COMMITTENTE

RFI RETE FERROVIARIA ITALIANA
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PROGETTAZIONE:

ITALFERR
GRUPPO FERROVIE DELLO STATO ITALIANE

DIREZIONE TECNICA

U.O. INFRASTRUTTURE CENTRO

PROGETTO DI FATTIBILITA' TECNICA ECONOMICA

VELOCIZZAZIONE DELLA LINEA ROMA – PESCARA

RADDOPPIO FERROVIARIO TRATTA CHIETI – INTERPORTO D'ABRUZZO (LOTTO 3)

GEOTECNICA

Relazione di calcolo – Comportamento delle fondazioni profonde

SCALA: -

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

1. INTRODUZIONE

Il presente documento riporta lo studio del comportamento, ai sensi della Normativa vigente (Doc. Rif.[5] e [6]), dei pali di fondazioni delle opere d'arte previste nell'ambito del PROGETTO DI FATTIBILITA' TECNICA ECONOMICA della "*Velocizzazione della Linea Roma-Pescara – Raddoppio ferroviario Pescara Porta Nuova – Chieti (Lotto 3), Tratta Chieti – Interporto Val Pescara*.

Il documento è così articolato:

Nel Cap. 2 si riportano i documenti di riferimento e la normativa citati nel testo.

Nel Cap. 3 si descrivono i criteri generali di progettazione in accordo alla Normativa vigente (Doc. Rif.[5] e [6]) sulla base dei quali viene calcolata la resistenza di progetto del palo singolo;

Nel Cap. 4 si riportano i criteri per la valutazione della resistenza di progetto del palo singolo;

Nel Cap. 5, dopo l'elenco delle opere ubicate nei diversi tratti di viabilità ferroviaria e stradale per le quali sono stati definiti i pali di fondazione, si riportano le curve di resistenza di progetto e di spostamento del palo singolo per le diverse opere.

2. DOCUMENTI DI RIFERIMENTO

2.1 Documentazione di progetto

[1] PROGETTO DI FATTIBILITA' TECNICA ECONOMICA - Relazione geotecnica generale - (Doc. rif. IA6F03D29F6GE0006001A)

[2] PROGETTO DI FATTIBILITA' TECNICA ECONOMICA- Plano-profilo geotecnico - Tav. 1 - (Doc. rif. – IA6F03D29F6GE0006001A)

[3] PROGETTO DI FATTIBILITA' TECNICA ECONOMICA - Plano-profilo geotecnico - Tav. 2 - (Doc. rif. IA6F03D29F6GE0006002A)

[4] PROGETTO DI FATTIBILITA' TECNICA ECONOMICA - Plano-profilo geotecnico - Tav. 3 - (Doc. rif. IA6F03D29F6GE0006003A)

2.2 Normativa e standard di riferimento

[5] Decreto Ministeriale del 17 gennaio 2018: "Approvazione delle Nuove Norme Tecniche per le Costruzioni", G.U. n.29 del 20.2.2018, Supplemento Ordinario n.30.

[6] Circolare del Ministero delle infrastrutture e dei trasporti 21 gennaio 2019, n. 7 del Consiglio superiore del Lavori Pubblici recante "Istruzioni per l'applicazione dell'«Aggiornamento delle "Norme tecniche per le costruzioni"» di cui al decreto ministeriale 17 gennaio 2018"

[7] UNI EN 1997-1 : Eurocodice 7 – Progettazione geotecnica – Parte 1: Regole generali

[8] UNI EN 1998-5 : Eurocodice 8 – Progettazione delle strutture per la resistenza sismica – Parte 5: Fondazioni, strutture di contenimento ed aspetti geotecnici

[9] RFI DTC INC PO SP IFS 001 A del 21.12.2011- Specifica per la progettazione e l'esecuzione dei ponti ferroviari e di altre opere minori sotto binario;

[10] RFI DTC INC CS SP IFS 001 A del 21.12.2011 - Specifica per la progettazione geotecnica delle opere civili ferroviarie;

[11] RFI DTC SICS SP IFS 001 A del 30.06.2014 - Capitolato generale tecnico di appalto delle opere civili – Parte II – Sezione 5 – "Opere in terra e scavi"– RFI.

[12] 2008/217/CE - "Specifiche tecniche di interoperabilità per il sottosistema «infrastruttura» del sistema ferroviario transeuropeo ad alta velocità (20/12/2007)".

[13] 2011/275/CE - "Specifiche tecniche di interoperabilità per il sottosistema «infrastruttura» del sistema ferroviario transeuropeo convenzionale (26/04/2011)".

2.3 Software

[1] TZPile Version 2014.3.2, 1985-2014, Ensoft Inc.

[2] LPile 2016.9.09, 2016 by Ensoft Inc.

2.4 Bibliografia

[3] Bowles J.E. (1988) "Foundation Analysis and Design", 4TH Edition, Mc Graw Hill

[4] Chen Y.J., Kulhawy F.H. (1994) "Case history evaluation of the behaviour of drilled shafts under axial and lateral loading" EPRI TR-104601, Research Project 1493-04, Palo Alto.

[5] Elson W.K. (1984) "Design of laterally loaded piles" CIRIA Report n°103.

[6] Fleming W.G.K., Weltman A.J., Randolph M.F., Elson W.K. (1985) "Piling Engineering" Surrey University Press, Glasgow and London, Halsted Press, a division of John Wiley & Sons, New York.

[7] Gwizdala K. (1984) "Large bored piles in non cohesive soils" Swedish Geotechnical Institute, Report n° 26.

[8] Jamiolkowski M. (2000) "Axial load capacity of bored piles in sand and gravel" 3rd Symposium on Deep Foundations, Mexico City.

[9] Matsui T. (1993) "Case studies on cast-in-place bored piles and some considerations for design" Proc. 2nd Int. Seminar on Deep Foundations on Bored and Auger Piles, Ghent.

[10] Meyerhof G.G. (1976) "Bearing capacity and settlement of pile foundation" Journal of Geotechnical Engineering Division, ASCE, vol.102, March.

[11] O'Neill M.W, Hassan K.M. (1994) "Drilled shaft: effects of construction on performance and design criteria" Proc. Int. Conference on Design and Construction of Deep Foundations, Orlando, Florida, U.S., F.H.W.A., vol.I.

[12] Poulos H.G. (1989) "Program PIES – Axial response of piles in expansive soils" Centre for Geotechnical Research. University of Sydney.

[13] Poulos H.G. (1990) "Program DEFPIG – Deformation analysis of pile groups" Centre for Geotechnical Research. University of Sydney.

[14] Poulos H.G. e Davis E.H. (1980), "Pile foundation analysis and design", John Wiley and Sons.

[15] Reese L.C., O'Neill M.W. (1988) "Drilled shaft: construction procedures and design methods" Publication N.FHWA-HI-88-042, Federal Highway Administration, Washington, D.C..

[16] Reese L.C., Wang S.T. (1990) "Analysis of load versus settlement for an axially loaded deep foundation" Documentation of Computer Program APILE2, Ensoft Inc., Austin, Texas.

Reese L.C., Wright S.J. (1977) "Drilled shaft manual" U.S. Department of Transportation, Office of Research and Development, Div. HDV 2, Washington.

3. CRITERI DI PROGETTAZIONE IN ACCORDO ALLE NTC2018

3.1 Generale

In accordo con quanto definito nel paragrafo 6.2.4 delle NTC2018 (Doc.Rif. [5]), devono essere svolte le seguenti verifiche di sicurezza e delle prestazioni attese:

- Verifiche agli Stati Limite Ultimi (SLU)
- Verifiche agli Stati Limite d'Esercizio (SLE)

3.1.1 Stati Limite Ultimi (SLU)

Per ogni Stato Limite Ultimo (SLU) la verifica è considerata soddisfatta se vale la seguente disuguaglianza:

$E_d \leq R_d$

dove

E_d valore di progetto dell'azione o dell'effetto dell'azione;

R_d valore di progetto della resistenza.

L'azione e la corrispondente resistenza di progetto vanno determinate in accordo alle NTC2018 per gli approcci previsti al paragrafo 6.4.3.1. Sono previsti coefficienti parziali da applicarsi rispettivamente alle azioni (A1), ai parametri del terreno (M1) ed alle resistenze caratteristiche di calcolo (R3).

In particolare per tutte le verifiche, con la sola esclusione delle verifiche di stabilità non oggetto del presente documento, le NTC2018 indicano di adottare l'approccio progettuale DA2.
Nel secondo approccio progettuale, **Approccio 2**, è prevista una sola combinazione di gruppi di coefficienti (A1+M1+R3) da adottarsi sia nelle verifiche strutturali sia nelle verifiche geotecniche, con la sola esclusione delle verifiche di stabilità, non oggetto nel presente documento, per le quali si deve seguire l'Approccio 1 Combinazione 2 (A2+M2+R2).

Per le verifiche in condizioni sismiche è previsto l'utilizzo della medesima combinazione in cui siano posti pari ad 1 i coefficienti parziali sulle azioni e sui parametri geotecnici (già pari ad 1

secondo il set M1) ed adottando i coefficienti parziali sulle resistenze come indicato per le combinazioni statiche laddove non diversamente specificato nel capitolo 7 sulla sismica. In particolare per le fondazioni profonde il capitolo 7.11.5.3.2 non indica coefficienti parziali sulle resistenze diversi da quelli per le verifiche in campo statico ma indica di valutare opportunamente le eventuali riduzioni di resistenza dei terreni per effetto dell'azione sismica.

I valori assunti dai coefficienti di sicurezza parziali di ciascun gruppo, "Azioni – Parametri geotecnici del terreno – Resistenze", sono riportati all'interno delle NTC2018 (Doc. Rif. [5] e Doc. Rif. [6]), rispettivamente alle tabelle:

A Tabella 6.2.I

M Tabella 6.2.II

R Tabella 6.4.II

3.1.2 Stati Limite di Esercizio (SLE)

Per ogni Stato Limite d'Esercizio (SLE) la verifica è considerata soddisfatta se vale la seguente disuguaglianza:

$E_d \leq C_d$

dove

E_d valore di progetto dell'effetto dell'azione;

C_d valore limite prescritto dell'effetto delle azioni.

All'interno del progetto devono essere quindi definite le prescrizioni relative agli spostamenti compatibili per l'opera e le prestazioni attese.

3.2 Verifiche statiche

Come riportato al paragrafo 6.4.3 delle NTC2018, le verifiche delle fondazioni su pali devono essere effettuate con riferimento almeno ai seguenti stati limite, quando pertinenti:

- Stato limite ultimo di tipo Geotecnico (SLU GEO)
- Stato limite ultimo di tipo Strutturale (SLU STR) (non oggetto del presente documento)
- Stato limite di esercizio (SLE)

Le verifiche statiche GEO e STR devono essere svolte secondo l'**Approccio 2** indicato al paragrafo 3.1, ossia:

- Combinazione A1+M1+R3 (SLU STR e SLU GEO)

Con la sola esclusione delle verifiche di stabilità, non oggetto nel presente documento, per le quali si deve seguire l'Approccio 1 Combinazione 2 (A2+M2+R2).

3.2.1 Verifiche agli stati limite ultimi di tipo Geotecnico (SLU GEO)

Le verifiche di sicurezza agli SLU di tipo geotecnico sono:

- collasso per carico limite della palificata nei riguardi dei carichi assiali di compressione e di trazione;
- collasso per carico limite della palificata nei riguardi dei carichi orizzontali;
- stabilità globale.

Collasso per carico limite della palificata nei riguardi dei carichi assiali di compressione e di trazione

Ai fini della verifica nei confronti dei carichi assiali nel presente documento viene determinata la curva di resistenza di progetto del palo singolo, mediante l'utilizzo delle combinazioni di carico previste dalla Normativa, ed in particolare utilizzando l'approccio 2 (A1+M1+R3).

Tale azione dovrà poi essere confrontata dal progettista della fondazione con il valore dell'azione assiale massima (di compressione e di trazione) sul singolo palo, valutata mediante un'analisi che tanga anche conto dell'effetto gruppo, in modo da definire la lunghezza di progetto del palo.

Collasso per carico limite della palificata nei riguardi dei carichi orizzontali

Per quanto concerne le verifiche geotecniche nei confronti dei carichi orizzontali le NTC2018 indicano di eseguire una verifica confrontando l'azione applicata al palo con il valore di progetto della resistenza dei pali soggetti ai carichi trasversali $R_{tr,d}$ e adottando un coefficiente parziale da applicare alla disuguaglianza γ_r pari a 1.3 (si veda tab 6.4.VI al paragrafo 6.4.3.1.2 delle NTC2018).

Tuttavia in merito a tali verifiche si ritiene, in virtù della flessibilità dei pali sottoposti a tali carichi, che tale meccanismo di rottura non sia possibile, e che le problematiche progettuali della palificata sottoposta ai carichi di progetto orizzontali afferiscano piuttosto nei seguenti aspetti:

- limitazione degli spostamenti orizzontali entro i limiti accettabili, imposti dal progettista strutturale (nella valutazione del campo di spostamento indotto si terrà conto anche delle rotazioni);
- limitazione dei carichi orizzontali e dei relativi momenti di incastro per limiti strutturali.

Stabilità globale

La stabilità globale non viene qui considerata in quanto la geometria del problema non rende possibili fenomeni di instabilità globale della fondazione.

Altre verifiche

Oltre alle verifiche di cui sopra, per la combinazione A1+M1+R3 deve essere condotta anche la verifica strutturale nei confronti dei carichi orizzontali (azioni di taglio e di momento flettente), determinando il dominio di rottura nel piano M-N per la sezione del palo considerata e verificando che le sollecitazioni calcolate sul singolo palo dal Progettista Strutturale, a partire dai carichi relativi alla combinazione di carico assunta, siano interne a tale dominio. Per permettere al Progettista Strutturale di valutare tali sollecitazioni, si forniscono al progettista in allegato, per ciascuna tipologia di palo analizzato, le curve p-y che permettono di valutare gli andamenti delle azioni di taglio e di momento flettente lungo il fusto del palo, tenendo conto dell'interazione del palo con il terreno circostante, per le diverse condizioni di carico a testa palo.

3.2.2 Verifiche agli stati limite di esercizio (SLE)

Gli stati limite di esercizio sono:

- eccessivi cedimenti o sollevamenti;
- eccessivi spostamenti trasversali;
- eccessive rotazioni.

Nello specifico, ai fini della valutazione da parte del Progettista Strutturale della compatibilità degli spostamenti e delle distorsioni con i requisiti prestazionali della struttura in elevazione, si forniscono le curve carico – cedimento e carico – spostamento orizzontale del palo singolo.

Sarà cura del progettista della palificata nel suo insieme valutare, in funzione delle effettive distanze e posizioni dei singoli pali all'interno della palificata, gli eventuali coefficienti correttivi da applicare per tenere conto dell'effetto gruppo

3.3 Verifiche sismiche

La Normativa, come definito nei Doc. Rif. [5] e Doc. Rif. [6], stabilisce differenti Stati Limite (sia d'esercizio che ultimi) in funzione:

- dell'importanza dell'opera, mediante l'identificazione della Classe d'Uso;
- del danno conseguente ad un certo Stato Limite.

In particolare si definiscono i seguenti Stati Limite di esercizio e ultimi:

- SLU:
  - Stato Limite di Salvaguardia della Vita umana, **SLV,** definito come lo stato limite in cui la struttura subisce una significativa perdita della rigidezza nei confronti dei carichi orizzontali ma non nei confronti dei carichi verticali. Permane un margine di sicurezza nei confronti del collasso per azioni sismiche orizzontali.
  - Stato Limite di Prevenzione del Collasso, **SLC**, stato limite nel quale la struttura subisce gravi danni strutturali, mantenendo comunque un margine di sicurezza per azioni verticali ed un esiguo margine di sicurezza a collasso per carichi orizzontali.
- SLE:
  - Stato Limite di immediata Operatività **SLO** per le strutture ed apparecchiature che debbono restare operative a seguito dell'evento sismico. Tale stato limite non si applica per l'opera in oggetto.
  - Stato Limite di Danno **SLD** definito come lo stato limite da rispettare per garantire la sostanziale integrità dell'opera ed il suo immediato utilizzo.

Con riferimento all'opera in oggetto, e considerando quanto riportato al punto C7.1 del Doc. Rif. [6], le verifiche geotecniche in presenza di un evento sismico richiedono la verifica ai seguenti stati limite:

- Stato Limite Ultimo: **SLV** – Stato Limite di Salvaguardia della Vita (cui corrisponde una probabilità di superamento P_{vr} =10% nel periodo V_R);
- Stato Limite Esercizio: **SLD** – Stato Limite di Danno (cui corrisponde una probabilità di superamento P_{vr} =63% nel periodo V_R).

Le suddette probabilità, valutate nel periodo di riferimento V_R per l'azione sismica, consentono di determinare, per ciascuno stato limite, il tempo di ritorno del terremoto di progetto corrispondente.
Stabiliti i criteri di determinazione degli Stati Limite, le verifiche di sicurezza in campo sismico devono contemplare almeno le medesime verifiche definite in campo statico. In più sono da prevedersi le verifiche di liquefazione del terreno in caso di evento sismico; per queste ultime si rimanda alla Relazione geotecnica generale di Lotto (Doc. Rif. [1]).
Si precisa che le verifiche di collasso per carico limite della palificata nei riguardi dei carichi verticali e trasversali, come definito al paragrafo 7.11.5.3.2 delle NTC2018, dovranno essere svolte secondo quanto riportato al punto 7.11.1 secondo cui si deve adottare il medesimo approccio di verifica adottato per le condizioni statiche (DA2), utilizzando coefficienti parziali sulle azioni e sui materiali pari ad 1, mentre restano invariati i fattori parziali sulle resistenze.

Di fatto si tratta di utilizzare, sia per le verifiche geotecniche che per quelle strutturali, la seguente combinazione di carico:

- SISMA+M1+R3

Per le procedure di verifica si faccia quindi riferimento a quelle definite nel paragrafo 3.2 considerando la medesima curva di resistenza del palo singolo calcolata per le condizioni statiche.

4. METODI DI CALCOLO ADOTTATI PER LA VALUTAZIONE DEL COMPORTAMENTO DEL PALO SINGOLO

4.1 Curve di resistenza del palo singolo

Le curve di resistenza di progetto a compressione (o trazione) del palo singolo $R_{c,d}$ (o $R_{t,d}$), da confrontare con la massima azione di compressione (o trazione) agente in testa al palo E_d, sono date dalle seguenti espressioni:

$$R_{c,d} = \frac{R_{c,k}}{\gamma_R} = \min\left\{\frac{(R_{c;cal})_{media}}{\xi_3}; \frac{(R_{c;cal})_{\min}}{\xi_4}\right\} / \gamma_R$$ Resistenza di progetto a compressione

$$R_{t,d} = \frac{R_{t,k}}{\gamma_R} = \min\left\{\frac{(R_{t;cal})_{media}}{\xi_3}; \frac{(R_{t;cal})_{\min}}{\xi_4}\right\} / \gamma_R$$ Resistenza di progetto a trazione

dove

$R_{c,cal}$ e $R_{t,cal}$ resistenza di calcolo del palo singolo, rispettivamente a compressione e a trazione, determinate ad una data profondità secondo quanto descritto al paragrafo 4.1.1;

ξ_3, ξ_4 fattori di correlazione per la determinazione della resistenza caratteristica del palo in funzione del numero di verticali indagate, valutati secondo quanto indicato al paragrafo 4.1.2;

$R_{c,k}$ e $R_{t,k}$ resistenza caratteristica del palo singolo rispettivamente a compressione e a trazione ad una data profondità, calcolate secondo quanto descritto al paragrafo 4.1.2;

γ_R coefficienti parziali da applicarsi alle resistenze caratteristiche in funzione dell'approccio considerato, valutati secondo quanto indicato al paragrafo 4.1.3.

4.1.1 Resistenza di calcolo dei pali trivellati da parametri geotecnici

La resistenza di calcolo $R_{c,cal}$ a compressione del palo viene definita come capacità portante totale data dalla somma dei contributi della resistenza laterale e della resistenza di base, mentre la resistenza di calcolo $R_{t,cal}$ a trazione del palo viene valutata come sola portata limite per attrito laterale. Di seguito si riportano entrambe le espressioni di calcolo:

$$R_{c,cal} = Q_{ult\_comp} = Q_{lat\_ult} + Q_{base\_ult} - (W_p - W_s)$$

$$R_{c,traz} = Q_{ult\_traz} = Q_{lat\_ult} + (W_p - W_s)$$

dove:

Q_{ult_comp} Resistenza di calcolo a compressione;

Q_{ult_traz} Resistenza di calcolo a trazione;

$Q_{lat\_ult} = \pi \cdot D \cdot \int_{zt}^{zb} \tau_{us} \cdot dz$ Portata limite per attrito laterale

con:

τ_{us} = tensione tangenziale ultima lungo il fusto del palo, calcolata come riportato nel paragrafo 4.1.1.1;

z_b = profondità della base del palo dal p.c. originario;

z_t = profondità della testa del palo dal p.c. originario.

$Q_{base\_ult} = \frac{\pi \cdot D^2}{4} \cdot q_{ub}$ Portata limite di base

con:

q_{ub} = pressione limite alla base del palo calcolata come riportato nel paragrafo 4.1.1.2;

W_p Peso del palo;

W_s Peso del terreno sostituito dal palo.

I contributi di resistenza laterale e di base sono stati calcolati come descritto nei paragrafi 4.1.1.1 e 4.1.1.2 in funzione del tipo di terreno attraversato e della tipologia e dimensione del palo da realizzare.

Il peso del palo, in accordo con quanto riportato al paragrafo 6.4.3 delle NTC2018, Doc. Rif. [5], deve essere incluso tra le azioni permanenti di cui alla Tabella 6.2.I delle stesse NTC2018. Nella condizione di resistenza a compressione è stato assunto come carico permanente svaforevole, mentre nella condizione di calcolo di resistenza a trazione è stato assunto come azione permanente favorevole.

4.1.1.1 Resistenza laterale di calcolo

La resistenza laterale di calcolo è stata determinata, in base al tipo di terreno attraversato, come segue:

Terreni a grana grossa (sabbie)

$$\tau_{u,s}(kPa) = k \cdot \sigma'_{vo} \cdot \tan\phi' \leq \tau_{u,s\max}(kPa)$$

dove:

k coefficiente empirico variabile con la profondità tra 0.4 e 0.7, assunto in questa sede pari a 0.6;

σ'_{vo} tensione verticale efficace geostatica calcolata, a partire dal p.c. originario, alla quota di riferimento;

ϕ' angolo di resistenza al taglio del terreno.

Il valore di $\tau_{us,max}$ è assunto nei calcoli pari a 120 kPa.

Terreni a grana fine (limi e argille)

τ_{ult} (kPa) = $\alpha \cdot c_u \leq 120$ kPa

dove:

c_u resistenza a taglio non drenata;

α coefficiente adimensionale variabile col valore di cu secondo quanto indicato in Tabella 4.1.

Tabella 4.1: valori indicativi di α per pali trivellati in terreni coesivi (AGI, 1984)

c_U (kPa)	**α (-)**
≤ 25	0.9
25÷50	0.8
50÷75	0.6
≥ 75	0.4

Terreni stratificati

Nel caso di terreni stratificati, costituiti da alternanze di strati di limi e argille sature e di sabbie e ghiaie, i criteri di valutazione delle portate laterali limite rimangono analoghi a quelli sopra descritti.

Attrito negativo

In presenza di attrito negativo il contributo di resistenza laterale offerto dal terreno che cede rispetto al palo, non viene considerato e l'integrale di tali resistenze non considerate costituisce l'azione da Attrito Negativo che deve essere utilizzata come carico nelle diverse verifiche. Pertanto operativamente nella valutazione delle curve di capacità portante dei pali per cui è prevista la presenza dell'attrito negativo si procede nel seguente modo:

- valutazione del profilo di cedimento del terreno
- individuazione della profondità sino alla quale il terreno cede rispetto al palo
- annullamento dei contributi di resistenza laterale sino alla profondità sopra definita
- calcolo della forza aggiuntiva dovuta all'attrito negativo da considerare come carico esterno aggiuntivo nelle diverse verifiche; tale azione è calcolata come integrale dei contributi di resistenza laterale annullati nella valutazione della capacità portante.

4.1.1.2 Resistenza di base di calcolo

La resistenza di base di calcolo è stata determinata, in base al tipo di terreno alla base del palo, come segue (AGI, 1984):

Terreni a grana grossa (sabbie)

$$\left(q_{u,b}\right)_{\frac{s}{D}=0.1}(kPa) = N_q^* \cdot \sigma'_{vo} \le q_{u,b,\max}(kPa)$$

dove:

$(q_{u,b})_{\frac{s}{D}=0.1}$ pressione limite alla base associabile a cedimenti pari al 10% del diametro del palo;

N_q^* parametro che può essere valutato mediante la Figura 4.1;

σ'_{vo} tensione verticale efficace calcolata dal p.c. originario.

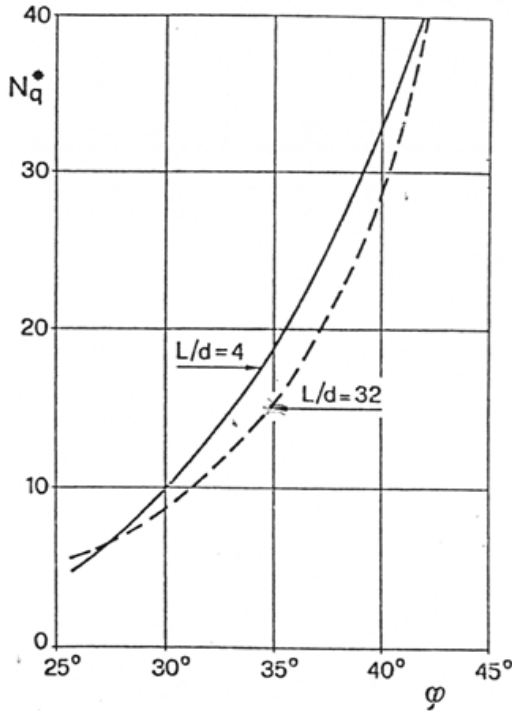


Figura 4.1: Coefficienti N_q^* (Berezantzev, 1965)

Il valore di $q_{ub,max}$ è stato valutato in accordo a quanto riportato nella successiva Tabella 4.2 ed assunto conservativamente nei calcoli per i terreni in esame pari a 4000 kPa.

Tabella 4.2: valori di $(q_{u,b})max$ per terreni grana grossa, Gwizdala, 1984

	$(q_{u,b})_{max}$
GHIAIE	7500
GHIAIE SABBIOSE	5800
SABBIE	5800
SABBIE LIMOSE	4300

Terreni a grana fine (limi e argille)

$q_{ult} = 9 \cdot c_u + \sigma_{v0} \leq q_{ub,max}$

dove:

c_u resistenza a taglio non drenata del terreno alla base del palo.

s_{v0} tensione totale alla quota della base del palo

Il valore di $q_{ub,max}$ è stato assunto conservativamente nei calcoli per i terreni in esame pari a 3000 kPa.

Terreni stratificati

Nel caso di terreni stratificati, costituiti da alternanze di strati di limi e argille sature e di sabbie e ghiaie, la portata di base negli strati sabbioso-ghiaiosi andrà abbattuta rispetto a quella caratteristica dello strato supposto omogeneo in accordo allo schema riportato in Figura 4.2.

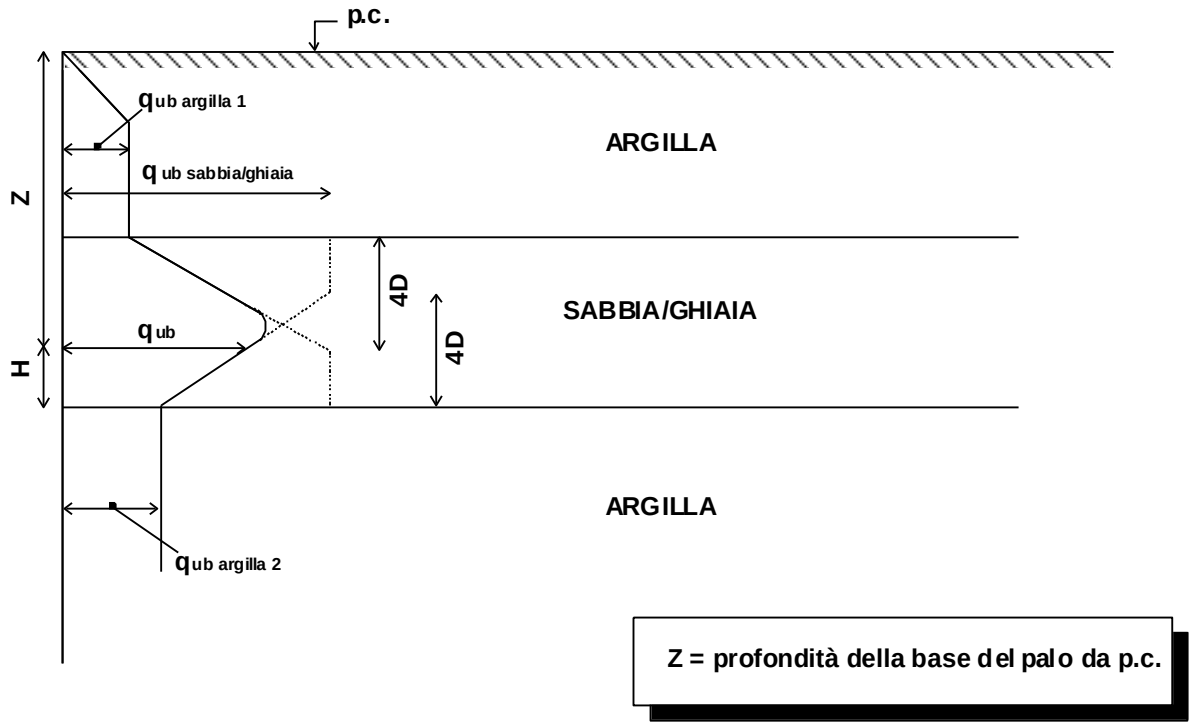


Figura 4.2: Criterio di valutazione dellla pressione ultima di base (q_{ub}) in terreni stratificati (modificata da Meyerhof, 1976)

4.1.2 Resistenza caratteristica

La resistenza caratteristica a compressione $R_{c,k}$ e la resistenza caratteristica a trazione $R_{t,k}$ del palo singolo sono state determinate a partire dalle resistenze di calcolo ottenute con metodi che utilizzano i parametri geotecnici; in accordo con quanto definito nel paragrafo 6.4.3.1.1 delle NTC2018 risulta pertanto:

$$R_{c,k} = Min\left\{\frac{\left(R_{c,cal}\right)_{media}}{\xi_3}; \frac{\left(R_{c,cal}\right)_{\min}}{\xi_4}\right\}$$

$$R_{t,k} = Min\left\{\frac{\left(R_{t,cal}\right)_{media}}{\xi_3}; \frac{\left(R_{t,cal}\right)_{\min}}{\xi_4}\right\}$$

essendo:

$R_{c,k}$ e $R_{t,k}$	resistenza caratteristica rispettivamente a compressione e a trazione del palo singolo ad una data profondità;
$R_{c,cal}$ e $R_{t,cal}$	resistenza di calcolo rispettivamente a compressione e a trazione determinate ad una data profondità;
$\left(R_{c,cal}\right)_{media}$ e $\left(R_{t,cal}\right)_{media}$	resistenza di calcolo media ad una data profondità;
$\left(R_{c,cal}\right)_{\min}$ e $\left(R_{t,cal}\right)_{\min}$	resistenza di calcolo minima ad una data profondità;
ξ_3, ξ_4	fattori di correlazione in funzione del numero di verticali indagate, in accordo a quanto indicato nel paragrafo 6.4.3.1 delle NTC2018, Tab. 6.4.IV.

Nel caso in esame si è assunto: ξ_3, =1.7 e ξ_4 = 1.7.

4.1.3 Resistenza di progetto

I valori della resistenza di progetto a compressione $R_{c,d}$ e della resistenza di progetto a trazione $R_{t,d}$ sono determinati applicando al valore caratteristico della resistenza i coefficienti parziali γ_R secondo le seguenti espressioni:

$$R_{c,d} = \frac{R_{c,k}}{\gamma_R}$$

$$R_{t,d} = \frac{R_{t,k}}{\gamma_R}$$

essendo:

$R_{c,d}$ e $R_{t,d}$ resistenza di progetto del palo singolo, rispettivamente a compressione e a trazione;

$R_{c,k}$ e $R_{t,k}$ resistenza caratteristica del palo singolo, rispettivamente a compressione e a trazione;

γ_R coefficienti parziali da applicarsi alle resistenze caratteristiche in funzione dell'approccio considerato e della tipologia esecutiva del palo (vedi la Tabella 4.3 in cui sono riportati i fattori parziali relativi a pali trivellati).

Tabella 4.3: Coefficienti parziali alle resistenze caratteristiche

	Pali trivellati
Resistenza \ γ_R	**R_3 [-]**
Base	1.35
Laterale - compressione	1.15
Laterale - trazione	1.25

4.2 Curve carico-cedimento del palo singolo

4.2.1 Curva carico-cedimento in assenza di attrito negativo

La valutazione della curva carico-cedimento del palo singolo è stata effettuata con il metodo delle curve di trasferimento (τ-s e q-s) mediante l'ausilio del codice di calcolo TZ-Pile ver. 2014.3.2 che opera come segue:

1. Il palo è schematizzato con un elemento cilindrico, suddiviso in conci, caratterizzato da un modulo elastico E_p.
2. Il trasferimento degli sforzi dal palo al terreno avviene tramite molle (una per concio) caratterizzate da leggi non lineari (si veda la Figura 4.3). L'ordinata delle molle rappresenta la tensione tangenziale sviluppabile lungo il fusto (τ) o la portata di base (q); le ascisse

rappresentano lo spostamento locale verso il basso del concio generico (s_v). Lo spostamento verso il basso del generico concio viene a dipendere dal carico applicato alla testa del palo (Q_t), dalla sua posizione lungo il palo, dal modulo elastico del palo e dalle curve di trasferimento (τ-s_v e q-s_v) lungo il fusto e alla base.

3. La determinazione dell'andamento dei carichi e degli spostamenti lungo il fusto e alla base, per un dato carico applicato in testa, viene effettuata risolvendo l'equazione differenziale:

$$\frac{dQ_z}{dz} = E_p \cdot A_p \cdot \frac{d^2 s_{vz}}{dz^2}$$

essendo:

z = coordinata generica lungo il palo con origine alla testa palo

A_p = area della sezione del palo

Q_z = carico assiale agente nella sezione di palo di coordinata z

s_{vz} = spostamento assiale nella sezione di palo di coordinata z.

La soluzione dell'equazione differenziale viene fatta con metodi numerici in accordo alla seguente procedura:

a. si assume un movimento verso il basso della base del palo e, con riferimento alla curva di trasferimento della base (q-s), si ottiene il corrispondente carico applicato alla base;
b. si usa la curva di trasferimento (τ-s) relativa al concio sopra la base e si ottiene il carico di attrito laterale associabile allo spostamento di cui al punto a);
c. si valuta il carico agente alla sommità del concio come somma del carico applicato alla base (punto a) e del carico di attrito laterale (punto b);
d. si calcola l'accorciamento elastico del concio di palo in funzione dei carichi agenti a testa concio (punto c) e base concio (punto a);
e. si calcola lo spostamento alla testa del concio come somma di quello imposto alla base (punto a) più quello elastico del concio (punto d).

4. Si ripete la procedura per ciascun concio soprastante quello di base, fino ad arrivare alla testa del palo; il carico e lo spostamento della testa rappresentano un punto della curva carico-cedimento del palo.

3. Si assumono altri valori dello spostamento della base e per ciascun valore si ripetono i calcoli fino ad ottenere la curva carico-cedimento completa del palo.

I risultati del calcolo, per ogni valore di carico assiale applicato in testa, sono:

- lo spostamento verticale della testa del palo;
- l'andamento dei carichi assiali lungo il fusto;
- le azioni esercitate tra palo e terreno.

Sono state adottate le curve di trasferimento implementate internamente al codice di calcolo (Reese & O'Neill, 1988).

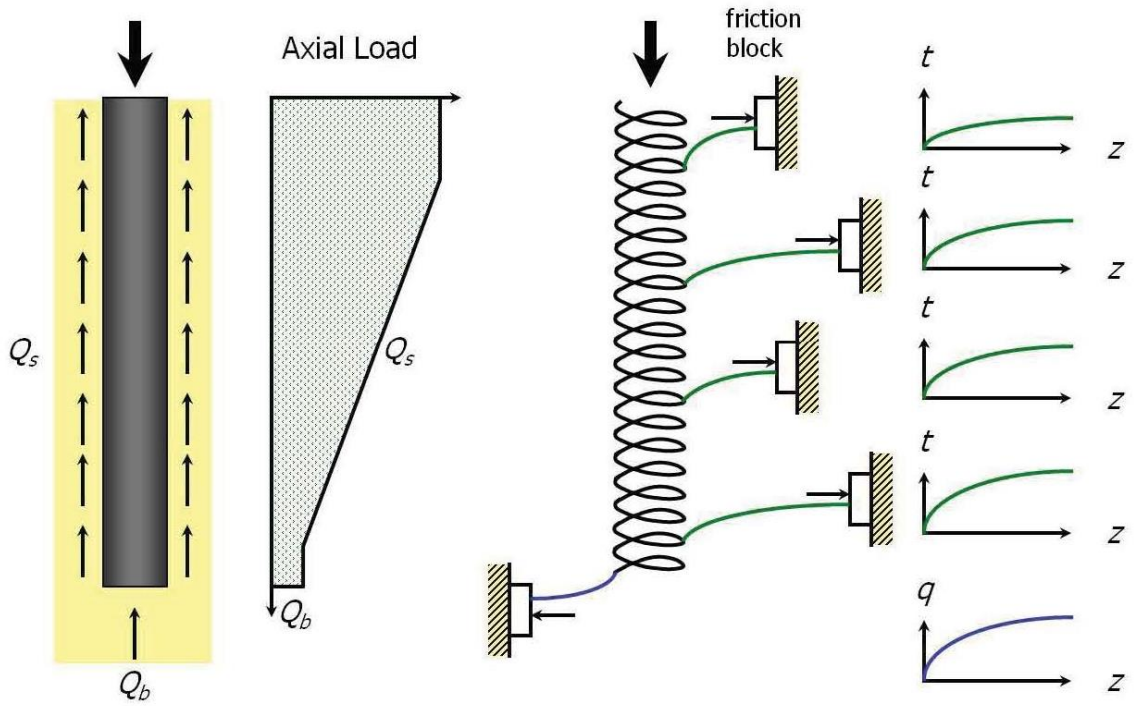


Figura 4.3: Schema di calcolo del palo singolocaricato assialmente (TZPILE Technical Manual)

4.2.2 Curva carico-cedimento in presenza di attrito negativo

La valutazione della curva carico-cedimento del palo singolo in presenza di attrito negativo è stata effettuata con il metodo delle curve di trasferimento (τ-s e q-s) sempre mediante l'ausilio del codice di calcolo TZ-Pile ver. 2014.3.2 che opera come indicato al paragrafo 4.2.1, con la differenza che in presenza di attrito negativo si tiene conto, concio per concio, dell'entità del cedimento differenziale tra quello relativo al concio e quello relativo al terreno circostante il palo.

4.3 Comportamento del palo singolo soggetto a carico orizzontale

Lo studio dell'interazione palo-terreno sotto carichi orizzontali, e quindi la valutazione della curva carico-spostamento orizzontale del palo singolo, è stata effettuata con il metodo delle curve di trasferimento p-y) mediante l'ausilio del codice di calcolo L-Pile ver. 2016.9.09.
La procedura di calcolo implementata in LPile è del tutto analoga a quella del codice TZ-Pile con curve di trasferimento diverse a seconda dei materiali che permettono di riprodurre con un legame non lineare l'interazione tra palo e terreno circostante nei confronti dei carichi orizzontali.

Come detto in precedenza al paragrafo 3.2.1, da un punto di vista puramente geotecnico si ritiene pertanto non significativa una valutazione della resistenza di progetto per il palo soggetto a carichi orizzontali. Tuttavia si fornisce comunque un valore di riferimento calcolato, con il codice di calcolo L-Pile, come massima azione orizzontale applicabile in testa al palo in corrispondenza della quale avviene la prima insorgenza di plasticizzazione nel terreno circostante e dividendo tale valore per il coefficiente parziale indicato da normativa γ_r pari a 1.3.

5. CURVE DI RESISTENZA E COMPORTAMENTO DEFORMATIVO DEI PALI DI FONDAZIONE

5.1 Elenco delle opere per cui sono previste fondazioni profonde

Lungo il tracciato del Lotto 3 dei lavori di velocizzazione della linea Roma – Pescara, nella tratta tra Chieti e Interporto Val Pescara, il corpo stradale ferroviario si sviluppa alternativamente in rilevato e in trincea. I rilevati raggiungono altezze fino ad un massimo di 5.5 m, mentre le trincee raggiungono profondità fino a 3.5 m.

Oggetto della presente relazione sono le valutazioni delle resistenze e del comportamento dei pali di fondazione delle opere d'arte sia in linea che di attraversamento relative al tratto in oggetto.

In particolare nel seguito si riportano le valutazioni relative alle seguenti opere:

- VI31 – Ponte su via Tirino – km 14+245 (viadotto ferroviario in linea). L'opera prevede due spalle su pali.

5.2 VI31 – Ponte su Via Tirino – km 14+245

5.2.1 Inquadramento geotecnico

In accordo a quanto riportato nella Relazione Geotecnica (Doc. rif. [1]), nella successiva Tabella 5. è riportata la stratigrafia di riferimento utilizzata per la definizione delle curve di resistenza. Nella successiva Tabella 5.2 sono invece riportati i parametri geotecnici di calcolo associati alla suddetta stratigrafia.

La stratigrafia è derivata dai profili geotecnici della linea ferroviaria e delle viabilità stradali a cui si rimanda per i dettagli (da doc [2] a doc [4]).

Tabella 5.1: Stratigrafia di calcolo VI31

Strato	Elevazione media da [m slm]	Elevazione media a [m slm]	Descrizione
R	+48.00	+46.50	R
LA1 *	+46.50	+39.30	L,A; L(A)[S]
LA2	+39.30	+32.70	L(A);L,A
LA3	+32.70	+27.00	L(A,S); L(S,A)
L(S)1	+27.00	+24.30	L(S);S(L);S(L,A)
G,S	+24.30	+12.70	S; S(G);G(S);G
M	+12.70	-	A(M); M

Tabella 5.2: Parametri geotecnici di calcolo VI31 – Materiali in sito

UNITA'			Parametri di resistenza		
	γ_n	K_0	φ'	c'	c_u
	[kN/m³]	[-]	[°]	[kPa]	[kPa]
R	19		38	-	-
LA1	19.5	0.68	33	5	120
LA2	19	0.75	28	5	30-60
LA3	18.5	0.6	28	0	50
L(S)1	19.5	0.47	32	0	-
G,S **	19	0.38	38	0	-
M	20	0.54	28	25	200-500

Nelle valutazioni è stata considerata una quota testa palo a +37.75 m s.l.m. e una quota della falda a +32 m s.l.m..

Nel calcolo si è tenuto conto anche del riempimento (riporto antropico) che dagli elaborati di progetto sarà presente nella configurazione definitiva. Tale materiale è stato inserito come peso aggiuntivo, al di sopra del terreno naturale, nelle valutazioni di capacità portante in modo da considerare lo stato tensionale corretto alle diverse profondità.

5.2.2 Curve di portanza palo singolo

Il VI31 è ubicato lungo linea in corrispondenza di tratti in cui la linea corre pressoché a raso.

Nelle successive Figura 5.1 e Figura 5.2, in accordo ai criteri descritti al precedente punto 4, sono riportate rispettivamente le curve di capacità portante a compressione e a trazione secondo l'Approccio 2, valide anche per le condizioni sismiche, in Figura 5.3 e Figura 5.4 sono riportati

separatamente i contributi di resistenza laterale e di portata di base, sempre in accordo al DA2, e in Figura 5.5 sono riportate le curve di resistenza laterale caratteristica.

Nelle seguenti curve il peso del palo non è stato considerato e deve essere tenuto in conto come carico esterno considerando la differenza tra W_p (Peso del palo) e W_s (Peso del terreno sostituito dal palo), utilizzando sempre il valore del peso di terreno saturo anche sotto falda e non quello sommerso.

I calcoli sono stati condotti per pali di diametro:

- D = 800 mm;
- D = 1000 mm;
- D = 1200 mm;
- D = 1500 mm.

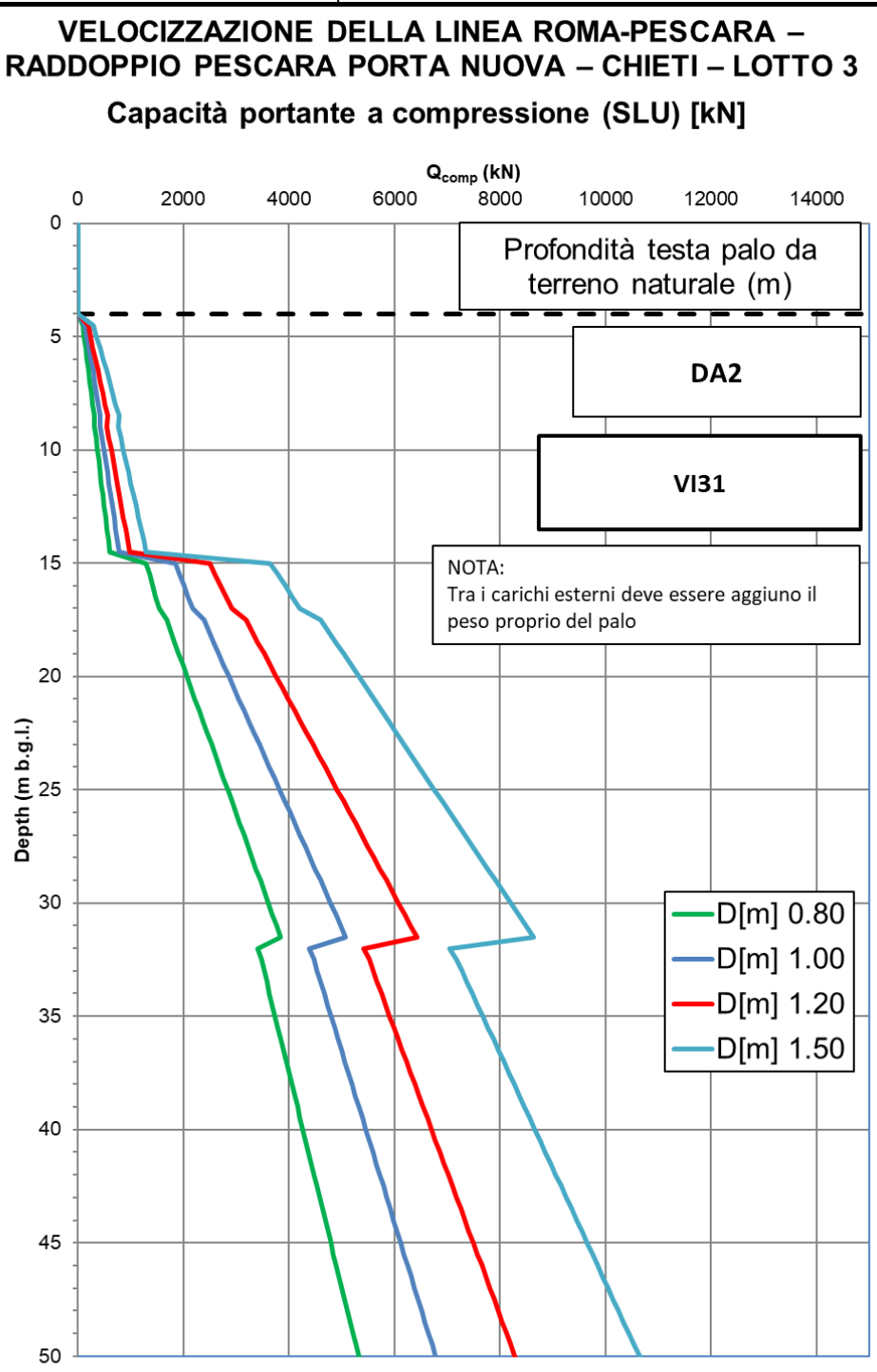


Figura 5.1: VI31 - Curve di capacità portante a compressione (SLU) DA2 + SISMA

VELOCIZZAZIONE DELLA LINEA ROMA-PESCARA – RADDOPPIO PESCARA PORTA NUOVA – CHIETI – LOTTO 3
Capacità portante a trazione (SLU) [kN]

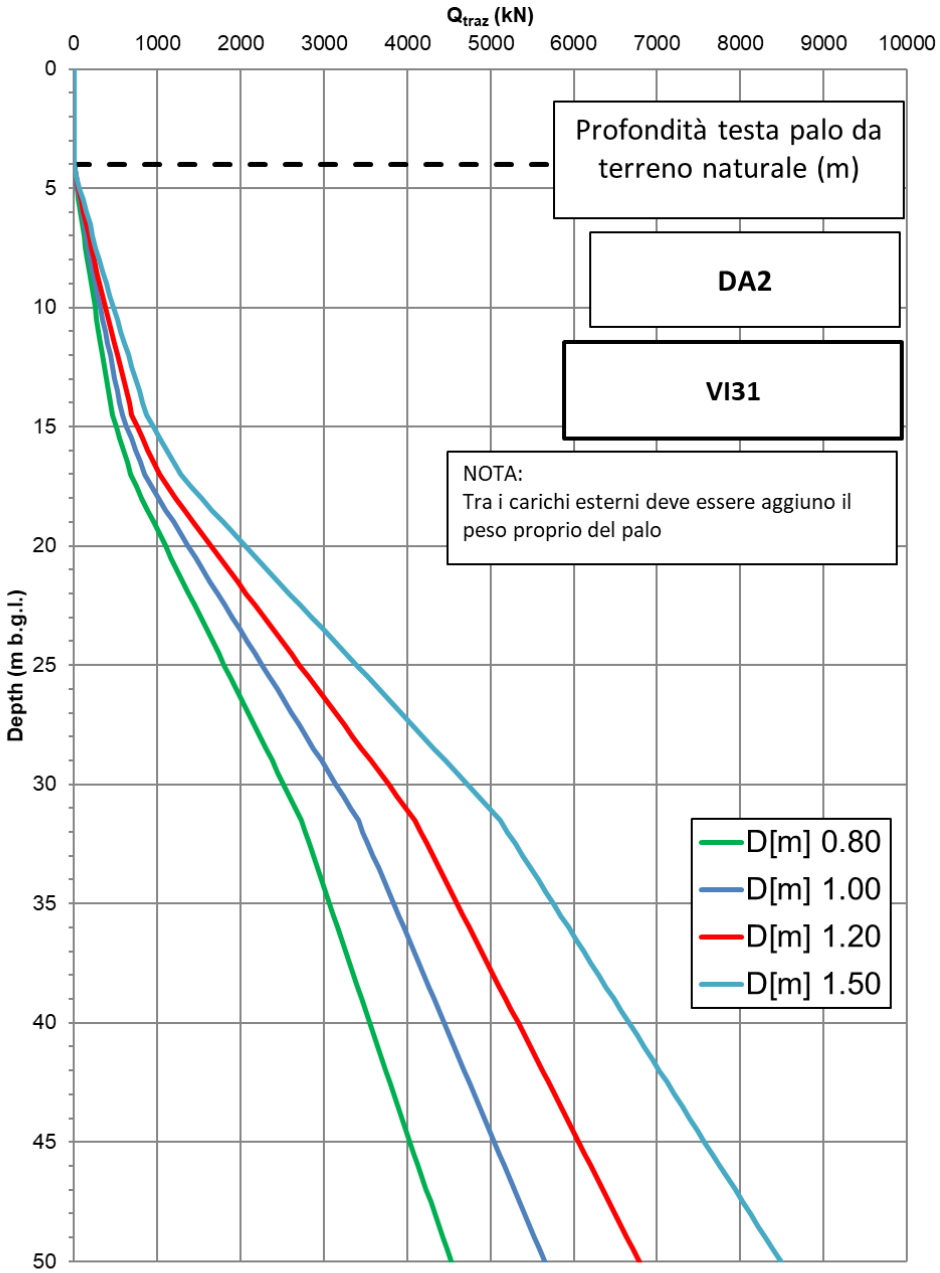


Figura 5.2: VI31 - Curve di capacità portante a trazione (SLU) DA2 + SISMA

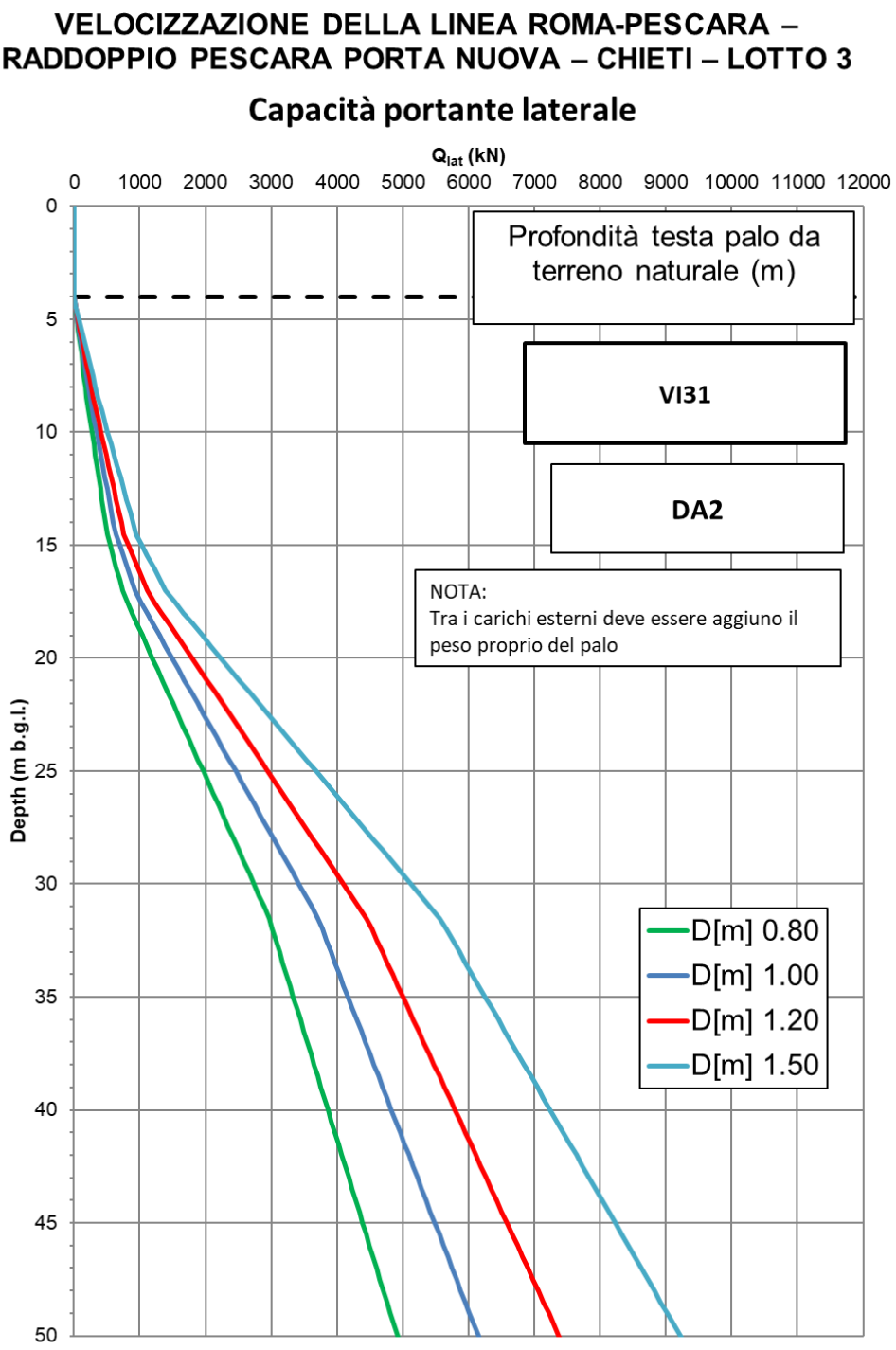


Figura 5.3: VI31 - Contributo di resistenza laterale (SLU) DA2 + SISMA

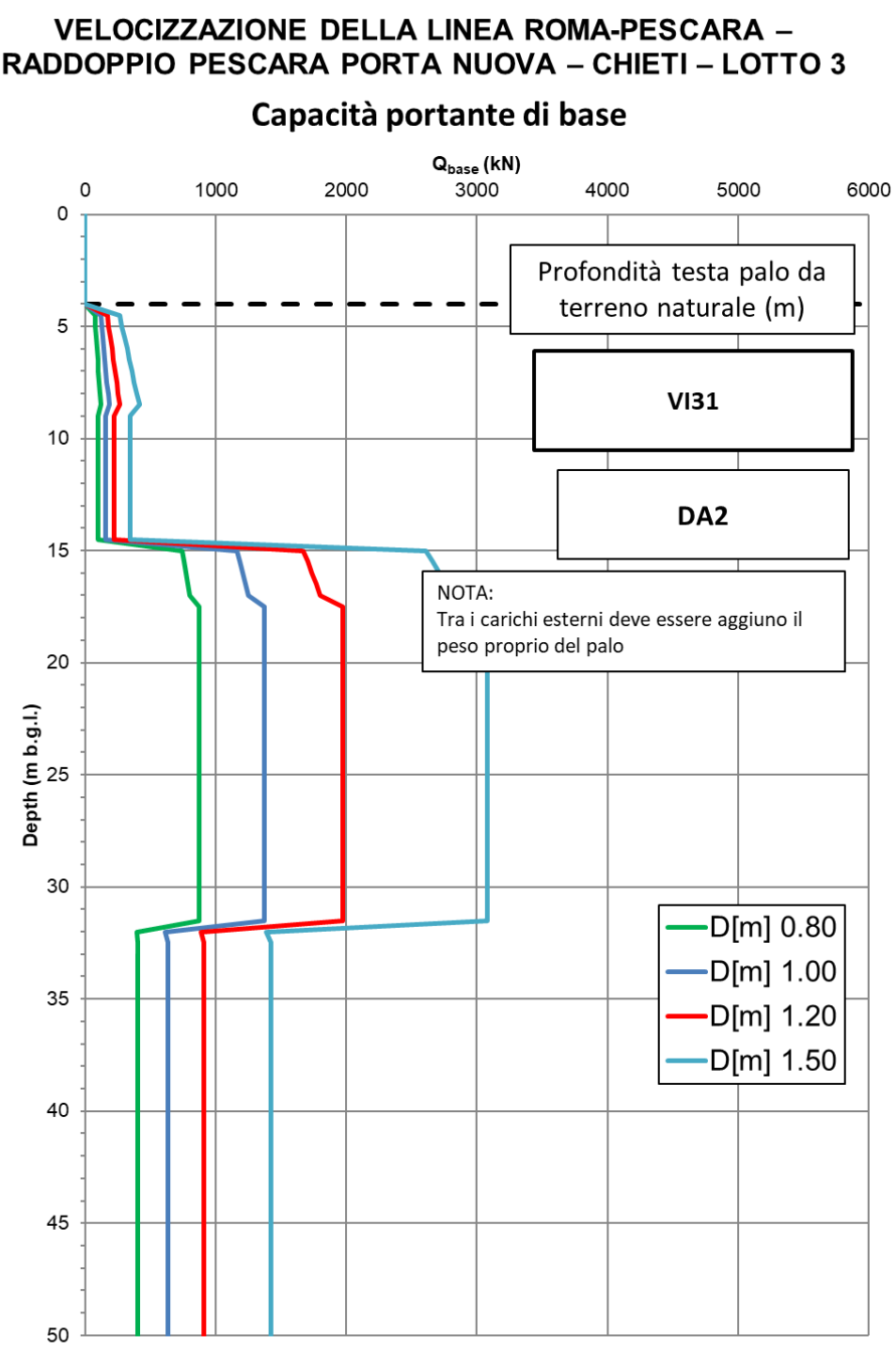


Figura 5.4: VI31- Contributo di portata di base (SLU) DA2 + SISMA

VELOCIZZAZIONE DELLA LINEA ROMA-PESCARA – RADDOPPIO PESCARA PORTA NUOVA – CHIETI – LOTTO 3

Capacità portante laterale caratteristica

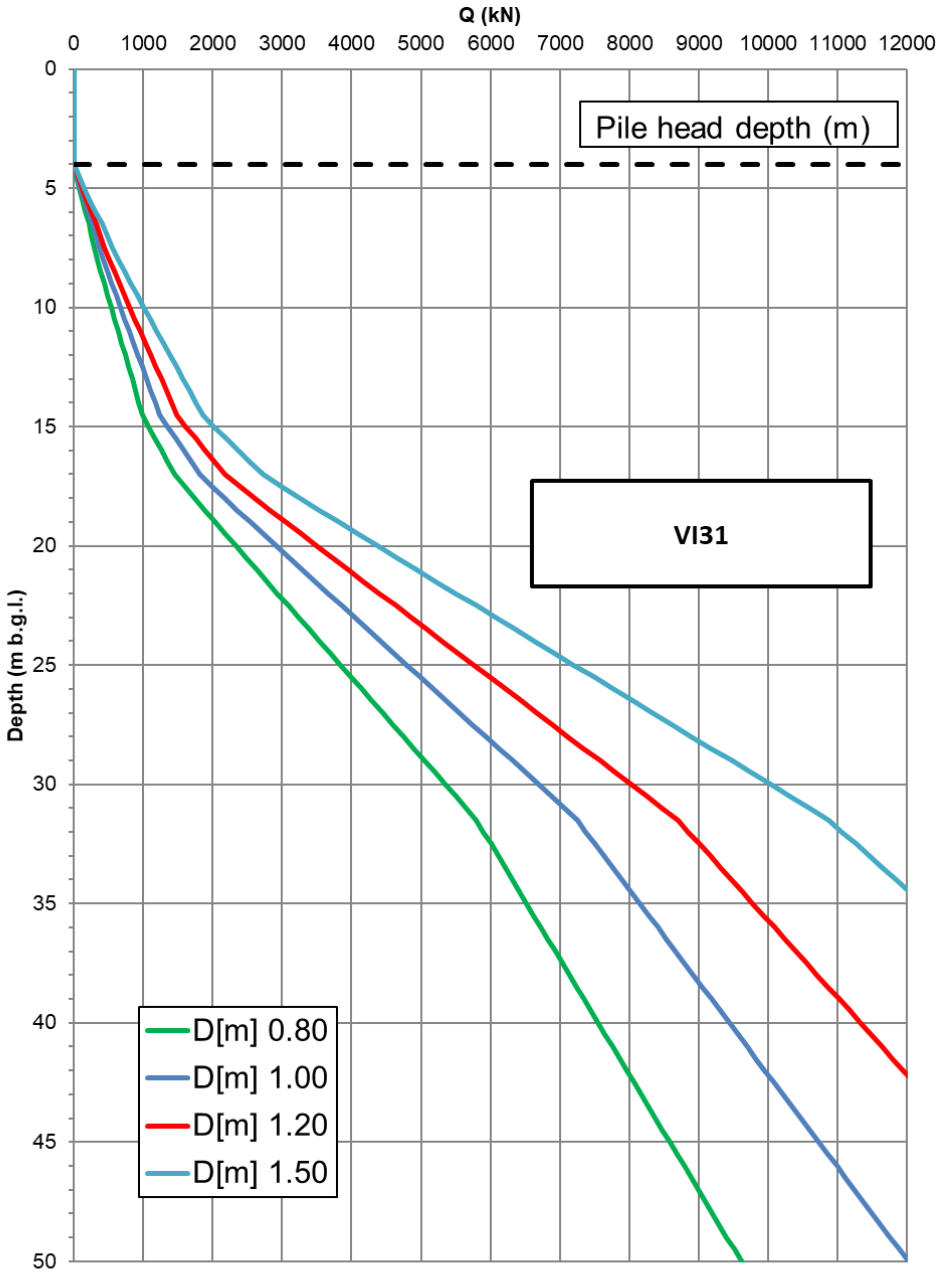


Figura 5.5: VI31 - Curve di resistenza laterale caratteristica

5.2.3 Curve carico-cedimento palo singolo

In accordo alla procedura descritta al precedente punto 4.2.1, utilizzando il metodo delle curve di trasferimento mediante l'ausilio del codice di calcolo TZ-Pile ver. 2014.3.2, si è calcolata la curva carico-cedimento per i pali del VI31. Nelle valutazioni sono state considerate, per ciascun diametro di palo, tre lunghezze di riferimento pari a 20 m, 25 m e 35 m.

Nella Figura 5.6 si riporta la curva carico-cedimento calcolata per il palo di diametro 800 mm, nella Figura 5.7 per il palo di diametro 1000 mm, nella Figura 5.8 per il palo di diametro 1200 mm e nella Figura 5.9 per il palo di diametro 1500 mm.

