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**METANODOTTO**  
**INTERCONNESSIONE TAP DN 1400(56"), DP 75 bar**  
**TERMINALE SRG DI MELENDUGNO (LE)**

**POZZETTO PER VALVOLA DI REGOLAZIONE VDR1 – VDR2**  
**TERMINALE SRG DI MELENDUGNO (LE)**

**RELAZIONE DI CALCOLO STRUTTURALE**

|             |                       |                  |                   |                                  |             |
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|             |                       |                  |                   |                                  |             |
| 0           | Emissione per appalto | L.BELARDINELLI   | M.BEGINI          | H.D.AIUDI<br>F. FERRINI          | 11/08/2017  |
| <b>Rev.</b> | <b>Descrizione</b>    | <b>Elaborato</b> | <b>Verificato</b> | <b>Approvato<br/>Autorizzato</b> | <b>Data</b> |

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## 1. RELAZIONE DI CALCOLO DELLE STRUTTURE

### 1.1. Premessa

La presente relazione, redatta su incarico di Snam Rete Gas S.p.A., ha come oggetto la realizzazione di un pozzetto in c.a. per ubicazione di valvole di regolazione VDR 1 e 2, ubicato all'interno del nuovo impianto terminale di Melendugno (LE).

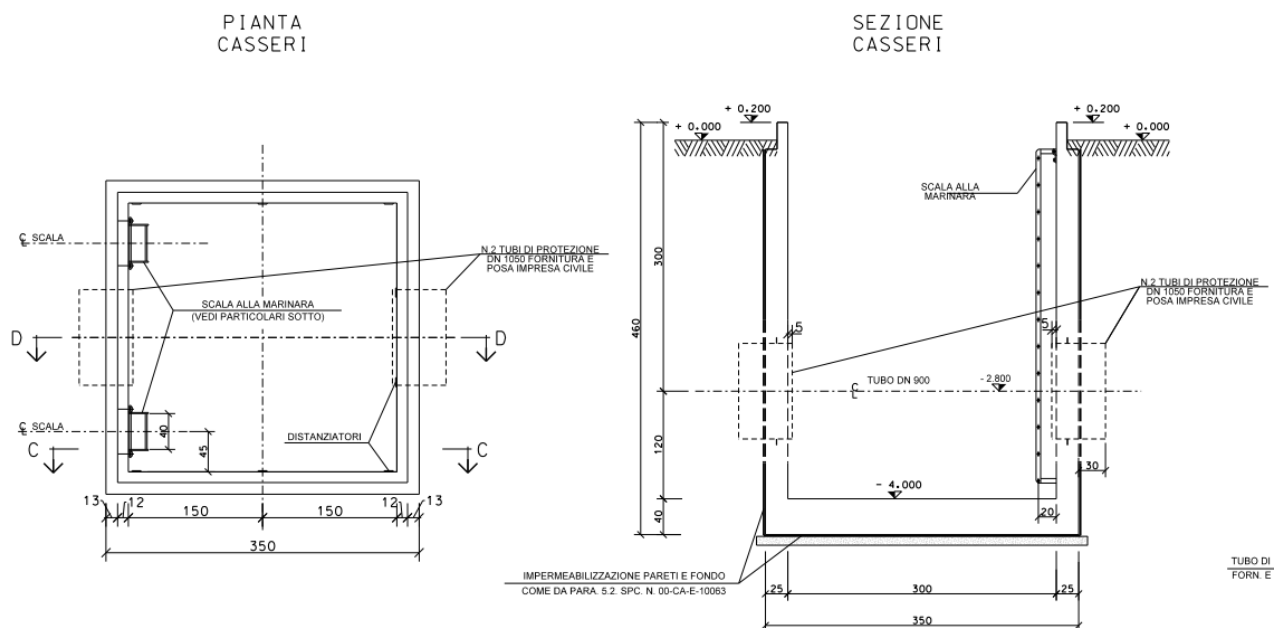
Il pozzetto in c.a. ha base quadrata di dimensioni esterne 350 x 350 cm e profondità interrata pari a - 4,00 m (quota di estradosso della platea di fondazione).

Le pareti laterali del pozzetto di spessore 25 cm emergono dal piano campagna di 20 cm.

La platea di base ha spessore di 40 cm ed è realizzata su un getto in calcestruzzo magro con spessore minimo di 10 cm.

Il pozzetto presenta 2 delle 4 pareti laterali forate per il passaggio del tubo DN900 all'interno di due manicotti costituiti da tubi di protezione in acciaio DN 1050 annegati nel getto. Per consentire l'accesso al fondo del pozzetto agli addetti alla manutenzione è previsto l'ancoraggio a parete di due scale alla marinara.

Il pozzetto presenta copertura in cupola di vetroresina.



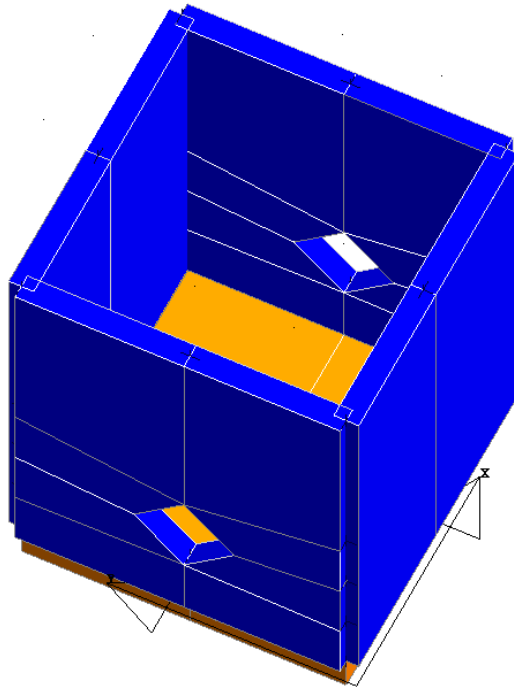
Per i dettagli si rimanda agli elaborati grafici allegati.

Di seguito un'immagine del modello di calcolo realizzato con software CDS.

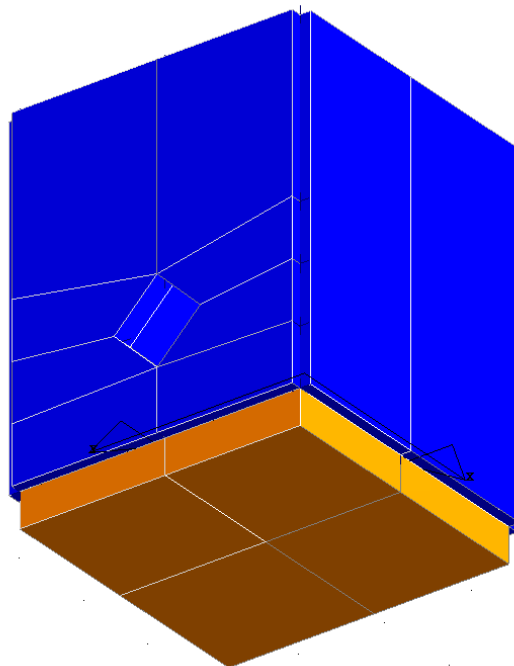
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*vista dall'alto del modello di calcolo*



*vista dal basso del modello di calcolo*



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## 1.2. Documenti di riferimento

- REL. RE-GFN-122  
POZZETTO PER VDR1 E VDR2 - RELAZIONE GEOTECNICA E SULLE FONDAZIONI
- REL. RE-MAT-102  
RELAZIONE SUI MATERIALI

### Elaborati grafici di riferimento

- DIS. CIV-106  
PLANIMETRIA FONDAZIONI
- DIS. CIV-122  
POZZETTO PER VDR1 E VDR2 - CASSERI ED ARMATURE

## 1.3. Normativa di riferimento

- Legge 5/11/1971 n.1086 – Norme per la disciplina delle opere in conglomerato cementizio armato, normale e precompresso, e a struttura metallica.
- Legge 2/02/1974 n. 64 – Provvedimenti per le costruzioni con particolari prescrizioni per le zone sismiche.
- Decreto del Presidente della Repubblica 6/06/2001 n.380 – Testo unico delle disposizioni legislative e regolamentari in materia edilizia e s.m.e i.
- Decreto Ministero delle Infrastrutture e dei Trasporti 14/01/2008 – Norme Tecniche per le Costruzioni.
- Circolare 2/02/2009 n. 617 -Istruzioni per l'applicazione delle 'Nuove norme tecniche per le costruzioni' di cui al D.M. 14/01/08.

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## 1.4. Analisi dei carichi

### Peso Proprio

Il peso proprio degli elementi strutturali è calcolato in automatico dal programma di calcolo in funzione della geometria modellata, congruente con quella prevista nei disegni di progetto. L'eventuale scostamento tra la volumetria modellata e quella effettiva di progetto è ritenuto trascurabile e comunque ampiamente coperto dal coefficiente parziale di sicurezza pari a 1,30.

### Sovraccarichi permanenti portati e variabili

Sono costituiti da:

- peso della copertura in vetroresina;
- peso della tubazione DN900 passante all'interno dei manicotti di diametro nominale DN1050;
- peso valvola di regolazione;
- spinta del terreno a tergo delle pareti.

• La copertura, costituita da una cupola in vetroresina, è sostenuta da un telaio metallico in acciaio inox incernierato lungo un lato ed ancorato direttamente alle pareti del pozzetto; sono indicati a seguire con  $P_c$  il peso totale e  $p_c$  il peso ripartito della copertura lungo il perimetro del pozzetto, comprensivo del peso dei profilati inox.

| Pc peso<br>copertura<br>kN | perimetro<br>m | peso<br>copertura<br>kN/m |
|----------------------------|----------------|---------------------------|
| 3                          | 12             | 0.25                      |

• Il peso della tubazione DN900 grava sulla parte inferiore delle 2 pareti contrapposte del pozzetto ed è valutato in funzione della lunghezza del tratto orizzontale all'interno del pozzetto più i tratti esterni di competenza, assunti pari a 4m ambo i lati del pozzetto (cautelativo).

Poiché in fase di collaudo la tubazione è riempita di acqua, se ne terrà conto nell'analisi dei carichi. Si assumono cautelativamente i seguenti carichi complessivi:

peso tubazione DN900: 950Kg/m,  
ovvero  $950\text{Kg/m} \cdot 4\text{m} = 3800\text{Kg}$ , applicato su entrambe le pareti attraversate dal tubo.

• Il peso della valvola di regolazione è stato assunto pari a quello indicato nel documento EL-MEC-106, pari a 10300Kg, applicato sulla soletta di base del pozzetto.

• La spinta del terreno sulle quattro pareti laterali è stato considerato con presenza di sovraccarico verticale rappresentativo di un automezzo di tipo pesante in transito o in stazionamento, equiparato ad un sovraccarico uniformemente distribuito, assunto cautelativamente pari a  $20\text{ kN/m}^2$ .

Si è considerato un terreno standard di riporto a tergo delle pareti, trattandosi di pozzetto realizzato su di uno scavo e successivamente riempito fino al livello 0.00 della quota impianto per l'appunto

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con materiale di riporto.

Per il terreno di riporto si assumono le seguenti caratteristiche meccaniche:

$$\gamma = 18000 \text{ N/m}^3$$

$$\varphi = 30^\circ$$

$$c' = 0$$

Si considera la condizione di spinta a riposo in quanto trattandosi di pareti rigide si ritengono trascurabili gli spostamenti delle pareti. Il coefficiente di spinta a riposo vale:

$$K_0 = 1 - \sin \varphi = 0,50$$

La spinta orizzontale del terreno alla profondità generica  $z$  rispetto al piano campagna, comprensiva dell'effetto del sovraccarico verticale, vale pertanto:

$$p_h(z) = K_0 \cdot \gamma \cdot z + K_0 \cdot q = 0,50 \cdot 18000 \text{ N/m}^3 \cdot z + 0,50 \cdot 20000 \text{ N/m}^2 = 9000 \text{ N/m}^3 \cdot z + 10000 \text{ N/m}^2$$

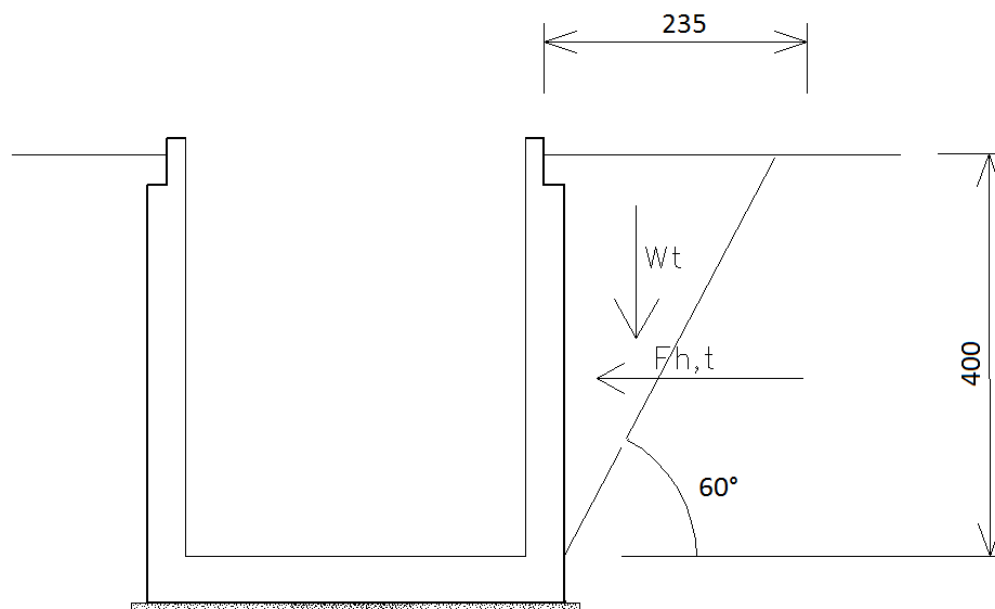
Per  $z=0$  si ha:

$$p_h(z=0\text{m}) = 10000 \text{ N/m}^2$$

$$p_h(z=4,00\text{m}) = 46000 \text{ N/m}^2$$

Si considera anche l'incremento sismico della spinta del terreno, con approccio pseudo-statico. Tale incremento è pari alla forza di inerzia del cuneo di spinta del terreno a tergo del muro di sostegno, applicato a metà altezza del muro stesso, trattandosi di muri che non subiscono spostamenti relativi significativi rispetto al terreno ( $\beta_m = 1$ ).

Si fa riferimento allo schema seguente per il calcolo dell'incremento sismico spinta terreno (misure in centimetri).



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La componente orizzontale di forza di inerzia sismica del volume di spinta a tergo del muro vale:

$$F_{h,t} = W_t \cdot K_h$$

Con:

$$K_h = \beta_m \cdot (a_{max} / g)$$

$$a_{max} = S_S \cdot S_T \cdot a_g$$

Nel caso in questione si ha:

$$W_t = (2,35m \cdot 4,00m / 2) \cdot 18000N/m^3 = 84600 N$$

$$a_{max} = 1,20 \cdot 1,00 \cdot 0,091 \cdot g = 0,109 \cdot g$$

$$K_h = 1 \cdot (0,109 \cdot g / g) = 0,109$$

—————  
 Pertanto:  $F_{h,t} = 84600 N \cdot 0,109 = 9221 N$

Ovvero, la pressione esercitata sulla parete verticale vale:

$$p_h(z) = 9221 N / 4,00 m = 2306 N/m^2$$

#### Azione del vento

L'azione del vento non è stata presa in considerazione in quanto trattasi di struttura interrata su cui il vento non produce effetti.

#### Azione della neve

Il carico della neve agisce sulla copertura del pozzetto.

Il carico di neve al suolo  $q_{sk}$  è valutato in conformità al DM 14-01-08 con la seguente espressione:

$$q_s = \mu_i \cdot q_{sk} \cdot C_e \cdot C_t$$

con  $q_{sk}$  valore caratteristico di riferimento del carico di neve al suolo per un periodo di ritorno di 50 anni dipendente dalla zona climatica del sito in oggetto e dall'altitudine  $a_s$  sul livello del mare:

-Zona I Alpina:  $q_{sk}=1.50$  kN/mq per  $a_s \leq 200$  m s.l.m.

$$q_{sk}=1.39 (1+(a_s/728)^2) \text{ kN/mq per } a_s > 200 \text{ m s.l.m.};$$

-Zona I Mediterranea:  $q_{sk}=1.50$  kN/mq per  $a_s \leq 200$  m s.l.m.;

$$q_{sk}=1.35 (1+(a_s/602)^2) \text{ kN/mq per } a_s > 200 \text{ m s.l.m.};$$

-Zona II:  $q_{sk}=1.00$  kN/mq per  $a_s \leq 200$  m s.l.m.;

$$q_{sk}=0.85 (1+(a_s/481)^2) \text{ kN/mq per } a_s > 200 \text{ m s.l.m.};$$

-Zona III:  $q_{sk}=0.60$  kN/mq per  $a_s \leq 200$  m s.l.m.;



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$q_{sk} = 0.51(1 + (a_s/481)^2)$  kN/mq per  $a_s > 200$  m s.l.m.;

$\mu_i$  coefficiente di forma dipendente dall'angolo  $\alpha$  di inclinazione della superficie esposta rispetto all'orizzontale:

- se la neve non risulta impedita di scivolare  $0^\circ \leq \alpha \leq 30^\circ$   $\mu_i = 0.8$ , per  $30^\circ < \alpha < 60^\circ$   $\mu_i = 0.8(60\alpha)/30$ , per  $\alpha > 60^\circ$   $\mu_i = 0$ ;

- se l'estremità della superficie termina con un parapetto o altra ostruzione  $\mu_i = 0.8$  indipendentemente dal valore dell'angolo  $\alpha$ ;

$C_e$  coefficiente di esposizione valutato in funzione delle diverse classi di topografia:

- per area "battuta dai venti"  $C_e = 0.9$ ;

- per area "normale"  $C_e = 1.0$ ;

- per area "riparata"  $C_e = 1.1$ ;

$C_t$  coefficiente termico che si pone pari a 1.

L'altitudine  $a_s$  del sito in esame è pari a 5 m s.l.m e la zona climatica di appartenenza è la Zona III; il carico della neve corrispondente ai parametri reali del sito risulta  $q_{sk} = 0,60$  kN/mq per  $a_s < 200$  m s.l.m.;

E' stato considerato il carico della neve agente sulla copertura delle cappe di insonorizzazione il cui angolo di inclinazione è  $\alpha = 0^\circ$ .

Calcolo del carico della neve:  $q_s = \mu_i \cdot q_{sk} \cdot C_e \cdot C_t = 0,8 \cdot 0,60 \cdot 1 \cdot 1 = 0,48$  kN/m<sup>2</sup>

L'area su cui agisce il carico neve è pari alla dimensione in pianta della copertura, ovvero  $3,50\text{m} \times 3,50\text{m} = 12,25$  m<sup>2</sup>, pertanto il carico unitario lineare sulle pareti vale:  
 $0,48$  kN/m<sup>2</sup>  $\cdot 12,25$  m<sup>2</sup> / (4 + 4 + 3,50 + 3,50) = 0,40 kN/m

### Azione del sisma

Il calcolo dell'azione sismica di progetto è effettuato, in conformità al DM 14/01/2008, dal programma di calcolo.

Per il dettaglio sui carichi, sulle modalità e combinazioni di carico, si rimanda alla relazione di calcolo in appendice.

## 2. APPENDICE

Nella presente appendice è contenuto l'output del programma di calcolo CDS.

### Nota sulle verifiche degli elementi strutturali presenti nel modello (piastre, pareti, travi, pilastri)

Nelle pagine seguenti sono riportati i quantitativi minimi di armatura richiesti dal programma di calcolo. Per questioni pratiche legate ad esigenze costruttive, potrà accadere che detti quantitativi non corrispondano esattamente a quanto riportato negli elaborati grafici di progetto. In ogni caso, i quantitativi prescritti negli elaborati grafici risulteranno sempre non inferiori a quelli minimi ottenuti dai calcoli di verifica.

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## RELAZIONE DI CALCOLO

Sono illustrati con la presente i risultati dei calcoli che riguardano il progetto delle armature, la verifica delle tensioni di lavoro dei materiali e del terreno.

### • **NORMATIVA DI RIFERIMENTO**

I calcoli sono condotti nel pieno rispetto della normativa vigente e, in particolare, la normativa cui viene fatto riferimento nelle fasi di calcolo, verifica e progettazione è costituita dalle *Norme Tecniche per le Costruzioni*, emanate con il D.M. 14/01/2008 pubblicato nel suppl. 30 G.U. 29 del 4/02/2008, nonché la Circolare del Ministero Infrastrutture e Trasporti del 2 Febbraio 2009, n. 617 "Istruzioni per l'applicazione delle nuove norme tecniche per le costruzioni".

### • **METODI DI CALCOLO**

I metodi di calcolo adottati per il calcolo sono i seguenti:

- 1) Per i carichi statici: *METODO DELLE DEFORMAZIONI*;
- 2) Per i carichi sismici: metodo dell'*ANALISI MODALE* o dell'*ANALISI SISMICA STATICA EQUIVALENTE*.

Per lo svolgimento del calcolo si è accettata l'ipotesi che, in corrispondenza dei piani sismici, i solai siano infinitamente rigidi nel loro piano e che le masse ai fini del calcolo delle forze di piano siano concentrate alle loro quote.

### • **CALCOLO SPOSTAMENTI E CARATTERISTICHE**

Il calcolo degli spostamenti e delle caratteristiche viene effettuato con il metodo degli elementi finiti (**F.E.M.**).

Possano essere inseriti due tipi di elementi:

- 1) Elemento monodimensionale asta (*beam*) che unisce due nodi aventi ciascuno 6 gradi di libertà. Per maggiore precisione di calcolo, viene tenuta in conto anche la deformabilità a taglio e quella assiale di questi elementi. Queste aste, inoltre, non sono considerate flessibili da nodo a nodo ma hanno sulla parte iniziale e finale due tratti infinitamente rigidi formati dalla parte di trave inglobata nello spessore del pilastro; questi tratti rigidi forniscono al nodo una dimensione reale.
- 2) L'elemento bidimensionale shell (*quad*) che unisce quattro nodi nello spazio. Il suo comportamento è duplice, funziona da lastra per i carichi agenti sul suo piano, da piastra per i carichi ortogonali.

Assemblate tutte le matrici di rigidezza degli elementi in quella della struttura spaziale, la risoluzione del sistema viene perseguita tramite il *metodo di Cholesky*.

Ai fini della risoluzione della struttura, gli spostamenti X e Y e le rotazioni attorno l'asse verticale Z di tutti i nodi che giacciono su di un impalcato dichiarato rigido sono mutuamente vincolati.

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|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
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- **RELAZIONE SUI MATERIALI**

Le caratteristiche meccaniche dei materiali sono descritti nei tabulati riportati nel seguito per ciascuna tipologia di materiale utilizzato.

- **ANALISI SISMICA DINAMICA A MASSE CONCENTRATE**

L'analisi sismica dinamica è stata svolta con il metodo dell'analisi modale; la ricerca dei modi e delle relative frequenze è stata perseguita con il metodo delle "iterazioni nel sottospazio".

I modi di vibrazione considerati sono in numero tale da assicurare l'eccitazione di più dell'85% della massa totale della struttura.

Per ciascuna direzione di ingresso del sisma si sono valutate le forze modali che vengono applicate su ciascun nodo spaziale (tre forze, in direzione X, Y e Z, e tre momenti).

Per la verifica della struttura si è fatto riferimento all'analisi modale, pertanto sono prima calcolate le sollecitazioni e gli spostamenti modali e poi viene calcolato il loro valore efficace.

I valori stampati nei tabulati finali allegati sono proprio i suddetti valori efficaci e pertanto l'equilibrio ai nodi perde di significato. I valori delle sollecitazioni sismiche sono combinate linearmente (in somma e in differenza) con quelle per carichi statici per ottenere le sollecitazioni per sisma nelle due direzioni di calcolo.

Gli angoli delle direzioni di ingresso dei sismi sono valutati rispetto all'asse X del sistema di riferimento globale.

- **VERIFICHE**

Le verifiche, svolte secondo il metodo degli stati limite ultimi e di esercizio, si ottengono involupando tutte le condizioni di carico prese in considerazione.

In fase di verifica è stato differenziato l'elemento trave dall'elemento pilastro. Nell'elemento trave le armature sono disposte in modo asimmetrico, mentre nei pilastri sono sempre disposte simmetricamente.

Per l'elemento trave, l'armatura si determina suddividendola in cinque conci in cui l'armatura si mantiene costante, valutando per tali conci le massime aree di armatura superiore ed inferiore richieste in base ai momenti massimi riscontrati nelle varie combinazioni di carico esaminate. Lo stesso criterio è stato adottato per il calcolo delle staffe.

Anche l'elemento pilastro viene scomposto in cinque conci in cui l'armatura si mantiene costante. Vengono però riportate le armature massime richieste nella metà superiore (testa) e inferiore (piede).

La fondazione su travi rovesce è risolta contemporaneamente alla sovrastruttura tenendo in conto sia la rigidità flettente che quella torcente, utilizzando per l'analisi agli elementi finiti l'elemento asta su suolo elastico alla *Winkler*.

Le travate possono incrociarsi con angoli qualsiasi e avere dei disassamenti rispetto ai pilastri su cui si appoggiano.

La ripartizione dei carichi, data la natura matriciale del calcolo, tiene automaticamente conto della rigidità relativa delle varie travate convergenti su ogni nodo.

|  |  |                                    |                                     |
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Le verifiche per gli elementi bidimensionali (setti) vengono effettuate sovrapponendo lo stato tensionale del comportamento a lastra e di quello a piastra. Vengono calcolate le armature delle due facce dell'elemento bidimensionale disponendo i ferri in due direzioni ortogonali.

- **DIMENSIONAMENTO MINIMO DELLE ARMATURE.**

Per il calcolo delle armature sono stati rispettati i minimi di legge di seguito riportati:

TRAVI:

Area minima delle staffe pari a  $1.5 \cdot b$  mmq/ml, essendo b lo spessore minimo dell'anima misurato in mm, con passo non maggiore di 0,8 dell'altezza utile e con un minimo di 3 staffe al metro. In prossimità degli appoggi o di carichi concentrati per una lunghezza pari all'altezza utile della sezione, il passo minimo sarà 12 volte il diametro minimo dell'armatura longitudinale.

Armatura longitudinale in zona tesa  $\geq 0,15\%$  della sezione di calcestruzzo. Alle estremità è disposta una armatura inferiore minima che possa assorbire, allo stato limite ultimo, uno sforzo di trazione uguale al taglio.

In zona sismica, nelle zone critiche il passo staffe è non superiore al minimo di:

- un quarto dell'altezza utile della sezione trasversale;
- 175 mm e 225 mm, rispettivamente per CDA e CDB;
- 6 volte e 8 volte il diametro minimo delle barre longitudinali considerate ai fini delle verifiche, rispettivamente per CDA e CDB;
- 24 volte il diametro delle armature trasversali.

Le zone critiche si estendono, per CDB e CDA, per una lunghezza pari rispettivamente a 1 e 1,5 volte l'altezza della sezione della trave, misurata a partire dalla faccia del nodo trave-pilastro. Nelle zone critiche della trave il rapporto fra l'armatura compressa e quella tesa è maggiore o uguale a 0,5.

PILASTRI:

Armatura longitudinale compresa fra 0,3% e 4% della sezione effettiva e non minore di  $0,10 \cdot N_{ed}/f_{yd}$ ;

Barre longitudinali con diametro  $\geq 12$  mm;

Diametro staffe  $\geq 6$  mm e comunque  $\geq 1/4$  del diametro max delle barre longitudinali, con interasse non maggiore di 30 cm.

In zona sismica l'armatura longitudinale è almeno pari all'1% della sezione effettiva; il passo delle staffe di contenimento è non superiore alla più piccola delle quantità seguenti:

- 1/3 e 1/2 del lato minore della sezione trasversale, rispettivamente per CDA e CDB;
- 125 mm e 175 mm, rispettivamente per CDA e CDB;
- 6 e 8 volte il diametro delle barre longitudinali che collegano, rispettivamente per CDA e CDB.

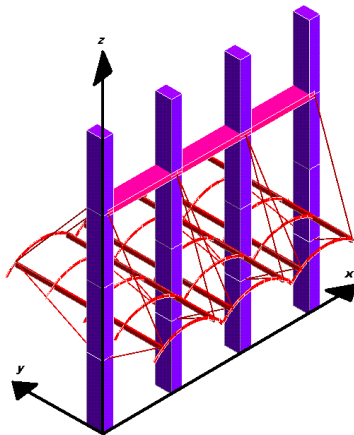
|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
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- SISTEMI DI RIFERIMENTO**

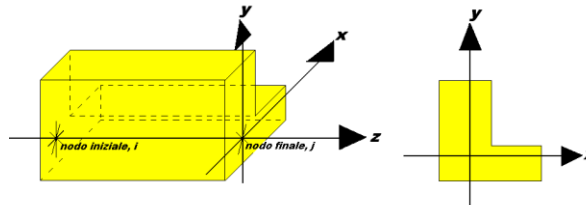
*1) SISTEMA GLOBALE DELLA STRUTTURA SPAZIALE*

Il sistema di riferimento globale è costituito da una terna destra di assi cartesiani ortogonali (O-XYZ) dove l'asse Z rappresenta l'asse verticale rivolto verso l'alto. Le rotazioni sono considerate positive se concordi con gli assi vettori:



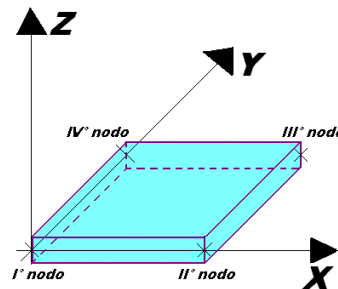
*2) SISTEMA LOCALE DELLE ASTE*

Il sistema di riferimento locale delle aste, inclinate o meno, è costituito da una terna destra di assi cartesiani ortogonali che ha l'asse Z coincidente con l'asse longitudinale dell'asta ed orientamento dal nodo iniziale al nodo finale, gli assi X ed Y sono orientati come nell'archivio delle sezioni:



*3) SISTEMA LOCALE DELL'ELEMENTO SHELL*

Il sistema di riferimento locale dell'elemento shell è costituito da una terna destra di assi cartesiani ortogonali che ha l'asse X coincidente con la direzione fra il primo ed il secondo nodo di input, l'asse Y giacente nel piano dello shell e l'asse Z in direzione dello spessore:



|  |  |                                    |                                     |
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|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
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- UNITÀ DI MISURA**

Si adottano le seguenti unità di misura:

|               |             |
|---------------|-------------|
| [lunghezze]   | = m         |
| [forze]       | = kgf / daN |
| [tempo]       | = sec       |
| [temperatura] | = °C        |

- CONVENZIONI SUI SEGNI**

I carichi agenti sono:

- 1) Carichi e momenti distribuiti lungo gli assi coordinati;
- 2) Forze e coppie nodali concentrate sui nodi.

Le forze distribuite sono da ritenersi positive se concordi con il sistema di riferimento locale dell'asta, quelle concentrate sono positive se concordi con il sistema di riferimento globale.

I gradi di libertà nodali sono gli omologhi agli enti forza, e quindi sono definiti positivi se concordi a questi ultimi.

|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
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|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
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- SPECIFICHE CAMPI TABELLA DI STAMPA**

Si riporta di seguito la spiegazione delle sigle usate nella tabella di stampa dell'archivio materiali.

|                             |   |
|-----------------------------|---|
| <b>Materiale N.ro</b>       | : Numero identificativo del materiale in esame                                      |
| <b>Densità</b>              | : Peso specifico del materiale  |
| <b>E<sub>x</sub> * 1E3</b>  | : Modulo elastico in direzione x moltiplicato per 10 al cubo                        |
| <b>Ni.x</b>                 | : Coefficiente di Poisson in direzione x  |
| <b>Alfa.x</b>               | : Coefficiente di dilatazione termica in direzione x                                |
| <b>E<sub>y</sub> * 1E3</b>  | : Modulo elastico in direzione y moltiplicato per 10 al cubo                        |
| <b>Ni.y</b>                 | : Coefficiente di Poisson in direzione y  |
| <b>Alfa.y</b>               | : Coefficiente di dilatazione termica in direzione y                                |
| <b>E<sub>11</sub> * 1E3</b> | : Elemento della matrice elastica moltiplicato per 10 al cubo, 1a riga - 1a colonna |
| <b>E<sub>12</sub> * 1E3</b> | : Elemento della matrice elastica moltiplicato per 10 al cubo, 1a riga - 2a colonna |
| <b>E<sub>13</sub> * 1E3</b> | : Elemento della matrice elastica moltiplicato per 10 al cubo, 1a riga - 3a colonna |
| <b>E<sub>22</sub> * 1E3</b> | : Elemento della matrice elastica moltiplicato per 10 al cubo, 2a riga - 2a colonna |
| <b>E<sub>23</sub> * 1E3</b> | : Elemento della matrice elastica moltiplicato per 10 al cubo, 2a riga - 3a colonna |
| <b>E<sub>33</sub> * 1E3</b> | : Elemento della matrice elastica moltiplicato per 10 al cubo, 3a riga - 3a colonna |

|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
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• **SPECIFICHE CAMPI TABELLA DI STAMPA**

Si riporta appresso la spiegazione delle sigle usate nelle tabelle riassuntive dei criteri di progetto per le aste in elevazione, per quelle di fondazione, per i pilastri e per i setti.

|                     |  |
|---------------------|--|
| <b>Crit.N.ro</b>    | : Numero indicativo del criterio di progetto   |
| <b>Elem.</b>        | : Tipo di elemento strutturale   |
| <b>%Rig.Tors.</b>   | : Percentuale di rigidità torsionale   |
| <b>Mod. E</b>       | : Modulo di elasticità normale   |
| <b>Poisson</b>      | : Coefficiente di Poisson  |
| <b>Sgmc</b>         | : Tensione massima di esercizio del calcestruzzo   |
| <b>tauc0</b>        | : Tensione tangenziale minima  |
| <b>tauc1</b>        | : Tensione tangenziale massima   |
| <b>Sgmf</b>         | : Tensione massima di esercizio dell'acciaio   |
| <b>Om.</b>          | : Coefficiente di omogeneizzazione   |
| <b>Gamma</b>        | : Peso specifico del materiale   |
| <b>Coprstaffa</b>   | : Distanza tra il lembo esterno della staffa ed il lembo esterno della sezione in calcestruzzo   |
| <b>Fi min.</b>      | : Diametro minimo utilizzabile per le armature longitudinali   |
| <b>Fi st.</b>       | : Diametro delle staffe  |
| <b>Lar. st.</b>     | : Larghezza massima delle staffe   |
| <b>Psc</b>          | : Passo di scansione per i diagrammi delle caratteristiche   |
| <b>Pos.pol.</b>     | : Numero di posizioni delle armature per la verifica di sezioni poligonali   |
| <b>D arm.</b>       | : Passo di incremento dell'armatura per la verifica di sezioni poligonali  |
| <b>Iteraz.</b>      | : Numero massimo di iterazioni per la verifica di sezioni poligonali   |
| <b>Def. Tag.</b>    | : Deformabilità a taglio (si, no)  |
| <b>%Scorr.Staf.</b> | : Percentuale di scorrimento da far assorbire alle staffe  |
| <b>P.max staffe</b> | : Passo massimo delle staffe   |
| <b>P.min.staffe</b> | : Passo minimo delle staffe  |
| <b>tMt min.</b>     | : Tensione di torsione minima al di sotto del quale non si arma a torsione   |
| <b>Ferri parete</b> | : Presenza di ferri di parete a taglio   |
| <b>Ecc.lim.</b>     | : Eccentricità M/N limite oltre la quale la verifica viene effettuata a flessione pura   |
| <b>Tipo ver.</b>    | : Tipo di verifica (0 = solo Mx; 1 = Mx e My separate; 2 = deviata)  |
| <b>Fl.rett.</b>     | : Flessione retta forzata per sezioni dissimmetriche ma simmetrizzabili (0 = no; 1 = si)   |
| <b>Den.X pos.</b>   | : Denominatore della quantità $q \cdot l \cdot l$ per determinare il momento Mx minimo per la copertura del diagramma positivo   |
| <b>Den.X neg.</b>   | : Denominatore della quantità $q \cdot l \cdot l$ per determinare il momento Mx minimo per la copertura del diagramma negativo   |
| <b>Den.Y pos.</b>   | : Denominatore della quantità $q \cdot l \cdot l$ per determinare il momento My minimo per la copertura del diagramma positivo   |
| <b>Den.Y neg.</b>   | : Denominatore della quantità $q \cdot l \cdot l$ per determinare il momento My minimo per la copertura del diagramma negativo   |
| <b>%Mag.car.</b>    | : Percentuale di maggiorazione dei carichi statici della prima combinazione di carico  |
| <b>Linear.</b>      | : Coefficiente descrittivo del comportamento dell'asta:<br>1 = comportamento lineare sia a trazione che a compressione<br>2 = comportamento non lineare sia a trazione che a compressione.<br>3 = comportamento lineare solo a trazione.<br>4 = comportamento non lineare solo a trazione.<br>5 = comportamento lineare solo a compressione. |



|   |  |                             |                              |
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|                     |   |
|---------------------|---|
|                     | <i>6 = comportamento non lineare solo a compressione.</i>   |
| <b>Appesi</b>       | : <i>Flag di disposizione del carico sull'asta (1 = appeso, cioè applicato all'intradosso; 0 = non appeso, cioè applicato all'estradosso)</i> |
| <b>Min. T/sigma</b> | : <i>Verifica minimo T/sigma (1 = si; 0 = no)</i>   |
| <b>Verif.Alette</b> | : <i>Verifica alette travi di fondazione (1 = si; 0 = no)</i>   |
| <b>Kwinkl.</b>      | : <i>Costante di sottofondo del terreno</i>   |

Si riporta appresso la spiegazione delle sigle usate nelle tabelle riassuntive dei criteri di progetto per le verifiche agli stati limite.

|                      |  |
|----------------------|--|
| <b>Cri.Nro</b>       | : <i>Numero identificativo del criterio di progetto</i>  |
| <b>Tipo Elem.</b>    | : <i>Tipo di elemento: trave di elevazione, trave di fondazione, pilastro, setto, setto elastico ("SHela")</i>   |
| <b>fck</b>           | : <i>Resistenza caratteristica del calcestruzzo</i>  |
| <b>fcd</b>           | : <i>Resistenza di calcolo del calcestruzzo</i>  |
| <b>rcd</b>           | : <i>Resistenza di calcolo a flessione del calcestruzzo (massimo del diagramma parabola rettangolo)</i>  |
| <b>fyk</b>           | : <i>Resistenza caratteristica dell'acciaio</i>  |
| <b>fyd</b>           | : <i>Resistenza di calcolo dell'acciaio</i>  |
| <b>Ey</b>            | : <i>Modulo elastico dell'acciaio</i>  |
| <b>ec0</b>           | : <i>Deformazione limite del calcestruzzo in campo elastico</i>  |
| <b>ecu</b>           | : <i>Deformazione ultima del calcestruzzo</i>  |
| <b>eyu</b>           | : <i>Deformazione ultima dell'acciaio</i>  |
| <b>Ac/At</b>         | : <i>Rapporto dell'incremento fra l'armatura compressa e quella tesa</i>   |
| <b>Mt/Mtu</b>        | : <i>Rapporto fra il momento torcente di calcolo e il momento torcente resistente ultimo del calcestruzzo al di sotto del quale non si arma a torsione</i> |
| <b>Wra</b>           | : <i>Ampiezza limite della fessura per combinazioni rare</i>   |
| <b>Wfr</b>           | : <i>Ampiezza limite della fessura per combinazioni frequenti</i>  |
| <b>Wpe</b>           | : <i>Ampiezza limite della fessura per combinazioni permanenti</i>   |
| $\sigma$ <b>Rara</b> | : <i>Sigma massima del calcestruzzo per combinazioni rare</i>  |
| $\sigma$ <b>Perm</b> | : <i>Sigma massima del calcestruzzo per combinazioni permanenti</i>  |
| $\sigma$ <b>Rara</b> | : <i>Sigma massima dell'acciaio per combinazioni rare</i>  |
| <b>SpRar</b>         | : <i>Rapporto fra la lunghezza dell'elemento e lo spostamento massimo per combinazioni rare</i>  |
| <b>SpPer</b>         | : <i>Rapporto fra la lunghezza dell'elemento e lo spostamento massimo per combinazioni permanenti</i>  |
| <b>Coef.Visc.:</b>   | : <i>Coefficiente di viscosità</i>   |

- SPECIFICHE CAMPI TABELLA DI STAMPA**

Si riporta appresso la spiegazione delle sigle usate nella tabella coordinate nodi.

|                |  |
|----------------|--|
| <b>Nodo3d</b>  | : <i>Numero del nodo spaziale</i>                                  |
| <b>Coord.X</b> | : <i>Coordinata X del punto nel sistema di riferimento globale</i> |
| <b>Coord.Y</b> | : <i>Coordinata Y del punto nel sistema di riferimento globale</i> |

|  |  |                                    |                                     |
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- Coord.Z** : *Coordinata Z del punto nel sistema di riferimento globale*
- Filo** : *Numero del filo per individuare le travate in c.a.*
- Piano Sism.** : *Numero del piano rigido di appartenenza del nodo*
- Peso** : *Peso sismico del nodo; ogni canale di carico è stato moltiplicato per il proprio coefficiente di riduzione del sovraccarico*

- **SPECIFICHE CAMPI TABELLA DI STAMPA**

Si riporta appresso la spiegazione delle sigle usate nella tabella dati di shell spaziale.

