

COMMITTENTE:



PROGETTAZIONE:



DIREZIONE TECNICA

U.O. INFRASTRUTTURE CENTRO

PROGETTO DEFINITIVO

LINEA FERROVIA ROMA - VITERBO

RADDOPPIO TRATTA CESANO VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743

Relazione di calcolo opere provvisionali

SCALA:

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

NR1J 01 D 29 CL IN0600 002 A

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|------|---------------------|-------------------------------|---------|---------------------------|---------|-----------------------------------|---------|--|
| A | EMISSIONE ESECUTIVA | F. Serrau <i>F. Serrau</i> | 11.2018 | M. Arcangeli <i>MA</i> | 11.2018 | T. Paoletti <i>T. Paoletti</i> | 11.2018 | F. Arduini 11.2018 ITALFERR S.p.A. Direzione Tecnica Infrastrutture Centro Dot. Ing. Fabrizio Arduini Ordine degli Ingegneri della Provincia di Roma n. 18362 del 1/18 <i>F. Arduini</i> |
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Allegato 1 – tabulati di PARATIE 62

1. PREMESSA

Nella presente relazione si riportano i calcoli per il dimensionamento della paratia provvisoria da realizzare per consentire la costruzione dell'attraversamento idraulico IN06 (pk 30+743), nell'ambito degli interventi di raddoppio della linea Cesano-Vigna di Valle.

La geometria del manufatto di attraversamento è discussa in dettaglio negli elaborati di progetto (Doc. rif. [9], [10] e [12]) e rappresentata in maniera schematica in Figura 1. La paratia consentirà di eseguire le lavorazioni secondo quanto previsto nell'elaborato grafico delle Fasi costruttive (Doc. rif. [11]), risolvendo le interferenze con la linea ferroviaria esistente, che sarà mantenuta in funzione fino alla parziale realizzazione del tombino.

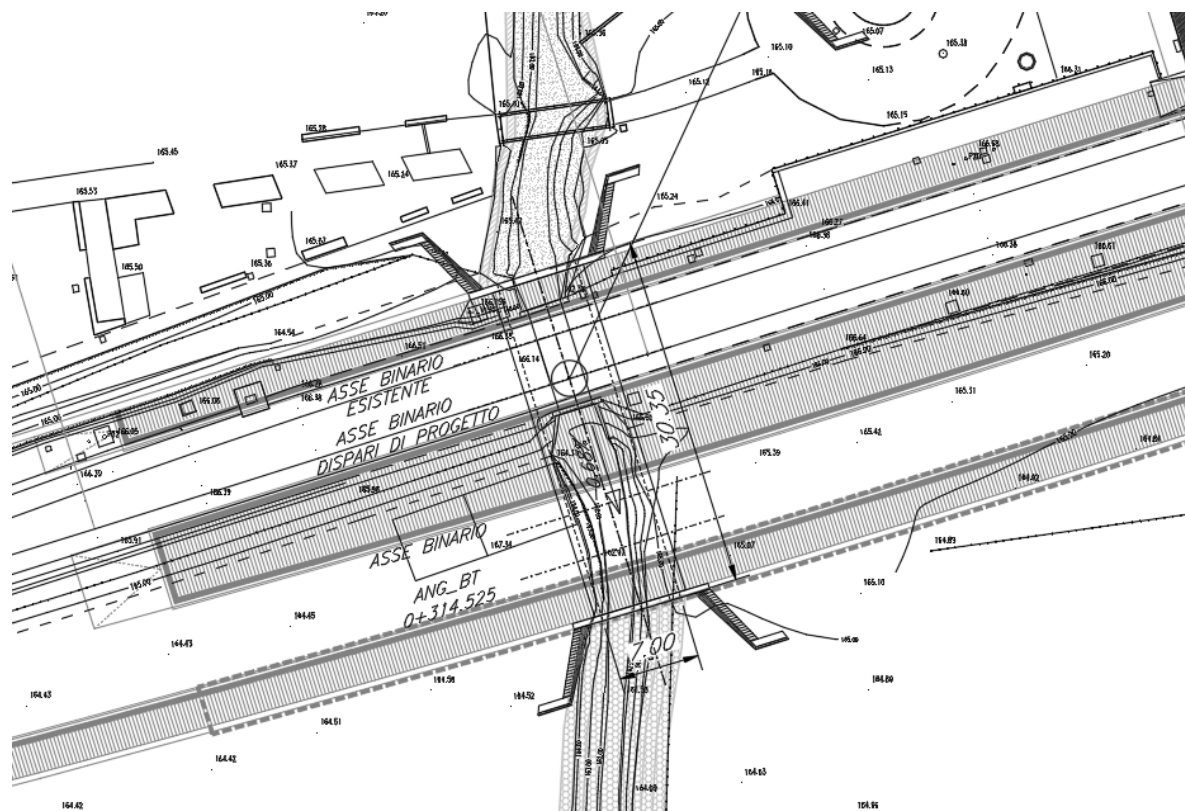


Figura 1 – Tombino IN06 al km 30+743: planimetria (Doc. rif. [10])

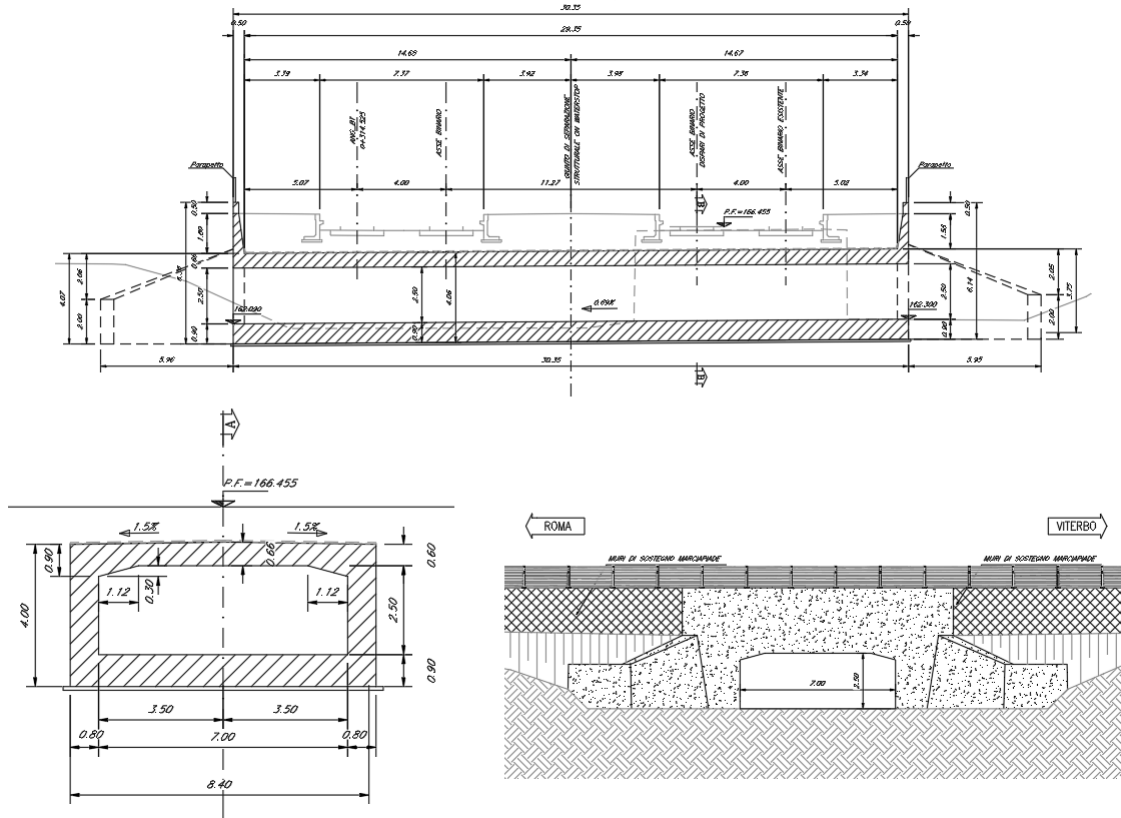


Figura 2 - Tombino IN06 al km 30+743: sezioni (Doc. rif. [12])

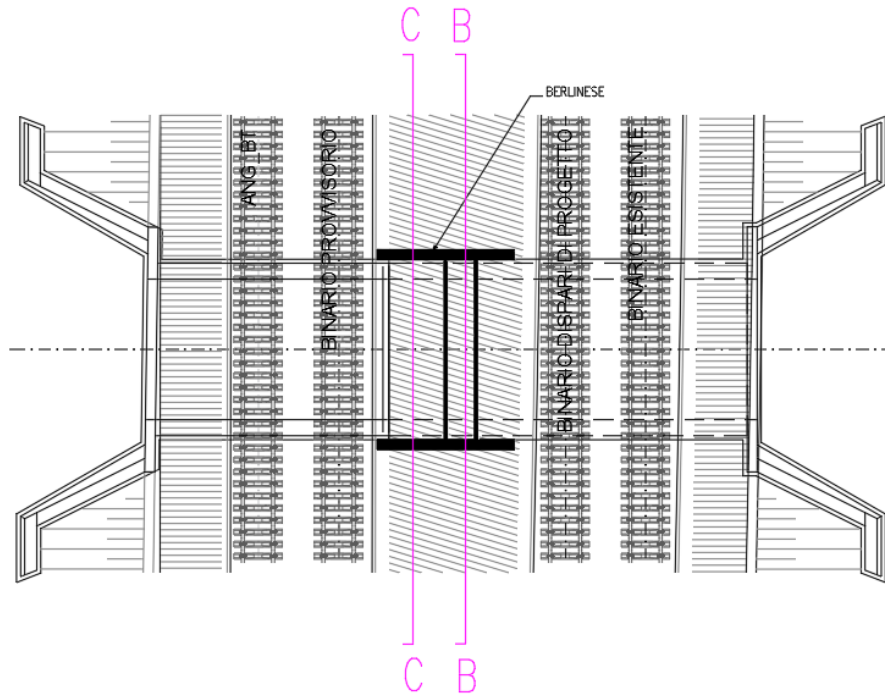


Figura 3 - Paratia provvisoria: vista in pianta (binario esistente a sinistra)

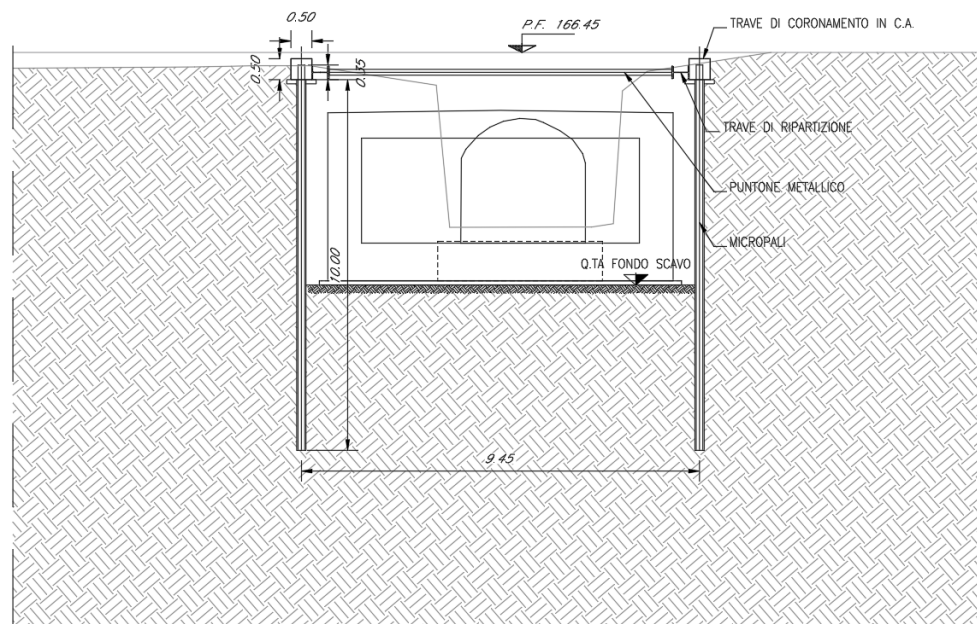


Figura 4 - Paratia provvisoria: sezione

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2. NORMATIVA DI RIFERIMENTO

2.1 Normative di riferimento

Le principali Normative nazionali ed internazionali vigenti alla data di redazione del presente documento e prese a riferimento sono le seguenti:

- [1] Decreto Ministeriale del 17 gennaio 2018: “Approvazione delle Nuove Norme Tecniche per le Costruzioni”, Supplemento Ordinario alla G.U. n.42 del 20.2.2018;
- [2] Istruzione RFI DTC INC PO SP IFS 001 - Specifica per la progettazione e l’esecuzione dei ponti ferroviari e di altre opere minori sotto binario;
- [3] Istruzione RFI DTC INC CS SP IFS 001 - Specifica per la progettazione geotecnica delle opere civili ferroviarie;
- [4] Regolamento (UE) N.1299/2014 della Commissione del 18 Novembre 2014 relativo alle specifiche tecniche di interoperabilità per il sottosistema “infrastruttura” del sistema ferroviario dell’Unione europea.
- [5] RFI DTC SI CS MA IFS 001 B “Manuale di progettazione delle opere civili – Parte II – Sezione 3 Corpo Stradale”.
- [6] RFI DTC SI CS MA IFS 001 A – Manuale di progettazione delle opere civili – parte II Sezione 3 – Corpo Stradale

2.2 Documentazione di progetto

- [7] Relazione geotecnica generale – Progetto Definitivo NR1J00D29GE0005001A
- [8] Profilo geotecnico di linea – Tav1-8 NR1J01D29F6GE0005001A-8A[8]
- [9] IV06 Tombino idraulico al km 30+743 - Relazione tecnica descrittiva NR1J01D29ROIN0600001A
- [10] IV06 Tombino idraulico al km 30+743 - Planimetria di progetto NR1J01D29P8IN0600001A
- [11] IV06 Tombino idraulico al km 30+743 Fasi costruttive NR1J01D29BZIN0600001A-2A
- [12] IV06 Tombino idraulico al km 30+743 – Carpenteria scatolare – Pianta e sezioni NR1J01D29BZIN0600002A

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[13] IV06 Tombino idraulico al km 30+743 – Scavi e opere provvisionali – Pianta e sezioni
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2.3 Software

[14] ParatiePlus 18.1.0 – Ceas Srl (www.ceas.it)

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3. CARATTERISTICHE DEI MATERIALI

3.1 Calcestruzzo

Elemento strutturale: cordoli di collegamento

| | |
|---|-------------------------|
| Peso specifico, γ_c | 25,00 kN/mc |
| Classe di resistenza | C25/30 |
| Resistenza cubica caratteristica, R_{ck} | 30 N/mm ² |
| Resistenza cilindrica caratteristica, f_{ck} | 25 N/mm ² |
| Resistenza cilindrica media, f_{cm} | 33 N/mm ² |
| Resistenza a trazione media, f_{ctm} | 2.55 N/mm ² |
| Resistenza a trazione per flessione media, f_{ctm} | 3.06 N/mm ² |
| Resistenza a trazione per flessione caratteristica, f_{ctk} | 2.14 N/mm ² |
| Modulo elastico, E_{cm} | 31447 N/mm ² |

3.2 Acciaio di Armatura - Barre

| | |
|--|-----------------------|
| Tipo acciaio | B 450 C |
| Peso specifico, γ_a | 78,50 kN/mc |
| Tensione nominale di snervamento, $f_{y\ nom}$ | 450 N/mm ² |
| Tensione nominale di rottura, $f_{t\ nom}$ | 540 N/mm ² |
| Minima tensione caratteristica di snervamento, $f_{yk\ min}$ | 450 N/mm ² |
| Minima tensione caratteristica di rottura, $f_{tk\ min}$ | 540 N/mm ² |
| Minimo rapporto tra i valori caratteristici, $(f_t/f_y)_{k\ min}$ | 1,15 |
| Massimo rapporto tra i valori caratteristici, $(f_t/f_y)_{k\ max}$ | 1,35 |

Massimo rapporto tra i valori nominali, ($f_y/f_y \text{ nom}$)k 1,25

Allungamento caratteristico sotto carico massimo, (Agt)k 7,5 %

Modulo di elasticità dell'acciaio, E 206000 N/mmq

3.3 Carpenteria metallica

Acciaio in profili a sezione aperta laminati a caldo saldati

Tipo EN 10025-2 S275 J2+N – per spessori nominali $t \leq 40$ mm

Tipo EN 10025-2 S275 K2+N – per spessori nominali $t > 40$ mm

Acciaio in profili a sezione aperta laminati a caldo non saldati

Tipo EN 10025-2 S275 J0+N

Acciaio in profili a sezione cava

Tipo EN 10210-1 S275 J0H+N

modulo elastico $E_s = 210000$ MPa

resistenza caratteristica a rottura $f_{tk} \geq 430$ MPa

resistenza caratteristica a snervamento $f_{yk} \geq 275$ MPa

resistenza di calcolo acciaio $f_{yd} = f_{yk}/\gamma_{M0} = 261.9$ MPa

con $\gamma_{M0} = 1.05$

4. DESCRIZIONE DELL'OPERA

La paratia illustrata in Figura 3 avrà la funzione di consentire la realizzazione dell'attraversamento idraulico IN06 per fasi, mantenendo in esercizio la linea ferroviaria. Ciò sarà possibile procedendo alla costruzione in due stage, come illustrato in Figura 5, e secondo le fasi costruttive riassunte di seguito.

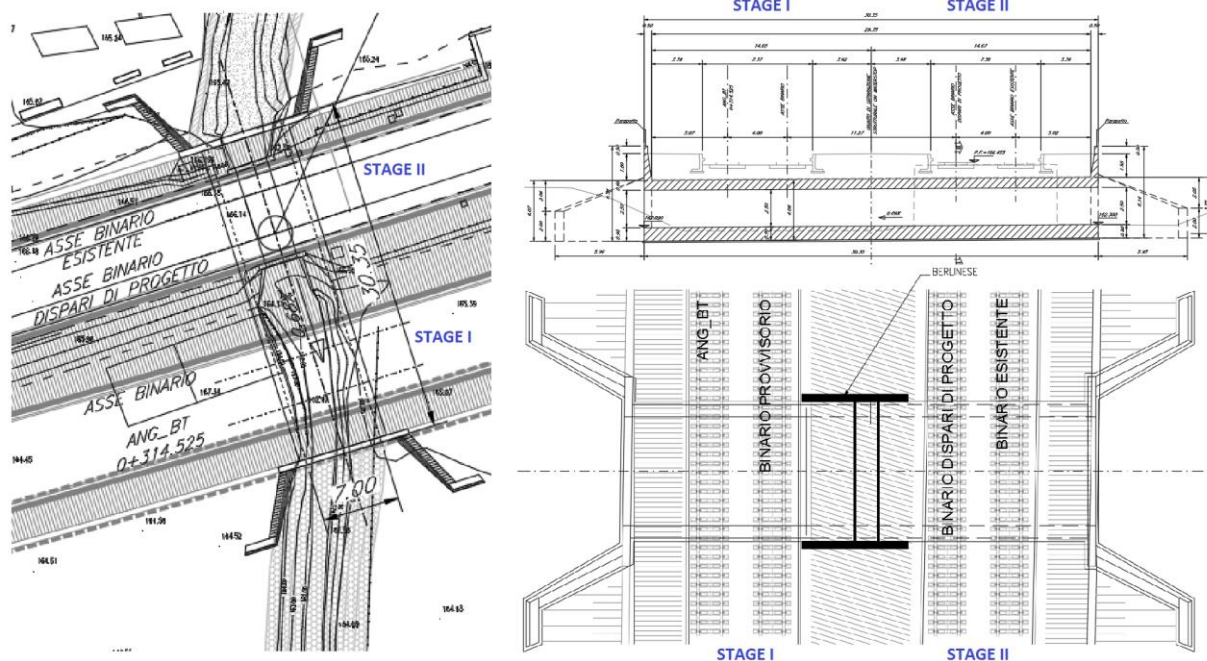


Figura 5 - Tombino IN06: realizzazione in due stage al fine di mantenere in esercizio la linea

STAGE I

FASE 1) SCAVO PRELIMINARE – in considerazione delle caratteristiche meccaniche del terreno in sito, lo scavo nella zona del binario provvisorio sarà effettuato unicamente al di fuori della recinzione, per evitare interferenza con la linea ferroviaria esistente;

FASE 2) COSTRUZIONE BERLINESE;

FASE 3) SCAVO FINO ALLA QUOTA MASSIMA – scavo e contestuale installazione dei puntoni;

FASE 4) COSTRUZIONE DEL TOMBINO 1/2: realizzazione tombino per sottofasi, riprofilatura del rilevato e posa dei nuovi binari;

FASE 5) TRAFFICO FERROVIARIO SU NUOVO BINARIO;

STAGE II

FASE 6) DISMISSIONE BINARIO ESISTENTE E SCAVO: demolizione binario e tombino esistenti; scavo fino alla quota massima;

FASE 7) COSTRUZIONE TOMBINO 2/2; costruzione del manufatto per sottofasi e realizzazione del rilevato ferroviario; posa dei nuovi binari.

Per maggiori dettagli sulle fasi costruttive si faccia riferimento all'elaborato di progetto dedicato (Doc. rif. [11]).

L'opera sarà costituita da berlinesi a sbalzo composte da una fila di micropali con interasse pari a 0.4 m e realizzati con perforazioni del diametro di 220 mm fino alla profondità di 6-10 m ed iniezioni a gravità (v. Figura 6 e Figura 7). Saranno armati con tubolari aventi diametro pari a 139.7 mm e spessore di 10 mm. Nel tratto di maggiore altezza (lato binario esistente), si adatteranno due puntoni tubolari del diametro di 139.7 mm e con spessore 10 mm, aventi un interasse di 1.5 m.

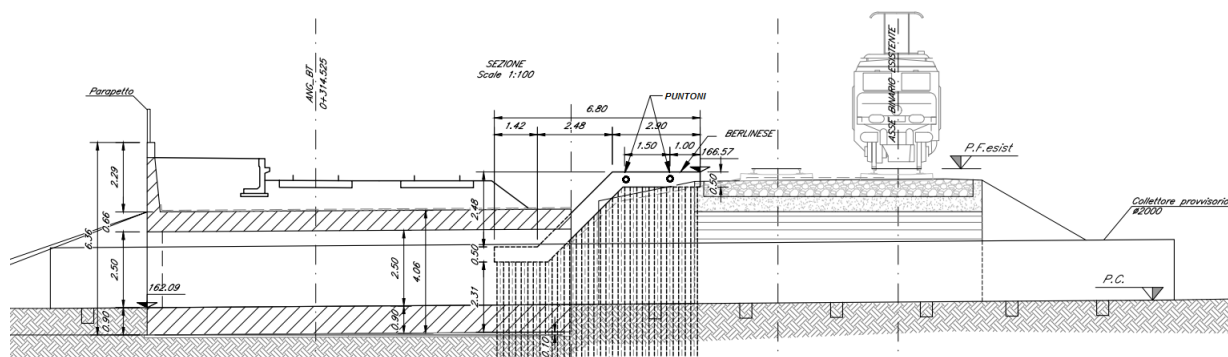


Figura 6 - Paratia provvisoria: prospetto

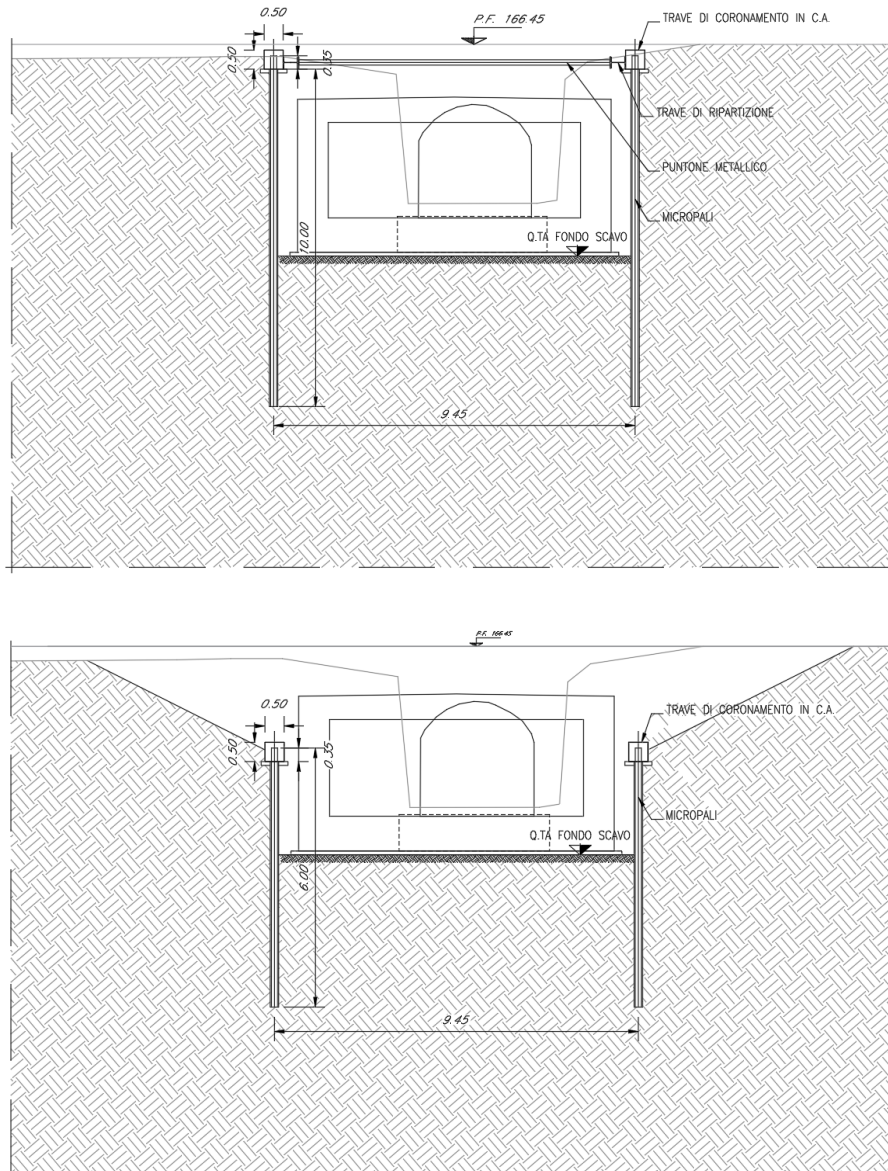



Figura 7 - Paratia provvisoria: sezioni di riferimento

Nei seguenti capitoli si descrivono in dettaglio il calcolo e la verifica dell'opera in oggetto.

| | | | | | | |
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5. CARATTERIZZAZIONE GEOTECNICA E MATERIALI ANTROPICI

Il modello geotecnico di riferimento è stato definito sulla base di quanto emerso dalla Relazione Geotecnica Generale (Doc. rif. [7]) ed, in particolare, del modello 3 (pk 29+900 – 31+300). Al fine di contestualizzare quest'ultimo e rappresentare le condizioni stratigrafiche del sito in esame, il modello è stato adattato per riprodurre la stratigrafia desunta dal profilo geotecnico di linea (Doc. rif. [8]). Il modello di riferimento è sintetizzato in Tabella 1.

Tabella 1 - Modello geotecnico di riferimento

| Unità litologiche | Profondità | | γ KN/m ³ | ϕ' ° | c' KPa | Eop MPa |
|--|------------|--------|-------------------------------|--------------|-----------|------------|
| | 0 | m p.c. | | | | |
| Limo sabbioso | 0 | 10.9 | 17 | 26 | 10 | 15 |
| Depositi vulcanici – sabbia limosa argillosa addensata | 10.9 | 22.2 | 16 | 30 | 0 | 25 |

Dalle misure freatiche effettuate, la quota di falda risulta essere all'interfaccia tra i due strati. Assumendo un'oscillazione di circa 0.5 m, la soggiacenza di progetto è stata imposta pari a 10.4 m p.c., non interferente con l'opera in oggetto.

Nell'ambito del progetto definitivo, le indagini integrative saranno volte a confermare le proprietà meccaniche dello strato limo sabbioso, ed in particolar modo il valore della coesione drenata, fortemente condizionante i risultati dell'analisi d'interazione suolo-struttura.

|  | <p style="text-align: center;">INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE – AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE</p> <p style="text-align: center;">RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE</p> | | | | | | | | | | | | |
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6. ANALISI DEI CARICHI STATICI DI PROGETTO

6.1 Azioni permanenti

6.1.1 Peso proprio

Per la tipologia di modello di calcolo adottato l'effetto del peso proprio della berlinese non entra in gioco nelle valutazioni dello stato di sforzo agente.

6.1.2 Spinta delle terre

I parametri che identificano il tipo di legge costitutiva possono essere distinti in due sottoclassi: parametri di spinta e parametri di deformabilità del terreno.

I parametri di spinta sono il coefficiente di spinta a riposo K_0 , il coefficiente di spinta attiva K_A e il coefficiente di spinta passiva K_P .

Il coefficiente di spinta a riposo fornisce lo stato tensionale presente in sito prima delle operazioni di scavo. Esso lega la tensione orizzontale efficace σ'_h a quella verticale σ'_v attraverso la relazione:

$$\sigma'_h = K_0 \sigma'_v$$

K_0 dipende dalla resistenza del terreno, attraverso il suo angolo di attrito efficace ϕ' e dalla sua storia geologica. Si può assumere che:

$$K_0 = K_{0NC} (OCR)^m$$

dove

$$K_{0NC} = 1 - \sin \phi'$$

è il coefficiente di spinta a riposo per un terreno normalconsolidato ($OCR=1$). OCR è il grado di sovraconsolidazione e m è un parametro empirico, di solito compreso tra 0.4 e 0.7. Ladd et al. (1977), Jamiolkowski et al. (1979) forniscono valori di m per argille italiane.

Il coefficiente di spinta attiva e passiva sono dati secondo Rankine per una parete liscia, da:

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$$K_A = \tan^2(45^\circ - \phi'/2)$$

$$K_P = \tan^2(45^\circ + \phi'/2)$$

Attraverso valori opportuni di K_A e K_P si tiene conto dell'angolo di attrito δ tra paratia e terreno e della pendenza del terreno a monte ed entro la luce di scavo; si possono usare a questo scopo i valori desunti da NAVFAC (1986) o quelle elaborate da Caquot e Kerisel (1948).

Il valore limite della tensione orizzontale sarà dato da:

$$\sigma'h = K_A \sigma'v - 2c'K_A^{0.5}$$

$$\sigma'h = K_P \sigma'v + 2c'K_P^{0.5}$$

a seconda che il collasso avvenga in spinta attiva o passiva rispettivamente. c' è la coesione drenata del terreno.

I parametri di deformabilità del terreno compaiono nella definizione della rigidezza delle molle. Per un letto di molle distribuite la rigidezza di ciascuna di esse, k , è data da

$$k = E / L$$

ove E è un modulo di rigidezza del terreno mentre L è una grandezza geometrica caratteristica. Poiché nel programma PARATIE le molle sono posizionate a distanze finite Δ , la rigidezza di ogni molla è:

$$K = E \Delta / L$$

Il valore di Δ è fornito dalla schematizzazione ad elementi finiti. Il valore di L è fissato automaticamente dal programma. Esso rappresenta una grandezza caratteristica che è diversa a valle e a monte della paratia perché diversa è la zona di terreno coinvolta dal movimento in zona attiva e passiva. Si è scelto, in zona attiva (uphill):

$$L_A = 2/3 l_A \tan(45^\circ - \phi'/2)$$

e in zona passiva (downhill):

$$L_P = 2/3 l_P \tan(45^\circ - \phi'/2)$$

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dove e sono rispettivamente:

$$l_A = \min[l; 2H]$$

$$l_P = \min[l-H; H]$$

e dove l = altezza totale della paratia e H = altezza corrente dello scavo. La logica di questa scelta è illustrata nella pubblicazione di Becci e Nova (1987).

Si assume in ogni caso un valore di H non minore di 1/10 dell'altezza totale della parete.

Il parametro E dipende dalla storia tensionale del sito nonché dall'incremento locale dello stato tensionale come illustrato in Becci e Nova (1987).

Il modulo E può essere considerato dipendente dalla pressione media $p = (\sigma'_v + \sigma'_h)/2$ secondo la legge

$$E = R(p/p_a)^n$$

in cui p_a è la pressione atmosferica mentre R e n sono quantità determinabili sperimentalmente. E' ovvio che ponendo $n=0$ si può considerare il caso di modulo costante, mentre se n è posto pari a 1, si ha il caso, tipico delle argille normalconsolidate, in cui il modulo varia linearmente con la profondità. Nelle nostre analisi si è posto $n=0$.

Il valore R è in genere diverso in condizioni di carico vergine o di scarico-ricarico. Valori indicativi di R e n sono dati da Janbu (1963). La variabilità di questi parametri è grandissima. Per una sabbia n può variare tra 0.2 e 1.0 e R tra 8 e 200 MPa. Per un'argilla normalmente consolidata $n \sim 1$. I valori di R per argille italiane possono essere dedotti da Jamiolkowski et al. (1979).

Si noti inoltre che, poiché lo stato tensionale iniziale vergine non è isotropo, la rigidità del terreno in condizioni di carico vergine è minore di quella che si può misurare in prove triassiali drenate isotropicamente consolidate.

Nel caso in cui $n=0$, il valore del modulo R in condizioni di carico vergine può essere considerato identico al valore del modulo elastico inteso tradizionalmente. Per una correlazione con i risultati delle più comuni prove in sito si veda ad esempio Bowles (1988).

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Il modulo di scarico-ricarico è da 3 a 10 volte maggiore nel caso di argille, mentre e in genere da 1.5 a 3 volte più grande nel caso di sabbie. Nel caso specifico si è comunque scelto di mantenerlo uguale a quello di carico vergine.

6.1.2.1 Profondità massima di scavo

Nel caso in cui la funzione di sostegno è affidata alla resistenza del volume di terreno a valle dell'opera, il modello geometrico di riferimento deve tenere conto delle possibili variazioni del profilo del terreno a monte e a valle del paramento rispetto ai valori nominali. In particolare, secondo le indicazioni delle NTC, la quota di valle deve essere diminuita di una quantità pari al minore dei seguenti valori:

- 10% dell'altezza di terreno da sostenere nel caso di opere a sbalzo;
- 10% della differenza di quota fra il livello inferiore di vincolo e il fondo scavo nel caso di opere vincolate;
- 0,5 m.

6.2 Sovraccarichi accidentali

A monte della struttura è stato ipotizzato un carico variabile di 10 kPa distribuito su una fascia di 5 m di spessore e rappresentante il carico da i mezzi di cantiere o agricoli.

|  <p>ITAFERR GRUPPO FERROVIE DELLO STATO ITALIANE</p> | <p>INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE – AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE</p> <p>RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE</p> | | | | | | | | | | | | |
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7. VERIFICHE AGLI STATI LIMITI

Le combinazioni di carico prese in considerazione nelle verifiche sono state definite in base a quanto prescritto dalle NTC-2018 al par.2.5.3:

Combinazione fondamentale, impiegata per gli stati limite ultimi (SLU):

$$\gamma_{G1} \cdot G_1 + \gamma_{G2} \cdot G_2 + \gamma_P \cdot P + \gamma_{Q1} \cdot Q_{k1} + \gamma_{Q2} \cdot \psi_{02} \cdot Q_{k2} + \gamma_{Q3} \cdot \psi_{03} \cdot Q_{k3} + \dots;$$

Combinazione caratteristica rara, impiegata per gli stati limite di esercizio (SLE) irreversibili, da utilizzarsi nelle verifiche delle tensioni d'esercizio:

$$G_1 + G_2 + P + Q_{k1} + \psi_{02} \cdot Q_{k2} + \psi_{03} \cdot Q_{k3} \dots;$$

Combinazione caratteristica frequente, impiegata per gli stati limite di esercizio (SLE) reversibili, da utilizzarsi nelle verifiche a fessurazione:

$$G_1 + G_2 + P + \psi_{11} \cdot Q_{k1} + \psi_{22} \cdot Q_{k2} + \psi_{23} \cdot Q_{k3} \dots;$$

Combinazione quasi permanente, impiegata per gli effetti a lungo termine, da utilizzarsi nelle verifiche a fessurazione:

$$G_1 + G_2 + P + \psi_{21} \cdot Q_{k1} + \psi_{22} \cdot Q_{k2} + \psi_{23} \cdot Q_{k3} \dots;$$

Combinazione sismica, generalmente impiegata per gli stati limite ultimi e di esercizio connessi all'azione sismica E:

$$G_1 + G_2 + P + \psi_{21} \cdot Q_{k1} + \psi_{22} \cdot Q_{k2} + \dots$$

I valori dei coefficienti parziali di sicurezza γ_F , γ_M e γ_R (relativi alle resistenze dei pali soggetti a carichi assiali), nonché i coefficienti di combinazione ψ delle azioni sono dati dalle tabelle NTC2018 5.2.V, 5.2.VI, 6.2.II e 6.4.II che vengono riportate nel seguito.

L'analisi mira a garantire la sicurezza e le prestazioni attese attraverso il conseguimento dei seguenti requisiti:

- sicurezza nei confronti degli Stati Limite di Esercizio (SLE);

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- sicurezza nei confronti degli Stati Limite Ultimi (SLU).

Le verifiche di sicurezza agli SLU sono da effettuarsi applicando il primo approccio progettuale (Approccio 1) che prevede le due seguenti combinazioni di coefficienti:

- Combinazione 1: A1+M1+R1 (STR);
- Combinazione 2: A2+M2+R1 (GEO);

Considerando i coefficienti parziali riportati nelle seguenti tabelle ed R1 pari ad 1.

In particolare sono stati verificati i seguenti stati limiti ultimi:

- collasso per rotazione intorno a un punto dell'opera;
- raggiungimento della resistenza strutturale della paratia;
- raggiungimento della resistenza massima allo sfilamento dei tiranti;
- instabilità globale del complesso opera di sostegno-terreno.

Per quest'ultimo meccanismo, la verifica deve essere effettuata secondo la Combinazione 2 dell'Approccio 1 definita come segue, assumendo R2 pari a 1.1 in condizioni statiche ed a 1.2 in condizioni sismiche:

- Combinazione 2: A2+M2+R2 (GEO).

Nelle condizioni di esercizio gli spostamenti dell'opera sono stati valutati per verificarne la compatibilità con la funzionalità dell'opera e con la sicurezza delle opere adiacenti.

Tabella 2 - Coefficienti parziali di sicurezza per le combinazioni di carico agli SLU

| Coefficiente | | | EQU ⁽⁴⁾ | A1 | A2 |
|---|-------------|----------------|---------------------|---------------------|------|
| Azioni permanenti | favorevoli | γ_{G1} | 0,90 | 1,00 | 1,00 |
| | sfavorevoli | | 1,10 | 1,35 | 1,00 |
| Azioni permanenti non strutturali ⁽²⁾ | favorevoli | γ_{G2} | 0,00 | 0,00 | 0,00 |
| | sfavorevoli | | 1,50 | 1,50 | 1,30 |
| Ballast ⁽³⁾ | favorevoli | γ_B | 0,90 | 1,00 | 1,00 |
| | sfavorevoli | | 1,50 | 1,50 | 1,30 |
| Azioni variabili da traffico ⁽⁴⁾ | favorevoli | γ_Q | 0,00 | 0,00 | 0,00 |
| | sfavorevoli | | 1,45 | 1,45 | 1,25 |
| Azioni variabili | favorevoli | γ_{Qi} | 0,00 | 0,00 | 0,00 |
| | sfavorevoli | | 1,50 | 1,50 | 1,30 |
| Precompressione | favorevole | γ_P | 0,90 | 1,00 | 1,00 |
| | sfavorevole | | 1,00 ⁽⁵⁾ | 1,00 ⁽⁶⁾ | 1,00 |
| Ritiro, viscosità e cedimenti non imposti appositamente | favorevole | γ_{Ced} | 0,00 | 0,00 | 0,00 |
| | sfavorevole | | 1,20 | 1,20 | 1,00 |

⁽⁴⁾ Equilibrio che non coinvolga i parametri di deformabilità e resistenza del terreno; altrimenti si applicano i valori della colonna A2.

Tabella 3 - Coefficienti di combinazione delle azioni

| Azioni | | ψ_0 | ψ_1 | ψ_2 |
|------------------|---|---------------------|---------------------|------------|
| Azioni singole | Carico sul rilevato a tergo delle spalle | 0,80 | 0,50 | 0,0 |
| da traffico | Azioni aerodinamiche generate dal transito dei convogli | 0,80 | 0,50 | 0,0 |
| Gruppi di carico | gr_1 | 0,80 ⁽¹⁾ | 0,80 ⁽¹⁾ | 0,0 |
| | gr_2 | 0,80 ⁽²⁾ | 0,80 ⁽¹⁾ | - |
| | gr_3 | 0,80 ⁽²⁾ | 0,80 ⁽¹⁾ | 0,0 |
| | gr_4 | 1,00 | 1,00 ⁽¹⁾ | 0,0 |
| Azioni del vento | F_{Wk} | 0,60 | 0,50 | 0,0 |
| Azioni da neve | in fase di esecuzione SLU e SLE | 0,80 0,0 | 0,0 0,0 | 0,0 0,0 |
| Azioni termiche | T_k | 0,60 | 0,60 | 0,50 |

⁽¹⁾ 0,80 se è carico solo un binario, 0,60 se sono carichi due binari e 0,40 se sono carichi tre o più binari.

⁽²⁾ Quando come azione di base venga assunta quella del vento, i coefficienti ψ_0 relativi ai gruppi di carico delle azioni da traffico vanno assunti pari a 0,0.

Tabella 4 - Coefficienti parziali per i parametri geotecnici del terreno

| Parametro | Grandezza alla quale applicare il coefficiente parziale | Coefficiente parziale γ_M | (M1) | (M2) |
|--|---|----------------------------------|------|------|
| Tangente dell'angolo di resistenza al taglio | $\tan \varphi'_k$ | $\gamma_{\varphi'}$ | 1,0 | 1,25 |
| Coesione efficace | c'_k | $\gamma_{c'}$ | 1,0 | 1,25 |
| Resistenza non drenata | c_{uk} | γ_{cu} | 1,0 | 1,4 |
| Peso dell'unità di volume | γ_r | γ_r | 1,0 | 1,0 |

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8. METODO DI ANALISI

8.1 Modellazione numerica

Il calcolo agli elementi finiti delle paratie è stato effettuato utilizzando il codice PARATIE (versione 18.1.0) prodotto dalla “CeAs” – Milano – ITA. Gli effetti nelle opere di sostegno flessibile delle spinte del terreno e delle azioni concentrate offerte dalla eventuale tirantatura sono stati esaminati con l’ausilio del programma di calcolo per l’analisi di strutture di sostegno flessibili PARATIE.

PARATIE analizza il comportamento meccanico di una struttura di sostegno flessibile di uno scavo in terreno o roccia, ponendo l’accento sull’aspetto dell’interazione “locale” fra parete e terreno.

Lo studio di una parete flessibile è condotto attraverso una simulazione numerica del reale: il programma stabilisce e risolve un sistema di equazioni algebriche la cui soluzione permette di riprodurre abbastanza realisticamente l’effettivo comportamento dell’opera di sostegno.

La simulazione numerica utilizzata segue due differenti percorsi:

Analisi classica = viene eseguita una analisi all’equilibrio limite della singola o doppia paratia. Il calcolo delle sollecitazioni avviene per mezzo delle teorie classiche. Il calcolo degli spostamenti avviene tramite un’analisi elastica semplificata considerando lo schema di carico e di vincoli imposti dall’Utente.

Analisi non lineare secondo un modello “a molle” elasto plastiche” per la parte terreno. La schematizzazione in elementi finiti avviene in questo modo:

- Si analizza un problema piano (nel piano Y-Z): i gradi di libertà nodali attivi sono lo spostamento laterale e la rotazione fuori piano: gli spostamenti verticali sono automaticamente vincolati (di conseguenza le azioni assiali nelle pareti verticali non sono calcolate);
- La parete flessibile di sostegno vera e propria è schematizzata da una serie di elementi finiti BEAM verticali;

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- Il terreno, che spinge contro la parete (da monte e da valle) e che reagisce in modo complesso alle deformazioni della parete, è simulato attraverso un doppio letto di molle elasto-plastiche connesse agli stessi nodi della parete;
- Si adotta un valore dell'angolo di attrito terreno paratia, (δ), pari a $0.5 \phi'$. In sismica tale valore è nullo;
- i tiranti, i puntoni, le solette, gli appoggi cedevoli o fissi, sono schematizzati tramite molle puntuali convergenti in alcuni punti (nodi) della parete ove convergono parimenti elementi BEAM ed elementi terreno.

Lo scopo di PARATIE è lo studio di un problema definito; in altre parole, il programma analizza la risposta, durante le varie fasi realizzative, di una parete caratterizzata in tutte le sue componenti (altezza, infissione e spessore della parete, entità dei tiranti, ecc.). Il problema è ricondotto a uno schema piano in cui viene analizzata una “fetta” di parete di larghezza unitaria, come mostrato nella Figura seguente.

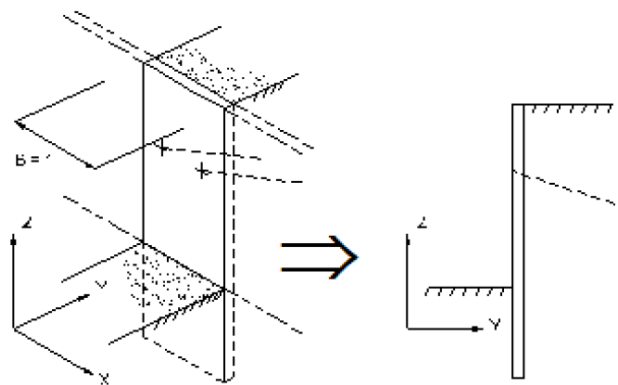


Figura 8 – Schema di modellazione piana effettuata per mezzo del software PARATIE

La modellazione numerica dell'interazione terreno-struttura è del tipo “trave su suolo elastico”. Le pareti di sostegno vengono rappresentate con elementi finiti trave il cui comportamento è definito dalla rigidità flessionale EJ , mentre il terreno viene simulato attraverso elementi elastoplastici monodimensionali (molle) connessi ai nodi delle paratie; ad ogni nodo convergono uno o al massimo due elementi terreno:

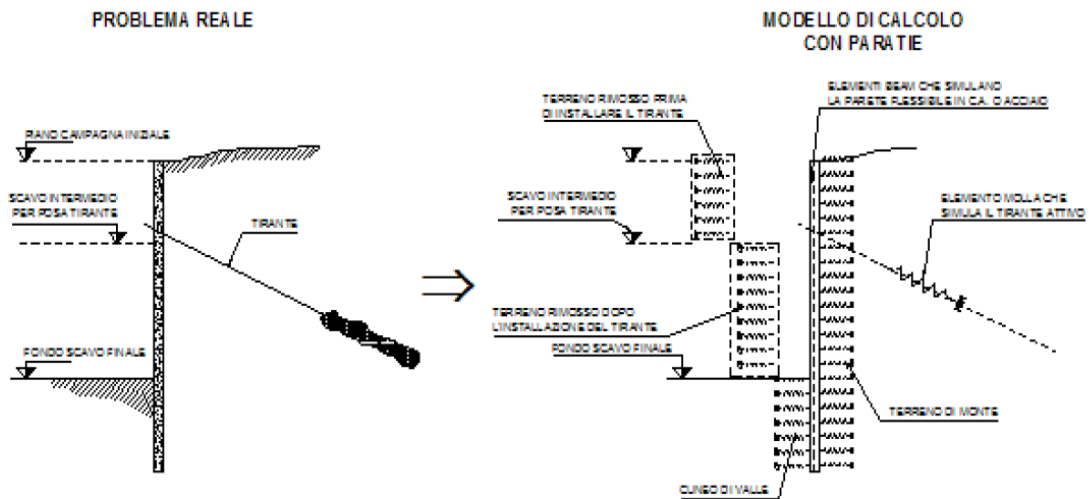


Figura 9 – Trave su suolo elastico: modellazione numerica della paratia e dei vincoli

Il limite di questo schema sta nell'ammettere che ogni porzione di terreno, schematizzata da una "molla", abbia comportamento del tutto indipendente dalle porzioni adiacenti; l'interazione fra le varie regioni di terreno è affidata alla rigidità flessionale della parete.

PARATIE calcola internamente e aggiorna costantemente tale parametro, sulla base del modulo elastico (Young) e la geometria del muro. In altre parole, ad ogni passo, la rigidità K della "molla" viene calcolata dalla seguente equazione:

$$k = a \cdot \frac{E_s \cdot t}{L}$$

dove

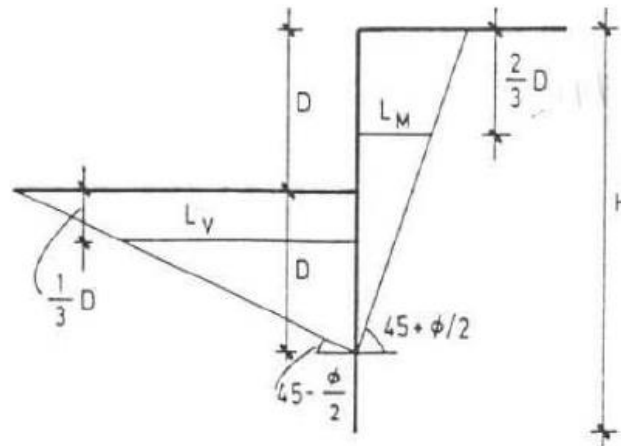
a è un fattore di scala posto pari a 1;

E_s è il modulo di Young del terreno;

t è l'interasse della molla;

L è un parametro geometrico che tiene conto della geometria del muro (v. capitolo 6.1.2).

Nella figura seguente viene riportato in via grafica il criterio per la definizione di L a monte ed a valle (L_M e L_V).



La realizzazione dello scavo sostenuto da una o due paratie, eventualmente tirantate, viene seguita in tutte le varie fasi attraverso un'analisi statica incrementale: ogni passo di carico coincide con una ben precisa configurazione caratterizzata da una certa quota di scavo, da un certo insieme di tiranti applicati, da una ben precisa disposizione di carichi applicati.

Poiché il comportamento degli elementi finiti è di tipo elastoplastico, ogni configurazione dipende in generale dalle configurazioni precedenti e lo sviluppo di deformazioni plastiche ad un certo passo condiziona la risposta della struttura nei passi successivi. La soluzione ad ogni nuova configurazione (step) viene raggiunta attraverso un calcolo iterativo alla Newton-Raphson (Bathe, 1996).

L'analisi ha lo scopo di indagare la risposta strutturale in termini di deformazioni laterali subite dalla parete durante le varie fasi di scavo e di conseguenza la variazione delle pressioni orizzontali nel terreno. Per far questo, in corrispondenza di ogni nodo è necessario definire due soli gradi di libertà, cioè lo spostamento orizzontale e la rotazione attorno all'asse X ortogonale al piano della struttura (positiva se antioraria).

Ne consegue che con questo strumento non possono essere valutati:

- cedimenti o innalzamenti verticali del terreno in vicinanza dello scavo;
- condizioni di stabilità generale del complesso parete+terreno+tiranti.

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| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | | | | | | | | |
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In questa impostazione particolare, inoltre, gli sforzi verticali nel terreno non sono per ipotesi influenzati dal comportamento deformativo orizzontale, ma sono una variabile del tutto indipendente, legata ad un calcolo basato sulle classiche ipotesi di distribuzione geostatica.

8.2 Modelli di calcolo

Al fine di esaminare compiutamente l'opera in esame, rappresentata in Figura 6 ed aventi caratteristiche tridimensionali, sono state effettuate due analisi. La prima (denominata Sezione A) ha preso in esame una sezione lato binario esistente, caratterizzata dalla massima profondità di scavo e dalla presenza di puntoni. La seconda (denominata Sezione B) ha considerato una sezione posizionata a distanza maggiore dal binario esistente e descritta da una paratia a sbalzo di altezza ridotta. Le due sezioni sono rappresentate schematicamente in Figura 7.

8.3 Fasi di costruzione

Sulla base di quanto descritto nel capitolo 4, il calcolo numerico è effettuato per fasi, al fine di consentire la valutazione delle azioni sulla paratia nelle differenti stadi di costruzione e di consentire la convergenza della soluzione. Nel seguito si riassumono le fasi di calcolo considerate nell'analisi.

8.3.1 Sezione A

FASE 0 - INIZIALIZZAZIONE

Paratia: -

Puntoni: -

Quota terreno lato esterno: 0 m

Quota terreno lato interno: 0 m

Sovraccarico: -

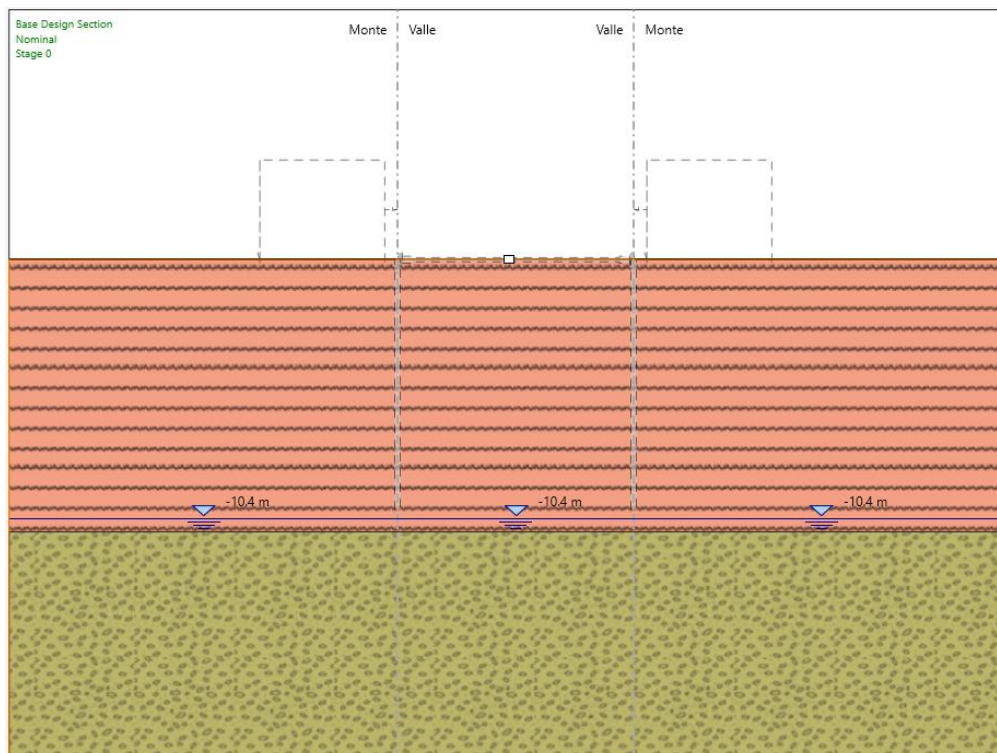


Figura 10 – Stage 0: stato di fatto

FASE 1 - BERLINESE

Paratia: $\Phi 139.7$, spessore 10mm, lunghezza 10m, passo 0.4m

Puntoni: -

Quota terreno lato esterno: 0 m

Quota terreno lato interno: 0 m

Sovraccarico: 10kPa variabile

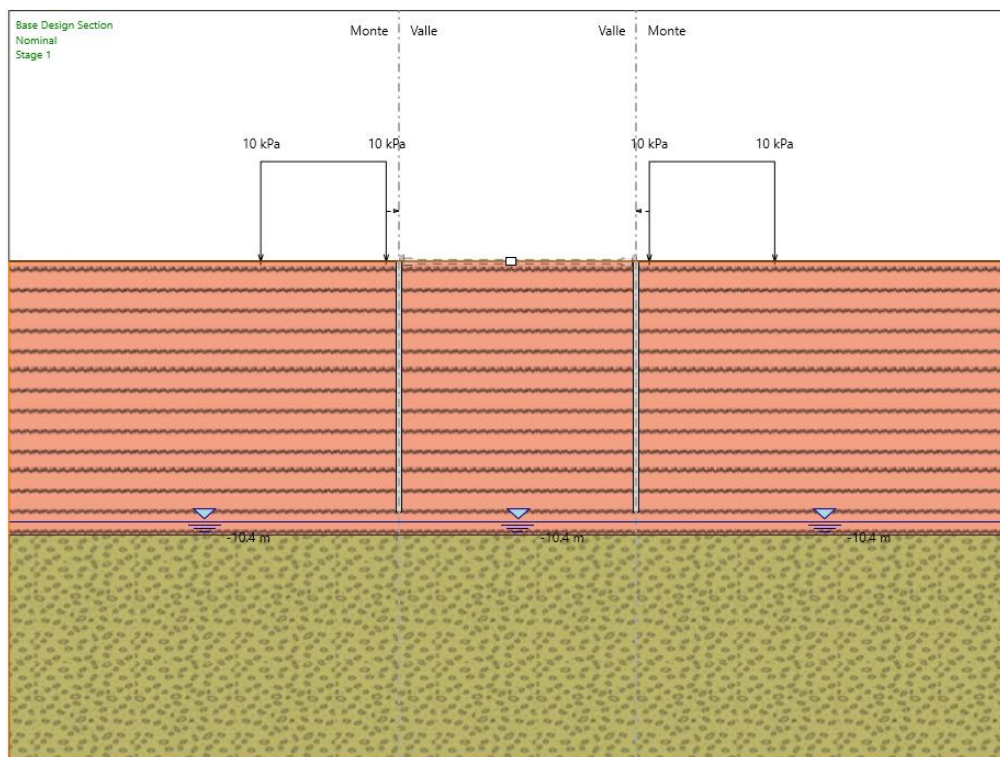


Figura 11 – Stage 1: costruzione berlinese

FASE 2 – SCAVO -1m

Paratia: $\Phi 139.7$, spessore 10mm, lunghezza 10m, passo 0.4m

Puntoni: -

Quota terreno lato esterno: 0 m

Quota terreno lato interno: -1 m

Sovraccarico: 10kPa variabile

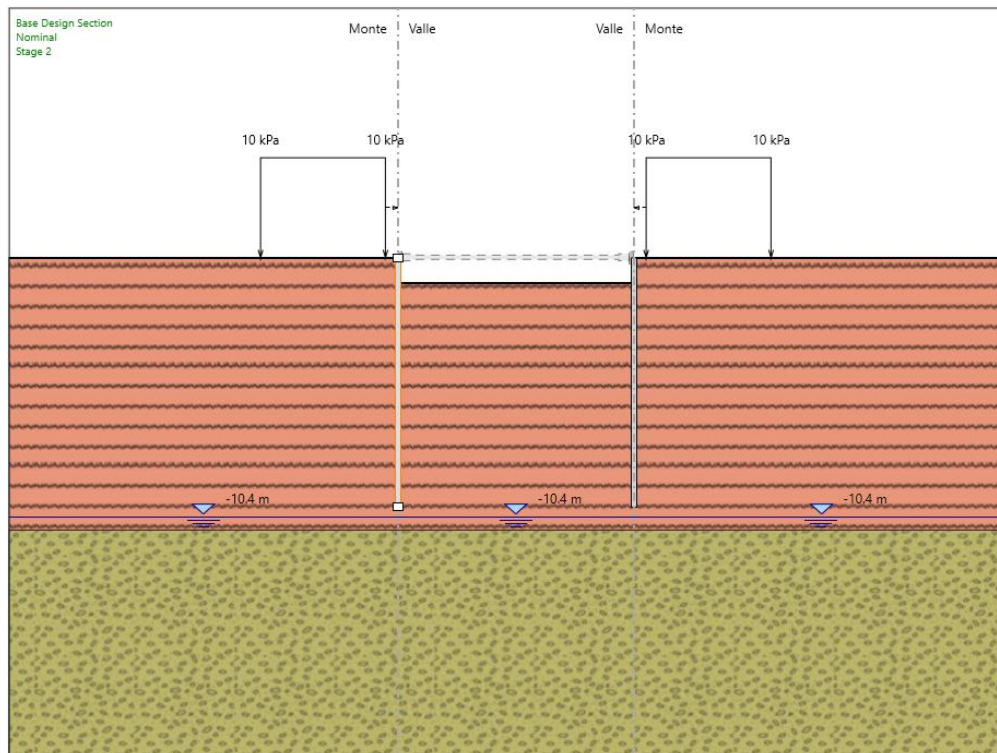


Figura 12 – Stage 2: scavo -1m

FASE 3 – INSTALLAZIONE PUNTONE

Paratia: $\Phi 139.7$, spessore 10mm, lunghezza 10m, passo 0.4m

Puntoni: $\Phi 139.7$, spessore 10mm, passo 2.5m (passo massimo lungo la paratia)

Quota terreno lato esterno: 0 m

Quota terreno lato interno: -1 m

Sovraccarico: 10kPa variabile

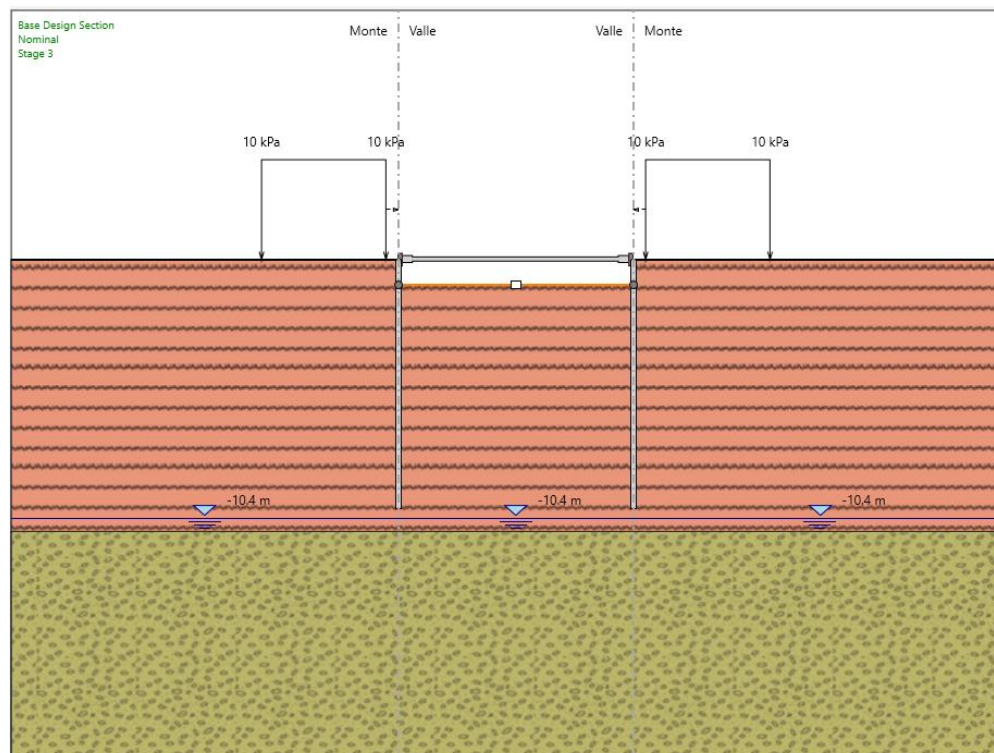


Figura 13 – Stage 3: installazione puntone

FASE 4 – SCAVO -3m

Paratia: $\Phi 139.7$, spessore 10mm, lunghezza 10m, passo 0.4m

Puntoni: $\Phi 139.7$, spessore 10mm, passo 2.5m (passo massimo lungo la paratia)

Quota terreno lato esterno: 0 m

Quota terreno lato interno: -3 m

Sovraccarico: 10kPa variabile

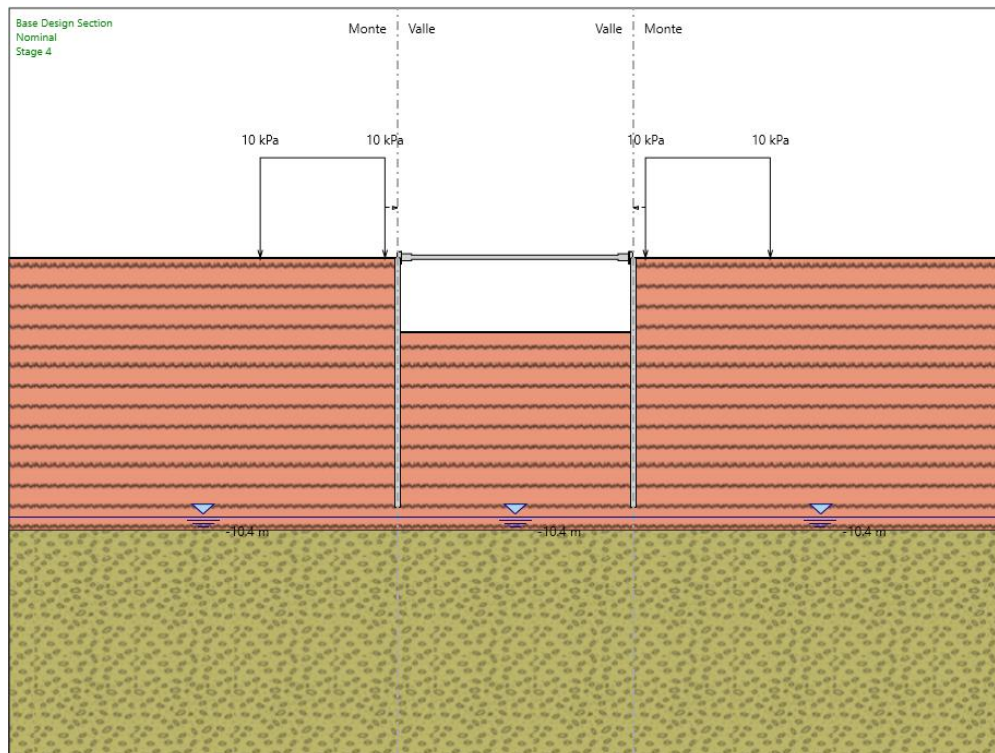


Figura 14 – Stage 4: scavo -3m

FASE 5 – SCAVO -4m

Paratia: $\Phi 139.7$, spessore 10mm, lunghezza 10m, passo 0.4m

Puntoni: $\Phi 139.7$, spessore 10mm, passo 2.5m (passo massimo lungo la paratia)

Quota terreno lato esterno: 0 m

Quota terreno lato interno: -4 m

Sovraccarico: 10kPa variabile

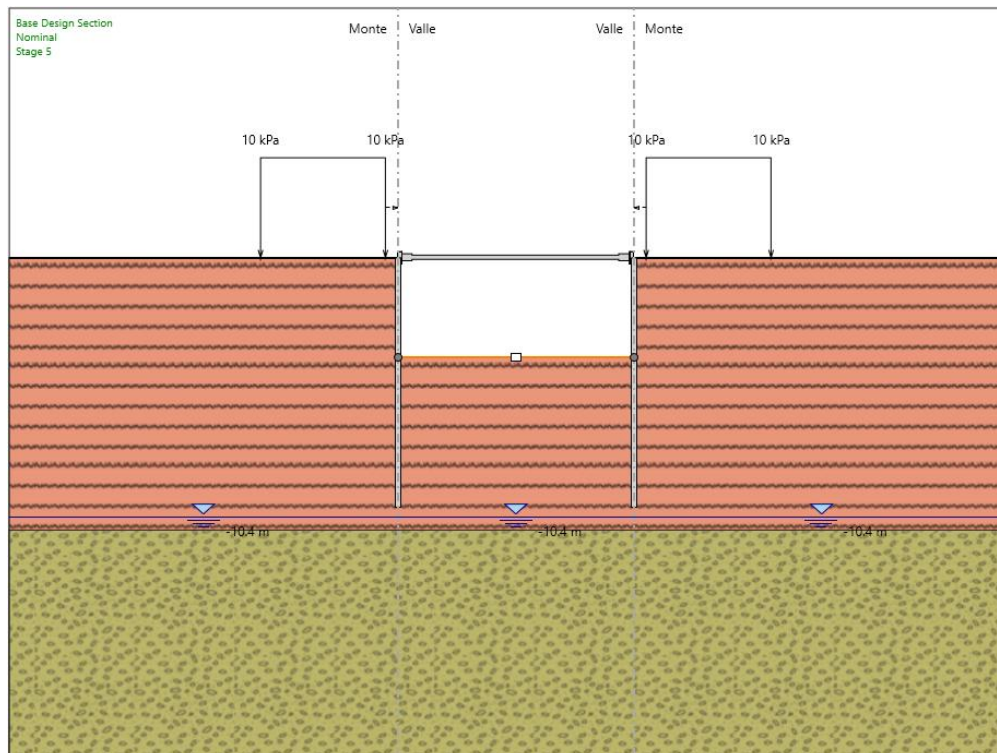


Figura 15 – Stage 5: scavo -4m

FASE 6 – FONDO SCAVO

Paratia: $\Phi 139.7$, spessore 10mm, lunghezza 10m, passo 0.4m

Puntoni: $\Phi 139.7$, spessore 10mm, passo 2.5m (passo massimo lungo la paratia)

Quota terreno lato esterno: 0 m

Quota terreno lato interno: -5.2 m

Sovraccarico: 10kPa variabile

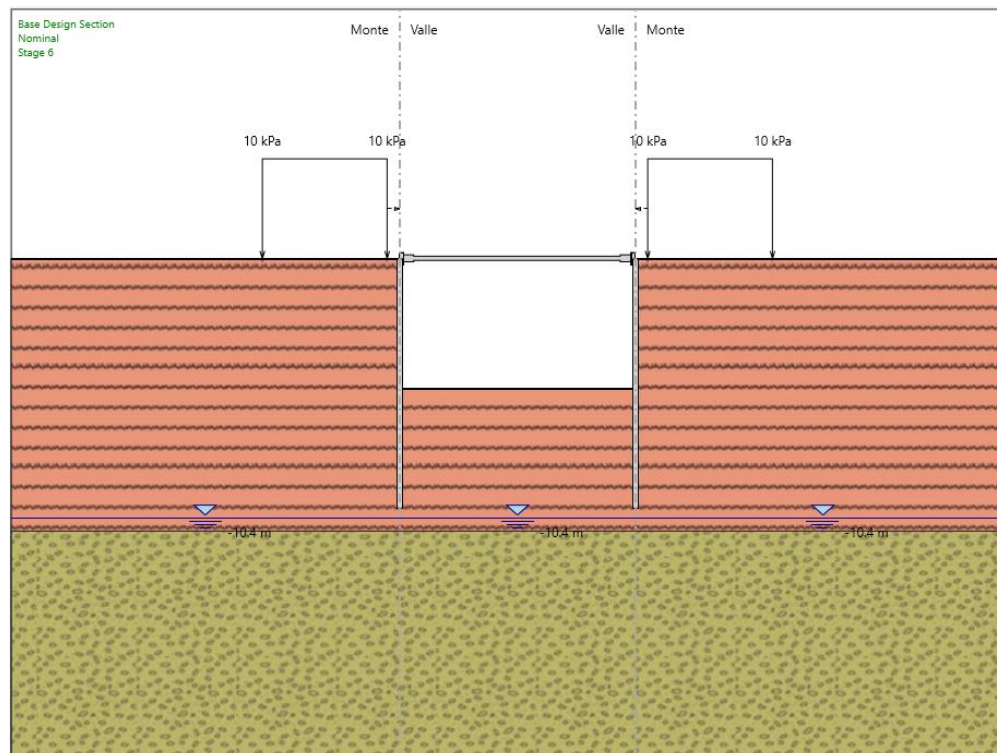


Figura 16 – Stage 6: scavo -5.2m

FASE 7 – SOVRASCAVO

Paratia: $\Phi 139.7$, spessore 10mm, lunghezza 10m, passo 0.4m

Puntoni: $\Phi 139.7$, spessore 10mm, passo 2.5m (passo massimo lungo la paratia)

Quota terreno lato esterno: 0 m

Quota terreno lato interno: -5.7m (v. capitolo 6.1.2.1)

Sovraccarico: 10kPa variabile

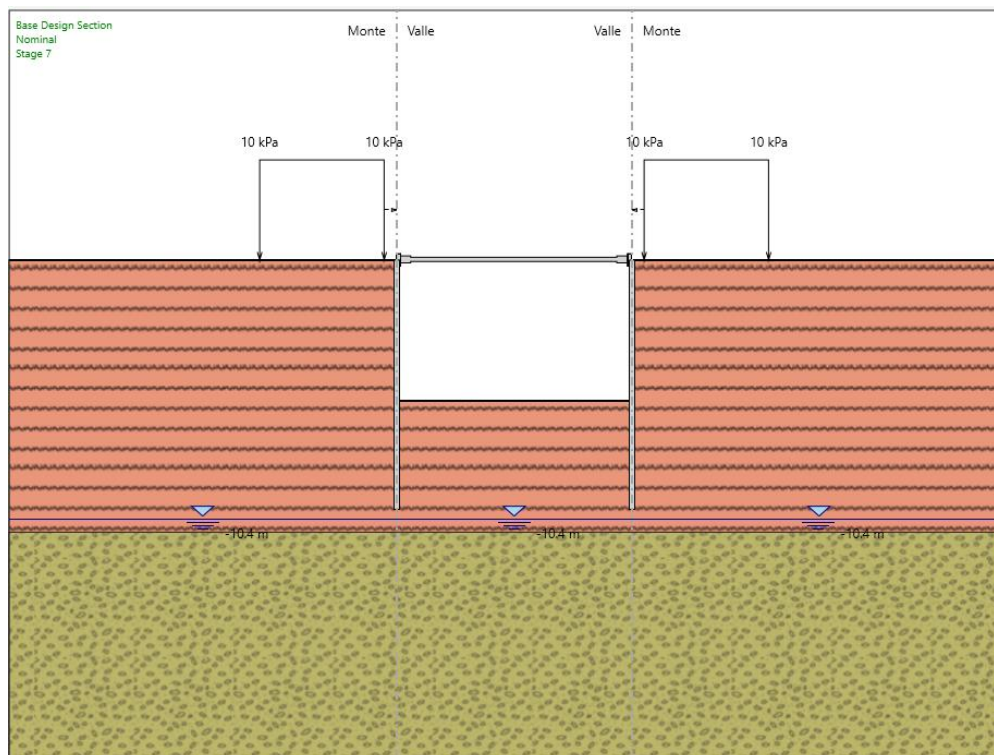


Figura 17 – Stage 7: sovrascavo

8.3.2 Sezione B

FASE 0 - INIZIALIZZAZIONE

Paratia: -

Quota terreno lato esterno: 0 m

Quota terreno lato interno: 0 m

Sovraccarico: -

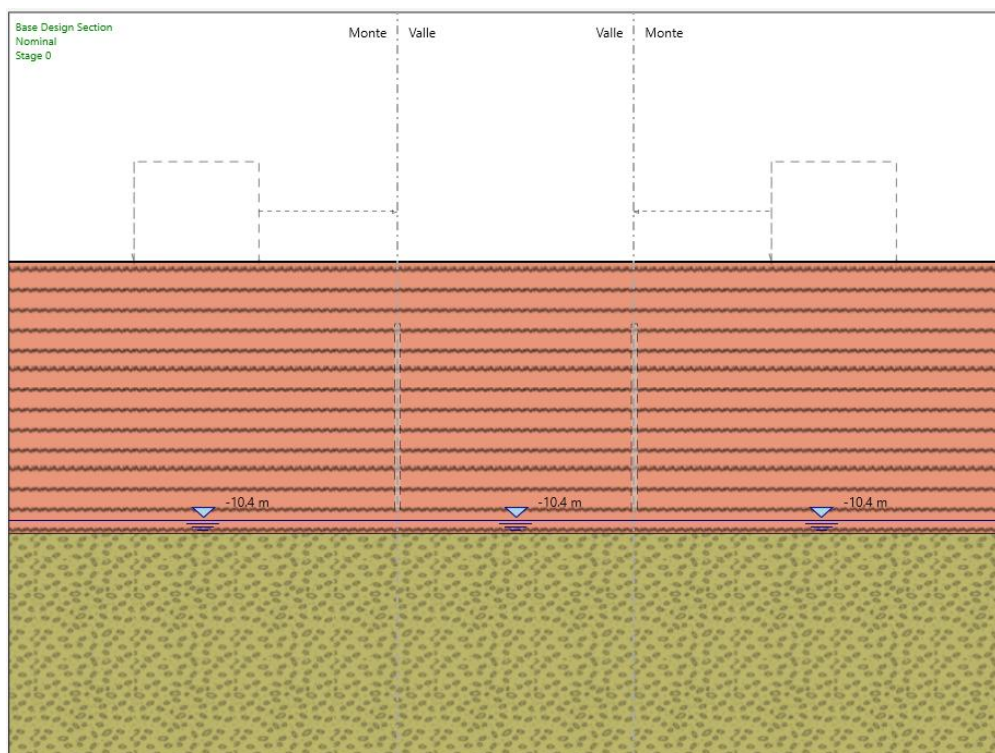


Figura 18 – Stage 0: stato di fatto

FASE 1 - PRESCAVO

Paratia: -

Quota terreno lato esterno: 0 - -2.5m

Quota terreno lato interno: -2.5m

Sovraccarico: 10kPa variabile

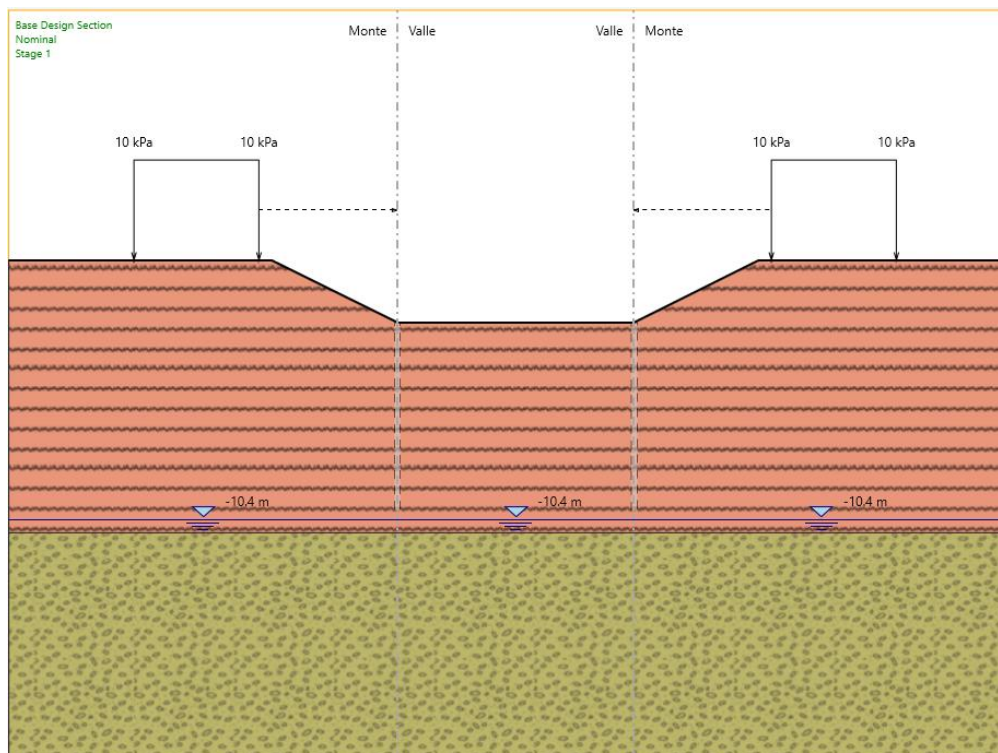


Figura 19 – Stage 1: prescavo

FASE 2 - BERLINESE

Paratia: $\Phi 139.7$, spessore 10mm, lunghezza 10m, passo 0.4m

Quota terreno lato esterno: 0 - -2.5m

Quota terreno lato interno: -2.5m

Sovraccarico: 10kPa variabile

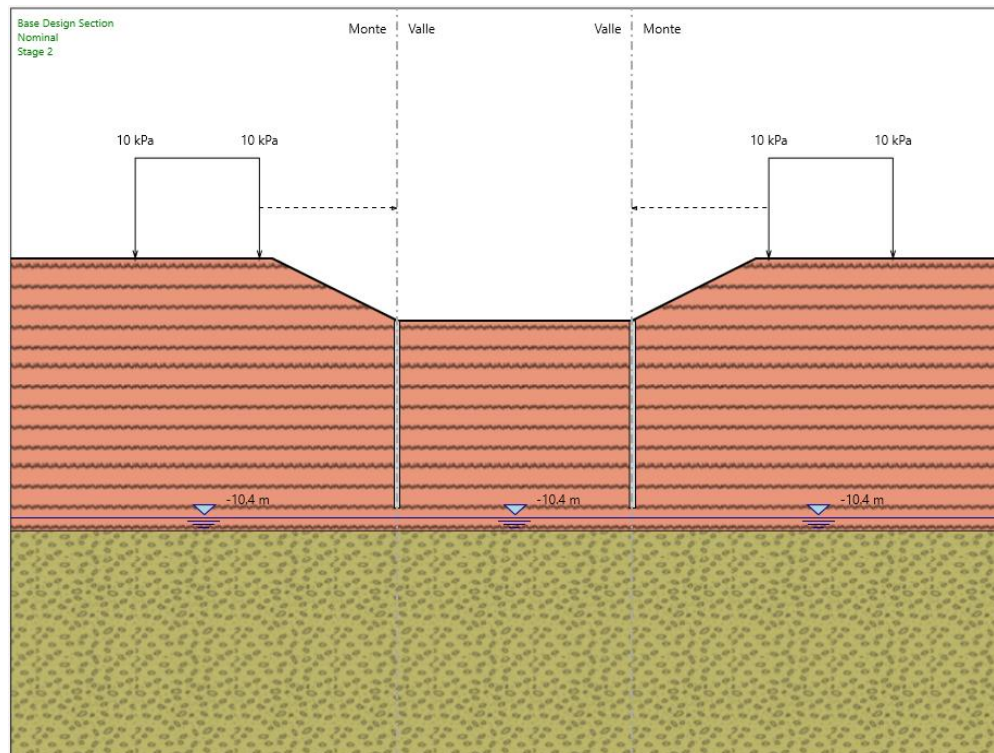


Figura 20 – Stage 2: costruzione berlinese

FASE 3 – SCAVO -4.5m

Paratia: $\Phi 139.7$, spessore 10mm, lunghezza 10m, passo 0.4m

Quota terreno lato esterno: 0 - -2.5m

Quota terreno lato interno: -4.5m

Sovraccarico: 10kPa variabile

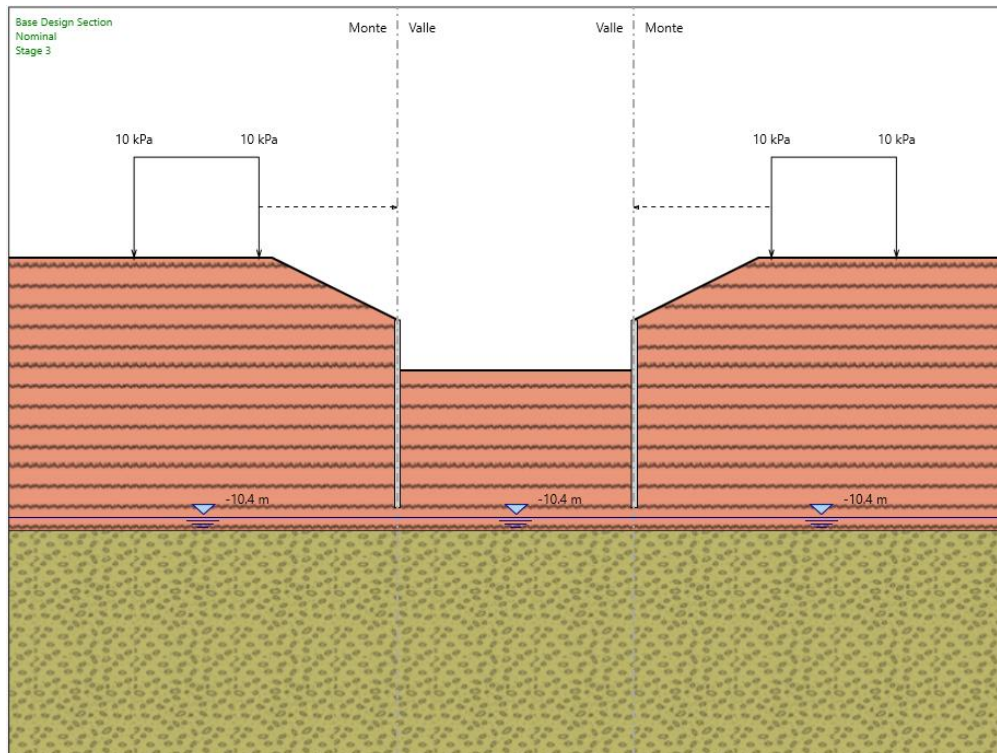


Figura 21 – Stage 3: scavo -4.5m

FASE 4 – FONDO SCAVO

Paratia: $\Phi 139.7$, spessore 10mm, lunghezza 10m, passo 0.4m

Quota terreno lato esterno: 0 - -2.5m

Quota terreno lato interno: -5.2m

Sovraccarico: 10kPa variabile

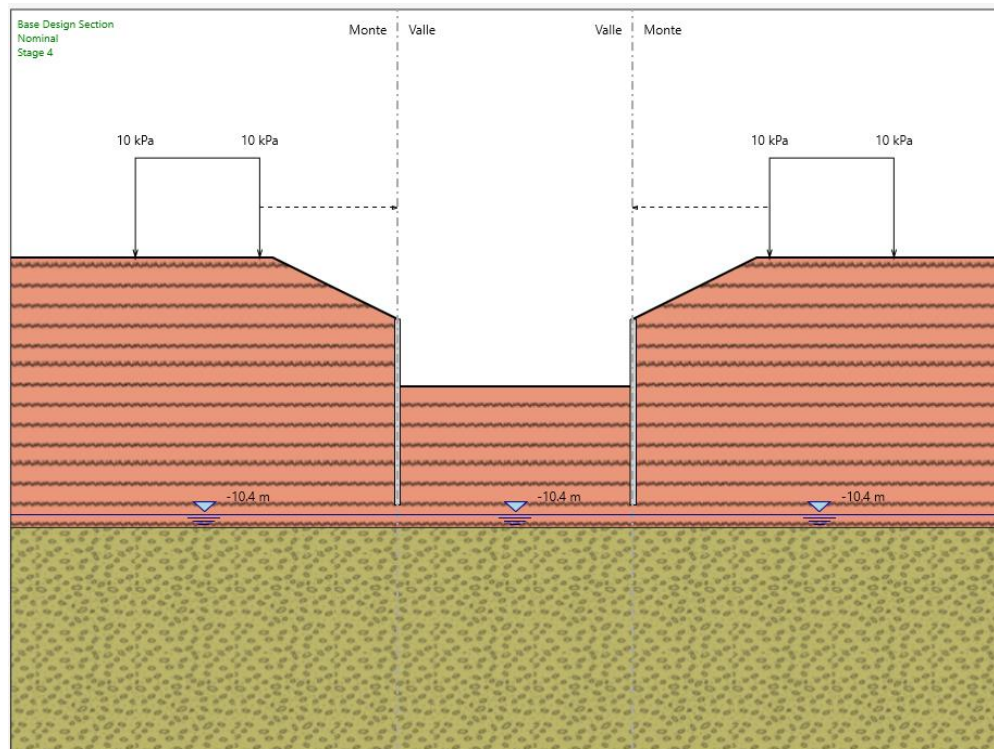


Figura 22 – Stage 3: scavo -5.2m

FASE 5 - SOVRASCAVO

Paratia: $\Phi 139.7$, spessore 10mm, lunghezza 10m, passo 0.4m

Quota terreno lato esterno: 0 - -2.5m

Quota terreno lato interno: -5.5m

Sovraccarico: 10kPa variabile

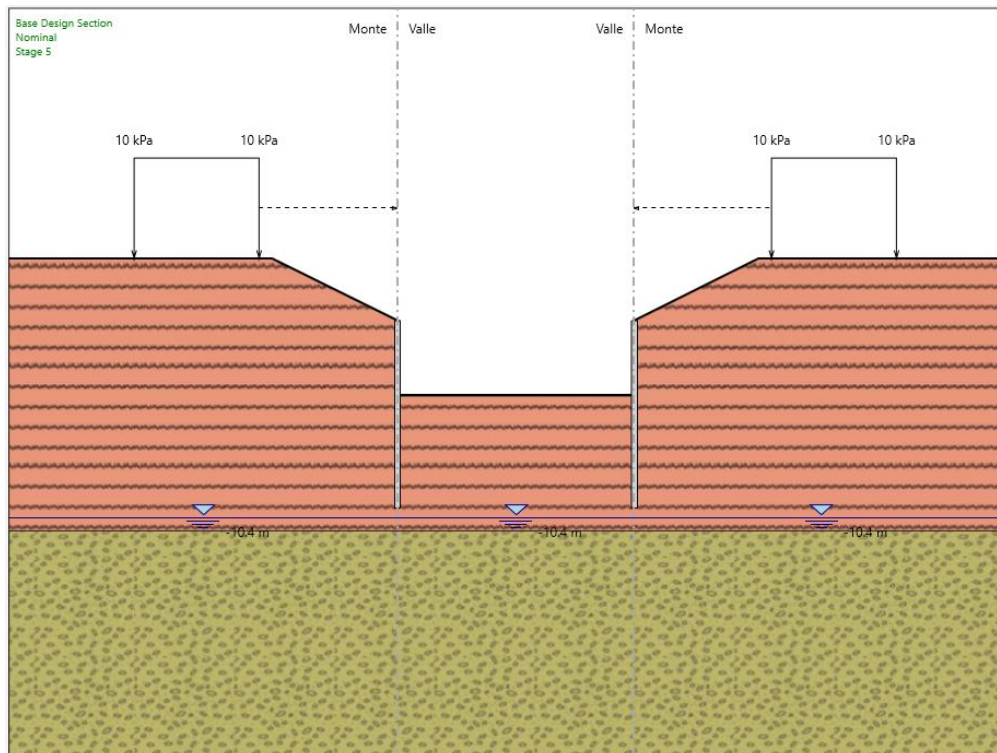


Figura 23 – Stage 5: scavo -5.5m

|  | <p style="text-align: center;">INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE – AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE</p> <p style="text-align: center;">RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE</p> | | | | | | | | | | | | |
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9. CRITERI DI VERIFICA

Coerentemente con quanto descritto nel capitolo 7, le verifiche agli Stati Limite Ultimo della paratia sono condotte con riferimento a tutti i meccanismi di rottura e instabilità che possono verificarsi e previsti da normativa tecnica. Le verifiche di esercizio sono, invece, finalizzate alla valutazione degli spostamenti e della loro compatibilità con la funzionalità delle strutture adiacenti, compresa la sede ferroviaria.

Le verifiche vengono condotte secondo quanto dichiarato nell'istruttoria RFI DTC INC PO SP IFS 001 A § 1.8.3.

Le verifiche di resistenza delle sezioni sono eseguite secondo il metodo semiprobabilistico agli stati limite. I coefficienti di sicurezza adottati sono i seguenti:

- coefficiente parziale di sicurezza per il calcestruzzo: 1.50;
- coefficiente parziale di sicurezza per l'acciaio in barre: 1.15;

Il paragrafo in oggetto illustra nel dettaglio i criteri generali adottati per le verifiche strutturali e geotecniche condotte nel progetto. Ulteriori dettagli di carattere specifico, laddove impiegati, sono dichiarati e motivati nelle relative risultanze delle verifiche.

9.1 Verifiche geotecniche

9.1.1 Verifica della massima spinta passiva mobilitata

La lunghezza di ammorsamento della paratia di micropali deve essere tale da garantire la stabilità dell'opera in tutte le fasi di realizzazione. La stabilità è verificata per mezzo del programma di calcolo Paratie, verificando la convergenza della soluzione calcolata e, dunque, l'equilibrio nella direzione orizzontale ed alla rotazione. Nell'ambito delle analisi si verificherà quindi che la spinta passiva mobilitata sia sempre inferiore alla spinta passiva ultima di progetto, nella Combinazione 2 dell'Approccio 1, garantendo un adeguato margine di sicurezza.

|  <p>ITAFERR GRUPPO FERROVIE DELLO STATO ITALIANE</p> | <p>INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE – AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE</p> <p>RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE</p> | | | | | | | | | | | | |
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9.1.2 Verifica degli spostamenti

Il calcolo degli spostamenti della berlinese è effettuato con PARATIE e secondo quanto previsto dalle NTC. Al fine di mantenere in esercizio la linea ferroviaria adiacente ed evitare elevati detensionamenti del materiale a tergo della paratia, lo spostamento in testa di quest'ultima dev'essere mantenuto al di sotto del valore massimo ammissibile di 5mm. Orientativamente, lungo la paratia il valore limite degli spostamenti sarà pari ed accettabile 1/200 dell'altezza di scavo, per quanto riguarda il limite di spostamento agli SLE.

9.1.3 Altre verifiche

In considerazione della geometria dell'opera e dello scavo, stratigrafia e delle condizioni di falda, per l'opera in oggetto si ritiene che non possano innescarsi meccanismi di instabilità globale del complesso opera-terreno o relativi al sollevamento, al sifonamento o ad altri stati limite di tipo idraulico.

9.2 Verifiche strutturali

9.2.1 Verifica dei tubi di armatura dei micropali

La verifica dei tubi di armatura dei micropali, sia verticali che inclinati, viene eseguita secondo il criterio valido per sezioni tubolari compatte (classe 1 o 2) con il metodo plastico descritto nelle NTC. Le verifiche a flessione ed a taglio saranno effettuate con Paratie, in termini di coefficiente di sfruttamento.

9.2.2 Verifica del puntone

La verifica dei puntoni viene eseguita secondo il criterio valido per sezioni compatte di classe 1 o 2 con il metodo plastico descritto nelle NTC. Queste verifiche sono condotte in modo automatico dal software Paratie.

|  <p>ITALFERR GRUPPO FERROVIE DELLO STATO ITALIANE</p> | <p>INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE – AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE</p> <p>RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE</p> | | | | | | | | | | | | |
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9.2.3 Verifica della trave di coronamento

La verifica a flessione ed al taglio si esegue in corrispondenza delle sezioni maggiormente sollecitate, in corrispondenza dei puntoni. Il calcolo è effettuato mediante il software RC-SEC, in congruenza a quanto prescritto dalle Norme Tecniche per le Costruzioni (Doc. rif.[1]) relativamente alle strutture in cemento armato.

10. RISULTATI

Nel presente capitolo si riassumono i risultati del calcolo effettuato sull'opera descritta nel capitolo 8.

10.1 Sezione A

INVILUPPO MOMENTO FLETTENTE

Nella figura che segue si illustra il momento flettente massimo calcolato per le combinazioni agli Stati Limite Ultimo.

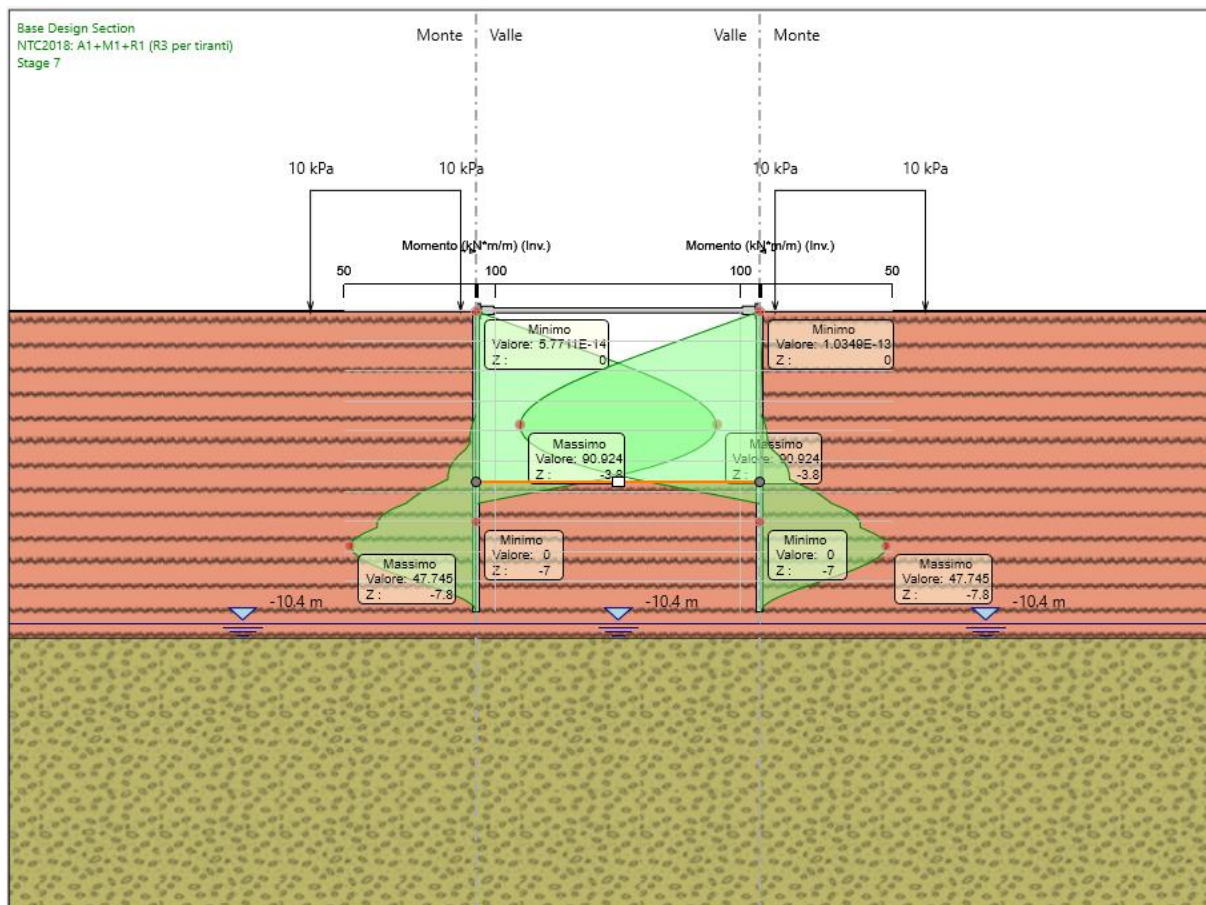


Figura 24 – Sezione A: Momento flettente massimo SLU ($M_{max}=48$ kNm/m)

INVILUPPO AZIONE DI TAGLIO

Nella figura che segue si illustra l'azione di taglio massima calcolata per le combinazioni agli Stati Limite Ultimo.