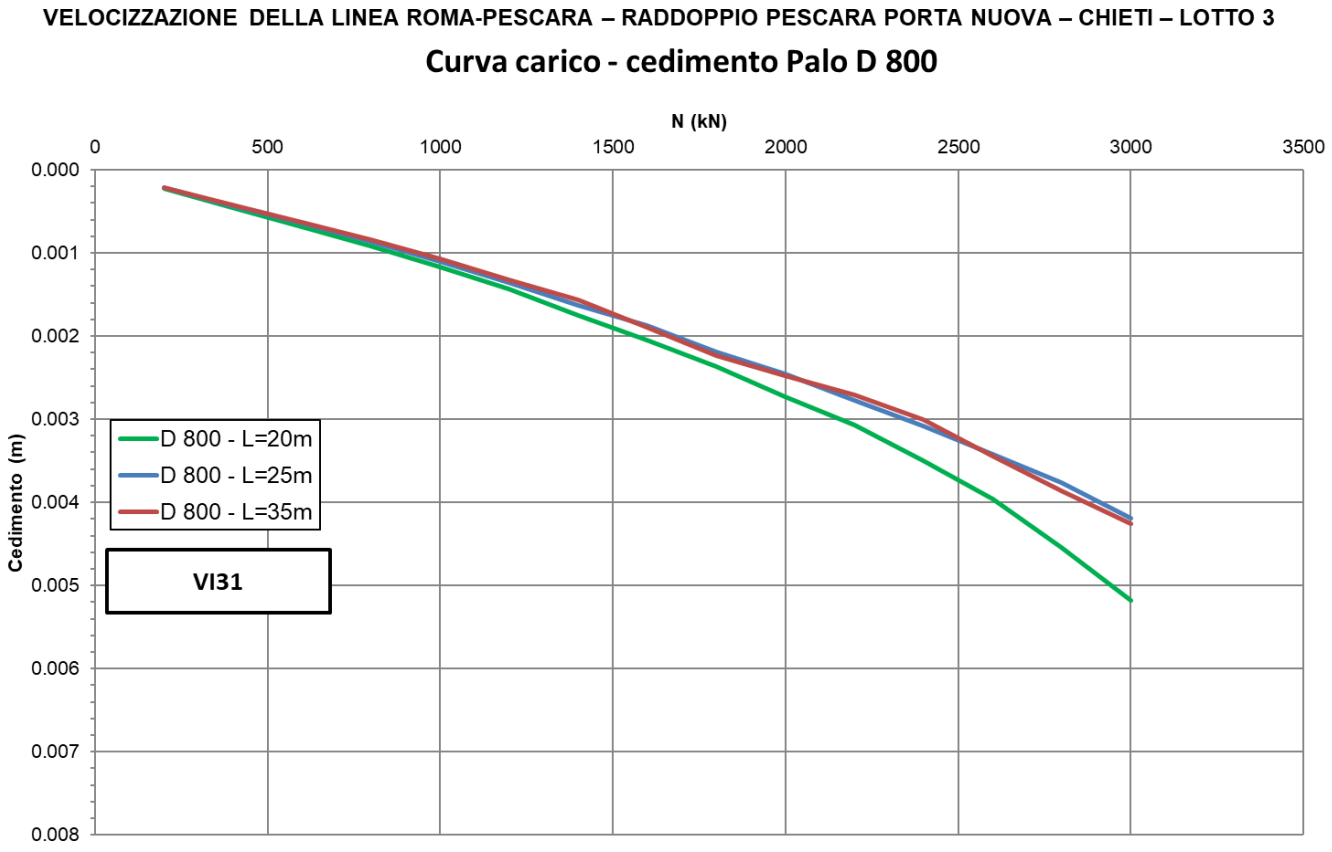


Figura 5.6: VI31 - Curva carico cedimento – D800

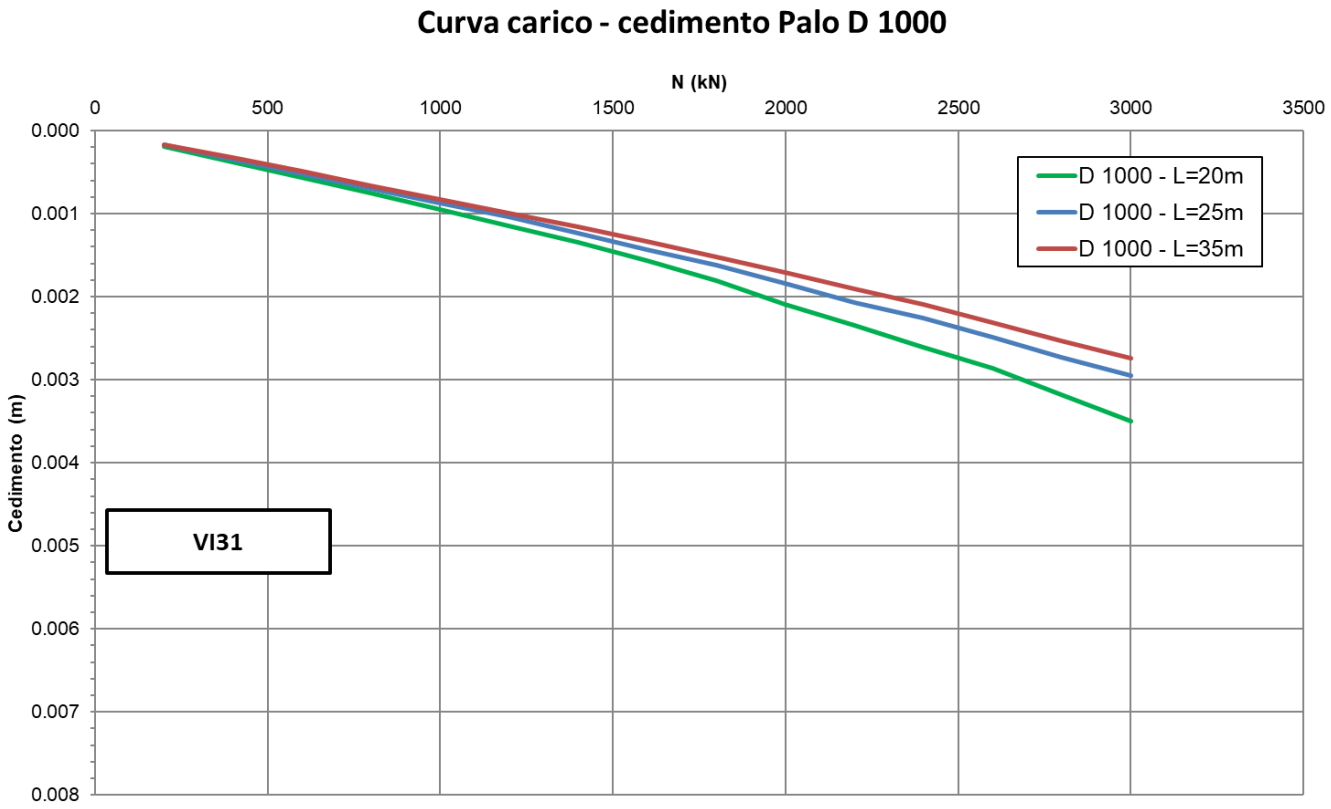


Figura 5.7: VI31 - Curva carico cedimento – D1000

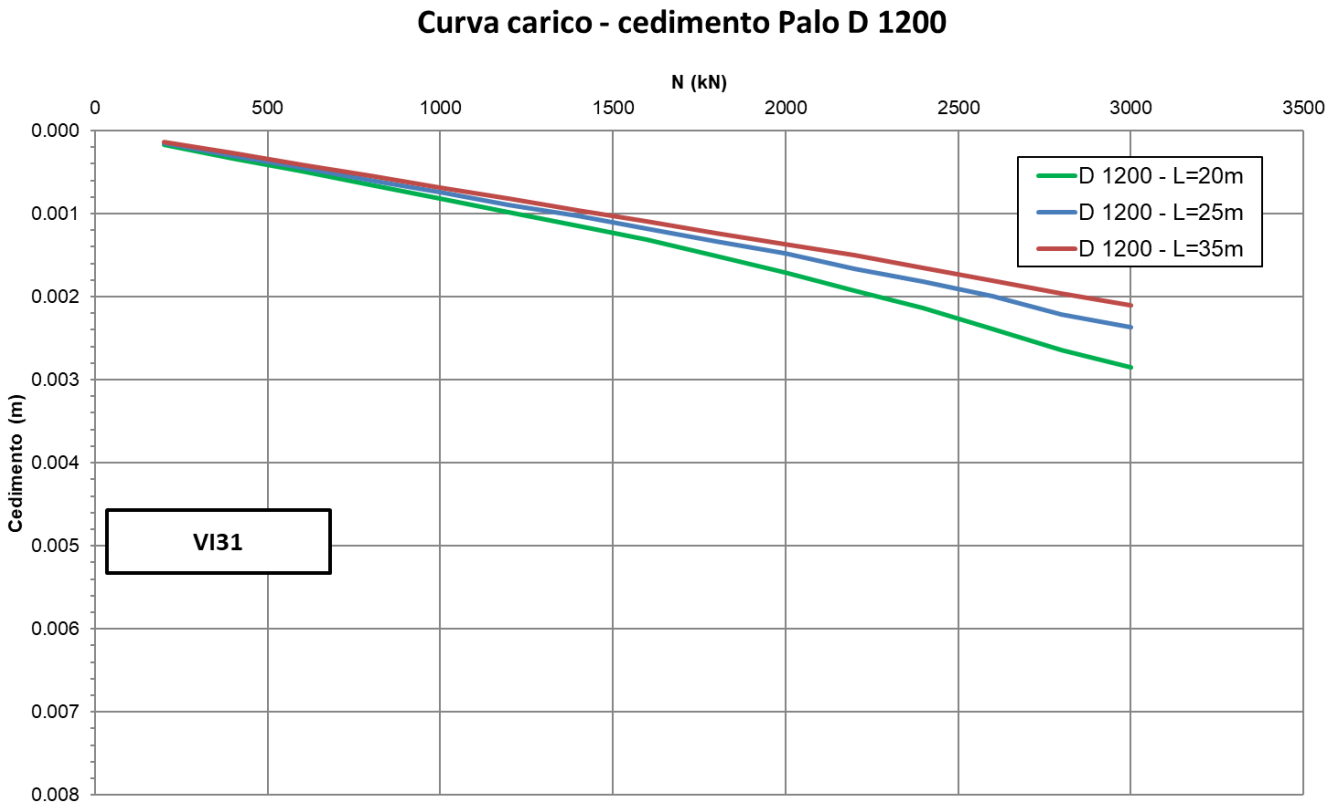


Figura 5.8: VI31 - Curva carico cedimento – D1200

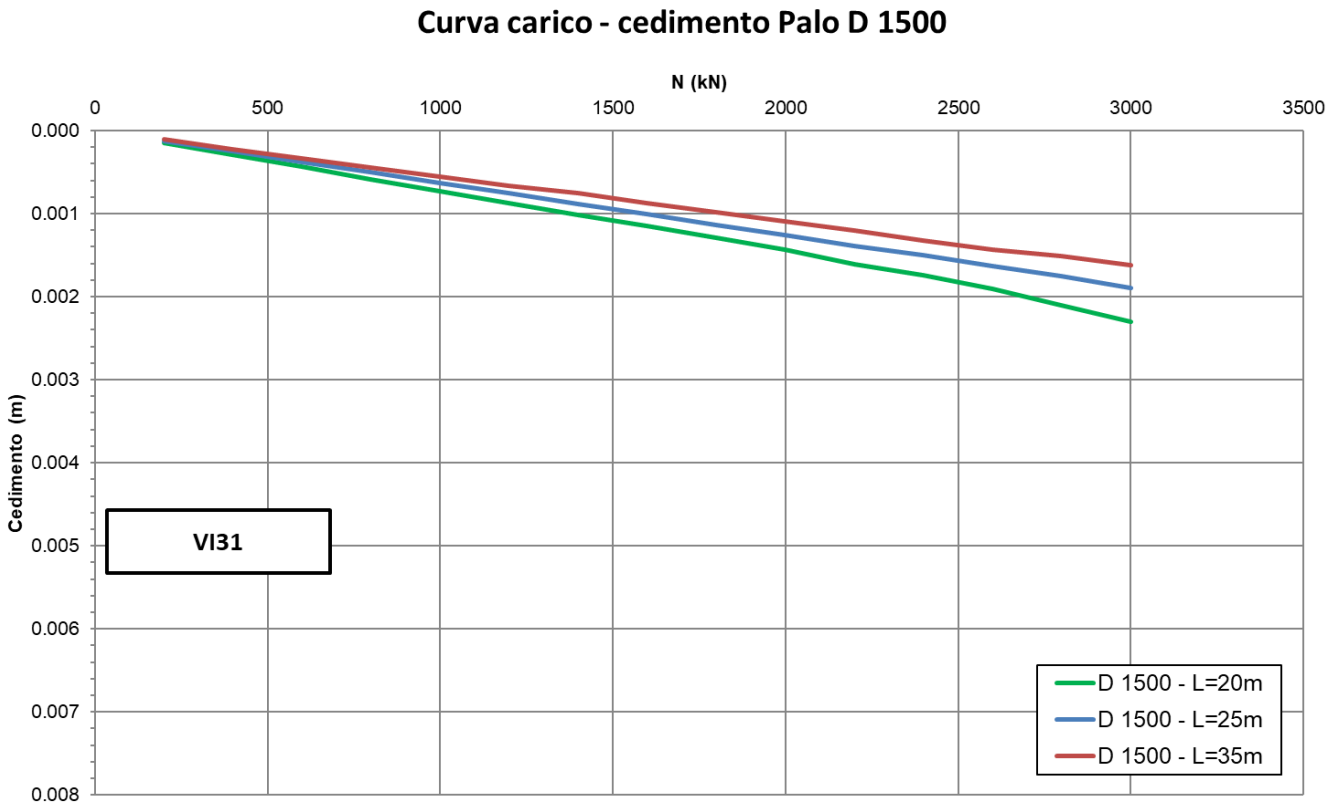


Figura 5.9: VI31 - Curva carico cedimento – D1500

5.2.4 Comportamento del palo singolo soggetto a carico orizzontale

Come meglio specificato al precedente capitolo 4.3, lo studio dell'interazione palo-terreno sotto carichi orizzontali è stata condotta utilizzando il metodo delle curve di trasferimento mediante l'ausilio del codice di calcolo L-Pile ver. 2016.9.09.

In particolare, i calcoli sono stati eseguiti considerando, per tutti i diametri di palo selezionati, una lunghezza di palo pari a 20 m. Tuttavia considerato che il comportamento del palo soggetto a carichi orizzontali dipende solamente dalle caratteristiche degli strati di terreno fino a profondità pari a 10÷12 volte il diametro del palo stesso, i risultati possono essere estesi a lunghezze di palo maggiori di quelle analizzate.

Nelle analisi la connessione della testa palo alla fondazione è stata considerata a "testa incernierata".

Nella Figura 5.10 si riporta la curva carico-cedimento calcolata per i pali di diametro 800 mm, 1000 mm, 1200 mm e 1500 mm.

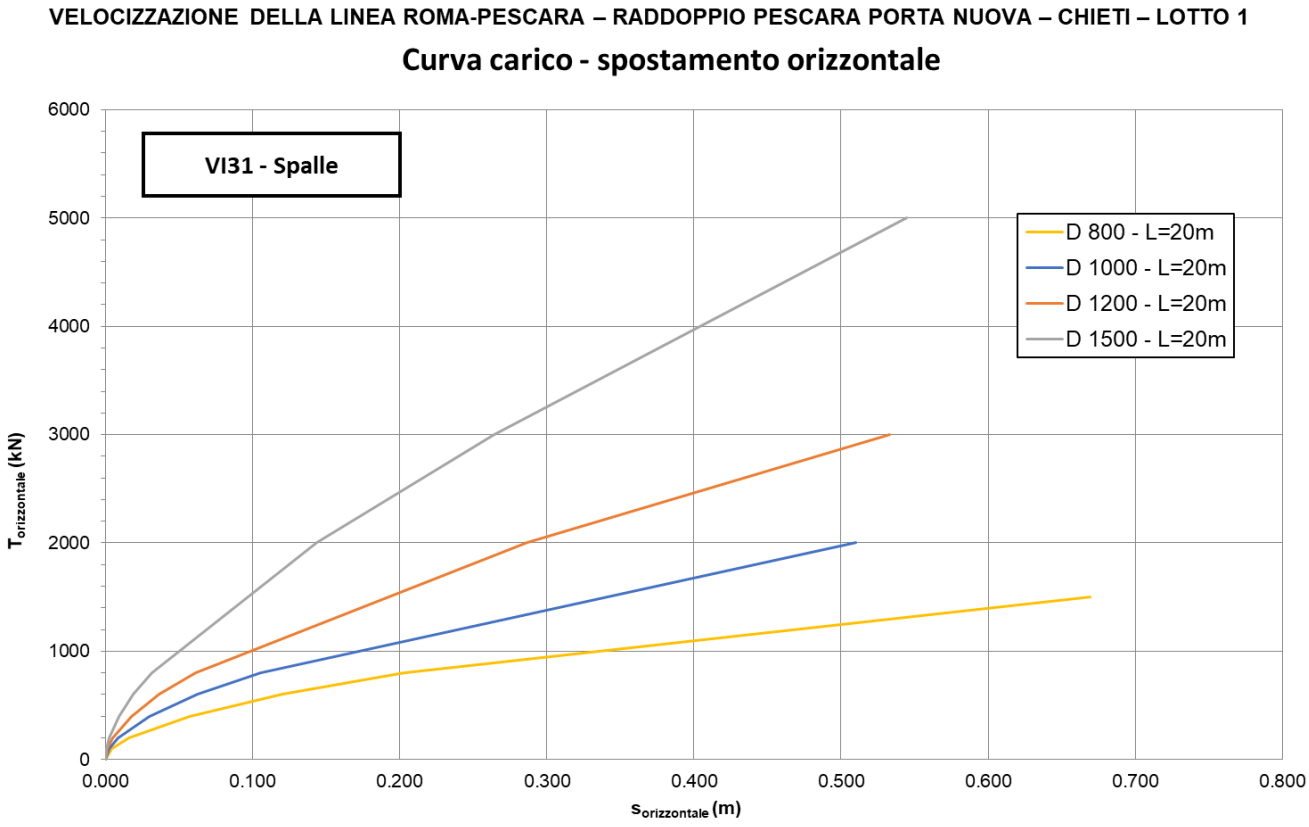
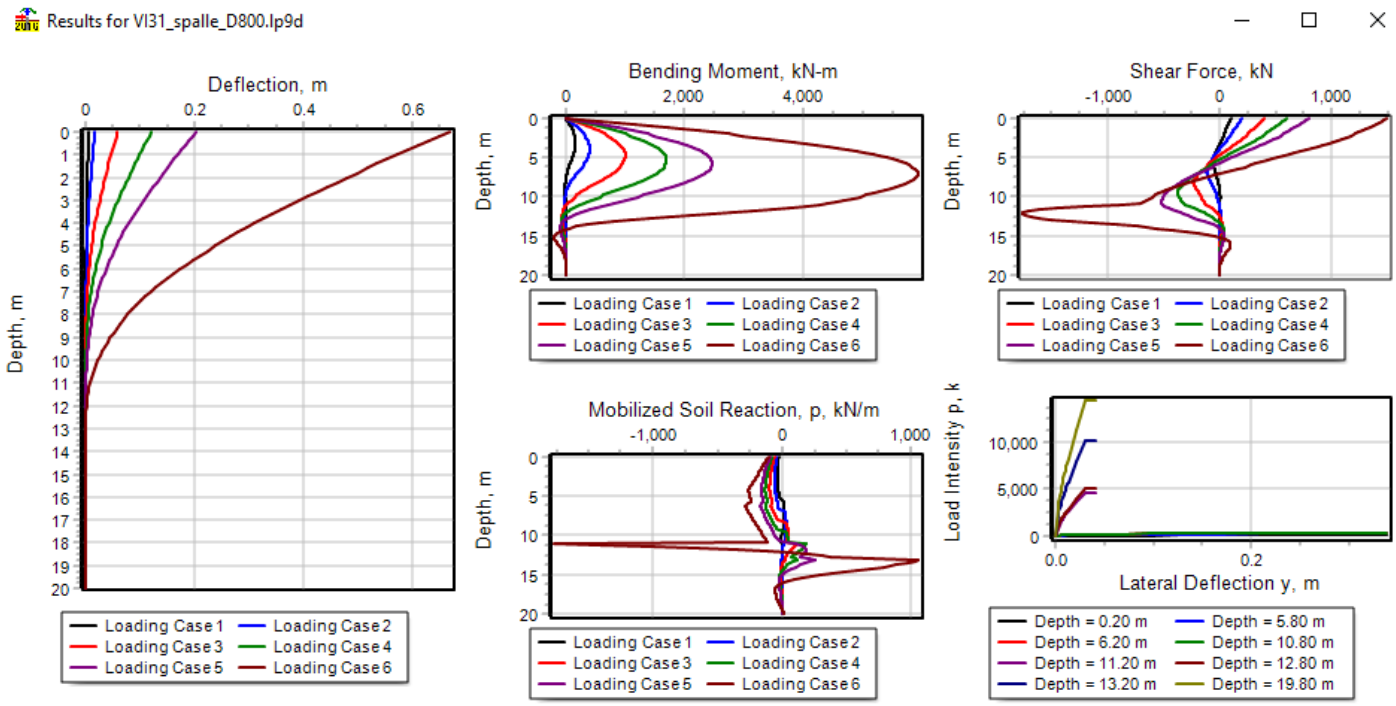


Figura 5.10: VI31 - Curva carico – spostamento orizzontale

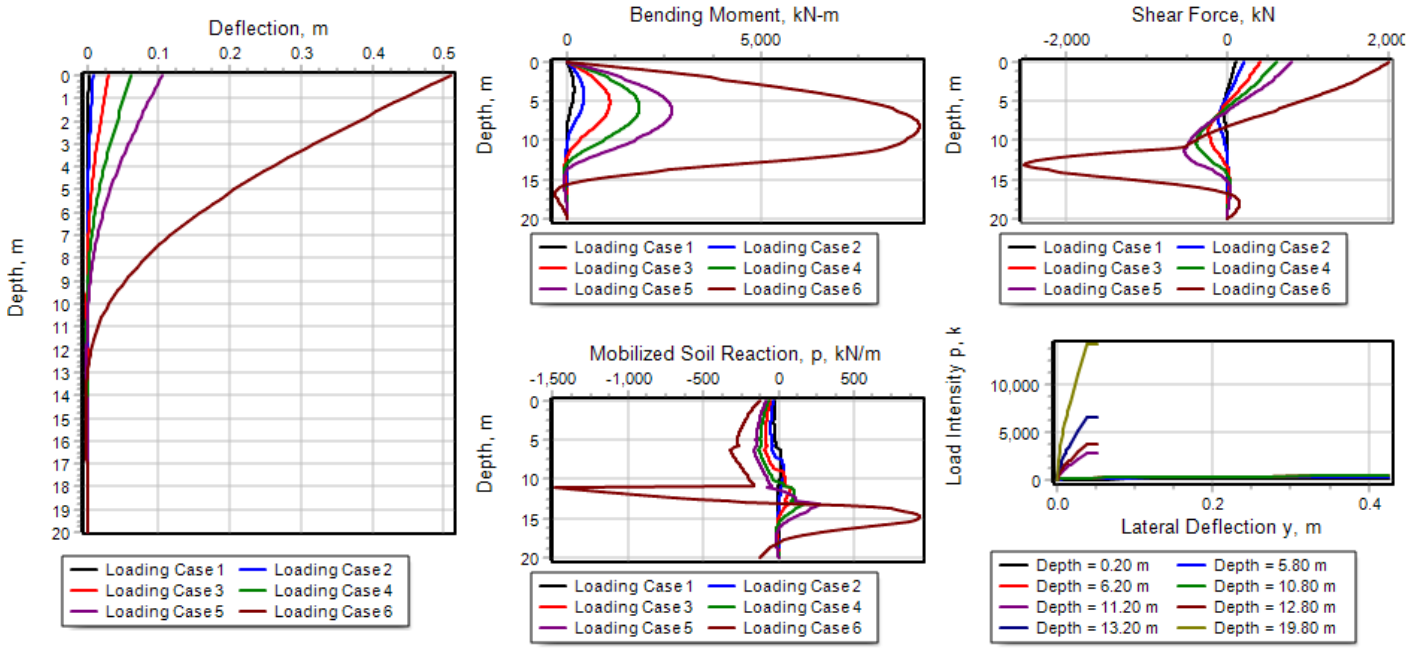
Per quanto riguarda la resistenza di progetto ai carichi orizzontali è stato valutato di adottare conservativamente il valore del carico trasversale, definito con il codice di calcolo L-Pile, in corrispondenza del quale si ha la prima insorgenza di plasticizzazione nel terreno circostante il palo o comunque uno spostamento rilevante della testa palo, come si può vedere dai grafici sotto

riportati nella parte dedicata alla resistenza del terreno mobilitata. I valori ottenuti per i diversi diametri sono i seguenti:

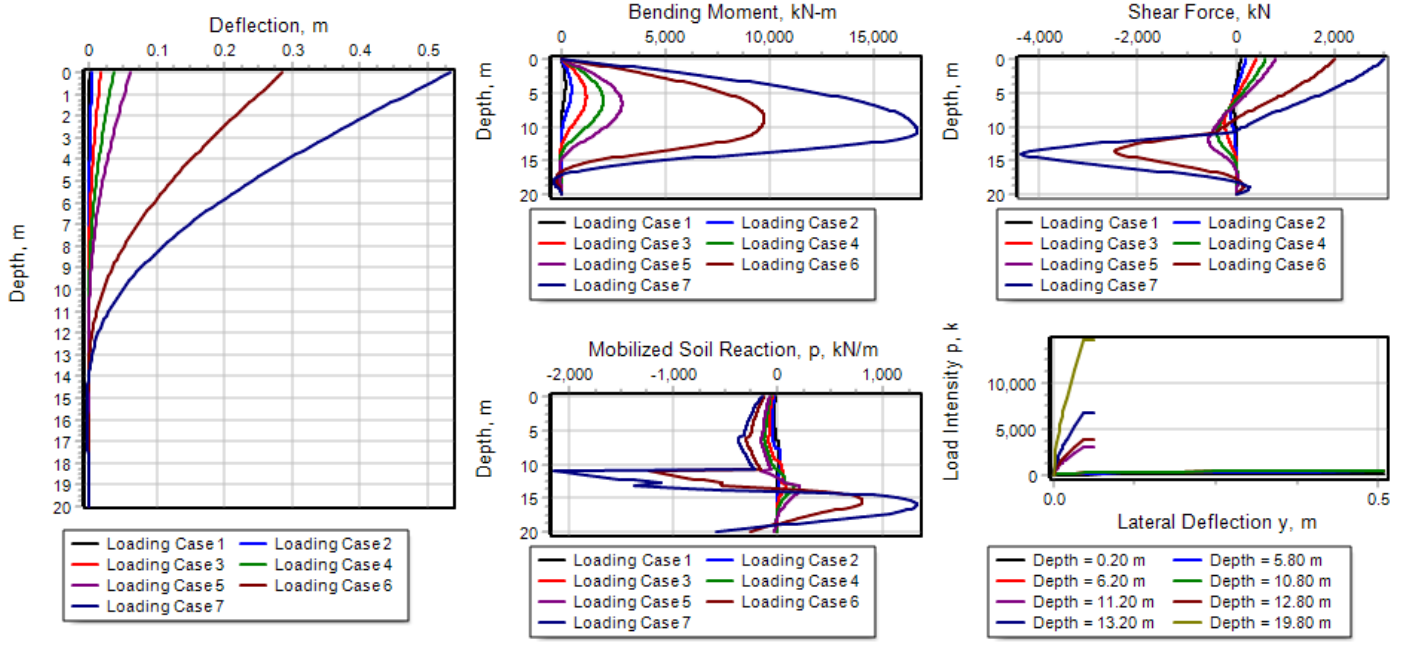
- D800 mm – T = 1500 kN
- D1000 mm – T = 2000 kN
- D1200 mm – T = 3000 kN
- D1500 mm – T = 5000 kN

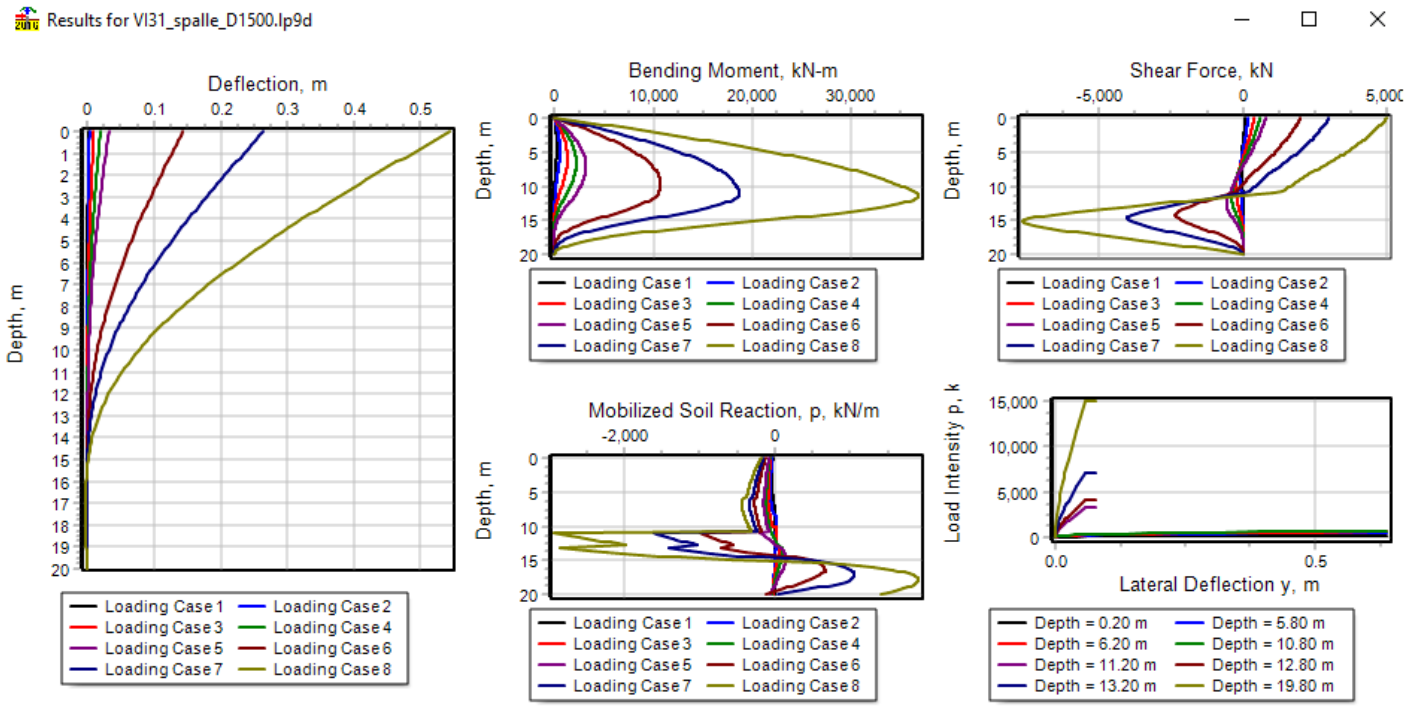


Results for VI31_spalle_D1000.lp9d



Results for VI31_spalle_D1200.lp9d





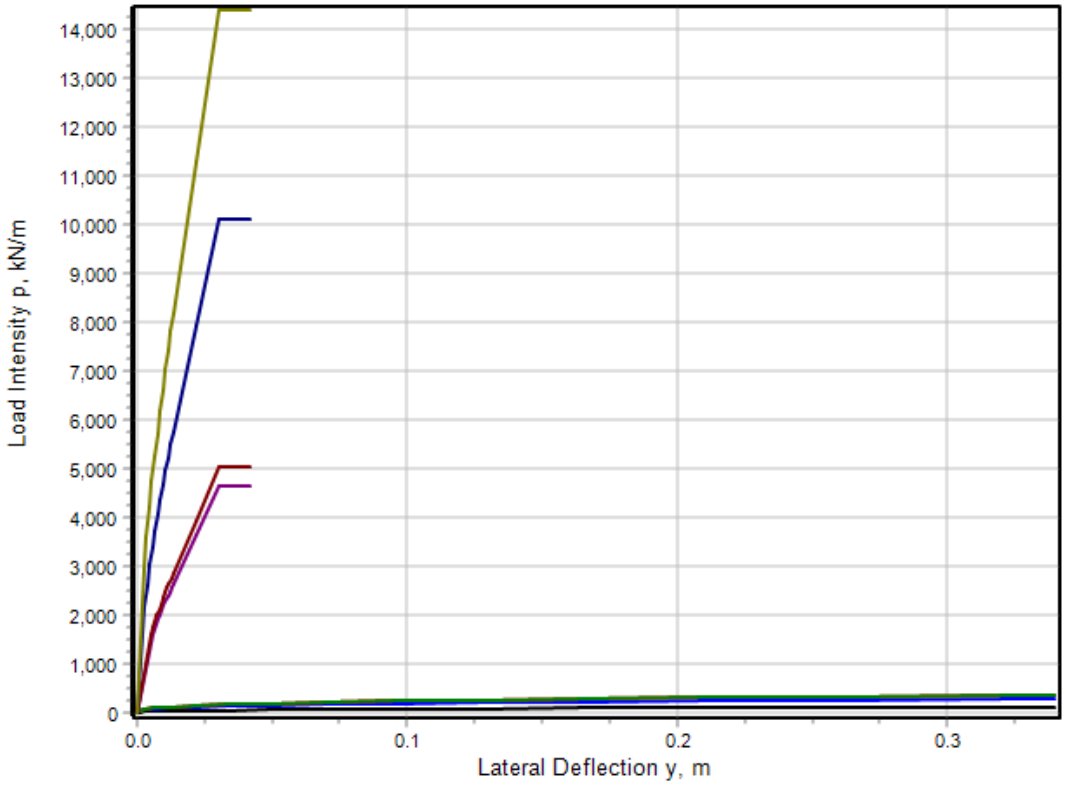
Da cui, applicando il fattore parziale γ_r = 1.3 si ottengono i seguenti valori di $R_{tr,d}$:

- D800 mm – $R_{tr,d}$ = 1153 kN
- D1000 mm – $R_{tr,d}$ = 1538 kN
- D1200 mm – $R_{tr,d}$ = 2307 kN
- D1500 mm – $R_{tr,d}$ = 3846 kN

Nell'Allegato A sono riportati i dati delle curve p-y selezionate per modellare l'interazione palo-terreno rispetto ai carichi orizzontali.

ALLEGATO A – CURVE P-Y PER L'INTERAZIONE PALO-TERRENO NEI CONFRONTI DEI CARICHI ORIZZONTALI

Opera VI31



Summary of Input Soil Properties

Layer Num.	Soil Type Layer Name (p-y Curve Type)	Layer Depth m	Effective Unit Wt. kN/m3	Undrained Cohesion kPa	Angle of Friction deg.	E50 or krm	kpy kN/m3
1	Soft	-1.0000	19.0000	30.0000	--	0.02000	--
	Clay	6.0000	19.0000	40.0000	--	0.02000	--
2	Soft	6.0000	9.0000	50.0000	--	0.02000	--
	Clay	11.0000	9.0000	50.0000	--	0.02000	--
3	Sand	11.0000	9.0000	--	32.0000	--	default
	(Reese, et al.)	13.0000	9.0000	--	32.0000	--	default
4	Sand	13.0000	9.0000	--	38.0000	--	default
	(Reese, et al.)	20.0000	9.0000	--	38.0000	--	default

Specified Depths for Output of p-y Curves

Lateral load-transfer (p-y) curves are computed and output at 8 depths.
(Note that load-transfer values are computeded at the specified depths and may differ from values computed at nodal points)

Depth No.	Depth Below Pile Head m	Depth Below Ground Surface m

1	0.200	1.200
2	5.800	6.800
3	6.200	7.200
4	10.800	11.800
5	11.200	12.200
6	12.800	13.800
7	13.200	14.200
8	19.800	20.800

Depth of ground surface below top of pile = -1.0000 m

---

p-y Curves Reported for Specified Depths

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p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 1
Depth of top of Layer 1 below pile head = -1.000 m
Depth of p-y curve below pile head = 0.200 m
Depth of p-y curve below ground surface = 1.200 m
Equiv. depth of p-y curve below ground surface = 1.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 800.000 mm
Average effective unit weight = 19.00000 kN/m3
Undrained cohesion = 31.714 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 4.902 m
Static pu_s for flat ground = 113.383 kN/m
Static pu_d for flat ground = 228.343 kN/m
y_50 = 0.04000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 113.383 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00009481	7.55886
0.00075852	15.11771
0.00256	22.67657
0.00607	30.23543
0.01185	37.79429
0.02048	45.35314
0.03252	52.91200
0.04855	60.47086
0.06912	68.02971
0.09481	75.58857
0.12620	83.14743
0.16384	90.70629
0.20831	98.26514

0.26017	105.82400
0.32000	113.38286
0.34000	113.38286

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 1
Depth of top of Layer 1 below pile head = -1.000 m
Depth of p-y curve below pile head = 5.800 m
Depth of p-y curve below ground surface = 6.800 m
Equiv. depth of p-y curve below ground surface = 6.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 800.000 mm
Average effective unit weight = 19.00000 kN/m3
Undrained cohesion = 39.714 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 5.438 m
Static pu_s for flat ground = 333.703 kN/m
Static pu_d for flat ground = 285.943 kN/m
y_50 = 0.04000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 285.943 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00009481	19.06286
0.00075852	38.12571
0.00256	57.18857
0.00607	76.25143
0.01185	95.31429
0.02048	114.37714
0.03252	133.44000
0.04855	152.50286
0.06912	171.56571
0.09481	190.62857
0.12620	209.69143
0.16384	228.75429
0.20831	247.81714
0.26017	266.88000
0.32000	285.94286
0.34000	285.94286

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 2
Depth of top of Layer 2 below pile head = 6.000 m
Depth of p-y curve below pile head = 6.200 m

Depth of p-y curve below ground surface = 7.200 m
Equiv. depth of p-y curve below ground surface = 7.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 800.000 mm
Average effective unit weight = 18.72222 kN/m3
Undrained cohesion = 50.000 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 6.003 m
Static pu_s for flat ground = 407.840 kN/m
Static pu_d for flat ground = 360.000 kN/m
y_50 = 0.04000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 360.000 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00009481	24.00000
0.00075852	48.00000
0.00256	72.00000
0.00607	96.00000
0.01185	120.00000
0.02048	144.00000
0.03252	168.00000
0.04855	192.00000
0.06912	216.00000
0.09481	240.00000
0.12620	264.00000
0.16384	288.00000
0.20831	312.00000
0.26017	336.00000
0.32000	360.00000
0.34000	360.00000

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 2
Depth of top of Layer 2 below pile head = 6.000 m
Depth of p-y curve below pile head = 10.800 m
Depth of p-y curve below ground surface = 11.800 m
Equiv. depth of p-y curve below ground surface = 11.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 800.000 mm
Average effective unit weight = 14.93220 kN/m3
Undrained cohesion = 50.000 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 6.496 m
Static pu_s for flat ground = 555.960 kN/m
Static pu_d for flat ground = 360.000 kN/m

y_50 = 0.04000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 360.000 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00009481	24.00000
0.00075852	48.00000
0.00256	72.00000
0.00607	96.00000
0.01185	120.00000
0.02048	144.00000
0.03252	168.00000
0.04855	192.00000
0.06912	216.00000
0.09481	240.00000
0.12620	264.00000
0.16384	288.00000
0.20831	312.00000
0.26017	336.00000
0.32000	360.00000
0.34000	360.00000

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 3
Depth of top of Layer 3 below pile head = 11.000 m
Depth of p-y curve below pile head = 11.200 m
Depth of p-y curve below ground surface = 12.200 m
Equiv. depth of p-y curve below ground surface = 12.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 800.000 mm
Angle of Friction = 32.000 degrees
Average Effective Unit Weight = 14.738 kN/m3
k_py = 22564.423 kN/m3
K active = 0.307
K passive = 3.255
K0 = 0.400
Pst = 5428.204 kN/m
Psd = 5295.325 kN/m
Ps = Psd (deep controls) = 5295.325 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 36551.0529
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 120733.4155
Yk = [c/(kx)]^(n/(n-1)) = 0.0058 m
Pk = 1595.272 kN/m
Ym = b/60 = 0.0133 m

Pm = B ps = 2647.663 kN/m
Yu = 3b/80 = 0.0300 m
Pu = A Ps = 4659.886 kN/m
Maximum Es value = 275285.965 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00579	1595.27161
0.00648	1707.45169
0.00717	1815.06640
0.00785	1918.71417
0.00854	2018.87011
0.00922	2115.91921
0.00991	2210.17884
0.01059	2301.91442
0.01128	2391.35074
0.01196	2478.68022
0.01265	2564.06920
0.01333	2647.66262
0.02167	3653.77442
0.03000	4659.88621
0.03600	4659.88621
0.04200	4659.88621

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 3
Depth of top of Layer 3 below pile head = 11.000 m
Depth of p-y curve below pile head = 12.800 m
Depth of p-y curve below ground surface = 13.800 m
Equiv. depth of p-y curve below ground surface = 13.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 800.000 mm
Angle of Friction = 32.000 degrees
Average Effective Unit Weight = 14.072 kN/m3
k_py = 22564.423 kN/m3
K active = 0.307
K passive = 3.255
K0 = 0.400
Pst = 6571.801 kN/m
Psd = 5719.422 kN/m
Ps = Psd (deep controls) = 5719.422 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 39478.3898
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 130402.8326

Yk = [c/(kx)]^(n/(n-1)) = 0.0052 m
Pk = 1603.914 kN/m
Ym = b/60 = 0.0133 m
Pm = B ps = 2859.711 kN/m
Yu = 3b/80 = 0.0300 m
Pu = A Ps = 5033.092 kN/m
Maximum Es value = 311389.042 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00515	1603.91424
0.00589	1741.00560
0.00664	1871.45979
0.00738	1996.29409
0.00813	2116.28410
0.00887	2232.03789
0.00961	2344.04313
0.01036	2452.69828
0.01110	2558.33418
0.01185	2661.22917
0.01259	2761.62026
0.01333	2859.71124
0.02167	3946.40151
0.03000	5033.09178
0.03600	5033.09178
0.04200	5033.09178

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 4
Depth of top of Layer 4 below pile head = 13.000 m
Depth of p-y curve below pile head = 13.200 m
Depth of p-y curve below ground surface = 14.200 m
Equiv. depth of p-y curve below ground surface = 14.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 800.000 mm
Angle of Friction = 38.000 degrees
Average Effective Unit Weight = 13.930 kN/m3
k_py = 56849.174 kN/m3
K active = 0.238
K passive = 4.204
K0 = 0.400
Pst = 11498.417 kN/m
Psd = 12591.333 kN/m

Ps = Pst (shallow controls) = 11498.417 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 79367.9782
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 262163.9139
Yk = [c/(kx)]^(n/(n-1)) = 0.0027 m
Pk = 2173.693 kN/m
Ym = b/60 = 0.0133 m
Pm = B ps = 5749.209 kN/m
Yu = 3b/80 = 0.0300 m
Pu = A Ps = 10118.607 kN/m
Maximum Es value = 807258.272 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00269	2173.69323
0.00366	2619.64897
0.00463	3021.11563
0.00559	3390.72612
0.00656	3735.97399
0.00753	4061.75439
0.00850	4371.48237
0.00946	4667.65719
0.01043	4952.17593
0.01140	5226.52058
0.01237	5491.87615
0.01333	5749.20864
0.02167	7933.90792
0.03000	10118.60720
0.03600	10118.60720
0.04200	10118.60720

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 4
Depth of top of Layer 4 below pile head = 13.000 m
Depth of p-y curve below pile head = 19.800 m
Depth of p-y curve below ground surface = 20.800 m
Equiv. depth of p-y curve below ground surface = 20.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 800.000 mm
Angle of Friction = 38.000 degrees
Average Effective Unit Weight = 12.365 kN/m3
k_py = 56849.174 kN/m3
K active = 0.238
K passive = 4.204

K0	= 0.400
Pst	= 21521.412 kN/m
Psd	= 16372.552 kN/m
Ps = Psd (deep controls)	= 16372.552 kN/m
A (static)	= 0.8800
B (static)	= 0.5000
C = Pm/(Ym^(1/n))	= 113011.7592
n = Pm/(m Ym)	= 1.6447
m = (Pu-Pm)/(Yu-Ym)	= 373294.1896
Yk = [c/(kx)]^(n/(n-1))	= 0.0025 m
Pk	= 2962.130 kN/m
Ym = b/60	= 0.0133 m
Pm = B ps	= 8186.276 kN/m
Yu = 3b/80	= 0.0300 m
Pu = A Ps	= 14407.846 kN/m
Maximum Es value	= 1182462.821 kN/m/m
p-multiplier	= 1.00000
y-multiplier	= 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00251	2962.13045
0.00349	3623.42429
0.00447	4214.40983
0.00546	4756.09626
0.00644	5260.57455
0.00743	5735.59030
0.00841	6186.47339
0.00940	6617.08479
0.01038	7030.33207
0.01136	7428.47237
0.01235	7813.30124
0.01333	8186.27609
0.02167	11297.06100
0.03000	14407.84591
0.03600	14407.84591
0.04200	14407.84591

The above p-y curve was computed using internal default values of k.

ALLEGATO B – CURVE COMPORTAMENTO PALO SINGOLO SOGGETTO A CARICO ORIZZONTALE

Opera VI31 – D800

==========

LPile for Windows, Version 2016-09.009

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

==========

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Files Used for Analysis

Path to file locations:
\m9159A\Work\07_Pali\VI31 (NV34)\LPILE\

Name of input data file:
VI31_spalle_D800.lp9d

Name of output report file:
VI31_spalle_D800.lp9o

Name of plot output file:
VI31_spalle_D800.lp9p

Name of runtime message file:
VI31_spalle_D800.lp9r

Date and Time of Analysis

Date: July 9, 2019 Time: 12:22:17

Problem Title

Project Name: VI02 - Spalle e pila
Job Number:
Client:
Engineer:
Description:

Program Options and Settings

Computational Options:
- Use unfactored loads in computations (conventional analysis)

Engineering Units Used for Data Input and Computations:
- International System Units (kilonewtons, meters, millimeters)

Analysis Control Options:
- Maximum number of iterations allowed = 500
- Deflection tolerance for convergence = 2.5400E-07 m
- Maximum allowable deflection = 2.5400 m
- Number of pile increments = 100

Loading Type and Number of Cycles of Loading:
- Static loading specified

- Use of p-y modification factors for p-y curves not selected
- No distributed lateral loads are entered
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:
- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- p-y curves computed and reported at user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined = 1
Total length of pile = 20.000 m
Depth of ground surface below top of pile = -1.0000 m

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point	Depth Below Pile Head meters	Pile Diameter millimeters
1	0.000	800.00
2	20.000	800.00

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is an elastic pile
Cross-sectional Shape = Circular Pile
Length of section = 20.000000 m
Width of top of section = 0.800000 m
Width of bottom of section = 0.800000 m

Top Area = 0.502655 sq. m
Bottom Area = 0.502655 sq. m
Moment of Inertia at Top = 0.020106 m^4
Moment of Inertia at Bottom = 0.020106 m^4
Elastic Modulus = 28000000. kPa

Ground Slope and Pile Batter Angles

Ground Slope Angle = 0.000 degrees
= 0.000 radians

Pile Batter Angle = 0.000 degrees
= 0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = -1.000000 m
Distance from top of pile to bottom of layer = 6.000000 m
Effective unit weight at top of layer = 19.000000 kN/m3
Effective unit weight at bottom of layer = 19.000000 kN/m3
Undrained cohesion at top of layer = 30.000000 kPa
Undrained cohesion at bottom of layer = 40.000000 kPa
Epsilon-50 at top of layer = 0.020000
Epsilon-50 at bottom of layer = 0.020000

Layer 2 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = 6.000000 m
Distance from top of pile to bottom of layer = 11.000000 m
Effective unit weight at top of layer = 9.000000 kN/m3
Effective unit weight at bottom of layer = 9.000000 kN/m3
Undrained cohesion at top of layer = 50.000000 kPa
Undrained cohesion at bottom of layer = 50.000000 kPa
Epsilon-50 at top of layer = 0.020000
Epsilon-50 at bottom of layer = 0.020000

Layer 3 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 11.000000 m
Distance from top of pile to bottom of layer = 13.000000 m
Effective unit weight at top of layer = 9.000000 kN/m3
Effective unit weight at bottom of layer = 9.000000 kN/m3
Friction angle at top of layer = 32.000000 deg.
Friction angle at bottom of layer = 32.000000 deg.
Subgrade k at top of layer = 0.0000 kN/m3
Subgrade k at bottom of layer = 0.0000 kN/m3

NOTE: Default values for subgrade k will be computed for this layer.

Layer 4 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 13.000000 m
Distance from top of pile to bottom of layer = 20.000000 m

Effective unit weight at top of layer = 9.000000 kN/m3
Effective unit weight at bottom of layer = 9.000000 kN/m3
Friction angle at top of layer = 38.000000 deg.
Friction angle at bottom of layer = 38.000000 deg.
Subgrade k at top of layer = 0.0000 kN/m3
Subgrade k at bottom of layer = 0.0000 kN/m3

NOTE: Default values for subgrade k will be computed for this layer.

(Depth of the lowest soil layer extends 0.000 m below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth m	Effective Unit Wt. kN/m3	Undrained Cohesion kPa	Angle of Friction deg.	E50 or krm	kpy kN/m3
1	Soft Clay	-1.0000 6.0000	19.0000 19.0000	30.0000 40.0000	-- --	0.02000 0.02000	-- --
2	Soft Clay	6.0000 11.0000	9.0000 9.0000	50.0000 50.0000	-- --	0.02000 0.02000	-- --
3	Sand (Reese, et al.)	11.0000 13.0000	9.0000 9.0000	-- --	32.0000 32.0000	-- --	default default
4	Sand (Reese, et al.)	13.0000 20.0000	9.0000 9.0000	-- --	38.0000 38.0000	-- --	default default

---

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 6

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, kN	Compute Top y vs. Pile Length
1	1	V = 100.000000 kN	M = 0.0000 m-kN	0.0000000	No
2	1	V = 200.000000 kN	M = 0.0000 m-kN	0.0000000	No
3	1	V = 400.000000 kN	M = 0.0000 m-kN	0.0000000	No
4	1	V = 600.000000 kN	M = 0.0000 m-kN	0.0000000	No
5	1	V = 800.000000 kN	M = 0.0000 m-kN	0.0000000	No
6	1	V = 1500. kN	M = 0.0000 m-kN	0.0000000	No

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Specified Depths for Output of p-y Curves

Lateral load-transfer (p-y) curves are computed and output at 8 depths.
(Note that load-transfer values are computeded at the specified depths and
may differ from values computed at nodal points)

Depth No.	Depth Below Pile Head m	Depth Below Ground Surface m
1	0.200	1.200
2	5.800	6.800
3	6.200	7.200
4	10.800	11.800
5	11.200	12.200
6	12.800	13.800
7	13.200	14.200
8	19.800	20.800

Depth of ground surface below top of pile = -1.0000 m

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

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Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

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Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head meters	Equivalent Top Depth Below Grnd Surf meters	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer kN	F1 Integral for Layer kN
1	-1.0000	0.00	N.A.	No	0.00	1276.
2	6.0000	7.0000	Yes	No	1276.	1799.
3	11.0000	12.0000	No	No	3075.	8961.
4	13.0000	14.0000	Yes	No	12036.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals
for Layer n. Layering correction equivalent depths are computed only
for soil types with both shallow-depth and deep-depth expressions for
peak lateral load transfer. These soil types are soft and stiff clays,
non-liquefied sands, and cemented c-phi soil.

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p-y Curves Reported for Specified Depths

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p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 1
Depth of top of Layer 1 below pile head = -1.000 m
Depth of p-y curve below pile head = 0.200 m
Depth of p-y curve below ground surface = 1.200 m
Equiv. depth of p-y curve below ground surface = 1.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 800.000 mm
Average effective unit weight = 19.00000 kN/m3
Undrained cohesion = 31.714 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 4.902 m
Static pu_s for flat ground = 113.383 kN/m
Static pu_d for flat ground = 228.343 kN/m
y_50 = 0.04000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 113.383 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00009481	7.55886
0.00075852	15.11771
0.00256	22.67657
0.00607	30.23543
0.01185	37.79429
0.02048	45.35314
0.03252	52.91200
0.04855	60.47086
0.06912	68.02971
0.09481	75.58857
0.12620	83.14743
0.16384	90.70629
0.20831	98.26514
0.26017	105.82400
0.32000	113.38286
0.34000	113.38286

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 1
Depth of top of Layer 1 below pile head = -1.000 m
Depth of p-y curve below pile head = 5.800 m
Depth of p-y curve below ground surface = 6.800 m
Equiv. depth of p-y curve below ground surface = 6.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 800.000 mm
Average effective unit weight = 19.00000 kN/m3
Undrained cohesion = 39.714 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 5.438 m
Static pu_s for flat ground = 333.703 kN/m
Static pu_d for flat ground = 285.943 kN/m
y_50 = 0.04000 m

p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 285.943 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00009481	19.06286
0.00075852	38.12571
0.00256	57.18857
0.00607	76.25143
0.01185	95.31429
0.02048	114.37714
0.03252	133.44000
0.04855	152.50286
0.06912	171.56571
0.09481	190.62857
0.12620	209.69143
0.16384	228.75429
0.20831	247.81714
0.26017	266.88000
0.32000	285.94286
0.34000	285.94286

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 2
Depth of top of Layer 2 below pile head = 6.000 m
Depth of p-y curve below pile head = 6.200 m
Depth of p-y curve below ground surface = 7.200 m
Equiv. depth of p-y curve below ground surface = 7.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 800.000 mm
Average effective unit weight = 18.72222 kN/m3
Undrained cohesion = 50.000 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 6.003 m
Static pu_s for flat ground = 407.840 kN/m
Static pu_d for flat ground = 360.000 kN/m
y_50 = 0.04000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 360.000 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00009481	24.00000
0.00075852	48.00000
0.00256	72.00000
0.00607	96.00000
0.01185	120.00000
0.02048	144.00000
0.03252	168.00000

0.04855	192.00000
0.06912	216.00000
0.09481	240.00000
0.12620	264.00000
0.16384	288.00000
0.20831	312.00000
0.26017	336.00000
0.32000	360.00000
0.34000	360.00000

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 2
Depth of top of Layer 2 below pile head = 6.000 m
Depth of p-y curve below pile head = 10.800 m
Depth of p-y curve below ground surface = 11.800 m
Equiv. depth of p-y curve below ground surface = 11.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 800.000 mm
Average effective unit weight = 14.93220 kN/m3
Undrained cohesion = 50.000 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 6.496 m
Static pu_s for flat ground = 555.960 kN/m
Static pu_d for flat ground = 360.000 kN/m
y_50 = 0.04000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 360.000 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00009481	24.00000
0.00075852	48.00000
0.00256	72.00000
0.00607	96.00000
0.01185	120.00000
0.02048	144.00000
0.03252	168.00000
0.04855	192.00000
0.06912	216.00000
0.09481	240.00000
0.12620	264.00000
0.16384	288.00000
0.20831	312.00000
0.26017	336.00000
0.32000	360.00000
0.34000	360.00000

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 3
Depth of top of Layer 3 below pile head = 11.000 m
Depth of p-y curve below pile head = 11.200 m
Depth of p-y curve below ground surface = 12.200 m

Equiv. depth of p-y curve below ground surface = 12.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 800.000 mm
Angle of Friction = 32.000 degrees
Average Effective Unit Weight = 14.738 kN/m3
k_py = 22564.423 kN/m3
K active = 0.307
K passive = 3.255
K0 = 0.400
Pst = 5428.204 kN/m
Psd = 5295.325 kN/m
Ps = Psd (deep controls) = 5295.325 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 36551.0529
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 120733.4155
Yk = [c/(kx)]^(n/(n-1)) = 0.0058 m
Pk = 1595.272 kN/m
Ym = b/60 = 0.0133 m
Pm = B ps = 2647.663 kN/m
Yu = 3b/80 = 0.0300 m
Pu = A Ps = 4659.886 kN/m
Maximum Es value = 275285.965 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00579	1595.27161
0.00648	1707.45169
0.00717	1815.06640
0.00785	1918.71417
0.00854	2018.87011
0.00922	2115.91921
0.00991	2210.17884
0.01059	2301.91442
0.01128	2391.35074
0.01196	2478.68022
0.01265	2564.06920
0.01333	2647.66262
0.02167	3653.77442
0.03000	4659.88621
0.03600	4659.88621
0.04200	4659.88621

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 3
Depth of top of Layer 3 below pile head = 11.000 m
Depth of p-y curve below pile head = 12.800 m
Depth of p-y curve below ground surface = 13.800 m
Equiv. depth of p-y curve below ground surface = 13.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees

Pile Diameter = 800.000 mm
Angle of Friction = 32.000 degrees
Average Effective Unit Weight = 14.072 kN/m3
k_py = 22564.423 kN/m3
K active = 0.307
K passive = 3.255
K0 = 0.400
Pst = 6571.801 kN/m
Psd = 5719.422 kN/m
Ps = Psd (deep controls) = 5719.422 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 39478.3898
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 130402.8326
Yk = [c/(kx)]^(n/(n-1)) = 0.0052 m
Pk = 1603.914 kN/m
Ym = b/60 = 0.0133 m
Pm = B ps = 2859.711 kN/m
Yu = 3b/80 = 0.0300 m
Pu = A Ps = 5033.092 kN/m
Maximum Es value = 311389.042 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00515	1603.91424
0.00589	1741.00560
0.00664	1871.45979
0.00738	1996.29409
0.00813	2116.28410
0.00887	2232.03789
0.00961	2344.04313
0.01036	2452.69828
0.01110	2558.33418
0.01185	2661.22917
0.01259	2761.62026
0.01333	2859.71124
0.02167	3946.40151
0.03000	5033.09178
0.03600	5033.09178
0.04200	5033.09178

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 4
Depth of top of Layer 4 below pile head = 13.000 m
Depth of p-y curve below pile head = 13.200 m
Depth of p-y curve below ground surface = 14.200 m
Equiv. depth of p-y curve below ground surface = 14.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 800.000 mm

Angle of Friction = 38.000 degrees
Average Effective Unit Weight = 13.930 kN/m3
k_py = 56849.174 kN/m3
K active = 0.238
K passive = 4.204
K0 = 0.400
Pst = 11498.417 kN/m
Psd = 12591.333 kN/m
Ps = Pst (shallow controls) = 11498.417 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 79367.9782
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 262163.9139
Yk = [c/(kx)]^(n/(n-1)) = 0.0027 m
Pk = 2173.693 kN/m
Ym = b/60 = 0.0133 m
Pm = B ps = 5749.209 kN/m
Yu = 3b/80 = 0.0300 m
Pu = A Ps = 10118.607 kN/m
Maximum Es value = 807258.272 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00269	2173.69323
0.00366	2619.64897
0.00463	3021.11563
0.00559	3390.72612
0.00656	3735.97399
0.00753	4061.75439
0.00850	4371.48237
0.00946	4667.65719
0.01043	4952.17593
0.01140	5226.52058
0.01237	5491.87615
0.01333	5749.20864
0.02167	7933.90792
0.03000	10118.60720
0.03600	10118.60720
0.04200	10118.60720

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 4
Depth of top of Layer 4 below pile head = 13.000 m
Depth of p-y curve below pile head = 19.800 m
Depth of p-y curve below ground surface = 20.800 m
Equiv. depth of p-y curve below ground surface = 20.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 800.000 mm
Angle of Friction = 38.000 degrees
Average Effective Unit Weight = 12.365 kN/m3
k_py = 56849.174 kN/m3
K active = 0.238

K passive = 4.204
K0 = 0.400
Pst = 21521.412 kN/m
Psd = 16372.552 kN/m
Ps = Psd (deep controls) = 16372.552 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 113011.7592
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 373294.1896
Yk = [c/(kx)]^(n/(n-1)) = 0.0025 m
Pk = 2962.130 kN/m
Ym = b/60 = 0.0133 m
Pm = B ps = 8186.276 kN/m
Yu = 3b/80 = 0.0300 m
Pu = A Ps = 14407.846 kN/m
Maximum Es value = 1182462.821 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00251	2962.13045
0.00349	3623.42429
0.00447	4214.40983
0.00546	4756.09626
0.00644	5260.57455
0.00743	5735.59030
0.00841	6186.47339
0.00940	6617.08479
0.01038	7030.33207
0.01136	7428.47237
0.01235	7813.30124
0.01333	8186.27609
0.02167	11297.06100
0.03000	14407.84591
0.03600	14407.84591
0.04200	14407.84591

The above p-y curve was computed using internal default values of k.

