GRUPPO FS ITALIANE

Direzione Tecnica

ITINERARIO INTERNAZIONALE E78 S.G.C. GROSSETO – FANO
Tratto Selci Lama (E45) – S. Stefano di Gaifa
Adeguamento a 2 corsie della Galleria della Guinza (lotto 2) e del tratto Guinza – Mercatello Ovest (lotto 3)
1° stralcio

PROGETTO ESECUTIVO

COD. AN58

PROGETTAZIONE:
RAGGRUPPAMENTO
TEMPORANEO PROGETTISTI

MANDATARIA: PRO ITER Progetto Infrastrutture Territorio s.r.l.

MANDANTI: errevia S.R.L. RICERCA VIABILITÀ AMBIENTE; sinergo

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VISTO: IL RESP. DEL PROCEDIMENTO:
Dott. ing. Vincenzo Catone

PROTOCOLLO: DATA:

OPERE D'ARTE MAGGIORI:
Ing. Enrico Maria Pizzarotti – Società Pro Iter Srl
Ordine Ingegneri Provincia di Milano n. A29470

ORDINE DEGLI INGEGNERI DELLA PROVINCIA DI MILANO – DOTT.ING. FORMICHI RICCARDO – Sez.A Settori: a) civile e ambientale b) industriale c) dell'informazione n° A 18045

ORDINE DEGLI INGEGNERI DELLA PROVINCIA DI MILANO – DOTT.ING. ENRICO MARIA PIZZAROTTI – Sez.A Settori a) civile e ambientale b) industriale c) dell'informazione n° A 29470

06 - OPERE D'ARTE MAGGIORI IN SOTTERRANEO
06.02 - GA.01 - GALLERIA GUINZA - IMBOCCO LATO UMBRIA
06.02.03 - GALLERIA ARTIFICIALE

Relazione di calcolo

CODICE PROGETTO	NOME FILE	REVISIONE	SCALA
PROGETTO: LO702M – LIV. PROG.: E – N. PROG.: 2101	T00GA03OSTRE01A.pdf		
CODICE ELAB.: T00GA03OSTRE01		A	-

REV.	DESCRIZIONE	DATA	REDATTO	VERIFICATO	APPROVATO
D					
C					
B					
A	EMISSIONE	FEBBRAIO 2023	CICERI	MOJA	PIZZAROTTI

INDICE

1 PREMESSE

La presente relazione affronta le problematiche progettuali connesse alla realizzazione della galleria artificiale e del becco di flauto a forma di berretto di fantino per la sistemazione definitiva dell'imbocco lato Umbria della galleria Guinza, facente parte dell'Itinerario Internazionale E78 S.G.C. Grosseto – Fano – Tratto Selci Lama (E45) – S. Stefano di Gaifa - Adeguamento a 2 corsie della Galleria della Guinza (lotto 2) e del tratto Guinza – Mercatello Ovest (lotto 3).

La planimetria dell'area di interesse in fase definitiva è riportata nella Figura 1, mentre il profilo in asse galleria è riportato nella Figura 2.