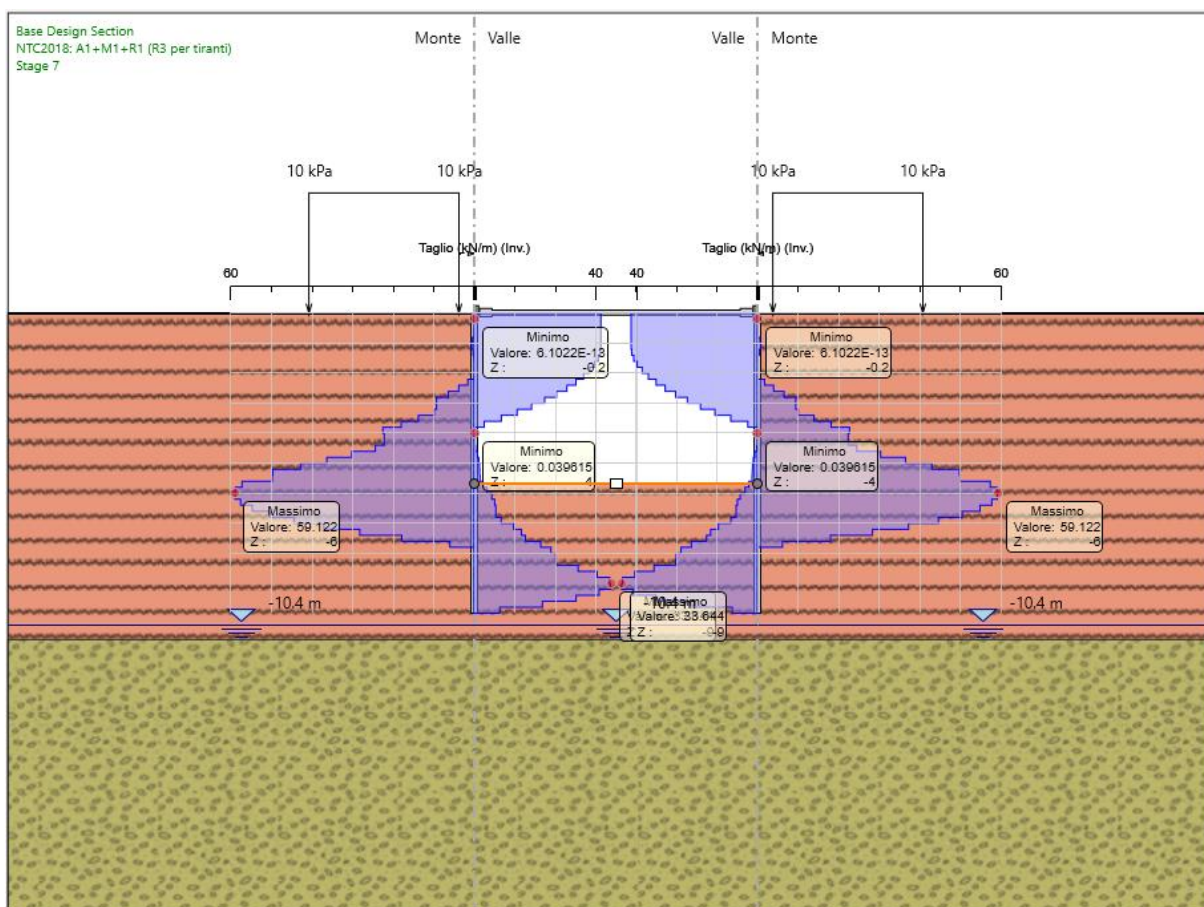


Figura 25 – Sezione A: Azione di taglio massimo SLU ($T_{max}=59 \text{ kN/m}$)

SPOSTAMENTO MASSIMO PARATIA

Nelle figure che seguono si illustrano gli spostamenti massimi calcolati negli Stati Limite di Esercizio.

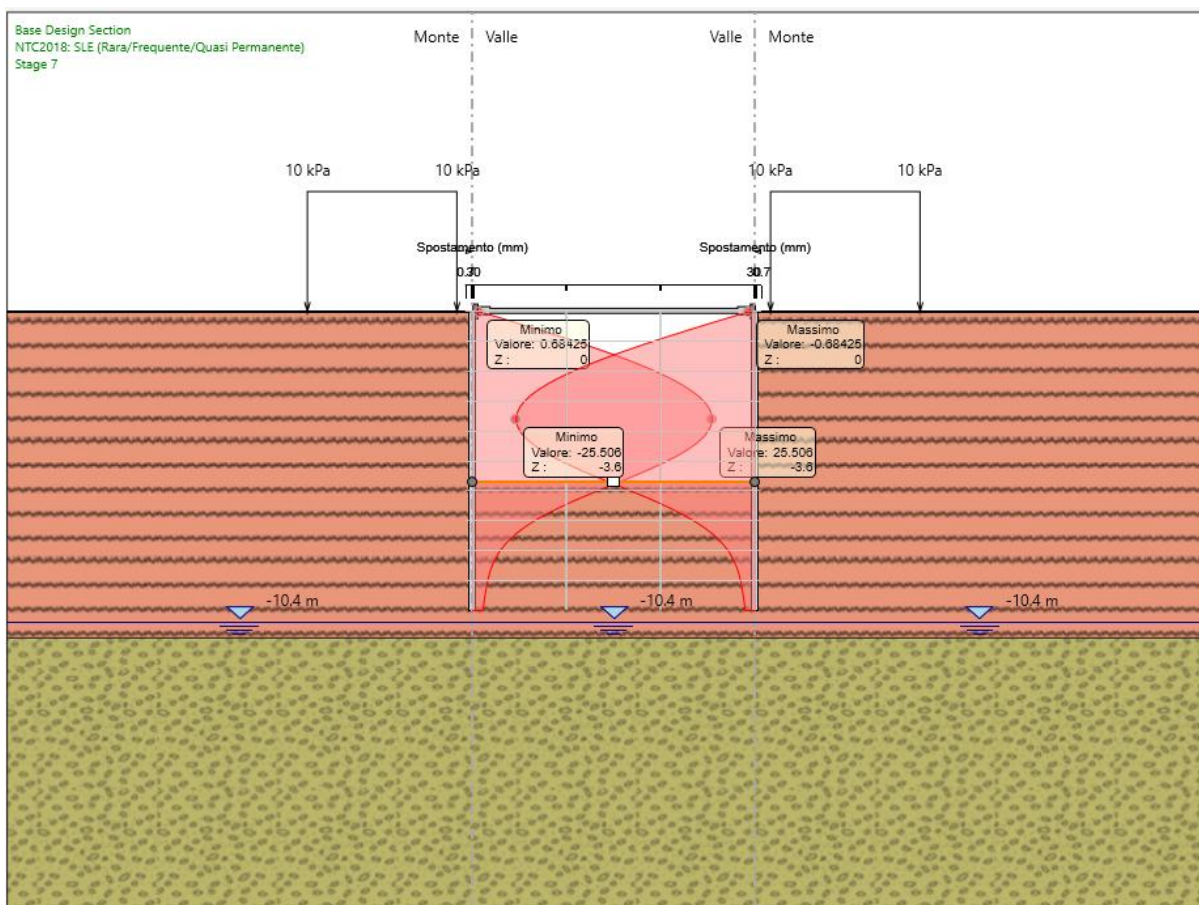


Figura 26 – Sezione A: Spostamento massimo SLE (25.5mm)

SPINTA PASSIVA MOBILITATA

Tabella 5 - Involuppo spinta reale efficace / Spinta passiva (Approccio 1 Combinazione 2)

| Design Assumption | Stage | Muro | Lato | Involuppo Spinta Reale Efficace / Spinta Passiva % |
|------------------------------------|---------|------------|-------|---|
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 0 | Left Wall | LEFT | 14.59 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 7 | Left Wall | RIGHT | 39.22 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 7 | Right wall | LEFT | 39.22 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 0 | Right wall | RIGHT | 14.59 |

INVILUPPO AZIONI SUL PUNTONE

Nella figura che segue si illustra la reazione di compressione massima agente sul puntone calcolata per le combinazioni agli Stati Limite Ultimo.

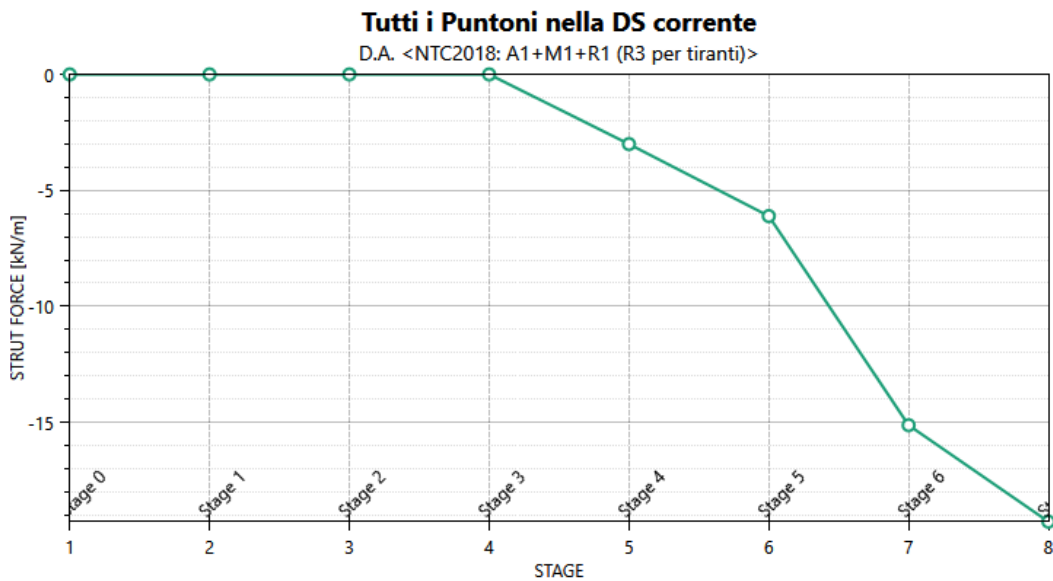


Figura 27 – Azione di taglio massimo SLU ($T_{max}=19.3$ kN/m)

10.2 Sezione B

INVILUPPO MOMENTO FLETTENTE

Nella figura che segue si illustra il momento flettente massimo calcolato per le combinazioni agli Stati Limite Ultimo.

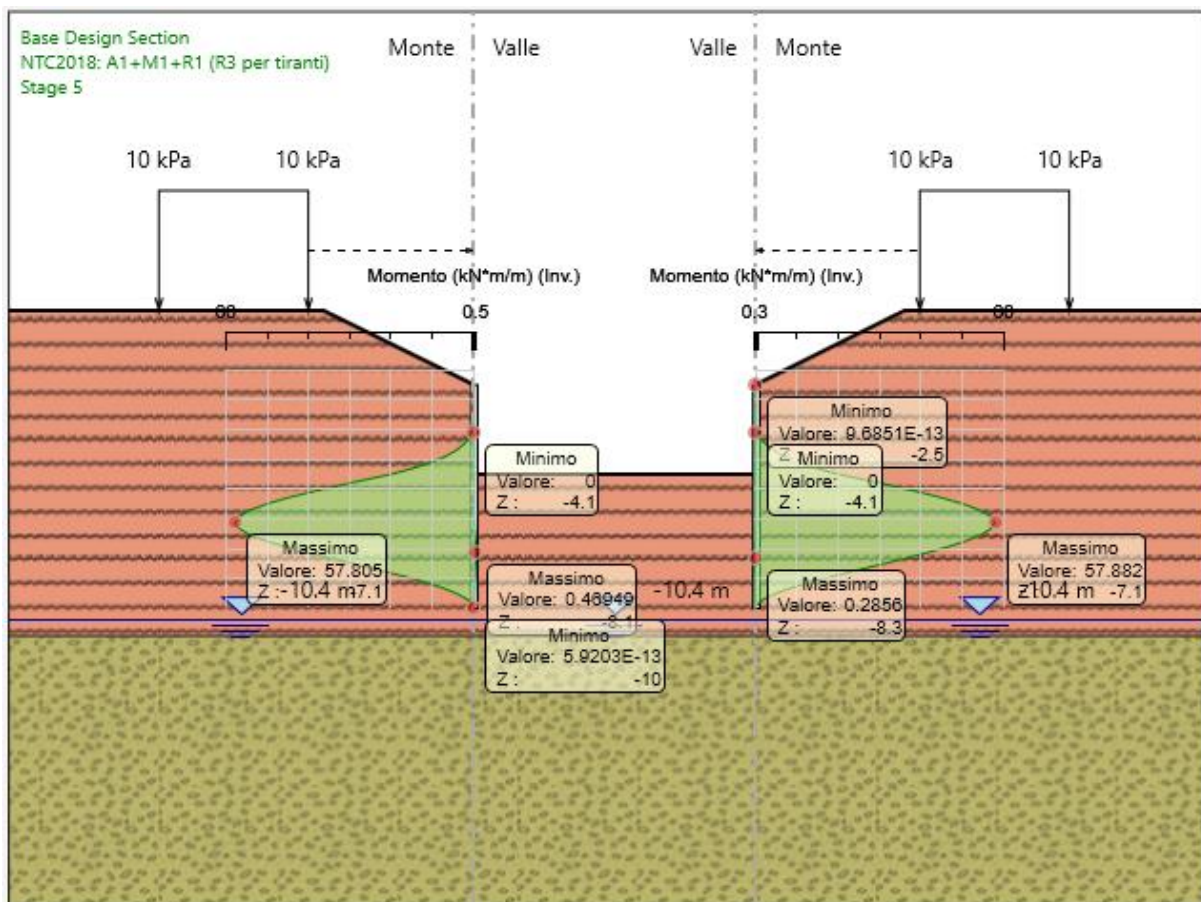


Figura 28 – Sezione B: Momento flettente massimo SLU ($M_{max}=58 \text{ kNm/m}$)

INVILUPPO AZIONE DI TAGLIO

Nella figura che segue si illustra l'azione di taglio massima calcolata per le combinazioni agli Stati Limite Ultimo.

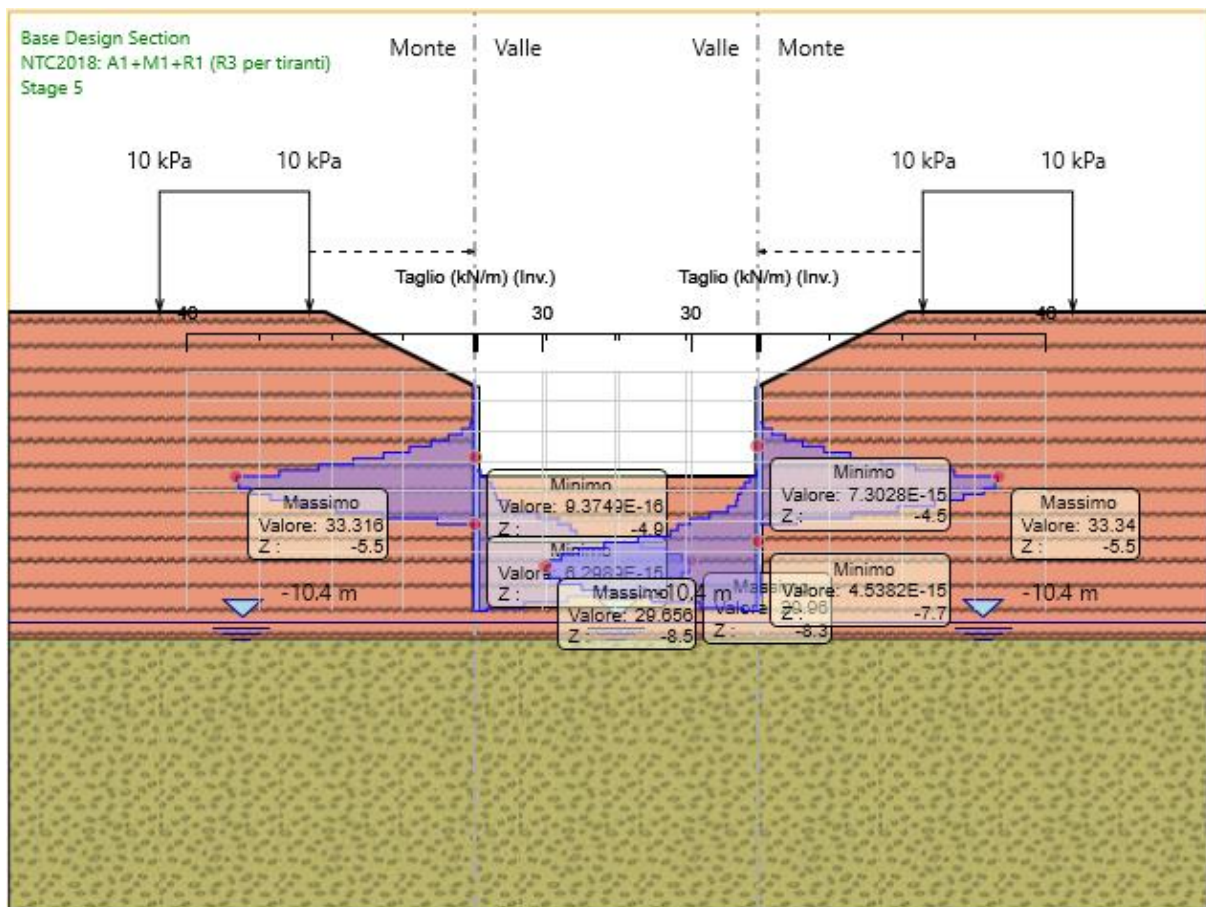


Figura 29 – Sezione B: Azione di taglio massima SLU ($T_{max}=34$ kN/m)

SPOSTAMENTO MASSIMO PARATIA

Nelle figure che seguono si illustrano gli spostamenti massimi calcolati negli Stati Limite di Esercizio.

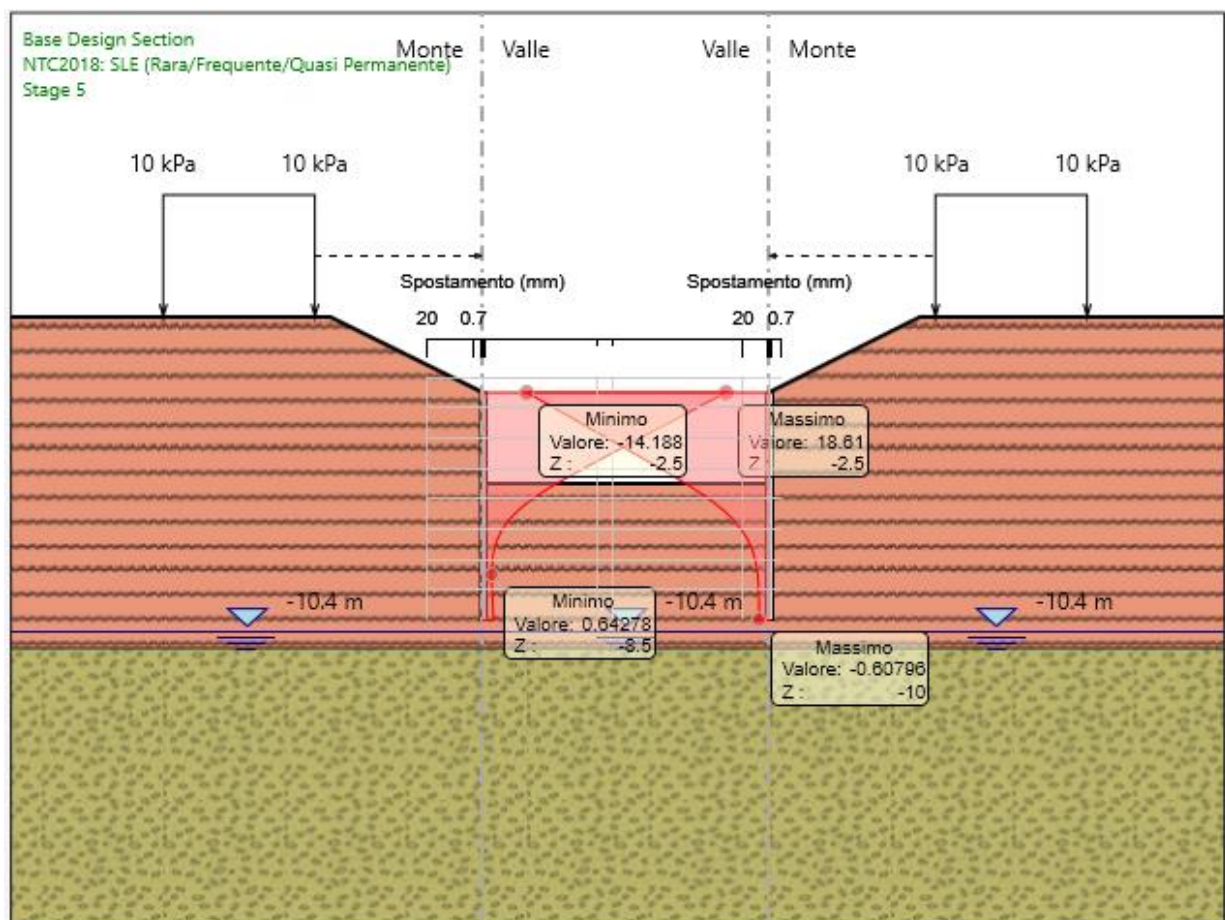


Figura 30 – Sezione B: Spostamento massimo SLE (18.6mm)

SPINTA PASSIVA MOBILITATA

Tabella 6 - Inviluppo spinta reale efficace / Spinta passiva (Approccio 1 Combinazione 2)

| Design Assumption | Stage | Muro | Lato | Inviluppo Spinta Reale Efficace / Spinta Passiva |
|-------------------|---------|------------|-------|--|
| | | | | % |
| NTC2018: A2+M2+R1 | Stage 1 | Left Wall | LEFT | 24.5 |
| NTC2018: A2+M2+R1 | Stage 5 | Left Wall | RIGHT | 57.78 |
| NTC2018: A2+M2+R1 | Stage 5 | Right wall | LEFT | 57.7 |
| NTC2018: A2+M2+R1 | Stage 1 | Right wall | RIGHT | 24.5 |

|  | <p style="text-align: center;">INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE – AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE</p> <p style="text-align: center;">RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE</p> | | | | | | | | | | | | |
|--|--|----------|------------|----------|-----------|------|--------|------|---------|----|------------|---|-----------|
| <p>IN06 – Tombino idraulico al km 30+743 Relazione di calcolo delle opere provvisionali</p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">COMMESSA</th> <th style="text-align: left;">LOTTO</th> <th style="text-align: left;">CODIFICA</th> <th style="text-align: left;">DOCUMENTO</th> <th style="text-align: left;">REV.</th> <th style="text-align: left;">FOGLIO</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">NR1J</td> <td style="text-align: center;">01 D 29</td> <td style="text-align: center;">CL</td> <td style="text-align: center;">IN0600 002</td> <td style="text-align: center;">A</td> <td style="text-align: center;">53 di 386</td> </tr> </tbody> </table> | COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | NR1J | 01 D 29 | CL | IN0600 002 | A | 53 di 386 |
| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | | | | | | | | |
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11. VERIFICHE

11.1 Verifiche geotecniche

Sulla base dei risultati presentati nel precedente capitolo, la percentuale di spinta passiva massima mobilitata nella Combinazione 2 è tale da garantire la stabilità dell'opera alla rototraslazione.

Inoltre, gli spostamenti calcolati e rappresentati in Figura 26 e Figura 30 sono in grado di garantire i requisiti prestazionali dell'opera e, quindi, soddisfare le verifiche agli SLE.

11.2 Verifiche strutturali

Le seguenti figure illustrano il massimo livello di sfruttamento della struttura al momento ed al taglio, sempre ampiamente inferiore al 100%. Le verifiche strutturali agli SLU sono, pertanto, soddisfatte.

11.2.1 Sezione A

11.2.1.1 Paratia

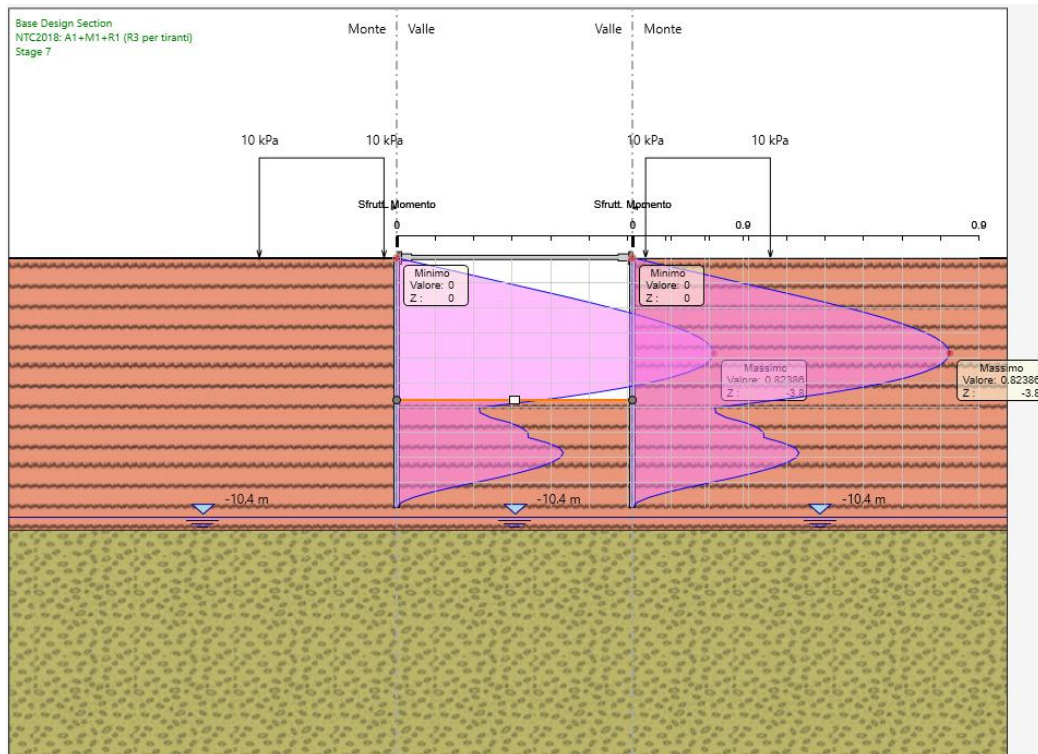


Figura 31 – Sezione A: Inviluppo del massimo grado di sfruttamento del tubolare a flessione (SLU)

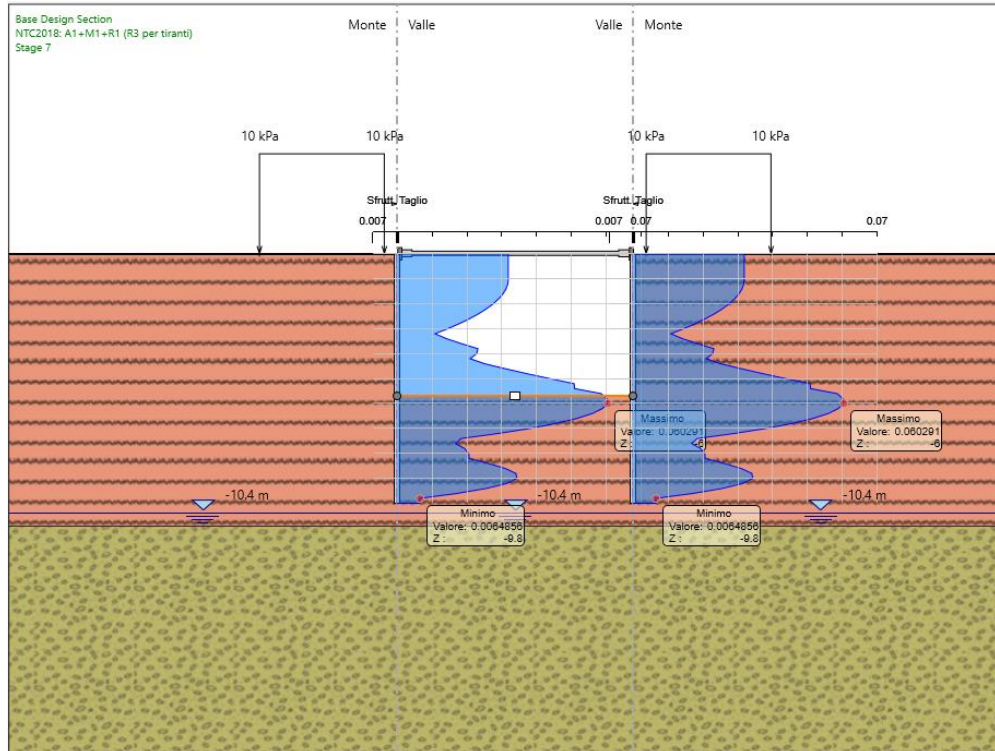


Figura 32 – Sezione A: Involuppo del massimo grado di sfruttamento del tubolare a taglio (SLU)

11.2.1.2 Puntone

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) | Tipo Risultato: Verifiche Puntoni | NTC2018 (ITA) | | | | | | | | | | | | | | |
|---|---|------------------|---------|-------------|-----------|------------------------|-----------|---------|---------------------------|--------------|---------------|--------------|-------------|-------------|-------------|--------------------|
| | | | Puntone | Sezione | Materiale | Spaziatura orizzontale | Lunghezza | Stage | Carico distribuito (kN/m) | Assiale (kN) | Ratio momento | Ratio taglio | Instabilità | λy | λz | λ laterale |
| | | | Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 3 | 0 | 0 | 0 | 0.005 | 0 | 0 | 0 | 0 |
| | | | Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 4 | -3.004 | -7.511 | 0.007 | 0.005 | 0.145 | 205 | 205 | 0 |
| | | | Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 5 | -6.109 | -15.272 | 0.014 | 0.005 | 0.193 | 205 | 205 | 0 |
| | | | Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 6 | -15.125 | -37.813 | 0.035 | 0.005 | 0.333 | 205 | 205 | 0 |
| | | | Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 7 | -19.286 | -48.214 | 0.045 | 0.005 | 0.397 | 205 | 205 | 0 |

| | | | | | | |
|---|---|------------------|------------------|----------------|-------------------------|-----------|
|  ITAFERR GRUPPO FERROVIE DELLO STATO ITALIANE | INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE – AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE | | | | | |
| | IN06 – Tombino idraulico al km 30+743 Relazione di calcolo delle opere provvisionali | COMMESSA NR1J | LOTTO 01 D 29 | CODIFICA CL | DOCUMENTO IN0600 002 | REV. A |

11.2.1.3 Trave di coronamento

Il calcolo delle azioni agenti sulla trave in c.a. è stato effettuato in considerazione dei risultati illustrati in Figura 27 e nell'ipotesi di trave semplicemente appoggiata, le azioni risultanti sono:

$$M_{\max} = q l^2 / 8 = 15 \text{ kNm/m}$$

$$T_{\max} = q l / 2 = 24 \text{ kN/m.}$$

La sezione viene armata superiormente ed inferiormente con longitudinali 4φ16 e staffe φ12/20.

DATI GENERALI SEZIONE IN C.A.

| | |
|-------------------------------|-------------------------------|
| Descrizione Sezione: | Trave x |
| Metodo di calcolo resistenza: | Stati Limite Ultimi |
| Tipologia sezione: | Sezione generica |
| Normativa di riferimento: | N.T.C. |
| Percorso sollecitazione: | A Sforzo Norm. costante |
| Riferimento Sforzi assegnati: | Assi x,y principali d'inerzia |

CARATTERISTICHE DI RESISTENZA DEI MATERIALI IMPIEGATI

| | | |
|-------------------------------|--------------------------------|-----------------------------|
| CALCESTRUZZO - | Classe: | C25/30 |
| | Resis. compr. di calcolo fcd: | 14.160 MPa |
| | Resis. compr. ridotta fcd': | 7.080 MPa |
| | Def.unit. max resistenza ec2: | 0.0020 |
| | Def.unit. ultima ecu: | 0.0035 |
| | Diagramma tensione-deformaz.: | Parabola-Rettangolo |
| | Modulo Elastico Normale Ec: | 31475.0 MPa |
| | Resis. media a trazione fctm: | 2.560 MPa |
| ACCIAIO - | Tipo: | B450C |
| | Resist. caratt. snervam. fyk: | 450.00 MPa |
| | Resist. caratt. rottura ftk: | 450.00 MPa |
| | Resist. snerv. di calcolo fyd: | 391.30 MPa |
| | Resist. ultima di calcolo ftd: | 391.30 MPa |
| | Deform. ultima di calcolo Epu: | 0.068 |
| | Modulo Elastico Ef | 2000000 daN/cm ² |
| Diagramma tensione-deformaz.: | Bilineare finito | |

CARATTERISTICHE DOMINIO CONGLOMERATO

| | |
|----------------------|------------|
| Forma del Dominio: | Poligonale |
| Classe Conglomerato: | C25/30 |

| N°vertice: | X [cm] | Y [cm] |
|------------|--------|--------|
| 1 | -25.0 | 0.0 |
| 2 | -25.0 | 50.0 |
| 3 | 25.0 | 50.0 |
| 4 | 25.0 | 0.0 |

DATI BARRE ISOLATE

| N°Barra | X [cm] | Y [cm] | DiamØ[mm] |
|---------|--------|--------|-----------|
| 1 | -18.0 | 7.0 | 16 |
| 2 | -18.0 | 43.0 | 16 |
| 3 | 18.0 | 43.0 | 16 |
| 4 | 18.0 | 7.0 | 16 |

ARMATURE A TAGLIO

| | |
|------------------|------------------------------------|
| Diametro staffe: | 12 mm |
| Passo staffe: | 20.0 cm |
| Staffe: | Una sola staffa chiusa perimetrale |

ST.LIM.ULTIMI - SFORZI PER OGNI COMBINAZIONE ASSEGNATA

| N°Comb. | N | Mx | My | Vy | Vx |
|---------|------|-------|------|-------|------|
| 1 | 0.00 | 15.00 | 0.00 | 24.00 | 0.00 |

N Sforzo normale [kN] applicato nel Baric. (+ se di compressione)
 Mx Momento flettente [daNm] intorno all'asse x princ. d'inerzia con verso positivo se tale da comprimere il lembo sup. della sez.
 My Momento flettente [daNm] intorno all'asse y princ. d'inerzia con verso positivo se tale da comprimere il lembo destro della sez.
 Vy Componente del Taglio [kN] parallela all'asse princ.d'inerzia y
 Vx Componente del Taglio [kN] parallela all'asse princ.d'inerzia x

RISULTATI DEL CALCOLO

Sezione verificata per tutte le combinazioni assegnate

| | |
|--|---------|
| Copriferro netto minimo barre longitudinali: | 6.2 cm |
| Interferro netto minimo barre longitudinali: | 34.4 cm |
| Copriferro netto minimo staffe: | 5.0 cm |

METODO AGLI STATI LIMITE ULTIMI - RISULTATI PRESSO-TENSO FLESSIONE

| | |
|----------|--|
| Ver | S = combinazione verificata / N = combin. non verificata |
| N Sn | Sforzo normale allo snervamento [kN] nel baricentro B sezione cls.(positivo se di compressione) |
| Mx Sn | Momento di snervamento [kNm] riferito all'asse x princ. d'inerzia |
| My Sn | Momento di snervamento [kNm] riferito all'asse y princ. d'inerzia |
| N Ult | Sforzo normale ultimo [kN] nel baricentro B sezione cls.(positivo se di compress.) |
| Mx Ult | Momento flettente ultimo [kNm] riferito all'asse x princ. d'inerzia |
| My Ult | Momento flettente ultimo [kNm] riferito all'asse y princ. d'inerzia |
| Mis.Sic. | Misura sicurezza = rapporto vettoriale tra (N Ult,Mx Ult,My Ult) e (N,Mx,My) Verifica positiva se tale rapporto risulta >=1.000 |
| As Tesa | Area armature [cm²] in zona tesa (solo travi). Tra parentesi l'area minima di normativa |

| N°Comb | Ver | N Sn | Mx Sn | My Sn | N Ult | Mx Ult | My Ult | Mis.Sic. | As Tesa |
|--------|-----|------|-------|-------|-------|--------|--------|----------|----------|
| 1 | S | 0.00 | 62.50 | 0.00 | 0.00 | 70.49 | 0.00 | 4.699 | 8.0(3.2) |

METODO AGLI STATI LIMITE ULTIMI - DEFORMAZIONI UNITARIE ALLO STATO ULTIMO

| | |
|--------|--|
| ec max | Deform. unit. massima del conglomerato a compressione |
| ec 3/7 | Deform. unit. del conglomerato nella fibra a 3/7 dell'altezza efficace |
| Xc max | Ascissa in cm della fibra corrisp. a ec max (sistema rif. X,Y,O sez.) |
| Yc max | Ordinata in cm della fibra corrisp. a ec max (sistema rif. X,Y,O sez.) |
| es min | Deform. unit. minima nell'acciaio (negativa se di trazione) |

| | |
|--------|--|
| Xs min | Ascissa in cm della barra corrisp. a es min (sistema rif. X,Y,O sez.) |
| Ys min | Ordinata in cm della barra corrisp. a es min (sistema rif. X,Y,O sez.) |
| es max | Deform. unit. massima nell'acciaio (positiva se di compress.) |
| Xs max | Ascissa in cm della barra corrisp. a es max (sistema rif. X,Y,O sez.) |
| Ys max | Ordinata in cm della barra corrisp. a es max (sistema rif. X,Y,O sez.) |

| N°Comb | ec max | ec 3/7 | Xc max | Yc max | es min | Xs min | Ys min | es max | Xs max | Ys max |
|--------|---------|----------|--------|--------|----------|--------|--------|----------|--------|--------|
| 1 | 0.00350 | -0.01188 | -25.0 | 50.0 | -0.00152 | -18.0 | 43.0 | -0.02736 | -18.0 | 7.0 |

POSIZIONE ASSE NEUTRO PER OGNI COMB. DI RESISTENZA

| | |
|---------|--|
| a, b, c | Coeff. a, b, c nell'eq. dell'asse neutro $aX+bY+c=0$ nel rif. X,Y,O gen. |
| x/d | Rapp. di duttilità a rottura in presenza di sola fless.(travi) |
| C.Rid. | Coeff. di riduz. momenti per sola flessione in travi continue |

| N°Comb | a | b | c | x/d | C.Rid. |
|--------|-------------|-------------|--------------|-------|--------|
| 1 | 0.000000000 | 0.000717752 | -0.032387587 | 0.113 | 0.700 |

METODO AGLI STATI LIMITE ULTIMI - VERIFICHE A TAGLIO

Passo staffe: 20.0 cm [Passo massimo di normativa = 33.0 cm]

| | |
|-------|---|
| Ver | S = comb. verificata a taglio / N = comb. non verificata |
| Vsdu | Taglio di progetto [kN] = proiez. di V_x e V_y sulla normale all'asse neutro |
| Vcd | Taglio resistente ultimo [kN] lato conglomerato compresso [(4.1.19) NTC] |
| Vwd | Taglio resistente [kN] assorbito dalle staffe [(4.1.18) NTC] |
| Dmed | Altezza utile media pesata [cm] valutata lungo strisce ortog. all'asse neutro. Vengono prese nella media le strisce con almeno un estremo compresso. I pesi della media sono costituiti dalle stesse lunghezze delle strisce. |
| bw | Larghezza media resistente a taglio [cm] misurate parallel. all'asse neutro E' data dal rapporto tra l'area delle sopradette strisce resistenti e Dmed. |
| Teta | Angolo [gradi sessadec.] di inclinazione dei puntoni di conglomerato |
| Acw | Coefficiente maggiorativo della resistenza a taglio per compressione |
| Ast | Area staffe+legature strettam. necessarie a taglio per metro di pil.[cm ² /m] |
| A.Eff | Area staffe+legature efficaci nella direzione del taglio di combinaz.[cm ² /m] Tra parentesi è indicata la quota dell'area relativa alle sole legature. L'area della legatura è ridotta col fattore L/d_{max} con L =lungh.legat.proietta- ta sulla direz. del taglio e d_{max} = massima altezza utile nella direz.del taglio. |

| N°Comb | Ver | Vsdu | Vcd | Vwd | Dmed | bw | Teta | Acw | Ast | A.Eff |
|--------|-----|-------|--------|--------|------|------|--------|-------|-----|-----------|
| 1 | S | 24.00 | 472.41 | 428.17 | 43.0 | 50.0 | 21.80° | 1.000 | 0.6 | 11.3(0.0) |

11.2.2 Sezione B

11.2.2.1 Paratia

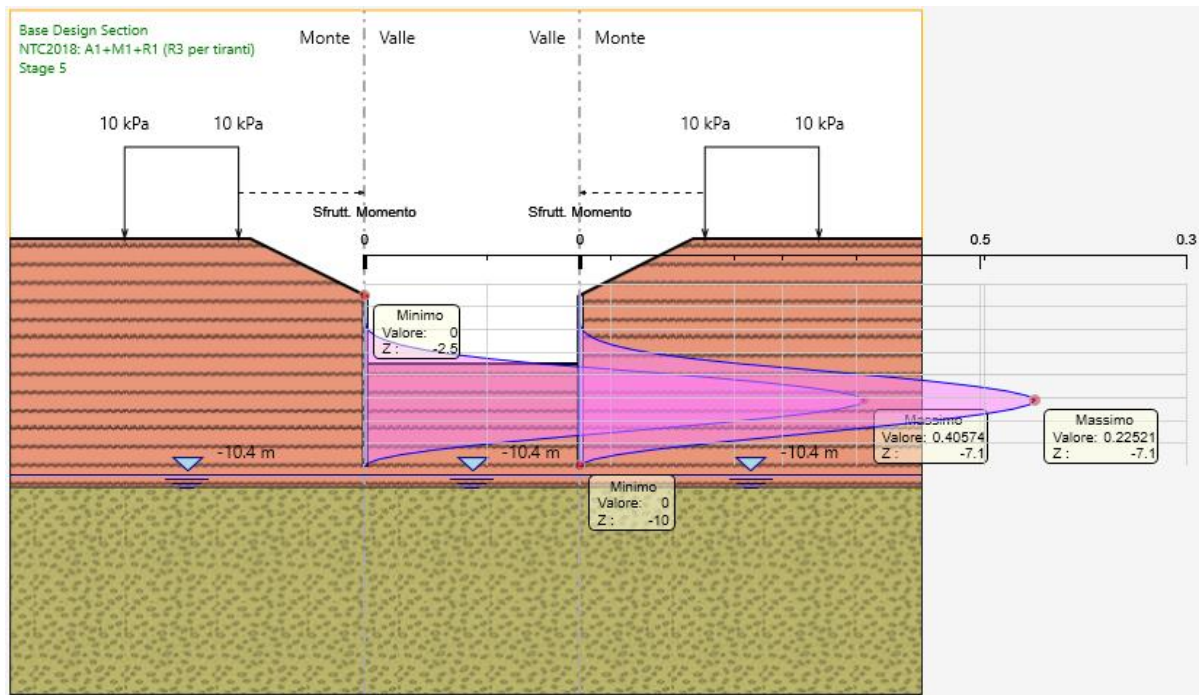


Figura 33 – Sezione B: Involuppo del massimo grado di sfruttamento del tubolare a flessione (SLU)

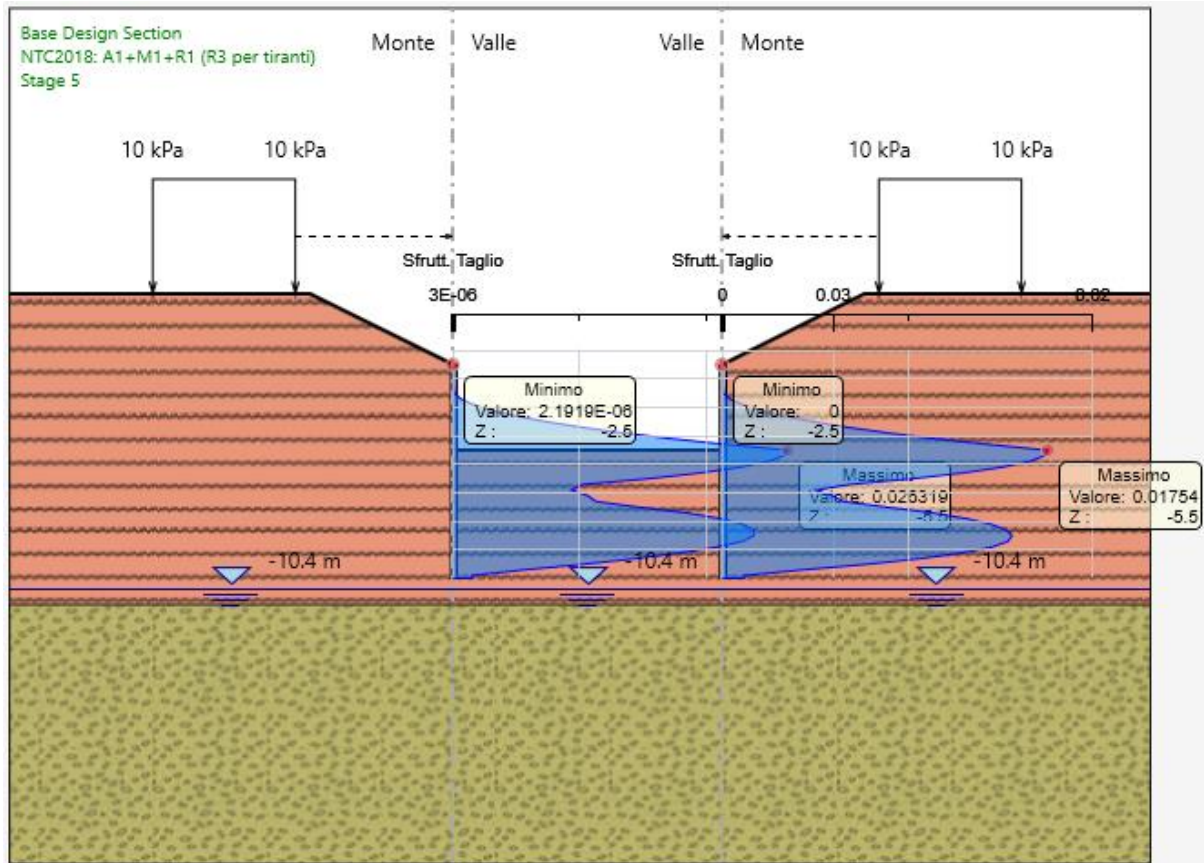


Figura 34 – Sezione B: Inviluppo del massimo grado di sfruttamento del tubolare a taglio (SLU)



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SEZIONE A

Descrizione Pareti

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Muro di sinistra

Sezione : Micropali 139.7*10

Area equivalente : 0.0157818085500266 m

Inerzia equivalente : 0 m⁴/m

Materiale calcestruzzo : C25/30

Tipo sezione : Tangent

Spaziatura : 0.4 m

Diametro : 0.22 m

Efficacia : 0.5

Materiale acciaio : S275

Sezione : CHS139.7*10

Tipo sezione : O

Spaziatura : 0.4 m

Spessore : 0.01 m

Diametro : 0.1397 m

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Muro di destra

Sezione : Micropali 139.7*10

Area equivalente : 0.0157818085500266 m

Inerzia equivalente : 0 m⁴/m

Materiale calcestruzzo : C25/30

Tipo sezione : Tangent

Spaziatura : 0.4 m

Diametro : 0.22 m

Efficacia : 0.5

Materiale acciaio : S275

Sezione : CHS139.7*10

Tipo sezione : O

Spaziatura : 0.4 m

Spessore : 0.01 m



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Diametro : 0.1397 m

Sezione : Micropali 139.7*10

Area equivalente : 0.0157818085500266 m

Inerzia equivalente : 0 m⁴/m

Materiale calcestruzzo : C25/30

Tipo sezione : Tangent

Spaziatura : 0.4 m

Diametro : 0.22 m

Efficacia : 0.5

Materiale acciaio : S275

Sezione : CHS139.7*10

Tipo sezione : O

Spaziatura : 0.4 m

Spessore : 0.01 m

Diametro : 0.1397 m

Fasi di Calcolo

Stage 0

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : 0 m

Muro di destra

Lato monte : 0 m

Lato valle : 0 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

0 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Stage 1

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : 0 m

Muro di destra

Lato monte : 0 m

Lato valle : 0 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

0 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10



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Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Stage 2

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : -1 m

Muro di destra

Lato monte : 0 m

Lato valle : -1 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

-1 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|-----------|
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Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Stage 3

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : -1 m

Muro di destra

Lato monte : 0 m

Lato valle : -1 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

-1 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Puntone : Strut

X del primo muro : -9.45 m

X del secondo muro : 0 m

Z : 0 m

Lunghezza : 9.45 m

Angolo : 0 °

Sezione : Puntone 139.7*10

Trave di Ripartizione Sinistra : TraveRipSX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Trave di Ripartizione Destra : TraveRipDX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Stage 4

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : -3 m

Muro di destra

Lato monte : 0 m

Lato valle : -3 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

-3 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Puntone : Strut

X del primo muro : -9.45 m

X del secondo muro : 0 m

Z : 0 m

Lunghezza : 9.45 m

Angolo : 0 °

Sezione : Puntone 139.7*10

Trave di Ripartizione Sinistra : TraveRipSX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Trave di Ripartizione Destra : TraveRipDX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Stage 5

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : -4 m

Muro di destra

Lato monte : 0 m

Lato valle : -4 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

-4 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Puntone : Strut

X del primo muro : -9.45 m

X del secondo muro : 0 m

Z : 0 m

Lunghezza : 9.45 m

Angolo : 0 °

Sezione : Puntone 139.7*10

Trave di Ripartizione Sinistra : TraveRipSX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Trave di Ripartizione Destra : TraveRipDX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Stage 6

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : -5.2 m

Muro di destra

Lato monte : 0 m

Lato valle : -5.2 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

-5.2 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Puntone : Strut

X del primo muro : -9.45 m

X del secondo muro : 0 m

Z : 0 m

Lunghezza : 9.45 m

Angolo : 0 °

Sezione : Puntone 139.7*10

Trave di Ripartizione Sinistra : TraveRipSX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Trave di Ripartizione Destra : TraveRipDX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Stage 7

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : -5.7 m

Muro di destra

Lato monte : 0 m

Lato valle : -5.7 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

-5.7 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Puntone : Strut

X del primo muro : -9.45 m

X del secondo muro : 0 m

Z : 0 m

Lunghezza : 9.45 m

Angolo : 0 °

Sezione : Puntone 139.7*10

Trave di Ripartizione Sinistra : TraveRipSX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Trave di Ripartizione Destra : TraveRipDX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Grafici dei Risultati

Design Assumption : Nominal

Tabella Spostamento Nominal - LEFT Stage: Stage 0

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 |
| Stage 0 | -0.4 | 0 |
| Stage 0 | -0.6 | 0 |
| Stage 0 | -0.8 | 0 |
| Stage 0 | -1 | 0 |
| Stage 0 | -1.2 | 0 |
| Stage 0 | -1.4 | 0 |
| Stage 0 | -1.6 | 0 |
| Stage 0 | -1.8 | 0 |
| Stage 0 | -2 | 0 |
| Stage 0 | -2.2 | 0 |
| Stage 0 | -2.4 | 0 |
| Stage 0 | -2.6 | 0 |
| Stage 0 | -2.8 | 0 |
| Stage 0 | -3 | 0 |
| Stage 0 | -3.2 | 0 |
| Stage 0 | -3.4 | 0 |
| Stage 0 | -3.6 | 0 |
| Stage 0 | -3.8 | 0 |
| Stage 0 | -4 | 0 |
| Stage 0 | -4.2 | 0 |
| Stage 0 | -4.4 | 0 |
| Stage 0 | -4.6 | 0 |
| Stage 0 | -4.8 | 0 |
| Stage 0 | -5 | 0 |
| Stage 0 | -5.2 | 0 |
| Stage 0 | -5.4 | 0 |
| Stage 0 | -5.6 | 0 |
| Stage 0 | -5.8 | 0 |
| Stage 0 | -6 | 0 |
| Stage 0 | -6.2 | 0 |
| Stage 0 | -6.4 | 0 |
| Stage 0 | -6.6 | 0 |
| Stage 0 | -6.8 | 0 |
| Stage 0 | -7 | 0 |
| Stage 0 | -7.2 | 0 |
| Stage 0 | -7.4 | 0 |
| Stage 0 | -7.6 | 0 |
| Stage 0 | -7.8 | 0 |
| Stage 0 | -8 | 0 |
| Stage 0 | -8.2 | 0 |
| Stage 0 | -8.4 | 0 |
| Stage 0 | -8.6 | 0 |
| Stage 0 | -8.8 | 0 |
| Stage 0 | -9 | 0 |
| Stage 0 | -9.2 | 0 |
| Stage 0 | -9.4 | 0 |
| Stage 0 | -9.6 | 0 |
| Stage 0 | -9.8 | 0 |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
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VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| | | | | | |
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| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 0 | -10 | 0 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 0

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: RIGHT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 |
| Stage 0 | -0.4 | 0 |
| Stage 0 | -0.6 | 0 |
| Stage 0 | -0.8 | 0 |
| Stage 0 | -1 | 0 |
| Stage 0 | -1.2 | 0 |
| Stage 0 | -1.4 | 0 |
| Stage 0 | -1.6 | 0 |
| Stage 0 | -1.8 | 0 |
| Stage 0 | -2 | 0 |
| Stage 0 | -2.2 | 0 |
| Stage 0 | -2.4 | 0 |
| Stage 0 | -2.6 | 0 |
| Stage 0 | -2.8 | 0 |
| Stage 0 | -3 | 0 |
| Stage 0 | -3.2 | 0 |
| Stage 0 | -3.4 | 0 |
| Stage 0 | -3.6 | 0 |
| Stage 0 | -3.8 | 0 |
| Stage 0 | -4 | 0 |
| Stage 0 | -4.2 | 0 |
| Stage 0 | -4.4 | 0 |
| Stage 0 | -4.6 | 0 |
| Stage 0 | -4.8 | 0 |
| Stage 0 | -5 | 0 |
| Stage 0 | -5.2 | 0 |
| Stage 0 | -5.4 | 0 |
| Stage 0 | -5.6 | 0 |
| Stage 0 | -5.8 | 0 |
| Stage 0 | -6 | 0 |
| Stage 0 | -6.2 | 0 |
| Stage 0 | -6.4 | 0 |
| Stage 0 | -6.6 | 0 |
| Stage 0 | -6.8 | 0 |
| Stage 0 | -7 | 0 |
| Stage 0 | -7.2 | 0 |
| Stage 0 | -7.4 | 0 |
| Stage 0 | -7.6 | 0 |
| Stage 0 | -7.8 | 0 |
| Stage 0 | -8 | 0 |
| Stage 0 | -8.2 | 0 |
| Stage 0 | -8.4 | 0 |
| Stage 0 | -8.6 | 0 |
| Stage 0 | -8.8 | 0 |
| Stage 0 | -9 | 0 |
| Stage 0 | -9.2 | 0 |
| Stage 0 | -9.4 | 0 |
| Stage 0 | -9.6 | 0 |
| Stage 0 | -9.8 | 0 |
| Stage 0 | -10 | 0 |

Tabella Spostamento Nominal - LEFT Stage: Stage 1

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 1 | 0 | 0 |
| Stage 1 | -0.2 | 0.01 |
| Stage 1 | -0.4 | 0.01 |
| Stage 1 | -0.6 | 0.02 |
| Stage 1 | -0.8 | 0.03 |
| Stage 1 | -1 | 0.03 |
| Stage 1 | -1.2 | 0.04 |
| Stage 1 | -1.4 | 0.05 |
| Stage 1 | -1.6 | 0.05 |
| Stage 1 | -1.8 | 0.05 |
| Stage 1 | -2 | 0.06 |
| Stage 1 | -2.2 | 0.06 |
| Stage 1 | -2.4 | 0.07 |
| Stage 1 | -2.6 | 0.07 |
| Stage 1 | -2.8 | 0.07 |
| Stage 1 | -3 | 0.07 |
| Stage 1 | -3.2 | 0.07 |
| Stage 1 | -3.4 | 0.07 |
| Stage 1 | -3.6 | 0.07 |
| Stage 1 | -3.8 | 0.08 |
| Stage 1 | -4 | 0.08 |
| Stage 1 | -4.2 | 0.08 |
| Stage 1 | -4.4 | 0.08 |
| Stage 1 | -4.6 | 0.08 |
| Stage 1 | -4.8 | 0.08 |
| Stage 1 | -5 | 0.08 |
| Stage 1 | -5.2 | 0.08 |
| Stage 1 | -5.4 | 0.08 |
| Stage 1 | -5.6 | 0.08 |
| Stage 1 | -5.8 | 0.08 |
| Stage 1 | -6 | 0.07 |
| Stage 1 | -6.2 | 0.07 |
| Stage 1 | -6.4 | 0.07 |
| Stage 1 | -6.6 | 0.07 |
| Stage 1 | -6.8 | 0.07 |
| Stage 1 | -7 | 0.07 |
| Stage 1 | -7.2 | 0.07 |
| Stage 1 | -7.4 | 0.06 |
| Stage 1 | -7.6 | 0.06 |
| Stage 1 | -7.8 | 0.06 |
| Stage 1 | -8 | 0.06 |
| Stage 1 | -8.2 | 0.06 |
| Stage 1 | -8.4 | 0.06 |
| Stage 1 | -8.6 | 0.06 |
| Stage 1 | -8.8 | 0.06 |
| Stage 1 | -9 | 0.06 |
| Stage 1 | -9.2 | 0.05 |
| Stage 1 | -9.4 | 0.05 |
| Stage 1 | -9.6 | 0.05 |
| Stage 1 | -9.8 | 0.05 |
| Stage 1 | -10 | 0.05 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 1

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: RIGHT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 1 | 0 | 0 |
| Stage 1 | -0.2 | -0.01 |
| Stage 1 | -0.4 | -0.01 |
| Stage 1 | -0.6 | -0.02 |
| Stage 1 | -0.8 | -0.03 |
| Stage 1 | -1 | -0.03 |
| Stage 1 | -1.2 | -0.04 |
| Stage 1 | -1.4 | -0.05 |
| Stage 1 | -1.6 | -0.05 |
| Stage 1 | -1.8 | -0.05 |
| Stage 1 | -2 | -0.06 |
| Stage 1 | -2.2 | -0.06 |
| Stage 1 | -2.4 | -0.07 |
| Stage 1 | -2.6 | -0.07 |
| Stage 1 | -2.8 | -0.07 |
| Stage 1 | -3 | -0.07 |
| Stage 1 | -3.2 | -0.07 |
| Stage 1 | -3.4 | -0.07 |
| Stage 1 | -3.6 | -0.07 |
| Stage 1 | -3.8 | -0.08 |
| Stage 1 | -4 | -0.08 |
| Stage 1 | -4.2 | -0.08 |
| Stage 1 | -4.4 | -0.08 |
| Stage 1 | -4.6 | -0.08 |
| Stage 1 | -4.8 | -0.08 |
| Stage 1 | -5 | -0.08 |
| Stage 1 | -5.2 | -0.08 |
| Stage 1 | -5.4 | -0.08 |
| Stage 1 | -5.6 | -0.08 |
| Stage 1 | -5.8 | -0.08 |
| Stage 1 | -6 | -0.07 |
| Stage 1 | -6.2 | -0.07 |
| Stage 1 | -6.4 | -0.07 |
| Stage 1 | -6.6 | -0.07 |
| Stage 1 | -6.8 | -0.07 |
| Stage 1 | -7 | -0.07 |
| Stage 1 | -7.2 | -0.07 |
| Stage 1 | -7.4 | -0.06 |
| Stage 1 | -7.6 | -0.06 |
| Stage 1 | -7.8 | -0.06 |
| Stage 1 | -8 | -0.06 |
| Stage 1 | -8.2 | -0.06 |
| Stage 1 | -8.4 | -0.06 |
| Stage 1 | -8.6 | -0.06 |
| Stage 1 | -8.8 | -0.06 |
| Stage 1 | -9 | -0.06 |
| Stage 1 | -9.2 | -0.05 |
| Stage 1 | -9.4 | -0.05 |
| Stage 1 | -9.6 | -0.05 |
| Stage 1 | -9.8 | -0.05 |
| Stage 1 | -10 | -0.05 |

Tabella Spostamento Nominal - LEFT Stage: Stage 2

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 2 | 0 | 0.26 |
| Stage 2 | -0.2 | 0.25 |
| Stage 2 | -0.4 | 0.24 |
| Stage 2 | -0.6 | 0.23 |
| Stage 2 | -0.8 | 0.22 |
| Stage 2 | -1 | 0.21 |
| Stage 2 | -1.2 | 0.2 |
| Stage 2 | -1.4 | 0.19 |
| Stage 2 | -1.6 | 0.18 |
| Stage 2 | -1.8 | 0.18 |
| Stage 2 | -2 | 0.18 |
| Stage 2 | -2.2 | 0.17 |
| Stage 2 | -2.4 | 0.17 |
| Stage 2 | -2.6 | 0.17 |
| Stage 2 | -2.8 | 0.17 |
| Stage 2 | -3 | 0.17 |
| Stage 2 | -3.2 | 0.17 |
| Stage 2 | -3.4 | 0.17 |
| Stage 2 | -3.6 | 0.17 |
| Stage 2 | -3.8 | 0.17 |
| Stage 2 | -4 | 0.17 |
| Stage 2 | -4.2 | 0.17 |
| Stage 2 | -4.4 | 0.17 |
| Stage 2 | -4.6 | 0.18 |
| Stage 2 | -4.8 | 0.18 |
| Stage 2 | -5 | 0.18 |
| Stage 2 | -5.2 | 0.17 |
| Stage 2 | -5.4 | 0.17 |
| Stage 2 | -5.6 | 0.17 |
| Stage 2 | -5.8 | 0.17 |
| Stage 2 | -6 | 0.17 |
| Stage 2 | -6.2 | 0.17 |
| Stage 2 | -6.4 | 0.17 |
| Stage 2 | -6.6 | 0.17 |
| Stage 2 | -6.8 | 0.17 |
| Stage 2 | -7 | 0.16 |
| Stage 2 | -7.2 | 0.16 |
| Stage 2 | -7.4 | 0.16 |
| Stage 2 | -7.6 | 0.16 |
| Stage 2 | -7.8 | 0.16 |
| Stage 2 | -8 | 0.16 |
| Stage 2 | -8.2 | 0.16 |
| Stage 2 | -8.4 | 0.15 |
| Stage 2 | -8.6 | 0.15 |
| Stage 2 | -8.8 | 0.15 |
| Stage 2 | -9 | 0.15 |
| Stage 2 | -9.2 | 0.15 |
| Stage 2 | -9.4 | 0.15 |
| Stage 2 | -9.6 | 0.15 |
| Stage 2 | -9.8 | 0.15 |
| Stage 2 | -10 | 0.15 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 2

| Design Assumption: Nominal | | Tipo Risultato: Spostamento | Muro: RIGHT |
|----------------------------|-------|-----------------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 2 | 0 | -0.26 | |
| Stage 2 | -0.2 | -0.25 | |
| Stage 2 | -0.4 | -0.24 | |
| Stage 2 | -0.6 | -0.23 | |
| Stage 2 | -0.8 | -0.22 | |
| Stage 2 | -1 | -0.21 | |
| Stage 2 | -1.2 | -0.2 | |
| Stage 2 | -1.4 | -0.19 | |
| Stage 2 | -1.6 | -0.18 | |
| Stage 2 | -1.8 | -0.18 | |
| Stage 2 | -2 | -0.18 | |
| Stage 2 | -2.2 | -0.17 | |
| Stage 2 | -2.4 | -0.17 | |
| Stage 2 | -2.6 | -0.17 | |
| Stage 2 | -2.8 | -0.17 | |
| Stage 2 | -3 | -0.17 | |
| Stage 2 | -3.2 | -0.17 | |
| Stage 2 | -3.4 | -0.17 | |
| Stage 2 | -3.6 | -0.17 | |
| Stage 2 | -3.8 | -0.17 | |
| Stage 2 | -4 | -0.17 | |
| Stage 2 | -4.2 | -0.17 | |
| Stage 2 | -4.4 | -0.17 | |
| Stage 2 | -4.6 | -0.18 | |
| Stage 2 | -4.8 | -0.18 | |
| Stage 2 | -5 | -0.18 | |
| Stage 2 | -5.2 | -0.17 | |
| Stage 2 | -5.4 | -0.17 | |
| Stage 2 | -5.6 | -0.17 | |
| Stage 2 | -5.8 | -0.17 | |
| Stage 2 | -6 | -0.17 | |
| Stage 2 | -6.2 | -0.17 | |
| Stage 2 | -6.4 | -0.17 | |
| Stage 2 | -6.6 | -0.17 | |
| Stage 2 | -6.8 | -0.17 | |
| Stage 2 | -7 | -0.16 | |
| Stage 2 | -7.2 | -0.16 | |
| Stage 2 | -7.4 | -0.16 | |
| Stage 2 | -7.6 | -0.16 | |
| Stage 2 | -7.8 | -0.16 | |
| Stage 2 | -8 | -0.16 | |
| Stage 2 | -8.2 | -0.16 | |
| Stage 2 | -8.4 | -0.15 | |
| Stage 2 | -8.6 | -0.15 | |
| Stage 2 | -8.8 | -0.15 | |
| Stage 2 | -9 | -0.15 | |
| Stage 2 | -9.2 | -0.15 | |
| Stage 2 | -9.4 | -0.15 | |
| Stage 2 | -9.6 | -0.15 | |
| Stage 2 | -9.8 | -0.15 | |
| Stage 2 | -10 | -0.15 | |

Tabella Spostamento Nominal - LEFT Stage: Stage 3

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 3 | 0 | 0.26 |
| Stage 3 | -0.2 | 0.25 |
| Stage 3 | -0.4 | 0.24 |
| Stage 3 | -0.6 | 0.23 |
| Stage 3 | -0.8 | 0.22 |
| Stage 3 | -1 | 0.21 |
| Stage 3 | -1.2 | 0.2 |
| Stage 3 | -1.4 | 0.19 |
| Stage 3 | -1.6 | 0.18 |
| Stage 3 | -1.8 | 0.18 |
| Stage 3 | -2 | 0.18 |
| Stage 3 | -2.2 | 0.17 |
| Stage 3 | -2.4 | 0.17 |
| Stage 3 | -2.6 | 0.17 |
| Stage 3 | -2.8 | 0.17 |
| Stage 3 | -3 | 0.17 |
| Stage 3 | -3.2 | 0.17 |
| Stage 3 | -3.4 | 0.17 |
| Stage 3 | -3.6 | 0.17 |
| Stage 3 | -3.8 | 0.17 |
| Stage 3 | -4 | 0.17 |
| Stage 3 | -4.2 | 0.17 |
| Stage 3 | -4.4 | 0.17 |
| Stage 3 | -4.6 | 0.18 |
| Stage 3 | -4.8 | 0.18 |
| Stage 3 | -5 | 0.18 |
| Stage 3 | -5.2 | 0.17 |
| Stage 3 | -5.4 | 0.17 |
| Stage 3 | -5.6 | 0.17 |
| Stage 3 | -5.8 | 0.17 |
| Stage 3 | -6 | 0.17 |
| Stage 3 | -6.2 | 0.17 |
| Stage 3 | -6.4 | 0.17 |
| Stage 3 | -6.6 | 0.17 |
| Stage 3 | -6.8 | 0.17 |
| Stage 3 | -7 | 0.16 |
| Stage 3 | -7.2 | 0.16 |
| Stage 3 | -7.4 | 0.16 |
| Stage 3 | -7.6 | 0.16 |
| Stage 3 | -7.8 | 0.16 |
| Stage 3 | -8 | 0.16 |
| Stage 3 | -8.2 | 0.16 |
| Stage 3 | -8.4 | 0.15 |
| Stage 3 | -8.6 | 0.15 |
| Stage 3 | -8.8 | 0.15 |
| Stage 3 | -9 | 0.15 |
| Stage 3 | -9.2 | 0.15 |
| Stage 3 | -9.4 | 0.15 |
| Stage 3 | -9.6 | 0.15 |
| Stage 3 | -9.8 | 0.15 |
| Stage 3 | -10 | 0.15 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 3

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: RIGHT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 3 | 0 | -0.26 |
| Stage 3 | -0.2 | -0.25 |
| Stage 3 | -0.4 | -0.24 |
| Stage 3 | -0.6 | -0.23 |
| Stage 3 | -0.8 | -0.22 |
| Stage 3 | -1 | -0.21 |
| Stage 3 | -1.2 | -0.2 |
| Stage 3 | -1.4 | -0.19 |
| Stage 3 | -1.6 | -0.18 |
| Stage 3 | -1.8 | -0.18 |
| Stage 3 | -2 | -0.18 |
| Stage 3 | -2.2 | -0.17 |
| Stage 3 | -2.4 | -0.17 |
| Stage 3 | -2.6 | -0.17 |
| Stage 3 | -2.8 | -0.17 |
| Stage 3 | -3 | -0.17 |
| Stage 3 | -3.2 | -0.17 |
| Stage 3 | -3.4 | -0.17 |
| Stage 3 | -3.6 | -0.17 |
| Stage 3 | -3.8 | -0.17 |
| Stage 3 | -4 | -0.17 |
| Stage 3 | -4.2 | -0.17 |
| Stage 3 | -4.4 | -0.17 |
| Stage 3 | -4.6 | -0.18 |
| Stage 3 | -4.8 | -0.18 |
| Stage 3 | -5 | -0.18 |
| Stage 3 | -5.2 | -0.17 |
| Stage 3 | -5.4 | -0.17 |
| Stage 3 | -5.6 | -0.17 |
| Stage 3 | -5.8 | -0.17 |
| Stage 3 | -6 | -0.17 |
| Stage 3 | -6.2 | -0.17 |
| Stage 3 | -6.4 | -0.17 |
| Stage 3 | -6.6 | -0.17 |
| Stage 3 | -6.8 | -0.17 |
| Stage 3 | -7 | -0.16 |
| Stage 3 | -7.2 | -0.16 |
| Stage 3 | -7.4 | -0.16 |
| Stage 3 | -7.6 | -0.16 |
| Stage 3 | -7.8 | -0.16 |
| Stage 3 | -8 | -0.16 |
| Stage 3 | -8.2 | -0.16 |
| Stage 3 | -8.4 | -0.15 |
| Stage 3 | -8.6 | -0.15 |
| Stage 3 | -8.8 | -0.15 |
| Stage 3 | -9 | -0.15 |
| Stage 3 | -9.2 | -0.15 |
| Stage 3 | -9.4 | -0.15 |
| Stage 3 | -9.6 | -0.15 |
| Stage 3 | -9.8 | -0.15 |
| Stage 3 | -10 | -0.15 |

Tabella Spostamento Nominal - LEFT Stage: Stage 4

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 4 | 0 | 0.33 |
| Stage 4 | -0.2 | 0.49 |
| Stage 4 | -0.4 | 0.64 |
| Stage 4 | -0.6 | 0.79 |
| Stage 4 | -0.8 | 0.94 |
| Stage 4 | -1 | 1.07 |
| Stage 4 | -1.2 | 1.2 |
| Stage 4 | -1.4 | 1.31 |
| Stage 4 | -1.6 | 1.41 |
| Stage 4 | -1.8 | 1.49 |
| Stage 4 | -2 | 1.54 |
| Stage 4 | -2.2 | 1.58 |
| Stage 4 | -2.4 | 1.6 |
| Stage 4 | -2.6 | 1.59 |
| Stage 4 | -2.8 | 1.57 |
| Stage 4 | -3 | 1.52 |
| Stage 4 | -3.2 | 1.47 |
| Stage 4 | -3.4 | 1.4 |
| Stage 4 | -3.6 | 1.33 |
| Stage 4 | -3.8 | 1.26 |
| Stage 4 | -4 | 1.2 |
| Stage 4 | -4.2 | 1.14 |
| Stage 4 | -4.4 | 1.08 |
| Stage 4 | -4.6 | 1.03 |
| Stage 4 | -4.8 | 0.99 |
| Stage 4 | -5 | 0.95 |
| Stage 4 | -5.2 | 0.92 |
| Stage 4 | -5.4 | 0.89 |
| Stage 4 | -5.6 | 0.87 |
| Stage 4 | -5.8 | 0.86 |
| Stage 4 | -6 | 0.84 |
| Stage 4 | -6.2 | 0.83 |
| Stage 4 | -6.4 | 0.82 |
| Stage 4 | -6.6 | 0.82 |
| Stage 4 | -6.8 | 0.81 |
| Stage 4 | -7 | 0.81 |
| Stage 4 | -7.2 | 0.8 |
| Stage 4 | -7.4 | 0.8 |
| Stage 4 | -7.6 | 0.8 |
| Stage 4 | -7.8 | 0.8 |
| Stage 4 | -8 | 0.79 |
| Stage 4 | -8.2 | 0.79 |
| Stage 4 | -8.4 | 0.79 |
| Stage 4 | -8.6 | 0.79 |
| Stage 4 | -8.8 | 0.78 |
| Stage 4 | -9 | 0.78 |
| Stage 4 | -9.2 | 0.78 |
| Stage 4 | -9.4 | 0.78 |
| Stage 4 | -9.6 | 0.78 |
| Stage 4 | -9.8 | 0.77 |
| Stage 4 | -10 | 0.77 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 4

| Design Assumption: Nominal | | Tipo Risultato: Spostamento | Muro: RIGHT |
|----------------------------|-------|-----------------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 4 | 0 | -0.33 | |
| Stage 4 | -0.2 | -0.49 | |
| Stage 4 | -0.4 | -0.64 | |
| Stage 4 | -0.6 | -0.79 | |
| Stage 4 | -0.8 | -0.94 | |
| Stage 4 | -1 | -1.07 | |
| Stage 4 | -1.2 | -1.2 | |
| Stage 4 | -1.4 | -1.31 | |
| Stage 4 | -1.6 | -1.41 | |
| Stage 4 | -1.8 | -1.49 | |
| Stage 4 | -2 | -1.54 | |
| Stage 4 | -2.2 | -1.58 | |
| Stage 4 | -2.4 | -1.6 | |
| Stage 4 | -2.6 | -1.59 | |
| Stage 4 | -2.8 | -1.57 | |
| Stage 4 | -3 | -1.52 | |
| Stage 4 | -3.2 | -1.47 | |
| Stage 4 | -3.4 | -1.4 | |
| Stage 4 | -3.6 | -1.33 | |
| Stage 4 | -3.8 | -1.26 | |
| Stage 4 | -4 | -1.2 | |
| Stage 4 | -4.2 | -1.14 | |
| Stage 4 | -4.4 | -1.08 | |
| Stage 4 | -4.6 | -1.03 | |
| Stage 4 | -4.8 | -0.99 | |
| Stage 4 | -5 | -0.95 | |
| Stage 4 | -5.2 | -0.92 | |
| Stage 4 | -5.4 | -0.89 | |
| Stage 4 | -5.6 | -0.87 | |
| Stage 4 | -5.8 | -0.86 | |
| Stage 4 | -6 | -0.84 | |
| Stage 4 | -6.2 | -0.83 | |
| Stage 4 | -6.4 | -0.82 | |
| Stage 4 | -6.6 | -0.82 | |
| Stage 4 | -6.8 | -0.81 | |
| Stage 4 | -7 | -0.81 | |
| Stage 4 | -7.2 | -0.8 | |
| Stage 4 | -7.4 | -0.8 | |
| Stage 4 | -7.6 | -0.8 | |
| Stage 4 | -7.8 | -0.8 | |
| Stage 4 | -8 | -0.79 | |
| Stage 4 | -8.2 | -0.79 | |
| Stage 4 | -8.4 | -0.79 | |
| Stage 4 | -8.6 | -0.79 | |
| Stage 4 | -8.8 | -0.78 | |
| Stage 4 | -9 | -0.78 | |
| Stage 4 | -9.2 | -0.78 | |
| Stage 4 | -9.4 | -0.78 | |
| Stage 4 | -9.6 | -0.78 | |
| Stage 4 | -9.8 | -0.77 | |
| Stage 4 | -10 | -0.77 | |

Tabella Spostamento Nominal - LEFT Stage: Stage 5

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 5 | 0 | 0.39 |
| Stage 5 | -0.2 | 0.8 |
| Stage 5 | -0.4 | 1.2 |
| Stage 5 | -0.6 | 1.59 |
| Stage 5 | -0.8 | 1.97 |
| Stage 5 | -1 | 2.33 |
| Stage 5 | -1.2 | 2.67 |
| Stage 5 | -1.4 | 2.99 |
| Stage 5 | -1.6 | 3.27 |
| Stage 5 | -1.8 | 3.52 |
| Stage 5 | -2 | 3.73 |
| Stage 5 | -2.2 | 3.9 |
| Stage 5 | -2.4 | 4.03 |
| Stage 5 | -2.6 | 4.1 |
| Stage 5 | -2.8 | 4.13 |
| Stage 5 | -3 | 4.1 |
| Stage 5 | -3.2 | 4.02 |
| Stage 5 | -3.4 | 3.9 |
| Stage 5 | -3.6 | 3.73 |
| Stage 5 | -3.8 | 3.53 |
| Stage 5 | -4 | 3.31 |
| Stage 5 | -4.2 | 3.07 |
| Stage 5 | -4.4 | 2.83 |
| Stage 5 | -4.6 | 2.6 |
| Stage 5 | -4.8 | 2.38 |
| Stage 5 | -5 | 2.18 |
| Stage 5 | -5.2 | 2.01 |
| Stage 5 | -5.4 | 1.85 |
| Stage 5 | -5.6 | 1.72 |
| Stage 5 | -5.8 | 1.61 |
| Stage 5 | -6 | 1.51 |
| Stage 5 | -6.2 | 1.44 |
| Stage 5 | -6.4 | 1.38 |
| Stage 5 | -6.6 | 1.33 |
| Stage 5 | -6.8 | 1.3 |
| Stage 5 | -7 | 1.27 |
| Stage 5 | -7.2 | 1.25 |
| Stage 5 | -7.4 | 1.24 |
| Stage 5 | -7.6 | 1.23 |
| Stage 5 | -7.8 | 1.23 |
| Stage 5 | -8 | 1.23 |
| Stage 5 | -8.2 | 1.23 |
| Stage 5 | -8.4 | 1.23 |
| Stage 5 | -8.6 | 1.23 |
| Stage 5 | -8.8 | 1.23 |
| Stage 5 | -9 | 1.23 |
| Stage 5 | -9.2 | 1.24 |
| Stage 5 | -9.4 | 1.24 |
| Stage 5 | -9.6 | 1.24 |
| Stage 5 | -9.8 | 1.24 |
| Stage 5 | -10 | 1.24 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 5

| Design Assumption: Nominal | | Tipo Risultato: Spostamento | Muro: RIGHT |
|----------------------------|-------|-----------------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 5 | 0 | -0.39 | |
| Stage 5 | -0.2 | -0.8 | |
| Stage 5 | -0.4 | -1.2 | |
| Stage 5 | -0.6 | -1.59 | |
| Stage 5 | -0.8 | -1.97 | |
| Stage 5 | -1 | -2.33 | |
| Stage 5 | -1.2 | -2.67 | |
| Stage 5 | -1.4 | -2.99 | |
| Stage 5 | -1.6 | -3.27 | |
| Stage 5 | -1.8 | -3.52 | |
| Stage 5 | -2 | -3.73 | |
| Stage 5 | -2.2 | -3.9 | |
| Stage 5 | -2.4 | -4.03 | |
| Stage 5 | -2.6 | -4.1 | |
| Stage 5 | -2.8 | -4.13 | |
| Stage 5 | -3 | -4.1 | |
| Stage 5 | -3.2 | -4.02 | |
| Stage 5 | -3.4 | -3.9 | |
| Stage 5 | -3.6 | -3.73 | |
| Stage 5 | -3.8 | -3.53 | |
| Stage 5 | -4 | -3.31 | |
| Stage 5 | -4.2 | -3.07 | |
| Stage 5 | -4.4 | -2.83 | |
| Stage 5 | -4.6 | -2.6 | |
| Stage 5 | -4.8 | -2.38 | |
| Stage 5 | -5 | -2.18 | |
| Stage 5 | -5.2 | -2.01 | |
| Stage 5 | -5.4 | -1.85 | |
| Stage 5 | -5.6 | -1.72 | |
| Stage 5 | -5.8 | -1.61 | |
| Stage 5 | -6 | -1.51 | |
| Stage 5 | -6.2 | -1.44 | |
| Stage 5 | -6.4 | -1.38 | |
| Stage 5 | -6.6 | -1.33 | |
| Stage 5 | -6.8 | -1.3 | |
| Stage 5 | -7 | -1.27 | |
| Stage 5 | -7.2 | -1.25 | |
| Stage 5 | -7.4 | -1.24 | |
| Stage 5 | -7.6 | -1.23 | |
| Stage 5 | -7.8 | -1.23 | |
| Stage 5 | -8 | -1.23 | |
| Stage 5 | -8.2 | -1.23 | |
| Stage 5 | -8.4 | -1.23 | |
| Stage 5 | -8.6 | -1.23 | |
| Stage 5 | -8.8 | -1.23 | |
| Stage 5 | -9 | -1.23 | |
| Stage 5 | -9.2 | -1.24 | |
| Stage 5 | -9.4 | -1.24 | |
| Stage 5 | -9.6 | -1.24 | |
| Stage 5 | -9.8 | -1.24 | |
| Stage 5 | -10 | -1.24 | |

Tabella Spostamento Nominal - LEFT Stage: Stage 6

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 6 | 0 | 0.59 |
| Stage 6 | -0.2 | 2.05 |
| Stage 6 | -0.4 | 3.49 |
| Stage 6 | -0.6 | 4.91 |
| Stage 6 | -0.8 | 6.3 |
| Stage 6 | -1 | 7.65 |
| Stage 6 | -1.2 | 8.94 |
| Stage 6 | -1.4 | 10.17 |
| Stage 6 | -1.6 | 11.32 |
| Stage 6 | -1.8 | 12.39 |
| Stage 6 | -2 | 13.36 |
| Stage 6 | -2.2 | 14.23 |
| Stage 6 | -2.4 | 14.97 |
| Stage 6 | -2.6 | 15.59 |
| Stage 6 | -2.8 | 16.08 |
| Stage 6 | -3 | 16.43 |
| Stage 6 | -3.2 | 16.63 |
| Stage 6 | -3.4 | 16.68 |
| Stage 6 | -3.6 | 16.58 |
| Stage 6 | -3.8 | 16.33 |
| Stage 6 | -4 | 15.93 |
| Stage 6 | -4.2 | 15.39 |
| Stage 6 | -4.4 | 14.72 |
| Stage 6 | -4.6 | 13.93 |
| Stage 6 | -4.8 | 13.04 |
| Stage 6 | -5 | 12.07 |
| Stage 6 | -5.2 | 11.04 |
| Stage 6 | -5.4 | 9.98 |
| Stage 6 | -5.6 | 8.93 |
| Stage 6 | -5.8 | 7.91 |
| Stage 6 | -6 | 6.94 |
| Stage 6 | -6.2 | 6.05 |
| Stage 6 | -6.4 | 5.24 |
| Stage 6 | -6.6 | 4.53 |
| Stage 6 | -6.8 | 3.91 |
| Stage 6 | -7 | 3.38 |
| Stage 6 | -7.2 | 2.94 |
| Stage 6 | -7.4 | 2.58 |
| Stage 6 | -7.6 | 2.29 |
| Stage 6 | -7.8 | 2.07 |
| Stage 6 | -8 | 1.9 |
| Stage 6 | -8.2 | 1.77 |
| Stage 6 | -8.4 | 1.68 |
| Stage 6 | -8.6 | 1.62 |
| Stage 6 | -8.8 | 1.59 |
| Stage 6 | -9 | 1.56 |
| Stage 6 | -9.2 | 1.55 |
| Stage 6 | -9.4 | 1.55 |
| Stage 6 | -9.6 | 1.55 |
| Stage 6 | -9.8 | 1.56 |
| Stage 6 | -10 | 1.56 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 6

| Design Assumption: Nominal | | Tipo Risultato: Spostamento | Muro: RIGHT |
|----------------------------|-------|-----------------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 6 | 0 | -0.59 | |
| Stage 6 | -0.2 | -2.05 | |
| Stage 6 | -0.4 | -3.49 | |
| Stage 6 | -0.6 | -4.91 | |
| Stage 6 | -0.8 | -6.3 | |
| Stage 6 | -1 | -7.65 | |
| Stage 6 | -1.2 | -8.94 | |
| Stage 6 | -1.4 | -10.17 | |
| Stage 6 | -1.6 | -11.32 | |
| Stage 6 | -1.8 | -12.39 | |
| Stage 6 | -2 | -13.36 | |
| Stage 6 | -2.2 | -14.23 | |
| Stage 6 | -2.4 | -14.97 | |
| Stage 6 | -2.6 | -15.59 | |
| Stage 6 | -2.8 | -16.08 | |
| Stage 6 | -3 | -16.43 | |
| Stage 6 | -3.2 | -16.63 | |
| Stage 6 | -3.4 | -16.68 | |
| Stage 6 | -3.6 | -16.58 | |
| Stage 6 | -3.8 | -16.33 | |
| Stage 6 | -4 | -15.93 | |
| Stage 6 | -4.2 | -15.39 | |
| Stage 6 | -4.4 | -14.72 | |
| Stage 6 | -4.6 | -13.93 | |
| Stage 6 | -4.8 | -13.04 | |
| Stage 6 | -5 | -12.07 | |
| Stage 6 | -5.2 | -11.04 | |
| Stage 6 | -5.4 | -9.98 | |
| Stage 6 | -5.6 | -8.93 | |
| Stage 6 | -5.8 | -7.91 | |
| Stage 6 | -6 | -6.94 | |
| Stage 6 | -6.2 | -6.05 | |
| Stage 6 | -6.4 | -5.24 | |
| Stage 6 | -6.6 | -4.53 | |
| Stage 6 | -6.8 | -3.91 | |
| Stage 6 | -7 | -3.38 | |
| Stage 6 | -7.2 | -2.94 | |
| Stage 6 | -7.4 | -2.58 | |
| Stage 6 | -7.6 | -2.29 | |
| Stage 6 | -7.8 | -2.07 | |
| Stage 6 | -8 | -1.9 | |
| Stage 6 | -8.2 | -1.77 | |
| Stage 6 | -8.4 | -1.68 | |
| Stage 6 | -8.6 | -1.62 | |
| Stage 6 | -8.8 | -1.59 | |
| Stage 6 | -9 | -1.56 | |
| Stage 6 | -9.2 | -1.55 | |
| Stage 6 | -9.4 | -1.55 | |
| Stage 6 | -9.6 | -1.55 | |
| Stage 6 | -9.8 | -1.56 | |
| Stage 6 | -10 | -1.56 | |

Tabella Spostamento Nominal - LEFT Stage: Stage 7

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 7 | 0 | 0.68 |
| Stage 7 | -0.2 | 2.79 |
| Stage 7 | -0.4 | 4.88 |
| Stage 7 | -0.6 | 6.94 |
| Stage 7 | -0.8 | 8.97 |
| Stage 7 | -1 | 10.93 |
| Stage 7 | -1.2 | 12.83 |
| Stage 7 | -1.4 | 14.65 |
| Stage 7 | -1.6 | 16.37 |
| Stage 7 | -1.8 | 17.98 |
| Stage 7 | -2 | 19.47 |
| Stage 7 | -2.2 | 20.82 |
| Stage 7 | -2.4 | 22.03 |
| Stage 7 | -2.6 | 23.07 |
| Stage 7 | -2.8 | 23.94 |
| Stage 7 | -3 | 24.62 |
| Stage 7 | -3.2 | 25.11 |
| Stage 7 | -3.4 | 25.41 |
| Stage 7 | -3.6 | 25.51 |
| Stage 7 | -3.8 | 25.4 |
| Stage 7 | -4 | 25.08 |
| Stage 7 | -4.2 | 24.57 |
| Stage 7 | -4.4 | 23.86 |
| Stage 7 | -4.6 | 22.98 |
| Stage 7 | -4.8 | 21.91 |
| Stage 7 | -5 | 20.7 |
| Stage 7 | -5.2 | 19.36 |
| Stage 7 | -5.4 | 17.91 |
| Stage 7 | -5.6 | 16.38 |
| Stage 7 | -5.8 | 14.82 |
| Stage 7 | -6 | 13.25 |
| Stage 7 | -6.2 | 11.73 |
| Stage 7 | -6.4 | 10.27 |
| Stage 7 | -6.6 | 8.91 |
| Stage 7 | -6.8 | 7.66 |
| Stage 7 | -7 | 6.55 |
| Stage 7 | -7.2 | 5.56 |
| Stage 7 | -7.4 | 4.71 |
| Stage 7 | -7.6 | 3.99 |
| Stage 7 | -7.8 | 3.39 |
| Stage 7 | -8 | 2.9 |
| Stage 7 | -8.2 | 2.5 |
| Stage 7 | -8.4 | 2.18 |
| Stage 7 | -8.6 | 1.93 |
| Stage 7 | -8.8 | 1.74 |
| Stage 7 | -9 | 1.58 |
| Stage 7 | -9.2 | 1.46 |
| Stage 7 | -9.4 | 1.35 |
| Stage 7 | -9.6 | 1.25 |
| Stage 7 | -9.8 | 1.16 |
| Stage 7 | -10 | 1.07 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 7

| Design Assumption: Nominal | | Tipo Risultato: Spostamento | Muro: RIGHT |
|----------------------------|-------|-----------------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 7 | 0 | -0.68 | |
| Stage 7 | -0.2 | -2.79 | |
| Stage 7 | -0.4 | -4.88 | |
| Stage 7 | -0.6 | -6.94 | |
| Stage 7 | -0.8 | -8.97 | |
| Stage 7 | -1 | -10.93 | |
| Stage 7 | -1.2 | -12.83 | |
| Stage 7 | -1.4 | -14.65 | |
| Stage 7 | -1.6 | -16.37 | |
| Stage 7 | -1.8 | -17.98 | |
| Stage 7 | -2 | -19.47 | |
| Stage 7 | -2.2 | -20.82 | |
| Stage 7 | -2.4 | -22.03 | |
| Stage 7 | -2.6 | -23.07 | |
| Stage 7 | -2.8 | -23.94 | |
| Stage 7 | -3 | -24.62 | |
| Stage 7 | -3.2 | -25.11 | |
| Stage 7 | -3.4 | -25.41 | |
| Stage 7 | -3.6 | -25.51 | |
| Stage 7 | -3.8 | -25.4 | |
| Stage 7 | -4 | -25.08 | |
| Stage 7 | -4.2 | -24.57 | |
| Stage 7 | -4.4 | -23.86 | |
| Stage 7 | -4.6 | -22.98 | |
| Stage 7 | -4.8 | -21.91 | |
| Stage 7 | -5 | -20.7 | |
| Stage 7 | -5.2 | -19.36 | |
| Stage 7 | -5.4 | -17.91 | |
| Stage 7 | -5.6 | -16.38 | |
| Stage 7 | -5.8 | -14.82 | |
| Stage 7 | -6 | -13.25 | |
| Stage 7 | -6.2 | -11.73 | |
| Stage 7 | -6.4 | -10.27 | |
| Stage 7 | -6.6 | -8.91 | |
| Stage 7 | -6.8 | -7.66 | |
| Stage 7 | -7 | -6.55 | |
| Stage 7 | -7.2 | -5.56 | |
| Stage 7 | -7.4 | -4.71 | |
| Stage 7 | -7.6 | -3.99 | |
| Stage 7 | -7.8 | -3.39 | |
| Stage 7 | -8 | -2.9 | |
| Stage 7 | -8.2 | -2.5 | |
| Stage 7 | -8.4 | -2.18 | |
| Stage 7 | -8.6 | -1.93 | |
| Stage 7 | -8.8 | -1.74 | |
| Stage 7 | -9 | -1.58 | |
| Stage 7 | -9.2 | -1.46 | |
| Stage 7 | -9.4 | -1.35 | |
| Stage 7 | -9.6 | -1.25 | |
| Stage 7 | -9.8 | -1.16 | |
| Stage 7 | -10 | -1.07 | |

Inviluppi Spostamento Nominal

Risultati Paratia

Tabella Risultati Paratia Nominal - Stage: Stage 0

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| | | | | | |
|----------|---------|----------|------------|------|------------|
| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
| NR1J | 01 D 29 | CL | IN0600 002 | A | 101 di 386 |

Design Assumption: Nominal Risultati Paratia Muro: LEFT

| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
|---------|-------|------------------|---------------|
| Stage 0 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 0

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 1

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | 0.01 | 0.04 |
| Stage 1 | -0.6 | 0.03 | 0.09 |
| Stage 1 | -0.8 | 0.05 | 0.13 |
| Stage 1 | -1 | 0.08 | 0.14 |
| Stage 1 | -1.2 | 0.1 | 0.11 |
| Stage 1 | -1.4 | 0.12 | 0.07 |
| Stage 1 | -1.6 | 0.12 | 0.03 |
| Stage 1 | -1.8 | 0.12 | -0.01 |
| Stage 1 | -2 | 0.11 | -0.03 |
| Stage 1 | -2.2 | 0.1 | -0.05 |
| Stage 1 | -2.4 | 0.09 | -0.06 |
| Stage 1 | -2.6 | 0.08 | -0.06 |
| Stage 1 | -2.8 | 0.07 | -0.06 |
| Stage 1 | -3 | 0.06 | -0.05 |
| Stage 1 | -3.2 | 0.05 | -0.04 |
| Stage 1 | -3.4 | 0.04 | -0.04 |
| Stage 1 | -3.6 | 0.04 | -0.03 |
| Stage 1 | -3.8 | 0.03 | -0.02 |
| Stage 1 | -4 | 0.03 | -0.02 |
| Stage 1 | -4.2 | 0.03 | -0.01 |
| Stage 1 | -4.4 | 0.03 | 0.01 |
| Stage 1 | -4.6 | 0.03 | 0.01 |
| Stage 1 | -4.8 | 0.04 | 0.02 |
| Stage 1 | -5 | 0.04 | 0.02 |
| Stage 1 | -5.2 | 0.04 | 0.02 |
| Stage 1 | -5.4 | 0.04 | 0.01 |
| Stage 1 | -5.6 | 0.04 | -0.01 |
| Stage 1 | -5.8 | 0.04 | -0.03 |
| Stage 1 | -6 | 0.03 | -0.04 |
| Stage 1 | -6.2 | 0.02 | -0.04 |
| Stage 1 | -6.4 | 0.01 | -0.04 |
| Stage 1 | -6.6 | 0.01 | -0.03 |
| Stage 1 | -6.8 | 0 | -0.03 |
| Stage 1 | -7 | 0 | -0.02 |
| Stage 1 | -7.2 | -0.01 | -0.02 |
| Stage 1 | -7.4 | -0.01 | -0.01 |
| Stage 1 | -7.6 | -0.01 | -0.01 |
| Stage 1 | -7.8 | -0.01 | 0 |
| Stage 1 | -8 | -0.01 | 0 |
| Stage 1 | -8.2 | -0.01 | 0 |
| Stage 1 | -8.4 | -0.01 | 0 |
| Stage 1 | -8.6 | -0.01 | 0.01 |
| Stage 1 | -8.8 | -0.01 | 0.01 |
| Stage 1 | -9 | -0.01 | 0.01 |
| Stage 1 | -9.2 | 0 | 0.01 |
| Stage 1 | -9.4 | 0 | 0.01 |
| Stage 1 | -9.6 | 0 | 0.01 |
| Stage 1 | -9.8 | 0 | 0 |
| Stage 1 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 1

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | -0.01 | -0.04 |
| Stage 1 | -0.6 | -0.03 | -0.09 |
| Stage 1 | -0.8 | -0.05 | -0.13 |
| Stage 1 | -1 | -0.08 | -0.14 |
| Stage 1 | -1.2 | -0.1 | -0.11 |
| Stage 1 | -1.4 | -0.12 | -0.07 |
| Stage 1 | -1.6 | -0.12 | -0.03 |
| Stage 1 | -1.8 | -0.12 | 0.01 |
| Stage 1 | -2 | -0.11 | 0.03 |
| Stage 1 | -2.2 | -0.1 | 0.05 |
| Stage 1 | -2.4 | -0.09 | 0.06 |
| Stage 1 | -2.6 | -0.08 | 0.06 |
| Stage 1 | -2.8 | -0.07 | 0.06 |
| Stage 1 | -3 | -0.06 | 0.05 |
| Stage 1 | -3.2 | -0.05 | 0.04 |
| Stage 1 | -3.4 | -0.04 | 0.04 |
| Stage 1 | -3.6 | -0.04 | 0.03 |
| Stage 1 | -3.8 | -0.03 | 0.02 |
| Stage 1 | -4 | -0.03 | 0.02 |
| Stage 1 | -4.2 | -0.03 | 0.01 |
| Stage 1 | -4.4 | -0.03 | -0.01 |
| Stage 1 | -4.6 | -0.03 | -0.01 |
| Stage 1 | -4.8 | -0.04 | -0.02 |
| Stage 1 | -5 | -0.04 | -0.02 |
| Stage 1 | -5.2 | -0.04 | -0.02 |
| Stage 1 | -5.4 | -0.04 | -0.01 |
| Stage 1 | -5.6 | -0.04 | 0.01 |
| Stage 1 | -5.8 | -0.04 | 0.03 |
| Stage 1 | -6 | -0.03 | 0.04 |
| Stage 1 | -6.2 | -0.02 | 0.04 |
| Stage 1 | -6.4 | -0.01 | 0.04 |
| Stage 1 | -6.6 | -0.01 | 0.03 |
| Stage 1 | -6.8 | 0 | 0.03 |
| Stage 1 | -7 | 0 | 0.02 |
| Stage 1 | -7.2 | 0.01 | 0.02 |
| Stage 1 | -7.4 | 0.01 | 0.01 |
| Stage 1 | -7.6 | 0.01 | 0.01 |
| Stage 1 | -7.8 | 0.01 | 0 |
| Stage 1 | -8 | 0.01 | 0 |
| Stage 1 | -8.2 | 0.01 | 0 |
| Stage 1 | -8.4 | 0.01 | 0 |
| Stage 1 | -8.6 | 0.01 | -0.01 |
| Stage 1 | -8.8 | 0.01 | -0.01 |
| Stage 1 | -9 | 0.01 | -0.01 |
| Stage 1 | -9.2 | 0 | -0.01 |
| Stage 1 | -9.4 | 0 | -0.01 |
| Stage 1 | -9.6 | 0 | -0.01 |
| Stage 1 | -9.8 | 0 | 0 |
| Stage 1 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 2

