

COMMITTENTE:



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CONSORZIO:



SOCI:



PROGETTAZIONE:

MANDATARIA:



MANDANTI:



PROGETTO ESECUTIVO DI DETTAGLIO

ITINERARIO NAPOLI - BARI RADDOPPIO TRATTA APICE - ORSARA I LOTTO FUNZIONALE APICE - HIRPINIA VIADOTTI

VI01 - VIADOTTO UFITA HIRPINIA DA KM 1+766 A KM 2+421

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

APPALTATORE	DIRETTORE DELLA PROGETTAZIONE	PROGETTISTA
Consorzio HIRPINIA AV Il Direttore Tecnico Ing. Vincenzo Moriello 28/03/2020	Il Responsabile integrazione fra le varie prestazioni specialistiche Ing. G. Cassani	Alpina S.p.A. Ing. Paolo Galvanin

COMMESSA LOTTO FASE ENTE TIPO DOC. OPERA/DISCIPLINA PROGR. REV. SCALA:

IF28	01	E	ZZ	CL	VI0103	001	B	-
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Rev.	Descrizione	Redatto	Data	Verificato	Data	Approvato	Data	Autorizzato Data
A	Emissione per consegna	P.Pazzaglia	28/03/2020	L.Zanelotti	28/03/2020	M.Vernaleone	28/03/2020	P.Galvanin
B	Recepimento Istruttorie	P.Pazzaglia	10/06/2020	L.Zanelotti	10/06/2020	M.Vernaleone	10/06/2020	
								10/06/2020

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PROGETTAZIONE: <u>Mandatario</u> ROCKSOIL S.P.A.	<u>Mandanti</u> NET ENGINEERING S.P.A. ALPINA S.P.A.					
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1 INTRODUZIONE

Nell'ambito della redazione del Progetto Esecutivo della tratta Apice - Orsara del Lotto 1 Apice – Irpinia - potenziamento della linea ferroviaria Napoli – Bari, la presente relazione riporta i risultati del dimensionamento e verifiche delle fondazioni della spalla SPA e della spalla SPB del Viadotto VI01 denominato Viadotto Ufita Hirpinia.

Per quanto riguarda i criteri di verifica adottati per le analisi del sistema di fondazione adottato si rimanda al documento IF2801EZZRBVI0003001: Viadotti ferroviari – Relazione sui criteri di calcolo delle fondazioni.

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2 Documenti di riferimento e normativa

2.1 DOCUMENTI DI RIFERIMENTO

- 1) IF2801EZZRGVI0000001 - Relazione Tecnico-Descrittiva delle Opere Civili - Viadotti VI01, VI02, VI03 e VI04;
- 2) IF2801EZZRBVI0003001 - Relazione sui criteri di calcolo delle fondazioni;
- 3) IF2801EZZRBOC0101001 - Relazione Geotecnica Generale;
- 4) IF2801EZZF6OC0101001 - Profilo geologico - Tratta all'aperto Isca Girasole, da pk 0+000 a 2+705;
- 5) IF2801EZZF6OC0101002 - Profilo geologico - Tratta all'aperto valle Ufita, da pk 4+695 a pk 5+090;
- 6) IF2801EZZF6OC0101003 - Profilo geologico - Tratta all'aperto Castel del Fiego, da pk 9+550 a pk 10+090;
- 7) IF2801EZZF6OC0101004 - Profilo geologico - Tratta all'aperto Iscalonga, da pk 16+610 a pk 18+700;
- 8) IF2801EZZRBOC0301001 - Relazione Sismica generale;
- 9) IF2801EZZP9VI0100000 - Pianta fondazioni e sezioni (tav. 1 di 6)
- 10) IF2801EZZP9VI0100001 - Pianta fondazioni e sezioni (tav. 2 di 6)
- 11) IF2801EZZP9VI0100002 - Pianta fondazioni e sezioni (tav. 3 di 6)
- 12) IF2801EZZP9VI0100003 - Pianta fondazioni e sezioni (tav. 4 di 6)
- 13) IF2801EZZP9VI0100004 - Pianta fondazioni e sezioni (tav. 5 di 6)
- 14) IF2801EZZP9VI0100005 - Pianta fondazioni e sezioni (tav. 6 di 6)
- 15) IF2801EZZCLVI0104001 - Spalla A: Relazione di calcolo strutture in elevazione
- 16) IF2801EZZCLVI0105002 - Pile P1 e P2: Relazione di calcolo strutture in elevazione
- 17) IF2801EZZCLVI0105003 - Pile P3, P5, P6, P9, P11 e P16: Relazione di calcolo strutture in elevazione
- 18) IF2801EZZCLVI0105005 - Pile P7, P8, P19, P20, P21 e P22: Relazione di calcolo strutture in elevazione
- 19) IF2801EZZCLVI0105006 - Pile da P12 e P15 Relazione di calcolo strutture in elevazione
- 20) IF2801EZZCLVI0105007 - Pile da P13 Relazione di calcolo strutture in elevazione
- 21) IF2801EZZCLVI0105008 - Pile da P14 Relazione di calcolo strutture in elevazione
- 22) IF2801EZZCLVI0105009 - Pile da P17 e P18 Relazione di calcolo strutture in elevazione
- 23) IF2801EZZCLVI0105010 - Pile P4 e P10 Relazione di calcolo strutture in elevazione
- 24) IF2801EZZCLVI0104002 - Spalla B: Relazione di calcolo strutture in elevazione
- 25) IF2801EZZCLVI0103001 - Relazione di calcolo fondazioni spalla A e spalla B
- 26) IF2801EZZCLVI0103002 - Relazione di calcolo fondazioni pile P13 e P14
- 27) IF2801EZZCLVI0103003 - Relazione di calcolo fondazioni pile P12 e P15
- 28) IF2801EZZCLVI0103004 - Relazione di calcolo fondazioni pile P1, P2, P7, P8 e da P19 a P22
- 29) IF2801EZZCLVI0103005 - Relazione di calcolo fondazioni pile P3, P4, P5, P6, P9, P10, P11 e P16

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30) IF2801EZZCLVI0103006 - Relazione di calcolo fondazioni pile P17 e P18.

2.2 **NORMATIVA E STRANDARD DI RIFERIMENTO**

- 31) Decreto Ministeriale del 14/01/2008: “Approvazione delle Nuove Norma Tecniche per le Costruzioni”, G.U. n.29 del 04/02/20018, Supplemento Ordinario n.30;
- 32) Circolare 01/02/2009, n.617 - Istruzione per l’applicazione delle “Nuove Norme Tecniche per le Costruzioni” di cui al D.M. 14/01/2008;
- 33) DM 06/05/2008 - “Integrazione al DM 14/01/2008 di approvazione delle Nuove Norme Tecniche per le Costruzioni”;
- 34) RFI DTC SI MA IFS 001 A - “Manuale di progettazione delle opere civili”;
- 35) RFI DTC SI SP IFS 001 A - “Capitolato generale tecnico d’appalto delle opere civili”;
- 36) UNI EN 1997-1: Eurocodice 7 - Progettazione Geotecnica - Parte 1: Regole generali;
- 37) UNI EN 1998-5: Eurocodice 8 - Progettazione delle strutture per la resistenza sismica - Parte 5: Fondazioni, strutture di contenimento ed aspetti geotecnici;
- 38) Caltrans. Guidelines on Foundation Loading and Deformation Due to Liquefaction Induced Lateral Spreading. California Department of Transportation, Sacramento, California, 2012;
- 39) JRA (2002) – Specifications for Highway Bridges, JapanRoad Association. Part V: Seismic Design.

2.3 **SOFTWARE**

- 40) Lpile, Ensoft Inc, versione 2016, release n. 9;
- 41) Group, Ensoft Inc, versione 2016, release n.10;
- 42) GeoStru, RC-SEC, Calcolo di sezioni in Cemento Armato;
- 43) Pozzi J – Pozzi di fondazione o di stabilizzazione – VOL. 4, T. Collotta 2010.

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3 Materiali

Il progetto strutturale delle fondazioni prevede l'uso dei materiali con le caratteristiche meccaniche minime riportate nei paragrafi seguenti.

3.1 ACCIAIO

3.1.1 Acciaio per armatura strutture in c.a.

Barre ad aderenza migliorata, saldabile, tipo B450C dotato delle seguenti caratteristiche meccaniche:

- tensione caratteristica di rottura: $f_{tk} \geq 540 \text{ MPa}$
- tensione caratteristica di snervamento: $f_{yk} \geq 450 \text{ MPa}$
- allungamento caratteristico: $\geq 7.5 \%$
- rapporto tensione di rottura/ tensione di snervamento: $1.15 \leq f_{tk}/f_{yk} < 1.35$

3.1.2 Profilati e piastre metalliche

- - Acciaio tipo: EN 10025-S275 JR
- - Tensione di rottura a trazione: $f_{tk} \geq 430 \text{ MPa}$
- - Tensione di snervamento: $f_{yk} \geq 275 \text{ MPa}$

3.2 CALCESTRUZZO

3.2.1 Calcestruzzo magro per getti di livellamento







- Classe di resistenza: C12/15
- classe di esposizione: X0

3.2.2 Calcestruzzo pali, diaframmi di fondazione, cordoli e opere provvisionali







- Classe di resistenza: C25/30
- classe di consistenza: S4
- classe di esposizione: XC2
- dimensione massima dell'inerte: $D_{max} = 32 \text{ mm}$
- copriferro minimo: $C_{f,min} \geq 60 \text{ mm}$

3.2.3 Calcestruzzo per fondazioni pile e spalle

- Classe di resistenza: C28/35
- classe di consistenza: S4
- classe di esposizione: XC2

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- dimensione massima dell'inerte:
 $D_{max} = 25 \text{ mm}$
- copriferro minimo:
 $C_{f,min} \geq 40 \text{ mm}$

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4 DESCRIZIONE DELLE FONDAZIONI E STRATIGRAFIA DI PROGETTO

4.1 DESCRIZIONE DEL SISTEMA FONDAZIONALE

La fondazione della spalla SPA è costituita da: un plinto a sezione rettangolare di dimensioni 12.0 m x 16.50 m² e altezza di 2.0 m; su n.12 pali trivellati di diametro $\varnothing = 1500$ mm e lunghezza L = 22.0 m.

La fondazione della spalla SPB è costituita da: un plinto a sezione rettangolare di dimensioni 12.0 m x 21.00 m² e altezza di 2.0 m; su n.15 pali trivellati di diametro $\varnothing = 1500$ mm e lunghezza L = 20.0 m.

4.2 STRATIGRAFIA DI RIFERIMENTO SPALLA A

In accordo con quanto riportato nella Relazione Geotecnica Generale - ref. 3), la stratigrafia e i parametri geotecnici di riferimento sono riportati nella seguente Tabella 1 unitamente alla portanza limite laterale e di base dei diaframmi.

La quota piano campagna di riferimento è ca. 322,60 m s.l.m.. Si considera la profondità della testa del palo da p.c. di ca. 3.45 m.

SPA STRATIGRAFIA da quota testa palo				PARAMETRI GEOTECNICI DI RIFERIMENTO			PORTANZA LIMITE DEGLI ELEMENTI FONDAZIONE	
DA	A	ΔH	UNITA' DI RIFERIMENTO	γ	φ	Cu	qs	qb
[m]	[m]	[m]		[kN/m ³]	[°]	[kPa]	[kPa]	[kPa]
0	1.0	1.0	ALL1-A	18		60/100	10	-
1.0	2.5	1.5	ALL2-S	19	30		15.5	-
2.5	6.0	3.5	ALL3-G	19	36		30	-
6.0	25.0	19	ANZ 2a	20		200	106.07	3000.0
25.0	ANZ 2a	20		400	150.0	4242.6

Tabella 1 Stratigrafia e parametri geotecnici di riferimento

La falda è assunta coincidente con la quota testa palo.

4.1 STRATIGRAFIA DI RIFERIMENTO SPALLA B

In accordo con quanto riportato nella Relazione Geotecnica Generale - ref. 3), la stratigrafia e i parametri geotecnici di riferimento sono riportati nella seguente Tabella 1 unitamente alla portanza limite laterale e di base dei diaframmi.

La quota piano campagna di riferimento è ca. 319,60 m s.l.m.. Si considera la profondità della testa del palo da p.c. di ca. 3.25 m.

APPALTATORE: Consorzio <u>HirpiniaAV</u> Soci <u>salini impregilo</u> <u>ASTALDI</u>	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria <u>ROKSOJL</u> Mandanti <u>NETENGINEERING</u> <u>Alpina</u>						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 10 di 420

SPB STRATIGRAFIA da quota testa palo				PARAMETRI GEOTECNICI DI RIFERIMENTO			PORTANZA LIMITE DEGLI ELEMENTI FONDAZIONE	
DA	A	ΔH	UNITA' DI RIFERIMENTO	γ	φ	Cu	qs	qb
[m]	[m]	[m]		[kN/m ³]	[°]	[kPa]	[kPa]	[kPa]
0	1.0	1.0	ALL1-A	18		60	10	-
1.0	2.5	1.5	ALL2-S	19	30		16	-
2.5	13.5	3.5	ANZ 2a	20		100	75.0	2121.3
13.5	25.0	19	ANZ 2a	20		200	106.07	3000.0
25.0	ANZ 2a	20		400	150.0	4242.6

Tabella 2 Stratigrafia e parametri geotecnici di riferimento

La falda è assunta coincidente con la quota testa palo.

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA																	
PROGETTAZIONE: Mandataria Mandanti   	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 16.6%;">COMMESSA</td> <td style="width: 16.6%;">LOTTO</td> <td style="width: 16.6%;">CODIFICA</td> <td style="width: 16.6%;">DOCUMENTO</td> <td style="width: 16.6%;">REV.</td> <td style="width: 16.6%;">FOGLIO</td> </tr> <tr> <td style="text-align: center;">IF28</td> <td style="text-align: center;">01</td> <td style="text-align: center;">E ZZ CL</td> <td style="text-align: center;">VI0103 001</td> <td style="text-align: center;">B</td> <td style="text-align: center;">11 di 420</td> </tr> </table>						COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	11 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO													
IF28	01	E ZZ CL	VI0103 001	B	11 di 420													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B																		

5 CRITERI DI VERIFICA

Per ogni stato limite ultimo deve essere rispettata la condizione:

$$Ed \leq Rd;$$

dove Ed è il valore di progetto dell'azione o dell'effetto dell'azione e Rd è il valore di progetto della resistenza.



Le verifiche sono sviluppate secondo l'approccio 2:

combinazione: A1+M1+R3,

in cui è previsto un'unica combinazione di gruppi di coefficienti, da adottare sia nelle verifiche strutturali (STR) sia nelle verifiche geotecniche (GEO).

Per maggiori dettagli sui criteri di calcolo e verifica si rimanda alla relazione ref. 2).

Per le verifiche a fessurazione si ricorda che sono svolte per condizioni ambientali ordinarie e armature poco sensibili (vedasi § 9.3.1 di ref. 2)).

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 12 di 420

6 SCARICHI DI FONDAZIONE

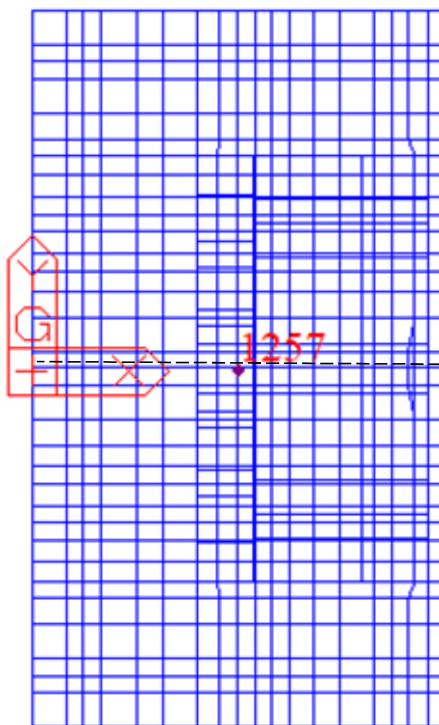
Di seguito si esaminano gli scarichi a quota intradosso fondazione della spalla per le combinazioni di carico sismiche (SLV), statiche (SLU) e di esercizio (SLE).

Scarichi alla base del plinto Nella Figura 6-1 la convenzione dei segni assunta per il calcolo della spalla.

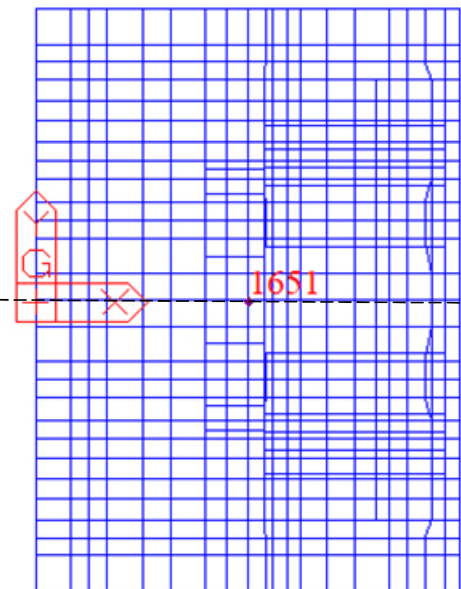
Le convenzioni:

- X: direzione longitudinale impalcato;
- Y: direzione trasversale impalcato;
- Z: direzione verticale (positiva verso l'alto);
- MX: Momento attorno all'asse X;
- MY: Momento attorno all'asse Y;
- MZ: Momento attorno all'asse Z.

SPALLA B



SPALLA A



DIREZIONE LONGITUDINALE

Figura 6-1: Sistema di riferimento proprio delle spalle

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 13 di 420

6.1 SCARICHI SPALLA A

6.1.1 Combinazioni delle azioni agli stati limite ultimi sismici

Nella seguente Tabella 3 si riportano le combinazioni di carico più gravose agli stati limite ultimi (SLV) in presenza di sisma.

Tali carichi sono stati ottenuti considerando la struttura in elevazione in classe di duttilità B (fattore di struttura $q=1.5$). Per il dimensionamento e le verifiche del sistema fondazione le azioni da considerare sono le resistenze degli elementi strutturali soprastanti, con il limite, in accordo alle NTC 2008 (ref. 31)), che il fattore di amplificazione non superi $\gamma_{Rd} = 1.1$.

COMB SISMICHE SLV

Node	Load	FX (kN)	FY (kN)	FZ (kN)	MX (kN*m)	MY (kN*m)	MZ (kN*m)
*****	*****	*****	*****	*****	*****	*****	*****
1651	ULS_V_02	10583.8	-71.1	-27176.3	915	49735	23.6
1651	ULS_V_05	-10583.8	-71.1	-27123.5	915	-33451	-2.7
1651	ULS_V_10	-313	13785.4	-27123	-70989	5673	4167
1651	ULS_V_13	-313	-13927.7	-27123	72819	5674	-4144
1651	ULS_V_22	-3394	-71	-22548.8	910	-7436	7
1651	ULS_V_19	3394	-71	-35672.2	925	24895	13
1651	ULS_V_16	-313	-13928	-31045	72824	6849	-4144
1651	ULS_V_09	-313	13785	-27123	-70989	5674	4167
1651	ULS_V_03	10584	-71	-31097	920	50911	24
1651	ULS_V_06	-10584	-71	-27123	915	-33452	-3
1651	ULS_V_09	-313	13785	-27123	-70989	5674	4167.1
1651	ULS_V_16	-313	-13928	-31045	72824	6849	-4143.5






Tabella 3: Combinazioni sismiche SLV: azioni agenti a base plinto SPA

6.1.2 Combinazioni delle azioni agli stati limite ultimi statici (SLU)

Nella seguente Tabella 4 si riportano le combinazioni agli stati limite ultimi statici (SLU); i carichi sono amplificati con i coefficienti parziali A1.

COMBINAZIONI ULS

Node	Load	FX (kN)	FY (kN)	FZ (kN)	MX (kN*m)	MY (kN*m)	MZ (kN*m)
*****	*****	*****	*****	*****	*****	*****	*****
1651	ULS_20	947.2	-726.0	-44419.1	7931.444	16110.2	253.5
1651	ULS_09	-947.2	-726.0	-43825.6	7931.445	-688.9	292.3
1651	ULS_54	-628	-620.3	-41042	5265.358	6887	171
1651	ULS_01	-681	-994.4	-44608	12132.075	7061	197
1651	ULS_48	-415	-798	-28236.4	9132.240	5278	186
1651	ULS_15	681	-994	-44684.9	12132.075	19102	178

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria  Mandanti  	RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 14 di 420

1651 ULS_02	-681	-994	-44608	12132.075	7060	197
1651 ULS_27	-681	-656	-31462	5211.861	3490	186
1651 ULS_15	681	-994	-44685	12132.075	19102.3	178
1651 ULS_32	-947	-726	-33600	7931.445	-3721.0	292
1651 ULS_03	-415	-770	-43168	9688.237	2701	461.4
1651 ULS_56	-628	-749	-40798	10336.918	6628	128.5

Tabella 4: Combinazioni statiche SLU-A1: azioni agenti a base plinto SPA

6.1.3 Combinazioni delle azioni agli stati limite di esercizio (SLE)

Nella seguente Tabella 5 si riportano le combinazioni di carico caratteristiche impiegate per gli stati limite di esercizio (SLE).

COMB SLE CARATTERISTICHE

Node	Load	FX (kN)	FY (kN)	FZ (kN)	MX (kN*m)	MY (kN*m)	MZ (kN*m)
*****	*****	*****	*****	*****	*****	*****	*****
1651 CH_20		643.7	-489.7	-32555.6	5344.000	11099.0	172.3
1651 CH_09		-643.7	-489.7	-31935.6	5344.000	168.1	199.0
1651 CH_30		-423	-416.8	-30016	3505.320	5392	115
1651 CH_01		-460	-674.8	-32475	8240.986	5513	133
1651 CH_24		-277	-532	-28236.4	6088.160	6375	124
1651 CH_15		460	-675	-32738.9	8240.986	13163	120
1651 CH_02		-460	-675	-32475	8240.986	5512	133
1651 CH_05		-460	-441	-30461	3468.425	5141	126
1651 CH_15		460	-675	-32739	8240.986	13162.7	120
1651 CH_10		-644	-490	-31936	5344.000	167.5	199
1651 CH_03		-277	-520	-31482	6555.581	2506	315.6
1651 CH_32		-423	-506	-29848	7002.947	5214	86.1


Tabella 5: Combinazioni di esercizio SLE: azioni agenti a base plinto SPA

6.2 SCARICHI A INTRADOSSO PLINTO - GROUP

6.2.1 Combinazioni delle azioni agli stati limite ultimi sismici (SLV)

Nella Tabella 6 si riportano le combinazioni di carico agli stati limite ultimi (SLV) in presenza dell'azione sismica, ottenute:

- amplificando le azioni di taglio e i momenti a base pila del coefficiente $\gamma_{Rd} = 1.1$;
- sistema di riferimento codice calcolo Group (Figura 6-2).

APPALTATORE: Consorzio Soci 		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti 							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 15 di 420

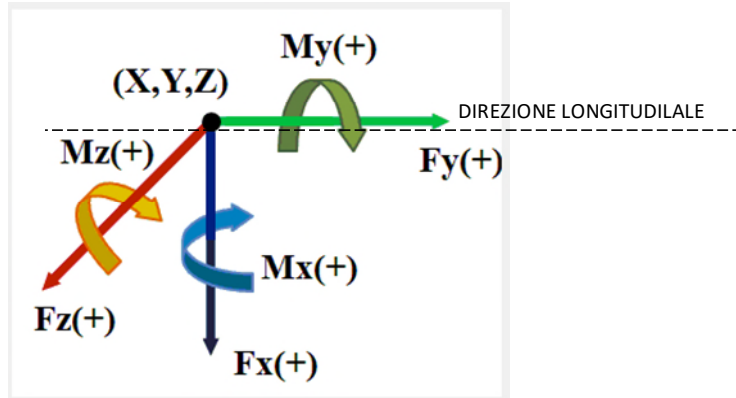


Figura 6-2: Convenzioni di segno Group

NODE	LOAD	VERT	LONG	LONG	TRASV	TRASV	TORC
		FX	FY	MZ	FZ	MY	MX
1651	ULS_V_02	27176.3	11642.2	-54708.2	78.3	1007.0	-26.0
1651	ULS_V_05	27123.5	-11642.2	36796.5	78.3	1007.0	3.0
1651	ULS_V_10	27123.5	-344.6	-6240.5	-15164.0	-78087.4	-4583.8
1651	ULS_V_13	27123.5	-344.6	-6240.9	15320.5	80101.3	4557.9
1651	ULS_V_22	22548.8	-3733.8	8179.8	78.3	1001.4	-8.2
1651	ULS_V_19	35672.2	3733.8	-27384.9	78.3	1017.4	-14.8
1651	ULS_V_16	31044.7	-344.6	-7534.0	15320.5	80106.1	4557.9
1651	ULS_V_09	27123.5	-344.6	-6240.9	-15164.0	-78087.4	-4583.8
1651	ULS_V_03	31097.5	11642.2	-56002.0	78.3	1011.8	-26.0
1651	ULS_V_06	27123.5	-11642.2	36796.9	78.3	1007.0	3.0
1651	ULS_V_09	27123.5	-344.6	-6240.9	-15164.0	-78087.4	-4583.8
1651	ULS_V_16	31044.7	-344.6	-7534.0	15320.5	80106.1	4557.9

Tabella 6: Combinazioni sismiche SLV: azioni agenti ad intradosso plinto SPA - Group

6.2.2 Combinazioni delle azioni agli stati limite ultimi statici (SLU)

Nella Tabella 7 si riportano gli scarichi per gli stati limite ultimi statici (SLU), ottenuti considerando sistema di riferimento codice calcolo Group (Figura 6-2).

NODE	LOAD	VERT	LONG	LONG	TRASV	TRASV	TORC
		FX	FY	MZ	FZ	MY	MX
1651	ULS_20	44419.1	947.2	-16110.2	726.0	7931,4	-253.5
1651	ULS_09	43825.6	-947.2	688.9	726.0	7931,4	-292.3
1651	ULS_54	41042.2	-627.7	-6886.5	620.3	5265,4	-170.9
1651	ULS_01	44607.6	-681.0	-7060.7	994.4	12132,1	-197.1
1651	ULS_48	28236.4	-414.8	-5278.3	797.6	9132,2	-186.1
1651	ULS_15	44684.9	681.0	-19102.3	994.4	12132,1	-177.7

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B

1651	ULS_02	44607.6	-681.0	-7060.1	994.4	12132,1	-197.1
1651	ULS_27	31461.9	-681.0	-3490.3	655.8	5211,9	-185.7
1651	ULS_15	44684.9	681.0	-19102.3	994.4	12132,1	-177.7
1651	ULS_32	33600.2	-947.2	3721.0	726.0	7931,4	-292.3
1651	ULS_03	43168.5	-414.8	-2700.8	770.0	9688,2	-461.4
1651	ULS_56	40798.0	-627.7	-6628.0	749.5	10336,9	-128.5

Tabella 7: Combinazioni di statiche SLU-A1: azioni agenti ad intradosso plinto SPA - Group

6.2.3 Combinazioni delle azioni agli stati limite di esercizio (SLE)

Nella **Tabella 8** si riportano le combinazioni di carico caratteristiche impiegate per gli stati limite di esercizio ottenute considerando sistema di riferimento codice calcolo Group (Figura 6-2).

NODE	LOAD	VERT	LONG	LONG	TRASV	TRASV	TORC
		FX	FY	MZ	FZ	MY	MX
1651	CH_20	32555.6	643.7	-11099.0	489.7	5344,0	-172.3
1651	CH_09	31935.6	-643.7	-168.1	489.7	5344,0	-199.0
1651	CH_30	30016.0	-423.4	-5392.3	416.8	3505,3	-115.3
1651	CH_01	32474.9	-460.1	-5512.6	674.8	8241,0	-133.3
1651	CH_24	28236.4	-276.5	-6374.8	531.7	6088,2	-124.1
1651	CH_15	32738.9	460.1	-13162.7	674.8	8241,0	-120.0
1651	CH_02	32474.9	-460.1	-5512.0	674.8	8241,0	-133.3
1651	CH_05	30460.9	-460.1	-5141.0	441.2	3468,4	-125.5
1651	CH_15	32738.9	460.1	-13162.7	674.8	8241,0	-120.0
1651	CH_10	31935.6	-643.7	-167.5	489.7	5344,0	-199.0
1651	CH_03	31482.4	-276.5	-2505.8	520.0	6555,6	-315.6
1651	CH_32	29847.6	-423.4	-5214.0	505.9	7002,9	-86.1

Tabella 8: Combinazioni di esercizio SLE: azioni agenti ad intradosso plinto SPA - Group

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 17 di 420

6.1 SCARICHI SPALLA B

6.1.1 Combinazioni delle azioni agli stati limite ultimi sismici

Nella seguente Tabella 9 si riportano le combinazioni di carico più gravose agli stati limite ultimi (SLV) in presenza di sisma.

Tali carichi sono stati ottenuti considerando la struttura in elevazione in classe di duttilità B (fattore di struttura $q=1.5$). Per il dimensionamento e le verifiche del sistema fondazione le azioni da considerare sono le resistenze degli elementi strutturali soprastanti, con il limite, in accordo alle NTC 2008 (ref. 31)), che il fattore di amplificazione non superi $\gamma_{Rd} = 1.1$.

COMB SISMICHE SLV

Node	Load	FX (kN)	FY (kN)	FZ (kN)	MX (kN*m)	MY (kN*m)	MZ (kN*m)
*****	*****	*****	*****	*****	*****	*****	*****
1257	ULS_V_02	11696.5	-71.1	-29106.5	830	45764	23.8
1257	ULS_V_05	-11696.5	-71.1	-29053.7	830	-30077	-2.9
1257	ULS_V_10	-497	14770.6	-29054	-62752	4558	4015
1257	ULS_V_13	-497	-14912.9	-29054	64412	4558	-3991
1257	ULS_V_22	-3857	-71	-24153.8	825	-7154	7
1257	ULS_V_19	3857	-71	-38206.4	840	23973	14
1257	ULS_V_16	-497	-14913	-33254	64417	5691	-3991
1257	ULS_V_09	-497	14771	-29054	-62752	4558	4015
1257	ULS_V_04	11697	-71	-33306	834	46897	24
1257	ULS_V_05	-11697	-71	-29054	830	-30077	-3
1257	ULS_V_10	-497	14771	-29054	-62752	4558	4014.7
1257	ULS_V_15	-497	-14913	-33254	64417	5691	-3991.1







Tabella 9: Combinazioni sismiche SLV: azioni agenti a base plinto SPB

6.1.2 Combinazioni delle azioni agli stati limite ultimi statici (SLU)

Nella seguente Tabella 10 si riportano le combinazioni agli stati limite ultimi statici (SLU); i carichi sono amplificati con i coefficienti parziali A1.

COMBINAZIONI ULS

Node	Load	FX (kN)	FY (kN)	FZ (kN)	MX (kN*m)	MY (kN*m)	MZ (kN*m)
*****	*****	*****	*****	*****	*****	*****	*****
1257	ULS_20	4070.5	-749.1	-47518.6	7396,4	34164.8	120.8
1257	ULS_09	-4070.5	-749.1	-46619.6	7396,4	-20228.4	159.7
1257	ULS_54	-1103	-643.4	-43836	4857,1	4178	38
1257	ULS_15	2011	-1017.5	-47784	11275,0	25822	45
1257	ULS_48	-415	-836	-30306.0	8735,3	5552	-35

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA						
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1"> <tr> <td>COMMESSA IF28</td> <td>LOTTO 01</td> <td>CODIFICA E ZZ CL</td> <td>DOCUMENTO VI0103 001</td> <td>REV. B</td> <td>FOGLIO 18 di 420</td> </tr> </table>	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 18 di 420
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 18 di 420		

1257 ULS_15	2011	-1017	-47784.4	11275,0	25822	45
1257 ULS_16	2011	-1017	-47784	11275,0	25822	45
1257 ULS_27	-1275	-679	-33532	4761,1	185	53
1257 ULS_20	4070	-749	-47519	7396,4	34164.8	121
1257 ULS_31	-4070	-749	-35670	7396,4	-23148.0	160
1257 ULS_04	-3538	-793	-45962	9100,4	-17477	328.7
1257 ULS_45	-415	-836	-41256	8735,3	8472	-35.0

Tabella 10: Combinazioni statiche SLU-A1: azioni agenti a base plinto SPB

6.1.3 Combinazioni delle azioni agli stati limite di esercizio (SLE)

Nella seguente Tabella 11 si riportano le combinazioni di carico caratteristiche impiegate per gli stati limite di esercizio (SLE).

COMB SLE CARATTERISTICHE

Node	Load	FX (kN)	FY (kN)	FZ (kN)	MX (kN*m)	MY (kN*m)	MZ (kN*m)
*****	*****	*****	*****	*****	*****	*****	*****
1257 CH_20		2797.7	-505.1	-34625.2	4980,5	24046.3	83.8
1257 CH_09		-2797.7	-505.1	-34005.2	4980,5	-13342.4	110.6
1257 CH_30		-751	-432.2	-32086	3229,2	3490	27
1257 CH_01		-1378	-690.2	-34544	7655,3	-181	45
1257 CH_24		-277	-557	-30306.0	5823,6	6451	-23
1257 CH_15		1378	-690	-34808.5	7655,3	18292	32
1257 CH_16		1378	-690	-34808	7655,3	18293	32
1257 CH_05		-870	-457	-32530	3163,0	2749	37
1257 CH_20		2798	-505	-34625	4980,5	24046.3	84
1257 CH_09		-2798	-505	-34005	4980,5	-13342.4	111
1257 CH_04		-2431	-535	-33552	6155,6	-11445	227.2
1257 CH_23		-277	-557	-30306	5823,6	6451	-23.3



Tabella 11: Combinazioni di esercizio SLE: azioni agenti a base plinto SPB

6.2 SCARICHI A INTRADOSSO PLINTO - GROUP

6.2.1 Combinazioni delle azioni agli stati limite ultimi sismici (SLV)

Nella Tabella 12 si riportano le combinazioni di carico agli stati limite ultimi (SLV) in presenza dell'azione sismica, ottenute:

- amplificando le azioni di taglio e i momenti a base pila del coefficiente $\gamma_{Rd} = 1.1$;
- sistema di riferimento codice calcolo Group (Figura 6-2).

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 19 di 420

NODE	LOAD	VERT	LONG	LONG	TRASV	TRASV	TORC
		FX	FY	MZ	FZ	MY	MX
1257	ULS_V_02	29106.5	12866.2	-50340.5	78.3	913.0	-26.2
1257	ULS_V_05	29053.7	-12866.2	33085.2	78.3	913.0	3.2
1257	ULS_V_10	29053.7	-546.4	-5014.0	-16247.6	-69027.6	-4416.2
1257	ULS_V_13	29053.7	-546.4	-5013.9	16404.2	70853.7	4390.3
1257	ULS_V_22	24153.8	-4242.3	7869.5	78.3	907.4	-8.1
1257	ULS_V_19	38206.4	4242.3	-26370.8	78.3	923.5	-14.9
1257	ULS_V_16	33253.7	-546.4	-6260.1	16404.2	70858.6	4390.3
1257	ULS_V_09	29053.7	-546.4	-5013.9	-16247.6	-69027.7	-4416.2
1257	ULS_V_04	33306.5	12866.2	-51586.6	78.3	917.9	-26.2
1257	ULS_V_05	29053.7	-12866.2	33085.2	78.3	913.0	3.2
1257	ULS_V_10	29053.7	-546.4	-5014.0	-16247.6	-69027.6	-4416.2
1257	ULS_V_15	33253.7	-546.4	-6260.0	16404.2	70858.6	4390.3


Tabella 12: Combinazioni sismiche SLV: azioni agenti ad intradosso plinto SPB - Group

6.2.2 Combinazioni delle azioni agli stati limite ultimi statici (SLU)

Nella Tabella 13 si riportano gli scarichi per gli stati limite ultimi statici (SLU), ottenuti considerando sistema di riferimento codice calcolo Group (Figura 6-2).

NODE	LOAD	VERT	LONG	LONG	TRASV	TRASV	TORC
		FX	FY	MZ	FZ	MY	MX
1257	ULS_20	47518.6	4070.5	-34164.8	749.1	7396,4	-120.8
1257	ULS_09	46619.6	-4070.5	20228.4	749.1	7396,4	-159.7
1257	ULS_54	43836.2	-1102.8	-4178.4	643.4	4857,1	-38.2
1257	ULS_15	47784.4	2011.4	-25821.6	1017.5	11275,0	-45.0
1257	ULS_48	30306.0	-414.8	-5552.3	836.1	8735,3	35.0
1257	ULS_15	47784.4	2011.4	-25821.6	1017.5	11275,0	-45.0
1257	ULS_16	47784.4	2011.4	-25821.8	1017.5	11275,0	-45.0
1257	ULS_27	33531.5	-1274.8	-185.2	678.8	4761,1	-53.0
1257	ULS_20	47518.6	4070.5	-34164.8	749.1	7396,4	-120.8
1257	ULS_31	35669.8	-4070.5	23148.0	749.1	7396,4	-159.7
1257	ULS_04	45962.4	-3538.1	17477.5	793.1	9100,4	-328.7
1257	ULS_45	41255.7	-414.8	-8471.7	836.1	8735,3	35.0

Tabella 13: Combinazioni di statiche SLU-A1: azioni agenti ad intradosso plinto SPB - Group


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PROGETTAZIONE: Mandataria  Mandanti  						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 20 di 420

6.2.3 Combinazioni delle azioni agli stati limite di esercizio (SLE)

Nella **Tabella 14** si riportano le combinazioni di carico caratteristiche impiegate per gli stati limite di esercizio ottenute considerando sistema di riferimento codice calcolo Group (Figura 6-2).

NODE	LOAD	VERT	LONG	LONG	TRASV	TRASV	TORC
		FX	FY	MZ	FZ	MY	MX
1257	CH_20	34625.2	2797.7	-24046.3	505.1	4980,5	-83.8
1257	CH_09	34005.2	-2797.7	13342.4	505.1	4980,5	-110.6
1257	CH_30	32085.6	-751.0	-3490.0	432.2	3229,2	-26.9
1257	CH_01	34544.5	-1377.6	181.0	690.2	7655,3	-44.9
1257	CH_24	30306.0	-276.5	-6451.0	557.4	5823,6	23.3
1257	CH_15	34808.5	1377.6	-18292.3	690.2	7655,3	-31.5
1257	CH_16	34808.5	1377.6	-18292.5	690.2	7655,3	-31.5
1257	CH_05	32530.5	-869.6	-2749.5	456.6	3163,0	-37.1
1257	CH_20	34625.2	2797.7	-24046.3	505.1	4980,5	-83.8
1257	CH_09	34005.2	-2797.7	13342.4	505.1	4980,5	-110.6
1257	CH_04	33552.0	-2430.5	11445.1	535.4	6155,6	-227.2
1257	CH_23	30306.0	-276.5	-6450.8	557.4	5823,6	23.3

Tabella 14: Combinazioni di esercizio SLE: azioni agenti ad intradosso plinto SPB - Group

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA																	
PROGETTAZIONE: Mandataria Mandanti   	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 16.6%;">COMMESSA</td> <td style="width: 16.6%;">LOTTO</td> <td style="width: 16.6%;">CODIFICA</td> <td style="width: 16.6%;">DOCUMENTO</td> <td style="width: 16.6%;">REV.</td> <td style="width: 16.6%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>21 di 420</td> </tr> </table>						COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	21 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO													
IF28	01	E ZZ CL	VI0103 001	B	21 di 420													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B																		

7 ANALISI DELL'INTERAZIONE FONDAZIONE-TERRENO SPALLA A

L'analisi di interazione terreno-fondazione è stata sviluppata con il software GROUP della Ensoft.

Il programma considera che il comportamento di un palo soggetto ad azioni orizzontali all'interno di un gruppo differisce da quello di un palo singolo ed isolato. In un gruppo di pali caricato da azioni orizzontali i fenomeni di interazione reciproca palo – terreno – palo determinano, complessivamente, una diminuzione della rigidità del sistema.

La diversità di comportamento si manifesta mediante un differente valore dello sforzo di taglio agente in testa a ciascun palo, differenti valori di momento flettente, diversa ubicazione del valore massimo di momento al variare della profondità (nell'ipotesi in cui il vincolo in testa al palo non sia un incastro). La modalità di risposta di ciascun palo è funzione essenzialmente dalla posizione geometrica che questo occupa all'interno del gruppo. Precisamente, la risposta del singolo palo all'interno del gruppo è condizionata:

- dalla fila di appartenenza all'interno del gruppo (effetto ombra o shadowing);
- dalla posizione all'interno della singola fila (effetto di bordo).

7.1 DESCRIZIONE DEL MODELLO DI CALCOLO GROUP

Il modello di calcolo è stato costruito nel seguente modo:

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA																	
PROGETTAZIONE: Mandataria Mandanti   	<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 16.6%;">COMMESSA</td> <td style="width: 16.6%;">LOTTO</td> <td style="width: 16.6%;">CODIFICA</td> <td style="width: 16.6%;">DOCUMENTO</td> <td style="width: 16.6%;">REV.</td> <td style="width: 16.6%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>22 di 420</td> </tr> </table>						COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	22 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO													
IF28	01	E ZZ CL	VI0103 001	B	22 di 420													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B																		

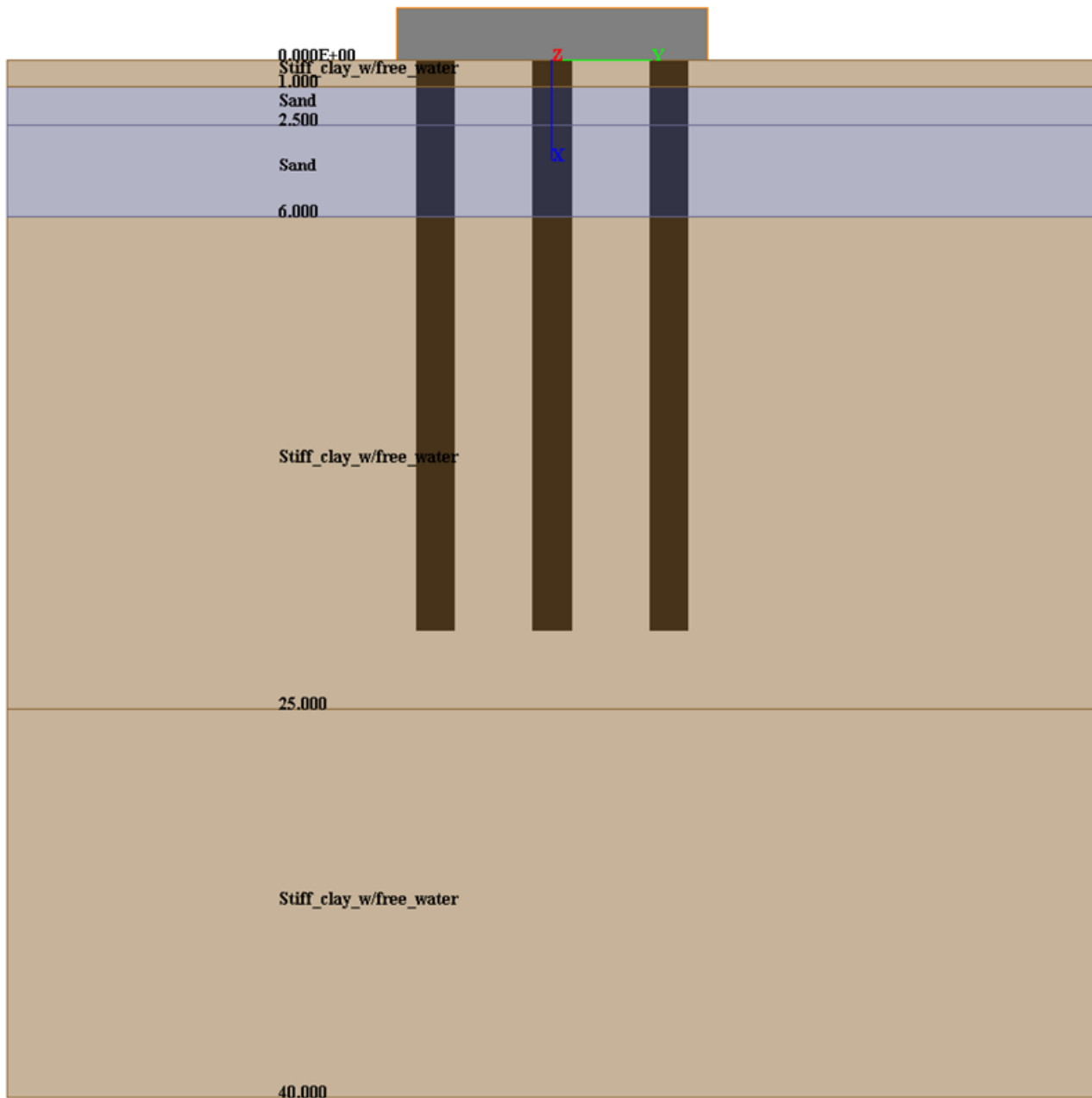


Figura 7-1: Vista frontale del modello GROUPv2016

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti 	
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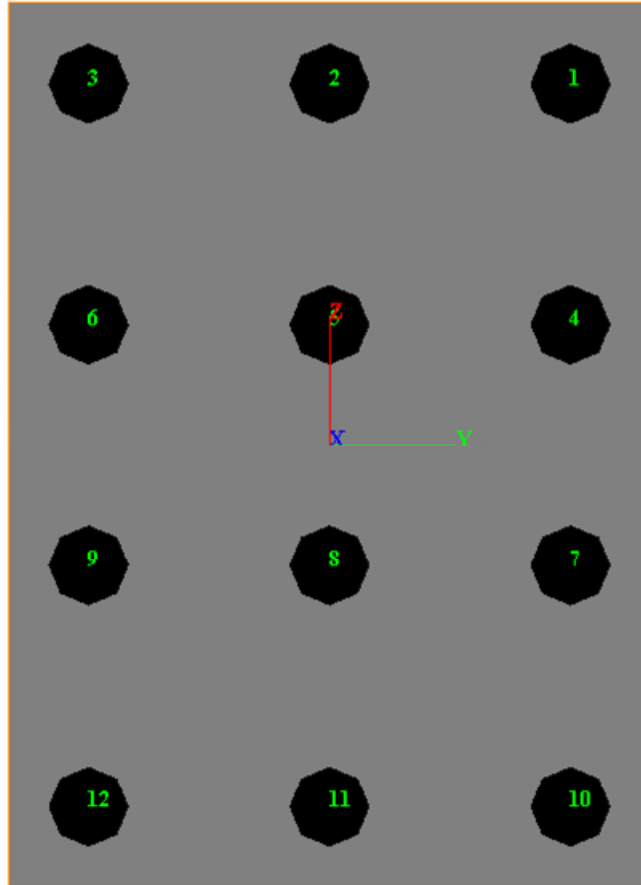


Figura 7-2: Vista in pianta del modello GROUPv2016

In accordo al § 4.2 nelle seguenti Figura 7-3 ÷ Figura 7-8 si riporta il modello stratigrafico di calcolo e i parametri geotecnici assegnati ai singoli strati. I parametri di rigidezza del terreno sono stati assunti in accordo ai criteri illustrati nella relazione al ref. 2), § 8.1.1 per le “stiff clays with free water”.

Layer	Soil Type	Depth for Top of Soil Layer (m)	Depth for Bottom of Soil Layer (m)	Properties of Layer
1	Stiff Clay with Free Water (Reese)	0	1	1: Stiff Clay with Free Water
2	Sand (Reese)	1	2.5	2: Sand (Reese, et al.)
3	Sand (Reese)	2.5	6	3: Sand (Reese, et al.)
4	Stiff Clay with Free Water (Reese)	6	25	4: Stiff Clay with Free Water
5	Stiff Clay with Free Water (Reese)	25	40	5: Stiff Clay with Free Water

Buttons: Add Row, Insert Row, Delete Row

Figura 7-3: Modello stratigrafico GROUP V2016

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Stiff Clay with Free Water 1

1=Top, 2=Bottom	Effective Unit Weight (kN/m ³)	Undrained Cohesion, c (kN/m ²)	p-y Modulus, k (kN/m ³)	Strain Factor E50	Ultimate Unit Side Friction (kN/m ²)	Ultimate Unit Tip Resistance (kN/m ²)
1	8	60	135000	0.007	10	0
2	8	60	135000	0.007	10	0

A linear interpolation with depth will be used to compute values between the top and bottom of the layer.
 p-y Modulus, k, and Strain Factor E50:
 - Always check recommended value in Geotechnical Investigation Reports.
 - Program will help to estimate values for p-y Modulus, k, and Strain Factor E50 if zero input values are entered.
 Ultimate Unit Side Friction and Ultimate Unit Tip Resistance:
 - The program uses Ultimate Unit Side Friction to generate t-z curves.
 - The program uses Ultimate Unit Tip Resistance to generate q-w curves.
 - Always check recommended values in Geotechnical Investigation Reports.
 - Program will help to estimate values for Ultimate Unit Side Friction and Ultimate Unit Tip Resistance if zero input values are entered.

(k=55000 per analisi SLE)

Figura 7-4: Layer no.1 (ALL1-A)

Sand (Reese, et al.) 2

1=Top, 2=Bottom	Effective Unit Weight (kN/m ³)	Friction Angle, (DEG.)	p-y Modulus, k (kN/m ³)	Ultimate Unit Side Friction (kN/m ²)	Ultimate Unit Tip Resistance (kN/m ²)
1	9	30	16300	15.5	0
2	9	30	16300	15.5	0

A linear interpolation with depth will be used to compute values between the top and bottom of the layer.
 p-y Modulus, k:
 - Always check recommended value in Geotechnical Investigation Reports.
 - Program will help to estimate value for p-y Modulus, k, if zero input value is entered.
 Ultimate Unit Side Friction and Ultimate Unit Tip Resistance:
 - The program uses Ultimate Unit Side Friction to generate t-z curves.
 - The program uses Ultimate Unit Tip Resistance to generate q-w curves.
 - Always check recommended values in Geotechnical Investigation Reports.
 - Program will help to estimate values for Ultimate Unit Side Friction and Ultimate Unit Tip Resistance if zero input values are entered.


Figura 7-5: Layer no.2 (ALL2-S)

Sand (Reese, et al.) 3

1=Top, 2=Bottom	Effective Unit Weight (kN/m ³)	Friction Angle, (DEG.)	p-y Modulus, k (kN/m ³)	Ultimate Unit Side Friction (kN/m ²)	Ultimate Unit Tip Resistance (kN/m ²)
1	9	36	34000	30	0
2	9	36	34000	30	0

A linear interpolation with depth will be used to compute values between the top and bottom of the layer.
 p-y Modulus, k:
 - Always check recommended value in Geotechnical Investigation Reports.
 - Program will help to estimate value for p-y Modulus, k, if zero input value is entered.
 Ultimate Unit Side Friction and Ultimate Unit Tip Resistance:
 - The program uses Ultimate Unit Side Friction to generate t-z curves.
 - The program uses Ultimate Unit Tip Resistance to generate q-w curves.
 - Always check recommended values in Geotechnical Investigation Reports.
 - Program will help to estimate values for Ultimate Unit Side Friction and Ultimate Unit Tip Resistance if zero input values are entered.

Figura 7-6: Layer no.3 (ALL3-G)

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
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1=Top, 2=Bottom	Effective Unit Weight (kN/m ³)	Undrained Cohesion, c (kN/m ²)	p-y Modulus, k (kN/m ³)	Strain Factor E50	Ultimate Unit Side Friction (kN/m ²)	Ultimate Unit Tip Resistance (kN/m ²)
1	10	200	540000	0.004	106.07	3000
2	10	200	540000	0.004	106.07	3000

A linear interpolation with depth will be used to compute values between the top and bottom of the layer.
 p-y Modulus, k, and Strain Factor E50:
 - Always check recommended value in Geotechnical Investigation Reports.
 - Program will help to estimate values for p-y Modulus, k, and Strain Factor E50 if zero input values are entered.
 Ultimate Unit Side Friction and Ultimate Unit Tip Resistance:
 - The program uses Ultimate Unit Side Friction to generate t-z curves.
 - The program uses Ultimate Unit Tip Resistance to generate q-w curves.
 - Always check recommended values in Geotechnical Investigation Reports.
 - Program will help to estimate values for Ultimate Unit Side Friction and Ultimate Unit Tip Resistance if zero input values are entered.

(k=220000 per analisi SLE)


Figura 7-7: Layer no.4 (ANZ 2a)

1=Top, 2=Bottom	Effective Unit Weight (kN/m ³)	Undrained Cohesion, c (kN/m ²)	p-y Modulus, k (kN/m ³)	Strain Factor E50	Ultimate Unit Side Friction (kN/m ²)	Ultimate Unit Tip Resistance (kN/m ²)
1	10	400	540000	0.004	150	4242.6
2	10	400	540000	0.004	150	4242.6

A linear interpolation with depth will be used to compute values between the top and bottom of the layer.
 p-y Modulus, k, and Strain Factor E50:
 - Always check recommended value in Geotechnical Investigation Reports.
 - Program will help to estimate values for p-y Modulus, k, and Strain Factor E50 if zero input values are entered.
 Ultimate Unit Side Friction and Ultimate Unit Tip Resistance:
 - The program uses Ultimate Unit Side Friction to generate t-z curves.
 - The program uses Ultimate Unit Tip Resistance to generate q-w curves.
 - Always check recommended values in Geotechnical Investigation Reports.
 - Program will help to estimate values for Ultimate Unit Side Friction and Ultimate Unit Tip Resistance if zero input values are entered.

(k=220000 per analisi SLE)

Figura 7-8: Layer no.5 (ANZ 2a)

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti 						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 26 di 420

7.2 SINTESI DEI RISULTATI AGLI STATI LIMITE DI ESERCIZIO (SLE)

Si riassumono nel seguito le sollecitazioni massime di sforzo assiale, taglio e momento, agenti in testa ai pali.

Si ricorda che per le analisi allo SLE (vedasi Ref. 2)) sono stati utilizzati per le curve p-y i coefficienti di rigidezza del terreno suggeriti dal programma per carichi ciclici; facendo riferimento alle Figura 7-4 ÷ Figura 7-8 sono stati utilizzati i valori evidenziati di lato.

SLE	FOR. X, KN	FOR.H, KN	MOM, KN-M	MOM X, KN- M
	*****	*****	*****	*****
max	3340.6	81.5	233.7	-0.4
min	2039.4	43.6	131.9	-1.0

Tabella 15: Sollecitazioni allo SLE massime e minime per i pali di fondazione

Nelle seguenti figure sono diagrammati l'andamento con la profondità del momento flettente e del taglio relativi alle combinazioni in cui tali sollecitazioni risultano massime.

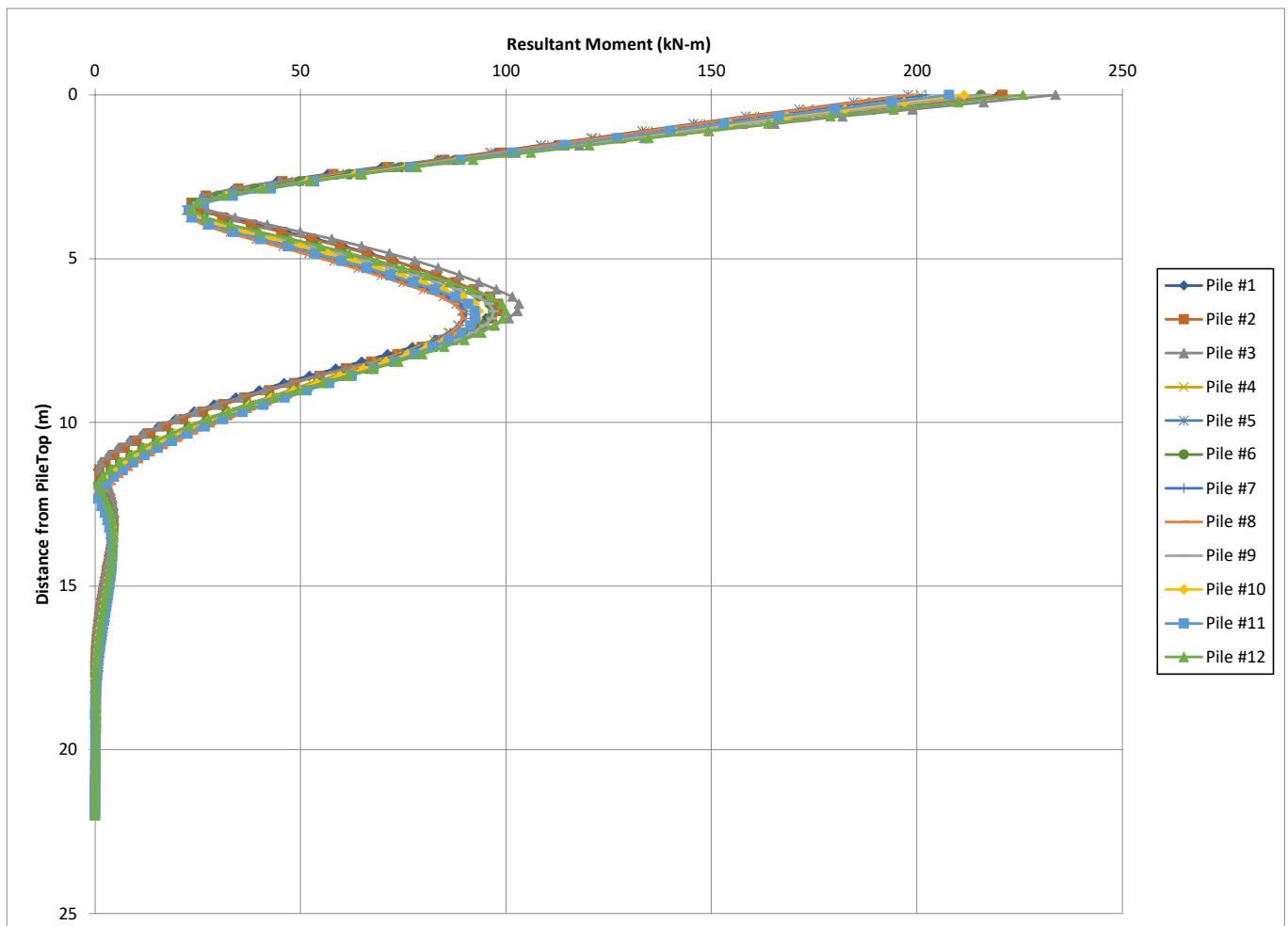


Figura 7-9: Combinazioni SLE: Andamento con la profondità del momento (combo SLE 4-1651-CH_01).

APPALTATORE: Consorzio Soci 		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti 							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 27 di 420

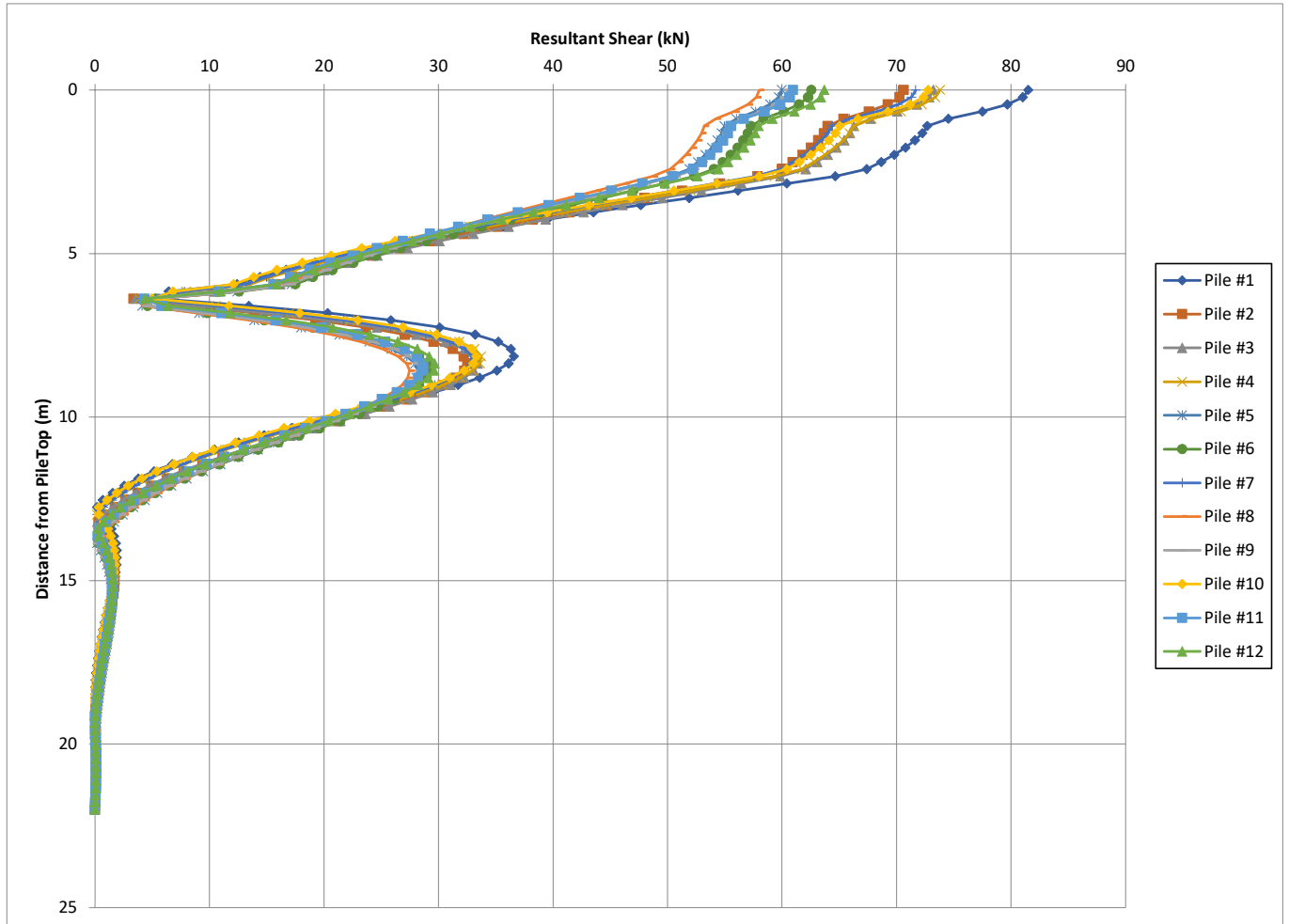



Figura 7-10: Combinazioni SLE: Andamento con la profondità del taglio (combo SLE 1-1651-CH_20).

7.2.1 Spostamenti

Nella Tabella 16 si riportano gli spostamenti e le rotazioni ad intradosso plinto e sommità spalla.

Gli spostamenti orizzontali (direzione y-2) e direzione z-3) tengono già conto dell'interazione fra pali e sono quindi rappresentativi degli spostamenti orizzontali del gruppo di pali; lo spostamento verticale non tiene conto dell'effetto gruppo.

Il coefficiente amplificativo del cedimento verticale per effetto gruppo E_G viene valutato in accordo a Mandolini et al. (2005) ed è riportato in Tabella 17.

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti 	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA LOTTO CODIFICA DOCUMENTO REV. FOGLIO IF28 01 E ZZ CL VI0103 001 B 28 di 420

VERTICAL , M	HORIZONTAL Y, M	HORIZONTAL Z, M	ANGLE ROT. X,RAD	ANGLE ROT. Y,RAD	ANGLE ROT. Z,RAD	Ppostamento spalla - sle		
						H pila (m)	7,95	
						asse Y (mm)	asse Z (mm)	asse X (mm)
0,0014061	0,0003473	0,0002027	-1,812E-06	1,163E-05	-4,053E-05	0,669	0,295	2,669
0,0013790	-0,0002361	0,0002022	-1,653E-06	1,163E-05	5,884E-06	-0,283	0,295	2,618
0,0012952	-0,0001036	0,0001673	-1,392E-06	8,150E-06	-1,237E-05	-0,005	0,232	2,458
0,0014025	-0,0001168	0,0002859	-1,823E-06	1,751E-05	-1,236E-05	-0,018	0,425	2,662
0,0012175	-0,0000401	0,0002238	-1,569E-06	1,312E-05	-1,684E-05	0,094	0,328	2,311
0,0014141	0,0003005	0,0002842	-1,124E-06	1,750E-05	-4,506E-05	0,659	0,423	2,684
0,0014025	-0,0001168	0,0002859	-1,823E-06	1,751E-05	-1,236E-05	-0,019	0,425	2,662
0,0013146	-0,0001196	0,0001757	-1,447E-06	8,220E-06	-1,123E-05	-0,030	0,241	2,495
0,0014141	0,0003005	0,0002842	-1,124E-06	1,750E-05	-4,506E-05	0,659	0,423	2,684
0,0013790	-0,0002361	0,0002022	-1,653E-06	1,163E-05	5,886E-06	-0,283	0,295	2,618
0,0013592	-0,0000790	0,0002216	-3,071E-06	1,384E-05	-4,938E-06	-0,040	0,332	2,580
0,0012878	-0,0001057	0,0002185	-1,298E-06	1,451E-05	-1,181E-05	-0,012	0,334	2,445

Tabella 16: Combinazioni SLE: spostamenti e rotazioni ad intradosso plinto.

DATI FONDAZIONE		
Larghezza plinto	12	m
Profondità plinto	16,5	m
Diametro palo	1,5	m
Lunghezza palo	22	m
interasse palo	4,5	m
numero pali	12	-
Coefficiente R	1,57	-
Coefficiente RG	0,16	-
Coeff. amplificazione cedimento del gruppo EG	1,90	-

Tabella 17: Coefficiente amplificativo del cedimento verticale per effetto gruppo.





7.3 SINTESI DEI RISULTATI AGLI STATI LIMITE ULTIMI STATICI (SLU)

Si riassumono nel seguito le sollecitazioni massime di sforzo assiale, taglio e momento, agenti in testa ai pali.

SLU	FOR. X, KN	FOR.H, KN	MOM, KN-M	MOM X, KN-M
	*****	*****	*****	*****
max	4604.5	119.7	317.9	-0.5
min	1998.3	64.9	179.1	-1.3

Tabella 18: Sollecitazioni allo SLU massime e minime per i pali di fondazione

Nelle seguenti figure sono diagrammati l'andamento con la profondità del momento flettente e del taglio relativi alle combinazioni in cui tali sollecitazioni risultano massime.

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA							
PROGETTAZIONE: Mandataria Mandanti   		PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 29 di 420

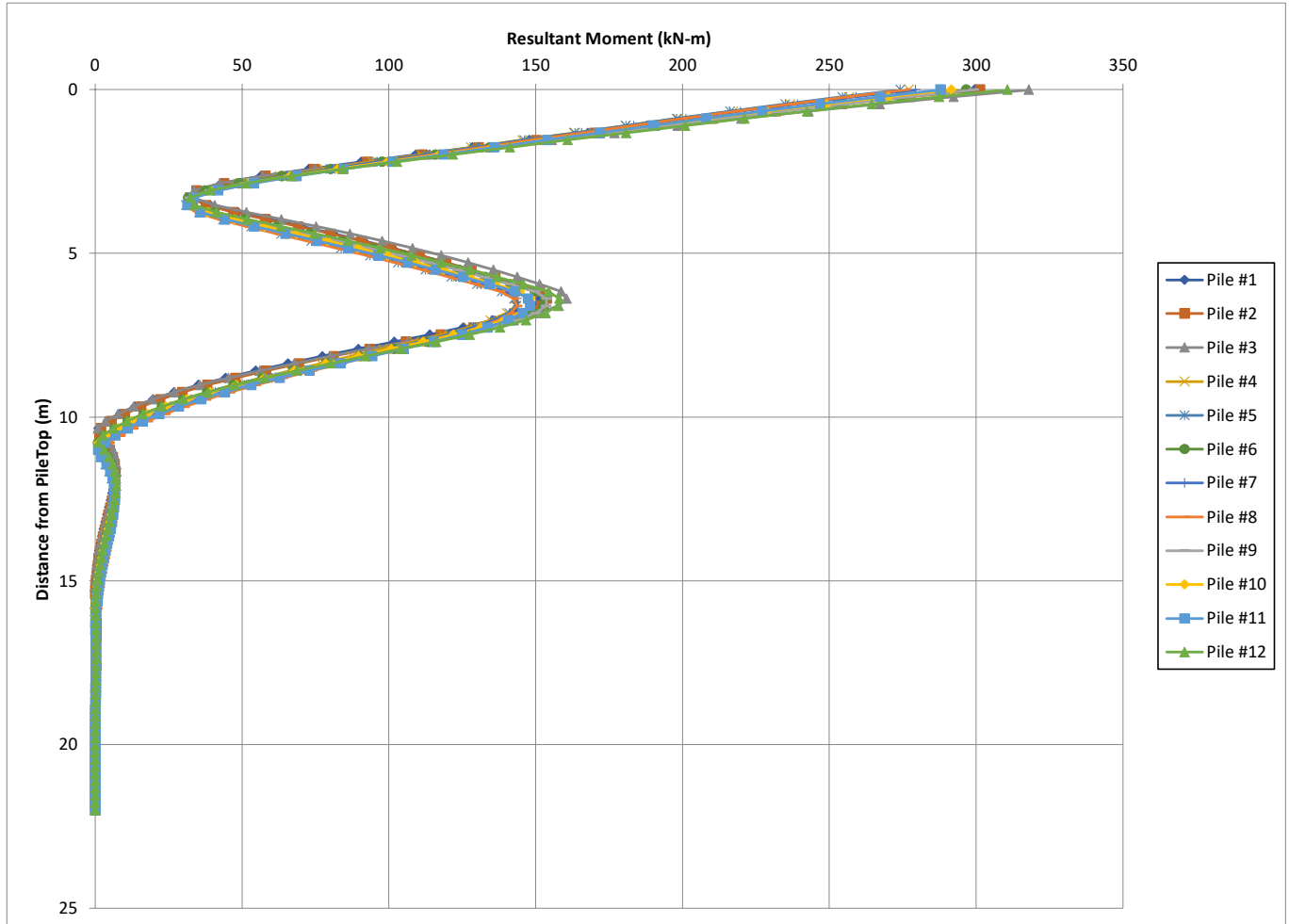


Figura 7-11: Combinazioni statica SLU: Andamento con la profondità del momento (combo 4-1651-ULS_01).

APPALTATORE: Consorzio Soci 		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti 							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 30 di 420

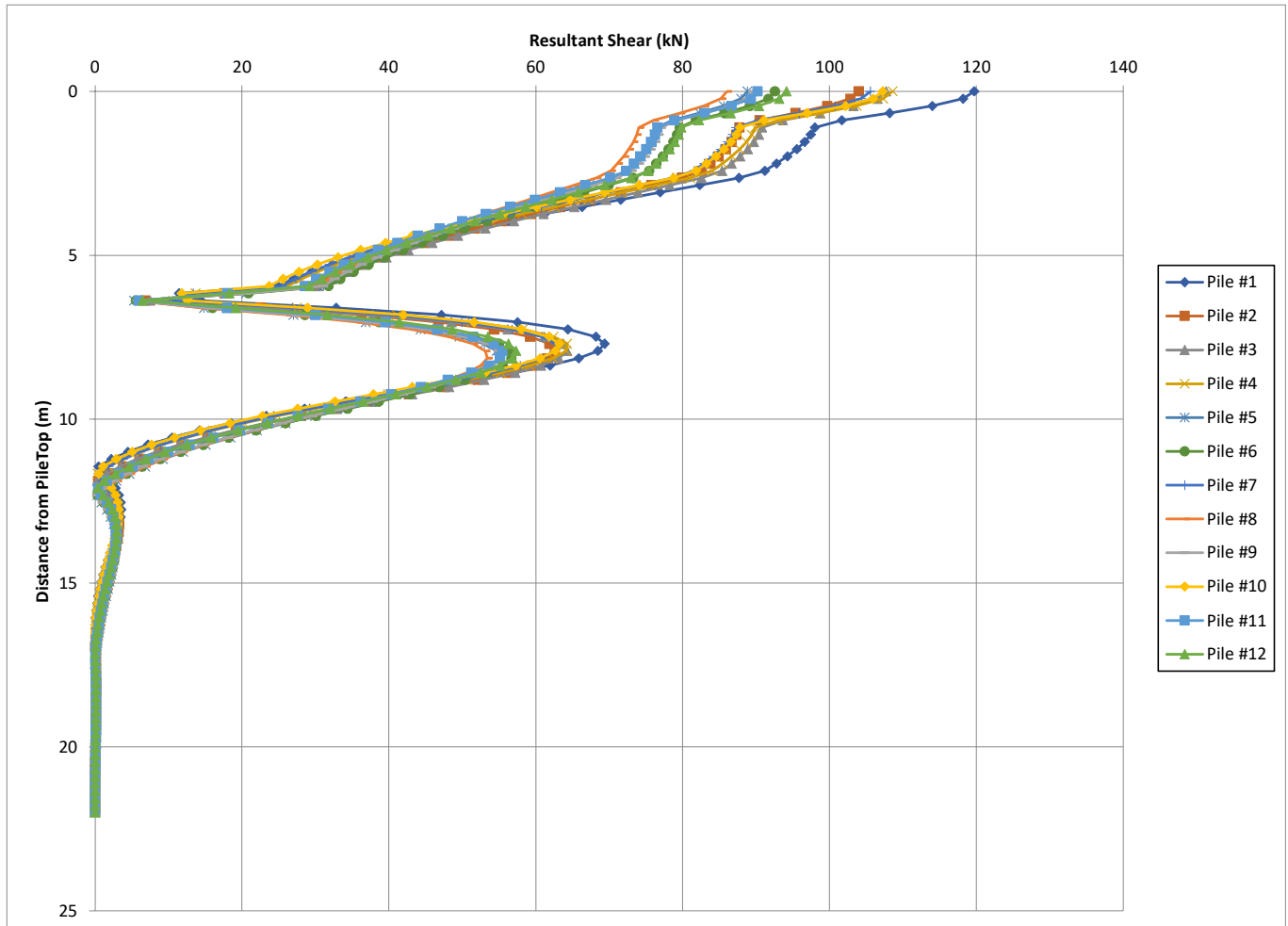


Figura 7-12: Combinazioni statica SLU: Andamento con la profondità del taglio (combo 1-1651-ULS_20).

7.4 SINTESI DEI RISULTATI AGLI STATI LIMITE ULTIMI SISMICI (SLV)

Si riassumono nel seguito le sollecitazioni massime di sforzo assiale, taglio e momento, agenti in testa ai pali.

SLV	FOR. X, KN	FOR.H, KN	MOM, KN-M	MOM X, KN- M
	*****	*****	*****	*****
max	5500.3	1575.0	5128.2	18.0
min	-901.5	277.5	766.6	-18.0

Tabella 19: Sollecitazioni allo SLV massime e minime per i pali di fondazione

Nelle seguenti figure sono diagrammati l'andamento con la profondità del momento flettente e del taglio relativi alle combinazioni in cui tali sollecitazioni risultano massime.

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA											
PROGETTAZIONE: Mandataria Mandanti   		COMMESSA IF28		LOTTO 01		CODIFICA E ZZ CL		DOCUMENTO VI0103 001		REV. B		FOGLIO 31 di 420	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B													

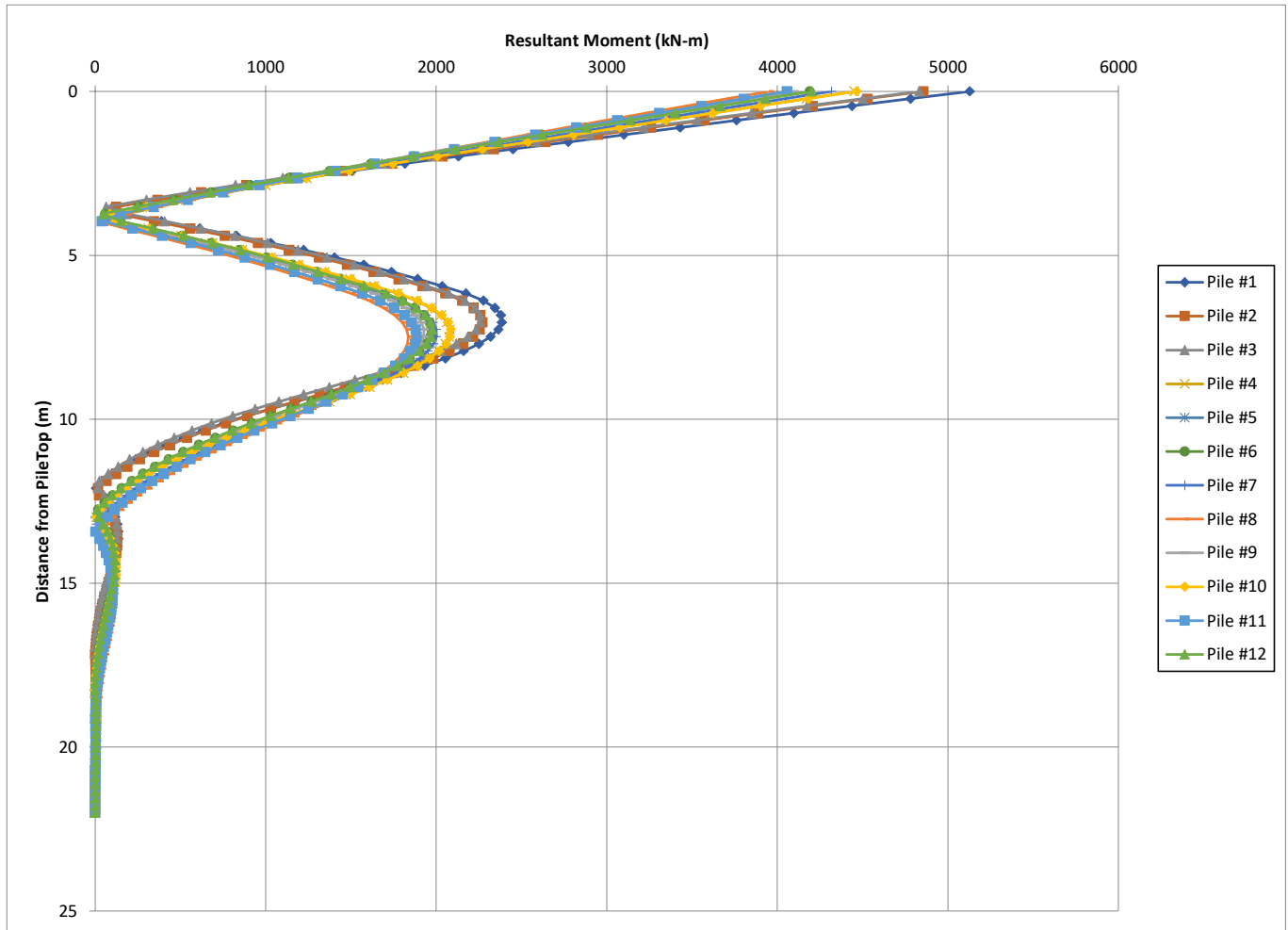


Figura 7-13: Combinazioni sismica SLV: Andamento con la profondità del momento (combo 16-1651-ULS_V_13).

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PROGETTAZIONE: Mandataria Mandanti 							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 32 di 420

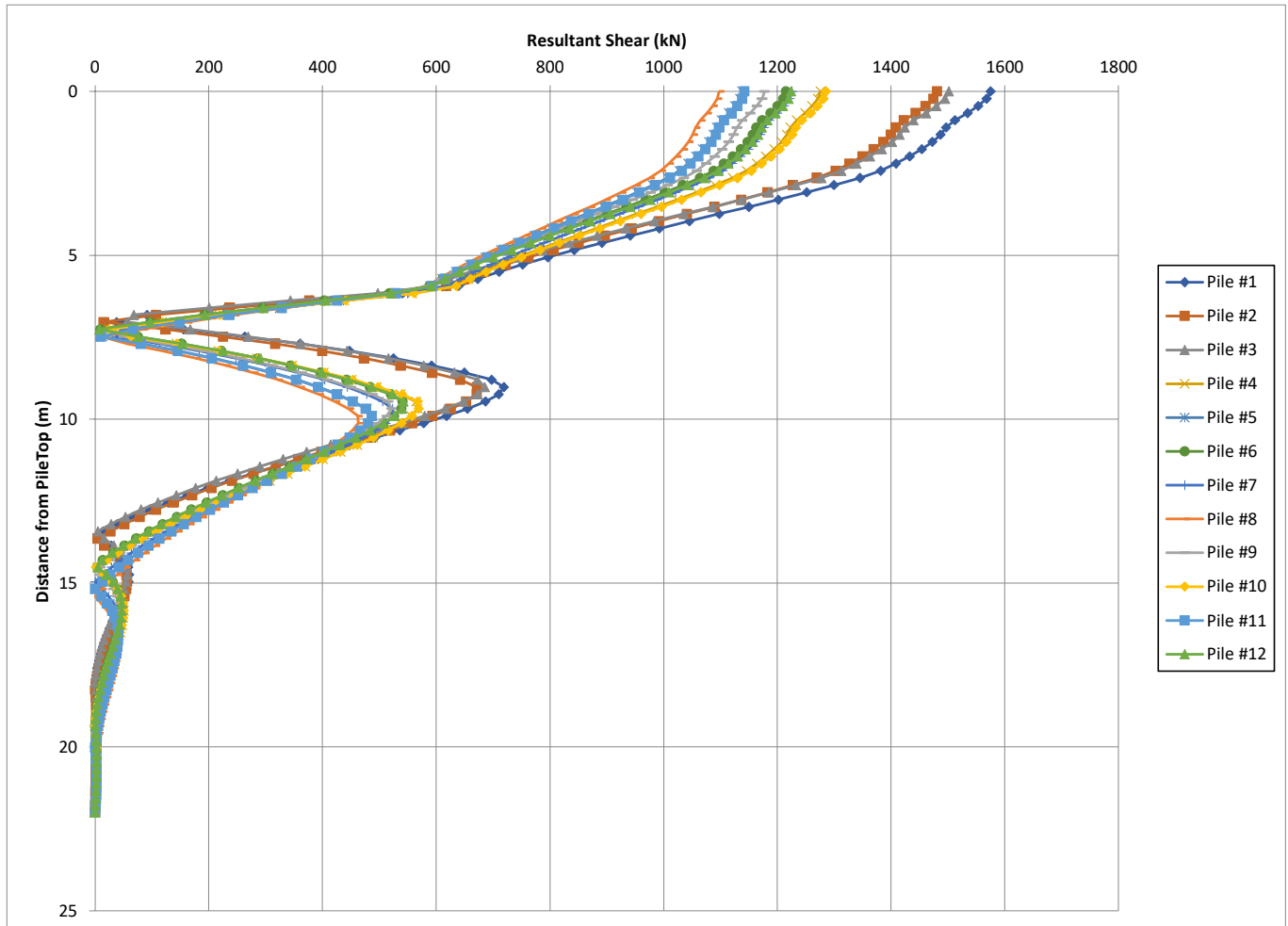


Figura 7-14: Combinazioni sismica SLV: Andamento con la profondità del taglio (combo 16-1651-ULS_V_13).

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PROGETTAZIONE: Mandataria Mandanti   						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 33 di 420

8 VERIFICA DEI PALI DI FONDAZIONE SPALLA A

Nel seguito di riportano le verifiche strutturali dei pali di fondazione.

Le sollecitazioni massime agenti lungo il fusto del palo sono riassunte nella Tabella 20.

LOAD CASE :	PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M	FOR.H, KN	MOM, KN-M
*****	*****	*****	*****	*****	*****	*****	*****		
SLV-16	1	5201.8	-106.95	1571	17.951	-5113.4	-389.81	1574.6	5128.2
SLV-16	12	-901.5	41.175	1223.5	17.951	-4198.9	130.53	1224.2	4200.9

LOAD CASE :	PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M	FOR.H, KN	MOM, KN-M
*****	*****	*****	*****	*****	*****	*****	*****		
4_SLE	3					-185.72	-141.92		233.7
5_SLE	12	2039.4							

Tabella 20: Sollecitazioni massime agenti nel palo

Nel seguito si riportano le verifiche strutturali del palo trivellato di diametro $\varnothing = 1500\text{mm}$ in cls – C25/30 e lunghezza L22m. Per le verifiche si considerano le sollecitazioni risultanti. Sono risultate più severe le verifiche in presenza di trazione.

In riferimento all'andamento dei momenti lungo il fusto del palo- Momenti Figura 7-13 e Taglio Figura 7-14 - sono state previste n. 3 ordini di armature principali:

1. L'armatura massima:
 - o ferri correnti: corona esterna n.26 $\varnothing 30$;
 - o ferri correnti: corona interna n.13 $\varnothing 30$;
 - o staffatura: doppia spirale $\varnothing 14$ passo 10.
2. L'armatura media:
 - o ferri correnti: corona esterna n.26 $\varnothing 30$;
 - o staffatura: spirale $\varnothing 14$ passo 20.
3. L'armatura minima:
 - o ferri correnti: corona esterna n.26 $\varnothing 26$;
 - o staffatura: spirale $\varnothing 14$ passo 20.

Le verifiche strutturali del palo sono soddisfatte; di seguito la scheda di calcolo.

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PROGETTAZIONE: Mandataria ROKSOJL Mandanti NETENGINEERING Alpina						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 34 di 420

geometria				
sezione trasversale				
D	c	d	passo	interferro
[cm]	[cm]	[cm]	[cm]	[cm]
150	6.0	141.1	16.0	13.0
armatura longitudinale				
nbarre	ϕ	r_i	A_{sI}	C_i
	[mm]	[cm]	[cm ²]	[cm]
26	30	66.10	183.78	8.90
13	30	59.10	91.89	15.90
armatura a taglio				
Tipo	ϕ	p	A_{sw}	
	[mm]	[cm]	[cm ²]	
spirale	14	10	3.08	

sollecitazioni e risultati	
SLE	SLU
M_{Ek} 233.7 [kNm]	M_{Ed} 4200.9 [kNm]
N_{Ek} -2039.4 [kN]	N_{Ed} 901.5 [kN]
momento di cracking	V_{Ed} 1575 [kN]
M_{cr} 1361.0 [kNm]	presso-flessione
quota asse neutro	M_{Rd} 5316.9 [kNm]
y_n - [cm]	FS 1.27
tensioni e fessure	taglio
$\sigma_{c,min}$ -1.5 [MPa]	V_{Rdc} 561.5 [kN]
$\sigma_{s,min}$ -20.9 [MPa]	predisporre armatura a taglio
$\sigma_{s,max}$ -7.1 [MPa]	V_{Rds} 1926.5 [kN]
k_2 0.5	V_{Rdmax} 4480.7 [kN]
$\epsilon_{sm}-\epsilon_{cm}$ - [%]	θ 30.0 [°]
$S_{r,max}$ - [cm]	sezione duttile
w_k - [mm]	al 92.1 [cm]

materiali			
calcestruzzo		acciaio	
R_{ck}	30 [MPa]	f_{yk}	450 [MPa]
f_{ck}	24.9 [MPa]	γ_s	1.15
γ_c	1.5	f_{yd}	391.3 [MPa]
α_{cc}	0.85	E_s	200000 [MPa]
f_{cd}	14.1 [MPa]	ϵ_{uk}	10 [%]
ν	0.5	valori limite	
ϵ_{c2}	2.0 [%]	0,55 f_{ck}	13.7 [MPa]
ϵ_{cu2}	3.5 [%]	0,75 f_{yk}	337.5 [MPa]
α_e	15.0	$w_{k,lim}$	0.2 [mm]
k_t	0.6		
k_1	0.8		
k_3	3.4		
k_4	0.425		

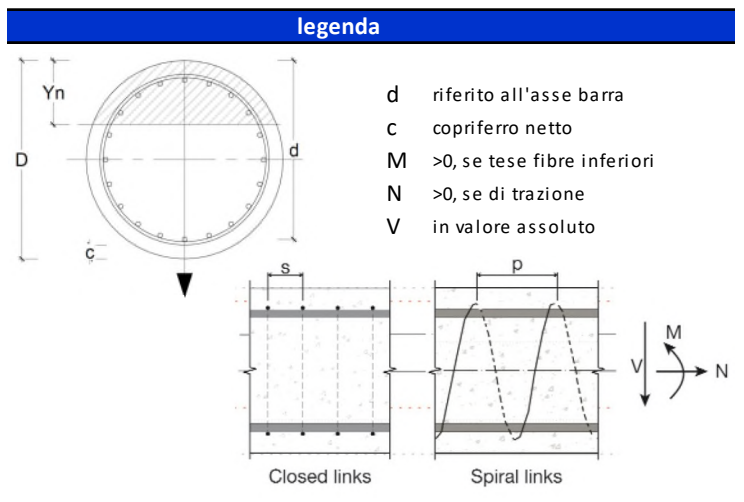


Tabella 8-21: Verifica del palo D=1500mm; trazione e armatura massima

APPALTATORE: Consorzio HirpiniaAV Soci salini impregilo ASTALDI	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria ROKSOJL Mandanti NETENGINEERING Alpina	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	
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geometria				
sezione trasversale				
D	c	d	passo	interferro
[cm]	[cm]	[cm]	[cm]	[cm]
150	6,0	141,1	16,0	13,0
armatura longitudinale				
n _{barre}	φ	r _i	A _{sl}	c _i
	[mm]	[cm]	[cm ²]	[cm]
26	30	66,10	183,78	8,90
60,60				
armatura a taglio				
Tipo	φ	ρ	A _{sw}	
	[mm]	[cm]	[cm ²]	
spirale	14	20	3,08	

sollecitazioni e risultati	
SLE	SLU
M _{Ek} 233,7 [kNm]	M _{Ed} 2390,4 [kNm]
N _{Ek} -2039,4 [kN]	N _{Ed} 901,5 [kN]
momento di cracking	
M _{cr} 1290,1 [kNm]	
quota asse neutro	
y _n 69,68 [cm]	
tensioni e fessure	
σ _{c,min} -6,4 [MPa]	
σ _{s,min} -83,5 [MPa]	
σ _{s,max} 98,1 [MPa]	
prezzo-flessione	
M _{Rd} 3617,6 [kNm]	
FS 1,51	
taglio	
V _{Rdc} 474,4 [kN]	
non serve armatura a taglio	
V _{Rds} 962,5 [kN]	
V _{Rdmax} 4480,7 [kN]	
θ 30,0 [°]	
sezione duttile	
a _i 99,9 [cm]	

materiali			
calcestruzzo		acciaio	
R _{ck}	30 [MPa]	f _{yk}	450 [MPa]
f _{ck}	24,9 [MPa]	γ _s	1,15
γ _c	1,5	f _{yd}	391,3 [MPa]
α _{cc}	0,85	E _s	200000 [MPa]
f _{cd}	14,1 [MPa]	ε _{uk}	10 [‰]
v	0,5		
ε _{c2}	2,0 [‰]		
ε _{cu2}	3,5 [‰]		
α _e	15,0		
k _t	0,6		
k ₁	0,8		
k ₃	3,4		
k ₄	0,425		
		valori limite	
		0,55 f _{ck}	13,7 [MPa]
		0,75 f _{yk}	337,5 [MPa]
		W _{k,lim}	0,2 [mm]

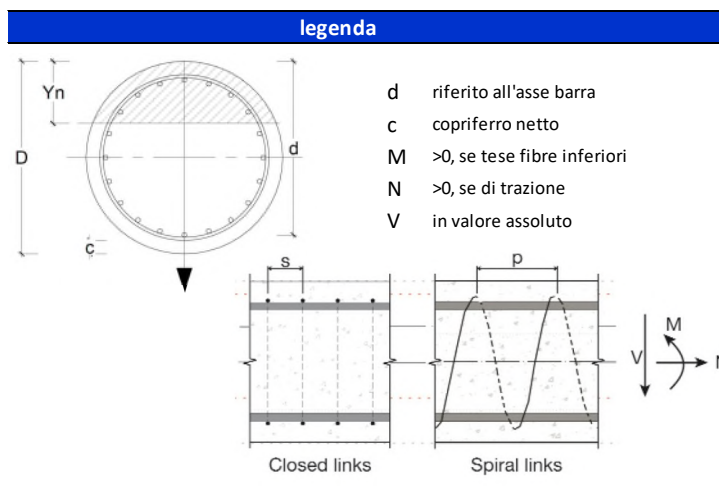


Tabella 8-22: Verifica del palo D=1500mm; armatura media

APPALTATORE: Consorzio HirpiniaAV Soci salini impregilo ASTALDI	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria ROKSOJL Mandanti NETENGINEERING Alpina						
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geometria				
sezione trasversale				
D	c	d	passo	interferro
[cm]	[cm]	[cm]	[cm]	[cm]
150	6,0	141,3	16,0	13,4
armatura longitudinale				
n _{barre}	φ	r _i	A _{sl}	c _i
	[mm]	[cm]	[cm ²]	[cm]
26	26	66,30	138,04	8,70
armatura a taglio				
Tipo	φ	ρ	A _{sw}	
	[mm]	[cm]	[cm ²]	
spirale	14	20	3,08	

sollecitazioni e risultati	
SLE	SLU
M _{Ek} 233,7 [kNm]	M _{Ed} 510,0 [kNm]
N _{Ek} -2039,4 [kN]	N _{Ed} 901,5 [kN]
momento di cracking	V _{Ed} 200 [kN]
M _{cr} 1240,7 [kNm]	presso-flessione
quota asse neutro	M _{Rd} 2661,5 [kNm]
y _n - [cm]	FS 5,22
tensioni e fessure	taglio
σ _{c,min} -1,6 [MPa]	V _{Rdc} 419,6 [kN]
σ _{s,min} -23,3 [MPa]	non serve armatura a taglio
σ _{s,max} -7,6 [MPa]	
	V _{Rds} 963,8 [kN]
k ₂ 0,5	V _{Rdmax} 4487,1 [kN]
ε _{sm-ε_{cm}} - [%]	θ 30,0 [°]
S _{r,max} - [cm]	sezione duttile
W _k - [mm]	a _i 99,9 [cm]

materiali			
calcestruzzo		acciaio	
R _{ck}	30 [MPa]	f _{yk}	450 [MPa]
f _{ck}	24,9 [MPa]	γ _s	1,15
γ _c	1,5	f _{yd}	391,3 [MPa]
α _{cc}	0,85	E _s	200000 [MPa]
f _{cd}	14,1 [MPa]	ε _{uk}	10 [%]
v	0,5		
ε _{c2}	2,0 [%]		
ε _{cu2}	3,5 [%]		
α _e	15,0		
k _t	0,6		
k ₁	0,8		
k ₃	3,4		
k ₄	0,425		
		valori limite	
		0,55 f _{ck}	13,7 [MPa]
		0,75 f _{yk}	337,5 [MPa]
		W _{k,lim}	0,2 [mm]

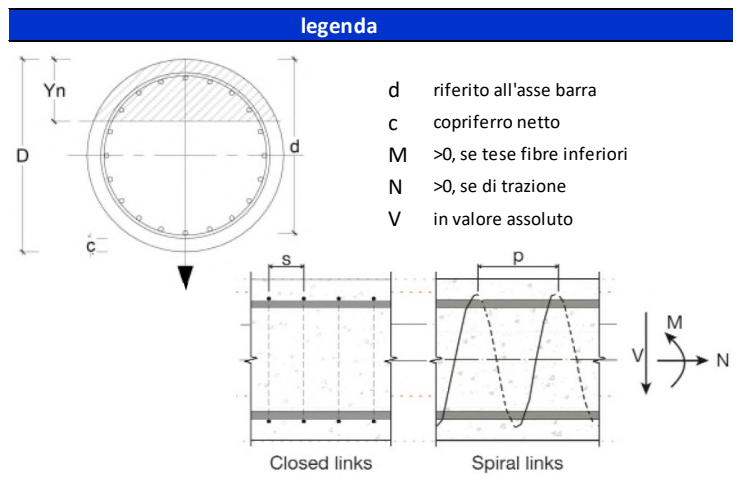


Tabella 8-23: Verifica del palo D=1500mm; armatura minima

APPALTATORE: Consorzio HirpiniaAV Soci salini impregilo ASTALDI		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria ROKSOJL Mandanti NETENGINEERING Alpina		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
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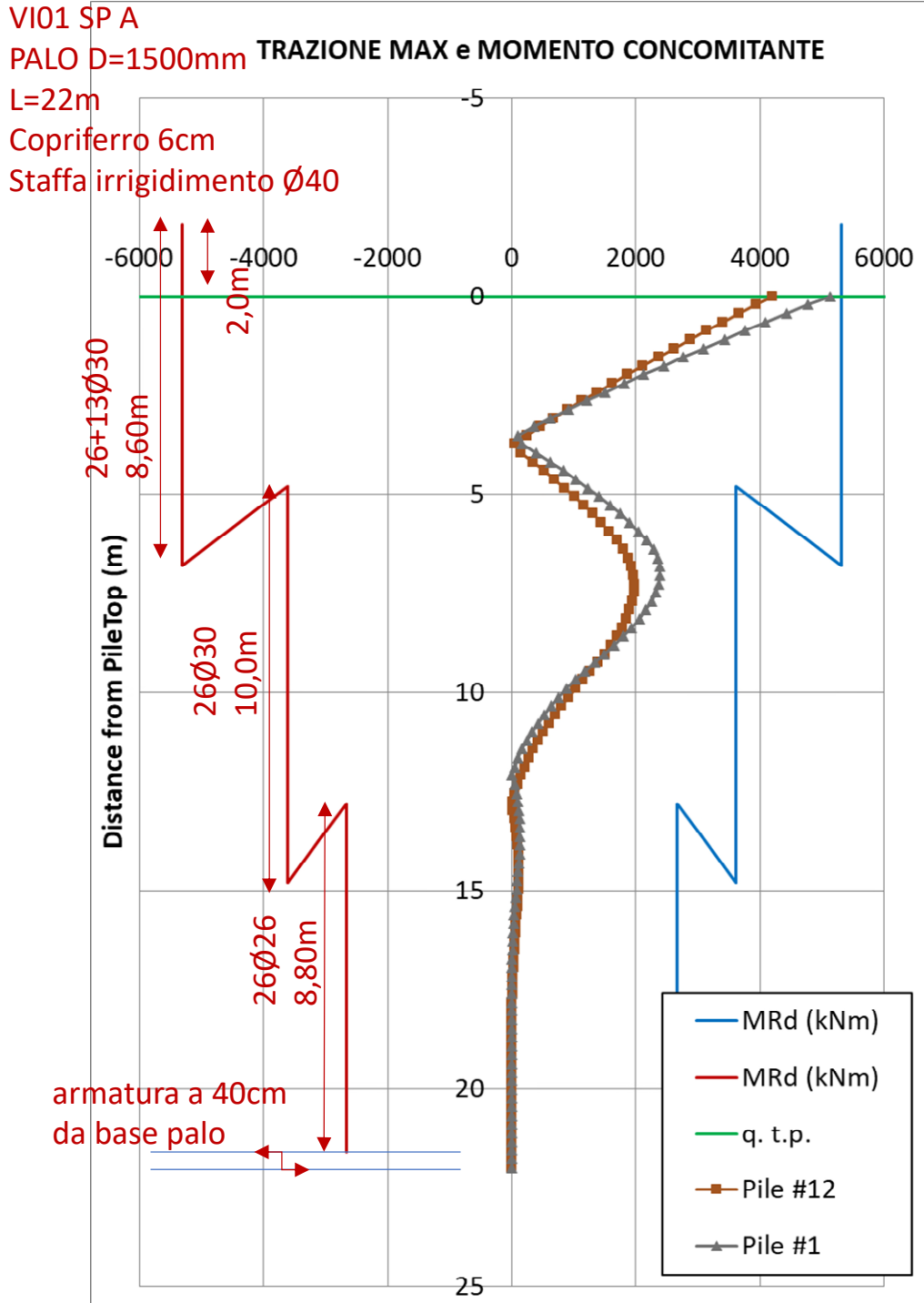


Figura 8-1: VI01 SP A Schema armatura gabbie

APPALTATORE: Consorzio HirpiniaAV Soci salini impregio ASTALDI		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria ROKSOJL Mandanti NETENGINEERING Alpina		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 39 di 420

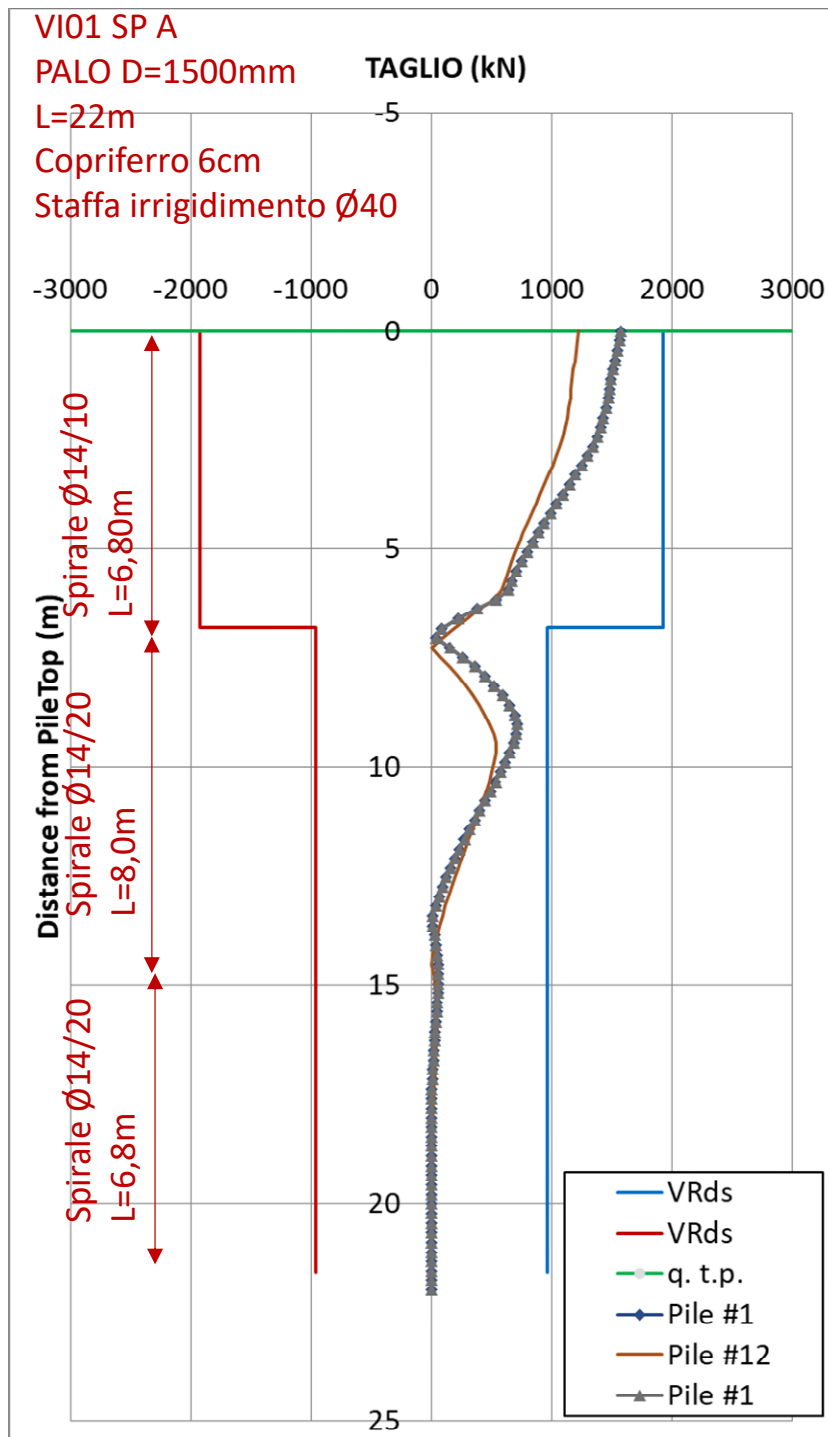




Figura 8-2: VI01 SP A Schema armatura a taglio

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti 						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 40 di 420

9 VERIFICHE ALLO SLU DI TIPO GEOTECNICO SPALLA A

9.1 VERIFICA DI CAPACITÀ PORTANTE DEL PALO SINGOLO

La verifica di capacità portante verticale per il singolo palo è stata condotta in accordo ai criteri esposti nel documento di cui al ref. 2).

Di seguito si riporta, per i pali di fondazione di lunghezza $L = 22$ m, la capacità portante a compressione ($R_{c,d}$) e a trazione ($R_{t,d}$), secondo l'approccio 2 (A1+M1+R3).

I carichi assiali massimi agenti sui pali sono riassunti nella seguente tabella:

Massima compressione, N_{dc} , max [kN]	5500.3 (SLV)
Massima trazione, N_{dt} , max [kN]	-901.5 (SLV)

Tabella 25: Combinazione SLU e SLV: Sollecitazioni massime di compressione e trazione

Si verifica inoltre che lo sforzo assiale massimo in esercizio (Tabella 19) sia inferiore della resistenza laterale di calcolo ($R_{c,s,k}$) divisa per un fattore pari a 1.25.

Massima compressione, N_{dcSLE} , max [kN]	3340.6 (SLE)
--	--------------

Tabella 26: Combinazione SLE: Sollecitazione massima di compressione

In Tabella 27 si riporta, per i pali di lunghezza 22.0 m, la capacità portante a compressione ($R_{c,d}$) e a trazione ($R_{t,d}$) del palo isolato secondo l'Approccio 2 (A1+M1+R3).







Combinazione SLU A1+M1+R3 (metodo AGI)							Comb. SLU A1+M1+R3 (metodo AGI)				
L palo	Q I-c,k	Q b-c,k	Q I-c,d	Q b-c,d	ΔW palo	Q _{c,d}	L palo	Q I-t,k	Q I-t,d	ΔW palo	Q _{t,d}
m	kN	kN	kN	kN	kN	kN	m	kN	kN	kN	kN
22,0	8731,0	5301,4	5061,5	2618,0	758,1	6921,3	22,0	8731,0	4656,5	583,2	5239,7

Tabella 27: Capacità portante a compressione e a trazione dei pali di fondazione secondo l'Approccio 2 (A1+M1+R3).

9.1.1 Capacità portante verticale del palo singolo

Stratigrafia e parametri geotecnici







Dati di input		
Diametro Palo	1.5	m
Sovraccarico efficace	27.0	kPa
HW da testa palo	0	m
γ acqua	10	kN/m ³
Δz palo da p.c. originario	3	m
N° diametri per qb	4	(-)
L palo fuori terra	0	(m)
Peso calcestruzzo	25	kN/m ³
Pressione max sul cls.	11.34	MPa

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Caratteristiche del terreno													
Profondità (m)		Strato	Terreno	γ_{tot}	Nspt		c_u (kPa)		$\Delta-z$	ϕ°		Nq	
da	a	No.	(S,SL,G,A)	kN/m3	da	a	da	a	(m)	da	a	da	a
0.00	1.00	1	A	18.0			60	60	1.00				
1.00	2.50	2	S	19.0					1.00	30	30	9.45	9.45
2.50	6.00	3	S	19.0					1.00	36	36	20	20
6.00	25.00	4	A	20.0			200	200	1.00				
25.00	40.00	5	A	20.0			400	400	1.00				

Verticali di indagine	ξ_3	ξ_4
5	1.50	1.34

Scelta di ξ	ξ
3	1.5

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA LOTTO CODIFICA DOCUMENTO REV. FOGLIO IF28 01 E ZZ CL VI0103 001 B 42 di 420

Combinazione SLE (metodo AGI)						
L palo	τ_s calcolo	q_{ub} calcolo	$R_{c,s,k}$	$R_{c,b,k}$	ΔW palo	$Q_{c,s,k}/1.25$
m	kPa	kPa	kN	kN	kN	kN
1.0	36.0	310.0	169.6	547.8	26.5	109.2
1.0	36.0	310.0	169.6	547.8	26.5	109.2
1.0	36.0	310.0	169.6	547.8	26.5	109.2
2.0	13.7	415.8	234.1	734.8	53.0	134.3
2.5	16.0	458.3	271.9	809.9	66.3	151.2
2.5	16.8	458.3	271.9	809.9	66.3	151.2
3.0	22.1	740.7	324.0	1309.0	79.5	179.7
4.0	25.1	1240.0	442.1	2191.3	106.0	247.7
5.0	29.0	1420.0	578.7	2509.3	132.5	330.4
6.0	32.9	1600.0	733.8	2827.4	159.0	428.0
6.0	34.9	1600.0	733.8	2827.4	159.0	428.0
7.0	106.1	1950.0	1233.7	3445.9	185.6	801.4
8.0	106.1	2300.0	1733.5	4064.4	212.1	1174.7
9.0	106.1	2650.0	2233.3	4682.9	238.6	1548.1
10.0	106.1	3000.0	2733.1	5301.4	265.1	1921.4
11.0	106.1	3000.0	3232.9	5301.4	291.6	2294.8
12.0	106.1	3000.0	3732.8	5301.4	318.1	2668.1
13.0	106.1	3000.0	4232.6	5301.4	344.6	3041.5
14.0	106.1	3000.0	4732.4	5301.4	371.1	3414.8
15.0	106.1	3000.0	5232.2	5301.4	397.6	3788.2
16.0	106.1	3000.0	5732.1	5301.4	424.1	4161.5
17.0	106.1	3000.0	6231.9	5301.4	450.6	4534.9
18.0	106.1	3000.0	6731.7	5301.4	477.1	4908.2
19.0	106.1	3000.0	7231.5	5301.4	503.6	5281.6
20.0	106.1	3000.0	7731.4	5301.4	530.1	5654.9
21.0	106.1	3000.0	8231.2	5301.4	556.7	6028.3
22.0	106.1	3000.0	8731.0	5301.4	583.2	6401.7
23.0	106.1	3000.0	9230.8	5301.4	609.7	6775.0
24.0	106.1	3000.0	9730.7	5301.4	636.2	7148.4
25.0	106.1	3000.0	10230.5	5301.4	662.7	7521.7
25.0	106.1	3000.0	10230.5	5301.4	662.7	7521.7
26.0	150.0	3310.7	10937.3	5850.4	689.2	8060.7
27.0	150.0	3621.3	11644.2	6399.4	715.7	8599.7
28.0	150.0	3932.0	12351.1	6948.4	742.2	9138.6
29.0	150.0	4242.6	13057.9	7497.4	768.7	9677.6
30.0	150.0	4242.6	13764.8	7497.4	795.2	10216.6
31.0	150.0	4242.6	14471.6	7497.4	821.7	10755.6
32.0	150.0	4242.6	15178.5	7497.4	848.2	11294.6
33.0	150.0	4242.6	15885.4	7497.4	874.7	11833.5
34.0	150.0	4242.6	16592.2	7497.4	901.2	12372.5
35.0	150.0	4242.6	17299.1	7497.4	927.8	12911.5
36.0	150.0	4242.6	18005.9	7497.4	954.3	13450.5
37.0	150.0	4242.6	18712.8	7497.4	980.8	13989.5
38.0	150.0	4242.6	19419.6	7497.4	1007.3	14528.4
39.0	150.0	4242.6	20126.5	7497.4	1033.8	15067.4
40.0	150.0	4242.6	20833.4	7497.4	1060.3	15606.4

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria  Mandanti  					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO V10103 001	REV. B	FOGLIO 43 di 420

Combinazione SLU A1+M1+R3 (metodo AGI)						
L palo	Q l-c,k	Q b-c,k	Q l-c,d	Q b-c,d	ΔW palo	Q _{c,d}
m	kN	kN	kN	kN	kN	kN
1.0	169.6	547.8	98.3	270.5	34.5	334.4
1.0	169.6	547.8	98.3	270.5	34.5	334.4
1.0	169.6	547.8	98.3	270.5	34.5	334.4
2.0	234.1	734.8	135.7	362.9	68.9	429.7
2.5	271.9	809.9	157.6	400.0	86.1	471.4
2.5	271.9	809.9	157.6	400.0	86.1	471.4
3.0	324.0	1309.0	187.8	646.4	103.4	730.9
4.0	442.1	2191.3	256.3	1082.1	137.8	1200.6
5.0	578.7	2509.3	335.5	1239.2	172.3	1402.4
6.0	733.8	2827.4	425.4	1396.3	206.8	1614.9
6.0	733.8	2827.4	425.4	1396.3	206.8	1614.9
7.0	1233.7	3445.9	715.2	1701.7	241.2	2175.6
8.0	1733.5	4064.4	1004.9	2007.1	275.7	2736.4
9.0	2233.3	4682.9	1294.7	2312.6	310.1	3297.1
10.0	2733.1	5301.4	1584.4	2618.0	344.6	3857.8
11.0	3232.9	5301.4	1874.2	2618.0	379.1	4113.1
12.0	3732.8	5301.4	2163.9	2618.0	413.5	4368.4
13.0	4232.6	5301.4	2453.7	2618.0	448.0	4623.7
14.0	4732.4	5301.4	2743.4	2618.0	482.4	4879.0
15.0	5232.2	5301.4	3033.2	2618.0	516.9	5134.3
16.0	5732.1	5301.4	3322.9	2618.0	551.3	5389.6
17.0	6231.9	5301.4	3612.7	2618.0	585.8	5644.9
18.0	6731.7	5301.4	3902.4	2618.0	620.3	5900.2
19.0	7231.5	5301.4	4192.2	2618.0	654.7	6155.5
20.0	7731.4	5301.4	4482.0	2618.0	689.2	6410.8
21.0	8231.2	5301.4	4771.7	2618.0	723.6	6666.1
22.0	8731.0	5301.4	5061.5	2618.0	758.1	6921.3
23.0	9230.8	5301.4	5351.2	2618.0	792.6	7176.6
24.0	9730.7	5301.4	5641.0	2618.0	827.0	7431.9
25.0	10230.5	5301.4	5930.7	2618.0	861.5	7687.2
25.0	10230.5	5301.4	5930.7	2618.0	861.5	7687.2
26.0	10937.3	5850.4	6340.5	2889.1	895.9	8333.6
27.0	11644.2	6399.4	6750.3	3160.2	930.4	8980.1
28.0	12351.1	6948.4	7160.0	3431.3	964.9	9626.5
29.0	13057.9	7497.4	7569.8	3702.4	999.3	10272.9
30.0	13764.8	7497.4	7979.6	3702.4	1033.8	10648.2
31.0	14471.6	7497.4	8389.4	3702.4	1068.2	11023.5
32.0	15178.5	7497.4	8799.1	3702.4	1102.7	11398.8
33.0	15885.4	7497.4	9208.9	3702.4	1137.2	11774.1
34.0	16592.2	7497.4	9618.7	3702.4	1171.6	12149.5
35.0	17299.1	7497.4	10028.4	3702.4	1206.1	12524.8
36.0	18005.9	7497.4	10438.2	3702.4	1240.5	12900.1
37.0	18712.8	7497.4	10848.0	3702.4	1275.0	13275.4
38.0	19419.6	7497.4	11257.8	3702.4	1309.5	13650.7
39.0	20126.5	7497.4	11667.5	3702.4	1343.9	14026.0
40.0	20833.4	7497.4	12077.3	3702.4	1378.4	14401.3

Comb. SLU A1+M1+R3 (metodo AGI)				
L palo	Q l-t,k	Q l-t,d	ΔW palo	Q _{t,d}
m	kN	kN	kN	kN
1.0	169.6	90.5	26.5	117.0
1.0	169.6	90.5	26.5	117.0
1.0	169.6	90.5	26.5	117.0
2.0	234.1	124.9	53.0	177.9
2.5	271.9	145.0	66.3	211.3
2.5	271.9	145.0	66.3	211.3
3.0	324.0	172.8	79.5	252.3
4.0	442.1	235.8	106.0	341.8
5.0	578.7	308.7	132.5	441.2
6.0	733.8	391.4	159.0	550.4
6.0	733.8	391.4	159.0	550.4
7.0	1233.7	657.9	185.6	843.5
8.0	1733.5	924.5	212.1	1136.6
9.0	2233.3	1191.1	238.6	1429.7
10.0	2733.1	1457.7	265.1	1722.7
11.0	3232.9	1724.2	291.6	2015.8
12.0	3732.8	1990.8	318.1	2308.9
13.0	4232.6	2257.4	344.6	2602.0
14.0	4732.4	2524.0	371.1	2895.1
15.0	5232.2	2790.5	397.6	3188.1
16.0	5732.1	3057.1	424.1	3481.2
17.0	6231.9	3323.7	450.6	3774.3
18.0	6731.7	3590.2	477.1	4067.4
19.0	7231.5	3856.8	503.6	4360.5
20.0	7731.4	4123.4	530.1	4653.5
21.0	8231.2	4390.0	556.7	4946.6
22.0	8731.0	4656.5	583.2	5239.7
23.0	9230.8	4923.1	609.7	5532.8
24.0	9730.7	5189.7	636.2	5825.9
25.0	10230.5	5456.3	662.7	6118.9
25.0	10230.5	5456.3	662.7	6118.9
26.0	10937.3	5833.3	689.2	6522.4
27.0	11644.2	6210.2	715.7	6925.9
28.0	12351.1	6587.2	742.2	7329.4
29.0	13057.9	6964.2	768.7	7732.9
30.0	13764.8	7341.2	795.2	8136.4
31.0	14471.6	7718.2	821.7	8539.9
32.0	15178.5	8095.2	848.2	8943.4
33.0	15885.4	8472.2	874.7	9346.9
34.0	16592.2	8849.2	901.2	9750.4
35.0	17299.1	9226.2	927.8	10153.9
36.0	18005.9	9603.2	954.3	10557.4
37.0	18712.8	9980.2	980.8	10960.9
38.0	19419.6	10357.1	1007.3	11364.4
39.0	20126.5	10734.1	1033.8	11767.9
40.0	20833.4	11111.1	1060.3	12171.4

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria Mandanti   	RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 44 di 420

VI01 - spalla SPA
 Capacità portante A1+M1+R3
 Palo D=1500mm

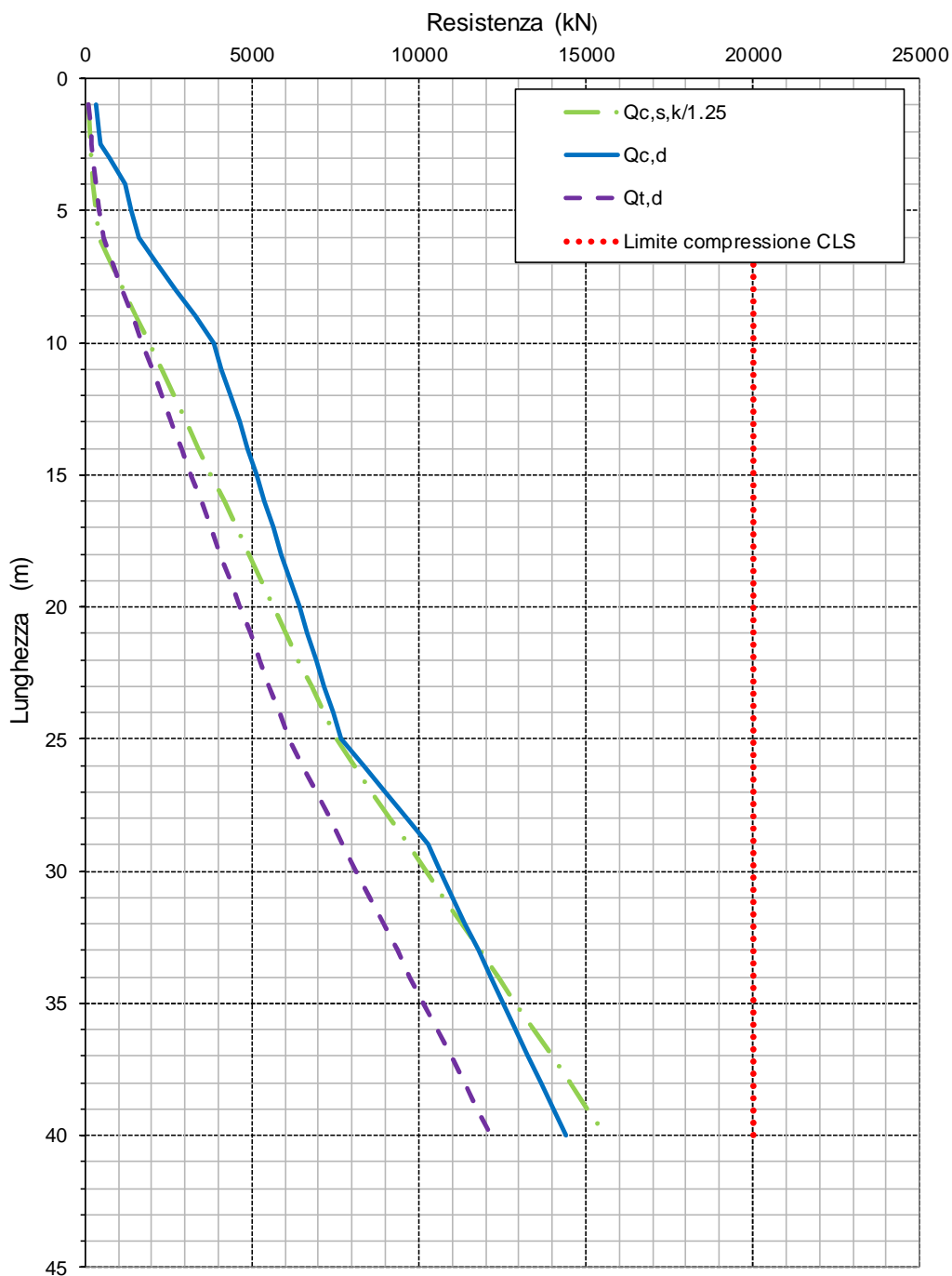




Figura 9-1: Capacità portante del palo singolo

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PROGETTAZIONE: Mandataria Mandanti   													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">COMMESSA</td> <td style="text-align: center;">LOTTO</td> <td style="text-align: center;">CODIFICA</td> <td style="text-align: center;">DOCUMENTO</td> <td style="text-align: center;">REV.</td> <td style="text-align: center;">FOGLIO</td> </tr> <tr> <td style="text-align: center;">IF28</td> <td style="text-align: center;">01</td> <td style="text-align: center;">E ZZ CL</td> <td style="text-align: center;">VI0103 001</td> <td style="text-align: center;">B</td> <td style="text-align: center;">45 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	45 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	45 di 420								

9.1.1 Verifica di capacità portante orizzontale del gruppo di pali

La verifica di capacità portante orizzontale del gruppo di pali è stata condotta con i criteri descritti nel documento di cui al Ref. 2) §6.2, con i metodi basati sulle curve p-y.

Considerata la presenza di successioni stratigrafiche abbastanza articolate, con contrasti di rigidezza anche marcati e caratteristiche diverse delle varie unità geotecniche, si è fatto uso del programma FEM non lineare LPile, considerando negli strati di terreno curve p-y non lineari, definibili lungo il fuso del palo, e opportunamente ridotte secondo il coefficiente parziale $\xi \times \gamma_T$.

Si ricava una curva “pushover” del palo singolo: incrementando progressivamente il carico orizzontale applicato alla testa del palo, fino al raggiungimento del collasso, vale a dire della completa plasticizzazione del terreno. Tale plasticizzazione si rende “visibile” attraverso il cambiamento del comportamento deformativo del palo stesso, al raggiungimento del “plateau” di resistenza.

Nella seguente Figura 9-2 è illustrata la curva push-over ottenuta per il palo in oggetto, con il vincolo di invastro, al crescere dell’azione H applicata alla testa dello stesso.

Il taglio massimo agente è pari a $T_{longSLV} \approx 1575.0$ kN.

La verifica a capacità portante orizzontale risulta soddisfatta, poiché il carico limite $H_{lim} = 5247.0$ kN risulta superiore al valore di progetto.

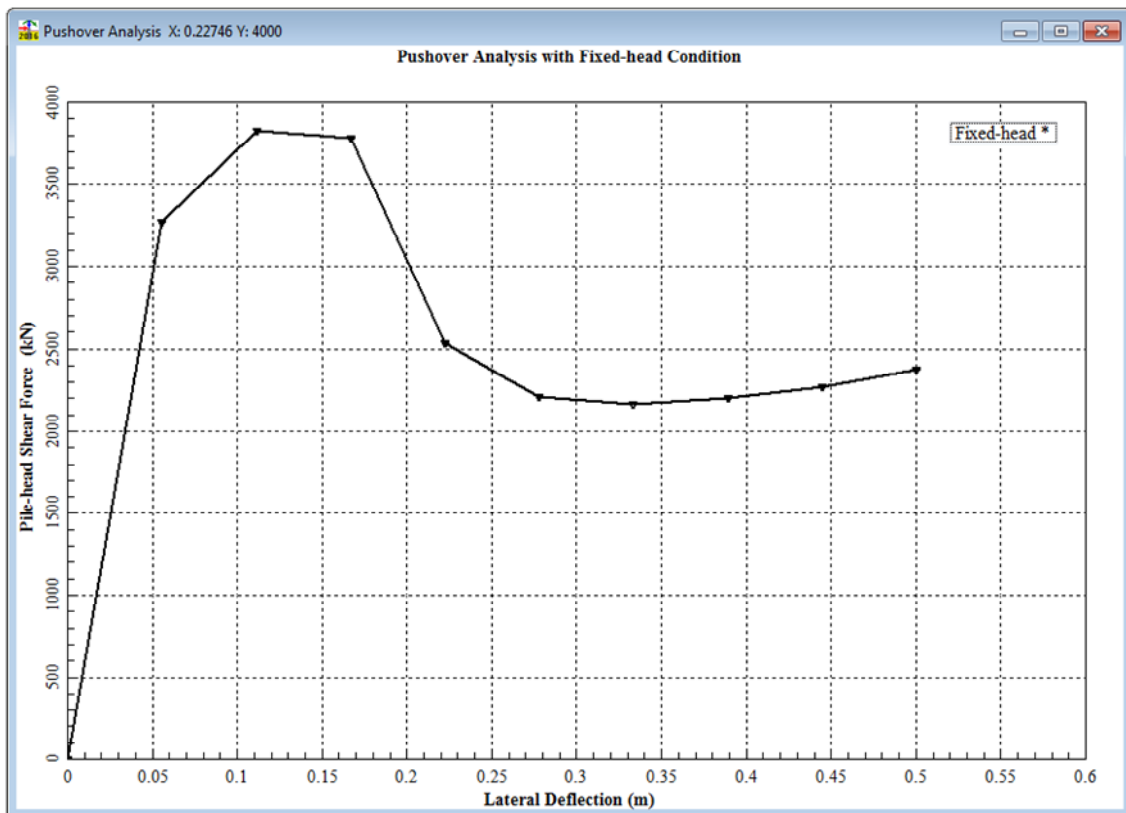



Figura 9-2: Analisi push-over palo

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA																	
PROGETTAZIONE: Mandataria Mandanti   	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 16.6%;">COMMESSA</td> <td style="width: 16.6%;">LOTTO</td> <td style="width: 16.6%;">CODIFICA</td> <td style="width: 16.6%;">DOCUMENTO</td> <td style="width: 16.6%;">REV.</td> <td style="width: 16.6%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>46 di 420</td> </tr> </table>						COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	46 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO													
IF28	01	E ZZ CL	VI0103 001	B	46 di 420													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B																		

10 ANALISI DELL'INTERAZIONE FONDAZIONE-TERRENO SPALLA B

L'analisi di interazione terreno-fondazione è stata sviluppata con il software GROUP della Ensoft.

Il programma considera che il comportamento di un palo soggetto ad azioni orizzontali all'interno di un gruppo differisce da quello di un palo singolo ed isolato. In un gruppo di pali caricato da azioni orizzontali i fenomeni di interazione reciproca palo – terreno – palo determinano, complessivamente, una diminuzione della rigidità del sistema.

La diversità di comportamento si manifesta mediante un differente valore dello sforzo di taglio agente in testa a ciascun palo, differenti valori di momento flettente, diversa ubicazione del valore massimo di momento al variare della profondità (nell'ipotesi in cui il vincolo in testa al palo non sia un incastro). La modalità di risposta di ciascun palo è funzione essenzialmente dalla posizione geometrica che questo occupa all'interno del gruppo. Precisamente, la risposta del singolo palo all'interno del gruppo è condizionata:

- dalla fila di appartenenza all'interno del gruppo (effetto ombra o shadowing);
- dalla posizione all'interno della singola fila (effetto di bordo).

10.1 DESCRIZIONE DEL MODELLO DI CALCOLO GROUP

Il modello di calcolo è stato costruito nel seguente modo:

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA																	
PROGETTAZIONE: Mandataria Mandanti   	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 16.6%;">COMMESSA</td> <td style="width: 16.6%;">LOTTO</td> <td style="width: 16.6%;">CODIFICA</td> <td style="width: 16.6%;">DOCUMENTO</td> <td style="width: 16.6%;">REV.</td> <td style="width: 16.6%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>47 di 420</td> </tr> </table>						COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	47 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO													
IF28	01	E ZZ CL	VI0103 001	B	47 di 420													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B																		

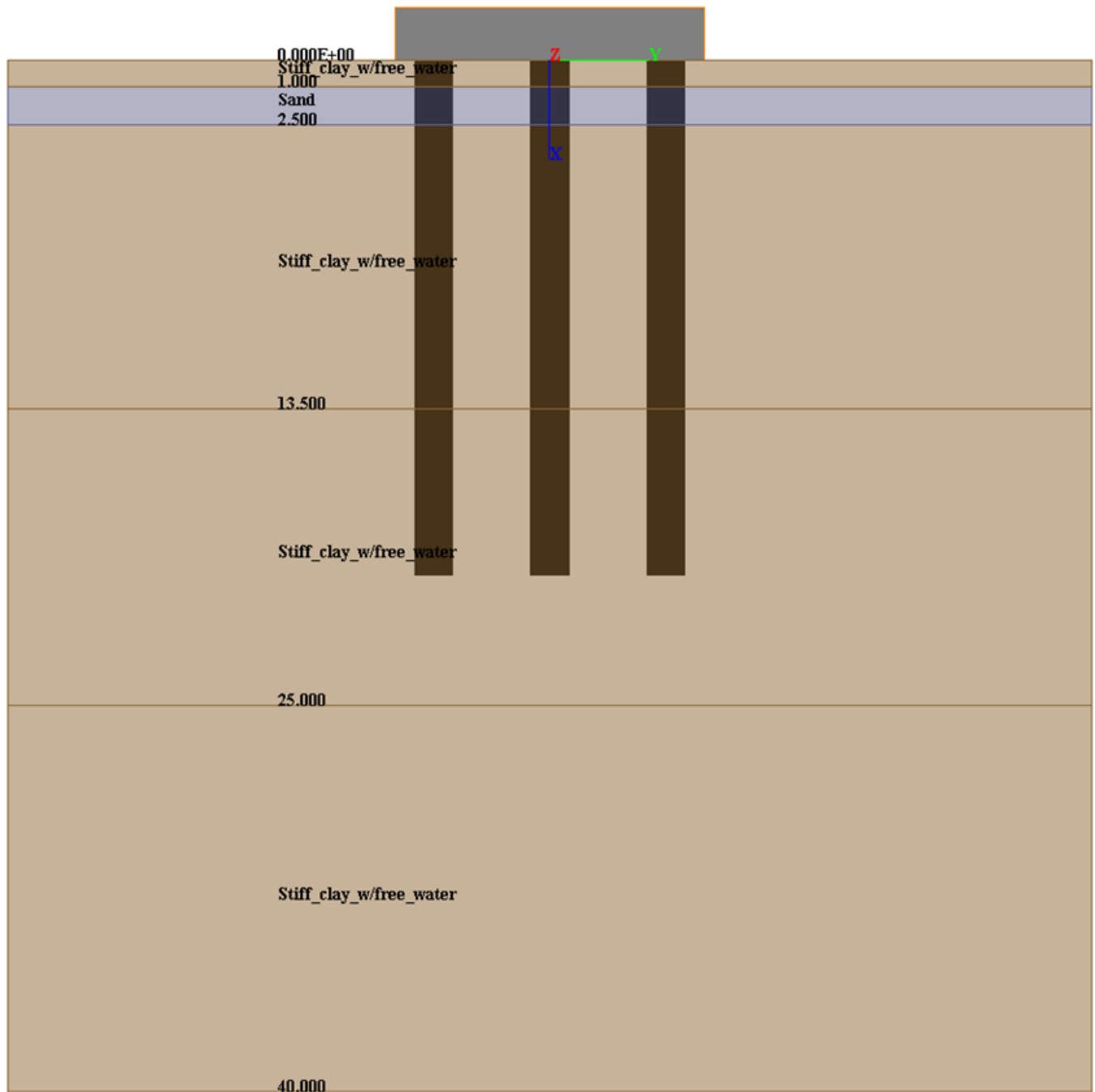


Figura 10-1: Vista frontale del modello GROUPv2016

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA																	
PROGETTAZIONE: Mandataria Mandanti   	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 16.6%;">COMMESSA</td> <td style="width: 16.6%;">LOTTO</td> <td style="width: 16.6%;">CODIFICA</td> <td style="width: 16.6%;">DOCUMENTO</td> <td style="width: 16.6%;">REV.</td> <td style="width: 16.6%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>48 di 420</td> </tr> </table>						COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	48 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO													
IF28	01	E ZZ CL	VI0103 001	B	48 di 420													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B																		

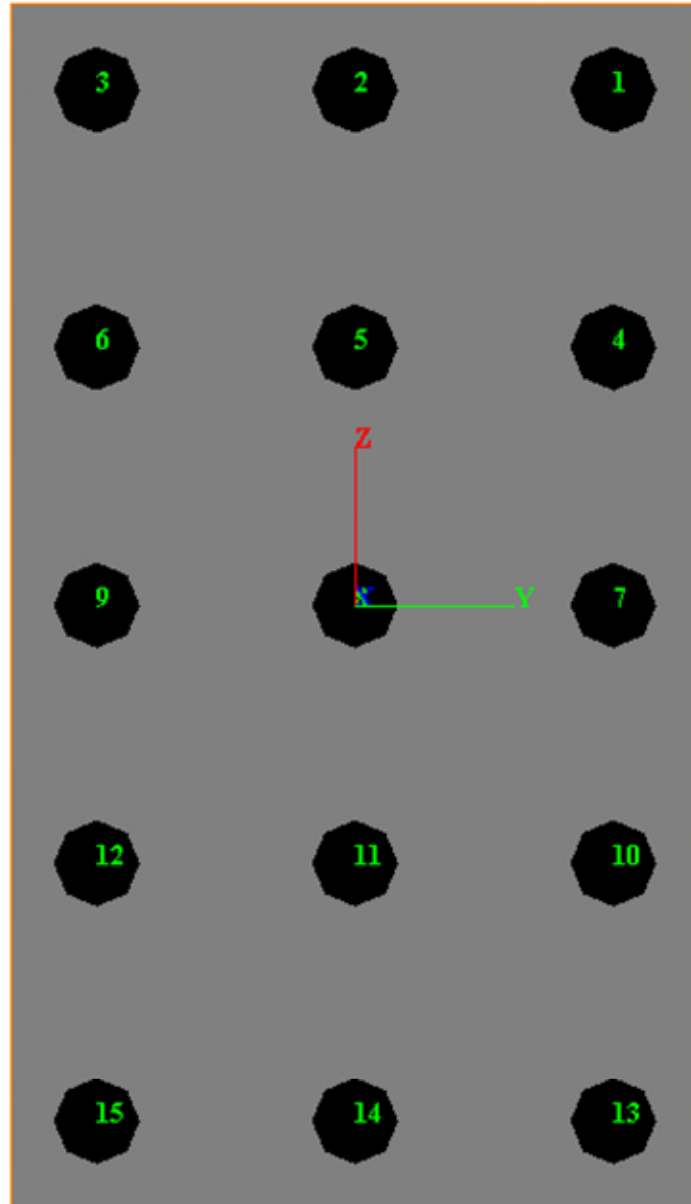


Figura 10-2: Vista in pianta del modello GROUPv2016

In accordo al § 4.2 nelle seguenti Figura 10-3 ÷ Figura 10-8 si riporta il modello stratigrafico di calcolo e i parametri geotecnici assegnati ai singoli strati. I parametri di rigidità del terreno sono stati assunti in accordo ai criteri illustrati nella relazione al ref. 2), § 8.1.1 per le “stiff clays with free water”.

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti 	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA LOTTO CODIFICA DOCUMENTO REV. FOGLIO IF28 01 E ZZ CL VI0103 001 B 49 di 420

Layer	Soil Type	Depth for Top of Soil Layer (m)	Depth for Bottom of Soil Layer (m)	Properties of Layer
1	Stiff Clay with Free Water (Reese)	0	1	1: Stiff Clay with Free Water
2	Sand (Reese)	1	2.5	2: Sand (Reese, et al.)
3	Stiff Clay with Free Water (Reese)	2.5	13.5	3: Stiff Clay with Free Water
4	Stiff Clay with Free Water (Reese)	13.5	25	4: Stiff Clay with Free Water
5	Stiff Clay with Free Water (Reese)	25	40	5: Stiff Clay with Free Water

Figura 10-3: Modello stratigrafico GROUP V2016

1=Top, 2=Bottom	Effective Unit Weight (kN/m ³)	Undrained Cohesion, c (kN/m ²)	p-y Modulus, k (kN/m ³)	Strain Factor E50	Ultimate Unit Side Friction (kN/m ²)	Ultimate Unit Tip Resistance (kN/m ²)
1	8	60	135000	0.007	10	0
2	8	60	135000	0.007	10	0

A linear interpolation with depth will be used to compute values between the top and bottom of the layer.

p-y Modulus, k, and Strain Factor E50:
 - Always check recommended value in Geotechnical Investigation Reports.
 - Program will help to estimate values for p-y Modulus, k, and Strain Factor E50 if zero input values are entered.

Ultimate Unit Side Friction and Ultimate Unit Tip Resistance:
 - The program uses Ultimate Unit Side Friction to generate t-z curves.
 - The program uses Ultimate Unit Tip Resistance to generate q-w curves.
 - Always check recommended values in Geotechnical Investigation Reports.
 - Program will help to estimate values for Ultimate Unit Side Friction and Ultimate Unit Tip Resistance if zero input values are entered.

(k=55000 per analisi SLE)

Figura 10-4: Layer no.1 (ALL1-A)



1=Top, 2=Bottom	Effective Unit Weight (kN/m ³)	Friction Angle, (DEG.)	p-y Modulus, k (kN/m ³)	Ultimate Unit Side Friction (kN/m ²)	Ultimate Unit Tip Resistance (kN/m ²)
1	9	30	16300	15.5	0
2	9	30	16300	15.5	0

A linear interpolation with depth will be used to compute values between the top and bottom of the layer.

p-y Modulus, k:
 - Always check recommended value in Geotechnical Investigation Reports.
 - Program will help to estimate value for p-y Modulus, k, if zero input value is entered.

Ultimate Unit Side Friction and Ultimate Unit Tip Resistance:
 - The program uses Ultimate Unit Side Friction to generate t-z curves.
 - The program uses Ultimate Unit Tip Resistance to generate q-w curves.
 - Always check recommended values in Geotechnical Investigation Reports.
 - Program will help to estimate values for Ultimate Unit Side Friction and Ultimate Unit Tip Resistance if zero input values are entered.

Figura 10-5: Layer no.2 (ALL2-S)

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti 	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA LOTTO CODIFICA DOCUMENTO REV. FOGLIO IF28 01 E ZZ CL VI0103 001 B 50 di 420

Stiff Clay with Free Water 3

1=Top, 2=Bottom	Effective Unit Weight (kN/m ³)	Undrained Cohesion, c (kN/m ²)	p-y Modulus, k (kN/m ³)	Strain Factor E50	Ultimate Unit Side Friction (kN/m ²)	Ultimate Unit Tip Resistance (kN/m ²)
1	9	100	135000	0.007	75	2121.3
2	9	100	135000	0.007	75	2121.3

A linear interpolation with depth will be used to compute values between the top and bottom of the layer.
 p-y Modulus, k, and Strain Factor E50:
 - Always check recommended value in Geotechnical Investigation Reports.
 - Program will help to estimate values for p-y Modulus, k, and Strain Factor E50 if zero input values are entered.
 Ultimate Unit Side Friction and Ultimate Unit Tip Resistance:
 - The program uses Ultimate Unit Side Friction to generate t-z curves.
 - The program uses Ultimate Unit Tip Resistance to generate q-w curves.
 - Always check recommended values in Geotechnical Investigation Reports.
 - Program will help to estimate values for Ultimate Unit Side Friction and Ultimate Unit Tip Resistance if zero input values are entered.

(k=55000 per analisi SLE)

Figura 10-6: Layer no.3 (ANZ 2a)

Stiff Clay with Free Water 4

1=Top, 2=Bottom	Effective Unit Weight (kN/m ³)	Undrained Cohesion, c (kN/m ²)	p-y Modulus, k (kN/m ³)	Strain Factor E50	Ultimate Unit Side Friction (kN/m ²)	Ultimate Unit Tip Resistance (kN/m ²)
1	10	200	540000	0.004	106.07	3000
2	10	200	540000	0.004	106.07	3000

A linear interpolation with depth will be used to compute values between the top and bottom of the layer.
 p-y Modulus, k, and Strain Factor E50:
 - Always check recommended value in Geotechnical Investigation Reports.
 - Program will help to estimate values for p-y Modulus, k, and Strain Factor E50 if zero input values are entered.
 Ultimate Unit Side Friction and Ultimate Unit Tip Resistance:
 - The program uses Ultimate Unit Side Friction to generate t-z curves.
 - The program uses Ultimate Unit Tip Resistance to generate q-w curves.
 - Always check recommended values in Geotechnical Investigation Reports.
 - Program will help to estimate values for Ultimate Unit Side Friction and Ultimate Unit Tip Resistance if zero input values are entered.

(k=220000 per analisi SLE)

Figura 10-7: Layer no.4 (ANZ 2a)

Stiff Clay with Free Water 5

1=Top, 2=Bottom	Effective Unit Weight (kN/m ³)	Undrained Cohesion, c (kN/m ²)	p-y Modulus, k (kN/m ³)	Strain Factor E50	Ultimate Unit Side Friction (kN/m ²)	Ultimate Unit Tip Resistance (kN/m ²)
1	10	400	540000	0.004	150	4242.6
2	10	400	540000	0.004	150	4242.6

A linear interpolation with depth will be used to compute values between the top and bottom of the layer.
 p-y Modulus, k, and Strain Factor E50:
 - Always check recommended value in Geotechnical Investigation Reports.
 - Program will help to estimate values for p-y Modulus, k, and Strain Factor E50 if zero input values are entered.
 Ultimate Unit Side Friction and Ultimate Unit Tip Resistance:
 - The program uses Ultimate Unit Side Friction to generate t-z curves.
 - The program uses Ultimate Unit Tip Resistance to generate q-w curves.
 - Always check recommended values in Geotechnical Investigation Reports.
 - Program will help to estimate values for Ultimate Unit Side Friction and Ultimate Unit Tip Resistance if zero input values are entered.

(k=220000 per analisi SLE)

Figura 10-8: Layer no.5 (ANZ 2a)

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PROGETTAZIONE: Mandataria Mandanti 						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 51 di 420

10.2 SINTESI DEI RISULTATI AGLI STATI LIMITE DI ESERCIZIO (SLE)

Si riassumono nel seguito le sollecitazioni massime di sforzo assiale, taglio e momento, agenti in testa ai pali.

Si ricorda che per le analisi allo SLE (vedasi Ref. 2)) sono stati utilizzati per le curve p-y i coefficienti di rigidezza del terreno suggeriti dal programma per carichi ciclici; facendo riferimento alle Figura 10-3 ÷ Figura 10-8 sono stati utilizzati i valori evidenziati di lato.

SLE	FOR. X, KN	FOR.H, KN	MOM, KN-M	MOM X, KN- M
	*****	*****	*****	*****
max	3079.7	233.0	552.6	0.1
min	1537.0	36.4	114.7	-0.3

Tabella 28: Sollecitazioni allo SLE massime e minime per i pali di fondazione

Nelle seguenti figure sono diagrammati l'andamento con la profondità del momento flettente e del taglio relativi alle combinazioni in cui tali sollecitazioni risultano massime.

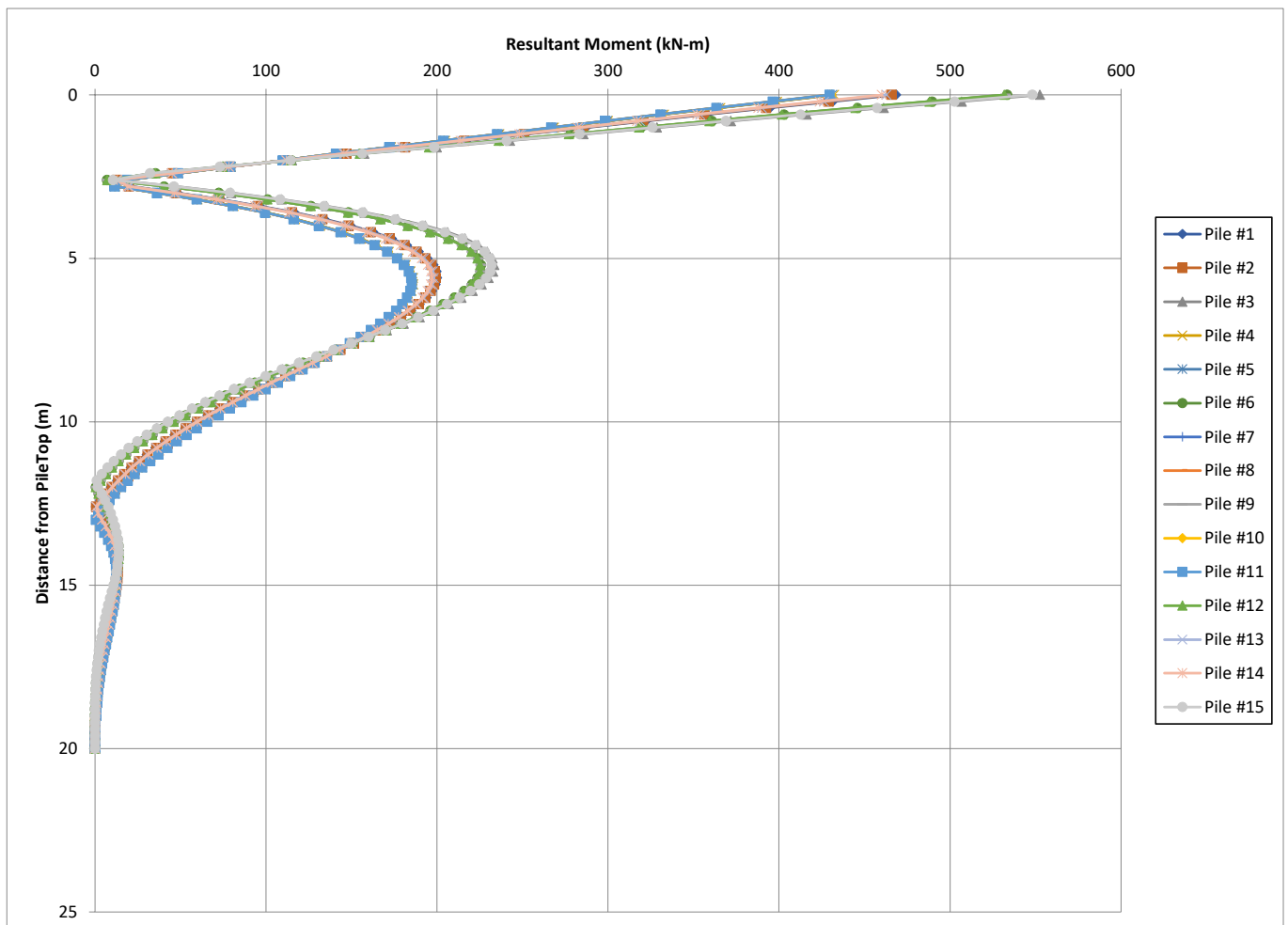


Figura 10-9: Combinazioni SLE: Andamento con la profondità del momento (combo SLE2-1257-CH_09).

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PROGETTAZIONE: Mandataria Mandanti 		COMMESSA IF28		LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 52 di 420
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B								

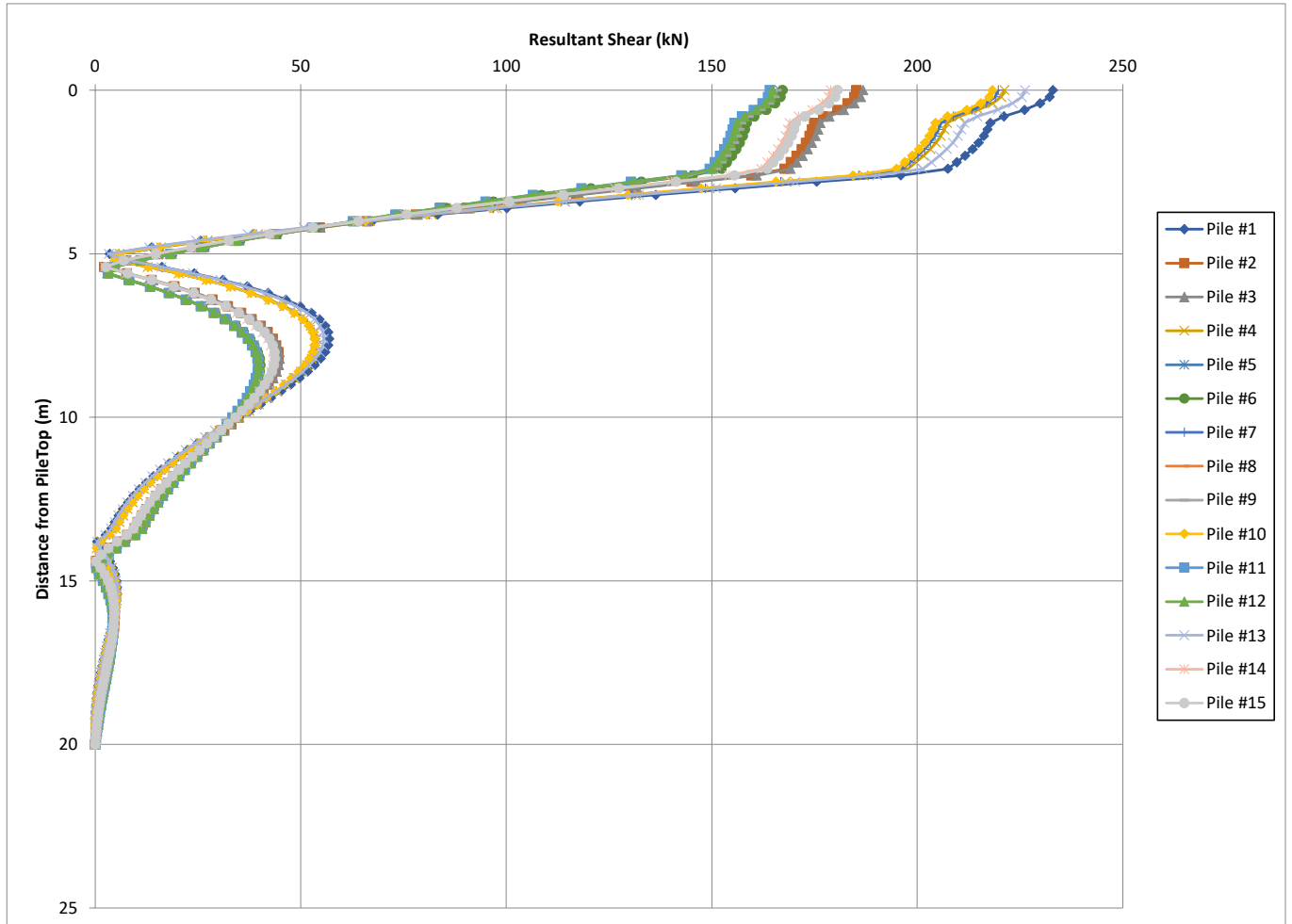


Figura 10-10: Combinazioni SLE: Andamento con la profondità del taglio (combo SLE1-1257-CH_20).

10.2.1 Spostamenti

Nella Tabella 16 si riportano gli spostamenti e le rotazioni ad intradosso plinto e sommità spalla.

Gli spostamenti orizzontali (direzione y-2) e direzione z-3) tengono già conto dell'interazione fra pali e sono quindi rappresentativi degli spostamenti orizzontali del gruppo di pali; lo spostamento verticale non tiene conto dell'effetto gruppo.

Il coefficiente amplificativo del cedimento verticale per effetto gruppo E_G viene valutato in accordo a Mandolini et al. (2005) ed è riportato in Tabella 17.

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PROGETTAZIONE: Mandataria Mandanti 	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 53 di 420

VERTICAL , M	HORIZONTAL Y, M	HORIZONTAL Z, M	ANGLE ROT. X,RAD	ANGLE ROT. Y,RAD	ANGLE ROT. Z,RAD	Ppostamento spalla - sle		
						H pila (m)	6,75	
						asse Y (mm)	asse Z (mm)	asse X (mm)
0,0012421	0,0008216	0,0001220	-8,854E-07	5,677E-06	-8,194E-05	1,375	0,160	2,377
0,0012196	-0,0007421	0,0001218	1,482E-07	5,676E-06	5,471E-05	-1,111	0,160	2,334
0,0011499	-0,0001472	0,0001018	-8,266E-08	3,950E-06	-3,299E-06	-0,125	0,128	2,201
0,0012391	-0,0003185	0,0001688	7,355E-08	8,504E-06	1,069E-05	-0,391	0,226	2,372
0,0010853	-0,0000170	0,0001384	-2,550E-07	6,564E-06	-1,435E-05	0,080	0,183	2,077
0,0012487	0,0004526	0,0001688	-6,326E-07	8,504E-06	-5,677E-05	0,836	0,226	2,390
0,0012487	0,0004526	0,0001688	-6,326E-07	8,504E-06	-5,677E-05	0,836	0,226	2,390
0,0011661	-0,0001799	0,0001068	-4,232E-08	3,954E-06	-5,362E-07	-0,176	0,134	2,232
0,0012421	0,0008216	0,0001220	-8,854E-07	5,677E-06	-8,194E-05	1,375	0,160	2,377
0,0012196	-0,0007421	0,0001218	1,482E-07	5,676E-06	5,471E-05	-1,111	0,160	2,334
0,0012031	-0,0006437	0,0001312	-2,884E-07	6,786E-06	4,716E-05	-0,962	0,177	2,303
0,0010853	-0,0000170	0,0001384	-2,550E-07	6,564E-06	-1,435E-05	0,080	0,183	2,077

Tabella 29: Combinazioni SLE: spostamenti e rotazioni ad intradosso plinto.

DATI FONDAZIONE		
Larghezza plinto	12	m
Profondità plinto	12	m
Diametro palo	1,5	m
Lunghezza palo	25	m
interasse palo	4,5	m
numero pali	9	-
Coefficiente R	1,2728	-
Coefficiente RG	0,2094	-
Coeff. amplificazione cedimento del gruppo EG	1,88	-

Tabella 30: Coefficiente amplificativo del cedimento verticale per effetto gruppo.

10.3 SINTESI DEI RISULTATI AGLI STATI LIMITE ULTIMI STATICI (SLU)

Si riassumono nel seguito le sollecitazioni massime di sforzo assiale, taglio e momento, agenti in testa ai pali.

SLU	FOR. X, KN	FOR.H, KN	MOM, KN-M	MOM X, KN-M
	*****	*****	*****	*****
max	4191.4	335.9	730.4	0.1
min	1522.5	54.8	143.2	-0.4

Tabella 31: Sollecitazioni allo SLU massime e minime per i pali di fondazione

Nelle seguenti figure sono diagrammati l'andamento con la profondità del momento flettente e del taglio relativi alle combinazioni in cui tali sollecitazioni risultano massime.

APPALTATORE: Consorzio Soci 		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA						
PROGETTAZIONE: Mandataria Mandanti Alpina		COMMESSA IF28		LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 54 di 420
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B								

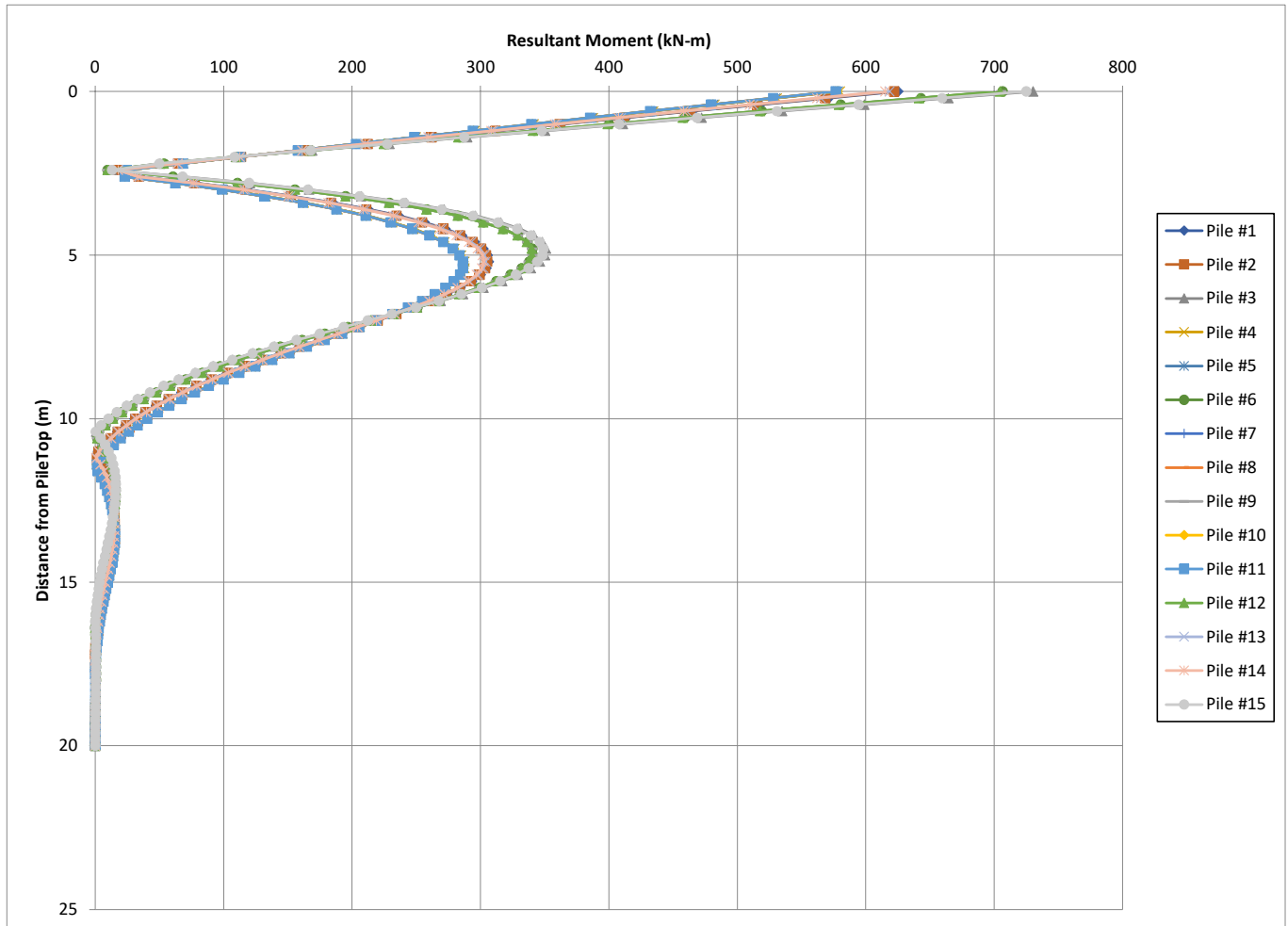


Figura 10-11: Combinazioni statica SLU: Andamento con la profondità del momento (combo 2-1257-ULS_09).

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PROGETTAZIONE: Mandataria Mandanti 							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 55 di 420

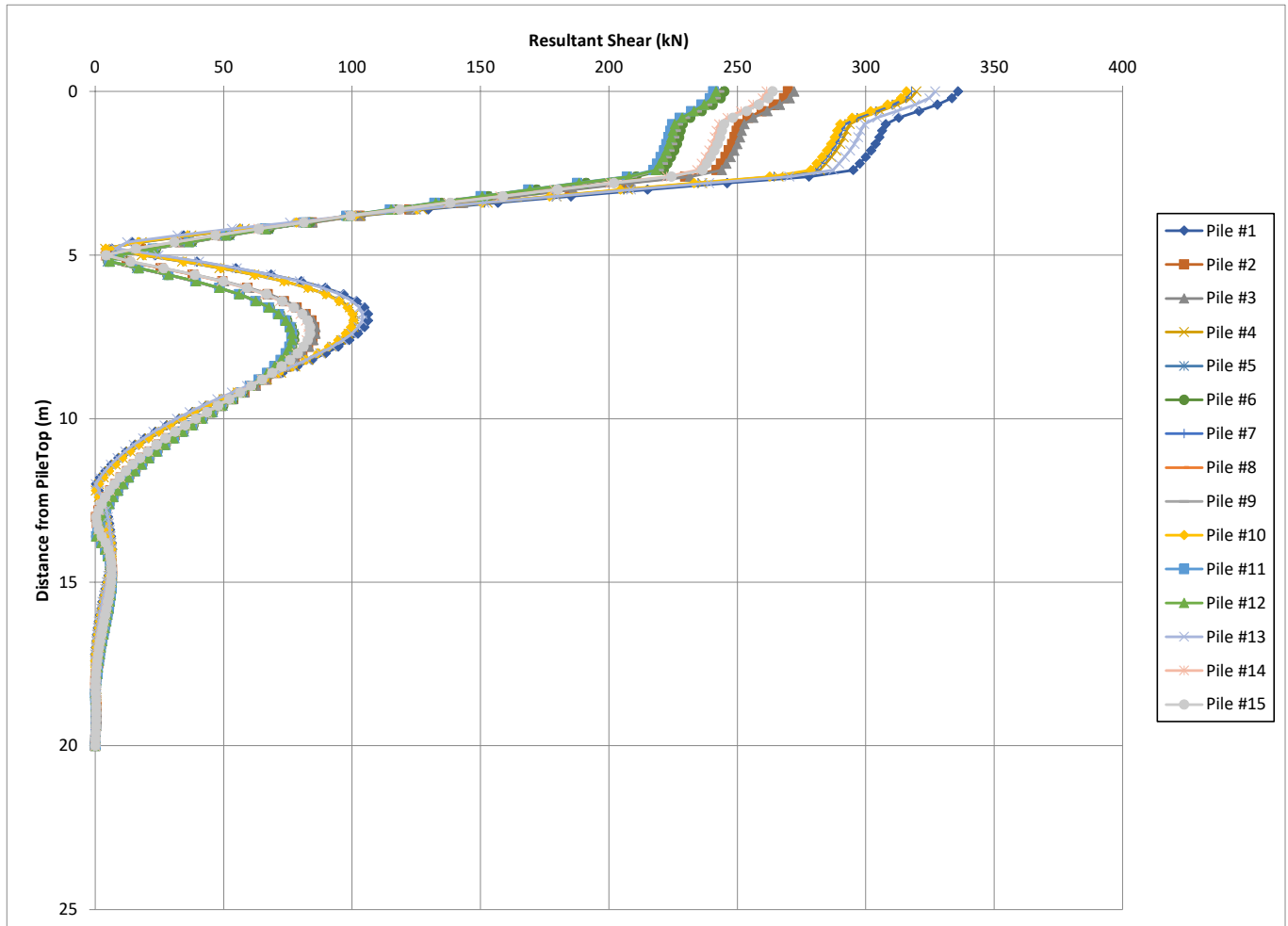


Figura 10-12: Combinazioni statica SLU: Andamento con la profondità del taglio (combo 1-1257-ULS_20).

10.4 SINTESI DEI RISULTATI AGLI STATI LIMITE ULTIMI SISMICI (SLV)

Si riassumono nel seguito le sollecitazioni massime di sforzo assiale, taglio e momento, agenti in testa ai pali.

SLV	FOR. X, KN	FOR.H, KN	MOM, KN-M	MOM X, KN- M
max	4140.8	1407.4	4123.7	8.3
min	8.2	249.1	572.1	-8.3

Tabella 32: Sollecitazioni allo SLV massime e minime per i pali di fondazione

Nelle seguenti figure sono diagrammati l'andamento con la profondità del momento flettente e del taglio relativi alle combinazioni in cui tali sollecitazioni risultano massime.

APPALTATORE: Consorzio Soci 		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti 		COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		IF28	01	E ZZ CL	VI0103 001	B	56 di 420

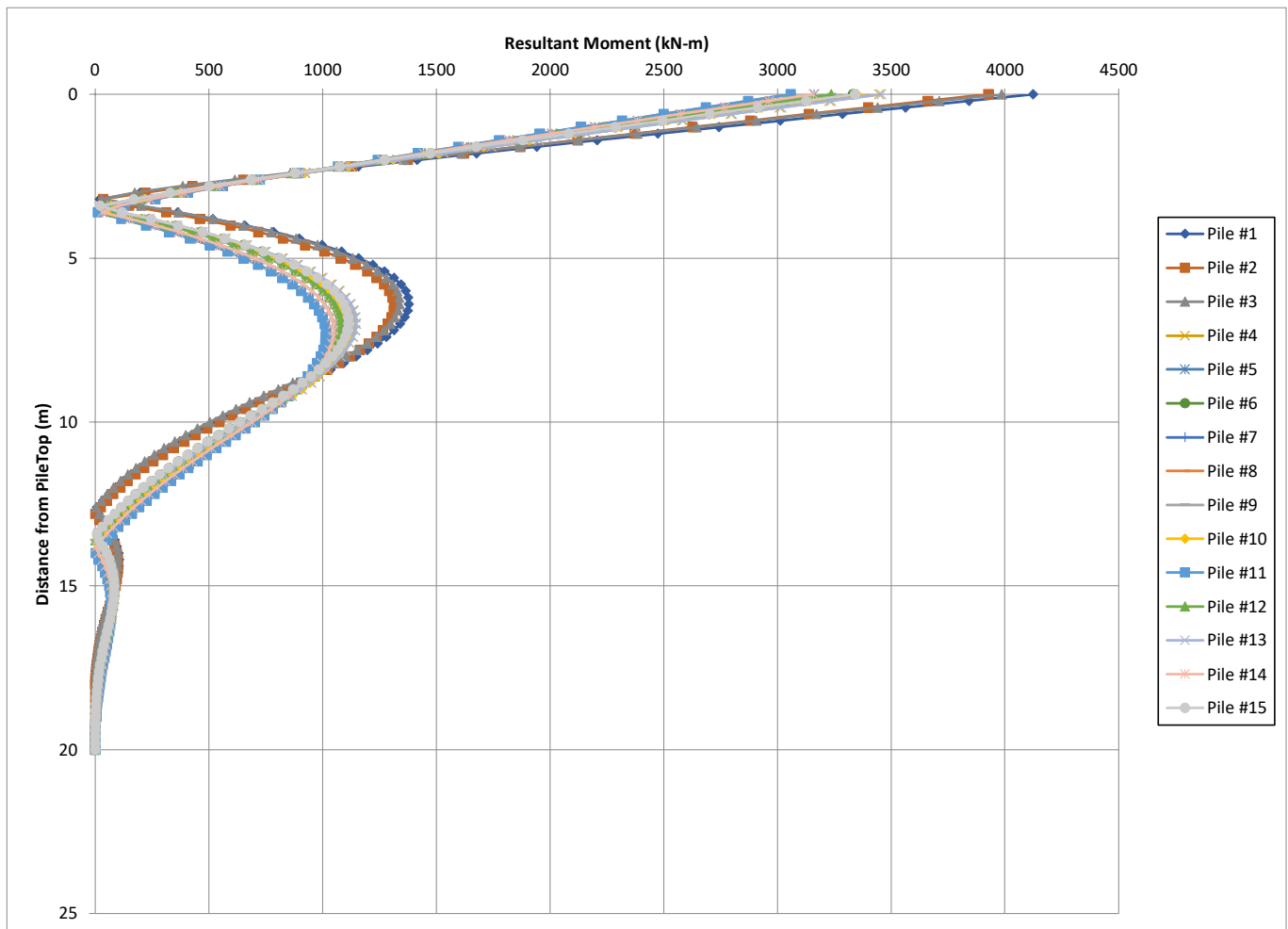


Figura 10-13: Combinazioni sismica SLV: Andamento con la profondità del momento (combo 16-1257-ULS_V_13).

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PROGETTAZIONE: Mandataria Mandanti 							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 57 di 420

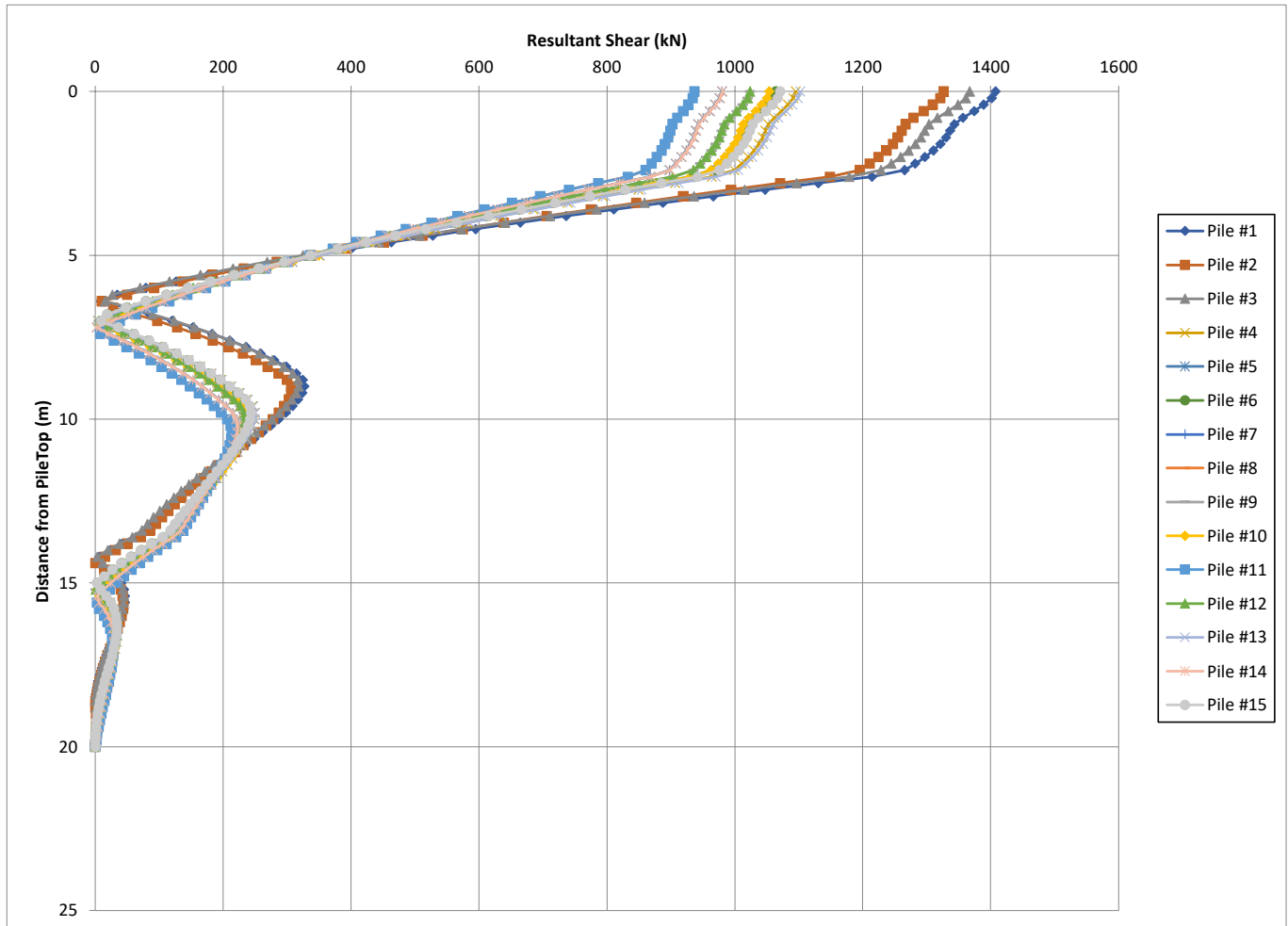


Figura 10-14: Combinazioni sismica SLV: Andamento con la profondità del taglio (combo 16-1257-ULS_V_13).

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PROGETTAZIONE: Mandataria Mandanti   						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 58 di 420

11 VERIFICA DEI PALI DI FONDAZIONE SPALLA B

Nel seguito di riportano le verifiche strutturali dei pali di fondazione.

Le sollecitazioni massime agenti lungo il fusto del palo sono riassunte nella Tabella 33.

LOAD CASE :	PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M	FOR.H, KN	MOM, KN-M
*****	*****	*****	*****	*****	*****	*****	*****		
SLV-13	15	8.1543	823.82	5.4436	-0.1293	-15.915	2306.7	823.84	2306.75
SLV-16	1	3809	-98.537	1403.8	8.2822	-4112	-310.6	1407.25	4123.71

LOAD CASE :	PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M	FOR.H, KN	MOM, KN-M
*****	*****	*****	*****	*****	*****	*****	*****		
2_SLE	3					-102.68	-542.96		552.58
1_SLE	15	1537							

Tabella 33: Sollecitazioni massime agenti nel palo

Nel seguito si riportano le verifiche strutturali del palo trivellato di diametro $\varnothing = 1500\text{mm}$ in cls – C25/30 e lunghezza L25m. Per le verifiche si considerano le sollecitazioni risultanti. I pali di fondazione risultano sempre compressi; le verifiche di armatura sono state eseguite associando alle massime sollecitazioni di taglio e momento il contributo di compressione minimo.

In riferimento all'andamento dei momenti lungo il fusto del palo- Momenti Figura 7-13 e Taglio Figura 7-14 - sono state previste n. 3 ordini di armature principali:

4. L'armatura massima:

- o ferri correnti: corona esterna n.26 $\varnothing 30$;
- o ferri correnti: corona interna n.13 $\varnothing 26$;
- o staffatura: doppia spirale $\varnothing 14$ passo 10.

5. L'armatura media:

- o ferri correnti: corona esterna n.26 $\varnothing 30$;
- o staffatura: spirale $\varnothing 14$ passo 20.

6. L'armatura minima:

- o ferri correnti: corona esterna n.26 $\varnothing 26$;
- o staffatura: spirale $\varnothing 14$ passo 20.

Le verifiche strutturali del palo sono soddisfatte; di seguito la scheda di calcolo.

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PROGETTAZIONE: Mandataria ROKSOJL Mandanti NETENGINEERING Alpina						
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geometria				
sezione trasversale				
D	c	d	passo	interferro
[cm]	[cm]	[cm]	[cm]	[cm]
150	6.0	141.1	16.0	13.0
armatura longitudinale				
nbarre	ϕ	r_i	A_{sI}	C_i
	[mm]	[cm]	[cm ²]	[cm]
26	30	66.10	183.78	8.90
13	26	59.30	69.02	15.70
armatura a taglio				
Tipo	ϕ	p	A_{sw}	
	[mm]	[cm]	[cm ²]	
spirale	14	10	3.08	

sollecitazioni e risultati	
SLE	SLU
M_{Ek} 552.6 [kNm]	M_{Ed} 4123.7 [kNm]
N_{Ek} -1537.0 [kN]	N_{Ed} -8.2 [kN]
momento di cracking	V_{Ed} 1407 [kN]
M_{cr} 1241.5 [kNm]	presso-flessione
quota asse neutro	M_{Rd} 5279.6 [kNm]
y_n 109.62 [cm]	FS 1.28
tensioni e fessure	taglio
$\sigma_{c,min}$ -2.1 [MPa]	V_{Rdc} 670.6 [kN]
$\sigma_{s,min}$ -28.6 [MPa]	predisporre armatura a taglio
$\sigma_{s,max}$ 8.9 [MPa]	V_{Rds} 1926.5 [kN]
k_2 0.5	V_{Rdmax} 4480.7 [kN]
$\epsilon_{sm}-\epsilon_{cm}$ - [%]	θ 30.0 [°]
$S_{r,max}$ - [cm]	sezione duttile
w_k - [mm]	al 92.1 [cm]

materiali			
calcestruzzo		acciaio	
R_{ck}	30 [MPa]	f_{yk}	450 [MPa]
f_{ck}	24.9 [MPa]	γ_s	1.15
γ_c	1.5	f_{yd}	391.3 [MPa]
α_{cc}	0.85	E_s	200000 [MPa]
f_{cd}	14.1 [MPa]	ϵ_{uk}	10 [%]
ν	0.5	valori limite	
ϵ_{c2}	2.0 [%]	0,55 f_{ck}	13.7 [MPa]
ϵ_{cu2}	3.5 [%]	0,75 f_{yk}	337.5 [MPa]
α_e	15.0	$w_{k,lim}$	0.2 [mm]
k_t	0.6		
k_1	0.8		
k_3	3.4		
k_4	0.425		

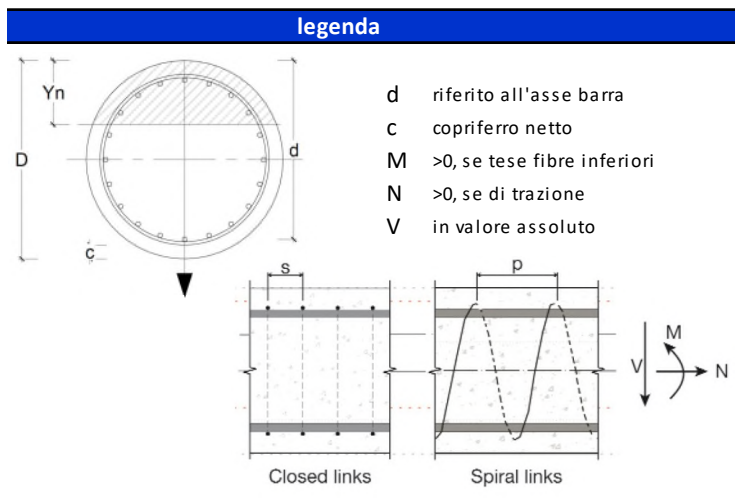


Tabella 11-34: Verifica del palo D=1500mm; trazione e armatura massima

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PROGETTAZIONE: Mandataria ROKSOJL Mandanti NETENGINEERING Alpina						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 60 di 420

geometria				
sezione trasversale				
D	c	d	passo	interferro
[cm]	[cm]	[cm]	[cm]	[cm]
150	6,0	141,1	16,0	13,0
armatura longitudinale				
n _{barre}	φ	r _i	A _{sl}	c _i
	[mm]	[cm]	[cm ²]	[cm]
26	30	66,10	183,78	8,90
60,60				
armatura a taglio				
Tipo	φ	ρ	A _{sw}	
	[mm]	[cm]	[cm ²]	
spirale	14	20	3,08	

sollecitazioni e risultati	
SLE	SLU
M _{Ek} 552,6 [kNm]	M _{Ed} 1379,7 [kNm]
N _{Ek} -1537,0 [kN]	N _{Ed} -8,2 [kN]
momento di cracking	presso-flessione
M _{cr} 1188,7 [kNm]	M _{Rd} 4032,3 [kNm]
quota asse neutro	FS 2,92
y _n 69,68 [cm]	taglio
tensioni e fessure	V _{Rdc} 603,1 [kN]
σ _{c,min} -4,8 [MPa]	non serve armatura a taglio
σ _{s,min} -62,9 [MPa]	
σ _{s,max} 74,0 [MPa]	
	V _{Rds} 962,5 [kN]
k₂ 0,5	V _{Rdmax} 4480,7 [kN]
ε _{sm-ε_{cm}} - [%]	θ 30,0 [°]
S _{r,max} - [cm]	sezione duttile
W _k - [mm]	a _i 99,9 [cm]

materiali			
calcestruzzo		acciaio	
R _{ck}	30 [MPa]	f _{yk}	450 [MPa]
f _{ck}	24,9 [MPa]	γ _s	1,15
γ _c	1,5	f _{yd}	391,3 [MPa]
α _{cc}	0,85	E _s	200000 [MPa]
f _{cd}	14,1 [MPa]	ε _{uk}	10 [‰]
v	0,5		
ε _{c2}	2,0 [‰]		
ε _{cu2}	3,5 [‰]		
α _e	15,0		
k _t	0,6		
k ₁	0,8	valori limite	
k ₃	3,4	0,55 f _{ck}	13,7 [MPa]
k ₄	0,425	0,75 f _{yk}	337,5 [MPa]
		W _{k,lim}	0,2 [mm]

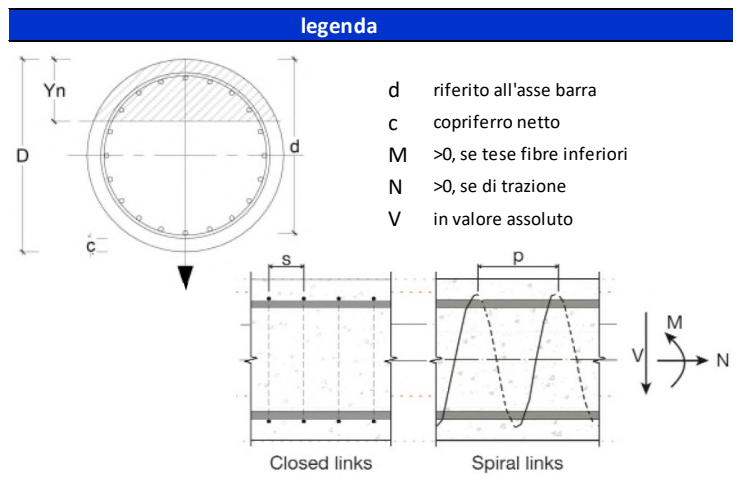


Tabella 11-35: Verifica del palo D=1500mm; armatura media

APPALTATORE: Consorzio HirpiniaAV Soci salini impregilo ASTALDI	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria ROKSOJL Mandanti NETENGINEERING Alpina						
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geometria				
sezione trasversale				
D	c	d	passo	interferro
[cm]	[cm]	[cm]	[cm]	[cm]
150	6,0	141,3	16,0	13,4
armatura longitudinale				
n _{barre}	φ	r _i	A _{sl}	c _i
	[mm]	[cm]	[cm ²]	[cm]
26	26	66,30	138,04	8,70
armatura a taglio				
Tipo	φ	p	A _{sw}	
	[mm]	[cm]	[cm ²]	
spirale	14	20	3,08	

sollecitazioni e risultati	
SLE	SLU
M _{Ek} 552,6 [kNm]	M _{Ed} 510,0 [kNm]
N _{Ek} -1537,0 [kN]	N _{Ed} -8,2 [kN]
momento di cracking	
M _{cr} 1140,9 [kNm]	
quota asse neutro	
y _n 106,44 [cm]	
tensioni e fessure	
σ _{c,min} -2,3 [MPa]	
σ _{s,min} -32,2 [MPa]	
σ _{s,max} 11,4 [MPa]	
prezzo-flessione	
M _{Rd} 3109,4 [kNm]	
FS 6,10	
taglio	
V _{Rdc} 548,3 [kN]	
non serve armatura a taglio	
V _{Rds} 963,8 [kN]	
V _{Rdmax} 4487,1 [kN]	
θ 30,0 [°]	
sezione duttile	
a _i 99,9 [cm]	

materiali			
calcestruzzo		acciaio	
R _{ck}	30 [MPa]	f _{yk}	450 [MPa]
f _{ck}	24,9 [MPa]	γ _s	1,15
γ _c	1,5	f _{yd}	391,3 [MPa]
α _{cc}	0,85	E _s	200000 [MPa]
f _{cd}	14,1 [MPa]	ε _{uk}	10 [‰]
v	0,5		
ε _{c2}	2,0 [‰]		
ε _{cu2}	3,5 [‰]		
α _e	15,0		
k _t	0,6		
k ₁	0,8		
k ₃	3,4		
k ₄	0,425		
		valori limite	
		0,55 f _{ck}	13,7 [MPa]
		0,75 f _{yk}	337,5 [MPa]
		w _{k,lim}	0,2 [mm]

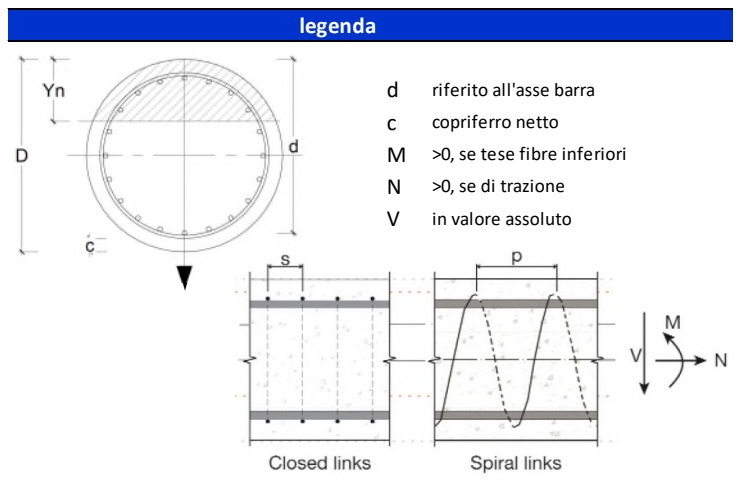


Tabella 11-36: Verifica del palo D=1500mm; armatura minima

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 62 di 420

11.1.1 Schemi armatura e incidenza del palo

Nelle Figura 11-1 e Figura 11-2 sono schematizzate le armature correnti e le armature di taglio. Nella Tabella 11-37 l'incidenza di armatura valutata con una percentuale di incremento pari al 10% dovuta a ganci di sollevamento, armature di confezionamento, legatura, ecc.; si considera una incidenza di progetto pari a 160kg/m³.

Tabella ferri						
ARMATURA PALO LUNGH. = 20 m – SP B						
POS.	N.	DIAM.	LUNG. (cm)	P.U.	LUNG. TOT. (cm)	PESO (kg)
1	26	30	860	5,549	22360	1241
2	13	26	860	4,168	11180	466
3	26	30	1000	5,549	26000	1443
4	26	26	680	4,168	17680	737
5	1	14	29619	1,208	29619	358
6	1	14	17170	1,208	17170	207
7	1	14	10740	1,208	10740	130
8	13	40	450	9,864	5850	577

Kg 5158

AREA PALO (m²) **1,77**
 LUNGH. PALO (m) **20,00**
 VOLUME (m³) **35,33**

INCIDENZA DI CALCOLO (kg/m³) **146,0**
 Incremento percentuale % (*) **10**
 INCIDENZA DI PROGETTO (kg/m³) **~160**

(*) incremento in % dovuto a ganci di sollevamento, armature di confezionamento, legature, ecc.