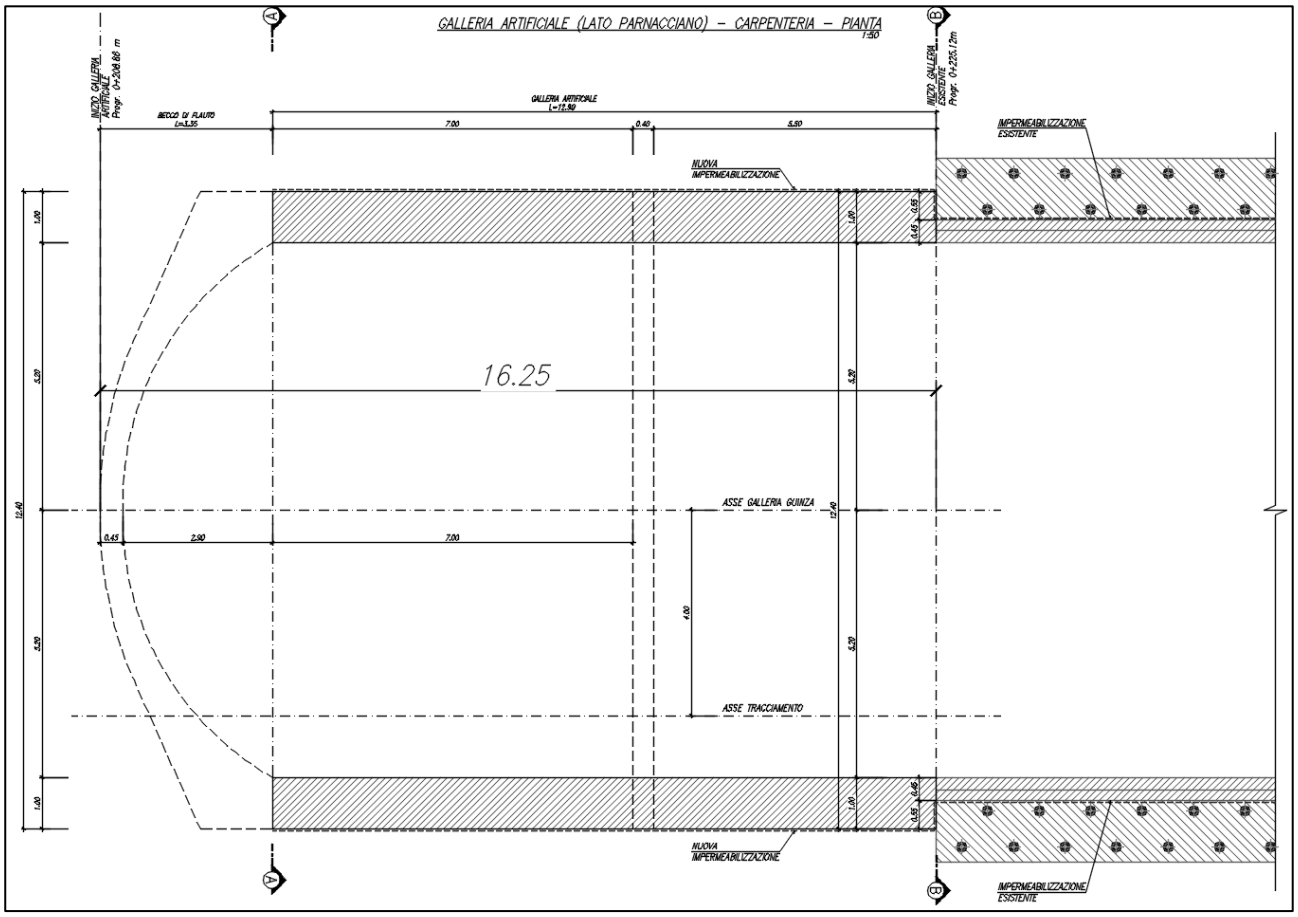

Figura 1 Planimetria galleria artificiale – Galleria Guinza - Imbocco lato Umbria

RTP di progettazione: ***Mandataria:*** ***Mandanti:***
PRO ITER Progetto Infrastrutture Territorio s.r.l.
erreVia s.r.l. RICERCA VIABILITÀ AMBIENTE
sinergo