- Shell** : *Numero dello shell spaziale*
- Filo 1** : *Numero del filo del primo nodo*
- Filo 2** : *Numero del filo del secondo nodo*
- Filo 3** : *Numero del filo del terzo nodo*
- Filo 4** : *Numero del filo del quarto nodo*
- Quota 1** : *Quota del primo nodo*
- Quota 2** : *Quota del secondo nodo*
- Quota 3** : *Quota del terzo nodo*
- Quota 4** : *Quota del quarto nodo*
- Nod3d 1** : *Numero del primo nodo*
- Nod3d 2** : *Numero del secondo nodo*
- Nod3d 3** : *Numero del terzo nodo*
- Nod3d 4** : *Numero del quarto nodo*
- Sez. N.ro** : *Numero in archivio della sezione*
- Spess** : *Spessore dello shell*
- Kwinkl** : *Costante di Winkler del terreno se l'elemento è di fondazione; 0 se è di elevazione*
- Tipo Mat.** : *Numero dell'archivio per il tipo di materiale*
- Mesh X** : *Numero di suddivisioni del macro elemento sull'asse X locale*
- Mesh Y** : *Numero di suddivisioni del macro elemento sull'asse Y locale*

|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 19 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

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- SPECIFICHE CAMPI TABELLA DI STAMPA**

Si riporta appresso la spiegazione delle sigle usate nella tabella vincoli nodali esterni:

- **Nodo3d** : Numero del nodo spaziale
- **Codice** : Codice esplicito per la determinazione del vincolo:

**I** = incastro  
**C** = cerniera completa  
**W** = *Winkler*  
**E** = esplicito  
**P** = plinto  
**U** = Vincolo unilatero

- **Tx** : Rigidezza traslante in direzione X sul sistema di riferimento locale del vincolo (-1 spostamento impedito)
- **Ty** : Rigidezza traslante in direzione Y sul sistema di riferimento locale del vincolo (-1 spostamento impedito)
- **Tz** : Rigidezza traslante in direzione Z sul sistema di riferimento locale del vincolo (-1 spostamento impedito)
- **Rx** : Rigidezza rotazionale in direzione X sul sistema di riferimento locale del vincolo (-1 spostamento impedito)
- **Ry** : Rigidezza rotazionale in direzione Y sul sistema di riferimento locale del vincolo (-1 spostamento impedito)
- **Rz** : Rigidezza rotazionale in direzione Z sul sistema di riferimento locale del vincolo (-1 spostamento impedito)

### SCOSTAMENTO PER I VINCOLI ELASTICI

- **Tr. X** : Scostamento in direzione X globale del sistema di riferimento locale del vincolo
- **Tr. Y** : Scostamento in direzione Y globale del sistema di riferimento locale del vincolo
- **Tr. Z** : Scostamento in direzione Z globale del sistema di riferimento locale del vincolo
- **Azim** : Angolo formato fra la proiezione dell'asse Z locale sul piano XY e l'asse X globale (azimut)
- **CoZe** : Angolo formato fra l'asse Z locale e l'asse Z globale (complemento allo zenit)
- **Ass.** : Rotazione attorno dell'asse Z locale del sistema di riferimento locale

### ATTRIBUTO DI VERSO PER I VINCOLI UNILATERI

- **Tr. X** : Attributo sul verso dello spostamento impedito dal vincolo unilatero lungo la direzione X
- **Tr. Y** : Attributo sul verso dello spostamento impedito dal vincolo unilatero lungo la direzione Y
- **Tr. Z** : Attributo sul verso dello spostamento impedito dal vincolo unilatero lungo la direzione Z
- **Rot.X** : Attributo sul verso della rotazione impedita dal vincolo unilatero lungo l'asse vettore X
- **Rot.Y** : Attributo sul verso della rotazione impedita dal vincolo unilatero lungo l'asse vettore Y
- **Rot.Z** : Attributo sul verso della rotazione impedita dal vincolo unilatero lungo l'asse vettore Z

Gli attributi sul verso degli spostamenti e delle rotazioni possono assumere i seguenti valori:

**1** = Impedisce gli spostamenti sia positivi che negativi  
**3** = Impedisce solo gli spostamenti positivi  
**5** = Impedisce solo gli spostamenti negativi

|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 20 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

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- **SPECIFICHE CAMPI TABELLA DI STAMPA**

Si riporta di seguito la spiegazione delle sigle usate nella tabella di stampa della composizione degli elementi bidimensionali e la numerazione dei vertici dei microelementi in cui questi vengono suddivisi.

**Macro N.ro** :  
**Col.1/2/3/4/5/6** :  
**Micro N.ro** :  
**Macro N.ro** :  
**Vert.1** :  
**Vert.2** :  
**Vert.3** : *Numero del terzo vertice del microelemento*  
**Vert.4** : *Numero del quarto vertice del microelemento*

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 21 di 71                | <b>Rev.</b><br><b>0</b>      |

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| ARCHIVIO MATERIALI PIASTRE: MATRICE ELASTICA |               |              |      |               |              |      |               |               |               |               |               |               |               |
|--|---------------|--------------|------|---------------|--------------|------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Materiale N.ro                               | Densita' N/mc | Ex*1E3 N/mmq | Ni.x | Alfa.x (*1E5) | Ey*1E3 N/mmq | Ni.y | Alfa.y (*1E5) | E11*1E3 N/mmq | E12*1E3 N/mmq | E13*1E3 N/mmq | E22*1E3 N/mmq | E23*1E3 N/mmq | E33*1E3 N/mmq |
| 1  | 25000         | 32.8         | 0.20 | 1.00          | 32.8         | 0.20 | 1.00          | 34.2          | 6.8           | 0.0           | 34.2          | 0.0           | 13.7          |

| CRITERI DI PROGETTO |       |                               |              |            |                |               |          |            |               |               |             |                       |            |        |       |         |       |         |
|---------------------|-------|-------------------------------|--------------|------------|----------------|---------------|----------|------------|---------------|---------------|-------------|-----------------------|------------|--------|-------|---------|-------|---------|
| IDENTIF.            |       | CARATTERISTICHE DEL MATERIALE |              |            |                |               |          |            | DURABILITA'   |               |             | CARATTER. COSTRUTTIVE |            |        |       | FLAG    |       |         |
| Crit N.ro           | Elem. | % Rig Tors.                   | % Rig Fless. | Classe CLS | Classe Acciaio | Mod. El N/mmq | Pois son | Gamma N/mc | Tipo Ambiente | Tipo Armatura | Toll. Copr. | Copr. staf            | Copr. ferr | Fi min | Fi st | Lun sta | Li n. | App esi |
| 1                   | ELEV. | 60                            | 100          | C30/37     | B450C          | 32836.5       | 0.33     | 25000      | ORDIN. X0     | POCO SENS.    | 0.00        | 3.0                   | 4.7        | 14     | 10    | 60      | 0     | 0       |
| 3                   | PILAS | 60                            | 100          | C30/37     | B450C          | 32836.5       | 0.33     | 25000      | ORDIN. X0     | POCO SENS.    | 0.00        | 3.0                   | 4.7        | 14     | 10    | 50      | 1     |         |

| CRITERI PER IL CALCOLO AGLI STATI LIMITE ULTIMI E DI ESERCIZIO |           |       |       |       |       |       |       |          |      |      |      |        |         |        |        |        |           |           |           |         |         |         |         |      |
|--|-----------|-------|-------|-------|-------|-------|-------|----------|------|------|------|--------|---------|--------|--------|--------|-----------|-----------|-----------|---------|---------|---------|---------|------|
| Cri Nro  | Tipo Elem | fck   | fcd   | rcd   | fyk   | ftk   | fyd   | Ey       | ec0  | ecu  | eyu  | At/ Ac | Mt/ Mtu | Wra mm | Wfr mm | Wpe mm | ccRar --- | ccPer --- | ccRar --- | Spo Rar | Spo Fre | Spo Per | Coe Vis | euk  |
| 1  | ELEV.     | 30.00 | 17.00 | 17.00 | 450.0 | 450.0 | 391.3 | 210000.0 | 0.20 | 0.35 | 1.00 | 50     | 10      | 0.4    | 0.3    | 18.00  | 13.50     | 360.0     |           |         |         |         | 2.0     | 0.08 |
| 3  | PILAS     | 30.00 | 17.00 | 17.00 | 450.0 | 450.0 | 391.3 | 210000.0 | 0.20 | 0.35 | 1.00 | 50     | 10      | 0.4    | 0.3    | 18.00  | 13.50     | 360.0     |           |         |         |         | 2.0     | 0.08 |

| MATERIALI SHELL IN C.A. |         |            |                 |              |          |            |               |               |             |            |              |  |
|-------------------------|---------|------------|-----------------|--------------|----------|------------|---------------|---------------|-------------|------------|--------------|--|
| IDENT                   |         | %          | CARATTERISTICHE |              |          |            |               | DURABILITA'   |             |            | COPRIFERRO   |  |
| Mat. N.ro               | Rig Fls | Classe CLS | Classe Acciaio  | Mod. E N/mmq | Pois-son | Gamma N/mc | Tipo Ambiente | Tipo Armatura | Toll. Copr. | Setti (cm) | Piastre (cm) |  |
| 1                       | 100     | C30/37     | B450C           | 32836.5      | 0.20     | 25000      | AGGR. CX4     | POCO SENS.    | 0.00        | 3.5        | 3.5          |  |

| MATERIALI SHELL IN C.A.  |           |       |       |       |       |       |       |          |      |      |      |        |         |        |        |        |           |           |           |         |         |         |         |     |
|--|-----------|-------|-------|-------|-------|-------|-------|----------|------|------|------|--------|---------|--------|--------|--------|-----------|-----------|-----------|---------|---------|---------|---------|-----|
| CRITERI PER IL CALCOLO AGLI STATI LIMITE ULTIMI E DI ESERCIZIO |           |       |       |       |       |       |       |          |      |      |      |        |         |        |        |        |           |           |           |         |         |         |         |     |
| Cri Nro  | Tipo Elem | fck   | fcd   | rcd   | fyk   | ftk   | fyd   | Ey       | ec0  | ecu  | eyu  | At/ Ac | Mt/ Mtu | Wra mm | Wfr mm | Wpe mm | ccRar --- | ccPer --- | ccRar --- | Spo Rar | Spo Fre | Spo Per | Coe Vis | euk |
| 1  | SETTI     | 30.00 | 17.00 | 17.00 | 450.0 | 450.0 | 391.3 | 210000.0 | 0.20 | 0.35 | 1.00 | 50     |         |        | 0.3    | 0.2    | 18.00     | 13.50     | 360.0     |         |         |         |         |     |

| CRITERI DI PROGETTO GEOTECNICI - FONDAZIONI SUPERFICIALI E SU PALI |                  |               |  |           |                  |               |  |           |                  |               |  |
|--|------------------|---------------|--|-----------|------------------|---------------|--|-----------|------------------|---------------|--|
| IDEN   | COSTANTE WINKLER |               |  | IDEN      | COSTANTE WINKLER |               |  | IDEN      | COSTANTE WINKLER |               |  |
| Crit N.ro  | KwVert N/cmc     | KwOriz. N/cmc |  | Crit N.ro | KwVert N/cmc     | KwOriz. N/cmc |  | Crit N.ro | KwVert N/cmc     | KwOriz. N/cmc |  |
| 1  | 150.0            | 15.0          |  | 2         | 100.0            | 0.0           |  | 3         | 40.0             | 0.0           |  |

| DATI GENERALI DI STRUTTURA                |           |                            |          |
|---|-----------|----------------------------|----------|
| Massima dimens. dir. X (m)                | 3.50      | Altezza edificio (m)       | 2.70     |
| Massima dimens. dir. Y (m)                | 3.50      | Differenza temperatura(°C) | 15       |
| PARAMETRI SISMICI                         |           |                            |          |
| Vita Nominale (Anni)                      | 100       | Classe d' Uso              | QUARTA   |
| Longitudine Est (Grd)                     | 9.39123   | Latitudine Nord (Grd)      | 45.51364 |
| Categoria Suolo                           | C         | Coeff. Condiz. Topogr.     | 1.00000  |
| Sistema Costruttivo Dir.1                 | Utente    | Sistema Costruttivo Dir.2  | Utente   |
| Regolarita' in Altezza                    | SI (KR=1) | Regolarita' in Pianta      | SI       |
| Direzione Sisma (Grd)                     | 0         | Sisma Verticale            | ASSENTE  |
| Effetti P/Delta                           | NO        | Quota di Zero Sismico (m)  | 0.00000  |
| PARAMETRI SPETTRO ELASTICO - SISMA S.L.D. |           |                            |          |
| Probabilita' Pvr                          | 0.63      | Periodo di Ritorno Anni    | 201.00   |
| Accelerazione Ag/g                        | 0.05      | Periodo Tc (sec.)          | 0.26     |
| Fo  | 2.56      | Fv                         | 0.77     |
| Fattore Stratigrafia'Ss'                  | 1.50      | Periodo TB (sec.)          | 0.14     |
| Periodo TC (sec.)                         | 0.43      | Periodo TD (sec.)          | 1.80     |
| PARAMETRI SPETTRO ELASTICO - SISMA S.L.V. |           |                            |          |
| Probabilita' Pvr                          | 0.10      | Periodo di Ritorno Anni    | 1898.00  |
| Accelerazione Ag/g                        | 0.10      | Periodo Tc (sec.)          | 0.30     |
| Fo  | 2.62      | Fv                         | 1.13     |
| Fattore Stratigrafia'Ss'                  | 1.50      | Periodo TB (sec.)          | 0.16     |
| Periodo TC (sec.)                         | 0.47      | Periodo TD (sec.)          | 2.01     |
| PARAMETRI SPETTRO ELASTICO - SISMA S.L.C. |           |                            |          |
| Probabilita' Pvr                          | 0.05      | Periodo di Ritorno Anni    | 2475.00  |
| Accelerazione Ag/g                        | 0.11      | Periodo Tc (sec.)          | 0.31     |
| Fo  | 2.62      | Fv                         | 1.19     |
| Fattore Stratigrafia'Ss'                  | 1.50      | Periodo TB (sec.)          | 0.16     |
| Periodo TC (sec.)                         | 0.47      | Periodo TD (sec.)          | 2.05     |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 22 di 71                | <b>Rev.</b><br><b>0</b>      |

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|  |      |                             |      |
|--|------|-----------------------------|------|
| PARAMETRI SISTEMA COSTRUTTIVO ESPLICITO - D I R. 1 |      |                             |      |
| Fattore di struttura 'q'                           | 1.00 |                             |      |
| PARAMETRI SISTEMA COSTRUTTIVO ESPLICITO - D I R. 2 |      |                             |      |
| Fattore di struttura 'q'                           | 1.00 |                             |      |
| COEFFICIENTI DI SICUREZZA PARZIALI DEI MATERIALI   |      |                             |      |
| Acciaio per CLS armato                             | 1.15 | Calcestruzzo CLS armato     | 1.50 |
| Legno per comb. eccez.                             | 1.00 | Legno per comb. fondament.: | 1.30 |
| Livello conoscenza                                 | LC2  |                             |      |
| FRP Collasso Tipo 'A'                              | 1.10 | FRP Delaminazione Tipo 'A'  | 1.20 |
| FRP Collasso Tipo 'B'                              | 1.25 | FRP Delaminazione Tipo 'B'  | 1.50 |
| FRP Resist. Press/Fless                            | 1.00 | FRP Resist. Taglio/Torsione | 1.20 |
| FRP Resist. Confinamento                           | 1.10 |                             |      |

**ATTRIBUTI TAMPONATURE SU PIANI SISMICI**

| IDENTIFICATIVI |           | ATTRIBUTI      |               |
|----------------|-----------|----------------|---------------|
| Piano N.ro     | Quota (m) | Irregol Pianta | Piano Soffice |
| 1              | 2.70      | NO             | NO            |

**COORDINATE DEI NODI**

| IDENT.<br>Nodo3d<br>N.ro | POSIZIONE NODO |                |                | ATTRIBUTI    |                |              |
|--------------------------|----------------|----------------|----------------|--------------|----------------|--------------|
|                          | Coord.X<br>(m) | Coord.Y<br>(m) | Coord.Z<br>(m) | Filo<br>N.ro | Piano<br>Sism. | Peso<br>(kN) |
| 1                        | 0.00           | 0.00           | 0.00           | 1            | 0              | 0.0          |
| 2                        | 0.13           | 0.00           | 0.00           | 2            | 0              | 0.0          |
| 3                        | 0.00           | 0.13           | 0.00           | 5            | 0              | 0.0          |
| 4                        | 0.13           | 0.13           | 0.00           | 6            | 0              | 0.0          |
| 5                        | 1.69           | 0.13           | 0.00           | 18           | 0              | 0.0          |
| 6                        | 1.69           | 0.00           | 0.00           | 17           | 0              | 0.0          |
| 7                        | 3.38           | 0.13           | 0.00           | 7            | 0              | 0.0          |
| 8                        | 3.38           | 0.00           | 0.00           | 3            | 0              | 0.0          |
| 9                        | 3.50           | 0.13           | 0.00           | 8            | 0              | 0.0          |
| 10                       | 3.50           | 0.00           | 0.00           | 4            | 0              | 0.0          |
| 11                       | 3.38           | 1.69           | 0.00           | 24           | 0              | 0.0          |
| 12                       | 3.50           | 1.69           | 0.00           | 25           | 0              | 0.0          |
| 13                       | 1.69           | 1.69           | 0.00           | 23           | 0              | 0.0          |
| 14                       | 0.13           | 1.69           | 0.00           | 22           | 0              | 0.0          |
| 15                       | 0.00           | 1.69           | 0.00           | 21           | 0              | 0.0          |
| 16                       | 0.00           | 3.38           | 0.00           | 9            | 0              | 0.0          |
| 17                       | 0.13           | 3.38           | 0.00           | 10           | 0              | 0.0          |
| 18                       | 1.69           | 3.38           | 0.00           | 19           | 0              | 0.0          |
| 19                       | 3.38           | 3.38           | 0.00           | 11           | 0              | 0.0          |
| 20                       | 3.50           | 3.38           | 0.00           | 12           | 0              | 0.0          |
| 21                       | 3.50           | 3.50           | 0.00           | 16           | 0              | 0.0          |
| 22                       | 3.38           | 3.50           | 0.00           | 15           | 0              | 0.0          |
| 23                       | 1.69           | 3.50           | 0.00           | 20           | 0              | 0.0          |
| 24                       | 0.13           | 3.50           | 0.00           | 14           | 0              | 0.0          |
| 25                       | 0.00           | 3.50           | 0.00           | 13           | 0              | 0.0          |
| 26                       | 0.13           | 3.38           | 2.70           | 10           | 1              | 5.4          |
| 27                       | 0.13           | 1.69           | 2.70           | 22           | 1              | 5.4          |
| 28                       | 0.13           | 0.13           | 2.70           | 6            | 1              | 5.2          |
| 29                       | 1.69           | 0.13           | 2.70           | 18           | 1              | 5.4          |
| 30                       | 3.38           | 0.13           | 2.70           | 7            | 1              | 5.4          |
| 31                       | 3.38           | 1.69           | 2.70           | 24           | 1              | 5.4          |
| 32                       | 3.38           | 3.38           | 2.70           | 11           | 1              | 5.6          |
| 33                       | 1.69           | 3.38           | 2.70           | 19           | 1              | 5.4          |
| 34                       | 3.38           | 1.69           | 0.90           | 24           | 0              | 0.0          |
| 35                       | 0.13           | 1.69           | 0.90           | 22           | 0              | 0.0          |

**DATI SHELL SPAZIALI**

| IDENTIFICAZIONE |        |        |        |        |            |            |            |            |         |         |         |         | CARATTERISTICHE SEZIONE |            |              |           | SUDDIVIS. |       |
|-----------------|--------|--------|--------|--------|------------|------------|------------|------------|---------|---------|---------|---------|-------------------------|------------|--------------|-----------|-----------|-------|
| Shell N.ro      | Filo 1 | Filo 2 | Filo 3 | Filo 4 | Quota1 (m) | Quota2 (m) | Quota3 (m) | Quota4 (m) | Nod3d 1 | Nod3d 2 | Nod3d 3 | Nod3d 4 | Sez. N.ro               | Spess (cm) | Kwinkl N/cmc | Tipo Mat. | MeshX     | MeshY |
| 1               | 1      | 2      | 6      | 5      | 0.00       | 0.00       | 0.00       | 0.00       | 1       | 2       | 4       | 3       | 1                       | 40.0       | 100.0        | 1         | 1         | 1     |
| 2               | 6      | 2      | 17     | 18     | 0.00       | 0.00       | 0.00       | 0.00       | 4       | 2       | 6       | 5       | 1                       | 40.0       | 100.0        | 1         | 1         | 1     |
| 3               | 18     | 17     | 3      | 7      | 0.00       | 0.00       | 0.00       | 0.00       | 5       | 6       | 8       | 7       | 1                       | 40.0       | 100.0        | 1         | 1         | 1     |
| 4               | 7      | 3      | 4      | 8      | 0.00       | 0.00       | 0.00       | 0.00       | 7       | 8       | 10      | 9       | 1                       | 40.0       | 100.0        | 1         | 1         | 1     |
| 5               | 7      | 8      | 25     | 24     | 0.00       | 0.00       | 0.00       | 0.00       | 7       | 9       | 12      | 11      | 1                       | 40.0       | 100.0        | 1         | 1         | 1     |
| 6               | 7      | 24     | 23     | 18     | 0.00       | 0.00       | 0.00       | 0.00       | 7       | 11      | 13      | 5       | 1                       | 40.0       | 100.0        | 1         | 1         | 1     |
| 7               | 18     | 23     | 22     | 6      | 0.00       | 0.00       | 0.00       | 0.00       | 5       | 13      | 14      | 4       | 1                       | 40.0       | 100.0        | 1         | 1         | 1     |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               | Fg. 23 di 71                | <b>Rev.</b><br><b>0</b>      |

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| DATI SHELL SPAZIALI |        |        |        |        |            |            |            |            |         |         |         |                         |           |            |              |           |       |       |
|---------------------|--------|--------|--------|--------|------------|------------|------------|------------|---------|---------|---------|-------------------------|-----------|------------|--------------|-----------|-------|-------|
| IDENTIFICAZIONE     |        |        |        |        |            |            |            |            |         |         |         | CARATTERISTICHE SEZIONE |           |            |              | SUDDIVIS. |       |       |
| Shell N.ro          | Filo 1 | Filo 2 | Filo 3 | Filo 4 | Quota1 (m) | Quota2 (m) | Quota3 (m) | Quota4 (m) | Nod3d 1 | Nod3d 2 | Nod3d 3 | Nod3d 4                 | Sez. N.ro | Spess (cm) | Kwinkl N/cmc | Tipo Mat. | MeshX | MeshY |
| 8                   | 6      | 22     | 21     | 5      | 0.00       | 0.00       | 0.00       | 0.00       | 4       | 14      | 15      | 3                       | 1         | 40.0       | 100.0        | 1         | 1     | 1     |
| 9                   | 21     | 22     | 10     | 9      | 0.00       | 0.00       | 0.00       | 0.00       | 15      | 14      | 17      | 16                      | 1         | 40.0       | 100.0        | 1         | 1     | 1     |
| 10                  | 22     | 23     | 19     | 10     | 0.00       | 0.00       | 0.00       | 0.00       | 14      | 13      | 18      | 17                      | 1         | 40.0       | 100.0        | 1         | 1     | 1     |
| 11                  | 19     | 23     | 24     | 11     | 0.00       | 0.00       | 0.00       | 0.00       | 18      | 13      | 11      | 19                      | 1         | 40.0       | 100.0        | 1         | 1     | 1     |
| 12                  | 24     | 25     | 12     | 11     | 0.00       | 0.00       | 0.00       | 0.00       | 11      | 12      | 20      | 19                      | 1         | 40.0       | 100.0        | 1         | 1     | 1     |
| 13                  | 12     | 16     | 15     | 11     | 0.00       | 0.00       | 0.00       | 0.00       | 20      | 21      | 22      | 19                      | 1         | 40.0       | 100.0        | 1         | 1     | 1     |
| 14                  | 11     | 15     | 20     | 19     | 0.00       | 0.00       | 0.00       | 0.00       | 19      | 22      | 23      | 18                      | 1         | 40.0       | 100.0        | 1         | 1     | 1     |
| 15                  | 19     | 20     | 14     | 10     | 0.00       | 0.00       | 0.00       | 0.00       | 18      | 23      | 24      | 17                      | 1         | 40.0       | 100.0        | 1         | 1     | 1     |
| 16                  | 10     | 14     | 13     | 9      | 0.00       | 0.00       | 0.00       | 0.00       | 17      | 24      | 25      | 16                      | 1         | 40.0       | 100.0        | 1         | 1     | 1     |
| 17                  | 10     | 22     | 22     | 10     | 0.00       | 0.00       | 2.70       | 2.70       | 17      | 14      | 27      | 26                      | 2         | 25.0       | 0.0          | 1         | 1     | 3     |
| 18                  | 6      | 18     | 18     | 6      | 0.00       | 0.00       | 2.70       | 2.70       | 4       | 5       | 29      | 28                      | 2         | 25.0       | 0.0          | 1         | 1     | 3     |
| 19                  | 7      | 24     | 24     | 7      | 0.00       | 0.00       | 2.70       | 2.70       | 7       | 11      | 31      | 30                      | 2         | 25.0       | 0.0          | 1         | 1     | 3     |
| 20                  | 11     | 19     | 19     | 11     | 0.00       | 0.00       | 2.70       | 2.70       | 19      | 18      | 33      | 32                      | 2         | 25.0       | 0.0          | 1         | 1     | 3     |
| 21                  | 18     | 7      | 7      | 18     | 0.00       | 0.00       | 2.70       | 2.70       | 5       | 7       | 30      | 29                      | 2         | 25.0       | 0.0          | 1         | 1     | 3     |
| 22                  | 19     | 10     | 10     | 19     | 0.00       | 0.00       | 2.70       | 2.70       | 18      | 17      | 26      | 33                      | 2         | 25.0       | 0.0          | 1         | 1     | 3     |
| 23                  | 22     | 6      | 6      | 22     | 0.00       | 0.00       | 2.70       | 2.70       | 14      | 4       | 28      | 27                      | 2         | 25.0       | 0.0          | 1         | 1     | 3     |
| 24                  | 24     | 11     | 11     | 24     | 0.00       | 0.00       | 2.70       | 2.70       | 11      | 19      | 32      | 31                      | 2         | 25.0       | 0.0          | 1         | 1     | 3     |

| VINCOLI E CEDIMENTI NODALI |        |                     |         |         |                       |         |         |             |         |         |          |          |                             |      |      |      |      |      |      |
|----------------------------|--------|---------------------|---------|---------|-----------------------|---------|---------|-------------|---------|---------|----------|----------|-----------------------------|------|------|------|------|------|------|
| IDENTIFIC.                 |        | RIGIDENZE TRASLANTI |         |         | RIGIDENZE ROTAZIONALI |         |         | SCOSTAMENTI |         |         |          |          | VERSO SPOSTAMENTI UNILATERI |      |      |      |      |      |      |
| Nodo3d N.ro                | Codice | Tx kN/m             | Ty kN/m | Tz kN/m | Rx kN*m               | Ry kN*m | Rz kN*m | Tr.X cm     | Tr.Y cm | Tr.Z cm | Azim Grd | CoZe Grd | Ass. Grd                    | Tr.X | Tr.Y | Tr.Z | RotX | RotY | RotZ |
| 1                          | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 2                          | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 3                          | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 4                          | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 5                          | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 6                          | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 7                          | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 8                          | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 9                          | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 10                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 11                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 12                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 13                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 14                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 15                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 16                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 17                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 18                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 19                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 20                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 21                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 22                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 23                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 24                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 25                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 34                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |
| 35                         | W      | -10                 | -10     | 0       | 0                     | 0       | -10     | 0           | 0       | 0       | 0        | 0        | 0                           |      |      |      |      |      |      |

| CARICHI TERMICI/DISTRIBUITI/CONCENTRATI |                   |         |         |                      |         |         |
|---|-------------------|---------|---------|----------------------|---------|---------|
| CONDIZIONE DI CARICO N.ro: 2            |                   |         |         | ALIQUOTA SISMICA:100 |         |         |
| IDENTI                                  | FORZE CONCENTRATE |         |         | MOMENTI CONCENTRATI  |         |         |
| Nodo3d N.ro                             | Fx (kN)           | Fy (kN) | Fz (kN) | Mx kN*m              | My kN*m | Mz kN*m |
| 34                                      | 0.000             | 0.000   | -3.500  | 0.000                | 0.000   | 0.000   |
| 35                                      | 0.000             | 0.000   | -3.500  | 0.000                | 0.000   | 0.000   |

| CARICHI SUGLI SHELL          |             |           |           |           |                       |           |           |           |           |
|------------------------------|-------------|-----------|-----------|-----------|-----------------------|-----------|-----------|-----------|-----------|
| CONDIZIONE DI CARICO N.ro: 2 |             |           |           |           | ALIQUOTA SISMICA: 100 |           |           |           |           |
| IDENT.                       | PRESSIONI   |           |           |           | CARICHI PERIMETRALI   |           |           |           |           |
| Shell N.ro                   | Riferimento | P.a kN/mq | P.b kN/mq | P.c kN/mq | P.d kN/mq             | Q.ab kN/m | Q.bc kN/m | Q.cd kN/m | Q.da kN/m |
| 17                           | 1           | 0.0       | 0.0       | 0.0       | 0.0                   | 0.0       | 0.0       | -0.5      | 0.0       |
| 18                           | 1           | 0.0       | 0.0       | 0.0       | 0.0                   | 0.0       | 0.0       | -0.5      | 0.0       |
| 19                           | 1           | 0.0       | 0.0       | 0.0       | 0.0                   | 0.0       | 0.0       | -0.5      | 0.0       |
| 20                           | 1           | 0.0       | 0.0       | 0.0       | 0.0                   | 0.0       | 0.0       | -0.5      | 0.0       |
| 21                           | 1           | 0.0       | 0.0       | 0.0       | 0.0                   | 0.0       | 0.0       | -0.5      | 0.0       |
| 22                           | 1           | 0.0       | 0.0       | 0.0       | 0.0                   | 0.0       | 0.0       | -0.5      | 0.0       |
| 23                           | 1           | 0.0       | 0.0       | 0.0       | 0.0                   | 0.0       | 0.0       | -0.5      | 0.0       |
| 24                           | 1           | 0.0       | 0.0       | 0.0       | 0.0                   | 0.0       | 0.0       | -0.5      | 0.0       |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               | Fg. 24 di 71                | <b>Rev.</b><br>0             |

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| CARICHI SUGLI SHELL          |             |           |           |           |           |                       |           |           |           |
|------------------------------|-------------|-----------|-----------|-----------|-----------|-----------------------|-----------|-----------|-----------|
| CONDIZIONE DI CARICO N.ro: 3 |             |           |           |           |           | ALIQUOTA SISMICA: 100 |           |           |           |
| IDENT.                       |             | PRESSIONI |           |           |           | CARICHI PERIMETRALI   |           |           |           |
| Shell N.ro                   | Riferimento | P.a kN/mq | P.b kN/mq | P.c kN/mq | P.d kN/mq | Q.ab kN/m             | Q.bc kN/m | Q.cd kN/m | Q.da kN/m |
| 17                           | 1           | -33.8     | -33.8     | -10.0     | -10.0     | 0.0                   | 0.0       | 0.0       | 0.0       |
| 18                           | 1           | -33.8     | -33.8     | -10.0     | -10.0     | 0.0                   | 0.0       | 0.0       | 0.0       |
| 19                           | 1           | -33.8     | -33.8     | -10.0     | -10.0     | 0.0                   | 0.0       | 0.0       | 0.0       |
| 20                           | 1           | -33.8     | -33.8     | -10.0     | -10.0     | 0.0                   | 0.0       | 0.0       | 0.0       |
| 21                           | 1           | -33.8     | -33.8     | -10.0     | -10.0     | 0.0                   | 0.0       | 0.0       | 0.0       |
| 22                           | 1           | -33.8     | -33.8     | -10.0     | -10.0     | 0.0                   | 0.0       | 0.0       | 0.0       |
| 23                           | 1           | -33.8     | -33.8     | -10.0     | -10.0     | 0.0                   | 0.0       | 0.0       | 0.0       |
| 24                           | 1           | -33.8     | -33.8     | -10.0     | -10.0     | 0.0                   | 0.0       | 0.0       | 0.0       |

| CARICHI SUGLI SHELL          |             |           |           |           |           |                       |           |           |           |
|------------------------------|-------------|-----------|-----------|-----------|-----------|-----------------------|-----------|-----------|-----------|
| CONDIZIONE DI CARICO N.ro: 4 |             |           |           |           |           | ALIQUOTA SISMICA: 100 |           |           |           |
| IDENT.                       |             | PRESSIONI |           |           |           | CARICHI PERIMETRALI   |           |           |           |
| Shell N.ro                   | Riferimento | P.a kN/mq | P.b kN/mq | P.c kN/mq | P.d kN/mq | Q.ab kN/m             | Q.bc kN/m | Q.cd kN/m | Q.da kN/m |
| 17                           | 1           | -2.5      | -2.5      | -2.5      | -2.5      | 0.0                   | 0.0       | 0.0       | 0.0       |
| 18                           | 1           | -2.5      | -2.5      | -2.5      | -2.5      | 0.0                   | 0.0       | 0.0       | 0.0       |
| 19                           | 1           | -2.5      | -2.5      | -2.5      | -2.5      | 0.0                   | 0.0       | 0.0       | 0.0       |
| 20                           | 1           | -2.5      | -2.5      | -2.5      | -2.5      | 0.0                   | 0.0       | 0.0       | 0.0       |
| 21                           | 1           | -2.5      | -2.5      | -2.5      | -2.5      | 0.0                   | 0.0       | 0.0       | 0.0       |
| 22                           | 1           | -2.5      | -2.5      | -2.5      | -2.5      | 0.0                   | 0.0       | 0.0       | 0.0       |
| 23                           | 1           | -2.5      | -2.5      | -2.5      | -2.5      | 0.0                   | 0.0       | 0.0       | 0.0       |
| 24                           | 1           | -2.5      | -2.5      | -2.5      | -2.5      | 0.0                   | 0.0       | 0.0       | 0.0       |

| CARICHI SUGLI SHELL          |             |           |           |           |           |                     |           |           |           |
|------------------------------|-------------|-----------|-----------|-----------|-----------|---------------------|-----------|-----------|-----------|
| CONDIZIONE DI CARICO N.ro: 5 |             |           |           |           |           | ALIQUOTA SISMICA: 0 |           |           |           |
| IDENT.                       |             | PRESSIONI |           |           |           | CARICHI PERIMETRALI |           |           |           |
| Shell N.ro                   | Riferimento | P.a kN/mq | P.b kN/mq | P.c kN/mq | P.d kN/mq | Q.ab kN/m           | Q.bc kN/m | Q.cd kN/m | Q.da kN/m |
| 17                           | 1           | 0.0       | 0.0       | 0.0       | 0.0       | 0.0                 | 0.0       | -0.4      | 0.0       |
| 18                           | 1           | 0.0       | 0.0       | 0.0       | 0.0       | 0.0                 | 0.0       | -0.4      | 0.0       |
| 19                           | 1           | 0.0       | 0.0       | 0.0       | 0.0       | 0.0                 | 0.0       | -0.4      | 0.0       |
| 20                           | 1           | 0.0       | 0.0       | 0.0       | 0.0       | 0.0                 | 0.0       | -0.4      | 0.0       |
| 21                           | 1           | 0.0       | 0.0       | 0.0       | 0.0       | 0.0                 | 0.0       | -0.4      | 0.0       |
| 22                           | 1           | 0.0       | 0.0       | 0.0       | 0.0       | 0.0                 | 0.0       | -0.4      | 0.0       |
| 23                           | 1           | 0.0       | 0.0       | 0.0       | 0.0       | 0.0                 | 0.0       | -0.4      | 0.0       |
| 24                           | 1           | 0.0       | 0.0       | 0.0       | 0.0       | 0.0                 | 0.0       | -0.4      | 0.0       |

| COMPOSIZIONE SHELL |       |       |       |       |       |       |  |           |       |       |       |       |       |       |
|--------------------|-------|-------|-------|-------|-------|-------|--|-----------|-------|-------|-------|-------|-------|-------|
| Macro Nro          | Col.1 | Col.2 | Col.3 | Col.4 | Col.5 | Col.6 |  | Macro Nro | Col.1 | Col.2 | Col.3 | Col.4 | Col.5 | Col.6 |
| 17                 | 17    |       |       |       |       |       |  | 18        | 18    |       |       |       |       |       |
|                    | 25    |       |       |       |       |       |  |           | 27    |       |       |       |       |       |
|                    | 26    |       |       |       |       |       |  |           | 28    |       |       |       |       |       |
| 19                 | 19    |       |       |       |       |       |  | 20        | 20    |       |       |       |       |       |
|                    | 29    |       |       |       |       |       |  |           | 31    |       |       |       |       |       |
|                    | 30    |       |       |       |       |       |  |           | 32    |       |       |       |       |       |
| 21                 | 21    |       |       |       |       |       |  | 22        | 22    |       |       |       |       |       |
|                    | 33    |       |       |       |       |       |  |           | 35    |       |       |       |       |       |
|                    | 34    |       |       |       |       |       |  |           | 36    |       |       |       |       |       |
| 23                 | 23    |       |       |       |       |       |  | 24        | 24    |       |       |       |       |       |
|                    | 37    |       |       |       |       |       |  |           | 39    |       |       |       |       |       |
|                    | 38    |       |       |       |       |       |  |           | 40    |       |       |       |       |       |



|   |  |  |  |  |  |  |                             |  |                              |  |
|---|--|--|--|--|--|--|-----------------------------|--|------------------------------|--|
|  | <b>PROGETTISTA</b><br> |  |  |  |  |  | <b>COMMESSA</b><br>NR/13167 |  | <b>COD. TECNICO</b><br>16153 |  |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   |  |  |  |  |  | <b>RE-STRU-122</b>          |  |                              |  |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               |  |  |  |  |  | Fg. 25 di 71                |  | <b>Rev.</b><br><b>0</b>      |  |