Tabella 11-37 Incidenza armatura

APPALTATORE: Consorzio HirpiniaAV Soci salini impregilo ASTALDI		ITINERARIO NAPOLI – BARI					
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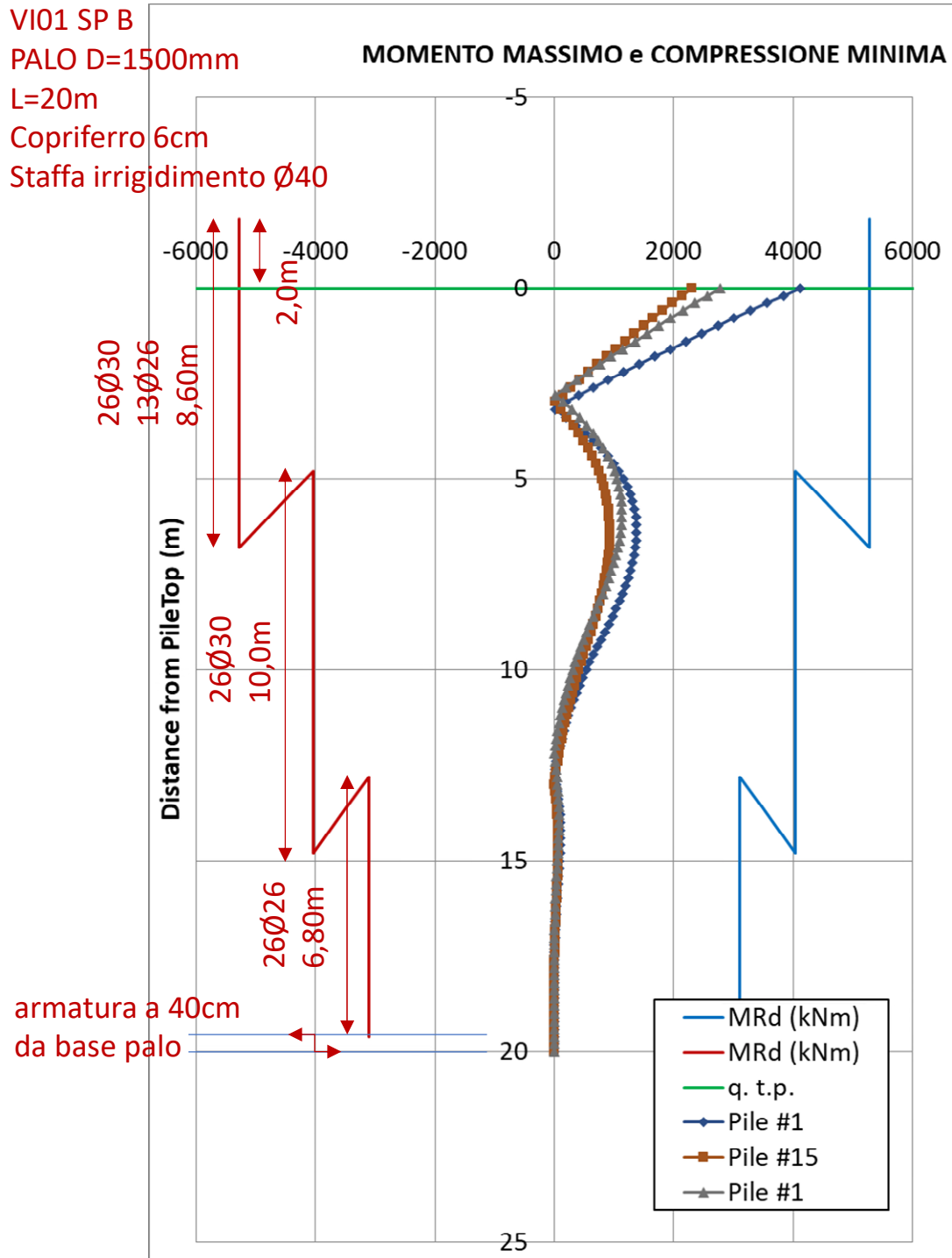


Figura 11-1: VI01 SP B Schema armatura gabbie

APPALTATORE: Consorzio HirpiniaAV Soci salini impregio ASTALDI		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria ROKSOJL Mandanti NETENGINEERING Alpina		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 64 di 420

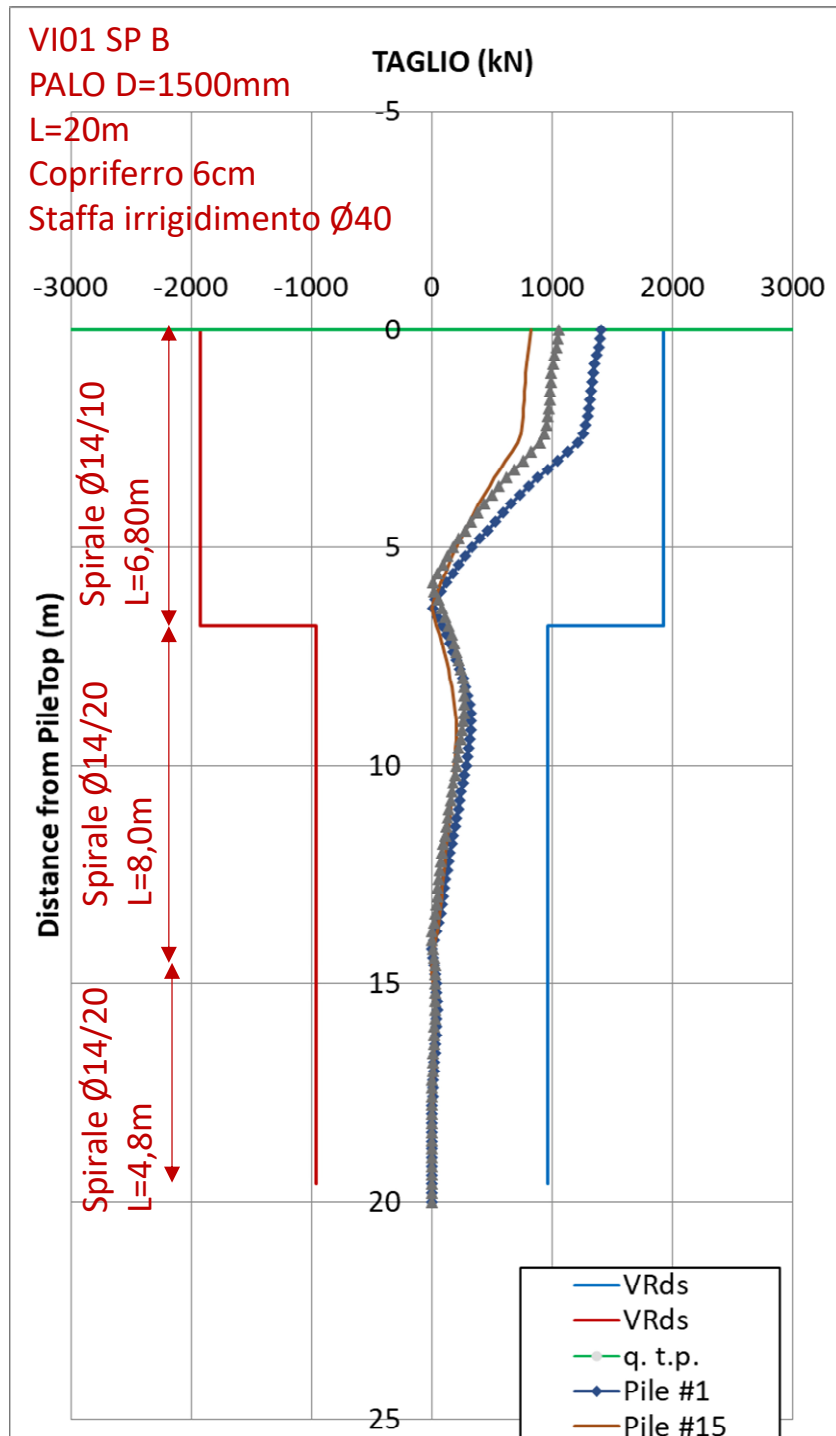









Figura 11-2: VI01 SP B Schema armatura a taglio

<p>APPALTATORE:</p> <p>Consortio Soci</p> <p>  </p>	<p>ITINERARIO NAPOLI – BARI</p> <p>RADDOPPIO TRATTA APICE – ORSARA</p> <p>I LOTTO FUNZIONALE APICE – HIRPINIA</p>																	
<p>PROGETTAZIONE:</p> <p>Mandataria Mandanti</p> <p>  </p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 16.6%;">COMMESSA</td> <td style="width: 16.6%;">LOTTO</td> <td style="width: 16.6%;">CODIFICA</td> <td style="width: 16.6%;">DOCUMENTO</td> <td style="width: 16.6%;">REV.</td> <td style="width: 16.6%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>65 di 420</td> </tr> </table>						COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	65 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO													
IF28	01	E ZZ CL	VI0103 001	B	65 di 420													
<p>PROGETTO ESECUTIVO</p> <p>RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B</p>																		

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 66 di 420

12 VERIFICHE ALLO SLU DI TIPO GEOTECNICO SPALLA B

12.1 VERIFICA DI CAPACITÀ PORTANTE DEL PALO SINGOLO

La verifica di capacità portante verticale per il singolo palo è stata condotta in accordo ai criteri esposti nel documento di cui al ref. 2).

Di seguito si riporta, per i pali di fondazione di lunghezza $L = 20$ m, la capacità portante a compressione ($R_{c,d}$) e a trazione ($R_{t,d}$), secondo l'approccio 2 (A1+M1+R3).

I carichi assiali massimi agenti sui pali sono riassunti nella seguente tabella:

Massima compressione, N_{dc} , max [kN]	4191.4 (SLU)
Massima trazione, N_{dt} , max [kN]	n.p.

Tabella 38: Combinazione SLU e SLV: Sollecitazioni massime di compressione e trazione

Si verifica inoltre che lo sforzo assiale massimo in esercizio sia inferiore della resistenza laterale di calcolo ($R_{c,s,k}$) divisa per un fattore pari a 1.25.

Massima compressione, N_{dcSLE} , max [kN]	3079.7 (SLE)
--	--------------

Tabella 39: Combinazione SLE: Sollecitazione massima di compressione

In Tabella 27 si riporta, per i pali di lunghezza 20.0 m, la capacità portante a compressione ($R_{c,d}$) e a trazione ($R_{t,d}$) del palo isolato secondo l'Approccio 2 (A1+M1+R3).

Combinazione SLU A1+M1+R3 (metodo AGI)							Comb. SLU A1+M1+R3 (metodo AGI)				
L palo	Q _{l-c,k}	Q _{b-c,k}	Q _{l-c,d}	Q _{b-c,d}	ΔW palo	Q _{c,d}	L palo	Q _{l-t,k}	Q _{l-t,d}	ΔW palo	Q _{t,d}
m	kN	kN	kN	kN	kN	kN	m	kN	kN	kN	kN
20,0	7414,0	5301,4	4298,0	2618,0	689,2	6226,8	20,0	7414,0	3954,1	530,1	4484,3

Tabella 40: Capacità portante a compressione e a trazione dei pali di fondazione secondo l'Approccio 2 (A1+M1+R3).

12.1.1 Capacità portante verticale del palo singolo

Stratigrafia e parametri geotecnici







Dati di input		
Diametro Palo	1.5	m
Sovraccarico efficace	29.3	kPa
HW da testa palo	0	m
γ acqua	10	kN/m ³
Δz palo da p.c. originario	3.25	m
N° diametri per qb	4	(-)
L palo fuori terra	0	(m)
Peso calcestruzzo	25	kN/m ³
Pressione max sul cls.	11.34	MPa

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Caratteristiche del terreno													
Profondità (m)		Strato	Terreno	γ_{tot}	Nspt		c_u (kPa)		$\Delta-z$	ϕ°		Nq	
da	a	No.	(S,SL,G,A)	kN/m3	da	a	da	a	(m)	da	a	da	a
0.00	1.00	1	A	18.0			60	60	1.00				
1.00	2.50	2	S	19.0					1.00	30	30	9.45	9.45
2.50	13.50	3	A	20.0			100	100	1.00				
13.50	25.00	4	A	20.0			200	200	1.00				
25.00	40.00	5	A	20.0			400	400	1.00				

Verticali di indagine	ξ_3	ξ_4
5	1.50	1.34

Scelta di ξ	ξ
3	1.5

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Combinazione SLE (metodo AGI)						
L palo	τ_s calcolo	q_{ub} calcolo	$R_{c,s,k}$	$R_{c,b,k}$	ΔW palo	$Q_{c,s,k}/1.25$
m	kPa	kPa	kN	kN	kN	kN
1.0	36.0	530.3	169.6	937.2	26.5	109.2
1.0	36.0	530.3	169.6	937.2	26.5	109.2
1.0	36.0	530.3	169.6	937.2	26.5	109.2
2.0	14.5	437.1	237.8	772.4	53.0	137.2
2.5	16.8	479.6	277.4	847.5	66.3	155.6
2.5	17.6	479.6	277.4	847.5	66.3	155.6
3.0	75.0	662.0	454.1	1169.9	79.5	283.8
4.0	75.0	1026.8	807.5	1814.6	106.0	540.0
5.0	75.0	1391.7	1161.0	2459.3	132.5	796.2
6.0	75.0	1756.5	1514.4	3104.0	159.0	1052.5
7.0	75.0	2121.3	1867.8	3748.7	185.6	1308.7
8.0	75.0	2121.3	2221.2	3748.7	212.1	1564.9
9.0	75.0	2121.3	2574.7	3748.7	238.6	1821.2
10.0	75.0	2121.3	2928.1	3748.7	265.1	2077.4
11.0	75.0	2121.3	3281.5	3748.7	291.6	2333.6
12.0	75.0	2121.3	3635.0	3748.7	318.1	2589.9
13.0	75.0	2121.3	3988.4	3748.7	344.6	2846.1
13.5	75.0	2121.3	4165.1	3748.7	357.8	2974.2
13.5	75.0	2121.3	4165.1	3748.7	357.8	2974.2
14.0	106.1	2219.0	4415.0	3921.2	371.1	3160.9
15.0	106.1	2414.2	4914.8	4266.3	397.6	3534.3
16.0	106.1	2609.5	5414.7	4611.3	424.1	3907.6
17.0	106.1	2804.7	5914.5	4956.4	450.6	4281.0
18.0	106.1	3000.0	6414.3	5301.4	477.1	4654.3
19.0	106.1	3000.0	6914.1	5301.4	503.6	5027.7
20.0	106.1	3000.0	7414.0	5301.4	530.1	5401.0
21.0	106.1	3000.0	7913.8	5301.4	556.7	5774.4
22.0	106.1	3000.0	8413.6	5301.4	583.2	6147.7
23.0	106.1	3000.0	8913.4	5301.4	609.7	6521.1
24.0	106.1	3000.0	9413.3	5301.4	636.2	6894.4
25.0	106.1	3000.0	9913.1	5301.4	662.7	7267.8
25.0	106.1	3000.0	9913.1	5301.4	662.7	7267.8
26.0	150.0	3310.7	10619.9	5850.4	689.2	7806.8
27.0	150.0	3621.3	11326.8	6399.4	715.7	8345.7
28.0	150.0	3932.0	12033.7	6948.4	742.2	8884.7
29.0	150.0	4242.6	12740.5	7497.4	768.7	9423.7
30.0	150.0	4242.6	13447.4	7497.4	795.2	9962.7
31.0	150.0	4242.6	14154.2	7497.4	821.7	10501.7
32.0	150.0	4242.6	14861.1	7497.4	848.2	11040.6
33.0	150.0	4242.6	15568.0	7497.4	874.7	11579.6
34.0	150.0	4242.6	16274.8	7497.4	901.2	12118.6
35.0	150.0	4242.6	16981.7	7497.4	927.8	12657.6
36.0	150.0	4242.6	17688.5	7497.4	954.3	13196.6
37.0	150.0	4242.6	18395.4	7497.4	980.8	13735.5
38.0	150.0	4242.6	19102.2	7497.4	1007.3	14274.5
39.0	150.0	4242.6	19809.1	7497.4	1033.8	14813.5
40.0	150.0	4242.6	20516.0	7497.4	1060.3	15352.5

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Combinazione SLU A1+M1+R3 (metodo AGI)						
L palo	Q l-c,k	Q b-c,k	Q l-c,d	Q b-c,d	ΔW palo	Q c,d
m	kN	kN	kN	kN	kN	kN
1,0	169,6	937,2	98,3	462,8	34,5	526,7
1,0	169,6	937,2	98,3	462,8	34,5	526,7
1,0	169,6	937,2	98,3	462,8	34,5	526,7
2,0	237,8	772,4	137,9	381,4	68,9	450,3
2,5	277,4	847,5	160,8	418,5	86,1	493,2
2,5	277,4	847,5	160,8	418,5	86,1	493,2
3,0	454,1	1169,9	263,2	577,7	103,4	737,6
4,0	807,5	1814,6	468,1	896,1	137,8	1226,4
5,0	1161,0	2459,3	673,0	1214,5	172,3	1715,2
6,0	1514,4	3104,0	877,9	1532,8	206,8	2204,0
7,0	1867,8	3748,7	1082,8	1851,2	241,2	2692,8
8,0	2221,2	3748,7	1287,7	1851,2	275,7	2863,2
9,0	2574,7	3748,7	1492,6	1851,2	310,1	3033,6
10,0	2928,1	3748,7	1697,5	1851,2	344,6	3204,1
11,0	3281,5	3748,7	1902,3	1851,2	379,1	3374,5
12,0	3635,0	3748,7	2107,2	1851,2	413,5	3544,9
13,0	3988,4	3748,7	2312,1	1851,2	448,0	3715,3
13,5	4165,1	3748,7	2414,6	1851,2	465,2	3800,6
13,5	4165,1	3748,7	2414,6	1851,2	465,2	3800,6
14,0	4415,0	3921,2	2559,4	1936,4	482,4	4013,4
15,0	4914,8	4266,3	2849,2	2106,8	516,9	4439,1
16,0	5414,7	4611,3	3138,9	2277,2	551,3	4864,8
17,0	5914,5	4956,4	3428,7	2447,6	585,8	5290,5
18,0	6414,3	5301,4	3718,4	2618,0	620,3	5716,2
19,0	6914,1	5301,4	4008,2	2618,0	654,7	5971,5
20,0	7414,0	5301,4	4298,0	2618,0	689,2	6226,8
21,0	7913,8	5301,4	4587,7	2618,0	723,6	6482,1
22,0	8413,6	5301,4	4877,5	2618,0	758,1	6737,3
23,0	8913,4	5301,4	5167,2	2618,0	792,6	6992,6
24,0	9413,3	5301,4	5457,0	2618,0	827,0	7247,9
25,0	9913,1	5301,4	5746,7	2618,0	861,5	7503,2
25,0	9913,1	5301,4	5746,7	2618,0	861,5	7503,2
26,0	10619,9	5850,4	6156,5	2889,1	895,9	8149,6
27,0	11326,8	6399,4	6566,3	3160,2	930,4	8796,1
28,0	12033,7	6948,4	6976,0	3431,3	964,9	9442,5
29,0	12740,5	7497,4	7385,8	3702,4	999,3	10088,9
30,0	13447,4	7497,4	7795,6	3702,4	1033,8	10464,2
31,0	14154,2	7497,4	8205,4	3702,4	1068,2	10839,5
32,0	14861,1	7497,4	8615,1	3702,4	1102,7	11214,8
33,0	15568,0	7497,4	9024,9	3702,4	1137,2	11590,1
34,0	16274,8	7497,4	9434,7	3702,4	1171,6	11965,5
35,0	16981,7	7497,4	9844,4	3702,4	1206,1	12340,8
36,0	17688,5	7497,4	10254,2	3702,4	1240,5	12716,1
37,0	18395,4	7497,4	10664,0	3702,4	1275,0	13091,4
38,0	19102,2	7497,4	11073,8	3702,4	1309,5	13466,7
39,0	19809,1	7497,4	11483,5	3702,4	1343,9	13842,0
40,0	20516,0	7497,4	11893,3	3702,4	1378,4	14217,3

Comb. SLU A1+M1+R3 (metodo AGI)				
L palo	Q l-t,k	Q l-t,d	ΔW palo	Q t,d
m	kN	kN	kN	kN
1,0	169,6	90,5	26,5	117,0
1,0	169,6	90,5	26,5	117,0
1,0	169,6	90,5	26,5	117,0
2,0	237,8	126,8	53,0	179,8
2,5	277,4	147,9	66,3	214,2
2,5	277,4	147,9	66,3	214,2
3,0	454,1	242,2	79,5	321,7
4,0	807,5	430,7	106,0	536,7
5,0	1161,0	619,2	132,5	751,7
6,0	1514,4	807,7	159,0	966,7
7,0	1867,8	996,2	185,6	1181,7
8,0	2221,2	1184,7	212,1	1396,7
9,0	2574,7	1373,2	238,6	1611,7
10,0	2928,1	1561,7	265,1	1826,7
11,0	3281,5	1750,2	291,6	2041,7
12,0	3635,0	1938,6	318,1	2256,7
13,0	3988,4	2127,1	344,6	2471,7
13,5	4165,1	2221,4	357,8	2579,2
13,5	4165,1	2221,4	357,8	2579,2
14,0	4415,0	2354,7	371,1	2725,8
15,0	4914,8	2621,2	397,6	3018,9
16,0	5414,7	2887,8	424,1	3311,9
17,0	5914,5	3154,4	450,6	3605,0
18,0	6414,3	3421,0	477,1	3898,1
19,0	6914,1	3687,5	503,6	4191,2
20,0	7414,0	3954,1	530,1	4484,3
21,0	7913,8	4220,7	556,7	4777,3
22,0	8413,6	4487,3	583,2	5070,4
23,0	8913,4	4753,8	609,7	5363,5
24,0	9413,3	5020,4	636,2	5656,6
25,0	9913,1	5287,0	662,7	5949,7
25,0	9913,1	5287,0	662,7	5949,7
26,0	10619,9	5664,0	689,2	6353,2
27,0	11326,8	6041,0	715,7	6756,7
28,0	12033,7	6418,0	742,2	7160,2
29,0	12740,5	6794,9	768,7	7563,7
30,0	13447,4	7171,9	795,2	7967,2
31,0	14154,2	7548,9	821,7	8370,6
32,0	14861,1	7925,9	848,2	8774,1
33,0	15568,0	8302,9	874,7	9177,6
34,0	16274,8	8679,9	901,2	9581,1
35,0	16981,7	9056,9	927,8	9984,6
36,0	17688,5	9433,9	954,3	10388,1
37,0	18395,4	9810,9	980,8	10791,6
38,0	19102,2	10187,9	1007,3	11195,1
39,0	19809,1	10564,9	1033,8	11598,6
40,0	20516,0	10941,8	1060,3	12002,1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria Mandanti   	RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 70 di 420

VI01 - spalla SPB
 Capacità portante A1+M1+R3
 Palo D=1500mm

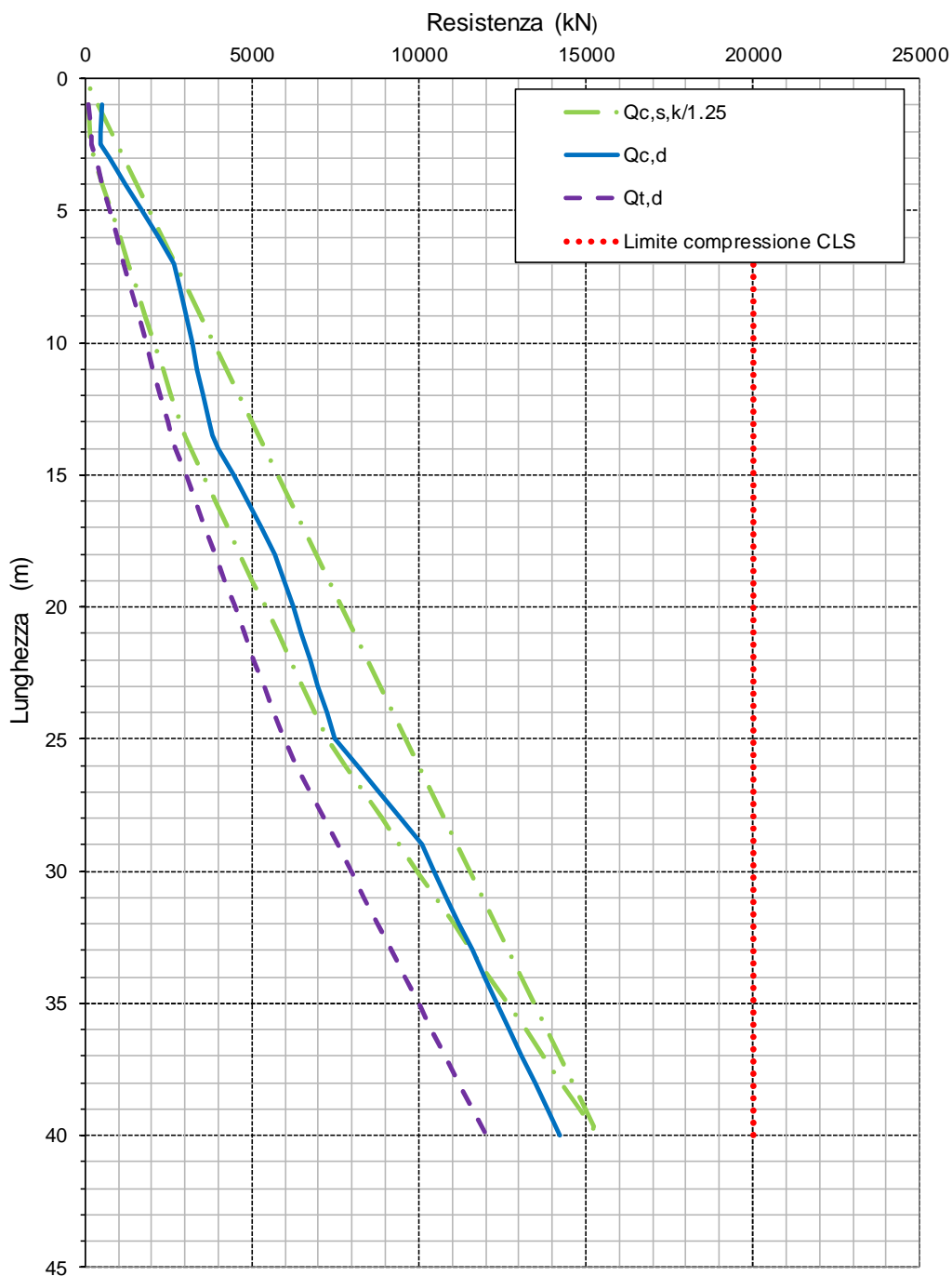




Figura 12-1: Capacità portante del palo singolo

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti 						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 71 di 420

12.1.2 Verifica di capacità portante orizzontale del gruppo di pali

La verifica di capacità portante orizzontale del gruppo di pali è stata condotta con i criteri descritti nel documento di cui al Ref. 2) §6.2, con i metodi basati sulle curve p-y.

Considerata la presenza di successioni stratigrafiche abbastanza articolate, con contrasti di rigidezza anche marcati e caratteristiche diverse delle varie unità geotecniche, si è fatto uso del programma FEM non lineare LPile, considerando negli strati di terreno curve p-y non lineari, definibili lungo il fuso del palo, e opportunamente ridotte secondo il coefficiente parziale $\xi \times \gamma_T$.

Si ricava una curva “pushover” del palo singolo: incrementando progressivamente il carico orizzontale applicato alla testa del palo, fino al raggiungimento del collasso, vale a dire della completa plasticizzazione del terreno. Tale plasticizzazione si rende “visibile” attraverso il cambiamento del comportamento deformativo del palo stesso, al raggiungimento del “plateau” di resistenza.

Nella seguente Figura 9-2 è illustrata la curva push-over ottenuta per il palo in oggetto, con il vincolo di invastro, al crescere dell’azione H applicata alla testa dello stesso.

Il taglio massimo agente è pari a $T_{longSLV} \approx 1407.4$ kN.

La verifica a capacità portante orizzontale risulta soddisfatta, poiché il carico limite $H_{lim} = 3751.0$ kN risulta superiore al valore di progetto.

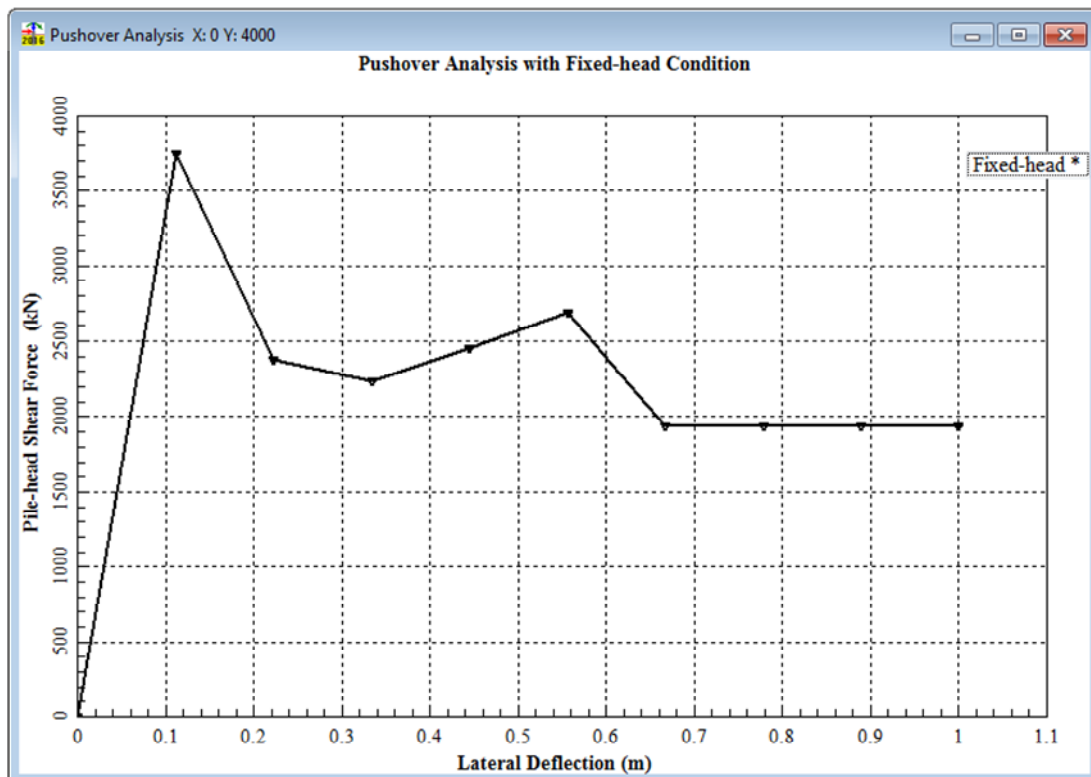














Figura 12-2: Analisi push-over palo

<p>APPALTATORE:</p> <p>Consortio Soci</p> <p>  </p>	<p>ITINERARIO NAPOLI – BARI</p> <p>RADDOPPIO TRATTA APICE – ORSARA</p> <p>I LOTTO FUNZIONALE APICE – HIRPINIA</p>																	
<p>PROGETTAZIONE:</p> <p>Mandataria Mandanti</p> <p>  </p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 16.6%;">COMMESSA</td> <td style="width: 16.6%;">LOTTO</td> <td style="width: 16.6%;">CODIFICA</td> <td style="width: 16.6%;">DOCUMENTO</td> <td style="width: 16.6%;">REV.</td> <td style="width: 16.6%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>72 di 420</td> </tr> </table>						COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	72 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO													
IF28	01	E ZZ CL	VI0103 001	B	72 di 420													
<p>PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B</p>																		

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA																	
PROGETTAZIONE: Mandataria Mandanti   	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 16.6%;">COMMESSA</td> <td style="width: 16.6%;">LOTTO</td> <td style="width: 16.6%;">CODIFICA</td> <td style="width: 16.6%;">DOCUMENTO</td> <td style="width: 16.6%;">REV.</td> <td style="width: 16.6%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>73 di 420</td> </tr> </table>						COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	73 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO													
IF28	01	E ZZ CL	VI0103 001	B	73 di 420													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B																		

13 ALLEGATO: TABULATI GROUP

13.1 SPA SLE

=====

GROUP for Windows, Version 2016.10.13

Serial Number : 228330872

Analysis of A Group of Piles
 Subjected to Axial and Lateral Loading

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=====

 Time and Date of Analysis

Date: February 10, 2020 Time: 12:18:55

***** COMPUTATION RESULTS *****

New Group

***** LOAD CASES RESULTS *****

LOAD CASE : 1
 CASE NAME : Load Case
 LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
 ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.6441	1.0000
3	0.6674	1.0000
4	0.7543	1.0000
5	0.4954	1.0000
6	0.5180	1.0000
7	0.7477	1.0000
8	0.4870	1.0000
9	0.5084	1.0000
10	0.8039	1.0000
11	0.5593	1.0000
12	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
32555.6	643.705	489.689
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-172.262	5344.00	-11099.0

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL , M 1.40605E-03	HORIZONTAL Y, M 3.47270E-04	HORIZONTAL Z, M 2.02720E-04
ANGLE ROT. X,RAD -1.81209E-06	ANGLE ROT. Y,RAD 1.16293E-05	ANGLE ROT. Z,RAD -4.05270E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.6669E-03	3.5950E-04	1.9457E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
2	1.4846E-03	3.5950E-04	2.0272E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
3	1.3022E-03	3.5950E-04	2.1087E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
4	1.6146E-03	3.5135E-04	1.9457E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
5	1.4322E-03	3.5135E-04	2.0272E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
6	1.2498E-03	3.5135E-04	2.1087E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
7	1.5623E-03	3.4319E-04	1.9457E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
8	1.3799E-03	3.4319E-04	2.0272E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
9	1.1975E-03	3.4319E-04	2.1087E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
10	1.5099E-03	3.3504E-04	1.9457E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
11	1.3276E-03	3.3504E-04	2.0272E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
12	1.1452E-03	3.3504E-04	2.1087E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
MINIMUM	1.1452E-03	3.3504E-04	1.9457E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.6669E-03	3.5950E-04	2.1087E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3210.8	67.559	45.577	-0.5871	-122.68	148.86
2	2862.8	57.248	41.322	-0.5871	-117.58	130.29
3	2514.7	58.408	44.138	-0.5871	-125.61	132.40
4	3110.9	60.316	42.501	-0.5871	-117.06	133.04
5	2762.9	47.707	36.338	-0.5871	-107.81	109.49
6	2414.9	48.920	38.995	-0.5871	-115.60	111.81
7	3011.1	57.841	42.317	-0.5871	-116.72	125.66
8	2663.0	45.466	36.043	-0.5871	-107.21	102.54
9	2315.0	46.584	38.645	-0.5871	-114.90	104.67
10	2911.2	58.024	43.895	-0.5871	-119.61	123.01
11	2563.2	47.211	38.556	-0.5871	-112.21	103.24
12	2215.1	48.421	41.362	-0.5871	-120.26	105.48
MINIMUM	2215.1	45.466	36.043	-0.5871	-125.61	102.54
Pile N.	12	8	8	1	3	8
MAXIMUM	3210.8	67.559	45.577	-0.5871	-107.21	148.86
Pile N.	1	1	1	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.6669E-03	3.5950E-04	1.9457E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
2	1.4846E-03	3.5950E-04	2.0272E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
3	1.3022E-03	3.5950E-04	2.1087E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
4	1.6146E-03	3.5135E-04	1.9457E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
5	1.4322E-03	3.5135E-04	2.0272E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
6	1.2498E-03	3.5135E-04	2.1087E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
7	1.5623E-03	3.4319E-04	1.9457E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
8	1.3799E-03	3.4319E-04	2.0272E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
9	1.1975E-03	3.4319E-04	2.1087E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
10	1.5099E-03	3.3504E-04	1.9457E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
11	1.3276E-03	3.3504E-04	2.0272E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
12	1.1452E-03	3.3504E-04	2.1087E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
MINIMUM	1.1452E-03	3.3504E-04	1.9457E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.6669E-03	3.5950E-04	2.1087E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3210.8	67.559	45.577	-0.5871	-122.68	148.86

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	75 di 420

2	2862.8	57.248	41.322	-0.5871	-117.58	130.29
3	2514.7	58.408	44.138	-0.5871	-125.61	132.40
4	3110.9	60.316	42.501	-0.5871	-117.06	133.04
5	2762.9	47.707	36.338	-0.5871	-107.81	109.49
6	2414.9	48.920	38.995	-0.5871	-115.60	111.81
7	3011.1	57.841	42.317	-0.5871	-116.72	125.66
8	2663.0	45.466	36.043	-0.5871	-107.21	102.54
9	2315.0	46.584	38.645	-0.5871	-114.90	104.67
10	2911.2	58.024	43.895	-0.5871	-119.61	123.01
11	2563.2	47.211	38.556	-0.5871	-112.21	103.24
12	2215.1	48.421	41.362	-0.5871	-120.26	105.48
MINIMUM	2215.1	45.466	36.043	-0.5871	-125.61	102.54
Pile N.	12	8	8	1	3	8
MAXIMUM	3210.8	67.559	45.577	-0.5871	-107.21	148.86
Pile N.	1	1	1	1	8	1

PILE GROUP STRESS, KN/ M**2

*****	*****
1	2399.1
2	2149.7
3	1973.8
4	2295.3
5	2027.2
6	1851.9
7	2221.5
8	1954.7
9	1779.1
10	2165.2
11	1910.6
12	1736.3
MINIMUM	1736.3
Pile N.	12
MAXIMUM	2399.1
Pile N.	1







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-5.3629E-06	-3.1414E-06	-148.86	-122.68	-31.471	-18.641	-9.9350	-5.9050	1816.9	7.8279E+06	7.8279E+06
x(M)	9.6800	9.6800	0.0000	0.0000	8.1400	8.1400	9.9000	9.9000	22.000	0.0000	0.0000
2	-5.7204E-06	-3.5021E-06	-130.29	-117.58	-27.659	-17.098	-8.1721	-5.0849	1620.0	7.8279E+06	7.8279E+06
x(M)	9.9000	10.120	0.0000	0.0000	8.3600	8.5800	10.120	10.340	22.000	0.0000	0.0000
3	-5.6822E-06	-3.6281E-06	-132.40	-125.61	-28.079	-18.134	-8.3758	-5.4373	1423.0	7.8279E+06	7.8279E+06
x(M)	9.9000	10.120	0.0000	0.0000	8.3600	8.3600	10.120	10.340	22.000	0.0000	0.0000
4	-5.3807E-06	-3.2421E-06	-133.04	-117.06	-28.870	-17.567	-8.8226	-5.3986	1760.4	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	0.0000	8.1400	8.3600	9.9000	10.120	22.000	0.0000	0.0000
5	-5.8731E-06	-3.6758E-06	-109.49	-107.81	-23.878	-15.157	-6.6685	-4.2522	1563.5	7.8279E+06	7.8279E+06
x(M)	10.340	10.560	0.0000	0.0000	8.5800	8.8000	10.560	10.780	22.000	0.0000	0.0000
6	-5.8107E-06	-3.8023E-06	-111.81	-115.60	-24.353	-16.143	-6.8670	-4.5712	1366.5	7.8279E+06	7.8279E+06
x(M)	10.340	10.340	0.0000	0.0000	8.5800	8.8000	10.560	10.780	22.000	0.0000	0.0000
7	-5.2450E-06	-3.2474E-06	-125.66	-116.72	-27.964	-17.499	-8.5262	-5.3663	1703.9	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	0.0000	8.1400	8.3600	9.9000	10.120	22.000	0.0000	0.0000
8	-5.7356E-06	-3.6889E-06	-102.54	-107.21	-23.040	-15.039	-6.4087	-4.2037	1507.0	7.8279E+06	7.8279E+06
x(M)	10.340	10.560	0.0000	0.0000	8.5800	8.8000	10.560	10.780	22.000	0.0000	0.0000
9	-5.6786E-06	-3.8132E-06	-104.67	-114.90	-23.481	-16.009	-6.5937	-4.5163	1310.0	7.8279E+06	7.8279E+06
x(M)	10.340	10.560	0.0000	0.0000	8.5800	8.8000	10.560	10.780	22.000	0.0000	0.0000
10	-5.0280E-06	-3.1961E-06	-123.01	-119.61	-28.033	-18.042	-8.7017	-5.6266	1647.4	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	0.0000	8.1400	8.3600	9.9000	10.120	22.000	0.0000	0.0000
11	-5.4309E-06	-3.5983E-06	-103.24	-112.21	-23.856	-16.044	-6.8377	-4.6215	1450.5	7.8279E+06	7.8279E+06
x(M)	10.120	10.340	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
12	-5.3771E-06	-3.7195E-06	-105.48	-120.26	-24.344	-17.099	-7.0418	-4.9695	1253.5	7.8279E+06	7.8279E+06
x(M)	10.120	10.340	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
Min.	-5.8731E-06	-3.8132E-06	-148.86	-125.61	-31.471	-18.641	-9.9350	-5.9050	1253.5	7.8279E+06	7.8279E+06
Pile N.	5	9	1	3	1	1	1	1	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	3.5950E-04	1.9457E-04	105.14	62.033	67.566	45.583	41.292	27.477	2399.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
2	3.5950E-04	2.0272E-04	98.748	60.747	57.254	41.327	36.049	25.213	2149.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.3800	6.0000	6.0000	6.1600	6.1600	0.0000	0.0000	0.0000
3	3.5950E-04	2.1087E-04	99.507	63.915	58.413	44.143	36.682	26.891	1973.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.3800	6.0000	6.0000	6.1600	6.1600	0.0000	0.0000	0.0000
4	3.5135E-04	1.9457E-04	99.310	60.183	60.322	42.506	37.534	25.848	2295.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.3800	6.0000	6.0000	6.1600	6.1600	0.0000	0.0000	0.0000
5	3.5135E-04	2.0272E-04	90.423	57.044	47.711	36.342	30.433	22.058	2027.2	7.8279E+06	7.8279E+06

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA			
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	76 di 420

x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
6	3.5135E-04	2.1087E-04	91.410	60.225	48.924	38.999	31.172	23.678	1851.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
7	3.4319E-04	1.9457E-04	96.429	60.060	57.846	42.322	36.078	25.745	2221.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
8	3.4319E-04	2.0272E-04	87.620	56.792	45.470	36.047	29.100	21.860	1954.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
9	3.4319E-04	2.1087E-04	88.537	59.936	46.588	38.649	29.783	23.446	1779.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
10	3.3504E-04	1.9457E-04	95.263	61.050	58.029	43.900	35.931	26.602	2165.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
11	3.3504E-04	2.0272E-04	88.027	58.799	47.215	38.560	30.173	23.498	1910.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
12	3.3504E-04	2.1087E-04	88.910	62.030	48.424	41.365	30.869	25.194	1736.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max.	3.5950E-04	2.1087E-04	105.14	63.915	67.566	45.583	41.292	27.477	2399.1	7.8279E+06	7.8279E+06
Pile N.	1	3	1	3	1	1	1	1	1	1	1

LOAD CASE : 2
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.7173	1.0000
2	0.6840	1.0000
3	0.8661	1.0000
4	0.5325	1.0000
5	0.4955	1.0000
6	0.7183	1.0000
7	0.5168	1.0000
8	0.4816	1.0000
9	0.7068	1.0000
10	0.5845	1.0000
11	0.5457	1.0000
12	0.7598	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
31935.6	-643.705	489.689
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-199.042	5344.00	-168.073




* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.37898E-03	-2.36080E-04	2.02202E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-1.65272E-06	1.16263E-05	5.88377E-06

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.4310E-03	-2.2492E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8838E-06
2	1.4575E-03	-2.2492E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8838E-06
3	1.4839E-03	-2.2492E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8838E-06
4	1.3787E-03	-2.3236E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8838E-06
5	1.4051E-03	-2.3236E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8838E-06
6	1.4316E-03	-2.3236E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8838E-06
7	1.3263E-03	-2.3980E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8838E-06
8	1.3528E-03	-2.3980E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8838E-06
9	1.3793E-03	-2.3980E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8838E-06
10	1.2740E-03	-2.4724E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8838E-06
11	1.3005E-03	-2.4724E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8838E-06
12	1.3270E-03	-2.4724E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8838E-06

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 77 di 420

MINIMUM	1.2740E-03	-2.4724E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8838E-06
Pile N.	10	10	1	1	1	1
MAXIMUM	1.4839E-03	-2.2492E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8838E-06
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2760.5	-54.192	41.506	-0.5355	-115.28	-163.19
2	2811.1	-52.984	42.441	-0.5355	-119.54	-160.90
3	2861.6	-59.313	49.909	-0.5355	-135.87	-172.71
4	2660.7	-48.837	35.816	-0.5355	-104.34	-155.10
5	2711.2	-47.243	36.233	-0.5355	-107.45	-151.87
6	2761.8	-56.184	45.445	-0.5355	-127.68	-169.44
7	2560.8	-49.855	35.299	-0.5355	-103.31	-159.39
8	2611.4	-48.262	35.737	-0.5355	-106.44	-156.15
9	2661.9	-57.697	45.083	-0.5355	-127.00	-174.77
10	2461.0	-54.565	37.501	-0.5355	-107.64	-171.08
11	2511.5	-52.851	37.979	-0.5355	-110.92	-167.67
12	2562.1	-61.723	46.740	-0.5355	-130.08	-184.85
MINIMUM	2461.0	-61.723	35.299	-0.5355	-135.87	-184.85
Pile N.	10	12	7	1	3	12
MAXIMUM	2861.6	-47.243	49.909	-0.5355	-103.31	-151.87
Pile N.	3	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4310E-03	-2.2492E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8838E-06
2	1.4575E-03	-2.2492E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8838E-06
3	1.4839E-03	-2.2492E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8838E-06
4	1.3787E-03	-2.3236E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8838E-06
5	1.4051E-03	-2.3236E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8838E-06
6	1.4316E-03	-2.3236E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8838E-06
7	1.3263E-03	-2.3980E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8838E-06
8	1.3528E-03	-2.3980E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8838E-06
9	1.3793E-03	-2.3980E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8838E-06
10	1.2740E-03	-2.4724E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8838E-06
11	1.3005E-03	-2.4724E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8838E-06
12	1.3270E-03	-2.4724E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8838E-06
MINIMUM	1.2740E-03	-2.4724E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8838E-06
Pile N.	10	10	1	1	1	1
MAXIMUM	1.4839E-03	-2.2492E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8838E-06
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2760.5	-54.192	41.506	-0.5355	-115.28	-163.19
2	2811.1	-52.984	42.441	-0.5355	-119.54	-160.90
3	2861.6	-59.313	49.909	-0.5355	-135.87	-172.71
4	2660.7	-48.837	35.816	-0.5355	-104.34	-155.10
5	2711.2	-47.243	36.233	-0.5355	-107.45	-151.87
6	2761.8	-56.184	45.445	-0.5355	-127.68	-169.44
7	2560.8	-49.855	35.299	-0.5355	-103.31	-159.39
8	2611.4	-48.262	35.737	-0.5355	-106.44	-156.15
9	2661.9	-57.697	45.083	-0.5355	-127.00	-174.77
10	2461.0	-54.565	37.501	-0.5355	-107.64	-171.08
11	2511.5	-52.851	37.979	-0.5355	-110.92	-167.67
12	2562.1	-61.723	46.740	-0.5355	-130.08	-184.85
MINIMUM	2461.0	-61.723	35.299	-0.5355	-135.87	-184.85
Pile N.	10	12	7	1	3	12
MAXIMUM	2861.6	-47.243	49.909	-0.5355	-103.31	-151.87
Pile N.	3	5	3	1	7	5

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2165.2
2	2195.7
3	2282.6
4	2069.8
5	2095.7
6	2203.1
7	2022.4
8	2048.1
9	2158.3
10	2002.7
11	2028.0

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							

12 2132.0

MINIMUM 2002.7
Pile N. 10
MAXIMUM 2282.6
Pile N. 3

* EFFECTS FOR laterally loaded PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.2492E-04	-3.2735E-06	-72.658	-115.28	-54.199	-17.197	-32.658	-5.2182	1562.1	7.8279E+06	7.8279E+06
x(M)	0.0000	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
2	-2.2492E-04	-3.4473E-06	-71.900	-119.54	-52.990	-17.530	-31.936	-5.2758	1590.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.120	6.6000	0.0000	0.0000	8.3600	6.1600	10.340	22.000	0.0000	0.0000
3	-2.2492E-04	-3.4050E-06	-75.616	-135.87	-59.320	-20.223	-35.531	-6.4077	1619.3	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.3800	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
4	-2.3236E-04	-3.4761E-06	-69.959	-104.34	-48.843	-14.996	-29.215	-4.2735	1505.6	7.8279E+06	7.8279E+06
x(M)	0.0000	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
5	-2.3236E-04	-3.6652E-06	-68.786	-107.45	-47.249	-15.116	-28.138	-4.2413	1534.2	7.8279E+06	7.8279E+06
x(M)	0.0000	10.560	6.8200	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
6	-2.3236E-04	-3.5437E-06	-75.186	-127.68	-56.191	-18.654	-33.850	-5.6620	1562.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
7	-2.3980E-04	-3.4913E-06	-71.792	-103.31	-49.860	-14.776	-29.760	-4.1811	1449.1	7.8279E+06	7.8279E+06
x(M)	0.0000	10.340	6.8200	0.0000	0.0000	8.8000	6.1600	10.560	22.000	0.0000	0.0000
8	-2.3980E-04	-3.6869E-06	-70.584	-106.44	-48.268	-14.919	-28.674	-4.1598	1477.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.560	6.8200	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
9	-2.3980E-04	-3.5559E-06	-77.417	-127.00	-57.704	-18.515	-34.756	-5.6034	1506.3	7.8279E+06	7.8279E+06
x(M)	0.0000	10.120	6.6000	0.0000	0.0000	8.3600	6.1600	10.340	22.000	0.0000	0.0000
10	-2.4724E-04	-3.4112E-06	-76.409	-107.64	-54.570	-15.674	-32.756	-4.5530	1392.6	7.8279E+06	7.8279E+06
x(M)	0.0000	10.340	6.6000	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
11	-2.4724E-04	-3.6050E-06	-75.069	-110.92	-52.857	-15.811	-31.633	-4.5309	1421.2	7.8279E+06	7.8279E+06
x(M)	0.0000	10.340	6.6000	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
12	-2.4724E-04	-3.5097E-06	-81.158	-130.08	-61.729	-19.124	-37.138	-5.8877	1449.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
Min.	-2.4724E-04	-3.6869E-06	-81.158	-135.87	-61.729	-20.223	-37.138	-6.4077	1392.6	7.8279E+06	7.8279E+06
Pile N.	10	8	12	3	12	3	12	3	10	1	1







* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	3.9835E-06	1.9476E-04	163.19	59.546	20.976	41.510	6.3961	25.291	2165.2	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	6.3800	0.0000	8.3600	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
2	4.0251E-06	2.0220E-04	160.90	61.364	20.550	42.446	6.2003	25.873	2195.7	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	6.6000	0.0000	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
3	3.8237E-06	2.0964E-04	172.71	67.304	22.801	49.915	7.2326	30.059	2282.6	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	6.3800	0.0000	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
4	4.3592E-06	1.9476E-04	155.10	55.614	18.962	35.820	5.4102	21.832	2069.8	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	6.6000	0.0000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
5	4.4234E-06	2.0220E-04	151.87	56.892	18.337	36.237	5.1532	21.995	2095.7	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	6.6000	0.0000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
6	4.1192E-06	2.0964E-04	169.44	64.529	21.713	45.450	6.6233	27.647	2203.1	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	6.3800	0.0000	8.3600	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
7	4.5338E-06	1.9476E-04	159.39	55.201	19.327	35.303	5.4814	21.494	2022.4	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	6.6000	0.0000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
8	4.5905E-06	2.0220E-04	156.15	56.469	18.685	35.741	5.2163	21.664	2048.1	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	6.6000	0.0000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
9	4.2720E-06	2.0964E-04	174.77	64.278	22.271	45.088	6.7735	27.439	2158.3	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	6.6000	0.0000	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
10	4.5772E-06	1.9476E-04	171.08	56.872	21.105	37.505	6.1549	22.900	2002.7	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	6.6000	0.0000	8.5800	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
11	4.6266E-06	2.0220E-04	167.67	58.287	20.450	37.983	5.8628	23.134	2028.0	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	6.6000	0.0000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
12	4.3342E-06	2.0964E-04	184.85	65.384	23.777	46.745	7.3226	28.372	2132.0	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	6.3800	0.0000	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
Max.	4.6266E-06	2.0964E-04	184.85	67.304	23.777	49.915	7.3226	30.059	2282.6	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	12	3	3	1	1

LOAD CASE : 3
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO P-FACTOR Y-FACTOR

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO		
IF28	01	E ZZ CL	VI0103 001	B	79 di 420		

1	0.7980	1.0000
2	0.7494	1.0000
3	0.8661	1.0000
4	0.5572	1.0000
5	0.4959	1.0000
6	0.6497	1.0000
7	0.5313	1.0000
8	0.4718	1.0000
9	0.6277	1.0000
10	0.5845	1.0000
11	0.5208	1.0000
12	0.6745	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 30016.0	HOR. LOAD Y, KN -423.388	HOR. LOAD Z, KN 416.808
MOMENT X, KN- M -115.299	MOMENT Y, KN- M 3505.32	MOMENT Z, KN- M -5392.26

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.29515E-03	HORIZONTAL Y, M -1.03632E-04	HORIZONTAL Z, M 1.67334E-04
ANGLE ROT. X,RAD -1.39223E-06	ANGLE ROT. Y,RAD 8.14984E-06	ANGLE ROT. Z,RAD -1.23655E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4058E-03	-9.4234E-05	1.6107E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
2	1.3502E-03	-9.4234E-05	1.6733E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
3	1.2945E-03	-9.4234E-05	1.7360E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
4	1.3691E-03	-1.0050E-04	1.6107E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
5	1.3135E-03	-1.0050E-04	1.6733E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
6	1.2579E-03	-1.0050E-04	1.7360E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
7	1.3325E-03	-1.0676E-04	1.6107E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
8	1.2768E-03	-1.0676E-04	1.6733E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
9	1.2212E-03	-1.0676E-04	1.7360E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
10	1.2958E-03	-1.1303E-04	1.6107E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
11	1.2401E-03	-1.1303E-04	1.6733E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
12	1.1845E-03	-1.1303E-04	1.7360E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
MINIMUM	1.1845E-03	-1.1303E-04	1.6107E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4058E-03	-9.4234E-05	1.7360E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2712.5	-36.570	37.471	-0.4511	-104.75	-130.55
2	2606.3	-35.644	38.002	-0.4511	-107.89	-128.74
3	2500.1	-37.828	42.631	-0.4511	-118.55	-132.98
4	2642.5	-33.113	31.420	-0.4511	-93.251	-125.48
5	2536.3	-31.623	31.101	-0.4511	-94.530	-122.34
6	2430.1	-35.219	37.009	-0.4511	-108.10	-129.81
7	2572.5	-33.933	30.710	-0.4511	-91.842	-128.98
8	2466.3	-32.375	30.373	-0.4511	-93.049	-125.66
9	2360.1	-36.283	36.396	-0.4511	-106.92	-133.83
10	2502.5	-36.753	32.161	-0.4511	-94.699	-136.64
11	2396.3	-35.089	31.842	-0.4511	-96.013	-133.17
12	2290.2	-38.958	37.691	-0.4511	-109.40	-141.11
MINIMUM	2290.2	-38.958	30.373	-0.4511	-118.55	-141.11
Pile N.	12	12	8	1	3	12
MAXIMUM	2712.5	-31.623	42.631	-0.4511	-91.842	-122.34
Pile N.	1	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

APPALTATORE:
Consorzio **Soci**
  

ITINERARIO NAPOLI – BARI

PROGETTAZIONE:
Mandatario **Mandanti**
  

RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO
 RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	80 di 420

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
1	1.4058E-03	-9.4234E-05	1.6107E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
2	1.3502E-03	-9.4234E-05	1.6733E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
3	1.2945E-03	-9.4234E-05	1.7360E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
4	1.3691E-03	-1.0050E-04	1.6107E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
5	1.3135E-03	-1.0050E-04	1.6733E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
6	1.2579E-03	-1.0050E-04	1.7360E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
7	1.3325E-03	-1.0676E-04	1.6107E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
8	1.2768E-03	-1.0676E-04	1.6733E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
9	1.2212E-03	-1.0676E-04	1.7360E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
10	1.2958E-03	-1.1303E-04	1.6107E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
11	1.2401E-03	-1.1303E-04	1.6733E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
12	1.1845E-03	-1.1303E-04	1.7360E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
MINIMUM	1.1845E-03	-1.1303E-04	1.6107E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4058E-03	-9.4234E-05	1.7360E-04	-1.3922E-06	8.1498E-06	-1.2366E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2712.5	-36.570	37.471	-0.4511	-104.75	-130.55
2	2606.3	-35.644	38.002	-0.4511	-107.89	-128.74
3	2500.1	-37.828	42.631	-0.4511	-118.55	-132.98
4	2642.5	-33.113	31.420	-0.4511	-93.251	-125.48
5	2536.3	-31.623	31.101	-0.4511	-94.530	-122.34
6	2430.1	-35.219	37.009	-0.4511	-108.10	-129.81
7	2572.5	-33.933	30.710	-0.4511	-91.842	-128.98
8	2466.3	-32.375	30.373	-0.4511	-93.049	-125.66
9	2360.1	-36.283	36.396	-0.4511	-106.92	-133.83
10	2502.5	-36.753	32.161	-0.4511	-94.699	-136.64
11	2396.3	-35.089	31.842	-0.4511	-96.013	-133.17
12	2290.2	-38.958	37.691	-0.4511	-109.40	-141.11
MINIMUM	2290.2	-38.958	30.373	-0.4511	-118.55	-141.11
Pile N.	12	12	8	1	3	12
MAXIMUM	2712.5	-31.623	42.631	-0.4511	-91.842	-122.34
Pile N.	1	5	3	1	7	5







PILE GROUP STRESS, KN/ M**2

1	2040.1
2	1981.8
3	1952.5
4	1967.2
5	1901.9
6	1885.0
7	1933.6
8	1867.6
9	1852.6
10	1917.9
11	1851.5
12	1834.8
MINIMUM	1834.8
Pile N.	12
MAXIMUM	2040.1
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	-9.9153E-05	-2.6886E-06	-39.473	-104.75	-36.575	-15.131	-21.486	-4.7126	1535.0	7.8279E+06	7.8279E+06
x(M)	0.8800	9.9000	6.8200	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
2	-9.9231E-05	-2.8366E-06	-38.966	-107.89	-35.648	-15.349	-20.886	-4.7097	1474.9	7.8279E+06	7.8279E+06
x(M)	0.8800	9.9000	6.8200	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
3	-9.9051E-05	-2.8533E-06	-40.123	-118.55	-37.833	-16.974	-5.3809	1414.8	7.8279E+06	7.8279E+06	7.8279E+06
x(M)	0.8800	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
4	-1.0562E-04	-2.8904E-06	-38.311	-93.251	-33.118	-12.866	-18.984	-3.7058	1495.4	7.8279E+06	7.8279E+06
x(M)	0.8800	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
5	-1.0576E-04	-3.0740E-06	-37.251	-94.530	-31.627	-12.702	-17.884	-3.5660	1435.3	7.8279E+06	7.8279E+06
x(M)	0.8800	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
6	-1.0544E-04	-3.0401E-06	-39.772	-108.10	-35.223	-14.965	-20.476	-4.4584	1375.2	7.8279E+06	7.8279E+06
x(M)	0.8800	10.120	6.8200	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
7	-1.1173E-04	-2.9129E-06	-39.835	-91.842	-33.938	-12.568	-19.382	-3.5823	1455.8	7.8279E+06	7.8279E+06
x(M)	0.8800	10.340	7.0400	0.0000	0.0000	8.8000	6.1600	10.560	22.000	0.0000	0.0000
8	-1.1187E-04	-3.1025E-06	-38.672	-93.049	-32.380	-12.408	-18.222	-3.4443	1395.7	7.8279E+06	7.8279E+06

<p>APPALTATORE:</p> <p>Consorzio Soci</p>   	<h2 style="margin: 0;">ITINERARIO NAPOLI – BARI</h2> <h3 style="margin: 0;">RADDOPPIO TRATTA APICE – ORSARA</h3> <h3 style="margin: 0;">I LOTTO FUNZIONALE APICE – HIRPINIA</h3>												
<p>PROGETTAZIONE:</p> <p>Mandatario Mandanti</p>   													
<p>PROGETTO ESECUTIVO</p> <p>RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B</p>													
<table> <tr> <td style="padding: 2px;">COMMESSA</td> <td style="padding: 2px;">LOTTO</td> <td style="padding: 2px;">CODIFICA</td> <td style="padding: 2px;">DOCUMENTO</td> <td style="padding: 2px;">REV.</td> <td style="padding: 2px;">FOGLIO</td> </tr> <tr> <td style="padding: 2px;">IF28</td> <td style="padding: 2px;">01</td> <td style="padding: 2px;">E ZZ CL</td> <td style="padding: 2px;">VI0103 001</td> <td style="padding: 2px;">B</td> <td style="padding: 2px;">81 di 420</td> </tr> </table>		COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	81 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	81 di 420								

x(M)	0.8800	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
9	-1.1152E-04	-3.0574E-06	-41.477	-106.92	-36.287	-14.742	-21.062	-4.3510	1335.6	7.8279E+06	7.8279E+06
x(M)	0.8800	10.120	6.8200	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
10	-1.1765E-04	-2.8619E-06	-42.741	-94.699	-36.758	-13.162	-21.229	-3.8273	1416.1	7.8279E+06	7.8279E+06
x(M)	0.8800	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
11	-1.1780E-04	-3.0420E-06	-41.581	-96.013	-35.094	-12.985	-20.025	-3.6825	1356.1	7.8279E+06	7.8279E+06
x(M)	0.8800	10.340	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
12	-1.1748E-04	-3.0175E-06	-44.266	-109.40	-38.962	-15.201	-22.758	-4.5722	1296.0	7.8279E+06	7.8279E+06
x(M)	0.6600	10.120	6.8200	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
Min.	-1.1780E-04	-3.1025E-06	-44.266	-118.55	-38.962	-16.974	-22.758	-5.3809	1296.0	7.8279E+06	7.8279E+06
Pile N.	11	8	12	3	12	3	12	3	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL.	DISPL.	MOMENT	MOMENT	SHEAR	SHEAR	SOIL REACT	SOIL REACT	TOTAL	FLEX. RIG.	FLEX. RIG.
	y-DIR	z-DIR	z-DIR	y-DIR	y-DIR	z-DIR	y-DIR	z-DIR	STRESS	z-DIR	y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	2.0512E-06	1.6107E-04	130.55	51.188	11.781	37.475	3.6916	22.661	2040.1	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
2	2.0732E-06	1.6733E-04	128.74	52.565	11.450	38.006	3.5345	23.033	1981.8	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
3	2.0118E-06	1.7360E-04	132.98	56.494	12.188	42.635	3.8845	25.629	1952.5	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
4	2.3188E-06	1.6107E-04	125.48	47.180	10.557	31.423	3.0573	19.076	1967.2	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	9.0200	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
5	2.3699E-06	1.6733E-04	122.34	47.720	9.9963	31.105	2.8266	18.773	1901.9	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
6	2.2524E-06	1.7360E-04	129.81	53.026	11.333	37.012	3.3914	22.475	1885.0	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.6000	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
7	2.4611E-06	1.6107E-04	128.98	46.625	10.863	30.713	3.1148	18.616	1933.6	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
8	2.5086E-06	1.6733E-04	125.66	47.098	10.254	30.377	2.8685	18.281	1867.6	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.8200	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
9	2.3841E-06	1.7360E-04	133.83	52.614	11.729	36.400	3.4826	22.100	1852.6	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
10	2.5409E-06	1.6107E-04	136.64	47.729	11.892	32.164	3.4867	19.547	1917.9	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
11	2.5929E-06	1.6733E-04	133.17	48.331	11.285	31.845	3.2224	19.264	1851.5	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
12	2.4718E-06	1.7360E-04	141.11	53.464	12.697	37.695	3.8374	22.883	1834.8	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.6000	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
Max.	2.5929E-06	1.7360E-04	141.11	56.494	12.697	42.635	3.8845	25.629	2040.1	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	3	3	1	1	1

LOAD CASE : 4
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS






GROUP NO	P-FACTOR	Y-FACTOR
1	0.8317	1.0000
2	0.7770	1.0000
3	0.8661	1.0000
4	0.5679	1.0000
5	0.4960	1.0000
6	0.6165	1.0000
7	0.5377	1.0000
8	0.4673	1.0000
9	0.5889	1.0000
10	0.5845	1.0000
11	0.5092	1.0000
12	0.6325	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
32474.9	-460.108	674.779
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-133.347	8240.99	-5512.60

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

APPALTATORE: Consorzio Soci   			ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   								
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B			COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 82 di 420

VERTICAL , M 1.40252E-03	HORIZONTAL Y, M -1.16778E-04	HORIZONTAL Z, M 2.85898E-04
ANGLE ROT. X,RAD -1.82300E-06	ANGLE ROT. Y,RAD 1.75089E-05	ANGLE ROT. Z,RAD -1.23623E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.5763E-03	-1.0447E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
2	1.5207E-03	-1.0447E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
3	1.4651E-03	-1.0447E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
4	1.4976E-03	-1.1268E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
5	1.4419E-03	-1.1268E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
6	1.3863E-03	-1.1268E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
7	1.4188E-03	-1.2088E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
8	1.3631E-03	-1.2088E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
9	1.3075E-03	-1.2088E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
10	1.3400E-03	-1.2908E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
11	1.2843E-03	-1.2908E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
12	1.2287E-03	-1.2908E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
MINIMUM	1.2287E-03	-1.2908E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5763E-03	-1.0447E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3038.0	-40.069	62.943	-0.5907	-168.99	-140.60
2	2931.8	-38.956	63.043	-0.5907	-172.06	-138.45
3	2825.6	-40.755	68.970	-0.5907	-185.72	-141.92
4	2887.6	-36.235	51.972	-0.5907	-148.39	-135.47
5	2781.4	-34.329	50.448	-0.5907	-147.91	-131.46
6	2675.3	-37.462	58.166	-0.5907	-165.64	-137.99
7	2737.2	-37.344	50.595	-0.5907	-145.68	-140.12
8	2631.1	-35.307	49.009	-0.5907	-144.99	-135.80
9	2524.9	-38.745	56.869	-0.5907	-163.12	-143.02
10	2586.9	-40.592	52.733	-0.5907	-149.85	-149.22
11	2480.7	-38.386	51.111	-0.5907	-149.21	-144.62
12	2374.5	-41.928	58.921	-0.5907	-167.06	-151.94
MINIMUM	2374.5	-41.928	49.009	-0.5907	-185.72	-151.94
Pile N.	12	12	8	1	3	12
MAXIMUM	3038.0	-34.329	68.970	-0.5907	-144.99	-131.46
Pile N.	1	5	3	1	8	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.5763E-03	-1.0447E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
2	1.5207E-03	-1.0447E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
3	1.4651E-03	-1.0447E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
4	1.4976E-03	-1.1268E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
5	1.4419E-03	-1.1268E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
6	1.3863E-03	-1.1268E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
7	1.4188E-03	-1.2088E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
8	1.3631E-03	-1.2088E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
9	1.3075E-03	-1.2088E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
10	1.3400E-03	-1.2908E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
11	1.2843E-03	-1.2908E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
12	1.2287E-03	-1.2908E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
MINIMUM	1.2287E-03	-1.2908E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5763E-03	-1.0447E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3038.0	-40.069	62.943	-0.5907	-168.99	-140.60
2	2931.8	-38.956	63.043	-0.5907	-172.06	-138.45
3	2825.6	-40.755	68.970	-0.5907	-185.72	-141.92

<p>APPALDATTORE:</p> <p>Consorzio Soci</p> <p> </p>	<p>ITINERARIO NAPOLI – BARI</p> <p>RADDOPPIO TRATTA APICE – ORSARA</p> <p>I LOTTO FUNZIONALE APICE – HIRPINIA</p>
<p>PROGETTAZIONE:</p> <p>Mandataria Mandanti</p> <p> </p>	
<p>PROGETTO ESECUTIVO</p> <p>RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B</p>	

4	2887.6	-36.235	51.972	-0.5907	-148.39	-135.47
5	2781.4	-34.329	50.448	-0.5907	-147.91	-131.46
6	2675.3	-37.462	58.166	-0.5907	-165.64	-137.99
7	2737.2	-37.344	50.595	-0.5907	-145.68	-140.12
8	2631.1	-35.307	49.009	-0.5907	-144.99	-135.80
9	2524.9	-38.745	56.869	-0.5907	-163.12	-143.02
10	2586.9	-40.592	52.733	-0.5907	-149.85	-149.22
11	2480.7	-38.386	51.111	-0.5907	-149.21	-144.62
12	2374.5	-41.928	58.921	-0.5907	-167.06	-151.94
MINIMUM	2374.5	-41.928	49.009	-0.5907	-185.72	-151.94
Pile N.	12	12	8	1	3	12
MAXIMUM	3038.0	-34.329	68.970	-0.5907	-144.99	-131.46
Pile N.	1	5	3	1	8	5

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2382.6
2	2325.6
3	2304.4
4	2240.4
5	2171.2
6	2164.5
7	2159.0
8	2088.4
9	2083.5
10	2102.1
11	2030.9
12	2025.2
MINIMUM	2025.2
Pile N.	12
MAXIMUM	2382.6
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL.		MOMENT		SHEAR		SOIL REACT		TOTAL	FLEX. RIG.	
	y-DIR	z-DIR	z-DIR	y-DIR	y-DIR	z-DIR	y-DIR	z-DIR	STRESS	z-DIR	y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.0894E-04	-4.4970E-06	-43.305	-168.99	-40.075	-25.971	-23.598	-8.1497	1719.1	7.8279E+06	7.8279E+06
x(M)	0.8800	9.9000	6.6000	0.0000	0.0000	8.1400	6.1600	10.120	22.000	0.0000	0.0000
2	-1.0903E-04	-4.7235E-06	-42.733	-172.06	-38.961	-26.073	-22.897	-8.0690	1659.1	7.8279E+06	7.8279E+06
x(M)	0.8800	9.9000	6.8200	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
3	-1.0890E-04	-4.7490E-06	-43.711	-185.72	-40.761	-28.184	-24.017	-8.9278	1599.0	7.8279E+06	7.8279E+06
x(M)	0.6600	9.6000	6.6000	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
4	-1.1735E-04	-4.8716E-06	-42.308	-148.39	-36.241	-21.933	-20.873	-6.3334	1634.0	7.8279E+06	7.8279E+06
x(M)	0.8800	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
5	-1.1752E-04	-5.1512E-06	-40.982	-147.91	-34.334	-21.245	-19.478	-5.9607	1574.0	7.8279E+06	7.8279E+06
x(M)	0.8800	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
6	-1.1724E-04	-5.1028E-06	-43.210	-165.64	-37.467	-24.248	-7.1269	-1513.9	1513.9	7.8279E+06	7.8279E+06
x(M)	0.8800	10.120	6.8200	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
7	-1.2534E-04	-4.9243E-06	-44.341	-145.68	-37.350	-21.369	-21.425	-6.1013	1549.0	7.8279E+06	7.8279E+06
x(M)	0.6600	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
8	-1.2552E-04	-5.2134E-06	-42.841	-144.99	-35.312	-20.670	-19.918	-5.7226	1488.9	7.8279E+06	7.8279E+06
x(M)	0.8800	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
9	-1.2527E-04	-5.1432E-06	-45.343	-163.12	-38.750	-23.755	-22.427	-6.9100	1428.8	7.8279E+06	7.8279E+06
x(M)	0.6600	10.340	6.8200	0.0000	0.0000	8.1400	6.1600	10.560	22.000	0.0000	0.0000
10	-1.3331E-04	-4.8380E-06	-47.888	-149.85	-40.597	-22.222	-23.513	-6.4526	1463.9	7.8279E+06	7.8279E+06
x(M)	0.6600	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
11	-1.3343E-04	-5.1237E-06	-46.298	-149.21	-38.391	-21.490	-21.922	-6.0621	1403.8	7.8279E+06	7.8279E+06
x(M)	0.6600	10.340	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
12	-1.3324E-04	-5.0800E-06	-48.833	-167.06	-41.933	-24.514	-24.443	-7.2559	1343.7	7.8279E+06	7.8279E+06
x(M)	0.6600	10.120	6.8200	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
Min. Pile N.	-1.3343E-04	-5.2134E-06	-48.833	-185.72	-41.933	-28.184	-24.443	-8.9278	1343.7	7.8279E+06	7.8279E+06
	11	8	12	3	12	3	12	3	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL.		MOMENT		SHEAR		SOIL REACT		TOTAL	FLEX. RIG.	
	y-DIR	z-DIR	z-DIR	y-DIR	y-DIR	z-DIR	y-DIR	z-DIR	STRESS	z-DIR	y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	2.2146E-06	2.7769E-04	140.60	87.319	13.048	62.951	4.1240	38.093	2382.6	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
2	2.2465E-06	2.8590E-04	138.45	88.825	12.673	63.050	3.9462	38.299	2325.6	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
3	2.1908E-06	2.9410E-04	141.92	93.800	13.261	68.978	4.2247	41.573	2304.4	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
4	2.5473E-06	2.7769E-04	135.47	80.107	11.701	51.978	3.4091	31.791	2240.4	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	9.0200	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
5	2.6096E-06	2.8590E-04	131.46	80.001	10.998	50.454	3.1088	30.705	2171.2	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
6	2.5058E-06	2.9410E-04	137.99	86.960	12.169	58.173	3.6014	35.530	2164.5	7.8279E+06	7.8279E+06

APPALTATORE: Consorzio Soci 			ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti 								
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B								

x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
7	2.7255E-06	2.7769E-04	140.12	79.065	12.120	50.601	3.4810	30.914	2159.0	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
8	2.7926E-06	2.8590E-04	135.80	78.768	11.327	49.014	3.1615	29.742	2088.4	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
9	2.6867E-06	2.9410E-04	143.02	86.050	12.634	56.875	3.7076	34.728	2083.5	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
10	2.8472E-06	2.7769E-04	149.22	80.647	13.317	52.738	3.9011	32.263	2102.1	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
11	2.9178E-06	2.8590E-04	144.62	80.533	12.498	51.116	3.5508	31.136	2030.9	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
12	2.7996E-06	2.9410E-04	151.94	87.455	13.817	58.926	4.1063	35.984	2025.2	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.6000	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
Max.	2.9178E-06	2.9410E-04	151.94	93.800	13.817	68.978	4.2247	41.573	2382.6	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	3	3	1	1	1

LOAD CASE : 5
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8587	1.0000
2	0.7992	1.0000
3	0.8661	1.0000
4	0.5767	1.0000
5	0.4961	1.0000
6	0.5874	1.0000
7	0.5430	1.0000
8	0.4636	1.0000
9	0.5544	1.0000
10	0.5845	1.0000
11	0.4993	1.0000
12	0.5953	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
28236.4	-276.510	531.740
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-124.067	6088.16	-6374.80

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.21745E-03	-4.01295E-05	2.23818E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-1.56856E-06	1.31197E-05	-1.68434E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.3818E-03	-2.9542E-05	2.1676E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
2	1.3060E-03	-2.9542E-05	2.2382E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
3	1.2302E-03	-2.9542E-05	2.3088E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
4	1.3228E-03	-3.6600E-05	2.1676E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
5	1.2470E-03	-3.6600E-05	2.2382E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
6	1.1712E-03	-3.6600E-05	2.3088E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
7	1.2637E-03	-4.3659E-05	2.1676E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
8	1.1879E-03	-4.3659E-05	2.2382E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
9	1.1121E-03	-4.3659E-05	2.3088E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
10	1.2047E-03	-5.0717E-05	2.1676E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
11	1.1289E-03	-5.0717E-05	2.2382E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
12	1.0531E-03	-5.0717E-05	2.3088E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
MINIMUM	1.0531E-03	-5.0717E-05	2.1676E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
Pile N.	12	10	1	1	1	1

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	85 di 420

MAXIMUM	1.3818E-03	-2.9542E-05	2.3088E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2666.7	-23.132	50.429	-0.5082	-135.60	-94.543
2	2522.0	-22.562	50.578	-0.5082	-138.37	-93.379
3	2377.4	-23.203	54.705	-0.5082	-148.35	-94.689
4	2554.0	-21.868	41.314	-0.5082	-118.55	-93.853
5	2409.4	-20.775	39.949	-0.5082	-118.03	-91.438
6	2264.7	-22.010	45.088	-0.5082	-130.37	-94.162
7	2441.3	-23.058	40.112	-0.5082	-116.19	-98.304
8	2296.7	-21.829	38.659	-0.5082	-115.41	-95.575
9	2152.0	-23.228	43.834	-0.5082	-127.91	-98.678
10	2328.7	-25.352	41.598	-0.5082	-119.09	-105.15
11	2184.0	-23.972	40.082	-0.5082	-118.28	-102.15
12	2039.4	-25.520	45.391	-0.5082	-130.95	-105.51
MINIMUM	2039.4	-25.520	38.659	-0.5082	-148.35	-105.51
Pile N.	12	12	8	1	3	12
MAXIMUM	2666.7	-20.775	54.705	-0.5082	-115.41	-91.438
Pile N.	1	5	3	1	8	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.3818E-03	-2.9542E-05	2.1676E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
2	1.3060E-03	-2.9542E-05	2.2382E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
3	1.2302E-03	-2.9542E-05	2.3088E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
4	1.3228E-03	-3.6600E-05	2.1676E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
5	1.2470E-03	-3.6600E-05	2.2382E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
6	1.1712E-03	-3.6600E-05	2.3088E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
7	1.2637E-03	-4.3659E-05	2.1676E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
8	1.1879E-03	-4.3659E-05	2.2382E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
9	1.1121E-03	-4.3659E-05	2.3088E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
10	1.2047E-03	-5.0717E-05	2.1676E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
11	1.1289E-03	-5.0717E-05	2.2382E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
12	1.0531E-03	-5.0717E-05	2.3088E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
MINIMUM	1.0531E-03	-5.0717E-05	2.1676E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3818E-03	-2.9542E-05	2.3088E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2666.7	-23.132	50.429	-0.5082	-135.60	-94.543
2	2522.0	-22.562	50.578	-0.5082	-138.37	-93.379
3	2377.4	-23.203	54.705	-0.5082	-148.35	-94.689
4	2554.0	-21.868	41.314	-0.5082	-118.55	-93.853
5	2409.4	-20.775	39.949	-0.5082	-118.03	-91.438
6	2264.7	-22.010	45.088	-0.5082	-130.37	-94.162
7	2441.3	-23.058	40.112	-0.5082	-116.19	-98.304
8	2296.7	-21.829	38.659	-0.5082	-115.41	-95.575
9	2152.0	-23.228	43.834	-0.5082	-127.91	-98.678
10	2328.7	-25.352	41.598	-0.5082	-119.09	-105.15
11	2184.0	-23.972	40.082	-0.5082	-118.28	-102.15
12	2039.4	-25.520	45.391	-0.5082	-130.95	-105.51
MINIMUM	2039.4	-25.520	38.659	-0.5082	-148.35	-105.51
Pile N.	12	8	1	3	12	12
MAXIMUM	2666.7	-20.775	54.705	-0.5082	-115.41	-91.438
Pile N.	1	5	3	1	8	5

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2007.9
2	1931.0
3	1876.5
4	1901.6
5	1814.0
6	1766.9
7	1840.9
8	1751.9
9	1705.4
10	1797.2
11	1707.6
12	1661.6

APPALTATORE: Consorzio HirpiniaAV Soci salini impregilo ASTALDI		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandatario ROKSOIL Mandanti NETENGINEERING Alpina		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 86 di 420

MINIMUM 1661.6
Pile N. 12
MAXIMUM 2007.9
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-4.3094E-05	-3.4999E-06	-20.520	-135.60	-23.136	-20.656	-13.386	-6.5297	1509.0	7.8279E+06	7.8279E+06
x(M)	1.7600	9.6800	7.0400	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
2	-4.3261E-05	-3.6878E-06	-20.245	-138.37	-22.566	-20.744	-12.971	-6.4610	1427.2	7.8279E+06	7.8279E+06
x(M)	1.7600	9.9000	7.0400	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
3	-4.3073E-05	-3.7416E-06	-20.551	-148.35	-23.206	-22.218	-13.435	-7.0391	1345.3	7.8279E+06	7.8279E+06
x(M)	1.7600	9.6800	7.0400	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
4	-5.0150E-05	-3.8037E-06	-21.019	-118.55	-21.872	-17.312	-12.126	-5.0154	1445.3	7.8279E+06	7.8279E+06
x(M)	1.7600	10.340	7.2600	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
5	-5.0505E-05	-4.0481E-06	-20.278	-118.03	-20.778	-16.706	-11.241	-4.6881	1363.4	7.8279E+06	7.8279E+06
x(M)	1.7600	10.560	7.2600	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
6	-5.0105E-05	-4.0568E-06	-21.103	-130.37	-22.013	-18.711	-12.237	-5.4420	1281.6	7.8279E+06	7.8279E+06
x(M)	1.7600	10.340	7.2600	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
7	-5.6462E-05	-3.8506E-06	-22.885	-116.19	-23.061	-16.825	-12.736	-4.8151	1381.5	7.8279E+06	7.8279E+06
x(M)	1.7600	10.340	7.2600	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
8	-5.6865E-05	-4.1017E-06	-22.007	-115.41	-21.832	-16.188	-11.743	-4.4734	1299.7	7.8279E+06	7.8279E+06
x(M)	1.7600	10.560	7.2600	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
9	-5.6407E-05	-4.1073E-06	-22.991	-127.91	-23.231	-18.209	-12.870	-5.2359	1217.8	7.8279E+06	7.8279E+06
x(M)	1.7600	10.340	7.2600	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
10	-6.2642E-05	-3.7910E-06	-25.485	-119.09	-25.355	-17.418	-14.218	-5.0592	1317.8	7.8279E+06	7.8279E+06
x(M)	1.5400	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
11	-6.2993E-05	-4.0416E-06	-24.554	-118.28	-23.975	-16.753	-13.132	-4.7076	1235.9	7.8279E+06	7.8279E+06
x(M)	1.5400	10.560	7.2600	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
12	-6.2600E-05	-4.0431E-06	-25.602	-130.95	-25.523	-18.823	-14.346	-5.4879	1154.1	7.8279E+06	7.8279E+06
x(M)	1.5400	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
Min.	-6.2993E-05	-4.1073E-06	-25.602	-148.35	-25.523	-22.218	-14.346	-7.0391	1154.1	7.8279E+06	7.8279E+06
Pile N.	11	9	12	3	12	3	12	3	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.0234E-06	2.1676E-04	94.543	68.897	6.2675	50.434	2.0047	30.423	2007.9	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.3800	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
2	1.0404E-06	2.2382E-04	93.379	70.262	6.0829	50.583	1.9177	30.649	1931.0	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.3800	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
3	1.0208E-06	2.3088E-04	94.689	73.954	6.2877	54.710	2.0144	32.951	1876.5	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.3800	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
4	1.2436E-06	2.1676E-04	93.853	63.009	5.8724	41.318	1.7254	25.237	1901.6	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
5	1.2779E-06	2.2382E-04	91.438	62.882	5.4790	39.953	1.5589	24.268	1814.0	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.6000	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
6	1.2395E-06	2.3088E-04	94.162	67.808	5.9165	45.093	1.7472	27.491	1766.9	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
7	1.3876E-06	2.1676E-04	98.304	62.109	6.3082	40.116	1.8240	24.474	1840.9	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
8	1.4289E-06	2.2382E-04	95.575	61.770	5.8601	38.663	1.6411	23.402	1751.9	7.8279E+06	7.8279E+06
x(M)	11.220	0.0000	0.0000	6.6000	9.4600	0.0000	11.440	6.1600	0.0000	0.0000	0.0000
9	1.3838E-06	2.3088E-04	98.678	66.879	6.3643	43.838	1.8509	26.697	1705.4	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
10	1.5035E-06	2.1676E-04	105.15	63.208	7.1336	41.602	2.0986	25.412	1797.2	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
11	1.5475E-06	2.2382E-04	102.15	62.985	6.6387	40.086	1.8876	24.353	1707.6	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.6000	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
12	1.4971E-06	2.3088E-04	105.51	68.017	7.1944	45.395	2.1229	27.677	1661.6	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
Max.	1.5475E-06	2.3088E-04	105.51	73.954	7.1944	54.710	2.1229	32.951	2007.9	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	12	3	1	1	1

LOAD CASE : 6
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.6951	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

3	0.7311	1.0000
4	0.7076	1.0000
5	0.4956	1.0000
6	0.5366	1.0000
7	0.6945	1.0000
8	0.4800	1.0000
9	0.5192	1.0000
10	0.7465	1.0000
11	0.5417	1.0000
12	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 32738.9	HOR. LOAD Y, KN 460.108	HOR. LOAD Z, KN 674.779
MOMENT X, KN- M -119.957	MOMENT Y, KN- M 8240.99	MOMENT Z, KN- M -13162.7

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.41405E-03	HORIZONTAL Y, M 3.00514E-04	HORIZONTAL Z, M 2.84169E-04
ANGLE ROT. X, RAD -1.12390E-06	ANGLE ROT. Y, RAD 1.74983E-05	ANGLE ROT. Z, RAD -4.50558E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.7349E-03	3.0810E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
2	1.5322E-03	3.0810E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
3	1.3294E-03	3.0810E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
4	1.6562E-03	3.0304E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
5	1.4534E-03	3.0304E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
6	1.2507E-03	3.0304E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
7	1.5774E-03	2.9799E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
8	1.3747E-03	2.9799E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
9	1.1719E-03	2.9799E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
10	1.4987E-03	2.9293E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
11	1.2959E-03	2.9293E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
12	1.0932E-03	2.9293E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
MINIMUM	1.0932E-03	2.9293E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.7349E-03	3.0810E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3340.6	48.864	64.664	-0.3641	-172.65	85.395
2	2953.6	42.692	59.167	-0.3641	-164.30	74.590
3	2566.7	44.052	62.041	-0.3641	-171.35	76.963
4	3190.3	41.832	58.368	-0.3641	-161.11	71.249
5	2803.4	33.584	50.051	-0.3641	-146.61	56.099
6	2416.4	35.287	53.219	-0.3641	-154.45	59.267
7	3040.0	40.048	57.828	-0.3641	-160.09	66.231
8	2653.1	31.824	49.280	-0.3641	-145.05	51.085
9	2266.2	33.434	52.372	-0.3641	-152.76	54.091
10	2889.8	40.550	59.978	-0.3641	-164.08	65.244
11	2502.8	33.150	52.293	-0.3641	-151.05	51.886
12	2115.9	34.791	55.519	-0.3641	-158.93	54.873
MINIMUM	2115.9	31.824	49.280	-0.3641	-172.65	51.085
Pile N.	12	8	8	1	1	8
MAXIMUM	3340.6	48.864	64.664	-0.3641	-145.05	85.395
Pile N.	1	1	1	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	88 di 420

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.7349E-03	3.0810E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
2	1.5322E-03	3.0810E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
3	1.3294E-03	3.0810E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
4	1.6562E-03	3.0304E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
5	1.4534E-03	3.0304E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
6	1.2507E-03	3.0304E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
7	1.5774E-03	2.9799E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
8	1.3747E-03	2.9799E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
9	1.1719E-03	2.9799E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
10	1.4987E-03	2.9293E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
11	1.2959E-03	2.9293E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
12	1.0932E-03	2.9293E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
MINIMUM	1.0932E-03	2.9293E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.7349E-03	3.0810E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3340.6	48.864	64.664	-0.3641	-172.65	85.395
2	2953.6	42.692	59.167	-0.3641	-164.30	74.590
3	2566.7	44.052	62.041	-0.3641	-171.35	76.963
4	3190.3	41.832	58.368	-0.3641	-161.11	71.249
5	2803.4	33.584	50.051	-0.3641	-146.61	56.099
6	2416.4	35.287	53.219	-0.3641	-154.45	59.267
7	3040.0	40.048	57.828	-0.3641	-160.09	66.231
8	2653.1	31.824	49.280	-0.3641	-145.05	51.085
9	2266.2	33.434	52.372	-0.3641	-152.76	54.091
10	2889.8	40.550	59.978	-0.3641	-164.08	65.244
11	2502.8	33.150	52.293	-0.3641	-151.05	51.886
12	2115.9	34.791	55.519	-0.3641	-158.93	54.873
MINIMUM	2115.9	31.824	49.280	-0.3641	-172.65	51.085
Pile N.	12	8	8	1	1	8
MAXIMUM	3340.6	48.864	64.664	-0.3641	-145.05	85.395
Pile N.	1	1	1	1	8	1

PILE GROUP STRESS, KN/ M**2

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2471.7
2	2216.0
3	2019.4
4	2337.0
5	2060.2
6	1866.7
7	2243.2
8	1965.5
9	1771.5
10	2168.2
11	1898.3
12	1704.8
MINIMUM	1704.8
Pile N.	12
MAXIMUM	2471.7
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-4.3889E-06	-4.4878E-06	-85.395	-172.65	-25.540	-26.616	-8.0360	-8.4297	1890.4	7.8279E+06	7.8279E+06
x(M)	9.4600	9.6800	0.0000	7.9200	8.1400	9.6800	9.9000	9.6800	22.000	0.0000	0.0000
2	-4.6125E-06	-4.7942E-06	-74.590	-164.30	-23.233	-24.659	-6.9557	-7.4350	1671.4	7.8279E+06	7.8279E+06
x(M)	9.6800	10.120	0.0000	8.1400	8.3600	9.9000	10.340	9.9000	22.000	0.0000	0.0000
3	-4.5646E-06	-4.8402E-06	-76.963	-171.35	-23.730	-25.720	-7.1981	-7.8428	1452.5	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	8.1400	8.3600	9.9000	10.120	9.9000	22.000	0.0000	0.0000
4	-4.5094E-06	-4.6823E-06	-71.249	-161.11	-22.937	-24.376	-6.9009	-7.3701	1805.3	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	8.1400	8.3600	9.9000	10.120	9.9000	22.000	0.0000	0.0000
5	-4.8671E-06	-5.1183E-06	-56.099	-146.61	-19.578	-21.097	-5.4441	-5.9180	1586.4	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	8.3600	8.8000	10.340	10.780	10.780	22.000	0.0000	0.0000
6	-4.7809E-06	-5.1486E-06	-59.267	-154.45	-20.285	-22.321	-5.7433	-6.3715	1367.4	7.8279E+06	7.8279E+06
x(M)	10.120	10.340	0.0000	8.3600	8.5800	10.340	10.560	10.560	22.000	0.0000	0.0000
7	-4.4377E-06	-4.7017E-06	-66.231	-160.09	-22.284	-24.166	-6.6726	-7.2839	1720.3	7.8279E+06	7.8279E+06
x(M)	9.6800	10.120	0.0000	8.1400	8.3600	9.9000	10.340	9.9000	22.000	0.0000	0.0000
8	-4.8022E-06	-5.1531E-06	-51.085	-145.05	-18.901	-20.791	-5.2141	-5.7916	1501.3	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	8.3600	8.8000	10.340	10.780	10.780	22.000	0.0000	0.0000
9	-4.7232E-06	-5.1745E-06	-54.091	-152.76	-19.581	-21.958	-5.5030	-6.2209	1282.4	7.8279E+06	7.8279E+06

APPALTATORE: Consorzio HirpiniaAV Soci salini impregilo ASTALDI		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA			
PROGETTAZIONE: Mandataria ROKSOIL Mandanti NETENGINEERING Alpina					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	89 di 420

x(M)	10.120	10.340	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
10	-4.2778E-06	-4.6394E-06	-65.244	-164.08	-22.467	-24.959	-6.8512	-7.6511	1635.3	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	0.0000	8.1400	8.3600	9.9000	10.120	22.000	0.0000	0.0000
11	-4.5811E-06	-5.0426E-06	-51.886	-151.05	-19.532	-21.995	-5.5378	-6.2909	1416.3	7.8279E+06	7.8279E+06
x(M)	9.9000	10.340	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
12	-4.5167E-06	-5.0581E-06	-54.873	-158.93	-20.201	-23.240	-5.8286	-6.7502	1197.4	7.8279E+06	7.8279E+06
x(M)	9.9000	10.340	0.0000	0.0000	8.1400	8.5800	10.120	10.560	22.000	0.0000	0.0000
Min.	-4.8671E-06	-5.1745E-06	-85.395	-172.65	-25.540	-26.616	-8.0360	-8.4297	1197.4	7.8279E+06	7.8279E+06
Pile N.	5	9	1	1	1	1	1	1	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	3.0810E-04	2.7911E-04	85.591	88.569	48.868	64.672	30.248	39.009	2471.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
2	3.0810E-04	2.8417E-04	81.888	85.986	42.695	59.173	27.393	36.116	2216.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
3	3.0810E-04	2.8923E-04	82.753	88.712	44.055	62.047	28.057	37.785	2019.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
4	3.0304E-04	2.7911E-04	80.569	84.675	41.835	58.375	26.833	35.628	2337.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
5	3.0304E-04	2.8417E-04	74.400	79.460	33.586	50.056	22.389	30.469	2060.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
6	3.0304E-04	2.8923E-04	75.795	82.636	35.289	53.224	23.366	32.459	1866.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
7	2.9799E-04	2.7911E-04	78.633	84.296	40.051	57.835	25.815	35.317	2243.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
8	2.9799E-04	2.8417E-04	72.404	78.804	31.826	49.286	21.353	29.955	1965.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
9	2.9799E-04	2.8923E-04	73.744	81.962	33.436	52.377	22.284	31.908	1771.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
10	2.9293E-04	2.7911E-04	78.145	85.738	40.552	59.984	25.897	36.528	2168.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
11	2.9293E-04	2.8417E-04	72.979	81.241	33.152	52.299	22.097	31.925	1898.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
12	2.9293E-04	2.8923E-04	74.225	84.341	34.793	55.524	22.994	33.913	1704.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max.	3.0810E-04	2.8923E-04	85.591	88.712	48.868	64.672	30.248	39.009	2471.7	7.8279E+06	7.8279E+06
Pile N.	1	3	1	3	1	1	1	1	1	1	1

LOAD CASE : 7
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8317	1.0000
2	0.7770	1.0000
3	0.8661	1.0000
4	0.5679	1.0000
5	0.4960	1.0000
6	0.6165	1.0000
7	0.5377	1.0000
8	0.4673	1.0000
9	0.5889	1.0000
10	0.5845	1.0000
11	0.5092	1.0000
12	0.6325	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
32474.9	-460.108	674.779
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-133.347	8240.99	-5512.04

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
-------------	-----------------	-----------------

APPALTATORE:

Consorzio



Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandataria



Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA

IF28

LOTTO

01

CODIFICA

E ZZ CL

DOCUMENTO

VI0103 001

REV.

B

FOGLIO

90 di 420

1.40252E-03 -1.16783E-04 2.85898E-04

ANGLE ROT. X,RAD ANGLE ROT. Y,RAD ANGLE ROT. Z,RAD

-1.82298E-06 1.75089E-05 -1.23606E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.5763E-03	-1.0448E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
2	1.5207E-03	-1.0448E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
3	1.4651E-03	-1.0448E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
4	1.4975E-03	-1.1268E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
5	1.4419E-03	-1.1268E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
6	1.3863E-03	-1.1268E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
7	1.4188E-03	-1.2089E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
8	1.3631E-03	-1.2089E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
9	1.3075E-03	-1.2089E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
10	1.3400E-03	-1.2909E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
11	1.2843E-03	-1.2909E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
12	1.2287E-03	-1.2909E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
MINIMUM	1.2287E-03	-1.2909E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5763E-03	-1.0448E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3037.9	-40.069	62.943	-0.5907	-168.99	-140.60
2	2931.8	-38.956	63.043	-0.5907	-172.06	-138.45
3	2825.6	-40.756	68.970	-0.5907	-185.72	-141.91
4	2887.6	-36.235	51.972	-0.5907	-148.39	-135.47
5	2781.4	-34.329	50.448	-0.5907	-147.91	-131.46
6	2675.3	-37.462	58.167	-0.5907	-165.64	-137.98
7	2737.2	-37.344	50.595	-0.5907	-145.68	-140.12
8	2631.1	-35.307	49.009	-0.5907	-144.99	-135.80
9	2524.9	-38.745	56.869	-0.5907	-163.12	-143.02
10	2586.8	-40.591	52.733	-0.5907	-149.85	-149.22
11	2480.7	-38.386	51.111	-0.5907	-149.21	-144.62
12	2374.5	-41.928	58.921	-0.5907	-167.06	-151.94
MINIMUM	2374.5	-41.928	49.009	-0.5907	-185.72	-151.94
Pile N.	12	12	8	1	3	12
MAXIMUM	3037.9	-34.329	68.970	-0.5907	-144.99	-131.46
Pile N.	1	5	3	1	8	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.5763E-03	-1.0448E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
2	1.5207E-03	-1.0448E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
3	1.4651E-03	-1.0448E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
4	1.4975E-03	-1.1268E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
5	1.4419E-03	-1.1268E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
6	1.3863E-03	-1.1268E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
7	1.4188E-03	-1.2089E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
8	1.3631E-03	-1.2089E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
9	1.3075E-03	-1.2089E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
10	1.3400E-03	-1.2909E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
11	1.2843E-03	-1.2909E-04	2.8590E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
12	1.2287E-03	-1.2909E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
MINIMUM	1.2287E-03	-1.2909E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5763E-03	-1.0448E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3037.9	-40.069	62.943	-0.5907	-168.99	-140.60
2	2931.8	-38.956	63.043	-0.5907	-172.06	-138.45
3	2825.6	-40.756	68.970	-0.5907	-185.72	-141.91
4	2887.6	-36.235	51.972	-0.5907	-148.39	-135.47
5	2781.4	-34.329	50.448	-0.5907	-147.91	-131.46

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria Mandanti 													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 15%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 15%;">REV.</td> <td style="width: 15%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>91 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	91 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	91 di 420								

6	2675.3	-37.462	58.167	-0.5907	-165.64	-137.98
7	2737.2	-37.344	50.595	-0.5907	-145.68	-140.12
8	2631.1	-35.307	49.009	-0.5907	-144.99	-135.80
9	2524.9	-38.745	56.869	-0.5907	-163.12	-143.02
10	2586.8	-40.591	52.733	-0.5907	-149.85	-149.22
11	2480.7	-38.386	51.111	-0.5907	-149.21	-144.62
12	2374.5	-41.928	58.921	-0.5907	-167.06	-151.94
MINIMUM	2374.5	-41.928	49.009	-0.5907	-185.72	-151.94
Pile N.	12	12	8	1	3	12
MAXIMUM	3037.9	-34.329	68.970	-0.5907	-144.99	-131.46
Pile N.	1	5	3	1	8	5

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2382.6
2	2325.6
3	2304.4
4	2240.4
5	2171.2
6	2164.5
7	2159.0
8	2088.4
9	2083.5
10	2102.1
11	2030.9
12	2025.2
MINIMUM	2025.2
Pile N.	12
MAXIMUM	2382.6
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL.		MOMENT		SHEAR		SOIL REACT		TOTAL STRESS KN/ M**2	FLEX. RIG.	
	y- DIR M	z- DIR M	y- DIR KN- M	z- DIR KN- M	y- DIR KN	z- DIR KN	y- DIR KN/ M	z- DIR KN/ M		z- DIR KN- M**2	y- DIR KN- M**2
1	-1.0894E-04	-4.4970E-06	-43.306	-168.99	-40.075	-25.971	-23.598	-8.1497	1719.1	7.8279E+06	7.8279E+06
x (M)	0.8800	9.9000	6.6000	0.0000	0.0000	8.1400	6.1600	10.120	22.000	0.0000	0.0000
2	-1.0904E-04	-4.7235E-06	-42.734	-172.06	-38.961	-26.073	-22.897	-8.0690	1659.1	7.8279E+06	7.8279E+06
x (M)	0.8800	9.9000	6.8200	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
3	-1.0891E-04	-4.7490E-06	-43.712	-185.72	-40.761	-28.184	-24.017	-8.9278	1599.0	7.8279E+06	7.8279E+06
x (M)	0.6600	9.6000	6.6000	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
4	-1.1735E-04	-4.8716E-06	-42.308	-148.39	-36.241	-21.933	-20.873	-6.3334	1634.0	7.8279E+06	7.8279E+06
x (M)	0.8800	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
5	-1.1752E-04	-5.1512E-06	-40.983	-147.91	-34.334	-21.245	-19.478	-5.9607	1574.0	7.8279E+06	7.8279E+06
x (M)	0.8800	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
6	-1.1724E-04	-5.1028E-06	-43.211	-165.64	-37.467	-24.248	-21.741	-7.1269	1513.9	7.8279E+06	7.8279E+06
x (M)	0.8800	10.120	6.8200	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
7	-1.2535E-04	-4.9243E-06	-44.342	-145.68	-37.349	-21.369	-21.425	-6.1013	1548.9	7.8279E+06	7.8279E+06
x (M)	0.6600	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
8	-1.2552E-04	-5.2134E-06	-42.842	-144.99	-35.312	-20.670	-19.919	-5.7226	1488.9	7.8279E+06	7.8279E+06
x (M)	0.8800	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
9	-1.2527E-04	-5.1432E-06	-45.344	-163.12	-38.750	-23.755	-22.428	-6.9101	1428.8	7.8279E+06	7.8279E+06
x (M)	0.6600	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
10	-1.3332E-04	-4.8380E-06	-47.889	-149.85	-40.597	-22.222	-23.513	-6.4526	1463.9	7.8279E+06	7.8279E+06
x (M)	0.6600	10.340	6.8200	0.0000	0.0000	8.8000	6.1600	10.560	22.000	0.0000	0.0000
11	-1.3343E-04	-5.1237E-06	-46.299	-149.21	-38.391	-21.490	-21.922	-6.0621	1403.8	7.8279E+06	7.8279E+06
x (M)	0.6600	10.340	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
12	-1.3325E-04	-5.0800E-06	-48.834	-167.06	-41.934	-24.514	-24.443	-7.2559	1343.7	7.8279E+06	7.8279E+06
x (M)	0.6600	10.120	6.8200	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
Min.	-1.3343E-04	-5.2134E-06	-48.834	-185.72	-41.934	-28.184	-24.443	-8.9278	1343.7	7.8279E+06	7.8279E+06
Pile N.	11	8	12	3	12	3	12	3	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL.		MOMENT		SHEAR		SOIL REACT		TOTAL STRESS KN/ M**2	FLEX. RIG.	
	y- DIR M	z- DIR M	y- DIR KN- M	z- DIR KN- M	y- DIR KN	z- DIR KN	y- DIR KN/ M	z- DIR KN/ M		z- DIR KN- M**2	y- DIR KN- M**2
1	2.2147E-06	2.7769E-04	140.60	87.319	13.049	62.951	4.1241	38.092	2382.6	7.8279E+06	7.8279E+06
x (M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
2	2.2465E-06	2.8590E-04	138.45	88.825	12.674	63.050	3.9462	38.299	2325.6	7.8279E+06	7.8279E+06
x (M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
3	2.1908E-06	2.9410E-04	141.91	93.800	13.262	68.978	4.2248	41.573	2304.4	7.8279E+06	7.8279E+06
x (M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
4	2.5473E-06	2.7769E-04	135.47	80.107	11.701	51.978	3.4091	31.791	2240.4	7.8279E+06	7.8279E+06
x (M)	10.560	0.0000	0.0000	6.6000	9.0200	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
5	2.6097E-06	2.8590E-04	131.46	80.001	10.998	50.454	3.1089	30.705	2171.2	7.8279E+06	7.8279E+06
x (M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
6	2.5059E-06	2.9410E-04	137.98	86.960	12.169	58.173	3.6014	35.530	2164.5	7.8279E+06	7.8279E+06
x (M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
7	2.7256E-06	2.7769E-04	140.12	79.065	12.120	50.601	3.4810	30.914	2159.0	7.8279E+06	7.8279E+06

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 92 di 420

x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
8	2.7927E-06	2.8590E-04	135.80	78.768	11.327	49.014	3.1616	29.742	2088.4	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
9	2.6868E-06	2.9410E-04	143.02	86.050	12.634	56.875	3.7076	34.728	2083.5	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
10	2.8472E-06	2.7769E-04	149.22	80.647	13.318	52.738	3.9011	32.263	2102.1	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
11	2.9179E-06	2.8590E-04	144.62	80.533	12.499	51.116	3.5509	31.136	2030.9	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
12	2.7996E-06	2.9410E-04	151.94	87.455	13.817	58.926	4.1064	35.984	2025.2	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.6000	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
Max.	2.9179E-06	2.9410E-04	151.94	93.800	13.817	68.978	4.2248	41.573	2382.6	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	3	3	1	1	1

LOAD CASE : 8
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.7879	1.0000
2	0.7411	1.0000
3	0.8661	1.0000
4	0.5540	1.0000
5	0.4958	1.0000
6	0.6592	1.0000
7	0.5294	1.0000
8	0.4731	1.0000
9	0.6387	1.0000
10	0.5845	1.0000
11	0.5241	1.0000
12	0.6863	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30460.9	-460.108	441.249
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-125.514	3468.43	-5141.03

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.31458E-03	-1.19614E-04	1.75675E-04
ANGLE ROT. X,RAD	ANGLE ROT. Y,RAD	ANGLE ROT. Z,RAD
-1.44731E-06	8.21979E-06	-1.12284E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4206E-03	-1.0985E-04	1.6916E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
2	1.3701E-03	-1.0985E-04	1.7568E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
3	1.3195E-03	-1.0985E-04	1.8219E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
4	1.3836E-03	-1.1636E-04	1.6916E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
5	1.3331E-03	-1.1636E-04	1.7568E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
6	1.2825E-03	-1.1636E-04	1.8219E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
7	1.3466E-03	-1.2287E-04	1.6916E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
8	1.2961E-03	-1.2287E-04	1.7568E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
9	1.2456E-03	-1.2287E-04	1.8219E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
10	1.3096E-03	-1.2938E-04	1.6916E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
11	1.2591E-03	-1.2938E-04	1.7568E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
12	1.2086E-03	-1.2938E-04	1.8219E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
MINIMUM	1.2086E-03	-1.2938E-04	1.6916E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4206E-03	-1.0985E-04	1.8219E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
Pile N.	1	1	3	1	1	1

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandataria

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA
IF28LOTTO
01CODIFICA
E ZZ CLDOCUMENTO
VI0103 001REV.
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* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2740.7	-39.690	39.392	-0.4689	-110.92	-138.89
2	2644.3	-38.692	39.958	-0.4689	-114.21	-136.94
3	2547.9	-41.308	45.030	-0.4689	-125.78	-141.99
4	2670.1	-35.863	33.169	-0.4689	-99.064	-133.20
5	2573.7	-34.295	32.902	-0.4689	-100.52	-129.91
6	2477.3	-38.511	39.382	-0.4689	-115.29	-138.60
7	2599.5	-36.704	32.456	-0.4689	-97.647	-136.82
8	2503.1	-35.076	32.177	-0.4689	-99.042	-133.37
9	2406.7	-39.637	38.786	-0.4689	-114.14	-142.83
10	2528.9	-39.775	34.043	-0.4689	-100.78	-145.06
11	2432.5	-38.041	33.787	-0.4689	-102.29	-141.46
12	2336.1	-42.515	40.166	-0.4689	-116.77	-150.57
MINIMUM	2336.1	-42.515	32.177	-0.4689	-125.78	-150.57
Pile N.	12	12	8	1	3	12
MAXIMUM	2740.7	-34.295	45.030	-0.4689	-97.647	-129.91
Pile N.	1	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
1	1.4206E-03	-1.0985E-04	1.6916E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
2	1.3701E-03	-1.0985E-04	1.7568E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
3	1.3195E-03	-1.0985E-04	1.8219E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
4	1.3836E-03	-1.1636E-04	1.6916E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
5	1.3331E-03	-1.1636E-04	1.7568E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
6	1.2825E-03	-1.1636E-04	1.8219E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
7	1.3466E-03	-1.2287E-04	1.6916E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
8	1.2961E-03	-1.2287E-04	1.7568E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
9	1.2456E-03	-1.2287E-04	1.8219E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
10	1.3096E-03	-1.2938E-04	1.6916E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
11	1.2591E-03	-1.2938E-04	1.7568E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
12	1.2086E-03	-1.2938E-04	1.8219E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
MINIMUM	1.2086E-03	-1.2938E-04	1.6916E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4206E-03	-1.0985E-04	1.8219E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2740.7	-39.690	39.392	-0.4689	-110.92	-138.89
2	2644.3	-38.692	39.958	-0.4689	-114.21	-136.94
3	2547.9	-41.308	45.030	-0.4689	-125.78	-141.99
4	2670.1	-35.863	33.169	-0.4689	-99.064	-133.20
5	2573.7	-34.295	32.902	-0.4689	-100.52	-129.91
6	2477.3	-38.511	39.382	-0.4689	-115.29	-138.60
7	2599.5	-36.704	32.456	-0.4689	-97.647	-136.82
8	2503.1	-35.076	32.177	-0.4689	-99.042	-133.37
9	2406.7	-39.637	38.786	-0.4689	-114.14	-142.83
10	2528.9	-39.775	34.043	-0.4689	-100.78	-145.06
11	2432.5	-38.041	33.787	-0.4689	-102.29	-141.46
12	2336.1	-42.515	40.166	-0.4689	-116.77	-150.57
MINIMUM	2336.1	-42.515	32.177	-0.4689	-125.78	-150.57
Pile N.	12	12	8	1	3	12
MAXIMUM	2740.7	-34.295	45.030	-0.4689	-97.647	-129.91
Pile N.	1	5	3	1	7	5

PILE GROUP STRESS, KN/ M**2

PILE GROUP	STRESS, KN/ M**2
1	2087.4
2	2034.5
3	2014.3
4	2012.0
5	1952.1
6	1945.9
7	1978.3
8	1917.8
9	1913.7
10	1964.2
11	1903.4
12	1897.0
MINIMUM	1897.0
Pile N.	12

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 95 di 420

5	0.4956	1.0000
6	0.5366	1.0000
7	0.6945	1.0000
8	0.4800	1.0000
9	0.5192	1.0000
10	0.7465	1.0000
11	0.5417	1.0000
12	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 32738.9	HOR. LOAD Y, KN 460.108	HOR. LOAD Z, KN 674.779
MOMENT X, KN- M -119.957	MOMENT Y, KN- M 8240.99	MOMENT Z, KN- M -13162.7

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.41405E-03	HORIZONTAL Y, M 3.00514E-04	HORIZONTAL Z, M 2.84169E-04
ANGLE ROT. X, RAD -1.12390E-06	ANGLE ROT. Y, RAD 1.74983E-05	ANGLE ROT. Z, RAD -4.50558E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.7349E-03	3.0810E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
2	1.5322E-03	3.0810E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
3	1.3294E-03	3.0810E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
4	1.6562E-03	3.0304E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
5	1.4534E-03	3.0304E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
6	1.2507E-03	3.0304E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
7	1.5774E-03	2.9799E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
8	1.3747E-03	2.9799E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
9	1.1719E-03	2.9799E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
10	1.4987E-03	2.9293E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
11	1.2959E-03	2.9293E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
12	1.0932E-03	2.9293E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
MINIMUM	1.0932E-03	2.9293E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.7349E-03	3.0810E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3340.6	48.864	64.664	-0.3641	-172.65	85.395
2	2953.6	42.692	59.167	-0.3641	-164.30	74.590
3	2566.7	44.052	62.041	-0.3641	-171.35	76.963
4	3190.3	41.832	58.368	-0.3641	-161.11	71.249
5	2803.4	33.584	50.051	-0.3641	-146.61	56.099
6	2416.4	35.287	53.219	-0.3641	-154.45	59.267
7	3040.0	40.048	57.828	-0.3641	-160.09	66.231
8	2653.1	31.824	49.280	-0.3641	-145.05	51.085
9	2266.2	33.434	52.372	-0.3641	-152.76	54.091
10	2889.8	40.550	59.978	-0.3641	-164.08	65.244
11	2502.8	33.150	52.293	-0.3641	-151.05	51.886
12	2115.9	34.791	55.519	-0.3641	-158.93	54.873
MINIMUM	2115.9	31.824	49.280	-0.3641	-172.65	51.085
Pile N.	12	8	1	1	1	8
MAXIMUM	3340.6	48.864	64.664	-0.3641	-145.05	85.395
Pile N.	1	1	1	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
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APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

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1	1.7349E-03	3.0810E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
2	1.5322E-03	3.0810E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
3	1.3294E-03	3.0810E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
4	1.6562E-03	3.0304E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
5	1.4534E-03	3.0304E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
6	1.2507E-03	3.0304E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
7	1.5774E-03	2.9799E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
8	1.3747E-03	2.9799E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
9	1.1719E-03	2.9799E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
10	1.4987E-03	2.9293E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
11	1.2959E-03	2.9293E-04	2.8417E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
12	1.0932E-03	2.9293E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
MINIMUM	1.0932E-03	2.9293E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
Pile N.	12	10	1	1	1	1	
MAXIMUM	1.7349E-03	3.0810E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05	
Pile N.	1	1	3	1	1	1	

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	3340.6	48.864	64.664	-0.3641	-172.65	85.395
2	2953.6	42.692	59.167	-0.3641	-164.30	74.590
3	2566.7	44.052	62.041	-0.3641	-171.35	76.963
4	3190.3	41.832	58.368	-0.3641	-161.11	71.249
5	2803.4	33.584	50.051	-0.3641	-146.61	56.099
6	2416.4	35.287	53.219	-0.3641	-154.45	59.267
7	3040.0	40.048	57.828	-0.3641	-160.09	66.231
8	2653.1	31.824	49.280	-0.3641	-145.05	51.085
9	2266.2	33.434	52.372	-0.3641	-152.76	54.091
10	2889.8	40.550	59.978	-0.3641	-164.08	65.244
11	2502.8	33.150	52.293	-0.3641	-151.05	51.886
12	2115.9	34.791	55.519	-0.3641	-158.93	54.873
MINIMUM	2115.9	31.824	49.280	-0.3641	-172.65	51.085
Pile N.	12	8	8	1	1	8
MAXIMUM	3340.6	48.864	64.664	-0.3641	-145.05	85.395
Pile N.	1	1	1	1	8	1





PILE GROUP STRESS, KN/ M**2

PILE GROUP	STRESS, KN/ M**2
1	2471.7
2	2216.0
3	2019.4
4	2337.0
5	2060.2
6	1866.7
7	2243.2
8	1965.5
9	1771.5
10	2168.2
11	1898.3
12	1704.8
MINIMUM	1704.8
Pile N.	12
MAXIMUM	2471.7
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	-4.3889E-06	-4.4878E-06	-85.395	-172.65	-25.540	-26.616	-8.0360	-8.4297	1890.4	7.8279E+06	7.8279E+06
x(M)	9.4600	9.6800	0.0000	0.0000	7.9200	8.1400	9.6800	9.9000	22.000	0.0000	0.0000
2	-4.6125E-06	-4.7942E-06	-74.590	-164.30	-23.233	-24.659	-6.9557	-7.4350	1671.4	7.8279E+06	7.8279E+06
x(M)	9.6800	10.120	0.0000	0.0000	8.1400	8.3600	9.9000	10.340	22.000	0.0000	0.0000
3	-4.5646E-06	-4.8402E-06	-76.963	-171.35	-23.730	-25.720	-7.1981	-7.8428	1452.5	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	0.0000	8.1400	8.3600	9.9000	10.120	22.000	0.0000	0.0000
4	-4.5094E-06	-4.6823E-06	-71.249	-161.11	-22.937	-24.376	-6.9009	-7.3701	1805.3	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	0.0000	8.1400	8.3600	9.9000	10.120	22.000	0.0000	0.0000
5	-4.8671E-06	-5.1183E-06	-56.099	-146.61	-19.578	-21.097	-5.4441	-5.9180	1586.4	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.340	10.780	22.000	0.0000	0.0000
6	-4.7809E-06	-5.1486E-06	-59.267	-154.45	-20.285	-22.321	-5.7433	-6.3715	1367.4	7.8279E+06	7.8279E+06
x(M)	10.120	10.340	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
7	-4.4377E-06	-4.7017E-06	-66.231	-160.09	-22.284	-24.166	-6.6726	-7.2839	1720.3	7.8279E+06	7.8279E+06
x(M)	9.6800	10.120	0.0000	0.0000	8.1400	8.3600	9.9000	10.340	22.000	0.0000	0.0000
8	-4.8022E-06	-5.1531E-06	-51.085	-145.05	-18.901	-20.791	-5.2141	-5.7916	1501.3	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.340	10.780	22.000	0.0000	0.0000
9	-4.7232E-06	-5.1745E-06	-54.091	-152.76	-19.581	-21.958	-5.5030	-6.2209	1282.4	7.8279E+06	7.8279E+06
x(M)	10.120	10.340	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
10	-4.2778E-06	-4.6394E-06	-65.244	-164.08	-22.467	-24.959	-6.8512	-7.6511	1635.3	7.8279E+06	7.8279E+06

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO V10103 001	REV. B	FOGLIO 97 di 420

x(M)	9.6800	9.9000	0.0000	0.0000	8.1400	8.3600	9.9000	10.120	22.000	0.0000	0.0000
11	-4.5811E-06	-5.0426E-06	-51.886	-151.05	-19.532	-21.995	-5.5378	-6.2909	1416.3	7.8279E+06	7.8279E+06
x(M)	9.9000	10.340	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
12	-4.5167E-06	-5.0581E-06	-54.873	-158.93	-20.201	-23.240	-5.8286	-6.7502	1197.4	7.8279E+06	7.8279E+06
x(M)	9.9000	10.340	0.0000	0.0000	8.1400	8.5800	10.120	10.560	22.000	0.0000	0.0000
Min.	-4.8671E-06	-5.1745E-06	-85.395	-172.65	-25.540	-26.616	-8.0360	-8.4297	1197.4	7.8279E+06	7.8279E+06
Pile N.	5	9	1	1	1	1	1	1	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	3.0810E-04	2.7911E-04	85.591	88.569	48.868	64.672	30.248	39.009	2471.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
2	3.0810E-04	2.8417E-04	81.888	85.986	42.695	59.173	27.393	36.116	2216.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
3	3.0810E-04	2.8923E-04	82.753	88.712	44.055	62.047	28.057	37.785	2019.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
4	3.0304E-04	2.7911E-04	80.569	84.675	41.835	58.375	26.833	35.628	2337.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
5	3.0304E-04	2.8417E-04	74.400	79.460	33.586	50.056	22.389	30.469	2060.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
6	3.0304E-04	2.8923E-04	75.795	82.636	35.289	53.224	23.366	32.459	1866.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
7	2.9799E-04	2.7911E-04	78.633	84.296	40.051	57.835	25.815	35.317	2243.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
8	2.9799E-04	2.8417E-04	72.404	78.804	31.826	49.286	21.353	29.955	1965.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
9	2.9799E-04	2.8923E-04	73.744	81.962	33.436	52.377	22.284	31.908	1771.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
10	2.9293E-04	2.7911E-04	78.145	85.738	40.552	59.984	25.897	36.528	2168.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
11	2.9293E-04	2.8417E-04	72.979	81.241	33.152	52.299	22.097	31.925	1898.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
12	2.9293E-04	2.8923E-04	74.225	84.341	34.793	55.524	22.994	33.913	1704.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max.	3.0810E-04	2.8923E-04	85.591	88.712	48.868	64.672	30.248	39.009	2471.7	7.8279E+06	7.8279E+06
Pile N.	1	3	1	3	1	1	1	1	1	1	1

LOAD CASE : 10
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.7173	1.0000
2	0.6840	1.0000
3	0.8661	1.0000
4	0.5325	1.0000
5	0.4955	1.0000
6	0.7183	1.0000
7	0.5168	1.0000
8	0.4816	1.0000
9	0.7068	1.0000
10	0.5845	1.0000
11	0.5457	1.0000
12	0.7598	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
31935.6	-643.705	489.689
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-199.042	5344.00	-167.507

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.37898E-03	-2.36086E-04	2.02202E-04

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	98 di 420

ANGLE ROT. X,RAD	ANGLE ROT. Y,RAD	ANGLE ROT. Z,RAD
-1.65270E-06	1.16263E-05	5.88551E-06

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4310E-03	-2.2493E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8855E-06
2	1.4575E-03	-2.2493E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8855E-06
3	1.4839E-03	-2.2493E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8855E-06
4	1.3786E-03	-2.3237E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8855E-06
5	1.4051E-03	-2.3237E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8855E-06
6	1.4316E-03	-2.3237E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8855E-06
7	1.3263E-03	-2.3980E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8855E-06
8	1.3528E-03	-2.3980E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8855E-06
9	1.3793E-03	-2.3980E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8855E-06
10	1.2740E-03	-2.4724E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8855E-06
11	1.3005E-03	-2.4724E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8855E-06
12	1.3270E-03	-2.4724E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8855E-06
MINIMUM	1.2740E-03	-2.4724E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8855E-06
Pile N.	10	10	1	1	1	1
MAXIMUM	1.4839E-03	-2.2493E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8855E-06
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2760.5	-54.192	41.506	-0.5355	-115.28	-163.19
2	2811.1	-52.984	42.441	-0.5355	-119.54	-160.89
3	2861.6	-59.313	49.909	-0.5355	-135.87	-172.71
4	2660.7	-48.837	35.816	-0.5355	-104.34	-155.10
5	2711.2	-47.243	36.233	-0.5355	-107.45	-151.87
6	2761.8	-56.184	45.445	-0.5355	-127.68	-169.44
7	2560.8	-49.854	35.299	-0.5355	-103.31	-159.39
8	2611.4	-48.262	35.737	-0.5355	-106.44	-156.14
9	2661.9	-57.697	45.083	-0.5355	-127.00	-174.77
10	2461.0	-54.565	37.501	-0.5355	-107.64	-171.07
11	2511.5	-52.851	37.979	-0.5355	-110.92	-167.67
12	2562.1	-61.723	46.740	-0.5355	-130.08	-184.84
MINIMUM	2461.0	-61.723	35.299	-0.5355	-135.87	-184.84
Pile N.	10	12	7	1	3	12
MAXIMUM	2861.6	-47.243	49.909	-0.5355	-103.31	-151.87
Pile N.	3	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4310E-03	-2.2493E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8855E-06
2	1.4575E-03	-2.2493E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8855E-06
3	1.4839E-03	-2.2493E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8855E-06
4	1.3786E-03	-2.3237E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8855E-06
5	1.4051E-03	-2.3237E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8855E-06
6	1.4316E-03	-2.3237E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8855E-06
7	1.3263E-03	-2.3980E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8855E-06
8	1.3528E-03	-2.3980E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8855E-06
9	1.3793E-03	-2.3980E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8855E-06
10	1.2740E-03	-2.4724E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8855E-06
11	1.3005E-03	-2.4724E-04	2.0220E-04	-1.6527E-06	1.1626E-05	5.8855E-06
12	1.3270E-03	-2.4724E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8855E-06
MINIMUM	1.2740E-03	-2.4724E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8855E-06
Pile N.	10	10	1	1	1	1
MAXIMUM	1.4839E-03	-2.2493E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8855E-06
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2760.5	-54.192	41.506	-0.5355	-115.28	-163.19
2	2811.1	-52.984	42.441	-0.5355	-119.54	-160.89
3	2861.6	-59.313	49.909	-0.5355	-135.87	-172.71
4	2660.7	-48.837	35.816	-0.5355	-104.34	-155.10
5	2711.2	-47.243	36.233	-0.5355	-107.45	-151.87
6	2761.8	-56.184	45.445	-0.5355	-127.68	-169.44
7	2560.8	-49.854	35.299	-0.5355	-103.31	-159.39

APPALTATORE: Consorzio Soci 		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti 		
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		
		COMMESSA LOTTO CODIFICA DOCUMENTO REV. FOGLIO IF28 01 E ZZ CL V10103 001 B 99 di 420

8	2611.4	-48.262	35.737	-0.5355	-106.44	-156.14
9	2661.9	-57.697	45.083	-0.5355	-127.00	-174.77
10	2461.0	-54.565	37.501	-0.5355	-107.64	-171.07
11	2511.5	-52.851	37.979	-0.5355	-110.92	-167.67
12	2562.1	-61.723	46.740	-0.5355	-130.08	-184.84
MINIMUM	2461.0	-61.723	35.299	-0.5355	-135.87	-184.84
Pile N.	10	12	7	1	3	12
MAXIMUM	2861.6	-47.243	49.909	-0.5355	-103.31	-151.87
Pile N.	3	5	3	1	7	5

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2165.1
2	2195.7
3	2282.6
4	2069.8
5	2095.7
6	2203.1
7	2022.4
8	2048.1
9	2158.3
10	2002.6
11	2028.0
12	2132.0
MINIMUM	2002.6
Pile N.	10
MAXIMUM	2282.6
Pile N.	3





* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.2493E-04	-3.2735E-06	-72.659	-115.28	-54.199	-17.197	-32.659	-5.2182	1562.1	7.8279E+06	7.8279E+06
x(M)	0.0000	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
2	-2.2493E-04	-3.4473E-06	-71.901	-119.54	-52.990	-17.530	-31.936	-5.2758	1590.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.120	6.6000	0.0000	0.0000	8.3600	6.1600	10.340	22.000	0.0000	0.0000
3	-2.2493E-04	-3.4050E-06	-75.617	-135.87	-59.320	-20.223	-35.531	-6.4077	1619.3	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.3800	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
4	-2.3237E-04	-3.4761E-06	-69.960	-104.34	-48.842	-14.996	-29.215	-4.2735	1505.6	7.8279E+06	7.8279E+06
x(M)	0.0000	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
5	-2.3237E-04	-3.6652E-06	-68.787	-107.45	-47.249	-15.116	-28.138	-4.2413	1534.2	7.8279E+06	7.8279E+06
x(M)	0.0000	10.560	6.8200	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
6	-2.3237E-04	-3.5437E-06	-75.187	-127.68	-56.191	-18.654	-33.850	-5.6620	1562.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
7	-2.3980E-04	-3.4913E-06	-71.793	-103.31	-49.860	-14.776	-29.760	-4.1811	1449.1	7.8279E+06	7.8279E+06
x(M)	0.0000	10.340	6.8200	0.0000	0.0000	8.8000	6.1600	10.560	22.000	0.0000	0.0000
8	-2.3980E-04	-3.6869E-06	-70.585	-106.44	-48.268	-14.919	-28.674	-4.1598	1477.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.560	6.8200	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
9	-2.3980E-04	-3.5559E-06	-77.418	-127.00	-57.704	-18.515	-34.756	-5.6034	1506.3	7.8279E+06	7.8279E+06
x(M)	0.0000	10.120	6.6000	0.0000	0.0000	8.3600	6.1600	10.340	22.000	0.0000	0.0000
10	-2.4724E-04	-3.4112E-06	-76.410	-107.64	-54.570	-15.674	-32.756	-4.5530	1392.6	7.8279E+06	7.8279E+06
x(M)	0.0000	10.340	6.6000	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
11	-2.4724E-04	-3.6050E-06	-75.070	-110.92	-52.856	-15.811	-31.633	-4.5309	1421.2	7.8279E+06	7.8279E+06
x(M)	0.0000	10.340	6.6000	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
12	-2.4724E-04	-3.5096E-06	-81.159	-130.08	-61.730	-19.124	-37.138	-5.8877	1449.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
Min.	-2.4724E-04	-3.6869E-06	-81.159	-135.87	-61.730	-20.223	-37.138	-6.4077	1392.6	7.8279E+06	7.8279E+06
Pile N.	10	8	12	3	12	3	12	3	10	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	3.9835E-06	1.9476E-04	163.19	59.546	20.976	41.510	6.3961	25.291	2165.1	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.3600	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
2	4.0251E-06	2.0220E-04	160.89	61.364	20.550	42.446	6.2004	25.873	2195.7	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.6000	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
3	3.8237E-06	2.0964E-04	172.71	67.303	22.801	49.915	7.2326	30.059	2282.6	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.3800	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
4	4.3593E-06	1.9476E-04	155.10	55.614	18.962	35.820	5.4103	21.832	2069.8	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
5	4.4235E-06	2.0220E-04	151.87	56.892	18.337	36.237	5.1532	21.995	2095.7	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
6	4.1192E-06	2.0964E-04	169.44	64.529	21.713	45.450	6.6234	27.647	2203.1	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.3600	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
7	4.5339E-06	1.9476E-04	159.39	55.201	19.328	35.303	5.4815	21.494	2022.4	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
8	4.5906E-06	2.0220E-04	156.14	56.469	18.685	35.741	5.2163	21.664	2048.1	7.8279E+06	7.8279E+06

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria  Mandanti  					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 100 di 420

x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
9	4.2721E-06	2.0964E-04	174.77	64.278	22.272	45.088	6.7736	27.439	2158.3	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.6000	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
10	4.5773E-06	1.9476E-04	171.07	56.872	21.105	37.505	6.1550	22.900	2002.6	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.6000	8.5800	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
11	4.6266E-06	2.0220E-04	167.67	58.287	20.450	37.983	5.8629	23.134	2028.0	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
12	4.3343E-06	2.0964E-04	184.84	65.384	23.777	46.745	7.3227	28.372	2132.0	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.3800	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
Max.	4.6266E-06	2.0964E-04	184.84	67.303	23.777	49.915	7.3227	30.059	2282.6	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	12	3	3	1	1

LOAD CASE : 11
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8391	1.0000
2	0.7831	1.0000
3	0.8661	1.0000
4	0.5703	1.0000
5	0.4960	1.0000
6	0.6088	1.0000
7	0.5392	1.0000
8	0.4663	1.0000
9	0.5798	1.0000
10	0.5845	1.0000
11	0.5065	1.0000
12	0.6227	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
31482.4	-276.510	520.044
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-315.640	6555.58	-2505.77

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *


VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.35919E-03	-7.89709E-05	2.21567E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-3.07138E-06	1.38376E-05	-4.93824E-06

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4748E-03	-5.8239E-05	2.0775E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
2	1.4526E-03	-5.8239E-05	2.2157E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
3	1.4304E-03	-5.8239E-05	2.3539E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
4	1.4125E-03	-7.2060E-05	2.0775E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
5	1.3903E-03	-7.2060E-05	2.2157E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
6	1.3681E-03	-7.2060E-05	2.3539E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
7	1.3503E-03	-8.5881E-05	2.0775E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
8	1.3281E-03	-8.5881E-05	2.2157E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
9	1.3058E-03	-8.5881E-05	2.3539E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
10	1.2880E-03	-9.9703E-05	2.0775E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
11	1.2658E-03	-9.9703E-05	2.2157E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
12	1.2436E-03	-9.9703E-05	2.3539E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
MINIMUM	1.2436E-03	-9.9703E-05	2.0775E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4748E-03	-5.8239E-05	2.3539E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2844.2	-20.727	46.667	-0.9951	-123.80	-70.592
2	2801.8	-20.126	48.826	-0.9951	-132.61	-69.440
3	2759.4	-21.011	55.358	-0.9951	-149.36	-71.129
4	2725.4	-20.902	38.390	-0.9951	-108.31	-75.239
5	2682.9	-19.730	38.899	-0.9951	-113.61	-72.802
6	2640.5	-21.482	46.405	-0.9951	-132.70	-76.418
7	2606.5	-23.612	37.337	-0.9951	-106.24	-84.851
8	2564.1	-22.228	37.745	-0.9951	-111.27	-81.949
9	2521.7	-24.345	45.305	-0.9951	-130.56	-86.352
10	2487.7	-27.738	38.873	-0.9951	-109.23	-97.364
11	2445.3	-26.110	39.308	-0.9951	-114.41	-94.015
12	2402.9	-28.497	46.932	-0.9951	-133.70	-98.892
MINIMUM	2402.9	-28.497	37.337	-0.9951	-149.36	-98.892
Pile N.	12	12	7	1	3	12
MAXIMUM	2844.2	-19.730	55.358	-0.9951	-106.24	-69.440
Pile N.	1	5	3	1	7	2

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4748E-03	-5.8239E-05	2.0775E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
2	1.4526E-03	-5.8239E-05	2.2157E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
3	1.4304E-03	-5.8239E-05	2.3539E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
4	1.4125E-03	-7.2060E-05	2.0775E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
5	1.3903E-03	-7.2060E-05	2.2157E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
6	1.3681E-03	-7.2060E-05	2.3539E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
7	1.3503E-03	-8.5881E-05	2.0775E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
8	1.3281E-03	-8.5881E-05	2.2157E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
9	1.3058E-03	-8.5881E-05	2.3539E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
10	1.2800E-03	-9.9703E-05	2.0775E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
11	1.2658E-03	-9.9703E-05	2.2157E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
12	1.2436E-03	-9.9703E-05	2.3539E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
MINIMUM	1.2436E-03	-9.9703E-05	2.0775E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4748E-03	-5.8239E-05	2.3539E-04	-3.0714E-06	1.3838E-05	-4.9382E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2844.2	-20.727	46.667	-0.9951	-123.80	-70.592
2	2801.8	-20.126	48.826	-0.9951	-132.61	-69.440
3	2759.4	-21.011	55.358	-0.9951	-149.36	-71.129
4	2725.4	-20.902	38.390	-0.9951	-108.31	-75.239
5	2682.9	-19.730	38.899	-0.9951	-113.61	-72.802
6	2640.5	-21.482	46.405	-0.9951	-132.70	-76.418
7	2606.5	-23.612	37.337	-0.9951	-106.24	-84.851
8	2564.1	-22.228	37.745	-0.9951	-111.27	-81.949
9	2521.7	-24.345	45.305	-0.9951	-130.56	-86.352
10	2487.7	-27.738	38.873	-0.9951	-109.23	-97.364
11	2445.3	-26.110	39.308	-0.9951	-114.41	-94.015
12	2402.9	-28.497	46.932	-0.9951	-133.70	-98.892
MINIMUM	2402.9	-28.497	37.337	-0.9951	-149.36	-98.892
Pile N.	12	12	7	1	3	12
MAXIMUM	2844.2	-19.730	55.358	-0.9951	-106.24	-69.440
Pile N.	1	5	3	1	7	2

PILE GROUP STRESS, KN/ M**2

*****	*****
1	2039.6
2	2037.3
3	2060.8
4	1940.3
5	1925.5
6	1956.4
7	1885.3
8	1868.1
9	1899.4
10	1849.4
11	1830.7
12	1861.6
MINIMUM	1830.7
Pile N.	11
MAXIMUM	2060.8
Pile N.	3

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 102 di 420
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* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-5.9647E-05	-3.3386E-06	-23.083	-123.80	-20.730	-19.397	-12.247	-6.0959	1609.5	7.8279E+06	7.8279E+06
x (M)	0.6600	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
2	-5.9676E-05	-3.6470E-06	-22.717	-132.61	-20.129	-20.228	-11.879	-6.2710	1585.5	7.8279E+06	7.8279E+06
x (M)	0.6600	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
3	-5.9633E-05	-3.8049E-06	-23.245	-149.36	-21.014	-22.584	-12.416	-7.1543	1561.5	7.8279E+06	7.8279E+06
x (M)	0.6600	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
4	-7.3340E-05	-3.6206E-06	-25.544	-108.31	-20.905	-16.341	-12.159	-4.7206	1542.2	7.8279E+06	7.8279E+06
x (M)	0.6600	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
5	-7.3401E-05	-3.9842E-06	-24.653	-113.61	-19.733	-16.429	-11.321	-4.6093	1518.2	7.8279E+06	7.8279E+06
x (M)	0.6600	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
6	-7.3317E-05	-4.0961E-06	-25.958	-132.70	-21.485	-19.325	-12.561	-5.6592	1494.2	7.8279E+06	7.8279E+06
x (M)	0.4400	10.120	6.8200	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
7	-8.7037E-05	-3.6627E-06	-29.526	-106.24	-23.615	-15.914	-13.708	-4.5449	1475.0	7.8279E+06	7.8279E+06
x (M)	0.4400	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
8	-8.7071E-05	-4.0345E-06	-28.459	-111.27	-22.231	-15.969	-12.708	-4.4188	1451.0	7.8279E+06	7.8279E+06
x (M)	0.4400	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
9	-8.7020E-05	-4.1367E-06	-30.073	-130.56	-24.348	-18.901	-14.220	-5.4826	1427.0	7.8279E+06	7.8279E+06
x (M)	0.4400	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
10	-1.0071E-04	-3.5986E-06	-34.565	-109.23	-27.741	-16.523	-16.246	-4.7958	1407.7	7.8279E+06	7.8279E+06
x (M)	0.4400	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
11	-1.0075E-04	-3.9668E-06	-33.323	-114.41	-26.113	-16.581	-15.103	-4.6719	1383.7	7.8279E+06	7.8279E+06
x (M)	0.4400	10.340	6.8200	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
12	-1.0069E-04	-4.0813E-06	-35.083	-133.70	-28.501	-19.514	-16.762	-5.7510	1359.7	7.8279E+06	7.8279E+06
x (M)	0.4400	10.120	6.8200	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
Min. Pile N.	-1.0075E-04 11	-4.1367E-06 9	-35.083 12	-149.36 3	-28.501 12	-22.584 3	-16.762 12	-7.1543 3	1359.7 12	7.8279E+06 1	7.8279E+06 1







* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.1740E-06	2.0775E-04	70.592	6.9403	6.9403	46.672	2.1952	28.246	2039.6	7.8279E+06	7.8279E+06
x (M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
2	1.1939E-06	2.2157E-04	69.440	68.826	6.7462	48.831	2.1032	29.659	2037.3	7.8279E+06	7.8279E+06
x (M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
3	1.1655E-06	2.3539E-04	71.129	75.164	7.0355	55.363	2.2428	33.362	2060.8	7.8279E+06	7.8279E+06
x (M)	9.9000	0.0000	0.0000	6.3800	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
4	1.5363E-06	2.0775E-04	75.239	59.641	7.9558	38.394	2.0536	23.532	1940.3	7.8279E+06	7.8279E+06
x (M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
5	1.5745E-06	2.2157E-04	72.802	61.884	6.6136	38.903	1.8668	23.694	1925.5	7.8279E+06	7.8279E+06
x (M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
6	1.5136E-06	2.3539E-04	76.418	69.486	7.2752	46.410	2.1420	28.334	1956.4	7.8279E+06	7.8279E+06
x (M)	10.340	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
7	1.8196E-06	2.0775E-04	84.851	58.852	8.0443	37.341	2.3133	22.865	1885.3	7.8279E+06	7.8279E+06
x (M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
8	1.8660E-06	2.2157E-04	81.949	60.898	7.5222	37.749	2.0934	22.924	1868.1	7.8279E+06	7.8279E+06
x (M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
9	1.7952E-06	2.3539E-04	86.352	68.704	8.3338	45.309	2.4311	27.650	1899.4	7.8279E+06	7.8279E+06
x (M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
10	2.0554E-06	2.0775E-04	97.364	59.981	9.5926	38.877	2.8007	23.830	1849.4	7.8279E+06	7.8279E+06
x (M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
11	2.1081E-06	2.2157E-04	94.015	62.213	8.9662	39.312	2.5398	23.960	1830.7	7.8279E+06	7.8279E+06
x (M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
12	2.0329E-06	2.3539E-04	98.892	69.838	9.8675	46.937	2.9237	28.654	1861.6	7.8279E+06	7.8279E+06
x (M)	10.340	0.0000	0.0000	6.6000	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
Max. Pile N.	2.1081E-06 11	2.3539E-04 3	98.892 12	75.164 3	9.8675 12	55.363 3	2.9237 12	33.362 3	2060.8 3	7.8279E+06 1	7.8279E+06 1

LOAD CASE : 12
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8201	1.0000
2	0.7675	1.0000
3	0.8661	1.0000
4	0.5642	1.0000
5	0.4960	1.0000
6	0.6283	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

7	0.5355	1.0000
8	0.4689	1.0000
9	0.6027	1.0000
10	0.5845	1.0000
11	0.5132	1.0000
12	0.6474	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 29847.6	HOR. LOAD Y, KN -423.388	HOR. LOAD Z, KN 505.868
MOMENT X, KN- M -86.0619	MOMENT Y, KN- M 7002.95	MOMENT Z, KN- M -5213.98

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.28780E-03	HORIZONTAL Y, M -1.05715E-04	HORIZONTAL Z, M 2.18524E-04
ANGLE ROT. X, RAD -1.29826E-06	ANGLE ROT. Y, RAD 1.45089E-05	ANGLE ROT. Z, RAD -1.18141E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4389E-03	-9.6952E-05	2.1268E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
2	1.3857E-03	-9.6952E-05	2.1852E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
3	1.3326E-03	-9.6952E-05	2.2437E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
4	1.3736E-03	-1.0279E-04	2.1268E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
5	1.3204E-03	-1.0279E-04	2.1852E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
6	1.2673E-03	-1.0279E-04	2.2437E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
7	1.3083E-03	-1.0864E-04	2.1268E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
8	1.2552E-03	-1.0864E-04	2.1852E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
9	1.2020E-03	-1.0864E-04	2.2437E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
10	1.2430E-03	-1.1448E-04	2.1268E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
11	1.1899E-03	-1.1448E-04	2.1852E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
12	1.1367E-03	-1.1448E-04	2.2437E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
MINIMUM	1.1367E-03	-1.1448E-04	2.1268E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4389E-03	-9.6952E-05	2.2437E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
Pile N.	1	1	3	1	1	1




* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2775.7	-37.267	46.926	-0.4207	-124.35	-131.46
2	2674.2	-36.261	46.944	-0.4207	-126.43	-129.50
3	2572.7	-38.124	51.617	-0.4207	-136.97	-133.10
4	2651.1	-33.390	38.829	-0.4207	-109.15	-125.48
5	2549.6	-31.722	37.720	-0.4207	-108.77	-121.97
6	2448.1	-34.871	43.876	-0.4207	-122.65	-128.52
7	2526.5	-34.048	37.836	-0.4207	-107.20	-128.52
8	2425.0	-32.296	36.694	-0.4207	-106.70	-124.79
9	2323.5	-35.710	42.978	-0.4207	-120.92	-131.96
10	2401.9	-36.669	39.530	-0.4207	-110.50	-135.64
11	2300.4	-34.798	38.371	-0.4207	-110.05	-131.74
12	2198.9	-38.231	44.548	-0.4207	-123.91	-138.82
MINIMUM	2198.9	-38.231	36.694	-0.4207	-136.97	-138.82
Pile N.	12	12	8	1	3	12
MAXIMUM	2775.7	-31.722	51.617	-0.4207	-106.70	-121.97
Pile N.	1	5	3	1	8	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4389E-03	-9.6952E-05	2.1268E-04	-1.2983E-06	1.4509E-05	-1.1814E-05

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 104 di 420

2	1.3857E-03	-9.6952E-05	2.1852E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
3	1.3326E-03	-9.6952E-05	2.2437E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
4	1.3736E-03	-1.0279E-04	2.1268E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
5	1.3204E-03	-1.0279E-04	2.1852E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
6	1.2673E-03	-1.0279E-04	2.2437E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
7	1.3083E-03	-1.0864E-04	2.1268E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
8	1.2552E-03	-1.0864E-04	2.1852E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
9	1.2020E-03	-1.0864E-04	2.2437E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
10	1.2430E-03	-1.1448E-04	2.1268E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
11	1.1899E-03	-1.1448E-04	2.1852E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
12	1.1367E-03	-1.1448E-04	2.2437E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
MINIMUM	1.1367E-03	-1.1448E-04	2.1268E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4389E-03	-9.6952E-05	2.2437E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *



PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2775.7	-37.267	46.926	-0.4207	-124.35	-131.46
2	2674.2	-36.261	46.944	-0.4207	-126.43	-129.50
3	2572.7	-38.124	51.617	-0.4207	-136.97	-133.10
4	2651.1	-33.390	38.829	-0.4207	-109.15	-125.48
5	2549.6	-31.722	37.720	-0.4207	-108.77	-121.97
6	2448.1	-34.871	43.876	-0.4207	-122.65	-128.52
7	2526.5	-34.048	37.836	-0.4207	-107.20	-128.52
8	2425.0	-32.296	36.694	-0.4207	-106.70	-124.79
9	2323.5	-35.710	42.978	-0.4207	-120.92	-131.96
10	2401.9	-36.669	39.530	-0.4207	-110.50	-135.64
11	2300.4	-34.798	38.371	-0.4207	-110.05	-131.74
12	2198.9	-38.231	44.548	-0.4207	-123.91	-138.82
MINIMUM	2198.9	-38.231	36.694	-0.4207	-136.97	-138.82
Pile N.	12	12	8	1	3	12
MAXIMUM	2775.7	-31.722	51.617	-0.4207	-106.70	-121.97
Pile N.	1	5	3	1	8	5

PILE GROUP	STRESS, KN/ M**2
1	2116.8
2	2059.5
3	2032.3
4	2002.1
5	1936.0
6	1921.5
7	1934.8
8	1867.8
9	1855.0
10	1887.2
11	1819.8
12	1805.9
MINIMUM	1805.9
Pile N.	12
MAXIMUM	2116.8
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
1	-1.0135E-04	-3.4281E-06	-40.284	-124.35	-37.272	-19.596	-21.932	-6.1300	1570.7	7.8279E+06	7.8279E+06
x(M)	0.8800	9.9000	6.8200	0.0000	0.0000	8.1400	6.1600	10.120	22.000	0.0000	0.0000
2	-1.0143E-04	-3.5911E-06	-39.758	-126.43	-36.266	-19.646	-21.294	-6.0621	1513.3	7.8279E+06	7.8279E+06
x(M)	0.8800	9.9000	6.8200	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
3	-1.0128E-04	-3.5958E-06	-40.759	-136.97	-38.129	-21.319	-22.459	-6.7511	1455.9	7.8279E+06	7.8279E+06
x(M)	0.8800	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
4	-1.0744E-04	-3.7061E-06	-38.836	-109.15	-33.395	-16.600	-19.199	-4.7848	1500.2	7.8279E+06	7.8279E+06
x(M)	0.8800	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
5	-1.0759E-04	-3.9049E-06	-37.667	-108.77	-31.726	-16.090	-17.974	-4.5130	1442.8	7.8279E+06	7.8279E+06
x(M)	0.8800	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
6	-1.0731E-04	-3.8513E-06	-39.894	-122.65	-34.876	-18.480	-20.248	-5.4616	1385.4	7.8279E+06	7.8279E+06
x(M)	0.8800	10.120	6.8200	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
7	-1.1314E-04	-3.7453E-06	-40.192	-107.20	-34.053	-16.196	-19.495	-4.6179	1429.7	7.8279E+06	7.8279E+06
x(M)	0.8800	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
8	-1.1330E-04	-3.9516E-06	-38.894	-106.70	-32.300	-15.684	-18.195	-4.3451	1372.3	7.8279E+06	7.8279E+06
x(M)	0.8800	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
9	-1.1299E-04	-3.8773E-06	-41.365	-120.92	-35.714	-18.149	-20.685	-5.3020	1314.9	7.8279E+06	7.8279E+06
x(M)	0.8800	10.120	6.8200	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
10	-1.1870E-04	-3.6743E-06	-42.916	-110.50	-36.674	-16.869	-21.207	-4.8950	1359.2	7.8279E+06	7.8279E+06
x(M)	0.6600	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
11	-1.1883E-04	-3.8842E-06	-41.589	-110.05	-34.802	-16.343	-19.854	-4.6156	1301.8	7.8279E+06	7.8279E+06

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 105 di 420

x(M)	0.8800	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
12	-1.1862E-04	-3.8284E-06	-44.014	-123.91	-38.236	-18.722	-22.294	-5.5740	1244.3	7.8279E+06	7.8279E+06
x(M)	0.6600	10.120	6.8200	0.0000	0.0000	8.3600	6.1600	10.340	22.000	0.0000	0.0000
Min.	-1.1883E-04	-3.9516E-06	-44.014	-136.97	-38.236	-21.319	-22.459	-6.7511	1244.3	7.8279E+06	7.8279E+06
Pile N.	11	8	12	3	12	3	3	3	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	2.0718E-06	2.1268E-04	131.46	66.122	12.100	46.931	3.8134	28.465	2116.8	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
2	2.0986E-06	2.1852E-04	129.50	67.158	11.754	46.949	3.6495	28.583	2059.5	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
3	2.0429E-06	2.2437E-04	133.10	70.962	12.370	51.622	3.9410	31.145	2032.3	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
4	2.3423E-06	2.1268E-04	125.48	60.745	10.727	38.833	3.1189	23.820	2002.1	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	9.0200	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
5	2.3975E-06	2.1852E-04	121.97	60.661	10.108	37.723	2.8575	23.038	1936.0	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
6	2.2921E-06	2.2437E-04	128.52	66.050	11.283	43.881	3.3505	26.865	1921.5	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
7	2.4746E-06	2.1268E-04	128.52	59.997	10.977	37.839	3.1512	23.190	1934.8	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
8	2.5303E-06	2.1852E-04	124.79	59.791	10.294	36.698	2.8758	22.356	1867.8	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
9	2.4247E-06	2.2437E-04	131.96	65.439	11.589	42.982	3.4163	26.318	1855.0	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
10	2.5512E-06	2.1268E-04	135.64	61.242	11.937	39.534	3.4985	24.254	1887.2	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
11	2.6107E-06	2.1852E-04	131.74	61.182	11.248	38.374	3.2017	23.460	1819.8	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
12	2.4994E-06	2.2437E-04	138.82	66.480	12.518	44.552	3.7434	27.264	1805.9	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.6000	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
Max.	2.6107E-06	2.2437E-04	138.82	70.962	12.518	51.622	3.9410	31.145	2116.8	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	3	3	1	1	1

LOAD CASE : 13
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5998	1.0000
3	0.6112	1.0000
4	0.7899	1.0000
5	0.4952	1.0000
6	0.5026	1.0000
7	0.7880	1.0000
8	0.4926	1.0000
9	0.4995	1.0000
10	0.8474	1.0000
11	0.5731	1.0000
12	0.5845	1.0000







* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30827.9	496.827	204.774
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-125.420	2238.30	-10961.2

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.33061E-03	2.91840E-04	8.49983E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-1.39049E-06	4.87008E-06	-3.86434E-05

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria Mandanti   		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 106 di 420

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.5374E-03	3.0123E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
2	1.3635E-03	3.0123E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
3	1.1896E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
4	1.5155E-03	2.9497E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
5	1.3416E-03	2.9497E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
6	1.1677E-03	2.9497E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
7	1.4935E-03	2.8871E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
8	1.3196E-03	2.8871E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
9	1.1458E-03	2.8871E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
10	1.4716E-03	2.8245E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
11	1.2977E-03	2.8245E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
12	1.1238E-03	2.8245E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
MINIMUM	1.1238E-03	2.8245E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5374E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2963.6	52.519	18.305	-0.4505	-48.978	105.58
2	2631.7	42.416	16.735	-0.4505	-48.175	87.454
3	2299.9	42.894	18.423	-0.4505	-53.444	88.308
4	2921.8	48.047	17.468	-0.4505	-47.461	95.432
5	2589.9	36.587	15.240	-0.4505	-45.223	74.360
6	2258.0	36.914	16.753	-0.4505	-50.153	74.958
7	2879.9	46.263	17.447	-0.4505	-47.422	89.979
8	2548.1	35.091	15.202	-0.4505	-45.146	69.464
9	2216.2	35.390	16.705	-0.4505	-50.054	70.007
10	2838.1	46.532	18.104	-0.4505	-48.614	88.099
11	2506.3	36.862	16.365	-0.4505	-47.452	70.745
12	2174.4	37.311	18.027	-0.4505	-52.672	71.549
MINIMUM	2174.4	35.091	15.202	-0.4505	-53.444	69.464
Pile N.	12	8	8	1	3	8
MAXIMUM	2963.6	52.519	18.423	-0.4505	-45.146	105.58
Pile N.	1	1	3	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.5374E-03	3.0123E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
2	1.3635E-03	3.0123E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
3	1.1896E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
4	1.5155E-03	2.9497E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
5	1.3416E-03	2.9497E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
6	1.1677E-03	2.9497E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
7	1.4935E-03	2.8871E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
8	1.3196E-03	2.8871E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
9	1.1458E-03	2.8871E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
10	1.4716E-03	2.8245E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
11	1.2977E-03	2.8245E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
12	1.1238E-03	2.8245E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
MINIMUM	1.1238E-03	2.8245E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5374E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2963.6	52.519	18.305	-0.4505	-48.978	105.58
2	2631.7	42.416	16.735	-0.4505	-48.175	87.454
3	2299.9	42.894	18.423	-0.4505	-53.444	88.308
4	2921.8	48.047	17.468	-0.4505	-47.461	95.432
5	2589.9	36.587	15.240	-0.4505	-45.223	74.360
6	2258.0	36.914	16.753	-0.4505	-50.153	74.958
7	2879.9	46.263	17.447	-0.4505	-47.422	89.979
8	2548.1	35.091	15.202	-0.4505	-45.146	69.464
9	2216.2	35.390	16.705	-0.4505	-50.054	70.007

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 107 di 420
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10	2838.1	46.532	18.104	-0.4505	-48.614	88.099
11	2506.3	36.862	16.365	-0.4505	-47.452	70.745
12	2174.4	37.311	18.027	-0.4505	-52.672	71.549
MINIMUM	2174.4	35.091	15.202	-0.4505	-53.444	69.464
Pile N.	12	8	8	1	3	8
MAXIMUM	2963.6	52.519	18.423	-0.4505	-45.146	105.58
Pile N.	1	1	3	1	8	1

PILE GROUP STRESS, KN/ M**2

1	2028.3
2	1790.6
3	1613.0
4	1975.1
5	1728.3
6	1550.0
7	1936.7
8	1692.0
9	1513.9
10	1909.7
11	1675.3
12	1498.6
MINIMUM	1498.6
Pile N.	12
MAXIMUM	2028.3
Pile N.	1




* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
1	-4.3848E-06	-1.2673E-06	-105.58	-48.978	-25.668	-7.5178	-8.0865	-2.3811	1677.1	7.8279E+06	7.8279E+06
x(M)	9.4600	9.6800	0.0000	0.0000	7.9200	8.1400	9.6800	9.9000	22.000	0.0000	0.0000
2	-4.7573E-06	-1.4851E-06	-87.454	-48.175	-21.882	-6.9499	-6.3538	-2.0289	1489.3	7.8279E+06	7.8279E+06
x(M)	9.9000	10.120	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
3	-4.7419E-06	-1.5988E-06	-88.308	-53.444	-22.058	-7.5742	-6.4325	-2.2197	1301.5	7.8279E+06	7.8279E+06
x(M)	9.9000	10.120	0.0000	0.0000	8.3600	8.5800	10.120	10.340	22.000	0.0000	0.0000
4	-4.3822E-06	-1.2947E-06	-95.432	-47.461	-24.080	-7.2227	-7.4421	-2.2436	1653.4	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	0.0000	8.1400	8.3600	9.9000	10.120	22.000	0.0000	0.0000
5	-4.8253E-06	-1.5413E-06	-74.360	-45.223	-19.523	-6.3541	-5.4462	-1.7825	1465.6	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.560	10.780	22.000	0.0000	0.0000
6	-4.8135E-06	-1.6592E-06	-74.958	-50.153	-19.660	-6.9131	-5.4969	-1.9458	1277.8	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.560	10.780	22.000	0.0000	0.0000
7	-4.2746E-06	-1.2955E-06	-89.979	-47.422	-23.429	-7.2153	-7.2365	-2.2401	1629.7	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	0.0000	8.1400	8.3600	9.9000	10.120	22.000	0.0000	0.0000
8	-4.7126E-06	-1.5430E-06	-69.464	-45.146	-18.986	-6.3391	-5.2864	-1.7763	1441.9	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.560	10.780	22.000	0.0000	0.0000
9	-4.7015E-06	-1.6614E-06	-70.007	-50.054	-19.110	-6.8941	-5.3324	-1.9380	1254.1	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.560	10.780	22.000	0.0000	0.0000
10	-4.0851E-06	-1.2719E-06	-88.099	-48.614	-23.524	-7.4427	-7.3672	-2.3452	1606.0	7.8279E+06	7.8279E+06
x(M)	9.4600	9.6800	0.0000	0.0000	7.9200	8.1400	9.6800	9.9000	22.000	0.0000	0.0000
11	-4.4539E-06	-1.5012E-06	-70.745	-47.452	-19.831	-6.8054	-5.7001	-1.9699	1418.3	7.8279E+06	7.8279E+06
x(M)	10.120	10.340	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
12	-4.4357E-06	-1.6141E-06	-71.549	-52.672	-20.000	-7.4214	-5.7708	-2.1574	1230.5	7.8279E+06	7.8279E+06
x(M)	9.9000	10.340	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
Min. Pile N.	-4.8253E-06 5	-1.6614E-06 9	-105.58 1	-53.444 3	-25.668 1	-7.5742 3	-8.0865 1	-2.3811 1	1230.5 12	7.8279E+06 1	7.8279E+06 1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
1	3.0123E-04	7.8741E-05	86.043	25.020	52.523	18.307	32.270	11.039	2028.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	0.0000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
2	3.0123E-04	8.4998E-05	79.488	25.068	42.419	16.737	27.187	10.210	1790.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	0.0000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
3	3.0123E-04	9.1256E-05	79.806	27.203	42.896	18.425	27.450	11.218	1613.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	0.0000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
4	2.9497E-04	7.8741E-05	82.333	24.531	48.051	17.470	29.971	10.604	1975.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	0.0000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
5	2.9497E-04	8.4998E-05	74.248	23.918	36.590	15.241	23.779	9.2494	1728.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	0.0000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
6	2.9497E-04	9.1256E-05	74.500	25.930	36.917	16.755	23.972	10.147	1550.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	0.0000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
7	2.8871E-04	7.8741E-05	80.209	24.517	46.267	17.449	28.912	10.593	1936.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	0.0000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
8	2.8871E-04	8.4998E-05	72.292	23.885	35.094	15.204	22.897	9.2241	1692.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	0.0000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
9	2.8871E-04	9.1256E-05	72.520	25.890	35.392	16.706	23.072	10.115	1513.9	7.8279E+06	7.8279E+06

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 108 di 420

x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
10	2.8245E-04	7.8741E-05	79.285	24.906	46.536	18.106	28.792	10.937	1909.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
11	2.8245E-04	8.4998E-05	72.825	24.800	36.865	16.367	23.917	9.9780	1675.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
12	2.8245E-04	9.1256E-05	73.130	26.920	37.313	18.029	24.165	10.970	1498.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max.	3.0123E-04	9.1256E-05	86.043	27.203	52.523	18.425	32.270	11.218	2028.3	7.8279E+06	7.8279E+06
Pile N.	1	3	1	3	1	3	1	3	1	1	1

LOAD CASE : 14
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.6846	1.0000
2	0.6578	1.0000
3	0.8661	1.0000
4	0.5229	1.0000
5	0.4954	1.0000
6	0.7424	1.0000
7	0.5112	1.0000
8	0.4852	1.0000
9	0.7342	1.0000
10	0.5845	1.0000
11	0.5547	1.0000
12	0.7894	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30700.3	-496.827	213.441
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-39.3608	2752.85	-4888.68

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.32503E-03	-1.34590E-04	9.04107E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-3.29930E-07	5.77836E-06	-1.00993E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4095E-03	-1.3236E-04	8.8926E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
2	1.3640E-03	-1.3236E-04	9.0411E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
3	1.3186E-03	-1.3236E-04	9.1895E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
4	1.3835E-03	-1.3385E-04	8.8926E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
5	1.3380E-03	-1.3385E-04	9.0411E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
6	1.2926E-03	-1.3385E-04	9.1895E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
7	1.3575E-03	-1.3533E-04	8.8926E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
8	1.3120E-03	-1.3533E-04	9.0411E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
9	1.2666E-03	-1.3533E-04	9.1895E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
10	1.3315E-03	-1.3682E-04	8.8926E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
11	1.2860E-03	-1.3682E-04	9.0411E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
12	1.2406E-03	-1.3682E-04	9.1895E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
MINIMUM	1.2406E-03	-1.3682E-04	8.8926E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4095E-03	-1.3236E-04	9.1895E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
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APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria  Mandanti  	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

	*****	*****	*****	*****	*****	*****
1	2719.5	-42.304	18.129	-0.1069	-49.952	-148.44
2	2632.8	-41.601	18.145	-0.1069	-50.475	-147.04
3	2546.1	-46.774	21.285	-0.1069	-56.773	-157.07
4	2669.9	-38.160	15.851	-0.1069	-45.556	-140.46
5	2583.2	-37.326	15.766	-0.1069	-45.838	-138.71
6	2496.4	-44.181	19.682	-0.1069	-53.851	-152.59
7	2620.3	-38.143	15.676	-0.1069	-45.206	-140.85
8	2533.5	-37.337	15.606	-0.1069	-45.515	-139.15
9	2446.8	-44.368	19.573	-0.1069	-53.648	-153.42
10	2570.7	-40.668	16.752	-0.1069	-47.320	-146.50
11	2483.9	-39.797	16.671	-0.1069	-47.630	-144.71
12	2397.2	-46.170	20.305	-0.1069	-54.994	-157.39
MINIMUM	2397.2	-46.774	15.606	-0.1069	-56.773	-157.39
Pile N.	12	3	8	1	3	12
MAXIMUM	2719.5	-37.326	21.285	-0.1069	-45.206	-138.71
Pile N.	1	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
1	1.4095E-03	-1.3236E-04	8.8926E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
2	1.3640E-03	-1.3236E-04	9.0411E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
3	1.3186E-03	-1.3236E-04	9.1895E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
4	1.3835E-03	-1.3385E-04	8.8926E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
5	1.3380E-03	-1.3385E-04	9.0411E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
6	1.2926E-03	-1.3385E-04	9.1895E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
7	1.3575E-03	-1.3533E-04	8.8926E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
8	1.3120E-03	-1.3533E-04	9.0411E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
9	1.2666E-03	-1.3533E-04	9.1895E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
10	1.3315E-03	-1.3682E-04	8.8926E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
11	1.2860E-03	-1.3682E-04	9.0411E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
12	1.2406E-03	-1.3682E-04	9.1895E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
MINIMUM	1.2406E-03	-1.3682E-04	8.8926E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4095E-03	-1.3236E-04	9.1895E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2719.5	-42.304	18.129	-0.1069	-49.952	-148.44
2	2632.8	-41.601	18.145	-0.1069	-50.475	-147.04
3	2546.1	-46.774	21.285	-0.1069	-56.773	-157.07
4	2669.9	-38.160	15.851	-0.1069	-45.556	-140.46
5	2583.2	-37.326	15.766	-0.1069	-45.838	-138.71
6	2496.4	-44.181	19.682	-0.1069	-53.851	-152.59
7	2620.3	-38.143	15.676	-0.1069	-45.206	-140.85
8	2533.5	-37.337	15.606	-0.1069	-45.515	-139.15
9	2446.8	-44.368	19.573	-0.1069	-53.648	-153.42
10	2570.7	-40.668	16.752	-0.1069	-47.320	-146.50
11	2483.9	-39.797	16.671	-0.1069	-47.630	-144.71
12	2397.2	-46.170	20.305	-0.1069	-54.994	-157.39
MINIMUM	2397.2	-46.774	15.606	-0.1069	-56.773	-157.39
Pile N.	12	3	8	1	3	12
MAXIMUM	2719.5	-37.326	21.285	-0.1069	-45.206	-138.71
Pile N.	1	5	3	1	7	5

PILE GROUP	STRESS, KN/ M**2
1	2011.6
2	1959.1
3	1944.8
4	1956.5
5	1902.7
6	1901.0
7	1929.2
8	1875.5
9	1875.1
10	1919.3
11	1865.4
12	1859.7
MINIMUM	1859.7
Pile N.	12
MAXIMUM	2011.6
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 110 di 420
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* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.3513E-04	-1.4977E-06	-49.553	-49.952	-42.309	-7.6185	-24.875	-2.2901	1538.9	7.8279E+06	7.8279E+06
x(M)	0.6600	10.120	6.8200	0.0000	0.0000	8.3600	6.1600	10.340	22.000	0.0000	0.0000
2	-1.3516E-04	-1.5397E-06	-49.114	-50.475	-41.606	-7.6135	-24.408	-2.2736	1489.9	7.8279E+06	7.8279E+06
x(M)	0.6600	10.120	6.8200	0.0000	0.0000	8.3600	6.1600	10.340	22.000	0.0000	0.0000
3	-1.3493E-04	-1.4765E-06	-52.184	-56.773	-46.780	-8.7572	-27.661	-2.7735	1440.8	7.8279E+06	7.8279E+06
x(M)	0.4400	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
4	-1.3681E-04	-1.5798E-06	-46.854	-45.556	-38.165	-6.7291	-21.976	-1.9090	1510.9	7.8279E+06	7.8279E+06
x(M)	0.6600	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
5	-1.3686E-04	-1.6224E-06	-46.264	-45.838	-37.331	-6.6830	-21.369	-1.8743	1461.8	7.8279E+06	7.8279E+06
x(M)	0.6600	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
6	-1.3651E-04	-1.5283E-06	-50.901	-53.851	-44.186	-8.1937	-26.069	-2.5082	1412.7	7.8279E+06	7.8279E+06
x(M)	0.6600	9.9000	6.8200	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
7	-1.3829E-04	-1.5849E-06	-47.067	-45.206	-38.148	-6.6535	-21.918	-1.8776	1482.8	7.8279E+06	7.8279E+06
x(M)	0.6600	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.780	22.000	0.0000	0.0000
8	-1.3833E-04	-1.6299E-06	-46.483	-45.515	-37.342	-6.6204	-21.329	-1.8485	1433.7	7.8279E+06	7.8279E+06
x(M)	0.6600	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
9	-1.3797E-04	-1.5314E-06	-51.285	-53.648	-44.373	-8.1538	-26.173	-2.4891	1384.6	7.8279E+06	7.8279E+06
x(M)	0.6600	9.9000	6.8200	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
10	-1.3963E-04	-1.5445E-06	-49.179	-47.320	-40.673	-7.0929	-23.674	-2.0591	1454.7	7.8279E+06	7.8279E+06
x(M)	0.6600	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
11	-1.3967E-04	-1.5915E-06	-48.527	-47.630	-39.802	-7.0511	-23.061	-2.0264	1405.6	7.8279E+06	7.8279E+06
x(M)	0.6600	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
12	-1.3938E-04	-1.5084E-06	-52.637	-54.994	-46.176	-8.4095	-27.291	-2.6118	1356.5	7.8279E+06	7.8279E+06
x(M)	0.4400	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
Min.	-1.3967E-04	-1.6299E-06	-52.637	-56.773	-46.780	-8.7572	-27.661	-2.7735	1356.5	7.8279E+06	7.8279E+06
Pile N.	11	8	12	3	3	3	3	3	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	2.7544E-06	8.8926E-05	148.44	26.671	14.238	18.131	4.3153	11.086	2011.6	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.3800	8.5800	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
2	2.7773E-06	9.0411E-05	147.04	26.916	13.991	18.147	4.2034	11.100	1959.1	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.6000	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
3	2.6180E-06	9.1895E-05	157.07	29.149	15.791	21.287	5.0325	12.838	1944.8	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.3800	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
4	2.9209E-06	8.8926E-05	140.46	25.070	12.721	15.853	3.6300	9.6896	1956.5	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
5	2.9544E-06	9.0411E-05	138.71	25.187	12.408	15.767	3.5022	9.6120	1902.7	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
6	2.7348E-06	9.1895E-05	152.59	28.183	14.932	19.684	4.5965	11.989	1901.0	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
7	2.9648E-06	8.8926E-05	140.85	24.929	12.714	15.678	3.6120	9.5755	1929.2	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
8	2.9945E-06	9.0411E-05	139.15	25.053	12.405	15.607	3.4854	9.5059	1875.5	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
9	2.7667E-06	9.1895E-05	153.42	28.110	15.004	19.575	4.6057	11.928	1875.1	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
10	2.9242E-06	8.8926E-05	146.50	25.744	13.664	16.754	3.9965	10.260	1919.3	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
11	2.9531E-06	9.0411E-05	144.71	25.899	13.318	16.672	3.8565	10.197	1865.4	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
12	2.7557E-06	9.1895E-05	157.39	28.576	15.635	20.307	4.8818	12.328	1859.7	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
Max.	2.9945E-06	9.1895E-05	157.39	29.149	15.791	21.287	5.0325	12.838	2011.6	7.8279E+06	7.8279E+06
Pile N.	8	3	12	3	3	3	3	3	1	1	1

LOAD CASE : 15
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.5791	1.0000
3	0.8661	1.0000
4	0.4955	1.0000
5	0.4951	1.0000
6	0.8053	1.0000
7	0.4955	1.0000
8	0.4951	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

9	0.8053	1.0000
10	0.5845	1.0000
11	0.5791	1.0000
12	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 28236.4	HOR. LOAD Y, KN -276.510	HOR. LOAD Z, KN -1.00000E-06
MOMENT X, KN- M 3.00000E-06	MOMENT Y, KN- M 2.70000E-05	MOMENT Z, KN- M -6438.70

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.21745E-03	HORIZONTAL Y, M -3.79650E-05	HORIZONTAL Z, M -2.00527E-13
ANGLE ROT. X, RAD 2.24298E-14	ANGLE ROT. Y, RAD 3.99511E-14	ANGLE ROT. Z, RAD -1.70561E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
2	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
3	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
4	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
5	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
6	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
7	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
8	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
9	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
10	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
11	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
12	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
MINIMUM	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2499.5	-22.465	-5.5173E-08	7.2674E-09	2.3317E-07	-95.972
2	2353.0	-22.393	-7.9054E-08	7.2674E-09	3.1174E-07	-95.817
3	2206.6	-25.805	-1.2137E-07	7.2674E-09	4.2703E-07	-102.93
4	2499.5	-21.229	-5.2097E-08	7.2674E-09	2.2642E-07	-93.249
5	2353.0	-21.224	-7.4518E-08	7.2674E-09	3.0205E-07	-93.238
6	2206.6	-25.140	-1.1779E-07	7.2674E-09	4.2012E-07	-101.59
7	2499.5	-21.229	-5.2097E-08	7.2674E-09	2.2642E-07	-93.249
8	2353.0	-21.224	-7.4518E-08	7.2674E-09	3.0205E-07	-93.238
9	2206.6	-25.140	-1.1779E-07	7.2674E-09	4.2012E-07	-101.59
10	2499.5	-22.465	-5.5173E-08	7.2674E-09	2.3317E-07	-95.972
11	2353.0	-22.393	-7.9054E-08	7.2674E-09	3.1174E-07	-95.817
12	2206.6	-25.805	-1.2137E-07	7.2674E-09	4.2703E-07	-102.93
MINIMUM	2206.6	-25.805	-1.2137E-07	7.2674E-09	2.2642E-07	-102.93
Pile N.	3	3	3	1	4	3
MAXIMUM	2499.5	-21.224	-5.2097E-08	7.2674E-09	4.2703E-07	-93.238
Pile N.	1	5	4	1	3	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
2	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
3	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA LOTTO CODIFICA DOCUMENTO REV. FOGLIO
IF28 01 E ZZ CL VI0103 001 B 112 di 420

4	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
5	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
6	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
7	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
8	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
9	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
10	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
11	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
12	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
MINIMUM	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS *







PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2499.5	-22.465	-5.5173E-08	7.2674E-09	2.3317E-07	-95.972
2	2353.0	-22.393	-7.9054E-08	7.2674E-09	3.1174E-07	-95.817
3	2206.6	-25.805	-1.2137E-07	7.2674E-09	4.2703E-07	-102.93
4	2499.5	-21.229	-5.2097E-08	7.2674E-09	2.2642E-07	-93.249
5	2353.0	-21.224	-7.4518E-08	7.2674E-09	3.0205E-07	-93.238
6	2206.6	-25.140	-1.1779E-07	7.2674E-09	4.2012E-07	-101.59
7	2499.5	-21.229	-5.2097E-08	7.2674E-09	2.2642E-07	-93.249
8	2353.0	-21.224	-7.4518E-08	7.2674E-09	3.0205E-07	-93.238
9	2206.6	-25.140	-1.1779E-07	7.2674E-09	4.2012E-07	-101.59
10	2499.5	-22.465	-5.5173E-08	7.2674E-09	2.3317E-07	-95.972
11	2353.0	-22.393	-7.9054E-08	7.2674E-09	3.1174E-07	-95.817
12	2206.6	-25.805	-1.2137E-07	7.2674E-09	4.2703E-07	-102.93
MINIMUM	2206.6	-25.805	-1.2137E-07	7.2674E-09	2.2642E-07	-102.93
Pile N.	3	3	3	1	4	3
MAXIMUM	2499.5	-21.224	-5.2097E-08	7.2674E-09	4.2703E-07	-93.238
Pile N.	1	5	4	1	3	5

PILE GROUP	STRESS, KN/ M**2
1	1704.1
2	1620.7
3	1559.3
4	1695.9
5	1612.9
6	1555.3
7	1695.9
8	1612.9
9	1555.3
10	1704.1
11	1620.7
12	1559.3
MINIMUM	1555.3
Pile N.	6
MAXIMUM	1704.1
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	-5.1537E-05	-1.3001E-13	-21.625	-5.3940E-08	-22.468	-5.5181E-08	-12.490	-3.0775E-08	1414.4	7.8279E+06	7.8279E+06
x (M)	1.7600	1.7600	7.2600	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
2	-5.1539E-05	-2.2252E-13	-21.581	-8.5638E-08	-22.396	-7.9064E-08	-12.433	-4.4936E-08	1331.5	7.8279E+06	7.8279E+06
x (M)	1.7600	1.1000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
3	-5.0586E-05	-3.1714E-13	-23.541	-1.2858E-07	-25.808	-1.2139E-07	-14.981	-7.1438E-08	1248.7	7.8279E+06	7.8279E+06
x (M)	1.5400	0.8800	6.8200	6.6000	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
4	-5.1938E-05	-1.3101E-13	-20.799	-5.1919E-08	-21.232	-5.2105E-08	-11.494	-2.8317E-08	1414.4	7.8279E+06	7.8279E+06
x (M)	1.7600	1.7600	7.2600	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
5	-5.1939E-05	-2.2317E-13	-20.794	-8.2302E-08	-21.227	-7.4528E-08	-11.489	-4.1500E-08	1331.5	7.8279E+06	7.8279E+06
x (M)	1.7600	1.3200	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
6	-5.0740E-05	-3.1743E-13	-23.203	-1.2673E-07	-25.143	-1.1780E-07	-14.513	-6.9205E-08	1248.7	7.8279E+06	7.8279E+06
x (M)	1.5400	0.8800	7.0400	6.8200	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
7	-5.1938E-05	-1.3101E-13	-20.799	-5.1919E-08	-21.232	-5.2105E-08	-11.494	-2.8317E-08	1414.4	7.8279E+06	7.8279E+06
x (M)	1.7600	1.7600	7.2600	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
8	-5.1939E-05	-2.2317E-13	-20.794	-8.2302E-08	-21.227	-7.4528E-08	-11.489	-4.1500E-08	1331.5	7.8279E+06	7.8279E+06
x (M)	1.7600	1.3200	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
9	-5.0740E-05	-3.1743E-13	-23.203	-1.2673E-07	-25.143	-1.1780E-07	-14.513	-6.9205E-08	1248.7	7.8279E+06	7.8279E+06
x (M)	1.5400	0.8800	7.0400	6.8200	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
10	-5.1537E-05	-1.3001E-13	-21.625	-5.3940E-08	-22.468	-5.5181E-08	-12.490	-3.0775E-08	1414.4	7.8279E+06	7.8279E+06
x (M)	1.7600	1.7600	7.2600	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
11	-5.1539E-05	-2.2252E-13	-21.581	-8.5638E-08	-22.396	-7.9064E-08	-12.433	-4.4936E-08	1331.5	7.8279E+06	7.8279E+06
x (M)	1.7600	1.1000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
12	-5.0586E-05	-3.1714E-13	-23.541	-1.2858E-07	-25.808	-1.2139E-07	-14.981	-7.1438E-08	1248.7	7.8279E+06	7.8279E+06

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 113 di 420

x(M)	1.5400	0.8800	6.8200	6.6000	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
Min. Pile N.	-5.1939E-05	-3.1743E-13	-23.541	-1.2858E-07	-25.808	-1.2139E-07	-14.981	-7.1438E-08	1248.7	7.8279E+06	7.8279E+06
	5	6	3	3	3	3	3	3	3	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR M**2	FLEX. RIG. y-DIR M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.2733E-06	3.1810E-15	95.972	2.3317E-07	6.0566	1.5110E-08	1.7864	4.4543E-09	1704.1	7.8279E+06	7.8279E+06
x(M)	10.780	10.780	0.0000	0.0000	9.2400	9.0200	11.000	11.000	0.0000	0.0000	0.0000
2	1.2752E-06	5.0740E-15	95.817	3.1174E-07	6.0329	2.3843E-08	1.7748	6.9676E-09	1620.7	7.8279E+06	7.8279E+06
x(M)	10.780	10.560	0.0000	0.0000	9.2400	9.0200	11.000	11.000	0.0000	0.0000	0.0000
3	1.1692E-06	6.4467E-15	102.93	4.2703E-07	7.1853	3.9060E-08	2.3035	1.2449E-08	1559.3	7.8279E+06	7.8279E+06
x(M)	10.340	10.120	0.0000	0.0000	8.8000	8.5800	10.340	10.340	0.0000	0.0000	0.0000
4	1.3117E-06	3.2779E-15	93.249	2.2642E-07	5.6180	1.4020E-08	1.5978	3.9847E-09	1695.9	7.8279E+06	7.8279E+06
x(M)	11.000	11.000	0.0000	0.0000	9.2400	9.2400	11.220	11.220	0.0000	0.0000	0.0000
5	1.3117E-06	5.2216E-15	93.238	3.0205E-07	5.6151	2.2158E-08	1.5967	6.2716E-09	1612.9	7.8279E+06	7.8279E+06
x(M)	11.000	11.000	0.0000	0.0000	9.2400	9.2400	11.220	11.220	0.0000	0.0000	0.0000
6	1.1921E-06	6.5599E-15	101.59	4.2012E-07	6.9814	3.7898E-08	2.2022	1.1900E-08	1555.3	7.8279E+06	7.8279E+06
x(M)	10.340	10.120	0.0000	0.0000	8.8000	8.5800	10.560	10.340	0.0000	0.0000	0.0000
7	1.3117E-06	3.2779E-15	93.249	2.2642E-07	5.6180	1.4020E-08	1.5978	3.9847E-09	1695.9	7.8279E+06	7.8279E+06
x(M)	11.000	11.000	0.0000	0.0000	9.2400	9.2400	11.220	11.220	0.0000	0.0000	0.0000
8	1.3117E-06	5.2216E-15	93.238	3.0205E-07	5.6151	2.2158E-08	1.5967	6.2716E-09	1612.9	7.8279E+06	7.8279E+06
x(M)	11.000	11.000	0.0000	0.0000	9.2400	9.2400	11.220	11.220	0.0000	0.0000	0.0000
9	1.1921E-06	6.5599E-15	101.59	4.2012E-07	6.9814	3.7898E-08	2.2022	1.1900E-08	1555.3	7.8279E+06	7.8279E+06
x(M)	10.340	10.120	0.0000	0.0000	8.8000	8.5800	10.560	10.340	0.0000	0.0000	0.0000
10	1.2733E-06	3.1810E-15	95.972	2.3317E-07	6.0566	1.5110E-08	1.7864	4.4543E-09	1704.1	7.8279E+06	7.8279E+06
x(M)	10.780	10.780	0.0000	0.0000	9.2400	9.0200	11.000	11.000	0.0000	0.0000	0.0000
11	1.2752E-06	5.0740E-15	95.817	3.1174E-07	6.0329	2.3843E-08	1.7748	6.9676E-09	1620.7	7.8279E+06	7.8279E+06
x(M)	10.780	10.560	0.0000	0.0000	9.2400	9.0200	11.000	11.000	0.0000	0.0000	0.0000
12	1.1692E-06	6.4467E-15	102.93	4.2703E-07	7.1853	3.9060E-08	2.3035	1.2449E-08	1559.3	7.8279E+06	7.8279E+06
x(M)	10.340	10.120	0.0000	0.0000	8.8000	8.5800	10.340	10.340	0.0000	0.0000	0.0000
Max. Pile N.	1.3117E-06	6.5599E-15	102.93	4.2703E-07	7.1853	3.9060E-08	2.3035	1.2449E-08	1704.1	7.8279E+06	7.8279E+06
	4	6	3	3	3	3	3	3	1	1	1

LOAD CASE : 16
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8396	1.0000
2	0.7835	1.0000
3	0.8661	1.0000
4	0.5704	1.0000
5	0.4960	1.0000
6	0.6082	1.0000
7	0.5393	1.0000
8	0.4662	1.0000
9	0.5791	1.0000
10	0.5845	1.0000
11	0.5064	1.0000
12	0.6220	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
28236.4	-276.510	265.870
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-62.0335	3044.08	-6407.27

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.21745E-03	-3.93562E-05	1.11615E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-9.65975E-07	6.55815E-06	-1.69478E-05

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.3380E-03	-3.2836E-05	1.0727E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
2	1.2617E-03	-3.2836E-05	1.1161E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
3	1.1855E-03	-3.2836E-05	1.1596E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
4	1.3085E-03	-3.7183E-05	1.0727E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
5	1.2322E-03	-3.7183E-05	1.1161E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
6	1.1559E-03	-3.7183E-05	1.1596E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
7	1.2790E-03	-4.1530E-05	1.0727E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
8	1.2027E-03	-4.1530E-05	1.1161E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
9	1.1264E-03	-4.1530E-05	1.1596E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
10	1.2494E-03	-4.5877E-05	1.0727E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
11	1.1732E-03	-4.5877E-05	1.1161E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
12	1.0969E-03	-4.5877E-05	1.1596E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
MINIMUM	1.0969E-03	-4.5877E-05	1.0727E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3380E-03	-3.2836E-05	1.1596E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2583.1	-23.973	24.616	-0.3130	-66.327	-97.458
2	2437.5	-23.398	24.959	-0.3130	-68.480	-96.285
3	2292.0	-24.239	27.505	-0.3130	-74.639	-97.999
4	2526.7	-22.007	20.285	-0.3130	-58.201	-94.534
5	2381.2	-20.982	19.909	-0.3130	-58.798	-92.270
6	2235.6	-22.501	23.062	-0.3130	-66.363	-95.606
7	2470.4	-22.591	19.733	-0.3130	-57.114	-96.950
8	2324.9	-21.488	19.321	-0.3130	-57.605	-94.495
9	2179.3	-23.160	22.515	-0.3130	-65.298	-98.191
10	2414.1	-24.274	20.533	-0.3130	-58.680	-101.76
11	2268.6	-23.082	20.112	-0.3130	-59.200	-99.159
12	2123.0	-24.816	23.319	-0.3130	-66.853	-102.92
MINIMUM	2123.0	-24.816	19.321	-0.3130	-74.639	-102.92
Pile N.	12	12	8	1	3	12
MAXIMUM	2583.1	-20.982	27.505	-0.3130	-57.114	-92.270
Pile N.	1	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.3380E-03	-3.2836E-05	1.0727E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
2	1.2617E-03	-3.2836E-05	1.1161E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
3	1.1855E-03	-3.2836E-05	1.1596E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
4	1.3085E-03	-3.7183E-05	1.0727E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
5	1.2322E-03	-3.7183E-05	1.1161E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
6	1.1559E-03	-3.7183E-05	1.1596E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
7	1.2790E-03	-4.1530E-05	1.0727E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
8	1.2027E-03	-4.1530E-05	1.1161E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
9	1.1264E-03	-4.1530E-05	1.1596E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
10	1.2494E-03	-4.5877E-05	1.0727E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
11	1.1732E-03	-4.5877E-05	1.1161E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
12	1.0969E-03	-4.5877E-05	1.1596E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
MINIMUM	1.0969E-03	-4.5877E-05	1.0727E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3380E-03	-3.2836E-05	1.1596E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2583.1	-23.973	24.616	-0.3130	-66.327	-97.458
2	2437.5	-23.398	24.959	-0.3130	-68.480	-96.285
3	2292.0	-24.239	27.505	-0.3130	-74.639	-97.999
4	2526.7	-22.007	20.285	-0.3130	-58.201	-94.534
5	2381.2	-20.982	19.909	-0.3130	-58.798	-92.270
6	2235.6	-22.501	23.062	-0.3130	-66.363	-95.606
7	2470.4	-22.591	19.733	-0.3130	-57.114	-96.950
8	2324.9	-21.488	19.321	-0.3130	-57.605	-94.495
9	2179.3	-23.160	22.515	-0.3130	-65.298	-98.191
10	2414.1	-24.274	20.533	-0.3130	-58.680	-101.76
11	2268.6	-23.082	20.112	-0.3130	-59.200	-99.159

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	115 di 420

12	2123.0	-24.816	23.319	-0.3130	-66.853	-102.92
MINIMUM	2123.0	-24.816	19.321	-0.3130	-74.639	-102.92
Pile N.	12	12	8	1	3	12
MAXIMUM	2583.1	-20.982	27.505	-0.3130	-57.114	-92.270
Pile N.	1	5	3	1	7	5

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1817.5
2	1735.9
3	1668.8
4	1764.9
5	1677.7
6	1616.4
7	1737.6
8	1649.6
9	1589.1
10	1720.6
11	1632.3
12	1571.8
MINIMUM	1571.8
Pile N.	12
MAXIMUM	1817.5
Pile N.	1







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-4.6089E-05	-1.7375E-06	-21.601	-66.327	-23.977	-10.106	-13.862	-3.1772	1461.7	7.8279E+06	7.8279E+06
x(M)	1.7600	9.9000	7.0400	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
2	-4.6258E-05	-1.8472E-06	-21.319	-68.480	-23.402	-10.257	-13.445	-3.1804	1379.4	7.8279E+06	7.8279E+06
x(M)	1.7600	9.9000	7.0400	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
3	-4.6012E-05	-1.8799E-06	-21.719	-74.639	-24.242	-11.164	-14.050	-3.5370	1297.0	7.8279E+06	7.8279E+06
x(M)	1.7600	9.6800	7.0400	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
4	-5.0797E-05	-1.8851E-06	-21.208	-58.201	-22.010	-8.5155	-12.186	-2.4617	1429.8	7.8279E+06	7.8279E+06
x(M)	1.7600	10.340	7.2600	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
5	-5.1131E-05	-2.0183E-06	-20.509	-58.798	-20.985	-8.3284	-11.356	-2.3370	1347.5	7.8279E+06	7.8279E+06
x(M)	1.7600	10.560	7.2600	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
6	-5.0640E-05	-2.0239E-06	-21.499	-66.363	-22.504	-9.5511	-12.576	-2.7957	1265.1	7.8279E+06	7.8279E+06
x(M)	1.7600	10.120	7.2600	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
7	-5.4732E-05	-1.9062E-06	-22.260	-57.114	-22.594	-8.2904	-12.443	-2.3689	1398.0	7.8279E+06	7.8279E+06
x(M)	1.7600	10.340	7.2600	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
8	-5.5095E-05	-2.0431E-06	-21.465	-57.605	-21.491	-8.0929	-11.548	-2.2395	1315.6	7.8279E+06	7.8279E+06
x(M)	1.7600	10.560	7.2600	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
9	-5.4550E-05	-2.0452E-06	-22.614	-65.298	-23.163	-9.3400	-12.893	-2.7093	1233.2	7.8279E+06	7.8279E+06
x(M)	1.7600	10.340	7.2600	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
10	-5.8395E-05	-1.8744E-06	-24.013	-58.680	-24.277	-8.6113	-13.572	-2.5010	1366.1	7.8279E+06	7.8279E+06
x(M)	1.5400	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
11	-5.8700E-05	-2.0086E-06	-23.236	-59.200	-23.005	-8.4048	-12.627	-2.3686	1283.7	7.8279E+06	7.8279E+06
x(M)	1.5400	10.560	7.2600	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
12	-5.8260E-05	-2.0171E-06	-24.390	-66.853	-24.820	-9.6450	-13.990	-2.8411	1201.4	7.8279E+06	7.8279E+06
x(M)	1.5400	10.120	7.0400	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
Min.	-5.8700E-05	-2.0452E-06	-24.390	-74.639	-24.820	-11.164	-14.050	-3.5370	1201.4	7.8279E+06	7.8279E+06
Pile N.	11	9	12	3	12	3	3	3	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.0889E-06	1.0727E-04	97.458	33.900	6.5632	24.619	2.0892	14.878	1817.5	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.3800	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
2	1.1054E-06	1.1162E-04	96.285	34.876	6.3744	24.962	2.0000	15.142	1735.9	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.3800	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
3	1.0795E-06	1.1596E-04	97.999	37.161	6.6429	27.508	2.1268	16.566	1668.8	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.3800	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
4	1.2600E-06	1.0727E-04	94.534	31.071	5.9119	20.287	1.7318	12.394	1764.9	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
5	1.2927E-06	1.1162E-04	92.270	31.350	5.5411	19.911	1.5764	12.095	1677.7	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.6000	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
6	1.2451E-06	1.1596E-04	95.606	34.349	6.0831	23.065	1.8079	14.064	1616.4	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
7	1.3539E-06	1.0727E-04	96.950	30.655	6.1288	19.735	1.7709	12.042	1737.6	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.6000	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
8	1.3901E-06	1.1162E-04	94.495	30.845	5.7266	19.322	1.6059	11.701	1649.6	7.8279E+06	7.8279E+06
x(M)	11.220	0.0000	0.0000	6.6000	9.4600	0.0000	11.440	6.1600	0.0000	0.0000	0.0000
9	1.3380E-06	1.1596E-04	98.191	33.958	6.3171	22.517	1.8593	13.722	1589.1	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
10	1.4169E-06	1.0727E-04	101.76	31.249	6.7270	20.535	1.9812	12.548	1720.6	7.8279E+06	7.8279E+06

APPALTATORE: Consorzio Soci   			ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   								
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B								

x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
11	1.4547E-06	1.1162E-04	99.159	31.516	6.3049	20.114	1.7990	12.228	1632.3	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.6000	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
12	1.3962E-06	1.1596E-04	102.92	34.523	6.9245	23.321	2.0597	14.220	1571.8	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
Max.	1.4547E-06	1.1596E-04	102.92	37.161	6.9245	27.508	2.1268	16.566	1817.5	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	3	3	1	1	1

LOAD CASE : 17
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.5791	1.0000
3	0.8661	1.0000
4	0.4955	1.0000
5	0.4951	1.0000
6	0.8053	1.0000
7	0.4955	1.0000
8	0.4951	1.0000
9	0.8053	1.0000
10	0.5845	1.0000
11	0.5791	1.0000
12	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
28236.4	-276.510	-1.00000E-06
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
3.00000E-06	2.70000E-05	-6438.70

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.21745E-03	-3.79650E-05	-2.00527E-13
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
2.24298E-14	3.99511E-14	-1.70561E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
2	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
3	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
4	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
5	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
6	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
7	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
8	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
9	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
10	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
11	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
12	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
MINIMUM	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2499.5	-22.465	-5.5173E-08	7.2674E-09	2.3317E-07	-95.972