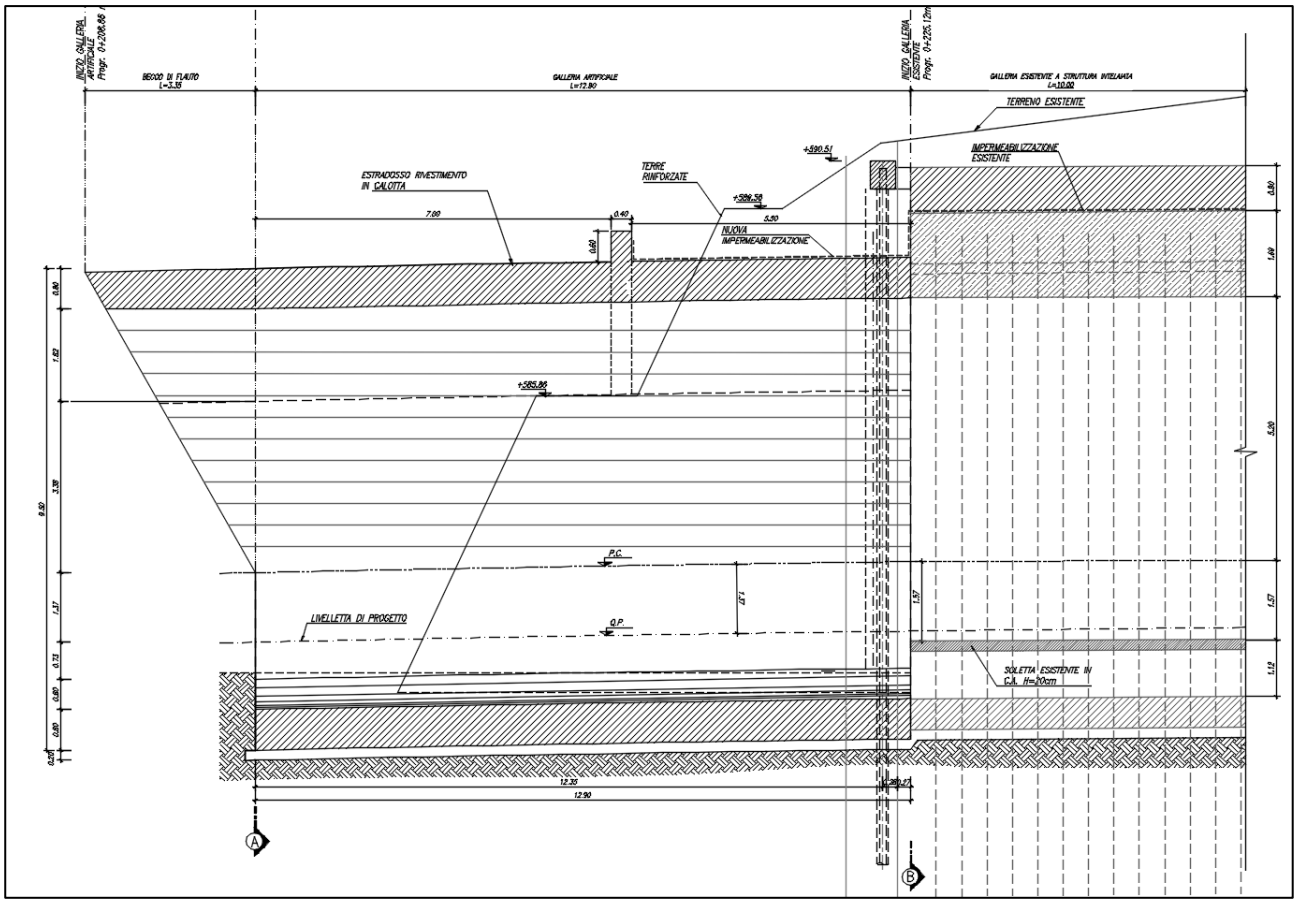

Figura 2 Profilo galleria artificiale – Galleria Guinza - Imbocco lato Umbria

Il tratto in artificiale è caratterizzato da una sezione tipo avente una piattaforma di 8.00m, ovvero una corsia di emergenza da 3.50m, una corsia da 3.50m e con una banchina da 1.00m. Tale sezione è la stessa della galleria naturale. La Figura 3 mostra una sezione rappresentativa dell'imbocco.

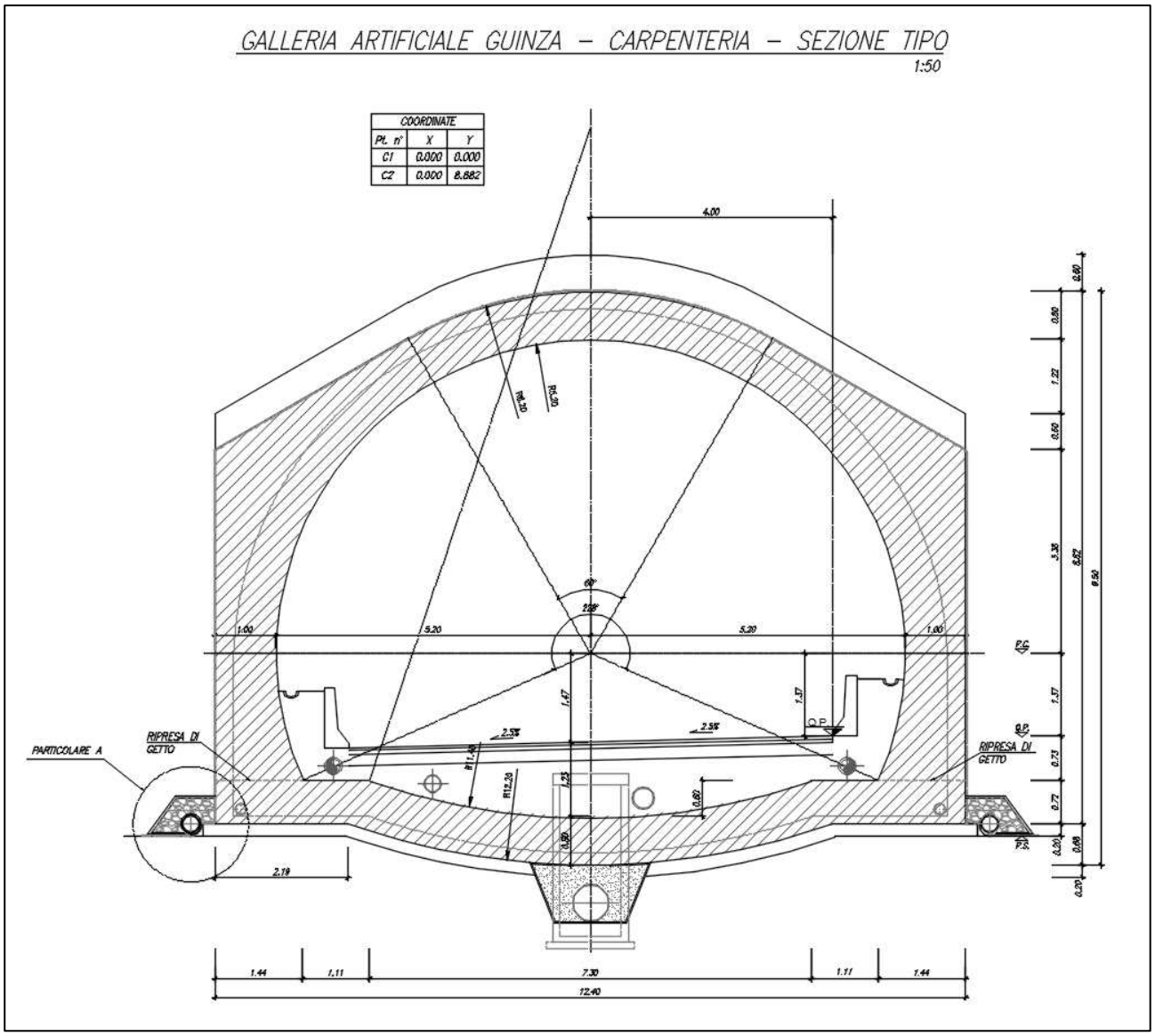

Figura 3: Sezione galleria artificiale – Galleria Guinza - Imbocco lato Umbria

Tale opera verrà realizzata in continuità con un tratto artificiale esistente di lunghezza 10m realizzato all'interno di una struttura intelaiata posto a monte della berlinese di imbocco provvisoria esistente. Il tratto di nuova realizzazione è collegato a quello esistente attraverso dei ferri longitudinali di inghisaggio con resina epossidica, garantendo la continuità dell'impermeabilizzazione mediante saldatura con quella esistente.