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| COMPOSIZIONE SHELL |       |       |       |       |       |       |  |           |       |       |       |       |       |       |
|--------------------|-------|-------|-------|-------|-------|-------|--|-----------|-------|-------|-------|-------|-------|-------|
| Macro Nro          | Col.1 | Col.2 | Col.3 | Col.4 | Col.5 | Col.6 |  | Macro Nro | Col.1 | Col.2 | Col.3 | Col.4 | Col.5 | Col.6 |

**S.L.U. - AZIONI S.L.V. - NODI SHELL C.A. - QUOTA: 1 ELEMENTO: 2**

| Nodo 3d N.ro | X3d (m) | Y3d (m) | Z3d (m) |  | Nodo 3d N.ro | X3d (m) | Y3d (m) | Z3d (m) |
|--------------|---------|---------|---------|--|--------------|---------|---------|---------|
| 14           | 0.13    | 1.69    | 0.00    |  | 37           | 0.13    | 3.38    | 1.80    |
| 38           | 0.13    | 1.69    | 1.80    |  | 39           | 0.13    | 0.13    | 0.90    |
| 41           | 0.13    | 0.13    | 1.80    |  |              |         |         |         |

**S.L.U. - AZIONI S.L.V. - NODI SHELL C.A. - QUOTA: 1 ELEMENTO: 3**

| Nodo 3d N.ro | X3d (m) | Y3d (m) | Z3d (m) |  | Nodo 3d N.ro | X3d (m) | Y3d (m) | Z3d (m) |
|--------------|---------|---------|---------|--|--------------|---------|---------|---------|
| 5            | 1.69    | 0.13    | 0.00    |  | 7            | 3.38    | 0.13    | 0.00    |
| 40           | 1.69    | 0.13    | 0.90    |  | 42           | 1.69    | 0.13    | 1.80    |
| 44           | 3.38    | 0.13    | 1.80    |  |              |         |         |         |

**S.L.U. - AZIONI S.L.V. - NODI SHELL C.A. - QUOTA: 1 ELEMENTO: 5**

| Nodo 3d N.ro | X3d (m) | Y3d (m) | Z3d (m) |  | Nodo 3d N.ro | X3d (m) | Y3d (m) | Z3d (m) |
|--------------|---------|---------|---------|--|--------------|---------|---------|---------|
| 11           | 3.38    | 1.69    | 0.00    |  | 44           | 3.38    | 0.13    | 1.80    |
| 45           | 3.38    | 1.69    | 1.80    |  | 46           | 3.38    | 3.38    | 0.90    |
| 48           | 3.38    | 3.38    | 1.80    |  |              |         |         |         |

**S.L.U. - AZIONI S.L.V. - NODI SHELL C.A. - QUOTA: 1 ELEMENTO: 10**

| Nodo 3d N.ro | X3d (m) | Y3d (m) | Z3d (m) |  | Nodo 3d N.ro | X3d (m) | Y3d (m) | Z3d (m) |
|--------------|---------|---------|---------|--|--------------|---------|---------|---------|
| 18           | 1.69    | 3.38    | 0.00    |  | 19           | 3.38    | 3.38    | 0.00    |
| 47           | 1.69    | 3.38    | 0.90    |  | 48           | 3.38    | 3.38    | 1.80    |
| 49           | 1.69    | 3.38    | 1.80    |  |              |         |         |         |

**S.L.U. - AZIONI S.L.V. - NODI PIASTRA - QUOTA: 0 ELEMENTO: 1**

| Nodo 3d N.ro | X3d (m) | Y3d (m) | Z3d (m) |  | Nodo 3d N.ro | X3d (m) | Y3d (m) | Z3d (m) |
|--------------|---------|---------|---------|--|--------------|---------|---------|---------|
| 12           | 3.50    | 1.69    | 0.00    |  | 13           | 1.69    | 1.69    | 0.00    |
| 19           | 3.38    | 3.38    | 0.00    |  | 20           | 3.50    | 3.38    | 0.00    |
| 21           | 3.50    | 3.50    | 0.00    |  | 22           | 3.38    | 3.50    | 0.00    |
| 23           | 1.69    | 3.50    | 0.00    |  | 24           | 0.13    | 3.50    | 0.00    |
| 25           | 0.00    | 3.50    | 0.00    |  |              |         |         |         |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               | Fg. 26 di 71                | <b>Rev.</b><br>0             |

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| COMBINAZIONI CARICHI - S.L.V. - A1 / S.L.D. |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |
|---|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DESCRIZIONI                                 | 1    | 2    | 3    | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    |
| Peso Strutturale                            | 1.30 | 1.30 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Perm.Non Strutturale                        | 1.50 | 1.50 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| SPINTA TERR STATICA                         | 1.50 | 1.50 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| SPINTA TERRENO SISMI                        | 0.00 | 0.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| NEVE  | 0.00 | 1.50 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Corr. Tors. dir. 0                          | 0.00 | 0.00 | 1.00 | -1.00 | 1.00  | -1.00 | 1.00  | -1.00 | 1.00  | -1.00 | 1.00  | -1.00 | 1.00  | -1.00 | 1.00  |
| Corr. Tors. dir. 90                         | 0.00 | 0.00 | 0.30 | 0.30  | -0.30 | -0.30 | -0.30 | -0.30 | 0.30  | 0.30  | 0.30  | 0.30  | -0.30 | -0.30 | -0.30 |
| Sisma direz. grd 0                          | 0.00 | 0.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | -1.00 | -1.00 | -1.00 | -1.00 | -1.00 |
| Sisma direz. grd 90                         | 0.00 | 0.00 | 0.30 | 0.30  | 0.30  | 0.30  | -0.30 | -0.30 | -0.30 | -0.30 | 0.30  | 0.30  | 0.30  | 0.30  | -0.30 |

| COMBINAZIONI CARICHI - S.L.V. - A1 / S.L.D. |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |
|---|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DESCRIZIONI                                 | 16    | 17    | 18    | 19   | 20    | 21    | 22    | 23    | 24    | 25    | 26    | 27    | 28    | 29    | 30    |
| Peso Strutturale                            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Perm.Non Strutturale                        | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| SPINTA TERR STATICA                         | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| SPINTA TERRENO SISMI                        | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| NEVE  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Corr. Tors. dir. 0                          | 1.00  | -1.00 | 1.00  | 0.30 | -0.30 | 0.30  | -0.30 | 0.30  | -0.30 | 0.30  | -0.30 | -0.30 | 0.30  | -0.30 | 0.30  |
| Corr. Tors. dir. 90                         | -0.30 | 0.30  | 0.30  | 1.00 | 1.00  | -1.00 | -1.00 | -1.00 | -1.00 | 1.00  | 1.00  | 1.00  | 1.00  | -1.00 | -1.00 |
| Sisma direz. grd 0                          | -1.00 | -1.00 | -1.00 | 0.30 | 0.30  | 0.30  | 0.30  | 0.30  | 0.30  | 0.30  | 0.30  | -0.30 | -0.30 | -0.30 | -0.30 |
| Sisma direz. grd 90                         | -0.30 | -0.30 | -0.30 | 1.00 | 1.00  | 1.00  | 1.00  | -1.00 | -1.00 | -1.00 | -1.00 | 1.00  | 1.00  | 1.00  | 1.00  |

| COMBINAZIONI CARICHI - S.L.V. - A1 / S.L.D. |       |       |       |       |
|---|-------|-------|-------|-------|
| DESCRIZIONI                                 | 31    | 32    | 33    | 34    |
| Peso Strutturale                            | 1.00  | 1.00  | 1.00  | 1.00  |
| Perm.Non Strutturale                        | 1.00  | 1.00  | 1.00  | 1.00  |
| SPINTA TERR STATICA                         | 1.00  | 1.00  | 1.00  | 1.00  |
| SPINTA TERRENO SISMI                        | 1.00  | 1.00  | 1.00  | 1.00  |
| NEVE  | 0.00  | 0.00  | 0.00  | 0.00  |
| Corr. Tors. dir. 0                          | -0.30 | 0.30  | -0.30 | 0.30  |
| Corr. Tors. dir. 90                         | -1.00 | -1.00 | 1.00  | 1.00  |
| Sisma direz. grd 0                          | -0.30 | -0.30 | -0.30 | -0.30 |
| Sisma direz. grd 90                         | -1.00 | -1.00 | -1.00 | -1.00 |

| COMBINAZIONI RARE - S.L.E. |      |      |
|----------------------------|------|------|
| DESCRIZIONI                | 1    | 2    |
| Peso Strutturale           | 1.00 | 1.00 |
| Perm.Non Strutturale       | 1.00 | 1.00 |
| SPINTA TERR STATICA        | 1.00 | 1.00 |
| SPINTA TERRENO SISMI       | 0.00 | 0.00 |
| NEVE                       | 0.50 | 1.00 |
| Corr. Tors. dir. 0         | 0.00 | 0.00 |
| Corr. Tors. dir. 90        | 0.00 | 0.00 |
| Sisma direz. grd 0         | 0.00 | 0.00 |
| Sisma direz. grd 90        | 0.00 | 0.00 |

| COMBINAZIONI FREQUENTI - S.L.E. |      |      |
|---------------------------------|------|------|
| DESCRIZIONI                     | 1    | 2    |
| Peso Strutturale                | 1.00 | 1.00 |
| Perm.Non Strutturale            | 1.00 | 1.00 |
| SPINTA TERR STATICA             | 1.00 | 1.00 |
| SPINTA TERRENO SISMI            | 0.00 | 0.00 |
| NEVE                            | 0.00 | 0.20 |
| Corr. Tors. dir. 0              | 0.00 | 0.00 |
| Corr. Tors. dir. 90             | 0.00 | 0.00 |
| Sisma direz. grd 0              | 0.00 | 0.00 |
| Sisma direz. grd 90             | 0.00 | 0.00 |

| COMBINAZIONI PERMANENTI - S.L.E. |      |
|----------------------------------|------|
| DESCRIZIONI                      | 1    |
| Peso Strutturale                 | 1.00 |
| Perm.Non Strutturale             | 1.00 |
| SPINTA TERR STATICA              | 1.00 |
| SPINTA TERRENO SISMI             | 0.00 |
| NEVE                             | 0.00 |
| Corr. Tors. dir. 0               | 0.00 |
| Corr. Tors. dir. 90              | 0.00 |
| Sisma direz. grd 0               | 0.00 |
| Sisma direz. grd 90              | 0.00 |

|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 27 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

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• **SPECIFICHE CAMPI TABELLE DI STAMPA TRAVI**

**Tratto** : *Le aste adiacenti a setti e piastre vengono suddivise in sottoelementi per garantire la congruenza. Il numero di "TRATTO" identifica la posizione sequenziale del sottoelemento attuale a partire dall'estremo iniziale*

**Filo in.** : *Filo iniziale*

**Filo fin.** : *Filo finale*

Le altre grandezze descritte di seguito si riferiscono a ciascun estremo dell'asta:

**Alt.** : *Altezza dell'estremità dell'asta dallo spiccato di fondazione*

**Tx** : *Taglio lungo la direzione dell'asse 'X' del sistema di riferimento locale di asta (principale d'inerzia)*

**Ty** : *Taglio lungo la direzione dell'asse 'Y' del sistema di riferimento locale di asta*

**N** : *Sforzo assiale*

**Mx** : *Momento agente con asse vettore parallelo all'asse 'X' del sistema di riferimento locale di asta*

**My** : *Momento agente con asse vettore parallelo all'asse 'Y' del sistema di riferimento locale di asta*

**Mt** : *Momento torcente dell'asta (agente con asse vettore parallelo all'asse 'Z' locale)*

• **SPECIFICHE CAMPI TABELLE DI STAMPA SHELL**

SISTEMA DI RIFERIMENTO LOCALE (s.r.l.): *Il sistema di riferimento locale dell'elemento shell è così definito:*

**Origine** : *I° punto di inserimento dello shell*

**Asse 1** : *Asse X nel s.r.l., definito dal punto origine e dal II° punto di inserimento, nel verso di quest'ultimo*

**Piano 12** : *Piano XY nel s.r.l., definito dai punti origine, II° e III° di inserimento*

**Asse 2** : *Asse Y nel s.r.l., ottenuto nel piano 12 con una rotazione antioraria di 90° dell'asse X intorno al punto origine, in modo che l'asse I-II si sovrapponga all'asse I-III con un angolo < 180°*

**Asse 3** : *Asse Z nel s.r.l., ortogonale al piano 12, in modo da formare una terna destra con gli assi 1 e 2*

Le tensioni di lastra (S) sono costanti lungo lo spessore. Le tensioni di piastra (M) variano linearmente lungo lo spessore, annullandosi in corrispondenza del piano medio (diagramma emisimmetrico o "a farfalla"). I valori del tensore degli sforzi sono riferiti alla faccia positiva (superiore nel s.r.l.) di normale 3 (esempio: Xij tensione X agente sulla faccia di normale i e diretta lungo j).

Le altre grandezze descritte di seguito si riferiscono a ciascun nodo dell'elemento bidimensionale:

**Shell Nro** : *numero dell'elemento bidimensionale*

**nodo N.ro** : *numero del nodo dell'elemento bidimensionale a cui sono riferite le tensioni S di lastra e M piastra*

**S11** : *tensione normale di lastra*

**S22** : *tensione normale di lastra*

**S12** : *tensione tangenziale di lastra (S12 = S21)*

**M11** : *tensione normale di piastra sulla faccia positiva*

**M22** : *tensione normale di piastra sulla faccia positiva*

**M12** : *tensione tangenziale di piastra sulla faccia positiva*

Tabulato di stampa dei carichi nodali equivalenti applicati nei nodi degli shell.

|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 28 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

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|                  |  |
|------------------|--|
| <b>Shell Nro</b> | : numero dell'elemento bidimensionale  |
| <b>nodo N.ro</b> | : numero del nodo dell'elemento bidimensionale a cui sono i carichi nodali degli shell   |
| <b>Tx</b>        | : Forza nodale in direzione X del sistema di riferimento locale                          |
| <b>Ty</b>        | : Forza nodale in direzione Y del sistema di riferimento locale                          |
| <b>Tz</b>        | : Forza nodale in direzione Z del sistema di riferimento locale                          |
| <b>Mx</b>        | : Momento nodale con asse vettore parallelo all'asse X del sistema di riferimento locale |
| <b>My</b>        | : Momento nodale con asse vettore parallelo all'asse Y del sistema di riferimento locale |
| <b>Mz</b>        | : Momento nodale con asse vettore parallelo all'asse Z del sistema di riferimento locale |

• **SPECIFICHE CAMPI TABELLE DI STAMPA TRAVI**

|                  |   |
|------------------|---|
| <b>Tratto</b>    | : Le aste adiacenti a setti e piastre vengono suddivise in sottoelementi per garantire la congruenza. Il numero di "TRATTO" identifica la posizione sequenziale del sottoelemento attuale a partire dall'estremo iniziale |
| <b>Filo in.</b>  | : Filo iniziale   |
| <b>Filo fin.</b> | : Filo finale   |

Le altre grandezze descritte di seguito si riferiscono a ciascun estremo dell'asta:

|             |  |
|-------------|--|
| <b>Alt.</b> | : Altezza dell'estremità dell'asta dallo spiccatto di fondazione   |
| <b>Tx</b>   | : Taglio lungo la direzione dell'asse 'X' del sistema di riferimento locale di asta (principale d'inerzia) |
| <b>Ty</b>   | : Taglio lungo la direzione dell'asse 'Y' del sistema di riferimento locale di asta                        |
| <b>N</b>    | : Sforzo assiale   |
| <b>Mx</b>   | : Momento agente con asse vettore parallelo all'asse 'X' del sistema di riferimento locale di asta         |
| <b>My</b>   | : Momento agente con asse vettore parallelo all'asse 'Y' del sistema di riferimento locale di asta         |
| <b>Mt</b>   | : Momento torcente dell'asta (agente con asse vettore parallelo all'asse 'Z' locale)                       |

• **SPECIFICHE CAMPI TABELLE DI STAMPA SHELL**

SISTEMA DI RIFERIMENTO LOCALE (s.r.l.): Il sistema di riferimento locale dell'elemento shell è così definito:

|                 |   |
|-----------------|---|
| <b>Origine</b>  | : I° punto di inserimento dello shell   |
| <b>Asse 1</b>   | : Asse X nel s.r.l., definito dal punto origine e dal II° punto di inserimento, nel verso di quest'ultimo   |
| <b>Piano 12</b> | : Piano XY nel s.r.l., definito dai punti origine, II° e III° di inserimento  |
| <b>Asse 2</b>   | : Asse Y nel s.r.l., ottenuto nel piano 12 con una rotazione antioraria di 90° dell'asse X intorno al punto origine, in modo che l'asse I-II si sovrapponga all'asse I-III con un angolo < 180° |
| <b>Asse 3</b>   | : Asse Z nel s.r.l., ortogonale al piano 12, in modo da formare una terna destra con gli assi 1 e 2   |

Le tensioni di lastra (S) sono costanti lungo lo spessore. Le tensioni di piastra (M) variano linearmente lungo lo spessore, annullandosi in corrispondenza del piano medio (diagramma emisimmetrico o "a farfalla"). I valori del tensore degli sforzi

|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 29 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

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sono riferiti alla faccia positiva (superiore nel s.r.l.) di normale 3 (esempio: Xij tensione X agente sulla faccia di normale i e diretta lungo j).

Le altre grandezze descritte di seguito si riferiscono a ciascun nodo dell'elemento bidimensionale:

|                  |   |
|------------------|---|
| <b>Shell Nro</b> | : <i>numero dell'elemento bidimensionale</i>  |
| <b>nodo N.ro</b> | : <i>numero del nodo dell'elemento bidimensionale a cui sono riferite le tensioni S di lastra e M piastra</i> |
| <b>S11</b>       | : <i>tensione normale di lastra</i>   |
| <b>S22</b>       | : <i>tensione normale di lastra</i>   |
| <b>S12</b>       | : <i>tensione tangenziale di lastra (S12 = S21)</i>   |
| <b>M11</b>       | : <i>tensione normale di piastra sulla faccia positiva</i>  |
| <b>M22</b>       | : <i>tensione normale di piastra sulla faccia positiva</i>  |
| <b>M12</b>       | : <i>tensione tangenziale di piastra sulla faccia positiva</i>  |

Tabulato di stampa dei carichi nodali equivalenti applicati nei nodi degli shell.

|                  |   |
|------------------|---|
| <b>Shell Nro</b> | : <i>numero dell'elemento bidimensionale</i>  |
| <b>nodo N.ro</b> | : <i>numero del nodo dell'elemento bidimensionale a cui sono i carichi nodali degli shell</i>   |
| <b>Tx</b>        | : <i>Forza nodale in direzione X del sistema di riferimento locale</i>                          |
| <b>Ty</b>        | : <i>Forza nodale in direzione Y del sistema di riferimento locale</i>                          |
| <b>Tz</b>        | : <i>Forza nodale in direzione Z del sistema di riferimento locale</i>                          |
| <b>Mx</b>        | : <i>Momento nodale con asse vettore parallelo all'asse X del sistema di riferimento locale</i> |
| <b>My</b>        | : <i>Momento nodale con asse vettore parallelo all'asse Y del sistema di riferimento locale</i> |
| <b>Mz</b>        | : <i>Momento nodale con asse vettore parallelo all'asse Z del sistema di riferimento locale</i> |

|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 30 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

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- SPECIFICHE CAMPI TABELLE DI STAMPA TRAVI**

**Tratto** : *Le aste adiacenti a setti e piastre vengono suddivise in sottoelementi per garantire la congruenza. Il numero di "TRATTO" identifica la posizione sequenziale del sottoelemento attuale a partire dall'estremo iniziale*

**Filo in.** : *Filo iniziale*

**Filo fin.** : *Filo finale*

Le altre grandezze descritte di seguito si riferiscono a ciascun estremo dell'asta:

**Alt.** : *Altezza dell'estremità dell'asta dallo spiccato di fondazione*

**Sx** : *Spostamento lungo la direzione dell'asse 'X' del sistema di riferimento locale di asta*

**Sy** : *Spostamento lungo la direzione dell'asse 'Y' del sistema di riferimento locale di asta*

**Sz** : *Spostamento assiale*

**Rx** : *Rotazione agente con asse vettore parallelo all'asse 'X' del sistema di riferimento locale di asta*

**Ry** : *Rotazione agente con asse vettore parallelo all'asse 'Y' del sistema di riferimento locale di asta*

**Rz** : *Rotazione torcente dell'asta (agente con asse vettore parallelo all'asse 'Z' locale)*

- SPECIFICHE CAMPI TABELLE DI STAMPA SHELL**

SISTEMA DI RIFERIMENTO LOCALE (s.r.l.): *Il sistema di riferimento locale dell'elemento shell è così definito:*

**Origine** : *I° punto di inserimento dello shell*

**Asse 1** : *Asse X nel s.r.l., definito dal punto origine e dal II° punto di inserimento, nel verso di quest'ultimo*

**Piano 12** : *Piano XY nel s.r.l., definito dai punti origine, II° e III° di inserimento*

**Asse 2** : *Asse Y nel s.r.l., ottenuto nel piano 12 con una rotazione antioraria di 90° dell'asse X intorno al punto origine, in modo che l'asse I-II si sovrapponga all'asse I-III con un angolo < 180°*

**Asse 3** : *Asse Z nel s.r.l., ortogonale al piano 12, in modo da formare una terna destra con gli assi 1 e 2*

**Shell Nro** : *numero dell'elemento bidimensionale*

**nodo N.ro** : *numero del nodo dell'elemento bidimensionale a cui sono riferite le tensioni S di lastra e M piastra*

Per ogni nodo dell'elemento bidimensionale:

**Si** : *spostamento in direzione i, s.r.l*

**Ri** : *rotazione con asse vettore i, s.r.l*

|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 31 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

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- SPECIFICHE CAMPI TABELLA DI STAMPA**

- Filo N.ro** : *Numero del filo del nodo inferiore o superiore*
- Quota inf/sup** : *Quota del nodo inferiore e del nodo superiore*
- Nodo inf/sup** : *Numero dei nodi inferiore e superiore per la determinazione degli spostamenti sismici relativi*
- Sisma N.ro** : *Numero del sisma per cui è massimo il valore dello spostamento totale calcolato per lo S.L.D.*
- Spostam. Calcolo** : *valore dello spostamento totale calcolato per lo S.L.D.*
- Spostam. Limite** : *valore dello spostamento limite per lo S.L.D.*
- Sisma N.ro** : *Numero del sisma per cui è massimo il valore dello spostamento totale calcolato per lo S.L.O.*
- Spostam. Calcolo** : *valore dello spostamento totale calcolato per lo S.L.O.*
- Spostam. Limite** : *valore dello spostamento limite per lo S.L.O.*

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 32 di 71                | <b>Rev.</b><br><b>0</b>      |

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• **SPECIFICHE CAMPI TABELLA DI STAMPA**

Si riporta di seguito la spiegazione delle sigle usate nella tabella di stampa della verifica degli elementi bidimensionali allo stato limite ultimo.

|                     |   |
|---------------------|---|
| <b>Quota N.ro:</b>  | : Quota a cui si trova l'elemento   |
| <b>Perim. N.ro</b>  | : Numero identificativo del macroelemento il cui perimetro è stato definito prima di eseguire la verifica   |
| <b>Nodo 3d N.ro</b> | : Numero del nodo relativo alla suddivisione del macroelemento in microelementi   |
| <b>Nx</b>           | : Sforzo sul piano dell'elemento bidimensionale diretto come l'asse x del sistema locale (il sistema di riferimento locale è quello delle armature)   |
| <b>Ny</b>           | : Sforzo sul piano dell'elemento bidimensionale diretto come l'asse y del sistema locale  |
| <b>Txy</b>          | : Sforzo tagliante sul piano dell'elemento con direzione y e agente sulla faccia di normale x del sistema locale (ovvero anche, per la simmetria delle tensioni tangenziali, sforzo tagliante sul piano dell'elemento con direzione x e agente sulla faccia di normale y del sistema locale)  |
| <b>Mx</b>           | : Momento flettente agente sulla sezione di normale x del sistema locale. Per le verifiche è accoppiato allo sforzo normale Nx. Questo momento è incrementato per tenere in conto il valore del momento torcente Mxy  |
| <b>My</b>           | : Momento flettente agente sulla sezione di normale y del sistema locale. Per le verifiche è accoppiato allo sforzo normale Ny. Questo momento è incrementato per tenere in conto il valore del momento torcente Mxy  |
| <b>Mxy</b>          | : Momento torcente con asse vettore x e agente sulla sezione di normale x (ovvero anche, per la simmetria delle tensioni tangenziali momento torcente con asse vettore y e agente sulla sezione di normale y)   |
| <b>εcx *10000</b>   | : Deformazione del calcestruzzo nella faccia di normale x *10000 (Es. 0.35% = 35)   |
| <b>εcy *10000</b>   | : Deformazione del calcestruzzo nella faccia di normale y *10000 (Es. 0.35% = 35)   |
| <b>εfx *10000</b>   | : Deformazione dell'acciaio nella faccia di normale x *10000 (Es. 1% = 100)   |
| <b>εfy *10000</b>   | : Deformazione dell'acciaio nella faccia di normale y *10000 (Es. 1% = 100)   |
| <b>Ax superiore</b> | : Area totale armatura superiore diretta lungo x. Area totale è l'area della pressoflessione più l'area per il taglio riportata dopo)   |
| <b>Ay superiore</b> | : Area totale armatura superiore diretta lungo y  |
| <b>Ax inferiore</b> | : Area totale armatura inferiore diretta lungo x  |
| <b>Ay inferiore</b> | : Area totale armatura inferiore diretta lungo y  |
| <b>Atag</b>         | : Area per il taglio su ciascuna faccia per le due direzioni  |
| <b>σt</b>           | : Tensione massima di contatto con il terreno   |
| <b>Eta</b>          | : Abbassamento verticale del nodo in esame  |
| <b>Fpunz</b>        | : Forza di punzonamento determinata amplificando il massimo valore della forza punzonante (ottenuta dall'involuppo fra le varie combinazioni di carico agenti) per un coefficiente beta raccomandato nell'eurocodice 2 (figura 6.21). Per le piastre di fondazione la forza di punzonamento è stata ridotta dell'effetto favorevole della pressione del suolo |
| <b>FpunzLi</b>      | : Resistenza al punzonamento ottenuta dall'applicazione della formula (6.47) dell'eurocodice 2, utilizzando il perimetro di base definito nelle figure 6.13 e 6.15  |
| <b>Apunz</b>        | : Armatura di punzonamento calcolata dalla formula (6.51) dell' eurocodice 2  |

Nel caso di stampa di riverifiche degli elementi con le armature effettivamente disposte sul disegno ferri le colonne delle ε vengono sostituite con:

|              |   |
|--------------|---|
| <b>Molt.</b> | : Moltiplicatore delle sollecitazioni che porta a rottura la sezione, rispettivamente nelle direzioni X e Y |
| <b>x/d</b>   | : Posizione adimensionalizzata dell'asse neutro rispettivamente nelle direzioni X e Y                       |



|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 33 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

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● **SPECIFICHE CAMPI TABELLA DI STAMPA**

Si riporta di seguito la spiegazione delle sigle usate nella tabella di stampa delle verifiche agli stati limite di esercizio degli elementi bidimensionali.

|                       |  |
|-----------------------|--|
| <b>Quota</b>          | : Quota a cui si trova l'elemento  |
| <b>Perim.</b>         | : Numero identificativo del macro-elemento il cui perimetro è stato definito prima di eseguire la verifica   |
| <b>Nodo</b>           | : Numero del nodo relativo alla suddivisione del macro-elemento in microelementi   |
| <b>Comb Cari</b>      | : Indicatore della matrice di combinazione; la prima riga individua la matrice delle combinazioni rare, la seconda la matrice delle combinazioni frequenti, la terza quella permanenti   |
| <b>Fes lim</b>        | : Fessura limite espressa in mm  |
| <b>Fess.</b>          | : Fessura di calcolo espressa in mm; se sull'elemento non si aprono fessure tutta la riga sarà nulla   |
| <b>Dist mm</b>        | : Distanza fra le fessure  |
| <b>Combin</b>         | : Numero della combinazione ed in sequenza sollecitazioni per cui si è avuta la massima fessura  |
| <b>Mf X</b>           | : Momento flettente agente sulla sezione di normale x del sistema locale. (Il sistema di riferimento locale è quello delle armature)   |
| <b>N X</b>            | : Sforzo sul piano dell'elemento bidimensionale diretto come l'asse x del sistema locale   |
| <b>Mf Y</b>           | : Momento flettente agente sulla sezione di normale y del sistema locale. (Il sistema di riferimento locale è quello delle armature)   |
| <b>N Y</b>            | : Sforzo sul piano dell'elemento bidimensionale diretto come l'asse y del sistema locale   |
| <b>Cos teta</b>       | : Coseno dell'angolo teta tra l'armatura in direzione X e la direzione della tensione principale di trazione   |
| <b>Sin teta</b>       | : Seno dell'angolo teta  |
| <b>Combina Carico</b> | : Indicatore della matrice di combinazione; la prima riga individua la matrice delle combinazioni rare per la verifica della tensione sul cls, la seconda la matrice delle combinazioni rare per la verifica della tensione sull'acciaio, la terza la matrice delle combinazioni permanenti per la verifica della tensione sul cls |
| <b>s lim</b>          | : Valore della tensione limite in Kg/cm <sup>2</sup>   |
| <b>s cal</b>          | : Valore della tensione di calcolo in Kg/cm <sup>2</sup> sulla faccia di normale x   |
| <b>Conbin</b>         | : Numero della combinazione ed in sequenza sollecitazioni per cui si è avuta la massima tensione   |
| <b>Mf X</b>           | : Momento flettente agente sulla sezione di normale x del sistema locale. (Il sistema di riferimento locale è quello delle armature)   |
| <b>N X</b>            | : Sforzo sul piano dell'elemento bidimensionale diretto come l'asse x del sistema locale   |
| <b>s cal</b>          | : Valore della tensione di calcolo in Kg/cm <sup>2</sup> sulla faccia di normale y   |
| <b>Combin</b>         | : Numero della combinazione ed in sequenza sollecitazioni per cui si è avuta la massima tensione   |
| <b>Mf Y</b>           | : Momento flettente agente sulla sezione di normale y del sistema locale   |
| <b>N Y</b>            | : Sforzo sul piano dell'elemento bidimensionale diretto come l'asse y del sistema locale   |

|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 34 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

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• **SPECIFICHE CAMPI TABELLA DI STAMPA**

Si riporta di seguito la spiegazione delle sigle usate nella tabella di stampa della verifica degli elementi bidimensionali allo stato limite ultimo.

|   |   |
|---|---|
| <b>Gruppo Quote</b>                       | : Numero identificativo del gruppo di quote definito prima di eseguire la verifica  |
| <b>Generatrice</b>                        | : Numero identificativo della generatrice definita prima di eseguire la verifica  |
| <b>Nodo 3d N.ro</b>                       | : Numero del nodo relativo alla suddivisione del macroelemento in microelementi   |
| <b>Nx</b>                                 | : Sforzo sul piano dell'elemento bidimensionale diretto come l'asse $x$ del sistema locale. (Il sistema di riferimento locale ha l'asse $x$ nella direzione del setto e l'asse $y$ verticale)   |
| <b>Ny</b>                                 | : Sforzo sul piano dell'elemento bidimensionale diretto come l'asse $y$ del sistema locale  |
| <b>Txy</b>                                | : Sforzo tagliante sul piano dell'elemento con direzione $y$ e agente sulla faccia di normale $x$ del sistema locale. (Ovvero anche, per la simmetria delle tensioni tangenziali, sforzo tagliante sul piano dell'elemento con direzione $x$ e agente sulla faccia di normale $y$ del sistema locale) |
| <b>Mx</b>                                 | : Momento flettente agente sulla sezione di normale $x$ del sistema locale. Per le verifiche è accoppiato allo sforzo normale $Nx$ . Questo momento è incrementato per tenere in conto il valore del momento torcente $Mxy$   |
| <b>My</b>                                 | : Momento flettente agente sulla sezione di normale $y$ del sistema locale. Per le verifiche è accoppiato allo sforzo normale $Ny$ . Questo momento è incrementato per tenere in conto il valore del momento torcente $Mxy$   |
| <b>Mxy</b>                                | : Momento torcente con asse vettore $x$ e agente sulla sezione di normale $x$ (ovvero anche, per la simmetria delle tensioni tangenziali, momento torcente con asse vettore $y$ e agente sulla sezione di normale $y$ )   |
| <b><math>\epsilon_{cx} * 10000</math></b> | : Deformazione del calcestruzzo nella faccia di normale $x \times 10000$ (Es. $0.35\% = 35$ )   |
| <b><math>\epsilon_{cy} * 10000</math></b> | : Deformazione del calcestruzzo nella faccia di normale $y \times 10000$ (Es. $0.35\% = 35$ )   |
| <b><math>\epsilon_{fx} * 10000</math></b> | : Deformazione dell'acciaio nella faccia di normale $x \times 10000$ (Es. $1\% = 100$ )   |
| <b><math>\epsilon_{fy} * 10000</math></b> | : Deformazione dell'acciaio nella faccia di normale $y \times 10000$ (Es. $1\% = 100$ )   |
| <b>Ax superiore</b>                       | : Area totale armatura superiore diretta lungo $x$ . (Area totale è l'area della pressoflessione più l'area per il taglio riportata dopo)   |
| <b>Ay superiore</b>                       | : Area totale armatura superiore diretta lungo $y$  |
| <b>Ax inferiore</b>                       | : Area totale armatura inferiore diretta lungo $x$  |
| <b>Ay inferiore</b>                       | : Area totale armatura inferiore diretta lungo $y$  |
| <b>Atag</b>                               | : Area per il taglio su ciascuna faccia per le due direzioni  |
| <b><math>\sigma</math></b>                | : Tensione massima di contatto con il terreno   |
| <b>Eta</b>                                | : Abbassamento verticale del nodo in esame  |

Nel caso di stampa di riverifiche degli elementi con le armature effettivamente disposte sul disegno ferri le colonne delle  $\epsilon$  vengono sostituite con:

|              |   |
|--------------|---|
| <b>Molt.</b> | : Moltiplicatore delle sollecitazioni che porta a rottura la sezione, rispettivamente nelle direzioni $X$ e $Y$ |
|--------------|---|

|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 35 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

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• **SPECIFICHE CAMPI TABELLA DI STAMPA**

Si riporta di seguito la spiegazione delle sigle usate nella tabella di stampa delle verifiche agli stati limite di esercizio degli elementi bidimensionali.