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -1 | -0.1 | -0.48 |
| Stage 2 | -1.2 | -0.22 | -0.61 |
| Stage 2 | -1.4 | -0.29 | -0.35 |
| Stage 2 | -1.6 | -0.31 | -0.13 |
| Stage 2 | -1.8 | -0.31 | 0.04 |
| Stage 2 | -2 | -0.28 | 0.15 |
| Stage 2 | -2.2 | -0.24 | 0.2 |
| Stage 2 | -2.4 | -0.19 | 0.23 |
| Stage 2 | -2.6 | -0.15 | 0.23 |
| Stage 2 | -2.8 | -0.1 | 0.21 |
| Stage 2 | -3 | -0.07 | 0.18 |
| Stage 2 | -3.2 | -0.04 | 0.16 |
| Stage 2 | -3.4 | -0.01 | 0.12 |
| Stage 2 | -3.6 | 0.01 | 0.09 |
| Stage 2 | -3.8 | 0.02 | 0.06 |
| Stage 2 | -4 | 0.03 | 0.04 |
| Stage 2 | -4.2 | 0.03 | 0.03 |
| Stage 2 | -4.4 | 0.04 | 0.03 |
| Stage 2 | -4.6 | 0.04 | 0.02 |
| Stage 2 | -4.8 | 0.05 | 0.02 |
| Stage 2 | -5 | 0.05 | 0.02 |
| Stage 2 | -5.2 | 0.05 | 0.01 |
| Stage 2 | -5.4 | 0.05 | 0 |
| Stage 2 | -5.6 | 0.05 | -0.02 |
| Stage 2 | -5.8 | 0.04 | -0.04 |
| Stage 2 | -6 | 0.03 | -0.04 |
| Stage 2 | -6.2 | 0.02 | -0.04 |
| Stage 2 | -6.4 | 0.01 | -0.04 |
| Stage 2 | -6.6 | 0.01 | -0.04 |
| Stage 2 | -6.8 | 0 | -0.03 |
| Stage 2 | -7 | -0.01 | -0.02 |
| Stage 2 | -7.2 | -0.01 | -0.02 |
| Stage 2 | -7.4 | -0.01 | -0.01 |
| Stage 2 | -7.6 | -0.01 | -0.01 |
| Stage 2 | -7.8 | -0.01 | 0 |
| Stage 2 | -8 | -0.01 | 0 |
| Stage 2 | -8.2 | -0.01 | 0 |
| Stage 2 | -8.4 | -0.01 | 0.01 |
| Stage 2 | -8.6 | -0.01 | 0.01 |
| Stage 2 | -8.8 | -0.01 | 0.01 |
| Stage 2 | -9 | -0.01 | 0.01 |
| Stage 2 | -9.2 | 0 | 0.01 |
| Stage 2 | -9.4 | 0 | 0.01 |
| Stage 2 | -9.6 | 0 | 0.01 |
| Stage 2 | -9.8 | 0 | 0 |
| Stage 2 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 2

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -1 | 0.1 | 0.48 |
| Stage 2 | -1.2 | 0.22 | 0.61 |
| Stage 2 | -1.4 | 0.29 | 0.35 |
| Stage 2 | -1.6 | 0.31 | 0.13 |
| Stage 2 | -1.8 | 0.31 | -0.04 |
| Stage 2 | -2 | 0.28 | -0.15 |
| Stage 2 | -2.2 | 0.24 | -0.2 |
| Stage 2 | -2.4 | 0.19 | -0.23 |
| Stage 2 | -2.6 | 0.15 | -0.23 |
| Stage 2 | -2.8 | 0.1 | -0.21 |
| Stage 2 | -3 | 0.07 | -0.18 |
| Stage 2 | -3.2 | 0.04 | -0.16 |
| Stage 2 | -3.4 | 0.01 | -0.12 |
| Stage 2 | -3.6 | -0.01 | -0.09 |
| Stage 2 | -3.8 | -0.02 | -0.06 |
| Stage 2 | -4 | -0.03 | -0.04 |
| Stage 2 | -4.2 | -0.03 | -0.03 |
| Stage 2 | -4.4 | -0.04 | -0.03 |
| Stage 2 | -4.6 | -0.04 | -0.02 |
| Stage 2 | -4.8 | -0.05 | -0.02 |
| Stage 2 | -5 | -0.05 | -0.02 |
| Stage 2 | -5.2 | -0.05 | -0.01 |
| Stage 2 | -5.4 | -0.05 | 0 |
| Stage 2 | -5.6 | -0.05 | 0.02 |
| Stage 2 | -5.8 | -0.04 | 0.04 |
| Stage 2 | -6 | -0.03 | 0.04 |
| Stage 2 | -6.2 | -0.02 | 0.04 |
| Stage 2 | -6.4 | -0.01 | 0.04 |
| Stage 2 | -6.6 | -0.01 | 0.04 |
| Stage 2 | -6.8 | 0 | 0.03 |
| Stage 2 | -7 | 0.01 | 0.02 |
| Stage 2 | -7.2 | 0.01 | 0.02 |
| Stage 2 | -7.4 | 0.01 | 0.01 |
| Stage 2 | -7.6 | 0.01 | 0.01 |
| Stage 2 | -7.8 | 0.01 | 0 |
| Stage 2 | -8 | 0.01 | 0 |
| Stage 2 | -8.2 | 0.01 | 0 |
| Stage 2 | -8.4 | 0.01 | -0.01 |
| Stage 2 | -8.6 | 0.01 | -0.01 |
| Stage 2 | -8.8 | 0.01 | -0.01 |
| Stage 2 | -9 | 0.01 | -0.01 |
| Stage 2 | -9.2 | 0 | -0.01 |
| Stage 2 | -9.4 | 0 | -0.01 |
| Stage 2 | -9.6 | 0 | -0.01 |
| Stage 2 | -9.8 | 0 | 0 |
| Stage 2 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 3

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 3 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -1 | -0.1 | -0.48 |
| Stage 3 | -1.2 | -0.22 | -0.61 |
| Stage 3 | -1.4 | -0.29 | -0.35 |
| Stage 3 | -1.6 | -0.31 | -0.13 |
| Stage 3 | -1.8 | -0.31 | 0.04 |
| Stage 3 | -2 | -0.28 | 0.15 |
| Stage 3 | -2.2 | -0.24 | 0.2 |
| Stage 3 | -2.4 | -0.19 | 0.23 |
| Stage 3 | -2.6 | -0.15 | 0.23 |
| Stage 3 | -2.8 | -0.1 | 0.21 |
| Stage 3 | -3 | -0.07 | 0.18 |
| Stage 3 | -3.2 | -0.04 | 0.16 |
| Stage 3 | -3.4 | -0.01 | 0.12 |
| Stage 3 | -3.6 | 0.01 | 0.09 |
| Stage 3 | -3.8 | 0.02 | 0.06 |
| Stage 3 | -4 | 0.03 | 0.04 |
| Stage 3 | -4.2 | 0.03 | 0.03 |
| Stage 3 | -4.4 | 0.04 | 0.03 |
| Stage 3 | -4.6 | 0.04 | 0.02 |
| Stage 3 | -4.8 | 0.05 | 0.02 |
| Stage 3 | -5 | 0.05 | 0.02 |
| Stage 3 | -5.2 | 0.05 | 0.01 |
| Stage 3 | -5.4 | 0.05 | 0 |
| Stage 3 | -5.6 | 0.05 | -0.02 |
| Stage 3 | -5.8 | 0.04 | -0.04 |
| Stage 3 | -6 | 0.03 | -0.04 |
| Stage 3 | -6.2 | 0.02 | -0.04 |
| Stage 3 | -6.4 | 0.01 | -0.04 |
| Stage 3 | -6.6 | 0.01 | -0.04 |
| Stage 3 | -6.8 | 0 | -0.03 |
| Stage 3 | -7 | -0.01 | -0.02 |
| Stage 3 | -7.2 | -0.01 | -0.02 |
| Stage 3 | -7.4 | -0.01 | -0.01 |
| Stage 3 | -7.6 | -0.01 | -0.01 |
| Stage 3 | -7.8 | -0.01 | 0 |
| Stage 3 | -8 | -0.01 | 0 |
| Stage 3 | -8.2 | -0.01 | 0 |
| Stage 3 | -8.4 | -0.01 | 0.01 |
| Stage 3 | -8.6 | -0.01 | 0.01 |
| Stage 3 | -8.8 | -0.01 | 0.01 |
| Stage 3 | -9 | -0.01 | 0.01 |
| Stage 3 | -9.2 | 0 | 0.01 |
| Stage 3 | -9.4 | 0 | 0.01 |
| Stage 3 | -9.6 | 0 | 0.01 |
| Stage 3 | -9.8 | 0 | 0 |
| Stage 3 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 3

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 3 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -1 | 0.1 | 0.48 |
| Stage 3 | -1.2 | 0.22 | 0.61 |
| Stage 3 | -1.4 | 0.29 | 0.35 |
| Stage 3 | -1.6 | 0.31 | 0.13 |
| Stage 3 | -1.8 | 0.31 | -0.04 |
| Stage 3 | -2 | 0.28 | -0.15 |
| Stage 3 | -2.2 | 0.24 | -0.2 |
| Stage 3 | -2.4 | 0.19 | -0.23 |
| Stage 3 | -2.6 | 0.15 | -0.23 |
| Stage 3 | -2.8 | 0.1 | -0.21 |
| Stage 3 | -3 | 0.07 | -0.18 |
| Stage 3 | -3.2 | 0.04 | -0.16 |
| Stage 3 | -3.4 | 0.01 | -0.12 |
| Stage 3 | -3.6 | -0.01 | -0.09 |
| Stage 3 | -3.8 | -0.02 | -0.06 |
| Stage 3 | -4 | -0.03 | -0.04 |
| Stage 3 | -4.2 | -0.03 | -0.03 |
| Stage 3 | -4.4 | -0.04 | -0.03 |
| Stage 3 | -4.6 | -0.04 | -0.02 |
| Stage 3 | -4.8 | -0.05 | -0.02 |
| Stage 3 | -5 | -0.05 | -0.02 |
| Stage 3 | -5.2 | -0.05 | -0.01 |
| Stage 3 | -5.4 | -0.05 | 0 |
| Stage 3 | -5.6 | -0.05 | 0.02 |
| Stage 3 | -5.8 | -0.04 | 0.04 |
| Stage 3 | -6 | -0.03 | 0.04 |
| Stage 3 | -6.2 | -0.02 | 0.04 |
| Stage 3 | -6.4 | -0.01 | 0.04 |
| Stage 3 | -6.6 | -0.01 | 0.04 |
| Stage 3 | -6.8 | 0 | 0.03 |
| Stage 3 | -7 | 0.01 | 0.02 |
| Stage 3 | -7.2 | 0.01 | 0.02 |
| Stage 3 | -7.4 | 0.01 | 0.01 |
| Stage 3 | -7.6 | 0.01 | 0.01 |
| Stage 3 | -7.8 | 0.01 | 0 |
| Stage 3 | -8 | 0.01 | 0 |
| Stage 3 | -8.2 | 0.01 | 0 |
| Stage 3 | -8.4 | 0.01 | -0.01 |
| Stage 3 | -8.6 | 0.01 | -0.01 |
| Stage 3 | -8.8 | 0.01 | -0.01 |
| Stage 3 | -9 | 0.01 | -0.01 |
| Stage 3 | -9.2 | 0 | -0.01 |
| Stage 3 | -9.4 | 0 | -0.01 |
| Stage 3 | -9.6 | 0 | -0.01 |
| Stage 3 | -9.8 | 0 | 0 |
| Stage 3 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 4

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | 2.28 |
| Stage 4 | -0.2 | 0.46 | 2.28 |
| Stage 4 | -0.4 | 0.91 | 2.28 |
| Stage 4 | -0.6 | 1.37 | 2.28 |
| Stage 4 | -0.8 | 1.83 | 2.28 |
| Stage 4 | -1 | 2.28 | 2.28 |
| Stage 4 | -1.2 | 2.74 | 2.28 |
| Stage 4 | -1.4 | 3.2 | 2.28 |
| Stage 4 | -1.6 | 3.65 | 2.28 |
| Stage 4 | -1.8 | 4.09 | 2.18 |
| Stage 4 | -2 | 4.45 | 1.8 |
| Stage 4 | -2.2 | 4.67 | 1.1 |
| Stage 4 | -2.4 | 4.68 | 0.07 |
| Stage 4 | -2.6 | 4.42 | -1.33 |
| Stage 4 | -2.8 | 3.79 | -3.14 |
| Stage 4 | -3 | 2.71 | -5.4 |
| Stage 4 | -3.2 | 1.62 | -5.46 |
| Stage 4 | -3.4 | 0.7 | -4.6 |
| Stage 4 | -3.6 | -0.03 | -3.64 |
| Stage 4 | -3.8 | -0.58 | -2.72 |
| Stage 4 | -4 | -0.96 | -1.9 |
| Stage 4 | -4.2 | -1.2 | -1.2 |
| Stage 4 | -4.4 | -1.32 | -0.62 |
| Stage 4 | -4.6 | -1.35 | -0.16 |
| Stage 4 | -4.8 | -1.31 | 0.18 |
| Stage 4 | -5 | -1.23 | 0.43 |
| Stage 4 | -5.2 | -1.11 | 0.58 |
| Stage 4 | -5.4 | -0.98 | 0.66 |
| Stage 4 | -5.6 | -0.84 | 0.68 |
| Stage 4 | -5.8 | -0.71 | 0.66 |
| Stage 4 | -6 | -0.59 | 0.62 |
| Stage 4 | -6.2 | -0.48 | 0.56 |
| Stage 4 | -6.4 | -0.38 | 0.5 |
| Stage 4 | -6.6 | -0.29 | 0.43 |
| Stage 4 | -6.8 | -0.22 | 0.36 |
| Stage 4 | -7 | -0.16 | 0.3 |
| Stage 4 | -7.2 | -0.11 | 0.24 |
| Stage 4 | -7.4 | -0.08 | 0.19 |
| Stage 4 | -7.6 | -0.05 | 0.14 |
| Stage 4 | -7.8 | -0.03 | 0.1 |
| Stage 4 | -8 | -0.01 | 0.07 |
| Stage 4 | -8.2 | 0 | 0.05 |
| Stage 4 | -8.4 | 0 | 0.03 |
| Stage 4 | -8.6 | 0.01 | 0.01 |
| Stage 4 | -8.8 | 0.01 | 0 |
| Stage 4 | -9 | 0.01 | 0 |
| Stage 4 | -9.2 | 0 | -0.01 |
| Stage 4 | -9.4 | 0 | -0.01 |
| Stage 4 | -9.6 | 0 | -0.01 |
| Stage 4 | -9.8 | 0 | 0 |
| Stage 4 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 4

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | -2.28 |
| Stage 4 | -0.2 | -0.46 | -2.28 |
| Stage 4 | -0.4 | -0.91 | -2.28 |
| Stage 4 | -0.6 | -1.37 | -2.28 |
| Stage 4 | -0.8 | -1.83 | -2.28 |
| Stage 4 | -1 | -2.28 | -2.28 |
| Stage 4 | -1.2 | -2.74 | -2.28 |
| Stage 4 | -1.4 | -3.2 | -2.28 |
| Stage 4 | -1.6 | -3.65 | -2.28 |
| Stage 4 | -1.8 | -4.09 | -2.18 |
| Stage 4 | -2 | -4.45 | -1.8 |
| Stage 4 | -2.2 | -4.67 | -1.1 |
| Stage 4 | -2.4 | -4.68 | -0.07 |
| Stage 4 | -2.6 | -4.42 | 1.33 |
| Stage 4 | -2.8 | -3.79 | 3.14 |
| Stage 4 | -3 | -2.71 | 5.4 |
| Stage 4 | -3.2 | -1.62 | 5.46 |
| Stage 4 | -3.4 | -0.7 | 4.6 |
| Stage 4 | -3.6 | 0.03 | 3.64 |
| Stage 4 | -3.8 | 0.58 | 2.72 |
| Stage 4 | -4 | 0.96 | 1.9 |
| Stage 4 | -4.2 | 1.2 | 1.2 |
| Stage 4 | -4.4 | 1.32 | 0.62 |
| Stage 4 | -4.6 | 1.35 | 0.16 |
| Stage 4 | -4.8 | 1.31 | -0.18 |
| Stage 4 | -5 | 1.23 | -0.43 |
| Stage 4 | -5.2 | 1.11 | -0.58 |
| Stage 4 | -5.4 | 0.98 | -0.66 |
| Stage 4 | -5.6 | 0.84 | -0.68 |
| Stage 4 | -5.8 | 0.71 | -0.66 |
| Stage 4 | -6 | 0.59 | -0.62 |
| Stage 4 | -6.2 | 0.48 | -0.56 |
| Stage 4 | -6.4 | 0.38 | -0.5 |
| Stage 4 | -6.6 | 0.29 | -0.43 |
| Stage 4 | -6.8 | 0.22 | -0.36 |
| Stage 4 | -7 | 0.16 | -0.3 |
| Stage 4 | -7.2 | 0.11 | -0.24 |
| Stage 4 | -7.4 | 0.08 | -0.19 |
| Stage 4 | -7.6 | 0.05 | -0.14 |
| Stage 4 | -7.8 | 0.03 | -0.1 |
| Stage 4 | -8 | 0.01 | -0.07 |
| Stage 4 | -8.2 | 0 | -0.05 |
| Stage 4 | -8.4 | 0 | -0.03 |
| Stage 4 | -8.6 | -0.01 | -0.01 |
| Stage 4 | -8.8 | -0.01 | 0 |
| Stage 4 | -9 | -0.01 | 0 |
| Stage 4 | -9.2 | 0 | 0.01 |
| Stage 4 | -9.4 | 0 | 0.01 |
| Stage 4 | -9.6 | 0 | 0.01 |
| Stage 4 | -9.8 | 0 | 0 |
| Stage 4 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 5

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 5 | 0 | 0 | 4.48 |
| Stage 5 | -0.2 | 0.9 | 4.48 |
| Stage 5 | -0.4 | 1.79 | 4.48 |
| Stage 5 | -0.6 | 2.69 | 4.48 |
| Stage 5 | -0.8 | 3.59 | 4.48 |
| Stage 5 | -1 | 4.48 | 4.48 |
| Stage 5 | -1.2 | 5.38 | 4.48 |
| Stage 5 | -1.4 | 6.28 | 4.48 |
| Stage 5 | -1.6 | 7.18 | 4.48 |
| Stage 5 | -1.8 | 8.07 | 4.48 |
| Stage 5 | -2 | 8.92 | 4.25 |
| Stage 5 | -2.2 | 9.67 | 3.73 |
| Stage 5 | -2.4 | 10.26 | 2.93 |
| Stage 5 | -2.6 | 10.63 | 1.86 |
| Stage 5 | -2.8 | 10.73 | 0.51 |
| Stage 5 | -3 | 10.51 | -1.12 |
| Stage 5 | -3.2 | 9.9 | -3.01 |
| Stage 5 | -3.4 | 8.86 | -5.19 |
| Stage 5 | -3.6 | 7.34 | -7.64 |
| Stage 5 | -3.8 | 5.27 | -10.36 |
| Stage 5 | -4 | 2.6 | -13.34 |
| Stage 5 | -4.2 | 0.19 | -12.04 |
| Stage 5 | -4.4 | -1.72 | -9.54 |
| Stage 5 | -4.6 | -3.08 | -6.83 |
| Stage 5 | -4.8 | -3.98 | -4.46 |
| Stage 5 | -5 | -4.48 | -2.51 |
| Stage 5 | -5.2 | -4.67 | -0.96 |
| Stage 5 | -5.4 | -4.63 | 0.22 |
| Stage 5 | -5.6 | -4.41 | 1.08 |
| Stage 5 | -5.8 | -4.08 | 1.66 |
| Stage 5 | -6 | -3.68 | 2.02 |
| Stage 5 | -6.2 | -3.24 | 2.21 |
| Stage 5 | -6.4 | -2.79 | 2.25 |
| Stage 5 | -6.6 | -2.35 | 2.19 |
| Stage 5 | -6.8 | -1.94 | 2.06 |
| Stage 5 | -7 | -1.56 | 1.88 |
| Stage 5 | -7.2 | -1.23 | 1.66 |
| Stage 5 | -7.4 | -0.94 | 1.44 |
| Stage 5 | -7.6 | -0.7 | 1.21 |
| Stage 5 | -7.8 | -0.5 | 0.99 |
| Stage 5 | -8 | -0.34 | 0.79 |
| Stage 5 | -8.2 | -0.22 | 0.61 |
| Stage 5 | -8.4 | -0.13 | 0.45 |
| Stage 5 | -8.6 | -0.06 | 0.32 |
| Stage 5 | -8.8 | -0.02 | 0.21 |
| Stage 5 | -9 | 0 | 0.12 |
| Stage 5 | -9.2 | 0.01 | 0.05 |
| Stage 5 | -9.4 | 0.01 | 0.01 |
| Stage 5 | -9.6 | 0.01 | -0.02 |
| Stage 5 | -9.8 | 0 | -0.03 |
| Stage 5 | -10 | 0 | -0.01 |

Tabella Risultati Paratia Nominal - Stage: Stage 5

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 5 | 0 | 0 | -4.48 |
| Stage 5 | -0.2 | -0.9 | -4.48 |
| Stage 5 | -0.4 | -1.79 | -4.48 |
| Stage 5 | -0.6 | -2.69 | -4.48 |
| Stage 5 | -0.8 | -3.59 | -4.48 |
| Stage 5 | -1 | -4.48 | -4.48 |
| Stage 5 | -1.2 | -5.38 | -4.48 |
| Stage 5 | -1.4 | -6.28 | -4.48 |
| Stage 5 | -1.6 | -7.18 | -4.48 |
| Stage 5 | -1.8 | -8.07 | -4.48 |
| Stage 5 | -2 | -8.92 | -4.25 |
| Stage 5 | -2.2 | -9.67 | -3.73 |
| Stage 5 | -2.4 | -10.26 | -2.93 |
| Stage 5 | -2.6 | -10.63 | -1.86 |
| Stage 5 | -2.8 | -10.73 | -0.51 |
| Stage 5 | -3 | -10.51 | 1.12 |
| Stage 5 | -3.2 | -9.9 | 3.01 |
| Stage 5 | -3.4 | -8.86 | 5.19 |
| Stage 5 | -3.6 | -7.34 | 7.64 |
| Stage 5 | -3.8 | -5.27 | 10.36 |
| Stage 5 | -4 | -2.6 | 13.34 |
| Stage 5 | -4.2 | -0.19 | 12.04 |
| Stage 5 | -4.4 | 1.72 | 9.54 |
| Stage 5 | -4.6 | 3.08 | 6.83 |
| Stage 5 | -4.8 | 3.98 | 4.46 |
| Stage 5 | -5 | 4.48 | 2.51 |
| Stage 5 | -5.2 | 4.67 | 0.96 |
| Stage 5 | -5.4 | 4.63 | -0.22 |
| Stage 5 | -5.6 | 4.41 | -1.08 |
| Stage 5 | -5.8 | 4.08 | -1.66 |
| Stage 5 | -6 | 3.68 | -2.02 |
| Stage 5 | -6.2 | 3.24 | -2.21 |
| Stage 5 | -6.4 | 2.79 | -2.25 |
| Stage 5 | -6.6 | 2.35 | -2.19 |
| Stage 5 | -6.8 | 1.94 | -2.06 |
| Stage 5 | -7 | 1.56 | -1.88 |
| Stage 5 | -7.2 | 1.23 | -1.66 |
| Stage 5 | -7.4 | 0.94 | -1.44 |
| Stage 5 | -7.6 | 0.7 | -1.21 |
| Stage 5 | -7.8 | 0.5 | -0.99 |
| Stage 5 | -8 | 0.34 | -0.79 |
| Stage 5 | -8.2 | 0.22 | -0.61 |
| Stage 5 | -8.4 | 0.13 | -0.45 |
| Stage 5 | -8.6 | 0.06 | -0.32 |
| Stage 5 | -8.8 | 0.02 | -0.21 |
| Stage 5 | -9 | 0 | -0.12 |
| Stage 5 | -9.2 | -0.01 | -0.05 |
| Stage 5 | -9.4 | -0.01 | -0.01 |
| Stage 5 | -9.6 | -0.01 | 0.02 |
| Stage 5 | -9.8 | 0 | 0.03 |
| Stage 5 | -10 | 0 | 0.01 |

Tabella Risultati Paratia Nominal - Stage: Stage 6

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | 11.22 |
| Stage 6 | -0.2 | 2.24 | 11.22 |
| Stage 6 | -0.4 | 4.49 | 11.22 |
| Stage 6 | -0.6 | 6.73 | 11.22 |
| Stage 6 | -0.8 | 8.97 | 11.22 |
| Stage 6 | -1 | 11.22 | 11.22 |
| Stage 6 | -1.2 | 13.46 | 11.22 |
| Stage 6 | -1.4 | 15.7 | 11.22 |
| Stage 6 | -1.6 | 17.95 | 11.22 |
| Stage 6 | -1.8 | 20.19 | 11.22 |
| Stage 6 | -2 | 22.39 | 10.98 |
| Stage 6 | -2.2 | 24.48 | 10.46 |
| Stage 6 | -2.4 | 26.41 | 9.67 |
| Stage 6 | -2.6 | 28.13 | 8.59 |
| Stage 6 | -2.8 | 29.58 | 7.24 |
| Stage 6 | -3 | 30.7 | 5.62 |
| Stage 6 | -3.2 | 31.45 | 3.72 |
| Stage 6 | -3.4 | 31.76 | 1.54 |
| Stage 6 | -3.6 | 31.58 | -0.91 |
| Stage 6 | -3.8 | 30.85 | -3.62 |
| Stage 6 | -4 | 29.53 | -6.61 |
| Stage 6 | -4.2 | 27.56 | -9.86 |
| Stage 6 | -4.4 | 24.88 | -13.39 |
| Stage 6 | -4.6 | 21.44 | -17.18 |
| Stage 6 | -4.8 | 17.2 | -21.24 |
| Stage 6 | -5 | 12.08 | -25.57 |
| Stage 6 | -5.2 | 6.05 | -30.16 |
| Stage 6 | -5.4 | -0.96 | -35.03 |
| Stage 6 | -5.6 | -7.05 | -30.47 |
| Stage 6 | -5.8 | -11.87 | -24.12 |
| Stage 6 | -6 | -15.48 | -18.06 |
| Stage 6 | -6.2 | -17.95 | -12.31 |
| Stage 6 | -6.4 | -19.36 | -7.08 |
| Stage 6 | -6.6 | -19.83 | -2.35 |
| Stage 6 | -6.8 | -19.44 | 1.95 |
| Stage 6 | -7 | -18.4 | 5.19 |
| Stage 6 | -7.2 | -16.92 | 7.42 |
| Stage 6 | -7.4 | -15.16 | 8.8 |
| Stage 6 | -7.6 | -13.26 | 9.5 |
| Stage 6 | -7.8 | -11.33 | 9.66 |
| Stage 6 | -8 | -9.44 | 9.42 |
| Stage 6 | -8.2 | -7.67 | 8.87 |
| Stage 6 | -8.4 | -6.05 | 8.12 |
| Stage 6 | -8.6 | -4.6 | 7.23 |
| Stage 6 | -8.8 | -3.35 | 6.25 |
| Stage 6 | -9 | -2.3 | 5.25 |
| Stage 6 | -9.2 | -1.45 | 4.24 |
| Stage 6 | -9.4 | -0.81 | 3.24 |
| Stage 6 | -9.6 | -0.35 | 2.27 |
| Stage 6 | -9.8 | -0.09 | 1.33 |
| Stage 6 | -10 | 0 | 0.43 |

Tabella Risultati Paratia Nominal - Stage: Stage 6

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | -11.22 |
| Stage 6 | -0.2 | -2.24 | -11.22 |
| Stage 6 | -0.4 | -4.49 | -11.22 |
| Stage 6 | -0.6 | -6.73 | -11.22 |
| Stage 6 | -0.8 | -8.97 | -11.22 |
| Stage 6 | -1 | -11.22 | -11.22 |
| Stage 6 | -1.2 | -13.46 | -11.22 |
| Stage 6 | -1.4 | -15.7 | -11.22 |
| Stage 6 | -1.6 | -17.95 | -11.22 |
| Stage 6 | -1.8 | -20.19 | -11.22 |
| Stage 6 | -2 | -22.39 | -10.98 |
| Stage 6 | -2.2 | -24.48 | -10.46 |
| Stage 6 | -2.4 | -26.41 | -9.67 |
| Stage 6 | -2.6 | -28.13 | -8.59 |
| Stage 6 | -2.8 | -29.58 | -7.24 |
| Stage 6 | -3 | -30.7 | -5.62 |
| Stage 6 | -3.2 | -31.45 | -3.72 |
| Stage 6 | -3.4 | -31.76 | -1.54 |
| Stage 6 | -3.6 | -31.58 | 0.91 |
| Stage 6 | -3.8 | -30.85 | 3.62 |
| Stage 6 | -4 | -29.53 | 6.61 |
| Stage 6 | -4.2 | -27.56 | 9.86 |
| Stage 6 | -4.4 | -24.88 | 13.39 |
| Stage 6 | -4.6 | -21.44 | 17.18 |
| Stage 6 | -4.8 | -17.2 | 21.24 |
| Stage 6 | -5 | -12.08 | 25.57 |
| Stage 6 | -5.2 | -6.05 | 30.16 |
| Stage 6 | -5.4 | 0.96 | 35.03 |
| Stage 6 | -5.6 | 7.05 | 30.47 |
| Stage 6 | -5.8 | 11.87 | 24.12 |
| Stage 6 | -6 | 15.48 | 18.06 |
| Stage 6 | -6.2 | 17.95 | 12.31 |
| Stage 6 | -6.4 | 19.36 | 7.08 |
| Stage 6 | -6.6 | 19.83 | 2.35 |
| Stage 6 | -6.8 | 19.44 | -1.95 |
| Stage 6 | -7 | 18.4 | -5.19 |
| Stage 6 | -7.2 | 16.92 | -7.42 |
| Stage 6 | -7.4 | 15.16 | -8.8 |
| Stage 6 | -7.6 | 13.26 | -9.5 |
| Stage 6 | -7.8 | 11.33 | -9.66 |
| Stage 6 | -8 | 9.44 | -9.42 |
| Stage 6 | -8.2 | 7.67 | -8.87 |
| Stage 6 | -8.4 | 6.05 | -8.12 |
| Stage 6 | -8.6 | 4.6 | -7.23 |
| Stage 6 | -8.8 | 3.35 | -6.25 |
| Stage 6 | -9 | 2.3 | -5.25 |
| Stage 6 | -9.2 | 1.45 | -4.24 |
| Stage 6 | -9.4 | 0.81 | -3.24 |
| Stage 6 | -9.6 | 0.35 | -2.27 |
| Stage 6 | -9.8 | 0.09 | -1.33 |
| Stage 6 | -10 | 0 | -0.43 |

Tabella Risultati Paratia Nominal - Stage: Stage 7

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | 14.33 |
| Stage 7 | -0.2 | 2.87 | 14.33 |
| Stage 7 | -0.4 | 5.73 | 14.33 |
| Stage 7 | -0.6 | 8.6 | 14.33 |
| Stage 7 | -0.8 | 11.46 | 14.33 |
| Stage 7 | -1 | 14.33 | 14.33 |
| Stage 7 | -1.2 | 17.2 | 14.33 |
| Stage 7 | -1.4 | 20.06 | 14.33 |
| Stage 7 | -1.6 | 22.93 | 14.33 |
| Stage 7 | -1.8 | 25.79 | 14.33 |
| Stage 7 | -2 | 28.61 | 14.09 |
| Stage 7 | -2.2 | 31.33 | 13.58 |
| Stage 7 | -2.4 | 33.88 | 12.78 |
| Stage 7 | -2.6 | 36.22 | 11.7 |
| Stage 7 | -2.8 | 38.3 | 10.35 |
| Stage 7 | -3 | 40.04 | 8.73 |
| Stage 7 | -3.2 | 41.41 | 6.83 |
| Stage 7 | -3.4 | 42.34 | 4.65 |
| Stage 7 | -3.6 | 42.78 | 2.21 |
| Stage 7 | -3.8 | 42.68 | -0.51 |
| Stage 7 | -4 | 41.98 | -3.5 |
| Stage 7 | -4.2 | 40.63 | -6.75 |
| Stage 7 | -4.4 | 38.57 | -10.27 |
| Stage 7 | -4.6 | 35.76 | -14.07 |
| Stage 7 | -4.8 | 32.13 | -18.13 |
| Stage 7 | -5 | 27.64 | -22.45 |
| Stage 7 | -5.2 | 22.23 | -27.05 |
| Stage 7 | -5.4 | 15.85 | -31.92 |
| Stage 7 | -5.6 | 8.44 | -37.05 |
| Stage 7 | -5.8 | -0.05 | -42.44 |
| Stage 7 | -6 | -7.96 | -39.55 |
| Stage 7 | -6.2 | -14.88 | -34.6 |
| Stage 7 | -6.4 | -20.4 | -27.59 |
| Stage 7 | -6.6 | -24.37 | -19.89 |
| Stage 7 | -6.8 | -26.93 | -12.76 |
| Stage 7 | -7 | -28.16 | -6.18 |
| Stage 7 | -7.2 | -28.21 | -0.22 |
| Stage 7 | -7.4 | -27.21 | 5.01 |
| Stage 7 | -7.6 | -25.31 | 9.46 |
| Stage 7 | -7.8 | -22.82 | 12.46 |
| Stage 7 | -8 | -19.97 | 14.25 |
| Stage 7 | -8.2 | -16.96 | 15.06 |
| Stage 7 | -8.4 | -13.94 | 15.09 |
| Stage 7 | -8.6 | -11.04 | 14.49 |
| Stage 7 | -8.8 | -8.36 | 13.42 |
| Stage 7 | -9 | -5.96 | 11.98 |
| Stage 7 | -9.2 | -3.91 | 10.25 |
| Stage 7 | -9.4 | -2.25 | 8.29 |
| Stage 7 | -9.6 | -1.03 | 6.14 |
| Stage 7 | -9.8 | -0.27 | 3.81 |
| Stage 7 | -10 | 0 | 1.32 |

Tabella Risultati Paratia Nominal - Stage: Stage 7

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | -14.33 |
| Stage 7 | -0.2 | -2.87 | -14.33 |
| Stage 7 | -0.4 | -5.73 | -14.33 |
| Stage 7 | -0.6 | -8.6 | -14.33 |
| Stage 7 | -0.8 | -11.46 | -14.33 |
| Stage 7 | -1 | -14.33 | -14.33 |
| Stage 7 | -1.2 | -17.2 | -14.33 |
| Stage 7 | -1.4 | -20.06 | -14.33 |
| Stage 7 | -1.6 | -22.93 | -14.33 |
| Stage 7 | -1.8 | -25.79 | -14.33 |
| Stage 7 | -2 | -28.61 | -14.09 |
| Stage 7 | -2.2 | -31.33 | -13.58 |
| Stage 7 | -2.4 | -33.88 | -12.78 |
| Stage 7 | -2.6 | -36.22 | -11.7 |
| Stage 7 | -2.8 | -38.3 | -10.35 |
| Stage 7 | -3 | -40.04 | -8.73 |
| Stage 7 | -3.2 | -41.41 | -6.83 |
| Stage 7 | -3.4 | -42.34 | -4.65 |
| Stage 7 | -3.6 | -42.78 | -2.21 |
| Stage 7 | -3.8 | -42.68 | 0.51 |
| Stage 7 | -4 | -41.98 | 3.5 |
| Stage 7 | -4.2 | -40.63 | 6.75 |
| Stage 7 | -4.4 | -38.57 | 10.27 |
| Stage 7 | -4.6 | -35.76 | 14.07 |
| Stage 7 | -4.8 | -32.13 | 18.13 |
| Stage 7 | -5 | -27.64 | 22.45 |
| Stage 7 | -5.2 | -22.23 | 27.05 |
| Stage 7 | -5.4 | -15.85 | 31.92 |
| Stage 7 | -5.6 | -8.44 | 37.05 |
| Stage 7 | -5.8 | 0.05 | 42.44 |
| Stage 7 | -6 | 7.96 | 39.55 |
| Stage 7 | -6.2 | 14.88 | 34.6 |
| Stage 7 | -6.4 | 20.4 | 27.59 |
| Stage 7 | -6.6 | 24.37 | 19.89 |
| Stage 7 | -6.8 | 26.93 | 12.76 |
| Stage 7 | -7 | 28.16 | 6.18 |
| Stage 7 | -7.2 | 28.21 | 0.22 |
| Stage 7 | -7.4 | 27.21 | -5.01 |
| Stage 7 | -7.6 | 25.31 | -9.46 |
| Stage 7 | -7.8 | 22.82 | -12.46 |
| Stage 7 | -8 | 19.97 | -14.25 |
| Stage 7 | -8.2 | 16.96 | -15.06 |
| Stage 7 | -8.4 | 13.94 | -15.09 |
| Stage 7 | -8.6 | 11.04 | -14.49 |
| Stage 7 | -8.8 | 8.36 | -13.42 |
| Stage 7 | -9 | 5.96 | -11.98 |
| Stage 7 | -9.2 | 3.91 | -10.25 |
| Stage 7 | -9.4 | 2.25 | -8.29 |
| Stage 7 | -9.6 | 1.03 | -6.14 |
| Stage 7 | -9.8 | 0.27 | -3.81 |
| Stage 7 | -10 | 0 | -1.32 |

Inviluppi Risultati Paratia Nominal

Risultati Elementi strutturali

Design Assumption: Nominal Sollecitazione Strut

| Stage | Forza (kN/m) |
|---------|--------------|
| Stage 3 | 0 |
| Stage 4 | -2.282406 |
| Stage 5 | -4.484574 |
| Stage 6 | -11.21754 |
| Stage 7 | -14.32973 |

Riepilogo spinte

| Design Assumption: | Tipo Risultato: | Muro: | LEFT | Lato | LEFT | | |
|--------------------|------------------|---------------|-------------|-----------------|-----------------|--------------------|--------|
| Nominal | Riepilogo spinte | | | | | | |
| Stage | Vera effettiva | Pressione | Vera Totale | Min ammissibile | Max ammissibile | Percentuale di | Vera / |
| | (kN/m) | neutra (kN/m) | (kN/m) | (kN/m) | (kN/m) | resistenza massima | Attiva |
| Stage 0 | 476 | 0 | 476 | 5.4 | 3262.4 | 14.59% | 88.15 |
| Stage 1 | 484.5 | 0 | 484.5 | 5.5 | 3419.4 | 14.17% | 88.09 |
| Stage 2 | 454 | 0 | 454 | 5.5 | 3419.4 | 13.28% | 82.55 |
| Stage 3 | 454 | 0 | 454 | 5.5 | 3419.4 | 13.28% | 82.55 |
| Stage 4 | 377.9 | 0 | 377.9 | 5.5 | 3419.4 | 11.05% | 68.71 |
| Stage 5 | 337.1 | 0 | 337.1 | 5.5 | 3419.4 | 9.86% | 61.29 |
| Stage 6 | 296.8 | 0 | 296.8 | 5.5 | 3419.4 | 8.68% | 53.96 |
| Stage 7 | 284.9 | 0 | 284.9 | 5.5 | 3419.4 | 8.33% | 51.8 |

| Design Assumption: | Tipo Risultato: | Muro: | LEFT | Lato | RIGHT | | |
|--------------------|------------------|---------------|-------------|-----------------|-----------------|--------------------|--------|
| Nominal | Riepilogo spinte | | | | | | |
| Stage | Vera effettiva | Pressione | Vera Totale | Min ammissibile | Max ammissibile | Percentuale di | Vera / |
| | (kN/m) | neutra (kN/m) | (kN/m) | (kN/m) | (kN/m) | resistenza massima | Attiva |
| Stage 0 | 476 | 0 | 476 | 5.4 | 3262.4 | 14.59% | 88.15 |
| Stage 1 | 484.5 | 0 | 484.5 | 5.4 | 3262.4 | 14.85% | 89.72 |
| Stage 2 | 454 | 0 | 454 | 4.7 | 2679.4 | 16.94% | 96.6 |
| Stage 3 | 454 | 0 | 454 | 4.7 | 2679.4 | 16.94% | 96.6 |
| Stage 4 | 375.6 | 0 | 375.6 | 3.4 | 1679.8 | 22.36% | 110.47 |
| Stage 5 | 332.6 | 0 | 332.6 | 2.7 | 1266.7 | 26.26% | 123.19 |
| Stage 6 | 285.6 | 0 | 285.6 | 1.9 | 840.1 | 34% | 150.32 |
| Stage 7 | 270.6 | 0 | 270.6 | 1.6 | 693.9 | 39% | 169.12 |

| Design Assumption: | Tipo Risultato: | Muro: | RIGHT | Lato | LEFT | | |
|--------------------|------------------|---------------|-------------|-----------------|-----------------|--------------------|--------|
| Nominal | Riepilogo spinte | | | | | | |
| Stage | Vera effettiva | Pressione | Vera Totale | Min ammissibile | Max ammissibile | Percentuale di | Vera / |
| | (kN/m) | neutra (kN/m) | (kN/m) | (kN/m) | (kN/m) | resistenza massima | Attiva |
| Stage 0 | 476 | 0 | 476 | 5.4 | 3262.4 | 14.59% | 88.15 |
| Stage 1 | 484.5 | 0 | 484.5 | 5.4 | 3262.4 | 14.85% | 89.72 |
| Stage 2 | 454 | 0 | 454 | 4.7 | 2679.4 | 16.94% | 96.6 |
| Stage 3 | 454 | 0 | 454 | 4.7 | 2679.4 | 16.94% | 96.6 |
| Stage 4 | 375.6 | 0 | 375.6 | 3.4 | 1679.8 | 22.36% | 110.47 |
| Stage 5 | 332.6 | 0 | 332.6 | 2.7 | 1266.7 | 26.26% | 123.19 |
| Stage 6 | 285.6 | 0 | 285.6 | 1.9 | 840.1 | 34% | 150.32 |
| Stage 7 | 270.6 | 0 | 270.6 | 1.6 | 693.9 | 39% | 169.12 |

| Design Assumption: | Tipo Risultato: | Muro: | RIGHT | Lato | RIGHT | | |
|--------------------|------------------|---------------|-------------|-----------------|-----------------|--------------------|--------|
| Nominal | Riepilogo spinte | | | | | | |
| Stage | Vera effettiva | Pressione | Vera Totale | Min ammissibile | Max ammissibile | Percentuale di | Vera / |
| | (kN/m) | neutra (kN/m) | (kN/m) | (kN/m) | (kN/m) | resistenza massima | Attiva |
| Stage 0 | 476 | 0 | 476 | 5.4 | 3262.4 | 14.59% | 88.15 |
| Stage 1 | 484.5 | 0 | 484.5 | 5.5 | 3419.4 | 14.17% | 88.09 |
| Stage 2 | 454 | 0 | 454 | 5.5 | 3419.4 | 13.28% | 82.55 |
| Stage 3 | 454 | 0 | 454 | 5.5 | 3419.4 | 13.28% | 82.55 |
| Stage 4 | 377.9 | 0 | 377.9 | 5.5 | 3419.4 | 11.05% | 68.71 |
| Stage 5 | 337.1 | 0 | 337.1 | 5.5 | 3419.4 | 9.86% | 61.29 |
| Stage 6 | 296.8 | 0 | 296.8 | 5.5 | 3419.4 | 8.68% | 53.96 |
| Stage 7 | 284.9 | 0 | 284.9 | 5.5 | 3419.4 | 8.33% | 51.8 |

Descrizione Coefficienti Design Assumption

Coefficienti A

| Nome | Carichi Permanenti Sfavorevoli (F_dead_loa d_unfavour) | Carichi Permanenti Favorevoli (F_dead_lo ad_favour) | Carichi Variabili Sfavorevoli (F_live_load _unfavour) | Carichi Variabili Favorevoli (F_live_loa d_favour) | Carico Sismico (F_seis m_load) | Pressi on i Acqua Lato Monte (F_Wa terDR) | Pressio ni Acqua Lato Valle (F_Wat erRes) | Carichi Perman enti Destabil izzanti (F_UPL_ GStab) | Carichi Perman enti Stabiliz zanti (F_UPL_ GStab) | Carichi Variabili Destabili (F_UPL_ QDStab) | Carichi Perman enti Destabili (F_HYD_ GStab) | Carichi Perman enti Stabilizz anti (F_HYD_ GStab) | Carichi Variabili Destabili (F_HYD_ QDStab) |
|--|--|---|---|--|---------------------------------|---|---|---|---|---|--|---|---|
| Simbolo | γ_G | γ_G | γ_Q | γ_Q | γ_{QE} | γ_G | γ_G | γ_{Gdst} | γ_{Gstb} | γ_{Qdst} | γ_{Gdst} | γ_{Gstb} | γ_{Qdst} |
| Nominal | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| NTC2018: SLE (Rara/Frequente/Quasi Permanente) | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | 1.3 | 1 | 1.5 | 1 | 0 | 1.3 | 1 | 1 | 1 | 1 | 1.3 | 0.9 | 1 |
| NTC2018: A2+M2+R1 | 1 | 1 | 1.3 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1.3 | 0.9 | 1 |

Coefficienti M

| Nome | Parziale su $\tan(\phi')$ (F_Fr) | Parziale su c' (F_eff_cohes) | Parziale su Su (F_Su) | Parziale su qu (F_qu) | Parziale su peso specifico (F_gamma) |
|--|----------------------------------|--------------------------------|-----------------------|-----------------------|--------------------------------------|
| Simbolo | γ_ϕ | γ_c | γ_{cu} | γ_{qu} | γ_γ |
| Nominal | 1 | 1 | 1 | 1 | 1 |
| NTC2018: SLE (Rara/Frequente/Quasi Permanente) | 1 | 1 | 1 | 1 | 1 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | 1 | 1 | 1 | 1 | 1 |
| NTC2018: A2+M2+R1 | 1.25 | 1.25 | 1.4 | 1 | 1 |

Coefficienti R

| Nome | Parziale resistenza terreno (es. Kp) (F_Soil_Res_walls) | Parziale resistenza Tiranti permanenti (F_Anch_P) | Parziale resistenza Tiranti temporanei (F_Anch_T) | Parziale elementi strutturali (F_wall) |
|--|---|---|---|--|
| Simbolo | γ_{Re} | γ_{ap} | γ_{at} | |
| Nominal | 1 | 1 | 1 | 1 |
| NTC2018: SLE (Rara/Frequente/Quasi Permanente) | 1 | 1 | 1 | 1 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | 1 | 1.2 | 1.1 | 1 |
| NTC2018: A2+M2+R1 | 1 | 1.2 | 1.1 | 1 |

Risultati NTC2018: SLE (Rara/Frequente/Quasi Permanente)

Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage 0

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | | Muro: LEFT |
|---|-------|------------------|------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 0 | 0 | 0 | |
| Stage 0 | -0.2 | 0 | |
| Stage 0 | -0.4 | 0 | |
| Stage 0 | -0.6 | 0 | |
| Stage 0 | -0.8 | 0 | |
| Stage 0 | -1 | 0 | |
| Stage 0 | -1.2 | 0 | |
| Stage 0 | -1.4 | 0 | |
| Stage 0 | -1.6 | 0 | |
| Stage 0 | -1.8 | 0 | |
| Stage 0 | -2 | 0 | |
| Stage 0 | -2.2 | 0 | |
| Stage 0 | -2.4 | 0 | |
| Stage 0 | -2.6 | 0 | |
| Stage 0 | -2.8 | 0 | |
| Stage 0 | -3 | 0 | |
| Stage 0 | -3.2 | 0 | |
| Stage 0 | -3.4 | 0 | |
| Stage 0 | -3.6 | 0 | |
| Stage 0 | -3.8 | 0 | |
| Stage 0 | -4 | 0 | |
| Stage 0 | -4.2 | 0 | |
| Stage 0 | -4.4 | 0 | |
| Stage 0 | -4.6 | 0 | |
| Stage 0 | -4.8 | 0 | |
| Stage 0 | -5 | 0 | |
| Stage 0 | -5.2 | 0 | |
| Stage 0 | -5.4 | 0 | |
| Stage 0 | -5.6 | 0 | |
| Stage 0 | -5.8 | 0 | |
| Stage 0 | -6 | 0 | |
| Stage 0 | -6.2 | 0 | |
| Stage 0 | -6.4 | 0 | |
| Stage 0 | -6.6 | 0 | |
| Stage 0 | -6.8 | 0 | |
| Stage 0 | -7 | 0 | |
| Stage 0 | -7.2 | 0 | |
| Stage 0 | -7.4 | 0 | |
| Stage 0 | -7.6 | 0 | |
| Stage 0 | -7.8 | 0 | |
| Stage 0 | -8 | 0 | |
| Stage 0 | -8.2 | 0 | |
| Stage 0 | -8.4 | 0 | |
| Stage 0 | -8.6 | 0 | |
| Stage 0 | -8.8 | 0 | |
| Stage 0 | -9 | 0 | |
| Stage 0 | -9.2 | 0 | |
| Stage 0 | -9.4 | 0 | |
| Stage 0 | -9.6 | 0 | |
| Stage 0 | -9.8 | 0 | |
| Stage 0 | -10 | 0 | |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 0**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | | Muro: RIGHT |
|---|-------|------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 0 | 0 | 0 | |
| Stage 0 | -0.2 | 0 | |
| Stage 0 | -0.4 | 0 | |
| Stage 0 | -0.6 | 0 | |
| Stage 0 | -0.8 | 0 | |
| Stage 0 | -1 | 0 | |
| Stage 0 | -1.2 | 0 | |
| Stage 0 | -1.4 | 0 | |
| Stage 0 | -1.6 | 0 | |
| Stage 0 | -1.8 | 0 | |
| Stage 0 | -2 | 0 | |
| Stage 0 | -2.2 | 0 | |
| Stage 0 | -2.4 | 0 | |
| Stage 0 | -2.6 | 0 | |
| Stage 0 | -2.8 | 0 | |
| Stage 0 | -3 | 0 | |
| Stage 0 | -3.2 | 0 | |
| Stage 0 | -3.4 | 0 | |
| Stage 0 | -3.6 | 0 | |
| Stage 0 | -3.8 | 0 | |
| Stage 0 | -4 | 0 | |
| Stage 0 | -4.2 | 0 | |
| Stage 0 | -4.4 | 0 | |
| Stage 0 | -4.6 | 0 | |
| Stage 0 | -4.8 | 0 | |
| Stage 0 | -5 | 0 | |
| Stage 0 | -5.2 | 0 | |
| Stage 0 | -5.4 | 0 | |
| Stage 0 | -5.6 | 0 | |
| Stage 0 | -5.8 | 0 | |
| Stage 0 | -6 | 0 | |
| Stage 0 | -6.2 | 0 | |
| Stage 0 | -6.4 | 0 | |
| Stage 0 | -6.6 | 0 | |
| Stage 0 | -6.8 | 0 | |
| Stage 0 | -7 | 0 | |
| Stage 0 | -7.2 | 0 | |
| Stage 0 | -7.4 | 0 | |
| Stage 0 | -7.6 | 0 | |
| Stage 0 | -7.8 | 0 | |
| Stage 0 | -8 | 0 | |
| Stage 0 | -8.2 | 0 | |
| Stage 0 | -8.4 | 0 | |
| Stage 0 | -8.6 | 0 | |
| Stage 0 | -8.8 | 0 | |
| Stage 0 | -9 | 0 | |
| Stage 0 | -9.2 | 0 | |
| Stage 0 | -9.4 | 0 | |
| Stage 0 | -9.6 | 0 | |
| Stage 0 | -9.8 | 0 | |
| Stage 0 | -10 | 0 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 0**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 0**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
1**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | Muro: LEFT |
|---|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 1 | 0 | 0 |
| Stage 1 | -0.2 | 0.01 |
| Stage 1 | -0.4 | 0.01 |
| Stage 1 | -0.6 | 0.02 |
| Stage 1 | -0.8 | 0.03 |
| Stage 1 | -1 | 0.03 |
| Stage 1 | -1.2 | 0.04 |
| Stage 1 | -1.4 | 0.05 |
| Stage 1 | -1.6 | 0.05 |
| Stage 1 | -1.8 | 0.05 |
| Stage 1 | -2 | 0.06 |
| Stage 1 | -2.2 | 0.06 |
| Stage 1 | -2.4 | 0.07 |
| Stage 1 | -2.6 | 0.07 |
| Stage 1 | -2.8 | 0.07 |
| Stage 1 | -3 | 0.07 |
| Stage 1 | -3.2 | 0.07 |
| Stage 1 | -3.4 | 0.07 |
| Stage 1 | -3.6 | 0.07 |
| Stage 1 | -3.8 | 0.08 |
| Stage 1 | -4 | 0.08 |
| Stage 1 | -4.2 | 0.08 |
| Stage 1 | -4.4 | 0.08 |
| Stage 1 | -4.6 | 0.08 |
| Stage 1 | -4.8 | 0.08 |
| Stage 1 | -5 | 0.08 |
| Stage 1 | -5.2 | 0.08 |
| Stage 1 | -5.4 | 0.08 |
| Stage 1 | -5.6 | 0.08 |
| Stage 1 | -5.8 | 0.08 |
| Stage 1 | -6 | 0.07 |
| Stage 1 | -6.2 | 0.07 |
| Stage 1 | -6.4 | 0.07 |
| Stage 1 | -6.6 | 0.07 |
| Stage 1 | -6.8 | 0.07 |
| Stage 1 | -7 | 0.07 |
| Stage 1 | -7.2 | 0.07 |
| Stage 1 | -7.4 | 0.06 |
| Stage 1 | -7.6 | 0.06 |
| Stage 1 | -7.8 | 0.06 |
| Stage 1 | -8 | 0.06 |
| Stage 1 | -8.2 | 0.06 |
| Stage 1 | -8.4 | 0.06 |
| Stage 1 | -8.6 | 0.06 |
| Stage 1 | -8.8 | 0.06 |
| Stage 1 | -9 | 0.06 |
| Stage 1 | -9.2 | 0.05 |
| Stage 1 | -9.4 | 0.05 |
| Stage 1 | -9.6 | 0.05 |
| Stage 1 | -9.8 | 0.05 |
| Stage 1 | -10 | 0.05 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 1**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento Muro: RIGHT | | | |
|---|-------|------------------|--|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 1 | 0 | 0 | |
| Stage 1 | -0.2 | -0.01 | |
| Stage 1 | -0.4 | -0.01 | |
| Stage 1 | -0.6 | -0.02 | |
| Stage 1 | -0.8 | -0.03 | |
| Stage 1 | -1 | -0.03 | |
| Stage 1 | -1.2 | -0.04 | |
| Stage 1 | -1.4 | -0.05 | |
| Stage 1 | -1.6 | -0.05 | |
| Stage 1 | -1.8 | -0.05 | |
| Stage 1 | -2 | -0.06 | |
| Stage 1 | -2.2 | -0.06 | |
| Stage 1 | -2.4 | -0.07 | |
| Stage 1 | -2.6 | -0.07 | |
| Stage 1 | -2.8 | -0.07 | |
| Stage 1 | -3 | -0.07 | |
| Stage 1 | -3.2 | -0.07 | |
| Stage 1 | -3.4 | -0.07 | |
| Stage 1 | -3.6 | -0.07 | |
| Stage 1 | -3.8 | -0.08 | |
| Stage 1 | -4 | -0.08 | |
| Stage 1 | -4.2 | -0.08 | |
| Stage 1 | -4.4 | -0.08 | |
| Stage 1 | -4.6 | -0.08 | |
| Stage 1 | -4.8 | -0.08 | |
| Stage 1 | -5 | -0.08 | |
| Stage 1 | -5.2 | -0.08 | |
| Stage 1 | -5.4 | -0.08 | |
| Stage 1 | -5.6 | -0.08 | |
| Stage 1 | -5.8 | -0.08 | |
| Stage 1 | -6 | -0.07 | |
| Stage 1 | -6.2 | -0.07 | |
| Stage 1 | -6.4 | -0.07 | |
| Stage 1 | -6.6 | -0.07 | |
| Stage 1 | -6.8 | -0.07 | |
| Stage 1 | -7 | -0.07 | |
| Stage 1 | -7.2 | -0.07 | |
| Stage 1 | -7.4 | -0.06 | |
| Stage 1 | -7.6 | -0.06 | |
| Stage 1 | -7.8 | -0.06 | |
| Stage 1 | -8 | -0.06 | |
| Stage 1 | -8.2 | -0.06 | |
| Stage 1 | -8.4 | -0.06 | |
| Stage 1 | -8.6 | -0.06 | |
| Stage 1 | -8.8 | -0.06 | |
| Stage 1 | -9 | -0.06 | |
| Stage 1 | -9.2 | -0.05 | |
| Stage 1 | -9.4 | -0.05 | |
| Stage 1 | -9.6 | -0.05 | |
| Stage 1 | -9.8 | -0.05 | |
| Stage 1 | -10 | -0.05 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 1**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | 0.01 | 0.04 |
| Stage 1 | -0.6 | 0.03 | 0.09 |
| Stage 1 | -0.8 | 0.05 | 0.13 |
| Stage 1 | -1 | 0.08 | 0.14 |
| Stage 1 | -1.2 | 0.1 | 0.11 |
| Stage 1 | -1.4 | 0.12 | 0.07 |
| Stage 1 | -1.6 | 0.12 | 0.03 |
| Stage 1 | -1.8 | 0.12 | -0.01 |
| Stage 1 | -2 | 0.11 | -0.03 |
| Stage 1 | -2.2 | 0.1 | -0.05 |
| Stage 1 | -2.4 | 0.09 | -0.06 |
| Stage 1 | -2.6 | 0.08 | -0.06 |
| Stage 1 | -2.8 | 0.07 | -0.06 |
| Stage 1 | -3 | 0.06 | -0.05 |
| Stage 1 | -3.2 | 0.05 | -0.04 |
| Stage 1 | -3.4 | 0.04 | -0.04 |
| Stage 1 | -3.6 | 0.04 | -0.03 |
| Stage 1 | -3.8 | 0.03 | -0.02 |
| Stage 1 | -4 | 0.03 | -0.02 |
| Stage 1 | -4.2 | 0.03 | -0.01 |
| Stage 1 | -4.4 | 0.03 | 0.01 |
| Stage 1 | -4.6 | 0.03 | 0.01 |
| Stage 1 | -4.8 | 0.04 | 0.02 |
| Stage 1 | -5 | 0.04 | 0.02 |
| Stage 1 | -5.2 | 0.04 | 0.02 |
| Stage 1 | -5.4 | 0.04 | 0.01 |
| Stage 1 | -5.6 | 0.04 | -0.01 |
| Stage 1 | -5.8 | 0.04 | -0.03 |
| Stage 1 | -6 | 0.03 | -0.04 |
| Stage 1 | -6.2 | 0.02 | -0.04 |
| Stage 1 | -6.4 | 0.01 | -0.04 |
| Stage 1 | -6.6 | 0.01 | -0.03 |
| Stage 1 | -6.8 | 0 | -0.03 |
| Stage 1 | -7 | 0 | -0.02 |
| Stage 1 | -7.2 | -0.01 | -0.02 |
| Stage 1 | -7.4 | -0.01 | -0.01 |
| Stage 1 | -7.6 | -0.01 | -0.01 |
| Stage 1 | -7.8 | -0.01 | 0 |
| Stage 1 | -8 | -0.01 | 0 |
| Stage 1 | -8.2 | -0.01 | 0 |
| Stage 1 | -8.4 | -0.01 | 0 |
| Stage 1 | -8.6 | -0.01 | 0.01 |
| Stage 1 | -8.8 | -0.01 | 0.01 |
| Stage 1 | -9 | -0.01 | 0.01 |
| Stage 1 | -9.2 | 0 | 0.01 |
| Stage 1 | -9.4 | 0 | 0.01 |
| Stage 1 | -9.6 | 0 | 0.01 |
| Stage 1 | -9.8 | 0 | 0 |
| Stage 1 | -10 | 0 | 0 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 1**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | -0.01 | -0.04 |
| Stage 1 | -0.6 | -0.03 | -0.09 |
| Stage 1 | -0.8 | -0.05 | -0.13 |
| Stage 1 | -1 | -0.08 | -0.14 |
| Stage 1 | -1.2 | -0.1 | -0.11 |
| Stage 1 | -1.4 | -0.12 | -0.07 |
| Stage 1 | -1.6 | -0.12 | -0.03 |
| Stage 1 | -1.8 | -0.12 | 0.01 |
| Stage 1 | -2 | -0.11 | 0.03 |
| Stage 1 | -2.2 | -0.1 | 0.05 |
| Stage 1 | -2.4 | -0.09 | 0.06 |
| Stage 1 | -2.6 | -0.08 | 0.06 |
| Stage 1 | -2.8 | -0.07 | 0.06 |
| Stage 1 | -3 | -0.06 | 0.05 |
| Stage 1 | -3.2 | -0.05 | 0.04 |
| Stage 1 | -3.4 | -0.04 | 0.04 |
| Stage 1 | -3.6 | -0.04 | 0.03 |
| Stage 1 | -3.8 | -0.03 | 0.02 |
| Stage 1 | -4 | -0.03 | 0.02 |
| Stage 1 | -4.2 | -0.03 | 0.01 |
| Stage 1 | -4.4 | -0.03 | -0.01 |
| Stage 1 | -4.6 | -0.03 | -0.01 |
| Stage 1 | -4.8 | -0.04 | -0.02 |
| Stage 1 | -5 | -0.04 | -0.02 |
| Stage 1 | -5.2 | -0.04 | -0.02 |
| Stage 1 | -5.4 | -0.04 | -0.01 |
| Stage 1 | -5.6 | -0.04 | 0.01 |
| Stage 1 | -5.8 | -0.04 | 0.03 |
| Stage 1 | -6 | -0.03 | 0.04 |
| Stage 1 | -6.2 | -0.02 | 0.04 |
| Stage 1 | -6.4 | -0.01 | 0.04 |
| Stage 1 | -6.6 | -0.01 | 0.03 |
| Stage 1 | -6.8 | 0 | 0.03 |
| Stage 1 | -7 | 0 | 0.02 |
| Stage 1 | -7.2 | 0.01 | 0.02 |
| Stage 1 | -7.4 | 0.01 | 0.01 |
| Stage 1 | -7.6 | 0.01 | 0.01 |
| Stage 1 | -7.8 | 0.01 | 0 |
| Stage 1 | -8 | 0.01 | 0 |
| Stage 1 | -8.2 | 0.01 | 0 |
| Stage 1 | -8.4 | 0.01 | 0 |
| Stage 1 | -8.6 | 0.01 | -0.01 |
| Stage 1 | -8.8 | 0.01 | -0.01 |
| Stage 1 | -9 | 0.01 | -0.01 |
| Stage 1 | -9.2 | 0 | -0.01 |
| Stage 1 | -9.4 | 0 | -0.01 |
| Stage 1 | -9.6 | 0 | -0.01 |
| Stage 1 | -9.8 | 0 | 0 |
| Stage 1 | -10 | 0 | 0 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
2**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | | Muro: LEFT |
|---|-------|------------------|------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 2 | 0 | 0.26 | |
| Stage 2 | -0.2 | 0.25 | |
| Stage 2 | -0.4 | 0.24 | |
| Stage 2 | -0.6 | 0.23 | |
| Stage 2 | -0.8 | 0.22 | |
| Stage 2 | -1 | 0.21 | |
| Stage 2 | -1.2 | 0.2 | |
| Stage 2 | -1.4 | 0.19 | |
| Stage 2 | -1.6 | 0.18 | |
| Stage 2 | -1.8 | 0.18 | |
| Stage 2 | -2 | 0.18 | |
| Stage 2 | -2.2 | 0.17 | |
| Stage 2 | -2.4 | 0.17 | |
| Stage 2 | -2.6 | 0.17 | |
| Stage 2 | -2.8 | 0.17 | |
| Stage 2 | -3 | 0.17 | |
| Stage 2 | -3.2 | 0.17 | |
| Stage 2 | -3.4 | 0.17 | |
| Stage 2 | -3.6 | 0.17 | |
| Stage 2 | -3.8 | 0.17 | |
| Stage 2 | -4 | 0.17 | |
| Stage 2 | -4.2 | 0.17 | |
| Stage 2 | -4.4 | 0.17 | |
| Stage 2 | -4.6 | 0.18 | |
| Stage 2 | -4.8 | 0.18 | |
| Stage 2 | -5 | 0.18 | |
| Stage 2 | -5.2 | 0.17 | |
| Stage 2 | -5.4 | 0.17 | |
| Stage 2 | -5.6 | 0.17 | |
| Stage 2 | -5.8 | 0.17 | |
| Stage 2 | -6 | 0.17 | |
| Stage 2 | -6.2 | 0.17 | |
| Stage 2 | -6.4 | 0.17 | |
| Stage 2 | -6.6 | 0.17 | |
| Stage 2 | -6.8 | 0.17 | |
| Stage 2 | -7 | 0.16 | |
| Stage 2 | -7.2 | 0.16 | |
| Stage 2 | -7.4 | 0.16 | |
| Stage 2 | -7.6 | 0.16 | |
| Stage 2 | -7.8 | 0.16 | |
| Stage 2 | -8 | 0.16 | |
| Stage 2 | -8.2 | 0.16 | |
| Stage 2 | -8.4 | 0.15 | |
| Stage 2 | -8.6 | 0.15 | |
| Stage 2 | -8.8 | 0.15 | |
| Stage 2 | -9 | 0.15 | |
| Stage 2 | -9.2 | 0.15 | |
| Stage 2 | -9.4 | 0.15 | |
| Stage 2 | -9.6 | 0.15 | |
| Stage 2 | -9.8 | 0.15 | |
| Stage 2 | -10 | 0.15 | |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 2**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento Muro: RIGHT | | | |
|---|-------|------------------|--|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 2 | 0 | -0.26 | |
| Stage 2 | -0.2 | -0.25 | |
| Stage 2 | -0.4 | -0.24 | |
| Stage 2 | -0.6 | -0.23 | |
| Stage 2 | -0.8 | -0.22 | |
| Stage 2 | -1 | -0.21 | |
| Stage 2 | -1.2 | -0.2 | |
| Stage 2 | -1.4 | -0.19 | |
| Stage 2 | -1.6 | -0.18 | |
| Stage 2 | -1.8 | -0.18 | |
| Stage 2 | -2 | -0.18 | |
| Stage 2 | -2.2 | -0.17 | |
| Stage 2 | -2.4 | -0.17 | |
| Stage 2 | -2.6 | -0.17 | |
| Stage 2 | -2.8 | -0.17 | |
| Stage 2 | -3 | -0.17 | |
| Stage 2 | -3.2 | -0.17 | |
| Stage 2 | -3.4 | -0.17 | |
| Stage 2 | -3.6 | -0.17 | |
| Stage 2 | -3.8 | -0.17 | |
| Stage 2 | -4 | -0.17 | |
| Stage 2 | -4.2 | -0.17 | |
| Stage 2 | -4.4 | -0.17 | |
| Stage 2 | -4.6 | -0.18 | |
| Stage 2 | -4.8 | -0.18 | |
| Stage 2 | -5 | -0.18 | |
| Stage 2 | -5.2 | -0.17 | |
| Stage 2 | -5.4 | -0.17 | |
| Stage 2 | -5.6 | -0.17 | |
| Stage 2 | -5.8 | -0.17 | |
| Stage 2 | -6 | -0.17 | |
| Stage 2 | -6.2 | -0.17 | |
| Stage 2 | -6.4 | -0.17 | |
| Stage 2 | -6.6 | -0.17 | |
| Stage 2 | -6.8 | -0.17 | |
| Stage 2 | -7 | -0.16 | |
| Stage 2 | -7.2 | -0.16 | |
| Stage 2 | -7.4 | -0.16 | |
| Stage 2 | -7.6 | -0.16 | |
| Stage 2 | -7.8 | -0.16 | |
| Stage 2 | -8 | -0.16 | |
| Stage 2 | -8.2 | -0.16 | |
| Stage 2 | -8.4 | -0.15 | |
| Stage 2 | -8.6 | -0.15 | |
| Stage 2 | -8.8 | -0.15 | |
| Stage 2 | -9 | -0.15 | |
| Stage 2 | -9.2 | -0.15 | |
| Stage 2 | -9.4 | -0.15 | |
| Stage 2 | -9.6 | -0.15 | |
| Stage 2 | -9.8 | -0.15 | |
| Stage 2 | -10 | -0.15 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 2**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | | |
|---|-------|------------------|---------------|---|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 2 | 0 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 | 0 |
| Stage 2 | -1 | -0.1 | -0.48 | |
| Stage 2 | -1.2 | -0.22 | -0.61 | |
| Stage 2 | -1.4 | -0.29 | -0.35 | |
| Stage 2 | -1.6 | -0.31 | -0.13 | |
| Stage 2 | -1.8 | -0.31 | 0.04 | |
| Stage 2 | -2 | -0.28 | 0.15 | |
| Stage 2 | -2.2 | -0.24 | 0.2 | |
| Stage 2 | -2.4 | -0.19 | 0.23 | |
| Stage 2 | -2.6 | -0.15 | 0.23 | |
| Stage 2 | -2.8 | -0.1 | 0.21 | |
| Stage 2 | -3 | -0.07 | 0.18 | |
| Stage 2 | -3.2 | -0.04 | 0.16 | |
| Stage 2 | -3.4 | -0.01 | 0.12 | |
| Stage 2 | -3.6 | 0.01 | 0.09 | |
| Stage 2 | -3.8 | 0.02 | 0.06 | |
| Stage 2 | -4 | 0.03 | 0.04 | |
| Stage 2 | -4.2 | 0.03 | 0.03 | |
| Stage 2 | -4.4 | 0.04 | 0.03 | |
| Stage 2 | -4.6 | 0.04 | 0.02 | |
| Stage 2 | -4.8 | 0.05 | 0.02 | |
| Stage 2 | -5 | 0.05 | 0.02 | |
| Stage 2 | -5.2 | 0.05 | 0.01 | |
| Stage 2 | -5.4 | 0.05 | 0 | |
| Stage 2 | -5.6 | 0.05 | -0.02 | |
| Stage 2 | -5.8 | 0.04 | -0.04 | |
| Stage 2 | -6 | 0.03 | -0.04 | |
| Stage 2 | -6.2 | 0.02 | -0.04 | |
| Stage 2 | -6.4 | 0.01 | -0.04 | |
| Stage 2 | -6.6 | 0.01 | -0.04 | |
| Stage 2 | -6.8 | 0 | -0.03 | |
| Stage 2 | -7 | -0.01 | -0.02 | |
| Stage 2 | -7.2 | -0.01 | -0.02 | |
| Stage 2 | -7.4 | -0.01 | -0.01 | |
| Stage 2 | -7.6 | -0.01 | -0.01 | |
| Stage 2 | -7.8 | -0.01 | 0 | |
| Stage 2 | -8 | -0.01 | 0 | |
| Stage 2 | -8.2 | -0.01 | 0 | |
| Stage 2 | -8.4 | -0.01 | 0.01 | |
| Stage 2 | -8.6 | -0.01 | 0.01 | |
| Stage 2 | -8.8 | -0.01 | 0.01 | |
| Stage 2 | -9 | -0.01 | 0.01 | |
| Stage 2 | -9.2 | 0 | 0.01 | |
| Stage 2 | -9.4 | 0 | 0.01 | |
| Stage 2 | -9.6 | 0 | 0.01 | |
| Stage 2 | -9.8 | 0 | 0 | |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 132 di 386 |

| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
|---------|-------|------------------|---------------|
| Stage 2 | -10 | 0 | 0 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 2**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | | |
|---|-------|------------------|---------------|---|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 2 | 0 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 | 0 |
| Stage 2 | -1 | 0.1 | 0.48 | |
| Stage 2 | -1.2 | 0.22 | 0.61 | |
| Stage 2 | -1.4 | 0.29 | 0.35 | |
| Stage 2 | -1.6 | 0.31 | 0.13 | |
| Stage 2 | -1.8 | 0.31 | -0.04 | |
| Stage 2 | -2 | 0.28 | -0.15 | |
| Stage 2 | -2.2 | 0.24 | -0.2 | |
| Stage 2 | -2.4 | 0.19 | -0.23 | |
| Stage 2 | -2.6 | 0.15 | -0.23 | |
| Stage 2 | -2.8 | 0.1 | -0.21 | |
| Stage 2 | -3 | 0.07 | -0.18 | |
| Stage 2 | -3.2 | 0.04 | -0.16 | |
| Stage 2 | -3.4 | 0.01 | -0.12 | |
| Stage 2 | -3.6 | -0.01 | -0.09 | |
| Stage 2 | -3.8 | -0.02 | -0.06 | |
| Stage 2 | -4 | -0.03 | -0.04 | |
| Stage 2 | -4.2 | -0.03 | -0.03 | |
| Stage 2 | -4.4 | -0.04 | -0.03 | |
| Stage 2 | -4.6 | -0.04 | -0.02 | |
| Stage 2 | -4.8 | -0.05 | -0.02 | |
| Stage 2 | -5 | -0.05 | -0.02 | |
| Stage 2 | -5.2 | -0.05 | -0.01 | |
| Stage 2 | -5.4 | -0.05 | 0 | |
| Stage 2 | -5.6 | -0.05 | 0.02 | |
| Stage 2 | -5.8 | -0.04 | 0.04 | |
| Stage 2 | -6 | -0.03 | 0.04 | |
| Stage 2 | -6.2 | -0.02 | 0.04 | |
| Stage 2 | -6.4 | -0.01 | 0.04 | |
| Stage 2 | -6.6 | -0.01 | 0.04 | |
| Stage 2 | -6.8 | 0 | 0.03 | |
| Stage 2 | -7 | 0.01 | 0.02 | |
| Stage 2 | -7.2 | 0.01 | 0.02 | |
| Stage 2 | -7.4 | 0.01 | 0.01 | |
| Stage 2 | -7.6 | 0.01 | 0.01 | |
| Stage 2 | -7.8 | 0.01 | 0 | |
| Stage 2 | -8 | 0.01 | 0 | |
| Stage 2 | -8.2 | 0.01 | 0 | |
| Stage 2 | -8.4 | 0.01 | -0.01 | |
| Stage 2 | -8.6 | 0.01 | -0.01 | |
| Stage 2 | -8.8 | 0.01 | -0.01 | |
| Stage 2 | -9 | 0.01 | -0.01 | |
| Stage 2 | -9.2 | 0 | -0.01 | |
| Stage 2 | -9.4 | 0 | -0.01 | |
| Stage 2 | -9.6 | 0 | -0.01 | |
| Stage 2 | -9.8 | 0 | 0 | |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 134 di 386 |

Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia Muro: RIGHT

| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
|---------|-------|------------------|---------------|
| Stage 2 | -10 | 0 | 0 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
3**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | Muro: LEFT |
|---|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 3 | 0 | 0.26 |
| Stage 3 | -0.2 | 0.25 |
| Stage 3 | -0.4 | 0.24 |
| Stage 3 | -0.6 | 0.23 |
| Stage 3 | -0.8 | 0.22 |
| Stage 3 | -1 | 0.21 |
| Stage 3 | -1.2 | 0.2 |
| Stage 3 | -1.4 | 0.19 |
| Stage 3 | -1.6 | 0.18 |
| Stage 3 | -1.8 | 0.18 |
| Stage 3 | -2 | 0.18 |
| Stage 3 | -2.2 | 0.17 |
| Stage 3 | -2.4 | 0.17 |
| Stage 3 | -2.6 | 0.17 |
| Stage 3 | -2.8 | 0.17 |
| Stage 3 | -3 | 0.17 |
| Stage 3 | -3.2 | 0.17 |
| Stage 3 | -3.4 | 0.17 |
| Stage 3 | -3.6 | 0.17 |
| Stage 3 | -3.8 | 0.17 |
| Stage 3 | -4 | 0.17 |
| Stage 3 | -4.2 | 0.17 |
| Stage 3 | -4.4 | 0.17 |
| Stage 3 | -4.6 | 0.18 |
| Stage 3 | -4.8 | 0.18 |
| Stage 3 | -5 | 0.18 |
| Stage 3 | -5.2 | 0.17 |
| Stage 3 | -5.4 | 0.17 |
| Stage 3 | -5.6 | 0.17 |
| Stage 3 | -5.8 | 0.17 |
| Stage 3 | -6 | 0.17 |
| Stage 3 | -6.2 | 0.17 |
| Stage 3 | -6.4 | 0.17 |
| Stage 3 | -6.6 | 0.17 |
| Stage 3 | -6.8 | 0.17 |
| Stage 3 | -7 | 0.16 |
| Stage 3 | -7.2 | 0.16 |
| Stage 3 | -7.4 | 0.16 |
| Stage 3 | -7.6 | 0.16 |
| Stage 3 | -7.8 | 0.16 |
| Stage 3 | -8 | 0.16 |
| Stage 3 | -8.2 | 0.16 |
| Stage 3 | -8.4 | 0.15 |
| Stage 3 | -8.6 | 0.15 |
| Stage 3 | -8.8 | 0.15 |
| Stage 3 | -9 | 0.15 |
| Stage 3 | -9.2 | 0.15 |
| Stage 3 | -9.4 | 0.15 |
| Stage 3 | -9.6 | 0.15 |
| Stage 3 | -9.8 | 0.15 |
| Stage 3 | -10 | 0.15 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 3**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento Muro: RIGHT | | | |
|---|-------|------------------|--|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 3 | 0 | -0.26 | |
| Stage 3 | -0.2 | -0.25 | |
| Stage 3 | -0.4 | -0.24 | |
| Stage 3 | -0.6 | -0.23 | |
| Stage 3 | -0.8 | -0.22 | |
| Stage 3 | -1 | -0.21 | |
| Stage 3 | -1.2 | -0.2 | |
| Stage 3 | -1.4 | -0.19 | |
| Stage 3 | -1.6 | -0.18 | |
| Stage 3 | -1.8 | -0.18 | |
| Stage 3 | -2 | -0.18 | |
| Stage 3 | -2.2 | -0.17 | |
| Stage 3 | -2.4 | -0.17 | |
| Stage 3 | -2.6 | -0.17 | |
| Stage 3 | -2.8 | -0.17 | |
| Stage 3 | -3 | -0.17 | |
| Stage 3 | -3.2 | -0.17 | |
| Stage 3 | -3.4 | -0.17 | |
| Stage 3 | -3.6 | -0.17 | |
| Stage 3 | -3.8 | -0.17 | |
| Stage 3 | -4 | -0.17 | |
| Stage 3 | -4.2 | -0.17 | |
| Stage 3 | -4.4 | -0.17 | |
| Stage 3 | -4.6 | -0.18 | |
| Stage 3 | -4.8 | -0.18 | |
| Stage 3 | -5 | -0.18 | |
| Stage 3 | -5.2 | -0.17 | |
| Stage 3 | -5.4 | -0.17 | |
| Stage 3 | -5.6 | -0.17 | |
| Stage 3 | -5.8 | -0.17 | |
| Stage 3 | -6 | -0.17 | |
| Stage 3 | -6.2 | -0.17 | |
| Stage 3 | -6.4 | -0.17 | |
| Stage 3 | -6.6 | -0.17 | |
| Stage 3 | -6.8 | -0.17 | |
| Stage 3 | -7 | -0.16 | |
| Stage 3 | -7.2 | -0.16 | |
| Stage 3 | -7.4 | -0.16 | |
| Stage 3 | -7.6 | -0.16 | |
| Stage 3 | -7.8 | -0.16 | |
| Stage 3 | -8 | -0.16 | |
| Stage 3 | -8.2 | -0.16 | |
| Stage 3 | -8.4 | -0.15 | |
| Stage 3 | -8.6 | -0.15 | |
| Stage 3 | -8.8 | -0.15 | |
| Stage 3 | -9 | -0.15 | |
| Stage 3 | -9.2 | -0.15 | |
| Stage 3 | -9.4 | -0.15 | |
| Stage 3 | -9.6 | -0.15 | |
| Stage 3 | -9.8 | -0.15 | |
| Stage 3 | -10 | -0.15 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 3**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | | |
|---|-------|------------------|---------------|---|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 3 | 0 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 | 0 |
| Stage 3 | -1 | -0.1 | -0.48 | |
| Stage 3 | -1.2 | -0.22 | -0.61 | |
| Stage 3 | -1.4 | -0.29 | -0.35 | |
| Stage 3 | -1.6 | -0.31 | -0.13 | |
| Stage 3 | -1.8 | -0.31 | 0.04 | |
| Stage 3 | -2 | -0.28 | 0.15 | |
| Stage 3 | -2.2 | -0.24 | 0.2 | |
| Stage 3 | -2.4 | -0.19 | 0.23 | |
| Stage 3 | -2.6 | -0.15 | 0.23 | |
| Stage 3 | -2.8 | -0.1 | 0.21 | |
| Stage 3 | -3 | -0.07 | 0.18 | |
| Stage 3 | -3.2 | -0.04 | 0.16 | |
| Stage 3 | -3.4 | -0.01 | 0.12 | |
| Stage 3 | -3.6 | 0.01 | 0.09 | |
| Stage 3 | -3.8 | 0.02 | 0.06 | |
| Stage 3 | -4 | 0.03 | 0.04 | |
| Stage 3 | -4.2 | 0.03 | 0.03 | |
| Stage 3 | -4.4 | 0.04 | 0.03 | |
| Stage 3 | -4.6 | 0.04 | 0.02 | |
| Stage 3 | -4.8 | 0.05 | 0.02 | |
| Stage 3 | -5 | 0.05 | 0.02 | |
| Stage 3 | -5.2 | 0.05 | 0.01 | |
| Stage 3 | -5.4 | 0.05 | 0 | |
| Stage 3 | -5.6 | 0.05 | -0.02 | |
| Stage 3 | -5.8 | 0.04 | -0.04 | |
| Stage 3 | -6 | 0.03 | -0.04 | |
| Stage 3 | -6.2 | 0.02 | -0.04 | |
| Stage 3 | -6.4 | 0.01 | -0.04 | |
| Stage 3 | -6.6 | 0.01 | -0.04 | |
| Stage 3 | -6.8 | 0 | -0.03 | |
| Stage 3 | -7 | -0.01 | -0.02 | |
| Stage 3 | -7.2 | -0.01 | -0.02 | |
| Stage 3 | -7.4 | -0.01 | -0.01 | |
| Stage 3 | -7.6 | -0.01 | -0.01 | |
| Stage 3 | -7.8 | -0.01 | 0 | |
| Stage 3 | -8 | -0.01 | 0 | |
| Stage 3 | -8.2 | -0.01 | 0 | |
| Stage 3 | -8.4 | -0.01 | 0.01 | |
| Stage 3 | -8.6 | -0.01 | 0.01 | |
| Stage 3 | -8.8 | -0.01 | 0.01 | |
| Stage 3 | -9 | -0.01 | 0.01 | |
| Stage 3 | -9.2 | 0 | 0.01 | |
| Stage 3 | -9.4 | 0 | 0.01 | |
| Stage 3 | -9.6 | 0 | 0.01 | |
| Stage 3 | -9.8 | 0 | 0 | |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 138 di 386 |

| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
|---------|-------|------------------|---------------|
| Stage 3 | -10 | 0 | 0 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 3**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | | |
|---|-------|------------------|---------------|---|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 3 | 0 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 | 0 |
| Stage 3 | -1 | 0.1 | 0.48 | |
| Stage 3 | -1.2 | 0.22 | 0.61 | |
| Stage 3 | -1.4 | 0.29 | 0.35 | |
| Stage 3 | -1.6 | 0.31 | 0.13 | |
| Stage 3 | -1.8 | 0.31 | -0.04 | |
| Stage 3 | -2 | 0.28 | -0.15 | |
| Stage 3 | -2.2 | 0.24 | -0.2 | |
| Stage 3 | -2.4 | 0.19 | -0.23 | |
| Stage 3 | -2.6 | 0.15 | -0.23 | |
| Stage 3 | -2.8 | 0.1 | -0.21 | |
| Stage 3 | -3 | 0.07 | -0.18 | |
| Stage 3 | -3.2 | 0.04 | -0.16 | |
| Stage 3 | -3.4 | 0.01 | -0.12 | |
| Stage 3 | -3.6 | -0.01 | -0.09 | |
| Stage 3 | -3.8 | -0.02 | -0.06 | |
| Stage 3 | -4 | -0.03 | -0.04 | |
| Stage 3 | -4.2 | -0.03 | -0.03 | |
| Stage 3 | -4.4 | -0.04 | -0.03 | |
| Stage 3 | -4.6 | -0.04 | -0.02 | |
| Stage 3 | -4.8 | -0.05 | -0.02 | |
| Stage 3 | -5 | -0.05 | -0.02 | |
| Stage 3 | -5.2 | -0.05 | -0.01 | |
| Stage 3 | -5.4 | -0.05 | 0 | |
| Stage 3 | -5.6 | -0.05 | 0.02 | |
| Stage 3 | -5.8 | -0.04 | 0.04 | |
| Stage 3 | -6 | -0.03 | 0.04 | |
| Stage 3 | -6.2 | -0.02 | 0.04 | |
| Stage 3 | -6.4 | -0.01 | 0.04 | |
| Stage 3 | -6.6 | -0.01 | 0.04 | |
| Stage 3 | -6.8 | 0 | 0.03 | |
| Stage 3 | -7 | 0.01 | 0.02 | |
| Stage 3 | -7.2 | 0.01 | 0.02 | |
| Stage 3 | -7.4 | 0.01 | 0.01 | |
| Stage 3 | -7.6 | 0.01 | 0.01 | |
| Stage 3 | -7.8 | 0.01 | 0 | |
| Stage 3 | -8 | 0.01 | 0 | |
| Stage 3 | -8.2 | 0.01 | 0 | |
| Stage 3 | -8.4 | 0.01 | -0.01 | |
| Stage 3 | -8.6 | 0.01 | -0.01 | |
| Stage 3 | -8.8 | 0.01 | -0.01 | |
| Stage 3 | -9 | 0.01 | -0.01 | |
| Stage 3 | -9.2 | 0 | -0.01 | |
| Stage 3 | -9.4 | 0 | -0.01 | |
| Stage 3 | -9.6 | 0 | -0.01 | |
| Stage 3 | -9.8 | 0 | 0 | |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 140 di 386 |

Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia Muro: RIGHT

| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
|---------|-------|------------------|---------------|
| Stage 3 | -10 | 0 | 0 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
4**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | | Muro: LEFT |
|---|-------|------------------|------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 4 | 0 | 0.33 | |
| Stage 4 | -0.2 | 0.49 | |
| Stage 4 | -0.4 | 0.64 | |
| Stage 4 | -0.6 | 0.79 | |
| Stage 4 | -0.8 | 0.94 | |
| Stage 4 | -1 | 1.07 | |
| Stage 4 | -1.2 | 1.2 | |
| Stage 4 | -1.4 | 1.31 | |
| Stage 4 | -1.6 | 1.41 | |
| Stage 4 | -1.8 | 1.49 | |
| Stage 4 | -2 | 1.54 | |
| Stage 4 | -2.2 | 1.58 | |
| Stage 4 | -2.4 | 1.6 | |
| Stage 4 | -2.6 | 1.59 | |
| Stage 4 | -2.8 | 1.57 | |
| Stage 4 | -3 | 1.52 | |
| Stage 4 | -3.2 | 1.47 | |
| Stage 4 | -3.4 | 1.4 | |
| Stage 4 | -3.6 | 1.33 | |
| Stage 4 | -3.8 | 1.26 | |
| Stage 4 | -4 | 1.2 | |
| Stage 4 | -4.2 | 1.14 | |
| Stage 4 | -4.4 | 1.08 | |
| Stage 4 | -4.6 | 1.03 | |
| Stage 4 | -4.8 | 0.99 | |
| Stage 4 | -5 | 0.95 | |
| Stage 4 | -5.2 | 0.92 | |
| Stage 4 | -5.4 | 0.89 | |
| Stage 4 | -5.6 | 0.87 | |
| Stage 4 | -5.8 | 0.86 | |
| Stage 4 | -6 | 0.84 | |
| Stage 4 | -6.2 | 0.83 | |
| Stage 4 | -6.4 | 0.82 | |
| Stage 4 | -6.6 | 0.82 | |
| Stage 4 | -6.8 | 0.81 | |
| Stage 4 | -7 | 0.81 | |
| Stage 4 | -7.2 | 0.8 | |
| Stage 4 | -7.4 | 0.8 | |
| Stage 4 | -7.6 | 0.8 | |
| Stage 4 | -7.8 | 0.8 | |
| Stage 4 | -8 | 0.79 | |
| Stage 4 | -8.2 | 0.79 | |
| Stage 4 | -8.4 | 0.79 | |
| Stage 4 | -8.6 | 0.79 | |
| Stage 4 | -8.8 | 0.78 | |
| Stage 4 | -9 | 0.78 | |
| Stage 4 | -9.2 | 0.78 | |
| Stage 4 | -9.4 | 0.78 | |
| Stage 4 | -9.6 | 0.78 | |
| Stage 4 | -9.8 | 0.77 | |
| Stage 4 | -10 | 0.77 | |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 4**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento Muro: RIGHT | | | |
|---|-------|------------------|--|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 4 | 0 | -0.33 | |
| Stage 4 | -0.2 | -0.49 | |
| Stage 4 | -0.4 | -0.64 | |
| Stage 4 | -0.6 | -0.79 | |
| Stage 4 | -0.8 | -0.94 | |
| Stage 4 | -1 | -1.07 | |
| Stage 4 | -1.2 | -1.2 | |
| Stage 4 | -1.4 | -1.31 | |
| Stage 4 | -1.6 | -1.41 | |
| Stage 4 | -1.8 | -1.49 | |
| Stage 4 | -2 | -1.54 | |
| Stage 4 | -2.2 | -1.58 | |
| Stage 4 | -2.4 | -1.6 | |
| Stage 4 | -2.6 | -1.59 | |
| Stage 4 | -2.8 | -1.57 | |
| Stage 4 | -3 | -1.52 | |
| Stage 4 | -3.2 | -1.47 | |
| Stage 4 | -3.4 | -1.4 | |
| Stage 4 | -3.6 | -1.33 | |
| Stage 4 | -3.8 | -1.26 | |
| Stage 4 | -4 | -1.2 | |
| Stage 4 | -4.2 | -1.14 | |
| Stage 4 | -4.4 | -1.08 | |
| Stage 4 | -4.6 | -1.03 | |
| Stage 4 | -4.8 | -0.99 | |
| Stage 4 | -5 | -0.95 | |
| Stage 4 | -5.2 | -0.92 | |
| Stage 4 | -5.4 | -0.89 | |
| Stage 4 | -5.6 | -0.87 | |
| Stage 4 | -5.8 | -0.86 | |
| Stage 4 | -6 | -0.84 | |
| Stage 4 | -6.2 | -0.83 | |
| Stage 4 | -6.4 | -0.82 | |
| Stage 4 | -6.6 | -0.82 | |
| Stage 4 | -6.8 | -0.81 | |
| Stage 4 | -7 | -0.81 | |
| Stage 4 | -7.2 | -0.8 | |
| Stage 4 | -7.4 | -0.8 | |
| Stage 4 | -7.6 | -0.8 | |
| Stage 4 | -7.8 | -0.8 | |
| Stage 4 | -8 | -0.79 | |
| Stage 4 | -8.2 | -0.79 | |
| Stage 4 | -8.4 | -0.79 | |
| Stage 4 | -8.6 | -0.79 | |
| Stage 4 | -8.8 | -0.78 | |
| Stage 4 | -9 | -0.78 | |
| Stage 4 | -9.2 | -0.78 | |
| Stage 4 | -9.4 | -0.78 | |
| Stage 4 | -9.6 | -0.78 | |
| Stage 4 | -9.8 | -0.77 | |
| Stage 4 | -10 | -0.77 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 4**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | 2.28 |
| Stage 4 | -0.2 | 0.46 | 2.28 |
| Stage 4 | -0.4 | 0.91 | 2.28 |
| Stage 4 | -0.6 | 1.37 | 2.28 |
| Stage 4 | -0.8 | 1.83 | 2.28 |
| Stage 4 | -1 | 2.28 | 2.28 |
| Stage 4 | -1.2 | 2.74 | 2.28 |
| Stage 4 | -1.4 | 3.2 | 2.28 |
| Stage 4 | -1.6 | 3.65 | 2.28 |
| Stage 4 | -1.8 | 4.09 | 2.18 |
| Stage 4 | -2 | 4.45 | 1.8 |
| Stage 4 | -2.2 | 4.67 | 1.1 |
| Stage 4 | -2.4 | 4.68 | 0.07 |
| Stage 4 | -2.6 | 4.42 | -1.33 |
| Stage 4 | -2.8 | 3.79 | -3.14 |
| Stage 4 | -3 | 2.71 | -5.4 |
| Stage 4 | -3.2 | 1.62 | -5.46 |
| Stage 4 | -3.4 | 0.7 | -4.6 |
| Stage 4 | -3.6 | -0.03 | -3.64 |
| Stage 4 | -3.8 | -0.58 | -2.72 |
| Stage 4 | -4 | -0.96 | -1.9 |
| Stage 4 | -4.2 | -1.2 | -1.2 |
| Stage 4 | -4.4 | -1.32 | -0.62 |
| Stage 4 | -4.6 | -1.35 | -0.16 |
| Stage 4 | -4.8 | -1.31 | 0.18 |
| Stage 4 | -5 | -1.23 | 0.43 |
| Stage 4 | -5.2 | -1.11 | 0.58 |
| Stage 4 | -5.4 | -0.98 | 0.66 |
| Stage 4 | -5.6 | -0.84 | 0.68 |
| Stage 4 | -5.8 | -0.71 | 0.66 |
| Stage 4 | -6 | -0.59 | 0.62 |
| Stage 4 | -6.2 | -0.48 | 0.56 |
| Stage 4 | -6.4 | -0.38 | 0.5 |
| Stage 4 | -6.6 | -0.29 | 0.43 |
| Stage 4 | -6.8 | -0.22 | 0.36 |
| Stage 4 | -7 | -0.16 | 0.3 |
| Stage 4 | -7.2 | -0.11 | 0.24 |
| Stage 4 | -7.4 | -0.08 | 0.19 |
| Stage 4 | -7.6 | -0.05 | 0.14 |
| Stage 4 | -7.8 | -0.03 | 0.1 |
| Stage 4 | -8 | -0.01 | 0.07 |
| Stage 4 | -8.2 | 0 | 0.05 |
| Stage 4 | -8.4 | 0 | 0.03 |
| Stage 4 | -8.6 | 0.01 | 0.01 |
| Stage 4 | -8.8 | 0.01 | 0 |
| Stage 4 | -9 | 0.01 | 0 |
| Stage 4 | -9.2 | 0 | -0.01 |
| Stage 4 | -9.4 | 0 | -0.01 |
| Stage 4 | -9.6 | 0 | -0.01 |
| Stage 4 | -9.8 | 0 | 0 |
| Stage 4 | -10 | 0 | 0 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 4**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | -2.28 |
| Stage 4 | -0.2 | -0.46 | -2.28 |
| Stage 4 | -0.4 | -0.91 | -2.28 |
| Stage 4 | -0.6 | -1.37 | -2.28 |
| Stage 4 | -0.8 | -1.83 | -2.28 |
| Stage 4 | -1 | -2.28 | -2.28 |
| Stage 4 | -1.2 | -2.74 | -2.28 |
| Stage 4 | -1.4 | -3.2 | -2.28 |
| Stage 4 | -1.6 | -3.65 | -2.28 |
| Stage 4 | -1.8 | -4.09 | -2.18 |
| Stage 4 | -2 | -4.45 | -1.8 |
| Stage 4 | -2.2 | -4.67 | -1.1 |
| Stage 4 | -2.4 | -4.68 | -0.07 |
| Stage 4 | -2.6 | -4.42 | 1.33 |
| Stage 4 | -2.8 | -3.79 | 3.14 |
| Stage 4 | -3 | -2.71 | 5.4 |
| Stage 4 | -3.2 | -1.62 | 5.46 |
| Stage 4 | -3.4 | -0.7 | 4.6 |
| Stage 4 | -3.6 | 0.03 | 3.64 |
| Stage 4 | -3.8 | 0.58 | 2.72 |
| Stage 4 | -4 | 0.96 | 1.9 |
| Stage 4 | -4.2 | 1.2 | 1.2 |
| Stage 4 | -4.4 | 1.32 | 0.62 |
| Stage 4 | -4.6 | 1.35 | 0.16 |
| Stage 4 | -4.8 | 1.31 | -0.18 |
| Stage 4 | -5 | 1.23 | -0.43 |
| Stage 4 | -5.2 | 1.11 | -0.58 |
| Stage 4 | -5.4 | 0.98 | -0.66 |
| Stage 4 | -5.6 | 0.84 | -0.68 |
| Stage 4 | -5.8 | 0.71 | -0.66 |
| Stage 4 | -6 | 0.59 | -0.62 |
| Stage 4 | -6.2 | 0.48 | -0.56 |
| Stage 4 | -6.4 | 0.38 | -0.5 |
| Stage 4 | -6.6 | 0.29 | -0.43 |
| Stage 4 | -6.8 | 0.22 | -0.36 |
| Stage 4 | -7 | 0.16 | -0.3 |
| Stage 4 | -7.2 | 0.11 | -0.24 |
| Stage 4 | -7.4 | 0.08 | -0.19 |
| Stage 4 | -7.6 | 0.05 | -0.14 |
| Stage 4 | -7.8 | 0.03 | -0.1 |
| Stage 4 | -8 | 0.01 | -0.07 |
| Stage 4 | -8.2 | 0 | -0.05 |
| Stage 4 | -8.4 | 0 | -0.03 |
| Stage 4 | -8.6 | -0.01 | -0.01 |
| Stage 4 | -8.8 | -0.01 | 0 |
| Stage 4 | -9 | -0.01 | 0 |
| Stage 4 | -9.2 | 0 | 0.01 |
| Stage 4 | -9.4 | 0 | 0.01 |
| Stage 4 | -9.6 | 0 | 0.01 |
| Stage 4 | -9.8 | 0 | 0 |
| Stage 4 | -10 | 0 | 0 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
5**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | | Muro: LEFT |
|---|-------|------------------|------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 5 | 0 | 0.39 | |
| Stage 5 | -0.2 | 0.8 | |
| Stage 5 | -0.4 | 1.2 | |
| Stage 5 | -0.6 | 1.59 | |
| Stage 5 | -0.8 | 1.97 | |
| Stage 5 | -1 | 2.33 | |
| Stage 5 | -1.2 | 2.67 | |
| Stage 5 | -1.4 | 2.99 | |
| Stage 5 | -1.6 | 3.27 | |
| Stage 5 | -1.8 | 3.52 | |
| Stage 5 | -2 | 3.73 | |
| Stage 5 | -2.2 | 3.9 | |
| Stage 5 | -2.4 | 4.03 | |
| Stage 5 | -2.6 | 4.1 | |
| Stage 5 | -2.8 | 4.13 | |
| Stage 5 | -3 | 4.1 | |
| Stage 5 | -3.2 | 4.02 | |
| Stage 5 | -3.4 | 3.9 | |
| Stage 5 | -3.6 | 3.73 | |
| Stage 5 | -3.8 | 3.53 | |
| Stage 5 | -4 | 3.31 | |
| Stage 5 | -4.2 | 3.07 | |
| Stage 5 | -4.4 | 2.83 | |
| Stage 5 | -4.6 | 2.6 | |
| Stage 5 | -4.8 | 2.38 | |
| Stage 5 | -5 | 2.18 | |
| Stage 5 | -5.2 | 2.01 | |
| Stage 5 | -5.4 | 1.85 | |
| Stage 5 | -5.6 | 1.72 | |
| Stage 5 | -5.8 | 1.61 | |
| Stage 5 | -6 | 1.51 | |
| Stage 5 | -6.2 | 1.44 | |
| Stage 5 | -6.4 | 1.38 | |
| Stage 5 | -6.6 | 1.33 | |
| Stage 5 | -6.8 | 1.3 | |
| Stage 5 | -7 | 1.27 | |
| Stage 5 | -7.2 | 1.25 | |
| Stage 5 | -7.4 | 1.24 | |
| Stage 5 | -7.6 | 1.23 | |
| Stage 5 | -7.8 | 1.23 | |
| Stage 5 | -8 | 1.23 | |
| Stage 5 | -8.2 | 1.23 | |
| Stage 5 | -8.4 | 1.23 | |
| Stage 5 | -8.6 | 1.23 | |
| Stage 5 | -8.8 | 1.23 | |
| Stage 5 | -9 | 1.23 | |
| Stage 5 | -9.2 | 1.24 | |
| Stage 5 | -9.4 | 1.24 | |
| Stage 5 | -9.6 | 1.24 | |
| Stage 5 | -9.8 | 1.24 | |
| Stage 5 | -10 | 1.24 | |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 5**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento Muro: RIGHT | | | |
|---|-------|------------------|--|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 5 | 0 | -0.39 | |
| Stage 5 | -0.2 | -0.8 | |
| Stage 5 | -0.4 | -1.2 | |
| Stage 5 | -0.6 | -1.59 | |
| Stage 5 | -0.8 | -1.97 | |
| Stage 5 | -1 | -2.33 | |
| Stage 5 | -1.2 | -2.67 | |
| Stage 5 | -1.4 | -2.99 | |
| Stage 5 | -1.6 | -3.27 | |
| Stage 5 | -1.8 | -3.52 | |
| Stage 5 | -2 | -3.73 | |
| Stage 5 | -2.2 | -3.9 | |
| Stage 5 | -2.4 | -4.03 | |
| Stage 5 | -2.6 | -4.1 | |
| Stage 5 | -2.8 | -4.13 | |
| Stage 5 | -3 | -4.1 | |
| Stage 5 | -3.2 | -4.02 | |
| Stage 5 | -3.4 | -3.9 | |
| Stage 5 | -3.6 | -3.73 | |
| Stage 5 | -3.8 | -3.53 | |
| Stage 5 | -4 | -3.31 | |
| Stage 5 | -4.2 | -3.07 | |
| Stage 5 | -4.4 | -2.83 | |
| Stage 5 | -4.6 | -2.6 | |
| Stage 5 | -4.8 | -2.38 | |
| Stage 5 | -5 | -2.18 | |
| Stage 5 | -5.2 | -2.01 | |
| Stage 5 | -5.4 | -1.85 | |
| Stage 5 | -5.6 | -1.72 | |
| Stage 5 | -5.8 | -1.61 | |
| Stage 5 | -6 | -1.51 | |
| Stage 5 | -6.2 | -1.44 | |
| Stage 5 | -6.4 | -1.38 | |
| Stage 5 | -6.6 | -1.33 | |
| Stage 5 | -6.8 | -1.3 | |
| Stage 5 | -7 | -1.27 | |
| Stage 5 | -7.2 | -1.25 | |
| Stage 5 | -7.4 | -1.24 | |
| Stage 5 | -7.6 | -1.23 | |
| Stage 5 | -7.8 | -1.23 | |
| Stage 5 | -8 | -1.23 | |
| Stage 5 | -8.2 | -1.23 | |
| Stage 5 | -8.4 | -1.23 | |
| Stage 5 | -8.6 | -1.23 | |
| Stage 5 | -8.8 | -1.23 | |
| Stage 5 | -9 | -1.23 | |
| Stage 5 | -9.2 | -1.24 | |
| Stage 5 | -9.4 | -1.24 | |
| Stage 5 | -9.6 | -1.24 | |
| Stage 5 | -9.8 | -1.24 | |
| Stage 5 | -10 | -1.24 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 5**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | | |
|---|-------|------------------|---------------|--|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 5 | 0 | 0 | 4.48 | |
| Stage 5 | -0.2 | 0.9 | 4.48 | |
| Stage 5 | -0.4 | 1.79 | 4.48 | |
| Stage 5 | -0.6 | 2.69 | 4.48 | |
| Stage 5 | -0.8 | 3.59 | 4.48 | |
| Stage 5 | -1 | 4.48 | 4.48 | |
| Stage 5 | -1.2 | 5.38 | 4.48 | |
| Stage 5 | -1.4 | 6.28 | 4.48 | |
| Stage 5 | -1.6 | 7.18 | 4.48 | |
| Stage 5 | -1.8 | 8.07 | 4.48 | |
| Stage 5 | -2 | 8.92 | 4.25 | |
| Stage 5 | -2.2 | 9.67 | 3.73 | |
| Stage 5 | -2.4 | 10.26 | 2.93 | |
| Stage 5 | -2.6 | 10.63 | 1.86 | |
| Stage 5 | -2.8 | 10.73 | 0.51 | |
| Stage 5 | -3 | 10.51 | -1.12 | |
| Stage 5 | -3.2 | 9.9 | -3.01 | |
| Stage 5 | -3.4 | 8.86 | -5.19 | |
| Stage 5 | -3.6 | 7.34 | -7.64 | |
| Stage 5 | -3.8 | 5.27 | -10.36 | |
| Stage 5 | -4 | 2.6 | -13.34 | |
| Stage 5 | -4.2 | 0.19 | -12.04 | |
| Stage 5 | -4.4 | -1.72 | -9.54 | |
| Stage 5 | -4.6 | -3.08 | -6.83 | |
| Stage 5 | -4.8 | -3.98 | -4.46 | |
| Stage 5 | -5 | -4.48 | -2.51 | |
| Stage 5 | -5.2 | -4.67 | -0.96 | |
| Stage 5 | -5.4 | -4.63 | 0.22 | |
| Stage 5 | -5.6 | -4.41 | 1.08 | |
| Stage 5 | -5.8 | -4.08 | 1.66 | |
| Stage 5 | -6 | -3.68 | 2.02 | |
| Stage 5 | -6.2 | -3.24 | 2.21 | |
| Stage 5 | -6.4 | -2.79 | 2.25 | |
| Stage 5 | -6.6 | -2.35 | 2.19 | |
| Stage 5 | -6.8 | -1.94 | 2.06 | |
| Stage 5 | -7 | -1.56 | 1.88 | |
| Stage 5 | -7.2 | -1.23 | 1.66 | |
| Stage 5 | -7.4 | -0.94 | 1.44 | |
| Stage 5 | -7.6 | -0.7 | 1.21 | |
| Stage 5 | -7.8 | -0.5 | 0.99 | |
| Stage 5 | -8 | -0.34 | 0.79 | |
| Stage 5 | -8.2 | -0.22 | 0.61 | |
| Stage 5 | -8.4 | -0.13 | 0.45 | |
| Stage 5 | -8.6 | -0.06 | 0.32 | |
| Stage 5 | -8.8 | -0.02 | 0.21 | |
| Stage 5 | -9 | 0 | 0.12 | |
| Stage 5 | -9.2 | 0.01 | 0.05 | |
| Stage 5 | -9.4 | 0.01 | 0.01 | |
| Stage 5 | -9.6 | 0.01 | -0.02 | |
| Stage 5 | -9.8 | 0 | -0.03 | |
| Stage 5 | -10 | 0 | -0.01 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 5**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 5 | 0 | 0 | -4.48 |
| Stage 5 | -0.2 | -0.9 | -4.48 |
| Stage 5 | -0.4 | -1.79 | -4.48 |
| Stage 5 | -0.6 | -2.69 | -4.48 |
| Stage 5 | -0.8 | -3.59 | -4.48 |
| Stage 5 | -1 | -4.48 | -4.48 |
| Stage 5 | -1.2 | -5.38 | -4.48 |
| Stage 5 | -1.4 | -6.28 | -4.48 |
| Stage 5 | -1.6 | -7.18 | -4.48 |
| Stage 5 | -1.8 | -8.07 | -4.48 |
| Stage 5 | -2 | -8.92 | -4.25 |
| Stage 5 | -2.2 | -9.67 | -3.73 |
| Stage 5 | -2.4 | -10.26 | -2.93 |
| Stage 5 | -2.6 | -10.63 | -1.86 |
| Stage 5 | -2.8 | -10.73 | -0.51 |
| Stage 5 | -3 | -10.51 | 1.12 |
| Stage 5 | -3.2 | -9.9 | 3.01 |
| Stage 5 | -3.4 | -8.86 | 5.19 |
| Stage 5 | -3.6 | -7.34 | 7.64 |
| Stage 5 | -3.8 | -5.27 | 10.36 |
| Stage 5 | -4 | -2.6 | 13.34 |
| Stage 5 | -4.2 | -0.19 | 12.04 |
| Stage 5 | -4.4 | 1.72 | 9.54 |
| Stage 5 | -4.6 | 3.08 | 6.83 |
| Stage 5 | -4.8 | 3.98 | 4.46 |
| Stage 5 | -5 | 4.48 | 2.51 |
| Stage 5 | -5.2 | 4.67 | 0.96 |
| Stage 5 | -5.4 | 4.63 | -0.22 |
| Stage 5 | -5.6 | 4.41 | -1.08 |
| Stage 5 | -5.8 | 4.08 | -1.66 |
| Stage 5 | -6 | 3.68 | -2.02 |
| Stage 5 | -6.2 | 3.24 | -2.21 |
| Stage 5 | -6.4 | 2.79 | -2.25 |
| Stage 5 | -6.6 | 2.35 | -2.19 |
| Stage 5 | -6.8 | 1.94 | -2.06 |
| Stage 5 | -7 | 1.56 | -1.88 |
| Stage 5 | -7.2 | 1.23 | -1.66 |
| Stage 5 | -7.4 | 0.94 | -1.44 |
| Stage 5 | -7.6 | 0.7 | -1.21 |
| Stage 5 | -7.8 | 0.5 | -0.99 |
| Stage 5 | -8 | 0.34 | -0.79 |
| Stage 5 | -8.2 | 0.22 | -0.61 |
| Stage 5 | -8.4 | 0.13 | -0.45 |
| Stage 5 | -8.6 | 0.06 | -0.32 |
| Stage 5 | -8.8 | 0.02 | -0.21 |
| Stage 5 | -9 | 0 | -0.12 |
| Stage 5 | -9.2 | -0.01 | -0.05 |
| Stage 5 | -9.4 | -0.01 | -0.01 |
| Stage 5 | -9.6 | -0.01 | 0.02 |
| Stage 5 | -9.8 | 0 | 0.03 |
| Stage 5 | -10 | 0 | 0.01 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
6**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | Muro: LEFT |
|---|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 6 | 0 | 0.59 |
| Stage 6 | -0.2 | 2.05 |
| Stage 6 | -0.4 | 3.49 |
| Stage 6 | -0.6 | 4.91 |
| Stage 6 | -0.8 | 6.3 |
| Stage 6 | -1 | 7.65 |
| Stage 6 | -1.2 | 8.94 |
| Stage 6 | -1.4 | 10.17 |
| Stage 6 | -1.6 | 11.32 |
| Stage 6 | -1.8 | 12.39 |
| Stage 6 | -2 | 13.36 |
| Stage 6 | -2.2 | 14.23 |
| Stage 6 | -2.4 | 14.97 |
| Stage 6 | -2.6 | 15.59 |
| Stage 6 | -2.8 | 16.08 |
| Stage 6 | -3 | 16.43 |
| Stage 6 | -3.2 | 16.63 |
| Stage 6 | -3.4 | 16.68 |
| Stage 6 | -3.6 | 16.58 |
| Stage 6 | -3.8 | 16.33 |
| Stage 6 | -4 | 15.93 |
| Stage 6 | -4.2 | 15.39 |
| Stage 6 | -4.4 | 14.72 |
| Stage 6 | -4.6 | 13.93 |
| Stage 6 | -4.8 | 13.04 |
| Stage 6 | -5 | 12.07 |
| Stage 6 | -5.2 | 11.04 |
| Stage 6 | -5.4 | 9.98 |
| Stage 6 | -5.6 | 8.93 |
| Stage 6 | -5.8 | 7.91 |
| Stage 6 | -6 | 6.94 |
| Stage 6 | -6.2 | 6.05 |
| Stage 6 | -6.4 | 5.24 |
| Stage 6 | -6.6 | 4.53 |
| Stage 6 | -6.8 | 3.91 |
| Stage 6 | -7 | 3.38 |
| Stage 6 | -7.2 | 2.94 |
| Stage 6 | -7.4 | 2.58 |
| Stage 6 | -7.6 | 2.29 |
| Stage 6 | -7.8 | 2.07 |
| Stage 6 | -8 | 1.9 |
| Stage 6 | -8.2 | 1.77 |
| Stage 6 | -8.4 | 1.68 |
| Stage 6 | -8.6 | 1.62 |
| Stage 6 | -8.8 | 1.59 |
| Stage 6 | -9 | 1.56 |
| Stage 6 | -9.2 | 1.55 |
| Stage 6 | -9.4 | 1.55 |
| Stage 6 | -9.6 | 1.55 |
| Stage 6 | -9.8 | 1.56 |
| Stage 6 | -10 | 1.56 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 6**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento Muro: RIGHT | | | |
|---|-------|------------------|--|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 6 | 0 | -0.59 | |
| Stage 6 | -0.2 | -2.05 | |
| Stage 6 | -0.4 | -3.49 | |
| Stage 6 | -0.6 | -4.91 | |
| Stage 6 | -0.8 | -6.3 | |
| Stage 6 | -1 | -7.65 | |
| Stage 6 | -1.2 | -8.94 | |
| Stage 6 | -1.4 | -10.17 | |
| Stage 6 | -1.6 | -11.32 | |
| Stage 6 | -1.8 | -12.39 | |
| Stage 6 | -2 | -13.36 | |
| Stage 6 | -2.2 | -14.23 | |
| Stage 6 | -2.4 | -14.97 | |
| Stage 6 | -2.6 | -15.59 | |
| Stage 6 | -2.8 | -16.08 | |
| Stage 6 | -3 | -16.43 | |
| Stage 6 | -3.2 | -16.63 | |
| Stage 6 | -3.4 | -16.68 | |
| Stage 6 | -3.6 | -16.58 | |
| Stage 6 | -3.8 | -16.33 | |
| Stage 6 | -4 | -15.93 | |
| Stage 6 | -4.2 | -15.39 | |
| Stage 6 | -4.4 | -14.72 | |
| Stage 6 | -4.6 | -13.93 | |
| Stage 6 | -4.8 | -13.04 | |
| Stage 6 | -5 | -12.07 | |
| Stage 6 | -5.2 | -11.04 | |
| Stage 6 | -5.4 | -9.98 | |
| Stage 6 | -5.6 | -8.93 | |
| Stage 6 | -5.8 | -7.91 | |
| Stage 6 | -6 | -6.94 | |
| Stage 6 | -6.2 | -6.05 | |
| Stage 6 | -6.4 | -5.24 | |
| Stage 6 | -6.6 | -4.53 | |
| Stage 6 | -6.8 | -3.91 | |
| Stage 6 | -7 | -3.38 | |
| Stage 6 | -7.2 | -2.94 | |
| Stage 6 | -7.4 | -2.58 | |
| Stage 6 | -7.6 | -2.29 | |
| Stage 6 | -7.8 | -2.07 | |
| Stage 6 | -8 | -1.9 | |
| Stage 6 | -8.2 | -1.77 | |
| Stage 6 | -8.4 | -1.68 | |
| Stage 6 | -8.6 | -1.62 | |
| Stage 6 | -8.8 | -1.59 | |
| Stage 6 | -9 | -1.56 | |
| Stage 6 | -9.2 | -1.55 | |
| Stage 6 | -9.4 | -1.55 | |
| Stage 6 | -9.6 | -1.55 | |
| Stage 6 | -9.8 | -1.56 | |
| Stage 6 | -10 | -1.56 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 6**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | 11.22 |
| Stage 6 | -0.2 | 2.24 | 11.22 |
| Stage 6 | -0.4 | 4.49 | 11.22 |
| Stage 6 | -0.6 | 6.73 | 11.22 |
| Stage 6 | -0.8 | 8.97 | 11.22 |
| Stage 6 | -1 | 11.22 | 11.22 |
| Stage 6 | -1.2 | 13.46 | 11.22 |
| Stage 6 | -1.4 | 15.7 | 11.22 |
| Stage 6 | -1.6 | 17.95 | 11.22 |
| Stage 6 | -1.8 | 20.19 | 11.22 |
| Stage 6 | -2 | 22.39 | 10.98 |
| Stage 6 | -2.2 | 24.48 | 10.46 |
| Stage 6 | -2.4 | 26.41 | 9.67 |
| Stage 6 | -2.6 | 28.13 | 8.59 |
| Stage 6 | -2.8 | 29.58 | 7.24 |
| Stage 6 | -3 | 30.7 | 5.62 |
| Stage 6 | -3.2 | 31.45 | 3.72 |
| Stage 6 | -3.4 | 31.76 | 1.54 |
| Stage 6 | -3.6 | 31.58 | -0.91 |
| Stage 6 | -3.8 | 30.85 | -3.62 |
| Stage 6 | -4 | 29.53 | -6.61 |
| Stage 6 | -4.2 | 27.56 | -9.86 |
| Stage 6 | -4.4 | 24.88 | -13.39 |
| Stage 6 | -4.6 | 21.44 | -17.18 |
| Stage 6 | -4.8 | 17.2 | -21.24 |
| Stage 6 | -5 | 12.08 | -25.57 |
| Stage 6 | -5.2 | 6.05 | -30.16 |
| Stage 6 | -5.4 | -0.96 | -35.03 |
| Stage 6 | -5.6 | -7.05 | -30.47 |
| Stage 6 | -5.8 | -11.87 | -24.12 |
| Stage 6 | -6 | -15.48 | -18.06 |
| Stage 6 | -6.2 | -17.95 | -12.31 |
| Stage 6 | -6.4 | -19.36 | -7.08 |
| Stage 6 | -6.6 | -19.83 | -2.35 |
| Stage 6 | -6.8 | -19.44 | 1.95 |
| Stage 6 | -7 | -18.4 | 5.19 |
| Stage 6 | -7.2 | -16.92 | 7.42 |
| Stage 6 | -7.4 | -15.16 | 8.8 |
| Stage 6 | -7.6 | -13.26 | 9.5 |
| Stage 6 | -7.8 | -11.33 | 9.66 |
| Stage 6 | -8 | -9.44 | 9.42 |
| Stage 6 | -8.2 | -7.67 | 8.87 |
| Stage 6 | -8.4 | -6.05 | 8.12 |
| Stage 6 | -8.6 | -4.6 | 7.23 |
| Stage 6 | -8.8 | -3.35 | 6.25 |
| Stage 6 | -9 | -2.3 | 5.25 |
| Stage 6 | -9.2 | -1.45 | 4.24 |
| Stage 6 | -9.4 | -0.81 | 3.24 |
| Stage 6 | -9.6 | -0.35 | 2.27 |
| Stage 6 | -9.8 | -0.09 | 1.33 |
| Stage 6 | -10 | 0 | 0.43 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 6**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | -11.22 |
| Stage 6 | -0.2 | -2.24 | -11.22 |
| Stage 6 | -0.4 | -4.49 | -11.22 |
| Stage 6 | -0.6 | -6.73 | -11.22 |
| Stage 6 | -0.8 | -8.97 | -11.22 |
| Stage 6 | -1 | -11.22 | -11.22 |
| Stage 6 | -1.2 | -13.46 | -11.22 |
| Stage 6 | -1.4 | -15.7 | -11.22 |
| Stage 6 | -1.6 | -17.95 | -11.22 |
| Stage 6 | -1.8 | -20.19 | -11.22 |
| Stage 6 | -2 | -22.39 | -10.98 |
| Stage 6 | -2.2 | -24.48 | -10.46 |
| Stage 6 | -2.4 | -26.41 | -9.67 |
| Stage 6 | -2.6 | -28.13 | -8.59 |
| Stage 6 | -2.8 | -29.58 | -7.24 |
| Stage 6 | -3 | -30.7 | -5.62 |
| Stage 6 | -3.2 | -31.45 | -3.72 |
| Stage 6 | -3.4 | -31.76 | -1.54 |
| Stage 6 | -3.6 | -31.58 | 0.91 |
| Stage 6 | -3.8 | -30.85 | 3.62 |
| Stage 6 | -4 | -29.53 | 6.61 |
| Stage 6 | -4.2 | -27.56 | 9.86 |
| Stage 6 | -4.4 | -24.88 | 13.39 |
| Stage 6 | -4.6 | -21.44 | 17.18 |
| Stage 6 | -4.8 | -17.2 | 21.24 |
| Stage 6 | -5 | -12.08 | 25.57 |
| Stage 6 | -5.2 | -6.05 | 30.16 |
| Stage 6 | -5.4 | 0.96 | 35.03 |
| Stage 6 | -5.6 | 7.05 | 30.47 |
| Stage 6 | -5.8 | 11.87 | 24.12 |
| Stage 6 | -6 | 15.48 | 18.06 |
| Stage 6 | -6.2 | 17.95 | 12.31 |
| Stage 6 | -6.4 | 19.36 | 7.08 |
| Stage 6 | -6.6 | 19.83 | 2.35 |
| Stage 6 | -6.8 | 19.44 | -1.95 |
| Stage 6 | -7 | 18.4 | -5.19 |
| Stage 6 | -7.2 | 16.92 | -7.42 |
| Stage 6 | -7.4 | 15.16 | -8.8 |
| Stage 6 | -7.6 | 13.26 | -9.5 |
| Stage 6 | -7.8 | 11.33 | -9.66 |
| Stage 6 | -8 | 9.44 | -9.42 |
| Stage 6 | -8.2 | 7.67 | -8.87 |
| Stage 6 | -8.4 | 6.05 | -8.12 |
| Stage 6 | -8.6 | 4.6 | -7.23 |
| Stage 6 | -8.8 | 3.35 | -6.25 |
| Stage 6 | -9 | 2.3 | -5.25 |
| Stage 6 | -9.2 | 1.45 | -4.24 |
| Stage 6 | -9.4 | 0.81 | -3.24 |
| Stage 6 | -9.6 | 0.35 | -2.27 |
| Stage 6 | -9.8 | 0.09 | -1.33 |
| Stage 6 | -10 | 0 | -0.43 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
7**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | | Muro: LEFT |
|---|-------|------------------|------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 7 | 0 | 0.68 | |
| Stage 7 | -0.2 | 2.79 | |
| Stage 7 | -0.4 | 4.88 | |
| Stage 7 | -0.6 | 6.94 | |
| Stage 7 | -0.8 | 8.97 | |
| Stage 7 | -1 | 10.93 | |
| Stage 7 | -1.2 | 12.83 | |
| Stage 7 | -1.4 | 14.65 | |
| Stage 7 | -1.6 | 16.37 | |
| Stage 7 | -1.8 | 17.98 | |
| Stage 7 | -2 | 19.47 | |
| Stage 7 | -2.2 | 20.82 | |
| Stage 7 | -2.4 | 22.03 | |
| Stage 7 | -2.6 | 23.07 | |
| Stage 7 | -2.8 | 23.94 | |
| Stage 7 | -3 | 24.62 | |
| Stage 7 | -3.2 | 25.11 | |
| Stage 7 | -3.4 | 25.41 | |
| Stage 7 | -3.6 | 25.51 | |
| Stage 7 | -3.8 | 25.4 | |
| Stage 7 | -4 | 25.08 | |
| Stage 7 | -4.2 | 24.57 | |
| Stage 7 | -4.4 | 23.86 | |
| Stage 7 | -4.6 | 22.98 | |
| Stage 7 | -4.8 | 21.91 | |
| Stage 7 | -5 | 20.7 | |
| Stage 7 | -5.2 | 19.36 | |
| Stage 7 | -5.4 | 17.91 | |
| Stage 7 | -5.6 | 16.38 | |
| Stage 7 | -5.8 | 14.82 | |
| Stage 7 | -6 | 13.25 | |
| Stage 7 | -6.2 | 11.73 | |
| Stage 7 | -6.4 | 10.27 | |
| Stage 7 | -6.6 | 8.91 | |
| Stage 7 | -6.8 | 7.66 | |
| Stage 7 | -7 | 6.55 | |
| Stage 7 | -7.2 | 5.56 | |
| Stage 7 | -7.4 | 4.71 | |
| Stage 7 | -7.6 | 3.99 | |
| Stage 7 | -7.8 | 3.39 | |
| Stage 7 | -8 | 2.9 | |
| Stage 7 | -8.2 | 2.5 | |
| Stage 7 | -8.4 | 2.18 | |
| Stage 7 | -8.6 | 1.93 | |
| Stage 7 | -8.8 | 1.74 | |
| Stage 7 | -9 | 1.58 | |
| Stage 7 | -9.2 | 1.46 | |
| Stage 7 | -9.4 | 1.35 | |
| Stage 7 | -9.6 | 1.25 | |
| Stage 7 | -9.8 | 1.16 | |
| Stage 7 | -10 | 1.07 | |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 7**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | | Muro: RIGHT |
|---|-------|------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 7 | 0 | -0.68 | |
| Stage 7 | -0.2 | -2.79 | |
| Stage 7 | -0.4 | -4.88 | |
| Stage 7 | -0.6 | -6.94 | |
| Stage 7 | -0.8 | -8.97 | |
| Stage 7 | -1 | -10.93 | |
| Stage 7 | -1.2 | -12.83 | |
| Stage 7 | -1.4 | -14.65 | |
| Stage 7 | -1.6 | -16.37 | |
| Stage 7 | -1.8 | -17.98 | |
| Stage 7 | -2 | -19.47 | |
| Stage 7 | -2.2 | -20.82 | |
| Stage 7 | -2.4 | -22.03 | |
| Stage 7 | -2.6 | -23.07 | |
| Stage 7 | -2.8 | -23.94 | |
| Stage 7 | -3 | -24.62 | |
| Stage 7 | -3.2 | -25.11 | |
| Stage 7 | -3.4 | -25.41 | |
| Stage 7 | -3.6 | -25.51 | |
| Stage 7 | -3.8 | -25.4 | |
| Stage 7 | -4 | -25.08 | |
| Stage 7 | -4.2 | -24.57 | |
| Stage 7 | -4.4 | -23.86 | |
| Stage 7 | -4.6 | -22.98 | |
| Stage 7 | -4.8 | -21.91 | |
| Stage 7 | -5 | -20.7 | |
| Stage 7 | -5.2 | -19.36 | |
| Stage 7 | -5.4 | -17.91 | |
| Stage 7 | -5.6 | -16.38 | |
| Stage 7 | -5.8 | -14.82 | |
| Stage 7 | -6 | -13.25 | |
| Stage 7 | -6.2 | -11.73 | |
| Stage 7 | -6.4 | -10.27 | |
| Stage 7 | -6.6 | -8.91 | |
| Stage 7 | -6.8 | -7.66 | |
| Stage 7 | -7 | -6.55 | |
| Stage 7 | -7.2 | -5.56 | |
| Stage 7 | -7.4 | -4.71 | |
| Stage 7 | -7.6 | -3.99 | |
| Stage 7 | -7.8 | -3.39 | |
| Stage 7 | -8 | -2.9 | |
| Stage 7 | -8.2 | -2.5 | |
| Stage 7 | -8.4 | -2.18 | |
| Stage 7 | -8.6 | -1.93 | |
| Stage 7 | -8.8 | -1.74 | |
| Stage 7 | -9 | -1.58 | |
| Stage 7 | -9.2 | -1.46 | |
| Stage 7 | -9.4 | -1.35 | |
| Stage 7 | -9.6 | -1.25 | |
| Stage 7 | -9.8 | -1.16 | |
| Stage 7 | -10 | -1.07 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 7**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | 14.33 |
| Stage 7 | -0.2 | 2.87 | 14.33 |
| Stage 7 | -0.4 | 5.73 | 14.33 |
| Stage 7 | -0.6 | 8.6 | 14.33 |
| Stage 7 | -0.8 | 11.46 | 14.33 |
| Stage 7 | -1 | 14.33 | 14.33 |
| Stage 7 | -1.2 | 17.2 | 14.33 |
| Stage 7 | -1.4 | 20.06 | 14.33 |
| Stage 7 | -1.6 | 22.93 | 14.33 |
| Stage 7 | -1.8 | 25.79 | 14.33 |
| Stage 7 | -2 | 28.61 | 14.09 |
| Stage 7 | -2.2 | 31.33 | 13.58 |
| Stage 7 | -2.4 | 33.88 | 12.78 |
| Stage 7 | -2.6 | 36.22 | 11.7 |
| Stage 7 | -2.8 | 38.3 | 10.35 |
| Stage 7 | -3 | 40.04 | 8.73 |
| Stage 7 | -3.2 | 41.41 | 6.83 |
| Stage 7 | -3.4 | 42.34 | 4.65 |
| Stage 7 | -3.6 | 42.78 | 2.21 |
| Stage 7 | -3.8 | 42.68 | -0.51 |
| Stage 7 | -4 | 41.98 | -3.5 |
| Stage 7 | -4.2 | 40.63 | -6.75 |
| Stage 7 | -4.4 | 38.57 | -10.27 |
| Stage 7 | -4.6 | 35.76 | -14.07 |
| Stage 7 | -4.8 | 32.13 | -18.13 |
| Stage 7 | -5 | 27.64 | -22.45 |
| Stage 7 | -5.2 | 22.23 | -27.05 |
| Stage 7 | -5.4 | 15.85 | -31.92 |
| Stage 7 | -5.6 | 8.44 | -37.05 |
| Stage 7 | -5.8 | -0.05 | -42.44 |
| Stage 7 | -6 | -7.96 | -39.55 |
| Stage 7 | -6.2 | -14.88 | -34.6 |
| Stage 7 | -6.4 | -20.4 | -27.59 |
| Stage 7 | -6.6 | -24.37 | -19.89 |
| Stage 7 | -6.8 | -26.93 | -12.76 |
| Stage 7 | -7 | -28.16 | -6.18 |
| Stage 7 | -7.2 | -28.21 | -0.22 |
| Stage 7 | -7.4 | -27.21 | 5.01 |
| Stage 7 | -7.6 | -25.31 | 9.46 |
| Stage 7 | -7.8 | -22.82 | 12.46 |
| Stage 7 | -8 | -19.97 | 14.25 |
| Stage 7 | -8.2 | -16.96 | 15.06 |
| Stage 7 | -8.4 | -13.94 | 15.09 |
| Stage 7 | -8.6 | -11.04 | 14.49 |
| Stage 7 | -8.8 | -8.36 | 13.42 |
| Stage 7 | -9 | -5.96 | 11.98 |
| Stage 7 | -9.2 | -3.91 | 10.25 |
| Stage 7 | -9.4 | -2.25 | 8.29 |
| Stage 7 | -9.6 | -1.03 | 6.14 |
| Stage 7 | -9.8 | -0.27 | 3.81 |
| Stage 7 | -10 | 0 | 1.32 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 7**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | -14.33 |
| Stage 7 | -0.2 | -2.87 | -14.33 |
| Stage 7 | -0.4 | -5.73 | -14.33 |
| Stage 7 | -0.6 | -8.6 | -14.33 |
| Stage 7 | -0.8 | -11.46 | -14.33 |
| Stage 7 | -1 | -14.33 | -14.33 |
| Stage 7 | -1.2 | -17.2 | -14.33 |
| Stage 7 | -1.4 | -20.06 | -14.33 |
| Stage 7 | -1.6 | -22.93 | -14.33 |
| Stage 7 | -1.8 | -25.79 | -14.33 |
| Stage 7 | -2 | -28.61 | -14.09 |
| Stage 7 | -2.2 | -31.33 | -13.58 |
| Stage 7 | -2.4 | -33.88 | -12.78 |
| Stage 7 | -2.6 | -36.22 | -11.7 |
| Stage 7 | -2.8 | -38.3 | -10.35 |
| Stage 7 | -3 | -40.04 | -8.73 |
| Stage 7 | -3.2 | -41.41 | -6.83 |
| Stage 7 | -3.4 | -42.34 | -4.65 |
| Stage 7 | -3.6 | -42.78 | -2.21 |
| Stage 7 | -3.8 | -42.68 | 0.51 |
| Stage 7 | -4 | -41.98 | 3.5 |
| Stage 7 | -4.2 | -40.63 | 6.75 |
| Stage 7 | -4.4 | -38.57 | 10.27 |
| Stage 7 | -4.6 | -35.76 | 14.07 |
| Stage 7 | -4.8 | -32.13 | 18.13 |
| Stage 7 | -5 | -27.64 | 22.45 |
| Stage 7 | -5.2 | -22.23 | 27.05 |
| Stage 7 | -5.4 | -15.85 | 31.92 |
| Stage 7 | -5.6 | -8.44 | 37.05 |
| Stage 7 | -5.8 | 0.05 | 42.44 |
| Stage 7 | -6 | 7.96 | 39.55 |
| Stage 7 | -6.2 | 14.88 | 34.6 |
| Stage 7 | -6.4 | 20.4 | 27.59 |
| Stage 7 | -6.6 | 24.37 | 19.89 |
| Stage 7 | -6.8 | 26.93 | 12.76 |
| Stage 7 | -7 | 28.16 | 6.18 |
| Stage 7 | -7.2 | 28.21 | 0.22 |
| Stage 7 | -7.4 | 27.21 | -5.01 |
| Stage 7 | -7.6 | 25.31 | -9.46 |
| Stage 7 | -7.8 | 22.82 | -12.46 |
| Stage 7 | -8 | 19.97 | -14.25 |
| Stage 7 | -8.2 | 16.96 | -15.06 |
| Stage 7 | -8.4 | 13.94 | -15.09 |
| Stage 7 | -8.6 | 11.04 | -14.49 |
| Stage 7 | -8.8 | 8.36 | -13.42 |
| Stage 7 | -9 | 5.96 | -11.98 |
| Stage 7 | -9.2 | 3.91 | -10.25 |
| Stage 7 | -9.4 | 2.25 | -8.29 |
| Stage 7 | -9.6 | 1.03 | -6.14 |
| Stage 7 | -9.8 | 0.27 | -3.81 |
| Stage 7 | -10 | 0 | -1.32 |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| | | | | | |
|----------|---------|----------|------------|------|------------|
| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
| NR1J | 01 D 29 | CL | IN0600 002 | A | 157 di 386 |

Risultati Elementi strutturali - NTC2018: SLE (Rara/Frequente/Quasi Permanente)

Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Sollecitazione Strut

| Stage | Forza (kN/m) |
|---------|--------------|
| Stage 3 | 0 |
| Stage 4 | -2.282406 |
| Stage 5 | -4.484574 |
| Stage 6 | -11.21754 |
| Stage 7 | -14.32973 |

Risultati NTC2018: A1+M1+R1 (R3 per tiranti)

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 0

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 0

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 1

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | 0.01 | 0.07 |
| Stage 1 | -0.6 | 0.04 | 0.14 |
| Stage 1 | -0.8 | 0.08 | 0.2 |
| Stage 1 | -1 | 0.12 | 0.21 |
| Stage 1 | -1.2 | 0.15 | 0.16 |
| Stage 1 | -1.4 | 0.18 | 0.1 |
| Stage 1 | -1.6 | 0.18 | 0.04 |
| Stage 1 | -1.8 | 0.18 | -0.01 |
| Stage 1 | -2 | 0.17 | -0.05 |
| Stage 1 | -2.2 | 0.16 | -0.07 |
| Stage 1 | -2.4 | 0.14 | -0.09 |
| Stage 1 | -2.6 | 0.12 | -0.09 |
| Stage 1 | -2.8 | 0.1 | -0.09 |
| Stage 1 | -3 | 0.09 | -0.08 |
| Stage 1 | -3.2 | 0.08 | -0.06 |
| Stage 1 | -3.4 | 0.06 | -0.05 |
| Stage 1 | -3.6 | 0.06 | -0.05 |
| Stage 1 | -3.8 | 0.05 | -0.04 |
| Stage 1 | -4 | 0.04 | -0.03 |
| Stage 1 | -4.2 | 0.04 | -0.01 |
| Stage 1 | -4.4 | 0.04 | 0.01 |
| Stage 1 | -4.6 | 0.05 | 0.02 |
| Stage 1 | -4.8 | 0.05 | 0.03 |
| Stage 1 | -5 | 0.06 | 0.03 |
| Stage 1 | -5.2 | 0.06 | 0.03 |
| Stage 1 | -5.4 | 0.07 | 0.01 |
| Stage 1 | -5.6 | 0.06 | -0.02 |
| Stage 1 | -5.8 | 0.06 | -0.04 |
| Stage 1 | -6 | 0.04 | -0.06 |
| Stage 1 | -6.2 | 0.03 | -0.06 |
| Stage 1 | -6.4 | 0.02 | -0.06 |
| Stage 1 | -6.6 | 0.01 | -0.05 |
| Stage 1 | -6.8 | 0 | -0.04 |
| Stage 1 | -7 | 0 | -0.03 |
| Stage 1 | -7.2 | -0.01 | -0.03 |
| Stage 1 | -7.4 | -0.01 | -0.02 |
| Stage 1 | -7.6 | -0.02 | -0.01 |
| Stage 1 | -7.8 | -0.02 | 0 |
| Stage 1 | -8 | -0.02 | 0 |
| Stage 1 | -8.2 | -0.02 | 0 |
| Stage 1 | -8.4 | -0.01 | 0.01 |
| Stage 1 | -8.6 | -0.01 | 0.01 |
| Stage 1 | -8.8 | -0.01 | 0.01 |
| Stage 1 | -9 | -0.01 | 0.01 |
| Stage 1 | -9.2 | -0.01 | 0.01 |
| Stage 1 | -9.4 | 0 | 0.01 |
| Stage 1 | -9.6 | 0 | 0.01 |
| Stage 1 | -9.8 | 0 | 0.01 |
| Stage 1 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 1

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | -0.01 | -0.07 |
| Stage 1 | -0.6 | -0.04 | -0.14 |
| Stage 1 | -0.8 | -0.08 | -0.2 |
| Stage 1 | -1 | -0.12 | -0.21 |
| Stage 1 | -1.2 | -0.15 | -0.16 |
| Stage 1 | -1.4 | -0.18 | -0.1 |
| Stage 1 | -1.6 | -0.18 | -0.04 |
| Stage 1 | -1.8 | -0.18 | 0.01 |
| Stage 1 | -2 | -0.17 | 0.05 |
| Stage 1 | -2.2 | -0.16 | 0.07 |
| Stage 1 | -2.4 | -0.14 | 0.09 |
| Stage 1 | -2.6 | -0.12 | 0.09 |
| Stage 1 | -2.8 | -0.1 | 0.09 |
| Stage 1 | -3 | -0.09 | 0.08 |
| Stage 1 | -3.2 | -0.08 | 0.06 |
| Stage 1 | -3.4 | -0.06 | 0.05 |
| Stage 1 | -3.6 | -0.06 | 0.05 |
| Stage 1 | -3.8 | -0.05 | 0.04 |
| Stage 1 | -4 | -0.04 | 0.03 |
| Stage 1 | -4.2 | -0.04 | 0.01 |
| Stage 1 | -4.4 | -0.04 | -0.01 |
| Stage 1 | -4.6 | -0.05 | -0.02 |
| Stage 1 | -4.8 | -0.05 | -0.03 |
| Stage 1 | -5 | -0.06 | -0.03 |
| Stage 1 | -5.2 | -0.06 | -0.03 |
| Stage 1 | -5.4 | -0.07 | -0.01 |
| Stage 1 | -5.6 | -0.06 | 0.02 |
| Stage 1 | -5.8 | -0.06 | 0.04 |
| Stage 1 | -6 | -0.04 | 0.06 |
| Stage 1 | -6.2 | -0.03 | 0.06 |
| Stage 1 | -6.4 | -0.02 | 0.06 |
| Stage 1 | -6.6 | -0.01 | 0.05 |
| Stage 1 | -6.8 | 0 | 0.04 |
| Stage 1 | -7 | 0 | 0.03 |
| Stage 1 | -7.2 | 0.01 | 0.03 |
| Stage 1 | -7.4 | 0.01 | 0.02 |
| Stage 1 | -7.6 | 0.02 | 0.01 |
| Stage 1 | -7.8 | 0.02 | 0 |
| Stage 1 | -8 | 0.02 | 0 |
| Stage 1 | -8.2 | 0.02 | 0 |
| Stage 1 | -8.4 | 0.01 | -0.01 |
| Stage 1 | -8.6 | 0.01 | -0.01 |
| Stage 1 | -8.8 | 0.01 | -0.01 |
| Stage 1 | -9 | 0.01 | -0.01 |
| Stage 1 | -9.2 | 0.01 | -0.01 |
| Stage 1 | -9.4 | 0 | -0.01 |
| Stage 1 | -9.6 | 0 | -0.01 |
| Stage 1 | -9.8 | 0 | -0.01 |
| Stage 1 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 2

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -1 | -0.13 | -0.63 |
| Stage 2 | -1.2 | -0.28 | -0.78 |
| Stage 2 | -1.4 | -0.37 | -0.44 |
| Stage 2 | -1.6 | -0.4 | -0.15 |
| Stage 2 | -1.8 | -0.39 | 0.06 |
| Stage 2 | -2 | -0.35 | 0.2 |
| Stage 2 | -2.2 | -0.3 | 0.27 |
| Stage 2 | -2.4 | -0.24 | 0.3 |
| Stage 2 | -2.6 | -0.18 | 0.29 |
| Stage 2 | -2.8 | -0.12 | 0.27 |
| Stage 2 | -3 | -0.08 | 0.24 |
| Stage 2 | -3.2 | -0.04 | 0.2 |
| Stage 2 | -3.4 | -0.01 | 0.15 |
| Stage 2 | -3.6 | 0.02 | 0.11 |
| Stage 2 | -3.8 | 0.03 | 0.08 |
| Stage 2 | -4 | 0.04 | 0.05 |
| Stage 2 | -4.2 | 0.05 | 0.04 |
| Stage 2 | -4.4 | 0.06 | 0.03 |
| Stage 2 | -4.6 | 0.06 | 0.03 |
| Stage 2 | -4.8 | 0.07 | 0.03 |
| Stage 2 | -5 | 0.07 | 0.02 |
| Stage 2 | -5.2 | 0.07 | 0.01 |
| Stage 2 | -5.4 | 0.07 | 0 |
| Stage 2 | -5.6 | 0.07 | -0.03 |
| Stage 2 | -5.8 | 0.06 | -0.05 |
| Stage 2 | -6 | 0.05 | -0.06 |
| Stage 2 | -6.2 | 0.03 | -0.07 |
| Stage 2 | -6.4 | 0.02 | -0.06 |
| Stage 2 | -6.6 | 0.01 | -0.06 |
| Stage 2 | -6.8 | 0 | -0.05 |
| Stage 2 | -7 | -0.01 | -0.04 |
| Stage 2 | -7.2 | -0.01 | -0.03 |
| Stage 2 | -7.4 | -0.02 | -0.02 |
| Stage 2 | -7.6 | -0.02 | -0.01 |
| Stage 2 | -7.8 | -0.02 | 0 |
| Stage 2 | -8 | -0.02 | 0 |
| Stage 2 | -8.2 | -0.02 | 0.01 |
| Stage 2 | -8.4 | -0.02 | 0.01 |
| Stage 2 | -8.6 | -0.01 | 0.01 |
| Stage 2 | -8.8 | -0.01 | 0.01 |
| Stage 2 | -9 | -0.01 | 0.01 |
| Stage 2 | -9.2 | -0.01 | 0.01 |
| Stage 2 | -9.4 | 0 | 0.01 |
| Stage 2 | -9.6 | 0 | 0.01 |
| Stage 2 | -9.8 | 0 | 0.01 |
| Stage 2 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 2

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -1 | 0.13 | 0.63 |
| Stage 2 | -1.2 | 0.28 | 0.78 |
| Stage 2 | -1.4 | 0.37 | 0.44 |
| Stage 2 | -1.6 | 0.4 | 0.15 |
| Stage 2 | -1.8 | 0.39 | -0.06 |
| Stage 2 | -2 | 0.35 | -0.2 |
| Stage 2 | -2.2 | 0.3 | -0.27 |
| Stage 2 | -2.4 | 0.24 | -0.3 |
| Stage 2 | -2.6 | 0.18 | -0.29 |
| Stage 2 | -2.8 | 0.12 | -0.27 |
| Stage 2 | -3 | 0.08 | -0.24 |
| Stage 2 | -3.2 | 0.04 | -0.2 |
| Stage 2 | -3.4 | 0.01 | -0.15 |
| Stage 2 | -3.6 | -0.02 | -0.11 |
| Stage 2 | -3.8 | -0.03 | -0.08 |
| Stage 2 | -4 | -0.04 | -0.05 |
| Stage 2 | -4.2 | -0.05 | -0.04 |
| Stage 2 | -4.4 | -0.06 | -0.03 |
| Stage 2 | -4.6 | -0.06 | -0.03 |
| Stage 2 | -4.8 | -0.07 | -0.03 |
| Stage 2 | -5 | -0.07 | -0.02 |
| Stage 2 | -5.2 | -0.07 | -0.01 |
| Stage 2 | -5.4 | -0.07 | 0 |
| Stage 2 | -5.6 | -0.07 | 0.03 |
| Stage 2 | -5.8 | -0.06 | 0.05 |
| Stage 2 | -6 | -0.05 | 0.06 |
| Stage 2 | -6.2 | -0.03 | 0.07 |
| Stage 2 | -6.4 | -0.02 | 0.06 |
| Stage 2 | -6.6 | -0.01 | 0.06 |
| Stage 2 | -6.8 | 0 | 0.05 |
| Stage 2 | -7 | 0.01 | 0.04 |
| Stage 2 | -7.2 | 0.01 | 0.03 |
| Stage 2 | -7.4 | 0.02 | 0.02 |
| Stage 2 | -7.6 | 0.02 | 0.01 |
| Stage 2 | -7.8 | 0.02 | 0 |
| Stage 2 | -8 | 0.02 | 0 |
| Stage 2 | -8.2 | 0.02 | -0.01 |
| Stage 2 | -8.4 | 0.02 | -0.01 |
| Stage 2 | -8.6 | 0.01 | -0.01 |
| Stage 2 | -8.8 | 0.01 | -0.01 |
| Stage 2 | -9 | 0.01 | -0.01 |
| Stage 2 | -9.2 | 0.01 | -0.01 |
| Stage 2 | -9.4 | 0 | -0.01 |
| Stage 2 | -9.6 | 0 | -0.01 |
| Stage 2 | -9.8 | 0 | -0.01 |
| Stage 2 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 3

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 3 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -1 | -0.13 | -0.63 |
| Stage 3 | -1.2 | -0.28 | -0.78 |
| Stage 3 | -1.4 | -0.37 | -0.44 |
| Stage 3 | -1.6 | -0.4 | -0.15 |
| Stage 3 | -1.8 | -0.39 | 0.06 |
| Stage 3 | -2 | -0.35 | 0.2 |
| Stage 3 | -2.2 | -0.3 | 0.27 |
| Stage 3 | -2.4 | -0.24 | 0.3 |
| Stage 3 | -2.6 | -0.18 | 0.29 |
| Stage 3 | -2.8 | -0.12 | 0.27 |
| Stage 3 | -3 | -0.08 | 0.24 |
| Stage 3 | -3.2 | -0.04 | 0.2 |
| Stage 3 | -3.4 | -0.01 | 0.15 |
| Stage 3 | -3.6 | 0.02 | 0.11 |
| Stage 3 | -3.8 | 0.03 | 0.08 |
| Stage 3 | -4 | 0.04 | 0.05 |
| Stage 3 | -4.2 | 0.05 | 0.04 |
| Stage 3 | -4.4 | 0.06 | 0.03 |
| Stage 3 | -4.6 | 0.06 | 0.03 |
| Stage 3 | -4.8 | 0.07 | 0.03 |
| Stage 3 | -5 | 0.07 | 0.02 |
| Stage 3 | -5.2 | 0.07 | 0.01 |
| Stage 3 | -5.4 | 0.07 | 0 |
| Stage 3 | -5.6 | 0.07 | -0.03 |
| Stage 3 | -5.8 | 0.06 | -0.05 |
| Stage 3 | -6 | 0.05 | -0.06 |
| Stage 3 | -6.2 | 0.03 | -0.07 |
| Stage 3 | -6.4 | 0.02 | -0.06 |
| Stage 3 | -6.6 | 0.01 | -0.06 |
| Stage 3 | -6.8 | 0 | -0.05 |
| Stage 3 | -7 | -0.01 | -0.04 |
| Stage 3 | -7.2 | -0.01 | -0.03 |
| Stage 3 | -7.4 | -0.02 | -0.02 |
| Stage 3 | -7.6 | -0.02 | -0.01 |
| Stage 3 | -7.8 | -0.02 | 0 |
| Stage 3 | -8 | -0.02 | 0 |
| Stage 3 | -8.2 | -0.02 | 0.01 |
| Stage 3 | -8.4 | -0.02 | 0.01 |
| Stage 3 | -8.6 | -0.01 | 0.01 |
| Stage 3 | -8.8 | -0.01 | 0.01 |
| Stage 3 | -9 | -0.01 | 0.01 |
| Stage 3 | -9.2 | -0.01 | 0.01 |
| Stage 3 | -9.4 | 0 | 0.01 |
| Stage 3 | -9.6 | 0 | 0.01 |
| Stage 3 | -9.8 | 0 | 0.01 |
| Stage 3 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 3

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 3 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -1 | 0.13 | 0.63 |
| Stage 3 | -1.2 | 0.28 | 0.78 |
| Stage 3 | -1.4 | 0.37 | 0.44 |
| Stage 3 | -1.6 | 0.4 | 0.15 |
| Stage 3 | -1.8 | 0.39 | -0.06 |
| Stage 3 | -2 | 0.35 | -0.2 |
| Stage 3 | -2.2 | 0.3 | -0.27 |
| Stage 3 | -2.4 | 0.24 | -0.3 |
| Stage 3 | -2.6 | 0.18 | -0.29 |
| Stage 3 | -2.8 | 0.12 | -0.27 |
| Stage 3 | -3 | 0.08 | -0.24 |
| Stage 3 | -3.2 | 0.04 | -0.2 |
| Stage 3 | -3.4 | 0.01 | -0.15 |
| Stage 3 | -3.6 | -0.02 | -0.11 |
| Stage 3 | -3.8 | -0.03 | -0.08 |
| Stage 3 | -4 | -0.04 | -0.05 |
| Stage 3 | -4.2 | -0.05 | -0.04 |
| Stage 3 | -4.4 | -0.06 | -0.03 |
| Stage 3 | -4.6 | -0.06 | -0.03 |
| Stage 3 | -4.8 | -0.07 | -0.03 |
| Stage 3 | -5 | -0.07 | -0.02 |
| Stage 3 | -5.2 | -0.07 | -0.01 |
| Stage 3 | -5.4 | -0.07 | 0 |
| Stage 3 | -5.6 | -0.07 | 0.03 |
| Stage 3 | -5.8 | -0.06 | 0.05 |
| Stage 3 | -6 | -0.05 | 0.06 |
| Stage 3 | -6.2 | -0.03 | 0.07 |
| Stage 3 | -6.4 | -0.02 | 0.06 |
| Stage 3 | -6.6 | -0.01 | 0.06 |
| Stage 3 | -6.8 | 0 | 0.05 |
| Stage 3 | -7 | 0.01 | 0.04 |
| Stage 3 | -7.2 | 0.01 | 0.03 |
| Stage 3 | -7.4 | 0.02 | 0.02 |
| Stage 3 | -7.6 | 0.02 | 0.01 |
| Stage 3 | -7.8 | 0.02 | 0 |
| Stage 3 | -8 | 0.02 | 0 |
| Stage 3 | -8.2 | 0.02 | -0.01 |
| Stage 3 | -8.4 | 0.02 | -0.01 |
| Stage 3 | -8.6 | 0.01 | -0.01 |
| Stage 3 | -8.8 | 0.01 | -0.01 |
| Stage 3 | -9 | 0.01 | -0.01 |
| Stage 3 | -9.2 | 0.01 | -0.01 |
| Stage 3 | -9.4 | 0 | -0.01 |
| Stage 3 | -9.6 | 0 | -0.01 |
| Stage 3 | -9.8 | 0 | -0.01 |
| Stage 3 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 4

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | 3 |
| Stage 4 | -0.2 | 0.6 | 3 |
| Stage 4 | -0.4 | 1.2 | 3 |
| Stage 4 | -0.6 | 1.8 | 3 |
| Stage 4 | -0.8 | 2.4 | 3 |
| Stage 4 | -1 | 3 | 3 |
| Stage 4 | -1.2 | 3.61 | 3 |
| Stage 4 | -1.4 | 4.21 | 3 |
| Stage 4 | -1.6 | 4.81 | 3 |
| Stage 4 | -1.8 | 5.38 | 2.86 |
| Stage 4 | -2 | 5.85 | 2.34 |
| Stage 4 | -2.2 | 6.13 | 1.43 |
| Stage 4 | -2.4 | 6.15 | 0.07 |
| Stage 4 | -2.6 | 5.79 | -1.77 |
| Stage 4 | -2.8 | 4.96 | -4.15 |
| Stage 4 | -3 | 3.54 | -7.11 |
| Stage 4 | -3.2 | 2.1 | -7.17 |
| Stage 4 | -3.4 | 0.9 | -6.02 |
| Stage 4 | -3.6 | -0.05 | -4.76 |
| Stage 4 | -3.8 | -0.77 | -3.56 |
| Stage 4 | -4 | -1.26 | -2.48 |
| Stage 4 | -4.2 | -1.57 | -1.55 |
| Stage 4 | -4.4 | -1.73 | -0.79 |
| Stage 4 | -4.6 | -1.77 | -0.19 |
| Stage 4 | -4.8 | -1.72 | 0.26 |
| Stage 4 | -5 | -1.6 | 0.57 |
| Stage 4 | -5.2 | -1.45 | 0.77 |
| Stage 4 | -5.4 | -1.28 | 0.87 |
| Stage 4 | -5.6 | -1.1 | 0.89 |
| Stage 4 | -5.8 | -0.93 | 0.86 |
| Stage 4 | -6 | -0.77 | 0.8 |
| Stage 4 | -6.2 | -0.62 | 0.73 |
| Stage 4 | -6.4 | -0.49 | 0.64 |
| Stage 4 | -6.6 | -0.38 | 0.55 |
| Stage 4 | -6.8 | -0.29 | 0.47 |
| Stage 4 | -7 | -0.21 | 0.39 |
| Stage 4 | -7.2 | -0.15 | 0.31 |
| Stage 4 | -7.4 | -0.1 | 0.24 |
| Stage 4 | -7.6 | -0.06 | 0.18 |
| Stage 4 | -7.8 | -0.03 | 0.14 |
| Stage 4 | -8 | -0.02 | 0.09 |
| Stage 4 | -8.2 | 0 | 0.06 |
| Stage 4 | -8.4 | 0 | 0.04 |
| Stage 4 | -8.6 | 0.01 | 0.02 |
| Stage 4 | -8.8 | 0.01 | 0 |
| Stage 4 | -9 | 0.01 | 0 |
| Stage 4 | -9.2 | 0 | -0.01 |
| Stage 4 | -9.4 | 0 | -0.01 |
| Stage 4 | -9.6 | 0 | -0.01 |
| Stage 4 | -9.8 | 0 | -0.01 |
| Stage 4 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 4

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | | |
|---|-------|------------------|---------------|--|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 4 | 0 | 0 | -3 | |
| Stage 4 | -0.2 | -0.6 | -3 | |
| Stage 4 | -0.4 | -1.2 | -3 | |
| Stage 4 | -0.6 | -1.8 | -3 | |
| Stage 4 | -0.8 | -2.4 | -3 | |
| Stage 4 | -1 | -3 | -3 | |
| Stage 4 | -1.2 | -3.61 | -3 | |
| Stage 4 | -1.4 | -4.21 | -3 | |
| Stage 4 | -1.6 | -4.81 | -3 | |
| Stage 4 | -1.8 | -5.38 | -2.86 | |
| Stage 4 | -2 | -5.85 | -2.34 | |
| Stage 4 | -2.2 | -6.13 | -1.43 | |
| Stage 4 | -2.4 | -6.15 | -0.07 | |
| Stage 4 | -2.6 | -5.79 | 1.77 | |
| Stage 4 | -2.8 | -4.96 | 4.15 | |
| Stage 4 | -3 | -3.54 | 7.11 | |
| Stage 4 | -3.2 | -2.1 | 7.17 | |
| Stage 4 | -3.4 | -0.9 | 6.02 | |
| Stage 4 | -3.6 | 0.05 | 4.76 | |
| Stage 4 | -3.8 | 0.77 | 3.56 | |
| Stage 4 | -4 | 1.26 | 2.48 | |
| Stage 4 | -4.2 | 1.57 | 1.55 | |
| Stage 4 | -4.4 | 1.73 | 0.79 | |
| Stage 4 | -4.6 | 1.77 | 0.19 | |
| Stage 4 | -4.8 | 1.72 | -0.26 | |
| Stage 4 | -5 | 1.6 | -0.57 | |
| Stage 4 | -5.2 | 1.45 | -0.77 | |
| Stage 4 | -5.4 | 1.28 | -0.87 | |
| Stage 4 | -5.6 | 1.1 | -0.89 | |
| Stage 4 | -5.8 | 0.93 | -0.86 | |
| Stage 4 | -6 | 0.77 | -0.8 | |
| Stage 4 | -6.2 | 0.62 | -0.73 | |
| Stage 4 | -6.4 | 0.49 | -0.64 | |
| Stage 4 | -6.6 | 0.38 | -0.55 | |
| Stage 4 | -6.8 | 0.29 | -0.47 | |
| Stage 4 | -7 | 0.21 | -0.39 | |
| Stage 4 | -7.2 | 0.15 | -0.31 | |
| Stage 4 | -7.4 | 0.1 | -0.24 | |
| Stage 4 | -7.6 | 0.06 | -0.18 | |
| Stage 4 | -7.8 | 0.03 | -0.14 | |
| Stage 4 | -8 | 0.02 | -0.09 | |
| Stage 4 | -8.2 | 0 | -0.06 | |
| Stage 4 | -8.4 | 0 | -0.04 | |
| Stage 4 | -8.6 | -0.01 | -0.02 | |
| Stage 4 | -8.8 | -0.01 | 0 | |
| Stage 4 | -9 | -0.01 | 0 | |
| Stage 4 | -9.2 | 0 | 0.01 | |
| Stage 4 | -9.4 | 0 | 0.01 | |
| Stage 4 | -9.6 | 0 | 0.01 | |
| Stage 4 | -9.8 | 0 | 0.01 | |
| Stage 4 | -10 | 0 | 0 | |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 5

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | | |
|---|-------|------------------|---------------|--|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 5 | 0 | 0 | 6.11 | |
| Stage 5 | -0.2 | 1.22 | 6.11 | |
| Stage 5 | -0.4 | 2.44 | 6.11 | |
| Stage 5 | -0.6 | 3.67 | 6.11 | |
| Stage 5 | -0.8 | 4.89 | 6.11 | |
| Stage 5 | -1 | 6.11 | 6.11 | |
| Stage 5 | -1.2 | 7.33 | 6.11 | |
| Stage 5 | -1.4 | 8.55 | 6.11 | |
| Stage 5 | -1.6 | 9.77 | 6.11 | |
| Stage 5 | -1.8 | 11 | 6.11 | |
| Stage 5 | -2 | 12.14 | 5.73 | |
| Stage 5 | -2.2 | 13.14 | 4.99 | |
| Stage 5 | -2.4 | 13.91 | 3.88 | |
| Stage 5 | -2.6 | 14.39 | 2.4 | |
| Stage 5 | -2.8 | 14.51 | 0.56 | |
| Stage 5 | -3 | 14.18 | -1.63 | |
| Stage 5 | -3.2 | 13.35 | -4.18 | |
| Stage 5 | -3.4 | 11.93 | -7.1 | |
| Stage 5 | -3.6 | 9.85 | -10.37 | |
| Stage 5 | -3.8 | 7.05 | -13.99 | |
| Stage 5 | -4 | 3.46 | -17.96 | |
| Stage 5 | -4.2 | 0.22 | -16.19 | |
| Stage 5 | -4.4 | -2.35 | -12.89 | |
| Stage 5 | -4.6 | -4.22 | -9.32 | |
| Stage 5 | -4.8 | -5.43 | -6.08 | |
| Stage 5 | -5 | -6.11 | -3.41 | |
| Stage 5 | -5.2 | -6.37 | -1.29 | |
| Stage 5 | -5.4 | -6.31 | 0.32 | |
| Stage 5 | -5.6 | -6.01 | 1.49 | |
| Stage 5 | -5.8 | -5.56 | 2.27 | |
| Stage 5 | -6 | -5 | 2.76 | |
| Stage 5 | -6.2 | -4.4 | 3.01 | |
| Stage 5 | -6.4 | -3.79 | 3.07 | |
| Stage 5 | -6.6 | -3.19 | 2.99 | |
| Stage 5 | -6.8 | -2.63 | 2.81 | |
| Stage 5 | -7 | -2.11 | 2.56 | |
| Stage 5 | -7.2 | -1.66 | 2.27 | |
| Stage 5 | -7.4 | -1.27 | 1.96 | |
| Stage 5 | -7.6 | -0.94 | 1.65 | |
| Stage 5 | -7.8 | -0.67 | 1.35 | |
| Stage 5 | -8 | -0.46 | 1.08 | |
| Stage 5 | -8.2 | -0.29 | 0.83 | |
| Stage 5 | -8.4 | -0.17 | 0.61 | |
| Stage 5 | -8.6 | -0.08 | 0.43 | |
| Stage 5 | -8.8 | -0.03 | 0.27 | |
| Stage 5 | -9 | 0 | 0.15 | |
| Stage 5 | -9.2 | 0.02 | 0.06 | |
| Stage 5 | -9.4 | 0.02 | 0 | |
| Stage 5 | -9.6 | 0.01 | -0.03 | |
| Stage 5 | -9.8 | 0 | -0.04 | |
| Stage 5 | -10 | 0 | -0.02 | |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 5

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 5 | 0 | 0 | -6.11 |
| Stage 5 | -0.2 | -1.22 | -6.11 |
| Stage 5 | -0.4 | -2.44 | -6.11 |
| Stage 5 | -0.6 | -3.67 | -6.11 |
| Stage 5 | -0.8 | -4.89 | -6.11 |
| Stage 5 | -1 | -6.11 | -6.11 |
| Stage 5 | -1.2 | -7.33 | -6.11 |
| Stage 5 | -1.4 | -8.55 | -6.11 |
| Stage 5 | -1.6 | -9.77 | -6.11 |
| Stage 5 | -1.8 | -11 | -6.11 |
| Stage 5 | -2 | -12.14 | -5.73 |
| Stage 5 | -2.2 | -13.14 | -4.99 |
| Stage 5 | -2.4 | -13.91 | -3.88 |
| Stage 5 | -2.6 | -14.39 | -2.4 |
| Stage 5 | -2.8 | -14.51 | -0.56 |
| Stage 5 | -3 | -14.18 | 1.63 |
| Stage 5 | -3.2 | -13.35 | 4.18 |
| Stage 5 | -3.4 | -11.93 | 7.1 |
| Stage 5 | -3.6 | -9.85 | 10.37 |
| Stage 5 | -3.8 | -7.05 | 13.99 |
| Stage 5 | -4 | -3.46 | 17.96 |
| Stage 5 | -4.2 | -0.22 | 16.19 |
| Stage 5 | -4.4 | 2.35 | 12.89 |
| Stage 5 | -4.6 | 4.22 | 9.32 |
| Stage 5 | -4.8 | 5.43 | 6.08 |
| Stage 5 | -5 | 6.11 | 3.41 |
| Stage 5 | -5.2 | 6.37 | 1.29 |
| Stage 5 | -5.4 | 6.31 | -0.32 |
| Stage 5 | -5.6 | 6.01 | -1.49 |
| Stage 5 | -5.8 | 5.56 | -2.27 |
| Stage 5 | -6 | 5 | -2.76 |
| Stage 5 | -6.2 | 4.4 | -3.01 |
| Stage 5 | -6.4 | 3.79 | -3.07 |
| Stage 5 | -6.6 | 3.19 | -2.99 |
| Stage 5 | -6.8 | 2.63 | -2.81 |
| Stage 5 | -7 | 2.11 | -2.56 |
| Stage 5 | -7.2 | 1.66 | -2.27 |
| Stage 5 | -7.4 | 1.27 | -1.96 |
| Stage 5 | -7.6 | 0.94 | -1.65 |
| Stage 5 | -7.8 | 0.67 | -1.35 |
| Stage 5 | -8 | 0.46 | -1.08 |
| Stage 5 | -8.2 | 0.29 | -0.83 |
| Stage 5 | -8.4 | 0.17 | -0.61 |
| Stage 5 | -8.6 | 0.08 | -0.43 |
| Stage 5 | -8.8 | 0.03 | -0.27 |
| Stage 5 | -9 | 0 | -0.15 |
| Stage 5 | -9.2 | -0.02 | -0.06 |
| Stage 5 | -9.4 | -0.02 | 0 |
| Stage 5 | -9.6 | -0.01 | 0.03 |
| Stage 5 | -9.8 | 0 | 0.04 |
| Stage 5 | -10 | 0 | 0.02 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 6

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | | |
|---|-------|------------------|---------------|--|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 6 | 0 | 0 | 15.13 | |
| Stage 6 | -0.2 | 3.03 | 15.13 | |
| Stage 6 | -0.4 | 6.05 | 15.13 | |
| Stage 6 | -0.6 | 9.08 | 15.13 | |
| Stage 6 | -0.8 | 12.1 | 15.13 | |
| Stage 6 | -1 | 15.13 | 15.13 | |
| Stage 6 | -1.2 | 18.15 | 15.13 | |
| Stage 6 | -1.4 | 21.18 | 15.13 | |
| Stage 6 | -1.6 | 24.2 | 15.13 | |
| Stage 6 | -1.8 | 27.23 | 15.13 | |
| Stage 6 | -2 | 30.18 | 14.75 | |
| Stage 6 | -2.2 | 32.98 | 14 | |
| Stage 6 | -2.4 | 35.55 | 12.89 | |
| Stage 6 | -2.6 | 37.84 | 11.42 | |
| Stage 6 | -2.8 | 39.75 | 9.58 | |
| Stage 6 | -3 | 41.23 | 7.39 | |
| Stage 6 | -3.2 | 42.2 | 4.84 | |
| Stage 6 | -3.4 | 42.58 | 1.92 | |
| Stage 6 | -3.6 | 42.31 | -1.35 | |
| Stage 6 | -3.8 | 41.32 | -4.97 | |
| Stage 6 | -4 | 39.53 | -8.95 | |
| Stage 6 | -4.2 | 36.88 | -13.26 | |
| Stage 6 | -4.4 | 33.29 | -17.93 | |
| Stage 6 | -4.6 | 28.7 | -22.95 | |
| Stage 6 | -4.8 | 23.03 | -28.32 | |
| Stage 6 | -5 | 16.22 | -34.04 | |
| Stage 6 | -5.2 | 8.2 | -40.11 | |
| Stage 6 | -5.4 | -1.1 | -46.53 | |
| Stage 6 | -5.6 | -9.24 | -40.69 | |
| Stage 6 | -5.8 | -15.7 | -32.28 | |
| Stage 6 | -6 | -20.55 | -24.28 | |
| Stage 6 | -6.2 | -23.89 | -16.69 | |
| Stage 6 | -6.4 | -25.84 | -9.74 | |
| Stage 6 | -6.6 | -26.53 | -3.46 | |
| Stage 6 | -6.8 | -26.08 | 2.23 | |
| Stage 6 | -7 | -24.75 | 6.69 | |
| Stage 6 | -7.2 | -22.79 | 9.76 | |
| Stage 6 | -7.4 | -20.45 | 11.69 | |
| Stage 6 | -7.6 | -17.92 | 12.69 | |
| Stage 6 | -7.8 | -15.33 | 12.96 | |
| Stage 6 | -8 | -12.79 | 12.66 | |
| Stage 6 | -8.2 | -10.4 | 11.96 | |
| Stage 6 | -8.4 | -8.21 | 10.96 | |
| Stage 6 | -8.6 | -6.26 | 9.77 | |
| Stage 6 | -8.8 | -4.56 | 8.48 | |
| Stage 6 | -9 | -3.14 | 7.12 | |
| Stage 6 | -9.2 | -1.98 | 5.76 | |
| Stage 6 | -9.4 | -1.1 | 4.41 | |
| Stage 6 | -9.6 | -0.48 | 3.09 | |
| Stage 6 | -9.8 | -0.12 | 1.82 | |
| Stage 6 | -10 | 0 | 0.59 | |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 6

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | -15.13 |
| Stage 6 | -0.2 | -3.03 | -15.13 |
| Stage 6 | -0.4 | -6.05 | -15.13 |
| Stage 6 | -0.6 | -9.08 | -15.13 |
| Stage 6 | -0.8 | -12.1 | -15.13 |
| Stage 6 | -1 | -15.13 | -15.13 |
| Stage 6 | -1.2 | -18.15 | -15.13 |
| Stage 6 | -1.4 | -21.18 | -15.13 |
| Stage 6 | -1.6 | -24.2 | -15.13 |
| Stage 6 | -1.8 | -27.23 | -15.13 |
| Stage 6 | -2 | -30.18 | -14.75 |
| Stage 6 | -2.2 | -32.98 | -14 |
| Stage 6 | -2.4 | -35.55 | -12.89 |
| Stage 6 | -2.6 | -37.84 | -11.42 |
| Stage 6 | -2.8 | -39.75 | -9.58 |
| Stage 6 | -3 | -41.23 | -7.39 |
| Stage 6 | -3.2 | -42.2 | -4.84 |
| Stage 6 | -3.4 | -42.58 | -1.92 |
| Stage 6 | -3.6 | -42.31 | 1.35 |
| Stage 6 | -3.8 | -41.32 | 4.97 |
| Stage 6 | -4 | -39.53 | 8.95 |
| Stage 6 | -4.2 | -36.88 | 13.26 |
| Stage 6 | -4.4 | -33.29 | 17.93 |
| Stage 6 | -4.6 | -28.7 | 22.95 |
| Stage 6 | -4.8 | -23.03 | 28.32 |
| Stage 6 | -5 | -16.22 | 34.04 |
| Stage 6 | -5.2 | -8.2 | 40.11 |
| Stage 6 | -5.4 | 1.1 | 46.53 |
| Stage 6 | -5.6 | 9.24 | 40.69 |
| Stage 6 | -5.8 | 15.7 | 32.28 |
| Stage 6 | -6 | 20.55 | 24.28 |
| Stage 6 | -6.2 | 23.89 | 16.69 |
| Stage 6 | -6.4 | 25.84 | 9.74 |
| Stage 6 | -6.6 | 26.53 | 3.46 |
| Stage 6 | -6.8 | 26.08 | -2.23 |
| Stage 6 | -7 | 24.75 | -6.69 |
| Stage 6 | -7.2 | 22.79 | -9.76 |
| Stage 6 | -7.4 | 20.45 | -11.69 |
| Stage 6 | -7.6 | 17.92 | -12.69 |
| Stage 6 | -7.8 | 15.33 | -12.96 |
| Stage 6 | -8 | 12.79 | -12.66 |
| Stage 6 | -8.2 | 10.4 | -11.96 |
| Stage 6 | -8.4 | 8.21 | -10.96 |
| Stage 6 | -8.6 | 6.26 | -9.77 |
| Stage 6 | -8.8 | 4.56 | -8.48 |
| Stage 6 | -9 | 3.14 | -7.12 |
| Stage 6 | -9.2 | 1.98 | -5.76 |
| Stage 6 | -9.4 | 1.1 | -4.41 |
| Stage 6 | -9.6 | 0.48 | -3.09 |
| Stage 6 | -9.8 | 0.12 | -1.82 |
| Stage 6 | -10 | 0 | -0.59 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 7

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | | |
|---|-------|------------------|---------------|--|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 7 | 0 | 0 | 19.29 | |
| Stage 7 | -0.2 | 3.86 | 19.29 | |
| Stage 7 | -0.4 | 7.71 | 19.29 | |
| Stage 7 | -0.6 | 11.57 | 19.29 | |
| Stage 7 | -0.8 | 15.43 | 19.29 | |
| Stage 7 | -1 | 19.29 | 19.29 | |
| Stage 7 | -1.2 | 23.14 | 19.29 | |
| Stage 7 | -1.4 | 27 | 19.29 | |
| Stage 7 | -1.6 | 30.86 | 19.29 | |
| Stage 7 | -1.8 | 34.71 | 19.29 | |
| Stage 7 | -2 | 38.5 | 18.91 | |
| Stage 7 | -2.2 | 42.13 | 18.16 | |
| Stage 7 | -2.4 | 45.54 | 17.05 | |
| Stage 7 | -2.6 | 48.66 | 15.58 | |
| Stage 7 | -2.8 | 51.4 | 13.74 | |
| Stage 7 | -3 | 53.71 | 11.55 | |
| Stage 7 | -3.2 | 55.51 | 9 | |
| Stage 7 | -3.4 | 56.73 | 6.08 | |
| Stage 7 | -3.6 | 57.29 | 2.81 | |
| Stage 7 | -3.8 | 57.13 | -0.81 | |
| Stage 7 | -4 | 56.17 | -4.79 | |
| Stage 7 | -4.2 | 54.35 | -9.1 | |
| Stage 7 | -4.4 | 51.59 | -13.77 | |
| Stage 7 | -4.6 | 47.84 | -18.79 | |
| Stage 7 | -4.8 | 43 | -24.16 | |
| Stage 7 | -5 | 37.03 | -29.88 | |
| Stage 7 | -5.2 | 29.84 | -35.95 | |
| Stage 7 | -5.4 | 21.36 | -42.37 | |
| Stage 7 | -5.6 | 11.54 | -49.14 | |
| Stage 7 | -5.8 | 0.29 | -56.24 | |
| Stage 7 | -6 | -10.23 | -52.57 | |
| Stage 7 | -6.2 | -19.47 | -46.23 | |
| Stage 7 | -6.4 | -26.91 | -37.2 | |
| Stage 7 | -6.6 | -32.3 | -26.95 | |
| Stage 7 | -6.8 | -35.8 | -17.5 | |
| Stage 7 | -7 | -37.56 | -8.79 | |
| Stage 7 | -7.2 | -37.73 | -0.82 | |
| Stage 7 | -7.4 | -36.49 | 6.15 | |
| Stage 7 | -7.6 | -34.04 | 12.28 | |
| Stage 7 | -7.8 | -30.75 | 16.45 | |
| Stage 7 | -8 | -26.95 | 18.97 | |
| Stage 7 | -8.2 | -22.92 | 20.16 | |
| Stage 7 | -8.4 | -18.87 | 20.27 | |
| Stage 7 | -8.6 | -14.97 | 19.53 | |
| Stage 7 | -8.8 | -11.34 | 18.12 | |
| Stage 7 | -9 | -8.1 | 16.21 | |
| Stage 7 | -9.2 | -5.32 | 13.89 | |
| Stage 7 | -9.4 | -3.07 | 11.26 | |
| Stage 7 | -9.6 | -1.4 | 8.35 | |
| Stage 7 | -9.8 | -0.36 | 5.19 | |
| Stage 7 | -10 | 0 | 1.81 | |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 7

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | -19.29 |
| Stage 7 | -0.2 | -3.86 | -19.29 |
| Stage 7 | -0.4 | -7.71 | -19.29 |
| Stage 7 | -0.6 | -11.57 | -19.29 |
| Stage 7 | -0.8 | -15.43 | -19.29 |
| Stage 7 | -1 | -19.29 | -19.29 |
| Stage 7 | -1.2 | -23.14 | -19.29 |
| Stage 7 | -1.4 | -27 | -19.29 |
| Stage 7 | -1.6 | -30.86 | -19.29 |
| Stage 7 | -1.8 | -34.71 | -19.29 |
| Stage 7 | -2 | -38.5 | -18.91 |
| Stage 7 | -2.2 | -42.13 | -18.16 |
| Stage 7 | -2.4 | -45.54 | -17.05 |
| Stage 7 | -2.6 | -48.66 | -15.58 |
| Stage 7 | -2.8 | -51.4 | -13.74 |
| Stage 7 | -3 | -53.71 | -11.55 |
| Stage 7 | -3.2 | -55.51 | -9 |
| Stage 7 | -3.4 | -56.73 | -6.08 |
| Stage 7 | -3.6 | -57.29 | -2.81 |
| Stage 7 | -3.8 | -57.13 | 0.81 |
| Stage 7 | -4 | -56.17 | 4.79 |
| Stage 7 | -4.2 | -54.35 | 9.1 |
| Stage 7 | -4.4 | -51.59 | 13.77 |
| Stage 7 | -4.6 | -47.84 | 18.79 |
| Stage 7 | -4.8 | -43 | 24.16 |
| Stage 7 | -5 | -37.03 | 29.88 |
| Stage 7 | -5.2 | -29.84 | 35.95 |
| Stage 7 | -5.4 | -21.36 | 42.37 |
| Stage 7 | -5.6 | -11.54 | 49.14 |
| Stage 7 | -5.8 | -0.29 | 56.24 |
| Stage 7 | -6 | 10.23 | 52.57 |
| Stage 7 | -6.2 | 19.47 | 46.23 |
| Stage 7 | -6.4 | 26.91 | 37.2 |
| Stage 7 | -6.6 | 32.3 | 26.95 |
| Stage 7 | -6.8 | 35.8 | 17.5 |
| Stage 7 | -7 | 37.56 | 8.79 |
| Stage 7 | -7.2 | 37.73 | 0.82 |
| Stage 7 | -7.4 | 36.49 | -6.15 |
| Stage 7 | -7.6 | 34.04 | -12.28 |
| Stage 7 | -7.8 | 30.75 | -16.45 |
| Stage 7 | -8 | 26.95 | -18.97 |
| Stage 7 | -8.2 | 22.92 | -20.16 |
| Stage 7 | -8.4 | 18.87 | -20.27 |
| Stage 7 | -8.6 | 14.97 | -19.53 |
| Stage 7 | -8.8 | 11.34 | -18.12 |
| Stage 7 | -9 | 8.1 | -16.21 |
| Stage 7 | -9.2 | 5.32 | -13.89 |
| Stage 7 | -9.4 | 3.07 | -11.26 |
| Stage 7 | -9.6 | 1.4 | -8.35 |
| Stage 7 | -9.8 | 0.36 | -5.19 |
| Stage 7 | -10 | 0 | -1.81 |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE
RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 - Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 174 di 386 |

Risultati Elementi strutturali - NTC2018: A1+M1+R1 (R3 per tiranti)

Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Sollecitazione Strut

| Stage | Forza (kN/m) |
|---------|--------------|
| Stage 3 | 0 |
| Stage 4 | -3.0042766 |
| Stage 5 | -6.1086727 |
| Stage 6 | -15.125279 |
| Stage 7 | -19.28563 |

Risultati NTC2018: A2+M2+R1

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 0

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 0

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 1

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | 0.01 | 0.06 |
| Stage 1 | -0.6 | 0.04 | 0.12 |
| Stage 1 | -0.8 | 0.07 | 0.17 |
| Stage 1 | -1 | 0.11 | 0.18 |
| Stage 1 | -1.2 | 0.14 | 0.14 |
| Stage 1 | -1.4 | 0.15 | 0.09 |
| Stage 1 | -1.6 | 0.16 | 0.04 |
| Stage 1 | -1.8 | 0.16 | -0.01 |
| Stage 1 | -2 | 0.15 | -0.04 |
| Stage 1 | -2.2 | 0.14 | -0.06 |
| Stage 1 | -2.4 | 0.12 | -0.08 |
| Stage 1 | -2.6 | 0.11 | -0.08 |
| Stage 1 | -2.8 | 0.09 | -0.08 |
| Stage 1 | -3 | 0.08 | -0.07 |
| Stage 1 | -3.2 | 0.07 | -0.05 |
| Stage 1 | -3.4 | 0.06 | -0.05 |
| Stage 1 | -3.6 | 0.05 | -0.04 |
| Stage 1 | -3.8 | 0.04 | -0.03 |
| Stage 1 | -4 | 0.04 | -0.02 |
| Stage 1 | -4.2 | 0.04 | -0.01 |
| Stage 1 | -4.4 | 0.04 | 0.01 |
| Stage 1 | -4.6 | 0.04 | 0.02 |
| Stage 1 | -4.8 | 0.05 | 0.03 |
| Stage 1 | -5 | 0.05 | 0.03 |
| Stage 1 | -5.2 | 0.06 | 0.02 |
| Stage 1 | -5.4 | 0.06 | 0.01 |
| Stage 1 | -5.6 | 0.06 | -0.01 |
| Stage 1 | -5.8 | 0.05 | -0.04 |
| Stage 1 | -6 | 0.04 | -0.05 |
| Stage 1 | -6.2 | 0.03 | -0.05 |
| Stage 1 | -6.4 | 0.02 | -0.05 |
| Stage 1 | -6.6 | 0.01 | -0.05 |
| Stage 1 | -6.8 | 0 | -0.04 |
| Stage 1 | -7 | 0 | -0.03 |
| Stage 1 | -7.2 | -0.01 | -0.02 |
| Stage 1 | -7.4 | -0.01 | -0.02 |
| Stage 1 | -7.6 | -0.01 | -0.01 |
| Stage 1 | -7.8 | -0.01 | 0 |
| Stage 1 | -8 | -0.01 | 0 |
| Stage 1 | -8.2 | -0.01 | 0 |
| Stage 1 | -8.4 | -0.01 | 0.01 |
| Stage 1 | -8.6 | -0.01 | 0.01 |
| Stage 1 | -8.8 | -0.01 | 0.01 |
| Stage 1 | -9 | -0.01 | 0.01 |
| Stage 1 | -9.2 | -0.01 | 0.01 |
| Stage 1 | -9.4 | 0 | 0.01 |
| Stage 1 | -9.6 | 0 | 0.01 |
| Stage 1 | -9.8 | 0 | 0.01 |
| Stage 1 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 1

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | -0.01 | -0.06 |
| Stage 1 | -0.6 | -0.04 | -0.12 |
| Stage 1 | -0.8 | -0.07 | -0.17 |
| Stage 1 | -1 | -0.11 | -0.18 |
| Stage 1 | -1.2 | -0.14 | -0.14 |
| Stage 1 | -1.4 | -0.15 | -0.09 |
| Stage 1 | -1.6 | -0.16 | -0.04 |
| Stage 1 | -1.8 | -0.16 | 0.01 |
| Stage 1 | -2 | -0.15 | 0.04 |
| Stage 1 | -2.2 | -0.14 | 0.06 |
| Stage 1 | -2.4 | -0.12 | 0.08 |
| Stage 1 | -2.6 | -0.11 | 0.08 |
| Stage 1 | -2.8 | -0.09 | 0.08 |
| Stage 1 | -3 | -0.08 | 0.07 |
| Stage 1 | -3.2 | -0.07 | 0.05 |
| Stage 1 | -3.4 | -0.06 | 0.05 |
| Stage 1 | -3.6 | -0.05 | 0.04 |
| Stage 1 | -3.8 | -0.04 | 0.03 |
| Stage 1 | -4 | -0.04 | 0.02 |
| Stage 1 | -4.2 | -0.04 | 0.01 |
| Stage 1 | -4.4 | -0.04 | -0.01 |
| Stage 1 | -4.6 | -0.04 | -0.02 |
| Stage 1 | -4.8 | -0.05 | -0.03 |
| Stage 1 | -5 | -0.05 | -0.03 |
| Stage 1 | -5.2 | -0.06 | -0.02 |
| Stage 1 | -5.4 | -0.06 | -0.01 |
| Stage 1 | -5.6 | -0.06 | 0.01 |
| Stage 1 | -5.8 | -0.05 | 0.04 |
| Stage 1 | -6 | -0.04 | 0.05 |
| Stage 1 | -6.2 | -0.03 | 0.05 |
| Stage 1 | -6.4 | -0.02 | 0.05 |
| Stage 1 | -6.6 | -0.01 | 0.05 |
| Stage 1 | -6.8 | 0 | 0.04 |
| Stage 1 | -7 | 0 | 0.03 |
| Stage 1 | -7.2 | 0.01 | 0.02 |
| Stage 1 | -7.4 | 0.01 | 0.02 |
| Stage 1 | -7.6 | 0.01 | 0.01 |
| Stage 1 | -7.8 | 0.01 | 0 |
| Stage 1 | -8 | 0.01 | 0 |
| Stage 1 | -8.2 | 0.01 | 0 |
| Stage 1 | -8.4 | 0.01 | -0.01 |
| Stage 1 | -8.6 | 0.01 | -0.01 |
| Stage 1 | -8.8 | 0.01 | -0.01 |
| Stage 1 | -9 | 0.01 | -0.01 |
| Stage 1 | -9.2 | 0.01 | -0.01 |
| Stage 1 | -9.4 | 0 | -0.01 |
| Stage 1 | -9.6 | 0 | -0.01 |
| Stage 1 | -9.8 | 0 | -0.01 |
| Stage 1 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 2

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.8 | 0 | -0.01 |
| Stage 2 | -1 | -0.12 | -0.57 |
| Stage 2 | -1.2 | -0.24 | -0.64 |
| Stage 2 | -1.4 | -0.31 | -0.35 |
| Stage 2 | -1.6 | -0.33 | -0.11 |
| Stage 2 | -1.8 | -0.32 | 0.07 |
| Stage 2 | -2 | -0.29 | 0.18 |
| Stage 2 | -2.2 | -0.24 | 0.23 |
| Stage 2 | -2.4 | -0.19 | 0.25 |
| Stage 2 | -2.6 | -0.14 | 0.25 |
| Stage 2 | -2.8 | -0.09 | 0.22 |
| Stage 2 | -3 | -0.06 | 0.19 |
| Stage 2 | -3.2 | -0.02 | 0.16 |
| Stage 2 | -3.4 | 0 | 0.12 |
| Stage 2 | -3.6 | 0.02 | 0.09 |
| Stage 2 | -3.8 | 0.03 | 0.06 |
| Stage 2 | -4 | 0.04 | 0.04 |
| Stage 2 | -4.2 | 0.04 | 0.03 |
| Stage 2 | -4.4 | 0.05 | 0.03 |
| Stage 2 | -4.6 | 0.06 | 0.02 |
| Stage 2 | -4.8 | 0.06 | 0.02 |
| Stage 2 | -5 | 0.06 | 0.02 |
| Stage 2 | -5.2 | 0.07 | 0.01 |
| Stage 2 | -5.4 | 0.07 | 0 |
| Stage 2 | -5.6 | 0.06 | -0.02 |
| Stage 2 | -5.8 | 0.05 | -0.05 |
| Stage 2 | -6 | 0.04 | -0.06 |
| Stage 2 | -6.2 | 0.03 | -0.06 |
| Stage 2 | -6.4 | 0.02 | -0.05 |
| Stage 2 | -6.6 | 0.01 | -0.05 |
| Stage 2 | -6.8 | 0 | -0.04 |
| Stage 2 | -7 | -0.01 | -0.03 |
| Stage 2 | -7.2 | -0.01 | -0.02 |
| Stage 2 | -7.4 | -0.01 | -0.02 |
| Stage 2 | -7.6 | -0.02 | -0.01 |
| Stage 2 | -7.8 | -0.02 | 0 |
| Stage 2 | -8 | -0.02 | 0 |
| Stage 2 | -8.2 | -0.02 | 0 |
| Stage 2 | -8.4 | -0.01 | 0.01 |
| Stage 2 | -8.6 | -0.01 | 0.01 |
| Stage 2 | -8.8 | -0.01 | 0.01 |
| Stage 2 | -9 | -0.01 | 0.01 |
| Stage 2 | -9.2 | -0.01 | 0.01 |
| Stage 2 | -9.4 | 0 | 0.01 |
| Stage 2 | -9.6 | 0 | 0.01 |
| Stage 2 | -9.8 | 0 | 0.01 |
| Stage 2 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 2

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0.01 |
| Stage 2 | -1 | 0.12 | 0.57 |
| Stage 2 | -1.2 | 0.24 | 0.64 |
| Stage 2 | -1.4 | 0.31 | 0.35 |
| Stage 2 | -1.6 | 0.33 | 0.11 |
| Stage 2 | -1.8 | 0.32 | -0.07 |
| Stage 2 | -2 | 0.29 | -0.18 |
| Stage 2 | -2.2 | 0.24 | -0.23 |
| Stage 2 | -2.4 | 0.19 | -0.25 |
| Stage 2 | -2.6 | 0.14 | -0.25 |
| Stage 2 | -2.8 | 0.09 | -0.22 |
| Stage 2 | -3 | 0.06 | -0.19 |
| Stage 2 | -3.2 | 0.02 | -0.16 |
| Stage 2 | -3.4 | 0 | -0.12 |
| Stage 2 | -3.6 | -0.02 | -0.09 |
| Stage 2 | -3.8 | -0.03 | -0.06 |
| Stage 2 | -4 | -0.04 | -0.04 |
| Stage 2 | -4.2 | -0.04 | -0.03 |
| Stage 2 | -4.4 | -0.05 | -0.03 |
| Stage 2 | -4.6 | -0.06 | -0.02 |
| Stage 2 | -4.8 | -0.06 | -0.02 |
| Stage 2 | -5 | -0.06 | -0.02 |
| Stage 2 | -5.2 | -0.07 | -0.01 |
| Stage 2 | -5.4 | -0.07 | 0 |
| Stage 2 | -5.6 | -0.06 | 0.02 |
| Stage 2 | -5.8 | -0.05 | 0.05 |
| Stage 2 | -6 | -0.04 | 0.06 |
| Stage 2 | -6.2 | -0.03 | 0.06 |
| Stage 2 | -6.4 | -0.02 | 0.05 |
| Stage 2 | -6.6 | -0.01 | 0.05 |
| Stage 2 | -6.8 | 0 | 0.04 |
| Stage 2 | -7 | 0.01 | 0.03 |
| Stage 2 | -7.2 | 0.01 | 0.02 |
| Stage 2 | -7.4 | 0.01 | 0.02 |
| Stage 2 | -7.6 | 0.02 | 0.01 |
| Stage 2 | -7.8 | 0.02 | 0 |
| Stage 2 | -8 | 0.02 | 0 |
| Stage 2 | -8.2 | 0.02 | 0 |
| Stage 2 | -8.4 | 0.01 | -0.01 |
| Stage 2 | -8.6 | 0.01 | -0.01 |
| Stage 2 | -8.8 | 0.01 | -0.01 |
| Stage 2 | -9 | 0.01 | -0.01 |
| Stage 2 | -9.2 | 0.01 | -0.01 |
| Stage 2 | -9.4 | 0 | -0.01 |
| Stage 2 | -9.6 | 0 | -0.01 |
| Stage 2 | -9.8 | 0 | -0.01 |
| Stage 2 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 3

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 3 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.8 | 0 | -0.01 |
| Stage 3 | -1 | -0.12 | -0.57 |
| Stage 3 | -1.2 | -0.24 | -0.64 |
| Stage 3 | -1.4 | -0.31 | -0.35 |
| Stage 3 | -1.6 | -0.33 | -0.11 |
| Stage 3 | -1.8 | -0.32 | 0.07 |
| Stage 3 | -2 | -0.29 | 0.18 |
| Stage 3 | -2.2 | -0.24 | 0.23 |
| Stage 3 | -2.4 | -0.19 | 0.25 |
| Stage 3 | -2.6 | -0.14 | 0.25 |
| Stage 3 | -2.8 | -0.09 | 0.22 |
| Stage 3 | -3 | -0.06 | 0.19 |
| Stage 3 | -3.2 | -0.02 | 0.16 |
| Stage 3 | -3.4 | 0 | 0.12 |
| Stage 3 | -3.6 | 0.02 | 0.09 |
| Stage 3 | -3.8 | 0.03 | 0.06 |
| Stage 3 | -4 | 0.04 | 0.04 |
| Stage 3 | -4.2 | 0.04 | 0.03 |
| Stage 3 | -4.4 | 0.05 | 0.03 |
| Stage 3 | -4.6 | 0.06 | 0.02 |
| Stage 3 | -4.8 | 0.06 | 0.02 |
| Stage 3 | -5 | 0.06 | 0.02 |
| Stage 3 | -5.2 | 0.07 | 0.01 |
| Stage 3 | -5.4 | 0.07 | 0 |
| Stage 3 | -5.6 | 0.06 | -0.02 |
| Stage 3 | -5.8 | 0.05 | -0.05 |
| Stage 3 | -6 | 0.04 | -0.06 |
| Stage 3 | -6.2 | 0.03 | -0.06 |
| Stage 3 | -6.4 | 0.02 | -0.05 |
| Stage 3 | -6.6 | 0.01 | -0.05 |
| Stage 3 | -6.8 | 0 | -0.04 |
| Stage 3 | -7 | -0.01 | -0.03 |
| Stage 3 | -7.2 | -0.01 | -0.02 |
| Stage 3 | -7.4 | -0.01 | -0.02 |
| Stage 3 | -7.6 | -0.02 | -0.01 |
| Stage 3 | -7.8 | -0.02 | 0 |
| Stage 3 | -8 | -0.02 | 0 |
| Stage 3 | -8.2 | -0.02 | 0 |
| Stage 3 | -8.4 | -0.01 | 0.01 |
| Stage 3 | -8.6 | -0.01 | 0.01 |
| Stage 3 | -8.8 | -0.01 | 0.01 |
| Stage 3 | -9 | -0.01 | 0.01 |
| Stage 3 | -9.2 | -0.01 | 0.01 |
| Stage 3 | -9.4 | 0 | 0.01 |
| Stage 3 | -9.6 | 0 | 0.01 |
| Stage 3 | -9.8 | 0 | 0.01 |
| Stage 3 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 3

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 3 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0.01 |
| Stage 3 | -1 | 0.12 | 0.57 |
| Stage 3 | -1.2 | 0.24 | 0.64 |
| Stage 3 | -1.4 | 0.31 | 0.35 |
| Stage 3 | -1.6 | 0.33 | 0.11 |
| Stage 3 | -1.8 | 0.32 | -0.07 |
| Stage 3 | -2 | 0.29 | -0.18 |
| Stage 3 | -2.2 | 0.24 | -0.23 |
| Stage 3 | -2.4 | 0.19 | -0.25 |
| Stage 3 | -2.6 | 0.14 | -0.25 |
| Stage 3 | -2.8 | 0.09 | -0.22 |
| Stage 3 | -3 | 0.06 | -0.19 |
| Stage 3 | -3.2 | 0.02 | -0.16 |
| Stage 3 | -3.4 | 0 | -0.12 |
| Stage 3 | -3.6 | -0.02 | -0.09 |
| Stage 3 | -3.8 | -0.03 | -0.06 |
| Stage 3 | -4 | -0.04 | -0.04 |
| Stage 3 | -4.2 | -0.04 | -0.03 |
| Stage 3 | -4.4 | -0.05 | -0.03 |
| Stage 3 | -4.6 | -0.06 | -0.02 |
| Stage 3 | -4.8 | -0.06 | -0.02 |
| Stage 3 | -5 | -0.06 | -0.02 |
| Stage 3 | -5.2 | -0.07 | -0.01 |
| Stage 3 | -5.4 | -0.07 | 0 |
| Stage 3 | -5.6 | -0.06 | 0.02 |
| Stage 3 | -5.8 | -0.05 | 0.05 |
| Stage 3 | -6 | -0.04 | 0.06 |
| Stage 3 | -6.2 | -0.03 | 0.06 |
| Stage 3 | -6.4 | -0.02 | 0.05 |
| Stage 3 | -6.6 | -0.01 | 0.05 |
| Stage 3 | -6.8 | 0 | 0.04 |
| Stage 3 | -7 | 0.01 | 0.03 |
| Stage 3 | -7.2 | 0.01 | 0.02 |
| Stage 3 | -7.4 | 0.01 | 0.02 |
| Stage 3 | -7.6 | 0.02 | 0.01 |
| Stage 3 | -7.8 | 0.02 | 0 |
| Stage 3 | -8 | 0.02 | 0 |
| Stage 3 | -8.2 | 0.02 | 0 |
| Stage 3 | -8.4 | 0.01 | -0.01 |
| Stage 3 | -8.6 | 0.01 | -0.01 |
| Stage 3 | -8.8 | 0.01 | -0.01 |
| Stage 3 | -9 | 0.01 | -0.01 |
| Stage 3 | -9.2 | 0.01 | -0.01 |
| Stage 3 | -9.4 | 0 | -0.01 |
| Stage 3 | -9.6 | 0 | -0.01 |
| Stage 3 | -9.8 | 0 | -0.01 |
| Stage 3 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 4