Il tratto artificiale di nuova realizzazione avrà una lunghezza totale di cui 16.25m di cui 12.90m di galleria artificiale e 3.35 di becco di flauto a forma di berretto di fantino.

2 DOCUMENTI DI RIFERIMENTO

2.1 Leggi, decreti, circolari ministeriali

2.1.1 Legislazione di carattere generale

- **Ministero dei LL.PP. - D.M. 17.01.2018:** "Norme tecniche per le Costruzioni".
- **Ministero dei LL.PP. - Circ. 7 del 21.01.2019:** Istruzioni per l'applicazione delle "Norme tecniche per le costruzioni" di cui al decreto ministeriale 17 gennaio 2018;

2.1.2 Norme UNI

- **UNI EN 197-1:** "Cemento - Composizione, specificazioni e criteri di conformità per cementi comuni.
- **UNI EN 206-2016:** "Calcestruzzo - Specificazioni, prestazioni, produzione e conformità".
- **UNI 11104/2016:** "Calcestruzzo - Specificazione, prestazione, produzione e conformità – Istruzioni complementari per l'applicazione della EN 206-1".

2.1.3 Bibliografia

- Migliacci – F. Mola: **Progetto agli stati limite delle strutture in c.a.** – Masson Italia Editori 1985
- C. Cestelli Guidi: **Geotecnica e tecnica delle fondazioni** – Ulrico Hoepli Editore 1987
- R. Lancellotta: **Geotecnica** – Edizioni Zanichelli 1987
- Bowles J.E.: **Foundation Analysis and Design 4th edition** – McGraw-Hill – New York, 1988

2.2 Documenti di progetto

2.2.1 Geotecnica e sismica

[1] T00GE03GETRE01 - Relazione geotecnica generale
[2] T00GE03GETRE03 - Relazione geomeccanica
[3] T00GE04GETRE01 - Relazione sismica

2.2.2 Galleria Artificiale – Imbocco lato Umbria

[4] T00GA03OSTCP01A – Carpenteria - Pianta, profilo e sezione
[5] T00GA03OSTCP02A – Carpenteria - Particolari
[6] T00GA03OSTAR01A – Armatura
[7] T00GA03OSTSE01A – Fasi esecutive

2.2.3 Terra rinforzata – Imbocco lato Umbria

[8] T00GA04OSTRE01A – Relazione di calcolo

2.3 Programmi di calcolo

SAP2000 Advanced rel. 21
Structural Analysis program – Computers and Structures, Inc. – Berkeley CA, USA
Programma di calcolo ad elementi finiti monodimensionali, bidimensionali e tridimensionali.

Spettri di risposta ver. 1.0.3
Distribuito dal Consiglio Superiore LL.PP.
Foglio di calcolo per la definizione dei parametri sismici secondo la trattazione del D.M. 14/01/2008 "Norme tecniche per le Costruzioni".

Trave continua
Professore Piero Gelfi
Programma per il calcolo delle sollecitazioni e delle deformazioni in Esercizio o allo Stato Limite Ultimo di

una trave continua a più campate con vincoli di estremità appoggio, incastro, estremo libero, incastro elastico.

3 MATERIALI

3.1 Calcestruzzo per rivestimenti definitivi in calotta

Classe di resistenza	C28/35	-
Rapporto massimo acqua / cemento	0.55	-
Slump	S4	-
Contenuto minimo di cemento	300	kg/m^3
Diametro massimo inerte	30	mm
Classe di esposizione	XC2	-
Copriferro minimo	5.0	cm

Resistenza caratteristica a compressione cubica	R_{ck}	=		35.00	N/mm^2
Resistenza caratteristica a compressione cilindrica	f_{ck}	=		29.05	N/mm^2
Resistenza media a compressione cilindrica	f_{cm}	=	$f_{ck}+8$	= 37.05	N/mm^2
Modulo elastico	E_c	=	$22000\times(f_{cm}/10)^{0.3}$	= 32588.1	N/mm^2
Resistenza a trazione semplice	f_{ctm}	=	$0.30\times f_{ck}^{2/3}$	= 2.83	N/mm^2
Resistenza a trazione caratteristica (frattile 5%)	f_{ctk}	=	$0.70\times f_{ctm}$	= 1.98	N/mm^2
Stato Limite Ultimo					
Coefficiente parziale di sicurezza	γ_C	=		1.50	-
Coefficiente riduttivo per resistenze di lunga durata	α_{cc}	=		0.85	-
Resistenza a compressione di calcolo	f_{cd}	=	$\alpha_{cc}\times f_{ck}/\gamma_C$	= 16.46	N/mm^2
Resistenza a trazione di calcolo	f_{ctd}	=	f_{ctk}/γ_C	= 1.32	N/mm^2
Stato Limite di Esercizio					
Tensione max di compressione - Comb. rara	σ_c	<	$0.60\times f_{ck}$	= 17.4	N/mm^2
Tensione max di compressione - Comb. quasi permanente	σ_c	<	$0.45\times f_{ck}$	= 13.1	N/mm^2