|                   |  |
|-------------------|--|
| <b>Gr.Q</b>       | : Numero identificativo del gruppo di quote definito prima di eseguire la verifica   |
| <b>Gen</b>        | : Numero identificativo della generatrice definita prima di eseguire la verifica   |
| <b>Nodo</b>       | : Numero del nodo relativo alla suddivisione del macro-elemento in microelementi   |
| <b>Comb. Cari</b> | : Indicatore della matrice di combinazione; la prima riga individua la matrice delle combinazioni rare, la seconda la matrice delle combinazioni frequenti, la terza quella permanenti   |
| <b>Fes lim</b>    | : Fessura limite espressa in mm  |
| <b>Fess.</b>      | : Fessura di calcolo espressa in mm; se sull'elemento non si aprono fessure tutta la riga sarà nulla   |
| <b>Dist mm</b>    | : Distanza fra le fessure  |
| <b>Combin</b>     | : Numero della combinazione ed in sequenza sollecitazioni per cui si è avuta la massima fessura  |
| <b>Mf X</b>       | : Momento flettente agente sulla sezione di normale x del sistema locale. (Il sistema di riferimento locale è quello delle armature)   |
| <b>N X</b>        | : Sforzo sul piano dell'elemento bidimensionale diretto come l'asse x del sistema locale   |
| <b>Mf Y</b>       | : Momento flettente agente sulla sezione di normale y del sistema locale. (Il sistema di riferimento locale è quello delle armature)   |
| <b>N Y</b>        | : Sforzo sul piano dell'elemento bidimensionale diretto come l'asse y del sistema locale   |
| <b>Cos teta</b>   | : Coseno dell'angolo teta tra l'armatura in direzione X e la direzione della tensione principale di trazione   |
| <b>Sin teta</b>   | : Seno dell'angolo teta  |
| <b>Combina</b>    | : Indicatore della matrice di combinazione; la prima riga individua la matrice delle combinazioni rare per la verifica della tensione sul cls, la seconda la matrice delle combinazioni rare per la verifica della tensione sull'acciaio, la terza la matrice delle combinazioni permanenti per la verifica della tensione sul cls |
| <b>Carico</b>     |  |
| <b>s lim</b>      | : Valore della tensione limite in Kg/cm <sup>2</sup>   |
| <b>s cal</b>      | : Valore della tensione di calcolo in Kg/cm <sup>2</sup> sulla faccia di normale x   |
| <b>Conbin</b>     | : Numero della combinazione ed in sequenza sollecitazioni per cui si è avuta la massima tensione   |
| <b>Mf X</b>       | : Momento flettente agente sulla sezione di normale x del sistema locale. (Il sistema di riferimento locale è quello delle armature)   |
| <b>N X</b>        | : Sforzo sul piano dell'elemento bidimensionale diretto come l'asse x del sistema locale   |
| <b>s cal</b>      | : Valore della tensione di calcolo in Kg/cm <sup>2</sup> sulla faccia di normale y   |
| <b>Conbin</b>     | : Numero della combinazione ed in sequenza sollecitazioni per cui si è avuta la massima tensione   |
| <b>Mf Y</b>       | : Momento flettente agente sulla sezione di normale y del sistema locale   |
| <b>N Y</b>        | : Sforzo sul piano dell'elemento bidimensionale diretto come l'asse y del sistema locale   |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 36 di 71                | <b>Rev.</b><br><b>0</b>      |

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| FREQUENZE E MASSE ECCITATE |                      |               |              |          |          |            |            |            |          |                    |       |                    |       |                    |       |
|----------------------------|----------------------|---------------|--------------|----------|----------|------------|------------|------------|----------|--------------------|-------|--------------------|-------|--------------------|-------|
|                            |                      |               |              |          |          |            |            |            |          | SISMA N.ro 1       |       | SISMA N.ro 2       |       | SISMA N.ro 3       |       |
|                            |                      |               |              |          |          |            |            |            |          | Massa              | Perc. | Massa              | Perc. | Massa              | Perc. |
|                            |                      |               |              |          |          |            |            |            |          | 15.61              | .91   | 14.87              | .86   |                    |       |
|                            |                      |               |              |          |          |            |            |            |          | 17.1               |       | 17.1               |       |                    |       |
| Modo N.ro                  | Pulsazione (rad/sec) | Periodo (sec) | Smorz Mod(%) | Sd/g SLO | Sd/g SLD | Sd/g SLV X | Sd/g SLV Y | Sd/g SLV Z | Sd/g SLC | Massa Mod Ecc.(kN) | Perc. | Massa Mod Ecc.(kN) | Perc. | Massa Mod Ecc.(kN) | Perc. |
| 1                          | 229.647              | 0.02736       | 5.0          |          | 0.096    | 0.198      | 0.198      |            | 0.215    | 145.6              | 0.85  | 0.0                | 0.00  |                    |       |
| 2                          | 547.676              | 0.01147       | 5.0          |          | 0.083    | 0.173      | 0.173      |            | 0.188    | 0.0                | 0.00  | 135.4              | 0.79  |                    |       |
| 3                          | 677.707              | 0.00927       | 5.0          |          | 0.081    | 0.169      | 0.169      |            | 0.184    | 0.0                | 0.00  | 0.0                | 0.00  |                    |       |
| 4                          | 797.689              | 0.00788       | 5.0          |          | 0.080    | 0.167      | 0.167      |            | 0.182    | 0.0                | 0.00  | 9.5                | 0.06  |                    |       |
| 5                          | 1070.418             | 0.00587       | 5.0          |          | 0.078    | 0.164      | 0.164      |            | 0.178    | 0.0                | 0.00  | 0.0                | 0.00  |                    |       |
| 6                          | 1090.580             | 0.00576       | 5.0          |          | 0.078    | 0.164      | 0.164      |            | 0.178    | 3.0                | 0.02  | 0.0                | 0.00  |                    |       |
| 7                          | 1178.900             | 0.00533       | 5.0          |          | 0.078    | 0.163      | 0.163      |            | 0.177    | 0.0                | 0.00  | 0.0                | 0.00  |                    |       |
| 8                          | 1494.225             | 0.00420       | 5.0          |          | 0.077    | 0.161      | 0.161      |            | 0.175    | 0.0                | 0.00  | 0.0                | 0.00  |                    |       |
| 9                          | 1504.808             | 0.00418       | 5.0          |          | 0.077    | 0.161      | 0.161      |            | 0.175    | 0.0                | 0.00  | 3.1                | 0.02  |                    |       |
| 10                         | 2048.021             | 0.00307       | 5.0          |          | 0.076    | 0.159      | 0.159      |            | 0.173    | 0.0                | 0.00  | 0.0                | 0.00  |                    |       |
| 11                         | 2355.248             | 0.00267       | 5.0          |          | 0.076    | 0.159      | 0.159      |            | 0.173    | 6.4                | 0.04  | 0.0                | 0.00  |                    |       |
| 12                         | 2386.997             | 0.00263       | 5.0          |          | 0.076    | 0.159      | 0.159      |            | 0.173    | 1.0                | 0.01  | 0.7                | 0.00  |                    |       |

| FORZE: SISMA 0°: MODO1: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |  |
|-------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|--|
| Shell N.ro                    | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |  |
| 1                             | 3         | 0.0     | 0.0     | 0.4     | -0.1      | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 1.0     | 0.0       | 0.0       | 0.0       |  |
|                               | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | -1.4    | 0.0       | 0.0       | 0.0       |  |
| 2                             | 5         | 0.0     | 0.0     | -0.5    | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.5     | 0.0       | 0.0       | 0.0       |  |
|                               | 4         | 0.0     | 0.0     | -1.3    | 0.1       | 0.2       | 0.0       | 2         | 0.0     | 0.0     | 1.3     | 0.0       | 0.0       | 0.0       |  |
| 3                             | 7         | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       |  |
|                               | 5         | 0.0     | 0.0     | 0.5     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | -0.5    | 0.0       | 0.0       | 0.0       |  |
| 4                             | 9         | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |  |
|                               | 7         | 0.0     | 0.0     | -0.6    | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.3     | 0.0       | 0.0       | 0.0       |  |
| 5                             | 11        | 0.0     | 0.0     | -0.2    | 0.1       | -0.3      | 0.0       | 12        | 0.0     | 0.0     | 0.2     | -0.2      | 0.0       | 0.0       |  |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.3       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |  |
| 6                             | 5         | 0.0     | 0.0     | 0.4     | -0.2      | 0.1       | 0.0       | 13        | 0.0     | 0.0     | 0.8     | 0.0       | 0.0       | 0.0       |  |
|                               | 7         | 0.0     | 0.0     | -0.6    | -0.5      | 0.3       | 0.0       | 11        | 0.0     | 0.0     | -0.5    | -1.3      | 0.0       | 0.0       |  |
| 7                             | 4         | 0.0     | 0.0     | 0.6     | -0.5      | -0.3      | 0.0       | 14        | 0.0     | 0.0     | 0.6     | -1.4      | 0.0       | 0.0       |  |
|                               | 5         | 0.0     | 0.0     | -0.4    | -0.1      | -0.1      | 0.0       | 13        | 0.0     | 0.0     | -0.9    | 0.0       | 0.0       | 0.0       |  |
| 8                             | 3         | 0.0     | 0.0     | -0.5    | 0.0       | -0.1      | 0.0       | 15        | 0.0     | 0.0     | -0.3    | 0.1       | -0.2      | 0.0       |  |
|                               | 4         | 0.0     | 0.0     | 0.6     | 0.2       | 0.1       | 0.0       | 14        | 0.0     | 0.0     | 0.2     | -0.2      | 0.1       | 0.0       |  |
| 9                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.1     | 0.0       | 0.4       | 0.0       |  |
|                               | 15        | 0.0     | 0.0     | 0.0     | -0.2      | -0.1      | 0.0       | 14        | 0.0     | 0.0     | -0.1    | 0.1       | -0.3      | 0.0       |  |
| 10                            | 17        | 0.0     | 0.0     | 0.7     | -0.3      | -0.6      | 0.0       | 18        | 0.0     | 0.0     | -0.5    | -0.1      | -0.2      | 0.0       |  |
|                               | 14        | 0.0     | 0.0     | 0.8     | 0.1       | -1.5      | 0.0       | 13        | 0.0     | 0.0     | -1.0    | 0.0       | 0.0       | 0.0       |  |
| 11                            | 19        | 0.0     | 0.0     | -0.6    | 0.6       | 0.3       | 0.0       | 11        | 0.0     | 0.0     | -0.6    | 1.4       | 0.0       | 0.0       |  |
|                               | 18        | 0.0     | 0.0     | 0.4     | 0.1       | 0.1       | 0.0       | 13        | 0.0     | 0.0     | 0.8     | 0.0       | 0.0       | 0.0       |  |
| 12                            | 19        | 0.0     | 0.0     | -0.1    | 0.0       | 0.3       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |  |
|                               | 11        | 0.0     | 0.0     | 0.0     | -0.1      | -0.3      | 0.0       | 12        | 0.0     | 0.0     | 0.1     | 0.2       | 0.0       | 0.0       |  |
| 13                            | 19        | 0.0     | 0.0     | -0.5    | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.3     | 0.0       | 0.0       | 0.0       |  |
|                               | 20        | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |  |
| 14                            | 18        | 0.0     | 0.0     | 0.3     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       |  |
|                               | 19        | 0.0     | 0.0     | 0.1     | 0.0       | -0.1      | 0.0       | 22        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |  |
| 15                            | 17        | 0.0     | 0.0     | -0.1    | 0.0       | 0.1       | 0.0       | 24        | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       |  |
|                               | 18        | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       |  |
| 16                            | 16        | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |  |
|                               | 17        | 0.0     | 0.0     | 0.5     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | -0.3    | 0.0       | 0.0       | 0.0       |  |
| 17                            | 36        | -1.4    | 2.7     | 0.0     | -0.6      | 0.3       | 0.5       | 35        | -0.5    | 1.7     | 4.9     | -1.6      | 0.6       | -0.6      |  |
|                               | 17        | 0.5     | -1.6    | -0.5    | -0.6      | 0.0       | -0.4      | 14        | 1.4     | -2.7    | -4.5    | -1.7      | -0.1      | 0.6       |  |
| 18                            | 39        | 2.1     | -0.7    | -0.3    | 0.1       | 0.3       | 0.0       | 40        | 2.0     | 0.8     | 0.2     | 0.0       | 0.0       | -0.1      |  |
|                               | 4         | -2.6    | -1.6    | 0.0     | 0.0       | 0.0       | 0.2       | 5         | -1.5    | 1.6     | 0.1     | 0.0       | 0.1       | -0.1      |  |
| 19                            | 43        | 1.4     | -2.8    | 0.2     | 0.5       | -0.3      | -0.4      | 34        | 0.4     | -1.7    | -4.9    | 1.5       | -0.6      | 0.6       |  |
|                               | 7         | -0.5    | 1.7     | 0.4     | 0.5       | -0.1      | 0.4       | 11        | -1.3    | 2.8     | 4.3     | 1.6       | 0.1       | -0.6      |  |
| 20                            | 46        | -2.6    | 0.9     | 0.3     | 0.0       | -0.3      | 0.0       | 47        | -2.3    | -0.7    | -0.2    | 0.0       | 0.0       | 0.2       |  |
|                               | 19        | 3.1     | 1.7     | -0.1    | 0.0       | 0.0       | -0.3      | 18        | 1.8     | -1.9    | -0.1    | 0.0       | -0.1      | 0.2       |  |
| 21                            | 40        | 2.2     | -0.6    | -0.2    | 0.0       | 0.0       | -0.2      | 43        | 2.3     | 0.8     | 0.3     | 0.0       | 0.3       | 0.0       |  |
|                               | 5         | -1.6    | -1.8    | 0.0     | 0.0       | 0.1       | -0.2      | 7         | -3.0    | 1.6     | -0.1    | 0.0       | 0.0       | 0.3       |  |
| 22                            | 47        | -2.2    | 0.8     | 0.1     | 0.0       | 0.0       | 0.2       | 36        | -2.4    | -0.9    | -0.3    | 0.0       | -0.3      | 0.0       |  |
|                               | 18        | 1.6     | 1.8     | 0.1     | 0.0       | -0.1      | 0.1       | 17        | 2.9     | -1.7    | 0.1     | 0.0       | 0.0       | -0.3      |  |
| 23                            | 35        | 0.5     | 1.7     | 4.9     | -1.5      | -0.6      | 0.6       | 39        | 1.4     | 2.5     | -0.2    | -0.6      | -0.3      | -0.4      |  |
|                               | 14        | -1.4    | -2.8    | -4.3    | -1.6      | 0.1       | -0.6      | 4         | -0.5    | -1.5    | -0.4    | -0.6      | -0.1      | 0.4       |  |
| 24                            | 34        | -0.4    | -1.7    | -5.0    | 1.6       | 0.6       | -0.6      | 46        | -1.4    | -2.7    | 0.0     | 0.6       | 0.3       | 0.5       |  |
|                               | 11        | 1.4     | 2.7     | 4.5     | 1.7       | -0.1      | 0.6       | 19        | 0.5     | 1.7     | 0.5     | 0.6       | 0.0       | -0.4      |  |
| 25                            | 37        | -1.1    | 1.4     | -1.0    | 0.1       | 0.2       | 0.2       | 38        | -0.5    | 0.8     | -1.6    | 0.0       | 0.5       | -0.2      |  |
|                               | 36        | 0.8     | -0.6    | 0.0     | 0.6       | 0.3       | -0.4      | 35        | 0.8     | -1.7    | 2.6     | 1.6       | 0.7       | 0.4       |  |
| 26                            | 26        | -0.9    | 0.7     | 0.5     | 0.0       | 0.0       | 0.0       | 27        | -0.6    | 0.0     | -0.5    | 0.0       | 0.0       | 0.0       |  |
|                               | 37        | 0.8     | 0.1     | -0.9    | 0.0       | 0.2       | -0.1      | 38        | 0.7     | -0.8    | 0.9     | 0.0       | 0.4       | 0.1       |  |
| 27                            | 41        | 1.2     | -0.6    | 0.0     | 0.0       | 0.2       | -0.1      | 42        | 2.0     | 1.2     | 0.2     | 0.0       | 0.0       | 0.0       |  |
|                               | 39        | -1.6    | -1.3    | -0.4    | -0.1      | 0.3       | -0.1      | 40        | -1.6    | 0.7     | 0.2     | -0.1      | 0.0       | 0.2       |  |
| 28                            | 28        | 1.3     | -0.6    | 0.1     | 0.0       | 0.0       | 0.0       | 29        | 1.5     | 1.0     | 0.1     | 0.0       | 0.0       | 0.0       |  |
|                               | 41        | -1.6    | -1.0    | -0.3    | -0.1      | 0.2       | 0.0       | 42        | -1.2    | 0.7     | 0.1     | 0.0       | 0.0       | 0.0       |  |
| 29                            | 44        | 1.1     | -1.5    | 1.0     | -0.1      | -0.3      | -0.2      | 45        | 0.5     | -0.8    | 1.4     | 0.0       | -0.5      | 0.2       |  |
|                               | 43        | -0.7    | 0.6     | 0.2     | -0.6      | -0.3      | 0.3       | 34        | -0.8    | 1.7     | -2.6    | -1.5      | -0.7      | -0.3      |  |
| 30                            | 30        | 0.8     | -0.7    | -0.5    | 0.0       | 0.0       | 0.0       | 31        | 0.6     | 0.0     | 0.6     | 0.0       | 0.0       | 0.0       |  |

|  |  |                             |                              |
|--|--|-----------------------------|------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>          |                              |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 37 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 0°: MOD01: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                     | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 31                            | 44        | -0.8    | -0.1    | 0.9     | 0.0       | -0.2      | 0.1       | 45        | -0.6    | 0.8     | -1.0    | 0.0       | -0.4      | -0.1      |
|                               | 48        | -1.5    | 0.7     | 0.0     | 0.0       | -0.2      | 0.1       | 49        | -2.2    | -1.2    | -0.2    | 0.0       | 0.0       | 0.0       |
|                               | 46        | 1.7     | 1.3     | 0.3     | 0.1       | -0.3      | 0.1       | 47        | 1.9     | -0.8    | -0.1    | 0.0       | 0.0       | -0.2      |
| 32                            | 32        | -1.4    | 0.7     | -0.1    | 0.0       | 0.0       | 0.0       | 33        | -1.6    | -0.9    | -0.1    | 0.0       | 0.0       | 0.0       |
|                               | 48        | 1.6     | 0.9     | 0.3     | 0.1       | -0.2      | 0.0       | 49        | 1.3     | -0.7    | -0.1    | 0.0       | 0.0       | 0.0       |
| 33                            | 42        | 2.3     | -1.2    | -0.2    | 0.0       | 0.0       | 0.0       | 44        | 1.4     | 0.7     | 0.0     | 0.0       | 0.2       | -0.1      |
|                               | 40        | -1.8    | -0.8    | -0.2    | 0.1       | 0.0       | 0.2       | 43        | -1.9    | 1.3     | 0.4     | 0.1       | 0.3       | 0.0       |
| 34                            | 29        | 1.7     | -1.0    | -0.1    | 0.0       | 0.0       | 0.0       | 30        | 1.4     | 0.7     | -0.1    | 0.0       | 0.0       | 0.0       |
|                               | 42        | -1.4    | -0.7    | -0.1    | 0.0       | 0.0       | 0.0       | 44        | -1.7    | 1.0     | 0.3     | 0.1       | 0.2       | 0.0       |
| 35                            | 49        | -2.0    | 1.2     | 0.2     | 0.0       | 0.0       | 0.0       | 37        | -1.3    | -0.7    | 0.0     | 0.0       | -0.2      | 0.1       |
|                               | 47        | 1.8     | 0.7     | 0.2     | -0.1      | 0.0       | -0.2      | 36        | 1.5     | -1.2    | -0.4    | -0.1      | -0.3      | 0.1       |
| 36                            | 33        | -1.5    | 0.9     | 0.1     | 0.0       | 0.0       | 0.0       | 26        | -1.2    | -0.7    | 0.1     | 0.0       | 0.0       | 0.0       |
|                               | 49        | 1.2     | 0.7     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 1.5     | -0.9    | -0.3    | -0.1      | -0.2      | 0.0       |
| 37                            | 38        | 0.5     | 0.7     | -1.4    | 0.0       | -0.5      | 0.2       | 41        | 1.0     | 1.4     | -1.0    | 0.1       | -0.3      | -0.2      |
|                               | 35        | -0.8    | -1.6    | 2.6     | 1.5       | -0.7      | -0.3      | 39        | -0.7    | -0.5    | -0.2    | 0.6       | -0.4      | 0.3       |
| 38                            | 27        | 0.6     | 0.0     | -0.6    | 0.0       | 0.0       | 0.0       | 28        | 0.8     | 0.6     | 0.5     | 0.0       | 0.0       | 0.0       |
|                               | 38        | -0.6    | -0.8    | 1.0     | 0.0       | -0.4      | -0.1      | 41        | -0.7    | 0.1     | -0.9    | 0.0       | -0.2      | 0.1       |
| 39                            | 45        | -0.5    | -0.8    | 1.5     | 0.0       | 0.5       | -0.2      | 48        | -1.1    | -1.5    | 1.0     | -0.1      | 0.2       | 0.2       |
|                               | 34        | 0.9     | 1.7     | -2.5    | -1.6      | 0.7       | 0.4       | 46        | 0.8     | 0.6     | 0.0     | -0.6      | 0.3       | -0.4      |
| 40                            | 31        | -0.6    | 0.0     | 0.5     | 0.0       | 0.0       | 0.0       | 32        | -0.9    | -0.7    | -0.5    | 0.0       | 0.0       | 0.0       |
|                               | 45        | 0.7     | 0.8     | -0.9    | 0.0       | 0.4       | 0.1       | 48        | 0.9     | -0.1    | 0.9     | 0.0       | 0.2       | -0.1      |

| FORZE: SISMA 0°: MOD03: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                     | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                             | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                             | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                             | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                             | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                             | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                             | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                             | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                             | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                            | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                            | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                            | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                            | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                            | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                            | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                            | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                            | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                            | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                            | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                            | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                            | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                            | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                            | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                            | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                            | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

|  |  |                             |                              |
|--|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br>   | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>          |                              |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 38 di 71</b>         | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 0°: MODO3: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                    | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 29                            | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                            | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                            | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                            | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                            | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                            | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                            | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                            | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                            | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                            | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                            | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                            | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE: SISMA 0°: MODO5: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                    | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                             | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                             | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                             | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                             | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                             | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                             | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                             | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                             | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                            | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                            | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                            | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                            | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                            | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                            | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                            | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                            | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                            | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                            | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                            | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                            | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                            | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                            | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

|  |  |                             |                              |
|--|--|-----------------------------|------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>          |                              |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP DN 1400 (56") DP 75 bar</b>           | Fg. 39 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 0°: MOD05: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                    | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 27                            | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                            | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                            | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                            | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                            | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                            | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                            | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                            | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                            | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                            | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                            | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                            | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                            | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                            | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE: SISMA 0°: MOD06: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                    | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                             | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                             | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                             | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                             | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                             | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                             | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                             | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                             | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                            | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                            | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                            | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                            | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                            | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
|                               | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 18                            | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                            | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 20                            | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                            | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                            | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                            | 35        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 14        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                            | 34        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

|  |  |  |  |  |  |  |                             |  |                              |  |
|--|--|--|--|--|--|--|-----------------------------|--|------------------------------|--|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> |  |  |  |  |  | <b>COMMESSA</b><br>NR/13167 |  | <b>COD. TECNICO</b><br>16153 |  |
|  | <b>LOCALITA'</b><br>REGIONE PUGLIA   |  |  |  |  |  | <b>RE-STRU-122</b>          |  |                              |  |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> |  |  |  |  |  | Fg. 40 di 71                |  | <b>Rev.</b><br><b>0</b>      |  |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 0°: MOD06: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                    | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 25                            | 11        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | -0.2    | 0.1       | 0.0       | 0.0       |
|                               | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       |
| 26                            | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
|                               | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | -0.1    | -0.1      | 0.0       | 0.0       |
| 27                            | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                            | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                            | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.2     | -0.1      | 0.0       | 0.0       |
|                               | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 30                            | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
|                               | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.1     | 0.1       | 0.0       | 0.0       |
| 31                            | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                            | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                            | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                            | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                            | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                            | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                            | 38        | 0.0     | 0.0     | -0.2    | 0.1       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 35        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                            | 27        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 38        | 0.0     | 0.0     | -0.1    | -0.1      | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                            | 45        | 0.0     | 0.0     | 0.2     | -0.1      | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 34        | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                            | 31        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 45        | 0.0     | 0.0     | 0.1     | 0.1       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE: SISMA 0°: MOD07: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                    | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                             | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                             | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                             | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                             | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                             | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                             | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                             | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                             | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                            | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                            | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                            | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                            | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                            | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                            | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                            | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                            | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                            | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                            | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |



|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               | Fg. 41 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 0°: MODO7: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                     | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 23                            | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                            | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                            | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                            | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                            | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                            | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                            | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                            | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                            | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                            | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                            | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                            | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                            | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                            | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                            | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                            | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                            | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                            | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                               | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE: SISMA 0°: MODO10: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                              | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                              | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                              | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                              | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                             | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                             | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                             | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                             | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 42 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 0°: MODO10: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 21                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                             | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                             | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                             | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                             | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                             | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                             | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                             | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                             | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                             | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                             | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                             | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                             | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                             | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                             | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                             | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                             | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                             | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                             | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                             | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE: SISMA 0°: MODO11: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                              | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                              | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                              | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                              | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                             | 36        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                             | 39        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

|  |  |                             |                              |
|--|--|-----------------------------|------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|  | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|  | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               | Fg. 43 di 71                | <b>Rev.</b><br>0             |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 0°: MODO11: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                     | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 19                             | 4         | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 43        | -0.2    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                             | 46        | -0.2    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 19        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.2     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                             | 40        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.2     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | -0.2    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 7         | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                             | 47        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                             | 35        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 14        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                             | 34        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.2     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 11        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                             | 37        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 36        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                             | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 37        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                             | 41        | 0.0     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 39        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                             | 28        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 41        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                             | 44        | -0.2    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.2     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 43        | -0.2    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.2     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                             | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 44        | -0.2    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                             | 48        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 46        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                             | 32        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 48        | -0.2    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 49        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                             | 42        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                             | 29        | -0.2    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 42        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                             | 49        | 0.0     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                             | 33        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 49        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                             | 38        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 35        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                             | 27        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                             | 45        | -0.2    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.2     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 34        | -0.2    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.2     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                             | 31        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 45        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.2     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE: SISMA 0°: MODO12: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                     | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                              | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                              | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                              | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                              | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 44 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 0°: MODO12: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                     | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 17                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                             | 36        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                             | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                             | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                              | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                             | 46        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                             | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                             | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                             | 18        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                             | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                             | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                             | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                             | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                             | 37        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                             | 36        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                             | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                             | 37        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                             | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                             | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                             | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 41                             | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                             | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 43                             | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                             | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 44                             | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                             | 48        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 46                             | 46        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                             | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 48                             | 48        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                             | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                             | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                             | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 42                             | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                             | 49        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 47                             | 47        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                             | 33        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 49                             | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                             | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                             | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                             | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                             | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                             | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                             | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                             | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 45                             | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE: SISMA 90°: MODO2: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                     | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       |
| 1                              | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       |
| 2                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | -0.1      | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                              | 4         | 0.0     | 0.0     | 0.2     | 0.0       | 0.1       | 0.0       | 2         | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       |
| 3                              | 7         | 0.0     | 0.0     | 0.1     | 0.0       | 0.1       | 0.0       | 8         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 5                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | -0.1      | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                              | 9         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                              | 7         | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 5                              | 11        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 7                              | 7         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 6                              | 5         | 0.0     | 0.0     | -0.1    | 0.0       | 0.3       | 0.0       | 13        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 7                              | 7         | 0.0     | 0.0     | -0.1    | 0.0       | 0.1       | 0.0       | 11        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 4                              | 4         | 0.0     | 0.0     | -0.1    | 0.0       | 0.1       | 0.0       | 14        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 5                              | 5         | 0.0     | 0.0     | -0.1    | 0.0       | 0.2       | 0.0       | 13        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 8                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 4                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 9                              | 16        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 15                             | 15        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 10                             | 17        | 0.0     | 0.0     | 0.1     | -0.1      | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.1     | -0.3      | 0.0       | 0.0       |
| 14                             | 14        | 0.0     | 0.0     | -0.1    | -0.1      | 0.0       | 0.0       | 13        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 11                             | 19        | 0.0     | 0.0     | 0.1     | 0.0       | -0.1      | 0.0       | 11        | 0.0     | 0.0     | -0.1    | 0.0       | -0.1      | 0.0       |
| 18                             | 18        | 0.0     | 0.0     | 0.2     | 0.0       | -0.3      | 0.0       | 13        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 12                             | 19        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 11                             | 11        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 13                             | 19        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 20                             | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.1       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 45 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 90°: MODO2: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 15                             | 19        | 0.0     | 0.0     | -0.1    | 0.0       | -0.1      | 0.0       | 22        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
|                                | 17        | 0.0     | 0.0     | -0.1    | 0.0       | -0.1      | 0.0       | 24        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.1       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 17        | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 17                             | 36        | 0.1     | -2.5    | 0.0     | 0.0       | 0.1       | -0.8      | 35        | 6.3     | 1.5     | 0.1     | 0.0       | 0.0       | 0.8       |
|                                | 17        | -3.5    | -0.9    | -0.1    | 0.0       | 0.0       | 0.1       | 14        | -2.8    | 1.9     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                             | 39        | 0.2     | 0.7     | 0.3     | 0.0       | -0.1      | 0.2       | 40        | 0.4     | 0.5     | -0.9    | 0.1       | -0.1      | -0.2      |
|                                | 4         | -0.6    | -1.1    | -0.1    | 0.1       | 0.0       | -0.1      | 5         | -0.1    | -0.1    | 0.7     | 0.3       | 0.0       | 0.1       |
| 19                             | 43        | -0.1    | 2.5     | 0.0     | 0.0       | -0.1      | 0.7       | 34        | -6.0    | -1.6    | -0.1    | 0.0       | 0.0       | -0.7      |
|                                | 7         | 3.5     | 1.0     | 0.1     | 0.0       | 0.0       | -0.1      | 11        | 2.6     | -1.9    | 0.0     | 0.0       | 0.0       | 0.1       |
| 20                             | 46        | -0.2    | -0.7    | -0.2    | 0.0       | 0.1       | -0.2      | 47        | -0.4    | -0.4    | 0.9     | -0.2      | 0.1       | 0.2       |
|                                | 19        | 0.5     | 1.0     | 0.1     | -0.1      | 0.0       | 0.1       | 18        | 0.1     | 0.1     | -0.8    | -0.4      | 0.0       | -0.1      |
| 21                             | 40        | -0.4    | 0.5     | -0.9    | 0.2       | 0.1       | 0.2       | 43        | -0.2    | 0.8     | 0.2     | 0.0       | 0.1       | -0.2      |
|                                | 5         | 0.1     | -0.1    | 0.8     | 0.3       | 0.0       | -0.1      | 7         | 0.6     | -1.1    | -0.1    | 0.1       | 0.0       | 0.1       |
| 22                             | 47        | 0.4     | -0.5    | 0.9     | -0.2      | -0.1      | -0.2      | 36        | 0.2     | -0.7    | -0.2    | 0.0       | -0.1      | 0.2       |
|                                | 18        | -0.1    | 0.1     | -0.8    | -0.3      | 0.0       | 0.1       | 17        | -0.5    | 1.0     | 0.1     | -0.1      | 0.0       | -0.1      |
| 23                             | 35        | 6.0     | -1.6    | -0.1    | 0.0       | 0.0       | 0.7       | 39        | 0.0     | 2.5     | 0.0     | 0.0       | 0.1       | -0.7      |
|                                | 14        | -2.6    | -1.9    | 0.0     | 0.0       | 0.0       | -0.1      | 4         | -3.4    | 1.0     | 0.1     | 0.0       | 0.0       | 0.1       |
| 24                             | 34        | -6.3    | 1.5     | 0.1     | 0.0       | 0.0       | -0.7      | 46        | -0.1    | -2.5    | 0.0     | 0.0       | -0.1      | 0.8       |
|                                | 11        | 2.8     | 1.9     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 3.5     | -0.9    | -0.1    | 0.0       | 0.0       | -0.1      |
| 25                             | 37        | -2.7    | 0.3     | -0.1    | 0.0       | 0.1       | 0.0       | 38        | -1.8    | -1.3    | 0.1     | 0.0       | 0.0       | 0.1       |
|                                | 36        | -0.9    | 2.1     | -0.1    | 0.0       | 0.1       | 0.7       | 35        | 5.4     | -1.1    | 0.1     | 0.0       | 0.1       | -0.8      |
| 26                             | 26        | -1.2    | 0.5     | -0.1    | 0.0       | 0.0       | 0.0       | 27        | -1.2    | -0.6    | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 37        | 1.0     | 0.7     | 0.0     | 0.0       | 0.1       | 0.0       | 38        | 1.4     | -0.6    | 0.1     | 0.0       | 0.0       | -0.1      |
| 27                             | 41        | -0.3    | 1.3     | 0.2     | 0.1       | -0.1      | 0.2       | 42        | 0.2     | 0.4     | -0.5    | 0.3       | -0.2      | -0.2      |
|                                | 39        | -0.1    | -1.2    | 0.2     | 0.0       | -0.1      | -0.2      | 40        | 0.3     | -0.5    | 0.1     | -0.1      | -0.2      | 0.2       |
| 28                             | 28        | -0.5    | 0.5     | -0.2    | 0.0       | 0.0       | 0.0       | 29        | -0.3    | 0.0     | 0.6     | 0.0       | 0.0       | 0.0       |
|                                | 41        | 0.4     | -0.1    | 0.4     | -0.1      | -0.1      | -0.1      | 42        | 0.3     | -0.4    | -0.8    | -0.3      | -0.2      | 0.1       |
| 29                             | 44        | 2.5     | -0.4    | 0.1     | 0.0       | -0.1      | 0.0       | 45        | 1.7     | 1.3     | -0.1    | 0.0       | 0.0       | -0.1      |
|                                | 43        | 0.8     | -2.0    | 0.1     | 0.0       | -0.1      | -0.7      | 34        | -5.1    | 1.2     | -0.1    | 0.0       | -0.1      | 0.7       |
| 30                             | 30        | 1.1     | -0.5    | 0.1     | 0.0       | 0.0       | 0.0       | 31        | 1.2     | 0.7     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 44        | -1.0    | -0.8    | 0.0     | 0.0       | -0.1      | 0.0       | 45        | -1.2    | 0.6     | -0.1    | 0.0       | 0.0       | 0.0       |
| 31                             | 48        | 0.3     | -1.2    | -0.2    | -0.1      | 0.1       | -0.2      | 49        | -0.2    | -0.4    | 0.5     | -0.3      | 0.2       | 0.2       |
|                                | 46        | 0.1     | 1.2     | -0.1    | 0.0       | 0.1       | 0.2       | 47        | -0.3    | 0.4     | -0.1    | 0.2       | 0.2       | -0.2      |
| 32                             | 32        | 0.5     | -0.5    | 0.2     | 0.0       | 0.0       | 0.0       | 33        | 0.2     | 0.0     | -0.6    | 0.0       | 0.0       | 0.0       |
|                                | 48        | -0.4    | 0.2     | -0.4    | 0.1       | 0.1       | 0.1       | 49        | -0.3    | 0.4     | 0.8     | 0.3       | 0.2       | -0.1      |
| 33                             | 42        | -0.2    | 0.4     | -0.5    | 0.3       | 0.2       | 0.2       | 44        | 0.3     | 1.3     | 0.2     | 0.1       | 0.1       | -0.2      |
|                                | 40        | -0.3    | -0.5    | 0.1     | -0.2      | 0.2       | -0.2      | 43        | 0.2     | -1.3    | 0.2     | 0.0       | 0.1       | 0.2       |
| 34                             | 29        | 0.2     | 0.0     | 0.6     | 0.0       | 0.0       | 0.0       | 30        | 0.5     | 0.5     | -0.2    | 0.0       | 0.0       | 0.0       |
|                                | 42        | -0.3    | -0.4    | -0.8    | -0.3      | 0.2       | -0.1      | 44        | -0.4    | -0.1    | 0.4     | -0.1      | 0.1       | 0.1       |
| 35                             | 49        | 0.2     | -0.4    | 0.5     | -0.3      | -0.2      | -0.2      | 37        | -0.3    | -1.2    | -0.3    | -0.1      | -0.1      | 0.2       |
|                                | 47        | 0.3     | 0.5     | -0.1    | 0.2       | -0.2      | 0.2       | 36        | -0.1    | 1.1     | -0.2    | 0.0       | -0.1      | -0.2      |
| 36                             | 33        | -0.2    | 0.0     | -0.6    | 0.0       | 0.0       | 0.0       | 26        | -0.5    | -0.5    | 0.2     | 0.0       | 0.0       | 0.0       |
|                                | 49        | 0.3     | 0.4     | 0.8     | 0.3       | -0.2      | 0.1       | 37        | 0.4     | 0.1     | -0.4    | 0.1       | -0.1      | -0.1      |
| 37                             | 38        | -1.7    | 1.3     | -0.1    | 0.0       | 0.0       | 0.1       | 41        | -2.6    | -0.4    | 0.1     | 0.0       | 0.1       | 0.0       |
|                                | 35        | 5.2     | 1.2     | -0.1    | 0.0       | 0.1       | -0.7      | 39        | -0.8    | -2.0    | 0.1     | 0.0       | 0.1       | 0.7       |
| 38                             | 27        | -1.2    | 0.6     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | -1.1    | -0.5    | 0.1     | 0.0       | 0.0       | 0.0       |
|                                | 38        | 1.2     | 0.6     | -0.1    | 0.0       | 0.0       | 0.0       | 41        | 1.0     | -0.8    | 0.0     | 0.0       | 0.1       | 0.0       |
| 39                             | 45        | 1.8     | -1.3    | 0.1     | 0.0       | 0.0       | -0.1      | 48        | 2.6     | 0.3     | -0.1    | 0.0       | -0.1      | 0.0       |
|                                | 34        | -5.3    | -1.1    | 0.1     | 0.0       | -0.1      | 0.8       | 46        | 0.9     | 2.0     | -0.1    | 0.0       | -0.1      | -0.7      |
| 40                             | 31        | 1.2     | -0.7    | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 1.2     | 0.5     | -0.1    | 0.0       | 0.0       | 0.0       |
|                                | 45        | -1.4    | -0.6    | 0.1     | 0.0       | 0.0       | 0.1       | 48        | -1.0    | 0.8     | 0.0     | 0.0       | -0.1      | 0.0       |