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 117 di 420
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2	2353.0	-22.393	-7.9054E-08	7.2674E-09	3.1174E-07	-95.817
3	2206.6	-25.805	-1.2137E-07	7.2674E-09	4.2703E-07	-102.93
4	2499.5	-21.229	-5.2097E-08	7.2674E-09	2.2642E-07	-93.249
5	2353.0	-21.224	-7.4518E-08	7.2674E-09	3.0205E-07	-93.238
6	2206.6	-25.140	-1.1779E-07	7.2674E-09	4.2012E-07	-101.59
7	2499.5	-21.229	-5.2097E-08	7.2674E-09	2.2642E-07	-93.249
8	2353.0	-21.224	-7.4518E-08	7.2674E-09	3.0205E-07	-93.238
9	2206.6	-25.140	-1.1779E-07	7.2674E-09	4.2012E-07	-101.59
10	2499.5	-22.465	-5.5173E-08	7.2674E-09	2.3317E-07	-95.972
11	2353.0	-22.393	-7.9054E-08	7.2674E-09	3.1174E-07	-95.817
12	2206.6	-25.805	-1.2137E-07	7.2674E-09	4.2703E-07	-102.93
MINIMUM	2206.6	-25.805	-1.2137E-07	7.2674E-09	2.2642E-07	-102.93
Pile N.	3	3	3	1	4	3
MAXIMUM	2499.5	-21.224	-5.2097E-08	7.2674E-09	4.2703E-07	-93.238
Pile N.	1	5	4	1	3	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
1	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
2	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
3	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
4	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
5	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
6	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
7	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
8	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
9	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
10	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
11	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
12	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
MINIMUM	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2499.5	-22.465	-5.5173E-08	7.2674E-09	2.3317E-07	-95.972
2	2353.0	-22.393	-7.9054E-08	7.2674E-09	3.1174E-07	-95.817
3	2206.6	-25.805	-1.2137E-07	7.2674E-09	4.2703E-07	-102.93
4	2499.5	-21.229	-5.2097E-08	7.2674E-09	2.2642E-07	-93.249
5	2353.0	-21.224	-7.4518E-08	7.2674E-09	3.0205E-07	-93.238
6	2206.6	-25.140	-1.1779E-07	7.2674E-09	4.2012E-07	-101.59
7	2499.5	-21.229	-5.2097E-08	7.2674E-09	2.2642E-07	-93.249
8	2353.0	-21.224	-7.4518E-08	7.2674E-09	3.0205E-07	-93.238
9	2206.6	-25.140	-1.1779E-07	7.2674E-09	4.2012E-07	-101.59
10	2499.5	-22.465	-5.5173E-08	7.2674E-09	2.3317E-07	-95.972
11	2353.0	-22.393	-7.9054E-08	7.2674E-09	3.1174E-07	-95.817
12	2206.6	-25.805	-1.2137E-07	7.2674E-09	4.2703E-07	-102.93
MINIMUM	2206.6	-25.805	-1.2137E-07	7.2674E-09	2.2642E-07	-102.93
Pile N.	3	3	3	1	4	3
MAXIMUM	2499.5	-21.224	-5.2097E-08	7.2674E-09	4.2703E-07	-93.238
Pile N.	1	5	4	1	3	5

PILE GROUP STRESS, KN/ M**2

1	1704.1
2	1620.7
3	1559.3
4	1695.9
5	1612.9
6	1555.3
7	1695.9
8	1612.9
9	1555.3
10	1704.1
11	1620.7
12	1559.3
MINIMUM	1555.3
Pile N.	6
MAXIMUM	1704.1
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 118 di 420
------------------	-------------	---------------------	-------------------------	-----------	-------------------------

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-5.1537E-05	-1.3001E-13	-21.625	-5.3940E-08	-22.468	-5.5181E-08	-12.490	-3.0775E-08	1414.4	7.8279E+06	7.8279E+06
x (M)	1.7600	1.7600	7.2600	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
2	-5.1559E-05	-2.2252E-13	-21.581	-8.5638E-08	-22.396	-7.9064E-08	-12.433	-4.4936E-08	1331.5	7.8279E+06	7.8279E+06
x (M)	1.7600	1.1000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
3	-5.0586E-05	-3.1714E-13	-23.541	-1.2858E-07	-25.808	-1.2139E-07	-14.981	-7.1438E-08	1248.7	7.8279E+06	7.8279E+06
x (M)	1.5400	0.8800	6.8200	6.6000	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
4	-5.1938E-05	-1.3101E-13	-20.799	-5.1919E-08	-21.232	-5.2105E-08	-11.494	-2.8317E-08	1414.4	7.8279E+06	7.8279E+06
x (M)	1.7600	1.7600	7.2600	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
5	-5.1939E-05	-2.2317E-13	-20.794	-8.2302E-08	-21.227	-7.4528E-08	-11.489	-4.1500E-08	1331.5	7.8279E+06	7.8279E+06
x (M)	1.7600	1.3200	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
6	-5.0740E-05	-3.1743E-13	-23.203	-1.2673E-07	-25.143	-1.1780E-07	-14.513	-6.9205E-08	1248.7	7.8279E+06	7.8279E+06
x (M)	1.5400	0.8800	7.0400	6.8200	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
7	-5.1938E-05	-1.3101E-13	-20.799	-5.1919E-08	-21.232	-5.2105E-08	-11.494	-2.8317E-08	1414.4	7.8279E+06	7.8279E+06
x (M)	1.7600	1.7600	7.2600	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
8	-5.1939E-05	-2.2317E-13	-20.794	-8.2302E-08	-21.227	-7.4528E-08	-11.489	-4.1500E-08	1331.5	7.8279E+06	7.8279E+06
x (M)	1.7600	1.3200	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
9	-5.0740E-05	-3.1743E-13	-23.203	-1.2673E-07	-25.143	-1.1780E-07	-14.513	-6.9205E-08	1248.7	7.8279E+06	7.8279E+06
x (M)	1.5400	0.8800	7.0400	6.8200	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
10	-5.1537E-05	-1.3001E-13	-21.625	-5.3940E-08	-22.468	-5.5181E-08	-12.490	-3.0775E-08	1414.4	7.8279E+06	7.8279E+06
x (M)	1.7600	1.7600	7.2600	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
11	-5.1559E-05	-2.2252E-13	-21.581	-8.5638E-08	-22.396	-7.9064E-08	-12.433	-4.4936E-08	1331.5	7.8279E+06	7.8279E+06
x (M)	1.7600	1.1000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
12	-5.0586E-05	-3.1714E-13	-23.541	-1.2858E-07	-25.808	-1.2139E-07	-14.981	-7.1438E-08	1248.7	7.8279E+06	7.8279E+06
x (M)	1.5400	0.8800	6.8200	6.6000	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
Min.	-5.1939E+05	-3.1743E-13	-23.541	-1.2858E-07	-25.808	-1.2139E-07	-14.981	-7.1438E-08	1248.7	7.8279E+06	7.8279E+06
Pile N.	5	3	3	3	3	3	3	3	3	1	1






* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.2733E-06	3.1810E-15	95.972	2.3317E-07	6.0566	1.5110E-08	1.7864	4.4543E-09	1704.1	7.8279E+06	7.8279E+06
x (M)	10.780	10.780	0.0000	0.0000	9.2400	9.0200	11.000	11.000	0.0000	0.0000	0.0000
2	1.2752E-06	5.0740E-15	95.817	3.1174E-07	6.0329	2.3843E-08	1.7748	6.9676E-09	1620.7	7.8279E+06	7.8279E+06
x (M)	10.780	10.560	0.0000	0.0000	9.2400	9.0200	11.000	11.000	0.0000	0.0000	0.0000
3	1.1692E-06	6.4467E-15	102.93	4.2703E-07	7.1853	3.9060E-08	2.3035	1.2449E-08	1559.3	7.8279E+06	7.8279E+06
x (M)	10.340	10.120	0.0000	0.0000	8.8000	8.5800	10.340	10.340	0.0000	0.0000	0.0000
4	1.3117E-06	3.2779E-15	93.249	2.2642E-07	5.6180	1.4020E-08	1.5978	3.9847E-09	1695.9	7.8279E+06	7.8279E+06
x (M)	11.000	11.000	0.0000	0.0000	9.2400	9.2400	11.220	11.220	0.0000	0.0000	0.0000
5	1.3117E-06	5.2216E-15	93.238	3.0205E-07	5.6151	2.2158E-08	1.5967	6.2716E-09	1612.9	7.8279E+06	7.8279E+06
x (M)	11.000	11.000	0.0000	0.0000	9.2400	9.2400	11.220	11.220	0.0000	0.0000	0.0000
6	1.1921E-06	6.5599E-15	101.59	4.2012E-07	6.9814	3.7898E-08	2.2022	1.1900E-08	1555.3	7.8279E+06	7.8279E+06
x (M)	10.340	10.120	0.0000	0.0000	8.8000	8.5800	10.560	10.340	0.0000	0.0000	0.0000
7	1.3117E-06	3.2779E-15	93.249	2.2642E-07	5.6180	1.4020E-08	1.5978	3.9847E-09	1695.9	7.8279E+06	7.8279E+06
x (M)	11.000	11.000	0.0000	0.0000	9.2400	9.2400	11.220	11.220	0.0000	0.0000	0.0000
8	1.3117E-06	5.2216E-15	93.238	3.0205E-07	5.6151	2.2158E-08	1.5967	6.2716E-09	1612.9	7.8279E+06	7.8279E+06
x (M)	11.000	11.000	0.0000	0.0000	9.2400	9.2400	11.220	11.220	0.0000	0.0000	0.0000
9	1.1921E-06	6.5599E-15	101.59	4.2012E-07	6.9814	3.7898E-08	2.2022	1.1900E-08	1555.3	7.8279E+06	7.8279E+06
x (M)	10.340	10.120	0.0000	0.0000	8.8000	8.5800	10.560	10.340	0.0000	0.0000	0.0000
10	1.2733E-06	3.1810E-15	95.972	2.3317E-07	6.0566	1.5110E-08	1.7864	4.4543E-09	1704.1	7.8279E+06	7.8279E+06
x (M)	10.780	10.780	0.0000	0.0000	9.2400	9.0200	11.000	11.000	0.0000	0.0000	0.0000
11	1.2752E-06	5.0740E-15	95.817	3.1174E-07	6.0329	2.3843E-08	1.7748	6.9676E-09	1620.7	7.8279E+06	7.8279E+06
x (M)	10.780	10.560	0.0000	0.0000	9.2400	9.0200	11.000	11.000	0.0000	0.0000	0.0000
12	1.1692E-06	6.4467E-15	102.93	4.2703E-07	7.1853	3.9060E-08	2.3035	1.2449E-08	1559.3	7.8279E+06	7.8279E+06
x (M)	10.340	10.120	0.0000	0.0000	8.8000	8.5800	10.340	10.340	0.0000	0.0000	0.0000
Max.	1.3117E-06	6.5599E-15	102.93	4.2703E-07	7.1853	3.9060E-08	2.3035	1.2449E-08	1704.1	7.8279E+06	7.8279E+06
Pile N.	4	6	3	3	3	3	3	3	1	1	1

LOAD CASE : 18
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5998	1.0000
3	0.6112	1.0000
4	0.7899	1.0000
5	0.4952	1.0000
6	0.5026	1.0000
7	0.7880	1.0000
8	0.4926	1.0000
9	0.4995	1.0000
10	0.8474	1.0000

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA											
PROGETTAZIONE: Mandataria  Mandanti  												
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B												
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 15%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 15%;">REV.</td> <td style="width: 15%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>119 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	119 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO							
IF28	01	E ZZ CL	VI0103 001	B	119 di 420							

11 0.5731 1.0000
 12 0.5845 1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30827.9	496.827	204.774
MOMENT X , KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-125.420	2238.30	-10961.7

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL , M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.33061E-03	2.91845E-04	8.49983E-05
ANGLE ROT. X,RAD	ANGLE ROT. Y,RAD	ANGLE ROT. Z,RAD
-1.39049E-06	4.87008E-06	-3.86449E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.5374E-03	3.0123E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
2	1.3635E-03	3.0123E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
3	1.1896E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
4	1.5155E-03	2.9497E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
5	1.3416E-03	2.9497E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
6	1.1677E-03	2.9497E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
7	1.4935E-03	2.8872E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
8	1.3196E-03	2.8872E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
9	1.1458E-03	2.8872E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
10	1.4716E-03	2.8246E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
11	1.2977E-03	2.8246E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
12	1.1238E-03	2.8246E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
MINIMUM	1.1238E-03	2.8246E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5374E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	1	1	3	1	1	1




* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2963.6	52.519	18.305	-0.4505	-48.978	105.58
2	2631.7	42.416	16.735	-0.4505	-48.175	87.452
3	2299.9	42.894	18.423	-0.4505	-53.444	88.306
4	2921.8	48.047	17.468	-0.4505	-47.461	95.430
5	2589.9	36.587	15.240	-0.4505	-45.223	74.358
6	2258.0	36.914	16.753	-0.4505	-50.153	74.956
7	2880.0	46.263	17.447	-0.4505	-47.422	89.977
8	2548.1	35.091	15.202	-0.4505	-45.146	69.462
9	2216.2	35.390	16.705	-0.4505	-50.054	70.005
10	2838.1	46.532	18.104	-0.4505	-48.614	88.097
11	2506.3	36.862	16.365	-0.4505	-47.453	70.743
12	2174.4	37.311	18.027	-0.4505	-52.672	71.547
MINIMUM	2174.4	35.091	15.202	-0.4505	-53.444	69.462
Pile N.	12	8	8	1	3	8
MAXIMUM	2963.6	52.519	18.423	-0.4505	-45.146	105.58
Pile N.	1	1	3	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.5374E-03	3.0123E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
2	1.3635E-03	3.0123E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
3	1.1896E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
4	1.5155E-03	2.9497E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
5	1.3416E-03	2.9497E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   		
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		

6	1.1677E-03	2.9497E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
7	1.4935E-03	2.8872E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
8	1.3196E-03	2.8872E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
9	1.1458E-03	2.8872E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
10	1.4716E-03	2.8246E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
11	1.2977E-03	2.8246E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
12	1.1238E-03	2.8246E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
MINIMUM	1.1238E-03	2.8246E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5374E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *







PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2963.6	52.519	18.305	-0.4505	-48.978	105.58
2	2631.7	42.416	16.735	-0.4505	-48.175	87.452
3	2299.9	42.894	18.423	-0.4505	-53.444	88.306
4	2921.8	48.047	17.468	-0.4505	-47.461	95.430
5	2589.9	36.587	15.240	-0.4505	-45.223	74.358
6	2258.0	36.914	16.753	-0.4505	-50.153	74.956
7	2880.0	46.263	17.447	-0.4505	-47.422	89.977
8	2548.1	35.091	15.202	-0.4505	-45.146	69.462
9	2216.2	35.390	16.705	-0.4505	-50.054	70.005
10	2838.1	46.532	18.104	-0.4505	-48.614	88.097
11	2506.3	36.862	16.365	-0.4505	-47.453	70.743
12	2174.4	37.311	18.027	-0.4505	-52.672	71.547
MINIMUM	2174.4	35.091	15.202	-0.4505	-53.444	69.462
Pile N.	12	8	8	1	3	8
MAXIMUM	2963.6	52.519	18.423	-0.4505	-45.146	105.58
Pile N.	1	1	3	1	8	1

PILE GROUP	STRESS, KN/ M**2
1	2028.3
2	1790.6
3	1613.0
4	1975.1
5	1728.2
6	1550.0
7	1936.7
8	1691.9
9	1513.8
10	1909.7
11	1675.3
12	1498.6
MINIMUM	1498.6
Pile N.	12
MAXIMUM	2028.3
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
1	-4.3849E-06	-1.2673E-06	-105.58	-48.978	-25.668	-7.5178	-8.0866	-2.3811	1677.1	7.8279E+06	7.8279E+06
x(M)	9.4600	9.6800	0.0000	0.0000	7.9200	8.1400	9.6800	9.9000	22.000	0.0000	0.0000
2	-4.7574E-06	-1.4851E-06	-87.452	-48.175	-21.882	-6.9499	-6.3538	-2.0289	1489.3	7.8279E+06	7.8279E+06
x(M)	9.9000	10.120	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
3	-4.7419E-06	-1.5988E-06	-88.306	-53.444	-22.058	-7.5742	-6.4325	-2.2197	1301.4	7.8279E+06	7.8279E+06
x(M)	9.9000	10.120	0.0000	0.0000	8.3600	8.5800	10.120	10.340	22.000	0.0000	0.0000
4	-4.3822E-06	-1.2947E-06	-95.430	-47.461	-24.080	-7.2227	-7.4422	-2.2436	1653.4	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	0.0000	8.1400	8.3600	9.9000	10.120	22.000	0.0000	0.0000
5	-4.8253E-06	-1.5413E-06	-74.358	-45.223	-19.523	-6.3541	-5.4463	-1.7825	1465.6	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.560	10.780	22.000	0.0000	0.0000
6	-4.8136E-06	-1.6592E-06	-74.956	-50.153	-19.661	-6.9131	-5.4969	-1.9458	1277.8	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.560	10.780	22.000	0.0000	0.0000
7	-4.2746E-06	-1.2955E-06	-89.977	-47.422	-23.430	-7.2153	-7.2366	-2.2401	1629.7	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	0.0000	8.1400	8.3600	9.9000	10.120	22.000	0.0000	0.0000
8	-4.7126E-06	-1.5430E-06	-69.462	-45.146	-18.986	-6.3391	-5.2864	-1.7763	1441.9	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.560	10.780	22.000	0.0000	0.0000
9	-4.7015E-06	-1.6614E-06	-70.005	-50.054	-19.110	-6.8941	-5.3324	-1.9380	1254.1	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.560	10.780	22.000	0.0000	0.0000
10	-4.0852E-06	-1.2719E-06	-88.097	-48.614	-23.524	-7.4427	-7.3673	-2.3452	1606.1	7.8279E+06	7.8279E+06
x(M)	9.4600	9.6800	0.0000	0.0000	7.9200	8.1400	9.6800	9.9000	22.000	0.0000	0.0000
11	-4.4540E-06	-1.5012E-06	-70.743	-47.453	-19.831	-6.8054	-5.7002	-1.9699	1418.3	7.8279E+06	7.8279E+06
x(M)	10.120	10.340	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
12	-4.4358E-06	-1.6141E-06	-71.547	-52.672	-20.000	-7.4214	-5.7709	-2.1574	1230.4	7.8279E+06	7.8279E+06
x(M)	9.9000	10.340	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 121 di 420

Min. -4.8253E-06 -1.6614E-06 -105.58 -53.444 -25.668 -7.5742 -8.0866 -2.3811 1230.4 7.8279E+06 7.8279E+06
Pile N. 5 9 1 3 1 3 1 1 12 1 1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	3.0123E-04	7.8741E-05	86.044	25.020	52.523	18.307	32.270	11.039	2028.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
2	3.0123E-04	8.4998E-05	79.488	25.068	42.419	16.737	27.187	10.210	1790.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
3	3.0123E-04	9.1256E-05	79.807	27.203	42.896	18.425	27.450	11.218	1613.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
4	2.9497E-04	7.8741E-05	82.334	24.531	48.051	17.470	29.971	10.604	1975.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
5	2.9497E-04	8.4998E-05	74.249	23.918	36.590	15.241	23.779	9.2494	1728.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
6	2.9497E-04	9.1256E-05	74.501	25.930	36.917	16.755	23.972	10.147	1550.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
7	2.8872E-04	7.8741E-05	80.210	24.517	46.267	17.449	28.913	10.593	1936.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
8	2.8872E-04	8.4998E-05	72.293	23.885	35.094	15.204	22.897	9.2241	1691.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
9	2.8872E-04	9.1256E-05	72.521	25.890	35.392	16.706	23.072	10.115	1513.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
10	2.8246E-04	7.8741E-05	79.286	24.906	46.536	18.106	28.792	10.937	1909.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
11	2.8246E-04	8.4998E-05	72.826	24.800	36.865	16.367	23.917	9.9780	1675.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
12	2.8246E-04	9.1256E-05	73.131	26.920	37.313	18.029	24.165	10.970	1498.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max.	3.0123E-04	9.1256E-05	86.044	27.203	52.523	18.425	32.270	11.218	2028.3	7.8279E+06	7.8279E+06
Pile N.	1	3	1	3	1	3	1	3	1	1	1

LOAD CASE : 19
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.7990	1.0000
2	0.7502	1.0000
3	0.8661	1.0000
4	0.5575	1.0000
5	0.4959	1.0000
6	0.6488	1.0000
7	0.5315	1.0000
8	0.4717	1.0000
9	0.6267	1.0000
10	0.5845	1.0000
11	0.5204	1.0000
12	0.6733	1.0000

* TABLE L * COMPUTATION ON PILE CAP



* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
29835.4	-276.510	213.600
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-256.320	3486.70	-4519.97

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.28727E-03	-5.81508E-05	9.47883E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-2.40849E-06	7.01348E-06	-1.11419E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria  Mandanti  		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 122 di 420

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
1	1.3847E-03	-4.1894E-05	8.3950E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
2	1.3346E-03	-4.1894E-05	9.4788E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
3	1.2845E-03	-4.1894E-05	1.0563E-04	-2.4085E-06	7.0135E-06	-1.1142E-05
4	1.3532E-03	-5.2732E-05	8.3950E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
5	1.3031E-03	-5.2732E-05	9.4788E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
6	1.2529E-03	-5.2732E-05	1.0563E-04	-2.4085E-06	7.0135E-06	-1.1142E-05
7	1.3216E-03	-6.3570E-05	8.3950E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
8	1.2715E-03	-6.3570E-05	9.4788E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
9	1.2213E-03	-6.3570E-05	1.0563E-04	-2.4085E-06	7.0135E-06	-1.1142E-05
10	1.2901E-03	-7.4408E-05	8.3950E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
11	1.2399E-03	-7.4408E-05	9.4788E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
12	1.1898E-03	-7.4408E-05	1.0563E-04	-2.4085E-06	7.0135E-06	-1.1142E-05
MINIMUM	1.1898E-03	-7.4408E-05	8.3950E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3847E-03	-4.1894E-05	1.0563E-04	-2.4085E-06	7.0135E-06	-1.1142E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2672.3	-21.093	17.177	-0.7804	-43.434	-80.881
2	2576.6	-20.596	19.524	-0.7804	-51.523	-79.884
3	2480.9	-21.755	24.141	-0.7804	-63.737	-82.188
4	2612.1	-20.981	14.240	-0.7804	-37.944	-83.799
5	2516.4	-20.083	15.821	-0.7804	-44.443	-81.868
6	2420.7	-22.225	20.844	-0.7804	-57.660	-86.399
7	2551.9	-23.096	13.896	-0.7804	-37.272	-91.289
8	2456.2	-22.071	15.430	-0.7804	-43.658	-89.079
9	2360.5	-24.610	20.484	-0.7804	-56.973	-94.460
10	2491.6	-26.549	14.593	-0.7804	-38.624	-101.60
11	2395.9	-25.375	16.211	-0.7804	-45.214	-99.131
12	2300.3	-28.076	21.239	-0.7804	-58.402	-104.73
MINIMUM	2300.3	-28.076	13.896	-0.7804	-63.737	-104.73
Pile N.	12	12	7	1	3	12
MAXIMUM	2672.3	-20.083	24.141	-0.7804	-37.272	-79.884
Pile N.	1	5	3	1	7	2

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
1	1.3847E-03	-4.1894E-05	8.3950E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
2	1.3346E-03	-4.1894E-05	9.4788E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
3	1.2845E-03	-4.1894E-05	1.0563E-04	-2.4085E-06	7.0135E-06	-1.1142E-05
4	1.3532E-03	-5.2732E-05	8.3950E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
5	1.3031E-03	-5.2732E-05	9.4788E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
6	1.2529E-03	-5.2732E-05	1.0563E-04	-2.4085E-06	7.0135E-06	-1.1142E-05
7	1.3216E-03	-6.3570E-05	8.3950E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
8	1.2715E-03	-6.3570E-05	9.4788E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
9	1.2213E-03	-6.3570E-05	1.0563E-04	-2.4085E-06	7.0135E-06	-1.1142E-05
10	1.2901E-03	-7.4408E-05	8.3950E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
11	1.2399E-03	-7.4408E-05	9.4788E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
12	1.1898E-03	-7.4408E-05	1.0563E-04	-2.4085E-06	7.0135E-06	-1.1142E-05
MINIMUM	1.1898E-03	-7.4408E-05	8.3950E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3847E-03	-4.1894E-05	1.0563E-04	-2.4085E-06	7.0135E-06	-1.1142E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2672.3	-21.093	17.177	-0.7804	-43.434	-80.881
2	2576.6	-20.596	19.524	-0.7804	-51.523	-79.884
3	2480.9	-21.755	24.141	-0.7804	-63.737	-82.188
4	2612.1	-20.981	14.240	-0.7804	-37.944	-83.799
5	2516.4	-20.083	15.821	-0.7804	-44.443	-81.868
6	2420.7	-22.225	20.844	-0.7804	-57.660	-86.399
7	2551.9	-23.096	13.896	-0.7804	-37.272	-91.289
8	2456.2	-22.071	15.430	-0.7804	-43.658	-89.079
9	2360.5	-24.610	20.484	-0.7804	-56.973	-94.460
10	2491.6	-26.549	14.593	-0.7804	-38.624	-101.60
11	2395.9	-25.375	16.211	-0.7804	-45.214	-99.131
12	2300.3	-28.076	21.239	-0.7804	-58.402	-104.73

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	123 di 420

MINIMUM	2300.3	-28.076	13.896	-0.7804	-63.737	-104.73
Pile N.	12	12	7	1	3	12
MAXIMUM	2672.3	-20.083	24.141	-0.7804	-37.272	-79.884
Pile N.	1	5	3	1	7	2

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1789.3
2	1745.0
3	1717.8
4	1755.8
5	1705.1
6	1683.3
7	1741.6
8	1689.3
9	1668.7
10	1738.0
11	1684.7
12	1663.6

MINIMUM	1663.6
Pile N.	12
MAXIMUM	1789.3
Pile N.	1







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-4.8595E-05	-1.3292E-06	-20.917	-43.434	-21.096	-7.4551	-12.269	-2.3146	1512.2	7.8279E+06	7.8279E+06
x(M)	1.3200	9.9000	6.8200	0.0000	0.0000	8.1400	6.1600	10.120	22.000	0.0000	0.0000
2	-4.8683E-05	-1.5474E-06	-20.616	-51.523	-20.599	-8.3281	-11.926	-2.5558	1458.1	7.8279E+06	7.8279E+06
x(M)	1.3200	9.9000	6.8200	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
3	-4.8481E-05	-1.6885E-06	-21.278	-63.737	-21.758	-10.007	-12.709	-3.1688	1403.9	7.8279E+06	7.8279E+06
x(M)	1.3200	9.6800	6.8200	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
4	-5.9104E-05	-1.4323E-06	-22.666	-37.944	-20.984	-6.3496	-11.852	-1.8228	1478.1	7.8279E+06	7.8279E+06
x(M)	1.3200	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
5	-5.9277E-05	-1.6756E-06	-21.986	-44.443	-20.806	-6.8861	-11.165	-1.9304	1424.0	7.8279E+06	7.8279E+06
x(M)	1.3200	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.780	22.000	0.0000	0.0000
6	-5.8912E-05	-1.7970E-06	-23.468	-57.660	-22.228	-8.7999	-12.769	-2.6203	1369.8	7.8279E+06	7.8279E+06
x(M)	1.1000	10.120	7.0400	0.0000	0.0000	8.3600	6.1600	10.340	22.000	0.0000	0.0000
7	-6.9396E-05	-1.4475E-06	-25.762	-37.272	-23.099	-6.2120	-13.041	-1.7660	1444.1	7.8279E+06	7.8279E+06
x(M)	1.1000	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
8	-6.9539E-05	-1.6927E-06	-24.962	-43.658	-22.074	-6.7338	-12.259	-1.8676	1389.9	7.8279E+06	7.8279E+06
x(M)	1.1000	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
9	-6.9191E-05	-1.8093E-06	-26.763	-56.973	-24.613	-8.6635	-14.154	-2.5589	1335.8	7.8279E+06	7.8279E+06
x(M)	1.1000	10.120	7.0400	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
10	-7.9547E-05	-1.4202E-06	-29.783	-38.624	-26.553	-6.4836	-15.222	-1.8810	1410.0	7.8279E+06	7.8279E+06
x(M)	0.8800	10.120	7.0400	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
11	-7.9689E-05	-1.6635E-06	-28.976	-45.214	-25.374	-7.0524	-14.356	-1.9972	1355.8	7.8279E+06	7.8279E+06
x(M)	1.1000	10.340	7.0400	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
12	-7.9413E-05	-1.7819E-06	-30.806	-58.402	-28.079	-8.9565	-16.303	-2.6843	1301.7	7.8279E+06	7.8279E+06
x(M)	0.8800	10.120	6.8200	0.0000	0.0000	8.3600	6.1600	10.340	22.000	0.0000	0.0000
Min.	-7.9689E-05	-1.8093E-06	-30.806	-63.737	-28.079	-10.007	-16.303	-3.1688	1301.7	7.8279E+06	7.8279E+06
Pile N.	11	9	12	3	12	3	12	3	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.0792E-06	8.3950E-05	80.881	25.317	6.2468	17.179	1.9631	10.489	1789.3	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.3800	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
2	1.0959E-06	9.4788E-05	79.884	28.637	6.0901	19.526	1.8885	11.934	1745.0	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.3800	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
3	1.0621E-06	1.0563E-04	82.188	33.312	6.4790	24.144	2.0723	14.572	1717.8	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
4	1.3673E-06	8.3950E-05	83.799	23.316	6.2612	14.241	1.8187	8.8229	1755.8	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
5	1.3944E-06	9.4788E-05	81.868	26.002	5.9266	15.822	1.6785	9.7165	1705.1	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.6000	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
6	1.3283E-06	1.0563E-04	86.399	31.221	6.7017	20.846	2.0126	12.768	1683.3	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
7	1.5884E-06	8.3950E-05	91.289	23.062	7.0335	13.897	2.0218	8.6080	1741.6	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
8	1.6209E-06	9.4788E-05	89.079	25.676	6.6509	15.431	1.8629	9.4595	1689.3	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.6000	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
9	1.5403E-06	1.0563E-04	94.460	30.987	7.5787	20.486	2.2586	12.553	1668.7	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
10	1.7662E-06	8.3950E-05	101.60	23.563	8.2956	14.595	2.4335	9.0390	1738.0	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	9.0200	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
11	1.8043E-06	9.4788E-05	99.131	26.311	7.8683	16.212	2.2500	9.9683	1684.7	7.8279E+06	7.8279E+06

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 124 di 420

x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
12	1.7179E-06	1.0563E-04	104.73	31.484	8.8555	21.241	2.6743	12.999	1663.6	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.3800	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
Max.	1.8043E-06	1.0563E-04	104.73	33.312	8.8555	24.144	2.6743	14.572	1789.3	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	12	3	1	1	1

LOAD CASE : 20
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5959	1.0000
2	0.5879	1.0000
3	0.8661	1.0000
4	0.4985	1.0000
5	0.4951	1.0000
6	0.7989	1.0000
7	0.4972	1.0000
8	0.4941	1.0000
9	0.7981	1.0000
10	0.5845	1.0000
11	0.5766	1.0000
12	0.8583	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
29535.7	-496.827	73.3230
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-34.6614	-110.682	-4613.18

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.27418E-03	-1.37256E-04	2.53032E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-1.49964E-07	2.11315E-07	-9.25427E-06




THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.3173E-03	-1.3624E-04	2.4628E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
2	1.2756E-03	-1.3624E-04	2.5303E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
3	1.2340E-03	-1.3624E-04	2.5978E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
4	1.3163E-03	-1.3692E-04	2.4628E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
5	1.2747E-03	-1.3692E-04	2.5303E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
6	1.2330E-03	-1.3692E-04	2.5978E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
7	1.3154E-03	-1.3759E-04	2.4628E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
8	1.2737E-03	-1.3759E-04	2.5303E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
9	1.2321E-03	-1.3759E-04	2.5978E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
10	1.3144E-03	-1.3827E-04	2.4628E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
11	1.2728E-03	-1.3827E-04	2.5303E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
12	1.2311E-03	-1.3827E-04	2.5978E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
MINIMUM	1.2311E-03	-1.3827E-04	2.4628E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3173E-03	-1.3624E-04	2.5978E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2543.5	-40.191	5.7796	-0.048590	-18.596	-143.43
2	2464.0	-39.966	5.9063	-0.048590	-19.056	-142.97
3	2384.6	-47.151	7.2619	-0.048590	-21.862	-157.01

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

4	2541.7	-37.470	5.3312	-0.048590	-17.693	-138.00
5	2462.2	-37.368	5.4653	-0.048590	-18.165	-137.79
6	2382.7	-45.714	6.9913	-0.048590	-21.361	-154.51
7	2539.9	-37.581	5.3250	-0.048590	-17.680	-138.43
8	2460.4	-37.485	5.4600	-0.048590	-18.155	-138.22
9	2380.9	-45.881	6.9880	-0.048590	-21.355	-155.05
10	2538.1	-40.353	5.7291	-0.048590	-18.496	-144.36
11	2458.6	-40.123	5.8542	-0.048590	-18.953	-143.89
12	2379.1	-47.544	7.2310	-0.048590	-21.805	-158.43
MINIMUM	2379.1	-47.544	5.3250	-0.048590	-21.862	-158.43
Pile N.	12	12	7	1	3	12
MAXIMUM	2543.5	-37.368	7.2619	-0.048590	-17.680	-137.79
Pile N.	1	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.3173E-03	-1.3624E-04	2.4628E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
2	1.2756E-03	-1.3624E-04	2.5303E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
3	1.2340E-03	-1.3624E-04	2.5978E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
4	1.3163E-03	-1.3692E-04	2.4628E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
5	1.2747E-03	-1.3692E-04	2.5303E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
6	1.2330E-03	-1.3692E-04	2.5978E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
7	1.3154E-03	-1.3759E-04	2.4628E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
8	1.2737E-03	-1.3759E-04	2.5303E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
9	1.2321E-03	-1.3759E-04	2.5978E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
10	1.3144E-03	-1.3827E-04	2.4628E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
11	1.2728E-03	-1.3827E-04	2.5303E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
12	1.2311E-03	-1.3827E-04	2.5978E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
MINIMUM	1.2311E-03	-1.3827E-04	2.4628E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3173E-03	-1.3624E-04	2.5978E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2543.5	-40.191	5.7796	-0.048590	-18.596	-143.43
2	2464.0	-39.966	5.9063	-0.048590	-19.056	-142.97
3	2384.6	-47.151	7.2619	-0.048590	-21.862	-157.01
4	2541.7	-37.470	5.3312	-0.048590	-17.693	-138.00
5	2462.2	-37.368	5.4653	-0.048590	-18.165	-137.79
6	2382.7	-45.714	6.9913	-0.048590	-21.361	-154.51
7	2539.9	-37.581	5.3250	-0.048590	-17.680	-138.43
8	2460.4	-37.485	5.4600	-0.048590	-18.155	-138.22
9	2380.9	-45.881	6.9880	-0.048590	-21.355	-155.05
10	2538.1	-40.353	5.7291	-0.048590	-18.496	-144.36
11	2458.6	-40.123	5.8542	-0.048590	-18.953	-143.89
12	2379.1	-47.544	7.2310	-0.048590	-21.805	-158.43
MINIMUM	2379.1	-47.544	5.3250	-0.048590	-21.862	-158.43
Pile N.	12	12	7	1	3	12
MAXIMUM	2543.5	-37.368	7.2619	-0.048590	-17.680	-137.79
Pile N.	1	5	3	1	7	5

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1875.8
2	1829.7
3	1827.8
4	1858.2
5	1812.8
6	1819.1
7	1858.4
8	1813.0
9	1819.7
10	1875.5
11	1829.3
12	1829.0
MINIMUM	1812.8
Pile N.	5
MAXIMUM	1875.8
Pile N.	1

* EFFECTS FOR Laterally Loaded PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL.	DISPL.	MOMENT	MOMENT	SHEAR	SHEAR	SOIL REACT	SOIL REACT	TOTAL	FLEX. RIG.	FLEX. RIG.
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APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 126 di 420
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	y-Dir M	z-Dir M	z-Dir KN- M	y-Dir KN- M	y-Dir KN	z-Dir KN	y-Dir KN/ M	z-Dir KN/ M	STRESS KN/ M**2	z-Dir KN- M**2	y-Dir KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.3860E-04	-4.6485E-07	-48.781	-18.596	-40.196	-2.1742	-23.465	-0.6375	1439.3	7.8279E+06	7.8279E+06
x(M)	0.4400	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
2	-1.3860E-04	-4.7887E-07	-48.619	-19.056	-39.971	-2.2197	-23.308	-0.6491	1394.4	7.8279E+06	7.8279E+06
x(M)	0.4400	10.340	6.8200	0.0000	0.0000	8.8000	6.1600	10.560	22.000	0.0000	0.0000
3	-1.3844E-04	-4.5423E-07	-53.058	-21.862	-47.156	-2.7149	-27.904	-0.8620	1349.4	7.8279E+06	7.8279E+06
x(M)	0.4400	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
4	-1.3939E-04	-4.8023E-07	-46.829	-17.693	-37.475	-2.0025	-21.517	-0.5639	1438.3	7.8279E+06	7.8279E+06
x(M)	0.6600	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
5	-1.3940E-04	-4.9382E-07	-46.754	-18.165	-37.373	-2.0512	-21.441	-0.5768	1393.3	7.8279E+06	7.8279E+06
x(M)	0.6600	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
6	-1.3914E-04	-4.6203E-07	-52.350	-21.361	-45.719	-2.6217	-27.048	-0.8177	1348.4	7.8279E+06	7.8279E+06
x(M)	0.4400	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
7	-1.4005E-04	-4.8022E-07	-47.007	-17.680	-37.586	-2.0000	-21.576	-0.5629	1437.3	7.8279E+06	7.8279E+06
x(M)	0.6600	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
8	-1.4006E-04	-4.9397E-07	-46.936	-18.155	-37.489	-2.0090	-21.505	-0.5758	1392.3	7.8279E+06	7.8279E+06
x(M)	0.6600	10.560	7.0400	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
9	-1.3981E-04	-4.6211E-07	-52.570	-21.355	-45.886	-2.6205	-27.148	-0.8171	1347.3	7.8279E+06	7.8279E+06
x(M)	0.4400	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
10	-1.4061E-04	-4.6642E-07	-49.200	-18.496	-40.358	-2.1545	-23.530	-0.6290	1436.2	7.8279E+06	7.8279E+06
x(M)	0.4400	10.340	6.8200	0.0000	0.0000	8.8000	6.1600	10.560	22.000	0.0000	0.0000
11	-1.4062E-04	-4.8039E-07	-49.031	-18.953	-40.128	-2.2013	-23.369	-0.6401	1391.3	7.8279E+06	7.8279E+06
x(M)	0.4400	10.340	6.8200	0.0000	0.0000	8.8000	6.1600	10.560	22.000	0.0000	0.0000
12	-1.4045E-04	-4.5523E-07	-53.664	-21.805	-47.549	-2.7047	-28.141	-0.8571	1346.3	7.8279E+06	7.8279E+06
x(M)	0.4400	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
Min.	-1.4062E-04	-4.9397E-07	-53.664	-21.862	-47.549	-2.7149	-28.141	-0.8620	1346.3	7.8279E+06	7.8279E+06
Pile N.	11	8	12	3	12	3	12	3	12	1	1







* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-Dir M	DISPL. z-Dir M	MOMENT z-Dir KN- M	MOMENT y-Dir KN- M	SHEAR y-Dir KN	SHEAR z-Dir KN	SOIL REACT y-Dir KN/ M	SOIL REACT z-Dir KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-Dir KN- M**2	FLEX. RIG. y-Dir KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	2.8742E-06	2.4628E-05	143.43	7.8283	13.608	5.7803	3.9919	3.4517	1875.8	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
2	2.8831E-06	2.5303E-05	142.97	8.0176	13.521	5.9070	3.9572	3.5249	1829.7	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
3	2.6636E-06	2.5978E-05	157.01	8.9825	16.053	7.2626	5.1143	4.3372	1827.8	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.6000	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
4	2.9843E-06	2.4628E-05	138.00	7.5012	12.576	5.3318	3.5533	3.1501	1858.2	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.8200	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
5	2.9881E-06	2.5303E-05	137.79	7.6965	12.536	5.4659	3.5369	3.2272	1812.8	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.8200	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
6	2.7252E-06	2.5978E-05	154.51	8.8406	15.573	6.9920	4.8743	4.1869	1819.1	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.6000	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
7	2.9991E-06	2.4628E-05	138.43	7.4964	12.616	5.3257	3.5628	3.1459	1858.4	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.8200	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
8	3.0026E-06	2.5303E-05	138.22	7.6923	12.578	5.4606	3.5473	3.2236	1813.0	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.8200	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
9	2.7380E-06	2.5978E-05	155.05	8.8388	15.635	6.9887	4.8927	4.1851	1819.7	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.6000	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
10	2.9255E-06	2.4628E-05	144.36	7.7896	13.665	5.7298	3.9950	3.4186	1875.5	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
11	2.9340E-06	2.5303E-05	143.89	7.9783	13.576	5.8549	3.9588	3.4906	1829.3	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.8200	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
12	2.7035E-06	2.5978E-05	158.43	8.9670	16.200	7.2318	5.1504	4.3204	1829.0	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.6000	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
Max.	3.0026E-06	2.5978E-05	158.43	8.9825	16.200	7.2626	5.1504	4.3372	1875.8	7.8279E+06	7.8279E+06
Pile N.	8	3	12	3	12	3	12	3	1	1	1

LOAD CASE : 21
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5998	1.0000
3	0.6112	1.0000
4	0.7899	1.0000
5	0.4952	1.0000
6	0.5026	1.0000
7	0.7880	1.0000
8	0.4926	1.0000
9	0.4995	1.0000
10	0.8474	1.0000
11	0.5731	1.0000
12	0.5845	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 30827.9	HOR. LOAD Y, KN 496.827	HOR. LOAD Z, KN 204.774
MOMENT X, KN- M -125.420	MOMENT Y, KN- M 2238.30	MOMENT Z, KN- M -10961.7

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.33061E-03	HORIZONTAL Y, M 2.91845E-04	HORIZONTAL Z, M 8.49983E-05
ANGLE ROT. X, RAD -1.39049E-06	ANGLE ROT. Y, RAD 4.87008E-06	ANGLE ROT. Z, RAD -3.86449E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.5374E-03	3.0123E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
2	1.3635E-03	3.0123E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
3	1.1896E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
4	1.5155E-03	2.9497E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
5	1.3416E-03	2.9497E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
6	1.1677E-03	2.9497E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
7	1.4935E-03	2.8872E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
8	1.3196E-03	2.8872E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
9	1.1458E-03	2.8872E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
10	1.4716E-03	2.8246E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
11	1.2977E-03	2.8246E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
12	1.1238E-03	2.8246E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
MINIMUM	1.1238E-03	2.8246E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5374E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2963.6	52.519	18.305	-0.4505	-48.978	105.58
2	2631.7	42.416	16.735	-0.4505	-48.175	87.452
3	2299.9	42.894	18.423	-0.4505	-53.444	88.306
4	2921.8	48.047	17.468	-0.4505	-47.461	95.430
5	2589.9	36.587	15.240	-0.4505	-45.223	74.358
6	2258.0	36.914	16.753	-0.4505	-50.153	74.956
7	2880.0	46.263	17.447	-0.4505	-47.422	89.977
8	2548.1	35.091	15.202	-0.4505	-45.146	69.462
9	2216.2	35.390	16.705	-0.4505	-50.054	70.005
10	2838.1	46.532	18.104	-0.4505	-48.614	88.097
11	2506.3	36.862	16.365	-0.4505	-47.453	70.743
12	2174.4	37.311	18.027	-0.4505	-52.672	71.547
MINIMUM	2174.4	35.091	15.202	-0.4505	-53.444	69.462
Pile N.	12	8	8	1	3	8
MAXIMUM	2963.6	52.519	18.423	-0.4505	-45.146	105.58
Pile N.	1	1	3	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.5374E-03	3.0123E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
2	1.3635E-03	3.0123E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
3	1.1896E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
4	1.5155E-03	2.9497E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
5	1.3416E-03	2.9497E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
6	1.1677E-03	2.9497E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
7	1.4935E-03	2.8872E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria  Mandanti  		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 128 di 420

8	1.3196E-03	2.8872E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
9	1.1458E-03	2.8872E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
10	1.4716E-03	2.8246E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
11	1.2977E-03	2.8246E-04	8.4998E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
12	1.1238E-03	2.8246E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
MINIMUM	1.1238E-03	2.8246E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5374E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2963.6	52.519	18.305	-0.4505	-48.978	105.58
2	2631.7	42.416	16.735	-0.4505	-48.175	87.452
3	2299.9	42.894	18.423	-0.4505	-53.444	88.306
4	2921.8	48.047	17.468	-0.4505	-47.461	95.430
5	2589.9	36.587	15.240	-0.4505	-45.223	74.358
6	2258.0	36.914	16.753	-0.4505	-50.153	74.956
7	2880.0	46.263	17.447	-0.4505	-47.422	89.977
8	2548.1	35.091	15.202	-0.4505	-45.146	69.462
9	2216.2	35.390	16.705	-0.4505	-50.054	70.005
10	2838.1	46.532	18.104	-0.4505	-48.614	88.097
11	2506.3	36.862	16.365	-0.4505	-47.453	70.743
12	2174.4	37.311	18.027	-0.4505	-52.672	71.547
MINIMUM	2174.4	35.091	15.202	-0.4505	-53.444	69.462
Pile N.	12	8	8	1	3	8
MAXIMUM	2963.6	52.519	18.423	-0.4505	-45.146	105.58
Pile N.	1	1	3	1	8	1



PILE GROUP STRESS, KN/ M**2

1	2028.3
2	1790.6
3	1613.0
4	1975.1
5	1728.2
6	1550.0
7	1936.7
8	1691.9
9	1513.8
10	1909.7
11	1675.3
12	1498.6
MINIMUM	1498.6
Pile N.	12
MAXIMUM	2028.3
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-4.3849E-06	-1.2673E-06	-105.58	-48.978	-25.668	-7.5178	-8.0866	-2.3811	1677.1	7.8279E+06	7.8279E+06
x(M)	9.4600	9.6800	0.0000	0.0000	7.9200	8.1400	9.6800	9.9000	22.000	0.0000	0.0000
2	-4.7574E-06	-1.4851E-06	-87.452	-48.175	-21.882	-6.9499	-6.3538	-2.0289	1489.3	7.8279E+06	7.8279E+06
x(M)	9.9000	10.120	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
3	-4.7419E-06	-1.5988E-06	-88.306	-53.444	-22.058	-7.5742	-6.4325	-2.2197	1301.4	7.8279E+06	7.8279E+06
x(M)	9.9000	10.120	0.0000	0.0000	8.3600	8.5800	10.120	10.340	22.000	0.0000	0.0000
4	-4.3822E-06	-1.2947E-06	-95.430	-47.461	-24.080	-7.2227	-7.4422	-2.2436	1653.4	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	0.0000	8.1400	8.3600	9.9000	10.120	22.000	0.0000	0.0000
5	-4.8253E-06	-1.5413E-06	-74.358	-45.223	-19.523	-6.3541	-5.4463	-1.7825	1465.6	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.560	10.780	22.000	0.0000	0.0000
6	-4.8136E-06	-1.6592E-06	-74.956	-50.153	-19.661	-6.9131	-5.4969	-1.9458	1277.8	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.560	10.780	22.000	0.0000	0.0000
7	-4.2746E-06	-1.2955E-06	-89.977	-47.422	-23.430	-7.2153	-7.2366	-2.2401	1629.7	7.8279E+06	7.8279E+06
x(M)	9.6800	9.9000	0.0000	0.0000	8.1400	8.3600	9.9000	10.120	22.000	0.0000	0.0000
8	-4.7126E-06	-1.5430E-06	-69.462	-45.146	-18.986	-6.3391	-5.2864	-1.7763	1441.9	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.560	10.780	22.000	0.0000	0.0000
9	-4.7015E-06	-1.6614E-06	-70.005	-50.054	-19.110	-6.8941	-5.3324	-1.9380	1254.1	7.8279E+06	7.8279E+06
x(M)	10.120	10.560	0.0000	0.0000	8.3600	8.8000	10.560	10.780	22.000	0.0000	0.0000
10	-4.0852E-06	-1.2719E-06	-88.097	-48.614	-23.524	-7.4427	-7.3673	-2.3452	1606.1	7.8279E+06	7.8279E+06
x(M)	9.4600	9.6800	0.0000	0.0000	7.9200	8.1400	9.6800	9.9000	22.000	0.0000	0.0000
11	-4.4540E-06	-1.5012E-06	-70.743	-47.453	-19.831	-6.8054	-5.7002	-1.9699	1418.3	7.8279E+06	7.8279E+06
x(M)	10.120	10.340	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
12	-4.4358E-06	-1.6141E-06	-71.547	-52.672	-20.000	-7.4214	-5.7709	-2.1574	1230.4	7.8279E+06	7.8279E+06
x(M)	9.9000	10.340	0.0000	0.0000	8.3600	8.5800	10.340	10.560	22.000	0.0000	0.0000
Min.	-4.8253E-06	-1.6614E-06	-105.58	-53.444	-25.668	-7.5742	-8.0866	-2.3811	1230.4	7.8279E+06	7.8279E+06
Pile N.	5	9	1	3	1	3	1	1	12	1	1

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti 					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 129 di 420

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR y-DIR M	DISPL. z-DIR z-DIR M	MOMENT z-DIR z-DIR KN- M	MOMENT y-DIR y-DIR KN- M	SHEAR y-DIR y-DIR KN	SHEAR z-DIR z-DIR KN	SOIL REACT y-DIR y-DIR KN/ M	SOIL REACT z-DIR z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR z-DIR KN- M**2	FLEX. RIG. y-DIR y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	3.0123E-04	7.8741E-05	86.044	25.020	52.523	18.307	32.270	11.039	2028.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
2	3.0123E-04	8.4998E-05	79.488	25.068	42.419	16.737	27.187	10.210	1790.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
3	3.0123E-04	9.1256E-05	79.807	27.203	42.896	18.425	27.450	11.218	1613.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
4	2.9497E-04	7.8741E-05	82.334	24.531	48.051	17.470	29.971	10.604	1975.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
5	2.9497E-04	8.4998E-05	74.249	23.918	36.590	15.241	23.779	9.2494	1728.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
6	2.9497E-04	9.1256E-05	74.501	25.930	36.917	16.755	23.972	10.147	1550.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
7	2.8872E-04	7.8741E-05	80.210	24.517	46.267	17.449	28.913	10.593	1936.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
8	2.8872E-04	8.4998E-05	72.293	23.885	35.094	15.204	22.897	9.2241	1691.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
9	2.8872E-04	9.1256E-05	72.521	25.890	35.392	16.706	23.072	10.115	1513.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
10	2.8246E-04	7.8741E-05	79.286	24.906	46.536	18.106	28.792	10.937	1909.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
11	2.8246E-04	8.4998E-05	72.826	24.800	36.865	16.367	23.917	9.9780	1675.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
12	2.8246E-04	9.1256E-05	73.131	26.920	37.313	18.029	24.165	10.970	1498.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max.	3.0123E-04	9.1256E-05	86.044	27.203	52.523	18.425	32.270	11.218	2028.3	7.8279E+06	7.8279E+06
Pile N.	1	3	1	3	1	3	1	3	1	1	1

LOAD CASE : 22
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.6586	1.0000
2	0.6371	1.0000
3	0.8661	1.0000
4	0.5155	1.0000
5	0.4953	1.0000
6	0.7602	1.0000
7	0.5070	1.0000
8	0.4879	1.0000
9	0.7544	1.0000
10	0.5845	1.0000
11	0.5615	1.0000
12	0.8112	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30455.9	-496.827	204.774
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-141.488	2238.31	-2699.04

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.31436E-03	-1.56325E-04	8.43350E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-1.04314E-06	4.86609E-06	-3.36560E-06

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 130 di 420
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PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.3624E-03	-1.4928E-04	7.9641E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
2	1.3472E-03	-1.4928E-04	8.4335E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
3	1.3321E-03	-1.4928E-04	8.9029E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
4	1.3405E-03	-1.5398E-04	7.9641E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
5	1.3253E-03	-1.5398E-04	8.4335E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
6	1.3102E-03	-1.5398E-04	8.9029E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
7	1.3186E-03	-1.5867E-04	7.9641E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
8	1.3034E-03	-1.5867E-04	8.4335E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
9	1.2883E-03	-1.5867E-04	8.9029E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
10	1.2967E-03	-1.6337E-04	7.9641E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
11	1.2815E-03	-1.6337E-04	8.4335E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
12	1.2664E-03	-1.6337E-04	8.9029E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
MINIMUM	1.2664E-03	-1.6337E-04	7.9641E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3624E-03	-1.4928E-04	8.9029E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2629.6	-40.439	16.175	-0.3380	-45.363	-134.26
2	2600.7	-39.851	17.078	-0.3380	-48.629	-133.10
3	2571.8	-45.733	21.261	-0.3380	-57.994	-144.35
4	2587.8	-37.390	14.332	-0.3380	-41.781	-129.55
5	2558.9	-36.749	15.098	-0.3380	-44.745	-128.22
6	2530.0	-44.380	19.915	-0.3380	-55.537	-143.38
7	2546.0	-38.174	14.215	-0.3380	-41.547	-132.53
8	2517.1	-37.549	14.989	-0.3380	-44.524	-131.23
9	2488.2	-45.491	19.840	-0.3380	-55.397	-147.04
10	2504.2	-41.743	15.246	-0.3380	-43.578	-141.19
11	2475.3	-41.015	16.051	-0.3380	-46.636	-139.73
12	2446.4	-48.312	20.574	-0.3380	-56.745	-153.94
MINIMUM	2446.4	-48.312	14.215	-0.3380	-57.994	-153.94
Pile N.	12	12	7	1	3	12
MAXIMUM	2629.6	-36.749	21.261	-0.3380	-41.547	-128.22
Pile N.	1	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.3624E-03	-1.4928E-04	7.9641E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
2	1.3472E-03	-1.4928E-04	8.4335E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
3	1.3321E-03	-1.4928E-04	8.9029E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
4	1.3405E-03	-1.5398E-04	7.9641E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
5	1.3253E-03	-1.5398E-04	8.4335E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
6	1.3102E-03	-1.5398E-04	8.9029E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
7	1.3186E-03	-1.5867E-04	7.9641E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
8	1.3034E-03	-1.5867E-04	8.4335E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
9	1.2883E-03	-1.5867E-04	8.9029E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
10	1.2967E-03	-1.6337E-04	7.9641E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
11	1.2815E-03	-1.6337E-04	8.4335E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
12	1.2664E-03	-1.6337E-04	8.9029E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
MINIMUM	1.2664E-03	-1.6337E-04	7.9641E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3624E-03	-1.4928E-04	8.9029E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2629.6	-40.439	16.175	-0.3380	-45.363	-134.26
2	2600.7	-39.851	17.078	-0.3380	-48.629	-133.10
3	2571.8	-45.733	21.261	-0.3380	-57.994	-144.35
4	2587.8	-37.390	14.332	-0.3380	-41.781	-129.55
5	2558.9	-36.749	15.098	-0.3380	-44.745	-128.22
6	2530.0	-44.380	19.915	-0.3380	-55.537	-143.38
7	2546.0	-38.174	14.215	-0.3380	-41.547	-132.53
8	2517.1	-37.549	14.989	-0.3380	-44.524	-131.23
9	2488.2	-45.491	19.840	-0.3380	-55.397	-147.04
10	2504.2	-41.743	15.246	-0.3380	-43.578	-141.19
11	2475.3	-41.015	16.051	-0.3380	-46.636	-139.73
12	2446.4	-48.312	20.574	-0.3380	-56.745	-153.94
MINIMUM	2446.4	-48.312	14.215	-0.3380	-57.994	-153.94
Pile N.	12	12	7	1	3	12

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 131 di 420
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MAXIMUM Pile N.	2629.6 1	-36.749 5	21.261 3	-0.3380 1	-41.547 7	-128.22 5
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PILE GROUP STRESS, KN/ M**2

*****	*****
1	1915.7
2	1899.3
3	1924.8
4	1875.2
5	1857.9
6	1895.7
7	1859.9
8	1842.6
9	1882.3
10	1863.1
11	1845.3
12	1879.5

MINIMUM Pile N.	1842.6 8
MAXIMUM Pile N.	1924.8 3







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.4961E-04	-1.3618E-06	-50.994	-45.363	-40.444	-6.7407	-24.015	-2.0143	1488.0	7.8279E+06	7.8279E+06
x(M)	0.2200	10.120	6.6000	0.0000	0.0000	8.3600	6.1600	10.340	22.000	0.0000	0.0000
2	-1.4961E-04	-1.4590E-06	-50.606	-48.629	-39.856	-7.0750	-23.634	-2.0980	1471.7	7.8279E+06	7.8279E+06
x(M)	0.2200	10.120	6.8200	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
3	-1.4958E-04	-1.4475E-06	-54.248	-57.994	-45.738	-8.5984	-27.202	-2.7245	1455.3	7.8279E+06	7.8279E+06
x(M)	0.2200	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
4	-1.5432E-04	-1.4254E-06	-49.602	-41.781	-37.395	-6.0206	-21.874	-1.7027	1464.4	7.8279E+06	7.8279E+06
x(M)	0.2200	10.340	6.8200	0.0000	0.0000	8.8000	6.1600	10.560	22.000	0.0000	0.0000
5	-1.5432E-04	-1.5282E-06	-49.091	-44.745	-36.754	-6.3009	-21.423	-1.7677	1448.0	7.8279E+06	7.8279E+06
x(M)	0.2200	10.560	6.8200	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
6	-1.5427E-04	-1.4921E-06	-54.368	-55.537	-44.385	-8.1345	-26.438	-2.5047	1431.7	7.8279E+06	7.8279E+06
x(M)	0.2200	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
7	-1.5900E-04	-1.4284E-06	-50.844	-41.547	-38.179	-5.9765	-22.306	-1.6844	1440.7	7.8279E+06	7.8279E+06
x(M)	0.2200	10.340	6.8200	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
8	-1.5901E-04	-1.5331E-06	-50.338	-44.524	-37.554	-6.2578	-21.863	-1.7499	1424.4	7.8279E+06	7.8279E+06
x(M)	0.2200	10.560	6.8200	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
9	-1.5896E-04	-1.4942E-06	-55.873	-55.397	-45.496	-8.1073	-27.102	-2.4917	1408.0	7.8279E+06	7.8279E+06
x(M)	0.2200	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
10	-1.6367E-04	-1.3918E-06	-54.153	-43.578	-41.748	-6.3941	-24.657	-1.8571	1417.1	7.8279E+06	7.8279E+06
x(M)	0.2200	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
11	-1.6367E-04	-1.4949E-06	-53.644	-46.636	-41.020	-6.6834	-24.164	-1.9267	1400.7	7.8279E+06	7.8279E+06
x(M)	0.2200	10.340	6.8200	0.0000	0.0000	8.5800	6.1600	10.560	22.000	0.0000	0.0000
12	-1.6363E-04	-1.4707E-06	-58.391	-56.745	-48.317	-8.3597	-28.779	-2.6126	1384.4	7.8279E+06	7.8279E+06
x(M)	0.2200	9.9000	6.6000	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
Min. Pile N.	-1.6367E-04 10	-1.5331E-06 8	-58.391 12	-57.994 3	-48.317 12	-8.5984 3	-28.779 12	-2.7245 3	1384.4 12	7.8279E+06 1	7.8279E+06 1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	2.8924E-06	7.9641E-05	134.26	23.829	14.527	16.176	4.3506	9.8820	1915.7	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.6000	8.5800	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
2	2.9141E-06	8.4335E-05	133.10	25.196	14.297	17.080	4.2582	10.422	1899.3	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.6000	8.5800	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
3	2.7349E-06	8.9029E-05	144.35	28.618	16.405	21.263	5.2162	12.802	1924.8	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.3800	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
4	3.1210E-06	7.9641E-05	129.55	22.509	13.356	14.333	3.7959	8.7342	1875.2	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
5	3.1366E-06	8.4335E-05	128.22	23.718	13.106	15.100	3.6915	9.1658	1857.9	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.5600	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
6	2.8968E-06	8.9029E-05	143.38	27.805	15.943	19.917	4.9324	12.086	1895.7	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
7	3.2205E-06	7.9641E-05	132.53	22.414	13.633	14.216	3.8598	8.6576	1859.9	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
8	3.2401E-06	8.4335E-05	131.23	23.626	13.401	14.990	3.7629	9.0929	1842.6	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
9	2.9875E-06	8.9029E-05	147.04	27.756	16.360	19.842	5.0526	12.044	1882.3	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
10	3.2265E-06	7.9641E-05	141.19	23.202	15.008	15.248	4.3738	9.3174	1863.1	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.6000	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
11	3.2526E-06	8.4335E-05	139.73	24.472	14.736	16.052	4.2620	9.7846	1845.3	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
12	3.0205E-06	8.9029E-05	153.94	28.216	17.379	20.576	5.4442	12.443	1879.5	7.8279E+06	7.8279E+06

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 132 di 420

x(M)	9.9000	0.0000	0.0000	6.3800	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
Max.	3.2526E-06	8.9029E-05	153.94	28.618	17.379	21.263	5.4442	12.802	1924.8	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	12	3	3	1	1

LOAD CASE : 23
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8002	1.0000
2	0.7512	1.0000
3	0.8661	1.0000
4	0.5578	1.0000
5	0.4959	1.0000
6	0.6477	1.0000
7	0.5317	1.0000
8	0.4715	1.0000
9	0.6254	1.0000
10	0.5845	1.0000
11	0.5200	1.0000
12	0.6719	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30184.0	-276.510	241.200
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-289.439	3170.02	-4102.13

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.30249E-03	-6.23987E-05	1.02885E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-2.67639E-06	6.63179E-06	-9.85565E-06

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.3916E-03	-4.4333E-05	9.0842E-05	-2.6764E-06	6.6318E-06	-9.8556E-06
2	1.3472E-03	-4.4333E-05	1.0289E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
3	1.3029E-03	-4.4333E-05	1.1493E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
4	1.3618E-03	-5.6377E-05	9.0842E-05	-2.6764E-06	6.6318E-06	-9.8556E-06
5	1.3174E-03	-5.6377E-05	1.0289E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
6	1.2731E-03	-5.6377E-05	1.1493E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
7	1.3319E-03	-6.8421E-05	9.0842E-05	-2.6764E-06	6.6318E-06	-9.8556E-06
8	1.2876E-03	-6.8421E-05	1.0289E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
9	1.2432E-03	-6.8421E-05	1.1493E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
10	1.3021E-03	-8.0464E-05	9.0842E-05	-2.6764E-06	6.6318E-06	-9.8556E-06
11	1.2577E-03	-8.0464E-05	1.0289E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
12	1.2134E-03	-8.0464E-05	1.1493E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
MINIMUM	1.2134E-03	-8.0464E-05	9.0842E-05	-2.6764E-06	6.6318E-06	-9.8556E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3916E-03	-4.4333E-05	1.1493E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2685.4	-20.678	19.420	-0.8672	-50.897	-77.789
2	2600.8	-20.179	22.030	-0.8672	-59.884	-76.795
3	2516.1	-21.329	27.141	-0.8672	-73.435	-79.065
4	2628.4	-20.845	16.155	-0.8672	-44.762	-81.671
5	2543.8	-19.929	17.907	-0.8672	-51.965	-79.716

APPALTATORE:

Consorzio

Soci



PROGETTAZIONE:

Mandataria

Mandanti



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	133 di 420

6	2459.2	-22.087	23.466	-0.8672	-66.633	-84.250
7	2571.5	-23.229	15.771	-0.8672	-44.008	-90.073
8	2486.9	-22.171	17.471	-0.8672	-51.084	-87.807
9	2402.2	-24.760	23.064	-0.8672	-65.861	-93.259
10	2514.5	-26.990	16.542	-0.8672	-45.510	-101.36
11	2429.9	-25.766	18.333	-0.8672	-52.813	-98.800
12	2345.3	-28.548	23.899	-0.8672	-67.451	-104.53
MINIMUM	2345.3	-28.548	15.771	-0.8672	-73.435	-104.53
Pile N.	12	12	7	1	3	12
MAXIMUM	2685.4	-19.929	27.141	-0.8672	-44.008	-76.795
Pile N.	1	5	3	1	7	2

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.3916E-03	-4.4333E-05	9.0842E-05	-2.6764E-06	6.6318E-06	-9.8556E-06
2	1.3472E-03	-4.4333E-05	1.0289E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
3	1.3029E-03	-4.4333E-05	1.1493E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
4	1.3618E-03	-5.6377E-05	9.0842E-05	-2.6764E-06	6.6318E-06	-9.8556E-06
5	1.3174E-03	-5.6377E-05	1.0289E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
6	1.2731E-03	-5.6377E-05	1.1493E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
7	1.3319E-03	-6.8421E-05	9.0842E-05	-2.6764E-06	6.6318E-06	-9.8556E-06
8	1.2876E-03	-6.8421E-05	1.0289E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
9	1.2432E-03	-6.8421E-05	1.1493E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
10	1.3021E-03	-8.0464E-05	9.0842E-05	-2.6764E-06	6.6318E-06	-9.8556E-06
11	1.2577E-03	-8.0464E-05	1.0289E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
12	1.2134E-03	-8.0464E-05	1.1493E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
MINIMUM	1.2134E-03	-8.0464E-05	9.0842E-05	-2.6764E-06	6.6318E-06	-9.8556E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3916E-03	-4.4333E-05	1.1493E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2685.4	-20.678	19.420	-0.8672	-50.897	-77.789
2	2600.8	-20.179	22.030	-0.8672	-59.884	-76.795
3	2516.1	-21.329	27.141	-0.8672	-73.435	-79.065
4	2628.4	-20.845	16.155	-0.8672	-44.762	-81.671
5	2543.8	-19.929	17.907	-0.8672	-51.965	-79.716
6	2459.2	-22.087	23.466	-0.8672	-66.633	-84.250
7	2571.5	-23.229	15.771	-0.8672	-44.008	-90.073
8	2486.9	-22.171	17.471	-0.8672	-51.084	-87.807
9	2402.2	-24.760	23.064	-0.8672	-65.861	-93.259
10	2514.5	-26.990	16.542	-0.8672	-45.510	-101.36
11	2429.9	-25.766	18.333	-0.8672	-52.813	-98.800
12	2345.3	-28.548	23.899	-0.8672	-67.451	-104.53
MINIMUM	2345.3	-28.548	15.771	-0.8672	-73.435	-104.53
Pile N.	12	12	7	1	3	12
MAXIMUM	2685.4	-19.929	27.141	-0.8672	-44.008	-76.795
Pile N.	1	5	3	1	7	2

* PILE GROUP STRESS, KN/ M**2

*****	*****
1	1800.2
2	1765.6
3	1749.5
4	1768.5
5	1726.7
6	1715.8
7	1757.7
8	1713.9
9	1703.9
10	1758.3
11	1713.2
12	1702.6
MINIMUM	1702.6
Pile N.	12
MAXIMUM	1800.2
Pile N.	1

* EFFECTS FOR Laterally LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
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APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria  Mandanti  		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 134 di 420

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*****
1 -4.9721E-05 -1.4626E-06 -20.988 -50.897 -20.681 -8.2098 -12.061 -2.5566 1519.6 7.8279E+06 7.8279E+06
x (M) 1.1000 9.9000 6.8200 0.0000 0.0000 8.1400 6.1600 10.120 22.000 0.0000 0.0000
2 -4.9785E-05 -1.7033E-06 -20.695 -59.884 -20.182 -9.1961 -11.724 -2.8232 1471.7 7.8279E+06 7.8279E+06
x (M) 1.1000 9.9000 6.8200 0.0000 0.0000 8.3600 6.1600 10.120 22.000 0.0000 0.0000
3 -4.9640E-05 -1.8604E-06 -21.332 -73.435 -21.332 -11.045 -12.486 -3.4991 1423.8 7.8279E+06 7.8279E+06
x (M) 1.1000 9.6800 6.8200 0.0000 0.0000 8.1400 6.1600 9.9000 22.000 0.0000 0.0000
4 -6.1470E-05 -1.5753E-06 -23.105 -44.762 -20.848 -6.9969 -11.841 -2.0112 1487.4 7.8279E+06 7.8279E+06
x (M) 1.1000 10.340 7.0400 0.0000 0.0000 8.5800 6.1600 10.560 22.000 0.0000 0.0000
5 -6.1596E-05 -1.8442E-06 -22.427 -51.965 -19.931 -7.6007 -11.150 -2.1320 1439.5 7.8279E+06 7.8279E+06
x (M) 1.1000 10.560 7.0400 0.0000 0.0000 8.8000 6.1600 10.780 22.000 0.0000 0.0000
6 -6.1304E-05 -1.9819E-06 -23.899 -66.633 -22.900 -9.7084 -12.743 -2.8914 1391.6 7.8279E+06 7.8279E+06
x (M) 1.1000 10.120 6.8200 0.0000 0.0000 8.5800 6.1600 10.340 22.000 0.0000 0.0000
7 -7.2953E-05 -1.5907E-06 -26.576 -44.008 -23.232 -6.8408 -13.192 -1.9467 1455.2 7.8279E+06 7.8279E+06
x (M) 0.8800 10.340 7.0400 0.0000 0.0000 8.5800 6.1600 10.560 22.000 0.0000 0.0000
8 -7.3075E-05 -1.8640E-06 -25.769 -51.084 -22.175 -7.4284 -12.395 -2.0607 1407.3 7.8279E+06 7.8279E+06
x (M) 1.1000 10.560 7.0400 0.0000 0.0000 8.8000 6.1600 10.780 22.000 0.0000 0.0000
9 -7.2816E-05 -1.9944E-06 -27.602 -65.861 -24.763 -9.5640 -14.302 -2.8217 1359.4 7.8279E+06 7.8279E+06
x (M) 0.8800 10.120 6.8200 0.0000 0.0000 8.5800 6.1600 10.340 22.000 0.0000 0.0000
10 -8.4489E-05 -1.5589E-06 -30.980 -45.510 -26.993 -7.1463 -15.550 -2.0725 1422.9 7.8279E+06 7.8279E+06
x (M) 0.8800 10.120 6.8200 0.0000 0.0000 8.5800 6.1600 10.560 22.000 0.0000 0.0000
11 -8.4600E-05 -1.8303E-06 -30.155 -52.813 -25.769 -7.7695 -14.658 -2.2014 1375.0 7.8279E+06 7.8279E+06
x (M) 0.8800 10.340 7.0400 0.0000 0.0000 8.5800 6.1600 10.560 22.000 0.0000 0.0000
12 -8.4353E-05 -1.9664E-06 -32.073 -67.451 -28.552 -9.8741 -16.639 -2.9628 1327.1 7.8279E+06 7.8279E+06
x (M) 0.8800 10.120 6.8200 0.0000 0.0000 8.3600 6.1600 10.340 22.000 0.0000 0.0000

Min. -8.4600E-05 -1.9944E-06 -32.073 -73.435 -28.552 -11.045 -16.639 -3.4991 1327.1 7.8279E+06 7.8279E+06
Pile N. 11 9 12 3 12 3 12 3 12 1 1
  
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* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
1	1.0823E-06	9.0842E-05	77.789	27.878	6.2681	19.422	1.9684	11.818	1800.2	7.8279E+06	7.8279E+06
x (M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
2	1.0996E-06	1.0289E-04	76.795	31.562	6.0999	22.032	1.8914	13.420	1765.6	7.8279E+06	7.8279E+06
x (M)	10.340	0.0000	0.0000	6.3800	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
3	1.0665E-06	1.1493E-04	79.065	36.763	6.4928	27.144	2.0746	16.352	1749.5	7.8279E+06	7.8279E+06
x (M)	10.120	0.0000	0.0000	6.3800	8.5800	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
4	1.3938E-06	9.0842E-05	81.671	25.676	6.3775	16.157	1.8499	9.9390	1768.5	7.8279E+06	7.8279E+06
x (M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
5	1.4222E-06	1.0289E-04	79.716	28.645	6.0285	17.909	1.7057	10.922	1726.7	7.8279E+06	7.8279E+06
x (M)	10.780	0.0000	0.0000	6.6000	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
6	1.3549E-06	1.1493E-04	84.250	34.460	6.8243	23.469	2.0443	14.317	1715.8	7.8279E+06	7.8279E+06
x (M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
7	1.6399E-06	9.0842E-05	90.073	25.387	7.2524	15.773	2.0824	9.6962	1757.7	7.8279E+06	7.8279E+06
x (M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
8	1.6728E-06	1.0289E-04	87.807	28.275	6.8486	17.472	1.9169	10.632	1713.9	7.8279E+06	7.8279E+06
x (M)	11.000	0.0000	0.0000	6.6000	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
9	1.5907E-06	1.1493E-04	93.259	34.193	7.8102	23.066	2.3222	14.074	1703.9	7.8279E+06	7.8279E+06
x (M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
10	1.8417E-06	9.0842E-05	101.36	25.952	8.6242	16.544	2.5306	10.179	1758.3	7.8279E+06	7.8279E+06
x (M)	10.560	0.0000	0.0000	6.6000	8.8000	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
11	1.8805E-06	1.0289E-04	98.800	28.988	8.1835	18.335	2.3374	11.200	1713.2	7.8279E+06	7.8279E+06
x (M)	10.780	0.0000	0.0000	6.6000	9.0200	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
12	1.7925E-06	1.1493E-04	104.53	34.734	9.2011	23.901	2.7778	14.573	1702.6	7.8279E+06	7.8279E+06
x (M)	10.340	0.0000	0.0000	6.6000	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
Max.	1.8805E-06	1.1493E-04	104.53	36.763	9.2011	27.144	2.7778	16.352	1800.2	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	12	3	1	1	1

LOAD CASE : 24
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.5791	1.0000
3	0.8661	1.0000
4	0.4955	1.0000
5	0.4951	1.0000
6	0.8053	1.0000
7	0.4955	1.0000
8	0.4951	1.0000
9	0.8053	1.0000
10	0.5845	1.0000
11	0.5791	1.0000
12	0.8661	1.0000

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA						
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1"> <tr> <td>COMMESSA IF28</td> <td>LOTTO 01</td> <td>CODIFICA E ZZ CL</td> <td>DOCUMENTO VI0103 001</td> <td>REV. B</td> <td>FOGLIO 135 di 420</td> </tr> </table>	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 135 di 420
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 135 di 420		

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 28236.4	HOR. LOAD Y, KN -276.510	HOR. LOAD Z, KN -1.00000E-06
MOMENT X, KN- M 3.00000E-06	MOMENT Y, KN- M 2.70000E-05	MOMENT Z, KN- M -6438.70

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.21745E-03	HORIZONTAL Y, M -3.79650E-05	HORIZONTAL Z, M -2.00527E-13
ANGLE ROT. X, RAD 2.24298E-14	ANGLE ROT. Y, RAD 3.99511E-14	ANGLE ROT. Z, RAD -1.70561E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
2	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
3	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
4	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
5	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
6	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
7	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
8	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
9	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
10	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
11	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
12	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
MINIMUM	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2499.5	-22.465	-5.5173E-08	7.2674E-09	2.3317E-07	-95.972
2	2353.0	-22.393	-7.9054E-08	7.2674E-09	3.1174E-07	-95.817
3	2206.6	-25.805	-1.2137E-07	7.2674E-09	4.2703E-07	-102.93
4	2499.5	-21.229	-5.2097E-08	7.2674E-09	2.2642E-07	-93.249
5	2353.0	-21.224	-7.4518E-08	7.2674E-09	3.0205E-07	-93.238
6	2206.6	-25.140	-1.1779E-07	7.2674E-09	4.2012E-07	-101.59
7	2499.5	-21.229	-5.2097E-08	7.2674E-09	2.2642E-07	-93.249
8	2353.0	-21.224	-7.4518E-08	7.2674E-09	3.0205E-07	-93.238
9	2206.6	-25.140	-1.1779E-07	7.2674E-09	4.2012E-07	-101.59
10	2499.5	-22.465	-5.5173E-08	7.2674E-09	2.3317E-07	-95.972
11	2353.0	-22.393	-7.9054E-08	7.2674E-09	3.1174E-07	-95.817
12	2206.6	-25.805	-1.2137E-07	7.2674E-09	4.2703E-07	-102.93
MINIMUM	2206.6	-25.805	-1.2137E-07	7.2674E-09	2.2642E-07	-102.93
Pile N.	3	3	3	1	4	3
MAXIMUM	2499.5	-21.224	-5.2097E-08	7.2674E-09	4.2703E-07	-93.238
Pile N.	1	5	4	1	3	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
2	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
3	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
4	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
5	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
6	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
7	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
8	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
9	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 136 di 420

10	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
11	1.2174E-03	-3.7965E-05	-2.0053E-13	2.2430E-14	3.9951E-14	-1.7056E-05
12	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
MINIMUM	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2499.5	-22.465	-5.5173E-08	7.2674E-09	2.3317E-07	-95.972
2	2353.0	-22.393	-7.9054E-08	7.2674E-09	3.1174E-07	-95.817
3	2206.6	-25.805	-1.2137E-07	7.2674E-09	4.2703E-07	-102.93
4	2499.5	-21.229	-5.2097E-08	7.2674E-09	2.2642E-07	-93.249
5	2353.0	-21.224	-7.4518E-08	7.2674E-09	3.0205E-07	-93.238
6	2206.6	-25.140	-1.1779E-07	7.2674E-09	4.2012E-07	-101.59
7	2499.5	-21.229	-5.2097E-08	7.2674E-09	2.2642E-07	-93.249
8	2353.0	-21.224	-7.4518E-08	7.2674E-09	3.0205E-07	-93.238
9	2206.6	-25.140	-1.1779E-07	7.2674E-09	4.2012E-07	-101.59
10	2499.5	-22.465	-5.5173E-08	7.2674E-09	2.3317E-07	-95.972
11	2353.0	-22.393	-7.9054E-08	7.2674E-09	3.1174E-07	-95.817
12	2206.6	-25.805	-1.2137E-07	7.2674E-09	4.2703E-07	-102.93
MINIMUM	2206.6	-25.805	-1.2137E-07	7.2674E-09	2.2642E-07	-102.93
Pile N.	3	3	3	1	4	3
MAXIMUM	2499.5	-21.224	-5.2097E-08	7.2674E-09	4.2703E-07	-93.238
Pile N.	1	5	4	1	3	5

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	1704.1
2	1620.7
3	1559.3
4	1695.9
5	1612.9
6	1555.3
7	1695.9
8	1612.9
9	1555.3
10	1704.1
11	1620.7
12	1559.3
MINIMUM	1555.3
Pile N.	6
MAXIMUM	1704.1
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	-5.1537E-05	-1.3001E-13	-21.625	-5.3940E-08	-22.468	-5.5181E-08	-12.490	-3.0775E-08	1414.4	7.8279E+06	7.8279E+06
x(M)	1.7600	1.7600	7.2600	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
2	-5.1559E-05	-2.2252E-13	-21.581	-8.5638E-08	-22.396	-7.9064E-08	-12.433	-4.4936E-08	1331.5	7.8279E+06	7.8279E+06
x(M)	1.7600	1.1000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
3	-5.0586E-05	-3.1714E-13	-23.541	-1.2858E-07	-25.808	-1.2139E-07	-14.981	-7.1438E-08	1248.7	7.8279E+06	7.8279E+06
x(M)	1.5400	0.8800	6.8200	6.6000	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
4	-5.1938E-05	-1.3101E-13	-20.799	-5.1919E-08	-21.232	-5.2105E-08	-11.494	-2.8317E-08	1414.4	7.8279E+06	7.8279E+06
x(M)	1.7600	1.7600	7.2600	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
5	-5.1939E-05	-2.2317E-13	-20.794	-8.2302E-08	-21.227	-7.4528E-08	-11.489	-4.1500E-08	1331.5	7.8279E+06	7.8279E+06
x(M)	1.7600	1.3200	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
6	-5.0740E-05	-3.1743E-13	-23.203	-1.2673E-07	-25.143	-1.1780E-07	-14.513	-6.9205E-08	1248.7	7.8279E+06	7.8279E+06
x(M)	1.5400	0.8800	7.0400	6.8200	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
7	-5.1938E-05	-1.3101E-13	-20.799	-5.1919E-08	-21.232	-5.2105E-08	-11.494	-2.8317E-08	1414.4	7.8279E+06	7.8279E+06
x(M)	1.7600	1.7600	7.2600	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
8	-5.1939E-05	-2.2317E-13	-20.794	-8.2302E-08	-21.227	-7.4528E-08	-11.489	-4.1500E-08	1331.5	7.8279E+06	7.8279E+06
x(M)	1.7600	1.3200	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
9	-5.0740E-05	-3.1743E-13	-23.203	-1.2673E-07	-25.143	-1.1780E-07	-14.513	-6.9205E-08	1248.7	7.8279E+06	7.8279E+06
x(M)	1.5400	0.8800	7.0400	6.8200	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
10	-5.1537E-05	-1.3001E-13	-21.625	-5.3940E-08	-22.468	-5.5181E-08	-12.490	-3.0775E-08	1414.4	7.8279E+06	7.8279E+06
x(M)	1.7600	1.7600	7.2600	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
11	-5.1559E-05	-2.2252E-13	-21.581	-8.5638E-08	-22.396	-7.9064E-08	-12.433	-4.4936E-08	1331.5	7.8279E+06	7.8279E+06
x(M)	1.7600	1.1000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
12	-5.0586E-05	-3.1714E-13	-23.541	-1.2858E-07	-25.808	-1.2139E-07	-14.981	-7.1438E-08	1248.7	7.8279E+06	7.8279E+06
x(M)	1.5400	0.8800	6.8200	6.6000	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
Min.	-5.1939E-05	-3.1743E-13	-23.541	-1.2858E-07	-25.808	-1.2139E-07	-14.981	-7.1438E-08	1248.7	7.8279E+06	7.8279E+06
Pile N.	5	6	3	3	3	3	3	3	3	1	1

* MAXIMUM VALUES AND LOCATIONS *

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 137 di 420

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.2733E-06	3.1810E-15	95.972	2.3317E-07	6.0566	1.5110E-08	1.7864	4.4543E-09	1704.1	7.8279E+06	7.8279E+06
x(M)	10.780	10.780	0.0000	0.0000	9.2400	9.0200	11.000	11.000	0.0000	0.0000	0.0000
2	1.2752E-06	5.0740E-15	95.817	3.1174E-07	6.0329	2.3843E-08	1.7748	6.9676E-09	1620.7	7.8279E+06	7.8279E+06
x(M)	10.780	10.560	0.0000	0.0000	9.2400	9.0200	11.000	11.000	0.0000	0.0000	0.0000
3	1.1692E-06	6.4467E-15	102.93	4.2703E-07	7.1853	3.9060E-08	2.3035	1.2449E-08	1559.3	7.8279E+06	7.8279E+06
x(M)	10.340	10.120	0.0000	0.0000	8.8000	8.5800	10.340	10.340	0.0000	0.0000	0.0000
4	1.3117E-06	3.2779E-15	93.249	2.2642E-07	5.6180	1.4020E-08	1.5978	3.9847E-09	1695.9	7.8279E+06	7.8279E+06
x(M)	11.000	11.000	0.0000	0.0000	9.2400	9.2400	11.220	11.220	0.0000	0.0000	0.0000
5	1.3117E-06	5.2216E-15	93.238	3.0205E-07	5.6151	2.2158E-08	1.5967	6.2716E-09	1612.9	7.8279E+06	7.8279E+06
x(M)	11.000	11.000	0.0000	0.0000	9.2400	9.2400	11.220	11.220	0.0000	0.0000	0.0000
6	1.1921E-06	6.5599E-15	101.59	4.2012E-07	6.9814	3.7898E-08	2.2022	1.1900E-08	1555.3	7.8279E+06	7.8279E+06
x(M)	10.340	10.120	0.0000	0.0000	8.8000	8.5800	10.560	10.340	0.0000	0.0000	0.0000
7	1.3117E-06	3.2779E-15	93.249	2.2642E-07	5.6180	1.4020E-08	1.5978	3.9847E-09	1695.9	7.8279E+06	7.8279E+06
x(M)	11.000	11.000	0.0000	0.0000	9.2400	9.2400	11.220	11.220	0.0000	0.0000	0.0000
8	1.3117E-06	5.2216E-15	93.238	3.0205E-07	5.6151	2.2158E-08	1.5967	6.2716E-09	1612.9	7.8279E+06	7.8279E+06
x(M)	11.000	11.000	0.0000	0.0000	9.2400	9.2400	11.220	11.220	0.0000	0.0000	0.0000
9	1.1921E-06	6.5599E-15	101.59	4.2012E-07	6.9814	3.7898E-08	2.2022	1.1900E-08	1555.3	7.8279E+06	7.8279E+06
x(M)	10.340	10.120	0.0000	0.0000	8.8000	8.5800	10.560	10.340	0.0000	0.0000	0.0000
10	1.2733E-06	3.1810E-15	95.972	2.3317E-07	6.0566	1.5110E-08	1.7864	4.4543E-09	1704.1	7.8279E+06	7.8279E+06
x(M)	10.780	10.780	0.0000	0.0000	9.2400	9.0200	11.000	11.000	0.0000	0.0000	0.0000
11	1.2752E-06	5.0740E-15	95.817	3.1174E-07	6.0329	2.3843E-08	1.7748	6.9676E-09	1620.7	7.8279E+06	7.8279E+06
x(M)	10.780	10.560	0.0000	0.0000	9.2400	9.0200	11.000	11.000	0.0000	0.0000	0.0000
12	1.1692E-06	6.4467E-15	102.93	4.2703E-07	7.1853	3.9060E-08	2.3035	1.2449E-08	1559.3	7.8279E+06	7.8279E+06
x(M)	10.340	10.120	0.0000	0.0000	8.8000	8.5800	10.340	10.340	0.0000	0.0000	0.0000
Max.	1.3117E-06	6.5599E-15	102.93	4.2703E-07	7.1853	3.9060E-08	2.3035	1.2449E-08	1704.1	7.8279E+06	7.8279E+06
Pile N.	4	6	3	3	3	3	3	3	1	1	1

LOAD CASE : 25
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.5791	1.0000
3	0.8661	1.0000
4	0.4955	1.0000
5	0.4951	1.0000
6	0.8053	1.0000
7	0.4955	1.0000
8	0.4951	1.0000
9	0.8053	1.0000
10	0.5845	1.0000
11	0.5791	1.0000
12	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
28236.4	-276.510	1.00000E-06
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-3.00000E-06	-1.30000E-05	-6439.22

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.21745E-03	-3.79599E-05	2.76476E-13
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-2.22064E-14	-1.64482E-14	-1.70577E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
------------	------------	------------	------------	-------------	-------------	-------------

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	138 di 420

*****	*****	*****	*****	*****	*****	*****
1	1.2942E-03	-3.7960E-05	1.7655E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
2	1.2174E-03	-3.7960E-05	2.7648E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
3	1.1407E-03	-3.7960E-05	3.7640E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
4	1.2942E-03	-3.7960E-05	1.7655E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
5	1.2174E-03	-3.7960E-05	2.7648E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
6	1.1407E-03	-3.7960E-05	3.7640E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
7	1.2942E-03	-3.7960E-05	1.7655E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
8	1.2174E-03	-3.7960E-05	2.7648E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
9	1.1407E-03	-3.7960E-05	3.7640E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
10	1.2942E-03	-3.7960E-05	1.7655E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
11	1.2174E-03	-3.7960E-05	2.7648E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
12	1.1407E-03	-3.7960E-05	3.7640E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
MINIMUM	1.1407E-03	-3.7960E-05	1.7655E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
Pile N.	3	1	1	1	1	1
MAXIMUM	1.2942E-03	-3.7960E-05	3.7640E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2499.5	-22.465	5.5159E-08	-7.1950E-09	-2.0231E-07	-95.974
2	2353.0	-22.393	7.8771E-08	-7.1950E-09	-2.8005E-07	-95.820
3	2206.5	-25.805	1.2230E-07	-7.1950E-09	-3.9652E-07	-102.93
4	2499.5	-21.229	5.1583E-08	-7.1950E-09	-1.9485E-07	-93.251
5	2353.0	-21.224	7.3780E-08	-7.1950E-09	-2.6972E-07	-93.240
6	2206.5	-25.140	1.1841E-07	-7.1950E-09	-3.8920E-07	-101.59
7	2499.5	-21.229	5.1583E-08	-7.1950E-09	-1.9485E-07	-93.251
8	2353.0	-21.224	7.3780E-08	-7.1950E-09	-2.6972E-07	-93.240
9	2206.5	-25.140	1.1841E-07	-7.1950E-09	-3.8920E-07	-101.59
10	2499.5	-22.465	5.5159E-08	-7.1950E-09	-2.0231E-07	-95.974
11	2353.0	-22.393	7.8771E-08	-7.1950E-09	-2.8005E-07	-95.820
12	2206.5	-25.805	1.2230E-07	-7.1950E-09	-3.9652E-07	-102.93
MINIMUM	2206.5	-25.805	5.1583E-08	-7.1950E-09	-3.9652E-07	-102.93
Pile N.	3	3	4	1	3	3
MAXIMUM	2499.5	-21.224	1.2230E-07	-7.1950E-09	-1.9485E-07	-93.240
Pile N.	1	5	3	1	4	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.2942E-03	-3.7960E-05	1.7655E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
2	1.2174E-03	-3.7960E-05	2.7648E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
3	1.1407E-03	-3.7960E-05	3.7640E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
4	1.2942E-03	-3.7960E-05	1.7655E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
5	1.2174E-03	-3.7960E-05	2.7648E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
6	1.1407E-03	-3.7960E-05	3.7640E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
7	1.2942E-03	-3.7960E-05	1.7655E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
8	1.2174E-03	-3.7960E-05	2.7648E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
9	1.1407E-03	-3.7960E-05	3.7640E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
10	1.2942E-03	-3.7960E-05	1.7655E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
11	1.2174E-03	-3.7960E-05	2.7648E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
12	1.1407E-03	-3.7960E-05	3.7640E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
MINIMUM	1.1407E-03	-3.7960E-05	1.7655E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
Pile N.	3	1	1	1	1	1
MAXIMUM	1.2942E-03	-3.7960E-05	3.7640E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2499.5	-22.465	5.5159E-08	-7.1950E-09	-2.0231E-07	-95.974
2	2353.0	-22.393	7.8771E-08	-7.1950E-09	-2.8005E-07	-95.820
3	2206.5	-25.805	1.2230E-07	-7.1950E-09	-3.9652E-07	-102.93
4	2499.5	-21.229	5.1583E-08	-7.1950E-09	-1.9485E-07	-93.251
5	2353.0	-21.224	7.3780E-08	-7.1950E-09	-2.6972E-07	-93.240
6	2206.5	-25.140	1.1841E-07	-7.1950E-09	-3.8920E-07	-101.59
7	2499.5	-21.229	5.1583E-08	-7.1950E-09	-1.9485E-07	-93.251
8	2353.0	-21.224	7.3780E-08	-7.1950E-09	-2.6972E-07	-93.240
9	2206.5	-25.140	1.1841E-07	-7.1950E-09	-3.8920E-07	-101.59
10	2499.5	-22.465	5.5159E-08	-7.1950E-09	-2.0231E-07	-95.974
11	2353.0	-22.393	7.8771E-08	-7.1950E-09	-2.8005E-07	-95.820
12	2206.5	-25.805	1.2230E-07	-7.1950E-09	-3.9652E-07	-102.93
MINIMUM	2206.5	-25.805	5.1583E-08	-7.1950E-09	-3.9652E-07	-102.93
Pile N.	3	3	4	1	3	3
MAXIMUM	2499.5	-21.224	1.2230E-07	-7.1950E-09	-1.9485E-07	-93.240
Pile N.	1	5	3	1	4	5

APPALTATORE: Consorzio Soci 			ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria Mandanti 			RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B			COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 139 di 420

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	1704.1
2	1620.7
3	1559.3
4	1695.9
5	1612.9
6	1555.3
7	1695.9
8	1612.9
9	1555.3
10	1704.1
11	1620.7
12	1559.3
MINIMUM	1555.3
Pile N.	6
MAXIMUM	1704.1
Pile N.	1







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL.	DISPL.	MOMENT	MOMENT	SHEAR	SHEAR	SOIL REACT	SOIL REACT	TOTAL	FLEX. RIG.	FLEX. RIG.
	y-Dir	z-Dir	z-Dir	y-Dir	y-Dir	z-Dir	y-Dir	z-Dir	STRESS	KN- M**2	y-Dir
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2		KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-5.1534E-05	-3.8796E-15	-21.625	-2.0231E-07	-22.468	-1.8144E-08	-12.490	-5.3141E-09	1414.4	7.8279E+06	7.8279E+06
x(M)	1.7600	10.560	7.2600	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
2	-5.1557E-05	-5.7971E-15	-21.581	-2.8005E-07	-22.396	-2.6894E-08	-12.433	-7.8447E-09	1331.5	7.8279E+06	7.8279E+06
x(M)	1.7600	10.560	7.2600	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
3	-5.0583E-05	-7.1105E-15	-23.541	-3.9652E-07	-25.808	-4.2750E-08	-14.981	-1.3606E-08	1248.6	7.8279E+06	7.8279E+06
x(M)	1.5400	9.9000	6.8200	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
4	-5.1935E-05	-3.9959E-15	-20.798	-1.9485E-07	-21.232	-1.6808E-08	-11.494	-4.7475E-09	1414.4	7.8279E+06	7.8279E+06
x(M)	1.7600	10.780	7.2600	0.0000	0.0000	9.0200	6.1600	11.000	22.000	0.0000	0.0000
5	-5.1937E-05	-5.9623E-15	-20.793	-2.6972E-07	-21.227	-2.4994E-08	-11.489	-7.0499E-09	1331.5	7.8279E+06	7.8279E+06
x(M)	1.7600	10.780	7.2600	0.0000	0.0000	9.0200	6.1600	11.000	22.000	0.0000	0.0000
6	-5.0737E-05	-7.2137E-15	-23.202	-3.8920E-07	-25.143	-4.1339E-08	-14.512	-1.2953E-08	1248.6	7.8279E+06	7.8279E+06
x(M)	1.5400	10.120	7.0400	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
7	-5.1935E-05	-3.9959E-15	-20.798	-1.9485E-07	-21.232	-1.6808E-08	-11.494	-4.7475E-09	1414.4	7.8279E+06	7.8279E+06
x(M)	1.7600	10.780	7.2600	0.0000	0.0000	9.0200	6.1600	11.000	22.000	0.0000	0.0000
8	-5.1937E-05	-5.9623E-15	-20.793	-2.6972E-07	-21.227	-2.4994E-08	-11.489	-7.0499E-09	1331.5	7.8279E+06	7.8279E+06
x(M)	1.7600	10.780	7.2600	0.0000	0.0000	9.0200	6.1600	11.000	22.000	0.0000	0.0000
9	-5.0737E-05	-7.2137E-15	-23.202	-3.8920E-07	-25.143	-4.1339E-08	-14.512	-1.2953E-08	1248.6	7.8279E+06	7.8279E+06
x(M)	1.5400	10.120	7.0400	0.0000	0.0000	8.5800	6.1600	10.340	22.000	0.0000	0.0000
10	-5.1534E-05	-3.8796E-15	-21.625	-2.0231E-07	-22.468	-1.8144E-08	-12.490	-5.3141E-09	1414.4	7.8279E+06	7.8279E+06
x(M)	1.7600	10.560	7.2600	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
11	-5.1557E-05	-5.7971E-15	-21.581	-2.8005E-07	-22.396	-2.6894E-08	-12.433	-7.8447E-09	1331.5	7.8279E+06	7.8279E+06
x(M)	1.7600	10.560	7.2600	0.0000	0.0000	8.8000	6.1600	10.780	22.000	0.0000	0.0000
12	-5.0583E-05	-7.1105E-15	-23.541	-3.9652E-07	-25.808	-4.2750E-08	-14.981	-1.3606E-08	1248.6	7.8279E+06	7.8279E+06
x(M)	1.5400	9.9000	6.8200	0.0000	0.0000	8.3600	6.1600	10.120	22.000	0.0000	0.0000
Min.	-5.1937E-05	-7.2137E-15	-23.541	-3.9652E-07	-25.808	-4.2750E-08	-14.981	-1.3606E-08	1248.6	7.8279E+06	7.8279E+06
Pile N.	5	6	3	3	3	3	3	3	3	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL.	DISPL.	MOMENT	MOMENT	SHEAR	SHEAR	SOIL REACT	SOIL REACT	TOTAL	FLEX. RIG.	FLEX. RIG.
	y-Dir	z-Dir	z-Dir	y-Dir	y-Dir	z-Dir	y-Dir	z-Dir	STRESS	KN- M**2	y-Dir
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2		KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.2732E-06	1.8207E-13	95.974	6.5254E-08	6.0565	5.5166E-08	1.7864	3.1968E-08	1704.1	7.8279E+06	7.8279E+06
x(M)	10.780	0.6600	0.0000	6.8200	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
2	1.2751E-06	2.8036E-13	95.820	9.7071E-08	6.0327	7.8780E-08	1.7748	4.5980E-08	1620.7	7.8279E+06	7.8279E+06
x(M)	10.780	0.4400	0.0000	6.8200	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
3	1.1692E-06	3.7890E-13	102.93	1.4135E-07	7.1851	1.2231E-07	2.3034	7.2556E-08	1559.3	7.8279E+06	7.8279E+06
x(M)	10.340	0.4400	0.0000	6.6000	8.8000	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
4	1.3117E-06	1.8226E-13	93.251	6.2663E-08	5.6178	5.1590E-08	1.5977	2.9386E-08	1695.9	7.8279E+06	7.8279E+06
x(M)	11.000	0.6600	0.0000	7.0400	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
5	1.3117E-06	2.8048E-13	93.240	9.3232E-08	5.6149	7.3789E-08	1.5966	4.2438E-08	1612.9	7.8279E+06	7.8279E+06
x(M)	11.000	0.4400	0.0000	7.0400	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
6	1.1921E-06	3.7899E-13	101.59	1.3917E-07	6.9812	1.1842E-07	2.2022	7.0290E-08	1555.3	7.8279E+06	7.8279E+06
x(M)	10.340	0.4400	0.0000	6.6000	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
7	1.3117E-06	1.8226E-13	93.251	6.2663E-08	5.6178	5.1590E-08	1.5977	2.9386E-08	1695.9	7.8279E+06	7.8279E+06
x(M)	11.000	0.6600	0.0000	7.0400	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
8	1.3117E-06	2.8048E-13	93.240	9.3232E-08	5.6149	7.3789E-08	1.5966	4.2438E-08	1612.9	7.8279E+06	7.8279E+06
x(M)	11.000	0.4400	0.0000	7.0400	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
9	1.1921E-06	3.7899E-13	101.59	1.3917E-07	6.9812	1.1842E-07	2.2022	7.0290E-08	1555.3	7.8279E+06	7.8279E+06
x(M)	10.340	0.4400	0.0000	6.6000	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
10	1.2732E-06	1.8207E-13	95.974	6.5254E-08	6.0565	5.5166E-08	1.7864	3.1968E-08	1704.1	7.8279E+06	7.8279E+06
x(M)	10.780	0.6600	0.0000	6.8200	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
11	1.2751E-06	2.8036E-13	95.820	9.7071E-08	6.0327	7.8780E-08	1.7748	4.5980E-08	1620.7	7.8279E+06	7.8279E+06
x(M)	10.780	0.4400	0.0000	6.8200	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
12	1.1692E-06	3.7890E-13	102.93	1.4135E-07	7.1851	1.2231E-07	2.3034	7.2556E-08	1559.3	7.8279E+06	7.8279E+06
x(M)	10.340	0.4400	0.0000	6.6000	8.8000	0.0000	10.340	6.1600	0.0000	0.0000	0.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	
COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 140 di 420	

Max. Pile N.	1.3117E-06 4	3.7899E-13 6	102.93 3	1.4135E-07 3	7.1851 3	1.2231E-07 3	2.3034 3	7.2556E-08 3	1704.1 1	7.8279E+06 1	7.8279E+06 1
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LOAD CASE : 26
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.5791	1.0000
3	0.8661	1.0000
4	0.4955	1.0000
5	0.4951	1.0000
6	0.8053	1.0000
7	0.4955	1.0000
8	0.4951	1.0000
9	0.8053	1.0000
10	0.5845	1.0000
11	0.5791	1.0000
12	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 28236.4	HOR. LOAD Y, KN -276.510	HOR. LOAD Z, KN 0.00000
MOMENT X, KN- M 2.00000E-06	MOMENT Y, KN- M 2.30000E-05	MOMENT Z, KN- M -6438.75

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.21745E-03	HORIZONTAL Y, M -3.79645E-05	HORIZONTAL Z, M 1.29948E-13
ANGLE ROT. X, RAD 1.67601E-14	ANGLE ROT. Y, RAD 3.86447E-14	ANGLE ROT. Z, RAD -1.70562E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.2942E-03	-3.7964E-05	2.0537E-13	1.6760E-14	3.8645E-14	-1.7056E-05
2	1.2174E-03	-3.7964E-05	1.2995E-13	1.6760E-14	3.8645E-14	-1.7056E-05
3	1.1407E-03	-3.7964E-05	5.4527E-14	1.6760E-14	3.8645E-14	-1.7056E-05
4	1.2942E-03	-3.7964E-05	2.0537E-13	1.6760E-14	3.8645E-14	-1.7056E-05
5	1.2174E-03	-3.7964E-05	1.2995E-13	1.6760E-14	3.8645E-14	-1.7056E-05
6	1.1407E-03	-3.7964E-05	5.4527E-14	1.6760E-14	3.8645E-14	-1.7056E-05
7	1.2942E-03	-3.7964E-05	2.0537E-13	1.6760E-14	3.8645E-14	-1.7056E-05
8	1.2174E-03	-3.7964E-05	1.2995E-13	1.6760E-14	3.8645E-14	-1.7056E-05
9	1.1407E-03	-3.7964E-05	5.4527E-14	1.6760E-14	3.8645E-14	-1.7056E-05
10	1.2942E-03	-3.7964E-05	2.0537E-13	1.6760E-14	3.8645E-14	-1.7056E-05
11	1.2174E-03	-3.7964E-05	1.2995E-13	1.6760E-14	3.8645E-14	-1.7056E-05
12	1.1407E-03	-3.7964E-05	5.4527E-14	1.6760E-14	3.8645E-14	-1.7056E-05
MINIMUM	1.1407E-03	-3.7964E-05	5.4527E-14	1.6760E-14	3.8645E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7964E-05	2.0537E-13	1.6760E-14	3.8645E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2499.5	-22.465	1.8847E-08	5.4304E-09	-1.1092E-08	-95.972
2	2353.0	-22.393	7.4327E-10	5.4304E-09	4.8144E-08	-95.818
3	2206.6	-25.805	-1.8175E-08	5.4304E-09	1.1026E-07	-102.93
4	2499.5	-21.229	1.6683E-08	5.4304E-09	-7.1998E-09	-93.249
5	2353.0	-21.224	-8.6588E-11	5.4304E-09	4.9360E-08	-93.238
6	2206.6	-25.140	-1.8011E-08	5.4304E-09	1.0971E-07	-101.59
7	2499.5	-21.229	1.6683E-08	5.4304E-09	-7.1998E-09	-93.249

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 141 di 420

8	2353.0	-21.224	-8.6588E-11	5.4304E-09	4.9360E-08	-93.238
9	2206.6	-25.140	-1.8011E-08	5.4304E-09	1.0971E-07	-101.59
10	2499.5	-22.465	1.8847E-08	5.4304E-09	-1.1092E-08	-95.972
11	2353.0	-22.393	7.4327E-10	5.4304E-09	4.8144E-08	-95.818
12	2206.6	-25.805	-1.8175E-08	5.4304E-09	1.1026E-07	-102.93
MINIMUM	2206.6	-25.805	-1.8175E-08	5.4304E-09	-1.1092E-08	-102.93
Pile N.	3	3	3	1	1	3
MAXIMUM	2499.5	-21.224	1.8847E-08	5.4304E-09	1.1026E-07	-93.238
Pile N.	1	5	1	1	3	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.2942E-03	-3.7964E-05	2.0537E-13	1.6760E-14	3.8645E-14	-1.7056E-05
2	1.2174E-03	-3.7964E-05	1.2995E-13	1.6760E-14	3.8645E-14	-1.7056E-05
3	1.1407E-03	-3.7964E-05	5.4527E-14	1.6760E-14	3.8645E-14	-1.7056E-05
4	1.2942E-03	-3.7964E-05	2.0537E-13	1.6760E-14	3.8645E-14	-1.7056E-05
5	1.2174E-03	-3.7964E-05	1.2995E-13	1.6760E-14	3.8645E-14	-1.7056E-05
6	1.1407E-03	-3.7964E-05	5.4527E-14	1.6760E-14	3.8645E-14	-1.7056E-05
7	1.2942E-03	-3.7964E-05	2.0537E-13	1.6760E-14	3.8645E-14	-1.7056E-05
8	1.2174E-03	-3.7964E-05	1.2995E-13	1.6760E-14	3.8645E-14	-1.7056E-05
9	1.1407E-03	-3.7964E-05	5.4527E-14	1.6760E-14	3.8645E-14	-1.7056E-05
10	1.2942E-03	-3.7964E-05	2.0537E-13	1.6760E-14	3.8645E-14	-1.7056E-05
11	1.2174E-03	-3.7964E-05	1.2995E-13	1.6760E-14	3.8645E-14	-1.7056E-05
12	1.1407E-03	-3.7964E-05	5.4527E-14	1.6760E-14	3.8645E-14	-1.7056E-05
MINIMUM	1.1407E-03	-3.7964E-05	5.4527E-14	1.6760E-14	3.8645E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7964E-05	2.0537E-13	1.6760E-14	3.8645E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2499.5	-22.465	1.8847E-08	5.4304E-09	-1.1092E-08	-95.972
2	2353.0	-22.393	7.4327E-10	5.4304E-09	4.8144E-08	-95.818
3	2206.6	-25.805	-1.8175E-08	5.4304E-09	1.1026E-07	-102.93
4	2499.5	-21.224	1.6683E-08	5.4304E-09	-7.1998E-09	-93.249
5	2353.0	-21.224	-8.6588E-11	5.4304E-09	4.9360E-08	-93.238
6	2206.6	-25.140	-1.8011E-08	5.4304E-09	1.0971E-07	-101.59
7	2499.5	-21.224	1.6683E-08	5.4304E-09	-7.1998E-09	-93.249
8	2353.0	-21.224	-8.6588E-11	5.4304E-09	4.9360E-08	-93.238
9	2206.6	-25.140	-1.8011E-08	5.4304E-09	1.0971E-07	-101.59
10	2499.5	-22.465	1.8847E-08	5.4304E-09	-1.1092E-08	-95.972
11	2353.0	-22.393	7.4327E-10	5.4304E-09	4.8144E-08	-95.818
12	2206.6	-25.805	-1.8175E-08	5.4304E-09	1.1026E-07	-102.93
MINIMUM	2206.6	-25.805	-1.8175E-08	5.4304E-09	-1.1092E-08	-102.93
Pile N.	3	3	3	1	1	3
MAXIMUM	2499.5	-21.224	1.8847E-08	5.4304E-09	1.1026E-07	-93.238
Pile N.	1	5	1	1	3	5

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1704.1
2	1620.7
3	1559.3
4	1695.9
5	1612.9
6	1555.3
7	1695.9
8	1612.9
9	1555.3
10	1704.1
11	1620.7
12	1559.3
MINIMUM	1555.3
Pile N.	6
MAXIMUM	1704.1
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-5.1536E-05	-3.0664E-15	-21.625	-1.1092E-08	-22.468	-1.3520E-08	-12.490	-3.8821E-09	1414.4	7.8279E+06	7.8279E+06

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI					
	RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti 						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 142 di 420

x(M)	1.7600	9.6800	7.2600	0.0000	0.0000	7.9200	6.1600	9.9000	22.000	0.0000	0.0000
2	-5.1559E-05	-2.1572E-15	-21.581	-1.5281E-09	-22.396	-8.7049E-09	-12.433	-2.4283E-09	1331.5	7.8279E+06	7.8279E+06
x(M)	1.7600	8.5800	7.2600	12.100	0.0000	8.1400	6.1600	9.0200	22.000	0.0000	0.0000
3	-5.0586E-05	-1.2815E-14	-23.541	-8.6784E-09	-25.808	-1.9013E-08	-14.981	-9.9090E-09	1248.7	7.8279E+06	7.8279E+06
x(M)	1.5400	4.4000	6.8200	8.1400	0.0000	2.2000	6.1600	6.1600	22.000	0.0000	0.0000
4	-5.1937E-05	-3.1882E-15	-20.799	-7.1998E-09	-21.232	-1.2611E-08	-11.494	-3.4871E-09	1414.4	7.8279E+06	7.8279E+06
x(M)	1.7600	9.9000	7.2600	0.0000	0.0000	8.1400	6.1600	10.120	22.000	0.0000	0.0000
5	-5.1939E-05	-2.3048E-15	-20.794	-1.5200E-09	-21.227	-8.3277E-09	-11.489	-2.2381E-09	1331.5	7.8279E+06	7.8279E+06
x(M)	1.7600	8.8000	7.2600	12.320	0.0000	7.0400	6.1600	9.0200	22.000	0.0000	0.0000
6	-5.0739E-05	-1.3136E-14	-23.203	-8.6394E-09	-25.143	-1.8789E-08	-14.512	-9.5969E-09	1248.7	7.8279E+06	7.8279E+06
x(M)	1.5400	4.4000	7.0400	8.1400	0.0000	2.2000	6.1600	6.1600	22.000	0.0000	0.0000
7	-5.1937E-05	-3.1882E-15	-20.799	-7.1998E-09	-21.232	-1.2611E-08	-11.494	-3.4871E-09	1414.4	7.8279E+06	7.8279E+06
x(M)	1.7600	9.9000	7.2600	0.0000	0.0000	8.1400	6.1600	10.120	22.000	0.0000	0.0000
8	-5.1939E-05	-2.3048E-15	-20.794	-1.5200E-09	-21.227	-8.3277E-09	-11.489	-2.2381E-09	1331.5	7.8279E+06	7.8279E+06
x(M)	1.7600	8.8000	7.2600	12.320	0.0000	7.0400	6.1600	9.0200	22.000	0.0000	0.0000
9	-5.0739E-05	-1.3136E-14	-23.203	-8.6394E-09	-25.143	-1.8789E-08	-14.512	-9.5969E-09	1248.7	7.8279E+06	7.8279E+06
x(M)	1.5400	4.4000	7.0400	8.1400	0.0000	2.2000	6.1600	6.1600	22.000	0.0000	0.0000
10	-5.1536E-05	-3.0644E-15	-21.625	-1.1092E-08	-22.468	-1.3520E-08	-12.490	-3.8821E-09	1414.4	7.8279E+06	7.8279E+06
x(M)	1.7600	9.6800	7.2600	0.0000	0.0000	7.9200	6.1600	9.9000	22.000	0.0000	0.0000
11	-5.1559E-05	-2.1572E-15	-21.581	-1.5281E-09	-22.396	-8.7049E-09	-12.433	-2.4283E-09	1331.5	7.8279E+06	7.8279E+06
x(M)	1.7600	8.5800	7.2600	12.100	0.0000	6.8200	6.1600	9.0200	22.000	0.0000	0.0000
12	-5.0586E-05	-1.2815E-14	-23.541	-8.6784E-09	-25.808	-1.9013E-08	-14.981	-9.9090E-09	1248.7	7.8279E+06	7.8279E+06
x(M)	1.5400	4.4000	6.8200	8.1400	0.0000	2.2000	6.1600	6.1600	22.000	0.0000	0.0000
Min.	-5.1939E-05	-1.3136E-14	-23.541	-1.1092E-08	-25.808	-1.9013E-08	-14.981	-9.9090E-09	1248.7	7.8279E+06	7.8279E+06
Pile N.	5	6	3	1	3	3	3	3	3	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR M**2	FLEX. RIG. y-DIR M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.2733E-06	2.0537E-13	95.972	5.0183E-08	6.0566	1.8847E-08	1.7864	1.3186E-08	1704.1	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	5.5000	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
2	1.2752E-06	1.2995E-13	95.818	4.8532E-08	6.0328	7.4168E-10	1.7748	2.7560E-09	1620.7	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	0.6600	9.2400	0.0000	11.000	0.8800	0.0000	0.0000	0.0000
3	1.1692E-06	5.4527E-14	102.93	1.1026E-07	7.1853	2.7312E-09	2.3035	1.0784E-09	1559.3	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	0.0000	8.8000	9.6800	10.340	0.8800	0.0000	0.0000	0.0000
4	1.3117E-06	2.0537E-13	93.249	4.8398E-08	5.6179	1.6684E-08	1.5978	1.2069E-08	1695.9	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	5.7200	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
5	1.3117E-06	1.2995E-13	93.238	4.9361E-08	5.6150	4.5776E-10	1.5967	2.3575E-09	1612.9	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	0.2200	9.2400	14.080	11.220	0.8800	0.0000	0.0000	0.0000
6	1.1921E-06	5.4527E-14	101.59	1.0971E-07	6.9814	2.6766E-09	2.2022	1.0018E-09	1555.3	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	0.0000	8.8000	9.9000	10.560	0.8800	0.0000	0.0000	0.0000
7	1.3117E-06	2.0537E-13	93.249	4.8398E-08	5.6179	1.6684E-08	1.5978	1.2069E-08	1695.9	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	5.7200	9.2400	0.0000	11.220	6.1600	0.0000	0.0000	0.0000
8	1.3117E-06	1.2995E-13	93.238	4.9361E-08	5.6150	4.5776E-10	1.5967	2.3575E-09	1612.9	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	0.2200	9.2400	14.080	11.220	0.8800	0.0000	0.0000	0.0000
9	1.1921E-06	5.4527E-14	101.59	1.0971E-07	6.9814	2.6766E-09	2.2022	1.0018E-09	1555.3	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	0.0000	8.8000	9.9000	10.560	0.8800	0.0000	0.0000	0.0000
10	1.2733E-06	2.0537E-13	95.972	5.0183E-08	6.0566	1.8847E-08	1.7864	1.3186E-08	1704.1	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	5.5000	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
11	1.2752E-06	1.2995E-13	95.818	4.8532E-08	6.0328	7.4168E-10	1.7748	2.7560E-09	1620.7	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	0.6600	9.2400	0.0000	11.000	0.8800	0.0000	0.0000	0.0000
12	1.1692E-06	5.4527E-14	102.93	1.1026E-07	7.1853	2.7312E-09	2.3035	1.0784E-09	1559.3	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	0.0000	8.8000	9.6800	10.340	0.8800	0.0000	0.0000	0.0000
Max.	1.3117E-06	2.0537E-13	102.93	1.1026E-07	7.1853	1.8847E-08	2.3035	1.3186E-08	1704.1	7.8279E+06	7.8279E+06
Pile N.	4	1	3	3	3	1	3	1	1	1	1

***** SUMMARY FOR LOAD CASES AND COMBINATIONS *****

***** LOAD CASES RESULTS *****

LOAD CASE : 1

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *





LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
32555.6	643.705	489.689	-172.262	5344.00	-11099.0

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.40605E-03	3.47270E-04	2.02720E-04	-1.81209E-06	1.16293E-05	-4.05270E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.1452E-03	3.3504E-04	1.9457E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.6669E-03	3.5950E-04	2.1087E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
Pile N.	1	1	3	1	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 143 di 420

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2215.1	45.466	36.043	-0.5871	-125.61	102.54
Pile N.	12	8	8	1	3	8
MAXIMUM	3210.8	67.559	45.577	-0.5871	-107.21	148.86
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.1452E-03	3.3504E-04	1.9457E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.6669E-03	3.5950E-04	2.1087E-04	-1.8121E-06	1.1629E-05	-4.0527E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2215.1	45.466	36.043	-0.5871	-125.61	102.54
Pile N.	12	8	8	1	3	8
MAXIMUM	3210.8	67.559	45.577	-0.5871	-107.21	148.86
Pile N.	1	1	1	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-5.8731E-06	-3.8132E-06	-148.86	-125.61	-31.471	-18.641	-9.9350	-5.9050	1253.5
Pile N.	5	9	1	3	1	1	1	1	12
Max.	3.5950E-04	2.1087E-04	105.14	63.915	67.566	45.583	41.292	27.477	2399.1
Pile N.	1	3	1	3	1	1	1	1	1

LOAD CASE : 2

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
31935.6	-643.705	489.689	-199.042	5344.00	-168.073

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.37898E-03	-2.36080E-04	2.02202E-04	-1.65272E-06	1.16263E-05	5.88377E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2740E-03	-2.4724E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8838E-06
Pile N.	10	10	1	1	1	1
MAXIMUM	1.4839E-03	-2.2492E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8838E-06
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2461.0	-61.723	35.299	-0.5355	-135.87	-184.85
Pile N.	10	12	7	1	3	12
MAXIMUM	2861.6	-47.243	49.909	-0.5355	-103.31	-151.87
Pile N.	3	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.2740E-03	-2.4724E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8838E-06
Pile N.	10	10	1	1	1	1
MAXIMUM	1.4839E-03	-2.2492E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8838E-06
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2461.0	-61.723	35.299	-0.5355	-135.87	-184.85
Pile N.	10	12	7	1	3	12
MAXIMUM	2861.6	-47.243	49.909	-0.5355	-103.31	-151.87
Pile N.	3	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-2.4724E-04	-3.6869E-06	-81.158	-135.87	-61.729	-20.223	-37.138	-6.4077	1392.6
Pile N.	10	8	12	3	12	3	12	3	10

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 144 di 420
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Max. Pile N.	4.6266E-06 11	2.0964E-04 3	184.85 12	67.304 3	23.777 12	49.915 3	7.3226 12	30.059 3	2282.6 3
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LOAD CASE : 3

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30016.0	-423.388	416.808	-115.299	3505.32	-5392.26

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.29515E-03	-1.03632E-04	1.67334E-04	-1.39223E-06	8.14984E-06	-1.23655E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.1845E-03	-1.1303E-04	1.6107E-04	-1.3922E-06	8.1498E-06
Pile N.	12	10	1	1	1
MAXIMUM	1.4058E-03	-9.4234E-05	1.7360E-04	-1.3922E-06	8.1498E-06
Pile N.	1	1	3	1	1

* PILE TOP REACTIONS, GLOBAL *

FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2290.2	-38.958	30.373	-0.4511	-118.55
Pile N.	12	12	8	1	3
MAXIMUM	2712.5	-31.623	42.631	-0.4511	-91.842
Pile N.	1	5	3	1	7

* PILE TOP DISPLACEMENTS, LOCAL *

DISP. X, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.1845E-03	-1.1303E-04	1.6107E-04	-1.3922E-06	8.1498E-06
Pile N.	12	10	1	1	1
MAXIMUM	1.4058E-03	-9.4234E-05	1.7360E-04	-1.3922E-06	8.1498E-06
Pile N.	1	1	3	1	1

* PILE TOP REACTIONS, LOCAL *

AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2290.2	-38.958	30.373	-0.4511	-118.55
Pile N.	12	12	8	1	3
MAXIMUM	2712.5	-31.623	42.631	-0.4511	-91.842
Pile N.	1	5	3	1	7

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR z-DIR	SHEAR y-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
Min.	-1.1780E-04	-3.1025E-06	-44.266	-118.55	-38.962	-16.974	-22.758	-5.3809	1296.0
Pile N.	11	8	12	3	12	3	12	3	12
Max.	2.5929E-06	1.7360E-04	141.11	56.494	12.697	42.635	3.8845	25.629	2040.1
Pile N.	11	3	12	3	12	3	3	3	1

LOAD CASE : 4

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
32474.9	-460.108	674.779	-133.347	8240.99	-5512.60

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.40252E-03	-1.16778E-04	2.85898E-04	-1.82300E-06	1.75089E-05	-1.23623E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2287E-03	-1.2908E-04	2.7769E-04	-1.8230E-06	1.7509E-05
Pile N.	12	10	1	1	1
MAXIMUM	1.5763E-03	-1.0447E-04	2.9410E-04	-1.8230E-06	1.7509E-05
Pile N.	1	1	3	1	1

* PILE TOP REACTIONS, GLOBAL *

FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2374.5	-41.928	49.009	-0.5907	-185.72
Pile N.	12	12	8	1	3
MAXIMUM	3038.0	-34.329	68.970	-0.5907	-144.99
Pile N.	1	5	3	1	8

* PILE TOP DISPLACEMENTS, LOCAL *

DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
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APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 145 di 420
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MINIMUM	1.2287E-03	-1.2908E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5763E-03	-1.0447E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2362E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2374.5	-41.928	49.009	-0.5907	-185.72	-151.94
Pile N.	12	12	8	1	3	12
MAXIMUM	3038.0	-34.329	68.970	-0.5907	-144.99	-131.46
Pile N.	1	5	3	1	8	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-1.3343E-04	-5.2134E-06	-48.833	-185.72	-41.933	-28.184	-24.443	-8.9278	1343.7
Pile N.	11	8	12	3	12	3	12	3	12
Max.	2.9178E-06	2.9410E-04	151.94	93.800	13.817	68.978	4.2247	41.573	2382.6
Pile N.	11	3	12	3	12	3	3	3	1

LOAD CASE : 5

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
28236.4	-276.510	531.740	-124.067	6088.16	-6374.80

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.21745E-03	-4.01295E-05	2.23818E-04	-1.56856E-06	1.31197E-05	-1.68434E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.0531E-03	-5.0717E-05	2.1676E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3818E-03	-2.9542E-05	2.3088E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2039.4	-25.520	38.659	-0.5082	-148.35	-105.51
Pile N.	12	12	8	1	3	12
MAXIMUM	2666.7	-20.775	54.705	-0.5082	-115.41	-91.438
Pile N.	1	5	3	1	8	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.0531E-03	-5.0717E-05	2.1676E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3818E-03	-2.9542E-05	2.3088E-04	-1.5686E-06	1.3120E-05	-1.6843E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2039.4	-25.520	38.659	-0.5082	-148.35	-105.51
Pile N.	12	12	8	1	3	12
MAXIMUM	2666.7	-20.775	54.705	-0.5082	-115.41	-91.438
Pile N.	1	5	3	1	8	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-6.2993E-05	-4.1073E-06	-25.602	-148.35	-25.523	-22.218	-14.346	-7.0391	1154.1
Pile N.	11	9	12	3	12	3	12	3	12
Max.	1.5475E-06	2.3088E-04	105.51	73.954	7.1944	54.710	2.1229	32.951	2007.9
Pile N.	11	3	12	3	12	3	12	3	1

LOAD CASE : 6

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
32738.9	460.108	674.779	-119.957	8240.99	-13162.7

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 146 di 420

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.41405E-03	3.00514E-04	2.84169E-04	-1.12390E-06	1.74983E-05	-4.50558E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.0932E-03	2.9293E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.7349E-03	3.0810E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2115.9	31.824	49.280	-0.3641	-172.65	51.085
Pile N.	12	8	8	1	1	8
MAXIMUM	3340.6	48.864	64.664	-0.3641	-145.05	85.395
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.0932E-03	2.9293E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.7349E-03	3.0810E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2115.9	31.824	49.280	-0.3641	-172.65	51.085
Pile N.	12	8	8	1	1	8
MAXIMUM	3340.6	48.864	64.664	-0.3641	-145.05	85.395
Pile N.	1	1	1	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-4.8671E-06	-5.1745E-06	-85.395	-172.65	-25.540	-26.616	-8.0360	-8.4297	1197.4
Pile N.	5	9	1	1	1	1	1	1	12
Max.	3.0810E-04	2.8923E-04	85.591	88.712	48.868	64.672	30.248	39.009	2471.7
Pile N.	1	3	1	3	1	1	1	1	1

LOAD CASE : 7

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
32474.9	-460.108	674.779	-133.347	8240.99	-5512.04

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.40252E-03	-1.16783E-04	2.85898E-04	-1.82298E-06	1.75089E-05	-1.23606E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2287E-03	-1.2909E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5763E-03	-1.0448E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2374.5	-41.928	49.009	-0.5907	-185.72	-151.94
Pile N.	12	12	8	1	3	12
MAXIMUM	3037.9	-34.329	68.970	-0.5907	-144.99	-131.46
Pile N.	1	5	3	1	8	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.2287E-03	-1.2909E-04	2.7769E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5763E-03	-1.0448E-04	2.9410E-04	-1.8230E-06	1.7509E-05	-1.2361E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2374.5	-41.928	49.009	-0.5907	-185.72	-151.94
Pile N.	12	12	8	1	3	12

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

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MAXIMUM	3037.9	-34.329	68.970	-0.5907	-144.99	-131.46
Pile N.	1	5	3	1	8	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-1.3343E-04	-5.2134E-06	-48.834	-185.72	-41.934	-28.184	-24.443	-8.9278	1343.7
Pile N.	11	8	12	3	12	3	12	3	12
Max.	2.9179E-06	2.9410E-04	151.94	93.800	13.817	68.978	4.2248	41.573	2382.6
Pile N.	11	3	12	3	12	3	3	3	1

LOAD CASE : 8

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30460.9	-460.108	441.249	-125.514	3468.43	-5141.03

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.31458E-03	-1.19614E-04	1.75675E-04	-1.44731E-06	8.21979E-06	-1.12284E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.2086E-03	-1.2938E-04	1.6916E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4206E-03	-1.0985E-04	1.8219E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	2336.1	-42.515	32.177	-0.4689	-125.78	-150.57
Pile N.	12	12	8	1	3	12
MAXIMUM	2740.7	-34.295	45.030	-0.4689	-97.647	-129.91
Pile N.	1	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.2086E-03	-1.2938E-04	1.6916E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4206E-03	-1.0985E-04	1.8219E-04	-1.4473E-06	8.2198E-06	-1.1228E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	2336.1	-42.515	32.177	-0.4689	-125.78	-150.57
Pile N.	12	12	8	1	3	12
MAXIMUM	2740.7	-34.295	45.030	-0.4689	-97.647	-129.91
Pile N.	1	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-1.3307E-04	-3.2648E-06	-49.225	-125.78	-42.520	-17.867	-24.954	-5.6643	1322.0
Pile N.	11	8	12	3	12	3	12	3	12
Max.	2.8691E-06	1.8219E-04	150.57	59.462	14.146	45.035	4.3395	27.063	2087.4
Pile N.	11	3	12	3	12	3	3	3	1

LOAD CASE : 9

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *





LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
32738.9	460.108	674.779	-119.957	8240.99	-13162.7

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.41405E-03	3.00514E-04	2.84169E-04	-1.12390E-06	1.74983E-05	-4.50558E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.0932E-03	2.9293E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.7349E-03	3.0810E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	1	1	3	1	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
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* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2115.9	31.824	49.280	-0.3641	-172.65	51.085
Pile N.	12	8	8	1	1	8
MAXIMUM	3340.6	48.864	64.664	-0.3641	-145.05	85.395
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.0932E-03	2.9293E-04	2.7911E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.7349E-03	3.0810E-04	2.8923E-04	-1.1239E-06	1.7498E-05	-4.5056E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2115.9	31.824	49.280	-0.3641	-172.65	51.085
Pile N.	12	8	8	1	1	8
MAXIMUM	3340.6	48.864	64.664	-0.3641	-145.05	85.395
Pile N.	1	1	1	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-4.8671E-06	-5.1745E-06	-85.395	-172.65	-25.540	-26.616	-8.0360	-8.4297	1197.4
Pile N.	5	9	1	1	1	1	1	1	12
Max.	3.0810E-04	2.8923E-04	85.591	88.712	48.868	64.672	30.248	39.009	2471.7
Pile N.	1	3	1	3	1	1	1	1	1

LOAD CASE : 10

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
31935.6	-643.705	489.689	-199.042	5344.00	-167.507

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.37898E-03	-2.36088E-04	2.02202E-04	-1.65270E-06	1.16263E-05	5.88551E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2740E-03	-2.4724E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8855E-06
Pile N.	10	10	1	1	1	1
MAXIMUM	1.4839E-03	-2.2493E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8855E-06
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2461.0	-61.723	35.299	-0.5355	-135.87	-184.84
Pile N.	10	12	7	1	3	12
MAXIMUM	2861.6	-47.243	49.909	-0.5355	-103.31	-151.87
Pile N.	3	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.2740E-03	-2.4724E-04	1.9477E-04	-1.6527E-06	1.1626E-05	5.8855E-06
Pile N.	10	10	1	1	1	1
MAXIMUM	1.4839E-03	-2.2493E-04	2.0964E-04	-1.6527E-06	1.1626E-05	5.8855E-06
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2461.0	-61.723	35.299	-0.5355	-135.87	-184.84
Pile N.	10	12	7	1	3	12
MAXIMUM	2861.6	-47.243	49.909	-0.5355	-103.31	-151.87
Pile N.	3	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-2.4724E-04	-3.6869E-06	-81.159	-135.87	-61.730	-20.223	-37.138	-6.4077	1392.6
Pile N.	10	8	12	3	12	3	12	3	10

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

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Max. Pile N.	4.6266E-06 11	2.0964E-04 3	184.84 12	67.303 3	23.777 12	49.915 3	7.3227 12	30.059 3	2282.6 3
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LOAD CASE : 11

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
31482.4	-276.510	520.044	-315.640	6555.58	-2505.77

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.35919E-03	-7.89709E-05	2.21567E-04	-3.07138E-06	1.38376E-05	-4.93824E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2436E-03	-9.9703E-05	2.0775E-04	-3.0714E-06	1.3838E-05
Pile N.	12	10	1	1	1
MAXIMUM	1.4748E-03	-5.8239E-05	2.3539E-04	-3.0714E-06	1.3838E-05
Pile N.	1	1	3	1	1

* PILE TOP REACTIONS, GLOBAL *

FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2402.9	-28.497	37.337	-0.9951	-149.36
Pile N.	12	12	7	1	3
MAXIMUM	2844.2	-19.730	55.358	-0.9951	-106.24
Pile N.	1	5	3	1	7

* PILE TOP DISPLACEMENTS, LOCAL *

DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.2436E-03	-9.9703E-05	2.0775E-04	-3.0714E-06	1.3838E-05
Pile N.	12	10	1	1	1
MAXIMUM	1.4748E-03	-5.8239E-05	2.3539E-04	-3.0714E-06	1.3838E-05
Pile N.	1	1	3	1	1

* PILE TOP REACTIONS, LOCAL *

AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2402.9	-28.497	37.337	-0.9951	-149.36
Pile N.	12	12	7	1	3
MAXIMUM	2844.2	-19.730	55.358	-0.9951	-106.24
Pile N.	1	5	3	1	7

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR z-DIR	SHEAR y-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-1.0075E-04	-4.1367E-06	-35.083	-149.36	-28.501	-22.584	-16.762	-7.1543	1359.7
Pile N.	11	9	12	3	12	3	12	3	12
Max.	2.1081E-06	2.3539E-04	98.892	75.164	9.8675	55.363	2.9237	33.362	2060.8
Pile N.	11	3	12	3	12	3	12	3	3

LOAD CASE : 12

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
29847.6	-423.388	505.868	-86.0619	7002.95	-5213.98

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.28780E-03	-1.05715E-04	2.18524E-04	-1.29826E-06	1.45089E-05	-1.18141E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.1367E-03	-1.1448E-04	2.1268E-04	-1.2983E-06	1.4509E-05
Pile N.	12	10	1	1	1
MAXIMUM	1.4389E-03	-9.6952E-05	2.2437E-04	-1.2983E-06	1.4509E-05
Pile N.	1	1	3	1	1

* PILE TOP REACTIONS, GLOBAL *

FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2198.9	-38.231	36.694	-0.4207	-136.97
Pile N.	12	12	8	1	3
MAXIMUM	2775.7	-31.722	51.617	-0.4207	-106.70
Pile N.	1	5	3	1	8

* PILE TOP DISPLACEMENTS, LOCAL *

DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
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APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 150 di 420
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MINIMUM	1.1367E-03	-1.1448E-04	2.1268E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4389E-03	-9.6952E-05	2.2437E-04	-1.2983E-06	1.4509E-05	-1.1814E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2198.9	-38.231	36.694	-0.4207	-136.97	-138.82
Pile N.	12	12	8	1	3	12
MAXIMUM	2775.7	-31.722	51.617	-0.4207	-106.70	-121.97
Pile N.	1	5	3	1	8	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-1.1883E-04	-3.9516E-06	-44.014	-136.97	-38.236	-21.319	-22.459	-6.7511	1244.3
Pile N.	11	8	12	3	12	3	3	3	12
Max.	2.6107E-06	2.2437E-04	138.82	70.962	12.518	51.622	3.9410	31.145	2116.8
Pile N.	11	3	12	3	12	3	3	3	1

LOAD CASE : 13

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30827.9	496.827	204.774	-125.420	2238.30	-10961.2

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.33061E-03	2.91840E-04	8.49983E-05	-1.39049E-06	4.87008E-06	-3.86434E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.1238E-03	2.8245E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5374E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2174.4	35.091	15.202	-0.4505	-53.444	69.464
Pile N.	12	8	8	1	3	8
MAXIMUM	2963.6	52.519	18.423	-0.4505	-45.146	105.58
Pile N.	1	1	3	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.1238E-03	2.8245E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5374E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8643E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2174.4	35.091	15.202	-0.4505	-53.444	69.464
Pile N.	12	8	8	1	3	8
MAXIMUM	2963.6	52.519	18.423	-0.4505	-45.146	105.58
Pile N.	1	1	3	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-4.8253E-06	-1.6614E-06	-105.58	-53.444	-25.668	-7.5742	-8.0865	-2.3811	1230.5
Pile N.	5	9	1	3	1	3	1	1	12
Max.	3.0123E-04	9.1256E-05	86.043	27.203	52.523	18.425	32.270	11.218	2028.3
Pile N.	1	3	1	3	1	3	1	3	1

LOAD CASE : 14

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30700.3	-496.827	213.441	-39.3608	2752.85	-4888.68

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.32503E-03	-1.34599E-04	9.04107E-05	-3.29930E-07	5.77836E-06	-1.00993E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2406E-03	-1.3682E-04	8.8926E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4095E-03	-1.3236E-04	9.1895E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2397.2	-46.774	15.606	-0.1069	-56.773	-157.39
Pile N.	12	3	8	1	3	12
MAXIMUM	2719.5	-37.326	21.285	-0.1069	-45.206	-138.71
Pile N.	1	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.2406E-03	-1.3682E-04	8.8926E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4095E-03	-1.3236E-04	9.1895E-05	-3.2993E-07	5.7784E-06	-1.0099E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2397.2	-46.774	15.606	-0.1069	-56.773	-157.39
Pile N.	12	3	8	1	3	12
MAXIMUM	2719.5	-37.326	21.285	-0.1069	-45.206	-138.71
Pile N.	1	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-1.3967E-04	-1.6299E-06	-52.637	-56.773	-46.780	-8.7572	-27.661	-2.7735	1356.5
Pile N.	11	8	12	3	3	3	3	3	12
Max.	2.9945E-06	9.1895E-05	157.39	29.149	15.791	21.287	5.0325	12.838	2011.6
Pile N.	8	3	12	3	3	3	3	3	1

LOAD CASE : 15

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
28236.4	-276.510	-1.00000E-06	3.00000E-06	2.70000E-05	-6438.70

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.21745E-03	-3.79650E-05	-2.00527E-13	2.24298E-14	3.99511E-14	-1.70561E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2206.6	-25.805	-1.2137E-07	7.2674E-09	2.2642E-07	-102.93
Pile N.	3	3	3	1	4	3
MAXIMUM	2499.5	-21.224	-5.2097E-08	7.2674E-09	4.2703E-07	-93.238
Pile N.	1	5	4	1	3	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2206.6	-25.805	-1.2137E-07	7.2674E-09	2.2642E-07	-102.93
Pile N.	3	3	3	1	4	3

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   		
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		

MAXIMUM 2499.5 -21.224 -5.2097E-08 7.2674E-09 4.2703E-07 -93.238
Pile N. 1 5 4 1 3 5

*** EFFECTS FOR LATERALLY LOADED PILE ***

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min. Pile N.	-5.1939E-05	-3.1743E-13	-23.541	-1.2858E-07	-25.808	-1.2139E-07	-14.981	-7.1438E-08	1248.7
Pile N.	5	6	3	3	3	3	3	3	3
Max. Pile N.	1.3117E-06	6.5599E-15	102.93	4.2703E-07	7.1853	3.9060E-08	2.3035	1.2449E-08	1704.1
Pile N.	4	6	3	3	3	3	3	3	1

LOAD CASE : 16

*** TABLE L * COMPUTATION ON PILE CAP**

*** EQUIVALENT CONCENTRATED LOAD AT ORIGIN ***

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
28236.4	-276.510	265.870	-62.0335	3044.08	-6407.27

*** DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN ***

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.21745E-03	-3.93562E-05	1.11615E-04	-9.65975E-07	6.55815E-06	-1.69478E-05

*** PILE TOP DISPLACEMENTS, GLOBAL ***

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.0969E-03	-4.5877E-05	1.0727E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3380E-03	-3.2836E-05	1.1596E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
Pile N.	1	1	3	1	1	1

*** PILE TOP REACTIONS, GLOBAL ***

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2123.0	-24.816	19.321	-0.3130	-74.639	-102.92
Pile N.	12	12	8	1	3	12
MAXIMUM	2583.1	-20.982	27.505	-0.3130	-57.114	-92.270
Pile N.	1	5	3	1	7	5

*** PILE TOP DISPLACEMENTS, LOCAL ***

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.0969E-03	-4.5877E-05	1.0727E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3380E-03	-3.2836E-05	1.1596E-04	-9.6598E-07	6.5582E-06	-1.6948E-05
Pile N.	1	1	3	1	1	1

*** PILE TOP REACTIONS, LOCAL ***

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2123.0	-24.816	19.321	-0.3130	-74.639	-102.92
Pile N.	12	12	8	1	3	12
MAXIMUM	2583.1	-20.982	27.505	-0.3130	-57.114	-92.270
Pile N.	1	5	3	1	7	5

*** EFFECTS FOR LATERALLY LOADED PILE ***

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min. Pile N.	-5.8700E-05	-2.0452E-06	-24.390	-74.639	-24.820	-11.164	-14.050	-3.5370	1201.4
Pile N.	11	9	12	3	12	3	3	3	12
Max. Pile N.	1.4547E-06	1.1596E-04	102.92	37.161	6.9245	27.508	2.1268	16.566	1817.5
Pile N.	11	3	12	3	12	3	3	3	1

LOAD CASE : 17

*** TABLE L * COMPUTATION ON PILE CAP**

*** EQUIVALENT CONCENTRATED LOAD AT ORIGIN ***




LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
28236.4	-276.510	-1.00000E-06	3.00000E-06	2.70000E-05	-6438.70

*** DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN ***

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.21745E-03	-3.79650E-05	-2.00527E-13	2.24298E-14	3.99511E-14	-1.70561E-05

*** PILE TOP DISPLACEMENTS, GLOBAL ***

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 153 di 420

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2206.6	-25.805	-1.2137E-07	7.2674E-09	2.2642E-07	-102.93
Pile N.	3	3	3	1	4	3
MAXIMUM	2499.5	-21.224	-5.2097E-08	7.2674E-09	4.2703E-07	-93.238
Pile N.	1	5	4	1	3	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2206.6	-25.805	-1.2137E-07	7.2674E-09	2.2642E-07	-102.93
Pile N.	3	3	3	1	4	3
MAXIMUM	2499.5	-21.224	-5.2097E-08	7.2674E-09	4.2703E-07	-93.238
Pile N.	1	5	4	1	3	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-5.1939E-05	-3.1743E-13	-23.541	-1.2858E-07	-25.808	-1.2139E-07	-14.981	-7.1438E-08	1248.7
Pile N.	5	6	3	3	3	3	3	3	3
Max.	1.3117E-06	6.5599E-15	102.93	4.2703E-07	7.1853	3.9060E-08	2.3035	1.2449E-08	1704.1
Pile N.	4	6	3	3	3	3	3	3	1

LOAD CASE : 18

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30827.9	496.827	204.774	-125.420	2238.30	-10961.7

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.33061E-03	2.91845E-04	8.49983E-05	-1.39049E-06	4.87008E-06	-3.86449E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.1238E-03	2.8246E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5374E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2174.4	35.091	15.202	-0.4505	-53.444	69.462
Pile N.	12	8	8	1	3	8
MAXIMUM	2963.6	52.519	18.423	-0.4505	-45.146	105.58
Pile N.	1	1	3	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *



	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.1238E-03	2.8246E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5374E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2174.4	35.091	15.202	-0.4505	-53.444	69.462
Pile N.	12	8	8	1	3	8
MAXIMUM	2963.6	52.519	18.423	-0.4505	-45.146	105.58
Pile N.	1	1	3	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-4.8253E-06	-1.6614E-06	-105.58	-53.444	-25.668	-7.5742	-8.0866	-2.3811	1230.4
Pile N.	5	9	1	3	1	3	1	1	12

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	
COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 154 di 420	

Max. 3.0123E-04 9.1256E-05 86.044 27.203 52.523 18.425 32.270 11.218 2028.3
 Pile N. 1 3 1 3 1 3 1 3 1

LOAD CASE : 19

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
29835.4	-276.510	213.600	-256.320	3486.70	-4519.97

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.28727E-03	-5.81508E-05	9.47883E-05	-2.40849E-06	7.01348E-06	-1.11419E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.1898E-03	-7.4408E-05	8.3950E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3847E-03	-4.1894E-05	1.0563E-04	-2.4085E-06	7.0135E-06	-1.1142E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2300.3	-28.076	13.896	-0.7804	-63.737	-104.73
Pile N.	12	12	7	1	3	12
MAXIMUM	2672.3	-20.083	24.141	-0.7804	-37.272	-79.884
Pile N.	1	5	3	1	7	2

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.1898E-03	-7.4408E-05	8.3950E-05	-2.4085E-06	7.0135E-06	-1.1142E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3847E-03	-4.1894E-05	1.0563E-04	-2.4085E-06	7.0135E-06	-1.1142E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2300.3	-28.076	13.896	-0.7804	-63.737	-104.73
Pile N.	12	12	7	1	3	12
MAXIMUM	2672.3	-20.083	24.141	-0.7804	-37.272	-79.884
Pile N.	1	5	3	1	7	2

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR z-DIR KN	SHEAR y-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-7.9689E-05	-1.8093E-06	-30.806	-63.737	-28.079	-10.007	-16.303	-3.1688	1301.7
Pile N.	11	9	12	3	12	3	12	3	12
Max.	1.8043E-06	1.0563E-04	104.73	33.312	8.8555	24.144	2.6743	14.572	1789.3
Pile N.	11	3	12	3	12	3	12	3	1

LOAD CASE : 20

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
29535.7	-496.827	73.3230	-34.6614	-110.682	-4613.18

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.27418E-03	-1.37256E-04	2.53032E-05	-1.49964E-07	2.11315E-07	-9.25427E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2311E-03	-1.3827E-04	2.4628E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3173E-03	-1.3624E-04	2.5978E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2379.1	-47.544	5.3250	-0.048590	-21.862	-158.43
Pile N.	12	12	7	1	3	12
MAXIMUM	2543.5	-37.368	7.2619	-0.048590	-17.680	-137.79
Pile N.	1	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
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APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 155 di 420
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MINIMUM	1.2311E-03	-1.3827E-04	2.4628E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3173E-03	-1.3624E-04	2.5978E-05	-1.4996E-07	2.1132E-07	-9.2543E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2379.1	-47.544	5.3250	-0.048590	-21.862	-158.43
Pile N.	12	12	7	1	3	12
MAXIMUM	2543.5	-37.368	7.2619	-0.048590	-17.680	-137.79
Pile N.	1	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-1.4062E-04	-4.9397E-07	-53.664	-21.862	-47.549	-2.7149	-28.141	-0.8620	1346.3
Pile N.	11	8	12	3	12	3	3	3	12
Max.	3.0026E-06	2.5978E-05	158.43	8.9825	16.200	7.2626	5.1504	4.3372	1875.8
Pile N.	8	3	12	3	12	3	12	3	1

LOAD CASE : 21

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30827.9	496.827	204.774	-125.420	2238.30	-10961.7

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.33061E-03	2.91845E-04	8.49983E-05	-1.39049E-06	4.87008E-06	-3.86449E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.1238E-03	2.8246E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5374E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2174.4	35.091	15.202	-0.4505	-53.444	69.462
Pile N.	12	8	8	1	3	8
MAXIMUM	2963.6	52.519	18.423	-0.4505	-45.146	105.58
Pile N.	1	1	3	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.1238E-03	2.8246E-04	7.8741E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.5374E-03	3.0123E-04	9.1256E-05	-1.3905E-06	4.8701E-06	-3.8645E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2174.4	35.091	15.202	-0.4505	-53.444	69.462
Pile N.	12	8	8	1	3	8
MAXIMUM	2963.6	52.519	18.423	-0.4505	-45.146	105.58
Pile N.	1	1	3	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-4.8253E-06	-1.6614E-06	-105.58	-53.444	-25.668	-7.5742	-8.0866	-2.3811	1230.4
Pile N.	5	9	1	3	1	3	1	1	12
Max.	3.0123E-04	9.1256E-05	86.044	27.203	52.523	18.425	32.270	11.218	2028.3
Pile N.	1	3	1	3	1	3	1	3	1

LOAD CASE : 22

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30455.9	-496.827	204.774	-141.488	2238.31	-2699.04

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.31436E-03	-1.56325E-04	8.43350E-05	-1.04314E-06	4.86609E-06	-3.36560E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2664E-03	-1.6337E-04	7.9641E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3624E-03	-1.4928E-04	8.9029E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2446.4	-48.312	14.215	-0.3380	-57.994	-153.94
Pile N.	12	12	7	1	3	12
MAXIMUM	2629.6	-36.749	21.261	-0.3380	-41.547	-128.22
Pile N.	1	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.2664E-03	-1.6337E-04	7.9641E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3624E-03	-1.4928E-04	8.9029E-05	-1.0431E-06	4.8661E-06	-3.3656E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2446.4	-48.312	14.215	-0.3380	-57.994	-153.94
Pile N.	12	12	7	1	3	12
MAXIMUM	2629.6	-36.749	21.261	-0.3380	-41.547	-128.22
Pile N.	1	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-1.6367E-04	-1.5331E-06	-58.391	-57.994	-48.312	-8.5984	-28.779	-2.7245	1384.4
Pile N.	10	8	12	3	12	3	3	12	12
Max.	3.2526E-06	8.9029E-05	153.94	28.618	17.379	21.263	5.4442	12.802	1924.8
Pile N.	11	3	12	3	12	3	12	3	3

LOAD CASE : 23

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30184.0	-276.510	241.200	-289.439	3170.02	-4102.13

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.30249E-03	-6.23987E-05	1.02885E-04	-2.67639E-06	6.63179E-06	-9.85565E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2134E-03	-8.0464E-05	9.0842E-05	-2.6764E-06	6.6318E-06	-9.8556E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3916E-03	-4.4333E-05	1.1493E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2345.3	-28.548	15.771	-0.8672	-73.435	-104.53
Pile N.	12	12	7	1	3	12
MAXIMUM	2685.4	-19.929	27.141	-0.8672	-44.008	-76.795
Pile N.	1	5	3	1	7	2

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.2134E-03	-8.0464E-05	9.0842E-05	-2.6764E-06	6.6318E-06	-9.8556E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.3916E-03	-4.4333E-05	1.1493E-04	-2.6764E-06	6.6318E-06	-9.8556E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2345.3	-28.548	15.771	-0.8672	-73.435	-104.53
Pile N.	12	12	7	1	3	12

APPALTATORE:

Consorzio

Soci



PROGETTAZIONE:

Mandataria

Mandanti



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 157 di 420
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MAXIMUM Pile N.	2685.4 1	-19.929 5	27.141 3	-0.8672 1	-44.008 7	-76.795 2
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* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-8.4600E-05	-1.9944E-06	-32.073	-73.435	-28.552	-11.045	-16.639	-3.4991	1327.1
Pile N.	11	9	12	3	12	3	12	3	12
Max.	1.8805E-06	1.1493E-04	104.53	36.763	9.2011	27.144	2.7778	16.352	1800.2
Pile N.	11	3	12	3	12	3	12	3	1

LOAD CASE : 24

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
28236.4	-276.510	-1.00000E-06	3.00000E-06	2.70000E-05	-6438.70

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.21745E-03	-3.79650E-05	-2.00527E-13	2.24298E-14	3.99511E-14	-1.70561E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	2206.6	-25.805	-1.2137E-07	7.2674E-09	2.2642E-07	-102.93
Pile N.	3	3	3	1	4	3
MAXIMUM	2499.5	-21.224	-5.2097E-08	7.2674E-09	4.2703E-07	-93.238
Pile N.	1	5	4	1	3	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.1407E-03	-3.7965E-05	-3.0146E-13	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7965E-05	-9.9593E-14	2.2430E-14	3.9951E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	2206.6	-25.805	-1.2137E-07	7.2674E-09	2.2642E-07	-102.93
Pile N.	3	3	3	1	4	3
MAXIMUM	2499.5	-21.224	-5.2097E-08	7.2674E-09	4.2703E-07	-93.238
Pile N.	1	5	4	1	3	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-5.1939E-05	-3.1743E-13	-23.541	-1.2858E-07	-25.808	-1.2139E-07	-14.981	-7.1438E-08	1248.7
Pile N.	5	6	3	3	3	3	3	3	3
Max.	1.3117E-06	6.5599E-15	102.93	4.2703E-07	7.1853	3.9060E-08	2.3035	1.2449E-08	1704.1
Pile N.	4	6	3	3	3	3	3	3	1

LOAD CASE : 25

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *



LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
28236.4	-276.510	1.00000E-06	-3.00000E-06	-1.30000E-05	-6439.22

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.21745E-03	-3.79599E-05	2.76476E-13	-2.22064E-14	-1.64482E-14	-1.70577E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.1407E-03	-3.7960E-05	1.7655E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
Pile N.	3	1	1	1	1	1
MAXIMUM	1.2942E-03	-3.7960E-05	3.7640E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
Pile N.	1	1	3	1	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 158 di 420

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2206.5	-25.805	5.1583E-08	-7.1950E-09	-3.9652E-07	-102.93
Pile N.	3	3	4	1	3	3
MAXIMUM	2499.5	-21.224	1.2230E-07	-7.1950E-09	-1.9485E-07	-93.240
Pile N.	1	5	3	1	4	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.1407E-03	-3.7960E-05	1.7655E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
Pile N.	3	1	1	1	1	1
MAXIMUM	1.2942E-03	-3.7960E-05	3.7640E-13	-2.2206E-14	-1.6448E-14	-1.7058E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2206.5	-25.805	5.1583E-08	-7.1950E-09	-3.9652E-07	-102.93
Pile N.	3	3	4	1	3	3
MAXIMUM	2499.5	-21.224	1.2230E-07	-7.1950E-09	-1.9485E-07	-93.240
Pile N.	1	5	3	1	4	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-5.1937E-05	-7.2137E-15	-23.541	-3.9652E-07	-25.808	-4.2750E-08	-14.981	-1.3606E-08	1248.6
Pile N.	5	6	3	3	3	3	3	3	3
Max.	1.3117E-06	3.7899E-13	102.93	1.4135E-07	7.1851	1.2231E-07	2.3034	7.2556E-08	1704.1
Pile N.	4	6	3	3	3	3	3	3	1

LOAD CASE : 26

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
28236.4	-276.510	0.00000	2.00000E-06	2.30000E-05	-6438.75

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.21745E-03	-3.79645E-05	1.29948E-13	1.67601E-14	3.86447E-14	-1.70562E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.1407E-03	-3.7964E-05	5.4527E-14	1.6760E-14	3.8645E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7964E-05	2.0537E-13	1.6760E-14	3.8645E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2206.6	-25.805	-1.8175E-08	5.4304E-09	-1.1092E-08	-102.93
Pile N.	3	3	3	1	1	3
MAXIMUM	2499.5	-21.224	1.8847E-08	5.4304E-09	1.1026E-07	-93.238
Pile N.	1	5	1	1	3	5

* PILE TOP DISPLACEMENTS, LOCAL *







	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.1407E-03	-3.7964E-05	5.4527E-14	1.6760E-14	3.8645E-14	-1.7056E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.2942E-03	-3.7964E-05	2.0537E-13	1.6760E-14	3.8645E-14	-1.7056E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2206.6	-25.805	-1.8175E-08	5.4304E-09	-1.1092E-08	-102.93
Pile N.	3	3	3	1	1	3
MAXIMUM	2499.5	-21.224	1.8847E-08	5.4304E-09	1.1026E-07	-93.238
Pile N.	1	5	1	1	3	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-5.1939E-05	-1.3136E-14	-23.541	-1.1092E-08	-25.808	-1.9013E-08	-14.981	-9.9090E-09	1248.7
Pile N.	5	6	3	1	3	3	3	3	3

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 159 di 420

Max.	1.3117E-06	2.0537E-13	102.93	1.1026E-07	7.1853	1.8847E-08	2.3035	1.3186E-08	1704.1
Pile N.	4	1	3	3	3	1	3	1	1

13.2 SPA SLU – SLV

GROUP for Windows, Version 2016.10.13

Serial Number : 228330872

Analysis of A Group of Piles
 Subjected to Axial and Lateral Loading

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Time and Date of Analysis

Date: February 10, 2020 Time: 12:19:35

***** COMPUTATION RESULTS *****

New Group

***** LOAD CASES RESULTS *****

LOAD CASE : 1
 CASE NAME : Load Case
 LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
 ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS




GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.6440	1.0000
3	0.6673	1.0000
4	0.7544	1.0000
5	0.4954	1.0000
6	0.5180	1.0000
7	0.7478	1.0000
8	0.4870	1.0000
9	0.5084	1.0000
10	0.8040	1.0000
11	0.5593	1.0000
12	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 44419.1	HOR. LOAD Y, KN 947.198	HOR. LOAD Z, KN 726.001
MOMENT X, KN- M -253.502	MOMENT Y, KN- M 7931.44	MOMENT Z, KN- M -16110.2

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

VERTICAL , M 1.92408E-03	HORIZONTAL Y, M 4.58961E-04	HORIZONTAL Z, M 2.67578E-04
ANGLE ROT. X,RAD -2.39989E-06	ANGLE ROT. Y,RAD 1.70269E-05	ANGLE ROT. Z,RAD -5.82603E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.3012E-03	4.7516E-04	2.5678E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
2	2.0390E-03	4.7516E-04	2.6758E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
3	1.7768E-03	4.7516E-04	2.7838E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
4	2.2246E-03	4.6436E-04	2.5678E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
5	1.9624E-03	4.6436E-04	2.6758E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
6	1.7002E-03	4.6436E-04	2.7838E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
7	2.1479E-03	4.5356E-04	2.5678E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
8	1.8858E-03	4.5356E-04	2.6758E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
9	1.6236E-03	4.5356E-04	2.7838E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
10	2.0713E-03	4.4276E-04	2.5678E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
11	1.8092E-03	4.4276E-04	2.6758E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
12	1.5470E-03	4.4276E-04	2.7838E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
MINIMUM	1.5470E-03	4.4276E-04	2.5678E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.3012E-03	4.7516E-04	2.7838E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4421.3	99.118	67.094	-0.7776	-167.94	197.07
2	3920.9	84.105	61.101	-0.7776	-162.89	173.97
3	3420.6	85.714	65.234	-0.7776	-174.07	176.53
4	4275.0	88.613	62.742	-0.7776	-161.03	176.24
5	3774.7	70.428	54.124	-0.7776	-150.92	147.09
6	3274.4	72.108	58.030	-0.7776	-161.79	149.90
7	4128.8	85.041	62.553	-0.7776	-160.65	165.90
8	3628.5	67.156	53.760	-0.7776	-150.21	137.26
9	3128.1	68.703	57.592	-0.7776	-160.96	139.85
10	3982.6	85.360	64.913	-0.7776	-164.29	161.44
11	3482.3	69.583	57.367	-0.7776	-156.39	136.87
12	2981.9	71.269	61.493	-0.7776	-167.59	139.60
MINIMUM	2981.9	67.156	53.760	-0.7776	-174.07	136.87
Pile N.	12	8	8	1	3	11
MAXIMUM	4421.3	99.118	67.094	-0.7776	-150.21	197.07
Pile N.	1	1	1	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.3012E-03	4.7516E-04	2.5678E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
2	2.0390E-03	4.7516E-04	2.6758E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
3	1.7768E-03	4.7516E-04	2.7838E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
4	2.2246E-03	4.6436E-04	2.5678E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
5	1.9624E-03	4.6436E-04	2.6758E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
6	1.7002E-03	4.6436E-04	2.7838E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
7	2.1479E-03	4.5356E-04	2.5678E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
8	1.8858E-03	4.5356E-04	2.6758E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
9	1.6236E-03	4.5356E-04	2.7838E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
10	2.0713E-03	4.4276E-04	2.5678E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
11	1.8092E-03	4.4276E-04	2.6758E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
12	1.5470E-03	4.4276E-04	2.7838E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
MINIMUM	1.5470E-03	4.4276E-04	2.5678E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.3012E-03	4.7516E-04	2.7838E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4421.3	99.118	67.094	-0.7776	-167.94	197.07
2	3920.9	84.105	61.101	-0.7776	-162.89	173.97

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandataria

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA
IF28LOTTO
01CODIFICA
E ZZ CLDOCUMENTO
VI0103 001REV.
BFOGLIO
161 di
420

3	3420.6	85.714	65.234	-0.7776	-174.07	176.53
4	4275.0	88.613	62.742	-0.7776	-161.03	176.24
5	3774.7	70.428	54.124	-0.7776	-150.92	147.09
6	3274.4	72.108	58.030	-0.7776	-161.79	149.90
7	4128.8	85.041	62.553	-0.7776	-160.65	165.90
8	3628.5	67.156	53.760	-0.7776	-150.21	137.26
9	3128.1	68.703	57.592	-0.7776	-160.96	139.85
10	3982.6	85.360	64.913	-0.7776	-164.29	161.44
11	3482.3	69.583	57.367	-0.7776	-156.39	136.87
12	2981.9	71.269	61.493	-0.7776	-167.59	139.60

MINIMUM	2981.9	67.156	53.760	-0.7776	-174.07	136.87
Pile N.	12	8	8	1	3	11
MAXIMUM	4421.3	99.118	67.094	-0.7776	-150.21	197.07
Pile N.	1	1	1	1	8	1

PILE GROUP STRESS, KN/ M**2

1	3283.4
2	2938.1
3	2683.9
4	3139.7
5	2772.1
6	2518.6
7	3033.4
8	2667.4
9	2413.7
10	2948.8
11	2597.8
12	2345.7

MINIMUM	2345.7
Pile N.	12
MAXIMUM	3283.4
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-5.4508E-06	-3.2862E-06	-197.07	-167.94	-59.373	-35.927	-22.994	-13.990	2501.9	7.8279E+06	7.8279E+06
x(M)	9.0200	9.0200	0.0000	0.0000	7.7000	7.7000	9.0200	9.2400	22.000	0.0000	0.0000
2	-5.9368E-06	-3.7245E-06	-173.97	-162.89	-52.846	-33.510	-19.168	-12.206	2218.8	7.8279E+06	7.8279E+06
x(M)	9.2400	9.2400	0.0000	0.0000	7.9200	7.9200	9.4600	9.4600	22.000	0.0000	0.0000
3	-5.8734E-06	-3.8612E-06	-176.53	-174.07	-53.552	-35.551	-19.559	-13.051	1935.7	7.8279E+06	7.8279E+06
x(M)	9.2400	9.2400	0.0000	0.0000	7.9200	7.9200	9.4600	9.4600	22.000	0.0000	0.0000
4	-5.5219E-06	-3.4105E-06	-176.24	-161.03	-54.652	-34.084	-20.573	-12.837	2419.2	7.8279E+06	7.8279E+06
x(M)	9.0200	9.2400	0.0000	0.0000	7.7000	7.9200	9.2400	9.2400	22.000	0.0000	0.0000
5	-6.1769E-06	-3.9748E-06	-147.09	-150.92	-45.989	-30.045	-15.775	-10.292	2136.0	7.8279E+06	7.8279E+06
x(M)	9.4600	9.6800	0.0000	0.0000	7.9200	8.1400	9.6800	9.6800	22.000	0.0000	0.0000
6	-6.1034E-06	-4.1092E-06	-149.90	-161.79	-46.913	-32.008	-16.211	-11.093	1852.9	7.8279E+06	7.8279E+06
x(M)	9.4600	9.4600	0.0000	0.0000	7.9200	8.1400	9.6800	9.6800	22.000	0.0000	0.0000
7	-5.3752E-06	-3.4200E-06	-165.90	-160.65	-52.867	-33.971	-19.858	-12.760	2336.4	7.8279E+06	7.8279E+06
x(M)	9.0200	9.2400	0.0000	0.0000	7.7000	7.9200	9.2400	9.2400	22.000	0.0000	0.0000
8	-6.0249E-06	-3.9940E-06	-137.26	-150.21	-44.329	-29.820	-15.147	-10.170	2053.3	7.8279E+06	7.8279E+06
x(M)	9.4600	9.6800	0.0000	0.0000	8.1400	8.1400	9.6800	9.9000	22.000	0.0000	0.0000
9	-5.9578E-06	-4.1225E-06	-139.85	-160.96	-45.178	-31.752	-10.952	-10.952	1770.2	7.8279E+06	7.8279E+06
x(M)	9.4600	9.4600	0.0000	0.0000	7.9200	8.1400	9.6800	9.6800	22.000	0.0000	0.0000
10	-5.1099E-06	-3.3471E-06	-161.44	-164.29	-52.773	-34.875	-20.078	-13.378	2253.7	7.8279E+06	7.8279E+06
x(M)	9.0200	9.0200	0.0000	0.0000	7.7000	7.9200	9.2400	9.2400	22.000	0.0000	0.0000
11	-5.6320E-06	-3.8687E-06	-136.87	-156.39	-45.672	-31.594	-16.043	-11.152	1970.6	7.8279E+06	7.8279E+06
x(M)	9.2400	9.4600	0.0000	0.0000	7.9200	8.1400	9.4600	9.6800	22.000	0.0000	0.0000
12	-5.5765E-06	-3.9960E-06	-139.60	-167.59	-46.498	-33.598	-16.506	-11.973	1687.4	7.8279E+06	7.8279E+06
x(M)	9.2400	9.4600	0.0000	0.0000	7.9200	8.1400	9.4600	9.6800	22.000	0.0000	0.0000
Min.	-6.1769E-06	-4.1225E-06	-197.07	-174.07	-59.373	-35.927	-22.994	-13.990	1687.4	7.8279E+06	7.8279E+06
Pile N.	5	9	1	3	1	1	1	1	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	4.7516E-04	2.5678E-04	160.26	96.789	99.130	67.104	99.477	66.349	3283.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
2	4.7516E-04	2.6758E-04	152.59	96.587	84.115	61.110	86.896	60.973	2938.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
3	4.7516E-04	2.7838E-04	153.44	101.60	85.723	65.242	88.408	65.059	2683.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
4	4.6436E-04	2.5678E-04	152.28	94.779	88.623	62.751	90.372	62.426	3139.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
5	4.6436E-04	2.6758E-04	141.59	91.626	70.436	54.132	73.489	53.478	2772.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000

APPALTATORE: Consorzio Soci   			ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   								
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B								
			COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
			IF28	01	E ZZ CL	VI0103 001	B	162 di 420

	6	4.6436E-04	2.7838E-04	142.77	96.649	72.115	58.038	75.237	57.412	2518.6	7.8279E+06	7.8279E+06
x(M)		0.0000	0.0000	6.3800	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
	7	4.5356E-04	2.5678E-04	147.67	94.642	85.051	62.562	86.813	62.179	3033.4	7.8279E+06	7.8279E+06
x(M)		0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
	8	4.5356E-04	2.6758E-04	137.04	91.336	67.163	53.768	70.240	53.010	2667.4	7.8279E+06	7.8279E+06
x(M)		0.0000	0.0000	6.3800	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
	9	4.5356E-04	2.7838E-04	138.13	96.259	68.710	57.599	71.853	56.863	2413.7	7.8279E+06	7.8279E+06
x(M)		0.0000	0.0000	6.3800	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
	10	4.4276E-04	2.5678E-04	145.00	95.729	85.369	64.923	86.393	64.237	2948.8	7.8279E+06	7.8279E+06
x(M)		0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
	11	4.4276E-04	2.6758E-04	136.29	93.976	69.590	57.374	72.674	56.896	2597.8	7.8279E+06	7.8279E+06
x(M)		0.0000	0.0000	6.3800	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
	12	4.4276E-04	2.7838E-04	137.31	99.080	71.275	61.500	74.324	61.017	2345.7	7.8279E+06	7.8279E+06
x(M)		0.0000	0.0000	6.3800	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max.	4.7516E-04	2.7838E-04	160.26	101.60	99.130	67.104	99.477	66.349	3283.4	7.8279E+06	7.8279E+06	
Pile N.	1	3	1	3	1	1	1	1	1	1	1	

LOAD CASE : 2
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.7160	1.0000
2	0.6829	1.0000
3	0.8661	1.0000
4	0.5321	1.0000
5	0.4955	1.0000
6	0.7193	1.0000
7	0.5166	1.0000
8	0.4817	1.0000
9	0.7079	1.0000
10	0.5845	1.0000
11	0.5461	1.0000
12	0.7610	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
43825.6	-947.198	726.001
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-292.333	7931.44	688.891

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.89817E-03	-3.11745E-04	2.64526E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-2.14314E-06	1.69901E-05	1.09653E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	-1.9635E-03	-2.9728E-04	2.5488E-04	-2.1431E-06	1.6990E-05	1.0965E-05
2	2.0129E-03	-2.9728E-04	2.6453E-04	-2.1431E-06	1.6990E-05	1.0965E-05
3	2.0622E-03	-2.9728E-04	2.7417E-04	-2.1431E-06	1.6990E-05	1.0965E-05
4	1.8870E-03	-3.0692E-04	2.5488E-04	-2.1431E-06	1.6990E-05	1.0965E-05
5	1.9364E-03	-3.0692E-04	2.6453E-04	-2.1431E-06	1.6990E-05	1.0965E-05
6	1.9857E-03	-3.0692E-04	2.7417E-04	-2.1431E-06	1.6990E-05	1.0965E-05
7	1.8106E-03	-3.1657E-04	2.5488E-04	-2.1431E-06	1.6990E-05	1.0965E-05
8	1.8599E-03	-3.1657E-04	2.6453E-04	-2.1431E-06	1.6990E-05	1.0965E-05
9	1.9093E-03	-3.1657E-04	2.7417E-04	-2.1431E-06	1.6990E-05	1.0965E-05
10	1.7341E-03	-3.2621E-04	2.5488E-04	-2.1431E-06	1.6990E-05	1.0965E-05
11	1.7835E-03	-3.2621E-04	2.6453E-04	-2.1431E-06	1.6990E-05	1.0965E-05
12	1.8328E-03	-3.2621E-04	2.7417E-04	-2.1431E-06	1.6990E-05	1.0965E-05
MINIMUM	1.7341E-03	-3.2621E-04	2.5488E-04	-2.1431E-06	1.6990E-05	1.0965E-05

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 163 di 420

Pile N.	10	10	1	1	1	1
MAXIMUM	2.0622E-03	-2.9728E-04	2.7417E-04	-2.1431E-06	1.6990E-05	1.0965E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	3776.8	-79.629	61.478	-0.6944	-157.47	-220.52
2	3871.0	-77.836	62.859	-0.6944	-163.73	-217.67
3	3965.2	-87.028	73.811	-0.6944	-185.00	-232.30
4	3630.9	-72.035	53.247	-0.6944	-144.02	-211.70
5	3725.1	-69.757	53.940	-0.6944	-148.92	-207.77
6	3819.3	-82.525	67.272	-0.6944	-174.88	-229.32
7	3485.0	-73.568	52.476	-0.6944	-142.74	-218.02
8	3579.2	-71.303	53.207	-0.6944	-147.67	-214.08
9	3673.3	-84.736	66.701	-0.6944	-174.01	-236.90
10	3339.1	-80.340	55.594	-0.6944	-148.04	-233.37
11	3433.3	-77.886	56.367	-0.6944	-153.15	-229.23
12	3527.4	-90.555	69.049	-0.6944	-177.78	-250.29
MINIMUM	3339.1	-90.555	52.476	-0.6944	-185.00	-250.29
Pile N.	10	12	7	1	3	12
MAXIMUM	3965.2	-69.757	73.811	-0.6944	-142.74	-207.77
Pile N.	3	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.9635E-03	-2.9728E-04	2.5488E-04	-2.1431E-06	1.6990E-05	1.0965E-05
2	2.0129E-03	-2.9728E-04	2.6453E-04	-2.1431E-06	1.6990E-05	1.0965E-05
3	2.0622E-03	-2.9728E-04	2.7417E-04	-2.1431E-06	1.6990E-05	1.0965E-05
4	1.8870E-03	-3.0692E-04	2.5488E-04	-2.1431E-06	1.6990E-05	1.0965E-05
5	1.9364E-03	-3.0692E-04	2.6453E-04	-2.1431E-06	1.6990E-05	1.0965E-05
6	1.9857E-03	-3.0692E-04	2.7417E-04	-2.1431E-06	1.6990E-05	1.0965E-05
7	1.8106E-03	-3.1657E-04	2.5488E-04	-2.1431E-06	1.6990E-05	1.0965E-05
8	1.8599E-03	-3.1657E-04	2.6453E-04	-2.1431E-06	1.6990E-05	1.0965E-05
9	1.9093E-03	-3.1657E-04	2.7417E-04	-2.1431E-06	1.6990E-05	1.0965E-05
10	1.7341E-03	-3.2621E-04	2.5488E-04	-2.1431E-06	1.6990E-05	1.0965E-05
11	1.7835E-03	-3.2621E-04	2.6453E-04	-2.1431E-06	1.6990E-05	1.0965E-05
12	1.8328E-03	-3.2621E-04	2.7417E-04	-2.1431E-06	1.6990E-05	1.0965E-05
MINIMUM	1.7341E-03	-3.2621E-04	2.5488E-04	-2.1431E-06	1.6990E-05	1.0965E-05
Pile N.	10	10	1	1	1	1
MAXIMUM	2.0622E-03	-2.9728E-04	2.7417E-04	-2.1431E-06	1.6990E-05	1.0965E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	3776.8	-79.629	61.478	-0.6944	-157.47	-220.52
2	3871.0	-77.836	62.859	-0.6944	-163.73	-217.67
3	3965.2	-87.028	73.811	-0.6944	-185.00	-232.30
4	3630.9	-72.035	53.247	-0.6944	-144.02	-211.70
5	3725.1	-69.757	53.940	-0.6944	-148.92	-207.77
6	3819.3	-82.525	67.272	-0.6944	-174.88	-229.32
7	3485.0	-73.568	52.476	-0.6944	-142.74	-218.02
8	3579.2	-71.303	53.207	-0.6944	-147.67	-214.08
9	3673.3	-84.736	66.701	-0.6944	-174.01	-236.90
10	3339.1	-80.340	55.594	-0.6944	-148.04	-233.37
11	3433.3	-77.886	56.367	-0.6944	-153.15	-229.23
12	3527.4	-90.555	69.049	-0.6944	-177.78	-250.29
MINIMUM	3339.1	-90.555	52.476	-0.6944	-185.00	-250.29
Pile N.	10	12	7	1	3	12
MAXIMUM	3965.2	-69.757	73.811	-0.6944	-142.74	-207.77
Pile N.	3	5	3	1	7	5

PILE GROUP	STRESS, KN/ M**2
1	2955.1
2	3012.6
3	3140.1
4	2827.4
5	2879.5
6	3031.6
7	2758.6
8	2810.3
9	2965.8
10	2723.6
11	2774.8
12	2922.7

APPALTATORE: Consorzio HirpiniaAV Soci salini impregilo ASTALDI		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandatario ROKSOIL Mandanti NETENGINEERING Alpina						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B						
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	
IF28	01	E ZZ CL	VI0103 001	B	164 di 420	

MINIMUM 2723.6
Pile N. 10
MAXIMUM 3140.1
Pile N. 3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.9728E-04	-3.4366E-06	-114.90	-157.47	-79.641	-33.131	-77.551	-12.325	2137.2	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
2	-2.9728E-04	-3.6287E-06	-113.92	-163.73	-77.848	-33.905	-75.864	-12.502	2190.5	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
3	-2.9728E-04	-3.5355E-06	-118.55	-185.00	-87.041	-38.663	-84.408	-15.066	2243.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.2400	22.000	0.0000	0.0000
4	-3.0692E-04	-3.7072E-06	-112.34	-144.02	-72.046	-29.319	-69.589	-10.229	2054.7	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
5	-3.0692E-04	-3.9241E-06	-110.85	-148.92	-69.768	-29.668	-67.103	-10.165	2108.0	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
6	-3.0692E-04	-3.7244E-06	-118.98	-174.88	-82.537	-36.036	-80.528	-13.422	2161.3	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
7	-3.1657E-04	-3.7290E-06	-115.47	-142.74	-73.579	-28.960	-70.944	-10.030	1972.1	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
8	-3.1657E-04	-3.9556E-06	-113.93	-147.67	-71.313	-29.301	-68.437	-9.9755	2025.4	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
9	-3.1657E-04	-3.7410E-06	-122.61	-174.01	-84.748	-35.808	-82.726	-13.299	2078.7	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
10	-3.2621E-04	-3.6216E-06	-121.94	-148.04	-80.351	-30.422	-78.030	-10.839	1889.5	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4600	6.3800	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
11	-3.2621E-04	-3.8418E-06	-120.45	-153.15	-77.897	-30.897	-75.429	-10.846	1942.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
12	-3.2621E-04	-3.6600E-06	-128.20	-177.78	-90.568	-36.818	-88.394	-13.897	1996.1	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.2400	22.000	0.0000	0.0000
Min. Pile N.	-3.2621E-04 10	-3.9556E-06 8	-128.20 12	-185.00 3	-90.568 12	-38.663 3	-88.394 12	-15.066 3	1889.5 10	7.8279E+06 1	7.8279E+06 1







* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	4.2314E-06	2.5488E-04	220.52	93.186	40.919	61.487	15.262	60.414	2955.1	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
2	4.2797E-06	2.6453E-04	217.67	96.375	40.123	62.868	14.826	61.837	3012.6	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
3	4.0091E-06	2.7417E-04	232.30	104.21	43.938	73.821	17.169	71.858	3140.1	7.8279E+06	7.8279E+06
x(M)	9.0200	0.0000	0.0000	6.3800	7.9200	0.0000	9.2400	6.1600	0.0000	0.0000	0.0000
4	4.7066E-06	2.5488E-04	211.70	88.112	37.459	53.255	13.071	52.297	2827.4	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
5	4.7985E-06	2.6453E-04	207.77	90.469	36.300	53.948	12.467	52.760	2879.5	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.6000	8.1400	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
6	4.3726E-06	2.7417E-04	229.32	101.22	42.420	67.281	15.837	66.161	3031.6	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
7	4.9011E-06	2.5488E-04	218.02	87.567	38.217	52.483	13.234	51.515	2758.6	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
8	4.9943E-06	2.6453E-04	214.08	89.995	37.028	53.214	12.664	51.993	2810.3	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.6000	8.1400	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
9	4.5368E-06	2.7417E-04	236.90	100.95	43.554	66.710	16.212	65.677	2965.8	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
10	4.9215E-06	2.5488E-04	233.37	89.800	41.553	55.601	14.821	54.830	2723.6	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
11	4.9960E-06	2.6453E-04	229.23	92.343	40.412	56.374	14.192	55.453	2774.8	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
12	4.5913E-06	2.7417E-04	250.29	102.18	46.288	69.058	17.457	67.894	2922.7	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
Max. Pile N.	4.9960E-06 11	2.7417E-04 3	250.29 12	104.21 3	46.288 12	73.821 3	17.457 12	71.858 3	3140.1 3	7.8279E+06 1	7.8279E+06 1

LOAD CASE : 3
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.7959	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria Mandanti   													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 10%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 10%;">REV.</td> <td style="width: 35%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>165 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	165 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	165 di 420								

2	0.7477	1.0000
3	0.8661	1.0000
4	0.5565	1.0000
5	0.4959	1.0000
6	0.6517	1.0000
7	0.5309	1.0000
8	0.4721	1.0000
9	0.6300	1.0000
10	0.5845	1.0000
11	0.5215	1.0000
12	0.6770	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
41042.2	-627.738	620.324
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-170.906	5265.36	-6886.51

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.77663E-03	-1.36418E-04	2.15819E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-1.75007E-06	1.19472E-05	-1.52604E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.9259E-03	-1.2460E-04	2.0794E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
2	1.8573E-03	-1.2460E-04	2.1582E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
3	1.7886E-03	-1.2460E-04	2.2369E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
4	1.8722E-03	-1.3248E-04	2.0794E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
5	1.8035E-03	-1.3248E-04	2.1582E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
6	1.7348E-03	-1.3248E-04	2.2369E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
7	1.8184E-03	-1.4036E-04	2.0794E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
8	1.7498E-03	-1.4036E-04	2.1582E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
9	1.6811E-03	-1.4036E-04	2.2369E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
10	1.7647E-03	-1.4823E-04	2.0794E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
11	1.6960E-03	-1.4823E-04	2.1582E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
12	1.6273E-03	-1.4823E-04	2.2369E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
MINIMUM	1.6273E-03	-1.4823E-04	2.0794E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.9259E-03	-1.2460E-04	2.2369E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3705.1	-54.108	55.772	-0.5670	-141.52	-179.30
2	3574.1	-52.731	56.472	-0.5670	-146.02	-177.06
3	3443.0	-55.952	63.373	-0.5670	-159.95	-182.35
4	3602.5	-49.153	46.804	-0.5670	-127.36	-173.83
5	3471.5	-47.037	46.356	-0.5670	-129.67	-170.02
6	3340.4	-52.209	55.045	-0.5670	-147.13	-179.22
7	3499.9	-50.379	45.756	-0.5670	-125.64	-178.84
8	3368.9	-48.179	45.297	-0.5670	-127.87	-174.84
9	3237.8	-53.780	54.135	-0.5670	-145.68	-184.89
10	3397.3	-54.458	47.871	-0.5670	-129.15	-188.94
11	3266.3	-52.096	47.421	-0.5670	-131.51	-184.75
12	3135.2	-57.655	56.020	-0.5670	-148.71	-194.50
MINIMUM	3135.2	-57.655	45.297	-0.5670	-159.95	-194.50
Pile N.	12	12	8	1	3	12
MAXIMUM	3705.1	-47.037	63.373	-0.5670	-125.64	-170.02
Pile N.	1	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	166 di 420

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.9259E-03	-1.2460E-04	2.0794E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
2	1.8573E-03	-1.2460E-04	2.1582E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
3	1.7886E-03	-1.2460E-04	2.2369E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
4	1.8722E-03	-1.3248E-04	2.0794E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
5	1.8035E-03	-1.3248E-04	2.1582E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
6	1.7348E-03	-1.3248E-04	2.2369E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
7	1.8184E-03	-1.4036E-04	2.0794E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
8	1.7498E-03	-1.4036E-04	2.1582E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
9	1.6811E-03	-1.4036E-04	2.2369E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
10	1.7647E-03	-1.4823E-04	2.0794E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
11	1.6960E-03	-1.4823E-04	2.1582E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
12	1.6273E-03	-1.4823E-04	2.2369E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
MINIMUM	1.6273E-03	-1.4823E-04	2.0794E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.9259E-03	-1.2460E-04	2.2369E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3705.1	-54.108	55.772	-0.5670	-141.52	-179.30
2	3574.1	-52.731	56.472	-0.5670	-146.02	-177.06
3	3443.0	-55.952	63.373	-0.5670	-159.95	-182.35
4	3602.5	-49.153	46.804	-0.5670	-127.36	-173.83
5	3471.5	-47.037	46.356	-0.5670	-129.67	-170.02
6	3340.4	-52.209	55.045	-0.5670	-147.13	-179.22
7	3499.9	-50.379	45.756	-0.5670	-125.64	-178.84
8	3368.9	-48.179	45.297	-0.5670	-127.87	-174.84
9	3237.8	-53.780	54.135	-0.5670	-145.68	-184.89
10	3397.3	-54.458	47.871	-0.5670	-129.15	-188.94
11	3266.3	-52.096	47.421	-0.5670	-131.51	-184.75
12	3135.2	-57.655	56.020	-0.5670	-148.71	-194.50
MINIMUM	3135.2	-57.655	45.297	-0.5670	-159.95	-194.50
Pile N.	12	12	8	1	3	12
MAXIMUM	3705.1	-47.037	63.373	-0.5670	-125.64	-170.02
Pile N.	1	5	3	1	7	5




* PILE TOP STRESS *

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2786.1
2	2715.2
3	2680.4
4	2689.0
5	2609.8
6	2590.1
7	2640.2
8	2560.1
9	2542.6
10	2613.2
11	2532.8
12	2513.1
MINIMUM	2513.1
Pile N.	12
MAXIMUM	2786.1
Pile N.	1

* EFFECTS FOR Laterally Loaded PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.2998E-04	-2.7568E-06	-63.806	-141.52	-54.117	-28.631	-50.745	-10.946	2096.7	7.8279E+06	7.8279E+06
x(M)	0.6600	9.0200	6.6000	0.0000	0.0000	7.9200	6.1600	9.2400	22.000	0.0000	0.0000
2	-1.3004E-04	-2.9327E-06	-63.185	-146.02	-52.740	-29.157	-49.350	-10.941	2022.5	7.8279E+06	7.8279E+06
x(M)	0.6600	9.2400	6.6000	0.0000	0.0000	7.9200	6.1600	9.2400	22.000	0.0000	0.0000
3	-1.2991E-04	-2.9281E-06	-64.584	-159.95	-55.961	-32.036	-52.647	-12.499	1948.4	7.8279E+06	7.8279E+06
x(M)	0.6600	9.0200	6.6000	0.0000	0.0000	7.7000	6.1600	9.2400	22.000	0.0000	0.0000
4	-1.3798E-04	-3.0427E-06	-62.865	-127.36	-49.162	-24.797	-44.942	-8.7435	2038.6	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
5	-1.3814E-04	-3.2536E-06	-61.322	-129.67	-47.045	-24.615	-42.419	-8.4331	1964.5	7.8279E+06	7.8279E+06
x(M)	0.8800	9.6800	6.8200	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
6	-1.3785E-04	-3.1595E-06	-64.875	-147.13	-52.217	-28.686	-48.506	-10.483	1890.3	7.8279E+06	7.8279E+06
x(M)	0.6600	9.2400	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
7	-1.4573E-04	-3.0738E-06	-65.302	-125.64	-50.388	-24.325	-45.884	-8.4825	1980.6	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
8	-1.4582E-04	-3.2967E-06	-63.721	-127.87	-48.187	-24.076	-43.230	-8.1820	1906.4	7.8279E+06	7.8279E+06
x(M)	0.6600	9.6800	6.8200	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000

APPALTATORE: Consorzio Soci   	<h1 style="margin: 0;">ITINERARIO NAPOLI – BARI</h1> <h2 style="margin: 0;">RADDOPPIO TRATTA APICE – ORSARA</h2> <h2 style="margin: 0;">I LOTTO FUNZIONALE APICE – HIRPINIA</h2>																		
PROGETTAZIONE: Mandataria Mandanti   	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 12.5%;">COMMESSA</td> <td style="width: 12.5%;">LOTTO</td> <td style="width: 12.5%;">CODIFICA</td> <td style="width: 12.5%;">DOCUMENTO</td> <td style="width: 12.5%;">REV.</td> <td style="width: 12.5%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>167 di 420</td> </tr> </table>							COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	167 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO														
IF28	01	E ZZ CL	VI0103 001	B	167 di 420														
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B																			

	9	-1.4558E-04	-3.1847E-06	-67.633	-145.68	-53.788	-28.264	-49.888	-10.250	1832.2	7.8279E+06	7.8279E+06
x(M)		0.6600	9.4600	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
	10	-1.5334E-04	-3.0048E-06	-69.773	-129.15	-54.467	-25.277	-50.191	-9.0091	1922.5	7.8279E+06	7.8279E+06
x(M)		0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
	11	-1.5345E-04	-3.2124E-06	-68.106	-131.51	-52.105	-25.155	-47.435	-8.7328	1848.3	7.8279E+06	7.8279E+06
x(M)		0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
	12	-1.5320E-04	-3.1334E-06	-71.743	-148.71	-57.664	-29.151	-53.836	-10.739	1774.2	7.8279E+06	7.8279E+06
x(M)		0.6600	9.2400	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
	Min.	-1.5345E-04	-3.2967E-06	-71.743	-159.95	-57.664	-32.036	-53.836	-12.499	1774.2	7.8279E+06	7.8279E+06
Pile N.	11		8	12	3	12	3	12	3	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	2.2289E-06	2.0794E-04	179.30	78.695	23.351	55.779	8.9784	53.281	2786.1	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
2	2.2599E-06	2.1582E-04	177.06	81.183	22.794	56.480	8.6322	54.144	2715.2	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
3	2.1780E-06	2.2369E-04	182.35	86.412	24.184	63.381	9.4201	60.260	2680.4	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
4	2.5715E-06	2.0794E-04	173.83	73.750	21.232	46.811	7.5227	44.985	2689.0	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
5	2.6325E-06	2.1582E-04	170.02	75.087	20.243	46.362	6.9784	44.331	2609.8	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.6000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
6	2.4728E-06	2.2369E-04	179.22	82.433	22.716	55.052	8.3302	52.980	2590.1	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
7	2.7281E-06	2.0794E-04	178.84	73.031	21.856	45.762	7.6624	43.933	2640.2	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
8	2.8003E-06	2.1582E-04	174.84	74.387	20.774	45.303	7.0794	43.212	2560.1	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.6000	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
9	2.6143E-06	2.2369E-04	184.89	81.910	23.492	54.142	8.5531	52.129	2542.6	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
10	2.7866E-06	2.0794E-04	188.94	74.487	23.791	47.878	8.5144	46.103	2613.2	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
11	2.8672E-06	2.1582E-04	184.75	75.787	22.705	47.427	7.9262	45.496	2532.8	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
12	2.6912E-06	2.2369E-04	194.50	83.010	25.330	56.027	9.3521	53.947	2513.1	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
Max.	2.8672E-06	2.2369E-04	194.50	86.412	25.330	63.381	9.4201	60.260	2786.1	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	3	3	1	1	1

LOAD CASE : 4
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS






GROUP NO	P-FACTOR	Y-FACTOR
1	0.8302	1.0000
2	0.7758	1.0000
3	0.8661	1.0000
4	0.5674	1.0000
5	0.4960	1.0000
6	0.6180	1.0000
7	0.5375	1.0000
8	0.4675	1.0000
9	0.5906	1.0000
10	0.5845	1.0000
11	0.5097	1.0000
12	0.6344	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 44607.6	HOR. LOAD Y, KN -680.981	HOR. LOAD Z, KN 994.382
MOMENT X, KN- M -197.074	MOMENT Y, KN- M 12132.1	MOMENT Z, KN- M -7060.67

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria  Mandanti  	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

VERTICAL , M HORIZONTAL Y, M HORIZONTAL Z, M
 1.93231E-03 -1.55405E-04 3.71717E-04
 ANGLE ROT. X,RAD ANGLE ROT. Y,RAD ANGLE ROT. Z,RAD
 -2.32387E-06 2.54169E-05 -1.52257E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1724E-03	-1.3972E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
2	2.1039E-03	-1.3972E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
3	2.0354E-03	-1.3972E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
4	2.0580E-03	-1.5018E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
5	1.9895E-03	-1.5018E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
6	1.9210E-03	-1.5018E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
7	1.9436E-03	-1.6063E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
8	1.8751E-03	-1.6063E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
9	1.8066E-03	-1.6063E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
10	1.8293E-03	-1.7109E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
11	1.7607E-03	-1.7109E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
12	1.6922E-03	-1.7109E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
MINIMUM	1.6922E-03	-1.7109E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.1724E-03	-1.3972E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4175.5	-59.081	92.593	-0.7530	-227.95	-194.20
2	4044.7	-57.440	92.625	-0.7530	-232.63	-191.52
3	3914.0	-60.007	101.22	-0.7530	-250.48	-195.82
4	3957.2	-53.723	76.709	-0.7530	-202.68	-188.94
5	3826.4	-51.039	74.583	-0.7530	-203.16	-184.06
6	3695.7	-55.438	85.663	-0.7530	-225.96	-192.08
7	3738.9	-55.395	74.722	-0.7530	-199.36	-195.69
8	3608.2	-52.543	72.536	-0.7530	-199.61	-190.44
9	3477.4	-57.356	83.796	-0.7530	-222.89	-199.31
10	3520.6	-60.064	77.753	-0.7530	-204.46	-207.85
11	3389.9	-56.967	75.495	-0.7530	-204.77	-202.28
12	3259.1	-61.929	86.690	-0.7530	-227.68	-211.24
MINIMUM	3259.1	-61.929	72.536	-0.7530	-250.48	-211.24
Pile N.	12	12	8	1	3	12
MAXIMUM	4175.5	-51.039	101.22	-0.7530	-199.36	-184.06
Pile N.	1	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1724E-03	-1.3972E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
2	2.1039E-03	-1.3972E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
3	2.0354E-03	-1.3972E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
4	2.0580E-03	-1.5018E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
5	1.9895E-03	-1.5018E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
6	1.9210E-03	-1.5018E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
7	1.9436E-03	-1.6063E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
8	1.8751E-03	-1.6063E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
9	1.8066E-03	-1.6063E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
10	1.8293E-03	-1.7109E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
11	1.7607E-03	-1.7109E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
12	1.6922E-03	-1.7109E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
MINIMUM	1.6922E-03	-1.7109E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.1724E-03	-1.3972E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4175.5	-59.081	92.593	-0.7530	-227.95	-194.20
2	4044.7	-57.440	92.625	-0.7530	-232.63	-191.52
3	3914.0	-60.007	101.22	-0.7530	-250.48	-195.82
4	3957.2	-53.723	76.709	-0.7530	-202.68	-188.94