3.2 Acciaio per calcestruzzo armato

Tensione caratteristica di rottura (frattile 5%)	f_{tk}	=		540.00	N/mm^2
Tensione caratteristica di snervamento (frattile 5%)	f_{yk}	=		450.00	N/mm^2
Stato Limite Ultimo					
Coefficiente parziale di sicurezza	γ_S	=		1.15	--
Resistenza a trazione di calcolo	f_{yd}	=	f_{yk}/γ_S	= 391.30	N/mm^2
Stato Limite di Esercizio					
Tensione massima di trazione	σ_s	<	$0.80\times f_{yk}$	= 360.00	N/mm^2

4 CARATTERIZZAZIONE GEOTECNICA

L'imbocco Lato Umbria della galleria Guinza è caratterizzato da una formazione marnoso arenacea (FMA4b) coperta da una coltre detritica per uno spessore di 3 m.

Gli scavi di approccio alla galleria, sostenuti da una berlinese tirantanta esistente, sono stati già realizzarti e hanno raggiunto il piano di fondazione della galleria artificiale che è completamente caratterizzato dalla formazione FMA. Sul lato sinistro dell'impronta della galleria è attualmente presente una platea in cls magro e una in c.a. che verranno completamente demolite prima della realizzazione di qualsiasi opera definitiva agli imbocchi.

In fase definitiva, sarà realizzato un rilevato in terra rinforzata [8] che andrà a coprire interamente la berlinese d'imbocco provvisoria e parzialmente la galleria artificiale stessa.

La trattazione completa della configurazione geologica e geotecnica in prossimità delle opere in oggetto è riportata in [1] e [2].

L'ammasso roccioso risulta nel suo insieme leggermente alterato e la quota di falda è stata individuata al di sotto del piano di scavo della galleria artificiale. Si ritiene pertanto che la falda non interferisca con la galleria artificiale

In Tabella 1 si riportano i parametri geotecnici caratteristici delle varie unità geologiche assunti nei calcoli.

Materiale	γ_n [kN/m^3]	**c'** [kPa]	ϕ' [°]	E_{vc} [MPa]	E_{ur} [MPa]	ν [-]
FMA4b	21	100	35	800	2400	0,3
Terre rinforzate	19	0	35	20	60	0.3

Tabella 1: caratterizzazione geotecnica

Dove:

γ_n	peso di volume naturale
c'	coesione
ϕ'	angolo di attrito
E_{vc}	modulo elastico carico
E_{ur}	modulo elastico ricarico
ν	modulo di Poisson

5 CRITERI DI VERIFICA

5.1 Verifica per sollecitazioni di presso/tenso-flessione

Come previsto dal DM 17.01.2018 al § 4.1.2.3.4 con riferimento alla generica sezione la verifica di resistenza allo SLU si esegue controllando che:

$$M_{Rd} = M_{Rd}(N_{Ed}) \geq M_{Ed}$$

dove:

- MRd è il valore di calcolo del momento resistente corrispondente a NEd;
- NEd è il valore di calcolo della componente assiale (sforzo normale) dell'azione;
- MEd è il valore di calcolo della componente flettente dell'azione.

5.2 Verifica a taglio SLU

Si esegue dapprima la verifica degli *elementi senza armature resistenti a taglio* secondo quanto previsto nel DM 17.01.2018 al punto 4.1.2.3.5.1.

Indicato con V_{Ed} il valore di calcolo dell'azione di taglio agente allo SLU, si verifica che:

$$V_{Ed} < V_{Rd} = \max\left\{\left(0.18 \cdot k \cdot \frac{\sqrt[3]{100 \cdot \rho_\ell \cdot f_{ck}}}{\gamma_c} + 0.15 \cdot \sigma_{cp}\right) \cdot b_w \cdot d; \left(\nu_{min} + 0.15 \cdot \sigma_{cp}\right) \cdot b_w \cdot d\right\}$$

dove:

$$k = 1 + \sqrt{\frac{200}{d}} \leq 2$$ con *d* altezza utile della sezione espressa in mm

$$\nu_{min} = 0.035 \cdot \sqrt{k^3} \cdot \sqrt{f_{ck}}$$

$$\rho_\ell = \frac{A_{s\ell}}{b_w \cdot d} \leq 0.02$$ con b_w larghezza minima della sezione espressa in mm

$$\sigma_{cp} = \frac{N_{Ed}}{A_c} \leq 0.2 \cdot f_{cd}$$ tensione media di compressione nella sezione

Qualora la verifica non fosse soddisfatta è necessario ricorrere ad *elementi provvisti di armature resistenti a taglio* secondo quanto previsto al punto 4.1.2.3.5.1 del già citato D.M. 17.01.2018.