| FORZE: SISMA 90°: MODO3: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                              | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                              | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                              | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                              | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 46 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 90°: MODO3: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 13                             | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                             | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                             | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                             | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                             | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                             | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                             | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                             | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                             | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                             | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                             | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                             | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                             | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                             | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                             | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                             | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                             | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                             | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                             | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                             | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                             | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                             | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                             | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                             | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                             | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE: SISMA 90°: MODO4: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                              | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                              | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                              | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                              | 5         | 0.0     | 0.0     | 0.1     | 0.0       | -0.1      | 0.0       | 13        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.1     | 0.0       | -0.1      | 0.0       | 13        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 8                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                              | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | -0.1    | 0.1       | 0.0       | 0.0       |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 47 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 90°: MODO4: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                     | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 11                             | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
|                                | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | -0.1    | 0.0       | 0.1       | 0.0       | 13        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 12                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                             | 36        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 35        | 0.7     | 0.2     | 0.0     | 0.0       | 0.0       | 0.1       |
|                                | 17        | -0.4    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 14        | -0.4    | 0.2     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                             | 39        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.1     | 0.1     | 0.3     | -0.1      | 0.0       | 0.0       |
|                                | 4         | -0.1    | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       | 5         | 0.0     | -0.1    | -0.2    | -0.1      | 0.0       | 0.0       |
| 19                             | 43        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 34        | -0.7    | -0.2    | 0.0     | 0.0       | 0.0       | -0.1      |
|                                | 7         | 0.3     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.3     | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                             | 46        | 0.0     | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | -0.1    | -0.3    | 0.1       | 0.0       | 0.0       |
|                                | 19        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.1     | 0.2     | 0.1       | 0.0       | 0.0       |
| 21                             | 40        | 0.0     | 0.1     | 0.3     | -0.1      | 0.0       | 0.0       | 43        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | -0.1    | -0.2    | -0.1      | 0.0       | 0.0       | 7         | 0.1     | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                             | 47        | 0.1     | -0.1    | -0.3    | 0.1       | 0.0       | 0.0       | 36        | 0.0     | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.1     | 0.2     | 0.1       | 0.0       | 0.0       | 17        | -0.1    | 0.2     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                             | 35        | 0.7     | -0.2    | 0.0     | 0.0       | 0.0       | 0.1       | 39        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
|                                | 14        | -0.3    | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       | 4         | -0.3    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                             | 34        | -0.7    | 0.2     | 0.0     | 0.0       | 0.0       | -0.1      | 46        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
|                                | 11        | 0.4     | 0.2     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.3     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                             | 37        | -0.3    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | -0.3    | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 36        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 35        | 0.6     | -0.1    | 0.0     | 0.0       | 0.0       | -0.1      |
| 26                             | 26        | -0.2    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | -0.2    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 37        | 0.2     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.2     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                             | 41        | -0.1    | 0.2     | -0.1    | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.1     | 0.1     | -0.1      | 0.1       | 0.0       |
|                                | 39        | 0.0     | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.1     | -0.1    | 0.0     | 0.1       | 0.0       | 0.0       |
| 28                             | 28        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
|                                | 41        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 42        | 0.1     | -0.1    | 0.2     | 0.1       | 0.0       | 0.0       |
| 29                             | 44        | 0.3     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.3     | 0.2     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 43        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 34        | -0.6    | 0.2     | 0.0     | 0.0       | 0.0       | 0.1       |
| 30                             | 30        | 0.2     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.2     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 44        | -0.2    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 45        | -0.2    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                             | 48        | 0.1     | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | -0.1    | -0.1    | 0.1       | -0.1      | 0.0       |
|                                | 46        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | -0.1    | 0.1     | 0.0     | -0.1      | 0.0       | 0.0       |
| 32                             | 32        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
|                                | 48        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 49        | -0.1    | 0.1     | -0.2    | -0.1      | 0.0       | 0.0       |
| 33                             | 42        | 0.0     | 0.1     | 0.1     | -0.1      | -0.1      | 0.0       | 44        | 0.1     | 0.2     | -0.1    | 0.0       | 0.0       | 0.0       |
|                                | 40        | -0.1    | -0.1    | 0.0     | 0.1       | 0.0       | 0.0       | 43        | 0.0     | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                             | 29        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 30        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 42        | -0.1    | -0.1    | 0.2     | 0.1       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 35                             | 49        | 0.0     | -0.1    | -0.1    | 0.1       | 0.1       | 0.0       | 37        | -0.1    | -0.2    | 0.1     | 0.0       | 0.0       | 0.0       |
|                                | 47        | 0.1     | 0.1     | 0.0     | -0.1      | 0.0       | 0.0       | 36        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                             | 33        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 26        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 49        | 0.1     | 0.1     | -0.2    | -0.1      | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 37                             | 38        | -0.3    | 0.2     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | -0.3    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 35        | 0.6     | 0.2     | 0.0     | 0.0       | 0.0       | -0.1      | 39        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 38                             | 27        | -0.2    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 38        | 0.2     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.2     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                             | 45        | 0.3     | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.3     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 34        | -0.7    | -0.2    | 0.0     | 0.0       | 0.0       | 0.1       | 46        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
| 40                             | 31        | 0.2     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.2     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 45        | -0.2    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 48        | -0.2    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE: SISMA 90°: MODO7: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                     | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                              | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                              | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                              | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               | Fg. 48 di 71                | <b>Rev.</b><br>0             |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 90°: MODO7: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 9                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                             | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                             | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                             | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                             | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                             | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                             | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                             | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                             | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                             | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                             | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                             | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                             | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                             | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                             | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                             | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                             | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                             | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                             | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                             | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                             | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                             | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                             | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                             | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                             | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE: SISMA 90°: MODO8: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                              | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                              | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                              | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |



|  |  |  |  |  |  |  |  |                             |  |  |                              |  |  |
|--|--|--|--|--|--|--|--|-----------------------------|--|--|------------------------------|--|--|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> |  |  |  |  |  |  | <b>COMMESSA</b><br>NR/13167 |  |  | <b>COD. TECNICO</b><br>16153 |  |  |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  |  |  |  |  |  |  | <b>RE-STRU-122</b>          |  |  |                              |  |  |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> |  |  |  |  |  |  | Fg. 49 di 71                |  |  | <b>Rev.</b><br><b>0</b>      |  |  |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 90°: MODO8: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 7                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                              | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                              | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                             | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                             | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                             | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                             | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                             | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                             | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                             | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                             | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                             | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                             | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                             | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                             | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                             | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                             | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                             | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                             | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                             | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                             | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                             | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                             | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                             | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                             | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                             | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                             | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                             | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                             | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                             | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                             | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                             | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                             | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                             | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                             | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                             | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                             | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                             | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                             | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                             | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                             | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                             | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                             | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                             | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                             | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                             | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                             | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                             | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                             | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                             | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                             | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE: SISMA 90°: MODO9: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 1                              | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                              | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                              | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 50 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 90°: MODO9: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|--------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                     | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 5                              | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                              | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                              | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                              | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                              | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                              | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                              | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                              | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                              | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                             | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                             | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                             | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                             | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                             | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                             | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                             | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                             | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 18                             | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 19                             | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                             | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                             | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 20                             | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 21                             | 40        | 0.0     | 0.0     | -0.1    | 0.1       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                             | 5         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                             | 47        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                             | 18        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                             | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                             | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                             | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                             | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                             | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                             | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                             | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                             | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                             | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 27                             | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 28                             | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 28                             | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 29                             | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                             | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                             | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                             | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                             | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 31                             | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 32                             | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 32                             | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 33                             | 42        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                             | 40        | 0.0     | 0.0     | -0.1    | -0.1      | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                             | 29        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                             | 42        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                             | 49        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                             | 47        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                             | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                             | 49        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                             | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                             | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                             | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                             | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                             | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                             | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                             | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                             | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE: SISMA 90°: MODO10: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|---------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                               | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 1                               | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

|   |  |  |  |  |  |  |                             |  |                              |  |
|---|--|--|--|--|--|--|-----------------------------|--|------------------------------|--|
|  | <b>PROGETTISTA</b><br> |  |  |  |  |  | <b>COMMESSA</b><br>NR/13167 |  | <b>COD. TECNICO</b><br>16153 |  |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   |  |  |  |  |  | <b>RE-STRU-122</b>          |  |                              |  |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               |  |  |  |  |  |                             |  |                              |  |

Rif. TFM: 011014-50-RC-E-2020

| FORZE: SISMA 90°: MODO10: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|---------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 3                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                               | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                               | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                               | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                               | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                              | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                              | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                              | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                              | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                              | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                              | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                              | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                              | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                              | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                              | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                              | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                              | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                              | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                              | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                              | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                              | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                              | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                              | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                              | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                              | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                              | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                              | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                              | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                              | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                              | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                              | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                              | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                              | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                              | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                              | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                              | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE: SISMA 90°: MODO11: SHELL |      |    |    |    |    |    |    |      |    |    |    |    |    |    |
|---------------------------------|------|----|----|----|----|----|----|------|----|----|----|----|----|----|
| Shell                           | Nodo | Tx | Ty | Tz | Mx | My | Mz | Nodo | Tx | Ty | Tz | Mx | My | Mz |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 52 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| Nro | N.ro | (kN) | (kN) | (kN) | (kN*m) | (kN*m) | (kN*m) | N.ro | (kN) | (kN) | (kN) | (kN*m) | (kN*m) | (kN*m) |
|-----|------|------|------|------|--------|--------|--------|------|------|------|------|--------|--------|--------|
| 1   | 3    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 4    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 1    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 2    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 2   | 5    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 6    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 4    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 2    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 3   | 7    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 8    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 5    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 6    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 4   | 9    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 10   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 7    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 8    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 5   | 11   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 12   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 7    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 9    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 6   | 5    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 13   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 7    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 11   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 7   | 4    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 14   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 5    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 13   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 8   | 3    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 15   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 4    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 14   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 9   | 16   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 17   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 15   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 14   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 10  | 17   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 18   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 14   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 13   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 11  | 19   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 11   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 18   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 13   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 12  | 19   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 20   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 11   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 12   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 13  | 19   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 22   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 20   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 21   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 14  | 18   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 23   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 19   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 22   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 15  | 17   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 24   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 18   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 23   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 16  | 16   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 25   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 17   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 24   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 17  | 36   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 35   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 17   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 14   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 18  | 39   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 40   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 4    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 5    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 19  | 43   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 34   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 7    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 11   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 20  | 46   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 47   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 19   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 18   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 21  | 40   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 43   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 5    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 7    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 22  | 47   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 36   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 18   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 17   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 23  | 35   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 39   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 14   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 4    | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 24  | 34   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 46   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 11   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 19   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 25  | 37   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 38   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 36   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 35   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 26  | 26   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 27   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 37   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 38   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 27  | 41   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 42   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 39   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 40   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 28  | 28   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 29   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 41   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 42   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 29  | 44   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 45   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 43   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 34   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 30  | 30   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 31   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 44   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 45   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 31  | 48   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 49   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 46   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 47   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 32  | 32   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 33   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 48   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 49   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 33  | 42   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 44   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 40   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 43   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 34  | 29   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 30   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 42   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 44   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 35  | 49   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 37   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 47   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 36   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 36  | 33   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 26   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 49   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 37   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 37  | 38   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 41   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 35   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 39   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 38  | 27   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 28   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 38   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 41   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 39  | 45   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 48   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 34   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 46   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
| 40  | 31   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 32   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |
|     | 45   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 48   | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    |

**FORZE: SISMA 90°: MODO12: SHELL**

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 53 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| Shell N.ro | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
|------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| 1          | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2          | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3          | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4          | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5          | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6          | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7          | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8          | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9          | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10         | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11         | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12         | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13         | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14         | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15         | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16         | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17         | 36        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18         | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19         | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20         | 46        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21         | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22         | 47        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 18        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23         | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24         | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25         | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 36        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26         | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 37        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27         | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28         | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29         | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30         | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31         | 48        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 46        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32         | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 48        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33         | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 40        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34         | 29        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 42        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35         | 49        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 47        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36         | 33        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 49        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37         | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38         | 27        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 38        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39         | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40         | 31        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|            | 45        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 54 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

Rif. TFM: 011014-50-RC-E-2020

| FORZE PESO PROPRIO: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|---------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                         | 3         | 0.0     | 0.0     | -0.3    | -0.3      | -0.1      | 0.0       | 4         | 0.0     | 0.0     | 3.6     | -0.2      | 0.1       | 0.0       |
|                           | 1         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | -3.3    | 0.0       | 0.0       | 0.0       |
| 2                         | 5         | 0.0     | 0.0     | -0.5    | -0.5      | 1.1       | 0.0       | 6         | 0.0     | 0.0     | 1.6     | 0.4       | 0.0       | 0.0       |
|                           | 4         | 0.0     | 0.0     | -4.0    | -0.2      | -0.5      | 0.0       | 2         | 0.0     | 0.0     | 4.8     | 0.0       | 0.0       | 0.0       |
| 3                         | 7         | 0.0     | 0.0     | -1.9    | 0.2       | -0.6      | 0.0       | 8         | 0.0     | 0.0     | 2.9     | -0.1      | -0.1      | 0.0       |
|                           | 5         | 0.0     | 0.0     | -0.1    | 0.5       | 1.1       | 0.0       | 6         | 0.0     | 0.0     | 1.2     | -0.4      | 0.0       | 0.0       |
| 4                         | 9         | 0.0     | 0.0     | -1.3    | -0.1      | -0.1      | 0.0       | 10        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
|                           | 7         | 0.0     | 0.0     | 2.6     | 0.1       | -0.1      | 0.0       | 8         | 0.0     | 0.0     | -1.3    | 0.1       | 0.1       | 0.0       |
| 5                         | 11        | 0.0     | 0.0     | 0.0     | -0.4      | 1.0       | 0.0       | 12        | 0.0     | 0.0     | 1.1     | 0.4       | 0.0       | 0.0       |
|                           | 7         | 0.0     | 0.0     | -1.9    | -0.2      | -0.6      | 0.0       | 9         | 0.0     | 0.0     | 2.8     | 0.1       | -0.1      | 0.0       |
| 6                         | 5         | 0.0     | 0.0     | 2.1     | -1.7      | 2.0       | 0.0       | 13        | 0.0     | 0.0     | 17.2    | -4.7      | 4.9       | 0.0       |
|                           | 7         | 0.0     | 0.0     | 4.2     | -1.9      | 1.9       | 0.0       | 11        | 0.0     | 0.0     | 2.9     | -2.0      | 2.0       | 0.0       |
| 7                         | 4         | 0.0     | 0.0     | 3.6     | 2.1       | 1.7       | 0.0       | 14        | 0.0     | 0.0     | 1.7     | 2.0       | 1.8       | 0.0       |
|                           | 5         | 0.0     | 0.0     | 2.2     | 2.0       | 1.8       | 0.0       | 13        | 0.0     | 0.0     | 16.9    | 4.8       | 4.6       | 0.0       |
| 8                         | 3         | 0.0     | 0.0     | 1.8     | 0.1       | -0.3      | 0.0       | 15        | 0.0     | 0.0     | 0.9     | 0.2       | -0.4      | 0.0       |
|                           | 4         | 0.0     | 0.0     | -0.9    | 0.1       | 0.4       | 0.0       | 14        | 0.0     | 0.0     | 0.2     | -0.6      | 0.5       | 0.0       |
| 9                         | 16        | 0.0     | 0.0     | 2.9     | -0.1      | 0.1       | 0.0       | 17        | 0.0     | 0.0     | -2.0    | 0.2       | 0.7       | 0.0       |
|                           | 15        | 0.0     | 0.0     | 2.0     | -0.4      | -0.2      | 0.0       | 14        | 0.0     | 0.0     | -0.8    | 0.5       | -1.0      | 0.0       |
| 10                        | 17        | 0.0     | 0.0     | 4.1     | 1.8       | 2.0       | 0.0       | 18        | 0.0     | 0.0     | 3.2     | 1.7       | 2.1       | 0.0       |
|                           | 14        | 0.0     | 0.0     | 1.9     | 1.7       | 2.1       | 0.0       | 13        | 0.0     | 0.0     | 17.1    | 4.6       | 5.0       | 0.0       |
| 11                        | 19        | 0.0     | 0.0     | 4.6     | 2.0       | 1.9       | 0.0       | 11        | 0.0     | 0.0     | 3.0     | 2.2       | 1.8       | 0.0       |
|                           | 18        | 0.0     | 0.0     | 3.4     | 2.0       | 1.9       | 0.0       | 13        | 0.0     | 0.0     | 17.5    | 5.0       | 4.9       | 0.0       |
| 12                        | 19        | 0.0     | 0.0     | -1.9    | 0.2       | -0.6      | 0.0       | 20        | 0.0     | 0.0     | 2.9     | -0.1      | -0.1      | 0.0       |
|                           | 11        | 0.0     | 0.0     | -0.6    | 0.4       | 1.1       | 0.0       | 12        | 0.0     | 0.0     | 1.8     | -0.4      | 0.0       | 0.0       |
| 13                        | 19        | 0.0     | 0.0     | 2.6     | -0.1      | -0.1      | 0.0       | 22        | 0.0     | 0.0     | -1.3    | -0.1      | 0.1       | 0.0       |
|                           | 20        | 0.0     | 0.0     | -1.3    | 0.1       | -0.1      | 0.0       | 21        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 14                        | 18        | 0.0     | 0.0     | -0.6    | -0.5      | 1.2       | 0.0       | 23        | 0.0     | 0.0     | 1.8     | 0.4       | 0.0       | 0.0       |
|                           | 19        | 0.0     | 0.0     | -1.9    | -0.2      | -0.6      | 0.0       | 22        | 0.0     | 0.0     | 2.9     | 0.1       | -0.1      | 0.0       |
| 15                        | 17        | 0.0     | 0.0     | -2.0    | 0.2       | -0.6      | 0.0       | 24        | 0.0     | 0.0     | 2.9     | -0.1      | -0.1      | 0.0       |
|                           | 18        | 0.0     | 0.0     | 0.0     | 0.5       | 1.1       | 0.0       | 23        | 0.0     | 0.0     | 1.1     | -0.4      | 0.0       | 0.0       |
| 16                        | 16        | 0.0     | 0.0     | -1.3    | -0.1      | -0.1      | 0.0       | 25        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
|                           | 17        | 0.0     | 0.0     | 2.7     | 0.1       | -0.1      | 0.0       | 24        | 0.0     | 0.0     | -1.4    | 0.1       | 0.1       | 0.0       |
| 17                        | 36        | 2.6     | -7.0    | -0.8    | 0.2       | 0.1       | -2.7      | 35        | 1.6     | -11.0   | -1.7    | 0.2       | 0.0       | 3.6       |
|                           | 17        | -0.9    | 9.5     | 0.7     | 0.5       | 0.0       | 2.6       | 14        | -3.3    | 18.0    | 1.9     | 1.3       | 0.1       | -3.5      |
| 18                        | 39        | 2.3     | -6.5    | -0.7    | 0.0       | 0.1       | -2.3      | 40        | 1.7     | -10.5   | -0.3    | -0.2      | 0.2       | 3.3       |
|                           | 4         | -0.7    | 8.6     | 0.4     | 0.3       | 0.0       | 2.1       | 5         | -3.3    | 17.2    | 0.5     | 0.7       | 0.1       | -3.1      |
| 19                        | 43        | 2.6     | -7.8    | -0.6    | 0.2       | 0.1       | -2.5      | 34        | 1.8     | -11.2   | -1.3    | 0.2       | 0.0       | 3.3       |
|                           | 7         | -1.3    | 9.6     | 0.4     | 0.3       | 0.0       | 2.6       | 11        | -3.1    | 18.2    | 1.5     | 1.1       | 0.1       | -3.4      |
| 20                        | 46        | 2.6     | -7.4    | -0.5    | 0.0       | 0.1       | -2.7      | 47        | 1.5     | -11.0   | -0.3    | -0.2      | 0.1       | 3.7       |
|                           | 19        | -0.7    | 10.0    | 0.3     | 0.2       | 0.0       | 2.6       | 18        | -3.4    | 17.9    | 0.5     | 0.7       | 0.1       | -3.5      |
| 21                        | 40        | -1.6    | -11.0   | -0.4    | -0.2      | -0.2      | -3.6      | 43        | -2.4    | -6.7    | -0.7    | 0.0       | -0.1      | 2.6       |
|                           | 5         | 3.3     | 17.9    | 0.6     | 0.8       | -0.1      | 3.4       | 7         | 0.7     | 9.3     | 0.5     | 0.3       | 0.0       | -2.5      |
| 22                        | 47        | -1.6    | -11.1   | -0.3    | -0.2      | -0.1      | -3.3      | 36        | -2.4    | -7.4    | -0.5    | 0.0       | -0.1      | 2.4       |
|                           | 18        | 3.0     | 17.7    | 0.5     | 0.7       | -0.1      | 3.3       | 17        | 1.0     | 9.5     | 0.3     | 0.2       | 0.0       | -2.4      |
| 23                        | 35        | -1.7    | -11.1   | -1.5    | 0.2       | 0.0       | -3.3      | 39        | -2.5    | -7.4    | -0.6    | 0.2       | -0.1      | 2.4       |
|                           | 14        | 3.0     | 17.8    | 1.7     | 1.2       | -0.1      | 3.3       | 4         | 1.2     | 9.4     | 0.4     | 0.4       | 0.0       | -2.5      |
| 24                        | 34        | -1.5    | -11.3   | -1.4    | 0.2       | 0.0       | -3.7      | 46        | -2.8    | -7.7    | -0.6    | 0.2       | -0.1      | 2.8       |
|                           | 11        | 3.4     | 18.3    | 1.6     | 1.1       | -0.1      | 3.6       | 19        | 0.8     | 10.2    | 0.5     | 0.4       | 0.0       | -2.7      |
| 25                        | 37        | 1.7     | -4.1    | -0.4    | 0.3       | 0.0       | -1.6      | 38        | 0.7     | -5.3    | 0.1     | 0.1       | 0.0       | 1.8       |
|                           | 36        | -2.7    | 7.5     | 0.4     | 0.2       | 0.0       | 2.4       | 35        | 0.3     | 11.4    | -0.1    | -0.2      | 0.0       | -2.6      |
| 26                        | 26        | 1.5     | 0.0     | -0.6    | 0.2       | 0.0       | -0.2      | 27        | -0.4    | 0.0     | 0.1     | 0.0       | 0.0       | 0.3       |
|                           | 37        | -1.9    | 4.2     | 0.6     | 0.2       | 0.0       | 1.1       | 38        | 0.8     | 5.3     | -0.1    | -0.1      | 0.0       | -1.2      |
| 27                        | 41        | 1.5     | -3.8    | -0.6    | 0.2       | 0.0       | -1.3      | 42        | 0.7     | -4.7    | -0.1    | 0.0       | 0.1       | 1.5       |
|                           | 39        | -2.5    | 6.9     | 0.4     | 0.3       | 0.0       | 2.0       | 40        | 0.2     | 10.4    | 0.3     | 0.2       | 0.1       | -2.2      |
| 28                        | 28        | 1.1     | 0.1     | -0.4    | 0.2       | 0.0       | -0.2      | 29        | -0.4    | 0.0     | -0.1    | 0.0       | 0.0       | 0.3       |
|                           | 41        | -1.4    | 3.9     | 0.4     | 0.2       | 0.0       | 0.9       | 42        | 0.7     | 4.8     | 0.2     | 0.0       | 0.1       | -0.9      |
| 29                        | 44        | 1.6     | -4.1    | -0.4    | 0.2       | 0.0       | -1.4      | 45        | 1.0     | -5.0    | 0.1     | 0.0       | 0.0       | 1.6       |
|                           | 43        | -2.8    | 7.0     | 0.4     | 0.2       | 0.0       | 2.1       | 34        | 0.2     | 10.9    | -0.1    | -0.2      | 0.0       | -2.3      |
| 30                        | 30        | 1.3     | -0.1    | -0.6    | 0.2       | 0.0       | -0.3      | 31        | -0.1    | 0.0     | 0.1     | 0.0       | 0.0       | 0.3       |
|                           | 44        | -1.8    | 3.8     | 0.6     | 0.2       | 0.0       | 0.9       | 45        | 0.5     | 5.1     | -0.1    | 0.0       | 0.0       | -1.0      |
| 31                        | 48        | 1.8     | -4.1    | -0.6    | 0.2       | 0.0       | -1.6      | 49        | 0.7     | -5.3    | -0.2    | 0.0       | 0.1       | 1.7       |
|                           | 46        | -2.8    | 7.5     | 0.5     | 0.3       | 0.0       | 2.4       | 47        | 0.3     | 11.4    | 0.3     | 0.2       | 0.1       | -2.6      |
| 32                        | 32        | 1.3     | 0.1     | -0.5    | 0.2       | 0.0       | -0.2      | 33        | -0.5    | 0.0     | -0.1    | 0.0       | 0.0       | 0.3       |
|                           | 48        | -1.7    | 4.2     | 0.4     | 0.3       | 0.0       | 1.1       | 49        | 0.8     | 5.2     | 0.1     | 0.0       | 0.0       | -1.1      |
| 33                        | 42        | -0.5    | -5.2    | -0.2    | 0.0       | -0.1      | -1.7      | 44        | -1.7    | -3.9    | -0.6    | 0.2       | 0.0       | 1.5       |
|                           | 40        | -0.3    | 11.1    | 0.3     | 0.2       | -0.1      | 2.5       | 43        | 2.6     | 7.5     | 0.5     | 0.3       | 0.0       | -2.3      |
| 34                        | 29        | 0.6     | 0.0     | -0.1    | 0.0       | 0.0       | -0.3      | 30        | -1.3    | 0.1     | -0.5    | 0.3       | 0.0       | 0.2       |
|                           | 42        | -0.9    | 5.1     | 0.2     | 0.0       | -0.1      | 1.1       | 44        | 1.6     | 4.3     | 0.4     | 0.3       | 0.0       | -1.1      |
| 35                        | 49        | -0.9    | -4.8    | -0.1    | 0.0       | -0.1      | -1.5      | 37        | -1.6    | -3.9    | -0.6    | 0.2       | 0.0       | 1.4       |
|                           | 47        | -0.2    | 10.7    | 0.3     | 0.1       | -0.1      | 2.2       | 36        | 2.8     | 6.9     | 0.4     | 0.3       | 0.0       | -2.1      |
| 36                        | 33        | 0.2     | 0.0     | -0.1    | 0.0       | 0.0       | -0.3      | 26        | -1.2    | 0.0     | -0.5    | 0.2       | 0.0       | 0.2       |
|                           | 49        | -0.6    | 4.9     | 0.1     | 0.0       | 0.0       | 0.9       | 37        | 1.5     | 3.9     | 0.4     | 0.2       | 0.0       | -0.9      |
| 37                        | 38        | -0.9    | -5.0    | 0.2     | 0.1       | 0.0       | -1.6      | 41        | -1.5    | -4.0    | -0.4    | 0.2       | 0.0       | 1.4       |
|                           | 35        | -0.4    | 10.7    | -0.1    | -0.2      | 0.0       | 2.3       | 39        | 2.7     | 7.1     | 0.3     | 0.1       | 0.0       | -2.1      |
| 38                        | 27        | 0.2     | 0.0     | 0.1     | 0.0       | 0.0       | -0.3      | 28        | -1.2    | -0.1    | -0.5    | 0.2       | 0.0       | 0.2       |
|                           | 38        | -0.6    | 5.0     | -0.2    | -0.1      | 0.0       | 1.0       | 41        | 1.7     | 3.9     | 0.5     | 0.2       | 0.0       | -0.9      |
| 39                        | 45        | -0.8    | -5.5    | 0.1     | 0.0       | 0.0       | -1.8      | 48        | -1.8    | -4.3    | -0.4    | 0.2       | 0.0       | 1.6       |
|                           | 34        | -0.2    | 11.6    | -0.1    | -0.2      | 0.0       | 2.6       | 46        | 2.8     | 7.7     | 0.4     | 0.2       | 0.0       | -2.5      |
| 40                        | 31        | 0.3     | 0.0     | 0.1     | 0.0       | 0.0       | -0.3      | 32        | -1.5    | -0.1    | -0.6    | 0.2       | 0.0       | 0.2       |
|                           | 45        | -0.8    | 5.4     | -0.1    | -0.1      | 0.0       | 1.2       | 48        | 2.0     | 4.2     | 0.6     | 0.2       | 0.0       | -1.1      |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               | Fg. 55 di 71                | <b>Rev.</b><br>0             |

Rif. TFM: 011014-50-RC-E-2020

| FORZE SOVRACCARICO PERMAN.: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-----------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                        | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                                 | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       |
| 1                                 | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       |
| 2                                 | 5         | 0.0     | 0.0     | -0.1    | 0.0       | 0.1       | 0.0       | 6         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 4                                 | 4         | 0.0     | 0.0     | -0.3    | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.3     | 0.0       | 0.0       | 0.0       |
| 3                                 | 7         | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       |
| 5                                 | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.1       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                                 | 9         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                                 | 7         | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 5                                 | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.1       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                                 | 7         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 6                                 | 5         | 0.0     | 0.0     | -0.2    | -0.1      | 0.1       | 0.0       | 13        | 0.0     | 0.0     | 0.7     | -0.3      | 0.3       | 0.0       |
| 7                                 | 7         | 0.0     | 0.0     | -0.1    | -0.1      | 0.1       | 0.0       | 11        | 0.0     | 0.0     | -0.3    | -0.1      | 0.1       | 0.0       |
| 7                                 | 4         | 0.0     | 0.0     | -0.1    | 0.1       | 0.1       | 0.0       | 14        | 0.0     | 0.0     | -0.3    | 0.1       | 0.1       | 0.0       |
| 5                                 | 5         | 0.0     | 0.0     | -0.2    | 0.1       | 0.1       | 0.0       | 13        | 0.0     | 0.0     | 0.7     | 0.3       | 0.3       | 0.0       |
| 8                                 | 3         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                                 | 4         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                                 | 16        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 15                                | 15        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | -0.1    | 0.0       | -0.1      | 0.0       |
| 10                                | 17        | 0.0     | 0.0     | -0.1    | 0.1       | 0.1       | 0.0       | 18        | 0.0     | 0.0     | -0.2    | 0.1       | 0.1       | 0.0       |
| 14                                | 14        | 0.0     | 0.0     | -0.3    | 0.1       | 0.1       | 0.0       | 13        | 0.0     | 0.0     | 0.7     | 0.3       | 0.3       | 0.0       |
| 11                                | 19        | 0.0     | 0.0     | -0.1    | 0.1       | 0.1       | 0.0       | 11        | 0.0     | 0.0     | -0.3    | 0.2       | 0.1       | 0.0       |
| 18                                | 18        | 0.0     | 0.0     | -0.2    | 0.1       | 0.1       | 0.0       | 13        | 0.0     | 0.0     | 0.6     | 0.3       | 0.3       | 0.0       |
| 19                                | 19        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 11                                | 11        | 0.0     | 0.0     | -0.1    | 0.0       | 0.1       | 0.0       | 12        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 19                                | 19        | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 20                                | 20        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                                | 18        | 0.0     | 0.0     | -0.1    | 0.0       | 0.1       | 0.0       | 23        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 19                                | 19        | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       |
| 17                                | 17        | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       |
| 18                                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.1       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                                | 16        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                                | 17        | 0.0     | 0.0     | 0.2     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 36                                | 36        | -0.2    | -0.3    | 0.0     | 0.0       | 0.0       | -0.2      | 35        | -0.5    | -1.5    | -0.1    | 0.0       | 0.0       | 0.3       |
| 17                                | 17        | 0.5     | 0.7     | 0.0     | 0.0       | 0.0       | 0.2       | 14        | 0.2     | 1.1     | 0.1     | 0.1       | 0.0       | -0.3      |
| 39                                | 39        | 0.2     | -0.6    | 0.0     | 0.0       | 0.0       | -0.2      | 40        | 0.2     | -0.8    | 0.0     | 0.0       | 0.0       | 0.2       |
| 4                                 | 4         | -0.1    | 0.4     | 0.0     | 0.0       | 0.0       | 0.1       | 5         | -0.3    | 1.0     | 0.0     | 0.0       | 0.0       | -0.2      |
| 43                                | 43        | -0.2    | -0.4    | 0.0     | 0.0       | 0.0       | -0.2      | 34        | -0.4    | -1.5    | -0.1    | 0.0       | 0.0       | 0.3       |
| 7                                 | 7         | 0.4     | 0.7     | 0.0     | 0.0       | 0.0       | 0.2       | 11        | 0.1     | 1.2     | 0.1     | 0.1       | 0.0       | -0.3      |
| 46                                | 46        | 0.2     | -0.7    | 0.0     | 0.0       | 0.0       | -0.2      | 47        | 0.2     | -0.8    | 0.0     | 0.0       | 0.0       | 0.2       |
| 19                                | 19        | -0.1    | 0.5     | 0.0     | 0.0       | 0.0       | 0.2       | 18        | -0.3    | 1.1     | 0.0     | 0.0       | 0.0       | -0.2      |
| 40                                | 40        | -0.2    | -0.8    | 0.0     | 0.0       | 0.0       | -0.2      | 43        | -0.2    | -0.7    | 0.0     | 0.0       | 0.0       | 0.2       |
| 5                                 | 5         | 0.3     | 1.1     | 0.0     | 0.0       | 0.0       | 0.2       | 7         | 0.1     | 0.4     | 0.0     | 0.0       | 0.0       | -0.2      |
| 47                                | 47        | -0.2    | -0.8    | 0.0     | 0.0       | 0.0       | -0.2      | 36        | -0.2    | -0.7    | 0.0     | 0.0       | 0.0       | 0.2       |
| 18                                | 18        | 0.3     | 1.0     | 0.0     | 0.0       | 0.0       | 0.2       | 17        | 0.2     | 0.5     | 0.0     | 0.0       | 0.0       | -0.2      |
| 35                                | 35        | 0.4     | -1.5    | -0.1    | 0.0       | 0.0       | -0.3      | 39        | 0.2     | -0.4    | 0.0     | 0.0       | 0.0       | 0.2       |
| 14                                | 14        | -0.1    | 1.2     | 0.1     | 0.1       | 0.0       | 0.3       | 4         | -0.4    | 0.7     | 0.0     | 0.0       | 0.0       | -0.2      |
| 34                                | 34        | 0.5     | -1.6    | -0.1    | 0.0       | 0.0       | -0.3      | 46        | 0.2     | -0.3    | 0.0     | 0.0       | 0.0       | 0.2       |
| 11                                | 11        | -0.2    | 1.2     | 0.1     | 0.1       | 0.0       | 0.3       | 19        | -0.5    | 0.7     | 0.0     | 0.0       | 0.0       | -0.2      |
| 37                                | 37        | -0.3    | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 38        | -0.4    | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                                | 36        | 0.2     | 0.6     | 0.0     | 0.0       | 0.0       | 0.1       | 35        | 0.4     | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                                | 26        | -0.1    | -0.3    | -0.1    | 0.0       | 0.0       | 0.0       | 27        | -0.4    | -0.4    | 0.0     | 0.0       | 0.0       | 0.1       |
| 37                                | 37        | 0.3     | 0.5     | 0.1     | 0.0       | 0.0       | 0.1       | 38        | 0.2     | 0.1     | 0.0     | 0.0       | 0.0       | -0.1      |
| 41                                | 41        | 0.2     | -0.7    | 0.0     | 0.0       | 0.0       | -0.1      | 42        | 0.2     | -0.6    | 0.0     | 0.0       | 0.0       | 0.2       |
| 39                                | 39        | -0.2    | 0.4     | 0.0     | 0.0       | 0.0       | 0.2       | 40        | -0.2    | 0.8     | 0.0     | 0.0       | 0.0       | -0.2      |
| 28                                | 28        | 0.3     | -0.5    | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.0     | -0.4    | 0.0     | 0.0       | 0.0       | 0.1       |
| 41                                | 41        | -0.2    | 0.4     | 0.0     | 0.0       | 0.0       | 0.1       | 42        | -0.1    | 0.6     | 0.0     | 0.0       | 0.0       | -0.2      |
| 44                                | 44        | -0.3    | -0.2    | 0.0     | 0.0       | 0.0       | -0.1      | 45        | -0.3    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       |
| 43                                | 43        | 0.2     | 0.6     | 0.0     | 0.0       | 0.0       | 0.1       | 34        | 0.5     | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                                | 30        | -0.1    | -0.3    | -0.1    | 0.0       | 0.0       | 0.0       | 31        | -0.4    | -0.4    | 0.0     | 0.0       | 0.0       | 0.1       |
| 44                                | 44        | 0.3     | 0.5     | 0.1     | 0.0       | 0.0       | 0.1       | 45        | 0.2     | 0.2     | 0.0     | 0.0       | 0.0       | -0.1      |
| 48                                | 48        | 0.2     | -0.7    | 0.0     | 0.0       | 0.0       | -0.2      | 49        | 0.2     | -0.6    | 0.0     | 0.0       | 0.0       | 0.2       |
| 46                                | 46        | -0.3    | 0.4     | 0.0     | 0.0       | 0.0       | 0.2       | 47        | -0.1    | 0.8     | 0.0     | 0.0       | 0.0       | -0.2      |
| 32                                | 32        | 0.4     | -0.6    | 0.0     | 0.0       | 0.0       | 0.0       | 33        | -0.1    | -0.4    | 0.0     | 0.0       | 0.0       | 0.1       |
| 48                                | 48        | -0.2    | 0.4     | 0.0     | 0.0       | 0.0       | 0.1       | 49        | -0.1    | 0.6     | 0.0     | 0.0       | 0.0       | -0.2      |
| 42                                | 42        | -0.2    | -0.6    | 0.0     | 0.0       | 0.0       | -0.2      | 44        | -0.2    | -0.7    | 0.0     | 0.0       | 0.0       | 0.2       |
| 40                                | 40        | 0.2     | 0.8     | 0.0     | 0.0       | 0.0       | 0.2       | 43        | 0.2     | 0.5     | 0.0     | 0.0       | 0.0       | -0.2      |
| 29                                | 29        | 0.1     | -0.4    | 0.0     | 0.0       | 0.0       | -0.1      | 30        | -0.4    | -0.6    | 0.0     | 0.0       | 0.0       | 0.0       |
| 42                                | 42        | 0.1     | 0.6     | 0.0     | 0.0       | 0.0       | 0.2       | 44        | 0.2     | 0.4     | 0.0     | 0.0       | 0.0       | -0.1      |
| 49                                | 49        | -0.2    | -0.5    | 0.0     | 0.0       | 0.0       | -0.1      | 37        | -0.2    | -0.6    | 0.0     | 0.0       | 0.0       | 0.1       |
| 47                                | 47        | 0.1     | 0.8     | 0.0     | 0.0       | 0.0       | 0.2       | 36        | 0.3     | 0.4     | 0.0     | 0.0       | 0.0       | -0.2      |
| 33                                | 33        | 0.0     | -0.4    | 0.0     | 0.0       | 0.0       | -0.1      | 26        | -0.3    | -0.6    | 0.0     | 0.0       | 0.0       | 0.0       |
| 49                                | 49        | 0.2     | 0.6     | 0.0     | 0.0       | 0.0       | 0.2       | 37        | 0.2     | 0.4     | 0.0     | 0.0       | 0.0       | -0.1      |
| 38                                | 38        | 0.3     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.3     | -0.2    | 0.0     | 0.0       | 0.0       | 0.1       |
| 35                                | 35        | -0.5    | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       | 39        | -0.2    | 0.6     | 0.0     | 0.0       | 0.0       | -0.1      |
| 27                                | 27        | 0.4     | -0.4    | 0.0     | 0.0       | 0.0       | -0.1      | 28        | 0.1     | -0.2    | -0.1    | 0.0       | 0.0       | 0.0       |
| 38                                | 38        | -0.2    | 0.2     | 0.0     | 0.0       | 0.0       | 0.1       | 41        | -0.3    | 0.5     | 0.1     | 0.0       | 0.0       | -0.1      |
| 45                                | 45        | 0.4     | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.3     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 34                                | 34        | -0.4    | -0.2    | 0.0     | 0.0       | 0.0       | 0.0       | 46        | -0.2    | 0.6     | 0.0     | 0.0       | 0.0       | -0.1      |
| 40                                | 40        | 0.4     | -0.4    | 0.0     | 0.0       | 0.0       | -0.1      | 32        | 0.1     | -0.3    | -0.1    | 0.0       | 0.0       | 0.0       |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 56 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE SOVRACCARICO PERMAN.: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-----------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                        | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
|                                   | 45        | -0.2    | 0.1     | 0.0     | 0.0       | 0.0       | 0.1       | 48        | -0.3    | 0.5     | 0.1     | 0.0       | 0.0       | -0.1      |