APPALTATORE: Consorzio Soci   				ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria Mandanti   				RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B				COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 169 di 420

5	3826.4	-51.039	74.583	-0.7530	-203.16	-184.06
6	3695.7	-55.438	85.663	-0.7530	-225.96	-192.08
7	3738.9	-55.395	74.722	-0.7530	-199.36	-195.69
8	3608.2	-52.543	72.536	-0.7530	-199.61	-190.44
9	3477.4	-57.356	83.796	-0.7530	-222.89	-199.31
10	3520.6	-60.064	77.753	-0.7530	-204.46	-207.85
11	3389.9	-56.967	75.495	-0.7530	-204.77	-202.28
12	3259.1	-61.929	86.690	-0.7530	-227.68	-211.24
MINIMUM	3259.1	-61.929	72.536	-0.7530	-250.48	-211.24
Pile N.	12	12	8	1	3	12
MAXIMUM	4175.5	-51.039	101.22	-0.7530	-199.36	-184.06
Pile N.	1	5	3	1	7	5

PILE GROUP STRESS, KN/ M2**
 ***** *****

1	3266.6
2	3198.3
3	3174.4
4	3075.6
5	2992.7
6	2986.4
7	2958.9
8	2874.4
9	2870.2
10	2872.2
11	2787.0
12	2781.6

MINIMUM	2781.6
Pile N.	12
MAXIMUM	3266.6
Pile N.	1







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.4468E-04	-4.6394E-06	-70.540	-227.95	-59.093	-49.267	-56.376	-19.037	2362.8	7.8279E+06	7.8279E+06
x(M)	0.6600	9.0200	6.6000	0.0000	0.0000	7.7000	6.1600	9.2400	22.000	0.0000	0.0000
2	-1.4475E-04	-4.8695E-06	-69.837	-232.63	-57.451	-49.630	-54.718	-18.850	2288.8	7.8279E+06	7.8279E+06
x(M)	0.6600	9.2400	6.6000	0.0000	0.0000	7.9200	6.1600	9.2400	22.000	0.0000	0.0000
3	-1.4464E-04	-4.8874E-06	-70.954	-250.48	-60.018	-53.433	-57.419	-20.806	2214.8	7.8279E+06	7.8279E+06
x(M)	0.6600	9.0200	6.6000	0.0000	0.0000	7.7000	6.1600	9.2400	22.000	0.0000	0.0000
4	-1.5526E-04	-5.1407E-06	-70.114	-202.68	-53.733	-42.320	-49.960	-14.983	2239.3	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
5	-1.5538E-04	-5.4696E-06	-68.084	-203.16	-51.049	-41.378	-46.710	-14.181	2165.3	7.8279E+06	7.8279E+06
x(M)	0.6600	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
6	-1.5518E-04	-5.3418E-06	-71.321	-225.96	-55.448	-46.746	-52.080	-16.864	2091.3	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
7	-1.6554E-04	-5.2090E-06	-73.405	-199.36	-55.405	-41.422	-51.282	-14.486	2115.8	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
8	-1.6567E-04	-5.5603E-06	-71.239	-199.61	-52.553	-40.308	-47.780	-13.649	2041.8	7.8279E+06	7.8279E+06
x(M)	0.6600	9.6800	6.8200	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
9	-1.6545E-04	-5.4162E-06	-74.852	-222.89	-57.366	-45.809	-53.725	-16.356	1967.8	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
10	-1.7568E-04	-5.0979E-06	-78.855	-204.46	-60.075	-42.796	-56.211	-15.246	1992.3	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
11	-1.7582E-04	-5.4357E-06	-76.606	-204.77	-56.976	-41.856	-52.512	-14.447	1918.3	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
12	-1.7560E-04	-5.3071E-06	-80.110	-227.68	-61.938	-47.276	-58.479	-17.159	1844.3	7.8279E+06	7.8279E+06
x(M)	0.6600	9.2400	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
Min.	-1.7582E-04	-5.5603E-06	-80.110	-250.48	-61.938	-53.433	-58.479	-20.806	1844.3	7.8279E+06	7.8279E+06
Pile N.	11	8	12	3	12	3	12	3	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	2.4251E-06	3.6126E-04	194.20	134.23	26.135	92.606	10.109	90.369	3266.6	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
2	2.4664E-06	3.7172E-04	191.52	137.24	25.391	92.639	9.7113	90.855	3198.3	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
3	2.3947E-06	3.8217E-04	195.82	143.96	26.582	101.23	10.348	98.658	3174.4	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.2400	6.1600	0.0000	0.0000	0.0000
4	2.8418E-06	3.6126E-04	188.94	125.68	23.735	76.720	8.4421	75.598	3075.6	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
5	2.9254E-06	3.7172E-04	184.06	126.22	22.475	74.594	7.7493	73.134	2992.7	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
6	2.7792E-06	3.8217E-04	192.08	136.14	24.660	85.674	8.9391	84.525	2986.4	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 170 di 420

7	3.0509E-06	3.6126E-04	195.69	124.31	24.597	74.732	8.6469	73.565	2958.9	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
8	3.1467E-06	3.7172E-04	190.44	124.73	23.177	72.546	7.8789	70.913	2874.4	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.6000	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
9	2.9734E-06	3.8217E-04	199.31	134.96	25.590	83.807	9.1794	82.674	2870.2	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
10	3.1485E-06	3.6126E-04	207.85	126.41	26.888	77.763	9.6201	76.734	2872.2	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
11	3.2571E-06	3.7172E-04	202.28	126.95	25.400	75.505	8.8180	74.181	2787.0	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
12	3.0915E-06	3.8217E-04	211.24	136.80	27.864	86.700	10.153	85.615	2781.6	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
Max.	3.2571E-06	3.8217E-04	211.24	143.96	27.864	101.23	10.348	98.658	3266.6	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	3	3	1	1	1

LOAD CASE : 5
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8476	1.0000
2	0.7900	1.0000
3	0.8661	1.0000
4	0.5730	1.0000
5	0.4961	1.0000
6	0.5997	1.0000
7	0.5408	1.0000
8	0.4651	1.0000
9	0.5690	1.0000
10	0.5845	1.0000
11	0.5035	1.0000
12	0.6111	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
28236.4	-414.765	797.610
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-186.100	9132.24	-5278.25

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.21745E-03	-8.47760E-05	2.92202E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-1.99423E-06	1.93419E-05	-1.22885E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4033E-03	-7.1315E-05	2.8323E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
2	1.3480E-03	-7.1315E-05	2.9220E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
3	1.2927E-03	-7.1315E-05	3.0118E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
4	1.3163E-03	-8.0289E-05	2.8323E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
5	1.2610E-03	-8.0289E-05	2.9220E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
6	1.2057E-03	-8.0289E-05	3.0118E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
7	1.2292E-03	-8.9263E-05	2.8323E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
8	1.1739E-03	-8.9263E-05	2.9220E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
9	1.1186E-03	-8.9263E-05	3.0118E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
10	1.1422E-03	-9.8237E-05	2.8323E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
11	1.0869E-03	-9.8237E-05	2.9220E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
12	1.0316E-03	-9.8237E-05	3.0118E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
MINIMUM	1.0316E-03	-9.8237E-05	2.8323E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4033E-03	-7.1315E-05	3.0118E-04	-1.9942E-06	1.9342E-05	-1.2288E-05

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

Pile N. 1 1 3 1 1 1

*** PILE TOP REACTIONS ***

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2707.7	-34.994	75.160	-0.6462	-183.13	-118.95
2	2602.2	-34.008	75.239	-0.6462	-187.31	-117.35
3	2496.7	-35.218	81.698	-0.6462	-201.10	-119.40
4	2541.6	-32.632	61.789	-0.6462	-162.28	-118.26
5	2436.1	-30.931	59.919	-0.6462	-162.72	-115.17
6	2330.6	-33.133	68.043	-0.6462	-179.84	-119.22
7	2375.5	-34.354	60.067	-0.6462	-159.45	-124.53
8	2270.0	-32.484	58.117	-0.6462	-159.64	-121.10
9	2164.4	-34.953	66.326	-0.6462	-177.04	-125.69
10	2209.4	-37.855	62.337	-0.6462	-163.21	-134.02
11	2103.9	-35.767	60.299	-0.6462	-163.40	-130.27
12	1998.3	-38.436	68.615	-0.6462	-180.81	-135.12
MINIMUM	1998.3	-38.436	58.117	-0.6462	-201.10	-135.12
Pile N.	12	12	8	1	3	12
MAXIMUM	2707.7	-30.931	81.698	-0.6462	-159.45	-115.17
Pile N.	1	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

*** PILE TOP DISPLACEMENTS ***

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4033E-03	-7.1315E-05	2.8323E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
2	1.3480E-03	-7.1315E-05	2.9220E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
3	1.2927E-03	-7.1315E-05	3.0118E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
4	1.3163E-03	-8.0289E-05	2.8323E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
5	1.2610E-03	-8.0289E-05	2.9220E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
6	1.2057E-03	-8.0289E-05	3.0118E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
7	1.2292E-03	-8.9263E-05	2.8323E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
8	1.1739E-03	-8.9263E-05	2.9220E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
9	1.1186E-03	-8.9263E-05	3.0118E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
10	1.1422E-03	-9.8237E-05	2.8323E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
11	1.0869E-03	-9.8237E-05	2.9220E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
12	1.0316E-03	-9.8237E-05	3.0118E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
MINIMUM	1.0316E-03	-9.8237E-05	2.8323E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4033E-03	-7.1315E-05	3.0118E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
Pile N.	1	1	3	1	1	1

*** PILE TOP REACTIONS ***

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2707.7	-34.994	75.160	-0.6462	-183.13	-118.95
2	2602.2	-34.008	75.239	-0.6462	-187.31	-117.35
3	2496.7	-35.218	81.698	-0.6462	-201.10	-119.40
4	2541.6	-32.632	61.789	-0.6462	-162.28	-118.26
5	2436.1	-30.931	59.919	-0.6462	-162.72	-115.17
6	2330.6	-33.133	68.043	-0.6462	-179.84	-119.22
7	2375.5	-34.354	60.067	-0.6462	-159.45	-124.53
8	2270.0	-32.484	58.117	-0.6462	-159.64	-121.10
9	2164.4	-34.953	66.326	-0.6462	-177.04	-125.69
10	2209.4	-37.855	62.337	-0.6462	-163.21	-134.02
11	2103.9	-35.767	60.299	-0.6462	-163.40	-130.27
12	1998.3	-38.436	68.615	-0.6462	-180.81	-135.12
MINIMUM	1998.3	-38.436	58.117	-0.6462	-201.10	-135.12
Pile N.	12	12	8	1	3	12
MAXIMUM	2707.7	-30.931	81.698	-0.6462	-159.45	-115.17
Pile N.	1	5	3	1	7	5

PILE GROUP STRESS, KN/ M2**

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2191.3
2	2139.6
3	2118.7
4	2044.3
5	1980.2
6	1970.0
7	1954.9
8	1889.3
9	1880.1
10	1887.6
11	1821.2
12	1812.1
MINIMUM	1812.1

APPALTATORE: Consorzio Soci 		<h2 style="margin: 0;">ITINERARIO NAPOLI – BARI</h2> <h3 style="margin: 0;">RADDOPPIO TRATTA APICE – ORSARA</h3> <h4 style="margin: 0;">I LOTTO FUNZIONALE APICE – HIRPINIA</h4>					
PROGETTAZIONE: Mandatario Mandanti 							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO V10103 001	REV. B	FOGLIO 172 di 420

Pile N. 12
MAXIMUM 2191.3
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-Dir	DISPL. z-Dir	MOMENT z-Dir	MOMENT y-Dir	SHEAR y-Dir	SHEAR z-Dir	SOIL REACT y-Dir	SOIL REACT z-Dir	TOTAL STRESS	FLEX. RIG. z-Dir	FLEX. RIG. y-Dir
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-7.6717E-05	-3.6288E-06	-39.656	-183.13	-34.998	-39.087	-32.925	-15.162	1532.3	7.8279E+06	7.8279E+06
x(M)	0.8800	9.0200	6.6000	0.0000	0.0000	7.7000	6.1600	9.2400	22.000	0.0000	0.0000
2	-7.6783E-05	-3.8204E-06	-39.233	-187.31	-34.012	-39.418	-31.930	-15.046	1472.5	7.8279E+06	7.8279E+06
x(M)	0.8800	9.0200	6.6000	0.0000	0.0000	7.9200	6.1600	9.2400	22.000	0.0000	0.0000
3	-7.6698E-05	-3.8649E-06	-39.781	-201.10	-35.222	-42.262	-33.235	-16.463	1412.8	7.8279E+06	7.8279E+06
x(M)	0.8800	9.0200	6.6000	0.0000	0.0000	7.7000	6.1600	9.2400	22.000	0.0000	0.0000
4	-8.5694E-05	-4.0322E-06	-40.480	-162.28	-32.637	-33.423	-29.831	-11.858	1438.3	7.8279E+06	7.8279E+06
x(M)	0.8800	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
5	-8.5824E-05	-4.3142E-06	-39.331	-162.72	-30.935	-32.644	-27.765	-11.187	1378.5	7.8279E+06	7.8279E+06
x(M)	0.8800	9.6800	6.8200	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
6	-8.5654E-05	-4.2648E-06	-40.870	-179.84	-33.137	-36.478	-30.500	-13.065	1318.8	7.8279E+06	7.8279E+06
x(M)	0.8800	9.4600	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
7	-9.4381E-05	-4.0901E-06	-43.485	-159.45	-34.358	-32.670	-31.270	-11.442	1344.3	7.8279E+06	7.8279E+06
x(M)	0.8800	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
8	-9.4526E-05	-4.3909E-06	-42.210	-159.64	-32.488	-31.722	-28.975	-10.736	1284.5	7.8279E+06	7.8279E+06
x(M)	0.8800	9.6800	6.8200	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
9	-9.4332E-05	-4.3275E-06	-43.969	-177.04	-34.957	-35.735	-32.067	-12.660	1224.8	7.8279E+06	7.8279E+06
x(M)	0.8800	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
10	-1.0293E-04	-4.0096E-06	-47.785	-163.21	-37.860	-33.674	-34.856	-11.997	1250.3	7.8279E+06	7.8279E+06
x(M)	0.8800	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
11	-1.0309E-04	-4.2947E-06	-46.293	-163.40	-35.771	-32.849	-32.366	-11.302	1190.5	7.8279E+06	7.8279E+06
x(M)	0.8800	9.4600	6.8200	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
12	-1.0289E-04	-4.2400E-06	-48.217	-180.81	-38.439	-36.783	-35.615	-13.235	1130.8	7.8279E+06	7.8279E+06
x(M)	0.8800	9.4600	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
Min.	-1.0309E-04	-4.3909E-06	-48.217	-201.10	-38.439	-42.262	-35.615	-16.463	1130.8	7.8279E+06	7.8279E+06
Pile N.	11	8	12	3	12	3	12	3	12	1	1







* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-Dir	DISPL. z-Dir	MOMENT z-Dir	MOMENT y-Dir	SHEAR y-Dir	SHEAR z-Dir	SOIL REACT y-Dir	SOIL REACT z-Dir	TOTAL STRESS	FLEX. RIG. z-Dir	FLEX. RIG. y-Dir
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.3463E-06	2.8323E-04	118.95	105.94	14.740	75.167	5.7414	71.981	2191.3	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
2	1.3689E-06	2.9220E-04	117.35	108.61	14.328	75.246	5.5047	72.528	2139.6	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	8.1400	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
3	1.3382E-06	3.0118E-04	119.40	113.92	14.873	81.705	5.8114	78.337	2118.7	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
4	1.6334E-06	2.8323E-04	118.26	99.070	13.780	61.795	4.9149	59.982	2044.3	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
5	1.6862E-06	2.9220E-04	115.17	99.580	12.972	59.924	4.4717	57.926	1980.2	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
6	1.6128E-06	3.0118E-04	119.22	107.09	14.026	68.049	5.0556	66.146	1970.0	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
7	1.8010E-06	2.8323E-04	124.53	97.922	14.632	60.072	5.1526	58.268	1954.9	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
8	1.8643E-06	2.9220E-04	121.10	98.347	13.692	58.122	4.6656	56.012	1889.3	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.6000	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
9	1.7795E-06	3.0118E-04	125.69	105.99	14.930	66.332	5.3161	64.453	1880.1	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
10	1.9086E-06	2.8323E-04	134.02	99.457	16.289	62.342	5.8317	60.583	1887.6	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
11	1.9728E-06	2.9220E-04	130.27	99.896	15.331	60.304	5.3058	58.377	1821.2	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
12	1.8827E-06	3.0118E-04	135.12	107.48	16.621	68.620	6.0136	66.763	1812.1	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
Max.	1.9728E-06	3.0118E-04	135.12	113.92	16.621	81.705	6.0136	78.337	2191.3	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	12	3	1	1	1

LOAD CASE : 6
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.6932	1.0000
3	0.7287	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

4	0.7094	1.0000
5	0.4956	1.0000
6	0.5359	1.0000
7	0.6966	1.0000
8	0.4803	1.0000
9	0.5188	1.0000
10	0.7488	1.0000
11	0.5424	1.0000
12	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 44684.9	HOR. LOAD Y, KN 680.981	HOR. LOAD Z, KN 994.382
MOMENT X, KN- M -177.659	MOMENT Y, KN- M 12132.1	MOMENT Z, KN- M -19102.3

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.93601E-03	HORIZONTAL Y, M 4.02041E-04	HORIZONTAL Z, M 3.73867E-04
ANGLE ROT. X, RAD -1.49713E-06	ANGLE ROT. Y, RAD 2.55389E-05	ANGLE ROT. Z, RAD -6.50440E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.4011E-03	4.1215E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
2	2.1084E-03	4.1215E-04	3.7387E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
3	1.8157E-03	4.1215E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
4	2.2862E-03	4.0541E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
5	1.9935E-03	4.0541E-04	3.7387E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
6	1.7008E-03	4.0541E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
7	2.1713E-03	3.9867E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
8	1.8786E-03	3.9867E-04	3.7387E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
9	1.5858E-03	3.9867E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
10	2.0563E-03	3.9194E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
11	1.7636E-03	3.9194E-04	3.7387E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
12	1.4709E-03	3.9194E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
MINIMUM	1.4709E-03	3.9194E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.4011E-03	4.1215E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4604.5	72.273	94.696	-0.4851	-234.98	109.21
2	4053.3	62.996	86.792	-0.4851	-225.32	95.407
3	3494.8	64.931	90.922	-0.4851	-234.78	98.320
4	4392.6	61.979	85.855	-0.4851	-220.96	90.833
5	3834.0	49.801	74.116	-0.4851	-203.85	71.688
6	3275.4	52.200	78.615	-0.4851	-214.21	75.550
7	4173.3	59.369	85.155	-0.4851	-219.75	83.826
8	3614.7	47.224	73.096	-0.4851	-201.99	64.695
9	3056.1	49.490	77.488	-0.4851	-212.20	68.355
10	3954.0	60.132	88.282	-0.4851	-224.71	81.874
11	3395.4	49.131	77.385	-0.4851	-209.40	64.969
12	2836.8	51.456	81.980	-0.4851	-219.83	68.615
MINIMUM	2836.8	47.224	73.096	-0.4851	-234.98	64.695
Pile N.	12	8	8	1	1	8
MAXIMUM	4604.5	72.273	94.696	-0.4851	-201.99	109.21
Pile N.	1	1	1	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 174 di 420
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PILE GROUP *****	DISP. x, M *****	DISP. y, M *****	DISP. z, M *****	ROT. x,RAD *****	ROT. y,RAD *****	ROT. z,RAD *****
1	2.4011E-03	4.1215E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
2	2.1084E-03	4.1215E-04	3.7387E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
3	1.8157E-03	4.1215E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
4	2.2862E-03	4.0541E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
5	1.9935E-03	4.0541E-04	3.7387E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
6	1.7008E-03	4.0541E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
7	2.1713E-03	3.9867E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
8	1.8786E-03	3.9867E-04	3.7387E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
9	1.5858E-03	3.9867E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
10	2.0563E-03	3.9194E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
11	1.7636E-03	3.9194E-04	3.7387E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
12	1.4709E-03	3.9194E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
MINIMUM Pile N.	1.4709E-03 12	3.9194E-04 10	3.6713E-04 1	-1.4971E-06 1	2.5539E-05 1	-6.5044E-05 1
MAXIMUM Pile N.	2.4011E-03 1	4.1215E-04 1	3.8060E-04 3	-1.4971E-06 1	2.5539E-05 1	-6.5044E-05 1

* PILE TOP REACTIONS *

PILE GROUP *****	AXIAL, KN *****	LAT. y, KN *****	LAT. z, KN *****	MOM x, KN- M *****	MOM y, KN- M *****	MOM z, KN- M *****
1	4604.5	72.273	94.696	-0.4851	-234.98	109.21
2	4053.3	62.996	86.792	-0.4851	-225.32	95.407
3	3494.8	64.931	90.922	-0.4851	-234.78	98.320
4	4392.6	61.979	85.855	-0.4851	-220.96	90.833
5	3834.0	49.801	74.116	-0.4851	-203.85	71.688
6	3275.4	52.200	78.615	-0.4851	-214.21	75.550
7	4173.3	59.369	85.155	-0.4851	-219.75	83.826
8	3614.7	47.224	73.096	-0.4851	-201.99	64.695
9	3056.1	49.490	77.488	-0.4851	-212.20	68.355
10	3954.0	60.132	88.282	-0.4851	-224.71	81.874
11	3395.4	49.131	77.385	-0.4851	-209.40	64.969
12	2836.8	51.456	81.980	-0.4851	-219.83	68.615
MINIMUM Pile N.	2836.8 12	47.224 8	73.096 8	-0.4851 1	-234.98 1	64.695 8
MAXIMUM Pile N.	4604.5 1	72.273 1	94.696 1	-0.4851 1	-201.99 8	109.21 1

PILE GROUP *****	STRESS, KN/ M**2 *****
1	3387.6
2	3032.2
3	2745.8
4	3206.7
5	2821.8
6	2539.0
7	3071.4
8	2685.6
9	2402.2
10	2959.3
11	2583.1
12	2300.3
MINIMUM Pile N.	2300.3 12
MAXIMUM Pile N.	3387.6 1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
1	-4.4150E-06	-4.6707E-06	-109.21	-234.98	-47.646	-51.053	-18.504	-19.870	2605.6	7.8279E+06	7.8279E+06
x(M)	8.8000	9.0200	0.0000	0.0000	7.7000	7.7000	9.0200	9.2400	22.000	0.0000	0.0000
2	-4.7178E-06	-5.0724E-06	-95.407	-225.32	-43.872	-47.839	-16.158	-17.686	2293.7	7.8279E+06	7.8279E+06
x(M)	9.0200	9.2400	0.0000	0.0000	7.7000	7.9200	9.2400	9.4600	22.000	0.0000	0.0000
3	-4.6528E-06	-5.1015E-06	-98.320	-234.78	-44.737	-49.777	-16.644	-18.575	1977.6	7.8279E+06	7.8279E+06
x(M)	9.0200	9.2400	0.0000	0.0000	7.7000	7.9200	9.2400	9.4600	22.000	0.0000	0.0000
4	-4.5904E-06	-4.9384E-06	-90.833	-220.96	-43.318	-47.295	-16.024	-17.560	2485.7	7.8279E+06	7.8279E+06
x(M)	9.0200	9.2400	0.0000	0.0000	7.7000	7.9200	9.2400	9.4600	22.000	0.0000	0.0000
5	-5.0454E-06	-5.5041E-06	-71.688	-203.85	-37.505	-41.613	-12.773	-14.259	2169.6	7.8279E+06	7.8279E+06
x(M)	9.4600	9.6800	0.0000	0.0000	7.9200	8.1400	9.6800	9.6800	22.000	0.0000	0.0000
6	-4.9532E-06	-5.5230E-06	-75.550	-214.21	-38.704	-43.872	-13.450	-15.332	1853.5	7.8279E+06	7.8279E+06
x(M)	9.2400	9.4600	0.0000	0.0000	7.9200	8.1400	9.4600	9.6800	22.000	0.0000	0.0000
7	-4.5135E-06	-4.9632E-06	-83.826	-219.75	-42.051	-46.953	-15.491	-17.373	2361.6	7.8279E+06	7.8279E+06
x(M)	9.0200	9.2400	0.0000	0.0000	7.7000	7.9200	9.2400	9.4600	22.000	0.0000	0.0000
8	-4.9830E-06	-5.5537E-06	-64.695	-201.99	-36.201	-41.042	-12.231	-13.957	2045.5	7.8279E+06	7.8279E+06
x(M)	9.4600	9.6800	0.0000	0.0000	7.9200	8.1400	9.6800	9.9000	22.000	0.0000	0.0000
9	-4.8844E-06	-5.5592E-06	-68.355	-212.20	-37.356	-43.285	-12.877	-15.008	1729.4	7.8279E+06	7.8279E+06
x(M)	9.2400	9.4600	0.0000	0.0000	7.9200	8.1400	9.4600	9.6800	22.000	0.0000	0.0000

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B

10	-4.3194E-06	-4.8569E-06	-81.874	-224.71	-42.241	-48.276	-15.773	-18.146	2237.5	7.8279E+06	7.8279E+06
x(M)	9.0200	9.2400	0.0000	0.0000	7.7000	7.9200	9.2400	9.2400	22.000	0.0000	0.0000
11	-4.7290E-06	-5.3993E-06	-64.969	-209.40	-37.153	-43.203	-12.949	-15.141	1921.4	7.8279E+06	7.8279E+06
x(M)	9.2400	9.4600	0.0000	0.0000	7.9200	8.1400	9.4600	9.6800	22.000	0.0000	0.0000
12	-4.6303E-06	-5.4033E-06	-68.615	-219.83	-38.214	-45.387	-13.543	-16.171	1605.3	7.8279E+06	7.8279E+06
x(M)	9.2400	9.4600	0.0000	0.0000	7.7000	8.1400	9.4600	9.6800	22.000	0.0000	0.0000
Min.	-5.0454E-06	-5.5592E-06	-109.21	-234.98	-47.646	-51.053	-18.504	-19.870	1605.3	7.8279E+06	7.8279E+06
Pile N.	5	9	1	1	1	1	1	1	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	4.1215E-04	3.6713E-04	129.38	137.50	72.280	94.711	73.645	93.821	3387.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
2	4.1215E-04	3.7387E-04	125.10	135.54	63.001	86.805	66.616	86.838	3032.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
3	4.1215E-04	3.8060E-04	126.10	139.48	64.936	90.934	68.213	90.863	2745.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
4	4.0541E-04	3.6713E-04	122.87	133.30	61.984	85.868	65.385	85.820	3206.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
5	4.0541E-04	3.7387E-04	115.40	126.96	49.805	74.127	54.632	73.562	2821.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
6	4.0541E-04	3.8060E-04	117.09	131.68	52.204	78.625	56.936	78.289	2539.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
7	3.9867E-04	3.6713E-04	119.82	132.89	59.374	85.168	62.898	85.097	3071.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
8	3.9867E-04	3.7387E-04	112.25	126.12	47.227	73.106	52.119	72.371	2685.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
9	3.9867E-04	3.8060E-04	113.88	130.79	49.493	77.497	54.311	77.007	2402.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
10	3.9194E-04	3.6713E-04	118.43	134.49	60.136	88.295	63.061	87.986	2959.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
11	3.9194E-04	3.7387E-04	112.29	129.38	49.134	77.395	53.863	77.051	2583.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
12	3.9194E-04	3.8060E-04	113.77	134.00	51.459	81.989	55.981	81.784	2300.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max.	4.1215E-04	3.8060E-04	129.38	139.48	72.280	94.711	73.645	93.821	3387.6	7.8279E+06	7.8279E+06
Pile N.	1	3	1	3	1	1	1	1	1	1	1

LOAD CASE : 7
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8302	1.0000
2	0.7758	1.0000
3	0.8661	1.0000
4	0.5674	1.0000
5	0.4960	1.0000
6	0.6180	1.0000
7	0.5375	1.0000
8	0.4675	1.0000
9	0.5906	1.0000
10	0.5845	1.0000
11	0.5097	1.0000
12	0.6344	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
44607.6	-680.981	994.382
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-197.074	12132.1	-7060.11

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.93231E-03	-1.55410E-04	3.71717E-04

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandataria

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 176 di 420
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ANGLE ROT. X,RAD ANGLE ROT. Y,RAD ANGLE ROT. Z,RAD
-2.32385E-06 2.54169E-05 -1.52240E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1724E-03	-1.3972E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
2	2.1039E-03	-1.3972E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
3	2.0354E-03	-1.3972E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
4	2.0580E-03	-1.5018E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
5	1.9895E-03	-1.5018E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
6	1.9210E-03	-1.5018E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
7	1.9436E-03	-1.6064E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
8	1.8751E-03	-1.6064E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
9	1.8066E-03	-1.6064E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
10	1.8293E-03	-1.7110E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
11	1.7607E-03	-1.7110E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
12	1.6922E-03	-1.7110E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
MINIMUM	1.6922E-03	-1.7110E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.1724E-03	-1.3972E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4175.5	-59.081	92.593	-0.7530	-227.95	-194.20
2	4044.7	-57.440	92.625	-0.7530	-232.63	-191.52
3	3914.0	-60.007	101.22	-0.7530	-250.48	-195.82
4	3957.2	-53.723	76.709	-0.7530	-202.68	-188.93
5	3826.4	-51.039	74.583	-0.7530	-203.16	-184.06
6	3695.7	-55.438	85.663	-0.7530	-225.96	-192.08
7	3738.9	-55.395	74.721	-0.7530	-199.36	-195.68
8	3608.2	-52.543	72.536	-0.7530	-199.61	-190.44
9	3477.4	-57.356	83.797	-0.7530	-222.89	-199.31
10	3520.6	-60.064	77.753	-0.7530	-204.46	-207.85
11	3389.9	-56.967	75.495	-0.7530	-204.77	-202.27
12	3259.1	-61.929	86.690	-0.7530	-227.68	-211.24
MINIMUM	3259.1	-61.929	72.536	-0.7530	-250.48	-211.24
Pile N.	12	12	8	1	3	12
MAXIMUM	4175.5	-51.039	101.22	-0.7530	-199.36	-184.06
Pile N.	1	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1724E-03	-1.3972E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
2	2.1039E-03	-1.3972E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
3	2.0354E-03	-1.3972E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
4	2.0580E-03	-1.5018E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
5	1.9895E-03	-1.5018E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
6	1.9210E-03	-1.5018E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
7	1.9436E-03	-1.6064E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
8	1.8751E-03	-1.6064E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
9	1.8066E-03	-1.6064E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
10	1.8293E-03	-1.7110E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
11	1.7607E-03	-1.7110E-04	3.7172E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
12	1.6922E-03	-1.7110E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
MINIMUM	1.6922E-03	-1.7110E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.1724E-03	-1.3972E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4175.5	-59.081	92.593	-0.7530	-227.95	-194.20
2	4044.7	-57.440	92.625	-0.7530	-232.63	-191.52
3	3914.0	-60.007	101.22	-0.7530	-250.48	-195.82
4	3957.2	-53.723	76.709	-0.7530	-202.68	-188.93
5	3826.4	-51.039	74.583	-0.7530	-203.16	-184.06
6	3695.7	-55.438	85.663	-0.7530	-225.96	-192.08

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	177 di 420

7	3738.9	-55.395	74.721	-0.7530	-199.36	-195.68
8	3608.2	-52.543	72.536	-0.7530	-199.61	-190.44
9	3477.4	-57.356	83.797	-0.7530	-222.89	-199.31
10	3520.6	-60.064	77.753	-0.7530	-204.46	-207.85
11	3389.9	-56.967	75.495	-0.7530	-204.77	-202.27
12	3259.1	-61.929	86.690	-0.7530	-227.68	-211.24
MINIMUM	3259.1	-61.929	72.536	-0.7530	-250.48	-211.24
Pile N.	12	12	8	1	3	12
MAXIMUM	4175.5	-51.039	101.22	-0.7530	-199.36	-184.06
Pile N.	1	5	3	1	7	5

PILE GROUP STRESS, KN/ M**2

1	3266.6
2	3198.3
3	3174.4
4	3075.6
5	2992.7
6	2986.4
7	2958.9
8	2874.4
9	2870.2
10	2872.2
11	2787.0
12	2781.7

MINIMUM	2781.7
Pile N.	12
MAXIMUM	3266.6
Pile N.	1







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.4469E-04	-4.6394E-06	-70.541	-227.95	-59.093	-49.267	-56.376	-19.037	2362.8	7.8279E+06	7.8279E+06
x (M)	0.6600	9.0200	6.6000	0.0000	0.0000	7.7000	6.1600	9.2400	22.000	0.0000	0.0000
2	-1.4475E-04	-4.8695E-06	-69.838	-232.63	-57.451	-49.629	-54.718	-18.850	2288.8	7.8279E+06	7.8279E+06
x (M)	0.6600	9.2400	6.6000	0.0000	0.0000	7.9200	6.1600	9.2400	22.000	0.0000	0.0000
3	-1.4465E-04	-4.8874E-06	-70.955	-250.48	-60.018	-53.433	-57.419	-20.806	2214.9	7.8279E+06	7.8279E+06
x (M)	0.6600	9.0200	6.6000	0.0000	0.0000	7.7000	6.1600	9.2400	22.000	0.0000	0.0000
4	-1.5526E-04	-5.1407E-06	-70.115	-202.68	-53.733	-42.320	-49.960	-14.983	2239.3	7.8279E+06	7.8279E+06
x (M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
5	-1.5538E-04	-5.4696E-06	-68.085	-203.16	-51.049	-41.378	-46.710	-14.181	2165.3	7.8279E+06	7.8279E+06
x (M)	0.6600	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
6	-1.5519E-04	-5.3418E-06	-71.322	-225.96	-55.448	-46.746	-52.081	-16.864	2091.3	7.8279E+06	7.8279E+06
x (M)	0.6600	9.4600	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
7	-1.6554E-04	-5.2090E-06	-73.406	-199.36	-55.405	-41.422	-51.282	-14.486	2115.8	7.8279E+06	7.8279E+06
x (M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
8	-1.6567E-04	-5.5603E-06	-71.240	-199.61	-52.553	-40.308	-47.780	-13.649	2041.8	7.8279E+06	7.8279E+06
x (M)	0.6600	9.6800	6.8200	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
9	-1.6545E-04	-5.4162E-06	-74.853	-222.89	-57.366	-45.809	-53.725	-16.357	1967.8	7.8279E+06	7.8279E+06
x (M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
10	-1.7569E-04	-5.0979E-06	-78.855	-204.46	-60.074	-42.796	-56.211	-15.246	1992.3	7.8279E+06	7.8279E+06
x (M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
11	-1.7582E-04	-5.4357E-06	-76.607	-204.77	-56.976	-41.856	-52.512	-14.447	1918.3	7.8279E+06	7.8279E+06
x (M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
12	-1.7560E-04	-5.3071E-06	-80.111	-227.68	-61.938	-47.276	-58.479	-17.159	1844.3	7.8279E+06	7.8279E+06
x (M)	0.6600	9.2400	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
Min.	-1.7582E-04	-5.5603E-06	-80.111	-250.48	-61.938	-53.433	-58.479	-20.806	1844.3	7.8279E+06	7.8279E+06
Pile N.	11	8	12	3	12	3	12	3	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	2.4251E-06	3.6126E-04	194.20	134.23	26.135	92.606	10.109	90.369	3266.6	7.8279E+06	7.8279E+06
x (M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
2	2.4664E-06	3.7172E-04	191.52	137.24	25.391	92.638	9.7114	90.855	3198.3	7.8279E+06	7.8279E+06
x (M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
3	2.3947E-06	3.8217E-04	195.82	143.96	26.583	101.23	10.348	98.658	3174.4	7.8279E+06	7.8279E+06
x (M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.2400	6.1600	0.0000	0.0000	0.0000
4	2.8419E-06	3.6126E-04	188.93	125.68	23.736	76.720	8.4422	75.597	3075.6	7.8279E+06	7.8279E+06
x (M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
5	2.9254E-06	3.7172E-04	184.06	126.22	22.476	74.594	7.7493	73.134	2992.7	7.8279E+06	7.8279E+06
x (M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
6	2.7792E-06	3.8217E-04	192.08	136.14	24.660	85.674	8.9392	84.525	2986.4	7.8279E+06	7.8279E+06
x (M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
7	3.0509E-06	3.6126E-04	195.68	124.31	24.598	74.732	8.6469	73.565	2958.9	7.8279E+06	7.8279E+06
x (M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

	8	3.1467E-06	3.7172E-04	190.44	124.73	23.177	72.546	7.8789	70.913	2874.4	7.8279E+06	7.8279E+06
x(M)		9.9000	0.0000	0.0000	6.6000	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
	9	2.9734E-06	3.8217E-04	199.31	134.96	25.591	83.807	9.1796	82.674	2870.2	7.8279E+06	7.8279E+06
x(M)		9.6800	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
	10	3.1485E-06	3.6126E-04	207.85	126.41	26.889	77.763	9.6202	76.734	2872.2	7.8279E+06	7.8279E+06
x(M)		9.6800	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
	11	3.2571E-06	3.7172E-04	202.27	126.95	25.400	75.505	8.8181	74.181	2787.0	7.8279E+06	7.8279E+06
x(M)		9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
	12	3.0916E-06	3.8217E-04	211.24	136.80	27.864	86.700	10.153	85.615	2781.7	7.8279E+06	7.8279E+06
x(M)		9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
Max.		3.2571E-06	3.8217E-04	211.24	143.96	27.864	101.23	10.348	98.658	3266.6	7.8279E+06	7.8279E+06
Pile N.	11		3	12	3	12	3	3	1	1	1	1

LOAD CASE : 8
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.7661	1.0000
2	0.7234	1.0000
3	0.8661	1.0000
4	0.5472	1.0000
5	0.4957	1.0000
6	0.6786	1.0000
7	0.5255	1.0000
8	0.4758	1.0000
9	0.6611	1.0000
10	0.5845	1.0000
11	0.5311	1.0000
12	0.7105	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
31461.9	-680.981	655.763
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-185.718	5211.86	-3490.31







* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.35829E-03	-1.84849E-04	2.26598E-04
ANGLE ROT. X,RAD	ANGLE ROT. Y,RAD	ANGLE ROT. Z,RAD
-1.67776E-06	1.20422E-05	-4.37190E-06

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4593E-03	-1.7352E-04	2.1905E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
2	1.4396E-03	-1.7352E-04	2.2660E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
3	1.4199E-03	-1.7352E-04	2.3415E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
4	1.4051E-03	-1.8107E-04	2.1905E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
5	1.3854E-03	-1.8107E-04	2.2660E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
6	1.3657E-03	-1.8107E-04	2.3415E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
7	1.3509E-03	-1.8862E-04	2.1905E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
8	1.3312E-03	-1.8862E-04	2.2660E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
9	1.3115E-03	-1.8862E-04	2.3415E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
10	1.2967E-03	-1.9617E-04	2.1905E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
11	1.2770E-03	-1.9617E-04	2.2660E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
12	1.2573E-03	-1.9617E-04	2.3415E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
MINIMUM	1.2573E-03	-1.9617E-04	2.1905E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4593E-03	-1.7352E-04	2.3415E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
Pile N.	1	1	3	1	1	1

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria  Mandanti  	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2814.5	-58.599	57.935	-0.5436	-149.50	-176.82
2	2777.0	-57.095	58.578	-0.5436	-153.76	-174.44
3	2739.4	-61.788	66.484	-0.5436	-169.19	-181.96
4	2711.1	-52.744	49.223	-0.5436	-135.59	-170.04
5	2673.5	-50.600	48.928	-0.5436	-138.03	-166.31
6	2636.0	-57.690	58.924	-0.5436	-157.55	-178.51
7	2607.7	-53.841	48.261	-0.5436	-134.02	-174.78
8	2570.1	-51.659	47.984	-0.5436	-136.44	-170.93
9	2532.6	-59.229	58.148	-0.5436	-156.35	-184.07
10	2504.2	-58.357	50.700	-0.5436	-138.12	-185.45
11	2466.7	-56.027	50.442	-0.5436	-140.67	-181.45
12	2429.2	-63.352	60.156	-0.5436	-159.59	-193.90
MINIMUM	2429.2	-63.352	47.984	-0.5436	-169.19	-193.90
Pile N.	12	12	8	1	3	12
MAXIMUM	2814.5	-50.600	66.484	-0.5436	-134.02	-166.31
Pile N.	1	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4593E-03	-1.7352E-04	2.1905E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
2	1.4396E-03	-1.7352E-04	2.2660E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
3	1.4199E-03	-1.7352E-04	2.3415E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
4	1.4051E-03	-1.8107E-04	2.1905E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
5	1.3854E-03	-1.8107E-04	2.2660E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
6	1.3657E-03	-1.8107E-04	2.3415E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
7	1.3509E-03	-1.8862E-04	2.1905E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
8	1.3312E-03	-1.8862E-04	2.2660E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
9	1.3115E-03	-1.8862E-04	2.3415E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
10	1.2967E-03	-1.9617E-04	2.1905E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
11	1.2770E-03	-1.9617E-04	2.2660E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
12	1.2573E-03	-1.9617E-04	2.3415E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
MINIMUM	1.2573E-03	-1.9617E-04	2.1905E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4593E-03	-1.7352E-04	2.3415E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2814.5	-58.599	57.935	-0.5436	-149.50	-176.82
2	2777.0	-57.095	58.578	-0.5436	-153.76	-174.44
3	2739.4	-61.788	66.484	-0.5436	-169.19	-181.96
4	2711.1	-52.744	49.223	-0.5436	-135.59	-170.04
5	2673.5	-50.600	48.928	-0.5436	-138.03	-166.31
6	2636.0	-57.690	58.924	-0.5436	-157.55	-178.51
7	2607.7	-53.841	48.261	-0.5436	-134.02	-174.78
8	2570.1	-51.659	47.984	-0.5436	-136.44	-170.93
9	2532.6	-59.229	58.148	-0.5436	-156.35	-184.07
10	2504.2	-58.357	50.700	-0.5436	-138.12	-185.45
11	2466.7	-56.027	50.442	-0.5436	-140.67	-181.45
12	2429.2	-63.352	60.156	-0.5436	-159.59	-193.90
MINIMUM	2429.2	-63.352	47.984	-0.5436	-169.19	-193.90
Pile N.	12	12	8	1	3	12
MAXIMUM	2814.5	-50.600	66.484	-0.5436	-134.02	-166.31
Pile N.	1	5	3	1	7	5

PILE GROUP STRESS, KN/ M**2

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2291.5
2	2273.2
3	2300.1
4	2190.5
5	2165.2
6	2210.2
7	2140.3
8	2114.5
9	2162.0
10	2115.0
11	2088.8
12	2132.5
MINIMUM	2088.8
Pile N.	11
MAXIMUM	2300.1

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 180 di 420

Pile N. 3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
1	-1.7394E-04	-2.9552E-06	-75.568	-149.50	-58.606	-29.884	-55.561	-11.296	1592.7	7.8279E+06	7.8279E+06
x(M)	0.2200	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.2400	22.000	0.0000	0.0000
2	-1.7395E-04	-3.1216E-06	-74.754	-153.76	-57.102	-30.350	-54.138	-11.325	1571.4	7.8279E+06	7.8279E+06
x(M)	0.2200	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
3	-1.7392E-04	-3.0753E-06	-77.208	-169.19	-61.795	-33.652	-58.636	-13.134	1550.2	7.8279E+06	7.8279E+06
x(M)	0.2200	9.2000	6.3800	0.0000	0.0000	7.7000	6.1600	9.2400	22.000	0.0000	0.0000
4	-1.8151E-04	-3.2306E-06	-74.142	-135.59	-52.751	-26.064	-49.288	-9.1550	1534.2	7.8279E+06	7.8279E+06
x(M)	0.2200	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
5	-1.8152E-04	-3.4295E-06	-72.665	-138.03	-50.606	-25.943	-46.887	-8.8868	1512.9	7.8279E+06	7.8279E+06
x(M)	0.2200	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
6	-1.8148E-04	-3.2891E-06	-77.055	-157.55	-57.697	-30.655	-54.699	-11.300	1491.7	7.8279E+06	7.8279E+06
x(M)	0.2200	9.2400	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
7	-1.8905E-04	-3.2572E-06	-76.486	-134.02	-53.848	-25.628	-50.183	-8.9138	1475.6	7.8279E+06	7.8279E+06
x(M)	0.2200	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
8	-1.8906E-04	-3.4673E-06	-74.911	-136.44	-51.665	-25.468	-47.703	-8.6692	1454.4	7.8279E+06	7.8279E+06
x(M)	0.2200	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
9	-1.8902E-04	-3.3079E-06	-79.792	-156.35	-59.235	-30.319	-56.148	-11.115	1433.1	7.8279E+06	7.8279E+06
x(M)	0.2200	9.2400	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
10	-1.9656E-04	-3.1788E-06	-81.084	-138.12	-58.364	-26.754	-54.907	-9.5359	1417.1	7.8279E+06	7.8279E+06
x(M)	0.2200	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
11	-1.9657E-04	-3.3730E-06	-79.598	-140.67	-56.033	-26.724	-52.354	-9.3195	1395.9	7.8279E+06	7.8279E+06
x(M)	0.2200	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
12	-1.9654E-04	-3.2515E-06	-83.819	-159.59	-63.358	-31.239	-60.255	-11.620	1374.6	7.8279E+06	7.8279E+06
x(M)	0.2200	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
Min. Pile N.	-1.9657E-04 11	-3.4673E-06 8	-83.819 12	-169.19 3	-63.358 12	-33.652 3	-60.255 12	-13.134 3	1374.6 12	7.8279E+06 1	7.8279E+06 1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
1	2.6970E-06	2.1905E-04	176.82	82.788	27.421	57.941	10.405	55.646	2291.5	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
2	2.7338E-06	2.2660E-04	174.44	85.120	26.762	58.584	10.048	56.419	2273.2	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
3	2.5962E-06	2.3415E-04	181.96	90.801	28.764	66.491	11.219	63.501	2300.1	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.2400	6.1600	0.0000	0.0000	0.0000
4	3.0560E-06	2.1905E-04	170.04	77.761	24.863	49.228	8.7414	47.387	2190.5	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
5	3.1329E-06	2.2660E-04	166.31	79.170	23.829	48.933	8.2180	46.891	2165.2	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.6000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
6	2.8950E-06	2.3415E-04	178.51	87.248	27.158	58.930	10.035	56.906	2210.2	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
7	3.2139E-06	2.1905E-04	174.78	77.097	25.379	48.266	8.8621	46.425	2140.3	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.1400	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
8	3.2843E-06	2.2660E-04	170.93	78.553	24.365	47.989	8.3166	45.903	2114.5	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.6000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
9	3.0349E-06	2.3415E-04	184.07	86.833	27.968	58.154	10.250	56.213	2162.0	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
10	3.2491E-06	2.1905E-04	185.45	78.818	27.638	50.705	9.8732	48.977	2115.0	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
11	3.3281E-06	2.2660E-04	181.45	80.196	26.485	50.447	9.2605	48.579	2088.8	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.1400	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
12	3.0875E-06	2.3415E-04	193.90	87.967	29.870	60.161	11.173	58.148	2132.5	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
Max. Pile N.	3.3281E-06 11	2.3415E-04 3	193.90 12	90.801 3	29.870 12	66.491 3	11.219 3	63.501 3	2300.1 3	7.8279E+06 1	7.8279E+06 1

LOAD CASE : 9
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.6932	1.0000
3	0.7287	1.0000
4	0.7094	1.0000
5	0.4956	1.0000

APPALTATORE:

Consorzio



Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario



Mandanti

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	182 di 420

1	2.4011E-03	4.1215E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
2	2.1084E-03	4.1215E-04	3.7387E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
3	1.8157E-03	4.1215E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
4	2.2862E-03	4.0541E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
5	1.9935E-03	4.0541E-04	3.7387E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
6	1.7008E-03	4.0541E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
7	2.1713E-03	3.9867E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
8	1.8786E-03	3.9867E-04	3.7387E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
9	1.5858E-03	3.9867E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
10	2.0563E-03	3.9194E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
11	1.7636E-03	3.9194E-04	3.7387E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
12	1.4709E-03	3.9194E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05

MINIMUM	1.4709E-03	3.9194E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.4011E-03	4.1215E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	4604.5	72.273	94.696	-0.4851	-234.98	109.21
2	4053.3	62.996	86.792	-0.4851	-225.32	95.407
3	3494.8	64.931	90.922	-0.4851	-234.78	98.320
4	4392.6	61.979	85.855	-0.4851	-220.96	90.833
5	3834.0	49.801	74.116	-0.4851	-203.85	71.688
6	3275.4	52.200	78.615	-0.4851	-214.21	75.550
7	4173.3	59.369	85.155	-0.4851	-219.75	83.826
8	3614.7	47.224	73.096	-0.4851	-201.99	64.695
9	3056.1	49.490	77.488	-0.4851	-212.20	68.355
10	3954.0	60.132	88.282	-0.4851	-224.71	81.874
11	3395.4	49.131	77.385	-0.4851	-209.40	64.969
12	2836.8	51.456	81.980	-0.4851	-219.83	68.615
MINIMUM	2836.8	47.224	73.096	-0.4851	-234.98	64.695
Pile N.	12	8	8	1	1	8
MAXIMUM	4604.5	72.273	94.696	-0.4851	-201.99	109.21
Pile N.	1	1	1	1	8	1







* PILE GROUP STRESS, KN/ M**2

1	3387.6
2	3032.2
3	2745.8
4	3206.7
5	2821.8
6	2539.0
7	3071.4
8	2685.6
9	2402.2
10	2959.3
11	2583.1
12	2300.3
MINIMUM	2300.3
Pile N.	12
MAXIMUM	3387.6
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	-4.4150E-06	-4.6707E-06	-109.21	-234.98	-47.646	-51.053	-18.504	-19.870	2605.6	7.8279E+06	7.8279E+06
x (M)	8.8000	9.0200	0.0000	0.0000	7.7000	7.7000	9.0200	9.2400	22.000	0.0000	0.0000
2	-4.7178E-06	-5.0724E-06	-95.407	-225.32	-43.872	-47.839	-16.158	-17.686	2293.7	7.8279E+06	7.8279E+06
x (M)	9.0200	9.2400	0.0000	0.0000	7.7000	7.9200	9.2400	9.4600	22.000	0.0000	0.0000
3	-4.6528E-06	-5.1015E-06	-98.320	-234.78	-44.737	-49.777	-16.644	-18.575	1977.6	7.8279E+06	7.8279E+06
x (M)	9.0200	9.2400	0.0000	0.0000	7.7000	7.9200	9.2400	9.4600	22.000	0.0000	0.0000
4	-4.5904E-06	-4.9384E-06	-90.833	-220.96	-43.318	-47.295	-16.024	-17.560	2485.7	7.8279E+06	7.8279E+06
x (M)	9.0200	9.2400	0.0000	0.0000	7.7000	7.9200	9.2400	9.4600	22.000	0.0000	0.0000
5	-5.0454E-06	-5.5041E-06	-71.688	-203.85	-37.505	-41.613	-12.773	-14.259	2169.6	7.8279E+06	7.8279E+06
x (M)	9.4600	9.6800	0.0000	0.0000	7.9200	8.1400	9.6800	9.6800	22.000	0.0000	0.0000
6	-4.9532E-06	-5.5230E-06	-75.550	-214.21	-38.704	-43.872	-13.450	-15.332	1853.5	7.8279E+06	7.8279E+06
x (M)	9.2400	9.4600	0.0000	0.0000	7.9200	8.1400	9.4600	9.6800	22.000	0.0000	0.0000
7	-4.5135E-06	-4.9632E-06	-83.826	-219.75	-42.051	-46.953	-15.491	-17.373	2361.6	7.8279E+06	7.8279E+06
x (M)	9.0200	9.2400	0.0000	0.0000	7.7000	7.9200	9.2400	9.4600	22.000	0.0000	0.0000
8	-4.9830E-06	-5.5537E-06	-64.695	-201.99	-36.201	-41.042	-13.957	-12.231	2045.5	7.8279E+06	7.8279E+06
x (M)	9.4600	9.6800	0.0000	0.0000	7.9200	8.1400	9.6800	9.9000	22.000	0.0000	0.0000
9	-4.8844E-06	-5.5592E-06	-68.355	-212.20	-37.356	-43.285	-12.877	-15.008	1729.4	7.8279E+06	7.8279E+06
x (M)	9.2400	9.4600	0.0000	0.0000	7.9200	8.1400	9.4600	9.6800	22.000	0.0000	0.0000
10	-4.3194E-06	-4.8569E-06	-81.874	-224.71	-42.241	-48.276	-15.773	-18.146	2237.5	7.8279E+06	7.8279E+06
x (M)	9.0200	9.2400	0.0000	0.0000	7.7000	7.9200	9.2400	9.2400	22.000	0.0000	0.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 183 di 420

11	-4.7290E-06	-5.3993E-06	-64.969	-209.40	-37.153	-43.203	-12.949	-15.141	1921.4	7.8279E+06	7.8279E+06
x(M)	9.2400	9.4600	0.0000	0.0000	7.9200	8.1400	9.4600	9.6800	22.000	0.0000	0.0000
12	-4.6303E-06	-5.4033E-06	-68.615	-219.83	-38.214	-45.387	-13.543	-16.171	1605.3	7.8279E+06	7.8279E+06
x(M)	9.2400	9.4600	0.0000	0.0000	7.7000	8.1400	9.4600	9.6800	22.000	0.0000	0.0000
Min. Pile N.	-5.0454E-06	-5.5592E-06	-109.21	-234.98	-47.646	-51.053	-18.504	-19.870	1605.3	7.8279E+06	7.8279E+06
	5	9	1	1	1	1	1	1	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	4.1215E-04	3.6713E-04	129.38	137.50	72.280	94.711	73.645	93.821	3387.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
2	4.1215E-04	3.7387E-04	125.10	135.54	63.001	86.805	66.616	86.838	3032.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
3	4.1215E-04	3.8060E-04	126.10	139.48	64.936	90.934	68.213	90.863	2745.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
4	4.0541E-04	3.6713E-04	122.87	133.30	61.984	85.868	65.385	85.820	3206.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
5	4.0541E-04	3.7387E-04	115.40	126.96	49.805	74.127	54.632	73.562	2821.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
6	4.0541E-04	3.8060E-04	117.09	131.68	52.204	78.625	56.936	78.289	2539.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
7	3.9867E-04	3.6713E-04	119.82	132.89	59.374	85.168	62.898	85.097	3071.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
8	3.9867E-04	3.7387E-04	112.25	126.12	47.227	73.106	52.119	72.371	2685.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
9	3.9867E-04	3.8060E-04	113.88	130.79	49.493	77.497	54.311	77.007	2402.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
10	3.9194E-04	3.6713E-04	118.43	134.49	60.136	88.295	63.061	87.986	2959.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
11	3.9194E-04	3.7387E-04	112.29	129.38	49.134	77.395	53.863	77.051	2583.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
12	3.9194E-04	3.8060E-04	113.77	134.00	51.459	81.989	55.981	81.784	2300.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.1600	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max. Pile N.	4.1215E-04	3.8060E-04	129.38	139.48	72.280	94.711	73.645	93.821	3387.6	7.8279E+06	7.8279E+06
	1	3	1	3	1	1	1	1	1	1	1

LOAD CASE : 10
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.7040	1.0000
2	0.6733	1.0000
3	0.8661	1.0000
4	0.5286	1.0000
5	0.4955	1.0000
6	0.7283	1.0000
7	0.5145	1.0000
8	0.4831	1.0000
9	0.7182	1.0000
10	0.5845	1.0000
11	0.5494	1.0000
12	0.7721	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
33600.2	-947.198	726.001
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-292.333	7931.44	3721.04

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.45166E-03	-3.40307E-04	2.64734E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria Mandanti   		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 184 di 420

-2.01737E-06 1.69930E-05 2.02542E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
1	1.4752E-03	-3.2669E-04	2.5566E-04	-2.0174E-06	1.6993E-05	2.0254E-05
2	1.5664E-03	-3.2669E-04	2.6473E-04	-2.0174E-06	1.6993E-05	2.0254E-05
3	1.6575E-03	-3.2669E-04	2.7381E-04	-2.0174E-06	1.6993E-05	2.0254E-05
4	1.3988E-03	-3.3577E-04	2.5566E-04	-2.0174E-06	1.6993E-05	2.0254E-05
5	1.4899E-03	-3.3577E-04	2.6473E-04	-2.0174E-06	1.6993E-05	2.0254E-05
6	1.5810E-03	-3.3577E-04	2.7381E-04	-2.0174E-06	1.6993E-05	2.0254E-05
7	1.3223E-03	-3.4485E-04	2.5566E-04	-2.0174E-06	1.6993E-05	2.0254E-05
8	1.4134E-03	-3.4485E-04	2.6473E-04	-2.0174E-06	1.6993E-05	2.0254E-05
9	1.5046E-03	-3.4485E-04	2.7381E-04	-2.0174E-06	1.6993E-05	2.0254E-05
10	1.2458E-03	-3.5392E-04	2.5566E-04	-2.0174E-06	1.6993E-05	2.0254E-05
11	1.3370E-03	-3.5392E-04	2.6473E-04	-2.0174E-06	1.6993E-05	2.0254E-05
12	1.4281E-03	-3.5392E-04	2.7381E-04	-2.0174E-06	1.6993E-05	2.0254E-05
MINIMUM	1.2458E-03	-3.5392E-04	2.5566E-04	-2.0174E-06	1.6993E-05	2.0254E-05
Pile N.	10	10	1	1	1	1
MAXIMUM	1.6575E-03	-3.2669E-04	2.7381E-04	-2.0174E-06	1.6993E-05	2.0254E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2845.0	-79.373	61.096	-0.6536	-157.26	-207.02
2	3018.9	-77.621	62.389	-0.6536	-163.13	-204.27
3	3192.9	-87.785	73.560	-0.6536	-184.55	-220.28
4	2699.0	-71.610	53.217	-0.6536	-144.31	-197.85
5	2873.0	-69.463	53.928	-0.6536	-149.01	-194.19
6	3046.9	-83.260	67.470	-0.6536	-175.11	-217.17
7	2553.1	-73.045	52.518	-0.6536	-143.14	-203.80
8	2727.1	-70.924	53.271	-0.6536	-147.90	-200.16
9	2901.0	-85.365	66.965	-0.6536	-174.35	-224.36
10	2407.2	-79.948	55.737	-0.6536	-148.63	-219.08
11	2581.1	-77.632	56.521	-0.6536	-153.53	-215.22
12	2755.1	-91.173	69.330	-0.6536	-178.14	-237.44
MINIMUM	2407.2	-91.173	52.518	-0.6536	-184.55	-237.44
Pile N.	10	12	7	1	3	12
MAXIMUM	3192.9	-69.463	73.560	-0.6536	-143.14	-194.19
Pile N.	3	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
1	1.4752E-03	-3.2669E-04	2.5566E-04	-2.0174E-06	1.6993E-05	2.0254E-05
2	1.5664E-03	-3.2669E-04	2.6473E-04	-2.0174E-06	1.6993E-05	2.0254E-05
3	1.6575E-03	-3.2669E-04	2.7381E-04	-2.0174E-06	1.6993E-05	2.0254E-05
4	1.3988E-03	-3.3577E-04	2.5566E-04	-2.0174E-06	1.6993E-05	2.0254E-05
5	1.4899E-03	-3.3577E-04	2.6473E-04	-2.0174E-06	1.6993E-05	2.0254E-05
6	1.5810E-03	-3.3577E-04	2.7381E-04	-2.0174E-06	1.6993E-05	2.0254E-05
7	1.3223E-03	-3.4485E-04	2.5566E-04	-2.0174E-06	1.6993E-05	2.0254E-05
8	1.4134E-03	-3.4485E-04	2.6473E-04	-2.0174E-06	1.6993E-05	2.0254E-05
9	1.5046E-03	-3.4485E-04	2.7381E-04	-2.0174E-06	1.6993E-05	2.0254E-05
10	1.2458E-03	-3.5392E-04	2.5566E-04	-2.0174E-06	1.6993E-05	2.0254E-05
11	1.3370E-03	-3.5392E-04	2.6473E-04	-2.0174E-06	1.6993E-05	2.0254E-05
12	1.4281E-03	-3.5392E-04	2.7381E-04	-2.0174E-06	1.6993E-05	2.0254E-05
MINIMUM	1.2458E-03	-3.5392E-04	2.5566E-04	-2.0174E-06	1.6993E-05	2.0254E-05
Pile N.	10	10	1	1	1	1
MAXIMUM	1.6575E-03	-3.2669E-04	2.7381E-04	-2.0174E-06	1.6993E-05	2.0254E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2845.0	-79.373	61.096	-0.6536	-157.26	-207.02
2	3018.9	-77.621	62.389	-0.6536	-163.13	-204.27
3	3192.9	-87.785	73.560	-0.6536	-184.55	-220.28
4	2699.0	-71.610	53.217	-0.6536	-144.31	-197.85
5	2873.0	-69.463	53.928	-0.6536	-149.01	-194.19
6	3046.9	-83.260	67.470	-0.6536	-175.11	-217.17
7	2553.1	-73.045	52.518	-0.6536	-143.14	-203.80
8	2727.1	-70.924	53.271	-0.6536	-147.90	-200.16

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 185 di 420
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9	2901.0	-85.365	66.965	-0.6536	-174.35	-224.36
10	2407.2	-79.948	55.737	-0.6536	-148.63	-219.08
11	2581.1	-77.632	56.521	-0.6536	-153.53	-215.22
12	2755.1	-91.173	69.330	-0.6536	-178.14	-237.44
MINIMUM	2407.2	-91.173	52.518	-0.6536	-184.55	-237.44
Pile N.	10	12	7	1	3	12
MAXIMUM	3192.9	-69.463	73.560	-0.6536	-143.14	-194.19
Pile N.	3	5	3	1	7	5

PILE GROUP STRESS, KN/ M**2

*****	*****
1	2394.6
2	2497.3
3	2674.1
4	2266.4
5	2364.5
6	2566.2
7	2196.4
8	2294.3
9	2499.2
10	2161.2
11	2258.5
12	2454.9

MINIMUM	2161.2
Pile N.	10
MAXIMUM	2674.1
Pile N.	3







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-3.2669E-04	-3.4637E-06	-120.16	-157.26	-79.381	-33.017	-78.065	-12.244	1609.9	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
2	-3.2669E-04	-3.6434E-06	-119.22	-163.13	-77.630	-33.730	-76.449	-12.402	1708.4	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
3	-3.2669E-04	-3.5295E-06	-124.16	-184.55	-87.794	-38.599	-85.638	-15.041	1806.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.0200	6.3800	0.0000	0.0000	7.7000	6.1600	9.2400	22.000	0.0000	0.0000
4	-3.3577E-04	-3.7234E-06	-117.23	-144.31	-71.617	-29.331	-70.158	-10.216	1527.3	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4600	6.3800	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
5	-3.3577E-04	-3.9263E-06	-115.71	-149.01	-69.471	-29.685	-67.865	-10.169	1625.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
6	-3.3577E-04	-3.7045E-06	-124.61	-175.11	-83.270	-36.150	-81.957	-13.495	1724.2	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
7	-3.4485E-04	-3.7429E-06	-120.05	-143.14	-73.052	-29.002	-71.448	-10.034	1444.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4600	6.3800	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
8	-3.4485E-04	-3.9547E-06	-118.64	-147.90	-70.932	-29.354	-69.154	-9.9981	1543.2	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
9	-3.4485E-04	-3.7195E-06	-128.07	-174.35	-85.374	-35.952	-84.075	-13.387	1641.6	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
10	-3.5392E-04	-3.6327E-06	-126.86	-148.63	-79.955	-30.519	-78.590	-10.874	1362.2	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4600	6.3800	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
11	-3.5392E-04	-3.8384E-06	-125.27	-153.53	-77.640	-30.993	-76.195	-10.895	1460.6	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4600	6.3800	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
12	-3.5392E-04	-3.6362E-06	-133.41	-178.14	-91.182	-36.953	-89.629	-14.008	1559.0	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.2400	22.000	0.0000	0.0000
Min.	-3.5392E-04	-3.9547E-06	-133.41	-184.55	-91.182	-38.599	-89.629	-15.041	1362.2	7.8279E+06	7.8279E+06
Pile N.	10	8	12	3	12	3	12	3	10	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	4.4627E-06	2.5566E-04	207.02	93.234	42.561	61.102	15.790	60.183	2394.6	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
2	4.5137E-06	2.6473E-04	204.27	96.214	41.799	62.396	15.372	61.499	2497.3	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
3	4.2116E-06	2.7381E-04	220.28	104.05	46.058	73.568	17.947	71.762	2674.1	7.8279E+06	7.8279E+06
x(M)	9.0200	0.0000	0.0000	6.3800	7.7000	0.0000	9.2400	6.1600	0.0000	0.0000	0.0000
4	4.9427E-06	2.5566E-04	197.85	88.283	38.987	53.222	13.580	52.328	2266.4	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	6.1600	9.6800	0.0000	0.0000	0.0000
5	5.0162E-06	2.6473E-04	194.19	90.542	37.928	53.934	12.992	52.819	2364.5	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.6000	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
6	4.5575E-06	2.7381E-04	217.17	101.28	44.482	67.477	16.608	66.450	2566.2	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
7	5.1154E-06	2.5566E-04	203.80	87.783	39.709	52.523	13.738	51.614	2196.4	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
8	5.2037E-06	2.6473E-04	200.16	90.116	38.631	53.277	13.170	52.129	2294.3	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.6000	8.1400	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 186 di 420

9	4.7134E-06	2.7381E-04	224.36	101.05	45.575	66.972	16.976	66.027	2499.2	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
10	5.1159E-06	2.5566E-04	219.08	90.100	43.043	55.742	15.341	55.047	2161.2	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
11	5.1954E-06	2.6473E-04	215.22	92.534	42.006	56.527	14.768	55.690	2258.5	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
12	4.7439E-06	2.7381E-04	237.44	102.26	48.228	69.337	18.275	68.245	2454.9	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.2400	6.1600	0.0000	0.0000	0.0000
Max. Pile N.	5.2037E-06	2.7381E-04	237.44	104.05	48.228	73.568	18.275	71.762	2674.1	7.8279E+06	7.8279E+06
	8	3	12	3	12	3	12	3	3	1	1

LOAD CASE : 11
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8356	1.0000
2	0.7802	1.0000
3	0.8661	1.0000
4	0.5691	1.0000
5	0.4960	1.0000
6	0.6125	1.0000
7	0.5385	1.0000
8	0.4668	1.0000
9	0.5841	1.0000
10	0.5845	1.0000
11	0.5078	1.0000
12	0.6274	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
43168.5	-414.765	770.016
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-461.400	9688.24	-2700.77

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *



VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.86947E-03	-1.09220E-04	2.86263E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-3.91869E-06	2.01326E-05	-4.39345E-06

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	2.0251E-03	-8.2769E-05	2.6863E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
2	2.0054E-03	-8.2769E-05	2.8626E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
3	1.9856E-03	-8.2769E-05	3.0390E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
4	1.9345E-03	-1.0040E-04	2.6863E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
5	1.9148E-03	-1.0040E-04	2.8626E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
6	1.8950E-03	-1.0040E-04	3.0390E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
7	1.8440E-03	-1.1804E-04	2.6863E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
8	1.8242E-03	-1.1804E-04	2.8626E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
9	1.8044E-03	-1.1804E-04	3.0390E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
10	1.7534E-03	-1.3567E-04	2.6863E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
11	1.7336E-03	-1.3567E-04	2.8626E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
12	1.7138E-03	-1.3567E-04	3.0390E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
MINIMUM Pile N.	1.7138E-03	-1.3567E-04	2.6863E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
	12	10	1	1	1	1
MAXIMUM Pile N.	2.0251E-03	-8.2769E-05	3.0390E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
	1	1	3	1	1	1

* PILE TOP REACTIONS *

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3894.4	-31.212	69.197	-1.2697	-165.43	-95.875
2	3856.7	-30.233	72.168	-1.2697	-177.85	-94.371
3	3819.0	-31.553	81.736	-1.2697	-200.26	-96.556
4	3721.6	-31.405	56.941	-1.2697	-146.39	-103.12
5	3683.8	-29.645	57.686	-1.2697	-154.68	-100.09
6	3646.1	-32.235	68.697	-1.2697	-180.03	-104.70
7	3548.7	-35.420	55.357	-1.2697	-143.85	-116.66
8	3510.9	-33.374	56.000	-1.2697	-151.84	-113.08
9	3473.2	-36.482	67.082	-1.2697	-177.45	-118.66
10	3375.8	-41.509	57.553	-1.2697	-147.52	-133.82
11	3338.0	-39.105	58.223	-1.2697	-155.69	-129.69
12	3300.3	-42.591	69.375	-1.2697	-181.25	-135.84
MINIMUM	3300.3	-42.591	55.357	-1.2697	-200.26	-135.84
Pile N.	12	12	7	1	3	12
MAXIMUM	3894.4	-29.645	81.736	-1.2697	-143.85	-94.371
Pile N.	1	5	3	1	7	2

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.0251E-03	-8.2769E-05	2.6863E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
2	2.0054E-03	-8.2769E-05	2.8626E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
3	1.9856E-03	-8.2769E-05	3.0390E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
4	1.9345E-03	-1.0040E-04	2.6863E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
5	1.9148E-03	-1.0040E-04	2.8626E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
6	1.8950E-03	-1.0040E-04	3.0390E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
7	1.8440E-03	-1.1804E-04	2.6863E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
8	1.8242E-03	-1.1804E-04	2.8626E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
9	1.8044E-03	-1.1804E-04	3.0390E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
10	1.7534E-03	-1.3567E-04	2.6863E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
11	1.7336E-03	-1.3567E-04	2.8626E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
12	1.7138E-03	-1.3567E-04	3.0390E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
MINIMUM	1.7138E-03	-1.3567E-04	2.6863E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	2.0251E-03	-8.2769E-05	3.0390E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3894.4	-31.212	69.197	-1.2697	-165.43	-95.875
2	3856.7	-30.233	72.168	-1.2697	-177.85	-94.371
3	3819.0	-31.553	81.736	-1.2697	-200.26	-96.556
4	3721.6	-31.405	56.941	-1.2697	-146.39	-103.12
5	3683.8	-29.645	57.686	-1.2697	-154.68	-100.09
6	3646.1	-32.235	68.697	-1.2697	-180.03	-104.70
7	3548.7	-35.420	55.357	-1.2697	-143.85	-116.66
8	3510.9	-33.374	56.000	-1.2697	-151.84	-113.08
9	3473.2	-36.482	67.082	-1.2697	-177.45	-118.66
10	3375.8	-41.509	57.553	-1.2697	-147.52	-133.82
11	3338.0	-39.105	58.223	-1.2697	-155.69	-129.69
12	3300.3	-42.591	69.375	-1.2697	-181.25	-135.84
MINIMUM	3300.3	-42.591	55.357	-1.2697	-200.26	-135.84
Pile N.	12	12	7	1	3	12
MAXIMUM	3894.4	-29.645	81.736	-1.2697	-143.85	-94.371
Pile N.	1	5	3	1	7	2

PILE GROUP STRESS, KN/ M**2

*****	*****
1	2780.9
2	2790.1
3	2832.1
4	2646.4
5	2640.6
6	2691.8
7	2567.1
8	2558.2
9	2609.7
10	2511.4
11	2500.5
12	2551.2
MINIMUM	2500.5
Pile N.	11
MAXIMUM	2832.1
Pile N.	3

APPALDATTORE:

Consorzio

Soci



PROGETTAZIONE:

Mandatario

Mandanti



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO
RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	188 di 420

* EFFECTS FOR Laterally Loaded Pile *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-8.3559E-05	-3.4142E-06	-38.311	-165.43	-31.217	-36.401	-29.511	-14.071	2203.8	7.8279E+06	7.8279E+06
x(M)	0.4400	9.0200	6.3800	0.0000	0.0000	7.7000	6.1600	9.2400	22.000	0.0000	0.0000
2	-8.3576E-05	-3.7274E-06	-37.837	-177.85	-30.238	-38.132	-28.636	-14.509	2182.5	7.8279E+06	7.8279E+06
x(M)	0.4400	9.0200	6.3800	0.0000	0.0000	7.9200	6.1600	9.2400	22.000	0.0000	0.0000
3	-8.3551E-05	-3.8871E-06	-38.554	-200.26	-31.558	-42.497	-29.975	-16.549	2161.1	7.8279E+06	7.8279E+06
x(M)	0.4400	9.0200	6.3800	0.0000	0.0000	7.7000	6.1600	9.2400	22.000	0.0000	0.0000
4	-1.0110E-04	-3.7859E-06	-42.815	-146.39	-31.411	-31.202	-29.279	-11.052	2106.0	7.8279E+06	7.8279E+06
x(M)	0.4400	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
5	-1.0114E-04	-4.1956E-06	-41.624	-154.68	-29.651	-31.739	-27.328	-10.878	2084.6	7.8279E+06	7.8279E+06
x(M)	0.4400	9.6000	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
6	-1.0109E-04	-4.2612E-06	-43.415	-180.03	-32.241	-37.035	-30.350	-13.332	2063.3	7.8279E+06	7.8279E+06
x(M)	0.4400	9.4600	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
7	-1.1864E-04	-3.8390E-06	-49.250	-143.85	-35.426	-30.534	-32.949	-10.683	2008.1	7.8279E+06	7.8279E+06
x(M)	0.2200	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
8	-1.1865E-04	-4.2676E-06	-47.776	-151.84	-33.379	-30.901	-30.636	-10.457	1986.8	7.8279E+06	7.8279E+06
x(M)	0.2200	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
9	-1.1864E-04	-4.3219E-06	-50.042	-177.45	-36.488	-36.288	-34.307	-12.928	1965.4	7.8279E+06	7.8279E+06
x(M)	0.2200	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
10	-1.3622E-04	-3.7571E-06	-57.055	-147.52	-41.516	-31.538	-38.966	-11.226	1910.3	7.8279E+06	7.8279E+06
x(M)	0.2200	9.4600	6.6000	0.0000	0.0000	7.9200	6.1600	9.6800	22.000	0.0000	0.0000
11	-1.3624E-04	-4.1743E-06	-55.483	-155.69	-39.111	-32.055	-36.324	-11.054	1888.9	7.8279E+06	7.8279E+06
x(M)	0.2200	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
12	-1.3622E-04	-4.2304E-06	-57.798	-181.25	-42.597	-37.424	-40.329	-13.549	1867.6	7.8279E+06	7.8279E+06
x(M)	0.2200	9.2400	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
Min.	-1.3624E-04	-4.3219E-06	-57.798	-200.26	-42.597	-42.497	-40.329	-16.549	1867.6	7.8279E+06	7.8279E+06
Pile N.	11	9	12	3	12	3	12	3	12	1	1







* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.3139E-06	2.6863E-04	95.875	98.960	14.199	69.207	5.4777	66.292	2780.9	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	6.3800	0.0000	7.9200	0.0000	9.2400	6.1600	0.0000	0.0000	0.0000
2	1.3400E-06	2.8626E-04	94.371	105.35	13.812	72.177	5.2684	69.648	2790.1	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	6.3800	0.0000	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
3	1.2985E-06	3.0390E-04	96.556	114.50	14.397	81.747	5.6114	78.483	2832.1	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	6.3800	0.0000	7.9200	0.0000	9.2400	6.1600	0.0000	0.0000	0.0000
4	1.7314E-06	2.6863E-04	103.12	92.694	14.503	56.949	5.1509	55.392	2646.4	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	6.3800	0.0000	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
5	1.7930E-06	2.8626E-04	100.09	96.848	13.679	57.694	4.7176	55.931	2640.6	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	6.3800	0.0000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
6	1.7051E-06	3.0390E-04	104.70	108.10	14.969	68.706	5.4065	66.956	2691.8	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	6.3800	0.0000	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
7	2.0461E-06	2.6863E-04	116.66	91.678	16.447	55.364	5.7720	53.874	2567.1	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	6.3800	0.0000	8.1400	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
8	2.1089E-06	2.8626E-04	113.08	95.647	15.500	56.008	5.2626	54.187	2558.2	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	6.6000	0.0000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
9	2.0030E-06	3.0390E-04	118.66	107.12	17.059	67.090	6.0952	65.419	2609.7	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	6.3800	0.0000	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
10	2.2843E-06	2.6863E-04	133.82	93.176	19.452	57.560	6.9509	56.141	2511.4	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	6.3800	0.0000	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
11	2.3673E-06	2.8626E-04	129.69	97.333	18.295	58.231	6.3458	56.622	2500.5	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	6.3800	0.0000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
12	2.2494E-06	3.0390E-04	135.84	108.59	20.034	69.383	7.2692	67.752	2551.2	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	6.3800	0.0000	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
Max.	2.3673E-06	3.0390E-04	135.84	114.50	20.034	81.747	7.2692	78.483	2832.1	7.8279E+06	7.8279E+06
Pile N.	11	3	12	3	12	3	12	3	3	1	1

LOAD CASE : 12
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8183	1.0000
2	0.7661	1.0000
3	0.8661	1.0000
4	0.5636	1.0000
5	0.4959	1.0000
6	0.6300	1.0000
7	0.5352	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 189 di 420

8	0.4691	1.0000
9	0.6047	1.0000
10	0.5845	1.0000
11	0.5139	1.0000
12	0.6497	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 40798.0	HOR. LOAD Y, KN -627.738	HOR. LOAD Z, KN 749.461
MOMENT X, KN- M -128.512	MOMENT Y, KN- M 10336.9	MOMENT Z, KN- M -6628.02

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.76596E-03	HORIZONTAL Y, M -1.40218E-04	HORIZONTAL Z, M 2.83263E-04
ANGLE ROT. X, RAD -1.64916E-06	ANGLE ROT. Y, RAD 2.11168E-05	ANGLE ROT. Z, RAD -1.44412E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.9735E-03	-1.2909E-04	2.7584E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
2	1.9085E-03	-1.2909E-04	2.8326E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
3	1.8435E-03	-1.2909E-04	2.9068E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
4	1.8785E-03	-1.3651E-04	2.7584E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
5	1.8135E-03	-1.3651E-04	2.8326E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
6	1.7485E-03	-1.3651E-04	2.9068E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
7	1.7834E-03	-1.4393E-04	2.7584E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
8	1.7185E-03	-1.4393E-04	2.8326E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
9	1.6535E-03	-1.4393E-04	2.9068E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
10	1.6884E-03	-1.5135E-04	2.7584E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
11	1.6234E-03	-1.5135E-04	2.8326E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
12	1.5584E-03	-1.5135E-04	2.9068E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
MINIMUM	1.5584E-03	-1.5135E-04	2.7584E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.9735E-03	-1.2909E-04	2.9068E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3795.9	-55.101	69.528	-0.5343	-166.63	-180.79
2	3671.9	-53.600	69.443	-0.5343	-169.81	-178.36
3	3547.8	-56.309	76.350	-0.5343	-183.58	-182.85
4	3614.5	-49.571	57.577	-0.5343	-147.91	-174.19
5	3490.5	-47.199	55.980	-0.5343	-148.19	-169.92
6	3366.5	-51.688	64.970	-0.5343	-166.01	-177.99
7	3433.2	-50.573	56.114	-0.5343	-145.51	-178.64
8	3309.2	-48.096	54.493	-0.5343	-145.66	-174.13
9	3185.1	-52.946	63.646	-0.5343	-163.90	-182.94
10	3251.8	-54.361	58.561	-0.5343	-149.57	-188.09
11	3127.8	-51.705	56.896	-0.5343	-149.77	-183.36
12	3003.8	-56.589	65.902	-0.5343	-167.55	-192.06
MINIMUM	3003.8	-56.589	54.493	-0.5343	-183.58	-192.06
Pile N.	12	12	8	1	3	12
MAXIMUM	3795.9	-47.199	76.350	-0.5343	-145.51	-169.92
Pile N.	1	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.9735E-03	-1.2909E-04	2.7584E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
2	1.9085E-03	-1.2909E-04	2.8326E-04	-1.6492E-06	2.1117E-05	-1.4441E-05

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 190 di 420
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3	1.8435E-03	-1.2909E-04	2.9068E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
4	1.8785E-03	-1.3651E-04	2.7584E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
5	1.8135E-03	-1.3651E-04	2.8326E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
6	1.7485E-03	-1.3651E-04	2.9068E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
7	1.7834E-03	-1.4393E-04	2.7584E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
8	1.7185E-03	-1.4393E-04	2.8326E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
9	1.6535E-03	-1.4393E-04	2.9068E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
10	1.6884E-03	-1.5135E-04	2.7584E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
11	1.6234E-03	-1.5135E-04	2.8326E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
12	1.5584E-03	-1.5135E-04	2.9068E-04	-1.6492E-06	2.1117E-05	-1.4441E-05

MINIMUM	1.5584E-03	-1.5135E-04	2.7584E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.9735E-03	-1.2909E-04	2.9068E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	3795.9	-55.101	69.528	-0.5343	-166.63	-180.79
2	3671.9	-53.600	69.443	-0.5343	-169.81	-178.36
3	3547.8	-56.309	76.350	-0.5343	-183.58	-182.85
4	3614.5	-49.571	57.577	-0.5343	-147.91	-174.19
5	3490.5	-47.199	55.980	-0.5343	-148.19	-169.92
6	3366.5	-51.688	64.970	-0.5343	-166.01	-177.99
7	3433.2	-50.573	56.114	-0.5343	-145.51	-178.64
8	3309.2	-48.096	54.493	-0.5343	-145.66	-174.13
9	3185.1	-52.946	63.646	-0.5343	-163.90	-182.94
10	3251.8	-54.361	58.561	-0.5343	-149.57	-188.09
11	3127.8	-51.705	56.896	-0.5343	-149.77	-183.36
12	3003.8	-56.589	65.902	-0.5343	-167.55	-192.06
MINIMUM	3003.8	-56.589	54.493	-0.5343	-183.58	-192.06
Pile N.	12	12	8	1	3	12
MAXIMUM	3795.9	-47.199	76.350	-0.5343	-145.51	-169.92
Pile N.	1	5	3	1	7	5

PILE GROUP	STRESS, KN/ M**2
1	2890.1
2	2821.1
3	2789.7
4	2735.1
5	2655.7
6	2639.6
7	2638.2
8	2557.8
9	2543.7
10	2565.4
11	2484.5
12	2469.0
MINIMUM	2469.0
Pile N.	12
MAXIMUM	2890.1
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
1	-1.3389E-04	-3.5144E-06	-65.315	-166.63	-55.111	-36.941	-52.064	-14.224	2148.0	7.8279E+06	7.8279E+06
x(M)	0.6600	9.0200	6.6000	0.0000	0.0000	7.7000	6.1600	9.2400	22.000	0.0000	0.0000
2	-1.3395E-04	-3.6810E-06	-64.669	-169.81	-53.609	-37.163	-50.566	-14.070	2077.8	7.8279E+06	7.8279E+06
x(M)	0.6600	9.2400	6.6000	0.0000	0.0000	7.9200	6.1600	9.2400	22.000	0.0000	0.0000
3	-1.3383E-04	-3.6741E-06	-65.834	-183.58	-56.318	-40.153	-53.361	-15.620	2007.7	7.8279E+06	7.8279E+06
x(M)	0.6600	9.0200	6.6000	0.0000	0.0000	7.7000	6.1600	9.2400	22.000	0.0000	0.0000
4	-1.4146E-04	-3.8862E-06	-64.055	-147.91	-49.580	-31.817	-45.686	-11.246	2045.4	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
5	-1.4157E-04	-4.1184E-06	-62.281	-148.19	-47.208	-31.147	-42.855	-10.676	1975.2	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
6	-1.4137E-04	-3.9989E-06	-65.495	-166.01	-51.697	-35.430	-48.225	-12.835	1905.0	7.8279E+06	7.8279E+06
x(M)	0.6600	9.2400	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
7	-1.4876E-04	-3.9363E-06	-66.253	-145.51	-50.582	-31.176	-46.403	-10.891	1942.8	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
8	-1.4888E-04	-4.1843E-06	-64.423	-145.66	-48.104	-30.398	-43.404	-10.289	1872.6	7.8279E+06	7.8279E+06
x(M)	0.6600	9.6800	6.8200	0.0000	0.0000	8.1400	6.1600	9.9000	22.000	0.0000	0.0000
9	-1.4866E-04	-4.0416E-06	-67.945	-163.90	-52.954	-34.800	-49.276	-12.486	1802.4	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
10	-1.5594E-04	-3.8462E-06	-70.436	-149.57	-54.369	-32.288	-50.425	-11.488	1840.2	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	7.9200	6.1600	9.6800	22.000	0.0000	0.0000
11	-1.5606E-04	-4.0912E-06	-68.541	-149.77	-51.713	-31.612	-47.303	-10.935	1770.0	7.8279E+06	7.8279E+06
x(M)	0.6600	9.4600	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 191 di 420

12	-1.5584E-04	-3.9727E-06	-71.879	-167.55	-56.597	-35.890	-53.054	-13.090	1699.8	7.8279E+06	7.8279E+06
x(M)	0.6600	9.2400	6.6000	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
Min. Pile N.	-1.5606E-04	-4.1843E-06	-71.879	-183.58	-56.597	-40.153	-53.361	-15.620	1699.8	7.8279E+06	7.8279E+06
	11	8	12	3	12	3	3	3	12	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	2.2583E-06	2.7584E-04	180.79	100.99	24.100	69.537	9.3023	67.093	2890.1	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
2	2.2937E-06	2.8326E-04	178.36	103.09	23.432	69.452	8.9389	67.379	2821.1	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	8.1400	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
3	2.2214E-06	2.9068E-04	182.85	108.14	24.660	76.359	9.5994	73.460	2789.7	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.2400	6.1600	0.0000	0.0000	0.0000
4	2.6045E-06	2.7584E-04	174.19	94.721	21.666	57.584	7.6957	56.292	2735.1	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
5	2.6753E-06	2.8326E-04	169.92	95.106	20.563	55.988	7.0896	54.542	2655.7	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
6	2.5321E-06	2.9068E-04	177.99	102.71	22.750	64.978	8.2821	63.533	2639.6	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
7	2.7584E-06	2.7584E-04	178.64	93.746	22.192	56.121	7.7939	54.845	2638.2	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
8	2.8402E-06	2.8326E-04	174.13	93.969	20.973	54.500	7.1362	52.982	2557.8	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.3800	8.3600	0.0000	10.120	6.1600	0.0000	0.0000	0.0000
9	2.6689E-06	2.9068E-04	182.94	101.93	23.365	63.654	8.4285	62.282	2543.7	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
10	2.8125E-06	2.7584E-04	188.09	95.392	24.016	58.568	8.5936	57.331	2565.4	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
11	2.9036E-06	2.8326E-04	183.36	95.818	22.771	56.902	7.9212	55.557	2484.5	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.3800	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
12	2.7456E-06	2.9068E-04	192.06	103.28	25.140	65.909	9.2069	64.484	2469.0	7.8279E+06	7.8279E+06
x(M)	9.4600	0.0000	0.0000	6.3800	8.1400	0.0000	9.6800	6.1600	0.0000	0.0000	0.0000
Max. Pile N.	2.9036E-06	2.9068E-04	192.06	108.14	25.140	76.359	9.5994	73.460	2890.1	7.8279E+06	7.8279E+06
	11	3	12	3	12	3	3	3	1	1	1

LOAD CASE : 13
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5791	1.0000
3	0.5846	1.0000
4	0.8053	1.0000
5	0.4951	1.0000
6	0.4955	1.0000
7	0.8053	1.0000
8	0.4951	1.0000
9	0.4955	1.0000
10	0.8661	1.0000
11	0.5791	1.0000
12	0.5845	1.0000







* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
27176.3	11642.2	78.2617
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-25.9651	1006.99	-54708.2

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.19462E-03	5.90621E-03	4.15249E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-6.70191E-07	2.46715E-06	-2.99132E-04

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.5574E-03	5.9107E-03	3.8509E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
2	1.2113E-03	5.9107E-03	4.1525E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
3	-1.3482E-04	5.9107E-03	4.4541E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
4	2.5463E-03	5.9077E-03	3.8509E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
5	1.2002E-03	5.9077E-03	4.1525E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
6	-1.4592E-04	5.9077E-03	4.4541E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
7	2.5352E-03	5.9047E-03	3.8509E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
8	1.1891E-03	5.9047E-03	4.1525E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
9	-1.5703E-04	5.9047E-03	4.4541E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
10	2.5241E-03	5.9017E-03	3.8509E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
11	1.1780E-03	5.9017E-03	4.1525E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
12	-1.6813E-04	5.9017E-03	4.4541E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
MINIMUM	-1.6813E-04	5.9017E-03	3.8509E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
Pile N.	12	10	1	1	1	1
MAXIMUM	2.5574E-03	5.9107E-03	4.4541E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4790.2	1151.7	7.1024	-0.2172	-20.266	3417.6
2	2341.3	927.05	6.2640	-0.2172	-19.314	2937.9
3	-254.40	933.60	6.8897	-0.2172	-21.442	2948.2
4	4777.0	1106.3	6.8203	-0.2172	-19.691	3323.7
5	2320.1	851.47	5.7487	-0.2172	-18.161	2767.4
6	-275.35	853.63	6.2986	-0.2172	-20.119	2768.1
7	4763.8	1105.8	6.8215	-0.2172	-19.693	3321.8
8	2298.9	851.09	5.7498	-0.2172	-18.163	2765.8
9	-296.30	853.25	6.2997	-0.2172	-20.121	2766.5
10	4750.6	1150.2	7.1062	-0.2172	-20.273	3411.7
11	2277.7	925.81	6.2673	-0.2172	-19.320	2932.8
12	-317.25	932.34	6.8934	-0.2172	-21.449	2943.0
MINIMUM	-317.25	851.09	5.7487	-0.2172	-21.449	2765.8
Pile N.	12	8	5	1	12	8
MAXIMUM	4790.2	1151.7	7.1062	-0.2172	-18.161	3417.6
Pile N.	1	1	10	1	5	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.5574E-03	5.9107E-03	3.8509E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
2	1.2113E-03	5.9107E-03	4.1525E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
3	-1.3482E-04	5.9107E-03	4.4541E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
4	2.5463E-03	5.9077E-03	3.8509E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
5	1.2002E-03	5.9077E-03	4.1525E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
6	-1.4592E-04	5.9077E-03	4.4541E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
7	2.5352E-03	5.9047E-03	3.8509E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
8	1.1891E-03	5.9047E-03	4.1525E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
9	-1.5703E-04	5.9047E-03	4.4541E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
10	2.5241E-03	5.9017E-03	3.8509E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
11	1.1780E-03	5.9017E-03	4.1525E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
12	-1.6813E-04	5.9017E-03	4.4541E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
MINIMUM	-1.6813E-04	5.9017E-03	3.8509E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
Pile N.	12	10	1	1	1	1
MAXIMUM	2.5574E-03	5.9107E-03	4.4541E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4790.2	1151.7	7.1024	-0.2172	-20.266	3417.6
2	2341.3	927.05	6.2640	-0.2172	-19.314	2937.9
3	-254.40	933.60	6.8897	-0.2172	-21.442	2948.2
4	4777.0	1106.3	6.8203	-0.2172	-19.691	3323.7
5	2320.1	851.47	5.7487	-0.2172	-18.161	2767.4
6	-275.35	853.63	6.2986	-0.2172	-20.119	2768.1
7	4763.8	1105.8	6.8215	-0.2172	-19.693	3321.8
8	2298.9	851.09	5.7498	-0.2172	-18.163	2765.8
9	-296.30	853.25	6.2997	-0.2172	-20.121	2766.5
10	4750.6	1150.2	7.1062	-0.2172	-20.273	3411.7

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	193 di 420

11	2277.7	925.81	6.2673	-0.2172	-19.320	2932.8
12	-317.25	932.34	6.8934	-0.2172	-21.449	2943.0
MINIMUM	-317.25	851.09	5.7487	-0.2172	-21.449	2765.8
Pile N.	12	8	5	1	12	8
MAXIMUM	4790.2	1151.7	7.1062	-0.2172	-18.161	3417.6
Pile N.	1	1	10	1	5	1

PILE GROUP STRESS, KN/ M**2

1	1.3025E+04
2	1.0192E+04
3	9042.0
4	1.2734E+04
5	9665.2
6	8510.3
7	1.2721E+04
8	9648.3
9	8517.2
10	1.2985E+04
11	1.0140E+04
12	9061.9
MINIMUM	8510.3
Pile N.	6
MAXIMUM	1.3025E+04
Pile N.	1





* EFFECTS FOR Laterally LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	-7.8514E-05	-4.9746E-07	-3417.6	-20.266	-545.03	-3.4461	-161.31	-1.0192	2710.7	7.8279E+06	7.8279E+06
x(M)	10.120	10.120	0.0000	0.0000	8.8000	8.8000	10.340	10.340	22.000	0.0000	0.0000
2	-8.6346E-05	-5.9563E-07	-2937.9	-19.314	-432.57	-2.9811	-114.12	-0.7858	1324.9	7.8279E+06	7.8279E+06
x(M)	10.780	10.780	0.0000	0.0000	9.2400	9.2400	11.000	11.000	22.000	0.0000	0.0000
3	-8.5997E-05	-6.4162E-07	-2948.2	-21.442	-434.34	-3.2390	-114.94	-0.8567	143.96	7.8279E+06	7.8279E+06
x(M)	10.780	10.780	0.0000	0.0000	9.2400	9.2400	11.000	11.000	22.000	0.0000	0.0000
4	-8.0008E-05	-5.0636E-07	-3323.7	-19.691	-524.05	-3.3205	-151.52	-0.9589	2703.2	7.8279E+06	7.8279E+06
x(M)	10.340	10.340	0.0000	0.0000	8.8000	8.8000	10.340	10.340	22.000	0.0000	0.0000
5	-8.9147E-05	-6.1521E-07	-2767.4	-18.161	-394.39	-2.7184	-99.682	-0.6859	1312.9	7.8279E+06	7.8279E+06
x(M)	11.220	11.000	0.0000	0.0000	9.4600	9.4600	11.440	11.440	22.000	0.0000	0.0000
6	-8.8908E-05	-6.6337E-07	-2768.1	-20.119	-393.97	-2.9391	-99.620	-0.7425	155.82	7.8279E+06	7.8279E+06
x(M)	11.220	11.000	0.0000	0.0000	9.4600	9.4600	11.440	11.440	22.000	0.0000	0.0000
7	-7.9955E-05	-5.0631E-07	-3321.8	-19.693	-523.83	-3.3210	-151.47	-0.9592	2695.8	7.8279E+06	7.8279E+06
x(M)	10.340	10.340	0.0000	0.0000	8.8000	8.8000	10.340	10.340	22.000	0.0000	0.0000
8	-8.9092E-05	-6.1520E-07	-2765.8	-18.163	-394.24	-2.7188	-99.650	-0.6861	1300.9	7.8279E+06	7.8279E+06
x(M)	11.220	11.000	0.0000	0.0000	9.4600	9.4600	11.440	11.440	22.000	0.0000	0.0000
9	-8.8853E-05	-6.6337E-07	-2766.5	-20.121	-393.81	-2.9396	-99.587	-0.7427	167.67	7.8279E+06	7.8279E+06
x(M)	11.220	11.000	0.0000	0.0000	9.4600	9.4600	11.440	11.440	22.000	0.0000	0.0000
10	-7.8372E-05	-4.9739E-07	-3411.7	-20.273	-544.34	-3.4475	-161.16	-1.0199	2688.3	7.8279E+06	7.8279E+06
x(M)	10.120	10.120	0.0000	0.0000	8.8000	8.8000	10.340	10.340	22.000	0.0000	0.0000
11	-8.6188E-05	-5.9554E-07	-2932.8	-19.320	-432.04	-2.9825	-114.01	-0.7863	1288.9	7.8279E+06	7.8279E+06
x(M)	10.780	10.780	0.0000	0.0000	9.2400	9.2400	11.000	11.000	22.000	0.0000	0.0000
12	-8.5839E-05	-6.4153E-07	-2943.0	-21.449	-433.80	-3.2404	-114.82	-0.8573	179.53	7.8279E+06	7.8279E+06
x(M)	10.780	10.780	0.0000	0.0000	9.2400	9.2400	11.000	11.000	22.000	0.0000	0.0000
Min.	-8.9147E-05	-6.6337E-07	-3417.6	-21.449	-545.03	-3.4475	-161.31	-1.0199	143.96	7.8279E+06	7.8279E+06
Pile N.	5	6	1	12	1	10	1	10	3	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	5.9107E-03	3.8509E-05	1738.1	11.063	1151.9	7.1038	573.51	3.5702	1.3025E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.8200	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
2	5.9107E-03	4.1525E-05	1528.4	10.576	927.15	6.2646	430.03	2.9315	1.0192E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.0400	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
3	5.9107E-03	4.4541E-05	1532.4	11.452	933.59	6.8896	433.19	3.2118	9042.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.0400	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
4	5.9077E-03	3.8509E-05	1700.1	10.821	1106.5	6.8217	544.89	3.3937	1.2734E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.8200	6.8200	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
5	5.9077E-03	4.1525E-05	1447.5	10.024	851.56	5.7493	382.39	2.6076	9665.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
6	5.9077E-03	4.4541E-05	1447.0	10.817	853.62	6.2985	382.78	2.8394	8510.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
7	5.9047E-03	3.8509E-05	1699.3	10.822	1106.0	6.8229	544.68	3.3944	1.2721E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.8200	6.8200	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
8	5.9047E-03	4.1525E-05	1446.8	10.025	851.18	5.7504	382.24	2.6082	9648.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
9	5.9047E-03	4.4541E-05	1446.3	10.819	853.24	6.2996	382.64	2.8400	8517.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

1	232.30	-933.44	6.6302	0.1260	-20.868	-3013.9
2	2295.5	-927.38	6.2498	0.1260	-19.601	-3003.6
3	4336.3	-1149.5	7.3665	0.1260	-21.489	-3477.5
4	213.41	-854.54	6.0635	0.1260	-19.600	-2836.2
5	2277.2	-852.79	5.7395	0.1260	-18.459	-2835.4
6	4318.0	-1104.9	7.0770	0.1260	-20.899	-3385.5
7	194.51	-854.32	6.0642	0.1260	-19.602	-2835.3
8	2258.9	-852.57	5.7402	0.1260	-18.460	-2834.4
9	4299.7	-1104.7	7.0778	0.1260	-20.900	-3384.4
10	175.62	-932.72	6.6324	0.1260	-20.872	-3010.9
11	2240.6	-926.66	6.2518	0.1260	-19.605	-3000.6
12	4281.4	-1148.6	7.3689	0.1260	-21.493	-3474.1
MINIMUM	175.62	-1149.5	5.7395	0.1260	-21.493	-3477.5
Pile N.	10	3	5	1	12	3
MAXIMUM	4336.3	-852.57	7.3689	0.1260	-18.459	-2834.4
Pile N.	3	8	12	1	5	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
1	1.1792E-04	-5.6649E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
2	1.1873E-03	-5.6649E-03	4.0058E-05	3.8881E-07	2.1315E-06	2.3764E-04
3	2.2567E-03	-5.6649E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
4	1.0833E-04	-5.6632E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
5	1.1777E-03	-5.6632E-03	4.0058E-05	3.8881E-07	2.1315E-06	2.3764E-04
6	2.2471E-03	-5.6632E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
7	9.8742E-05	-5.6614E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
8	1.1681E-03	-5.6614E-03	4.0058E-05	3.8881E-07	2.1315E-06	2.3764E-04
9	2.2375E-03	-5.6614E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
10	8.9151E-05	-5.6597E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
11	1.1585E-03	-5.6597E-03	4.0058E-05	3.8881E-07	2.1315E-06	2.3764E-04
12	2.2279E-03	-5.6597E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
MINIMUM	8.9151E-05	-5.6649E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	10	1	3	1	1	1
MAXIMUM	2.2567E-03	-5.6597E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	3	10	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	232.30	-933.44	6.6302	0.1260	-20.868	-3013.9
2	2295.5	-927.38	6.2498	0.1260	-19.601	-3003.6
3	4336.3	-1149.5	7.3665	0.1260	-21.489	-3477.5
4	213.41	-854.54	6.0635	0.1260	-19.600	-2836.2
5	2277.2	-852.79	5.7395	0.1260	-18.459	-2835.4
6	4318.0	-1104.9	7.0770	0.1260	-20.899	-3385.5
7	194.51	-854.32	6.0642	0.1260	-19.602	-2835.3
8	2258.9	-852.57	5.7402	0.1260	-18.460	-2834.4
9	4299.7	-1104.7	7.0778	0.1260	-20.900	-3384.4
10	175.62	-932.72	6.6324	0.1260	-20.872	-3010.9
11	2240.6	-926.66	6.2518	0.1260	-19.605	-3000.6
12	4281.4	-1148.6	7.3689	0.1260	-21.493	-3474.1
MINIMUM	175.62	-1149.5	5.7395	0.1260	-21.493	-3477.5
Pile N.	10	3	5	1	12	3
MAXIMUM	4336.3	-852.57	7.3689	0.1260	-18.459	-2834.4
Pile N.	3	8	12	1	5	8

PILE GROUP STRESS, KN/ M**2

1	9227.8
2	1.0364E+04
3	1.2949E+04
4	8680.9
5	9846.2
6	1.2661E+04
7	8667.3
8	9832.9
9	1.2648E+04
10	9186.6
11	1.0324E+04
12	1.2908E+04
MINIMUM	8667.3
Pile N.	7
MAXIMUM	1.2949E+04
Pile N.	3

* EFFECTS FOR Laterally LOADED PILE *

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	196 di 420

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-5.6649E-03	-6.0264E-07	-1493.0	-20.868	-933.45	-3.0769	-429.55	-0.8169	131.46	7.8279E+06	7.8279E+06
x (M)	0.0000	10.780	7.0400	0.0000	0.0000	9.2400	6.1600	11.000	22.000	0.0000	0.0000
2	-5.6649E-03	-5.7688E-07	-1488.9	-19.601	-927.48	-2.9214	-426.47	-0.7731	1299.0	7.8279E+06	7.8279E+06
x (M)	0.0000	10.780	7.0400	0.0000	0.0000	9.2400	6.1600	11.000	22.000	0.0000	0.0000
3	-5.6649E-03	-4.9858E-07	-1694.1	-21.489	-1149.7	-3.5011	-568.26	-1.0393	2453.9	7.8279E+06	7.8279E+06
x (M)	0.0000	10.120	6.8200	0.0000	0.0000	8.8000	6.1600	10.340	22.000	0.0000	0.0000
4	-5.6632E-03	-6.2270E-07	-1410.5	-19.600	-854.55	-2.7908	-379.78	-0.7077	120.76	7.8279E+06	7.8279E+06
x (M)	0.0000	11.220	7.2600	0.0000	0.0000	9.4600	6.1600	11.440	22.000	0.0000	0.0000
5	-5.6632E-03	-5.9515E-07	-1410.8	-18.459	-852.88	-2.6628	-379.42	-0.6746	1288.6	7.8279E+06	7.8279E+06
x (M)	0.0000	11.000	7.2600	0.0000	0.0000	9.4600	6.1600	11.440	22.000	0.0000	0.0000
6	-5.6632E-03	-5.0819E-07	-1656.8	-20.899	-1105.1	-3.3714	-540.06	-0.9779	2443.5	7.8279E+06	7.8279E+06
x (M)	0.0000	10.340	6.8200	0.0000	0.0000	8.8000	6.1600	10.340	22.000	0.0000	0.0000
7	-5.6614E-03	-6.2267E-07	-1410.1	-19.602	-854.33	-2.7911	-379.70	-0.7078	110.07	7.8279E+06	7.8279E+06
x (M)	0.0000	11.220	7.2600	0.0000	0.0000	9.4600	6.1600	11.440	22.000	0.0000	0.0000
8	-5.6614E-03	-5.9514E-07	-1410.4	-18.460	-852.66	-2.6631	-379.34	-0.6747	1278.3	7.8279E+06	7.8279E+06
x (M)	0.0000	11.000	7.2600	0.0000	0.0000	9.4600	6.1600	11.440	22.000	0.0000	0.0000
9	-5.6614E-03	-5.0816E-07	-1656.4	-20.900	-1104.9	-3.3717	-539.93	-0.9781	2433.1	7.8279E+06	7.8279E+06
x (M)	0.0000	10.340	6.8200	0.0000	0.0000	8.8000	6.1600	10.340	22.000	0.0000	0.0000
10	-5.6597E-03	-6.0257E-07	-1491.7	-20.872	-932.72	-3.0777	-429.26	-0.8172	99.379	7.8279E+06	7.8279E+06
x (M)	0.0000	10.780	7.0400	0.0000	0.0000	9.2400	6.1600	11.000	22.000	0.0000	0.0000
11	-5.6597E-03	-5.7681E-07	-1487.7	-19.605	-926.75	-2.9221	-426.17	-0.7734	1267.9	7.8279E+06	7.8279E+06
x (M)	0.0000	10.780	7.0400	0.0000	0.0000	9.2400	6.1600	11.000	22.000	0.0000	0.0000
12	-5.6597E-03	-4.9853E-07	-1692.6	-21.493	-1148.9	-3.5018	-567.86	-1.0397	2422.8	7.8279E+06	7.8279E+06
x (M)	0.0000	10.120	6.8200	0.0000	0.0000	8.8000	6.1600	10.340	22.000	0.0000	0.0000
Min.	-5.6649E-03	-6.2270E-07	-1694.1	-21.493	-1149.7	-3.5018	-568.26	-1.0397	99.379	7.8279E+06	7.8279E+06
Pile N.	1	4	3	12	3	12	3	12	10	1	1







* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	8.3193E-05	4.1808E-05	3013.9	10.849	425.10	6.6303	112.98	3.0765	9227.8	7.8279E+06	7.8279E+06
x (M)	10.780	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
2	8.3490E-05	4.0058E-05	3003.6	10.328	423.22	6.2504	112.15	2.9045	1.0364E+04	7.8279E+06	7.8279E+06
x (M)	10.780	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
3	7.5823E-05	3.8308E-05	3477.5	11.177	533.41	7.3678	158.49	3.6737	1.2949E+04	7.8279E+06	7.8279E+06
x (M)	10.120	0.0000	0.0000	6.8200	8.8000	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
4	8.6046E-05	4.1808E-05	2836.2	10.247	385.53	6.0635	97.946	2.7202	8680.9	7.8279E+06	7.8279E+06
x (M)	11.220	0.0000	0.0000	7.2600	9.4600	0.0000	11.440	6.1600	0.0000	0.0000	0.0000
5	8.6229E-05	4.0058E-05	2835.4	9.7811	385.82	5.7401	97.977	2.5842	9846.2	7.8279E+06	7.8279E+06
x (M)	11.220	0.0000	0.0000	7.0400	9.4600	0.0000	11.440	6.1600	0.0000	0.0000	0.0000
6	7.7382E-05	3.8308E-05	3385.5	10.943	512.70	7.0783	148.92	3.4921	1.2661E+04	7.8279E+06	7.8279E+06
x (M)	10.340	0.0000	0.0000	6.8200	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
7	8.6013E-05	4.1808E-05	2835.3	10.248	385.43	6.0642	97.926	2.7206	8667.3	7.8279E+06	7.8279E+06
x (M)	11.220	0.0000	0.0000	7.2600	9.4600	0.0000	11.440	6.1600	0.0000	0.0000	0.0000
8	8.6196E-05	4.0058E-05	2834.4	9.7817	385.72	5.7408	97.958	2.5845	9832.9	7.8279E+06	7.8279E+06
x (M)	11.220	0.0000	0.0000	7.0400	9.4600	0.0000	11.440	6.1600	0.0000	0.0000	0.0000
9	7.7350E-05	3.8308E-05	3384.4	10.943	512.57	7.0791	148.89	3.4926	1.2648E+04	7.8279E+06	7.8279E+06
x (M)	10.340	0.0000	0.0000	6.8200	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
10	8.3100E-05	4.1808E-05	3010.9	10.851	424.78	6.6324	112.91	3.0777	9186.6	7.8279E+06	7.8279E+06
x (M)	10.780	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
11	8.3397E-05	4.0058E-05	3000.6	10.330	422.90	6.2524	112.08	2.9056	1.0324E+04	7.8279E+06	7.8279E+06
x (M)	10.780	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
12	7.5739E-05	3.8308E-05	3474.1	11.179	533.00	7.3702	158.40	3.6750	1.2908E+04	7.8279E+06	7.8279E+06
x (M)	10.120	0.0000	0.0000	6.8200	8.8000	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
Max.	8.6229E-05	4.1808E-05	3477.5	11.179	533.41	7.3702	158.49	3.6750	1.2949E+04	7.8279E+06	7.8279E+06
Pile N.	5	1	3	12	3	12	3	12	3	1	1

LOAD CASE : 15
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.4966	1.0000
3	0.5846	1.0000
4	0.5445	1.0000
5	0.4625	1.0000
6	0.5445	1.0000
7	0.5791	1.0000
8	0.4962	1.0000
9	0.5791	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 197 di 420

10	0.8660	1.0000
11	0.8053	1.0000
12	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
27123.5	-344.552	-15164.0
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-4583.80	-78087.4	-6240.53

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.20884E-03	-7.64979E-05	-7.94382E-03
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-5.54595E-05	-2.33448E-04	-1.72122E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	-2.8948E-04	2.9785E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
2	-3.6693E-04	2.9785E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
3	-4.4439E-04	2.9785E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
4	7.6104E-04	4.8286E-05	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
5	6.8358E-04	4.8286E-05	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
6	6.0613E-04	4.8286E-05	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
7	1.8116E-03	-2.0128E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
8	1.7341E-03	-2.0128E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
9	1.6566E-03	-2.0128E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
10	2.8621E-03	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
11	2.7846E-03	-4.5085E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
12	2.7072E-03	-4.5085E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
MINIMUM	-4.4439E-04	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
Pile N.	3	10	1	1	1	1
MAXIMUM	2.8621E-03	2.9785E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
Pile N.	10	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	-546.23	40.672	-1272.2	-17.969	4413.5	129.73
2	-692.38	37.235	-1129.6	-17.969	4008.3	121.33
3	-838.54	41.569	-1210.4	-17.969	4149.1	131.67
4	1482.0	-2.6637	-1213.5	-17.969	4269.9	-29.658
5	1334.2	-2.7344	-1086.3	-17.969	3907.2	-29.655
6	1186.4	-2.6459	-1164.7	-17.969	4047.4	-29.705
7	3486.8	-45.621	-1262.2	-17.969	4398.8	-188.62
8	3339.0	-42.507	-1125.5	-17.969	4006.8	-180.58
9	3191.2	-46.444	-1200.8	-17.969	4135.1	-190.51
10	5152.4	-107.36	-1555.7	-17.969	5057.1	-390.55
11	5060.3	-104.62	-1461.6	-17.969	4785.7	-384.44
12	4968.3	-109.43	-1481.5	-17.969	4758.8	-394.90
MINIMUM	-838.54	-109.43	-1555.7	-17.969	3907.2	-394.90
Pile N.	3	12	10	1	5	12
MAXIMUM	5152.4	41.569	-1086.3	-17.969	5057.1	131.67
Pile N.	10	3	5	1	10	3

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	-2.8948E-04	2.9785E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
2	-3.6693E-04	2.9785E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
3	-4.4439E-04	2.9785E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
4	7.6104E-04	4.8286E-05	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	198 di 420

5	6.8358E-04	4.8286E-05	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
6	6.0613E-04	4.8286E-05	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
7	1.8116E-03	-2.0128E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
8	1.7341E-03	-2.0128E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
9	1.6566E-03	-2.0128E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
10	2.8621E-03	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
11	2.7846E-03	-4.5085E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
12	2.7072E-03	-4.5085E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
MINIMUM	-4.4439E-04	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
Pile N.	3	10	1	1	1	1
MAXIMUM	2.8621E-03	2.9785E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
Pile N.	10	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	-546.23	40.672	-1272.2	-17.969	4413.5	129.73
2	-692.38	37.235	-1129.6	-17.969	4008.3	121.33
3	-838.54	41.569	-1210.4	-17.969	4149.1	131.67
4	1482.0	-2.6637	-1213.5	-17.969	4269.9	-29.658
5	1334.2	-2.7344	-1086.3	-17.969	3907.2	-29.655
6	1186.4	-2.6459	-1164.7	-17.969	4047.4	-29.705
7	3486.8	-45.621	-1262.2	-17.969	4398.8	-188.62
8	3339.0	-42.507	-1125.5	-17.969	4006.8	-180.58
9	3191.2	-46.444	-1200.8	-17.969	4135.1	-190.51
10	5152.4	-107.36	-1555.7	-17.969	5057.1	-390.55
11	5060.3	-104.62	-1461.6	-17.969	4785.7	-384.44
12	4968.3	-109.43	-1481.5	-17.969	4758.8	-394.90
MINIMUM	-838.54	-109.43	-1555.7	-17.969	3907.2	-394.90
Pile N.	3	12	10	1	5	12
MAXIMUM	5152.4	41.569	-1086.3	-17.969	5057.1	131.67
Pile N.	10	3	5	1	10	3

PILE GROUP STRESS, KN/ M**2

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	1.3635E+04
2	1.2495E+04
3	1.3003E+04
4	1.3726E+04
5	1.2548E+04
6	1.2887E+04
7	1.5261E+04
8	1.3994E+04
9	1.4299E+04
10	1.8224E+04
11	1.7354E+04
12	1.7223E+04
MINIMUM	1.2495E+04
Pile N.	2
MAXIMUM	1.8224E+04
Pile N.	10

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-4.3680E-06	-8.1934E-03	-129.73	-2058.6	-19.184	-1272.1	-4.8069	-557.96	309.10	7.8279E+06	7.8279E+06
x(M)	11.220	0.0000	0.0000	7.2600	9.4600	0.0000	11.440	6.1600	22.000	0.0000	0.0000
2	-4.3380E-06	-7.9438E-03	-121.33	-1860.9	-16.915	-1129.6	-4.0762	-477.71	391.81	7.8279E+06	7.8279E+06
x(M)	11.660	0.0000	0.0000	7.4800	9.9000	0.0000	11.660	6.1600	22.000	0.0000	0.0000
3	-4.3272E-06	-7.6943E-03	-131.67	-1950.2	-19.548	-1210.3	-4.9384	-534.41	474.52	7.8279E+06	7.8279E+06
x(M)	11.220	0.0000	0.0000	7.2600	9.4600	0.0000	11.440	6.1600	22.000	0.0000	0.0000
4	-1.4051E-06	-8.1934E-03	-0.9456	-1975.6	-3.7223	-1213.6	-2.2397	-523.70	838.65	7.8279E+06	7.8279E+06
x(M)	7.7000	0.0000	11.000	7.4800	5.7200	0.0000	9.6800	6.1600	22.000	0.0000	0.0000
5	-1.6082E-06	-7.9438E-03	-1.0077	-1813.2	-3.6381	-1086.4	-2.1034	-452.14	755.00	7.8279E+06	7.8279E+06
x(M)	7.7000	0.0000	11.220	7.4800	5.7200	0.0000	9.9000	6.1600	22.000	0.0000	0.0000
6	-1.2834E-06	-7.6943E-03	-0.8567	-1902.7	-3.7672	-1164.8	-2.1980	-506.35	671.36	7.8279E+06	7.8279E+06
x(M)	7.7000	0.0000	11.000	7.2600	5.9400	0.0000	9.4600	6.1600	22.000	0.0000	0.0000
7	-2.0772E-04	-8.1934E-03	-61.348	-2053.6	-45.631	-1262.4	-18.509	-553.68	1973.1	7.8279E+06	7.8279E+06
x(M)	0.8800	0.0000	7.0000	7.2600	7.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
8	-2.0807E-04	-7.9438E-03	-57.270	-1862.2	-42.515	-1125.7	-16.558	-477.15	1889.5	7.8279E+06	7.8279E+06
x(M)	0.8800	0.0000	7.9200	7.4800	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
9	-2.0763E-04	-7.6943E-03	-62.008	-1945.6	-46.453	-1201.0	-18.984	-530.34	1805.9	7.8279E+06	7.8279E+06
x(M)	0.8800	0.0000	7.7000	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
10	-4.5374E-04	-8.1934E-03	-144.89	-2350.9	-107.38	-1556.1	-49.433	-744.42	2915.7	7.8279E+06	7.8279E+06
x(M)	0.4400	0.0000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
11	-4.5381E-04	-7.9438E-03	-142.43	-2235.7	-104.65	-1462.0	-47.471	-690.93	2863.6	7.8279E+06	7.8279E+06
x(M)	0.4400	0.0000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
12	-4.5369E-04	-7.6943E-03	-146.43	-2222.8	-109.46	-1481.8	-50.611	-711.75	2811.5	7.8279E+06	7.8279E+06
x(M)	0.4400	0.0000	7.0400	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 199 di 420

Min. -4.5381E-04 -8.1934E-03 -146.43 -2350.9 -109.46 -1556.1 -50.611 -744.42 309.10 7.8279E+06 7.8279E+06
Pile N. 11 1 12 10 12 10 12 10 1 1 1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL.		MOMENT		SHEAR		SOIL REACT		TOTAL STRESS	FLEX. RIG.	
	y-Dir	z-Dir	z-Dir	y-Dir	y-Dir	z-Dir	y-Dir	z-Dir		z-Dir	y-Dir
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	2.9785E-04	1.2812E-04	71.126	4413.5	40.671	562.07	18.407	141.75	1.3635E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	11.220	7.2600	0.0000	0.0000	9.6800	6.1600	11.440	0.0000	0.0000	0.0000
2	2.9785E-04	1.2355E-04	66.562	4008.3	37.234	480.94	16.278	116.14	1.2495E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	11.660	7.2600	0.0000	0.0000	9.9000	6.1600	11.880	0.0000	0.0000	0.0000
3	2.9785E-04	1.1881E-04	71.956	4149.1	41.567	535.93	18.886	136.25	1.3003E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	11.220	7.0400	0.0000	0.0000	9.4600	6.1600	11.440	0.0000	0.0000	0.0000
4	4.8286E-05	1.2582E-04	29.658	4269.9	0.2741	518.46	0.3124	128.56	1.3726E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	11.440	0.0000	0.0000	12.980	9.6800	2.6400	11.660	0.0000	0.0000	0.0000
5	4.8286E-05	1.2481E-04	29.655	3907.2	0.2794	457.68	0.2691	108.93	1.2548E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	11.880	0.0000	0.0000	13.200	10.120	2.6400	11.880	0.0000	0.0000	0.0000
6	4.8286E-05	1.2089E-04	29.705	4047.4	0.2584	515.63	0.3292	128.52	1.2887E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	11.220	0.0000	0.0000	13.200	9.6800	2.6400	11.660	0.0000	0.0000	0.0000
7	3.9580E-06	1.2888E-04	188.62	4398.8	17.453	560.75	4.4303	140.91	1.5261E+04	7.8279E+06	7.8279E+06
x(M)	11.440	11.220	0.0000	0.0000	9.6800	9.6800	11.880	11.440	0.0000	0.0000	0.0000
8	3.9694E-06	1.2407E-04	180.58	4006.8	15.461	481.85	3.7795	116.29	1.3994E+04	7.8279E+06	7.8279E+06
x(M)	11.880	11.660	0.0000	0.0000	10.120	9.9000	12.100	11.880	0.0000	0.0000	0.0000
9	3.9076E-06	1.1951E-04	190.51	4135.1	17.717	534.08	4.5357	135.43	1.4299E+04	7.8279E+06	7.8279E+06
x(M)	11.440	11.220	0.0000	0.0000	9.6800	9.4600	11.660	11.440	0.0000	0.0000	0.0000
10	7.4445E-06	1.1860E-04	390.55	5057.1	44.565	709.87	12.596	198.74	1.8224E+04	7.8279E+06	7.8279E+06
x(M)	10.560	10.560	0.0000	0.0000	9.2400	9.0200	10.780	10.780	0.0000	0.0000	0.0000
11	7.5572E-06	1.1621E-04	384.44	4785.7	43.453	663.59	12.067	183.60	1.7354E+04	7.8279E+06	7.8279E+06
x(M)	10.780	10.560	0.0000	0.0000	9.2400	9.0200	10.780	10.780	0.0000	0.0000	0.0000
12	7.3799E-06	1.0978E-04	394.90	4758.8	45.449	675.71	12.951	190.84	1.7223E+04	7.8279E+06	7.8279E+06
x(M)	10.560	10.560	0.0000	0.0000	9.0200	9.0200	10.780	10.780	0.0000	0.0000	0.0000
Max. Pile N.	2.9785E-04	1.2888E-04	394.90	5057.1	45.449	709.87	18.886	198.74	1.8224E+04	7.8279E+06	7.8279E+06
	1	7	12	10	12	10	3	10	10	1	1

LOAD CASE : 16
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8660	1.0000
2	0.8053	1.0000
3	0.8661	1.0000
4	0.5791	1.0000
5	0.4962	1.0000
6	0.5791	1.0000
7	0.5445	1.0000
8	0.4625	1.0000
9	0.5445	1.0000
10	0.5845	1.0000
11	0.4966	1.0000
12	0.5846	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
27123.5	-344.552	15320.5
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
4557.88	80101.3	-6240.87

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.21260E-03	-7.71072E-05	8.07126E-03
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
5.54017E-05	2.39036E-04	-1.72257E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 200 di 420
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* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.9036E-03	-4.5107E-04	8.3206E-03	5.5402E-05	2.3904E-04	-1.7226E-05
2	2.8261E-03	-4.5107E-04	8.0713E-03	5.5402E-05	2.3904E-04	-1.7226E-05
3	2.7486E-03	-4.5107E-04	7.8219E-03	5.5402E-05	2.3904E-04	-1.7226E-05
4	1.8280E-03	-2.0176E-04	8.3206E-03	5.5402E-05	2.3904E-04	-1.7226E-05
5	1.7504E-03	-2.0176E-04	8.0713E-03	5.5402E-05	2.3904E-04	-1.7226E-05
6	1.6729E-03	-2.0176E-04	7.8219E-03	5.5402E-05	2.3904E-04	-1.7226E-05
7	7.5228E-04	4.7547E-05	8.3206E-03	5.5402E-05	2.3904E-04	-1.7226E-05
8	6.7477E-04	4.7547E-05	8.0713E-03	5.5402E-05	2.3904E-04	-1.7226E-05
9	5.9725E-04	4.7547E-05	7.8219E-03	5.5402E-05	2.3904E-04	-1.7226E-05
10	-3.2338E-04	2.9685E-04	8.3206E-03	5.5402E-05	2.3904E-04	-1.7226E-05
11	-4.0090E-04	2.9685E-04	8.0713E-03	5.5402E-05	2.3904E-04	-1.7226E-05
12	-4.7841E-04	2.9685E-04	7.8219E-03	5.5402E-05	2.3904E-04	-1.7226E-05
MINIMUM	-4.7841E-04	-4.5107E-04	7.8219E-03	5.5402E-05	2.3904E-04	-1.7226E-05
Pile N.	12	1	3	1	1	1
MAXIMUM	2.9036E-03	2.9685E-04	8.3206E-03	5.5402E-05	2.3904E-04	-1.7226E-05
Pile N.	1	10	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	5201.8	-106.95	1571.0	17.951	-5113.4	-389.81
2	5109.6	-104.21	1476.6	17.951	-4841.0	-383.68
3	5017.5	-109.00	1497.4	17.951	-4816.5	-394.10
4	3518.1	-45.534	1274.7	17.951	-4447.4	-188.56
5	3370.2	-42.418	1137.0	17.951	-4052.5	-180.51
6	3222.3	-46.343	1213.7	17.951	-4184.8	-190.42
7	1465.3	-2.8005	1225.5	17.951	-4316.8	-30.166
8	1317.4	-2.8611	1097.5	17.951	-3951.6	-30.138
9	1169.4	-2.7873	1177.3	17.951	-4095.9	-30.223
10	-610.20	40.300	1284.9	17.951	-4462.5	128.63
11	-756.47	36.886	1141.3	17.951	-4054.0	120.27
12	-901.47	41.175	1223.5	17.951	-4198.9	130.53
MINIMUM	-901.47	-109.00	1097.5	17.951	-5113.4	-394.10
Pile N.	12	3	8	1	1	3
MAXIMUM	5201.8	41.175	1571.0	17.951	-3951.6	130.53
Pile N.	1	12	1	1	8	12

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.9036E-03	-4.5107E-04	8.3206E-03	5.5402E-05	2.3904E-04	-1.7226E-05
2	2.8261E-03	-4.5107E-04	8.0713E-03	5.5402E-05	2.3904E-04	-1.7226E-05
3	2.7486E-03	-4.5107E-04	7.8219E-03	5.5402E-05	2.3904E-04	-1.7226E-05
4	1.8280E-03	-2.0176E-04	8.3206E-03	5.5402E-05	2.3904E-04	-1.7226E-05
5	1.7504E-03	-2.0176E-04	8.0713E-03	5.5402E-05	2.3904E-04	-1.7226E-05
6	1.6729E-03	-2.0176E-04	7.8219E-03	5.5402E-05	2.3904E-04	-1.7226E-05
7	7.5228E-04	4.7547E-05	8.3206E-03	5.5402E-05	2.3904E-04	-1.7226E-05
8	6.7477E-04	4.7547E-05	8.0713E-03	5.5402E-05	2.3904E-04	-1.7226E-05
9	5.9725E-04	4.7547E-05	7.8219E-03	5.5402E-05	2.3904E-04	-1.7226E-05
10	-3.2338E-04	2.9685E-04	8.3206E-03	5.5402E-05	2.3904E-04	-1.7226E-05
11	-4.0090E-04	2.9685E-04	8.0713E-03	5.5402E-05	2.3904E-04	-1.7226E-05
12	-4.7841E-04	2.9685E-04	7.8219E-03	5.5402E-05	2.3904E-04	-1.7226E-05
MINIMUM	-4.7841E-04	-4.5107E-04	7.8219E-03	5.5402E-05	2.3904E-04	-1.7226E-05
Pile N.	12	1	3	1	1	1
MAXIMUM	2.9036E-03	2.9685E-04	8.3206E-03	5.5402E-05	2.3904E-04	-1.7226E-05
Pile N.	1	10	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	5201.8	-106.95	1571.0	17.951	-5113.4	-389.81
2	5109.6	-104.21	1476.6	17.951	-4841.0	-383.68
3	5017.5	-109.00	1497.4	17.951	-4816.5	-394.10
4	3518.1	-45.534	1274.7	17.951	-4447.4	-188.56
5	3370.2	-42.418	1137.0	17.951	-4052.5	-180.51
6	3222.3	-46.343	1213.7	17.951	-4184.8	-190.42
7	1465.3	-2.8005	1225.5	17.951	-4316.8	-30.166
8	1317.4	-2.8611	1097.5	17.951	-3951.6	-30.138
9	1169.4	-2.7873	1177.3	17.951	-4095.9	-30.223
10	-610.20	40.300	1284.9	17.951	-4462.5	128.63
11	-756.47	36.886	1141.3	17.951	-4054.0	120.27
12	-901.47	41.175	1223.5	17.951	-4198.9	130.53

APPALTATORE: Consorzio    Soci		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria    Mandanti		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 201 di 420

MINIMUM	-901.47	-109.00	1097.5	17.951	-5113.4	-394.10
Pile N.	12	3	8	1	1	3
MAXIMUM	5201.8	41.175	1571.0	17.951	-3951.6	130.53
Pile N.	1	12	1	1	8	12

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1.8421E+04
2	1.7548E+04
3	1.7424E+04
4	1.5426E+04
5	1.4150E+04
6	1.4466E+04
7	1.3858E+04
8	1.2672E+04
9	1.3024E+04
10	1.3819E+04
11	1.2669E+04
12	1.3189E+04

MINIMUM	1.2669E+04
Pile N.	11
MAXIMUM	1.8421E+04
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-4.5397E-04	-1.2066E-04	-144.67	-5113.4	-106.98	-717.84	-49.206	-200.59	2943.6	7.8279E+06	7.8279E+06
x(M)	0.4400	10.560	7.2600	0.0000	0.0000	9.0200	6.1600	10.780	22.000	0.0000	0.0000
2	-4.5405E-04	-1.1813E-04	-142.17	-4841.0	-104.24	-670.14	-47.249	-185.15	2891.5	7.8279E+06	7.8279E+06
x(M)	0.4400	10.560	7.2600	0.0000	0.0000	9.0200	6.1600	10.780	22.000	0.0000	0.0000
3	-4.5392E-04	-1.1192E-04	-146.14	-4816.5	-109.03	-683.99	-50.364	-192.74	2839.3	7.8279E+06	7.8279E+06
x(M)	0.4400	10.560	7.0400	0.0000	0.0000	9.0200	6.1600	10.780	22.000	0.0000	0.0000
4	-2.0821E-04	-1.3096E-04	-61.336	-4447.4	-45.543	-567.02	-18.448	-142.13	1990.9	7.8279E+06	7.8279E+06
x(M)	0.8800	11.220	7.7000	0.0000	0.0000	9.6800	6.1600	11.660	22.000	0.0000	0.0000
5	-2.0857E-04	-1.2628E-04	-57.251	-4052.5	-42.426	-487.37	-16.497	-117.39	1907.1	7.8279E+06	7.8279E+06
x(M)	0.8800	11.660	7.9200	0.0000	0.0000	9.9000	6.1600	11.880	22.000	0.0000	0.0000
6	-2.0813E-04	-1.2172E-04	-61.995	-4184.8	-46.351	-540.24	-18.913	-136.74	1823.4	7.8279E+06	7.8279E+06
x(M)	0.8800	11.220	7.7000	0.0000	0.0000	9.4600	6.1600	11.440	22.000	0.0000	0.0000
7	-1.5020E-06	-1.2788E-04	-1.0137	-4316.8	-3.7910	-524.16	-2.2695	-129.65	829.20	7.8279E+06	7.8279E+06
x(M)	7.4800	11.440	10.780	0.0000	5.7200	9.9000	9.6800	11.660	22.000	0.0000	0.0000
8	-1.7171E-06	-1.2698E-04	-1.0812	-3951.6	-3.7054	-462.98	-2.1333	-109.85	745.48	7.8279E+06	7.8279E+06
x(M)	7.4800	11.880	11.000	0.0000	5.5000	10.120	9.9000	11.880	22.000	0.0000	0.0000
9	-1.3753E-06	-1.2293E-04	-0.9209	-4095.9	-3.8350	-521.60	-2.2404	-129.69	661.77	7.8279E+06	7.8279E+06
x(M)	7.4800	11.220	11.000	0.0000	5.7200	9.6800	9.4600	11.660	22.000	0.0000	0.0000
10	-4.3613E-06	-1.3033E-04	-128.63	-4462.5	-19.033	-568.89	-4.7605	-143.03	345.30	7.8279E+06	7.8279E+06
x(M)	11.220	11.220	0.0000	0.0000	9.4600	9.6800	11.440	11.440	22.000	0.0000	0.0000
11	-4.3294E-06	-1.2567E-04	-120.27	-4054.0	-16.781	-486.14	-4.0322	-117.18	428.07	7.8279E+06	7.8279E+06
x(M)	11.660	11.660	0.0000	0.0000	9.9000	9.9000	11.660	11.880	22.000	0.0000	0.0000
12	-4.3211E-06	-1.2100E-04	-130.53	-4198.9	-19.389	-542.08	-4.8884	-137.55	510.13	7.8279E+06	7.8279E+06
x(M)	11.220	11.220	0.0000	0.0000	9.4600	9.4600	11.440	11.440	22.000	0.0000	0.0000
Min.	-4.5405E-04	-1.3096E-04	-146.14	-5113.4	-109.03	-717.84	-50.364	-200.59	345.30	7.8279E+06	7.8279E+06
Pile N.	2	4	3	1	3	1	3	1	10	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	7.4633E-06	8.3206E-03	389.81	2381.2	44.469	1571.4	12.538	751.55	1.8421E+04	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
2	7.5753E-06	8.0713E-03	383.68	2265.2	43.294	1476.9	11.994	697.82	1.7548E+04	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
3	7.4049E-06	7.8220E-03	394.10	2253.8	45.277	1497.8	12.874	719.14	1.7424E+04	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	7.0400	9.0200	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
4	3.9724E-06	8.3206E-03	188.56	2079.4	17.410	1274.9	4.4126	558.82	1.5426E+04	7.8279E+06	7.8279E+06
x(M)	11.440	0.0000	0.0000	7.2600	9.6800	0.0000	11.880	6.1600	0.0000	0.0000	0.0000
5	3.9908E-06	8.0713E-03	180.51	1886.2	15.446	1137.2	3.7667	481.64	1.4150E+04	7.8279E+06	7.8279E+06
x(M)	11.880	0.0000	0.0000	7.4800	10.120	0.0000	12.100	6.1600	0.0000	0.0000	0.0000
6	3.9283E-06	7.8220E-03	190.42	1971.8	17.692	1213.9	4.5178	535.62	1.4466E+04	7.8279E+06	7.8279E+06
x(M)	11.440	0.0000	0.0000	7.2600	9.6800	0.0000	11.660	6.1600	0.0000	0.0000	0.0000
7	4.7547E-05	8.3206E-03	30.166	2000.4	0.2923	1225.6	0.2967	528.51	1.3858E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	7.4800	12.980	0.0000	2.6400	6.1600	0.0000	0.0000	0.0000
8	4.7547E-05	8.0713E-03	30.138	1836.3	0.2977	1097.5	0.2572	456.39	1.2672E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	7.4800	13.200	0.0000	0.8800	6.1600	0.0000	0.0000	0.0000
9	4.7547E-05	7.8220E-03	30.223	1928.1	0.2752	1177.4	0.3126	511.41	1.3024E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	7.2600	12.980	0.0000	2.6400	6.1600	0.0000	0.0000	0.0000
10	2.9685E-04	8.3206E-03	70.690	2084.4	40.299	1284.9	18.229	563.09	1.3819E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.2600	7.2600	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 202 di 420

11	2.9685E-04	8.0713E-03	66.127	1884.8	36.884	1141.3	16.116	482.22	1.2669E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.2600	7.4800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
12	2.9685E-04	7.8220E-03	71.485	1976.5	41.173	1223.4	18.697	539.74	1.3189E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.0400	7.2600	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max.	2.9685E-04	8.3206E-03	394.10	2381.2	45.277	1571.4	18.697	751.55	1.8421E+04	7.8279E+06	7.8279E+06
Pile N.	10	1	3	1	3	1	12	1	1	1	1

LOAD CASE : 17
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5847	1.0000
2	0.5792	1.0000
3	0.8661	1.0000
4	0.4956	1.0000
5	0.4951	1.0000
6	0.8052	1.0000
7	0.4955	1.0000
8	0.4951	1.0000
9	0.8052	1.0000
10	0.5845	1.0000
11	0.5790	1.0000
12	0.8659	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
22548.8	-3733.84	78.2617
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-8.17398	1001.40	8179.77

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
9.69090E-04	-1.37400E-03	3.14003E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
1.32297E-07	2.09664E-06	6.15120E-05



THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	7.0644E-04	-1.3749E-03	3.1996E-05	1.3230E-07	2.0966E-06	6.1512E-05
2	9.8324E-04	-1.3749E-03	3.1400E-05	1.3230E-07	2.0966E-06	6.1512E-05
3	1.2600E-03	-1.3749E-03	3.0805E-05	1.3230E-07	2.0966E-06	6.1512E-05
4	6.9700E-04	-1.3743E-03	3.1996E-05	1.3230E-07	2.0966E-06	6.1512E-05
5	9.7381E-04	-1.3743E-03	3.1400E-05	1.3230E-07	2.0966E-06	6.1512E-05
6	1.2506E-03	-1.3743E-03	3.0805E-05	1.3230E-07	2.0966E-06	6.1512E-05
7	6.8757E-04	-1.3737E-03	3.1996E-05	1.3230E-07	2.0966E-06	6.1512E-05
8	9.6437E-04	-1.3737E-03	3.1400E-05	1.3230E-07	2.0966E-06	6.1512E-05
9	1.2412E-03	-1.3737E-03	3.0805E-05	1.3230E-07	2.0966E-06	6.1512E-05
10	6.7813E-04	-1.3731E-03	3.1996E-05	1.3230E-07	2.0966E-06	6.1512E-05
11	9.5494E-04	-1.3731E-03	3.1400E-05	1.3230E-07	2.0966E-06	6.1512E-05
12	1.2317E-03	-1.3731E-03	3.0805E-05	1.3230E-07	2.0966E-06	6.1512E-05
MINIMUM	6.7813E-04	-1.3749E-03	3.0805E-05	1.3230E-07	2.0966E-06	6.1512E-05
Pile N.	10	1	3	1	1	1
MAXIMUM	1.2600E-03	-1.3731E-03	3.1996E-05	1.3230E-07	2.0966E-06	6.1512E-05
Pile N.	3	10	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	1377.8	-300.96	6.4558	0.042865	-17.955	-886.09
2	1906.1	-299.59	6.2736	0.042865	-17.414	-883.75

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							
		COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
		IF28	01	E ZZ CL	VI0103 001	B	203 di 420

3	2434.3	-360.28	7.4199	0.042865	-19.182	-990.46
4	1359.8	-279.63	5.9839	0.042865	-17.086	-846.19
5	1888.1	-279.41	5.8369	0.042865	-16.610	-845.97
6	2416.3	-347.98	7.1601	0.042865	-18.745	-969.31
7	1341.8	-279.49	5.9841	0.042865	-17.086	-845.73
8	1870.1	-279.28	5.8371	0.042865	-16.610	-845.51
9	2398.3	-347.81	7.1604	0.042865	-18.745	-968.79
10	1323.8	-300.50	6.4558	0.042865	-17.954	-884.59
11	1852.1	-299.14	6.2736	0.042865	-17.414	-882.27
12	2380.3	-359.76	7.4205	0.042865	-19.182	-988.86
MINIMUM	1323.8	-360.28	5.8369	0.042865	-19.182	-990.46
Pile N.	10	3	5	1	3	3
MAXIMUM	2434.3	-279.28	7.4205	0.042865	-16.610	-845.51
Pile N.	3	8	12	1	5	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
1	7.0644E-04	-1.3749E-03	3.1996E-05	1.3230E-07	2.0966E-06	6.1512E-05
2	9.8324E-04	-1.3749E-03	3.1400E-05	1.3230E-07	2.0966E-06	6.1512E-05
3	1.2600E-03	-1.3749E-03	3.0805E-05	1.3230E-07	2.0966E-06	6.1512E-05
4	6.9700E-04	-1.3743E-03	3.1996E-05	1.3230E-07	2.0966E-06	6.1512E-05
5	9.7381E-04	-1.3743E-03	3.1400E-05	1.3230E-07	2.0966E-06	6.1512E-05
6	1.2506E-03	-1.3743E-03	3.0805E-05	1.3230E-07	2.0966E-06	6.1512E-05
7	6.8757E-04	-1.3737E-03	3.1996E-05	1.3230E-07	2.0966E-06	6.1512E-05
8	9.6437E-04	-1.3737E-03	3.1400E-05	1.3230E-07	2.0966E-06	6.1512E-05
9	1.2412E-03	-1.3737E-03	3.0805E-05	1.3230E-07	2.0966E-06	6.1512E-05
10	6.7813E-04	-1.3731E-03	3.1996E-05	1.3230E-07	2.0966E-06	6.1512E-05
11	9.5494E-04	-1.3731E-03	3.1400E-05	1.3230E-07	2.0966E-06	6.1512E-05
12	1.2317E-03	-1.3731E-03	3.0805E-05	1.3230E-07	2.0966E-06	6.1512E-05
MINIMUM	6.7813E-04	-1.3749E-03	3.0805E-05	1.3230E-07	2.0966E-06	6.1512E-05
Pile N.	10	1	3	1	1	1
MAXIMUM	1.2600E-03	-1.3731E-03	3.1996E-05	1.3230E-07	2.0966E-06	6.1512E-05
Pile N.	3	10	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	1377.8	-300.96	6.4558	0.042865	-17.955	-886.09
2	1906.1	-299.59	6.2736	0.042865	-17.414	-883.75
3	2434.3	-360.28	7.4199	0.042865	-19.182	-990.46
4	1359.8	-279.63	5.9839	0.042865	-17.086	-846.19
5	1888.1	-279.41	5.8369	0.042865	-16.610	-845.97
6	2416.3	-347.98	7.1601	0.042865	-18.745	-969.31
7	1341.8	-279.49	5.9841	0.042865	-17.086	-845.73
8	1870.1	-279.28	5.8371	0.042865	-16.610	-845.51
9	2398.3	-347.81	7.1604	0.042865	-18.745	-968.79
10	1323.8	-300.50	6.4558	0.042865	-17.954	-884.59
11	1852.1	-299.14	6.2736	0.042865	-17.414	-882.27
12	2380.3	-359.76	7.4205	0.042865	-19.182	-988.86
MINIMUM	1323.8	-360.28	5.8369	0.042865	-19.182	-990.46
Pile N.	10	3	5	1	3	3
MAXIMUM	2434.3	-279.28	7.4205	0.042865	-16.610	-845.51
Pile N.	3	8	12	1	5	8

PILE GROUP	STRESS, KN/ M**2
1	3454.5
2	3746.3
3	4367.4
4	3323.9
5	3622.1
6	4293.3
7	3312.3
8	3610.5
9	4281.6
10	3419.4
11	3711.3
12	4332.0
MINIMUM	3312.3
Pile N.	7
MAXIMUM	4367.4
Pile N.	3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 204 di 420
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PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.3749E-03	-4.2148E-07	-474.43	-17.955	-300.98	-3.5990	-205.02	-1.2882	779.68	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
2	-1.3749E-03	-4.1397E-07	-473.64	-17.414	-299.62	-3.5099	-204.00	-1.2534	1078.6	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
3	-1.3749E-03	-3.6078E-07	-506.07	-19.182	-360.31	-4.0079	-248.66	-1.5636	1377.5	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
4	-1.3743E-03	-4.3990E-07	-459.26	-17.086	-279.64	-3.3759	-187.61	-1.1637	769.50	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.6000	0.0000	0.0000	8.3600	6.1600	9.9000	22.000	0.0000	0.0000
5	-1.3743E-03	-4.3097E-07	-459.20	-16.610	-279.44	-3.3042	-187.50	-1.1387	1068.4	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.6000	0.0000	0.0000	8.3600	6.1600	9.9000	22.000	0.0000	0.0000
6	-1.3743E-03	-3.6872E-07	-499.66	-18.745	-348.01	-3.8953	-240.32	-1.5021	1367.4	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
7	-1.3737E-03	-4.3993E-07	-459.06	-17.086	-279.51	-3.3760	-187.54	-1.1637	759.31	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.6000	0.0000	0.0000	8.3600	6.1600	9.9000	22.000	0.0000	0.0000
8	-1.3737E-03	-4.3099E-07	-459.00	-16.610	-279.30	-3.3043	-187.44	-1.1387	1058.2	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.6000	0.0000	0.0000	8.3600	6.1600	9.9000	22.000	0.0000	0.0000
9	-1.3737E-03	-3.6874E-07	-499.45	-18.745	-347.85	-3.8955	-240.24	-1.5022	1357.2	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
10	-1.3731E-03	-4.2158E-07	-473.79	-17.954	-300.52	-3.5990	-204.80	-1.2881	749.12	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
11	-1.3731E-03	-4.1406E-07	-473.01	-17.414	-299.16	-3.5099	-203.78	-1.2533	1048.0	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6800	6.6000	0.0000	0.0000	8.1400	6.1600	9.6800	22.000	0.0000	0.0000
12	-1.3731E-03	-3.6085E-07	-505.40	-19.182	-359.80	-4.0083	-248.42	-1.5637	1347.0	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2400	6.3800	0.0000	0.0000	7.9200	6.1600	9.4600	22.000	0.0000	0.0000
Min.	-1.3749E-03	-4.3993E-07	-506.07	-19.182	-360.31	-4.0083	-248.66	-1.5637	749.12	7.8279E+06	7.8279E+06
Pile N.	1	7	3	3	3	12	3	12	10	1	1







* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.8854E-05	3.1996E-05	886.09	10.614	161.26	6.4561	57.760	4.4574	3454.5	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.6000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
2	1.8911E-05	3.1400E-05	883.75	10.375	160.74	6.2741	57.462	4.3342	3746.3	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.6000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
3	1.6831E-05	3.0805E-05	990.46	10.862	187.19	7.4206	73.308	5.1616	4367.4	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
4	1.9652E-05	3.1996E-05	846.19	10.292	151.08	5.9842	52.065	4.0798	3323.9	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.6000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
5	1.9663E-05	3.1400E-05	845.97	10.076	151.05	5.8374	52.044	3.9846	3622.1	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.6000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
6	1.7162E-05	3.0805E-05	969.31	10.736	182.11	7.1607	70.286	4.9908	4293.3	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	8.1400	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
7	1.9644E-05	3.1996E-05	845.73	10.293	151.01	5.9844	52.041	4.0805	3312.3	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.6000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
8	1.9655E-05	3.1400E-05	845.51	10.077	150.99	5.8376	52.020	3.9853	3610.5	7.8279E+06	7.8279E+06
x(M)	9.9000	0.0000	0.0000	6.6000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
9	1.7155E-05	3.0805E-05	968.79	10.736	182.03	7.1610	70.255	4.9917	4281.6	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	8.1400	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
10	1.8832E-05	3.1996E-05	884.59	10.615	161.03	6.4561	57.673	4.4592	3419.4	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.6000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
11	1.8889E-05	3.1400E-05	882.27	10.375	160.51	6.2741	57.375	4.3359	3711.3	7.8279E+06	7.8279E+06
x(M)	9.6800	0.0000	0.0000	6.6000	8.3600	0.0000	9.9000	6.1600	0.0000	0.0000	0.0000
12	1.6811E-05	3.0805E-05	988.86	10.863	186.94	7.4211	73.207	5.1641	4332.0	7.8279E+06	7.8279E+06
x(M)	9.2400	0.0000	0.0000	6.3800	7.9200	0.0000	9.4600	6.1600	0.0000	0.0000	0.0000
Max.	1.9663E-05	3.1996E-05	990.46	10.863	187.19	7.4211	73.308	5.1641	4367.4	7.8279E+06	7.8279E+06
Pile N.	5	1	3	12	3	12	3	12	3	1	1

LOAD CASE : 18
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5792	1.0000
3	0.5847	1.0000
4	0.8052	1.0000
5	0.4951	1.0000
6	0.4956	1.0000
7	0.8052	1.0000
8	0.4951	1.0000
9	0.4955	1.0000
10	0.8660	1.0000
11	0.5790	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria Mandanti   													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 15%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 15%;">REV.</td> <td style="width: 15%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>205 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	205 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	205 di 420								

12 0.5845 1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 35672.2	HOR. LOAD Y, KN 3733.84	HOR. LOAD Z, KN 78.2617
MOMENT X, KN- M -14.7990	MOMENT Y, KN- M 1017.36	MOMENT Z, KN- M -27384.9

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.54214E-03	HORIZONTAL Y, M 1.56992E-03	HORIZONTAL Z, M 3.17101E-05
ANGLE ROT. X,RAD -3.19012E-07	ANGLE ROT. Y,RAD 2.12602E-06	ANGLE ROT. Z,RAD -1.20684E-04

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
1	2.0996E-03	1.5721E-03	3.0274E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
2	1.5565E-03	1.5721E-03	3.1710E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
3	1.0134E-03	1.5721E-03	3.3146E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
4	2.0900E-03	1.5706E-03	3.0274E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
5	1.5469E-03	1.5706E-03	3.1710E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
6	1.0038E-03	1.5706E-03	3.3146E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
7	2.0804E-03	1.5692E-03	3.0274E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
8	1.5374E-03	1.5692E-03	3.1710E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
9	9.9428E-04	1.5692E-03	3.3146E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
10	2.0709E-03	1.5678E-03	3.0274E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
11	1.5278E-03	1.5678E-03	3.1710E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
12	9.8471E-04	1.5678E-03	3.3146E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
MINIMUM	9.8471E-04	1.5678E-03	3.0274E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
Pile N.	12	10	1	1	1	1
MAXIMUM	2.0996E-03	1.5721E-03	3.3146E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	4036.5	363.35	7.1768	-0.1034	-18.547	920.02
2	3000.1	299.18	6.2877	-0.1034	-17.526	807.72
3	1963.6	300.73	6.6850	-0.1034	-18.757	810.13
4	4018.2	350.08	6.9261	-0.1034	-18.122	897.03
5	2981.8	277.70	5.8522	-0.1034	-16.717	767.55
6	1945.4	278.04	6.2003	-0.1034	-17.857	767.74
7	4000.0	349.69	6.9267	-0.1034	-18.122	895.79
8	2963.6	277.39	5.8527	-0.1034	-16.718	766.45
9	1927.1	277.72	6.2009	-0.1034	-17.858	766.64
10	3981.7	362.13	7.1784	-0.1034	-18.548	916.21
11	2945.3	298.14	6.2888	-0.1034	-17.527	804.26
12	1908.9	299.69	6.6861	-0.1034	-18.759	806.65
MINIMUM	1908.9	277.39	5.8522	-0.1034	-18.759	766.45
Pile N.	12	8	5	1	12	8
MAXIMUM	4036.5	363.35	7.1784	-0.1034	-16.717	920.02
Pile N.	1	1	10	1	5	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
1	2.0996E-03	1.5721E-03	3.0274E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
2	1.5565E-03	1.5721E-03	3.1710E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
3	1.0134E-03	1.5721E-03	3.3146E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
4	2.0900E-03	1.5706E-03	3.0274E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
5	1.5469E-03	1.5706E-03	3.1710E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
6	1.0038E-03	1.5706E-03	3.3146E-05	-3.1901E-07	2.1260E-06	-1.2068E-04

APPALTATORE:

Consorzio



Soci



ITINERARIO NAPOLI – BARI

**RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA**

PROGETTAZIONE:

Mandatario



Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 206 di 420
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7	2.0804E-03	1.5692E-03	3.0274E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
8	1.5374E-03	1.5692E-03	3.1710E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
9	9.9428E-04	1.5692E-03	3.3146E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
10	2.0709E-03	1.5678E-03	3.0274E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
11	1.5278E-03	1.5678E-03	3.1710E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
12	9.8471E-04	1.5678E-03	3.3146E-05	-3.1901E-07	2.1260E-06	-1.2068E-04

MINIMUM	9.8471E-04	1.5678E-03	3.0274E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
Pile N.	12	10	1	1	1	1
MAXIMUM	2.0996E-03	1.5721E-03	3.3146E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
Pile N.	1	1	3	1	1	1

*** PILE TOP REACTIONS ***

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	4036.5	363.35	7.1768	-0.1034	-18.547	920.02
2	3000.1	299.18	6.2877	-0.1034	-17.526	807.72
3	1963.6	300.73	6.6850	-0.1034	-18.757	810.13
4	4018.2	350.08	6.9261	-0.1034	-18.122	897.03
5	2981.8	277.70	5.8522	-0.1034	-16.717	767.55
6	1945.4	278.04	6.2003	-0.1034	-17.857	767.74
7	4000.0	349.69	6.9267	-0.1034	-18.122	895.79
8	2963.6	277.39	5.8527	-0.1034	-16.718	766.45
9	1927.1	277.72	6.2009	-0.1034	-17.858	766.64
10	3981.7	362.13	7.1784	-0.1034	-18.548	916.21
11	2945.3	298.14	6.2888	-0.1034	-17.527	804.26
12	1908.9	299.69	6.6861	-0.1034	-18.759	806.65
MINIMUM	1908.9	277.39	5.8522	-0.1034	-18.759	766.45
Pile N.	12	8	5	1	12	8
MAXIMUM	4036.5	363.35	7.1784	-0.1034	-16.717	920.02
Pile N.	1	1	10	1	5	1

PILE GROUP	STRESS, KN/ M**2
1	5061.4
2	4136.0
3	3556.9
4	4981.7
5	4004.4
6	3418.6
7	4967.6
8	3990.8
9	3404.9
10	5018.9
11	4094.6
12	3515.4
MINIMUM	3404.9
Pile N.	9
MAXIMUM	5061.4
Pile N.	1

*** EFFECTS FOR LATERALLY LOADED PILE ***

*** MINIMUM VALUES AND LOCATIONS ***

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
1	-1.8097E-05	-3.5300E-07	-920.02	-18.547	-200.95	-3.9212	-78.300	-1.5296	2284.2	7.8279E+06	7.8279E+06
x(M)	9.2400	9.2400	0.0000	0.0000	7.9200	7.9200	9.4600	9.4600	22.000	0.0000	0.0000
2	-2.0316E-05	-4.1778E-07	-807.72	-17.526	-172.30	-3.5418	-61.507	-1.2648	1697.7	7.8279E+06	7.8279E+06
x(M)	9.6800	9.6800	0.0000	0.0000	8.1400	8.1400	9.6800	9.6800	22.000	0.0000	0.0000
3	-2.0244E-05	-4.3768E-07	-810.13	-18.757	-172.92	-3.7366	-61.870	-1.3377	1111.2	7.8279E+06	7.8279E+06
x(M)	9.6800	9.6800	0.0000	0.0000	8.1400	8.1400	9.6800	9.6800	22.000	0.0000	0.0000
4	-1.8490E-05	-3.6085E-07	-897.03	-18.122	-195.20	-3.8117	-75.186	-1.4697	2273.9	7.8279E+06	7.8279E+06
x(M)	9.2400	9.2400	0.0000	0.0000	7.9200	7.9200	9.4600	9.4600	22.000	0.0000	0.0000
5	-2.1170E-05	-4.3493E-07	-767.55	-16.717	-161.91	-3.3350	-55.807	-1.1494	1687.4	7.8279E+06	7.8279E+06
x(M)	9.6800	9.6800	0.0000	0.0000	8.3600	8.3600	9.9000	9.9000	22.000	0.0000	0.0000
6	-2.1154E-05	-4.5662E-07	-767.74	-17.857	-161.91	-3.5064	-55.816	-1.2086	1100.9	7.8279E+06	7.8279E+06
x(M)	9.6800	9.6800	0.0000	0.0000	8.3600	8.3600	9.9000	9.9000	22.000	0.0000	0.0000
7	-1.8473E-05	-3.6090E-07	-895.79	-18.122	-195.02	-3.8122	-75.113	-1.4698	2263.5	7.8279E+06	7.8279E+06
x(M)	9.2400	9.2400	0.0000	0.0000	7.9200	7.9200	9.4600	9.4600	22.000	0.0000	0.0000
8	-2.1151E-05	-4.3500E-07	-766.45	-16.718	-161.76	-3.3353	-55.753	-1.1494	1677.0	7.8279E+06	7.8279E+06
x(M)	9.6800	9.6800	0.0000	0.0000	8.3600	8.3600	9.9000	9.9000	22.000	0.0000	0.0000
9	-2.1135E-05	-4.5669E-07	-766.64	-17.858	-161.75	-3.5067	-55.761	-1.2087	1090.5	7.8279E+06	7.8279E+06
x(M)	9.6800	9.6800	0.0000	0.0000	8.3600	8.3600	9.9000	9.9000	22.000	0.0000	0.0000
10	-1.8047E-05	-3.5316E-07	-916.21	-18.548	-200.38	-3.9225	-78.066	-1.5300	2253.2	7.8279E+06	7.8279E+06
x(M)	9.2400	9.2400	0.0000	0.0000	7.9200	7.9200	9.4600	9.4600	22.000	0.0000	0.0000
11	-2.0260E-05	-4.1795E-07	-804.26	-17.527	-171.80	-3.5427	-61.322	-1.2650	1666.7	7.8279E+06	7.8279E+06
x(M)	9.6800	9.6800	0.0000	0.0000	8.1400	8.1400	9.6800	9.6800	22.000	0.0000	0.0000
12	-2.0188E-05	-4.3786E-07	-806.65	-18.759	-172.42	-3.7375	-61.684	-1.3379	1080.2	7.8279E+06	7.8279E+06
x(M)	9.6800	9.6800	0.0000	0.0000	8.1400	8.1400	9.6800	9.6800	22.000	0.0000	0.0000
Min.	-2.1170E-05	-4.5669E-07	-920.02	-18.759	-200.95	-3.9225	-78.300	-1.5300	1080.2	7.8279E+06	7.8279E+06

APPALTIATORE:

Consorzio

Soci



PROGETTAZIONE:

Mandataria

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 207 di 420
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Pile N.	5	9	1	12	1	10	1	10	12	1	1
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* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.5721E-03	3.0275E-05	544.75	10.622	363.40	7.1778	252.55	4.9753	5061.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
2	1.5721E-03	3.1710E-05	508.99	10.464	299.21	6.2884	207.06	4.3197	4136.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.6000	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
3	1.5721E-03	3.3146E-05	509.76	11.016	300.75	6.6855	208.13	4.5832	3555.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.6000	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
4	1.5706E-03	3.0275E-05	538.01	10.499	350.13	6.9271	243.97	4.8117	4981.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
5	1.5706E-03	3.1710E-05	494.17	10.163	277.74	5.8529	190.15	3.9720	4004.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.6000	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
6	1.5706E-03	3.3146E-05	494.19	10.682	278.06	6.2008	190.28	4.1957	3418.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.6000	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
7	1.5692E-03	3.0275E-05	537.50	10.500	349.74	6.9277	243.79	4.8137	4967.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
8	1.5692E-03	3.1710E-05	493.70	10.164	277.42	5.8534	190.01	3.9737	3990.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.6000	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
9	1.5692E-03	3.3146E-05	493.72	10.683	277.74	6.2013	190.14	4.1975	3404.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.6000	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
10	1.5678E-03	3.0275E-05	543.18	10.624	362.18	7.1794	251.99	4.9814	5018.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.3800	6.3800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
11	1.5678E-03	3.1710E-05	507.51	10.466	298.17	6.2895	206.59	4.3248	4094.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.6000	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
12	1.5678E-03	3.3146E-05	508.27	11.018	299.71	6.6866	207.65	4.5887	3515.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.6000	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max.	1.5721E-03	3.3146E-05	544.75	11.018	363.40	7.1794	252.55	4.9814	5061.4	7.8279E+06	7.8279E+06
Pile N.	1	3	1	12	1	10	1	10	1	1	1

LOAD CASE : 19
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.8053	1.0000
3	0.8661	1.0000
4	0.5791	1.0000
5	0.4962	1.0000
6	0.5791	1.0000
7	0.5445	1.0000
8	0.4625	1.0000
9	0.5445	1.0000
10	0.5845	1.0000
11	0.4966	1.0000
12	0.5846	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 31044.7	HOR. LOAD Y, KN -344.552	HOR. LOAD Z, KN 15320.5
MOMENT X, KN- M 4557.88	MOMENT Y, KN- M 80106.1	MOMENT Z, KN- M -7534.02

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.40613E-03	HORIZONTAL Y, M -6.11318E-05	HORIZONTAL Z, M 8.09755E-03
ANGLE ROT. X, RAD 5.55125E-05	ANGLE ROT. Y, RAD 2.44644E-04	ANGLE ROT. Z, RAD -2.16156E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

APPALTATORE: Consorzio HirpiniaAV Soci salini impregilo ASTALDI	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria ROKSOJL Mandanti NETENGINEERING Alpina	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 208 di 420

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	3.1548E-03	-4.3584E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
2	3.0575E-03	-4.3584E-04	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
3	2.9602E-03	-4.3584E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
4	2.0538E-03	-1.8604E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
5	1.9566E-03	-1.8604E-04	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
6	1.8593E-03	-1.8604E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
7	9.5296E-04	6.3771E-05	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
8	8.5569E-04	6.3771E-05	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
9	7.5842E-04	6.3771E-05	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
10	-1.4794E-04	3.1358E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
11	-2.4521E-04	3.1358E-04	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
12	-3.4248E-04	3.1358E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
MINIMUM	-3.4248E-04	-4.3584E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	12	1	3	1	1	1
MAXIMUM	3.1548E-03	3.1358E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	1	10	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	5500.3	-106.86	1571.4	17.986	-5110.1	-395.08
2	5384.7	-104.15	1476.8	17.986	-4837.3	-389.01
3	5269.1	-108.88	1497.7	17.986	-4812.7	-399.34
4	3949.2	-45.596	1274.6	17.986	-4443.4	-193.91
5	3763.6	-42.542	1136.9	17.986	-4048.0	-185.96
6	3578.0	-46.386	1213.6	17.986	-4180.2	-195.74
7	1848.3	-2.8406	1225.4	17.986	-4312.6	-35.309
8	1662.6	-2.9637	1097.3	17.986	-3947.0	-35.391
9	1477.0	-2.8043	1177.2	17.986	-4091.2	-35.332
10	-279.16	40.354	1284.9	17.986	-4458.4	123.81
11	-462.71	36.867	1141.2	17.986	-4049.4	115.31
12	-646.25	41.254	1223.5	17.986	-4194.4	125.74
MINIMUM	-646.25	-108.88	1097.3	17.986	-5110.1	-399.34
Pile N.	12	3	8	1	1	3
MAXIMUM	5500.3	41.254	1571.4	17.986	-3947.0	125.74
Pile N.	1	12	1	1	8	12

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	3.1548E-03	-4.3584E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
2	3.0575E-03	-4.3584E-04	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
3	2.9602E-03	-4.3584E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
4	2.0538E-03	-1.8604E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
5	1.9566E-03	-1.8604E-04	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
6	1.8593E-03	-1.8604E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
7	9.5296E-04	6.3771E-05	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
8	8.5569E-04	6.3771E-05	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
9	7.5842E-04	6.3771E-05	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
10	-1.4794E-04	3.1358E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
11	-2.4521E-04	3.1358E-04	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
12	-3.4248E-04	3.1358E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
MINIMUM	-3.4248E-04	-4.3584E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	12	1	3	1	1	1
MAXIMUM	3.1548E-03	3.1358E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	1	10	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	5500.3	-106.86	1571.4	17.986	-5110.1	-395.08
2	5384.7	-104.15	1476.8	17.986	-4837.3	-389.01
3	5269.1	-108.88	1497.7	17.986	-4812.7	-399.34
4	3949.2	-45.596	1274.6	17.986	-4443.4	-193.91
5	3763.6	-42.542	1136.9	17.986	-4048.0	-185.96
6	3578.0	-46.386	1213.6	17.986	-4180.2	-195.74
7	1848.3	-2.8406	1225.4	17.986	-4312.6	-35.309
8	1662.6	-2.9637	1097.3	17.986	-3947.0	-35.391
9	1477.0	-2.8043	1177.2	17.986	-4091.2	-35.332
10	-279.16	40.354	1284.9	17.986	-4458.4	123.81
11	-462.71	36.867	1141.2	17.986	-4049.4	115.31
12	-646.25	41.254	1223.5	17.986	-4194.4	125.74
MINIMUM	-646.25	-108.88	1097.3	17.986	-5110.1	-399.34

APPALTATORE:

Consorzio



Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandataria



Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA
IF28LOTTO
01CODIFICA
E ZZ CLDOCUMENTO
VI0103 001REV.
BFOGLIO
209 di
420

Pile N.	12	3	8	1	1	3
MAXIMUM	5500.3	41.254	1571.4	17.986	-3947.0	125.74
Pile N.	1	12	1	1	8	12

PILE GROUP STRESS, KN/ M**2

```
*****
1      1.8581E+04
2      1.7693E+04
3      1.7556E+04
4      1.5658E+04
5      1.4360E+04
6      1.4655E+04
7      1.4062E+04
8      1.2854E+04
9      1.3184E+04
10     1.3619E+04
11     1.2488E+04
12     1.3030E+04
```

```
MINIMUM      1.2488E+04
Pile N.      11
MAXIMUM      1.8581E+04
Pile N.      1
```







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-4.4061E-04	-1.2101E-04	-142.53	-5110.1	-106.89	-719.18	-48.914	-200.88	3112.5	7.8279E+06	7.8279E+06
x(M)	0.4400	0.5600	7.2600	0.0000	0.0000	9.0200	6.1600	10.780	22.000	0.0000	0.0000
2	-4.4068E-04	-1.1847E-04	-140.03	-4837.3	-104.18	-671.47	-46.970	-185.44	3047.1	7.8279E+06	7.8279E+06
x(M)	0.4400	10.560	7.2600	0.0000	0.0000	9.0200	6.1600	10.780	22.000	0.0000	0.0000
3	-4.4056E-04	-1.1223E-04	-143.92	-4812.7	-108.91	-685.24	-50.065	-193.03	2981.7	7.8279E+06	7.8279E+06
x(M)	0.4400	10.560	7.2600	0.0000	0.0000	9.0200	6.1600	10.780	22.000	0.0000	0.0000
4	-1.9608E-04	-1.3137E-04	-59.433	-4443.4	-45.607	-568.11	-18.220	-142.36	2234.8	7.8279E+06	7.8279E+06
x(M)	0.8800	11.220	7.7000	0.0000	0.0000	9.6800	6.1600	11.660	22.000	0.0000	0.0000
5	-1.9659E-04	-1.2666E-04	-55.503	-4048.0	-42.552	-488.32	-16.304	-117.57	2129.8	7.8279E+06	7.8279E+06
x(M)	1.1000	11.660	7.9200	0.0000	0.0000	9.9000	6.1600	11.880	22.000	0.0000	0.0000
6	-1.9600E-04	-1.2208E-04	-60.093	-4180.2	-46.396	-541.30	-18.678	-136.94	2024.7	7.8279E+06	7.8279E+06
x(M)	0.8800	11.220	7.7000	0.0000	0.0000	9.4600	6.1600	11.440	22.000	0.0000	0.0000
7	-1.4802E-06	-1.2827E-04	-0.9665	-4312.6	-4.4021	-525.12	-2.8081	-129.85	1045.9	7.8279E+06	7.8279E+06
x(M)	8.1400	11.440	11.440	0.0000	6.1600	9.9000	9.6800	11.660	22.000	0.0000	0.0000
8	-1.6967E-06	-1.2737E-04	-1.0323	-3947.0	-4.2958	-463.84	-2.6384	-110.03	940.86	7.8279E+06	7.8279E+06
x(M)	8.1400	11.880	11.660	0.0000	6.1600	10.120	9.9000	11.880	22.000	0.0000	0.0000
9	-1.3543E-06	-1.2330E-04	-0.8773	-4091.2	-4.4597	-522.59	-2.7512	-129.89	835.82	7.8279E+06	7.8279E+06
x(M)	8.1400	11.220	11.440	0.0000	6.3800	9.6800	9.4600	11.660	22.000	0.0000	0.0000
10	-4.4976E-06	-1.3070E-04	-123.81	-4458.4	-19.629	-569.88	-4.8922	-143.24	157.97	7.8279E+06	7.8279E+06
x(M)	11.220	11.220	0.0000	0.0000	9.4600	9.6800	11.440	11.440	22.000	0.0000	0.0000
11	-4.4599E-06	-1.2606E-04	-115.31	-4049.4	-17.279	-487.12	-4.1476	-117.37	261.84	7.8279E+06	7.8279E+06
x(M)	11.660	11.660	0.0000	0.0000	9.9000	11.660	11.660	11.880	22.000	0.0000	0.0000
12	-4.4597E-06	-1.2135E-04	-125.74	-4194.4	-19.983	-543.10	-5.0233	-137.75	365.70	7.8279E+06	7.8279E+06
x(M)	11.000	11.220	0.0000	0.0000	9.4600	9.4600	11.220	11.440	22.000	0.0000	0.0000
Min.	-4.4068E-04	-1.3137E-04	-143.92	-5110.1	-108.91	-719.18	-50.065	-200.88	157.97	7.8279E+06	7.8279E+06
Pile N.	2	4	3	1	3	1	3	1	10	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	7.3692E-06	8.3474E-03	395.08	2386.2	43.960	1571.8	12.397	752.21	1.8581E+04	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
2	7.4885E-06	8.0975E-03	389.01	2270.0	42.787	1477.2	11.856	698.42	1.7693E+04	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
3	7.3130E-06	7.8477E-03	399.34	2258.5	44.678	1498.0	12.717	719.76	1.7556E+04	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	7.0400	9.0200	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
4	3.8711E-06	8.3474E-03	193.91	2083.9	16.967	1274.9	4.3153	559.25	1.5658E+04	7.8279E+06	7.8279E+06
x(M)	11.440	0.0000	0.0000	7.2600	9.6800	0.0000	11.880	6.1600	0.0000	0.0000	0.0000
5	3.8977E-06	8.0975E-03	185.96	1890.3	15.090	1137.1	3.6833	482.00	1.4360E+04	7.8279E+06	7.8279E+06
x(M)	11.880	0.0000	0.0000	7.4800	10.120	0.0000	12.100	6.1600	0.0000	0.0000	0.0000
6	3.8289E-06	7.8477E-03	195.74	1976.1	17.245	1213.8	4.4183	536.02	1.4655E+04	7.8279E+06	7.8279E+06
x(M)	11.440	0.0000	0.0000	7.2600	9.6800	0.0000	11.880	6.1600	0.0000	0.0000	0.0000
7	6.3771E-05	8.3474E-03	35.309	2004.6	0.2872	1225.5	0.4384	528.92	1.4062E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	7.4800	13.640	0.0000	2.6400	6.1600	0.0000	0.0000	0.0000
8	6.3771E-05	8.0975E-03	35.391	1840.3	0.2925	1097.4	0.3780	456.73	1.2854E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	7.4800	13.860	0.0000	2.6400	6.1600	0.0000	0.0000	0.0000
9	6.3771E-05	7.8477E-03	35.332	1932.3	0.2743	1177.3	0.4614	511.78	1.3184E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	7.2600	13.640	0.0000	2.6400	6.1600	0.0000	0.0000	0.0000
10	3.1358E-04	8.3474E-03	73.321	2088.8	40.353	1284.9	18.513	563.53	1.3619E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.0400	7.2600	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
11	3.1358E-04	8.0975E-03	68.637	1888.9	36.866	1141.2	16.357	482.58	1.2488E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.2600	7.4800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000

APPALTATORE: Consorzio Soci   				ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   									
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B									

12	3.1358E-04	7.8477E-03	74.199	1980.7	41.252	1223.4	18.989	540.15	1.3030E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.0400	7.2600	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max. Pile N.	3.1358E-04	8.3474E-03	399.34	2386.2	44.678	1571.8	18.989	752.21	1.8581E+04	7.8279E+06	7.8279E+06
	10	1	3	1	3	1	12	1	1	1	1

LOAD CASE : 20
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.4966	1.0000
3	0.5846	1.0000
4	0.5445	1.0000
5	0.4625	1.0000
6	0.5445	1.0000
7	0.5791	1.0000
8	0.4962	1.0000
9	0.5791	1.0000
10	0.8660	1.0000
11	0.8053	1.0000
12	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
27123.5	-344.552	-15164.0
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-4583.80	-78087.4	-6240.88

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.20884E-03	-7.64936E-05	-7.94382E-03
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-5.54595E-05	-2.33448E-04	-1.72134E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	-2.8947E-04	2.9786E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
2	-3.6693E-04	2.9786E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
3	-4.4439E-04	2.9786E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
4	7.6104E-04	4.8290E-05	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
5	6.8358E-04	4.8290E-05	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
6	6.0612E-04	4.8290E-05	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
7	1.8116E-03	-2.0128E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
8	1.7341E-03	-2.0128E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
9	1.6566E-03	-2.0128E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
10	2.8621E-03	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
11	2.7846E-03	-4.5085E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
12	2.7072E-03	-4.5085E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
MINIMUM Pile N.	3	10	1	1	1	1
MAXIMUM Pile N.	10	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	-546.22	40.672	-1272.2	-17.969	4413.5	129.73
2	-692.38	37.235	-1129.6	-17.969	4008.3	121.33
3	-838.55	41.569	-1210.4	-17.969	4149.1	131.67
4	1482.0	-2.6637	-1213.5	-17.969	4269.9	-29.660

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria Mandanti 													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table style="width: 100%; border-collapse: collapse;"> <tr> <td>COMMESSA</td> <td>LOTTO</td> <td>CODIFICA</td> <td>DOCUMENTO</td> <td>REV.</td> <td>FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>211 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	211 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	211 di 420								

5	1334.2	-2.7345	-1086.3	-17.969	3907.2	-29.656
6	1186.4	-2.6459	-1164.7	-17.969	4047.4	-29.706
7	3486.8	-45.621	-1262.2	-17.969	4398.8	-188.62
8	3339.0	-42.507	-1125.5	-17.969	4006.8	-180.58
9	3191.2	-46.444	-1200.8	-17.969	4135.1	-190.51
10	5152.4	-107.36	-1555.7	-17.969	5057.1	-390.55
11	5060.3	-104.62	-1461.6	-17.969	4785.7	-384.44
12	4968.3	-109.43	-1481.5	-17.969	4758.8	-394.90
MINIMUM	-838.55	-109.43	-1555.7	-17.969	3907.2	-394.90
Pile N.	3	12	10	1	5	12
MAXIMUM	5152.4	41.569	-1086.3	-17.969	5057.1	131.67
Pile N.	10	3	5	1	10	3

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	-2.8947E-04	2.9786E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
2	-3.6693E-04	2.9786E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
3	-4.4439E-04	2.9786E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
4	7.6104E-04	4.8290E-05	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
5	6.8358E-04	4.8290E-05	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
6	6.0612E-04	4.8290E-05	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
7	1.8116E-03	-2.0128E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
8	1.7341E-03	-2.0128E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
9	1.6566E-03	-2.0128E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
10	2.8621E-03	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
11	2.7846E-03	-4.5085E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
12	2.7072E-03	-4.5085E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
MINIMUM	-4.4439E-04	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
Pile N.	3	10	1	1	1	1
MAXIMUM	2.8621E-03	2.9786E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
Pile N.	10	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	-546.22	40.672	-1272.2	-17.969	4413.5	129.73
2	-692.38	37.235	-1129.6	-17.969	4008.3	121.33
3	-838.55	41.569	-1210.4	-17.969	4149.1	131.67
4	1482.0	-2.6637	-1213.5	-17.969	4269.9	-29.660
5	1334.2	-2.7345	-1086.3	-17.969	3907.2	-29.656
6	1186.4	-2.6459	-1164.7	-17.969	4047.4	-29.706
7	3486.8	-45.621	-1262.2	-17.969	4398.8	-188.62
8	3339.0	-42.507	-1125.5	-17.969	4006.8	-180.58
9	3191.2	-46.444	-1200.8	-17.969	4135.1	-190.51
10	5152.4	-107.36	-1555.7	-17.969	5057.1	-390.55
11	5060.3	-104.62	-1461.6	-17.969	4785.7	-384.44
12	4968.3	-109.43	-1481.5	-17.969	4758.8	-394.90
MINIMUM	-838.55	-109.43	-1555.7	-17.969	3907.2	-394.90
Pile N.	3	12	10	1	5	12
MAXIMUM	5152.4	41.569	-1086.3	-17.969	5057.1	131.67
Pile N.	10	3	5	1	10	3

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1.3635E+04
2	1.2495E+04
3	1.3003E+04
4	1.3726E+04
5	1.2548E+04
6	1.2887E+04
7	1.5261E+04
8	1.3994E+04
9	1.4299E+04
10	1.8224E+04
11	1.7354E+04
12	1.7223E+04
MINIMUM	1.2495E+04
Pile N.	2
MAXIMUM	1.8224E+04
Pile N.	10

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
------	--------------	--------------	--------------	--------------	-------------	-------------	------------------	------------------	--------------	------------------	------------------

APPALDATTORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



**RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA**

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	212 di 420

	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-4.3680E-06	-8.1934E-03	-129.73	-2058.6	-19.184	-1272.1	-4.8069	-557.96	309.10	7.8279E+06	7.8279E+06
x(M)	11.220	0.0000	0.0000	7.2600	9.4600	0.0000	11.440	6.1600	22.000	0.0000	0.0000
2	-4.3380E-06	-7.9438E-03	-121.33	-1860.9	-16.915	-1129.6	-4.0762	-477.71	391.81	7.8279E+06	7.8279E+06
x(M)	11.660	0.0000	0.0000	7.4800	9.9000	0.0000	11.660	6.1600	22.000	0.0000	0.0000
3	-4.3272E-06	-7.6943E-03	-131.67	-1950.2	-19.548	-1210.3	-4.9384	-534.41	474.52	7.8279E+06	7.8279E+06
x(M)	11.220	0.0000	0.0000	7.2600	9.4600	0.0000	11.440	6.1600	22.000	0.0000	0.0000
4	-1.4050E-06	-8.1934E-03	-0.9456	-1975.6	-3.7225	-1213.6	-2.2399	-523.70	838.65	7.8279E+06	7.8279E+06
x(M)	7.7000	0.0000	11.000	7.4800	5.7200	0.0000	9.6800	6.1600	22.000	0.0000	0.0000
5	-1.6082E-06	-7.9438E-03	-1.0077	-1813.2	-3.6383	-1086.4	-2.1035	-452.14	755.00	7.8279E+06	7.8279E+06
x(M)	7.7000	0.0000	11.220	7.4800	5.7200	0.0000	9.9000	6.1600	22.000	0.0000	0.0000
6	-1.2834E-06	-7.6943E-03	-0.8567	-1902.7	-3.7674	-1164.8	-2.1982	-506.35	671.35	7.8279E+06	7.8279E+06
x(M)	7.7000	0.0000	11.000	7.2600	5.9400	0.0000	9.4600	6.1600	22.000	0.0000	0.0000
7	-2.0771E-04	-8.1934E-03	-61.347	-2053.6	-45.631	-1262.4	-18.508	-553.68	1973.2	7.8279E+06	7.8279E+06
x(M)	0.8800	0.0000	7.7000	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
8	-2.0807E-04	-7.9438E-03	-57.269	-1862.2	-42.515	-1125.7	-16.558	-477.15	1889.5	7.8279E+06	7.8279E+06
x(M)	0.8800	0.0000	7.9200	7.4800	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
9	-2.0763E-04	-7.6943E-03	-62.008	-1945.6	-46.453	-1201.0	-18.983	-530.34	1805.8	7.8279E+06	7.8279E+06
x(M)	0.8800	0.0000	7.7000	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
10	-4.5374E-04	-8.1934E-03	-144.89	-2350.9	-107.38	-1556.1	-49.433	-744.42	2915.7	7.8279E+06	7.8279E+06
x(M)	0.4400	0.0000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
11	-4.5381E-04	-7.9438E-03	-142.42	-2235.7	-104.65	-1462.0	-47.471	-690.93	2863.6	7.8279E+06	7.8279E+06
x(M)	0.4400	0.0000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
12	-4.5368E-04	-7.6943E-03	-146.43	-2222.8	-109.46	-1481.8	-50.611	-711.75	2811.5	7.8279E+06	7.8279E+06
x(M)	0.4400	0.0000	7.0400	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
Min.	-4.5381E-04	-8.1934E-03	-146.43	-2350.9	-109.46	-1556.1	-50.611	-744.42	309.10	7.8279E+06	7.8279E+06
Pile N.	11	1	12	10	12	10	12	10	1	1	1

*** MAXIMUM VALUES AND LOCATIONS ***

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	2.9786E-04	1.2812E-04	71.127	4413.5	40.671	562.07	18.407	141.75	1.3635E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	11.220	7.2600	0.0000	0.0000	9.6800	6.1600	11.440	0.0000	0.0000	0.0000
2	2.9786E-04	1.2355E-04	66.563	4008.3	37.234	480.94	16.278	116.14	1.2495E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	11.660	7.2600	0.0000	0.0000	9.9000	6.1600	11.880	0.0000	0.0000	0.0000
3	2.9786E-04	1.1881E-04	71.957	4149.1	41.567	535.93	18.886	136.25	1.3003E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	11.220	7.0400	0.0000	0.0000	9.4600	6.1600	11.440	0.0000	0.0000	0.0000
4	4.8290E-05	1.2582E-04	29.660	4269.9	0.2741	518.46	0.3124	128.56	1.3726E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	11.440	0.0000	11.440	0.0000	12.980	2.6400	11.660	0.0000	0.0000	0.0000
5	4.8290E-05	1.2481E-04	29.656	3907.2	0.2794	457.68	0.2691	108.93	1.2548E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	11.880	0.0000	0.0000	13.200	10.120	2.6400	11.880	0.0000	0.0000	0.0000
6	4.8290E-05	1.2089E-04	29.706	4047.4	0.2584	515.63	0.3293	128.52	1.2887E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	11.220	0.0000	0.0000	13.200	9.6800	2.6400	11.660	0.0000	0.0000	0.0000
7	3.9580E-06	1.2888E-04	188.62	4398.8	17.453	560.75	4.4302	140.91	1.5261E+04	7.8279E+06	7.8279E+06
x(M)	11.440	11.220	0.0000	0.0000	9.6800	9.6800	11.880	11.440	0.0000	0.0000	0.0000
8	3.9694E-06	1.2407E-04	180.58	4006.8	15.460	481.85	3.7795	116.29	1.3994E+04	7.8279E+06	7.8279E+06
x(M)	11.880	11.660	0.0000	0.0000	10.120	9.9000	12.100	11.880	0.0000	0.0000	0.0000
9	3.9076E-06	1.1951E-04	190.51	4135.1	17.717	534.08	4.5357	135.43	1.4299E+04	7.8279E+06	7.8279E+06
x(M)	11.440	11.220	0.0000	0.0000	9.6800	9.4600	11.660	11.440	0.0000	0.0000	0.0000
10	7.4445E-06	1.1860E-04	390.55	5057.1	44.565	709.87	12.596	198.74	1.8224E+04	7.8279E+06	7.8279E+06
x(M)	10.560	10.560	0.0000	0.0000	9.2400	9.0200	11.000	10.780	0.0000	0.0000	0.0000
11	7.5572E-06	1.1621E-04	384.44	4785.7	43.453	663.59	12.067	183.60	1.7354E+04	7.8279E+06	7.8279E+06
x(M)	10.780	10.560	0.0000	0.0000	9.2400	9.0200	11.000	10.780	0.0000	0.0000	0.0000
12	7.3799E-06	1.0978E-04	394.90	4758.8	45.449	675.71	12.951	190.84	1.7223E+04	7.8279E+06	7.8279E+06
x(M)	10.560	10.560	0.0000	0.0000	9.0200	9.0200	10.780	10.780	0.0000	0.0000	0.0000
Max.	2.9786E-04	1.2888E-04	394.90	5057.1	45.449	709.87	18.886	198.74	1.8224E+04	7.8279E+06	7.8279E+06
Pile N.	1	7	12	10	12	10	3	10	10	1	1

LOAD CASE : 21
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5791	1.0000
3	0.5846	1.0000
4	0.8053	1.0000
5	0.4951	1.0000
6	0.4955	1.0000
7	0.8053	1.0000
8	0.4951	1.0000
9	0.4955	1.0000
10	0.8661	1.0000
11	0.5791	1.0000
12	0.5845	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA											
PROGETTAZIONE: Mandataria Mandanti   												
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B												
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 10%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 10%;">REV.</td> <td style="width: 10%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>213 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	213 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO							
IF28	01	E ZZ CL	VI0103 001	B	213 di 420							

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 31097.5	HOR. LOAD Y, KN 11642.2	HOR. LOAD Z, KN 78.2617
MOMENT X, KN- M -25.9651	MOMENT Y, KN- M 1011.77	MOMENT Z, KN- M -56002.0

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.40067E-03	HORIZONTAL Y, M 5.96687E-03	HORIZONTAL Z, M 4.16019E-05
ANGLE ROT. X, RAD -6.71059E-07	ANGLE ROT. Y, RAD 2.47226E-06	ANGLE ROT. Z, RAD -3.14011E-04

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.8304E-03	5.9714E-03	3.8582E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
2	1.4174E-03	5.9714E-03	4.1602E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
3	4.3100E-06	5.9714E-03	4.4622E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
4	2.8193E-03	5.9684E-03	3.8582E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
5	1.4062E-03	5.9684E-03	4.1602E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
6	-6.8152E-06	5.9684E-03	4.4622E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
7	2.8082E-03	5.9654E-03	3.8582E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
8	1.3951E-03	5.9654E-03	4.1602E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
9	-1.7940E-05	5.9654E-03	4.4622E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
10	2.7970E-03	5.9623E-03	3.8582E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
11	1.3840E-03	5.9623E-03	4.1602E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
12	-2.9066E-05	5.9623E-03	4.4622E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
MINIMUM	-2.9066E-05	5.9623E-03	3.8582E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
Pile N.	12	10	1	1	1	1
MAXIMUM	2.8304E-03	5.9714E-03	4.4622E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	5114.8	1152.2	7.1020	-0.2174	-20.283	3403.9
2	2734.6	926.86	6.2637	-0.2174	-19.330	2922.8
3	8.4902	933.53	6.8900	-0.2174	-21.460	2933.0
4	5101.5	1106.7	6.8201	-0.2174	-19.708	3309.6
5	2713.3	851.07	5.7488	-0.2174	-18.178	2751.8
6	-12.860	853.34	6.2992	-0.2174	-20.137	2752.4
7	5088.3	1106.2	6.8213	-0.2174	-19.710	3307.7
8	2692.1	850.69	5.7498	-0.2174	-18.180	2750.2
9	-33.853	852.96	6.3003	-0.2174	-20.139	2750.8
10	5075.1	1150.7	7.1058	-0.2174	-20.290	3398.0
11	2670.9	925.62	6.2671	-0.2174	-19.337	2917.6
12	-54.845	932.27	6.8936	-0.2174	-21.467	2927.8
MINIMUM	-54.845	850.69	5.7488	-0.2174	-21.467	2750.2
Pile N.	12	8	5	1	12	8
MAXIMUM	5114.8	1152.2	7.1058	-0.2174	-18.178	3403.9
Pile N.	1	1	10	1	5	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.8304E-03	5.9714E-03	3.8582E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
2	1.4174E-03	5.9714E-03	4.1602E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
3	4.3100E-06	5.9714E-03	4.4622E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
4	2.8193E-03	5.9684E-03	3.8582E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
5	1.4062E-03	5.9684E-03	4.1602E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
6	-6.8152E-06	5.9684E-03	4.4622E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
7	2.8082E-03	5.9654E-03	3.8582E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
8	1.3951E-03	5.9654E-03	4.1602E-05	-6.7106E-07	2.4723E-06	-3.1401E-04

APPALTATORE: Consorzio Soci 	<h2 style="margin: 0;">ITINERARIO NAPOLI – BARI</h2> <h3 style="margin: 0;">RADDOPPIO TRATTA APICE – ORSARA</h3> <h3 style="margin: 0;">I LOTTO FUNZIONALE APICE – HIRPINIA</h3>
PROGETTAZIONE: Mandataria Mandanti 	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 214 di 420

	9	-1.7940E-05	5.9654E-03	4.4622E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
	10	2.7970E-03	5.9623E-03	3.8582E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
	11	1.3840E-03	5.9623E-03	4.1602E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
	12	-2.9066E-05	5.9623E-03	4.4622E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
	MINIMUM	-2.9066E-05	5.9623E-03	3.8582E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
Pile N.	12	10	1	1	1	1	1
MAXIMUM	2.8304E-03	5.9714E-03	4.4622E-05	-6.7106E-07	2.4723E-06	-3.1401E-04	
Pile N.	1	1	3	1	1	1	

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	5114.8	1152.2	7.1020	-0.2174	-20.283	3403.9
2	2734.6	926.86	6.2637	-0.2174	-19.330	2922.8
3	8.4902	933.53	6.8900	-0.2174	-21.460	2933.0
4	5101.5	1106.7	6.8201	-0.2174	-19.708	3309.6
5	2713.3	851.07	5.7488	-0.2174	-18.178	2751.8
6	-12.860	853.34	6.2992	-0.2174	-20.137	2752.4
7	5088.3	1106.2	6.8213	-0.2174	-19.710	3307.7
8	2692.1	850.69	5.7498	-0.2174	-18.180	2750.2
9	-33.853	852.96	6.3003	-0.2174	-20.139	2750.8
10	5075.1	1150.7	7.1058	-0.2174	-20.290	3398.0
11	2670.9	925.62	6.2671	-0.2174	-19.337	2917.6
12	-54.845	932.27	6.8936	-0.2174	-21.467	2927.8
MINIMUM	-54.845	850.69	5.7488	-0.2174	-21.467	2750.2
Pile N.	12	8	5	1	12	8
MAXIMUM	5114.8	1152.2	7.1058	-0.2174	-18.178	3403.9
Pile N.	1	1	10	1	5	1