Con riferimento all'armatura trasversale, la resistenza di calcolo a "*taglio-trazione*" si calcola con:

$$V_{Rsd} = 0.9 \cdot d \cdot \frac{A_{sw}}{s} \cdot f_{yd} \cdot (\mathrm{ctg}\,\alpha + \mathrm{ctg}\,\vartheta) \cdot \sin\alpha$$

Con riferimento al calcestruzzo d'anima, la resistenza di calcolo a "*taglio-compressione*" si calcola con:

$$V_{Rcd} = 0.9 \cdot d \cdot b_w \cdot \alpha_c \cdot f'_{cd} \cdot \frac{\mathrm{ctg}\,\alpha + \mathrm{ctg}\,\vartheta}{1 + \mathrm{ctg}^2\,\vartheta}$$

La resistenza a taglio dell'elemento strutturale è la minore delle due sopra definite:

$$V_{Rd} = \min(V_{Rsd}; V_{Rcd})$$

Nelle precedenti espressioni, i nuovi parametri, introdotti rispetto al caso di elementi sprovvisti di armatura a taglio, assumono il seguente significato:

ϑ inclinazione dei puntoni di calcestruzzo rispetto all'asse dell'elemento con la limitazione $1.0 \le \mathrm{ctg}\,\vartheta \le 2.5$;

α inclinazione dell'armatura trasversale rispetto all'asse dell'elemento;

A_{sw} area dell'armatura trasversale;

s interasse tra due armature trasversali consecutive;

$f'_{cd} = 0.5 \cdot f_{cd}$ resistenza a compressione ridotta del calcestruzzo d'anima;

α_c coefficiente maggiorativi pari a:

1	per membrature non compresse
$1 + \sigma_{cp}/f_{cd}$	per $0 \le \sigma_{cp} < 0.25 \times f_{cd}$
1.25	per $0.25\, f_{cd} \le \sigma_{cp} \le 0.5 \times f_{cd}$
$2.5 \times (1 - \sigma_{cp}/f_{cd})$	per $0.5 \times f_{cd} < \sigma_{cp} < f_{cd}$

In presenza di significativo sforzo assiale, come ad esempio nel caso della precompressione, è necessario considerare un'ulteriore limitazione relativa all'inclinazione dei puntoni di calcestruzzo:

$$\mathrm{cotg}\,\vartheta_1 \le \mathrm{cotg}\,\vartheta$$

in cui:

ϑ_I angolo di inclinazione della prima fessurazione ricavato come cotg ϑ_I/σ_I

τ tensione tangenziale sulla corda baricentrica della sezione interamente reagente

σ_I tensione principale di trazione sulla corda baricentrica della sezione interamente reagente

5.3 Verifiche di limitazione delle tensioni di esercizio

Le Verifiche di limitazione delle tensioni in condizioni di esercizio (SLE) sono svolte con riferimento ai valori caratteristici delle azioni e dei parametri di resistenza dei materiali e consistono nel verificare che i valori di tensione nei materiali strutturali siano inferiori ai limiti di normativa (punto 4.1.2.2.5 del D.M. 17/01/2018).

- Calcestruzzo compresso:
  - Combinazione caratteristica o rara $\sigma_c < 0.60 \cdot f_{ck} = 17.4\text{Mpa}$
  - Combinazione quasi permanente $\sigma_c < 0.45 \cdot f_{ck} = 13.1\text{Mpa}$
- Acciaio teso:
  - Combinazione caratteristica o rara $\sigma_s < 0.80 \cdot f_{yk} = 360\text{Mpa}$

5.4 Verifiche a fessurazione

Per poter procedere alle verifiche a fessurazione è necessario effettuare una valutazione relativa al grado di protezione delle armature metalliche contro la corrosione (in termini di condizioni ambientali e sensibilità delle armature stesse alla corrosione).

La Tabella 2 riassume le condizioni ambientali previste dalle NTC 2018 in funzione delle classi di esposizione.

Condizioni ambientali	Classe di esposizione
Ordinarie	X0, XC1, XC2, XC3, XF1
Aggressive	XC4, XD1, XS1, XA1, XA2, XF2, XF3
Molto Aggressive	XD2, XD3, XS2, XS3, XA3, XF4,

Tabella 2: Descrizione delle condizioni ambientali (da Tabella 4.1.III NTC 18).

Le armature possono essere distinte in:

- armature sensibili;
- armature poco sensibili.

I valori limite di apertura delle fessure ottenuti in base alle condizioni ambientali, alla sensibilità delle armature e alla combinazione di azioni sono riportati in Tabella 3.