| FORZE SPINTA TERR STATICA: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|----------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                       | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                                | 3         | 0.0     | 0.0     | 0.9     | 0.1       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | -2.1    | 0.1       | 0.0       | 0.0       |
|                                  | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 1.2     | -0.1      | -0.1      | 0.0       |
| 2                                | 5         | 0.0     | 0.0     | -0.2    | 0.6       | -1.3      | 0.0       | 6         | 0.0     | 0.0     | 0.3     | -0.6      | 0.0       | 0.0       |
|                                  | 4         | 0.0     | 0.0     | 1.1     | -0.1      | 1.1       | 0.0       | 2         | 0.0     | 0.0     | -1.3    | -0.1      | 0.1       | 0.0       |
| 3                                | 7         | 0.0     | 0.0     | 0.9     | 0.1       | 1.1       | 0.0       | 8         | 0.0     | 0.0     | -1.0    | 0.1       | 0.1       | 0.0       |
|                                  | 5         | 0.0     | 0.0     | 0.5     | -0.6      | -1.4      | 0.0       | 6         | 0.0     | 0.0     | -0.4    | 0.6       | 0.0       | 0.0       |
| 4                                | 9         | 0.0     | 0.0     | 0.9     | 0.0       | 0.1       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 7         | 0.0     | 0.0     | -1.9    | 0.0       | 0.1       | 0.0       | 8         | 0.0     | 0.0     | 1.0     | -0.1      | -0.1      | 0.0       |
| 5                                | 11        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 7         | 0.0     | 0.0     | 0.8     | -0.1      | -0.1      | 0.0       | 9         | 0.0     | 0.0     | -0.9    | -0.1      | 0.0       | 0.0       |
| 6                                | 5         | 0.0     | 0.0     | -3.3    | 1.3       | 4.9       | 0.0       | 13        | 0.0     | 0.0     | 0.9     | 1.8       | 0.2       | 0.0       |
|                                  | 7         | 0.0     | 0.0     | -1.8    | 0.0       | 2.2       | 0.0       | 11        | 0.0     | 0.0     | 4.2     | 0.9       | 0.6       | 0.0       |
| 7                                | 4         | 0.0     | 0.0     | -1.6    | 0.0       | 2.0       | 0.0       | 14        | 0.0     | 0.0     | 4.2     | -1.0      | 0.6       | 0.0       |
|                                  | 5         | 0.0     | 0.0     | -3.1    | -1.3      | 4.6       | 0.0       | 13        | 0.0     | 0.0     | 0.5     | -1.8      | 0.1       | 0.0       |
| 8                                | 3         | 0.0     | 0.0     | -0.9    | 0.0       | 0.1       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 4         | 0.0     | 0.0     | 0.8     | 0.1       | 0.1       | 0.0       | 14        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 9                                | 16        | 0.0     | 0.0     | -1.0    | 0.1       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 1.0     | 0.1       | 0.1       | 0.0       |
|                                  | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 10                               | 17        | 0.0     | 0.0     | -1.3    | 1.9       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | -3.1    | 4.6       | -1.5      | 0.0       |
|                                  | 14        | 0.0     | 0.0     | 4.1     | 0.7       | -1.1      | 0.0       | 13        | 0.0     | 0.0     | 0.2     | 0.1       | -2.0      | 0.0       |
| 11                               | 19        | 0.0     | 0.0     | -1.4    | 0.0       | 2.2       | 0.0       | 11        | 0.0     | 0.0     | 4.1     | -1.0      | 0.7       | 0.0       |
|                                  | 18        | 0.0     | 0.0     | -3.2    | -1.5      | 4.9       | 0.0       | 13        | 0.0     | 0.0     | 0.6     | -2.0      | 0.2       | 0.0       |
| 12                               | 19        | 0.0     | 0.0     | 0.9     | 0.1       | -0.1      | 0.0       | 20        | 0.0     | 0.0     | -0.9    | 0.1       | 0.0       | 0.0       |
|                                  | 11        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                               | 19        | 0.0     | 0.0     | -1.9    | 0.0       | 0.1       | 0.0       | 22        | 0.0     | 0.0     | 1.0     | 0.1       | -0.1      | 0.0       |
|                                  | 20        | 0.0     | 0.0     | 0.9     | 0.0       | 0.1       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                               | 18        | 0.0     | 0.0     | 0.5     | 0.6       | -1.4      | 0.0       | 23        | 0.0     | 0.0     | -0.4    | -0.6      | 0.0       | 0.0       |
|                                  | 19        | 0.0     | 0.0     | 0.9     | -0.1      | 1.1       | 0.0       | 22        | 0.0     | 0.0     | -1.0    | -0.1      | 0.1       | 0.0       |
| 15                               | 17        | 0.0     | 0.0     | 0.9     | 0.1       | 1.1       | 0.0       | 24        | 0.0     | 0.0     | -1.1    | 0.1       | 0.1       | 0.0       |
|                                  | 18        | 0.0     | 0.0     | -0.2    | -0.6      | -1.3      | 0.0       | 23        | 0.0     | 0.0     | 0.4     | 0.6       | 0.0       | 0.0       |
| 16                               | 16        | 0.0     | 0.0     | 1.0     | 0.0       | 0.1       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 17        | 0.0     | 0.0     | -2.1    | 0.0       | 0.1       | 0.0       | 24        | 0.0     | 0.0     | 1.1     | -0.1      | -0.1      | 0.0       |
| 17                               | 36        | 8.5     | -0.7    | 12.9    | -0.6      | -1.1      | 1.8       | 35        | -5.7    | 6.1     | 13.7    | -1.7      | -0.1      | -1.4      |
|                                  | 17        | 2.2     | -0.8    | 10.8    | -0.2      | -0.2      | -1.7      | 14        | -5.0    | -4.6    | 7.8     | -1.0      | -0.3      | 1.4       |
| 18                               | 39        | 12.2    | -6.7    | 10.9    | 1.8       | -1.1      | 0.7       | 40        | -3.9    | 1.5     | -5.5    | 3.9       | -2.1      | -0.6      |
|                                  | 4         | -1.6    | 1.9     | 12.1    | 2.4       | -0.2      | 0.4       | 5         | -6.7    | 3.3     | 24.4    | 5.9       | 0.3       | -0.4      |
| 19                               | 43        | 8.7     | -1.2    | 12.0    | -0.6      | -1.1      | 1.6       | 34        | -5.9    | 5.4     | 12.6    | -1.6      | -0.1      | -1.2      |
|                                  | 7         | 2.5     | -0.5    | 10.0    | -0.2      | -0.2      | -1.6      | 11        | -5.2    | -3.8    | 7.2     | -0.9      | -0.3      | 1.2       |
| 20                               | 46        | 12.8    | -6.5    | 10.8    | 2.0       | -1.1      | 0.8       | 47        | -4.3    | 2.1     | -5.2    | 4.2       | -2.1      | -0.8      |
|                                  | 19        | -1.7    | 1.9     | 13.6    | 2.7       | -0.2      | 0.4       | 18        | -6.7    | 2.5     | 26.0    | 6.3       | 0.4       | -0.4      |
| 21                               | 40        | 4.0     | 1.7     | -5.1    | 4.2       | 2.1       | 0.6       | 43        | -12.1   | -6.4    | 10.9    | 2.0       | 1.1       | -0.7      |
|                                  | 5         | 6.5     | 2.6     | 25.9    | 6.3       | -0.3      | 0.5       | 7         | 1.6     | 2.1     | 13.6    | 2.7       | 0.2       | -0.4      |
| 22                               | 47        | 4.2     | 1.8     | -5.6    | 3.9       | 2.1       | 0.7       | 36        | -12.8   | -6.8    | 10.9    | 1.8       | 1.1       | -0.8      |
|                                  | 18        | 7.0     | 3.2     | 24.5    | 5.9       | -0.3      | 0.4       | 17        | 1.7     | 1.8     | 12.1    | 2.4       | 0.2       | -0.3      |
| 23                               | 35        | 5.9     | 5.4     | 12.6    | -1.6      | 0.2       | 1.2       | 39        | -8.5    | -1.0    | 12.1    | -0.6      | 1.2       | -1.5      |
|                                  | 14        | 5.1     | -3.9    | 7.1     | -1.0      | 0.3       | -1.3      | 4         | -2.5    | -0.5    | 10.0    | -0.2      | 0.2       | 1.6       |
| 24                               | 34        | 5.7     | 6.1     | 13.7    | -1.7      | 0.1       | 1.4       | 46        | -8.8    | -0.9    | 12.8    | -0.6      | 1.1       | -1.8      |
|                                  | 11        | 5.1     | -4.5    | 7.9     | -1.0      | 0.3       | -1.3      | 19        | -2.1    | -0.7    | 10.8    | -0.2      | 0.2       | 1.7       |
| 25                               | 37        | 8.9     | -1.4    | 9.3     | 0.8       | -1.9      | 2.0       | 38        | -11.2   | 5.0     | 0.6     | 2.5       | -1.5      | -1.8      |
|                                  | 36        | 11.9    | 2.6     | 10.5    | 0.9       | -1.4      | -2.3      | 35        | -9.5    | -6.2    | 12.8    | 1.7       | -0.6      | 2.1       |
| 26                               | 26        | -1.8    | 1.1     | 6.2     | -0.3      | -0.3      | 0.5       | 27        | -6.3    | 0.3     | 8.5     | 0.0       | -0.5      | -0.4      |
|                                  | 37        | 12.0    | 3.3     | 6.6     | -0.9      | -1.7      | -1.5      | 38        | -3.9    | -4.6    | -0.1    | -2.5      | -1.2      | 1.5       |
| 27                               | 41        | 8.4     | -4.6    | 11.8    | 0.9       | -2.0      | 0.8       | 42        | -8.7    | 1.1     | 4.5     | 3.5       | -3.0      | -0.8      |
|                                  | 39        | 9.8     | 4.8     | 9.6     | -1.3      | -1.5      | -1.0      | 40        | -9.5    | -1.3    | 4.9     | -3.9      | -2.8      | 1.0       |
| 28                               | 28        | 1.0     | -1.1    | 4.0     | -0.4      | -0.4      | 0.3       | 29        | -3.6    | -0.2    | 11.8    | 0.0       | -0.5      | -0.2      |
|                                  | 41        | 7.2     | 2.6     | 9.2     | -1.4      | -1.7      | -0.7      | 42        | -4.7    | -1.3    | -5.3    | -3.5      | -2.7      | 0.7       |
| 29                               | 44        | 9.1     | -1.6    | 9.0     | 0.7       | -1.9      | 1.9       | 45        | -11.4   | 4.0     | 0.1     | 2.4       | -1.4      | -1.7      |
|                                  | 43        | 12.0    | 2.9     | 9.8     | 0.9       | -1.4      | -2.1      | 34        | -9.7    | -5.3    | 11.9    | 1.6       | -0.6      | 1.9       |
| 30                               | 30        | -1.5    | 1.1     | 5.7     | -0.3      | -0.3      | 0.5       | 31        | -6.6    | -0.3    | 8.0     | 0.0       | -0.5      | -0.4      |
|                                  | 44        | 11.9    | 3.6     | 6.5     | -0.8      | -1.7      | -1.3      | 45        | -3.8    | -4.4    | -0.5    | -2.4      | -1.2      | 1.3       |
| 31                               | 48        | 8.3     | -4.3    | 12.1    | 1.0       | -1.8      | 0.9       | 49        | -9.2    | 1.8     | 5.5     | 3.8       | -3.0      | -0.9      |
|                                  | 46        | 10.5    | 4.8     | 9.9     | -1.5      | -1.4      | -1.2      | 47        | -9.6    | -2.3    | 5.8     | -4.2      | -2.7      | 1.2       |
| 32                               | 32        | 0.9     | -1.0    | 4.7     | -0.5      | -0.3      | 0.3       | 33        | -3.6    | 0.2     | 12.4    | 0.0       | -0.4      | -0.2      |
|                                  | 48        | 7.5     | 2.4     | 8.8     | -1.6      | -1.6      | -0.8      | 49        | -4.8    | -1.6    | -4.7    | -3.8      | -2.7      | 0.7       |
| 33                               | 42        | 8.7     | 1.7     | 5.5     | 3.8       | 3.0       | 0.9       | 44        | -8.3    | -4.4    | 12.1    | 1.0       | 1.9       | -0.8      |
|                                  | 40        | 9.3     | -1.9    | 5.8     | -4.2      | 2.8       | -1.1      | 43        | -9.7    | 4.6     | 9.9     | -1.5      | 1.4       | 1.0       |
| 34                               | 29        | 3.4     | 0.2     | 12.3    | 0.0       | 0.4       | 0.2       | 30        | -1.0    | -1.1    | 4.7     | -0.5      | 0.3       | -0.3      |
|                                  | 42        | 4.7     | -1.5    | -4.7    | -3.8      | 2.7       | -0.7      | 44        | -7.2    | 2.4     | 8.9     | -1.5      | 1.6       | 0.8       |
| 35                               | 49        | 9.3     | 1.1     | 4.5     | 3.6       | 3.0       | 0.9       | 37        | -8.5    | -4.5    | 11.7    | 0.9       | 1.9       | -0.9      |
|                                  | 47        | 9.8     | -1.6    | 5.0     | -3.9      | 2.8       | -1.1      | 36        | -10.5   | 4.9     | 9.5     | -1.3      | 1.5       | 1.1       |
| 36                               | 33        | 3.7     | -0.2    | 11.8    | 0.0       | 0.4       | 0.2       | 26        | -1.0    | -1.1    | 4.0     | -0.5      | 0.4       | -0.3      |
|                                  | 49        | 4.8     | -1.4    | -5.3    | -3.6      | 2.7       | -0.7      | 37        | -7.5    | 2.6     | 9.1     | -1.4      | 1.6       | 0.7       |
| 37                               | 38        | 11.4    | 4.0     | 0.0     | 2.4       | 1.5       | 1.7       | 41        | -9.0    | -1.6    | 9.1     | 0.7       | 1.9       | -1.8      |
|                                  | 35        | 9.6     | -5.3    | 11.8    | 1.6       | 0.6       | -1.9      | 39        | -12.0   | 2.9     | 9.8     | 0.9       | 1.5       | 2.1       |
| 38                               | 27        | 6.6     | -0.3    | 7.9     | 0.0       | 0.5       | 0.4       | 28        | 1.6     | 1.1     | 5.7     | -0.3      | 0.3       | -0.4      |



|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               | Fg. 57 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE SPINTA TERR STATICA: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|----------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                       | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 39                               | 38        | 3.7     | -4.4    | -0.5    | -2.4      | 1.2       | -1.3      | 41        | -11.9   | 3.6     | 6.6     | -0.8      | 1.7       | 1.3       |
|                                  | 45        | 11.3    | 5.0     | 0.6     | 2.6       | 1.4       | 1.9       | 48        | -8.9    | -1.4    | 9.2     | 0.8       | 1.8       | -2.0      |
|                                  | 34        | 9.6     | -6.2    | 12.9    | 1.7       | 0.6       | -2.1      | 46        | -11.9   | 2.6     | 10.4    | 0.9       | 1.4       | 2.3       |
| 40                               | 31        | 6.3     | 0.3     | 8.6     | 0.0       | 0.5       | 0.4       | 32        | 1.7     | 1.0     | 6.2     | -0.3      | 0.3       | -0.5      |
|                                  | 45        | 3.9     | -4.6    | -0.2    | -2.6      | 1.2       | -1.5      | 48        | -12.0   | 3.2     | 6.6     | -0.9      | 1.6       | 1.5       |

| FORZE SPINTA TERRENO SISMI: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-----------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                        | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                                 | 3         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       |
|                                   | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 2                                 | 5         | 0.0     | 0.0     | 0.0     | 0.1       | -0.1      | 0.0       | 6         | 0.0     | 0.0     | 0.0     | -0.1      | 0.0       | 0.0       |
|                                   | 4         | 0.0     | 0.0     | 0.1     | 0.0       | 0.1       | 0.0       | 2         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 3                                 | 7         | 0.0     | 0.0     | 0.1     | 0.0       | 0.1       | 0.0       | 8         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
|                                   | 5         | 0.0     | 0.0     | 0.1     | -0.1      | -0.1      | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.1       | 0.0       | 0.0       |
| 4                                 | 9         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                   | 7         | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 5                                 | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                   | 7         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 6                                 | 5         | 0.0     | 0.0     | -0.4    | 0.1       | 0.5       | 0.0       | 13        | 0.0     | 0.0     | 0.1     | 0.2       | 0.0       | 0.0       |
|                                   | 7         | 0.0     | 0.0     | -0.2    | 0.0       | 0.2       | 0.0       | 11        | 0.0     | 0.0     | 0.5     | 0.1       | 0.1       | 0.0       |
| 7                                 | 4         | 0.0     | 0.0     | -0.2    | 0.0       | 0.2       | 0.0       | 14        | 0.0     | 0.0     | 0.5     | -0.1      | 0.1       | 0.0       |
|                                   | 5         | 0.0     | 0.0     | -0.4    | -0.1      | 0.5       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | -0.2      | 0.0       | 0.0       |
| 8                                 | 3         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                   | 4         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                                 | 16        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
|                                   | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                                | 17        | 0.0     | 0.0     | -0.1    | 0.2       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | -0.3    | 0.5       | -0.2      | 0.0       |
|                                   | 14        | 0.0     | 0.0     | 0.5     | 0.1       | -0.1      | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | -0.2      | 0.0       |
| 11                                | 19        | 0.0     | 0.0     | -0.1    | 0.0       | 0.2       | 0.0       | 11        | 0.0     | 0.0     | 0.4     | -0.1      | 0.1       | 0.0       |
|                                   | 18        | 0.0     | 0.0     | -0.4    | -0.2      | 0.5       | 0.0       | 13        | 0.0     | 0.0     | 0.1     | -0.2      | 0.0       | 0.0       |
| 12                                | 19        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
|                                   | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                                | 19        | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
|                                   | 20        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                                | 18        | 0.0     | 0.0     | 0.1     | 0.1       | -0.2      | 0.0       | 23        | 0.0     | 0.0     | 0.0     | -0.1      | 0.0       | 0.0       |
|                                   | 19        | 0.0     | 0.0     | 0.1     | 0.0       | 0.1       | 0.0       | 22        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 15                                | 17        | 0.0     | 0.0     | 0.1     | 0.0       | 0.1       | 0.0       | 24        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
|                                   | 18        | 0.0     | 0.0     | 0.0     | -0.1      | -0.1      | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.1       | 0.0       | 0.0       |
| 16                                | 16        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                   | 17        | 0.0     | 0.0     | -0.2    | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 17                                | 36        | 0.9     | 0.0     | 1.2     | -0.1      | -0.1      | 0.2       | 35        | -0.6    | 0.6     | 1.3     | -0.3      | 0.0       | -0.2      |
|                                   | 17        | 0.3     | -0.1    | 0.8     | 0.0       | 0.0       | -0.2      | 14        | -0.5    | -0.5    | 0.5     | -0.1      | 0.0       | 0.2       |
| 18                                | 39        | 1.3     | -0.7    | 1.0     | 0.2       | -0.1      | 0.1       | 40        | -0.4    | 0.1     | -0.8    | 0.4       | -0.2      | -0.1      |
|                                   | 4         | -0.2    | 0.2     | 1.0     | 0.3       | 0.0       | 0.0       | 5         | -0.7    | 0.4     | 2.3     | 0.6       | 0.0       | 0.0       |
| 19                                | 43        | 0.9     | -0.1    | 1.1     | -0.1      | -0.1      | 0.2       | 34        | -0.6    | 0.6     | 1.2     | -0.2      | 0.0       | -0.1      |
|                                   | 7         | 0.3     | -0.1    | 0.8     | 0.0       | 0.0       | -0.2      | 11        | -0.5    | -0.4    | 0.4     | -0.1      | 0.0       | 0.1       |
| 20                                | 46        | 1.3     | -0.7    | 0.9     | 0.2       | -0.1      | 0.1       | 47        | -0.5    | 0.2     | -0.8    | 0.4       | -0.2      | -0.1      |
|                                   | 19        | -0.2    | 0.2     | 1.2     | 0.3       | 0.0       | 0.0       | 18        | -0.7    | 0.3     | 2.5     | 0.7       | 0.0       | 0.0       |
| 21                                | 40        | 0.4     | 0.1     | -0.8    | 0.4       | 0.2       | 0.1       | 43        | -1.3    | -0.7    | 0.9     | 0.2       | 0.1       | -0.1      |
|                                   | 5         | 0.7     | 0.3     | 2.5     | 0.7       | 0.0       | 0.0       | 7         | 0.2     | 0.2     | 1.2     | 0.3       | 0.0       | 0.0       |
| 22                                | 47        | 0.4     | 0.2     | -0.8    | 0.4       | 0.2       | 0.1       | 36        | -1.4    | -0.7    | 1.0     | 0.2       | 0.1       | -0.1      |
|                                   | 18        | 0.7     | 0.4     | 2.4     | 0.6       | 0.0       | 0.0       | 17        | 0.2     | 0.2     | 1.0     | 0.3       | 0.0       | 0.0       |
| 23                                | 35        | 0.6     | 0.6     | 1.2     | -0.2      | 0.0       | 0.1       | 39        | -0.9    | -0.1    | 1.1     | -0.1      | 0.1       | -0.2      |
|                                   | 14        | 0.5     | -0.4    | 0.4     | -0.1      | 0.0       | -0.1      | 4         | -0.3    | -0.1    | 0.8     | 0.0       | 0.0       | 0.2       |
| 24                                | 34        | 0.6     | 0.6     | 1.3     | -0.3      | 0.0       | 0.2       | 46        | -0.9    | -0.1    | 1.2     | -0.1      | 0.1       | -0.2      |
|                                   | 11        | 0.5     | -0.5    | 0.5     | -0.1      | 0.0       | -0.1      | 19        | -0.2    | -0.1    | 0.8     | 0.0       | 0.0       | 0.2       |
| 25                                | 37        | 1.2     | -0.2    | 1.0     | 0.1       | -0.2      | 0.2       | 38        | -1.3    | 0.6     | -0.1    | 0.4       | -0.2      | -0.2      |
|                                   | 36        | 1.2     | 0.3     | 1.3     | 0.1       | -0.2      | -0.2      | 35        | -1.1    | -0.7    | 1.6     | 0.3       | -0.1      | 0.2       |
| 26                                | 26        | -0.2    | 0.1     | 1.1     | 0.0       | 0.0       | 0.1       | 27        | -0.8    | 0.0     | 1.4     | 0.0       | -0.1      | 0.0       |
|                                   | 37        | 1.5     | 0.4     | 1.1     | -0.1      | -0.2      | -0.2      | 38        | -0.5    | -0.6    | 0.2     | -0.4      | -0.2      | 0.2       |
| 27                                | 41        | 1.1     | -0.6    | 1.3     | 0.1       | -0.2      | 0.1       | 42        | -1.0    | 0.2     | 0.3     | 0.5       | -0.4      | -0.1      |
|                                   | 39        | 1.0     | 0.5     | 1.1     | -0.1      | -0.2      | -0.1      | 40        | -1.1    | -0.1    | 0.7     | -0.4      | -0.3      | 0.1       |
| 28                                | 28        | 0.1     | -0.1    | 0.8     | -0.1      | 0.0       | 0.0       | 29        | -0.5    | 0.0     | 1.8     | 0.0       | -0.1      | 0.0       |
|                                   | 41        | 1.0     | 0.4     | 1.4     | -0.2      | -0.2      | -0.1      | 42        | -0.6    | -0.2    | -0.4    | -0.5      | -0.3      | 0.1       |
| 29                                | 44        | 1.2     | -0.2    | 1.0     | 0.1       | -0.2      | 0.2       | 45        | -1.3    | 0.5     | -0.2    | 0.3       | -0.2      | -0.2      |
|                                   | 43        | 1.2     | 0.3     | 1.2     | 0.1       | -0.2      | -0.2      | 34        | -1.2    | -0.5    | 1.5     | 0.2       | -0.1      | 0.2       |
| 30                                | 30        | -0.2    | 0.1     | 1.0     | 0.0       | 0.0       | 0.1       | 31        | -0.8    | 0.0     | 1.3     | 0.0       | -0.1      | 0.0       |
|                                   | 44        | 1.5     | 0.5     | 1.1     | -0.1      | -0.2      | -0.2      | 45        | -0.5    | -0.5    | 0.1     | -0.3      | -0.2      | 0.2       |
| 31                                | 48        | 1.1     | -0.5    | 1.3     | 0.2       | -0.2      | 0.1       | 49        | -1.0    | 0.3     | 0.4     | 0.5       | -0.4      | -0.1      |
|                                   | 46        | 1.1     | 0.5     | 1.2     | -0.1      | -0.2      | -0.1      | 47        | -1.2    | -0.2    | 0.9     | -0.4      | -0.3      | 0.1       |
| 32                                | 32        | 0.1     | -0.1    | 0.9     | -0.1      | 0.0       | 0.0       | 33        | -0.5    | 0.0     | 1.9     | 0.0       | 0.0       | 0.0       |
|                                   | 48        | 1.0     | 0.3     | 1.4     | -0.2      | -0.2      | -0.1      | 49        | -0.6    | -0.2    | -0.3    | -0.5      | -0.3      | 0.1       |
| 33                                | 42        | 1.0     | 0.3     | 0.4     | 0.5       | 0.4       | 0.1       | 44        | -1.1    | -0.6    | 1.3     | 0.2       | 0.2       | -0.1      |
|                                   | 40        | 1.1     | -0.2    | 0.9     | -0.4      | 0.3       | -0.1      | 43        | -1.0    | 0.5     | 1.2     | -0.1      | 0.2       | 0.1       |
| 34                                | 29        | 0.5     | 0.0     | 1.8     | 0.0       | 0.1       | 0.0       | 30        | -0.1    | -0.1    | 0.9     | -0.1      | 0.0       | 0.0       |
|                                   | 42        | 0.6     | -0.2    | -0.3    | -0.5      | 0.3       | -0.1      | 44        | -1.0    | 0.3     | 1.4     | -0.2      | 0.2       | 0.1       |
| 35                                | 49        | 1.0     | 0.2     | 0.3     | 0.5       | 0.4       | 0.1       | 37        | -1.1    | -0.6    | 1.3     | 0.1       | 0.2       | -0.1      |
|                                   | 47        | 1.2     | -0.1    | 0.8     | -0.4      | 0.3       | -0.1      | 36        | -1.1    | 0.5     | 1.1     | -0.1      | 0.2       | 0.1       |
| 36                                | 33        | 0.5     | 0.0     | 1.8     | 0.0       | 0.1       | 0.0       | 26        | -0.1    | -0.1    | 0.8     | -0.1      | 0.0       | 0.0       |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 58 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE SPINTA TERRENO SISMI: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-----------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                        | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 37                                | 49        | 0.6     | -0.2    | -0.4    | -0.5      | 0.3       | -0.1      | 37        | -1.0    | 0.4     | 1.4     | -0.2      | 0.2       | 0.1       |
| 37                                | 38        | 1.3     | 0.5     | -0.2    | 0.3       | 0.2       | 0.2       | 41        | -1.2    | -0.2    | 1.0     | 0.1       | 0.2       | -0.2      |
| 37                                | 35        | 1.2     | -0.6    | 1.5     | 0.2       | 0.1       | -0.2      | 39        | -1.2    | 0.3     | 1.2     | 0.1       | 0.2       | 0.2       |
| 38                                | 27        | 0.8     | 0.0     | 1.3     | 0.0       | 0.1       | 0.0       | 28        | 0.2     | 0.1     | 1.0     | 0.0       | 0.0       | -0.1      |
| 38                                | 38        | 0.5     | -0.5    | 0.1     | -0.3      | 0.2       | -0.2      | 41        | -1.5    | 0.5     | 1.1     | -0.1      | 0.2       | 0.2       |
| 39                                | 45        | 1.3     | 0.6     | -0.1    | 0.4       | 0.2       | 0.2       | 48        | -1.2    | -0.2    | 1.0     | 0.1       | 0.2       | -0.2      |
| 39                                | 34        | 1.2     | -0.7    | 1.6     | 0.3       | 0.1       | -0.2      | 46        | -1.2    | 0.3     | 1.2     | 0.1       | 0.2       | 0.2       |
| 40                                | 31        | 0.8     | 0.0     | 1.4     | 0.0       | 0.1       | 0.0       | 32        | 0.2     | 0.1     | 1.1     | 0.0       | 0.0       | -0.1      |
| 40                                | 45        | 0.5     | -0.6    | 0.2     | -0.4      | 0.2       | -0.2      | 48        | -1.5    | 0.4     | 1.1     | -0.1      | 0.2       | 0.2       |

| FORZE NEVE: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro        | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                 | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 1                 | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 2                 | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                 | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 3                 | 7         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 3                 | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                 | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                 | 7         | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                 | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                 | 7         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                 | 5         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.2     | -0.1      | 0.1       | 0.0       |
| 6                 | 7         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 7                 | 4         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 7                 | 5         | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.2     | 0.1       | 0.1       | 0.0       |
| 8                 | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                 | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                 | 16        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 9                 | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                | 17        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 10                | 14        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.2     | 0.1       | 0.1       | 0.0       |
| 11                | 19        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       |
| 11                | 18        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.2     | 0.1       | 0.1       | 0.0       |
| 12                | 19        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 12                | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                | 19        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                | 19        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 15                | 17        | 0.0     | 0.0     | -0.1    | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       |
| 15                | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                | 17        | 0.0     | 0.0     | 0.1     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                | 36        | 0.0     | -0.2    | 0.0     | 0.0       | 0.0       | -0.1      | 35        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 17                | 17        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | 0.1       | 14        | -0.1    | 0.4     | 0.0     | 0.0       | 0.0       | -0.1      |
| 18                | 39        | 0.0     | -0.2    | 0.0     | 0.0       | 0.0       | -0.1      | 40        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 18                | 4         | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | 0.1       | 5         | -0.1    | 0.4     | 0.0     | 0.0       | 0.0       | -0.1      |
| 19                | 43        | 0.0     | -0.2    | 0.0     | 0.0       | 0.0       | -0.1      | 34        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 19                | 7         | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | 0.1       | 11        | -0.1    | 0.4     | 0.0     | 0.0       | 0.0       | -0.1      |
| 20                | 46        | 0.0     | -0.2    | 0.0     | 0.0       | 0.0       | -0.1      | 47        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 20                | 19        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | 0.1       | 18        | -0.1    | 0.4     | 0.0     | 0.0       | 0.0       | -0.1      |
| 21                | 40        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 43        | 0.0     | -0.2    | 0.0     | 0.0       | 0.0       | 0.1       |
| 21                | 5         | 0.1     | 0.4     | 0.0     | 0.0       | 0.0       | 0.1       | 7         | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | -0.1      |
| 22                | 47        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 36        | 0.0     | -0.2    | 0.0     | 0.0       | 0.0       | 0.1       |
| 22                | 18        | 0.1     | 0.4     | 0.0     | 0.0       | 0.0       | 0.1       | 17        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | -0.1      |
| 23                | 35        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 39        | 0.0     | -0.2    | 0.0     | 0.0       | 0.0       | 0.1       |
| 23                | 14        | 0.1     | 0.4     | 0.0     | 0.0       | 0.0       | 0.1       | 4         | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | -0.1      |
| 24                | 34        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 46        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 24                | 11        | 0.1     | 0.4     | 0.0     | 0.0       | 0.0       | 0.1       | 19        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | -0.1      |
| 25                | 37        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 38        | 0.0     | -0.2    | 0.0     | 0.0       | 0.0       | 0.1       |
| 25                | 36        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | 0.1       | 35        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
| 26                | 26        | 0.1     | -0.3    | 0.0     | 0.0       | 0.0       | 0.0       | 27        | -0.1    | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 26                | 37        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 38        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
| 27                | 41        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 42        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 27                | 39        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | 0.1       | 40        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
| 28                | 28        | 0.1     | -0.3    | 0.0     | 0.0       | 0.0       | 0.0       | 29        | -0.1    | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 28                | 41        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 42        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
| 29                | 44        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 45        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 29                | 43        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | 0.1       | 34        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
| 30                | 30        | 0.1     | -0.3    | 0.0     | 0.0       | 0.0       | 0.0       | 31        | -0.1    | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 30                | 44        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 45        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
| 31                | 48        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 49        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 31                | 46        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | 0.1       | 47        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
| 32                | 32        | 0.1     | -0.3    | 0.0     | 0.0       | 0.0       | 0.0       | 33        | -0.1    | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 32                | 48        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 49        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
| 33                | 42        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 44        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
| 33                | 40        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 43        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | -0.1      |
| 34                | 29        | 0.1     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 30        | -0.1    | -0.3    | 0.0     | 0.0       | 0.0       | 0.0       |

|   |  |  |                             |                              |
|---|--|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> |  | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   |  | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               |  | Fg. 59 di 71                | <b>Rev.</b><br>0             |

Rif. TFM: 011014-50-RC-E-2020

| FORZE NEVE: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|-------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro         | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 35                | 42        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 44        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
|                   | 49        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 37        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
|                   | 47        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 36        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | -0.1      |
| 36                | 33        | 0.1     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 26        | -0.1    | -0.3    | 0.0     | 0.0       | 0.0       | 0.0       |
|                   | 49        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 37        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
| 37                | 38        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 41        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
|                   | 35        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 39        | 0.0     | 0.2     | 0.0     | 0.0       | 0.0       | -0.1      |
| 38                | 27        | 0.1     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 28        | -0.1    | -0.3    | 0.0     | 0.0       | 0.0       | 0.0       |
|                   | 38        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 41        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
| 39                | 45        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 48        | 0.0     | -0.3    | 0.0     | 0.0       | 0.0       | 0.1       |
|                   | 34        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 46        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |
| 40                | 31        | 0.1     | -0.3    | 0.0     | 0.0       | 0.0       | -0.1      | 32        | -0.1    | -0.3    | 0.0     | 0.0       | 0.0       | 0.0       |
|                   | 45        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | 0.1       | 48        | 0.0     | 0.3     | 0.0     | 0.0       | 0.0       | -0.1      |

| FORZE Corr. Tors. dir. 0: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|---------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell Nro                       | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                               | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                               | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                               | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                               | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                               | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                               | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                               | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                               | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                              | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                              | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                              | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                              | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                              | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                              | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                              | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                              | 36        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                              | 39        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 4         | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                              | 43        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                              | 46        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 19        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                              | 40        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 5         | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 7         | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                              | 47        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 18        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                              | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                              | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                              | 37        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 36        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 35        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                              | 26        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 37        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 38        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                              | 41        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 39        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                              | 28        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 41        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                              | 44        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 43        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 34        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                              | 30        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 44        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 45        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 31                              | 48        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 46        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                              | 32        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               | Fg. 60 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| FORZE Corr. Tors. dir. 0: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|---------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                      | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 33                              | 48        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 42        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 40        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                              | 29        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 42        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                              | 49        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 47        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                              | 33        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 49        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                              | 38        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 35        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                              | 27        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 38        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 41        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                              | 45        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 34        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                              | 31        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                 | 45        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 48        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |

| FORZE Corr. Tors. dir. 90: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|----------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                       | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 1                                | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 1         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 2                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 2         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 3                                | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 6         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 4                                | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 10        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 8         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 5                                | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 9         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 6                                | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 7                                | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 5         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 8                                | 3         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 9                                | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 15        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 10                               | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 11                               | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 13        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 12                               | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 12        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 13                               | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 20        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 21        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 14                               | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 22        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 15                               | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 18        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 23        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 16                               | 16        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 25        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 24        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 17                               | 36        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 17        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 18                               | 39        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 40        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 4         | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 5         | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 19                               | 43        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 7         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 20                               | 46        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 47        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 19        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 18        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 21                               | 40        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 5         | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 7         | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 22                               | 47        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 18        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 17        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 23                               | 35        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 14        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 4         | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 24                               | 34        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 11        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 19        | 0.0     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 25                               | 37        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 38        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 36        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 35        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 26                               | 26        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 27        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 37        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 38        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 27                               | 41        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 42        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 39        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 40        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 28                               | 28        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 29        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 41        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 42        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 29                               | 44        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 45        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 43        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 34        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 30                               | 30        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 31        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |

|   |  |  |                             |                              |
|---|--|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> |  | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   |  | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               |  | Fg. 61 di 71                | <b>Rev.</b><br>0             |