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 100.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.00445	-3.66E-11	100.0000	-0.00134	7.29E-10	562973.	-25.5782	574.4679	0.00

0.2000	0.00419	19.4884	94.7707	-0.00133	387.7101	562973.	-26.7148	1277.	0.00
0.4000	0.00392	37.9083	89.3219	-0.00132	754.1613	562973.	-27.7729	1417.	0.00
0.6000	0.00366	55.2172	83.6698	-0.00131	1099.	562973.	-28.7486	1572.	0.00
0.8000	0.00340	71.3762	77.8311	-0.00128	1420.	562973.	-29.6377	1745.	0.00
1.0000	0.00314	86.3497	71.8237	-0.00126	1718.	562973.	-30.4363	1937.	0.00
1.2000	0.00290	100.1057	65.6661	-0.00122	1992.	562973.	-31.1406	2151.	0.00
1.4000	0.00265	112.6161	59.3773	-0.00118	2240.	562973.	-31.7466	2392.	0.00
1.6000	0.00242	123.8566	52.9776	-0.00114	2464.	562973.	-32.2506	2664.	0.00
1.8000	0.00220	133.8071	46.4877	-0.00110	2662.	562973.	-32.6488	2971.	0.00
2.0000	0.00198	142.4517	39.9290	-0.00105	2834.	562973.	-32.9375	3322.	0.00
2.2000	0.00178	149.7788	33.3240	-9.95E-04	2980.	562973.	-33.1129	3723.	0.00
2.4000	0.00158	155.7813	26.6956	-9.41E-04	3099.	562973.	-33.1712	4186.	0.00
2.6000	0.00140	160.4570	20.0676	-8.85E-04	3192.	562973.	-33.1085	4723.	0.00
2.8000	0.00123	163.8084	13.4647	-8.27E-04	3259.	562973.	-32.9209	5349.	0.00
3.0000	0.00107	165.8429	6.9122	-7.69E-04	3299.	562973.	-32.6040	6087.	0.00
3.2000	9.23E-04	166.5732	0.4365	-7.10E-04	3314.	562973.	-32.1533	6965.	0.00
3.4000	7.87E-04	166.0175	-5.9352	-6.51E-04	3303.	562973.	-31.5636	8018.	0.00
3.6000	6.63E-04	164.1991	-12.1745	-5.92E-04	3267.	562973.	-30.8289	9299.	0.00
3.8000	5.50E-04	161.1477	-18.2515	-5.34E-04	3206.	562973.	-29.9418	10879.	0.00
4.0000	4.49E-04	156.8985	-24.1350	-4.78E-04	3121.	562973.	-28.8931	12861.	0.00
4.2000	3.59E-04	151.4937	-29.7913	-4.23E-04	3014.	562973.	-27.6700	15401.	0.00
4.4000	2.80E-04	144.9820	-35.1562	-3.70E-04	2884.	562973.	-25.9790	18549.	0.00
4.6000	2.11E-04	137.4312	-40.1366	-3.20E-04	2734.	562973.	-23.8249	22561.	0.00
4.8000	1.52E-04	128.9274	-44.6705	-2.73E-04	2565.	562973.	-21.5144	28299.	0.00
5.0000	1.02E-04	119.5630	-48.7199	-2.29E-04	2379.	562973.	-18.9791	37193.	0.00
5.2000	6.06E-05	109.4394	-52.2247	-1.88E-04	2177.	562973.	-16.0689	53067.	0.00
5.4000	2.68E-05	98.6731	-55.0662	-1.51E-04	1963.	562973.	-12.3463	92000.	0.00
5.6000	1.30E-07	87.4129	-56.3066	-1.18E-04	1739.	562973.	-0.05791	89258.	0.00
5.8000	-2.04E-05	76.1504	-55.1716	-8.90E-05	1515.	562973.	11.4079	112010.	0.00
6.0000	-3.55E-05	65.3443	-52.4753	-6.38E-05	1300.	562973.	15.5558	87742.	0.00
6.2000	-4.59E-05	55.1603	-49.0357	-4.24E-05	1097.	562973.	18.8403	82086.	0.00
6.4000	-5.24E-05	45.7300	-45.1821	-2.45E-05	909.7697	562973.	19.6954	75130.	0.00
6.6000	-5.57E-05	37.0875	-41.2027	-9.80E-06	737.8324	562973.	20.0985	72157.	0.00
6.8000	-5.64E-05	29.2489	-37.1752	1.98E-06	581.8891	562973.	20.1763	71610.	0.00
7.0000	-5.49E-05	22.2174	-33.1572	1.11E-05	442.0015	562973.	20.0042	72856.	0.00
7.2000	-5.19E-05	15.9861	-29.1936	1.79E-05	318.0327	562973.	19.6320	75653.	0.00
7.4000	-4.77E-05	10.5400	-25.3209	2.26E-05	209.6866	562973.	19.0949	79979.	0.00
7.6000	-4.29E-05	5.8577	-21.5694	2.55E-05	116.5357	562973.	18.4192	85970.	0.00
7.8000	-3.75E-05	1.9122	-17.9650	2.69E-05	38.0423	562973.	17.6251	93912.	0.00
8.0000	-3.21E-05	-1.3283	-14.5297	2.70E-05	26.4254	562973.	16.7285	104280.	0.00
8.2000	-2.67E-05	-3.8996	-11.2826	2.61E-05	77.5810	562973.	15.7425	117802.	0.00
8.4000	-2.16E-05	-5.8413	-8.2406	2.44E-05	116.2092	562973.	14.6774	135605.	0.00
8.6000	-1.70E-05	-7.1959	-5.4187	2.20E-05	143.1574	562973.	13.5410	159469.	0.00
8.8000	-1.28E-05	-8.0088	-2.8308	1.93E-05	159.3300	562973.	12.3384	192350.	0.00
9.0000	-9.24E-06	-8.3282	-0.4899	1.64E-05	165.6840	562973.	11.0705	239499.	0.00
9.2000	-6.25E-06	-8.2047	1.5902	1.35E-05	163.2283	562973.	9.7307	311281.	0.00
9.4000	-3.84E-06	-7.6921	3.3929	1.07E-05	153.0292	562973.	8.2955	431798.	0.00
9.6000	-1.98E-06	-6.8476	4.8918	8.10E-06	136.2288	562973.	6.6939	676457.	0.00
9.8000	-6.02E-07	-5.7354	6.0260	5.86E-06	114.1015	562973.	4.6480	1543097.	0.00
10.0000	3.67E-07	-4.4372	6.1386	4.06E-06	88.2755	562973.	-3.5215	1920472.	0.00
10.2000	1.02E-06	-3.2799	5.2694	2.69E-06	65.2518	562973.	-5.1710	1013300.	0.00
10.4000	1.44E-06	-2.3295	4.1676	1.69E-06	46.3430	562973.	-5.8473	811285.	0.00
10.6000	1.70E-06	-1.6129	2.9634	9.90E-07	32.0873	562973.	-6.1948	730161.	0.00
10.8000	1.84E-06	-1.1441	1.7065	5.00E-07	22.7613	562973.	-6.3741	693756.	0.00
11.0000	1.90E-06	-0.9303	1.0177	1.32E-07	18.5076	562973.	-0.5137	54155.	0.00
11.2000	1.89E-06	-0.7370	0.9143	-1.64E-07	14.6627	562973.	-0.5204	55057.	0.00
11.4000	1.83E-06	-0.5646	0.8110	-3.95E-07	11.2319	562973.	-0.5124	55960.	0.00
11.6000	1.73E-06	-0.4126	0.7105	-5.69E-07	8.2089	562973.	-0.4925	56862.	0.00
11.8000	1.60E-06	-0.2804	0.6150	-6.92E-07	5.5777	562973.	-0.4632	57765.	0.00
12.0000	1.46E-06	-0.1666	0.5259	-7.71E-07	3.3152	562973.	-0.4269	58668.	0.00
12.2000	1.30E-06	-0.06999	0.4447	-8.13E-07	1.3925	562973.	-0.3858	59570.	0.00
12.4000	1.13E-06	0.01122	0.3719	-8.24E-07	0.2233	562973.	-0.3417	60473.	0.00
12.6000	9.66E-07	0.07877	0.3081	-8.08E-07	1.5672	562973.	-0.2963	61375.	0.00
12.8000	8.07E-07	0.1345	0.2534	-7.70E-07	2.6752	562973.	-0.2513	62278.	0.00
13.0000	6.58E-07	0.1801	0.1926	-7.14E-07	3.5833	562973.	-0.3562	108328.	0.00
13.2000	5.21E-07	0.2115	0.1149	-6.45E-07	4.2080	562973.	-0.4208	161452.	0.00
13.4000	4.00E-07	0.2261	0.04011	-5.67E-07	4.4978	562973.	-0.3273	163726.	0.00

13.6000	2.94E-07	0.2276	-0.01707	-4.86E-07	4.5271	562973.	-0.2444	166000.	0.00
13.8000	2.05E-07	0.2193	-0.05878	-4.07E-07	4.3619	562973.	-0.1727	168274.	0.00
14.0000	1.32E-07	0.2040	-0.08729	-3.32E-07	4.0593	562973.	-0.1123	170548.	0.00
14.2000	7.26E-08	0.1843	-0.1048	-2.63E-07	3.6673	562973.	-0.06276	172821.	0.00
14.4000	2.66E-08	0.1621	-0.1134	-2.01E-07	3.2253	562973.	-0.02332	175095.	0.00
14.6000	-7.85E-09	0.1390	-0.1150	-1.48E-07	2.7648	562973.	0.00696	177369.	0.00
14.8000	-3.24E-08	0.1161	-0.1114	-1.02E-07	2.3099	562973.	0.02915	179643.	0.00
15.0000	-4.88E-08	0.09440	-0.1041	-6.50E-08	1.8781	562973.	0.04439	181917.	0.00
15.2000	-5.85E-08	0.07447	-0.09426	-3.50E-08	1.4816	562973.	0.05383	184191.	0.00
15.4000	-6.28E-08	0.05670	-0.08302	-1.17E-08	1.1280	562973.	0.05855	186465.	0.00
15.6000	-6.31E-08	0.04127	-0.07121	5.70E-09	0.8210	562973.	0.05958	188739.	0.00
15.8000	-6.05E-08	0.02822	-0.05947	1.80E-08	0.5614	562973.	0.05781	191013.	0.00
16.0000	-5.59E-08	0.01748	-0.04828	2.62E-08	0.3478	562973.	0.05404	193287.	0.00
16.2000	-5.01E-08	0.00890	-0.03798	3.08E-08	0.1771	562973.	0.04895	195561.	0.00
16.4000	-4.36E-08	0.00229	-0.02878	3.28E-08	0.04549	562973.	0.04311	197835.	0.00
16.6000	-3.69E-08	-0.00261	-0.02077	3.28E-08	0.05186	562973.	0.03695	200109.	0.00
16.8000	-3.05E-08	-0.00602	-0.01399	3.12E-08	0.1198	562973.	0.03083	202383.	0.00
17.0000	-2.44E-08	-0.00820	-0.00841	2.87E-08	0.1632	562973.	0.02500	204657.	0.00
17.2000	-1.90E-08	-0.00939	-0.00395	2.56E-08	0.1867	562973.	0.01964	206931.	0.00
17.4000	-1.42E-08	-0.00978	-4.96E-04	2.22E-08	0.1946	562973.	0.01485	209205.	0.00
17.6000	-1.01E-08	-0.00958	0.00206	1.87E-08	0.1907	562973.	0.01069	211479.	0.00
17.8000	-6.70E-09	-0.00896	0.00384	1.55E-08	0.1782	562973.	0.00716	213753.	0.00
18.0000	-3.93E-09	-0.00805	0.00498	1.24E-08	0.1601	562973.	0.00424	216027.	0.00
18.2000	-1.73E-09	-0.00697	0.00560	9.76E-09	0.1386	562973.	0.00189	218301.	0.00
18.4000	-2.27E-11	-0.00581	0.00579	7.50E-09	0.1155	562973.	2.50E-05	220575.	0.00
18.6000	1.27E-09	-0.00465	0.00565	5.64E-09	0.09251	562973.	-0.00142	222849.	0.00
18.8000	2.23E-09	-0.00355	0.00526	4.18E-09	0.07059	562973.	-0.00251	225123.	0.00
19.0000	2.94E-09	-0.00255	0.00467	3.10E-09	0.05068	562973.	-0.00335	227397.	0.00
19.2000	3.47E-09	-0.00168	0.00394	2.35E-09	0.03343	562973.	-0.00399	229671.	0.00
19.4000	3.88E-09	-9.73E-04	0.00309	1.88E-09	0.01935	562973.	-0.00450	231945.	0.00
19.6000	4.22E-09	-4.45E-04	0.00214	1.62E-09	0.00886	562973.	-0.00495	234219.	0.00
19.8000	4.53E-09	-1.15E-04	0.00111	1.53E-09	0.00230	562973.	-0.00536	236493.	0.00
20.0000	4.83E-09	0.00	0.00	1.50E-09	0.00	562973.	-0.00577	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

Pile-head deflection = 0.00445250 meters
Computed slope at pile head = -0.00133581 radians
Maximum bending moment = 166.57323676 kN-m
Maximum shear force = 100.00000000 kN
Depth of maximum bending moment = 3.20000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 21
Number of zero deflection points = 4

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 2

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 200.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.01613	-7.81E-10	200.0000	-0.00399	1.55E-08	562973.	-39.2794	243.5894	0.00
0.2000	0.01533	39.2144	191.9543	-0.00398	780.1459	562973.	-41.1776	537.2952	0.00

0.4000	0.01453	76.7817	183.5380	-0.00396	1528.	562973.	-42.9855	591.5553	0.00
0.6000	0.01374	112.6296	174.7696	-0.00393	2241.	562973.	-44.6983	650.4511	0.00
0.8000	0.01296	146.6896	165.6686	-0.00388	2918.	562973.	-46.3115	714.5440	0.00
1.0000	0.01219	178.8971	156.2554	-0.00382	3559.	562973.	-47.8205	784.4769	0.00
1.2000	0.01143	209.1917	146.5513	-0.00375	4162.	562973.	-49.2209	860.9888	0.00
1.4000	0.01069	237.5176	136.5784	-0.00367	4725.	562973.	-50.5082	944.9333	0.00
1.6000	0.00996	263.8231	126.3598	-0.00359	5249.	562973.	-51.6780	1037.	0.00
1.8000	0.00926	288.0615	115.9194	-0.00349	5731.	562973.	-52.7259	1139.	0.00
2.0000	0.00857	310.1909	105.2821	-0.00338	6171.	562973.	-53.6476	1252.	0.00
2.2000	0.00790	330.1743	94.4734	-0.00327	6569.	562973.	-54.4388	1377.	0.00
2.4000	0.00726	347.9802	83.5200	-0.00315	6923.	562973.	-55.0951	1517.	0.00
2.6000	0.00665	363.5823	72.4493	-0.00302	7233.	562973.	-55.6122	1674.	0.00
2.8000	0.00605	376.9600	61.2895	-0.00289	7499.	562973.	-55.9857	1849.	0.00
3.0000	0.00549	388.0981	50.0698	-0.00275	7721.	562973.	-56.2114	2048.	0.00
3.2000	0.00495	396.9879	38.8202	-0.00261	7898.	562973.	-56.2845	2273.	0.00
3.4000	0.00444	403.6262	27.5717	-0.00247	8030.	562973.	-56.2004	2529.	0.00
3.6000	0.00396	408.0166	16.3563	-0.00233	8117.	562973.	-55.9543	2823.	0.00
3.8000	0.00351	410.1687	5.2067	-0.00218	8160.	562973.	-55.5409	3161.	0.00
4.0000	0.00309	410.0993	-5.8428	-0.00204	8159.	562973.	-54.9545	3554.	0.00
4.2000	0.00270	407.8316	-16.7571	-0.00189	8114.	562973.	-54.1888	4015.	0.00
4.4000	0.00234	403.3964	-27.4438	-0.00175	8025.	562973.	-52.6775	4510.	0.00
4.6000	0.00200	396.8541	-37.7523	-0.00160	7895.	562973.	-50.4079	5038.	0.00
4.8000	0.00169	388.2955	-47.5978	-0.00146	7725.	562973.	-48.0467	5672.	0.00
5.0000	0.00142	377.8150	-56.9610	-0.00133	7516.	562973.	-45.5858	6443.	0.00
5.2000	0.00116	365.5111	-65.8210	-0.00120	7272.	562973.	-43.0136	7399.	0.00
5.4000	9.36E-04	351.4866	-74.1537	-0.00107	6993.	562973.	-40.3134	8611.	0.00
5.6000	7.35E-04	335.8496	-81.9309	-9.47E-04	6682.	562973.	-37.4592	10193.	0.00
5.8000	5.57E-04	318.7142	-89.1178	-8.31E-04	6341.	562973.	-34.4099	12345.	0.00
6.0000	4.03E-04	300.2025	-96.0570	-7.21E-04	5972.	562973.	-34.9820	17379.	0.00
6.2000	2.69E-04	280.2914	-102.9537	-6.18E-04	5576.	562973.	-33.9844	25264.	0.00
6.4000	1.55E-04	259.0210	-109.1828	-5.22E-04	5153.	562973.	-28.3066	36431.	0.00
6.6000	6.02E-05	236.6183	-114.0776	-4.34E-04	4707.	562973.	-20.6421	68615.	0.00
6.8000	-1.82E-05	213.3900	-114.7599	-3.54E-04	4245.	562973.	13.8194	151452.	0.00
7.0000	-8.15E-05	190.7144	-111.0973	-2.82E-04	3794.	562973.	22.8068	55964.	0.00
7.2000	-1.31E-04	168.9511	-106.1430	-2.19E-04	3361.	562973.	26.7359	40753.	0.00
7.4000	-1.69E-04	148.2572	-100.5607	-1.62E-04	2949.	562973.	29.0870	34441.	0.00
7.6000	-1.96E-04	128.7268	-94.5949	-1.13E-04	2561.	562973.	30.5710	31183.	0.00
7.8000	-2.14E-04	110.4192	-88.3897	-7.05E-05	2197.	562973.	31.4811	29408.	0.00
8.0000	-2.24E-04	93.3709	-82.0443	-3.43E-05	1858.	562973.	31.9728	28512.	0.00
8.2000	-2.28E-04	77.6015	-75.6330	-3.92E-06	1544.	562973.	32.1406	28217.	0.00
8.4000	-2.26E-04	63.1177	-69.2141	2.11E-05	1256.	562973.	32.0478	28381.	0.00
8.6000	-2.19E-04	49.9158	-62.8354	4.12E-05	993.0436	562973.	31.7397	28935.	0.00
8.8000	-2.09E-04	37.9835	-56.5364	5.68E-05	755.6583	562973.	31.2499	29850.	0.00
9.0000	-1.97E-04	27.3012	-50.3510	6.84E-05	543.1409	562973.	30.6048	31122.	0.00
9.2000	-1.82E-04	17.8431	-44.3079	7.64E-05	354.9780	562973.	29.8257	32769.	0.00
9.4000	-1.66E-04	9.5781	-38.4323	8.13E-05	190.5497	562973.	28.9302	34830.	0.00
9.6000	-1.50E-04	2.4702	-32.7460	8.34E-05	49.1433	562973.	27.9332	37361.	0.00
9.8000	-1.33E-04	-3.5203	-27.2679	8.32E-05	70.0346	562973.	26.8476	40443.	0.00
10.0000	-1.16E-04	-8.4370	-22.0147	8.11E-05	167.8478	562973.	25.6847	44189.	0.00
10.2000	-1.00E-04	-12.3262	-17.0008	7.74E-05	245.2219	562973.	24.4544	48746.	0.00
10.4000	-8.53E-05	-15.2373	-12.2388	7.25E-05	303.1357	562973.	23.1657	54321.	0.00
10.6000	-7.13E-05	-17.2217	-7.7396	6.67E-05	342.6148	562973.	21.8260	61194.	0.00
10.8000	-5.86E-05	-18.3331	-3.5128	6.04E-05	364.7253	562973.	20.4412	69766.	0.00
11.0000	-4.72E-05	-18.6268	-0.1916	5.39E-05	370.5691	562973.	12.7717	54155.	0.00
11.2000	-3.71E-05	-18.4097	2.1058	4.73E-05	366.2496	562973.	10.2018	55057.	0.00
11.4000	-2.83E-05	-17.7845	3.9166	4.08E-05	353.8118	562973.	7.9066	55960.	0.00
11.6000	-2.07E-05	-16.8431	5.2964	3.47E-05	335.0821	562973.	5.8913	56862.	0.00
11.8000	-1.44E-05	-15.6660	6.3009	2.89E-05	311.6642	562973.	4.1536	57765.	0.00
12.0000	-9.15E-06	-14.3227	6.9848	2.36E-05	284.9410	562973.	2.6852	58668.	0.00
12.2000	-4.94E-06	-12.8720	7.4006	1.88E-05	256.0810	562973.	1.4727	59570.	0.00
12.4000	-1.65E-06	-11.3625	7.5977	1.45E-05	226.0491	562973.	0.4987	60473.	0.00
12.6000	8.38E-07	-9.8330	7.6218	1.07E-05	195.6204	562973.	-0.2573	61375.	0.00
12.8000	2.63E-06	-8.3137	7.5143	7.47E-06	165.3964	562973.	-0.8181	62278.	0.00
13.0000	3.83E-06	-6.8272	7.2253	4.78E-06	135.8235	562973.	-2.0721	108328.	0.00
13.2000	4.54E-06	-5.4236	6.6517	2.60E-06	107.8995	562973.	-3.6640	161452.	0.00
13.4000	4.87E-06	-4.1666	5.8869	8.99E-07	82.8912	562973.	-3.9840	163726.	0.00
13.6000	4.90E-06	-3.0689	5.0819	-3.86E-07	61.0533	562973.	-4.0658	166000.	0.00

13.8000	4.71E-06	-2.1338	4.2788	-1.31E-06	42.4508	562973.	-3.9648	168274.	0.00
14.0000	4.37E-06	-1.3573	3.5093	-1.93E-06	27.0034	562973.	-3.7303	170548.	0.00
14.2000	3.94E-06	-0.7301	2.7958	-2.30E-06	14.5244	562973.	-3.4047	172821.	0.00
14.4000	3.45E-06	-0.2390	2.1530	-2.47E-06	4.7548	562973.	-3.0239	175095.	0.00
14.6000	2.95E-06	0.1311	1.5889	-2.49E-06	2.6084	562973.	-2.6170	177369.	0.00
14.8000	2.46E-06	0.3966	1.1065	-2.40E-06	7.8891	562973.	-2.2070	179643.	0.00
15.0000	1.99E-06	0.5737	0.7047	-2.23E-06	11.4136	562973.	-1.8114	181917.	0.00
15.2000	1.57E-06	0.6784	0.3792	-2.00E-06	13.4965	562973.	-1.4427	184191.	0.00
15.4000	1.19E-06	0.7254	0.1240	-1.75E-06	14.4315	562973.	-1.1093	186465.	0.00
15.6000	8.65E-07	0.7280	-0.06850	-1.50E-06	14.4836	562973.	-0.8160	188739.	0.00
15.8000	5.91E-07	0.6980	-0.2066	-1.24E-06	13.8863	562973.	-0.5647	191013.	0.00
16.0000	3.68E-07	0.6454	-0.2986	-1.00E-06	12.8397	562973.	-0.3552	193287.	0.00
16.2000	1.90E-07	0.5786	-0.3526	-7.87E-07	11.5104	562973.	-0.1853	195561.	0.00
16.4000	5.27E-08	0.5043	-0.3764	-5.95E-07	10.0336	562973.	-0.05212	197835.	0.00
16.6000	-4.83E-08	0.4280	-0.3767	-4.29E-07	8.5153	562973.	0.04835	200109.	0.00
16.8000	-1.19E-07	0.3536	-0.3599	-2.90E-07	7.0356	562973.	0.1203	202383.	0.00
17.0000	-1.64E-07	0.2841	-0.3310	-1.77E-07	5.6516	562973.	0.1682	204657.	0.00
17.2000	-1.90E-07	0.2212	-0.2946	-8.72E-08	4.4014	562973.	0.1963	206931.	0.00
17.4000	-1.99E-07	0.1663	-0.2541	-1.83E-08	3.3075	562973.	0.2084	209205.	0.00
17.6000	-1.97E-07	0.1196	-0.2124	3.24E-08	2.3794	562973.	0.2083	211479.	0.00
17.8000	-1.86E-07	0.08129	-0.1717	6.81E-08	1.6172	562973.	0.1991	213753.	0.00
18.0000	-1.70E-07	0.05094	-0.1334	9.16E-08	1.0134	562973.	0.1834	216027.	0.00
18.2000	-1.50E-07	0.02792	-0.09874	1.06E-07	0.5555	562973.	0.1634	218301.	0.00
18.4000	-1.28E-07	0.01144	-0.06834	1.13E-07	0.2276	562973.	0.1407	220575.	0.00
18.6000	-1.05E-07	5.88E-04	-0.04261	1.15E-07	0.01171	562973.	0.1166	222849.	0.00
18.8000	-8.16E-08	-0.00560	-0.02176	1.14E-07	0.1115	562973.	0.09191	225123.	0.00
19.0000	-5.91E-08	-0.00812	-0.00586	1.11E-07	0.1615	562973.	0.06717	227397.	0.00
19.2000	-3.71E-08	-0.00795	0.00512	1.09E-07	0.1581	562973.	0.04258	229671.	0.00
19.4000	-1.57E-08	-0.00607	0.01119	1.06E-07	0.1208	562973.	0.01815	231945.	0.00
19.6000	5.35E-09	-0.00347	0.01238	1.04E-07	0.06899	562973.	-0.00626	234219.	0.00
19.8000	2.61E-08	-0.00112	0.00867	1.04E-07	0.02222	562973.	-0.03086	236493.	0.00
20.0000	4.68E-08	0.00	0.00	1.03E-07	0.00	562973.	-0.05584	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 2:

Pile-head deflection = 0.01612524 meters
Computed slope at pile head = -0.00398749 radians
Maximum bending moment = 410.16874116 kN-m
Maximum shear force = 200.00000000 kN
Depth of maximum bending moment = 3.80000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 25
Number of zero deflection points = 4

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 3

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 400.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X meters	Deflect. y meters	Bending Moment kN-m	Shear Force kN	Slope S radians	Total Stress kPa*	Bending Stiffness kN-m^2	Soil Res. p kN/m	Soil Spr. Es*h kN/m	Distrib. Lat. Load kN/m
0.00	0.05741	-8.79E-10	400.0000	-0.01177	1.75E-08	562973.	-59.9765	104.4759	0.00
0.2000	0.05505	78.8005	387.6963	-0.01176	1568.	562973.	-63.0606	229.0916	0.00
0.4000	0.05270	155.0785	374.7861	-0.01172	3085.	562973.	-66.0411	250.6109	0.00

0.6000	0.05037	228.7149	361.2907	-0.01165	4550.	562973.	-68.9126	273.6452	0.00
0.8000	0.04805	299.5948	347.2325	-0.01155	5960.	562973.	-71.6701	298.3455	0.00
1.0000	0.04574	367.6079	332.6346	-0.01144	7313.	562973.	-74.3082	324.8807	0.00
1.2000	0.04347	432.6487	317.5217	-0.01129	8607.	562973.	-76.8218	353.4400	0.00
1.4000	0.04123	494.6166	301.9189	-0.01113	9840.	562973.	-79.2058	384.2363	0.00
1.6000	0.03902	553.4162	285.8528	-0.01094	11010.	562973.	-81.4551	417.5092	0.00
1.8000	0.03685	608.9577	269.3508	-0.01074	12115.	562973.	-83.5646	453.5300	0.00
2.0000	0.03473	661.1566	252.4415	-0.01051	13153.	562973.	-85.5292	492.6062	0.00
2.2000	0.03265	709.9343	235.1541	-0.01027	14124.	562973.	-87.3441	535.0875	0.00
2.4000	0.03062	755.2182	217.5193	-0.01001	15025.	562973.	-89.0041	581.3737	0.00
2.6000	0.02864	796.9420	199.5685	-0.00973	15855.	562973.	-90.5042	631.9225	0.00
2.8000	0.02673	835.0456	181.3341	-0.00944	16613.	562973.	-91.8395	687.2608	0.00
3.0000	0.02487	869.4757	162.8497	-0.00914	17298.	562973.	-93.0051	747.9972	0.00
3.2000	0.02307	900.1855	144.1496	-0.00882	17909.	562973.	-93.9958	814.8379	0.00
3.4000	0.02134	927.1355	125.2693	-0.00850	18445.	562973.	-94.8067	888.6066	0.00
3.6000	0.01967	950.2932	106.2454	-0.00817	18905.	562973.	-95.4327	970.2682	0.00
3.8000	0.01807	969.6336	87.1153	-0.00782	19290.	562973.	-95.8685	1061.	0.00
4.0000	0.01654	985.1393	67.9175	-0.00748	19599.	562973.	-96.1090	1162.	0.00
4.2000	0.01508	996.8006	48.6917	-0.00713	19831.	562973.	-96.1487	1275.	0.00
4.4000	0.01369	1005.	29.5794	-0.00677	19986.	562973.	-94.9745	1387.	0.00
4.6000	0.01237	1009.	10.8301	-0.00641	20066.	562973.	-92.5186	1495.	0.00
4.8000	0.01113	1009.	-7.4190	-0.00605	20072.	562973.	-89.9723	1617.	0.00
5.0000	0.00995	1006.	-25.1496	-0.00570	20007.	562973.	-87.3339	1755.	0.00
5.2000	0.00885	998.8882	-42.3431	-0.00534	19872.	562973.	-84.6008	1912.	0.00
5.4000	0.00782	988.7276	-58.9801	-0.00499	19670.	562973.	-81.7700	2092.	0.00
5.6000	0.00685	975.2962	-75.0409	-0.00464	19403.	562973.	-78.8376	2301.	0.00
5.8000	0.00596	958.7112	-90.5045	-0.00429	19073.	562973.	-75.7985	2543.	0.00
6.0000	0.00514	939.0944	-106.2570	-0.00396	18683.	562973.	-81.7268	3183.	0.00
6.2000	0.00438	916.2084	-123.0397	-0.00363	18227.	562973.	-86.0995	3934.	0.00
6.4000	0.00368	889.8785	-139.7789	-0.00331	17704.	562973.	-81.2928	4413.	0.00
6.6000	0.00305	860.2969	-155.5451	-0.00300	17115.	562973.	-76.3690	5000.	0.00
6.8000	0.00249	827.6605	-170.3121	-0.00270	16466.	562973.	-71.3015	5736.	0.00
7.0000	0.00198	792.1720	-184.0473	-0.00241	15760.	562973.	-66.0502	6684.	0.00
7.2000	0.00152	754.0416	-196.7076	-0.00213	15001.	562973.	-60.5524	7954.	0.00
7.4000	0.00112	713.4890	-208.2332	-0.00187	14194.	562973.	-54.7038	9745.	0.00
7.6000	7.73E-04	670.7483	-218.5349	-0.00163	13344.	562973.	-48.3135	12494.	0.00
7.8000	4.72E-04	626.0750	-227.4637	-0.00140	12455.	562973.	-40.9746	17372.	0.00
8.0000	2.15E-04	579.7628	-234.7126	-0.00118	11534.	562973.	-31.5144	29373.	0.00
8.2000	-1.38E-06	532.1900	-237.2892	-9.85E-04	10588.	562973.	5.7489	831725.	0.00
8.4000	-1.80E-04	484.8471	-233.7456	-8.05E-04	9646.	562973.	29.6874	33072.	0.00
8.6000	-3.23E-04	438.6918	-227.1650	-6.41E-04	8727.	562973.	36.1182	22348.	0.00
8.8000	-4.36E-04	393.9811	-219.5631	-4.93E-04	7838.	562973.	39.9008	18313.	0.00
9.0000	-5.20E-04	350.8665	-211.3400	-3.60E-04	6980.	562973.	42.3306	16272.	0.00
9.2000	-5.80E-04	309.4451	-202.7180	-2.43E-04	6156.	562973.	43.8894	15137.	0.00
9.4000	-6.18E-04	269.7793	-193.8471	-1.40E-04	5367.	562973.	44.8189	14515.	0.00
9.6000	-6.36E-04	231.9063	-184.8391	-5.11E-05	4614.	562973.	45.2612	14233.	0.00
9.8000	-6.38E-04	195.8437	-175.7822	2.49E-05	3896.	562973.	45.3081	14204.	0.00
10.0000	-6.26E-04	161.5934	-166.7490	8.84E-05	3215.	562973.	45.0238	14384.	0.00
10.2000	-6.03E-04	129.1441	-157.8011	1.40E-04	2569.	562973.	44.4553	14754.	0.00
10.4000	-5.70E-04	98.4730	-148.9917	1.80E-04	1959.	562973.	43.6389	15312.	0.00
10.6000	-5.30E-04	69.5475	-140.3673	2.10E-04	1384.	562973.	42.6043	16064.	0.00
10.8000	-4.86E-04	42.3261	-131.9692	2.30E-04	842.0504	562973.	41.3769	17032.	0.00
11.0000	-4.38E-04	16.7598	-115.9624	2.41E-04	333.4249	562973.	118.6912	54155.	0.00
11.2000	-3.90E-04	-4.0589	-93.3678	2.43E-04	80.7491	562973.	107.2543	55057.	0.00
11.4000	-3.41E-04	-20.5874	-73.0966	2.39E-04	409.5728	562973.	95.4581	55960.	0.00
11.6000	-2.94E-04	-33.2975	-55.1867	2.29E-04	662.4334	562973.	83.6406	56862.	0.00
11.8000	-2.50E-04	-42.6621	-39.6144	2.15E-04	848.7349	562973.	72.0824	57765.	0.00
12.0000	-2.08E-04	-49.1433	-26.3051	1.99E-04	977.6751	562973.	61.0106	58668.	0.00
12.2000	-1.70E-04	-53.1841	-15.1437	1.81E-04	1058.	562973.	50.6036	59570.	0.00
12.4000	-1.36E-04	-55.2008	-5.9838	1.62E-04	1098.	562973.	40.9952	60473.	0.00
12.6000	-1.05E-04	-55.5777	1.3438	1.42E-04	1106.	562973.	32.2808	61375.	0.00
12.8000	-7.87E-05	-54.6633	7.0240	1.23E-04	1087.	562973.	24.5217	62278.	0.00
13.0000	-5.62E-05	-52.7681	12.5197	1.03E-04	1050.	562973.	30.4354	108328.	0.00
13.2000	-3.74E-05	-49.6554	18.5810	8.52E-05	987.8629	562973.	30.1771	161452.	0.00
13.4000	-2.21E-05	-45.3357	23.4080	6.84E-05	901.9244	562973.	18.0927	163726.	0.00
13.6000	-1.00E-05	-40.2922	26.0507	5.31E-05	801.5882	562973.	8.3344	166000.	0.00
13.8000	-8.45E-07	-34.9154	26.9552	3.98E-05	694.6196	562973.	0.7106	168274.	0.00

14.0000	5.87E-06	-29.5101	26.5255	2.83E-05	587.0856	562973.	-5.0070	170548.	0.00
14.2000	1.05E-05	-24.3052	25.1183	1.88E-05	483.5360	562973.	-9.0654	172821.	0.00
14.4000	1.34E-05	-19.4628	23.0401	1.10E-05	387.2005	562973.	-11.7171	175095.	0.00
14.6000	1.49E-05	-15.0891	20.5475	4.87E-06	300.1891	562973.	-13.2081	177369.	0.00
14.8000	1.53E-05	-11.2438	17.8497	1.91E-07	223.6884	562973.	-13.7705	179643.	0.00
15.0000	1.50E-05	-7.9493	15.1110	-3.22E-06	158.1459	562973.	-13.6162	181917.	0.00
15.2000	1.40E-05	-5.1994	12.4560	-5.55E-06	103.4388	562973.	-12.9334	184191.	0.00
15.4000	1.27E-05	-2.9669	9.9742	-7.00E-06	59.0238	562973.	-11.8853	186465.	0.00
15.6000	1.12E-05	-1.2097	7.7248	-7.75E-06	24.0668	562973.	-10.6087	188739.	0.00
15.8000	9.65E-06	0.1231	5.7423	-7.94E-06	2.4481	562973.	-9.2157	191013.	0.00
16.0000	8.07E-06	1.0872	4.0413	-7.72E-06	21.6293	562973.	-7.7950	193287.	0.00
16.2000	6.56E-06	1.7396	2.6204	-7.22E-06	34.6075	562973.	-6.4139	195561.	0.00
16.4000	5.18E-06	2.1354	1.4669	-6.53E-06	42.4816	562973.	-5.1207	197835.	0.00
16.6000	3.95E-06	2.3263	0.5600	-5.74E-06	46.2808	562973.	-3.9479	200109.	0.00
16.8000	2.88E-06	2.3594	-0.1262	-4.91E-06	46.9383	562973.	-2.9144	202383.	0.00
17.0000	1.98E-06	2.2759	-0.6204	-4.09E-06	45.2767	562973.	-2.0282	204657.	0.00
17.2000	1.25E-06	2.1112	-0.9521	-3.31E-06	42.0010	562973.	-1.2888	206931.	0.00
17.4000	6.59E-07	1.8950	-1.1500	-2.60E-06	37.6997	562973.	-0.6897	209205.	0.00
17.6000	2.08E-07	1.6512	-1.2409	-1.97E-06	32.8496	562973.	-0.2195	211479.	0.00
17.8000	-1.27E-07	1.3986	-1.2493	-1.42E-06	27.8249	562973.	0.1355	213753.	0.00
18.0000	-3.62E-07	1.1515	-1.1967	-9.71E-07	22.9079	562973.	0.3908	216027.	0.00
18.2000	-5.15E-07	0.9200	-1.1014	-6.03E-07	18.3019	562973.	0.5621	218301.	0.00
18.4000	-6.03E-07	0.7109	-0.9787	-3.13E-07	14.1433	562973.	0.6649	220575.	0.00
18.6000	-6.40E-07	0.5285	-0.8409	-9.28E-08	10.5137	562973.	0.7133	222849.	0.00
18.8000	-6.40E-07	0.3746	-0.6975	6.76E-08	7.4517	562973.	0.7203	225123.	0.00
19.0000	-6.13E-07	0.2495	-0.5558	1.78E-07	4.9630	562973.	0.6971	227397.	0.00
19.2000	-5.69E-07	0.1523	-0.4208	2.50E-07	3.0290	562973.	0.6529	229671.	0.00
19.4000	-5.13E-07	0.08116	-0.2960	2.91E-07	1.6146	562973.	0.5951	231945.	0.00
19.6000	-4.52E-07	0.03386	-0.1835	3.12E-07	0.6737	562973.	0.5294	234219.	0.00
19.8000	-3.88E-07	0.00774	-0.08466	3.19E-07	0.1541	562973.	0.4593	236493.	0.00
20.0000	-3.24E-07	0.00	0.00	3.21E-07	0.00	562973.	0.3872	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 3:

Pile-head deflection = 0.05740703 meters
Computed slope at pile head = -0.01177137 radians
Maximum bending moment = 1009. kN-m
Maximum shear force = 400.00000000 kN
Depth of maximum bending moment = 4.80000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 27
Number of zero deflection points = 3

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 4

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 600.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.1201	-1.95E-09	600.0000	-0.02205	3.89E-08	562973.	-76.7010	63.8814	0.00
0.2000	0.1157	118.4660	584.2534	-0.02203	2357.	562973.	-80.7650	139.6617	0.00
0.4000	0.1113	233.7014	567.7051	-0.02196	4649.	562973.	-84.7177	152.2921	0.00
0.6000	0.1069	345.5480	550.3780	-0.02186	6874.	562973.	-88.5536	165.7185	0.00

0.8000	0.1025	453.8526	532.2959	-0.02172	9029.	562973.	-92.2670	180.0115	0.00
1.0000	0.09818	558.4664	513.4840	-0.02154	11110.	562973.	-95.8523	195.2492	0.00
1.2000	0.09390	659.2462	493.9684	-0.02132	13115.	562973.	-99.3041	211.5182	0.00
1.4000	0.08966	756.0538	473.7763	-0.02107	15041.	562973.	-102.6168	228.9142	0.00
1.6000	0.08547	848.7567	452.9361	-0.02079	16885.	562973.	-105.7850	247.5436	0.00
1.8000	0.08134	937.2282	431.4773	-0.02047	18646.	562973.	-108.8032	267.5251	0.00
2.0000	0.07728	1021.	409.4304	-0.02012	20319.	562973.	-111.6660	288.9911	0.00
2.2000	0.07329	1101.	386.8270	-0.01974	21904.	562973.	-114.3681	312.0896	0.00
2.4000	0.06938	1176.	363.6998	-0.01934	23397.	562973.	-116.9041	336.9867	0.00
2.6000	0.06556	1246.	340.0825	-0.01891	24798.	562973.	-119.2686	363.8695	0.00
2.8000	0.06182	1312.	316.0100	-0.01846	26104.	562973.	-121.4565	392.9487	0.00
3.0000	0.05817	1373.	291.5181	-0.01798	27313.	562973.	-123.4625	424.4627	0.00
3.2000	0.05463	1429.	266.6437	-0.01748	28423.	562973.	-125.2813	458.6823	0.00
3.4000	0.05118	1480.	241.4248	-0.01696	29435.	562973.	-126.9077	495.9154	0.00
3.6000	0.04784	1525.	215.9004	-0.01643	30345.	562973.	-128.3365	536.5140	0.00
3.8000	0.04461	1566.	190.1105	-0.01588	31153.	562973.	-129.5626	580.8814	0.00
4.0000	0.04149	1601.	164.0961	-0.01532	31858.	562973.	-130.5807	629.4820	0.00
4.2000	0.03848	1632.	137.8995	-0.01474	32458.	562973.	-131.3856	682.8524	0.00
4.4000	0.03559	1656.	111.7022	-0.01416	32955.	562973.	-130.5871	733.8323	0.00
4.6000	0.03282	1676.	85.8369	-0.01357	33347.	562973.	-128.0661	780.4817	0.00
4.8000	0.03016	1691.	60.4851	-0.01297	33638.	562973.	-125.4522	831.8282	0.00
5.0000	0.02763	1700.	35.6653	-0.01237	33829.	562973.	-122.7451	888.5242	0.00
5.2000	0.02522	1705.	11.3964	-0.01176	33922.	562973.	-119.9440	951.3411	0.00
5.4000	0.02292	1705.	-12.3028	-0.01116	33919.	562973.	-117.0481	1021.	0.00
5.6000	0.02075	1700.	-35.4132	-0.01055	33824.	562973.	-114.0565	1099.	0.00
5.8000	0.01870	1691.	-57.9157	-0.00995	33638.	562973.	-110.9681	1187.	0.00
6.0000	0.01677	1677.	-81.1379	-0.00935	33363.	562973.	-121.2542	1446.	0.00
6.2000	0.01496	1658.	-106.2326	-0.00876	32992.	562973.	-129.6926	1734.	0.00
6.4000	0.01327	1635.	-131.6622	-0.00817	32518.	562973.	-124.6037	1878.	0.00
6.6000	0.01169	1606.	-156.0684	-0.00760	31944.	562973.	-119.4582	2043.	0.00
6.8000	0.01023	1572.	-179.4395	-0.00703	31276.	562973.	-114.2528	2234.	0.00
7.0000	0.00888	1534.	-201.7631	-0.00648	30516.	562973.	-108.9833	2455.	0.00
7.2000	0.00764	1491.	-223.0258	-0.00595	29670.	562973.	-103.6434	2715.	0.00
7.4000	0.00650	1445.	-243.2126	-0.00542	28741.	562973.	-98.2247	3022.	0.00
7.6000	0.00547	1394.	-262.3066	-0.00492	27735.	562973.	-92.7155	3392.	0.00
7.8000	0.00453	1340.	-280.2881	-0.00443	26654.	562973.	-87.0991	3844.	0.00
8.0000	0.00369	1282.	-297.1331	-0.00397	25504.	562973.	-81.3516	4406.	0.00
8.2000	0.00294	1221.	-312.8121	-0.00352	24290.	562973.	-75.4379	5124.	0.00
8.4000	0.00228	1157.	-327.2863	-0.00310	23015.	562973.	-69.3042	6071.	0.00
8.6000	0.00170	1090.	-340.5031	-0.00270	21685.	562973.	-62.8633	7379.	0.00
8.8000	0.00120	1021.	-352.3856	-0.00233	20305.	562973.	-55.9625	9311.	0.00
9.0000	7.73E-04	949.0577	-362.8119	-0.00198	18881.	562973.	-48.2999	12500.	0.00
9.2000	4.11E-04	875.5293	-371.5551	-0.00165	17418.	562973.	-39.1321	19045.	0.00
9.4000	1.11E-04	800.4356	-378.0006	-0.00136	15924.	562973.	-25.3235	45491.	0.00
9.6000	-1.31E-04	724.3290	-377.8574	-0.00109	14410.	562973.	26.7555	40722.	0.00
9.8000	-3.23E-04	649.2927	-371.5720	-8.41E-04	12917.	562973.	36.0990	22374.	0.00
10.0000	-4.68E-04	575.7002	-363.8764	-6.23E-04	11453.	562973.	40.8574	17467.	0.00
10.2000	-5.72E-04	503.7421	-355.4215	-4.32E-04	10022.	562973.	43.6912	15275.	0.00
10.4000	-6.41E-04	433.5316	-346.5155	-2.65E-04	8625.	562973.	45.3687	14166.	0.00
10.6000	-6.78E-04	365.1359	-337.3546	-1.23E-04	7264.	562973.	46.2408	13637.	0.00
10.8000	-6.90E-04	298.5898	-328.0799	-5.47E-06	5940.	562973.	46.5053	13483.	0.00
11.0000	-6.80E-04	233.9039	-305.0074	8.91E-05	4653.	562973.	184.2197	54155.	0.00
11.2000	-6.54E-04	176.5868	-268.5759	1.62E-04	3513.	562973.	180.0961	55057.	0.00
11.4000	-6.16E-04	126.4736	-233.3437	2.16E-04	2516.	562973.	172.2260	55960.	0.00
11.6000	-5.68E-04	83.2494	-199.9759	2.53E-04	1656.	562973.	161.4519	56862.	0.00
11.8000	-5.14E-04	46.4832	-168.9768	2.76E-04	924.7547	562973.	148.5392	57765.	0.00
12.0000	-4.57E-04	15.6587	-140.7054	2.87E-04	311.5194	562973.	134.1741	58668.	0.00
12.2000	-3.99E-04	-9.7989	-115.3916	2.88E-04	194.9436	562973.	118.9642	59570.	0.00
12.4000	-3.42E-04	-30.4980	-93.1510	2.81E-04	606.7378	562973.	103.4414	60473.	0.00
12.6000	-2.87E-04	-47.0594	-74.0003	2.67E-04	936.2160	562973.	88.0663	61375.	0.00
12.8000	-2.35E-04	-60.0981	-57.8701	2.48E-04	1196.	562973.	73.2349	62278.	0.00
13.0000	-1.88E-04	-70.2074	-40.3818	2.25E-04	1397.	562973.	101.6487	108328.	0.00
13.2000	-1.45E-04	-76.2508	-18.5005	1.99E-04	1517.	562973.	117.1637	161452.	0.00
13.4000	-1.08E-04	-77.6076	2.0590	1.72E-04	1544.	562973.	88.4321	163726.	0.00
13.6000	-7.64E-05	-75.4272	17.2456	1.45E-04	1501.	562973.	63.4333	166000.	0.00
13.8000	-5.02E-05	-70.7094	27.8114	1.19E-04	1407.	562973.	42.2250	168274.	0.00
14.0000	-2.90E-05	-64.3026	34.5043	9.47E-05	1279.	562973.	24.7041	170548.	0.00

14.2000	-1.23E-05	-56.9077	38.0396	7.31E-05	1132.	562973.	10.6488	172821.	0.00
14.4000	2.80E-07	-49.0868	39.0800	5.43E-05	976.5504	562973.	-0.2453	175095.	0.00
14.6000	9.40E-06	-41.2757	38.2221	3.82E-05	821.1537	562973.	-8.3328	177369.	0.00
14.8000	1.56E-05	-33.7979	35.9895	2.49E-05	672.3882	562973.	-13.9935	179643.	0.00
15.0000	1.94E-05	-26.8799	32.8291	1.41E-05	534.7583	562973.	-17.6106	181917.	0.00
15.2000	2.12E-05	-20.6663	29.1126	5.69E-06	411.1425	562973.	-19.5547	184191.	0.00
15.4000	2.16E-05	-15.2349	25.1399	-6.88E-07	303.0878	562973.	-20.1724	186465.	0.00
15.6000	2.10E-05	-10.6103	21.1448	-5.28E-06	211.0858	562973.	-19.7778	188739.	0.00
15.8000	1.95E-05	-6.7769	17.3023	-8.37E-06	134.8225	562973.	-18.6477	191013.	0.00
16.0000	1.76E-05	-3.6894	13.7355	-1.02E-05	73.3986	562973.	-17.0197	193287.	0.00
16.2000	1.54E-05	-1.2827	10.5244	-1.11E-05	25.5185	562973.	-15.0919	195561.	0.00
16.4000	1.32E-05	0.5203	7.7128	-1.12E-05	10.3519	562973.	-13.0244	197835.	0.00
16.6000	1.09E-05	1.8024	5.3161	-1.08E-05	35.8577	562973.	-10.9423	200109.	0.00
16.8000	8.83E-06	2.6468	3.3279	-1.00E-05	52.6560	562973.	-8.9392	202383.	0.00
17.0000	6.92E-06	3.1336	1.7260	-9.02E-06	62.3406	562973.	-7.0806	204657.	0.00
17.2000	5.23E-06	3.3372	0.4770	-7.87E-06	66.3907	562973.	-5.4089	206931.	0.00
17.4000	3.77E-06	3.3244	-0.4585	-6.68E-06	66.1366	562973.	-3.9467	209205.	0.00
17.6000	2.55E-06	3.1537	-1.1233	-5.53E-06	62.7418	562973.	-2.7012	211479.	0.00
17.8000	1.56E-06	2.8751	-1.5602	-4.46E-06	57.1975	562973.	-1.6675	213753.	0.00
18.0000	7.70E-07	2.5297	-1.8101	-3.50E-06	50.3263	562973.	-0.8318	216027.	0.00
18.2000	1.60E-07	2.1510	-1.9107	-2.67E-06	42.7932	562973.	-0.1743	218301.	0.00
18.4000	-2.98E-07	1.7654	-1.8953	-1.97E-06	35.1214	562973.	0.3285	220575.	0.00
18.6000	-6.30E-07	1.3929	-1.7922	-1.41E-06	27.7110	562973.	0.7019	222849.	0.00
18.8000	-8.63E-07	1.0485	-1.6249	-9.79E-07	20.8592	562973.	0.9715	225123.	0.00
19.0000	-1.02E-06	0.7429	-1.4116	-6.61E-07	14.7805	562973.	1.1617	227397.	0.00
19.2000	-1.13E-06	0.4839	-1.1659	-4.43E-07	9.6263	562973.	1.2949	229671.	0.00
19.4000	-1.20E-06	0.2766	-0.8974	-3.08E-07	5.5025	562973.	1.3906	231945.	0.00
19.6000	-1.25E-06	0.1249	-0.6118	-2.37E-07	2.4853	562973.	1.4649	234219.	0.00
19.8000	-1.29E-06	0.03186	-0.3123	-2.09E-07	0.6339	562973.	1.5299	236493.	0.00
20.0000	-1.33E-06	0.00	0.00	-2.03E-07	0.00	562973.	1.5932	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 4:

Pile-head deflection = 0.12006765 meters
Computed slope at pile head = -0.02204791 radians
Maximum bending moment = 1705. kN-m
Maximum shear force = 600.00000000 kN
Depth of maximum bending moment = 5.20000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 30
Number of zero deflection points = 3

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 5

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 800.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.2031	1.95E-09	800.0000	-0.03444	3.89E-08	562973.	-91.3929	44.9936	0.00
0.2000	0.1962	158.1721	781.2278	-0.03441	3147.	562973.	-96.3291	98.1765	0.00
0.4000	0.1894	312.4911	761.4800	-0.03433	6217.	562973.	-101.1490	106.8323	0.00
0.6000	0.1825	462.7641	740.7804	-0.03419	9206.	562973.	-105.8466	115.9923	0.00
0.8000	0.1757	608.8033	719.1542	-0.03400	12112.	562973.	-110.4161	125.6977	0.00

1.0000	0.1689	750.4258	696.6274	-0.03376	14929.	562973.	-114.8517	135.9938	0.00
1.2000	0.1622	887.4542	673.2274	-0.03347	17655.	562973.	-119.1476	146.9301	0.00
1.4000	0.1555	1020.	648.9829	-0.03313	20287.	562973.	-123.2980	158.5611	0.00
1.6000	0.1489	1147.	623.9233	-0.03274	22820.	562973.	-127.2973	170.9467	0.00
1.8000	0.1424	1269.	598.0797	-0.03231	25252.	562973.	-131.1396	184.1531	0.00
2.0000	0.1360	1386.	571.4837	-0.03184	27579.	562973.	-134.8194	198.2533	0.00
2.2000	0.1297	1498.	544.1687	-0.03133	29799.	562973.	-138.3311	213.3284	0.00
2.4000	0.1235	1604.	516.1687	-0.03078	31910.	562973.	-141.6689	229.4680	0.00
2.6000	0.1174	1704.	487.5191	-0.03019	33907.	562973.	-144.8274	246.7721	0.00
2.8000	0.1114	1799.	458.2562	-0.02957	35789.	562973.	-147.8010	265.3518	0.00
3.0000	0.1056	1888.	428.4177	-0.02891	37554.	562973.	-150.5843	285.3313	0.00
3.2000	0.09984	1970.	398.0421	-0.02823	39198.	562973.	-153.1718	306.8498	0.00
3.4000	0.09426	2047.	367.1691	-0.02751	40721.	562973.	-155.5581	330.0633	0.00
3.6000	0.08883	2117.	335.8395	-0.02677	42120.	562973.	-157.7379	355.1473	0.00
3.8000	0.08355	2181.	304.0951	-0.02601	43394.	562973.	-159.7058	382.3001	0.00
4.0000	0.07843	2239.	271.9789	-0.02523	44540.	562973.	-161.4565	411.7457	0.00
4.2000	0.07346	2290.	239.5347	-0.02442	45558.	562973.	-162.9848	443.7387	0.00
4.4000	0.06866	2335.	206.9801	-0.02360	46446.	562973.	-162.5612	473.5462	0.00
4.6000	0.06402	2373.	174.7221	-0.02276	47205.	562973.	-160.0191	499.9033	0.00
4.8000	0.05955	2405.	142.9821	-0.02191	47837.	562973.	-157.3805	528.5513	0.00
5.0000	0.05525	2430.	111.7796	-0.02106	48343.	562973.	-154.6454	559.7605	0.00
5.2000	0.05113	2449.	81.1337	-0.02019	48726.	562973.	-151.8135	593.8419	0.00
5.4000	0.04718	2462.	51.0639	-0.01932	48989.	562973.	-148.8847	631.1560	0.00
5.6000	0.04340	2470.	21.5895	-0.01844	49132.	562973.	-145.8587	672.1210	0.00
5.8000	0.03980	2471.	-7.2699	-0.01756	49160.	562973.	-142.7354	717.2256	0.00
6.0000	0.03638	2467.	-37.2388	-0.01669	49075.	562973.	-156.9539	862.9235	0.00
6.2000	0.03313	2456.	-69.8380	-0.01581	48864.	562973.	-169.0376	1021.	0.00
6.4000	0.03005	2439.	-103.1054	-0.01494	48519.	562973.	-163.6366	1089.	0.00
6.6000	0.02715	2415.	-135.2882	-0.01408	48044.	562973.	-158.1907	1165.	0.00
6.8000	0.02442	2385.	-166.3772	-0.01323	47442.	562973.	-152.6999	1251.	0.00
7.0000	0.02186	2348.	-196.3636	-0.01239	46720.	562973.	-147.1643	1346.	0.00
7.2000	0.01947	2306.	-225.2384	-0.01156	45880.	562973.	-141.5833	1455.	0.00
7.4000	0.01724	2258.	-252.9923	-0.01075	44927.	562973.	-135.9559	1578.	0.00
7.6000	0.01517	2205.	-279.6160	-0.00996	43866.	562973.	-130.2807	1718.	0.00
7.8000	0.01325	2146.	-305.0996	-0.00918	42702.	562973.	-124.5554	1880.	0.00
8.0000	0.01149	2083.	-329.4328	-0.00843	41439.	562973.	-118.7766	2067.	0.00
8.2000	0.00988	2015.	-352.6045	-0.00770	40080.	562973.	-112.9399	2286.	0.00
8.4000	0.00841	1942.	-374.6023	-0.00700	38633.	562973.	-107.0387	2545.	0.00
8.6000	0.00708	1865.	-395.4126	-0.00633	37099.	562973.	-101.0642	2855.	0.00
8.8000	0.00588	1784.	-415.0194	-0.00568	35486.	562973.	-95.0039	3231.	0.00
9.0000	0.00481	1699.	-433.4038	-0.00506	33797.	562973.	-88.8399	3695.	0.00
9.2000	0.00386	1610.	-450.5424	-0.00447	32037.	562973.	-82.5462	4280.	0.00
9.4000	0.00302	1519.	-466.4054	-0.00392	30212.	562973.	-76.0839	5037.	0.00
9.6000	0.00229	1424.	-480.9529	-0.00339	28326.	562973.	-69.3916	6056.	0.00
9.8000	0.00166	1326.	-494.1288	-0.00290	26384.	562973.	-62.3671	7497.	0.00
10.0000	0.00113	1226.	-505.8479	-0.00245	24393.	562973.	-54.8234	9702.	0.00
10.2000	6.84E-04	1124.	-515.9667	-0.00203	22359.	562973.	-46.3649	13565.	0.00
10.4000	3.17E-04	1020.	-524.1916	-0.00165	20287.	562973.	-35.8840	22647.	0.00
10.6000	2.27E-05	914.2019	-529.2697	-0.00131	18187.	562973.	-14.8974	131513.	0.00
10.8000	-2.07E-04	808.0500	-527.6480	-0.00100	16076.	562973.	31.1149	30117.	0.00
11.0000	-3.78E-04	703.1427	-514.2879	-7.34E-04	13989.	562973.	102.4861	54155.	0.00
11.2000	-5.00E-04	602.3348	-490.2638	-5.03E-04	11983.	562973.	137.7541	55057.	0.00
11.4000	-5.80E-04	507.0372	-460.2736	-3.05E-04	10087.	562973.	162.1479	55960.	0.00
11.6000	-6.23E-04	418.2254	-426.3575	-1.41E-04	8320.	562973.	177.0133	56862.	0.00
11.8000	-6.36E-04	336.4942	-390.2877	-7.09E-06	6694.	562973.	183.6850	57765.	0.00
12.0000	-6.25E-04	262.1103	-353.5727	9.92E-05	5215.	562973.	183.4642	58668.	0.00
12.2000	-5.96E-04	195.0651	-317.4662	1.80E-04	3881.	562973.	177.6013	59570.	0.00
12.4000	-5.53E-04	135.1238	-282.9776	2.39E-04	2688.	562973.	167.2846	60473.	0.00
12.6000	-5.01E-04	81.8740	-250.8858	2.78E-04	1629.	562973.	153.6334	61375.	0.00
12.8000	-4.42E-04	34.7695	-221.7529	2.98E-04	691.7178	562973.	137.6958	62278.	0.00
13.0000	-3.81E-04	-6.8271	-187.3311	3.03E-04	135.8214	562973.	206.5219	108328.	0.00
13.2000	-3.21E-04	-40.1629	-140.7766	2.95E-04	799.0157	562973.	259.0226	161452.	0.00
13.4000	-2.63E-04	-63.1378	-93.3201	2.77E-04	1256.	562973.	215.5427	163726.	0.00
13.6000	-2.10E-04	-77.4910	-54.3181	2.52E-04	1542.	562973.	174.4771	166000.	0.00
13.8000	-1.63E-04	-84.8650	-23.1868	2.23E-04	1688.	562973.	136.8368	168274.	0.00
14.0000	-1.21E-04	-86.7657	0.8226	1.92E-04	1726.	562973.	103.2564	170548.	0.00
14.2000	-8.57E-05	-84.5360	18.5540	1.62E-04	1682.	562973.	74.0583	172821.	0.00

14.4000	-5.63E-05	-79.3440	30.8913	1.33E-04	1578.	562973.	49.3141	175095.	0.00
14.6000	-3.26E-05	-72.1795	38.7128	1.06E-04	1436.	562973.	28.9014	177369.	0.00
14.8000	-1.40E-05	-63.8589	42.8585	8.17E-05	1270.	562973.	12.5554	179643.	0.00
15.0000	9.54E-08	-55.0361	44.1054	6.06E-05	1095.	562973.	-0.08678	181917.	0.00
15.2000	1.03E-05	-46.2168	43.1519	4.26E-05	919.4531	562973.	-9.4477	184191.	0.00
15.4000	1.71E-05	-37.7753	40.6093	2.77E-05	751.5161	562973.	-15.9782	186465.	0.00
15.6000	2.13E-05	-29.9730	36.9983	1.57E-05	596.2942	562973.	-20.1323	188739.	0.00
15.8000	2.34E-05	-22.9760	32.7503	6.25E-06	457.0930	562973.	-22.3478	191013.	0.00
16.0000	2.38E-05	-16.8729	28.2122	-8.30E-07	335.6756	562973.	-23.0326	193287.	0.00
16.2000	2.31E-05	-11.6911	23.6535	-5.90E-06	232.5870	562973.	-22.5551	195561.	0.00
16.4000	2.15E-05	-7.4115	19.2741	-9.30E-06	147.4472	562973.	-21.2384	197835.	0.00
16.6000	1.93E-05	-3.9814	15.2144	-1.13E-05	79.2084	562973.	-19.3586	200109.	0.00
16.8000	1.69E-05	-1.3257	11.5641	-1.23E-05	26.3747	562973.	-17.1443	202383.	0.00
17.0000	1.44E-05	0.6442	8.3718	-1.24E-05	12.8160	562973.	-14.7788	204657.	0.00
17.2000	1.20E-05	2.0230	5.6535	-1.19E-05	40.2461	562973.	-12.4039	206931.	0.00
17.4000	9.68E-06	2.9056	3.4008	-1.10E-05	57.8055	562973.	-10.1235	209205.	0.00
17.6000	7.57E-06	3.3833	1.5876	-9.92E-06	67.3088	562973.	-8.0089	211479.	0.00
17.8000	5.71E-06	3.5406	0.1763	-8.69E-06	70.4388	562973.	-6.1034	213753.	0.00
18.0000	4.10E-06	3.4538	-0.8767	-7.45E-06	68.7120	562973.	-4.4272	216027.	0.00
18.2000	2.73E-06	3.1900	-1.6177	-6.27E-06	63.4621	562973.	-2.9822	218301.	0.00
18.4000	1.59E-06	2.8068	-2.0915	-5.20E-06	55.8390	562973.	-1.7561	220575.	0.00
18.6000	6.52E-07	2.3534	-2.3397	-4.28E-06	46.8185	562973.	-0.7263	222849.	0.00
18.8000	-1.21E-07	1.8709	-2.3987	-3.53E-06	37.2201	562973.	0.1367	225123.	0.00
19.0000	-7.62E-07	1.3939	-2.2984	-2.95E-06	27.7305	562973.	0.8662	227397.	0.00
19.2000	-1.30E-06	0.9515	-2.0621	-2.54E-06	18.9302	562973.	1.4964	229671.	0.00
19.4000	-1.78E-06	0.5690	-1.7064	-2.27E-06	11.3207	562973.	2.0606	231945.	0.00
19.6000	-2.21E-06	0.2690	-1.2415	-2.12E-06	5.3509	562973.	2.5882	234219.	0.00
19.8000	-2.62E-06	0.07242	-0.6724	-2.06E-06	1.4408	562973.	3.1030	236493.	0.00
20.0000	-3.03E-06	0.00	0.00	-2.05E-06	0.00	562973.	3.6212	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 5:

Pile-head deflection = 0.20312398 meters
Computed slope at pile head = -0.03443728 radians
Maximum bending moment = 2471. kN-m
Maximum shear force = 800.00000000 kN
Depth of maximum bending moment = 5.80000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 29
Number of zero deflection points = 3

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 6

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 1500.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X meters	Deflect. y meters	Bending Moment kN-m	Shear Force kN	Slope S radians	Total Stress kPa*	Bending Stiffness kN-m^2	Soil Res. p kN/m	Soil Spr. Es*h kN/m	Distrib. Lat. Load kN/m
0.00	0.6693	2.03E-08	1500.	-0.09633	4.04E-07	562973.	-106.3429	15.8896	0.00
0.2000	0.6500	297.8731	1478.	-0.09627	5926.	562973.	-113.3829	34.8873	0.00
0.4000	0.6308	591.2110	1455.	-0.09611	11762.	562973.	-120.4800	38.2021	0.00
0.6000	0.6115	879.7296	1430.	-0.09585	17502.	562973.	-127.6343	41.7414	0.00
0.8000	0.5924	1163.	1404.	-0.09549	23140.	562973.	-134.8458	45.5245	0.00
1.0000	0.5734	1441.	1376.	-0.09503	28671.	562973.	-142.1143	49.5731	0.00

1.2000	0.5544	1713.	1347.	-0.09447	34089.	562973.	-149.4401	53.9108	0.00
1.4000	0.5356	1980.	1316.	-0.09381	39388.	562973.	-156.8229	58.5635	0.00
1.6000	0.5169	2240.	1284.	-0.09306	44562.	562973.	-164.2629	63.5602	0.00
1.8000	0.4983	2493.	1250.	-0.09222	49606.	562973.	-171.7601	68.9328	0.00
2.0000	0.4800	2740.	1215.	-0.09129	54512.	562973.	-179.3144	74.7167	0.00
2.2000	0.4618	2980.	1179.	-0.09028	59277.	562973.	-186.9258	80.9511	0.00
2.4000	0.4439	3212.	1141.	-0.08918	63892.	562973.	-194.5944	87.6799	0.00
2.6000	0.4262	3436.	1101.	-0.08800	68352.	562973.	-202.3201	94.9518	0.00
2.8000	0.4087	3652.	1060.	-0.08674	72652.	562973.	-210.1029	102.8212	0.00
3.0000	0.3915	3860.	1017.	-0.08540	76784.	562973.	-217.9429	111.3491	0.00
3.2000	0.3745	4059.	972.3929	-0.08400	80743.	562973.	-225.8401	120.6039	0.00
3.4000	0.3579	4249.	926.4295	-0.08252	84522.	562973.	-233.7944	130.6623	0.00
3.6000	0.3415	4429.	878.8695	-0.08098	88115.	562973.	-241.8058	141.6108	0.00
3.8000	0.3255	4600.	829.7014	-0.07937	91516.	562973.	-249.8744	153.5472	0.00
4.0000	0.3098	4761.	779.1923	-0.07771	94718.	562973.	-255.2175	164.7853	0.00
4.2000	0.2944	4912.	727.7823	-0.07599	97717.	562973.	-258.8820	175.8802	0.00
4.4000	0.2794	5052.	675.9417	-0.07422	100510.	562973.	-259.5235	185.7985	0.00
4.6000	0.2647	5182.	624.3063	-0.07241	103096.	562973.	-256.8314	194.0584	0.00
4.8000	0.2504	5302.	573.2214	-0.07054	105478.	562973.	-254.0171	202.8908	0.00
5.0000	0.2365	5411.	522.7117	-0.06864	107657.	562973.	-251.0797	212.3498	0.00
5.2000	0.2229	5511.	472.8019	-0.06670	109637.	562973.	-248.0184	222.4963	0.00
5.4000	0.2098	5601.	423.5169	-0.06473	111420.	562973.	-244.8321	233.3988	0.00
5.6000	0.1971	5680.	374.8817	-0.06272	113007.	562973.	-241.5200	245.1347	0.00
5.8000	0.1847	5751.	326.9216	-0.06069	114403.	562973.	-238.0810	257.7917	0.00
6.0000	0.1728	5811.	276.7306	-0.05864	115609.	562973.	-263.8282	305.4029	0.00
6.2000	0.1613	5861.	221.7002	-0.05657	116605.	562973.	-286.4759	355.3135	0.00
6.4000	0.1501	5900.	165.0784	-0.05448	117373.	562973.	-279.7427	372.6236	0.00
6.6000	0.1395	5927.	109.8098	-0.05238	117919.	562973.	-272.9425	391.4223	0.00
6.8000	0.1292	5944.	55.9081	-0.05027	118247.	562973.	-266.0749	411.8890	0.00
7.0000	0.1194	5950.	3.3867	-0.04815	118364.	562973.	-259.1392	434.2321	0.00
7.2000	0.1099	5945.	-47.7407	-0.04604	118274.	562973.	-252.1344	458.6947	0.00
7.4000	0.1009	5931.	-97.4601	-0.04393	117984.	562973.	-245.0596	485.5620	0.00
7.6000	0.09236	5906.	-145.7573	-0.04183	117499.	562973.	-237.9131	515.1709	0.00
7.8000	0.08421	5872.	-192.6180	-0.03974	116824.	562973.	-230.6933	547.9214	0.00
8.0000	0.07647	5829.	-238.0271	-0.03766	115966.	562973.	-223.3978	584.2924	0.00
8.2000	0.06914	5777.	-281.9693	-0.03560	114930.	562973.	-216.0242	624.8610	0.00
8.4000	0.06223	5716.	-324.4286	-0.03356	113722.	562973.	-208.5691	670.3291	0.00
8.6000	0.05572	5647.	-365.3884	-0.03154	112348.	562973.	-201.0289	721.5580	0.00
8.8000	0.04961	5570.	-404.8312	-0.02954	110814.	562973.	-193.3989	779.6152	0.00
9.0000	0.04390	5485.	-442.7384	-0.02758	109126.	562973.	-185.6736	845.8389	0.00
9.2000	0.03858	5393.	-479.0905	-0.02565	107291.	562973.	-177.8467	921.9273	0.00
9.4000	0.03364	5294.	-513.8661	-0.02375	105314.	562973.	-169.9100	1010.	0.00
9.6000	0.02908	5187.	-547.0426	-0.02189	103202.	562973.	-161.8542	1113.	0.00
9.8000	0.02489	5075.	-578.5947	-0.02007	100961.	562973.	-153.6674	1235.	0.00
10.0000	0.02105	4956.	-608.4950	-0.01828	98597.	562973.	-145.3351	1381.	0.00
10.2000	0.01757	4831.	-636.7124	-0.01655	96119.	562973.	-136.8394	1557.	0.00
10.4000	0.01444	4701.	-663.2120	-0.01485	93531.	562973.	-128.1569	1775.	0.00
10.6000	0.01163	4566.	-687.9535	-0.01321	90841.	562973.	-119.2577	2050.	0.00
10.8000	0.00915	4426.	-710.8894	-0.01161	88056.	562973.	-110.1016	2405.	0.00
11.0000	0.00699	4282.	-898.8949	-0.01006	85184.	562973.	-1770.	50644.	0.00
11.2000	0.00513	4067.	-1217.	-0.00858	80903.	562973.	-1412.	55057.	0.00
11.4000	0.00356	3795.	-1458.	-0.00718	75498.	562973.	-995.5423	55960.	0.00
11.6000	0.00226	3483.	-1622.	-0.00589	69302.	562973.	-641.5055	56862.	0.00
11.8000	0.00120	3146.	-1720.	-0.00471	62594.	562973.	-347.2055	57765.	0.00
12.0000	3.71E-04	2795.	-1766.	-0.00366	55611.	562973.	-108.9665	58668.	0.00
12.2000	-2.61E-04	2440.	-1769.	-0.00273	48541.	562973.	77.6136	59570.	0.00
12.4000	-7.19E-04	2088.	-1740.	-0.00192	41532.	562973.	217.4810	60473.	0.00
12.6000	-0.00103	1744.	-1686.	-0.00124	34697.	562973.	315.9697	61375.	0.00
12.8000	-0.00122	1413.	-1617.	-6.81E-04	28113.	562973.	378.6732	62278.	0.00
13.0000	-0.00130	1097.	-1508.	-2.35E-04	21830.	562973.	705.2795	108328.	0.00
13.2000	-0.00131	809.7157	-1332.	1.03E-04	16109.	562973.	1058.	161452.	0.00
13.4000	-0.00126	564.4339	-1123.	3.48E-04	11229.	562973.	1032.	163726.	0.00
13.6000	-0.00117	360.4353	-922.7850	5.12E-04	7171.	562973.	972.0807	166000.	0.00
13.8000	-0.00106	195.3199	-736.7270	6.11E-04	3886.	562973.	888.4987	168274.	0.00
14.0000	-9.27E-04	65.7445	-568.8308	6.57E-04	1308.	562973.	790.4638	170548.	0.00
14.2000	-7.93E-04	-32.2124	-421.2386	6.63E-04	640.8456	562973.	685.4581	172821.	0.00
14.4000	-6.62E-04	-102.7510	-294.7513	6.39E-04	2044.	562973.	579.4153	175095.	0.00

14.6000	-5.38E-04	-150.1129	-189.1239	5.94E-04	2986.	562973.	476.8585	177369.	0.00
14.8000	-4.24E-04	-178.4005	-103.3321	5.36E-04	3549.	562973.	381.0592	179643.	0.00
15.0000	-3.23E-04	-191.4458	-35.8052	4.70E-04	3809.	562973.	294.2094	181917.	0.00
15.2000	-2.36E-04	-192.7226	15.3752	4.02E-04	3834.	562973.	217.5951	184191.	0.00
15.4000	-1.63E-04	-185.2957	52.3112	3.35E-04	3686.	562973.	151.7647	186465.	0.00
15.6000	-1.02E-04	-171.7981	77.1564	2.71E-04	3418.	562973.	96.6874	188739.	0.00
15.8000	-5.43E-05	-154.4331	92.0148	2.13E-04	3072.	562973.	51.8964	191013.	0.00
16.0000	-1.72E-05	-134.9922	98.8660	1.62E-04	2686.	562973.	16.6156	193287.	0.00
16.2000	1.04E-05	-114.8867	99.5144	1.17E-04	2286.	562973.	-10.1314	195561.	0.00
16.4000	2.98E-05	-95.1865	95.5582	8.00E-05	1894.	562973.	-29.4305	197835.	0.00
16.6000	4.24E-05	-76.6634	88.3748	4.95E-05	1525.	562973.	-42.4037	200109.	0.00
16.8000	4.96E-05	-59.8365	79.1192	2.53E-05	1190.	562973.	-50.1521	202383.	0.00
17.0000	5.25E-05	-45.0157	68.7327	6.65E-06	895.5593	562973.	-53.7133	204657.	0.00
17.2000	5.22E-05	-32.3434	57.9582	-7.09E-06	643.4524	562973.	-54.0319	206931.	0.00
17.4000	4.97E-05	-21.8324	47.3609	-1.67E-05	434.3427	562973.	-51.9406	209205.	0.00
17.6000	4.55E-05	-13.3991	37.3518	-2.30E-05	266.5661	562973.	-48.1507	211479.	0.00
17.8000	4.05E-05	-6.8917	28.2118	-2.66E-05	137.1066	562973.	-43.2496	213753.	0.00
18.0000	3.49E-05	-2.1144	20.1164	-2.82E-05	42.0639	562973.	-37.7043	216027.	0.00
18.2000	2.92E-05	1.1548	13.1591	-2.83E-05	22.9746	562973.	-31.8686	218301.	0.00
18.4000	2.36E-05	3.1493	7.3729	-2.76E-05	62.6528	562973.	-25.9936	220575.	0.00
18.6000	1.82E-05	4.1040	2.7495	-2.63E-05	81.6461	562973.	-20.2399	222849.	0.00
18.8000	1.31E-05	4.2491	-0.7436	-2.48E-05	84.5329	562973.	-14.6915	225123.	0.00
19.0000	8.24E-06	3.8065	-3.1498	-2.34E-05	75.7286	562973.	-9.3702	227397.	0.00
19.2000	3.70E-06	2.9892	-4.5118	-2.22E-05	59.4678	562973.	-4.2500	229671.	0.00
19.4000	-6.27E-07	2.0018	-4.8641	-2.13E-05	39.8250	562973.	0.7271	231945.	0.00
19.6000	-4.81E-06	1.0436	-4.2277	-2.07E-05	20.7608	562973.	5.6361	234219.	0.00
19.8000	-8.92E-06	0.3107	-2.6089	-2.05E-05	6.1817	562973.	10.5526	236493.	0.00
20.0000	-1.30E-05	0.00	0.00	-2.04E-05	0.00	562973.	15.5362	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 6:

Pile-head deflection = 0.66925959 meters
Computed slope at pile head = -0.09632564 radians
Maximum bending moment = 5950. kN-m
Maximum shear force = -1769. kN
Depth of maximum bending moment = 7.00000000 meters below pile head
Depth of maximum shear force = 12.20000000 meters below pile head
Number of iterations = 30
Number of zero deflection points = 3

Summary of Pile-head Responses for Conventional Analyses

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, kN, and Load 2 = Moment, M, kN-m
Load Type 2: Load 1 = Shear, V, kN, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, kN, and Load 2 = Rot. Stiffness, R, kN-m/rad.
Load Type 4: Load 1 = Top Deflection, y, m, and Load 2 = Moment, M, kN-m
Load Type 5: Load 1 = Top Deflection, y, m, and Load 2 = Slope, S, radians

Load Case No.	Load Type	Pile-head Load 1	Load Type	Pile-head Load 2	Axial Pile-head Loading kN	Pile-head Deflection meters	Pile-head Rotation radians	Max Shear in Pile kN	Max Moment in Pile kN-m
1	V, kN	100.0000	M, kN-m	0.00	0.00	0.00445	-0.00134	100.0000	166.5732
2	V, kN	200.0000	M, kN-m	0.00	0.00	0.01613	-0.00399	200.0000	410.1687
3	V, kN	400.0000	M, kN-m	0.00	0.00	0.05741	-0.01177	400.0000	1009.
4	V, kN	600.0000	M, kN-m	0.00	0.00	0.1201	-0.02205	600.0000	1705.
5	V, kN	800.0000	M, kN-m	0.00	0.00	0.2031	-0.03444	800.0000	2471.
6	V, kN	1500.	M, kN-m	0.00	0.00	0.6693	-0.09633	-1769.	5950.