Gruppi di esigenze	**Condizioni ambientali**	**Combinazioni di azioni S.L.E.**	**Armature**	**w_d**	**Armature**	
A	Ordinarie	frequente	Poco sensibili	≤ w_3 = 0.4mm	Sensibili	≤ w_2 = 0.3mm
		quasi permanente		≤ w_2 = 0.3mm		≤ w_1 = 0.2mm
B	Aggressive	frequente	Poco sensibili	≤ w_2 = 0.3mm	Sensibili	≤ w_1 = 0.2mm
		quasi permanente		≤ w_1 = 0.2mm		-
C	Molto aggressive	frequente	Poco sensibili	≤ w_1 = 0.2mm	Sensibili	-
		quasi permanente		≤ w_1 = 0.2mm		-

Tabella 3: Criteri di scelta dello stato limite di fessurazione (da Tabella 4.1.IV NTC 18).

Nel caso in oggetto, dal momento che sono previste armature poco sensibili e sia la calotta che l'arco rovescio si trovano in condizioni ambientali ordinarie (XC2), è necessario limitare l'ampiezza delle fessure a 0.4mm per la combinazione frequente e 0.3mm per la combinazione di carico quasi permanente.

Per eseguire le verifiche a fessurazione si segue l'approccio *senza calcolo diretto* descritto al paragrafo C4.1.2.2.4 della Circolare del 11.02.2019 secondo cui è possibile limitare l'ampiezza delle fessure limitando il valore della tensione nell'acciaio teso nella combinazione di carico SLE considerata.

Si riportano le tabelle utilizzate per svolgere la verifica a fessurazione.

Tabella C4.1.II *Diametri massimi delle barre per il controllo di fessurazione*

Tensione nell'acciaio σ_s [MPa]	Diametro massimo ϕ delle barre (mm)		
	w_3 = 0,4 mm	w_2 = 0,3 mm	w_1 = 0,2 mm
160	40	32	25
200	32	25	16
240	20	16	12
280	16	12	8
320	12	10	6
360	10	8	-

Figura 4 - Diametri massimi delle barre per il controllo della fessurazione

Tabella C4.1.III *Spaziatura massima delle barre per il controllo di fessurazione*

Tensione nell'acciaio σ_s [MPa]	Spaziatura massima s delle barre (mm)		
	w_3 = 0,4 mm	w_2 = 0,3 mm	w_1 = 0,2 mm
160	300	300	200
200	300	250	150
240	250	200	100
280	200	150	50
320	150	100	-
360	100	50	-

Figura 5 - Spaziatura massima delle barre per il controllo della fessurazione

6 GALLERIA ARTIFICIALE

6.1 Descrizione della sezione tipo

La sezione tipo della galleria artificiale è una sezione monocentrica con raggio interno di calotta pari a 5.20m e un raggio interno di arco rovescio di 11.40m.

Lo spessore del rivestimento è pari a 80cm in calotta e in arco rovescio. In corrispondenza dei ritti, la sezione ha uno spessore variabile da un minimo di 100 cm in corrispondenza del piano dei centri fino a 149cm in corrispondenza della muretta e fino a 186cm in corrispondenza della calotta. I piedritti hanno un'altezza di 6.20m a partire dal piano di posa delle murette.

Tutte le caratteristiche geometriche sono riportate negli elaborati di riferimento [4][5][6][7].

6.2 Sezioni di verifica

Ai fini del dimensionamento statico della galleria artificiale, è stata presa in considerazione la sezione più sollecitata lungo lo sviluppo longitudinale della galleria che coincide con quella di massimo ricoprimento. La sezione di verifica è evidenziata in Figura 6.

La sezione presenta un profilo di riempimento sopra la calotta orizzontale con una copertura in asse cautelativamente assunta pari a 3m. La galleria è coperta e confinata su entrambi i lati da dei muri in terra rinforzata e poggia in arco rovescio sul materiale roccioso FMA4b.

La falda non interferisce con l'opera in progetto.