Rif. TFM: 011014-50-RC-E-2020

| FORZE Corr. Tors. dir. 90: SHELL |           |         |         |         |           |           |           |           |         |         |         |           |           |           |
|----------------------------------|-----------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|---------|---------|-----------|-----------|-----------|
| Shell N.ro                       | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) | Nodo N.ro | Tx (kN) | Ty (kN) | Tz (kN) | Mx (kN*m) | My (kN*m) | Mz (kN*m) |
| 31                               | 44        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 45        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 48        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 49        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 46        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 47        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 32                               | 32        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 33        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 48        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 49        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 33                               | 42        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 40        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 43        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 34                               | 29        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 30        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 42        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 44        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 35                               | 49        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | 0.1     | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 47        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 36        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 36                               | 33        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 26        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 49        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 37        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
| 37                               | 38        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 41        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 35        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 39        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 38                               | 27        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 28        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 38        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 41        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 39                               | 45        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 48        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 34        | -0.1    | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       | 46        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |
| 40                               | 31        | 0.1     | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 32        | 0.1     | 0.0     | 0.0     | 0.0       | 0.0       | 0.0       |
|                                  | 45        | -0.1    | -0.1    | 0.0     | 0.0       | 0.0       | 0.0       | 48        | -0.1    | 0.1     | 0.0     | 0.0       | 0.0       | 0.0       |

| SPOST. PESO PROPRIO: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|----------------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell N.ro                 | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 1                          | 3         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 4         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
|                            | 1         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 2         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
| 2                          | 5         | 0.00    | 0.00    | -0.28   | 0.00000  | 0.00001  | 0.00000  | 6         | 0.00    | 0.00    | -0.28   | 0.00000  | 0.00001  | 0.00000  |
|                            | 4         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 2         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
| 3                          | 7         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 8         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
|                            | 5         | 0.00    | 0.00    | -0.28   | 0.00000  | 0.00001  | 0.00000  | 6         | 0.00    | 0.00    | -0.28   | 0.00000  | 0.00001  | 0.00000  |
| 4                          | 9         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 10        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
|                            | 7         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 8         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
| 5                          | 11        | 0.00    | 0.00    | -0.28   | 0.00000  | 0.00001  | 0.00000  | 12        | 0.00    | 0.00    | -0.28   | 0.00000  | 0.00001  | 0.00000  |
|                            | 7         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 9         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
| 6                          | 5         | 0.00    | 0.00    | -0.28   | 0.00000  | -0.00001 | 0.00000  | 13        | 0.00    | 0.00    | -0.26   | 0.00000  | 0.00000  | 0.00000  |
|                            | 7         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | -0.28   | 0.00001  | 0.00000  | 0.00000  |
| 7                          | 4         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | -0.28   | -0.00001 | 0.00000  | 0.00000  |
|                            | 5         | 0.00    | 0.00    | -0.28   | 0.00000  | -0.00001 | 0.00000  | 13        | 0.00    | 0.00    | -0.26   | 0.00000  | 0.00000  | 0.00000  |
| 8                          | 3         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 15        | 0.00    | 0.00    | -0.28   | -0.00001 | 0.00000  | 0.00000  |
|                            | 4         | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | -0.28   | -0.00001 | 0.00000  | 0.00000  |
| 9                          | 16        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 17        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
|                            | 15        | 0.00    | 0.00    | -0.28   | 0.00000  | -0.00001 | 0.00000  | 14        | 0.00    | 0.00    | -0.28   | 0.00000  | -0.00001 | 0.00000  |
| 10                         | 17        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 18        | 0.00    | 0.00    | -0.28   | -0.00001 | 0.00000  | 0.00000  |
|                            | 14        | 0.00    | 0.00    | -0.28   | 0.00000  | -0.00001 | 0.00000  | 13        | 0.00    | 0.00    | -0.26   | 0.00000  | 0.00000  | 0.00000  |
| 11                         | 19        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | -0.28   | -0.00001 | 0.00000  | 0.00000  |
|                            | 18        | 0.00    | 0.00    | -0.28   | 0.00000  | -0.00001 | 0.00000  | 13        | 0.00    | 0.00    | -0.26   | 0.00000  | 0.00000  | 0.00000  |
| 12                         | 19        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 20        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
|                            | 11        | 0.00    | 0.00    | -0.28   | 0.00000  | 0.00001  | 0.00000  | 12        | 0.00    | 0.00    | -0.28   | 0.00000  | 0.00001  | 0.00000  |
| 13                         | 19        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 22        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
|                            | 20        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 21        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
| 14                         | 18        | 0.00    | 0.00    | -0.28   | 0.00000  | 0.00001  | 0.00000  | 23        | 0.00    | 0.00    | -0.28   | 0.00000  | 0.00001  | 0.00000  |
|                            | 19        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 22        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
| 15                         | 17        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 24        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
|                            | 18        | 0.00    | 0.00    | -0.28   | 0.00000  | 0.00001  | 0.00000  | 23        | 0.00    | 0.00    | -0.28   | 0.00000  | 0.00001  | 0.00000  |
| 16                         | 16        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 25        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
|                            | 17        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  | 24        | 0.00    | 0.00    | -0.29   | 0.00000  | 0.00000  | 0.00000  |
| 17                         | 36        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 35        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 17        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | -0.28   | 0.00    | 0.00001  | 0.00000  | 0.00000  |
| 18                         | 39        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 40        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 4         | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 5         | 0.00    | -0.28   | 0.00    | 0.00001  | 0.00000  | 0.00000  |
| 19                         | 43        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 34        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 7         | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | -0.28   | 0.00    | 0.00001  | 0.00000  | 0.00000  |
| 20                         | 46        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 47        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 19        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 18        | 0.00    | -0.28   | 0.00    | 0.00001  | 0.00000  | 0.00000  |
| 21                         | 40        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 43        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 5         | 0.00    | -0.28   | 0.00    | 0.00001  | 0.00000  | 0.00000  | 7         | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 22                         | 47        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 36        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 18        | 0.00    | -0.28   | 0.00    | 0.00001  | 0.00000  | 0.00000  | 17        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 23                         | 35        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 39        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 14        | 0.00    | -0.28   | 0.00    | 0.00001  | 0.00000  | 0.00000  | 4         | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 24                         | 34        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 46        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 11        | 0.00    | -0.28   | 0.00    | 0.00001  | 0.00000  | 0.00000  | 19        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 25                         | 37        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 38        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 36        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 35        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 26                         | 26        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 27        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 37        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 38        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 27                         | 41        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 42        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 39        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 40        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 28                         | 28        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 29        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 62 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| SPOST. PESO PROPRIO: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|----------------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell Nro                  | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 29                         | 41        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 42        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 44        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 45        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 43        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 34        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 30                         | 30        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 31        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 44        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 45        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 31                         | 48        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 49        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 46        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 47        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 32                         | 32        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 33        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 48        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 49        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 33                         | 42        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 44        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 40        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 43        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 34                         | 29        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 30        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 42        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 44        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 35                         | 49        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 37        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 47        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 36        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 36                         | 33        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 26        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 49        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 37        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 37                         | 38        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 35        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 39        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 38                         | 27        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 28        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 38        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 39                         | 45        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 34        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 46        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 40                         | 31        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 32        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                            | 45        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | -0.29   | 0.00    | 0.00000  | 0.00000  | 0.00000  |

| SPOST. SOVRACCARICO PERMAN.: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|------------------------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell Nro                          | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 1                                  | 3         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 4         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 1         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 2         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 2                                  | 5         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 6         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 4         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 2         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 3                                  | 7         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 8         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 5         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 6         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 4                                  | 9         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 10        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 7         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 8         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 5                                  | 11        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 12        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 7         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 9         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 6                                  | 5         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 7         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 7                                  | 4         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 5         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 8                                  | 3         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 15        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 4         | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 9                                  | 16        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 17        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 15        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 10                                 | 17        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 18        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 14        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 11                                 | 19        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 18        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 12                                 | 19        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 20        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 11        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 12        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 13                                 | 19        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 22        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 20        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 21        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 14                                 | 18        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 23        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 19        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 22        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 15                                 | 17        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 24        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 18        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 23        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 16                                 | 16        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 25        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                    | 17        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  | 24        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 17                                 | 36        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 35        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 17        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 18                                 | 39        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 40        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 4         | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 5         | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 19                                 | 43        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 34        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 7         | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 20                                 | 46        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 47        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 19        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 18        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 21                                 | 40        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 43        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 5         | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 7         | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 22                                 | 47        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 36        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 18        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 17        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 23                                 | 35        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 39        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 14        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 4         | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 24                                 | 34        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 46        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 11        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 19        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 25                                 | 37        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 38        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 36        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 35        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 26                                 | 26        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 27        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |

|   |  |                                    |                                     |
|---|--|------------------------------------|-------------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|   | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 63 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

Rif. TFM: 011014-50-RC-E-2020

| SPOST. SOVRACCARICO PERMAN.: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|------------------------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell N.ro                         | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 27                                 | 37        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 38        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 41        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 42        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 39        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 40        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 28                                 | 28        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 29        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 41        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 42        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 29                                 | 44        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 45        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 43        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 34        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 30                                 | 30        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 31        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 44        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 45        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 31                                 | 48        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 49        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 46        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 47        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 32                                 | 32        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 33        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 48        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 49        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 33                                 | 42        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 44        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 40        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 43        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 34                                 | 29        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 30        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 42        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 44        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 35                                 | 49        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 37        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 47        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 36        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 36                                 | 33        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 26        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 49        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 37        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 37                                 | 38        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 35        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 39        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 38                                 | 27        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 28        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 38        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 39                                 | 45        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 34        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 46        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 40                                 | 31        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 32        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 45        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | -0.01   | 0.00    | 0.00000  | 0.00000  | 0.00000  |

| SPOST. SPINTA TERR STATICA: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|-----------------------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell N.ro                        | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 1                                 | 3         | 0.00    | 0.00    | 0.00    | -0.0001  | 0.00000  | 0.00000  | 4         | 0.00    | 0.00    | 0.00    | -0.0001  | 0.00000  | 0.00000  |
|                                   | 1         | 0.00    | 0.00    | 0.01    | -0.0001  | 0.00000  | 0.00000  | 2         | 0.00    | 0.00    | 0.01    | -0.0001  | 0.00000  | 0.00000  |
| 2                                 | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0002  | 0.00000  | 6         | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0002  | 0.00000  |
|                                   | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0001  | 0.00000  | 2         | 0.00    | 0.00    | 0.01    | 0.00000  | -0.0001  | 0.00000  |
| 3                                 | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0001  | 0.00000  | 8         | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0001  | 0.00000  |
|                                   | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0002  | 0.00000  | 6         | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0002  | 0.00000  |
| 4                                 | 9         | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0001  | 0.00000  | 10        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0001  | 0.00000  |
|                                   | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0001  | 0.00000  | 8         | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0001  | 0.00000  |
| 5                                 | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 12        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 7         | 0.00    | 0.00    | 0.00    | -0.0001  | 0.00000  | 0.00000  | 9         | 0.00    | 0.00    | 0.00    | -0.0001  | 0.00000  | 0.00000  |
| 6                                 | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00002  | 0.00000  | 13        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
|                                   | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00001  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 7                                 | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00001  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00002  | 0.00000  | 13        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 8                                 | 3         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00001  | 0.00000  | 15        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00001  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 9                                 | 16        | 0.00    | 0.00    | 0.01    | 0.00001  | 0.00000  | 0.00000  | 17        | 0.00    | 0.00    | 0.00    | 0.00001  | 0.00000  | 0.00000  |
|                                   | 15        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 10                                | 17        | 0.00    | 0.00    | 0.00    | 0.00001  | 0.00000  | 0.00000  | 18        | 0.00    | 0.00    | 0.00    | 0.00003  | 0.00000  | 0.00000  |
|                                   | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 11                                | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00001  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00003  | 0.00000  | 13        | 0.00    | 0.00    | -0.01   | 0.00000  | 0.00000  | 0.00000  |
| 12                                | 19        | 0.00    | 0.00    | 0.00    | 0.00001  | 0.00000  | 0.00000  | 20        | 0.00    | 0.00    | 0.00    | 0.00001  | 0.00000  | 0.00000  |
|                                   | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 12        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 13                                | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0001  | 0.00000  | 22        | 0.00    | 0.00    | 0.01    | 0.00000  | -0.0001  | 0.00000  |
|                                   | 20        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0001  | 0.00000  | 21        | 0.00    | 0.00    | 0.01    | 0.00000  | -0.0001  | 0.00000  |
| 14                                | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0003  | 0.00000  | 23        | 0.00    | 0.00    | 0.01    | 0.00000  | -0.0002  | 0.00000  |
|                                   | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0001  | 0.00000  | 22        | 0.00    | 0.00    | 0.01    | 0.00000  | -0.0001  | 0.00000  |
| 15                                | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0001  | 0.00000  | 24        | 0.00    | 0.00    | 0.01    | 0.00000  | -0.0001  | 0.00000  |
|                                   | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0003  | 0.00000  | 23        | 0.00    | 0.00    | 0.01    | 0.00000  | -0.0002  | 0.00000  |
| 16                                | 16        | 0.00    | 0.00    | 0.01    | 0.00000  | -0.0001  | 0.00000  | 25        | 0.00    | 0.00    | 0.01    | 0.00000  | -0.0001  | 0.00000  |
|                                   | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0001  | 0.00000  | 24        | 0.00    | 0.00    | 0.01    | 0.00000  | -0.0001  | 0.00000  |
| 17                                | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0003  | 0.00000  | 35        | 0.00    | 0.00    | 0.00    | -0.0002  | 0.00000  | 0.00000  |
|                                   | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | -0.0001  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 18                                | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00003  | 0.00000  | 40        | 0.00    | 0.00    | -0.07   | -0.0007  | 0.00000  | 0.00000  |
|                                   | 4         | 0.00    | 0.00    | 0.00    | -0.0001  | 0.00000  | 0.00000  | 5         | 0.00    | 0.00    | 0.00    | -0.0002  | 0.00000  | 0.00000  |
| 19                                | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0003  | 0.00000  | 34        | 0.00    | 0.00    | 0.00    | -0.0002  | 0.00000  | 0.00000  |
|                                   | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | -0.0001  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 20                                | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00003  | 0.00000  | 47        | 0.00    | 0.00    | -0.07   | -0.0007  | 0.00000  | 0.00000  |
|                                   | 19        | 0.00    | 0.00    | 0.00    | -0.0001  | 0.00000  | 0.00000  | 18        | 0.00    | 0.00    | 0.00    | -0.0003  | 0.00000  | 0.00000  |
| 21                                | 40        | 0.00    | 0.00    | -0.07   | -0.0007  | 0.00000  | 0.00000  | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0003  | 0.00000  |
|                                   | 5         | 0.00    | 0.00    | 0.00    | -0.0002  | 0.00000  | 0.00000  | 7         | 0.00    | 0.00    | 0.00    | -0.0001  | 0.00000  | 0.00000  |
| 22                                | 47        | 0.00    | 0.00    | -0.07   | -0.0007  | 0.00000  | 0.00000  | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.0003  | 0.00000  |
|                                   | 18        | 0.00    | 0.00    | 0.00    | -0.0003  | 0.00000  | 0.00000  | 17        | 0.00    | 0.00    | 0.00    | -0.0001  | 0.00000  | 0.00000  |
| 23                                | 35        | 0.00    | 0.00    | 0.00    | -0.0002  | 0.00000  | 0.00000  | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00003  | 0.00000  |
|                                   | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00001  |
| 24                                | 34        | 0.00    | 0.00    | 0.00    | -0.0002  | 0.00000  | 0.00000  | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00003  | 0.00000  |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               | Fg. 64 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| SPOST. SPINTA TERR STATICA: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|-----------------------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell N.ro                        | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 25                                | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00001  |
|                                   | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.00003 | 0.00000  | 38        | 0.00    | 0.00    | -0.02   | 0.00000  | 0.00000  | 0.00000  |
|                                   | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.00003 | 0.00000  | 35        | 0.00    | 0.00    | 0.00    | -0.00002 | 0.00000  | 0.00000  |
| 26                                | 26        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 27        | 0.00    | 0.00    | 0.00    | 0.00003  | 0.00000  | 0.00000  |
|                                   | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.00003 | 0.00000  | 38        | 0.00    | 0.00    | -0.02   | 0.00000  | 0.00000  | 0.00000  |
| 27                                | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00003  | 0.00000  | 42        | 0.00    | 0.00    | -0.07   | 0.00005  | 0.00000  | 0.00000  |
|                                   | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00003  | 0.00000  | 40        | 0.00    | 0.00    | -0.07   | -0.00007 | 0.00000  | 0.00000  |
| 28                                | 28        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 29        | 0.00    | 0.00    | 0.00    | 0.00010  | 0.00000  | 0.00000  |
|                                   | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00003  | 0.00000  | 42        | 0.00    | 0.00    | -0.07   | 0.00005  | 0.00000  | 0.00000  |
| 29                                | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.00002 | 0.00000  | 45        | 0.00    | 0.00    | -0.02   | 0.00000  | 0.00000  | 0.00000  |
|                                   | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.00003 | 0.00000  | 34        | 0.00    | 0.00    | 0.00    | -0.00002 | 0.00000  | 0.00000  |
| 30                                | 30        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 31        | 0.00    | 0.00    | 0.00    | 0.00004  | 0.00000  | 0.00000  |
|                                   | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.00002 | 0.00000  | 45        | 0.00    | 0.00    | -0.02   | 0.00000  | 0.00000  | 0.00000  |
| 31                                | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00002  | 0.00000  | 49        | 0.00    | 0.00    | -0.08   | 0.00005  | 0.00000  | 0.00000  |
|                                   | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00003  | 0.00000  | 47        | 0.00    | 0.00    | -0.07   | -0.00007 | 0.00000  | 0.00000  |
| 32                                | 32        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 33        | 0.00    | 0.00    | 0.00    | 0.00010  | 0.00000  | 0.00000  |
|                                   | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00002  | 0.00000  | 49        | 0.00    | 0.00    | -0.08   | 0.00005  | 0.00000  | 0.00000  |
| 33                                | 42        | 0.00    | 0.00    | -0.07   | 0.00005  | 0.00000  | 0.00000  | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.00002 | 0.00000  |
|                                   | 40        | 0.00    | 0.00    | -0.07   | -0.00007 | 0.00000  | 0.00000  | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.00003 | 0.00000  |
| 34                                | 29        | 0.00    | 0.00    | 0.00    | 0.00010  | 0.00000  | 0.00000  | 30        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 42        | 0.00    | 0.00    | -0.07   | 0.00005  | 0.00000  | 0.00000  | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.00002 | 0.00000  |
| 35                                | 49        | 0.00    | 0.00    | -0.08   | 0.00005  | 0.00000  | 0.00000  | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.00003 | 0.00000  |
|                                   | 47        | 0.00    | 0.00    | -0.07   | -0.00007 | 0.00000  | 0.00000  | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.00003 | 0.00000  |
| 36                                | 33        | 0.00    | 0.00    | 0.00    | 0.00010  | 0.00000  | 0.00000  | 26        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 49        | 0.00    | 0.00    | -0.08   | 0.00005  | 0.00000  | 0.00000  | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | -0.00003 | 0.00000  |
| 37                                | 38        | 0.00    | 0.00    | -0.02   | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00003  | 0.00000  |
|                                   | 35        | 0.00    | 0.00    | 0.00    | -0.00002 | 0.00000  | 0.00000  | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00003  | 0.00000  |
| 38                                | 27        | 0.00    | 0.00    | 0.00    | 0.00003  | 0.00000  | 0.00000  | 28        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 38        | 0.00    | 0.00    | -0.02   | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00003  | 0.00000  |
| 39                                | 45        | 0.00    | 0.00    | -0.02   | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00002  | 0.00000  |
|                                   | 34        | 0.00    | 0.00    | 0.00    | -0.00002 | 0.00000  | 0.00000  | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00003  | 0.00000  |
| 40                                | 31        | 0.00    | 0.00    | 0.00    | 0.00004  | 0.00000  | 0.00000  | 32        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 45        | 0.00    | 0.00    | -0.02   | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00002  | 0.00000  |

| SPOST. SPINTA TERRENO Sismi: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|------------------------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell N.ro                         | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 1                                  | 3         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 1         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 2         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 2                                  | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 6         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 2         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 3                                  | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 8         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 6         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 4                                  | 9         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 10        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 8         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 5                                  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 12        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 9         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 6                                  | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 7                                  | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 8                                  | 3         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 15        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 9                                  | 16        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 15        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 10                                 | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 11                                 | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 12                                 | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 20        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 12        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 13                                 | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 22        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 20        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 21        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 14                                 | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 23        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 22        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 15                                 | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 24        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 23        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 16                                 | 16        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 25        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 24        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 17                                 | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 18                                 | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 40        | 0.00    | 0.00    | -0.01   | -0.00001 | 0.00000  | 0.00000  |
|                                    | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 19                                 | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 20                                 | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 47        | 0.00    | 0.00    | -0.01   | -0.00001 | 0.00000  | 0.00000  |
|                                    | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 21                                 | 40        | 0.00    | 0.00    | -0.01   | -0.00001 | 0.00000  | 0.00000  | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 22                                 | 47        | 0.00    | 0.00    | -0.01   | -0.00001 | 0.00000  | 0.00000  | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |



|  |  |                             |                              |
|--|--|-----------------------------|------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|  | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | Fg. 65 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| SPOST. SPINTA TERRENO SISMI: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|------------------------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell Nro                          | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 23                                 | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 24                                 | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 25                                 | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 26                                 | 26        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 27        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 27                                 | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 42        | 0.00    | 0.00    | -0.01   | 0.00001  | 0.00000  | 0.00000  |
|                                    | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 40        | 0.00    | 0.00    | -0.01   | -0.00001 | 0.00000  | 0.00000  |
| 28                                 | 28        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 29        | 0.00    | 0.00    | 0.00    | 0.00001  | 0.00000  | 0.00000  |
|                                    | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 42        | 0.00    | 0.00    | -0.01   | 0.00001  | 0.00000  | 0.00000  |
| 29                                 | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 30                                 | 30        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 31        | 0.00    | 0.00    | 0.00    | 0.00001  | 0.00000  | 0.00000  |
|                                    | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 31                                 | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 49        | 0.00    | 0.00    | -0.01   | 0.00001  | 0.00000  | 0.00000  |
|                                    | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 47        | 0.00    | 0.00    | -0.01   | -0.00001 | 0.00000  | 0.00000  |
| 32                                 | 32        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 33        | 0.00    | 0.00    | 0.00    | 0.00001  | 0.00000  | 0.00000  |
|                                    | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 49        | 0.00    | 0.00    | -0.01   | 0.00001  | 0.00000  | 0.00000  |
| 33                                 | 42        | 0.00    | 0.00    | -0.01   | 0.00001  | 0.00000  | 0.00000  | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 40        | 0.00    | 0.00    | -0.01   | -0.00001 | 0.00000  | 0.00000  | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 34                                 | 29        | 0.00    | 0.00    | 0.00    | 0.00001  | 0.00000  | 0.00000  | 30        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 42        | 0.00    | 0.00    | -0.01   | 0.00001  | 0.00000  | 0.00000  | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 35                                 | 49        | 0.00    | 0.00    | -0.01   | 0.00001  | 0.00000  | 0.00000  | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 47        | 0.00    | 0.00    | -0.01   | -0.00001 | 0.00000  | 0.00000  | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 36                                 | 33        | 0.00    | 0.00    | 0.00    | 0.00001  | 0.00000  | 0.00000  | 26        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 49        | 0.00    | 0.00    | -0.01   | 0.00001  | 0.00000  | 0.00000  | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 37                                 | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 38                                 | 27        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 28        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 39                                 | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 40                                 | 31        | 0.00    | 0.00    | 0.00    | 0.00001  | 0.00000  | 0.00000  | 32        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                    | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |

| SPOST. NEVE: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|--------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell Nro          | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 1                  | 3         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 1         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 2         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 2                  | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 6         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 2         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 3                  | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 8         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 6         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 4                  | 9         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 10        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 8         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 5                  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 12        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 9         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 6                  | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 7                  | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 8                  | 3         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 15        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 9                  | 16        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 15        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 10                 | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 11                 | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 12                 | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 20        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 12        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 13                 | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 22        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 20        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 21        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 14                 | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 23        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 22        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 15                 | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 24        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 23        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 16                 | 16        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 25        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 24        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 17                 | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 18                 | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 40        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 19                 | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 20                 | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 47        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               | Fg. 66 di 71                | <b>Rev.</b><br><b>0</b>      |

Rif. TFM: 011014-50-RC-E-2020

| SPOST. NEVE: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|--------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell Nro          | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 21                 | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 40        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 22                 | 47        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 23                 | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 24                 | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 25                 | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 26                 | 26        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 27        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 27                 | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 42        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 40        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 28                 | 28        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 29        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 42        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 29                 | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 30                 | 30        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 31        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 31                 | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 49        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 47        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 32                 | 32        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 33        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 49        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 33                 | 42        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 40        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 34                 | 29        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 30        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 42        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 35                 | 49        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 47        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 36                 | 33        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 26        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 49        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 37                 | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 38                 | 27        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 28        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 39                 | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 40                 | 31        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 32        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                    | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |

| SPOST. Corr. Tors. dir. 0: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|----------------------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell Nro                        | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 1                                | 3         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 1         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 2         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 2                                | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 6         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 2         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 3                                | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 8         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 6         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 4                                | 9         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 10        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 8         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 5                                | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 12        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 9         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 6                                | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 7                                | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 8                                | 3         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 15        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 9                                | 16        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 15        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 10                               | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 11                               | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 12                               | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 20        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 12        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 13                               | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 22        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 20        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 21        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 14                               | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 23        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 22        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 15                               | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 24        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 23        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 16                               | 16        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 25        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 24        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 17                               | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 18                               | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 40        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               | Fg. 67 di 71                | <b>Rev.</b><br>0             |

Rif. TFM: 011014-50-RC-E-2020

| SPOST. Corr. Tors. dir. 0: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|----------------------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell N.ro                       | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 19                               | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 20                               | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 47        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 21                               | 40        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 22                               | 47        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 23                               | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 24                               | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 25                               | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 26                               | 26        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 27        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 27                               | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 42        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 40        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 28                               | 28        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 29        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 42        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 29                               | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 30                               | 30        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 31        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 31                               | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 49        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 47        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 32                               | 32        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 33        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 49        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 33                               | 42        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 40        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 34                               | 29        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 30        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 42        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 35                               | 49        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 47        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 36                               | 33        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 26        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 49        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 37                               | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 38                               | 27        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 28        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 39                               | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 40                               | 31        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 32        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                  | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |

| SPOST. Corr. Tors. dir. 90: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|-----------------------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell N.ro                        | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 1                                 | 3         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 1         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 2         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 2                                 | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 6         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 2         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 3                                 | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 8         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 6         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 4                                 | 9         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 10        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 8         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 5                                 | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 12        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 9         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 6                                 | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 7                                 | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 8                                 | 3         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 15        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 9                                 | 16        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 15        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 10                                | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 11                                | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 13        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 12                                | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 20        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 12        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 13                                | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 22        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 20        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 21        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 14                                | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 23        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 22        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 15                                | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 24        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 23        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 16                                | 16        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 25        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |

|   |  |                             |                              |
|---|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               | Fg. 68 di 71                | <b>Rev.</b><br>0             |

Rif. TFM: 011014-50-RC-E-2020

| SPOST. Corr. Tors. dir. 90: SHELL |           |         |         |         |          |          |          |           |         |         |         |          |          |          |
|-----------------------------------|-----------|---------|---------|---------|----------|----------|----------|-----------|---------|---------|---------|----------|----------|----------|
| Shell N.ro                        | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) | Nodo N.ro | S1 (mm) | S2 (mm) | S3 (mm) | R1 (rad) | R2 (rad) | R3 (rad) |
| 17                                | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 24        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 18                                | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 40        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 19                                | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 20                                | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 47        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 21                                | 40        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 5         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 7         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 22                                | 47        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 18        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 17        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 23                                | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 14        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 4         | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 24                                | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 11        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 19        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 25                                | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 26                                | 26        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 27        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 27                                | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 42        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 40        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 28                                | 28        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 29        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 42        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 29                                | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 30                                | 30        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 31        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 31                                | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 49        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 47        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 32                                | 32        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 33        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 49        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 33                                | 42        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 40        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 43        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 34                                | 29        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 30        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 42        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 44        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 35                                | 49        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 47        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 36        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 36                                | 33        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 26        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 49        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 37        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 37                                | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 35        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 39        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 38                                | 27        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 28        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 38        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 41        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 39                                | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 34        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 46        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
| 40                                | 31        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 32        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |
|                                   | 45        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  | 48        | 0.00    | 0.00    | 0.00    | 0.00000  | 0.00000  | 0.00000  |

| S.L.U. - AZIONI S.L.V. - VERIFICA PIASTRE - QUOTA: 0 ELEMENTO: 1 |       |            |        |        |         |          |          |           |                   |                   |                     |                  |         |      |          |          |           |      |      |
|--|-------|------------|--------|--------|---------|----------|----------|-----------|-------------------|-------------------|---------------------|------------------|---------|------|----------|----------|-----------|------|------|
| Quo N.r  | P. Nr | Nod3d N.ro | Nx N/m | Ny N/m | Txy N/m | Mx N*m/m | My N*m/m | Mxy N*m/m | Molt x/d Direz. X | Molt x/d Direz. Y | Ax s Ay s Ax i Ay i | Atag cmg /m----- | σ N/mmq | ε mm | Fpunz. N | FpnzLi N | Apunz cmq |      |      |
| 0  | 1     | 12         | 0      | 0      | 0       | 1373     | -886     | -39       | 76.7              | 0.1               | 99.9                | 0.10             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 13         | 0      | 0      | 0       | -7340    | -11921   | -13       | 14.3              | 0.1               | 8.8                 | 0.10             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 19         | 0      | 0      | 0       | 959      | 2929     | 132       | 99.9              | 0.1               | 35.9                | 0.10             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 20         | 0      | 0      | 0       | -3136    | 2655     | 1667      | 33.6              | 0.1               | 39.7                | 0.10             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 21         | 0      | 0      | 0       | 949      | 1128     | 918       | 99.9              | 0.1               | 93.3                | 0.10             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 22         | 0      | 0      | 0       | 2546     | 1417     | -1058     | 41.4              | 0.1               | 74.3                | 0.10             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 23         | 0      | 0      | 0       | -1816    | -694     | 32        | 58.0              | 0.1               | 99.9                | 0.10             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 24         | 0      | 0      | 0       | 2771     | 1584     | 1140      | 38.0              | 0.1               | 66.5                | 0.10             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 25         | 0      | 0      | 0       | -890     | 1024     | -803      | 99.9              | 0.1               | 99.9                | 0.10             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |

| S.L.U. - AZIONI S.L.D. - VERIFICA PIASTRE - QUOTA: 0 ELEMENTO: 1 |       |            |        |        |         |          |          |           |                   |                   |                     |                  |         |      |          |          |           |      |      |
|--|-------|------------|--------|--------|---------|----------|----------|-----------|-------------------|-------------------|---------------------|------------------|---------|------|----------|----------|-----------|------|------|
| Quo N.r  | P. Nr | Nod3d N.ro | Nx N/m | Ny N/m | Txy N/m | Mx N*m/m | My N*m/m | Mxy N*m/m | Molt x/d Direz. X | Molt x/d Direz. Y | Ax s Ay s Ax i Ay i | Atag cmg /m----- | σ N/mmq | ε mm | Fpunz. N | FpnzLi N | Apunz cmq |      |      |
| 0  | 1     | 12         | 0      | 0      | 0       | 1249     | -483     | -20       | 98.2              | 0.1               | 99.9                | 0.09             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 13         | 0      | 0      | 0       | -7340    | -11921   | -13       | 16.7              | 0.1               | 10.3                | 0.09             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 19         | 0      | 0      | 0       | 828      | 2929     | 462       | 99.9              | 0.1               | 41.9                | 0.09             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 20         | 0      | 0      | 0       | -3006    | 2655     | 1534      | 40.8              | 0.1               | 46.2                | 0.09             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 21         | 0      | 0      | 0       | -943     | 1107     | 941       | 99.9              | 0.1               | 99.9                | 0.09             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 22         | 0      | 0      | 0       | 2546     | 1417     | -1058     | 48.2              | 0.1               | 86.6                | 0.09             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 23         | 0      | 0      | 0       | -1816    | -694     | 32        | 67.6              | 0.1               | 99.9                | 0.09             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 24         | 0      | 0      | 0       | 2771     | 1584     | 1140      | 44.3              | 0.1               | 77.5                | 0.09             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |
| 0  | 1     | 25         | 0      | 0      | 0       | -890     | 996      | -825      | 99.9              | 0.1               | 99.9                | 0.09             | 7.7     | 7.7  | 7.7      | 7.7      | 0.0       | 0.03 | -0.3 |

| S.L.E. - VERIFICA PIASTRE - QUOTA: 0 ELEMENTO: 1 |         |           |            |         |         |        |       |            |         |            |         |          |             |                |              |              |             |           |        |              |       |           |        |  |
|--|---------|-----------|------------|---------|---------|--------|-------|------------|---------|------------|---------|----------|-------------|----------------|--------------|--------------|-------------|-----------|--------|--------------|-------|-----------|--------|--|
| FESSURAZIONI                                     |         |           |            |         |         |        |       |            |         | TENSIONI   |         |          | DIREZIONE X |                |              |              | DIREZIONE Y |           |        |              |       |           |        |  |
| Quo N.r  | Per N.r | Nodo N.ro | Comb. Cari | Fes lim | Fess mm | dis mm | Co mb | MFX (kN*m) | NX (kN) | MfY (kN*m) | NY (kN) | cos teta | sin teta    | Combina Carico | σ lim. N/mmq | σ cal. N/mmq | Co mb       | Mf (kN*m) | N (kN) | σ cal. N/mmq | Co mb | Mf (kN*m) | N (kN) |  |
|  |         |           |            |         |         |        |       |            |         |            |         |          |             |                |              |              |             |           |        |              |       |           |        |  |

|   |  |  |                             |                              |
|---|--|--|-----------------------------|------------------------------|
|  | <b>PROGETTISTA</b><br> |  | <b>COMMESSA</b><br>NR/13167 | <b>COD. TECNICO</b><br>16153 |
|   | <b>LOCALITA'</b><br>REGIONE PUGLIA   |  | <b>RE-STRU-122</b>          |                              |
|   | <b>PROGETTO/IMPIANTO</b><br>METANODOTTO: INTERCONNESSIONE TAP<br>DN 1400 (56") DP 75 bar               |  |                             |                              |