Maximum pile-head deflection = 0.6692595919 meters
Maximum pile-head rotation = -0.0963256359 radians = -5.519052 deg.

The analysis ended normally.

Opera VI31 – D1000

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LPile for Windows, Version 2016-09.009

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

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Files Used for Analysis

Path to file locations:
\m9159A\Work\07_Pali\VI31 (NV34)\LPILE\

Name of input data file:
VI31_spalle_D1000.lp9d

Name of output report file:
VI31_spalle_D1000.lp9o

Name of plot output file:
VI31_spalle_D1000.lp9p

Name of runtime message file:
VI31_spalle_D1000.lp9r

Date and Time of Analysis

Date: July 9, 2019 Time: 12:28:08

Problem Title

Project Name: VI02 - Spalle e pila
Job Number:
Client:
Engineer:
Description:

Program Options and Settings

Computational Options:
- Use unfactored loads in computations (conventional analysis)

Engineering Units Used for Data Input and Computations:
- International System Units (kilonewtons, meters, millimeters)

Analysis Control Options:
- Maximum number of iterations allowed = 500
- Deflection tolerance for convergence = 2.5400E-07 m
- Maximum allowable deflection = 2.5400 m
- Number of pile increments = 100

Loading Type and Number of Cycles of Loading:
- Static loading specified

- Use of p-y modification factors for p-y curves not selected
- No distributed lateral loads are entered
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:
- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- p-y curves computed and reported at user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined = 1
Total length of pile = 20.000 m
Depth of ground surface below top of pile = -1.0000 m

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point	Depth Below Pile Head meters	Pile Diameter millimeters
1	0.000	1000.00
2	20.000	1000.00

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is an elastic pile
Cross-sectional Shape = Circular Pile
Length of section = 20.000000 m
Width of top of section = 1.000000 m
Width of bottom of section = 1.000000 m

Top Area = 0.785398 sq. m
Bottom Area = 0.785398 sq. m
Moment of Inertia at Top = 0.049087 m^4
Moment of Inertia at Bottom = 0.049087 m^4
Elastic Modulus = 28000000. kPa

Ground Slope and Pile Batter Angles

Ground Slope Angle = 0.000 degrees
= 0.000 radians

Pile Batter Angle = 0.000 degrees
= 0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = -1.000000 m
Distance from top of pile to bottom of layer = 6.000000 m
Effective unit weight at top of layer = 19.000000 kN/m3
Effective unit weight at bottom of layer = 19.000000 kN/m3
Undrained cohesion at top of layer = 30.000000 kPa
Undrained cohesion at bottom of layer = 40.000000 kPa
Epsilon-50 at top of layer = 0.020000
Epsilon-50 at bottom of layer = 0.020000

Layer 2 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = 6.000000 m
Distance from top of pile to bottom of layer = 11.000000 m
Effective unit weight at top of layer = 9.000000 kN/m3
Effective unit weight at bottom of layer = 9.000000 kN/m3
Undrained cohesion at top of layer = 50.000000 kPa
Undrained cohesion at bottom of layer = 50.000000 kPa
Epsilon-50 at top of layer = 0.020000
Epsilon-50 at bottom of layer = 0.020000

Layer 3 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 11.000000 m
Distance from top of pile to bottom of layer = 13.000000 m
Effective unit weight at top of layer = 9.000000 kN/m3
Effective unit weight at bottom of layer = 9.000000 kN/m3
Friction angle at top of layer = 32.000000 deg.
Friction angle at bottom of layer = 32.000000 deg.
Subgrade k at top of layer = 0.0000 kN/m3
Subgrade k at bottom of layer = 0.0000 kN/m3

NOTE: Default values for subgrade k will be computed for this layer.

Layer 4 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 13.000000 m
Distance from top of pile to bottom of layer = 20.000000 m

Effective unit weight at top of layer = 9.000000 kN/m3
Effective unit weight at bottom of layer = 9.000000 kN/m3
Friction angle at top of layer = 38.000000 deg.
Friction angle at bottom of layer = 38.000000 deg.
Subgrade k at top of layer = 0.0000 kN/m3
Subgrade k at bottom of layer = 0.0000 kN/m3

NOTE: Default values for subgrade k will be computed for this layer.

(Depth of the lowest soil layer extends 0.000 m below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth m	Effective Unit Wt. kN/m3	Undrained Cohesion kPa	Angle of Friction deg.	E50 or krm	kpy kN/m3
1	Soft Clay	-1.0000 6.0000	19.0000 19.0000	30.0000 40.0000	-- --	0.02000 0.02000	-- --
2	Soft Clay	6.0000 11.0000	9.0000 9.0000	50.0000 50.0000	-- --	0.02000 0.02000	-- --
3	Sand (Reese, et al.)	11.0000 13.0000	9.0000 9.0000	-- --	32.0000 32.0000	-- --	default default
4	Sand (Reese, et al.)	13.0000 20.0000	9.0000 9.0000	-- --	38.0000 38.0000	-- --	default default

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Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 6

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, kN	Compute Top y vs. Pile Length
1	1	V = 100.000000 kN	M = 0.0000 m-kN	0.0000000	No
2	1	V = 200.000000 kN	M = 0.0000 m-kN	0.0000000	No
3	1	V = 400.000000 kN	M = 0.0000 m-kN	0.0000000	No
4	1	V = 600.000000 kN	M = 0.0000 m-kN	0.0000000	No
5	1	V = 800.000000 kN	M = 0.0000 m-kN	0.0000000	No
6	1	V = 2000. kN	M = 0.0000 m-kN	0.0000000	No

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Specified Depths for Output of p-y Curves

Lateral load-transfer (p-y) curves are computed and output at 8 depths.
(Note that load-transfer values are computeded at the specified depths and
may differ from values computed at nodal points)

Depth No.	Depth Below Pile Head m	Depth Below Ground Surface m
1	0.200	1.200
2	5.800	6.800
3	6.200	7.200
4	10.800	11.800
5	11.200	12.200
6	12.800	13.800
7	13.200	14.200
8	19.800	20.800

Depth of ground surface below top of pile = -1.0000 m

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

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Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

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Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head meters	Equivalent Top Depth Below Grnd Surf meters	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer kN	F1 Integral for Layer kN
1	-1.0000	0.00	N.A.	No	0.00	1526.
2	6.0000	7.0000	Yes	No	1526.	2248.
3	11.0000	6.4539	No	No	3773.	6081.
4	13.0000	8.4539	Yes	No	9854.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals
for Layer n. Layering correction equivalent depths are computed only
for soil types with both shallow-depth and deep-depth expressions for
peak lateral load transfer. These soil types are soft and stiff clays,
non-liquefied sands, and cemented c-phi soil.

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p-y Curves Reported for Specified Depths

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p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 1
Depth of top of Layer 1 below pile head = -1.000 m
Depth of p-y curve below pile head = 0.200 m
Depth of p-y curve below ground surface = 1.200 m
Equiv. depth of p-y curve below ground surface = 1.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 1000.000 mm
Average effective unit weight = 19.00000 kN/m3
Undrained cohesion = 31.714 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 5.459 m
Static pu_s for flat ground = 136.971 kN/m
Static pu_d for flat ground = 285.429 kN/m
y_50 = 0.05000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 136.971 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00011852	9.13143
0.00094815	18.26286
0.00320	27.39429
0.00759	36.52571
0.01481	45.65714
0.02560	54.78857
0.04065	63.92000
0.06068	73.05143
0.08640	82.18286
0.11852	91.31429
0.15775	100.44571
0.20480	109.57714
0.26039	118.70857
0.32521	127.84000
0.40000	136.97143
0.42500	136.97143

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 1
Depth of top of Layer 1 below pile head = -1.000 m
Depth of p-y curve below pile head = 5.800 m
Depth of p-y curve below ground surface = 6.800 m
Equiv. depth of p-y curve below ground surface = 6.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 1000.000 mm
Average effective unit weight = 19.00000 kN/m3
Undrained cohesion = 39.714 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 6.132 m
Static pu_s for flat ground = 383.371 kN/m
Static pu_d for flat ground = 357.429 kN/m
y_50 = 0.05000 m

p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 357.429 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00011852	23.82857
0.00094815	47.65714
0.00320	71.48571
0.00759	95.31429
0.01481	119.14286
0.02560	142.97143
0.04065	166.80000
0.06068	190.62857
0.08640	214.45714
0.11852	238.28571
0.15775	262.11429
0.20480	285.94286
0.26039	309.77143
0.32521	333.60000
0.40000	357.42857
0.42500	357.42857

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 2
Depth of top of Layer 2 below pile head = 6.000 m
Depth of p-y curve below pile head = 6.200 m
Depth of p-y curve below ground surface = 7.200 m
Equiv. depth of p-y curve below ground surface = 7.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 1000.000 mm
Average effective unit weight = 18.72222 kN/m3
Undrained cohesion = 50.000 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 6.861 m
Static pu_s for flat ground = 464.800 kN/m
Static pu_d for flat ground = 450.000 kN/m
y_50 = 0.05000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 450.000 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00011852	30.00000
0.00094815	60.00000
0.00320	90.00000
0.00759	120.00000
0.01481	150.00000
0.02560	180.00000
0.04065	210.00000

0.06068	240.00000
0.08640	270.00000
0.11852	300.00000
0.15775	330.00000
0.20480	360.00000
0.26039	390.00000
0.32521	420.00000
0.40000	450.00000
0.42500	450.00000

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 2
Depth of top of Layer 2 below pile head = 6.000 m
Depth of p-y curve below pile head = 10.800 m
Depth of p-y curve below ground surface = 11.800 m
Equiv. depth of p-y curve below ground surface = 11.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 1000.000 mm
Average effective unit weight = 14.93220 kN/m3
Undrained cohesion = 50.000 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 7.513 m
Static pu_s for flat ground = 621.200 kN/m
Static pu_d for flat ground = 450.000 kN/m
y_50 = 0.05000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 450.000 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00011852	30.00000
0.00094815	60.00000
0.00320	90.00000
0.00759	120.00000
0.01481	150.00000
0.02560	180.00000
0.04065	210.00000
0.06068	240.00000
0.08640	270.00000
0.11852	300.00000
0.15775	330.00000
0.20480	360.00000
0.26039	390.00000
0.32521	420.00000
0.40000	450.00000
0.42500	450.00000

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 3
Depth of top of Layer 3 below pile head = 11.000 m
Depth of p-y curve below pile head = 11.200 m
Depth of p-y curve below ground surface = 12.200 m

Equiv. depth of p-y curve below ground surface = 6.654 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 1000.000 mm
Angle of Friction = 32.000 degrees
Average Effective Unit Weight = 14.738 kN/m3
k_py = 22564.423 kN/m3
K active = 0.307
K passive = 3.255
K0 = 0.400
Pst = 3259.268 kN/m
Psd = 6619.157 kN/m
Ps = Pst (shallow controls) = 3259.268 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 19642.9185
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 59449.0453
Yk = [c/(kx)]^(n/(n-1)) = 0.0012 m
Pk = 327.220 kN/m
Ym = b/60 = 0.0167 m
Pm = B ps = 1629.634 kN/m
Yu = 3b/80 = 0.0375 m
Pu = A Ps = 2868.156 kN/m
Maximum Es value = 275285.965 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00119	327.22016
0.00260	526.11122
0.00400	684.61412
0.00541	822.21727
0.00682	946.30609
0.00822	1060.66988
0.00963	1167.57259
0.01104	1268.50015
0.01245	1364.49267
0.01385	1456.31327
0.01526	1544.54232
0.01667	1629.63392
0.02708	2248.89480
0.03750	2868.15569
0.04500	2868.15569
0.05250	2868.15569

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 3
Depth of top of Layer 3 below pile head = 11.000 m
Depth of p-y curve below pile head = 12.800 m
Depth of p-y curve below ground surface = 13.800 m
Equiv. depth of p-y curve below ground surface = 8.254 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees

Pile Diameter = 1000.000 mm
Angle of Friction = 32.000 degrees
Average Effective Unit Weight = 14.072 kN/m3
k_py = 22564.423 kN/m3
K active = 0.307
K passive = 3.255
K0 = 0.400
Pst = 4229.158 kN/m
Psd = 7149.278 kN/m
Ps = Pst (shallow controls) = 4229.158 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 25488.2401
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 77139.8374
Yk = [c/(kx)]^(n/(n-1)) = 0.0017 m
Pk = 525.336 kN/m
Ym = b/60 = 0.0167 m
Pm = B ps = 2114.579 kN/m
Yu = 3b/80 = 0.0375 m
Pu = A Ps = 3721.659 kN/m
Maximum Es value = 311389.042 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00169	525.33618
0.00305	752.82663
0.00441	942.31603
0.00577	1109.80156
0.00713	1262.33236
0.00850	1403.78834
0.00986	1536.58659
0.01122	1662.35864
0.01258	1782.26980
0.01394	1897.18818
0.01530	2007.78193
0.01667	2114.57888
0.02708	2918.11885
0.03750	3721.65882
0.04500	3721.65882
0.05250	3721.65882

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 4
Depth of top of Layer 4 below pile head = 13.000 m
Depth of p-y curve below pile head = 13.200 m
Depth of p-y curve below ground surface = 14.200 m
Equiv. depth of p-y curve below ground surface = 8.654 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 1000.000 mm

Angle of Friction = 38.000 degrees
Average Effective Unit Weight = 13.930 kN/m3
k_py = 56849.174 kN/m3
K active = 0.238
K passive = 4.204
K0 = 0.400
Pst = 7409.483 kN/m
Psd = 15739.166 kN/m
Ps = Pst (shallow controls) = 7409.483 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 44655.3879
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 135148.9685
Yk = [c/(kx)]^(n/(n-1)) = 0.0006 m
Pk = 501.217 kN/m
Ym = b/60 = 0.0167 m
Pm = B ps = 3704.741 kN/m
Yu = 3b/80 = 0.0375 m
Pu = A Ps = 6520.345 kN/m
Maximum Es value = 807258.272 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00062089	501.21745
0.00208	1045.21358
0.00354	1443.91365
0.00500	1781.10561
0.00646	2081.23016
0.00791	2355.66110
0.00937	2610.83701
0.01083	2850.83960
0.01229	3078.45726
0.01375	3295.69908
0.01521	3504.07185
0.01667	3704.74146
0.02708	5112.54321
0.03750	6520.34497
0.04500	6520.34497
0.05250	6520.34497

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 4
Depth of top of Layer 4 below pile head = 13.000 m
Depth of p-y curve below pile head = 19.800 m
Depth of p-y curve below ground surface = 20.800 m
Equiv. depth of p-y curve below ground surface = 15.254 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 1000.000 mm
Angle of Friction = 38.000 degrees
Average Effective Unit Weight = 12.365 kN/m3
k_py = 56849.174 kN/m3
K active = 0.238

K passive = 4.204
K0 = 0.400
Pst = 16204.557 kN/m
Psd = 20465.690 kN/m
Ps = Pst (shallow controls) = 16204.557 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 97661.4391
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 295571.1145
Yk = [c/(kx)]^(n/(n-1)) = 0.0017 m
Pk = 2041.118 kN/m
Ym = b/60 = 0.0167 m
Pm = B ps = 8102.278 kN/m
Yu = 3b/80 = 0.0375 m
Pu = A Ps = 14260.010 kN/m
Maximum Es value = 1182462.821 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00173	2041.11828
0.00308	2904.94390
0.00444	3626.49773
0.00580	4265.06541
0.00716	4847.03281
0.00852	5386.99606
0.00988	5894.07638
0.01123	6374.44354
0.01259	6832.51104
0.01395	7271.57060
0.01531	7694.15810
0.01667	8102.27836
0.02708	11181.14413
0.03750	14260.00991
0.04500	14260.00991
0.05250	14260.00991

The above p-y curve was computed using internal default values of k.

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 100.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.00236	4.47E-11	100.0000	-6.51E-04	4.55E-10	1374447.	-23.3197	987.0284	0.00

0.2000	0.00223	19.5336	95.2383	-6.49E-04	198.9677	1374447.	-24.2976	2177.	0.00
0.4000	0.00210	38.0953	90.2871	-6.45E-04	388.0357	1374447.	-25.2144	2398.	0.00
0.6000	0.00197	55.6484	85.1589	-6.38E-04	566.8304	1374447.	-26.0671	2640.	0.00
0.8000	0.00185	72.1589	79.8669	-6.29E-04	735.0043	1374447.	-26.8530	2907.	0.00
1.0000	0.00172	87.5952	74.4247	-6.17E-04	892.2375	1374447.	-27.5691	3200.	0.00
1.2000	0.00160	101.9288	68.8466	-6.03E-04	1038.	1374447.	-28.2126	3525.	0.00
1.4000	0.00148	115.1338	63.1472	-5.88E-04	1173.	1374447.	-28.7808	3885.	0.00
1.6000	0.00137	127.1877	57.3420	-5.70E-04	1296.	1374447.	-29.2711	4286.	0.00
1.8000	0.00125	138.0706	51.4468	-5.51E-04	1406.	1374447.	-29.6806	4735.	0.00
2.0000	0.00115	147.7664	45.4781	-5.30E-04	1505.	1374447.	-30.0068	5239.	0.00
2.2000	0.00104	156.2619	39.4527	-5.08E-04	1592.	1374447.	-30.2470	5807.	0.00
2.4000	9.42E-04	163.5475	33.3882	-4.84E-04	1666.	1374447.	-30.3985	6451.	0.00
2.6000	8.48E-04	169.6171	27.3024	-4.60E-04	1728.	1374447.	-30.4587	7184.	0.00
2.8000	7.58E-04	174.4685	21.2141	-4.35E-04	1777.	1374447.	-30.4247	8024.	0.00
3.0000	6.74E-04	178.1028	15.1422	-4.10E-04	1814.	1374447.	-30.2939	8992.	0.00
3.2000	5.95E-04	180.5254	9.1065	-3.83E-04	1839.	1374447.	-30.0632	10114.	0.00
3.4000	5.20E-04	181.7454	3.1273	-3.57E-04	1851.	1374447.	-29.7295	11425.	0.00
3.6000	4.52E-04	181.7763	-2.7746	-3.31E-04	1852.	1374447.	-29.2893	12969.	0.00
3.8000	3.88E-04	180.6356	-8.5774	-3.04E-04	1840.	1374447.	-28.7388	14807.	0.00
4.0000	3.30E-04	178.3453	-14.2586	-2.78E-04	1817.	1374447.	-28.0733	17017.	0.00
4.2000	2.77E-04	174.9321	-19.7947	-2.52E-04	1782.	1374447.	-27.2875	19709.	0.00
4.4000	2.29E-04	170.4274	-25.1608	-2.27E-04	1736.	1374447.	-26.3741	23038.	0.00
4.6000	1.86E-04	164.8678	-30.3307	-2.03E-04	1679.	1374447.	-25.3239	27234.	0.00
4.8000	1.48E-04	158.2952	-35.2754	-1.79E-04	1612.	1374447.	-24.1238	32648.	0.00
5.0000	1.14E-04	150.7576	-39.9632	-1.57E-04	1536.	1374447.	-22.7543	39851.	0.00
5.2000	8.50E-05	142.3099	-44.3266	-1.36E-04	1450.	1374447.	-20.8795	49129.	0.00
5.4000	5.99E-05	133.0270	-48.2871	-1.16E-04	1355.	1374447.	-18.7249	62475.	0.00
5.6000	3.88E-05	122.9950	-51.7911	-9.70E-05	1253.	1374447.	-16.3151	84186.	0.00
5.8000	2.12E-05	112.3105	-54.7665	-7.99E-05	1144.	1374447.	-13.4393	127053.	0.00
6.0000	6.82E-06	101.0884	-57.1579	-6.43E-05	1030.	1374447.	-10.4747	307202.	0.00
6.2000	-4.57E-06	89.4474	-57.1983	-5.05E-05	911.1035	1374447.	10.0708	440296.	0.00
6.4000	-1.34E-05	78.2091	-54.7449	-3.83E-05	796.6317	1374447.	14.4632	216427.	0.00
6.6000	-1.99E-05	67.5494	-51.6463	-2.77E-05	688.0527	1374447.	16.5232	166228.	0.00
6.8000	-2.44E-05	57.5506	-48.2235	-1.86E-05	586.2059	1374447.	17.7039	144942.	0.00
7.0000	-2.73E-05	48.2600	-44.6155	-1.09E-05	491.5723	1374447.	18.3760	134608.	0.00
7.2000	-2.88E-05	39.7044	-40.9077	-4.46E-06	404.4258	1374447.	18.7020	129999.	0.00
7.4000	-2.91E-05	31.8969	-37.1604	7.51E-07	324.8991	1374447.	18.7712	129072.	0.00
7.6000	-2.85E-05	24.8402	-33.4194	4.88E-06	253.0206	1374447.	18.6392	130928.	0.00
7.8000	-2.71E-05	18.5291	-29.7211	8.03E-06	188.7363	1374447.	18.3434	135201.	0.00
8.0000	-2.53E-05	12.9518	-26.0957	1.03E-05	131.9258	1374447.	17.9110	141820.	0.00
8.2000	-2.30E-05	8.0909	-22.5684	1.19E-05	82.4129	1374447.	17.3621	150940.	0.00
8.4000	-2.05E-05	3.9244	-19.1609	1.27E-05	39.9740	1374447.	16.7123	162915.	0.00
8.6000	-1.79E-05	0.4265	-15.8924	1.30E-05	4.3443	1374447.	15.9735	178341.	0.00
8.8000	-1.53E-05	-2.4325	-12.7795	1.29E-05	24.7773	1374447.	15.1551	198131.	0.00
9.0000	-1.28E-05	-4.6853	-9.8376	1.24E-05	47.7241	1374447.	14.2635	223682.	0.00
9.2000	-1.03E-05	-6.3676	-7.0810	1.16E-05	64.8594	1374447.	13.3026	257177.	0.00
9.4000	-8.12E-06	-7.5177	-4.5236	1.06E-05	76.5747	1374447.	12.2721	302192.	0.00
9.6000	-6.12E-06	-8.1770	-2.1797	9.43E-06	83.2900	1374447.	11.1662	365037.	0.00
9.8000	-4.35E-06	-8.3896	-0.06630	8.22E-06	85.4557	1374447.	9.9679	458124.	0.00
10.0000	-2.83E-06	-8.2035	1.7941	7.01E-06	83.5601	1374447.	8.6362	610426.	0.00
10.2000	-1.55E-06	-7.6720	3.3639	5.86E-06	78.1459	1374447.	7.0617	913404.	0.00
10.4000	-4.86E-07	-6.8579	4.0976	4.80E-06	69.8544	1374447.	0.2751	113190.	0.00
10.6000	3.74E-07	-6.0329	4.1039	3.86E-06	61.4509	1374447.	-0.2118	113190.	0.00
10.8000	1.06E-06	-5.2164	3.4607	3.04E-06	53.1336	1374447.	-6.2199	1174451.	0.00
11.0000	1.59E-06	-4.6486	2.7956	2.33E-06	47.3506	1374447.	-0.4312	54155.	0.00
11.2000	1.99E-06	-4.0981	2.6977	1.69E-06	41.7432	1374447.	-0.5478	55057.	0.00
11.4000	2.27E-06	-3.5695	2.5795	1.13E-06	36.3591	1374447.	-0.6348	55960.	0.00
11.6000	2.44E-06	-3.0663	2.4465	6.50E-07	31.2335	1374447.	-0.6947	56862.	0.00
11.8000	2.53E-06	-2.5909	2.3040	2.39E-07	26.3910	1374447.	-0.7304	57765.	0.00
12.0000	2.54E-06	-2.1447	2.1565	-1.06E-07	21.8461	1374447.	-0.7447	58668.	0.00
12.2000	2.49E-06	-1.7283	2.0080	-3.88E-07	17.6046	1374447.	-0.7405	59570.	0.00
12.4000	2.38E-06	-1.3415	1.8619	-6.11E-07	13.6648	1374447.	-0.7207	60473.	0.00
12.6000	2.24E-06	-0.9836	1.7210	-7.80E-07	10.0187	1374447.	-0.6880	61375.	0.00
12.8000	2.07E-06	-0.6531	1.5877	-8.99E-07	6.6529	1374447.	-0.6450	62278.	0.00
13.0000	1.88E-06	-0.3485	1.4213	-9.72E-07	3.5498	1374447.	-1.0194	108328.	0.00
13.2000	1.68E-06	-0.08464	1.1835	-1.00E-06	0.8622	1374447.	-1.3583	161452.	0.00
13.4000	1.48E-06	0.1249	0.9264	-1.00E-06	1.2721	1374447.	-1.2121	163726.	0.00

13.6000	1.28E-06	0.2859	0.6988	-9.71E-07	2.9125	1374447.	-1.0643	166000.	0.00
13.8000	1.09E-06	0.4044	0.5005	-9.21E-07	4.1193	1374447.	-0.9189	168274.	0.00
14.0000	9.14E-07	0.4861	0.3307	-8.56E-07	4.9517	1374447.	-0.7794	170548.	0.00
14.2000	7.50E-07	0.5367	0.1879	-7.82E-07	5.4666	1374447.	-0.6479	172821.	0.00
14.4000	6.01E-07	0.5613	0.07050	-7.02E-07	5.7175	1374447.	-0.5265	175095.	0.00
14.6000	4.69E-07	0.5649	-0.02376	-6.20E-07	5.7538	1374447.	-0.4161	177369.	0.00
14.8000	3.53E-07	0.5518	-0.09711	-5.38E-07	5.6207	1374447.	-0.3175	179643.	0.00
15.0000	2.54E-07	0.5260	-0.1519	-4.60E-07	5.3582	1374447.	-0.2309	181917.	0.00
15.2000	1.69E-07	0.4910	-0.1906	-3.86E-07	5.0016	1374447.	-0.1561	184191.	0.00
15.4000	9.94E-08	0.4498	-0.2155	-3.18E-07	4.5814	1374447.	-0.09266	186465.	0.00
15.6000	4.24E-08	0.4048	-0.2288	-2.55E-07	4.1235	1374447.	-0.04003	188739.	0.00
15.8000	-2.77E-09	0.3583	-0.2325	-2.00E-07	3.6493	1374447.	0.00265	191013.	0.00
16.0000	-3.75E-08	0.3118	-0.2286	-1.51E-07	3.1762	1374447.	0.03627	193287.	0.00
16.2000	-6.32E-08	0.2668	-0.2188	-1.09E-07	2.7178	1374447.	0.06182	195561.	0.00
16.4000	-8.11E-08	0.2243	-0.2046	-7.33E-08	2.2846	1374447.	0.08027	197835.	0.00
16.6000	-9.25E-08	0.1850	-0.1873	-4.35E-08	1.8841	1374447.	0.09259	200109.	0.00
16.8000	-9.86E-08	0.1494	-0.1681	-1.92E-08	1.5214	1374447.	0.09973	202383.	0.00
17.0000	-1.00E-07	0.1177	-0.1479	2.39E-10	1.1993	1374447.	0.1026	204657.	0.00
17.2000	-9.85E-08	0.09022	-0.1274	1.54E-08	0.9190	1374447.	0.1019	206931.	0.00
17.4000	-9.41E-08	0.06677	-0.1074	2.68E-08	0.6801	1374447.	0.09840	209205.	0.00
17.6000	-8.77E-08	0.04726	-0.08828	3.51E-08	0.4814	1374447.	0.09278	211479.	0.00
17.8000	-8.00E-08	0.03146	-0.07044	4.08E-08	0.3205	1374447.	0.08554	213753.	0.00
18.0000	-7.14E-08	0.01908	-0.05418	4.45E-08	0.1944	1374447.	0.07714	216027.	0.00
18.2000	-6.22E-08	0.00979	-0.03967	4.66E-08	0.09973	1374447.	0.06793	218301.	0.00
18.4000	-5.28E-08	0.00322	-0.02706	4.75E-08	0.03275	1374447.	0.05821	220575.	0.00
18.6000	-4.32E-08	-0.00103	-0.01642	4.77E-08	0.01050	1374447.	0.04816	222849.	0.00
18.8000	-3.37E-08	-0.00335	-0.00781	4.74E-08	0.03414	1374447.	0.03793	225123.	0.00
19.0000	-2.43E-08	-0.00416	-0.00126	4.68E-08	0.04232	1374447.	0.02759	227397.	0.00
19.2000	-1.50E-08	-0.00385	0.00322	4.63E-08	0.03926	1374447.	0.01718	229671.	0.00
19.4000	-5.77E-09	-0.00287	0.00561	4.58E-08	0.02920	1374447.	0.00669	231945.	0.00
19.6000	3.34E-09	-0.00161	0.00589	4.54E-08	0.01641	1374447.	-0.00391	234219.	0.00
19.8000	1.24E-08	-5.12E-04	0.00403	4.53E-08	0.00522	1374447.	-0.01467	236493.	0.00
20.0000	2.15E-08	0.00	0.00	4.52E-08	0.00	1374447.	-0.02561	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

Pile-head deflection = 0.00236261 meters
Computed slope at pile head = -0.00065054 radians
Maximum bending moment = 181.77626389 kN-m
Maximum shear force = 100.00000000 kN
Depth of maximum bending moment = 3.60000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 20
Number of zero deflection points = 4

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 2

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 200.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.00851	0.00	200.0000	-0.00194	0.00	1374447.	-35.7455	420.0386	0.00
0.2000	0.00812	39.2851	192.6886	-0.00194	400.1546	1374447.	-37.3689	920.1618	0.00

0.4000	0.00774	77.0754	185.0595	-0.00193	785.0838	1374447.	-38.9213	1006.	0.00
0.6000	0.00735	113.3089	177.1275	-0.00191	1154.	1374447.	-40.3994	1099.	0.00
0.8000	0.00697	147.9264	168.9076	-0.00189	1507.	1374447.	-41.7999	1199.	0.00
1.0000	0.00659	180.8719	160.4156	-0.00187	1842.	1374447.	-43.1195	1308.	0.00
1.2000	0.00622	212.0927	151.6682	-0.00184	2160.	1374447.	-44.3550	1426.	0.00
1.4000	0.00586	241.5392	142.6823	-0.00181	2460.	1374447.	-45.5031	1554.	0.00
1.6000	0.00550	269.1656	133.4760	-0.00177	2742.	1374447.	-46.5607	1694.	0.00
1.8000	0.00515	294.9296	124.0674	-0.00173	3004.	1374447.	-47.5246	1847.	0.00
2.0000	0.00481	318.7926	114.4758	-0.00169	3247.	1374447.	-48.3916	2014.	0.00
2.2000	0.00447	340.7199	104.7208	-0.00164	3471.	1374447.	-49.1585	2198.	0.00
2.4000	0.00415	360.6809	94.8227	-0.00159	3674.	1374447.	-49.8222	2401.	0.00
2.6000	0.00384	378.6490	84.8026	-0.00153	3857.	1374447.	-50.3795	2626.	0.00
2.8000	0.00354	394.6019	74.6819	-0.00148	4019.	1374447.	-50.8273	2874.	0.00
3.0000	0.00325	408.5217	64.4829	-0.00142	4161.	1374447.	-51.1623	3152.	0.00
3.2000	0.00297	420.3951	54.2286	-0.00136	4282.	1374447.	-51.3813	3461.	0.00
3.4000	0.00270	430.2132	43.9423	-0.00130	4382.	1374447.	-51.4809	3809.	0.00
3.6000	0.00245	437.9720	33.6485	-0.00123	4461.	1374447.	-51.4576	4201.	0.00
3.8000	0.00221	443.6726	23.3720	-0.00117	4519.	1374447.	-51.3078	4644.	0.00
4.0000	0.00198	447.3208	13.1384	-0.00110	4556.	1374447.	-51.0276	5148.	0.00
4.2000	0.00177	448.9279	2.9744	-0.00104	4573.	1374447.	-50.6129	5726.	0.00
4.4000	0.00157	448.5105	-7.0929	-9.74E-04	4568.	1374447.	-50.0591	6391.	0.00
4.6000	0.00138	446.0908	-17.0349	-9.09E-04	4544.	1374447.	-49.3611	7164.	0.00
4.8000	0.00120	441.6966	-26.8222	-8.45E-04	4499.	1374447.	-48.5127	8067.	0.00
5.0000	0.00104	435.3619	-36.4242	-7.81E-04	4435.	1374447.	-47.5070	9133.	0.00
5.2000	8.91E-04	427.1269	-45.7417	-7.18E-04	4351.	1374447.	-45.6675	10257.	0.00
5.4000	7.53E-04	417.0652	-54.6589	-6.57E-04	4248.	1374447.	-43.5048	11553.	0.00
5.6000	6.28E-04	405.2633	-63.1339	-5.97E-04	4128.	1374447.	-41.2451	13138.	0.00
5.8000	5.14E-04	391.8117	-71.1459	-5.39E-04	3991.	1374447.	-38.8747	15114.	0.00
6.0000	4.12E-04	376.8050	-79.1254	-4.83E-04	3838.	1374447.	-40.9200	19845.	0.00
6.2000	3.21E-04	360.1615	-87.4012	-4.29E-04	3669.	1374447.	-41.8389	26043.	0.00
6.4000	2.41E-04	341.8445	-95.3852	-3.78E-04	3482.	1374447.	-38.0008	31574.	0.00
6.6000	1.70E-04	322.0074	-102.5701	-3.30E-04	3280.	1374447.	-33.8480	39806.	0.00
6.8000	1.09E-04	300.8164	-108.8718	-2.84E-04	3064.	1374447.	-29.1689	53626.	0.00
7.0000	5.63E-05	278.4587	-114.1310	-2.42E-04	2836.	1374447.	-23.4228	83260.	0.00
7.2000	1.18E-05	255.1641	-117.8708	-2.04E-04	2599.	1374447.	-13.9755	235956.	0.00
7.4000	-2.51E-05	231.3104	-117.4820	-1.68E-04	2356.	1374447.	17.8632	142070.	0.00
7.6000	-5.54E-05	208.1713	-113.3690	-1.36E-04	2120.	1374447.	23.2670	83984.	0.00
7.8000	-7.96E-05	185.9628	-108.4162	-1.07E-04	1894.	1374447.	26.2612	65974.	0.00
8.0000	-9.84E-05	164.8048	-102.9714	-8.20E-05	1679.	1374447.	28.1865	57289.	0.00
8.2000	-1.12E-04	144.7742	-97.2062	-5.94E-05	1475.	1374447.	29.4658	52432.	0.00
8.4000	-1.22E-04	125.9223	-91.2298	-3.97E-05	1283.	1374447.	30.2982	49597.	0.00
8.6000	-1.28E-04	108.2823	-85.1203	-2.27E-05	1103.	1374447.	30.7965	48009.	0.00
8.8000	-1.31E-04	91.8742	-78.9374	-8.14E-06	935.8226	1374447.	31.0326	47285.	0.00
9.0000	-1.32E-04	76.7073	-72.7285	4.12E-06	781.3346	1374447.	31.0561	47216.	0.00
9.2000	-1.30E-04	62.7828	-66.5326	1.43E-05	639.4999	1374447.	30.9030	47686.	0.00
9.4000	-1.26E-04	50.0943	-60.3822	2.25E-05	510.2562	1374447.	30.6009	48634.	0.00
9.6000	-1.21E-04	38.6299	-54.3050	2.89E-05	393.4805	1374447.	30.1716	50030.	0.00
9.8000	-1.14E-04	28.3723	-48.3246	3.38E-05	288.9978	1374447.	29.6327	51867.	0.00
10.0000	-1.07E-04	19.3000	-42.4614	3.73E-05	196.5885	1374447.	28.9992	54159.	0.00
10.2000	-9.94E-05	11.3877	-36.7331	3.95E-05	115.9946	1374447.	28.2834	56936.	0.00
10.4000	-9.13E-05	4.6068	-31.1552	4.07E-05	46.9244	1374447.	27.4961	60244.	0.00
10.6000	-8.31E-05	-1.0743	-25.7409	4.09E-05	10.9429	1374447.	26.6467	64148.	0.00
10.8000	-7.49E-05	-5.6896	-20.5019	4.04E-05	57.9534	1374447.	25.7428	68732.	0.00
11.0000	-6.69E-05	-9.2751	-16.1162	3.94E-05	94.4753	1374447.	18.1150	54155.	0.00
11.2000	-5.92E-05	-12.1360	-12.6759	3.78E-05	123.6165	1374447.	16.2872	55057.	0.00
11.4000	-5.18E-05	-14.3455	-9.5984	3.59E-05	146.1217	1374447.	14.4884	55960.	0.00
11.6000	-4.48E-05	-15.9754	-6.8754	3.37E-05	162.7238	1374447.	12.7417	56862.	0.00
11.8000	-3.83E-05	-17.0956	-4.4946	3.13E-05	174.1344	1374447.	11.0664	57765.	0.00
12.0000	-3.23E-05	-17.7732	-2.4401	2.87E-05	181.0362	1374447.	9.4783	58668.	0.00
12.2000	-2.68E-05	-18.0716	-0.6932	2.61E-05	184.0762	1374447.	7.9902	59570.	0.00
12.4000	-2.19E-05	-18.0505	0.7669	2.35E-05	183.8607	1374447.	6.6115	60473.	0.00
12.6000	-1.74E-05	-17.7649	1.9630	2.09E-05	180.9515	1374447.	5.3493	61375.	0.00
12.8000	-1.35E-05	-17.2653	2.9187	1.83E-05	175.8627	1374447.	4.2080	62278.	0.00
13.0000	-1.01E-05	-16.5974	3.8865	1.59E-05	169.0594	1374447.	5.4697	108328.	0.00
13.2000	-7.17E-06	-15.7107	5.0120	1.35E-05	160.0276	1374447.	5.7850	161452.	0.00
13.4000	-4.69E-06	-14.5926	5.9745	1.13E-05	148.6388	1374447.	3.8404	163726.	0.00
13.6000	-2.64E-06	-13.3209	6.5778	9.28E-06	135.6852	1374447.	2.1920	166000.	0.00

13.8000	-9.78E-07	-11.9615	6.8793	7.44E-06	121.8385	1374447.	0.8232	168274.	0.00
14.0000	3.36E-07	-10.5692	6.9329	5.80E-06	107.6565	1374447.	-0.2867	170548.	0.00
14.2000	1.34E-06	-9.1883	6.7882	4.37E-06	93.5912	1374447.	-1.1606	172821.	0.00
14.4000	2.08E-06	-7.8539	6.4898	3.13E-06	79.9988	1374447.	-1.8233	175095.	0.00
14.6000	2.59E-06	-6.5924	6.0775	2.08E-06	67.1493	1374447.	-2.3001	177369.	0.00
14.8000	2.91E-06	-5.4229	5.5859	1.20E-06	55.2368	1374447.	-2.6162	179643.	0.00
15.0000	3.07E-06	-4.3580	5.0447	4.89E-07	44.3904	1374447.	-2.7960	181917.	0.00
15.2000	3.11E-06	-3.4050	4.4788	-7.55E-08	34.6831	1374447.	-2.8627	184191.	0.00
15.4000	3.04E-06	-2.5665	3.9087	-5.10E-07	26.1422	1374447.	-2.8377	186465.	0.00
15.6000	2.90E-06	-1.8415	3.3509	-8.31E-07	18.7574	1374447.	-2.7409	188739.	0.00
15.8000	2.71E-06	-1.2261	2.8178	-1.05E-06	12.4894	1374447.	-2.5896	191013.	0.00
16.0000	2.48E-06	-0.7144	2.3189	-1.20E-06	7.2765	1374447.	-2.3995	193287.	0.00
16.2000	2.23E-06	-0.2986	1.8606	-1.27E-06	3.0413	1374447.	-2.1839	195561.	0.00
16.4000	1.98E-06	0.02987	1.4468	-1.29E-06	0.3042	1374447.	-1.9540	197835.	0.00
16.6000	1.72E-06	0.2801	1.0795	-1.27E-06	2.8536	1374447.	-1.7190	200109.	0.00
16.8000	1.47E-06	0.4617	0.7590	-1.21E-06	4.7025	1374447.	-1.4865	202383.	0.00
17.0000	1.23E-06	0.5837	0.4841	-1.14E-06	5.9458	1374447.	-1.2621	204657.	0.00
17.2000	1.01E-06	0.6553	0.2529	-1.05E-06	6.6749	1374447.	-1.0499	206931.	0.00
17.4000	8.15E-07	0.6849	0.06262	-9.48E-07	6.9762	1374447.	-0.8527	209205.	0.00
17.6000	6.36E-07	0.6804	-0.08984	-8.49E-07	6.9300	1374447.	-0.6720	211479.	0.00
17.8000	4.76E-07	0.6489	-0.2079	-7.52E-07	6.6101	1374447.	-0.5084	213753.	0.00
18.0000	3.35E-07	0.5972	-0.2949	-6.61E-07	6.0830	1374447.	-0.3615	216027.	0.00
18.2000	2.11E-07	0.5310	-0.3541	-5.79E-07	5.4087	1374447.	-0.2305	218301.	0.00
18.4000	1.03E-07	0.4556	-0.3885	-5.07E-07	4.6404	1374447.	-0.1136	220575.	0.00
18.6000	8.14E-09	0.3756	-0.4007	-4.47E-07	3.8259	1374447.	-0.00907	222849.	0.00
18.8000	-7.58E-08	0.2953	-0.3931	-3.98E-07	3.0076	1374447.	0.08532	225123.	0.00
19.0000	-1.51E-07	0.2184	-0.3674	-3.61E-07	2.2241	1374447.	0.1718	227397.	0.00
19.2000	-2.20E-07	0.1483	-0.3249	-3.34E-07	1.5107	1374447.	0.2528	229671.	0.00
19.4000	-2.85E-07	0.08838	-0.2666	-3.17E-07	0.9002	1374447.	0.3303	231945.	0.00
19.6000	-3.47E-07	0.04165	-0.1930	-3.07E-07	0.4243	1374447.	0.4063	234219.	0.00
19.8000	-4.08E-07	0.01118	-0.1041	-3.04E-07	0.1139	1374447.	0.4822	236493.	0.00
20.0000	-4.68E-07	0.00	0.00	-3.03E-07	0.00	1374447.	0.5591	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 2:

Pile-head deflection = 0.00851006 meters
Computed slope at pile head = -0.00193910 radians
Maximum bending moment = 448.92793272 kN-m
Maximum shear force = 200.00000000 kN
Depth of maximum bending moment = 4.20000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 22
Number of zero deflection points = 3

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 3

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 400.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X meters	Deflect. y meters	Bending Moment kN-m	Shear Force kN	Slope S radians	Total Stress kPa*	Bending Stiffness kN-m^2	Soil Res. p kN/m	Soil Spr. Es*h kN/m	Distrib. Lat. Load kN/m
0.00	0.03002	-1.19E-10	400.0000	-0.00569	1.21E-09	1374447.	-54.4127	181.2655	0.00
0.2000	0.02888	78.9117	388.8552	-0.00569	803.7884	1374447.	-57.0354	394.9823	0.00
0.4000	0.02774	155.5421	377.1940	-0.00567	1584.	1374447.	-59.5763	429.4713	0.00

0.6000	0.02661	229.7894	365.0333	-0.00564	2341.	1374447.	-62.0315	466.1823	0.00
0.8000	0.02549	301.5554	352.3904	-0.00560	3072.	1374447.	-64.3974	505.3194	0.00
1.0000	0.02437	370.7455	339.2836	-0.00555	3776.	1374447.	-66.6702	547.1086	0.00
1.2000	0.02327	437.2688	325.7320	-0.00549	4454.	1374447.	-68.8461	591.8010	0.00
1.4000	0.02217	501.0383	311.7552	-0.00543	5104.	1374447.	-70.9215	639.6763	0.00
1.6000	0.02110	561.9709	297.3738	-0.00535	5724.	1374447.	-72.8926	691.0466	0.00
1.8000	0.02003	619.9878	282.6089	-0.00526	6315.	1374447.	-74.7559	746.2611	0.00
2.0000	0.01899	675.0145	267.4826	-0.00517	6876.	1374447.	-76.5076	805.7117	0.00
2.2000	0.01797	726.9808	252.0174	-0.00507	7405.	1374447.	-78.1440	869.8393	0.00
2.4000	0.01696	775.8215	236.2369	-0.00496	7902.	1374447.	-79.6617	939.1415	0.00
2.6000	0.01598	821.4756	220.1650	-0.00484	8367.	1374447.	-81.0568	1014.	0.00
2.8000	0.01503	863.8875	203.8267	-0.00472	8799.	1374447.	-82.3259	1096.	0.00
3.0000	0.01410	903.0063	187.2476	-0.00459	9198.	1374447.	-83.4653	1184.	0.00
3.2000	0.01319	938.7865	170.4539	-0.00446	9562.	1374447.	-84.4714	1281.	0.00
3.4000	0.01232	971.1879	153.4727	-0.00432	9892.	1374447.	-85.3406	1386.	0.00
3.6000	0.01147	1000.	136.3318	-0.00417	10188.	1374447.	-86.0691	1501.	0.00
3.8000	0.01065	1026.	119.0595	-0.00403	10448.	1374447.	-86.6533	1628.	0.00
4.0000	0.00986	1048.	101.6852	-0.00387	10673.	1374447.	-87.0895	1767.	0.00
4.2000	0.00910	1066.	84.2389	-0.00372	10862.	1374447.	-87.3739	1921.	0.00
4.4000	0.00837	1081.	66.7512	-0.00356	11016.	1374447.	-87.5025	2092.	0.00
4.6000	0.00767	1093.	49.2538	-0.00341	11134.	1374447.	-87.4714	2281.	0.00
4.8000	0.00700	1101.	31.7791	-0.00325	11217.	1374447.	-87.2764	2492.	0.00
5.0000	0.00637	1106.	14.3601	-0.00309	11264.	1374447.	-86.9132	2728.	0.00
5.2000	0.00577	1107.	-2.8444	-0.00293	11275.	1374447.	-85.1321	2951.	0.00
5.4000	0.00520	1105.	-19.6418	-0.00276	11252.	1374447.	-82.8413	3186.	0.00
5.6000	0.00466	1099.	-35.9729	-0.00260	11195.	1374447.	-80.4703	3450.	0.00
5.8000	0.00416	1090.	-51.8216	-0.00244	11105.	1374447.	-78.0169	3751.	0.00
6.0000	0.00369	1078.	-68.1146	-0.00229	10984.	1374447.	-84.9132	4607.	0.00
6.2000	0.00324	1063.	-85.6478	-0.00213	10828.	1374447.	-90.4183	5573.	0.00
6.4000	0.00283	1044.	-103.3325	-0.00198	10635.	1374447.	-86.4293	6100.	0.00
6.6000	0.00245	1022.	-120.2130	-0.00183	10407.	1374447.	-82.3750	6715.	0.00
6.8000	0.00210	996.0109	-136.2752	-0.00168	10145.	1374447.	-78.2473	7442.	0.00
7.0000	0.00178	967.1909	-151.5034	-0.00154	9852.	1374447.	-74.0348	8313.	0.00
7.2000	0.00149	935.4095	-165.8791	-0.00140	9528.	1374447.	-69.7216	9374.	0.00
7.4000	0.00122	900.8393	-179.3797	-0.00127	9176.	1374447.	-65.2851	10691.	0.00
7.6000	9.81E-04	863.6576	-191.9774	-0.00114	8797.	1374447.	-60.6918	12371.	0.00
7.8000	7.66E-04	824.0483	-203.6356	-0.00101	8394.	1374447.	-55.8903	14588.	0.00
8.0000	5.75E-04	782.2034	-214.3044	-8.98E-04	7967.	1374447.	-50.7977	17661.	0.00
8.2000	4.07E-04	738.3265	-223.9109	-7.87E-04	7521.	1374447.	-45.2670	22241.	0.00
8.4000	2.60E-04	692.6390	-232.3378	-6.83E-04	7055.	1374447.	-39.0024	29964.	0.00
8.6000	1.34E-04	645.3914	-239.3623	-5.86E-04	6574.	1374447.	-31.2425	46712.	0.00
8.8000	2.60E-05	596.8941	-244.2976	-4.95E-04	6080.	1374447.	-18.1104	139390.	0.00
9.0000	-6.44E-05	547.6724	-243.6613	-4.12E-04	5579.	1374447.	24.4734	75974.	0.00
9.2000	-1.39E-04	499.4296	-238.0516	-3.36E-04	5087.	1374447.	31.6237	45535.	0.00
9.4000	-1.99E-04	452.4517	-231.3249	-2.67E-04	4609.	1374447.	35.6429	35852.	0.00
9.6000	-2.46E-04	406.8996	-223.9362	-2.04E-04	4145.	1374447.	38.2444	31143.	0.00
9.8000	-2.81E-04	362.8773	-216.1139	-1.48E-04	3696.	1374447.	39.9783	28502.	0.00
10.0000	-3.05E-04	320.4540	-208.0057	-9.85E-05	3264.	1374447.	41.1043	26962.	0.00
10.2000	-3.20E-04	279.6750	-199.7183	-5.49E-05	2849.	1374447.	41.7697	26111.	0.00
10.4000	-3.27E-04	240.5667	-191.3345	-1.70E-05	2450.	1374447.	42.0682	25742.	0.00
10.6000	-3.27E-04	203.1412	-182.9212	1.53E-05	2069.	1374447.	42.0642	25747.	0.00
10.8000	-3.21E-04	167.3982	-174.5343	4.22E-05	1705.	1374447.	41.8048	26068.	0.00
11.0000	-3.10E-04	133.3275	-161.9639	6.41E-05	1358.	1374447.	83.8990	54155.	0.00
11.2000	-2.95E-04	102.6127	-145.4507	8.13E-05	1045.	1374447.	81.2333	55057.	0.00
11.4000	-2.77E-04	75.1472	-129.5675	9.42E-05	765.4429	1374447.	77.5987	55960.	0.00
11.6000	-2.57E-04	50.7857	-114.4894	1.03E-04	517.2985	1374447.	73.1822	56862.	0.00
11.8000	-2.36E-04	29.3514	-100.3553	1.09E-04	298.9711	1374447.	68.1589	57765.	0.00
12.0000	-2.14E-04	10.6435	-87.2703	1.12E-04	108.4142	1374447.	62.6917	58668.	0.00
12.2000	-1.91E-04	-5.5567	-75.3080	1.12E-04	56.5999	1374447.	56.9312	59570.	0.00
12.4000	-1.69E-04	-19.4797	-64.5133	1.11E-04	198.4181	1374447.	51.0159	60473.	0.00
12.6000	-1.47E-04	-31.3620	-54.9045	1.07E-04	319.4506	1374447.	45.0722	61375.	0.00
12.8000	-1.26E-04	-41.4414	-46.4757	1.02E-04	422.1190	1374447.	39.2155	62278.	0.00
13.0000	-1.06E-04	-49.9523	-36.8016	9.50E-05	508.8096	1374447.	57.5255	108328.	0.00
13.2000	-8.79E-05	-56.1621	-23.9509	8.73E-05	572.0622	1374447.	70.9815	161452.	0.00
13.4000	-7.13E-05	-59.5326	-11.0170	7.89E-05	606.3943	1374447.	58.3571	163726.	0.00
13.6000	-5.64E-05	-60.5689	-0.5021	7.01E-05	616.9496	1374447.	46.7923	166000.	0.00
13.8000	-4.32E-05	-59.7335	7.8143	6.14E-05	608.4400	1374447.	36.3715	168274.	0.00

14.0000	-3.18E-05	-57.4432	14.1649	5.29E-05	585.1113	1374447.	27.1341	170548.	0.00
14.2000	-2.21E-05	-54.0675	18.7865	4.48E-05	550.7271	1374447.	19.0819	172821.	0.00
14.4000	-1.39E-05	-49.9286	21.9132	3.72E-05	508.5683	1374447.	12.1858	175095.	0.00
14.6000	-7.21E-06	-45.3022	23.7711	3.03E-05	461.4446	1374447.	6.3927	177369.	0.00
14.8000	-1.82E-06	-40.4201	24.5735	2.40E-05	411.7162	1374447.	1.6312	179643.	0.00
15.0000	2.40E-06	-35.4728	24.5183	1.85E-05	361.3232	1374447.	-2.1829	181917.	0.00
15.2000	5.58E-06	-30.6128	23.7858	1.37E-05	311.8196	1374447.	-5.1421	184191.	0.00
15.4000	7.88E-06	-25.9585	22.5373	9.57E-06	264.4111	1374447.	-7.3431	186465.	0.00
15.6000	9.41E-06	-21.5979	20.9147	6.11E-06	219.9944	1374447.	-8.8833	188739.	0.00
15.8000	1.03E-05	-17.5926	19.0405	3.26E-06	179.1971	1374447.	-9.8582	191013.	0.00
16.0000	1.07E-05	-13.9817	17.0188	9.66E-07	142.4164	1374447.	-10.3589	193287.	0.00
16.2000	1.07E-05	-10.7851	14.9358	-8.36E-07	109.8563	1374447.	-10.4708	195561.	0.00
16.4000	1.04E-05	-8.0074	12.8616	-2.20E-06	81.5624	1374447.	-10.2719	197835.	0.00
16.6000	9.83E-06	-5.6405	10.8511	-3.20E-06	57.4536	1374447.	-9.8325	200109.	0.00
16.8000	9.11E-06	-3.6669	8.9464	-3.87E-06	37.3510	1374447.	-9.2144	202383.	0.00
17.0000	8.28E-06	-2.0619	7.1779	-4.29E-06	21.0026	1374447.	-8.4706	204657.	0.00
17.2000	7.39E-06	-0.7958	5.5663	-4.50E-06	8.1055	1374447.	-7.6459	206931.	0.00
17.4000	6.48E-06	0.1646	4.1240	-4.54E-06	1.6764	1374447.	-6.7768	209205.	0.00
17.6000	5.57E-06	0.8538	2.8571	-4.47E-06	8.6972	1374447.	-5.8921	211479.	0.00
17.8000	4.69E-06	1.3074	1.7666	-4.31E-06	13.3173	1374447.	-5.0133	213753.	0.00
18.0000	3.85E-06	1.5605	0.8497	-4.10E-06	15.8948	1374447.	-4.1555	216027.	0.00
18.2000	3.05E-06	1.6473	0.1013	-3.87E-06	16.7793	1374447.	-3.3281	218301.	0.00
18.4000	2.30E-06	1.6010	-0.4850	-3.63E-06	16.3077	1374447.	-2.5355	220575.	0.00
18.6000	1.60E-06	1.4533	-0.9164	-3.41E-06	14.8031	1374447.	-1.7777	222849.	0.00
18.8000	9.34E-07	1.2345	-1.1993	-3.22E-06	12.5741	1374447.	-1.0515	225123.	0.00
19.0000	3.09E-07	0.9736	-1.3396	-3.06E-06	9.9168	1374447.	-0.3512	227397.	0.00
19.2000	-2.88E-07	0.6986	-1.3416	-2.93E-06	7.1163	1374447.	0.3309	229671.	0.00
19.4000	-8.65E-07	0.4369	-1.2082	-2.85E-06	4.4506	1374447.	1.0029	231945.	0.00
19.6000	-1.43E-06	0.2154	-0.9406	-2.80E-06	2.1936	1374447.	1.6732	234219.	0.00
19.8000	-1.99E-06	0.06070	-0.5384	-2.78E-06	0.6183	1374447.	2.3489	236493.	0.00
20.0000	-2.54E-06	0.00	0.00	-2.78E-06	0.00	1374447.	3.0351	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 3:

Pile-head deflection = 0.03001823 meters
Computed slope at pile head = -0.00569131 radians
Maximum bending moment = 1107. kN-m
Maximum shear force = 400.00000000 kN
Depth of maximum bending moment = 5.20000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 26
Number of zero deflection points = 3

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 4

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 600.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X meters	Deflect. y meters	Bending Moment kN-m	Shear Force kN	Slope S radians	Total Stress kPa*	Bending Stiffness kN-m^2	Soil Res. p kN/m	Soil Spr. Es*h kN/m	Distrib. Lat. Load kN/m
0.00	0.06257	3.81E-09	600.0000	-0.01063	3.89E-08	1374447.	-69.5059	111.0883	0.00
0.2000	0.06044	118.6099	585.7539	-0.01063	1208.	1374447.	-72.9550	241.4081	0.00
0.4000	0.05832	234.3016	570.8268	-0.01060	2387.	1374447.	-76.3160	261.7248	0.00
0.6000	0.05620	346.9406	555.2367	-0.01056	3534.	1374447.	-79.5849	283.2145	0.00

0.8000	0.05409	456.3963	539.0025	-0.01050	4649.	1374447.	-82.7575	305.9733	0.00
1.0000	0.05200	562.5416	522.1437	-0.01043	5730.	1374447.	-85.8300	330.1068	0.00
1.2000	0.04992	665.2537	504.6809	-0.01034	6776.	1374447.	-88.7983	355.7306	0.00
1.4000	0.04787	764.4140	486.6352	-0.01023	7786.	1374447.	-91.6584	382.9718	0.00
1.6000	0.04583	859.9078	468.0288	-0.01011	8759.	1374447.	-94.4065	411.9707	0.00
1.8000	0.04382	951.6255	448.8843	-0.00998	9693.	1374447.	-97.0385	442.8821	0.00
2.0000	0.04184	1039.	429.2253	-0.00984	10588.	1374447.	-99.5507	475.8770	0.00
2.2000	0.03989	1123.	409.0764	-0.00968	11442.	1374447.	-101.9390	511.1452	0.00
2.4000	0.03797	1203.	388.4625	-0.00951	12255.	1374447.	-104.1997	548.8975	0.00
2.6000	0.03608	1279.	367.4096	-0.00933	13025.	1374447.	-106.3288	589.3684	0.00
2.8000	0.03423	1350.	345.9445	-0.00914	13752.	1374447.	-108.3227	632.8198	0.00
3.0000	0.03243	1417.	324.0945	-0.00894	14434.	1374447.	-110.1773	679.5444	0.00
3.2000	0.03066	1480.	301.8879	-0.00873	15072.	1374447.	-111.8890	729.8705	0.00
3.4000	0.02894	1538.	279.3536	-0.00851	15664.	1374447.	-113.4539	784.1672	0.00
3.6000	0.02726	1591.	256.5213	-0.00828	16210.	1374447.	-114.8684	842.8506	0.00
3.8000	0.02562	1640.	233.4216	-0.00804	16709.	1374447.	-116.1286	906.3910	0.00
4.0000	0.02404	1685.	210.0857	-0.00780	17161.	1374447.	-117.2308	975.3220	0.00
4.2000	0.02250	1724.	186.5455	-0.00755	17565.	1374447.	-118.1713	1050.	0.00
4.4000	0.02102	1759.	162.8337	-0.00730	17921.	1374447.	-118.9463	1132.	0.00
4.6000	0.01958	1790.	138.9839	-0.00704	18229.	1374447.	-119.5522	1221.	0.00
4.8000	0.01820	1815.	115.0301	-0.00678	18488.	1374447.	-119.9850	1318.	0.00
5.0000	0.01687	1836.	91.0075	-0.00651	18697.	1374447.	-120.2412	1425.	0.00
5.2000	0.01559	1851.	67.1251	-0.00625	18858.	1374447.	-118.5826	1521.	0.00
5.4000	0.01437	1862.	43.6421	-0.00598	18971.	1374447.	-116.2482	1618.	0.00
5.6000	0.01320	1869.	20.6338	-0.00570	19036.	1374447.	-113.8343	1724.	0.00
5.8000	0.01209	1871.	-1.8837	-0.00543	19055.	1374447.	-111.3403	1842.	0.00
6.0000	0.01103	1868.	-25.2538	-0.00516	19029.	1374447.	-122.3613	2218.	0.00
6.2000	0.01003	1861.	-50.6596	-0.00489	18952.	1374447.	-131.6963	2627.	0.00
6.4000	0.00908	1848.	-76.5686	-0.00462	18822.	1374447.	-127.3943	2807.	0.00
6.6000	0.00818	1830.	-101.6131	-0.00435	18640.	1374447.	-123.0506	3009.	0.00
6.8000	0.00733	1807.	-125.7846	-0.00409	18408.	1374447.	-118.6644	3236.	0.00
7.0000	0.00654	1780.	-149.0745	-0.00383	18128.	1374447.	-114.2344	3492.	0.00
7.2000	0.00580	1748.	-171.4738	-0.00357	17801.	1374447.	-109.7587	3782.	0.00
7.4000	0.00512	1711.	-192.9732	-0.00332	17429.	1374447.	-105.2347	4114.	0.00
7.6000	0.00448	1670.	-213.5625	-0.00307	17014.	1374447.	-100.6588	4497.	0.00
7.8000	0.00389	1626.	-233.2310	-0.00283	16559.	1374447.	-96.0262	4941.	0.00
8.0000	0.00334	1577.	-251.9667	-0.00260	16064.	1374447.	-91.3301	5462.	0.00
8.2000	0.00285	1525.	-269.7558	-0.00237	15532.	1374447.	-86.5617	6081.	0.00
8.4000	0.00239	1469.	-286.5828	-0.00216	14965.	1374447.	-81.7085	6825.	0.00
8.6000	0.00198	1410.	-302.4290	-0.00195	14365.	1374447.	-76.7532	7734.	0.00
8.8000	0.00162	1348.	-317.2714	-0.00175	13733.	1374447.	-71.6711	8870.	0.00
9.0000	0.00129	1283.	-331.0811	-0.00155	13072.	1374447.	-66.4256	10327.	0.00
9.2000	9.94E-04	1216.	-343.8197	-0.00137	12384.	1374447.	-60.9604	12261.	0.00
9.4000	7.38E-04	1146.	-355.4341	-0.00120	11671.	1374447.	-55.1835	14963.	0.00
9.6000	5.14E-04	1074.	-365.8455	-0.00104	10936.	1374447.	-48.9305	19032.	0.00
9.8000	3.22E-04	999.4737	-374.9249	-8.88E-04	10181.	1374447.	-41.8640	26001.	0.00
10.0000	1.59E-04	923.6514	-382.4199	-7.48E-04	9408.	1374447.	-33.0859	41632.	0.00
10.2000	2.27E-05	846.5057	-387.4599	-6.19E-04	8622.	1374447.	-17.3136	152227.	0.00
10.4000	-8.88E-05	768.6675	-386.4666	-5.02E-04	7830.	1374447.	27.2461	61355.	0.00
10.6000	-1.78E-04	691.9191	-380.3066	-3.96E-04	7048.	1374447.	34.3544	38599.	0.00
10.8000	-2.47E-04	616.5448	-373.0390	-3.00E-04	6280.	1374447.	38.3219	31022.	0.00
11.0000	-2.98E-04	542.7035	-361.1330	-2.16E-04	5528.	1374447.	80.7372	54155.	0.00
11.2000	-3.33E-04	472.0916	-343.8788	-1.42E-04	4809.	1374447.	91.8053	55057.	0.00
11.4000	-3.55E-04	405.1520	-324.7635	-7.84E-05	4127.	1374447.	99.3479	55960.	0.00
11.6000	-3.65E-04	342.1862	-304.4554	-2.40E-05	3485.	1374447.	103.7330	56862.	0.00
11.8000	-3.65E-04	283.3698	-283.5491	2.15E-05	2886.	1374447.	105.3302	57765.	0.00
12.0000	-3.56E-04	228.7666	-262.5654	5.87E-05	2330.	1374447.	104.5068	58668.	0.00
12.2000	-3.41E-04	178.3436	-241.9523	8.84E-05	1817.	1374447.	101.6244	59570.	0.00
12.4000	-3.21E-04	131.9857	-222.0862	1.11E-04	1344.	1374447.	97.0365	60473.	0.00
12.6000	-2.97E-04	89.5092	-203.2738	1.27E-04	911.7330	1374447.	91.0870	61375.	0.00
12.8000	-2.70E-04	50.6762	-185.7542	1.37E-04	516.1831	1374447.	84.1088	62278.	0.00
13.0000	-2.42E-04	15.2075	-164.2399	1.42E-04	154.9022	1374447.	131.0344	108328.	0.00
13.2000	-2.13E-04	-15.0198	-133.9182	1.42E-04	152.9904	1374447.	172.1823	161452.	0.00
13.4000	-1.85E-04	-38.3598	-101.5472	1.38E-04	390.7298	1374447.	151.5286	163726.	0.00
13.6000	-1.58E-04	-55.6387	-73.2783	1.31E-04	566.7308	1374447.	131.1604	166000.	0.00
13.8000	-1.33E-04	-67.6711	-49.0083	1.22E-04	689.2922	1374447.	111.5389	168274.	0.00
14.0000	-1.09E-04	-75.2420	-28.5527	1.12E-04	766.4087	1374447.	93.0179	170548.	0.00