PILE GROUP STRESS, KN/ M**2

1	1.3168E+04
2	1.0369E+04
3	8856.9
4	1.2876E+04
5	9840.7
6	8314.5
7	1.2862E+04
8	9823.7
9	8321.4
10	1.3128E+04
11	1.0317E+04
12	8867.5
MINIMUM	8314.5
Pile N.	6
MAXIMUM	1.3168E+04
Pile N.	1

* EFFECTS FOR laterally loaded pile *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	-7.9204E-05	-4.9970E-07	-3403.9	-20.283	-547.98	-3.4509	-162.03	-1.0197	2894.4	7.8279E+06	7.8279E+06
x(M)	10.120	10.120	0.0000	0.0000	8.8000	8.8000	10.340	10.340	22.000	0.0000	0.0000
2	-8.7096E-05	-5.9823E-07	-2922.8	-19.330	-434.99	-2.9855	-114.64	-0.7863	1547.4	7.8279E+06	7.8279E+06
x(M)	10.780	10.780	0.0000	0.0000	9.2400	9.2400	11.000	11.000	22.000	0.0000	0.0000
3	-8.6733E-05	-6.4432E-07	-2933.0	-21.460	-436.73	-3.2434	-115.45	-0.8571	4.8045	7.8279E+06	7.8279E+06
x(M)	10.780	10.780	0.0000	0.0000	9.2400	9.2400	11.000	11.000	22.000	0.0000	0.0000
4	-8.0687E-05	-5.0860E-07	-3309.6	-19.708	-526.94	-3.3248	-152.18	-0.9593	2886.9	7.8279E+06	7.8279E+06
x(M)	10.340	10.340	0.0000	0.0000	8.8000	8.8000	10.340	10.340	22.000	0.0000	0.0000
5	-8.9923E-05	-6.1805E-07	-2751.8	-18.178	-396.64	-2.7228	-100.13	-0.6865	1535.4	7.8279E+06	7.8279E+06
x(M)	11.220	11.000	0.0000	0.0000	9.4600	9.4600	11.440	11.440	22.000	0.0000	0.0000
6	-8.9669E-05	-6.6630E-07	-2752.4	-20.137	-396.17	-2.9436	-100.06	-0.7431	7.2773	7.8279E+06	7.8279E+06
x(M)	11.220	11.000	0.0000	0.0000	9.4600	9.4600	11.440	11.440	22.000	0.0000	0.0000
7	-8.0634E-05	-5.0855E-07	-3307.7	-19.710	-526.73	-3.3253	-152.13	-0.9595	2879.4	7.8279E+06	7.8279E+06
x(M)	10.340	10.340	0.0000	0.0000	8.8000	8.8000	10.340	10.340	22.000	0.0000	0.0000
8	-8.9867E-05	-6.1805E-07	-2750.2	-18.180	-396.48	-2.7233	-100.10	-0.6866	1523.4	7.8279E+06	7.8279E+06
x(M)	11.220	11.000	0.0000	0.0000	9.4600	9.4600	11.440	11.440	22.000	0.0000	0.0000
9	-8.9614E-05	-6.6630E-07	-2750.8	-20.139	-396.02	-2.9441	-100.03	-0.7432	19.157	7.8279E+06	7.8279E+06
x(M)	11.220	11.000	0.0000	0.0000	9.4600	9.4600	11.440	11.440	22.000	0.0000	0.0000
10	-7.9061E-05	-4.9963E-07	-3398.0	-20.290	-547.28	-3.4523	-161.87	-1.0205	2871.9	7.8279E+06	7.8279E+06
x(M)	10.120	10.120	0.0000	0.0000	8.8000	8.8000	10.340	10.340	22.000	0.0000	0.0000
11	-8.6938E-05	-5.9814E-07	-2917.6	-19.337	-434.46	-2.9868	-114.53	-0.7868	1511.4	7.8279E+06	7.8279E+06
x(M)	10.780	10.780	0.0000	0.0000	9.2400	9.2400	11.000	11.000	22.000	0.0000	0.0000
12	-8.6575E-05	-6.4423E-07	-2927.8	-21.467	-436.19	-3.2449	-115.34	-0.8578	31.036	7.8279E+06	7.8279E+06
x(M)	10.780	10.780	0.0000	0.0000	9.2400	9.2400	11.000	11.000	22.000	0.0000	0.0000
Min.	-8.9923E-05	-6.6630E-07	-3403.9	-21.467	-547.98	-3.4523	-162.03	-1.0205	4.8045	7.8279E+06	7.8279E+06
Pile N.	5	6	1	12	1	10	1	10	3	1	1

<p>APPALTATORE:</p> <p>Consorzio Soci</p> <p>HirpiniaAV  </p>	<h2 style="margin: 0;">ITINERARIO NAPOLI – BARI</h2> <h3 style="margin: 0;">RADDOPPIO TRATTA APICE – ORSARA</h3> <h3 style="margin: 0;">I LOTTO FUNZIONALE APICE – HIRPINIA</h3>												
<p>PROGETTAZIONE:</p> <p>Mandataria Mandanti</p> <p>  Alpina</p>													
<p>PROGETTO ESECUTIVO</p> <p>RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 15%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 20%;">DOCUMENTO</td> <td style="width: 15%;">REV.</td> <td style="width: 20%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>215 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	215 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	215 di 420								

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL.		MOMENT		SHEAR		SOIL REACT		TOTAL	FLEX. RIG.	
	y-DIR M	z-DIR M	z-DIR KN- M	y-DIR KN- M	y-DIR KN	z-DIR KN	y-DIR KN/ M	z-DIR KN/ M	STRESS KN/ M**2	z-DIR KN- M**2	y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	5.9714E-03	3.8582E-05	1749.2	11.079	1152.5	7.1035	574.84	3.5721	1.3168E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.8200	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
2	5.9714E-03	4.1602E-05	1538.4	10.592	926.97	6.2645	430.93	2.9326	1.0369E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.0400	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
3	5.9714E-03	4.4622E-05	1542.3	11.469	933.53	6.8900	434.11	3.2129	8856.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.0400	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
4	5.9684E-03	3.8582E-05	1711.0	10.838	1106.9	6.8215	546.14	3.3954	1.2876E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.8200	6.8200	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
5	5.9684E-03	4.1602E-05	1456.8	10.039	851.18	5.7495	383.15	2.6084	9840.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
6	5.9684E-03	4.4622E-05	1456.3	10.833	853.34	6.2992	383.56	2.8402	8314.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
7	5.9654E-03	3.8582E-05	1710.2	10.839	1106.4	6.8227	545.93	3.3961	1.2862E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.8200	6.8200	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
8	5.9654E-03	4.1602E-05	1456.1	10.040	850.79	5.7505	383.01	2.6090	9823.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
9	5.9654E-03	4.4622E-05	1455.6	10.834	852.96	6.3003	383.41	2.8409	8321.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
10	5.9623E-03	3.8582E-05	1746.7	11.082	1150.9	7.1072	574.16	3.5742	1.3128E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.8200	6.6000	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
11	5.9623E-03	4.1602E-05	1536.3	10.595	925.73	6.2678	430.43	2.9344	1.0317E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.0400	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
12	5.9623E-03	4.4622E-05	1540.2	11.472	932.27	6.8936	433.61	3.2150	8867.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.0400	7.0400	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max.	5.9714E-03	4.4622E-05	1749.2	11.472	1152.5	7.1072	574.84	3.5742	1.3168E+04	7.8279E+06	7.8279E+06
Pile N.	1	3	1	12	1	10	1	10	1	1	1

LOAD CASE : 22
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5846	1.0000
2	0.5791	1.0000
3	0.8661	1.0000
4	0.4955	1.0000
5	0.4951	1.0000
6	0.8053	1.0000
7	0.4955	1.0000
8	0.4951	1.0000
9	0.8053	1.0000
10	0.5845	1.0000
11	0.5791	1.0000
12	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
27123.5	-11642.2	78.2617
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
2.99203	1006.99	36796.9

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.17291E-03	-5.66232E-03	4.00580E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
3.88806E-07	2.13146E-06	2.37640E-04

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

APPALTATORE:

Consorzio

Soci



**ITINERARIO NAPOLI – BARI
RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA**

PROGETTAZIONE:

Mandataria

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA LOTTO CODIFICA DOCUMENTO REV. FOGLIO
IF28 01 E ZZ CL VI0103 001 B 216 di
420

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.1792E-04	-5.6650E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
2	1.1873E-03	-5.6650E-03	4.0058E-05	3.8881E-07	2.1315E-06	2.3764E-04
3	2.2567E-03	-5.6650E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
4	1.0833E-04	-5.6632E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
5	1.1777E-03	-5.6632E-03	4.0058E-05	3.8881E-07	2.1315E-06	2.3764E-04
6	2.2471E-03	-5.6632E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
7	9.8737E-05	-5.6615E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
8	1.1681E-03	-5.6615E-03	4.0058E-05	3.8881E-07	2.1315E-06	2.3764E-04
9	2.2375E-03	-5.6615E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
10	8.9146E-05	-5.6597E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
11	1.1585E-03	-5.6597E-03	4.0058E-05	3.8881E-07	2.1315E-06	2.3764E-04
12	2.2279E-03	-5.6597E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
MINIMUM	8.9146E-05	-5.6650E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	10	1	3	1	1	1
MAXIMUM	2.2567E-03	-5.6597E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	3	10	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	232.29	-933.44	6.6302	0.1260	-20.868	-3013.9
2	2295.5	-927.38	6.2498	0.1260	-19.601	-3003.6
3	4336.3	-1149.5	7.3665	0.1260	-21.489	-3477.5
4	213.40	-854.54	6.0635	0.1260	-19.600	-2836.2
5	2277.2	-852.79	5.7395	0.1260	-18.459	-2835.4
6	4318.0	-1104.9	7.0770	0.1260	-20.899	-3385.5
7	194.50	-854.32	6.0642	0.1260	-19.602	-2835.3
8	2258.9	-852.57	5.7402	0.1260	-18.460	-2834.4
9	4299.7	-1104.7	7.0778	0.1260	-20.900	-3384.4
10	175.61	-932.72	6.6324	0.1260	-20.872	-3010.9
11	2240.6	-926.66	6.2518	0.1260	-19.605	-3000.6
12	4281.4	-1148.6	7.3689	0.1260	-21.493	-3474.1
MINIMUM	175.61	-1149.5	5.7395	0.1260	-21.493	-3477.5
Pile N.	10	3	5	1	5	8
MAXIMUM	4336.3	-852.57	7.3689	0.1260	-18.459	-2834.4
Pile N.	3	8	12	1	5	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.1792E-04	-5.6650E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
2	1.1873E-03	-5.6650E-03	4.0058E-05	3.8881E-07	2.1315E-06	2.3764E-04
3	2.2567E-03	-5.6650E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
4	1.0833E-04	-5.6632E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
5	1.1777E-03	-5.6632E-03	4.0058E-05	3.8881E-07	2.1315E-06	2.3764E-04
6	2.2471E-03	-5.6632E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
7	9.8737E-05	-5.6615E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
8	1.1681E-03	-5.6615E-03	4.0058E-05	3.8881E-07	2.1315E-06	2.3764E-04
9	2.2375E-03	-5.6615E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
10	8.9146E-05	-5.6597E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
11	1.1585E-03	-5.6597E-03	4.0058E-05	3.8881E-07	2.1315E-06	2.3764E-04
12	2.2279E-03	-5.6597E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
MINIMUM	8.9146E-05	-5.6650E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	10	1	3	1	1	1
MAXIMUM	2.2567E-03	-5.6597E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	3	10	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	232.29	-933.44	6.6302	0.1260	-20.868	-3013.9
2	2295.5	-927.38	6.2498	0.1260	-19.601	-3003.6
3	4336.3	-1149.5	7.3665	0.1260	-21.489	-3477.5
4	213.40	-854.54	6.0635	0.1260	-19.600	-2836.2
5	2277.2	-852.79	5.7395	0.1260	-18.459	-2835.4
6	4318.0	-1104.9	7.0770	0.1260	-20.899	-3385.5
7	194.50	-854.32	6.0642	0.1260	-19.602	-2835.3
8	2258.9	-852.57	5.7402	0.1260	-18.460	-2834.4
9	4299.7	-1104.7	7.0778	0.1260	-20.900	-3384.4
10	175.61	-932.72	6.6324	0.1260	-20.872	-3010.9
11	2240.6	-926.66	6.2518	0.1260	-19.605	-3000.6
12	4281.4	-1148.6	7.3689	0.1260	-21.493	-3474.1
MINIMUM	175.61	-1149.5	5.7395	0.1260	-21.493	-3477.5
Pile N.	10	3	5	1	5	8
MAXIMUM	4336.3	-852.57	7.3689	0.1260	-18.459	-2834.4

APPALTATORE: Conorzio HirpiniaAV Soci salini impregilo ASTALDI	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandatara Mandanti NETENGINEERING Alpina	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 217 di 420

Pile N. 3 8 12 1 5 8

PILE GROUP STRESS, KN/ M**2

1 9227.8
2 1.0364E+04
3 1.2949E+04
4 8680.9
5 9846.2
6 1.2661E+04
7 8667.3
8 9832.9
9 1.2648E+04
10 9186.6
11 1.0324E+04
12 1.2908E+04



MINIMUM 8667.3
Pile N. 7
MAXIMUM 1.2949E+04
Pile N. 3

* EFFECTS FOR LATERALLY LOADED PILE *
* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-5.6649E-03	-6.0264E-07	-1493.0	-20.868	-933.45	-3.0769	-429.55	-0.8169	131.45	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	0.0000	0.0000	9.2400	6.1600	11.000	22.000	0.0000	0.0000
2	-5.6649E-03	-5.7688E-07	-1488.9	-19.601	-927.48	-2.9214	-426.47	-0.7731	1299.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	0.0000	0.0000	9.2400	6.1600	11.000	22.000	0.0000	0.0000
3	-5.6649E-03	-4.9858E-07	-1694.1	-21.489	-1149.7	-3.5011	-568.26	-1.0393	2453.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	0.0000	0.0000	8.8000	6.1600	10.340	22.000	0.0000	0.0000
4	-5.6632E-03	-6.2270E-07	-1410.5	-19.600	-854.55	-2.7908	-379.78	-0.7077	120.76	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	0.0000	0.0000	9.4600	6.1600	11.440	22.000	0.0000	0.0000
5	-5.6632E-03	-5.9515E-07	-1410.8	-18.459	-852.88	-2.6628	-379.42	-0.6746	1288.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	0.0000	0.0000	9.4600	6.1600	11.440	22.000	0.0000	0.0000
6	-5.6632E-03	-5.0820E-07	-1656.8	-20.899	-1105.1	-3.3714	-540.06	-0.9779	2443.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	0.0000	0.0000	8.8000	6.1600	10.340	22.000	0.0000	0.0000
7	-5.6614E-03	-6.2267E-07	-1410.1	-19.602	-854.33	-2.7911	-379.70	-0.7078	110.07	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	0.0000	0.0000	9.4600	6.1600	11.440	22.000	0.0000	0.0000
8	-5.6614E-03	-5.9514E-07	-1410.4	-18.460	-852.66	-2.6631	-379.34	-0.6747	1278.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	0.0000	0.0000	9.4600	6.1600	11.440	22.000	0.0000	0.0000
9	-5.6614E-03	-5.0816E-07	-1656.4	-20.900	-1104.9	-3.3717	-539.93	-0.9781	2433.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	0.0000	0.0000	8.8000	6.1600	10.340	22.000	0.0000	0.0000
10	-5.6597E-03	-6.0257E-07	-1491.7	-20.872	-932.72	-3.0777	-429.26	-0.8172	99.374	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	0.0000	0.0000	9.2400	6.1600	11.000	22.000	0.0000	0.0000
11	-5.6597E-03	-5.7681E-07	-1487.7	-19.605	-926.75	-2.9221	-426.17	-0.7734	1267.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	0.0000	0.0000	9.2400	6.1600	11.000	22.000	0.0000	0.0000
12	-5.6597E-03	-4.9853E-07	-1692.6	-21.493	-1148.9	-3.5018	-567.86	-1.0397	2422.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	0.0000	0.0000	8.8000	6.1600	10.340	22.000	0.0000	0.0000
Min.	-5.6649E-03	-6.2270E-07	-1694.1	-21.493	-1149.7	-3.5018	-568.26	-1.0397	99.374	7.8279E+06	7.8279E+06
Pile N.	1	4	3	12	3	12	3	12	10	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	8.3193E-05	4.1808E-05	3013.9	10.849	425.10	6.6303	112.98	3.0765	9227.8	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
2	8.3490E-05	4.0058E-05	3003.6	10.328	423.22	6.2504	112.15	2.9045	1.0364E+04	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
3	7.5823E-05	3.8308E-05	3477.5	11.177	533.41	7.3678	158.49	3.6737	1.2949E+04	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.8200	8.8000	0.0000	10.340	6.1600	0.0000	0.0000	0.0000
4	8.6046E-05	4.1808E-05	2836.2	10.247	385.53	6.0635	97.946	2.7202	8680.9	7.8279E+06	7.8279E+06
x(M)	11.220	0.0000	0.0000	7.2600	9.4600	0.0000	11.440	6.1600	0.0000	0.0000	0.0000
5	8.6229E-05	4.0058E-05	2835.4	9.7811	385.82	5.7401	97.977	2.5842	9846.2	7.8279E+06	7.8279E+06
x(M)	11.220	0.0000	0.0000	7.0400	9.4600	0.0000	11.440	6.1600	0.0000	0.0000	0.0000
6	7.7382E-05	3.8308E-05	3385.5	10.943	512.70	7.0783	148.92	3.4921	1.2661E+04	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.8200	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
7	8.6013E-05	4.1808E-05	2835.3	10.248	385.43	6.0642	97.926	2.7206	8667.3	7.8279E+06	7.8279E+06
x(M)	11.220	0.0000	0.0000	7.2600	9.4600	0.0000	11.440	6.1600	0.0000	0.0000	0.0000
8	8.6196E-05	4.0058E-05	2834.4	9.7817	385.72	5.7408	97.958	2.5845	9832.9	7.8279E+06	7.8279E+06
x(M)	11.220	0.0000	0.0000	7.0400	9.4600	0.0000	11.440	6.1600	0.0000	0.0000	0.0000
9	7.7351E-05	3.8308E-05	3384.4	10.943	512.57	7.0791	148.89	3.4926	1.2648E+04	7.8279E+06	7.8279E+06
x(M)	10.340	0.0000	0.0000	6.8200	8.8000	0.0000	10.560	6.1600	0.0000	0.0000	0.0000
10	8.3100E-05	4.1808E-05	3010.9	10.851	424.78	6.6324	112.91	3.0777	9186.6	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
11	8.3398E-05	4.0058E-05	3000.6	10.330	422.90	6.2524	112.08	2.9056	1.0324E+04	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
12	7.5739E-05	3.8308E-05	3474.1	11.179	533.00	7.3702	158.40	3.6750	1.2908E+04	7.8279E+06	7.8279E+06
x(M)	10.120	0.0000	0.0000	6.8200	8.8000	0.0000	10.340	6.1600	0.0000	0.0000	0.0000

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti 	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	
COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 218 di 420	

Max.	8.6229E-05	4.1808E-05	3477.5	11.179	533.41	7.3702	158.49	3.6750	1.2949E+04	7.8279E+06	7.8279E+06
Pile N.	5	1	3	12	3	12	3	12	3	1	1

LOAD CASE : 23
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.4966	1.0000
3	0.5846	1.0000
4	0.5445	1.0000
5	0.4625	1.0000
6	0.5445	1.0000
7	0.5791	1.0000
8	0.4962	1.0000
9	0.5791	1.0000
10	0.8660	1.0000
11	0.8053	1.0000
12	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
27123.5	-344.552	-15164.0
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-4583.80	-78087.4	-6240.88

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.20884E-03	-7.64936E-05	-7.94382E-03
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-5.54595E-05	-2.33448E-04	-1.72134E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	-2.8947E-04	2.9786E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
2	-3.6693E-04	2.9786E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
3	-4.4439E-04	2.9786E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
4	7.6104E-04	4.8290E-05	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
5	6.8358E-04	4.8290E-05	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
6	6.0612E-04	4.8290E-05	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
7	1.8116E-03	-2.0128E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
8	1.7341E-03	-2.0128E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
9	1.6566E-03	-2.0128E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
10	2.8621E-03	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
11	2.7846E-03	-4.5085E-04	-7.9438E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
12	2.7072E-03	-4.5085E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
MINIMUM	-4.4439E-04	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
Pile N.	3	10	1	1	1	1
MAXIMUM	2.8621E-03	2.9786E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
Pile N.	10	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	-546.22	40.672	-1272.2	-17.969	4413.5	129.73
2	-692.38	37.235	-1129.6	-17.969	4008.3	121.33
3	-838.55	41.569	-1210.4	-17.969	4149.1	131.67
4	1482.0	-2.6637	-1213.5	-17.969	4269.9	-29.660
5	1334.2	-2.7345	-1086.3	-17.969	3907.2	-29.656
6	1186.4	-2.6459	-1164.7	-17.969	4047.4	-29.706

APPALTATORE:

Consorzio



Soci

**PROGETTAZIONE:**

Mandatario



Mandanti

**PROGETTO ESECUTIVO****RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B****ITINERARIO NAPOLI – BARI****RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA**

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	220 di 420

	1	-4.3680E-06	-8.1934E-03	-129.73	-2058.6	-19.184	-1272.1	-4.8069	-557.96	309.10	7.8279E+06	7.8279E+06
x(M)		11.220	0.0000	0.0000	7.2600	9.4600	0.0000	11.440	6.1600	22.000	0.0000	0.0000
	2	-4.3380E-06	-7.9438E-03	-121.33	-1860.9	-16.915	-1129.6	-4.0762	-477.71	391.81	7.8279E+06	7.8279E+06
x(M)		11.660	0.0000	0.0000	7.4800	9.9000	0.0000	11.660	6.1600	22.000	0.0000	0.0000
	3	-4.3272E-06	-7.6943E-03	-131.67	-1950.2	-19.548	-1210.3	-4.9384	-534.41	474.52	7.8279E+06	7.8279E+06
x(M)		11.220	0.0000	0.0000	7.2600	9.4600	0.0000	11.440	6.1600	22.000	0.0000	0.0000
	4	-1.4050E-06	-8.1934E-03	-0.9456	-1975.6	-3.7225	-1213.6	-2.2399	-523.70	838.65	7.8279E+06	7.8279E+06
x(M)		7.7000	0.0000	11.000	7.4800	5.7200	0.0000	9.6800	6.1600	22.000	0.0000	0.0000
	5	-1.6082E-06	-7.9438E-03	-1.0077	-1813.2	-3.6383	-1086.4	-2.1035	-452.14	755.00	7.8279E+06	7.8279E+06
x(M)		7.7000	0.0000	11.220	7.4800	0.0000	0.0000	9.9000	6.1600	22.000	0.0000	0.0000
	6	-1.2834E-06	-7.6943E-03	-0.8567	-1902.7	-3.7674	-1164.8	-2.1982	-506.35	671.35	7.8279E+06	7.8279E+06
x(M)		7.7000	0.0000	11.000	7.2600	5.9400	0.0000	9.4600	6.1600	22.000	0.0000	0.0000
	7	-2.0771E-04	-8.1934E-03	-61.347	-2053.6	-45.631	-1262.4	-18.508	-553.68	1973.2	7.8279E+06	7.8279E+06
x(M)		0.8800	0.0000	7.7000	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
	8	-2.0807E-04	-7.9438E-03	-57.269	-1862.2	-42.515	-1125.7	-16.558	-477.15	1889.5	7.8279E+06	7.8279E+06
x(M)		0.8800	0.0000	7.9200	7.4800	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
	9	-2.0763E-04	-7.6943E-03	-62.008	-1945.6	-46.453	-1201.0	-18.983	-530.34	1805.8	7.8279E+06	7.8279E+06
x(M)		0.8800	0.0000	7.7000	7.2600	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
	10	-4.5374E-04	-8.1934E-03	-144.89	-2350.9	-107.38	-1556.1	-49.433	-744.42	2915.7	7.8279E+06	7.8279E+06
x(M)		0.4400	0.0000	7.2600	0.0000	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
	11	-4.5381E-04	-7.9438E-03	-142.42	-2235.7	-104.65	-1462.0	-47.471	-690.93	2863.6	7.8279E+06	7.8279E+06
x(M)		0.4400	0.0000	7.2600	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
	12	-4.5368E-04	-7.6943E-03	-146.43	-2222.8	-109.46	-1481.8	-50.611	-711.75	2811.5	7.8279E+06	7.8279E+06
x(M)		0.4400	0.0000	7.0400	7.0400	0.0000	0.0000	6.1600	6.1600	22.000	0.0000	0.0000
Min.	-4.5381E-04	-8.1934E-03	-146.43	-2350.9	-109.46	-1556.1	-50.611	-744.42	309.10	7.8279E+06	7.8279E+06	
Pile N.	11	1	12	10	12	10	12	10	1	1	1	

* MAXIMUM VALUES AND LOCATIONS *







PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2	

	1	2.9786E-04	1.2812E-04	71.127	4413.5	40.671	562.07	18.407	141.75	1.3635E+04	7.8279E+06	7.8279E+06
x(M)		0.0000	11.220	7.2600	0.0000	0.0000	9.6800	6.1600	11.440	0.0000	0.0000	0.0000
	2	2.9786E-04	1.2355E-04	66.563	4008.3	37.234	480.94	16.278	116.14	1.2495E+04	7.8279E+06	7.8279E+06
x(M)		0.0000	11.660	7.2600	0.0000	0.0000	9.9000	6.1600	11.880	0.0000	0.0000	0.0000
	3	2.9786E-04	1.1881E-04	71.957	4149.1	41.567	535.93	18.886	136.25	1.3003E+04	7.8279E+06	7.8279E+06
x(M)		0.0000	11.220	7.0400	0.0000	0.0000	9.4600	6.1600	11.440	0.0000	0.0000	0.0000
	4	4.8290E-05	1.2582E-04	29.660	4269.9	0.2741	518.46	0.3124	128.56	1.3726E+04	7.8279E+06	7.8279E+06
x(M)		0.0000	11.440	0.0000	12.980	0.0000	9.6800	2.6400	11.660	0.0000	0.0000	0.0000
	5	4.8290E-05	1.2481E-04	29.656	3907.2	0.2794	457.68	0.2691	108.93	1.2548E+04	7.8279E+06	7.8279E+06
x(M)		0.0000	11.880	0.0000	13.200	10.120	2.6400	2.6400	11.880	0.0000	0.0000	0.0000
	6	4.8290E-05	1.2089E-04	29.706	4047.4	0.2584	515.63	0.3293	128.52	1.2887E+04	7.8279E+06	7.8279E+06
x(M)		0.0000	11.220	0.0000	0.0000	13.200	9.6800	2.6400	11.660	0.0000	0.0000	0.0000
	7	3.9580E-06	1.2888E-04	188.62	4398.8	17.453	560.75	4.4302	140.91	1.5261E+04	7.8279E+06	7.8279E+06
x(M)		11.440	11.220	0.0000	0.0000	9.6800	9.6800	11.880	11.440	0.0000	0.0000	0.0000
	8	3.9694E-06	1.2407E-04	180.58	4006.8	15.460	481.85	3.7795	116.29	1.3994E+04	7.8279E+06	7.8279E+06
x(M)		11.880	11.660	0.0000	0.0000	10.120	9.9000	12.100	11.880	0.0000	0.0000	0.0000
	9	3.9076E-06	1.1951E-04	190.51	4135.1	17.717	534.08	4.5357	135.43	1.4299E+04	7.8279E+06	7.8279E+06
x(M)		11.440	11.220	0.0000	0.0000	9.6800	9.4600	11.660	11.440	0.0000	0.0000	0.0000
	10	7.4445E-06	1.1860E-04	390.55	5057.1	44.565	709.87	12.596	198.74	1.8224E+04	7.8279E+06	7.8279E+06
x(M)		10.560	10.560	0.0000	0.0000	9.2400	9.0200	11.000	10.780	0.0000	0.0000	0.0000
	11	7.5572E-06	1.1621E-04	384.44	4785.7	43.453	663.59	12.067	183.60	1.7354E+04	7.8279E+06	7.8279E+06
x(M)		10.780	10.560	0.0000	0.0000	9.2400	9.0200	11.000	10.780	0.0000	0.0000	0.0000
	12	7.3799E-06	1.0978E-04	394.90	4758.8	45.449	675.71	12.951	190.84	1.7223E+04	7.8279E+06	7.8279E+06
x(M)		10.560	10.560	0.0000	0.0000	9.0200	9.0200	10.780	10.780	0.0000	0.0000	0.0000
Max.	2.9786E-04	1.2888E-04	394.90	5057.1	45.449	709.87	18.886	198.74	1.8224E+04	7.8279E+06	7.8279E+06	
Pile N.	1	7	12	10	12	10	3	10	10	1	1	

LOAD CASE : 24
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.8053	1.0000
3	0.8661	1.0000
4	0.5791	1.0000
5	0.4962	1.0000
6	0.5791	1.0000
7	0.5445	1.0000
8	0.4625	1.0000
9	0.5445	1.0000
10	0.5845	1.0000
11	0.4966	1.0000
12	0.5846	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 31044.7	HOR. LOAD Y, KN -344.552	HOR. LOAD Z, KN 15320.5
MOMENT X, KN- M 4557.88	MOMENT Y, KN- M 80106.1	MOMENT Z, KN- M -7534.02

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.40613E-03	HORIZONTAL Y, M -6.11318E-05	HORIZONTAL Z, M 8.09755E-03
ANGLE ROT. X, RAD 5.55125E-05	ANGLE ROT. Y, RAD 2.44644E-04	ANGLE ROT. Z, RAD -2.16156E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	3.1548E-03	-4.3584E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
2	3.0575E-03	-4.3584E-04	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
3	2.9602E-03	-4.3584E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
4	2.0538E-03	-1.8604E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
5	1.9566E-03	-1.8604E-04	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
6	1.8593E-03	-1.8604E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
7	9.5296E-04	6.3771E-05	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
8	8.5569E-04	6.3771E-05	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
9	7.5842E-04	6.3771E-05	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
10	-1.4794E-04	3.1358E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
11	-2.4521E-04	3.1358E-04	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
12	-3.4248E-04	3.1358E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
MINIMUM	-3.4248E-04	-4.3584E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	12	1	3	1	1	1
MAXIMUM	3.1548E-03	3.1358E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	1	10	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	5500.3	-106.86	1571.4	17.986	-5110.1	-395.08
2	5384.7	-104.15	1476.8	17.986	-4837.3	-389.01
3	5269.1	-108.88	1497.7	17.986	-4812.7	-399.34
4	3949.2	-45.596	1274.6	17.986	-4443.4	-193.91
5	3763.6	-42.542	1136.9	17.986	-4048.0	-185.96
6	3578.0	-46.386	1213.6	17.986	-4180.2	-195.74
7	1848.3	-2.8406	1225.4	17.986	-4312.6	-35.309
8	1662.6	-2.9637	1097.3	17.986	-3947.0	-35.391
9	1477.0	-2.8043	1177.2	17.986	-4091.2	-35.332
10	-279.16	40.354	1284.9	17.986	-4458.4	123.81
11	-462.71	36.867	1141.2	17.986	-4049.4	115.31
12	-646.25	41.254	1223.5	17.986	-4194.4	125.74
MINIMUM	-646.25	-108.88	1097.3	17.986	-5110.1	-399.34
Pile N.	12	3	8	1	1	3
MAXIMUM	5500.3	41.254	1571.4	17.986	-3947.0	125.74
Pile N.	1	12	1	1	8	12

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	3.1548E-03	-4.3584E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
2	3.0575E-03	-4.3584E-04	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
3	2.9602E-03	-4.3584E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
4	2.0538E-03	-1.8604E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
5	1.9566E-03	-1.8604E-04	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
6	1.8593E-03	-1.8604E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
7	9.5296E-04	6.3771E-05	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
8	8.5569E-04	6.3771E-05	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
9	7.5842E-04	6.3771E-05	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
10	-1.4794E-04	3.1358E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA LOTTO CODIFICA DOCUMENTO REV. FOGLIO
IF28 01 E ZZ CL VI0103 001 B 222 di 420

11	-2.4521E-04	3.1358E-04	8.0976E-03	5.5513E-05	2.4464E-04	-2.1616E-05
12	-3.4248E-04	3.1358E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
MINIMUM	-3.4248E-04	-4.3584E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	12	1	3	1	1	1
MAXIMUM	3.1548E-03	3.1358E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	1	10	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	5500.3	-106.86	1571.4	17.986	-5110.1	-395.08
2	5384.7	-104.15	1476.8	17.986	-4837.3	-389.01
3	5269.1	-108.88	1497.7	17.986	-4812.7	-399.34
4	3949.2	-45.596	1274.6	17.986	-4443.4	-193.91
5	3763.6	-42.542	1136.9	17.986	-4048.0	-185.96
6	3578.0	-46.386	1213.6	17.986	-4180.2	-195.74
7	1848.3	-2.8406	1225.4	17.986	-4312.6	-35.309
8	1662.6	-2.9637	1097.3	17.986	-3947.0	-35.391
9	1477.0	-2.8043	1177.2	17.986	-4091.2	-35.332
10	-279.16	40.354	1284.9	17.986	-4458.4	123.81
11	-462.71	36.867	1141.2	17.986	-4049.4	115.31
12	-646.25	41.254	1223.5	17.986	-4194.4	125.74
MINIMUM	-646.25	-108.88	1097.3	17.986	-5110.1	-399.34
Pile N.	12	3	8	1	1	3
MAXIMUM	5500.3	41.254	1571.4	17.986	-3947.0	125.74
Pile N.	1	12	1	1	8	12

PILE GROUP	STRESS, KN/ M**2
1	1.8581E+04
2	1.7693E+04
3	1.7556E+04
4	1.5658E+04
5	1.4360E+04
6	1.4655E+04
7	1.4062E+04
8	1.2854E+04
9	1.3184E+04
10	1.3619E+04
11	1.2488E+04
12	1.3030E+04

MINIMUM	1.2488E+04
Pile N.	11
MAXIMUM	1.8581E+04
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL.		MOMENT		SHEAR		SOIL REACT		TOTAL STRESS	FLEX. RIG.	
	y-DIR	z-DIR	z-DIR	y-DIR	y-DIR	z-DIR	y-DIR	z-DIR		KN- M**2	KN- M**2
1	-4.4061E-04	-1.2101E-04	-142.53	-5110.1	-106.89	-719.18	-48.914	-200.88	3112.5	7.8279E+06	7.8279E+06
x(M)	0.4400	10.560	7.2600	0.0000	0.0000	9.0200	6.1600	10.780	22.000	0.0000	0.0000
2	-4.4068E-04	-1.1847E-04	-140.03	-4837.3	-104.18	-671.47	-46.970	-185.44	3047.1	7.8279E+06	7.8279E+06
x(M)	0.4400	10.560	7.2600	0.0000	0.0000	9.0200	6.1600	10.780	22.000	0.0000	0.0000
3	-4.4056E-04	-1.1223E-04	-143.92	-4812.7	-108.91	-685.24	-50.065	-193.03	2981.7	7.8279E+06	7.8279E+06
x(M)	0.4400	10.560	7.2600	0.0000	0.0000	9.0200	6.1600	10.780	22.000	0.0000	0.0000
4	-1.9608E-04	-1.3137E-04	-59.433	-4443.4	-45.607	-568.11	-18.220	-142.36	2234.8	7.8279E+06	7.8279E+06
x(M)	0.8800	11.220	7.7000	0.0000	0.0000	9.6800	6.1600	11.660	22.000	0.0000	0.0000
5	-1.9659E-04	-1.2666E-04	-55.503	-4048.0	-42.552	-488.32	-16.304	-117.57	2129.8	7.8279E+06	7.8279E+06
x(M)	1.1000	11.660	7.9200	0.0000	0.0000	9.9000	6.1600	11.880	22.000	0.0000	0.0000
6	-1.9600E-04	-1.2208E-04	-60.093	-4180.2	-46.396	-541.30	-18.678	-136.94	2024.7	7.8279E+06	7.8279E+06
x(M)	0.8800	11.220	7.7000	0.0000	0.0000	9.4600	6.1600	11.440	22.000	0.0000	0.0000
7	-1.4802E-06	-1.2827E-04	-0.9665	-4312.6	-4.4021	-525.12	-2.8081	-129.85	1045.9	7.8279E+06	7.8279E+06
x(M)	8.1400	11.440	11.440	0.0000	6.1600	9.9000	9.6800	11.660	22.000	0.0000	0.0000
8	-1.6967E-06	-1.2737E-04	-1.0323	-3947.0	-4.2958	-463.84	-2.6384	-110.03	940.86	7.8279E+06	7.8279E+06
x(M)	8.1400	11.880	11.660	0.0000	6.1600	10.120	9.9000	11.880	22.000	0.0000	0.0000
9	-1.3543E-06	-1.2330E-04	-0.8773	-4091.2	-4.4597	-522.59	-2.7512	-129.89	835.82	7.8279E+06	7.8279E+06
x(M)	8.1400	11.220	11.440	0.0000	6.3800	9.6800	9.4600	11.660	22.000	0.0000	0.0000
10	-4.4976E-06	-1.3070E-04	-123.81	-4458.4	-19.629	-569.88	-4.8922	-143.24	157.97	7.8279E+06	7.8279E+06
x(M)	11.220	11.220	0.0000	0.0000	9.4600	9.6800	11.440	11.440	22.000	0.0000	0.0000
11	-4.4599E-06	-1.2606E-04	-115.31	-4049.4	-17.279	-487.12	-4.1476	-117.37	261.84	7.8279E+06	7.8279E+06
x(M)	11.660	11.660	0.0000	0.0000	9.9000	9.9000	11.660	11.880	22.000	0.0000	0.0000
12	-4.4597E-06	-1.2135E-04	-125.74	-4194.4	-19.983	-543.10	-5.0233	-137.75	365.70	7.8279E+06	7.8279E+06
x(M)	11.000	11.220	0.0000	0.0000	9.4600	9.4600	11.220	11.440	22.000	0.0000	0.0000
Min.	-4.4068E-04	-1.3137E-04	-143.92	-5110.1	-108.91	-719.18	-50.065	-200.88	157.97	7.8279E+06	7.8279E+06
Pile N.	2	4	3	1	3	1	3	1	10	1	1

* MAXIMUM VALUES AND LOCATIONS *

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 223 di 420
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PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	7.3692E-06	8.3474E-03	395.08	2386.2	43.960	1571.8	12.397	752.21	1.8581E+04	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
2	7.4885E-06	8.0975E-03	389.01	2270.0	42.787	1477.2	11.856	698.42	1.7693E+04	7.8279E+06	7.8279E+06
x(M)	10.780	0.0000	0.0000	7.0400	9.2400	0.0000	11.000	6.1600	0.0000	0.0000	0.0000
3	7.3130E-06	7.8477E-03	399.34	2258.5	44.678	1498.0	12.717	719.76	1.7556E+04	7.8279E+06	7.8279E+06
x(M)	10.560	0.0000	0.0000	7.0400	9.0200	0.0000	10.780	6.1600	0.0000	0.0000	0.0000
4	3.8711E-06	8.3474E-03	193.91	2083.9	16.967	1274.9	4.3153	559.25	1.5658E+04	7.8279E+06	7.8279E+06
x(M)	11.440	0.0000	0.0000	7.2600	9.6800	0.0000	11.880	6.1600	0.0000	0.0000	0.0000
5	3.8977E-06	8.0975E-03	185.96	1890.3	15.090	1137.1	3.6833	482.00	1.4360E+04	7.8279E+06	7.8279E+06
x(M)	11.880	0.0000	0.0000	7.4800	10.120	0.0000	12.100	6.1600	0.0000	0.0000	0.0000
6	3.8289E-06	7.8477E-03	195.74	1976.1	17.245	1213.8	4.4183	536.02	1.4655E+04	7.8279E+06	7.8279E+06
x(M)	11.440	0.0000	0.0000	7.2600	9.6800	0.0000	11.880	6.1600	0.0000	0.0000	0.0000
7	6.3771E-05	8.3474E-03	35.309	2004.6	0.2872	1225.5	0.4384	528.92	1.4062E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	7.4800	13.640	0.0000	2.6400	6.1600	0.0000	0.0000	0.0000
8	6.3771E-05	8.0975E-03	35.391	1840.3	0.2925	1097.4	0.3780	456.73	1.2854E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	7.4800	13.860	0.0000	2.6400	6.1600	0.0000	0.0000	0.0000
9	6.3771E-05	7.8477E-03	35.332	1932.3	0.2743	1177.3	0.4614	511.78	1.3184E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	0.0000	7.2600	13.640	0.0000	2.6400	6.1600	0.0000	0.0000	0.0000
10	3.1358E-04	8.3474E-03	73.321	2088.8	40.353	1284.9	18.513	563.53	1.3619E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.0400	7.2600	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
11	3.1358E-04	8.0975E-03	68.637	1888.9	36.866	1141.2	16.357	482.58	1.2488E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.2600	7.4800	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
12	3.1358E-04	7.8477E-03	74.199	1980.7	41.252	1223.4	18.989	540.15	1.3030E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	7.0400	7.2600	0.0000	0.0000	6.1600	6.1600	0.0000	0.0000	0.0000
Max.	3.1358E-04	8.3474E-03	399.34	2386.2	44.678	1571.8	18.989	752.21	1.8581E+04	7.8279E+06	7.8279E+06
Pile N.	10	1	3	1	3	1	12	1	1	1	1

***** SUMMARY FOR LOAD CASES AND COMBINATIONS *****

***** LOAD CASES RESULTS *****

LOAD CASE : 1

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
44419.1	947.198	726.001	-253.502	7931.44	-16110.2

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.92408E-03	4.58961E-04	2.67578E-04	-2.39989E-06	1.70269E-05	-5.82603E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.5470E-03	4.4276E-04	2.5678E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.3012E-03	4.7516E-04	2.7838E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2981.9	67.156	53.760	-0.7776	-174.07	136.87
Pile N.	12	8	8	1	3	11
MAXIMUM	4421.3	99.118	67.094	-0.7776	-150.21	197.07
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.5470E-03	4.4276E-04	2.5678E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.3012E-03	4.7516E-04	2.7838E-04	-2.3999E-06	1.7027E-05	-5.8260E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2981.9	67.156	53.760	-0.7776	-174.07	136.87
Pile N.	12	8	8	1	3	11
MAXIMUM	4421.3	99.118	67.094	-0.7776	-150.21	197.07
Pile N.	1	1	1	1	8	1

* EFFECTS FOR Laterally LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
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APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 224 di 420
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	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-6.1769E-06	-4.1225E-06	-197.07	-174.07	-59.373	-35.927	-22.994	-13.990	1687.4
Pile N.	5	9	1	3	1	1	1	1	12
Max.	4.7516E-04	2.7838E-04	160.26	101.60	99.130	67.104	99.477	66.349	3283.4
Pile N.	1	3	1	3	1	1	1	1	1

LOAD CASE : 2

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
43825.6	-947.198	726.001	-292.333	7931.44	688.891

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.89817E-03	-3.11745E-04	2.64526E-04	-2.14314E-06	1.69901E-05	1.09653E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.7341E-03	-3.2621E-04	2.5488E-04	-2.1431E-06	1.6990E-05	1.0965E-05
Pile N.	10	10	1	1	1	1
MAXIMUM	2.0622E-03	-2.9728E-04	2.7417E-04	-2.1431E-06	1.6990E-05	1.0965E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	3339.1	-90.555	52.476	-0.6944	-185.00	-250.29
Pile N.	10	12	7	1	3	12
MAXIMUM	3965.2	-69.757	73.811	-0.6944	-142.74	-207.77
Pile N.	3	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.7341E-03	-3.2621E-04	2.5488E-04	-2.1431E-06	1.6990E-05	1.0965E-05
Pile N.	10	10	1	1	1	1
MAXIMUM	2.0622E-03	-2.9728E-04	2.7417E-04	-2.1431E-06	1.6990E-05	1.0965E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	3339.1	-90.555	52.476	-0.6944	-185.00	-250.29
Pile N.	10	12	7	1	3	12
MAXIMUM	3965.2	-69.757	73.811	-0.6944	-142.74	-207.77
Pile N.	3	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-3.2621E-04	-3.9556E-06	-128.20	-185.00	-90.568	-38.663	-88.394	-15.066	1889.5
Pile N.	10	8	12	3	12	3	3	3	10
Max.	4.9960E-06	2.7417E-04	250.29	104.21	46.288	73.821	17.457	71.858	3140.1
Pile N.	11	3	12	3	12	3	12	3	3

LOAD CASE : 3

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
41042.2	-627.738	620.324	-170.906	5265.36	-6886.51

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.77663E-03	-1.36418E-04	2.15819E-04	-1.75007E-06	1.19472E-05	-1.52604E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.6273E-03	-1.4823E-04	2.0794E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.9259E-03	-1.2460E-04	2.2369E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	3135.2	-57.655	45.297	-0.5670	-159.95	-194.50
Pile N.	12	12	8	1	3	12
MAXIMUM	3705.1	-47.037	63.373	-0.5670	-125.64	-170.02

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 225 di 420
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Pile N.	1	5	3	1	7	5
* PILE TOP DISPLACEMENTS, LOCAL *						
	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.6273E-03	-1.4823E-04	2.0794E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.9259E-03	-1.2460E-04	2.2369E-04	-1.7501E-06	1.1947E-05	-1.5260E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *						
	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	3135.2	-57.655	45.297	-0.5670	-159.95	-194.50
Pile N.	12	12	8	1	3	12
MAXIMUM	3705.1	-47.037	63.373	-0.5670	-125.64	-170.02
Pile N.	1	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-1.5345E-04	-3.2967E-06	-71.743	-159.95	-57.664	-32.036	-53.836	-12.499	1774.2
Pile N.	11	8	12	3	12	3	12	3	12
Max.	2.8672E-06	2.2369E-04	194.50	86.412	25.330	63.381	9.4201	60.260	2786.1
Pile N.	11	3	12	3	12	3	3	3	1

LOAD CASE : 4

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
44607.6	-680.981	994.382	-197.074	12132.1	-7060.67

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.93231E-03	-1.55405E-04	3.71717E-04	-2.32387E-06	2.54169E-05	-1.52257E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.6922E-03	-1.7109E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.1724E-03	-1.3972E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	3259.1	-61.929	72.536	-0.7530	-250.48	-211.24
Pile N.	12	12	8	1	3	12
MAXIMUM	4175.5	-51.039	101.22	-0.7530	-199.36	-184.06
Pile N.	1	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.6922E-03	-1.7109E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.1724E-03	-1.3972E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5226E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	3259.1	-61.929	72.536	-0.7530	-250.48	-211.24
Pile N.	12	12	8	1	3	12
MAXIMUM	4175.5	-51.039	101.22	-0.7530	-199.36	-184.06
Pile N.	1	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-1.7582E-04	-5.5603E-06	-80.110	-250.48	-61.938	-53.433	-58.479	-20.806	1844.3
Pile N.	11	8	12	3	12	3	12	3	12
Max.	3.2571E-06	3.8217E-04	211.24	143.96	27.864	101.23	10.348	98.658	3266.6
Pile N.	11	3	12	3	12	3	3	3	1

LOAD CASE : 5

* TABLE L * COMPUTATION ON PILE CAP

APPALTATORE: Consorzio Soci 		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA			
PROGETTAZIONE: Mandataria Mandanti 					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 226 di 420

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
28236.4	-414.765	797.610	-186.100	9132.24	-5278.25

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.21745E-03	-8.47769E-05	2.92202E-04	-1.99423E-06	1.93419E-05	-1.22885E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.0316E-03	-9.8237E-05	2.8323E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4033E-03	-7.1315E-05	3.0118E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1998.3	-38.436	58.117	-0.6462	-201.10	-135.12
Pile N.	12	12	8	1	3	12
MAXIMUM	2707.7	-30.931	81.698	-0.6462	-159.45	-115.17
Pile N.	1	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.0316E-03	-9.8237E-05	2.8323E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4033E-03	-7.1315E-05	3.0118E-04	-1.9942E-06	1.9342E-05	-1.2288E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1998.3	-38.436	58.117	-0.6462	-201.10	-135.12
Pile N.	12	12	8	1	3	12
MAXIMUM	2707.7	-30.931	81.698	-0.6462	-159.45	-115.17
Pile N.	1	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-1.0309E-04	-4.3909E-06	-48.217	-201.10	-38.439	-42.262	-35.615	-16.463	1130.8
Pile N.	11	8	12	3	12	3	12	3	12
Max.	1.9728E-06	3.0118E-04	135.12	113.92	16.621	81.705	6.0136	78.337	2191.3
Pile N.	11	3	12	3	12	3	12	3	1

LOAD CASE : 6

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
44684.9	680.981	994.382	-177.659	12132.1	-19102.3

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.93601E-03	4.02041E-04	3.73867E-04	-1.49713E-06	2.55389E-05	-6.50440E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.4709E-03	3.9194E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.4011E-03	4.1215E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
Pile N.	1	1	3	1	1	1




* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2836.8	47.224	73.096	-0.4851	-234.98	64.695
Pile N.	12	8	8	1	1	8
MAXIMUM	4604.5	72.273	94.696	-0.4851	-201.99	109.21
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.4709E-03	3.9194E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.4011E-03	4.1215E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 227 di 420

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2836.8	47.224	73.096	-0.4851	-234.98	64.695
Pile N.	12	8	8	1	1	8
MAXIMUM	4604.5	72.273	94.696	-0.4851	-201.99	109.21
Pile N.	1	1	1	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-5.0454E-06	-5.5592E-06	-109.21	-234.98	-47.646	-51.053	-18.504	-19.870	1605.3
Pile N.	5	9	1	1	1	1	1	1	12
Max.	4.1215E-04	3.8060E-04	129.38	139.48	72.280	94.711	73.645	93.821	3387.6
Pile N.	1	3	1	3	1	1	1	1	1

LOAD CASE : 7

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
44607.6	-680.981	994.382	-197.074	12132.1	-7060.11

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.93231E-03	-1.55410E-04	3.71717E-04	-2.32385E-06	2.54169E-05	-1.52240E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.6922E-03	-1.7110E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.1724E-03	-1.3972E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	3259.1	-61.929	72.536	-0.7530	-250.48	-211.24
Pile N.	12	12	8	1	3	12
MAXIMUM	4175.5	-51.039	101.22	-0.7530	-199.36	-184.06
Pile N.	1	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. X, M	DISP. Y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.6922E-03	-1.7110E-04	3.6126E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.1724E-03	-1.3972E-04	3.8218E-04	-2.3239E-06	2.5417E-05	-1.5224E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	3259.1	-61.929	72.536	-0.7530	-250.48	-211.24
Pile N.	12	12	8	1	3	12
MAXIMUM	4175.5	-51.039	101.22	-0.7530	-199.36	-184.06
Pile N.	1	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-1.7582E-04	-5.5603E-06	-80.111	-250.48	-61.938	-53.433	-58.479	-20.806	1844.3
Pile N.	11	8	12	3	12	3	12	3	12
Max.	3.2571E-06	3.8217E-04	211.24	143.96	27.864	101.23	10.348	98.658	3266.6
Pile N.	11	3	12	3	12	3	3	3	1

LOAD CASE : 8

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *




LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
31461.9	-680.981	655.763	-185.718	5211.86	-3490.31

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.35829E-03	-1.84849E-04	2.26598E-04	-1.67776E-06	1.20422E-05	-4.37190E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.35829E-03	-1.84849E-04	2.26598E-04	-1.67776E-06	1.20422E-05	-4.37190E-06
Pile N.	11	10	1	1	1	1
MAXIMUM	1.35829E-03	-1.84849E-04	2.26598E-04	-1.67776E-06	1.20422E-05	-4.37190E-06
Pile N.	1	1	3	1	1	1

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

MINIMUM	1.2573E-03	-1.9617E-04	2.1905E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4593E-03	-1.7352E-04	2.3415E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2429.2	-63.352	47.984	-0.5436	-169.19	-193.90
Pile N.	12	12	8	1	3	12
MAXIMUM	2814.5	-50.600	66.484	-0.5436	-134.02	-166.31
Pile N.	1	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
MINIMUM	1.2573E-03	-1.9617E-04	2.1905E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	1.4593E-03	-1.7352E-04	2.3415E-04	-1.6778E-06	1.2042E-05	-4.3719E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2429.2	-63.352	47.984	-0.5436	-169.19	-193.90
Pile N.	12	12	8	1	3	12
MAXIMUM	2814.5	-50.600	66.484	-0.5436	-134.02	-166.31
Pile N.	1	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-1.9657E-04	-3.4673E-06	-83.819	-169.19	-63.358	-33.652	-60.255	-13.134	1374.6
Pile N.	11	8	12	3	12	3	12	3	12
Max.	3.3281E-06	2.3415E-04	193.90	90.801	29.870	66.491	11.219	63.501	2300.1
Pile N.	11	3	12	3	12	3	3	3	3

LOAD CASE : 9

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
44684.9	680.981	994.382	-177.659	12132.1	-19102.3

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X, RAD	ROT Y, RAD	ROT Z, RAD
1.93601E-03	4.02041E-04	3.73867E-04	-1.49713E-06	2.55389E-05	-6.50440E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
MINIMUM	1.4709E-03	3.9194E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.4011E-03	4.1215E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2836.8	47.224	73.096	-0.4851	-234.98	64.695
Pile N.	12	8	8	1	1	8
MAXIMUM	4604.5	72.273	94.696	-0.4851	-201.99	109.21
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *





	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
MINIMUM	1.4709E-03	3.9194E-04	3.6713E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	2.4011E-03	4.1215E-04	3.8060E-04	-1.4971E-06	2.5539E-05	-6.5044E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2836.8	47.224	73.096	-0.4851	-234.98	64.695
Pile N.	12	8	8	1	1	8
MAXIMUM	4604.5	72.273	94.696	-0.4851	-201.99	109.21
Pile N.	1	1	1	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
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APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
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	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-5.0454E-06	-5.5592E-06	-109.21	-234.98	-47.646	-51.053	-18.504	-19.870	1605.3
Pile N.	5	9	1	1	1	1	1	1	12
Max.	4.1215E-04	3.8060E-04	129.38	139.48	72.280	94.711	73.645	93.821	3387.6
Pile N.	1	3	1	3	1	1	1	1	1

LOAD CASE : 10

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
33600.2	-947.198	726.001	-292.333	7931.44	3721.04

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.45166E-03	-3.40307E-04	2.64734E-04	-2.01737E-06	1.69930E-05	2.02542E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2458E-03	-3.5392E-04	2.5566E-04	-2.0174E-06	1.6993E-05	2.0254E-05
Pile N.	10	10	1	1	1	1
MAXIMUM	1.6575E-03	-3.2669E-04	2.7381E-04	-2.0174E-06	1.6993E-05	2.0254E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2407.2	-91.173	52.518	-0.6536	-184.55	-237.44
Pile N.	10	12	7	1	3	12
MAXIMUM	3192.9	-69.463	73.560	-0.6536	-143.14	-194.19
Pile N.	3	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.2458E-03	-3.5392E-04	2.5566E-04	-2.0174E-06	1.6993E-05	2.0254E-05
Pile N.	10	10	1	1	1	1
MAXIMUM	1.6575E-03	-3.2669E-04	2.7381E-04	-2.0174E-06	1.6993E-05	2.0254E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2407.2	-91.173	52.518	-0.6536	-184.55	-237.44
Pile N.	10	12	7	1	3	12
MAXIMUM	3192.9	-69.463	73.560	-0.6536	-143.14	-194.19
Pile N.	3	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-3.5392E-04	-3.9547E-06	-133.41	-184.55	-91.182	-38.599	-89.629	-15.041	1362.2
Pile N.	10	8	12	3	12	3	12	3	10
Max.	5.2037E-06	2.7381E-04	237.44	104.05	48.228	73.568	18.275	71.762	2674.1
Pile N.	8	3	12	3	12	3	12	3	3

LOAD CASE : 11

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
43168.5	-414.765	770.016	-461.400	9688.24	-2700.77

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.86947E-03	-1.09220E-04	2.86263E-04	-3.91869E-06	2.01336E-05	-4.39345E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.7138E-03	-1.3567E-04	2.6863E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	2.0251E-03	-8.2769E-05	3.0390E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	3300.3	-42.591	55.357	-1.2697	-200.26	-135.84
Pile N.	12	12	7	1	3	12
MAXIMUM	3894.4	-29.645	81.736	-1.2697	-143.85	-94.371

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA LOTTO CODIFICA DOCUMENTO REV. FOGLIO
IF28 01 E ZZ CL VI0103 001 B 230 di 420

Pile N.	1	5	3	1	7	2
* PILE TOP DISPLACEMENTS, LOCAL *						
	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.7138E-03	-1.3567E-04	2.6863E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
Pile N.	12	10	1	1	1	1
MAXIMUM	2.0251E-03	-8.2769E-05	3.0390E-04	-3.9187E-06	2.0133E-05	-4.3935E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *						
	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	3300.3	-42.591	55.357	-1.2697	-200.26	-135.84
Pile N.	12	12	7	1	3	12
MAXIMUM	3894.4	-29.645	81.736	-1.2697	-143.85	-94.371
Pile N.	1	5	3	1	7	2

*** EFFECTS FOR LATERALLY LOADED PILE ***

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-1.3624E-04	-4.3219E-06	-57.798	-200.26	-42.597	-42.497	-40.329	-16.549	1867.6
Pile N.	11	9	12	3	12	3	12	3	12
Max.	2.3673E-06	3.0390E-04	135.84	114.50	20.034	81.747	7.2692	78.483	2832.1
Pile N.	11	3	12	3	12	3	12	3	3

LOAD CASE : 12

*** TABLE L * COMPUTATION ON PILE CAP**

*** EQUIVALENT CONCENTRATED LOAD AT ORIGIN ***

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
40798.0	-627.738	749.461	-128.512	10336.9	-6628.02

*** DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN ***

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.76596E-03	-1.40218E-04	2.83263E-04	-1.64916E-06	2.11168E-05	-1.44412E-05

*** PILE TOP DISPLACEMENTS, GLOBAL ***

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.5584E-03	-1.5135E-04	2.7584E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.9735E-03	-1.2909E-04	2.9068E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
Pile N.	1	1	3	1	1	1

*** PILE TOP REACTIONS, GLOBAL ***

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	3003.8	-56.589	54.493	-0.5343	-183.58	-192.06
Pile N.	12	12	8	1	3	12
MAXIMUM	3795.9	-47.199	76.350	-0.5343	-145.51	-169.92
Pile N.	1	5	3	1	7	5

*** PILE TOP DISPLACEMENTS, LOCAL ***

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.5584E-03	-1.5135E-04	2.7584E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
Pile N.	12	10	1	1	1	1
MAXIMUM	1.9735E-03	-1.2909E-04	2.9068E-04	-1.6492E-06	2.1117E-05	-1.4441E-05
Pile N.	1	1	3	1	1	1

*** PILE TOP REACTIONS, LOCAL ***

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	3003.8	-56.589	54.493	-0.5343	-183.58	-192.06
Pile N.	12	12	8	1	3	12
MAXIMUM	3795.9	-47.199	76.350	-0.5343	-145.51	-169.92
Pile N.	1	5	3	1	7	5

*** EFFECTS FOR LATERALLY LOADED PILE ***

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-1.5606E-04	-4.1843E-06	-71.879	-183.58	-56.597	-40.153	-53.361	-15.620	1699.8
Pile N.	11	8	12	3	12	3	3	3	12
Max.	2.9036E-06	2.9068E-04	192.06	108.14	25.140	76.359	9.5994	73.460	2890.1
Pile N.	11	3	12	3	12	3	3	3	1

LOAD CASE : 13

*** TABLE L * COMPUTATION ON PILE CAP**

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
27176.3	11642.2	78.2617	-25.9651	1006.99	-54708.2

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.19462E-03	5.90621E-03	4.15249E-05	-6.70191E-07	2.46715E-06	-2.99132E-04

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	-1.6813E-04	5.9017E-03	3.8509E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
Pile N.	12	10	1	1	1	1
MAXIMUM	2.5574E-03	5.9107E-03	4.4541E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	-317.25	851.09	5.7487	-0.2172	-21.449	2765.8
Pile N.	12	8	5	1	12	8
MAXIMUM	4790.2	1151.7	7.1062	-0.2172	-18.161	3417.6
Pile N.	1	1	10	1	5	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	-1.6813E-04	5.9017E-03	3.8509E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
Pile N.	12	10	1	1	1	1
MAXIMUM	2.5574E-03	5.9107E-03	4.4541E-05	-6.7019E-07	2.4672E-06	-2.9913E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	-317.25	851.09	5.7487	-0.2172	-21.449	2765.8
Pile N.	12	8	5	1	12	8
MAXIMUM	4790.2	1151.7	7.1062	-0.2172	-18.161	3417.6
Pile N.	1	1	10	1	5	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR z-DIR KN	SHEAR y-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-8.9147E-05	-6.6337E-07	-3417.6	-21.449	-545.03	-3.4475	-161.31	-1.0199	143.96
Pile N.	5	6	1	12	1	10	1	10	3
Max.	5.9107E-03	4.4541E-05	1738.1	11.456	1151.9	7.1075	573.51	3.5724	1.3025E+04
Pile N.	1	3	1	12	1	10	1	10	1

LOAD CASE : 14

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
27123.5	-11642.2	78.2617	2.99203	1006.99	36796.5

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.17291E-03	-5.66232E-03	4.00580E-05	3.88806E-07	2.13146E-06	2.37639E-04

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	8.9151E-05	-5.6649E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	10	1	3	1	1	1
MAXIMUM	2.2567E-03	-5.6597E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	3	10	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	175.62	-1149.5	5.7395	0.1260	-21.493	-3477.5
Pile N.	10	3	5	1	12	3
MAXIMUM	4336.3	-852.57	7.3689	0.1260	-18.459	-2834.4
Pile N.	3	8	12	1	5	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	8.9151E-05	-5.6649E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	10	1	3	1	1	1
MAXIMUM	2.2567E-03	-5.6597E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	3	10	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

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	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	175.62	-1149.5	5.7395	0.1260	-21.493	-3477.5
Pile N.	10	3	5	1	12	3
MAXIMUM	4336.3	-852.57	7.3689	0.1260	-18.459	-2834.4
Pile N.	3	8	12	1	5	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-5.6649E-03	-6.2270E-07	-1694.1	-21.493	-1149.7	-3.5018	-568.26	-1.0397	99.379
Pile N.	1	4	3	12	3	12	3	12	10
Max.	8.6229E-05	4.1808E-05	3477.5	11.179	533.41	7.3702	158.49	3.6750	1.2949E+04
Pile N.	5	1	3	12	3	12	3	12	3

LOAD CASE : 15

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
27123.5	-344.552	-15164.0	-4583.80	-78087.4	-6240.53

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.20884E-03	-7.64979E-05	-7.94382E-03	-5.54595E-05	-2.33448E-04	-1.72122E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	-4.4439E-04	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
Pile N.	3	10	1	1	1	1
MAXIMUM	2.8621E-03	2.9785E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
Pile N.	10	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	-838.54	-109.43	-1555.7	-17.969	3907.2	-394.90
Pile N.	3	12	10	1	5	12
MAXIMUM	5152.4	41.569	-1086.3	-17.969	5057.1	131.67
Pile N.	10	3	5	1	10	3

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. X, M	DISP. Y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	-4.4439E-04	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
Pile N.	3	10	1	1	1	1
MAXIMUM	2.8621E-03	2.9785E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7212E-05
Pile N.	10	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	-838.54	-109.43	-1555.7	-17.969	3907.2	-394.90
Pile N.	3	12	10	1	5	12
MAXIMUM	5152.4	41.569	-1086.3	-17.969	5057.1	131.67
Pile N.	10	3	5	1	10	3

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-4.5381E-04	-8.1934E-03	-146.43	-2350.9	-109.46	-1556.1	-50.611	-744.42	309.10
Pile N.	11	1	12	10	12	10	12	10	1
Max.	2.9785E-04	1.2888E-04	394.90	5057.1	45.449	709.87	18.886	198.74	1.8224E+04
Pile N.	1	7	12	10	12	10	3	10	10

LOAD CASE : 16

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
27123.5	-344.552	15320.5	4557.88	80101.3	-6240.87

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.21260E-03	-7.71072E-05	8.07126E-03	5.54017E-05	2.39036E-04	-1.72257E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	-4.5381E-04	-8.1934E-03	-146.43	-2350.9	-109.46	-1556.1
Pile N.	11	1	12	10	12	10
MAXIMUM	2.9785E-04	1.2888E-04	394.90	5057.1	45.449	709.87
Pile N.	1	7	12	10	12	10

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

MINIMUM	-4.7841E-04	-4.5107E-04	7.8219E-03	5.5402E-05	2.3904E-04	-1.7226E-05
Pile N.	12	1	3	1	1	1
MAXIMUM	2.9036E-03	2.9685E-04	8.3206E-03	5.5402E-05	2.3904E-04	-1.7226E-05
Pile N.	1	10	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	-901.47	-109.00	1097.5	17.951	-5113.4	-394.10
Pile N.	12	3	8	1	1	3
MAXIMUM	5201.8	41.175	1571.0	17.951	-3951.6	130.53
Pile N.	1	12	1	1	8	12

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
MINIMUM	-4.7841E-04	-4.5107E-04	7.8219E-03	5.5402E-05	2.3904E-04	-1.7226E-05
Pile N.	12	1	3	1	1	1
MAXIMUM	2.9036E-03	2.9685E-04	8.3206E-03	5.5402E-05	2.3904E-04	-1.7226E-05
Pile N.	1	10	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	-901.47	-109.00	1097.5	17.951	-5113.4	-394.10
Pile N.	12	3	8	1	1	3
MAXIMUM	5201.8	41.175	1571.0	17.951	-3951.6	130.53
Pile N.	1	12	1	1	8	12

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-4.5405E-04	-1.3096E-04	-146.14	-5113.4	-109.03	-717.84	-50.364	-200.59	345.30
Pile N.	2	4	3	1	3	1	3	1	10
Max.	2.9685E-04	8.3206E-03	394.10	2381.2	45.277	1571.4	18.697	751.55	1.8421E+04
Pile N.	10	1	3	1	3	1	12	1	1

LOAD CASE : 17

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
22548.8	-3733.84	78.2617	-8.17398	1001.40	8179.77

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X, RAD	ROT Y, RAD	ROT Z, RAD
9.69090E-04	-1.37400E-03	3.14003E-05	1.32297E-07	2.09664E-06	6.15120E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
MINIMUM	6.7813E-04	-1.3749E-03	3.0805E-05	1.3230E-07	2.0966E-06	6.1512E-05
Pile N.	10	1	3	1	1	1
MAXIMUM	1.2600E-03	-1.3731E-03	3.1996E-05	1.3230E-07	2.0966E-06	6.1512E-05
Pile N.	3	10	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1323.8	-360.28	5.8369	0.042865	-19.182	-990.46
Pile N.	10	3	5	1	3	3
MAXIMUM	2434.3	-279.28	7.4205	0.042865	-16.610	-845.51
Pile N.	3	8	12	1	5	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
MINIMUM	6.7813E-04	-1.3749E-03	3.0805E-05	1.3230E-07	2.0966E-06	6.1512E-05
Pile N.	10	1	3	1	1	1
MAXIMUM	1.2600E-03	-1.3731E-03	3.1996E-05	1.3230E-07	2.0966E-06	6.1512E-05
Pile N.	3	10	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1323.8	-360.28	5.8369	0.042865	-19.182	-990.46
Pile N.	10	3	5	1	3	3
MAXIMUM	2434.3	-279.28	7.4205	0.042865	-16.610	-845.51
Pile N.	3	8	12	1	5	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
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APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

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	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-1.3749E-03	-4.3993E-07	-506.07	-19.182	-360.31	-4.0083	-248.66	-1.5637	749.12
Pile N.	1	7	3	3	3	12	3	12	10
Max.	1.9663E-05	3.1996E-05	990.46	10.863	187.19	7.4211	73.308	5.1641	4367.4
Pile N.	5	1	3	12	3	12	3	12	3

LOAD CASE : 18

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
35672.2	3733.84	78.2617	-14.7990	1017.36	-27384.9

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.54214E-03	1.56992E-03	3.17101E-05	-3.19012E-07	2.12602E-06	-1.20684E-04

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	9.8471E-04	1.5678E-03	3.0274E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
Pile N.	12	10	1	1	1	1
MAXIMUM	2.0996E-03	1.5721E-03	3.3146E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1908.9	277.39	5.8522	-0.1034	-18.759	766.45
Pile N.	12	8	5	1	12	8
MAXIMUM	4036.5	363.35	7.1784	-0.1034	-16.717	920.02
Pile N.	1	1	10	1	5	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	9.8471E-04	1.5678E-03	3.0274E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
Pile N.	12	10	1	1	1	1
MAXIMUM	2.0996E-03	1.5721E-03	3.3146E-05	-3.1901E-07	2.1260E-06	-1.2068E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1908.9	277.39	5.8522	-0.1034	-18.759	766.45
Pile N.	12	8	5	1	12	8
MAXIMUM	4036.5	363.35	7.1784	-0.1034	-16.717	920.02
Pile N.	1	1	10	1	5	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-2.1170E-05	-4.5669E-07	-920.02	-18.759	-200.95	-3.9225	-78.300	-1.5300	1080.2
Pile N.	5	9	1	12	1	10	1	10	12
Max.	1.5721E-03	3.3146E-05	544.75	11.018	363.40	7.1794	252.55	4.9814	5061.4
Pile N.	1	3	1	12	1	10	1	10	1

LOAD CASE : 19

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
31044.7	-344.552	15320.5	4557.88	80106.1	-7534.02

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *





DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.40613E-03	-6.11318E-05	8.09755E-03	5.55125E-05	2.44644E-04	-2.16156E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	-3.4248E-04	-4.3584E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	12	1	3	1	1	1
MAXIMUM	3.1548E-03	3.1358E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	1	10	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	-646.25	-108.88	1097.3	17.986	-5110.1	-399.34
Pile N.	12	3	8	1	1	3
MAXIMUM	5500.3	41.254	1571.4	17.986	-3947.0	125.74

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

Pile N.	1	12	1	1	8	12
* PILE TOP DISPLACEMENTS, LOCAL *						
	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	-3.4248E-04	-4.3584E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	12	1	3	1	1	1
MAXIMUM	3.1548E-03	3.1358E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	1	10	1	1	1	1
* PILE TOP REACTIONS, LOCAL *						
	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	-646.25	-108.88	1097.3	17.986	-5110.1	-399.34
Pile N.	12	3	8	1	1	3
MAXIMUM	5500.3	41.254	1571.4	17.986	-3947.0	125.74
Pile N.	1	12	1	1	8	12

*** EFFECTS FOR LATERALLY LOADED PILE ***

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-4.4068E-04	-1.3137E-04	-143.92	-5110.1	-108.91	-719.18	-50.065	-200.88	157.97
Pile N.	2	4	3	1	3	1	3	1	10
Max.	3.1358E-04	8.3474E-03	399.34	2386.2	44.678	1571.8	18.989	752.21	1.8581E+04
Pile N.	10	1	3	1	3	1	12	1	1

LOAD CASE : 20

*** TABLE L * COMPUTATION ON PILE CAP**

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *					
LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
27123.5	-344.552	-15164.0	-4583.80	-78087.4	-6240.88

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *					
DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.20884E-03	-7.64936E-05	-7.94382E-03	-5.54595E-05	-2.33448E-04	-1.72134E-05

* PILE TOP DISPLACEMENTS, GLOBAL *						
	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	-4.4439E-04	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
Pile N.	3	10	1	1	1	1
MAXIMUM	2.8621E-03	2.9786E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
Pile N.	10	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *						
	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	-838.55	-109.43	-1555.7	-17.969	3907.2	-394.90
Pile N.	3	12	10	1	5	12
MAXIMUM	5152.4	41.569	-1086.3	-17.969	5057.1	131.67
Pile N.	10	3	5	1	10	3

* PILE TOP DISPLACEMENTS, LOCAL *						
	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	-4.4439E-04	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
Pile N.	3	10	1	1	1	1
MAXIMUM	2.8621E-03	2.9786E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
Pile N.	10	1	3	1	1	1


* PILE TOP REACTIONS, LOCAL *						
	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	-838.55	-109.43	-1555.7	-17.969	3907.2	-394.90
Pile N.	3	12	10	1	5	12
MAXIMUM	5152.4	41.569	-1086.3	-17.969	5057.1	131.67
Pile N.	10	3	5	1	10	3

*** EFFECTS FOR LATERALLY LOADED PILE ***

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-4.5381E-04	-8.1934E-03	-146.43	-2350.9	-109.46	-1556.1	-50.611	-744.42	309.10
Pile N.	11	1	12	10	12	10	12	10	1
Max.	2.9786E-04	1.2888E-04	394.90	5057.1	45.449	709.87	18.886	198.74	1.8224E+04
Pile N.	1	7	12	10	12	10	3	10	10

LOAD CASE : 21

*** TABLE L * COMPUTATION ON PILE CAP**

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 236 di 420

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
31097.5	11642.2	78.2617	-25.9651	1011.77	-56002.0

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.40067E-03	5.96687E-03	4.16019E-05	-6.71059E-07	2.47226E-06	-3.14011E-04

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	-2.9066E-05	5.9623E-03	3.8582E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
Pile N.	12	10	1	1	1	1
MAXIMUM	2.8304E-03	5.9714E-03	4.4622E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	-54.845	850.69	5.7488	-0.2174	-21.467	2750.2
Pile N.	12	8	5	1	12	8
MAXIMUM	5114.8	1152.2	7.1058	-0.2174	-18.178	3403.9
Pile N.	1	1	10	1	5	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	-2.9066E-05	5.9623E-03	3.8582E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
Pile N.	12	10	1	1	1	1
MAXIMUM	2.8304E-03	5.9714E-03	4.4622E-05	-6.7106E-07	2.4723E-06	-3.1401E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	-54.845	850.69	5.7488	-0.2174	-21.467	2750.2
Pile N.	12	8	5	1	12	8
MAXIMUM	5114.8	1152.2	7.1058	-0.2174	-18.178	3403.9
Pile N.	1	1	10	1	5	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-8.9923E-05	-6.6630E-07	-3403.9	-21.467	-547.98	-3.4523	-162.03	-1.0205	4.8045
Pile N.	5	6	1	12	1	10	1	10	3
Max.	5.9714E-03	4.4622E-05	1749.2	11.472	1152.5	7.1072	574.84	3.5742	1.3168E+04
Pile N.	1	3	1	12	1	10	1	10	1

LOAD CASE : 22

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
27123.5	-11642.2	78.2617	2.99203	1006.99	36796.9

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.17291E-03	-5.66232E-03	4.00580E-05	3.88806E-07	2.13146E-06	2.37640E-04

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	8.9146E-05	-5.6650E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	10	1	3	1	1	1
MAXIMUM	2.2567E-03	-5.6597E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	3	10	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	175.61	-1149.5	5.7395	0.1260	-21.493	-3477.5
Pile N.	10	3	5	1	12	3
MAXIMUM	4336.3	-852.57	7.3689	0.1260	-18.459	-2834.4
Pile N.	3	8	12	1	5	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	8.9146E-05	-5.6650E-03	3.8308E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	10	1	3	1	1	1
MAXIMUM	2.2567E-03	-5.6597E-03	4.1808E-05	3.8881E-07	2.1315E-06	2.3764E-04
Pile N.	3	10	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandataria

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 237 di 420
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	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	175.61	-1149.5	5.7395	0.1260	-21.493	-3477.5
Pile N.	10	3	5	1	12	3
MAXIMUM	4336.3	-852.57	7.3689	0.1260	-18.459	-2834.4
Pile N.	3	8	12	1	5	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-5.6649E-03	-6.2270E-07	-1694.1	-21.493	-1149.7	-3.5018	-568.26	-1.0397	99.374
Pile N.	1	4	3	12	3	12	3	12	10
Max.	8.6229E-05	4.1808E-05	3477.5	11.179	533.41	7.3702	158.49	3.6750	1.2949E+04
Pile N.	5	1	3	12	3	12	3	12	3

LOAD CASE : 23

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
27123.5	-344.552	-15164.0	-4583.80	-78087.4	-6240.88

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.20884E-03	-7.64936E-05	-7.94382E-03	-5.54595E-05	-2.33448E-04	-1.72134E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	-4.4439E-04	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
Pile N.	3	10	1	1	1	1
MAXIMUM	2.8621E-03	2.9786E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
Pile N.	10	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	-838.55	-109.43	-1555.7	-17.969	3907.2	-394.90
Pile N.	3	12	10	1	5	12
MAXIMUM	5152.4	41.569	-1086.3	-17.969	5057.1	131.67
Pile N.	10	3	5	1	10	3

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. X, M	DISP. Y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	-4.4439E-04	-4.5085E-04	-8.1934E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
Pile N.	3	10	1	1	1	1
MAXIMUM	2.8621E-03	2.9786E-04	-7.6943E-03	-5.5459E-05	-2.3345E-04	-1.7213E-05
Pile N.	10	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	-838.55	-109.43	-1555.7	-17.969	3907.2	-394.90
Pile N.	3	12	10	1	5	12
MAXIMUM	5152.4	41.569	-1086.3	-17.969	5057.1	131.67
Pile N.	10	3	5	1	10	3

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-4.5381E-04	-8.1934E-03	-146.43	-2350.9	-109.46	-1556.1	-50.611	-744.42	309.10
Pile N.	11	1	12	10	12	10	12	10	1
Max.	2.9786E-04	1.2888E-04	394.90	5057.1	45.449	709.87	18.886	198.74	1.8224E+04
Pile N.	1	7	12	10	12	10	3	10	10

LOAD CASE : 24

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *


LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
31044.7	-344.552	15320.5	4557.88	80106.1	-7534.02

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.40613E-03	-6.11318E-05	8.09755E-03	5.55125E-05	2.44644E-04	-2.16156E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	-4.5381E-04	-8.1934E-03	-146.43	-2350.9	-109.46	-1556.1
Pile N.	11	1	12	10	12	10
MAXIMUM	2.9786E-04	1.2888E-04	394.90	5057.1	45.449	709.87
Pile N.	1	7	12	10	12	10

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 238 di 420

MINIMUM	-3.4248E-04	-4.3584E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	12	1	3	1	1	1
MAXIMUM	3.1548E-03	3.1358E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	1	10	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	-646.25	-108.88	1097.3	17.986	-5110.1	-399.34
Pile N.	12	3	8	1	1	3
MAXIMUM	5500.3	41.254	1571.4	17.986	-3947.0	125.74
Pile N.	1	12	1	1	8	12

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
MINIMUM	-3.4248E-04	-4.3584E-04	7.8477E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	12	1	3	1	1	1
MAXIMUM	3.1548E-03	3.1358E-04	8.3473E-03	5.5513E-05	2.4464E-04	-2.1616E-05
Pile N.	1	10	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	-646.25	-108.88	1097.3	17.986	-5110.1	-399.34
Pile N.	12	3	8	1	1	3
MAXIMUM	5500.3	41.254	1571.4	17.986	-3947.0	125.74
Pile N.	1	12	1	1	8	12

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-4.4068E-04	-1.3137E-04	-143.92	-5110.1	-108.91	-719.18	-50.065	-200.88	157.97
Pile N.	2	4	3	1	3	1	3	1	10
Max.	3.1358E-04	8.3474E-03	399.34	2386.2	44.678	1571.8	18.989	752.21	1.8581E+04
Pile N.	10	1	3	1	3	1	12	1	1

13.3 SPB SLE

GROUP for Windows, Version 2016.10.13

Serial Number : 228330872

Analysis of A Group of Piles
 Subjected to Axial and Lateral Loading

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Time and Date of Analysis







Date: February 10, 2020 Time: 15:28:58

***** COMPUTATION RESULTS *****

New Group

***** LOAD CASES RESULTS *****

LOAD CASE : 1

APPALDATTORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 239 di 420

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5849	1.0000
3	0.5920	1.0000
4	0.8011	1.0000
5	0.4951	1.0000
6	0.4975	1.0000
7	0.8006	1.0000
8	0.4934	1.0000
9	0.4956	1.0000
10	0.8006	1.0000
11	0.4944	1.0000
12	0.4966	1.0000
13	0.8610	1.0000
14	0.5774	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
34625.2	2797.70	505.070
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-83.8198	4980.47	-24046.3

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.24206E-03	8.21561E-04	1.22047E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-8.85411E-07	5.67677E-06	-8.19429E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.6619E-03	8.2953E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
2	1.2932E-03	8.2953E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
3	9.2441E-04	8.2953E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
4	1.6363E-03	8.2555E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
5	1.2676E-03	8.2555E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
6	8.9887E-04	8.2555E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
7	1.6108E-03	8.2156E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
8	1.2421E-03	8.2156E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
9	8.7332E-04	8.2156E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
10	1.5853E-03	8.1758E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
11	1.2165E-03	8.1758E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
12	8.4778E-04	8.1758E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
13	1.5597E-03	8.1359E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
14	1.1910E-03	8.1359E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
15	8.2223E-04	8.1359E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
MINIMUM Pile N.	8.2223E-04 15	8.1359E-04 13	1.1806E-04 1	-8.8541E-07 1	5.6768E-06 1	-8.1943E-05 1
MAXIMUM Pile N.	1.6619E-03 1	8.2953E-04 1	1.2603E-04 3	-8.8541E-07 1	5.6768E-06 1	-8.1943E-05 1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	3079.7	229.69	38.998	-0.3254	-99.458	513.96
2	2402.2	182.26	32.653	-0.3254	-88.496	424.44
3	1724.8	183.66	34.129	-0.3254	-92.597	426.99
4	3032.7	218.01	37.370	-0.3254	-96.406	491.10
5	2355.3	163.76	29.753	-0.3254	-82.627	386.66
6	1677.8	164.30	30.977	-0.3254	-86.225	387.56
7	2985.8	216.47	37.357	-0.3254	-96.381	486.86

APPALTATORE:

Consorzio



Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandatario



Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA
IF28LOTTO
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E ZZ CLDOCUMENTO
VI0103 001REV.
BFOGLIO
240 di
420

8	2308.3	162.29	29.695	-0.3254	-82.507	382.53
9	1630.9	162.80	30.912	-0.3254	-86.091	383.38
10	2938.9	215.02	37.358	-0.3254	-96.381	482.77
11	2261.4	161.37	29.731	-0.3254	-82.578	379.51
12	1584.0	161.88	30.949	-0.3254	-86.164	380.35
13	2891.9	222.87	38.875	-0.3254	-99.224	495.75
14	2214.5	175.98	32.423	-0.3254	-88.031	407.19
15	1537.0	177.35	33.892	-0.3254	-92.118	409.69
MINIMUM	1537.0	161.37	29.695	-0.3254	-99.458	379.51
Pile N.	15	11	8	1	1	11
MAXIMUM	3079.7	229.69	38.998	-0.3254	-82.507	513.96
Pile N.	1	1	1	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.6619E-03	8.2953E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
2	1.2932E-03	8.2953E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
3	9.2441E-04	8.2953E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
4	1.6363E-03	8.2555E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
5	1.2676E-03	8.2555E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
6	8.9887E-04	8.2555E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
7	1.6108E-03	8.2156E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
8	1.2421E-03	8.2156E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
9	8.7332E-04	8.2156E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
10	1.5853E-03	8.1758E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
11	1.2165E-03	8.1758E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
12	8.4778E-04	8.1758E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
13	1.5597E-03	8.1359E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
14	1.1910E-03	8.1359E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
15	8.2223E-04	8.1359E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
MINIMUM	8.2223E-04	8.1359E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6619E-03	8.2953E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3079.7	229.69	38.998	-0.3254	-99.458	513.96
2	2402.2	182.26	32.653	-0.3254	-88.496	424.44
3	1724.8	183.66	34.129	-0.3254	-92.597	426.99
4	3032.7	218.01	37.370	-0.3254	-96.406	491.10
5	2355.3	163.76	29.753	-0.3254	-82.627	386.66
6	1677.8	164.30	30.977	-0.3254	-86.225	387.56
7	2985.8	216.47	37.357	-0.3254	-96.381	486.86
8	2308.3	162.29	29.695	-0.3254	-82.507	382.53
9	1630.9	162.80	30.912	-0.3254	-86.091	383.38
10	2938.9	215.02	37.358	-0.3254	-96.381	482.77
11	2261.4	161.37	29.731	-0.3254	-82.578	379.51
12	1584.0	161.88	30.949	-0.3254	-86.164	380.35
13	2891.9	222.87	38.875	-0.3254	-99.224	495.75
14	2214.5	175.98	32.423	-0.3254	-88.031	407.19
15	1537.0	177.35	33.892	-0.3254	-92.118	409.69
MINIMUM	1537.0	161.37	29.695	-0.3254	-99.458	379.51
Pile N.	15	11	8	1	1	11
MAXIMUM	3079.7	229.69	38.998	-0.3254	-82.507	513.96
Pile N.	1	1	1	1	8	1

PILE GROUP STRESS, KN/ M**2

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	3322.6
2	2667.9
3	2294.7
4	3226.6
5	2526.1
6	2147.7
7	3187.5
8	2487.3
9	2108.8
10	3148.8
11	2451.9
12	2073.3
13	3162.4
14	2510.5
15	2137.1
MINIMUM	2073.3
Pile N.	12

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 241 di 420
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MAXIMUM 3322.6
Pile N. 1







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.3286E-05	-3.2970E-06	-513.96	-99.458	-56.366	-8.1578	-12.958	-1.8742	1742.7	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	0.0000	7.6000	7.8000	10.000	10.200	20.000	0.0000	0.0000
2	-2.2485E-05	-3.2394E-06	-424.44	-88.496	-44.098	-6.5868	-12.684	-2.1068	1359.4	7.8279E+06	7.8279E+06
x(M)	10.400	10.600	0.0000	0.0000	8.2000	8.4000	13.600	20.000	20.000	0.0000	0.0000
3	-2.2495E-05	-3.3492E-06	-426.99	-92.597	-44.395	-6.8555	-12.661	-2.1804	976.02	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.2000	8.4000	13.600	13.600	20.000	0.0000	0.0000
4	-2.3086E-05	-3.2782E-06	-491.10	-96.406	-53.380	-7.7671	-12.010	-1.8742	1716.2	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
5	-2.1831E-05	-3.1192E-06	-386.66	-82.627	-39.600	-5.9444	-12.693	-2.0922	1332.8	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	20.000	0.0000	0.0000
6	-2.1829E-05	-3.2202E-06	-387.56	-86.225	-39.688	-6.1569	-12.692	-2.1673	949.46	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	13.600	20.000	0.0000	0.0000
7	-2.2976E-05	-3.2778E-06	-486.86	-96.381	-53.097	-7.7636	-11.944	-1.8748	1689.6	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
8	-2.1720E-05	-3.1166E-06	-382.53	-82.507	-39.321	-5.9314	-12.616	-2.0912	1306.3	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	13.600	20.000	0.0000	0.0000
9	-2.1717E-05	-3.2173E-06	-383.38	-86.091	-39.403	-6.1424	-12.615	-2.1661	922.90	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	13.600	20.000	0.0000	0.0000
10	-2.2866E-05	-3.2776E-06	-482.77	-96.381	-52.366	-7.7633	-11.885	-1.8748	1663.1	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
11	-2.1631E-05	-3.1179E-06	-379.51	-82.578	-39.178	-5.9387	-12.542	-2.0917	1279.7	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	13.600	20.000	0.0000	0.0000
12	-2.1628E-05	-3.2186E-06	-380.35	-86.164	-39.259	-6.1499	-12.541	-2.1667	896.34	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	13.600	20.000	0.0000	0.0000
13	-2.2841E-05	-3.2939E-06	-495.75	-99.224	-55.052	-8.1254	-12.635	-1.8638	1636.5	7.8279E+06	7.8279E+06
x(M)	9.6000	9.8000	0.0000	0.0000	7.6000	7.8000	10.000	10.200	20.000	0.0000	0.0000
14	-2.2044E-05	-3.2299E-06	-407.19	-88.031	-42.896	-6.5338	-12.401	-2.1078	1253.1	7.8279E+06	7.8279E+06
x(M)	10.400	10.600	0.0000	0.0000	8.2000	8.6000	13.600	20.000	20.000	0.0000	0.0000
15	-2.2051E-05	-3.3400E-06	-409.69	-92.118	-43.188	-6.7983	-12.379	-2.1818	869.79	7.8279E+06	7.8279E+06
x(M)	10.400	10.600	0.0000	0.0000	8.2000	8.6000	13.600	13.600	20.000	0.0000	0.0000
Min.	-2.3286E-05	-3.3492E-06	-513.96	-99.458	-56.366	-8.1578	-12.958	-2.1818	869.79	7.8279E+06	7.8279E+06
Pile N.	1	3	1	1	1	1	1	15	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	8.2953E-04	1.1806E-04	256.31	36.848	229.71	39.002	102.21	15.947	3322.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
2	8.2953E-04	1.2205E-04	218.86	32.434	182.27	32.655	72.191	11.706	2667.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
3	8.2953E-04	1.2603E-04	219.88	33.671	183.67	34.131	72.981	12.251	2294.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
4	8.2555E-04	1.1806E-04	247.04	35.694	218.02	37.373	94.893	14.897	3226.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
5	8.2555E-04	1.2205E-04	203.69	30.291	163.77	29.755	61.815	10.093	2526.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.6000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
6	8.2555E-04	1.2603E-04	204.03	31.352	164.31	30.979	62.081	10.494	2147.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.6000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
7	8.2156E-04	1.1806E-04	245.77	35.684	216.49	37.361	94.294	14.889	3187.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
8	8.2156E-04	1.2205E-04	202.43	30.248	162.30	29.698	61.264	10.061	2487.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.6000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
9	8.2156E-04	1.2603E-04	202.75	31.305	162.81	30.914	61.513	10.459	2108.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.6000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
10	8.1758E-04	1.1806E-04	244.56	35.684	215.04	37.361	93.749	14.889	3148.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
11	8.1758E-04	1.2205E-04	201.62	30.273	161.38	29.733	61.023	10.080	2451.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.6000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
12	8.1758E-04	1.2603E-04	201.93	31.330	161.89	30.951	61.270	10.478	2073.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.6000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
13	8.1359E-04	1.1806E-04	250.79	36.759	222.89	38.879	99.367	15.865	3162.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
14	8.1359E-04	1.2205E-04	213.58	32.265	175.99	32.426	69.732	11.573	2510.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
15	8.1359E-04	1.2603E-04	214.59	33.497	177.36	33.894	70.502	12.113	2137.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
Max.	8.2953E-04	1.2603E-04	256.31	36.848	229.71	39.002	102.21	15.947	3322.6	7.8279E+06	7.8279E+06
Pile N.	1	3	1	1	1	1	1	1	1	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5936	1.0000
2	0.5861	1.0000
3	0.8661	1.0000
4	0.4979	1.0000
5	0.4951	1.0000
6	0.8002	1.0000
7	0.4958	1.0000
8	0.4933	1.0000
9	0.7995	1.0000
10	0.4969	1.0000
11	0.4943	1.0000
12	0.7995	1.0000
13	0.5845	1.0000
14	0.5771	1.0000
15	0.8599	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
34005.2	-2797.70	505.070
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-110.600	4980.47	13342.4

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.21957E-03	-7.42133E-04	1.21779E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
1.48200E-07	5.67572E-06	5.47085E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.0245E-03	-7.4347E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
2	1.2706E-03	-7.4347E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
3	1.5168E-03	-7.4347E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
4	9.9892E-04	-7.4280E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
5	1.2451E-03	-7.4280E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
6	1.4913E-03	-7.4280E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
7	9.7338E-04	-7.4213E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
8	1.2196E-03	-7.4213E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
9	1.4658E-03	-7.4213E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
10	9.4784E-04	-7.4147E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
11	1.1940E-03	-7.4147E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
12	1.4402E-03	-7.4147E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
13	9.2230E-04	-7.4080E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
14	1.1685E-03	-7.4080E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
15	1.4147E-03	-7.4080E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
MINIMUM	9.2230E-04	-7.4347E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.5168E-03	-7.4080E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	1908.6	-182.09	33.057	0.054470	-89.404	-459.93
2	2360.9	-180.72	32.609	0.054470	-88.331	-457.33
3	2813.1	-225.63	40.165	0.054470	-102.68	-542.96
4	1861.6	-164.30	29.968	0.054470	-83.165	-424.21
5	2313.9	-163.73	29.678	0.054470	-82.401	-423.15
6	2766.2	-215.54	38.467	0.054470	-99.491	-524.01
7	1814.7	-163.73	29.900	0.054470	-83.024	-422.83

APPALTATORE:

Consorzio



Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandatario



Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA
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420

8	2267.0	-163.18	29.616	0.054470	-82.271	-421.84
9	2719.3	-215.20	38.451	0.054470	-99.459	-523.14
10	1767.8	-163.74	29.935	0.054470	-83.094	-422.65
11	2220.1	-163.20	29.651	0.054470	-82.341	-421.66
12	2672.4	-214.96	38.452	0.054470	-99.459	-522.46
13	1720.9	-179.67	32.778	0.054470	-88.842	-454.31
14	2173.2	-178.30	32.331	0.054470	-87.769	-451.71
15	2625.5	-223.72	40.011	0.054470	-102.38	-538.48
MINIMUM	1720.9	-225.63	29.616	0.054470	-102.68	-542.96
Pile N.	13	3	8	1	3	3
MAXIMUM	2813.1	-163.18	40.165	0.054470	-82.271	-421.66
Pile N.	3	8	3	1	8	11

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.0245E-03	-7.4347E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
2	1.2706E-03	-7.4347E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
3	1.5168E-03	-7.4347E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
4	9.9892E-04	-7.4280E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
5	1.2451E-03	-7.4280E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
6	1.4913E-03	-7.4280E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
7	9.7338E-04	-7.4213E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
8	1.2196E-03	-7.4213E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
9	1.4658E-03	-7.4213E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
10	9.4784E-04	-7.4147E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
11	1.1940E-03	-7.4147E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
12	1.4402E-03	-7.4147E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
13	9.2230E-04	-7.4080E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
14	1.1685E-03	-7.4080E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
15	1.4147E-03	-7.4080E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
MINIMUM	9.2230E-04	-7.4347E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.5168E-03	-7.4080E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	1908.6	-182.09	33.057	0.054470	-89.404	-459.93
2	2360.9	-180.72	32.609	0.054470	-88.331	-457.33
3	2813.1	-225.63	40.165	0.054470	-102.68	-542.96
4	1861.6	-164.30	29.968	0.054470	-83.165	-424.21
5	2313.9	-163.73	29.678	0.054470	-82.401	-423.15
6	2766.2	-215.54	38.467	0.054470	-99.491	-524.01
7	1814.7	-163.73	29.900	0.054470	-83.024	-422.83
8	2267.0	-163.18	29.616	0.054470	-82.271	-421.84
9	2719.3	-215.20	38.451	0.054470	-99.459	-523.14
10	1767.8	-163.74	29.935	0.054470	-83.094	-422.65
11	2220.1	-163.20	29.651	0.054470	-82.341	-421.66
12	2672.4	-214.96	38.452	0.054470	-99.459	-522.46
13	1720.9	-179.67	32.778	0.054470	-88.842	-454.31
14	2173.2	-178.30	32.331	0.054470	-87.769	-451.71
15	2625.5	-223.72	40.011	0.054470	-102.38	-538.48
MINIMUM	1720.9	-225.63	29.616	0.054470	-102.68	-542.96
Pile N.	13	3	8	1	3	3
MAXIMUM	2813.1	-163.18	40.165	0.054470	-82.271	-421.66
Pile N.	3	8	3	1	8	11

PILE GROUP STRESS, KN/ M**2

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2494.1
2	2741.7
3	3259.6
4	2358.1
5	2610.5
6	3175.1
7	2327.4
8	2580.0
9	3146.0
10	2300.4
11	2552.9
12	3117.4
13	2370.9
14	2618.5
15	3140.0
MINIMUM	2300.4
Pile N.	10

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 244 di 420
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MAXIMUM 3259.6
Pile N. 3

* EFFECTS FOR LATERALLY LOADED PILE *





* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-7.4347E-04	-3.2570E-06	-197.43	-89.404	-182.10	-6.6696	-68.789	-2.1121	1080.0	7.8279E+06	7.8279E+06
x(M)	0.0000	10.6000	5.6000	0.0000	0.0000	8.4000	2.6000	13.6000	20.000	0.0000	0.0000
2	-7.4347E-04	-3.2335E-06	-196.45	-88.331	-180.73	-6.5809	-68.013	-2.1014	1336.0	7.8279E+06	7.8279E+06
x(M)	0.0000	10.6000	5.6000	0.0000	0.0000	8.4000	2.6000	13.6000	20.000	0.0000	0.0000
3	-7.4347E-04	-3.3811E-06	-230.43	-102.68	-225.65	-8.3711	-95.990	-1.9232	1591.9	7.8279E+06	7.8279E+06
x(M)	0.0000	9.8000	5.2000	0.0000	0.0000	7.8000	2.6000	10.2000	20.000	0.0000	0.0000
4	-7.4280E-04	-3.1309E-06	-183.60	-83.165	-164.31	-5.9818	-58.731	-2.1006	1053.5	7.8279E+06	7.8279E+06
x(M)	0.0000	11.0000	5.8000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
5	-7.4280E-04	-3.1123E-06	-183.22	-82.401	-163.74	-5.9309	-58.438	-2.0872	1309.4	7.8279E+06	7.8279E+06
x(M)	0.0000	11.0000	5.8000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
6	-7.4280E-04	-3.3615E-06	-222.78	-99.491	-215.56	-7.9653	-89.469	-1.9297	1565.4	7.8279E+06	7.8279E+06
x(M)	0.0000	10.0000	5.2000	0.0000	0.0000	8.0000	2.6000	13.6000	20.000	0.0000	0.0000
7	-7.4213E-04	-3.1280E-06	-183.13	-83.024	-163.74	-5.9665	-58.455	-2.0995	1026.9	7.8279E+06	7.8279E+06
x(M)	0.0000	11.0000	5.8000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
8	-7.4213E-04	-3.1095E-06	-182.77	-82.271	-163.20	-5.9168	-58.180	-2.0860	1282.9	7.8279E+06	7.8279E+06
x(M)	0.0000	11.0000	5.8000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
9	-7.4213E-04	-3.3611E-06	-222.50	-99.459	-215.22	-7.9610	-89.316	-1.9305	1538.8	7.8279E+06	7.8279E+06
x(M)	0.0000	10.0000	5.2000	0.0000	0.0000	8.0000	2.6000	13.6000	20.000	0.0000	0.0000
10	-7.4147E-04	-3.1292E-06	-183.11	-83.094	-163.75	-5.9737	-58.503	-2.1000	1000.4	7.8279E+06	7.8279E+06
x(M)	0.0000	11.0000	5.8000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
11	-7.4147E-04	-3.1107E-06	-182.76	-82.341	-163.21	-5.9240	-58.229	-2.0866	1256.3	7.8279E+06	7.8279E+06
x(M)	0.0000	11.0000	5.8000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
12	-7.4147E-04	-3.3609E-06	-222.30	-99.459	-214.98	-7.9607	-89.225	-1.9305	1512.3	7.8279E+06	7.8279E+06
x(M)	0.0000	10.0000	5.2000	0.0000	0.0000	8.0000	2.6000	13.6000	20.000	0.0000	0.0000
13	-7.4080E-04	-3.2467E-06	-195.49	-88.842	-179.68	-6.6019	-67.575	-2.1139	973.82	7.8279E+06	7.8279E+06
x(M)	0.0000	10.6000	5.6000	0.0000	0.0000	8.4000	2.6000	13.6000	20.000	0.0000	0.0000
14	-7.4080E-04	-3.2223E-06	-194.50	-87.769	-178.31	-6.5165	-66.803	-2.1028	1229.8	7.8279E+06	7.8279E+06
x(M)	0.0000	10.6000	5.6000	0.0000	0.0000	8.4000	2.6000	13.6000	20.000	0.0000	0.0000
15	-7.4080E-04	-3.3779E-06	-228.91	-102.38	-223.74	-8.3307	-95.001	-1.9102	1485.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.0000	5.2000	0.0000	0.0000	7.8000	2.6000	10.2000	20.000	0.0000	0.0000
Min.	-7.4347E-04	-3.3811E-06	-230.43	-102.68	-225.65	-8.3711	-95.990	-2.1139	973.82	7.8279E+06	7.8279E+06
Pile N.	1	3	3	3	3	3	3	13	13	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.9928E-05	1.2245E-04	459.93	32.732	40.044	33.059	12.055	11.903	2494.1	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.8000	8.4000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
2	1.9891E-05	1.2178E-04	457.33	32.388	39.756	32.612	12.072	11.700	2741.7	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.8000	8.4000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
3	2.0773E-05	1.2111E-04	542.96	37.817	50.806	40.169	11.680	16.393	3259.6	7.8279E+06	7.8279E+06
x(M)	9.8000	0.0000	0.0000	5.4000	7.8000	0.0000	10.0000	2.6000	0.0000	0.0000	0.0000
4	1.9264E-05	1.2245E-04	424.21	30.455	35.896	29.970	12.061	10.179	2358.1	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
5	1.9255E-05	1.2178E-04	423.15	30.223	35.789	29.681	12.058	10.069	2610.5	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
6	2.0616E-05	1.2111E-04	524.01	36.612	48.318	38.470	11.009	15.299	3175.1	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	7.8000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
7	1.9231E-05	1.2245E-04	422.83	30.405	35.770	29.902	12.044	10.142	2327.4	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
8	1.9222E-05	1.2178E-04	421.84	30.177	35.670	29.618	12.041	10.035	2580.0	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
9	2.0596E-05	1.2111E-04	523.14	36.600	48.247	38.454	11.002	15.289	3146.0	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	7.8000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
10	1.9221E-05	1.2245E-04	422.65	30.430	35.781	29.937	12.033	10.160	2300.4	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
11	1.9212E-05	1.2178E-04	421.66	30.201	35.682	29.653	12.030	10.053	2552.9	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
12	2.0576E-05	1.2111E-04	522.46	36.599	48.201	38.455	10.990	15.289	3117.4	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	7.8000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
13	1.9796E-05	1.2245E-04	454.31	32.529	39.522	32.780	12.022	11.741	2370.9	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.8000	8.4000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
14	1.9754E-05	1.2178E-04	451.71	32.185	39.232	32.334	12.037	11.539	2618.5	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.8000	8.4000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
15	2.0688E-05	1.2111E-04	538.48	37.706	50.391	40.015	11.556	16.291	3140.0	7.8279E+06	7.8279E+06
x(M)	9.8000	0.0000	0.0000	5.4000	7.8000	0.0000	10.0000	2.6000	0.0000	0.0000	0.0000
Max.	2.0773E-05	1.2245E-04	542.96	37.817	50.806	40.169	12.072	16.393	3259.6	7.8279E+06	7.8279E+06
Pile N.	3	1	3	3	3	3	2	3	3	1	1

LOAD CASE : 3

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria Mandanti   													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 15%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 15%;">REV.</td> <td style="width: 15%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>245 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	245 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	245 di 420								

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.6883	1.0000
2	0.6608	1.0000
3	0.8661	1.0000
4	0.5240	1.0000
5	0.4954	1.0000
6	0.7397	1.0000
7	0.5112	1.0000
8	0.4841	1.0000
9	0.7312	1.0000
10	0.5119	1.0000
11	0.4848	1.0000
12	0.7312	1.0000
13	0.5845	1.0000
14	0.5537	1.0000
15	0.7861	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
32085.6	-750.988	432.189
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-26.8538	3229.24	-3489.97

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.14991E-03	-1.47239E-04	1.01788E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-8.26629E-08	3.94995E-06	-3.29945E-06



THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.2003E-03	-1.4650E-04	1.0142E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
2	1.1855E-03	-1.4650E-04	1.0179E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
3	1.1706E-03	-1.4650E-04	1.0216E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
4	1.1825E-03	-1.4687E-04	1.0142E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
5	1.1677E-03	-1.4687E-04	1.0179E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
6	1.1528E-03	-1.4687E-04	1.0216E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
7	1.1648E-03	-1.4724E-04	1.0142E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
8	1.1499E-03	-1.4724E-04	1.0179E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
9	1.1351E-03	-1.4724E-04	1.0216E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
10	1.1470E-03	-1.4761E-04	1.0142E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
11	1.1321E-03	-1.4761E-04	1.0179E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
12	1.1173E-03	-1.4761E-04	1.0216E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
13	1.1292E-03	-1.4798E-04	1.0142E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
14	1.1144E-03	-1.4798E-04	1.0179E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
15	1.0995E-03	-1.4798E-04	1.0216E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
MINIMUM Pile N.	15	13	1	1	1	1
MAXIMUM Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2231.6	-52.710	30.439	-0.030382	-81.798	-156.08
2	2204.3	-51.611	29.890	-0.030382	-80.842	-153.89
3	2177.1	-59.309	34.772	-0.030382	-90.290	-168.88
4	2199.0	-45.867	26.197	-0.030382	-73.356	-142.30
5	2171.7	-44.545	25.501	-0.030382	-72.033	-139.54
6	2144.4	-54.836	31.923	-0.030382	-84.897	-160.37
7	2166.3	-45.385	25.840	-0.030382	-72.626	-141.40

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

8	2139.0	-44.112	25.175	-0.030382	-71.359	-138.72
9	2111.8	-54.640	31.722	-0.030382	-84.510	-160.10
10	2133.7	-45.525	25.860	-0.030382	-72.665	-141.79
11	2106.4	-44.252	25.196	-0.030382	-71.403	-139.12
12	2079.1	-54.770	31.722	-0.030382	-84.510	-160.47
13	2101.0	-48.900	27.830	-0.030382	-76.650	-148.85
14	2073.7	-47.544	27.124	-0.030382	-75.339	-146.07
15	2046.5	-56.983	32.998	-0.030382	-86.946	-164.90
MINIMUM	2046.5	-59.309	25.175	-0.030382	-90.290	-168.88
Pile N.	15	3	8	1	3	3
MAXIMUM	2231.6	-44.112	34.772	-0.030382	-71.359	-138.72
Pile N.	1	8	3	1	8	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.2003E-03	-1.4650E-04	1.0142E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
2	1.1855E-03	-1.4650E-04	1.0179E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
3	1.1706E-03	-1.4650E-04	1.0216E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
4	1.1825E-03	-1.4687E-04	1.0142E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
5	1.1677E-03	-1.4687E-04	1.0179E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
6	1.1528E-03	-1.4687E-04	1.0216E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
7	1.1648E-03	-1.4724E-04	1.0142E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
8	1.1499E-03	-1.4724E-04	1.0179E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
9	1.1351E-03	-1.4724E-04	1.0216E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
10	1.1470E-03	-1.4761E-04	1.0142E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
11	1.1321E-03	-1.4761E-04	1.0179E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
12	1.1173E-03	-1.4761E-04	1.0216E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
13	1.1292E-03	-1.4798E-04	1.0142E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
14	1.1144E-03	-1.4798E-04	1.0179E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
15	1.0995E-03	-1.4798E-04	1.0216E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
MINIMUM	1.0995E-03	-1.4798E-04	1.0142E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2003E-03	-1.4650E-04	1.0216E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2231.6	-52.710	30.439	-0.030382	-81.798	-156.08
2	2204.3	-51.611	29.890	-0.030382	-80.842	-153.89
3	2177.1	-59.309	34.772	-0.030382	-90.290	-168.88
4	2199.0	-45.867	26.197	-0.030382	-73.356	-142.30
5	2171.7	-44.545	25.501	-0.030382	-72.033	-139.54
6	2144.4	-54.836	31.923	-0.030382	-84.897	-160.37
7	2166.3	-45.385	25.840	-0.030382	-72.626	-141.40
8	2139.0	-44.112	25.175	-0.030382	-71.359	-138.72
9	2111.8	-54.640	31.722	-0.030382	-84.510	-160.10
10	2133.7	-45.525	25.860	-0.030382	-72.665	-141.79
11	2106.4	-44.252	25.196	-0.030382	-71.403	-139.12
12	2079.1	-54.770	31.722	-0.030382	-84.510	-160.47
13	2101.0	-48.900	27.830	-0.030382	-76.650	-148.85
14	2073.7	-47.544	27.124	-0.030382	-75.339	-146.07
15	2046.5	-56.983	32.998	-0.030382	-86.946	-164.90
MINIMUM	2046.5	-59.309	25.175	-0.030382	-90.290	-168.88
Pile N.	15	3	8	1	3	3
MAXIMUM	2231.6	-44.112	34.772	-0.030382	-71.359	-138.72
Pile N.	1	8	3	1	8	8

PILE GROUP STRESS, KN/ M**2

1	1794.7
2	1772.0
3	1809.9
4	1727.5
5	1702.9
6	1761.1
7	1705.6
8	1681.3
9	1741.4
10	1688.3
11	1663.9
12	1723.9
13	1694.2
14	1669.5
15	1720.7
MINIMUM	1663.9
Pile N.	11

APPALDATTORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandataria

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA
IF28

LOTTO
01

CODIFICA
E ZZ CL

DOCUMENTO
VI0103 001

REV.
B

FOGLIO
247 di
420

MAXIMUM 1809.9
Pile N. 3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.4676E-04	-2.7627E-06	-43.126	-81.798	-52.714	-6.0858	-18.188	-1.7388	1262.8	7.8279E+06	7.8279E+06
x(M)	0.2000	10.400	6.0000	0.0000	0.0000	8.2000	2.6000	13.600	20.000	0.0000	0.0000
2	-1.4676E-04	-2.7567E-06	-42.432	-80.842	-51.615	-5.9528	-17.550	-1.7614	1247.4	7.8279E+06	7.8279E+06
x(M)	0.2000	10.400	6.0000	0.0000	0.0000	8.4000	2.6000	13.600	20.000	0.0000	0.0000
3	-1.4672E-04	-2.8539E-06	-47.385	-90.290	-59.313	-7.0820	-22.205	-1.6275	1232.0	7.8279E+06	7.8279E+06
x(M)	0.2000	10.000	5.6000	0.0000	0.0000	7.8000	2.6000	10.200	20.000	0.0000	0.0000
4	-1.4716E-04	-2.6220E-06	-38.697	-73.356	-45.871	-5.1326	-14.348	-1.7754	1244.4	7.8279E+06	7.8279E+06
x(M)	0.2000	10.800	6.2000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
5	-1.4717E-04	-2.5957E-06	-37.830	-72.033	-44.548	-4.9783	-13.654	-1.7712	1228.9	7.8279E+06	7.8279E+06
x(M)	0.2000	11.000	6.4000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
6	-1.4712E-04	-2.8109E-06	-44.541	-84.897	-54.840	-6.4155	-19.415	-1.7159	1213.5	7.8279E+06	7.8279E+06
x(M)	0.2000	10.200	5.8000	0.0000	0.0000	8.2000	2.6000	13.600	20.000	0.0000	0.0000
7	-1.4754E-04	-2.6044E-06	-38.390	-72.626	-45.389	-5.0563	-14.071	-1.7712	1225.9	7.8279E+06	7.8279E+06
x(M)	0.2000	11.000	6.2000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
8	-1.4754E-04	-2.5798E-06	-37.578	-71.359	-44.116	-4.9057	-13.409	-1.7648	1210.4	7.8279E+06	7.8279E+06
x(M)	0.2000	11.000	6.4000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
9	-1.4749E-04	-2.8062E-06	-44.435	-84.510	-54.644	-6.3697	-19.267	-1.7226	1195.0	7.8279E+06	7.8279E+06
x(M)	0.2000	10.200	5.8000	0.0000	0.0000	8.2000	2.6000	13.600	20.000	0.0000	0.0000
10	-1.4791E-04	-2.6050E-06	-38.507	-72.665	-45.529	-5.0063	-14.122	-1.7714	1207.4	7.8279E+06	7.8279E+06
x(M)	0.2000	11.000	6.2000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
11	-1.4792E-04	-2.5808E-06	-37.693	-71.403	-44.256	-4.9103	-13.460	-1.7652	1192.0	7.8279E+06	7.8279E+06
x(M)	0.2000	11.000	6.4000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
12	-1.4786E-04	-2.8061E-06	-44.545	-84.510	-54.774	-6.3695	-19.314	-1.7226	1176.5	7.8279E+06	7.8279E+06
x(M)	0.2000	10.200	5.8000	0.0000	0.0000	8.2000	2.6000	13.600	20.000	0.0000	0.0000
13	-1.4826E-04	-2.6860E-06	-40.751	-76.650	-48.904	-5.4930	-15.916	-1.7794	1188.9	7.8279E+06	7.8279E+06
x(M)	0.2000	10.600	6.0000	0.0000	0.0000	8.6000	2.6000	13.600	20.000	0.0000	0.0000
14	-1.4827E-04	-2.6656E-06	-39.883	-75.339	-47.548	-5.3323	-15.175	-1.7874	1173.5	7.8279E+06	7.8279E+06
x(M)	0.2000	10.800	6.2000	0.0000	0.0000	8.6000	2.6000	13.600	20.000	0.0000	0.0000
15	-1.4822E-04	-2.8262E-06	-46.008	-86.946	-56.987	-6.6665	-20.619	-1.6757	1158.1	7.8279E+06	7.8279E+06
x(M)	0.2000	10.200	5.8000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
Min.	-1.4827E-04	-2.8539E-06	-47.385	-90.290	-59.313	-7.0820	-22.205	-1.7874	1158.1	7.8279E+06	7.8279E+06
Pile N.	14	3	3	3	3	3	3	14	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	4.0312E-06	1.0142E-04	156.08	28.898	9.1460	30.442	2.8755	11.381	1794.7	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.6000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
2	3.9964E-06	1.0179E-04	153.89	28.513	8.9200	29.892	2.8931	11.022	1772.0	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.6000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
3	4.1642E-06	1.0216E-04	168.88	32.004	10.558	34.775	2.6590	14.024	1809.9	7.8279E+06	7.8279E+06
x(M)	10.200	0.0000	0.0000	5.4000	8.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
4	3.7842E-06	1.0142E-04	142.30	25.826	7.7533	26.199	2.8875	8.9406	1727.5	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.0000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
5	3.7195E-06	1.0179E-04	139.54	25.347	7.4958	25.503	2.8572	8.5384	1702.9	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.0000	9.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
6	4.0891E-06	1.0216E-04	160.37	29.984	9.5932	31.925	2.8358	12.220	1761.1	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.6000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
7	3.7674E-06	1.0142E-04	141.40	25.573	7.6520	25.842	2.8823	8.7454	1705.6	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.0000	9.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
8	3.6965E-06	1.0179E-04	138.72	25.108	7.4109	25.177	2.8488	8.3635	1681.3	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	6.0000	9.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
9	4.0898E-06	1.0216E-04	160.10	29.844	9.5465	31.724	2.8514	12.096	1741.4	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.6000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
10	3.7782E-06	1.0142E-04	141.79	25.586	7.6769	25.862	2.8899	8.7559	1688.3	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.0000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
11	3.7076E-06	1.0179E-04	139.12	25.123	7.4357	25.198	2.8567	8.3747	1663.9	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.0000	9.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
12	4.0999E-06	1.0216E-04	160.47	29.844	9.5699	31.725	2.8583	12.096	1723.9	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.6000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
13	3.9261E-06	1.0142E-04	148.85	27.023	8.3505	27.832	2.9379	9.8522	1694.2	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	5.8000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
14	3.8747E-06	1.0179E-04	146.07	26.520	8.0768	27.126	2.9283	9.4272	1669.5	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	5.8000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
15	4.1554E-06	1.0216E-04	164.90	30.729	10.029	33.000	2.8012	12.888	1720.7	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.4000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
Max.	4.1642E-06	1.0216E-04	168.88	32.004	10.558	34.775	2.9379	14.024	1809.9	7.8279E+06	7.8279E+06
Pile N.	3	3	3	3	3	3	13	3	3	1	1

LOAD CASE : 4

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 248 di 420

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.6567	1.0000
2	0.6356	1.0000
3	0.8661	1.0000
4	0.5150	1.0000
5	0.4953	1.0000
6	0.7615	1.0000
7	0.5059	1.0000
8	0.4873	1.0000
9	0.7558	1.0000
10	0.5067	1.0000
11	0.4881	1.0000
12	0.7558	1.0000
13	0.5845	1.0000
14	0.5620	1.0000
15	0.8127	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
34544.5	-1377.61	690.160
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-44.9046	7655.35	180.951

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.23914E-03	-3.18518E-04	1.68786E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
7.35546E-08	8.50427E-06	1.06917E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.2676E-03	-3.1918E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
2	1.3157E-03	-3.1918E-04	1.6879E-04	7.3555E-08	8.5043E-06	1.0692E-05
3	1.3638E-03	-3.1918E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
4	1.2293E-03	-3.1885E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
5	1.2774E-03	-3.1885E-04	1.6879E-04	7.3555E-08	8.5043E-06	1.0692E-05
6	1.3255E-03	-3.1885E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
7	1.1910E-03	-3.1852E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
8	1.2391E-03	-3.1852E-04	1.6879E-04	7.3555E-08	8.5043E-06	1.0692E-05
9	1.2872E-03	-3.1852E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
10	1.1527E-03	-3.1819E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
11	1.2009E-03	-3.1819E-04	1.6879E-04	7.3555E-08	8.5043E-06	1.0692E-05
12	1.2490E-03	-3.1819E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
13	1.1145E-03	-3.1786E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
14	1.1626E-03	-3.1786E-04	1.6879E-04	7.3555E-08	8.5043E-06	1.0692E-05
15	1.2107E-03	-3.1786E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
MINIMUM	1.1145E-03	-3.1918E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.3638E-03	-3.1786E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2355.2	-95.021	47.637	0.027035	-125.88	-259.95
2	2443.6	-93.342	46.672	0.027035	-123.90	-256.65
3	2532.0	-110.36	55.231	0.027035	-140.13	-289.35
4	2284.9	-83.081	41.591	0.027035	-113.83	-235.91
5	2373.3	-81.311	40.594	0.027035	-111.71	-232.28
6	2461.7	-102.85	51.463	0.027035	-133.05	-275.02
7	2214.6	-82.172	41.175	0.027035	-112.98	-233.94

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 249 di 420
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8	2303.0	-80.491	40.223	0.027035	-110.94	-230.49
9	2391.4	-102.32	51.255	0.027035	-132.65	-273.90
10	2144.3	-82.151	41.214	0.027035	-113.06	-233.80
11	2232.7	-80.477	40.264	0.027035	-111.02	-230.36
12	2321.1	-102.21	51.257	0.027035	-132.65	-273.57
13	2074.0	-88.770	44.655	0.027035	-119.99	-247.13
14	2162.4	-86.875	43.583	0.027035	-117.75	-243.33
15	2250.7	-106.17	53.346	0.027035	-136.60	-281.00
MINIMUM	2074.0	-110.36	40.223	0.027035	-140.13	-289.35
Pile N.	13	3	8	1	3	3
MAXIMUM	2532.0	-80.477	55.231	0.027035	-110.94	-230.36
Pile N.	3	11	3	1	8	11

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *


PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.2676E-03	-3.1918E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
2	1.3157E-03	-3.1918E-04	1.6879E-04	7.3555E-08	8.5043E-06	1.0692E-05
3	1.3638E-03	-3.1918E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
4	1.2293E-03	-3.1885E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
5	1.2774E-03	-3.1885E-04	1.6879E-04	7.3555E-08	8.5043E-06	1.0692E-05
6	1.3255E-03	-3.1885E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
7	1.1910E-03	-3.1852E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
8	1.2391E-03	-3.1852E-04	1.6879E-04	7.3555E-08	8.5043E-06	1.0692E-05
9	1.2872E-03	-3.1852E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
10	1.1527E-03	-3.1819E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
11	1.2009E-03	-3.1819E-04	1.6879E-04	7.3555E-08	8.5043E-06	1.0692E-05
12	1.2490E-03	-3.1819E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
13	1.1145E-03	-3.1786E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
14	1.1626E-03	-3.1786E-04	1.6879E-04	7.3555E-08	8.5043E-06	1.0692E-05
15	1.2107E-03	-3.1786E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
MINIMUM	1.1145E-03	-3.1918E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.3638E-03	-3.1786E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2355.2	-95.021	47.637	0.027035	-125.88	-259.95
2	2443.6	-93.342	46.672	0.027035	-123.90	-256.65
3	2532.0	-110.36	55.231	0.027035	-140.13	-289.35
4	2284.9	-83.081	41.591	0.027035	-113.83	-235.91
5	2373.3	-81.311	40.594	0.027035	-111.71	-232.28
6	2461.7	-102.85	51.463	0.027035	-133.05	-275.02
7	2214.6	-82.172	41.175	0.027035	-112.98	-233.94
8	2303.0	-80.491	40.223	0.027035	-110.94	-230.49
9	2391.4	-102.32	51.255	0.027035	-132.65	-273.90
10	2144.3	-82.151	41.214	0.027035	-113.06	-233.80
11	2232.7	-80.477	40.264	0.027035	-111.02	-230.36
12	2321.1	-102.21	51.257	0.027035	-132.65	-273.57
13	2074.0	-88.770	44.655	0.027035	-119.99	-247.13
14	2162.4	-86.875	43.583	0.027035	-117.75	-243.33
15	2250.7	-106.17	53.346	0.027035	-136.60	-281.00
MINIMUM	2074.0	-110.36	40.223	0.027035	-140.13	-289.35
Pile N.	13	3	8	1	3	3
MAXIMUM	2532.0	-80.477	55.231	0.027035	-110.94	-230.36
Pile N.	3	11	3	1	8	11

PILE GROUP STRESS, KN/ M**2

1	2204.5
2	2242.9
3	2403.1
4	2083.5
5	2120.9
6	2315.1
7	2037.3
8	2075.2
9	2271.7
10	1997.2
11	2035.2
12	2231.0
13	2002.7
14	2039.5
15	2216.6
MINIMUM	1997.2
Pile N.	10

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria  Mandanti  		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 250 di 420

MAXIMUM 2403.1
Pile N. 3

* EFFECTS FOR LATERALLY LOADED PILE *




* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-3.1918E-04	-4.5807E-06	-89.342	-125.88	-95.028	-9.7975	-34.691	-2.8529	1332.8	7.8279E+06	7.8279E+06
x(M)	0.0000	10.400	5.8000	0.0000	0.0000	8.2000	2.6000	13.600	20.000	0.0000	0.0000
2	-3.1918E-04	-4.5484E-06	-88.197	-123.90	-93.350	-9.5814	-33.707	-2.8633	1382.8	7.8279E+06	7.8279E+06
x(M)	0.0000	10.400	5.8000	0.0000	0.0000	8.4000	2.6000	13.600	20.000	0.0000	0.0000
3	-3.1918E-04	-4.7020E-06	-100.21	-140.13	-110.37	-11.623	-44.201	-2.6699	1432.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.8000	5.4000	0.0000	0.0000	7.8000	2.6000	10.200	20.000	0.0000	0.0000
4	-3.1885E-04	-4.3719E-06	-80.839	-113.83	-83.088	-8.4178	-27.943	-2.8897	1293.0	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	6.0000	0.0000	0.0000	8.6000	2.6000	13.600	20.000	0.0000	0.0000
5	-3.1885E-04	-4.3188E-06	-79.565	-111.71	-81.318	-8.2069	-26.990	-2.8717	1343.0	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	6.0000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
6	-3.1885E-04	-4.6450E-06	-94.909	-133.05	-102.86	-10.716	-49.463	-2.7175	1393.0	7.8279E+06	7.8279E+06
x(M)	0.0000	10.200	5.6000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
7	-3.1852E-04	-4.3506E-06	-80.167	-112.98	-82.178	-8.3264	-27.471	-2.8847	1253.2	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	6.0000	0.0000	0.0000	8.2000	2.6000	13.600	20.000	0.0000	0.0000
8	-3.1852E-04	-4.3036E-06	-78.944	-110.94	-80.498	-8.1252	-26.571	-2.8653	1303.2	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	6.0000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
9	-3.1852E-04	-4.6426E-06	-94.526	-132.65	-102.33	-10.665	-39.165	-2.7255	1353.2	7.8279E+06	7.8279E+06
x(M)	0.0000	10.200	5.6000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
10	-3.1819E-04	-4.3521E-06	-80.132	-113.06	-82.158	-8.3336	-27.479	-2.8850	1213.4	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	6.0000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
11	-3.1819E-04	-4.3048E-06	-78.916	-111.02	-80.483	-8.1331	-26.582	-2.8659	1263.4	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	6.0000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
12	-3.1819E-04	-4.6422E-06	-94.425	-132.65	-102.22	-10.664	-39.122	-2.7254	1313.4	7.8279E+06	7.8279E+06
x(M)	0.0000	10.200	5.6000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
13	-3.1786E-04	-4.4901E-06	-84.871	-119.99	-88.777	-9.1077	-31.166	-2.8950	1173.6	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.8000	0.0000	0.0000	8.4000	2.6000	13.600	20.000	0.0000	0.0000
14	-3.1786E-04	-4.4445E-06	-83.484	-117.75	-86.882	-8.8714	-30.099	-2.8926	1223.6	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.8000	0.0000	0.0000	8.6000	2.6000	13.600	20.000	0.0000	0.0000
15	-3.1786E-04	-4.6799E-06	-97.148	-136.60	-106.18	-11.160	-41.637	-2.6383	1273.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.4000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
Min.	-3.1918E-04	-4.7020E-06	-100.21	-140.13	-110.37	-11.623	-44.201	-2.8950	1173.6	7.8279E+06	7.8279E+06
Pile N.	1	3	3	3	3	3	3	13	13	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	8.6324E-06	1.6912E-04	259.95	47.078	18.657	47.641	5.5974	17.850	2204.5	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.6000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
2	8.5821E-06	1.6879E-04	256.65	46.354	18.282	46.676	5.6263	17.306	2242.9	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.6000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
3	8.9303E-06	1.6846E-04	289.35	52.518	22.197	55.235	5.0985	22.659	2403.1	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	8.0000	0.0000	10.200	2.6000	0.0000	0.0000	0.0000
4	8.1960E-06	1.6912E-04	235.91	42.602	16.021	41.594	5.6330	14.387	2083.5	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	5.8000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
5	8.1212E-06	1.6879E-04	232.28	41.832	15.637	40.597	5.6050	13.866	2120.9	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.0000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
6	8.8095E-06	1.6846E-04	275.02	49.819	20.446	51.467	5.3668	20.248	2315.1	7.8279E+06	7.8279E+06
x(M)	10.200	0.0000	0.0000	5.4000	8.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
7	8.1541E-06	1.6912E-04	233.94	42.280	15.826	41.179	5.6147	14.159	2037.3	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	5.8000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
8	8.0751E-06	1.6879E-04	230.49	41.564	15.458	40.227	5.5841	13.665	2075.2	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.0000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
9	8.7924E-06	1.6846E-04	273.90	49.663	20.332	51.259	5.3757	20.116	2271.7	7.8279E+06	7.8279E+06
x(M)	10.200	0.0000	0.0000	5.4000	8.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
10	8.1480E-06	1.6912E-04	233.80	42.308	15.824	41.217	5.6094	14.179	1997.2	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	5.8000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
11	8.0700E-06	1.6879E-04	230.36	41.591	15.457	40.267	5.5793	13.686	2035.2	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.0000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
12	8.7826E-06	1.6846E-04	273.57	49.662	20.309	51.261	5.3696	20.116	2231.0	7.8279E+06	7.8279E+06
x(M)	10.200	0.0000	0.0000	5.4000	8.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
13	8.4081E-06	1.6912E-04	247.13	44.862	17.270	44.658	5.6405	16.103	2002.7	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.8000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
14	8.3443E-06	1.6879E-04	243.33	44.074	16.854	43.586	5.6433	15.518	2039.5	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.8000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
15	8.8377E-06	1.6846E-04	281.00	51.184	21.246	53.350	5.2008	21.436	2216.6	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	8.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
Max.	8.9303E-06	1.6912E-04	289.35	52.518	22.197	55.235	5.6433	22.659	2403.1	7.8279E+06	7.8279E+06
Pile N.	3	1	3	3	3	3	14	3	3	1	1

LOAD CASE : 5

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8626	1.0000
2	0.8024	1.0000
3	0.8661	1.0000
4	0.5779	1.0000
5	0.4961	1.0000
6	0.5831	1.0000
7	0.5437	1.0000
8	0.4630	1.0000
9	0.5492	1.0000
10	0.5438	1.0000
11	0.4630	1.0000
12	0.5492	1.0000
13	0.5845	1.0000
14	0.4979	1.0000
15	0.5897	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30306.0	-276.510	557.375
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
23.3401	5823.56	-6450.98

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.08533E-03	-1.69932E-05	1.38384E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-2.54987E-07	6.56399E-06	-1.43496E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.2090E-03	-1.4698E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
2	1.1444E-03	-1.4698E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
3	1.0798E-03	-1.4698E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
4	1.1794E-03	-1.5846E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
5	1.1149E-03	-1.5846E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
6	1.0503E-03	-1.5846E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
7	1.1499E-03	-1.6993E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
8	1.0853E-03	-1.6993E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
9	1.0208E-03	-1.6993E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
10	1.1204E-03	-1.8141E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
11	1.0558E-03	-1.8141E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
12	9.9122E-04	-1.8141E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
13	1.0908E-03	-1.9288E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
14	1.0263E-03	-1.9288E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
15	9.6168E-04	-1.9288E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
MINIMUM	9.6168E-04	-1.9288E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2090E-03	-1.4698E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2247.6	-20.689	45.284	-0.093719	-115.58	-78.501
2	2128.9	-20.099	43.952	-0.093719	-113.46	-77.266
3	2010.3	-20.724	46.264	-0.093719	-118.18	-78.574
4	2193.3	-17.956	36.312	-0.093719	-98.287	-72.900
5	2074.7	-16.867	33.670	-0.093719	-93.263	-70.442
6	1956.0	-18.022	37.207	-0.093719	-100.74	-73.049
7	2139.0	-17.856	35.099	-0.093719	-95.848	-72.931

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	252 di 420

8	2020.4	-16.708	32.387	-0.093719	-90.614	-70.316
9	1901.8	-17.931	35.989	-0.093719	-98.299	-73.101
10	2084.8	-18.199	35.100	-0.093719	-95.849	-73.955
11	1966.1	-17.023	32.389	-0.093719	-90.616	-71.281
12	1847.5	-18.275	35.990	-0.093719	-98.298	-74.128
13	2030.5	-19.108	36.546	-0.093719	-98.747	-76.238
14	1911.9	-17.873	33.740	-0.093719	-93.400	-73.470
15	1793.2	-19.179	37.445	-0.093719	-101.21	-76.396
MINIMUM	1793.2	-20.724	32.387	-0.093719	-118.18	-78.574
Pile N.	15	3	8	1	3	3
MAXIMUM	2247.6	-16.708	46.264	-0.093719	-90.614	-70.316
Pile N.	1	8	3	1	8	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.2090E-03	-1.4698E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
2	1.1444E-03	-1.4698E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
3	1.0798E-03	-1.4698E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
4	1.1794E-03	-1.5846E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
5	1.1149E-03	-1.5846E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
6	1.0503E-03	-1.5846E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
7	1.1499E-03	-1.6993E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
8	1.0853E-03	-1.6993E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
9	1.0208E-03	-1.6993E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
10	1.1204E-03	-1.8141E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
11	1.0558E-03	-1.8141E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
12	9.9122E-04	-1.8141E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
13	1.0908E-03	-1.9288E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
14	1.0263E-03	-1.9288E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
15	9.6168E-04	-1.9288E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
MINIMUM	9.6168E-04	-1.9288E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2090E-03	-1.4698E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2247.6	-20.689	45.284	-0.093719	-115.58	-78.501
2	2128.9	-20.099	43.952	-0.093719	-113.46	-77.266
3	2010.3	-20.724	46.264	-0.093719	-118.18	-78.574
4	2193.3	-17.956	36.312	-0.093719	-98.287	-72.900
5	2074.7	-16.867	33.670	-0.093719	-93.263	-70.442
6	1956.0	-18.022	37.207	-0.093719	-100.74	-73.049
7	2139.0	-17.856	35.099	-0.093719	-95.848	-72.931
8	2020.4	-16.708	32.387	-0.093719	-90.614	-70.316
9	1901.8	-17.931	35.989	-0.093719	-98.299	-73.101
10	2084.8	-18.199	35.100	-0.093719	-95.849	-73.955
11	1966.1	-17.023	32.389	-0.093719	-90.616	-71.281
12	1847.5	-18.275	35.990	-0.093719	-98.298	-74.128
13	2030.5	-19.108	36.546	-0.093719	-98.747	-76.238
14	1911.9	-17.873	33.740	-0.093719	-93.400	-73.470
15	1793.2	-19.179	37.445	-0.093719	-101.21	-76.396
MINIMUM	1793.2	-20.724	32.387	-0.093719	-118.18	-78.574
Pile N.	15	3	8	1	3	3
MAXIMUM	2247.6	-16.708	46.264	-0.093719	-90.614	-70.316
Pile N.	1	8	3	1	8	8

PILE GROUP STRESS, KN/ M**2

1	1693.5
2	1619.0
3	1565.9
4	1610.5
5	1526.8
6	1482.5
7	1573.9
8	1489.5
9	1445.9
10	1545.1
11	1460.6
12	1417.0
13	1525.5
14	1440.5
15	1397.5
MINIMUM	1397.5
Pile N.	15

APPALTIATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 253 di 420
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MAXIMUM 1693.5
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *







* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.6801E-05	-3.8272E-06	-9.6488	-115.58	-20.692	-9.4525	-5.6685	-2.1692	1271.9	7.8279E+06	7.8279E+06
x(M)	2.0000	0.0000	7.0000	0.0000	0.0000	7.8000	3.2000	10.200	20.000	0.0000	0.0000
2	-2.7019E-05	-3.8396E-06	-9.4496	-113.46	-20.101	-9.1097	-5.3655	-2.1986	1204.7	7.8279E+06	7.8279E+06
x(M)	2.0000	10.000	7.0000	0.0000	0.0000	8.0000	3.2000	13.600	20.000	0.0000	0.0000
3	-2.6790E-05	-3.8922E-06	-9.6589	-118.18	-20.726	-9.6373	-5.6859	-2.2140	1137.6	7.8279E+06	7.8279E+06
x(M)	1.8000	9.8000	7.0000	0.0000	0.0000	7.8000	3.2000	10.200	20.000	0.0000	0.0000
4	-2.8926E-05	-3.6338E-06	-8.8406	-98.287	-17.958	-7.3452	-4.3117	-2.3633	1241.2	7.8279E+06	7.8279E+06
x(M)	2.0000	10.600	7.6000	0.0000	0.0000	8.6000	3.6000	13.600	20.000	0.0000	0.0000
5	-2.9403E-05	-3.5379E-06	-8.4624	-93.263	-16.869	-6.7435	-3.8498	-2.3683	1174.0	7.8279E+06	7.8279E+06
x(M)	2.2000	11.000	7.8000	0.0000	0.0000	8.8000	3.6000	13.600	20.000	0.0000	0.0000
6	-2.8899E-05	-3.6995E-06	-8.8620	-100.74	-18.024	-7.5106	-4.3399	-2.4058	1106.9	7.8279E+06	7.8279E+06
x(M)	2.0000	10.600	7.4000	0.0000	0.0000	8.4000	3.6000	13.600	20.000	0.0000	0.0000
7	-3.0049E-05	-3.5870E-06	-8.9502	-95.848	-17.858	-7.0771	-4.2253	-2.3640	1210.4	7.8279E+06	7.8279E+06
x(M)	2.0000	10.800	7.6000	0.0000	0.0000	8.6000	3.6000	13.600	20.000	0.0000	0.0000
8	-3.0554E-05	-3.4748E-06	-8.5363	-90.614	-16.710	-6.4584	-3.7483	-2.3413	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	11.000	7.8000	0.0000	0.0000	9.0000	3.8000	13.600	20.000	0.0000	0.0000
9	-3.0018E-05	-3.6521E-06	-8.9754	-98.299	-17.933	-7.2417	-4.2568	-2.4078	1076.2	7.8279E+06	7.8279E+06
x(M)	2.0000	10.800	7.6000	0.0000	0.0000	8.6000	3.6000	13.600	20.000	0.0000	0.0000
10	-3.0992E-05	-3.5868E-06	-9.2093	-95.849	-18.201	-7.0768	-4.3289	-2.3639	1179.7	7.8279E+06	7.8279E+06
x(M)	2.0000	10.800	7.6000	0.0000	0.0000	8.6000	3.6000	13.600	20.000	0.0000	0.0000
11	-3.1479E-05	-3.4745E-06	-8.7814	-90.616	-17.025	-6.4582	-3.8379	-2.3412	1112.6	7.8279E+06	7.8279E+06
x(M)	2.0000	11.000	7.8000	0.0000	0.0000	9.0000	3.6000	13.600	20.000	0.0000	0.0000
12	-3.0960E-05	-3.6518E-06	-9.2347	-98.298	-18.277	-7.2413	-4.3612	-2.4078	1045.5	7.8279E+06	7.8279E+06
x(M)	2.0000	10.800	7.6000	0.0000	0.0000	8.6000	3.6000	13.600	20.000	0.0000	0.0000
13	-3.1707E-05	-3.6415E-06	-9.6839	-98.747	-19.110	-7.3974	-4.6817	-2.3619	1149.0	7.8279E+06	7.8279E+06
x(M)	2.0000	10.800	7.4000	0.0000	0.0000	8.4000	3.4000	13.600	20.000	0.0000	0.0000
14	-3.2209E-05	-3.5397E-06	-9.2213	-93.400	-17.874	-6.7570	-4.1500	-2.3691	1081.9	7.8279E+06	7.8279E+06
x(M)	2.0000	11.000	7.6000	0.0000	0.0000	8.8000	3.6000	13.600	20.000	0.0000	0.0000
15	-3.1679E-05	-3.7069E-06	-9.7091	-101.21	-19.180	-7.5649	-4.7132	-2.4041	1014.8	7.8279E+06	7.8279E+06
x(M)	2.0000	10.600	7.4000	0.0000	0.0000	8.4000	3.4000	13.600	20.000	0.0000	0.0000
Min.	-3.2209E-05	-3.8922E-06	-9.7091	-118.18	-20.726	-9.6373	-5.6859	-2.4078	1014.8	7.8279E+06	7.8279E+06
Pile N.	14	3	15	3	3	3	3	9	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	7.6495E-07	1.3724E-04	78.501	42.760	2.2052	45.288	0.8499	18.480	1693.5	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	5.4000	9.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
2	7.5304E-07	1.3838E-04	77.266	41.869	2.1276	43.955	0.8583	17.507	1619.0	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	5.4000	9.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
3	7.6529E-07	1.3953E-04	78.574	43.558	2.2092	46.267	0.8491	18.881	1565.9	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	5.4000	9.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
4	7.0231E-07	1.3724E-04	72.900	36.275	1.8747	36.315	0.8385	12.993	1610.5	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
5	6.5463E-07	1.3838E-04	70.442	34.358	1.7521	33.672	0.7780	11.446	1526.8	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	6.0000	10.600	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
6	7.0492E-07	1.3953E-04	73.049	37.023	1.8817	37.210	0.8411	13.334	1482.5	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
7	7.0876E-07	1.3724E-04	72.931	35.385	1.8747	35.101	0.8389	12.308	1573.9	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
8	6.5477E-07	1.3838E-04	70.316	33.416	1.7481	32.390	0.7642	10.760	1489.5	7.8279E+06	7.8279E+06
x(M)	12.600	0.0000	0.0000	6.0000	10.800	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
9	7.1146E-07	1.3953E-04	73.101	36.133	1.8835	35.992	0.8426	12.644	1445.9	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
10	7.3340E-07	1.3724E-04	73.955	35.385	1.9282	35.103	0.8606	12.308	1545.1	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
11	6.7773E-07	1.3838E-04	71.281	33.416	1.7957	32.391	0.7853	10.760	1460.6	7.8279E+06	7.8279E+06
x(M)	12.600	0.0000	0.0000	6.0000	10.600	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
12	7.3601E-07	1.3953E-04	74.128	36.132	1.9371	35.993	0.8643	12.644	1417.0	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
13	7.8239E-07	1.3724E-04	76.238	36.440	2.0492	36.549	0.9074	13.125	1525.5	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
14	7.2739E-07	1.3838E-04	73.470	34.405	1.9035	33.742	0.8439	11.482	1440.5	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	6.0000	10.400	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
15	7.8457E-07	1.3953E-04	76.396	37.189	2.0577	37.447	0.9098	13.468	1397.5	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
Max.	7.8457E-07	1.3953E-04	78.574	43.558	2.2092	46.267	0.9098	18.881	1693.5	7.8279E+06	7.8279E+06
Pile N.	15	3	3	3	3	3	15	3	1	1	1

LOAD CASE : 6

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria  Mandanti  													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 15%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 15%;">REV.</td> <td style="width: 15%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>254 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	254 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	254 di 420								

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.6112	1.0000
3	0.6257	1.0000
4	0.7812	1.0000
5	0.4952	1.0000
6	0.5065	1.0000
7	0.7781	1.0000
8	0.4903	1.0000
9	0.5008	1.0000
10	0.7781	1.0000
11	0.4912	1.0000
12	0.5018	1.0000
13	0.8368	1.0000
14	0.5696	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
34808.5	1377.61	690.160
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-31.5147	7655.35	-18292.3

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.24872E-03	4.52624E-04	1.68815E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-6.32584E-07	8.50416E-06	-5.67690E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.5807E-03	4.5832E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
2	1.3253E-03	4.5832E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
3	1.0698E-03	4.5832E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
4	1.5424E-03	4.5547E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
5	1.2870E-03	4.5547E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
6	1.0315E-03	4.5547E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
7	1.5042E-03	4.5262E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
8	1.2487E-03	4.5262E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
9	9.9325E-04	4.5262E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
10	1.4659E-03	4.4978E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
11	1.2105E-03	4.4978E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
12	9.5499E-04	4.4978E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
13	1.4276E-03	4.4693E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
14	1.1722E-03	4.4693E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
15	9.1672E-04	4.4693E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
MINIMUM	9.1672E-04	4.4693E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.5807E-03	4.5832E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2930.5	114.80	54.273	-0.2325	-137.51	233.43
2	2461.2	92.688	45.675	-0.2325	-121.94	192.38
3	1991.9	94.084	47.203	-0.2325	-125.80	194.97
4	2860.2	106.79	51.285	-0.2325	-131.91	217.84
5	2390.9	80.407	40.597	-0.2325	-111.72	167.63
6	1921.5	81.586	41.941	-0.2325	-115.25	169.88
7	2789.9	105.51	51.177	-0.2325	-131.70	214.48

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

**RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA**

PROGETTAZIONE:

Mandatario

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 255 di 420
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8	2320.6	79.099	40.371	-0.2325	-111.25	164.18
9	1851.2	80.202	41.680	-0.2325	-114.71	166.28
10	2719.6	104.49	51.178	-0.2325	-131.70	211.59
11	2250.3	78.394	40.415	-0.2325	-111.34	161.92
12	1780.9	79.485	41.725	-0.2325	-114.80	164.00
13	2649.3	108.18	53.266	-0.2325	-135.62	217.28
14	2180.0	85.233	43.921	-0.2325	-118.44	174.39
15	1710.6	86.658	45.452	-0.2325	-122.32	177.06
MINIMUM	1710.6	78.394	40.371	-0.2325	-137.51	161.92
Pile N.	15	11	8	1	1	11
MAXIMUM	2930.5	114.80	54.273	-0.2325	-111.25	233.43
Pile N.	1	1	1	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.5807E-03	4.5832E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
2	1.3253E-03	4.5832E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
3	1.0698E-03	4.5832E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
4	1.5424E-03	4.5547E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
5	1.2870E-03	4.5547E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
6	1.0315E-03	4.5547E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
7	1.5042E-03	4.5262E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
8	1.2487E-03	4.5262E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
9	9.9325E-04	4.5262E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
10	1.4659E-03	4.4978E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
11	1.2105E-03	4.4978E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
12	9.5499E-04	4.4978E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
13	1.4276E-03	4.4693E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
14	1.1722E-03	4.4693E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
15	9.1672E-04	4.4693E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
MINIMUM	9.1672E-04	4.4693E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.5807E-03	4.5832E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2930.5	114.80	54.273	-0.2325	-137.51	233.43
2	2461.2	92.688	45.675	-0.2325	-121.94	192.38
3	1991.9	94.084	47.203	-0.2325	-125.80	194.97
4	2860.2	106.79	51.285	-0.2325	-131.91	217.84
5	2390.9	80.407	40.597	-0.2325	-111.72	167.63
6	1921.5	81.586	41.941	-0.2325	-115.25	169.88
7	2789.9	105.51	51.177	-0.2325	-131.70	214.48
8	2320.6	79.099	40.371	-0.2325	-111.25	164.18
9	1851.2	80.202	41.680	-0.2325	-114.71	166.28
10	2719.6	104.49	51.178	-0.2325	-131.70	211.59
11	2250.3	78.394	40.415	-0.2325	-111.34	161.92
12	1780.9	79.485	41.725	-0.2325	-114.80	164.00
13	2649.3	108.18	53.266	-0.2325	-135.62	217.28
14	2180.0	85.233	43.921	-0.2325	-118.44	174.39
15	1710.6	86.658	45.452	-0.2325	-122.32	177.06
MINIMUM	1710.6	78.394	40.371	-0.2325	-137.51	161.92
Pile N.	15	11	8	1	1	11
MAXIMUM	2930.5	114.80	54.273	-0.2325	-111.25	233.43
Pile N.	1	1	1	1	8	1

PILE GROUP STRESS, KN/ M**2

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2476.0
2	2080.2
3	1827.4
4	2387.1
5	1960.9
6	1706.9
7	2338.4
8	1911.7
9	1657.3
10	2291.2
11	1866.4
12	1612.0
13	2272.2
14	1869.8
15	1617.5
MINIMUM	1612.0
Pile N.	12

APPALDATORE:
 Consorzio Soci
 HirpiniaAV salini impreglio ASTALDI
PROGETTAZIONE:
 Mandataria Mandanti
 ROK SOIL NET ENGINEERING Alpina
PROGETTO ESECUTIVO
RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

ITINERARIO NAPOLI – BARI
RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 256 di 420
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MAXIMUM 2476.0
 Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-Dir	DISPL. z-Dir	MOMENT z-Dir	MOMENT y-Dir	SHEAR y-Dir	SHEAR z-Dir	SOIL REACT y-Dir	SOIL REACT z-Dir	TOTAL STRESS	FLEX. RIG. z-Dir	FLEX. RIG. y-Dir
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	-1.2976E-05	-4.6346E-06	-233.43	-137.51	-31.078	-11.451	-7.1460	-2.6305	1658.3	7.8279E+06	7.8279E+06
x(M)	9.4000	0.0000	0.0000	0.0000	7.4000	7.8000	10.2000	10.2000	20.000	0.0000	0.0000
2	-1.2738E-05	-4.5156E-06	-192.38	-121.94	-25.043	-9.3557	-6.5166	-2.8789	1392.7	7.8279E+06	7.8279E+06
x(M)	10.000	10.600	0.0000	0.0000	7.8000	8.4000	13.600	20.000	20.000	0.0000	0.0000
3	-1.2763E-05	-4.6084E-06	-194.97	-125.80	-25.408	-9.6527	-6.4789	-2.9241	1127.2	7.8279E+06	7.8279E+06
x(M)	10.000	10.400	0.0000	0.0000	7.8000	8.4000	13.600	13.600	20.000	0.0000	0.0000
4	-1.2870E-05	-4.5942E-06	-217.84	-131.91	-28.978	-10.731	-6.4791	-2.6435	1618.5	7.8279E+06	7.8279E+06
x(M)	9.6000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
5	-1.2382E-05	-4.3195E-06	-167.63	-111.72	-21.907	-8.2074	-6.6156	-2.8722	1353.0	7.8279E+06	7.8279E+06
x(M)	10.400	11.000	0.0000	0.0000	8.2000	8.8000	13.600	13.600	20.000	0.0000	0.0000
6	-1.2411E-05	-4.4141E-06	-169.88	-115.25	-22.195	-8.4588	-6.6127	-2.9324	1087.7	7.8279E+06	7.8279E+06
x(M)	10.400	10.800	0.0000	0.0000	8.2000	8.8000	13.600	13.600	20.000	0.0000	0.0000
7	-1.2792E-05	-4.5915E-06	-214.48	-131.70	-28.727	-10.704	-6.4162	-2.6481	1578.8	7.8279E+06	7.8279E+06
x(M)	9.6000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
8	-1.2299E-05	-4.3102E-06	-164.18	-111.25	-21.642	-8.1573	-6.5619	-2.8683	1313.2	7.8279E+06	7.8279E+06
x(M)	10.400	11.000	0.0000	0.0000	8.2000	8.8000	13.600	13.600	20.000	0.0000	0.0000
9	-1.2327E-05	-4.3994E-06	-166.28	-114.71	-21.911	-8.4020	-6.5604	-2.9286	1047.6	7.8279E+06	7.8279E+06
x(M)	10.400	10.800	0.0000	0.0000	8.2000	8.8000	13.600	13.600	20.000	0.0000	0.0000
10	-1.2718E-05	-4.5911E-06	-211.59	-131.70	-28.546	-10.703	-6.3759	-2.6480	1539.0	7.8279E+06	7.8279E+06
x(M)	9.6000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
11	-1.2237E-05	-4.3115E-06	-161.92	-111.34	-21.534	-8.1661	-6.5087	-2.8689	1273.4	7.8279E+06	7.8279E+06
x(M)	10.400	11.000	0.0000	0.0000	8.2000	8.8000	13.600	13.600	20.000	0.0000	0.0000
12	-1.2263E-05	-4.4013E-06	-164.00	-114.80	-21.799	-8.4106	-6.5067	-2.9291	1007.8	7.8279E+06	7.8279E+06
x(M)	10.400	10.800	0.0000	0.0000	8.2000	8.8000	13.600	13.600	20.000	0.0000	0.0000
13	-1.2670E-05	-4.6210E-06	-217.28	-135.62	-29.662	-11.195	-6.7570	-2.5546	1499.2	7.8279E+06	7.8279E+06
x(M)	9.6000	10.000	0.0000	0.0000	7.4000	7.8000	9.8000	13.600	20.000	0.0000	0.0000
14	-1.2381E-05	-4.4592E-06	-174.39	-118.44	-23.417	-8.9450	-6.3861	-2.8925	1233.6	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	20.000	0.0000	0.0000
15	-1.2397E-05	-4.5548E-06	-177.06	-122.32	-23.772	-9.2442	-6.3578	-2.9429	968.02	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.4000	13.600	13.600	20.000	0.0000	0.0000
Min. Pile N.	-1.2976E-05 1	-4.6346E-06 1	-233.43 1	-137.51 1	-31.078 1	-11.451 1	-7.1460 1	-2.9429 15	968.02 15	7.8279E+06 1	7.8279E+06 1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-Dir	DISPL. z-Dir	MOMENT z-Dir	MOMENT y-Dir	SHEAR y-Dir	SHEAR z-Dir	SOIL REACT y-Dir	SOIL REACT z-Dir	TOTAL STRESS	FLEX. RIG. z-Dir	FLEX. RIG. y-Dir
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	4.5832E-04	1.6597E-04	141.87	51.730	114.81	54.279	53.788	22.295	2476.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	4.8000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
2	4.5832E-04	1.6882E-04	123.71	45.605	92.694	45.679	39.459	16.720	2080.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.6000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
3	4.5832E-04	1.7166E-04	124.81	46.842	94.089	47.206	40.300	17.386	1827.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.6000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
4	4.5547E-04	1.6597E-04	135.43	49.605	106.80	51.290	48.720	20.373	2387.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
5	4.5547E-04	1.6882E-04	113.28	41.837	80.412	40.600	32.398	13.866	1960.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
6	4.5547E-04	1.7166E-04	114.28	42.942	81.590	41.944	33.062	14.407	1706.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
7	4.5262E-04	1.6597E-04	134.40	49.524	105.52	51.181	48.172	20.304	2338.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
8	4.5262E-04	1.6882E-04	112.18	41.672	79.104	40.374	31.854	13.743	1911.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
9	4.5262E-04	1.7166E-04	113.11	42.739	80.206	41.683	32.473	14.264	1657.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
10	4.4978E-04	1.6597E-04	133.57	49.523	104.50	51.183	47.793	20.304	2291.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
11	4.4978E-04	1.6882E-04	111.61	41.702	78.398	40.418	31.655	13.766	1866.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
12	4.4978E-04	1.7166E-04	112.53	42.771	79.489	41.727	32.268	14.287	1612.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
13	4.4693E-04	1.6597E-04	136.57	51.020	108.19	53.271	50.563	21.636	2272.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	4.8000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
14	4.4693E-04	1.6882E-04	117.53	44.322	85.238	43.924	35.888	15.708	1869.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
15	4.4693E-04	1.7166E-04	118.69	45.546	86.662	45.455	36.732	16.368	1617.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
Max. Pile N.	4.5832E-04 1	1.7166E-04 3	141.87 1	51.730 1	114.81 1	54.279 1	53.788 1	22.295 1	2476.0 1	7.8279E+06 1	7.8279E+06 1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 257 di 420

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.6112	1.0000
3	0.6257	1.0000
4	0.7812	1.0000
5	0.4952	1.0000
6	0.5065	1.0000
7	0.7781	1.0000
8	0.4903	1.0000
9	0.5008	1.0000
10	0.7781	1.0000
11	0.4912	1.0000
12	0.5018	1.0000
13	0.8368	1.0000
14	0.5696	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
34808.5	1377.61	690.160
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-31.5147	7655.35	-18292.5

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.24872E-03	4.52625E-04	1.68815E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-6.32584E-07	8.50416E-06	-5.67694E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.5807E-03	4.5832E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
2	1.3253E-03	4.5832E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
3	1.0698E-03	4.5832E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
4	1.5424E-03	4.5547E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
5	1.2870E-03	4.5547E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
6	1.0315E-03	4.5547E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
7	1.5042E-03	4.5263E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
8	1.2487E-03	4.5263E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
9	9.9325E-04	4.5263E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
10	1.4659E-03	4.4978E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
11	1.2105E-03	4.4978E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
12	9.5498E-04	4.4978E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
13	1.4276E-03	4.4693E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
14	1.1722E-03	4.4693E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
15	9.1672E-04	4.4693E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
MINIMUM	9.1672E-04	4.4693E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.5807E-03	4.5832E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2930.5	114.80	54.273	-0.2325	-137.51	233.43
2	2461.2	92.688	45.675	-0.2325	-121.94	192.38
3	1991.8	94.084	47.203	-0.2325	-125.80	194.97
4	2860.2	106.79	51.285	-0.2325	-131.91	217.84
5	2390.9	80.407	40.597	-0.2325	-111.72	167.63
6	1921.5	81.586	41.941	-0.2325	-115.25	169.88
7	2789.9	105.51	51.177	-0.2325	-131.70	214.48

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandatario

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	258 di 420

8	2320.6	79.099	40.371	-0.2325	-111.25	164.17
9	1851.2	80.202	41.680	-0.2325	-114.71	166.28
10	2719.6	104.49	51.178	-0.2325	-131.70	211.59
11	2250.3	78.394	40.415	-0.2325	-111.34	161.92
12	1780.9	79.485	41.725	-0.2325	-114.80	164.00
13	2649.3	108.18	53.266	-0.2325	-135.62	217.28
14	2180.0	85.233	43.921	-0.2325	-118.44	174.39
15	1710.6	86.658	45.452	-0.2325	-122.32	177.06
MINIMUM	1710.6	78.394	40.371	-0.2325	-137.51	161.92
Pile N.	15	11	8	1	1	11
MAXIMUM	2930.5	114.80	54.273	-0.2325	-111.25	233.43
Pile N.	1	1	1	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.5807E-03	4.5832E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
2	1.3253E-03	4.5832E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
3	1.0698E-03	4.5832E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
4	1.5424E-03	4.5547E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
5	1.2870E-03	4.5547E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
6	1.0315E-03	4.5547E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
7	1.5042E-03	4.5263E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
8	1.2487E-03	4.5263E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
9	9.9325E-04	4.5263E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
10	1.4659E-03	4.4978E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
11	1.2105E-03	4.4978E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
12	9.5498E-04	4.4978E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
13	1.4276E-03	4.4693E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
14	1.1722E-03	4.4693E-04	1.6882E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
15	9.1672E-04	4.4693E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
MINIMUM	9.1672E-04	4.4693E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.5807E-03	4.5832E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2930.5	114.80	54.273	-0.2325	-137.51	233.43
2	2461.2	92.688	45.675	-0.2325	-121.94	192.38
3	1991.8	94.084	47.203	-0.2325	-125.80	194.97
4	2860.2	106.79	51.285	-0.2325	-131.91	217.84
5	2390.9	80.407	40.597	-0.2325	-111.72	167.63
6	1921.5	81.586	41.941	-0.2325	-115.25	169.88
7	2789.9	105.51	51.177	-0.2325	-131.70	214.48
8	2320.6	79.099	40.371	-0.2325	-111.25	164.17
9	1851.2	80.202	41.680	-0.2325	-114.71	166.28
10	2719.6	104.49	51.178	-0.2325	-131.70	211.59
11	2250.3	78.394	40.415	-0.2325	-111.34	161.92
12	1780.9	79.485	41.725	-0.2325	-114.80	164.00
13	2649.3	108.18	53.266	-0.2325	-135.62	217.28
14	2180.0	85.233	43.921	-0.2325	-118.44	174.39
15	1710.6	86.658	45.452	-0.2325	-122.32	177.06
MINIMUM	1710.6	78.394	40.371	-0.2325	-137.51	161.92
Pile N.	15	11	8	1	1	11
MAXIMUM	2930.5	114.80	54.273	-0.2325	-111.25	233.43
Pile N.	1	1	1	1	8	1

PILE GROUP STRESS, KN/ M**2

1	2476.0
2	2080.2
3	1827.4
4	2387.1
5	1960.9
6	1706.9
7	2338.4
8	1911.7
9	1657.3
10	2291.2
11	1866.4
12	1612.0
13	2272.2
14	1869.8
15	1617.5
MINIMUM	1612.0
Pile N.	12

MAXIMUM 2476.0
 Pile N. 1







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL.	DISPL.	MOMENT	MOMENT	SHEAR	SHEAR	SOIL REACT	SOIL REACT	TOTAL	FLEX. RIG.	FLEX. RIG.
	y-DIR	z-DIR	z-DIR	y-DIR	y-DIR	z-DIR	y-DIR	z-DIR	STRESS	z-DIR	y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.2976E-05	-4.6346E-06	-233.43	-137.51	-31.078	-11.451	-7.1460	-2.6305	1658.3	7.8279E+06	7.8279E+06
x(M)	9.4000	0.0000	0.0000	7.4000	7.8000	7.8000	9.8000	10.2000	20.000	0.0000	0.0000
2	-1.2738E-05	-4.5156E-06	-192.38	-121.94	-25.043	-9.3557	-6.5166	-2.8789	1392.7	7.8279E+06	7.8279E+06
x(M)	10.000	10.600	0.0000	0.0000	7.8000	8.4000	13.600	20.000	20.000	0.0000	0.0000
3	-1.2763E-05	-4.6084E-06	-194.97	-125.80	-25.408	-9.6527	-6.4789	-2.9241	1127.2	7.8279E+06	7.8279E+06
x(M)	10.000	10.400	0.0000	0.0000	7.8000	8.4000	13.600	13.600	20.000	0.0000	0.0000
4	-1.2870E-05	-4.5942E-06	-217.84	-131.91	-28.978	-10.731	-6.4791	-2.6435	1618.5	7.8279E+06	7.8279E+06
x(M)	9.6000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
5	-1.2383E-05	-4.3195E-06	-167.63	-111.72	-21.907	-8.2074	-6.6156	-2.8722	1353.0	7.8279E+06	7.8279E+06
x(M)	10.400	11.000	0.0000	0.0000	8.2000	8.8000	13.600	13.600	20.000	0.0000	0.0000
6	-1.2412E-05	-4.4141E-06	-169.88	-115.25	-22.195	-8.4588	-6.6127	-2.9324	1087.7	7.8279E+06	7.8279E+06
x(M)	10.400	10.800	0.0000	0.0000	8.2000	8.8000	13.600	13.600	20.000	0.0000	0.0000
7	-1.2792E-05	-4.5915E-06	-214.48	-131.70	-28.728	-10.704	-6.4163	-2.6481	1578.8	7.8279E+06	7.8279E+06
x(M)	9.6000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
8	-1.2299E-05	-4.3102E-06	-164.17	-111.25	-21.642	-8.1573	-6.5620	-2.8683	1313.2	7.8279E+06	7.8279E+06
x(M)	10.400	11.000	0.0000	0.0000	8.2000	8.8000	13.600	13.600	20.000	0.0000	0.0000
9	-1.2327E-05	-4.3994E-06	-166.28	-114.71	-21.911	-8.4020	-6.5604	-2.9286	1047.6	7.8279E+06	7.8279E+06
x(M)	10.400	10.800	0.0000	0.0000	8.2000	8.8000	13.600	13.600	20.000	0.0000	0.0000
10	-1.2718E-05	-4.5911E-06	-211.59	-131.70	-28.546	-10.703	-6.3759	-2.6480	1539.0	7.8279E+06	7.8279E+06
x(M)	9.6000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
11	-1.2237E-05	-4.3115E-06	-161.92	-111.34	-21.534	-8.1661	-6.5087	-2.8689	1273.4	7.8279E+06	7.8279E+06
x(M)	10.400	11.000	0.0000	0.0000	8.2000	8.8000	13.600	13.600	20.000	0.0000	0.0000
12	-1.2263E-05	-4.4013E-06	-164.00	-114.80	-21.799	-8.4106	-6.5067	-2.9291	1007.8	7.8279E+06	7.8279E+06
x(M)	10.400	10.800	0.0000	0.0000	8.2000	8.8000	13.600	13.600	20.000	0.0000	0.0000
13	-1.2670E-05	-4.6210E-06	-217.28	-135.62	-29.662	-11.195	-6.5570	-2.5546	1499.2	7.8279E+06	7.8279E+06
x(M)	9.6000	10.000	0.0000	0.0000	7.4000	7.8000	9.8000	13.600	20.000	0.0000	0.0000
14	-1.2381E-05	-4.4592E-06	-174.39	-118.44	-23.417	-8.9450	-6.3861	-2.8925	1233.6	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	20.000	0.0000	0.0000
15	-1.2397E-05	-4.5548E-06	-177.06	-122.32	-23.772	-9.2442	-6.3578	-2.9429	968.02	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.4000	13.600	13.600	20.000	0.0000	0.0000
Min.	-1.2976E-05	-4.6346E-06	-233.43	-137.51	-31.078	-11.451	-7.1460	-2.9429	968.02	7.8279E+06	7.8279E+06
Pile N.	1	1	1	1	1	1	1	15	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL.	DISPL.	MOMENT	MOMENT	SHEAR	SHEAR	SOIL REACT	SOIL REACT	TOTAL	FLEX. RIG.	FLEX. RIG.
	y-DIR	z-DIR	z-DIR	y-DIR	y-DIR	z-DIR	y-DIR	z-DIR	STRESS	z-DIR	y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	4.5832E-04	1.6597E-04	141.87	51.730	114.81	54.279	53.788	22.295	2476.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	4.8000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
2	4.5832E-04	1.6882E-04	123.71	45.605	92.694	45.679	39.459	16.720	2080.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.6000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
3	4.5832E-04	1.7166E-04	124.81	46.842	94.089	47.206	40.300	17.386	1827.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.6000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
4	4.5547E-04	1.6597E-04	135.43	49.605	106.80	51.290	48.720	20.373	2387.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
5	4.5547E-04	1.6882E-04	113.28	41.837	80.412	40.600	32.398	13.866	1960.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.2000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
6	4.5547E-04	1.7166E-04	114.28	42.942	81.590	41.944	33.062	14.407	1706.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
7	4.5263E-04	1.6597E-04	134.40	49.524	105.52	51.181	48.172	20.304	2338.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
8	4.5263E-04	1.6882E-04	112.18	41.672	79.104	40.374	31.854	13.743	1911.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
9	4.5263E-04	1.7166E-04	113.11	42.739	80.206	41.683	32.473	14.264	1657.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
10	4.4978E-04	1.6597E-04	133.57	49.523	104.50	51.183	47.793	20.304	2291.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
11	4.4978E-04	1.6882E-04	111.61	41.702	78.398	40.418	31.655	13.766	1866.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
12	4.4978E-04	1.7166E-04	112.53	42.771	79.489	41.727	32.268	14.287	1612.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
13	4.4693E-04	1.6597E-04	136.57	51.020	108.19	53.271	50.563	21.636	2272.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	4.8000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
14	4.4693E-04	1.6882E-04	117.53	44.322	85.238	43.924	35.889	15.708	1869.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
15	4.4693E-04	1.7166E-04	118.69	45.546	86.662	45.455	36.732	16.368	1617.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
Max.	4.5832E-04	1.7166E-04	141.87	51.730	114.81	54.279	53.788	22.295	2476.0	7.8279E+06	7.8279E+06
Pile N.	1	3	1	1	1	1	1	1	1	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.6694	1.0000
2	0.6457	1.0000
3	0.8661	1.0000
4	0.5186	1.0000
5	0.4954	1.0000
6	0.7529	1.0000
7	0.5080	1.0000
8	0.4860	1.0000
9	0.7461	1.0000
10	0.5087	1.0000
11	0.4868	1.0000
12	0.7461	1.0000
13	0.5845	1.0000
14	0.5587	1.0000
15	0.8023	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
32530.5	-869.607	456.630
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-37.0683	3163.02	-2749.47

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.16605E-03	-1.79899E-04	1.06816E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-4.23223E-08	3.95406E-06	-5.36188E-07





THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.2040E-03	-1.7952E-04	1.0663E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
2	1.2016E-03	-1.7952E-04	1.0682E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
3	1.1992E-03	-1.7952E-04	1.0701E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
4	1.1863E-03	-1.7971E-04	1.0663E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
5	1.1838E-03	-1.7971E-04	1.0682E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
6	1.1814E-03	-1.7971E-04	1.0701E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
7	1.1685E-03	-1.7990E-04	1.0663E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
8	1.1661E-03	-1.7990E-04	1.0682E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
9	1.1636E-03	-1.7990E-04	1.0701E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
10	1.1507E-03	-1.8009E-04	1.0663E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
11	1.1483E-03	-1.8009E-04	1.0682E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
12	1.1458E-03	-1.8009E-04	1.0701E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
13	1.1329E-03	-1.8028E-04	1.0663E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
14	1.1305E-03	-1.8028E-04	1.0682E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
15	1.1281E-03	-1.8028E-04	1.0701E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
MINIMUM	1.1281E-03	-1.8028E-04	1.0663E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2040E-03	-1.7952E-04	1.0701E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2238.5	-60.302	31.711	-0.015555	-85.892	-174.74
2	2234.1	-59.170	31.154	-0.015555	-84.859	-172.50
3	2229.6	-68.981	36.614	-0.015555	-95.379	-191.53
4	2205.8	-52.755	27.559	-0.015555	-77.596	-159.52
5	2201.4	-51.486	26.923	-0.015555	-76.343	-156.88
6	2197.0	-64.198	33.943	-0.015555	-90.328	-182.43
7	2173.1	-52.233	27.246	-0.015555	-76.953	-158.49

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

8	2168.7	-51.021	26.640	-0.015555	-75.759	-155.96
9	2164.3	-63.964	33.777	-0.015555	-90.010	-182.04
10	2140.4	-52.330	27.269	-0.015555	-76.999	-158.74
11	2136.0	-51.120	26.665	-0.015555	-75.809	-156.21
12	2131.6	-64.032	33.778	-0.015555	-90.010	-182.23
13	2107.8	-56.386	29.441	-0.015555	-81.400	-167.12
14	2103.3	-55.057	28.777	-0.015555	-80.119	-164.41
15	2098.9	-66.572	35.133	-0.015555	-92.591	-187.19
MINIMUM	2098.9	-68.981	26.640	-0.015555	-95.379	-191.53
Pile N.	15	3	8	1	3	3
MAXIMUM	2238.5	-51.021	36.614	-0.015555	-75.759	-155.96
Pile N.	1	8	3	1	8	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.2040E-03	-1.7952E-04	1.0663E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
2	1.2016E-03	-1.7952E-04	1.0682E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
3	1.1992E-03	-1.7952E-04	1.0701E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
4	1.1863E-03	-1.7971E-04	1.0663E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
5	1.1838E-03	-1.7971E-04	1.0682E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
6	1.1814E-03	-1.7971E-04	1.0701E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
7	1.1685E-03	-1.7990E-04	1.0663E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
8	1.1661E-03	-1.7990E-04	1.0682E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
9	1.1636E-03	-1.7990E-04	1.0701E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
10	1.1507E-03	-1.8009E-04	1.0663E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
11	1.1483E-03	-1.8009E-04	1.0682E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
12	1.1458E-03	-1.8009E-04	1.0701E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
13	1.1329E-03	-1.8028E-04	1.0663E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
14	1.1305E-03	-1.8028E-04	1.0682E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
15	1.1281E-03	-1.8028E-04	1.0701E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
MINIMUM	1.1281E-03	-1.8028E-04	1.0663E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2040E-03	-1.7952E-04	1.0701E-04	-4.2322E-08	3.9541E-06	-5.3619E-07
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2238.5	-60.302	31.711	-0.015555	-85.892	-174.74
2	2234.1	-59.170	31.154	-0.015555	-84.859	-172.50
3	2229.6	-68.981	36.614	-0.015555	-95.379	-191.53
4	2205.8	-52.755	27.559	-0.015555	-77.596	-159.52
5	2201.4	-51.486	26.923	-0.015555	-76.343	-156.88
6	2197.0	-64.198	33.943	-0.015555	-90.328	-182.43
7	2173.1	-52.233	27.246	-0.015555	-76.953	-158.49
8	2168.7	-51.021	26.640	-0.015555	-75.759	-155.96
9	2164.3	-63.964	33.777	-0.015555	-90.010	-182.04
10	2140.4	-52.330	27.269	-0.015555	-76.999	-158.74
11	2136.0	-51.120	26.665	-0.015555	-75.809	-156.21
12	2131.6	-64.032	33.778	-0.015555	-90.010	-182.23
13	2107.8	-56.386	29.441	-0.015555	-81.400	-167.12
14	2103.3	-55.057	28.777	-0.015555	-80.119	-164.41
15	2098.9	-66.572	35.133	-0.015555	-92.591	-187.19
MINIMUM	2098.9	-68.981	26.640	-0.015555	-95.379	-191.53
Pile N.	15	3	8	1	3	3
MAXIMUM	2238.5	-51.021	36.614	-0.015555	-75.759	-155.96
Pile N.	1	8	3	1	8	8

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1854.4
2	1844.4
3	1907.5
4	1783.6
5	1772.3
6	1857.6
7	1761.5
8	1750.5
9	1837.6
10	1743.7
11	1732.8
12	1819.6
13	1753.8
14	1742.2
15	1818.0
MINIMUM	1732.8
Pile N.	11

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 262 di 420
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MAXIMUM 1907.5
Pile N. 3







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.7952E-04	-2.8938E-06	-51.620	-85.892	-60.307	-6.2915	-21.088	-1.8477	1266.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.400	5.8000	0.0000	0.0000	8.4000	2.6000	13.6000	20.000	0.0000	0.0000
2	-1.7952E-04	-2.8798E-06	-50.852	-84.859	-59.175	-6.1660	-20.431	-1.8635	1264.2	7.8279E+06	7.8279E+06
x(M)	0.0000	10.400	6.0000	0.0000	0.0000	8.4000	2.6000	13.6000	20.000	0.0000	0.0000
3	-1.7952E-04	-2.9907E-06	-57.406	-95.379	-68.986	-7.4240	-26.391	-1.7061	1261.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.6000	0.0000	0.0000	8.0000	2.6000	10.200	20.000	0.0000	0.0000
4	-1.7971E-04	-2.7466E-06	-46.573	-77.596	-52.759	-5.3688	-16.858	-1.8718	1248.2	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	6.2000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
5	-1.7971E-04	-2.7226E-06	-45.709	-76.343	-51.490	-5.2287	-16.186	-1.8651	1245.7	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	6.2000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
6	-1.7971E-04	-2.9510E-06	-54.231	-90.328	-64.203	-6.7993	-23.393	-1.7935	1243.2	7.8279E+06	7.8279E+06
x(M)	0.0000	10.200	5.8000	0.0000	0.0000	8.2000	2.6000	13.6000	20.000	0.0000	0.0000
7	-1.7990E-04	-2.7338E-06	-46.232	-76.953	-52.238	-5.3012	-16.569	-1.8676	1229.7	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	6.2000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
8	-1.7990E-04	-2.7087E-06	-45.395	-75.759	-51.025	-5.1658	-15.932	-1.8595	1227.2	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	6.2000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
9	-1.7990E-04	-2.9477E-06	-54.094	-90.010	-63.969	-6.7620	-23.234	-1.7994	1224.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.200	5.8000	0.0000	0.0000	8.2000	2.6000	13.6000	20.000	0.0000	0.0000
10	-1.8009E-04	-2.7346E-06	-46.309	-76.999	-52.335	-5.3059	-16.608	-1.8679	1211.2	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	6.2000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
11	-1.8009E-04	-2.7098E-06	-45.474	-75.809	-51.124	-5.1710	-15.972	-1.8600	1208.7	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	6.2000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
12	-1.8009E-04	-2.9476E-06	-54.151	-90.010	-64.037	-6.7619	-23.259	-1.7994	1206.2	7.8279E+06	7.8279E+06
x(M)	0.0000	10.200	5.8000	0.0000	0.0000	8.2000	2.6000	13.6000	20.000	0.0000	0.0000
13	-1.8028E-04	-2.8228E-06	-49.057	-81.400	-56.390	-5.7816	-18.798	-1.8783	1192.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	6.0000	0.0000	0.0000	8.6000	2.6000	13.6000	20.000	0.0000	0.0000
14	-1.8028E-04	-2.8016E-06	-48.134	-80.119	-55.061	-5.6328	-18.064	-1.8830	1190.2	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	6.0000	0.0000	0.0000	8.6000	2.6000	13.6000	20.000	0.0000	0.0000
15	-1.8028E-04	-2.9691E-06	-55.840	-92.591	-66.577	-7.0806	-24.800	-1.7468	1187.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.6000	0.0000	0.0000	8.0000	2.6000	13.6000	20.000	0.0000	0.0000
Min.	-1.8028E-04	-2.9907E-06	-57.406	-95.379	-68.986	-7.4240	-26.391	-1.8830	1187.7	7.8279E+06	7.8279E+06
Pile N.	13	3	3	3	3	3	3	14	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	4.8907E-06	1.0663E-04	174.74	30.051	10.856	31.713	3.3988	11.714	1854.4	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.6000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
2	4.8564E-06	1.0682E-04	172.50	29.648	10.623	31.157	3.4157	11.369	1844.4	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.8000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
3	5.0637E-06	1.0701E-04	191.53	33.547	12.764	36.617	3.1127	14.732	1907.5	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	8.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
4	4.6093E-06	1.0663E-04	159.52	27.065	9.2886	27.561	3.4054	9.3442	1783.6	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.0000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
5	4.5509E-06	1.0682E-04	156.88	26.617	9.0298	26.925	3.3788	8.9875	1772.3	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.0000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
6	4.9881E-06	1.0701E-04	182.43	31.655	11.695	33.945	3.3080	13.037	1857.6	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.6000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
7	4.5862E-06	1.0663E-04	158.49	26.841	9.1816	27.248	3.3978	9.1735	1761.5	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.0000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
8	4.5292E-06	1.0682E-04	155.96	26.410	8.9323	26.642	3.3689	8.8361	1750.5	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.0000	9.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
9	4.9878E-06	1.0701E-04	182.04	31.540	11.644	33.780	3.3209	12.934	1837.6	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.6000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
10	4.5926E-06	1.0663E-04	158.74	26.857	9.1994	27.271	3.4022	9.1857	1743.7	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.0000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
11	4.5361E-06	1.0682E-04	156.21	26.427	8.9498	26.667	3.3736	8.8489	1732.8	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.0000	9.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
12	4.9929E-06	1.0701E-04	182.23	31.540	11.656	33.780	3.3243	12.934	1819.6	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.6000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
13	4.7731E-06	1.0663E-04	167.12	28.432	10.027	29.444	3.4479	10.392	1753.8	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.8000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
14	4.7182E-06	1.0682E-04	164.41	27.953	9.7522	28.779	3.4425	10.003	1742.2	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	5.8000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
15	5.0467E-06	1.0701E-04	187.19	32.486	12.220	35.136	3.2418	13.782	1818.0	7.8279E+06	7.8279E+06
x(M)	10.200	0.0000	0.0000	5.4000	8.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
Max.	5.0637E-06	1.0701E-04	191.53	33.547	12.764	36.617	3.4479	14.732	1907.5	7.8279E+06	7.8279E+06
Pile N.	3	3	3	3	3	3	13	3	3	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 263 di 420

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5849	1.0000
3	0.5920	1.0000
4	0.8011	1.0000
5	0.4951	1.0000
6	0.4975	1.0000
7	0.8006	1.0000
8	0.4934	1.0000
9	0.4956	1.0000
10	0.8006	1.0000
11	0.4944	1.0000
12	0.4966	1.0000
13	0.8610	1.0000
14	0.5774	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
34625.2	2797.70	505.070
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-83.8198	4980.47	-24046.3

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.24206E-03	8.21561E-04	1.22047E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-8.85411E-07	5.67677E-06	-8.19429E-05






THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.6619E-03	8.2953E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
2	1.2932E-03	8.2953E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
3	9.2441E-04	8.2953E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
4	1.6363E-03	8.2555E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
5	1.2676E-03	8.2555E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
6	8.9887E-04	8.2555E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
7	1.6108E-03	8.2156E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
8	1.2421E-03	8.2156E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
9	8.7332E-04	8.2156E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
10	1.5853E-03	8.1758E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
11	1.2165E-03	8.1758E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
12	8.4778E-04	8.1758E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
13	1.5597E-03	8.1359E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
14	1.1910E-03	8.1359E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
15	8.2223E-04	8.1359E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
MINIMUM Pile N.	15	13	1	1	1	1
MAXIMUM Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	3079.7	229.69	38.998	-0.3254	-99.458	513.96
2	2402.2	182.26	32.653	-0.3254	-88.496	424.44
3	1724.8	183.66	34.129	-0.3254	-92.597	426.99
4	3032.7	218.01	37.370	-0.3254	-96.406	491.10
5	2355.3	163.76	29.753	-0.3254	-82.627	386.66
6	1677.8	164.30	30.977	-0.3254	-86.225	387.56
7	2985.8	216.47	37.357	-0.3254	-96.381	486.86

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

8	2308.3	162.29	29.695	-0.3254	-82.507	382.53
9	1630.9	162.80	30.912	-0.3254	-86.091	383.38
10	2938.9	215.02	37.358	-0.3254	-96.381	482.77
11	2261.4	161.37	29.731	-0.3254	-82.578	379.51
12	1584.0	161.88	30.949	-0.3254	-86.164	380.35
13	2891.9	222.87	38.875	-0.3254	-99.224	495.75
14	2214.5	175.98	32.423	-0.3254	-88.031	407.19
15	1537.0	177.35	33.892	-0.3254	-92.118	409.69
MINIMUM	1537.0	161.37	29.695	-0.3254	-99.458	379.51
Pile N.	15	11	8	1	1	11
MAXIMUM	3079.7	229.69	38.998	-0.3254	-82.507	513.96
Pile N.	1	1	1	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
1	1.6619E-03	8.2953E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
2	1.2932E-03	8.2953E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
3	9.2441E-04	8.2953E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
4	1.6363E-03	8.2555E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
5	1.2676E-03	8.2555E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
6	8.9887E-04	8.2555E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
7	1.6108E-03	8.2156E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
8	1.2421E-03	8.2156E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
9	8.7332E-04	8.2156E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
10	1.5853E-03	8.1758E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
11	1.2165E-03	8.1758E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
12	8.4778E-04	8.1758E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
13	1.5597E-03	8.1359E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
14	1.1910E-03	8.1359E-04	1.2205E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
15	8.2223E-04	8.1359E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
MINIMUM	8.2223E-04	8.1359E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6619E-03	8.2953E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	3079.7	229.69	38.998	-0.3254	-99.458	513.96
2	2402.2	182.26	32.653	-0.3254	-88.496	424.44
3	1724.8	183.66	34.129	-0.3254	-92.597	426.99
4	3032.7	218.01	37.370	-0.3254	-96.406	491.10
5	2355.3	163.76	29.753	-0.3254	-82.627	386.66
6	1677.8	164.30	30.977	-0.3254	-86.225	387.56
7	2985.8	216.47	37.357	-0.3254	-96.381	486.86
8	2308.3	162.29	29.695	-0.3254	-82.507	382.53
9	1630.9	162.80	30.912	-0.3254	-86.091	383.38
10	2938.9	215.02	37.358	-0.3254	-96.381	482.77
11	2261.4	161.37	29.731	-0.3254	-82.578	379.51
12	1584.0	161.88	30.949	-0.3254	-86.164	380.35
13	2891.9	222.87	38.875	-0.3254	-99.224	495.75
14	2214.5	175.98	32.423	-0.3254	-88.031	407.19
15	1537.0	177.35	33.892	-0.3254	-92.118	409.69
MINIMUM	1537.0	161.37	29.695	-0.3254	-99.458	379.51
Pile N.	15	11	8	1	1	11
MAXIMUM	3079.7	229.69	38.998	-0.3254	-82.507	513.96
Pile N.	1	1	1	1	8	1

PILE GROUP STRESS, KN/ M**2

1	3322.6
2	2667.9
3	2294.7
4	3226.6
5	2526.1
6	2147.7
7	3187.5
8	2487.3
9	2108.8
10	3148.8
11	2451.9
12	2073.3
13	3162.4
14	2510.5
15	2137.1
MINIMUM	2073.3
Pile N.	12

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 265 di 420
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MAXIMUM 3322.6
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *







* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.3286E-05	-3.2970E-06	-513.96	-99.458	-56.366	-8.1578	-12.958	-1.8742	1742.7	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	0.0000	7.6000	7.8000	10.000	10.200	20.000	0.0000	0.0000
2	-2.2485E-05	-3.2394E-06	-424.44	-88.496	-44.098	-6.5868	-12.684	-2.1068	1359.4	7.8279E+06	7.8279E+06
x(M)	10.400	10.600	0.0000	0.0000	8.2000	8.4000	13.600	20.000	20.000	0.0000	0.0000
3	-2.2495E-05	-3.3492E-06	-426.99	-92.597	-44.395	-6.8555	-12.661	-2.1804	976.02	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.2000	8.4000	13.600	13.600	20.000	0.0000	0.0000
4	-2.3086E-05	-3.2782E-06	-491.10	-96.406	-53.380	-7.7671	-12.010	-1.8742	1716.2	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
5	-2.1831E-05	-3.1192E-06	-386.66	-82.627	-39.600	-5.9444	-12.693	-2.0922	1332.8	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	20.000	0.0000	0.0000
6	-2.1829E-05	-3.2202E-06	-387.56	-86.225	-39.688	-6.1569	-12.692	-2.1673	949.46	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	13.600	20.000	0.0000	0.0000
7	-2.2976E-05	-3.2778E-06	-486.86	-96.381	-53.097	-7.7636	-11.944	-1.8748	1689.6	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
8	-2.1720E-05	-3.1166E-06	-382.53	-82.507	-39.321	-5.9314	-12.616	-2.0912	1306.3	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	20.000	0.0000	0.0000
9	-2.1717E-05	-3.2173E-06	-383.38	-86.091	-39.403	-6.1424	-12.615	-2.1661	922.90	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	13.600	20.000	0.0000	0.0000
10	-2.2866E-05	-3.2776E-06	-482.77	-96.381	-52.366	-7.7633	-11.885	-1.8748	1663.1	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
11	-2.1631E-05	-3.1179E-06	-379.51	-82.578	-39.178	-5.9387	-12.542	-2.0917	1279.7	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	20.000	0.0000	0.0000
12	-2.1628E-05	-3.2186E-06	-380.35	-86.164	-39.259	-6.1499	-12.541	-2.1667	896.34	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	13.600	20.000	0.0000	0.0000
13	-2.2841E-05	-3.2939E-06	-495.75	-99.224	-55.052	-8.1254	-12.635	-1.8638	1636.5	7.8279E+06	7.8279E+06
x(M)	9.6000	9.8000	0.0000	0.0000	7.6000	7.8000	10.000	10.200	20.000	0.0000	0.0000
14	-2.2044E-05	-3.2299E-06	-407.19	-88.031	-42.896	-6.5338	-12.401	-2.1078	1253.1	7.8279E+06	7.8279E+06
x(M)	10.400	10.600	0.0000	0.0000	8.2000	8.6000	13.600	20.000	20.000	0.0000	0.0000
15	-2.2051E-05	-3.3400E-06	-409.69	-92.118	-43.188	-6.7983	-12.379	-2.1818	869.79	7.8279E+06	7.8279E+06
x(M)	10.400	10.600	0.0000	0.0000	8.2000	8.6000	13.600	13.600	20.000	0.0000	0.0000
Min.	-2.3286E-05	-3.3492E-06	-513.96	-99.458	-56.366	-8.1578	-12.958	-2.1818	869.79	7.8279E+06	7.8279E+06
Pile N.	1	3	1	1	1	1	1	15	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	8.2953E-04	1.1806E-04	256.31	36.848	229.71	39.002	102.21	15.947	3322.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
2	8.2953E-04	1.2205E-04	218.86	32.434	182.27	32.655	72.191	11.706	2667.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
3	8.2953E-04	1.2603E-04	219.88	33.671	183.67	34.131	72.981	12.251	2294.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
4	8.2555E-04	1.1806E-04	247.04	35.694	218.02	37.373	94.893	14.897	3226.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
5	8.2555E-04	1.2205E-04	203.69	30.291	163.77	29.755	61.815	10.093	2526.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.6000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
6	8.2555E-04	1.2603E-04	204.03	31.352	164.31	30.979	62.081	10.494	2147.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.6000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
7	8.2156E-04	1.1806E-04	245.77	35.684	216.49	37.361	94.294	14.889	3187.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
8	8.2156E-04	1.2205E-04	202.43	30.248	162.30	29.698	61.264	10.061	2487.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.6000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
9	8.2156E-04	1.2603E-04	202.75	31.305	162.81	30.914	61.513	10.459	2108.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.6000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
10	8.1758E-04	1.1806E-04	244.56	35.684	215.04	37.361	93.749	14.889	3148.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
11	8.1758E-04	1.2205E-04	201.62	30.273	161.38	29.733	61.023	10.080	2451.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.6000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
12	8.1758E-04	1.2603E-04	201.93	31.330	161.89	30.951	61.270	10.478	2073.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.6000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
13	8.1359E-04	1.1806E-04	250.79	36.759	222.89	38.879	99.367	15.865	3162.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
14	8.1359E-04	1.2205E-04	213.58	32.265	175.99	32.426	69.732	11.573	2510.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
15	8.1359E-04	1.2603E-04	214.59	33.497	177.36	33.894	70.502	12.113	2137.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
Max.	8.2953E-04	1.2603E-04	256.31	36.848	229.71	39.002	102.21	15.947	3322.6	7.8279E+06	7.8279E+06
Pile N.	1	3	1	1	1	1	1	1	1	1	1

LOAD CASE : 10

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria Mandanti   													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1"> <tr> <td>COMMESSA</td> <td>LOTTO</td> <td>CODIFICA</td> <td>DOCUMENTO</td> <td>REV.</td> <td>FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>266 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	266 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	266 di 420								

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5936	1.0000
2	0.5861	1.0000
3	0.8661	1.0000
4	0.4979	1.0000
5	0.4951	1.0000
6	0.8002	1.0000
7	0.4958	1.0000
8	0.4933	1.0000
9	0.7995	1.0000
10	0.4969	1.0000
11	0.4943	1.0000
12	0.7995	1.0000
13	0.5845	1.0000
14	0.5771	1.0000
15	0.8599	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
34005.2	-2797.70	505.070
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-110.600	4980.47	13342.4