Rif. TFM: 011014-50-RC-E-2020

| S.L.E. - VERIFICA PIASTRE - QUOTA: 0 ELEMENTO: 1 |         |              |            |         |         |        |       |          |         |          |         |          |          |                |              |              |       |         |             |              |       |         |        |
|--|---------|--------------|------------|---------|---------|--------|-------|----------|---------|----------|---------|----------|----------|----------------|--------------|--------------|-------|---------|-------------|--------------|-------|---------|--------|
|  |         | FESSURAZIONI |            |         |         |        |       |          |         |          |         |          | TENSIONI |                | DIREZIONE X  |              |       |         | DIREZIONE Y |              |       |         |        |
| Quo N.r  | Per N.r | Nodo N.ro    | Comb. Cari | Fes lim | Fess mm | dis mm | Co mb | MfX kN*m | NX (kN) | MfY kN*m | NY (kN) | cos teta | sin teta | Combina Carico | σ lim. N/mmq | σ cal. N/mmq | Co mb | Mf kN*m | N (kN)      | σ cal. N/mmq | Co mb | Mf kN*m | N (kN) |
| 0  | 1       | 12           | Rara       | 0.3     | 0.00    | 0      | 2     | 0.9      | 0.0     | 0.0      | 0.0     | 0.000    | 0.000    | RaraClis       | 18.00        | 0.09         | 2     | 1.0     | 0.0         | 0.03         | 2     | -0.3    | 0.0    |
|  |         |              | Freq       | 0.2     | 0.00    | 0      | 1     | 0.9      | 0.0     | 0.0      | 0.0     | 0.000    | 0.000    | RaraFer        | 360.0        | 3.6          | 2     | 1.0     | 0.0         | 1.2          | 2     | -0.3    | 0.0    |
|  |         |              | Perm       | 0.2     | 0.00    | 0      | 1     | 0.9      | 0.0     | 0.0      | 0.0     | 0.000    | 0.000    | PermClis       | 13.50        | 0.09         | 1     | 0.9     | 0.0         | 0.03         | 1     | -0.3    | 0.0    |
| 0  | 1       | 13           | Rara       | 0.3     | 0.00    | 0      | 2     | -5.8     | 0.0     | -8.8     | 0.0     | 0.000    | 0.000    | RaraClis       | 18.00        | 0.58         | 2     | -5.9    | 0.0         | 0.87         | 2     | -9.0    | 0.0    |
|  |         |              | Freq       | 0.2     | 0.00    | 0      | 1     | -5.8     | 0.0     | -8.8     | 0.0     | 0.000    | 0.000    | RaraFer        | 360.0        | 22.3         | 2     | -5.9    | 0.0         | 33.6         | 2     | -9.0    | 0.0    |
|  |         |              | Perm       | 0.2     | 0.00    | 0      | 1     | -5.8     | 0.0     | -8.8     | 0.0     | 0.000    | 0.000    | PermClis       | 13.50        | 0.56         | 1     | -5.8    | 0.0         | 0.85         | 1     | -8.8    | 0.0    |
| 0  | 1       | 19           | Rara       | 0.3     | 0.00    | 0      | 2     | 0.7      | 0.0     | 2.1      | 0.0     | 0.000    | 0.000    | RaraClis       | 18.00        | 0.07         | 2     | 0.7     | 0.0         | 0.20         | 2     | 2.1     | 0.0    |
|  |         |              | Freq       | 0.2     | 0.00    | 0      | 1     | 0.7      | 0.0     | 2.1      | 0.0     | 0.000    | 0.000    | RaraFer        | 360.0        | 2.6          | 2     | 0.7     | 0.0         | 7.8          | 2     | 2.1     | 0.0    |
|  |         |              | Perm       | 0.2     | 0.00    | 0      | 1     | 0.7      | 0.0     | 2.1      | 0.0     | 0.000    | 0.000    | PermClis       | 13.50        | 0.07         | 1     | 0.7     | 0.0         | 0.20         | 1     | 2.1     | 0.0    |
| 0  | 1       | 20           | Rara       | 0.3     | 0.00    | 0      | 2     | -2.2     | 0.0     | -0.4     | 0.0     | 0.000    | 0.000    | RaraClis       | 18.00        | 0.22         | 2     | -2.3    | 0.0         | 0.18         | 2     | 1.8     | 0.0    |
|  |         |              | Freq       | 0.2     | 0.00    | 0      | 1     | -2.2     | 0.0     | -0.4     | 0.0     | 0.000    | 0.000    | RaraFer        | 360.0        | 8.5          | 2     | -2.3    | 0.0         | 6.9          | 2     | 1.8     | 0.0    |
|  |         |              | Perm       | 0.2     | 0.00    | 0      | 1     | -2.2     | 0.0     | -0.4     | 0.0     | 0.000    | 0.000    | PermClis       | 13.50        | 0.22         | 1     | -2.2    | 0.0         | 0.18         | 1     | 1.8     | 0.0    |
| 0  | 1       | 21           | Rara       | 0.3     | 0.00    | 0      | 2     | 0.8      | 0.0     | 0.9      | 0.0     | 0.000    | 0.000    | RaraClis       | 18.00        | 0.08         | 2     | 0.9     | 0.0         | 0.09         | 2     | 1.0     | 0.0    |
|  |         |              | Freq       | 0.2     | 0.00    | 0      | 1     | 0.8      | 0.0     | 0.9      | 0.0     | 0.000    | 0.000    | RaraFer        | 360.0        | 3.2          | 2     | 0.9     | 0.0         | 3.6          | 2     | 1.0     | 0.0    |
|  |         |              | Perm       | 0.2     | 0.00    | 0      | 1     | 0.8      | 0.0     | 0.9      | 0.0     | 0.000    | 0.000    | PermClis       | 13.50        | 0.08         | 1     | 0.8     | 0.0         | 0.09         | 1     | 0.9     | 0.0    |
| 0  | 1       | 22           | Rara       | 0.3     | 0.00    | 0      | 1     | 1.5      | 0.0     | 0.7      | 0.0     | 0.000    | 0.000    | RaraClis       | 18.00        | 0.15         | 1     | 1.5     | 0.0         | 0.06         | 1     | 0.6     | 0.0    |
|  |         |              | Freq       | 0.2     | 0.00    | 0      | 1     | 1.5      | 0.0     | 0.7      | 0.0     | 0.000    | 0.000    | RaraFer        | 360.0        | 5.6          | 1     | 1.5     | 0.0         | 2.4          | 1     | 0.6     | 0.0    |
|  |         |              | Perm       | 0.2     | 0.00    | 0      | 1     | 1.5      | 0.0     | 0.7      | 0.0     | 0.000    | 0.000    | PermClis       | 13.50        | 0.15         | 1     | 1.5     | 0.0         | 0.06         | 1     | 0.7     | 0.0    |
| 0  | 1       | 23           | Rara       | 0.3     | 0.00    | 0      | 2     | -1.3     | 0.0     | -0.3     | 0.0     | 0.000    | 0.000    | RaraClis       | 18.00        | 0.12         | 2     | -1.3    | 0.0         | 0.03         | 1     | -0.3    | 0.0    |
|  |         |              | Freq       | 0.2     | 0.00    | 0      | 1     | -1.3     | 0.0     | -0.3     | 0.0     | 0.000    | 0.000    | RaraFer        | 360.0        | 4.8          | 2     | -1.3    | 0.0         | 1.2          | 1     | -0.3    | 0.0    |
|  |         |              | Perm       | 0.2     | 0.00    | 0      | 1     | -1.3     | 0.0     | -0.3     | 0.0     | 0.000    | 0.000    | PermClis       | 13.50        | 0.12         | 1     | -1.3    | 0.0         | 0.03         | 1     | -0.3    | 0.0    |
| 0  | 1       | 24           | Rara       | 0.3     | 0.00    | 0      | 1     | 1.6      | 0.0     | 0.8      | 0.0     | 0.000    | 0.000    | RaraClis       | 18.00        | 0.16         | 1     | 1.6     | 0.0         | 0.07         | 1     | 0.7     | 0.0    |
|  |         |              | Freq       | 0.2     | 0.00    | 0      | 1     | 1.6      | 0.0     | 0.8      | 0.0     | 0.000    | 0.000    | RaraFer        | 360.0        | 6.1          | 1     | 1.6     | 0.0         | 2.8          | 1     | 0.7     | 0.0    |
|  |         |              | Perm       | 0.2     | 0.00    | 0      | 1     | 1.6      | 0.0     | 0.8      | 0.0     | 0.000    | 0.000    | PermClis       | 13.50        | 0.16         | 1     | 1.6     | 0.0         | 0.07         | 1     | 0.8     | 0.0    |
| 0  | 1       | 25           | Rara       | 0.3     | 0.00    | 0      | 2     | 0.7      | 0.0     | 0.9      | 0.0     | 0.000    | 0.000    | RaraClis       | 18.00        | 0.07         | 2     | -0.7    | 0.0         | 0.09         | 2     | 0.9     | 0.0    |
|  |         |              | Freq       | 0.2     | 0.00    | 0      | 1     | 0.7      | 0.0     | 0.9      | 0.0     | 0.000    | 0.000    | RaraFer        | 360.0        | 2.8          | 2     | -0.7    | 0.0         | 3.3          | 2     | 0.9     | 0.0    |
|  |         |              | Perm       | 0.2     | 0.00    | 0      | 1     | 0.7      | 0.0     | 0.9      | 0.0     | 0.000    | 0.000    | PermClis       | 13.50        | 0.07         | 1     | -0.7    | 0.0         | 0.03         | 1     | 0.9     | 0.0    |

| S.L.U. - AZIONI S.L.V. - VERIFICA SHELL C.A. - QUOTA: 1 ELEMENTO: 2 |         |              |        |        |         |          |          |           |                    |                    |       |       |       |       |       |         |        |
|---|---------|--------------|--------|--------|---------|----------|----------|-----------|--------------------|--------------------|-------|-------|-------|-------|-------|---------|--------|
| Gr.Q N.ro   | Gen N.r | Nodo 3d N.ro | Nx N/m | Ny N/m | Txy N/m | Mx N*m/m | My N*m/m | Mxy N*m/m | Molt.Ult. Direz. X | Molt.Ult. Direz. Y | Ax s. | Ay s. | Ax i. | Ay i. | Atag. | σ N/mmq | eta mm |
| 1   | 2       | 14           | -2608  | -3288  | 3355    | 537      | -1619    | -21       | 99.90              | 48.16              | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.032   | -0.3   |
| 1   | 2       | 37           | -35517 | -13804 | 3994    | 7260     | 1612     | -951      | 15.56              | 99.90              | 7.7   | 7.7   | 7.7   | 7.7   | 0.1   | 0.032   | -0.3   |
| 1   | 2       | 38           | -23329 | 5007   | 3872    | -5344    | -7171    | 13        | 19.57              | 8.08               | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.032   | -0.3   |
| 1   | 2       | 39           | -24329 | -18682 | 1814    | 4678     | -18      | 654       | 25.33              | 99.90              | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.032   | -0.3   |
| 1   | 2       | 41           | -35796 | -14346 | 4344    | 7516     | 1673     | 981       | 14.74              | 99.90              | 7.7   | 7.7   | 7.7   | 7.7   | 0.1   | 0.032   | -0.3   |

| S.L.U. - AZIONI S.L.V. - VERIFICA SHELL C.A. - QUOTA: 1 ELEMENTO: 3 |         |              |        |        |         |          |          |           |                    |                    |       |       |       |       |       |         |        |
|---|---------|--------------|--------|--------|---------|----------|----------|-----------|--------------------|--------------------|-------|-------|-------|-------|-------|---------|--------|
| Gr.Q N.ro   | Gen N.r | Nodo 3d N.ro | Nx N/m | Ny N/m | Txy N/m | Mx N*m/m | My N*m/m | Mxy N*m/m | Molt.Ult. Direz. X | Molt.Ult. Direz. Y | Ax s. | Ay s. | Ax i. | Ay i. | Atag. | σ N/mmq | eta mm |
| 1   | 3       | 5            | -3550  | -11912 | 910     | -1493    | -9080    | -56       | 54.36              | 7.89               | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |
| 1   | 3       | 7            | -1051  | -3455  | 7209    | 738      | 690      | 565       | 98.37              | 99.90              | 7.7   | 7.7   | 7.7   | 7.7   | 0.1   | 0.032   | -0.3   |
| 1   | 3       | 40           | -31296 | -16504 | 2510    | 8789     | 10872    | -135      | 10.67              | 6.75               | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |
| 1   | 3       | 42           | -24467 | -2301  | 2858    | 10281    | 9757     | 92        | 7.90               | 6.52               | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |
| 1   | 3       | 44           | -27862 | -12812 | 4435    | -8404    | -2185    | -1574     | 10.81              | 60.60              | 7.7   | 7.7   | 7.7   | 7.7   | 0.1   | 0.032   | -0.3   |

| S.L.U. - AZIONI S.L.V. - VERIFICA SHELL C.A. - QUOTA: 1 ELEMENTO: 5 |         |              |        |        |         |          |          |           |                    |                    |       |       |       |       |       |         |        |
|---|---------|--------------|--------|--------|---------|----------|----------|-----------|--------------------|--------------------|-------|-------|-------|-------|-------|---------|--------|
| Gr.Q N.ro   | Gen N.r | Nodo 3d N.ro | Nx N/m | Ny N/m | Txy N/m | Mx N*m/m | My N*m/m | Mxy N*m/m | Molt.Ult. Direz. X | Molt.Ult. Direz. Y | Ax s. | Ay s. | Ax i. | Ay i. | Atag. | σ N/mmq | eta mm |
| 1   | 5       | 11           | -1817  | -3343  | 3418    | 388      | 1727     | 24        | 99.90              | 44.65              | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.032   | -0.3   |
| 1   | 5       | 44           | -35823 | -14161 | 4213    | -7178    | -1605    | -958      | 15.97              | 99.90              | 7.7   | 7.7   | 7.7   | 7.7   | 0.1   | 0.032   | -0.3   |
| 1   | 5       | 45           | -23520 | 4710   | 3851    | 5272     | 7241     | -12       | 20.12              | 8.04               | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |
| 1   | 5       | 46           | -25588 | -15302 | 1968    | -4275    | -18      | -76       | 31.66              | 99.90              | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |
| 1   | 5       | 48           | -35494 | -13763 | 3778    | -6938    | -1556    | 930       | 16.85              | 99.90              | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |

| S.L.U. - AZIONI S.L.V. - VERIFICA SHELL C.A. - QUOTA: 1 ELEMENTO: 10 |         |              |        |        |         |          |          |           |                    |                    |       |       |       |       |       |         |        |
|--|---------|--------------|--------|--------|---------|----------|----------|-----------|--------------------|--------------------|-------|-------|-------|-------|-------|---------|--------|
| Gr.Q N.ro  | Gen N.r | Nodo 3d N.ro | Nx N/m | Ny N/m | Txy N/m | Mx N*m/m | My N*m/m | Mxy N*m/m | Molt.Ult. Direz. X | Molt.Ult. Direz. Y | Ax s. | Ay s. | Ax i. | Ay i. | Atag. | σ N/mmq | eta mm |
| 1  | 10      | 18           | -3390  | -11400 | 587     | 2189     | 9073     | 58        | 33.62              | 7.84               | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |
| 1  | 10      | 19           | -1195  | -4053  | 7494    | 691      | -753     | -581      | 99.90              | 99.90              | 7.7   | 7.7   | 7.7   | 7.7   | 0.1   | 0.032   | -0.3   |
| 1  | 10      | 47           | -32879 | -16094 | 2589    | -8814    | -10957   | 135       | 10.88              | 6.66               | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |
| 1  | 10      | 48           | -28538 | -13059 | 4132    | 8265     | 2205     | 1599      | 11.19              | 60.67              | 7.7   | 7.7   | 7.7   | 7.7   | 0.1   | 0.032   | -0.3   |
| 1  | 10      | 49           | -25063 | -2153  | 2927    | -10263   | -9826    | -93       | 7.97               | 6.46               | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |

| S.L.U. - AZIONI S.L.D. - VERIFICA SHELL C.A. - QUOTA: 1 ELEMENTO: 2 |         |              |        |        |         |          |          |           |                    |                    |       |       |       |       |       |         |        |
|---|---------|--------------|--------|--------|---------|----------|----------|-----------|--------------------|--------------------|-------|-------|-------|-------|-------|---------|--------|
| Gr.Q N.ro   | Gen N.r | Nodo 3d N.ro | Nx N/m | Ny N/m | Txy N/m | Mx N*m/m | My N*m/m | Mxy N*m/m | Molt.Ult. Direz. X | Molt.Ult. Direz. Y | Ax s. | Ay s. | Ax i. | Ay i. | Atag. | σ N/mmq | eta mm |
| 1   | 2       | 14           | -2321  | -4116  | 1101    | 262      | -544     | -19       | 99.90              | 99.90              | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |
| 1   | 2       | 37           | -35517 | -14456 | 3307    | 7260     | 1402     | -673      | 19.47              | 99.90              | 7.7   | 7.7   | 7.7   | 7.7   | 0.1   | 0.032   | -0.3   |
| 1   | 2       | 38           | -30610 | 5007   | 1406    | -5954    | -7171    | 19        | 24.70              | 9.46               | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |
| 1   | 2       | 39           | -25340 | -23274 | 1064    | 3879     | 795      | 398       | 48.51              | 99.90              | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |
| 1   | 2       | 41           | -35796 | -15086 | 3827    | 7516     | 1444     | 682       | 18.43              | 99.90              | 7.7   | 7.7   | 7.7   | 7.7   | 0.1   | 0.032   | -0.3   |

| S.L.U. - AZIONI S.L.D. - VERIFICA SHELL C.A. - QUOTA: 1 ELEMENTO: 3 |         |              |        |        |         |          |          |           |                    |                    |       |       |       |       |       |         |        |
|---|---------|--------------|--------|--------|---------|----------|----------|-----------|--------------------|--------------------|-------|-------|-------|-------|-------|---------|--------|
| Gr.Q N.ro   | Gen N.r | Nodo 3d N.ro | Nx N/m | Ny N/m | Txy N/m | Mx N*m/m | My N*m/m | Mxy N*m/m | Molt.Ult. Direz. X | Molt.Ult. Direz. Y | Ax s. | Ay s. | Ax i. | Ay i. | Atag. | σ N/mmq | eta mm |
| 1   | 3       | 5            | -3550  | -11912 | 604     | -1493    | -9080    | -56       | 65.22              | 9.33               | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |
| 1   | 3       | 7            | -1972  | -4022  | 7209    | 693      | 621      | 521       | 99.90              | 99.90              | 7.7   | 7.7   | 7.7   | 7.7   | 0.1   | 0.030   | -0.3   |
| 1   | 3       | 40           | -31296 | -16504 | 1075    | 8789     | 10872    | -135      | 13.22              | 8.00               | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |
| 1   | 3       | 42           | -24467 | -2301  | 1122    | 10281    | 9757     | 92        | 9.48               | 7.67               | 7.7   | 7.7   | 7.7   | 7.7   | 0.0   | 0.030   | -0.3   |
| 1   | 3       | 44           | -27862 | -19460 | 3161    | -8404    | -2682    | -1963     | 13.30              | 80.73              | 7.7   | 7.7   | 7.7   | 7.7   | 0.1   | 0.032   | -0.3   |

|  |  |                                    |                                     |
|--|--|------------------------------------|-------------------------------------|
|  <b>SNAM RETE GAS</b> | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|  | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|  | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 70 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

Rif. TFM: 011014-50-RC-E-2020

| S.L.U. - AZIONI S.L.D. - VERIFICA SHELL C.A. - QUOTA: 1 ELEMENTO: 5 |            |                 |           |           |            |             |             |              |                       |                       |       |       |                  |       |       |             |           |
|---|------------|-----------------|-----------|-----------|------------|-------------|-------------|--------------|-----------------------|-----------------------|-------|-------|------------------|-------|-------|-------------|-----------|
| Gr.Q<br>N.ro  | Gen<br>N.r | Nodo 3d<br>N.ro | Nx<br>N/m | Ny<br>N/m | Txy<br>N/m | Mx<br>N*m/m | My<br>N*m/m | Mxy<br>N*m/m | Molt.Ult.<br>Direz. X | Molt.Ult.<br>Direz. Y | Ax s. | Ay s. | Ax i.<br>cmq / m | Ay i. | Atag. | σt<br>N/mmq | eta<br>mm |
| 1   | 5          | 11              | -2097     | -4108     | 1162       | 225         | 644         | 17           | 99.90                 | 99.90                 | 7.7   | 7.7   | 7.7              | 7.7   | 0.0   | 0.030       | -0.3      |
| 1   | 5          | 44              | -35823    | -14964    | 3579       | -7178       | -1377       | -659         | 20.00                 | 99.90                 | 7.7   | 7.7   | 7.7              | 7.7   | 0.1   | 0.030       | -0.3      |
| 1   | 5          | 45              | -30680    | 4710      | 1395       | 5862        | 7241        | -18          | 25.48                 | 9.42                  | 7.7   | 7.7   | 7.7              | 7.7   | 0.0   | 0.030       | -0.3      |
| 1   | 5          | 46              | -26437    | -23158    | 1223       | -3559       | -620        | 385          | 61.93                 | 99.90                 | 7.7   | 7.7   | 7.7              | 7.7   | 0.0   | 0.030       | -0.3      |
| 1   | 5          | 48              | -35494    | -14459    | 2999       | -6938       | -1346       | 651          | 21.12                 | 99.90                 | 7.7   | 7.7   | 7.7              | 7.7   | 0.0   | 0.030       | -0.3      |

| S.L.U. - AZIONI S.L.D. - VERIFICA SHELL C.A. - QUOTA: 1 ELEMENTO: 10 |            |                 |           |           |            |             |             |              |                       |                       |       |       |                  |       |       |             |           |
|--|------------|-----------------|-----------|-----------|------------|-------------|-------------|--------------|-----------------------|-----------------------|-------|-------|------------------|-------|-------|-------------|-----------|
| Gr.Q<br>N.ro   | Gen<br>N.r | Nodo 3d<br>N.ro | Nx<br>N/m | Ny<br>N/m | Txy<br>N/m | Mx<br>N*m/m | My<br>N*m/m | Mxy<br>N*m/m | Molt.Ult.<br>Direz. X | Molt.Ult.<br>Direz. Y | Ax s. | Ay s. | Ax i.<br>cmq / m | Ay i. | Atag. | σt<br>N/mmq | eta<br>mm |
| 1  | 10         | 18              | -3390     | -11400    | 274        | 2189        | 9073        | 58           | 39.86                 | 9.27                  | 7.7   | 7.7   | 7.7              | 7.7   | 0.0   | 0.030       | -0.3      |
| 1  | 10         | 19              | -2172     | -6504     | 7494       | -768        | -893        | -707         | 99.90                 | 99.90                 | 7.7   | 7.7   | 7.7              | 7.7   | 0.1   | 0.030       | -0.3      |
| 1  | 10         | 47              | -32879    | -16094    | 1039       | -8814       | -10957      | 135          | 13.54                 | 7.88                  | 7.7   | 7.7   | 7.7              | 7.7   | 0.0   | 0.030       | -0.3      |
| 1  | 10         | 48              | -28538    | -19670    | 2903       | 8265        | 2702        | 1998         | 13.82                 | 80.29                 | 7.7   | 7.7   | 7.7              | 7.7   | 0.1   | 0.030       | -0.3      |
| 1  | 10         | 49              | -25063    | -2153     | 1196       | -10263      | -9826       | -93          | 9.58                  | 7.60                  | 7.7   | 7.7   | 7.7              | 7.7   | 0.0   | 0.030       | -0.3      |

| S.L.E. - VERIFICA SHELL C.A. - QUOTA: 1 ELEMENTO: 2 |            |              |               |            |            |           |          |             |            |             |            |             |             |                   |                 |                 |          |            |             |                 |          |            |           |
|---|------------|--------------|---------------|------------|------------|-----------|----------|-------------|------------|-------------|------------|-------------|-------------|-------------------|-----------------|-----------------|----------|------------|-------------|-----------------|----------|------------|-----------|
| GrQ<br>N.ro   | Gen<br>N.r | Nodo<br>N.ro | FESSURAZIONI  |            |            |           |          |             |            |             |            |             | TENSIONI    |                   | DIREZIONE X     |                 |          |            | DIREZIONE Y |                 |          |            |           |
|   |            |              | Comb.<br>Cari | Fes<br>lim | Fess<br>mm | dis<br>mm | Co<br>mb | MfX<br>kN*m | NX<br>(kN) | MfY<br>kN*m | NY<br>(kN) | cos<br>teta | sin<br>teta | Combina<br>Carico | σ lim.<br>N/mmq | σ cal.<br>N/mmq | Co<br>mb | Mf<br>kN*m | N<br>(kN)   | σ cal.<br>N/mmq | Co<br>mb | Mf<br>kN*m | N<br>(kN) |
| 1   | 2          | 14           | Rara          | 0.3        | 0.00       | 0         | 2        | 0.2         | -2.3       | 0.1         | -5.4       | 0.000       | 0.000       | RaraCls           | 18.00           | 0.03            | 2        | 0.2        | -2.3        | 0.04            | 2        | 0.2        | -5.6      |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | 0.2         | -2.3       | 0.1         | -5.4       | 0.000       | 0.000       | RaraFer           | 360.0           | 0.2             | 2        | 0.2        | -2.3        | 0.2             | 2        | 0.2        | -5.6      |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | 0.2         | -2.3       | 0.1         | -5.3       | 0.000       | 0.000       | PermCls           | 13.50           | 0.03            | 1        | 0.2        | -2.3        | 0.03            | 1        | 0.1        | -5.3      |
| 1   | 2          | 37           | Rara          | 0.3        | 0.00       | 0         | 2        | 4.8         | -23.5      | 1.2         | -13.7      | 0.000       | 0.000       | RaraCls           | 18.00           | 1.02            | 1        | 4.8        | -23.5       | 0.19            | 2        | 1.2        | -13.9     |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | 4.8         | -23.5      | 1.2         | -13.7      | 0.000       | 0.000       | RaraFer           | 360.0           | 16.3            | 1        | 4.8        | -23.5       | 1.0             | 2        | 1.2        | -13.9     |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | 4.8         | -23.5      | 1.2         | -13.6      | 0.000       | 0.000       | PermCls           | 13.50           | 1.02            | 1        | 4.8        | -23.5       | 0.19            | 1        | 1.2        | -13.6     |
| 1   | 2          | 38           | Rara          | 0.3        | 0.00       | 0         | 2        | -4.0        | -20.4      | -4.8        | 2.2        | 0.000       | 0.000       | RaraCls           | 18.00           | 0.84            | 2        | -4.0       | -20.4       | 1.10            | 2        | -4.8       | 1.9       |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | -4.0        | -20.4      | -4.8        | 2.2        | 0.000       | 0.000       | RaraFer           | 360.0           | 12.8            | 1        | -4.0       | -20.4       | 32.5            | 1        | -4.8       | 2.1       |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | -4.0        | -20.3      | -4.8        | 2.3        | 0.000       | 0.000       | PermCls           | 13.50           | 0.84            | 1        | -4.0       | -20.3       | 1.10            | 1        | -4.8       | 2.3       |
| 1   | 2          | 39           | Rara          | 0.3        | 0.00       | 0         | 2        | 3.1         | -23.1      | 0.6         | -16.0      | 0.000       | 0.000       | RaraCls           | 18.00           | 0.61            | 2        | 3.1        | -23.1       | 0.11            | 2        | 0.6        | -16.1     |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | 3.1         | -23.1      | 0.6         | -16.0      | 0.000       | 0.000       | RaraFer           | 360.0           | 6.6             | 2        | 3.1        | -23.1       | 0.7             | 2        | 0.6        | -16.1     |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | 3.1         | -23.1      | 0.6         | -15.9      | 0.000       | 0.000       | PermCls           | 13.50           | 0.61            | 1        | 3.1        | -23.1       | 0.11            | 1        | 0.6        | -15.9     |
| 1   | 2          | 41           | Rara          | 0.3        | 0.00       | 0         | 2        | 5.0         | -23.7      | 1.2         | -14.3      | 0.000       | 0.000       | RaraCls           | 18.00           | 1.06            | 1        | 5.0        | -23.7       | 0.19            | 2        | 1.2        | -14.6     |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | 5.0         | -23.7      | 1.2         | -14.3      | 0.000       | 0.000       | RaraFer           | 360.0           | 17.2            | 1        | 5.0        | -23.7       | 1.0             | 2        | 1.2        | -14.6     |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | 5.0         | -23.7      | 1.2         | -14.2      | 0.000       | 0.000       | PermCls           | 13.50           | 1.06            | 1        | 5.0        | -23.7       | 0.19            | 1        | 1.2        | -14.2     |

| S.L.E. - VERIFICA SHELL C.A. - QUOTA: 1 ELEMENTO: 3 |            |              |               |            |            |           |          |             |            |             |            |             |             |                   |                 |                 |          |            |             |                 |          |            |           |
|---|------------|--------------|---------------|------------|------------|-----------|----------|-------------|------------|-------------|------------|-------------|-------------|-------------------|-----------------|-----------------|----------|------------|-------------|-----------------|----------|------------|-----------|
| GrQ<br>N.ro   | Gen<br>N.r | Nodo<br>N.ro | FESSURAZIONI  |            |            |           |          |             |            |             |            |             | TENSIONI    |                   | DIREZIONE X     |                 |          |            | DIREZIONE Y |                 |          |            |           |
|   |            |              | Comb.<br>Cari | Fes<br>lim | Fess<br>mm | dis<br>mm | Co<br>mb | MfX<br>kN*m | NX<br>(kN) | MfY<br>kN*m | NY<br>(kN) | cos<br>teta | sin<br>teta | Combina<br>Carico | σ lim.<br>N/mmq | σ cal.<br>N/mmq | Co<br>mb | Mf<br>kN*m | N<br>(kN)   | σ cal.<br>N/mmq | Co<br>mb | Mf<br>kN*m | N<br>(kN) |
| 1   | 3          | 5            | Rara          | 0.3        | 0.00       | 0         | 2        | -1.0        | -2.7       | -6.1        | -9.6       | 0.000       | 0.000       | RaraCls           | 18.00           | 0.22            | 1        | -1.0       | -2.8        | 1.37            | 2        | -6.2       | -9.8      |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | -1.0        | -2.7       | -6.1        | -9.6       | 0.000       | 0.000       | RaraFer           | 360.0           | 4.6             | 1        | -1.0       | -2.8        | 33.7            | 1        | -6.1       | -9.6      |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | -1.0        | -2.7       | -6.1        | -9.5       | 0.000       | 0.000       | PermCls           | 13.50           | 0.22            | 1        | -1.0       | -2.7        | 1.37            | 1        | -6.1       | -9.5      |
| 1   | 3          | 7            | Rara          | 0.3        | 0.00       | 0         | 2        | 0.5         | -1.4       | 0.5         | -4.0       | 0.000       | 0.000       | RaraCls           | 18.00           | 0.10            | 2        | 0.5        | -1.4        | 0.10            | 1        | 0.5        | -4.1      |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | 0.5         | -1.4       | 0.5         | -4.0       | 0.000       | 0.000       | RaraFer           | 360.0           | 2.1             | 1        | 0.5        | -1.4        | 1.0             | 1        | 0.5        | -4.1      |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | 0.5         | -1.4       | 0.5         | -4.0       | 0.000       | 0.000       | PermCls           | 13.50           | 0.10            | 1        | 0.5        | -1.4        | 0.10            | 1        | 0.5        | -4.0      |
| 1   | 3          | 40           | Rara          | 0.3        | 0.00       | 0         | 1        | 5.8         | -20.9      | 7.2         | -13.3      | 0.000       | 0.000       | RaraCls           | 18.00           | 1.26            | 1        | 5.8        | -20.9       | 1.60            | 1        | 7.2        | -13.6     |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 1        | 5.8         | -20.9      | 7.2         | -13.3      | 0.000       | 0.000       | RaraFer           | 360.0           | 24.4            | 1        | 5.8        | -20.9       | 38.2            | 1        | 7.2        | -13.6     |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | 5.8         | -20.9      | 7.2         | -13.3      | 0.000       | 0.000       | PermCls           | 13.50           | 1.26            | 1        | 5.8        | -20.9       | 1.60            | 1        | 7.2        | -13.3     |
| 1   | 3          | 42           | Rara          | 0.3        | 0.00       | 0         | 2        | 6.8         | -16.3      | 6.5         | -2.6       | 0.000       | 0.000       | RaraCls           | 18.00           | 1.50            | 1        | 6.8        | -16.3       | 1.47            | 1        | 6.5        | -2.8      |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | 6.8         | -16.3      | 6.5         | -2.6       | 0.000       | 0.000       | RaraFer           | 360.0           | 33.9            | 1        | 6.8        | -16.3       | 40.4            | 1        | 6.5        | -2.8      |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | 6.8         | -16.3      | 6.5         | -2.6       | 0.000       | 0.000       | PermCls           | 13.50           | 1.50            | 1        | 6.8        | -16.3       | 1.47            | 1        | 6.5        | -2.6      |
| 1   | 3          | 44           | Rara          | 0.3        | 0.00       | 0         | 2        | -5.6        | -18.4      | -1.8        | -13.5      | 0.000       | 0.000       | RaraCls           | 18.00           | 1.21            | 2        | -5.6       | -18.5       | 0.34            | 1        | -1.8       | -13.5     |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | -5.6        | -18.4      | -1.8        | -13.5      | 0.000       | 0.000       | RaraFer           | 360.0           | 24.4            | 1        | -5.6       | -18.5       | 3.5             | 1        | -1.8       | -13.5     |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | -5.6        | -18.4      | -1.8        | -13.4      | 0.000       | 0.000       | PermCls           | 13.50           | 1.21            | 1        | -5.6       | -18.4       | 0.34            | 1        | -1.8       | -13.4     |

| S.L.E. - VERIFICA SHELL C.A. - QUOTA: 1 ELEMENTO: 5 |            |              |               |            |            |           |          |             |            |             |            |             |             |                   |                 |                 |          |            |             |                 |          |            |           |
|---|------------|--------------|---------------|------------|------------|-----------|----------|-------------|------------|-------------|------------|-------------|-------------|-------------------|-----------------|-----------------|----------|------------|-------------|-----------------|----------|------------|-----------|
| GrQ<br>N.ro   | Gen<br>N.r | Nodo<br>N.ro | FESSURAZIONI  |            |            |           |          |             |            |             |            |             | TENSIONI    |                   | DIREZIONE X     |                 |          |            | DIREZIONE Y |                 |          |            |           |
|   |            |              | Comb.<br>Cari | Fes<br>lim | Fess<br>mm | dis<br>mm | Co<br>mb | MfX<br>kN*m | NX<br>(kN) | MfY<br>kN*m | NY<br>(kN) | cos<br>teta | sin<br>teta | Combina<br>Carico | σ lim.<br>N/mmq | σ cal.<br>N/mmq | Co<br>mb | Mf<br>kN*m | N<br>(kN)   | σ cal.<br>N/mmq | Co<br>mb | Mf<br>kN*m | N<br>(kN) |
| 1   | 5          | 11           | Rara          | 0.3        | 0.00       | 0         | 1        | 0.1         | -2.3       | 0.0         | -5.3       | 0.000       | 0.000       | RaraCls           | 18.00           | 0.02            | 1        | 0.1        | -2.3        | 0.03            | 2        | -0.1       | -5.6      |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 1        | 0.1         | -2.3       | 0.0         | -5.3       | 0.000       | 0.000       | RaraFer           | 360.0           | 0.1             | 1        | 0.1        | -2.3        | 0.2             | 2        | -0.1       | -5.6      |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | 0.1         | -2.3       | 0.0         | -5.3       | 0.000       | 0.000       | PermCls           | 13.50           | 0.02            | 1        | 0.1        | -2.3        | 0.02            | 1        | 0.0        | -5.3      |
| 1   | 5          | 44           | Rara          | 0.3        | 0.00       | 0         | 2        | -4.8        | -23.7      | -1.1        | -14.2      | 0.000       | 0.000       | RaraCls           | 18.00           | 1.01            | 1        | -4.8       | -23.7       | 0.18            | 2        | -1.1       | -14.5     |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | -4.8        | -23.7      | -1.1        | -14.2      | 0.000       | 0.000       | RaraFer           | 360.0           | 15.8            | 1        | -4.8       | -23.7       | 1.0             | 2        | -1.1       | -14.5     |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | -4.8        | -23.7      | -1.1        | -14.1      | 0.000       | 0.000       | PermCls           | 13.50           | 1.01            | 1        | -4.8       | -23.7       | 0.18            | 1        | -1.1       | -14.1     |
| 1   | 5          | 45           | Rara          | 0.3        | 0.00       | 0         | 2        | 3.9         | -20.4      | 4.8         | 2.0        | 0.000       | 0.000       | RaraCls           | 18.00           | 0.83            | 2        | 3.9        | -20.5       | 1.11            | 2        | 4.8        | 1.7       |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | 3.9         | -20.4      | 4.8         | 2.0        | 0.000       | 0.000       | RaraFer           | 360.0           | 12.3            | 1        | 3.9        | -20.4       | 32.6            | 1        | 4.8        | 1.9       |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | 3.9         | -20.4      | 4.8         | 2.0        | 0.000       | 0.000       | PermCls           | 13.50           | 0.82            | 1        | 3.9        | -20.4       | 1.11            | 1        | 4.8        | 2.0       |
| 1   | 5          | 46           | Rara          | 0.3        | 0.00       | 0         | 2        | -2.9        | -24.1      | -0.5        | -15.9      | 0.000       | 0.000       | RaraCls           | 18.00           | 0.54            | 2        | -2.9       | -24.1       | 0.10            | 2        | -0.5       | -16.1     |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | -2.9        | -24.1      | -0.5        | -15.9      | 0.000       | 0.000       | RaraFer           | 360.0           | 4.7             | 2        | -2.9       | -24.1       | 0.6             | 2        | -0.5       | -16.1     |
|   |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | -2.9        | -24.2      | -0.5        | -15.9      | 0.000       | 0.000       | PermCls           | 13.50           | 0.54            | 1        | -2.9       | -24.2       | 0.10            | 1        | -0.5       | -15.9     |
| 1   | 5          | 48           | Rara          | 0.3        | 0.00       | 0         | 2        | -4.6        | -23.5      | -1.1        | -13.7      | 0.000       | 0.000       | RaraCls           | 18.00           | 0.97            | 1        | -4.6       | -23.5       | 0.18            | 2        | -1.1       | -14.0     |
|   |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | -4.6        | -23.5      | -1.1        | -13.7      | 0.000       | 0.000       | RaraFer           | 360.0           | 14.9            | 1        | -4.6       | -23.5       | 1.0             | 2        | -1.1       | -14.0     |

|   |  |                                    |                                     |
|---|--|------------------------------------|-------------------------------------|
|  | <b>PROGETTISTA</b><br> | <b>COMMESSA</b><br><b>NR/13167</b> | <b>COD. TECNICO</b><br><b>16153</b> |
|   | <b>LOCALITA'</b><br><b>REGIONE PUGLIA</b>  | <b>RE-STRU-122</b>                 |                                     |
|   | <b>PROGETTO/IMPIANTO</b><br><b>METANODOTTO: INTERCONNESSIONE TAP</b><br><b>DN 1400 (56") DP 75 bar</b> | <b>Fg. 71 di 71</b>                | <b>Rev.</b><br><b>0</b>             |

Rif. TFM: 011014-50-RC-E-2020

| S.L.E. - VERIFICA SHELL C.A. - QUOTA: 1 ELEMENTO: 10 |            |              |               |            |            |           |          |             |            |             |            |             |             |                   |                             |                             |          |            |             |                             |          |            |           |
|--|------------|--------------|---------------|------------|------------|-----------|----------|-------------|------------|-------------|------------|-------------|-------------|-------------------|-----------------------------|-----------------------------|----------|------------|-------------|-----------------------------|----------|------------|-----------|
|  |            |              | FESSURAZIONI  |            |            |           |          |             |            |             |            |             | TENSIONI    |                   |                             | DIREZIONE X                 |          |            | DIREZIONE Y |                             |          |            |           |
| GrQ<br>N.r   | Gen<br>N.r | Nodo<br>N.ro | Comb.<br>Cari | Fes<br>lim | Fess<br>mm | dis<br>mm | Co<br>mb | MfX<br>kN*m | NX<br>(kN) | MfY<br>kN*m | NY<br>(kN) | cos<br>teta | sin<br>teta | Combina<br>Carico | σ lim.<br>N/mm <sup>2</sup> | σ cal.<br>N/mm <sup>2</sup> | Co<br>mb | Mf<br>kN*m | N<br>(kN)   | σ cal.<br>N/mm <sup>2</sup> | Co<br>mb | Mf<br>kN*m | N<br>(kN) |
| 1  | 10         | 19           | Perm          | 0.2        | 0.00       | 0         | 1        | 1.5         | -2.6       | 6.1         | -9.2       | 0.000       | 0.000       | PermCls           | 13.50                       | 0.33                        | 1        | 1.5        | -2.6        | 1.37                        | 1        | 6.1        | -9.2      |
|  |            |              | Rara          |            |            |           |          |             |            |             |            |             |             | RaraCls           | 18.00                       | 0.11                        | 1        | -0.5       | -1.6        | 0.11                        | 2        | -0.6       | -4.6      |
|  |            |              | Freq          | 0.3        | 0.00       | 0         | 1        | -0.5        | -1.5       | -0.6        | -4.6       | 0.000       | 0.000       | RaraFer           | 360.0                       | 2.1                         | 1        | -0.5       | -1.6        | 1.1                         | 1        | -0.6       | -4.6      |
|  |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | -0.5        | -1.5       | -0.6        | -4.6       | 0.000       | 0.000       | PermCls           | 13.50                       | 0.11                        | 1        | -0.5       | -1.5        | 0.11                        | 1        | -0.6       | -4.6      |
| 1  | 10         | 47           | Rara          |            |            |           |          |             |            |             |            |             |             | RaraCls           | 18.00                       | 1.26                        | 1        | -5.8       | -22.0       | 1.61                        | 1        | -7.3       | -13.3     |
|  |            |              | Freq          | 0.3        | 0.00       | 0         | 1        | -5.8        | -22.0      | -7.3        | -13.1      | 0.000       | 0.000       | RaraFer           | 360.0                       | 23.8                        | 1        | -5.8       | -22.0       | 38.8                        | 1        | -7.3       | -13.3     |
|  |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | -5.8        | -22.0      | -7.3        | -13.1      | 0.000       | 0.000       | PermCls           | 13.50                       | 1.26                        | 1        | -5.8       | -22.0       | 1.61                        | 1        | -7.3       | -13.1     |
| 1  | 10         | 48           | Rara          |            |            |           |          |             |            |             |            |             |             | RaraCls           | 18.00                       | 1.19                        | 2        | 5.5        | -18.9       | 0.34                        | 1        | 1.8        | -13.7     |
|  |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | 5.5         | -18.9      | 1.8         | -13.6      | 0.000       | 0.000       | RaraFer           | 360.0                       | 23.6                        | 1        | 5.5        | -18.9       | 3.5                         | 1        | 1.8        | -13.7     |
|  |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | 5.5         | -18.8      | 1.8         | -13.5      | 0.000       | 0.000       | PermCls           | 13.50                       | 1.19                        | 1        | 5.5        | -18.8       | 0.34                        | 1        | 1.8        | -13.5     |
| 1  | 10         | 49           | Rara          |            |            |           |          |             |            |             |            |             |             | RaraCls           | 18.00                       | 1.50                        | 1        | -6.8       | -16.7       | 1.48                        | 1        | -6.5       | -2.7      |
|  |            |              | Freq          | 0.3        | 0.00       | 0         | 2        | -6.8        | -16.7      | -6.5        | -2.6       | 0.000       | 0.000       | RaraFer           | 360.0                       | 33.6                        | 1        | -6.8       | -16.7       | 40.8                        | 1        | -6.5       | -2.7      |
|  |            |              | Perm          | 0.2        | 0.00       | 0         | 1        | -6.8        | -16.7      | -6.5        | -2.5       | 0.000       | 0.000       | PermCls           | 13.50                       | 1.50                        | 1        | -6.8       | -16.7       | 1.48                        | 1        | -6.5       | -2.5      |