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | 4.38 |
| Stage 4 | -0.2 | 0.88 | 4.38 |
| Stage 4 | -0.4 | 1.75 | 4.38 |
| Stage 4 | -0.6 | 2.63 | 4.38 |
| Stage 4 | -0.8 | 3.51 | 4.38 |
| Stage 4 | -1 | 4.38 | 4.38 |
| Stage 4 | -1.2 | 5.26 | 4.38 |
| Stage 4 | -1.4 | 6.11 | 4.25 |
| Stage 4 | -1.6 | 6.86 | 3.75 |
| Stage 4 | -1.8 | 7.44 | 2.89 |
| Stage 4 | -2 | 7.78 | 1.68 |
| Stage 4 | -2.2 | 7.8 | 0.13 |
| Stage 4 | -2.4 | 7.45 | -1.77 |
| Stage 4 | -2.6 | 6.65 | -4 |
| Stage 4 | -2.8 | 5.33 | -6.57 |
| Stage 4 | -3 | 3.44 | -9.46 |
| Stage 4 | -3.2 | 1.65 | -8.96 |
| Stage 4 | -3.4 | 0.16 | -7.46 |
| Stage 4 | -3.6 | -1 | -5.8 |
| Stage 4 | -3.8 | -1.82 | -4.09 |
| Stage 4 | -4 | -2.33 | -2.58 |
| Stage 4 | -4.2 | -2.6 | -1.34 |
| Stage 4 | -4.4 | -2.68 | -0.38 |
| Stage 4 | -4.6 | -2.61 | 0.34 |
| Stage 4 | -4.8 | -2.44 | 0.85 |
| Stage 4 | -5 | -2.21 | 1.17 |
| Stage 4 | -5.2 | -1.94 | 1.35 |
| Stage 4 | -5.4 | -1.65 | 1.41 |
| Stage 4 | -5.6 | -1.38 | 1.37 |
| Stage 4 | -5.8 | -1.12 | 1.28 |
| Stage 4 | -6 | -0.89 | 1.15 |
| Stage 4 | -6.2 | -0.69 | 1.01 |
| Stage 4 | -6.4 | -0.52 | 0.87 |
| Stage 4 | -6.6 | -0.37 | 0.73 |
| Stage 4 | -6.8 | -0.25 | 0.59 |
| Stage 4 | -7 | -0.16 | 0.47 |
| Stage 4 | -7.2 | -0.09 | 0.36 |
| Stage 4 | -7.4 | -0.03 | 0.26 |
| Stage 4 | -7.6 | 0 | 0.18 |
| Stage 4 | -7.8 | 0.03 | 0.12 |
| Stage 4 | -8 | 0.04 | 0.07 |
| Stage 4 | -8.2 | 0.05 | 0.03 |
| Stage 4 | -8.4 | 0.05 | 0 |
| Stage 4 | -8.6 | 0.04 | -0.02 |
| Stage 4 | -8.8 | 0.03 | -0.03 |
| Stage 4 | -9 | 0.03 | -0.04 |
| Stage 4 | -9.2 | 0.02 | -0.04 |
| Stage 4 | -9.4 | 0.01 | -0.04 |
| Stage 4 | -9.6 | 0.01 | -0.03 |
| Stage 4 | -9.8 | 0 | -0.02 |
| Stage 4 | -10 | 0 | -0.01 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 4

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | -4.38 |
| Stage 4 | -0.2 | -0.88 | -4.38 |
| Stage 4 | -0.4 | -1.75 | -4.38 |
| Stage 4 | -0.6 | -2.63 | -4.38 |
| Stage 4 | -0.8 | -3.51 | -4.38 |
| Stage 4 | -1 | -4.38 | -4.38 |
| Stage 4 | -1.2 | -5.26 | -4.38 |
| Stage 4 | -1.4 | -6.11 | -4.25 |
| Stage 4 | -1.6 | -6.86 | -3.75 |
| Stage 4 | -1.8 | -7.44 | -2.89 |
| Stage 4 | -2 | -7.78 | -1.68 |
| Stage 4 | -2.2 | -7.8 | -0.13 |
| Stage 4 | -2.4 | -7.45 | 1.77 |
| Stage 4 | -2.6 | -6.65 | 4 |
| Stage 4 | -2.8 | -5.33 | 6.57 |
| Stage 4 | -3 | -3.44 | 9.46 |
| Stage 4 | -3.2 | -1.65 | 8.96 |
| Stage 4 | -3.4 | -0.16 | 7.46 |
| Stage 4 | -3.6 | 1 | 5.8 |
| Stage 4 | -3.8 | 1.82 | 4.09 |
| Stage 4 | -4 | 2.33 | 2.58 |
| Stage 4 | -4.2 | 2.6 | 1.34 |
| Stage 4 | -4.4 | 2.68 | 0.38 |
| Stage 4 | -4.6 | 2.61 | -0.34 |
| Stage 4 | -4.8 | 2.44 | -0.85 |
| Stage 4 | -5 | 2.21 | -1.17 |
| Stage 4 | -5.2 | 1.94 | -1.35 |
| Stage 4 | -5.4 | 1.65 | -1.41 |
| Stage 4 | -5.6 | 1.38 | -1.37 |
| Stage 4 | -5.8 | 1.12 | -1.28 |
| Stage 4 | -6 | 0.89 | -1.15 |
| Stage 4 | -6.2 | 0.69 | -1.01 |
| Stage 4 | -6.4 | 0.52 | -0.87 |
| Stage 4 | -6.6 | 0.37 | -0.73 |
| Stage 4 | -6.8 | 0.25 | -0.59 |
| Stage 4 | -7 | 0.16 | -0.47 |
| Stage 4 | -7.2 | 0.09 | -0.36 |
| Stage 4 | -7.4 | 0.03 | -0.26 |
| Stage 4 | -7.6 | 0 | -0.18 |
| Stage 4 | -7.8 | -0.03 | -0.12 |
| Stage 4 | -8 | -0.04 | -0.07 |
| Stage 4 | -8.2 | -0.05 | -0.03 |
| Stage 4 | -8.4 | -0.05 | 0 |
| Stage 4 | -8.6 | -0.04 | 0.02 |
| Stage 4 | -8.8 | -0.03 | 0.03 |
| Stage 4 | -9 | -0.03 | 0.04 |
| Stage 4 | -9.2 | -0.02 | 0.04 |
| Stage 4 | -9.4 | -0.01 | 0.04 |
| Stage 4 | -9.6 | -0.01 | 0.03 |
| Stage 4 | -9.8 | 0 | 0.02 |
| Stage 4 | -10 | 0 | 0.01 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 5

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 5 | 0 | 0 | 10.59 |
| Stage 5 | -0.2 | 2.12 | 10.59 |
| Stage 5 | -0.4 | 4.24 | 10.59 |
| Stage 5 | -0.6 | 6.36 | 10.59 |
| Stage 5 | -0.8 | 8.48 | 10.59 |
| Stage 5 | -1 | 10.59 | 10.59 |
| Stage 5 | -1.2 | 12.71 | 10.59 |
| Stage 5 | -1.4 | 14.81 | 10.46 |
| Stage 5 | -1.6 | 16.8 | 9.96 |
| Stage 5 | -1.8 | 18.62 | 9.1 |
| Stage 5 | -2 | 20.2 | 7.89 |
| Stage 5 | -2.2 | 21.46 | 6.33 |
| Stage 5 | -2.4 | 22.35 | 4.44 |
| Stage 5 | -2.6 | 22.79 | 2.21 |
| Stage 5 | -2.8 | 22.72 | -0.36 |
| Stage 5 | -3 | 22.07 | -3.25 |
| Stage 5 | -3.2 | 20.77 | -6.48 |
| Stage 5 | -3.4 | 18.76 | -10.05 |
| Stage 5 | -3.6 | 15.98 | -13.94 |
| Stage 5 | -3.8 | 12.34 | -18.16 |
| Stage 5 | -4 | 7.8 | -22.7 |
| Stage 5 | -4.2 | 3.33 | -22.35 |
| Stage 5 | -4.4 | -0.77 | -20.53 |
| Stage 5 | -4.6 | -4.22 | -17.22 |
| Stage 5 | -4.8 | -6.89 | -13.34 |
| Stage 5 | -5 | -8.83 | -9.73 |
| Stage 5 | -5.2 | -10.11 | -6.37 |
| Stage 5 | -5.4 | -10.79 | -3.43 |
| Stage 5 | -5.6 | -10.97 | -0.88 |
| Stage 5 | -5.8 | -10.7 | 1.36 |
| Stage 5 | -6 | -10.06 | 3.19 |
| Stage 5 | -6.2 | -9.18 | 4.4 |
| Stage 5 | -6.4 | -8.16 | 5.1 |
| Stage 5 | -6.6 | -7.08 | 5.39 |
| Stage 5 | -6.8 | -6 | 5.38 |
| Stage 5 | -7 | -4.97 | 5.14 |
| Stage 5 | -7.2 | -4.03 | 4.74 |
| Stage 5 | -7.4 | -3.18 | 4.25 |
| Stage 5 | -7.6 | -2.44 | 3.7 |
| Stage 5 | -7.8 | -1.81 | 3.14 |
| Stage 5 | -8 | -1.29 | 2.59 |
| Stage 5 | -8.2 | -0.88 | 2.06 |
| Stage 5 | -8.4 | -0.56 | 1.59 |
| Stage 5 | -8.6 | -0.33 | 1.17 |
| Stage 5 | -8.8 | -0.16 | 0.81 |
| Stage 5 | -9 | -0.06 | 0.51 |
| Stage 5 | -9.2 | -0.01 | 0.28 |
| Stage 5 | -9.4 | 0.02 | 0.11 |
| Stage 5 | -9.6 | 0.02 | 0 |
| Stage 5 | -9.8 | 0.01 | -0.05 |
| Stage 5 | -10 | 0 | -0.04 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 5

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 5 | 0 | 0 | -10.59 |
| Stage 5 | -0.2 | -2.12 | -10.59 |
| Stage 5 | -0.4 | -4.24 | -10.59 |
| Stage 5 | -0.6 | -6.36 | -10.59 |
| Stage 5 | -0.8 | -8.48 | -10.59 |
| Stage 5 | -1 | -10.59 | -10.59 |
| Stage 5 | -1.2 | -12.71 | -10.59 |
| Stage 5 | -1.4 | -14.81 | -10.46 |
| Stage 5 | -1.6 | -16.8 | -9.96 |
| Stage 5 | -1.8 | -18.62 | -9.1 |
| Stage 5 | -2 | -20.2 | -7.89 |
| Stage 5 | -2.2 | -21.46 | -6.33 |
| Stage 5 | -2.4 | -22.35 | -4.44 |
| Stage 5 | -2.6 | -22.79 | -2.21 |
| Stage 5 | -2.8 | -22.72 | 0.36 |
| Stage 5 | -3 | -22.07 | 3.25 |
| Stage 5 | -3.2 | -20.77 | 6.48 |
| Stage 5 | -3.4 | -18.76 | 10.05 |
| Stage 5 | -3.6 | -15.98 | 13.94 |
| Stage 5 | -3.8 | -12.34 | 18.16 |
| Stage 5 | -4 | -7.8 | 22.7 |
| Stage 5 | -4.2 | -3.33 | 22.35 |
| Stage 5 | -4.4 | 0.77 | 20.53 |
| Stage 5 | -4.6 | 4.22 | 17.22 |
| Stage 5 | -4.8 | 6.89 | 13.34 |
| Stage 5 | -5 | 8.83 | 9.73 |
| Stage 5 | -5.2 | 10.11 | 6.37 |
| Stage 5 | -5.4 | 10.79 | 3.43 |
| Stage 5 | -5.6 | 10.97 | 0.88 |
| Stage 5 | -5.8 | 10.7 | -1.36 |
| Stage 5 | -6 | 10.06 | -3.19 |
| Stage 5 | -6.2 | 9.18 | -4.4 |
| Stage 5 | -6.4 | 8.16 | -5.1 |
| Stage 5 | -6.6 | 7.08 | -5.39 |
| Stage 5 | -6.8 | 6 | -5.38 |
| Stage 5 | -7 | 4.97 | -5.14 |
| Stage 5 | -7.2 | 4.03 | -4.74 |
| Stage 5 | -7.4 | 3.18 | -4.25 |
| Stage 5 | -7.6 | 2.44 | -3.7 |
| Stage 5 | -7.8 | 1.81 | -3.14 |
| Stage 5 | -8 | 1.29 | -2.59 |
| Stage 5 | -8.2 | 0.88 | -2.06 |
| Stage 5 | -8.4 | 0.56 | -1.59 |
| Stage 5 | -8.6 | 0.33 | -1.17 |
| Stage 5 | -8.8 | 0.16 | -0.81 |
| Stage 5 | -9 | 0.06 | -0.51 |
| Stage 5 | -9.2 | 0.01 | -0.28 |
| Stage 5 | -9.4 | -0.02 | -0.11 |
| Stage 5 | -9.6 | -0.02 | 0 |
| Stage 5 | -9.8 | -0.01 | 0.05 |
| Stage 5 | -10 | 0 | 0.04 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 6

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | 24.33 |
| Stage 6 | -0.2 | 4.87 | 24.33 |
| Stage 6 | -0.4 | 9.73 | 24.33 |
| Stage 6 | -0.6 | 14.6 | 24.33 |
| Stage 6 | -0.8 | 19.46 | 24.33 |
| Stage 6 | -1 | 24.33 | 24.33 |
| Stage 6 | -1.2 | 29.19 | 24.33 |
| Stage 6 | -1.4 | 34.03 | 24.19 |
| Stage 6 | -1.6 | 38.77 | 23.69 |
| Stage 6 | -1.8 | 43.34 | 22.83 |
| Stage 6 | -2 | 47.66 | 21.62 |
| Stage 6 | -2.2 | 51.67 | 20.07 |
| Stage 6 | -2.4 | 55.31 | 18.17 |
| Stage 6 | -2.6 | 58.5 | 15.94 |
| Stage 6 | -2.8 | 61.17 | 13.38 |
| Stage 6 | -3 | 63.27 | 10.48 |
| Stage 6 | -3.2 | 64.72 | 7.25 |
| Stage 6 | -3.4 | 65.46 | 3.68 |
| Stage 6 | -3.6 | 65.41 | -0.21 |
| Stage 6 | -3.8 | 64.53 | -4.43 |
| Stage 6 | -4 | 62.73 | -8.97 |
| Stage 6 | -4.2 | 59.97 | -13.83 |
| Stage 6 | -4.4 | 56.17 | -19.01 |
| Stage 6 | -4.6 | 51.26 | -24.52 |
| Stage 6 | -4.8 | 45.19 | -30.35 |
| Stage 6 | -5 | 37.89 | -36.5 |
| Stage 6 | -5.2 | 29.29 | -42.98 |
| Stage 6 | -5.4 | 19.34 | -49.78 |
| Stage 6 | -5.6 | 9.36 | -49.89 |
| Stage 6 | -5.8 | -0.34 | -48.51 |
| Stage 6 | -6 | -9.46 | -45.62 |
| Stage 6 | -6.2 | -17.71 | -41.24 |
| Stage 6 | -6.4 | -24.78 | -35.36 |
| Stage 6 | -6.6 | -30.38 | -27.98 |
| Stage 6 | -6.8 | -34.2 | -19.1 |
| Stage 6 | -7 | -36.43 | -11.14 |
| Stage 6 | -7.2 | -37.27 | -4.2 |
| Stage 6 | -7.4 | -36.9 | 1.83 |
| Stage 6 | -7.6 | -35.49 | 7.07 |
| Stage 6 | -7.8 | -33.16 | 11.62 |
| Stage 6 | -8 | -30.09 | 15.37 |
| Stage 6 | -8.2 | -26.43 | 18.3 |
| Stage 6 | -8.4 | -22.38 | 20.24 |
| Stage 6 | -8.6 | -18.21 | 20.87 |
| Stage 6 | -8.8 | -14.12 | 20.43 |
| Stage 6 | -9 | -10.3 | 19.09 |
| Stage 6 | -9.2 | -6.91 | 16.99 |
| Stage 6 | -9.4 | -4.06 | 14.23 |
| Stage 6 | -9.6 | -1.89 | 10.86 |
| Stage 6 | -9.8 | -0.5 | 6.95 |
| Stage 6 | -10 | 0 | 2.49 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 6

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | -24.33 |
| Stage 6 | -0.2 | -4.87 | -24.33 |
| Stage 6 | -0.4 | -9.73 | -24.33 |
| Stage 6 | -0.6 | -14.6 | -24.33 |
| Stage 6 | -0.8 | -19.46 | -24.33 |
| Stage 6 | -1 | -24.33 | -24.33 |
| Stage 6 | -1.2 | -29.19 | -24.33 |
| Stage 6 | -1.4 | -34.03 | -24.19 |
| Stage 6 | -1.6 | -38.77 | -23.69 |
| Stage 6 | -1.8 | -43.34 | -22.83 |
| Stage 6 | -2 | -47.66 | -21.62 |
| Stage 6 | -2.2 | -51.67 | -20.07 |
| Stage 6 | -2.4 | -55.31 | -18.17 |
| Stage 6 | -2.6 | -58.5 | -15.94 |
| Stage 6 | -2.8 | -61.17 | -13.38 |
| Stage 6 | -3 | -63.27 | -10.48 |
| Stage 6 | -3.2 | -64.72 | -7.25 |
| Stage 6 | -3.4 | -65.46 | -3.68 |
| Stage 6 | -3.6 | -65.41 | 0.21 |
| Stage 6 | -3.8 | -64.53 | 4.43 |
| Stage 6 | -4 | -62.73 | 8.97 |
| Stage 6 | -4.2 | -59.97 | 13.83 |
| Stage 6 | -4.4 | -56.17 | 19.01 |
| Stage 6 | -4.6 | -51.26 | 24.52 |
| Stage 6 | -4.8 | -45.19 | 30.35 |
| Stage 6 | -5 | -37.89 | 36.5 |
| Stage 6 | -5.2 | -29.29 | 42.98 |
| Stage 6 | -5.4 | -19.34 | 49.78 |
| Stage 6 | -5.6 | -9.36 | 49.89 |
| Stage 6 | -5.8 | 0.34 | 48.51 |
| Stage 6 | -6 | 9.46 | 45.62 |
| Stage 6 | -6.2 | 17.71 | 41.24 |
| Stage 6 | -6.4 | 24.78 | 35.36 |
| Stage 6 | -6.6 | 30.38 | 27.98 |
| Stage 6 | -6.8 | 34.2 | 19.1 |
| Stage 6 | -7 | 36.43 | 11.14 |
| Stage 6 | -7.2 | 37.27 | 4.2 |
| Stage 6 | -7.4 | 36.9 | -1.83 |
| Stage 6 | -7.6 | 35.49 | -7.07 |
| Stage 6 | -7.8 | 33.16 | -11.62 |
| Stage 6 | -8 | 30.09 | -15.37 |
| Stage 6 | -8.2 | 26.43 | -18.3 |
| Stage 6 | -8.4 | 22.38 | -20.24 |
| Stage 6 | -8.6 | 18.21 | -20.87 |
| Stage 6 | -8.8 | 14.12 | -20.43 |
| Stage 6 | -9 | 10.3 | -19.09 |
| Stage 6 | -9.2 | 6.91 | -16.99 |
| Stage 6 | -9.4 | 4.06 | -14.23 |
| Stage 6 | -9.6 | 1.89 | -10.86 |
| Stage 6 | -9.8 | 0.5 | -6.95 |
| Stage 6 | -10 | 0 | -2.49 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 7

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | 31.27 |
| Stage 7 | -0.2 | 6.25 | 31.27 |
| Stage 7 | -0.4 | 12.51 | 31.27 |
| Stage 7 | -0.6 | 18.76 | 31.27 |
| Stage 7 | -0.8 | 25.02 | 31.27 |
| Stage 7 | -1 | 31.27 | 31.27 |
| Stage 7 | -1.2 | 37.53 | 31.27 |
| Stage 7 | -1.4 | 43.76 | 31.14 |
| Stage 7 | -1.6 | 49.88 | 30.64 |
| Stage 7 | -1.8 | 55.84 | 29.78 |
| Stage 7 | -2 | 61.55 | 28.57 |
| Stage 7 | -2.2 | 66.96 | 27.01 |
| Stage 7 | -2.4 | 71.98 | 25.12 |
| Stage 7 | -2.6 | 76.56 | 22.89 |
| Stage 7 | -2.8 | 80.62 | 20.32 |
| Stage 7 | -3 | 84.11 | 17.42 |
| Stage 7 | -3.2 | 86.95 | 14.2 |
| Stage 7 | -3.4 | 89.07 | 10.63 |
| Stage 7 | -3.6 | 90.42 | 6.74 |
| Stage 7 | -3.8 | 90.92 | 2.52 |
| Stage 7 | -4 | 90.52 | -2.02 |
| Stage 7 | -4.2 | 89.14 | -6.88 |
| Stage 7 | -4.4 | 86.73 | -12.07 |
| Stage 7 | -4.6 | 83.21 | -17.57 |
| Stage 7 | -4.8 | 78.53 | -23.41 |
| Stage 7 | -5 | 72.62 | -29.56 |
| Stage 7 | -5.2 | 65.41 | -36.03 |
| Stage 7 | -5.4 | 56.85 | -42.83 |
| Stage 7 | -5.6 | 46.86 | -49.95 |
| Stage 7 | -5.8 | 35.38 | -57.38 |
| Stage 7 | -6 | 23.58 | -59 |
| Stage 7 | -6.2 | 11.76 | -59.12 |
| Stage 7 | -6.4 | 0.21 | -57.74 |
| Stage 7 | -6.6 | -10.76 | -54.87 |
| Stage 7 | -6.8 | -20.86 | -50.49 |
| Stage 7 | -7 | -29.79 | -44.62 |
| Stage 7 | -7.2 | -37.23 | -37.25 |
| Stage 7 | -7.4 | -42.91 | -28.38 |
| Stage 7 | -7.6 | -46.51 | -18.02 |
| Stage 7 | -7.8 | -47.75 | -6.16 |
| Stage 7 | -8 | -46.94 | 4.01 |
| Stage 7 | -8.2 | -44.42 | 12.61 |
| Stage 7 | -8.4 | -40.46 | 19.78 |
| Stage 7 | -8.6 | -35.33 | 25.66 |
| Stage 7 | -8.8 | -29.26 | 30.37 |
| Stage 7 | -9 | -22.57 | 33.42 |
| Stage 7 | -9.2 | -15.84 | 33.64 |
| Stage 7 | -9.4 | -9.68 | 30.84 |
| Stage 7 | -9.6 | -4.65 | 25.16 |
| Stage 7 | -9.8 | -1.27 | 16.87 |
| Stage 7 | -10 | 0 | 6.36 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 7

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | -31.27 |
| Stage 7 | -0.2 | -6.25 | -31.27 |
| Stage 7 | -0.4 | -12.51 | -31.27 |
| Stage 7 | -0.6 | -18.76 | -31.27 |
| Stage 7 | -0.8 | -25.02 | -31.27 |
| Stage 7 | -1 | -31.27 | -31.27 |
| Stage 7 | -1.2 | -37.53 | -31.27 |
| Stage 7 | -1.4 | -43.76 | -31.14 |
| Stage 7 | -1.6 | -49.88 | -30.64 |
| Stage 7 | -1.8 | -55.84 | -29.78 |
| Stage 7 | -2 | -61.55 | -28.57 |
| Stage 7 | -2.2 | -66.96 | -27.01 |
| Stage 7 | -2.4 | -71.98 | -25.12 |
| Stage 7 | -2.6 | -76.56 | -22.89 |
| Stage 7 | -2.8 | -80.62 | -20.32 |
| Stage 7 | -3 | -84.11 | -17.42 |
| Stage 7 | -3.2 | -86.95 | -14.2 |
| Stage 7 | -3.4 | -89.07 | -10.63 |
| Stage 7 | -3.6 | -90.42 | -6.74 |
| Stage 7 | -3.8 | -90.92 | -2.52 |
| Stage 7 | -4 | -90.52 | 2.02 |
| Stage 7 | -4.2 | -89.14 | 6.88 |
| Stage 7 | -4.4 | -86.73 | 12.07 |
| Stage 7 | -4.6 | -83.21 | 17.57 |
| Stage 7 | -4.8 | -78.53 | 23.41 |
| Stage 7 | -5 | -72.62 | 29.56 |
| Stage 7 | -5.2 | -65.41 | 36.03 |
| Stage 7 | -5.4 | -56.85 | 42.83 |
| Stage 7 | -5.6 | -46.86 | 49.95 |
| Stage 7 | -5.8 | -35.38 | 57.38 |
| Stage 7 | -6 | -23.58 | 59 |
| Stage 7 | -6.2 | -11.76 | 59.12 |
| Stage 7 | -6.4 | -0.21 | 57.74 |
| Stage 7 | -6.6 | 10.76 | 54.87 |
| Stage 7 | -6.8 | 20.86 | 50.49 |
| Stage 7 | -7 | 29.79 | 44.62 |
| Stage 7 | -7.2 | 37.23 | 37.25 |
| Stage 7 | -7.4 | 42.91 | 28.38 |
| Stage 7 | -7.6 | 46.51 | 18.02 |
| Stage 7 | -7.8 | 47.75 | 6.16 |
| Stage 7 | -8 | 46.94 | -4.01 |
| Stage 7 | -8.2 | 44.42 | -12.61 |
| Stage 7 | -8.4 | 40.46 | -19.78 |
| Stage 7 | -8.6 | 35.33 | -25.66 |
| Stage 7 | -8.8 | 29.26 | -30.37 |
| Stage 7 | -9 | 22.57 | -33.42 |
| Stage 7 | -9.2 | 15.84 | -33.64 |
| Stage 7 | -9.4 | 9.68 | -30.84 |
| Stage 7 | -9.6 | 4.65 | -25.16 |
| Stage 7 | -9.8 | 1.27 | -16.87 |
| Stage 7 | -10 | 0 | -6.36 |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 191 di 386 |

Risultati Elementi strutturali - NTC2018: A2+M2+R1

Design Assumption: NTC2018: A2+M2+R1 Sollecitazione Strut

| Stage | Forza (kN/m) |
|---------|----------------|
| Stage 3 | -3.2972756E-14 |
| Stage 4 | -4.384865 |
| Stage 5 | -10.5944 |
| Stage 6 | -24.32707 |
| Stage 7 | -31.27316 |

Descrizione sintetica dei risultati delle Design Assumption (Inviluppi)

Tabella Inviluppi Momento WallElement

| Design Assumption: Nominal | Inviluppi: Momento | Muro: WallElement |
|----------------------------|------------------------|----------------------|
| Z (m) | Lato sinistro (kN*m/m) | Lato destro (kN*m/m) |
| 0 | 0 | 0 |
| -0.2 | 0 | 3.857 |
| -0.4 | 0 | 7.714 |
| -0.6 | 0 | 11.571 |
| -0.8 | 0 | 15.429 |
| -1 | 0.126 | 19.286 |
| -1.2 | 0.282 | 23.143 |
| -1.4 | 0.37 | 27 |
| -1.6 | 0.401 | 30.857 |
| -1.8 | 0.389 | 34.714 |
| -2 | 0.349 | 38.496 |
| -2.2 | 0.296 | 42.129 |
| -2.4 | 0.236 | 45.54 |
| -2.6 | 0.178 | 48.655 |
| -2.8 | 0.124 | 51.403 |
| -3 | 0.077 | 53.713 |
| -3.2 | 0.037 | 55.512 |
| -3.4 | 0.007 | 56.728 |
| -3.6 | 0.054 | 57.29 |
| -3.8 | 0.765 | 57.127 |
| -4 | 1.262 | 56.17 |
| -4.2 | 1.572 | 54.349 |
| -4.4 | 2.353 | 51.594 |
| -4.6 | 4.216 | 47.836 |
| -4.8 | 5.432 | 43.003 |
| -5 | 6.114 | 37.027 |
| -5.2 | 6.372 | 29.836 |
| -5.4 | 6.308 | 21.362 |
| -5.6 | 9.242 | 11.535 |
| -5.8 | 15.699 | 0.287 |
| -6 | 20.554 | 0.046 |
| -6.2 | 23.892 | 0.033 |
| -6.4 | 26.913 | 0.021 |
| -6.6 | 32.304 | 0.011 |
| -6.8 | 35.804 | 0.002 |
| -7 | 37.562 | 0 |
| -7.2 | 37.725 | 0 |
| -7.4 | 36.494 | 0 |
| -7.6 | 34.039 | 0 |
| -7.8 | 30.75 | 0 |
| -8 | 26.955 | 0 |
| -8.2 | 22.924 | 0 |
| -8.4 | 18.87 | 0.003 |
| -8.6 | 14.965 | 0.007 |
| -8.8 | 11.341 | 0.008 |
| -9 | 8.099 | 0.007 |
| -9.2 | 5.32 | 0.017 |
| -9.4 | 3.069 | 0.017 |
| -9.6 | 1.4 | 0.011 |
| -9.8 | 0.361 | 0.004 |
| -10 | 0 | 0 |

Tabella Involuppi Momento WallElement_New

| Design Assumption: Nominal | Involuppi: Momento | Muro: WallElement_New |
|----------------------------|------------------------|-----------------------|
| Z (m) | Lato sinistro (kN*m/m) | Lato destro (kN*m/m) |
| 0 | 0 | 0 |
| -0.2 | 3.857 | 0 |
| -0.4 | 7.714 | 0 |
| -0.6 | 11.571 | 0 |
| -0.8 | 15.429 | 0 |
| -1 | 19.286 | 0.126 |
| -1.2 | 23.143 | 0.282 |
| -1.4 | 27 | 0.37 |
| -1.6 | 30.857 | 0.401 |
| -1.8 | 34.714 | 0.389 |
| -2 | 38.496 | 0.349 |
| -2.2 | 42.129 | 0.296 |
| -2.4 | 45.54 | 0.236 |
| -2.6 | 48.655 | 0.178 |
| -2.8 | 51.403 | 0.124 |
| -3 | 53.713 | 0.077 |
| -3.2 | 55.512 | 0.037 |
| -3.4 | 56.728 | 0.007 |
| -3.6 | 57.29 | 0.054 |
| -3.8 | 57.127 | 0.765 |
| -4 | 56.17 | 1.262 |
| -4.2 | 54.349 | 1.572 |
| -4.4 | 51.594 | 2.353 |
| -4.6 | 47.836 | 4.216 |
| -4.8 | 43.003 | 5.432 |
| -5 | 37.027 | 6.114 |
| -5.2 | 29.836 | 6.372 |
| -5.4 | 21.362 | 6.308 |
| -5.6 | 11.535 | 9.242 |
| -5.8 | 0.287 | 15.699 |
| -6 | 0.046 | 20.554 |
| -6.2 | 0.033 | 23.892 |
| -6.4 | 0.021 | 26.913 |
| -6.6 | 0.011 | 32.304 |
| -6.8 | 0.002 | 35.804 |
| -7 | 0 | 37.562 |
| -7.2 | 0 | 37.725 |
| -7.4 | 0 | 36.494 |
| -7.6 | 0 | 34.039 |
| -7.8 | 0 | 30.75 |
| -8 | 0 | 26.955 |
| -8.2 | 0 | 22.924 |
| -8.4 | 0.003 | 18.87 |
| -8.6 | 0.007 | 14.965 |
| -8.8 | 0.008 | 11.341 |
| -9 | 0.007 | 8.099 |
| -9.2 | 0.017 | 5.32 |
| -9.4 | 0.017 | 3.069 |
| -9.6 | 0.011 | 1.4 |
| -9.8 | 0.004 | 0.361 |
| -10 | 0 | 0 |

Tabella Involuppi Taglio WallElement

| Design Assumption: Nominal | Involuppi: Taglio | Muro: WallElement |
|----------------------------|----------------------|--------------------|
| Z (m) | Lato sinistro (kN/m) | Lato destro (kN/m) |
| 0 | 0.001 | 19.286 |
| -0.2 | 0.001 | 19.286 |
| -0.4 | 0 | 19.286 |
| -0.6 | 0 | 19.286 |
| -0.8 | 0.631 | 19.286 |
| -1 | 0.78 | 19.286 |
| -1.2 | 0.78 | 19.286 |
| -1.4 | 0.442 | 19.286 |
| -1.6 | 0.151 | 19.286 |
| -1.8 | 0.049 | 19.286 |
| -2 | 0.075 | 18.911 |
| -2.2 | 0.089 | 18.165 |
| -2.4 | 1.774 | 17.052 |
| -2.6 | 4.153 | 15.577 |
| -2.8 | 7.114 | 13.741 |
| -3 | 7.171 | 11.547 |
| -3.2 | 7.171 | 8.995 |
| -3.4 | 10.367 | 6.08 |
| -3.6 | 13.989 | 2.81 |
| -3.8 | 17.963 | 0.077 |
| -4 | 17.963 | 0.05 |
| -4.2 | 17.934 | 0.04 |
| -4.4 | 22.954 | 0.034 |
| -4.6 | 28.324 | 0.256 |
| -4.8 | 34.043 | 0.571 |
| -5 | 40.112 | 0.771 |
| -5.2 | 46.53 | 0.872 |
| -5.4 | 49.136 | 1.486 |
| -5.6 | 56.24 | 2.274 |
| -5.8 | 56.24 | 2.764 |
| -6 | 52.574 | 3.013 |
| -6.2 | 46.227 | 3.073 |
| -6.4 | 37.201 | 3.073 |
| -6.6 | 26.954 | 2.991 |
| -6.8 | 17.502 | 6.69 |
| -7 | 8.788 | 9.764 |
| -7.2 | 0.816 | 11.691 |
| -7.4 | 0.018 | 12.69 |
| -7.6 | 0.011 | 16.448 |
| -7.8 | 0.005 | 18.974 |
| -8 | 0 | 20.157 |
| -8.2 | 0 | 20.265 |
| -8.4 | 0 | 20.265 |
| -8.6 | 0 | 19.525 |
| -8.8 | 0.004 | 18.124 |
| -9 | 0.008 | 16.21 |
| -9.2 | 0.009 | 13.894 |
| -9.4 | 0.03 | 11.255 |
| -9.6 | 0.037 | 8.345 |
| -9.8 | 0.037 | 5.192 |
| -10 | 0.02 | 1.807 |

Tabella Involuppi Taglio WallElement_New

| Design Assumption: Nominal | Involuppi: Taglio | Muro: WallElement_New |
|----------------------------|----------------------|-----------------------|
| Z (m) | Lato sinistro (kN/m) | Lato destro (kN/m) |
| 0 | 19.286 | 0.001 |
| -0.2 | 19.286 | 0.001 |
| -0.4 | 19.286 | 0 |
| -0.6 | 19.286 | 0 |
| -0.8 | 19.286 | 0.631 |
| -1 | 19.286 | 0.78 |
| -1.2 | 19.286 | 0.78 |
| -1.4 | 19.286 | 0.442 |
| -1.6 | 19.286 | 0.151 |
| -1.8 | 19.286 | 0.049 |
| -2 | 18.911 | 0.075 |
| -2.2 | 18.165 | 0.089 |
| -2.4 | 17.052 | 1.774 |
| -2.6 | 15.577 | 4.153 |
| -2.8 | 13.741 | 7.114 |
| -3 | 11.547 | 7.171 |
| -3.2 | 8.995 | 7.171 |
| -3.4 | 6.08 | 10.367 |
| -3.6 | 2.81 | 13.989 |
| -3.8 | 0.077 | 17.963 |
| -4 | 0.05 | 17.963 |
| -4.2 | 0.04 | 17.934 |
| -4.4 | 0.034 | 22.954 |
| -4.6 | 0.256 | 28.324 |
| -4.8 | 0.571 | 34.043 |
| -5 | 0.771 | 40.112 |
| -5.2 | 0.872 | 46.53 |
| -5.4 | 1.486 | 49.136 |
| -5.6 | 2.274 | 56.24 |
| -5.8 | 2.764 | 56.24 |
| -6 | 3.013 | 52.574 |
| -6.2 | 3.073 | 46.227 |
| -6.4 | 3.073 | 37.201 |
| -6.6 | 2.991 | 26.954 |
| -6.8 | 6.69 | 17.502 |
| -7 | 9.764 | 8.788 |
| -7.2 | 11.691 | 0.816 |
| -7.4 | 12.69 | 0.018 |
| -7.6 | 16.448 | 0.011 |
| -7.8 | 18.974 | 0.005 |
| -8 | 20.157 | 0 |
| -8.2 | 20.265 | 0 |
| -8.4 | 20.265 | 0 |
| -8.6 | 19.525 | 0 |
| -8.8 | 18.124 | 0.004 |
| -9 | 16.21 | 0.008 |
| -9.2 | 13.894 | 0.009 |
| -9.4 | 11.255 | 0.03 |
| -9.6 | 8.345 | 0.037 |
| -9.8 | 5.192 | 0.037 |
| -10 | 1.807 | 0.02 |

Inviluppo Spinta Reale Efficace / Spinta Passiva

| Design Assumption | Stage | Muro | Lato | Inviluppo Spinta Reale Efficace / Spinta Passiva % |
|------------------------------------|---------|------------|-------|---|
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 0 | Left Wall | LEFT | 14.59 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 7 | Left Wall | RIGHT | 39.22 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 7 | Right wall | LEFT | 39.22 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 0 | Right wall | RIGHT | 14.59 |

Inviluppo Spinta Reale Efficace / Spinta Attiva

| Design Assumption | Stage | Muro | Lato | Inviluppo Spinta Reale Efficace / Spinta Attiva % |
|------------------------------------|---------|------------|-------|--|
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 7 | Left Wall | LEFT | 5165.46 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 0 | Left Wall | RIGHT | 8845.94 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 0 | Right wall | LEFT | 8845.94 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 7 | Right wall | RIGHT | 5165.46 |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE
RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| | | | | | |
|----------|---------|----------|------------|------|------------|
| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
| NR1J | 01 D 29 | CL | IN0600 002 | A | 198 di 386 |

Inviluppo Risultati Elementi Strutturali

| Elemento strutturale | Design Assumption | Stage | Puntone kN/m |
|----------------------|------------------------------------|---------|-----------------|
| Strut | NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 7 | -19.29 |

Normative adottate per le verifiche degli Elementi Strutturali

Normative Verifiche

| | |
|--------------|-----|
| Calcestruzzo | NTC |
| Acciaio | NTC |
| Tirante | NTC |

Coefficienti per Verifica Tiranti

| | |
|------------|------|
| GEO FS | 1 |
| ξ_{a3} | 1.8 |
| γ_s | 1.15 |

Risultati SteelWorld

Tabella Inviluppi Tasso di Sfruttamento a Momento - SteelWorld : LEFT

| Inviluppi Tasso di Sfruttamento a Momento - SteelWorld | LEFT |
|--|--|
| Z (m) | Tasso di Sfruttamento a Momento - SteelWorld |
| 0 | 0 |
| -0.2 | 0.035 |
| -0.4 | 0.07 |
| -0.6 | 0.105 |
| -0.8 | 0.14 |
| -1 | 0.175 |
| -1.2 | 0.21 |
| -1.4 | 0.245 |
| -1.6 | 0.28 |
| -1.8 | 0.315 |
| -2 | 0.349 |
| -2.2 | 0.382 |
| -2.4 | 0.413 |
| -2.6 | 0.441 |
| -2.8 | 0.466 |
| -3 | 0.487 |
| -3.2 | 0.503 |
| -3.4 | 0.514 |
| -3.6 | 0.519 |
| -3.8 | 0.518 |
| -4 | 0.509 |
| -4.2 | 0.492 |
| -4.4 | 0.467 |
| -4.6 | 0.433 |
| -4.8 | 0.39 |
| -5 | 0.335 |
| -5.2 | 0.27 |
| -5.4 | 0.194 |
| -5.6 | 0.105 |
| -5.8 | 0.142 |
| -6 | 0.186 |
| -6.2 | 0.216 |
| -6.4 | 0.244 |
| -6.6 | 0.293 |
| -6.8 | 0.324 |
| -7 | 0.34 |
| -7.2 | 0.342 |
| -7.4 | 0.331 |
| -7.6 | 0.308 |
| -7.8 | 0.279 |
| -8 | 0.244 |
| -8.2 | 0.208 |
| -8.4 | 0.171 |
| -8.6 | 0.136 |
| -8.8 | 0.103 |
| -9 | 0.073 |
| -9.2 | 0.048 |
| -9.4 | 0.028 |
| -9.6 | 0.013 |
| -9.8 | 0.003 |
| -10 | 0 |

Tabella Inviluppi Tasso di Sfruttamento a Momento - SteelWorld : RIGHT

| Inviluppi Tasso di Sfruttamento a Momento - SteelWorld | RIGHT |
|--|--|
| Z (m) | Tasso di Sfruttamento a Momento - SteelWorld |
| 0 | 0 |
| -0.2 | 0.035 |
| -0.4 | 0.07 |
| -0.6 | 0.105 |
| -0.8 | 0.14 |
| -1 | 0.175 |
| -1.2 | 0.21 |
| -1.4 | 0.245 |
| -1.6 | 0.28 |
| -1.8 | 0.315 |
| -2 | 0.349 |
| -2.2 | 0.382 |
| -2.4 | 0.413 |
| -2.6 | 0.441 |
| -2.8 | 0.466 |
| -3 | 0.487 |
| -3.2 | 0.503 |
| -3.4 | 0.514 |
| -3.6 | 0.519 |
| -3.8 | 0.518 |
| -4 | 0.509 |
| -4.2 | 0.492 |
| -4.4 | 0.467 |
| -4.6 | 0.433 |
| -4.8 | 0.39 |
| -5 | 0.335 |
| -5.2 | 0.27 |
| -5.4 | 0.194 |
| -5.6 | 0.105 |
| -5.8 | 0.142 |
| -6 | 0.186 |
| -6.2 | 0.216 |
| -6.4 | 0.244 |
| -6.6 | 0.293 |
| -6.8 | 0.324 |
| -7 | 0.34 |
| -7.2 | 0.342 |
| -7.4 | 0.331 |
| -7.6 | 0.308 |
| -7.8 | 0.279 |
| -8 | 0.244 |
| -8.2 | 0.208 |
| -8.4 | 0.171 |
| -8.6 | 0.136 |
| -8.8 | 0.103 |
| -9 | 0.073 |
| -9.2 | 0.048 |
| -9.4 | 0.028 |
| -9.6 | 0.013 |
| -9.8 | 0.003 |
| -10 | 0 |

Tabella Inviluppi Tasso di Sfruttamento a Taglio - SteelWorld : LEFT

| Inviluppi Tasso di Sfruttamento a Taglio - SteelWorld | LEFT |
|---|---|
| Z (m) | Tasso di Sfruttamento a Taglio - SteelWorld |
| 0 | 0.02 |
| -0.2 | 0.02 |
| -0.4 | 0.02 |
| -0.6 | 0.02 |
| -0.8 | 0.02 |
| -1 | 0.02 |
| -1.2 | 0.02 |
| -1.4 | 0.02 |
| -1.6 | 0.02 |
| -1.8 | 0.019 |
| -2 | 0.019 |
| -2.2 | 0.017 |
| -2.4 | 0.016 |
| -2.6 | 0.014 |
| -2.8 | 0.012 |
| -3 | 0.009 |
| -3.2 | 0.007 |
| -3.4 | 0.011 |
| -3.6 | 0.014 |
| -3.8 | 0.018 |
| -4 | 0.017 |
| -4.2 | 0.018 |
| -4.4 | 0.023 |
| -4.6 | 0.029 |
| -4.8 | 0.035 |
| -5 | 0.041 |
| -5.2 | 0.047 |
| -5.4 | 0.05 |
| -5.6 | 0.057 |
| -5.8 | 0.054 |
| -6 | 0.047 |
| -6.2 | 0.038 |
| -6.4 | 0.027 |
| -6.6 | 0.018 |
| -6.8 | 0.009 |
| -7 | 0.01 |
| -7.2 | 0.012 |
| -7.4 | 0.013 |
| -7.6 | 0.017 |
| -7.8 | 0.019 |
| -8 | 0.021 |
| -8.2 | 0.021 |
| -8.4 | 0.02 |
| -8.6 | 0.018 |
| -8.8 | 0.017 |
| -9 | 0.014 |
| -9.2 | 0.011 |
| -9.4 | 0.009 |
| -9.6 | 0.005 |
| -9.8 | 0.002 |
| -10 | 0.002 |

Tabella Inviluppi Tasso di Sfruttamento a Taglio - SteelWorld : RIGHT

| Inviluppi Tasso di Sfruttamento a Taglio - SteelWorld | RIGHT |
|---|---|
| Z (m) | Tasso di Sfruttamento a Taglio - SteelWorld |
| 0 | 0.02 |
| -0.2 | 0.02 |
| -0.4 | 0.02 |
| -0.6 | 0.02 |
| -0.8 | 0.02 |
| -1 | 0.02 |
| -1.2 | 0.02 |
| -1.4 | 0.02 |
| -1.6 | 0.02 |
| -1.8 | 0.019 |
| -2 | 0.019 |
| -2.2 | 0.017 |
| -2.4 | 0.016 |
| -2.6 | 0.014 |
| -2.8 | 0.012 |
| -3 | 0.009 |
| -3.2 | 0.007 |
| -3.4 | 0.011 |
| -3.6 | 0.014 |
| -3.8 | 0.018 |
| -4 | 0.017 |
| -4.2 | 0.018 |
| -4.4 | 0.023 |
| -4.6 | 0.029 |
| -4.8 | 0.035 |
| -5 | 0.041 |
| -5.2 | 0.047 |
| -5.4 | 0.05 |
| -5.6 | 0.057 |
| -5.8 | 0.054 |
| -6 | 0.047 |
| -6.2 | 0.038 |
| -6.4 | 0.027 |
| -6.6 | 0.018 |
| -6.8 | 0.009 |
| -7 | 0.01 |
| -7.2 | 0.012 |
| -7.4 | 0.013 |
| -7.6 | 0.017 |
| -7.8 | 0.019 |
| -8 | 0.021 |
| -8.2 | 0.021 |
| -8.4 | 0.02 |
| -8.6 | 0.018 |
| -8.8 | 0.017 |
| -9 | 0.014 |
| -9.2 | 0.011 |
| -9.4 | 0.009 |
| -9.6 | 0.005 |
| -9.8 | 0.002 |
| -10 | 0.002 |

Verifiche Puntoni Nominal

| Design | Tipo Risultato: | | | | | | | | | | | | |
|-------------|-----------------|-----------|---------------------------|-----------------|------------|---------------------------------|-----------------|------------------|-----------------|-------------------------------------|-----|-----|-----------------------|
| Assumption: | Verifiche | | | | | | | | | | | | |
| Nominal | Puntoni | | | | | | | | | | | | |
| Puntone | Sezione | Materiale | Spaziatura orizzontale | Lunghezza Stage | Stage | Carico distribuito (kN/m) | Assiale (kN) | Ratio momento | Ratio taglio | Instabilità λ y λ z | | | λ laterale |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 3 | 0 | 0 | 0 | 0.004 | 0 | 0 | 0 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 4 | -2.282 | -5.706 | 0.005 | 0.004 | 0.11 | 205 | 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 5 | -4.485 | -11.211 | 0.011 | 0.004 | 0.144 | 205 | 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 6 | -11.218 | -28.044 | 0.026 | 0.004 | 0.247 | 205 | 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 7 | -14.33 | -35.824 | 0.034 | 0.004 | 0.294 | 205 | 205 | 0 |

Verifiche Puntoni NTC2018: SLE (Rara/Frequente/Quasi Permanente)

| Design Assumption: | Tipo | NTC2018 | | | | | | | | | | | | |
|-----------------------------------|-------------------|-----------|---------------------------|-----------|---------|---------------------------------|-----------------|------------------|-----------------|----------------------------|-------------|-----------|-----------|----------|
| NTC2018: SLE | Risultato: | (ITA) | | | | | | | | | | | | |
| (Rara/Frequente/Quasi Permanente) | Verifiche Puntoni | | | | | | | | | | | | | |
| Puntone | Sezione | Materiale | Spaziatura orizzontale | Lunghezza | Stage | Carico distribuito (kN/m) | Assiale (kN) | Ratio momento | Ratio taglio | Instabilità λ y | λ z | λ | λ | laterale |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 3 | 0 | 0 | 0 | 0.004 | 0 | 0 | 0 | 0 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 4 | -2.282 | -5.706 | 0.005 | 0.004 | 0.11 | 205 | 205 | 0 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 5 | -4.485 | - | 0.011 | 0.004 | 0.144 | 205 | 205 | 0 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 6 | -11.218 | - | 0.026 | 0.004 | 0.247 | 205 | 205 | 0 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 7 | -14.33 | - | 0.034 | 0.004 | 0.294 | 205 | 205 | 0 | 0 |

Verifiche Puntoni NTC2018: A1+M1+R1 (R3 per tiranti)

| Design | Tipo Risultato: NTC2018 | | | | | | | | | | | |
|---------------------------|-------------------------|-----------|---------------------------|-----------|---------|---------------------------------|-----------------|------------------|-----------------|-------------------------|-------------|-----------------------|
| Assumption: | Verifiche (ITA) | | | | | | | | | | | |
| NTC2018: | Puntoni | | | | | | | | | | | |
| A1+M1+R1 (R3 per tiranti) | | | | | | | | | | | | |
| Puntone | Sezione | Materiale | Spaziatura orizzontale | Lunghezza | Stage | Carico distribuito (kN/m) | Assiale (kN) | Ratio momento | Ratio taglio | Instabilità λ y | λ z | λ laterale |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 3 | 0 | 0 | 0 | 0.005 | 0 | 0 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 4 | -3.004 | -7.511 | 0.007 | 0.005 | 0.145 | 205 | 205 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 5 | -6.109 | -15.272 | 0.014 | 0.005 | 0.193 | 205 | 205 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 6 | -15.125 | -37.813 | 0.035 | 0.005 | 0.333 | 205 | 205 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 7 | -19.286 | -48.214 | 0.045 | 0.005 | 0.397 | 205 | 205 |

Verifiche Puntoni NTC2018: A2+M2+R1

| Design | Tipo Risultato: NTC2018 | | | | | | | | | | | |
|-------------|-------------------------|-----------|---------------------------|-----------------|------------|---------------------------------|-----------------|------------------|-----------------|-------------------------------------|---------|-----------------------|
| Assumption: | Verifiche (ITA) | | | | | | | | | | | |
| NTC2018: | Puntoni | | | | | | | | | | | |
| A2+M2+R1 | | | | | | | | | | | | |
| Puntone | Sezione | Materiale | Spaziatura orizzontale | Lunghezza Stage | Stage | Carico distribuito (kN/m) | Assiale (kN) | Ratio momento | Ratio taglio | Instabilità λ y λ z | | λ laterale |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 3 | 0 | 0 | 0 | 0.004 | 0.075 | 205 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 4 | -4.385 | -10.962 | 0.01 | 0.004 | 0.142 | 205 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 5 | -10.594 | -26.486 | 0.025 | 0.004 | 0.237 | 205 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 6 | -24.327 | -60.818 | 0.057 | 0.004 | 0.447 | 205 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 7 | -31.273 | -78.183 | 0.073 | 0.004 | 0.553 | 205 205 | 0 |

|  <p>ITALFERR GRUPPO FERROVIE DELLO STATO ITALIANE</p> | <p>INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE - AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE</p> <p>RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE</p> | | | | | | | | | | | | |
|---|---|----------|------------|----------|------------|------|--------|------|---------|----|------------|---|------------|
| <p>IN06 – Tombino idraulico al km 30+743 Relazione di calcolo delle opere provvisionali</p> | <table border="1"> <thead> <tr> <th>COMMESSA</th> <th>LOTTO</th> <th>CODIFICA</th> <th>DOCUMENTO</th> <th>REV.</th> <th>FOGLIO</th> </tr> </thead> <tbody> <tr> <td>NR1J</td> <td>01 D 29</td> <td>CL</td> <td>IN0600 002</td> <td>A</td> <td>209 di 386</td> </tr> </tbody> </table> | COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | NR1J | 01 D 29 | CL | IN0600 002 | A | 209 di 386 |
| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | | | | | | | | |
| NR1J | 01 D 29 | CL | IN0600 002 | A | 209 di 386 | | | | | | | | |

Verifiche Travi di Ripartizione Nominal

|  <p>ITALFERR GRUPPO FERROVIE DELLO STATO ITALIANE</p> | <p>INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE - AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE</p> <p>RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE</p> | | | | | | | | | | | | |
|---|---|----------|------------|----------|------------|------|--------|------|---------|----|------------|---|------------|
| <p>IN06 – Tombino idraulico al km 30+743 Relazione di calcolo delle opere provvisionali</p> | <table border="1"> <thead> <tr> <th>COMMESSA</th> <th>LOTTO</th> <th>CODIFICA</th> <th>DOCUMENTO</th> <th>REV.</th> <th>FOGLIO</th> </tr> </thead> <tbody> <tr> <td>NR1J</td> <td>01 D 29</td> <td>CL</td> <td>IN0600 002</td> <td>A</td> <td>210 di 386</td> </tr> </tbody> </table> | COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | NR1J | 01 D 29 | CL | IN0600 002 | A | 210 di 386 |
| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | | | | | | | | |
| NR1J | 01 D 29 | CL | IN0600 002 | A | 210 di 386 | | | | | | | | |

Verifiche Travi di Ripartizione NTC2018: SLE (Rara/Frequente/Quasi Permanente)

|  <p>ITALFERR GRUPPO FERROVIE DELLO STATO ITALIANE</p> | <p>INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE - AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE</p> <p>RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE</p> | | | | | | | | | | | | |
|---|---|----------|------------|----------|------------|------|--------|------|---------|----|------------|---|------------|
| <p>IN06 – Tombino idraulico al km 30+743 Relazione di calcolo delle opere provvisionali</p> | <table border="1"> <thead> <tr> <th>COMMESSA</th> <th>LOTTO</th> <th>CODIFICA</th> <th>DOCUMENTO</th> <th>REV.</th> <th>FOGLIO</th> </tr> </thead> <tbody> <tr> <td>NR1J</td> <td>01 D 29</td> <td>CL</td> <td>IN0600 002</td> <td>A</td> <td>211 di 386</td> </tr> </tbody> </table> | COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | NR1J | 01 D 29 | CL | IN0600 002 | A | 211 di 386 |
| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | | | | | | | | |
| NR1J | 01 D 29 | CL | IN0600 002 | A | 211 di 386 | | | | | | | | |

Verifiche Travi di Ripartizione NTC2018: A1+M1+R1 (R3 per tiranti)

|  <p>ITALFERR GRUPPO FERROVIE DELLO STATO ITALIANE</p> | <p>INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE - AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE</p> <p>RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE</p> | | | | | | | | | | | | |
|---|---|----------|------------|----------|------------|------|--------|------|---------|----|------------|---|------------|
| <p>IN06 – Tombino idraulico al km 30+743 Relazione di calcolo delle opere provvisionali</p> | <table border="1"> <thead> <tr> <th>COMMESSA</th> <th>LOTTO</th> <th>CODIFICA</th> <th>DOCUMENTO</th> <th>REV.</th> <th>FOGLIO</th> </tr> </thead> <tbody> <tr> <td>NR1J</td> <td>01 D 29</td> <td>CL</td> <td>IN0600 002</td> <td>A</td> <td>212 di 386</td> </tr> </tbody> </table> | COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | NR1J | 01 D 29 | CL | IN0600 002 | A | 212 di 386 |
| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | | | | | | | | |
| NR1J | 01 D 29 | CL | IN0600 002 | A | 212 di 386 | | | | | | | | |

Verifiche Travi di Ripartizione NTC2018: A2+M2+R1



**INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE**

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 213 di 386 |

Allegati

Design Assumption : Nominal - File di Paratie - File di input (.d)

```
* PARATIE ANALYSIS FOR DESIGN SECTION:Base Design Section USING ASSUMPTION: Nominal
* Time:venerdi 26 ottobre 2018 17:29:32
* 1: Defining general settings
UNIT m kN
TITLE Esempio
DELTA 0.2
option param itemax 40
option control hinges 0 0.0001 0.001

* 2: Defining wall(s)
WALL LeftWall_32 -9.45 -10 0 1
WALL Rightwall_3999 0 -10 0 -1

* 3: Defining surfaces for wall(s)
SOIL 0_L LeftWall_32 -10 0 1 0
SOIL 0_R LeftWall_32 -10 0 2 180
SOIL 1_L Rightwall_3999 -10 0 2 0
SOIL 1_R Rightwall_3999 -10 0 1 180

* 4: Defining soil layers
*
* Soil Profile (Terrenovegetale_2_34713_0)
*
LDATA Terrenovegetale_2_34713_0 3
ATREST 0.56 0.5 1
WEIGHT 15 5 10
PERMEABILITY 0.0001
RESISTANCE 10 26 0 0 0
YOUNG 5000 8000
ENDDL
*
* Soil Profile (Limosabbioso_5_35122_0)
*
LDATA Limosabbioso_5_35122_0 0
ATREST 0.56 0.5 1
WEIGHT 17 7 10
PERMEABILITY 0.0001
RESISTANCE 10 26 0 0 0
YOUNG 1.5E+04 2.4E+04
ENDDL

* 5: Defining structural materials
* Steel material: 113 Name=S275 E=210000000 kPa
MATERIAL S275_113 2.1E+08
* Concrete material: 104 Name=C25/30 E=31475800 kPa
MATERIAL C2530_104 3.148E+07
* Concrete material: 103 Name=C20/25 E=29962000 kPa
MATERIAL C2025_103 2.996E+07

* 6: Defining structural elements
* 6.1: Beams and combined Wall Elements
BEAM WallElement_33 LeftWall_32 -10 0 S275_113 0.07821 00 00 0
BEAM WallElement_New_34998 Rightwall_3999 -10 0 S275_113 0.07821 00 00 0

* 6.2: Supports

TRUS Strut_64640 0 S275_113 0.0007603 no 0 0 0

* 6.3: Strips
STRIP LeftWall_32 2 8 0.5 5 0 10 45
STRIP Rightwall_3999 2 8 0.5 5 0 10 45

* 7: Defining Steps
STEP Stage0_69964
```



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 214 di 386 |

CHANGE Terrenovegetale_2_34713_0 U-FRICT=26 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-FRICT=26 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KA=0.39 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KP=3.404 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KA=0.39 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KP=3.404 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-FRICT=26 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-FRICT=26 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KA=0.39 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KP=3.404 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KA=0.39 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KP=3.404 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-FRICT=26 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-FRICT=26 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KA=0.39 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KP=3.404 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KA=0.39 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KP=3.404 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-FRICT=26 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-FRICT=26 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KA=0.39 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KP=3.404 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KA=0.39 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KP=3.404 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-COHE=10 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-COHE=10 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-COHE=10 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-COHE=10 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-COHE=10 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-COHE=10 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-COHE=10 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-COHE=10 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 Rightwall_3999
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage1_34164
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ADD WallElement_33 WallElement_New_34998
ENDSTEP

STEP Stage2_65398
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage3_65586
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ADD Strut_64640
ENDSTEP

STEP Stage4_66644

**IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali**

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 215 di 386 |

```
SETWALL LeftWall_32
GEOM 0 -3
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -3
WATER -10.4 0 -10 0 0
ENDSTEP
```

```
STEP Stage5_67702
SETWALL LeftWall_32
GEOM 0 -4
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -4
WATER -10.4 0 -10 0 0
ENDSTEP
```

```
STEP Stage6_67890
SETWALL LeftWall_32
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
ENDSTEP
```

```
STEP Stage7_68426
SETWALL LeftWall_32
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
ENDSTEP
```



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE
RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 - Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 216 di 386 |

Design Assumption : NTC2018: SLE (Rara/Frequente/Quasi Permanente) - File di Paratie - File di input (.d)

```
* PARATIE ANALYSIS FOR DESIGN SECTION:Base Design Section USING ASSUMPTION: NTC2018: SLE (Rara/Frequente/Quasi Permanente)
* Time:venerdì 26 ottobre 2018 17:29:35
* 1: Defining general settings
UNIT m kN
TITLE Esempio
DELTA 0.2
option param itemax 40
option control hinges 0 0.0001 0.001

* 2: Defining wall(s)
WALL LeftWall_32 -9.45 -10 0 1
WALL Rightwall_3999 0 -10 0 -1

* 3: Defining surfaces for wall(s)
SOIL 0_L LeftWall_32 -10 0 1 0
SOIL 0_R LeftWall_32 -10 0 2 180
SOIL 1_L Rightwall_3999 -10 0 2 0
SOIL 1_R Rightwall_3999 -10 0 1 180

* 4: Defining soil layers
*
* Soil Profile (Terrenovegetale_2_34713_0)
*
LDATA Terrenovegetale_2_34713_0 3
ATREST 0.56 0.5 1
WEIGHT 15 5 10
PERMEABILITY 0.0001
RESISTANCE 10 26 0 0 0
YOUNG 5000 8000
ENDDL
*
* Soil Profile (Limosabbioso_5_35122_0)
*
LDATA Limosabbioso_5_35122_0 0
ATREST 0.56 0.5 1
WEIGHT 17 7 10
PERMEABILITY 0.0001
RESISTANCE 10 26 0 0 0
YOUNG 1.5E+04 2.4E+04
ENDDL

* 5: Defining structural materials
* Steel material: 113 Name=S275 E=210000000 kPa
MATERIAL S275_113 2.1E+08
* Concrete material: 104 Name=C25/30 E=31475800 kPa
MATERIAL C2530_104 3.148E+07
* Concrete material: 103 Name=C20/25 E=29962000 kPa
MATERIAL C2025_103 2.996E+07

* 6: Defining structural elements
* 6.1: Beams and combined Wall Elements
BEAM WallElement_33 LeftWall_32 -10 0 S275_113 0.07821 00 00 0
BEAM WallElement_New_34998 Rightwall_3999 -10 0 S275_113 0.07821 00 00 0

* 6.2: Supports

TRUS Strut_64640 0 S275_113 0.0007603 no 0 0 0

* 6.3: Strips
STRIP LeftWall_32 2 8 0.5 5 0 10 45
STRIP Rightwall_3999 2 8 0.5 5 0 10 45

* 7: Defining Steps
STEP Stage0_69964
CHANGE Terrenovegetale_2_34713_0 U-FRICT=26 LeftWall_32
```



**INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE – AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE**

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

**IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali**

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 217 di 386 |

CHANGE Terrenovegetale_2_34713_0 D-FRICT=26 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KA=0.39 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KP=3.404 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KA=0.39 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KP=3.404 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-FRICT=26 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-FRICT=26 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KA=0.39 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KP=3.404 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KA=0.39 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KP=3.404 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-FRICT=26 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-FRICT=26 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KA=0.39 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KP=3.404 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KA=0.39 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KP=3.404 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-FRICT=26 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-FRICT=26 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KA=0.39 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KP=3.404 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KA=0.39 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KP=3.404 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-COHE=10 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-COHE=10 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-COHE=10 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-COHE=10 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-COHE=10 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-COHE=10 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-COHE=10 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-COHE=10 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 Rightwall_3999
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage1_34164
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ADD WallElement_33 WallElement_New_34998
ENDSTEP

STEP Stage2_65398
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage3_65586
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ADD Strut_64640
ENDSTEP

STEP Stage4_66644
SETWALL LeftWall_32

**IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali**

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 218 di 386 |

GEOM 0 -3
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -3
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage5_67702
SETWALL LeftWall_32
GEOM 0 -4
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -4
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage6_67890
SETWALL LeftWall_32
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage7_68426
SETWALL LeftWall_32
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
ENDSTEP



INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE - AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE
RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 219 di 386 |

Design Assumption : NTC2018: A1+M1+R1 (R3 per tiranti) - File di Paratie - File di input (.d)

* PARATIE ANALYSIS FOR DESIGN SECTION:Base Design Section USING ASSUMPTION: NTC2018: A1+M1+R1 (R3 per tiranti)

* Time:venerdì 26 ottobre 2018 17:29:37

* 1: Defining general settings

UNIT m kN

TITLE Esempio

DELTA 0.2

option param itemax 40

option control hinges 0 0.0001 0.001

* 2: Defining wall(s)

WALL LeftWall_32 -9.45 -10 0 1

WALL Rightwall_3999 0 -10 0 -1

* 3: Defining surfaces for wall(s)

SOIL 0_L LeftWall_32 -10 0 1 0

SOIL 0_R LeftWall_32 -10 0 2 180

SOIL 1_L Rightwall_3999 -10 0 2 0

SOIL 1_R Rightwall_3999 -10 0 1 180

* 4: Defining soil layers

*

* Soil Profile (Terrenovegetale_2_34713_0)

*

LDATA Terrenovegetale_2_34713_0 3

ATREST 0.56 0.5 1

WEIGHT 15 5 10

PERMEABILITY 0.0001

RESISTANCE 10 26 0 0 0

YOUNG 5000 8000

ENDDL

*

* Soil Profile (Limosabbioso_5_35122_0)

*

LDATA Limosabbioso_5_35122_0 0

ATREST 0.56 0.5 1

WEIGHT 17 7 10

PERMEABILITY 0.0001

RESISTANCE 10 26 0 0 0

YOUNG 1.5E+04 2.4E+04

ENDDL

* 5: Defining structural materials

* Steel material: 113 Name=S275 E=210000000 kPa

MATERIAL S275_113 2.1E+08

* Concrete material: 104 Name=C25/30 E=31475800 kPa

MATERIAL C2530_104 3.148E+07

* Concrete material: 103 Name=C20/25 E=29962000 kPa

MATERIAL C2025_103 2.996E+07

* 6: Defining structural elements

* 6.1: Beams and combined Wall Elements

BEAM WallElement_33 LeftWall_32 -10 0 S275_113 0.07821 00 00 0

BEAM WallElement_New_34998 Rightwall_3999 -10 0 S275_113 0.07821 00 00 0

* 6.2: Supports

TRUS Strut_64640 0 S275_113 0.0007603 no 0 0 0

* 6.3: Strips

STRIP LeftWall_32 2 8 0.5 5 0 11.54 45

STRIP Rightwall_3999 2 8 0.5 5 0 11.54 45

* 7: Defining Steps

STEP Stage0_69964

CHANGE Terrenovegetale_2_34713_0 U-FRICT=26 LeftWall_32

IN06 – Tombino idraulico al km 30+743
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| NR1J | 01 D 29 | CL | IN0600 002 | A | 220 di 386 |

CHANGE Terrenovegetale_2_34713_0 D-FRICT=26 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KA=0.39 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KP=3.404 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KA=0.39 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KP=3.404 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-FRICT=26 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-FRICT=26 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KA=0.39 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KP=3.404 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KA=0.39 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KP=3.404 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-FRICT=26 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-FRICT=26 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KA=0.39 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KP=3.404 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KA=0.39 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KP=3.404 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-FRICT=26 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-FRICT=26 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KA=0.39 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KP=3.404 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KA=0.39 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KP=3.404 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-COHE=10 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-COHE=10 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-COHE=10 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-COHE=10 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-COHE=10 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-COHE=10 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-COHE=10 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-COHE=10 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 Rightwall_3999
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage1_34164
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ADD WallElement_33 WallElement_New_34998
ENDSTEP

STEP Stage2_65398
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage3_65586
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ADD Strut_64640
ENDSTEP

STEP Stage4_66644
SETWALL LeftWall_32



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

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| NR1J | 01 D 29 | CL | IN0600 002 | A | 221 di 386 |

GEOM 0 -3
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -3
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage5_67702
SETWALL LeftWall_32
GEOM 0 -4
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -4
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage6_67890
SETWALL LeftWall_32
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage7_68426
SETWALL LeftWall_32
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
ENDSTEP



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
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RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

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Design Assumption : NTC2018: A2+M2+R1 - File di Paratie - File di input (.d)

* PARATIE ANALYSIS FOR DESIGN SECTION:Base Design Section USING ASSUMPTION: NTC2018: A2+M2+R1

* Time:venerdi 26 ottobre 2018 17:29:40

* 1: Defining general settings

UNIT m kN

TITLE Esempio

DELTA 0.2

option param itemax 40

option control hinges 0 0.0001 0.001

* 2: Defining wall(s)

WALL LeftWall_32 -9.45 -10 0 1

WALL Rightwall_3999 0 -10 0 -1

* 3: Defining surfaces for wall(s)

SOIL 0_L LeftWall_32 -10 0 1 0

SOIL 0_R LeftWall_32 -10 0 2 180

SOIL 1_L Rightwall_3999 -10 0 2 0

SOIL 1_R Rightwall_3999 -10 0 1 180

* 4: Defining soil layers

*

* Soil Profile (Terrenovegetale_2_34713_0)

*

LDATA Terrenovegetale_2_34713_0 3

ATREST 0.56 0.5 1

WEIGHT 15 5 10

PERMEABILITY 0.0001

RESISTANCE 10 26 0 0 0

YOUNG 5000 8000

ENDDL

*

* Soil Profile (Limosabbioso_5_35122_0)

*

LDATA Limosabbioso_5_35122_0 0

ATREST 0.56 0.5 1

WEIGHT 17 7 10

PERMEABILITY 0.0001

RESISTANCE 10 26 0 0 0

YOUNG 1.5E+04 2.4E+04

ENDDL

* 5: Defining structural materials

* Steel material: 113 Name=S275 E=210000000 kPa

MATERIAL S275_113 2.1E+08

* Concrete material: 104 Name=C25/30 E=31475800 kPa

MATERIAL C2530_104 3.148E+07

* Concrete material: 103 Name=C20/25 E=29962000 kPa

MATERIAL C2025_103 2.996E+07

* 6: Defining structural elements

* 6.1: Beams and combined Wall Elements

BEAM WallElement_33 LeftWall_32 -10 0 S275_113 0.07821 00 00 0

BEAM WallElement_New_34998 Rightwall_3999 -10 0 S275_113 0.07821 00 00 0

* 6.2: Supports

TRUS Strut_64640 0 S275_113 0.0007603 no 0 0 0

* 6.3: Strips

STRIP LeftWall_32 2 8 0.5 5 0 13 45

STRIP Rightwall_3999 2 8 0.5 5 0 13 45

* 7: Defining Steps

STEP Stage0_69964

CHANGE Terrenovegetale_2_34713_0 U-FRICT=21.32 LeftWall_32

CHANGE Terrenovegetale_2_34713_0 D-FRICT=21.32 LeftWall_32

CHANGE Terrenovegetale_2_34713_0 U-KA=0.467 LeftWall_32

CHANGE Terrenovegetale_2_34713_0 U-KP=2.649 LeftWall_32



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
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RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

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| NR1J | 01 D 29 | CL | IN0600 002 | A | 223 di 386 |

CHANGE Terrenovegetale_2_34713_0 D-KA=0.467 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KP=2.649 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-FRICT=21.32 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-FRICT=21.32 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KA=0.467 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KP=2.649 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KA=0.467 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KP=2.649 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-FRICT=21.32 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-FRICT=21.32 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KA=0.467 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KP=2.649 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KA=0.467 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KP=2.649 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-FRICT=21.32 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-FRICT=21.32 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KA=0.467 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KP=2.649 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KA=0.467 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KP=2.649 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-COHE=8 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-COHE=8 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-COHE=8 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-COHE=8 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-COHE=8 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-COHE=8 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-COHE=8 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-COHE=8 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 Rightwall_3999
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage1_34164
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ADD WallElement_33 WallElement_New_34998
ENDSTEP

STEP Stage2_65398
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage3_65586
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ADD Strut_64640
ENDSTEP

STEP Stage4_66644
SETWALL LeftWall_32
GEOM 0 -3
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
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RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
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| NR1J | 01 D 29 | CL | IN0600 002 | A | 224 di 386 |

GEOM 0 -3
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage5_67702
SETWALL LeftWall_32
GEOM 0 -4
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -4
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage6_67890
SETWALL LeftWall_32
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage7_68426
SETWALL LeftWall_32
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
ENDSTEP



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
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RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
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SEZIONE B



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

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|----------|---------|----------|------------|------|------------|
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Descrizione Pareti

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Muro di sinistra

Sezione : Micropali 139.7*10

Area equivalente : 0.0157818085500266 m

Inerzia equivalente : 0 m⁴/m

Materiale calcestruzzo : C25/30

Tipo sezione : Tangent

Spaziatura : 0.4 m

Diametro : 0.22 m

Efficacia : 0.5

Materiale acciaio : S275

Sezione : CHS139.7*10

Tipo sezione : O

Spaziatura : 0.4 m

Spessore : 0.01 m

Diametro : 0.1397 m

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Muro di destra

Sezione : Micropali 139.7*10

Area equivalente : 0.0157818085500266 m

Inerzia equivalente : 0 m⁴/m

Materiale calcestruzzo : C25/30

Tipo sezione : Tangent

Spaziatura : 0.4 m

Diametro : 0.22 m

Efficacia : 0.5

Materiale acciaio : S275

Sezione : CHS139.7*10

Tipo sezione : O

Spaziatura : 0.4 m

Spessore : 0.01 m



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
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RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

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| NR1J | 01 D 29 | CL | IN0600 002 | A | 229 di 386 |

Diametro : 0.1397 m

Sezione : Micropali 139.7*10

Area equivalente : 0.0157818085500266 m

Inerzia equivalente : 0 m⁴/m

Materiale calcestruzzo : C25/30

Tipo sezione : Tangent

Spaziatura : 0.4 m

Diametro : 0.22 m

Efficacia : 0.5

Materiale acciaio : S275

Sezione : CHS139.7*10

Tipo sezione : O

Spaziatura : 0.4 m

Spessore : 0.01 m

Diametro : 0.1397 m

Fasi di Calcolo

Stage 0

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : 0 m

Muro di destra

Lato monte : 0 m

Lato valle : 0 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

0 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Stage 1

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : 0 m

Muro di destra

Lato monte : 0 m

Lato valle : 0 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

0 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

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Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Stage 2

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : -1 m

Muro di destra

Lato monte : 0 m

Lato valle : -1 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

-1 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

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| NR1J | 01 D 29 | CL | IN0600 002 | A | 234 di 386 |

Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Stage 3

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : -1 m

Muro di destra

Lato monte : 0 m

Lato valle : -1 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

-1 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Puntone : Strut

X del primo muro : -9.45 m

X del secondo muro : 0 m

Z : 0 m

Lunghezza : 9.45 m

Angolo : 0 °

Sezione : Puntone 139.7*10

Trave di Ripartizione Sinistra : TraveRipSX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Trave di Ripartizione Destra : TraveRipDX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Stage 4

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : -3 m

Muro di destra

Lato monte : 0 m

Lato valle : -3 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

-3 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Puntone : Strut

X del primo muro : -9.45 m

X del secondo muro : 0 m

Z : 0 m

Lunghezza : 9.45 m

Angolo : 0 °

Sezione : Puntone 139.7*10

Trave di Ripartizione Sinistra : TraveRipSX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Trave di Ripartizione Destra : TraveRipDX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Stage 5

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : -4 m

Muro di destra

Lato monte : 0 m

Lato valle : -4 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

-4 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Puntone : Strut

X del primo muro : -9.45 m

X del secondo muro : 0 m

Z : 0 m

Lunghezza : 9.45 m

Angolo : 0 °

Sezione : Puntone 139.7*10

Trave di Ripartizione Sinistra : TraveRipSX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Trave di Ripartizione Destra : TraveRipDX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Stage 6

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : -5.2 m

Muro di destra

Lato monte : 0 m

Lato valle : -5.2 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

-5.2 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Puntone : Strut

X del primo muro : -9.45 m

X del secondo muro : 0 m

Z : 0 m

Lunghezza : 9.45 m

Angolo : 0 °

Sezione : Puntone 139.7*10

Trave di Ripartizione Sinistra : TraveRipSX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Trave di Ripartizione Destra : TraveRipDX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Stage 7

Scavo

Muro di sinistra

Lato monte : 0 m

Lato valle : -5.7 m

Muro di destra

Lato monte : 0 m

Lato valle : -5.7 m

Linea di scavo di sinistra (Orizzontale)

0 m

Linea di scavo centrale (Orizzontale)

-5.7 m

Linea di scavo di destra (Orizzontale)

0 m

Falda acquifera

Falda di sinistra : -10.4 m

Falda di destra : -10.4 m

Falda centrale : -10.4 m

Carichi

Carico lineare in superficie : SurfaceSurcharge

X iniziale : -14.95 m

X finale : -9.95 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Carico lineare in superficie : SurfaceSurcharge

X iniziale : 0.5 m

X finale : 5.5 m

Pressione iniziale : 10 kPa

Pressione finale : 10 kPa

Elementi strutturali

Paratia : WallElement

X : -9.45 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Paratia : WallElement_New

X : 0 m

Quota in alto : 0 m

Quota di fondo : -10 m

Sezione : Micropali 139.7*10

Puntone : Strut

X del primo muro : -9.45 m

X del secondo muro : 0 m

Z : 0 m

Lunghezza : 9.45 m

Angolo : 0 °

Sezione : Puntone 139.7*10

Trave di Ripartizione Sinistra : TraveRipSX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Trave di Ripartizione Destra : TraveRipDX

Sezione : Trave c.a.

0.17x0.5

Materiale : C25/30

Grafici dei Risultati

Design Assumption : Nominal

Tabella Spostamento Nominal - LEFT Stage: Stage 0

| Design Assumption: Nominal | | Tipo Risultato: Spostamento | Muro: LEFT |
|----------------------------|-------|-----------------------------|------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 0 | 0 | 0 | |
| Stage 0 | -0.2 | 0 | |
| Stage 0 | -0.4 | 0 | |
| Stage 0 | -0.6 | 0 | |
| Stage 0 | -0.8 | 0 | |
| Stage 0 | -1 | 0 | |
| Stage 0 | -1.2 | 0 | |
| Stage 0 | -1.4 | 0 | |
| Stage 0 | -1.6 | 0 | |
| Stage 0 | -1.8 | 0 | |
| Stage 0 | -2 | 0 | |
| Stage 0 | -2.2 | 0 | |
| Stage 0 | -2.4 | 0 | |
| Stage 0 | -2.6 | 0 | |
| Stage 0 | -2.8 | 0 | |
| Stage 0 | -3 | 0 | |
| Stage 0 | -3.2 | 0 | |
| Stage 0 | -3.4 | 0 | |
| Stage 0 | -3.6 | 0 | |
| Stage 0 | -3.8 | 0 | |
| Stage 0 | -4 | 0 | |
| Stage 0 | -4.2 | 0 | |
| Stage 0 | -4.4 | 0 | |
| Stage 0 | -4.6 | 0 | |
| Stage 0 | -4.8 | 0 | |
| Stage 0 | -5 | 0 | |
| Stage 0 | -5.2 | 0 | |
| Stage 0 | -5.4 | 0 | |
| Stage 0 | -5.6 | 0 | |
| Stage 0 | -5.8 | 0 | |
| Stage 0 | -6 | 0 | |
| Stage 0 | -6.2 | 0 | |
| Stage 0 | -6.4 | 0 | |
| Stage 0 | -6.6 | 0 | |
| Stage 0 | -6.8 | 0 | |
| Stage 0 | -7 | 0 | |
| Stage 0 | -7.2 | 0 | |
| Stage 0 | -7.4 | 0 | |
| Stage 0 | -7.6 | 0 | |
| Stage 0 | -7.8 | 0 | |
| Stage 0 | -8 | 0 | |
| Stage 0 | -8.2 | 0 | |
| Stage 0 | -8.4 | 0 | |
| Stage 0 | -8.6 | 0 | |
| Stage 0 | -8.8 | 0 | |
| Stage 0 | -9 | 0 | |
| Stage 0 | -9.2 | 0 | |
| Stage 0 | -9.4 | 0 | |
| Stage 0 | -9.6 | 0 | |
| Stage 0 | -9.8 | 0 | |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| | | | | | |
|----------|---------|----------|------------|------|------------|
| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
| NR1J | 01 D 29 | CL | IN0600 002 | A | 246 di 386 |

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 0 | -10 | 0 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 0

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: RIGHT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 |
| Stage 0 | -0.4 | 0 |
| Stage 0 | -0.6 | 0 |
| Stage 0 | -0.8 | 0 |
| Stage 0 | -1 | 0 |
| Stage 0 | -1.2 | 0 |
| Stage 0 | -1.4 | 0 |
| Stage 0 | -1.6 | 0 |
| Stage 0 | -1.8 | 0 |
| Stage 0 | -2 | 0 |
| Stage 0 | -2.2 | 0 |
| Stage 0 | -2.4 | 0 |
| Stage 0 | -2.6 | 0 |
| Stage 0 | -2.8 | 0 |
| Stage 0 | -3 | 0 |
| Stage 0 | -3.2 | 0 |
| Stage 0 | -3.4 | 0 |
| Stage 0 | -3.6 | 0 |
| Stage 0 | -3.8 | 0 |
| Stage 0 | -4 | 0 |
| Stage 0 | -4.2 | 0 |
| Stage 0 | -4.4 | 0 |
| Stage 0 | -4.6 | 0 |
| Stage 0 | -4.8 | 0 |
| Stage 0 | -5 | 0 |
| Stage 0 | -5.2 | 0 |
| Stage 0 | -5.4 | 0 |
| Stage 0 | -5.6 | 0 |
| Stage 0 | -5.8 | 0 |
| Stage 0 | -6 | 0 |
| Stage 0 | -6.2 | 0 |
| Stage 0 | -6.4 | 0 |
| Stage 0 | -6.6 | 0 |
| Stage 0 | -6.8 | 0 |
| Stage 0 | -7 | 0 |
| Stage 0 | -7.2 | 0 |
| Stage 0 | -7.4 | 0 |
| Stage 0 | -7.6 | 0 |
| Stage 0 | -7.8 | 0 |
| Stage 0 | -8 | 0 |
| Stage 0 | -8.2 | 0 |
| Stage 0 | -8.4 | 0 |
| Stage 0 | -8.6 | 0 |
| Stage 0 | -8.8 | 0 |
| Stage 0 | -9 | 0 |
| Stage 0 | -9.2 | 0 |
| Stage 0 | -9.4 | 0 |
| Stage 0 | -9.6 | 0 |
| Stage 0 | -9.8 | 0 |
| Stage 0 | -10 | 0 |

Tabella Spostamento Nominal - LEFT Stage: Stage 1

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 1 | 0 | 0 |
| Stage 1 | -0.2 | 0.01 |
| Stage 1 | -0.4 | 0.01 |
| Stage 1 | -0.6 | 0.02 |
| Stage 1 | -0.8 | 0.03 |
| Stage 1 | -1 | 0.03 |
| Stage 1 | -1.2 | 0.04 |
| Stage 1 | -1.4 | 0.05 |
| Stage 1 | -1.6 | 0.05 |
| Stage 1 | -1.8 | 0.05 |
| Stage 1 | -2 | 0.06 |
| Stage 1 | -2.2 | 0.06 |
| Stage 1 | -2.4 | 0.07 |
| Stage 1 | -2.6 | 0.07 |
| Stage 1 | -2.8 | 0.07 |
| Stage 1 | -3 | 0.07 |
| Stage 1 | -3.2 | 0.07 |
| Stage 1 | -3.4 | 0.07 |
| Stage 1 | -3.6 | 0.07 |
| Stage 1 | -3.8 | 0.08 |
| Stage 1 | -4 | 0.08 |
| Stage 1 | -4.2 | 0.08 |
| Stage 1 | -4.4 | 0.08 |
| Stage 1 | -4.6 | 0.08 |
| Stage 1 | -4.8 | 0.08 |
| Stage 1 | -5 | 0.08 |
| Stage 1 | -5.2 | 0.08 |
| Stage 1 | -5.4 | 0.08 |
| Stage 1 | -5.6 | 0.08 |
| Stage 1 | -5.8 | 0.08 |
| Stage 1 | -6 | 0.07 |
| Stage 1 | -6.2 | 0.07 |
| Stage 1 | -6.4 | 0.07 |
| Stage 1 | -6.6 | 0.07 |
| Stage 1 | -6.8 | 0.07 |
| Stage 1 | -7 | 0.07 |
| Stage 1 | -7.2 | 0.07 |
| Stage 1 | -7.4 | 0.06 |
| Stage 1 | -7.6 | 0.06 |
| Stage 1 | -7.8 | 0.06 |
| Stage 1 | -8 | 0.06 |
| Stage 1 | -8.2 | 0.06 |
| Stage 1 | -8.4 | 0.06 |
| Stage 1 | -8.6 | 0.06 |
| Stage 1 | -8.8 | 0.06 |
| Stage 1 | -9 | 0.06 |
| Stage 1 | -9.2 | 0.05 |
| Stage 1 | -9.4 | 0.05 |
| Stage 1 | -9.6 | 0.05 |
| Stage 1 | -9.8 | 0.05 |
| Stage 1 | -10 | 0.05 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 1

| Design Assumption: Nominal | | Tipo Risultato: Spostamento | Muro: RIGHT |
|----------------------------|-------|-----------------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 1 | 0 | 0 | |
| Stage 1 | -0.2 | -0.01 | |
| Stage 1 | -0.4 | -0.01 | |
| Stage 1 | -0.6 | -0.02 | |
| Stage 1 | -0.8 | -0.03 | |
| Stage 1 | -1 | -0.03 | |
| Stage 1 | -1.2 | -0.04 | |
| Stage 1 | -1.4 | -0.05 | |
| Stage 1 | -1.6 | -0.05 | |
| Stage 1 | -1.8 | -0.05 | |
| Stage 1 | -2 | -0.06 | |
| Stage 1 | -2.2 | -0.06 | |
| Stage 1 | -2.4 | -0.07 | |
| Stage 1 | -2.6 | -0.07 | |
| Stage 1 | -2.8 | -0.07 | |
| Stage 1 | -3 | -0.07 | |
| Stage 1 | -3.2 | -0.07 | |
| Stage 1 | -3.4 | -0.07 | |
| Stage 1 | -3.6 | -0.07 | |
| Stage 1 | -3.8 | -0.08 | |
| Stage 1 | -4 | -0.08 | |
| Stage 1 | -4.2 | -0.08 | |
| Stage 1 | -4.4 | -0.08 | |
| Stage 1 | -4.6 | -0.08 | |
| Stage 1 | -4.8 | -0.08 | |
| Stage 1 | -5 | -0.08 | |
| Stage 1 | -5.2 | -0.08 | |
| Stage 1 | -5.4 | -0.08 | |
| Stage 1 | -5.6 | -0.08 | |
| Stage 1 | -5.8 | -0.08 | |
| Stage 1 | -6 | -0.07 | |
| Stage 1 | -6.2 | -0.07 | |
| Stage 1 | -6.4 | -0.07 | |
| Stage 1 | -6.6 | -0.07 | |
| Stage 1 | -6.8 | -0.07 | |
| Stage 1 | -7 | -0.07 | |
| Stage 1 | -7.2 | -0.07 | |
| Stage 1 | -7.4 | -0.06 | |
| Stage 1 | -7.6 | -0.06 | |
| Stage 1 | -7.8 | -0.06 | |
| Stage 1 | -8 | -0.06 | |
| Stage 1 | -8.2 | -0.06 | |
| Stage 1 | -8.4 | -0.06 | |
| Stage 1 | -8.6 | -0.06 | |
| Stage 1 | -8.8 | -0.06 | |
| Stage 1 | -9 | -0.06 | |
| Stage 1 | -9.2 | -0.05 | |
| Stage 1 | -9.4 | -0.05 | |
| Stage 1 | -9.6 | -0.05 | |
| Stage 1 | -9.8 | -0.05 | |
| Stage 1 | -10 | -0.05 | |

Tabella Spostamento Nominal - LEFT Stage: Stage 2

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 2 | 0 | 0.26 |
| Stage 2 | -0.2 | 0.25 |
| Stage 2 | -0.4 | 0.24 |
| Stage 2 | -0.6 | 0.23 |
| Stage 2 | -0.8 | 0.22 |
| Stage 2 | -1 | 0.21 |
| Stage 2 | -1.2 | 0.2 |
| Stage 2 | -1.4 | 0.19 |
| Stage 2 | -1.6 | 0.18 |
| Stage 2 | -1.8 | 0.18 |
| Stage 2 | -2 | 0.18 |
| Stage 2 | -2.2 | 0.17 |
| Stage 2 | -2.4 | 0.17 |
| Stage 2 | -2.6 | 0.17 |
| Stage 2 | -2.8 | 0.17 |
| Stage 2 | -3 | 0.17 |
| Stage 2 | -3.2 | 0.17 |
| Stage 2 | -3.4 | 0.17 |
| Stage 2 | -3.6 | 0.17 |
| Stage 2 | -3.8 | 0.17 |
| Stage 2 | -4 | 0.17 |
| Stage 2 | -4.2 | 0.17 |
| Stage 2 | -4.4 | 0.17 |
| Stage 2 | -4.6 | 0.18 |
| Stage 2 | -4.8 | 0.18 |
| Stage 2 | -5 | 0.18 |
| Stage 2 | -5.2 | 0.17 |
| Stage 2 | -5.4 | 0.17 |
| Stage 2 | -5.6 | 0.17 |
| Stage 2 | -5.8 | 0.17 |
| Stage 2 | -6 | 0.17 |
| Stage 2 | -6.2 | 0.17 |
| Stage 2 | -6.4 | 0.17 |
| Stage 2 | -6.6 | 0.17 |
| Stage 2 | -6.8 | 0.17 |
| Stage 2 | -7 | 0.16 |
| Stage 2 | -7.2 | 0.16 |
| Stage 2 | -7.4 | 0.16 |
| Stage 2 | -7.6 | 0.16 |
| Stage 2 | -7.8 | 0.16 |
| Stage 2 | -8 | 0.16 |
| Stage 2 | -8.2 | 0.16 |
| Stage 2 | -8.4 | 0.15 |
| Stage 2 | -8.6 | 0.15 |
| Stage 2 | -8.8 | 0.15 |
| Stage 2 | -9 | 0.15 |
| Stage 2 | -9.2 | 0.15 |
| Stage 2 | -9.4 | 0.15 |
| Stage 2 | -9.6 | 0.15 |
| Stage 2 | -9.8 | 0.15 |
| Stage 2 | -10 | 0.15 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 2

| Design Assumption: Nominal | | Tipo Risultato: Spostamento | Muro: RIGHT |
|----------------------------|-------|-----------------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 2 | 0 | -0.26 | |
| Stage 2 | -0.2 | -0.25 | |
| Stage 2 | -0.4 | -0.24 | |
| Stage 2 | -0.6 | -0.23 | |
| Stage 2 | -0.8 | -0.22 | |
| Stage 2 | -1 | -0.21 | |
| Stage 2 | -1.2 | -0.2 | |
| Stage 2 | -1.4 | -0.19 | |
| Stage 2 | -1.6 | -0.18 | |
| Stage 2 | -1.8 | -0.18 | |
| Stage 2 | -2 | -0.18 | |
| Stage 2 | -2.2 | -0.17 | |
| Stage 2 | -2.4 | -0.17 | |
| Stage 2 | -2.6 | -0.17 | |
| Stage 2 | -2.8 | -0.17 | |
| Stage 2 | -3 | -0.17 | |
| Stage 2 | -3.2 | -0.17 | |
| Stage 2 | -3.4 | -0.17 | |
| Stage 2 | -3.6 | -0.17 | |
| Stage 2 | -3.8 | -0.17 | |
| Stage 2 | -4 | -0.17 | |
| Stage 2 | -4.2 | -0.17 | |
| Stage 2 | -4.4 | -0.17 | |
| Stage 2 | -4.6 | -0.18 | |
| Stage 2 | -4.8 | -0.18 | |
| Stage 2 | -5 | -0.18 | |
| Stage 2 | -5.2 | -0.17 | |
| Stage 2 | -5.4 | -0.17 | |
| Stage 2 | -5.6 | -0.17 | |
| Stage 2 | -5.8 | -0.17 | |
| Stage 2 | -6 | -0.17 | |
| Stage 2 | -6.2 | -0.17 | |
| Stage 2 | -6.4 | -0.17 | |
| Stage 2 | -6.6 | -0.17 | |
| Stage 2 | -6.8 | -0.17 | |
| Stage 2 | -7 | -0.16 | |
| Stage 2 | -7.2 | -0.16 | |
| Stage 2 | -7.4 | -0.16 | |
| Stage 2 | -7.6 | -0.16 | |
| Stage 2 | -7.8 | -0.16 | |
| Stage 2 | -8 | -0.16 | |
| Stage 2 | -8.2 | -0.16 | |
| Stage 2 | -8.4 | -0.15 | |
| Stage 2 | -8.6 | -0.15 | |
| Stage 2 | -8.8 | -0.15 | |
| Stage 2 | -9 | -0.15 | |
| Stage 2 | -9.2 | -0.15 | |
| Stage 2 | -9.4 | -0.15 | |
| Stage 2 | -9.6 | -0.15 | |
| Stage 2 | -9.8 | -0.15 | |
| Stage 2 | -10 | -0.15 | |

Tabella Spostamento Nominal - LEFT Stage: Stage 3

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 3 | 0 | 0.26 |
| Stage 3 | -0.2 | 0.25 |
| Stage 3 | -0.4 | 0.24 |
| Stage 3 | -0.6 | 0.23 |
| Stage 3 | -0.8 | 0.22 |
| Stage 3 | -1 | 0.21 |
| Stage 3 | -1.2 | 0.2 |
| Stage 3 | -1.4 | 0.19 |
| Stage 3 | -1.6 | 0.18 |
| Stage 3 | -1.8 | 0.18 |
| Stage 3 | -2 | 0.18 |
| Stage 3 | -2.2 | 0.17 |
| Stage 3 | -2.4 | 0.17 |
| Stage 3 | -2.6 | 0.17 |
| Stage 3 | -2.8 | 0.17 |
| Stage 3 | -3 | 0.17 |
| Stage 3 | -3.2 | 0.17 |
| Stage 3 | -3.4 | 0.17 |
| Stage 3 | -3.6 | 0.17 |
| Stage 3 | -3.8 | 0.17 |
| Stage 3 | -4 | 0.17 |
| Stage 3 | -4.2 | 0.17 |
| Stage 3 | -4.4 | 0.17 |
| Stage 3 | -4.6 | 0.18 |
| Stage 3 | -4.8 | 0.18 |
| Stage 3 | -5 | 0.18 |
| Stage 3 | -5.2 | 0.17 |
| Stage 3 | -5.4 | 0.17 |
| Stage 3 | -5.6 | 0.17 |
| Stage 3 | -5.8 | 0.17 |
| Stage 3 | -6 | 0.17 |
| Stage 3 | -6.2 | 0.17 |
| Stage 3 | -6.4 | 0.17 |
| Stage 3 | -6.6 | 0.17 |
| Stage 3 | -6.8 | 0.17 |
| Stage 3 | -7 | 0.16 |
| Stage 3 | -7.2 | 0.16 |
| Stage 3 | -7.4 | 0.16 |
| Stage 3 | -7.6 | 0.16 |
| Stage 3 | -7.8 | 0.16 |
| Stage 3 | -8 | 0.16 |
| Stage 3 | -8.2 | 0.16 |
| Stage 3 | -8.4 | 0.15 |
| Stage 3 | -8.6 | 0.15 |
| Stage 3 | -8.8 | 0.15 |
| Stage 3 | -9 | 0.15 |
| Stage 3 | -9.2 | 0.15 |
| Stage 3 | -9.4 | 0.15 |
| Stage 3 | -9.6 | 0.15 |
| Stage 3 | -9.8 | 0.15 |
| Stage 3 | -10 | 0.15 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 3

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: RIGHT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 3 | 0 | -0.26 |
| Stage 3 | -0.2 | -0.25 |
| Stage 3 | -0.4 | -0.24 |
| Stage 3 | -0.6 | -0.23 |
| Stage 3 | -0.8 | -0.22 |
| Stage 3 | -1 | -0.21 |
| Stage 3 | -1.2 | -0.2 |
| Stage 3 | -1.4 | -0.19 |
| Stage 3 | -1.6 | -0.18 |
| Stage 3 | -1.8 | -0.18 |
| Stage 3 | -2 | -0.18 |
| Stage 3 | -2.2 | -0.17 |
| Stage 3 | -2.4 | -0.17 |
| Stage 3 | -2.6 | -0.17 |
| Stage 3 | -2.8 | -0.17 |
| Stage 3 | -3 | -0.17 |
| Stage 3 | -3.2 | -0.17 |
| Stage 3 | -3.4 | -0.17 |
| Stage 3 | -3.6 | -0.17 |
| Stage 3 | -3.8 | -0.17 |
| Stage 3 | -4 | -0.17 |
| Stage 3 | -4.2 | -0.17 |
| Stage 3 | -4.4 | -0.17 |
| Stage 3 | -4.6 | -0.18 |
| Stage 3 | -4.8 | -0.18 |
| Stage 3 | -5 | -0.18 |
| Stage 3 | -5.2 | -0.17 |
| Stage 3 | -5.4 | -0.17 |
| Stage 3 | -5.6 | -0.17 |
| Stage 3 | -5.8 | -0.17 |
| Stage 3 | -6 | -0.17 |
| Stage 3 | -6.2 | -0.17 |
| Stage 3 | -6.4 | -0.17 |
| Stage 3 | -6.6 | -0.17 |
| Stage 3 | -6.8 | -0.17 |
| Stage 3 | -7 | -0.16 |
| Stage 3 | -7.2 | -0.16 |
| Stage 3 | -7.4 | -0.16 |
| Stage 3 | -7.6 | -0.16 |
| Stage 3 | -7.8 | -0.16 |
| Stage 3 | -8 | -0.16 |
| Stage 3 | -8.2 | -0.16 |
| Stage 3 | -8.4 | -0.15 |
| Stage 3 | -8.6 | -0.15 |
| Stage 3 | -8.8 | -0.15 |
| Stage 3 | -9 | -0.15 |
| Stage 3 | -9.2 | -0.15 |
| Stage 3 | -9.4 | -0.15 |
| Stage 3 | -9.6 | -0.15 |
| Stage 3 | -9.8 | -0.15 |
| Stage 3 | -10 | -0.15 |

Tabella Spostamento Nominal - LEFT Stage: Stage 4

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 4 | 0 | 0.33 |
| Stage 4 | -0.2 | 0.49 |
| Stage 4 | -0.4 | 0.64 |
| Stage 4 | -0.6 | 0.79 |
| Stage 4 | -0.8 | 0.94 |
| Stage 4 | -1 | 1.07 |
| Stage 4 | -1.2 | 1.2 |
| Stage 4 | -1.4 | 1.31 |
| Stage 4 | -1.6 | 1.41 |
| Stage 4 | -1.8 | 1.49 |
| Stage 4 | -2 | 1.54 |
| Stage 4 | -2.2 | 1.58 |
| Stage 4 | -2.4 | 1.6 |
| Stage 4 | -2.6 | 1.59 |
| Stage 4 | -2.8 | 1.57 |
| Stage 4 | -3 | 1.52 |
| Stage 4 | -3.2 | 1.47 |
| Stage 4 | -3.4 | 1.4 |
| Stage 4 | -3.6 | 1.33 |
| Stage 4 | -3.8 | 1.26 |
| Stage 4 | -4 | 1.2 |
| Stage 4 | -4.2 | 1.14 |
| Stage 4 | -4.4 | 1.08 |
| Stage 4 | -4.6 | 1.03 |
| Stage 4 | -4.8 | 0.99 |
| Stage 4 | -5 | 0.95 |
| Stage 4 | -5.2 | 0.92 |
| Stage 4 | -5.4 | 0.89 |
| Stage 4 | -5.6 | 0.87 |
| Stage 4 | -5.8 | 0.86 |
| Stage 4 | -6 | 0.84 |
| Stage 4 | -6.2 | 0.83 |
| Stage 4 | -6.4 | 0.82 |
| Stage 4 | -6.6 | 0.82 |
| Stage 4 | -6.8 | 0.81 |
| Stage 4 | -7 | 0.81 |
| Stage 4 | -7.2 | 0.8 |
| Stage 4 | -7.4 | 0.8 |
| Stage 4 | -7.6 | 0.8 |
| Stage 4 | -7.8 | 0.8 |
| Stage 4 | -8 | 0.79 |
| Stage 4 | -8.2 | 0.79 |
| Stage 4 | -8.4 | 0.79 |
| Stage 4 | -8.6 | 0.79 |
| Stage 4 | -8.8 | 0.78 |
| Stage 4 | -9 | 0.78 |
| Stage 4 | -9.2 | 0.78 |
| Stage 4 | -9.4 | 0.78 |
| Stage 4 | -9.6 | 0.78 |
| Stage 4 | -9.8 | 0.77 |
| Stage 4 | -10 | 0.77 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 4