14.2000	-8.78E-05	-79.0922	-11.6654	1.01E-04	805.6262	1374447.	75.8550	172821.	0.00
14.4000	-6.88E-05	-79.9081	1.9424	8.92E-05	813.9377	1374447.	60.2229	175095.	0.00
14.6000	-5.21E-05	-78.3152	12.5868	7.77E-05	797.7121	1374447.	46.2213	177369.	0.00
14.8000	-3.77E-05	-74.8734	20.5978	6.65E-05	762.6543	1374447.	33.8879	179643.	0.00
15.0000	-2.55E-05	-70.0761	26.3075	5.60E-05	713.7893	1374447.	23.2092	181917.	0.00
15.2000	-1.53E-05	-64.3504	30.0415	4.62E-05	655.4680	1374447.	14.1310	184191.	0.00
15.4000	-7.04E-06	-58.0595	32.1113	3.73E-05	591.3893	1374447.	6.5675	186465.	0.00
15.6000	-4.34E-07	-51.5059	32.8090	2.93E-05	524.6348	1374447.	0.4098	188739.	0.00
15.8000	4.68E-06	-44.9359	32.4034	2.23E-05	457.7133	1374447.	-4.4666	191013.	0.00
16.0000	8.48E-06	-38.5446	31.1372	1.62E-05	392.6116	1374447.	-8.1953	193287.	0.00
16.2000	1.12E-05	-32.4810	29.2263	1.10E-05	330.8490	1374447.	-10.9137	195561.	0.00
16.4000	1.29E-05	-26.8540	26.8591	6.73E-06	273.5331	1374447.	-12.7580	197835.	0.00
16.6000	1.39E-05	-21.7374	24.1973	3.19E-06	221.4152	1374447.	-13.8598	200109.	0.00
16.8000	1.42E-05	-17.1751	21.3770	3.61E-07	174.9444	1374447.	-14.3432	202383.	0.00
17.0000	1.40E-05	-13.1866	18.5104	-1.85E-06	134.3175	1374447.	-14.3224	204657.	0.00
17.2000	1.34E-05	-9.7709	15.6881	-3.52E-06	99.5261	1374447.	-13.9006	206931.	0.00
17.4000	1.26E-05	-6.9113	12.9812	-4.73E-06	70.3983	1374447.	-13.1685	209205.	0.00
17.6000	1.15E-05	-4.5785	10.4439	-5.57E-06	46.6358	1374447.	-12.2045	211479.	0.00
17.8000	1.04E-05	-2.7338	8.1161	-6.10E-06	27.8458	1374447.	-11.0742	213753.	0.00
18.0000	9.10E-06	-1.3320	6.0255	-6.40E-06	13.5679	1374447.	-9.8312	216027.	0.00
18.2000	7.80E-06	-0.3235	4.1907	-6.52E-06	3.2957	1374447.	-8.5173	218301.	0.00
18.4000	6.50E-06	0.3442	2.6226	-6.52E-06	3.5064	1374447.	-7.1634	220575.	0.00
18.6000	5.20E-06	0.7255	1.3272	-6.44E-06	7.3898	1374447.	-5.7909	222849.	0.00
18.8000	3.92E-06	0.8751	0.3068	-6.32E-06	8.9138	1374447.	-4.4127	225123.	0.00
19.0000	2.67E-06	0.8482	-0.4379	-6.20E-06	8.6398	1374447.	-3.0344	227397.	0.00
19.2000	1.44E-06	0.6999	-0.9069	-6.08E-06	7.1296	1374447.	-1.6560	229671.	0.00
19.4000	2.36E-07	0.4854	-1.0999	-6.00E-06	4.9446	1374447.	-0.2733	231945.	0.00
19.6000	-9.57E-07	0.2600	-1.0152	-5.94E-06	2.6483	1374447.	1.1202	234219.	0.00
19.8000	-2.14E-06	0.07936	-0.6500	-5.92E-06	0.8083	1374447.	2.5319	236493.	0.00
20.0000	-3.32E-06	0.00	0.00	-5.91E-06	0.00	1374447.	3.9679	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 4:

Pile-head deflection = 0.06256813 meters
Computed slope at pile head = -0.01063454 radians
Maximum bending moment = 1871. kN-m
Maximum shear force = 600.00000000 kN
Depth of maximum bending moment = 5.80000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 28
Number of zero deflection points = 3

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 5

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 800.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X meters	Deflect. y meters	Bending Moment kN-m	Shear Force kN	Slope S radians	Total Stress kPa*	Bending Stiffness kN-m^2	Soil Res. p kN/m	Soil Spr. Es*h kN/m	Distrib. Lat. Load kN/m
0.00	0.1054	2.38E-08	800.0000	-0.01658	2.43E-07	1374447.	-82.7054	78.4590	0.00
0.2000	0.1021	158.3459	783.0409	-0.01657	1613.	1374447.	-86.8856	170.2024	0.00
0.4000	0.09879	313.2164	765.2550	-0.01653	3190.	1374447.	-90.9732	184.1825	0.00
0.6000	0.09548	464.4479	746.6613	-0.01648	4731.	1374447.	-94.9640	198.9105	0.00
0.8000	0.09220	611.8809	727.2795	-0.01640	6233.	1374447.	-98.8538	214.4428	0.00

1.0000	0.08893	755.3597	707.1303	-0.01630	7694.	1374447.	-102.6383	230.8410	0.00
1.2000	0.08568	894.7330	686.2351	-0.01618	9114.	1374447.	-106.3134	248.1724	0.00
1.4000	0.08245	1030.	664.6163	-0.01604	10490.	1374447.	-109.8749	266.5100	0.00
1.6000	0.07926	1161.	642.2969	-0.01588	11822.	1374447.	-113.3188	285.9339	0.00
1.8000	0.07610	1287.	619.3010	-0.01570	13107.	1374447.	-116.6407	306.5317	0.00
2.0000	0.07298	1408.	595.6532	-0.01550	14345.	1374447.	-119.8368	328.3995	0.00
2.2000	0.06990	1525.	571.3793	-0.01529	15534.	1374447.	-122.9027	351.6426	0.00
2.4000	0.06687	1637.	546.5055	-0.01506	16673.	1374447.	-125.8346	376.3772	0.00
2.6000	0.06388	1744.	521.0592	-0.01481	17761.	1374447.	-128.6283	402.7311	0.00
2.8000	0.06094	1845.	495.0684	-0.01455	18796.	1374447.	-131.2798	430.8457	0.00
3.0000	0.05806	1942.	468.5619	-0.01428	19778.	1374447.	-133.7852	460.8772	0.00
3.2000	0.05523	2033.	441.5694	-0.01399	20705.	1374447.	-136.1404	492.9987	0.00
3.4000	0.05246	2118.	414.1212	-0.01369	21577.	1374447.	-138.3414	527.4028	0.00
3.6000	0.04975	2198.	386.2486	-0.01337	22392.	1374447.	-140.3845	564.3035	0.00
3.8000	0.04711	2273.	357.9836	-0.01305	23150.	1374447.	-142.2655	603.9400	0.00
4.0000	0.04454	2342.	329.3590	-0.01271	23851.	1374447.	-143.9807	646.5794	0.00
4.2000	0.04203	2405.	300.4083	-0.01237	24492.	1374447.	-145.5262	692.5214	0.00
4.4000	0.03959	2462.	271.1658	-0.01201	25075.	1374447.	-146.8982	742.1026	0.00
4.6000	0.03722	2513.	241.6667	-0.01165	25597.	1374447.	-148.0928	795.7027	0.00
4.8000	0.03493	2558.	211.9468	-0.01128	26059.	1374447.	-149.1063	853.7504	0.00
5.0000	0.03271	2598.	182.0427	-0.01091	26461.	1374447.	-149.9349	916.7318	0.00
5.2000	0.03057	2631.	152.2088	-0.01053	26801.	1374447.	-148.4045	970.9995	0.00
5.4000	0.02850	2659.	122.7636	-0.01014	27081.	1374447.	-146.0474	1025.	0.00
5.6000	0.02651	2680.	93.7981	-0.00975	27301.	1374447.	-143.6076	1083.	0.00
5.8000	0.02460	2696.	65.3288	-0.00936	27463.	1374447.	-141.0849	1147.	0.00
6.0000	0.02277	2706.	35.6414	-0.00897	27567.	1374447.	-155.7889	1369.	0.00
6.2000	0.02101	2710.	3.2092	-0.00857	27608.	1374447.	-168.5337	1604.	0.00
6.4000	0.01934	2708.	-30.0372	-0.00818	27581.	1374447.	-163.9301	1695.	0.00
6.6000	0.01774	2698.	-62.3591	-0.00779	27486.	1374447.	-159.2885	1796.	0.00
6.8000	0.01622	2683.	-93.7488	-0.00739	27326.	1374447.	-154.6092	1906.	0.00
7.0000	0.01478	2661.	-124.1990	-0.00701	27104.	1374447.	-149.8925	2028.	0.00
7.2000	0.01342	2633.	-153.7021	-0.00662	26820.	1374447.	-145.1384	2163.	0.00
7.4000	0.01213	2599.	-182.2506	-0.00624	26478.	1374447.	-140.3466	2313.	0.00
7.6000	0.01092	2560.	-209.8369	-0.00586	26078.	1374447.	-135.5167	2481.	0.00
7.8000	0.00979	2516.	-236.4534	-0.00550	25623.	1374447.	-130.6478	2669.	0.00
8.0000	0.00873	2466.	-262.0920	-0.00513	25114.	1374447.	-125.7388	2882.	0.00
8.2000	0.00774	2411.	-286.7447	-0.00478	24555.	1374447.	-120.7880	3123.	0.00
8.4000	0.00681	2351.	-310.4028	-0.00443	23946.	1374447.	-115.7929	3398.	0.00
8.6000	0.00596	2287.	-333.0571	-0.00409	23290.	1374447.	-110.7502	3715.	0.00
8.8000	0.00518	2218.	-354.6977	-0.00377	22589.	1374447.	-105.6557	4082.	0.00
9.0000	0.00446	2145.	-375.3136	-0.00345	21845.	1374447.	-100.5035	4511.	0.00
9.2000	0.00380	2068.	-394.8925	-0.00314	21060.	1374447.	-95.2857	5018.	0.00
9.4000	0.00320	1987.	-413.4203	-0.00285	20236.	1374447.	-89.9915	5626.	0.00
9.6000	0.00266	1902.	-430.8800	-0.00256	19376.	1374447.	-84.6060	6365.	0.00
9.8000	0.00217	1814.	-447.2514	-0.00229	18481.	1374447.	-79.1082	7281.	0.00
10.0000	0.00174	1723.	-462.5090	-0.00204	17553.	1374447.	-73.4675	8442.	0.00
10.2000	0.00136	1629.	-476.6195	-0.00179	16596.	1374447.	-67.6379	9960.	0.00
10.4000	0.00102	1533.	-489.5380	-0.00156	15611.	1374447.	-61.5464	12029.	0.00
10.6000	7.33E-04	1434.	-501.1995	-0.00135	14602.	1374447.	-55.0683	15025.	0.00
10.8000	4.84E-04	1332.	-511.5029	-0.00115	13569.	1374447.	-47.9665	19804.	0.00
11.0000	2.75E-04	1229.	-523.7344	-9.60E-04	12517.	1374447.	-74.3484	54155.	0.00
11.2000	1.01E-04	1123.	-533.9362	-7.89E-04	11435.	1374447.	-27.6695	55057.	0.00
11.4000	-4.09E-05	1015.	-535.5593	-6.33E-04	10342.	1374447.	11.4388	55960.	0.00
11.6000	-1.53E-04	908.4450	-530.0732	-4.93E-04	9253.	1374447.	43.4222	56862.	0.00
11.8000	-2.38E-04	803.2988	-518.8530	-3.69E-04	8182.	1374447.	68.7791	57765.	0.00
12.0000	-3.00E-04	700.9037	-503.1702	-2.59E-04	7139.	1374447.	88.0493	58668.	0.00
12.2000	-3.42E-04	602.0307	-484.1849	-1.64E-04	6132.	1374447.	101.8037	59570.	0.00
12.4000	-3.66E-04	507.2298	-462.9409	-8.36E-05	5167.	1374447.	110.6362	60473.	0.00
12.6000	-3.75E-04	416.8543	-440.3617	-1.64E-05	4246.	1374447.	115.1563	61375.	0.00
12.8000	-3.72E-04	331.0851	-417.2477	3.80E-05	3372.	1374447.	115.9832	62278.	0.00
13.0000	-3.60E-04	249.9552	-386.1476	8.03E-05	2546.	1374447.	195.0183	108328.	0.00
13.2000	-3.40E-04	176.6261	-339.1700	1.11E-04	1799.	1374447.	274.7576	161452.	0.00
13.4000	-3.16E-04	114.2872	-285.8644	1.32E-04	1164.	1374447.	258.2984	163726.	0.00
13.6000	-2.87E-04	62.2803	-236.1832	1.45E-04	634.3821	1374447.	238.5138	166000.	0.00
13.8000	-2.57E-04	19.8140	-190.6754	1.51E-04	201.8234	1374447.	216.5639	168274.	0.00
14.0000	-2.27E-04	-13.9898	-149.6749	1.52E-04	142.4993	1374447.	193.4407	170548.	0.00
14.2000	-1.97E-04	-40.0560	-113.3334	1.48E-04	408.0072	1374447.	169.9747	172821.	0.00

14.4000	-1.68E-04	-59.3232	-81.6515	1.41E-04	604.2611	1374447.	146.8439	175095.	0.00
14.6000	-1.40E-04	-72.7166	-54.5086	1.31E-04	740.6855	1374447.	124.5852	177369.	0.00
14.8000	-1.15E-04	-81.1266	-31.6893	1.20E-04	826.3492	1374447.	103.6078	179643.	0.00
15.0000	-9.26E-05	-85.3924	-12.9079	1.08E-04	869.7994	1374447.	84.2065	181917.	0.00
15.2000	-7.23E-05	-86.2898	2.1704	9.52E-05	878.9407	1374447.	66.5759	184191.	0.00
15.4000	-5.45E-05	-84.5242	13.9105	8.27E-05	860.9565	1374447.	50.8254	186465.	0.00
15.6000	-3.92E-05	-80.7256	22.6922	7.07E-05	822.2643	1374447.	36.9921	188739.	0.00
15.8000	-2.62E-05	-75.4473	28.8969	5.93E-05	768.5000	1374447.	25.0543	191013.	0.00
16.0000	-1.55E-05	-69.1668	32.8967	4.88E-05	704.5277	1374447.	14.9436	193287.	0.00
16.2000	-6.71E-06	-62.2886	35.0467	3.93E-05	634.4669	1374447.	6.5563	195561.	0.00
16.4000	2.40E-07	-55.1482	35.6786	3.07E-05	561.7348	1374447.	-0.2370	197835.	0.00
16.6000	5.58E-06	-48.0172	35.0966	2.32E-05	489.0992	1374447.	-5.5824	200109.	0.00
16.8000	9.52E-06	-41.1095	33.5749	1.67E-05	418.7382	1374447.	-9.6352	202383.	0.00
17.0000	1.23E-05	-34.5873	31.3560	1.12E-05	352.3029	1374447.	-12.5534	204657.	0.00
17.2000	1.40E-05	-28.5671	28.6514	6.62E-06	290.9822	1374447.	-14.4925	206931.	0.00
17.4000	1.49E-05	-23.1267	25.6420	2.86E-06	235.5664	1374447.	-15.6015	209205.	0.00
17.6000	1.52E-05	-18.3103	22.4799	-1.57E-07	186.5072	1374447.	-16.0196	211479.	0.00
17.8000	1.49E-05	-14.1347	19.2906	-2.52E-06	143.9749	1374447.	-15.8734	213753.	0.00
18.0000	1.41E-05	-10.5940	16.1757	-4.32E-06	107.9101	1374447.	-15.2761	216027.	0.00
18.2000	1.31E-05	-7.6644	13.2154	-5.65E-06	78.0693	1374447.	-14.3262	218301.	0.00
18.4000	1.19E-05	-5.3079	10.4721	-6.59E-06	54.0655	1374447.	-13.1072	220575.	0.00
18.6000	1.05E-05	-3.4756	7.9926	-7.23E-06	35.4021	1374447.	-11.6878	222849.	0.00
18.8000	8.99E-06	-2.1108	5.8115	-7.63E-06	21.5007	1374447.	-10.1228	225123.	0.00
19.0000	7.44E-06	-1.1510	3.9539	-7.87E-06	11.7237	1374447.	-8.4540	227397.	0.00
19.2000	5.84E-06	-0.5293	2.4373	-7.99E-06	5.3912	1374447.	-6.7113	229671.	0.00
19.4000	4.24E-06	-0.1760	1.2748	-8.05E-06	1.7931	1374447.	-4.9145	231945.	0.00
19.6000	2.63E-06	-0.01937	0.4758	-8.06E-06	0.1973	1374447.	-3.0752	234219.	0.00
19.8000	1.01E-06	0.01428	0.04843	-8.06E-06	0.1455	1374447.	-1.1986	236493.	0.00
20.0000	-5.98E-07	0.00	0.00	-8.06E-06	0.00	1374447.	0.7142	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 5:

Pile-head deflection = 0.10541232 meters
Computed slope at pile head = -0.01657743 radians
Maximum bending moment = 2710. kN-m
Maximum shear force = 800.00000000 kN
Depth of maximum bending moment = 6.20000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 26
Number of zero deflection points = 3

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 6

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 2000.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X meters	Deflect. y meters	Bending Moment kN-m	Shear Force kN	Slope S radians	Total Stress kPa*	Bending Stiffness kN-m^2	Soil Res. p kN/m	Soil Spr. Es*h kN/m	Distrib. Lat. Load kN/m
0.00	0.5100	-7.63E-08	2000.	-0.06616	7.77E-07	1374447.	-129.0000	25.2943	0.00
0.2000	0.4968	397.4200	1973.	-0.06613	4048.	1374447.	-136.9715	55.1452	0.00
0.4000	0.4835	789.3611	1945.	-0.06604	8040.	1374447.	-145.0001	59.9735	0.00
0.6000	0.4704	1176.	1915.	-0.06590	11974.	1374447.	-153.0858	65.0944	0.00
0.8000	0.4572	1556.	1884.	-0.06570	15844.	1374447.	-161.2286	70.5306	0.00
1.0000	0.4441	1929.	1851.	-0.06545	19650.	1374447.	-169.4286	76.3071	0.00

1.2000	0.4310	2296.	1816.	-0.06514	23386.	1374447.	-177.6858	82.4510	0.00
1.4000	0.4180	2656.	1780.	-0.06478	27049.	1374447.	-186.0001	88.9920	0.00
1.6000	0.4051	3008.	1742.	-0.06437	30637.	1374447.	-194.3715	95.9626	0.00
1.8000	0.3923	3352.	1702.	-0.06390	34146.	1374447.	-201.4850	102.7279	0.00
2.0000	0.3795	3689.	1661.	-0.06339	37573.	1374447.	-207.6197	109.4067	0.00
2.2000	0.3669	4017.	1619.	-0.06283	40915.	1374447.	-213.5922	116.4266	0.00
2.4000	0.3544	4336.	1576.	-0.06222	44170.	1374447.	-219.3970	123.8113	0.00
2.6000	0.3420	4647.	1531.	-0.06157	47335.	1374447.	-225.0286	131.5864	0.00
2.8000	0.3298	4949.	1486.	-0.06087	50409.	1374447.	-230.4814	139.7797	0.00
3.0000	0.3177	5241.	1439.	-0.06013	53389.	1374447.	-235.7497	148.4215	0.00
3.2000	0.3057	5525.	1392.	-0.05935	56273.	1374447.	-240.8279	157.5447	0.00
3.4000	0.2939	5798.	1343.	-0.05852	59059.	1374447.	-245.7103	167.1853	0.00
3.6000	0.2823	6062.	1293.	-0.05766	61745.	1374447.	-250.3911	177.3825	0.00
3.8000	0.2709	6315.	1243.	-0.05676	64329.	1374447.	-254.8645	188.1794	0.00
4.0000	0.2596	6559.	1191.	-0.05582	66809.	1374447.	-259.1248	199.6229	0.00
4.2000	0.2485	6792.	1139.	-0.05485	69183.	1374447.	-263.1660	211.7650	0.00
4.4000	0.2377	7015.	1086.	-0.05385	71450.	1374447.	-266.9821	224.6624	0.00
4.6000	0.2270	7226.	1032.	-0.05281	73608.	1374447.	-270.5673	238.3779	0.00
4.8000	0.2166	7428.	977.9565	-0.05174	75656.	1374447.	-273.9153	252.9810	0.00
5.0000	0.2063	7618.	922.8630	-0.05065	77593.	1374447.	-277.0202	268.5482	0.00
5.2000	0.1963	7797.	867.5768	-0.04953	79416.	1374447.	-275.8418	281.0545	0.00
5.4000	0.1865	7965.	812.6756	-0.04838	81128.	1374447.	-273.1704	292.9464	0.00
5.6000	0.1769	8122.	758.3205	-0.04721	82728.	1374447.	-270.3798	305.6205	0.00
5.8000	0.1676	8268.	704.5357	-0.04602	84217.	1374447.	-267.4688	319.1478	0.00
6.0000	0.1585	8404.	648.0397	-0.04480	85598.	1374447.	-297.4907	375.3088	0.00
6.2000	0.1497	8527.	585.8622	-0.04357	86858.	1374447.	-324.2843	433.2674	0.00
6.4000	0.1411	8638.	521.6379	-0.04232	87985.	1374447.	-317.9584	450.6791	0.00
6.6000	0.1328	8736.	458.6854	-0.04106	88983.	1374447.	-311.5670	469.3590	0.00
6.8000	0.1247	8821.	397.0177	-0.03978	89854.	1374447.	-305.1096	489.4366	0.00
7.0000	0.1168	8895.	336.6483	-0.03849	90601.	1374447.	-298.5854	511.0589	0.00
7.2000	0.1093	8956.	277.5904	-0.03720	91226.	1374447.	-291.9936	534.3936	0.00
7.4000	0.1020	9006.	219.8577	-0.03589	91732.	1374447.	-285.3334	559.6325	0.00
7.6000	0.09493	9044.	163.4640	-0.03457	92121.	1374447.	-278.6034	586.9962	0.00
7.8000	0.08814	9071.	108.4234	-0.03326	92398.	1374447.	-271.8023	616.7394	0.00
8.0000	0.08162	9087.	54.7503	-0.03194	92563.	1374447.	-264.9287	649.1574	0.00
8.2000	0.07537	9093.	2.4594	-0.03061	92621.	1374447.	-257.9807	684.5949	0.00
8.4000	0.06938	9088.	-48.4343	-0.02929	92573.	1374447.	-250.9563	723.4556	0.00
8.6000	0.06365	9074.	-97.9153	-0.02797	92423.	1374447.	-243.8532	766.2158	0.00
8.8000	0.05819	9049.	-145.9675	-0.02665	92174.	1374447.	-236.6689	813.4407	0.00
9.0000	0.05299	9015.	-192.5744	-0.02534	91829.	1374447.	-229.4003	865.8052	0.00
9.2000	0.04806	8972.	-237.7189	-0.02403	91390.	1374447.	-222.0442	924.1216	0.00
9.4000	0.04338	8920.	-281.3830	-0.02273	90860.	1374447.	-214.5970	989.3751	0.00
9.6000	0.03897	8860.	-323.5481	-0.02143	90243.	1374447.	-207.0543	1063.	0.00
9.8000	0.03481	8791.	-364.1947	-0.02015	89542.	1374447.	-199.4117	1146.	0.00
10.0000	0.03091	8714.	-403.3023	-0.01887	88759.	1374447.	-191.6638	1240.	0.00
10.2000	0.02726	8629.	-440.8491	-0.01761	87899.	1374447.	-183.8048	1349.	0.00
10.4000	0.02386	8538.	-476.8125	-0.01636	86963.	1374447.	-175.8284	1474.	0.00
10.6000	0.02071	8439.	-511.1681	-0.01513	85956.	1374447.	-167.7275	1620.	0.00
10.8000	0.01781	8333.	-543.8903	-0.01391	84880.	1374447.	-159.4945	1791.	0.00
11.0000	0.01515	8221.	-708.2441	-0.01270	83740.	1374447.	-1484.	19592.	0.00
11.2000	0.01273	8050.	-994.9760	-0.01152	81995.	1374447.	-1383.	21735.	0.00
11.4000	0.01054	7823.	-1261.	-0.01036	79686.	1374447.	-1277.	24231.	0.00
11.6000	0.00858	7545.	-1505.	-0.00925	76857.	1374447.	-1166.	27177.	0.00
11.8000	0.00684	7221.	-1727.	-0.00817	73553.	1374447.	-1051.	30710.	0.00
12.0000	0.00531	6855.	-1925.	-0.00715	69820.	1374447.	-931.0150	35043.	0.00
12.2000	0.00398	6451.	-2099.	-0.00618	65709.	1374447.	-807.0040	40515.	0.00
12.4000	0.00284	6015.	-2248.	-0.00527	61268.	1374447.	-678.2464	47737.	0.00
12.6000	0.00187	5552.	-2370.	-0.00443	56551.	1374447.	-543.2658	57964.	0.00
12.8000	0.00107	5067.	-2457.	-0.00366	51613.	1374447.	-332.8636	62278.	0.00
13.0000	4.11E-04	4569.	-2513.	-0.00296	46539.	1374447.	-222.5651	108328.	0.00
13.2000	-1.14E-04	4062.	-2526.	-0.00233	41375.	1374447.	92.1691	161452.	0.00
13.4000	-5.21E-04	3559.	-2474.	-0.00178	36248.	1374447.	426.5444	163726.	0.00
13.6000	-8.24E-04	3072.	-2368.	-0.00129	31294.	1374447.	631.3820	153182.	0.00
13.8000	-0.00104	2611.	-2230.	-8.79E-04	26598.	1374447.	747.4884	143990.	0.00
14.0000	-0.00118	2180.	-2073.	-5.31E-04	22207.	1374447.	829.3420	141026.	0.00
14.2000	-0.00125	1782.	-1901.	-2.43E-04	18154.	1374447.	885.0102	141534.	0.00
14.4000	-0.00127	1420.	-1721.	-9.63E-06	14461.	1374447.	919.3831	144423.	0.00

14.6000	-0.00125	1094.	-1535.	1.73E-04	11142.	1374447.	935.8924	149211.	0.00
14.8000	-0.00120	805.5654	-1348.	3.11E-04	8205.	1374447.	937.1979	155696.	0.00
15.0000	-0.00113	554.7158	-1162.	4.10E-04	5650.	1374447.	925.5070	163825.	0.00
15.2000	-0.00104	340.8864	-978.8732	4.76E-04	3472.	1374447.	902.7378	173651.	0.00
15.4000	-9.40E-04	163.1665	-801.5392	5.12E-04	1662.	1374447.	870.6024	185306.	0.00
15.6000	-8.35E-04	20.2707	-635.6978	5.26E-04	206.4756	1374447.	787.8114	188739.	0.00
15.8000	-7.29E-04	-91.1126	-487.2542	5.20E-04	928.0658	1374447.	696.6247	191013.	0.00
16.0000	-6.27E-04	-174.6310	-357.0314	5.01E-04	1779.	1374447.	605.6036	193287.	0.00
16.2000	-5.29E-04	-233.9252	-244.7495	4.71E-04	2383.	1374447.	517.2150	195561.	0.00
16.4000	-4.38E-04	-272.5308	-149.6941	4.35E-04	2776.	1374447.	433.3394	197835.	0.00
16.6000	-3.55E-04	-293.8028	-70.8268	3.93E-04	2993.	1374447.	355.3330	200109.	0.00
16.8000	-2.81E-04	-300.8615	-6.8843	3.50E-04	3065.	1374447.	284.0928	202383.	0.00
17.0000	-2.15E-04	-296.5565	43.5371	3.07E-04	3021.	1374447.	220.1208	204657.	0.00
17.2000	-1.58E-04	-283.4467	81.9078	2.64E-04	2887.	1374447.	163.5858	206931.	0.00
17.4000	-1.09E-04	-263.7934	109.7047	2.25E-04	2687.	1374447.	114.3833	209205.	0.00
17.6000	-6.83E-05	-239.5648	128.3620	1.88E-04	2440.	1374447.	72.1898	211479.	0.00
17.8000	-3.42E-05	-212.4486	139.2323	1.55E-04	2164.	1374447.	36.5136	213753.	0.00
18.0000	-6.24E-06	-183.8719	143.5577	1.26E-04	1873.	1374447.	6.7400	216027.	0.00
18.2000	1.63E-05	-155.0255	142.4489	1.02E-04	1579.	1374447.	-17.8277	218301.	0.00
18.4000	3.44E-05	-126.8923	136.8728	8.11E-05	1293.	1374447.	-37.9330	220575.	0.00
18.6000	4.88E-05	-100.2764	127.6461	6.45E-05	1021.	1374447.	-54.3342	222849.	0.00
18.8000	6.02E-05	-75.8339	115.4350	5.17E-05	772.4373	1374447.	-67.7772	225123.	0.00
19.0000	6.95E-05	-54.1024	100.7601	4.23E-05	551.0825	1374447.	-78.9714	227397.	0.00
19.2000	7.71E-05	-35.5298	84.0062	3.58E-05	361.9036	1374447.	-88.5676	229671.	0.00
19.4000	8.38E-05	-20.4999	65.4356	3.17E-05	208.8104	1374447.	-97.1390	231945.	0.00
19.6000	8.98E-05	-9.3556	45.2054	2.95E-05	95.2952	1374447.	-105.1627	234219.	0.00
19.8000	9.56E-05	-2.4178	23.3889	2.87E-05	24.6271	1374447.	-113.0017	236493.	0.00
20.0000	1.01E-04	0.00	0.00	2.85E-05	0.00	1374447.	-120.8878	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 6:

Pile-head deflection = 0.50999751 meters
Computed slope at pile head = -0.06615574 radians
Maximum bending moment = 9093. kN-m
Maximum shear force = -2526. kN
Depth of maximum bending moment = 8.20000000 meters below pile head
Depth of maximum shear force = 13.20000000 meters below pile head
Number of iterations = 25
Number of zero deflection points = 2

Summary of Pile-head Responses for Conventional Analyses

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, kN, and Load 2 = Moment, M, kN-m
Load Type 2: Load 1 = Shear, V, kN, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, kN, and Load 2 = Rot. Stiffness, R, kN-m/rad.
Load Type 4: Load 1 = Top Deflection, y, m, and Load 2 = Moment, M, kN-m
Load Type 5: Load 1 = Top Deflection, y, m, and Load 2 = Slope, S, radians

Load Case No.	Load Type	Pile-head Load 1	Load Type	Pile-head Load 2	Axial Pile-head Loading kN	Pile-head Deflection meters	Pile-head Rotation radians	Max Shear in Pile kN	Max Moment in Pile kN-m
1	V, kN	100.0000	M, kN-m	0.00	0.00	0.00236	-6.51E-04	100.0000	181.7763
2	V, kN	200.0000	M, kN-m	0.00	0.00	0.00851	-0.00194	200.0000	448.9279
3	V, kN	400.0000	M, kN-m	0.00	0.00	0.03002	-0.00569	400.0000	1107.
4	V, kN	600.0000	M, kN-m	0.00	0.00	0.06257	-0.01063	600.0000	1871.
5	V, kN	800.0000	M, kN-m	0.00	0.00	0.1054	-0.01658	800.0000	2710.
6	V, kN	2000.	M, kN-m	0.00	0.00	0.5100	-0.06616	-2526.	9093.

Maximum pile-head deflection = 0.5099975123 meters
Maximum pile-head rotation = -0.0661557391 radians = -3.790445 deg.

The analysis ended normally.

Opera VI31 – D1200

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LPile for Windows, Version 2016-09.009

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

==========

This copy of LPile is being used by:

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Files Used for Analysis

Path to file locations:
\m9159A\Work\07_Pali\VI31 (NV34)\LPILE\

Name of input data file:
VI31_spalle_D1200.lp9d

Name of output report file:
VI31_spalle_D1200.lp9o

Name of plot output file:
VI31_spalle_D1200.lp9p

Name of runtime message file:
VI31_spalle_D1200.lp9r

Date and Time of Analysis

Date: July 9, 2019 Time: 12:30:46

Problem Title

Project Name: VI02 - Spalle e pila
Job Number:
Client:
Engineer:
Description:

Program Options and Settings

Computational Options:
- Use unfactored loads in computations (conventional analysis)

Engineering Units Used for Data Input and Computations:
- International System Units (kilonewtons, meters, millimeters)

Analysis Control Options:
- Maximum number of iterations allowed = 500
- Deflection tolerance for convergence = 2.5400E-07 m
- Maximum allowable deflection = 2.5400 m
- Number of pile increments = 100

Loading Type and Number of Cycles of Loading:
- Static loading specified

- Use of p-y modification factors for p-y curves not selected
- No distributed lateral loads are entered
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:
- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- p-y curves computed and reported at user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined = 1
Total length of pile = 20.000 m
Depth of ground surface below top of pile = -1.0000 m

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point	Depth Below Pile Head meters	Pile Diameter millimeters
1	0.000	1200.00
2	20.000	1200.00

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is an elastic pile
Cross-sectional Shape = Circular Pile
Length of section = 20.000000 m
Width of top of section = 1.200000 m
Width of bottom of section = 1.200000 m

Top Area = 1.130973 sq. m
Bottom Area = 1.130973 sq. m
Moment of Inertia at Top = 0.101788 m^4
Moment of Inertia at Bottom = 0.101788 m^4
Elastic Modulus = 28000000. kPa

Ground Slope and Pile Batter Angles

Ground Slope Angle = 0.000 degrees
= 0.000 radians

Pile Batter Angle = 0.000 degrees
= 0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = -1.000000 m
Distance from top of pile to bottom of layer = 6.000000 m
Effective unit weight at top of layer = 19.000000 kN/m3
Effective unit weight at bottom of layer = 19.000000 kN/m3
Undrained cohesion at top of layer = 30.000000 kPa
Undrained cohesion at bottom of layer = 40.000000 kPa
Epsilon-50 at top of layer = 0.020000
Epsilon-50 at bottom of layer = 0.020000

Layer 2 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = 6.000000 m
Distance from top of pile to bottom of layer = 11.000000 m
Effective unit weight at top of layer = 9.000000 kN/m3
Effective unit weight at bottom of layer = 9.000000 kN/m3
Undrained cohesion at top of layer = 50.000000 kPa
Undrained cohesion at bottom of layer = 50.000000 kPa
Epsilon-50 at top of layer = 0.020000
Epsilon-50 at bottom of layer = 0.020000

Layer 3 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 11.000000 m
Distance from top of pile to bottom of layer = 13.000000 m
Effective unit weight at top of layer = 9.000000 kN/m3
Effective unit weight at bottom of layer = 9.000000 kN/m3
Friction angle at top of layer = 32.000000 deg.
Friction angle at bottom of layer = 32.000000 deg.
Subgrade k at top of layer = 0.0000 kN/m3
Subgrade k at bottom of layer = 0.0000 kN/m3

NOTE: Default values for subgrade k will be computed for this layer.

Layer 4 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 13.000000 m
Distance from top of pile to bottom of layer = 20.000000 m

Effective unit weight at top of layer = 9.000000 kN/m3
Effective unit weight at bottom of layer = 9.000000 kN/m3
Friction angle at top of layer = 38.000000 deg.
Friction angle at bottom of layer = 38.000000 deg.
Subgrade k at top of layer = 0.0000 kN/m3
Subgrade k at bottom of layer = 0.0000 kN/m3

NOTE: Default values for subgrade k will be computed for this layer.

(Depth of the lowest soil layer extends 0.000 m below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth m	Effective Unit Wt. kN/m3	Undrained Cohesion kPa	Angle of Friction deg.	E50 or krm	kpy kN/m3
1	Soft Clay	-1.0000 6.0000	19.0000 19.0000	30.0000 40.0000	-- --	0.02000 0.02000	-- --
2	Soft Clay	6.0000 11.0000	9.0000 9.0000	50.0000 50.0000	-- --	0.02000 0.02000	-- --
3	Sand (Reese, et al.)	11.0000 13.0000	9.0000 9.0000	-- --	32.0000 32.0000	-- --	default default
4	Sand (Reese, et al.)	13.0000 20.0000	9.0000 9.0000	-- --	38.0000 38.0000	-- --	default default

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Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 7

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, kN	Compute Top y vs. Pile Length
1	1	V = 100.000000 kN	M = 0.0000 m-kN	0.0000000	No
2	1	V = 200.000000 kN	M = 0.0000 m-kN	0.0000000	No
3	1	V = 400.000000 kN	M = 0.0000 m-kN	0.0000000	No
4	1	V = 600.000000 kN	M = 0.0000 m-kN	0.0000000	No
5	1	V = 800.000000 kN	M = 0.0000 m-kN	0.0000000	No
6	1	V = 2000. kN	M = 0.0000 m-kN	0.0000000	No
7	1	V = 3000. kN	M = 0.0000 m-kN	0.0000000	No

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Specified Depths for Output of p-y Curves

Lateral load-transfer (p-y) curves are computed and output at 8 depths.
(Note that load-transfer values are computeded at the specified depths and
may differ from values computed at nodal points)

Depth No.	Depth Below Pile Head m	Depth Below Ground Surface m
1	0.200	1.200
2	5.800	6.800
3	6.200	7.200
4	10.800	11.800
5	11.200	12.200
6	12.800	13.800
7	13.200	14.200
8	19.800	20.800

Depth of ground surface below top of pile = -1.0000 m

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

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Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

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Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head meters	Equivalent Top Depth Below Grnd Surf meters	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer kN	F1 Integral for Layer kN
1	-1.0000	0.00	N.A.	No	0.00	1759.
2	6.0000	7.0000	Yes	No	1759.	2668.
3	11.0000	6.6271	No	No	4427.	6380.
4	13.0000	8.6271	Yes	No	10807.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals
for Layer n. Layering correction equivalent depths are computed only
for soil types with both shallow-depth and deep-depth expressions for
peak lateral load transfer. These soil types are soft and stiff clays,
non-liquefied sands, and cemented c-phi soil.

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p-y Curves Reported for Specified Depths

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p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 1
Depth of top of Layer 1 below pile head = -1.000 m
Depth of p-y curve below pile head = 0.200 m
Depth of p-y curve below ground surface = 1.200 m
Equiv. depth of p-y curve below ground surface = 1.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 1200.000 mm
Average effective unit weight = 19.00000 kN/m3
Undrained cohesion = 31.714 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 5.907 m
Static pu_s for flat ground = 160.560 kN/m
Static pu_d for flat ground = 342.514 kN/m
y_50 = 0.06000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 160.560 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00014222	10.70400
0.00114	21.40800
0.00384	32.11200
0.00910	42.81600
0.01778	53.52000
0.03072	64.22400
0.04878	74.92800
0.07282	85.63200
0.10368	96.33600
0.14222	107.04000
0.18930	117.74400
0.24576	128.44800
0.31246	139.15200
0.39026	149.85600
0.48000	160.56000
0.51000	160.56000

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 1
Depth of top of Layer 1 below pile head = -1.000 m
Depth of p-y curve below pile head = 5.800 m
Depth of p-y curve below ground surface = 6.800 m
Equiv. depth of p-y curve below ground surface = 6.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 1200.000 mm
Average effective unit weight = 19.00000 kN/m3
Undrained cohesion = 39.714 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 6.703 m
Static pu_s for flat ground = 433.040 kN/m
Static pu_d for flat ground = 428.914 kN/m

y_50 = 0.06000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 428.914 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00014222	28.59429
0.00114	57.18857
0.00384	85.78286
0.00910	114.37714
0.01778	142.97143
0.03072	171.56571
0.04878	200.16000
0.07282	228.75429
0.10368	257.34857
0.14222	285.94286
0.18930	314.53714
0.24576	343.13143
0.31246	371.72571
0.39026	400.32000
0.48000	428.91429
0.51000	428.91429

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 2
Depth of top of Layer 2 below pile head = 6.000 m
Depth of p-y curve below pile head = 6.200 m
Depth of p-y curve below ground surface = 7.200 m
Equiv. depth of p-y curve below ground surface = 7.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 1200.000 mm
Average effective unit weight = 18.72222 kN/m3
Undrained cohesion = 50.000 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 7.584 m
Static pu_s for flat ground = 521.760 kN/m
Static pu_d for flat ground = 540.000 kN/m
y_50 = 0.06000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 521.760 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00014222	34.78400
0.00114	69.56800
0.00384	104.35200
0.00910	139.13600
0.01778	173.92000
0.03072	208.70400

0.04878	243.48800
0.07282	278.27200
0.10368	313.05600
0.14222	347.84000
0.18930	382.62400
0.24576	417.40800
0.31246	452.19200
0.39026	486.97600
0.48000	521.76000
0.51000	521.76000

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 2
Depth of top of Layer 2 below pile head = 6.000 m
Depth of p-y curve below pile head = 10.800 m
Depth of p-y curve below ground surface = 11.800 m
Equiv. depth of p-y curve below ground surface = 11.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 1200.000 mm
Average effective unit weight = 14.93220 kN/m3
Undrained cohesion = 50.000 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 8.388 m
Static pu_s for flat ground = 686.440 kN/m
Static pu_d for flat ground = 540.000 kN/m
y_50 = 0.06000 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 540.000 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00014222	36.00000
0.00114	72.00000
0.00384	108.00000
0.00910	144.00000
0.01778	180.00000
0.03072	216.00000
0.04878	252.00000
0.07282	288.00000
0.10368	324.00000
0.14222	360.00000
0.18930	396.00000
0.24576	432.00000
0.31246	468.00000
0.39026	504.00000
0.48000	540.00000
0.51000	540.00000

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 3
Depth of top of Layer 3 below pile head = 11.000 m
Depth of p-y curve below pile head = 11.200 m

Depth of p-y curve below ground surface = 12.200 m
Equiv. depth of p-y curve below ground surface = 6.827 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 1200.000 mm
Angle of Friction = 32.000 degrees
Average Effective Unit Weight = 14.738 kN/m3
k_py = 22564.423 kN/m3
K active = 0.307
K passive = 3.255
K0 = 0.400
Pst = 3436.280 kN/m
Psd = 7942.988 kN/m
Ps = Pst (shallow controls) = 3436.280 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 18536.6956
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 52231.4567
Yk = [c/(kx)]^(n/(n-1)) = 0.0010 m
Pk = 282.242 kN/m
Ym = b/60 = 0.0200 m
Pm = B ps = 1718.140 kN/m
Yu = 3b/80 = 0.0450 m
Pu = A Ps = 3023.926 kN/m
Maximum Es value = 275285.965 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00103	282.24187
0.00275	514.24488
0.00448	691.39689
0.00620	842.97513
0.00793	978.65485
0.00965	1103.13566
0.01138	1219.14005
0.01310	1328.41946
0.01483	1432.18262
0.01655	1531.30703
0.01828	1626.45465
0.02000	1718.14002
0.03250	2371.03323
0.04500	3023.92644
0.05400	3023.92644
0.06300	3023.92644

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 3
Depth of top of Layer 3 below pile head = 11.000 m
Depth of p-y curve below pile head = 12.800 m
Depth of p-y curve below ground surface = 13.800 m
Equiv. depth of p-y curve below ground surface = 8.427 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees

Effective slope angle = 0.000 degrees
Pile Diameter = 1200.000 mm
Angle of Friction = 32.000 degrees
Average Effective Unit Weight = 14.072 kN/m3
k_py = 22564.423 kN/m3
K active = 0.307
K passive = 3.255
K0 = 0.400
Pst = 4420.347 kN/m
Psd = 8579.134 kN/m
Ps = Pst (shallow controls) = 4420.347 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 23845.1523
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 67189.2698
Yk = [c/(kx)]^(n/(n-1)) = 0.0014 m
Pk = 443.212 kN/m
Ym = b/60 = 0.0200 m
Pm = B ps = 2210.173 kN/m
Yu = 3b/80 = 0.0450 m
Pu = A Ps = 3889.905 kN/m
Maximum Es value = 311389.042 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00142	443.21191
0.00311	713.14662
0.00480	928.20733
0.00649	1114.89172
0.00818	1283.23234
0.00987	1438.37467
0.01156	1583.39225
0.01324	1720.30205
0.01493	1850.51577
0.01662	1975.06906
0.01831	2094.74952
0.02000	2210.17335
0.03250	3050.03922
0.04500	3889.90509
0.05400	3889.90509
0.06300	3889.90509

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 4
Depth of top of Layer 4 below pile head = 13.000 m
Depth of p-y curve below pile head = 13.200 m
Depth of p-y curve below ground surface = 14.200 m
Equiv. depth of p-y curve below ground surface = 8.827 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees

Pile Diameter = 1200.000 mm
Angle of Friction = 38.000 degrees
Average Effective Unit Weight = 13.930 kN/m3
k_py = 56849.174 kN/m3
K active = 0.238
K passive = 4.204
K0 = 0.400
Pst = 7698.933 kN/m
Psd = 18886.999 kN/m
Ps = Pst (shallow controls) = 7698.933 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 41531.1835
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 117023.7817
Yk = [c/(kx)]^(n/(n-1)) = 0.0005 m
Pk = 416.553 kN/m
Ym = b/60 = 0.0200 m
Pm = B ps = 3849.467 kN/m
Yu = 3b/80 = 0.0450 m
Pu = A Ps = 6775.061 kN/m
Maximum Es value = 807258.272 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00051601	416.55290
0.00229	1030.00804
0.00406	1459.70139
0.00583	1819.25202
0.00760	2137.70159
0.00937	2428.05614
0.01114	2697.53311
0.01291	2950.65152
0.01469	3190.47221
0.01646	3419.18685
0.01823	3638.43130
0.02000	3849.46650
0.03250	5312.26378
0.04500	6775.06105
0.05400	6775.06105
0.06300	6775.06105

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 4
Depth of top of Layer 4 below pile head = 13.000 m
Depth of p-y curve below pile head = 19.800 m
Depth of p-y curve below ground surface = 20.800 m
Equiv. depth of p-y curve below ground surface = 15.427 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 1200.000 mm
Angle of Friction = 38.000 degrees
Average Effective Unit Weight = 12.365 kN/m3
k_py = 56849.174 kN/m3

K active = 0.238
K passive = 4.204
K0 = 0.400
Pst = 16580.930 kN/m
Psd = 24558.828 kN/m
Ps = Pst (shallow controls) = 16580.930 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 89444.2946
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 252030.1304
Yk = [c/(kx)]^(n/(n-1)) = 0.0014 m
Pk = 1631.152 kN/m
Ym = b/60 = 0.0200 m
Pm = B ps = 8290.465 kN/m
Yu = 3b/80 = 0.0450 m
Pu = A Ps = 14591.218 kN/m
Maximum Es value = 1182462.821 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00138	1631.15228
0.00307	2654.14432
0.00477	3465.89413
0.00646	4169.49474
0.00815	4803.46523
0.00984	5387.44967
0.01154	5933.14373
0.01323	6448.20619
0.01492	6937.98929
0.01661	7406.41512
0.01831	7856.46367
0.02000	8290.46482
0.03250	11440.84145
0.04500	14591.21808
0.05400	14591.21808
0.06300	14591.21808

The above p-y curve was computed using internal default values of k.

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 100.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m

0.00	0.00140	0.00	100.0000	-3.60E-04	0.00	2850053.	-21.6553	1550.	0.00
0.2000	0.00133	19.5669	95.5819	-3.59E-04	115.3395	2850053.	-22.5261	3400.	0.00
0.4000	0.00125	38.2327	90.9946	-3.57E-04	225.3678	2850053.	-23.3465	3725.	0.00
0.6000	0.00118	55.9647	86.2485	-3.54E-04	329.8912	2850053.	-24.1142	4079.	0.00
0.8000	0.00111	72.7322	81.3544	-3.49E-04	428.7289	2850053.	-24.8270	4465.	0.00
1.0000	0.00104	88.5065	76.3234	-3.44E-04	521.7128	2850053.	-25.4827	4888.	0.00
1.2000	9.75E-04	103.2615	71.1673	-3.37E-04	608.6882	2850053.	-26.0792	5352.	0.00
1.4000	9.08E-04	116.9734	65.8979	-3.29E-04	689.5146	2850053.	-26.6144	5863.	0.00
1.6000	8.43E-04	129.6207	60.5279	-3.20E-04	764.0657	2850053.	-27.0861	6427.	0.00
1.8000	7.80E-04	141.1845	55.0700	-3.11E-04	832.2302	2850053.	-27.4923	7051.	0.00
2.0000	7.19E-04	151.6487	49.5377	-3.01E-04	893.9125	2850053.	-27.8310	7746.	0.00
2.2000	6.59E-04	160.9996	43.9446	-2.90E-04	949.0327	2850053.	-28.1000	8522.	0.00
2.4000	6.03E-04	169.2265	38.3049	-2.78E-04	997.5274	2850053.	-28.2974	9391.	0.00
2.6000	5.48E-04	176.3216	32.6330	-2.66E-04	1039.	2850053.	-28.4211	10368.	0.00
2.8000	4.96E-04	182.2797	26.9440	-2.53E-04	1074.	2850053.	-28.4690	11473.	0.00
3.0000	4.47E-04	187.0992	21.2532	-2.40E-04	1103.	2850053.	-28.4390	12728.	0.00
3.2000	4.00E-04	190.7810	15.5764	-2.27E-04	1125.	2850053.	-28.3290	14161.	0.00
3.4000	3.56E-04	193.3297	9.9298	-2.14E-04	1140.	2850053.	-28.1366	15807.	0.00
3.6000	3.15E-04	194.7530	4.3302	-2.00E-04	1148.	2850053.	-27.8594	17710.	0.00
3.8000	2.76E-04	195.0618	-1.2052	-1.86E-04	1150.	2850053.	-27.4948	19927.	0.00
4.0000	2.40E-04	194.2709	-6.6586	-1.73E-04	1145.	2850053.	-27.0398	22529.	0.00
4.2000	2.07E-04	192.3984	-12.0117	-1.59E-04	1134.	2850053.	-26.4911	25613.	0.00
4.4000	1.76E-04	189.4662	-17.2453	-1.46E-04	1117.	2850053.	-25.8445	29308.	0.00
4.6000	1.49E-04	185.5002	-22.3392	-1.33E-04	1093.	2850053.	-25.0951	33790.	0.00
4.8000	1.23E-04	180.5305	-27.2724	-1.20E-04	1064.	2850053.	-24.2364	39310.	0.00
5.0000	1.01E-04	174.5913	-32.0220	-1.07E-04	1029.	2850053.	-23.2600	46236.	0.00
5.2000	8.04E-05	167.7217	-36.5634	-9.53E-05	988.6568	2850053.	-22.1537	55127.	0.00
5.4000	6.25E-05	159.9659	-40.8688	-8.38E-05	942.9395	2850053.	-20.8999	66896.	0.00
5.6000	4.68E-05	151.3742	-44.9058	-7.29E-05	892.2943	2850053.	-19.4706	83134.	0.00
5.8000	3.33E-05	142.0036	-48.6177	-6.26E-05	837.0582	2850053.	-17.6486	105926.	0.00
6.0000	2.18E-05	131.9271	-52.0947	-5.30E-05	777.6609	2850053.	-17.1213	157098.	0.00
6.2000	1.21E-05	121.1657	-55.3420	-4.41E-05	714.2266	2850053.	-15.3513	253262.	0.00
6.4000	4.15E-06	109.7903	-57.9710	-3.60E-05	647.1727	2850053.	-10.9384	527245.	0.00
6.6000	-2.28E-06	97.9773	-58.1746	-2.87E-05	577.5397	2850053.	8.9025	779751.	0.00
6.8000	-7.34E-06	86.5204	-55.9488	-2.23E-05	510.0057	2850053.	13.3551	363847.	0.00
7.0000	-1.12E-05	75.5978	-53.0744	-1.66E-05	445.6207	2850053.	15.3896	275199.	0.00
7.2000	-1.40E-05	65.2907	-49.8772	-1.16E-05	384.8643	2850053.	16.5823	237456.	0.00
7.4000	-1.58E-05	55.6469	-46.4894	-7.38E-06	328.0177	2850053.	17.2957	218482.	0.00
7.6000	-1.69E-05	46.6949	-42.9912	-3.79E-06	275.2493	2850053.	17.6857	209080.	0.00
7.8000	-1.73E-05	38.4504	-39.4390	-7.99E-07	226.6509	2850053.	17.8366	205642.	0.00
8.0000	-1.72E-05	30.9193	-35.8753	1.64E-06	182.2580	2850053.	17.8006	206537.	0.00
8.2000	-1.67E-05	24.1003	-32.3340	3.57E-06	142.0623	2850053.	17.6127	211017.	0.00
8.4000	-1.58E-05	17.9858	-28.8429	5.04E-06	106.0194	2850053.	17.2979	218809.	0.00
8.6000	-1.47E-05	12.5631	-25.4256	6.11E-06	74.0550	2850053.	16.8747	229958.	0.00
8.8000	-1.34E-05	7.8155	-22.1025	6.83E-06	46.0695	2850053.	16.3572	244771.	0.00
9.0000	-1.19E-05	3.7222	-18.8911	7.23E-06	21.9407	2850053.	15.7565	263824.	0.00
9.2000	-1.05E-05	0.2591	-15.8074	7.37E-06	1.5271	2850053.	15.0808	288029.	0.00
9.4000	-9.00E-06	-2.6008	-12.8656	7.29E-06	15.3307	2850053.	14.3365	318757.	0.00
9.6000	-7.56E-06	-4.8872	-10.0793	7.03E-06	28.8081	2850053.	13.5272	358089.	0.00
9.8000	-6.18E-06	-6.6325	-7.4611	6.62E-06	39.0961	2850053.	12.6542	409272.	0.00
10.0000	-4.91E-06	-7.8716	-5.0242	6.12E-06	46.4003	2850053.	11.7150	477636.	0.00
10.2000	-3.74E-06	-8.6422	-2.7826	5.54E-06	50.9424	2850053.	10.7010	572625.	0.00
10.4000	-2.69E-06	-8.9847	-0.7533	4.92E-06	52.9613	2850053.	9.5925	712954.	0.00
10.6000	-1.77E-06	-8.9435	1.0405	4.29E-06	52.7185	2850053.	8.3455	942762.	0.00
10.8000	-9.75E-07	-8.5685	2.5597	3.67E-06	50.5079	2850053.	6.8462	1403692.	0.00
11.0000	-3.01E-07	-7.9196	3.2525	3.10E-06	46.6831	2850053.	0.08143	54155.	0.00
11.2000	2.63E-07	-7.2675	3.2534	2.56E-06	42.8391	2850053.	-0.07235	55057.	0.00
11.4000	7.24E-07	-6.6182	3.2259	2.08E-06	39.0121	2850053.	-0.2027	55960.	0.00
11.6000	1.09E-06	-5.9771	3.1745	1.63E-06	35.2329	2850053.	-0.3108	56862.	0.00
11.8000	1.38E-06	-5.3484	3.1037	1.24E-06	31.5270	2850053.	-0.3980	57765.	0.00
12.0000	1.59E-06	-4.7357	3.0173	8.82E-07	27.9150	2850053.	-0.4657	58668.	0.00
12.2000	1.73E-06	-4.1415	2.9192	5.71E-07	24.4127	2850053.	-0.5155	59570.	0.00
12.4000	1.82E-06	-3.5680	2.8127	3.01E-07	21.0320	2850053.	-0.5491	60473.	0.00
12.6000	1.85E-06	-3.0164	2.7010	6.95E-08	17.7807	2850053.	-0.5680	61375.	0.00
12.8000	1.84E-06	-2.4876	2.5868	-1.24E-07	14.6634	2850053.	-0.5741	62278.	0.00
13.0000	1.80E-06	-1.9817	2.4318	-2.80E-07	11.6815	2850053.	-0.9758	108328.	0.00
13.2000	1.73E-06	-1.5149	2.1944	-4.03E-07	8.9296	2850053.	-1.3978	161452.	0.00

13.4000	1.64E-06	-1.1040	1.9204	-4.95E-07	6.5074	2850053.	-1.3428	163726.	0.00
13.6000	1.53E-06	-0.7467	1.6588	-5.60E-07	4.4017	2850053.	-1.2729	166000.	0.00
13.8000	1.42E-06	-0.4404	1.4123	-6.02E-07	2.5962	2850053.	-1.1917	168274.	0.00
14.0000	1.29E-06	-0.1818	1.1829	-6.23E-07	1.0717	2850053.	-1.1025	170548.	0.00
14.2000	1.17E-06	0.03273	0.9718	-6.29E-07	0.1929	2850053.	-1.0084	172821.	0.00
14.4000	1.04E-06	0.2069	0.7798	-6.20E-07	1.2198	2850053.	-0.9118	175095.	0.00
14.6000	9.19E-07	0.3447	0.6071	-6.01E-07	2.0316	2850053.	-0.8149	177369.	0.00
14.8000	8.01E-07	0.4498	0.4537	-5.73E-07	2.6513	2850053.	-0.7195	179643.	0.00
15.0000	6.90E-07	0.5261	0.3190	-5.39E-07	3.1014	2850053.	-0.6273	181917.	0.00
15.2000	5.86E-07	0.5774	0.2024	-5.00E-07	3.4035	2850053.	-0.5393	184191.	0.00
15.4000	4.90E-07	0.6071	0.1028	-4.59E-07	3.5785	2850053.	-0.4565	186465.	0.00
15.6000	4.02E-07	0.6185	0.01919	-4.16E-07	3.6459	2850053.	-0.3795	188739.	0.00
15.8000	3.23E-07	0.6148	-0.04964	-3.72E-07	3.6238	2850053.	-0.3089	191013.	0.00
16.0000	2.53E-07	0.5987	-0.1050	-3.30E-07	3.5288	2850053.	-0.2447	193287.	0.00
16.2000	1.92E-07	0.5728	-0.1482	-2.89E-07	3.3762	2850053.	-0.1873	195561.	0.00
16.4000	1.38E-07	0.5394	-0.1806	-2.50E-07	3.1794	2850053.	-0.1363	197835.	0.00
16.6000	9.17E-08	0.5005	-0.2034	-2.13E-07	2.9504	2850053.	-0.09174	200109.	0.00
16.8000	5.26E-08	0.4580	-0.2179	-1.79E-07	2.6999	2850053.	-0.05321	202383.	0.00
17.0000	1.99E-08	0.4134	-0.2252	-1.49E-07	2.4368	2850053.	-0.02037	204657.	0.00
17.2000	-6.96E-09	0.3679	-0.2265	-1.21E-07	2.1688	2850053.	0.00720	206931.	0.00
17.4000	-2.87E-08	0.3228	-0.2228	-9.72E-08	1.9026	2850053.	0.02999	209205.	0.00
17.6000	-4.58E-08	0.2788	-0.2150	-7.61E-08	1.6435	2850053.	0.04848	211479.	0.00
17.8000	-5.91E-08	0.2368	-0.2038	-5.80E-08	1.3958	2850053.	0.06318	213753.	0.00
18.0000	-6.91E-08	0.1973	-0.1900	-4.28E-08	1.1629	2850053.	0.07459	216027.	0.00
18.2000	-7.62E-08	0.1608	-0.1743	-3.02E-08	0.9477	2850053.	0.08320	218301.	0.00
18.4000	-8.11E-08	0.1276	-0.1570	-2.01E-08	0.7521	2850053.	0.08949	220575.	0.00
18.6000	-8.43E-08	0.09798	-0.1386	-1.22E-08	0.5776	2850053.	0.09389	222849.	0.00
18.8000	-8.60E-08	0.07213	-0.1196	-6.22E-09	0.4252	2850053.	0.09682	225123.	0.00
19.0000	-8.68E-08	0.05015	-0.1000	-1.93E-09	0.2956	2850053.	0.09864	227397.	0.00
19.2000	-8.68E-08	0.03212	-0.08020	9.56E-10	0.1893	2850053.	0.09966	229671.	0.00
19.4000	-8.64E-08	0.01807	-0.06021	2.72E-09	0.1065	2850053.	0.1002	231945.	0.00
19.6000	-8.57E-08	0.00803	-0.04016	3.63E-09	0.04735	2850053.	0.1004	234219.	0.00
19.8000	-8.49E-08	0.00201	-0.02008	3.99E-09	0.01184	2850053.	0.1004	236493.	0.00
20.0000	-8.41E-08	0.00	0.00	4.06E-09	0.00	2850053.	0.1004	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

Pile-head deflection = 0.00139713 meters
Computed slope at pile head = -0.00035975 radians
Maximum bending moment = 195.06181170 kN-m
Maximum shear force = 100.00000000 kN
Depth of maximum bending moment = 3.80000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 18
Number of zero deflection points = 3

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 2

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 200.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.00502	3.09E-10	200.0000	-0.00107	1.82E-09	2850053.	-33.1714	660.4805	0.00