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.21957E-03	-7.42133E-04	1.21779E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
1.48200E-07	5.67572E-06	5.47085E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.0245E-03	-7.4347E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
2	1.2706E-03	-7.4347E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
3	1.5168E-03	-7.4347E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
4	9.9892E-04	-7.4280E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
5	1.2451E-03	-7.4280E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
6	1.4913E-03	-7.4280E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
7	9.7338E-04	-7.4213E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
8	1.2196E-03	-7.4213E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
9	1.4658E-03	-7.4213E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
10	9.4784E-04	-7.4147E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
11	1.1940E-03	-7.4147E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
12	1.4402E-03	-7.4147E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
13	9.2230E-04	-7.4080E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
14	1.1685E-03	-7.4080E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
15	1.4147E-03	-7.4080E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
MINIMUM	9.2230E-04	-7.4347E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.5168E-03	-7.4080E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	1908.6	-182.09	33.057	0.054470	-89.404	-459.93
2	2360.9	-180.72	32.609	0.054470	-88.331	-457.33
3	2813.1	-225.63	40.165	0.054470	-102.68	-542.96
4	1861.6	-164.30	29.968	0.054470	-83.165	-424.21
5	2313.9	-163.73	29.678	0.054470	-82.401	-423.15
6	2766.2	-215.54	38.467	0.054470	-99.491	-524.01
7	1814.7	-163.73	29.900	0.054470	-83.024	-422.83

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 267 di 420
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8	2267.0	-163.18	29.616	0.054470	-82.271	-421.84
9	2719.3	-215.20	38.451	0.054470	-99.459	-523.14
10	1767.8	-163.74	29.935	0.054470	-83.094	-422.65
11	2220.1	-163.20	29.651	0.054470	-82.341	-421.66
12	2672.4	-214.96	38.452	0.054470	-99.459	-522.46
13	1720.9	-179.67	32.778	0.054470	-88.842	-454.31
14	2173.2	-178.30	32.331	0.054470	-87.769	-451.71
15	2625.5	-223.72	40.011	0.054470	-102.38	-538.48
MINIMUM	1720.9	-225.63	29.616	0.054470	-102.68	-542.96
Pile N.	13	3	8	1	3	3
MAXIMUM	2813.1	-163.18	40.165	0.054470	-82.271	-421.66
Pile N.	3	8	3	1	8	11

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.0245E-03	-7.4347E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
2	1.2706E-03	-7.4347E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
3	1.5168E-03	-7.4347E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
4	9.9892E-04	-7.4280E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
5	1.2451E-03	-7.4280E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
6	1.4913E-03	-7.4280E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
7	9.7338E-04	-7.4213E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
8	1.2196E-03	-7.4213E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
9	1.4658E-03	-7.4213E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
10	9.4784E-04	-7.4147E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
11	1.1940E-03	-7.4147E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
12	1.4402E-03	-7.4147E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
13	9.2230E-04	-7.4080E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
14	1.1685E-03	-7.4080E-04	1.2178E-04	1.4820E-07	5.6757E-06	5.4708E-05
15	1.4147E-03	-7.4080E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
MINIMUM	9.2230E-04	-7.4347E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.5168E-03	-7.4080E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	1908.6	-182.09	33.057	0.054470	-89.404	-459.93
2	2360.9	-180.72	32.609	0.054470	-88.331	-457.33
3	2813.1	-225.63	40.165	0.054470	-102.68	-542.96
4	1861.6	-164.30	29.968	0.054470	-83.165	-424.21
5	2313.9	-163.73	29.678	0.054470	-82.401	-423.15
6	2766.2	-215.54	38.467	0.054470	-99.491	-524.01
7	1814.7	-163.73	29.900	0.054470	-83.024	-422.83
8	2267.0	-163.18	29.616	0.054470	-82.271	-421.84
9	2719.3	-215.20	38.451	0.054470	-99.459	-523.14
10	1767.8	-163.74	29.935	0.054470	-83.094	-422.65
11	2220.1	-163.20	29.651	0.054470	-82.341	-421.66
12	2672.4	-214.96	38.452	0.054470	-99.459	-522.46
13	1720.9	-179.67	32.778	0.054470	-88.842	-454.31
14	2173.2	-178.30	32.331	0.054470	-87.769	-451.71
15	2625.5	-223.72	40.011	0.054470	-102.38	-538.48
MINIMUM	1720.9	-225.63	29.616	0.054470	-102.68	-542.96
Pile N.	13	3	8	1	3	3
MAXIMUM	2813.1	-163.18	40.165	0.054470	-82.271	-421.66
Pile N.	3	8	3	1	8	11

PILE GROUP STRESS, KN/ M**2

1	2494.1
2	2741.7
3	3259.6
4	2358.1
5	2610.5
6	3175.1
7	2327.4
8	2580.0
9	3146.0
10	2300.4
11	2552.9
12	3117.4
13	2370.9
14	2618.5
15	3140.0
MINIMUM	2300.4
Pile N.	10

APPALDATTORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 268 di 420
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MAXIMUM 3259.6
Pile N. 3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-7.4347E-04	-3.2570E-06	-197.43	-89.404	-182.10	-6.6696	-68.789	-2.1121	1080.0	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.4000	2.6000	13.600	2.0000	0.0000	0.0000
2	-7.4347E-04	-3.2335E-06	-196.45	-88.331	-180.73	-6.5809	-68.013	-2.1014	1336.0	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.4000	2.6000	13.600	20.000	0.0000	0.0000
3	-7.4347E-04	-3.3811E-06	-230.43	-102.68	-225.65	-8.3711	-95.990	-1.9232	1591.9	7.8279E+06	7.8279E+06
x(M)	0.0000	9.8000	5.2000	0.0000	0.0000	7.8000	2.6000	10.200	20.000	0.0000	0.0000
4	-7.4280E-04	-3.1309E-06	-183.60	-83.165	-164.31	-5.9818	-58.731	-2.1006	1053.5	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
5	-7.4280E-04	-3.1123E-06	-183.22	-82.401	-163.74	-5.9309	-58.438	-2.0872	1309.4	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
6	-7.4280E-04	-3.3615E-06	-222.78	-99.491	-215.56	-7.9653	-89.469	-1.9297	1565.4	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.2000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
7	-7.4213E-04	-3.1280E-06	-183.13	-83.024	-163.74	-5.9665	-58.455	-2.0995	1026.9	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
8	-7.4213E-04	-3.1095E-06	-182.77	-82.271	-163.20	-5.9168	-58.180	-2.0860	1282.9	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
9	-7.4213E-04	-3.3611E-06	-222.50	-99.459	-215.22	-7.9610	-89.316	-1.9305	1538.8	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.2000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
10	-7.4147E-04	-3.1292E-06	-183.11	-83.094	-163.75	-5.9737	-58.503	-2.1000	1000.4	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
11	-7.4147E-04	-3.1107E-06	-182.76	-82.341	-163.21	-5.9240	-58.229	-2.0866	1256.3	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
12	-7.4147E-04	-3.3609E-06	-222.30	-99.459	-214.98	-7.9607	-89.225	-1.9305	1512.3	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.2000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
13	-7.4080E-04	-3.2467E-06	-195.49	-88.842	-179.68	-6.6019	-67.575	-2.1139	973.82	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.4000	2.6000	13.600	20.000	0.0000	0.0000
14	-7.4080E-04	-3.2223E-06	-194.50	-87.769	-178.31	-6.5165	-66.803	-2.1028	1229.8	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.4000	2.6000	13.600	20.000	0.0000	0.0000
15	-7.4080E-04	-3.3779E-06	-228.91	-102.38	-223.74	-8.3307	-95.001	-1.9102	1485.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.2000	0.0000	0.0000	7.8000	2.6000	10.200	20.000	0.0000	0.0000
Min.	-7.4347E-04	-3.3811E-06	-230.43	-102.68	-225.65	-8.3711	-95.990	-2.1139	973.82	7.8279E+06	7.8279E+06
Pile N.	1	3	3	3	3	3	3	13	13	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.9928E-05	1.2245E-04	459.93	32.732	40.044	33.059	12.055	11.903	2494.1	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.8000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
2	1.9891E-05	1.2178E-04	457.33	32.388	39.756	32.612	12.072	11.700	2741.7	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.8000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
3	2.0773E-05	1.2111E-04	542.96	37.817	50.806	40.169	11.680	16.393	3259.6	7.8279E+06	7.8279E+06
x(M)	9.8000	0.0000	0.0000	5.4000	7.8000	0.0000	10.000	2.6000	0.0000	0.0000	0.0000
4	1.9264E-05	1.2245E-04	424.21	30.455	35.896	29.970	12.061	10.179	2358.1	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
5	1.9255E-05	1.2178E-04	423.15	30.223	35.789	29.681	12.058	10.069	2610.5	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
6	2.0616E-05	1.2111E-04	524.01	36.612	48.318	38.470	11.009	15.299	3175.1	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	7.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
7	1.9231E-05	1.2245E-04	422.83	30.405	35.770	29.902	12.044	10.142	2327.4	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
8	1.9222E-05	1.2178E-04	421.84	30.177	35.670	29.618	12.041	10.035	2580.0	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
9	2.0596E-05	1.2111E-04	523.14	36.600	48.247	38.454	11.002	15.289	3146.0	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	7.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
10	1.9221E-05	1.2245E-04	422.65	30.430	35.781	29.937	12.033	10.160	2300.4	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
11	1.9212E-05	1.2178E-04	421.66	30.201	35.682	29.653	12.030	10.053	2552.9	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
12	2.0576E-05	1.2111E-04	522.46	36.599	48.201	38.455	10.990	15.289	3117.4	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	7.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
13	1.9796E-05	1.2245E-04	454.31	32.529	39.522	32.780	12.022	11.741	2370.9	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.8000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
14	1.9754E-05	1.2178E-04	451.71	32.185	39.232	32.334	12.037	11.539	2618.5	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.8000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
15	2.0688E-05	1.2111E-04	538.48	37.706	50.391	40.015	11.556	16.291	3140.0	7.8279E+06	7.8279E+06
x(M)	9.8000	0.0000	0.0000	5.4000	7.8000	0.0000	10.000	2.6000	0.0000	0.0000	0.0000
Max.	2.0773E-05	1.2245E-04	542.96	37.817	50.806	40.169	12.072	16.393	3259.6	7.8279E+06	7.8279E+06
Pile N.	3	1	3	3	3	3	2	3	3	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5983	1.0000
2	0.5898	1.0000
3	0.8661	1.0000
4	0.4991	1.0000
5	0.4951	1.0000
6	0.7975	1.0000
7	0.4966	1.0000
8	0.4928	1.0000
9	0.7965	1.0000
10	0.4976	1.0000
11	0.4938	1.0000
12	0.7965	1.0000
13	0.5845	1.0000
14	0.5760	1.0000
15	0.8566	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
33552.0	-2430.51	535.425
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-227.197	6155.62	11445.1

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.20312E-03	-6.43677E-04	1.31189E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-2.88385E-07	6.78649E-06	4.71569E-05




THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.0520E-03	-6.4108E-04	1.2989E-04	-2.8839E-07	6.7865E-06	4.7157E-05
2	1.2642E-03	-6.4108E-04	1.3119E-04	-2.8839E-07	6.7865E-06	4.7157E-05
3	1.4764E-03	-6.4108E-04	1.3249E-04	-2.8839E-07	6.7865E-06	4.7157E-05
4	1.0214E-03	-6.4238E-04	1.2989E-04	-2.8839E-07	6.7865E-06	4.7157E-05
5	1.2337E-03	-6.4238E-04	1.3119E-04	-2.8839E-07	6.7865E-06	4.7157E-05
6	1.4459E-03	-6.4238E-04	1.3249E-04	-2.8839E-07	6.7865E-06	4.7157E-05
7	9.9091E-04	-6.4368E-04	1.2989E-04	-2.8839E-07	6.7865E-06	4.7157E-05
8	1.2031E-03	-6.4368E-04	1.3119E-04	-2.8839E-07	6.7865E-06	4.7157E-05
9	1.4153E-03	-6.4368E-04	1.3249E-04	-2.8839E-07	6.7865E-06	4.7157E-05
10	9.6037E-04	-6.4497E-04	1.2989E-04	-2.8839E-07	6.7865E-06	4.7157E-05
11	1.1726E-03	-6.4497E-04	1.3119E-04	-2.8839E-07	6.7865E-06	4.7157E-05
12	1.3848E-03	-6.4497E-04	1.3249E-04	-2.8839E-07	6.7865E-06	4.7157E-05
13	9.2983E-04	-6.4627E-04	1.2989E-04	-2.8839E-07	6.7865E-06	4.7157E-05
14	1.1420E-03	-6.4627E-04	1.3119E-04	-2.8839E-07	6.7865E-06	4.7157E-05
15	1.3542E-03	-6.4627E-04	1.3249E-04	-2.8839E-07	6.7865E-06	4.7157E-05
MINIMUM Pile N.	13	13	1	1	1	1
MAXIMUM Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	1959.2	-157.73	34.513	-0.1060	-92.006	-398.06
2	2349.0	-156.40	34.634	-0.1060	-92.649	-395.52
3	2738.9	-194.58	43.330	-0.1060	-109.78	-468.27
4	1903.0	-142.43	31.173	-0.1060	-85.280	-367.89
5	2292.9	-141.73	31.394	-0.1060	-86.111	-366.56
6	2682.8	-186.21	41.413	-0.1060	-106.19	-453.18
7	1846.9	-142.37	31.083	-0.1060	-85.094	-368.14

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

8	2236.8	-141.72	31.312	-0.1060	-85.941	-366.89
9	2626.7	-186.56	41.387	-0.1060	-106.14	-454.26
10	1790.8	-142.92	31.120	-0.1060	-85.167	-369.60
11	2180.7	-142.26	31.349	-0.1060	-86.015	-368.35
12	2570.6	-187.04	41.388	-0.1060	-106.14	-455.59
13	1734.7	-157.27	34.070	-0.1060	-91.118	-398.68
14	2124.6	-155.91	34.184	-0.1060	-91.744	-396.07
15	2514.4	-195.37	43.075	-0.1060	-109.30	-471.50
MINIMUM	1734.7	-195.37	31.083	-0.1060	-109.78	-471.50
Pile N.	13	15	7	1	3	15
MAXIMUM	2738.9	-141.72	43.330	-0.1060	-85.094	-366.56
Pile N.	3	8	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.0520E-03	-6.4108E-04	1.2989E-04	-2.8839E-07	6.7865E-06	4.7157E-05
2	1.2642E-03	-6.4108E-04	1.3119E-04	-2.8839E-07	6.7865E-06	4.7157E-05
3	1.4764E-03	-6.4108E-04	1.3249E-04	-2.8839E-07	6.7865E-06	4.7157E-05
4	1.0214E-03	-6.4238E-04	1.2989E-04	-2.8839E-07	6.7865E-06	4.7157E-05
5	1.2337E-03	-6.4238E-04	1.3119E-04	-2.8839E-07	6.7865E-06	4.7157E-05
6	1.4459E-03	-6.4238E-04	1.3249E-04	-2.8839E-07	6.7865E-06	4.7157E-05
7	9.9091E-04	-6.4368E-04	1.2989E-04	-2.8839E-07	6.7865E-06	4.7157E-05
8	1.2031E-03	-6.4368E-04	1.3119E-04	-2.8839E-07	6.7865E-06	4.7157E-05
9	1.4153E-03	-6.4368E-04	1.3249E-04	-2.8839E-07	6.7865E-06	4.7157E-05
10	9.6037E-04	-6.4497E-04	1.2989E-04	-2.8839E-07	6.7865E-06	4.7157E-05
11	1.1726E-03	-6.4497E-04	1.3119E-04	-2.8839E-07	6.7865E-06	4.7157E-05
12	1.3848E-03	-6.4497E-04	1.3249E-04	-2.8839E-07	6.7865E-06	4.7157E-05
13	9.2983E-04	-6.4627E-04	1.2989E-04	-2.8839E-07	6.7865E-06	4.7157E-05
14	1.1420E-03	-6.4627E-04	1.3119E-04	-2.8839E-07	6.7865E-06	4.7157E-05
15	1.3542E-03	-6.4627E-04	1.3249E-04	-2.8839E-07	6.7865E-06	4.7157E-05
MINIMUM	9.2983E-04	-6.4627E-04	1.2989E-04	-2.8839E-07	6.7865E-06	4.7157E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	1.4764E-03	-6.4108E-04	1.3249E-04	-2.8839E-07	6.7865E-06	4.7157E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	1959.2	-157.73	34.513	-0.1060	-92.006	-398.06
2	2349.0	-156.40	34.634	-0.1060	-92.649	-395.52
3	2738.9	-194.58	43.330	-0.1060	-109.78	-468.27
4	1903.0	-142.43	31.173	-0.1060	-85.280	-367.89
5	2292.9	-141.73	31.394	-0.1060	-86.111	-366.56
6	2682.8	-186.21	41.413	-0.1060	-106.19	-453.18
7	1846.9	-142.37	31.083	-0.1060	-85.094	-368.14
8	2236.8	-141.72	31.312	-0.1060	-85.941	-366.89
9	2626.7	-186.56	41.387	-0.1060	-106.14	-454.26
10	1790.8	-142.92	31.120	-0.1060	-85.167	-369.60
11	2180.7	-142.26	31.349	-0.1060	-86.015	-368.35
12	2570.6	-187.04	41.388	-0.1060	-106.14	-455.59
13	1734.7	-157.27	34.070	-0.1060	-91.118	-398.68
14	2124.6	-155.91	34.184	-0.1060	-91.744	-396.07
15	2514.4	-195.37	43.075	-0.1060	-109.30	-471.50
MINIMUM	1734.7	-195.37	31.083	-0.1060	-109.78	-471.50
Pile N.	13	15	7	1	3	15
MAXIMUM	2738.9	-141.72	43.330	-0.1060	-85.094	-366.56
Pile N.	3	8	3	1	7	5

PILE GROUP STRESS, KN/ M**2

1	2341.7
2	2555.3
3	3001.5
4	2216.6
5	2433.9
6	2922.9
7	2185.5
8	2403.0
9	2894.3
10	2158.1
11	2375.6
12	2866.4
13	2215.9
14	2429.3
15	2883.6
MINIMUM	2158.1
Pile N.	10

APPALDATTORE:

Consorzio

Soci



ITINERARIO NAPOLI - BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE - ORSARA I LOTTO FUNZIONALE APICE - HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO V10103 001	REV. B	FOGLIO 271 di 420
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MAXIMUM Pile N. 3001.5
3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
1	-6.4108E-04	-3.4628E-06	-170.78	-92.006	-157.74	-7.0936	-59.735	-2.2100	1108.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.4000	2.6000	13.600	0.0000	0.0000	0.0000
2	-6.4108E-04	-3.4908E-06	-169.82	-92.649	-156.41	-7.1034	-58.974	-2.2375	1329.3	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.4000	2.6000	13.600	0.0000	0.0000	0.0000
3	-6.4108E-04	-3.6989E-06	-198.70	-109.78	-194.60	-9.1399	-82.775	-2.0995	1549.9	7.8279E+06	7.8279E+06
x(M)	0.0000	9.8000	5.2000	0.0000	0.0000	7.8000	2.6000	10.200	20.000	0.0000	0.0000
4	-6.4238E-04	-3.3307E-06	-158.94	-85.280	-142.43	-6.3357	-50.927	-2.2033	1076.9	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
5	-6.4238E-04	-3.3574E-06	-158.46	-86.111	-141.74	-6.3724	-50.562	-2.2259	1297.5	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
6	-6.4238E-04	-3.6756E-06	-192.39	-106.19	-186.23	-8.6758	-77.180	-2.0903	1518.1	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.2000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
7	-6.4368E-04	-3.3254E-06	-158.94	-85.094	-142.38	-6.3158	-50.809	-2.2019	1045.2	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
8	-6.4368E-04	-3.3541E-06	-158.49	-85.941	-141.73	-6.3541	-50.467	-2.2245	1265.8	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
9	-6.4368E-04	-3.6749E-06	-192.68	-106.14	-186.58	-8.6688	-77.274	-2.0915	1486.4	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.2000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
10	-6.4497E-04	-3.3271E-06	-159.39	-85.167	-142.92	-6.3232	-51.018	-2.2024	1013.4	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
11	-6.4497E-04	-3.3552E-06	-158.94	-86.015	-142.27	-6.3616	-50.676	-2.2250	1234.0	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
12	-6.4497E-04	-3.6747E-06	-193.07	-106.14	-187.06	-8.6685	-77.451	-2.0915	1454.6	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.2000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
13	-6.4627E-04	-3.4487E-06	-170.57	-91.118	-157.27	-6.9877	-59.049	-2.2136	981.66	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	5.6000	0.0000	0.0000	8.4000	2.6000	13.600	0.0000	0.0000	0.0000
14	-6.4627E-04	-3.4746E-06	-169.58	-91.744	-155.92	-6.9947	-58.281	-2.2403	1202.3	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.4000	2.6000	13.600	20.000	0.0000	0.0000
15	-6.4627E-04	-3.6931E-06	-199.42	-109.30	-195.38	-9.0738	-82.737	-2.0782	1422.9	7.8279E+06	7.8279E+06
x(M)	0.0000	9.8000	5.2000	0.0000	0.0000	7.8000	2.6000	10.200	20.000	0.0000	0.0000
Min. Pile N.	-6.4627E-04 13	-3.6989E-06 3	-199.42 15	-109.78 3	-195.38 15	-9.1399 3	-82.775 3	-2.2403 14	981.66 13	7.8279E+06 1	7.8279E+06 1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
1	1.7208E-05	1.2989E-04	398.06	34.755	34.705	34.515	10.386	12.582	2341.7	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.6000	8.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
2	1.7172E-05	1.3119E-04	395.52	34.905	34.409	34.637	10.404	12.558	2555.3	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.8000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
3	1.7911E-05	1.3249E-04	468.27	41.293	43.807	43.334	10.071	17.798	3001.5	7.8279E+06	7.8279E+06
x(M)	9.8000	0.0000	0.0000	5.4000	7.8000	0.0000	10.000	2.6000	0.0000	0.0000	0.0000
4	1.6667E-05	1.2989E-04	367.89	32.274	31.094	31.175	10.438	10.708	2216.6	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.8000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
5	1.6649E-05	1.3119E-04	366.56	32.493	30.953	31.397	10.433	10.748	2433.9	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.8000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
6	1.7825E-05	1.3249E-04	453.18	39.937	41.696	41.417	9.5435	16.561	2922.9	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	7.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
7	1.6681E-05	1.2989E-04	368.14	32.204	31.058	31.085	10.457	10.659	2185.5	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.8000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
8	1.6663E-05	1.3119E-04	366.89	32.431	30.925	31.315	10.452	10.703	2403.0	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
9	1.7859E-05	1.3249E-04	454.26	39.916	41.747	41.390	9.5727	16.543	2894.3	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	7.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
10	1.6718E-05	1.2989E-04	369.60	32.231	31.159	31.122	10.483	10.678	2158.1	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.8000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
11	1.6702E-05	1.3119E-04	368.35	32.457	31.026	31.352	10.478	10.722	2375.6	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
12	1.7894E-05	1.3249E-04	455.59	39.916	41.831	41.391	9.5959	16.543	2866.4	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	7.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
13	1.7262E-05	1.2989E-04	398.68	34.427	34.491	34.072	10.509	12.325	2215.9	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	5.8000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
14	1.7218E-05	1.3119E-04	396.07	34.579	34.197	34.186	10.523	12.298	2429.3	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.8000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
15	1.8041E-05	1.3249E-04	471.50	41.111	43.872	43.079	10.046	17.629	2883.6	7.8279E+06	7.8279E+06
x(M)	9.8000	0.0000	0.0000	5.4000	7.8000	0.0000	10.000	2.6000	0.0000	0.0000	0.0000
Max. Pile N.	1.8041E-05 15	1.3249E-04 3	471.50 15	41.293 3	43.872 15	43.334 3	10.523 14	17.798 3	3001.5 3	7.8279E+06 1	7.8279E+06 1

LOAD CASE : 12

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8626	1.0000
2	0.8024	1.0000
3	0.8661	1.0000
4	0.5779	1.0000
5	0.4961	1.0000
6	0.5831	1.0000
7	0.5437	1.0000
8	0.4630	1.0000
9	0.5492	1.0000
10	0.5438	1.0000
11	0.4630	1.0000
12	0.5492	1.0000
13	0.5845	1.0000
14	0.4979	1.0000
15	0.5897	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30306.0	-276.510	557.375
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
23.3401	5823.56	-6450.80

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.08533E-03	-1.69945E-05	1.38384E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-2.54987E-07	6.56398E-06	-1.43491E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.2090E-03	-1.4700E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
2	1.1444E-03	-1.4700E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
3	1.0798E-03	-1.4700E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
4	1.1794E-03	-1.5847E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
5	1.1149E-03	-1.5847E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
6	1.0503E-03	-1.5847E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
7	1.1499E-03	-1.6995E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
8	1.0853E-03	-1.6995E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
9	1.0208E-03	-1.6995E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
10	1.1204E-03	-1.8142E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
11	1.0558E-03	-1.8142E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
12	9.9122E-04	-1.8142E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
13	1.0908E-03	-1.9289E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
14	1.0263E-03	-1.9289E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
15	9.6168E-04	-1.9289E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
MINIMUM	9.6168E-04	-1.9289E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2090E-03	-1.4700E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2247.6	-20.689	45.284	-0.093719	-115.58	-78.500
2	2128.9	-20.099	43.952	-0.093719	-113.46	-77.265
3	2010.3	-20.724	46.264	-0.093719	-118.18	-78.573
4	2193.3	-17.956	36.312	-0.093719	-98.287	-72.899
5	2074.7	-16.867	33.670	-0.093719	-93.263	-70.441
6	1956.0	-18.022	37.207	-0.093719	-100.74	-73.048
7	2139.0	-17.856	35.099	-0.093719	-95.848	-72.931

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandatario

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 273 di 420
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8	2020.4	-16.708	32.387	-0.093719	-90.614	-70.315
9	1901.8	-17.931	35.989	-0.093719	-98.299	-73.101
10	2084.8	-18.199	35.100	-0.093719	-95.849	-73.954
11	1966.1	-17.023	32.389	-0.093719	-90.616	-71.281
12	1847.5	-18.275	35.990	-0.093719	-98.298	-74.128
13	2030.5	-19.108	36.546	-0.093719	-98.747	-76.237
14	1911.9	-17.873	33.740	-0.093719	-93.400	-73.470
15	1793.2	-19.179	37.445	-0.093719	-101.21	-76.395
MINIMUM	1793.2	-20.724	32.387	-0.093719	-118.18	-78.573
Pile N.	15	3	8	1	3	3
MAXIMUM	2247.6	-16.708	46.264	-0.093719	-90.614	-70.315
Pile N.	1	8	3	1	8	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.2090E-03	-1.4700E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
2	1.1444E-03	-1.4700E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
3	1.0798E-03	-1.4700E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
4	1.1794E-03	-1.5847E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
5	1.1149E-03	-1.5847E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
6	1.0503E-03	-1.5847E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
7	1.1499E-03	-1.6995E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
8	1.0853E-03	-1.6995E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
9	1.0208E-03	-1.6995E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
10	1.1204E-03	-1.8142E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
11	1.0558E-03	-1.8142E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
12	9.9122E-04	-1.8142E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
13	1.0908E-03	-1.9289E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
14	1.0263E-03	-1.9289E-05	1.3838E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
15	9.6168E-04	-1.9289E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
MINIMUM	9.6168E-04	-1.9289E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2090E-03	-1.4700E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2247.6	-20.689	45.284	-0.093719	-115.58	-78.500
2	2128.9	-20.099	43.952	-0.093719	-113.46	-77.265
3	2010.3	-20.724	46.264	-0.093719	-118.18	-78.573
4	2193.3	-17.956	36.312	-0.093719	-98.287	-72.899
5	2074.7	-16.867	33.670	-0.093719	-93.263	-70.441
6	1956.0	-18.022	37.207	-0.093719	-100.74	-73.048
7	2139.0	-17.856	35.099	-0.093719	-95.848	-72.931
8	2020.4	-16.708	32.387	-0.093719	-90.614	-70.315
9	1901.8	-17.931	35.989	-0.093719	-98.299	-73.101
10	2084.8	-18.199	35.100	-0.093719	-95.849	-73.954
11	1966.1	-17.023	32.389	-0.093719	-90.616	-71.281
12	1847.5	-18.275	35.990	-0.093719	-98.298	-74.128
13	2030.5	-19.108	36.546	-0.093719	-98.747	-76.237
14	1911.9	-17.873	33.740	-0.093719	-93.400	-73.470
15	1793.2	-19.179	37.445	-0.093719	-101.21	-76.395
MINIMUM	1793.2	-20.724	32.387	-0.093719	-118.18	-78.573
Pile N.	15	3	8	1	3	3
MAXIMUM	2247.6	-16.708	46.264	-0.093719	-90.614	-70.315
Pile N.	1	8	3	1	8	8

PILE GROUP STRESS, KN/ M**2

1	1693.5
2	1619.0
3	1565.9
4	1610.5
5	1526.8
6	1482.5
7	1573.9
8	1489.5
9	1445.9
10	1545.1
11	1460.6
12	1417.0
13	1525.5
14	1440.5
15	1397.5
MINIMUM	1397.5
Pile N.	15

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA
IF28LOTTO
01CODIFICA
E ZZ CLDOCUMENTO
VI0103 001REV.
BFOGLIO
274 di
420MAXIMUM 1693.5
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL.		MOMENT		SHEAR		SOIL REACT		TOTAL STRESS	FLEX. RIG.	
	y-Dir	z-Dir	z-Dir	y-Dir	y-Dir	z-Dir	y-Dir	z-Dir		z-Dir	y-Dir
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	-2.6802E-05	-3.8272E-06	-9.6490	-115.58	-20.692	-9.4525	-5.6686	-2.1692	1271.9	7.8279E+06	7.8279E+06
x(M)	2.0000	0.0000	7.0000	0.0000	0.0000	7.8000	3.2000	10.200	20.000	0.0000	0.0000
2	-2.7019E-05	-3.8396E-06	-9.4497	-113.46	-20.101	-9.1097	-5.3655	-2.1986	1204.7	7.8279E+06	7.8279E+06
x(M)	2.0000	10.000	7.0000	0.0000	0.0000	8.0000	3.2000	13.600	20.000	0.0000	0.0000
3	-2.6791E-05	-3.8922E-06	-9.6590	-118.18	-20.726	-9.6373	-5.6859	-2.2140	1137.6	7.8279E+06	7.8279E+06
x(M)	1.8000	9.8000	7.0000	0.0000	0.0000	7.8000	3.2000	10.200	20.000	0.0000	0.0000
4	-2.8926E-05	-3.6338E-06	-8.8407	-98.287	-17.958	-7.3452	-4.3117	-2.3633	1241.2	7.8279E+06	7.8279E+06
x(M)	2.0000	10.600	7.6000	0.0000	0.0000	8.6000	3.6000	13.600	20.000	0.0000	0.0000
5	-2.9403E-05	-3.5379E-06	-8.4626	-93.263	-16.869	-6.7435	-3.8499	-2.3683	1174.0	7.8279E+06	7.8279E+06
x(M)	2.2000	11.000	7.8000	0.0000	0.0000	8.8000	3.6000	13.600	20.000	0.0000	0.0000
6	-2.8900E-05	-3.6995E-06	-8.8622	-100.74	-18.024	-7.5106	-4.3399	-2.4058	1106.9	7.8279E+06	7.8279E+06
x(M)	2.0000	10.600	7.4000	0.0000	0.0000	8.4000	3.6000	13.600	20.000	0.0000	0.0000
7	-3.0049E-05	-3.5870E-06	-8.9504	-95.848	-17.858	-7.0771	-4.2253	-2.3640	1210.4	7.8279E+06	7.8279E+06
x(M)	2.0000	10.800	7.6000	0.0000	0.0000	8.6000	3.6000	13.600	20.000	0.0000	0.0000
8	-3.0554E-05	-3.4748E-06	-8.5365	-90.614	-16.710	-6.4584	-3.7483	-2.3413	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	11.000	7.8000	0.0000	0.0000	9.0000	3.8000	13.600	20.000	0.0000	0.0000
9	-3.0019E-05	-3.6521E-06	-8.9756	-98.299	-17.933	-7.2417	-4.2569	-2.4078	1076.2	7.8279E+06	7.8279E+06
x(M)	2.0000	10.800	7.6000	0.0000	0.0000	8.6000	3.6000	13.600	20.000	0.0000	0.0000
10	-3.0992E-05	-3.5868E-06	-9.2094	-95.849	-18.201	-7.0768	-4.3289	-2.3639	1179.7	7.8279E+06	7.8279E+06
x(M)	2.0000	10.800	7.6000	0.0000	0.0000	8.6000	3.6000	13.600	20.000	0.0000	0.0000
11	-3.1480E-05	-3.4745E-06	-8.7816	-90.616	-17.025	-6.4582	-3.8379	-2.3412	1112.6	7.8279E+06	7.8279E+06
x(M)	2.0000	11.000	7.8000	0.0000	0.0000	9.0000	3.6000	13.600	20.000	0.0000	0.0000
12	-3.0961E-05	-3.6518E-06	-9.2349	-98.298	-18.277	-7.2413	-4.3612	-2.4078	1045.5	7.8279E+06	7.8279E+06
x(M)	2.0000	10.800	7.6000	0.0000	0.0000	8.6000	3.6000	13.600	20.000	0.0000	0.0000
13	-3.1708E-05	-3.6415E-06	-9.6840	-98.747	-19.110	-7.3974	-4.6817	-2.3619	1149.0	7.8279E+06	7.8279E+06
x(M)	2.0000	10.600	7.4000	0.0000	0.0000	8.4000	3.4000	13.600	20.000	0.0000	0.0000
14	-3.2209E-05	-3.5397E-06	-9.2214	-93.400	-17.874	-6.7570	-4.1500	-2.3691	1081.9	7.8279E+06	7.8279E+06
x(M)	2.0000	11.000	7.6000	0.0000	0.0000	8.8000	3.6000	13.600	20.000	0.0000	0.0000
15	-3.1679E-05	-3.7069E-06	-9.7093	-101.21	-19.180	-7.5649	-4.7132	-2.4041	1014.8	7.8279E+06	7.8279E+06
x(M)	2.0000	10.600	7.4000	0.0000	0.0000	8.4000	3.4000	13.600	20.000	0.0000	0.0000
Min.	-3.2209E-05	-3.8922E-06	-9.7093	-118.18	-20.726	-9.6373	-5.6859	-2.4078	1014.8	7.8279E+06	7.8279E+06
Pile N.	14	3	15	3	3	3	3	9	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL.		MOMENT		SHEAR		SOIL REACT		TOTAL STRESS	FLEX. RIG.	
	y-Dir	z-Dir	z-Dir	y-Dir	y-Dir	z-Dir	y-Dir	z-Dir		z-Dir	y-Dir
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	7.6497E-07	1.3724E-04	78.500	42.760	2.2053	45.288	0.8499	18.480	1693.5	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	5.4000	9.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
2	7.5306E-07	1.3838E-04	77.265	41.869	2.1276	43.955	0.8583	17.507	1619.0	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	5.4000	9.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
3	7.6531E-07	1.3953E-04	78.573	43.558	2.2092	46.267	0.8491	18.881	1565.9	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	5.4000	9.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
4	7.0233E-07	1.3724E-04	72.899	36.275	1.8747	36.315	0.8385	12.993	1610.5	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
5	6.5465E-07	1.3838E-04	70.441	34.358	1.7522	33.672	0.7780	11.446	1526.8	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	6.0000	10.600	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
6	7.0494E-07	1.3953E-04	73.048	37.023	1.8817	37.210	0.8411	13.334	1482.5	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
7	7.0878E-07	1.3724E-04	72.931	35.385	1.8747	35.101	0.8389	12.308	1573.9	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
8	6.5479E-07	1.3838E-04	70.315	33.416	1.7482	32.390	0.7642	10.760	1489.5	7.8279E+06	7.8279E+06
x(M)	12.600	0.0000	0.0000	6.0000	10.800	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
9	7.1148E-07	1.3953E-04	73.101	36.133	1.8836	35.992	0.8426	12.644	1445.9	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
10	7.3342E-07	1.3724E-04	73.954	35.385	1.9282	35.103	0.8607	12.308	1545.1	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
11	6.7775E-07	1.3838E-04	71.281	33.416	1.7957	32.391	0.7853	10.760	1460.6	7.8279E+06	7.8279E+06
x(M)	12.600	0.0000	0.0000	6.0000	10.600	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
12	7.3603E-07	1.3953E-04	74.128	36.132	1.9371	35.993	0.8643	12.644	1417.0	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
13	7.8241E-07	1.3724E-04	76.237	36.440	2.0492	36.549	0.9074	13.125	1525.5	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
14	7.2741E-07	1.3838E-04	73.470	34.405	1.9035	33.742	0.8439	11.482	1440.5	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	6.0000	10.400	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
15	7.8459E-07	1.3953E-04	76.395	37.189	2.0578	37.447	0.9098	13.468	1397.5	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
Max.	7.8459E-07	1.3953E-04	78.573	43.558	2.2092	46.267	0.9098	18.881	1693.5	7.8279E+06	7.8279E+06
Pile N.	15	3	3	3	3	3	15	3	1	1	1

LOAD CASE : 13

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria  Mandanti  													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 10%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 10%;">REV.</td> <td style="width: 10%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>275 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	275 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	275 di 420								

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5813	1.0000
3	0.5874	1.0000
4	0.8037	1.0000
5	0.4951	1.0000
6	0.4963	1.0000
7	0.8035	1.0000
8	0.4938	1.0000
9	0.4949	1.0000
10	0.8035	1.0000
11	0.4948	1.0000
12	0.4959	1.0000
13	0.8642	1.0000
14	0.5785	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
32897.5	1789.23	204.774
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-125.422	1992.58	-18446.0

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.17937E-03	5.48129E-04	4.95428E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-7.18052E-07	2.27857E-06	-6.02085E-05







THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.4708E-03	5.5459E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
2	1.1999E-03	5.5459E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
3	9.2894E-04	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
4	1.4606E-03	5.5136E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
5	1.1896E-03	5.5136E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
6	9.1869E-04	5.5136E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
7	1.4503E-03	5.4813E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
8	1.1794E-03	5.4813E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
9	9.0843E-04	5.4813E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
10	1.4401E-03	5.4490E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
11	1.1691E-03	5.4490E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
12	8.9818E-04	5.4490E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
13	1.4298E-03	5.4167E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
14	1.1589E-03	5.4167E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
15	8.8793E-04	5.4167E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
MINIMUM Pile N.	8.8793E-04 15	5.4167E-04 13	4.6312E-05 1	-7.1805E-07 1	2.2786E-06 1	-6.0208E-05 1
MAXIMUM Pile N.	1.4708E-03 1	5.5459E-04 1	5.2774E-05 3	-7.1805E-07 1	2.2786E-06 1	-6.0208E-05 1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2728.6	147.87	15.245	-0.2639	-38.786	319.75
2	2230.8	116.46	13.234	-0.2639	-35.937	260.75
3	1733.1	117.24	14.319	-0.2639	-39.052	262.17
4	2709.8	140.28	14.634	-0.2639	-37.642	304.74
5	2212.0	104.66	12.101	-0.2639	-33.643	236.55
6	1714.2	104.85	13.038	-0.2639	-36.459	236.82
7	2690.9	139.08	14.632	-0.2639	-37.638	301.39

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

8	2193.2	103.58	12.083	-0.2639	-33.606	233.43
9	1695.4	103.75	13.018	-0.2639	-36.418	233.69
10	2672.1	137.90	14.632	-0.2639	-37.638	298.07
11	2174.3	102.80	12.097	-0.2639	-33.635	230.92
12	1676.6	102.97	13.034	-0.2639	-36.449	231.17
13	2653.3	142.77	15.227	-0.2639	-38.752	305.79
14	2155.5	112.14	13.199	-0.2639	-35.866	248.30
15	1657.7	112.89	14.281	-0.2639	-38.976	249.68
MINIMUM	1657.7	102.80	12.083	-0.2639	-39.052	230.92
Pile N.	15	11	8	1	3	11
MAXIMUM	2728.6	147.87	15.245	-0.2639	-33.606	319.75
Pile N.	1	1	1	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.4708E-03	5.5459E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
2	1.1999E-03	5.5459E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
3	9.2894E-04	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
4	1.4606E-03	5.5136E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
5	1.1896E-03	5.5136E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
6	9.1869E-04	5.5136E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
7	1.4503E-03	5.4813E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
8	1.1794E-03	5.4813E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
9	9.0843E-04	5.4813E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
10	1.4401E-03	5.4490E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
11	1.1691E-03	5.4490E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
12	8.9818E-04	5.4490E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
13	1.4298E-03	5.4167E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
14	1.1589E-03	5.4167E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
15	8.8793E-04	5.4167E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
MINIMUM	8.8793E-04	5.4167E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4708E-03	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2728.6	147.87	15.245	-0.2639	-38.786	319.75
2	2230.8	116.46	13.234	-0.2639	-35.937	260.75
3	1733.1	117.24	14.319	-0.2639	-39.052	262.17
4	2709.8	140.28	14.634	-0.2639	-37.642	304.74
5	2212.0	104.66	12.101	-0.2639	-33.643	236.55
6	1714.2	104.85	13.038	-0.2639	-36.459	236.82
7	2690.9	139.08	14.632	-0.2639	-37.638	301.39
8	2193.2	103.58	12.083	-0.2639	-33.606	233.43
9	1695.4	103.75	13.018	-0.2639	-36.418	233.69
10	2672.1	137.90	14.632	-0.2639	-37.638	298.07
11	2174.3	102.80	12.097	-0.2639	-33.635	230.92
12	1676.6	102.97	13.034	-0.2639	-36.449	231.17
13	2653.3	142.77	15.227	-0.2639	-38.752	305.79
14	2155.5	112.14	13.199	-0.2639	-35.866	248.30
15	1657.7	112.89	14.281	-0.2639	-38.976	249.68
MINIMUM	1657.7	102.80	12.083	-0.2639	-39.052	230.92
Pile N.	15	11	8	1	3	11
MAXIMUM	2728.6	147.87	15.245	-0.2639	-33.606	319.75
Pile N.	1	1	1	1	8	1

PILE GROUP STRESS, KN/ M**2

1	2516.2
2	2056.8
3	1780.7
4	2460.1
5	1972.8
6	1693.2
7	2439.4
8	1952.8
9	1673.2
10	2418.8
11	1934.7
12	1655.1
13	2431.7
14	1976.9
15	1700.7
MINIMUM	1655.1
Pile N.	12

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 277 di 420
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MAXIMUM 2516.2
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.5614E-05	-1.2929E-06	-319.75	-38.786	-37.601	-3.1976	-8.6413	-0.7346	1544.1	7.8279E+06	7.8279E+06
x(M)	9.6000	9.6000	0.0000	0.0000	7.6000	7.8000	9.8000	10.2000	20.000	0.0000	0.0000
2	-1.5132E-05	-1.3129E-06	-260.75	-35.937	-29.339	-2.6636	-8.2828	-0.8564	1262.4	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	0.0000	0.0000	0.0000
3	-1.5146E-05	-1.3998E-06	-262.17	-39.052	-29.521	-2.8585	-8.2689	-0.9172	980.72	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	0.0000	0.0000	0.0000
4	-1.5458E-05	-1.2859E-06	-304.74	-37.642	-35.702	-3.0504	-8.0422	-0.7319	1533.4	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
5	-1.4712E-05	-1.2658E-06	-236.55	-33.643	-26.434	-2.4133	-8.2929	-0.8501	1251.7	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	0.0000	0.0000	0.0000
6	-1.4707E-05	-1.3471E-06	-236.82	-36.459	-26.457	-2.5768	-8.2917	-0.9105	970.06	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	0.0000	0.0000	0.0000
7	-1.5370E-05	-1.2859E-06	-301.39	-37.638	-35.486	-3.0499	-7.9931	-0.7319	1522.8	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
8	-1.4629E-05	-1.2650E-06	-233.43	-33.606	-26.237	-2.4093	-8.2318	-0.8498	1241.1	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	0.0000	0.0000	0.0000
9	-1.4624E-05	-1.3462E-06	-233.69	-36.418	-26.258	-2.5724	-8.2305	-0.9102	959.40	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	0.0000	0.0000	0.0000
10	-1.5282E-05	-1.2858E-06	-298.07	-37.638	-35.275	-3.0499	-7.9458	-0.7319	1512.1	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
11	-1.4556E-05	-1.2656E-06	-230.92	-33.635	-26.114	-2.4124	-8.1718	-0.8500	1230.4	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	0.0000	0.0000	0.0000
12	-1.4550E-05	-1.3468E-06	-231.17	-36.449	-26.135	-2.5757	-8.1705	-0.9104	948.74	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	0.0000	0.0000	0.0000
13	-1.5262E-05	-1.2924E-06	-305.79	-38.752	-36.656	-3.1928	-8.4228	-0.7330	1501.4	7.8279E+06	7.8279E+06
x(M)	9.6000	9.8000	0.0000	0.0000	7.6000	7.8000	9.8000	10.2000	20.000	0.0000	0.0000
14	-1.4803E-05	-1.3114E-06	-248.30	-35.866	-28.575	-2.6558	-8.0425	-0.8565	1219.8	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	0.0000	0.0000	0.0000
15	-1.4815E-05	-1.3982E-06	-249.68	-38.976	-28.752	-2.8501	-8.0290	-0.9174	938.08	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	0.0000	0.0000	0.0000
Min.	-1.5614E-05	-1.3998E-06	-319.75	-39.052	-37.601	-3.1976	-8.6413	-0.9174	938.08	7.8279E+06	7.8279E+06
Pile N.	1	3	1	3	1	1	1	15	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	5.5459E-04	4.6312E-05	171.41	14.446	147.88	15.247	67.070	6.2433	2516.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
2	5.5459E-04	4.9543E-05	146.06	13.135	116.47	13.235	47.088	4.7300	2056.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
3	5.5459E-04	5.2774E-05	146.65	14.065	117.24	14.320	47.523	5.1108	1780.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
4	5.5136E-04	4.6312E-05	165.38	14.015	140.29	14.635	62.354	5.8490	2460.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
5	5.5136E-04	4.9543E-05	136.37	12.298	104.67	12.102	40.471	4.1006	1972.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
6	5.5136E-04	5.2774E-05	136.48	13.126	104.85	13.039	40.557	4.3992	1693.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
7	5.4813E-04	4.6312E-05	164.41	14.013	139.09	14.634	61.898	5.8478	2439.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
8	5.4813E-04	4.9543E-05	135.46	12.285	103.58	12.084	40.086	4.0910	1952.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
9	5.4813E-04	5.2774E-05	135.56	13.111	103.76	13.019	40.167	4.3885	1673.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
10	5.4490E-04	4.6312E-05	163.46	14.013	137.91	14.634	61.455	5.8478	2418.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
11	5.4490E-04	4.9543E-05	134.80	12.295	102.80	12.098	39.873	4.0987	1934.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
12	5.4490E-04	5.2774E-05	134.90	13.122	102.98	13.034	39.954	4.3967	1655.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
13	5.4167E-04	4.6312E-05	167.29	14.433	142.78	15.229	65.053	6.2313	2431.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
14	5.4167E-04	4.9543E-05	142.48	13.109	112.14	13.200	45.548	4.7097	1976.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
15	5.4167E-04	5.2774E-05	143.07	14.037	112.90	14.282	45.978	5.0890	1700.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
Max.	5.5459E-04	5.2774E-05	171.41	14.446	147.88	15.247	67.070	6.2433	2516.2	7.8279E+06	7.8279E+06
Pile N.	1	3	1	1	1	1	1	1	1	1	1

LOAD CASE : 14

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 278 di 420

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5886	1.0000
2	0.5822	1.0000
3	0.8661	1.0000
4	0.4966	1.0000
5	0.4951	1.0000
6	0.8030	1.0000
7	0.4951	1.0000
8	0.4937	1.0000
9	0.8027	1.0000
10	0.4961	1.0000
11	0.4947	1.0000
12	0.8027	1.0000
13	0.5845	1.0000
14	0.5782	1.0000
15	0.8633	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
32525.5	-1789.23	204.774
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-141.490	1992.58	5425.11

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.16587E-03	-4.51515E-04	4.91785E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-2.73453E-07	2.27715E-06	2.70793E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.0645E-03	-4.4905E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
2	1.1864E-03	-4.4905E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
3	1.3082E-03	-4.4905E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
4	1.0543E-03	-4.5028E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
5	1.1761E-03	-4.5028E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
6	1.2980E-03	-4.5028E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
7	1.0440E-03	-4.5151E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
8	1.1659E-03	-4.5151E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
9	1.2877E-03	-4.5151E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
10	1.0338E-03	-4.5275E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
11	1.1556E-03	-4.5275E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
12	1.2775E-03	-4.5275E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
13	1.0235E-03	-4.5398E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
14	1.1454E-03	-4.5398E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
15	1.2672E-03	-4.5398E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
MINIMUM	1.0235E-03	-4.5398E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	1.3082E-03	-4.4905E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	1982.1	-114.91	12.833	-0.1005	-34.665	-301.13
2	2206.0	-114.19	13.135	-0.1005	-35.635	-299.74
3	2429.9	-142.59	16.810	-0.1005	-43.110	-354.16
4	1963.3	-104.69	11.670	-0.1005	-32.315	-280.93
5	2187.2	-104.50	11.999	-0.1005	-33.335	-280.57
6	2411.1	-137.19	16.132	-0.1005	-41.838	-344.51
7	1944.5	-104.86	11.650	-0.1005	-32.274	-281.62

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

8	2168.4	-104.68	11.979	-0.1005	-33.295	-281.28
9	2392.2	-137.61	16.129	-0.1005	-41.832	-345.72
10	1925.7	-105.33	11.664	-0.1005	-32.302	-282.94
11	2149.5	-105.15	11.994	-0.1005	-33.324	-282.60
12	2373.4	-138.06	16.129	-0.1005	-41.832	-346.98
13	1906.8	-115.99	12.784	-0.1005	-34.566	-304.74
14	2130.7	-115.26	13.084	-0.1005	-35.533	-303.32
15	2354.6	-144.21	16.781	-0.1005	-43.055	-358.88
MINIMUM	1906.8	-144.21	11.650	-0.1005	-43.110	-358.88
Pile N.	13	15	7	1	3	15
MAXIMUM	2429.9	-104.50	16.810	-0.1005	-32.274	-280.57
Pile N.	3	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
1	1.0645E-03	-4.4905E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
2	1.1864E-03	-4.4905E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
3	1.3082E-03	-4.4905E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
4	1.0543E-03	-4.5028E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
5	1.1761E-03	-4.5028E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
6	1.2980E-03	-4.5028E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
7	1.0440E-03	-4.5151E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
8	1.1659E-03	-4.5151E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
9	1.2877E-03	-4.5151E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
10	1.0338E-03	-4.5275E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
11	1.1556E-03	-4.5275E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
12	1.2775E-03	-4.5275E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
13	1.0235E-03	-4.5398E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
14	1.1454E-03	-4.5398E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
15	1.2672E-03	-4.5398E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
MINIMUM	1.0235E-03	-4.5398E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	1.3082E-03	-4.4905E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	1982.1	-114.91	12.833	-0.1005	-34.665	-301.13
2	2206.0	-114.19	13.135	-0.1005	-35.635	-299.74
3	2429.9	-142.59	16.810	-0.1005	-43.110	-354.16
4	1963.3	-104.69	11.670	-0.1005	-32.315	-280.93
5	2187.2	-104.50	11.999	-0.1005	-33.335	-280.57
6	2411.1	-137.19	16.132	-0.1005	-41.838	-344.51
7	1944.5	-104.86	11.650	-0.1005	-32.274	-281.62
8	2168.4	-104.68	11.979	-0.1005	-33.295	-281.28
9	2392.2	-137.61	16.129	-0.1005	-41.832	-345.72
10	1925.7	-105.33	11.664	-0.1005	-32.302	-282.94
11	2149.5	-105.15	11.994	-0.1005	-33.324	-282.60
12	2373.4	-138.06	16.129	-0.1005	-41.832	-346.98
13	1906.8	-115.99	12.784	-0.1005	-34.566	-304.74
14	2130.7	-115.26	13.084	-0.1005	-35.533	-303.32
15	2354.6	-144.21	16.781	-0.1005	-43.055	-358.88
MINIMUM	1906.8	-144.21	11.650	-0.1005	-43.110	-358.88
Pile N.	13	15	7	1	3	15
MAXIMUM	2429.9	-104.50	16.810	-0.1005	-32.274	-280.57
Pile N.	3	5	3	1	7	5

PILE GROUP STRESS, KN/ M**2

1	2036.5
2	2159.3
3	2451.8
4	1964.5
5	2090.4
6	2411.8
7	1955.9
8	2081.9
9	2404.7
10	1949.2
11	2075.2
12	2397.9
13	2004.7
14	2127.4
15	2423.3
MINIMUM	1949.2
Pile N.	10

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 280 di 420
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MAXIMUM 2451.8
Pile N. 3







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-4.4905E-04	-1.2738E-06	-119.14	-34.665	-114.92	-2.5964	-42.256	-0.8255	1121.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.4000	2.6000	13.600	20.000	0.0000	0.0000
2	-4.4905E-04	-1.3037E-06	-118.60	-35.635	-114.20	-2.6461	-41.848	-0.8494	1248.4	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.6000	2.6000	13.600	20.000	0.0000	0.0000
3	-4.4905E-04	-1.4067E-06	-139.55	-43.110	-142.60	-3.4856	-59.373	-0.8008	1375.0	7.8279E+06	7.8279E+06
x(M)	0.0000	9.8000	5.2000	0.0000	0.0000	7.8000	2.6000	10.200	20.000	0.0000	0.0000
4	-4.5028E-04	-1.2259E-06	-111.47	-32.315	-104.69	-2.3375	-36.423	-0.8205	1111.0	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
5	-4.5028E-04	-1.2565E-06	-111.34	-33.335	-104.51	-2.3951	-36.326	-0.8433	1237.7	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
6	-4.5028E-04	-1.3992E-06	-135.70	-41.838	-137.20	-3.3245	-55.743	-0.8054	1364.4	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.4000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
7	-4.5151E-04	-1.2251E-06	-111.64	-32.274	-104.86	-2.3331	-36.435	-0.8202	1100.4	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
8	-4.5151E-04	-1.2557E-06	-111.52	-33.295	-104.68	-2.3909	-36.343	-0.8430	1227.0	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
9	-4.5151E-04	-1.3991E-06	-136.06	-41.832	-137.62	-3.3237	-55.895	-0.8055	1353.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.4000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
10	-4.5275E-04	-1.2256E-06	-112.05	-32.302	-105.34	-2.3361	-36.614	-0.8204	1089.7	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
11	-4.5275E-04	-1.2563E-06	-111.92	-33.324	-105.16	-2.3939	-36.521	-0.8432	1216.4	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
12	-4.5275E-04	-1.3991E-06	-136.44	-41.832	-138.07	-3.3237	-56.063	-0.8055	1343.1	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.4000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
13	-4.5398E-04	-1.2720E-06	-120.11	-34.566	-116.00	-2.5845	-42.506	-0.8258	1079.1	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.4000	2.6000	13.600	20.000	0.0000	0.0000
14	-4.5398E-04	-1.3016E-06	-119.56	-35.533	-115.27	-2.6350	-42.094	-0.8497	1205.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.6000	2.6000	13.600	20.000	0.0000	0.0000
15	-4.5398E-04	-1.4062E-06	-140.90	-43.055	-144.22	-3.4781	-59.925	-0.7984	1332.4	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.2000	0.0000	0.0000	7.8000	2.6000	10.200	20.000	0.0000	0.0000
Min.	-4.5398E-04	-1.4067E-06	-140.90	-43.110	-144.22	-3.4856	-59.925	-0.8497	1079.1	7.8279E+06	7.8279E+06
Pile N.	13	3	15	3	15	3	15	14	13	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.1959E-05	4.7948E-05	301.13	12.768	24.194	12.834	7.5133	4.6168	2036.5	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.8000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
2	1.1944E-05	4.9178E-05	299.74	13.046	24.034	13.136	7.5198	4.6996	2159.3	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.8000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
3	1.2537E-05	5.0409E-05	354.16	15.750	30.852	16.812	7.0845	6.8432	2451.8	7.8279E+06	7.8279E+06
x(M)	9.8000	0.0000	0.0000	5.4000	7.8000	0.0000	10.200	2.6000	0.0000	0.0000	0.0000
4	1.1583E-05	4.7948E-05	280.93	11.908	21.813	11.671	7.5143	3.9685	1964.5	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
5	1.1577E-05	4.9178E-05	280.57	12.206	21.777	12.000	7.5127	4.0682	2090.4	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
6	1.2496E-05	5.0409E-05	344.51	15.269	29.471	16.133	6.9140	6.4063	2411.8	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	8.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
7	1.1604E-05	4.7948E-05	281.62	11.894	21.831	11.651	7.5347	3.9578	1955.9	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
8	1.1599E-05	4.9178E-05	281.28	12.192	21.799	11.980	7.5332	4.0578	2081.9	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
9	1.2530E-05	5.0409E-05	345.72	15.266	29.547	16.130	6.9372	6.4044	2404.7	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	8.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
10	1.1641E-05	4.7948E-05	282.94	11.904	21.921	11.665	7.5595	3.9652	1949.2	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
11	1.1635E-05	4.9178E-05	282.60	12.202	21.887	11.995	7.5579	4.0654	2075.2	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
12	1.2564E-05	5.0409E-05	346.98	15.266	29.630	16.130	6.9592	6.4044	2397.9	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	8.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
13	1.2075E-05	4.7948E-05	304.74	12.733	24.357	12.785	7.6105	4.5884	2004.7	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.8000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
14	1.2058E-05	4.9178E-05	303.32	13.009	24.194	13.085	7.6164	4.6705	2127.4	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.8000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
15	1.2669E-05	5.0409E-05	358.88	15.729	31.134	16.783	7.1435	6.8242	2423.3	7.8279E+06	7.8279E+06
x(M)	9.8000	0.0000	0.0000	5.4000	7.8000	0.0000	10.200	2.6000	0.0000	0.0000	0.0000
Max.	1.2669E-05	5.0409E-05	358.88	15.750	31.134	16.812	7.6164	6.8432	2451.8	7.8279E+06	7.8279E+06
Pile N.	15	3	15	3	15	3	14	3	3	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 281 di 420

CASE NAME : Load Case
 LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
 ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.5791	1.0000
3	0.8661	1.0000
4	0.4955	1.0000
5	0.4951	1.0000
6	0.8053	1.0000
7	0.4945	1.0000
8	0.4941	1.0000
9	0.8053	1.0000
10	0.4955	1.0000
11	0.4951	1.0000
12	0.8053	1.0000
13	0.5845	1.0000
14	0.5791	1.0000
15	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30306.0	-276.510	-5.00000E-06
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-4.00000E-06	1.69900E-03	-6450.98

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.08533E-03	-1.56881E-05	3.27410E-12
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-1.24325E-14	1.48132E-12	-1.43615E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
2	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
3	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
4	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
5	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
6	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
7	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
8	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
9	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
10	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
11	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
12	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
13	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
14	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
15	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
MINIMUM Pile N.	3	1	1	1	1	1
MAXIMUM Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2139.1	-18.002	-3.5740E-07	-4.5695E-09	3.1043E-06	-72.992
2	2020.4	-17.934	-3.4042E-07	-4.5695E-09	3.0527E-06	-72.840
3	1901.7	-21.114	-2.9174E-07	-4.5695E-09	3.0033E-06	-79.671
4	2139.1	-16.824	-3.6191E-07	-4.5695E-09	3.0891E-06	-70.333
5	2020.4	-16.819	-3.4600E-07	-4.5695E-09	3.0410E-06	-70.321
6	1901.7	-20.504	-2.9902E-07	-4.5695E-09	3.0055E-06	-78.398
7	2139.1	-16.809	-3.6195E-07	-4.5695E-09	3.0889E-06	-70.299

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandatario

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 282 di 420
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8	2020.4	-16.804	-3.4606E-07	-4.5695E-09	3.0408E-06	-70.287
9	1901.7	-20.504	-2.9902E-07	-4.5695E-09	3.0055E-06	-78.398
10	2139.1	-16.824	-3.6191E-07	-4.5695E-09	3.0891E-06	-70.333
11	2020.4	-16.819	-3.4600E-07	-4.5695E-09	3.0410E-06	-70.321
12	1901.7	-20.504	-2.9902E-07	-4.5695E-09	3.0055E-06	-78.398
13	2139.1	-18.002	-3.5740E-07	-4.5695E-09	3.1043E-06	-72.992
14	2020.4	-17.934	-3.4042E-07	-4.5695E-09	3.0527E-06	-72.840
15	1901.7	-21.114	-2.9174E-07	-4.5695E-09	3.0033E-06	-79.671
MINIMUM	1901.7	-21.114	-3.6195E-07	-4.5695E-09	3.0033E-06	-79.671
Pile N.	3	3	7	1	3	3
MAXIMUM	2139.1	-16.804	-2.9174E-07	-4.5695E-09	3.1043E-06	-70.287
Pile N.	1	8	3	1	1	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
2	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
3	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
4	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
5	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
6	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
7	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
8	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
9	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
10	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
11	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
12	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
13	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
14	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
15	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
MINIMUM	1.0207E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
Pile N.	3	1	1	1	1	1
MAXIMUM	1.1500E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2139.1	-18.002	-3.5740E-07	-4.5695E-09	3.1043E-06	-72.992
2	2020.4	-17.934	-3.4042E-07	-4.5695E-09	3.0527E-06	-72.840
3	1901.7	-21.114	-2.9174E-07	-4.5695E-09	3.0033E-06	-79.671
4	2139.1	-16.824	-3.6191E-07	-4.5695E-09	3.0891E-06	-70.333
5	2020.4	-16.819	-3.4600E-07	-4.5695E-09	3.0410E-06	-70.321
6	1901.7	-20.504	-2.9902E-07	-4.5695E-09	3.0055E-06	-78.398
7	2139.1	-16.809	-3.6195E-07	-4.5695E-09	3.0889E-06	-70.299
8	2020.4	-16.804	-3.4606E-07	-4.5695E-09	3.0408E-06	-70.287
9	1901.7	-20.504	-2.9902E-07	-4.5695E-09	3.0055E-06	-78.398
10	2139.1	-16.824	-3.6191E-07	-4.5695E-09	3.0891E-06	-70.333
11	2020.4	-16.819	-3.4600E-07	-4.5695E-09	3.0410E-06	-70.321
12	1901.7	-20.504	-2.9902E-07	-4.5695E-09	3.0055E-06	-78.398
13	2139.1	-18.002	-3.5740E-07	-4.5695E-09	3.1043E-06	-72.992
14	2020.4	-17.934	-3.4042E-07	-4.5695E-09	3.0527E-06	-72.840
15	1901.7	-21.114	-2.9174E-07	-4.5695E-09	3.0033E-06	-79.671
MINIMUM	1901.7	-21.114	-3.6195E-07	-4.5695E-09	3.0033E-06	-79.671
Pile N.	3	3	7	1	3	3
MAXIMUM	2139.1	-16.804	-2.9174E-07	-4.5695E-09	3.1043E-06	-70.287
Pile N.	1	8	3	1	1	8

PILE GROUP STRESS, KN/ M**2

1	1430.8
2	1363.1
3	1316.6
4	1422.8
5	1355.5
6	1312.7
7	1422.7
8	1355.4
9	1312.7
10	1422.8
11	1355.5
12	1312.7
13	1430.8
14	1363.1
15	1316.6
MINIMUM	1312.7
Pile N.	6

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 283 di 420
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MAXIMUM 1430.8
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.8776E-05	-3.3004E-13	-8.8366	-1.2355E-07	-18.004	-4.6074E-07	-4.3353	-9.0417E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.0000	6.4000	7.4000	11.200	0.0000	3.8000	3.6000	7.0000	20.000	0.0000	0.0000
2	-2.8804E-05	-3.2366E-13	-8.8134	-1.2092E-07	-17.936	-4.5148E-07	-4.3053	-8.8616E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.0000	6.4000	7.6000	11.200	0.0000	4.0000	3.6000	7.0000	20.000	0.0000	0.0000
3	-2.7621E-05	-2.5548E-13	-9.9397	-1.1481E-07	-21.116	-4.7878E-07	-5.8252	-1.0344E-07	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	6.8000	10.800	0.0000	4.2000	3.2000	6.8000	20.000	0.0000	0.0000
4	-2.9295E-05	-3.6100E-13	-8.4300	-1.2557E-07	-16.826	-4.4749E-07	-3.8351	-8.4489E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.2000	6.4000	7.8000	11.400	0.0000	3.8000	3.6000	7.0000	20.000	0.0000	0.0000
5	-2.9298E-05	-3.5198E-13	-8.4277	-1.2271E-07	-16.820	-4.3896E-07	-3.8327	-8.3030E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	6.4000	7.8000	11.400	0.0000	3.8000	3.6000	7.2000	20.000	0.0000	0.0000
6	-2.7811E-05	-2.6536E-13	-9.7277	-1.1532E-07	-20.506	-4.7196E-07	-5.5117	-1.0025E-07	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	7.0000	10.800	0.0000	4.0000	3.2000	7.0000	20.000	0.0000	0.0000
7	-2.9302E-05	-3.6142E-13	-8.4249	-1.2559E-07	-16.811	-4.4732E-07	-3.8291	-8.4415E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.2000	6.4000	7.8000	11.400	0.0000	3.8000	3.6000	7.0000	20.000	0.0000	0.0000
8	-2.9305E-05	-3.5237E-13	-8.4226	-1.2273E-07	-16.806	-4.3879E-07	-3.8266	-8.2959E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	6.4000	7.8000	11.400	0.0000	4.0000	3.6000	7.2000	20.000	0.0000	0.0000
9	-2.7811E-05	-2.6536E-13	-9.7277	-1.1532E-07	-20.506	-4.7196E-07	-5.5117	-1.0025E-07	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	7.0000	10.800	0.0000	4.0000	3.2000	7.0000	20.000	0.0000	0.0000
10	-2.9295E-05	-3.6100E-13	-8.4300	-1.2557E-07	-16.826	-4.4749E-07	-3.8351	-8.4489E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.2000	6.4000	7.8000	11.400	0.0000	3.8000	3.6000	7.0000	20.000	0.0000	0.0000
11	-2.9298E-05	-3.5198E-13	-8.4277	-1.2271E-07	-16.820	-4.3896E-07	-3.8327	-8.3030E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	6.4000	7.8000	11.400	0.0000	3.8000	3.6000	7.2000	20.000	0.0000	0.0000
12	-2.7811E-05	-2.6536E-13	-9.7277	-1.1532E-07	-20.506	-4.7196E-07	-5.5117	-1.0025E-07	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	7.0000	10.800	0.0000	4.0000	3.2000	7.0000	20.000	0.0000	0.0000
13	-2.8776E-05	-3.3004E-13	-8.8366	-1.2355E-07	-18.004	-4.6074E-07	-4.3353	-9.0417E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.0000	6.4000	7.4000	11.200	0.0000	3.8000	3.6000	7.0000	20.000	0.0000	0.0000
14	-2.8804E-05	-3.2366E-13	-8.8134	-1.2092E-07	-17.936	-4.5148E-07	-4.3053	-8.8616E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.0000	6.4000	7.6000	11.200	0.0000	4.0000	3.6000	7.0000	20.000	0.0000	0.0000
15	-2.7621E-05	-2.5548E-13	-9.9397	-1.1481E-07	-21.116	-4.7878E-07	-5.8252	-1.0344E-07	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	6.8000	10.800	0.0000	4.2000	3.2000	6.8000	20.000	0.0000	0.0000
Min.	-2.9305E-05	-3.6142E-13	-9.9397	-1.2559E-07	-21.116	-4.7878E-07	-5.8252	-1.0344E-07	1076.1	7.8279E+06	7.8279E+06
Pile N.	8	7	3	7	3	3	3	3	3	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	7.0265E-07	3.2182E-12	72.992	3.1043E-06	1.8776	3.1432E-08	0.8394	8.2273E-08	1430.8	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	0.0000	10.200	14.000	13.600	2.6000	0.0000	0.0000	0.0000
2	6.9956E-07	3.2741E-12	72.840	3.0527E-06	1.8696	3.1016E-08	0.8365	8.7210E-08	1363.1	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	0.0000	10.200	14.000	13.600	2.6000	0.0000	0.0000	0.0000
3	7.8923E-07	3.3300E-12	79.671	3.0033E-06	2.2721	3.1305E-08	0.8666	1.4103E-07	1316.6	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	0.0000	9.2000	13.400	13.600	2.6000	0.0000	0.0000	0.0000
4	6.5125E-07	3.2182E-12	70.333	3.0891E-06	1.7455	3.1811E-08	0.7749	6.8845E-08	1422.8	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.200	13.600	2.6000	0.0000	0.0000	0.0000
5	6.5084E-07	3.2741E-12	70.321	3.0410E-06	1.7447	3.1376E-08	0.7744	7.3797E-08	1355.5	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.200	13.600	2.6000	0.0000	0.0000	0.0000
6	7.7679E-07	3.3300E-12	78.398	3.0054E-06	2.1909	3.1025E-08	0.8760	1.3091E-07	1312.7	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	0.0000	9.4000	13.400	13.600	2.6000	0.0000	0.0000	0.0000
7	6.5051E-07	3.2182E-12	70.299	3.0889E-06	1.7440	3.1817E-08	0.7739	6.8686E-08	1422.7	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.200	13.600	2.6000	0.0000	0.0000	0.0000
8	6.5010E-07	3.2741E-12	70.287	3.0408E-06	1.7432	3.1380E-08	0.7734	7.3630E-08	1355.4	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.200	13.600	2.6000	0.0000	0.0000	0.0000
9	7.7679E-07	3.3300E-12	78.398	3.0054E-06	2.1909	3.1025E-08	0.8760	1.3091E-07	1312.7	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	0.0000	9.4000	13.400	13.600	2.6000	0.0000	0.0000	0.0000
10	6.5125E-07	3.2182E-12	70.333	3.0891E-06	1.7455	3.1811E-08	0.7749	6.8845E-08	1422.8	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.200	13.600	2.6000	0.0000	0.0000	0.0000
11	6.5084E-07	3.2741E-12	70.321	3.0410E-06	1.7447	3.1376E-08	0.7744	7.3797E-08	1355.5	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.200	13.600	2.6000	0.0000	0.0000	0.0000
12	7.7679E-07	3.3300E-12	78.398	3.0054E-06	2.1909	3.1025E-08	0.8760	1.3091E-07	1312.7	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	0.0000	9.4000	13.400	13.600	2.6000	0.0000	0.0000	0.0000
13	7.0265E-07	3.2182E-12	72.992	3.1043E-06	1.8776	3.1432E-08	0.8394	8.2273E-08	1430.8	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	0.0000	10.200	14.000	13.600	2.6000	0.0000	0.0000	0.0000
14	6.9956E-07	3.2741E-12	72.840	3.0527E-06	1.8696	3.1016E-08	0.8365	8.7210E-08	1363.1	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	0.0000	10.200	14.000	13.600	2.6000	0.0000	0.0000	0.0000
15	7.8923E-07	3.3300E-12	79.671	3.0033E-06	2.2721	3.1305E-08	0.8666	1.4103E-07	1316.6	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	0.0000	9.2000	13.400	13.600	2.6000	0.0000	0.0000	0.0000
Max.	7.8923E-07	3.3300E-12	79.671	3.1043E-06	2.2721	3.1817E-08	0.8760	1.4103E-07	1430.8	7.8279E+06	7.8279E+06
Pile N.	3	3	3	1	3	7	6	3	1	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 284 di 420

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8527	1.0000
2	0.7942	1.0000
3	0.8661	1.0000
4	0.5747	1.0000
5	0.4961	1.0000
6	0.5941	1.0000
7	0.5418	1.0000
8	0.4644	1.0000
9	0.5624	1.0000
10	0.5418	1.0000
11	0.4644	1.0000
12	0.5624	1.0000
13	0.5845	1.0000
14	0.5016	1.0000
15	0.6039	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30306.0	-276.510	278.688
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
11.6700	2911.78	-6450.81

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.08533E-03	-1.68898E-05	6.90475E-05
ANGLE ROT. X,RAD	ANGLE ROT. Y,RAD	ANGLE ROT. Z,RAD
-2.69412E-07	3.28147E-06	-1.43499E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
1	1.1794E-03	-1.4465E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
2	1.1149E-03	-1.4465E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
3	1.0503E-03	-1.4465E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
4	1.1647E-03	-1.5678E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
5	1.1001E-03	-1.5678E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
6	1.0355E-03	-1.5678E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
7	1.1499E-03	-1.6890E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
8	1.0853E-03	-1.6890E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
9	1.0208E-03	-1.6890E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
10	1.1351E-03	-1.8102E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
11	1.0706E-03	-1.8102E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
12	1.0060E-03	-1.8102E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
13	1.1204E-03	-1.9314E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
14	1.0558E-03	-1.9314E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
15	9.9122E-04	-1.9314E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
MINIMUM	9.9122E-04	-1.9314E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.1794E-03	-1.4465E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2193.3	-20.506	22.205	-0.099021	-56.704	-78.060
2	2074.7	-19.932	21.802	-0.099021	-56.354	-76.856
3	1956.0	-20.635	23.321	-0.099021	-59.613	-78.331
4	2166.2	-17.864	17.859	-0.099021	-48.320	-72.657
5	2047.5	-16.819	16.794	-0.099021	-46.507	-70.297
6	1928.9	-18.109	18.954	-0.099021	-51.218	-73.204
7	2139.0	-17.799	17.281	-0.099021	-47.157	-72.780

APPALTATORE:

Consorzio



Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandataria



Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA
IF28LOTTO
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E ZZ CLDOCUMENTO
VI0103 001REV.
BFOGLIO
285 di
420

8	2020.4	-16.701	16.181	-0.099021	-45.243	-70.277
9	1901.8	-18.076	18.385	-0.099021	-50.079	-73.403
10	2111.9	-18.161	17.282	-0.099021	-47.158	-73.861
11	1993.3	-17.034	16.183	-0.099021	-45.245	-71.300
12	1874.6	-18.444	18.385	-0.099021	-50.079	-74.497
13	2084.8	-19.116	18.030	-0.099021	-48.659	-76.263
14	1966.1	-17.936	16.899	-0.099021	-46.721	-73.619
15	1847.5	-19.378	19.128	-0.099021	-51.561	-76.841
MINIMUM	1847.5	-20.635	16.181	-0.099021	-59.613	-78.331
Pile N.	15	3	8	1	3	3
MAXIMUM	2193.3	-16.701	23.321	-0.099021	-45.243	-70.277
Pile N.	1	8	3	1	8	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.1794E-03	-1.4465E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
2	1.1149E-03	-1.4465E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
3	1.0503E-03	-1.4465E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
4	1.1647E-03	-1.5678E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
5	1.1001E-03	-1.5678E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
6	1.0355E-03	-1.5678E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
7	1.1499E-03	-1.6890E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
8	1.0853E-03	-1.6890E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
9	1.0208E-03	-1.6890E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
10	1.1351E-03	-1.8102E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
11	1.0706E-03	-1.8102E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
12	1.0060E-03	-1.8102E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
13	1.1204E-03	-1.9314E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
14	1.0558E-03	-1.9314E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
15	9.9122E-04	-1.9314E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
MINIMUM	9.9122E-04	-1.9314E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.1794E-03	-1.4465E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2193.3	-20.506	22.205	-0.099021	-56.704	-78.060
2	2074.7	-19.932	21.802	-0.099021	-56.354	-76.856
3	1956.0	-20.635	23.321	-0.099021	-59.613	-78.331
4	2166.2	-17.864	17.859	-0.099021	-48.320	-72.657
5	2047.5	-16.819	16.794	-0.099021	-46.507	-70.297
6	1928.9	-18.109	18.954	-0.099021	-51.218	-73.204
7	2139.0	-17.799	17.281	-0.099021	-47.157	-72.780
8	2020.4	-16.701	16.181	-0.099021	-45.243	-70.277
9	1901.8	-18.076	18.385	-0.099021	-50.079	-73.403
10	2111.9	-18.161	17.282	-0.099021	-47.158	-73.861
11	1993.3	-17.034	16.183	-0.099021	-45.245	-71.300
12	1874.6	-18.444	18.385	-0.099021	-50.079	-74.497
13	2084.8	-19.116	18.030	-0.099021	-48.659	-76.263
14	1966.1	-17.936	16.899	-0.099021	-46.721	-73.619
15	1847.5	-19.378	19.128	-0.099021	-51.561	-76.841
MINIMUM	1847.5	-20.635	16.181	-0.099021	-59.613	-78.331
Pile N.	15	3	8	1	3	3
MAXIMUM	2193.3	-16.701	23.321	-0.099021	-45.243	-70.277
Pile N.	1	8	3	1	8	8

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1532.3
2	1461.6
3	1404.0
4	1489.1
5	1413.1
6	1361.2
7	1472.2
8	1395.6
9	1344.4
10	1459.6
11	1382.8
12	1331.7
13	1452.8
14	1375.8
15	1324.8
MINIMUM	1324.8
Pile N.	15

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandataria

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 286 di 420
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MAXIMUM 1532.3
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *







* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.6651E-05	-1.8901E-06	-9.5558	-56.704	-20.508	-4.6360	-5.5875	-1.0605	1241.1	7.8279E+06	7.8279E+06
x(M)	2.0000	10.0000	7.0000	0.0000	0.0000	7.8000	3.2000	10.2000	20.000	0.0000	0.0000
2	-2.6864E-05	-1.9134E-06	-9.3579	-56.354	-19.934	-4.5160	-5.2939	-1.1020	1174.0	7.8279E+06	7.8279E+06
x(M)	2.0000	10.0000	7.0000	0.0000	0.0000	8.0000	3.2000	13.6000	20.000	0.0000	0.0000
3	-2.6604E-05	-1.9597E-06	-9.5963	-59.613	-20.637	-4.8532	-5.6538	-1.1150	1106.9	7.8279E+06	7.8279E+06
x(M)	2.0000	9.8000	7.0000	0.0000	0.0000	7.8000	3.2000	10.2000	20.000	0.0000	0.0000
4	-2.8805E-05	-1.7942E-06	-8.7892	-48.320	-17.866	-3.6173	-4.2780	-1.1670	1225.8	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.6000	0.0000	0.0000	8.6000	3.6000	13.6000	20.000	0.0000	0.0000
5	-2.9269E-05	-1.7652E-06	-8.4261	-46.507	-16.821	-3.3643	-3.8355	-1.1814	1158.7	7.8279E+06	7.8279E+06
x(M)	2.2000	11.0000	7.8000	0.0000	0.0000	8.8000	3.6000	13.6000	20.000	0.0000	0.0000
6	-2.8706E-05	-1.8694E-06	-8.8753	-51.218	-18.111	-3.8288	-4.3841	-1.2109	1091.5	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.4000	0.0000	0.0000	8.4000	3.6000	13.6000	20.000	0.0000	0.0000
7	-2.9975E-05	-1.7720E-06	-8.9175	-47.157	-17.801	-3.4893	-4.2045	-1.1670	1210.4	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.6000	0.0000	0.0000	8.6000	3.6000	13.6000	20.000	0.0000	0.0000
8	-3.0461E-05	-1.7354E-06	-8.5220	-45.243	-16.702	-3.2279	-3.7483	-1.1687	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	11.0000	7.8000	0.0000	0.0000	8.8000	3.8000	13.6000	20.000	0.0000	0.0000
9	-2.9862E-05	-1.8472E-06	-9.0116	-50.079	-18.078	-3.7007	-4.3227	-1.2135	1076.2	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.6000	0.0000	0.0000	8.6000	3.6000	13.6000	20.000	0.0000	0.0000
10	-3.0971E-05	-1.7720E-06	-9.1914	-47.158	-18.163	-3.4894	-4.3140	-1.1670	1195.1	7.8279E+06	7.8279E+06
x(M)	2.0000	10.8000	7.6000	0.0000	0.0000	8.6000	3.6000	13.6000	20.000	0.0000	0.0000
11	-3.1439E-05	-1.7354E-06	-8.7814	-45.245	-17.036	-3.2281	-3.8436	-1.1687	1128.0	7.8279E+06	7.8279E+06
x(M)	2.0000	11.0000	7.8000	0.0000	0.0000	8.8000	3.6000	13.6000	20.000	0.0000	0.0000
12	-3.0856E-05	-1.8471E-06	-9.2878	-50.079	-18.446	-3.7006	-4.4350	-1.2135	1060.8	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.4000	0.0000	0.0000	8.6000	3.6000	13.6000	20.000	0.0000	0.0000
13	-3.1729E-05	-1.8003E-06	-9.6904	-48.659	-19.118	-3.6559	-4.6844	-1.1661	1179.7	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.4000	0.0000	0.0000	8.4000	3.4000	13.6000	20.000	0.0000	0.0000
14	-3.2208E-05	-1.7689E-06	-9.2492	-46.721	-17.937	-3.3866	-4.1754	-1.1830	1112.6	7.8279E+06	7.8279E+06
x(M)	2.0000	11.0000	7.6000	0.0000	0.0000	8.8000	3.6000	13.6000	20.000	0.0000	0.0000
15	-3.1625E-05	-1.8743E-06	-9.7843	-51.561	-19.380	-3.8688	-4.8023	-1.2093	1045.5	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.4000	0.0000	0.0000	8.4000	3.4000	13.6000	20.000	0.0000	0.0000
Min.	-3.2208E-05	-1.9597E-06	-9.7843	-59.613	-20.637	-4.8532	-5.6538	-1.2135	1045.5	7.8279E+06	7.8279E+06
Pile N.	14	3	15	3	3	3	3	9	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	7.5767E-07	6.7835E-05	78.060	21.033	2.1793	22.206	0.8476	9.0344	1532.3	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	5.4000	9.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
2	7.4608E-07	6.9047E-05	76.856	20.801	2.1022	21.803	0.8548	8.6559	1461.6	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	5.4000	9.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
3	7.5968E-07	7.0260E-05	78.331	21.936	2.1949	23.323	0.8451	9.5130	1404.0	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	5.4000	9.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
4	6.9665E-07	6.7835E-05	72.657	17.886	1.8620	17.861	0.8335	6.3842	1489.1	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
5	6.5107E-07	6.9047E-05	70.297	17.142	1.7449	16.795	0.7748	5.7095	1413.1	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	6.0000	10.600	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
6	7.0671E-07	7.0260E-05	73.204	18.785	1.8890	18.956	0.8435	6.8310	1361.2	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
7	7.0543E-07	6.7835E-05	72.780	17.461	1.8673	17.282	0.8356	6.0581	1472.2	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	5.8000	10.400	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
8	6.5365E-07	6.9047E-05	70.277	16.692	1.7459	16.182	0.7639	5.3818	1395.6	7.8279E+06	7.8279E+06
x(M)	12.600	0.0000	0.0000	6.0000	10.800	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
9	7.1593E-07	7.0260E-05	73.403	18.374	1.9000	18.386	0.8491	6.5063	1344.4	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
10	7.3155E-07	6.7835E-05	73.861	17.462	1.9231	17.283	0.8586	6.0586	1459.6	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
11	6.7795E-07	6.9047E-05	71.300	16.693	1.7966	16.184	0.7863	5.3824	1382.8	7.8279E+06	7.8279E+06
x(M)	12.600	0.0000	0.0000	6.0000	10.600	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
12	7.4319E-07	7.0260E-05	74.497	18.374	1.9568	18.386	0.8721	6.5063	1331.7	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
13	7.8304E-07	6.7835E-05	76.263	18.008	2.0506	18.031	0.9079	6.4813	1452.8	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
14	7.3028E-07	6.9047E-05	73.619	17.216	1.9114	16.900	0.8480	5.7660	1375.8	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	6.0000	10.400	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
15	7.9263E-07	7.0260E-05	76.841	18.907	2.0830	19.129	0.9170	6.9307	1324.8	7.8279E+06	7.8279E+06
x(M)	11.800	0.0000	0.0000	5.8000	10.000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
Max.	7.9263E-07	7.0260E-05	78.331	21.936	2.1949	23.323	0.9170	9.5130	1532.3	7.8279E+06	7.8279E+06
Pile N.	15	3	3	3	3	3	15	3	1	1	1

LOAD CASE : 17

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.5791	1.0000
3	0.8661	1.0000
4	0.4955	1.0000
5	0.4951	1.0000
6	0.8053	1.0000
7	0.4945	1.0000
8	0.4941	1.0000
9	0.8053	1.0000
10	0.4955	1.0000
11	0.4951	1.0000
12	0.8053	1.0000
13	0.5845	1.0000
14	0.5791	1.0000
15	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30306.0	-276.510	-5.00000E-06
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-4.00000E-06	1.69900E-03	-6450.98

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.08533E-03	-1.56881E-05	3.27410E-12
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-1.24325E-14	1.48132E-12	-1.43615E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
2	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
3	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
4	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
5	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
6	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
7	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
8	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
9	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
10	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
11	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
12	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
13	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
14	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
15	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
MINIMUM Pile N.	3	1	1	1	1	1
MAXIMUM Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2139.1	-18.002	-3.5740E-07	-4.5695E-09	3.1043E-06	-72.992
2	2020.4	-17.934	-3.4042E-07	-4.5695E-09	3.0527E-06	-72.840
3	1901.7	-21.114	-2.9174E-07	-4.5695E-09	3.0033E-06	-79.671
4	2139.1	-16.824	-3.6191E-07	-4.5695E-09	3.0891E-06	-70.333
5	2020.4	-16.819	-3.4600E-07	-4.5695E-09	3.0410E-06	-70.321
6	1901.7	-20.504	-2.9902E-07	-4.5695E-09	3.0055E-06	-78.398
7	2139.1	-16.809	-3.6195E-07	-4.5695E-09	3.0889E-06	-70.299

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandatario

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 288 di 420
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8	2020.4	-16.804	-3.4600E-07	-4.5695E-09	3.0408E-06	-70.287
9	1901.7	-20.504	-2.9902E-07	-4.5695E-09	3.0055E-06	-78.398
10	2139.1	-16.824	-3.6191E-07	-4.5695E-09	3.0891E-06	-70.333
11	2020.4	-16.819	-3.4600E-07	-4.5695E-09	3.0410E-06	-70.321
12	1901.7	-20.504	-2.9902E-07	-4.5695E-09	3.0055E-06	-78.398
13	2139.1	-18.002	-3.5740E-07	-4.5695E-09	3.1043E-06	-72.992
14	2020.4	-17.934	-3.4042E-07	-4.5695E-09	3.0527E-06	-72.840
15	1901.7	-21.114	-2.9174E-07	-4.5695E-09	3.0033E-06	-79.671
MINIMUM	1901.7	-21.114	-3.6195E-07	-4.5695E-09	3.0033E-06	-79.671
Pile N.	3	3	7	1	3	3
MAXIMUM	2139.1	-16.804	-2.9174E-07	-4.5695E-09	3.1043E-06	-70.287
Pile N.	1	8	3	1	1	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
2	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
3	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
4	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
5	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
6	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
7	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
8	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
9	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
10	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
11	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
12	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
13	1.1500E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
14	1.0853E-03	-1.5688E-05	3.2741E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
15	1.0207E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
MINIMUM	1.0207E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
Pile N.	3	1	1	1	1	1
MAXIMUM	1.1500E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2139.1	-18.002	-3.5740E-07	-4.5695E-09	3.1043E-06	-72.992
2	2020.4	-17.934	-3.4042E-07	-4.5695E-09	3.0527E-06	-72.840
3	1901.7	-21.114	-2.9174E-07	-4.5695E-09	3.0033E-06	-79.671
4	2139.1	-16.824	-3.6191E-07	-4.5695E-09	3.0891E-06	-70.333
5	2020.4	-16.819	-3.4600E-07	-4.5695E-09	3.0410E-06	-70.321
6	1901.7	-20.504	-2.9902E-07	-4.5695E-09	3.0055E-06	-78.398
7	2139.1	-16.809	-3.6195E-07	-4.5695E-09	3.0889E-06	-70.299
8	2020.4	-16.804	-3.4606E-07	-4.5695E-09	3.0408E-06	-70.287
9	1901.7	-20.504	-2.9902E-07	-4.5695E-09	3.0055E-06	-78.398
10	2139.1	-16.824	-3.6191E-07	-4.5695E-09	3.0891E-06	-70.333
11	2020.4	-16.819	-3.4600E-07	-4.5695E-09	3.0410E-06	-70.321
12	1901.7	-20.504	-2.9902E-07	-4.5695E-09	3.0055E-06	-78.398
13	2139.1	-18.002	-3.5740E-07	-4.5695E-09	3.1043E-06	-72.992
14	2020.4	-17.934	-3.4042E-07	-4.5695E-09	3.0527E-06	-72.840
15	1901.7	-21.114	-2.9174E-07	-4.5695E-09	3.0033E-06	-79.671
MINIMUM	1901.7	-21.114	-3.6195E-07	-4.5695E-09	3.0033E-06	-79.671
Pile N.	3	3	7	1	3	3
MAXIMUM	2139.1	-16.804	-2.9174E-07	-4.5695E-09	3.1043E-06	-70.287
Pile N.	1	8	3	1	1	8

PILE GROUP STRESS, KN/ M**2

1	1430.8
2	1363.1
3	1316.6
4	1422.8
5	1355.5
6	1312.7
7	1422.7
8	1355.4
9	1312.7
10	1422.8
11	1355.5
12	1312.7
13	1430.8
14	1363.1
15	1316.6
MINIMUM	1312.7
Pile N.	6

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 289 di 420
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MAXIMUM 1430.8
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.8776E-05	-3.3004E-13	-8.8366	-1.2355E-07	-18.004	-4.6074E-07	-4.3353	-9.0417E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.0000	6.4000	7.4000	11.200	0.0000	3.8000	3.6000	7.0000	20.000	0.0000	0.0000
2	-2.8804E-05	-3.2366E-13	-8.8134	-1.2092E-07	-17.936	-4.5148E-07	-4.3053	-8.8616E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.0000	6.4000	7.6000	11.200	0.0000	4.0000	3.6000	7.0000	20.000	0.0000	0.0000
3	-2.7621E-05	-2.5548E-13	-9.9397	-1.1481E-07	-21.116	-4.7878E-07	-5.8252	-1.0344E-07	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	6.8000	10.800	0.0000	4.2000	3.2000	6.8000	20.000	0.0000	0.0000
4	-2.9295E-05	-3.6100E-13	-8.4300	-1.2557E-07	-16.826	-4.4749E-07	-3.8351	-8.4489E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.2000	6.4000	7.8000	11.400	0.0000	3.8000	3.6000	7.0000	20.000	0.0000	0.0000
5	-2.9298E-05	-3.5198E-13	-8.4277	-1.2271E-07	-16.820	-4.3896E-07	-3.8327	-8.3030E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	6.4000	7.8000	11.400	0.0000	3.8000	3.6000	7.2000	20.000	0.0000	0.0000
6	-2.7811E-05	-2.6536E-13	-9.7277	-1.1532E-07	-20.506	-4.7196E-07	-5.5117	-1.0025E-07	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	7.0000	10.800	0.0000	4.0000	3.2000	7.0000	20.000	0.0000	0.0000
7	-2.9302E-05	-3.6142E-13	-8.4249	-1.2559E-07	-16.811	-4.4732E-07	-3.8291	-8.4415E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.2000	6.4000	7.8000	11.400	0.0000	3.8000	3.6000	7.0000	20.000	0.0000	0.0000
8	-2.9305E-05	-3.5237E-13	-8.4226	-1.2273E-07	-16.806	-4.3879E-07	-3.8266	-8.2959E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	6.4000	7.8000	11.400	0.0000	4.0000	3.6000	7.2000	20.000	0.0000	0.0000
9	-2.7811E-05	-2.6536E-13	-9.7277	-1.1532E-07	-20.506	-4.7196E-07	-5.5117	-1.0025E-07	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	7.0000	10.800	0.0000	4.0000	3.2000	7.0000	20.000	0.0000	0.0000
10	-2.9295E-05	-3.6100E-13	-8.4300	-1.2557E-07	-16.826	-4.4749E-07	-3.8351	-8.4489E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.2000	6.4000	7.8000	11.400	0.0000	3.8000	3.6000	7.0000	20.000	0.0000	0.0000
11	-2.9298E-05	-3.5198E-13	-8.4277	-1.2271E-07	-16.820	-4.3896E-07	-3.8327	-8.3030E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	6.4000	7.8000	11.400	0.0000	3.8000	3.6000	7.2000	20.000	0.0000	0.0000
12	-2.7811E-05	-2.6536E-13	-9.7277	-1.1532E-07	-20.506	-4.7196E-07	-5.5117	-1.0025E-07	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	7.0000	10.800	0.0000	4.0000	3.2000	7.0000	20.000	0.0000	0.0000
13	-2.8776E-05	-3.3004E-13	-8.8366	-1.2355E-07	-18.004	-4.6074E-07	-4.3353	-9.0417E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.0000	6.4000	7.4000	11.200	0.0000	3.8000	3.6000	7.0000	20.000	0.0000	0.0000
14	-2.8804E-05	-3.2366E-13	-8.8134	-1.2092E-07	-17.936	-4.5148E-07	-4.3053	-8.8616E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.0000	6.4000	7.6000	11.200	0.0000	4.0000	3.6000	7.0000	20.000	0.0000	0.0000
15	-2.7621E-05	-2.5548E-13	-9.9397	-1.1481E-07	-21.116	-4.7878E-07	-5.8252	-1.0344E-07	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	6.8000	10.800	0.0000	4.2000	3.2000	6.8000	20.000	0.0000	0.0000
Min.	-2.9305E-05	-3.6142E-13	-9.9397	-1.2559E-07	-21.116	-4.7878E-07	-5.8252	-1.0344E-07	1076.1	7.8279E+06	7.8279E+06
Pile N.	8	7	3	7	3	3	3	3	3	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	7.0265E-07	3.2182E-12	72.992	3.1043E-06	1.8776	3.1432E-08	0.8394	8.2273E-08	1430.8	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	0.0000	10.200	14.000	13.600	2.6000	0.0000	0.0000	0.0000
2	6.9956E-07	3.2741E-12	72.840	3.0527E-06	1.8696	3.1016E-08	0.8365	8.7210E-08	1363.1	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	0.0000	10.200	14.000	13.600	2.6000	0.0000	0.0000	0.0000
3	7.8923E-07	3.3300E-12	79.671	3.0033E-06	2.2721	3.1305E-08	0.8666	1.4103E-07	1316.6	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	0.0000	9.2000	13.400	13.600	2.6000	0.0000	0.0000	0.0000
4	6.5125E-07	3.2182E-12	70.333	3.0891E-06	1.7455	3.1811E-08	0.7749	6.8845E-08	1422.8	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.200	13.600	2.6000	0.0000	0.0000	0.0000
5	6.5084E-07	3.2741E-12	70.321	3.0410E-06	1.7447	3.1376E-08	0.7744	7.3797E-08	1355.5	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.200	13.600	2.6000	0.0000	0.0000	0.0000
6	7.7679E-07	3.3300E-12	78.398	3.0054E-06	2.1909	3.1025E-08	0.8760	1.3091E-07	1312.7	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	0.0000	9.4000	13.400	13.600	2.6000	0.0000	0.0000	0.0000
7	6.5051E-07	3.2182E-12	70.299	3.0889E-06	1.7440	3.1817E-08	0.7739	6.8686E-08	1422.7	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.200	13.600	2.6000	0.0000	0.0000	0.0000
8	6.5010E-07	3.2741E-12	70.287	3.0408E-06	1.7432	3.1380E-08	0.7734	7.3630E-08	1355.4	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.200	13.600	2.6000	0.0000	0.0000	0.0000
9	7.7679E-07	3.3300E-12	78.398	3.0054E-06	2.1909	3.1025E-08	0.8760	1.3091E-07	1312.7	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	0.0000	9.4000	13.400	13.600	2.6000	0.0000	0.0000	0.0000
10	6.5125E-07	3.2182E-12	70.333	3.0891E-06	1.7455	3.1811E-08	0.7749	6.8845E-08	1422.8	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.200	13.600	2.6000	0.0000	0.0000	0.0000
11	6.5084E-07	3.2741E-12	70.321	3.0410E-06	1.7447	3.1376E-08	0.7744	7.3797E-08	1355.5	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.200	13.600	2.6000	0.0000	0.0000	0.0000
12	7.7679E-07	3.3300E-12	78.398	3.0054E-06	2.1909	3.1025E-08	0.8760	1.3091E-07	1312.7	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	0.0000	9.4000	13.400	13.600	2.6000	0.0000	0.0000	0.0000
13	7.0265E-07	3.2182E-12	72.992	3.1043E-06	1.8776	3.1432E-08	0.8394	8.2273E-08	1430.8	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	0.0000	10.200	14.000	13.600	2.6000	0.0000	0.0000	0.0000
14	6.9956E-07	3.2741E-12	72.840	3.0527E-06	1.8696	3.1016E-08	0.8365	8.7210E-08	1363.1	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	0.0000	10.200	14.000	13.600	2.6000	0.0000	0.0000	0.0000
15	7.8923E-07	3.3300E-12	79.671	3.0033E-06	2.2721	3.1305E-08	0.8666	1.4103E-07	1316.6	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	0.0000	9.2000	13.400	13.600	2.6000	0.0000	0.0000	0.0000
Max.	7.8923E-07	3.3300E-12	79.671	3.1043E-06	2.2721	3.1817E-08	0.8760	1.4103E-07	1430.8	7.8279E+06	7.8279E+06
Pile N.	3	3	3	1	3	7	6	3	1	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria Mandanti   													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 10%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 10%;">REV.</td> <td style="width: 10%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>290 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	290 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	290 di 420								

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5813	1.0000
3	0.5874	1.0000
4	0.8037	1.0000
5	0.4951	1.0000
6	0.4963	1.0000
7	0.8035	1.0000
8	0.4938	1.0000
9	0.4949	1.0000
10	0.8035	1.0000
11	0.4948	1.0000
12	0.4959	1.0000
13	0.8642	1.0000
14	0.5785	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
32897.5	1789.23	204.774
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-125.422	1992.58	-18445.9

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.17937E-03	5.48128E-04	4.95428E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-7.18052E-07	2.27857E-06	-6.02081E-05



THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.4708E-03	5.5459E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
2	1.1999E-03	5.5459E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
3	9.2894E-04	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
4	1.4606E-03	5.5136E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
5	1.1896E-03	5.5136E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
6	9.1869E-04	5.5136E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
7	1.4503E-03	5.4813E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
8	1.1794E-03	5.4813E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
9	9.0843E-04	5.4813E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
10	1.4401E-03	5.4490E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
11	1.1691E-03	5.4490E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
12	8.9818E-04	5.4490E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
13	1.4298E-03	5.4166E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
14	1.1589E-03	5.4166E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
15	8.8793E-04	5.4166E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
MINIMUM	8.8793E-04	5.4166E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4708E-03	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2728.6	147.87	15.245	-0.2639	-38.786	319.75
2	2230.8	116.46	13.234	-0.2639	-35.937	260.75
3	1733.1	117.24	14.319	-0.2639	-39.052	262.17
4	2709.8	140.28	14.634	-0.2639	-37.642	304.74
5	2212.0	104.66	12.101	-0.2639	-33.643	236.55
6	1714.2	104.85	13.038	-0.2639	-36.459	236.82
7	2690.9	139.08	14.632	-0.2639	-37.638	301.39

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria  Mandanti  													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 15%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 15%;">REV.</td> <td style="width: 15%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>291 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	291 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	291 di 420								

8	2193.2	103.58	12.083	-0.2639	-33.606	233.43
9	1695.4	103.75	13.018	-0.2639	-36.418	233.69
10	2672.1	137.90	14.632	-0.2639	-37.638	298.07
11	2174.3	102.80	12.097	-0.2639	-33.635	230.92
12	1676.6	102.97	13.034	-0.2639	-36.449	231.17
13	2653.2	142.77	15.227	-0.2639	-38.752	305.79
14	2155.5	112.14	13.199	-0.2639	-35.866	248.30
15	1657.7	112.89	14.281	-0.2639	-38.976	249.68
MINIMUM	1657.7	102.80	12.083	-0.2639	-39.052	230.92
Pile N.	15	11	8	1	3	11
MAXIMUM	2728.6	147.87	15.245	-0.2639	-33.606	319.75
Pile N.	1	1	1	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.4708E-03	5.5459E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
2	1.1999E-03	5.5459E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
3	9.2894E-04	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
4	1.4606E-03	5.5136E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
5	1.1896E-03	5.5136E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
6	9.1869E-04	5.5136E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
7	1.4503E-03	5.4813E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
8	1.1794E-03	5.4813E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
9	9.0843E-04	5.4813E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
10	1.4401E-03	5.4490E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
11	1.1691E-03	5.4490E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
12	8.9818E-04	5.4490E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
13	1.4298E-03	5.4166E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
14	1.1589E-03	5.4166E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
15	8.8793E-04	5.4166E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
MINIMUM	8.8793E-04	5.4166E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4708E-03	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2728.6	147.87	15.245	-0.2639	-38.786	319.75
2	2230.8	116.46	13.234	-0.2639	-35.937	260.75
3	1733.1	117.24	14.319	-0.2639	-39.052	262.17
4	2709.8	140.28	14.634	-0.2639	-37.642	304.74
5	2212.0	104.66	12.101	-0.2639	-33.643	236.55
6	1714.2	104.85	13.038	-0.2639	-36.459	236.82
7	2690.9	139.08	14.632	-0.2639	-37.638	301.39
8	2193.2	103.58	12.083	-0.2639	-33.606	233.43
9	1695.4	103.75	13.018	-0.2639	-36.418	233.69
10	2672.1	137.90	14.632	-0.2639	-37.638	298.07
11	2174.3	102.80	12.097	-0.2639	-33.635	230.92
12	1676.6	102.97	13.034	-0.2639	-36.449	231.17
13	2653.2	142.77	15.227	-0.2639	-38.752	305.79
14	2155.5	112.14	13.199	-0.2639	-35.866	248.30
15	1657.7	112.89	14.281	-0.2639	-38.976	249.68
MINIMUM	1657.7	102.80	12.083	-0.2639	-39.052	230.92
Pile N.	15	11	8	1	3	11
MAXIMUM	2728.6	147.87	15.245	-0.2639	-33.606	319.75
Pile N.	1	1	1	1	8	1

PILE GROUP STRESS, KN/ M**2

1	2516.2
2	2056.8
3	1780.7
4	2460.1
5	1972.8
6	1693.2
7	2439.4
8	1952.8
9	1673.2
10	2418.8
11	1934.7
12	1655.1
13	2431.7
14	1976.9
15	1700.8
MINIMUM	1655.1
Pile N.	12

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 292 di 420
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MAXIMUM 2516.2
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.5614E-05	-1.2929E-06	-319.75	-38.786	-37.601	-3.1976	-8.6413	-0.7346	1544.1	7.8279E+06	7.8279E+06
x(M)	9.6000	9.6000	0.0000	0.0000	7.6000	7.8000	9.8000	10.2000	20.000	0.0000	0.0000
2	-1.5132E-05	-1.3129E-06	-260.75	-35.937	-29.339	-2.6636	-8.2828	-0.8564	1262.4	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	0.0000	0.0000	0.0000
3	-1.5146E-05	-1.3998E-06	-262.17	-39.052	-29.521	-2.8585	-8.2689	-0.9172	980.73	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	0.0000	0.0000	0.0000
4	-1.5458E-05	-1.2859E-06	-304.74	-37.642	-35.702	-3.0504	-8.0422	-0.7319	1533.4	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
5	-1.4712E-05	-1.2658E-06	-236.55	-33.643	-26.434	-2.4133	-8.2929	-0.8501	1251.7	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	0.0000	0.0000	0.0000
6	-1.4707E-05	-1.3471E-06	-236.82	-36.459	-26.457	-2.5768	-8.2916	-0.9105	970.07	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	0.0000	0.0000	0.0000
7	-1.5370E-05	-1.2859E-06	-301.39	-37.638	-35.486	-3.0499	-7.9931	-0.7319	1522.8	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
8	-1.4629E-05	-1.2650E-06	-233.43	-33.606	-26.237	-2.4093	-8.2318	-0.8498	1241.1	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	0.0000	0.0000	0.0000
9	-1.4624E-05	-1.3462E-06	-233.69	-36.418	-26.258	-2.5724	-8.2305	-0.9102	959.41	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	0.0000	0.0000	0.0000
10	-1.5282E-05	-1.2858E-06	-298.07	-37.638	-35.275	-3.0499	-7.9457	-0.7319	1512.1	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
11	-1.4556E-05	-1.2656E-06	-230.92	-33.635	-26.114	-2.4124	-8.1718	-0.8500	1230.4	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	0.0000	0.0000	0.0000
12	-1.4550E-05	-1.3468E-06	-231.17	-36.449	-26.135	-2.5757	-8.1705	-0.9104	948.75	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	0.0000	0.0000	0.0000
13	-1.5262E-05	-1.2924E-06	-305.79	-38.752	-36.655	-3.1928	-8.4227	-0.7330	1501.4	7.8279E+06	7.8279E+06
x(M)	9.6000	9.8000	0.0000	0.0000	7.6000	7.8000	9.8000	10.2000	20.000	0.0000	0.0000
14	-1.4803E-05	-1.3114E-06	-248.30	-35.866	-28.575	-2.6558	-8.0424	-0.8565	1219.8	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	0.0000	0.0000	0.0000
15	-1.4815E-05	-1.3982E-06	-249.68	-38.976	-28.751	-2.8501	-8.0290	-0.9174	938.09	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	0.0000	0.0000	0.0000
Min.	-1.5614E-05	-1.3998E-06	-319.75	-39.052	-37.601	-3.1976	-8.6413	-0.9174	938.09	7.8279E+06	7.8279E+06
Pile N.	1	3	1	3	1	1	1	15	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	5.5459E-04	4.6312E-05	171.41	14.446	147.88	15.247	67.070	6.2433	2516.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
2	5.5459E-04	4.9543E-05	146.06	13.135	116.47	13.235	47.088	4.7300	2056.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
3	5.5459E-04	5.2774E-05	146.65	14.065	117.24	14.320	47.523	5.1108	1780.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
4	5.5136E-04	4.6312E-05	165.38	14.015	140.29	14.635	62.354	5.8490	2460.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
5	5.5136E-04	4.9543E-05	136.37	12.298	104.67	12.102	40.471	4.1006	1972.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
6	5.5136E-04	5.2774E-05	136.48	13.126	104.85	13.039	40.557	4.3992	1693.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
7	5.4813E-04	4.6312E-05	164.41	14.013	139.09	14.634	61.898	5.8478	2439.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
8	5.4813E-04	4.9543E-05	135.46	12.285	103.58	12.084	40.086	4.0910	1952.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
9	5.4813E-04	5.2774E-05	135.56	13.111	103.76	13.019	40.167	4.3885	1673.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
10	5.4490E-04	4.6312E-05	163.46	14.013	137.91	14.634	61.455	5.8478	2418.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
11	5.4490E-04	4.9543E-05	134.80	12.295	102.80	12.098	39.873	4.0987	1934.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
12	5.4490E-04	5.2774E-05	134.90	13.122	102.98	13.034	39.954	4.3967	1655.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
13	5.4167E-04	4.6312E-05	167.29	14.433	142.78	15.229	65.053	6.2313	2431.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
14	5.4167E-04	4.9543E-05	142.48	13.109	112.14	13.200	45.548	4.7097	1976.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
15	5.4167E-04	5.2774E-05	143.07	14.037	112.90	14.282	45.978	5.0890	1700.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
Max.	5.5459E-04	5.2774E-05	171.41	14.446	147.88	15.247	67.070	6.2433	2516.2	7.8279E+06	7.8279E+06
Pile N.	1	3	1	1	1	1	1	1	1	1	1

LOAD CASE : 19

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria  Mandanti  													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 10%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 10%;">REV.</td> <td style="width: 10%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>293 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	293 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	293 di 420								

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5825	1.0000
3	0.5890	1.0000
4	0.8028	1.0000
5	0.4951	1.0000
6	0.4967	1.0000
7	0.8025	1.0000
8	0.4937	1.0000
9	0.4951	1.0000
10	0.8025	1.0000
11	0.4947	1.0000
12	0.4962	1.0000
13	0.8630	1.0000
14	0.5781	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
32277.0	1568.91	213.600
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-256.322	3230.39	-16081.0

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.15685E-03	4.79931E-04	5.47977E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-1.20427E-06	3.39047E-06	-5.25561E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.4239E-03	4.9077E-04	4.9379E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
2	1.1874E-03	4.9077E-04	5.4798E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
3	9.5086E-04	4.9077E-04	6.0217E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
4	1.4086E-03	4.8535E-04	4.9379E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
5	1.1721E-03	4.8535E-04	5.4798E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
6	9.3561E-04	4.8535E-04	6.0217E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
7	1.3934E-03	4.7993E-04	4.9379E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
8	1.1569E-03	4.7993E-04	5.4798E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
9	9.2035E-04	4.7993E-04	6.0217E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
10	1.3781E-03	4.7451E-04	4.9379E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
11	1.1416E-03	4.7451E-04	5.4798E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
12	9.0509E-04	4.7451E-04	6.0217E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
13	1.3628E-03	4.6909E-04	4.9379E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
14	1.1263E-03	4.6909E-04	5.4798E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
15	8.8984E-04	4.6909E-04	6.0217E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
MINIMUM Pile N.	8.8984E-04 15	4.6909E-04 13	4.9379E-05 1	-1.2043E-06 1	3.3905E-06 1	-5.2556E-05 1
MAXIMUM Pile N.	1.4239E-03 1	4.9077E-04 1	6.0217E-05 3	-1.2043E-06 1	3.3905E-06 1	-5.2556E-05 1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2642.4	131.62	15.243	-0.4426	-37.130	286.14
2	2207.9	103.86	13.860	-0.4426	-36.234	233.96
3	1773.4	104.59	15.638	-0.4426	-41.377	235.30
4	2614.3	123.86	14.608	-0.4426	-35.951	270.02
5	2179.8	92.516	12.635	-0.4426	-33.769	209.99
6	1745.3	92.723	14.202	-0.4426	-38.486	210.33
7	2586.3	121.85	14.605	-0.4426	-35.945	264.41

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandataria

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	294 di 420

8	2151.8	90.814	12.614	-0.4426	-33.725	204.99
9	1717.3	91.010	14.178	-0.4426	-38.435	205.31
10	2558.3	119.87	14.606	-0.4426	-35.945	258.85
11	2123.8	89.396	12.629	-0.4426	-33.756	200.56
12	1689.3	89.588	14.195	-0.4426	-38.469	200.87
13	2530.2	123.11	15.214	-0.4426	-37.075	262.82
14	2095.7	96.702	13.801	-0.4426	-36.114	213.27
15	1661.2	97.388	15.572	-0.4426	-41.244	214.53
MINIMUM	1661.2	89.396	12.614	-0.4426	-41.377	200.56
Pile N.	15	11	8	1	3	11
MAXIMUM	2642.4	131.62	15.638	-0.4426	-33.725	286.14
Pile N.	1	1	3	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.4239E-03	4.9077E-04	4.9379E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
2	1.1874E-03	4.9077E-04	5.4798E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
3	9.5086E-04	4.9077E-04	6.0217E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
4	1.4086E-03	4.8535E-04	4.9379E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
5	1.1721E-03	4.8535E-04	5.4798E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
6	9.3561E-04	4.8535E-04	6.0217E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
7	1.3934E-03	4.7993E-04	4.9379E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
8	1.1569E-03	4.7993E-04	5.4798E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
9	9.2035E-04	4.7993E-04	6.0217E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
10	1.3781E-03	4.7451E-04	4.9379E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
11	1.1416E-03	4.7451E-04	5.4798E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
12	9.0509E-04	4.7451E-04	6.0217E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
13	1.3628E-03	4.6909E-04	4.9379E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
14	1.1263E-03	4.6909E-04	5.4798E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
15	8.8984E-04	4.6909E-04	6.0217E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
MINIMUM	8.8984E-04	4.6909E-04	4.9379E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4239E-03	4.9077E-04	6.0217E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2642.4	131.62	15.243	-0.4426	-37.130	286.14
2	2207.9	103.86	13.860	-0.4426	-36.234	233.96
3	1773.4	104.59	15.638	-0.4426	-41.377	235.30
4	2614.3	123.86	14.608	-0.4426	-35.951	270.02
5	2179.8	92.516	12.635	-0.4426	-33.769	209.99
6	1745.3	92.723	14.202	-0.4426	-38.486	210.33
7	2586.3	121.85	14.605	-0.4426	-35.945	264.41
8	2151.8	90.814	12.614	-0.4426	-33.725	204.99
9	1717.3	91.010	14.178	-0.4426	-38.435	205.31
10	2558.3	119.87	14.606	-0.4426	-35.945	258.85
11	2123.8	89.396	12.629	-0.4426	-33.756	200.56
12	1689.3	89.588	14.195	-0.4426	-38.469	200.87
13	2530.2	123.11	15.214	-0.4426	-37.075	262.82
14	2095.7	96.702	13.801	-0.4426	-36.114	213.27
15	1661.2	97.388	15.572	-0.4426	-41.244	214.53
MINIMUM	1661.2	89.396	12.614	-0.4426	-41.377	200.56
Pile N.	15	11	8	1	3	11
MAXIMUM	2642.4	131.62	15.638	-0.4426	-33.725	286.14
Pile N.	1	1	3	1	8	1

PILE GROUP STRESS, KN/ M**2

1	2366.1
2	1963.9
3	1724.6
4	2301.5
5	1875.4
6	1633.0
7	2268.9
8	1844.7
9	1602.2
10	2236.4
11	1815.6
12	1573.2
13	2232.9
14	1838.8
15	1599.4
MINIMUM	1573.2
Pile N.	12

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 295 di 420
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MAXIMUM 2366.1
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *







* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.3809E-05	-1.3792E-06	-286.14	-37.130	-33.281	-3.3810	-7.6481	-0.7765	1495.3	7.8279E+06	7.8279E+06
x(M)	9.6000	9.8000	0.0000	0.0000	7.6000	7.8000	0.0000	10.000	20.000	0.0000	0.0000
2	-1.3377E-05	-1.4581E-06	-233.96	-36.234	-25.993	-2.9321	-7.3545	-0.9144	1249.4	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.4000	13.600	13.600	20.000	0.0000	0.0000
3	-1.3392E-05	-1.6022E-06	-235.30	-41.377	-26.167	-3.2502	-7.3416	-1.0165	1003.5	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.4000	13.600	13.600	20.000	0.0000	0.0000
4	-1.3603E-05	-1.3704E-06	-270.02	-35.951	-31.403	-3.2230	-7.0714	-0.7408	1479.4	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	7.8000	10.000	13.600	20.000	0.0000	0.0000
5	-1.2939E-05	-1.4104E-06	-209.99	-33.769	-23.270	-2.6488	-7.3149	-0.9111	1233.5	7.8279E+06	7.8279E+06
x(M)	10.600	10.800	0.0000	0.0000	8.4000	8.6000	13.600	13.600	20.000	0.0000	0.0000
6	-1.2937E-05	-1.5452E-06	-210.33	-38.486	-23.303	-2.9220	-7.3142	-1.0126	987.66	7.8279E+06	7.8279E+06
x(M)	10.600	10.800	0.0000	0.0000	8.4000	8.8000	13.600	13.600	20.000	0.0000	0.0000
7	-1.3455E-05	-1.3704E-06	-264.41	-35.945	-31.043	-3.2221	-6.9896	-0.7410	1463.5	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	7.8000	10.000	13.600	20.000	0.0000	0.0000
8	-1.2804E-05	-1.4092E-06	-204.99	-33.725	-22.968	-2.6437	-7.2128	-0.9108	1217.7	7.8279E+06	7.8279E+06
x(M)	10.600	10.800	0.0000	0.0000	8.4000	8.6000	13.600	13.600	20.000	0.0000	0.0000
9	-1.2802E-05	-1.5437E-06	-205.31	-38.435	-22.999	-2.9165	-7.2121	-1.0122	971.79	7.8279E+06	7.8279E+06
x(M)	10.600	10.800	0.0000	0.0000	8.4000	8.8000	13.600	13.600	20.000	0.0000	0.0000
10	-1.3308E-05	-1.3703E-06	-258.85	-35.945	-30.690	-3.2220	-6.9104	-0.7410	1447.7	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	7.8000	10.000	13.600	20.000	0.0000	0.0000
11	-1.2677E-05	-1.4099E-06	-200.56	-33.756	-22.735	-2.6472	-7.1119	-0.9110	1201.8	7.8279E+06	7.8279E+06
x(M)	10.600	10.800	0.0000	0.0000	8.4000	8.6000	13.600	13.600	20.000	0.0000	0.0000
12	-1.2674E-05	-1.5446E-06	-200.87	-38.469	-22.766	-2.9201	-7.1111	-1.0124	955.93	7.8279E+06	7.8279E+06
x(M)	10.600	10.800	0.0000	0.0000	8.4000	8.8000	13.600	13.600	20.000	0.0000	0.0000
13	-1.3219E-05	-1.3788E-06	-262.82	-37.075	-31.711	-3.3734	-7.2849	-0.7738	1431.8	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	7.8000	9.8000	10.000	20.000	0.0000	0.0000
14	-1.2828E-05	-1.4562E-06	-213.27	-36.114	-24.738	-2.9177	-6.9499	-0.9148	1185.9	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.4000	13.600	13.600	20.000	0.0000	0.0000
15	-1.2840E-05	-1.6001E-06	-214.53	-41.244	-24.902	-3.2342	-6.9377	-1.0170	940.07	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.4000	13.600	13.600	20.000	0.0000	0.0000
Min.	-1.3809E-05	-1.6022E-06	-286.14	-41.377	-33.281	-3.3810	-7.6481	-1.0170	940.07	7.8279E+06	7.8279E+06
Pile N.	1	3	1	3	1	1	1	15	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	4.9077E-04	4.9378E-05	151.68	15.320	131.63	15.244	59.521	6.4322	2366.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.2000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
2	4.9077E-04	5.4798E-05	129.35	14.472	103.87	13.861	41.867	5.0945	1963.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.6000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
3	4.9077E-04	6.0217E-05	129.89	15.992	104.59	15.639	42.284	5.7110	1724.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.6000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
4	4.8535E-04	4.9378E-05	145.49	14.838	123.87	14.610	54.931	6.0188	2301.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.2000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
5	4.8535E-04	5.4798E-05	120.01	13.546	92.522	12.636	35.692	4.4067	1875.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.6000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
6	4.8535E-04	6.0217E-05	120.15	14.919	92.728	14.203	35.795	4.9061	1633.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.6000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
7	4.7993E-04	4.9378E-05	143.87	14.835	121.86	14.607	54.170	6.0167	2268.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
8	4.7993E-04	5.4798E-05	118.57	13.529	90.820	12.615	35.113	4.3951	1844.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
9	4.7993E-04	6.0217E-05	118.70	14.900	91.014	14.178	35.210	4.8925	1602.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
10	4.7451E-04	4.9378E-05	142.27	14.835	119.88	14.607	53.428	6.0167	2236.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
11	4.7451E-04	5.4798E-05	117.38	13.541	89.401	12.630	34.695	4.4033	1815.6	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.6000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
12	4.7451E-04	6.0217E-05	117.51	14.913	89.593	14.195	34.790	4.9017	1573.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.6000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
13	4.6909E-04	4.9378E-05	144.80	15.297	123.12	15.215	56.176	6.4125	2232.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.2000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
14	4.6909E-04	5.4798E-05	123.39	14.425	96.708	13.802	39.353	5.0599	1838.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.6000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
15	4.6909E-04	6.0217E-05	123.94	15.940	97.393	15.573	39.747	5.6724	1599.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.6000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
Max.	4.9077E-04	6.0217E-05	151.68	15.992	131.63	15.639	59.521	6.4322	2366.1	7.8279E+06	7.8279E+06
Pile N.	1	3	1	3	1	3	1	1	1	1	1

LOAD CASE : 20

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5863	1.0000
2	0.5804	1.0000
3	0.8661	1.0000
4	0.4960	1.0000
5	0.4951	1.0000
6	0.8043	1.0000
7	0.4947	1.0000
8	0.4939	1.0000
9	0.8042	1.0000
10	0.4958	1.0000
11	0.4949	1.0000
12	0.8042	1.0000
13	0.5845	1.0000
14	0.5787	1.0000
15	0.8649	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
31605.3	-988.227	73.3230
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-34.6604	-198.671	-1695.05

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.13248E-03	-2.14558E-04	1.52909E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-3.81331E-08	1.32725E-08	3.01964E-06




THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.1190E-03	-2.1421E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
2	1.1326E-03	-2.1421E-04	1.5291E-05	-3.8133E-08	1.3273E-08	3.0196E-06
3	1.1462E-03	-2.1421E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
4	1.1190E-03	-2.1439E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
5	1.1325E-03	-2.1439E-04	1.5291E-05	-3.8133E-08	1.3273E-08	3.0196E-06
6	1.1461E-03	-2.1439E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
7	1.1189E-03	-2.1456E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
8	1.1325E-03	-2.1456E-04	1.5291E-05	-3.8133E-08	1.3273E-08	3.0196E-06
9	1.1461E-03	-2.1456E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
10	1.1188E-03	-2.1473E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
11	1.1324E-03	-2.1473E-04	1.5291E-05	-3.8133E-08	1.3273E-08	3.0196E-06
12	1.1460E-03	-2.1473E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
13	1.1188E-03	-2.1490E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
14	1.1324E-03	-2.1490E-04	1.5291E-05	-3.8133E-08	1.3273E-08	3.0196E-06
15	1.1459E-03	-2.1490E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
MINIMUM	1.1188E-03	-2.1490E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
Pile N.	13	13	1	1	1	1
MAXIMUM	1.1462E-03	-2.1421E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2082.3	-63.758	4.6830	-0.014016	-13.793	-183.85
2	2107.2	-63.414	4.7111	-0.014016	-13.899	-183.16
3	2132.2	-78.460	5.8791	-0.014016	-16.236	-212.46
4	2082.2	-58.311	4.2844	-0.014016	-12.974	-172.76
5	2107.1	-58.255	4.3290	-0.014016	-13.113	-172.64
6	2132.1	-75.517	5.6565	-0.014016	-15.813	-206.95
7	2082.1	-58.281	4.2786	-0.014016	-12.962	-172.74

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

8	2107.0	-58.227	4.3234	-0.014016	-13.101	-172.63
9	2132.0	-75.574	5.6561	-0.014016	-15.812	-207.11
10	2081.9	-58.396	4.2834	-0.014016	-12.972	-173.03
11	2106.9	-58.342	4.3282	-0.014016	-13.111	-172.91
12	2131.9	-75.637	5.6561	-0.014016	-15.812	-207.29
13	2081.8	-63.868	4.6756	-0.014016	-13.777	-184.27
14	2106.8	-63.523	4.7036	-0.014016	-13.883	-183.58
15	2131.8	-78.665	5.8749	-0.014016	-16.228	-213.08
MINIMUM	2081.8	-78.665	4.2786	-0.014016	-16.236	-213.08
Pile N.	13	15	7	1	3	15
MAXIMUM	2132.2	-58.227	5.8791	-0.014016	-12.962	-172.63
Pile N.	3	8	3	1	7	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.1190E-03	-2.1421E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
2	1.1326E-03	-2.1421E-04	1.5291E-05	-3.8133E-08	1.3273E-08	3.0196E-06
3	1.1462E-03	-2.1421E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
4	1.1190E-03	-2.1439E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
5	1.1325E-03	-2.1439E-04	1.5291E-05	-3.8133E-08	1.3273E-08	3.0196E-06
6	1.1461E-03	-2.1439E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
7	1.1189E-03	-2.1456E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
8	1.1325E-03	-2.1456E-04	1.5291E-05	-3.8133E-08	1.3273E-08	3.0196E-06
9	1.1461E-03	-2.1456E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
10	1.1188E-03	-2.1473E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
11	1.1324E-03	-2.1473E-04	1.5291E-05	-3.8133E-08	1.3273E-08	3.0196E-06
12	1.1460E-03	-2.1473E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
13	1.1188E-03	-2.1490E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
14	1.1324E-03	-2.1490E-04	1.5291E-05	-3.8133E-08	1.3273E-08	3.0196E-06
15	1.1459E-03	-2.1490E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
MINIMUM	1.1188E-03	-2.1490E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
Pile N.	13	13	1	1	1	1
MAXIMUM	1.1462E-03	-2.1421E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2082.3	-63.758	4.6830	-0.014016	-13.793	-183.85
2	2107.2	-63.414	4.7111	-0.014016	-13.899	-183.16
3	2132.2	-78.460	5.8791	-0.014016	-16.236	-212.46
4	2082.2	-58.311	4.2844	-0.014016	-12.974	-172.76
5	2107.1	-58.255	4.3290	-0.014016	-13.113	-172.64
6	2132.1	-75.517	5.6565	-0.014016	-15.813	-206.95
7	2082.1	-58.281	4.2786	-0.014016	-12.962	-172.74
8	2107.0	-58.227	4.3234	-0.014016	-13.101	-172.63
9	2132.0	-75.574	5.6561	-0.014016	-15.812	-207.11
10	2081.9	-58.396	4.2834	-0.014016	-12.972	-173.03
11	2106.9	-58.342	4.3282	-0.014016	-13.111	-172.91
12	2131.9	-75.637	5.6561	-0.014016	-15.812	-207.29
13	2081.8	-63.868	4.6756	-0.014016	-13.777	-184.27
14	2106.8	-63.523	4.7036	-0.014016	-13.883	-183.58
15	2131.8	-78.665	5.8749	-0.014016	-16.228	-213.08
MINIMUM	2081.8	-78.665	4.2786	-0.014016	-16.236	-213.08
Pile N.	13	15	7	1	3	15
MAXIMUM	2132.2	-58.227	5.8791	-0.014016	-12.962	-172.63
Pile N.	3	8	3	1	7	8

PILE GROUP STRESS, KN/ M**2

1	1734.8
2	1746.8
3	1849.7
4	1701.1
5	1714.9
6	1832.9
7	1701.0
8	1714.8
9	1833.3
10	1701.8
11	1715.6
12	1833.8
13	1735.8
14	1747.8
15	1851.3
MINIMUM	1701.0
Pile N.	7

APPALTATORE:

Consorzio Soci

HirpiniaAV

PROGETTAZIONE:

Mandatario Mandanti

Alpina

PROGETTO ESECUTIVO
RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 298 di 420
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MAXIMUM 1851.3
Pile N. 15

* EFFECTS FOR LATERALLY LOADED PILE *







* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.1421E-04	-4.0049E-07	-57.789	-13.793	-63.763	-0.8399	-21.773	-0.2870	1178.3	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	6.0000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
2	-2.1421E-04	-4.0403E-07	-57.559	-13.899	-63.419	-0.8444	-21.580	-0.2902	1192.5	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	6.0000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
3	-2.1421E-04	-4.3572E-07	-67.811	-16.236	-78.466	-1.0967	-30.637	-0.2656	1206.6	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	5.6000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
4	-2.1439E-04	-3.8294E-07	-54.010	-12.974	-58.316	-0.7582	-18.788	-0.2823	1178.3	7.8279E+06	7.8279E+06
x(M)	0.0000	11.200	6.2000	0.0000	0.0000	9.0000	2.6000	13.600	20.000	0.0000	0.0000
5	-2.1439E-04	-3.8711E-07	-53.972	-13.113	-58.260	-0.7660	-18.758	-0.2855	1192.4	7.8279E+06	7.8279E+06
x(M)	0.0000	11.200	6.2000	0.0000	0.0000	9.0000	2.6000	13.600	20.000	0.0000	0.0000
6	-2.1439E-04	-4.3257E-07	-65.884	-15.813	-75.523	-1.0471	-28.752	-0.2753	1206.5	7.8279E+06	7.8279E+06
x(M)	0.0000	10.200	5.6000	0.0000	0.0000	8.2000	2.6000	13.600	20.000	0.0000	0.0000
7	-2.1456E-04	-3.8267E-07	-53.999	-12.962	-58.286	-0.7570	-18.761	-0.2822	1178.2	7.8279E+06	7.8279E+06
x(M)	0.0000	11.200	6.2000	0.0000	0.0000	9.0000	2.6000	13.600	20.000	0.0000	0.0000
8	-2.1456E-04	-3.8685E-07	-53.963	-13.101	-58.232	-0.7648	-18.733	-0.2853	1192.3	7.8279E+06	7.8279E+06
x(M)	0.0000	11.200	6.2000	0.0000	0.0000	9.0000	2.6000	13.600	20.000	0.0000	0.0000
9	-2.1456E-04	-4.3256E-07	-65.933	-15.812	-75.579	-1.0470	-28.772	-0.2753	1206.5	7.8279E+06	7.8279E+06
x(M)	0.0000	10.200	5.6000	0.0000	0.0000	8.2000	2.6000	13.600	20.000	0.0000	0.0000
10	-2.1473E-04	-3.8289E-07	-54.888	-12.972	-58.411	-0.7580	-18.812	-0.2823	1178.1	7.8279E+06	7.8279E+06
x(M)	0.0000	11.200	6.2000	0.0000	0.0000	9.0000	2.6000	13.600	20.000	0.0000	0.0000
11	-2.1473E-04	-3.8707E-07	-54.852	-13.111	-58.347	-0.7658	-18.784	-0.2854	1192.3	7.8279E+06	7.8279E+06
x(M)	0.0000	11.200	6.2000	0.0000	0.0000	9.0000	2.6000	13.600	20.000	0.0000	0.0000
12	-2.1473E-04	-4.3256E-07	-65.986	-15.812	-75.642	-1.0470	-28.796	-0.2753	1206.4	7.8279E+06	7.8279E+06
x(M)	0.0000	10.200	5.6000	0.0000	0.0000	8.2000	2.6000	13.600	20.000	0.0000	0.0000
13	-2.1490E-04	-4.0020E-07	-57.907	-13.777	-63.872	-0.8384	-21.786	-0.2870	1178.1	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	6.0000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
14	-2.1490E-04	-4.0372E-07	-57.675	-13.883	-63.528	-0.8428	-21.593	-0.2902	1192.2	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	6.0000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
15	-2.1490E-04	-4.3564E-07	-67.993	-16.228	-78.670	-1.0958	-30.700	-0.2658	1206.3	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	5.6000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
Min.	-2.1490E-04	-4.3572E-07	-67.993	-16.236	-78.670	-1.0967	-30.700	-0.2902	1178.1	7.8279E+06	7.8279E+06
Pile N.	13	3	15	3	15	3	15	2	10	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	5.6694E-06	1.5119E-05	183.85	4.1101	11.796	4.6834	3.9589	1.5707	1734.8	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
2	5.6578E-06	1.5291E-05	183.16	4.1397	11.720	4.7115	3.9593	1.5746	1746.8	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
3	6.0181E-06	1.5462E-05	212.46	4.9333	15.072	5.8796	3.5622	2.2593	1849.7	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.6000	8.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
4	5.4317E-06	1.5119E-05	172.76	3.8387	10.652	4.2847	3.9087	1.3546	1701.1	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.2000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
5	5.4286E-06	1.5291E-05	172.64	3.8795	10.641	4.3294	3.9075	1.3679	1714.9	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.2000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
6	5.9763E-06	1.5462E-05	206.95	4.7850	14.387	5.6569	3.6991	2.1188	1832.9	7.8279E+06	7.8279E+06
x(M)	10.200	0.0000	0.0000	5.6000	8.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
7	5.4313E-06	1.5119E-05	172.74	3.8348	10.645	4.2790	3.9101	1.3516	1701.0	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.2000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
8	5.4286E-06	1.5291E-05	172.63	3.8756	10.634	4.3237	3.9090	1.3649	1714.8	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.2000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
9	5.9810E-06	1.5462E-05	207.11	4.7847	14.397	5.6565	3.7024	2.1185	1833.3	7.8279E+06	7.8279E+06
x(M)	10.200	0.0000	0.0000	5.6000	8.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
10	5.4396E-06	1.5119E-05	173.03	3.8381	10.667	4.2838	3.9148	1.3541	1701.8	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.2000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
11	5.4366E-06	1.5291E-05	172.91	3.8790	10.656	4.3286	3.9137	1.3675	1715.6	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.2000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
12	5.9858E-06	1.5462E-05	207.29	4.7847	14.409	5.6565	3.7055	2.1185	1833.8	7.8279E+06	7.8279E+06
x(M)	10.200	0.0000	0.0000	5.6000	8.2000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
13	5.6841E-06	1.5119E-05	184.27	4.1051	11.811	4.6759	3.9721	1.5666	1735.8	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
14	5.6722E-06	1.5291E-05	183.58	4.1345	11.735	4.7040	3.9724	1.5704	1747.8	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
15	6.0365E-06	1.5462E-05	213.08	4.9305	15.108	5.8753	3.5768	2.2566	1851.3	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.6000	8.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
Max.	6.0365E-06	1.5462E-05	213.08	4.9333	15.108	5.8796	3.9724	2.2593	1851.3	7.8279E+06	7.8279E+06
Pile N.	15	3	15	3	15	3	14	3	15	1	1

LOAD CASE : 21

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria Mandanti   													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1"> <tr> <td>COMMESSA</td> <td>LOTTO</td> <td>CODIFICA</td> <td>DOCUMENTO</td> <td>REV.</td> <td>FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>299 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	299 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	299 di 420								

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5813	1.0000
3	0.5874	1.0000
4	0.8037	1.0000
5	0.4951	1.0000
6	0.4963	1.0000
7	0.8035	1.0000
8	0.4938	1.0000
9	0.4949	1.0000
10	0.8035	1.0000
11	0.4948	1.0000
12	0.4959	1.0000
13	0.8642	1.0000
14	0.5785	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
32897.5	1789.23	204.774
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-125.422	1992.58	-18446.0

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.17937E-03	5.48129E-04	4.95428E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-7.18052E-07	2.27857E-06	-6.02085E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.4708E-03	5.5459E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
2	1.1999E-03	5.5459E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
3	9.2894E-04	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
4	1.4606E-03	5.5136E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
5	1.1896E-03	5.5136E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
6	9.1869E-04	5.5136E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
7	1.4503E-03	5.4813E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
8	1.1794E-03	5.4813E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
9	9.0843E-04	5.4813E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
10	1.4401E-03	5.4490E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
11	1.1691E-03	5.4490E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
12	8.9818E-04	5.4490E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
13	1.4298E-03	5.4167E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
14	1.1589E-03	5.4167E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
15	8.8793E-04	5.4167E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
MINIMUM	8.8793E-04	5.4167E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4708E-03	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2728.6	147.87	15.245	-0.2639	-38.786	319.75
2	2230.8	116.46	13.234	-0.2639	-35.937	260.75
3	1733.1	117.24	14.319	-0.2639	-39.052	262.17
4	2709.8	140.28	14.634	-0.2639	-37.642	304.74
5	2212.0	104.66	12.101	-0.2639	-33.643	236.55
6	1714.2	104.85	13.038	-0.2639	-36.459	236.82
7	2690.9	139.08	14.632	-0.2639	-37.638	301.39

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 300 di 420
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8	2193.2	103.58	12.083	-0.2639	-33.606	233.43
9	1695.4	103.75	13.018	-0.2639	-36.418	233.69
10	2672.1	137.90	14.632	-0.2639	-37.638	298.07
11	2174.3	102.80	12.097	-0.2639	-33.635	230.92
12	1676.6	102.97	13.034	-0.2639	-36.449	231.17
13	2653.3	142.77	15.227	-0.2639	-38.752	305.79
14	2155.5	112.14	13.199	-0.2639	-35.866	248.30
15	1657.7	112.89	14.281	-0.2639	-38.976	249.68
MINIMUM	1657.7	102.80	12.083	-0.2639	-39.052	230.92
Pile N.	15	11	8	1	3	11
MAXIMUM	2728.6	147.87	15.245	-0.2639	-33.606	319.75
Pile N.	1	1	1	1	8	1

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *


PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.4708E-03	5.5459E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
2	1.1999E-03	5.5459E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
3	9.2894E-04	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
4	1.4606E-03	5.5136E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
5	1.1896E-03	5.5136E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
6	9.1869E-04	5.5136E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
7	1.4503E-03	5.4813E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
8	1.1794E-03	5.4813E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
9	9.0843E-04	5.4813E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
10	1.4401E-03	5.4490E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
11	1.1691E-03	5.4490E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
12	8.9818E-04	5.4490E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
13	1.4298E-03	5.4167E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
14	1.1589E-03	5.4167E-04	4.9543E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
15	8.8793E-04	5.4167E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
MINIMUM	8.8793E-04	5.4167E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4708E-03	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2728.6	147.87	15.245	-0.2639	-38.786	319.75
2	2230.8	116.46	13.234	-0.2639	-35.937	260.75
3	1733.1	117.24	14.319	-0.2639	-39.052	262.17
4	2709.8	140.28	14.634	-0.2639	-37.642	304.74
5	2212.0	104.66	12.101	-0.2639	-33.643	236.55
6	1714.2	104.85	13.038	-0.2639	-36.459	236.82
7	2690.9	139.08	14.632	-0.2639	-37.638	301.39
8	2193.2	103.58	12.083	-0.2639	-33.606	233.43
9	1695.4	103.75	13.018	-0.2639	-36.418	233.69
10	2672.1	137.90	14.632	-0.2639	-37.638	298.07
11	2174.3	102.80	12.097	-0.2639	-33.635	230.92
12	1676.6	102.97	13.034	-0.2639	-36.449	231.17
13	2653.3	142.77	15.227	-0.2639	-38.752	305.79
14	2155.5	112.14	13.199	-0.2639	-35.866	248.30
15	1657.7	112.89	14.281	-0.2639	-38.976	249.68
MINIMUM	1657.7	102.80	12.083	-0.2639	-39.052	230.92
Pile N.	15	11	8	1	3	11
MAXIMUM	2728.6	147.87	15.245	-0.2639	-33.606	319.75
Pile N.	1	1	1	1	8	1

PILE GROUP STRESS, KN/ M**2

1	2516.2
2	2056.8
3	1780.7
4	2460.1
5	1972.8
6	1693.2
7	2439.4
8	1952.8
9	1673.2
10	2418.8
11	1934.7
12	1655.1
13	2431.7
14	1976.9
15	1700.7
MINIMUM	1655.1
Pile N.	12

APPALTATORE: Consorzio Soci  PROGETTAZIONE: Mandataria Mandanti  PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
	COMMESSA LOTTO CODIFICA DOCUMENTO REV. FOGLIO IF28 01 E ZZ CL VI0103 001 B 301 di 420

MAXIMUM 2516.2
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	-1.5614E-05	-1.2929E-06	-319.75	-38.786	-37.601	-3.1976	-8.6413	-0.7346	1544.1	7.8279E+06	7.8279E+06
x(M)	9.6000	9.6000	0.0000	0.0000	7.6000	7.8000	9.8000	10.2000	20.000	0.0000	0.0000
2	-1.5132E-05	-1.3129E-06	-260.75	-35.937	-29.339	-2.6636	-8.2828	-0.8564	1262.4	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	20.000	0.0000	0.0000
3	-1.5146E-05	-1.3998E-06	-262.17	-39.052	-29.521	-2.8585	-8.2689	-0.9172	980.72	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	20.000	0.0000	0.0000
4	-1.5458E-05	-1.2859E-06	-304.74	-37.642	-35.702	-3.0504	-8.0422	-0.7319	1533.4	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
5	-1.4712E-05	-1.2658E-06	-236.55	-33.643	-26.434	-2.4133	-8.2929	-0.8501	1251.7	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	20.000	0.0000	0.0000
6	-1.4707E-05	-1.3471E-06	-236.82	-36.459	-26.457	-2.5768	-8.2917	-0.9105	970.06	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	20.000	0.0000	0.0000
7	-1.5370E-05	-1.2859E-06	-301.39	-37.638	-35.486	-3.0499	-7.9931	-0.7319	1522.8	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
8	-1.4629E-05	-1.2650E-06	-233.43	-33.606	-26.237	-2.4093	-8.2318	-0.8498	1241.1	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	20.000	0.0000	0.0000
9	-1.4624E-05	-1.3462E-06	-233.69	-36.418	-26.258	-2.5724	-8.2305	-0.9102	959.40	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	20.000	0.0000	0.0000
10	-1.5282E-05	-1.2858E-06	-298.07	-37.638	-35.275	-3.0499	-7.9458	-0.7319	1512.1	7.8279E+06	7.8279E+06
x(M)	9.8000	10.000	0.0000	0.0000	7.6000	8.0000	10.000	13.600	20.000	0.0000	0.0000
11	-1.4556E-05	-1.2656E-06	-230.92	-33.635	-26.114	-2.4124	-8.1718	-0.8500	1230.4	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	20.000	0.0000	0.0000
12	-1.4550E-05	-1.3468E-06	-231.17	-36.449	-26.135	-2.5757	-8.1705	-0.9104	948.74	7.8279E+06	7.8279E+06
x(M)	10.600	11.000	0.0000	0.0000	8.4000	8.8000	13.600	20.000	20.000	0.0000	0.0000
13	-1.5262E-05	-1.2924E-06	-305.79	-38.752	-36.656	-3.1928	-8.4228	-0.7330	1501.4	7.8279E+06	7.8279E+06
x(M)	9.6000	9.8000	0.0000	0.0000	7.6000	7.8000	9.8000	10.200	20.000	0.0000	0.0000
14	-1.4803E-05	-1.3114E-06	-248.30	-35.866	-28.575	-2.6558	-8.0425	-0.8565	1219.8	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	20.000	0.0000	0.0000
15	-1.4815E-05	-1.3982E-06	-249.68	-38.976	-28.752	-2.8501	-8.0290	-0.9174	938.08	7.8279E+06	7.8279E+06
x(M)	10.200	10.600	0.0000	0.0000	8.0000	8.6000	13.600	20.000	20.000	0.0000	0.0000
Min.	-1.5614E-05	-1.3998E-06	-319.75	-39.052	-37.601	-3.1976	-8.6413	-0.9174	938.08	7.8279E+06	7.8279E+06
Pile N.	1	3	1	3	1	1	1	15	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
1	5.5459E-04	4.6312E-05	171.41	14.446	147.88	15.247	67.070	6.2433	2516.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
2	5.5459E-04	4.9543E-05	146.06	13.135	116.47	13.235	47.088	4.7300	2056.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
3	5.5459E-04	5.2774E-05	146.65	14.065	117.24	14.320	5.1108	1780.7	1780.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
4	5.5136E-04	4.6312E-05	165.38	14.015	140.29	14.635	62.354	5.8490	2460.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
5	5.5136E-04	4.9543E-05	136.37	12.298	104.67	12.102	40.471	4.1006	1972.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
6	5.5136E-04	5.2774E-05	136.48	13.126	104.85	13.039	40.557	4.3992	1693.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
7	5.4813E-04	4.6312E-05	164.41	14.013	139.09	14.634	61.898	5.8478	2439.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
8	5.4813E-04	4.9543E-05	135.46	12.285	103.58	12.084	40.086	4.0910	1952.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
9	5.4813E-04	5.2774E-05	135.56	13.111	103.76	13.019	40.167	4.3885	1673.2	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
10	5.4490E-04	4.6312E-05	163.46	14.013	137.91	14.634	61.455	5.8478	2418.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
11	5.4490E-04	4.9543E-05	134.80	12.295	102.80	12.098	39.873	4.0987	1934.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	6.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
12	5.4490E-04	5.2774E-05	134.90	13.122	102.98	13.034	39.954	4.3967	1655.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.4000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
13	5.4167E-04	4.6312E-05	167.29	14.433	142.78	15.229	65.053	6.2313	2431.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
14	5.4167E-04	4.9543E-05	142.48	13.109	112.14	13.200	45.548	4.7097	1976.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
15	5.4167E-04	5.2774E-05	143.07	14.037	112.90	14.282	45.978	5.0890	1700.7	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.8000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
Max.	5.5459E-04	5.2774E-05	171.41	14.446	147.88	15.247	67.070	6.2433	2516.2	7.8279E+06	7.8279E+06
Pile N.	1	3	1	1	1	1	1	1	1	1	1

LOAD CASE : 22

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 302 di 420

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5886	1.0000
2	0.5822	1.0000
3	0.8661	1.0000
4	0.4966	1.0000
5	0.4951	1.0000
6	0.8030	1.0000
7	0.4951	1.0000
8	0.4937	1.0000
9	0.8027	1.0000
10	0.4961	1.0000
11	0.4947	1.0000
12	0.8027	1.0000
13	0.5845	1.0000
14	0.5782	1.0000
15	0.8633	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
32525.5	-1789.23	204.774
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-141.490	1992.58	5425.11

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.16587E-03	-4.51515E-04	4.91785E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-2.73453E-07	2.27715E-06	2.70793E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.0645E-03	-4.4905E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
2	1.1864E-03	-4.4905E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
3	1.3082E-03	-4.4905E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
4	1.0543E-03	-4.5028E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
5	1.1761E-03	-4.5028E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
6	1.2980E-03	-4.5028E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
7	1.0440E-03	-4.5151E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
8	1.1659E-03	-4.5151E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
9	1.2877E-03	-4.5151E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
10	1.0338E-03	-4.5275E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
11	1.1556E-03	-4.5275E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
12	1.2775E-03	-4.5275E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
13	1.0235E-03	-4.5398E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
14	1.1454E-03	-4.5398E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
15	1.2672E-03	-4.5398E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
MINIMUM	1.0235E-03	-4.5398E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	1.3082E-03	-4.4905E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	1982.1	-114.91	12.833	-0.1005	-34.665	-301.13
2	2206.0	-114.19	13.135	-0.1005	-35.635	-299.74
3	2429.9	-142.59	16.810	-0.1005	-43.110	-354.16
4	1963.3	-104.69	11.670	-0.1005	-32.315	-280.93
5	2187.2	-104.50	11.999	-0.1005	-33.335	-280.57
6	2411.1	-137.19	16.132	-0.1005	-41.838	-344.51
7	1944.5	-104.86	11.650	-0.1005	-32.274	-281.62

APPALTATORE:

Consorzio



Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandataria



Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA
IF28LOTTO
01CODIFICA
E ZZ CLDOCUMENTO
VI0103 001REV.
BFOGLIO
303 di
420

8	2168.4	-104.68	11.979	-0.1005	-33.295	-281.28
9	2392.2	-137.61	16.129	-0.1005	-41.832	-345.72
10	1925.7	-105.33	11.664	-0.1005	-32.302	-282.94
11	2149.5	-105.15	11.994	-0.1005	-33.324	-282.60
12	2373.4	-138.06	16.129	-0.1005	-41.832	-346.98
13	1906.8	-115.99	12.784	-0.1005	-34.566	-304.74
14	2130.7	-115.26	13.084	-0.1005	-35.533	-303.32
15	2354.6	-144.21	16.781	-0.1005	-43.055	-358.88
MINIMUM	1906.8	-144.21	11.650	-0.1005	-43.110	-358.88
Pile N.	13	15	7	1	3	15
MAXIMUM	2429.9	-104.50	16.810	-0.1005	-32.274	-280.57
Pile N.	3	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.0645E-03	-4.4905E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
2	1.1864E-03	-4.4905E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
3	1.3082E-03	-4.4905E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
4	1.0543E-03	-4.5028E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
5	1.1761E-03	-4.5028E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
6	1.2980E-03	-4.5028E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
7	1.0440E-03	-4.5151E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
8	1.1659E-03	-4.5151E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
9	1.2877E-03	-4.5151E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
10	1.0338E-03	-4.5275E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
11	1.1556E-03	-4.5275E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
12	1.2775E-03	-4.5275E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
13	1.0235E-03	-4.5398E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
14	1.1454E-03	-4.5398E-04	4.9178E-05	-2.7345E-07	2.2771E-06	2.7079E-05
15	1.2672E-03	-4.5398E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
MINIMUM	1.0235E-03	-4.5398E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	1.3082E-03	-4.4905E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	1982.1	-114.91	12.833	-0.1005	-34.665	-301.13
2	2206.0	-114.19	13.135	-0.1005	-35.635	-299.74
3	2429.9	-142.59	16.810	-0.1005	-43.110	-354.16
4	1963.3	-104.69	11.670	-0.1005	-32.315	-280.93
5	2187.2	-104.50	11.999	-0.1005	-33.335	-280.57
6	2411.1	-137.19	16.132	-0.1005	-41.838	-344.51
7	1944.5	-104.86	11.650	-0.1005	-32.274	-281.62
8	2168.4	-104.68	11.979	-0.1005	-33.295	-281.28
9	2392.2	-137.61	16.129	-0.1005	-41.832	-345.72
10	1925.7	-105.33	11.664	-0.1005	-32.302	-282.94
11	2149.5	-105.15	11.994	-0.1005	-33.324	-282.60
12	2373.4	-138.06	16.129	-0.1005	-41.832	-346.98
13	1906.8	-115.99	12.784	-0.1005	-34.566	-304.74
14	2130.7	-115.26	13.084	-0.1005	-35.533	-303.32
15	2354.6	-144.21	16.781	-0.1005	-43.055	-358.88
MINIMUM	1906.8	-144.21	11.650	-0.1005	-43.110	-358.88
Pile N.	13	15	7	1	3	15
MAXIMUM	2429.9	-104.50	16.810	-0.1005	-32.274	-280.57
Pile N.	3	5	3	1	7	5

PILE GROUP STRESS, KN/ M**2

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2036.5
2	2159.3
3	2451.8
4	1964.5
5	2090.4
6	2411.8
7	1955.9
8	2081.9
9	2404.7
10	1949.2
11	2075.2
12	2397.9
13	2004.7
14	2127.4
15	2423.3
MINIMUM	1949.2
Pile N.	10

APPALDATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti 						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO V10103 001	REV. B	FOGLIO 304 di 420

MAXIMUM 2451.8
Pile N. 3

* EFFECTS FOR LATERALLY LOADED PILE *




* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-4.4905E-04	-1.2738E-06	-119.14	-34.665	-114.92	-2.5964	-42.256	-0.8255	1121.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.6000	5.6000	0.0000	0.0000	8.4000	2.6000	13.6000	20.000	0.0000	0.0000
2	-4.4905E-04	-1.3037E-06	-118.60	-35.635	-114.20	-2.6461	-41.848	-0.8494	1248.4	7.8279E+06	7.8279E+06
x(M)	0.0000	10.6000	5.6000	0.0000	0.0000	8.6000	2.6000	13.6000	20.000	0.0000	0.0000
3	-4.4905E-04	-1.4067E-06	-139.55	-43.110	-142.60	-3.4856	-59.373	-0.8008	1375.0	7.8279E+06	7.8279E+06
x(M)	0.0000	9.8000	5.2000	0.0000	0.0000	7.8000	2.6000	10.2000	20.000	0.0000	0.0000
4	-4.5028E-04	-1.2259E-06	-111.47	-32.315	-104.69	-2.3375	-36.423	-0.8205	1111.0	7.8279E+06	7.8279E+06
x(M)	0.0000	11.0000	5.8000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
5	-4.5028E-04	-1.2565E-06	-111.34	-33.335	-104.51	-2.3951	-36.326	-0.8433	1237.7	7.8279E+06	7.8279E+06
x(M)	0.0000	11.0000	5.8000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
6	-4.5028E-04	-1.3992E-06	-135.70	-41.838	-137.20	-3.3245	-55.743	-0.8054	1364.4	7.8279E+06	7.8279E+06
x(M)	0.0000	10.0000	5.4000	0.0000	0.0000	8.0000	2.6000	13.6000	20.000	0.0000	0.0000
7	-4.5151E-04	-1.2251E-06	-111.64	-32.274	-104.86	-2.3331	-36.435	-0.8202	1100.4	7.8279E+06	7.8279E+06
x(M)	0.0000	11.0000	5.8000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
8	-4.5151E-04	-1.2557E-06	-111.52	-33.295	-104.68	-2.3909	-36.343	-0.8430	1227.0	7.8279E+06	7.8279E+06
x(M)	0.0000	11.0000	5.8000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
9	-4.5151E-04	-1.3991E-06	-136.06	-41.832	-137.62	-3.3237	-55.895	-0.8055	1353.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.0000	5.4000	0.0000	0.0000	8.0000	2.6000	13.6000	20.000	0.0000	0.0000
10	-4.5275E-04	-1.2256E-06	-112.05	-32.302	-105.34	-2.3361	-36.614	-0.8204	1089.7	7.8279E+06	7.8279E+06
x(M)	0.0000	11.0000	5.8000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
11	-4.5275E-04	-1.2563E-06	-111.92	-33.324	-105.16	-2.3939	-36.521	-0.8432	1216.4	7.8279E+06	7.8279E+06
x(M)	0.0000	11.0000	5.8000	0.0000	0.0000	8.8000	2.6000	13.6000	20.000	0.0000	0.0000
12	-4.5275E-04	-1.3991E-06	-136.44	-41.832	-138.07	-3.3237	-56.063	-0.8055	1343.1	7.8279E+06	7.8279E+06
x(M)	0.0000	10.0000	5.4000	0.0000	0.0000	8.0000	2.6000	13.6000	20.000	0.0000	0.0000
13	-4.5398E-04	-1.2720E-06	-120.11	-34.566	-116.00	-2.5845	-42.506	-0.8258	1079.1	7.8279E+06	7.8279E+06
x(M)	0.0000	10.6000	5.6000	0.0000	0.0000	8.4000	2.6000	13.6000	20.000	0.0000	0.0000
14	-4.5398E-04	-1.3016E-06	-119.56	-35.533	-115.27	-2.6350	-42.094	-0.8497	1205.7	7.8279E+06	7.8279E+06
x(M)	0.0000	10.6000	5.6000	0.0000	0.0000	8.6000	2.6000	13.6000	20.000	0.0000	0.0000
15	-4.5398E-04	-1.4062E-06	-140.90	-43.055	-144.22	-3.4781	-59.925	-0.7984	1332.4	7.8279E+06	7.8279E+06
x(M)	0.0000	10.0000	5.2000	0.0000	0.0000	7.8000	2.6000	10.2000	20.000	0.0000	0.0000
Min.	-4.5398E-04	-1.4067E-06	-140.90	-43.110	-144.22	-3.4856	-59.925	-0.8497	1079.1	7.8279E+06	7.8279E+06
Pile N.	13	3	15	3	15	3	15	14	13	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.1959E-05	4.7948E-05	301.13	12.768	24.194	12.834	7.5133	4.6168	2036.5	7.8279E+06	7.8279E+06
x(M)	10.6000	0.0000	0.0000	5.8000	8.4000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
2	1.1944E-05	4.9178E-05	299.74	13.046	24.034	13.136	7.5198	4.6996	2159.3	7.8279E+06	7.8279E+06
x(M)	10.6000	0.0000	0.0000	5.8000	8.4000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
3	1.2537E-05	5.0409E-05	354.16	15.750	30.852	16.812	7.0845	6.8432	2451.8	7.8279E+06	7.8279E+06
x(M)	9.8000	0.0000	0.0000	5.4000	7.8000	0.0000	10.2000	2.6000	0.0000	0.0000	0.0000
4	1.1583E-05	4.7948E-05	280.93	11.908	21.813	11.671	7.5143	3.9685	1964.5	7.8279E+06	7.8279E+06
x(M)	10.8000	0.0000	0.0000	6.0000	8.6000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
5	1.1577E-05	4.9178E-05	280.57	12.206	21.777	12.000	7.5127	4.0682	2090.4	7.8279E+06	7.8279E+06
x(M)	10.8000	0.0000	0.0000	6.0000	8.6000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
6	1.2496E-05	5.0409E-05	344.51	15.269	29.471	16.133	6.9140	6.4063	2411.8	7.8279E+06	7.8279E+06
x(M)	10.0000	0.0000	0.0000	5.4000	8.0000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
7	1.1604E-05	4.7948E-05	281.62	11.894	21.831	11.651	7.5347	3.9578	1955.9	7.8279E+06	7.8279E+06
x(M)	10.8000	0.0000	0.0000	6.0000	8.6000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
8	1.1599E-05	4.9178E-05	281.28	12.192	21.799	11.980	7.5332	4.0578	2081.9	7.8279E+06	7.8279E+06
x(M)	10.8000	0.0000	0.0000	6.0000	8.8000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
9	1.2530E-05	5.0409E-05	345.72	15.266	29.547	16.130	6.9372	6.4044	2404.7	7.8279E+06	7.8279E+06
x(M)	10.0000	0.0000	0.0000	5.4000	8.0000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
10	1.1641E-05	4.7948E-05	282.94	11.904	21.921	11.665	7.5595	3.9652	1949.2	7.8279E+06	7.8279E+06
x(M)	10.8000	0.0000	0.0000	6.0000	8.6000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
11	1.1635E-05	4.9178E-05	282.60	12.202	21.887	11.995	7.5579	4.0654	2075.2	7.8279E+06	7.8279E+06
x(M)	10.8000	0.0000	0.0000	6.0000	8.8000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
12	1.2564E-05	5.0409E-05	346.98	15.266	29.630	16.130	6.9592	6.4044	2397.9	7.8279E+06	7.8279E+06
x(M)	10.0000	0.0000	0.0000	5.4000	8.0000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
13	1.2075E-05	4.7948E-05	304.74	12.733	24.357	12.785	7.6105	4.5884	2004.7	7.8279E+06	7.8279E+06
x(M)	10.6000	0.0000	0.0000	5.8000	8.4000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
14	1.2058E-05	4.9178E-05	303.32	13.009	24.194	13.085	7.6164	4.6705	2127.4	7.8279E+06	7.8279E+06
x(M)	10.6000	0.0000	0.0000	5.8000	8.4000	0.0000	13.6000	2.6000	0.0000	0.0000	0.0000
15	1.2669E-05	5.0409E-05	358.88	15.729	31.134	16.783	7.1435	6.8242	2423.3	7.8279E+06	7.8279E+06
x(M)	9.8000	0.0000	0.0000	5.4000	7.8000	0.0000	10.2000	2.6000	0.0000	0.0000	0.0000
Max.	1.2669E-05	5.0409E-05	358.88	15.750	31.134	16.812	7.6164	6.8432	2451.8	7.8279E+06	7.8279E+06
Pile N.	15	3	15	3	15	3	14	3	3	1	1

LOAD CASE : 23

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5922	1.0000
2	0.5850	1.0000
3	0.8661	1.0000
4	0.4975	1.0000
5	0.4951	1.0000
6	0.8010	1.0000
7	0.4956	1.0000
8	0.4934	1.0000
9	0.8004	1.0000
10	0.4967	1.0000
11	0.4944	1.0000
12	0.8004	1.0000
13	0.5845	1.0000
14	0.5774	1.0000
15	0.8608	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
32253.6	-1568.91	241.200
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-289.441	2880.59	4286.71

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.15600E-03	-3.92444E-04	5.91268E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-7.92480E-07	3.15080E-06	2.25484E-05





THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.0829E-03	-3.8531E-04	5.5561E-05	-7.9248E-07	3.1508E-06	2.2548E-05
2	1.1844E-03	-3.8531E-04	5.9127E-05	-7.9248E-07	3.1508E-06	2.2548E-05
3	1.2858E-03	-3.8531E-04	6.2693E-05	-7.9248E-07	3.1508E-06	2.2548E-05
4	1.0687E-03	-3.8888E-04	5.5561E-05	-7.9248E-07	3.1508E-06	2.2548E-05
5	1.1702E-03	-3.8888E-04	5.9127E-05	-7.9248E-07	3.1508E-06	2.2548E-05
6	1.2717E-03	-3.8888E-04	6.2693E-05	-7.9248E-07	3.1508E-06	2.2548E-05
7	1.0545E-03	-3.9244E-04	5.5561E-05	-7.9248E-07	3.1508E-06	2.2548E-05
8	1.1560E-03	-3.9244E-04	5.9127E-05	-7.9248E-07	3.1508E-06	2.2548E-05
9	1.2575E-03	-3.9244E-04	6.2693E-05	-7.9248E-07	3.1508E-06	2.2548E-05
10	1.0404E-03	-3.9601E-04	5.5561E-05	-7.9248E-07	3.1508E-06	2.2548E-05
11	1.1418E-03	-3.9601E-04	5.9127E-05	-7.9248E-07	3.1508E-06	2.2548E-05
12	1.2433E-03	-3.9601E-04	6.2693E-05	-7.9248E-07	3.1508E-06	2.2548E-05
13	1.0262E-03	-3.9958E-04	5.5561E-05	-7.9248E-07	3.1508E-06	2.2548E-05
14	1.1277E-03	-3.9958E-04	5.9127E-05	-7.9248E-07	3.1508E-06	2.2548E-05
15	1.2291E-03	-3.9958E-04	6.2693E-05	-7.9248E-07	3.1508E-06	2.2548E-05
MINIMUM Pile N.	13	13	1	1	1	1
MAXIMUM Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2015.9	-99.574	14.451	-0.2913	-38.174	-261.88
2	2202.3	-98.880	15.456	-0.2913	-41.241	-260.53
3	2388.8	-123.08	20.571	-0.2913	-52.214	-306.91
4	1989.9	-91.230	13.096	-0.2913	-35.447	-246.14
5	2176.3	-90.970	14.070	-0.2913	-38.445	-245.63
6	2362.7	-119.17	19.709	-0.2913	-50.599	-300.84
7	1963.8	-92.047	13.067	-0.2913	-35.389	-248.81

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

8	2150.2	-91.799	14.043	-0.2913	-38.387	-248.32
9	2336.7	-120.43	19.702	-0.2913	-50.585	-304.41
10	1937.8	-93.171	13.083	-0.2913	-35.421	-252.10
11	2124.2	-92.920	14.059	-0.2913	-38.421	-251.61
12	2310.6	-121.74	19.702	-0.2913	-50.585	-308.07
13	1911.7	-103.27	14.345	-0.2913	-37.963	-273.48
14	2098.1	-102.54	15.343	-0.2913	-41.014	-272.06
15	2284.6	-128.09	20.504	-0.2913	-52.087	-321.15
MINIMUM	1911.7	-128.09	13.067	-0.2913	-52.214	-321.15
Pile N.	13	15	7	1	3	15
MAXIMUM	2388.8	-90.970	20.571	-0.2913	-35.389	-245.63
Pile N.	3	5	3	1	7	5

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *



PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
1	1.0829E-03	-3.8531E-04	5.5561E-05	-7.9248E-07	3.1508E-06	2.2548E-05
2	1.1844E-03	-3.8531E-04	5.9127E-05	-7.9248E-07	3.1508E-06	2.2548E-05
3	1.2858E-03	-3.8531E-04	6.2693E-05	-7.9248E-07	3.1508E-06	2.2548E-05
4	1.0687E-03	-3.8888E-04	5.5561E-05	-7.9248E-07	3.1508E-06	2.2548E-05
5	1.1702E-03	-3.8888E-04	5.9127E-05	-7.9248E-07	3.1508E-06	2.2548E-05
6	1.2717E-03	-3.8888E-04	6.2693E-05	-7.9248E-07	3.1508E-06	2.2548E-05
7	1.0545E-03	-3.9244E-04	5.5561E-05	-7.9248E-07	3.1508E-06	2.2548E-05
8	1.1560E-03	-3.9244E-04	5.9127E-05	-7.9248E-07	3.1508E-06	2.2548E-05
9	1.2575E-03	-3.9244E-04	6.2693E-05	-7.9248E-07	3.1508E-06	2.2548E-05
10	1.0404E-03	-3.9601E-04	5.5561E-05	-7.9248E-07	3.1508E-06	2.2548E-05
11	1.1418E-03	-3.9601E-04	5.9127E-05	-7.9248E-07	3.1508E-06	2.2548E-05
12	1.2433E-03	-3.9601E-04	6.2693E-05	-7.9248E-07	3.1508E-06	2.2548E-05
13	1.0262E-03	-3.9958E-04	5.5561E-05	-7.9248E-07	3.1508E-06	2.2548E-05
14	1.1277E-03	-3.9958E-04	5.9127E-05	-7.9248E-07	3.1508E-06	2.2548E-05
15	1.2291E-03	-3.9958E-04	6.2693E-05	-7.9248E-07	3.1508E-06	2.2548E-05
MINIMUM	1.0262E-03	-3.9958E-04	5.5561E-05	-7.9248E-07	3.1508E-06	2.2548E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	1.2858E-03	-3.8531E-04	6.2693E-05	-7.9248E-07	3.1508E-06	2.2548E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2015.9	-99.574	14.451	-0.2913	-38.174	-261.88
2	2202.3	-98.880	15.456	-0.2913	-41.241	-260.53
3	2388.8	-123.08	20.571	-0.2913	-52.214	-306.91
4	1989.9	-91.230	13.096	-0.2913	-35.447	-246.14
5	2176.3	-90.970	14.070	-0.2913	-38.445	-245.63
6	2362.7	-119.17	19.709	-0.2913	-50.599	-300.84
7	1963.8	-92.047	13.067	-0.2913	-35.389	-248.81
8	2150.2	-91.799	14.043	-0.2913	-38.387	-248.32
9	2336.7	-120.43	19.702	-0.2913	-50.585	-304.41
10	1937.8	-93.171	13.083	-0.2913	-35.421	-252.10
11	2124.2	-92.920	14.059	-0.2913	-38.421	-251.61
12	2310.6	-121.74	19.702	-0.2913	-50.585	-308.07
13	1911.7	-103.27	14.345	-0.2913	-37.963	-273.48
14	2098.1	-102.54	15.343	-0.2913	-41.014	-272.06
15	2284.6	-128.09	20.504	-0.2913	-52.087	-321.15
MINIMUM	1911.7	-128.09	13.067	-0.2913	-52.214	-321.15
Pile N.	13	15	7	1	3	15
MAXIMUM	2388.8	-90.970	20.571	-0.2913	-35.389	-245.63
Pile N.	3	5	3	1	7	5

PILE GROUP STRESS, KN/ M**2

1	1939.5
2	2042.3
3	2291.3
4	1876.6
5	1981.9
6	2257.7
7	1869.8
8	1975.1
9	2253.6
10	1864.9
11	1970.2
12	2249.8
13	1915.1
14	2017.7
15	2274.7
MINIMUM	1864.9
Pile N.	10

APPALTATORE:		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
Consorzio	Soci						
  							
PROGETTAZIONE:							
Mandataria	Mandanti						
  							
PROGETTO ESECUTIVO		COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		IF28	01	E ZZ CL	VI0103 001	B	307 di 420

MAXIMUM 2291.3
Pile N. 3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-Dir M	DISPL. z-Dir M	MOMENT z-Dir KN- M	MOMENT y-Dir KN- M	SHEAR y-Dir KN	SHEAR z-Dir KN	SOIL REACT y-Dir KN/ M	SOIL REACT z-Dir KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-Dir KN- M**2	FLEX. RIG. y-Dir KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-3.8531E-04	-1.4801E-06	-102.53	-38.174	-99.580	-3.0094	-36.574	-0.9367	1140.8	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.4000	2.6000	13.600	20.000	0.0000	0.0000
2	-3.8531E-04	-1.5713E-06	-102.00	-41.241	-98.887	-3.1827	-36.178	-1.0054	1246.3	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.4000	2.6000	13.600	20.000	0.0000	0.0000
3	-3.8531E-04	-1.7496E-06	-119.78	-52.214	-123.08	-4.3255	-51.106	-0.9936	1351.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.8000	5.2000	0.0000	0.0000	7.8000	2.6000	10.200	20.000	0.0000	0.0000
4	-3.8888E-04	-1.4272E-06	-96.390	-35.447	-91.237	-2.6988	-31.634	-0.9338	1126.0	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
5	-3.8888E-04	-1.5141E-06	-96.200	-38.445	-90.977	-2.8694	-31.497	-1.0001	1231.5	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
6	-3.8888E-04	-1.7395E-06	-117.16	-50.599	-119.18	-4.1173	-48.218	-0.9896	1337.0	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.4000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
7	-3.9244E-04	-1.4256E-06	-97.128	-35.389	-92.053	-2.6927	-31.846	-0.9334	1111.3	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
8	-3.9244E-04	-1.5125E-06	-96.947	-38.387	-91.805	-2.8632	-31.716	-0.9996	1216.8	7.8279E+06	7.8279E+06
x(M)	0.0000	11.000	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
9	-3.9244E-04	-1.7393E-06	-118.22	-50.585	-120.44	-4.1155	-48.677	-0.9899	1322.3	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.4000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
10	-3.9601E-04	-1.4264E-06	-98.104	-35.421	-93.177	-2.6959	-32.225	-0.9336	1096.6	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
11	-3.9601E-04	-1.5133E-06	-97.922	-38.421	-92.927	-2.8667	-32.094	-0.9999	1202.0	7.8279E+06	7.8279E+06
x(M)	0.0000	10.800	5.8000	0.0000	0.0000	8.8000	2.6000	13.600	20.000	0.0000	0.0000
12	-3.9601E-04	-1.7393E-06	-119.32	-50.585	-121.75	-4.1154	-49.164	-0.9899	1307.5	7.8279E+06	7.8279E+06
x(M)	0.0000	10.000	5.4000	0.0000	0.0000	8.0000	2.6000	13.600	20.000	0.0000	0.0000
13	-3.9958E-04	-1.4769E-06	-105.77	-37.963	-103.28	-2.9844	-37.631	-0.9376	1081.8	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.6000	0.0000	0.0000	8.4000	2.6000	13.600	20.000	0.0000	0.0000
14	-3.9958E-04	-1.5673E-06	-105.23	-41.014	-102.55	-3.1555	-37.221	-1.0061	1187.3	7.8279E+06	7.8279E+06
x(M)	0.0000	10.600	5.8000	0.0000	0.0000	8.4000	2.6000	13.600	20.000	0.0000	0.0000
15	-3.9958E-04	-1.7482E-06	-123.96	-52.087	-128.10	-4.3082	-52.911	-0.9880	1292.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.8000	5.4000	0.0000	0.0000	7.8000	2.6000	10.200	20.000	0.0000	0.0000
Min.	-3.9958E-04	-1.7496E-06	-123.96	-52.214	-128.10	-4.3255	-52.911	-1.0061	1081.8	7.8279E+06	7.8279E+06
Pile N.	13	3	15	3	15	3	15	14	13	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-Dir M	DISPL. z-Dir M	MOMENT z-Dir KN- M	MOMENT y-Dir KN- M	SHEAR y-Dir KN	SHEAR z-Dir KN	SOIL REACT y-Dir KN/ M	SOIL REACT z-Dir KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-Dir KN- M**2	FLEX. RIG. y-Dir KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.0268E-05	5.5561E-05	261.88	14.789	20.855	14.452	6.4697	5.2911	1939.5	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.6000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
2	1.0252E-05	5.9127E-05	260.53	15.672	20.699	15.457	6.4762	5.6042	2042.3	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.8000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
3	1.0756E-05	6.2693E-05	306.91	19.546	26.492	20.573	6.0837	8.4363	2291.3	7.8279E+06	7.8279E+06
x(M)	9.8000	0.0000	0.0000	5.4000	7.8000	0.0000	10.200	2.6000	0.0000	0.0000	0.0000
4	9.9964E-06	5.5561E-05	246.14	13.775	18.877	13.096	6.5192	4.5302	1876.6	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.8000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
5	9.9858E-06	5.9127E-05	245.63	14.640	18.826	14.072	6.5163	4.8301	1981.9	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.8000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
6	1.0790E-05	6.2693E-05	300.84	18.937	25.440	19.710	6.0135	7.8798	2257.7	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	8.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
7	1.0074E-05	5.5561E-05	248.81	13.753	19.012	13.068	6.5830	4.5148	1869.8	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.8000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
8	1.0064E-05	5.9127E-05	248.32	14.618	18.964	14.044	6.5801	4.8148	1975.1	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.8000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
9	1.0888E-05	6.2693E-05	304.41	18.932	25.669	19.703	6.0792	7.8752	2253.6	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	8.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
10	1.0168E-05	5.5561E-05	252.10	13.765	19.213	13.084	6.6512	4.5232	1864.9	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.8000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
11	1.0158E-05	5.9127E-05	251.61	14.630	19.164	14.060	6.6483	4.8238	1970.2	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	5.8000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
12	1.0986E-05	6.2693E-05	308.07	18.931	25.908	19.703	6.1429	7.8752	2249.8	7.8279E+06	7.8279E+06
x(M)	10.000	0.0000	0.0000	5.4000	8.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
13	1.0621E-05	5.5561E-05	273.48	14.707	21.465	14.346	6.7470	5.2299	1915.1	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.6000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
14	1.0601E-05	5.9127E-05	272.06	15.590	21.300	15.344	6.7523	5.5389	2017.7	7.8279E+06	7.8279E+06
x(M)	10.600	0.0000	0.0000	5.8000	8.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
15	1.1146E-05	6.2693E-05	321.15	19.499	27.389	20.505	6.2800	8.3917	2274.7	7.8279E+06	7.8279E+06
x(M)	9.8000	0.0000	0.0000	5.4000	7.8000	0.0000	10.200	2.6000	0.0000	0.0000	0.0000
Max.	1.1146E-05	6.2693E-05	321.15	19.546	27.389	20.573	6.7523	8.4363	2291.3	7.8279E+06	7.8279E+06
Pile N.	15	3	15	3	15	3	14	3	3	1	1

LOAD CASE : 24

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria Mandanti   													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 10%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 10%;">REV.</td> <td style="width: 10%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>308 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	308 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	308 di 420								

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8527	1.0000
2	0.7942	1.0000
3	0.8661	1.0000
4	0.5747	1.0000
5	0.4961	1.0000
6	0.5941	1.0000
7	0.5418	1.0000
8	0.4644	1.0000
9	0.5624	1.0000
10	0.5418	1.0000
11	0.4644	1.0000
12	0.5624	1.0000
13	0.5845	1.0000
14	0.5016	1.0000
15	0.6039	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30306.0	-276.510	278.688
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
11.6700	2911.78	-6450.81

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.08533E-03	-1.68898E-05	6.90475E-05
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-2.69412E-07	3.28147E-06	-1.43499E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.1794E-03	-1.4465E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
2	1.1149E-03	-1.4465E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
3	1.0503E-03	-1.4465E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
4	1.1647E-03	-1.5678E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
5	1.1001E-03	-1.5678E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
6	1.0355E-03	-1.5678E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
7	1.1499E-03	-1.6890E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
8	1.0853E-03	-1.6890E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
9	1.0208E-03	-1.6890E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
10	1.1351E-03	-1.8102E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
11	1.0706E-03	-1.8102E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
12	1.0060E-03	-1.8102E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
13	1.1204E-03	-1.9314E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
14	1.0558E-03	-1.9314E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
15	9.9122E-04	-1.9314E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
MINIMUM Pile N.	15	13	1	1	1	1
MAXIMUM Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2193.3	-20.506	22.205	-0.099021	-56.704	-78.060
2	2074.7	-19.932	21.802	-0.099021	-56.354	-76.856
3	1956.0	-20.635	23.321	-0.099021	-59.613	-78.331
4	2166.2	-17.864	17.859	-0.099021	-48.320	-72.657
5	2047.5	-16.819	16.794	-0.099021	-46.507	-70.297
6	1928.9	-18.109	18.954	-0.099021	-51.218	-73.204
7	2139.0	-17.799	17.281	-0.099021	-47.157	-72.780

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandatario

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E ZZ CL	VI0103 001	B	309 di 420

8	2020.4	-16.701	16.181	-0.099021	-45.243	-70.277
9	1901.8	-18.076	18.385	-0.099021	-50.079	-73.403
10	2111.9	-18.161	17.282	-0.099021	-47.158	-73.861
11	1993.3	-17.034	16.183	-0.099021	-45.245	-71.300
12	1874.6	-18.444	18.385	-0.099021	-50.079	-74.497
13	2084.8	-19.116	18.030	-0.099021	-48.659	-76.263
14	1966.1	-17.936	16.899	-0.099021	-46.721	-73.619
15	1847.5	-19.378	19.128	-0.099021	-51.561	-76.841
MINIMUM	1847.5	-20.635	16.181	-0.099021	-59.613	-78.331
Pile N.	15	3	8	1	3	3
MAXIMUM	2193.3	-16.701	23.321	-0.099021	-45.243	-70.277
Pile N.	1	8	3	1	8	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.1794E-03	-1.4465E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
2	1.1149E-03	-1.4465E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
3	1.0503E-03	-1.4465E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
4	1.1647E-03	-1.5678E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
5	1.1001E-03	-1.5678E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
6	1.0355E-03	-1.5678E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
7	1.1499E-03	-1.6890E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
8	1.0853E-03	-1.6890E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
9	1.0208E-03	-1.6890E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
10	1.1351E-03	-1.8102E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
11	1.0706E-03	-1.8102E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
12	1.0060E-03	-1.8102E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
13	1.1204E-03	-1.9314E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
14	1.0558E-03	-1.9314E-05	6.9047E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
15	9.9122E-04	-1.9314E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
MINIMUM	9.9122E-04	-1.9314E-05	6.7835E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.1794E-03	-1.4465E-05	7.0260E-05	-2.6941E-07	3.2815E-06	-1.4350E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2193.3	-20.506	22.205	-0.099021	-56.704	-78.060
2	2074.7	-19.932	21.802	-0.099021	-56.354	-76.856
3	1956.0	-20.635	23.321	-0.099021	-59.613	-78.331
4	2166.2	-17.864	17.859	-0.099021	-48.320	-72.657
5	2047.5	-16.819	16.794	-0.099021	-46.507	-70.297
6	1928.9	-18.109	18.954	-0.099021	-51.218	-73.204
7	2139.0	-17.799	17.281	-0.099021	-47.157	-72.780
8	2020.4	-16.701	16.181	-0.099021	-45.243	-70.277
9	1901.8	-18.076	18.385	-0.099021	-50.079	-73.403
10	2111.9	-18.161	17.282	-0.099021	-47.158	-73.861
11	1993.3	-17.034	16.183	-0.099021	-45.245	-71.300
12	1874.6	-18.444	18.385	-0.099021	-50.079	-74.497
13	2084.8	-19.116	18.030	-0.099021	-48.659	-76.263
14	1966.1	-17.936	16.899	-0.099021	-46.721	-73.619
15	1847.5	-19.378	19.128	-0.099021	-51.561	-76.841
MINIMUM	1847.5	-20.635	16.181	-0.099021	-59.613	-78.331
Pile N.	15	3	8	1	3	3
MAXIMUM	2193.3	-16.701	23.321	-0.099021	-45.243	-70.277
Pile N.	1	8	3	1	8	8

PILE GROUP STRESS, KN/ M**2

1	1532.3
2	1461.6
3	1404.0
4	1489.1
5	1413.1
6	1361.2
7	1472.2
8	1395.6
9	1344.4
10	1459.6
11	1382.8
12	1331.7
13	1452.8
14	1375.8
15	1324.8
MINIMUM	1324.8
Pile N.	15

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 310 di 420
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MAXIMUM 1532.3
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *







* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.6651E-05	-1.8901E-06	-9.5558	-56.704	-20.508	-4.6360	-5.5875	-1.0605	1241.1	7.8279E+06	7.8279E+06
x(M)	2.0000	10.0000	7.0000	0.0000	0.0000	7.8000	3.2000	10.2000	20.000	0.0000	0.0000
2	-2.6864E-05	-1.9134E-06	-9.3579	-56.354	-19.934	-4.5160	-5.2939	-1.1020	1174.0	7.8279E+06	7.8279E+06
x(M)	2.0000	10.0000	7.0000	0.0000	0.0000	8.0000	3.2000	13.6000	20.000	0.0000	0.0000
3	-2.6604E-05	-1.9597E-06	-9.5963	-59.613	-20.637	-4.8532	-5.6538	-1.1150	1106.9	7.8279E+06	7.8279E+06
x(M)	2.0000	9.8000	7.0000	0.0000	0.0000	7.8000	3.2000	10.2000	20.000	0.0000	0.0000
4	-2.8805E-05	-1.7942E-06	-8.7892	-48.320	-17.866	-3.6173	-4.2780	-1.1670	1225.8	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.6000	0.0000	0.0000	8.6000	3.6000	13.6000	20.000	0.0000	0.0000
5	-2.9269E-05	-1.7652E-06	-8.4261	-46.507	-16.821	-3.3643	-3.8355	-1.1814	1158.7	7.8279E+06	7.8279E+06
x(M)	2.2000	11.0000	7.8000	0.0000	0.0000	8.8000	3.6000	13.6000	20.000	0.0000	0.0000
6	-2.8706E-05	-1.8694E-06	-8.8753	-51.218	-18.111	-3.8288	-4.3841	-1.2109	1091.5	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.4000	0.0000	0.0000	8.4000	3.6000	13.6000	20.000	0.0000	0.0000
7	-2.9975E-05	-1.7720E-06	-8.9175	-47.157	-17.801	-3.4893	-4.2045	-1.1670	1210.4	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.6000	0.0000	0.0000	8.6000	3.6000	13.6000	20.000	0.0000	0.0000
8	-3.0461E-05	-1.7354E-06	-8.5220	-45.243	-16.702	-3.2279	-3.7483	-1.1687	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	11.0000	7.8000	0.0000	0.0000	8.8000	3.8000	13.6000	20.000	0.0000	0.0000
9	-2.9862E-05	-1.8472E-06	-9.0116	-50.079	-18.078	-3.7007	-4.3227	-1.2135	1076.2	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.6000	0.0000	0.0000	8.6000	3.6000	13.6000	20.000	0.0000	0.0000
10	-3.0971E-05	-1.7720E-06	-9.1914	-47.158	-18.163	-3.4894	-4.3140	-1.1670	1195.1	7.8279E+06	7.8279E+06
x(M)	2.0000	10.8000	7.6000	0.0000	0.0000	8.6000	3.6000	13.6000	20.000	0.0000	0.0000
11	-3.1439E-05	-1.7354E-06	-8.7814	-45.245	-17.036	-3.2281	-3.8436	-1.1687	1128.0	7.8279E+06	7.8279E+06
x(M)	2.0000	11.0000	7.8000	0.0000	0.0000	8.8000	3.6000	13.6000	20.000	0.0000	0.0000
12	-3.0856E-05	-1.8471E-06	-9.2878	-50.079	-18.446	-3.7006	-4.4350	-1.2135	1060.8	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.4000	0.0000	0.0000	8.6000	3.6000	13.6000	20.000	0.0000	0.0000
13	-3.1729E-05	-1.8003E-06	-9.6904	-48.659	-19.118	-3.6559	-4.6844	-1.1661	1179.7	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.4000	0.0000	0.0000	8.4000	3.4000	13.6000	20.000	0.0000	0.0000
14	-3.2208E-05	-1.7689E-06	-9.2492	-46.721	-17.937	-3.3866	-4.1754	-1.1830	1112.6	7.8279E+06	7.8279E+06
x(M)	2.0000	11.0000	7.6000	0.0000	0.0000	8.8000	3.6000	13.6000	20.000	0.0000	0.0000
15	-3.1625E-05	-1.8743E-06	-9.7843	-51.561	-19.380	-3.8688	-4.8023	-1.2093	1045.5	7.8279E+06	7.8279E+06
x(M)	2.0000	10.6000	7.4000	0.0000	0.0000	8.4000	3.4000	13.6000	20.000	0.0000	0.0000
Min.	-3.2208E-05	-1.9597E-06	-9.7843	-59.613	-20.637	-4.8532	-5.6538	-1.2135	1045.5	7.8279E+06	7.8279E+06
Pile N.	14	3	15	3	3	3	3	9	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	7.5767E-07	6.7835E-05	78.060	21.033	2.1793	22.206	0.8476	9.0344	1532.3	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	5.4000	9.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
2	7.4608E-07	6.9047E-05	76.856	20.801	2.1022	21.803	0.8548	8.6559	1461.6	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	5.4000	9.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
3	7.5968E-07	7.0260E-05	78.331	21.936	2.1949	23.323	0.8451	9.5130	1404.0	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	5.4000	9.4000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
4	6.9665E-07	6.7835E-05	72.657	17.886	1.8620	17.861	0.8335	6.3842	1489.1	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
5	6.5107E-07	6.9047E-05	70.297	17.142	1.7449	16.795	0.7748	5.7095	1413.1	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	6.0000	10.600	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
6	7.0671E-07	7.0260E-05	73.204	18.785	1.8890	18.956	0.8435	6.8310	1361.2	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
7	7.0543E-07	6.7835E-05	72.780	17.461	1.8673	17.282	0.8356	6.0581	1472.2	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	5.8000	10.400	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
8	6.5365E-07	6.9047E-05	70.277	16.692	1.7459	16.182	0.7639	5.3818	1395.6	7.8279E+06	7.8279E+06
x(M)	12.600	0.0000	0.0000	6.0000	10.800	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
9	7.1593E-07	7.0260E-05	73.403	18.374	1.9000	18.386	0.8491	6.5063	1344.4	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
10	7.3155E-07	6.7835E-05	73.861	17.462	1.9231	17.283	0.8586	6.0586	1459.6	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
11	6.7795E-07	6.9047E-05	71.300	16.693	1.7966	16.184	0.7863	5.3824	1382.8	7.8279E+06	7.8279E+06
x(M)	12.600	0.0000	0.0000	6.0000	10.600	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
12	7.4319E-07	7.0260E-05	74.497	18.374	1.9568	18.386	0.8721	6.5063	1331.7	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.200	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
13	7.8304E-07	6.7835E-05	76.263	18.008	2.0506	18.031	0.9079	6.4813	1452.8	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	5.8000	10.000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
14	7.3028E-07	6.9047E-05	73.619	17.216	1.9114	16.900	0.8480	5.7660	1375.8	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	6.0000	10.400	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
15	7.9263E-07	7.0260E-05	76.841	18.907	2.0830	19.129	0.9170	6.9307	1324.8	7.8279E+06	7.8279E+06
x(M)	11.800	0.0000	0.0000	5.8000	10.000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
Max.	7.9263E-07	7.0260E-05	78.331	21.936	2.1949	23.323	0.9170	9.5130	1532.3	7.8279E+06	7.8279E+06
Pile N.	15	3	3	3	3	3	15	3	1	1	1

LOAD CASE : 25

APPALDATTORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria Mandanti   													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1"> <tr> <td>COMMESSA</td> <td>LOTTO</td> <td>CODIFICA</td> <td>DOCUMENTO</td> <td>REV.</td> <td>FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>311 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	311 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	311 di 420								

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.5791	1.0000
3	0.8661	1.0000
4	0.4955	1.0000
5	0.4951	1.0000
6	0.8053	1.0000
7	0.4945	1.0000
8	0.4941	1.0000
9	0.8053	1.0000
10	0.4955	1.0000
11	0.4951	1.0000
12	0.8053	1.0000
13	0.5845	1.0000
14	0.5791	1.0000
15	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30306.0	-276.510	3.00000E-06
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
3.00000E-06	-5.10000E-04	-6450.81

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.08533E-03	-1.56893E-05	-6.56280E-13
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
1.23903E-14	-4.40800E-13	-1.43611E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.1500E-03	-1.5689E-05	-6.0052E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
2	1.0853E-03	-1.5689E-05	-6.5628E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
3	1.0207E-03	-1.5689E-05	-7.1204E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
4	1.1500E-03	-1.5689E-05	-6.0052E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
5	1.0853E-03	-1.5689E-05	-6.5628E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
6	1.0207E-03	-1.5689E-05	-7.1204E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
7	1.1500E-03	-1.5689E-05	-6.0052E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
8	1.0853E-03	-1.5689E-05	-6.5628E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
9	1.0207E-03	-1.5689E-05	-7.1204E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
10	1.1500E-03	-1.5689E-05	-6.0052E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
11	1.0853E-03	-1.5689E-05	-6.5628E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
12	1.0207E-03	-1.5689E-05	-7.1204E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
13	1.1500E-03	-1.5689E-05	-6.0052E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
14	1.0853E-03	-1.5689E-05	-6.5628E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
15	1.0207E-03	-1.5689E-05	-7.1204E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
MINIMUM Pile N.	3	1	3	1	1	1
MAXIMUM Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2139.1	-18.002	2.1707E-07	4.5540E-09	-1.2505E-06	-72.991
2	2020.4	-17.934	1.9941E-07	4.5540E-09	-1.1983E-06	-72.839
3	1901.7	-21.114	1.9311E-07	4.5540E-09	-1.1876E-06	-79.671
4	2139.1	-16.824	2.0911E-07	4.5540E-09	-1.2268E-06	-70.332
5	2020.4	-16.819	1.9323E-07	4.5540E-09	-1.1787E-06	-70.320
6	1901.7	-20.504	1.9133E-07	4.5540E-09	-1.1807E-06	-78.398
7	2139.1	-16.809	2.0901E-07	4.5540E-09	-1.2265E-06	-70.298

APPALTATORE:

Consorzio

Soci



PROGETTAZIONE:

Mandatario

Mandanti



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 312 di 420
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8	2020.4	-16.804	1.9315E-07	4.5540E-09	-1.1785E-06	-70.287
9	1901.7	-20.504	1.9133E-07	4.5540E-09	-1.1807E-06	-78.398
10	2139.1	-16.824	2.0911E-07	4.5540E-09	-1.2268E-06	-70.332
11	2020.4	-16.819	1.9323E-07	4.5540E-09	-1.1787E-06	-70.320
12	1901.7	-20.504	1.9133E-07	4.5540E-09	-1.1807E-06	-78.398
13	2139.1	-18.002	2.1707E-07	4.5540E-09	-1.2505E-06	-72.991
14	2020.4	-17.934	1.9941E-07	4.5540E-09	-1.1983E-06	-72.839
15	1901.7	-21.114	1.9311E-07	4.5540E-09	-1.1876E-06	-79.671
MINIMUM	1901.7	-21.114	1.9133E-07	4.5540E-09	-1.2505E-06	-79.671
Pile N.	3	3	6	1	1	3
MAXIMUM	2139.1	-16.804	2.1707E-07	4.5540E-09	-1.1785E-06	-70.287
Pile N.	1	8	1	1	8	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.1500E-03	-1.5689E-05	-6.0052E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
2	1.0853E-03	-1.5689E-05	-6.5628E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
3	1.0207E-03	-1.5689E-05	-7.1204E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
4	1.1500E-03	-1.5689E-05	-6.0052E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
5	1.0853E-03	-1.5689E-05	-6.5628E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
6	1.0207E-03	-1.5689E-05	-7.1204E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
7	1.1500E-03	-1.5689E-05	-6.0052E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
8	1.0853E-03	-1.5689E-05	-6.5628E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
9	1.0207E-03	-1.5689E-05	-7.1204E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
10	1.1500E-03	-1.5689E-05	-6.0052E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
11	1.0853E-03	-1.5689E-05	-6.5628E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
12	1.0207E-03	-1.5689E-05	-7.1204E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
13	1.1500E-03	-1.5689E-05	-6.0052E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
14	1.0853E-03	-1.5689E-05	-6.5628E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
15	1.0207E-03	-1.5689E-05	-7.1204E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
MINIMUM	1.0207E-03	-1.5689E-05	-7.1204E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.1500E-03	-1.5689E-05	-6.0052E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2139.1	-18.002	2.1707E-07	4.5540E-09	-1.2505E-06	-72.991
2	2020.4	-17.934	1.9941E-07	4.5540E-09	-1.1983E-06	-72.839
3	1901.7	-21.114	1.9311E-07	4.5540E-09	-1.1876E-06	-79.671
4	2139.1	-16.824	2.0911E-07	4.5540E-09	-1.2268E-06	-70.332
5	2020.4	-16.819	1.9323E-07	4.5540E-09	-1.1787E-06	-70.320
6	1901.7	-20.504	1.9133E-07	4.5540E-09	-1.1807E-06	-78.398
7	2139.1	-16.809	2.0901E-07	4.5540E-09	-1.2265E-06	-70.298
8	2020.4	-16.804	1.9315E-07	4.5540E-09	-1.1785E-06	-70.287
9	1901.7	-20.504	1.9133E-07	4.5540E-09	-1.1807E-06	-78.398
10	2139.1	-16.824	2.0911E-07	4.5540E-09	-1.2268E-06	-70.332
11	2020.4	-16.819	1.9323E-07	4.5540E-09	-1.1787E-06	-70.320
12	1901.7	-20.504	1.9133E-07	4.5540E-09	-1.1807E-06	-78.398
13	2139.1	-18.002	2.1707E-07	4.5540E-09	-1.2505E-06	-72.991
14	2020.4	-17.934	1.9941E-07	4.5540E-09	-1.1983E-06	-72.839
15	1901.7	-21.114	1.9311E-07	4.5540E-09	-1.1876E-06	-79.671
MINIMUM	1901.7	-21.114	1.9133E-07	4.5540E-09	-1.2505E-06	-79.671
Pile N.	3	3	6	1	1	3
MAXIMUM	2139.1	-16.804	2.1707E-07	4.5540E-09	-1.1785E-06	-70.287
Pile N.	1	8	1	1	8	8

PILE GROUP STRESS, KN/ M**2

1	1430.8
2	1363.1
3	1316.6
4	1422.8
5	1355.5
6	1312.7
7	1422.7
8	1355.4
9	1312.7
10	1422.8
11	1355.5
12	1312.7
13	1430.8
14	1363.1
15	1316.6
MINIMUM	1312.7
Pile N.	6

APPALTATORE: Consorzio <u>Soci</u> HirpiniaAV salini impreglio ASTALDI		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria <u>Mandanti</u> R&S SOIL NET ENGINEERING Alpina		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 313 di 420

MAXIMUM 1430.8
Pile N. 1







* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL.		MOMENT		SHEAR		SOIL REACT		TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
	y- DIR M	z- DIR M	z- DIR KN- M	y- DIR KN- M	y- DIR KN	z- DIR KN	y- DIR KN/ M	z- DIR KN/ M			
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.8777E-05	-6.0052E-13	-8.8367	-1.2505E-06	-18.004	-1.5671E-08	-4.3353	-7.6333E-09	1210.5	7.8279E+06	7.8279E+06
x(M)	2.0000	0.0000	7.4000	0.0000	0.0000	12.400	3.6000	0.8000	20.000	0.0000	0.0000
2	-2.8805E-05	-6.5628E-13	-8.8135	-1.1983E-06	-17.936	-1.4365E-08	-4.3054	-8.9329E-09	1143.3	7.8279E+06	7.8279E+06
x(M)	2.0000	0.0000	7.6000	0.0000	0.0000	12.600	3.6000	0.8000	20.000	0.0000	0.0000
3	-2.7622E-05	-7.1204E-13	-9.9399	-1.1876E-06	-21.116	-1.3336E-08	-5.8253	-1.5470E-08	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	0.0000	6.8000	0.0000	0.0000	12.000	3.2000	0.8000	20.000	0.0000	0.0000
4	-2.9296E-05	-6.0052E-13	-8.4301	-1.2268E-06	-16.826	-1.5439E-08	-3.8352	-6.4516E-09	1210.5	7.8279E+06	7.8279E+06
x(M)	2.2000	0.0000	7.8000	0.0000	0.0000	12.800	3.6000	0.8000	20.000	0.0000	0.0000
5	-2.9298E-05	-6.5628E-13	-8.4278	-1.1787E-06	-16.820	-1.4175E-08	-3.8327	-7.6214E-09	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	0.0000	7.8000	0.0000	0.0000	13.000	3.6000	0.8000	20.000	0.0000	0.0000
6	-2.7812E-05	-7.1204E-13	-9.7279	-1.1807E-06	-20.506	-1.3324E-08	-5.5117	-1.4375E-08	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	0.0000	7.0000	0.0000	0.0000	12.200	3.2000	0.8000	20.000	0.0000	0.0000
7	-2.9303E-05	-6.0052E-13	-8.4250	-1.2265E-06	-16.811	-1.5435E-08	-3.8291	-6.4376E-09	1210.5	7.8279E+06	7.8279E+06
x(M)	2.2000	0.0000	7.8000	0.0000	0.0000	12.800	3.6000	0.8000	20.000	0.0000	0.0000
8	-2.9306E-05	-6.5628E-13	-8.4228	-1.1785E-06	-16.806	-1.4171E-08	-3.8266	-7.6050E-09	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	0.0000	7.8000	0.0000	0.0000	13.000	3.6000	0.8000	20.000	0.0000	0.0000
9	-2.7812E-05	-7.1204E-13	-9.7279	-1.1807E-06	-20.506	-1.3324E-08	-5.5117	-1.4375E-08	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	0.0000	7.0000	0.0000	0.0000	12.200	3.2000	0.8000	20.000	0.0000	0.0000
10	-2.9296E-05	-6.0052E-13	-8.4301	-1.2268E-06	-16.826	-1.5439E-08	-3.8352	-6.4516E-09	1210.5	7.8279E+06	7.8279E+06
x(M)	2.2000	0.0000	7.8000	0.0000	0.0000	12.800	3.6000	0.8000	20.000	0.0000	0.0000
11	-2.9298E-05	-6.5628E-13	-8.4278	-1.1787E-06	-16.820	-1.4175E-08	-3.8327	-7.6214E-09	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	0.0000	7.8000	0.0000	0.0000	13.000	3.6000	0.8000	20.000	0.0000	0.0000
12	-2.7812E-05	-7.1204E-13	-9.7279	-1.1807E-06	-20.506	-1.3324E-08	-5.5117	-1.4375E-08	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	0.0000	7.0000	0.0000	0.0000	12.200	3.2000	0.8000	20.000	0.0000	0.0000
13	-2.8777E-05	-6.0052E-13	-8.8367	-1.2505E-06	-18.004	-1.5671E-08	-4.3353	-7.6333E-09	1210.5	7.8279E+06	7.8279E+06
x(M)	2.0000	0.0000	7.4000	0.0000	0.0000	12.400	3.6000	0.8000	20.000	0.0000	0.0000
14	-2.8805E-05	-6.5628E-13	-8.8135	-1.1983E-06	-17.936	-1.4365E-08	-4.3054	-8.9329E-09	1143.3	7.8279E+06	7.8279E+06
x(M)	2.0000	0.0000	7.6000	0.0000	0.0000	12.600	3.6000	0.8000	20.000	0.0000	0.0000
15	-2.7622E-05	-7.1204E-13	-9.9399	-1.1876E-06	-21.116	-1.3336E-08	-5.8253	-1.5470E-08	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	0.0000	6.8000	0.0000	0.0000	12.000	3.2000	0.8000	20.000	0.0000	0.0000
Min.	-2.9306E-05	-7.1204E-13	-9.9399	-1.2505E-06	-21.116	-1.5671E-08	-5.8253	-1.5470E-08	1076.1	7.8279E+06	7.8279E+06
Pile N.	8	3	3	1	3	1	3	3	3	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL.		MOMENT		SHEAR		SOIL REACT		TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
	y- DIR M	z- DIR M	z- DIR KN- M	y- DIR KN- M	y- DIR KN	z- DIR KN	y- DIR KN/ M	z- DIR KN/ M			
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	7.0267E-07	1.9001E-13	72.991	6.6314E-08	1.8776	2.2240E-07	0.8394	4.2211E-08	1430.8	7.8279E+06	7.8279E+06
x(M)	12.000	4.6000	0.0000	9.6000	10.200	2.0000	13.600	5.4000	0.0000	0.0000	0.0000
2	6.9958E-07	1.7097E-13	72.839	6.0058E-08	1.8696	2.0578E-07	0.8365	3.8893E-08	1363.1	7.8279E+06	7.8279E+06
x(M)	12.000	4.8000	0.0000	9.8000	10.200	2.2000	13.600	5.6000	0.0000	0.0000	0.0000
3	7.8925E-07	1.2449E-13	79.671	5.2706E-08	2.2722	2.0484E-07	0.8666	4.2655E-08	1316.6	7.8279E+06	7.8279E+06
x(M)	11.200	5.0000	0.0000	9.6000	9.2000	2.6000	13.600	5.6000	0.0000	0.0000	0.0000
4	6.5127E-07	2.0456E-13	70.332	6.6475E-08	1.7455	2.1360E-07	0.7749	3.9102E-08	1422.8	7.8279E+06	7.8279E+06
x(M)	12.400	4.6000	0.0000	10.000	10.600	2.0000	13.600	5.6000	0.0000	0.0000	0.0000
5	6.5086E-07	1.8409E-13	70.320	6.0430E-08	1.7447	1.9865E-07	0.7744	3.6285E-08	1355.5	7.8279E+06	7.8279E+06
x(M)	12.400	5.0000	0.0000	10.200	10.600	2.2000	13.600	5.8000	0.0000	0.0000	0.0000
6	7.7681E-07	1.2937E-13	78.398	5.3074E-08	2.1909	2.0216E-07	0.8761	4.1373E-08	1312.7	7.8279E+06	7.8279E+06
x(M)	11.400	5.0000	0.0000	9.6000	9.4000	2.6000	13.600	5.6000	0.0000	0.0000	0.0000
7	6.5053E-07	2.0475E-13	70.298	6.6481E-08	1.7440	2.1349E-07	0.7739	3.9063E-08	1422.7	7.8279E+06	7.8279E+06
x(M)	12.400	4.6000	0.0000	10.000	10.600	2.0000	13.600	5.6000	0.0000	0.0000	0.0000
8	6.5012E-07	1.8427E-13	70.287	6.0438E-08	1.7432	1.9856E-07	0.7734	3.6250E-08	1355.4	7.8279E+06	7.8279E+06
x(M)	12.400	5.0000	0.0000	10.200	10.600	2.2000	13.600	5.8000	0.0000	0.0000	0.0000
9	7.7681E-07	1.2937E-13	78.398	5.3074E-08	2.1909	2.0216E-07	0.8761	4.1373E-08	1312.7	7.8279E+06	7.8279E+06
x(M)	11.400	5.0000	0.0000	9.6000	9.4000	2.6000	13.600	5.6000	0.0000	0.0000	0.0000
10	6.5127E-07	2.0456E-13	70.332	6.6475E-08	1.7455	2.1360E-07	0.7749	3.9102E-08	1422.8	7.8279E+06	7.8279E+06
x(M)	12.400	4.6000	0.0000	10.000	10.600	2.0000	13.600	5.6000	0.0000	0.0000	0.0000
11	6.5086E-07	1.8409E-13	70.320	6.0430E-08	1.7447	1.9865E-07	0.7744	3.6285E-08	1355.5	7.8279E+06	7.8279E+06
x(M)	12.400	5.0000	0.0000	10.200	10.600	2.2000	13.600	5.8000	0.0000	0.0000	0.0000
12	7.7681E-07	1.2937E-13	78.398	5.3074E-08	2.1909	2.0216E-07	0.8761	4.1373E-08	1312.7	7.8279E+06	7.8279E+06
x(M)	11.400	5.0000	0.0000	9.6000	9.4000	2.6000	13.600	5.6000	0.0000	0.0000	0.0000
13	7.0267E-07	1.9001E-13	72.991	6.6314E-08	1.8776	2.2240E-07	0.8394	4.2211E-08	1430.8	7.8279E+06	7.8279E+06
x(M)	12.000	4.6000	0.0000	9.6000	10.200	2.0000	13.600	5.4000	0.0000	0.0000	0.0000
14	6.9958E-07	1.7097E-13	72.839	6.0058E-08	1.8696	2.0578E-07	0.8365	3.8893E-08	1363.1	7.8279E+06	7.8279E+06
x(M)	12.000	4.8000	0.0000	9.8000	10.200	2.2000	13.600	5.6000	0.0000	0.0000	0.0000
15	7.8925E-07	1.2449E-13	79.671	5.2706E-08	2.2722	2.0484E-07	0.8666	4.2655E-08	1316.6	7.8279E+06	7.8279E+06
x(M)	11.200	5.0000	0.0000	9.6000	9.2000	2.6000	13.600	5.6000	0.0000	0.0000	0.0000
Max.	7.8925E-07	2.0475E-13	79.671	6.6481E-08	2.2722	2.2240E-07	0.8761	4.2655E-08	1430.8	7.8279E+06	7.8279E+06
Pile N.	3	7	3	7	3	1	6	3	1	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria Mandanti   													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1"> <tr> <td>COMMESSA</td> <td>LOTTO</td> <td>CODIFICA</td> <td>DOCUMENTO</td> <td>REV.</td> <td>FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>314 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	314 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	314 di 420								

CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.5791	1.0000
3	0.8661	1.0000
4	0.4955	1.0000
5	0.4951	1.0000
6	0.8053	1.0000
7	0.4945	1.0000
8	0.4941	1.0000
9	0.8053	1.0000
10	0.4955	1.0000
11	0.4951	1.0000
12	0.8053	1.0000
13	0.5845	1.0000
14	0.5791	1.0000
15	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
30306.0	-276.510	-4.00000E-06
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-3.00000E-06	1.49800E-03	-6450.96

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.08533E-03	-1.56882E-05	2.97577E-12
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-8.48388E-15	1.30712E-12	-1.43615E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
1	1.1500E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
2	1.0853E-03	-1.5688E-05	2.9758E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
3	1.0207E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
4	1.1500E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
5	1.0853E-03	-1.5688E-05	2.9758E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
6	1.0207E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
7	1.1500E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
8	1.0853E-03	-1.5688E-05	2.9758E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
9	1.0207E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
10	1.1500E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
11	1.0853E-03	-1.5688E-05	2.9758E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
12	1.0207E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
13	1.1500E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
14	1.0853E-03	-1.5688E-05	2.9758E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
15	1.0207E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
MINIMUM	1.0207E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
Pile N.	3	1	1	1	1	1
MAXIMUM	1.1500E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
1	2139.1	-18.002	-2.8502E-07	-3.1182E-09	2.6497E-06	-72.992
2	2020.4	-17.934	-2.7364E-07	-3.1182E-09	2.6147E-06	-72.840
3	1901.7	-21.114	-2.2865E-07	-3.1182E-09	2.5705E-06	-79.671
4	2139.1	-16.824	-2.9156E-07	-3.1182E-09	2.6416E-06	-70.332
5	2020.4	-16.819	-2.8070E-07	-3.1182E-09	2.6088E-06	-70.321
6	1901.7	-20.504	-2.3615E-07	-3.1182E-09	2.5745E-06	-78.398
7	2139.1	-16.809	-2.9162E-07	-3.1182E-09	2.6414E-06	-70.299

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandatario

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 315 di 420
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8	2020.4	-16.804	-2.8078E-07	-3.1182E-09	2.6087E-06	-70.287
9	1901.7	-20.504	-2.3615E-07	-3.1182E-09	2.5745E-06	-78.398
10	2139.1	-16.824	-2.9156E-07	-3.1182E-09	2.6416E-06	-70.332
11	2020.4	-16.819	-2.8070E-07	-3.1182E-09	2.6088E-06	-70.321
12	1901.7	-20.504	-2.3615E-07	-3.1182E-09	2.5745E-06	-78.398
13	2139.1	-18.002	-2.8502E-07	-3.1182E-09	2.6497E-06	-72.992
14	2020.4	-17.934	-2.7364E-07	-3.1182E-09	2.6147E-06	-72.840
15	1901.7	-21.114	-2.2865E-07	-3.1182E-09	2.5705E-06	-79.671
MINIMUM	1901.7	-21.114	-2.9162E-07	-3.1182E-09	2.5705E-06	-79.671
Pile N.	3	3	7	1	3	3
MAXIMUM	2139.1	-16.804	-2.2865E-07	-3.1182E-09	2.6497E-06	-70.287
Pile N.	1	8	3	1	1	8

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
1	1.1500E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
2	1.0853E-03	-1.5688E-05	2.9758E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
3	1.0207E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
4	1.1500E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
5	1.0853E-03	-1.5688E-05	2.9758E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
6	1.0207E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
7	1.1500E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
8	1.0853E-03	-1.5688E-05	2.9758E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
9	1.0207E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
10	1.1500E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
11	1.0853E-03	-1.5688E-05	2.9758E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
12	1.0207E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
13	1.1500E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
14	1.0853E-03	-1.5688E-05	2.9758E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
15	1.0207E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
MINIMUM	1.0207E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
Pile N.	3	1	1	1	1	1
MAXIMUM	1.1500E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
1	2139.1	-18.002	-2.8502E-07	-3.1182E-09	2.6497E-06	-72.992
2	2020.4	-17.934	-2.7364E-07	-3.1182E-09	2.6147E-06	-72.840
3	1901.7	-21.114	-2.2865E-07	-3.1182E-09	2.5705E-06	-79.671
4	2139.1	-16.824	-2.9156E-07	-3.1182E-09	2.6416E-06	-70.332
5	2020.4	-16.819	-2.8070E-07	-3.1182E-09	2.6088E-06	-70.321
6	1901.7	-20.504	-2.3615E-07	-3.1182E-09	2.5745E-06	-78.398
7	2139.1	-16.809	-2.9162E-07	-3.1182E-09	2.6414E-06	-70.299
8	2020.4	-16.804	-2.8078E-07	-3.1182E-09	2.6087E-06	-70.287
9	1901.7	-20.504	-2.3615E-07	-3.1182E-09	2.5745E-06	-78.398
10	2139.1	-16.824	-2.9156E-07	-3.1182E-09	2.6416E-06	-70.332
11	2020.4	-16.819	-2.8070E-07	-3.1182E-09	2.6088E-06	-70.321
12	1901.7	-20.504	-2.3615E-07	-3.1182E-09	2.5745E-06	-78.398
13	2139.1	-18.002	-2.8502E-07	-3.1182E-09	2.6497E-06	-72.992
14	2020.4	-17.934	-2.7364E-07	-3.1182E-09	2.6147E-06	-72.840
15	1901.7	-21.114	-2.2865E-07	-3.1182E-09	2.5705E-06	-79.671
MINIMUM	1901.7	-21.114	-2.9162E-07	-3.1182E-09	2.5705E-06	-79.671
Pile N.	3	3	7	1	3	3
MAXIMUM	2139.1	-16.804	-2.2865E-07	-3.1182E-09	2.6497E-06	-70.287
Pile N.	1	8	3	1	1	8

PILE GROUP STRESS, KN/ M**2

1	1430.8
2	1363.1
3	1316.6
4	1422.8
5	1355.5
6	1312.7
7	1422.7
8	1355.4
9	1312.7
10	1422.8
11	1355.5
12	1312.7
13	1430.8
14	1363.1
15	1316.6
MINIMUM	1312.7
Pile N.	6

APPALDATTORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 316 di 420
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MAXIMUM 1430.8
Pile N. 1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.8776E-05	-2.7728E-13	-8.8366	-1.0436E-07	-18.004	-3.9240E-07	-4.3353	-7.7258E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.0000	6.4000	7.4000	11.400	0.0000	4.0000	3.6000	7.0000	20.000	0.0000	0.0000
2	-2.8804E-05	-2.7357E-13	-8.8134	-1.0287E-07	-17.936	-3.8641E-07	-4.3054	-7.6102E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.0000	6.6000	7.6000	11.400	0.0000	4.0000	3.6000	7.2000	20.000	0.0000	0.0000
3	-2.7622E-05	-2.1815E-13	-9.9397	-9.8446E-08	-21.116	-4.1335E-07	-5.8252	-8.9583E-08	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	6.8000	10.800	0.0000	4.2000	3.2000	7.0000	20.000	0.0000	0.0000
4	-2.9295E-05	-3.0282E-13	-8.4300	-1.0612E-07	-16.826	-3.8073E-07	-3.8351	-7.2179E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.2000	6.6000	7.8000	11.600	0.0000	4.0000	3.6000	7.2000	20.000	0.0000	0.0000
5	-2.9298E-05	-2.9742E-13	-8.4277	-1.0444E-07	-16.820	-3.7550E-07	-3.8327	-7.1265E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	6.6000	7.8000	11.600	0.0000	4.0000	3.6000	7.2000	20.000	0.0000	0.0000
6	-2.7811E-05	-2.2626E-13	-9.7278	-9.8913E-08	-20.506	-4.0719E-07	-5.5117	-8.6743E-08	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	7.0000	11.000	0.0000	4.2000	3.2000	7.0000	20.000	0.0000	0.0000
7	-2.9303E-05	-3.0316E-13	-8.4249	-1.0614E-07	-16.811	-3.8058E-07	-3.8291	-7.2115E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.2000	6.6000	7.8000	11.600	0.0000	4.0000	3.6000	7.2000	20.000	0.0000	0.0000
8	-2.9305E-05	-2.9775E-13	-8.4226	-1.0446E-07	-16.806	-3.7536E-07	-3.8266	-7.1201E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	6.6000	7.8000	11.600	0.0000	4.0000	3.6000	7.2000	20.000	0.0000	0.0000
9	-2.7811E-05	-2.2626E-13	-9.7278	-9.8913E-08	-20.506	-4.0719E-07	-5.5117	-8.6743E-08	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	7.0000	11.000	0.0000	4.2000	3.2000	7.0000	20.000	0.0000	0.0000
10	-2.9295E-05	-3.0282E-13	-8.4300	-1.0612E-07	-16.826	-3.8073E-07	-3.8351	-7.2179E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.2000	6.6000	7.8000	11.600	0.0000	4.0000	3.6000	7.2000	20.000	0.0000	0.0000
11	-2.9298E-05	-2.9742E-13	-8.4277	-1.0444E-07	-16.820	-3.7550E-07	-3.8327	-7.1265E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.2000	6.6000	7.8000	11.600	0.0000	4.0000	3.6000	7.2000	20.000	0.0000	0.0000
12	-2.7811E-05	-2.2626E-13	-9.7278	-9.8913E-08	-20.506	-4.0719E-07	-5.5117	-8.6743E-08	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	7.0000	11.000	0.0000	4.2000	3.2000	7.0000	20.000	0.0000	0.0000
13	-2.8776E-05	-2.7728E-13	-8.8366	-1.0436E-07	-18.004	-3.9240E-07	-4.3353	-7.7258E-08	1210.5	7.8279E+06	7.8279E+06
x(M)	2.0000	6.4000	7.4000	11.400	0.0000	4.0000	3.6000	7.0000	20.000	0.0000	0.0000
14	-2.8804E-05	-2.7357E-13	-8.8134	-1.0287E-07	-17.936	-3.8641E-07	-4.3054	-7.6102E-08	1143.3	7.8279E+06	7.8279E+06
x(M)	2.0000	6.6000	7.6000	11.400	0.0000	4.0000	3.6000	7.2000	20.000	0.0000	0.0000
15	-2.7622E-05	-2.1815E-13	-9.9397	-9.8446E-08	-21.116	-4.1335E-07	-5.8252	-8.9583E-08	1076.1	7.8279E+06	7.8279E+06
x(M)	1.8000	6.4000	6.8000	10.800	0.0000	4.2000	3.2000	7.0000	20.000	0.0000	0.0000
Min.	-2.9305E-05	-3.0316E-13	-9.9397	-1.0614E-07	-21.116	-4.1335E-07	-5.8252	-8.9583E-08	1076.1	7.8279E+06	7.8279E+06
Pile N.	8	7	3	7	3	3	3	3	3	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y- M	DISPL. z- M	MOMENT z- KN- M	MOMENT y- KN- M	SHEAR y- KN	SHEAR z- KN	SOIL REACT y- KN/ M	SOIL REACT z- KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z- KN- M**2	FLEX. RIG. y- KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	7.0265E-07	2.9376E-12	72.992	2.6497E-06	1.8776	2.6990E-08	0.8394	8.2755E-08	1430.8	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	0.0000	10.200	14.400	13.600	2.6000	0.0000	0.0000	0.0000
2	6.9956E-07	2.9758E-12	72.840	2.6147E-06	1.8696	2.6697E-08	0.8365	8.5876E-08	1363.1	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	0.0000	10.200	14.200	13.600	2.6000	0.0000	0.0000	0.0000
3	7.8923E-07	3.0140E-12	79.671	2.5705E-06	2.2721	2.6963E-08	0.8666	1.3550E-07	1316.6	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	0.0000	9.2000	13.400	13.600	2.6000	0.0000	0.0000	0.0000
4	6.5125E-07	2.9376E-12	70.332	2.6415E-06	1.7455	2.7349E-08	0.7749	6.9524E-08	1422.8	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.400	13.600	2.6000	0.0000	0.0000	0.0000
5	6.5084E-07	2.9758E-12	70.321	2.6088E-06	1.7447	2.7150E-08	0.7744	7.2885E-08	1355.5	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.400	13.600	2.6000	0.0000	0.0000	0.0000
6	7.7679E-07	3.0140E-12	78.398	2.5745E-06	2.1909	2.6612E-08	0.8760	1.2589E-07	1312.7	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	0.0000	9.4000	13.600	13.600	2.6000	0.0000	0.0000	0.0000
7	6.5052E-07	2.9376E-12	70.299	2.6414E-06	1.7440	2.7358E-08	0.7739	6.9368E-08	1422.7	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.400	13.600	2.6000	0.0000	0.0000	0.0000
8	6.5010E-07	2.9758E-12	70.287	2.6087E-06	1.7432	2.7159E-08	0.7734	7.2723E-08	1355.4	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.400	13.600	2.6000	0.0000	0.0000	0.0000
9	7.7679E-07	3.0140E-12	78.398	2.5745E-06	2.1909	2.6612E-08	0.8760	1.2589E-07	1312.7	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	0.0000	9.4000	13.600	13.600	2.6000	0.0000	0.0000	0.0000
10	6.5125E-07	2.9376E-12	70.332	2.6415E-06	1.7455	2.7349E-08	0.7749	6.9524E-08	1422.8	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.400	13.600	2.6000	0.0000	0.0000	0.0000
11	6.5084E-07	2.9758E-12	70.321	2.6088E-06	1.7447	2.7150E-08	0.7744	7.2885E-08	1355.5	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	0.0000	10.600	14.400	13.600	2.6000	0.0000	0.0000	0.0000
12	7.7679E-07	3.0140E-12	78.398	2.5745E-06	2.1909	2.6612E-08	0.8760	1.2589E-07	1312.7	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	0.0000	9.4000	13.600	13.600	2.6000	0.0000	0.0000	0.0000
13	7.0265E-07	2.9376E-12	72.992	2.6497E-06	1.8776	2.6990E-08	0.8394	8.2755E-08	1430.8	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	0.0000	10.200	14.000	13.600	2.6000	0.0000	0.0000	0.0000
14	6.9956E-07	2.9758E-12	72.840	2.6147E-06	1.8696	2.6697E-08	0.8365	8.5876E-08	1363.1	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	0.0000	10.200	14.200	13.600	2.6000	0.0000	0.0000	0.0000
15	7.8923E-07	3.0140E-12	79.671	2.5705E-06	2.2721	2.6963E-08	0.8666	1.3550E-07	1316.6	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	0.0000	9.2000	13.400	13.600	2.6000	0.0000	0.0000	0.0000
Max.	7.8923E-07	3.0140E-12	79.671	2.6497E-06	2.2721	2.7358E-08	0.8760	1.3550E-07	1430.8	7.8279E+06	7.8279E+06
Pile N.	3	3	3	1	3	7	6	3	1	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 317 di 420

***** SUMMARY FOR LOAD CASES AND COMBINATIONS *****

***** LOAD CASES RESULTS *****

LOAD CASE : 1

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
34625.2	2797.70	505.070	-83.8198	4980.47	-24046.3

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.24206E-03	8.21561E-04	1.22047E-04	-8.85411E-07	5.67677E-06	-8.19429E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	8.2223E-04	8.1359E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6619E-03	8.2953E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1537.0	161.37	29.695	-0.3254	-99.458	379.51
Pile N.	15	11	8	1	1	11
MAXIMUM	3079.7	229.69	38.998	-0.3254	-82.507	513.96
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	8.2223E-04	8.1359E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6619E-03	8.2953E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1537.0	161.37	29.695	-0.3254	-99.458	379.51
Pile N.	15	11	8	1	1	11
MAXIMUM	3079.7	229.69	38.998	-0.3254	-82.507	513.96
Pile N.	1	1	1	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-2.3286E-05	-3.3492E-06	-513.96	-99.458	-56.366	-8.1578	-12.958	-2.1818	869.79
Pile N.	1	3	1	1	1	1	1	15	15
Max.	8.2953E-04	1.2603E-04	256.31	36.848	229.71	39.002	102.21	15.947	3322.6
Pile N.	1	3	1	1	1	1	1	1	1

LOAD CASE : 2

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
34005.2	-2797.70	505.070	-110.600	4980.47	13342.4

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.21957E-03	-7.42133E-04	1.21779E-04	1.48200E-07	5.67572E-06	5.47085E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	9.2230E-04	-7.4347E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.5168E-03	-7.4080E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1720.9	-225.63	29.616	0.054470	-102.68	-542.96
Pile N.	13	3	8	1	3	3
MAXIMUM	2813.1	-163.18	40.165	0.054470	-82.271	-421.66
Pile N.	3	8	3	1	8	11

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
IF28	01	E Z CL	VI0103 001	B	318 di 420

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	9.2230E-04	-7.4347E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.5168E-03	-7.4080E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1720.9	-225.63	29.616	0.054470	-102.68	-542.96
Pile N.	13	3	8	1	3	3
MAXIMUM	2813.1	-163.18	40.165	0.054470	-82.271	-421.66
Pile N.	3	8	3	1	8	11

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR z-DIR KN	SHEAR y-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-7.4347E-04	-3.3811E-06	-230.43	-102.68	-225.65	-8.3711	-95.990	-2.1139	973.82
Pile N.	1	3	3	3	3	3	3	13	13
Max.	2.0773E-05	1.2245E-04	542.96	37.817	50.806	40.169	12.072	16.393	3259.6
Pile N.	3	1	3	3	3	3	2	3	3

LOAD CASE : 3

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
32085.6	-750.988	432.189	-26.8538	3229.24	-3489.97

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.14991E-03	-1.47239E-04	1.01788E-04	-8.26629E-08	3.94995E-06	-3.29945E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.0995E-03	-1.4798E-04	1.0142E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2003E-03	-1.4650E-04	1.0216E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2046.5	-59.309	25.175	-0.030382	-90.290	-168.88
Pile N.	15	3	8	1	3	3
MAXIMUM	2231.6	-44.112	34.772	-0.030382	-71.359	-138.72
Pile N.	1	8	3	1	8	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.0995E-03	-1.4798E-04	1.0142E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2003E-03	-1.4650E-04	1.0216E-04	-8.2663E-08	3.9500E-06	-3.2994E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2046.5	-59.309	25.175	-0.030382	-90.290	-168.88
Pile N.	15	3	8	1	3	3
MAXIMUM	2231.6	-44.112	34.772	-0.030382	-71.359	-138.72
Pile N.	1	8	3	1	8	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR z-DIR KN	SHEAR y-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-1.4827E-04	-2.8539E-06	-47.385	-90.290	-59.313	-7.0820	-22.205	-1.7874	1158.1
Pile N.	14	3	3	3	3	3	3	14	15
Max.	4.1642E-06	1.0216E-04	168.88	32.004	10.558	34.775	2.9379	14.024	1809.9
Pile N.	3	3	3	3	3	3	13	3	3

LOAD CASE : 4

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
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APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 319 di 420
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34544.5 -1377.61 690.160 -44.9046 7655.35 180.951

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.23914E-03	-3.18518E-04	1.68786E-04	7.35546E-08	8.50427E-06	1.06917E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.1145E-03	-3.1918E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.3638E-03	-3.1786E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2074.0	-110.36	40.223	0.027035	-140.13	-289.35
Pile N.	13	3	8	1	3	3
MAXIMUM	2532.0	-80.477	55.231	0.027035	-110.94	-230.36
Pile N.	3	11	3	1	8	11

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. X, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.1145E-03	-3.1918E-04	1.6845E-04	7.3555E-08	8.5043E-06	1.0692E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.3638E-03	-3.1786E-04	1.6912E-04	7.3555E-08	8.5043E-06	1.0692E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2074.0	-110.36	40.223	0.027035	-140.13	-289.35
Pile N.	13	3	8	1	3	3
MAXIMUM	2532.0	-80.477	55.231	0.027035	-110.94	-230.36
Pile N.	3	11	3	1	8	11

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-3.1918E-04	-4.7020E-06	-100.21	-140.13	-110.37	-11.623	-44.201	-2.8950	1173.6
Pile N.	1	3	3	3	3	3	3	13	13
Max.	8.9303E-06	1.6912E-04	289.35	52.518	22.197	55.235	5.6433	22.659	2403.1
Pile N.	3	1	3	3	3	3	14	3	3

LOAD CASE : 5

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30306.0	-276.510	557.375	23.3401	5823.56	-6450.98

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.08533E-03	-1.69932E-05	1.38384E-04	-2.54987E-07	6.56399E-06	-1.43496E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	9.6168E-04	-1.9288E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2090E-03	-1.4698E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *



	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1793.2	-20.724	32.387	-0.093719	-118.18	-78.574
Pile N.	15	3	8	1	3	3
MAXIMUM	2247.6	-16.708	46.264	-0.093719	-90.614	-70.316
Pile N.	1	8	3	1	8	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. X, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	9.6168E-04	-1.9288E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2090E-03	-1.4698E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4350E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1793.2	-20.724	32.387	-0.093719	-118.18	-78.574
Pile N.	15	3	8	1	3	3
MAXIMUM	2247.6	-16.708	46.264	-0.093719	-90.614	-70.316
Pile N.	1	8	3	1	8	8

APPALTATORE: Consorzio Soci   			ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   								
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B			COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 320 di 420

MINIMUM	1793.2	-20.724	32.387	-0.093719	-118.18	-78.574
Pile N.	15	3	8	1	3	3
MAXIMUM	2247.6	-16.708	46.264	-0.093719	-90.614	-70.316
Pile N.	1	8	3	1	8	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-3.2209E-05	-3.8922E-06	-9.7091	-118.18	-20.726	-9.6373	-5.6859	-2.4078	1014.8
Pile N.	14	3	15	3	3	3	3	9	15
Max.	7.8457E-07	1.3953E-04	78.574	43.558	2.2092	46.267	0.9098	18.881	1693.5
Pile N.	15	3	3	3	3	3	15	3	1

LOAD CASE : 6

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
34808.5	1377.61	690.160	-31.5147	7655.35	-18292.3

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.24872E-03	4.52624E-04	1.68815E-04	-6.32584E-07	8.50416E-06	-5.67690E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	9.1672E-04	4.4693E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.5807E-03	4.5832E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1710.6	78.394	40.371	-0.2325	-137.51	161.92
Pile N.	15	11	8	1	1	11
MAXIMUM	2930.5	114.80	54.273	-0.2325	-111.25	233.43
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	9.1672E-04	4.4693E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.5807E-03	4.5832E-04	1.7166E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. Y, KN	LAT. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1710.6	78.394	40.371	-0.2325	-137.51	161.92
Pile N.	15	11	8	1	1	11
MAXIMUM	2930.5	114.80	54.273	-0.2325	-111.25	233.43
Pile N.	1	1	1	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-1.2976E-05	-4.6346E-06	-233.43	-137.51	-31.078	-11.451	-7.1460	-2.9429	968.02
Pile N.	1	1	1	1	1	1	1	15	15
Max.	4.5832E-04	1.7166E-04	141.87	51.730	114.81	54.279	53.788	22.295	2476.0
Pile N.	1	3	1	1	1	1	1	1	1

LOAD CASE : 7

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *




LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
34808.5	1377.61	690.160	-31.5147	7655.35	-18292.5

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.24872E-03	4.52625E-04	1.68815E-04	-6.32584E-07	8.50416E-06	-5.67694E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	9.1672E-04	4.4693E-04	1.6597E-04	-6.3258E-07	8.5042E-06	-5.6769E-05
Pile N.	15	13	1	1	1	1

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

Min.	-1.8028E-04	-2.9907E-06	-57.406	-95.379	-68.986	-7.4240	-26.391	-1.8830	1187.7
Pile N.	13	3	3	3	3	3	3	14	15
Max.	5.0637E-06	1.0701E-04	191.53	33.547	12.764	36.617	3.4479	14.732	1907.5
Pile N.	3	3	3	3	3	3	13	3	3

LOAD CASE : 9

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
34625.2	2797.70	505.070	-83.8198	4980.47	-24046.3

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.24206E-03	8.21561E-04	1.22047E-04	-8.85411E-07	5.67677E-06	-8.19429E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	8.2223E-04	8.1359E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6619E-03	8.2953E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1537.0	161.37	29.695	-0.3254	-99.458	379.51
Pile N.	15	11	8	1	1	11
MAXIMUM	3079.7	229.69	38.998	-0.3254	-82.507	513.96
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	8.2223E-04	8.1359E-04	1.1806E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6619E-03	8.2953E-04	1.2603E-04	-8.8541E-07	5.6768E-06	-8.1943E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1537.0	161.37	29.695	-0.3254	-99.458	379.51
Pile N.	15	11	8	1	1	11
MAXIMUM	3079.7	229.69	38.998	-0.3254	-82.507	513.96
Pile N.	1	1	1	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-2.3286E-05	-3.3492E-06	-513.96	-99.458	-56.366	-8.1578	-12.958	-2.1818	869.79
Pile N.	1	3	1	1	1	1	1	15	15
Max.	8.2953E-04	1.2603E-04	256.31	36.848	229.71	39.002	102.21	15.947	3322.6
Pile N.	1	3	1	1	1	1	1	1	1

LOAD CASE : 10

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
34005.2	-2797.70	505.070	-110.600	4980.47	13342.4

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *



DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.21957E-03	-7.42133E-04	1.21779E-04	1.48200E-07	5.67572E-06	5.47085E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	9.2230E-04	-7.4347E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.5168E-03	-7.4080E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1720.9	-225.63	29.616	0.054470	-102.68	-542.96
Pile N.	13	3	8	1	3	3
MAXIMUM	2813.1	-163.18	40.165	0.054470	-82.271	-421.66
Pile N.	3	8	3	1	8	11

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	
COMMESSA IF28 LOTTO 01 CODIFICA E Z CL DOCUMENTO VI0103 001 REV. B FOGLIO 323 di 420	

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	9.2230E-04	-7.4347E-04	1.2111E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.5168E-03	-7.4080E-04	1.2244E-04	1.4820E-07	5.6757E-06	5.4708E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1720.9	-225.63	29.616	0.054470	-102.68	-542.96
Pile N.	13	3	8	1	3	3
MAXIMUM	2813.1	-163.18	40.165	0.054470	-82.271	-421.66
Pile N.	3	8	3	1	8	11

* EFFECTS FOR Laterally LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR z-DIR KN	SHEAR y-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-7.4347E-04	-3.3811E-06	-230.43	-102.68	-225.65	-8.3711	-95.990	-2.1139	973.82
Pile N.	1	3	3	3	3	3	3	13	13
Max.	2.0773E-05	1.2245E-04	542.96	37.817	50.806	40.169	12.072	16.393	3259.6
Pile N.	3	1	3	3	3	3	2	3	3

LOAD CASE : 11

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
33552.0	-2430.51	535.425	-227.197	6155.62	11445.1

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.20312E-03	-6.43677E-04	1.31189E-04	-2.88385E-07	6.78649E-06	4.71569E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	9.2983E-04	-6.4627E-04	1.2989E-04	-2.8839E-07	6.7865E-06	4.7157E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	1.4764E-03	-6.4108E-04	1.3249E-04	-2.8839E-07	6.7865E-06	4.7157E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1734.7	-195.37	31.083	-0.1060	-109.78	-471.50
Pile N.	13	15	7	1	3	15
MAXIMUM	2738.9	-141.72	43.330	-0.1060	-85.094	-366.56
Pile N.	3	8	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	9.2983E-04	-6.4627E-04	1.2989E-04	-2.8839E-07	6.7865E-06	4.7157E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	1.4764E-03	-6.4108E-04	1.3249E-04	-2.8839E-07	6.7865E-06	4.7157E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1734.7	-195.37	31.083	-0.1060	-109.78	-471.50
Pile N.	13	15	7	1	3	15
MAXIMUM	2738.9	-141.72	43.330	-0.1060	-85.094	-366.56
Pile N.	3	8	3	1	7	5

* EFFECTS FOR Laterally LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR z-DIR KN	SHEAR y-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-6.4627E-04	-3.6989E-06	-199.42	-109.78	-195.38	-9.1399	-82.775	-2.2403	981.66
Pile N.	13	3	15	3	15	3	3	14	13
Max.	1.8041E-05	1.3249E-04	471.50	41.293	43.872	43.334	10.523	17.798	3001.5
Pile N.	15	3	15	3	15	3	14	3	3

LOAD CASE : 12

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
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APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 324 di 420
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30306.0 -276.510 557.375 23.3401 5823.56 -6450.80

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.08533E-03	-1.69945E-05	1.38384E-04	-2.54987E-07	6.56398E-06	-1.43491E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	9.6168E-04	-1.9289E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2090E-03	-1.4700E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1793.2	-20.724	32.387	-0.093719	-118.18	-78.573
Pile N.	15	3	8	1	3	3
MAXIMUM	2247.6	-16.708	46.264	-0.093719	-90.614	-70.315
Pile N.	1	8	3	1	8	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. X, M	DISP. Y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	9.6168E-04	-1.9289E-05	1.3724E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2090E-03	-1.4700E-05	1.3953E-04	-2.5499E-07	6.5640E-06	-1.4349E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1793.2	-20.724	32.387	-0.093719	-118.18	-78.573
Pile N.	15	3	8	1	3	3
MAXIMUM	2247.6	-16.708	46.264	-0.093719	-90.614	-70.315
Pile N.	1	8	3	1	8	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-3.2209E-05	-3.8922E-06	-9.7093	-118.18	-20.726	-9.6373	-5.6859	-2.4078	1014.8
Pile N.	14	3	15	3	3	3	3	9	15
Max.	7.8459E-07	1.3953E-04	78.573	43.558	2.2092	46.267	0.9098	18.881	1693.5
Pile N.	15	3	3	3	3	3	15	3	1

LOAD CASE : 13

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
32897.5	1789.23	204.774	-125.422	1992.58	-18446.0

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.17937E-03	5.48129E-04	4.95428E-05	-7.18052E-07	2.27857E-06	-6.02085E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	8.8793E-04	5.4167E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4708E-03	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *





	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1657.7	102.80	12.083	-0.2639	-39.052	230.92
Pile N.	15	11	8	1	3	11
MAXIMUM	2728.6	147.87	15.245	-0.2639	-33.606	319.75
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	8.8793E-04	5.4167E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4708E-03	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   		
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		

MINIMUM	1657.7	102.80	12.083	-0.2639	-39.052	230.92
Pile N.	15	11	8	1	3	11
MAXIMUM	2728.6	147.87	15.245	-0.2639	-33.606	319.75
Pile N.	1	1	1	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-1.5614E-05	-1.3998E-06	-319.75	-39.052	-37.601	-3.1976	-8.6413	-0.9174	938.08
Pile N.	1	3	1	3	1	1	1	15	15
Max.	5.5459E-04	5.2774E-05	171.41	14.446	147.88	15.247	67.070	6.2433	2516.2
Pile N.	1	3	1	1	1	1	1	1	1

LOAD CASE : 14

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
32525.5	-1789.23	204.774	-141.490	1992.58	5425.11

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.16587E-03	-4.51515E-04	4.91785E-05	-2.73453E-07	2.27715E-06	2.70793E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.0235E-03	-4.5398E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	1.3082E-03	-4.4905E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1906.8	-144.21	11.650	-0.1005	-43.110	-358.88
Pile N.	13	15	7	1	3	15
MAXIMUM	2429.9	-104.50	16.810	-0.1005	-32.274	-280.57
Pile N.	3	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. X, M	DISP. Y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.0235E-03	-4.5398E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	1.3082E-03	-4.4905E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1906.8	-144.21	11.650	-0.1005	-43.110	-358.88
Pile N.	13	15	7	1	3	15
MAXIMUM	2429.9	-104.50	16.810	-0.1005	-32.274	-280.57
Pile N.	3	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-4.5398E-04	-1.4067E-06	-140.90	-43.110	-144.22	-3.4856	-59.925	-0.8497	1079.1
Pile N.	13	3	15	3	15	3	15	14	13
Max.	1.2669E-05	5.0409E-05	358.88	15.750	31.134	16.812	7.6164	6.8432	2451.8
Pile N.	15	3	15	3	15	3	14	3	3

LOAD CASE : 15

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30306.0	-276.510	-5.0000E-06	-4.0000E-06	1.69900E-03	-6450.98

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.08533E-03	-1.5688E-05	3.27410E-12	-1.24325E-14	1.48132E-12	-1.43615E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.0207E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
Pile N.	3	1	1	1	1	1

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

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Min.	-3.2208E-05	-1.9597E-06	-9.7843	-59.613	-20.637	-4.8532	-5.6538	-1.2135	1045.5
Pile N.	14	3	15	3	3	3	3	9	15
Max.	7.9263E-07	7.0260E-05	78.331	21.936	2.1949	23.323	0.9170	9.5130	1532.3
Pile N.	15	3	3	3	3	3	15	3	1

LOAD CASE : 17

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30306.0	-276.510	-5.00000E-06	-4.00000E-06	1.69900E-03	-6450.98

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.08533E-03	-1.56881E-05	3.27410E-12	-1.24325E-14	1.48132E-12	-1.43615E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.0207E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
Pile N.	3	1	1	1	1	1
MAXIMUM	1.1500E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1901.7	-21.114	-3.6195E-07	-4.5695E-09	3.0033E-06	-79.671
Pile N.	3	3	7	1	3	3
MAXIMUM	2139.1	-16.804	-2.9174E-07	-4.5695E-09	3.1043E-06	-70.287
Pile N.	1	8	3	1	1	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.0207E-03	-1.5688E-05	3.2181E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
Pile N.	3	1	1	1	1	1
MAXIMUM	1.1500E-03	-1.5688E-05	3.3300E-12	-1.2432E-14	1.4813E-12	-1.4361E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1901.7	-21.114	-3.6195E-07	-4.5695E-09	3.0033E-06	-79.671
Pile N.	3	3	7	1	3	3
MAXIMUM	2139.1	-16.804	-2.9174E-07	-4.5695E-09	3.1043E-06	-70.287
Pile N.	1	8	3	1	1	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-2.9305E-05	-3.6142E-13	-9.9397	-1.2559E-07	-21.116	-4.7878E-07	-5.8252	-1.0344E-07	1076.1
Pile N.	8	7	3	7	3	3	3	3	3
Max.	7.8923E-07	3.3300E-12	79.671	3.1043E-06	2.2721	3.1817E-08	0.8760	1.4103E-07	1430.8
Pile N.	3	3	3	1	3	7	6	3	1

LOAD CASE : 18

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
32897.5	1789.23	204.774	-125.422	1992.58	-18445.9

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *



DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.17937E-03	5.48128E-04	4.95428E-05	-7.18052E-07	2.27857E-06	-6.02081E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	8.8793E-04	5.4166E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4708E-03	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1657.7	102.80	12.083	-0.2639	-39.052	230.92
Pile N.	15	11	8	1	3	11
MAXIMUM	2728.6	147.87	15.245	-0.2639	-33.606	319.75
Pile N.	1	1	1	1	8	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 328 di 420

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	8.8793E-04	5.4166E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4708E-03	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1657.7	102.80	12.083	-0.2639	-39.052	230.92
Pile N.	15	11	8	1	3	11
MAXIMUM	2728.6	147.87	15.245	-0.2639	-33.606	319.75
Pile N.	1	1	1	1	8	1

* EFFECTS FOR Laterally LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR z-DIR KN	SHEAR y-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-1.5614E-05	-1.3998E-06	-319.75	-39.052	-37.601	-3.1976	-8.6413	-0.9174	938.09
Pile N.	1	3	1	3	1	1	15	15	15
Max.	5.5459E-04	5.2774E-05	171.41	14.446	147.88	15.247	67.070	6.2433	2516.2
Pile N.	1	3	1	1	1	1	1	1	1

LOAD CASE : 19

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
32277.0	1568.91	213.600	-256.322	3230.39	-16081.0

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.15685E-03	4.79931E-04	5.47977E-05	-1.20427E-06	3.39047E-06	-5.25561E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	8.8984E-04	4.6909E-04	4.9379E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4239E-03	4.9077E-04	6.0217E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1661.2	89.396	12.614	-0.4426	-41.377	200.56
Pile N.	15	11	8	1	3	11
MAXIMUM	2642.4	131.62	15.638	-0.4426	-33.725	286.14
Pile N.	1	1	3	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	8.8984E-04	4.6909E-04	4.9379E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4239E-03	4.9077E-04	6.0217E-05	-1.2043E-06	3.3905E-06	-5.2556E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1661.2	89.396	12.614	-0.4426	-41.377	200.56
Pile N.	15	11	8	1	3	11
MAXIMUM	2642.4	131.62	15.638	-0.4426	-33.725	286.14
Pile N.	1	1	3	1	8	1

* EFFECTS FOR Laterally LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR z-DIR KN	SHEAR y-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-1.3809E-05	-1.6022E-06	-286.14	-41.377	-33.281	-3.3810	-7.6481	-1.0170	940.07
Pile N.	1	3	1	3	1	1	15	15	15
Max.	4.9077E-04	6.0217E-05	151.68	15.992	131.63	15.639	59.521	6.4322	2366.1
Pile N.	1	3	1	3	1	3	1	1	1

LOAD CASE : 20

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
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APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 329 di 420
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31605.3 -988.227 73.3230 -34.6604 -198.671 -1695.05

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.13248E-03	-2.14558E-04	1.52909E-05	-3.81331E-08	1.32725E-08	3.01964E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.1188E-03	-2.1490E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
Pile N.	13	13	1	1	1	1
MAXIMUM	1.1462E-03	-2.1421E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2081.8	-78.665	4.2786	-0.014016	-16.236	-213.08
Pile N.	13	15	7	1	3	15
MAXIMUM	2132.2	-58.227	5.8791	-0.014016	-12.962	-172.63
Pile N.	3	8	3	1	7	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. X, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.1188E-03	-2.1490E-04	1.5119E-05	-3.8133E-08	1.3273E-08	3.0196E-06
Pile N.	13	13	1	1	1	1
MAXIMUM	1.1462E-03	-2.1421E-04	1.5462E-05	-3.8133E-08	1.3273E-08	3.0196E-06
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2081.8	-78.665	4.2786	-0.014016	-16.236	-213.08
Pile N.	13	15	7	1	3	15
MAXIMUM	2132.2	-58.227	5.8791	-0.014016	-12.962	-172.63
Pile N.	3	8	3	1	7	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-2.1490E-04	-4.3572E-07	-67.993	-16.236	-78.670	-1.0967	-30.700	-0.2902	1178.1
Pile N.	13	3	15	3	15	3	15	2	10
Max.	6.0365E-06	1.5462E-05	213.08	4.9333	15.108	5.8796	3.9724	2.2593	1851.3
Pile N.	15	3	15	3	15	3	14	3	15

LOAD CASE : 21

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
32897.5	1789.23	204.774	-125.422	1992.58	-18446.0

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.17937E-03	5.48129E-04	4.95428E-05	-7.18052E-07	2.27857E-06	-6.02085E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	8.8793E-04	5.4167E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4708E-03	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1657.7	102.80	12.083	-0.2639	-39.052	230.92
Pile N.	15	11	8	1	3	11
MAXIMUM	2728.6	147.87	15.245	-0.2639	-33.606	319.75
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. X, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	8.8793E-04	5.4167E-04	4.6312E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.4708E-03	5.5459E-04	5.2774E-05	-7.1805E-07	2.2786E-06	-6.0208E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1657.7	102.80	12.083	-0.2639	-39.052	230.92
Pile N.	15	11	8	1	3	11
MAXIMUM	2728.6	147.87	15.245	-0.2639	-33.606	319.75
Pile N.	1	1	1	1	8	1

APPALTATORE: Consorzio Soci 			ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti 								
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B			COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 330 di 420

MINIMUM	1657.7	102.80	12.083	-0.2639	-39.052	230.92
Pile N.	15	11	8	1	3	11
MAXIMUM	2728.6	147.87	15.245	-0.2639	-33.606	319.75
Pile N.	1	1	1	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-1.5614E-05	-1.3998E-06	-319.75	-39.052	-37.601	-3.1976	-8.6413	-0.9174	938.08
Pile N.	1	3	1	3	1	1	1	15	15
Max.	5.5459E-04	5.2774E-05	171.41	14.446	147.88	15.247	67.070	6.2433	2516.2
Pile N.	1	3	1	1	1	1	1	1	1

LOAD CASE : 22

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
32525.5	-1789.23	204.774	-141.490	1992.58	5425.11

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.16587E-03	-4.51515E-04	4.91785E-05	-2.73453E-07	2.27715E-06	2.70793E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.0235E-03	-4.5398E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	1.3082E-03	-4.4905E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1906.8	-144.21	11.650	-0.1005	-43.110	-358.88
Pile N.	13	15	7	1	3	15
MAXIMUM	2429.9	-104.50	16.810	-0.1005	-32.274	-280.57
Pile N.	3	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.0235E-03	-4.5398E-04	4.7948E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	1.3082E-03	-4.4905E-04	5.0409E-05	-2.7345E-07	2.2771E-06	2.7079E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. Y, KN	LAT. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1906.8	-144.21	11.650	-0.1005	-43.110	-358.88
Pile N.	13	15	7	1	3	15
MAXIMUM	2429.9	-104.50	16.810	-0.1005	-32.274	-280.57
Pile N.	3	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-4.5398E-04	-1.4067E-06	-140.90	-43.110	-144.22	-3.4856	-59.925	-0.8497	1079.1
Pile N.	13	3	15	3	15	3	15	14	13
Max.	1.2669E-05	5.0409E-05	358.88	15.750	31.134	16.812	7.6164	6.8432	2451.8
Pile N.	15	3	15	3	15	3	14	3	3

LOAD CASE : 23

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *




LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
32253.6	-1568.91	241.200	-289.441	2880.59	4286.71

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.15600E-03	-3.92444E-04	5.91268E-05	-7.92480E-07	3.15080E-06	2.25484E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.0262E-03	-3.9958E-04	5.5561E-05	-7.9248E-07	3.1508E-06	2.2548E-05
Pile N.	13	13	1	1	1	1

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

Min.	-3.2208E-05	-1.9597E-06	-9.7843	-59.613	-20.637	-4.8532	-5.6538	-1.2135	1045.5
Pile N.	14	3	15	3	3	3	3	9	15
Max.	7.9263E-07	7.0260E-05	78.331	21.936	2.1949	23.323	0.9170	9.5130	1532.3
Pile N.	15	3	3	3	3	3	15	3	1

LOAD CASE : 25

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30306.0	-276.510	3.00000E-06	3.00000E-06	-5.10000E-04	-6450.81

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.08533E-03	-1.56893E-05	-6.56280E-13	1.23903E-14	-4.40800E-13	-1.43611E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.0207E-03	-1.5689E-05	-7.1204E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.1500E-03	-1.5689E-05	-6.0052E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1901.7	-21.114	1.9133E-07	4.5540E-09	-1.2505E-06	-79.671
Pile N.	3	3	6	1	1	3
MAXIMUM	2139.1	-16.804	2.1707E-07	4.5540E-09	-1.1785E-06	-70.287
Pile N.	1	8	1	1	8	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.0207E-03	-1.5689E-05	-7.1204E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
Pile N.	3	1	3	1	1	1
MAXIMUM	1.1500E-03	-1.5689E-05	-6.0052E-13	1.2390E-14	-4.4080E-13	-1.4361E-05
Pile N.	1	1	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1901.7	-21.114	1.9133E-07	4.5540E-09	-1.2505E-06	-79.671
Pile N.	3	3	6	1	1	3
MAXIMUM	2139.1	-16.804	2.1707E-07	4.5540E-09	-1.1785E-06	-70.287
Pile N.	1	8	1	1	8	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-2.9306E-05	-7.1204E-13	-9.9399	-1.2505E-06	-21.116	-1.5671E-08	-5.8253	-1.5470E-08	1076.1
Pile N.	8	3	3	1	3	1	3	3	3
Max.	7.8925E-07	2.0475E-13	79.671	6.6481E-08	2.2722	2.2240E-07	0.8761	4.2655E-08	1430.8
Pile N.	3	7	3	7	3	1	6	3	1

LOAD CASE : 26

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30306.0	-276.510	-4.00000E-06	-3.00000E-06	1.49800E-03	-6450.96

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *




DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.08533E-03	-1.56882E-05	2.97577E-12	-8.48388E-15	1.30712E-12	-1.43615E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.0207E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
Pile N.	3	1	1	1	1	1
MAXIMUM	1.1500E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1901.7	-21.114	-2.9162E-07	-3.1182E-09	2.5705E-06	-79.671
Pile N.	3	3	7	3	3	3
MAXIMUM	2139.1	-16.804	-2.2865E-07	-3.1182E-09	2.6497E-06	-70.287
Pile N.	1	8	3	1	1	8

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 333 di 420

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x, RAD	ROT. y, RAD	ROT. z, RAD
MINIMUM	1.0207E-03	-1.5688E-05	2.9376E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
Pile N.	3	1	1	1	1	1
MAXIMUM	1.1500E-03	-1.5688E-05	3.0140E-12	-8.4839E-15	1.3071E-12	-1.4361E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1901.7	-21.114	-2.9162E-07	-3.1182E-09	2.5705E-06	-79.671
Pile N.	3	3	7	1	3	3
MAXIMUM	2139.1	-16.804	-2.2865E-07	-3.1182E-09	2.6497E-06	-70.287
Pile N.	1	8	3	1	1	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-2.9305E-05	-3.0316E-13	-9.9397	-1.0614E-07	-21.116	-4.1335E-07	-5.8252	-8.9583E-08	1076.1
Pile N.	8	7	3	7	3	3	3	3	3
Max.	7.8923E-07	3.0140E-12	79.671	2.6497E-06	2.2721	2.7358E-08	0.8760	1.3550E-07	1430.8
Pile N.	3	3	3	1	3	7	6	3	1

13.4 SPB SLU – SLV

GROUP for Windows, Version 2016.10.13

Serial Number : 228330872

Analysis of A Group of Piles
 Subjected to Axial and Lateral Loading

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Time and Date of Analysis

Date: February 10, 2020 Time: 15:27:09

***** COMPUTATION RESULTS *****

New Group

***** LOAD CASES RESULTS *****

LOAD CASE : 1
 CASE NAME : Load Case
 LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
 ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5850	1.0000
3	0.5921	1.0000
4	0.8010	1.0000
5	0.4951	1.0000

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA											
PROGETTAZIONE: Mandataria  Mandanti  												
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B												
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 10%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 10%;">REV.</td> <td style="width: 20%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>334 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	334 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO							
IF28	01	E ZZ CL	VI0103 001	B	334 di 420							

6	0.4975	1.0000
7	0.8005	1.0000
8	0.4934	1.0000
9	0.4956	1.0000
10	0.8005	1.0000
11	0.4944	1.0000
12	0.4966	1.0000
13	0.8609	1.0000
14	0.5774	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
47518.6	4070.50	749.073
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-120.838	7396.39	-34164.8

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.73031E-03	1.01220E-03	1.51475E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-1.19079E-06	9.55329E-06	-1.21372E-04


THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.3625E-03	1.0229E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
2	1.8163E-03	1.0229E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
3	1.2701E-03	1.0229E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
4	2.3195E-03	1.0176E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
5	1.7733E-03	1.0176E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
6	1.2271E-03	1.0176E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
7	2.2765E-03	1.0122E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
8	1.7303E-03	1.0122E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
9	1.1841E-03	1.0122E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
10	2.2335E-03	1.0068E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
11	1.6873E-03	1.0068E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
12	1.1412E-03	1.0068E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
13	2.1905E-03	1.0015E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
14	1.6443E-03	1.0015E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
15	1.0982E-03	1.0015E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
MINIMUM	1.0982E-03	1.0015E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.3625E-03	1.0229E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4191.4	331.08	56.839	-0.4377	-133.35	671.99
2	3363.3	265.37	48.390	-0.4377	-120.64	558.93
3	2359.9	267.29	50.799	-0.4377	-126.98	561.99
4	4143.9	315.01	54.662	-0.4377	-129.64	642.82
5	3284.3	239.72	44.400	-0.4377	-113.26	510.62
6	2280.9	240.45	46.443	-0.4377	-118.94	511.61
7	4096.4	312.98	54.727	-0.4377	-129.76	637.10
8	3205.3	237.72	44.387	-0.4377	-113.24	504.99
9	2201.9	238.41	46.423	-0.4377	-118.90	505.90
10	4049.0	311.07	54.811	-0.4377	-129.91	631.58
11	3126.4	236.50	44.505	-0.4377	-113.46	500.76
12	2123.0	237.18	46.546	-0.4377	-119.13	501.66
13	4001.5	322.05	57.009	-0.4377	-133.66	647.55
14	3047.4	256.90	48.361	-0.4377	-120.58	535.49
15	2044.0	258.77	50.770	-0.4377	-126.93	538.49
MINIMUM	2044.0	236.50	44.387	-0.4377	-133.66	500.76
Pile N.	15	11	8	1	13	11
MAXIMUM	4191.4	331.08	57.009	-0.4377	-113.24	671.99
Pile N.	1	1	13	1	8	1

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA						
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="0"> <tr> <td>COMMESSA IF28</td> <td>LOTTO 01</td> <td>CODIFICA E ZZ CL</td> <td>DOCUMENTO VI0103 001</td> <td>REV. B</td> <td>FOGLIO 335 di 420</td> </tr> </table>	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 335 di 420
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 335 di 420		

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.3625E-03	1.0229E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
2	1.8163E-03	1.0229E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
3	1.2701E-03	1.0229E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
4	2.3195E-03	1.0176E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
5	1.7733E-03	1.0176E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
6	1.2271E-03	1.0176E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
7	2.2765E-03	1.0122E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
8	1.7303E-03	1.0122E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
9	1.1841E-03	1.0122E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
10	2.2335E-03	1.0068E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
11	1.6873E-03	1.0068E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
12	1.1412E-03	1.0068E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
13	2.1905E-03	1.0015E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
14	1.6443E-03	1.0015E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
15	1.0982E-03	1.0015E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
MINIMUM	1.0982E-03	1.0015E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.3625E-03	1.0229E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4191.4	331.08	56.839	-0.4377	-133.35	671.99
2	3363.3	265.37	48.390	-0.4377	-120.64	558.93
3	2359.9	267.29	50.799	-0.4377	-126.98	561.99
4	4143.9	315.01	54.662	-0.4377	-129.64	642.82
5	3284.3	239.72	44.400	-0.4377	-113.26	510.62
6	2280.9	240.45	46.443	-0.4377	-118.94	511.61
7	4096.4	312.98	54.727	-0.4377	-129.76	637.10
8	3205.3	237.72	44.387	-0.4377	-113.24	504.99
9	2201.9	238.41	46.423	-0.4377	-118.90	505.90
10	4049.0	311.07	54.811	-0.4377	-129.91	631.58
11	3126.4	236.50	44.505	-0.4377	-113.46	500.76
12	2123.0	237.18	46.546	-0.4377	-119.13	501.66
13	4001.5	322.05	57.009	-0.4377	-133.66	647.55
14	3047.4	256.90	48.361	-0.4377	-120.58	535.49
15	2044.0	258.77	50.770	-0.4377	-126.93	538.49
MINIMUM	2044.0	236.50	44.387	-0.4377	-133.66	500.76
Pile N.	15	11	8	1	13	11
MAXIMUM	4191.4	331.08	57.009	-0.4377	-113.24	671.99
Pile N.	1	1	13	1	8	1

PILE GROUP STRESS, KN/ M**2

*****	*****
1	4439.5
2	3629.0
3	3074.3
4	4324.1
5	3437.1
6	2876.0
7	4280.4
8	3375.8
9	2814.5
10	4237.3
11	3318.8
12	2757.5
13	4259.9
14	3381.1
15	2826.4
MINIMUM	2757.5
Pile N.	12
MAXIMUM	4439.5
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.4192E-05	-3.5365E-06	-671.99	-133.35	-105.16	-15.572	-30.008	-4.4619	2371.8	7.8279E+06	7.8279E+06
x(M)	8.6000	8.8000	0.0000	0.0000	6.8000	7.0000	8.8000	9.0000	20.000	0.0000	0.0000

APPALDATTORE:
Consorzio **Soci**
  

ITINERARIO NAPOLI – BARI

PROGETTAZIONE:
Mandataria **Mandanti**
  

RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO
RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 336 di 420
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	2	-2.4952E-05	-3.7678E-06	-558.93	-120.64	-84.313	-12.943	-22.059	-3.3951	1903.2	7.8279E+06	7.8279E+06
x(M)		9.2000	9.4000	0.0000	0.0000	7.4000	7.6000	9.4000	9.6000	20.000	0.0000	0.0000
	3	-2.4898E-05	-3.8987E-06	-561.99	-126.98	-84.796	-13.504	-22.256	-3.5536	1335.4	7.8279E+06	7.8279E+06
x(M)		9.2000	9.4000	0.0000	0.0000	7.4000	7.6000	9.4000	9.6000	20.000	0.0000	0.0000
	4	-2.4215E-05	-3.5563E-06	-642.82	-129.64	-100.32	-14.927	-28.111	-4.1992	2345.0	7.8279E+06	7.8279E+06
x(M)		8.8000	8.8000	0.0000	0.0000	7.0000	7.2000	9.0000	9.2000	20.000	0.0000	0.0000
	5	-2.5103E-05	-3.7938E-06	-510.62	-113.26	-76.321	-11.767	-19.178	-2.9615	1858.5	7.8279E+06	7.8279E+06
x(M)		9.4000	9.6000	0.0000	0.0000	7.4000	7.8000	9.6000	10.000	20.000	0.0000	0.0000
	6	-2.5069E-05	-3.9270E-06	-511.61	-118.94	-76.468	-12.227	-19.238	-3.0810	1290.7	7.8279E+06	7.8279E+06
x(M)		9.4000	9.6000	0.0000	0.0000	7.4000	7.8000	9.6000	10.000	20.000	0.0000	0.0000
	7	-2.4111E-05	-3.5610E-06	-637.10	-129.76	-99.812	-14.934	-27.961	-4.2003	2318.1	7.8279E+06	7.8279E+06
x(M)		8.8000	8.8000	0.0000	0.0000	7.0000	7.2000	9.0000	9.2000	20.000	0.0000	0.0000
	8	-2.5000E-05	-3.7976E-06	-504.99	-113.24	-75.813	-11.751	-19.031	-2.9550	1813.9	7.8279E+06	7.8279E+06
x(M)		9.4000	9.6000	0.0000	0.0000	7.4000	7.8000	9.6000	10.000	20.000	0.0000	0.0000
	9	-2.4967E-05	-3.9308E-06	-505.90	-118.90	-75.946	-12.209	-19.086	-3.0735	1246.0	7.8279E+06	7.8279E+06
x(M)		9.4000	9.6000	0.0000	0.0000	7.4000	7.8000	9.6000	10.000	20.000	0.0000	0.0000
	10	-2.4015E-05	-3.5657E-06	-631.58	-129.91	-99.343	-14.947	-27.826	-4.2035	2291.2	7.8279E+06	7.8279E+06
x(M)		8.6000	8.6000	0.0000	0.0000	7.4000	7.2000	9.0000	9.2000	20.000	0.0000	0.0000
	11	-2.4892E-05	-3.8015E-06	-500.76	-113.46	-75.559	-11.773	-18.976	-2.9617	1769.2	7.8279E+06	7.8279E+06
x(M)		9.4000	9.6000	0.0000	0.0000	7.4000	7.8000	9.6000	10.000	20.000	0.0000	0.0000
	12	-2.4858E-05	-3.9349E-06	-501.66	-119.13	-75.690	-12.231	-19.030	-3.0804	1201.3	7.8279E+06	7.8279E+06
x(M)		9.4000	9.6000	0.0000	0.0000	7.4000	7.8000	9.6000	10.000	20.000	0.0000	0.0000
	13	-2.3804E-05	-3.5552E-06	-647.55	-133.66	-102.95	-15.583	-29.316	-4.4568	2264.4	7.8279E+06	7.8279E+06
x(M)		8.6000	8.8000	0.0000	0.0000	6.8000	7.0000	8.8000	9.0000	20.000	0.0000	0.0000
	14	-2.4549E-05	-3.7854E-06	-535.49	-120.58	-82.106	-12.886	-21.415	-3.3685	1724.5	7.8279E+06	7.8279E+06
x(M)		9.2000	9.4000	0.0000	0.0000	7.2000	7.6000	9.4000	9.6000	20.000	0.0000	0.0000
	15	-2.4496E-05	-3.9172E-06	-538.49	-126.93	-82.634	-13.446	-21.609	-3.5263	1156.7	7.8279E+06	7.8279E+06
x(M)		9.2000	9.4000	0.0000	0.0000	7.2000	7.6000	9.4000	9.6000	20.000	0.0000	0.0000
Min.		-2.5103E-05	-3.9349E-06	-671.99	-133.66	-105.16	-15.583	-30.008	-4.4619	1156.7	7.8279E+06	7.8279E+06
Pile N.		5	12	1	13	1	13	1	15	1	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.0229E-03	1.4612E-04	391.02	57.333	331.11	56.846	158.16	24.847	4439.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	4.8000	5.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
2	1.0229E-03	1.5147E-04	340.42	51.758	265.40	48.396	111.97	18.417	3629.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.0000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
3	1.0229E-03	1.5683E-04	341.75	53.875	267.31	50.802	113.14	19.337	3074.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.0000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
4	1.0176E-03	1.4612E-04	378.84	55.807	315.04	54.669	147.20	23.286	4324.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	4.8000	5.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
5	1.0176E-03	1.5147E-04	319.52	48.830	239.74	44.405	96.184	15.991	3437.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
6	1.0176E-03	1.5683E-04	319.92	50.690	240.46	46.447	96.547	16.685	2876.0	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
7	1.0122E-03	1.4612E-04	377.08	55.852	313.01	54.733	146.57	23.336	4280.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	4.8000	5.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
8	1.0122E-03	1.5147E-04	317.67	48.810	237.74	44.392	95.526	15.987	3375.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
9	1.0122E-03	1.5683E-04	318.04	50.664	238.43	46.426	95.866	16.677	2814.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
10	1.0068E-03	1.4612E-04	375.40	55.912	311.10	54.818	146.02	23.401	4237.3	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	4.8000	5.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
11	1.0068E-03	1.5147E-04	316.44	48.891	236.52	44.510	95.345	16.061	3318.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
12	1.0068E-03	1.5683E-04	316.80	50.748	237.19	46.549	95.687	16.754	2757.5	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
13	1.0015E-03	1.4612E-04	383.24	57.450	322.08	57.016	155.01	24.991	4259.9	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	4.8000	5.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
14	1.0015E-03	1.5147E-04	332.87	51.702	256.92	48.366	109.06	18.415	3381.1	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.0000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
15	1.0015E-03	1.5683E-04	334.18	53.819	258.79	50.774	110.20	19.337	2826.4	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
Max.	1.0229E-03	1.5683E-04	391.02	57.450	331.11	57.016	158.16	24.991	4439.5	7.8279E+06	7.8279E+06
Pile N.	1	3	1	13	1	13	1	13	1	1	1

LOAD CASE : 2
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5937	1.0000
2	0.5862	1.0000
3	0.8661	1.0000
4	0.4979	1.0000
5	0.4951	1.0000

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria  Mandanti  					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 337 di 420

6	0.8001	1.0000
7	0.4959	1.0000
8	0.4932	1.0000
9	0.7995	1.0000
10	0.4969	1.0000
11	0.4943	1.0000
12	0.7995	1.0000
13	0.5845	1.0000
14	0.5771	1.0000
15	0.8598	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 46619.6	HOR. LOAD Y, KN -4070.50	HOR. LOAD Z, KN 749.073
MOMENT X, KN- M -159.669	MOMENT Y, KN- M 7396.38	MOMENT Z, KN- M 20228.4

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.67731E-03	HORIZONTAL Y, M -8.86849E-04	HORIZONTAL Z, M 1.45932E-04
ANGLE ROT. X, RAD 1.75885E-07	ANGLE ROT. Y, RAD 8.29598E-06	ANGLE ROT. Z, RAD 7.94728E-05







THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.3943E-03	-8.8843E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
2	1.7520E-03	-8.8843E-04	1.4593E-04	1.7588E-07	8.2960E-06	7.9473E-05
3	2.1096E-03	-8.8843E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
4	1.3570E-03	-8.8764E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
5	1.7146E-03	-8.8764E-04	1.4593E-04	1.7588E-07	8.2960E-06	7.9473E-05
6	2.0723E-03	-8.8764E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
7	1.3197E-03	-8.8685E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
8	1.6773E-03	-8.8685E-04	1.4593E-04	1.7588E-07	8.2960E-06	7.9473E-05
9	2.0349E-03	-8.8685E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
10	1.2824E-03	-8.8606E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
11	1.6400E-03	-8.8606E-04	1.4593E-04	1.7588E-07	8.2960E-06	7.9473E-05
12	1.9976E-03	-8.8606E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
13	1.2450E-03	-8.8527E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
14	1.6026E-03	-8.8527E-04	1.4593E-04	1.7588E-07	8.2960E-06	7.9473E-05
15	1.9603E-03	-8.8527E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
MINIMUM	1.2450E-03	-8.8843E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	2.1096E-03	-8.8527E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2588.1	-265.24	49.094	0.064646	-123.14	-613.23
2	3245.1	-263.34	48.445	0.064646	-121.69	-610.01
3	3902.2	-325.12	58.918	0.064646	-139.73	-716.95
4	2519.5	-240.72	44.794	0.064646	-115.23	-568.41
5	3176.6	-239.91	44.365	0.064646	-114.18	-567.11
6	3833.6	-311.31	56.575	0.064646	-135.74	-693.37
7	2450.9	-239.95	44.710	0.064646	-115.07	-566.70
8	3108.0	-239.19	44.288	0.064646	-114.03	-565.48
9	3765.0	-310.90	56.567	0.064646	-135.72	-692.32
10	2382.4	-240.01	44.770	0.064646	-115.18	-566.49
11	3039.4	-239.25	44.349	0.064646	-114.14	-565.27
12	3696.4	-310.62	56.582	0.064646	-135.74	-691.50
13	2313.8	-262.07	48.751	0.064646	-122.51	-606.27
14	2970.8	-260.16	48.103	0.064646	-121.06	-603.03
15	3627.8	-322.72	58.761	0.064646	-139.45	-711.49
MINIMUM	2313.8	-325.12	44.288	0.064646	-139.73	-716.95
Pile N.	13	3	8	1	3	3
MAXIMUM	3902.2	-239.19	58.918	0.064646	-114.03	-565.27
Pile N.	3	8	3	1	8	11

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.3943E-03	-8.8843E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
2	1.7520E-03	-8.8843E-04	1.4593E-04	1.7588E-07	8.2960E-06	7.9473E-05
3	2.1096E-03	-8.8843E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
4	1.3570E-03	-8.8764E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
5	1.7146E-03	-8.8764E-04	1.4593E-04	1.7588E-07	8.2960E-06	7.9473E-05
6	2.0723E-03	-8.8764E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
7	1.3197E-03	-8.8685E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
8	1.6773E-03	-8.8685E-04	1.4593E-04	1.7588E-07	8.2960E-06	7.9473E-05
9	2.0349E-03	-8.8685E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
10	1.2824E-03	-8.8606E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
11	1.6400E-03	-8.8606E-04	1.4593E-04	1.7588E-07	8.2960E-06	7.9473E-05
12	1.9976E-03	-8.8606E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
13	1.2450E-03	-8.8527E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
14	1.6026E-03	-8.8527E-04	1.4593E-04	1.7588E-07	8.2960E-06	7.9473E-05
15	1.9603E-03	-8.8527E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
MINIMUM	1.2450E-03	-8.8843E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	2.1096E-03	-8.8527E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2588.1	-265.24	49.094	0.064646	-123.14	-613.23
2	3245.1	-263.34	48.445	0.064646	-121.69	-610.01
3	3902.2	-325.12	58.918	0.064646	-139.73	-716.95
4	2519.5	-240.72	44.794	0.064646	-115.23	-568.41
5	3176.6	-239.91	44.365	0.064646	-114.18	-567.11
6	3833.6	-311.31	56.575	0.064646	-135.74	-693.37
7	2450.9	-239.95	44.710	0.064646	-115.07	-566.70
8	3108.0	-239.19	44.288	0.064646	-114.03	-565.48
9	3765.0	-310.90	56.567	0.064646	-135.72	-692.32
10	2382.4	-240.01	44.770	0.064646	-115.18	-566.49
11	3039.4	-239.25	44.349	0.064646	-114.14	-565.27
12	3696.4	-310.62	56.582	0.064646	-135.74	-691.50
13	2313.8	-262.07	48.751	0.064646	-122.51	-606.27
14	2970.8	-260.16	48.103	0.064646	-121.06	-603.03
15	3627.8	-322.72	58.761	0.064646	-139.45	-711.49
MINIMUM	2313.8	-325.12	44.288	0.064646	-139.73	-716.95
Pile N.	13	3	8	1	3	3
MAXIMUM	3902.2	-239.19	58.918	0.064646	-114.03	-565.27
Pile N.	3	8	3	1	8	11

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	3352.3
2	3713.7
3	4412.7
4	3176.2
5	3543.5
6	4301.7
7	3132.2
8	3499.7
9	4259.8
10	3092.8
11	3460.4
12	4218.5
13	3176.1
14	3537.4
15	4241.1
MINIMUM	3092.8
Pile N.	10
MAXIMUM	4412.7
Pile N.	3

* EFFECTS FOR Laterally Loaded PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-8.8843E-04	-3.6787E-06	-302.44	-123.14	-265.26	-12.752	-108.30	-3.3585	1464.6	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4000	5.2000	0.0000	0.0000	7.6000	2.6000	9.6000	20.000	0.0000	0.0000

APPALTATORE: Consorzio Soci HirpiniaAV salini impreglio ASTALDI		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandatara Mandanti ROKSOJL NETENGINEERING Alpina		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO V10103 001	REV. B	FOGLIO 339 di 420

2	-8.8843E-04	-3.6631E-06	-301.14	-121.69	-263.36	-12.596	-107.10	-3.3061	1836.4	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4000	5.2000	0.0000	0.0000	7.6000	2.6000	9.6000	20.000	0.0000	0.0000
3	-8.8843E-04	-3.5539E-06	-346.30	-139.73	-325.16	-15.648	-150.62	-4.4832	2208.2	7.8279E+06	7.8279E+06
x(M)	0.0000	8.8000	4.8000	0.0000	0.0000	7.0000	2.6000	9.0000	20.000	0.0000	0.0000
4	-8.8764E-04	-3.7015E-06	-283.57	-115.23	-240.74	-11.523	-92.776	-2.9040	1425.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6000	5.2000	0.0000	0.0000	7.8000	2.8000	10.000	20.000	0.0000	0.0000
5	-8.8764E-04	-3.6832E-06	-283.02	-114.18	-239.93	-11.427	-92.332	-2.8762	1797.6	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6000	5.2000	0.0000	0.0000	7.8000	2.8000	10.000	20.000	0.0000	0.0000
6	-8.8764E-04	-3.5687E-06	-336.18	-135.74	-311.34	-14.975	-140.54	-4.2120	2169.4	7.8279E+06	7.8279E+06
x(M)	0.0000	8.8000	5.0000	0.0000	0.0000	7.2000	2.6000	9.2000	20.000	0.0000	0.0000
7	-8.8685E-04	-3.7018E-06	-282.91	-115.07	-239.97	-11.497	-92.388	-2.8946	1387.0	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6000	5.2000	0.0000	0.0000	7.8000	2.8000	10.000	20.000	0.0000	0.0000
8	-8.8685E-04	-3.6835E-06	-282.41	-114.03	-239.21	-11.404	-91.971	-2.8676	1758.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6000	5.4000	0.0000	0.0000	7.8000	2.8000	10.000	20.000	0.0000	0.0000
9	-8.8685E-04	-3.5696E-06	-335.82	-135.72	-310.93	-14.970	-140.36	-4.2099	2130.6	7.8279E+06	7.8279E+06
x(M)	0.0000	9.0000	5.0000	0.0000	0.0000	7.2000	2.6000	9.2000	20.000	0.0000	0.0000
10	-8.8606E-04	-3.7024E-06	-282.91	-115.18	-240.02	-11.511	-92.497	-2.8996	1348.1	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6000	5.2000	0.0000	0.0000	7.8000	2.8000	10.000	20.000	0.0000	0.0000
11	-8.8606E-04	-3.6841E-06	-282.41	-114.14	-239.27	-11.418	-92.082	-2.8726	1719.9	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6000	5.2000	0.0000	0.0000	7.8000	2.8000	10.000	20.000	0.0000	0.0000
12	-8.8606E-04	-3.5701E-06	-335.56	-135.74	-310.65	-14.972	-140.28	-4.2103	2091.7	7.8279E+06	7.8279E+06
x(M)	0.0000	9.0000	5.0000	0.0000	0.0000	7.2000	2.6000	9.2000	20.000	0.0000	0.0000
13	-8.8527E-04	-3.6840E-06	-299.85	-122.51	-262.08	-12.647	-106.58	-3.3167	1309.3	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4000	5.2000	0.0000	0.0000	7.6000	2.6000	9.6000	20.000	0.0000	0.0000
14	-8.8527E-04	-3.6677E-06	-298.54	-121.06	-260.18	-12.491	-105.38	-3.2640	1681.1	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4000	5.2000	0.0000	0.0000	7.6000	2.6000	9.6000	20.000	0.0000	0.0000
15	-8.8527E-04	-3.5585E-06	-344.33	-139.45	-322.75	-15.590	-149.32	-4.4598	2052.9	7.8279E+06	7.8279E+06
x(M)	0.0000	8.8000	4.8000	0.0000	0.0000	7.0000	2.6000	9.0000	20.000	0.0000	0.0000
Min.	-8.8843E-04	-3.7024E-06	-346.30	-139.73	-325.16	-15.648	-150.62	-4.4832	1309.3	7.8279E+06	7.8279E+06
Pile N.	1	10	3	3	3	3	3	3	13	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-Dir M	DISPL. z-Dir M	MOMENT z-Dir KN- M	MOMENT y-Dir KN- M	SHEAR y-Dir KN	SHEAR z-Dir KN	SOIL REACT y-Dir KN/ M	SOIL REACT z-Dir KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-Dir KN- M**2	FLEX. RIG. y-Dir KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	2.1954E-05	1.4672E-04	613.23	50.855	75.519	49.098	19.815	18.984	3352.3	7.8279E+06	7.8279E+06
x(M)	9.2000	0.0000	0.0000	5.4000	7.4000	0.0000	9.6000	2.8000	0.0000	0.0000	0.0000
2	2.1974E-05	1.4593E-04	610.01	50.357	75.002	48.450	19.633	18.668	3713.7	7.8279E+06	7.8279E+06
x(M)	9.2000	0.0000	0.0000	5.4000	7.4000	0.0000	9.6000	2.8000	0.0000	0.0000	0.0000
3	2.1380E-05	1.4514E-04	716.95	57.618	93.656	58.925	26.721	26.016	4412.7	7.8279E+06	7.8279E+06
x(M)	8.6000	0.0000	0.0000	5.0000	7.0000	0.0000	2.6000	9.0000	0.0000	0.0000	0.0000
4	2.2104E-05	1.4672E-04	568.41	47.774	68.181	44.798	17.177	16.325	3176.2	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
5	2.2127E-05	1.4593E-04	567.11	47.418	67.994	44.369	17.107	16.151	3543.5	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
6	2.1527E-05	1.4514E-04	693.37	55.995	89.472	56.582	25.124	24.308	4301.7	7.8279E+06	7.8279E+06
x(M)	8.8000	0.0000	0.0000	5.0000	7.0000	0.0000	9.0000	2.6000	0.0000	0.0000	0.0000
7	2.2093E-05	1.4672E-04	566.70	47.708	67.960	44.713	17.104	16.274	3132.2	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
8	2.2115E-05	1.4593E-04	565.48	47.358	67.786	44.293	17.039	16.105	3499.7	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
9	2.1512E-05	1.4514E-04	692.32	55.987	89.359	56.573	25.087	24.302	4259.8	7.8279E+06	7.8279E+06
x(M)	8.8000	0.0000	0.0000	5.0000	7.0000	0.0000	9.0000	2.6000	0.0000	0.0000	0.0000
10	2.2072E-05	1.4672E-04	566.49	47.751	67.984	44.774	17.118	16.310	3092.8	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
11	2.2094E-05	1.4593E-04	565.27	47.401	67.811	44.353	17.053	16.141	3460.4	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
12	2.1496E-05	1.4514E-04	691.50	55.996	89.288	56.588	25.067	24.312	4218.5	7.8279E+06	7.8279E+06
x(M)	8.8000	0.0000	0.0000	5.0000	7.0000	0.0000	9.0000	2.6000	0.0000	0.0000	0.0000
13	2.1896E-05	1.4672E-04	606.27	50.613	74.599	48.755	19.514	18.767	3176.1	7.8279E+06	7.8279E+06
x(M)	9.2000	0.0000	0.0000	5.4000	7.4000	0.0000	9.6000	2.8000	0.0000	0.0000	0.0000
14	2.1912E-05	1.4593E-04	603.03	50.114	74.077	48.108	19.328	18.451	3537.4	7.8279E+06	7.8279E+06
x(M)	9.2000	0.0000	0.0000	5.4000	7.4000	0.0000	9.6000	2.8000	0.0000	0.0000	0.0000
15	2.1323E-05	1.4514E-04	711.49	57.506	92.981	58.768	26.489	25.899	4241.1	7.8279E+06	7.8279E+06
x(M)	8.6000	0.0000	0.0000	5.0000	7.0000	0.0000	9.0000	2.6000	0.0000	0.0000	0.0000
Max.	2.2127E-05	1.4672E-04	716.95	57.618	93.656	58.925	26.721	26.016	4412.7	7.8279E+06	7.8279E+06
Pile N.	5	1	3	3	3	3	3	3	3	1	1

LOAD CASE : 3
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.6944	1.0000
2	0.6656	1.0000
3	0.8661	1.0000
4	0.5258	1.0000
5	0.4955	1.0000

APPALTATORE: Consorzio  Soci  			ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  								
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B								

6	0.7354	1.0000
7	0.5122	1.0000
8	0.4834	1.0000
9	0.7262	1.0000
10	0.5129	1.0000
11	0.4841	1.0000
12	0.7262	1.0000
13	0.5845	1.0000
14	0.5521	1.0000
15	0.7808	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 43836.2	HOR. LOAD Y, KN -1102.76	HOR. LOAD Z, KN 643.395
MOMENT X, KN- M -38.2378	MOMENT Y, KN- M 4857.11	MOMENT Z, KN- M -4178.39

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.57631E-03	HORIZONTAL Y, M -1.39467E-04	HORIZONTAL Z, M 1.01002E-04
ANGLE ROT. X, RAD -9.93583E-08	ANGLE ROT. Y, RAD 5.69847E-06	ANGLE ROT. Z, RAD -3.44516E-06


THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.6431E-03	-1.3857E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
2	1.6276E-03	-1.3857E-04	1.0100E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
3	1.6121E-03	-1.3857E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
4	1.6175E-03	-1.3902E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
5	1.6019E-03	-1.3902E-04	1.0100E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
6	1.5865E-03	-1.3902E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
7	1.5918E-03	-1.3947E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
8	1.5763E-03	-1.3947E-04	1.0100E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
9	1.5608E-03	-1.3947E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
10	1.5662E-03	-1.3991E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
11	1.5507E-03	-1.3991E-04	1.0100E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
12	1.5352E-03	-1.3991E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
13	1.5405E-03	-1.4036E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
14	1.5250E-03	-1.4036E-04	1.0100E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
15	1.5095E-03	-1.4036E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
MINIMUM	1.5095E-03	-1.4036E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6431E-03	-1.3857E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3045.1	-77.451	45.394	-0.036519	-104.33	-199.74
2	3016.6	-75.868	44.629	-0.036519	-103.25	-197.03
3	2988.2	-86.215	51.454	-0.036519	-114.61	-214.34
4	2998.0	-67.770	39.194	-0.036519	-93.764	-183.00
5	2969.5	-65.809	38.172	-0.036519	-92.142	-179.47
6	2941.0	-79.888	47.262	-0.036519	-107.82	-204.05
7	2950.9	-67.104	38.654	-0.036519	-92.815	-181.97
8	2922.4	-65.209	37.675	-0.036519	-91.259	-178.54
9	2893.9	-79.644	46.954	-0.036519	-107.31	-203.83
10	2903.8	-67.350	38.681	-0.036519	-92.862	-182.58
11	2875.3	-65.454	37.705	-0.036519	-91.311	-179.15
12	2846.8	-79.886	46.955	-0.036519	-107.31	-204.43
13	2856.7	-72.055	41.463	-0.036519	-97.691	-191.13
14	2828.2	-70.057	40.437	-0.036519	-96.104	-187.59
15	2799.7	-82.997	48.763	-0.036519	-110.27	-209.84
MINIMUM	2799.7	-86.215	37.675	-0.036519	-114.61	-214.34
Pile N.	15	3	8	1	3	3
MAXIMUM	3045.1	-65.209	51.454	-0.036519	-91.259	-178.54
Pile N.	1	8	3	1	8	8

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.6431E-03	-1.3857E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
2	1.6276E-03	-1.3857E-04	1.0100E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
3	1.6121E-03	-1.3857E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
4	1.6175E-03	-1.3902E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
5	1.6019E-03	-1.3902E-04	1.0100E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
6	1.5865E-03	-1.3902E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
7	1.5918E-03	-1.3947E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
8	1.5763E-03	-1.3947E-04	1.0100E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
9	1.5608E-03	-1.3947E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
10	1.5662E-03	-1.3991E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
11	1.5507E-03	-1.3991E-04	1.0100E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
12	1.5352E-03	-1.3991E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
13	1.5405E-03	-1.4036E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
14	1.5250E-03	-1.4036E-04	1.0100E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
15	1.5095E-03	-1.4036E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
MINIMUM	1.5095E-03	-1.4036E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6431E-03	-1.3857E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3045.1	-77.451	45.394	-0.036519	-104.33	-199.74
2	3016.6	-75.868	44.629	-0.036519	-103.25	-197.03
3	2988.2	-86.215	51.454	-0.036519	-114.61	-214.34
4	2998.0	-67.770	39.194	-0.036519	-93.764	-183.00
5	2969.5	-65.809	38.172	-0.036519	-92.142	-179.47
6	2941.0	-79.888	47.262	-0.036519	-107.82	-204.05
7	2950.9	-67.104	38.654	-0.036519	-92.815	-181.97
8	2922.4	-65.209	37.675	-0.036519	-91.259	-178.54
9	2893.9	-79.644	46.954	-0.036519	-107.31	-203.83
10	2903.8	-67.350	38.681	-0.036519	-92.862	-182.58
11	2875.3	-65.454	37.705	-0.036519	-91.311	-179.15
12	2846.8	-79.886	46.955	-0.036519	-107.31	-204.43
13	2856.7	-72.055	41.463	-0.036519	-97.691	-191.13
14	2828.2	-70.057	40.437	-0.036519	-96.104	-187.59
15	2799.7	-82.997	48.763	-0.036519	-110.27	-209.84
MINIMUM	2799.7	-86.215	37.675	-0.036519	-114.61	-214.34
Pile N.	15	3	8	1	3	3
MAXIMUM	3045.1	-65.209	51.454	-0.036519	-91.259	-178.54
Pile N.	1	8	3	1	8	8

PILE GROUP STRESS, KN/ M**2

*****	*****
1	2403.3
2	2378.4
3	2424.5
4	2317.1
5	2289.3
6	2360.8
7	2286.4
8	2258.9
9	2332.8
10	2261.4
11	2234.0
12	2307.8
13	2264.4
14	2236.6
15	2299.7
MINIMUM	2234.0
Pile N.	11
MAXIMUM	2424.5
Pile N.	3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.3875E-04	-2.8435E-06	-59.289	-104.33	-77.458	-10.568	-37.580	-2.8586	1723.2	7.8279E+06	7.8279E+06
x(M)	0.2000	8.6000	5.0000	0.0000	0.0000	6.8000	2.6000	9.0000	20.000	0.0000	0.0000

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria  Mandanti  	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

6	0.5059	1.0000
7	0.7796	1.0000
8	0.4905	1.0000
9	0.5005	1.0000
10	0.7796	1.0000
11	0.4914	1.0000
12	0.5014	1.0000
13	0.8384	1.0000
14	0.5702	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 47784.4	HOR. LOAD Y, KN 2011.36	HOR. LOAD Z, KN 1017.45
MOMENT X, KN- M -44.9961	MOMENT Y, KN- M 11275.0	MOMENT Z, KN- M -25821.6

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.72173E-03	HORIZONTAL Y, M 4.94479E-04	HORIZONTAL Z, M 1.78686E-04
ANGLE ROT. X, RAD -7.21357E-07	ANGLE ROT. Y, RAD 1.26619E-05	ANGLE ROT. Z, RAD -7.92222E-05



THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1922E-03	5.0097E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
2	1.8357E-03	5.0097E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
3	1.4792E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
4	2.1352E-03	4.9772E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
5	1.7787E-03	4.9772E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
6	1.4222E-03	4.9772E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
7	2.0782E-03	4.9448E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
8	1.7217E-03	4.9448E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
9	1.3652E-03	4.9448E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
10	2.0213E-03	4.9123E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
11	1.6647E-03	4.9123E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
12	1.3082E-03	4.9123E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
13	1.9643E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
14	1.6078E-03	4.8799E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
15	1.2513E-03	4.8799E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
MINIMUM	1.2513E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	2.1922E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4003.3	166.62	78.881	-0.2651	-174.86	281.72
2	3398.9	135.06	67.084	-0.2651	-156.45	230.66
3	2744.0	136.88	69.383	-0.2651	-161.74	233.57
4	3940.4	155.52	74.942	-0.2651	-168.40	262.61
5	3294.3	117.84	60.172	-0.2651	-144.23	200.05
6	2639.3	119.35	62.203	-0.2651	-149.09	202.53
7	3844.5	153.77	74.917	-0.2651	-168.36	258.24
8	3189.6	116.01	59.962	-0.2651	-143.85	195.55
9	2534.6	117.42	61.949	-0.2651	-148.63	197.86
10	3739.9	152.35	75.035	-0.2651	-168.55	254.40
11	3084.9	115.01	60.116	-0.2651	-144.12	192.47
12	2429.9	116.41	62.107	-0.2651	-148.90	194.76
13	3635.2	157.60	78.054	-0.2651	-173.51	261.09
14	2980.2	124.82	65.167	-0.2651	-153.08	207.78
15	2325.3	126.69	67.481	-0.2651	-158.41	210.80
MINIMUM	2325.3	115.01	59.962	-0.2651	-174.86	192.47
Pile N.	15	11	8	1	1	11
MAXIMUM	4003.3	166.62	78.881	-0.2651	-143.85	281.72
Pile N.	1	1	1	1	8	1

APPALTATORE: Consorzio Soci 			ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti 								
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B								COMMESSA IF28

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1922E-03	5.0097E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
2	1.8357E-03	5.0097E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
3	1.4792E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
4	2.1352E-03	4.9772E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
5	1.7787E-03	4.9772E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
6	1.4222E-03	4.9772E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
7	2.0782E-03	4.9448E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
8	1.7217E-03	4.9448E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
9	1.3652E-03	4.9448E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
10	2.0213E-03	4.9123E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
11	1.6647E-03	4.9123E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
12	1.3082E-03	4.9123E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
13	1.9643E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
14	1.6078E-03	4.8799E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
15	1.2513E-03	4.8799E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
MINIMUM	1.2513E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	2.1922E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *







PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4003.3	166.62	78.881	-0.2651	-174.86	281.72
2	3398.9	135.06	67.084	-0.2651	-156.45	230.66
3	2744.0	136.88	69.383	-0.2651	-161.74	233.57
4	3940.4	155.52	74.942	-0.2651	-168.40	262.61
5	3294.3	117.84	60.172	-0.2651	-144.23	200.05
6	2639.3	119.35	62.203	-0.2651	-149.09	202.53
7	3844.5	153.77	74.917	-0.2651	-168.36	258.24
8	3189.6	116.01	59.962	-0.2651	-143.85	195.55
9	2534.6	117.42	61.949	-0.2651	-148.63	197.86
10	3739.9	152.35	75.035	-0.2651	-168.55	254.40
11	3084.9	115.01	60.116	-0.2651	-144.12	192.47
12	2429.9	116.41	62.107	-0.2651	-148.90	194.76
13	3635.2	157.60	78.054	-0.2651	-173.51	261.09
14	2980.2	124.82	65.167	-0.2651	-153.08	207.78
15	2325.3	126.69	67.481	-0.2651	-158.41	210.80
MINIMUM	2325.3	115.01	59.962	-0.2651	-174.86	192.47
Pile N.	15	11	8	1	1	11
MAXIMUM	4003.3	166.62	78.881	-0.2651	-143.85	281.72
Pile N.	1	1	1	1	8	1

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	3266.1
2	2764.6
3	2410.2
4	3171.4
5	2608.5
6	2252.6
7	3106.0
8	2537.6
9	2181.2
10	3037.3
11	2471.4
12	2115.0
13	3003.2
14	2465.4
15	2111.7
MINIMUM	2111.7
Pile N.	15
MAXIMUM	3266.1
Pile N.	1

* EFFECTS FOR Laterally LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.3535E-05	-4.7880E-06	-281.72	-174.86	-56.808	-20.520	-15.994	-5.8244	2265.4	7.8279E+06	7.8279E+06
x(M)	8.0000	8.4000	0.0000	0.0000	6.4000	6.6000	8.4000	8.6000	20.000	0.0000	0.0000

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria  Mandanti  					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 346 di 420

6	0.5894	1.0000
7	0.5426	1.0000
8	0.4638	1.0000
9	0.5568	1.0000
10	0.5426	1.0000
11	0.4638	1.0000
12	0.5568	1.0000
13	0.5845	1.0000
14	0.5000	1.0000
15	0.5979	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 30306.0	HOR. LOAD Y, KN -414.765	HOR. LOAD Z, KN 836.063
MOMENT X, KN- M 35.0101	MOMENT Y, KN- M 8735.34	MOMENT Z, KN- M -5552.33

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.08533E-03	HORIZONTAL Y, M -2.78827E-05	HORIZONTAL Z, M 1.39102E-04
ANGLE ROT. X, RAD -2.24724E-07	ANGLE ROT. Y, RAD 9.54307E-06	ANGLE ROT. Z, RAD -1.13275E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.2222E-03	-2.5860E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
2	1.1712E-03	-2.5860E-05	1.3910E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
3	1.1202E-03	-2.5860E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
4	1.1792E-03	-2.6871E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
5	1.1283E-03	-2.6871E-05	1.3910E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
6	1.0773E-03	-2.6871E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
7	1.1363E-03	-2.7883E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
8	1.0853E-03	-2.7883E-05	1.3910E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
9	1.0344E-03	-2.7883E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
10	1.0934E-03	-2.8894E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
11	1.0424E-03	-2.8894E-05	1.3910E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
12	9.9141E-04	-2.8894E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
13	1.0504E-03	-2.9905E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
14	9.9944E-04	-2.9905E-05	1.3910E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
15	9.4847E-04	-2.9905E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
MINIMUM	9.4847E-04	-2.9905E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2222E-03	-2.5860E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2271.8	-31.117	67.146	-0.082596	-146.21	-94.766
2	2178.2	-30.219	65.240	-0.082596	-143.64	-93.193
3	2084.5	-31.253	68.713	-0.082596	-149.68	-95.003
4	2192.9	-26.902	54.392	-0.082596	-125.17	-87.538
5	2099.3	-25.270	50.634	-0.082596	-119.05	-84.446
6	2005.6	-27.161	56.050	-0.082596	-128.85	-88.022
7	2114.0	-26.708	52.672	-0.082596	-122.21	-87.515
8	2020.4	-24.998	48.819	-0.082596	-115.84	-84.243
9	1926.8	-27.000	54.366	-0.082596	-125.95	-88.065
10	2035.2	-27.179	52.676	-0.082596	-122.21	-88.744
11	1941.5	-25.434	48.823	-0.082596	-115.84	-85.407
12	1847.9	-27.477	54.368	-0.082596	-125.95	-89.303
13	1956.3	-28.532	54.825	-0.082596	-125.90	-91.620
14	1862.6	-26.709	50.854	-0.082596	-119.43	-88.185
15	1769.0	-28.806	56.484	-0.082596	-129.58	-92.127
MINIMUM	1769.0	-31.253	48.819	-0.082596	-149.68	-95.003
Pile N.	15	3	8	1	3	3
MAXIMUM	2271.8	-24.998	68.713	-0.082596	-115.84	-84.243
Pile N.	1	8	3	1	8	8

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.2222E-03	-2.5860E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
2	1.1712E-03	-2.5860E-05	1.3910E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
3	1.1202E-03	-2.5860E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
4	1.1792E-03	-2.6871E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
5	1.1283E-03	-2.6871E-05	1.3910E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
6	1.0773E-03	-2.6871E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
7	1.1363E-03	-2.7883E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
8	1.0853E-03	-2.7883E-05	1.3910E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
9	1.0344E-03	-2.7883E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
10	1.0934E-03	-2.8894E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
11	1.0424E-03	-2.8894E-05	1.3910E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
12	9.9141E-04	-2.8894E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
13	1.0504E-03	-2.9905E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
14	9.9944E-04	-2.9905E-05	1.3910E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
15	9.4847E-04	-2.9905E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
MINIMUM	9.4847E-04	-2.9905E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2222E-03	-2.5860E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2271.8	-31.117	67.146	-0.082596	-146.21	-94.766
2	2178.2	-30.219	65.240	-0.082596	-143.64	-93.193
3	2084.5	-31.253	68.713	-0.082596	-149.68	-95.003
4	2192.9	-26.902	54.392	-0.082596	-125.17	-87.538
5	2099.3	-25.270	50.634	-0.082596	-119.05	-84.446
6	2005.6	-27.161	56.050	-0.082596	-128.85	-88.022
7	2114.0	-26.708	52.672	-0.082596	-122.21	-87.515
8	2020.4	-24.998	48.819	-0.082596	-115.84	-84.243
9	1926.8	-27.000	54.366	-0.082596	-125.95	-88.065
10	2035.2	-27.179	52.676	-0.082596	-122.21	-88.744
11	1941.5	-25.434	48.823	-0.082596	-115.84	-85.407
12	1847.9	-27.477	54.368	-0.082596	-125.95	-89.303
13	1956.3	-28.532	54.825	-0.082596	-125.90	-91.620
14	1862.6	-26.709	50.854	-0.082596	-119.43	-88.185
15	1769.0	-28.806	56.484	-0.082596	-129.58	-92.127
MINIMUM	1769.0	-31.253	48.819	-0.082596	-149.68	-95.003
Pile N.	15	3	8	1	3	3
MAXIMUM	2271.8	-24.998	68.713	-0.082596	-115.84	-84.243
Pile N.	1	8	3	1	8	8

PILE GROUP STRESS, KN/ M**2

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	1811.4
2	1749.4
3	1714.7
4	1701.9
5	1628.5
6	1605.9
7	1650.0
8	1575.6
9	1554.2
10	1607.5
11	1533.0
12	1511.7
13	1577.0
14	1502.1
15	1480.9
MINIMUM	1480.9
Pile N.	15
MAXIMUM	1811.4
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-3.1841E-05	-3.8806E-06	-16.149	-146.21	-31.120	-16.447	-13.370	-4.6438	1285.6	7.8279E+06	7.8279E+06
x(M)	1.2000	8.4000	5.4000	0.0000	0.0000	6.6000	2.6000	8.6000	20.000	0.0000	0.0000

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria  Mandanti  						
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B						
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	
IF28	01	E ZZ CL	VI0103 001	B	349 di 420	

6	0.5059	1.0000
7	0.7796	1.0000
8	0.4905	1.0000
9	0.5005	1.0000
10	0.7796	1.0000
11	0.4914	1.0000
12	0.5014	1.0000
13	0.8384	1.0000
14	0.5702	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
47784.4	2011.36	1017.45
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-44.9961	11275.0	-25821.6

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.72173E-03	4.94479E-04	1.78686E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
-7.21357E-07	1.26619E-05	-7.92222E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1922E-03	5.0097E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
2	1.8357E-03	5.0097E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
3	1.4792E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
4	2.1352E-03	4.9772E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
5	1.7787E-03	4.9772E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
6	1.4222E-03	4.9772E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
7	2.0782E-03	4.9448E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
8	1.7217E-03	4.9448E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
9	1.3652E-03	4.9448E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
10	2.0213E-03	4.9123E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
11	1.6647E-03	4.9123E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
12	1.3082E-03	4.9123E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
13	1.9643E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
14	1.6078E-03	4.8799E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
15	1.2513E-03	4.8799E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
MINIMUM	1.2513E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	2.1922E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4003.3	166.62	78.881	-0.2651	-174.86	281.72
2	3398.9	135.06	67.084	-0.2651	-156.45	230.66
3	2744.0	136.88	69.383	-0.2651	-161.74	233.57
4	3940.4	155.52	74.942	-0.2651	-168.40	262.61
5	3294.3	117.84	60.172	-0.2651	-144.23	200.05
6	2639.3	119.35	62.203	-0.2651	-149.09	202.53
7	3844.5	153.77	74.917	-0.2651	-168.36	258.24
8	3189.6	116.01	59.962	-0.2651	-143.85	195.55
9	2534.6	117.42	61.949	-0.2651	-148.63	197.86
10	3739.9	152.35	75.035	-0.2651	-168.55	254.40
11	3084.9	115.01	60.116	-0.2651	-144.12	192.47
12	2429.9	116.41	62.107	-0.2651	-148.90	194.76
13	3635.2	157.60	78.054	-0.2651	-173.51	261.09
14	2980.2	124.82	65.167	-0.2651	-153.08	207.78
15	2325.3	126.69	67.481	-0.2651	-158.41	210.80
MINIMUM	2325.3	115.01	59.962	-0.2651	-174.86	192.47
Pile N.	15	11	8	1	1	11
MAXIMUM	4003.3	166.62	78.881	-0.2651	-143.85	281.72
Pile N.	1	1	1	1	8	1

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria Mandanti   		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 350 di 420

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1922E-03	5.0097E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
2	1.8357E-03	5.0097E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
3	1.4792E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
4	2.1352E-03	4.9772E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
5	1.7787E-03	4.9772E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
6	1.4222E-03	4.9772E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
7	2.0782E-03	4.9448E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
8	1.7217E-03	4.9448E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
9	1.3652E-03	4.9448E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
10	2.0213E-03	4.9123E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
11	1.6647E-03	4.9123E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
12	1.3082E-03	4.9123E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
13	1.9643E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
14	1.6078E-03	4.8799E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
15	1.2513E-03	4.8799E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
MINIMUM	1.2513E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	2.1922E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4003.3	166.62	78.881	-0.2651	-174.86	281.72
2	3398.9	135.06	67.084	-0.2651	-156.45	230.66
3	2744.0	136.88	69.383	-0.2651	-161.74	233.57
4	3940.4	155.52	74.942	-0.2651	-168.40	262.61
5	3294.3	117.84	60.172	-0.2651	-144.23	200.05
6	2639.3	119.35	62.203	-0.2651	-149.09	202.53
7	3844.5	153.77	74.917	-0.2651	-168.36	258.24
8	3189.6	116.01	59.962	-0.2651	-143.85	195.55
9	2534.6	117.42	61.949	-0.2651	-148.63	197.86
10	3739.9	152.35	75.035	-0.2651	-168.55	254.40
11	3084.9	115.01	60.116	-0.2651	-144.12	192.47
12	2429.9	116.41	62.107	-0.2651	-148.90	194.76
13	3635.2	157.60	78.054	-0.2651	-173.51	261.09
14	2980.2	124.82	65.167	-0.2651	-153.08	207.78
15	2325.3	126.69	67.481	-0.2651	-158.41	210.80
MINIMUM	2325.3	115.01	59.962	-0.2651	-174.86	192.47
Pile N.	15	11	8	1	1	11
MAXIMUM	4003.3	166.62	78.881	-0.2651	-143.85	281.72
Pile N.	1	1	1	1	8	1

PILE GROUP STRESS, KN/ M**2

*****	*****
1	3266.1
2	2764.6
3	2410.2
4	3171.4
5	2608.5
6	2252.6
7	3106.0
8	2537.6
9	2181.2
10	3037.3
11	2471.4
12	2115.0
13	3003.2
14	2465.4
15	2111.7
MINIMUM	2111.7
Pile N.	15
MAXIMUM	3266.1
Pile N.	1

* EFFECTS FOR Laterally LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.3535E-05	-4.7880E-06	-281.72	-174.86	-56.808	-20.520	-15.994	-5.8244	2265.4	7.8279E+06	7.8279E+06
x(M)	8.0000	8.4000	0.0000	0.0000	6.4000	6.6000	8.4000	8.6000	20.000	0.0000	0.0000

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandataria

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA
IF28

LOTTO
01

CODIFICA
E ZZ CL

DOCUMENTO
VI0103 001

REV.
B

FOGLIO
352 di
420

6	0.5059	1.0000
7	0.7796	1.0000
8	0.4905	1.0000
9	0.5005	1.0000
10	0.7796	1.0000
11	0.4914	1.0000
12	0.5014	1.0000
13	0.8384	1.0000
14	0.5702	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 47784.4	HOR. LOAD Y, KN 2011.36	HOR. LOAD Z, KN 1017.45
MOMENT X, KN- M -44.9961	MOMENT Y, KN- M 11275.0	MOMENT Z, KN- M -25821.8

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.72173E-03	HORIZONTAL Y, M 4.94480E-04	HORIZONTAL Z, M 1.78686E-04
ANGLE ROT. X, RAD -7.21358E-07	ANGLE ROT. Y, RAD 1.26620E-05	ANGLE ROT. Z, RAD -7.92227E-05



THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1922E-03	5.0097E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
2	1.8357E-03	5.0097E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
3	1.4792E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
4	2.1352E-03	4.9773E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
5	1.7787E-03	4.9773E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
6	1.4222E-03	4.9773E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
7	2.0782E-03	4.9448E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
8	1.7217E-03	4.9448E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
9	1.3652E-03	4.9448E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
10	2.0213E-03	4.9123E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
11	1.6647E-03	4.9123E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
12	1.3082E-03	4.9123E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
13	1.9643E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
14	1.6078E-03	4.8799E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
15	1.2513E-03	4.8799E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
MINIMUM	1.2513E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	2.1922E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4003.3	166.62	78.881	-0.2651	-174.86	281.72
2	3398.9	135.06	67.084	-0.2651	-156.45	230.66
3	2744.0	136.88	69.383	-0.2651	-161.74	233.57
4	3940.4	155.52	74.942	-0.2651	-168.40	262.61
5	3294.3	117.84	60.172	-0.2651	-144.23	200.05
6	2639.3	119.35	62.203	-0.2651	-149.09	202.53
7	3844.5	153.77	74.917	-0.2651	-168.36	258.24
8	3189.6	116.01	59.962	-0.2651	-143.85	195.55
9	2534.6	117.42	61.949	-0.2651	-148.63	197.86
10	3739.9	152.35	75.035	-0.2651	-168.55	254.40
11	3084.9	115.01	60.116	-0.2651	-144.12	192.46
12	2429.9	116.41	62.107	-0.2651	-148.90	194.75
13	3635.2	157.60	78.054	-0.2651	-173.51	261.09
14	2980.2	124.82	65.167	-0.2651	-153.08	207.78
15	2325.3	126.69	67.481	-0.2651	-158.41	210.80
MINIMUM	2325.3	115.01	59.962	-0.2651	-174.86	192.46
Pile N.	15	11	8	1	1	11
MAXIMUM	4003.3	166.62	78.881	-0.2651	-143.85	281.72
Pile N.	1	1	1	1	8	1

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria Mandanti 													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">COMMESSA</td> <td style="width: 10%;">LOTTO</td> <td style="width: 15%;">CODIFICA</td> <td style="width: 15%;">DOCUMENTO</td> <td style="width: 10%;">REV.</td> <td style="width: 35%;">FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>353 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	353 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	353 di 420								

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1922E-03	5.0097E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
2	1.8357E-03	5.0097E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
3	1.4792E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
4	2.1352E-03	4.9773E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
5	1.7787E-03	4.9773E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
6	1.4222E-03	4.9773E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
7	2.0782E-03	4.9448E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
8	1.7217E-03	4.9448E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
9	1.3652E-03	4.9448E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
10	2.0213E-03	4.9123E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
11	1.6647E-03	4.9123E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
12	1.3082E-03	4.9123E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
13	1.9643E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
14	1.6078E-03	4.8799E-04	1.7869E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
15	1.2513E-03	4.8799E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
MINIMUM	1.2513E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	2.1922E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4003.3	166.62	78.881	-0.2651	-174.86	281.72
2	3398.9	135.06	67.084	-0.2651	-156.45	230.66
3	2744.0	136.88	69.383	-0.2651	-161.74	233.57
4	3940.4	155.52	74.942	-0.2651	-168.40	262.61
5	3294.3	117.84	60.172	-0.2651	-144.23	200.05
6	2639.3	119.35	62.203	-0.2651	-149.09	202.53
7	3844.5	153.77	74.917	-0.2651	-168.36	258.24
8	3189.6	116.01	59.962	-0.2651	-143.85	195.55
9	2534.6	117.42	61.949	-0.2651	-148.63	197.86
10	3739.9	152.35	75.035	-0.2651	-168.55	254.40
11	3084.9	115.01	60.116	-0.2651	-144.12	192.46
12	2429.9	116.41	62.107	-0.2651	-148.90	194.75
13	3635.2	157.60	78.054	-0.2651	-173.51	261.09
14	2980.2	124.82	65.167	-0.2651	-153.08	207.78
15	2325.3	126.69	67.481	-0.2651	-158.41	210.80
MINIMUM	2325.3	115.01	59.962	-0.2651	-174.86	192.46
Pile N.	15	11	8	1	1	11
MAXIMUM	4003.3	166.62	78.881	-0.2651	-143.85	281.72
Pile N.	1	1	1	1	8	1

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	3266.1
2	2764.6
3	2410.2
4	3171.4
5	2608.5
6	2252.5
7	3106.0
8	2537.6
9	2181.2
10	3037.3
11	2471.4
12	2115.0
13	3003.2
14	2465.4
15	2111.6
MINIMUM	2111.6
Pile N.	15
MAXIMUM	3266.1
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.3535E-05	-4.7880E-06	-281.72	-174.86	-56.808	-20.520	-15.994	-5.8244	2265.4	7.8279E+06	7.8279E+06
x(M)	8.0000	8.4000	0.0000	0.0000	6.4000	6.6000	8.4000	8.6000	20.000	0.0000	0.0000

APPALTATORE:

Consorzio

Soci



PROGETTAZIONE:

Mandataria

Mandanti



ITINERARIO NAPOLI – BARI

**RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA**

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 355 di 420
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6	0.7583	1.0000
7	0.5066	1.0000
8	0.4868	1.0000
9	0.7523	1.0000
10	0.5074	1.0000
11	0.4877	1.0000
12	0.7523	1.0000
13	0.5845	1.0000
14	0.5608	1.0000
15	0.8089	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 33531.5	HOR. LOAD Y, KN -1274.76	HOR. LOAD Z, KN 678.835
MOMENT X, KN- M -53.0488	MOMENT Y, KN- M 4761.08	MOMENT Z, KN- M -185.217

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.20238E-03	HORIZONTAL Y, M -1.90749E-04	HORIZONTAL Z, M 1.05595E-04
ANGLE ROT. X, RAD 5.02353E-09	ANGLE ROT. Y, RAD 5.69224E-06	ANGLE ROT. Z, RAD 7.73075E-06



THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.2188E-03	-1.9080E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
2	1.2536E-03	-1.9080E-04	1.0559E-04	5.0235E-09	5.6922E-06	7.7308E-06
3	1.2884E-03	-1.9080E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
4	1.1932E-03	-1.9077E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
5	1.2280E-03	-1.9077E-04	1.0559E-04	5.0235E-09	5.6922E-06	7.7308E-06
6	1.2628E-03	-1.9077E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
7	1.1676E-03	-1.9075E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
8	1.2024E-03	-1.9075E-04	1.0559E-04	5.0235E-09	5.6922E-06	7.7308E-06
9	1.2372E-03	-1.9075E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
10	1.1420E-03	-1.9073E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
11	1.1768E-03	-1.9073E-04	1.0559E-04	5.0235E-09	5.6922E-06	7.7308E-06
12	1.2116E-03	-1.9073E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
13	1.1164E-03	-1.9070E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
14	1.1512E-03	-1.9070E-04	1.0559E-04	5.0235E-09	5.6922E-06	7.7308E-06
15	1.1859E-03	-1.9070E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
MINIMUM	1.1164E-03	-1.9080E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
Pile N.	13	1	3	1	1	1
MAXIMUM	1.2884E-03	-1.9070E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2265.6	-87.983	46.872	1.8464E-03	-109.02	-209.47
2	2329.6	-86.451	46.034	1.8464E-03	-107.60	-206.89
3	2393.5	-101.03	53.894	1.8464E-03	-120.49	-230.91
4	2218.6	-77.341	41.135	1.8464E-03	-99.169	-191.11
5	2282.5	-75.675	40.226	1.8464E-03	-97.560	-188.16
6	2346.4	-94.382	50.311	1.8464E-03	-114.70	-220.12
7	2171.5	-76.568	40.724	1.8464E-03	-98.443	-189.73
8	2235.4	-74.981	39.858	1.8464E-03	-96.905	-186.91
9	2299.3	-93.985	50.103	1.8464E-03	-114.36	-219.45
10	2124.5	-76.622	40.758	1.8464E-03	-98.502	-189.81
11	2188.4	-75.039	39.894	1.8464E-03	-96.968	-187.01
12	2252.3	-93.974	50.104	1.8464E-03	-114.36	-219.42
13	2077.4	-82.486	43.929	1.8464E-03	-104.02	-200.05
14	2141.3	-80.724	42.967	1.8464E-03	-102.35	-197.00
15	2205.2	-97.520	52.027	1.8464E-03	-117.49	-225.21
MINIMUM	2077.4	-101.03	39.858	1.8464E-03	-120.49	-230.91
Pile N.	13	3	8	1	3	3
MAXIMUM	2393.5	-74.981	53.894	1.8464E-03	-96.905	-186.91
Pile N.	3	8	3	1	8	8

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.2188E-03	-1.9080E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
2	1.2536E-03	-1.9080E-04	1.0559E-04	5.0235E-09	5.6922E-06	7.7308E-06
3	1.2884E-03	-1.9080E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
4	1.1932E-03	-1.9077E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
5	1.2280E-03	-1.9077E-04	1.0559E-04	5.0235E-09	5.6922E-06	7.7308E-06
6	1.2628E-03	-1.9077E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
7	1.1676E-03	-1.9075E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
8	1.2024E-03	-1.9075E-04	1.0559E-04	5.0235E-09	5.6922E-06	7.7308E-06
9	1.2372E-03	-1.9075E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
10	1.1420E-03	-1.9073E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
11	1.1768E-03	-1.9073E-04	1.0559E-04	5.0235E-09	5.6922E-06	7.7308E-06
12	1.2116E-03	-1.9073E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
13	1.1164E-03	-1.9070E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
14	1.1512E-03	-1.9070E-04	1.0559E-04	5.0235E-09	5.6922E-06	7.7308E-06
15	1.1859E-03	-1.9070E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
MINIMUM	1.1164E-03	-1.9080E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
Pile N.	13	1	3	1	1	1
MAXIMUM	1.2884E-03	-1.9070E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2265.6	-87.983	46.872	1.8464E-03	-109.02	-209.47
2	2329.6	-86.451	46.034	1.8464E-03	-107.60	-206.89
3	2393.5	-101.03	53.894	1.8464E-03	-120.49	-230.91
4	2218.6	-77.341	41.135	1.8464E-03	-99.169	-191.11
5	2282.5	-75.675	40.226	1.8464E-03	-97.560	-188.16
6	2346.4	-94.382	50.311	1.8464E-03	-114.70	-220.12
7	2171.5	-76.568	40.724	1.8464E-03	-98.443	-189.73
8	2235.4	-74.981	39.858	1.8464E-03	-96.905	-186.91
9	2299.3	-93.985	50.103	1.8464E-03	-114.36	-219.45
10	2124.5	-76.622	40.758	1.8464E-03	-98.502	-189.81
11	2188.4	-75.039	39.894	1.8464E-03	-96.968	-187.01
12	2252.3	-93.974	50.104	1.8464E-03	-114.36	-219.42
13	2077.4	-82.486	43.929	1.8464E-03	-104.02	-200.05
14	2141.3	-80.724	42.967	1.8464E-03	-102.35	-197.00
15	2205.2	-97.520	52.027	1.8464E-03	-117.49	-225.21
MINIMUM	2077.4	-101.03	39.858	1.8464E-03	-120.49	-230.91
Pile N.	13	3	8	1	3	3
MAXIMUM	2393.5	-74.981	53.894	1.8464E-03	-96.905	-186.91
Pile N.	3	8	3	1	8	8

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1994.8
2	2022.0
3	2140.5
4	1905.3
5	1931.3
6	2076.9
7	1873.9
8	1900.4
9	2048.0
10	1847.6
11	1874.1
12	2021.3
13	1856.1
14	1881.8
15	2014.5
MINIMUM	1847.6
Pile N.	10
MAXIMUM	2140.5
Pile N.	3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.9079E-04	-2.9923E-06	-77.288	-109.02	-87.989	-10.786	-44.879	-2.8858	1282.1	7.8279E+06	7.8279E+06
x(M)	0.0000	8.8000	4.8000	0.0000	0.0000	7.0000	2.6000	9.0000	20.000	0.0000	0.0000

APPALTATORE:		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
Consorzio	Soci						
							
PROGETTAZIONE:							
Mandatario	Mandanti						
							
PROGETTO ESECUTIVO		COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO
RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		IF28	01	E ZZ CL	VI0103 001	B	357 di 420

	2	-1.9079E-04	-2.9918E-06	-76.204	-107.60	-86.457	-10.561	-43.610	-2.8013	1318.3	7.8279E+06	7.8279E+06
x (M)	0.0000	8.8000	4.8000	0.0000	0.0000	0.0000	7.0000	2.6000	9.2000	20.000	0.0000	0.0000
	3	-1.9079E-04	-2.9815E-06	-86.276	-120.49	-101.03	-12.752	-56.261	-3.6134	1354.4	7.8279E+06	7.8279E+06
x (M)	0.0000	8.4000	4.6000	0.0000	0.0000	0.0000	6.6000	2.6000	8.6000	20.000	0.0000	0.0000
	4	-1.9077E-04	-2.9900E-06	-69.805	-99.169	-77.347	-9.2317	-36.352	-2.3383	1255.5	7.8279E+06	7.8279E+06
x (M)	0.0000	9.2000	5.0000	0.0000	0.0000	0.0000	7.2000	2.6000	9.4000	20.000	0.0000	0.0000
	5	-1.9077E-04	-2.9851E-06	-68.594	-97.560	-75.681	-8.9974	-35.082	-2.2573	1291.6	7.8279E+06	7.8279E+06
x (M)	0.0000	9.2000	5.0000	0.0000	0.0000	0.0000	7.4000	2.6000	9.6000	20.000	0.0000	0.0000
	6	-1.9077E-04	-2.9871E-06	-81.619	-114.70	-94.388	-11.742	-50.345	-3.2350	1327.8	7.8279E+06	7.8279E+06
x (M)	0.0000	8.6000	4.8000	0.0000	0.0000	0.0000	6.8000	2.6000	8.8000	20.000	0.0000	0.0000
	7	-1.9075E-04	-2.9886E-06	-69.243	-98.443	-76.573	-9.1215	-35.762	-2.3001	1228.8	7.8279E+06	7.8279E+06
x (M)	0.0000	9.2000	5.0000	0.0000	0.0000	0.0000	7.4000	2.6000	9.6000	20.000	0.0000	0.0000
	8	-1.9075E-04	-2.9815E-06	-68.079	-96.905	-74.987	-8.9023	-34.560	-2.2244	1265.0	7.8279E+06	7.8279E+06
x (M)	0.0000	9.4000	5.0000	0.0000	0.0000	0.0000	7.4000	2.6000	9.6000	20.000	0.0000	0.0000
	9	-1.9075E-04	-2.9878E-06	-81.356	-114.36	-93.991	-11.684	-50.002	-3.2131	1301.2	7.8279E+06	7.8279E+06
x (M)	0.0000	8.6000	4.8000	0.0000	0.0000	0.0000	6.8000	2.6000	8.8000	20.000	0.0000	0.0000
	10	-1.9073E-04	-2.9886E-06	-69.279	-98.502	-76.627	-9.1297	-35.805	-2.3030	1202.2	7.8279E+06	7.8279E+06
x (M)	0.0000	9.2000	5.0000	0.0000	0.0000	0.0000	7.4000	2.6000	9.6000	20.000	0.0000	0.0000
	11	-1.9073E-04	-2.9817E-06	-68.119	-96.968	-75.044	-8.9111	-34.606	-2.2275	1238.4	7.8279E+06	7.8279E+06
x (M)	0.0000	9.2000	5.0000	0.0000	0.0000	0.0000	7.4000	2.6000	9.6000	20.000	0.0000	0.0000
	12	-1.9073E-04	-2.9877E-06	-81.346	-114.36	-93.980	-11.684	-49.996	-3.2130	1274.5	7.8279E+06	7.8279E+06
x (M)	0.0000	8.6000	4.8000	0.0000	0.0000	0.0000	6.8000	2.6000	8.8000	20.000	0.0000	0.0000
	13	-1.9070E-04	-2.9924E-06	-73.380	-104.02	-82.491	-9.9770	-40.396	-2.5996	1175.6	7.8279E+06	7.8279E+06
x (M)	0.0000	9.0000	5.0000	0.0000	0.0000	0.0000	7.2000	2.6000	9.2000	20.000	0.0000	0.0000
	14	-1.9070E-04	-2.9899E-06	-72.182	-102.35	-80.729	-9.7279	-38.996	-2.5092	1211.7	7.8279E+06	7.8279E+06
x (M)	0.0000	9.0000	5.0000	0.0000	0.0000	0.0000	7.2000	2.6000	9.4000	20.000	0.0000	0.0000
	15	-1.9070E-04	-2.9844E-06	-83.836	-117.49	-97.526	-12.204	-53.119	-3.4083	1247.9	7.8279E+06	7.8279E+06
x (M)	0.0000	8.4000	4.6000	0.0000	0.0000	0.0000	6.8000	2.6000	8.8000	20.000	0.0000	0.0000
Min.	-1.9079E-04	-2.9924E-06	-86.276	-120.49	-101.03	-12.752	-56.261	-3.6134	1175.6	7.8279E+06	7.8279E+06	
Pile N.	1	13	3	3	3	3	3	3	13	1	1	

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	5.4265E-06	1.0562E-04	209.47	42.542	19.625	46.875	5.2493	24.300	1994.8	7.8279E+06	7.8279E+06
x (M)	8.8000	0.0000	0.0000	4.8000	7.0000	0.0000	9.0000	2.6000	0.0000	0.0000	0.0000
2	5.4212E-06	1.0560E-04	206.89	41.954	19.209	46.937	5.1061	23.606	2022.0	7.8279E+06	7.8279E+06
x (M)	8.8000	0.0000	0.0000	4.8000	7.0000	0.0000	9.2000	2.6000	0.0000	0.0000	0.0000
3	5.4153E-06	1.0557E-04	230.91	47.447	23.199	53.898	6.5819	30.461	2140.5	7.8279E+06	7.8279E+06
x (M)	8.4000	0.0000	0.0000	6.6000	6.6000	0.0000	2.6000	8.6000	0.0000	0.0000	0.0000
4	5.4161E-06	1.0562E-04	191.11	38.443	16.795	41.138	4.2559	19.678	1905.3	7.8279E+06	7.8279E+06
x (M)	9.2000	0.0000	0.0000	5.0000	7.4000	0.0000	9.6000	2.6000	0.0000	0.0000	0.0000
5	5.4081E-06	1.0560E-04	188.16	37.789	16.372	40.229	4.1097	18.985	1931.3	7.8279E+06	7.8279E+06
x (M)	9.4000	0.0000	0.0000	5.0000	7.4000	0.0000	9.6000	2.6000	0.0000	0.0000	0.0000
6	5.4224E-06	1.0557E-04	220.12	44.947	21.367	50.314	5.8897	27.256	2076.9	7.8279E+06	7.8279E+06
x (M)	8.6000	0.0000	0.0000	4.6000	6.8000	0.0000	8.8000	2.6000	0.0000	0.0000	0.0000
7	5.4095E-06	1.0562E-04	189.73	38.148	16.599	40.726	4.1886	19.361	1873.9	7.8279E+06	7.8279E+06
x (M)	9.2000	0.0000	0.0000	5.0000	7.4000	0.0000	9.6000	2.6000	0.0000	0.0000	0.0000
8	5.4088E-06	1.0560E-04	186.91	37.518	16.191	39.861	4.0473	18.704	1900.4	7.8279E+06	7.8279E+06
x (M)	9.4000	0.0000	0.0000	5.0000	7.4000	0.0000	9.6000	2.6000	0.0000	0.0000	0.0000
9	5.4219E-06	1.0557E-04	219.45	44.796	21.256	50.106	5.8481	27.074	2048.0	7.8279E+06	7.8279E+06
x (M)	8.6000	0.0000	0.0000	4.6000	6.8000	0.0000	8.8000	2.6000	0.0000	0.0000	0.0000
10	5.4092E-06	1.0562E-04	189.81	38.171	16.612	40.761	4.1934	19.386	1847.6	7.8279E+06	7.8279E+06
x (M)	9.2000	0.0000	0.0000	5.0000	7.4000	0.0000	9.6000	2.6000	0.0000	0.0000	0.0000
11	5.4079E-06	1.0560E-04	187.01	37.544	16.206	39.897	4.0526	18.731	1874.1	7.8279E+06	7.8279E+06
x (M)	9.4000	0.0000	0.0000	5.0000	7.4000	0.0000	9.6000	2.6000	0.0000	0.0000	0.0000
12	5.4211E-06	1.0557E-04	219.42	44.795	21.253	50.107	5.8472	27.074	2021.3	7.8279E+06	7.8279E+06
x (M)	8.6000	0.0000	0.0000	4.6000	6.8000	0.0000	8.8000	2.6000	0.0000	0.0000	0.0000
13	5.4218E-06	1.0562E-04	200.05	40.426	18.152	43.931	4.7264	21.880	1856.1	7.8279E+06	7.8279E+06
x (M)	9.0000	0.0000	0.0000	4.8000	7.2000	0.0000	9.4000	2.6000	0.0000	0.0000	0.0000
14	5.4126E-06	1.0560E-04	197.00	39.717	17.689	42.969	4.5689	21.115	1881.8	7.8279E+06	7.8279E+06
x (M)	9.2000	0.0000	0.0000	5.0000	7.2000	0.0000	9.4000	2.6000	0.0000	0.0000	0.0000
15	5.4076E-06	1.0557E-04	225.21	46.162	22.222	52.030	6.2120	28.772	2014.5	7.8279E+06	7.8279E+06
x (M)	8.4000	0.0000	0.0000	4.6000	6.8000	0.0000	8.8000	2.6000	0.0000	0.0000	0.0000
Max.	5.4265E-06	1.0562E-04	230.91	47.447	23.199	53.898	6.5819	30.461	2140.5	7.8279E+06	7.8279E+06
Pile N.	1	1	3	3	3	3	3	3	3	1	1

LOAD CASE : 9
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5850	1.0000
3	0.5921	1.0000
4	0.8010	1.0000
5	0.4951	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 358 di 420

6	0.4975	1.0000
7	0.8005	1.0000
8	0.4934	1.0000
9	0.4956	1.0000
10	0.8005	1.0000
11	0.4944	1.0000
12	0.4966	1.0000
13	0.8609	1.0000
14	0.5774	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 47518.6	HOR. LOAD Y, KN 4070.50	HOR. LOAD Z, KN 749.073
MOMENT X, KN- M -120.838	MOMENT Y, KN- M 7396.39	MOMENT Z, KN- M -34164.8

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.73031E-03	HORIZONTAL Y, M 1.01220E-03	HORIZONTAL Z, M 1.51475E-04
ANGLE ROT. X, RAD -1.19079E-06	ANGLE ROT. Y, RAD 9.55329E-06	ANGLE ROT. Z, RAD -1.21372E-04

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.3625E-03	1.0229E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
2	1.8163E-03	1.0229E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
3	1.2701E-03	1.0229E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
4	2.3195E-03	1.0176E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
5	1.7733E-03	1.0176E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
6	1.2271E-03	1.0176E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
7	2.2765E-03	1.0122E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
8	1.7303E-03	1.0122E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
9	1.1841E-03	1.0122E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
10	2.2335E-03	1.0068E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
11	1.6873E-03	1.0068E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
12	1.1412E-03	1.0068E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
13	2.1905E-03	1.0015E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
14	1.6443E-03	1.0015E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
15	1.0982E-03	1.0015E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
MINIMUM	1.0982E-03	1.0015E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.3625E-03	1.0229E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4191.4	331.08	56.839	-0.4377	-133.35	671.99
2	3363.3	265.37	48.390	-0.4377	-120.64	558.93
3	2359.9	267.29	50.799	-0.4377	-126.98	561.99
4	4143.9	315.01	54.662	-0.4377	-129.64	642.82
5	3284.3	239.72	44.400	-0.4377	-113.26	510.62
6	2280.9	240.45	46.443	-0.4377	-118.94	511.61
7	4096.4	312.98	54.727	-0.4377	-129.76	637.10
8	3205.3	237.72	44.387	-0.4377	-113.24	504.99
9	2201.9	238.41	46.423	-0.4377	-118.90	505.90
10	4049.0	311.07	54.811	-0.4377	-129.91	631.58
11	3126.4	236.50	44.505	-0.4377	-113.46	500.76
12	2123.0	237.18	46.546	-0.4377	-119.13	501.66
13	4001.5	322.05	57.009	-0.4377	-133.66	647.55
14	3047.4	256.90	48.361	-0.4377	-120.58	535.49
15	2044.0	258.77	50.770	-0.4377	-126.93	538.49
MINIMUM	2044.0	236.50	44.387	-0.4377	-133.66	500.76
Pile N.	15	11	8	1	13	11
MAXIMUM	4191.4	331.08	57.009	-0.4377	-113.24	671.99
Pile N.	1	1	13	1	8	1

APPALTATORE: Consorzio  Soci  	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria  Mandanti  	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.3625E-03	1.0229E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
2	1.8163E-03	1.0229E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
3	1.2701E-03	1.0229E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
4	2.3195E-03	1.0176E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
5	1.7733E-03	1.0176E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
6	1.2271E-03	1.0176E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
7	2.2765E-03	1.0122E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
8	1.7303E-03	1.0122E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
9	1.1841E-03	1.0122E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
10	2.2335E-03	1.0068E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
11	1.6873E-03	1.0068E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
12	1.1412E-03	1.0068E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
13	2.1905E-03	1.0015E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
14	1.6443E-03	1.0015E-03	1.5148E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
15	1.0982E-03	1.0015E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
MINIMUM	1.0982E-03	1.0015E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.3625E-03	1.0229E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4191.4	331.08	56.839	-0.4377	-133.35	671.99
2	3363.3	265.37	48.390	-0.4377	-120.64	558.93
3	2359.9	267.29	50.799	-0.4377	-126.98	561.99
4	4143.9	315.01	54.662	-0.4377	-129.64	642.82
5	3284.3	239.72	44.400	-0.4377	-113.26	510.62
6	2280.9	240.45	46.443	-0.4377	-118.94	511.61
7	4096.4	312.98	54.727	-0.4377	-129.76	637.10
8	3205.3	237.72	44.387	-0.4377	-113.24	504.99
9	2201.9	238.41	46.423	-0.4377	-118.90	505.90
10	4049.0	311.07	54.811	-0.4377	-129.91	631.58
11	3126.4	236.50	44.505	-0.4377	-113.46	500.76
12	2123.0	237.18	46.546	-0.4377	-119.13	501.66
13	4001.5	322.05	57.009	-0.4377	-133.66	647.55
14	3047.4	256.90	48.361	-0.4377	-120.58	535.49
15	2044.0	258.77	50.770	-0.4377	-126.93	538.49
MINIMUM	2044.0	236.50	44.387	-0.4377	-133.66	500.76
Pile N.	15	11	8	1	13	11
MAXIMUM	4191.4	331.08	57.009	-0.4377	-113.24	671.99
Pile N.	1	1	13	1	8	1

PILE GROUP STRESS, KN/ M**2

*****	*****
1	4439.5
2	3629.0
3	3074.3
4	4324.1
5	3437.1
6	2876.0
7	4280.4
8	3375.8
9	2814.5
10	4237.3
11	3318.8
12	2757.5
13	4259.9
14	3381.1
15	2826.4
MINIMUM	2757.5
Pile N.	12
MAXIMUM	4439.5
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.4192E-05	-3.5365E-06	-671.99	-133.35	-105.16	-15.572	-30.008	-4.4619	2371.8	7.8279E+06	7.8279E+06
x(M)	8.6000	8.8000	0.0000	0.0000	6.8000	7.0000	8.8000	9.0000	20.000	0.0000	0.0000

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



**RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA**

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 360 di 420
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	2	-2.4952E-05	-3.7678E-06	-558.93	-120.64	-84.313	-12.943	-22.059	-3.3951	1903.2	7.8279E+06	7.8279E+06
x (M)		9.2000	9.4000	0.0000	0.0000	7.4000	7.6000	9.4000	9.6000	20.000	0.0000	0.0000
	3	-2.4898E-05	-3.8987E-06	-561.99	-126.98	-84.796	-13.504	-22.256	-3.5536	1335.4	7.8279E+06	7.8279E+06
x (M)		9.2000	9.4000	0.0000	0.0000	7.4000	7.6000	9.4000	9.6000	20.000	0.0000	0.0000
	4	-2.4215E-05	-3.5563E-06	-642.82	-129.64	-100.32	-14.927	-28.111	-4.1992	2345.0	7.8279E+06	7.8279E+06
x (M)		8.8000	8.8000	0.0000	0.0000	7.0000	7.2000	9.0000	9.2000	20.000	0.0000	0.0000
	5	-2.5103E-05	-3.7938E-06	-510.62	-113.26	-76.321	-11.767	-19.178	-2.9615	1858.5	7.8279E+06	7.8279E+06
x (M)		9.4000	9.6000	0.0000	0.0000	7.4000	7.8000	9.6000	10.000	20.000	0.0000	0.0000
	6	-2.5069E-05	-3.9270E-06	-511.61	-118.94	-76.468	-12.227	-19.238	-3.0810	1290.7	7.8279E+06	7.8279E+06
x (M)		9.4000	9.6000	0.0000	0.0000	7.4000	7.8000	9.6000	10.000	20.000	0.0000	0.0000
	7	-2.4111E-05	-3.5610E-06	-637.10	-129.76	-99.812	-14.934	-27.961	-4.2003	2318.1	7.8279E+06	7.8279E+06
x (M)		8.8000	8.8000	0.0000	0.0000	7.0000	7.2000	9.0000	9.2000	20.000	0.0000	0.0000
	8	-2.5000E-05	-3.7976E-06	-504.99	-113.24	-75.813	-11.751	-19.031	-2.9550	1813.9	7.8279E+06	7.8279E+06
x (M)		9.4000	9.6000	0.0000	0.0000	7.4000	7.8000	9.6000	10.000	20.000	0.0000	0.0000
	9	-2.4967E-05	-3.9308E-06	-505.90	-118.90	-75.946	-12.209	-19.086	-3.0735	1246.0	7.8279E+06	7.8279E+06
x (M)		9.4000	9.6000	0.0000	0.0000	7.4000	7.8000	9.6000	10.000	20.000	0.0000	0.0000
	10	-2.4015E-05	-3.5657E-06	-631.58	-129.91	-99.343	-14.947	-27.826	-4.2035	2291.2	7.8279E+06	7.8279E+06
x (M)		8.6000	8.8000	0.0000	0.0000	7.3000	7.2000	9.0000	9.2000	20.000	0.0000	0.0000
	11	-2.4892E-05	-3.8015E-06	-500.76	-113.46	-75.559	-11.773	-18.976	-2.9617	1769.2	7.8279E+06	7.8279E+06
x (M)		9.4000	9.6000	0.0000	0.0000	7.4000	7.8000	9.6000	10.000	20.000	0.0000	0.0000
	12	-2.4858E-05	-3.9349E-06	-501.66	-119.13	-75.690	-12.231	-19.030	-3.0804	1201.3	7.8279E+06	7.8279E+06
x (M)		9.4000	9.6000	0.0000	0.0000	7.4000	7.8000	9.6000	10.000	20.000	0.0000	0.0000
	13	-2.3804E-05	-3.5552E-06	-647.55	-133.66	-102.95	-15.583	-29.316	-4.4568	2264.4	7.8279E+06	7.8279E+06
x (M)		8.6000	8.8000	0.0000	0.0000	6.8000	7.0000	8.8000	9.0000	20.000	0.0000	0.0000
	14	-2.4549E-05	-3.7854E-06	-535.49	-120.58	-82.106	-12.886	-21.415	-3.3685	1724.5	7.8279E+06	7.8279E+06
x (M)		9.2000	9.4000	0.0000	0.0000	7.2000	7.6000	9.4000	9.6000	20.000	0.0000	0.0000
	15	-2.4496E-05	-3.9172E-06	-538.49	-126.93	-82.634	-13.446	-21.609	-3.5263	1156.7	7.8279E+06	7.8279E+06
x (M)		9.2000	9.4000	0.0000	0.0000	7.2000	7.6000	9.4000	9.6000	20.000	0.0000	0.0000
Min.		-2.5103E-05	-3.9349E-06	-671.99	-133.66	-105.16	-15.583	-30.008	-4.4619	1156.7	7.8279E+06	7.8279E+06
Pile N.		5	12	1	13	1	13	1	1	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.0229E-03	1.4612E-04	391.02	57.333	331.11	56.846	158.16	24.847	4439.5	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	4.8000	5.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
2	1.0229E-03	1.5147E-04	340.42	51.758	265.40	48.396	111.97	18.417	3629.0	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
3	1.0229E-03	1.5683E-04	341.75	53.875	267.31	50.802	113.14	19.337	3074.3	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
4	1.0176E-03	1.4612E-04	378.84	55.807	315.04	54.669	147.20	23.286	4324.1	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	4.8000	5.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
5	1.0176E-03	1.5147E-04	319.52	48.830	239.74	44.405	96.184	15.991	3437.1	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
6	1.0176E-03	1.5683E-04	319.92	50.690	240.46	46.447	96.547	16.685	2876.0	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
7	1.0122E-03	1.4612E-04	377.08	55.852	313.01	54.733	146.57	23.336	4280.4	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	4.8000	5.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
8	1.0122E-03	1.5147E-04	317.67	48.810	237.74	44.392	95.526	15.987	3375.8	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
9	1.0122E-03	1.5683E-04	318.04	50.664	238.43	46.426	95.866	16.677	2814.5	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
10	1.0068E-03	1.4612E-04	375.40	55.912	311.10	54.818	146.02	23.401	4237.3	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	4.8000	5.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
11	1.0068E-03	1.5147E-04	316.44	48.891	236.52	44.510	95.345	16.061	3318.8	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
12	1.0068E-03	1.5683E-04	316.80	50.748	237.19	46.549	95.687	16.754	2757.5	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.2000	5.4000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
13	1.0015E-03	1.4612E-04	383.24	57.450	322.08	57.016	155.01	24.991	4259.9	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	4.8000	5.0000	0.0000	0.0000	2.6000	2.6000	0.0000	0.0000	0.0000
14	1.0015E-03	1.5147E-04	332.87	51.702	256.92	48.366	109.06	18.415	3381.1	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
15	1.0015E-03	1.5683E-04	334.18	53.819	258.79	50.774	110.20	19.337	2826.4	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.0000	5.4000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
Max.	1.0229E-03	1.5683E-04	391.02	57.450	331.11	57.016	158.16	24.991	4439.5	7.8279E+06	7.8279E+06
Pile N.	1	3	1	13	1	13	1	13	1	1	1

LOAD CASE : 10
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5933	1.0000
2	0.5859	1.0000
3	0.8661	1.0000
4	0.4978	1.0000
5	0.4951	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandataria Mandanti   													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table border="1"> <tr> <td>COMMESSA</td> <td>LOTTO</td> <td>CODIFICA</td> <td>DOCUMENTO</td> <td>REV.</td> <td>FOGLIO</td> </tr> <tr> <td>IF28</td> <td>01</td> <td>E ZZ CL</td> <td>VI0103 001</td> <td>B</td> <td>361 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	361 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	361 di 420								

6	0.8004	1.0000
7	0.4958	1.0000
8	0.4933	1.0000
9	0.7998	1.0000
10	0.4968	1.0000
11	0.4943	1.0000
12	0.7998	1.0000
13	0.5845	1.0000
14	0.5771	1.0000
15	0.8601	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN	HOR. LOAD Y, KN	HOR. LOAD Z, KN
35669.8	-4070.50	749.073
MOMENT X, KN- M	MOMENT Y, KN- M	MOMENT Z, KN- M
-159.669	7396.38	23148.0

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M	HORIZONTAL Y, M	HORIZONTAL Z, M
1.27997E-03	-9.08669E-04	1.46201E-04
ANGLE ROT. X, RAD	ANGLE ROT. Y, RAD	ANGLE ROT. Z, RAD
1.82591E-07	8.29730E-06	8.68892E-05



THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	9.6365E-04	-9.1031E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
2	1.3546E-03	-9.1031E-04	1.4620E-04	1.8259E-07	8.2973E-06	8.6889E-05
3	1.7457E-03	-9.1031E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
4	9.2631E-04	-9.0949E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
5	1.3173E-03	-9.0949E-04	1.4620E-04	1.8259E-07	8.2973E-06	8.6889E-05
6	1.7083E-03	-9.0949E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
7	8.8897E-04	-9.0867E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
8	1.2800E-03	-9.0867E-04	1.4620E-04	1.8259E-07	8.2973E-06	8.6889E-05
9	1.6710E-03	-9.0867E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
10	8.5163E-04	-9.0785E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
11	1.2426E-03	-9.0785E-04	1.4620E-04	1.8259E-07	8.2973E-06	8.6889E-05
12	1.6336E-03	-9.0785E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
13	8.1429E-04	-9.0703E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
14	1.2053E-03	-9.0703E-04	1.4620E-04	1.8259E-07	8.2973E-06	8.6889E-05
15	1.5963E-03	-9.0703E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
MINIMUM	8.1429E-04	-9.1031E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.7457E-03	-9.0703E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	1796.8	-265.11	49.091	0.067110	-123.24	-602.33
2	2515.2	-263.20	48.434	0.067110	-121.77	-599.13
3	3233.5	-325.58	58.894	0.067110	-139.79	-706.95
4	1728.2	-240.46	44.807	0.067110	-115.35	-557.33
5	2446.6	-239.66	44.370	0.067110	-114.28	-556.08
6	3164.9	-311.68	56.562	0.067110	-135.81	-683.24
7	1659.7	-239.69	44.725	0.067110	-115.20	-555.61
8	2378.0	-238.94	44.296	0.067110	-114.14	-554.44
9	3096.3	-311.26	56.555	0.067110	-135.80	-682.17
10	1591.1	-239.74	44.785	0.067110	-115.31	-555.39
11	2309.4	-238.99	44.357	0.067110	-114.25	-554.21
12	3027.7	-310.97	56.571	0.067110	-135.82	-681.31
13	1522.5	-261.98	48.767	0.067110	-122.64	-595.40
14	2240.8	-260.07	48.110	0.067110	-121.17	-592.18
15	2959.1	-323.17	58.748	0.067110	-139.53	-701.43
MINIMUM	1522.5	-325.58	44.296	0.067110	-139.79	-706.95
Pile N.	13	3	8	1	3	3
MAXIMUM	3233.5	-238.94	58.894	0.067110	-114.14	-554.21
Pile N.	3	8	3	1	8	11

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti 					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 362 di 420

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	9.6365E-04	-9.1031E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
2	1.3546E-03	-9.1031E-04	1.4620E-04	1.8259E-07	8.2973E-06	8.6889E-05
3	1.7457E-03	-9.1031E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
4	9.2631E-04	-9.0949E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
5	1.3173E-03	-9.0949E-04	1.4620E-04	1.8259E-07	8.2973E-06	8.6889E-05
6	1.7083E-03	-9.0949E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
7	8.8897E-04	-9.0867E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
8	1.2800E-03	-9.0867E-04	1.4620E-04	1.8259E-07	8.2973E-06	8.6889E-05
9	1.6710E-03	-9.0867E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
10	8.5163E-04	-9.0785E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
11	1.2426E-03	-9.0785E-04	1.4620E-04	1.8259E-07	8.2973E-06	8.6889E-05
12	1.6336E-03	-9.0785E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
13	8.1429E-04	-9.0703E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
14	1.2053E-03	-9.0703E-04	1.4620E-04	1.8259E-07	8.2973E-06	8.6889E-05
15	1.5963E-03	-9.0703E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
MINIMUM	8.1429E-04	-9.1031E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.7457E-03	-9.0703E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	1796.8	-265.11	49.091	0.067110	-123.24	-602.33
2	2515.2	-263.20	48.434	0.067110	-121.77	-599.13
3	3233.5	-325.58	58.894	0.067110	-139.79	-706.95
4	1728.2	-240.46	44.807	0.067110	-115.35	-557.33
5	2446.6	-239.66	44.370	0.067110	-114.28	-556.08
6	3164.9	-311.68	56.562	0.067110	-135.81	-683.24
7	1659.7	-239.69	44.725	0.067110	-115.20	-555.61
8	2378.0	-238.94	44.296	0.067110	-114.14	-554.44
9	3096.3	-311.26	56.555	0.067110	-135.80	-682.17
10	1591.1	-239.74	44.785	0.067110	-115.31	-555.39
11	2309.4	-238.99	44.357	0.067110	-114.25	-554.21
12	3027.7	-310.97	56.571	0.067110	-135.82	-681.31
13	1522.5	-261.98	48.767	0.067110	-122.64	-595.40
14	2240.8	-260.07	48.110	0.067110	-121.17	-592.18
15	2959.1	-323.17	58.748	0.067110	-139.53	-701.43
MINIMUM	1522.5	-325.58	44.296	0.067110	-139.79	-706.95
Pile N.	13	3	8	1	3	3
MAXIMUM	3233.5	-238.94	58.894	0.067110	-114.14	-554.21
Pile N.	3	8	3	1	8	11

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2872.3
2	3268.5
3	4004.7
4	2695.7
5	3097.8
6	3893.4
7	2651.7
8	3054.1
9	3851.4
10	2612.3
11	3014.7
12	3810.0
13	2696.2
14	3092.3
15	3832.9
MINIMUM	2612.3
Pile N.	10
MAXIMUM	4004.7
Pile N.	3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-9.1031E-04	-3.6819E-06	-308.58	-123.24	-265.13	-12.763	-109.01	-3.3604	1016.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4000	5.2000	0.0000	0.0000	7.6000	2.6000	9.6000	20.000	0.0000	0.0000

APPALTATORE: Consorzio HirpiniaAV Soci salini impreglio ASTALDI	ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandatario ROKSOJL Mandanti NETENGINEERING Alpina	RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 363 di 420

	2	-9.1031E-04	-3.6656E-06	-307.29	-121.77	-263.22	-12.606	-107.82	-3.3078	1423.3	7.8279E+06	7.8279E+06
x(M)		0.0000	9.4000	5.2000	0.0000	0.0000	7.6000	2.6000	9.6000	20.000	0.0000	0.0000
	3	-9.1031E-04	-3.5555E-06	-353.55	-139.79	-325.60	-15.658	-151.76	-4.4866	1829.8	7.8279E+06	7.8279E+06
x(M)		0.0000	8.8000	4.8000	0.0000	0.0000	7.0000	2.6000	9.0000	20.000	0.0000	0.0000
	4	-9.0949E-04	-3.7040E-06	-289.66	-115.35	-240.47	-11.536	-93.381	-2.9071	977.99	7.8279E+06	7.8279E+06
x(M)		0.0000	9.6000	5.2000	0.0000	0.0000	7.8000	2.8000	10.000	20.000	0.0000	0.0000
	5	-9.0949E-04	-3.6852E-06	-289.14	-114.28	-239.68	-11.439	-92.950	-2.8792	1384.5	7.8279E+06	7.8279E+06
x(M)		0.0000	9.6000	5.2000	0.0000	0.0000	7.8000	2.8000	10.000	20.000	0.0000	0.0000
	6	-9.0949E-04	-3.5707E-06	-343.13	-135.81	-311.70	-14.989	-141.63	-4.2167	1791.0	7.8279E+06	7.8279E+06
x(M)		0.0000	9.0000	4.8000	0.0000	0.0000	7.2000	2.6000	9.2000	20.000	0.0000	0.0000
	7	-9.0867E-04	-3.7044E-06	-289.00	-115.20	-239.71	-11.510	-92.996	-2.8979	939.17	7.8279E+06	7.8279E+06
x(M)		0.0000	9.6000	5.2000	0.0000	0.0000	7.8000	2.8000	10.000	20.000	0.0000	0.0000
	8	-9.0867E-04	-3.6855E-06	-288.52	-114.14	-238.96	-11.416	-92.591	-2.8708	1345.7	7.8279E+06	7.8279E+06
x(M)		0.0000	9.6000	5.2000	0.0000	0.0000	7.8000	2.8000	10.000	20.000	0.0000	0.0000
	9	-9.0867E-04	-3.5716E-06	-342.77	-135.80	-311.29	-14.985	-141.45	-4.2147	1752.2	7.8279E+06	7.8279E+06
x(M)		0.0000	9.0000	4.8000	0.0000	0.0000	7.2000	2.6000	9.2000	20.000	0.0000	0.0000
	10	-9.0785E-04	-3.7050E-06	-289.00	-115.31	-239.75	-11.525	-93.105	-2.9029	900.35	7.8279E+06	7.8279E+06
x(M)		0.0000	9.6000	5.2000	0.0000	0.0000	7.8000	2.8000	10.000	20.000	0.0000	0.0000
	11	-9.0785E-04	-3.6861E-06	-288.51	-114.25	-239.01	-11.430	-92.701	-2.8758	1306.8	7.8279E+06	7.8279E+06
x(M)		0.0000	9.6000	5.2000	0.0000	0.0000	7.8000	2.8000	10.000	20.000	0.0000	0.0000
	12	-9.0785E-04	-3.5721E-06	-342.51	-135.82	-311.00	-14.986	-141.36	-4.2151	1713.3	7.8279E+06	7.8279E+06
x(M)		0.0000	9.0000	4.8000	0.0000	0.0000	7.2000	2.6000	9.2000	20.000	0.0000	0.0000
	13	-9.0703E-04	-3.6869E-06	-306.01	-122.64	-261.99	-12.662	-107.33	-3.3203	861.54	7.8279E+06	7.8279E+06
x(M)		0.0000	9.4000	5.2000	0.0000	0.0000	7.6000	2.6000	9.6000	20.000	0.0000	0.0000
	14	-9.0703E-04	-3.6699E-06	-304.72	-121.17	-260.08	-12.505	-106.14	-3.2674	1268.0	7.8279E+06	7.8279E+06
x(M)		0.0000	9.4000	5.2000	0.0000	0.0000	7.6000	2.6000	9.6000	20.000	0.0000	0.0000
	15	-9.0703E-04	-3.5599E-06	-351.57	-139.53	-323.20	-15.602	-150.48	-4.4642	1674.5	7.8279E+06	7.8279E+06
x(M)		0.0000	8.8000	4.8000	0.0000	0.0000	7.0000	2.6000	9.0000	20.000	0.0000	0.0000
Min.	-9.1031E-04	-3.7050E-06	-353.55	-139.79	-325.60	-15.658	-151.76	-4.4866	861.54	7.8279E+06	7.8279E+06	
Pile N.	1	10	3	3	3	3	3	3	13	1	1	

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	2.2425E-05	1.4702E-04	602.33	50.918	76.975	49.094	20.186	18.906	2872.3	7.8279E+06	7.8279E+06
x(M)	9.2000	0.0000	0.0000	5.4000	7.4000	0.0000	9.4000	2.8000	0.0000	0.0000	0.0000
2	2.2450E-05	1.4620E-04	599.13	50.412	76.465	48.438	19.996	18.589	3268.5	7.8279E+06	7.8279E+06
x(M)	9.2000	0.0000	0.0000	5.4000	7.4000	0.0000	9.6000	2.8000	0.0000	0.0000	0.0000
3	2.1832E-05	1.4538E-04	706.95	57.662	95.461	58.900	27.217	25.904	4004.7	7.8279E+06	7.8279E+06
x(M)	8.6000	0.0000	0.0000	5.0000	7.0000	0.0000	9.0000	2.6000	0.0000	0.0000	0.0000
4	2.2566E-05	1.4702E-04	557.33	47.837	69.528	44.809	17.509	16.264	2695.7	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
5	2.2591E-05	1.4620E-04	556.08	47.475	69.352	44.374	17.443	16.089	3097.8	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
6	2.1970E-05	1.4538E-04	683.24	56.042	91.259	56.568	25.615	24.209	3893.4	7.8279E+06	7.8279E+06
x(M)	8.8000	0.0000	0.0000	5.0000	7.0000	0.0000	9.0000	2.6000	0.0000	0.0000	0.0000
7	2.2555E-05	1.4702E-04	555.61	47.772	69.308	44.727	17.436	16.214	2651.7	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
8	2.2580E-05	1.4620E-04	554.44	47.416	69.144	44.300	17.374	16.044	3054.1	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
9	2.1955E-05	1.4538E-04	682.17	56.035	91.146	56.561	25.578	24.204	3851.4	7.8279E+06	7.8279E+06
x(M)	8.8000	0.0000	0.0000	5.0000	7.0000	0.0000	9.0000	2.6000	0.0000	0.0000	0.0000
10	2.2533E-05	1.4702E-04	555.39	47.816	69.331	44.788	17.450	16.250	2612.3	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
11	2.2557E-05	1.4620E-04	554.21	47.459	69.167	44.360	17.389	16.081	3014.7	7.8279E+06	7.8279E+06
x(M)	9.6000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
12	2.1937E-05	1.4538E-04	681.31	56.044	91.070	56.576	25.556	24.215	3810.0	7.8279E+06	7.8279E+06
x(M)	8.8000	0.0000	0.0000	5.0000	7.0000	0.0000	9.0000	2.6000	0.0000	0.0000	0.0000
13	2.2368E-05	1.4702E-04	595.40	50.687	76.069	48.769	19.881	18.701	2696.2	7.8279E+06	7.8279E+06
x(M)	9.2000	0.0000	0.0000	5.4000	7.4000	0.0000	9.6000	2.8000	0.0000	0.0000	0.0000
14	2.2389E-05	1.4620E-04	592.18	50.180	75.554	48.114	19.698	18.385	3092.3	7.8279E+06	7.8279E+06
x(M)	9.2000	0.0000	0.0000	5.4000	7.4000	0.0000	9.6000	2.8000	0.0000	0.0000	0.0000
15	2.1773E-05	1.4538E-04	701.43	57.557	94.785	58.754	26.987	25.796	3832.9	7.8279E+06	7.8279E+06
x(M)	8.6000	0.0000	0.0000	5.0000	7.0000	0.0000	9.0000	2.6000	0.0000	0.0000	0.0000
Max.	2.2591E-05	1.4702E-04	706.95	57.662	95.461	58.900	27.217	25.904	4004.7	7.8279E+06	7.8279E+06
Pile N.	5	1	3	3	3	3	3	3	3	1	1

LOAD CASE : 11
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5983	1.0000
2	0.5898	1.0000
3	0.8661	1.0000
4	0.4991	1.0000
5	0.4951	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 364 di 420

6	0.7975	1.0000
7	0.4966	1.0000
8	0.4928	1.0000
9	0.7965	1.0000
10	0.4976	1.0000
11	0.4938	1.0000
12	0.7965	1.0000
13	0.5845	1.0000
14	0.5760	1.0000
15	0.8566	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 45962.4	HOR. LOAD Y, KN -3538.07	HOR. LOAD Z, KN 793.088
MOMENT X, KN- M -328.736	MOMENT Y, KN- M 9100.36	MOMENT Z, KN- M 17477.5

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.65347E-03	HORIZONTAL Y, M -7.45810E-04	HORIZONTAL Z, M 1.52235E-04
ANGLE ROT. X, RAD -4.02716E-07	ANGLE ROT. Y, RAD 9.87171E-06	ANGLE ROT. Z, RAD 6.84690E-05

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4342E-03	-7.4219E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
2	1.7423E-03	-7.4219E-04	1.5223E-04	-4.0272E-07	9.8717E-06	6.8469E-05
3	2.0504E-03	-7.4219E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
4	1.3898E-03	-7.4400E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
5	1.6979E-03	-7.4400E-04	1.5223E-04	-4.0272E-07	9.8717E-06	6.8469E-05
6	2.0060E-03	-7.4400E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
7	1.3454E-03	-7.4581E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
8	1.6535E-03	-7.4581E-04	1.5223E-04	-4.0272E-07	9.8717E-06	6.8469E-05
9	1.9616E-03	-7.4581E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
10	1.3009E-03	-7.4762E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
11	1.6090E-03	-7.4762E-04	1.5223E-04	-4.0272E-07	9.8717E-06	6.8469E-05
12	1.9172E-03	-7.4762E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
13	1.2565E-03	-7.4943E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
14	1.5646E-03	-7.4943E-04	1.5223E-04	-4.0272E-07	9.8717E-06	6.8469E-05
15	1.8727E-03	-7.4943E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
MINIMUM	1.2565E-03	-7.4943E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	2.0504E-03	-7.4219E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2661.3	-229.97	51.122	-0.1480	-124.20	-522.07
2	3227.4	-228.07	51.461	-0.1480	-125.53	-518.85
3	3793.4	-280.69	63.774	-0.1480	-147.57	-608.84
4	2579.7	-208.78	46.425	-0.1480	-115.68	-484.72
5	3145.8	-207.77	46.892	-0.1480	-117.22	-483.02
6	3711.8	-269.20	61.064	-0.1480	-143.00	-590.51
7	2498.1	-208.74	46.270	-0.1480	-115.39	-485.31
8	3064.2	-207.78	46.747	-0.1480	-116.95	-483.69
9	3630.2	-269.72	60.988	-0.1480	-142.87	-592.15
10	2416.5	-209.52	46.291	-0.1480	-115.42	-487.39
11	2982.6	-208.57	46.769	-0.1480	-116.99	-485.77
12	3548.6	-270.41	60.951	-0.1480	-142.80	-594.07
13	2334.9	-229.44	50.374	-0.1480	-122.84	-523.89
14	2900.9	-227.51	50.700	-0.1480	-124.15	-520.60
15	3467.0	-281.90	63.258	-0.1480	-146.68	-613.99
MINIMUM	2334.9	-281.90	46.270	-0.1480	-147.57	-613.99
Pile N.	13	15	7	1	3	15
MAXIMUM	3793.4	-207.77	63.774	-0.1480	-115.39	-483.02
Pile N.	3	5	3	1	7	5

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.4342E-03	-7.4219E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
2	1.7423E-03	-7.4219E-04	1.5223E-04	-4.0272E-07	9.8717E-06	6.8469E-05
3	2.0504E-03	-7.4219E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
4	1.3898E-03	-7.4400E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
5	1.6979E-03	-7.4400E-04	1.5223E-04	-4.0272E-07	9.8717E-06	6.8469E-05
6	2.0060E-03	-7.4400E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
7	1.3454E-03	-7.4581E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
8	1.6535E-03	-7.4581E-04	1.5223E-04	-4.0272E-07	9.8717E-06	6.8469E-05
9	1.9616E-03	-7.4581E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
10	1.3009E-03	-7.4762E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
11	1.6090E-03	-7.4762E-04	1.5223E-04	-4.0272E-07	9.8717E-06	6.8469E-05
12	1.9172E-03	-7.4762E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
13	1.2565E-03	-7.4943E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
14	1.5646E-03	-7.4943E-04	1.5223E-04	-4.0272E-07	9.8717E-06	6.8469E-05
15	1.8727E-03	-7.4943E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
MINIMUM	1.2565E-03	-7.4943E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	2.0504E-03	-7.4219E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	2661.3	-229.97	51.122	-0.1480	-124.20	-522.07
2	3227.4	-228.07	51.461	-0.1480	-125.53	-518.85
3	3793.4	-280.69	63.774	-0.1480	-147.57	-608.84
4	2579.7	-208.78	46.425	-0.1480	-115.68	-484.72
5	3145.8	-207.77	46.892	-0.1480	-117.22	-483.02
6	3711.8	-269.20	61.064	-0.1480	-143.00	-590.51
7	2498.1	-208.74	46.270	-0.1480	-115.39	-485.31
8	3064.2	-207.78	46.747	-0.1480	-116.95	-483.69
9	3630.2	-269.72	60.988	-0.1480	-142.87	-592.15
10	2416.5	-209.52	46.291	-0.1480	-115.42	-487.39
11	2982.6	-208.57	46.769	-0.1480	-116.99	-485.77
12	3548.6	-270.41	60.951	-0.1480	-142.80	-594.07
13	2334.9	-229.44	50.374	-0.1480	-122.84	-523.89
14	2900.9	-227.51	50.700	-0.1480	-124.15	-520.60
15	3467.0	-281.90	63.258	-0.1480	-146.68	-613.99
MINIMUM	2334.9	-281.90	46.270	-0.1480	-147.57	-613.99
Pile N.	13	15	7	1	3	15
MAXIMUM	3793.4	-207.77	63.774	-0.1480	-115.39	-483.02
Pile N.	3	5	3	1	7	5

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	3125.6
2	3437.4
3	4037.4
4	2963.8
5	3280.2
6	3934.2
7	2919.2
8	3235.8
9	3892.7
10	2879.1
11	3195.8
12	3852.1
13	2945.3
14	3256.8
15	3867.1
MINIMUM	2879.1
Pile N.	10
MAXIMUM	4037.4
Pile N.	3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-7.4219E-04	-3.8643E-06	-259.67	-124.20	-229.99	-13.351	-98.102	-3.5088	1506.0	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2000	5.0000	0.0000	0.0000	7.4000	2.6000	9.4000	20.000	0.0000	0.0000

APPALTATORE:

Consorzio

Soci



PROGETTAZIONE:

Mandataria

Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

ITINERARIO NAPOLI – BARI

**RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA**

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 366 di 420
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2	-7.4219E-04	-3.9142E-06	-258.28	-125.53	-228.09	-13.409	-96.845	-3.5142	1826.3	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2000	5.0000	0.0000	0.0000	7.4000	2.6000	9.6000	20.000	0.0000	0.0000
3	-7.4219E-04	-3.8803E-06	-297.19	-147.57	-280.72	-16.966	-135.21	-4.8373	2146.6	7.8279E+06	7.8279E+06
x(M)	0.0000	8.6000	4.8000	0.0000	0.0000	7.0000	2.6000	9.0000	20.000	0.0000	0.0000
4	-7.4400E-04	-3.8811E-06	-243.59	-115.68	-208.79	-11.995	-83.770	-3.0242	1459.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6000	5.2000	0.0000	0.0000	7.6000	2.6000	9.8000	20.000	0.0000	0.0000
5	-7.4400E-04	-3.9325E-06	-242.89	-117.22	-207.79	-12.092	-83.156	-3.0428	1780.1	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6000	5.2000	0.0000	0.0000	7.6000	2.6000	9.8000	20.000	0.0000	0.0000
6	-7.4400E-04	-3.9017E-06	-289.00	-143.00	-269.23	-16.173	-126.13	-4.5367	2100.5	7.8279E+06	7.8279E+06
x(M)	0.0000	8.8000	4.8000	0.0000	0.0000	7.0000	2.6000	9.0000	20.000	0.0000	0.0000
7	-7.4581E-04	-3.8805E-06	-243.66	-115.39	-208.75	-11.954	-83.526	-3.0101	1413.6	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6000	5.2000	0.0000	0.0000	7.6000	2.6000	9.8000	20.000	0.0000	0.0000
8	-7.4581E-04	-3.9316E-06	-243.00	-116.95	-207.80	-12.053	-82.951	-3.0296	1734.0	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6000	5.2000	0.0000	0.0000	7.6000	2.6000	9.8000	20.000	0.0000	0.0000
9	-7.4581E-04	-3.8999E-06	-289.47	-142.87	-269.74	-16.153	-126.20	-4.5303	2054.3	7.8279E+06	7.8279E+06
x(M)	0.0000	8.8000	4.8000	0.0000	0.0000	7.0000	2.6000	9.0000	20.000	0.0000	0.0000
10	-7.4762E-04	-3.8782E-06	-244.35	-115.42	-209.54	-11.964	-83.812	-3.0140	1367.5	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6000	5.2000	0.0000	0.0000	7.6000	2.6000	9.8000	20.000	0.0000	0.0000
11	-7.4762E-04	-3.9293E-06	-243.69	-116.99	-208.59	-12.063	-83.237	-3.0337	1687.8	7.8279E+06	7.8279E+06
x(M)	0.0000	9.6000	5.2000	0.0000	0.0000	7.6000	2.6000	9.8000	20.000	0.0000	0.0000
12	-7.4762E-04	-3.8976E-06	-290.06	-142.80	-270.43	-16.145	-126.41	-4.5282	2008.1	7.8279E+06	7.8279E+06
x(M)	0.0000	8.8000	4.8000	0.0000	0.0000	7.0000	2.6000	9.0000	20.000	0.0000	0.0000
13	-7.4943E-04	-3.8565E-06	-259.54	-122.84	-229.46	-13.147	-96.746	-3.4400	1321.3	7.8279E+06	7.8279E+06
x(M)	0.0000	9.2000	5.0000	0.0000	0.0000	7.4000	2.6000	9.6000	20.000	0.0000	0.0000
14	-7.4943E-04	-3.9051E-06	-258.10	-124.15	-227.53	-13.200	-95.479	-3.4443	1641.6	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4000	5.0000	0.0000	0.0000	7.4000	2.6000	9.6000	20.000	0.0000	0.0000
15	-7.4943E-04	-3.8712E-06	-298.48	-146.68	-281.93	-16.832	-134.82	-4.7905	1961.9	7.8279E+06	7.8279E+06
x(M)	0.0000	8.6000	4.8000	0.0000	0.0000	7.0000	2.6000	9.0000	20.000	0.0000	0.0000
Min.	-7.4943E-04	-3.9325E-06	-298.48	-147.57	-281.93	-16.966	-135.21	-4.8373	1321.3	7.8279E+06	7.8279E+06
Pile N.	13	5	15	3	15	3	3	3	13	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	1.8876E-05	1.5042E-04	522.07	53.334	64.742	51.127	17.024	20.847	3125.6	7.8279E+06	7.8279E+06
x(M)	9.2000	0.0000	0.0000	5.2000	7.2000	0.0000	9.4000	2.6000	0.0000	0.0000	0.0000
2	1.8905E-05	1.5223E-04	518.85	53.721	64.193	51.466	16.831	20.857	3437.4	7.8279E+06	7.8279E+06
x(M)	9.2000	0.0000	0.0000	5.2000	7.2000	0.0000	9.4000	2.6000	0.0000	0.0000	0.0000
3	1.8482E-05	1.5405E-04	608.84	62.527	80.249	63.782	22.874	29.468	4037.4	7.8279E+06	7.8279E+06
x(M)	8.6000	0.0000	0.0000	4.8000	6.8000	0.0000	8.8000	2.6000	0.0000	0.0000	0.0000
4	1.9066E-05	1.5042E-04	484.72	49.845	58.330	46.429	14.688	17.808	2963.8	7.8279E+06	7.8279E+06
x(M)	9.4000	0.0000	0.0000	5.4000	7.6000	0.0000	9.6000	2.8000	0.0000	0.0000	0.0000
5	1.9076E-05	1.5223E-04	483.02	50.329	58.088	46.896	14.596	17.920	3280.2	7.8279E+06	7.8279E+06
x(M)	9.4000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
6	1.8590E-05	1.5405E-04	590.51	60.682	76.705	61.070	21.466	27.417	3934.2	7.8279E+06	7.8279E+06
x(M)	8.6000	0.0000	0.0000	5.0000	7.0000	0.0000	9.0000	2.6000	0.0000	0.0000	0.0000
7	1.9105E-05	1.5042E-04	485.31	49.737	58.292	46.274	14.657	17.708	2919.2	7.8279E+06	7.8279E+06
x(M)	9.4000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
8	1.9114E-05	1.5223E-04	483.69	50.228	58.064	46.752	14.575	17.826	3235.8	7.8279E+06	7.8279E+06
x(M)	9.4000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
9	1.8626E-05	1.5405E-04	592.15	60.630	76.818	60.995	21.494	27.356	3892.7	7.8279E+06	7.8279E+06
x(M)	8.8000	0.0000	0.0000	5.0000	7.0000	0.0000	9.0000	2.6000	0.0000	0.0000	0.0000
10	1.9141E-05	1.5042E-04	487.39	49.755	58.486	46.295	14.713	17.718	2879.1	7.8279E+06	7.8279E+06
x(M)	9.4000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
11	1.9150E-05	1.5223E-04	485.77	50.246	58.258	46.774	14.631	17.837	3195.8	7.8279E+06	7.8279E+06
x(M)	9.4000	0.0000	0.0000	5.4000	7.6000	0.0000	9.8000	2.8000	0.0000	0.0000	0.0000
12	1.8663E-05	1.5405E-04	594.07	60.603	76.979	60.957	21.540	27.324	3852.1	7.8279E+06	7.8279E+06
x(M)	8.8000	0.0000	0.0000	5.0000	7.0000	0.0000	9.0000	2.6000	0.0000	0.0000	0.0000
13	1.9060E-05	1.5042E-04	523.89	52.798	64.409	50.378	16.845	20.329	2945.3	7.8279E+06	7.8279E+06
x(M)	9.2000	0.0000	0.0000	5.2000	7.4000	0.0000	9.4000	2.6000	0.0000	0.0000	0.0000
14	1.9081E-05	1.5223E-04	520.60	53.170	63.900	50.705	16.643	20.333	3256.8	7.8279E+06	7.8279E+06
x(M)	9.2000	0.0000	0.0000	5.2000	7.4000	0.0000	9.4000	2.6000	0.0000	0.0000	0.0000
15	1.8641E-05	1.5405E-04	613.99	62.142	80.368	63.264	22.864	29.055	3867.1	7.8279E+06	7.8279E+06
x(M)	8.6000	0.0000	0.0000	4.8000	6.8000	0.0000	8.8000	2.6000	0.0000	0.0000	0.0000
Max.	1.9150E-05	1.5405E-04	613.99	62.527	80.368	63.782	22.874	29.468	4037.4	7.8279E+06	7.8279E+06
Pile N.	11	3	15	3	15	3	3	3	3	1	1

LOAD CASE : 12
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8651	1.0000
2	0.8045	1.0000
3	0.8661	1.0000
4	0.5787	1.0000
5	0.4961	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 367 di 420

6	0.5802	1.0000
7	0.5443	1.0000
8	0.4627	1.0000
9	0.5458	1.0000
10	0.5443	1.0000
11	0.4627	1.0000
12	0.5458	1.0000
13	0.5845	1.0000
14	0.4969	1.0000
15	0.5860	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 41255.7	HOR. LOAD Y, KN -414.765	HOR. LOAD Z, KN 836.063
MOMENT X, KN- M 35.0101	MOMENT Y, KN- M 8735.34	MOMENT Z, KN- M -8471.70

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.48267E-03	HORIZONTAL Y, M -9.05201E-06	HORIZONTAL Z, M 1.39360E-04
ANGLE ROT. X, RAD -2.20684E-07	ANGLE ROT. Y, RAD 9.54477E-06	ANGLE ROT. Z, RAD -1.86965E-05



THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.6527E-03	-7.0659E-06	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
2	1.5686E-03	-7.0659E-06	1.3936E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
3	1.4844E-03	-7.0659E-06	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
4	1.6098E-03	-8.0589E-06	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
5	1.5256E-03	-8.0589E-06	1.3936E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
6	1.4415E-03	-8.0589E-06	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
7	1.5668E-03	-9.0520E-06	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
8	1.4827E-03	-9.0520E-06	1.3936E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
9	1.3985E-03	-9.0520E-06	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
10	1.5238E-03	-1.0045E-05	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
11	1.4397E-03	-1.0045E-05	1.3936E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
12	1.3556E-03	-1.0045E-05	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
13	1.4809E-03	-1.1038E-05	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
14	1.3968E-03	-1.1038E-05	1.3936E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
15	1.3126E-03	-1.1038E-05	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
MINIMUM	1.3126E-03	-1.1038E-05	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6527E-03	-7.0659E-06	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3062.8	-30.661	67.621	-0.081111	-147.13	-106.23
2	2908.2	-29.886	65.655	-0.081111	-144.46	-104.79
3	2753.6	-30.674	68.835	-0.081111	-150.01	-106.26
4	2983.9	-27.047	54.641	-0.081111	-125.74	-99.645
5	2829.3	-25.569	50.733	-0.081111	-119.36	-96.692
6	2674.7	-27.072	55.677	-0.081111	-128.33	-99.699
7	2905.0	-26.911	52.867	-0.081111	-122.69	-99.665
8	2750.4	-25.347	48.848	-0.081111	-116.01	-96.512
9	2595.8	-26.940	53.882	-0.081111	-125.24	-99.726
10	2826.0	-27.374	52.869	-0.081111	-122.69	-100.87
11	2671.5	-25.774	48.850	-0.081111	-116.01	-97.654
12	2516.9	-27.404	53.884	-0.081111	-125.24	-100.93
13	2747.1	-28.584	54.939	-0.081111	-126.24	-103.55
14	2592.6	-26.910	50.782	-0.081111	-119.43	-100.23
15	2438.0	-28.611	55.980	-0.081111	-128.84	-103.60
MINIMUM	2438.0	-30.674	48.848	-0.081111	-150.01	-106.26
Pile N.	15	3	8	1	3	3
MAXIMUM	3062.8	-25.347	68.835	-0.081111	-116.01	-96.512
Pile N.	1	8	3	1	8	8

APPALTATORE: Consorzio Soci 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti 	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.6527E-03	-7.0659E-06	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
2	1.5686E-03	-7.0659E-06	1.3936E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
3	1.4844E-03	-7.0659E-06	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
4	1.6098E-03	-8.0589E-06	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
5	1.5256E-03	-8.0589E-06	1.3936E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
6	1.4415E-03	-8.0589E-06	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
7	1.5668E-03	-9.0520E-06	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
8	1.4827E-03	-9.0520E-06	1.3936E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
9	1.3985E-03	-9.0520E-06	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
10	1.5238E-03	-1.0045E-05	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
11	1.4397E-03	-1.0045E-05	1.3936E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
12	1.3556E-03	-1.0045E-05	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
13	1.4809E-03	-1.1038E-05	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
14	1.3968E-03	-1.1038E-05	1.3936E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
15	1.3126E-03	-1.1038E-05	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
MINIMUM	1.3126E-03	-1.1038E-05	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6527E-03	-7.0659E-06	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *



PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3062.8	-30.661	67.621	-0.081111	-147.13	-106.23
2	2908.2	-29.886	65.655	-0.081111	-144.46	-104.79
3	2753.6	-30.674	68.835	-0.081111	-150.01	-106.26
4	2983.9	-27.047	54.641	-0.081111	-125.74	-99.645
5	2829.3	-25.569	50.733	-0.081111	-119.36	-96.692
6	2674.7	-27.072	55.677	-0.081111	-128.33	-99.699
7	2905.0	-26.911	52.867	-0.081111	-122.69	-99.665
8	2750.4	-25.347	48.848	-0.081111	-116.01	-96.512
9	2595.8	-26.940	53.882	-0.081111	-125.24	-99.726
10	2826.0	-27.374	52.869	-0.081111	-122.69	-100.87
11	2671.5	-25.774	48.850	-0.081111	-116.01	-97.654
12	2516.9	-27.404	53.884	-0.081111	-125.24	-100.93
13	2747.1	-28.584	54.939	-0.081111	-126.24	-103.55
14	2592.6	-26.910	50.782	-0.081111	-119.43	-100.23
15	2438.0	-28.611	55.980	-0.081111	-128.84	-103.60
MINIMUM	2438.0	-30.674	48.848	-0.081111	-150.01	-106.26
Pile N.	15	3	8	1	3	3
MAXIMUM	3062.8	-25.347	68.835	-0.081111	-116.01	-96.512
Pile N.	1	8	3	1	8	8

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2280.9
2	2184.3
3	2113.0
4	2172.7
5	2064.6
6	2004.0
7	2120.9
8	2011.9
9	1952.1
10	2078.6
11	1969.4
12	1909.7
13	2047.3
14	1937.7
15	1878.6
MINIMUM	1878.6
Pile N.	15
MAXIMUM	2280.9
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.2463E-05	-3.8881E-06	-12.007	-147.13	-30.666	-16.583	-11.122	-4.6913	1733.2	7.8279E+06	7.8279E+06
x(M)	1.8000	8.2000	6.0000	0.0000	0.0000	6.6000	2.8000	8.6000	20.000	0.0000	0.0000

APPALTATORE: Consorzio Soci   			ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   								
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B			COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 369 di 420

	2	-2.2678E-05	-3.9283E-06	-11.757	-144.46	-29.890	-15.963	-10.533	-4.4472	1645.7	7.8279E+06	7.8279E+06
x (M)	2.0000	8.4000	6.0000	0.0000	0.0000	0.0000	6.6000	2.8000	8.6000	20.000	0.0000	0.0000
	3	-2.2459E-05	-3.9438E-06	-12.010	-150.01	-30.678	-16.838	-11.132	-4.7649	1558.2	7.8279E+06	7.8279E+06
x (M)	1.8000	8.4000	6.0000	0.0000	0.0000	0.0000	6.6000	2.8000	8.6000	20.000	0.0000	0.0000
	4	-2.4516E-05	-3.9091E-06	-11.039	-125.74	-27.050	-12.910	-8.4750	-3.3539	1688.5	7.8279E+06	7.8279E+06
x (M)	2.0000	9.0000	6.4000	0.0000	0.0000	0.0000	7.0000	3.0000	9.2000	20.000	0.0000	0.0000
	5	-2.5026E-05	-3.9355E-06	-10.575	-119.36	-25.572	-11.809	-7.5766	-2.9597	1601.1	7.8279E+06	7.8279E+06
x (M)	2.0000	9.2000	6.0000	0.0000	0.0000	0.0000	7.2000	3.2000	9.4000	20.000	0.0000	0.0000
	6	-2.4508E-05	-3.9649E-06	-11.046	-128.33	-27.075	-13.119	-8.4908	-3.4103	1513.6	7.8279E+06	7.8279E+06
x (M)	2.0000	9.0000	6.4000	0.0000	0.0000	0.0000	7.0000	3.0000	9.2000	20.000	0.0000	0.0000
	7	-2.5482E-05	-3.9088E-06	-11.157	-122.69	-26.915	-12.428	-8.2955	-3.1817	1643.9	7.8279E+06	7.8279E+06
x (M)	2.0000	9.0000	6.0000	0.0000	0.0000	0.0000	7.2000	3.0000	9.4000	20.000	0.0000	0.0000
	8	-2.6028E-05	-3.9273E-06	-10.668	-116.01	-25.351	-11.311	-7.3705	-2.7899	1556.4	7.8279E+06	7.8279E+06
x (M)	2.0000	9.4000	6.8000	0.0000	0.0000	0.0000	7.4000	3.2000	9.6000	20.000	0.0000	0.0000
	9	-2.5472E-05	-3.9646E-06	-11.164	-125.24	-26.943	-12.632	-8.3131	-3.2360	1468.9	7.8279E+06	7.8279E+06
x (M)	2.0000	9.0000	6.6000	0.0000	0.0000	0.0000	7.2000	3.0000	9.4000	20.000	0.0000	0.0000
	10	-2.6243E-05	-3.9086E-06	-11.469	-122.69	-27.378	-12.428	-8.4955	-3.1816	1599.2	7.8279E+06	7.8279E+06
x (M)	2.0000	9.0000	6.4000	0.0000	0.0000	0.0000	7.2000	3.0000	9.4000	20.000	0.0000	0.0000
	11	-2.6800E-05	-3.9271E-06	-10.955	-116.01	-25.777	-11.310	-7.5404	-2.7897	1511.7	7.8279E+06	7.8279E+06
x (M)	2.0000	9.4000	6.0000	0.0000	0.0000	0.0000	7.4000	3.2000	9.6000	20.000	0.0000	0.0000
	12	-2.6233E-05	-3.9644E-06	-11.478	-125.24	-27.407	-12.632	-8.5135	-3.2359	1424.3	7.8279E+06	7.8279E+06
x (M)	2.0000	9.0000	6.4000	0.0000	0.0000	0.0000	7.2000	3.0000	9.4000	20.000	0.0000	0.0000
	13	-2.6752E-05	-3.9070E-06	-12.043	-126.24	-28.587	-12.992	-9.1727	-3.3820	1554.6	7.8279E+06	7.8279E+06
x (M)	2.0000	9.0000	6.4000	0.0000	0.0000	0.0000	7.0000	3.0000	9.2000	20.000	0.0000	0.0000
	14	-2.7323E-05	-3.9348E-06	-11.490	-119.43	-26.914	-11.820	-8.1240	-2.9635	1467.1	7.8279E+06	7.8279E+06
x (M)	2.0000	9.2000	6.6000	0.0000	0.0000	0.0000	7.2000	3.2000	9.4000	20.000	0.0000	0.0000
	15	-2.6743E-05	-3.9628E-06	-12.051	-128.84	-28.614	-13.202	-9.1897	-3.4388	1379.6	7.8279E+06	7.8279E+06
x (M)	2.0000	9.0000	6.4000	0.0000	0.0000	0.0000	7.0000	3.0000	9.2000	20.000	0.0000	0.0000
Min.	-2.7323E-05	-3.9649E-06	-12.051	-150.01	-30.678	-16.838	-11.132	-4.7649	1379.6	7.8279E+06	7.8279E+06	
Pile N.	14	6	15	3	3	3	3	3	15	1	1	