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: RIGHT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 4 | 0 | -0.33 |
| Stage 4 | -0.2 | -0.49 |
| Stage 4 | -0.4 | -0.64 |
| Stage 4 | -0.6 | -0.79 |
| Stage 4 | -0.8 | -0.94 |
| Stage 4 | -1 | -1.07 |
| Stage 4 | -1.2 | -1.2 |
| Stage 4 | -1.4 | -1.31 |
| Stage 4 | -1.6 | -1.41 |
| Stage 4 | -1.8 | -1.49 |
| Stage 4 | -2 | -1.54 |
| Stage 4 | -2.2 | -1.58 |
| Stage 4 | -2.4 | -1.6 |
| Stage 4 | -2.6 | -1.59 |
| Stage 4 | -2.8 | -1.57 |
| Stage 4 | -3 | -1.52 |
| Stage 4 | -3.2 | -1.47 |
| Stage 4 | -3.4 | -1.4 |
| Stage 4 | -3.6 | -1.33 |
| Stage 4 | -3.8 | -1.26 |
| Stage 4 | -4 | -1.2 |
| Stage 4 | -4.2 | -1.14 |
| Stage 4 | -4.4 | -1.08 |
| Stage 4 | -4.6 | -1.03 |
| Stage 4 | -4.8 | -0.99 |
| Stage 4 | -5 | -0.95 |
| Stage 4 | -5.2 | -0.92 |
| Stage 4 | -5.4 | -0.89 |
| Stage 4 | -5.6 | -0.87 |
| Stage 4 | -5.8 | -0.86 |
| Stage 4 | -6 | -0.84 |
| Stage 4 | -6.2 | -0.83 |
| Stage 4 | -6.4 | -0.82 |
| Stage 4 | -6.6 | -0.82 |
| Stage 4 | -6.8 | -0.81 |
| Stage 4 | -7 | -0.81 |
| Stage 4 | -7.2 | -0.8 |
| Stage 4 | -7.4 | -0.8 |
| Stage 4 | -7.6 | -0.8 |
| Stage 4 | -7.8 | -0.8 |
| Stage 4 | -8 | -0.79 |
| Stage 4 | -8.2 | -0.79 |
| Stage 4 | -8.4 | -0.79 |
| Stage 4 | -8.6 | -0.79 |
| Stage 4 | -8.8 | -0.78 |
| Stage 4 | -9 | -0.78 |
| Stage 4 | -9.2 | -0.78 |
| Stage 4 | -9.4 | -0.78 |
| Stage 4 | -9.6 | -0.78 |
| Stage 4 | -9.8 | -0.77 |
| Stage 4 | -10 | -0.77 |

Tabella Spostamento Nominal - LEFT Stage: Stage 5

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 5 | 0 | 0.39 |
| Stage 5 | -0.2 | 0.8 |
| Stage 5 | -0.4 | 1.2 |
| Stage 5 | -0.6 | 1.59 |
| Stage 5 | -0.8 | 1.97 |
| Stage 5 | -1 | 2.33 |
| Stage 5 | -1.2 | 2.67 |
| Stage 5 | -1.4 | 2.99 |
| Stage 5 | -1.6 | 3.27 |
| Stage 5 | -1.8 | 3.52 |
| Stage 5 | -2 | 3.73 |
| Stage 5 | -2.2 | 3.9 |
| Stage 5 | -2.4 | 4.03 |
| Stage 5 | -2.6 | 4.1 |
| Stage 5 | -2.8 | 4.13 |
| Stage 5 | -3 | 4.1 |
| Stage 5 | -3.2 | 4.02 |
| Stage 5 | -3.4 | 3.9 |
| Stage 5 | -3.6 | 3.73 |
| Stage 5 | -3.8 | 3.53 |
| Stage 5 | -4 | 3.31 |
| Stage 5 | -4.2 | 3.07 |
| Stage 5 | -4.4 | 2.83 |
| Stage 5 | -4.6 | 2.6 |
| Stage 5 | -4.8 | 2.38 |
| Stage 5 | -5 | 2.18 |
| Stage 5 | -5.2 | 2.01 |
| Stage 5 | -5.4 | 1.85 |
| Stage 5 | -5.6 | 1.72 |
| Stage 5 | -5.8 | 1.61 |
| Stage 5 | -6 | 1.51 |
| Stage 5 | -6.2 | 1.44 |
| Stage 5 | -6.4 | 1.38 |
| Stage 5 | -6.6 | 1.33 |
| Stage 5 | -6.8 | 1.3 |
| Stage 5 | -7 | 1.27 |
| Stage 5 | -7.2 | 1.25 |
| Stage 5 | -7.4 | 1.24 |
| Stage 5 | -7.6 | 1.23 |
| Stage 5 | -7.8 | 1.23 |
| Stage 5 | -8 | 1.23 |
| Stage 5 | -8.2 | 1.23 |
| Stage 5 | -8.4 | 1.23 |
| Stage 5 | -8.6 | 1.23 |
| Stage 5 | -8.8 | 1.23 |
| Stage 5 | -9 | 1.23 |
| Stage 5 | -9.2 | 1.24 |
| Stage 5 | -9.4 | 1.24 |
| Stage 5 | -9.6 | 1.24 |
| Stage 5 | -9.8 | 1.24 |
| Stage 5 | -10 | 1.24 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 5

| Design Assumption: Nominal | | Tipo Risultato: Spostamento | Muro: RIGHT |
|----------------------------|-------|-----------------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 5 | 0 | -0.39 | |
| Stage 5 | -0.2 | -0.8 | |
| Stage 5 | -0.4 | -1.2 | |
| Stage 5 | -0.6 | -1.59 | |
| Stage 5 | -0.8 | -1.97 | |
| Stage 5 | -1 | -2.33 | |
| Stage 5 | -1.2 | -2.67 | |
| Stage 5 | -1.4 | -2.99 | |
| Stage 5 | -1.6 | -3.27 | |
| Stage 5 | -1.8 | -3.52 | |
| Stage 5 | -2 | -3.73 | |
| Stage 5 | -2.2 | -3.9 | |
| Stage 5 | -2.4 | -4.03 | |
| Stage 5 | -2.6 | -4.1 | |
| Stage 5 | -2.8 | -4.13 | |
| Stage 5 | -3 | -4.1 | |
| Stage 5 | -3.2 | -4.02 | |
| Stage 5 | -3.4 | -3.9 | |
| Stage 5 | -3.6 | -3.73 | |
| Stage 5 | -3.8 | -3.53 | |
| Stage 5 | -4 | -3.31 | |
| Stage 5 | -4.2 | -3.07 | |
| Stage 5 | -4.4 | -2.83 | |
| Stage 5 | -4.6 | -2.6 | |
| Stage 5 | -4.8 | -2.38 | |
| Stage 5 | -5 | -2.18 | |
| Stage 5 | -5.2 | -2.01 | |
| Stage 5 | -5.4 | -1.85 | |
| Stage 5 | -5.6 | -1.72 | |
| Stage 5 | -5.8 | -1.61 | |
| Stage 5 | -6 | -1.51 | |
| Stage 5 | -6.2 | -1.44 | |
| Stage 5 | -6.4 | -1.38 | |
| Stage 5 | -6.6 | -1.33 | |
| Stage 5 | -6.8 | -1.3 | |
| Stage 5 | -7 | -1.27 | |
| Stage 5 | -7.2 | -1.25 | |
| Stage 5 | -7.4 | -1.24 | |
| Stage 5 | -7.6 | -1.23 | |
| Stage 5 | -7.8 | -1.23 | |
| Stage 5 | -8 | -1.23 | |
| Stage 5 | -8.2 | -1.23 | |
| Stage 5 | -8.4 | -1.23 | |
| Stage 5 | -8.6 | -1.23 | |
| Stage 5 | -8.8 | -1.23 | |
| Stage 5 | -9 | -1.23 | |
| Stage 5 | -9.2 | -1.24 | |
| Stage 5 | -9.4 | -1.24 | |
| Stage 5 | -9.6 | -1.24 | |
| Stage 5 | -9.8 | -1.24 | |
| Stage 5 | -10 | -1.24 | |

Tabella Spostamento Nominal - LEFT Stage: Stage 6

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 6 | 0 | 0.59 |
| Stage 6 | -0.2 | 2.05 |
| Stage 6 | -0.4 | 3.49 |
| Stage 6 | -0.6 | 4.91 |
| Stage 6 | -0.8 | 6.3 |
| Stage 6 | -1 | 7.65 |
| Stage 6 | -1.2 | 8.94 |
| Stage 6 | -1.4 | 10.17 |
| Stage 6 | -1.6 | 11.32 |
| Stage 6 | -1.8 | 12.39 |
| Stage 6 | -2 | 13.36 |
| Stage 6 | -2.2 | 14.23 |
| Stage 6 | -2.4 | 14.97 |
| Stage 6 | -2.6 | 15.59 |
| Stage 6 | -2.8 | 16.08 |
| Stage 6 | -3 | 16.43 |
| Stage 6 | -3.2 | 16.63 |
| Stage 6 | -3.4 | 16.68 |
| Stage 6 | -3.6 | 16.58 |
| Stage 6 | -3.8 | 16.33 |
| Stage 6 | -4 | 15.93 |
| Stage 6 | -4.2 | 15.39 |
| Stage 6 | -4.4 | 14.72 |
| Stage 6 | -4.6 | 13.93 |
| Stage 6 | -4.8 | 13.04 |
| Stage 6 | -5 | 12.07 |
| Stage 6 | -5.2 | 11.04 |
| Stage 6 | -5.4 | 9.98 |
| Stage 6 | -5.6 | 8.93 |
| Stage 6 | -5.8 | 7.91 |
| Stage 6 | -6 | 6.94 |
| Stage 6 | -6.2 | 6.05 |
| Stage 6 | -6.4 | 5.24 |
| Stage 6 | -6.6 | 4.53 |
| Stage 6 | -6.8 | 3.91 |
| Stage 6 | -7 | 3.38 |
| Stage 6 | -7.2 | 2.94 |
| Stage 6 | -7.4 | 2.58 |
| Stage 6 | -7.6 | 2.29 |
| Stage 6 | -7.8 | 2.07 |
| Stage 6 | -8 | 1.9 |
| Stage 6 | -8.2 | 1.77 |
| Stage 6 | -8.4 | 1.68 |
| Stage 6 | -8.6 | 1.62 |
| Stage 6 | -8.8 | 1.59 |
| Stage 6 | -9 | 1.56 |
| Stage 6 | -9.2 | 1.55 |
| Stage 6 | -9.4 | 1.55 |
| Stage 6 | -9.6 | 1.55 |
| Stage 6 | -9.8 | 1.56 |
| Stage 6 | -10 | 1.56 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 6

| Design Assumption: Nominal | | Tipo Risultato: Spostamento | Muro: RIGHT |
|----------------------------|-------|-----------------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 6 | 0 | -0.59 | |
| Stage 6 | -0.2 | -2.05 | |
| Stage 6 | -0.4 | -3.49 | |
| Stage 6 | -0.6 | -4.91 | |
| Stage 6 | -0.8 | -6.3 | |
| Stage 6 | -1 | -7.65 | |
| Stage 6 | -1.2 | -8.94 | |
| Stage 6 | -1.4 | -10.17 | |
| Stage 6 | -1.6 | -11.32 | |
| Stage 6 | -1.8 | -12.39 | |
| Stage 6 | -2 | -13.36 | |
| Stage 6 | -2.2 | -14.23 | |
| Stage 6 | -2.4 | -14.97 | |
| Stage 6 | -2.6 | -15.59 | |
| Stage 6 | -2.8 | -16.08 | |
| Stage 6 | -3 | -16.43 | |
| Stage 6 | -3.2 | -16.63 | |
| Stage 6 | -3.4 | -16.68 | |
| Stage 6 | -3.6 | -16.58 | |
| Stage 6 | -3.8 | -16.33 | |
| Stage 6 | -4 | -15.93 | |
| Stage 6 | -4.2 | -15.39 | |
| Stage 6 | -4.4 | -14.72 | |
| Stage 6 | -4.6 | -13.93 | |
| Stage 6 | -4.8 | -13.04 | |
| Stage 6 | -5 | -12.07 | |
| Stage 6 | -5.2 | -11.04 | |
| Stage 6 | -5.4 | -9.98 | |
| Stage 6 | -5.6 | -8.93 | |
| Stage 6 | -5.8 | -7.91 | |
| Stage 6 | -6 | -6.94 | |
| Stage 6 | -6.2 | -6.05 | |
| Stage 6 | -6.4 | -5.24 | |
| Stage 6 | -6.6 | -4.53 | |
| Stage 6 | -6.8 | -3.91 | |
| Stage 6 | -7 | -3.38 | |
| Stage 6 | -7.2 | -2.94 | |
| Stage 6 | -7.4 | -2.58 | |
| Stage 6 | -7.6 | -2.29 | |
| Stage 6 | -7.8 | -2.07 | |
| Stage 6 | -8 | -1.9 | |
| Stage 6 | -8.2 | -1.77 | |
| Stage 6 | -8.4 | -1.68 | |
| Stage 6 | -8.6 | -1.62 | |
| Stage 6 | -8.8 | -1.59 | |
| Stage 6 | -9 | -1.56 | |
| Stage 6 | -9.2 | -1.55 | |
| Stage 6 | -9.4 | -1.55 | |
| Stage 6 | -9.6 | -1.55 | |
| Stage 6 | -9.8 | -1.56 | |
| Stage 6 | -10 | -1.56 | |

Tabella Spostamento Nominal - LEFT Stage: Stage 7

| Design Assumption: Nominal Tipo Risultato: Spostamento | | Muro: LEFT |
|--|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 7 | 0 | 0.68 |
| Stage 7 | -0.2 | 2.79 |
| Stage 7 | -0.4 | 4.88 |
| Stage 7 | -0.6 | 6.94 |
| Stage 7 | -0.8 | 8.97 |
| Stage 7 | -1 | 10.93 |
| Stage 7 | -1.2 | 12.83 |
| Stage 7 | -1.4 | 14.65 |
| Stage 7 | -1.6 | 16.37 |
| Stage 7 | -1.8 | 17.98 |
| Stage 7 | -2 | 19.47 |
| Stage 7 | -2.2 | 20.82 |
| Stage 7 | -2.4 | 22.03 |
| Stage 7 | -2.6 | 23.07 |
| Stage 7 | -2.8 | 23.94 |
| Stage 7 | -3 | 24.62 |
| Stage 7 | -3.2 | 25.11 |
| Stage 7 | -3.4 | 25.41 |
| Stage 7 | -3.6 | 25.51 |
| Stage 7 | -3.8 | 25.4 |
| Stage 7 | -4 | 25.08 |
| Stage 7 | -4.2 | 24.57 |
| Stage 7 | -4.4 | 23.86 |
| Stage 7 | -4.6 | 22.98 |
| Stage 7 | -4.8 | 21.91 |
| Stage 7 | -5 | 20.7 |
| Stage 7 | -5.2 | 19.36 |
| Stage 7 | -5.4 | 17.91 |
| Stage 7 | -5.6 | 16.38 |
| Stage 7 | -5.8 | 14.82 |
| Stage 7 | -6 | 13.25 |
| Stage 7 | -6.2 | 11.73 |
| Stage 7 | -6.4 | 10.27 |
| Stage 7 | -6.6 | 8.91 |
| Stage 7 | -6.8 | 7.66 |
| Stage 7 | -7 | 6.55 |
| Stage 7 | -7.2 | 5.56 |
| Stage 7 | -7.4 | 4.71 |
| Stage 7 | -7.6 | 3.99 |
| Stage 7 | -7.8 | 3.39 |
| Stage 7 | -8 | 2.9 |
| Stage 7 | -8.2 | 2.5 |
| Stage 7 | -8.4 | 2.18 |
| Stage 7 | -8.6 | 1.93 |
| Stage 7 | -8.8 | 1.74 |
| Stage 7 | -9 | 1.58 |
| Stage 7 | -9.2 | 1.46 |
| Stage 7 | -9.4 | 1.35 |
| Stage 7 | -9.6 | 1.25 |
| Stage 7 | -9.8 | 1.16 |
| Stage 7 | -10 | 1.07 |

Tabella Spostamento Nominal - RIGHT Stage: Stage 7

| Design Assumption: Nominal | | Tipo Risultato: Spostamento | Muro: RIGHT |
|----------------------------|-------|-----------------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 7 | 0 | -0.68 | |
| Stage 7 | -0.2 | -2.79 | |
| Stage 7 | -0.4 | -4.88 | |
| Stage 7 | -0.6 | -6.94 | |
| Stage 7 | -0.8 | -8.97 | |
| Stage 7 | -1 | -10.93 | |
| Stage 7 | -1.2 | -12.83 | |
| Stage 7 | -1.4 | -14.65 | |
| Stage 7 | -1.6 | -16.37 | |
| Stage 7 | -1.8 | -17.98 | |
| Stage 7 | -2 | -19.47 | |
| Stage 7 | -2.2 | -20.82 | |
| Stage 7 | -2.4 | -22.03 | |
| Stage 7 | -2.6 | -23.07 | |
| Stage 7 | -2.8 | -23.94 | |
| Stage 7 | -3 | -24.62 | |
| Stage 7 | -3.2 | -25.11 | |
| Stage 7 | -3.4 | -25.41 | |
| Stage 7 | -3.6 | -25.51 | |
| Stage 7 | -3.8 | -25.4 | |
| Stage 7 | -4 | -25.08 | |
| Stage 7 | -4.2 | -24.57 | |
| Stage 7 | -4.4 | -23.86 | |
| Stage 7 | -4.6 | -22.98 | |
| Stage 7 | -4.8 | -21.91 | |
| Stage 7 | -5 | -20.7 | |
| Stage 7 | -5.2 | -19.36 | |
| Stage 7 | -5.4 | -17.91 | |
| Stage 7 | -5.6 | -16.38 | |
| Stage 7 | -5.8 | -14.82 | |
| Stage 7 | -6 | -13.25 | |
| Stage 7 | -6.2 | -11.73 | |
| Stage 7 | -6.4 | -10.27 | |
| Stage 7 | -6.6 | -8.91 | |
| Stage 7 | -6.8 | -7.66 | |
| Stage 7 | -7 | -6.55 | |
| Stage 7 | -7.2 | -5.56 | |
| Stage 7 | -7.4 | -4.71 | |
| Stage 7 | -7.6 | -3.99 | |
| Stage 7 | -7.8 | -3.39 | |
| Stage 7 | -8 | -2.9 | |
| Stage 7 | -8.2 | -2.5 | |
| Stage 7 | -8.4 | -2.18 | |
| Stage 7 | -8.6 | -1.93 | |
| Stage 7 | -8.8 | -1.74 | |
| Stage 7 | -9 | -1.58 | |
| Stage 7 | -9.2 | -1.46 | |
| Stage 7 | -9.4 | -1.35 | |
| Stage 7 | -9.6 | -1.25 | |
| Stage 7 | -9.8 | -1.16 | |
| Stage 7 | -10 | -1.07 | |

Inviluppi Spostamento Nominal

Risultati Paratia

Tabella Risultati Paratia Nominal - Stage: Stage 0

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 263 di 386 |

Design Assumption: Nominal Risultati Paratia Muro: LEFT

| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
|---------|-------|------------------|---------------|
| Stage 0 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 0

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 1

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | 0.01 | 0.04 |
| Stage 1 | -0.6 | 0.03 | 0.09 |
| Stage 1 | -0.8 | 0.05 | 0.13 |
| Stage 1 | -1 | 0.08 | 0.14 |
| Stage 1 | -1.2 | 0.1 | 0.11 |
| Stage 1 | -1.4 | 0.12 | 0.07 |
| Stage 1 | -1.6 | 0.12 | 0.03 |
| Stage 1 | -1.8 | 0.12 | -0.01 |
| Stage 1 | -2 | 0.11 | -0.03 |
| Stage 1 | -2.2 | 0.1 | -0.05 |
| Stage 1 | -2.4 | 0.09 | -0.06 |
| Stage 1 | -2.6 | 0.08 | -0.06 |
| Stage 1 | -2.8 | 0.07 | -0.06 |
| Stage 1 | -3 | 0.06 | -0.05 |
| Stage 1 | -3.2 | 0.05 | -0.04 |
| Stage 1 | -3.4 | 0.04 | -0.04 |
| Stage 1 | -3.6 | 0.04 | -0.03 |
| Stage 1 | -3.8 | 0.03 | -0.02 |
| Stage 1 | -4 | 0.03 | -0.02 |
| Stage 1 | -4.2 | 0.03 | -0.01 |
| Stage 1 | -4.4 | 0.03 | 0.01 |
| Stage 1 | -4.6 | 0.03 | 0.01 |
| Stage 1 | -4.8 | 0.04 | 0.02 |
| Stage 1 | -5 | 0.04 | 0.02 |
| Stage 1 | -5.2 | 0.04 | 0.02 |
| Stage 1 | -5.4 | 0.04 | 0.01 |
| Stage 1 | -5.6 | 0.04 | -0.01 |
| Stage 1 | -5.8 | 0.04 | -0.03 |
| Stage 1 | -6 | 0.03 | -0.04 |
| Stage 1 | -6.2 | 0.02 | -0.04 |
| Stage 1 | -6.4 | 0.01 | -0.04 |
| Stage 1 | -6.6 | 0.01 | -0.03 |
| Stage 1 | -6.8 | 0 | -0.03 |
| Stage 1 | -7 | 0 | -0.02 |
| Stage 1 | -7.2 | -0.01 | -0.02 |
| Stage 1 | -7.4 | -0.01 | -0.01 |
| Stage 1 | -7.6 | -0.01 | -0.01 |
| Stage 1 | -7.8 | -0.01 | 0 |
| Stage 1 | -8 | -0.01 | 0 |
| Stage 1 | -8.2 | -0.01 | 0 |
| Stage 1 | -8.4 | -0.01 | 0 |
| Stage 1 | -8.6 | -0.01 | 0.01 |
| Stage 1 | -8.8 | -0.01 | 0.01 |
| Stage 1 | -9 | -0.01 | 0.01 |
| Stage 1 | -9.2 | 0 | 0.01 |
| Stage 1 | -9.4 | 0 | 0.01 |
| Stage 1 | -9.6 | 0 | 0.01 |
| Stage 1 | -9.8 | 0 | 0 |
| Stage 1 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 1

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | -0.01 | -0.04 |
| Stage 1 | -0.6 | -0.03 | -0.09 |
| Stage 1 | -0.8 | -0.05 | -0.13 |
| Stage 1 | -1 | -0.08 | -0.14 |
| Stage 1 | -1.2 | -0.1 | -0.11 |
| Stage 1 | -1.4 | -0.12 | -0.07 |
| Stage 1 | -1.6 | -0.12 | -0.03 |
| Stage 1 | -1.8 | -0.12 | 0.01 |
| Stage 1 | -2 | -0.11 | 0.03 |
| Stage 1 | -2.2 | -0.1 | 0.05 |
| Stage 1 | -2.4 | -0.09 | 0.06 |
| Stage 1 | -2.6 | -0.08 | 0.06 |
| Stage 1 | -2.8 | -0.07 | 0.06 |
| Stage 1 | -3 | -0.06 | 0.05 |
| Stage 1 | -3.2 | -0.05 | 0.04 |
| Stage 1 | -3.4 | -0.04 | 0.04 |
| Stage 1 | -3.6 | -0.04 | 0.03 |
| Stage 1 | -3.8 | -0.03 | 0.02 |
| Stage 1 | -4 | -0.03 | 0.02 |
| Stage 1 | -4.2 | -0.03 | 0.01 |
| Stage 1 | -4.4 | -0.03 | -0.01 |
| Stage 1 | -4.6 | -0.03 | -0.01 |
| Stage 1 | -4.8 | -0.04 | -0.02 |
| Stage 1 | -5 | -0.04 | -0.02 |
| Stage 1 | -5.2 | -0.04 | -0.02 |
| Stage 1 | -5.4 | -0.04 | -0.01 |
| Stage 1 | -5.6 | -0.04 | 0.01 |
| Stage 1 | -5.8 | -0.04 | 0.03 |
| Stage 1 | -6 | -0.03 | 0.04 |
| Stage 1 | -6.2 | -0.02 | 0.04 |
| Stage 1 | -6.4 | -0.01 | 0.04 |
| Stage 1 | -6.6 | -0.01 | 0.03 |
| Stage 1 | -6.8 | 0 | 0.03 |
| Stage 1 | -7 | 0 | 0.02 |
| Stage 1 | -7.2 | 0.01 | 0.02 |
| Stage 1 | -7.4 | 0.01 | 0.01 |
| Stage 1 | -7.6 | 0.01 | 0.01 |
| Stage 1 | -7.8 | 0.01 | 0 |
| Stage 1 | -8 | 0.01 | 0 |
| Stage 1 | -8.2 | 0.01 | 0 |
| Stage 1 | -8.4 | 0.01 | 0 |
| Stage 1 | -8.6 | 0.01 | -0.01 |
| Stage 1 | -8.8 | 0.01 | -0.01 |
| Stage 1 | -9 | 0.01 | -0.01 |
| Stage 1 | -9.2 | 0 | -0.01 |
| Stage 1 | -9.4 | 0 | -0.01 |
| Stage 1 | -9.6 | 0 | -0.01 |
| Stage 1 | -9.8 | 0 | 0 |
| Stage 1 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 2

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -1 | -0.1 | -0.48 |
| Stage 2 | -1.2 | -0.22 | -0.61 |
| Stage 2 | -1.4 | -0.29 | -0.35 |
| Stage 2 | -1.6 | -0.31 | -0.13 |
| Stage 2 | -1.8 | -0.31 | 0.04 |
| Stage 2 | -2 | -0.28 | 0.15 |
| Stage 2 | -2.2 | -0.24 | 0.2 |
| Stage 2 | -2.4 | -0.19 | 0.23 |
| Stage 2 | -2.6 | -0.15 | 0.23 |
| Stage 2 | -2.8 | -0.1 | 0.21 |
| Stage 2 | -3 | -0.07 | 0.18 |
| Stage 2 | -3.2 | -0.04 | 0.16 |
| Stage 2 | -3.4 | -0.01 | 0.12 |
| Stage 2 | -3.6 | 0.01 | 0.09 |
| Stage 2 | -3.8 | 0.02 | 0.06 |
| Stage 2 | -4 | 0.03 | 0.04 |
| Stage 2 | -4.2 | 0.03 | 0.03 |
| Stage 2 | -4.4 | 0.04 | 0.03 |
| Stage 2 | -4.6 | 0.04 | 0.02 |
| Stage 2 | -4.8 | 0.05 | 0.02 |
| Stage 2 | -5 | 0.05 | 0.02 |
| Stage 2 | -5.2 | 0.05 | 0.01 |
| Stage 2 | -5.4 | 0.05 | 0 |
| Stage 2 | -5.6 | 0.05 | -0.02 |
| Stage 2 | -5.8 | 0.04 | -0.04 |
| Stage 2 | -6 | 0.03 | -0.04 |
| Stage 2 | -6.2 | 0.02 | -0.04 |
| Stage 2 | -6.4 | 0.01 | -0.04 |
| Stage 2 | -6.6 | 0.01 | -0.04 |
| Stage 2 | -6.8 | 0 | -0.03 |
| Stage 2 | -7 | -0.01 | -0.02 |
| Stage 2 | -7.2 | -0.01 | -0.02 |
| Stage 2 | -7.4 | -0.01 | -0.01 |
| Stage 2 | -7.6 | -0.01 | -0.01 |
| Stage 2 | -7.8 | -0.01 | 0 |
| Stage 2 | -8 | -0.01 | 0 |
| Stage 2 | -8.2 | -0.01 | 0 |
| Stage 2 | -8.4 | -0.01 | 0.01 |
| Stage 2 | -8.6 | -0.01 | 0.01 |
| Stage 2 | -8.8 | -0.01 | 0.01 |
| Stage 2 | -9 | -0.01 | 0.01 |
| Stage 2 | -9.2 | 0 | 0.01 |
| Stage 2 | -9.4 | 0 | 0.01 |
| Stage 2 | -9.6 | 0 | 0.01 |
| Stage 2 | -9.8 | 0 | 0 |
| Stage 2 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 2

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -1 | 0.1 | 0.48 |
| Stage 2 | -1.2 | 0.22 | 0.61 |
| Stage 2 | -1.4 | 0.29 | 0.35 |
| Stage 2 | -1.6 | 0.31 | 0.13 |
| Stage 2 | -1.8 | 0.31 | -0.04 |
| Stage 2 | -2 | 0.28 | -0.15 |
| Stage 2 | -2.2 | 0.24 | -0.2 |
| Stage 2 | -2.4 | 0.19 | -0.23 |
| Stage 2 | -2.6 | 0.15 | -0.23 |
| Stage 2 | -2.8 | 0.1 | -0.21 |
| Stage 2 | -3 | 0.07 | -0.18 |
| Stage 2 | -3.2 | 0.04 | -0.16 |
| Stage 2 | -3.4 | 0.01 | -0.12 |
| Stage 2 | -3.6 | -0.01 | -0.09 |
| Stage 2 | -3.8 | -0.02 | -0.06 |
| Stage 2 | -4 | -0.03 | -0.04 |
| Stage 2 | -4.2 | -0.03 | -0.03 |
| Stage 2 | -4.4 | -0.04 | -0.03 |
| Stage 2 | -4.6 | -0.04 | -0.02 |
| Stage 2 | -4.8 | -0.05 | -0.02 |
| Stage 2 | -5 | -0.05 | -0.02 |
| Stage 2 | -5.2 | -0.05 | -0.01 |
| Stage 2 | -5.4 | -0.05 | 0 |
| Stage 2 | -5.6 | -0.05 | 0.02 |
| Stage 2 | -5.8 | -0.04 | 0.04 |
| Stage 2 | -6 | -0.03 | 0.04 |
| Stage 2 | -6.2 | -0.02 | 0.04 |
| Stage 2 | -6.4 | -0.01 | 0.04 |
| Stage 2 | -6.6 | -0.01 | 0.04 |
| Stage 2 | -6.8 | 0 | 0.03 |
| Stage 2 | -7 | 0.01 | 0.02 |
| Stage 2 | -7.2 | 0.01 | 0.02 |
| Stage 2 | -7.4 | 0.01 | 0.01 |
| Stage 2 | -7.6 | 0.01 | 0.01 |
| Stage 2 | -7.8 | 0.01 | 0 |
| Stage 2 | -8 | 0.01 | 0 |
| Stage 2 | -8.2 | 0.01 | 0 |
| Stage 2 | -8.4 | 0.01 | -0.01 |
| Stage 2 | -8.6 | 0.01 | -0.01 |
| Stage 2 | -8.8 | 0.01 | -0.01 |
| Stage 2 | -9 | 0.01 | -0.01 |
| Stage 2 | -9.2 | 0 | -0.01 |
| Stage 2 | -9.4 | 0 | -0.01 |
| Stage 2 | -9.6 | 0 | -0.01 |
| Stage 2 | -9.8 | 0 | 0 |
| Stage 2 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 3

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 3 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -1 | -0.1 | -0.48 |
| Stage 3 | -1.2 | -0.22 | -0.61 |
| Stage 3 | -1.4 | -0.29 | -0.35 |
| Stage 3 | -1.6 | -0.31 | -0.13 |
| Stage 3 | -1.8 | -0.31 | 0.04 |
| Stage 3 | -2 | -0.28 | 0.15 |
| Stage 3 | -2.2 | -0.24 | 0.2 |
| Stage 3 | -2.4 | -0.19 | 0.23 |
| Stage 3 | -2.6 | -0.15 | 0.23 |
| Stage 3 | -2.8 | -0.1 | 0.21 |
| Stage 3 | -3 | -0.07 | 0.18 |
| Stage 3 | -3.2 | -0.04 | 0.16 |
| Stage 3 | -3.4 | -0.01 | 0.12 |
| Stage 3 | -3.6 | 0.01 | 0.09 |
| Stage 3 | -3.8 | 0.02 | 0.06 |
| Stage 3 | -4 | 0.03 | 0.04 |
| Stage 3 | -4.2 | 0.03 | 0.03 |
| Stage 3 | -4.4 | 0.04 | 0.03 |
| Stage 3 | -4.6 | 0.04 | 0.02 |
| Stage 3 | -4.8 | 0.05 | 0.02 |
| Stage 3 | -5 | 0.05 | 0.02 |
| Stage 3 | -5.2 | 0.05 | 0.01 |
| Stage 3 | -5.4 | 0.05 | 0 |
| Stage 3 | -5.6 | 0.05 | -0.02 |
| Stage 3 | -5.8 | 0.04 | -0.04 |
| Stage 3 | -6 | 0.03 | -0.04 |
| Stage 3 | -6.2 | 0.02 | -0.04 |
| Stage 3 | -6.4 | 0.01 | -0.04 |
| Stage 3 | -6.6 | 0.01 | -0.04 |
| Stage 3 | -6.8 | 0 | -0.03 |
| Stage 3 | -7 | -0.01 | -0.02 |
| Stage 3 | -7.2 | -0.01 | -0.02 |
| Stage 3 | -7.4 | -0.01 | -0.01 |
| Stage 3 | -7.6 | -0.01 | -0.01 |
| Stage 3 | -7.8 | -0.01 | 0 |
| Stage 3 | -8 | -0.01 | 0 |
| Stage 3 | -8.2 | -0.01 | 0 |
| Stage 3 | -8.4 | -0.01 | 0.01 |
| Stage 3 | -8.6 | -0.01 | 0.01 |
| Stage 3 | -8.8 | -0.01 | 0.01 |
| Stage 3 | -9 | -0.01 | 0.01 |
| Stage 3 | -9.2 | 0 | 0.01 |
| Stage 3 | -9.4 | 0 | 0.01 |
| Stage 3 | -9.6 | 0 | 0.01 |
| Stage 3 | -9.8 | 0 | 0 |
| Stage 3 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 3

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 3 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -1 | 0.1 | 0.48 |
| Stage 3 | -1.2 | 0.22 | 0.61 |
| Stage 3 | -1.4 | 0.29 | 0.35 |
| Stage 3 | -1.6 | 0.31 | 0.13 |
| Stage 3 | -1.8 | 0.31 | -0.04 |
| Stage 3 | -2 | 0.28 | -0.15 |
| Stage 3 | -2.2 | 0.24 | -0.2 |
| Stage 3 | -2.4 | 0.19 | -0.23 |
| Stage 3 | -2.6 | 0.15 | -0.23 |
| Stage 3 | -2.8 | 0.1 | -0.21 |
| Stage 3 | -3 | 0.07 | -0.18 |
| Stage 3 | -3.2 | 0.04 | -0.16 |
| Stage 3 | -3.4 | 0.01 | -0.12 |
| Stage 3 | -3.6 | -0.01 | -0.09 |
| Stage 3 | -3.8 | -0.02 | -0.06 |
| Stage 3 | -4 | -0.03 | -0.04 |
| Stage 3 | -4.2 | -0.03 | -0.03 |
| Stage 3 | -4.4 | -0.04 | -0.03 |
| Stage 3 | -4.6 | -0.04 | -0.02 |
| Stage 3 | -4.8 | -0.05 | -0.02 |
| Stage 3 | -5 | -0.05 | -0.02 |
| Stage 3 | -5.2 | -0.05 | -0.01 |
| Stage 3 | -5.4 | -0.05 | 0 |
| Stage 3 | -5.6 | -0.05 | 0.02 |
| Stage 3 | -5.8 | -0.04 | 0.04 |
| Stage 3 | -6 | -0.03 | 0.04 |
| Stage 3 | -6.2 | -0.02 | 0.04 |
| Stage 3 | -6.4 | -0.01 | 0.04 |
| Stage 3 | -6.6 | -0.01 | 0.04 |
| Stage 3 | -6.8 | 0 | 0.03 |
| Stage 3 | -7 | 0.01 | 0.02 |
| Stage 3 | -7.2 | 0.01 | 0.02 |
| Stage 3 | -7.4 | 0.01 | 0.01 |
| Stage 3 | -7.6 | 0.01 | 0.01 |
| Stage 3 | -7.8 | 0.01 | 0 |
| Stage 3 | -8 | 0.01 | 0 |
| Stage 3 | -8.2 | 0.01 | 0 |
| Stage 3 | -8.4 | 0.01 | -0.01 |
| Stage 3 | -8.6 | 0.01 | -0.01 |
| Stage 3 | -8.8 | 0.01 | -0.01 |
| Stage 3 | -9 | 0.01 | -0.01 |
| Stage 3 | -9.2 | 0 | -0.01 |
| Stage 3 | -9.4 | 0 | -0.01 |
| Stage 3 | -9.6 | 0 | -0.01 |
| Stage 3 | -9.8 | 0 | 0 |
| Stage 3 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 4

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | 2.28 |
| Stage 4 | -0.2 | 0.46 | 2.28 |
| Stage 4 | -0.4 | 0.91 | 2.28 |
| Stage 4 | -0.6 | 1.37 | 2.28 |
| Stage 4 | -0.8 | 1.83 | 2.28 |
| Stage 4 | -1 | 2.28 | 2.28 |
| Stage 4 | -1.2 | 2.74 | 2.28 |
| Stage 4 | -1.4 | 3.2 | 2.28 |
| Stage 4 | -1.6 | 3.65 | 2.28 |
| Stage 4 | -1.8 | 4.09 | 2.18 |
| Stage 4 | -2 | 4.45 | 1.8 |
| Stage 4 | -2.2 | 4.67 | 1.1 |
| Stage 4 | -2.4 | 4.68 | 0.07 |
| Stage 4 | -2.6 | 4.42 | -1.33 |
| Stage 4 | -2.8 | 3.79 | -3.14 |
| Stage 4 | -3 | 2.71 | -5.4 |
| Stage 4 | -3.2 | 1.62 | -5.46 |
| Stage 4 | -3.4 | 0.7 | -4.6 |
| Stage 4 | -3.6 | -0.03 | -3.64 |
| Stage 4 | -3.8 | -0.58 | -2.72 |
| Stage 4 | -4 | -0.96 | -1.9 |
| Stage 4 | -4.2 | -1.2 | -1.2 |
| Stage 4 | -4.4 | -1.32 | -0.62 |
| Stage 4 | -4.6 | -1.35 | -0.16 |
| Stage 4 | -4.8 | -1.31 | 0.18 |
| Stage 4 | -5 | -1.23 | 0.43 |
| Stage 4 | -5.2 | -1.11 | 0.58 |
| Stage 4 | -5.4 | -0.98 | 0.66 |
| Stage 4 | -5.6 | -0.84 | 0.68 |
| Stage 4 | -5.8 | -0.71 | 0.66 |
| Stage 4 | -6 | -0.59 | 0.62 |
| Stage 4 | -6.2 | -0.48 | 0.56 |
| Stage 4 | -6.4 | -0.38 | 0.5 |
| Stage 4 | -6.6 | -0.29 | 0.43 |
| Stage 4 | -6.8 | -0.22 | 0.36 |
| Stage 4 | -7 | -0.16 | 0.3 |
| Stage 4 | -7.2 | -0.11 | 0.24 |
| Stage 4 | -7.4 | -0.08 | 0.19 |
| Stage 4 | -7.6 | -0.05 | 0.14 |
| Stage 4 | -7.8 | -0.03 | 0.1 |
| Stage 4 | -8 | -0.01 | 0.07 |
| Stage 4 | -8.2 | 0 | 0.05 |
| Stage 4 | -8.4 | 0 | 0.03 |
| Stage 4 | -8.6 | 0.01 | 0.01 |
| Stage 4 | -8.8 | 0.01 | 0 |
| Stage 4 | -9 | 0.01 | 0 |
| Stage 4 | -9.2 | 0 | -0.01 |
| Stage 4 | -9.4 | 0 | -0.01 |
| Stage 4 | -9.6 | 0 | -0.01 |
| Stage 4 | -9.8 | 0 | 0 |
| Stage 4 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 4

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | -2.28 |
| Stage 4 | -0.2 | -0.46 | -2.28 |
| Stage 4 | -0.4 | -0.91 | -2.28 |
| Stage 4 | -0.6 | -1.37 | -2.28 |
| Stage 4 | -0.8 | -1.83 | -2.28 |
| Stage 4 | -1 | -2.28 | -2.28 |
| Stage 4 | -1.2 | -2.74 | -2.28 |
| Stage 4 | -1.4 | -3.2 | -2.28 |
| Stage 4 | -1.6 | -3.65 | -2.28 |
| Stage 4 | -1.8 | -4.09 | -2.18 |
| Stage 4 | -2 | -4.45 | -1.8 |
| Stage 4 | -2.2 | -4.67 | -1.1 |
| Stage 4 | -2.4 | -4.68 | -0.07 |
| Stage 4 | -2.6 | -4.42 | 1.33 |
| Stage 4 | -2.8 | -3.79 | 3.14 |
| Stage 4 | -3 | -2.71 | 5.4 |
| Stage 4 | -3.2 | -1.62 | 5.46 |
| Stage 4 | -3.4 | -0.7 | 4.6 |
| Stage 4 | -3.6 | 0.03 | 3.64 |
| Stage 4 | -3.8 | 0.58 | 2.72 |
| Stage 4 | -4 | 0.96 | 1.9 |
| Stage 4 | -4.2 | 1.2 | 1.2 |
| Stage 4 | -4.4 | 1.32 | 0.62 |
| Stage 4 | -4.6 | 1.35 | 0.16 |
| Stage 4 | -4.8 | 1.31 | -0.18 |
| Stage 4 | -5 | 1.23 | -0.43 |
| Stage 4 | -5.2 | 1.11 | -0.58 |
| Stage 4 | -5.4 | 0.98 | -0.66 |
| Stage 4 | -5.6 | 0.84 | -0.68 |
| Stage 4 | -5.8 | 0.71 | -0.66 |
| Stage 4 | -6 | 0.59 | -0.62 |
| Stage 4 | -6.2 | 0.48 | -0.56 |
| Stage 4 | -6.4 | 0.38 | -0.5 |
| Stage 4 | -6.6 | 0.29 | -0.43 |
| Stage 4 | -6.8 | 0.22 | -0.36 |
| Stage 4 | -7 | 0.16 | -0.3 |
| Stage 4 | -7.2 | 0.11 | -0.24 |
| Stage 4 | -7.4 | 0.08 | -0.19 |
| Stage 4 | -7.6 | 0.05 | -0.14 |
| Stage 4 | -7.8 | 0.03 | -0.1 |
| Stage 4 | -8 | 0.01 | -0.07 |
| Stage 4 | -8.2 | 0 | -0.05 |
| Stage 4 | -8.4 | 0 | -0.03 |
| Stage 4 | -8.6 | -0.01 | -0.01 |
| Stage 4 | -8.8 | -0.01 | 0 |
| Stage 4 | -9 | -0.01 | 0 |
| Stage 4 | -9.2 | 0 | 0.01 |
| Stage 4 | -9.4 | 0 | 0.01 |
| Stage 4 | -9.6 | 0 | 0.01 |
| Stage 4 | -9.8 | 0 | 0 |
| Stage 4 | -10 | 0 | 0 |

Tabella Risultati Paratia Nominal - Stage: Stage 5

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 5 | 0 | 0 | 4.48 |
| Stage 5 | -0.2 | 0.9 | 4.48 |
| Stage 5 | -0.4 | 1.79 | 4.48 |
| Stage 5 | -0.6 | 2.69 | 4.48 |
| Stage 5 | -0.8 | 3.59 | 4.48 |
| Stage 5 | -1 | 4.48 | 4.48 |
| Stage 5 | -1.2 | 5.38 | 4.48 |
| Stage 5 | -1.4 | 6.28 | 4.48 |
| Stage 5 | -1.6 | 7.18 | 4.48 |
| Stage 5 | -1.8 | 8.07 | 4.48 |
| Stage 5 | -2 | 8.92 | 4.25 |
| Stage 5 | -2.2 | 9.67 | 3.73 |
| Stage 5 | -2.4 | 10.26 | 2.93 |
| Stage 5 | -2.6 | 10.63 | 1.86 |
| Stage 5 | -2.8 | 10.73 | 0.51 |
| Stage 5 | -3 | 10.51 | -1.12 |
| Stage 5 | -3.2 | 9.9 | -3.01 |
| Stage 5 | -3.4 | 8.86 | -5.19 |
| Stage 5 | -3.6 | 7.34 | -7.64 |
| Stage 5 | -3.8 | 5.27 | -10.36 |
| Stage 5 | -4 | 2.6 | -13.34 |
| Stage 5 | -4.2 | 0.19 | -12.04 |
| Stage 5 | -4.4 | -1.72 | -9.54 |
| Stage 5 | -4.6 | -3.08 | -6.83 |
| Stage 5 | -4.8 | -3.98 | -4.46 |
| Stage 5 | -5 | -4.48 | -2.51 |
| Stage 5 | -5.2 | -4.67 | -0.96 |
| Stage 5 | -5.4 | -4.63 | 0.22 |
| Stage 5 | -5.6 | -4.41 | 1.08 |
| Stage 5 | -5.8 | -4.08 | 1.66 |
| Stage 5 | -6 | -3.68 | 2.02 |
| Stage 5 | -6.2 | -3.24 | 2.21 |
| Stage 5 | -6.4 | -2.79 | 2.25 |
| Stage 5 | -6.6 | -2.35 | 2.19 |
| Stage 5 | -6.8 | -1.94 | 2.06 |
| Stage 5 | -7 | -1.56 | 1.88 |
| Stage 5 | -7.2 | -1.23 | 1.66 |
| Stage 5 | -7.4 | -0.94 | 1.44 |
| Stage 5 | -7.6 | -0.7 | 1.21 |
| Stage 5 | -7.8 | -0.5 | 0.99 |
| Stage 5 | -8 | -0.34 | 0.79 |
| Stage 5 | -8.2 | -0.22 | 0.61 |
| Stage 5 | -8.4 | -0.13 | 0.45 |
| Stage 5 | -8.6 | -0.06 | 0.32 |
| Stage 5 | -8.8 | -0.02 | 0.21 |
| Stage 5 | -9 | 0 | 0.12 |
| Stage 5 | -9.2 | 0.01 | 0.05 |
| Stage 5 | -9.4 | 0.01 | 0.01 |
| Stage 5 | -9.6 | 0.01 | -0.02 |
| Stage 5 | -9.8 | 0 | -0.03 |
| Stage 5 | -10 | 0 | -0.01 |

Tabella Risultati Paratia Nominal - Stage: Stage 5

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 5 | 0 | 0 | -4.48 |
| Stage 5 | -0.2 | -0.9 | -4.48 |
| Stage 5 | -0.4 | -1.79 | -4.48 |
| Stage 5 | -0.6 | -2.69 | -4.48 |
| Stage 5 | -0.8 | -3.59 | -4.48 |
| Stage 5 | -1 | -4.48 | -4.48 |
| Stage 5 | -1.2 | -5.38 | -4.48 |
| Stage 5 | -1.4 | -6.28 | -4.48 |
| Stage 5 | -1.6 | -7.18 | -4.48 |
| Stage 5 | -1.8 | -8.07 | -4.48 |
| Stage 5 | -2 | -8.92 | -4.25 |
| Stage 5 | -2.2 | -9.67 | -3.73 |
| Stage 5 | -2.4 | -10.26 | -2.93 |
| Stage 5 | -2.6 | -10.63 | -1.86 |
| Stage 5 | -2.8 | -10.73 | -0.51 |
| Stage 5 | -3 | -10.51 | 1.12 |
| Stage 5 | -3.2 | -9.9 | 3.01 |
| Stage 5 | -3.4 | -8.86 | 5.19 |
| Stage 5 | -3.6 | -7.34 | 7.64 |
| Stage 5 | -3.8 | -5.27 | 10.36 |
| Stage 5 | -4 | -2.6 | 13.34 |
| Stage 5 | -4.2 | -0.19 | 12.04 |
| Stage 5 | -4.4 | 1.72 | 9.54 |
| Stage 5 | -4.6 | 3.08 | 6.83 |
| Stage 5 | -4.8 | 3.98 | 4.46 |
| Stage 5 | -5 | 4.48 | 2.51 |
| Stage 5 | -5.2 | 4.67 | 0.96 |
| Stage 5 | -5.4 | 4.63 | -0.22 |
| Stage 5 | -5.6 | 4.41 | -1.08 |
| Stage 5 | -5.8 | 4.08 | -1.66 |
| Stage 5 | -6 | 3.68 | -2.02 |
| Stage 5 | -6.2 | 3.24 | -2.21 |
| Stage 5 | -6.4 | 2.79 | -2.25 |
| Stage 5 | -6.6 | 2.35 | -2.19 |
| Stage 5 | -6.8 | 1.94 | -2.06 |
| Stage 5 | -7 | 1.56 | -1.88 |
| Stage 5 | -7.2 | 1.23 | -1.66 |
| Stage 5 | -7.4 | 0.94 | -1.44 |
| Stage 5 | -7.6 | 0.7 | -1.21 |
| Stage 5 | -7.8 | 0.5 | -0.99 |
| Stage 5 | -8 | 0.34 | -0.79 |
| Stage 5 | -8.2 | 0.22 | -0.61 |
| Stage 5 | -8.4 | 0.13 | -0.45 |
| Stage 5 | -8.6 | 0.06 | -0.32 |
| Stage 5 | -8.8 | 0.02 | -0.21 |
| Stage 5 | -9 | 0 | -0.12 |
| Stage 5 | -9.2 | -0.01 | -0.05 |
| Stage 5 | -9.4 | -0.01 | -0.01 |
| Stage 5 | -9.6 | -0.01 | 0.02 |
| Stage 5 | -9.8 | 0 | 0.03 |
| Stage 5 | -10 | 0 | 0.01 |

Tabella Risultati Paratia Nominal - Stage: Stage 6

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | 11.22 |
| Stage 6 | -0.2 | 2.24 | 11.22 |
| Stage 6 | -0.4 | 4.49 | 11.22 |
| Stage 6 | -0.6 | 6.73 | 11.22 |
| Stage 6 | -0.8 | 8.97 | 11.22 |
| Stage 6 | -1 | 11.22 | 11.22 |
| Stage 6 | -1.2 | 13.46 | 11.22 |
| Stage 6 | -1.4 | 15.7 | 11.22 |
| Stage 6 | -1.6 | 17.95 | 11.22 |
| Stage 6 | -1.8 | 20.19 | 11.22 |
| Stage 6 | -2 | 22.39 | 10.98 |
| Stage 6 | -2.2 | 24.48 | 10.46 |
| Stage 6 | -2.4 | 26.41 | 9.67 |
| Stage 6 | -2.6 | 28.13 | 8.59 |
| Stage 6 | -2.8 | 29.58 | 7.24 |
| Stage 6 | -3 | 30.7 | 5.62 |
| Stage 6 | -3.2 | 31.45 | 3.72 |
| Stage 6 | -3.4 | 31.76 | 1.54 |
| Stage 6 | -3.6 | 31.58 | -0.91 |
| Stage 6 | -3.8 | 30.85 | -3.62 |
| Stage 6 | -4 | 29.53 | -6.61 |
| Stage 6 | -4.2 | 27.56 | -9.86 |
| Stage 6 | -4.4 | 24.88 | -13.39 |
| Stage 6 | -4.6 | 21.44 | -17.18 |
| Stage 6 | -4.8 | 17.2 | -21.24 |
| Stage 6 | -5 | 12.08 | -25.57 |
| Stage 6 | -5.2 | 6.05 | -30.16 |
| Stage 6 | -5.4 | -0.96 | -35.03 |
| Stage 6 | -5.6 | -7.05 | -30.47 |
| Stage 6 | -5.8 | -11.87 | -24.12 |
| Stage 6 | -6 | -15.48 | -18.06 |
| Stage 6 | -6.2 | -17.95 | -12.31 |
| Stage 6 | -6.4 | -19.36 | -7.08 |
| Stage 6 | -6.6 | -19.83 | -2.35 |
| Stage 6 | -6.8 | -19.44 | 1.95 |
| Stage 6 | -7 | -18.4 | 5.19 |
| Stage 6 | -7.2 | -16.92 | 7.42 |
| Stage 6 | -7.4 | -15.16 | 8.8 |
| Stage 6 | -7.6 | -13.26 | 9.5 |
| Stage 6 | -7.8 | -11.33 | 9.66 |
| Stage 6 | -8 | -9.44 | 9.42 |
| Stage 6 | -8.2 | -7.67 | 8.87 |
| Stage 6 | -8.4 | -6.05 | 8.12 |
| Stage 6 | -8.6 | -4.6 | 7.23 |
| Stage 6 | -8.8 | -3.35 | 6.25 |
| Stage 6 | -9 | -2.3 | 5.25 |
| Stage 6 | -9.2 | -1.45 | 4.24 |
| Stage 6 | -9.4 | -0.81 | 3.24 |
| Stage 6 | -9.6 | -0.35 | 2.27 |
| Stage 6 | -9.8 | -0.09 | 1.33 |
| Stage 6 | -10 | 0 | 0.43 |

Tabella Risultati Paratia Nominal - Stage: Stage 6

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | -11.22 |
| Stage 6 | -0.2 | -2.24 | -11.22 |
| Stage 6 | -0.4 | -4.49 | -11.22 |
| Stage 6 | -0.6 | -6.73 | -11.22 |
| Stage 6 | -0.8 | -8.97 | -11.22 |
| Stage 6 | -1 | -11.22 | -11.22 |
| Stage 6 | -1.2 | -13.46 | -11.22 |
| Stage 6 | -1.4 | -15.7 | -11.22 |
| Stage 6 | -1.6 | -17.95 | -11.22 |
| Stage 6 | -1.8 | -20.19 | -11.22 |
| Stage 6 | -2 | -22.39 | -10.98 |
| Stage 6 | -2.2 | -24.48 | -10.46 |
| Stage 6 | -2.4 | -26.41 | -9.67 |
| Stage 6 | -2.6 | -28.13 | -8.59 |
| Stage 6 | -2.8 | -29.58 | -7.24 |
| Stage 6 | -3 | -30.7 | -5.62 |
| Stage 6 | -3.2 | -31.45 | -3.72 |
| Stage 6 | -3.4 | -31.76 | -1.54 |
| Stage 6 | -3.6 | -31.58 | 0.91 |
| Stage 6 | -3.8 | -30.85 | 3.62 |
| Stage 6 | -4 | -29.53 | 6.61 |
| Stage 6 | -4.2 | -27.56 | 9.86 |
| Stage 6 | -4.4 | -24.88 | 13.39 |
| Stage 6 | -4.6 | -21.44 | 17.18 |
| Stage 6 | -4.8 | -17.2 | 21.24 |
| Stage 6 | -5 | -12.08 | 25.57 |
| Stage 6 | -5.2 | -6.05 | 30.16 |
| Stage 6 | -5.4 | 0.96 | 35.03 |
| Stage 6 | -5.6 | 7.05 | 30.47 |
| Stage 6 | -5.8 | 11.87 | 24.12 |
| Stage 6 | -6 | 15.48 | 18.06 |
| Stage 6 | -6.2 | 17.95 | 12.31 |
| Stage 6 | -6.4 | 19.36 | 7.08 |
| Stage 6 | -6.6 | 19.83 | 2.35 |
| Stage 6 | -6.8 | 19.44 | -1.95 |
| Stage 6 | -7 | 18.4 | -5.19 |
| Stage 6 | -7.2 | 16.92 | -7.42 |
| Stage 6 | -7.4 | 15.16 | -8.8 |
| Stage 6 | -7.6 | 13.26 | -9.5 |
| Stage 6 | -7.8 | 11.33 | -9.66 |
| Stage 6 | -8 | 9.44 | -9.42 |
| Stage 6 | -8.2 | 7.67 | -8.87 |
| Stage 6 | -8.4 | 6.05 | -8.12 |
| Stage 6 | -8.6 | 4.6 | -7.23 |
| Stage 6 | -8.8 | 3.35 | -6.25 |
| Stage 6 | -9 | 2.3 | -5.25 |
| Stage 6 | -9.2 | 1.45 | -4.24 |
| Stage 6 | -9.4 | 0.81 | -3.24 |
| Stage 6 | -9.6 | 0.35 | -2.27 |
| Stage 6 | -9.8 | 0.09 | -1.33 |
| Stage 6 | -10 | 0 | -0.43 |

Tabella Risultati Paratia Nominal - Stage: Stage 7

| Design Assumption: Nominal Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | 14.33 |
| Stage 7 | -0.2 | 2.87 | 14.33 |
| Stage 7 | -0.4 | 5.73 | 14.33 |
| Stage 7 | -0.6 | 8.6 | 14.33 |
| Stage 7 | -0.8 | 11.46 | 14.33 |
| Stage 7 | -1 | 14.33 | 14.33 |
| Stage 7 | -1.2 | 17.2 | 14.33 |
| Stage 7 | -1.4 | 20.06 | 14.33 |
| Stage 7 | -1.6 | 22.93 | 14.33 |
| Stage 7 | -1.8 | 25.79 | 14.33 |
| Stage 7 | -2 | 28.61 | 14.09 |
| Stage 7 | -2.2 | 31.33 | 13.58 |
| Stage 7 | -2.4 | 33.88 | 12.78 |
| Stage 7 | -2.6 | 36.22 | 11.7 |
| Stage 7 | -2.8 | 38.3 | 10.35 |
| Stage 7 | -3 | 40.04 | 8.73 |
| Stage 7 | -3.2 | 41.41 | 6.83 |
| Stage 7 | -3.4 | 42.34 | 4.65 |
| Stage 7 | -3.6 | 42.78 | 2.21 |
| Stage 7 | -3.8 | 42.68 | -0.51 |
| Stage 7 | -4 | 41.98 | -3.5 |
| Stage 7 | -4.2 | 40.63 | -6.75 |
| Stage 7 | -4.4 | 38.57 | -10.27 |
| Stage 7 | -4.6 | 35.76 | -14.07 |
| Stage 7 | -4.8 | 32.13 | -18.13 |
| Stage 7 | -5 | 27.64 | -22.45 |
| Stage 7 | -5.2 | 22.23 | -27.05 |
| Stage 7 | -5.4 | 15.85 | -31.92 |
| Stage 7 | -5.6 | 8.44 | -37.05 |
| Stage 7 | -5.8 | -0.05 | -42.44 |
| Stage 7 | -6 | -7.96 | -39.55 |
| Stage 7 | -6.2 | -14.88 | -34.6 |
| Stage 7 | -6.4 | -20.4 | -27.59 |
| Stage 7 | -6.6 | -24.37 | -19.89 |
| Stage 7 | -6.8 | -26.93 | -12.76 |
| Stage 7 | -7 | -28.16 | -6.18 |
| Stage 7 | -7.2 | -28.21 | -0.22 |
| Stage 7 | -7.4 | -27.21 | 5.01 |
| Stage 7 | -7.6 | -25.31 | 9.46 |
| Stage 7 | -7.8 | -22.82 | 12.46 |
| Stage 7 | -8 | -19.97 | 14.25 |
| Stage 7 | -8.2 | -16.96 | 15.06 |
| Stage 7 | -8.4 | -13.94 | 15.09 |
| Stage 7 | -8.6 | -11.04 | 14.49 |
| Stage 7 | -8.8 | -8.36 | 13.42 |
| Stage 7 | -9 | -5.96 | 11.98 |
| Stage 7 | -9.2 | -3.91 | 10.25 |
| Stage 7 | -9.4 | -2.25 | 8.29 |
| Stage 7 | -9.6 | -1.03 | 6.14 |
| Stage 7 | -9.8 | -0.27 | 3.81 |
| Stage 7 | -10 | 0 | 1.32 |

Tabella Risultati Paratia Nominal - Stage: Stage 7

| Design Assumption: Nominal Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | -14.33 |
| Stage 7 | -0.2 | -2.87 | -14.33 |
| Stage 7 | -0.4 | -5.73 | -14.33 |
| Stage 7 | -0.6 | -8.6 | -14.33 |
| Stage 7 | -0.8 | -11.46 | -14.33 |
| Stage 7 | -1 | -14.33 | -14.33 |
| Stage 7 | -1.2 | -17.2 | -14.33 |
| Stage 7 | -1.4 | -20.06 | -14.33 |
| Stage 7 | -1.6 | -22.93 | -14.33 |
| Stage 7 | -1.8 | -25.79 | -14.33 |
| Stage 7 | -2 | -28.61 | -14.09 |
| Stage 7 | -2.2 | -31.33 | -13.58 |
| Stage 7 | -2.4 | -33.88 | -12.78 |
| Stage 7 | -2.6 | -36.22 | -11.7 |
| Stage 7 | -2.8 | -38.3 | -10.35 |
| Stage 7 | -3 | -40.04 | -8.73 |
| Stage 7 | -3.2 | -41.41 | -6.83 |
| Stage 7 | -3.4 | -42.34 | -4.65 |
| Stage 7 | -3.6 | -42.78 | -2.21 |
| Stage 7 | -3.8 | -42.68 | 0.51 |
| Stage 7 | -4 | -41.98 | 3.5 |
| Stage 7 | -4.2 | -40.63 | 6.75 |
| Stage 7 | -4.4 | -38.57 | 10.27 |
| Stage 7 | -4.6 | -35.76 | 14.07 |
| Stage 7 | -4.8 | -32.13 | 18.13 |
| Stage 7 | -5 | -27.64 | 22.45 |
| Stage 7 | -5.2 | -22.23 | 27.05 |
| Stage 7 | -5.4 | -15.85 | 31.92 |
| Stage 7 | -5.6 | -8.44 | 37.05 |
| Stage 7 | -5.8 | 0.05 | 42.44 |
| Stage 7 | -6 | 7.96 | 39.55 |
| Stage 7 | -6.2 | 14.88 | 34.6 |
| Stage 7 | -6.4 | 20.4 | 27.59 |
| Stage 7 | -6.6 | 24.37 | 19.89 |
| Stage 7 | -6.8 | 26.93 | 12.76 |
| Stage 7 | -7 | 28.16 | 6.18 |
| Stage 7 | -7.2 | 28.21 | 0.22 |
| Stage 7 | -7.4 | 27.21 | -5.01 |
| Stage 7 | -7.6 | 25.31 | -9.46 |
| Stage 7 | -7.8 | 22.82 | -12.46 |
| Stage 7 | -8 | 19.97 | -14.25 |
| Stage 7 | -8.2 | 16.96 | -15.06 |
| Stage 7 | -8.4 | 13.94 | -15.09 |
| Stage 7 | -8.6 | 11.04 | -14.49 |
| Stage 7 | -8.8 | 8.36 | -13.42 |
| Stage 7 | -9 | 5.96 | -11.98 |
| Stage 7 | -9.2 | 3.91 | -10.25 |
| Stage 7 | -9.4 | 2.25 | -8.29 |
| Stage 7 | -9.6 | 1.03 | -6.14 |
| Stage 7 | -9.8 | 0.27 | -3.81 |
| Stage 7 | -10 | 0 | -1.32 |

Inviluppi Risultati Paratia Nominal

Risultati Elementi strutturali

Design Assumption: Nominal Sollecitazione Strut

| Stage | Forza (kN/m) |
|---------|--------------|
| Stage 3 | 0 |
| Stage 4 | -2.282406 |
| Stage 5 | -4.484574 |
| Stage 6 | -11.21754 |
| Stage 7 | -14.32973 |

Riepilogo spinte

| Design Assumption: | Tipo Risultato: | Muro: | LEFT | Lato | LEFT | | |
|--------------------|------------------|---------------|-------------|-----------------|-----------------|--------------------|--------|
| Nominal | Riepilogo spinte | | | | | | |
| Stage | Vera effettiva | Pressione | Vera Totale | Min ammissibile | Max ammissibile | Percentuale di | Vera / |
| | (kN/m) | neutra (kN/m) | (kN/m) | (kN/m) | (kN/m) | resistenza massima | Attiva |
| Stage 0 | 476 | 0 | 476 | 5.4 | 3262.4 | 14.59% | 88.15 |
| Stage 1 | 484.5 | 0 | 484.5 | 5.5 | 3419.4 | 14.17% | 88.09 |
| Stage 2 | 454 | 0 | 454 | 5.5 | 3419.4 | 13.28% | 82.55 |
| Stage 3 | 454 | 0 | 454 | 5.5 | 3419.4 | 13.28% | 82.55 |
| Stage 4 | 377.9 | 0 | 377.9 | 5.5 | 3419.4 | 11.05% | 68.71 |
| Stage 5 | 337.1 | 0 | 337.1 | 5.5 | 3419.4 | 9.86% | 61.29 |
| Stage 6 | 296.8 | 0 | 296.8 | 5.5 | 3419.4 | 8.68% | 53.96 |
| Stage 7 | 284.9 | 0 | 284.9 | 5.5 | 3419.4 | 8.33% | 51.8 |

| Design Assumption: | Tipo Risultato: | Muro: | LEFT | Lato | RIGHT | | |
|--------------------|------------------|---------------|-------------|-----------------|-----------------|--------------------|--------|
| Nominal | Riepilogo spinte | | | | | | |
| Stage | Vera effettiva | Pressione | Vera Totale | Min ammissibile | Max ammissibile | Percentuale di | Vera / |
| | (kN/m) | neutra (kN/m) | (kN/m) | (kN/m) | (kN/m) | resistenza massima | Attiva |
| Stage 0 | 476 | 0 | 476 | 5.4 | 3262.4 | 14.59% | 88.15 |
| Stage 1 | 484.5 | 0 | 484.5 | 5.4 | 3262.4 | 14.85% | 89.72 |
| Stage 2 | 454 | 0 | 454 | 4.7 | 2679.4 | 16.94% | 96.6 |
| Stage 3 | 454 | 0 | 454 | 4.7 | 2679.4 | 16.94% | 96.6 |
| Stage 4 | 375.6 | 0 | 375.6 | 3.4 | 1679.8 | 22.36% | 110.47 |
| Stage 5 | 332.6 | 0 | 332.6 | 2.7 | 1266.7 | 26.26% | 123.19 |
| Stage 6 | 285.6 | 0 | 285.6 | 1.9 | 840.1 | 34% | 150.32 |
| Stage 7 | 270.6 | 0 | 270.6 | 1.6 | 693.9 | 39% | 169.12 |

| Design Assumption: | Tipo Risultato: | Muro: | RIGHT | Lato | LEFT | | |
|--------------------|------------------|---------------|-------------|-----------------|-----------------|--------------------|--------|
| Nominal | Riepilogo spinte | | | | | | |
| Stage | Vera effettiva | Pressione | Vera Totale | Min ammissibile | Max ammissibile | Percentuale di | Vera / |
| | (kN/m) | neutra (kN/m) | (kN/m) | (kN/m) | (kN/m) | resistenza massima | Attiva |
| Stage 0 | 476 | 0 | 476 | 5.4 | 3262.4 | 14.59% | 88.15 |
| Stage 1 | 484.5 | 0 | 484.5 | 5.4 | 3262.4 | 14.85% | 89.72 |
| Stage 2 | 454 | 0 | 454 | 4.7 | 2679.4 | 16.94% | 96.6 |
| Stage 3 | 454 | 0 | 454 | 4.7 | 2679.4 | 16.94% | 96.6 |
| Stage 4 | 375.6 | 0 | 375.6 | 3.4 | 1679.8 | 22.36% | 110.47 |
| Stage 5 | 332.6 | 0 | 332.6 | 2.7 | 1266.7 | 26.26% | 123.19 |
| Stage 6 | 285.6 | 0 | 285.6 | 1.9 | 840.1 | 34% | 150.32 |
| Stage 7 | 270.6 | 0 | 270.6 | 1.6 | 693.9 | 39% | 169.12 |

| Design Assumption: | Tipo Risultato: | Muro: | RIGHT | Lato | RIGHT | | |
|--------------------|------------------|---------------|-------------|-----------------|-----------------|--------------------|--------|
| Nominal | Riepilogo spinte | | | | | | |
| Stage | Vera effettiva | Pressione | Vera Totale | Min ammissibile | Max ammissibile | Percentuale di | Vera / |
| | (kN/m) | neutra (kN/m) | (kN/m) | (kN/m) | (kN/m) | resistenza massima | Attiva |
| Stage 0 | 476 | 0 | 476 | 5.4 | 3262.4 | 14.59% | 88.15 |
| Stage 1 | 484.5 | 0 | 484.5 | 5.5 | 3419.4 | 14.17% | 88.09 |
| Stage 2 | 454 | 0 | 454 | 5.5 | 3419.4 | 13.28% | 82.55 |
| Stage 3 | 454 | 0 | 454 | 5.5 | 3419.4 | 13.28% | 82.55 |
| Stage 4 | 377.9 | 0 | 377.9 | 5.5 | 3419.4 | 11.05% | 68.71 |
| Stage 5 | 337.1 | 0 | 337.1 | 5.5 | 3419.4 | 9.86% | 61.29 |
| Stage 6 | 296.8 | 0 | 296.8 | 5.5 | 3419.4 | 8.68% | 53.96 |
| Stage 7 | 284.9 | 0 | 284.9 | 5.5 | 3419.4 | 8.33% | 51.8 |

Descrizione Coefficienti Design Assumption

Coefficienti A

| Nome | Carichi Permanenti Sfavorevoli (F_dead_loa d_unfavour) | Carichi Permanenti Favorevoli (F_dead_lo ad_favour) | Carichi Variabili Sfavorevoli (F_live_load _unfavour) | Carichi Variabili Favorevoli (F_live_loa d_favour) | Carico Sismico (F_seis m_load) | Pressi on i Acqua Lato Monte (F_Wa terDR) | Pressio ni Acqua Lato Valle (F_Wat erRes) | Carichi Perman enti Destabil izzanti (F_UPL_ GDStab) | Carichi Perman enti Stabiliz zanti (F_UPL_ GDStab) | Carichi Variabili Destabili (F_UPL_ QDStab) | Carichi Perman enti Destabili (F_HYD_ GDStab) | Carichi Perman enti Stabilizz anti (F_HYD_ GDStab) | Carichi Variabili Destabili (F_HYD_ QDStab) |
|--|--|---|---|--|---------------------------------|---|---|--|--|---|---|--|---|
| Simbolo | γ_G | γ_G | γ_Q | γ_Q | γ_{QE} | γ_G | γ_G | γ_{Gdst} | γ_{Gstb} | γ_{Qdst} | γ_{Gdst} | γ_{Gstb} | γ_{Qdst} |
| Nominal | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| NTC2018: SLE (Rara/Frequente/Quasi Permanente) | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | 1.3 | 1 | 1.5 | 1 | 0 | 1.3 | 1 | 1 | 1 | 1 | 1.3 | 0.9 | 1 |
| NTC2018: A2+M2+R1 | 1 | 1 | 1.3 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1.3 | 0.9 | 1 |

Coefficienti M

| Nome | Parziale su $\tan(\phi')$ (F_Fr) | Parziale su c' (F_eff_cohes) | Parziale su Su (F_Su) | Parziale su qu (F_qu) | Parziale su peso specifico (F_gamma) |
|--|----------------------------------|--------------------------------|-----------------------|-----------------------|--------------------------------------|
| Simbolo | γ_ϕ | γ_c | γ_{cu} | γ_{qu} | γ_γ |
| Nominal | 1 | 1 | 1 | 1 | 1 |
| NTC2018: SLE (Rara/Frequente/Quasi Permanente) | 1 | 1 | 1 | 1 | 1 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | 1 | 1 | 1 | 1 | 1 |
| NTC2018: A2+M2+R1 | 1.25 | 1.25 | 1.4 | 1 | 1 |

Coefficienti R

| Nome | Parziale resistenza terreno (es. Kp) (F_Soil_Res_walls) | Parziale resistenza Tiranti permanenti (F_Anch_P) | Parziale resistenza Tiranti temporanei (F_Anch_T) | Parziale elementi strutturali (F_wall) |
|--|---|---|---|--|
| Simbolo | γ_{Re} | γ_{ap} | γ_{at} | |
| Nominal | 1 | 1 | 1 | 1 |
| NTC2018: SLE (Rara/Frequente/Quasi Permanente) | 1 | 1 | 1 | 1 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | 1 | 1.2 | 1.1 | 1 |
| NTC2018: A2+M2+R1 | 1 | 1.2 | 1.1 | 1 |

Risultati NTC2018: SLE (Rara/Frequente/Quasi Permanente)

Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage 0

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | | Muro: LEFT |
|---|-------|------------------|------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 0 | 0 | 0 | |
| Stage 0 | -0.2 | 0 | |
| Stage 0 | -0.4 | 0 | |
| Stage 0 | -0.6 | 0 | |
| Stage 0 | -0.8 | 0 | |
| Stage 0 | -1 | 0 | |
| Stage 0 | -1.2 | 0 | |
| Stage 0 | -1.4 | 0 | |
| Stage 0 | -1.6 | 0 | |
| Stage 0 | -1.8 | 0 | |
| Stage 0 | -2 | 0 | |
| Stage 0 | -2.2 | 0 | |
| Stage 0 | -2.4 | 0 | |
| Stage 0 | -2.6 | 0 | |
| Stage 0 | -2.8 | 0 | |
| Stage 0 | -3 | 0 | |
| Stage 0 | -3.2 | 0 | |
| Stage 0 | -3.4 | 0 | |
| Stage 0 | -3.6 | 0 | |
| Stage 0 | -3.8 | 0 | |
| Stage 0 | -4 | 0 | |
| Stage 0 | -4.2 | 0 | |
| Stage 0 | -4.4 | 0 | |
| Stage 0 | -4.6 | 0 | |
| Stage 0 | -4.8 | 0 | |
| Stage 0 | -5 | 0 | |
| Stage 0 | -5.2 | 0 | |
| Stage 0 | -5.4 | 0 | |
| Stage 0 | -5.6 | 0 | |
| Stage 0 | -5.8 | 0 | |
| Stage 0 | -6 | 0 | |
| Stage 0 | -6.2 | 0 | |
| Stage 0 | -6.4 | 0 | |
| Stage 0 | -6.6 | 0 | |
| Stage 0 | -6.8 | 0 | |
| Stage 0 | -7 | 0 | |
| Stage 0 | -7.2 | 0 | |
| Stage 0 | -7.4 | 0 | |
| Stage 0 | -7.6 | 0 | |
| Stage 0 | -7.8 | 0 | |
| Stage 0 | -8 | 0 | |
| Stage 0 | -8.2 | 0 | |
| Stage 0 | -8.4 | 0 | |
| Stage 0 | -8.6 | 0 | |
| Stage 0 | -8.8 | 0 | |
| Stage 0 | -9 | 0 | |
| Stage 0 | -9.2 | 0 | |
| Stage 0 | -9.4 | 0 | |
| Stage 0 | -9.6 | 0 | |
| Stage 0 | -9.8 | 0 | |
| Stage 0 | -10 | 0 | |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 0**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento Muro: RIGHT | | | |
|---|-------|------------------|---|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 0**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 0**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
1**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | Muro: LEFT | |
|---|-------|------------------|--|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 1 | 0 | 0 | |
| Stage 1 | -0.2 | 0.01 | |
| Stage 1 | -0.4 | 0.01 | |
| Stage 1 | -0.6 | 0.02 | |
| Stage 1 | -0.8 | 0.03 | |
| Stage 1 | -1 | 0.03 | |
| Stage 1 | -1.2 | 0.04 | |
| Stage 1 | -1.4 | 0.05 | |
| Stage 1 | -1.6 | 0.05 | |
| Stage 1 | -1.8 | 0.05 | |
| Stage 1 | -2 | 0.06 | |
| Stage 1 | -2.2 | 0.06 | |
| Stage 1 | -2.4 | 0.07 | |
| Stage 1 | -2.6 | 0.07 | |
| Stage 1 | -2.8 | 0.07 | |
| Stage 1 | -3 | 0.07 | |
| Stage 1 | -3.2 | 0.07 | |
| Stage 1 | -3.4 | 0.07 | |
| Stage 1 | -3.6 | 0.07 | |
| Stage 1 | -3.8 | 0.08 | |
| Stage 1 | -4 | 0.08 | |
| Stage 1 | -4.2 | 0.08 | |
| Stage 1 | -4.4 | 0.08 | |
| Stage 1 | -4.6 | 0.08 | |
| Stage 1 | -4.8 | 0.08 | |
| Stage 1 | -5 | 0.08 | |
| Stage 1 | -5.2 | 0.08 | |
| Stage 1 | -5.4 | 0.08 | |
| Stage 1 | -5.6 | 0.08 | |
| Stage 1 | -5.8 | 0.08 | |
| Stage 1 | -6 | 0.07 | |
| Stage 1 | -6.2 | 0.07 | |
| Stage 1 | -6.4 | 0.07 | |
| Stage 1 | -6.6 | 0.07 | |
| Stage 1 | -6.8 | 0.07 | |
| Stage 1 | -7 | 0.07 | |
| Stage 1 | -7.2 | 0.07 | |
| Stage 1 | -7.4 | 0.06 | |
| Stage 1 | -7.6 | 0.06 | |
| Stage 1 | -7.8 | 0.06 | |
| Stage 1 | -8 | 0.06 | |
| Stage 1 | -8.2 | 0.06 | |
| Stage 1 | -8.4 | 0.06 | |
| Stage 1 | -8.6 | 0.06 | |
| Stage 1 | -8.8 | 0.06 | |
| Stage 1 | -9 | 0.06 | |
| Stage 1 | -9.2 | 0.05 | |
| Stage 1 | -9.4 | 0.05 | |
| Stage 1 | -9.6 | 0.05 | |
| Stage 1 | -9.8 | 0.05 | |
| Stage 1 | -10 | 0.05 | |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 1**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento Muro: RIGHT | | | |
|---|-------|------------------|--|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 1 | 0 | 0 | |
| Stage 1 | -0.2 | -0.01 | |
| Stage 1 | -0.4 | -0.01 | |
| Stage 1 | -0.6 | -0.02 | |
| Stage 1 | -0.8 | -0.03 | |
| Stage 1 | -1 | -0.03 | |
| Stage 1 | -1.2 | -0.04 | |
| Stage 1 | -1.4 | -0.05 | |
| Stage 1 | -1.6 | -0.05 | |
| Stage 1 | -1.8 | -0.05 | |
| Stage 1 | -2 | -0.06 | |
| Stage 1 | -2.2 | -0.06 | |
| Stage 1 | -2.4 | -0.07 | |
| Stage 1 | -2.6 | -0.07 | |
| Stage 1 | -2.8 | -0.07 | |
| Stage 1 | -3 | -0.07 | |
| Stage 1 | -3.2 | -0.07 | |
| Stage 1 | -3.4 | -0.07 | |
| Stage 1 | -3.6 | -0.07 | |
| Stage 1 | -3.8 | -0.08 | |
| Stage 1 | -4 | -0.08 | |
| Stage 1 | -4.2 | -0.08 | |
| Stage 1 | -4.4 | -0.08 | |
| Stage 1 | -4.6 | -0.08 | |
| Stage 1 | -4.8 | -0.08 | |
| Stage 1 | -5 | -0.08 | |
| Stage 1 | -5.2 | -0.08 | |
| Stage 1 | -5.4 | -0.08 | |
| Stage 1 | -5.6 | -0.08 | |
| Stage 1 | -5.8 | -0.08 | |
| Stage 1 | -6 | -0.07 | |
| Stage 1 | -6.2 | -0.07 | |
| Stage 1 | -6.4 | -0.07 | |
| Stage 1 | -6.6 | -0.07 | |
| Stage 1 | -6.8 | -0.07 | |
| Stage 1 | -7 | -0.07 | |
| Stage 1 | -7.2 | -0.07 | |
| Stage 1 | -7.4 | -0.06 | |
| Stage 1 | -7.6 | -0.06 | |
| Stage 1 | -7.8 | -0.06 | |
| Stage 1 | -8 | -0.06 | |
| Stage 1 | -8.2 | -0.06 | |
| Stage 1 | -8.4 | -0.06 | |
| Stage 1 | -8.6 | -0.06 | |
| Stage 1 | -8.8 | -0.06 | |
| Stage 1 | -9 | -0.06 | |
| Stage 1 | -9.2 | -0.05 | |
| Stage 1 | -9.4 | -0.05 | |
| Stage 1 | -9.6 | -0.05 | |
| Stage 1 | -9.8 | -0.05 | |
| Stage 1 | -10 | -0.05 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 1**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | 0.01 | 0.04 |
| Stage 1 | -0.6 | 0.03 | 0.09 |
| Stage 1 | -0.8 | 0.05 | 0.13 |
| Stage 1 | -1 | 0.08 | 0.14 |
| Stage 1 | -1.2 | 0.1 | 0.11 |
| Stage 1 | -1.4 | 0.12 | 0.07 |
| Stage 1 | -1.6 | 0.12 | 0.03 |
| Stage 1 | -1.8 | 0.12 | -0.01 |
| Stage 1 | -2 | 0.11 | -0.03 |
| Stage 1 | -2.2 | 0.1 | -0.05 |
| Stage 1 | -2.4 | 0.09 | -0.06 |
| Stage 1 | -2.6 | 0.08 | -0.06 |
| Stage 1 | -2.8 | 0.07 | -0.06 |
| Stage 1 | -3 | 0.06 | -0.05 |
| Stage 1 | -3.2 | 0.05 | -0.04 |
| Stage 1 | -3.4 | 0.04 | -0.04 |
| Stage 1 | -3.6 | 0.04 | -0.03 |
| Stage 1 | -3.8 | 0.03 | -0.02 |
| Stage 1 | -4 | 0.03 | -0.02 |
| Stage 1 | -4.2 | 0.03 | -0.01 |
| Stage 1 | -4.4 | 0.03 | 0.01 |
| Stage 1 | -4.6 | 0.03 | 0.01 |
| Stage 1 | -4.8 | 0.04 | 0.02 |
| Stage 1 | -5 | 0.04 | 0.02 |
| Stage 1 | -5.2 | 0.04 | 0.02 |
| Stage 1 | -5.4 | 0.04 | 0.01 |
| Stage 1 | -5.6 | 0.04 | -0.01 |
| Stage 1 | -5.8 | 0.04 | -0.03 |
| Stage 1 | -6 | 0.03 | -0.04 |
| Stage 1 | -6.2 | 0.02 | -0.04 |
| Stage 1 | -6.4 | 0.01 | -0.04 |
| Stage 1 | -6.6 | 0.01 | -0.03 |
| Stage 1 | -6.8 | 0 | -0.03 |
| Stage 1 | -7 | 0 | -0.02 |
| Stage 1 | -7.2 | -0.01 | -0.02 |
| Stage 1 | -7.4 | -0.01 | -0.01 |
| Stage 1 | -7.6 | -0.01 | -0.01 |
| Stage 1 | -7.8 | -0.01 | 0 |
| Stage 1 | -8 | -0.01 | 0 |
| Stage 1 | -8.2 | -0.01 | 0 |
| Stage 1 | -8.4 | -0.01 | 0 |
| Stage 1 | -8.6 | -0.01 | 0.01 |
| Stage 1 | -8.8 | -0.01 | 0.01 |
| Stage 1 | -9 | -0.01 | 0.01 |
| Stage 1 | -9.2 | 0 | 0.01 |
| Stage 1 | -9.4 | 0 | 0.01 |
| Stage 1 | -9.6 | 0 | 0.01 |
| Stage 1 | -9.8 | 0 | 0 |
| Stage 1 | -10 | 0 | 0 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 1**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | -0.01 | -0.04 |
| Stage 1 | -0.6 | -0.03 | -0.09 |
| Stage 1 | -0.8 | -0.05 | -0.13 |
| Stage 1 | -1 | -0.08 | -0.14 |
| Stage 1 | -1.2 | -0.1 | -0.11 |
| Stage 1 | -1.4 | -0.12 | -0.07 |
| Stage 1 | -1.6 | -0.12 | -0.03 |
| Stage 1 | -1.8 | -0.12 | 0.01 |
| Stage 1 | -2 | -0.11 | 0.03 |
| Stage 1 | -2.2 | -0.1 | 0.05 |
| Stage 1 | -2.4 | -0.09 | 0.06 |
| Stage 1 | -2.6 | -0.08 | 0.06 |
| Stage 1 | -2.8 | -0.07 | 0.06 |
| Stage 1 | -3 | -0.06 | 0.05 |
| Stage 1 | -3.2 | -0.05 | 0.04 |
| Stage 1 | -3.4 | -0.04 | 0.04 |
| Stage 1 | -3.6 | -0.04 | 0.03 |
| Stage 1 | -3.8 | -0.03 | 0.02 |
| Stage 1 | -4 | -0.03 | 0.02 |
| Stage 1 | -4.2 | -0.03 | 0.01 |
| Stage 1 | -4.4 | -0.03 | -0.01 |
| Stage 1 | -4.6 | -0.03 | -0.01 |
| Stage 1 | -4.8 | -0.04 | -0.02 |
| Stage 1 | -5 | -0.04 | -0.02 |
| Stage 1 | -5.2 | -0.04 | -0.02 |
| Stage 1 | -5.4 | -0.04 | -0.01 |
| Stage 1 | -5.6 | -0.04 | 0.01 |
| Stage 1 | -5.8 | -0.04 | 0.03 |
| Stage 1 | -6 | -0.03 | 0.04 |
| Stage 1 | -6.2 | -0.02 | 0.04 |
| Stage 1 | -6.4 | -0.01 | 0.04 |
| Stage 1 | -6.6 | -0.01 | 0.03 |
| Stage 1 | -6.8 | 0 | 0.03 |
| Stage 1 | -7 | 0 | 0.02 |
| Stage 1 | -7.2 | 0.01 | 0.02 |
| Stage 1 | -7.4 | 0.01 | 0.01 |
| Stage 1 | -7.6 | 0.01 | 0.01 |
| Stage 1 | -7.8 | 0.01 | 0 |
| Stage 1 | -8 | 0.01 | 0 |
| Stage 1 | -8.2 | 0.01 | 0 |
| Stage 1 | -8.4 | 0.01 | 0 |
| Stage 1 | -8.6 | 0.01 | -0.01 |
| Stage 1 | -8.8 | 0.01 | -0.01 |
| Stage 1 | -9 | 0.01 | -0.01 |
| Stage 1 | -9.2 | 0 | -0.01 |
| Stage 1 | -9.4 | 0 | -0.01 |
| Stage 1 | -9.6 | 0 | -0.01 |
| Stage 1 | -9.8 | 0 | 0 |
| Stage 1 | -10 | 0 | 0 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
2**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | Muro: LEFT |
|---|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 2 | 0 | 0.26 |
| Stage 2 | -0.2 | 0.25 |
| Stage 2 | -0.4 | 0.24 |
| Stage 2 | -0.6 | 0.23 |
| Stage 2 | -0.8 | 0.22 |
| Stage 2 | -1 | 0.21 |
| Stage 2 | -1.2 | 0.2 |
| Stage 2 | -1.4 | 0.19 |
| Stage 2 | -1.6 | 0.18 |
| Stage 2 | -1.8 | 0.18 |
| Stage 2 | -2 | 0.18 |
| Stage 2 | -2.2 | 0.17 |
| Stage 2 | -2.4 | 0.17 |
| Stage 2 | -2.6 | 0.17 |
| Stage 2 | -2.8 | 0.17 |
| Stage 2 | -3 | 0.17 |
| Stage 2 | -3.2 | 0.17 |
| Stage 2 | -3.4 | 0.17 |
| Stage 2 | -3.6 | 0.17 |
| Stage 2 | -3.8 | 0.17 |
| Stage 2 | -4 | 0.17 |
| Stage 2 | -4.2 | 0.17 |
| Stage 2 | -4.4 | 0.17 |
| Stage 2 | -4.6 | 0.18 |
| Stage 2 | -4.8 | 0.18 |
| Stage 2 | -5 | 0.18 |
| Stage 2 | -5.2 | 0.17 |
| Stage 2 | -5.4 | 0.17 |
| Stage 2 | -5.6 | 0.17 |
| Stage 2 | -5.8 | 0.17 |
| Stage 2 | -6 | 0.17 |
| Stage 2 | -6.2 | 0.17 |
| Stage 2 | -6.4 | 0.17 |
| Stage 2 | -6.6 | 0.17 |
| Stage 2 | -6.8 | 0.17 |
| Stage 2 | -7 | 0.16 |
| Stage 2 | -7.2 | 0.16 |
| Stage 2 | -7.4 | 0.16 |
| Stage 2 | -7.6 | 0.16 |
| Stage 2 | -7.8 | 0.16 |
| Stage 2 | -8 | 0.16 |
| Stage 2 | -8.2 | 0.16 |
| Stage 2 | -8.4 | 0.15 |
| Stage 2 | -8.6 | 0.15 |
| Stage 2 | -8.8 | 0.15 |
| Stage 2 | -9 | 0.15 |
| Stage 2 | -9.2 | 0.15 |
| Stage 2 | -9.4 | 0.15 |
| Stage 2 | -9.6 | 0.15 |
| Stage 2 | -9.8 | 0.15 |
| Stage 2 | -10 | 0.15 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 2**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento Muro: RIGHT | | | |
|---|-------|------------------|--|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 2 | 0 | -0.26 | |
| Stage 2 | -0.2 | -0.25 | |
| Stage 2 | -0.4 | -0.24 | |
| Stage 2 | -0.6 | -0.23 | |
| Stage 2 | -0.8 | -0.22 | |
| Stage 2 | -1 | -0.21 | |
| Stage 2 | -1.2 | -0.2 | |
| Stage 2 | -1.4 | -0.19 | |
| Stage 2 | -1.6 | -0.18 | |
| Stage 2 | -1.8 | -0.18 | |
| Stage 2 | -2 | -0.18 | |
| Stage 2 | -2.2 | -0.17 | |
| Stage 2 | -2.4 | -0.17 | |
| Stage 2 | -2.6 | -0.17 | |
| Stage 2 | -2.8 | -0.17 | |
| Stage 2 | -3 | -0.17 | |
| Stage 2 | -3.2 | -0.17 | |
| Stage 2 | -3.4 | -0.17 | |
| Stage 2 | -3.6 | -0.17 | |
| Stage 2 | -3.8 | -0.17 | |
| Stage 2 | -4 | -0.17 | |
| Stage 2 | -4.2 | -0.17 | |
| Stage 2 | -4.4 | -0.17 | |
| Stage 2 | -4.6 | -0.18 | |
| Stage 2 | -4.8 | -0.18 | |
| Stage 2 | -5 | -0.18 | |
| Stage 2 | -5.2 | -0.17 | |
| Stage 2 | -5.4 | -0.17 | |
| Stage 2 | -5.6 | -0.17 | |
| Stage 2 | -5.8 | -0.17 | |
| Stage 2 | -6 | -0.17 | |
| Stage 2 | -6.2 | -0.17 | |
| Stage 2 | -6.4 | -0.17 | |
| Stage 2 | -6.6 | -0.17 | |
| Stage 2 | -6.8 | -0.17 | |
| Stage 2 | -7 | -0.16 | |
| Stage 2 | -7.2 | -0.16 | |
| Stage 2 | -7.4 | -0.16 | |
| Stage 2 | -7.6 | -0.16 | |
| Stage 2 | -7.8 | -0.16 | |
| Stage 2 | -8 | -0.16 | |
| Stage 2 | -8.2 | -0.16 | |
| Stage 2 | -8.4 | -0.15 | |
| Stage 2 | -8.6 | -0.15 | |
| Stage 2 | -8.8 | -0.15 | |
| Stage 2 | -9 | -0.15 | |
| Stage 2 | -9.2 | -0.15 | |
| Stage 2 | -9.4 | -0.15 | |
| Stage 2 | -9.6 | -0.15 | |
| Stage 2 | -9.8 | -0.15 | |
| Stage 2 | -10 | -0.15 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 2**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | | |
|---|-------|------------------|---------------|---|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 2 | 0 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 | 0 |
| Stage 2 | -1 | -0.1 | -0.48 | |
| Stage 2 | -1.2 | -0.22 | -0.61 | |
| Stage 2 | -1.4 | -0.29 | -0.35 | |
| Stage 2 | -1.6 | -0.31 | -0.13 | |
| Stage 2 | -1.8 | -0.31 | 0.04 | |
| Stage 2 | -2 | -0.28 | 0.15 | |
| Stage 2 | -2.2 | -0.24 | 0.2 | |
| Stage 2 | -2.4 | -0.19 | 0.23 | |
| Stage 2 | -2.6 | -0.15 | 0.23 | |
| Stage 2 | -2.8 | -0.1 | 0.21 | |
| Stage 2 | -3 | -0.07 | 0.18 | |
| Stage 2 | -3.2 | -0.04 | 0.16 | |
| Stage 2 | -3.4 | -0.01 | 0.12 | |
| Stage 2 | -3.6 | 0.01 | 0.09 | |
| Stage 2 | -3.8 | 0.02 | 0.06 | |
| Stage 2 | -4 | 0.03 | 0.04 | |
| Stage 2 | -4.2 | 0.03 | 0.03 | |
| Stage 2 | -4.4 | 0.04 | 0.03 | |
| Stage 2 | -4.6 | 0.04 | 0.02 | |
| Stage 2 | -4.8 | 0.05 | 0.02 | |
| Stage 2 | -5 | 0.05 | 0.02 | |
| Stage 2 | -5.2 | 0.05 | 0.01 | |
| Stage 2 | -5.4 | 0.05 | 0 | |
| Stage 2 | -5.6 | 0.05 | -0.02 | |
| Stage 2 | -5.8 | 0.04 | -0.04 | |
| Stage 2 | -6 | 0.03 | -0.04 | |
| Stage 2 | -6.2 | 0.02 | -0.04 | |
| Stage 2 | -6.4 | 0.01 | -0.04 | |
| Stage 2 | -6.6 | 0.01 | -0.04 | |
| Stage 2 | -6.8 | 0 | -0.03 | |
| Stage 2 | -7 | -0.01 | -0.02 | |
| Stage 2 | -7.2 | -0.01 | -0.02 | |
| Stage 2 | -7.4 | -0.01 | -0.01 | |
| Stage 2 | -7.6 | -0.01 | -0.01 | |
| Stage 2 | -7.8 | -0.01 | 0 | |
| Stage 2 | -8 | -0.01 | 0 | |
| Stage 2 | -8.2 | -0.01 | 0 | |
| Stage 2 | -8.4 | -0.01 | 0.01 | |
| Stage 2 | -8.6 | -0.01 | 0.01 | |
| Stage 2 | -8.8 | -0.01 | 0.01 | |
| Stage 2 | -9 | -0.01 | 0.01 | |
| Stage 2 | -9.2 | 0 | 0.01 | |
| Stage 2 | -9.4 | 0 | 0.01 | |
| Stage 2 | -9.6 | 0 | 0.01 | |
| Stage 2 | -9.8 | 0 | 0 | |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 294 di 386 |

| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
|---------|-------|------------------|---------------|
| Stage 2 | -10 | 0 | 0 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 2**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -1 | 0.1 | 0.48 |
| Stage 2 | -1.2 | 0.22 | 0.61 |
| Stage 2 | -1.4 | 0.29 | 0.35 |
| Stage 2 | -1.6 | 0.31 | 0.13 |
| Stage 2 | -1.8 | 0.31 | -0.04 |
| Stage 2 | -2 | 0.28 | -0.15 |
| Stage 2 | -2.2 | 0.24 | -0.2 |
| Stage 2 | -2.4 | 0.19 | -0.23 |
| Stage 2 | -2.6 | 0.15 | -0.23 |
| Stage 2 | -2.8 | 0.1 | -0.21 |
| Stage 2 | -3 | 0.07 | -0.18 |
| Stage 2 | -3.2 | 0.04 | -0.16 |
| Stage 2 | -3.4 | 0.01 | -0.12 |
| Stage 2 | -3.6 | -0.01 | -0.09 |
| Stage 2 | -3.8 | -0.02 | -0.06 |
| Stage 2 | -4 | -0.03 | -0.04 |
| Stage 2 | -4.2 | -0.03 | -0.03 |
| Stage 2 | -4.4 | -0.04 | -0.03 |
| Stage 2 | -4.6 | -0.04 | -0.02 |
| Stage 2 | -4.8 | -0.05 | -0.02 |
| Stage 2 | -5 | -0.05 | -0.02 |
| Stage 2 | -5.2 | -0.05 | -0.01 |
| Stage 2 | -5.4 | -0.05 | 0 |
| Stage 2 | -5.6 | -0.05 | 0.02 |
| Stage 2 | -5.8 | -0.04 | 0.04 |
| Stage 2 | -6 | -0.03 | 0.04 |
| Stage 2 | -6.2 | -0.02 | 0.04 |
| Stage 2 | -6.4 | -0.01 | 0.04 |
| Stage 2 | -6.6 | -0.01 | 0.04 |
| Stage 2 | -6.8 | 0 | 0.03 |
| Stage 2 | -7 | 0.01 | 0.02 |
| Stage 2 | -7.2 | 0.01 | 0.02 |
| Stage 2 | -7.4 | 0.01 | 0.01 |
| Stage 2 | -7.6 | 0.01 | 0.01 |
| Stage 2 | -7.8 | 0.01 | 0 |
| Stage 2 | -8 | 0.01 | 0 |
| Stage 2 | -8.2 | 0.01 | 0 |
| Stage 2 | -8.4 | 0.01 | -0.01 |
| Stage 2 | -8.6 | 0.01 | -0.01 |
| Stage 2 | -8.8 | 0.01 | -0.01 |
| Stage 2 | -9 | 0.01 | -0.01 |
| Stage 2 | -9.2 | 0 | -0.01 |
| Stage 2 | -9.4 | 0 | -0.01 |
| Stage 2 | -9.6 | 0 | -0.01 |
| Stage 2 | -9.8 | 0 | 0 |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 296 di 386 |

Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia Muro: RIGHT

| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
|---------|-------|------------------|---------------|
| Stage 2 | -10 | 0 | 0 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
3**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | | Muro: LEFT |
|---|-------|------------------|------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 3 | 0 | 0.26 | |
| Stage 3 | -0.2 | 0.25 | |
| Stage 3 | -0.4 | 0.24 | |
| Stage 3 | -0.6 | 0.23 | |
| Stage 3 | -0.8 | 0.22 | |
| Stage 3 | -1 | 0.21 | |
| Stage 3 | -1.2 | 0.2 | |
| Stage 3 | -1.4 | 0.19 | |
| Stage 3 | -1.6 | 0.18 | |
| Stage 3 | -1.8 | 0.18 | |
| Stage 3 | -2 | 0.18 | |
| Stage 3 | -2.2 | 0.17 | |
| Stage 3 | -2.4 | 0.17 | |
| Stage 3 | -2.6 | 0.17 | |
| Stage 3 | -2.8 | 0.17 | |
| Stage 3 | -3 | 0.17 | |
| Stage 3 | -3.2 | 0.17 | |
| Stage 3 | -3.4 | 0.17 | |
| Stage 3 | -3.6 | 0.17 | |
| Stage 3 | -3.8 | 0.17 | |
| Stage 3 | -4 | 0.17 | |
| Stage 3 | -4.2 | 0.17 | |
| Stage 3 | -4.4 | 0.17 | |
| Stage 3 | -4.6 | 0.18 | |
| Stage 3 | -4.8 | 0.18 | |
| Stage 3 | -5 | 0.18 | |
| Stage 3 | -5.2 | 0.17 | |
| Stage 3 | -5.4 | 0.17 | |
| Stage 3 | -5.6 | 0.17 | |
| Stage 3 | -5.8 | 0.17 | |
| Stage 3 | -6 | 0.17 | |
| Stage 3 | -6.2 | 0.17 | |
| Stage 3 | -6.4 | 0.17 | |
| Stage 3 | -6.6 | 0.17 | |
| Stage 3 | -6.8 | 0.17 | |
| Stage 3 | -7 | 0.16 | |
| Stage 3 | -7.2 | 0.16 | |
| Stage 3 | -7.4 | 0.16 | |
| Stage 3 | -7.6 | 0.16 | |
| Stage 3 | -7.8 | 0.16 | |
| Stage 3 | -8 | 0.16 | |
| Stage 3 | -8.2 | 0.16 | |
| Stage 3 | -8.4 | 0.15 | |
| Stage 3 | -8.6 | 0.15 | |
| Stage 3 | -8.8 | 0.15 | |
| Stage 3 | -9 | 0.15 | |
| Stage 3 | -9.2 | 0.15 | |
| Stage 3 | -9.4 | 0.15 | |
| Stage 3 | -9.6 | 0.15 | |
| Stage 3 | -9.8 | 0.15 | |
| Stage 3 | -10 | 0.15 | |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 3**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento Muro: RIGHT | | | |
|---|-------|------------------|--|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 3 | 0 | -0.26 | |
| Stage 3 | -0.2 | -0.25 | |
| Stage 3 | -0.4 | -0.24 | |
| Stage 3 | -0.6 | -0.23 | |
| Stage 3 | -0.8 | -0.22 | |
| Stage 3 | -1 | -0.21 | |
| Stage 3 | -1.2 | -0.2 | |
| Stage 3 | -1.4 | -0.19 | |
| Stage 3 | -1.6 | -0.18 | |
| Stage 3 | -1.8 | -0.18 | |
| Stage 3 | -2 | -0.18 | |
| Stage 3 | -2.2 | -0.17 | |
| Stage 3 | -2.4 | -0.17 | |
| Stage 3 | -2.6 | -0.17 | |
| Stage 3 | -2.8 | -0.17 | |
| Stage 3 | -3 | -0.17 | |
| Stage 3 | -3.2 | -0.17 | |
| Stage 3 | -3.4 | -0.17 | |
| Stage 3 | -3.6 | -0.17 | |
| Stage 3 | -3.8 | -0.17 | |
| Stage 3 | -4 | -0.17 | |
| Stage 3 | -4.2 | -0.17 | |
| Stage 3 | -4.4 | -0.17 | |
| Stage 3 | -4.6 | -0.18 | |
| Stage 3 | -4.8 | -0.18 | |
| Stage 3 | -5 | -0.18 | |
| Stage 3 | -5.2 | -0.17 | |
| Stage 3 | -5.4 | -0.17 | |
| Stage 3 | -5.6 | -0.17 | |
| Stage 3 | -5.8 | -0.17 | |
| Stage 3 | -6 | -0.17 | |
| Stage 3 | -6.2 | -0.17 | |
| Stage 3 | -6.4 | -0.17 | |
| Stage 3 | -6.6 | -0.17 | |
| Stage 3 | -6.8 | -0.17 | |
| Stage 3 | -7 | -0.16 | |
| Stage 3 | -7.2 | -0.16 | |
| Stage 3 | -7.4 | -0.16 | |
| Stage 3 | -7.6 | -0.16 | |
| Stage 3 | -7.8 | -0.16 | |
| Stage 3 | -8 | -0.16 | |
| Stage 3 | -8.2 | -0.16 | |
| Stage 3 | -8.4 | -0.15 | |
| Stage 3 | -8.6 | -0.15 | |
| Stage 3 | -8.8 | -0.15 | |
| Stage 3 | -9 | -0.15 | |
| Stage 3 | -9.2 | -0.15 | |
| Stage 3 | -9.4 | -0.15 | |
| Stage 3 | -9.6 | -0.15 | |
| Stage 3 | -9.8 | -0.15 | |
| Stage 3 | -10 | -0.15 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 3**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | | |
|---|-------|------------------|---------------|---|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 3 | 0 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 | 0 |
| Stage 3 | -1 | -0.1 | -0.48 | |
| Stage 3 | -1.2 | -0.22 | -0.61 | |
| Stage 3 | -1.4 | -0.29 | -0.35 | |
| Stage 3 | -1.6 | -0.31 | -0.13 | |
| Stage 3 | -1.8 | -0.31 | 0.04 | |
| Stage 3 | -2 | -0.28 | 0.15 | |
| Stage 3 | -2.2 | -0.24 | 0.2 | |
| Stage 3 | -2.4 | -0.19 | 0.23 | |
| Stage 3 | -2.6 | -0.15 | 0.23 | |
| Stage 3 | -2.8 | -0.1 | 0.21 | |
| Stage 3 | -3 | -0.07 | 0.18 | |
| Stage 3 | -3.2 | -0.04 | 0.16 | |
| Stage 3 | -3.4 | -0.01 | 0.12 | |
| Stage 3 | -3.6 | 0.01 | 0.09 | |
| Stage 3 | -3.8 | 0.02 | 0.06 | |
| Stage 3 | -4 | 0.03 | 0.04 | |
| Stage 3 | -4.2 | 0.03 | 0.03 | |
| Stage 3 | -4.4 | 0.04 | 0.03 | |
| Stage 3 | -4.6 | 0.04 | 0.02 | |
| Stage 3 | -4.8 | 0.05 | 0.02 | |
| Stage 3 | -5 | 0.05 | 0.02 | |
| Stage 3 | -5.2 | 0.05 | 0.01 | |
| Stage 3 | -5.4 | 0.05 | 0 | |
| Stage 3 | -5.6 | 0.05 | -0.02 | |
| Stage 3 | -5.8 | 0.04 | -0.04 | |
| Stage 3 | -6 | 0.03 | -0.04 | |
| Stage 3 | -6.2 | 0.02 | -0.04 | |
| Stage 3 | -6.4 | 0.01 | -0.04 | |
| Stage 3 | -6.6 | 0.01 | -0.04 | |
| Stage 3 | -6.8 | 0 | -0.03 | |
| Stage 3 | -7 | -0.01 | -0.02 | |
| Stage 3 | -7.2 | -0.01 | -0.02 | |
| Stage 3 | -7.4 | -0.01 | -0.01 | |
| Stage 3 | -7.6 | -0.01 | -0.01 | |
| Stage 3 | -7.8 | -0.01 | 0 | |
| Stage 3 | -8 | -0.01 | 0 | |
| Stage 3 | -8.2 | -0.01 | 0 | |
| Stage 3 | -8.4 | -0.01 | 0.01 | |
| Stage 3 | -8.6 | -0.01 | 0.01 | |
| Stage 3 | -8.8 | -0.01 | 0.01 | |
| Stage 3 | -9 | -0.01 | 0.01 | |
| Stage 3 | -9.2 | 0 | 0.01 | |
| Stage 3 | -9.4 | 0 | 0.01 | |
| Stage 3 | -9.6 | 0 | 0.01 | |
| Stage 3 | -9.8 | 0 | 0 | |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 300 di 386 |

| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
|---------|-------|------------------|---------------|
| Stage 3 | -10 | 0 | 0 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 3**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | | |
|---|-------|------------------|---------------|---|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 3 | 0 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 | 0 |
| Stage 3 | -1 | 0.1 | 0.48 | |
| Stage 3 | -1.2 | 0.22 | 0.61 | |
| Stage 3 | -1.4 | 0.29 | 0.35 | |
| Stage 3 | -1.6 | 0.31 | 0.13 | |
| Stage 3 | -1.8 | 0.31 | -0.04 | |
| Stage 3 | -2 | 0.28 | -0.15 | |
| Stage 3 | -2.2 | 0.24 | -0.2 | |
| Stage 3 | -2.4 | 0.19 | -0.23 | |
| Stage 3 | -2.6 | 0.15 | -0.23 | |
| Stage 3 | -2.8 | 0.1 | -0.21 | |
| Stage 3 | -3 | 0.07 | -0.18 | |
| Stage 3 | -3.2 | 0.04 | -0.16 | |
| Stage 3 | -3.4 | 0.01 | -0.12 | |
| Stage 3 | -3.6 | -0.01 | -0.09 | |
| Stage 3 | -3.8 | -0.02 | -0.06 | |
| Stage 3 | -4 | -0.03 | -0.04 | |
| Stage 3 | -4.2 | -0.03 | -0.03 | |
| Stage 3 | -4.4 | -0.04 | -0.03 | |
| Stage 3 | -4.6 | -0.04 | -0.02 | |
| Stage 3 | -4.8 | -0.05 | -0.02 | |
| Stage 3 | -5 | -0.05 | -0.02 | |
| Stage 3 | -5.2 | -0.05 | -0.01 | |
| Stage 3 | -5.4 | -0.05 | 0 | |
| Stage 3 | -5.6 | -0.05 | 0.02 | |
| Stage 3 | -5.8 | -0.04 | 0.04 | |
| Stage 3 | -6 | -0.03 | 0.04 | |
| Stage 3 | -6.2 | -0.02 | 0.04 | |
| Stage 3 | -6.4 | -0.01 | 0.04 | |
| Stage 3 | -6.6 | -0.01 | 0.04 | |
| Stage 3 | -6.8 | 0 | 0.03 | |
| Stage 3 | -7 | 0.01 | 0.02 | |
| Stage 3 | -7.2 | 0.01 | 0.02 | |
| Stage 3 | -7.4 | 0.01 | 0.01 | |
| Stage 3 | -7.6 | 0.01 | 0.01 | |
| Stage 3 | -7.8 | 0.01 | 0 | |
| Stage 3 | -8 | 0.01 | 0 | |
| Stage 3 | -8.2 | 0.01 | 0 | |
| Stage 3 | -8.4 | 0.01 | -0.01 | |
| Stage 3 | -8.6 | 0.01 | -0.01 | |
| Stage 3 | -8.8 | 0.01 | -0.01 | |
| Stage 3 | -9 | 0.01 | -0.01 | |
| Stage 3 | -9.2 | 0 | -0.01 | |
| Stage 3 | -9.4 | 0 | -0.01 | |
| Stage 3 | -9.6 | 0 | -0.01 | |
| Stage 3 | -9.8 | 0 | 0 | |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 302 di 386 |

Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia Muro: RIGHT

| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
|---------|-------|------------------|---------------|
| Stage 3 | -10 | 0 | 0 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
4**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | Muro: LEFT |
|---|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 4 | 0 | 0.33 |
| Stage 4 | -0.2 | 0.49 |
| Stage 4 | -0.4 | 0.64 |
| Stage 4 | -0.6 | 0.79 |
| Stage 4 | -0.8 | 0.94 |
| Stage 4 | -1 | 1.07 |
| Stage 4 | -1.2 | 1.2 |
| Stage 4 | -1.4 | 1.31 |
| Stage 4 | -1.6 | 1.41 |
| Stage 4 | -1.8 | 1.49 |
| Stage 4 | -2 | 1.54 |
| Stage 4 | -2.2 | 1.58 |
| Stage 4 | -2.4 | 1.6 |
| Stage 4 | -2.6 | 1.59 |
| Stage 4 | -2.8 | 1.57 |
| Stage 4 | -3 | 1.52 |
| Stage 4 | -3.2 | 1.47 |
| Stage 4 | -3.4 | 1.4 |
| Stage 4 | -3.6 | 1.33 |
| Stage 4 | -3.8 | 1.26 |
| Stage 4 | -4 | 1.2 |
| Stage 4 | -4.2 | 1.14 |
| Stage 4 | -4.4 | 1.08 |
| Stage 4 | -4.6 | 1.03 |
| Stage 4 | -4.8 | 0.99 |
| Stage 4 | -5 | 0.95 |
| Stage 4 | -5.2 | 0.92 |
| Stage 4 | -5.4 | 0.89 |
| Stage 4 | -5.6 | 0.87 |
| Stage 4 | -5.8 | 0.86 |
| Stage 4 | -6 | 0.84 |
| Stage 4 | -6.2 | 0.83 |
| Stage 4 | -6.4 | 0.82 |
| Stage 4 | -6.6 | 0.82 |
| Stage 4 | -6.8 | 0.81 |
| Stage 4 | -7 | 0.81 |
| Stage 4 | -7.2 | 0.8 |
| Stage 4 | -7.4 | 0.8 |
| Stage 4 | -7.6 | 0.8 |
| Stage 4 | -7.8 | 0.8 |
| Stage 4 | -8 | 0.79 |
| Stage 4 | -8.2 | 0.79 |
| Stage 4 | -8.4 | 0.79 |
| Stage 4 | -8.6 | 0.79 |
| Stage 4 | -8.8 | 0.78 |
| Stage 4 | -9 | 0.78 |
| Stage 4 | -9.2 | 0.78 |
| Stage 4 | -9.4 | 0.78 |
| Stage 4 | -9.6 | 0.78 |
| Stage 4 | -9.8 | 0.77 |
| Stage 4 | -10 | 0.77 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 4**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento Muro: RIGHT | | | |
|---|-------|------------------|--|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 4 | 0 | -0.33 | |
| Stage 4 | -0.2 | -0.49 | |
| Stage 4 | -0.4 | -0.64 | |
| Stage 4 | -0.6 | -0.79 | |
| Stage 4 | -0.8 | -0.94 | |
| Stage 4 | -1 | -1.07 | |
| Stage 4 | -1.2 | -1.2 | |
| Stage 4 | -1.4 | -1.31 | |
| Stage 4 | -1.6 | -1.41 | |
| Stage 4 | -1.8 | -1.49 | |
| Stage 4 | -2 | -1.54 | |
| Stage 4 | -2.2 | -1.58 | |
| Stage 4 | -2.4 | -1.6 | |
| Stage 4 | -2.6 | -1.59 | |
| Stage 4 | -2.8 | -1.57 | |
| Stage 4 | -3 | -1.52 | |
| Stage 4 | -3.2 | -1.47 | |
| Stage 4 | -3.4 | -1.4 | |
| Stage 4 | -3.6 | -1.33 | |
| Stage 4 | -3.8 | -1.26 | |
| Stage 4 | -4 | -1.2 | |
| Stage 4 | -4.2 | -1.14 | |
| Stage 4 | -4.4 | -1.08 | |
| Stage 4 | -4.6 | -1.03 | |
| Stage 4 | -4.8 | -0.99 | |
| Stage 4 | -5 | -0.95 | |
| Stage 4 | -5.2 | -0.92 | |
| Stage 4 | -5.4 | -0.89 | |
| Stage 4 | -5.6 | -0.87 | |
| Stage 4 | -5.8 | -0.86 | |
| Stage 4 | -6 | -0.84 | |
| Stage 4 | -6.2 | -0.83 | |
| Stage 4 | -6.4 | -0.82 | |
| Stage 4 | -6.6 | -0.82 | |
| Stage 4 | -6.8 | -0.81 | |
| Stage 4 | -7 | -0.81 | |
| Stage 4 | -7.2 | -0.8 | |
| Stage 4 | -7.4 | -0.8 | |
| Stage 4 | -7.6 | -0.8 | |
| Stage 4 | -7.8 | -0.8 | |
| Stage 4 | -8 | -0.79 | |
| Stage 4 | -8.2 | -0.79 | |
| Stage 4 | -8.4 | -0.79 | |
| Stage 4 | -8.6 | -0.79 | |
| Stage 4 | -8.8 | -0.78 | |
| Stage 4 | -9 | -0.78 | |
| Stage 4 | -9.2 | -0.78 | |
| Stage 4 | -9.4 | -0.78 | |
| Stage 4 | -9.6 | -0.78 | |
| Stage 4 | -9.8 | -0.77 | |
| Stage 4 | -10 | -0.77 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 4**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | | |
|---|-------|------------------|---------------|--|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 4 | 0 | 0 | 2.28 | |
| Stage 4 | -0.2 | 0.46 | 2.28 | |
| Stage 4 | -0.4 | 0.91 | 2.28 | |
| Stage 4 | -0.6 | 1.37 | 2.28 | |
| Stage 4 | -0.8 | 1.83 | 2.28 | |
| Stage 4 | -1 | 2.28 | 2.28 | |
| Stage 4 | -1.2 | 2.74 | 2.28 | |
| Stage 4 | -1.4 | 3.2 | 2.28 | |
| Stage 4 | -1.6 | 3.65 | 2.28 | |
| Stage 4 | -1.8 | 4.09 | 2.18 | |
| Stage 4 | -2 | 4.45 | 1.8 | |
| Stage 4 | -2.2 | 4.67 | 1.1 | |
| Stage 4 | -2.4 | 4.68 | 0.07 | |
| Stage 4 | -2.6 | 4.42 | -1.33 | |
| Stage 4 | -2.8 | 3.79 | -3.14 | |
| Stage 4 | -3 | 2.71 | -5.4 | |
| Stage 4 | -3.2 | 1.62 | -5.46 | |
| Stage 4 | -3.4 | 0.7 | -4.6 | |
| Stage 4 | -3.6 | -0.03 | -3.64 | |
| Stage 4 | -3.8 | -0.58 | -2.72 | |
| Stage 4 | -4 | -0.96 | -1.9 | |
| Stage 4 | -4.2 | -1.2 | -1.2 | |
| Stage 4 | -4.4 | -1.32 | -0.62 | |
| Stage 4 | -4.6 | -1.35 | -0.16 | |
| Stage 4 | -4.8 | -1.31 | 0.18 | |
| Stage 4 | -5 | -1.23 | 0.43 | |
| Stage 4 | -5.2 | -1.11 | 0.58 | |
| Stage 4 | -5.4 | -0.98 | 0.66 | |
| Stage 4 | -5.6 | -0.84 | 0.68 | |
| Stage 4 | -5.8 | -0.71 | 0.66 | |
| Stage 4 | -6 | -0.59 | 0.62 | |
| Stage 4 | -6.2 | -0.48 | 0.56 | |
| Stage 4 | -6.4 | -0.38 | 0.5 | |
| Stage 4 | -6.6 | -0.29 | 0.43 | |
| Stage 4 | -6.8 | -0.22 | 0.36 | |
| Stage 4 | -7 | -0.16 | 0.3 | |
| Stage 4 | -7.2 | -0.11 | 0.24 | |
| Stage 4 | -7.4 | -0.08 | 0.19 | |
| Stage 4 | -7.6 | -0.05 | 0.14 | |
| Stage 4 | -7.8 | -0.03 | 0.1 | |
| Stage 4 | -8 | -0.01 | 0.07 | |
| Stage 4 | -8.2 | 0 | 0.05 | |
| Stage 4 | -8.4 | 0 | 0.03 | |
| Stage 4 | -8.6 | 0.01 | 0.01 | |
| Stage 4 | -8.8 | 0.01 | 0 | |
| Stage 4 | -9 | 0.01 | 0 | |
| Stage 4 | -9.2 | 0 | -0.01 | |
| Stage 4 | -9.4 | 0 | -0.01 | |
| Stage 4 | -9.6 | 0 | -0.01 | |
| Stage 4 | -9.8 | 0 | 0 | |
| Stage 4 | -10 | 0 | 0 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 4**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | -2.28 |
| Stage 4 | -0.2 | -0.46 | -2.28 |
| Stage 4 | -0.4 | -0.91 | -2.28 |
| Stage 4 | -0.6 | -1.37 | -2.28 |
| Stage 4 | -0.8 | -1.83 | -2.28 |
| Stage 4 | -1 | -2.28 | -2.28 |
| Stage 4 | -1.2 | -2.74 | -2.28 |
| Stage 4 | -1.4 | -3.2 | -2.28 |
| Stage 4 | -1.6 | -3.65 | -2.28 |
| Stage 4 | -1.8 | -4.09 | -2.18 |
| Stage 4 | -2 | -4.45 | -1.8 |
| Stage 4 | -2.2 | -4.67 | -1.1 |
| Stage 4 | -2.4 | -4.68 | -0.07 |
| Stage 4 | -2.6 | -4.42 | 1.33 |
| Stage 4 | -2.8 | -3.79 | 3.14 |
| Stage 4 | -3 | -2.71 | 5.4 |
| Stage 4 | -3.2 | -1.62 | 5.46 |
| Stage 4 | -3.4 | -0.7 | 4.6 |
| Stage 4 | -3.6 | 0.03 | 3.64 |
| Stage 4 | -3.8 | 0.58 | 2.72 |
| Stage 4 | -4 | 0.96 | 1.9 |
| Stage 4 | -4.2 | 1.2 | 1.2 |
| Stage 4 | -4.4 | 1.32 | 0.62 |
| Stage 4 | -4.6 | 1.35 | 0.16 |
| Stage 4 | -4.8 | 1.31 | -0.18 |
| Stage 4 | -5 | 1.23 | -0.43 |
| Stage 4 | -5.2 | 1.11 | -0.58 |
| Stage 4 | -5.4 | 0.98 | -0.66 |
| Stage 4 | -5.6 | 0.84 | -0.68 |
| Stage 4 | -5.8 | 0.71 | -0.66 |
| Stage 4 | -6 | 0.59 | -0.62 |
| Stage 4 | -6.2 | 0.48 | -0.56 |
| Stage 4 | -6.4 | 0.38 | -0.5 |
| Stage 4 | -6.6 | 0.29 | -0.43 |
| Stage 4 | -6.8 | 0.22 | -0.36 |
| Stage 4 | -7 | 0.16 | -0.3 |
| Stage 4 | -7.2 | 0.11 | -0.24 |
| Stage 4 | -7.4 | 0.08 | -0.19 |
| Stage 4 | -7.6 | 0.05 | -0.14 |
| Stage 4 | -7.8 | 0.03 | -0.1 |
| Stage 4 | -8 | 0.01 | -0.07 |
| Stage 4 | -8.2 | 0 | -0.05 |
| Stage 4 | -8.4 | 0 | -0.03 |
| Stage 4 | -8.6 | -0.01 | -0.01 |
| Stage 4 | -8.8 | -0.01 | 0 |
| Stage 4 | -9 | -0.01 | 0 |
| Stage 4 | -9.2 | 0 | 0.01 |
| Stage 4 | -9.4 | 0 | 0.01 |
| Stage 4 | -9.6 | 0 | 0.01 |
| Stage 4 | -9.8 | 0 | 0 |
| Stage 4 | -10 | 0 | 0 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
5**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | | Muro: LEFT |
|---|-------|------------------|------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 5 | 0 | 0.39 | |
| Stage 5 | -0.2 | 0.8 | |
| Stage 5 | -0.4 | 1.2 | |
| Stage 5 | -0.6 | 1.59 | |
| Stage 5 | -0.8 | 1.97 | |
| Stage 5 | -1 | 2.33 | |
| Stage 5 | -1.2 | 2.67 | |
| Stage 5 | -1.4 | 2.99 | |
| Stage 5 | -1.6 | 3.27 | |
| Stage 5 | -1.8 | 3.52 | |
| Stage 5 | -2 | 3.73 | |
| Stage 5 | -2.2 | 3.9 | |
| Stage 5 | -2.4 | 4.03 | |
| Stage 5 | -2.6 | 4.1 | |
| Stage 5 | -2.8 | 4.13 | |
| Stage 5 | -3 | 4.1 | |
| Stage 5 | -3.2 | 4.02 | |
| Stage 5 | -3.4 | 3.9 | |
| Stage 5 | -3.6 | 3.73 | |
| Stage 5 | -3.8 | 3.53 | |
| Stage 5 | -4 | 3.31 | |
| Stage 5 | -4.2 | 3.07 | |
| Stage 5 | -4.4 | 2.83 | |
| Stage 5 | -4.6 | 2.6 | |
| Stage 5 | -4.8 | 2.38 | |
| Stage 5 | -5 | 2.18 | |
| Stage 5 | -5.2 | 2.01 | |
| Stage 5 | -5.4 | 1.85 | |
| Stage 5 | -5.6 | 1.72 | |
| Stage 5 | -5.8 | 1.61 | |
| Stage 5 | -6 | 1.51 | |
| Stage 5 | -6.2 | 1.44 | |
| Stage 5 | -6.4 | 1.38 | |
| Stage 5 | -6.6 | 1.33 | |
| Stage 5 | -6.8 | 1.3 | |
| Stage 5 | -7 | 1.27 | |
| Stage 5 | -7.2 | 1.25 | |
| Stage 5 | -7.4 | 1.24 | |
| Stage 5 | -7.6 | 1.23 | |
| Stage 5 | -7.8 | 1.23 | |
| Stage 5 | -8 | 1.23 | |
| Stage 5 | -8.2 | 1.23 | |
| Stage 5 | -8.4 | 1.23 | |
| Stage 5 | -8.6 | 1.23 | |
| Stage 5 | -8.8 | 1.23 | |
| Stage 5 | -9 | 1.23 | |
| Stage 5 | -9.2 | 1.24 | |
| Stage 5 | -9.4 | 1.24 | |
| Stage 5 | -9.6 | 1.24 | |
| Stage 5 | -9.8 | 1.24 | |
| Stage 5 | -10 | 1.24 | |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 5**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | | Muro: RIGHT |
|---|-------|------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 5 | 0 | -0.39 | |
| Stage 5 | -0.2 | -0.8 | |
| Stage 5 | -0.4 | -1.2 | |
| Stage 5 | -0.6 | -1.59 | |
| Stage 5 | -0.8 | -1.97 | |
| Stage 5 | -1 | -2.33 | |
| Stage 5 | -1.2 | -2.67 | |
| Stage 5 | -1.4 | -2.99 | |
| Stage 5 | -1.6 | -3.27 | |
| Stage 5 | -1.8 | -3.52 | |
| Stage 5 | -2 | -3.73 | |
| Stage 5 | -2.2 | -3.9 | |
| Stage 5 | -2.4 | -4.03 | |
| Stage 5 | -2.6 | -4.1 | |
| Stage 5 | -2.8 | -4.13 | |
| Stage 5 | -3 | -4.1 | |
| Stage 5 | -3.2 | -4.02 | |
| Stage 5 | -3.4 | -3.9 | |
| Stage 5 | -3.6 | -3.73 | |
| Stage 5 | -3.8 | -3.53 | |
| Stage 5 | -4 | -3.31 | |
| Stage 5 | -4.2 | -3.07 | |
| Stage 5 | -4.4 | -2.83 | |
| Stage 5 | -4.6 | -2.6 | |
| Stage 5 | -4.8 | -2.38 | |
| Stage 5 | -5 | -2.18 | |
| Stage 5 | -5.2 | -2.01 | |
| Stage 5 | -5.4 | -1.85 | |
| Stage 5 | -5.6 | -1.72 | |
| Stage 5 | -5.8 | -1.61 | |
| Stage 5 | -6 | -1.51 | |
| Stage 5 | -6.2 | -1.44 | |
| Stage 5 | -6.4 | -1.38 | |
| Stage 5 | -6.6 | -1.33 | |
| Stage 5 | -6.8 | -1.3 | |
| Stage 5 | -7 | -1.27 | |
| Stage 5 | -7.2 | -1.25 | |
| Stage 5 | -7.4 | -1.24 | |
| Stage 5 | -7.6 | -1.23 | |
| Stage 5 | -7.8 | -1.23 | |
| Stage 5 | -8 | -1.23 | |
| Stage 5 | -8.2 | -1.23 | |
| Stage 5 | -8.4 | -1.23 | |
| Stage 5 | -8.6 | -1.23 | |
| Stage 5 | -8.8 | -1.23 | |
| Stage 5 | -9 | -1.23 | |
| Stage 5 | -9.2 | -1.24 | |
| Stage 5 | -9.4 | -1.24 | |
| Stage 5 | -9.6 | -1.24 | |
| Stage 5 | -9.8 | -1.24 | |
| Stage 5 | -10 | -1.24 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 5**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | | |
|---|-------|------------------|---------------|--|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 5 | 0 | 0 | 4.48 | |
| Stage 5 | -0.2 | 0.9 | 4.48 | |
| Stage 5 | -0.4 | 1.79 | 4.48 | |
| Stage 5 | -0.6 | 2.69 | 4.48 | |
| Stage 5 | -0.8 | 3.59 | 4.48 | |
| Stage 5 | -1 | 4.48 | 4.48 | |
| Stage 5 | -1.2 | 5.38 | 4.48 | |
| Stage 5 | -1.4 | 6.28 | 4.48 | |
| Stage 5 | -1.6 | 7.18 | 4.48 | |
| Stage 5 | -1.8 | 8.07 | 4.48 | |
| Stage 5 | -2 | 8.92 | 4.25 | |
| Stage 5 | -2.2 | 9.67 | 3.73 | |
| Stage 5 | -2.4 | 10.26 | 2.93 | |
| Stage 5 | -2.6 | 10.63 | 1.86 | |
| Stage 5 | -2.8 | 10.73 | 0.51 | |
| Stage 5 | -3 | 10.51 | -1.12 | |
| Stage 5 | -3.2 | 9.9 | -3.01 | |
| Stage 5 | -3.4 | 8.86 | -5.19 | |
| Stage 5 | -3.6 | 7.34 | -7.64 | |
| Stage 5 | -3.8 | 5.27 | -10.36 | |
| Stage 5 | -4 | 2.6 | -13.34 | |
| Stage 5 | -4.2 | 0.19 | -12.04 | |
| Stage 5 | -4.4 | -1.72 | -9.54 | |
| Stage 5 | -4.6 | -3.08 | -6.83 | |
| Stage 5 | -4.8 | -3.98 | -4.46 | |
| Stage 5 | -5 | -4.48 | -2.51 | |
| Stage 5 | -5.2 | -4.67 | -0.96 | |
| Stage 5 | -5.4 | -4.63 | 0.22 | |
| Stage 5 | -5.6 | -4.41 | 1.08 | |
| Stage 5 | -5.8 | -4.08 | 1.66 | |
| Stage 5 | -6 | -3.68 | 2.02 | |
| Stage 5 | -6.2 | -3.24 | 2.21 | |
| Stage 5 | -6.4 | -2.79 | 2.25 | |
| Stage 5 | -6.6 | -2.35 | 2.19 | |
| Stage 5 | -6.8 | -1.94 | 2.06 | |
| Stage 5 | -7 | -1.56 | 1.88 | |
| Stage 5 | -7.2 | -1.23 | 1.66 | |
| Stage 5 | -7.4 | -0.94 | 1.44 | |
| Stage 5 | -7.6 | -0.7 | 1.21 | |
| Stage 5 | -7.8 | -0.5 | 0.99 | |
| Stage 5 | -8 | -0.34 | 0.79 | |
| Stage 5 | -8.2 | -0.22 | 0.61 | |
| Stage 5 | -8.4 | -0.13 | 0.45 | |
| Stage 5 | -8.6 | -0.06 | 0.32 | |
| Stage 5 | -8.8 | -0.02 | 0.21 | |
| Stage 5 | -9 | 0 | 0.12 | |
| Stage 5 | -9.2 | 0.01 | 0.05 | |
| Stage 5 | -9.4 | 0.01 | 0.01 | |
| Stage 5 | -9.6 | 0.01 | -0.02 | |
| Stage 5 | -9.8 | 0 | -0.03 | |
| Stage 5 | -10 | 0 | -0.01 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 5**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 5 | 0 | 0 | -4.48 |
| Stage 5 | -0.2 | -0.9 | -4.48 |
| Stage 5 | -0.4 | -1.79 | -4.48 |
| Stage 5 | -0.6 | -2.69 | -4.48 |
| Stage 5 | -0.8 | -3.59 | -4.48 |
| Stage 5 | -1 | -4.48 | -4.48 |
| Stage 5 | -1.2 | -5.38 | -4.48 |
| Stage 5 | -1.4 | -6.28 | -4.48 |
| Stage 5 | -1.6 | -7.18 | -4.48 |
| Stage 5 | -1.8 | -8.07 | -4.48 |
| Stage 5 | -2 | -8.92 | -4.25 |
| Stage 5 | -2.2 | -9.67 | -3.73 |
| Stage 5 | -2.4 | -10.26 | -2.93 |
| Stage 5 | -2.6 | -10.63 | -1.86 |
| Stage 5 | -2.8 | -10.73 | -0.51 |
| Stage 5 | -3 | -10.51 | 1.12 |
| Stage 5 | -3.2 | -9.9 | 3.01 |
| Stage 5 | -3.4 | -8.86 | 5.19 |
| Stage 5 | -3.6 | -7.34 | 7.64 |
| Stage 5 | -3.8 | -5.27 | 10.36 |
| Stage 5 | -4 | -2.6 | 13.34 |
| Stage 5 | -4.2 | -0.19 | 12.04 |
| Stage 5 | -4.4 | 1.72 | 9.54 |
| Stage 5 | -4.6 | 3.08 | 6.83 |
| Stage 5 | -4.8 | 3.98 | 4.46 |
| Stage 5 | -5 | 4.48 | 2.51 |
| Stage 5 | -5.2 | 4.67 | 0.96 |
| Stage 5 | -5.4 | 4.63 | -0.22 |
| Stage 5 | -5.6 | 4.41 | -1.08 |
| Stage 5 | -5.8 | 4.08 | -1.66 |
| Stage 5 | -6 | 3.68 | -2.02 |
| Stage 5 | -6.2 | 3.24 | -2.21 |
| Stage 5 | -6.4 | 2.79 | -2.25 |
| Stage 5 | -6.6 | 2.35 | -2.19 |
| Stage 5 | -6.8 | 1.94 | -2.06 |
| Stage 5 | -7 | 1.56 | -1.88 |
| Stage 5 | -7.2 | 1.23 | -1.66 |
| Stage 5 | -7.4 | 0.94 | -1.44 |
| Stage 5 | -7.6 | 0.7 | -1.21 |
| Stage 5 | -7.8 | 0.5 | -0.99 |
| Stage 5 | -8 | 0.34 | -0.79 |
| Stage 5 | -8.2 | 0.22 | -0.61 |
| Stage 5 | -8.4 | 0.13 | -0.45 |
| Stage 5 | -8.6 | 0.06 | -0.32 |
| Stage 5 | -8.8 | 0.02 | -0.21 |
| Stage 5 | -9 | 0 | -0.12 |
| Stage 5 | -9.2 | -0.01 | -0.05 |
| Stage 5 | -9.4 | -0.01 | -0.01 |
| Stage 5 | -9.6 | -0.01 | 0.02 |
| Stage 5 | -9.8 | 0 | 0.03 |
| Stage 5 | -10 | 0 | 0.01 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
6**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | Muro: LEFT |
|---|-------|------------------|
| Stage | Z (m) | Spostamento (mm) |
| Stage 6 | 0 | 0.59 |
| Stage 6 | -0.2 | 2.05 |
| Stage 6 | -0.4 | 3.49 |
| Stage 6 | -0.6 | 4.91 |
| Stage 6 | -0.8 | 6.3 |
| Stage 6 | -1 | 7.65 |
| Stage 6 | -1.2 | 8.94 |
| Stage 6 | -1.4 | 10.17 |
| Stage 6 | -1.6 | 11.32 |
| Stage 6 | -1.8 | 12.39 |
| Stage 6 | -2 | 13.36 |
| Stage 6 | -2.2 | 14.23 |
| Stage 6 | -2.4 | 14.97 |
| Stage 6 | -2.6 | 15.59 |
| Stage 6 | -2.8 | 16.08 |
| Stage 6 | -3 | 16.43 |
| Stage 6 | -3.2 | 16.63 |
| Stage 6 | -3.4 | 16.68 |
| Stage 6 | -3.6 | 16.58 |
| Stage 6 | -3.8 | 16.33 |
| Stage 6 | -4 | 15.93 |
| Stage 6 | -4.2 | 15.39 |
| Stage 6 | -4.4 | 14.72 |
| Stage 6 | -4.6 | 13.93 |
| Stage 6 | -4.8 | 13.04 |
| Stage 6 | -5 | 12.07 |
| Stage 6 | -5.2 | 11.04 |
| Stage 6 | -5.4 | 9.98 |
| Stage 6 | -5.6 | 8.93 |
| Stage 6 | -5.8 | 7.91 |
| Stage 6 | -6 | 6.94 |
| Stage 6 | -6.2 | 6.05 |
| Stage 6 | -6.4 | 5.24 |
| Stage 6 | -6.6 | 4.53 |
| Stage 6 | -6.8 | 3.91 |
| Stage 6 | -7 | 3.38 |
| Stage 6 | -7.2 | 2.94 |
| Stage 6 | -7.4 | 2.58 |
| Stage 6 | -7.6 | 2.29 |
| Stage 6 | -7.8 | 2.07 |
| Stage 6 | -8 | 1.9 |
| Stage 6 | -8.2 | 1.77 |
| Stage 6 | -8.4 | 1.68 |
| Stage 6 | -8.6 | 1.62 |
| Stage 6 | -8.8 | 1.59 |
| Stage 6 | -9 | 1.56 |
| Stage 6 | -9.2 | 1.55 |
| Stage 6 | -9.4 | 1.55 |
| Stage 6 | -9.6 | 1.55 |
| Stage 6 | -9.8 | 1.56 |
| Stage 6 | -10 | 1.56 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 6**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento Muro: RIGHT | | | |
|---|-------|------------------|--|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 6 | 0 | -0.59 | |
| Stage 6 | -0.2 | -2.05 | |
| Stage 6 | -0.4 | -3.49 | |
| Stage 6 | -0.6 | -4.91 | |
| Stage 6 | -0.8 | -6.3 | |
| Stage 6 | -1 | -7.65 | |
| Stage 6 | -1.2 | -8.94 | |
| Stage 6 | -1.4 | -10.17 | |
| Stage 6 | -1.6 | -11.32 | |
| Stage 6 | -1.8 | -12.39 | |
| Stage 6 | -2 | -13.36 | |
| Stage 6 | -2.2 | -14.23 | |
| Stage 6 | -2.4 | -14.97 | |
| Stage 6 | -2.6 | -15.59 | |
| Stage 6 | -2.8 | -16.08 | |
| Stage 6 | -3 | -16.43 | |
| Stage 6 | -3.2 | -16.63 | |
| Stage 6 | -3.4 | -16.68 | |
| Stage 6 | -3.6 | -16.58 | |
| Stage 6 | -3.8 | -16.33 | |
| Stage 6 | -4 | -15.93 | |
| Stage 6 | -4.2 | -15.39 | |
| Stage 6 | -4.4 | -14.72 | |
| Stage 6 | -4.6 | -13.93 | |
| Stage 6 | -4.8 | -13.04 | |
| Stage 6 | -5 | -12.07 | |
| Stage 6 | -5.2 | -11.04 | |
| Stage 6 | -5.4 | -9.98 | |
| Stage 6 | -5.6 | -8.93 | |
| Stage 6 | -5.8 | -7.91 | |
| Stage 6 | -6 | -6.94 | |
| Stage 6 | -6.2 | -6.05 | |
| Stage 6 | -6.4 | -5.24 | |
| Stage 6 | -6.6 | -4.53 | |
| Stage 6 | -6.8 | -3.91 | |
| Stage 6 | -7 | -3.38 | |
| Stage 6 | -7.2 | -2.94 | |
| Stage 6 | -7.4 | -2.58 | |
| Stage 6 | -7.6 | -2.29 | |
| Stage 6 | -7.8 | -2.07 | |
| Stage 6 | -8 | -1.9 | |
| Stage 6 | -8.2 | -1.77 | |
| Stage 6 | -8.4 | -1.68 | |
| Stage 6 | -8.6 | -1.62 | |
| Stage 6 | -8.8 | -1.59 | |
| Stage 6 | -9 | -1.56 | |
| Stage 6 | -9.2 | -1.55 | |
| Stage 6 | -9.4 | -1.55 | |
| Stage 6 | -9.6 | -1.55 | |
| Stage 6 | -9.8 | -1.56 | |
| Stage 6 | -10 | -1.56 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 6**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | 11.22 |
| Stage 6 | -0.2 | 2.24 | 11.22 |
| Stage 6 | -0.4 | 4.49 | 11.22 |
| Stage 6 | -0.6 | 6.73 | 11.22 |
| Stage 6 | -0.8 | 8.97 | 11.22 |
| Stage 6 | -1 | 11.22 | 11.22 |
| Stage 6 | -1.2 | 13.46 | 11.22 |
| Stage 6 | -1.4 | 15.7 | 11.22 |
| Stage 6 | -1.6 | 17.95 | 11.22 |
| Stage 6 | -1.8 | 20.19 | 11.22 |
| Stage 6 | -2 | 22.39 | 10.98 |
| Stage 6 | -2.2 | 24.48 | 10.46 |
| Stage 6 | -2.4 | 26.41 | 9.67 |
| Stage 6 | -2.6 | 28.13 | 8.59 |
| Stage 6 | -2.8 | 29.58 | 7.24 |
| Stage 6 | -3 | 30.7 | 5.62 |
| Stage 6 | -3.2 | 31.45 | 3.72 |
| Stage 6 | -3.4 | 31.76 | 1.54 |
| Stage 6 | -3.6 | 31.58 | -0.91 |
| Stage 6 | -3.8 | 30.85 | -3.62 |
| Stage 6 | -4 | 29.53 | -6.61 |
| Stage 6 | -4.2 | 27.56 | -9.86 |
| Stage 6 | -4.4 | 24.88 | -13.39 |
| Stage 6 | -4.6 | 21.44 | -17.18 |
| Stage 6 | -4.8 | 17.2 | -21.24 |
| Stage 6 | -5 | 12.08 | -25.57 |
| Stage 6 | -5.2 | 6.05 | -30.16 |
| Stage 6 | -5.4 | -0.96 | -35.03 |
| Stage 6 | -5.6 | -7.05 | -30.47 |
| Stage 6 | -5.8 | -11.87 | -24.12 |
| Stage 6 | -6 | -15.48 | -18.06 |
| Stage 6 | -6.2 | -17.95 | -12.31 |
| Stage 6 | -6.4 | -19.36 | -7.08 |
| Stage 6 | -6.6 | -19.83 | -2.35 |
| Stage 6 | -6.8 | -19.44 | 1.95 |
| Stage 6 | -7 | -18.4 | 5.19 |
| Stage 6 | -7.2 | -16.92 | 7.42 |
| Stage 6 | -7.4 | -15.16 | 8.8 |
| Stage 6 | -7.6 | -13.26 | 9.5 |
| Stage 6 | -7.8 | -11.33 | 9.66 |
| Stage 6 | -8 | -9.44 | 9.42 |
| Stage 6 | -8.2 | -7.67 | 8.87 |
| Stage 6 | -8.4 | -6.05 | 8.12 |
| Stage 6 | -8.6 | -4.6 | 7.23 |
| Stage 6 | -8.8 | -3.35 | 6.25 |
| Stage 6 | -9 | -2.3 | 5.25 |
| Stage 6 | -9.2 | -1.45 | 4.24 |
| Stage 6 | -9.4 | -0.81 | 3.24 |
| Stage 6 | -9.6 | -0.35 | 2.27 |
| Stage 6 | -9.8 | -0.09 | 1.33 |
| Stage 6 | -10 | 0 | 0.43 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 6**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | -11.22 |
| Stage 6 | -0.2 | -2.24 | -11.22 |
| Stage 6 | -0.4 | -4.49 | -11.22 |
| Stage 6 | -0.6 | -6.73 | -11.22 |
| Stage 6 | -0.8 | -8.97 | -11.22 |
| Stage 6 | -1 | -11.22 | -11.22 |
| Stage 6 | -1.2 | -13.46 | -11.22 |
| Stage 6 | -1.4 | -15.7 | -11.22 |
| Stage 6 | -1.6 | -17.95 | -11.22 |
| Stage 6 | -1.8 | -20.19 | -11.22 |
| Stage 6 | -2 | -22.39 | -10.98 |
| Stage 6 | -2.2 | -24.48 | -10.46 |
| Stage 6 | -2.4 | -26.41 | -9.67 |
| Stage 6 | -2.6 | -28.13 | -8.59 |
| Stage 6 | -2.8 | -29.58 | -7.24 |
| Stage 6 | -3 | -30.7 | -5.62 |
| Stage 6 | -3.2 | -31.45 | -3.72 |
| Stage 6 | -3.4 | -31.76 | -1.54 |
| Stage 6 | -3.6 | -31.58 | 0.91 |
| Stage 6 | -3.8 | -30.85 | 3.62 |
| Stage 6 | -4 | -29.53 | 6.61 |
| Stage 6 | -4.2 | -27.56 | 9.86 |
| Stage 6 | -4.4 | -24.88 | 13.39 |
| Stage 6 | -4.6 | -21.44 | 17.18 |
| Stage 6 | -4.8 | -17.2 | 21.24 |
| Stage 6 | -5 | -12.08 | 25.57 |
| Stage 6 | -5.2 | -6.05 | 30.16 |
| Stage 6 | -5.4 | 0.96 | 35.03 |
| Stage 6 | -5.6 | 7.05 | 30.47 |
| Stage 6 | -5.8 | 11.87 | 24.12 |
| Stage 6 | -6 | 15.48 | 18.06 |
| Stage 6 | -6.2 | 17.95 | 12.31 |
| Stage 6 | -6.4 | 19.36 | 7.08 |
| Stage 6 | -6.6 | 19.83 | 2.35 |
| Stage 6 | -6.8 | 19.44 | -1.95 |
| Stage 6 | -7 | 18.4 | -5.19 |
| Stage 6 | -7.2 | 16.92 | -7.42 |
| Stage 6 | -7.4 | 15.16 | -8.8 |
| Stage 6 | -7.6 | 13.26 | -9.5 |
| Stage 6 | -7.8 | 11.33 | -9.66 |
| Stage 6 | -8 | 9.44 | -9.42 |
| Stage 6 | -8.2 | 7.67 | -8.87 |
| Stage 6 | -8.4 | 6.05 | -8.12 |
| Stage 6 | -8.6 | 4.6 | -7.23 |
| Stage 6 | -8.8 | 3.35 | -6.25 |
| Stage 6 | -9 | 2.3 | -5.25 |
| Stage 6 | -9.2 | 1.45 | -4.24 |
| Stage 6 | -9.4 | 0.81 | -3.24 |
| Stage 6 | -9.6 | 0.35 | -2.27 |
| Stage 6 | -9.8 | 0.09 | -1.33 |
| Stage 6 | -10 | 0 | -0.43 |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - LEFT Stage: Stage
7**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | | Muro: LEFT |
|---|-------|------------------|------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 7 | 0 | 0.68 | |
| Stage 7 | -0.2 | 2.79 | |
| Stage 7 | -0.4 | 4.88 | |
| Stage 7 | -0.6 | 6.94 | |
| Stage 7 | -0.8 | 8.97 | |
| Stage 7 | -1 | 10.93 | |
| Stage 7 | -1.2 | 12.83 | |
| Stage 7 | -1.4 | 14.65 | |
| Stage 7 | -1.6 | 16.37 | |
| Stage 7 | -1.8 | 17.98 | |
| Stage 7 | -2 | 19.47 | |
| Stage 7 | -2.2 | 20.82 | |
| Stage 7 | -2.4 | 22.03 | |
| Stage 7 | -2.6 | 23.07 | |
| Stage 7 | -2.8 | 23.94 | |
| Stage 7 | -3 | 24.62 | |
| Stage 7 | -3.2 | 25.11 | |
| Stage 7 | -3.4 | 25.41 | |
| Stage 7 | -3.6 | 25.51 | |
| Stage 7 | -3.8 | 25.4 | |
| Stage 7 | -4 | 25.08 | |
| Stage 7 | -4.2 | 24.57 | |
| Stage 7 | -4.4 | 23.86 | |
| Stage 7 | -4.6 | 22.98 | |
| Stage 7 | -4.8 | 21.91 | |
| Stage 7 | -5 | 20.7 | |
| Stage 7 | -5.2 | 19.36 | |
| Stage 7 | -5.4 | 17.91 | |
| Stage 7 | -5.6 | 16.38 | |
| Stage 7 | -5.8 | 14.82 | |
| Stage 7 | -6 | 13.25 | |
| Stage 7 | -6.2 | 11.73 | |
| Stage 7 | -6.4 | 10.27 | |
| Stage 7 | -6.6 | 8.91 | |
| Stage 7 | -6.8 | 7.66 | |
| Stage 7 | -7 | 6.55 | |
| Stage 7 | -7.2 | 5.56 | |
| Stage 7 | -7.4 | 4.71 | |
| Stage 7 | -7.6 | 3.99 | |
| Stage 7 | -7.8 | 3.39 | |
| Stage 7 | -8 | 2.9 | |
| Stage 7 | -8.2 | 2.5 | |
| Stage 7 | -8.4 | 2.18 | |
| Stage 7 | -8.6 | 1.93 | |
| Stage 7 | -8.8 | 1.74 | |
| Stage 7 | -9 | 1.58 | |
| Stage 7 | -9.2 | 1.46 | |
| Stage 7 | -9.4 | 1.35 | |
| Stage 7 | -9.6 | 1.25 | |
| Stage 7 | -9.8 | 1.16 | |
| Stage 7 | -10 | 1.07 | |

**Tabella Spostamento NTC2018: SLE (Rara/Frequente/Quasi Permanente) - RIGHT Stage:
Stage 7**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Tipo Risultato: Spostamento | | | Muro: RIGHT |
|---|-------|------------------|-------------|
| Stage | Z (m) | Spostamento (mm) | |
| Stage 7 | 0 | -0.68 | |
| Stage 7 | -0.2 | -2.79 | |
| Stage 7 | -0.4 | -4.88 | |
| Stage 7 | -0.6 | -6.94 | |
| Stage 7 | -0.8 | -8.97 | |
| Stage 7 | -1 | -10.93 | |
| Stage 7 | -1.2 | -12.83 | |
| Stage 7 | -1.4 | -14.65 | |
| Stage 7 | -1.6 | -16.37 | |
| Stage 7 | -1.8 | -17.98 | |
| Stage 7 | -2 | -19.47 | |
| Stage 7 | -2.2 | -20.82 | |
| Stage 7 | -2.4 | -22.03 | |
| Stage 7 | -2.6 | -23.07 | |
| Stage 7 | -2.8 | -23.94 | |
| Stage 7 | -3 | -24.62 | |
| Stage 7 | -3.2 | -25.11 | |
| Stage 7 | -3.4 | -25.41 | |
| Stage 7 | -3.6 | -25.51 | |
| Stage 7 | -3.8 | -25.4 | |
| Stage 7 | -4 | -25.08 | |
| Stage 7 | -4.2 | -24.57 | |
| Stage 7 | -4.4 | -23.86 | |
| Stage 7 | -4.6 | -22.98 | |
| Stage 7 | -4.8 | -21.91 | |
| Stage 7 | -5 | -20.7 | |
| Stage 7 | -5.2 | -19.36 | |
| Stage 7 | -5.4 | -17.91 | |
| Stage 7 | -5.6 | -16.38 | |
| Stage 7 | -5.8 | -14.82 | |
| Stage 7 | -6 | -13.25 | |
| Stage 7 | -6.2 | -11.73 | |
| Stage 7 | -6.4 | -10.27 | |
| Stage 7 | -6.6 | -8.91 | |
| Stage 7 | -6.8 | -7.66 | |
| Stage 7 | -7 | -6.55 | |
| Stage 7 | -7.2 | -5.56 | |
| Stage 7 | -7.4 | -4.71 | |
| Stage 7 | -7.6 | -3.99 | |
| Stage 7 | -7.8 | -3.39 | |
| Stage 7 | -8 | -2.9 | |
| Stage 7 | -8.2 | -2.5 | |
| Stage 7 | -8.4 | -2.18 | |
| Stage 7 | -8.6 | -1.93 | |
| Stage 7 | -8.8 | -1.74 | |
| Stage 7 | -9 | -1.58 | |
| Stage 7 | -9.2 | -1.46 | |
| Stage 7 | -9.4 | -1.35 | |
| Stage 7 | -9.6 | -1.25 | |
| Stage 7 | -9.8 | -1.16 | |
| Stage 7 | -10 | -1.07 | |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Left Wall -
Stage: Stage 7**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | 14.33 |
| Stage 7 | -0.2 | 2.87 | 14.33 |
| Stage 7 | -0.4 | 5.73 | 14.33 |
| Stage 7 | -0.6 | 8.6 | 14.33 |
| Stage 7 | -0.8 | 11.46 | 14.33 |
| Stage 7 | -1 | 14.33 | 14.33 |
| Stage 7 | -1.2 | 17.2 | 14.33 |
| Stage 7 | -1.4 | 20.06 | 14.33 |
| Stage 7 | -1.6 | 22.93 | 14.33 |
| Stage 7 | -1.8 | 25.79 | 14.33 |
| Stage 7 | -2 | 28.61 | 14.09 |
| Stage 7 | -2.2 | 31.33 | 13.58 |
| Stage 7 | -2.4 | 33.88 | 12.78 |
| Stage 7 | -2.6 | 36.22 | 11.7 |
| Stage 7 | -2.8 | 38.3 | 10.35 |
| Stage 7 | -3 | 40.04 | 8.73 |
| Stage 7 | -3.2 | 41.41 | 6.83 |
| Stage 7 | -3.4 | 42.34 | 4.65 |
| Stage 7 | -3.6 | 42.78 | 2.21 |
| Stage 7 | -3.8 | 42.68 | -0.51 |
| Stage 7 | -4 | 41.98 | -3.5 |
| Stage 7 | -4.2 | 40.63 | -6.75 |
| Stage 7 | -4.4 | 38.57 | -10.27 |
| Stage 7 | -4.6 | 35.76 | -14.07 |
| Stage 7 | -4.8 | 32.13 | -18.13 |
| Stage 7 | -5 | 27.64 | -22.45 |
| Stage 7 | -5.2 | 22.23 | -27.05 |
| Stage 7 | -5.4 | 15.85 | -31.92 |
| Stage 7 | -5.6 | 8.44 | -37.05 |
| Stage 7 | -5.8 | -0.05 | -42.44 |
| Stage 7 | -6 | -7.96 | -39.55 |
| Stage 7 | -6.2 | -14.88 | -34.6 |
| Stage 7 | -6.4 | -20.4 | -27.59 |
| Stage 7 | -6.6 | -24.37 | -19.89 |
| Stage 7 | -6.8 | -26.93 | -12.76 |
| Stage 7 | -7 | -28.16 | -6.18 |
| Stage 7 | -7.2 | -28.21 | -0.22 |
| Stage 7 | -7.4 | -27.21 | 5.01 |
| Stage 7 | -7.6 | -25.31 | 9.46 |
| Stage 7 | -7.8 | -22.82 | 12.46 |
| Stage 7 | -8 | -19.97 | 14.25 |
| Stage 7 | -8.2 | -16.96 | 15.06 |
| Stage 7 | -8.4 | -13.94 | 15.09 |
| Stage 7 | -8.6 | -11.04 | 14.49 |
| Stage 7 | -8.8 | -8.36 | 13.42 |
| Stage 7 | -9 | -5.96 | 11.98 |
| Stage 7 | -9.2 | -3.91 | 10.25 |
| Stage 7 | -9.4 | -2.25 | 8.29 |
| Stage 7 | -9.6 | -1.03 | 6.14 |
| Stage 7 | -9.8 | -0.27 | 3.81 |
| Stage 7 | -10 | 0 | 1.32 |

**Tabella Risultati Paratia NTC2018: SLE (Rara/Frequente/Quasi Permanente) - Right wall -
Stage: Stage 7**

| Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | -14.33 |
| Stage 7 | -0.2 | -2.87 | -14.33 |
| Stage 7 | -0.4 | -5.73 | -14.33 |
| Stage 7 | -0.6 | -8.6 | -14.33 |
| Stage 7 | -0.8 | -11.46 | -14.33 |
| Stage 7 | -1 | -14.33 | -14.33 |
| Stage 7 | -1.2 | -17.2 | -14.33 |
| Stage 7 | -1.4 | -20.06 | -14.33 |
| Stage 7 | -1.6 | -22.93 | -14.33 |
| Stage 7 | -1.8 | -25.79 | -14.33 |
| Stage 7 | -2 | -28.61 | -14.09 |
| Stage 7 | -2.2 | -31.33 | -13.58 |
| Stage 7 | -2.4 | -33.88 | -12.78 |
| Stage 7 | -2.6 | -36.22 | -11.7 |
| Stage 7 | -2.8 | -38.3 | -10.35 |
| Stage 7 | -3 | -40.04 | -8.73 |
| Stage 7 | -3.2 | -41.41 | -6.83 |
| Stage 7 | -3.4 | -42.34 | -4.65 |
| Stage 7 | -3.6 | -42.78 | -2.21 |
| Stage 7 | -3.8 | -42.68 | 0.51 |
| Stage 7 | -4 | -41.98 | 3.5 |
| Stage 7 | -4.2 | -40.63 | 6.75 |
| Stage 7 | -4.4 | -38.57 | 10.27 |
| Stage 7 | -4.6 | -35.76 | 14.07 |
| Stage 7 | -4.8 | -32.13 | 18.13 |
| Stage 7 | -5 | -27.64 | 22.45 |
| Stage 7 | -5.2 | -22.23 | 27.05 |
| Stage 7 | -5.4 | -15.85 | 31.92 |
| Stage 7 | -5.6 | -8.44 | 37.05 |
| Stage 7 | -5.8 | 0.05 | 42.44 |
| Stage 7 | -6 | 7.96 | 39.55 |
| Stage 7 | -6.2 | 14.88 | 34.6 |
| Stage 7 | -6.4 | 20.4 | 27.59 |
| Stage 7 | -6.6 | 24.37 | 19.89 |
| Stage 7 | -6.8 | 26.93 | 12.76 |
| Stage 7 | -7 | 28.16 | 6.18 |
| Stage 7 | -7.2 | 28.21 | 0.22 |
| Stage 7 | -7.4 | 27.21 | -5.01 |
| Stage 7 | -7.6 | 25.31 | -9.46 |
| Stage 7 | -7.8 | 22.82 | -12.46 |
| Stage 7 | -8 | 19.97 | -14.25 |
| Stage 7 | -8.2 | 16.96 | -15.06 |
| Stage 7 | -8.4 | 13.94 | -15.09 |
| Stage 7 | -8.6 | 11.04 | -14.49 |
| Stage 7 | -8.8 | 8.36 | -13.42 |
| Stage 7 | -9 | 5.96 | -11.98 |
| Stage 7 | -9.2 | 3.91 | -10.25 |
| Stage 7 | -9.4 | 2.25 | -8.29 |
| Stage 7 | -9.6 | 1.03 | -6.14 |
| Stage 7 | -9.8 | 0.27 | -3.81 |
| Stage 7 | -10 | 0 | -1.32 |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 - Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| | | | | | |
|----------|---------|----------|------------|------|------------|
| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
| NR1J | 01 D 29 | CL | IN0600 002 | A | 319 di 386 |

Risultati Elementi strutturali - NTC2018: SLE (Rara/Frequente/Quasi Permanente)

Design Assumption: NTC2018: SLE (Rara/Frequente/Quasi Permanente) Sollecitazione Strut

| Stage | Forza (kN/m) |
|---------|--------------|
| Stage 3 | 0 |
| Stage 4 | -2.282406 |
| Stage 5 | -4.484574 |
| Stage 6 | -11.21754 |
| Stage 7 | -14.32973 |

Risultati NTC2018: A1+M1+R1 (R3 per tiranti)

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 0

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 0

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 1

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | 0.01 | 0.07 |
| Stage 1 | -0.6 | 0.04 | 0.14 |
| Stage 1 | -0.8 | 0.08 | 0.2 |
| Stage 1 | -1 | 0.12 | 0.21 |
| Stage 1 | -1.2 | 0.15 | 0.16 |
| Stage 1 | -1.4 | 0.18 | 0.1 |
| Stage 1 | -1.6 | 0.18 | 0.04 |
| Stage 1 | -1.8 | 0.18 | -0.01 |
| Stage 1 | -2 | 0.17 | -0.05 |
| Stage 1 | -2.2 | 0.16 | -0.07 |
| Stage 1 | -2.4 | 0.14 | -0.09 |
| Stage 1 | -2.6 | 0.12 | -0.09 |
| Stage 1 | -2.8 | 0.1 | -0.09 |
| Stage 1 | -3 | 0.09 | -0.08 |
| Stage 1 | -3.2 | 0.08 | -0.06 |
| Stage 1 | -3.4 | 0.06 | -0.05 |
| Stage 1 | -3.6 | 0.06 | -0.05 |
| Stage 1 | -3.8 | 0.05 | -0.04 |
| Stage 1 | -4 | 0.04 | -0.03 |
| Stage 1 | -4.2 | 0.04 | -0.01 |
| Stage 1 | -4.4 | 0.04 | 0.01 |
| Stage 1 | -4.6 | 0.05 | 0.02 |
| Stage 1 | -4.8 | 0.05 | 0.03 |
| Stage 1 | -5 | 0.06 | 0.03 |
| Stage 1 | -5.2 | 0.06 | 0.03 |
| Stage 1 | -5.4 | 0.07 | 0.01 |
| Stage 1 | -5.6 | 0.06 | -0.02 |
| Stage 1 | -5.8 | 0.06 | -0.04 |
| Stage 1 | -6 | 0.04 | -0.06 |
| Stage 1 | -6.2 | 0.03 | -0.06 |
| Stage 1 | -6.4 | 0.02 | -0.06 |
| Stage 1 | -6.6 | 0.01 | -0.05 |
| Stage 1 | -6.8 | 0 | -0.04 |
| Stage 1 | -7 | 0 | -0.03 |
| Stage 1 | -7.2 | -0.01 | -0.03 |
| Stage 1 | -7.4 | -0.01 | -0.02 |
| Stage 1 | -7.6 | -0.02 | -0.01 |
| Stage 1 | -7.8 | -0.02 | 0 |
| Stage 1 | -8 | -0.02 | 0 |
| Stage 1 | -8.2 | -0.02 | 0 |
| Stage 1 | -8.4 | -0.01 | 0.01 |
| Stage 1 | -8.6 | -0.01 | 0.01 |
| Stage 1 | -8.8 | -0.01 | 0.01 |
| Stage 1 | -9 | -0.01 | 0.01 |
| Stage 1 | -9.2 | -0.01 | 0.01 |
| Stage 1 | -9.4 | 0 | 0.01 |
| Stage 1 | -9.6 | 0 | 0.01 |
| Stage 1 | -9.8 | 0 | 0.01 |
| Stage 1 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 1

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | -0.01 | -0.07 |
| Stage 1 | -0.6 | -0.04 | -0.14 |
| Stage 1 | -0.8 | -0.08 | -0.2 |
| Stage 1 | -1 | -0.12 | -0.21 |
| Stage 1 | -1.2 | -0.15 | -0.16 |
| Stage 1 | -1.4 | -0.18 | -0.1 |
| Stage 1 | -1.6 | -0.18 | -0.04 |
| Stage 1 | -1.8 | -0.18 | 0.01 |
| Stage 1 | -2 | -0.17 | 0.05 |
| Stage 1 | -2.2 | -0.16 | 0.07 |
| Stage 1 | -2.4 | -0.14 | 0.09 |
| Stage 1 | -2.6 | -0.12 | 0.09 |
| Stage 1 | -2.8 | -0.1 | 0.09 |
| Stage 1 | -3 | -0.09 | 0.08 |
| Stage 1 | -3.2 | -0.08 | 0.06 |
| Stage 1 | -3.4 | -0.06 | 0.05 |
| Stage 1 | -3.6 | -0.06 | 0.05 |
| Stage 1 | -3.8 | -0.05 | 0.04 |
| Stage 1 | -4 | -0.04 | 0.03 |
| Stage 1 | -4.2 | -0.04 | 0.01 |
| Stage 1 | -4.4 | -0.04 | -0.01 |
| Stage 1 | -4.6 | -0.05 | -0.02 |
| Stage 1 | -4.8 | -0.05 | -0.03 |
| Stage 1 | -5 | -0.06 | -0.03 |
| Stage 1 | -5.2 | -0.06 | -0.03 |
| Stage 1 | -5.4 | -0.07 | -0.01 |
| Stage 1 | -5.6 | -0.06 | 0.02 |
| Stage 1 | -5.8 | -0.06 | 0.04 |
| Stage 1 | -6 | -0.04 | 0.06 |
| Stage 1 | -6.2 | -0.03 | 0.06 |
| Stage 1 | -6.4 | -0.02 | 0.06 |
| Stage 1 | -6.6 | -0.01 | 0.05 |
| Stage 1 | -6.8 | 0 | 0.04 |
| Stage 1 | -7 | 0 | 0.03 |
| Stage 1 | -7.2 | 0.01 | 0.03 |
| Stage 1 | -7.4 | 0.01 | 0.02 |
| Stage 1 | -7.6 | 0.02 | 0.01 |
| Stage 1 | -7.8 | 0.02 | 0 |
| Stage 1 | -8 | 0.02 | 0 |
| Stage 1 | -8.2 | 0.02 | 0 |
| Stage 1 | -8.4 | 0.01 | -0.01 |
| Stage 1 | -8.6 | 0.01 | -0.01 |
| Stage 1 | -8.8 | 0.01 | -0.01 |
| Stage 1 | -9 | 0.01 | -0.01 |
| Stage 1 | -9.2 | 0.01 | -0.01 |
| Stage 1 | -9.4 | 0 | -0.01 |
| Stage 1 | -9.6 | 0 | -0.01 |
| Stage 1 | -9.8 | 0 | -0.01 |
| Stage 1 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 2

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -1 | -0.13 | -0.63 |
| Stage 2 | -1.2 | -0.28 | -0.78 |
| Stage 2 | -1.4 | -0.37 | -0.44 |
| Stage 2 | -1.6 | -0.4 | -0.15 |
| Stage 2 | -1.8 | -0.39 | 0.06 |
| Stage 2 | -2 | -0.35 | 0.2 |
| Stage 2 | -2.2 | -0.3 | 0.27 |
| Stage 2 | -2.4 | -0.24 | 0.3 |
| Stage 2 | -2.6 | -0.18 | 0.29 |
| Stage 2 | -2.8 | -0.12 | 0.27 |
| Stage 2 | -3 | -0.08 | 0.24 |
| Stage 2 | -3.2 | -0.04 | 0.2 |
| Stage 2 | -3.4 | -0.01 | 0.15 |
| Stage 2 | -3.6 | 0.02 | 0.11 |
| Stage 2 | -3.8 | 0.03 | 0.08 |
| Stage 2 | -4 | 0.04 | 0.05 |
| Stage 2 | -4.2 | 0.05 | 0.04 |
| Stage 2 | -4.4 | 0.06 | 0.03 |
| Stage 2 | -4.6 | 0.06 | 0.03 |
| Stage 2 | -4.8 | 0.07 | 0.03 |
| Stage 2 | -5 | 0.07 | 0.02 |
| Stage 2 | -5.2 | 0.07 | 0.01 |
| Stage 2 | -5.4 | 0.07 | 0 |
| Stage 2 | -5.6 | 0.07 | -0.03 |
| Stage 2 | -5.8 | 0.06 | -0.05 |
| Stage 2 | -6 | 0.05 | -0.06 |
| Stage 2 | -6.2 | 0.03 | -0.07 |
| Stage 2 | -6.4 | 0.02 | -0.06 |
| Stage 2 | -6.6 | 0.01 | -0.06 |
| Stage 2 | -6.8 | 0 | -0.05 |
| Stage 2 | -7 | -0.01 | -0.04 |
| Stage 2 | -7.2 | -0.01 | -0.03 |
| Stage 2 | -7.4 | -0.02 | -0.02 |
| Stage 2 | -7.6 | -0.02 | -0.01 |
| Stage 2 | -7.8 | -0.02 | 0 |
| Stage 2 | -8 | -0.02 | 0 |
| Stage 2 | -8.2 | -0.02 | 0.01 |
| Stage 2 | -8.4 | -0.02 | 0.01 |
| Stage 2 | -8.6 | -0.01 | 0.01 |
| Stage 2 | -8.8 | -0.01 | 0.01 |
| Stage 2 | -9 | -0.01 | 0.01 |
| Stage 2 | -9.2 | -0.01 | 0.01 |
| Stage 2 | -9.4 | 0 | 0.01 |
| Stage 2 | -9.6 | 0 | 0.01 |
| Stage 2 | -9.8 | 0 | 0.01 |
| Stage 2 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 2

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0 |
| Stage 2 | -1 | 0.13 | 0.63 |
| Stage 2 | -1.2 | 0.28 | 0.78 |
| Stage 2 | -1.4 | 0.37 | 0.44 |
| Stage 2 | -1.6 | 0.4 | 0.15 |
| Stage 2 | -1.8 | 0.39 | -0.06 |
| Stage 2 | -2 | 0.35 | -0.2 |
| Stage 2 | -2.2 | 0.3 | -0.27 |
| Stage 2 | -2.4 | 0.24 | -0.3 |
| Stage 2 | -2.6 | 0.18 | -0.29 |
| Stage 2 | -2.8 | 0.12 | -0.27 |
| Stage 2 | -3 | 0.08 | -0.24 |
| Stage 2 | -3.2 | 0.04 | -0.2 |
| Stage 2 | -3.4 | 0.01 | -0.15 |
| Stage 2 | -3.6 | -0.02 | -0.11 |
| Stage 2 | -3.8 | -0.03 | -0.08 |
| Stage 2 | -4 | -0.04 | -0.05 |
| Stage 2 | -4.2 | -0.05 | -0.04 |
| Stage 2 | -4.4 | -0.06 | -0.03 |
| Stage 2 | -4.6 | -0.06 | -0.03 |
| Stage 2 | -4.8 | -0.07 | -0.03 |
| Stage 2 | -5 | -0.07 | -0.02 |
| Stage 2 | -5.2 | -0.07 | -0.01 |
| Stage 2 | -5.4 | -0.07 | 0 |
| Stage 2 | -5.6 | -0.07 | 0.03 |
| Stage 2 | -5.8 | -0.06 | 0.05 |
| Stage 2 | -6 | -0.05 | 0.06 |
| Stage 2 | -6.2 | -0.03 | 0.07 |
| Stage 2 | -6.4 | -0.02 | 0.06 |
| Stage 2 | -6.6 | -0.01 | 0.06 |
| Stage 2 | -6.8 | 0 | 0.05 |
| Stage 2 | -7 | 0.01 | 0.04 |
| Stage 2 | -7.2 | 0.01 | 0.03 |
| Stage 2 | -7.4 | 0.02 | 0.02 |
| Stage 2 | -7.6 | 0.02 | 0.01 |
| Stage 2 | -7.8 | 0.02 | 0 |
| Stage 2 | -8 | 0.02 | 0 |
| Stage 2 | -8.2 | 0.02 | -0.01 |
| Stage 2 | -8.4 | 0.02 | -0.01 |
| Stage 2 | -8.6 | 0.01 | -0.01 |
| Stage 2 | -8.8 | 0.01 | -0.01 |
| Stage 2 | -9 | 0.01 | -0.01 |
| Stage 2 | -9.2 | 0.01 | -0.01 |
| Stage 2 | -9.4 | 0 | -0.01 |
| Stage 2 | -9.6 | 0 | -0.01 |
| Stage 2 | -9.8 | 0 | -0.01 |
| Stage 2 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 3

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 3 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -1 | -0.13 | -0.63 |
| Stage 3 | -1.2 | -0.28 | -0.78 |
| Stage 3 | -1.4 | -0.37 | -0.44 |
| Stage 3 | -1.6 | -0.4 | -0.15 |
| Stage 3 | -1.8 | -0.39 | 0.06 |
| Stage 3 | -2 | -0.35 | 0.2 |
| Stage 3 | -2.2 | -0.3 | 0.27 |
| Stage 3 | -2.4 | -0.24 | 0.3 |
| Stage 3 | -2.6 | -0.18 | 0.29 |
| Stage 3 | -2.8 | -0.12 | 0.27 |
| Stage 3 | -3 | -0.08 | 0.24 |
| Stage 3 | -3.2 | -0.04 | 0.2 |
| Stage 3 | -3.4 | -0.01 | 0.15 |
| Stage 3 | -3.6 | 0.02 | 0.11 |
| Stage 3 | -3.8 | 0.03 | 0.08 |
| Stage 3 | -4 | 0.04 | 0.05 |
| Stage 3 | -4.2 | 0.05 | 0.04 |
| Stage 3 | -4.4 | 0.06 | 0.03 |
| Stage 3 | -4.6 | 0.06 | 0.03 |
| Stage 3 | -4.8 | 0.07 | 0.03 |
| Stage 3 | -5 | 0.07 | 0.02 |
| Stage 3 | -5.2 | 0.07 | 0.01 |
| Stage 3 | -5.4 | 0.07 | 0 |
| Stage 3 | -5.6 | 0.07 | -0.03 |
| Stage 3 | -5.8 | 0.06 | -0.05 |
| Stage 3 | -6 | 0.05 | -0.06 |
| Stage 3 | -6.2 | 0.03 | -0.07 |
| Stage 3 | -6.4 | 0.02 | -0.06 |
| Stage 3 | -6.6 | 0.01 | -0.06 |
| Stage 3 | -6.8 | 0 | -0.05 |
| Stage 3 | -7 | -0.01 | -0.04 |
| Stage 3 | -7.2 | -0.01 | -0.03 |
| Stage 3 | -7.4 | -0.02 | -0.02 |
| Stage 3 | -7.6 | -0.02 | -0.01 |
| Stage 3 | -7.8 | -0.02 | 0 |
| Stage 3 | -8 | -0.02 | 0 |
| Stage 3 | -8.2 | -0.02 | 0.01 |
| Stage 3 | -8.4 | -0.02 | 0.01 |
| Stage 3 | -8.6 | -0.01 | 0.01 |
| Stage 3 | -8.8 | -0.01 | 0.01 |
| Stage 3 | -9 | -0.01 | 0.01 |
| Stage 3 | -9.2 | -0.01 | 0.01 |
| Stage 3 | -9.4 | 0 | 0.01 |
| Stage 3 | -9.6 | 0 | 0.01 |
| Stage 3 | -9.8 | 0 | 0.01 |
| Stage 3 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 3

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 3 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0 |
| Stage 3 | -1 | 0.13 | 0.63 |
| Stage 3 | -1.2 | 0.28 | 0.78 |
| Stage 3 | -1.4 | 0.37 | 0.44 |
| Stage 3 | -1.6 | 0.4 | 0.15 |
| Stage 3 | -1.8 | 0.39 | -0.06 |
| Stage 3 | -2 | 0.35 | -0.2 |
| Stage 3 | -2.2 | 0.3 | -0.27 |
| Stage 3 | -2.4 | 0.24 | -0.3 |
| Stage 3 | -2.6 | 0.18 | -0.29 |
| Stage 3 | -2.8 | 0.12 | -0.27 |
| Stage 3 | -3 | 0.08 | -0.24 |
| Stage 3 | -3.2 | 0.04 | -0.2 |
| Stage 3 | -3.4 | 0.01 | -0.15 |
| Stage 3 | -3.6 | -0.02 | -0.11 |
| Stage 3 | -3.8 | -0.03 | -0.08 |
| Stage 3 | -4 | -0.04 | -0.05 |
| Stage 3 | -4.2 | -0.05 | -0.04 |
| Stage 3 | -4.4 | -0.06 | -0.03 |
| Stage 3 | -4.6 | -0.06 | -0.03 |
| Stage 3 | -4.8 | -0.07 | -0.03 |
| Stage 3 | -5 | -0.07 | -0.02 |
| Stage 3 | -5.2 | -0.07 | -0.01 |
| Stage 3 | -5.4 | -0.07 | 0 |
| Stage 3 | -5.6 | -0.07 | 0.03 |
| Stage 3 | -5.8 | -0.06 | 0.05 |
| Stage 3 | -6 | -0.05 | 0.06 |
| Stage 3 | -6.2 | -0.03 | 0.07 |
| Stage 3 | -6.4 | -0.02 | 0.06 |
| Stage 3 | -6.6 | -0.01 | 0.06 |
| Stage 3 | -6.8 | 0 | 0.05 |
| Stage 3 | -7 | 0.01 | 0.04 |
| Stage 3 | -7.2 | 0.01 | 0.03 |
| Stage 3 | -7.4 | 0.02 | 0.02 |
| Stage 3 | -7.6 | 0.02 | 0.01 |
| Stage 3 | -7.8 | 0.02 | 0 |
| Stage 3 | -8 | 0.02 | 0 |
| Stage 3 | -8.2 | 0.02 | -0.01 |
| Stage 3 | -8.4 | 0.02 | -0.01 |
| Stage 3 | -8.6 | 0.01 | -0.01 |
| Stage 3 | -8.8 | 0.01 | -0.01 |
| Stage 3 | -9 | 0.01 | -0.01 |
| Stage 3 | -9.2 | 0.01 | -0.01 |
| Stage 3 | -9.4 | 0 | -0.01 |
| Stage 3 | -9.6 | 0 | -0.01 |
| Stage 3 | -9.8 | 0 | -0.01 |
| Stage 3 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 4

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | 3 |
| Stage 4 | -0.2 | 0.6 | 3 |
| Stage 4 | -0.4 | 1.2 | 3 |
| Stage 4 | -0.6 | 1.8 | 3 |
| Stage 4 | -0.8 | 2.4 | 3 |
| Stage 4 | -1 | 3 | 3 |
| Stage 4 | -1.2 | 3.61 | 3 |
| Stage 4 | -1.4 | 4.21 | 3 |
| Stage 4 | -1.6 | 4.81 | 3 |
| Stage 4 | -1.8 | 5.38 | 2.86 |
| Stage 4 | -2 | 5.85 | 2.34 |
| Stage 4 | -2.2 | 6.13 | 1.43 |
| Stage 4 | -2.4 | 6.15 | 0.07 |
| Stage 4 | -2.6 | 5.79 | -1.77 |
| Stage 4 | -2.8 | 4.96 | -4.15 |
| Stage 4 | -3 | 3.54 | -7.11 |
| Stage 4 | -3.2 | 2.1 | -7.17 |
| Stage 4 | -3.4 | 0.9 | -6.02 |
| Stage 4 | -3.6 | -0.05 | -4.76 |
| Stage 4 | -3.8 | -0.77 | -3.56 |
| Stage 4 | -4 | -1.26 | -2.48 |
| Stage 4 | -4.2 | -1.57 | -1.55 |
| Stage 4 | -4.4 | -1.73 | -0.79 |
| Stage 4 | -4.6 | -1.77 | -0.19 |
| Stage 4 | -4.8 | -1.72 | 0.26 |
| Stage 4 | -5 | -1.6 | 0.57 |
| Stage 4 | -5.2 | -1.45 | 0.77 |
| Stage 4 | -5.4 | -1.28 | 0.87 |
| Stage 4 | -5.6 | -1.1 | 0.89 |
| Stage 4 | -5.8 | -0.93 | 0.86 |
| Stage 4 | -6 | -0.77 | 0.8 |
| Stage 4 | -6.2 | -0.62 | 0.73 |
| Stage 4 | -6.4 | -0.49 | 0.64 |
| Stage 4 | -6.6 | -0.38 | 0.55 |
| Stage 4 | -6.8 | -0.29 | 0.47 |
| Stage 4 | -7 | -0.21 | 0.39 |
| Stage 4 | -7.2 | -0.15 | 0.31 |
| Stage 4 | -7.4 | -0.1 | 0.24 |
| Stage 4 | -7.6 | -0.06 | 0.18 |
| Stage 4 | -7.8 | -0.03 | 0.14 |
| Stage 4 | -8 | -0.02 | 0.09 |
| Stage 4 | -8.2 | 0 | 0.06 |
| Stage 4 | -8.4 | 0 | 0.04 |
| Stage 4 | -8.6 | 0.01 | 0.02 |
| Stage 4 | -8.8 | 0.01 | 0 |
| Stage 4 | -9 | 0.01 | 0 |
| Stage 4 | -9.2 | 0 | -0.01 |
| Stage 4 | -9.4 | 0 | -0.01 |
| Stage 4 | -9.6 | 0 | -0.01 |
| Stage 4 | -9.8 | 0 | -0.01 |
| Stage 4 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 4

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | -3 |
| Stage 4 | -0.2 | -0.6 | -3 |
| Stage 4 | -0.4 | -1.2 | -3 |
| Stage 4 | -0.6 | -1.8 | -3 |
| Stage 4 | -0.8 | -2.4 | -3 |
| Stage 4 | -1 | -3 | -3 |
| Stage 4 | -1.2 | -3.61 | -3 |
| Stage 4 | -1.4 | -4.21 | -3 |
| Stage 4 | -1.6 | -4.81 | -3 |
| Stage 4 | -1.8 | -5.38 | -2.86 |
| Stage 4 | -2 | -5.85 | -2.34 |
| Stage 4 | -2.2 | -6.13 | -1.43 |
| Stage 4 | -2.4 | -6.15 | -0.07 |
| Stage 4 | -2.6 | -5.79 | 1.77 |
| Stage 4 | -2.8 | -4.96 | 4.15 |
| Stage 4 | -3 | -3.54 | 7.11 |
| Stage 4 | -3.2 | -2.1 | 7.17 |
| Stage 4 | -3.4 | -0.9 | 6.02 |
| Stage 4 | -3.6 | 0.05 | 4.76 |
| Stage 4 | -3.8 | 0.77 | 3.56 |
| Stage 4 | -4 | 1.26 | 2.48 |
| Stage 4 | -4.2 | 1.57 | 1.55 |
| Stage 4 | -4.4 | 1.73 | 0.79 |
| Stage 4 | -4.6 | 1.77 | 0.19 |
| Stage 4 | -4.8 | 1.72 | -0.26 |
| Stage 4 | -5 | 1.6 | -0.57 |
| Stage 4 | -5.2 | 1.45 | -0.77 |
| Stage 4 | -5.4 | 1.28 | -0.87 |
| Stage 4 | -5.6 | 1.1 | -0.89 |
| Stage 4 | -5.8 | 0.93 | -0.86 |
| Stage 4 | -6 | 0.77 | -0.8 |
| Stage 4 | -6.2 | 0.62 | -0.73 |
| Stage 4 | -6.4 | 0.49 | -0.64 |
| Stage 4 | -6.6 | 0.38 | -0.55 |
| Stage 4 | -6.8 | 0.29 | -0.47 |
| Stage 4 | -7 | 0.21 | -0.39 |
| Stage 4 | -7.2 | 0.15 | -0.31 |
| Stage 4 | -7.4 | 0.1 | -0.24 |
| Stage 4 | -7.6 | 0.06 | -0.18 |
| Stage 4 | -7.8 | 0.03 | -0.14 |
| Stage 4 | -8 | 0.02 | -0.09 |
| Stage 4 | -8.2 | 0 | -0.06 |
| Stage 4 | -8.4 | 0 | -0.04 |
| Stage 4 | -8.6 | -0.01 | -0.02 |
| Stage 4 | -8.8 | -0.01 | 0 |
| Stage 4 | -9 | -0.01 | 0 |
| Stage 4 | -9.2 | 0 | 0.01 |
| Stage 4 | -9.4 | 0 | 0.01 |
| Stage 4 | -9.6 | 0 | 0.01 |
| Stage 4 | -9.8 | 0 | 0.01 |
| Stage 4 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 5

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 5 | 0 | 0 | 6.11 |
| Stage 5 | -0.2 | 1.22 | 6.11 |
| Stage 5 | -0.4 | 2.44 | 6.11 |
| Stage 5 | -0.6 | 3.67 | 6.11 |
| Stage 5 | -0.8 | 4.89 | 6.11 |
| Stage 5 | -1 | 6.11 | 6.11 |
| Stage 5 | -1.2 | 7.33 | 6.11 |
| Stage 5 | -1.4 | 8.55 | 6.11 |
| Stage 5 | -1.6 | 9.77 | 6.11 |
| Stage 5 | -1.8 | 11 | 6.11 |
| Stage 5 | -2 | 12.14 | 5.73 |
| Stage 5 | -2.2 | 13.14 | 4.99 |
| Stage 5 | -2.4 | 13.91 | 3.88 |
| Stage 5 | -2.6 | 14.39 | 2.4 |
| Stage 5 | -2.8 | 14.51 | 0.56 |
| Stage 5 | -3 | 14.18 | -1.63 |
| Stage 5 | -3.2 | 13.35 | -4.18 |
| Stage 5 | -3.4 | 11.93 | -7.1 |
| Stage 5 | -3.6 | 9.85 | -10.37 |
| Stage 5 | -3.8 | 7.05 | -13.99 |
| Stage 5 | -4 | 3.46 | -17.96 |
| Stage 5 | -4.2 | 0.22 | -16.19 |
| Stage 5 | -4.4 | -2.35 | -12.89 |
| Stage 5 | -4.6 | -4.22 | -9.32 |
| Stage 5 | -4.8 | -5.43 | -6.08 |
| Stage 5 | -5 | -6.11 | -3.41 |
| Stage 5 | -5.2 | -6.37 | -1.29 |
| Stage 5 | -5.4 | -6.31 | 0.32 |
| Stage 5 | -5.6 | -6.01 | 1.49 |
| Stage 5 | -5.8 | -5.56 | 2.27 |
| Stage 5 | -6 | -5 | 2.76 |
| Stage 5 | -6.2 | -4.4 | 3.01 |
| Stage 5 | -6.4 | -3.79 | 3.07 |
| Stage 5 | -6.6 | -3.19 | 2.99 |
| Stage 5 | -6.8 | -2.63 | 2.81 |
| Stage 5 | -7 | -2.11 | 2.56 |
| Stage 5 | -7.2 | -1.66 | 2.27 |
| Stage 5 | -7.4 | -1.27 | 1.96 |
| Stage 5 | -7.6 | -0.94 | 1.65 |
| Stage 5 | -7.8 | -0.67 | 1.35 |
| Stage 5 | -8 | -0.46 | 1.08 |
| Stage 5 | -8.2 | -0.29 | 0.83 |
| Stage 5 | -8.4 | -0.17 | 0.61 |
| Stage 5 | -8.6 | -0.08 | 0.43 |
| Stage 5 | -8.8 | -0.03 | 0.27 |
| Stage 5 | -9 | 0 | 0.15 |
| Stage 5 | -9.2 | 0.02 | 0.06 |
| Stage 5 | -9.4 | 0.02 | 0 |
| Stage 5 | -9.6 | 0.01 | -0.03 |
| Stage 5 | -9.8 | 0 | -0.04 |
| Stage 5 | -10 | 0 | -0.02 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 5

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 5 | 0 | 0 | -6.11 |
| Stage 5 | -0.2 | -1.22 | -6.11 |
| Stage 5 | -0.4 | -2.44 | -6.11 |
| Stage 5 | -0.6 | -3.67 | -6.11 |
| Stage 5 | -0.8 | -4.89 | -6.11 |
| Stage 5 | -1 | -6.11 | -6.11 |
| Stage 5 | -1.2 | -7.33 | -6.11 |
| Stage 5 | -1.4 | -8.55 | -6.11 |
| Stage 5 | -1.6 | -9.77 | -6.11 |
| Stage 5 | -1.8 | -11 | -6.11 |
| Stage 5 | -2 | -12.14 | -5.73 |
| Stage 5 | -2.2 | -13.14 | -4.99 |
| Stage 5 | -2.4 | -13.91 | -3.88 |
| Stage 5 | -2.6 | -14.39 | -2.4 |
| Stage 5 | -2.8 | -14.51 | -0.56 |
| Stage 5 | -3 | -14.18 | 1.63 |
| Stage 5 | -3.2 | -13.35 | 4.18 |
| Stage 5 | -3.4 | -11.93 | 7.1 |
| Stage 5 | -3.6 | -9.85 | 10.37 |
| Stage 5 | -3.8 | -7.05 | 13.99 |
| Stage 5 | -4 | -3.46 | 17.96 |
| Stage 5 | -4.2 | -0.22 | 16.19 |
| Stage 5 | -4.4 | 2.35 | 12.89 |
| Stage 5 | -4.6 | 4.22 | 9.32 |
| Stage 5 | -4.8 | 5.43 | 6.08 |
| Stage 5 | -5 | 6.11 | 3.41 |
| Stage 5 | -5.2 | 6.37 | 1.29 |
| Stage 5 | -5.4 | 6.31 | -0.32 |
| Stage 5 | -5.6 | 6.01 | -1.49 |
| Stage 5 | -5.8 | 5.56 | -2.27 |
| Stage 5 | -6 | 5 | -2.76 |
| Stage 5 | -6.2 | 4.4 | -3.01 |
| Stage 5 | -6.4 | 3.79 | -3.07 |
| Stage 5 | -6.6 | 3.19 | -2.99 |
| Stage 5 | -6.8 | 2.63 | -2.81 |
| Stage 5 | -7 | 2.11 | -2.56 |
| Stage 5 | -7.2 | 1.66 | -2.27 |
| Stage 5 | -7.4 | 1.27 | -1.96 |
| Stage 5 | -7.6 | 0.94 | -1.65 |
| Stage 5 | -7.8 | 0.67 | -1.35 |
| Stage 5 | -8 | 0.46 | -1.08 |
| Stage 5 | -8.2 | 0.29 | -0.83 |
| Stage 5 | -8.4 | 0.17 | -0.61 |
| Stage 5 | -8.6 | 0.08 | -0.43 |
| Stage 5 | -8.8 | 0.03 | -0.27 |
| Stage 5 | -9 | 0 | -0.15 |
| Stage 5 | -9.2 | -0.02 | -0.06 |
| Stage 5 | -9.4 | -0.02 | 0 |
| Stage 5 | -9.6 | -0.01 | 0.03 |
| Stage 5 | -9.8 | 0 | 0.04 |
| Stage 5 | -10 | 0 | 0.02 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 6

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | | |
|---|-------|------------------|---------------|--|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 6 | 0 | 0 | 15.13 | |
| Stage 6 | -0.2 | 3.03 | 15.13 | |
| Stage 6 | -0.4 | 6.05 | 15.13 | |
| Stage 6 | -0.6 | 9.08 | 15.13 | |
| Stage 6 | -0.8 | 12.1 | 15.13 | |
| Stage 6 | -1 | 15.13 | 15.13 | |
| Stage 6 | -1.2 | 18.15 | 15.13 | |
| Stage 6 | -1.4 | 21.18 | 15.13 | |
| Stage 6 | -1.6 | 24.2 | 15.13 | |
| Stage 6 | -1.8 | 27.23 | 15.13 | |
| Stage 6 | -2 | 30.18 | 14.75 | |
| Stage 6 | -2.2 | 32.98 | 14 | |
| Stage 6 | -2.4 | 35.55 | 12.89 | |
| Stage 6 | -2.6 | 37.84 | 11.42 | |
| Stage 6 | -2.8 | 39.75 | 9.58 | |
| Stage 6 | -3 | 41.23 | 7.39 | |
| Stage 6 | -3.2 | 42.2 | 4.84 | |
| Stage 6 | -3.4 | 42.58 | 1.92 | |
| Stage 6 | -3.6 | 42.31 | -1.35 | |
| Stage 6 | -3.8 | 41.32 | -4.97 | |
| Stage 6 | -4 | 39.53 | -8.95 | |
| Stage 6 | -4.2 | 36.88 | -13.26 | |
| Stage 6 | -4.4 | 33.29 | -17.93 | |
| Stage 6 | -4.6 | 28.7 | -22.95 | |
| Stage 6 | -4.8 | 23.03 | -28.32 | |
| Stage 6 | -5 | 16.22 | -34.04 | |
| Stage 6 | -5.2 | 8.2 | -40.11 | |
| Stage 6 | -5.4 | -1.1 | -46.53 | |
| Stage 6 | -5.6 | -9.24 | -40.69 | |
| Stage 6 | -5.8 | -15.7 | -32.28 | |
| Stage 6 | -6 | -20.55 | -24.28 | |
| Stage 6 | -6.2 | -23.89 | -16.69 | |
| Stage 6 | -6.4 | -25.84 | -9.74 | |
| Stage 6 | -6.6 | -26.53 | -3.46 | |
| Stage 6 | -6.8 | -26.08 | 2.23 | |
| Stage 6 | -7 | -24.75 | 6.69 | |
| Stage 6 | -7.2 | -22.79 | 9.76 | |
| Stage 6 | -7.4 | -20.45 | 11.69 | |
| Stage 6 | -7.6 | -17.92 | 12.69 | |
| Stage 6 | -7.8 | -15.33 | 12.96 | |
| Stage 6 | -8 | -12.79 | 12.66 | |
| Stage 6 | -8.2 | -10.4 | 11.96 | |
| Stage 6 | -8.4 | -8.21 | 10.96 | |
| Stage 6 | -8.6 | -6.26 | 9.77 | |
| Stage 6 | -8.8 | -4.56 | 8.48 | |
| Stage 6 | -9 | -3.14 | 7.12 | |
| Stage 6 | -9.2 | -1.98 | 5.76 | |
| Stage 6 | -9.4 | -1.1 | 4.41 | |
| Stage 6 | -9.6 | -0.48 | 3.09 | |
| Stage 6 | -9.8 | -0.12 | 1.82 | |
| Stage 6 | -10 | 0 | 0.59 | |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 6

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | -15.13 |
| Stage 6 | -0.2 | -3.03 | -15.13 |
| Stage 6 | -0.4 | -6.05 | -15.13 |
| Stage 6 | -0.6 | -9.08 | -15.13 |
| Stage 6 | -0.8 | -12.1 | -15.13 |
| Stage 6 | -1 | -15.13 | -15.13 |
| Stage 6 | -1.2 | -18.15 | -15.13 |
| Stage 6 | -1.4 | -21.18 | -15.13 |
| Stage 6 | -1.6 | -24.2 | -15.13 |
| Stage 6 | -1.8 | -27.23 | -15.13 |
| Stage 6 | -2 | -30.18 | -14.75 |
| Stage 6 | -2.2 | -32.98 | -14 |
| Stage 6 | -2.4 | -35.55 | -12.89 |
| Stage 6 | -2.6 | -37.84 | -11.42 |
| Stage 6 | -2.8 | -39.75 | -9.58 |
| Stage 6 | -3 | -41.23 | -7.39 |
| Stage 6 | -3.2 | -42.2 | -4.84 |
| Stage 6 | -3.4 | -42.58 | -1.92 |
| Stage 6 | -3.6 | -42.31 | 1.35 |
| Stage 6 | -3.8 | -41.32 | 4.97 |
| Stage 6 | -4 | -39.53 | 8.95 |
| Stage 6 | -4.2 | -36.88 | 13.26 |
| Stage 6 | -4.4 | -33.29 | 17.93 |
| Stage 6 | -4.6 | -28.7 | 22.95 |
| Stage 6 | -4.8 | -23.03 | 28.32 |
| Stage 6 | -5 | -16.22 | 34.04 |
| Stage 6 | -5.2 | -8.2 | 40.11 |
| Stage 6 | -5.4 | 1.1 | 46.53 |
| Stage 6 | -5.6 | 9.24 | 40.69 |
| Stage 6 | -5.8 | 15.7 | 32.28 |
| Stage 6 | -6 | 20.55 | 24.28 |
| Stage 6 | -6.2 | 23.89 | 16.69 |
| Stage 6 | -6.4 | 25.84 | 9.74 |
| Stage 6 | -6.6 | 26.53 | 3.46 |
| Stage 6 | -6.8 | 26.08 | -2.23 |
| Stage 6 | -7 | 24.75 | -6.69 |
| Stage 6 | -7.2 | 22.79 | -9.76 |
| Stage 6 | -7.4 | 20.45 | -11.69 |
| Stage 6 | -7.6 | 17.92 | -12.69 |
| Stage 6 | -7.8 | 15.33 | -12.96 |
| Stage 6 | -8 | 12.79 | -12.66 |
| Stage 6 | -8.2 | 10.4 | -11.96 |
| Stage 6 | -8.4 | 8.21 | -10.96 |
| Stage 6 | -8.6 | 6.26 | -9.77 |
| Stage 6 | -8.8 | 4.56 | -8.48 |
| Stage 6 | -9 | 3.14 | -7.12 |
| Stage 6 | -9.2 | 1.98 | -5.76 |
| Stage 6 | -9.4 | 1.1 | -4.41 |
| Stage 6 | -9.6 | 0.48 | -3.09 |
| Stage 6 | -9.8 | 0.12 | -1.82 |
| Stage 6 | -10 | 0 | -0.59 |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Left Wall - Stage: Stage 7