0.2000	0.00481	39.3366	193.2217	-0.00107	231.8744	2850053.	-34.6119	1440.	0.00
0.4000	0.00459	77.2887	186.1611	-0.00107	455.5879	2850053.	-35.9936	1567.	0.00
0.6000	0.00438	113.8010	178.8303	-0.00106	670.8146	2850053.	-37.3140	1703.	0.00
0.8000	0.00417	148.8208	171.2419	-0.00105	877.2432	2850053.	-38.5705	1850.	0.00
1.0000	0.00396	182.2978	163.4088	-0.00104	1075.	2850053.	-39.7606	2007.	0.00
1.2000	0.00376	214.1843	155.3445	-0.00102	1263.	2850053.	-40.8818	2177.	0.00
1.4000	0.00355	244.4356	147.0632	-0.00101	1441.	2850053.	-41.9316	2361.	0.00
1.6000	0.00335	273.0096	138.5793	-9.90E-04	1609.	2850053.	-42.9074	2560.	0.00
1.8000	0.00316	299.8673	129.9079	-9.70E-04	1768.	2850053.	-43.8070	2777.	0.00
2.0000	0.00296	324.9727	121.0644	-9.48E-04	1916.	2850053.	-44.6278	3012.	0.00
2.2000	0.00278	348.2931	112.0649	-9.25E-04	2053.	2850053.	-45.3673	3268.	0.00
2.4000	0.00259	369.7987	102.9258	-9.00E-04	2180.	2850053.	-46.0232	3549.	0.00
2.6000	0.00242	389.4634	93.6642	-8.73E-04	2296.	2850053.	-46.5930	3857.	0.00
2.8000	0.00224	407.2644	84.2975	-8.45E-04	2401.	2850053.	-47.0743	4195.	0.00
3.0000	0.00208	423.1824	74.8436	-8.16E-04	2495.	2850053.	-47.4645	4568.	0.00
3.2000	0.00192	437.2018	65.3210	-7.86E-04	2577.	2850053.	-47.7612	4980.	0.00
3.4000	0.00176	449.3108	55.7487	-7.55E-04	2649.	2850053.	-47.9619	5438.	0.00
3.6000	0.00162	459.5013	46.1461	-7.23E-04	2709.	2850053.	-48.0638	5948.	0.00
3.8000	0.00147	467.7692	36.5333	-6.90E-04	2757.	2850053.	-48.0643	6517.	0.00
4.0000	0.00134	474.1146	26.9308	-6.57E-04	2795.	2850053.	-47.9606	7157.	0.00
4.2000	0.00121	478.5416	17.3598	-6.24E-04	2821.	2850053.	-47.7496	7879.	0.00
4.4000	0.00109	481.0586	7.8420	-5.90E-04	2836.	2850053.	-47.4281	8696.	0.00
4.6000	9.76E-04	481.6784	-1.6000	-5.56E-04	2839.	2850053.	-46.9927	9628.	0.00
4.8000	8.68E-04	480.4185	-10.9432	-5.22E-04	2832.	2850053.	-46.4392	10697.	0.00
5.0000	7.67E-04	477.3011	-20.1635	-4.89E-04	2814.	2850053.	-45.7634	11931.	0.00
5.2000	6.73E-04	472.3531	-29.2358	-4.56E-04	2784.	2850053.	-44.9601	13366.	0.00
5.4000	5.85E-04	465.6068	-38.1341	-4.23E-04	2745.	2850053.	-44.0229	15052.	0.00
5.6000	5.04E-04	457.0995	-46.8309	-3.90E-04	2694.	2850053.	-42.9445	17051.	0.00
5.8000	4.29E-04	446.8744	-55.2571	-3.59E-04	2634.	2850053.	-41.3178	19268.	0.00
6.0000	3.60E-04	434.9966	-63.7438	-3.28E-04	2564.	2850053.	-43.5496	24174.	0.00
6.2000	2.98E-04	421.3769	-72.5500	-2.98E-04	2484.	2850053.	-44.5124	29890.	0.00
6.4000	2.41E-04	405.9766	-81.2079	-2.68E-04	2393.	2850053.	-42.0666	34868.	0.00
6.6000	1.90E-04	388.8937	-89.3550	-2.41E-04	2292.	2850053.	-39.4041	41382.	0.00
6.8000	1.45E-04	370.2346	-96.9206	-2.14E-04	2182.	2850053.	-36.2516	49985.	0.00
7.0000	1.05E-04	350.1255	-103.7997	-1.89E-04	2064.	2850053.	-32.5391	62066.	0.00
7.2000	6.96E-05	328.7148	-109.8923	-1.65E-04	1938.	2850053.	-28.3873	81606.	0.00
7.4000	3.89E-05	306.1685	-115.0710	-1.43E-04	1805.	2850053.	-23.3996	120295.	0.00
7.6000	1.25E-05	282.6864	-119.0191	-1.22E-04	1666.	2850053.	-16.0816	256632.	0.00
7.8000	-9.87E-06	258.5609	-119.1546	-1.03E-04	1524.	2850053.	14.7268	298393.	0.00
8.0000	-2.86E-05	235.0245	-115.5748	-8.56E-05	1385.	2850053.	21.0709	147115.	0.00
8.2000	-4.41E-05	212.3310	-111.0329	-6.99E-05	1252.	2850053.	24.3482	110369.	0.00
8.4000	-5.66E-05	190.6114	-105.9516	-5.58E-05	1124.	2850053.	26.4651	93487.	0.00
8.6000	-6.64E-05	169.9503	-100.5132	-4.31E-05	1002.	2850053.	27.9183	84042.	0.00
8.8000	-7.39E-05	150.4061	-94.8288	-3.19E-05	886.5877	2850053.	28.9257	78311.	0.00
9.0000	-7.92E-05	132.0188	-88.9756	-2.20E-05	778.2017	2850053.	29.6064	74764.	0.00
9.2000	-8.27E-05	114.8158	-83.0116	-1.33E-05	676.7964	2850053.	30.0341	72659.	0.00
9.4000	-8.45E-05	98.8142	-76.9823	-5.84E-06	582.4727	2850053.	30.2588	71592.	0.00
9.6000	-8.50E-05	84.0229	-70.9248	5.80E-07	495.2836	2850053.	30.3160	71327.	0.00
9.8000	-8.43E-05	70.4443	-64.8699	6.00E-06	415.2426	2850053.	30.2326	71727.	0.00
10.0000	-8.26E-05	58.0749	-58.8438	1.05E-05	342.3300	2850053.	30.0292	72705.	0.00
10.2000	-8.01E-05	46.9067	-52.8686	1.42E-05	276.4978	2850053.	29.7225	74217.	0.00
10.4000	-7.69E-05	36.9275	-46.9638	1.71E-05	217.6737	2850053.	29.3258	76242.	0.00
10.6000	-7.32E-05	28.1212	-41.1462	1.94E-05	165.7642	2850053.	28.8502	78780.	0.00
10.8000	-6.92E-05	20.4690	-35.4307	2.11E-05	120.6572	2850053.	28.3044	81850.	0.00
11.0000	-6.48E-05	13.9490	-30.8458	2.23E-05	82.2239	2850053.	17.5444	54155.	0.00
11.2000	-6.02E-05	8.1307	-27.4333	2.31E-05	47.9273	2850053.	16.5805	55057.	0.00
11.4000	-5.56E-05	2.9756	-24.2209	2.35E-05	17.5402	2850053.	15.5435	55960.	0.00
11.6000	-5.08E-05	-1.5577	-21.2213	2.35E-05	9.1819	2850053.	14.4524	56862.	0.00
11.8000	-4.61E-05	-5.5129	-18.4436	2.33E-05	32.4965	2850053.	13.3250	57765.	0.00
12.0000	-4.15E-05	-8.9351	-15.8933	2.28E-05	52.6691	2850053.	12.1779	58668.	0.00
12.2000	-3.70E-05	-11.8702	-13.5728	2.21E-05	69.9705	2850053.	11.0264	59570.	0.00
12.4000	-3.27E-05	-14.3642	-11.4817	2.11E-05	84.6719	2850053.	9.8848	60473.	0.00
12.6000	-2.86E-05	-16.4629	-9.6166	2.01E-05	97.0427	2850053.	8.7659	61375.	0.00
12.8000	-2.47E-05	-18.2109	-7.9719	1.88E-05	107.3465	2850053.	7.6818	62278.	0.00
13.0000	-2.10E-05	-19.6516	-6.0647	1.75E-05	115.8391	2850053.	11.3904	108328.	0.00
13.2000	-1.77E-05	-20.6368	-3.4996	1.61E-05	121.6461	2850053.	14.2603	161452.	0.00
13.4000	-1.46E-05	-21.0515	-0.8791	1.46E-05	124.0907	2850053.	11.9442	163726.	0.00

13.6000	-1.18E-05	-20.9884	1.2956	1.32E-05	123.7190	2850053.	9.8034	166000.	0.00
13.8000	-9.33E-06	-20.5332	3.0607	1.17E-05	121.0358	2850053.	7.8472	168274.	0.00
14.0000	-7.13E-06	-19.7641	4.4535	1.03E-05	116.5023	2850053.	6.0803	170548.	0.00
14.2000	-5.21E-06	-18.7519	5.5118	8.94E-06	110.5352	2850053.	4.5032	172821.	0.00
14.4000	-3.56E-06	-17.5594	6.2734	7.66E-06	103.5063	2850053.	3.1127	175095.	0.00
14.6000	-2.15E-06	-16.2425	6.7750	6.48E-06	95.7435	2850053.	1.9032	177369.	0.00
14.8000	-9.65E-07	-14.8494	7.0520	5.39E-06	87.5319	2850053.	0.8665	179643.	0.00
15.0000	8.40E-09	-13.4217	7.1378	4.39E-06	79.1160	2850053.	-0.00764	181917.	0.00
15.2000	7.93E-07	-11.9943	7.0640	3.50E-06	70.7019	2850053.	-0.7304	184191.	0.00
15.4000	1.41E-06	-10.5961	6.8596	2.71E-06	62.4601	2850053.	-1.3140	186465.	0.00
15.6000	1.88E-06	-9.2505	6.5511	2.01E-06	54.5280	2850053.	-1.7713	188739.	0.00
15.8000	2.21E-06	-7.9757	6.1624	1.41E-06	47.0136	2850053.	-2.1153	191013.	0.00
16.0000	2.44E-06	-6.7855	5.7150	8.91E-07	39.9980	2850053.	-2.3587	193287.	0.00
16.2000	2.57E-06	-5.6897	5.2277	4.53E-07	33.5385	2850053.	-2.5142	195561.	0.00
16.4000	2.62E-06	-4.6944	4.7169	8.91E-08	27.6718	2850053.	-2.5936	197835.	0.00
16.6000	2.61E-06	-3.8029	4.1968	-2.09E-07	22.4166	2850053.	-2.6083	200109.	0.00
16.8000	2.54E-06	-3.0157	3.6791	-4.48E-07	17.7765	2850053.	-2.5686	202383.	0.00
17.0000	2.43E-06	-2.3313	3.1738	-6.36E-07	13.7420	2850053.	-2.4841	204657.	0.00
17.2000	2.28E-06	-1.7462	2.6891	-7.79E-07	10.2932	2850053.	-2.3631	206931.	0.00
17.4000	2.12E-06	-1.2556	2.2314	-8.84E-07	7.4015	2850053.	-2.2133	209205.	0.00
17.6000	1.93E-06	-0.8536	1.8060	-9.58E-07	5.0318	2850053.	-2.0411	211479.	0.00
17.8000	1.73E-06	-0.5332	1.4167	-1.01E-06	3.1433	2850053.	-1.8518	213753.	0.00
18.0000	1.53E-06	-0.2869	1.0665	-1.04E-06	1.6914	2850053.	-1.6499	216027.	0.00
18.2000	1.32E-06	-0.1066	0.7577	-1.05E-06	0.6285	2850053.	-1.4389	218301.	0.00
18.4000	1.11E-06	0.01612	0.4916	-1.05E-06	0.09503	2850053.	-1.2216	220575.	0.00
18.6000	8.97E-07	0.09001	0.2695	-1.05E-06	0.5306	2850053.	-0.9997	222849.	0.00
18.8000	6.88E-07	0.1239	0.09205	-1.04E-06	0.7304	2850053.	-0.7745	225123.	0.00
19.0000	4.81E-07	0.1268	-0.04004	-1.03E-06	0.7476	2850053.	-0.5464	227397.	0.00
19.2000	2.75E-07	0.1079	-0.1263	-1.02E-06	0.6360	2850053.	-0.3157	229671.	0.00
19.4000	7.08E-08	0.07633	-0.1660	-1.02E-06	0.4499	2850053.	-0.08212	231945.	0.00
19.6000	-1.32E-07	0.04148	-0.1588	-1.01E-06	0.2445	2850053.	0.1549	234219.	0.00
19.8000	-3.35E-07	0.01282	-0.1037	-1.01E-06	0.07559	2850053.	0.3958	236493.	0.00
20.0000	-5.37E-07	0.00	0.00	-1.01E-06	0.00	2850053.	0.6411	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 2:

Pile-head deflection = 0.00502231 meters
Computed slope at pile head = -0.00107158 radians
Maximum bending moment = 481.67839869 kN-m
Maximum shear force = 200.00000000 kN
Depth of maximum bending moment = 4.60000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 21
Number of zero deflection points = 3

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 3

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 400.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.01761	-1.98E-09	400.0000	-0.00313	1.17E-08	2850053.	-50.3895	286.1945	0.00
0.2000	0.01698	78.9922	389.6903	-0.00313	465.6297	2850053.	-52.7070	620.8100	0.00

0.4000	0.01635	155.8761	378.9240	-0.00312	918.8318	2850053.	-54.9564	672.0634	0.00
0.6000	0.01573	230.5618	367.7149	-0.00311	1359.	2850053.	-57.1347	726.3893	0.00
0.8000	0.01511	302.9621	356.0775	-0.00309	1786.	2850053.	-59.2391	784.0517	0.00
1.0000	0.01450	372.9928	344.0269	-0.00307	2199.	2850053.	-61.2667	845.3412	0.00
1.2000	0.01388	440.5729	331.5788	-0.00304	2597.	2850053.	-63.2146	910.5784	0.00
1.4000	0.01328	505.6243	318.7493	-0.00300	2980.	2850053.	-65.0800	980.1177	0.00
1.6000	0.01268	568.0726	305.5553	-0.00297	3349.	2850053.	-66.8600	1054.	0.00
1.8000	0.01209	627.8465	292.0142	-0.00292	3701.	2850053.	-68.5518	1134.	0.00
2.0000	0.01151	684.8783	278.1437	-0.00288	4037.	2850053.	-70.1525	1219.	0.00
2.2000	0.01094	739.1040	263.9625	-0.00283	4357.	2850053.	-71.6595	1310.	0.00
2.4000	0.01038	790.4633	249.4896	-0.00278	4659.	2850053.	-73.0697	1408.	0.00
2.6000	0.00983	838.8998	234.7446	-0.00272	4945.	2850053.	-74.3806	1513.	0.00
2.8000	0.00929	884.3611	219.7476	-0.00266	5213.	2850053.	-75.5892	1627.	0.00
3.0000	0.00877	926.7988	204.5194	-0.00259	5463.	2850053.	-76.6928	1749.	0.00
3.2000	0.00826	966.1689	189.0812	-0.00253	5695.	2850053.	-77.6886	1882.	0.00
3.4000	0.00776	1002.	173.4550	-0.00246	5909.	2850053.	-78.5738	2026.	0.00
3.6000	0.00727	1036.	157.6631	-0.00239	6104.	2850053.	-79.3456	2182.	0.00
3.8000	0.00680	1065.	141.7284	-0.00231	6281.	2850053.	-80.0011	2352.	0.00
4.0000	0.00635	1092.	125.6745	-0.00224	6438.	2850053.	-80.5375	2538.	0.00
4.2000	0.00591	1116.	109.5256	-0.00216	6577.	2850053.	-80.9520	2741.	0.00
4.4000	0.00548	1136.	93.3062	-0.00208	6697.	2850053.	-81.2416	2963.	0.00
4.6000	0.00508	1153.	77.0417	-0.00200	6797.	2850053.	-81.4033	3208.	0.00
4.8000	0.00468	1167.	60.7580	-0.00192	6878.	2850053.	-81.4341	3478.	0.00
5.0000	0.00431	1177.	44.4815	-0.00184	6940.	2850053.	-81.3308	3776.	0.00
5.2000	0.00395	1185.	28.2394	-0.00175	6983.	2850053.	-81.0901	4108.	0.00
5.4000	0.00361	1189.	12.0596	-0.00167	7007.	2850053.	-80.7086	4477.	0.00
5.6000	0.00328	1189.	-4.0296	-0.00159	7012.	2850053.	-80.1826	4889.	0.00
5.8000	0.00297	1187.	-19.9229	-0.00150	6997.	2850053.	-78.7509	5302.	0.00
6.0000	0.00268	1182.	-36.2958	-0.00142	6965.	2850053.	-84.9782	6346.	0.00
6.2000	0.00240	1173.	-53.7188	-0.00134	6912.	2850053.	-89.2513	7431.	0.00
6.4000	0.00214	1160.	-71.3534	-0.00126	6838.	2850053.	-87.0945	8129.	0.00
6.6000	0.00190	1144.	-88.5428	-0.00118	6744.	2850053.	-84.7999	8928.	0.00
6.8000	0.00167	1125.	-105.2099	-0.00110	6629.	2850053.	-81.8709	9790.	0.00
7.0000	0.00146	1102.	-121.2237	-0.00102	6495.	2850053.	-78.2669	10713.	0.00
7.2000	0.00127	1076.	-136.5105	-9.42E-04	6343.	2850053.	-74.6015	11793.	0.00
7.4000	0.00108	1047.	-151.0572	-8.67E-04	6174.	2850053.	-70.8659	13069.	0.00
7.6000	9.18E-04	1016.	-164.8486	-7.95E-04	5987.	2850053.	-67.0480	14602.	0.00
7.8000	7.67E-04	981.3887	-177.8665	-7.25E-04	5785.	2850053.	-63.1308	16472.	0.00
8.0000	6.28E-04	944.5528	-190.0886	-6.57E-04	5568.	2850053.	-59.0904	18804.	0.00
8.2000	5.04E-04	905.3533	-201.4868	-5.92E-04	5337.	2850053.	-54.8911	21795.	0.00
8.4000	3.92E-04	863.9581	-212.0237	-5.30E-04	5093.	2850053.	-50.4782	25780.	0.00
8.6000	2.92E-04	820.5438	-221.6477	-4.71E-04	4837.	2850053.	-45.7617	31382.	0.00
8.8000	2.03E-04	775.2990	-230.2817	-4.15E-04	4570.	2850053.	-40.5785	39941.	0.00
9.0000	1.26E-04	728.4311	-237.7982	-3.62E-04	4294.	2850053.	-34.5863	55062.	0.00
9.2000	5.83E-05	680.1798	-243.9383	-3.13E-04	4009.	2850053.	-26.8148	92013.	0.00
9.4000	4.88E-07	630.8558	-246.6474	-2.67E-04	3719.	2850053.	-0.2761	113190.	0.00
9.6000	-4.85E-05	581.5208	-244.1687	-2.24E-04	3428.	2850053.	25.0630	103449.	0.00
9.8000	-8.92E-05	533.1883	-238.5856	-1.85E-04	3143.	2850053.	30.7678	68958.	0.00
10.0000	-1.23E-04	486.0866	-232.0873	-1.49E-04	2865.	2850053.	34.2156	55847.	0.00
10.2000	-1.49E-04	440.3534	-225.0127	-1.17E-04	2596.	2850053.	36.5305	49031.	0.00
10.4000	-1.69E-04	396.0815	-217.5471	-8.76E-05	2335.	2850053.	38.1249	45037.	0.00
10.6000	-1.84E-04	353.3345	-209.8142	-6.13E-05	2083.	2850053.	39.2046	42604.	0.00
10.8000	-1.94E-04	312.1558	-201.9047	-3.79E-05	1840.	2850053.	39.8901	41162.	0.00
11.0000	-1.99E-04	272.5727	-192.5215	-1.74E-05	1607.	2850053.	53.9425	54155.	0.00
11.2000	-2.01E-04	235.1472	-181.5998	3.95E-07	1386.	2850053.	55.2741	55057.	0.00
11.4000	-1.99E-04	199.9327	-170.5028	1.57E-05	1179.	2850053.	55.6964	55960.	0.00
11.6000	-1.95E-04	166.9461	-159.4026	2.85E-05	984.0852	2850053.	55.3053	56862.	0.00
11.8000	-1.88E-04	136.1717	-148.4524	3.92E-05	802.6815	2850053.	54.1966	57765.	0.00
12.0000	-1.79E-04	107.5652	-137.7862	4.77E-05	634.0565	2850053.	52.4652	58668.	0.00
12.2000	-1.69E-04	81.0572	-127.5192	5.43E-05	477.8021	2850053.	50.2048	59570.	0.00
12.4000	-1.57E-04	56.5575	-117.7480	5.92E-05	333.3852	2850053.	47.5074	60473.	0.00
12.6000	-1.45E-04	33.9580	-108.5509	6.23E-05	200.1698	2850053.	44.4633	61375.	0.00
12.8000	-1.32E-04	13.1371	-99.9886	6.40E-05	77.4383	2850053.	41.1603	62278.	0.00
13.0000	-1.19E-04	-6.0374	-89.4113	6.42E-05	35.5883	2850053.	64.6130	108328.	0.00
13.2000	-1.06E-04	-22.6274	-74.3539	6.32E-05	133.3802	2850053.	85.9608	161452.	0.00
13.4000	-9.40E-05	-35.7790	-58.0630	6.12E-05	210.9037	2850053.	76.9476	163726.	0.00
13.6000	-8.20E-05	-45.8526	-43.5616	5.83E-05	270.2842	2850053.	68.0672	166000.	0.00

13.8000	-7.07E-05	-53.2036	-30.8093	5.49E-05	313.6154	2850053.	59.4556	168274.	0.00
14.0000	-6.01E-05	-58.1763	-19.7414	5.09E-05	342.9279	2850053.	51.2229	170548.	0.00
14.2000	-5.03E-05	-61.1002	-10.2737	4.68E-05	360.1628	2850053.	43.4547	172821.	0.00
14.4000	-4.14E-05	-62.2858	-2.3067	4.24E-05	367.1517	2850053.	36.2149	175095.	0.00
14.6000	-3.33E-05	-62.0229	4.2695	3.81E-05	365.6017	2850053.	29.5474	177369.	0.00
14.8000	-2.61E-05	-60.5780	9.5721	3.38E-05	357.0849	2850053.	23.4788	179643.	0.00
15.0000	-1.98E-05	-58.1940	13.7220	2.96E-05	343.0321	2850053.	18.0203	181917.	0.00
15.2000	-1.43E-05	-55.0892	16.8411	2.56E-05	324.7304	2850053.	13.1701	184191.	0.00
15.4000	-9.56E-06	-51.4576	19.0496	2.19E-05	303.3234	2850053.	8.9154	186465.	0.00
15.6000	-5.55E-06	-47.4694	20.4646	1.84E-05	279.8142	2850053.	5.2345	188739.	0.00
15.8000	-2.20E-06	-43.2718	21.1979	1.52E-05	255.0709	2850053.	2.0986	191013.	0.00
16.0000	5.45E-07	-38.9902	21.3551	1.23E-05	229.8327	2850053.	-0.5265	193287.	0.00
16.2000	2.74E-06	-34.7297	21.0346	9.76E-06	204.7186	2850053.	-2.6790	195561.	0.00
16.4000	4.45E-06	-30.5764	20.3268	7.46E-06	180.2362	2850053.	-4.3991	197835.	0.00
16.6000	5.73E-06	-26.5990	19.3140	5.46E-06	156.7911	2850053.	-5.7288	200109.	0.00
16.8000	6.63E-06	-22.8508	18.0701	3.72E-06	134.6967	2850053.	-6.7098	202383.	0.00
17.0000	7.22E-06	-19.3709	16.6608	2.24E-06	114.1844	2850053.	-7.3831	204657.	0.00
17.2000	7.53E-06	-16.1864	15.1437	9.95E-07	95.4129	2850053.	-7.7885	206931.	0.00
17.4000	7.61E-06	-13.3135	13.5685	-4.05E-08	78.4779	2850053.	-7.9633	209205.	0.00
17.6000	7.51E-06	-10.7590	11.9779	-8.85E-07	63.4204	2850053.	-7.9426	211479.	0.00
17.8000	7.26E-06	-8.5223	10.4078	-1.56E-06	50.2357	2850053.	-7.7581	213753.	0.00
18.0000	6.89E-06	-6.5959	8.8882	-2.09E-06	38.8803	2850053.	-7.4387	216027.	0.00
18.2000	6.42E-06	-4.9670	7.4433	-2.50E-06	29.2788	2850053.	-7.0097	218301.	0.00
18.4000	5.89E-06	-3.6186	6.0930	-2.80E-06	21.3300	2850053.	-6.4934	220575.	0.00
18.6000	5.30E-06	-2.5298	4.8529	-3.01E-06	14.9123	2850053.	-5.9082	222849.	0.00
18.8000	4.68E-06	-1.6774	3.7351	-3.16E-06	9.8877	2850053.	-5.2699	225123.	0.00
19.0000	4.04E-06	-1.0358	2.7490	-3.26E-06	6.1056	2850053.	-4.5906	227397.	0.00
19.2000	3.38E-06	-0.5778	1.9020	-3.31E-06	3.4059	2850053.	-3.8800	229671.	0.00
19.4000	2.71E-06	-0.2750	1.1995	-3.34E-06	1.6211	2850053.	-3.1450	231945.	0.00
19.6000	2.04E-06	-0.09801	0.6459	-3.36E-06	0.5778	2850053.	-2.3903	234219.	0.00
19.8000	1.37E-06	-0.01663	0.2450	-3.36E-06	0.09804	2850053.	-1.6187	236493.	0.00
20.0000	6.97E-07	0.00	0.00	-3.36E-06	0.00	2850053.	-0.8316	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 3:

Pile-head deflection = 0.01760674 meters
Computed slope at pile head = -0.00313332 radians
Maximum bending moment = 1189. kN-m
Maximum shear force = 400.00000000 kN
Depth of maximum bending moment = 5.60000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 24
Number of zero deflection points = 2

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 4

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 600.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.03658	7.91E-09	600.0000	-0.00584	4.66E-08	2850053.	-64.2953	175.7897	0.00
0.2000	0.03541	118.7141	586.8368	-0.00584	699.7754	2850053.	-67.3367	380.3662	0.00
0.4000	0.03424	234.7347	573.0727	-0.00583	1384.	2850053.	-70.3045	410.6681	0.00

0.6000	0.03308	347.9432	558.7227	-0.00581	2051.	2850053.	-73.1954	442.6006	0.00
0.8000	0.03192	458.2238	543.8025	-0.00578	2701.	2850053.	-76.0065	476.2889	0.00
1.0000	0.03076	565.4642	528.3284	-0.00574	3333.	2850053.	-78.7347	511.8698	0.00
1.2000	0.02962	669.5551	512.3172	-0.00570	3947.	2850053.	-81.3768	549.4923	0.00
1.4000	0.02848	770.3910	495.7866	-0.00565	4541.	2850053.	-83.9298	589.3194	0.00
1.6000	0.02736	867.8698	478.7545	-0.00559	5116.	2850053.	-86.3907	631.5297	0.00
1.8000	0.02625	961.8928	461.2398	-0.00553	5670.	2850053.	-88.7564	676.3190	0.00
2.0000	0.02515	1052.	443.2618	-0.00546	6203.	2850053.	-91.0240	723.9022	0.00
2.2000	0.02406	1139.	424.8403	-0.00538	6715.	2850053.	-93.1904	774.5163	0.00
2.4000	0.02300	1222.	405.9960	-0.00530	7205.	2850053.	-95.2526	828.4225	0.00
2.6000	0.02195	1302.	386.7500	-0.00521	7672.	2850053.	-97.2077	885.9092	0.00
2.8000	0.02091	1377.	367.1240	-0.00511	8117.	2850053.	-99.0526	947.2961	0.00
3.0000	0.01990	1448.	347.1403	-0.00502	8538.	2850053.	-100.7845	1013.	0.00
3.2000	0.01891	1516.	326.8218	-0.00491	8935.	2850053.	-102.4003	1083.	0.00
3.4000	0.01793	1579.	306.1920	-0.00480	9309.	2850053.	-103.8972	1159.	0.00
3.6000	0.01699	1638.	285.2751	-0.00469	9657.	2850053.	-105.2722	1240.	0.00
3.8000	0.01606	1693.	264.0956	-0.00457	9981.	2850053.	-106.5224	1327.	0.00
4.0000	0.01516	1744.	242.6789	-0.00445	10280.	2850053.	-107.6448	1420.	0.00
4.2000	0.01428	1790.	221.0508	-0.00433	10553.	2850053.	-108.6367	1522.	0.00
4.4000	0.01342	1832.	199.2376	-0.00420	10801.	2850053.	-109.4951	1631.	0.00
4.6000	0.01260	1870.	177.2664	-0.00407	11023.	2850053.	-110.2170	1750.	0.00
4.8000	0.01180	1903.	155.1647	-0.00394	11219.	2850053.	-110.7997	1879.	0.00
5.0000	0.01102	1932.	132.9607	-0.00380	11389.	2850053.	-111.2401	2019.	0.00
5.2000	0.01027	1956.	110.6832	-0.00367	11533.	2850053.	-111.5354	2171.	0.00
5.4000	0.00955	1976.	88.3614	-0.00353	11650.	2850053.	-111.6826	2338.	0.00
5.6000	0.00886	1992.	66.0252	-0.00339	11741.	2850053.	-111.6788	2520.	0.00
5.8000	0.00820	2003.	43.8115	-0.00325	11806.	2850053.	-110.4585	2695.	0.00
6.0000	0.00756	2009.	20.7551	-0.00311	11844.	2850053.	-120.1056	3177.	0.00
6.2000	0.00695	2011.	-3.9752	-0.00297	11855.	2850053.	-127.1970	3658.	0.00
6.4000	0.00637	2008.	-29.2204	-0.00283	11835.	2850053.	-125.2555	3930.	0.00
6.6000	0.00582	1999.	-54.0639	-0.00269	11786.	2850053.	-123.1793	4231.	0.00
6.8000	0.00530	1986.	-78.4063	-0.00255	11708.	2850053.	-120.2451	4538.	0.00
7.0000	0.00480	1968.	-102.0683	-0.00241	11601.	2850053.	-116.3741	4845.	0.00
7.2000	0.00434	1945.	-124.9523	-0.00227	11467.	2850053.	-112.4662	5187.	0.00
7.4000	0.00390	1918.	-147.0509	-0.00214	11306.	2850053.	-108.5202	5571.	0.00
7.6000	0.00348	1886.	-168.3564	-0.00200	11120.	2850053.	-104.5342	6004.	0.00
7.8000	0.00309	1851.	-188.8604	-0.00187	10909.	2850053.	-100.5060	6495.	0.00
8.0000	0.00273	1811.	-208.5543	-0.00174	10675.	2850053.	-96.4326	7056.	0.00
8.2000	0.00240	1767.	-227.4285	-0.00162	10418.	2850053.	-92.3098	7700.	0.00
8.4000	0.00209	1720.	-245.4727	-0.00149	10139.	2850053.	-88.1322	8447.	0.00
8.6000	0.00180	1669.	-262.6752	-0.00138	9839.	2850053.	-83.8926	9323.	0.00
8.8000	0.00154	1615.	-279.0226	-0.00126	9519.	2850053.	-79.5814	10360.	0.00
9.0000	0.00130	1558.	-294.4993	-0.00115	9181.	2850053.	-75.1854	11607.	0.00
9.2000	0.00108	1497.	-309.0865	-0.00104	8825.	2850053.	-70.6864	13132.	0.00
9.4000	8.79E-04	1434.	-322.7609	-9.39E-04	8452.	2850053.	-66.0583	15037.	0.00
9.6000	7.01E-04	1368.	-335.4931	-8.41E-04	8064.	2850053.	-61.2631	17483.	0.00
9.8000	5.42E-04	1300.	-347.2436	-7.47E-04	7661.	2850053.	-56.2419	20745.	0.00
10.0000	4.02E-04	1229.	-357.9576	-6.59E-04	7245.	2850053.	-50.8979	25330.	0.00
10.2000	2.79E-04	1156.	-367.5530	-5.75E-04	6817.	2850053.	-45.0566	32325.	0.00
10.4000	1.72E-04	1082.	-375.8938	-4.96E-04	6378.	2850053.	-38.3513	44622.	0.00
10.6000	8.02E-05	1006.	-382.7038	-4.23E-04	5931.	2850053.	-29.7490	74179.	0.00
10.8000	2.64E-06	929.0001	-386.6373	-3.55E-04	5476.	2850053.	-9.5860	725689.	0.00
11.0000	-6.19E-05	851.4809	-385.9202	-2.93E-04	5019.	2850053.	16.7571	54155.	0.00
11.2000	-1.14E-04	774.6320	-381.0935	-2.36E-04	4566.	2850053.	31.5103	55057.	0.00
11.4000	-1.56E-04	699.0435	-373.5728	-1.84E-04	4121.	2850053.	43.6961	55960.	0.00
11.6000	-1.88E-04	625.2028	-363.8563	-1.38E-04	3685.	2850053.	53.4690	56862.	0.00
11.8000	-2.11E-04	553.5010	-352.4099	-9.62E-05	3263.	2850053.	60.9954	57765.	0.00
12.0000	-2.27E-04	484.2389	-339.6652	-5.98E-05	2854.	2850053.	66.4518	58668.	0.00
12.2000	-2.35E-04	417.6349	-326.0177	-2.81E-05	2462.	2850053.	70.0225	59570.	0.00
12.4000	-2.38E-04	353.8318	-311.8257	-1.06E-06	2086.	2850053.	71.8981	60473.	0.00
12.6000	-2.36E-04	292.9046	-297.4084	2.16E-05	1727.	2850053.	72.2741	61375.	0.00
12.8000	-2.29E-04	234.8684	-283.0461	4.02E-05	1384.	2850053.	71.3496	62278.	0.00
13.0000	-2.19E-04	179.6862	-264.0246	5.47E-05	1059.	2850053.	118.8652	108328.	0.00
13.2000	-2.07E-04	129.2586	-235.4074	6.55E-05	761.9311	2850053.	167.3073	161452.	0.00
13.4000	-1.93E-04	85.5232	-202.8575	7.31E-05	504.1277	2850053.	158.1908	163726.	0.00
13.6000	-1.78E-04	48.1156	-172.2625	7.78E-05	283.6233	2850053.	147.7594	166000.	0.00
13.8000	-1.62E-04	16.6182	-143.8452	8.00E-05	97.9583	2850053.	136.4139	168274.	0.00

14.0000	-1.46E-04	-9.4225	-117.7530	8.03E-05	55.5422	2850053.	124.5081	170548.	0.00
14.2000	-1.30E-04	-30.4830	-94.0672	7.89E-05	179.6857	2850053.	112.3499	172821.	0.00
14.4000	-1.14E-04	-47.0494	-72.8119	7.62E-05	277.3386	2850053.	100.2027	175095.	0.00
14.6000	-9.96E-05	-59.6077	-53.9629	7.24E-05	351.3653	2850053.	88.2872	177369.	0.00
14.8000	-8.55E-05	-68.6346	-37.4558	6.79E-05	404.5752	2850053.	76.7842	179643.	0.00
15.0000	-7.24E-05	-74.5900	-23.1936	6.29E-05	439.6805	2850053.	65.8375	181917.	0.00
15.2000	-6.03E-05	-77.9120	-11.0542	5.75E-05	459.2623	2850053.	55.5569	184191.	0.00
15.4000	-4.94E-05	-79.0117	-0.8963	5.20E-05	465.7446	2850053.	46.0217	186465.	0.00
15.6000	-3.95E-05	-78.2705	7.4342	4.65E-05	461.3757	2850053.	37.2837	188739.	0.00
15.8000	-3.08E-05	-76.0380	14.0996	4.11E-05	448.2159	2850053.	29.3707	191013.	0.00
16.0000	-2.31E-05	-72.6307	19.2657	3.59E-05	428.1309	2850053.	22.2900	193287.	0.00
16.2000	-1.64E-05	-68.3317	23.0978	3.09E-05	402.7902	2850053.	16.0312	195561.	0.00
16.4000	-1.07E-05	-63.3916	25.7579	2.63E-05	373.6696	2850053.	10.5694	197835.	0.00
16.6000	-5.86E-06	-58.0286	27.4016	2.21E-05	342.0569	2850053.	5.8679	200109.	0.00
16.8000	-1.86E-06	-52.4309	28.1765	1.82E-05	309.0607	2850053.	1.8810	202383.	0.00
17.0000	1.41E-06	-46.7580	28.2202	1.47E-05	275.6209	2850053.	-1.4441	204657.	0.00
17.2000	4.03E-06	-41.1428	27.6593	1.16E-05	242.5216	2850053.	-4.1646	206931.	0.00
17.4000	6.06E-06	-35.6943	26.6088	8.93E-06	210.4043	2850053.	-6.3404	209205.	0.00
17.6000	7.60E-06	-30.4993	25.1715	6.61E-06	179.7820	2850053.	-8.0329	211479.	0.00
17.8000	8.70E-06	-25.6256	23.4379	4.64E-06	151.0537	2850053.	-9.3028	213753.	0.00
18.0000	9.45E-06	-21.1241	21.4867	3.00E-06	124.5188	2850053.	-10.2094	216027.	0.00
18.2000	9.90E-06	-17.0310	19.3849	1.66E-06	100.3912	2850053.	-10.8094	218301.	0.00
18.4000	1.01E-05	-13.3702	17.1883	5.92E-07	78.8122	2850053.	-11.1560	220575.	0.00
18.6000	1.01E-05	-10.1556	14.9429	-2.33E-07	59.8637	2850053.	-11.2984	222849.	0.00
18.8000	1.00E-05	-7.3930	12.6849	-8.49E-07	43.5791	2850053.	-11.2809	225123.	0.00
19.0000	9.80E-06	-5.0817	10.4426	-1.29E-06	29.9545	2850053.	-11.1428	227397.	0.00
19.2000	9.51E-06	-3.2160	8.2365	-1.58E-06	18.9571	2850053.	-10.9177	229671.	0.00
19.4000	9.17E-06	-1.7870	6.0814	-1.75E-06	10.5340	2850053.	-10.6336	231945.	0.00
19.6000	8.81E-06	-0.7834	3.9868	-1.84E-06	4.6180	2850053.	-10.3124	234219.	0.00
19.8000	8.43E-06	-0.1923	1.9586	-1.88E-06	1.1336	2850053.	-9.9700	236493.	0.00
20.0000	8.05E-06	0.00	0.00	-1.88E-06	0.00	2850053.	-9.6158	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 4:

Pile-head deflection = 0.03657514 meters
Computed slope at pile head = -0.00584434 radians
Maximum bending moment = 2011. kN-m
Maximum shear force = 600.00000000 kN
Depth of maximum bending moment = 6.20000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 24
Number of zero deflection points = 2

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 5

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 800.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X meters	Deflect. y meters	Bending Moment kN-m	Shear Force kN	Slope S radians	Total Stress kPa*	Bending Stiffness kN-m^2	Soil Res. p kN/m	Soil Spr. Es*h kN/m	Distrib. Lat. Load kN/m
0.00	0.06140	8.90E-09	800.0000	-0.00909	5.25E-08	2850053.	-76.4124	124.4579	0.00
0.2000	0.05958	158.4718	784.3496	-0.00909	934.1319	2850053.	-80.0913	268.8642	0.00
0.4000	0.05776	313.7399	767.9712	-0.00907	1849.	2850053.	-83.6925	289.7886	0.00
0.6000	0.05595	465.6602	750.8807	-0.00904	2745.	2850053.	-87.2128	311.7579	0.00

0.8000	0.05414	614.0921	733.0946	-0.00901	3620.	2850053.	-90.6488	334.8463	0.00
1.0000	0.05235	758.8981	714.6299	-0.00896	4473.	2850053.	-93.9974	359.1343	0.00
1.2000	0.05056	899.9441	695.5046	-0.00890	5305.	2850053.	-97.2554	384.7093	0.00
1.4000	0.04879	1037.	675.7372	-0.00883	6113.	2850053.	-100.4194	411.6660	0.00
1.6000	0.04703	1170.	655.3466	-0.00875	6898.	2850053.	-103.4864	440.1073	0.00
1.8000	0.04529	1299.	634.3526	-0.00867	7659.	2850053.	-106.4531	470.1453	0.00
2.0000	0.04356	1424.	612.7757	-0.00857	8394.	2850053.	-109.3163	501.9022	0.00
2.2000	0.04186	1544.	590.6368	-0.00847	9103.	2850053.	-112.0729	535.5114	0.00
2.4000	0.04017	1660.	567.9575	-0.00836	9786.	2850053.	-114.7197	571.1188	0.00
2.6000	0.03851	1772.	544.7602	-0.00823	10443.	2850053.	-117.2536	608.8842	0.00
2.8000	0.03688	1878.	521.0677	-0.00811	11071.	2850053.	-119.6715	648.9828	0.00
3.0000	0.03527	1980.	496.9035	-0.00797	11671.	2850053.	-121.9701	691.6073	0.00
3.2000	0.03369	2077.	472.2918	-0.00783	12243.	2850053.	-124.1466	736.9696	0.00
3.4000	0.03214	2169.	447.2574	-0.00768	12785.	2850053.	-126.1976	785.3035	0.00
3.6000	0.03062	2256.	421.8256	-0.00752	13297.	2850053.	-128.1203	836.8674	0.00
3.8000	0.02913	2338.	396.0225	-0.00736	13779.	2850053.	-129.9114	891.9472	0.00
4.0000	0.02767	2414.	369.8745	-0.00720	14231.	2850053.	-131.5681	950.8599	0.00
4.2000	0.02625	2486.	343.4090	-0.00703	14651.	2850053.	-133.0872	1014.	0.00
4.4000	0.02486	2552.	316.6537	-0.00685	15041.	2850053.	-134.4657	1082.	0.00
4.6000	0.02351	2612.	289.6371	-0.00667	15398.	2850053.	-135.7007	1154.	0.00
4.8000	0.02220	2667.	262.3881	-0.00648	15724.	2850053.	-136.7892	1233.	0.00
5.0000	0.02092	2717.	234.9363	-0.00629	16017.	2850053.	-137.7282	1317.	0.00
5.2000	0.01968	2761.	207.3120	-0.00610	16277.	2850053.	-138.5148	1408.	0.00
5.4000	0.01848	2800.	179.5459	-0.00591	16506.	2850053.	-139.1460	1506.	0.00
5.6000	0.01732	2833.	151.6694	-0.00571	16701.	2850053.	-139.6189	1613.	0.00
5.8000	0.01620	2861.	123.8478	-0.00551	16863.	2850053.	-138.5974	1712.	0.00
6.0000	0.01511	2883.	94.8593	-0.00531	16993.	2850053.	-151.2882	2002.	0.00
6.2000	0.01407	2899.	63.6419	-0.00510	17087.	2850053.	-160.8857	2287.	0.00
6.4000	0.01307	2908.	31.6400	-0.00490	17143.	2850053.	-159.1333	2435.	0.00
6.6000	0.01211	2911.	0.00262	-0.00470	17161.	2850053.	-157.2402	2596.	0.00
6.8000	0.01119	2908.	-31.1494	-0.00449	17143.	2850053.	-154.2796	2757.	0.00
7.0000	0.01032	2899.	-61.5909	-0.00429	17088.	2850053.	-150.1359	2911.	0.00
7.2000	0.00948	2884.	-91.2004	-0.00409	16998.	2850053.	-145.9590	3080.	0.00
7.4000	0.00868	2862.	-119.9712	-0.00388	16873.	2850053.	-141.7490	3265.	0.00
7.6000	0.00793	2836.	-147.8966	-0.00368	16715.	2850053.	-137.5055	3470.	0.00
7.8000	0.00721	2803.	-174.9700	-0.00349	16524.	2850053.	-133.2283	3696.	0.00
8.0000	0.00653	2766.	-201.1845	-0.00329	16302.	2850053.	-128.9165	3948.	0.00
8.2000	0.00589	2723.	-226.5331	-0.00310	16050.	2850053.	-124.5695	4228.	0.00
8.4000	0.00529	2675.	-251.0086	-0.00291	15768.	2850053.	-120.1858	4542.	0.00
8.6000	0.00473	2622.	-274.6036	-0.00272	15458.	2850053.	-115.7637	4896.	0.00
8.8000	0.00420	2565.	-297.3101	-0.00254	15121.	2850053.	-111.3011	5296.	0.00
9.0000	0.00371	2503.	-319.1197	-0.00236	14757.	2850053.	-106.7950	5753.	0.00
9.2000	0.00326	2438.	-340.0233	-0.00219	14368.	2850053.	-102.2415	6277.	0.00
9.4000	0.00284	2367.	-360.0110	-0.00202	13955.	2850053.	-97.6358	6883.	0.00
9.6000	0.00245	2294.	-379.0718	-0.00186	13519.	2850053.	-92.9712	7591.	0.00
9.8000	0.00209	2216.	-397.1928	-0.00170	13061.	2850053.	-88.2392	8427.	0.00
10.0000	0.00177	2135.	-414.3595	-0.00155	12583.	2850053.	-83.4280	9427.	0.00
10.2000	0.00148	2050.	-430.5545	-0.00140	12084.	2850053.	-78.5219	10641.	0.00
10.4000	0.00121	1962.	-445.7566	-0.00126	11568.	2850053.	-73.4986	12146.	0.00
10.6000	9.72E-04	1872.	-459.9391	-0.00112	11033.	2850053.	-68.3263	14054.	0.00
10.8000	7.61E-04	1778.	-473.0674	-9.96E-04	10483.	2850053.	-62.9570	16554.	0.00
11.0000	5.74E-04	1683.	-494.9028	-8.75E-04	9918.	2850053.	-155.3972	54155.	0.00
11.2000	4.11E-04	1580.	-521.7510	-7.60E-04	9316.	2850053.	-113.0848	55057.	0.00
11.4000	2.70E-04	1474.	-540.6101	-6.53E-04	8688.	2850053.	-75.5066	55960.	0.00
11.6000	1.50E-04	1364.	-552.4146	-5.53E-04	8042.	2850053.	-42.5375	56862.	0.00
11.8000	4.85E-05	1253.	-558.0696	-4.62E-04	7385.	2850053.	-14.0130	57765.	0.00
12.0000	-3.50E-05	1141.	-558.4443	-3.78E-04	6726.	2850053.	10.2659	58668.	0.00
12.2000	-1.02E-04	1030.	-554.3648	-3.01E-04	6069.	2850053.	30.5288	59570.	0.00
12.4000	-1.56E-04	919.2471	-546.6087	-2.33E-04	5419.	2850053.	47.0322	60473.	0.00
12.6000	-1.96E-04	810.8660	-535.9000	-1.72E-04	4780.	2850053.	60.0553	61375.	0.00
12.8000	-2.24E-04	704.8871	-522.9048	-1.19E-04	4155.	2850053.	69.8970	62278.	0.00
13.0000	-2.43E-04	601.7041	-502.7345	-7.33E-05	3547.	2850053.	131.8053	108328.	0.00
13.2000	-2.54E-04	503.7933	-469.0677	-3.45E-05	2970.	2850053.	204.8635	161452.	0.00
13.4000	-2.57E-04	414.0770	-427.5313	-2.28E-06	2441.	2850053.	210.5004	163726.	0.00
13.6000	-2.55E-04	332.7808	-385.3422	2.39E-05	1962.	2850053.	211.3903	166000.	0.00
13.8000	-2.48E-04	259.9401	-343.3737	4.47E-05	1532.	2850053.	208.2948	168274.	0.00
14.0000	-2.37E-04	195.4313	-302.3516	6.07E-05	1152.	2850053.	201.9265	170548.	0.00

14.2000	-2.23E-04	138.9995	-262.8646	7.24E-05	819.3502	2850053.	192.9431	172821.	0.00
14.4000	-2.08E-04	90.2854	-225.3758	8.05E-05	532.1990	2850053.	181.9446	175095.	0.00
14.6000	-1.91E-04	48.8492	-190.2343	8.54E-05	287.9476	2850053.	169.4707	177369.	0.00
14.8000	-1.74E-04	14.1917	-157.6872	8.76E-05	83.6549	2850053.	156.0006	179643.	0.00
15.0000	-1.56E-04	-14.2257	-127.8918	8.76E-05	83.8552	2850053.	141.9532	181917.	0.00
15.2000	-1.39E-04	-36.9650	-100.9275	8.58E-05	217.8949	2850053.	127.6892	184191.	0.00
15.4000	-1.22E-04	-54.5967	-76.8073	8.26E-05	321.8273	2850053.	113.5129	186465.	0.00
15.6000	-1.06E-04	-67.6879	-55.4885	7.83E-05	398.9951	2850053.	99.6755	188739.	0.00
15.8000	-9.04E-05	-76.7921	-36.8831	7.32E-05	452.6609	2850053.	86.3786	191013.	0.00
16.0000	-7.63E-05	-82.4412	-20.8674	6.76E-05	485.9599	2850053.	73.7781	193287.	0.00
16.2000	-6.34E-05	-85.1391	-7.2908	6.17E-05	501.8631	2850053.	61.9882	195561.	0.00
16.4000	-5.16E-05	-85.3575	4.0166	5.58E-05	503.1505	2850053.	51.0860	197835.	0.00
16.6000	-4.11E-05	-83.5324	13.2368	4.98E-05	492.3925	2850053.	41.1152	200109.	0.00
16.8000	-3.17E-05	-80.0628	20.5574	4.41E-05	471.9401	2850053.	32.0908	202383.	0.00
17.0000	-2.35E-05	-75.3095	26.1668	3.86E-05	443.9213	2850053.	24.0030	204657.	0.00
17.2000	-1.63E-05	-69.5961	30.2492	3.36E-05	410.2428	2850053.	16.8210	206931.	0.00
17.4000	-1.00E-05	-63.2098	32.9809	2.89E-05	372.5983	2850053.	10.4970	209205.	0.00
17.6000	-4.70E-06	-56.4037	34.5276	2.47E-05	332.4787	2850053.	4.9695	211479.	0.00
17.8000	-1.56E-07	-49.3988	35.0412	2.10E-05	291.1874	2850053.	0.1668	213753.	0.00
18.0000	3.69E-06	-42.3872	34.6589	1.78E-05	249.8567	2850053.	-3.9904	216027.	0.00
18.2000	6.95E-06	-35.5352	33.5012	1.50E-05	209.4669	2850053.	-7.5858	218301.	0.00
18.4000	9.71E-06	-28.9867	31.6721	1.28E-05	170.8658	2850053.	-10.7052	220575.	0.00
18.6000	1.21E-05	-22.8664	29.2582	1.09E-05	134.7887	2850053.	-13.4340	222849.	0.00
18.8000	1.41E-05	-17.2834	26.3293	9.54E-06	101.8792	2850053.	-15.8550	225123.	0.00
19.0000	1.59E-05	-12.3346	22.9392	8.50E-06	72.7081	2850053.	-18.0463	227397.	0.00
19.2000	1.75E-05	-8.1077	19.1266	7.78E-06	47.7920	2850053.	-20.0794	229671.	0.00
19.4000	1.90E-05	-4.6840	14.9170	7.33E-06	27.6103	2850053.	-22.0173	231945.	0.00
19.6000	2.04E-05	-2.1409	10.3240	7.09E-06	12.6200	2850053.	-23.9123	234219.	0.00
19.8000	2.18E-05	-0.5544	5.3523	7.00E-06	3.2679	2850053.	-25.8044	236493.	0.00
20.0000	2.32E-05	0.00	0.00	6.98E-06	0.00	2850053.	-27.7190	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 5:

Pile-head deflection = 0.06139618 meters
Computed slope at pile head = -0.00909330 radians
Maximum bending moment = 2911. kN-m
Maximum shear force = 800.00000000 kN
Depth of maximum bending moment = 6.60000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 24
Number of zero deflection points = 2

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 6

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 2000.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.2864	-2.10E-07	2000.	-0.03547	1.24E-06	2850053.	-127.6815	44.5751	0.00
0.2000	0.2793	397.4464	1974.	-0.03546	2343.	2850053.	-134.0516	95.9748	0.00
0.4000	0.2723	789.5307	1946.	-0.03541	4654.	2850053.	-140.3250	103.0818	0.00
0.6000	0.2652	1176.	1918.	-0.03534	6932.	2850053.	-146.4974	110.4881	0.00
0.8000	0.2581	1557.	1888.	-0.03525	9176.	2850053.	-152.5646	118.2115	0.00

1.0000	0.2511	1931.	1857.	-0.03513	11383.	2850053.	-158.5226	126.2712	0.00
1.2000	0.2441	2299.	1824.	-0.03498	13553.	2850053.	-164.3670	134.6878	0.00
1.4000	0.2371	2661.	1791.	-0.03480	15685.	2850053.	-170.0936	143.4834	0.00
1.6000	0.2301	3016.	1756.	-0.03460	17776.	2850053.	-175.6983	152.6818	0.00
1.8000	0.2232	3363.	1721.	-0.03438	19826.	2850053.	-181.1767	162.3085	0.00
2.0000	0.2164	3704.	1684.	-0.03413	21833.	2850053.	-186.5246	172.3908	0.00
2.2000	0.2096	4037.	1646.	-0.03386	23797.	2850053.	-191.7376	182.9585	0.00
2.4000	0.2029	4362.	1607.	-0.03357	25715.	2850053.	-196.8114	194.0435	0.00
2.6000	0.1962	4680.	1567.	-0.03325	27586.	2850053.	-201.7417	205.6803	0.00
2.8000	0.1896	4989.	1527.	-0.03291	29410.	2850053.	-206.5241	217.9063	0.00
3.0000	0.1830	5291.	1485.	-0.03255	31186.	2850053.	-211.1542	230.7618	0.00
3.2000	0.1765	5583.	1442.	-0.03217	32911.	2850053.	-215.6276	244.2909	0.00
3.4000	0.1701	5867.	1399.	-0.03177	34586.	2850053.	-219.9397	258.5410	0.00
3.6000	0.1638	6143.	1354.	-0.03134	36209.	2850053.	-224.0861	273.5641	0.00
3.8000	0.1576	6409.	1309.	-0.03090	37779.	2850053.	-228.0623	289.4167	0.00
4.0000	0.1515	6666.	1263.	-0.03045	39295.	2850053.	-231.8636	306.1604	0.00
4.2000	0.1454	6914.	1216.	-0.02997	40757.	2850053.	-235.4855	323.8624	0.00
4.4000	0.1395	7153.	1169.	-0.02948	42163.	2850053.	-238.9233	342.5966	0.00
4.6000	0.1336	7382.	1121.	-0.02897	43512.	2850053.	-242.1723	362.4438	0.00
4.8000	0.1279	7601.	1072.	-0.02844	44805.	2850053.	-245.2278	383.4927	0.00
5.0000	0.1223	7810.	1023.	-0.02790	46040.	2850053.	-248.0850	405.8411	0.00
5.2000	0.1167	8010.	972.7053	-0.02734	47216.	2850053.	-250.7389	429.5967	0.00
5.4000	0.1113	8200.	922.3129	-0.02678	48333.	2850053.	-253.1847	454.8785	0.00
5.6000	0.1060	8379.	871.4527	-0.02619	49391.	2850053.	-255.4173	481.8185	0.00
5.8000	0.1008	8548.	820.4131	-0.02560	50388.	2850053.	-254.9792	505.6986	0.00
6.0000	0.09578	8707.	766.9184	-0.02499	51325.	2850053.	-279.9678	584.5909	0.00
6.2000	0.09084	8855.	708.9651	-0.02438	52196.	2850053.	-299.5647	659.5090	0.00
6.4000	0.08603	8991.	649.1872	-0.02375	52997.	2850053.	-298.2145	693.2694	0.00
6.6000	0.08134	9115.	589.6998	-0.02312	53727.	2850053.	-296.6595	729.3938	0.00
6.8000	0.07678	9227.	530.7201	-0.02247	54387.	2850053.	-293.1380	763.5312	0.00
7.0000	0.07235	9327.	472.6674	-0.02182	54978.	2850053.	-287.3888	794.3856	0.00
7.2000	0.06806	9416.	415.7704	-0.02116	55502.	2850053.	-281.5805	827.4957	0.00
7.4000	0.06389	9493.	360.0411	-0.02050	55959.	2850053.	-275.7124	863.0943	0.00
7.6000	0.05986	9560.	305.4915	-0.01983	56351.	2850053.	-269.7837	901.4460	0.00
7.8000	0.05596	9615.	252.1338	-0.01916	56679.	2850053.	-263.7932	942.8527	0.00
8.0000	0.05219	9661.	199.9805	-0.01848	56945.	2850053.	-257.7399	987.6609	0.00
8.2000	0.04856	9695.	149.0443	-0.01780	57151.	2850053.	-251.6224	1036.	0.00
8.4000	0.04507	9720.	99.3381	-0.01712	57297.	2850053.	-245.4393	1089.	0.00
8.6000	0.04171	9735.	50.8753	-0.01644	57385.	2850053.	-239.1890	1147.	0.00
8.8000	0.03849	9740.	3.6695	-0.01576	57417.	2850053.	-232.8695	1210.	0.00
9.0000	0.03541	9737.	-42.2654	-0.01507	57393.	2850053.	-226.4789	1279.	0.00
9.2000	0.03246	9724.	-86.9148	-0.01439	57317.	2850053.	-220.0149	1355.	0.00
9.4000	0.02966	9702.	-130.2638	-0.01371	57189.	2850053.	-213.4749	1440.	0.00
9.6000	0.02698	9671.	-172.2969	-0.01303	57010.	2850053.	-206.8562	1533.	0.00
9.8000	0.02444	9633.	-212.9980	-0.01235	56782.	2850053.	-200.1556	1638.	0.00
10.0000	0.02204	9586.	-252.3506	-0.01168	56508.	2850053.	-193.3697	1755.	0.00
10.2000	0.01977	9532.	-290.3370	-0.01101	56187.	2850053.	-186.4948	1886.	0.00
10.4000	0.01764	9470.	-326.9392	-0.01034	55823.	2850053.	-179.5269	2036.	0.00
10.6000	0.01564	9401.	-362.1380	-0.00968	55416.	2850053.	-172.4616	2206.	0.00
10.8000	0.01377	9325.	-395.9136	-0.00902	54969.	2850053.	-165.2942	2401.	0.00
11.0000	0.01203	9243.	-534.3214	-0.00837	54483.	2850053.	-1219.	20266.	0.00
11.2000	0.01042	9112.	-771.7767	-0.00773	53709.	2850053.	-1156.	22186.	0.00
11.4000	0.00894	8934.	-996.2354	-0.00709	52663.	2850053.	-1089.	24364.	0.00
11.6000	0.00758	8713.	-1207.	-0.00647	51360.	2850053.	-1018.	26857.	0.00
11.8000	0.00635	8451.	-1403.	-0.00587	49817.	2850053.	-943.9668	29737.	0.00
12.0000	0.00523	8152.	-1584.	-0.00529	48052.	2850053.	-866.4382	33109.	0.00
12.2000	0.00423	7818.	-1749.	-0.00473	46082.	2850053.	-785.6796	37118.	0.00
12.4000	0.00334	7452.	-1898.	-0.00419	43927.	2850053.	-701.7052	41985.	0.00
12.6000	0.00256	7058.	-2030.	-0.00368	41607.	2850053.	-614.3523	48061.	0.00
12.8000	0.00187	6640.	-2143.	-0.00320	39141.	2850053.	-523.1302	55965.	0.00
13.0000	0.00128	6201.	-2250.	-0.00275	36553.	2850053.	-546.5955	85698.	0.00
13.2000	7.69E-04	5740.	-2358.	-0.00233	33835.	2850053.	-530.8203	138092.	0.00
13.4000	3.43E-04	5258.	-2439.	-0.00195	30992.	2850053.	-280.3912	163726.	0.00
13.6000	-9.97E-06	4764.	-2467.	-0.00160	28083.	2850053.	8.2785	166000.	0.00
13.8000	-2.96E-04	4271.	-2441.	-0.00128	25177.	2850053.	248.7052	168274.	0.00
14.0000	-5.21E-04	3788.	-2372.	-9.95E-04	22328.	2850053.	444.5103	170548.	0.00
14.2000	-6.94E-04	3322.	-2270.	-7.46E-04	19585.	2850053.	573.2377	165248.	0.00

14.4000	-8.20E-04	2880.	-2147.	-5.28E-04	16977.	2850053.	651.4959	158965.	0.00
14.6000	-9.05E-04	2464.	-2011.	-3.41E-04	14522.	2850053.	710.3633	156962.	0.00
14.8000	-9.56E-04	2076.	-1865.	-1.82E-04	12235.	2850053.	753.5973	157652.	0.00
15.0000	-9.78E-04	1718.	-1711.	-4.85E-05	10125.	2850053.	783.6787	160297.	0.00
15.2000	-9.75E-04	1391.	-1552.	6.06E-05	8201.	2850053.	802.4259	164527.	0.00
15.4000	-9.54E-04	1097.	-1391.	1.48E-04	6465.	2850053.	811.2757	170157.	0.00
15.6000	-9.16E-04	834.8075	-1229.	2.16E-04	4921.	2850053.	811.4253	177111.	0.00
15.8000	-8.67E-04	605.2946	-1067.	2.66E-04	3568.	2850053.	803.9093	185381.	0.00
16.0000	-8.10E-04	407.9381	-908.5183	3.02E-04	2405.	2850053.	782.6445	193287.	0.00
16.2000	-7.47E-04	241.8873	-757.2489	3.25E-04	1426.	2850053.	730.0495	195561.	0.00
16.4000	-6.80E-04	105.0385	-616.9780	3.37E-04	619.1628	2850053.	672.6591	197835.	0.00
16.6000	-6.12E-04	-4.9039	-488.4842	3.40E-04	28.9068	2850053.	612.2793	200109.	0.00
16.8000	-5.44E-04	-90.3552	-372.2141	3.37E-04	532.6101	2850053.	550.4211	202383.	0.00
17.0000	-4.77E-04	-153.7896	-268.3406	3.28E-04	906.5322	2850053.	488.3141	204657.	0.00
17.2000	-4.13E-04	-197.6914	-176.8169	3.16E-04	1165.	2850053.	426.9228	206931.	0.00
17.4000	-3.51E-04	-224.5163	-97.4281	3.01E-04	1323.	2850053.	366.9652	209205.	0.00
17.6000	-2.92E-04	-236.6627	-29.8382	2.85E-04	1395.	2850053.	308.9341	211479.	0.00
17.8000	-2.37E-04	-236.4516	26.3671	2.68E-04	1394.	2850053.	253.1191	213753.	0.00
18.0000	-1.85E-04	-226.1158	71.6421	2.52E-04	1333.	2850053.	199.6304	216027.	0.00
18.2000	-1.36E-04	-207.7948	106.4474	2.37E-04	1225.	2850053.	148.4228	218301.	0.00
18.4000	-9.01E-05	-183.5369	131.2218	2.23E-04	1082.	2850053.	99.3211	220575.	0.00
18.6000	-4.67E-05	-155.3061	146.3584	2.11E-04	915.4716	2850053.	52.0452	222849.	0.00
18.8000	-5.54E-06	-124.9935	152.1866	2.01E-04	736.7902	2850053.	6.2371	225123.	0.00
19.0000	3.39E-05	-94.4314	148.9591	1.94E-04	556.6382	2850053.	-38.5126	227397.	0.00
19.2000	7.20E-05	-65.4099	136.8441	1.88E-04	385.5669	2850053.	-82.6366	229671.	0.00
19.4000	1.09E-04	-39.6938	115.9243	1.84E-04	233.9801	2850053.	-126.5621	231945.	0.00
19.6000	1.46E-04	-19.0402	86.2000	1.82E-04	112.2348	2850053.	-170.6804	234219.	0.00
19.8000	1.82E-04	-5.2138	47.6005	1.82E-04	30.7333	2850053.	-215.3153	236493.	0.00
20.0000	2.18E-04	0.00	0.00	1.81E-04	0.00	2850053.	-260.6893	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 6:

Pile-head deflection = 0.28644137 meters
Computed slope at pile head = -0.03546902 radians
Maximum bending moment = 9740. kN-m
Maximum shear force = -2467. kN
Depth of maximum bending moment = 8.80000000 meters below pile head
Depth of maximum shear force = 13.60000000 meters below pile head
Number of iterations = 22
Number of zero deflection points = 2

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 7

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 3000.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X meters	Deflect. y meters	Bending Moment kN-m	Shear Force kN	Slope S radians	Total Stress kPa*	Bending Stiffness kN-m^2	Soil Res. p kN/m	Soil Spr. Es*h kN/m	Distrib. Lat. Load kN/m
0.00	0.5333	-2.45E-07	3000.	-0.06254	1.45E-06	2850053.	-151.6572	28.4399	0.00
0.2000	0.5207	596.9669	2969.	-0.06252	3519.	2850053.	-160.5601	61.6653	0.00
0.4000	0.5082	1188.	2936.	-0.06246	7000.	2850053.	-169.5201	66.7078	0.00
0.6000	0.4958	1771.	2901.	-0.06236	10441.	2850053.	-178.5372	72.0252	0.00
0.8000	0.4833	2348.	2864.	-0.06221	13840.	2850053.	-187.6115	77.6370	0.00
1.0000	0.4709	2917.	2826.	-0.06203	17195.	2850053.	-195.4888	83.0314	0.00