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	7.1971E-07	1.3837E-04	106.23	61.734	3.3441	67.627	0.9739	38.898	2280.9	7.8279E+06	7.8279E+06
x (M)	9.6000	0.0000	0.0000	4.6000	8.0000	0.0000	9.8000	2.6000	0.0000	0.0000	0.0000
2	7.2440E-07	1.3936E-04	104.79	60.454	3.2284	65.661	0.9233	36.897	2184.3	7.8279E+06	7.8279E+06
x (M)	9.8000	0.0000	0.0000	4.6000	8.0000	0.0000	9.8000	2.6000	0.0000	0.0000	0.0000
3	7.1947E-07	1.4035E-04	106.26	62.673	3.3453	68.841	0.9745	39.560	2113.0	7.8279E+06	7.8279E+06
x (M)	9.6000	0.0000	0.0000	4.6000	8.0000	0.0000	9.8000	2.6000	0.0000	0.0000	0.0000
4	7.6565E-07	1.3837E-04	99.645	52.508	2.8234	54.646	0.7402	27.697	2172.7	7.8279E+06	7.8279E+06
x (M)	10.400	0.0000	0.0000	4.8000	8.6000	0.0000	10.600	2.6000	0.0000	0.0000	0.0000
5	7.6511E-07	1.3936E-04	96.692	49.651	2.6149	50.737	0.8033	24.466	2064.6	7.8279E+06	7.8279E+06
x (M)	10.600	0.0000	0.0000	5.0000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
6	7.6535E-07	1.4035E-04	99.699	53.330	2.8263	55.681	0.7415	28.203	2004.0	7.8279E+06	7.8279E+06
x (M)	10.400	0.0000	0.0000	4.8000	8.6000	0.0000	10.600	2.6000	0.0000	0.0000	0.0000
7	7.8930E-07	1.3837E-04	99.665	51.184	2.8136	52.872	0.7589	26.279	2120.9	7.8279E+06	7.8279E+06
x (M)	10.400	0.0000	0.0000	4.8000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
8	7.8736E-07	1.3936E-04	96.512	48.270	2.5982	48.852	0.8526	23.034	2011.9	7.8279E+06	7.8279E+06
x (M)	10.800	0.0000	0.0000	5.0000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
9	7.8921E-07	1.4035E-04	99.726	51.990	2.8173	53.886	0.7569	26.767	1952.1	7.8279E+06	7.8279E+06
x (M)	10.400	0.0000	0.0000	4.8000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
10	8.1326E-07	1.3837E-04	100.87	51.183	2.8922	52.873	0.7700	26.279	2078.6	7.8279E+06	7.8279E+06
x (M)	10.400	0.0000	0.0000	4.8000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
11	8.1065E-07	1.3936E-04	97.654	48.269	2.6671	48.854	0.8664	23.035	1969.4	7.8279E+06	7.8279E+06
x (M)	10.800	0.0000	0.0000	5.0000	9.0000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
12	8.1313E-07	1.4035E-04	100.93	51.990	2.8960	53.888	0.7680	26.767	1909.7	7.8279E+06	7.8279E+06
x (M)	10.400	0.0000	0.0000	4.8000	8.6000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
13	8.3515E-07	1.3837E-04	103.55	52.721	3.0766	54.943	0.8095	27.934	2047.3	7.8279E+06	7.8279E+06
x (M)	10.200	0.0000	0.0000	4.8000	8.4000	0.0000	10.600	2.6000	0.0000	0.0000	0.0000
14	8.3651E-07	1.3936E-04	100.23	49.681	2.8375	50.786	0.8404	24.500	1937.7	7.8279E+06	7.8279E+06
x (M)	10.600	0.0000	0.0000	5.0000	8.8000	0.0000	13.600	2.6000	0.0000	0.0000	0.0000
15	8.3503E-07	1.4035E-04	103.60	53.546	3.0803	55.984	0.8109	28.444	1878.6	7.8279E+06	7.8279E+06
x (M)	10.200	0.0000	0.0000	4.8000	8.4000	0.0000	10.400	2.6000	0.0000	0.0000	0.0000
Max.	8.3651E-07	1.4035E-04	106.26	62.673	3.3453	68.841	0.9745	39.560	2280.9	7.8279E+06	7.8279E+06
Pile N.	14	3	3	3	3	3	3	3	1	1	1

LOAD CASE : 13
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5791	1.0000
3	0.5846	1.0000
4	0.8053	1.0000
5	0.4951	1.0000

APPALTATORE:

Consorzio



Soci



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTAZIONE:

Mandataria



Mandanti



PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA
IF28

LOTTO
01

CODIFICA
E ZZ CL

DOCUMENTO
VI0103 001

REV.
B

FOGLIO
370 di
420

6	0.4955	1.0000
7	0.8053	1.0000
8	0.4941	1.0000
9	0.4945	1.0000
10	0.8053	1.0000
11	0.4951	1.0000
12	0.4955	1.0000
13	0.8661	1.0000
14	0.5791	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 29106.5	HOR. LOAD Y, KN 12866.2	HOR. LOAD Z, KN 78.2617
MOMENT X, KN- M -26.1653	MOMENT Y, KN- M 913.045	MOMENT Z, KN- M -50340.5

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.04645E-03	HORIZONTAL Y, M 4.09155E-03	HORIZONTAL Z, M 2.38208E-05
ANGLE ROT. X, RAD -3.51763E-07	ANGLE ROT. Y, RAD 1.00846E-06	ANGLE ROT. Z, RAD -2.29574E-04

THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.0886E-03	4.0947E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
2	1.0555E-03	4.0947E-03	2.3821E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
3	2.2446E-05	4.0947E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
4	2.0841E-03	4.0931E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
5	1.0510E-03	4.0931E-03	2.3821E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
6	1.7908E-05	4.0931E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
7	2.0795E-03	4.0916E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
8	1.0464E-03	4.0916E-03	2.3821E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
9	1.3370E-05	4.0916E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
10	2.0750E-03	4.0900E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
11	1.0419E-03	4.0900E-03	2.3821E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
12	8.8317E-06	4.0900E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
13	2.0705E-03	4.0884E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
14	1.0374E-03	4.0884E-03	2.3821E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
15	4.2936E-06	4.0884E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
MINIMUM	4.2936E-06	4.0884E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.0886E-03	4.0947E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3863.6	1057.5	5.9605	-0.1293	-16.152	2793.7
2	1965.7	819.04	5.0176	-0.1293	-14.617	2300.4
3	42.629	824.92	5.4407	-0.1293	-15.908	2310.7
4	3855.3	1009.6	5.6968	-0.1293	-15.622	2697.5
5	1957.3	739.78	4.5426	-0.1293	-13.578	2127.8
6	34.010	741.07	4.9011	-0.1293	-14.729	2128.3
7	3846.9	1009.3	5.6976	-0.1293	-15.624	2696.4
8	1949.0	738.52	4.5371	-0.1293	-13.566	2124.6
9	25.391	739.80	4.8952	-0.1293	-14.716	2125.1
10	3838.6	1009.0	5.6984	-0.1293	-15.625	2695.2
11	1940.6	739.29	4.5439	-0.1293	-13.581	2125.9
12	16.773	740.58	4.9025	-0.1293	-14.732	2126.4
13	3830.3	1056.1	5.9637	-0.1293	-16.158	2789.0
14	1932.3	817.94	5.0203	-0.1293	-14.622	2296.4
15	8.1543	823.82	5.4436	-0.1293	-15.915	2306.7
MINIMUM	8.1543	738.52	4.5371	-0.1293	-16.158	2124.6
Pile N.	15	8	8	1	13	8
MAXIMUM	3863.6	1057.5	5.9637	-0.1293	-13.566	2793.7
Pile N.	1	1	13	1	8	1

APPALTATORE: Consorzio Soci 			ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti 								
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B			COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 371 di 420

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.0886E-03	4.0947E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
2	1.0555E-03	4.0947E-03	2.3821E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
3	2.2446E-05	4.0947E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
4	2.0841E-03	4.0931E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
5	1.0510E-03	4.0931E-03	2.3821E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
6	1.7908E-05	4.0931E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
7	2.0795E-03	4.0916E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
8	1.0464E-03	4.0916E-03	2.3821E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
9	1.3370E-05	4.0916E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
10	2.0750E-03	4.0900E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
11	1.0419E-03	4.0900E-03	2.3821E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
12	8.8317E-06	4.0900E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
13	2.0705E-03	4.0884E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
14	1.0374E-03	4.0884E-03	2.3821E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
15	4.2936E-06	4.0884E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
MINIMUM	4.2936E-06	4.0884E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.0886E-03	4.0947E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *




PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3863.6	1057.5	5.9605	-0.1293	-16.152	2793.7
2	1965.7	819.04	5.0176	-0.1293	-14.617	2300.4
3	42.629	824.92	5.4407	-0.1293	-15.908	2310.7
4	3855.3	1009.6	5.6968	-0.1293	-15.622	2697.5
5	1957.3	739.78	4.5426	-0.1293	-13.578	2127.8
6	34.010	741.07	4.9011	-0.1293	-14.729	2128.3
7	3846.9	1009.3	5.6976	-0.1293	-15.624	2696.4
8	1949.0	738.52	4.5371	-0.1293	-13.566	2124.6
9	25.391	739.80	4.8952	-0.1293	-14.716	2125.1
10	3838.6	1009.0	5.6984	-0.1293	-15.625	2695.2
11	1940.6	739.29	4.5439	-0.1293	-13.581	2125.9
12	16.773	740.58	4.9025	-0.1293	-14.732	2126.4
13	3830.3	1056.1	5.9637	-0.1293	-16.158	2789.0
14	1932.3	817.94	5.0203	-0.1293	-14.622	2296.4
15	8.1543	823.82	5.4436	-0.1293	-15.915	2306.7
MINIMUM	8.1543	738.52	4.5371	-0.1293	-16.158	2124.6
Pile N.	15	8	8	1	13	8
MAXIMUM	3863.6	1057.5	5.9637	-0.1293	-13.566	2793.7
Pile N.	1	1	13	1	8	1

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	1.0618E+04
2	8055.2
3	6998.0
4	1.0323E+04
5	7529.5
6	6442.7
7	1.0315E+04
8	7515.2
9	6428.2
10	1.0307E+04
11	7514.5
12	6427.4
13	1.0585E+04
14	8024.4
15	6966.5
MINIMUM	6427.4
Pile N.	12
MAXIMUM	1.0618E+04
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-8.1891E-05	-4.4999E-07	-2793.7	-16.152	-272.59	-1.4972	-76.250	-0.4284	2186.4	7.8279E+06	7.8279E+06
x(M)	10.200	10.400	0.0000	0.0000	8.4000	8.4000	13.600	13.600	20.000	0.0000	0.0000

APPALDATORE: Consorzio Soci   				ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   									
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B				COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 372 di 420

	2	-7.5768E-05	-4.4622E-07	-2300.4	-14.617	-205.76	-1.2186	-71.508	-0.4317	1112.3	7.8279E+06	7.8279E+06
x (M)	11.200	11.200	0.0000	0.0000	0.0000	9.2000	9.4000	13.600	13.600	20.000	0.0000	0.0000
	3	-7.5707E-05	-4.7683E-07	-2310.7	-15.908	-206.77	-1.3103	-71.709	-0.4650	24.123	7.8279E+06	7.8279E+06
x (M)	11.200	11.200	0.0000	0.0000	0.0000	9.2000	9.4000	13.600	13.600	20.000	0.0000	0.0000
	4	-8.1253E-05	-4.4600E-07	-2697.5	-15.622	-258.85	-1.4244	-76.672	-0.4305	2181.6	7.8279E+06	7.8279E+06
x (M)	10.400	10.400	0.0000	0.0000	0.0000	8.6000	8.6000	13.600	13.600	20.000	0.0000	0.0000
	5	-7.1781E-05	-4.2245E-07	-2127.8	-13.578	-185.38	-1.1003	-66.234	-0.3991	1107.6	7.8279E+06	7.8279E+06
x (M)	11.400	11.600	0.0000	0.0000	0.0000	9.6000	9.6000	13.600	13.600	20.000	0.0000	0.0000
	6	-7.1538E-05	-4.5006E-07	-2128.3	-14.729	-185.15	-1.1762	-66.193	-0.4281	19.246	7.8279E+06	7.8279E+06
x (M)	11.400	11.600	0.0000	0.0000	0.0000	9.6000	9.6000	13.600	13.600	20.000	0.0000	0.0000
	7	-8.1223E-05	-4.4602E-07	-2696.4	-15.624	-258.78	-1.4246	-76.638	-0.4305	2176.9	7.8279E+06	7.8279E+06
x (M)	10.400	10.400	0.0000	0.0000	0.0000	8.6000	8.6000	13.600	13.600	20.000	0.0000	0.0000
	8	-7.1683E-05	-4.2213E-07	-2124.6	-13.566	-185.06	-1.0987	-66.130	-0.3987	1102.9	7.8279E+06	7.8279E+06
x (M)	11.400	11.600	0.0000	0.0000	0.0000	9.6000	9.6000	13.600	13.600	20.000	0.0000	0.0000
	9	-7.1440E-05	-4.4971E-07	-2125.1	-14.716	-184.82	-1.1745	-66.089	-0.4276	14.369	7.8279E+06	7.8279E+06
x (M)	11.400	11.600	0.0000	0.0000	0.0000	9.6000	9.6000	13.600	13.600	20.000	0.0000	0.0000
	10	-8.1193E-05	-4.4604E-07	-2695.2	-15.625	-258.71	-1.4248	-76.605	-0.4305	2172.2	7.8279E+06	7.8279E+06
x (M)	10.400	10.400	0.0000	0.0000	0.0000	8.6000	8.6000	13.600	13.600	20.000	0.0000	0.0000
	11	-7.1743E-05	-4.2253E-07	-2125.9	-13.581	-185.28	-1.1006	-66.193	-0.3992	1098.2	7.8279E+06	7.8279E+06
x (M)	11.400	11.600	0.0000	0.0000	0.0000	9.6000	9.6000	13.600	13.600	20.000	0.0000	0.0000
	12	-7.1499E-05	-4.5016E-07	-2126.4	-14.732	-185.05	-1.1765	-66.152	-0.4283	9.4915	7.8279E+06	7.8279E+06
x (M)	11.400	11.600	0.0000	0.0000	0.0000	9.6000	9.6000	13.600	13.600	20.000	0.0000	0.0000
	13	-8.1773E-05	-4.5002E-07	-2789.0	-16.158	-272.33	-1.4982	-76.100	-0.4283	2167.5	7.8279E+06	7.8279E+06
x (M)	10.200	10.400	0.0000	0.0000	0.0000	8.4000	8.4000	13.600	13.600	20.000	0.0000	0.0000
	14	-7.5664E-05	-4.4634E-07	-2296.4	-14.622	-205.54	-1.2192	-71.405	-0.4319	1093.5	7.8279E+06	7.8279E+06
x (M)	11.200	11.200	0.0000	0.0000	0.0000	9.2000	9.4000	13.600	13.600	20.000	0.0000	0.0000
	15	-7.5602E-05	-4.7697E-07	-2306.7	-15.915	-206.55	-1.3109	-71.605	-0.4652	4.6144	7.8279E+06	7.8279E+06
x (M)	11.200	11.200	0.0000	0.0000	0.0000	9.2000	9.4000	13.600	13.600	20.000	0.0000	0.0000
Min.	-8.1891E-05	-4.7697E-07	-2793.7	-16.158	-272.59	-1.4982	-76.672	-0.4652	4.6144	7.8279E+06	7.8279E+06	
Pile N.	1	15	1	13	1	13	4	15	15	1	1	







* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	4.0947E-03	2.2238E-05	1120.8	6.1366	1057.6	5.9613	351.70	1.9484	1.0618E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.0000	6.0000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
2	4.0947E-03	2.3821E-05	930.84	5.4693	819.09	5.0180	241.78	1.4441	8055.2	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.4000	6.4000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
3	4.0947E-03	2.5404E-05	934.29	5.8670	824.92	5.4407	243.93	1.5615	6998.0	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.4000	6.4000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
4	4.0931E-03	2.2238E-05	1084.1	5.9318	1009.8	5.6976	328.68	1.8220	1.0323E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.0000	6.0000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
5	4.0931E-03	2.3821E-05	865.89	5.0922	739.84	4.5430	208.67	1.2473	7529.5	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.6000	6.8000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
6	4.0931E-03	2.5404E-05	865.61	5.4410	741.07	4.9011	208.85	1.3380	6442.7	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.6000	6.8000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
7	4.0916E-03	2.2238E-05	1083.7	5.9324	1009.4	5.6984	328.60	1.8224	1.0315E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.0000	6.0000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
8	4.0916E-03	2.3821E-05	864.77	5.0878	738.57	4.5374	208.21	1.2450	7515.2	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.6000	6.8000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
9	4.0916E-03	2.5404E-05	864.49	5.4362	739.80	4.8952	208.38	1.3356	6428.2	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.6000	6.8000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
10	4.0900E-03	2.2238E-05	1083.4	5.9330	1009.1	5.6991	328.52	1.8227	1.0307E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.0000	6.0000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
11	4.0900E-03	2.3821E-05	865.37	5.0932	739.35	4.5442	208.57	1.2478	7514.5	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.6000	6.8000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
12	4.0900E-03	2.5404E-05	865.09	5.4421	740.58	4.9025	208.75	1.3385	6427.4	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.6000	6.8000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
13	4.0884E-03	2.2238E-05	1119.4	6.1390	1056.2	5.9644	351.38	1.9499	1.0585E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.0000	6.0000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
14	4.0884E-03	2.3821E-05	929.72	5.4715	818.00	5.0207	241.56	1.4452	8024.4	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.4000	6.4000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
15	4.0884E-03	2.5404E-05	933.16	5.8693	823.82	5.4436	243.70	1.5627	6966.5	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.4000	6.6000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
Max.	4.0947E-03	2.5404E-05	1120.8	6.1390	1057.6	5.9644	351.70	1.9499	1.0618E+04	7.8279E+06	7.8279E+06
Pile N.	1	3	1	13	1	13	1	13	1	1	1

LOAD CASE : 14
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5846	1.0000
2	0.5791	1.0000
3	0.8661	1.0000
4	0.4955	1.0000
5	0.4951	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 373 di 420

6	0.8053	1.0000
7	0.4945	1.0000
8	0.4941	1.0000
9	0.8053	1.0000
10	0.4955	1.0000
11	0.4951	1.0000
12	0.8053	1.0000
13	0.5845	1.0000
14	0.5791	1.0000
15	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 29053.7	HOR. LOAD Y, KN -12866.2	HOR. LOAD Z, KN 78.2617
MOMENT X, KN- M 3.19123	MOMENT Y, KN- M 913.044	MOMENT Z, KN- M 33085.2

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.04238E-03	HORIZONTAL Y, M -3.92672E-03	HORIZONTAL Z, M 2.35947E-05
ANGLE ROT. X, RAD 2.20620E-07	ANGLE ROT. Y, RAD 1.00765E-06	ANGLE ROT. Z, RAD 1.85940E-04







THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1472E-04	-3.9287E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
2	1.0514E-03	-3.9287E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
3	1.8882E-03	-3.9287E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
4	2.1018E-04	-3.9277E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
5	1.0469E-03	-3.9277E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
6	1.8836E-03	-3.9277E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
7	2.0565E-04	-3.9267E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
8	1.0424E-03	-3.9267E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
9	1.8791E-03	-3.9267E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
10	2.0111E-04	-3.9257E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
11	1.0378E-03	-3.9257E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
12	1.8746E-03	-3.9257E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
13	1.9658E-04	-3.9247E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
14	1.0333E-03	-3.9247E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
15	1.8700E-03	-3.9247E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
MINIMUM	1.9658E-04	-3.9287E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
Pile N.	13	1	3	1	1	1
MAXIMUM	1.8882E-03	-3.9247E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	407.78	-822.93	5.2718	0.081088	-15.333	-2355.6
2	1958.1	-817.31	4.9931	0.081088	-14.497	-2345.3
3	3495.4	-1068.3	6.2033	0.081088	-16.797	-2874.8
4	399.17	-740.16	4.7470	0.081088	-14.189	-2175.3
5	1949.8	-739.07	4.5192	0.081088	-13.463	-2174.7
6	3487.0	-1005.8	5.8431	0.081088	-16.009	-2738.2
7	390.56	-739.00	4.7410	0.081088	-14.176	-2172.5
8	1941.5	-737.91	4.5135	0.081088	-13.450	-2171.9
9	3478.7	-1005.6	5.8437	0.081088	-16.010	-2737.5
10	381.95	-739.85	4.7479	0.081088	-14.191	-2174.2
11	1933.2	-738.76	4.5200	0.081088	-13.465	-2173.5
12	3470.4	-1005.4	5.8442	0.081088	-16.011	-2736.7
13	373.34	-822.24	5.2736	0.081088	-15.337	-2353.1
14	1924.8	-816.62	4.9949	0.081088	-14.501	-2342.8
15	3462.0	-1067.4	6.2054	0.081088	-16.801	-2871.8
MINIMUM	373.34	-1068.3	4.5135	0.081088	-16.801	-2874.8
Pile N.	13	3	8	1	15	3
MAXIMUM	3495.4	-737.91	6.2054	0.081088	-13.450	-2171.9
Pile N.	3	8	15	1	8	8

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B						COMMESSA IF28	LOTTO 01

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1472E-04	-3.9287E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
2	1.0514E-03	-3.9287E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
3	1.8882E-03	-3.9287E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
4	2.1018E-04	-3.9277E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
5	1.0469E-03	-3.9277E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
6	1.8836E-03	-3.9277E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
7	2.0565E-04	-3.9267E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
8	1.0424E-03	-3.9267E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
9	1.8791E-03	-3.9267E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
10	2.0111E-04	-3.9257E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
11	1.0378E-03	-3.9257E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
12	1.8746E-03	-3.9257E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
13	1.9658E-04	-3.9247E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
14	1.0333E-03	-3.9247E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
15	1.8700E-03	-3.9247E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
MINIMUM	1.9658E-04	-3.9287E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
Pile N.	13	1	3	1	1	1
MAXIMUM	1.8882E-03	-3.9247E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	407.78	-822.93	5.2718	0.081088	-15.333	-2355.6
2	1958.1	-817.31	4.9931	0.081088	-14.497	-2345.3
3	3495.4	-1068.3	6.2033	0.081088	-16.797	-2874.8
4	399.17	-740.16	4.7470	0.081088	-14.189	-2175.3
5	1949.8	-739.07	4.5192	0.081088	-13.463	-2174.7
6	3487.0	-1005.8	5.8431	0.081088	-16.009	-2738.2
7	390.56	-739.00	4.7410	0.081088	-14.176	-2172.5
8	1941.5	-737.91	4.5135	0.081088	-13.450	-2171.9
9	3478.7	-1005.6	5.8437	0.081088	-16.010	-2737.5
10	381.95	-739.85	4.7479	0.081088	-14.191	-2174.2
11	1933.2	-738.76	4.5200	0.081088	-13.465	-2173.5
12	3470.4	-1005.4	5.8442	0.081088	-16.011	-2736.7
13	373.34	-822.24	5.2736	0.081088	-15.337	-2353.1
14	1924.8	-816.62	4.9949	0.081088	-14.501	-2342.8
15	3462.0	-1067.4	6.2054	0.081088	-16.801	-2871.8
MINIMUM	373.34	-1068.3	4.5135	0.081088	-16.801	-2874.8
Pile N.	13	3	8	1	15	3
MAXIMUM	3495.4	-737.91	6.2054	0.081088	-13.450	-2171.9
Pile N.	3	8	15	1	8	8

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	7340.2
2	8186.4
3	1.0655E+04
4	6791.3
5	7666.8
6	1.0237E+04
7	6777.9
8	7653.6
9	1.0230E+04
10	6778.1
11	7653.9
12	1.0224E+04
13	7313.1
14	8160.0
15	1.0627E+04
MINIMUM	6777.9
Pile N.	7
MAXIMUM	1.0655E+04
Pile N.	3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-3.9287E-03	-4.5607E-07	-903.62	-15.333	-822.94	-1.2683	-240.86	-0.4481	230.76	7.8279E+06	7.8279E+06
x(M)	0.0000	11.200	6.4000	0.0000	0.0000	9.4000	2.8000	13.600	20.000	0.0000	0.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 376 di 420

6	0.5446	1.0000
7	0.5444	1.0000
8	0.4625	1.0000
9	0.5446	1.0000
10	0.5790	1.0000
11	0.4962	1.0000
12	0.5792	1.0000
13	0.8659	1.0000
14	0.8052	1.0000
15	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 29053.7	HOR. LOAD Y, KN -546.402	HOR. LOAD Z, KN -16247.6
MOMENT X, KN- M -4416.18	MOMENT Y, KN- M -69027.6	MOMENT Z, KN- M -5014.02

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.04222E-03	HORIZONTAL Y, M -1.23014E-04	HORIZONTAL Z, M -5.16716E-03
ANGLE ROT. X, RAD -2.25864E-05	ANGLE ROT. Y, RAD -1.06694E-04	ANGLE ROT. Z, RAD -8.33885E-06







THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.1949E-04	8.0263E-05	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
2	8.1967E-05	8.0263E-05	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
3	4.4443E-05	8.0263E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
4	5.9962E-04	-2.1375E-05	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
5	5.6209E-04	-2.1375E-05	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
6	5.2457E-04	-2.1375E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
7	1.0797E-03	-1.2301E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
8	1.0422E-03	-1.2301E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
9	1.0047E-03	-1.2301E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
10	1.5599E-03	-2.2465E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
11	1.5223E-03	-2.2465E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
12	1.4848E-03	-2.2465E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
13	2.0400E-03	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
14	2.0025E-03	-3.2629E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
15	1.9649E-03	-3.2629E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
MINIMUM	4.4443E-05	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
Pile N.	3	13	1	1	1	1
MAXIMUM	2.0400E-03	8.0263E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
Pile N.	13	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	226.94	11.781	-1092.1	-8.3015	3422.0	27.682
2	155.67	10.559	-971.18	-8.3015	3125.2	25.021
3	84.404	11.951	-1060.3	-8.3015	3304.8	28.044
4	1128.1	-10.391	-1043.9	-8.3015	3314.9	-44.890
5	1059.1	-9.6084	-927.90	-8.3015	3025.9	-42.938
6	990.18	-10.498	-1013.6	-8.3015	3201.3	-45.156
7	2010.1	-31.958	-1043.3	-8.3015	3314.7	-116.20
8	1941.2	-29.225	-927.31	-8.3015	3025.7	-109.71
9	1872.2	-32.335	-1013.0	-8.3015	3201.0	-117.08
10	2892.2	-55.487	-1083.7	-8.3015	3406.9	-192.06
11	2823.3	-50.905	-968.76	-8.3015	3123.3	-181.43
12	2754.3	-56.155	-1052.1	-8.3015	3290.1	-193.59
13	3774.3	-98.861	-1390.6	-8.3015	4069.3	-311.24
14	3705.3	-95.251	-1310.1	-8.3015	3874.3	-303.59
15	3636.4	-100.02	-1349.7	-8.3015	3929.6	-313.66
MINIMUM	84.404	-100.02	-1390.6	-8.3015	3025.7	-313.66
Pile N.	3	15	13	1	8	15
MAXIMUM	3774.3	11.951	-927.31	-8.3015	4069.3	28.044
Pile N.	13	3	8	1	13	3

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.1949E-04	8.0263E-05	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
2	8.1967E-05	8.0263E-05	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
3	4.4443E-05	8.0263E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
4	5.9962E-04	-2.1375E-05	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
5	5.6209E-04	-2.1375E-05	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
6	5.2457E-04	-2.1375E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
7	1.0797E-03	-1.2301E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
8	1.0422E-03	-1.2301E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
9	1.0047E-03	-1.2301E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
10	1.5599E-03	-2.2465E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
11	1.5223E-03	-2.2465E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
12	1.4848E-03	-2.2465E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
13	2.0400E-03	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
14	2.0025E-03	-3.2629E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
15	1.9649E-03	-3.2629E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
MINIMUM	4.4443E-05	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
Pile N.	3	13	1	1	1	1
MAXIMUM	2.0400E-03	8.0263E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
Pile N.	13	1	3	1	1	1

* PILE TOP REACTIONS *


PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	226.94	11.781	-1092.1	-8.3015	3422.0	27.682
2	155.67	10.559	-971.18	-8.3015	3125.2	25.021
3	84.404	11.951	-1060.3	-8.3015	3304.8	28.044
4	1128.1	-10.391	-1043.9	-8.3015	3314.9	-44.890
5	1059.1	-9.6084	-927.90	-8.3015	3025.9	-42.938
6	990.18	-10.498	-1013.6	-8.3015	3201.3	-45.156
7	2010.1	-31.958	-1043.3	-8.3015	3314.7	-116.20
8	1941.2	-29.225	-927.31	-8.3015	3025.7	-109.71
9	1872.2	-32.335	-1013.0	-8.3015	3201.0	-117.08
10	2892.2	-55.487	-1083.7	-8.3015	3406.9	-192.06
11	2823.3	-50.905	-968.76	-8.3015	3123.3	-181.43
12	2754.3	-56.155	-1052.1	-8.3015	3290.1	-193.59
13	3774.3	-98.861	-1390.6	-8.3015	4069.3	-311.24
14	3705.3	-95.251	-1310.1	-8.3015	3874.3	-303.59
15	3636.4	-100.02	-1349.7	-8.3015	3929.6	-313.66
MINIMUM	84.404	-100.02	-1390.6	-8.3015	3025.7	-313.66
Pile N.	3	15	13	1	8	15
MAXIMUM	3774.3	11.951	-927.31	-8.3015	4069.3	28.044
Pile N.	13	3	8	1	13	3

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	1.0457E+04
2	9520.5
3	1.0022E+04
4	1.0644E+04
5	9732.7
6	1.0223E+04
7	1.1148E+04
8	1.0236E+04
9	1.0727E+04
10	1.1935E+04
11	1.1040E+04
12	1.1505E+04
13	1.4453E+04
14	1.3826E+04
15	1.3955E+04
MINIMUM	9520.5
Pile N.	2
MAXIMUM	1.4453E+04
Pile N.	13

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.2986E-06	-5.2688E-03	-27.682	-1135.4	-3.3906	-1092.1	-1.1151	-289.52	128.42	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	7.0000	9.4000	0.0000	13.600	2.8000	20.000	0.0000	0.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 379 di 420

6	0.5792	1.0000
7	0.5444	1.0000
8	0.4625	1.0000
9	0.5446	1.0000
10	0.5444	1.0000
11	0.4625	1.0000
12	0.5446	1.0000
13	0.5845	1.0000
14	0.4966	1.0000
15	0.5847	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 29053.7	HOR. LOAD Y, KN -546.402	HOR. LOAD Z, KN 16404.2
MOMENT X, KN- M 4390.26	MOMENT Y, KN- M 70853.7	MOMENT Z, KN- M -5013.91

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.04234E-03	HORIZONTAL Y, M -1.23683E-04	HORIZONTAL Z, M 5.24061E-03
ANGLE ROT. X, RAD 2.25339E-05	ANGLE ROT. Y, RAD 1.08784E-04	ANGLE ROT. Z, RAD -8.33283E-06







THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.0589E-03	-3.2649E-04	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
2	2.0214E-03	-3.2649E-04	5.2406E-03	2.2534E-05	1.0878E-04	-8.3328E-06
3	1.9839E-03	-3.2649E-04	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
4	1.5694E-03	-2.2509E-04	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
5	1.5319E-03	-2.2509E-04	5.2406E-03	2.2534E-05	1.0878E-04	-8.3328E-06
6	1.4944E-03	-2.2509E-04	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
7	1.0798E-03	-1.2368E-04	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
8	1.0423E-03	-1.2368E-04	5.2406E-03	2.2534E-05	1.0878E-04	-8.3328E-06
9	1.0048E-03	-1.2368E-04	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
10	5.9031E-04	-2.2280E-05	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
11	5.5281E-04	-2.2280E-05	5.2406E-03	2.2534E-05	1.0878E-04	-8.3328E-06
12	5.1532E-04	-2.2280E-05	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
13	1.0078E-04	7.9123E-05	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
14	6.3287E-05	7.9123E-05	5.2406E-03	2.2534E-05	1.0878E-04	-8.3328E-06
15	2.5789E-05	7.9123E-05	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
MINIMUM	2.5789E-05	-3.2649E-04	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
Pile N.	15	1	3	1	1	1
MAXIMUM	2.0589E-03	7.9123E-05	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
Pile N.	1	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3809.0	-98.537	1403.8	8.2822	-4112.0	-310.60
2	3740.1	-94.927	1322.8	8.2822	-3915.9	-302.94
3	3671.2	-99.671	1363.2	8.2822	-3973.0	-312.98
4	2909.7	-55.365	1093.8	8.2822	-3442.1	-191.87
5	2840.8	-50.787	978.03	8.2822	-3156.2	-181.23
6	2771.9	-56.021	1062.5	8.2822	-3325.9	-193.37
7	2010.3	-31.975	1053.1	8.2822	-3348.8	-116.36
8	1941.4	-29.236	936.16	8.2822	-3057.6	-109.86
9	1872.5	-32.348	1023.0	8.2822	-3235.9	-117.24
10	1111.0	-10.544	1053.7	8.2822	-3349.0	-45.417
11	1042.1	-9.7461	936.77	8.2822	-3057.8	-43.428
12	973.18	-10.652	1023.6	8.2822	-3236.1	-45.686
13	191.41	11.479	1102.3	8.2822	-3457.4	26.766
14	120.19	10.283	980.50	8.2822	-3158.2	24.161
15	48.977	11.643	1070.8	8.2822	-3340.7	27.114
MINIMUM	48.977	-99.671	936.16	8.2822	-4112.0	-312.98
Pile N.	15	3	8	1	1	3
MAXIMUM	3809.0	11.643	1403.8	8.2822	-3057.6	27.114
Pile N.	1	15	1	1	8	15

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.0589E-03	-3.2649E-04	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
2	2.0214E-03	-3.2649E-04	5.2406E-03	2.2534E-05	1.0878E-04	-8.3328E-06
3	1.9839E-03	-3.2649E-04	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
4	1.5694E-03	-2.2509E-04	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
5	1.5319E-03	-2.2509E-04	5.2406E-03	2.2534E-05	1.0878E-04	-8.3328E-06
6	1.4944E-03	-2.2509E-04	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
7	1.0798E-03	-1.2368E-04	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
8	1.0423E-03	-1.2368E-04	5.2406E-03	2.2534E-05	1.0878E-04	-8.3328E-06
9	1.0048E-03	-1.2368E-04	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
10	5.9031E-04	-2.2280E-05	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
11	5.5281E-04	-2.2280E-05	5.2406E-03	2.2534E-05	1.0878E-04	-8.3328E-06
12	5.1532E-04	-2.2280E-05	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
13	1.0078E-04	7.9123E-05	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
14	6.3287E-05	7.9123E-05	5.2406E-03	2.2534E-05	1.0878E-04	-8.3328E-06
15	2.5789E-05	7.9123E-05	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
MINIMUM	2.5789E-05	-3.2649E-04	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
Pile N.	15	1	3	1	1	1
MAXIMUM	2.0589E-03	7.9123E-05	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
Pile N.	1	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3809.0	-98.537	1403.8	8.2822	-4112.0	-310.60
2	3740.1	-94.927	1322.8	8.2822	-3915.9	-302.94
3	3671.2	-99.671	1363.2	8.2822	-3973.0	-312.98
4	2909.7	-55.365	1093.8	8.2822	-3442.1	-191.87
5	2840.8	-50.787	978.03	8.2822	-3156.2	-181.23
6	2771.9	-56.021	1062.5	8.2822	-3325.9	-193.37
7	2010.3	-31.975	1053.1	8.2822	-3348.8	-116.36
8	1941.4	-29.236	936.16	8.2822	-3057.6	-109.86
9	1872.5	-32.348	1023.0	8.2822	-3235.9	-117.24
10	1111.0	-10.544	1053.7	8.2822	-3349.0	-45.417
11	1042.1	-9.7461	936.77	8.2822	-3057.8	-43.428
12	973.18	-10.652	1023.6	8.2822	-3236.1	-45.686
13	191.41	11.479	1102.3	8.2822	-3457.4	26.766
14	120.19	10.283	980.50	8.2822	-3158.2	24.161
15	48.977	11.643	1070.8	8.2822	-3340.7	27.114
MINIMUM	48.977	-99.671	936.16	8.2822	-4112.0	-312.98
Pile N.	15	3	8	1	1	3
MAXIMUM	3809.0	11.643	1403.8	8.2822	-3057.6	27.114
Pile N.	1	15	1	1	8	15

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1.4601E+04
2	1.3970E+04
3	1.4105E+04
4	1.2051E+04
5	1.1149E+04
6	1.1623E+04
7	1.1251E+04
8	1.0332E+04
9	1.0832E+04
10	1.0737E+04
11	9819.1
12	1.0318E+04
13	1.0543E+04
14	9599.8
15	1.0111E+04
MINIMUM	9599.8
Pile N.	14
MAXIMUM	1.4601E+04
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-3.2736E-04	-1.0455E-04	-88.030	-4112.0	-98.552	-326.31	-27.788	-108.40	2155.5	7.8279E+06	7.8279E+06
x(M)	0.2000	10.800	6.6000	0.0000	0.0000	9.0000	2.8000	13.600	20.000	0.0000	0.0000

APPALTA TORE: Consorzio Soci 			ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandat aria Mandanti 								
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B			COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 381 di 420

2	-3.2738E-04	-1.0100E-04	-85.554	-3915.9	-94.941	-306.00	-26.224	-104.93	2116.5	7.8279E+06	7.8279E+06
x(M)	0.2000	11.000	6.8000	0.0000	0.0000	9.2000	2.8000	13.600	20.000	0.0000	0.0000
3	-3.2736E-04	-1.0077E-04	-88.841	-3973.0	-99.686	-317.51	-28.308	-104.36	2077.5	7.8279E+06	7.8279E+06
x(M)	0.2000	10.800	6.6000	0.0000	0.0000	9.0000	2.8000	13.600	20.000	0.0000	0.0000
4	-2.2651E-04	-9.1236E-05	-51.387	-3442.1	-55.372	-249.15	-13.461	-92.055	1646.5	7.8279E+06	7.8279E+06
x(M)	0.4000	11.800	7.4000	0.0000	0.0000	9.8000	2.8000	13.600	20.000	0.0000	0.0000
5	-2.2662E-04	-8.3242E-05	-48.208	-3156.2	-50.794	-223.25	-11.764	-81.504	1607.5	7.8279E+06	7.8279E+06
x(M)	0.4000	12.000	7.6000	0.0000	0.0000	10.200	2.8000	13.600	20.000	0.0000	0.0000
6	-2.2650E-04	-8.8545E-05	-51.847	-3325.9	-56.028	-242.71	-13.718	-89.517	1568.6	7.8279E+06	7.8279E+06
x(M)	0.4000	11.600	7.4000	0.0000	0.0000	9.8000	2.8000	13.600	20.000	0.0000	0.0000
7	-1.2614E-04	-8.8608E-05	-28.583	-3348.8	-31.978	-239.83	-7.3417	-88.404	1137.6	7.8279E+06	7.8279E+06
x(M)	0.6000	11.800	7.6000	0.0000	0.0000	10.000	2.8000	13.600	20.000	0.0000	0.0000
8	-1.2628E-04	-7.9816E-05	-26.761	-3057.6	-29.239	-213.63	-6.3672	-76.887	1098.6	7.8279E+06	7.8279E+06
x(M)	0.6000	12.200	8.0000	0.0000	0.0000	10.400	2.8000	13.600	20.000	0.0000	0.0000
9	-1.2612E-04	-8.6212E-05	-28.846	-3235.9	-32.350	-233.42	-7.4823	-86.086	1059.6	7.8279E+06	7.8279E+06
x(M)	0.6000	11.800	7.6000	0.0000	0.0000	10.000	2.8000	13.600	20.000	0.0000	0.0000
10	-2.9164E-05	-8.8455E-05	-7.6879	-3349.0	-10.544	-239.65	-1.9704	-88.363	628.68	7.8279E+06	7.8279E+06
x(M)	1.8000	11.800	8.6000	0.0000	0.0000	10.000	3.0000	13.600	20.000	0.0000	0.0000
11	-2.9481E-05	-7.9673E-05	-7.2999	-3057.8	-9.7466	-213.47	-1.7175	-76.846	589.69	7.8279E+06	7.8279E+06
x(M)	2.0000	12.200	8.0000	0.0000	0.0000	10.400	3.2000	13.600	20.000	0.0000	0.0000
12	-2.9121E-05	-8.6083E-05	-7.7426	-3236.1	-10.652	-233.27	-2.0069	-86.052	550.71	7.8279E+06	7.8279E+06
x(M)	1.8000	11.800	8.4000	0.0000	0.0000	10.000	3.0000	13.600	20.000	0.0000	0.0000
13	-1.2770E-06	-9.1158E-05	-26.766	-3457.4	-3.3240	-250.27	-1.0910	-92.495	108.31	7.8279E+06	7.8279E+06
x(M)	11.400	11.800	0.0000	0.0000	9.4000	9.8000	13.600	20.000	0.0000	0.0000	0.0000
14	-1.2021E-06	-8.2855E-05	-24.161	-3158.2	-2.9879	-222.89	-0.9997	-81.439	68.015	7.8279E+06	7.8279E+06
x(M)	11.600	12.000	0.0000	0.0000	9.8000	10.200	13.600	20.000	0.0000	0.0000	0.0000
15	-1.2879E-06	-8.8596E-05	-27.114	-3340.7	-3.3688	-243.80	-1.1024	-89.943	27.716	7.8279E+06	7.8279E+06
x(M)	11.200	11.600	0.0000	0.0000	9.4000	9.8000	13.600	13.600	20.000	0.0000	0.0000
Min.	-3.2738E-04	-1.0455E-04	-88.841	-4112.0	-99.686	-326.31	-28.308	-108.40	27.716	7.8279E+06	7.8279E+06
Pile N.	2	1	3	1	3	1	3	1	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT KN-M	MOMENT y-DIR KN-M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	6.7364E-06	5.3420E-03	310.60	1376.9	21.293	1404.0	7.4639	420.17	1.4601E+04	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.4000	9.2000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
2	6.6367E-06	5.2406E-03	302.94	1311.4	20.449	1323.0	7.3566	388.58	1.3970E+04	7.8279E+06	7.8279E+06
x(M)	11.000	0.0000	0.0000	6.4000	9.2000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
3	6.7558E-06	5.1392E-03	312.98	1335.8	21.566	1363.4	7.4904	411.24	1.4105E+04	7.8279E+06	7.8279E+06
x(M)	10.800	0.0000	0.0000	6.4000	9.0000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
4	4.0678E-06	5.3420E-03	191.87	1143.5	11.572	1094.0	4.4103	288.89	1.2051E+04	7.8279E+06	7.8279E+06
x(M)	11.800	0.0000	0.0000	7.0000	10.000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
5	3.7713E-06	5.2406E-03	181.23	1049.3	10.638	978.14	3.9480	247.24	1.1149E+04	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	7.2000	10.400	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
6	4.1142E-06	5.1392E-03	193.37	1109.5	11.719	1062.6	4.4711	282.86	1.1623E+04	7.8279E+06	7.8279E+06
x(M)	11.800	0.0000	0.0000	7.0000	10.000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
7	2.2387E-06	5.3420E-03	116.36	1111.1	6.4665	1053.1	2.4632	272.75	1.1251E+04	7.8279E+06	7.8279E+06
x(M)	12.200	0.0000	0.0000	7.0000	10.400	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
8	2.0420E-06	5.2406E-03	109.86	1015.4	5.9344	936.23	2.1512	231.52	1.0332E+04	7.8279E+06	7.8279E+06
x(M)	12.600	0.0000	0.0000	7.4000	10.800	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
9	2.2670E-06	5.1392E-03	117.24	1078.7	6.5436	1023.0	2.5027	267.09	1.0832E+04	7.8279E+06	7.8279E+06
x(M)	12.000	0.0000	0.0000	7.0000	10.200	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
10	5.5593E-07	5.3420E-03	45.417	1110.8	1.8312	1053.8	0.7054	272.80	1.0737E+04	7.8279E+06	7.8279E+06
x(M)	12.600	0.0000	0.0000	7.0000	10.800	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
11	5.0565E-07	5.2406E-03	43.428	1015.1	1.7100	936.81	0.5981	231.56	9819.1	7.8279E+06	7.8279E+06
x(M)	13.000	0.0000	0.0000	7.4000	11.200	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
12	5.6445E-07	5.1392E-03	45.686	1078.4	1.8482	1023.6	0.7193	267.14	1.0318E+04	7.8279E+06	7.8279E+06
x(M)	12.400	0.0000	0.0000	7.0000	10.800	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
13	7.9123E-05	5.3420E-03	16.275	1147.6	11.479	1102.4	3.6521	291.61	1.0543E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.0000	7.0000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
14	7.9123E-05	5.2406E-03	15.186	1048.9	10.283	980.50	3.1530	247.59	9599.8	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.2000	7.2000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
15	7.9123E-05	5.1392E-03	16.430	1113.5	11.643	1070.8	3.7242	285.54	1.0111E+04	7.8279E+06	7.8279E+06
x(M)	0.0000	0.0000	6.0000	7.0000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
Max.	7.9123E-05	5.3420E-03	312.98	1376.9	21.566	1404.0	7.4904	420.17	1.4601E+04	7.8279E+06	7.8279E+06
Pile N.	13	1	3	1	3	1	3	1	1	1	1

LOAD CASE : 17
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5847	1.0000
2	0.5792	1.0000
3	0.8661	1.0000
4	0.4956	1.0000
5	0.4951	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 382 di 420

6	0.8052	1.0000
7	0.4945	1.0000
8	0.4940	1.0000
9	0.8052	1.0000
10	0.4955	1.0000
11	0.4951	1.0000
12	0.8052	1.0000
13	0.5845	1.0000
14	0.5790	1.0000
15	0.8660	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 24153.8	HOR. LOAD Y, KN -4242.34	HOR. LOAD Z, KN 78.2617
MOMENT X, KN- M -8.11459	MOMENT Y, KN- M 907.392	MOMENT Z, KN- M 7869.46

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 8.62080E-04	HORIZONTAL Y, M -8.28949E-04	HORIZONTAL Z, M 1.55223E-05
ANGLE ROT. X, RAD 6.88155E-08	ANGLE ROT. Y, RAD 9.84430E-07	ANGLE ROT. Z, RAD 4.92611E-05







THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	6.4926E-04	-8.2957E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
2	8.7094E-04	-8.2957E-04	1.5522E-05	6.8815E-08	9.8443E-07	4.9261E-05
3	1.0926E-03	-8.2957E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
4	6.4483E-04	-8.2926E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
5	8.6651E-04	-8.2926E-04	1.5522E-05	6.8815E-08	9.8443E-07	4.9261E-05
6	1.0882E-03	-8.2926E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
7	6.4041E-04	-8.2895E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
8	8.6208E-04	-8.2895E-04	1.5522E-05	6.8815E-08	9.8443E-07	4.9261E-05
9	1.0838E-03	-8.2895E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
10	6.3597E-04	-8.2864E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
11	8.5765E-04	-8.2864E-04	1.5522E-05	6.8815E-08	9.8443E-07	4.9261E-05
12	1.0793E-03	-8.2864E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
13	6.3154E-04	-8.2833E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
14	8.5322E-04	-8.2833E-04	1.5522E-05	6.8815E-08	9.8443E-07	4.9261E-05
15	1.0749E-03	-8.2833E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
MINIMUM	6.3154E-04	-8.2957E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.0926E-03	-8.2833E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	1219.3	-274.17	5.1841	0.025293	-12.834	-682.94
2	1626.5	-272.77	5.0357	0.025293	-12.450	-680.51
3	2033.8	-336.38	6.0680	0.025293	-14.125	-791.59
4	1211.1	-251.25	4.7514	0.025293	-12.040	-640.77
5	1618.4	-251.08	4.6354	0.025293	-11.716	-640.56
6	2025.6	-323.80	5.8422	0.025293	-13.743	-770.14
7	1203.0	-250.88	4.7464	0.025293	-12.031	-639.97
8	1610.3	-250.71	4.6306	0.025293	-11.707	-639.75
9	2017.5	-323.69	5.8428	0.025293	-13.744	-769.81
10	1194.9	-251.07	4.7523	0.025293	-12.042	-640.22
11	1602.1	-250.91	4.6363	0.025293	-11.718	-640.00
12	2009.4	-323.58	5.8434	0.025293	-13.745	-769.49
13	1186.7	-273.77	5.1857	0.025293	-12.836	-681.74
14	1594.0	-272.37	5.0372	0.025293	-12.453	-679.30
15	2001.2	-335.91	6.0702	0.025293	-14.129	-790.26
MINIMUM	1186.7	-336.38	4.6306	0.025293	-14.129	-791.59
Pile N.	13	3	8	1	15	3
MAXIMUM	2033.8	-250.71	6.0702	0.025293	-11.707	-639.75
Pile N.	3	8	15	1	8	8

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	6.4926E-04	-8.2957E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
2	8.7094E-04	-8.2957E-04	1.5522E-05	6.8815E-08	9.8443E-07	4.9261E-05
3	1.0926E-03	-8.2957E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
4	6.4483E-04	-8.2926E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
5	8.6651E-04	-8.2926E-04	1.5522E-05	6.8815E-08	9.8443E-07	4.9261E-05
6	1.0882E-03	-8.2926E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
7	6.4041E-04	-8.2895E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
8	8.6208E-04	-8.2895E-04	1.5522E-05	6.8815E-08	9.8443E-07	4.9261E-05
9	1.0838E-03	-8.2895E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
10	6.3597E-04	-8.2864E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
11	8.5765E-04	-8.2864E-04	1.5522E-05	6.8815E-08	9.8443E-07	4.9261E-05
12	1.0793E-03	-8.2864E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
13	6.3154E-04	-8.2833E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
14	8.5322E-04	-8.2833E-04	1.5522E-05	6.8815E-08	9.8443E-07	4.9261E-05
15	1.0749E-03	-8.2833E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
MINIMUM	6.3154E-04	-8.2957E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.0926E-03	-8.2833E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	1219.3	-274.17	5.1841	0.025293	-12.834	-682.94
2	1626.5	-272.77	5.0357	0.025293	-12.450	-680.51
3	2033.8	-336.38	6.0680	0.025293	-14.125	-791.59
4	1211.1	-251.25	4.7514	0.025293	-12.040	-640.77
5	1618.4	-251.08	4.6354	0.025293	-11.716	-640.56
6	2025.6	-323.80	5.8422	0.025293	-13.743	-770.14
7	1203.0	-250.88	4.7464	0.025293	-12.031	-639.97
8	1610.3	-250.71	4.6306	0.025293	-11.707	-639.75
9	2017.5	-323.69	5.8428	0.025293	-13.744	-769.81
10	1194.9	-251.07	4.7523	0.025293	-12.042	-640.22
11	1602.1	-250.91	4.6363	0.025293	-11.718	-640.00
12	2009.4	-323.58	5.8434	0.025293	-13.745	-769.49
13	1186.7	-273.77	5.1857	0.025293	-12.836	-681.74
14	1594.0	-272.37	5.0372	0.025293	-12.453	-679.30
15	2001.2	-335.91	6.0702	0.025293	-14.129	-790.26
MINIMUM	1186.7	-336.38	4.6306	0.025293	-14.129	-791.59
Pile N.	13	3	8	1	15	3
MAXIMUM	2033.8	-250.71	6.0702	0.025293	-11.707	-639.75
Pile N.	3	8	15	1	8	8

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	2751.5
2	2974.6
3	3540.3
4	2619.6
5	2849.4
6	3471.0
7	2612.5
8	2842.3
9	3465.4
10	2608.7
11	2838.5
12	3459.8
13	2729.4
14	2952.5
15	3517.9
MINIMUM	2608.7
Pile N.	10
MAXIMUM	3540.3
Pile N.	3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-8.2957E-04	-3.9501E-07	-284.94	-12.834	-274.19	-1.3547	-106.86	-0.3553	689.97	7.8279E+06	7.8279E+06
x(M)	0.0000	9.4000	5.4000	0.0000	0.0000	7.6000	2.6000	9.6000	20.000	0.0000	0.0000

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 385 di 420
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6	0.4955	1.0000
7	0.8052	1.0000
8	0.4940	1.0000
9	0.4945	1.0000
10	0.8052	1.0000
11	0.4951	1.0000
12	0.4955	1.0000
13	0.8660	1.0000
14	0.5791	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 38206.4	HOR. LOAD Y, KN 4242.34	HOR. LOAD Z, KN 78.2617
MOMENT X, KN- M -14.8594	MOMENT Y, KN- M 923.542	MOMENT Z, KN- M -26370.8

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.37202E-03	HORIZONTAL Y, M 9.70208E-04	HORIZONTAL Z, M 1.58123E-05
ANGLE ROT. X, RAD -1.50635E-07	ANGLE ROT. Y, RAD 1.00017E-06	ANGLE ROT. Z, RAD -9.63576E-05







THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.8146E-03	9.7156E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
2	1.3810E-03	9.7156E-04	1.5812E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
3	9.4741E-04	9.7156E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
4	1.8101E-03	9.7088E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
5	1.3765E-03	9.7088E-04	1.5812E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
6	9.4291E-04	9.7088E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
7	1.8056E-03	9.7021E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
8	1.3720E-03	9.7021E-04	1.5812E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
9	9.3841E-04	9.7021E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
10	1.8011E-03	9.6953E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
11	1.3675E-03	9.6953E-04	1.5812E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
12	9.3391E-04	9.6953E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
13	1.7966E-03	9.6885E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
14	1.3630E-03	9.6885E-04	1.5812E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
15	9.2941E-04	9.6885E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
MINIMUM	9.2941E-04	9.6885E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.8146E-03	9.7156E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3360.2	339.47	5.9036	-0.055365	-13.796	731.19
2	2563.6	272.39	5.0459	-0.055365	-12.562	614.97
3	1767.0	273.92	5.3366	-0.055365	-13.340	617.47
4	3352.0	326.04	5.6850	-0.055365	-13.424	708.33
5	2555.4	249.52	4.6470	-0.055365	-11.825	573.13
6	1758.7	249.75	4.8943	-0.055365	-12.524	573.31
7	3343.7	325.80	5.6861	-0.055365	-13.426	707.63
8	2547.1	249.03	4.6427	-0.055365	-11.817	571.99
9	1750.5	249.26	4.8897	-0.055365	-12.515	572.16
10	3335.4	325.56	5.6873	-0.055365	-13.428	706.94
11	2538.8	249.14	4.6489	-0.055365	-11.829	571.94
12	1742.2	249.37	4.8962	-0.055365	-12.527	572.11
13	3327.2	338.46	5.9082	-0.055365	-13.804	728.33
14	2530.6	271.55	5.0497	-0.055365	-12.568	612.43
15	1733.9	273.08	5.3405	-0.055365	-13.347	614.92
MINIMUM	1733.9	249.03	4.6427	-0.055365	-13.804	571.94
Pile N.	15	8	8	1	13	11
MAXIMUM	3360.2	339.47	5.9082	-0.055365	-11.817	731.19
Pile N.	1	1	13	1	8	1

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.8146E-03	9.7156E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
2	1.3810E-03	9.7156E-04	1.5812E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
3	9.4741E-04	9.7156E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
4	1.8101E-03	9.7088E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
5	1.3765E-03	9.7088E-04	1.5812E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
6	9.4291E-04	9.7088E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
7	1.8056E-03	9.7021E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
8	1.3720E-03	9.7021E-04	1.5812E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
9	9.3841E-04	9.7021E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
10	1.8011E-03	9.6953E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
11	1.3675E-03	9.6953E-04	1.5812E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
12	9.3391E-04	9.6953E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
13	1.7966E-03	9.6885E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
14	1.3630E-03	9.6885E-04	1.5812E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
15	9.2941E-04	9.6885E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
MINIMUM	9.2941E-04	9.6885E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.8146E-03	9.7156E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	3360.2	339.47	5.9036	-0.055365	-13.796	731.19
2	2563.6	272.39	5.0459	-0.055365	-12.562	614.97
3	1767.0	273.92	5.3366	-0.055365	-13.340	617.47
4	3352.0	326.04	5.6850	-0.055365	-13.424	708.33
5	2555.4	249.52	4.6470	-0.055365	-11.825	573.13
6	1758.7	249.75	4.8943	-0.055365	-12.524	573.31
7	3343.7	325.80	5.6861	-0.055365	-13.426	707.63
8	2547.1	249.03	4.6427	-0.055365	-11.817	571.99
9	1750.5	249.26	4.8897	-0.055365	-12.515	572.16
10	3335.4	325.56	5.6873	-0.055365	-13.428	706.94
11	2538.8	249.14	4.6489	-0.055365	-11.829	571.94
12	1742.2	249.37	4.8962	-0.055365	-12.527	572.11
13	3327.2	338.46	5.9082	-0.055365	-13.804	728.33
14	2530.6	271.55	5.0497	-0.055365	-12.568	612.43
15	1733.9	273.08	5.3405	-0.055365	-13.347	614.92
MINIMUM	1733.9	249.03	4.6427	-0.055365	-13.804	571.94
Pile N.	15	8	8	1	13	11
MAXIMUM	3360.2	339.47	5.9082	-0.055365	-11.817	731.19
Pile N.	1	1	13	1	8	1







PILE GROUP STRESS, KN/ M**2

*****	*****
1	4108.7
2	3307.1
3	2863.9
4	4035.0
5	3176.1
6	2725.9
7	4028.2
8	3168.0
9	2717.8
10	4021.4
11	3163.2
12	2713.0
13	4081.3
14	3280.7
15	2837.5
MINIMUM	2713.0
Pile N.	12
MAXIMUM	4108.7
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-2.3089E-05	-3.6573E-07	-731.19	-13.796	-101.06	-1.6103	-28.822	-0.4613	1901.5	7.8279E+06	7.8279E+06
x(M)	8.6000	8.8000	0.0000	0.0000	7.0000	7.0000	9.0000	9.0000	20.000	0.0000	0.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 388 di 420

6	0.5792	1.0000
7	0.5444	1.0000
8	0.4625	1.0000
9	0.5446	1.0000
10	0.5444	1.0000
11	0.4625	1.0000
12	0.5446	1.0000
13	0.5845	1.0000
14	0.4966	1.0000
15	0.5847	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 33253.7	HOR. LOAD Y, KN -546.402	HOR. LOAD Z, KN 16404.2
MOMENT X, KN- M 4390.26	MOMENT Y, KN- M 70858.6	MOMENT Z, KN- M -6260.08

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.19918E-03	HORIZONTAL Y, M -1.10383E-04	HORIZONTAL Z, M 5.24682E-03
ANGLE ROT. X, RAD 2.25805E-05	ANGLE ROT. Y, RAD 1.10191E-04	ANGLE ROT. Z, RAD -1.24336E-05







THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.2468E-03	-3.1361E-04	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
2	2.1909E-03	-3.1361E-04	5.2468E-03	2.2580E-05	1.1019E-04	-1.2434E-05
3	2.1350E-03	-3.1361E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
4	1.7510E-03	-2.1200E-04	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
5	1.6950E-03	-2.1200E-04	5.2468E-03	2.2580E-05	1.1019E-04	-1.2434E-05
6	1.6391E-03	-2.1200E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
7	1.2551E-03	-1.1038E-04	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
8	1.1992E-03	-1.1038E-04	5.2468E-03	2.2580E-05	1.1019E-04	-1.2434E-05
9	1.1432E-03	-1.1038E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
10	7.5926E-04	-8.7708E-06	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
11	7.0331E-04	-8.7708E-06	5.2468E-03	2.2580E-05	1.1019E-04	-1.2434E-05
12	6.4736E-04	-8.7708E-06	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
13	2.6340E-04	9.2842E-05	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
14	2.0745E-04	9.2842E-05	5.2468E-03	2.2580E-05	1.1019E-04	-1.2434E-05
15	1.5150E-04	9.2842E-05	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
MINIMUM	1.5150E-04	-3.1361E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
Pile N.	15	1	3	1	1	1
MAXIMUM	2.2468E-03	9.2842E-05	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
Pile N.	1	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4063.7	-98.391	1404.0	8.2993	-4111.5	-315.85
2	4001.9	-94.827	1323.0	8.2993	-3915.2	-308.25
3	3940.1	-99.510	1363.3	8.2993	-3972.1	-318.20
4	3243.3	-55.422	1093.9	8.2993	-3441.3	-197.31
5	3140.5	-50.915	977.99	8.2993	-3155.2	-186.77
6	3037.7	-56.068	1062.5	8.2993	-3324.7	-198.80
7	2332.3	-32.024	1053.1	8.2993	-3348.0	-121.72
8	2229.6	-29.359	936.10	8.2993	-3056.5	-115.31
9	2126.8	-32.387	1022.9	8.2993	-3234.6	-122.58
10	1421.4	-10.555	1053.7	8.2993	-3348.1	-50.635
11	1318.6	-9.8332	936.72	8.2993	-3056.6	-48.756
12	1215.8	-10.652	1023.5	8.2993	-3234.8	-50.889
13	500.25	11.548	1102.4	8.2993	-3456.5	21.747
14	393.99	10.267	980.45	8.2993	-3157.1	19.011
15	287.73	11.724	1070.7	8.2993	-3339.5	22.110
MINIMUM	287.73	-99.510	936.10	8.2993	-4111.5	-318.20
Pile N.	15	3	8	1	1	3
MAXIMUM	4063.7	11.724	1404.0	8.2993	-3056.5	22.110
Pile N.	1	15	1	1	8	15

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 389 di 420

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.2468E-03	-3.1361E-04	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
2	2.1909E-03	-3.1361E-04	5.2468E-03	2.2580E-05	1.1019E-04	-1.2434E-05
3	2.1350E-03	-3.1361E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
4	1.7510E-03	-2.1200E-04	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
5	1.6950E-03	-2.1200E-04	5.2468E-03	2.2580E-05	1.1019E-04	-1.2434E-05
6	1.6391E-03	-2.1200E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
7	1.2551E-03	-1.1038E-04	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
8	1.1992E-03	-1.1038E-04	5.2468E-03	2.2580E-05	1.1019E-04	-1.2434E-05
9	1.1432E-03	-1.1038E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
10	7.5926E-04	-8.7708E-06	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
11	7.0331E-04	-8.7708E-06	5.2468E-03	2.2580E-05	1.1019E-04	-1.2434E-05
12	6.4736E-04	-8.7708E-06	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
13	2.6340E-04	9.2842E-05	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
14	2.0745E-04	9.2842E-05	5.2468E-03	2.2580E-05	1.1019E-04	-1.2434E-05
15	1.5150E-04	9.2842E-05	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
MINIMUM	1.5150E-04	-3.1361E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
Pile N.	15	1	3	1	1	1
MAXIMUM	2.2468E-03	9.2842E-05	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
Pile N.	1	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4063.7	-98.391	1404.0	8.2993	-4111.5	-315.85
2	4001.9	-94.827	1323.0	8.2993	-3915.2	-308.25
3	3940.1	-99.510	1363.3	8.2993	-3972.1	-318.20
4	3243.3	-55.422	1093.9	8.2993	-3441.3	-197.31
5	3140.5	-50.915	977.99	8.2993	-3155.2	-186.77
6	3037.7	-56.068	1062.5	8.2993	-3324.7	-198.80
7	2332.3	-32.024	1053.1	8.2993	-3348.0	-121.72
8	2229.6	-29.359	936.10	8.2993	-3056.5	-115.31
9	2126.8	-32.387	1022.9	8.2993	-3234.6	-122.58
10	1421.4	-10.555	1053.7	8.2993	-3348.1	-50.635
11	1318.6	-9.8332	936.72	8.2993	-3056.6	-48.756
12	1215.8	-10.652	1023.5	8.2993	-3234.8	-50.889
13	500.25	11.548	1102.4	8.2993	-3456.5	21.747
14	393.99	10.267	980.45	8.2993	-3157.1	19.011
15	287.73	11.724	1070.7	8.2993	-3339.5	22.110
MINIMUM	287.73	-99.510	936.10	8.2993	-4111.5	-318.20
Pile N.	15	3	8	1	1	3
MAXIMUM	4063.7	11.724	1404.0	8.2993	-3056.5	22.110
Pile N.	1	15	1	1	8	15

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1.4745E+04
2	1.4117E+04
3	1.4256E+04
4	1.2238E+04
5	1.1316E+04
6	1.1771E+04
7	1.1431E+04
8	1.0493E+04
9	1.0973E+04
10	1.0910E+04
11	9972.4
12	1.0452E+04
13	1.0715E+04
14	9751.3
15	1.0242E+04
MINIMUM	9751.3
Pile N.	14
MAXIMUM	1.4745E+04
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-3.1545E-04	-1.0470E-04	-85.822	-4111.5	-98.407	-326.62	-27.307	-108.48	2299.6	7.8279E+06	7.8279E+06
x(M)	0.4000	10.800	6.8000	0.0000	0.0000	9.0000	2.8000	13.600	20.000	0.0000	0.0000

APPALTATORE: Consorzio 	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA												
PROGETTAZIONE: Mandatario 													
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%; text-align: center;">COMMESSA</td> <td style="width:10%; text-align: center;">LOTTO</td> <td style="width:10%; text-align: center;">CODIFICA</td> <td style="width:10%; text-align: center;">DOCUMENTO</td> <td style="width:10%; text-align: center;">REV.</td> <td style="width:10%; text-align: center;">FOGLIO</td> </tr> <tr> <td style="text-align: center;">IF28</td> <td style="text-align: center;">01</td> <td style="text-align: center;">E ZZ CL</td> <td style="text-align: center;">VI0103 001</td> <td style="text-align: center;">B</td> <td style="text-align: center;">390 di 420</td> </tr> </table>	COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO	IF28	01	E ZZ CL	VI0103 001	B	390 di 420
COMMESSA	LOTTO	CODIFICA	DOCUMENTO	REV.	FOGLIO								
IF28	01	E ZZ CL	VI0103 001	B	390 di 420								

	2	-3.1553E-04	-1.0116E-04	-83.506	-3915.2	-94.843	-306.29	-25.773	-105.00	2264.6	7.8279E+06	7.8279E+06
x(M)	0.4000	11.000	6.8000	0.0000	0.0000	9.2000	2.8000	13.600	20.000	0.0000	0.0000	0.0000
	3	-3.1543E-04	-1.0091E-04	-86.616	-3972.1	-99.526	-217.80	-27.818	-104.42	2229.6	7.8279E+06	7.8279E+06
x(M)	0.4000	10.800	6.6000	0.0000	0.0000	9.0000	2.8000	13.600	20.000	0.0000	0.0000	0.0000
	4	-2.1514E-04	-9.1395E-05	-49.722	-3441.3	-55.430	-249.42	-13.131	-92.125	1835.3	7.8279E+06	7.8279E+06
x(M)	0.6000	11.800	7.6000	0.0000	0.0000	9.8000	2.8000	13.600	20.000	0.0000	0.0000	0.0000
	5	-2.1537E-04	-8.3398E-05	-46.736	-3155.2	-50.922	-223.48	-11.480	-81.568	1777.2	7.8279E+06	7.8279E+06
x(M)	0.6000	12.000	7.8000	0.0000	0.0000	10.200	2.8000	13.600	20.000	0.0000	0.0000	0.0000
	6	-2.1511E-04	-8.8692E-05	-50.180	-3324.7	-56.075	-242.93	-13.381	-89.575	1719.0	7.8279E+06	7.8279E+06
x(M)	0.6000	11.600	7.4000	0.0000	0.0000	9.8000	2.8000	13.600	20.000	0.0000	0.0000	0.0000
	7	-1.1569E-04	-8.8781E-05	-27.131	-3348.0	-32.028	-240.09	-7.0226	-88.475	1319.8	7.8279E+06	7.8279E+06
x(M)	1.0000	11.800	7.8000	0.0000	0.0000	10.000	2.8000	13.600	20.000	0.0000	0.0000	0.0000
	8	-1.1605E-04	-7.9965E-05	-25.473	-3056.5	-29.362	-213.83	-6.0945	-76.946	1261.7	7.8279E+06	7.8279E+06
x(M)	1.0000	12.200	8.2000	0.0000	0.0000	10.400	2.8000	13.600	20.000	0.0000	0.0000	0.0000
	9	-1.1565E-04	-8.6348E-05	-27.371	-3234.6	-32.390	-233.62	-7.1562	-86.139	1203.5	7.8279E+06	7.8279E+06
x(M)	0.8000	11.800	7.8000	0.0000	0.0000	10.000	2.8000	13.600	20.000	0.0000	0.0000	0.0000
	10	-2.3133E-05	-8.8628E-05	-6.9112	-3348.1	-10.556	-239.91	-1.7289	-88.433	804.33	7.8279E+06	7.8279E+06
x(M)	2.6000	11.800	9.0000	0.0000	0.0000	10.000	4.2000	13.600	20.000	0.0000	0.0000	0.0000
	11	-2.3709E-05	-7.9823E-05	-6.6489	-3056.6	-9.8341	-213.68	-1.5792	-76.905	746.16	7.8279E+06	7.8279E+06
x(M)	2.8000	12.200	9.4000	0.0000	0.0000	10.400	9.8000	13.600	20.000	0.0000	0.0000	0.0000
	12	-2.3059E-05	-8.6220E-05	-6.9482	-3234.8	-10.653	-233.47	-1.7577	-86.105	687.99	7.8279E+06	7.8279E+06
x(M)	2.6000	11.800	9.0000	0.0000	0.0000	10.000	4.2000	13.600	20.000	0.0000	0.0000	0.0000
	13	-1.4978E-06	-9.1318E-05	-21.747	-3456.5	-3.8629	-250.53	-1.1701	-92.564	283.08	7.8279E+06	7.8279E+06
x(M)	11.200	11.800	0.0000	0.0000	0.0000	9.8000	9.8000	13.600	20.000	0.0000	0.0000	0.0000
	14	-1.4231E-06	-8.3011E-05	-19.011	-3157.1	-3.4830	-223.12	-1.0819	-81.501	222.95	7.8279E+06	7.8279E+06
x(M)	11.400	12.000	0.0000	0.0000	0.0000	9.4000	10.200	13.600	20.000	0.0000	0.0000	0.0000
	15	-1.5085E-06	-8.8745E-05	-22.110	-3339.5	-3.9147	-244.02	-1.1811	-90.000	162.82	7.8279E+06	7.8279E+06
x(M)	11.000	11.600	0.0000	0.0000	0.0000	9.8000	9.8000	13.600	13.600	20.000	0.0000	0.0000
	Min.	-3.1553E-04	-1.0470E-04	-86.616	-4111.5	-99.526	-326.62	-27.818	-108.48	162.82	7.8279E+06	7.8279E+06
	Pile N.	2	1	3	1	3	1	3	1	15	1	1




* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR	
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2	
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	
1	6.5899E-06	5.3484E-03	315.85	1378.2	20.911	1404.2	7.4183	420.36	1.4745E+04	7.8279E+06	7.8279E+06	
x(M)	11.000	0.0000	0.0000	6.4000	9.2000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000	
2	6.4799E-06	5.2468E-03	308.25	1312.7	20.053	1323.2	7.3077	388.75	1.4117E+04	7.8279E+06	7.8279E+06	
x(M)	11.000	0.0000	0.0000	6.4000	9.2000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000	
3	6.6020E-06	5.1452E-03	318.20	1337.0	21.146	1363.5	7.4460	411.41	1.4256E+04	7.8279E+06	7.8279E+06	
x(M)	11.000	0.0000	0.0000	6.4000	9.2000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000	
4	3.9290E-06	5.3484E-03	197.31	1144.7	11.317	1094.0	4.3430	289.01	1.2238E+04	7.8279E+06	7.8279E+06	
x(M)	12.000	0.0000	0.0000	7.0000	10.200	0.0000	13.600	2.8000	0.0000	0.0000	0.0000	
5	3.6318E-06	5.2468E-03	186.77	1050.3	10.417	978.12	3.8768	247.34	1.1316E+04	7.8279E+06	7.8279E+06	
x(M)	12.400	0.0000	0.0000	7.2000	10.600	0.0000	13.600	2.8000	0.0000	0.0000	0.0000	
6	3.9630E-06	5.1452E-03	198.80	1110.6	11.439	1062.6	4.4041	282.95	1.1771E+04	7.8279E+06	7.8279E+06	
x(M)	11.800	0.0000	0.0000	7.0000	10.000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000	
7	2.1037E-06	5.3484E-03	121.72	1112.3	6.2368	1053.2	2.3905	272.86	1.1431E+04	7.8279E+06	7.8279E+06	
x(M)	12.200	0.0000	0.0000	7.0000	10.400	0.0000	13.600	2.8000	0.0000	0.0000	0.0000	
8	1.9146E-06	5.2468E-03	115.31	1016.4	5.7420	936.19	2.0744	231.60	1.0493E+04	7.8279E+06	7.8279E+06	
x(M)	12.600	0.0000	0.0000	7.4000	10.800	0.0000	13.600	2.8000	0.0000	0.0000	0.0000	
9	2.1286E-06	5.1452E-03	122.58	1079.7	6.3073	1023.0	2.4302	267.17	1.0973E+04	7.8279E+06	7.8279E+06	
x(M)	12.200	0.0000	0.0000	7.0000	10.400	0.0000	13.600	2.8000	0.0000	0.0000	0.0000	
10	4.5208E-07	5.3484E-03	50.635	1112.0	1.6686	1053.8	0.6287	272.91	1.0910E+04	7.8279E+06	7.8279E+06	
x(M)	12.800	0.0000	0.0000	7.0000	11.200	0.0000	13.600	2.8000	0.0000	0.0000	0.0000	
11	4.1197E-07	5.2468E-03	48.756	1016.1	1.5819	936.77	0.5314	231.64	9972.4	7.8279E+06	7.8279E+06	
x(M)	13.200	0.0000	0.0000	7.4000	11.600	0.0000	14.200	2.8000	0.0000	0.0000	0.0000	
12	4.5778E-07	5.1452E-03	50.889	1079.4	1.6799	1023.6	0.6431	267.22	1.0452E+04	7.8279E+06	7.8279E+06	
x(M)	12.800	0.0000	0.0000	7.0000	11.200	0.0000	13.600	2.8000	0.0000	0.0000	0.0000	
13	9.2842E-05	5.3484E-03	19.337	1148.8	11.548	1102.4	4.0323	291.72	1.0715E+04	7.8279E+06	7.8279E+06	
x(M)	0.0000	0.0000	5.6000	7.0000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000	
14	9.2842E-05	5.2468E-03	18.109	1049.9	10.267	980.46	3.4784	247.68	9751.3	7.8279E+06	7.8279E+06	
x(M)	0.0000	0.0000	5.8000	7.2000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000	
15	9.2842E-05	5.1452E-03	19.509	1114.5	11.724	1070.7	4.1121	285.62	1.0242E+04	7.8279E+06	7.8279E+06	
x(M)	0.0000	0.0000	5.6000	7.0000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000	
	Max.	9.2842E-05	5.3484E-03	318.20	1378.2	21.146	1404.2	7.4460	420.36	1.4745E+04	7.8279E+06	7.8279E+06
	Pile N.	13	1	3	1	3	1	3	1	1	1	1

LOAD CASE : 20
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.4966	1.0000
3	0.5847	1.0000
4	0.5444	1.0000
5	0.4625	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 391 di 420

6	0.5446	1.0000
7	0.5444	1.0000
8	0.4625	1.0000
9	0.5446	1.0000
10	0.5790	1.0000
11	0.4962	1.0000
12	0.5792	1.0000
13	0.8659	1.0000
14	0.8052	1.0000
15	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 29053.7	HOR. LOAD Y, KN -546.402	HOR. LOAD Z, KN -16247.6
MOMENT X, KN- M -4416.18	MOMENT Y, KN- M -69027.7	MOMENT Z, KN- M -5013.91

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.04222E-03	HORIZONTAL Y, M -1.23015E-04	HORIZONTAL Z, M -5.16716E-03
ANGLE ROT. X, RAD -2.25863E-05	ANGLE ROT. Y, RAD -1.06694E-04	ANGLE ROT. Z, RAD -8.33857E-06






THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.1949E-04	8.0262E-05	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
2	8.1967E-05	8.0262E-05	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
3	4.4444E-05	8.0262E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
4	5.9961E-04	-2.1376E-05	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
5	5.6209E-04	-2.1376E-05	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
6	5.2457E-04	-2.1376E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
7	1.0797E-03	-1.2302E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
8	1.0422E-03	-1.2302E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
9	1.0047E-03	-1.2302E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
10	1.5599E-03	-2.2465E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
11	1.5223E-03	-2.2465E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
12	1.4848E-03	-2.2465E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
13	2.0400E-03	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
14	2.0025E-03	-3.2629E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
15	1.9649E-03	-3.2629E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
MINIMUM	4.4444E-05	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
Pile N.	3	13	1	1	1	1
MAXIMUM	2.0400E-03	8.0262E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
Pile N.	13	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	226.93	11.781	-1092.1	-8.3015	3422.0	27.682
2	155.67	10.559	-971.18	-8.3015	3125.2	25.021
3	84.406	11.951	-1060.3	-8.3015	3304.8	28.044
4	1128.1	-10.391	-1043.9	-8.3015	3314.9	-44.890
5	1059.1	-9.6084	-927.90	-8.3015	3025.9	-42.937
6	990.18	-10.498	-1013.6	-8.3015	3201.3	-45.156
7	2010.1	-31.958	-1043.3	-8.3015	3314.7	-116.20
8	1941.2	-29.225	-927.31	-8.3015	3025.7	-109.71
9	1872.3	-32.335	-1013.0	-8.3015	3201.0	-117.08
10	2892.2	-55.487	-1083.7	-8.3015	3406.9	-192.06
11	2823.3	-50.905	-968.76	-8.3015	3123.3	-181.43
12	2754.3	-56.155	-1052.1	-8.3015	3290.1	-193.59
13	3774.3	-98.861	-1390.6	-8.3015	4069.3	-311.24
14	3705.3	-95.251	-1310.1	-8.3015	3874.3	-303.59
15	3636.4	-100.02	-1349.7	-8.3015	3929.6	-313.66
MINIMUM	84.406	-100.02	-1390.6	-8.3015	3025.7	-313.66
Pile N.	3	15	13	1	8	15
MAXIMUM	3774.3	11.951	-927.31	-8.3015	4069.3	28.044
Pile N.	13	3	8	1	13	3

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B						COMMESSA IF28	LOTTO 01

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.1949E-04	8.0262E-05	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
2	8.1967E-05	8.0262E-05	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
3	4.4444E-05	8.0262E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
4	5.9961E-04	-2.1376E-05	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
5	5.6209E-04	-2.1376E-05	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
6	5.2457E-04	-2.1376E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
7	1.0797E-03	-1.2302E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
8	1.0422E-03	-1.2302E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
9	1.0047E-03	-1.2302E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
10	1.5599E-03	-2.2465E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
11	1.5223E-03	-2.2465E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
12	1.4848E-03	-2.2465E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
13	2.0400E-03	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
14	2.0025E-03	-3.2629E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
15	1.9649E-03	-3.2629E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
MINIMUM	4.4444E-05	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
Pile N.	3	13	1	1	1	1
MAXIMUM	2.0400E-03	8.0262E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
Pile N.	13	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	226.93	11.781	-1092.1	-8.3015	3422.0	27.682
2	155.67	10.559	-971.18	-8.3015	3125.2	25.021
3	84.406	11.951	-1060.3	-8.3015	3304.8	28.044
4	1128.1	-10.391	-1043.9	-8.3015	3314.9	-44.890
5	1059.1	-9.6084	-927.90	-8.3015	3025.9	-42.937
6	990.18	-10.498	-1013.6	-8.3015	3201.3	-45.156
7	2010.1	-31.958	-1043.3	-8.3015	3314.7	-116.20
8	1941.2	-29.225	-927.31	-8.3015	3025.7	-109.71
9	1872.3	-32.335	-1013.0	-8.3015	3201.0	-117.08
10	2892.2	-55.487	-1083.7	-8.3015	3406.9	-192.06
11	2823.3	-50.905	-968.76	-8.3015	3123.3	-181.43
12	2754.3	-56.155	-1052.1	-8.3015	3290.1	-193.59
13	3774.3	-98.861	-1390.6	-8.3015	4069.3	-311.24
14	3705.3	-95.251	-1310.1	-8.3015	3874.3	-303.59
15	3636.4	-100.02	-1349.7	-8.3015	3929.6	-313.66
MINIMUM	84.406	-100.02	-1390.6	-8.3015	3025.7	-313.66
Pile N.	3	15	13	1	8	15
MAXIMUM	3774.3	11.951	-927.31	-8.3015	4069.3	28.044
Pile N.	13	3	8	1	13	3

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	1.0457E+04
2	9520.5
3	1.0022E+04
4	1.0644E+04
5	9732.7
6	1.0223E+04
7	1.1148E+04
8	1.0236E+04
9	1.0727E+04
10	1.1935E+04
11	1.1040E+04
12	1.1505E+04
13	1.4453E+04
14	1.3826E+04
15	1.3955E+04
MINIMUM	9520.5
Pile N.	2
MAXIMUM	1.4453E+04
Pile N.	13

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.2986E-06	-5.2688E-03	-27.682	-1135.4	-3.3906	-1092.1	-1.1151	-289.52	128.42	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	7.0000	9.4000	0.0000	13.600	2.8000	20.000	0.0000	0.0000

APPALTATORE: Consorzio <u>Soci</u>   				ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: <u>Mandataria</u> <u>Mandanti</u>   									
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B				COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 393 di 420

2	-1.2229E-06	-5.1672E-03	-25.021	-1037.5	-3.0479	-971.18	-1.0223	-245.78	88.091	7.8279E+06	7.8279E+06
x (M)	11.600	0.0000	0.0000	7.2000	9.8000	0.0000	13.600	2.8000	20.000	0.0000	0.0000
3	-1.3104E-06	-5.0655E-03	-28.044	-1101.1	-3.4371	-1060.3	-1.1268	-283.39	47.764	7.8279E+06	7.8279E+06
x (M)	11.200	0.0000	0.0000	7.0000	9.4000	0.0000	13.600	2.8000	20.000	0.0000	0.0000
4	-2.8361E-05	-5.2688E-03	-7.5333	-1099.2	-10.391	-1044.0	-1.9357	-270.84	638.35	7.8279E+06	7.8279E+06
x (M)	1.8000	0.0000	8.6000	7.0000	0.0000	0.0000	3.0000	2.8000	20.000	0.0000	0.0000
5	-2.8691E-05	-5.1672E-03	-7.1525	-1004.0	-9.6090	-927.94	-1.6884	-229.87	599.34	7.8279E+06	7.8279E+06
x (M)	2.0000	0.0000	8.8000	7.4000	0.0000	0.0000	3.2000	2.8000	20.000	0.0000	0.0000
6	-2.8319E-05	-5.0655E-03	-7.5817	-1066.4	-10.499	-1013.6	-1.9722	-265.13	560.33	7.8279E+06	7.8279E+06
x (M)	1.8000	0.0000	8.4000	7.0000	0.0000	0.0000	3.0000	2.8000	20.000	0.0000	0.0000
7	-1.2548E-04	-5.2688E-03	-28.528	-1099.5	-31.961	-1043.4	-7.3531	-270.80	1137.5	7.8279E+06	7.8279E+06
x (M)	0.6000	0.0000	7.6000	7.0000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
8	-1.2561E-04	-5.1672E-03	-26.704	-1004.3	-29.227	-927.38	-6.3784	-229.82	1098.5	7.8279E+06	7.8279E+06
x (M)	0.6000	0.0000	8.0000	7.4000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
9	-1.2546E-04	-5.0655E-03	-28.787	-1066.7	-32.338	-1013.1	-7.4964	-265.08	1059.5	7.8279E+06	7.8279E+06
x (M)	0.6000	0.0000	7.6000	7.0000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
10	-2.2608E-04	-5.2688E-03	-51.438	-1131.3	-55.494	-1083.8	-13.522	-286.81	1636.6	7.8279E+06	7.8279E+06
x (M)	0.4000	0.0000	7.4000	7.0000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
11	-2.2619E-04	-5.1672E-03	-48.265	-1037.9	-50.912	-968.87	-11.820	-245.42	1597.6	7.8279E+06	7.8279E+06
x (M)	0.4000	0.0000	7.2000	7.0000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
12	-2.2607E-04	-5.0655E-03	-51.906	-1097.1	-56.162	-1052.3	-13.785	-280.73	1558.6	7.8279E+06	7.8279E+06
x (M)	0.4000	0.0000	7.4000	7.0000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
13	-3.2716E-04	-5.2688E-03	-88.240	-1362.2	-98.876	-1390.8	-27.947	-417.11	2135.8	7.8279E+06	7.8279E+06
x (M)	0.2000	0.0000	6.6000	6.4000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
14	-3.2718E-04	-5.1672E-03	-85.756	-1297.2	-95.265	-1310.3	-26.378	-385.68	2096.8	7.8279E+06	7.8279E+06
x (M)	0.2000	0.0000	6.8000	6.4000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
15	-3.2716E-04	-5.0655E-03	-89.064	-1320.8	-100.03	-1349.9	-28.479	-408.10	2057.8	7.8279E+06	7.8279E+06
x (M)	0.2000	0.0000	6.6000	6.4000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
Min.	-3.2718E-04	-5.2688E-03	-89.064	-1362.2	-100.03	-1390.8	-28.479	-417.11	47.764	7.8279E+06	7.8279E+06
Pile N.	14	1	15	13	15	13	15	13	3	1	1







* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	8.0262E-05	9.0158E-05	16.555	3422.0	11.781	247.96	3.7399	91.618	1.0457E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	11.600	6.0000	0.0000	0.0000	9.8000	2.6000	13.600	0.0000	0.0000	0.0000
2	8.0262E-05	8.2051E-05	15.447	3125.2	10.559	220.80	3.2295	80.753	9520.5	7.8279E+06	7.8279E+06
x (M)	0.0000	12.000	6.2000	0.0000	0.0000	10.200	2.6000	13.600	0.0000	0.0000	0.0000
3	8.0262E-05	8.7633E-05	16.716	3304.8	11.951	241.44	3.8148	89.046	1.0022E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	11.600	6.0000	0.0000	0.0000	9.8000	2.6000	13.600	0.0000	0.0000	0.0000
4	5.4425E-07	8.7614E-05	44.890	3314.9	1.7977	237.47	0.6946	87.584	1.0644E+04	7.8279E+06	7.8279E+06
x (M)	12.400	11.800	0.0000	0.0000	10.800	10.000	13.600	13.600	0.0000	0.0000	0.0000
5	4.9398E-07	7.8850E-05	42.937	3025.9	1.6773	211.29	0.5886	76.192	9732.7	7.8279E+06	7.8279E+06
x (M)	13.000	12.200	0.0000	0.0000	11.200	10.400	13.600	13.600	0.0000	0.0000	0.0000
6	5.5127E-07	8.5053E-05	45.156	3201.3	1.8123	230.81	0.7075	85.192	1.0223E+04	7.8279E+06	7.8279E+06
x (M)	12.400	11.800	0.0000	0.0000	10.800	10.000	13.600	13.600	0.0000	0.0000	0.0000
7	2.2356E-06	8.7762E-05	116.20	3314.7	6.4599	237.64	2.4651	87.625	1.1148E+04	7.8279E+06	7.8279E+06
x (M)	12.200	11.800	0.0000	0.0000	10.400	10.000	13.600	13.600	0.0000	0.0000	0.0000
8	2.0370E-06	7.8984E-05	109.71	3025.7	5.9225	211.43	2.1536	76.229	1.0236E+04	7.8279E+06	7.8279E+06
x (M)	12.600	12.200	0.0000	0.0000	10.800	10.400	13.600	13.600	0.0000	0.0000	0.0000
9	2.2617E-06	8.5176E-05	117.08	3201.0	6.5353	230.95	2.5027	85.224	1.0727E+04	7.8279E+06	7.8279E+06
x (M)	12.000	11.800	0.0000	0.0000	10.200	10.000	13.600	13.600	0.0000	0.0000	0.0000
10	4.0730E-06	9.0175E-05	192.06	3406.9	11.597	246.84	4.4217	91.181	1.1935E+04	7.8279E+06	7.8279E+06
x (M)	11.800	11.800	0.0000	0.0000	10.000	9.8000	13.600	13.600	0.0000	0.0000	0.0000
11	3.7806E-06	8.2410E-05	181.43	3123.3	10.664	221.12	3.9644	80.806	1.1040E+04	7.8279E+06	7.8279E+06
x (M)	12.200	12.000	0.0000	0.0000	10.400	10.200	13.600	13.600	0.0000	0.0000	0.0000
12	4.1206E-06	8.7573E-05	193.59	3290.1	11.748	240.35	4.4838	88.623	1.1505E+04	7.8279E+06	7.8279E+06
x (M)	11.800	11.600	0.0000	0.0000	10.000	9.8000	13.600	13.600	0.0000	0.0000	0.0000
13	6.7329E-06	1.0318E-04	311.24	4069.3	21.355	323.20	7.4681	107.04	1.4453E+04	7.8279E+06	7.8279E+06
x (M)	11.000	10.800	0.0000	0.0000	9.2000	9.0000	13.600	13.600	0.0000	0.0000	0.0000
14	6.6459E-06	9.9711E-05	303.59	3874.3	20.535	303.11	7.3661	103.65	1.3826E+04	7.8279E+06	7.8279E+06
x (M)	11.000	11.000	0.0000	0.0000	9.2000	9.0000	13.600	13.600	0.0000	0.0000	0.0000
15	6.7601E-06	9.9384E-05	313.66	3929.6	21.657	314.32	7.4935	102.96	1.3955E+04	7.8279E+06	7.8279E+06
x (M)	10.800	10.800	0.0000	0.0000	9.0000	9.0000	13.600	13.600	0.0000	0.0000	0.0000
Max.	8.0262E-05	1.0318E-04	313.66	4069.3	21.657	323.20	7.4935	107.04	1.4453E+04	7.8279E+06	7.8279E+06
Pile N.	1	13	15	13	15	13	15	13	13	1	1

LOAD CASE : 21
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8661	1.0000
2	0.5791	1.0000
3	0.5846	1.0000
4	0.8053	1.0000
5	0.4951	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 394 di 420

6	0.4955	1.0000
7	0.8053	1.0000
8	0.4941	1.0000
9	0.4945	1.0000
10	0.8053	1.0000
11	0.4951	1.0000
12	0.4955	1.0000
13	0.8661	1.0000
14	0.5791	1.0000
15	0.5845	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 33306.5	HOR. LOAD Y, KN 12866.2	HOR. LOAD Z, KN 78.2617
MOMENT X, KN- M -26.1652	MOMENT Y, KN- M 917.891	MOMENT Z, KN- M -51586.6

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.22179E-03	HORIZONTAL Y, M 4.13247E-03	HORIZONTAL Z, M 2.43364E-05
ANGLE ROT. X, RAD -3.53435E-07	ANGLE ROT. Y, RAD 1.16310E-06	ANGLE ROT. Z, RAD -2.40974E-04







THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.3166E-03	4.1357E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
2	1.2323E-03	4.1357E-03	2.4336E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
3	1.4788E-04	4.1357E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
4	2.3114E-03	4.1341E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
5	1.2270E-03	4.1341E-03	2.4336E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
6	1.4264E-04	4.1341E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
7	2.3062E-03	4.1325E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
8	1.2218E-03	4.1325E-03	2.4336E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
9	1.3741E-04	4.1325E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
10	2.3009E-03	4.1309E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
11	1.2166E-03	4.1309E-03	2.4336E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
12	1.3218E-04	4.1309E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
13	2.2957E-03	4.1293E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
14	1.2113E-03	4.1293E-03	2.4336E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
15	1.2694E-04	4.1293E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
MINIMUM	1.2694E-04	4.1293E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.3166E-03	4.1357E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4140.8	1058.0	5.9670	-0.1299	-15.966	2781.7
2	2290.3	818.90	5.0159	-0.1299	-14.421	2287.2
3	280.84	824.85	5.4408	-0.1299	-15.718	2297.5
4	4135.0	1010.0	5.7013	-0.1299	-15.433	2685.3
5	2280.7	739.45	4.5380	-0.1299	-13.378	2114.3
6	270.90	740.79	4.8980	-0.1299	-14.533	2114.7
7	4129.2	1009.7	5.7021	-0.1299	-15.435	2684.1
8	2271.1	738.18	4.5324	-0.1299	-13.366	2111.1
9	260.96	739.52	4.8921	-0.1299	-14.520	2111.5
10	4123.4	1009.4	5.7029	-0.1299	-15.436	2683.0
11	2261.5	738.96	4.5393	-0.1299	-13.381	2112.4
12	251.02	740.30	4.8994	-0.1299	-14.536	2112.9
13	4117.7	1056.6	5.9702	-0.1299	-15.972	2777.0
14	2251.9	817.81	5.0186	-0.1299	-14.427	2283.2
15	241.08	823.75	5.4437	-0.1299	-15.724	2293.5
MINIMUM	241.08	738.18	4.5324	-0.1299	-15.972	2111.1
Pile N.	15	8	8	1	13	8
MAXIMUM	4140.8	1058.0	5.9702	-0.1299	-13.366	2781.7
Pile N.	1	1	13	1	8	1

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI					
PROGETTAZIONE: Mandataria Mandanti   		RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 395 di 420

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.3166E-03	4.1357E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
2	1.2323E-03	4.1357E-03	2.4336E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
3	1.4788E-04	4.1357E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
4	2.3114E-03	4.1341E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
5	1.2270E-03	4.1341E-03	2.4336E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
6	1.4264E-04	4.1341E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
7	2.3062E-03	4.1325E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
8	1.2218E-03	4.1325E-03	2.4336E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
9	1.3741E-04	4.1325E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
10	2.3009E-03	4.1309E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
11	1.2166E-03	4.1309E-03	2.4336E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
12	1.3218E-03	4.1309E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
13	2.2957E-04	4.1293E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
14	1.2113E-03	4.1293E-03	2.4336E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
15	1.2694E-04	4.1293E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
MINIMUM	1.2694E-04	4.1293E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.3166E-03	4.1357E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4140.8	1058.0	5.9670	-0.1299	-15.966	2781.7
2	2290.3	818.90	5.0159	-0.1299	-14.421	2287.2
3	280.84	824.85	5.4408	-0.1299	-15.718	2297.5
4	4135.0	1010.0	5.7013	-0.1299	-15.433	2685.3
5	2280.7	739.45	4.5380	-0.1299	-13.378	2114.3
6	270.90	740.79	4.8980	-0.1299	-14.533	2114.7
7	4129.2	1009.7	5.7021	-0.1299	-15.435	2684.1
8	2271.1	738.18	4.5324	-0.1299	-13.366	2111.1
9	260.96	739.52	4.8921	-0.1299	-14.520	2111.5
10	4123.4	1009.4	5.7029	-0.1299	-15.436	2683.0
11	2261.5	738.96	4.5393	-0.1299	-13.381	2112.4
12	251.02	740.30	4.8994	-0.1299	-14.536	2112.9
13	4117.7	1056.6	5.9702	-0.1299	-15.972	2777.0
14	2251.9	817.81	5.0186	-0.1299	-14.427	2283.2
15	241.08	823.75	5.4437	-0.1299	-15.724	2293.5
MINIMUM	241.08	738.18	4.5324	-0.1299	-15.972	2111.1
Pile N.	15	8	8	1	13	8
MAXIMUM	4140.8	1058.0	5.9702	-0.1299	-13.366	2781.7
Pile N.	1	1	13	1	8	1

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1.0739E+04
2	8199.1
3	7093.0
4	1.0444E+04
5	7671.7
6	6535.8
7	1.0438E+04
8	7656.7
9	6520.6
10	1.0431E+04
11	7655.2
12	6519.0
13	1.0711E+04
14	8165.4
15	7058.4
MINIMUM	6519.0
Pile N.	12
MAXIMUM	1.0739E+04
Pile N.	1

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-8.2803E-05	-4.5864E-07	-2781.7	-15.966	-274.56	-1.5216	-76.611	-0.4311	2343.2	7.8279E+06	7.8279E+06
x(M)	10.200	10.400	0.0000	0.0000	8.4000	8.4000	13.600	13.600	20.000	0.0000	0.0000

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 396 di 420
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2	-7.6650E-05	-4.5531E-07	-2287.2	-14.421	-207.25	-1.2355	-71.829	-0.4349	1296.1	7.8279E+06	7.8279E+06
x (M)	11.200	11.200	0.0000	0.0000	9.2000	9.2000	13.600	13.600	20.000	0.0000	0.0000
3	-7.6574E-05	-4.8605E-07	-2297.5	-15.718	-208.24	-1.3277	-72.029	-0.4683	158.92	7.8279E+06	7.8279E+06
x (M)	11.200	11.200	0.0000	0.0000	9.2000	9.2000	13.600	13.600	20.000	0.0000	0.0000
4	-8.2161E-05	-4.5517E-07	-2685.3	-15.433	-260.62	-1.4463	-77.021	-0.4333	2339.9	7.8279E+06	7.8279E+06
x (M)	10.400	10.400	0.0000	0.0000	8.6000	8.6000	13.600	13.600	20.000	0.0000	0.0000
5	-7.2706E-05	-4.3130E-07	-2114.3	-13.378	-186.70	-1.1159	-66.543	-0.4023	1290.6	7.8279E+06	7.8279E+06
x (M)	11.400	11.600	0.0000	0.0000	9.6000	9.6000	13.600	13.600	20.000	0.0000	0.0000
6	-7.2452E-05	-4.5911E-07	-2114.7	-14.533	-186.46	-1.1922	-66.501	-0.4315	153.30	7.8279E+06	7.8279E+06
x (M)	11.400	11.600	0.0000	0.0000	9.6000	9.6000	13.600	13.600	20.000	0.0000	0.0000
7	-8.2132E-05	-4.5519E-07	-2684.1	-15.435	-260.55	-1.4465	-76.987	-0.4333	2336.7	7.8279E+06	7.8279E+06
x (M)	10.400	10.400	0.0000	0.0000	8.6000	8.6000	13.600	13.600	20.000	0.0000	0.0000
8	-7.2614E-05	-4.3103E-07	-2111.1	-13.366	-186.39	-1.1144	-66.442	-0.4019	1285.2	7.8279E+06	7.8279E+06
x (M)	11.400	11.600	0.0000	0.0000	9.6000	9.6000	13.600	13.600	20.000	0.0000	0.0000
9	-7.2353E-05	-4.5876E-07	-2111.5	-14.520	-186.14	-1.1906	-66.396	-0.4310	147.68	7.8279E+06	7.8279E+06
x (M)	11.400	11.600	0.0000	0.0000	9.6000	9.6000	13.600	13.600	20.000	0.0000	0.0000
10	-8.2102E-05	-4.5522E-07	-2683.0	-15.436	-260.48	-1.4468	-76.953	-0.4333	2333.4	7.8279E+06	7.8279E+06
x (M)	10.400	10.400	0.0000	0.0000	8.6000	8.6000	13.600	13.600	20.000	0.0000	0.0000
11	-7.2662E-05	-4.3136E-07	-2112.4	-13.381	-186.59	-1.1162	-66.500	-0.4024	1279.7	7.8279E+06	7.8279E+06
x (M)	11.400	11.600	0.0000	0.0000	9.6000	9.6000	13.600	13.600	20.000	0.0000	0.0000
12	-7.2413E-05	-4.5920E-07	-2112.9	-14.536	-186.36	-1.1926	-66.459	-0.4316	142.05	7.8279E+06	7.8279E+06
x (M)	11.400	11.600	0.0000	0.0000	9.6000	9.6000	13.600	13.600	20.000	0.0000	0.0000
13	-8.2679E-05	-4.5864E-07	-2777.0	-15.972	-274.27	-1.5225	-76.461	-0.4310	2330.1	7.8279E+06	7.8279E+06
x (M)	10.200	10.400	0.0000	0.0000	8.4000	8.4000	13.600	13.600	20.000	0.0000	0.0000
14	-7.6545E-05	-4.5543E-07	-2283.2	-14.427	-207.03	-1.2362	-71.726	-0.4351	1274.3	7.8279E+06	7.8279E+06
x (M)	11.200	11.200	0.0000	0.0000	9.2000	9.2000	13.600	13.600	20.000	0.0000	0.0000
15	-7.6468E-05	-4.8618E-07	-2293.5	-15.724	-208.01	-1.3285	-71.925	-0.4685	136.43	7.8279E+06	7.8279E+06
x (M)	11.200	11.200	0.0000	0.0000	9.2000	9.2000	13.600	13.600	20.000	0.0000	0.0000
Min.	-8.2803E-05	-4.8618E-07	-2781.7	-15.972	-274.56	-1.5225	-77.021	-0.4685	136.43	7.8279E+06	7.8279E+06
Pile N.	1	15	1	13	1	13	4	15	15	1	1







* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL.		MOMENT		SHEAR		SOIL REACT		TOTAL STRESS KN/ M**2	FLEX. RIG.	
	y-DIR M	z-DIR M	z-DIR KN- M	y-DIR KN- M	y-DIR KN	z-DIR KN	y-DIR KN/ M	z-DIR KN/ M		z-DIR KN- M**2	y-DIR KN- M**2
1	4.1356E-03	2.2746E-05	1129.9	6.2465	1058.2	5.9679	352.80	1.9661	1.0739E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.8000	6.0000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
2	4.1356E-03	2.4336E-05	938.56	5.5605	818.97	5.0163	242.48	1.4561	8199.1	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.4000	6.0000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
3	4.1356E-03	2.5927E-05	941.98	5.9597	824.86	5.4408	244.64	1.5738	7093.0	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.4000	6.0000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
4	4.1341E-03	2.2746E-05	1092.8	6.0414	1010.2	5.7022	329.66	1.8385	1.0444E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.0000	6.0000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
5	4.1341E-03	2.4336E-05	873.17	5.1778	739.51	4.5384	209.27	1.2575	7671.7	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.6000	6.8000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
6	4.1341E-03	2.5927E-05	872.86	5.5280	740.80	4.8981	209.44	1.3484	6535.8	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.6000	6.8000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
7	4.1325E-03	2.2746E-05	1092.5	6.0420	1009.8	5.7029	329.58	1.8389	1.0438E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.0000	6.0000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
8	4.1325E-03	2.4336E-05	872.06	5.1734	738.25	4.5328	208.80	1.2552	7656.7	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.6000	6.8000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
9	4.1325E-03	2.5927E-05	871.74	5.5232	739.52	4.8921	208.98	1.3460	6520.6	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.8000	6.0000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
10	4.1309E-03	2.2746E-05	1092.2	6.0427	1009.5	5.7037	329.51	1.8392	1.0431E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.0000	6.0000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
11	4.1309E-03	2.4336E-05	872.66	5.1788	739.02	4.5396	209.17	1.2580	7655.2	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.6000	6.8000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
12	4.1309E-03	2.5927E-05	872.35	5.5291	740.30	4.8995	209.35	1.3489	6519.0	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.6000	6.8000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
13	4.1293E-03	2.2746E-05	1128.6	6.2489	1056.8	5.9710	352.48	1.9677	1.0711E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.8000	6.0000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
14	4.1293E-03	2.4336E-05	937.44	5.5627	817.87	5.0190	242.26	1.4572	8165.4	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.4000	6.0000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
15	4.1293E-03	2.5927E-05	940.85	5.9620	823.76	5.4438	244.41	1.5750	7058.4	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	6.4000	6.6000	0.0000	0.0000	2.8000	2.8000	0.0000	0.0000	0.0000
Max.	4.1356E-03	2.5927E-05	1129.9	6.2489	1058.2	5.9710	352.80	1.9677	1.0739E+04	7.8279E+06	7.8279E+06
Pile N.	1	3	1	13	1	13	1	13	1	1	1

LOAD CASE : 22
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5846	1.0000
2	0.5791	1.0000
3	0.8661	1.0000
4	0.4955	1.0000
5	0.4951	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 397 di 420

6	0.8053	1.0000
7	0.4945	1.0000
8	0.4941	1.0000
9	0.8053	1.0000
10	0.4955	1.0000
11	0.4951	1.0000
12	0.8053	1.0000
13	0.5845	1.0000
14	0.5791	1.0000
15	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 29053.7	HOR. LOAD Y, KN -12866.2	HOR. LOAD Z, KN 78.2617
MOMENT X, KN- M 3.19123	MOMENT Y, KN- M 913.044	MOMENT Z, KN- M 33085.2

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.04238E-03	HORIZONTAL Y, M -3.92672E-03	HORIZONTAL Z, M 2.35947E-05
ANGLE ROT. X, RAD 2.20620E-07	ANGLE ROT. Y, RAD 1.00765E-06	ANGLE ROT. Z, RAD 1.85940E-04







THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1472E-04	-3.9287E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
2	1.0514E-03	-3.9287E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
3	1.8882E-03	-3.9287E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
4	2.1018E-04	-3.9277E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
5	1.0469E-03	-3.9277E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
6	1.8836E-03	-3.9277E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
7	2.0565E-04	-3.9267E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
8	1.0424E-03	-3.9267E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
9	1.8791E-03	-3.9267E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
10	2.0111E-04	-3.9257E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
11	1.0378E-03	-3.9257E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
12	1.8746E-03	-3.9257E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
13	1.9658E-04	-3.9247E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
14	1.0333E-03	-3.9247E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
15	1.8700E-03	-3.9247E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
MINIMUM	1.9658E-04	-3.9287E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
Pile N.	13	1	3	1	1	1
MAXIMUM	1.8882E-03	-3.9247E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	407.78	-822.93	5.2718	0.081088	-15.333	-2355.6
2	1958.1	-817.31	4.9931	0.081088	-14.497	-2345.3
3	3495.4	-1068.3	6.2033	0.081088	-16.797	-2874.8
4	399.17	-740.16	4.7470	0.081088	-14.189	-2175.3
5	1949.8	-739.07	4.5192	0.081088	-13.463	-2174.7
6	3487.0	-1005.8	5.8431	0.081088	-16.009	-2738.2
7	390.56	-739.00	4.7410	0.081088	-14.176	-2172.5
8	1941.5	-737.91	4.5135	0.081088	-13.450	-2171.9
9	3478.7	-1005.6	5.8437	0.081088	-16.010	-2737.5
10	381.95	-739.85	4.7479	0.081088	-14.191	-2174.2
11	1933.2	-738.76	4.5200	0.081088	-13.465	-2173.5
12	3470.4	-1005.4	5.8442	0.081088	-16.011	-2736.7
13	373.34	-822.24	5.2736	0.081088	-15.337	-2353.1
14	1924.8	-816.62	4.9949	0.081088	-14.501	-2342.8
15	3462.0	-1067.4	6.2054	0.081088	-16.801	-2871.8
MINIMUM	373.34	-1068.3	4.5135	0.081088	-16.801	-2874.8
Pile N.	13	3	8	1	15	3
MAXIMUM	3495.4	-737.91	6.2054	0.081088	-13.450	-2171.9
Pile N.	3	8	15	1	8	8

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.1472E-04	-3.9287E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
2	1.0514E-03	-3.9287E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
3	1.8882E-03	-3.9287E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
4	2.1018E-04	-3.9277E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
5	1.0469E-03	-3.9277E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
6	1.8836E-03	-3.9277E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
7	2.0565E-04	-3.9267E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
8	1.0424E-03	-3.9267E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
9	1.8791E-03	-3.9267E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
10	2.0111E-04	-3.9257E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
11	1.0378E-03	-3.9257E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
12	1.8746E-03	-3.9257E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
13	1.9658E-04	-3.9247E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
14	1.0333E-03	-3.9247E-03	2.3595E-05	2.2062E-07	1.0077E-06	1.8594E-04
15	1.8700E-03	-3.9247E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
MINIMUM	1.9658E-04	-3.9287E-03	2.2602E-05	2.2062E-07	1.0077E-06	1.8594E-04
Pile N.	13	1	3	1	1	1
MAXIMUM	1.8882E-03	-3.9247E-03	2.4588E-05	2.2062E-07	1.0077E-06	1.8594E-04
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	407.78	-822.93	5.2718	0.081088	-15.333	-2355.6
2	1958.1	-817.31	4.9931	0.081088	-14.497	-2345.3
3	3495.4	-1068.3	6.2033	0.081088	-16.797	-2874.8
4	399.17	-740.16	4.7470	0.081088	-14.189	-2175.3
5	1949.8	-739.07	4.5192	0.081088	-13.463	-2174.7
6	3487.0	-1005.8	5.8431	0.081088	-16.009	-2738.2
7	390.56	-739.00	4.7410	0.081088	-14.176	-2172.5
8	1941.5	-737.91	4.5135	0.081088	-13.450	-2171.9
9	3478.7	-1005.6	5.8437	0.081088	-16.010	-2737.5
10	381.95	-739.85	4.7479	0.081088	-14.191	-2174.2
11	1933.2	-738.76	4.5200	0.081088	-13.465	-2173.5
12	3470.4	-1005.4	5.8442	0.081088	-16.011	-2736.7
13	373.34	-822.24	5.2736	0.081088	-15.337	-2353.1
14	1924.8	-816.62	4.9949	0.081088	-14.501	-2342.8
15	3462.0	-1067.4	6.2054	0.081088	-16.801	-2871.8
MINIMUM	373.34	-1068.3	4.5135	0.081088	-16.801	-2874.8
Pile N.	13	3	8	1	15	3
MAXIMUM	3495.4	-737.91	6.2054	0.081088	-13.450	-2171.9
Pile N.	3	8	15	1	8	8

PILE GROUP	STRESS, KN/ M**2
*****	*****
1	7340.2
2	8186.4
3	1.0655E+04
4	6791.3
5	7666.8
6	1.0237E+04
7	6777.9
8	7653.6
9	1.0230E+04
10	6778.1
11	7653.9
12	1.0224E+04
13	7313.1
14	8160.0
15	1.0627E+04
MINIMUM	6777.9
Pile N.	7
MAXIMUM	1.0655E+04
Pile N.	3

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-3.9287E-03	-4.5607E-07	-903.62	-15.333	-822.94	-1.2683	-240.86	-0.4481	230.76	7.8279E+06	7.8279E+06
x(M)	0.0000	11.200	6.4000	0.0000	0.0000	9.4000	2.8000	13.600	20.000	0.0000	0.0000

APPALTATORE: **Consorzio** **Soci**

HirpiniaAV salini impregio ASTALDI

PROGETTAZIONE: **Mandatario** **Mandanti**

ROKSOJL NETENGINEERING Alpina

ITINERARIO NAPOLI – BARI
RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO
RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA LOTTO CODIFICA DOCUMENTO REV. FOGLIO
IF28 01 E ZZ CL V10103 001 B 399 di 420

	2	-3.9287E-03	-4.3691E-07	-900.07	-14.497	-817.37	-1.2085	-238.74	-0.4267	1108.1	7.8279E+06	7.8279E+06
x(M)		0.0000	11.200	6.4000	0.0000	0.0000	9.4000	2.8000	13.600	20.000	0.0000	0.0000
	3	-3.9287E-03	-4.9077E-07	-1114.9	-16.797	-1068.4	-1.6008	-349.19	-0.4778	1978.0	7.8279E+06	7.8279E+06
x(M)		0.0000	10.200	6.0000	0.0000	0.0000	8.4000	2.8000	13.600	20.000	0.0000	0.0000
	4	-3.9277E-03	-4.3009E-07	-837.02	-14.189	-740.17	-1.1371	-206.27	-0.4132	225.88	7.8279E+06	7.8279E+06
x(M)		0.0000	11.600	6.8000	0.0000	0.0000	9.6000	2.8000	13.600	20.000	0.0000	0.0000
	5	-3.9277E-03	-4.1316E-07	-837.18	-13.463	-739.13	-1.0896	-206.10	-0.3950	1103.4	7.8279E+06	7.8279E+06
x(M)		0.0000	11.600	6.8000	0.0000	0.0000	9.6000	2.8000	13.600	20.000	0.0000	0.0000
	6	-3.9277E-03	-4.4852E-07	-1049.0	-16.009	-1005.9	-1.4536	-324.45	-0.4363	1973.3	7.8279E+06	7.8279E+06
x(M)		0.0000	10.400	6.0000	0.0000	0.0000	8.6000	2.8000	13.600	20.000	0.0000	0.0000
	7	-3.9267E-03	-4.2976E-07	-836.06	-14.176	-739.01	-1.1355	-205.83	-0.4127	221.01	7.8279E+06	7.8279E+06
x(M)		0.0000	11.600	6.8000	0.0000	0.0000	9.6000	2.8000	13.600	20.000	0.0000	0.0000
	8	-3.9267E-03	-4.1284E-07	-836.22	-13.450	-737.96	-1.0881	-205.66	-0.3945	1098.7	7.8279E+06	7.8279E+06
x(M)		0.0000	11.600	6.8000	0.0000	0.0000	9.6000	2.8000	13.600	20.000	0.0000	0.0000
	9	-3.9267E-03	-4.4853E-07	-1048.8	-16.010	-1005.7	-1.4537	-324.40	-0.4363	1968.5	7.8279E+06	7.8279E+06
x(M)		0.0000	10.400	6.0000	0.0000	0.0000	8.6000	2.8000	13.600	20.000	0.0000	0.0000
	10	-3.9257E-03	-4.3014E-07	-836.68	-14.191	-739.86	-1.1373	-206.21	-0.4133	216.14	7.8279E+06	7.8279E+06
x(M)		0.0000	11.600	6.8000	0.0000	0.0000	9.6000	2.8000	13.600	20.000	0.0000	0.0000
	11	-3.9257E-03	-4.1320E-07	-836.84	-13.465	-738.82	-1.0898	-206.04	-0.3951	1093.9	7.8279E+06	7.8279E+06
x(M)		0.0000	11.600	6.8000	0.0000	0.0000	9.6000	2.8000	13.600	20.000	0.0000	0.0000
	12	-3.9257E-03	-4.4854E-07	-1048.6	-16.011	-1005.5	-1.4539	-324.36	-0.4363	1963.8	7.8279E+06	7.8279E+06
x(M)		0.0000	10.400	6.0000	0.0000	0.0000	8.6000	2.8000	13.600	20.000	0.0000	0.0000
	13	-3.9247E-03	-4.5613E-07	-902.90	-15.337	-822.25	-1.2686	-240.71	-0.4482	211.26	7.8279E+06	7.8279E+06
x(M)		0.0000	11.200	6.4000	0.0000	0.0000	9.4000	2.8000	13.600	20.000	0.0000	0.0000
	14	-3.9247E-03	-4.3697E-07	-899.36	-14.501	-816.68	-1.2089	-238.60	-0.4268	1089.2	7.8279E+06	7.8279E+06
x(M)		0.0000	11.200	6.4000	0.0000	0.0000	9.4000	2.8000	13.600	20.000	0.0000	0.0000
	15	-3.9247E-03	-4.9077E-07	-1113.9	-16.801	-1067.5	-1.6013	-348.98	-0.4778	1959.1	7.8279E+06	7.8279E+06
x(M)		0.0000	10.200	6.0000	0.0000	0.0000	8.4000	2.8000	13.600	20.000	0.0000	0.0000
Min.		-3.9287E-03	-4.9077E-07	-1114.9	-16.801	-1068.4	-1.6013	-349.19	-0.4778	211.26	7.8279E+06	7.8279E+06
Pile N.	1		3	3	15	3	15	3	3	13	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS	FLEX. RIG. z-DIR	FLEX. RIG. y-DIR
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2	KN- M**2	KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	7.2445E-05	2.4587E-05	2355.6	5.6826	201.05	5.2719	70.391	1.5257	7340.2	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.6000	9.2000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
2	7.2448E-05	2.3595E-05	2345.3	5.4251	199.96	4.9935	70.177	1.4465	8186.4	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.6000	9.2000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
3	8.5057E-05	2.2602E-05	2874.8	6.4289	277.21	6.2041	82.352	2.0190	1.0655E+04	7.8279E+06	7.8279E+06
x(M)	10.200	0.0000	0.0000	6.0000	8.4000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
4	6.8338E-05	2.4587E-05	2175.3	5.2684	180.06	4.7471	64.966	1.3071	6791.3	7.8279E+06	7.8279E+06
x(M)	11.600	0.0000	0.0000	6.8000	9.6000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
5	6.8508E-05	2.3595E-05	2174.7	5.0492	180.23	4.5196	64.991	1.2492	7666.8	7.8279E+06	7.8279E+06
x(M)	11.600	0.0000	0.0000	6.8000	9.6000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
6	7.7736E-05	2.2602E-05	2738.2	6.0476	251.79	5.8439	75.175	1.8766	1.0237E+04	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
7	6.8271E-05	2.4587E-05	2172.5	5.2637	179.76	4.7411	64.872	1.3047	6777.9	7.8279E+06	7.8279E+06
x(M)	11.600	0.0000	0.0000	6.8000	9.6000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
8	6.8441E-05	2.3595E-05	2171.9	5.0446	179.92	4.5138	64.897	1.2469	7653.6	7.8279E+06	7.8279E+06
x(M)	11.600	0.0000	0.0000	6.8000	9.6000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
9	7.7717E-05	2.2602E-05	2737.5	6.0480	251.75	5.8444	75.154	1.8769	1.0230E+04	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
10	6.8309E-05	2.4587E-05	2174.2	5.2691	180.00	4.7480	64.939	1.3075	6778.1	7.8279E+06	7.8279E+06
x(M)	11.600	0.0000	0.0000	6.8000	9.6000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
11	6.8479E-05	2.3595E-05	2173.5	5.0498	180.16	4.5204	64.964	1.2495	7653.9	7.8279E+06	7.8279E+06
x(M)	11.600	0.0000	0.0000	6.8000	9.6000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
12	7.7698E-05	2.2602E-05	2736.7	6.0484	251.71	5.8449	75.132	1.8771	1.0224E+04	7.8279E+06	7.8279E+06
x(M)	10.400	0.0000	0.0000	6.0000	8.6000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
13	7.2378E-05	2.4587E-05	2353.1	5.6839	200.90	5.2737	70.326	1.5264	7313.1	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.6000	9.2000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
14	7.2380E-05	2.3595E-05	2342.8	5.4263	199.82	4.9952	70.111	1.4472	8160.0	7.8279E+06	7.8279E+06
x(M)	11.200	0.0000	0.0000	6.6000	9.2000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
15	8.4966E-05	2.2602E-05	2871.8	6.4303	277.00	6.2061	82.251	2.0200	1.0627E+04	7.8279E+06	7.8279E+06
x(M)	10.200	0.0000	0.0000	6.0000	8.4000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
Max.		8.5057E-05	2.4587E-05	2874.8	6.4303	277.21	82.352	2.0200	1.0655E+04	7.8279E+06	7.8279E+06
Pile N.	3		1	3	15	3	15	3	3	1	1

LOAD CASE : 23
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.5845	1.0000
2	0.4966	1.0000
3	0.5847	1.0000
4	0.5444	1.0000
5	0.4625	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 400 di 420

6	0.5446	1.0000
7	0.5444	1.0000
8	0.4625	1.0000
9	0.5446	1.0000
10	0.5790	1.0000
11	0.4962	1.0000
12	0.5792	1.0000
13	0.8659	1.0000
14	0.8052	1.0000
15	0.8661	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 29053.7	HOR. LOAD Y, KN -546.402	HOR. LOAD Z, KN -16247.6
MOMENT X, KN- M -4416.18	MOMENT Y, KN- M -69027.6	MOMENT Z, KN- M -5014.02

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.04222E-03	HORIZONTAL Y, M -1.23014E-04	HORIZONTAL Z, M -5.16716E-03
ANGLE ROT. X, RAD -2.25864E-05	ANGLE ROT. Y, RAD -1.06694E-04	ANGLE ROT. Z, RAD -8.33885E-06







THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	1.1949E-04	8.0263E-05	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
2	8.1967E-05	8.0263E-05	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
3	4.4443E-05	8.0263E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
4	5.9962E-04	-2.1375E-05	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
5	5.6209E-04	-2.1375E-05	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
6	5.2457E-04	-2.1375E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
7	1.0797E-03	-1.2301E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
8	1.0422E-03	-1.2301E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
9	1.0047E-03	-1.2301E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
10	1.5599E-03	-2.2465E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
11	1.5223E-03	-2.2465E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
12	1.4848E-03	-2.2465E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
13	2.0400E-03	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
14	2.0025E-03	-3.2629E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
15	1.9649E-03	-3.2629E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
MINIMUM	4.4443E-05	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
Pile N.	3	13	1	1	1	1
MAXIMUM	2.0400E-03	8.0263E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
Pile N.	13	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	226.94	11.781	-1092.1	-8.3015	3422.0	27.682
2	155.67	10.559	-971.18	-8.3015	3125.2	25.021
3	84.404	11.951	-1060.3	-8.3015	3304.8	28.044
4	1128.1	-10.391	-1043.9	-8.3015	3314.9	-44.890
5	1059.1	-9.6084	-927.90	-8.3015	3025.9	-42.938
6	990.18	-10.498	-1013.6	-8.3015	3201.3	-45.156
7	2010.1	-31.958	-1043.3	-8.3015	3314.7	-116.20
8	1941.2	-29.225	-927.31	-8.3015	3025.7	-109.71
9	1872.2	-32.335	-1013.0	-8.3015	3201.0	-117.08
10	2892.2	-55.487	-1083.7	-8.3015	3406.9	-192.06
11	2823.3	-50.905	-968.76	-8.3015	3123.3	-181.43
12	2754.3	-56.155	-1052.1	-8.3015	3290.1	-193.59
13	3774.3	-98.861	-1390.6	-8.3015	4069.3	-311.24
14	3705.3	-95.251	-1310.1	-8.3015	3874.3	-303.59
15	3636.4	-100.02	-1349.7	-8.3015	3929.6	-313.66
MINIMUM	84.404	-100.02	-1390.6	-8.3015	3025.7	-313.66
Pile N.	3	15	13	1	8	15
MAXIMUM	3774.3	11.951	-927.31	-8.3015	4069.3	28.044
Pile N.	13	3	8	1	13	3

APPALTATORE: Consorzio Soci   		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria Mandanti   							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B		COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 401 di 420

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	1.1949E-04	8.0263E-05	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
2	8.1967E-05	8.0263E-05	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
3	4.4443E-05	8.0263E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
4	5.9962E-04	-2.1375E-05	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
5	5.6209E-04	-2.1375E-05	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
6	5.2457E-04	-2.1375E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
7	1.0797E-03	-1.2301E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
8	1.0422E-03	-1.2301E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
9	1.0047E-03	-1.2301E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
10	1.5599E-03	-2.2465E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
11	1.5223E-03	-2.2465E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
12	1.4848E-03	-2.2465E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
13	2.0400E-03	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
14	2.0025E-03	-3.2629E-04	-5.1672E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
15	1.9649E-03	-3.2629E-04	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
MINIMUM	4.4443E-05	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
Pile N.	3	13	1	1	1	1
MAXIMUM	2.0400E-03	8.0263E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
Pile N.	13	1	3	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	226.94	11.781	-1092.1	-8.3015	3422.0	27.682
2	155.67	10.559	-971.18	-8.3015	3125.2	25.021
3	84.404	11.951	-1060.3	-8.3015	3304.8	28.044
4	1128.1	-10.391	-1043.9	-8.3015	3314.9	-44.890
5	1059.1	-9.6084	-927.90	-8.3015	3025.9	-42.938
6	990.18	-10.498	-1013.6	-8.3015	3201.3	-45.156
7	2010.1	-31.958	-1043.3	-8.3015	3314.7	-116.20
8	1941.2	-29.225	-927.31	-8.3015	3025.7	-109.71
9	1872.2	-32.335	-1013.0	-8.3015	3201.0	-117.08
10	2892.2	-55.487	-1083.7	-8.3015	3406.9	-192.06
11	2823.3	-50.905	-968.76	-8.3015	3123.3	-181.43
12	2754.3	-56.155	-1052.1	-8.3015	3290.1	-193.59
13	3774.3	-98.861	-1390.6	-8.3015	4069.3	-311.24
14	3705.3	-95.251	-1310.1	-8.3015	3874.3	-303.59
15	3636.4	-100.02	-1349.7	-8.3015	3929.6	-313.66
MINIMUM	84.404	-100.02	-1390.6	-8.3015	3025.7	-313.66
Pile N.	3	15	13	1	8	15
MAXIMUM	3774.3	11.951	-927.31	-8.3015	4069.3	28.044
Pile N.	13	3	8	1	13	3

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1.0457E+04
2	9520.5
3	1.0022E+04
4	1.0644E+04
5	9732.7
6	1.0223E+04
7	1.1148E+04
8	1.0236E+04
9	1.0727E+04
10	1.1935E+04
11	1.1040E+04
12	1.1505E+04
13	1.4453E+04
14	1.3826E+04
15	1.3955E+04
MINIMUM	9520.5
Pile N.	2
MAXIMUM	1.4453E+04
Pile N.	13

* EFFECTS FOR LATERALLY LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-1.2986E-06	-5.2688E-03	-27.682	-1135.4	-3.3906	-1092.1	-1.1151	-289.52	128.42	7.8279E+06	7.8279E+06
x(M)	11.400	0.0000	0.0000	7.0000	9.4000	0.0000	13.600	2.8000	20.000	0.0000	0.0000

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandatario

Mandanti



**RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA**

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 402 di 420
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2	-1.2229E-06	-5.1672E-03	-25.021	-1037.5	-3.0480	-971.18	-1.0223	-245.78	88.091	7.8279E+06	7.8279E+06
x (M)	11.600	0.0000	0.0000	7.2000	9.8000	0.0000	13.600	2.8000	20.000	0.0000	0.0000
3	-1.3104E-06	-5.0655E-03	-28.044	-1101.1	-3.4371	-1060.3	-1.1269	-283.39	47.763	7.8279E+06	7.8279E+06
x (M)	11.200	0.0000	0.0000	7.0000	9.4000	0.0000	13.600	2.8000	20.000	0.0000	0.0000
4	-2.8360E-05	-5.2688E-03	-7.5333	-1099.2	-10.391	-1044.0	-1.9357	-270.84	638.35	7.8279E+06	7.8279E+06
x (M)	1.8000	0.0000	8.6000	7.0000	0.0000	0.0000	3.0000	2.8000	20.000	0.0000	0.0000
5	-2.8690E-05	-5.1672E-03	-7.1524	-1004.0	-9.6090	-927.94	-1.6884	-229.87	599.34	7.8279E+06	7.8279E+06
x (M)	2.0000	0.0000	8.8000	7.4000	0.0000	0.0000	3.2000	2.8000	20.000	0.0000	0.0000
6	-2.8318E-05	-5.0655E-03	-7.5816	-1066.4	-10.499	-1013.6	-1.9722	-265.13	560.33	7.8279E+06	7.8279E+06
x (M)	1.8000	0.0000	8.4000	7.0000	0.0000	0.0000	3.0000	2.8000	20.000	0.0000	0.0000
7	-1.2548E-04	-5.2688E-03	-28.528	-1099.5	-31.961	-1043.4	-7.3531	-270.80	1137.5	7.8279E+06	7.8279E+06
x (M)	0.6000	0.0000	7.6000	7.0000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
8	-1.2561E-04	-5.1672E-03	-26.704	-1004.3	-29.227	-927.38	-6.3783	-229.82	1098.5	7.8279E+06	7.8279E+06
x (M)	0.6000	0.0000	8.0000	7.4000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
9	-1.2546E-04	-5.0655E-03	-28.787	-1066.7	-32.338	-1013.1	-7.4964	-265.08	1059.5	7.8279E+06	7.8279E+06
x (M)	0.6000	0.0000	7.6000	7.0000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
10	-2.2608E-04	-5.2688E-03	-51.438	-1131.3	-55.494	-1083.8	-13.522	-286.81	1636.7	7.8279E+06	7.8279E+06
x (M)	0.4000	0.0000	7.4000	7.0000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
11	-2.2619E-04	-5.1672E-03	-48.265	-1037.9	-50.912	-968.87	-11.820	-245.42	1597.6	7.8279E+06	7.8279E+06
x (M)	0.4000	0.0000	7.2000	7.0000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
12	-2.2607E-04	-5.0655E-03	-51.906	-1097.1	-56.162	-1052.3	-13.785	-280.73	1558.6	7.8279E+06	7.8279E+06
x (M)	0.4000	0.0000	7.4000	7.0000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
13	-3.2716E-04	-5.2688E-03	-88.240	-1362.2	-98.876	-1390.8	-27.947	-417.11	2135.8	7.8279E+06	7.8279E+06
x (M)	0.2000	0.0000	6.6000	6.4000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
14	-3.2718E-04	-5.1672E-03	-85.756	-1297.2	-95.265	-1310.3	-26.378	-385.68	2096.8	7.8279E+06	7.8279E+06
x (M)	0.2000	0.0000	6.8000	6.4000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
15	-3.2716E-04	-5.0655E-03	-89.063	-1320.8	-100.03	-1349.9	-28.479	-408.10	2057.8	7.8279E+06	7.8279E+06
x (M)	0.2000	0.0000	6.6000	6.4000	0.0000	0.0000	2.8000	2.8000	20.000	0.0000	0.0000
Min.	-3.2718E-04	-5.2688E-03	-89.063	-1362.2	-100.03	-1390.8	-28.479	-417.11	47.763	7.8279E+06	7.8279E+06
Pile N.	14	1	15	13	15	13	15	13	3	1	1


* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	8.0263E-05	9.0158E-05	16.555	3422.0	11.781	247.96	3.7399	91.618	1.0457E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	11.600	6.0000	0.0000	0.0000	9.8000	2.6000	13.600	0.0000	0.0000	0.0000
2	8.0263E-05	8.2051E-05	15.447	3125.2	10.559	220.80	3.2295	80.753	9520.5	7.8279E+06	7.8279E+06
x (M)	0.0000	12.000	6.2000	0.0000	0.0000	10.200	2.6000	13.600	0.0000	0.0000	0.0000
3	8.0263E-05	8.7633E-05	16.716	3304.8	11.951	241.44	3.8149	89.046	1.0022E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	11.600	6.0000	0.0000	0.0000	9.8000	2.6000	13.600	0.0000	0.0000	0.0000
4	5.4425E-07	8.7614E-05	44.890	3314.9	1.7976	237.47	0.6946	87.584	1.0644E+04	7.8279E+06	7.8279E+06
x (M)	12.400	11.800	0.0000	0.0000	10.800	10.000	13.600	13.600	0.0000	0.0000	0.0000
5	4.9397E-07	7.8850E-05	42.938	3025.9	1.6773	211.29	0.5886	76.192	9732.7	7.8279E+06	7.8279E+06
x (M)	13.000	12.200	0.0000	0.0000	11.200	10.400	13.600	13.600	0.0000	0.0000	0.0000
6	5.5126E-07	8.5053E-05	45.156	3201.3	1.8123	230.81	0.7075	85.192	1.0223E+04	7.8279E+06	7.8279E+06
x (M)	12.400	11.800	0.0000	0.0000	10.800	10.000	13.600	13.600	0.0000	0.0000	0.0000
7	2.2356E-06	8.7762E-05	116.20	3314.7	6.4599	237.64	2.4651	87.625	1.1148E+04	7.8279E+06	7.8279E+06
x (M)	12.200	11.800	0.0000	0.0000	10.400	10.000	13.600	13.600	0.0000	0.0000	0.0000
8	2.0370E-06	7.8984E-05	109.71	3025.7	5.9225	211.43	2.1536	76.229	1.0236E+04	7.8279E+06	7.8279E+06
x (M)	12.600	12.200	0.0000	0.0000	10.800	10.400	13.600	13.600	0.0000	0.0000	0.0000
9	2.2617E-06	8.5176E-05	117.08	3201.0	6.5352	230.95	2.5027	85.224	1.0727E+04	7.8279E+06	7.8279E+06
x (M)	12.000	11.800	0.0000	0.0000	10.200	10.000	13.600	13.600	0.0000	0.0000	0.0000
10	4.0730E-06	9.0175E-05	192.06	3406.9	11.597	246.84	4.4217	91.181	1.1935E+04	7.8279E+06	7.8279E+06
x (M)	11.800	11.800	0.0000	0.0000	10.000	9.8000	13.600	13.600	0.0000	0.0000	0.0000
11	3.7806E-06	8.2410E-05	181.43	3123.3	10.664	221.12	3.9644	80.806	1.1040E+04	7.8279E+06	7.8279E+06
x (M)	12.200	12.000	0.0000	0.0000	10.400	10.200	13.600	13.600	0.0000	0.0000	0.0000
12	4.1206E-06	8.7573E-05	193.59	3290.1	11.748	240.35	4.4838	88.623	1.1505E+04	7.8279E+06	7.8279E+06
x (M)	11.800	11.600	0.0000	0.0000	10.000	9.8000	13.600	13.600	0.0000	0.0000	0.0000
13	6.7329E-06	1.0318E-04	311.24	4069.3	21.355	323.20	7.4681	107.04	1.4453E+04	7.8279E+06	7.8279E+06
x (M)	11.000	10.800	0.0000	0.0000	9.2000	9.0000	13.600	13.600	0.0000	0.0000	0.0000
14	6.6459E-06	9.9711E-05	303.59	3874.3	20.535	303.11	7.3661	103.65	1.3826E+04	7.8279E+06	7.8279E+06
x (M)	11.000	11.000	0.0000	0.0000	9.2000	9.0000	13.600	13.600	0.0000	0.0000	0.0000
15	6.7600E-06	9.9384E-05	313.66	3929.6	21.657	314.32	7.4935	102.96	1.3955E+04	7.8279E+06	7.8279E+06
x (M)	10.800	10.800	0.0000	0.0000	9.0000	9.0000	13.600	13.600	0.0000	0.0000	0.0000
Max.	8.0263E-05	1.0318E-04	313.66	4069.3	21.657	323.20	7.4935	107.04	1.4453E+04	7.8279E+06	7.8279E+06
Pile N.	1	13	15	13	15	13	15	13	13	1	1

LOAD CASE : 24
CASE NAME : Load Case
LOAD TYPE : Special, Sp

REDUCTION FACTORS FOR CLOSELY-SPACED PILE GROUPS, COMBINED Y AND Z DIRECTIONS
ESTIMATED USING MOVEMENT IN THE DIRECTION OF PILE CAP DISPLACEMENTS

GROUP NO	P-FACTOR	Y-FACTOR
1	0.8660	1.0000
2	0.8052	1.0000
3	0.8661	1.0000
4	0.5790	1.0000
5	0.4962	1.0000

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	
COMMESSA IF28 LOTTO 01 CODIFICA E ZZ CL DOCUMENTO VI0103 001 REV. B FOGLIO 403 di 420	

6	0.5792	1.0000
7	0.5444	1.0000
8	0.4625	1.0000
9	0.5446	1.0000
10	0.5444	1.0000
11	0.4625	1.0000
12	0.5446	1.0000
13	0.5845	1.0000
14	0.4966	1.0000
15	0.5847	1.0000

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

VERT. LOAD, KN 33253.7	HOR. LOAD Y, KN -546.402	HOR. LOAD Z, KN 16404.2
MOMENT X, KN- M 4390.26	MOMENT Y, KN- M 70858.6	MOMENT Z, KN- M -6259.97

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

VERTICAL, M 1.19918E-03	HORIZONTAL Y, M -1.10384E-04	HORIZONTAL Z, M 5.24682E-03
ANGLE ROT. X, RAD 2.25805E-05	ANGLE ROT. Y, RAD 1.10191E-04	ANGLE ROT. Z, RAD -1.24333E-05







THE GLOBAL STRUCTURAL COORDINATE SYSTEM

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X, RAD	ROT. Y, RAD	ROT. Z, RAD
*****	*****	*****	*****	*****	*****	*****
1	2.2468E-03	-3.1361E-04	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
2	2.1909E-03	-3.1361E-04	5.2468E-03	2.2580E-05	1.1019E-04	-1.2433E-05
3	2.1350E-03	-3.1361E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
4	1.7510E-03	-2.1200E-04	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
5	1.6950E-03	-2.1200E-04	5.2468E-03	2.2580E-05	1.1019E-04	-1.2433E-05
6	1.6391E-03	-2.1200E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
7	1.2551E-03	-1.1038E-04	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
8	1.1992E-03	-1.1038E-04	5.2468E-03	2.2580E-05	1.1019E-04	-1.2433E-05
9	1.1432E-03	-1.1038E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
10	7.5926E-04	-8.7717E-06	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
11	7.0331E-04	-8.7717E-06	5.2468E-03	2.2580E-05	1.1019E-04	-1.2433E-05
12	6.4737E-04	-8.7717E-06	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
13	2.6340E-04	9.2841E-05	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
14	2.0745E-04	9.2841E-05	5.2468E-03	2.2580E-05	1.1019E-04	-1.2433E-05
15	1.5150E-04	9.2841E-05	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
MINIMUM	1.5150E-04	-3.1361E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
Pile N.	15	1	3	1	1	1
MAXIMUM	2.2468E-03	9.2841E-05	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
Pile N.	1	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4063.7	-98.391	1404.0	8.2993	-4111.5	-315.85
2	4001.9	-94.827	1323.0	8.2993	-3915.2	-308.25
3	3940.1	-99.510	1363.3	8.2993	-3972.1	-318.20
4	3243.3	-55.422	1093.9	8.2993	-3441.3	-197.31
5	3140.5	-50.915	977.99	8.2993	-3155.2	-186.77
6	3037.7	-56.068	1062.5	8.2993	-3324.7	-198.80
7	2332.3	-32.024	1053.1	8.2993	-3348.0	-121.72
8	2229.6	-29.359	936.10	8.2993	-3056.5	-115.31
9	2126.8	-32.387	1022.9	8.2993	-3234.6	-122.58
10	1421.4	-10.555	1053.7	8.2993	-3348.1	-50.634
11	1318.6	-9.8332	936.72	8.2993	-3056.6	-48.756
12	1215.8	-10.652	1023.5	8.2993	-3234.8	-50.889
13	500.25	11.548	1102.4	8.2993	-3456.5	21.747
14	393.99	10.267	980.45	8.2993	-3157.1	19.012
15	287.73	11.724	1070.7	8.2993	-3339.5	22.110
MINIMUM	287.73	-99.510	936.10	8.2993	-4111.5	-318.20
Pile N.	15	3	8	1	1	3
MAXIMUM	4063.7	11.724	1404.0	8.2993	-3056.5	22.110
Pile N.	1	15	1	1	8	15

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA
PROGETTAZIONE: Mandataria Mandanti   	
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B	

THE PILE COORDINATE SYSTEM (LOCAL AXES)

* PILE TOP DISPLACEMENTS *

PILE GROUP	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
1	2.2468E-03	-3.1361E-04	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
2	2.1909E-03	-3.1361E-04	5.2468E-03	2.2580E-05	1.1019E-04	-1.2433E-05
3	2.1350E-03	-3.1361E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
4	1.7510E-03	-2.1200E-04	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
5	1.6950E-03	-2.1200E-04	5.2468E-03	2.2580E-05	1.1019E-04	-1.2433E-05
6	1.6391E-03	-2.1200E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
7	1.2551E-03	-1.1038E-04	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
8	1.1992E-03	-1.1038E-04	5.2468E-03	2.2580E-05	1.1019E-04	-1.2433E-05
9	1.1432E-03	-1.1038E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
10	7.5926E-04	-8.7717E-06	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
11	7.0331E-04	-8.7717E-06	5.2468E-03	2.2580E-05	1.1019E-04	-1.2433E-05
12	6.4737E-04	-8.7717E-06	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
13	2.6340E-04	9.2841E-05	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
14	2.0745E-04	9.2841E-05	5.2468E-03	2.2580E-05	1.1019E-04	-1.2433E-05
15	1.5150E-04	9.2841E-05	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
MINIMUM	1.5150E-04	-3.1361E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
Pile N.	15	1	3	1	1	1
MAXIMUM	2.2468E-03	9.2841E-05	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
Pile N.	1	13	1	1	1	1

* PILE TOP REACTIONS *

PILE GROUP	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
1	4063.7	-98.391	1404.0	8.2993	-4111.5	-315.85
2	4001.9	-94.827	1323.0	8.2993	-3915.2	-308.25
3	3940.1	-99.510	1363.3	8.2993	-3972.1	-318.20
4	3243.3	-55.422	1093.9	8.2993	-3441.3	-197.31
5	3140.5	-50.915	977.99	8.2993	-3155.2	-186.77
6	3037.7	-56.068	1062.5	8.2993	-3324.7	-198.80
7	2332.3	-32.024	1053.1	8.2993	-3348.0	-121.72
8	2229.6	-29.359	936.10	8.2993	-3056.5	-115.31
9	2126.8	-32.387	1022.9	8.2993	-3234.6	-122.58
10	1421.4	-10.555	1053.7	8.2993	-3348.1	-50.634
11	1318.6	-9.8332	936.72	8.2993	-3056.6	-48.756
12	1215.8	-10.652	1023.5	8.2993	-3234.8	-50.889
13	500.25	11.548	1102.4	8.2993	-3456.5	21.747
14	393.99	10.267	980.45	8.2993	-3157.1	19.012
15	287.73	11.724	1070.7	8.2993	-3339.5	22.110
MINIMUM	287.73	-99.510	936.10	8.2993	-4111.5	-318.20
Pile N.	15	3	8	1	1	3
MAXIMUM	4063.7	11.724	1404.0	8.2993	-3056.5	22.110
Pile N.	1	15	1	1	8	15

PILE GROUP STRESS, KN/ M**2

*****	*****
1	1.4745E+04
2	1.4117E+04
3	1.4256E+04
4	1.2238E+04
5	1.1316E+04
6	1.1771E+04
7	1.1431E+04
8	1.0493E+04
9	1.0973E+04
10	1.0910E+04
11	9972.4
12	1.0452E+04
13	1.0715E+04
14	9751.3
15	1.0242E+04
MINIMUM	9751.3
Pile N.	14
MAXIMUM	1.4745E+04
Pile N.	1

* EFFECTS FOR Laterally LOADED PILE *

* MINIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	-3.1546E-04	-1.0470E-04	-85.822	-4111.5	-98.407	-326.62	-27.307	-108.48	2299.6	7.8279E+06	7.8279E+06
x(M)	0.4000	10.800	6.8000	0.0000	0.0000	9.0000	2.8000	13.600	20.000	0.0000	0.0000

APPALTATORE: **Consorzio Soci**

HirpiniaAV salini impreglio ASTALDI

PROGETTAZIONE: **Mandatari Mandanti**

ROKSOJL NETENGINEERING Alpina

ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA

I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA LOTTO CODIFICA DOCUMENTO REV. FOGLIO

IF28 01 E ZZ CL VI0103 001 B 405 di 420

2	-3.1553E-04	-1.0116E-04	-83.506	-3915.2	-94.843	-306.29	-25.773	-105.00	2264.6	7.8279E+06	7.8279E+06
x (M)	0.4000	11.000	6.8000	0.0000	0.0000	9.2000	2.8000	13.600	20.000	0.0000	0.0000
3	-3.1543E-04	-1.0091E-04	-86.616	-3972.1	-99.526	-27.818	-27.818	-104.42	2229.6	7.8279E+06	7.8279E+06
x (M)	0.4000	10.800	6.6000	0.0000	0.0000	9.0000	2.8000	13.600	20.000	0.0000	0.0000
4	-2.1515E-04	-9.1395E-05	-49.722	-3441.3	-55.430	-249.42	-13.131	-92.125	1835.3	7.8279E+06	7.8279E+06
x (M)	0.6000	11.800	7.6000	0.0000	0.0000	9.8000	2.8000	13.600	20.000	0.0000	0.0000
5	-2.1537E-04	-8.3398E-05	-46.737	-3155.2	-50.922	-223.48	-11.480	-81.568	1777.2	7.8279E+06	7.8279E+06
x (M)	0.6000	12.000	7.8000	0.0000	0.0000	10.200	2.8000	13.600	20.000	0.0000	0.0000
6	-2.1511E-04	-8.8692E-05	-50.180	-3324.7	-56.075	-242.93	-13.381	-89.575	1719.0	7.8279E+06	7.8279E+06
x (M)	0.6000	11.600	7.4000	0.0000	0.0000	9.8000	2.8000	13.600	20.000	0.0000	0.0000
7	-1.1569E-04	-8.8781E-05	-27.131	-3348.0	-32.028	-240.09	-7.0226	-88.475	1319.8	7.8279E+06	7.8279E+06
x (M)	1.0000	11.800	7.8000	0.0000	0.0000	10.000	2.8000	13.600	20.000	0.0000	0.0000
8	-1.1605E-04	-7.9965E-05	-25.473	-3056.5	-29.362	-213.83	-6.0945	-76.946	1261.7	7.8279E+06	7.8279E+06
x (M)	1.0000	12.200	8.2000	0.0000	0.0000	10.400	2.8000	13.600	20.000	0.0000	0.0000
9	-1.1565E-04	-8.6348E-05	-27.371	-3234.6	-32.390	-233.62	-7.1562	-86.139	1203.5	7.8279E+06	7.8279E+06
x (M)	0.8000	11.800	7.8000	0.0000	0.0000	10.000	2.8000	13.600	20.000	0.0000	0.0000
10	-2.3133E-05	-8.8628E-05	-6.9112	-3348.1	-10.556	-239.91	-1.7289	-88.433	804.32	7.8279E+06	7.8279E+06
x (M)	2.6000	11.800	9.0000	0.0000	0.0000	10.000	4.2000	13.600	20.000	0.0000	0.0000
11	-2.3709E-05	-7.9823E-05	-6.6490	-3056.6	-9.8340	-213.68	-1.5791	-76.905	746.16	7.8279E+06	7.8279E+06
x (M)	2.8000	12.200	9.4000	0.0000	0.0000	10.400	9.8000	13.600	20.000	0.0000	0.0000
12	-2.3060E-05	-8.6220E-05	-6.9482	-3234.8	-10.653	-233.47	-1.7577	-86.105	687.99	7.8279E+06	7.8279E+06
x (M)	2.6000	11.800	9.0000	0.0000	0.0000	10.000	4.2000	13.600	20.000	0.0000	0.0000
13	-1.4978E-06	-9.1318E-05	-21.747	-3456.5	-3.8628	-250.53	-1.1701	-92.564	283.08	7.8279E+06	7.8279E+06
x (M)	11.200	11.800	0.0000	0.0000	9.2000	9.8000	13.600	20.000	0.0000	0.0000	0.0000
14	-1.4231E-06	-8.3011E-05	-19.012	-3157.1	-3.4829	-223.12	-1.0819	-81.501	222.95	7.8279E+06	7.8279E+06
x (M)	11.400	12.000	0.0000	0.0000	9.4000	10.200	13.600	20.000	0.0000	0.0000	0.0000
15	-1.5084E-06	-8.8745E-05	-22.110	-3339.5	-3.9146	-244.02	-1.1811	-90.000	162.82	7.8279E+06	7.8279E+06
x (M)	11.000	11.600	0.0000	0.0000	9.0000	9.8000	13.600	13.600	20.000	0.0000	0.0000
Min.	-3.1553E-04	-1.0470E-04	-86.616	-4111.5	-99.526	-326.62	-27.818	-108.48	162.82	7.8279E+06	7.8279E+06
Pile N.	2	1	3	1	3	1	3	1	15	1	1

* MAXIMUM VALUES AND LOCATIONS *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2	FLEX. RIG. z-DIR KN- M**2	FLEX. RIG. y-DIR KN- M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1	6.5899E-06	5.3484E-03	315.85	1378.2	20.911	1404.2	7.4183	420.36	1.4745E+04	7.8279E+06	7.8279E+06
x (M)	11.000	0.0000	0.0000	6.4000	9.2000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
2	6.4799E-06	5.2468E-03	308.25	1312.7	20.053	1323.2	7.3077	388.75	1.4117E+04	7.8279E+06	7.8279E+06
x (M)	11.000	0.0000	0.0000	6.4000	9.2000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
3	6.6020E-06	5.1452E-03	318.20	1337.0	21.146	1363.5	7.4460	411.41	1.4256E+04	7.8279E+06	7.8279E+06
x (M)	11.000	0.0000	0.0000	6.4000	9.2000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
4	3.9290E-06	5.3484E-03	197.31	1144.7	11.317	1094.0	4.3430	289.01	1.2238E+04	7.8279E+06	7.8279E+06
x (M)	12.000	0.0000	0.0000	7.0000	10.200	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
5	3.6318E-06	5.2468E-03	186.77	1050.3	10.417	978.12	3.8768	247.34	1.1316E+04	7.8279E+06	7.8279E+06
x (M)	12.400	0.0000	0.0000	7.2000	10.600	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
6	3.9630E-06	5.1452E-03	198.80	1110.6	11.439	1062.6	4.4041	282.95	1.1771E+04	7.8279E+06	7.8279E+06
x (M)	11.800	0.0000	0.0000	7.0000	10.000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
7	2.1037E-06	5.3484E-03	121.72	1112.3	6.2368	1053.2	2.3905	272.86	1.1431E+04	7.8279E+06	7.8279E+06
x (M)	12.200	0.0000	0.0000	7.0000	10.400	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
8	1.9146E-06	5.2468E-03	115.31	1016.4	5.7420	936.19	2.0744	231.60	1.0493E+04	7.8279E+06	7.8279E+06
x (M)	12.600	0.0000	0.0000	7.4000	10.000	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
9	2.1286E-06	5.1452E-03	122.58	1079.7	6.3073	1023.0	2.4302	267.17	1.0973E+04	7.8279E+06	7.8279E+06
x (M)	12.200	0.0000	0.0000	7.0000	10.400	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
10	4.5209E-07	5.3484E-03	50.634	1112.0	1.6687	1053.8	0.6288	272.91	1.0910E+04	7.8279E+06	7.8279E+06
x (M)	12.800	0.0000	0.0000	7.0000	11.200	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
11	4.1197E-07	5.2468E-03	48.756	1016.1	1.5819	936.77	0.5314	231.64	9972.4	7.8279E+06	7.8279E+06
x (M)	13.200	0.0000	0.0000	7.4000	11.600	0.0000	14.200	2.8000	0.0000	0.0000	0.0000
12	4.5779E-07	5.1452E-03	50.889	1079.4	1.6799	1023.6	0.6431	267.22	1.0452E+04	7.8279E+06	7.8279E+06
x (M)	12.800	0.0000	0.0000	7.0000	11.200	0.0000	13.600	2.8000	0.0000	0.0000	0.0000
13	9.2841E-05	5.3484E-03	19.336	1148.8	11.548	1102.4	4.0323	291.72	1.0715E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.6000	7.0000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
14	9.2841E-05	5.2468E-03	18.109	1049.9	10.267	980.46	3.4784	247.68	9751.3	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.8000	7.2000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
15	9.2841E-05	5.1452E-03	19.509	1114.5	11.724	1070.7	4.1121	285.62	1.0242E+04	7.8279E+06	7.8279E+06
x (M)	0.0000	0.0000	5.6000	7.0000	0.0000	0.0000	2.6000	2.8000	0.0000	0.0000	0.0000
Max.	9.2841E-05	5.3484E-03	318.20	1378.2	21.146	1404.2	7.4460	420.36	1.4745E+04	7.8279E+06	7.8279E+06
Pile N.	13	1	3	1	3	1	3	1	1	1	1

***** SUMMARY FOR LOAD CASES AND COMBINATIONS *****







***** LOAD CASES RESULTS *****

LOAD CASE : 1

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
47518.6	4070.50	749.073	-120.838	7396.39	-34164.8

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.73031E-03	1.01229E-03	1.51475E-04	-1.19079E-06	9.55329E-06	-1.21372E-04

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.0982E-03	1.0015E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.3625E-03	1.0229E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2044.0	236.50	44.387	-0.4377	-133.66	500.76
Pile N.	15	11	8	1	13	11
MAXIMUM	4191.4	331.08	57.009	-0.4377	-113.24	671.99
Pile N.	1	1	13	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.0982E-03	1.0015E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.3625E-03	1.0229E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2044.0	236.50	44.387	-0.4377	-133.66	500.76
Pile N.	15	11	8	1	13	11
MAXIMUM	4191.4	331.08	57.009	-0.4377	-113.24	671.99
Pile N.	1	1	13	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-2.5103E-05	-3.9349E-06	-671.99	-133.66	-105.16	-15.583	-30.008	-4.4619	1156.7
Pile N.	5	12	1	13	1	13	1	1	15
Max.	1.0229E-03	1.5683E-04	391.02	57.450	331.11	57.016	158.16	24.991	4439.5
Pile N.	1	3	1	13	1	13	1	13	1

LOAD CASE : 2

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
46619.6	-4070.50	749.073	-159.669	7396.38	20228.4

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.67731E-03	-8.86849E-04	1.45932E-04	1.75885E-07	8.29598E-06	7.94728E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2450E-03	-8.8843E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	2.1096E-03	-8.8527E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2313.8	-325.12	44.288	0.064646	-139.73	-716.95
Pile N.	13	3	8	1	3	3
MAXIMUM	3902.2	-239.19	58.918	0.064646	-114.03	-565.27
Pile N.	3	8	3	1	8	11

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.2450E-03	-8.8843E-04	1.4514E-04	1.7588E-07	8.2960E-06	7.9473E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	2.1096E-03	-8.8527E-04	1.4672E-04	1.7588E-07	8.2960E-06	7.9473E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2313.8	-325.12	44.288	0.064646	-139.73	-716.95
Pile N.	13	3	8	1	3	3

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 407 di 420
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MAXIMUM Pile N.	3902.2 3	-239.19 8	58.918 3	0.064646 1	-114.03 8	-565.27 11
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* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-8.8843E-04	-3.7024E-06	-346.30	-139.73	-325.16	-15.648	-150.62	-4.4832	1309.3
Pile N.	1	10	3	3	3	3	3	3	13
Max.	2.2127E-05	1.4672E-04	716.95	57.618	93.656	58.925	26.721	26.016	4412.7
Pile N.	5	1	3	3	3	3	3	3	3

LOAD CASE : 3

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
43836.2	-1102.76	643.395	-38.2378	4857.11	-4178.39

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.57631E-03	-1.39467E-04	1.01002E-04	-9.93583E-08	5.69847E-06	-3.44516E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.5095E-03	-1.4036E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6431E-03	-1.3857E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	2799.7	-86.215	37.675	-0.036519	-114.61	-214.34
Pile N.	15	3	8	1	3	3
MAXIMUM	3045.1	-65.209	51.454	-0.036519	-91.259	-178.54
Pile N.	1	8	3	1	8	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.5095E-03	-1.4036E-04	1.0056E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6431E-03	-1.3857E-04	1.0145E-04	-9.9358E-08	5.6985E-06	-3.4452E-06
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	2799.7	-86.215	37.675	-0.036519	-114.61	-214.34
Pile N.	15	3	8	1	3	3
MAXIMUM	3045.1	-65.209	51.454	-0.036519	-91.259	-178.54
Pile N.	1	8	3	1	8	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-1.4057E-04	-2.8720E-06	-64.885	-114.61	-86.223	-12.244	-45.150	-3.4689	1584.3
Pile N.	14	9	3	3	3	3	3	3	15
Max.	4.1003E-06	1.0145E-04	214.34	45.551	17.551	51.459	4.9975	29.163	2424.5
Pile N.	13	3	3	3	3	3	3	3	3

LOAD CASE : 4

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *


LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
47784.4	2011.36	1017.45	-44.9961	11275.0	-25821.6

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.72173E-03	4.94479E-04	1.78686E-04	-7.21357E-07	1.26619E-05	-7.92222E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.2513E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	2.1922E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	1	1	3	1	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 408 di 420

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2325.3	115.01	59.962	-0.2651	-174.86	192.47
Pile N.	15	11	8	1	1	11
MAXIMUM	4003.3	166.62	78.881	-0.2651	-143.85	281.72
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.2513E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	2.1922E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2325.3	115.01	59.962	-0.2651	-174.86	192.47
Pile N.	15	11	8	1	1	11
MAXIMUM	4003.3	166.62	78.881	-0.2651	-143.85	281.72
Pile N.	1	1	1	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-1.3879E-05	-5.0232E-06	-281.72	-174.86	-56.808	-20.520	-15.994	-5.8244	1315.8
Pile N.	5	15	1	1	1	1	1	1	15
Max.	5.0097E-04	1.8193E-04	213.15	76.249	166.63	78.890	98.573	40.416	3266.1
Pile N.	1	3	1	1	1	1	1	1	1

LOAD CASE : 5

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
30306.0	-414.765	836.063	35.0101	8735.34	-5552.33

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.08533E-03	-2.78827E-05	1.39102E-04	-2.24724E-07	9.54307E-06	-1.13275E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	9.4847E-04	-2.9905E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2222E-03	-2.5860E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1769.0	-31.253	48.819	-0.082596	-149.68	-95.003
Pile N.	15	3	8	1	3	3
MAXIMUM	2271.8	-24.998	68.713	-0.082596	-115.84	-84.243
Pile N.	1	8	3	1	8	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	9.4847E-04	-2.9905E-05	1.3809E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.2222E-03	-2.5860E-05	1.4011E-04	-2.2472E-07	9.5431E-06	-1.1327E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1769.0	-31.253	48.819	-0.082596	-149.68	-95.003
Pile N.	15	3	8	1	3	3
MAXIMUM	2271.8	-24.998	68.713	-0.082596	-115.84	-84.243
Pile N.	1	8	3	1	8	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-3.6337E-05	-3.9575E-06	-16.213	-149.68	-31.256	-16.803	-13.484	-4.7547	1001.0
Pile N.	14	9	3	3	3	3	3	3	15

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA LOTTO CODIFICA DOCUMENTO REV. FOGLIO
IF28 01 E Z CL VI0103 001 B 409 di 420

Max. Pile N.	1.1077E-06 13	1.4011E-04 3	95.003 3	62.558 3	4.4577 3	68.717 3	1.2831 3	39.486 3	1811.4 1
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LOAD CASE : 6

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
47784.4	2011.36	1017.45	-44.9961	11275.0	-25821.6

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.72173E-03	4.94479E-04	1.78686E-04	-7.21357E-07	1.26619E-05	-7.92222E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2513E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	2.1922E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2325.3	115.01	59.962	-0.2651	-174.86	192.47
Pile N.	15	11	8	1	1	11
MAXIMUM	4003.3	166.62	78.881	-0.2651	-143.85	281.72
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.2513E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	2.1922E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9222E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2325.3	115.01	59.962	-0.2651	-174.86	192.47
Pile N.	15	11	8	1	1	11
MAXIMUM	4003.3	166.62	78.881	-0.2651	-143.85	281.72
Pile N.	1	1	1	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR z-DIR	SHEAR y-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-1.3879E-05	-5.0232E-06	-281.72	-174.86	-56.808	-20.520	-15.994	-5.8244	1315.8
Pile N.	5	15	1	1	1	1	1	1	15
Max.	5.0097E-04	1.8193E-04	213.15	76.249	166.63	78.890	98.573	40.416	3266.1
Pile N.	1	3	1	1	1	1	1	1	1

LOAD CASE : 7

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
47784.4	2011.36	1017.45	-44.9961	11275.0	-25821.8

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.72173E-03	4.94480E-04	1.78686E-04	-7.21358E-07	1.26620E-05	-7.92227E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2513E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	2.1922E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2325.3	115.01	59.962	-0.2651	-174.86	192.46
Pile N.	15	11	8	1	1	11
MAXIMUM	4003.3	166.62	78.881	-0.2651	-143.85	281.72
Pile N.	1	1	1	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
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APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 410 di 420
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MINIMUM	1.2513E-03	4.8799E-04	1.7544E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	2.1922E-03	5.0097E-04	1.8193E-04	-7.2136E-07	1.2662E-05	-7.9223E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2325.3	115.01	59.962	-0.2651	-174.86	192.46
Pile N.	15	11	8	1	1	11
MAXIMUM	4003.3	166.62	78.881	-0.2651	-143.85	281.72
Pile N.	1	1	1	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-1.3879E-05	-5.0232E-06	-281.72	-174.86	-56.808	-20.520	-15.994	-5.8244	1315.8
Pile N.	5	15	1	1	1	1	1	1	15
Max.	5.0097E-04	1.8193E-04	213.16	76.249	166.63	78.890	98.573	40.416	3266.1
Pile N.	1	3	1	1	1	1	1	1	1

LOAD CASE : 8

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
33531.5	-1274.76	678.835	-53.0488	4761.08	-185.217

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.20238E-03	-1.90749E-04	1.05595E-04	5.02353E-09	5.69224E-06	7.73075E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.1164E-03	-1.9080E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
Pile N.	13	1	3	1	1	1
MAXIMUM	1.2884E-03	-1.9070E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2077.4	-101.03	39.858	1.8464E-03	-120.49	-230.91
Pile N.	13	3	8	1	3	3
MAXIMUM	2393.5	-74.981	53.894	1.8464E-03	-96.905	-186.91
Pile N.	3	8	3	1	8	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.1164E-03	-1.9080E-04	1.0557E-04	5.0235E-09	5.6922E-06	7.7308E-06
Pile N.	13	1	3	1	1	1
MAXIMUM	1.2884E-03	-1.9070E-04	1.0562E-04	5.0235E-09	5.6922E-06	7.7308E-06
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2077.4	-101.03	39.858	1.8464E-03	-120.49	-230.91
Pile N.	13	3	8	1	3	3
MAXIMUM	2393.5	-74.981	53.894	1.8464E-03	-96.905	-186.91
Pile N.	3	8	3	1	8	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-1.9079E-04	-2.9924E-06	-86.276	-120.49	-101.03	-12.752	-56.261	-3.6134	1175.6
Pile N.	1	13	3	3	3	3	3	3	13
Max.	5.4265E-06	1.0562E-04	230.91	47.447	23.199	53.898	6.5819	30.461	2140.5
Pile N.	1	1	3	3	3	3	3	3	3

LOAD CASE : 9

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
47518.6	4070.50	749.073	-120.838	7396.39	-34164.8

APPALTATORE: Consorzio  Soci  		ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA					
PROGETTAZIONE: Mandataria  Mandanti  							
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B							COMMESSA IF28

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.73031E-03	1.01229E-03	1.51475E-04	-1.19079E-06	9.55329E-06	-1.21372E-04

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.0982E-03	1.0015E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.3625E-03	1.0229E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2044.0	236.50	44.387	-0.4377	-133.66	500.76
Pile N.	15	11	8	1	13	11
MAXIMUM	4191.4	331.08	57.009	-0.4377	-113.24	671.99
Pile N.	1	1	13	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.0982E-03	1.0015E-03	1.4612E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.3625E-03	1.0229E-03	1.5683E-04	-1.1908E-06	9.5533E-06	-1.2137E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2044.0	236.50	44.387	-0.4377	-133.66	500.76
Pile N.	15	11	8	1	13	11
MAXIMUM	4191.4	331.08	57.009	-0.4377	-113.24	671.99
Pile N.	1	1	13	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-2.5103E-05	-3.9349E-06	-671.99	-133.66	-105.16	-15.583	-30.008	-4.4619	1156.7
Pile N.	5	12	1	13	1	13	1	1	15
Max.	1.0229E-03	1.5683E-04	391.02	57.450	331.11	57.016	158.16	24.991	4439.5
Pile N.	1	3	1	13	1	13	1	13	1

LOAD CASE : 10

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
35669.8	-4070.50	749.073	-159.669	7396.38	23148.0

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.27997E-03	-9.08669E-04	1.46201E-04	1.82591E-07	8.29730E-06	8.68892E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	8.1429E-04	-9.1031E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.7457E-03	-9.0703E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1522.5	-325.58	44.296	0.067110	-139.79	-706.95
Pile N.	13	3	8	1	3	3
MAXIMUM	3233.5	-238.94	58.894	0.067110	-114.14	-554.21
Pile N.	3	8	3	1	8	11

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	8.1429E-04	-9.1031E-04	1.4538E-04	1.8259E-07	8.2973E-06	8.6889E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.7457E-03	-9.0703E-04	1.4702E-04	1.8259E-07	8.2973E-06	8.6889E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1522.5	-325.58	44.296	0.067110	-139.79	-706.95
Pile N.	13	3	8	1	3	3

APPALTATORE:

Consorzio

Soci



PROGETTAZIONE:

Mandataria

Mandanti



ITINERARIO NAPOLI – BARI

RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 412 di 420
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MAXIMUM Pile N.	3233.5 3	-238.94 8	58.894 3	0.067110 1	-114.14 8	-554.21 11
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* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-9.1031E-04	-3.7050E-06	-353.55	-139.79	-325.60	-15.658	-151.76	-4.4866	861.54
Pile N.	1	10	3	3	3	3	3	3	13
Max.	2.2591E-05	1.4702E-04	706.95	57.662	95.461	58.900	27.217	25.904	4004.7
Pile N.	5	1	3	3	3	3	3	3	3

LOAD CASE : 11

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
45962.4	-3538.07	793.088	-328.736	9100.36	17477.5

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.65347E-03	-7.45810E-04	1.52235E-04	-4.02716E-07	9.87171E-06	6.84690E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2565E-03	-7.4943E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	2.0504E-03	-7.4219E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2334.9	-281.90	46.270	-0.1480	-147.57	-613.99
Pile N.	13	15	7	1	3	15
MAXIMUM	3793.4	-207.77	63.774	-0.1480	-115.39	-483.02
Pile N.	3	5	3	1	7	5

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.2565E-03	-7.4943E-04	1.5042E-04	-4.0272E-07	9.8717E-06	6.8469E-05
Pile N.	13	13	1	1	1	1
MAXIMUM	2.0504E-03	-7.4219E-04	1.5405E-04	-4.0272E-07	9.8717E-06	6.8469E-05
Pile N.	3	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2334.9	-281.90	46.270	-0.1480	-147.57	-613.99
Pile N.	13	15	7	1	3	15
MAXIMUM	3793.4	-207.77	63.774	-0.1480	-115.39	-483.02
Pile N.	3	5	3	1	7	5

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-7.4943E-04	-3.9325E-06	-298.48	-147.57	-281.93	-16.966	-135.21	-4.8373	1321.3
Pile N.	13	5	15	3	15	3	3	3	13
Max.	1.9150E-05	1.5405E-04	613.99	62.527	80.368	63.782	22.874	29.468	4037.4
Pile N.	11	3	15	3	15	3	3	3	3

LOAD CASE : 12

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *




LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
41255.7	-414.765	836.063	35.0101	8735.34	-8471.70

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.48267E-03	-9.05201E-06	1.39360E-04	-2.20684E-07	9.54477E-06	-1.86965E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.3126E-03	-1.1038E-05	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6527E-03	-7.0659E-06	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
Pile N.	1	1	3	1	1	1

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
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* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	2438.0	-30.674	48.848	-0.081111	-150.01	-106.26
Pile N.	15	3	8	1	3	3
MAXIMUM	3062.8	-25.347	68.835	-0.081111	-116.01	-96.512
Pile N.	1	8	3	1	8	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.3126E-03	-1.1038E-05	1.3837E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.6527E-03	-7.0659E-06	1.4035E-04	-2.2068E-07	9.5448E-06	-1.8696E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	2438.0	-30.674	48.848	-0.081111	-150.01	-106.26
Pile N.	15	3	8	1	3	3
MAXIMUM	3062.8	-25.347	68.835	-0.081111	-116.01	-96.512
Pile N.	1	8	3	1	8	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-2.7323E-05	-3.9649E-06	-12.051	-150.01	-30.678	-16.838	-11.132	-4.7649	1379.6
Pile N.	14	6	15	3	3	3	3	3	15
Max.	8.3651E-07	1.4035E-04	106.26	62.673	3.3453	68.841	0.9745	39.560	2280.9
Pile N.	14	3	3	3	3	3	3	3	1

LOAD CASE : 13

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
29106.5	12866.2	78.2617	-26.1653	913.045	-50340.5

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.04645E-03	4.09155E-03	2.38208E-05	-3.51763E-07	1.00846E-06	-2.29574E-04

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	4.2936E-06	4.0884E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.0886E-03	4.0947E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	8.1543	738.52	4.5371	-0.1293	-16.158	2124.6
Pile N.	15	8	8	1	13	8
MAXIMUM	3863.6	1057.5	5.9637	-0.1293	-13.566	2793.7
Pile N.	1	1	13	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	4.2936E-06	4.0884E-03	2.2238E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.0886E-03	4.0947E-03	2.5404E-05	-3.5176E-07	1.0085E-06	-2.2957E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	8.1543	738.52	4.5371	-0.1293	-16.158	2124.6
Pile N.	15	8	8	1	13	8
MAXIMUM	3863.6	1057.5	5.9637	-0.1293	-13.566	2793.7
Pile N.	1	1	13	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-8.1891E-05	-4.7697E-07	-2793.7	-16.158	-272.59	-1.4982	-76.672	-0.4652	4.6144
Pile N.	1	15	1	13	1	13	4	15	15

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 414 di 420
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Max. Pile N.	4.0947E-03 1	2.5404E-05 3	1120.8 1	6.1390 13	1057.6 1	5.9644 13	351.70 1	1.9499 13	1.0618E+04 1
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LOAD CASE : 14

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
29053.7	-12866.2	78.2617	3.19123	913.044	33085.2

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.04238E-03	-3.92672E-03	2.35947E-05	2.20620E-07	1.0077E-06	1.85940E-04

* PILE TOP DISPLACEMENTS, GLOBAL *

DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.9658E-04	-3.9287E-03	2.2602E-05	2.2062E-07	1.0077E-06
Pile N.	13	1	3	1	1
MAXIMUM	1.8882E-03	-3.9247E-03	2.4588E-05	2.2062E-07	1.0077E-06
Pile N.	3	13	1	1	1

* PILE TOP REACTIONS, GLOBAL *

FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	373.34	-1068.3	4.5135	0.081088	-16.801
Pile N.	13	3	8	1	15
MAXIMUM	3495.4	-737.91	6.2054	0.081088	-13.450
Pile N.	3	8	15	1	8

* PILE TOP DISPLACEMENTS, LOCAL *

DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.9658E-04	-3.9287E-03	2.2602E-05	2.2062E-07	1.0077E-06
Pile N.	13	1	3	1	1
MAXIMUM	1.8882E-03	-3.9247E-03	2.4588E-05	2.2062E-07	1.0077E-06
Pile N.	3	13	1	1	1

* PILE TOP REACTIONS, LOCAL *

AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	373.34	-1068.3	4.5135	0.081088	-16.801
Pile N.	13	3	8	1	15
MAXIMUM	3495.4	-737.91	6.2054	0.081088	-13.450
Pile N.	3	8	15	1	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR z-DIR	SHEAR y-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
Min.	-3.9287E-03	-4.9077E-07	-1114.9	-16.801	-1068.4	-1.6013	-349.19	-0.4778	211.26
Pile N.	1	3	3	15	3	15	3	3	13
Max.	8.5057E-05	2.4587E-05	2874.8	6.4303	277.21	6.2061	82.352	2.0200	1.0655E+04
Pile N.	3	1	3	15	3	15	3	15	3

LOAD CASE : 15

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
29053.7	-546.402	-16247.6	-4416.18	-69027.6	-5014.02

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.04222E-03	-1.23014E-04	-5.16716E-03	-2.25864E-05	-1.06694E-04	-8.33885E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	4.4443E-05	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04
Pile N.	3	13	1	1	1
MAXIMUM	2.0400E-03	8.0263E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04
Pile N.	13	1	3	1	1

* PILE TOP REACTIONS, GLOBAL *

FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	84.404	-100.02	-1390.6	-8.3015	3025.7
Pile N.	3	15	13	1	8
MAXIMUM	3774.3	11.951	-927.31	-8.3015	4069.3
Pile N.	13	3	8	1	13

* PILE TOP DISPLACEMENTS, LOCAL *

DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
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APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 415 di 420
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MINIMUM	4.4443E-05	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
Pile N.	3	13	1	1	1	1
MAXIMUM	2.0400E-03	8.0263E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
Pile N.	13	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	84.404	-100.02	-1390.6	-8.3015	3025.7	-313.66
Pile N.	3	15	13	1	8	15
MAXIMUM	3774.3	11.951	-927.31	-8.3015	4069.3	28.044
Pile N.	13	3	8	1	13	3

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-3.2718E-04	-5.2688E-03	-89.063	-1362.2	-100.03	-1390.8	-28.479	-417.11	47.763
Pile N.	14	1	15	13	15	13	15	13	3
Max.	8.0263E-05	1.0318E-04	313.66	4069.3	21.657	323.20	7.4935	107.04	1.4453E+04
Pile N.	1	13	15	13	15	13	15	13	13

LOAD CASE : 16

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
29053.7	-546.402	16404.2	4390.26	70853.7	-5013.91

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.04234E-03	-1.23683E-04	5.24061E-03	2.25339E-05	1.08784E-04	-8.33283E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	2.5789E-05	-3.2649E-04	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
Pile N.	15	1	3	1	1	1
MAXIMUM	2.0589E-03	7.9123E-05	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
Pile N.	1	13	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	48.977	-99.671	936.16	8.2822	-4112.0	-312.98
Pile N.	15	3	8	1	1	3
MAXIMUM	3809.0	11.643	1403.8	8.2822	-3057.6	27.114
Pile N.	1	15	1	1	8	15

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	2.5789E-05	-3.2649E-04	5.1392E-03	2.2534E-05	1.0878E-04	-8.3328E-06
Pile N.	15	1	3	1	1	1
MAXIMUM	2.0589E-03	7.9123E-05	5.3420E-03	2.2534E-05	1.0878E-04	-8.3328E-06
Pile N.	1	13	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	48.977	-99.671	936.16	8.2822	-4112.0	-312.98
Pile N.	15	3	8	1	1	3
MAXIMUM	3809.0	11.643	1403.8	8.2822	-3057.6	27.114
Pile N.	1	15	1	1	8	15

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-3.2738E-04	-1.0455E-04	-88.841	-4112.0	-99.686	-326.31	-28.308	-108.40	27.716
Pile N.	2	1	3	1	3	1	3	1	15
Max.	7.9123E-05	5.3420E-03	312.98	1376.9	21.566	1404.0	7.4904	420.17	1.4601E+04
Pile N.	13	1	3	1	3	1	3	1	1

LOAD CASE : 17

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
24153.8	-4242.34	78.2617	-8.11459	907.392	7869.46

APPALTATORE: Consorzio Soci   	ITINERARIO NAPOLI – BARI RADDOPPIO TRATTA APICE – ORSARA I LOTTO FUNZIONALE APICE – HIRPINIA				
PROGETTAZIONE: Mandataria Mandanti   					
PROGETTO ESECUTIVO RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B					
COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 416 di 420

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
8.62080E-04	-8.28949E-04	1.55223E-05	6.88155E-08	9.84430E-07	4.92611E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	6.3154E-04	-8.2957E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.0926E-03	-8.2833E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1186.7	-336.38	4.6306	0.025293	-14.129	-791.59
Pile N.	13	3	8	1	15	3
MAXIMUM	2033.8	-250.71	6.0702	0.025293	-11.707	-639.75
Pile N.	3	8	15	1	8	8

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	6.3154E-04	-8.2957E-04	1.5213E-05	6.8815E-08	9.8443E-07	4.9261E-05
Pile N.	13	1	3	1	1	1
MAXIMUM	1.0926E-03	-8.2833E-04	1.5832E-05	6.8815E-08	9.8443E-07	4.9261E-05
Pile N.	3	13	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1186.7	-336.38	4.6306	0.025293	-14.129	-791.59
Pile N.	13	3	8	1	15	3
MAXIMUM	2033.8	-250.71	6.0702	0.025293	-11.707	-639.75
Pile N.	3	8	15	1	8	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-8.2957E-04	-3.9736E-07	-328.47	-14.129	-336.40	-1.6272	-150.38	-0.4657	671.54
Pile N.	1	10	3	15	3	15	3	15	13
Max.	2.0839E-05	1.5832E-05	791.59	6.0047	89.037	6.0705	25.503	2.7346	3540.3
Pile N.	5	1	3	15	3	15	3	15	3

LOAD CASE : 18

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
38206.4	4242.34	78.2617	-14.8594	923.542	-26370.8

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.37202E-03	9.70208E-04	1.58123E-05	-1.50635E-07	1.00017E-06	-9.63576E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	9.2941E-04	9.6885E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.8146E-03	9.7156E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	1733.9	249.03	4.6427	-0.055365	-13.804	571.94
Pile N.	15	8	8	1	13	11
MAXIMUM	3360.2	339.47	5.9082	-0.055365	-11.817	731.19
Pile N.	1	1	13	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	9.2941E-04	9.6885E-04	1.5134E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
Pile N.	15	13	1	1	1	1
MAXIMUM	1.8146E-03	9.7156E-04	1.6490E-05	-1.5063E-07	1.0002E-06	-9.6358E-05
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	1733.9	249.03	4.6427	-0.055365	-13.804	571.94
Pile N.	15	8	8	1	13	11

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 417 di 420
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MAXIMUM Pile N.	3360.2 1	339.47 1	5.9082 13	-0.055365 1	-11.817 8	731.19 1
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* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-2.3949E-05	-4.1233E-07	-731.19	-13.804	-101.06	-1.6112	-28.822	-0.4615	981.21
Pile N.	5	12	1	13	1	13	1	13	15
Max.	9.7156E-04	1.6490E-05	374.45	5.9383	339.50	5.9088	157.77	2.6081	4108.7
Pile N.	1	3	1	13	1	13	1	13	1

LOAD CASE : 19

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
33253.7	-546.402	16404.2	4390.26	70858.6	-6260.08

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.19918E-03	-1.10383E-04	5.24682E-03	2.25805E-05	1.10191E-04	-1.24336E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.5150E-04	-3.1361E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
Pile N.	15	1	3	1	1	1
MAXIMUM	2.2468E-03	9.2842E-05	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
Pile N.	1	13	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	287.73	-99.510	936.10	8.2993	-4111.5	-318.20
Pile N.	15	3	8	1	1	3
MAXIMUM	4063.7	11.724	1404.0	8.2993	-3056.5	22.110
Pile N.	1	15	1	1	8	15

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	1.5150E-04	-3.1361E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2434E-05
Pile N.	15	1	3	1	1	1
MAXIMUM	2.2468E-03	9.2842E-05	5.3484E-03	2.2580E-05	1.1019E-04	-1.2434E-05
Pile N.	1	13	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
*****	*****	*****	*****	*****	*****	*****
MINIMUM	287.73	-99.510	936.10	8.2993	-4111.5	-318.20
Pile N.	15	3	8	1	1	3
MAXIMUM	4063.7	11.724	1404.0	8.2993	-3056.5	22.110
Pile N.	1	15	1	1	8	15

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
Min.	-3.1553E-04	-1.0470E-04	-86.616	-4111.5	-99.526	-326.62	-27.818	-108.48	162.82
Pile N.	2	1	3	1	3	1	3	1	15
Max.	9.2842E-05	5.3484E-03	318.20	1378.2	21.146	1404.2	7.4460	420.36	1.4745E+04
Pile N.	13	1	3	1	3	1	3	1	1

LOAD CASE : 20

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
29053.7	-546.402	-16247.6	-4416.18	-69027.7	-5013.91

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.04222E-03	-1.23015E-04	-5.16716E-03	-2.25863E-05	-1.06694E-04	-8.33857E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
*****	*****	*****	*****	*****	*****	*****
MINIMUM	4.4444E-05	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
Pile N.	3	13	1	1	1	1
MAXIMUM	2.0400E-03	8.0262E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
Pile N.	13	1	3	1	1	1

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 418 di 420
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* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	84.406	-100.02	-1390.6	-8.3015	3025.7	-313.66
Pile N.	3	15	13	1	8	15
MAXIMUM	3774.3	11.951	-927.31	-8.3015	4069.3	28.044
Pile N.	13	3	8	1	13	3

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	4.4444E-05	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
Pile N.	3	13	1	1	1	1
MAXIMUM	2.0400E-03	8.0262E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3386E-06
Pile N.	13	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	84.406	-100.02	-1390.6	-8.3015	3025.7	-313.66
Pile N.	3	15	13	1	8	15
MAXIMUM	3774.3	11.951	-927.31	-8.3015	4069.3	28.044
Pile N.	13	3	8	1	13	3

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-3.2718E-04	-5.2688E-03	-89.064	-1362.2	-100.03	-1390.8	-28.479	-417.11	47.764
Pile N.	14	1	15	13	15	13	15	13	3
Max.	8.0262E-05	1.0318E-04	313.66	4069.3	21.657	323.20	7.4935	107.04	1.4453E+04
Pile N.	1	13	15	13	15	13	15	13	13

LOAD CASE : 21

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
33306.5	12866.2	78.2617	-26.1652	917.891	-51586.6

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.22179E-03	4.13247E-03	2.43364E-05	-3.53435E-07	1.16310E-06	-2.40974E-04

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.2694E-04	4.1293E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.3166E-03	4.1357E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	241.08	738.18	4.5324	-0.1299	-15.972	2111.1
Pile N.	15	8	8	1	13	8
MAXIMUM	4140.8	1058.0	5.9702	-0.1299	-13.366	2781.7
Pile N.	1	1	13	1	8	1

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.2694E-04	4.1293E-03	2.2746E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
Pile N.	15	13	1	1	1	1
MAXIMUM	2.3166E-03	4.1357E-03	2.5927E-05	-3.5343E-07	1.1631E-06	-2.4097E-04
Pile N.	1	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	241.08	738.18	4.5324	-0.1299	-15.972	2111.1
Pile N.	15	8	8	1	13	8
MAXIMUM	4140.8	1058.0	5.9702	-0.1299	-13.366	2781.7
Pile N.	1	1	13	1	8	1

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR M	DISPL. z-DIR M	MOMENT z-DIR KN- M	MOMENT y-DIR KN- M	SHEAR y-DIR KN	SHEAR z-DIR KN	SOIL REACT y-DIR KN/ M	SOIL REACT z-DIR KN/ M	TOTAL STRESS KN/ M**2
Min.	-8.2803E-05	-4.8618E-07	-2781.7	-15.972	-274.56	-1.5225	-77.021	-0.4685	136.43
Pile N.	1	15	1	13	1	13	4	15	15

APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E ZZ CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 419 di 420
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Max. Pile N.	4.1356E-03 1	2.5927E-05 3	1129.9 1	6.2489 13	1058.2 1	5.9710 13	352.80 1	1.9677 13	1.0739E+04 1
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LOAD CASE : 22

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
29053.7	-12866.2	78.2617	3.19123	913.044	33085.2

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.04238E-03	-3.92672E-03	2.35947E-05	2.20620E-07	1.00776E-06	1.85940E-04

* PILE TOP DISPLACEMENTS, GLOBAL *

DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.9658E-04	-3.9287E-03	2.2602E-05	2.2062E-07	1.0077E-06
Pile N.	13	1	3	1	1
MAXIMUM	1.8882E-03	-3.9247E-03	2.4588E-05	2.2062E-07	1.0077E-06
Pile N.	3	13	1	1	1

* PILE TOP REACTIONS, GLOBAL *

FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	373.34	-1068.3	4.5135	0.081088	-16.801
Pile N.	13	3	8	15	3
MAXIMUM	3495.4	-737.91	6.2054	0.081088	-13.450
Pile N.	3	8	15	8	8

* PILE TOP DISPLACEMENTS, LOCAL *

DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.9658E-04	-3.9287E-03	2.2602E-05	2.2062E-07	1.0077E-06
Pile N.	13	1	3	1	1
MAXIMUM	1.8882E-03	-3.9247E-03	2.4588E-05	2.2062E-07	1.0077E-06
Pile N.	3	13	1	1	1

* PILE TOP REACTIONS, LOCAL *

AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	373.34	-1068.3	4.5135	0.081088	-16.801
Pile N.	13	3	8	15	3
MAXIMUM	3495.4	-737.91	6.2054	0.081088	-13.450
Pile N.	3	8	15	8	8

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR z-DIR	SHEAR y-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
Min.	-3.9287E-03	-4.9077E-07	-1114.9	-16.801	-1068.4	-1.6013	-349.19	-0.4778	211.26
Pile N.	1	3	3	15	3	15	3	3	13
Max.	8.5057E-05	2.4587E-05	2874.8	6.4303	277.21	6.2061	82.352	2.0200	1.0655E+04
Pile N.	3	1	3	15	3	15	3	15	3

LOAD CASE : 23

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
29053.7	-546.402	-16247.6	-4416.18	-69027.6	-5014.02

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.04222E-03	-1.23014E-04	-5.16716E-03	-2.25864E-05	-1.06694E-04	-8.33885E-06

* PILE TOP DISPLACEMENTS, GLOBAL *

DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	4.4443E-05	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04
Pile N.	3	13	1	1	1
MAXIMUM	2.0400E-03	8.0263E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04
Pile N.	13	1	3	1	1

* PILE TOP REACTIONS, GLOBAL *

FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	84.404	-100.02	-1390.6	-8.3015	3025.7
Pile N.	3	15	13	1	8
MAXIMUM	3774.3	11.951	-927.31	-8.3015	4069.3
Pile N.	13	3	8	1	13

* PILE TOP DISPLACEMENTS, LOCAL *

DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
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APPALTATORE:

Consorzio

Soci



ITINERARIO NAPOLI – BARI

PROGETTAZIONE:

Mandataria

Mandanti



RADDOPPIO TRATTA APICE – ORSARA
I LOTTO FUNZIONALE APICE – HIRPINIA

PROGETTO ESECUTIVO

RELAZIONE DI CALCOLO FONDAZIONI SPALLA A E SPALLA B

COMMESSA IF28	LOTTO 01	CODIFICA E Z CL	DOCUMENTO VI0103 001	REV. B	FOGLIO 420 di 420
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MINIMUM	4.4443E-05	-3.2629E-04	-5.2688E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
Pile N.	3	13	1	1	1	1
MAXIMUM	2.0400E-03	8.0263E-05	-5.0655E-03	-2.2586E-05	-1.0669E-04	-8.3389E-06
Pile N.	13	1	3	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	84.404	-100.02	-1390.6	-8.3015	3025.7	-313.66
Pile N.	3	15	13	1	8	15
MAXIMUM	3774.3	11.951	-927.31	-8.3015	4069.3	28.044
Pile N.	13	3	8	1	13	3

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-3.2718E-04	-5.2688E-03	-89.063	-1362.2	-100.03	-1390.8	-28.479	-417.11	47.763
Pile N.	14	1	15	13	15	13	15	13	3
Max.	8.0263E-05	1.0318E-04	313.66	4069.3	21.657	323.20	7.4935	107.04	1.4453E+04
Pile N.	1	13	15	13	15	13	15	13	13

LOAD CASE : 24

* TABLE L * COMPUTATION ON PILE CAP

* EQUIVALENT CONCENTRATED LOAD AT ORIGIN *

LOAD X, KN	LOAD Y, KN	LOAD Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
33253.7	-546.402	16404.2	4390.26	70858.6	-6259.97

* DISPLACEMENT OF GROUPED PILE FOUNDATION AT ORIGIN *

DISP X, M	DISP Y, M	DISP Z, M	ROT X,RAD	ROT Y,RAD	ROT Z,RAD
1.19918E-03	-1.10384E-04	5.24682E-03	2.25805E-05	1.10191E-04	-1.24333E-05

* PILE TOP DISPLACEMENTS, GLOBAL *

	DISP. X, M	DISP. Y, M	DISP. Z, M	ROT. X,RAD	ROT. Y,RAD	ROT. Z,RAD
MINIMUM	1.5150E-04	-3.1361E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
Pile N.	15	1	3	1	1	1
MAXIMUM	2.2468E-03	9.2841E-05	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
Pile N.	1	13	1	1	1	1

* PILE TOP REACTIONS, GLOBAL *

	FOR. X, KN	FOR. Y, KN	FOR. Z, KN	MOM X, KN- M	MOM Y, KN- M	MOM Z, KN- M
MINIMUM	287.73	-99.510	936.10	8.2993	-4111.5	-318.20
Pile N.	15	3	8	1	1	3
MAXIMUM	4063.7	11.724	1404.0	8.2993	-3056.5	22.110
Pile N.	1	15	1	1	8	15

* PILE TOP DISPLACEMENTS, LOCAL *

	DISP. x, M	DISP. y, M	DISP. z, M	ROT. x,RAD	ROT. y,RAD	ROT. z,RAD
MINIMUM	1.5150E-04	-3.1361E-04	5.1452E-03	2.2580E-05	1.1019E-04	-1.2433E-05
Pile N.	15	1	3	1	1	1
MAXIMUM	2.2468E-03	9.2841E-05	5.3484E-03	2.2580E-05	1.1019E-04	-1.2433E-05
Pile N.	1	13	1	1	1	1

* PILE TOP REACTIONS, LOCAL *

	AXIAL, KN	LAT. y, KN	LAT. z, KN	MOM x, KN- M	MOM y, KN- M	MOM z, KN- M
MINIMUM	287.73	-99.510	936.10	8.2993	-4111.5	-318.20
Pile N.	15	3	8	1	1	3
MAXIMUM	4063.7	11.724	1404.0	8.2993	-3056.5	22.110
Pile N.	1	15	1	1	8	15

* EFFECTS FOR LATERALLY LOADED PILE *

PILE	DISPL. y-DIR	DISPL. z-DIR	MOMENT z-DIR	MOMENT y-DIR	SHEAR y-DIR	SHEAR z-DIR	SOIL REACT y-DIR	SOIL REACT z-DIR	TOTAL STRESS
	M	M	KN- M	KN- M	KN	KN	KN/ M	KN/ M	KN/ M**2
Min.	-3.1553E-04	-1.0470E-04	-86.616	-4111.5	-99.526	-326.62	-27.818	-108.48	162.82
Pile N.	2	1	3	1	3	1	3	1	15
Max.	9.2841E-05	5.3484E-03	318.20	1378.2	21.146	1404.2	7.4460	420.36	1.4745E+04
Pile N.	13	1	3	1	3	1	3	1	1