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: LEFT | | |
|---|-------|------------------|---------------|--|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) | |
| Stage 7 | 0 | 0 | 19.29 | |
| Stage 7 | -0.2 | 3.86 | 19.29 | |
| Stage 7 | -0.4 | 7.71 | 19.29 | |
| Stage 7 | -0.6 | 11.57 | 19.29 | |
| Stage 7 | -0.8 | 15.43 | 19.29 | |
| Stage 7 | -1 | 19.29 | 19.29 | |
| Stage 7 | -1.2 | 23.14 | 19.29 | |
| Stage 7 | -1.4 | 27 | 19.29 | |
| Stage 7 | -1.6 | 30.86 | 19.29 | |
| Stage 7 | -1.8 | 34.71 | 19.29 | |
| Stage 7 | -2 | 38.5 | 18.91 | |
| Stage 7 | -2.2 | 42.13 | 18.16 | |
| Stage 7 | -2.4 | 45.54 | 17.05 | |
| Stage 7 | -2.6 | 48.66 | 15.58 | |
| Stage 7 | -2.8 | 51.4 | 13.74 | |
| Stage 7 | -3 | 53.71 | 11.55 | |
| Stage 7 | -3.2 | 55.51 | 9 | |
| Stage 7 | -3.4 | 56.73 | 6.08 | |
| Stage 7 | -3.6 | 57.29 | 2.81 | |
| Stage 7 | -3.8 | 57.13 | -0.81 | |
| Stage 7 | -4 | 56.17 | -4.79 | |
| Stage 7 | -4.2 | 54.35 | -9.1 | |
| Stage 7 | -4.4 | 51.59 | -13.77 | |
| Stage 7 | -4.6 | 47.84 | -18.79 | |
| Stage 7 | -4.8 | 43 | -24.16 | |
| Stage 7 | -5 | 37.03 | -29.88 | |
| Stage 7 | -5.2 | 29.84 | -35.95 | |
| Stage 7 | -5.4 | 21.36 | -42.37 | |
| Stage 7 | -5.6 | 11.54 | -49.14 | |
| Stage 7 | -5.8 | 0.29 | -56.24 | |
| Stage 7 | -6 | -10.23 | -52.57 | |
| Stage 7 | -6.2 | -19.47 | -46.23 | |
| Stage 7 | -6.4 | -26.91 | -37.2 | |
| Stage 7 | -6.6 | -32.3 | -26.95 | |
| Stage 7 | -6.8 | -35.8 | -17.5 | |
| Stage 7 | -7 | -37.56 | -8.79 | |
| Stage 7 | -7.2 | -37.73 | -0.82 | |
| Stage 7 | -7.4 | -36.49 | 6.15 | |
| Stage 7 | -7.6 | -34.04 | 12.28 | |
| Stage 7 | -7.8 | -30.75 | 16.45 | |
| Stage 7 | -8 | -26.95 | 18.97 | |
| Stage 7 | -8.2 | -22.92 | 20.16 | |
| Stage 7 | -8.4 | -18.87 | 20.27 | |
| Stage 7 | -8.6 | -14.97 | 19.53 | |
| Stage 7 | -8.8 | -11.34 | 18.12 | |
| Stage 7 | -9 | -8.1 | 16.21 | |
| Stage 7 | -9.2 | -5.32 | 13.89 | |
| Stage 7 | -9.4 | -3.07 | 11.26 | |
| Stage 7 | -9.6 | -1.4 | 8.35 | |
| Stage 7 | -9.8 | -0.36 | 5.19 | |
| Stage 7 | -10 | 0 | 1.81 | |

Tabella Risultati Paratia NTC2018: A1+M1+R1 (R3 per tiranti) - Right wall - Stage: Stage 7

| Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Risultati Paratia | | Muro: RIGHT | |
|---|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | -19.29 |
| Stage 7 | -0.2 | -3.86 | -19.29 |
| Stage 7 | -0.4 | -7.71 | -19.29 |
| Stage 7 | -0.6 | -11.57 | -19.29 |
| Stage 7 | -0.8 | -15.43 | -19.29 |
| Stage 7 | -1 | -19.29 | -19.29 |
| Stage 7 | -1.2 | -23.14 | -19.29 |
| Stage 7 | -1.4 | -27 | -19.29 |
| Stage 7 | -1.6 | -30.86 | -19.29 |
| Stage 7 | -1.8 | -34.71 | -19.29 |
| Stage 7 | -2 | -38.5 | -18.91 |
| Stage 7 | -2.2 | -42.13 | -18.16 |
| Stage 7 | -2.4 | -45.54 | -17.05 |
| Stage 7 | -2.6 | -48.66 | -15.58 |
| Stage 7 | -2.8 | -51.4 | -13.74 |
| Stage 7 | -3 | -53.71 | -11.55 |
| Stage 7 | -3.2 | -55.51 | -9 |
| Stage 7 | -3.4 | -56.73 | -6.08 |
| Stage 7 | -3.6 | -57.29 | -2.81 |
| Stage 7 | -3.8 | -57.13 | 0.81 |
| Stage 7 | -4 | -56.17 | 4.79 |
| Stage 7 | -4.2 | -54.35 | 9.1 |
| Stage 7 | -4.4 | -51.59 | 13.77 |
| Stage 7 | -4.6 | -47.84 | 18.79 |
| Stage 7 | -4.8 | -43 | 24.16 |
| Stage 7 | -5 | -37.03 | 29.88 |
| Stage 7 | -5.2 | -29.84 | 35.95 |
| Stage 7 | -5.4 | -21.36 | 42.37 |
| Stage 7 | -5.6 | -11.54 | 49.14 |
| Stage 7 | -5.8 | -0.29 | 56.24 |
| Stage 7 | -6 | 10.23 | 52.57 |
| Stage 7 | -6.2 | 19.47 | 46.23 |
| Stage 7 | -6.4 | 26.91 | 37.2 |
| Stage 7 | -6.6 | 32.3 | 26.95 |
| Stage 7 | -6.8 | 35.8 | 17.5 |
| Stage 7 | -7 | 37.56 | 8.79 |
| Stage 7 | -7.2 | 37.73 | 0.82 |
| Stage 7 | -7.4 | 36.49 | -6.15 |
| Stage 7 | -7.6 | 34.04 | -12.28 |
| Stage 7 | -7.8 | 30.75 | -16.45 |
| Stage 7 | -8 | 26.95 | -18.97 |
| Stage 7 | -8.2 | 22.92 | -20.16 |
| Stage 7 | -8.4 | 18.87 | -20.27 |
| Stage 7 | -8.6 | 14.97 | -19.53 |
| Stage 7 | -8.8 | 11.34 | -18.12 |
| Stage 7 | -9 | 8.1 | -16.21 |
| Stage 7 | -9.2 | 5.32 | -13.89 |
| Stage 7 | -9.4 | 3.07 | -11.26 |
| Stage 7 | -9.6 | 1.4 | -8.35 |
| Stage 7 | -9.8 | 0.36 | -5.19 |
| Stage 7 | -10 | 0 | -1.81 |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE
RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 336 di 386 |

Risultati Elementi strutturali - NTC2018: A1+M1+R1 (R3 per tiranti)

Design Assumption: NTC2018: A1+M1+R1 (R3 per tiranti) Sollecitazione Strut

| Stage | Forza (kN/m) |
|---------|--------------|
| Stage 3 | 0 |
| Stage 4 | -3.0042766 |
| Stage 5 | -6.1086727 |
| Stage 6 | -15.125279 |
| Stage 7 | -19.28563 |

Risultati NTC2018: A2+M2+R1

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 0

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 0

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 0 | 0 | 0 | 0 |
| Stage 0 | -0.2 | 0 | 0 |
| Stage 0 | -0.4 | 0 | 0 |
| Stage 0 | -0.6 | 0 | 0 |
| Stage 0 | -0.8 | 0 | 0 |
| Stage 0 | -1 | 0 | 0 |
| Stage 0 | -1.2 | 0 | 0 |
| Stage 0 | -1.4 | 0 | 0 |
| Stage 0 | -1.6 | 0 | 0 |
| Stage 0 | -1.8 | 0 | 0 |
| Stage 0 | -2 | 0 | 0 |
| Stage 0 | -2.2 | 0 | 0 |
| Stage 0 | -2.4 | 0 | 0 |
| Stage 0 | -2.6 | 0 | 0 |
| Stage 0 | -2.8 | 0 | 0 |
| Stage 0 | -3 | 0 | 0 |
| Stage 0 | -3.2 | 0 | 0 |
| Stage 0 | -3.4 | 0 | 0 |
| Stage 0 | -3.6 | 0 | 0 |
| Stage 0 | -3.8 | 0 | 0 |
| Stage 0 | -4 | 0 | 0 |
| Stage 0 | -4.2 | 0 | 0 |
| Stage 0 | -4.4 | 0 | 0 |
| Stage 0 | -4.6 | 0 | 0 |
| Stage 0 | -4.8 | 0 | 0 |
| Stage 0 | -5 | 0 | 0 |
| Stage 0 | -5.2 | 0 | 0 |
| Stage 0 | -5.4 | 0 | 0 |
| Stage 0 | -5.6 | 0 | 0 |
| Stage 0 | -5.8 | 0 | 0 |
| Stage 0 | -6 | 0 | 0 |
| Stage 0 | -6.2 | 0 | 0 |
| Stage 0 | -6.4 | 0 | 0 |
| Stage 0 | -6.6 | 0 | 0 |
| Stage 0 | -6.8 | 0 | 0 |
| Stage 0 | -7 | 0 | 0 |
| Stage 0 | -7.2 | 0 | 0 |
| Stage 0 | -7.4 | 0 | 0 |
| Stage 0 | -7.6 | 0 | 0 |
| Stage 0 | -7.8 | 0 | 0 |
| Stage 0 | -8 | 0 | 0 |
| Stage 0 | -8.2 | 0 | 0 |
| Stage 0 | -8.4 | 0 | 0 |
| Stage 0 | -8.6 | 0 | 0 |
| Stage 0 | -8.8 | 0 | 0 |
| Stage 0 | -9 | 0 | 0 |
| Stage 0 | -9.2 | 0 | 0 |
| Stage 0 | -9.4 | 0 | 0 |
| Stage 0 | -9.6 | 0 | 0 |
| Stage 0 | -9.8 | 0 | 0 |
| Stage 0 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 1

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | 0.01 | 0.06 |
| Stage 1 | -0.6 | 0.04 | 0.12 |
| Stage 1 | -0.8 | 0.07 | 0.17 |
| Stage 1 | -1 | 0.11 | 0.18 |
| Stage 1 | -1.2 | 0.14 | 0.14 |
| Stage 1 | -1.4 | 0.15 | 0.09 |
| Stage 1 | -1.6 | 0.16 | 0.04 |
| Stage 1 | -1.8 | 0.16 | -0.01 |
| Stage 1 | -2 | 0.15 | -0.04 |
| Stage 1 | -2.2 | 0.14 | -0.06 |
| Stage 1 | -2.4 | 0.12 | -0.08 |
| Stage 1 | -2.6 | 0.11 | -0.08 |
| Stage 1 | -2.8 | 0.09 | -0.08 |
| Stage 1 | -3 | 0.08 | -0.07 |
| Stage 1 | -3.2 | 0.07 | -0.05 |
| Stage 1 | -3.4 | 0.06 | -0.05 |
| Stage 1 | -3.6 | 0.05 | -0.04 |
| Stage 1 | -3.8 | 0.04 | -0.03 |
| Stage 1 | -4 | 0.04 | -0.02 |
| Stage 1 | -4.2 | 0.04 | -0.01 |
| Stage 1 | -4.4 | 0.04 | 0.01 |
| Stage 1 | -4.6 | 0.04 | 0.02 |
| Stage 1 | -4.8 | 0.05 | 0.03 |
| Stage 1 | -5 | 0.05 | 0.03 |
| Stage 1 | -5.2 | 0.06 | 0.02 |
| Stage 1 | -5.4 | 0.06 | 0.01 |
| Stage 1 | -5.6 | 0.06 | -0.01 |
| Stage 1 | -5.8 | 0.05 | -0.04 |
| Stage 1 | -6 | 0.04 | -0.05 |
| Stage 1 | -6.2 | 0.03 | -0.05 |
| Stage 1 | -6.4 | 0.02 | -0.05 |
| Stage 1 | -6.6 | 0.01 | -0.05 |
| Stage 1 | -6.8 | 0 | -0.04 |
| Stage 1 | -7 | 0 | -0.03 |
| Stage 1 | -7.2 | -0.01 | -0.02 |
| Stage 1 | -7.4 | -0.01 | -0.02 |
| Stage 1 | -7.6 | -0.01 | -0.01 |
| Stage 1 | -7.8 | -0.01 | 0 |
| Stage 1 | -8 | -0.01 | 0 |
| Stage 1 | -8.2 | -0.01 | 0 |
| Stage 1 | -8.4 | -0.01 | 0.01 |
| Stage 1 | -8.6 | -0.01 | 0.01 |
| Stage 1 | -8.8 | -0.01 | 0.01 |
| Stage 1 | -9 | -0.01 | 0.01 |
| Stage 1 | -9.2 | -0.01 | 0.01 |
| Stage 1 | -9.4 | 0 | 0.01 |
| Stage 1 | -9.6 | 0 | 0.01 |
| Stage 1 | -9.8 | 0 | 0.01 |
| Stage 1 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 1

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 1 | 0 | 0 | 0 |
| Stage 1 | -0.2 | 0 | 0 |
| Stage 1 | -0.4 | -0.01 | -0.06 |
| Stage 1 | -0.6 | -0.04 | -0.12 |
| Stage 1 | -0.8 | -0.07 | -0.17 |
| Stage 1 | -1 | -0.11 | -0.18 |
| Stage 1 | -1.2 | -0.14 | -0.14 |
| Stage 1 | -1.4 | -0.15 | -0.09 |
| Stage 1 | -1.6 | -0.16 | -0.04 |
| Stage 1 | -1.8 | -0.16 | 0.01 |
| Stage 1 | -2 | -0.15 | 0.04 |
| Stage 1 | -2.2 | -0.14 | 0.06 |
| Stage 1 | -2.4 | -0.12 | 0.08 |
| Stage 1 | -2.6 | -0.11 | 0.08 |
| Stage 1 | -2.8 | -0.09 | 0.08 |
| Stage 1 | -3 | -0.08 | 0.07 |
| Stage 1 | -3.2 | -0.07 | 0.05 |
| Stage 1 | -3.4 | -0.06 | 0.05 |
| Stage 1 | -3.6 | -0.05 | 0.04 |
| Stage 1 | -3.8 | -0.04 | 0.03 |
| Stage 1 | -4 | -0.04 | 0.02 |
| Stage 1 | -4.2 | -0.04 | 0.01 |
| Stage 1 | -4.4 | -0.04 | -0.01 |
| Stage 1 | -4.6 | -0.04 | -0.02 |
| Stage 1 | -4.8 | -0.05 | -0.03 |
| Stage 1 | -5 | -0.05 | -0.03 |
| Stage 1 | -5.2 | -0.06 | -0.02 |
| Stage 1 | -5.4 | -0.06 | -0.01 |
| Stage 1 | -5.6 | -0.06 | 0.01 |
| Stage 1 | -5.8 | -0.05 | 0.04 |
| Stage 1 | -6 | -0.04 | 0.05 |
| Stage 1 | -6.2 | -0.03 | 0.05 |
| Stage 1 | -6.4 | -0.02 | 0.05 |
| Stage 1 | -6.6 | -0.01 | 0.05 |
| Stage 1 | -6.8 | 0 | 0.04 |
| Stage 1 | -7 | 0 | 0.03 |
| Stage 1 | -7.2 | 0.01 | 0.02 |
| Stage 1 | -7.4 | 0.01 | 0.02 |
| Stage 1 | -7.6 | 0.01 | 0.01 |
| Stage 1 | -7.8 | 0.01 | 0 |
| Stage 1 | -8 | 0.01 | 0 |
| Stage 1 | -8.2 | 0.01 | 0 |
| Stage 1 | -8.4 | 0.01 | -0.01 |
| Stage 1 | -8.6 | 0.01 | -0.01 |
| Stage 1 | -8.8 | 0.01 | -0.01 |
| Stage 1 | -9 | 0.01 | -0.01 |
| Stage 1 | -9.2 | 0.01 | -0.01 |
| Stage 1 | -9.4 | 0 | -0.01 |
| Stage 1 | -9.6 | 0 | -0.01 |
| Stage 1 | -9.8 | 0 | -0.01 |
| Stage 1 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 2

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.8 | 0 | -0.01 |
| Stage 2 | -1 | -0.12 | -0.57 |
| Stage 2 | -1.2 | -0.24 | -0.64 |
| Stage 2 | -1.4 | -0.31 | -0.35 |
| Stage 2 | -1.6 | -0.33 | -0.11 |
| Stage 2 | -1.8 | -0.32 | 0.07 |
| Stage 2 | -2 | -0.29 | 0.18 |
| Stage 2 | -2.2 | -0.24 | 0.23 |
| Stage 2 | -2.4 | -0.19 | 0.25 |
| Stage 2 | -2.6 | -0.14 | 0.25 |
| Stage 2 | -2.8 | -0.09 | 0.22 |
| Stage 2 | -3 | -0.06 | 0.19 |
| Stage 2 | -3.2 | -0.02 | 0.16 |
| Stage 2 | -3.4 | 0 | 0.12 |
| Stage 2 | -3.6 | 0.02 | 0.09 |
| Stage 2 | -3.8 | 0.03 | 0.06 |
| Stage 2 | -4 | 0.04 | 0.04 |
| Stage 2 | -4.2 | 0.04 | 0.03 |
| Stage 2 | -4.4 | 0.05 | 0.03 |
| Stage 2 | -4.6 | 0.06 | 0.02 |
| Stage 2 | -4.8 | 0.06 | 0.02 |
| Stage 2 | -5 | 0.06 | 0.02 |
| Stage 2 | -5.2 | 0.07 | 0.01 |
| Stage 2 | -5.4 | 0.07 | 0 |
| Stage 2 | -5.6 | 0.06 | -0.02 |
| Stage 2 | -5.8 | 0.05 | -0.05 |
| Stage 2 | -6 | 0.04 | -0.06 |
| Stage 2 | -6.2 | 0.03 | -0.06 |
| Stage 2 | -6.4 | 0.02 | -0.05 |
| Stage 2 | -6.6 | 0.01 | -0.05 |
| Stage 2 | -6.8 | 0 | -0.04 |
| Stage 2 | -7 | -0.01 | -0.03 |
| Stage 2 | -7.2 | -0.01 | -0.02 |
| Stage 2 | -7.4 | -0.01 | -0.02 |
| Stage 2 | -7.6 | -0.02 | -0.01 |
| Stage 2 | -7.8 | -0.02 | 0 |
| Stage 2 | -8 | -0.02 | 0 |
| Stage 2 | -8.2 | -0.02 | 0 |
| Stage 2 | -8.4 | -0.01 | 0.01 |
| Stage 2 | -8.6 | -0.01 | 0.01 |
| Stage 2 | -8.8 | -0.01 | 0.01 |
| Stage 2 | -9 | -0.01 | 0.01 |
| Stage 2 | -9.2 | -0.01 | 0.01 |
| Stage 2 | -9.4 | 0 | 0.01 |
| Stage 2 | -9.6 | 0 | 0.01 |
| Stage 2 | -9.8 | 0 | 0.01 |
| Stage 2 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 2

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 2 | 0 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.2 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.4 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.6 | 0 | 0 |
| Stage 2 | -0.8 | 0 | 0.01 |
| Stage 2 | -1 | 0.12 | 0.57 |
| Stage 2 | -1.2 | 0.24 | 0.64 |
| Stage 2 | -1.4 | 0.31 | 0.35 |
| Stage 2 | -1.6 | 0.33 | 0.11 |
| Stage 2 | -1.8 | 0.32 | -0.07 |
| Stage 2 | -2 | 0.29 | -0.18 |
| Stage 2 | -2.2 | 0.24 | -0.23 |
| Stage 2 | -2.4 | 0.19 | -0.25 |
| Stage 2 | -2.6 | 0.14 | -0.25 |
| Stage 2 | -2.8 | 0.09 | -0.22 |
| Stage 2 | -3 | 0.06 | -0.19 |
| Stage 2 | -3.2 | 0.02 | -0.16 |
| Stage 2 | -3.4 | 0 | -0.12 |
| Stage 2 | -3.6 | -0.02 | -0.09 |
| Stage 2 | -3.8 | -0.03 | -0.06 |
| Stage 2 | -4 | -0.04 | -0.04 |
| Stage 2 | -4.2 | -0.04 | -0.03 |
| Stage 2 | -4.4 | -0.05 | -0.03 |
| Stage 2 | -4.6 | -0.06 | -0.02 |
| Stage 2 | -4.8 | -0.06 | -0.02 |
| Stage 2 | -5 | -0.06 | -0.02 |
| Stage 2 | -5.2 | -0.07 | -0.01 |
| Stage 2 | -5.4 | -0.07 | 0 |
| Stage 2 | -5.6 | -0.06 | 0.02 |
| Stage 2 | -5.8 | -0.05 | 0.05 |
| Stage 2 | -6 | -0.04 | 0.06 |
| Stage 2 | -6.2 | -0.03 | 0.06 |
| Stage 2 | -6.4 | -0.02 | 0.05 |
| Stage 2 | -6.6 | -0.01 | 0.05 |
| Stage 2 | -6.8 | 0 | 0.04 |
| Stage 2 | -7 | 0.01 | 0.03 |
| Stage 2 | -7.2 | 0.01 | 0.02 |
| Stage 2 | -7.4 | 0.01 | 0.02 |
| Stage 2 | -7.6 | 0.02 | 0.01 |
| Stage 2 | -7.8 | 0.02 | 0 |
| Stage 2 | -8 | 0.02 | 0 |
| Stage 2 | -8.2 | 0.02 | 0 |
| Stage 2 | -8.4 | 0.01 | -0.01 |
| Stage 2 | -8.6 | 0.01 | -0.01 |
| Stage 2 | -8.8 | 0.01 | -0.01 |
| Stage 2 | -9 | 0.01 | -0.01 |
| Stage 2 | -9.2 | 0.01 | -0.01 |
| Stage 2 | -9.4 | 0 | -0.01 |
| Stage 2 | -9.6 | 0 | -0.01 |
| Stage 2 | -9.8 | 0 | -0.01 |
| Stage 2 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 3

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 3 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.8 | 0 | -0.01 |
| Stage 3 | -1 | -0.12 | -0.57 |
| Stage 3 | -1.2 | -0.24 | -0.64 |
| Stage 3 | -1.4 | -0.31 | -0.35 |
| Stage 3 | -1.6 | -0.33 | -0.11 |
| Stage 3 | -1.8 | -0.32 | 0.07 |
| Stage 3 | -2 | -0.29 | 0.18 |
| Stage 3 | -2.2 | -0.24 | 0.23 |
| Stage 3 | -2.4 | -0.19 | 0.25 |
| Stage 3 | -2.6 | -0.14 | 0.25 |
| Stage 3 | -2.8 | -0.09 | 0.22 |
| Stage 3 | -3 | -0.06 | 0.19 |
| Stage 3 | -3.2 | -0.02 | 0.16 |
| Stage 3 | -3.4 | 0 | 0.12 |
| Stage 3 | -3.6 | 0.02 | 0.09 |
| Stage 3 | -3.8 | 0.03 | 0.06 |
| Stage 3 | -4 | 0.04 | 0.04 |
| Stage 3 | -4.2 | 0.04 | 0.03 |
| Stage 3 | -4.4 | 0.05 | 0.03 |
| Stage 3 | -4.6 | 0.06 | 0.02 |
| Stage 3 | -4.8 | 0.06 | 0.02 |
| Stage 3 | -5 | 0.06 | 0.02 |
| Stage 3 | -5.2 | 0.07 | 0.01 |
| Stage 3 | -5.4 | 0.07 | 0 |
| Stage 3 | -5.6 | 0.06 | -0.02 |
| Stage 3 | -5.8 | 0.05 | -0.05 |
| Stage 3 | -6 | 0.04 | -0.06 |
| Stage 3 | -6.2 | 0.03 | -0.06 |
| Stage 3 | -6.4 | 0.02 | -0.05 |
| Stage 3 | -6.6 | 0.01 | -0.05 |
| Stage 3 | -6.8 | 0 | -0.04 |
| Stage 3 | -7 | -0.01 | -0.03 |
| Stage 3 | -7.2 | -0.01 | -0.02 |
| Stage 3 | -7.4 | -0.01 | -0.02 |
| Stage 3 | -7.6 | -0.02 | -0.01 |
| Stage 3 | -7.8 | -0.02 | 0 |
| Stage 3 | -8 | -0.02 | 0 |
| Stage 3 | -8.2 | -0.02 | 0 |
| Stage 3 | -8.4 | -0.01 | 0.01 |
| Stage 3 | -8.6 | -0.01 | 0.01 |
| Stage 3 | -8.8 | -0.01 | 0.01 |
| Stage 3 | -9 | -0.01 | 0.01 |
| Stage 3 | -9.2 | -0.01 | 0.01 |
| Stage 3 | -9.4 | 0 | 0.01 |
| Stage 3 | -9.6 | 0 | 0.01 |
| Stage 3 | -9.8 | 0 | 0.01 |
| Stage 3 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 3

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 3 | 0 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.2 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.4 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.6 | 0 | 0 |
| Stage 3 | -0.8 | 0 | 0.01 |
| Stage 3 | -1 | 0.12 | 0.57 |
| Stage 3 | -1.2 | 0.24 | 0.64 |
| Stage 3 | -1.4 | 0.31 | 0.35 |
| Stage 3 | -1.6 | 0.33 | 0.11 |
| Stage 3 | -1.8 | 0.32 | -0.07 |
| Stage 3 | -2 | 0.29 | -0.18 |
| Stage 3 | -2.2 | 0.24 | -0.23 |
| Stage 3 | -2.4 | 0.19 | -0.25 |
| Stage 3 | -2.6 | 0.14 | -0.25 |
| Stage 3 | -2.8 | 0.09 | -0.22 |
| Stage 3 | -3 | 0.06 | -0.19 |
| Stage 3 | -3.2 | 0.02 | -0.16 |
| Stage 3 | -3.4 | 0 | -0.12 |
| Stage 3 | -3.6 | -0.02 | -0.09 |
| Stage 3 | -3.8 | -0.03 | -0.06 |
| Stage 3 | -4 | -0.04 | -0.04 |
| Stage 3 | -4.2 | -0.04 | -0.03 |
| Stage 3 | -4.4 | -0.05 | -0.03 |
| Stage 3 | -4.6 | -0.06 | -0.02 |
| Stage 3 | -4.8 | -0.06 | -0.02 |
| Stage 3 | -5 | -0.06 | -0.02 |
| Stage 3 | -5.2 | -0.07 | -0.01 |
| Stage 3 | -5.4 | -0.07 | 0 |
| Stage 3 | -5.6 | -0.06 | 0.02 |
| Stage 3 | -5.8 | -0.05 | 0.05 |
| Stage 3 | -6 | -0.04 | 0.06 |
| Stage 3 | -6.2 | -0.03 | 0.06 |
| Stage 3 | -6.4 | -0.02 | 0.05 |
| Stage 3 | -6.6 | -0.01 | 0.05 |
| Stage 3 | -6.8 | 0 | 0.04 |
| Stage 3 | -7 | 0.01 | 0.03 |
| Stage 3 | -7.2 | 0.01 | 0.02 |
| Stage 3 | -7.4 | 0.01 | 0.02 |
| Stage 3 | -7.6 | 0.02 | 0.01 |
| Stage 3 | -7.8 | 0.02 | 0 |
| Stage 3 | -8 | 0.02 | 0 |
| Stage 3 | -8.2 | 0.02 | 0 |
| Stage 3 | -8.4 | 0.01 | -0.01 |
| Stage 3 | -8.6 | 0.01 | -0.01 |
| Stage 3 | -8.8 | 0.01 | -0.01 |
| Stage 3 | -9 | 0.01 | -0.01 |
| Stage 3 | -9.2 | 0.01 | -0.01 |
| Stage 3 | -9.4 | 0 | -0.01 |
| Stage 3 | -9.6 | 0 | -0.01 |
| Stage 3 | -9.8 | 0 | -0.01 |
| Stage 3 | -10 | 0 | 0 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 4

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | 4.38 |
| Stage 4 | -0.2 | 0.88 | 4.38 |
| Stage 4 | -0.4 | 1.75 | 4.38 |
| Stage 4 | -0.6 | 2.63 | 4.38 |
| Stage 4 | -0.8 | 3.51 | 4.38 |
| Stage 4 | -1 | 4.38 | 4.38 |
| Stage 4 | -1.2 | 5.26 | 4.38 |
| Stage 4 | -1.4 | 6.11 | 4.25 |
| Stage 4 | -1.6 | 6.86 | 3.75 |
| Stage 4 | -1.8 | 7.44 | 2.89 |
| Stage 4 | -2 | 7.78 | 1.68 |
| Stage 4 | -2.2 | 7.8 | 0.13 |
| Stage 4 | -2.4 | 7.45 | -1.77 |
| Stage 4 | -2.6 | 6.65 | -4 |
| Stage 4 | -2.8 | 5.33 | -6.57 |
| Stage 4 | -3 | 3.44 | -9.46 |
| Stage 4 | -3.2 | 1.65 | -8.96 |
| Stage 4 | -3.4 | 0.16 | -7.46 |
| Stage 4 | -3.6 | -1 | -5.8 |
| Stage 4 | -3.8 | -1.82 | -4.09 |
| Stage 4 | -4 | -2.33 | -2.58 |
| Stage 4 | -4.2 | -2.6 | -1.34 |
| Stage 4 | -4.4 | -2.68 | -0.38 |
| Stage 4 | -4.6 | -2.61 | 0.34 |
| Stage 4 | -4.8 | -2.44 | 0.85 |
| Stage 4 | -5 | -2.21 | 1.17 |
| Stage 4 | -5.2 | -1.94 | 1.35 |
| Stage 4 | -5.4 | -1.65 | 1.41 |
| Stage 4 | -5.6 | -1.38 | 1.37 |
| Stage 4 | -5.8 | -1.12 | 1.28 |
| Stage 4 | -6 | -0.89 | 1.15 |
| Stage 4 | -6.2 | -0.69 | 1.01 |
| Stage 4 | -6.4 | -0.52 | 0.87 |
| Stage 4 | -6.6 | -0.37 | 0.73 |
| Stage 4 | -6.8 | -0.25 | 0.59 |
| Stage 4 | -7 | -0.16 | 0.47 |
| Stage 4 | -7.2 | -0.09 | 0.36 |
| Stage 4 | -7.4 | -0.03 | 0.26 |
| Stage 4 | -7.6 | 0 | 0.18 |
| Stage 4 | -7.8 | 0.03 | 0.12 |
| Stage 4 | -8 | 0.04 | 0.07 |
| Stage 4 | -8.2 | 0.05 | 0.03 |
| Stage 4 | -8.4 | 0.05 | 0 |
| Stage 4 | -8.6 | 0.04 | -0.02 |
| Stage 4 | -8.8 | 0.03 | -0.03 |
| Stage 4 | -9 | 0.03 | -0.04 |
| Stage 4 | -9.2 | 0.02 | -0.04 |
| Stage 4 | -9.4 | 0.01 | -0.04 |
| Stage 4 | -9.6 | 0.01 | -0.03 |
| Stage 4 | -9.8 | 0 | -0.02 |
| Stage 4 | -10 | 0 | -0.01 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 4

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 4 | 0 | 0 | -4.38 |
| Stage 4 | -0.2 | -0.88 | -4.38 |
| Stage 4 | -0.4 | -1.75 | -4.38 |
| Stage 4 | -0.6 | -2.63 | -4.38 |
| Stage 4 | -0.8 | -3.51 | -4.38 |
| Stage 4 | -1 | -4.38 | -4.38 |
| Stage 4 | -1.2 | -5.26 | -4.38 |
| Stage 4 | -1.4 | -6.11 | -4.25 |
| Stage 4 | -1.6 | -6.86 | -3.75 |
| Stage 4 | -1.8 | -7.44 | -2.89 |
| Stage 4 | -2 | -7.78 | -1.68 |
| Stage 4 | -2.2 | -7.8 | -0.13 |
| Stage 4 | -2.4 | -7.45 | 1.77 |
| Stage 4 | -2.6 | -6.65 | 4 |
| Stage 4 | -2.8 | -5.33 | 6.57 |
| Stage 4 | -3 | -3.44 | 9.46 |
| Stage 4 | -3.2 | -1.65 | 8.96 |
| Stage 4 | -3.4 | -0.16 | 7.46 |
| Stage 4 | -3.6 | 1 | 5.8 |
| Stage 4 | -3.8 | 1.82 | 4.09 |
| Stage 4 | -4 | 2.33 | 2.58 |
| Stage 4 | -4.2 | 2.6 | 1.34 |
| Stage 4 | -4.4 | 2.68 | 0.38 |
| Stage 4 | -4.6 | 2.61 | -0.34 |
| Stage 4 | -4.8 | 2.44 | -0.85 |
| Stage 4 | -5 | 2.21 | -1.17 |
| Stage 4 | -5.2 | 1.94 | -1.35 |
| Stage 4 | -5.4 | 1.65 | -1.41 |
| Stage 4 | -5.6 | 1.38 | -1.37 |
| Stage 4 | -5.8 | 1.12 | -1.28 |
| Stage 4 | -6 | 0.89 | -1.15 |
| Stage 4 | -6.2 | 0.69 | -1.01 |
| Stage 4 | -6.4 | 0.52 | -0.87 |
| Stage 4 | -6.6 | 0.37 | -0.73 |
| Stage 4 | -6.8 | 0.25 | -0.59 |
| Stage 4 | -7 | 0.16 | -0.47 |
| Stage 4 | -7.2 | 0.09 | -0.36 |
| Stage 4 | -7.4 | 0.03 | -0.26 |
| Stage 4 | -7.6 | 0 | -0.18 |
| Stage 4 | -7.8 | -0.03 | -0.12 |
| Stage 4 | -8 | -0.04 | -0.07 |
| Stage 4 | -8.2 | -0.05 | -0.03 |
| Stage 4 | -8.4 | -0.05 | 0 |
| Stage 4 | -8.6 | -0.04 | 0.02 |
| Stage 4 | -8.8 | -0.03 | 0.03 |
| Stage 4 | -9 | -0.03 | 0.04 |
| Stage 4 | -9.2 | -0.02 | 0.04 |
| Stage 4 | -9.4 | -0.01 | 0.04 |
| Stage 4 | -9.6 | -0.01 | 0.03 |
| Stage 4 | -9.8 | 0 | 0.02 |
| Stage 4 | -10 | 0 | 0.01 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 5

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 5 | 0 | 0 | 10.59 |
| Stage 5 | -0.2 | 2.12 | 10.59 |
| Stage 5 | -0.4 | 4.24 | 10.59 |
| Stage 5 | -0.6 | 6.36 | 10.59 |
| Stage 5 | -0.8 | 8.48 | 10.59 |
| Stage 5 | -1 | 10.59 | 10.59 |
| Stage 5 | -1.2 | 12.71 | 10.59 |
| Stage 5 | -1.4 | 14.81 | 10.46 |
| Stage 5 | -1.6 | 16.8 | 9.96 |
| Stage 5 | -1.8 | 18.62 | 9.1 |
| Stage 5 | -2 | 20.2 | 7.89 |
| Stage 5 | -2.2 | 21.46 | 6.33 |
| Stage 5 | -2.4 | 22.35 | 4.44 |
| Stage 5 | -2.6 | 22.79 | 2.21 |
| Stage 5 | -2.8 | 22.72 | -0.36 |
| Stage 5 | -3 | 22.07 | -3.25 |
| Stage 5 | -3.2 | 20.77 | -6.48 |
| Stage 5 | -3.4 | 18.76 | -10.05 |
| Stage 5 | -3.6 | 15.98 | -13.94 |
| Stage 5 | -3.8 | 12.34 | -18.16 |
| Stage 5 | -4 | 7.8 | -22.7 |
| Stage 5 | -4.2 | 3.33 | -22.35 |
| Stage 5 | -4.4 | -0.77 | -20.53 |
| Stage 5 | -4.6 | -4.22 | -17.22 |
| Stage 5 | -4.8 | -6.89 | -13.34 |
| Stage 5 | -5 | -8.83 | -9.73 |
| Stage 5 | -5.2 | -10.11 | -6.37 |
| Stage 5 | -5.4 | -10.79 | -3.43 |
| Stage 5 | -5.6 | -10.97 | -0.88 |
| Stage 5 | -5.8 | -10.7 | 1.36 |
| Stage 5 | -6 | -10.06 | 3.19 |
| Stage 5 | -6.2 | -9.18 | 4.4 |
| Stage 5 | -6.4 | -8.16 | 5.1 |
| Stage 5 | -6.6 | -7.08 | 5.39 |
| Stage 5 | -6.8 | -6 | 5.38 |
| Stage 5 | -7 | -4.97 | 5.14 |
| Stage 5 | -7.2 | -4.03 | 4.74 |
| Stage 5 | -7.4 | -3.18 | 4.25 |
| Stage 5 | -7.6 | -2.44 | 3.7 |
| Stage 5 | -7.8 | -1.81 | 3.14 |
| Stage 5 | -8 | -1.29 | 2.59 |
| Stage 5 | -8.2 | -0.88 | 2.06 |
| Stage 5 | -8.4 | -0.56 | 1.59 |
| Stage 5 | -8.6 | -0.33 | 1.17 |
| Stage 5 | -8.8 | -0.16 | 0.81 |
| Stage 5 | -9 | -0.06 | 0.51 |
| Stage 5 | -9.2 | -0.01 | 0.28 |
| Stage 5 | -9.4 | 0.02 | 0.11 |
| Stage 5 | -9.6 | 0.02 | 0 |
| Stage 5 | -9.8 | 0.01 | -0.05 |
| Stage 5 | -10 | 0 | -0.04 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 5

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 5 | 0 | 0 | -10.59 |
| Stage 5 | -0.2 | -2.12 | -10.59 |
| Stage 5 | -0.4 | -4.24 | -10.59 |
| Stage 5 | -0.6 | -6.36 | -10.59 |
| Stage 5 | -0.8 | -8.48 | -10.59 |
| Stage 5 | -1 | -10.59 | -10.59 |
| Stage 5 | -1.2 | -12.71 | -10.59 |
| Stage 5 | -1.4 | -14.81 | -10.46 |
| Stage 5 | -1.6 | -16.8 | -9.96 |
| Stage 5 | -1.8 | -18.62 | -9.1 |
| Stage 5 | -2 | -20.2 | -7.89 |
| Stage 5 | -2.2 | -21.46 | -6.33 |
| Stage 5 | -2.4 | -22.35 | -4.44 |
| Stage 5 | -2.6 | -22.79 | -2.21 |
| Stage 5 | -2.8 | -22.72 | 0.36 |
| Stage 5 | -3 | -22.07 | 3.25 |
| Stage 5 | -3.2 | -20.77 | 6.48 |
| Stage 5 | -3.4 | -18.76 | 10.05 |
| Stage 5 | -3.6 | -15.98 | 13.94 |
| Stage 5 | -3.8 | -12.34 | 18.16 |
| Stage 5 | -4 | -7.8 | 22.7 |
| Stage 5 | -4.2 | -3.33 | 22.35 |
| Stage 5 | -4.4 | 0.77 | 20.53 |
| Stage 5 | -4.6 | 4.22 | 17.22 |
| Stage 5 | -4.8 | 6.89 | 13.34 |
| Stage 5 | -5 | 8.83 | 9.73 |
| Stage 5 | -5.2 | 10.11 | 6.37 |
| Stage 5 | -5.4 | 10.79 | 3.43 |
| Stage 5 | -5.6 | 10.97 | 0.88 |
| Stage 5 | -5.8 | 10.7 | -1.36 |
| Stage 5 | -6 | 10.06 | -3.19 |
| Stage 5 | -6.2 | 9.18 | -4.4 |
| Stage 5 | -6.4 | 8.16 | -5.1 |
| Stage 5 | -6.6 | 7.08 | -5.39 |
| Stage 5 | -6.8 | 6 | -5.38 |
| Stage 5 | -7 | 4.97 | -5.14 |
| Stage 5 | -7.2 | 4.03 | -4.74 |
| Stage 5 | -7.4 | 3.18 | -4.25 |
| Stage 5 | -7.6 | 2.44 | -3.7 |
| Stage 5 | -7.8 | 1.81 | -3.14 |
| Stage 5 | -8 | 1.29 | -2.59 |
| Stage 5 | -8.2 | 0.88 | -2.06 |
| Stage 5 | -8.4 | 0.56 | -1.59 |
| Stage 5 | -8.6 | 0.33 | -1.17 |
| Stage 5 | -8.8 | 0.16 | -0.81 |
| Stage 5 | -9 | 0.06 | -0.51 |
| Stage 5 | -9.2 | 0.01 | -0.28 |
| Stage 5 | -9.4 | -0.02 | -0.11 |
| Stage 5 | -9.6 | -0.02 | 0 |
| Stage 5 | -9.8 | -0.01 | 0.05 |
| Stage 5 | -10 | 0 | 0.04 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 6

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | 24.33 |
| Stage 6 | -0.2 | 4.87 | 24.33 |
| Stage 6 | -0.4 | 9.73 | 24.33 |
| Stage 6 | -0.6 | 14.6 | 24.33 |
| Stage 6 | -0.8 | 19.46 | 24.33 |
| Stage 6 | -1 | 24.33 | 24.33 |
| Stage 6 | -1.2 | 29.19 | 24.33 |
| Stage 6 | -1.4 | 34.03 | 24.19 |
| Stage 6 | -1.6 | 38.77 | 23.69 |
| Stage 6 | -1.8 | 43.34 | 22.83 |
| Stage 6 | -2 | 47.66 | 21.62 |
| Stage 6 | -2.2 | 51.67 | 20.07 |
| Stage 6 | -2.4 | 55.31 | 18.17 |
| Stage 6 | -2.6 | 58.5 | 15.94 |
| Stage 6 | -2.8 | 61.17 | 13.38 |
| Stage 6 | -3 | 63.27 | 10.48 |
| Stage 6 | -3.2 | 64.72 | 7.25 |
| Stage 6 | -3.4 | 65.46 | 3.68 |
| Stage 6 | -3.6 | 65.41 | -0.21 |
| Stage 6 | -3.8 | 64.53 | -4.43 |
| Stage 6 | -4 | 62.73 | -8.97 |
| Stage 6 | -4.2 | 59.97 | -13.83 |
| Stage 6 | -4.4 | 56.17 | -19.01 |
| Stage 6 | -4.6 | 51.26 | -24.52 |
| Stage 6 | -4.8 | 45.19 | -30.35 |
| Stage 6 | -5 | 37.89 | -36.5 |
| Stage 6 | -5.2 | 29.29 | -42.98 |
| Stage 6 | -5.4 | 19.34 | -49.78 |
| Stage 6 | -5.6 | 9.36 | -49.89 |
| Stage 6 | -5.8 | -0.34 | -48.51 |
| Stage 6 | -6 | -9.46 | -45.62 |
| Stage 6 | -6.2 | -17.71 | -41.24 |
| Stage 6 | -6.4 | -24.78 | -35.36 |
| Stage 6 | -6.6 | -30.38 | -27.98 |
| Stage 6 | -6.8 | -34.2 | -19.1 |
| Stage 6 | -7 | -36.43 | -11.14 |
| Stage 6 | -7.2 | -37.27 | -4.2 |
| Stage 6 | -7.4 | -36.9 | 1.83 |
| Stage 6 | -7.6 | -35.49 | 7.07 |
| Stage 6 | -7.8 | -33.16 | 11.62 |
| Stage 6 | -8 | -30.09 | 15.37 |
| Stage 6 | -8.2 | -26.43 | 18.3 |
| Stage 6 | -8.4 | -22.38 | 20.24 |
| Stage 6 | -8.6 | -18.21 | 20.87 |
| Stage 6 | -8.8 | -14.12 | 20.43 |
| Stage 6 | -9 | -10.3 | 19.09 |
| Stage 6 | -9.2 | -6.91 | 16.99 |
| Stage 6 | -9.4 | -4.06 | 14.23 |
| Stage 6 | -9.6 | -1.89 | 10.86 |
| Stage 6 | -9.8 | -0.5 | 6.95 |
| Stage 6 | -10 | 0 | 2.49 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 6

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 6 | 0 | 0 | -24.33 |
| Stage 6 | -0.2 | -4.87 | -24.33 |
| Stage 6 | -0.4 | -9.73 | -24.33 |
| Stage 6 | -0.6 | -14.6 | -24.33 |
| Stage 6 | -0.8 | -19.46 | -24.33 |
| Stage 6 | -1 | -24.33 | -24.33 |
| Stage 6 | -1.2 | -29.19 | -24.33 |
| Stage 6 | -1.4 | -34.03 | -24.19 |
| Stage 6 | -1.6 | -38.77 | -23.69 |
| Stage 6 | -1.8 | -43.34 | -22.83 |
| Stage 6 | -2 | -47.66 | -21.62 |
| Stage 6 | -2.2 | -51.67 | -20.07 |
| Stage 6 | -2.4 | -55.31 | -18.17 |
| Stage 6 | -2.6 | -58.5 | -15.94 |
| Stage 6 | -2.8 | -61.17 | -13.38 |
| Stage 6 | -3 | -63.27 | -10.48 |
| Stage 6 | -3.2 | -64.72 | -7.25 |
| Stage 6 | -3.4 | -65.46 | -3.68 |
| Stage 6 | -3.6 | -65.41 | 0.21 |
| Stage 6 | -3.8 | -64.53 | 4.43 |
| Stage 6 | -4 | -62.73 | 8.97 |
| Stage 6 | -4.2 | -59.97 | 13.83 |
| Stage 6 | -4.4 | -56.17 | 19.01 |
| Stage 6 | -4.6 | -51.26 | 24.52 |
| Stage 6 | -4.8 | -45.19 | 30.35 |
| Stage 6 | -5 | -37.89 | 36.5 |
| Stage 6 | -5.2 | -29.29 | 42.98 |
| Stage 6 | -5.4 | -19.34 | 49.78 |
| Stage 6 | -5.6 | -9.36 | 49.89 |
| Stage 6 | -5.8 | 0.34 | 48.51 |
| Stage 6 | -6 | 9.46 | 45.62 |
| Stage 6 | -6.2 | 17.71 | 41.24 |
| Stage 6 | -6.4 | 24.78 | 35.36 |
| Stage 6 | -6.6 | 30.38 | 27.98 |
| Stage 6 | -6.8 | 34.2 | 19.1 |
| Stage 6 | -7 | 36.43 | 11.14 |
| Stage 6 | -7.2 | 37.27 | 4.2 |
| Stage 6 | -7.4 | 36.9 | -1.83 |
| Stage 6 | -7.6 | 35.49 | -7.07 |
| Stage 6 | -7.8 | 33.16 | -11.62 |
| Stage 6 | -8 | 30.09 | -15.37 |
| Stage 6 | -8.2 | 26.43 | -18.3 |
| Stage 6 | -8.4 | 22.38 | -20.24 |
| Stage 6 | -8.6 | 18.21 | -20.87 |
| Stage 6 | -8.8 | 14.12 | -20.43 |
| Stage 6 | -9 | 10.3 | -19.09 |
| Stage 6 | -9.2 | 6.91 | -16.99 |
| Stage 6 | -9.4 | 4.06 | -14.23 |
| Stage 6 | -9.6 | 1.89 | -10.86 |
| Stage 6 | -9.8 | 0.5 | -6.95 |
| Stage 6 | -10 | 0 | -2.49 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Left Wall - Stage: Stage 7

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: LEFT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | 31.27 |
| Stage 7 | -0.2 | 6.25 | 31.27 |
| Stage 7 | -0.4 | 12.51 | 31.27 |
| Stage 7 | -0.6 | 18.76 | 31.27 |
| Stage 7 | -0.8 | 25.02 | 31.27 |
| Stage 7 | -1 | 31.27 | 31.27 |
| Stage 7 | -1.2 | 37.53 | 31.27 |
| Stage 7 | -1.4 | 43.76 | 31.14 |
| Stage 7 | -1.6 | 49.88 | 30.64 |
| Stage 7 | -1.8 | 55.84 | 29.78 |
| Stage 7 | -2 | 61.55 | 28.57 |
| Stage 7 | -2.2 | 66.96 | 27.01 |
| Stage 7 | -2.4 | 71.98 | 25.12 |
| Stage 7 | -2.6 | 76.56 | 22.89 |
| Stage 7 | -2.8 | 80.62 | 20.32 |
| Stage 7 | -3 | 84.11 | 17.42 |
| Stage 7 | -3.2 | 86.95 | 14.2 |
| Stage 7 | -3.4 | 89.07 | 10.63 |
| Stage 7 | -3.6 | 90.42 | 6.74 |
| Stage 7 | -3.8 | 90.92 | 2.52 |
| Stage 7 | -4 | 90.52 | -2.02 |
| Stage 7 | -4.2 | 89.14 | -6.88 |
| Stage 7 | -4.4 | 86.73 | -12.07 |
| Stage 7 | -4.6 | 83.21 | -17.57 |
| Stage 7 | -4.8 | 78.53 | -23.41 |
| Stage 7 | -5 | 72.62 | -29.56 |
| Stage 7 | -5.2 | 65.41 | -36.03 |
| Stage 7 | -5.4 | 56.85 | -42.83 |
| Stage 7 | -5.6 | 46.86 | -49.95 |
| Stage 7 | -5.8 | 35.38 | -57.38 |
| Stage 7 | -6 | 23.58 | -59 |
| Stage 7 | -6.2 | 11.76 | -59.12 |
| Stage 7 | -6.4 | 0.21 | -57.74 |
| Stage 7 | -6.6 | -10.76 | -54.87 |
| Stage 7 | -6.8 | -20.86 | -50.49 |
| Stage 7 | -7 | -29.79 | -44.62 |
| Stage 7 | -7.2 | -37.23 | -37.25 |
| Stage 7 | -7.4 | -42.91 | -28.38 |
| Stage 7 | -7.6 | -46.51 | -18.02 |
| Stage 7 | -7.8 | -47.75 | -6.16 |
| Stage 7 | -8 | -46.94 | 4.01 |
| Stage 7 | -8.2 | -44.42 | 12.61 |
| Stage 7 | -8.4 | -40.46 | 19.78 |
| Stage 7 | -8.6 | -35.33 | 25.66 |
| Stage 7 | -8.8 | -29.26 | 30.37 |
| Stage 7 | -9 | -22.57 | 33.42 |
| Stage 7 | -9.2 | -15.84 | 33.64 |
| Stage 7 | -9.4 | -9.68 | 30.84 |
| Stage 7 | -9.6 | -4.65 | 25.16 |
| Stage 7 | -9.8 | -1.27 | 16.87 |
| Stage 7 | -10 | 0 | 6.36 |

Tabella Risultati Paratia NTC2018: A2+M2+R1 - Right wall - Stage: Stage 7

| Design Assumption: NTC2018: A2+M2+R1 Risultati Paratia | | Muro: RIGHT | |
|--|-------|------------------|---------------|
| Stage | Z (m) | Momento (kN*m/m) | Taglio (kN/m) |
| Stage 7 | 0 | 0 | -31.27 |
| Stage 7 | -0.2 | -6.25 | -31.27 |
| Stage 7 | -0.4 | -12.51 | -31.27 |
| Stage 7 | -0.6 | -18.76 | -31.27 |
| Stage 7 | -0.8 | -25.02 | -31.27 |
| Stage 7 | -1 | -31.27 | -31.27 |
| Stage 7 | -1.2 | -37.53 | -31.27 |
| Stage 7 | -1.4 | -43.76 | -31.14 |
| Stage 7 | -1.6 | -49.88 | -30.64 |
| Stage 7 | -1.8 | -55.84 | -29.78 |
| Stage 7 | -2 | -61.55 | -28.57 |
| Stage 7 | -2.2 | -66.96 | -27.01 |
| Stage 7 | -2.4 | -71.98 | -25.12 |
| Stage 7 | -2.6 | -76.56 | -22.89 |
| Stage 7 | -2.8 | -80.62 | -20.32 |
| Stage 7 | -3 | -84.11 | -17.42 |
| Stage 7 | -3.2 | -86.95 | -14.2 |
| Stage 7 | -3.4 | -89.07 | -10.63 |
| Stage 7 | -3.6 | -90.42 | -6.74 |
| Stage 7 | -3.8 | -90.92 | -2.52 |
| Stage 7 | -4 | -90.52 | 2.02 |
| Stage 7 | -4.2 | -89.14 | 6.88 |
| Stage 7 | -4.4 | -86.73 | 12.07 |
| Stage 7 | -4.6 | -83.21 | 17.57 |
| Stage 7 | -4.8 | -78.53 | 23.41 |
| Stage 7 | -5 | -72.62 | 29.56 |
| Stage 7 | -5.2 | -65.41 | 36.03 |
| Stage 7 | -5.4 | -56.85 | 42.83 |
| Stage 7 | -5.6 | -46.86 | 49.95 |
| Stage 7 | -5.8 | -35.38 | 57.38 |
| Stage 7 | -6 | -23.58 | 59 |
| Stage 7 | -6.2 | -11.76 | 59.12 |
| Stage 7 | -6.4 | -0.21 | 57.74 |
| Stage 7 | -6.6 | 10.76 | 54.87 |
| Stage 7 | -6.8 | 20.86 | 50.49 |
| Stage 7 | -7 | 29.79 | 44.62 |
| Stage 7 | -7.2 | 37.23 | 37.25 |
| Stage 7 | -7.4 | 42.91 | 28.38 |
| Stage 7 | -7.6 | 46.51 | 18.02 |
| Stage 7 | -7.8 | 47.75 | 6.16 |
| Stage 7 | -8 | 46.94 | -4.01 |
| Stage 7 | -8.2 | 44.42 | -12.61 |
| Stage 7 | -8.4 | 40.46 | -19.78 |
| Stage 7 | -8.6 | 35.33 | -25.66 |
| Stage 7 | -8.8 | 29.26 | -30.37 |
| Stage 7 | -9 | 22.57 | -33.42 |
| Stage 7 | -9.2 | 15.84 | -33.64 |
| Stage 7 | -9.4 | 9.68 | -30.84 |
| Stage 7 | -9.6 | 4.65 | -25.16 |
| Stage 7 | -9.8 | 1.27 | -16.87 |
| Stage 7 | -10 | 0 | -6.36 |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE
RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 - Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 353 di 386 |

Risultati Elementi strutturali - NTC2018: A2+M2+R1

Design Assumption: NTC2018: A2+M2+R1 Sollecitazione Strut

| Stage | Forza (kN/m) |
|---------|----------------|
| Stage 3 | -3.2972756E-14 |
| Stage 4 | -4.384865 |
| Stage 5 | -10.5944 |
| Stage 6 | -24.32707 |
| Stage 7 | -31.27316 |

Descrizione sintetica dei risultati delle Design Assumption (Inviluppi)

Tabella Inviluppi Momento WallElement

| Design Assumption: Nominal | Inviluppi: Momento | Muro: WallElement |
|----------------------------|------------------------|----------------------|
| Z (m) | Lato sinistro (kN*m/m) | Lato destro (kN*m/m) |
| 0 | 0 | 0 |
| -0.2 | 0 | 3.857 |
| -0.4 | 0 | 7.714 |
| -0.6 | 0 | 11.571 |
| -0.8 | 0 | 15.429 |
| -1 | 0.126 | 19.286 |
| -1.2 | 0.282 | 23.143 |
| -1.4 | 0.37 | 27 |
| -1.6 | 0.401 | 30.857 |
| -1.8 | 0.389 | 34.714 |
| -2 | 0.349 | 38.496 |
| -2.2 | 0.296 | 42.129 |
| -2.4 | 0.236 | 45.54 |
| -2.6 | 0.178 | 48.655 |
| -2.8 | 0.124 | 51.403 |
| -3 | 0.077 | 53.713 |
| -3.2 | 0.037 | 55.512 |
| -3.4 | 0.007 | 56.728 |
| -3.6 | 0.054 | 57.29 |
| -3.8 | 0.765 | 57.127 |
| -4 | 1.262 | 56.17 |
| -4.2 | 1.572 | 54.349 |
| -4.4 | 2.353 | 51.594 |
| -4.6 | 4.216 | 47.836 |
| -4.8 | 5.432 | 43.003 |
| -5 | 6.114 | 37.027 |
| -5.2 | 6.372 | 29.836 |
| -5.4 | 6.308 | 21.362 |
| -5.6 | 9.242 | 11.535 |
| -5.8 | 15.699 | 0.287 |
| -6 | 20.554 | 0.046 |
| -6.2 | 23.892 | 0.033 |
| -6.4 | 26.913 | 0.021 |
| -6.6 | 32.304 | 0.011 |
| -6.8 | 35.804 | 0.002 |
| -7 | 37.562 | 0 |
| -7.2 | 37.725 | 0 |
| -7.4 | 36.494 | 0 |
| -7.6 | 34.039 | 0 |
| -7.8 | 30.75 | 0 |
| -8 | 26.955 | 0 |
| -8.2 | 22.924 | 0 |
| -8.4 | 18.87 | 0.003 |
| -8.6 | 14.965 | 0.007 |
| -8.8 | 11.341 | 0.008 |
| -9 | 8.099 | 0.007 |
| -9.2 | 5.32 | 0.017 |
| -9.4 | 3.069 | 0.017 |
| -9.6 | 1.4 | 0.011 |
| -9.8 | 0.361 | 0.004 |
| -10 | 0 | 0 |

Tabella Inviluppi Momento WallElement_New

| Design Assumption: Nominal | Inviluppi: Momento | Muro: WallElement_New |
|----------------------------|------------------------|-----------------------|
| Z (m) | Lato sinistro (kN*m/m) | Lato destro (kN*m/m) |
| 0 | 0 | 0 |
| -0.2 | 3.857 | 0 |
| -0.4 | 7.714 | 0 |
| -0.6 | 11.571 | 0 |
| -0.8 | 15.429 | 0 |
| -1 | 19.286 | 0.126 |
| -1.2 | 23.143 | 0.282 |
| -1.4 | 27 | 0.37 |
| -1.6 | 30.857 | 0.401 |
| -1.8 | 34.714 | 0.389 |
| -2 | 38.496 | 0.349 |
| -2.2 | 42.129 | 0.296 |
| -2.4 | 45.54 | 0.236 |
| -2.6 | 48.655 | 0.178 |
| -2.8 | 51.403 | 0.124 |
| -3 | 53.713 | 0.077 |
| -3.2 | 55.512 | 0.037 |
| -3.4 | 56.728 | 0.007 |
| -3.6 | 57.29 | 0.054 |
| -3.8 | 57.127 | 0.765 |
| -4 | 56.17 | 1.262 |
| -4.2 | 54.349 | 1.572 |
| -4.4 | 51.594 | 2.353 |
| -4.6 | 47.836 | 4.216 |
| -4.8 | 43.003 | 5.432 |
| -5 | 37.027 | 6.114 |
| -5.2 | 29.836 | 6.372 |
| -5.4 | 21.362 | 6.308 |
| -5.6 | 11.535 | 9.242 |
| -5.8 | 0.287 | 15.699 |
| -6 | 0.046 | 20.554 |
| -6.2 | 0.033 | 23.892 |
| -6.4 | 0.021 | 26.913 |
| -6.6 | 0.011 | 32.304 |
| -6.8 | 0.002 | 35.804 |
| -7 | 0 | 37.562 |
| -7.2 | 0 | 37.725 |
| -7.4 | 0 | 36.494 |
| -7.6 | 0 | 34.039 |
| -7.8 | 0 | 30.75 |
| -8 | 0 | 26.955 |
| -8.2 | 0 | 22.924 |
| -8.4 | 0.003 | 18.87 |
| -8.6 | 0.007 | 14.965 |
| -8.8 | 0.008 | 11.341 |
| -9 | 0.007 | 8.099 |
| -9.2 | 0.017 | 5.32 |
| -9.4 | 0.017 | 3.069 |
| -9.6 | 0.011 | 1.4 |
| -9.8 | 0.004 | 0.361 |
| -10 | 0 | 0 |

Tabella Involuppi Taglio WallElement

| Design Assumption: Nominal | Involuppi: Taglio | Muro: WallElement |
|----------------------------|----------------------|--------------------|
| Z (m) | Lato sinistro (kN/m) | Lato destro (kN/m) |
| 0 | 0.001 | 19.286 |
| -0.2 | 0.001 | 19.286 |
| -0.4 | 0 | 19.286 |
| -0.6 | 0 | 19.286 |
| -0.8 | 0.631 | 19.286 |
| -1 | 0.78 | 19.286 |
| -1.2 | 0.78 | 19.286 |
| -1.4 | 0.442 | 19.286 |
| -1.6 | 0.151 | 19.286 |
| -1.8 | 0.049 | 19.286 |
| -2 | 0.075 | 18.911 |
| -2.2 | 0.089 | 18.165 |
| -2.4 | 1.774 | 17.052 |
| -2.6 | 4.153 | 15.577 |
| -2.8 | 7.114 | 13.741 |
| -3 | 7.171 | 11.547 |
| -3.2 | 7.171 | 8.995 |
| -3.4 | 10.367 | 6.08 |
| -3.6 | 13.989 | 2.81 |
| -3.8 | 17.963 | 0.077 |
| -4 | 17.963 | 0.05 |
| -4.2 | 17.934 | 0.04 |
| -4.4 | 22.954 | 0.034 |
| -4.6 | 28.324 | 0.256 |
| -4.8 | 34.043 | 0.571 |
| -5 | 40.112 | 0.771 |
| -5.2 | 46.53 | 0.872 |
| -5.4 | 49.136 | 1.486 |
| -5.6 | 56.24 | 2.274 |
| -5.8 | 56.24 | 2.764 |
| -6 | 52.574 | 3.013 |
| -6.2 | 46.227 | 3.073 |
| -6.4 | 37.201 | 3.073 |
| -6.6 | 26.954 | 2.991 |
| -6.8 | 17.502 | 6.69 |
| -7 | 8.788 | 9.764 |
| -7.2 | 0.816 | 11.691 |
| -7.4 | 0.018 | 12.69 |
| -7.6 | 0.011 | 16.448 |
| -7.8 | 0.005 | 18.974 |
| -8 | 0 | 20.157 |
| -8.2 | 0 | 20.265 |
| -8.4 | 0 | 20.265 |
| -8.6 | 0 | 19.525 |
| -8.8 | 0.004 | 18.124 |
| -9 | 0.008 | 16.21 |
| -9.2 | 0.009 | 13.894 |
| -9.4 | 0.03 | 11.255 |
| -9.6 | 0.037 | 8.345 |
| -9.8 | 0.037 | 5.192 |
| -10 | 0.02 | 1.807 |

Tabella Involuppi Taglio WallElement_New

| Design Assumption: Nominal | Involuppi: Taglio | Muro: WallElement_New |
|----------------------------|----------------------|-----------------------|
| Z (m) | Lato sinistro (kN/m) | Lato destro (kN/m) |
| 0 | 19.286 | 0.001 |
| -0.2 | 19.286 | 0.001 |
| -0.4 | 19.286 | 0 |
| -0.6 | 19.286 | 0 |
| -0.8 | 19.286 | 0.631 |
| -1 | 19.286 | 0.78 |
| -1.2 | 19.286 | 0.78 |
| -1.4 | 19.286 | 0.442 |
| -1.6 | 19.286 | 0.151 |
| -1.8 | 19.286 | 0.049 |
| -2 | 18.911 | 0.075 |
| -2.2 | 18.165 | 0.089 |
| -2.4 | 17.052 | 1.774 |
| -2.6 | 15.577 | 4.153 |
| -2.8 | 13.741 | 7.114 |
| -3 | 11.547 | 7.171 |
| -3.2 | 8.995 | 7.171 |
| -3.4 | 6.08 | 10.367 |
| -3.6 | 2.81 | 13.989 |
| -3.8 | 0.077 | 17.963 |
| -4 | 0.05 | 17.963 |
| -4.2 | 0.04 | 17.934 |
| -4.4 | 0.034 | 22.954 |
| -4.6 | 0.256 | 28.324 |
| -4.8 | 0.571 | 34.043 |
| -5 | 0.771 | 40.112 |
| -5.2 | 0.872 | 46.53 |
| -5.4 | 1.486 | 49.136 |
| -5.6 | 2.274 | 56.24 |
| -5.8 | 2.764 | 56.24 |
| -6 | 3.013 | 52.574 |
| -6.2 | 3.073 | 46.227 |
| -6.4 | 3.073 | 37.201 |
| -6.6 | 2.991 | 26.954 |
| -6.8 | 6.69 | 17.502 |
| -7 | 9.764 | 8.788 |
| -7.2 | 11.691 | 0.816 |
| -7.4 | 12.69 | 0.018 |
| -7.6 | 16.448 | 0.011 |
| -7.8 | 18.974 | 0.005 |
| -8 | 20.157 | 0 |
| -8.2 | 20.265 | 0 |
| -8.4 | 20.265 | 0 |
| -8.6 | 19.525 | 0 |
| -8.8 | 18.124 | 0.004 |
| -9 | 16.21 | 0.008 |
| -9.2 | 13.894 | 0.009 |
| -9.4 | 11.255 | 0.03 |
| -9.6 | 8.345 | 0.037 |
| -9.8 | 5.192 | 0.037 |
| -10 | 1.807 | 0.02 |

Inviluppo Spinta Reale Efficace / Spinta Passiva

| Design Assumption | Stage | Muro | Lato | Inviluppo Spinta Reale Efficace / Spinta Passiva % |
|------------------------------------|---------|------------|-------|---|
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 0 | Left Wall | LEFT | 14.59 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 7 | Left Wall | RIGHT | 39.22 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 7 | Right wall | LEFT | 39.22 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 0 | Right wall | RIGHT | 14.59 |

Inviluppo Spinta Reale Efficace / Spinta Attiva

| Design Assumption | Stage | Muro | Lato | Inviluppo Spinta Reale Efficace / Spinta Attiva % |
|------------------------------------|---------|------------|-------|--|
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 7 | Left Wall | LEFT | 5165.46 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 0 | Left Wall | RIGHT | 8845.94 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 0 | Right wall | LEFT | 8845.94 |
| NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 7 | Right wall | RIGHT | 5165.46 |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 - Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 360 di 386 |

Inviluppo Risultati Elementi Strutturali

| Elemento strutturale | Design Assumption | Stage | Puntone kN/m |
|----------------------|------------------------------------|---------|-----------------|
| Strut | NTC2018: A1+M1+R1 (R3 per tiranti) | Stage 7 | -19.29 |

Normative adottate per le verifiche degli Elementi Strutturali

Normative Verifiche

| | |
|--------------|-----|
| Calcestruzzo | NTC |
| Acciaio | NTC |
| Tirante | NTC |

Coefficienti per Verifica Tiranti

| | |
|------------|------|
| GEO FS | 1 |
| ξ_{a3} | 1.8 |
| γ_s | 1.15 |

Risultati SteelWorld

Tabella Inviluppi Tasso di Sfruttamento a Momento - SteelWorld : LEFT

| Inviluppi Tasso di Sfruttamento a Momento - SteelWorld | LEFT |
|--|--|
| Z (m) | Tasso di Sfruttamento a Momento - SteelWorld |
| 0 | 0 |
| -0.2 | 0.035 |
| -0.4 | 0.07 |
| -0.6 | 0.105 |
| -0.8 | 0.14 |
| -1 | 0.175 |
| -1.2 | 0.21 |
| -1.4 | 0.245 |
| -1.6 | 0.28 |
| -1.8 | 0.315 |
| -2 | 0.349 |
| -2.2 | 0.382 |
| -2.4 | 0.413 |
| -2.6 | 0.441 |
| -2.8 | 0.466 |
| -3 | 0.487 |
| -3.2 | 0.503 |
| -3.4 | 0.514 |
| -3.6 | 0.519 |
| -3.8 | 0.518 |
| -4 | 0.509 |
| -4.2 | 0.492 |
| -4.4 | 0.467 |
| -4.6 | 0.433 |
| -4.8 | 0.39 |
| -5 | 0.335 |
| -5.2 | 0.27 |
| -5.4 | 0.194 |
| -5.6 | 0.105 |
| -5.8 | 0.142 |
| -6 | 0.186 |
| -6.2 | 0.216 |
| -6.4 | 0.244 |
| -6.6 | 0.293 |
| -6.8 | 0.324 |
| -7 | 0.34 |
| -7.2 | 0.342 |
| -7.4 | 0.331 |
| -7.6 | 0.308 |
| -7.8 | 0.279 |
| -8 | 0.244 |
| -8.2 | 0.208 |
| -8.4 | 0.171 |
| -8.6 | 0.136 |
| -8.8 | 0.103 |
| -9 | 0.073 |
| -9.2 | 0.048 |
| -9.4 | 0.028 |
| -9.6 | 0.013 |
| -9.8 | 0.003 |
| -10 | 0 |

Tabella Inviluppi Tasso di Sfruttamento a Momento - SteelWorld : RIGHT

| Inviluppi Tasso di Sfruttamento a Momento - SteelWorld | RIGHT |
|--|--|
| Z (m) | Tasso di Sfruttamento a Momento - SteelWorld |
| 0 | 0 |
| -0.2 | 0.035 |
| -0.4 | 0.07 |
| -0.6 | 0.105 |
| -0.8 | 0.14 |
| -1 | 0.175 |
| -1.2 | 0.21 |
| -1.4 | 0.245 |
| -1.6 | 0.28 |
| -1.8 | 0.315 |
| -2 | 0.349 |
| -2.2 | 0.382 |
| -2.4 | 0.413 |
| -2.6 | 0.441 |
| -2.8 | 0.466 |
| -3 | 0.487 |
| -3.2 | 0.503 |
| -3.4 | 0.514 |
| -3.6 | 0.519 |
| -3.8 | 0.518 |
| -4 | 0.509 |
| -4.2 | 0.492 |
| -4.4 | 0.467 |
| -4.6 | 0.433 |
| -4.8 | 0.39 |
| -5 | 0.335 |
| -5.2 | 0.27 |
| -5.4 | 0.194 |
| -5.6 | 0.105 |
| -5.8 | 0.142 |
| -6 | 0.186 |
| -6.2 | 0.216 |
| -6.4 | 0.244 |
| -6.6 | 0.293 |
| -6.8 | 0.324 |
| -7 | 0.34 |
| -7.2 | 0.342 |
| -7.4 | 0.331 |
| -7.6 | 0.308 |
| -7.8 | 0.279 |
| -8 | 0.244 |
| -8.2 | 0.208 |
| -8.4 | 0.171 |
| -8.6 | 0.136 |
| -8.8 | 0.103 |
| -9 | 0.073 |
| -9.2 | 0.048 |
| -9.4 | 0.028 |
| -9.6 | 0.013 |
| -9.8 | 0.003 |
| -10 | 0 |

Tabella Inviluppi Tasso di Sfruttamento a Taglio - SteelWorld : LEFT

| Inviluppi Tasso di Sfruttamento a Taglio - SteelWorld | LEFT |
|---|---|
| Z (m) | Tasso di Sfruttamento a Taglio - SteelWorld |
| 0 | 0.02 |
| -0.2 | 0.02 |
| -0.4 | 0.02 |
| -0.6 | 0.02 |
| -0.8 | 0.02 |
| -1 | 0.02 |
| -1.2 | 0.02 |
| -1.4 | 0.02 |
| -1.6 | 0.02 |
| -1.8 | 0.019 |
| -2 | 0.019 |
| -2.2 | 0.017 |
| -2.4 | 0.016 |
| -2.6 | 0.014 |
| -2.8 | 0.012 |
| -3 | 0.009 |
| -3.2 | 0.007 |
| -3.4 | 0.011 |
| -3.6 | 0.014 |
| -3.8 | 0.018 |
| -4 | 0.017 |
| -4.2 | 0.018 |
| -4.4 | 0.023 |
| -4.6 | 0.029 |
| -4.8 | 0.035 |
| -5 | 0.041 |
| -5.2 | 0.047 |
| -5.4 | 0.05 |
| -5.6 | 0.057 |
| -5.8 | 0.054 |
| -6 | 0.047 |
| -6.2 | 0.038 |
| -6.4 | 0.027 |
| -6.6 | 0.018 |
| -6.8 | 0.009 |
| -7 | 0.01 |
| -7.2 | 0.012 |
| -7.4 | 0.013 |
| -7.6 | 0.017 |
| -7.8 | 0.019 |
| -8 | 0.021 |
| -8.2 | 0.021 |
| -8.4 | 0.02 |
| -8.6 | 0.018 |
| -8.8 | 0.017 |
| -9 | 0.014 |
| -9.2 | 0.011 |
| -9.4 | 0.009 |
| -9.6 | 0.005 |
| -9.8 | 0.002 |
| -10 | 0.002 |

Tabella Inviluppi Tasso di Sfruttamento a Taglio - SteelWorld : RIGHT

| Inviluppi Tasso di Sfruttamento a Taglio - SteelWorld | RIGHT |
|---|---|
| Z (m) | Tasso di Sfruttamento a Taglio - SteelWorld |
| 0 | 0.02 |
| -0.2 | 0.02 |
| -0.4 | 0.02 |
| -0.6 | 0.02 |
| -0.8 | 0.02 |
| -1 | 0.02 |
| -1.2 | 0.02 |
| -1.4 | 0.02 |
| -1.6 | 0.02 |
| -1.8 | 0.019 |
| -2 | 0.019 |
| -2.2 | 0.017 |
| -2.4 | 0.016 |
| -2.6 | 0.014 |
| -2.8 | 0.012 |
| -3 | 0.009 |
| -3.2 | 0.007 |
| -3.4 | 0.011 |
| -3.6 | 0.014 |
| -3.8 | 0.018 |
| -4 | 0.017 |
| -4.2 | 0.018 |
| -4.4 | 0.023 |
| -4.6 | 0.029 |
| -4.8 | 0.035 |
| -5 | 0.041 |
| -5.2 | 0.047 |
| -5.4 | 0.05 |
| -5.6 | 0.057 |
| -5.8 | 0.054 |
| -6 | 0.047 |
| -6.2 | 0.038 |
| -6.4 | 0.027 |
| -6.6 | 0.018 |
| -6.8 | 0.009 |
| -7 | 0.01 |
| -7.2 | 0.012 |
| -7.4 | 0.013 |
| -7.6 | 0.017 |
| -7.8 | 0.019 |
| -8 | 0.021 |
| -8.2 | 0.021 |
| -8.4 | 0.02 |
| -8.6 | 0.018 |
| -8.8 | 0.017 |
| -9 | 0.014 |
| -9.2 | 0.011 |
| -9.4 | 0.009 |
| -9.6 | 0.005 |
| -9.8 | 0.002 |
| -10 | 0.002 |

Verifiche Puntoni Nominal

| Design | Tipo Risultato: | | | | | | | | | | | | |
|-------------|-----------------|-----------|---------------------------|-----------|------------|---------------------------------|-----------------|------------------|-----------------|-------------------------------------|-----|-----|-----------------------|
| Assumption: | Verifiche | | | | | | | | | | | | |
| Nominal | Puntoni | | | | | | | | | | | | |
| Puntone | Sezione | Materiale | Spaziatura orizzontale | Lunghezza | Stage | Carico distribuito (kN/m) | Assiale (kN) | Ratio momento | Ratio taglio | Instabilità λ y λ z | | | λ laterale |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 3 | 0 | 0 | 0 | 0.004 | 0 | 0 | 0 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 4 | -2.282 | -5.706 | 0.005 | 0.004 | 0.11 | 205 | 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 5 | -4.485 | -11.211 | 0.011 | 0.004 | 0.144 | 205 | 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 6 | -11.218 | -28.044 | 0.026 | 0.004 | 0.247 | 205 | 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 7 | -14.33 | -35.824 | 0.034 | 0.004 | 0.294 | 205 | 205 | 0 |

Verifiche Puntoni NTC2018: SLE (Rara/Frequente/Quasi Permanente)

| Design Assumption: | Tipo | NTC2018 | | | | | | | | | | | | |
|-----------------------------------|-------------------|-----------|------------------------|-----------|---------|---------------------------|--------------|---------------|--------------|-----------------|-----|------------|---|--|
| NTC2018: SLE | Risultato: | (ITA) | | | | | | | | | | | | |
| (Rara/Frequente/Quasi Permanente) | Verifiche Puntoni | | | | | | | | | | | | | |
| Puntone | Sezione | Materiale | Spaziatura orizzontale | Lunghezza | Stage | Carico distribuito (kN/m) | Assiale (kN) | Ratio momento | Ratio taglio | Instabilità λ y | λ z | λ laterale | λ | |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 3 | 0 | 0 | 0 | 0.004 | 0 | 0 | 0 | 0 | |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 4 | -2.282 | -5.706 | 0.005 | 0.004 | 0.11 | 205 | 205 | 0 | |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 5 | -4.485 | - | 0.011 | 0.004 | 0.144 | 205 | 205 | 0 | |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 6 | -11.218 | - | 0.026 | 0.004 | 0.247 | 205 | 205 | 0 | |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 7 | -14.33 | - | 0.034 | 0.004 | 0.294 | 205 | 205 | 0 | |

Verifiche Puntoni NTC2018: A1+M1+R1 (R3 per tiranti)

| Design | Tipo Risultato: NTC2018 | | | | | | | | | | | | |
|---------------------------|-------------------------|-----------|---------------------------|-----------|---------|---------------------------------|-----------------|------------------|-----------------|-----------------------|-------------|-------------|-----------------------|
| Assumption: | Verifiche (ITA) | | | | | | | | | | | | |
| NTC2018: | Puntoni | | | | | | | | | | | | |
| A1+M1+R1 (R3 per tiranti) | | | | | | | | | | | | | |
| Puntone | Sezione | Materiale | Spaziatura orizzontale | Lunghezza | Stage | Carico distribuito (kN/m) | Assiale (kN) | Ratio momento | Ratio taglio | Instabilità λ | λ y | λ z | λ laterale |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 3 | 0 | 0 | 0 | 0.005 | 0 | 0 | 0 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 4 | -3.004 | -7.511 | 0.007 | 0.005 | 0.145 | 205 | 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 5 | -6.109 | -15.272 | 0.014 | 0.005 | 0.193 | 205 | 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 6 | -15.125 | -37.813 | 0.035 | 0.005 | 0.333 | 205 | 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 7 | -19.286 | -48.214 | 0.045 | 0.005 | 0.397 | 205 | 205 | 0 |

Verifiche Puntoni NTC2018: A2+M2+R1

| Design | Tipo Risultato: NTC2018 | | | | | | | | | | | |
|-------------|-------------------------|-----------|---------------------------|-----------------|------------|---------------------------------|-----------------|------------------|-----------------|-------------------------------------|---------|-----------------------|
| Assumption: | Verifiche (ITA) | | | | | | | | | | | |
| NTC2018: | Puntoni | | | | | | | | | | | |
| A2+M2+R1 | | | | | | | | | | | | |
| Puntone | Sezione | Materiale | Spaziatura orizzontale | Lunghezza Stage | Stage | Carico distribuito (kN/m) | Assiale (kN) | Ratio momento | Ratio taglio | Instabilità λ y λ z | | λ laterale |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 3 | 0 | 0 | 0 | 0.004 | 0.075 | 205 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 4 | -4.385 | -10.962 | 0.01 | 0.004 | 0.142 | 205 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 5 | -10.594 | -26.486 | 0.025 | 0.004 | 0.237 | 205 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 6 | -24.327 | -60.818 | 0.057 | 0.004 | 0.447 | 205 205 | 0 |
| Strut | CHS139.7*10 | S275 | 2.5 | 9.45 | Stage 7 | -31.273 | -78.183 | 0.073 | 0.004 | 0.553 | 205 205 | 0 |



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 371 di 386 |

Verifiche Travi di Ripartizione Nominal

|  <p>ITALFERR GRUPPO FERROVIE DELLO STATO ITALIANE</p> | <p>INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE – AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE</p> <p>RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE</p> | | | | | | | | | | | | |
|---|---|----------|------------|----------|------------|------|--------|------|---------|----|------------|---|------------|
| <p>IN06 – Tombino idraulico al km 30+743 Relazione di calcolo delle opere provvisionali</p> | <table border="1"> <thead> <tr> <th>COMMESSA</th> <th>LOTTO</th> <th>CODIFICA</th> <th>DOCUMENTO</th> <th>REV.</th> <th>FOGLIO</th> </tr> </thead> <tbody> <tr> <td>NR1J</td> <td>01 D 29</td> <td>CL</td> <td>IN0600 002</td> <td>A</td> <td>372 di 386</td> </tr> </tbody> </table> | COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | NR1J | 01 D 29 | CL | IN0600 002 | A | 372 di 386 |
| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | | | | | | | | |
| NR1J | 01 D 29 | CL | IN0600 002 | A | 372 di 386 | | | | | | | | |

Verifiche Travi di Ripartizione NTC2018: SLE (Rara/Frequente/Quasi Permanente)

|  <p>ITALFERR GRUPPO FERROVIE DELLO STATO ITALIANE</p> | <p>INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE - AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE</p> <p>RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE</p> | | | | | | | | | | | | |
|---|---|----------|------------|----------|------------|------|--------|------|---------|----|------------|---|------------|
| <p>IN06 – Tombino idraulico al km 30+743 Relazione di calcolo delle opere provvisionali</p> | <table border="1"> <thead> <tr> <th>COMMESSA</th> <th>LOTTO</th> <th>CODIFICA</th> <th>DOCUMENTO</th> <th>REV.</th> <th>FOGLIO</th> </tr> </thead> <tbody> <tr> <td>NR1J</td> <td>01 D 29</td> <td>CL</td> <td>IN0600 002</td> <td>A</td> <td>373 di 386</td> </tr> </tbody> </table> | COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | NR1J | 01 D 29 | CL | IN0600 002 | A | 373 di 386 |
| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | | | | | | | | |
| NR1J | 01 D 29 | CL | IN0600 002 | A | 373 di 386 | | | | | | | | |

Verifiche Travi di Ripartizione NTC2018: A1+M1+R1 (R3 per tiranti)

|  <p>ITALFERR GRUPPO FERROVIE DELLO STATO ITALIANE</p> | <p>INTERVENTI DI POTENZIAMENTO DELLA RETE FERROVIARIA REGIONALE - AMMODERNAMENTO E POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI VALLE</p> <p>RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE</p> | | | | | | | | | | | | |
|---|---|----------|------------|----------|------------|------|--------|------|---------|----|------------|---|------------|
| <p>IN06 – Tombino idraulico al km 30+743 Relazione di calcolo delle opere provvisionali</p> | <table border="1"> <thead> <tr> <th>COMMESSA</th> <th>LOTTO</th> <th>CODIFICA</th> <th>DOCUMENTO</th> <th>REV.</th> <th>FOGLIO</th> </tr> </thead> <tbody> <tr> <td>NR1J</td> <td>01 D 29</td> <td>CL</td> <td>IN0600 002</td> <td>A</td> <td>374 di 386</td> </tr> </tbody> </table> | COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | NR1J | 01 D 29 | CL | IN0600 002 | A | 374 di 386 |
| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO | | | | | | | | |
| NR1J | 01 D 29 | CL | IN0600 002 | A | 374 di 386 | | | | | | | | |

Verifiche Travi di Ripartizione NTC2018: A2+M2+R1



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 - Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 375 di 386 |

Allegati

Design Assumption : Nominal - File di Paratie - File di input (.d)

```
* PARATIE ANALYSIS FOR DESIGN SECTION:Base Design Section USING ASSUMPTION: Nominal
* Time:venerdi 26 ottobre 2018 17:29:32
* 1: Defining general settings
UNIT m kN
TITLE Esempio
DELTA 0.2
option param itemax 40
option control hinges 0 0.0001 0.001

* 2: Defining wall(s)
WALL LeftWall_32 -9.45 -10 0 1
WALL Rightwall_3999 0 -10 0 -1

* 3: Defining surfaces for wall(s)
SOIL 0_L LeftWall_32 -10 0 1 0
SOIL 0_R LeftWall_32 -10 0 2 180
SOIL 1_L Rightwall_3999 -10 0 2 0
SOIL 1_R Rightwall_3999 -10 0 1 180

* 4: Defining soil layers
*
* Soil Profile (Terrenovegetale_2_34713_0)
*
LDATA Terrenovegetale_2_34713_0 3
ATREST 0.56 0.5 1
WEIGHT 15 5 10
PERMEABILITY 0.0001
RESISTANCE 10 26 0 0 0
YOUNG 5000 8000
ENDDL
*
* Soil Profile (Limosabbioso_5_35122_0)
*
LDATA Limosabbioso_5_35122_0 0
ATREST 0.56 0.5 1
WEIGHT 17 7 10
PERMEABILITY 0.0001
RESISTANCE 10 26 0 0 0
YOUNG 1.5E+04 2.4E+04
ENDDL

* 5: Defining structural materials
* Steel material: 113 Name=S275 E=210000000 kPa
MATERIAL S275_113 2.1E+08
* Concrete material: 104 Name=C25/30 E=31475800 kPa
MATERIAL C2530_104 3.148E+07
* Concrete material: 103 Name=C20/25 E=29962000 kPa
MATERIAL C2025_103 2.996E+07

* 6: Defining structural elements
* 6.1: Beams and combined Wall Elements
BEAM WallElement_33 LeftWall_32 -10 0 S275_113 0.07821 00 00 0
BEAM WallElement_New_34998 Rightwall_3999 -10 0 S275_113 0.07821 00 00 0

* 6.2: Supports

TRUS Strut_64640 0 S275_113 0.0007603 no 0 0 0

* 6.3: Strips
STRIP LeftWall_32 2 8 0.5 5 0 10 45
STRIP Rightwall_3999 2 8 0.5 5 0 10 45

* 7: Defining Steps
STEP Stage0_69964
```



**INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE**

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

**IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali**

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 376 di 386 |

CHANGE Terrenovegetale_2_34713_0 U-FRICT=26 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-FRICT=26 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KA=0.39 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KP=3.404 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KA=0.39 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KP=3.404 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-FRICT=26 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-FRICT=26 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KA=0.39 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KP=3.404 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KA=0.39 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KP=3.404 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-FRICT=26 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-FRICT=26 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KA=0.39 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KP=3.404 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KA=0.39 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KP=3.404 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-FRICT=26 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-FRICT=26 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KA=0.39 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KP=3.404 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KA=0.39 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KP=3.404 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-COHE=10 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-COHE=10 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-COHE=10 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-COHE=10 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-COHE=10 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-COHE=10 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-COHE=10 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-COHE=10 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 Rightwall_3999
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage1_34164
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ADD WallElement_33 WallElement_New_34998
ENDSTEP

STEP Stage2_65398
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage3_65586
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ADD Strut_64640
ENDSTEP

STEP Stage4_66644



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 377 di 386 |

SETWALL LeftWall_32
GEOM 0 -3
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -3
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage5_67702
SETWALL LeftWall_32
GEOM 0 -4
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -4
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage6_67890
SETWALL LeftWall_32
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage7_68426
SETWALL LeftWall_32
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
ENDSTEP



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 - Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 378 di 386 |

Design Assumption : NTC2018: SLE (Rara/Frequente/Quasi Permanente) - File di Paratie - File di input (.d)

* PARATIE ANALYSIS FOR DESIGN SECTION:Base Design Section USING ASSUMPTION: NTC2018: SLE (Rara/Frequente/Quasi Permanente)

* Time:venerdì 26 ottobre 2018 17:29:35

* 1: Defining general settings

UNIT m kN

TITLE Esempio

DELTA 0.2

option param itemax 40

option control hinges 0 0.0001 0.001

* 2: Defining wall(s)

WALL LeftWall_32 -9.45 -10 0 1

WALL Rightwall_3999 0 -10 0 -1

* 3: Defining surfaces for wall(s)

SOIL 0_L LeftWall_32 -10 0 1 0

SOIL 0_R LeftWall_32 -10 0 2 180

SOIL 1_L Rightwall_3999 -10 0 2 0

SOIL 1_R Rightwall_3999 -10 0 1 180

* 4: Defining soil layers

*

* Soil Profile (Terrenovegetale_2_34713_0)

*

LDATA Terrenovegetale_2_34713_0 3

ATREST 0.56 0.5 1

WEIGHT 15 5 10

PERMEABILITY 0.0001

RESISTANCE 10 26 0 0 0

YOUNG 5000 8000

ENDDL

*

* Soil Profile (Limosabbioso_5_35122_0)

*

LDATA Limosabbioso_5_35122_0 0

ATREST 0.56 0.5 1

WEIGHT 17 7 10

PERMEABILITY 0.0001

RESISTANCE 10 26 0 0 0

YOUNG 1.5E+04 2.4E+04

ENDDL

* 5: Defining structural materials

* Steel material: 113 Name=S275 E=210000000 kPa

MATERIAL S275_113 2.1E+08

* Concrete material: 104 Name=C25/30 E=31475800 kPa

MATERIAL C2530_104 3.148E+07

* Concrete material: 103 Name=C20/25 E=29962000 kPa

MATERIAL C2025_103 2.996E+07

* 6: Defining structural elements

* 6.1: Beams and combined Wall Elements

BEAM WallElement_33 LeftWall_32 -10 0 S275_113 0.07821 00 00 0

BEAM WallElement_New_34998 Rightwall_3999 -10 0 S275_113 0.07821 00 00 0

* 6.2: Supports

TRUS Strut_64640 0 S275_113 0.0007603 no 0 0 0

* 6.3: Strips

STRIP LeftWall_32 2 8 0.5 5 0 10 45

STRIP Rightwall_3999 2 8 0.5 5 0 10 45

* 7: Defining Steps

STEP Stage0_69964

CHANGE Terrenovegetale_2_34713_0 U-FRICT=26 LeftWall_32



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 379 di 386 |

CHANGE Terrenovegetale_2_34713_0 D-FRICT=26 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KA=0.39 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KP=3.404 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KA=0.39 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KP=3.404 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-FRICT=26 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-FRICT=26 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KA=0.39 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KP=3.404 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KA=0.39 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KP=3.404 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-FRICT=26 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-FRICT=26 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KA=0.39 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KP=3.404 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KA=0.39 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KP=3.404 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-FRICT=26 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-FRICT=26 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KA=0.39 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KP=3.404 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KA=0.39 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KP=3.404 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-COHE=10 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-COHE=10 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-COHE=10 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-COHE=10 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-COHE=10 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-COHE=10 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-COHE=10 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-COHE=10 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 Rightwall_3999
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage1_34164
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ADD WallElement_33 WallElement_New_34998
ENDSTEP

STEP Stage2_65398
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage3_65586
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ADD Strut_64640
ENDSTEP

STEP Stage4_66644
SETWALL LeftWall_32



INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 380 di 386 |

GEOM 0 -3
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -3
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage5_67702
SETWALL LeftWall_32
GEOM 0 -4
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -4
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage6_67890
SETWALL LeftWall_32
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage7_68426
SETWALL LeftWall_32
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
ENDSTEP



**INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE**

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

**IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali**

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 381 di 386 |

Design Assumption : NTC2018: A1+M1+R1 (R3 per tiranti) - File di Paratie - File di input (.d)

* PARATIE ANALYSIS FOR DESIGN SECTION:Base Design Section USING ASSUMPTION: NTC2018: A1+M1+R1 (R3 per tiranti)

* Time:venerdì 26 ottobre 2018 17:29:37

* 1: Defining general settings

UNIT m kN

TITLE Esempio

DELTA 0.2

option param itemax 40

option control hinges 0 0.0001 0.001

* 2: Defining wall(s)

WALL LeftWall_32 -9.45 -10 0 1

WALL Rightwall_3999 0 -10 0 -1

* 3: Defining surfaces for wall(s)

SOIL 0_L LeftWall_32 -10 0 1 0

SOIL 0_R LeftWall_32 -10 0 2 180

SOIL 1_L Rightwall_3999 -10 0 2 0

SOIL 1_R Rightwall_3999 -10 0 1 180

* 4: Defining soil layers

*

* Soil Profile (Terrenovegetale_2_34713_0)

*

LDATA Terrenovegetale_2_34713_0 3

ATREST 0.56 0.5 1

WEIGHT 15 5 10

PERMEABILITY 0.0001

RESISTANCE 10 26 0 0 0

YOUNG 5000 8000

ENDL

*

* Soil Profile (Limosabbioso_5_35122_0)

*

LDATA Limosabbioso_5_35122_0 0

ATREST 0.56 0.5 1

WEIGHT 17 7 10

PERMEABILITY 0.0001

RESISTANCE 10 26 0 0 0

YOUNG 1.5E+04 2.4E+04

ENDL

* 5: Defining structural materials

* Steel material: 113 Name=S275 E=210000000 kPa

MATERIAL S275_113 2.1E+08

* Concrete material: 104 Name=C25/30 E=31475800 kPa

MATERIAL C2530_104 3.148E+07

* Concrete material: 103 Name=C20/25 E=29962000 kPa

MATERIAL C2025_103 2.996E+07

* 6: Defining structural elements

* 6.1: Beams and combined Wall Elements

BEAM WallElement_33 LeftWall_32 -10 0 S275_113 0.07821 00 00 0

BEAM WallElement_New_34998 Rightwall_3999 -10 0 S275_113 0.07821 00 00 0

* 6.2: Supports

TRUS Strut_64640 0 S275_113 0.0007603 no 0 0 0

* 6.3: Strips

STRIP LeftWall_32 2 8 0.5 5 0 11.54 45

STRIP Rightwall_3999 2 8 0.5 5 0 11.54 45

* 7: Defining Steps

STEP Stage0_69964

CHANGE Terrenovegetale_2_34713_0 U-FRICT=26 LeftWall_32



**INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE**

RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

**IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali**

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 382 di 386 |

CHANGE Terrenovegetale_2_34713_0 D-FRICT=26 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KA=0.39 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KP=3.404 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KA=0.39 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KP=3.404 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-FRICT=26 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-FRICT=26 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KA=0.39 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KP=3.404 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KA=0.39 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KP=3.404 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-FRICT=26 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-FRICT=26 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KA=0.39 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KP=3.404 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KA=0.39 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KP=3.404 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-FRICT=26 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-FRICT=26 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KA=0.39 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KP=3.404 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KA=0.39 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KP=3.404 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-COHE=10 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-COHE=10 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-COHE=10 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-COHE=10 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-COHE=10 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-COHE=10 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-COHE=10 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-COHE=10 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 Rightwall_3999
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage1_34164
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ADD WallElement_33 WallElement_New_34998
ENDSTEP

STEP Stage2_65398
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage3_65586
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ADD Strut_64640
ENDSTEP

STEP Stage4_66644
SETWALL LeftWall_32

**IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali**

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
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GEOM 0 -3
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -3
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage5_67702
SETWALL LeftWall_32
GEOM 0 -4
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -4
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage6_67890
SETWALL LeftWall_32
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage7_68426
SETWALL LeftWall_32
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
ENDSTEP



**INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
POTENZIAMENTO DELLA LINEA CESANO-VIGNA DI
VALLE
RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE**

**IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali**

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 384 di 386 |

Design Assumption : NTC2018: A2+M2+R1 - File di Paratie - File di input (.d)

```
* PARATIE ANALYSIS FOR DESIGN SECTION:Base Design Section USING ASSUMPTION: NTC2018: A2+M2+R1
* Time:venerdi 26 ottobre 2018 17:29:40
* 1: Defining general settings
UNIT m kN
TITLE Esempio
DELTA 0.2
option param itemax 40
option control hinges 0 0.0001 0.001

* 2: Defining wall(s)
WALL LeftWall_32 -9.45 -10 0 1
WALL Rightwall_3999 0 -10 0 -1

* 3: Defining surfaces for wall(s)
SOIL 0_L LeftWall_32 -10 0 1 0
SOIL 0_R LeftWall_32 -10 0 2 180
SOIL 1_L Rightwall_3999 -10 0 2 0
SOIL 1_R Rightwall_3999 -10 0 1 180

* 4: Defining soil layers
*
* Soil Profile (Terrenovegetale_2_34713_0)
*
LDATA Terrenovegetale_2_34713_0 3
ATREST 0.56 0.5 1
WEIGHT 15 5 10
PERMEABILITY 0.0001
RESISTANCE 10 26 0 0 0
YOUNG 5000 8000
ENDDL
*
* Soil Profile (Limosabbioso_5_35122_0)
*
LDATA Limosabbioso_5_35122_0 0
ATREST 0.56 0.5 1
WEIGHT 17 7 10
PERMEABILITY 0.0001
RESISTANCE 10 26 0 0 0
YOUNG 1.5E+04 2.4E+04
ENDDL

* 5: Defining structural materials
* Steel material: 113 Name=S275 E=210000000 kPa
MATERIAL S275_113 2.1E+08
* Concrete material: 104 Name=C25/30 E=31475800 kPa
MATERIAL C2530_104 3.148E+07
* Concrete material: 103 Name=C20/25 E=29962000 kPa
MATERIAL C2025_103 2.996E+07

* 6: Defining structural elements
* 6.1: Beams and combined Wall Elements
BEAM WallElement_33 LeftWall_32 -10 0 S275_113 0.07821 00 00 0
BEAM WallElement_New_34998 Rightwall_3999 -10 0 S275_113 0.07821 00 00 0

* 6.2: Supports
TRUS Strut_64640 0 S275_113 0.0007603 no 0 0 0

* 6.3: Strips
STRIP LeftWall_32 2 8 0.5 5 0 13 45
STRIP Rightwall_3999 2 8 0.5 5 0 13 45

* 7: Defining Steps
STEP Stage0_69964
CHANGE Terrenovegetale_2_34713_0 U-FRICT=21.32 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-FRICT=21.32 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KA=0.467 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-KP=2.649 LeftWall_32
```



**INTERVENTI DI POTENZIAMENTO DELLA RETE
FERROVIARIA REGIONALE - AMMODERNAMENTO E
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RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

**IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali**

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
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CHANGE Terrenovegetale_2_34713_0 D-KA=0.467 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-KP=2.649 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-FRICT=21.32 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-FRICT=21.32 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KA=0.467 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-KP=2.649 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KA=0.467 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-KP=2.649 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-FRICT=21.32 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-FRICT=21.32 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KA=0.467 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-KP=2.649 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KA=0.467 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-KP=2.649 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-FRICT=21.32 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-FRICT=21.32 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KA=0.467 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-KP=2.649 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KA=0.467 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-KP=2.649 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-COHE=8 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-COHE=8 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 LeftWall_32
CHANGE Terrenovegetale_2_34713_0 U-COHE=8 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 U-ADHES=0 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-COHE=8 Rightwall_3999
CHANGE Terrenovegetale_2_34713_0 D-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-COHE=8 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-COHE=8 LeftWall_32
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 LeftWall_32
CHANGE Limosabbioso_5_35122_0 U-COHE=8 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 U-ADHES=0 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-COHE=8 Rightwall_3999
CHANGE Limosabbioso_5_35122_0 D-ADHES=0 Rightwall_3999
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage1_34164
SETWALL LeftWall_32
GEOM 0 0
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 0
WATER -10.4 0 -10 0 0
ADD WallElement_33 WallElement_New_34998
ENDSTEP

STEP Stage2_65398
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage3_65586
SETWALL LeftWall_32
GEOM 0 -1
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -1
WATER -10.4 0 -10 0 0
ADD Strut_64640
ENDSTEP

STEP Stage4_66644
SETWALL LeftWall_32
GEOM 0 -3
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999



INTERVENTI DI POTENZIAMENTO DELLA RETE
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RADDOPPIO DELLA TRATTA CESANO-VIGNA DI VALLE

IN06 – Tombino idraulico al km 30+743
Relazione di calcolo delle opere provvisionali

| COMMESSA | LOTTO | CODIFICA | DOCUMENTO | REV. | FOGLIO |
|----------|---------|----------|------------|------|------------|
| NR1J | 01 D 29 | CL | IN0600 002 | A | 386 di 386 |

GEOM 0 -3
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage5_67702
SETWALL LeftWall_32
GEOM 0 -4
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -4
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage6_67890
SETWALL LeftWall_32
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.2
WATER -10.4 0 -10 0 0
ENDSTEP

STEP Stage7_68426
SETWALL LeftWall_32
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
SETWALL Rightwall_3999
GEOM 0 -5.7
WATER -10.4 0 -10 0 0
ENDSTEP