1.2000	0.4585	3478.	2786.	-0.06180	20503.	2850053.	-202.8089	88.4674	0.00
1.4000	0.4462	4031.	2745.	-0.06154	23764.	2850053.	-209.9966	94.1354	0.00
1.6000	0.4339	4576.	2702.	-0.06124	26975.	2850053.	-217.0469	100.0495	0.00
1.8000	0.4217	5112.	2658.	-0.06090	30136.	2850053.	-223.9550	106.2244	0.00
2.0000	0.4095	5640.	2613.	-0.06052	33243.	2850053.	-230.7158	112.6760	0.00
2.2000	0.3975	6157.	2566.	-0.06010	36296.	2850053.	-237.3243	119.4215	0.00
2.4000	0.3855	6666.	2518.	-0.05965	39293.	2850053.	-243.7755	126.4793	0.00
2.6000	0.3736	7165.	2468.	-0.05917	42232.	2850053.	-250.0642	133.8693	0.00
2.8000	0.3618	7653.	2418.	-0.05865	45113.	2850053.	-256.1854	141.6128	0.00
3.0000	0.3501	8132.	2366.	-0.05810	47933.	2850053.	-262.1337	149.7330	0.00
3.2000	0.3386	8600.	2313.	-0.05751	50691.	2850053.	-267.9040	158.2549	0.00
3.4000	0.3271	9057.	2259.	-0.05689	53386.	2850053.	-273.4909	167.2055	0.00
3.6000	0.3158	9503.	2204.	-0.05624	56017.	2850053.	-278.8891	176.6143	0.00
3.8000	0.3046	9938.	2147.	-0.05556	58582.	2850053.	-284.0930	186.5130	0.00
4.0000	0.2936	10362.	2090.	-0.05484	61080.	2850053.	-289.0973	196.9363	0.00
4.2000	0.2827	10774.	2032.	-0.05410	63510.	2850053.	-293.8964	207.9219	0.00
4.4000	0.2720	11175.	1972.	-0.05333	65870.	2850053.	-298.4845	219.5110	0.00
4.6000	0.2614	11563.	1912.	-0.05253	68160.	2850053.	-302.8560	231.7486	0.00
4.8000	0.2509	11940.	1851.	-0.05171	70379.	2850053.	-307.0051	244.6837	0.00
5.0000	0.2407	12304.	1789.	-0.05086	72525.	2850053.	-310.9259	258.3704	0.00
5.2000	0.2306	12655.	1727.	-0.04998	74598.	2850053.	-314.6124	272.8679	0.00
5.4000	0.2207	12994.	1664.	-0.04908	76597.	2850053.	-318.0584	288.2413	0.00
5.6000	0.2110	13321.	1600.	-0.04816	78521.	2850053.	-321.2579	304.5624	0.00
5.8000	0.2014	13634.	1535.	-0.04721	80369.	2850053.	-321.1157	318.8437	0.00
6.0000	0.1921	13935.	1468.	-0.04625	82141.	2850053.	-353.0518	367.6130	0.00
6.2000	0.1829	14221.	1395.	-0.04526	83830.	2850053.	-378.2823	413.5895	0.00
6.4000	0.1740	14493.	1319.	-0.04425	85430.	2850053.	-377.1131	433.5269	0.00
6.6000	0.1652	14749.	1244.	-0.04323	86941.	2850053.	-375.7008	454.7722	0.00
6.8000	0.1567	14991.	1169.	-0.04218	88364.	2850053.	-371.8109	474.5985	0.00
7.0000	0.1484	15217.	1096.	-0.04112	89698.	2850053.	-365.1006	492.2044	0.00
7.2000	0.1402	15429.	1023.	-0.04005	90947.	2850053.	-358.3161	511.0200	0.00
7.4000	0.1323	15626.	952.3314	-0.03896	92111.	2850053.	-351.4563	531.1631	0.00
7.6000	0.1247	15810.	882.7337	-0.03785	93192.	2850053.	-344.5199	552.7669	0.00
7.8000	0.1172	15979.	814.5312	-0.03674	94192.	2850053.	-337.5055	575.9822	0.00
8.0000	0.1100	16136.	747.7395	-0.03561	95113.	2850053.	-330.4115	600.9806	0.00
8.2000	0.1029	16278.	682.3747	-0.03447	95956.	2850053.	-323.2362	627.9581	0.00
8.4000	0.09617	16408.	618.4533	-0.03333	96722.	2850053.	-315.9778	657.1394	0.00
8.6000	0.08962	16526.	555.9921	-0.03217	97414.	2850053.	-308.6343	688.7828	0.00
8.8000	0.08330	16631.	495.0083	-0.03101	98033.	2850053.	-301.2035	723.1873	0.00
9.0000	0.07721	16724.	435.5197	-0.02984	98581.	2850053.	-293.6829	760.7000	0.00
9.2000	0.07136	16805.	377.5444	-0.02866	99060.	2850053.	-286.0701	801.7259	0.00
9.4000	0.06575	16875.	321.1012	-0.02748	99471.	2850053.	-278.3622	846.7404	0.00
9.6000	0.06037	16934.	266.2093	-0.02629	99817.	2850053.	-270.5563	896.3045	0.00
9.8000	0.05523	16981.	212.8888	-0.02510	100099.	2850053.	-262.6492	951.0837	0.00
10.0000	0.05033	17019.	161.1601	-0.02391	100319.	2850053.	-254.6376	1012.	0.00
10.2000	0.04567	17046.	111.0446	-0.02272	100479.	2850053.	-246.5179	1080.	0.00
10.4000	0.04124	17063.	62.5641	-0.02152	100581.	2850053.	-238.2865	1156.	0.00
10.6000	0.03706	17071.	15.7415	-0.02032	100626.	2850053.	-229.9397	1241.	0.00
10.8000	0.03312	17069.	-29.3999	-0.01912	100618.	2850053.	-221.4739	1338.	0.00
11.0000	0.02941	17059.	-265.0778	-0.01793	100557.	2850053.	-2135.	14521.	0.00
11.2000	0.02594	16963.	-681.4729	-0.01673	99993.	2850053.	-2029.	15638.	0.00
11.4000	0.02272	16787.	-1077.	-0.01555	98950.	2850053.	-1924.	16935.	0.00
11.6000	0.01973	16533.	-1451.	-0.01438	97454.	2850053.	-1821.	18462.	0.00
11.8000	0.01697	16206.	-1805.	-0.01323	95529.	2850053.	-1716.	20228.	0.00
12.0000	0.01443	15811.	-2137.	-0.01211	93199.	2850053.	-1605.	22246.	0.00
12.2000	0.01212	15351.	-2446.	-0.01101	90490.	2850053.	-1490.	24574.	0.00
12.4000	0.01003	14832.	-2732.	-0.00995	87430.	2850053.	-1369.	27293.	0.00
12.6000	0.00814	14258.	-2993.	-0.00893	84048.	2850053.	-1242.	30521.	0.00
12.8000	0.00645	13635.	-3229.	-0.00796	80372.	2850053.	-1111.	34432.	0.00
13.0000	0.00496	12967.	-3465.	-0.00702	76435.	2850053.	-1248.	50328.	0.00
13.2000	0.00365	12249.	-3726.	-0.00614	72203.	2850053.	-1368.	75020.	0.00
13.4000	0.00250	11476.	-3975.	-0.00530	67649.	2850053.	-1120.	89452.	0.00
13.6000	0.00152	10659.	-4172.	-0.00453	62831.	2850053.	-851.9892	111796.	0.00
13.8000	6.93E-04	9808.	-4312.	-0.00381	57812.	2850053.	-542.7120	156530.	0.00
14.0000	3.19E-07	8934.	-4366.	-0.00315	52665.	2850053.	-0.2723	170548.	0.00
14.2000	-5.67E-04	8061.	-4317.	-0.00256	47518.	2850053.	490.2916	172821.	0.00
14.4000	-0.00102	7208.	-4193.	-0.00202	42486.	2850053.	745.0013	145796.	0.00

14.6000	-0.00138	6384.	-4027.	-0.00154	37630.	2850053.	916.1398	133218.	0.00
14.8000	-0.00164	5597.	-3831.	-0.00112	32990.	2850053.	1046.	127616.	0.00
15.0000	-0.00182	4851.	-3612.	-7.56E-04	28597.	2850053.	1145.	125525.	0.00
15.2000	-0.00194	4152.	-3376.	-4.40E-04	24474.	2850053.	1220.	125613.	0.00
15.4000	-0.00200	3501.	-3126.	-1.72E-04	20638.	2850053.	1273.	127262.	0.00
15.6000	-0.00201	2901.	-2868.	5.29E-05	17102.	2850053.	1308.	130160.	0.00
15.8000	-0.00198	2354.	-2605.	2.37E-04	13875.	2850053.	1328.	134147.	0.00
16.0000	-0.00192	1860.	-2338.	3.85E-04	10961.	2850053.	1333.	139157.	0.00
16.2000	-0.00183	1418.	-2073.	5.00E-04	8362.	2850053.	1325.	145178.	0.00
16.4000	-0.00172	1030.	-1810.	5.86E-04	6074.	2850053.	1306.	152245.	0.00
16.6000	-0.00159	694.6525	-1551.	6.47E-04	4095.	2850053.	1276.	160437.	0.00
16.8000	-0.00146	409.8963	-1300.	6.85E-04	2416.	2850053.	1237.	169872.	0.00
17.0000	-0.00132	174.6336	-1057.	7.06E-04	1029.	2850053.	1190.	180723.	0.00
17.2000	-0.00117	-13.0322	-824.8598	7.12E-04	76.8201	2850053.	1135.	193231.	0.00
17.4000	-0.00103	-155.3103	-604.1732	7.06E-04	915.4963	2850053.	1072.	207738.	0.00
17.6000	-8.92E-04	-254.7015	-402.6156	6.91E-04	1501.	2850053.	943.4056	211479.	0.00
17.8000	-7.56E-04	-316.3565	-227.5044	6.71E-04	1865.	2850053.	807.7066	213753.	0.00
18.0000	-6.24E-04	-345.7033	-79.3637	6.48E-04	2038.	2850053.	673.7004	216027.	0.00
18.2000	-4.97E-04	-348.1020	42.2052	6.24E-04	2052.	2850053.	541.9880	218301.	0.00
18.4000	-3.74E-04	-328.8212	137.6812	6.00E-04	1938.	2850053.	412.7720	220575.	0.00
18.6000	-2.57E-04	-293.0295	207.5501	5.78E-04	1727.	2850053.	285.9175	222849.	0.00
18.8000	-1.43E-04	-245.8012	252.2435	5.59E-04	1449.	2850053.	161.0165	225123.	0.00
19.0000	-3.29E-05	-192.1321	272.0907	5.44E-04	1133.	2850053.	37.4557	227397.	0.00
19.2000	7.45E-05	-136.9649	267.2851	5.32E-04	807.3569	2850053.	-85.5123	229671.	0.00
19.4000	1.80E-04	-85.2181	237.8645	5.24E-04	502.3290	2850053.	-208.6934	231945.	0.00
19.6000	2.84E-04	-41.8191	183.7079	5.20E-04	246.5079	2850053.	-332.8726	234219.	0.00
19.8000	3.88E-04	-11.7350	104.5477	5.18E-04	69.1732	2850053.	-458.7293	236493.	0.00
20.0000	4.91E-04	0.00	0.00	5.18E-04	0.00	2850053.	-586.7476	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 7:

Pile-head deflection = 0.53325522 meters
Computed slope at pile head = -0.06254240 radians
Maximum bending moment = 17071. kN-m
Maximum shear force = -4366. kN
Depth of maximum bending moment = 10.60000000 meters below pile head
Depth of maximum shear force = 14.00000000 meters below pile head
Number of iterations = 21
Number of zero deflection points = 2

Summary of Pile-head Responses for Conventional Analyses

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, kN, and Load 2 = Moment, M, kN-m
Load Type 2: Load 1 = Shear, V, kN, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, kN, and Load 2 = Rot. Stiffness, R, kN-m/rad.
Load Type 4: Load 1 = Top Deflection, y, m, and Load 2 = Moment, M, kN-m
Load Type 5: Load 1 = Top Deflection, y, m, and Load 2 = Slope, S, radians

Load Case No.	Load Type	Pile-head Load 1	Load Type	Pile-head Load 2	Axial Pile-head Loading kN	Pile-head Deflection meters	Pile-head Rotation radians	Max Shear in Pile kN	Max Moment in Pile kN-m
1	V, kN	100.0000	M, kN-m	0.00	0.00	0.00140	-3.60E-04	100.0000	195.0618
2	V, kN	200.0000	M, kN-m	0.00	0.00	0.00502	-0.00107	200.0000	481.6784
3	V, kN	400.0000	M, kN-m	0.00	0.00	0.01761	-0.00313	400.0000	1189.
4	V, kN	600.0000	M, kN-m	0.00	0.00	0.03658	-0.00584	600.0000	2011.
5	V, kN	800.0000	M, kN-m	0.00	0.00	0.06140	-0.00909	800.0000	2911.
6	V, kN	2000.	M, kN-m	0.00	0.00	0.2864	-0.03547	-2467.	9740.

7	V, kN	3000.	M, kN-m	0.00	0.00	0.5333	-0.06254	-4366.	17071.

Maximum pile-head deflection = 0.5332552221 meters
Maximum pile-head rotation = -0.0625423969 radians = -3.583415 deg.

The analysis ended normally.

Opera VI31 – D1500

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LPile for Windows, Version 2016-09.009

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

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Files Used for Analysis

Path to file locations:
\m9159A\Work\07_Pali\VI31 (NV34)\LPILE\

Name of input data file:
VI31_spalle_D1500.lp9d

Name of output report file:
VI31_spalle_D1500.lp9o

Name of plot output file:
VI31_spalle_D1500.lp9p

Name of runtime message file:
VI31_spalle_D1500.lp9r

Date and Time of Analysis

Date: July 9, 2019 Time: 12:32:05

Problem Title

Project Name: VI02 - Spalle e pila
Job Number:
Client:
Engineer:
Description:

Program Options and Settings

Computational Options:
- Use unfactored loads in computations (conventional analysis)

Engineering Units Used for Data Input and Computations:
- International System Units (kilonewtons, meters, millimeters)

Analysis Control Options:
- Maximum number of iterations allowed = 500
- Deflection tolerance for convergence = 2.5400E-07 m
- Maximum allowable deflection = 2.5400 m
- Number of pile increments = 100

Loading Type and Number of Cycles of Loading:
- Static loading specified

- Use of p-y modification factors for p-y curves not selected
- No distributed lateral loads are entered
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:
- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- p-y curves computed and reported at user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined = 1
Total length of pile = 20.000 m
Depth of ground surface below top of pile = -1.0000 m

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point	Depth Below Pile Head meters	Pile Diameter millimeters
1	0.000	1500.00
2	20.000	1500.00

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is an elastic pile
Cross-sectional Shape = Circular Pile
Length of section = 20.000000 m
Width of top of section = 1.500000 m
Width of bottom of section = 1.500000 m

Top Area = 1.767146 sq. m
Bottom Area = 1.767146 sq. m
Moment of Inertia at Top = 0.248505 m^4
Moment of Inertia at Bottom = 0.248505 m^4
Elastic Modulus = 28000000. kPa

Ground Slope and Pile Batter Angles

Ground Slope Angle = 0.000 degrees
= 0.000 radians

Pile Batter Angle = 0.000 degrees
= 0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = -1.000000 m
Distance from top of pile to bottom of layer = 6.000000 m
Effective unit weight at top of layer = 19.000000 kN/m3
Effective unit weight at bottom of layer = 19.000000 kN/m3
Undrained cohesion at top of layer = 30.000000 kPa
Undrained cohesion at bottom of layer = 40.000000 kPa
Epsilon-50 at top of layer = 0.020000
Epsilon-50 at bottom of layer = 0.020000

Layer 2 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = 6.000000 m
Distance from top of pile to bottom of layer = 11.000000 m
Effective unit weight at top of layer = 9.000000 kN/m3
Effective unit weight at bottom of layer = 9.000000 kN/m3
Undrained cohesion at top of layer = 50.000000 kPa
Undrained cohesion at bottom of layer = 50.000000 kPa
Epsilon-50 at top of layer = 0.020000
Epsilon-50 at bottom of layer = 0.020000

Layer 3 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 11.000000 m
Distance from top of pile to bottom of layer = 13.000000 m
Effective unit weight at top of layer = 9.000000 kN/m3
Effective unit weight at bottom of layer = 9.000000 kN/m3
Friction angle at top of layer = 32.000000 deg.
Friction angle at bottom of layer = 32.000000 deg.
Subgrade k at top of layer = 0.0000 kN/m3
Subgrade k at bottom of layer = 0.0000 kN/m3

NOTE: Default values for subgrade k will be computed for this layer.

Layer 4 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 13.000000 m
Distance from top of pile to bottom of layer = 20.000000 m

Effective unit weight at top of layer = 9.000000 kN/m3
Effective unit weight at bottom of layer = 9.000000 kN/m3
Friction angle at top of layer = 38.000000 deg.
Friction angle at bottom of layer = 38.000000 deg.
Subgrade k at top of layer = 0.0000 kN/m3
Subgrade k at bottom of layer = 0.0000 kN/m3

NOTE: Default values for subgrade k will be computed for this layer.

(Depth of the lowest soil layer extends 0.000 m below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth m	Effective Unit Wt. kN/m3	Undrained Cohesion kPa	Angle of Friction deg.	E50 or krm	kpy kN/m3
1	Soft Clay	-1.0000 6.0000	19.0000 19.0000	30.0000 40.0000	-- --	0.02000 0.02000	-- --
2	Soft Clay	6.0000 11.0000	9.0000 9.0000	50.0000 50.0000	-- --	0.02000 0.02000	-- --
3	Sand (Reese, et al.)	11.0000 13.0000	9.0000 9.0000	-- --	32.0000 32.0000	-- --	default default
4	Sand (Reese, et al.)	13.0000 20.0000	9.0000 9.0000	-- --	38.0000 38.0000	-- --	default default

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Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 8

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, kN	Compute Top y vs. Pile Length
1	1	V = 100.000000 kN	M = 0.0000 m-kN	0.0000000	No
2	1	V = 200.000000 kN	M = 0.0000 m-kN	0.0000000	No
3	1	V = 400.000000 kN	M = 0.0000 m-kN	0.0000000	No
4	1	V = 600.000000 kN	M = 0.0000 m-kN	0.0000000	No
5	1	V = 800.000000 kN	M = 0.0000 m-kN	0.0000000	No
6	1	V = 2000. kN	M = 0.0000 m-kN	0.0000000	No
7	1	V = 3000. kN	M = 0.0000 m-kN	0.0000000	No
8	1	V = 5000. kN	M = 0.0000 m-kN	0.0000000	No

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Specified Depths for Output of p-y Curves

Lateral load-transfer (p-y) curves are computed and output at 8 depths.
(Note that load-transfer values are computeded at the specified depths and
may differ from values computed at nodal points)

Depth No.	Depth Below Pile Head m	Depth Below Ground Surface m
1	0.200	1.200
2	5.800	6.800
3	6.200	7.200
4	10.800	11.800
5	11.200	12.200
6	12.800	13.800
7	13.200	14.200
8	19.800	20.800

Depth of ground surface below top of pile = -1.0000 m

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

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Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

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Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head meters	Equivalent Top Depth Below Grnd Surf meters	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer kN	F1 Integral for Layer kN
1	-1.0000	0.00	N.A.	No	0.00	2091.
2	6.0000	7.0000	Yes	No	2091.	3240.
3	11.0000	6.7146	No	No	5330.	6710.
4	13.0000	8.7146	Yes	No	12040.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals
for Layer n. Layering correction equivalent depths are computed only
for soil types with both shallow-depth and deep-depth expressions for
peak lateral load transfer. These soil types are soft and stiff clays,
non-liquefied sands, and cemented c-phi soil.

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p-y Curves Reported for Specified Depths

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p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 1
Depth of top of Layer 1 below pile head = -1.000 m
Depth of p-y curve below pile head = 0.200 m
Depth of p-y curve below ground surface = 1.200 m
Equiv. depth of p-y curve below ground surface = 1.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 1500.000 mm
Average effective unit weight = 19.00000 kN/m3
Undrained cohesion = 31.714 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 6.435 m
Static pu_s for flat ground = 195.943 kN/m
Static pu_d for flat ground = 428.143 kN/m
y_50 = 0.07500 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 195.943 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00017778	13.06286
0.00142	26.12571
0.00480	39.18857
0.01138	52.25143
0.02222	65.31429
0.03840	78.37714
0.06098	91.44000
0.09102	104.50286
0.12960	117.56571
0.17778	130.62857
0.23662	143.69143
0.30720	156.75429
0.39058	169.81714
0.48782	182.88000
0.60000	195.94286
0.63750	195.94286

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 1
Depth of top of Layer 1 below pile head = -1.000 m
Depth of p-y curve below pile head = 5.800 m
Depth of p-y curve below ground surface = 6.800 m
Equiv. depth of p-y curve below ground surface = 6.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 1500.000 mm
Average effective unit weight = 19.00000 kN/m3
Undrained cohesion = 39.714 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 7.391 m
Static pu_s for flat ground = 507.543 kN/m

Static pu_d for flat ground = 536.143 kN/m
y_50 = 0.07500 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 507.543 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00017778	33.83619
0.00142	67.67238
0.00480	101.50857
0.01138	135.34476
0.02222	169.18095
0.03840	203.01714
0.06098	236.85333
0.09102	270.68952
0.12960	304.52571
0.17778	338.36190
0.23662	372.19810
0.30720	406.03429
0.39058	439.87048
0.48782	473.70667
0.60000	507.54286
0.63750	507.54286

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 2
Depth of top of Layer 2 below pile head = 6.000 m
Depth of p-y curve below pile head = 6.200 m
Depth of p-y curve below ground surface = 7.200 m
Equiv. depth of p-y curve below ground surface = 7.200 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 1500.000 mm
Average effective unit weight = 18.72222 kN/m3
Undrained cohesion = 50.000 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 8.477 m
Static pu_s for flat ground = 607.200 kN/m
Static pu_d for flat ground = 675.000 kN/m
y_50 = 0.07500 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 607.200 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00017778	40.48000
0.00142	80.96000
0.00480	121.44000
0.01138	161.92000
0.02222	202.40000

0.03840	242.88000
0.06098	283.36000
0.09102	323.84000
0.12960	364.32000
0.17778	404.80000
0.23662	445.28000
0.30720	485.76000
0.39058	526.24000
0.48782	566.72000
0.60000	607.20000
0.63750	607.20000

p-y Curve Computed Using the Soft Clay Criteria for Static Loading

Soil Layer Number = 2
Depth of top of Layer 2 below pile head = 6.000 m
Depth of p-y curve below pile head = 10.800 m
Depth of p-y curve below ground surface = 11.800 m
Equiv. depth of p-y curve below ground surface = 11.800 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile diameter = 1500.000 mm
Average effective unit weight = 14.93220 kN/m3
Undrained cohesion = 50.000 kPa
Epsilon_50 = 0.0200
J (default value) = 0.5000
Transition depth Xr = 9.494 m
Static pu_s for flat ground = 784.300 kN/m
Static pu_d for flat ground = 675.000 kN/m
y_50 = 0.07500 m
p-multiplier = 1.000
y-multiplier = 1.000
Positive-y Sloping Ground Factor = 1.000
Negative-y Sloping Ground Factor = 1.000
Sloping Ground Factor = 1.000
Positive-y, static pu = 675.000 kN/m

y, meters	p, kN/m
0.00000	0.00000
0.00017778	45.00000
0.00142	90.00000
0.00480	135.00000
0.01138	180.00000
0.02222	225.00000
0.03840	270.00000
0.06098	315.00000
0.09102	360.00000
0.12960	405.00000
0.17778	450.00000
0.23662	495.00000
0.30720	540.00000
0.39058	585.00000
0.48782	630.00000
0.60000	675.00000
0.63750	675.00000

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 3
Depth of top of Layer 3 below pile head = 11.000 m

Depth of p-y curve below pile head = 11.200 m
Depth of p-y curve below ground surface = 12.200 m
Equiv. depth of p-y curve below ground surface = 6.915 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 1500.000 mm
Angle of Friction = 32.000 degrees
Average Effective Unit Weight = 14.738 kN/m3
k_py = 22564.423 kN/m3
K active = 0.307
K passive = 3.255
K0 = 0.400
Pst = 3631.147 kN/m
Psd = 9928.735 kN/m
Ps = Pst (shallow controls) = 3631.147 kN/m
A (static) = 0.8878
B (static) = 0.5117
C = Pm/(Ym^(1/n)) = 16257.5783
n = Pm/(m Ym) = 1.7007
m = (Pu-Pm)/(Yu-Ym) = 43701.2424
Yk = [c/(kx)]^(n/(n-1)) = 0.0010 m
Pk = 286.770 kN/m
Ym = b/60 = 0.0250 m
Pm = B ps = 1858.090 kN/m
Yu = 3b/80 = 0.0563 m
Pu = A Ps = 3223.753 kN/m
Maximum Es value = 275285.965 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00104	286.76998
0.00322	556.78688
0.00540	754.44754
0.00758	920.84981
0.00975	1068.36162
0.01193	1202.78060
0.01411	1327.39716
0.01629	1444.29897
0.01847	1554.91223
0.02064	1660.26420
0.02282	1761.12485
0.02500	1858.08953
0.04063	2540.92144
0.05625	3223.75336
0.06750	3223.75336
0.07875	3223.75336

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 3
Depth of top of Layer 3 below pile head = 11.000 m
Depth of p-y curve below pile head = 12.800 m
Depth of p-y curve below ground surface = 13.800 m
Equiv. depth of p-y curve below ground surface = 8.515 m
Ground slope angle = 0.000 degrees

Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 1500.000 mm
Angle of Friction = 32.000 degrees
Average Effective Unit Weight = 14.072 kN/m3
k_py = 22564.423 kN/m3
K active = 0.307
K passive = 3.255
K0 = 0.400
Pst = 4630.820 kN/m
Psd = 10723.917 kN/m
Ps = Pst (shallow controls) = 4630.820 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 21811.2426
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 56310.7748
Yk = [c/(kx)]^(n/(n-1)) = 0.0011 m
Pk = 353.050 kN/m
Ym = b/60 = 0.0250 m
Pm = B ps = 2315.410 kN/m
Yu = 3b/80 = 0.0563 m
Pu = A Ps = 4075.122 kN/m
Maximum Es value = 311389.042 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00113	353.05039
0.00330	676.41397
0.00547	919.44642
0.00764	1126.40992
0.00981	1311.23371
0.01198	1480.56588
0.01415	1638.22099
0.01632	1786.63801
0.01849	1927.49304
0.02066	2061.99901
0.02283	2191.06867
0.02500	2315.41015
0.04063	3195.26601
0.05625	4075.12186
0.06750	4075.12186
0.07875	4075.12186

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 4
Depth of top of Layer 4 below pile head = 13.000 m
Depth of p-y curve below pile head = 13.200 m
Depth of p-y curve below ground surface = 14.200 m
Equiv. depth of p-y curve below ground surface = 8.915 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees

Effective slope angle = 0.000 degrees
Pile Diameter = 1500.000 mm
Angle of Friction = 38.000 degrees
Average Effective Unit Weight = 13.930 kN/m3
k_py = 56849.174 kN/m3
K active = 0.238
K passive = 4.204
K0 = 0.400
Pst = 8001.247 kN/m
Psd = 23608.749 kN/m
Ps = Pst (shallow controls) = 8001.247 kN/m
A (static) = 0.8800
B (static) = 0.5000
C = Pm/(Ym^(1/n)) = 37686.0104
n = Pm/(m Ym) = 1.6447
m = (Pu-Pm)/(Yu-Ym) = 97295.1652
Yk = [c/(kx)]^(n/(n-1)) = 0.0004 m
Pk = 325.111 kN/m
Ym = b/60 = 0.0250 m
Pm = B ps = 4000.624 kN/m
Yu = 3b/80 = 0.0563 m
Pu = A Ps = 7041.097 kN/m
Maximum Es value = 807258.272 kN/m/m
p-multiplier = 1.00000
y-multiplier = 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00040274	325.11129
0.00264	1019.53072
0.00487	1480.69921
0.00711	1862.76038
0.00935	2199.65413
0.01158	2506.05406
0.01382	2789.96059
0.01606	3056.32908
0.01829	3308.49124
0.02053	3548.81992
0.02276	3779.07895
0.02500	4000.62357
0.04063	5520.86053
0.05625	7041.09748
0.06750	7041.09748
0.07875	7041.09748

The above p-y curve was computed using internal default values of k.

p-y Curve in Sand for Static Loading Conditions Computed Using Reese Criteria

Soil Layer Number = 4
Depth of top of Layer 4 below pile head = 13.000 m
Depth of p-y curve below pile head = 19.800 m
Depth of p-y curve below ground surface = 20.800 m
Equiv. depth of p-y curve below ground surface = 15.515 m
Ground slope angle = 0.000 degrees
Pile batter angle = 0.000 degrees
Effective slope angle = 0.000 degrees
Pile Diameter = 1500.000 mm
Angle of Friction = 38.000 degrees
Average Effective Unit Weight = 12.365 kN/m3

k_py	= 56849.174 kN/m3
K active	= 0.238
K passive	= 4.204
K0	= 0.400
Pst	= 16974.030 kN/m
Psd	= 30698.535 kN/m
Ps = Pst (shallow controls)	= 16974.030 kN/m
A (static)	= 0.8800
B (static)	= 0.5000
C = Pm/(Ym^(1/n))	= 79947.9693
n = Pm/(m Ym)	= 1.6447
m = (Pu-Pm)/(Yu-Ym)	= 206404.2012
Yk = [c/(kx)]^(n/(n-1))	= 0.0010 m
Pk	= 1225.024 kN/m
Ym = b/60	= 0.0250 m
Pm = B ps	= 8487.015 kN/m
Yu = 3b/80	= 0.0563 m
Pu = A Ps	= 14937.146 kN/m
Maximum Es value	= 1182462.821 kN/m/m
p-multiplier	= 1.00000
y-multiplier	= 1.00000

This p-y curve is computed using the equivalent depth.

This curve has the normal shape where Yk < Ym < Yu.

y, meters	p, kN/m
0.00000	0.00000
0.00104	1225.02370
0.00321	2438.57235
0.00539	3340.13884
0.00757	4105.39205
0.00975	4787.70137
0.01193	5412.23413
0.01411	5993.33789
0.01629	6540.14872
0.01846	7058.92703
0.02064	7554.19391
0.02282	8029.34593
0.02500	8487.01485
0.04063	11712.08050
0.05625	14937.14614
0.06750	14937.14614
0.07875	14937.14614

The above p-y curve was computed using internal default values of k.

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head	= 100.000 kN
Applied moment at pile head	= 0.000 kN-m
Axial thrust load on pile head	= 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m

0.00	7.31E-04	4.90E-10	100.0000	-1.74E-04	1.48E-09	6958137.	-19.8273	2714.	0.00
0.2000	6.96E-04	19.6035	95.9582	-1.73E-04	59.1642	6958137.	-20.5907	5918.	0.00
0.4000	6.61E-04	38.3833	91.7677	-1.72E-04	115.8426	6958137.	-21.3139	6447.	0.00
0.6000	6.27E-04	56.3106	87.4368	-1.71E-04	169.9480	6958137.	-21.9951	7017.	0.00
0.8000	5.93E-04	73.3580	82.9741	-1.69E-04	221.3981	6958137.	-22.6328	7636.	0.00
1.0000	5.59E-04	89.5002	78.3882	-1.67E-04	270.1159	6958137.	-23.2254	8307.	0.00
1.2000	5.26E-04	104.7133	73.6886	-1.64E-04	316.0299	6958137.	-23.7713	9037.	0.00
1.4000	4.94E-04	118.9756	68.8845	-1.61E-04	359.0742	6958137.	-24.2689	9834.	0.00
1.6000	4.62E-04	132.2671	63.9860	-1.57E-04	399.1887	6958137.	-24.7167	10705.	0.00
1.8000	4.31E-04	144.5700	59.0030	-1.53E-04	436.3194	6958137.	-25.1133	11662.	0.00
2.0000	4.00E-04	155.8683	53.9460	-1.49E-04	470.4183	6958137.	-25.4570	12714.	0.00
2.2000	3.71E-04	166.1484	48.8256	-1.44E-04	501.4440	6958137.	-25.7464	13875.	0.00
2.4000	3.43E-04	175.3986	43.6530	-1.39E-04	529.3615	6958137.	-25.9801	15160.	0.00
2.6000	3.15E-04	183.6096	38.4393	-1.34E-04	554.1427	6958137.	-26.1564	16587.	0.00
2.8000	2.89E-04	190.7743	33.1963	-1.29E-04	575.7663	6958137.	-26.2741	18179.	0.00
3.0000	2.64E-04	196.8881	27.9357	-1.23E-04	594.2179	6958137.	-26.3314	19960.	0.00
3.2000	2.40E-04	201.9486	22.6699	-1.18E-04	609.4908	6958137.	-26.3270	21962.	0.00
3.4000	2.17E-04	205.9560	17.4113	-1.12E-04	621.5855	6958137.	-26.2592	24222.	0.00
3.6000	1.95E-04	208.9131	12.1727	-1.06E-04	630.5101	6958137.	-26.1264	26785.	0.00
3.8000	1.75E-04	210.8251	6.9674	-9.97E-05	636.2806	6958137.	-25.9268	29709.	0.00
4.0000	1.55E-04	211.7001	1.8088	-9.36E-05	638.9212	6958137.	-25.6587	33064.	0.00
4.2000	1.37E-04	211.5487	-3.2890	-8.75E-05	638.4643	6958137.	-25.3198	36938.	0.00
4.4000	1.20E-04	210.3845	-8.3118	-8.15E-05	634.9507	6958137.	-24.9080	41445.	0.00
4.6000	1.05E-04	208.2239	-13.2447	-7.54E-05	628.4301	6958137.	-24.4206	46734.	0.00
4.8000	9.00E-05	205.0866	-18.0722	-6.95E-05	618.9615	6958137.	-23.8543	52999.	0.00
5.0000	7.67E-05	200.9951	-22.7781	-6.37E-05	606.6131	6958137.	-23.2053	60504.	0.00
5.2000	6.46E-05	195.9753	-27.3455	-5.80E-05	591.4633	6958137.	-22.4687	69616.	0.00
5.4000	5.35E-05	190.0569	-31.7562	-5.24E-05	573.6010	6958137.	-21.6377	80858.	0.00
5.6000	4.36E-05	183.2729	-35.9903	-4.71E-05	553.1266	6958137.	-20.7035	95007.	0.00
5.8000	3.47E-05	175.6608	-40.0260	-4.19E-05	530.1528	6958137.	-19.6532	113276.	0.00
6.0000	2.68E-05	167.2625	-43.9802	-3.70E-05	504.8065	6958137.	-19.8893	148284.	0.00
6.2000	1.99E-05	158.0687	-47.9243	-3.23E-05	477.0590	6958137.	-19.5517	196366.	0.00
6.4000	1.39E-05	148.0928	-51.6374	-2.79E-05	446.9513	6958137.	-17.5788	252751.	0.00
6.6000	8.76E-06	137.4137	-54.9226	-2.38E-05	414.7214	6958137.	-15.2733	348795.	0.00
6.8000	4.40E-06	126.1238	-57.6825	-2.00E-05	380.6477	6958137.	-12.3261	560856.	0.00
7.0000	7.58E-07	114.3407	-58.9557	-1.65E-05	345.0859	6958137.	-0.4056	106985.	0.00
7.2000	-2.22E-06	102.5415	-58.0082	-1.34E-05	309.4752	6958137.	9.8802	889409.	0.00
7.4000	-4.61E-06	91.1374	-55.7368	-1.06E-05	275.0573	6958137.	12.8340	556521.	0.00
7.6000	-6.48E-06	80.2468	-52.9966	-8.18E-06	242.1887	6958137.	14.5681	449719.	0.00
7.8000	-7.88E-06	69.9388	-49.9650	-6.02E-06	211.0787	6958137.	15.7476	399481.	0.00
8.0000	-8.89E-06	60.2607	-46.7354	-4.15E-06	181.8699	6958137.	16.5492	372427.	0.00
8.2000	-9.54E-06	51.2446	-43.3852	-2.55E-06	154.6589	6958137.	16.9529	355259.	0.00
8.4000	-9.91E-06	42.9067	-39.9730	-1.19E-06	129.4945	6958137.	17.1690	346633.	0.00
8.6000	-1.00E-05	35.2555	-36.5322	-7.09E-08	106.4027	6958137.	17.2389	344032.	0.00
8.8000	-9.93E-06	28.2938	-33.0891	8.42E-07	85.3921	6958137.	17.1916	346099.	0.00
9.0000	-9.68E-06	22.0198	-29.6651	1.57E-06	66.4568	6958137.	17.0488	352077.	0.00
9.2000	-9.31E-06	16.4278	-26.2775	2.12E-06	49.5798	6958137.	16.8273	361553.	0.00
9.4000	-8.84E-06	11.5088	-22.9407	2.52E-06	34.7342	6958137.	16.5408	374331.	0.00
9.6000	-8.30E-06	7.2515	-19.6665	2.79E-06	21.8853	6958137.	16.2007	390355.	0.00
9.8000	-7.72E-06	3.6422	-16.4647	2.95E-06	10.9923	6958137.	15.8171	409672.	0.00
10.0000	-7.12E-06	0.6656	-13.3432	3.01E-06	2.0088	6958137.	15.3986	432409.	0.00
10.2000	-6.52E-06	-1.6951	-10.3080	2.99E-06	5.1158	6958137.	14.9528	458759.	0.00
10.4000	-5.93E-06	-3.4576	-7.3641	2.92E-06	10.4352	6958137.	14.4864	488982.	0.00
10.6000	-5.35E-06	-4.6407	-4.5150	2.80E-06	14.0059	6958137.	14.0049	523417.	0.00
10.8000	-4.80E-06	-5.2636	-1.7632	2.66E-06	15.8858	6958137.	13.5124	562527.	0.00
11.0000	-4.29E-06	-5.3460	-0.2959	2.51E-06	16.1345	6958137.	1.1609	54155.	0.00
11.2000	-3.80E-06	-5.3820	-0.07517	2.35E-06	16.2430	6958137.	1.0464	55057.	0.00
11.4000	-3.35E-06	-5.3761	0.1231	2.20E-06	16.2252	6958137.	0.9362	55960.	0.00
11.6000	-2.92E-06	-5.3327	0.2998	2.04E-06	16.0944	6958137.	0.8307	56862.	0.00
11.8000	-2.53E-06	-5.2562	0.4559	1.89E-06	15.8633	6958137.	0.7302	57765.	0.00
12.0000	-2.16E-06	-5.1504	0.5924	1.74E-06	15.5441	6958137.	0.6350	58668.	0.00
12.2000	-1.83E-06	-5.0192	0.7104	1.60E-06	15.1482	6958137.	0.5453	59570.	0.00
12.4000	-1.53E-06	-4.8662	0.8111	1.45E-06	14.6865	6958137.	0.4614	60473.	0.00
12.6000	-1.25E-06	-4.6948	0.8955	1.32E-06	14.1691	6958137.	0.3832	61375.	0.00
12.8000	-9.99E-07	-4.5080	0.9649	1.19E-06	13.6054	6958137.	0.3110	62278.	0.00
13.0000	-7.75E-07	-4.3088	1.0380	1.06E-06	13.0042	6958137.	0.4196	108328.	0.00

13.2000	-5.75E-07	-4.0928	1.1264	9.38E-07	12.3523	6958137.	0.4645	161452.	0.00
13.4000	-4.00E-07	-3.8582	1.2056	8.23E-07	11.6443	6958137.	0.3271	163726.	0.00
13.6000	-2.46E-07	-3.6106	1.2587	7.16E-07	10.8969	6958137.	0.2042	166000.	0.00
13.8000	-1.13E-07	-3.3547	1.2887	6.16E-07	10.1248	6958137.	0.09522	168274.	0.00
14.0000	3.98E-10	-3.0951	1.2982	5.23E-07	9.3412	6958137.	-3.40E-04	170548.	0.00
14.2000	9.62E-08	-2.8355	1.2898	4.38E-07	8.5576	6958137.	-0.08310	172821.	0.00
14.4000	1.76E-07	-2.5792	1.2661	3.60E-07	7.7841	6958137.	-0.1538	175095.	0.00
14.6000	2.40E-07	-2.3290	1.2294	2.90E-07	7.0291	6958137.	-0.2131	177369.	0.00
14.8000	2.92E-07	-2.0874	1.1819	2.26E-07	6.2999	6958137.	-0.2619	179643.	0.00
15.0000	3.31E-07	-1.8563	1.1257	1.70E-07	5.6023	6958137.	-0.3009	181917.	0.00
15.2000	3.59E-07	-1.6371	1.0625	1.19E-07	4.9410	6958137.	-0.3310	184191.	0.00
15.4000	3.79E-07	-1.4313	0.9941	7.53E-08	4.3197	6958137.	-0.3530	186465.	0.00
15.6000	3.90E-07	-1.2395	0.9220	3.69E-08	3.7409	6958137.	-0.3676	188739.	0.00
15.8000	3.93E-07	-1.0625	0.8477	3.85E-09	3.2066	6958137.	-0.3757	191013.	0.00
16.0000	3.91E-07	-0.9004	0.7723	-2.44E-08	2.7176	6958137.	-0.3779	193287.	0.00
16.2000	3.84E-07	-0.7535	0.6970	-4.81E-08	2.2742	6958137.	-0.3751	195561.	0.00
16.4000	3.72E-07	-0.6216	0.6227	-6.79E-08	1.8761	6958137.	-0.3678	197835.	0.00
16.6000	3.56E-07	-0.5044	0.5503	-8.41E-08	1.5224	6958137.	-0.3566	200109.	0.00
16.8000	3.38E-07	-0.4015	0.4804	-9.71E-08	1.2118	6958137.	-0.3422	202383.	0.00
17.0000	3.18E-07	-0.3123	0.4137	-1.07E-07	0.9425	6958137.	-0.3250	204657.	0.00
17.2000	2.95E-07	-0.2360	0.3506	-1.15E-07	0.7124	6958137.	-0.3055	206931.	0.00
17.4000	2.72E-07	-0.1720	0.2917	-1.21E-07	0.5192	6958137.	-0.2840	209205.	0.00
17.6000	2.47E-07	-0.1194	0.2372	-1.25E-07	0.3603	6958137.	-0.2610	211479.	0.00
17.8000	2.21E-07	-0.07715	0.1874	-1.28E-07	0.2328	6958137.	-0.2366	213753.	0.00
18.0000	1.96E-07	-0.04440	0.1426	-1.30E-07	0.1340	6958137.	-0.2112	216027.	0.00
18.2000	1.69E-07	-0.02009	0.1030	-1.31E-07	0.06063	6958137.	-0.1850	218301.	0.00
18.4000	1.43E-07	-0.00318	0.06874	-1.31E-07	0.00961	6958137.	-0.1580	220575.	0.00
18.6000	1.17E-07	0.00741	0.03991	-1.31E-07	0.02235	6958137.	-0.1304	222849.	0.00
18.8000	9.08E-08	0.01278	0.01665	-1.31E-07	0.03857	6958137.	-0.1022	225123.	0.00
19.0000	6.47E-08	0.01406	-9.30E-04	-1.30E-07	0.04245	6958137.	-0.07355	227397.	0.00
19.2000	3.87E-08	0.01241	-0.01272	-1.30E-07	0.03745	6958137.	-0.04439	229671.	0.00
19.4000	1.27E-08	0.00897	-0.01863	-1.30E-07	0.02709	6958137.	-0.01471	231945.	0.00
19.6000	-1.32E-08	0.00495	-0.01856	-1.29E-07	0.01495	6958137.	0.01549	234219.	0.00
19.8000	-3.91E-08	0.00155	-0.01238	-1.29E-07	0.00468	6958137.	0.04625	236493.	0.00
20.0000	-6.50E-08	0.00	0.00	-1.29E-07	0.00	6958137.	0.07759	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

Pile-head deflection = 0.00073053 meters
Computed slope at pile head = -0.00017351 radians
Maximum bending moment = 211.70006560 kN-m
Maximum shear force = 100.00000000 kN
Depth of maximum bending moment = 4.00000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 15
Number of zero deflection points = 3

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 2

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 200.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
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0.00	0.00262	-8.30E-10	200.0000	-5.17E-04	2.50E-09	6958137.	-30.3549	1157.	0.00
0.2000	0.00252	39.3929	193.8033	-5.16E-04	118.8897	6958137.	-31.6125	2510.	0.00
0.4000	0.00242	77.5213	187.3597	-5.15E-04	233.9631	6958137.	-32.8229	2717.	0.00
0.6000	0.00231	114.3368	180.6790	-5.12E-04	345.0741	6958137.	-33.9842	2938.	0.00
0.8000	0.00221	149.7929	173.7711	-5.08E-04	452.0824	6958137.	-35.0945	3174.	0.00
1.0000	0.00211	183.8452	166.6465	-5.03E-04	554.8540	6958137.	-36.1521	3427.	0.00
1.2000	0.00201	216.4515	159.3158	-4.98E-04	653.2613	6958137.	-37.1550	3697.	0.00
1.4000	0.00191	247.5716	151.7901	-4.91E-04	747.1832	6958137.	-38.1015	3988.	0.00
1.6000	0.00181	277.1676	144.0810	-4.83E-04	836.5053	6958137.	-38.9897	4300.	0.00
1.8000	0.00172	305.2040	136.2002	-4.75E-04	921.1206	6958137.	-39.8178	4636.	0.00
2.0000	0.00162	331.6476	128.1600	-4.66E-04	1001.	6958137.	-40.5841	4999.	0.00
2.2000	0.00153	356.4680	119.9730	-4.56E-04	1076.	6958137.	-41.2867	5392.	0.00
2.4000	0.00144	379.6368	111.6519	-4.45E-04	1146.	6958137.	-41.9238	5818.	0.00
2.6000	0.00135	401.1287	103.2102	-4.34E-04	1211.	6958137.	-42.4937	6280.	0.00
2.8000	0.00127	420.9209	94.6613	-4.22E-04	1270.	6958137.	-42.9946	6784.	0.00
3.0000	0.00118	438.9933	86.0194	-4.10E-04	1325.	6958137.	-43.4246	7333.	0.00
3.2000	0.00110	455.3287	77.2988	-3.97E-04	1374.	6958137.	-43.7819	7935.	0.00
3.4000	0.00103	469.9128	68.5141	-3.84E-04	1418.	6958137.	-44.0647	8594.	0.00
3.6000	9.50E-04	482.7343	59.6805	-3.70E-04	1457.	6958137.	-44.2710	9320.	0.00
3.8000	8.77E-04	493.7850	50.8135	-3.56E-04	1490.	6958137.	-44.3990	10120.	0.00
4.0000	8.08E-04	503.0597	41.9290	-3.42E-04	1518.	6958137.	-44.4466	11007.	0.00
4.2000	7.41E-04	510.5566	33.0431	-3.27E-04	1541.	6958137.	-44.4117	11992.	0.00
4.4000	6.77E-04	516.2770	24.1728	-3.12E-04	1558.	6958137.	-44.2921	13090.	0.00
4.6000	6.16E-04	520.2257	15.3350	-2.98E-04	1570.	6958137.	-44.0854	14319.	0.00
4.8000	5.58E-04	522.4110	6.5476	-2.83E-04	1577.	6958137.	-43.7891	15703.	0.00
5.0000	5.03E-04	522.8447	-2.1714	-2.68E-04	1578.	6958137.	-43.4004	17266.	0.00
5.2000	4.51E-04	521.5424	-10.8030	-2.53E-04	1574.	6958137.	-42.9160	19043.	0.00
5.4000	4.02E-04	518.5235	-19.3279	-2.38E-04	1565.	6958137.	-42.3324	21076.	0.00
5.6000	3.56E-04	513.8113	-27.7257	-2.23E-04	1551.	6958137.	-41.6456	23417.	0.00
5.8000	3.13E-04	507.4332	-35.9753	-2.08E-04	1531.	6958137.	-40.8504	26134.	0.00
6.0000	2.72E-04	499.4212	-44.3619	-1.94E-04	1507.	6958137.	-43.0163	31575.	0.00
6.2000	2.35E-04	489.6885	-53.1086	-1.79E-04	1478.	6958137.	-44.4504	37800.	0.00
6.4000	2.01E-04	478.1777	-61.8236	-1.65E-04	1443.	6958137.	-42.6994	42546.	0.00
6.6000	1.69E-04	464.9590	-70.1762	-1.52E-04	1403.	6958137.	-40.8268	48315.	0.00
6.8000	1.40E-04	450.1072	-78.1405	-1.39E-04	1358.	6958137.	-38.8158	55468.	0.00
7.0000	1.13E-04	433.7028	-85.6863	-1.26E-04	1309.	6958137.	-36.6420	64568.	0.00
7.2000	8.95E-05	415.8327	-92.7773	-1.14E-04	1255.	6958137.	-34.2688	76548.	0.00
7.4000	6.80E-05	396.5919	-99.3679	-1.02E-04	1197.	6958137.	-31.6373	93104.	0.00
7.6000	4.87E-05	376.0856	-105.3962	-9.11E-05	1135.	6958137.	-28.6449	117717.	0.00
7.8000	3.15E-05	354.4334	-110.7694	-8.06E-05	1070.	6958137.	-25.0873	159106.	0.00
8.0000	1.64E-05	331.7778	-115.3183	-7.07E-05	1001.	6958137.	-20.4016	248182.	0.00
8.2000	3.25E-06	308.3061	-118.5588	-6.15E-05	930.4831	6958137.	-12.0036	737861.	0.00
8.4000	-8.16E-06	284.3543	-118.1551	-5.30E-05	858.1953	6958137.	16.0409	393100.	0.00
8.6000	-1.79E-05	261.0441	-114.4599	-4.51E-05	787.8440	6958137.	20.9111	233105.	0.00
8.8000	-2.62E-05	238.5704	-109.9941	-3.80E-05	720.0171	6958137.	23.7470	181130.	0.00
9.0000	-3.31E-05	217.0465	-105.0513	-3.14E-05	655.0570	6958137.	25.6803	155032.	0.00
9.2000	-3.88E-05	196.5498	-99.7761	-2.55E-05	593.1971	6958137.	27.0718	139584.	0.00
9.4000	-4.33E-05	177.1360	-94.2599	-2.01E-05	534.6053	6958137.	28.0906	129690.	0.00
9.6000	-4.68E-05	158.8459	-88.5675	-1.53E-05	479.4047	6958137.	28.8326	123132.	0.00
9.8000	-4.94E-05	141.7090	-82.7484	-1.10E-05	427.6848	6958137.	29.3584	118785.	0.00
10.0000	-5.12E-05	125.7465	-76.8417	-7.11E-06	379.5091	6958137.	29.7090	116016.	0.00
10.2000	-5.23E-05	110.9723	-70.8794	-3.71E-06	334.9200	6958137.	29.9141	114445.	0.00
10.4000	-5.27E-05	97.3947	-64.8884	-7.18E-07	293.9421	6958137.	29.9957	113835.	0.00
10.6000	-5.26E-05	85.0170	-58.8918	1.90E-06	256.5854	6958137.	29.9707	114035.	0.00
10.8000	-5.19E-05	73.8380	-52.9095	4.19E-06	222.8468	6958137.	29.8522	114951.	0.00
11.0000	-5.09E-05	63.8532	-48.5463	6.17E-06	192.7120	6958137.	13.7794	54155.	0.00
11.2000	-4.95E-05	54.4195	-45.8065	7.87E-06	164.2407	6958137.	13.6191	55057.	0.00
11.4000	-4.77E-05	45.5306	-43.1087	9.30E-06	137.4135	6958137.	13.3585	55960.	0.00
11.6000	-4.58E-05	37.1760	-40.4721	1.05E-05	112.1990	6958137.	13.0078	56862.	0.00
11.8000	-4.35E-05	29.3417	-37.9136	1.14E-05	88.5548	6958137.	12.5775	57765.	0.00
12.0000	-4.12E-05	22.0106	-35.4480	1.22E-05	66.4290	6958137.	12.0777	58668.	0.00
12.2000	-3.87E-05	15.1625	-33.0884	1.27E-05	45.7612	6958137.	11.5189	59570.	0.00
12.4000	-3.61E-05	8.7752	-30.8454	1.31E-05	26.4840	6958137.	10.9111	60473.	0.00
12.6000	-3.34E-05	2.8244	-28.7278	1.32E-05	8.5241	6958137.	10.2645	61375.	0.00
12.8000	-3.08E-05	-2.7159	-26.7425	1.32E-05	8.1968	6958137.	9.5890	62278.	0.00
13.0000	-2.82E-05	-7.8726	-24.2585	1.31E-05	23.7600	6958137.	15.2504	108328.	0.00
13.2000	-2.56E-05	-12.4193	-20.6699	1.28E-05	37.4822	6958137.	20.6358	161452.	0.00

13.4000	-2.30E-05	-16.1406	-16.7201	1.24E-05	48.7132	6958137.	18.8621	163726.	0.00
13.6000	-2.06E-05	-19.1074	-13.1231	1.19E-05	57.6671	6958137.	17.1081	166000.	0.00
13.8000	-1.83E-05	-21.3899	-9.8732	1.13E-05	64.5556	6958137.	15.3912	168274.	0.00
14.0000	-1.61E-05	-23.0567	-6.9614	1.06E-05	69.5862	6958137.	13.7265	170548.	0.00
14.2000	-1.40E-05	-24.1744	-4.3761	9.97E-06	72.9596	6958137.	12.1264	172821.	0.00
14.4000	-1.21E-05	-24.8071	-2.1034	9.27E-06	74.8691	6958137.	10.6010	175095.	0.00
14.6000	-1.03E-05	-25.0158	-0.1274	8.55E-06	75.4988	6958137.	9.1583	177369.	0.00
14.8000	-8.69E-06	-24.8581	1.5688	7.83E-06	75.0229	6958137.	7.8043	179643.	0.00
15.0000	-7.19E-06	-24.3882	3.0035	7.13E-06	73.6049	6958137.	6.5430	181917.	0.00
15.2000	-5.84E-06	-23.6567	4.1955	6.44E-06	71.3970	6958137.	5.3768	184191.	0.00
15.4000	-4.62E-06	-22.7100	5.1639	5.77E-06	68.5400	6958137.	4.3066	186465.	0.00
15.6000	-3.53E-06	-21.5911	5.9277	5.13E-06	65.1631	6958137.	3.3319	188739.	0.00
15.8000	-2.57E-06	-20.3389	6.5060	4.53E-06	61.3840	6958137.	2.4509	191013.	0.00
16.0000	-1.72E-06	-18.9887	6.9172	3.96E-06	57.3089	6958137.	1.6610	193287.	0.00
16.2000	-9.80E-07	-17.5721	7.1791	3.44E-06	53.0334	6958137.	0.9586	195561.	0.00
16.4000	-3.43E-07	-16.1171	7.3089	2.95E-06	48.6421	6958137.	0.3394	197835.	0.00
16.6000	2.02E-07	-14.6485	7.3227	2.51E-06	44.2099	6958137.	-0.2017	200109.	0.00
16.8000	6.62E-07	-13.1880	7.2355	2.11E-06	39.8020	6958137.	-0.6699	202383.	0.00
17.0000	1.05E-06	-11.7543	7.0614	1.75E-06	35.4750	6958137.	-1.0711	204657.	0.00
17.2000	1.36E-06	-10.3634	6.8132	1.44E-06	31.2773	6958137.	-1.4110	206931.	0.00
17.4000	1.62E-06	-9.0290	6.5025	1.16E-06	27.2499	6958137.	-1.6959	209205.	0.00
17.6000	1.83E-06	-7.7624	6.1398	9.16E-07	23.4273	6958137.	-1.9317	211479.	0.00
17.8000	1.99E-06	-6.5731	5.7341	7.10E-07	19.8379	6958137.	-2.1245	213753.	0.00
18.0000	2.11E-06	-5.4687	5.2937	5.37E-07	16.5049	6958137.	-2.2802	216027.	0.00
18.2000	2.20E-06	-4.4556	4.8252	3.95E-07	13.4472	6958137.	-2.4043	218301.	0.00
18.4000	2.27E-06	-3.5387	4.3345	2.80E-07	10.6798	6958137.	-2.5023	220575.	0.00
18.6000	2.31E-06	-2.7218	3.8264	1.90E-07	8.2145	6958137.	-2.5792	222849.	0.00
18.8000	2.34E-06	-2.0081	3.3045	1.22E-07	6.0605	6958137.	-2.6394	225123.	0.00
19.0000	2.36E-06	-1.4000	2.7719	7.29E-08	4.2252	6958137.	-2.6872	227397.	0.00
19.2000	2.37E-06	-0.8993	2.2305	3.98E-08	2.7143	6958137.	-2.7262	229671.	0.00
19.4000	2.38E-06	-0.5078	1.6820	1.96E-08	1.5324	6958137.	-2.7594	231945.	0.00
19.6000	2.38E-06	-0.2266	1.1271	9.06E-09	0.6837	6958137.	-2.7894	234219.	0.00
19.8000	2.38E-06	-0.05692	0.5664	4.99E-09	0.1718	6958137.	-2.8178	236493.	0.00
20.0000	2.38E-06	0.00	0.00	4.17E-09	0.00	6958137.	-2.8459	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 2:

Pile-head deflection = 0.00262253 meters
Computed slope at pile head = -0.00051690 radians
Maximum bending moment = 522.84470923 kN-m
Maximum shear force = 200.00000000 kN
Depth of maximum bending moment = 5.00000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 18
Number of zero deflection points = 2

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 3

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 400.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.00915	5.43E-09	400.0000	-0.00151	1.64E-08	6958137.	-46.0368	503.1487	0.00

0.2000	0.00885	79.0793	390.5911	-0.00151	238.6651	6958137.	-48.0517	1086.	0.00
0.4000	0.00855	156.2365	380.7848	-0.00150	471.5293	6958137.	-50.0115	1170.	0.00
0.6000	0.00825	231.3932	370.5923	-0.00150	698.3561	6958137.	-51.9141	1259.	0.00
0.8000	0.00795	304.4734	360.0251	-0.00149	918.9156	6958137.	-53.7575	1353.	0.00
1.0000	0.00765	375.4032	349.0954	-0.00148	1133.	6958137.	-55.5396	1452.	0.00
1.2000	0.00736	444.1115	337.8156	-0.00147	1340.	6958137.	-57.2581	1557.	0.00
1.4000	0.00706	510.5295	326.1987	-0.00145	1541.	6958137.	-58.9111	1668.	0.00
1.6000	0.00678	574.5910	314.2579	-0.00144	1734.	6958137.	-60.4965	1786.	0.00
1.8000	0.00649	636.2327	302.0071	-0.00142	1920.	6958137.	-62.0121	1911.	0.00
2.0000	0.00621	695.3938	289.4603	-0.00140	2099.	6958137.	-63.4559	2045.	0.00
2.2000	0.00593	752.0168	276.6321	-0.00138	2270.	6958137.	-64.8260	2187.	0.00
2.4000	0.00565	806.0467	263.5375	-0.00136	2433.	6958137.	-66.1201	2338.	0.00
2.6000	0.00539	857.4318	250.1919	-0.00133	2588.	6958137.	-67.3363	2501.	0.00
2.8000	0.00512	906.1234	236.6110	-0.00131	2735.	6958137.	-68.4725	2674.	0.00
3.0000	0.00486	952.0762	222.8111	-0.00128	2873.	6958137.	-69.5267	2860.	0.00
3.2000	0.00461	995.2479	208.8087	-0.00125	3004.	6958137.	-70.4968	3060.	0.00
3.4000	0.00436	1036.	194.6209	-0.00123	3125.	6958137.	-71.3808	3274.	0.00
3.6000	0.00412	1073.	180.2652	-0.00119	3239.	6958137.	-72.1767	3505.	0.00
3.8000	0.00388	1108.	165.7593	-0.00116	3343.	6958137.	-72.8823	3755.	0.00
4.0000	0.00365	1139.	151.1215	-0.00113	3439.	6958137.	-73.4956	4024.	0.00
4.2000	0.00343	1168.	136.3705	-0.00110	3526.	6958137.	-74.0145	4316.	0.00
4.4000	0.00321	1194.	121.5253	-0.00106	3603.	6958137.	-74.4369	4633.	0.00
4.6000	0.00300	1217.	106.6056	-0.00103	3672.	6958137.	-74.7606	4978.	0.00
4.8000	0.00280	1237.	91.6312	-9.94E-04	3732.	6958137.	-74.9835	5353.	0.00
5.0000	0.00261	1253.	76.6225	-9.59E-04	3783.	6958137.	-75.1033	5764.	0.00
5.2000	0.00242	1267.	61.6004	-9.22E-04	3825.	6958137.	-75.1176	6213.	0.00
5.4000	0.00224	1278.	46.5862	-8.86E-04	3857.	6958137.	-75.0242	6707.	0.00
5.6000	0.00206	1286.	31.6018	-8.49E-04	3881.	6958137.	-74.8206	7251.	0.00
5.8000	0.00190	1291.	16.6693	-8.12E-04	3895.	6958137.	-74.5041	7852.	0.00
6.0000	0.00174	1293.	1.2414	-7.75E-04	3901.	6958137.	-79.7753	9175.	0.00
6.2000	0.00159	1291.	-15.1352	-7.38E-04	3897.	6958137.	-83.9904	10580.	0.00
6.4000	0.00144	1286.	-31.7749	-7.01E-04	3883.	6958137.	-82.4061	11414.	0.00
6.6000	0.00131	1278.	-48.0878	-6.64E-04	3859.	6958137.	-80.7233	12348.	0.00
6.8000	0.00118	1267.	-64.0541	-6.27E-04	3825.	6958137.	-78.9393	13397.	0.00
7.0000	0.00106	1253.	-79.6531	-5.91E-04	3781.	6958137.	-77.0509	14584.	0.00
7.2000	9.42E-04	1235.	-94.8636	-5.55E-04	3728.	6958137.	-75.0542	15933.	0.00
7.4000	8.35E-04	1215.	-109.6634	-5.20E-04	3667.	6958137.	-72.9440	17480.	0.00
7.6000	7.34E-04	1192.	-124.0293	-4.85E-04	3596.	6958137.	-70.7144	19265.	0.00
7.8000	6.40E-04	1165.	-137.9365	-4.51E-04	3517.	6958137.	-68.3575	21346.	0.00
8.0000	5.54E-04	1136.	-151.3439	-4.18E-04	3430.	6958137.	-65.7169	23744.	0.00
8.2000	4.73E-04	1105.	-164.1523	-3.86E-04	3334.	6958137.	-62.3675	26364.	0.00
8.4000	3.99E-04	1071.	-176.2819	-3.55E-04	3231.	6958137.	-58.9277	29533.	0.00
8.6000	3.31E-04	1034.	-187.7123	-3.25E-04	3121.	6958137.	-55.3764	33444.	0.00
8.8000	2.69E-04	995.6053	-198.4182	-2.95E-04	3005.	6958137.	-51.6829	38398.	0.00
9.0000	2.13E-04	954.8880	-208.3666	-2.67E-04	2882.	6958137.	-47.8009	44892.	0.00
9.2000	1.62E-04	912.2587	-217.5123	-2.41E-04	2753.	6958137.	-43.6567	53827.	0.00
9.4000	1.17E-04	867.8831	-225.7902	-2.15E-04	2619.	6958137.	-39.1221	67043.	0.00
9.6000	7.62E-05	821.9426	-233.0968	-1.91E-04	2481.	6958137.	-33.9432	89098.	0.00
9.8000	4.04E-05	774.6444	-239.2394	-1.68E-04	2338.	6958137.	-27.4834	136044.	0.00
10.0000	9.07E-06	726.2468	-243.6621	-1.46E-04	2192.	6958137.	-16.7435	369295.	0.00
10.2000	-1.81E-05	677.1796	-243.2387	-1.26E-04	2044.	6958137.	20.9781	231889.	0.00
10.4000	-4.14E-05	628.9514	-238.3748	-1.07E-04	1898.	6958137.	27.6600	133748.	0.00
10.6000	-6.10E-05	581.8296	-232.4594	-8.99E-05	1756.	6958137.	31.4942	103236.	0.00
10.8000	-7.73E-05	535.9676	-225.9015	-7.38E-05	1618.	6958137.	34.0853	88165.	0.00
11.0000	-9.05E-05	491.4690	-220.0411	-5.91E-05	1483.	6958137.	24.5180	54155.	0.00
11.2000	-1.01E-04	447.9512	-214.8103	-4.56E-05	1352.	6958137.	27.7900	55057.	0.00
11.4000	-1.09E-04	405.5449	-208.9878	-3.33E-05	1224.	6958137.	30.4354	55960.	0.00
11.6000	-1.14E-04	364.3560	-202.6954	-2.22E-05	1100.	6958137.	32.4885	56862.	0.00
11.8000	-1.18E-04	324.4667	-196.0479	-1.23E-05	979.2566	6958137.	33.9863	57765.	0.00
12.0000	-1.19E-04	285.9369	-189.1525	-3.57E-06	862.9716	6958137.	34.9676	58668.	0.00
12.2000	-1.19E-04	248.8057	-182.1084	4.12E-06	750.9079	6958137.	35.4732	59570.	0.00
12.4000	-1.18E-04	213.0935	-175.0066	1.08E-05	643.1267	6958137.	35.5454	60473.	0.00
12.6000	-1.15E-04	178.8031	-167.9293	1.64E-05	539.6365	6958137.	35.2277	61375.	0.00
12.8000	-1.11E-04	145.9218	-160.9500	2.11E-05	440.3991	6958137.	34.5650	62278.	0.00
13.0000	-1.06E-04	114.4231	-151.7320	2.48E-05	345.3345	6958137.	57.6153	108328.	0.00
13.2000	-1.01E-04	85.2290	-137.8104	2.77E-05	257.2253	6958137.	81.6005	161452.	0.00
13.4000	-9.53E-05	59.2989	-121.8484	2.97E-05	178.9671	6958137.	78.0194	163726.	0.00

13.6000	-8.92E-05	36.4896	-106.6441	3.11E-05	110.1275	6958137.	74.0240	166000.	0.00
13.8000	-8.29E-05	16.6413	-92.2704	3.19E-05	50.2242	6958137.	69.7129	168274.	0.00
14.0000	-7.64E-05	-0.4185	-78.7815	3.21E-05	1.2631	6958137.	65.1763	170548.	0.00
14.2000	-7.00E-05	-14.8713	-66.2143	3.19E-05	44.8823	6958137.	60.4957	172821.	0.00
14.4000	-6.37E-05	-26.9042	-54.5903	3.13E-05	81.1983	6958137.	55.7440	175095.	0.00
14.6000	-5.75E-05	-36.7074	-43.9174	3.04E-05	110.7848	6958137.	50.9852	177369.	0.00
14.8000	-5.15E-05	-44.4712	-34.1913	2.92E-05	134.2162	6958137.	46.2755	179643.	0.00
15.0000	-4.58E-05	-50.3839	-25.3975	2.79E-05	152.0612	6958137.	41.6625	181917.	0.00
15.2000	-4.04E-05	-54.6302	-17.5126	2.63E-05	164.8766	6958137.	37.1862	184191.	0.00
15.4000	-3.53E-05	-57.3890	-10.5061	2.47E-05	173.2028	6958137.	32.8794	186465.	0.00
15.6000	-3.05E-05	-58.8326	-4.3414	2.31E-05	177.5597	6958137.	28.7677	188739.	0.00
15.8000	-2.60E-05	-59.1255	1.0224	2.14E-05	178.4438	6958137.	24.8702	191013.	0.00
16.0000	-2.19E-05	-58.4236	5.6295	1.97E-05	176.3254	6958137.	21.2002	193287.	0.00
16.2000	-1.82E-05	-56.8737	9.5260	1.80E-05	171.6477	6958137.	17.7653	195561.	0.00
16.4000	-1.47E-05	-54.6132	12.7594	1.64E-05	164.8254	6958137.	14.5681	197835.	0.00
16.6000	-1.16E-05	-51.7700	15.3769	1.49E-05	156.2444	6958137.	11.6068	200109.	0.00
16.8000	-8.77E-06	-48.4625	17.4251	1.35E-05	146.2621	6958137.	8.8755	202383.	0.00
17.0000	-6.22E-06	-44.7999	18.9491	1.21E-05	135.2084	6958137.	6.3649	204657.	0.00
17.2000	-3.93E-06	-40.8828	19.9919	1.09E-05	123.3864	6958137.	4.0629	206931.	0.00
17.4000	-1.87E-06	-36.8032	20.5937	9.76E-06	111.0738	6958137.	1.9545	209205.	0.00
17.6000	-2.17E-08	-32.6454	20.7914	8.76E-06	98.5253	6958137.	0.02299	211479.	0.00
17.8000	1.64E-06	-28.4866	20.6187	7.89E-06	85.9740	6958137.	-1.7499	213753.	0.00
18.0000	3.13E-06	-24.3979	20.1053	7.13E-06	73.6340	6958137.	-3.3837	216027.	0.00
18.2000	4.49E-06	-20.4445	19.2771	6.48E-06	61.7025	6958137.	-4.8983	218301.	0.00
18.4000	5.73E-06	-16.6870	18.1559	5.95E-06	50.3622	6958137.	-6.3142	220575.	0.00
18.6000	6.87E-06	-13.1821	16.7593	5.52E-06	39.7843	6958137.	-7.6513	222849.	0.00
18.8000	7.93E-06	-9.9833	15.1013	5.19E-06	30.1300	6958137.	-8.9291	225123.	0.00
19.0000	8.94E-06	-7.1416	13.1918	4.94E-06	21.5537	6958137.	-10.1658	227397.	0.00
19.2000	9.91E-06	-4.7066	11.0374	4.77E-06	14.2046	6958137.	-11.3784	229671.	0.00
19.4000	1.08E-05	-2.7267	8.6414	4.66E-06	8.2292	6958137.	-12.5816	231945.	0.00
19.6000	1.18E-05	-1.2500	6.0045	4.61E-06	3.7726	6958137.	-13.7877	234219.	0.00
19.8000	1.27E-05	-0.3249	3.1250	4.58E-06	0.9805	6958137.	-15.0065	236493.	0.00
20.0000	1.36E-05	0.00	0.00	4.58E-06	0.00	6958137.	-16.2438	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 3:

Pile-head deflection = 0.00914975 meters
Computed slope at pile head = -0.00150682 radians
Maximum bending moment = 1293. kN-m
Maximum shear force = 400.00000000 kN
Depth of maximum bending moment = 6.00000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 22
Number of zero deflection points = 2

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 4

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 600.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.01900	4.83E-09	600.0000	-0.00281	1.46E-08	6958137.	-58.7366	309.0819	0.00
0.2000	0.01844	118.8253	587.9885	-0.00281	358.6205	6958137.	-61.3788	665.6377	0.00

0.4000	0.01788	235.1954	575.4544	-0.00280	709.8313	6958137.	-63.9614	715.3989	0.00
0.6000	0.01732	349.0070	562.4101	-0.00279	1053.	6958137.	-66.4822	767.6079	0.00
0.8000	0.01676	460.1594	548.8680	-0.00278	1389.	6958137.	-68.9388	822.4382	0.00
1.0000	0.01621	568.5542	534.8412	-0.00277	1716.	6958137.	-71.3290	880.0775	0.00
1.2000	0.01566	674.0959	520.3432	-0.00275	2034.	6958137.	-73.6506	940.7292	0.00
1.4000	0.01511	776.6915	505.3880	-0.00273	2344.	6958137.	-75.9015	1005.	0.00
1.6000	0.01457	876.2511	489.9900	-0.00270	2645.	6958137.	-78.0792	1072.	0.00
1.8000	0.01403	972.6875	474.1638	-0.00268	2936.	6958137.	-80.1818	1143.	0.00
2.0000	0.01350	1066.	457.9250	-0.00265	3217.	6958137.	-82.2069	1218.	0.00
2.2000	0.01297	1156.	441.2891	-0.00262	3488.	6958137.	-84.1524	1298.	0.00
2.4000	0.01245	1242.	424.2722	-0.00258	3750.	6958137.	-86.0161	1382.	0.00
2.6000	0.01194	1326.	406.8910	-0.00254	4001.	6958137.	-87.7959	1471.	0.00
2.8000	0.01143	1405.	389.1624	-0.00250	4241.	6958137.	-89.4896	1565.	0.00
3.0000	0.01094	1481.	371.1040	-0.00246	4470.	6958137.	-91.0950	1666.	0.00
3.2000	0.01045	1554.	352.7335	-0.00242	4689.	6958137.	-92.6101	1773.	0.00
3.4000	0.00997	1622.	334.0692	-0.00237	4896.	6958137.	-94.0326	1887.	0.00
3.6000	0.00950	1687.	315.1299	-0.00233	5092.	6958137.	-95.3605	2008.	0.00
3.8000	0.00904	1748.	295.9347	-0.00228	5277.	6958137.	-96.5917	2138.	0.00
4.0000	0.00859	1806.	276.5031	-0.00223	5449.	6958137.	-97.7241	2276.	0.00
4.2000	0.00815	1859.	256.8552	-0.00217	5610.	6958137.	-98.7555	2424.	0.00
4.4000	0.00772	1908.	237.0112	-0.00212	5760.	6958137.	-99.6839	2583.	0.00
4.6000	0.00730	1954.	216.9921	-0.00206	5897.	6958137.	-100.5072	2754.	0.00
4.8000	0.00689	1995.	196.8191	-0.00201	6022.	6958137.	-101.2233	2937.	0.00
5.0000	0.00650	2033.	176.5137	-0.00195	6134.	6958137.	-101.8301	3135.	0.00
5.2000	0.00611	2066.	156.0982	-0.00189	6235.	6958137.	-102.3256	3348.	0.00
5.4000	0.00574	2095.	135.5948	-0.00183	6323.	6958137.	-102.7077	3578.	0.00
5.6000	0.00538	2120.	115.0266	-0.00177	6398.	6958137.	-102.9743	3828.	0.00
5.8000	0.00503	2141.	94.4169	-0.00171	6462.	6958137.	-103.1233	4098.	0.00
6.0000	0.00470	2158.	72.9950	-0.00165	6512.	6958137.	-111.0950	4730.	0.00
6.2000	0.00437	2170.	50.1120	-0.00158	6550.	6958137.	-117.7354	5384.	0.00
6.4000	0.00406	2178.	26.7049	-0.00152	6573.	6958137.	-116.3358	5726.	0.00
6.6000	0.00376	2181.	3.5875	-0.00146	6582.	6958137.	-114.8378	6100.	0.00
6.8000	0.00348	2179.	-19.2203	-0.00140	6577.	6958137.	-113.2405	6509.	0.00
7.0000	0.00321	2173.	-41.6986	-0.00133	6559.	6958137.	-111.5428	6958.	0.00
7.2000	0.00295	2163.	-63.8273	-0.00127	6527.	6958137.	-109.7436	7451.	0.00
7.4000	0.00270	2148.	-85.5858	-0.00121	6482.	6958137.	-107.8416	7996.	0.00
7.6000	0.00246	2128.	-106.9535	-0.00115	6423.	6958137.	-105.8353	8599.	0.00
7.8000	0.00224	2105.	-127.9093	-0.00109	6353.	6958137.	-103.7228	9269.	0.00
8.0000	0.00203	2077.	-148.4093	-0.00103	6269.	6958137.	-101.2772	9995.	0.00
8.2000	0.00183	2045.	-168.3208	-9.68E-04	6173.	6958137.	-97.8374	10710.	0.00
8.4000	0.00164	2010.	-187.5409	-9.10E-04	6066.	6958137.	-94.3633	11514.	0.00
8.6000	0.00146	1970.	-206.0624	-8.53E-04	5947.	6958137.	-90.8524	12421.	0.00
8.8000	0.00130	1927.	-223.8778	-7.97E-04	5817.	6958137.	-87.3016	13452.	0.00
9.0000	0.00114	1881.	-240.9787	-7.42E-04	5677.	6958137.	-83.7069	14632.	0.00
9.2000	0.00100	1831.	-257.3557	-6.89E-04	5526.	6958137.	-80.0629	15994.	0.00
9.4000	8.69E-04	1778.	-272.9982	-6.37E-04	5366.	6958137.	-76.3627	17582.	0.00
9.6000	7.46E-04	1722.	-287.8942	-5.87E-04	5197.	6958137.	-72.5971	19453.	0.00
9.8000	6.34E-04	1663.	-302.0293	-5.38E-04	5018.	6958137.	-68.7540	21689.	0.00
10.0000	5.31E-04	1601.	-315.3863	-4.91E-04	4832.	6958137.	-64.8162	24404.	0.00
10.2000	4.38E-04	1537.	-327.9440	-4.46E-04	4638.	6958137.	-60.7603	27772.	0.00
10.4000	3.53E-04	1470.	-339.6751	-4.03E-04	4436.	6958137.	-56.5515	32060.	0.00
10.6000	2.76E-04	1401.	-350.5441	-3.62E-04	4228.	6958137.	-52.1377	37718.	0.00
10.8000	2.08E-04	1330.	-360.5013	-3.22E-04	4013.	6958137.	-47.4343	45571.	0.00
11.0000	1.48E-04	1257.	-369.2398	-2.85E-04	3792.	6958137.	-39.9508	54155.	0.00
11.2000	9.41E-05	1182.	-375.8262	-2.50E-04	3567.	6958137.	-25.9132	55057.	0.00
11.4000	4.75E-05	1106.	-379.7470	-2.17E-04	3339.	6958137.	-13.2946	55960.	0.00
11.6000	7.26E-06	1030.	-381.2828	-1.86E-04	3109.	6958137.	-2.0634	56862.	0.00
11.8000	-2.71E-05	953.7397	-380.7070	-1.58E-04	2878.	6958137.	7.8210	57765.	0.00
12.0000	-5.59E-05	877.7547	-378.2842	-1.32E-04	2649.	6958137.	16.4070	58668.	0.00
12.2000	-7.97E-05	802.4260	-374.2685	-1.08E-04	2422.	6958137.	23.7505	59570.	0.00
12.4000	-9.89E-05	728.0473	-368.9020	-8.55E-05	2197.	6958137.	29.9141	60473.	0.00
12.6000	-1.14E-04	654.8652	-362.4140	-6.56E-05	1976.	6958137.	34.9665	61375.	0.00
12.8000	-1.25E-04	583.0817	-355.0191	-4.78E-05	1760.	6958137.	38.9822	62278.	0.00
13.0000	-1.33E-04	512.8575	-343.9127	-3.21E-05	1548.	6958137.	72.0819	108328.	0.00
13.2000	-1.38E-04	445.5167	-325.5623	-1.83E-05	1345.	6958137.	111.4222	161452.	0.00
13.4000	-1.40E-04	382.6326	-302.9258	-6.42E-06	1155.	6958137.	114.9426	163726.	0.00
13.6000	-1.41E-04	324.3463	-279.7623	3.74E-06	978.8933	6958137.	116.6916	166000.	0.00

13.8000	-1.39E-04	270.7277	-256.4056	1.23E-05	817.0696	6958137.	116.8759	168274.	0.00
14.0000	-1.36E-04	221.7841	-233.1485	1.94E-05	669.3554	6958137.	115.6949	170548.	0.00
14.2000	-1.31E-04	177.4683	-210.2452	2.51E-05	535.6081	6958137.	113.3386	172821.	0.00
14.4000	-1.26E-04	137.6860	-187.9126	2.96E-05	415.5433	6958137.	109.9865	175095.	0.00
14.6000	-1.19E-04	102.3032	-166.3333	3.31E-05	308.7562	6958137.	105.8067	177369.	0.00
14.8000	-1.12E-04	71.1527	-145.6572	3.56E-05	214.7424	6958137.	100.9548	179643.	0.00
15.0000	-1.05E-04	44.0404	-126.0043	3.72E-05	132.9160	6958137.	95.5736	181917.	0.00
15.2000	-9.75E-05	20.7510	-107.4677	3.82E-05	62.6275	6958137.	89.7929	184191.	0.00
15.4000	-8.98E-05	1.0533	-90.1155	3.85E-05	3.1789	6958137.	83.7287	186465.	0.00
15.6000	-8.21E-05	-15.2952	-73.9943	3.83E-05	46.1618	6958137.	77.4838	188739.	0.00
15.8000	-7.45E-05	-28.5444	-59.1311	3.76E-05	86.1484	6958137.	71.1478	191013.	0.00
16.0000	-6.70E-05	-38.9477	-45.5366	3.67E-05	117.5460	6958137.	64.7974	193287.	0.00
16.2000	-5.98E-05	-46.7590	-33.2072	3.54E-05	141.1211	6958137.	58.4965	195561.	0.00
16.4000	-5.29E-05	-52.2306	-22.1278	3.40E-05	157.6344	6958137.	52.2972	197835.	0.00
16.6000	-4.62E-05	-55.6102	-12.2741	3.25E-05	167.8343	6958137.	46.2402	200109.	0.00
16.8000	-3.99E-05	-57.1402	-3.6145	3.09E-05	172.4519	6958137.	40.3554	202383.	0.00
17.0000	-3.39E-05	-57.0560	3.8873	2.92E-05	172.1978	6958137.	34.6627	204657.	0.00
17.2000	-2.82E-05	-55.5853	10.2708	2.76E-05	167.7591	6958137.	29.1727	206931.	0.00
17.4000	-2.28E-05	-52.9477	15.5769	2.60E-05	159.7987	6958137.	23.8878	209205.	0.00
17.6000	-1.78E-05	-49.3545	19.8459	2.46E-05	148.9545	6958137.	18.8030	211479.	0.00
17.8000	-1.30E-05	-45.0093	23.1169	2.32E-05	135.8403	6958137.	13.9065	213753.	0.00
18.0000	-8.50E-06	-40.1078	25.4256	2.20E-05	121.0473	6958137.	9.1809	216027.	0.00
18.2000	-4.22E-06	-34.8390	26.8042	2.09E-05	105.1460	6958137.	4.6044	218301.	0.00
18.4000	-1.37E-07	-29.3861	27.2797	2.00E-05	88.6888	6958137.	0.1514	220575.	0.00
18.6000	3.77E-06	-23.9272	26.8743	1.92E-05	72.2133	6958137.	-4.2061	222849.	0.00
18.8000	7.55E-06	-18.6364	25.6039	1.86E-05	56.2456	6958137.	-8.4978	225123.	0.00
19.0000	1.12E-05	-13.6856	23.4788	1.81E-05	41.3038	6958137.	-12.7535	227397.	0.00
19.2000	1.48E-05	-9.2449	20.5032	1.78E-05	27.9016	6958137.	-17.0022	229671.	0.00
19.4000	1.83E-05	-5.4843	16.6759	1.76E-05	16.5519	6958137.	-21.2709	231945.	0.00
19.6000	2.18E-05	-2.5746	11.9905	1.75E-05	7.7702	6958137.	-25.5831	234219.	0.00
19.8000	2.53E-05	-0.6881	6.4364	1.74E-05	2.0768	6958137.	-29.9575	236493.	0.00
20.0000	2.88E-05	0.00	0.00	1.74E-05	0.00	6958137.	-34.4065	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 4:

Pile-head deflection = 0.01900358 meters
Computed slope at pile head = -0.00280731 radians
Maximum bending moment = 2181. kN-m
Maximum shear force = 600.00000000 kN
Depth of maximum bending moment = 6.60000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 23
Number of zero deflection points = 2

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 5

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 800.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X meters	Deflect. y meters	Bending Moment kN-m	Shear Force kN	Slope S radians	Total Stress kPa*	Bending Stiffness kN-m^2	Soil Res. p kN/m	Soil Spr. Es*h kN/m	Distrib. Lat. Load kN/m
0.00	0.03170	-6.04E-09	800.0000	-0.00436	1.82E-08	6958137.	-69.6605	219.7427	0.00
0.2000	0.03083	158.6068	785.7494	-0.00436	478.6831	6958137.	-72.8453	472.5723	0.00
0.4000	0.02996	314.2998	770.8682	-0.00435	948.5722	6958137.	-75.9668	507.1467	0.00

0.6000	0.02909	466.9541	755.3693	-0.00434	1409.	6958137.	-79.0225	543.3055	0.00
0.8000	0.02822	616.4475	739.2660	-0.00432	1860.	6958137.	-82.0102	581.1534	0.00
1.0000	0.02736	762.6605	722.5723	-0.00430	2302.	6958137.	-84.9274	620.8027	0.00
1.2000	0.02650	905.4764	705.3023	-0.00428	2733.	6958137.	-87.7718	662.3746	0.00
1.4000	0.02565	1045.	687.4711	-0.00425	3153.	6958137.	-90.5410	706.0000	0.00
1.6000	0.02480	1180.	669.0937	-0.00422	3563.	6958137.	-93.2327	751.8200	0.00
1.8000	0.02396	1312.	650.1860	-0.00418	3961.	6958137.	-95.8445	799.9873	0.00
2.0000	0.02313	1441.	630.7641	-0.00414	4348.	6958137.	-98.3741	850.6674	0.00
2.2000	0.02230	1565.	610.8448	-0.00410	4722.	6958137.	-100.8192	904.0395	0.00
2.4000	0.02149	1685.	590.4451	-0.00405	5085.	6958137.	-103.1775	960.2985	0.00
2.6000	0.02068	1801.	569.5827	-0.00400	5435.	6958137.	-105.4466	1020.	0.00
2.8000	0.01989	1913.	548.2756	-0.00395	5773.	6958137.	-107.6242	1082.	0.00
3.0000	0.01910	2020.	526.5424	-0.00389	6097.	6958137.	-109.7081	1149.	0.00
3.2000	0.01833	2123.	504.4020	-0.00383	6408.	6958137.	-111.6960	1219.	0.00
3.4000	0.01757	2222.	481.8738	-0.00377	6706.	6958137.	-113.5856	1293.	0.00
3.6000	0.01682	2316.	458.9778	-0.00371	6990.	6958137.	-115.3745	1372.	0.00
3.8000	0.01609	2406.	435.7343	-0.00364	7260.	6958137.	-117.0606	1455.	0.00
4.0000	0.01537	2490.	412.1640	-0.00357	7516.	6958137.	-118.6416	1544.	0.00
4.2000	0.01466	2570.	388.2884	-0.00350	7758.	6958137.	-120.1153	1639.	0.00
4.4000	0.01397	2646.	364.1289	-0.00342	7985.	6958137.	-121.4793	1739.	0.00
4.6000	0.01329	2716.	339.7078	-0.00334	8197.	6958137.	-122.7315	1847.	0.00
4.8000	0.01263	2782.	315.0477	-0.00326	8395.	6958137.	-123.8697	1961.	0.00
5.0000	0.01199	2842.	290.1716	-0.00318	8578.	6958137.	-124.8915	2084.	0.00
5.2000	0.01136	2898.	265.1029	-0.00310	8745.	6958137.	-125.7949	2215.	0.00
5.4000	0.01075	2948.	239.8657	-0.00302	8898.	6958137.	-126.5776	2356.	0.00
5.6000	0.01015	2994.	214.4842	-0.00293	9035.	6958137.	-127.2373	2507.	0.00
5.8000	0.00957	3034.	188.9833	-0.00284	9157.	6958137.	-127.7719	2670.	0.00
6.0000	0.00901	3069.	162.4012	-0.00276	9263.	6958137.	-138.0485	3064.	0.00
6.2000	0.00847	3099.	133.9215	-0.00267	9353.	6958137.	-146.7486	3465.	0.00
6.4000	0.00794	3123.	104.6992	-0.00258	9425.	6958137.	-145.4745	3662.	0.00
6.6000	0.00744	3141.	75.7423	-0.00249	9479.	6958137.	-144.0949	3875.	0.00
6.8000	0.00695	3153.	47.0719	-0.00240	9516.	6958137.	-142.6088	4104.	0.00
7.0000	0.00648	3160.	18.7095	-0.00231	9536.	6958137.	-141.0156	4353.	0.00
7.2000	0.00603	3161.	-9.3235	-0.00222	9539.	6958137.	-139.3142	4624.	0.00
7.4000	0.00559	3156.	-37.0053	-0.00213	9525.	6958137.	-137.5038	4918.	0.00
7.6000	0.00518	3146.	-64.3140	-0.00204	9494.	6958137.	-135.5831	5239.	0.00
7.8000	0.00478	3130.	-91.2274	-0.00195	9447.	6958137.	-133.5512	5591.	0.00
8.0000	0.00440	3109.	-117.6941	-0.00186	9384.	6958137.	-131.1151	5963.	0.00
8.2000	0.00404	3083.	-143.5467	-0.00177	9305.	6958137.	-127.4111	6315.	0.00
8.4000	0.00369	3052.	-168.6555	-0.00168	9211.	6958137.	-123.6765	6702.	0.00
8.6000	0.00336	3016.	-193.0142	-0.00159	9101.	6958137.	-119.9105	7130.	0.00
8.8000	0.00305	2975.	-216.6164	-0.00151	8978.	6958137.	-116.1119	7604.	0.00
9.0000	0.00276	2929.	-239.4555	-0.00142	8840.	6958137.	-112.2793	8132.	0.00
9.2000	0.00249	2879.	-261.5245	-0.00134	8688.	6958137.	-108.4107	8723.	0.00
9.4000	0.00223	2824.	-282.8160	-0.00126	8524.	6958137.	-104.5040	9387.	0.00
9.6000	0.00198	2766.	-303.3220	-0.00117	8347.	6958137.	-100.5562	10139.	0.00
9.8000	0.00176	2703.	-323.0340	-0.00110	8158.	6958137.	-96.5636	10995.	0.00
10.0000	0.00155	2636.	-341.9425	-0.00102	7957.	6958137.	-92.5216	11976.	0.00
10.2000	0.00135	2566.	-360.0371	-9.45E-04	7745.	6958137.	-88.4241	13112.	0.00
10.4000	0.00117	2492.	-377.3059	-8.72E-04	7522.	6958137.	-84.2635	14439.	0.00
10.6000	1.00E-03	2415.	-393.7352	-8.02E-04	7290.	6958137.	-80.0297	16007.	0.00
10.8000	8.47E-04	2335.	-409.3091	-7.33E-04	7047.	6958137.	-75.7093	17886.	0.00
11.0000	7.07E-04	2252.	-436.0141	-6.67E-04	6795.	6958137.	-191.3410	54155.	0.00
11.2000	5.80E-04	2161.	-471.1052	-6.04E-04	6521.	6958137.	-159.5701	55057.	0.00
11.4000	4.65E-04	2063.	-500.0750	-5.43E-04	6227.	6958137.	-130.1282	55960.	0.00
11.6000	3.62E-04	1961.	-523.3903	-4.85E-04	5917.	6958137.	-103.0242	56862.	0.00
11.8000	2.71E-04	1854.	-541.5175	-4.31E-04	5595.	6958137.	-78.2483	57765.	0.00
12.0000	1.90E-04	1744.	-554.9197	-3.79E-04	5263.	6958137.	-55.7732	58668.	0.00
12.2000	1.19E-04	1632.	-564.0525	-3.30E-04	4925.	6958137.	-35.5549	59570.	0.00
12.4000	5.80E-05	1518.	-569.3614	-2.85E-04	4582.	6958137.	-17.5344	60473.	0.00
12.6000	5.34E-06	1404.	-571.2787	-2.43E-04	4238.	6958137.	-1.6384	61375.	0.00
12.8000	-3.92E-05	1290.	-570.2206	-2.04E-04	3893.	6958137.	12.2194	62278.	0.00
13.0000	-7.64E-05	1176.	-564.8601	-1.69E-04	3549.	6958137.	41.3853	108328.	0.00
13.2000	-1.07E-04	1064.	-552.0990	-1.37E-04	3211.	6958137.	86.2257	161452.	0.00
13.4000	-1.31E-04	955.1632	-532.7440	-1.08E-04	2883.	6958137.	107.3244	163726.	0.00
13.6000	-1.50E-04	850.7609	-509.5698	-8.18E-05	2568.	6958137.	124.4180	166000.	0.00
13.8000	-1.64E-04	751.3353	-483.3456	-5.87E-05	2268.	6958137.	137.8241	168274.	0.00

14.0000	-1.73E-04	657.4227	-454.7768	-3.85E-05	1984.	6958137.	147.8635	170548.	0.00
14.2000	-1.79E-04	569.4246	-424.5050	-2.09E-05	1719.	6958137.	154.8551	172821.	0.00
14.4000	-1.82E-04	487.6207	-393.1082	-5.67E-06	1472.	6958137.	159.1130	175095.	0.00
14.6000	-1.81E-04	412.1813	-361.1026	7.26E-06	1244.	6958137.	160.9426	177369.	0.00
14.8000	-1.79E-04	343.1796	-328.9446	1.81E-05	1036.	6958137.	160.6378	179643.	0.00
15.0000	-1.74E-04	280.6035	-297.0329	2.71E-05	846.8751	6958137.	158.4787	181917.	0.00
15.2000	-1.68E-04	224.3665	-265.7121	3.43E-05	677.1491	6958137.	154.7291	184191.	0.00
15.4000	-1.60E-04	174.3186	-235.2757	4.01E-05	526.1022	6958137.	149.6355	186465.	0.00
15.6000	-1.52E-04	130.2562	-205.9696	4.44E-05	393.1196	6958137.	143.4254	188739.	0.00
15.8000	-1.43E-04	91.9308	-177.9964	4.76E-05	277.4517	6958137.	136.3065	191013.	0.00
16.0000	-1.33E-04	59.0576	-151.5191	4.98E-05	178.2389	6958137.	128.4662	193287.	0.00
16.2000	-1.23E-04	31.3231	-126.6654	5.11E-05	94.5348	6958137.	120.0713	195561.	0.00
16.4000	-1.12E-04	8.3915	-103.5315	5.17E-05	25.3259	6958137.	111.2680	197835.	0.00
16.6000	-1.02E-04	-10.0894	-82.1865	5.17E-05	30.4505	6958137.	102.1818	200109.	0.00
16.8000	-9.18E-05	-24.4831	-62.6764	5.12E-05	73.8912	6958137.	92.9189	202383.	0.00
17.0000	-8.17E-05	-35.1600	-45.0280	5.03E-05	106.1146	6958137.	83.5656	204657.	0.00
17.2000	-7.17E-05	-42.4943	-29.2523	4.92E-05	128.2499	6958137.	74.1905	206931.	0.00
17.4000	-6.20E-05	-46.8609	-15.3488	4.79E-05	141.4286	6958137.	64.8444	209205.	0.00
17.6000	-5.25E-05	-48.6338	-3.3082	4.65E-05	146.7793	6958137.	55.5623	211479.	0.00
17.8000	-4.34E-05	-48.1842	6.8845	4.51E-05	145.4223	6958137.	46.3642	213753.	0.00
18.0000	-3.45E-05	-45.8800	15.2466	4.38E-05	138.4682	6958137.	37.2569	216027.	0.00
18.2000	-2.59E-05	-42.0856	21.7958	4.25E-05	127.0164	6958137.	28.2354	218301.	0.00
18.4000	-1.75E-05	-37.1617	26.5478	4.14E-05	112.1559	6958137.	19.2845	220575.	0.00
18.6000	-9.32E-06	-31.4665	29.5144	4.04E-05	94.9673	6958137.	10.3811	222849.	0.00
18.8000	-1.33E-06	-25.3560	30.7020	3.96E-05	76.5256	6958137.	1.4955	225123.	0.00
19.0000	6.51E-06	-19.1856	30.1110	3.89E-05	57.9032	6958137.	-7.4060	227397.	0.00
19.2000	1.42E-05	-13.3116	27.7345	3.85E-05	40.1750	6958137.	-16.3591	229671.	0.00
19.4000	2.19E-05	-8.0919	23.5586	3.82E-05	24.4216	6958137.	-25.3994	231945.	0.00
19.6000	2.95E-05	-3.8881	17.5628	3.80E-05	11.7345	6958137.	-34.5592	234219.	0.00
19.8000	3.71E-05	-1.0667	9.7203	3.79E-05	3.2195	6958137.	-43.8656	236493.	0.00
20.0000	4.47E-05	0.00	0.00	3.79E-05	0.00	6958137.	-53.3373	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 5:

Pile-head deflection = 0.03170095 meters
Computed slope at pile head = -0.00435843 radians
Maximum bending moment = 3161. kN-m
Maximum shear force = 800.00000000 kN
Depth of maximum bending moment = 7.20000000 meters below pile head
Depth of maximum shear force = 0.000000 meters below pile head
Number of iterations = 22
Number of zero deflection points = 2

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 6

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 2000.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.1434	5.31E-08	2000.	-0.01670	1.60E-07	6958137.	-115.1950	80.3559	0.00
0.2000	0.1400	397.6961	1976.	-0.01670	1200.	6958137.	-120.6345	172.3159	0.00
0.4000	0.1367	790.5668	1952.	-0.01668	2386.	6958137.	-125.9935	184.3664	0.00
0.6000	0.1333	1178.	1926.	-0.01665	3556.	6958137.	-131.2688	196.8881	0.00

0.8000	0.1300	1561.	1899.	-0.01661	4711.	6958137.	-136.4575	209.9077	0.00
1.0000	0.1267	1938.	1871.	-0.01656	5849.	6958137.	-141.5564	223.4535	0.00
1.2000	0.1234	2310.	1843.	-0.01650	6970.	6958137.	-146.5623	237.5558	0.00
1.4000	0.1201	2675.	1813.	-0.01643	8074.	6958137.	-151.4722	252.2470	0.00
1.6000	0.1168	3035.	1782.	-0.01635	9159.	6958137.	-156.2830	267.5615	0.00
1.8000	0.1136	3388.	1750.	-0.01625	10225.	6958137.	-160.9914	283.5366	0.00
2.0000	0.1103	3735.	1718.	-0.01615	11272.	6958137.	-165.5942	300.2118	0.00
2.2000	0.1071	4075.	1684.	-0.01604	12299.	6958137.	-170.0884	317.6299	0.00
2.4000	0.1039	4408.	1650.	-0.01592	13305.	6958137.	-174.4707	335.8364	0.00
2.6000	0.1007	4735.	1614.	-0.01579	14290.	6958137.	-178.7378	354.8808	0.00
2.8000	0.09759	5054.	1578.	-0.01565	15254.	6958137.	-182.8865	374.8158	0.00
3.0000	0.09447	5366.	1541.	-0.01550	16195.	6958137.	-186.9136	395.6987	0.00
3.2000	0.09139	5671.	1503.	-0.01534	17114.	6958137.	-190.8157	417.5909	0.00
3.4000	0.08834	5968.	1465.	-0.01517	18010.	6958137.	-194.5896	440.5591	0.00
3.6000	0.08532	6257.	1426.	-0.01499	18883.	6958137.	-198.2318	464.6752	0.00
3.8000	0.08234	6538.	1386.	-0.01481	19731.	6958137.	-201.7391	490.0172	0.00
4.0000	0.07940	6811.	1345.	-0.01462	20556.	6958137.	-205.1080	516.6696	0.00
4.2000	0.07649	7076.	1304.	-0.01442	21355.	6958137.	-208.3351	544.7243	0.00
4.4000	0.07363	7332.	1262.	-0.01421	22129.	6958137.	-211.4169	574.2813	0.00
4.6000	0.07081	7580.	1219.	-0.01400	22878.	6958137.	-214.3500	605.4493	0.00
4.8000	0.06803	7820.	1176.	-0.01378	23601.	6958137.	-217.1308	638.3472	0.00
5.0000	0.06530	8051.	1132.	-0.01355	24298.	6958137.	-219.7557	673.1046	0.00
5.2000	0.06261	8273.	1088.	-0.01331	24968.	6958137.	-222.2212	709.8637	0.00
5.4000	0.05997	8486.	1043.	-0.01307	25611.	6958137.	-224.5236	748.7802	0.00
5.6000	0.05738	8690.	998.1889	-0.01283	26227.	6958137.	-226.6591	790.0253	0.00
5.8000	0.05484	8885.	952.6606	-0.01257	26816.	6958137.	-228.6240	833.7873	0.00
6.0000	0.05235	9071.	904.9826	-0.01232	27377.	6958137.	-248.1557	948.0525	0.00
6.2000	0.04991	9247.	853.6604	-0.01205	27908.	6958137.	-265.0665	1062.	0.00
6.4000	0.04753	9413.	800.7453	-0.01178	28408.	6958137.	-264.0844	1111.	0.00
6.6000	0.04520	9567.	748.0420	-0.01151	28875.	6958137.	-262.9490	1163.	0.00
6.8000	0.04292	9712.	695.5813	-0.01123	29311.	6958137.	-261.6581	1219.	0.00
7.0000	0.04071	9846.	643.3945	-0.01095	29715.	6958137.	-260.2098	1278.	0.00
7.2000	0.03854	9969.	591.5133	-0.01067	30088.	6958137.	-258.6019	1342.	0.00
7.4000	0.03644	10082.	539.9699	-0.01038	30429.	6958137.	-256.8322	1410.	0.00
7.6000	0.03439	10185.	488.7968	-0.01009	30739.	6958137.	-254.8984	1482.	0.00
7.8000	0.03240	10278.	438.0272	-0.00980	31019.	6958137.	-252.7982	1560.	0.00
8.0000	0.03047	10360.	387.7500	-0.00950	31268.	6958137.	-249.9734	1641.	0.00
8.2000	0.02860	10433.	338.2775	-0.00920	31487.	6958137.	-244.7520	1711.	0.00
8.4000	0.02679	10496.	289.8546	-0.00890	31677.	6958137.	-239.4767	1788.	0.00
8.6000	0.02504	10549.	242.4923	-0.00860	31837.	6958137.	-234.1463	1870.	0.00
8.8000	0.02335	10593.	196.2017	-0.00829	31969.	6958137.	-228.7596	1959.	0.00
9.0000	0.02173	10627.	150.9942	-0.00799	32074.	6958137.	-223.3154	2056.	0.00
9.2000	0.02016	10653.	106.8815	-0.00768	32152.	6958137.	-217.8121	2161.	0.00
9.4000	0.01865	10670.	63.8754	-0.00738	32203.	6958137.	-212.2483	2276.	0.00
9.6000	0.01721	10679.	21.9884	-0.00707	32229.	6958137.	-206.6223	2401.	0.00
9.8000	0.01583	10679.	-18.7670	-0.00676	32230.	6958137.	-200.9320	2539.	0.00
10.0000	0.01450	10671.	-58.3778	-0.00645	32206.	6958137.	-195.1755	2691.	0.00
10.2000	0.01324	10656.	-96.8304	-0.00615	32159.	6958137.	-189.3506	2859.	0.00
10.4000	0.01205	10632.	-134.1110	-0.00584	32089.	6958137.	-183.4550	3046.	0.00
10.6000	0.01091	10602.	-170.2051	-0.00554	31997.	6958137.	-177.4860	3254.	0.00
10.8000	0.00983	10564.	-205.0978	-0.00523	31884.	6958137.	-171.4411	3488.	0.00
11.0000	0.00881	10520.	-321.0851	-0.00493	31750.	6958137.	-988.4321	22428.	0.00
11.2000	0.00786	10436.	-514.0196	-0.00463	31496.	6958137.	-940.9132	23946.	0.00
11.4000	0.00696	10314.	-697.1393	-0.00433	31129.	6958137.	-890.2830	25572.	0.00
11.6000	0.00613	10157.	-869.8497	-0.00404	30654.	6958137.	-836.8216	27319.	0.00
11.8000	0.00535	9966.	-1032.	-0.00375	30079.	6958137.	-781.9060	29239.	0.00
12.0000	0.00463	9744.	-1184.	-0.00346	29409.	6958137.	-738.2853	31909.	0.00
12.2000	0.00396	9493.	-1327.	-0.00319	28650.	6958137.	-692.3744	34944.	0.00
12.4000	0.00335	9214.	-1460.	-0.00292	27807.	6958137.	-644.2216	38432.	0.00
12.6000	0.00280	8909.	-1584.	-0.00266	26887.	6958137.	-593.8466	42489.	0.00
12.8000	0.00229	8580.	-1698.	-0.00241	25895.	6958137.	-541.2234	47284.	0.00
13.0000	0.00183	8230.	-1814.	-0.00217	24837.	6958137.	-620.5690	67727.	0.00
13.2000	0.00142	7854.	-1946.	-0.00193	23705.	6958137.	-700.4241	98432.	0.00
13.4000	0.00106	7451.	-2076.	-0.00171	22488.	6958137.	-601.8194	113666.	0.00
13.6000	7.38E-04	7024.	-2186.	-0.00151	21198.	6958137.	-496.5145	134645.	0.00
13.8000	4.56E-04	6577.	-2274.	-0.00131	19849.	6958137.	-381.1144	166978.	0.00
14.0000	2.13E-04	6114.	-2330.	-0.00113	18453.	6958137.	-181.8573	170548.	0.00

14.2000	5.19E-06	5645.	-2349.	-9.59E-04	17036.	6958137.	-4.4837	172821.	0.00
14.4000	-1.70E-04	5175.	-2334.	-8.04E-04	15618.	6958137.	149.2131	175095.	0.00
14.6000	-3.16E-04	4711.	-2291.	-6.62E-04	14218.	6958137.	280.5217	177369.	0.00
14.8000	-4.35E-04	4258.	-2224.	-5.33E-04	12851.	6958137.	390.8227	179643.	0.00
15.0000	-5.29E-04	3821.	-2137.	-4.17E-04	11532.	6958137.	481.5593	181917.	0.00
15.2000	-6.02E-04	3403.	-2035.	-3.13E-04	10272.	6958137.	539.4409	179283.	0.00
15.4000	-6.55E-04	3007.	-1923.	-2.21E-04	9076.	6958137.	581.6654	177727.	0.00
15.6000	-6.90E-04	2634.	-1803.	-1.40E-04	7950.	6958137.	615.1882	178300.	0.00
15.8000	-7.10E-04	2286.	-1677.	-6.89E-05	6899.	6958137.	641.1195	180492.	0.00
16.0000	-7.18E-04	1963.	-1547.	-7.85E-06	5925.	6958137.	660.2841	184019.	0.00
16.2000	-7.14E-04	1667.	-1414.	4.43E-05	5031.	6958137.	673.3251	188725.	0.00
16.4000	-7.00E-04	1398.	-1279.	8.84E-05	4218.	6958137.	680.7621	194532.	0.00
16.6000	-6.78E-04	1156.	-1143.	1.25E-04	3488.	6958137.	678.5746	200109.	0.00
16.8000	-6.50E-04	940.6736	-1009.	1.55E-04	2839.	6958137.	657.6128	202383.	0.00
17.0000	-6.16E-04	752.0252	-880.1946	1.80E-04	2270.	6958137.	630.4731	204657.	0.00
17.2000	-5.78E-04	588.5958	-757.3380	1.99E-04	1776.	6958137.	598.0932	206931.	0.00
17.4000	-5.37E-04	449.0900	-641.3978	2.14E-04	1355.	6958137.	561.3084	209205.	0.00
17.6000	-4.93E-04	332.0367	-533.1819	2.25E-04	1002.	6958137.	520.8511	211479.	0.00
17.8000	-4.47E-04	235.8173	-433.3615	2.33E-04	711.7082	6958137.	477.3525	213753.	0.00
18.0000	-3.99E-04	158.6921	-342.4917	2.39E-04	478.9404	6958137.	431.3450	216027.	0.00
18.2000	-3.51E-04	98.8206	-261.0306	2.42E-04	298.2455	6958137.	383.2663	218301.	0.00
18.4000	-3.02E-04	54.2798	-189.3575	2.45E-04	163.8191	6958137.	333.4649	220575.	0.00
18.6000	-2.53E-04	23.0776	-127.7903	2.46E-04	69.6494	6958137.	282.2065	222849.	0.00
18.8000	-2.04E-04	3.1637	-76.6014	2.46E-04	9.5481	6958137.	229.6826	225123.	0.00
19.0000	-1.55E-04	-7.5630	-36.0313	2.46E-04	22.8254	6958137.	176.0188	227397.	0.00
19.2000	-1.06E-04	-11.2488	-6.3009	2.46E-04	33.9496	6958137.	121.2852	229671.	0.00
19.4000	-5.65E-05	-10.0833	12.3784	2.46E-04	30.4319	6958137.	65.5080	231945.	0.00
19.6000	-7.41E-06	-6.2975	19.7974	2.45E-04	19.0061	6958137.	8.6813	234219.	0.00
19.8000	4.16E-05	-2.1644	15.7437	2.45E-04	6.5322	6958137.	-49.2184	236493.	0.00
20.0000	9.06E-05	0.00	0.00	2.45E-04	0.00	6958137.	-108.2183	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 6:

Pile-head deflection = 0.14335603 meters
Computed slope at pile head = -0.01670264 radians
Maximum bending moment = 10679. kN-m
Maximum shear force = -2349. kN
Depth of maximum bending moment = 9.80000000 meters below pile head
Depth of maximum shear force = 14.20000000 meters below pile head
Number of iterations = 20
Number of zero deflection points = 2

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 7

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 3000.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
meters	meters	kN-m	kN	radians	kPa*	kN-m^2	kN/m	kN/m	kN/m
0.00	0.2641	1.93E-08	3000.	-0.02921	5.83E-08	6958137.	-141.2096	53.4756	0.00
0.2000	0.2582	597.1758	2971.	-0.02920	1802.	6958137.	-147.9369	114.5815	0.00
0.4000	0.2524	1188.	2941.	-0.02918	3587.	6958137.	-154.5737	122.4915	0.00
0.6000	0.2466	1774.	2909.	-0.02913	5353.	6958137.	-161.1163	130.6962	0.00
0.8000	0.2407	2352.	2876.	-0.02907	7099.	6958137.	-167.5613	139.2114	0.00

1.0000	0.2349	2924.	2842.	-0.02900	8825.	6958137.	-173.9051	148.0541	0.00
1.2000	0.2291	3489.	2807.	-0.02891	10530.	6958137.	-180.1442	157.2421	0.00
1.4000	0.2234	4047.	2770.	-0.02880	12213.	6958137.	-186.2750	166.7946	0.00
1.6000	0.2176	4597.	2732.	-0.02867	13874.	6958137.	-192.2938	176.7321	0.00
1.8000	0.2119	5140.	2693.	-0.02853	15512.	6958137.	-198.1971	187.0763	0.00
2.0000	0.2062	5674.	2653.	-0.02838	17126.	6958137.	-203.9811	197.8507	0.00
2.2000	0.2005	6201.	2612.	-0.02821	18715.	6958137.	-209.6421	209.0801	0.00
2.4000	0.1949	6719.	2569.	-0.02802	20279.	6958137.	-215.1765	220.7914	0.00
2.6000	0.1893	7229.	2526.	-0.02782	21816.	6958137.	-220.5804	233.0132	0.00
2.8000	0.1838	7729.	2481.	-0.02761	23328.	6958137.	-225.8501	245.7762	0.00
3.0000	0.1783	8221.	2435.	-0.02738	24812.	6958137.	-230.9817	259.1136	0.00
3.2000	0.1728	8704.	2389.	-0.02713	26268.	6958137.	-235.9714	273.0610	0.00
3.4000	0.1674	9177.	2341.	-0.02688	27695.	6958137.	-240.8152	287.6568	0.00
3.6000	0.1621	9640.	2292.	-0.02661	29094.	6958137.	-245.5092	302.9421	0.00
3.8000	0.1568	10093.	2243.	-0.02632	30463.	6958137.	-250.0494	318.9618	0.00
4.0000	0.1516	10537.	2192.	-0.02603	31801.	6958137.	-254.4318	335.7641	0.00
4.2000	0.1464	10970.	2141.	-0.02572	33109.	6958137.	-258.6523	353.4012	0.00
4.4000	0.1413	11393.	2089.	-0.02540	34386.	6958137.	-262.7067	371.9297	0.00
4.6000	0.1362	11806.	2036.	-0.02506	35631.	6958137.	-266.5908	391.4113	0.00
4.8000	0.1312	12208.	1982.	-0.02472	36844.	6958137.	-270.3005	411.9126	0.00
5.0000	0.1263	12599.	1928.	-0.02436	38024.	6958137.	-273.8313	433.5065	0.00
5.2000	0.1215	12979.	1873.	-0.02399	39171.	6958137.	-277.1790	456.2724	0.00
5.4000	0.1167	13348.	1817.	-0.02362	40285.	6958137.	-280.3391	480.2969	0.00
5.6000	0.1121	13706.	1761.	-0.02323	41365.	6958137.	-283.3070	505.6749	0.00
5.8000	0.1074	14052.	1704.	-0.02283	42410.	6958137.	-286.0782	532.5103	0.00
6.0000	0.1029	14387.	1644.	-0.02242	43421.	6958137.	-310.8732	604.1062	0.00
6.2000	0.09848	14710.	1580.	-0.02200	44395.	6958137.	-332.4508	675.1805	0.00
6.4000	0.09412	15019.	1513.	-0.02157	45328.	6958137.	-331.6255	704.6884	0.00
6.6000	0.08985	15315.	1447.	-0.02114	46222.	6958137.	-330.6198	735.9515	0.00
6.8000	0.08566	15598.	1381.	-0.02069	47075.	6958137.	-329.4311	769.1168	0.00
7.0000	0.08157	15868.	1315.	-0.02024	47889.	6958137.	-328.0568	804.3470	0.00
7.2000	0.07757	16124.	1250.	-0.01978	48663.	6958137.	-326.4943	841.8230	0.00
7.4000	0.07366	16367.	1185.	-0.01931	49398.	6958137.	-324.7406	881.7466	0.00
7.6000	0.06984	16598.	1120.	-0.01884	50093.	6958137.	-322.7929	924.3428	0.00
7.8000	0.06612	16815.	1056.	-0.01836	50750.	6958137.	-320.6482	969.8640	0.00
8.0000	0.06250	17020.	991.7772	-0.01787	51368.	6958137.	-317.5975	1016.	0.00
8.2000	0.05897	17212.	928.8665	-0.01738	51947.	6958137.	-311.5090	1056.	0.00
8.4000	0.05555	17392.	867.1802	-0.01688	52489.	6958137.	-305.3543	1099.	0.00
8.6000	0.05222	17559.	806.7316	-0.01638	52994.	6958137.	-299.1318	1146.	0.00
8.8000	0.04899	17714.	747.5343	-0.01588	53463.	6958137.	-292.8405	1195.	0.00
9.0000	0.04587	17858.	689.6024	-0.01536	53896.	6958137.	-286.4786	1249.	0.00
9.2000	0.04285	17990.	632.9501	-0.01485	54295.	6958137.	-280.0448	1307.	0.00
9.4000	0.03993	18111.	577.5919	-0.01433	54660.	6958137.	-273.5373	1370.	0.00
9.6000	0.03712	18221.	523.5427	-0.01381	54993.	6958137.	-266.9543	1439.	0.00
9.8000	0.03441	18321.	470.8179	-0.01328	55293.	6958137.	-260.2940	1513.	0.00
10.0000	0.03180	18410.	419.4331	-0.01276	55561.	6958137.	-253.5544	1595.	0.00
10.2000	0.02930	18488.	369.4043	-0.01222	55799.	6958137.	-246.7336	1684.	0.00
10.4000	0.02691	18557.	320.7480	-0.01169	56007.	6958137.	-239.8293	1782.	0.00
10.6000	0.02463	18617.	273.4811	-0.01116	56186.	6958137.	-232.8395	1891.	0.00
10.8000	0.02245	18667.	227.6209	-0.01062	56337.	6958137.	-225.7621	2011.	0.00
11.0000	0.02038	18708.	44.1500	-0.01009	56461.	6958137.	-1609.	15791.	0.00
11.2000	0.01841	18684.	-271.9822	-0.00955	56390.	6958137.	-1552.	16860.	0.00
11.4000	0.01656	18599.	-576.2540	-0.00901	56133.	6958137.	-1490.	18001.	0.00
11.6000	0.01481	18454.	-867.5997	-0.00848	55695.	6958137.	-1423.	19218.	0.00
11.8000	0.01317	18252.	-1145.	-0.00795	55085.	6958137.	-1352.	20539.	0.00
12.0000	0.01163	17996.	-1410.	-0.00743	54312.	6958137.	-1293.	22234.	0.00
12.2000	0.01019	17688.	-1662.	-0.00692	53383.	6958137.	-1230.	24127.	0.00
12.4000	0.00886	17331.	-1901.	-0.00641	52306.	6958137.	-1163.	26255.	0.00
12.6000	0.00763	16928.	-2127.	-0.00592	51088.	6958137.	-1093.	28665.	0.00
12.8000	0.00649	16480.	-2338.	-0.00544	49738.	6958137.	-1020.	31422.	0.00
13.0000	0.00545	15992.	-2561.	-0.00498	48265.	6958137.	-1204.	44173.	0.00
13.2000	0.00450	15456.	-2822.	-0.00452	46647.	6958137.	-1411.	62668.	0.00
13.4000	0.00364	14863.	-3091.	-0.00409	44858.	6958137.	-1275.	70035.	0.00
13.6000	0.00287	14220.	-3332.	-0.00367	42916.	6958137.	-1134.	79070.	0.00
13.8000	0.00217	13531.	-3544.	-0.00327	40836.	6958137.	-984.5205	90555.	0.00
14.0000	0.00156	12802.	-3725.	-0.00289	38638.	6958137.	-826.0447	105966.	0.00
14.2000	0.00102	12041.	-3873.	-0.00254	36340.	6958137.	-654.2251	128616.	0.00

14.4000	5.45E-04	11253.	-3984.	-0.00220	33963.	6958137.	-459.3157	168615.	0.00
14.6000	1.37E-04	10447.	-4042.	-0.00189	31530.	6958137.	-121.4806	177369.	0.00
14.8000	-2.11E-04	9636.	-4035.	-0.00160	29083.	6958137.	189.3380	179643.	0.00
15.0000	-5.03E-04	8833.	-3971.	-0.00133	26659.	6958137.	457.6769	181917.	0.00
15.2000	-7.45E-04	8048.	-3863.	-0.00109	24290.	6958137.	614.0951	164909.	0.00
15.4000	-9.40E-04	7288.	-3730.	-8.72E-04	21995.	6958137.	724.8777	154213.	0.00
15.6000	-0.00109	6556.	-3576.	-6.73E-04	19787.	6958137.	813.9080	148858.	0.00
15.8000	-0.00121	5858.	-3406.	-4.95E-04	17678.	6958137.	885.9248	146521.	0.00
16.0000	-0.00129	5194.	-3223.	-3.36E-04	15676.	6958137.	943.7572	146165.	0.00
16.2000	-0.00134	4568.	-3029.	-1.95E-04	13788.	6958137.	989.2903	147263.	0.00
16.4000	-0.00137	3982.	-2828.	-7.25E-05	12019.	6958137.	1024.	149523.	0.00
16.6000	-0.00137	3437.	-2621.	3.41E-05	10374.	6958137.	1049.	152786.	0.00
16.8000	-0.00136	2934.	-2410.	1.26E-04	8855.	6958137.	1064.	156965.	0.00
17.0000	-0.00132	2473.	-2196.	2.03E-04	7465.	6958137.	1071.	162028.	0.00
17.2000	-0.00127	2056.	-1982.	2.68E-04	6204.	6958137.	1070.	167983.	0.00
17.4000	-0.00121	1681.	-1769.	3.22E-04	5072.	6958137.	1062.	174871.	0.00
17.6000	-0.00115	1348.	-1558.	3.66E-04	4069.	6958137.	1047.	182771.	0.00
17.8000	-0.00107	1058.	-1350.	4.00E-04	3192.	6958137.	1025.	191798.	0.00
18.0000	-9.86E-04	808.0504	-1148.	4.27E-04	2439.	6958137.	995.9970	202122.	0.00
18.2000	-8.98E-04	598.2964	-952.7136	4.47E-04	1806.	6958137.	960.5644	213982.	0.00
18.4000	-8.07E-04	426.9649	-767.6974	4.62E-04	1289.	6958137.	889.5977	220575.	0.00
18.6000	-7.13E-04	291.2174	-599.2941	4.72E-04	878.9084	6958137.	794.4357	222849.	0.00
18.8000	-6.18E-04	187.2473	-450.3245	4.79E-04	565.1216	6958137.	695.2601	225123.	0.00
19.0000	-5.21E-04	111.0876	-321.5291	4.84E-04	335.2678	6958137.	592.6934	227397.	0.00
19.2000	-4.24E-04	58.6356	-213.5396	4.86E-04	176.9653	6958137.	487.2014	229671.	0.00
19.4000	-3.27E-04	25.6717	-126.9083	4.87E-04	77.4786	6958137.	379.1123	231945.	0.00
19.6000	-2.29E-04	7.8723	-62.1334	4.88E-04	23.7591	6958137.	268.6363	234219.	0.00
19.8000	-1.32E-04	0.8184	-19.6808	4.88E-04	2.4699	6958137.	155.8895	236493.	0.00
20.0000	-3.43E-05	0.00	0.00	4.88E-04	0.00	6958137.	40.9187	119383.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 7:

Pile-head deflection = 0.26406352 meters
Computed slope at pile head = -0.02921052 radians
Maximum bending moment = 18708. kN-m
Maximum shear force = -4042. kN
Depth of maximum bending moment = 11.00000000 meters below pile head
Depth of maximum shear force = 14.60000000 meters below pile head
Number of iterations = 20
Number of zero deflection points = 2

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 8

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 5000.000 kN
Applied moment at pile head = 0.000 kN-m
Axial thrust load on pile head = 0.000 kN

Depth X meters	Deflect. y meters	Bending Moment kN-m	Shear Force kN	Slope S radians	Total Stress kPa*	Bending Stiffness kN-m^2	Soil Res. p kN/m	Soil Spr. Es*h kN/m	Distrib. Lat. Load kN/m
0.00	0.5443	-1.55E-07	5000.	-0.05718	4.66E-07	6958137.	-179.7124	33.0162	0.00
0.2000	0.5329	996.4058	4963.	-0.05717	3007.	6958137.	-188.3455	70.6898	0.00
0.4000	0.5214	1985.	4925.	-0.05713	5992.	6958137.	-196.8728	75.5101	0.00
0.6000	0.5100	2966.	4884.	-0.05706	8952.	6958137.	-205.2903	80.5016	0.00
0.8000	0.4986	3939.	4843.	-0.05696	11888.	6958137.	-213.5938	85.6731	0.00
1.0000	0.4872	4903.	4799.	-0.05683	14798.	6958137.	-221.7792	91.0339	0.00

1.2000	0.4759	5859.	4754.	-0.05667	17682.	6958137.	-229.8421	96.5939	0.00
1.4000	0.4646	6805.	4707.	-0.05649	20537.	6958137.	-237.7783	102.3637	0.00
1.6000	0.4533	7742.	4659.	-0.05628	23364.	6958137.	-245.5836	108.3545	0.00
1.8000	0.4421	8668.	4609.	-0.05605	26162.	6958137.	-253.2534	114.5783	0.00
2.0000	0.4309	9585.	4557.	-0.05579	28928.	6958137.	-260.7835	121.0477	0.00
2.2000	0.4197	10491.	4505.	-0.05550	31663.	6958137.	-268.1694	127.7765	0.00
2.4000	0.4087	11387.	4450.	-0.05518	34366.	6958137.	-275.4066	134.7792	0.00
2.6000	0.3977	12271.	4394.	-0.05484	37036.	6958137.	-282.4905	142.0712	0.00
2.8000	0.3867	13145.	4337.	-0.05448	39671.	6958137.	-289.4166	149.6694	0.00
3.0000	0.3759	14006.	4279.	-0.05409	42272.	6958137.	-296.1803	157.5915	0.00
3.2000	0.3651	14856.	4219.	-0.05367	44837.	6958137.	-302.7767	165.8567	0.00
3.4000	0.3544	15694.	4158.	-0.05323	47365.	6958137.	-309.2012	174.4856	0.00
3.6000	0.3438	16519.	4095.	-0.05277	49856.	6958137.	-315.4489	183.5003	0.00
3.8000	0.3333	17332.	4031.	-0.05228	52309.	6958137.	-321.5150	192.9246	0.00
4.0000	0.3229	18132.	3967.	-0.05177	54723.	6958137.	-327.3945	202.7841	0.00
4.2000	0.3126	18919.	3900.	-0.05124	57097.	6958137.	-333.0823	213.1067	0.00
4.4000	0.3024	19692.	3833.	-0.05069	59431.	6958137.	-338.5734	223.9221	0.00
4.6000	0.2923	20452.	3765.	-0.05011	61725.	6958137.	-343.8626	235.2628	0.00
4.8000	0.2824	21198.	3696.	-0.04951	63977.	6958137.	-348.9447	247.1639	0.00
5.0000	0.2725	21930.	3626.	-0.04889	66186.	6958137.	-353.8143	259.6634	0.00
5.2000	0.2628	22648.	3554.	-0.04825	68353.	6958137.	-358.4659	272.8027	0.00
5.4000	0.2532	23352.	3482.	-0.04759	70477.	6958137.	-362.8941	286.6267	0.00
5.6000	0.2438	24041.	3409.	-0.04691	72557.	6958137.	-367.0933	301.1845	0.00
5.8000	0.2345	24716.	3335.	-0.04621	74593.	6958137.	-371.0577	316.5295	0.00
6.0000	0.2253	25375.	3258.	-0.04549	76584.	6958137.	-403.6387	358.3387	0.00
6.2000	0.2163	26019.	3174.	-0.04475	78526.	6958137.	-432.1215	399.6340	0.00
6.4000	0.2074	26645.	3088.	-0.04399	80416.	6958137.	-431.5313	416.1673	0.00
6.6000	0.1987	27254.	3002.	-0.04322	82254.	6958137.	-430.7217	433.6235	0.00
6.8000	0.1901	27846.	2916.	-0.04243	84039.	6958137.	-429.6897	452.0756	0.00
7.0000	0.1817	28420.	2830.	-0.04162	85773.	6958137.	-428.4318	471.6042	0.00
7.2000	0.1734	28978.	2744.	-0.04079	87456.	6958137.	-426.9445	492.2985	0.00
7.4000	0.1654	29518.	2659.	-0.03995	89086.	6958137.	-425.2243	514.2570	0.00
7.6000	0.1575	30041.	2574.	-0.03910	90666.	6958137.	-423.2675	537.5893	0.00
7.8000	0.1497	30548.	2490.	-0.03823	92194.	6958137.	-421.0703	562.4172	0.00
8.0000	0.1422	31037.	2406.	-0.03734	93672.	6958137.	-417.7005	587.5711	0.00
8.2000	0.1348	31510.	2323.	-0.03644	95099.	6958137.	-410.3458	608.8221	0.00
8.4000	0.1276	31966.	2242.	-0.03553	96476.	6958137.	-402.9084	631.5066	0.00
8.6000	0.1206	32407.	2162.	-0.03460	97805.	6958137.	-395.3866	655.7623	0.00
8.8000	0.1138	32831.	2084.	-0.03367	99086.	6958137.	-387.7791	681.7446	0.00
9.0000	0.1071	33240.	2007.	-0.03272	100321.	6958137.	-380.0840	709.6287	0.00
9.2000	0.1007	33634.	1932.	-0.03176	101509.	6958137.	-372.2998	739.6133	0.00
9.4000	0.09442	34013.	1858.	-0.03078	102652.	6958137.	-364.4247	771.9246	0.00
9.6000	0.08836	34377.	1786.	-0.02980	103752.	6958137.	-356.4567	806.8203	0.00
9.8000	0.08250	34727.	1715.	-0.02881	104808.	6958137.	-348.3941	844.5957	0.00
10.0000	0.07684	35063.	1647.	-0.02780	105823.	6958137.	-340.2349	885.5903	0.00
10.2000	0.07138	35386.	1579.	-0.02679	106796.	6958137.	-331.9771	930.1955	0.00
10.4000	0.06612	35695.	1514.	-0.02577	107729.	6958137.	-323.6189	978.8647	0.00
10.6000	0.06107	35991.	1450.	-0.02474	108624.	6958137.	-315.1586	1032.	0.00
10.8000	0.05623	36275.	1388.	-0.02370	109480.	6958137.	-306.5943	1091.	0.00
11.0000	0.05159	36546.	1064.	-0.02265	110299.	6958137.	-2932.	11368.	0.00
11.2000	0.04716	36701.	487.9077	-0.02160	110764.	6958137.	-2827.	11987.	0.00
11.4000	0.04295	36742.	-66.4662	-0.02055	110888.	6958137.	-2717.	12653.	0.00
11.6000	0.03894	36674.	-598.6003	-0.01949	110684.	6958137.	-2604.	13374.	0.00
11.8000	0.03515	36502.	-1108.	-0.01844	110165.	6958137.	-2490.	14166.	0.00
12.0000	0.03157	36231.	-1596.	-0.01739	109346.	6958137.	-2388.	15128.	0.00
12.2000	0.02819	35864.	-2063.	-0.01636	108239.	6958137.	-2287.	16221.	0.00
12.4000	0.02503	35405.	-2511.	-0.01533	106855.	6958137.	-2187.	17477.	0.00
12.6000	0.02206	34860.	-2938.	-0.01432	105208.	6958137.	-2085.	18905.	0.00
12.8000	0.01930	34230.	-3344.	-0.01333	103309.	6958137.	-1978.	20503.	0.00
13.0000	0.01673	33522.	-3780.	-0.01236	101171.	6958137.	-2381.	28464.	0.00
13.2000	0.01435	32718.	-4304.	-0.01141	98745.	6958137.	-2855.	39783.	0.00
13.4000	0.01217	31800.	-4855.	-0.01048	95975.	6958137.	-2655.	43652.	0.00
13.6000	0.01016	30776.	-5365.	-0.00958	92885.	6958137.	-2447.	48154.	0.00
13.8000	0.00833	29655.	-5832.	-0.00871	89499.	6958137.	-2228.	53479.	0.00
14.0000	0.00668	28444.	-6255.	-0.00788	85844.	6958137.	-2000.	59915.	0.00
14.2000	0.00518	27153.	-6631.	-0.00708	81948.	6958137.	-1761.	67934.	0.00
14.4000	0.00385	25791.	-6958.	-0.00632	77839.	6958137.	-1507.	78374.	0.00

14.6000	0.00266	24369.	-7232.	-0.00559	73548.	6958137.	-1235.	92951.	0.00
14.8000	0.00161	22898.	-7449.	-0.00492	69108.	6958137.	-933.2963	116066.	0.00
15.0000	6.91E-04	21390.	-7600.	-0.00428	64555.	6958137.	-572.4641	165713.	0.00
15.2000	-1.03E-04	19858.	-7647.	-0.00369	59934.	6958137.	95.2552	184191.	0.00
15.4000	-7.84E-04	18331.	-7573.	-0.00314	55323.	6958137.	648.9161	165621.	0.00
15.6000	-0.00136	16829.	-7415.	-0.00263	50791.	6958137.	928.6435	136724.	0.00
15.8000	-0.00184	15365.	-7208.	-0.00217	46372.	6958137.	1142.	124385.	0.00
16.0000	-0.00223	13946.	-6962.	-0.00175	42090.	6958137.	1314.	118067.	0.00
16.2000	-0.00254	12580.	-6685.	-0.00137	37967.	6958137.	1456.	114805.	0.00
16.4000	-0.00277	11272.	-6383.	-0.00102	34019.	6958137.	1572.	113398.	0.00
16.6000	-0.00295	10027.	-6059.	-7.18E-04	30261.	6958137.	1668.	113263.	0.00
16.8000	-0.00306	8848.	-5717.	-4.47E-04	26705.	6958137.	1746.	114081.	0.00
17.0000	-0.00312	7740.	-5362.	-2.08E-04	23359.	6958137.	1807.	115668.	0.00
17.2000	-0.00314	6704.	-4996.	-8.86E-07	20232.	6958137.	1853.	117915.	0.00
17.4000	-0.00312	5741.	-4622.	1.78E-04	17328.	6958137.	1887.	120755.	0.00
17.6000	-0.00307	4855.	-4243.	3.30E-04	14652.	6958137.	1907.	124154.	0.00
17.8000	-0.00299	4044.	-3860.	4.58E-04	12206.	6958137.	1917.	128098.	0.00
18.0000	-0.00289	3311.	-3477.	5.64E-04	9992.	6958137.	1915.	132589.	0.00
18.2000	-0.00277	2654.	-3095.	6.50E-04	8009.	6958137.	1904.	137645.	0.00
18.4000	-0.00263	2073.	-2716.	7.18E-04	6256.	6958137.	1884.	143296.	0.00
18.6000	-0.00248	1567.	-2342.	7.70E-04	4730.	6958137.	1855.	149588.	0.00
18.8000	-0.00232	1136.	-1975.	8.09E-04	3428.	6958137.	1817.	156583.	0.00
19.0000	-0.00216	777.0856	-1616.	8.36E-04	2345.	6958137.	1772.	164366.	0.00
19.2000	-0.00199	489.3013	-1267.	8.54E-04	1477.	6958137.	1719.	173051.	0.00
19.4000	-0.00181	270.2870	-929.2150	8.65E-04	815.7394	6958137.	1659.	182791.	0.00
19.6000	-0.00164	117.6153	-604.3566	8.71E-04	354.9688	6958137.	1590.	193800.	0.00
19.8000	-0.00147	28.5443	-294.0383	8.73E-04	86.1483	6958137.	1513.	206381.	0.00
20.0000	-0.00129	0.00	0.00	8.73E-04	0.00	6958137.	1427.	110491.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 8:

Pile-head deflection = 0.54431544 meters
Computed slope at pile head = -0.05718413 radians
Maximum bending moment = 36742. kN-m
Maximum shear force = -7647. kN
Depth of maximum bending moment = 11.40000000 meters below pile head
Depth of maximum shear force = 15.20000000 meters below pile head
Number of iterations = 20
Number of zero deflection points = 1

Summary of Pile-head Responses for Conventional Analyses

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, kN, and Load 2 = Moment, M, kN-m
Load Type 2: Load 1 = Shear, V, kN, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, kN, and Load 2 = Rot. Stiffness, R, kN-m/rad.
Load Type 4: Load 1 = Top Deflection, y, m, and Load 2 = Moment, M, kN-m
Load Type 5: Load 1 = Top Deflection, y, m, and Load 2 = Slope, S, radians

Load Case No.	Load Type	Pile-head Load 1	Load Type	Pile-head Load 2	Axial Pile-head Loading kN	Pile-head Deflection meters	Pile-head Rotation radians	Max Shear in Pile kN	Max Moment in Pile kN-m
1	V, kN	100.0000	M, kN-m	0.00	0.00	7.31E-04	-1.74E-04	100.0000	211.7001
2	V, kN	200.0000	M, kN-m	0.00	0.00	0.00262	-5.17E-04	200.0000	522.8447
3	V, kN	400.0000	M, kN-m	0.00	0.00	0.00915	-0.00151	400.0000	1293.
4	V, kN	600.0000	M, kN-m	0.00	0.00	0.01900	-0.00281	600.0000	2181.
5	V, kN	800.0000	M, kN-m	0.00	0.00	0.03170	-0.00436	800.0000	3161.
6	V, kN	2000.	M, kN-m	0.00	0.00	0.1434	-0.01670	-2349.	10679.

7	V, kN	3000.	M, kN-m	0.00	0.00	0.2641	-0.02921	-4042.	18708.
8	V, kN	5000.	M, kN-m	0.00	0.00	0.5443	-0.05718	-7647.	36742.

Maximum pile-head deflection = 0.5443154379 meters
Maximum pile-head rotation = -0.0571841333 radians = -3.276409 deg.

The analysis ended normally.