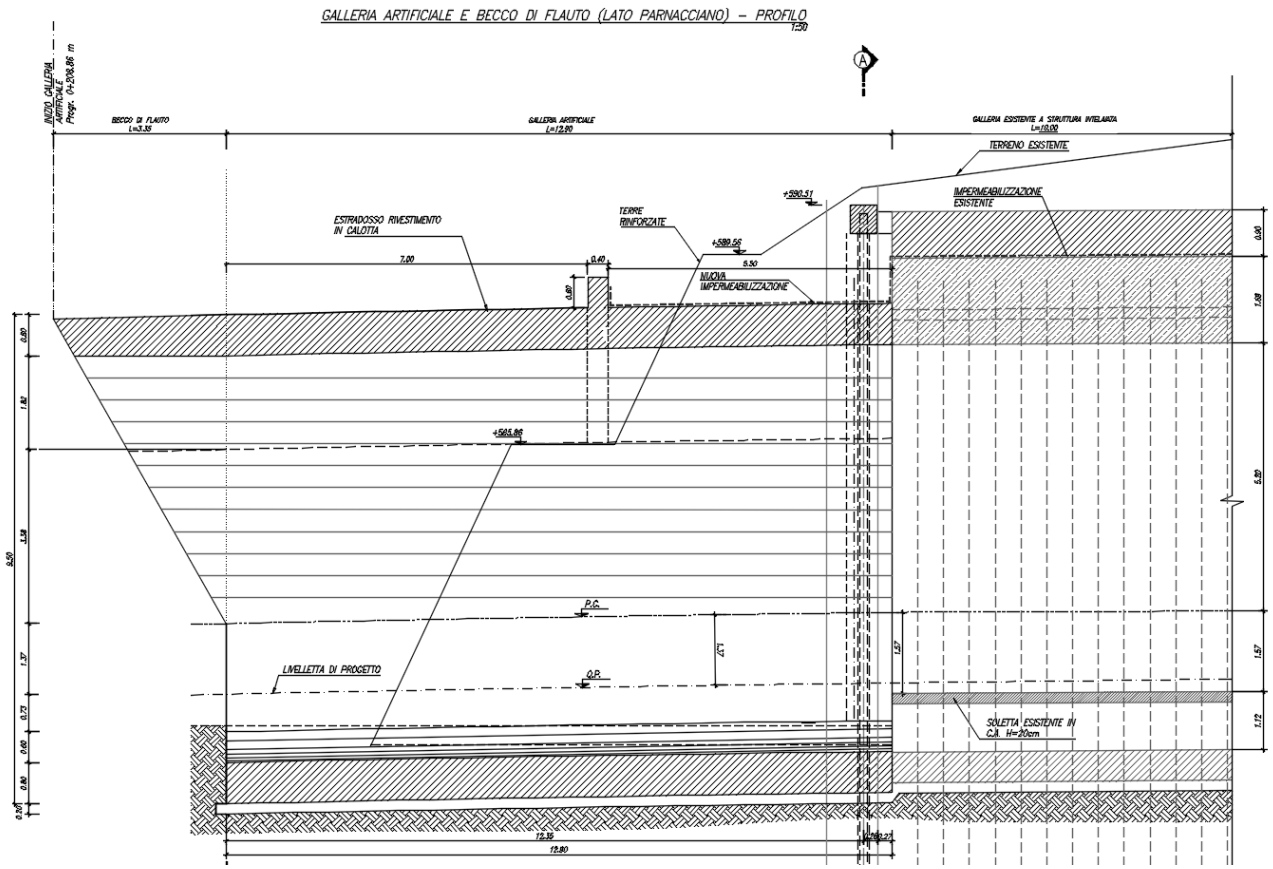

Figura 6: Profilo imbocco lato Umbria con individuazione sezione di verifica (sez. A)

6.3 Modello di calcolo

L'analisi strutturale delle sezioni trasversali studiate è stata condotta tramite il programma a elementi finiti SAP2000 considerando un concio di galleria di lunghezza unitaria (pari a 1.0m). La struttura è stata discretizzata mediante elementi finiti piani di tipo trave (beam) di lunghezza pari a 100 cm circa, al fine di conseguire una sufficiente approssimazione delle componenti curve della sezione trasversale (Figura 7). Gli spessori delle aste variano in funzione dell'elemento strutturale considerato (arco rovescio, ritti, calotta) come mostrato in Figura 8.

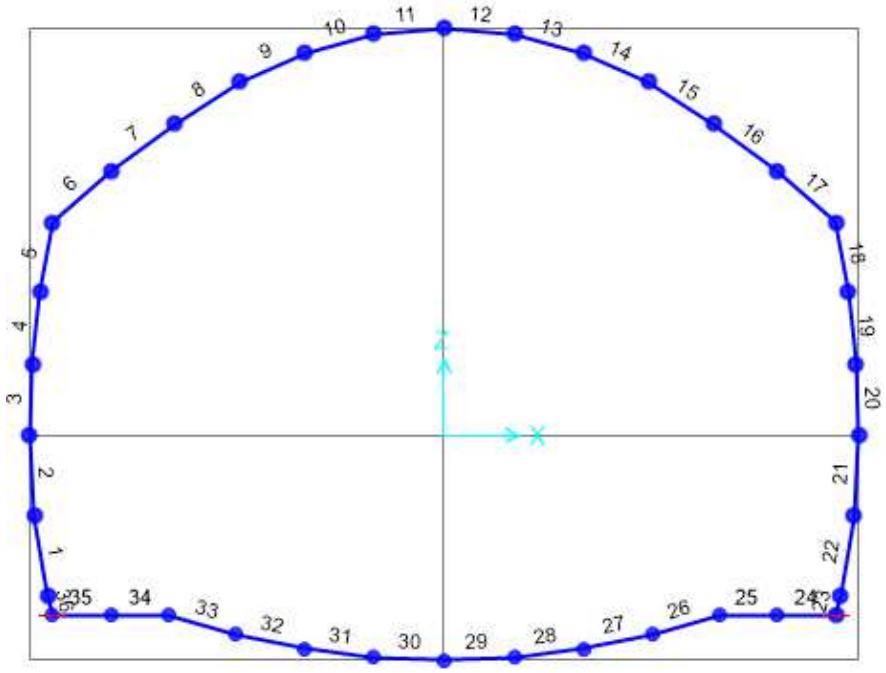

Figura 7: Sezione GA: modello sezione trasversale

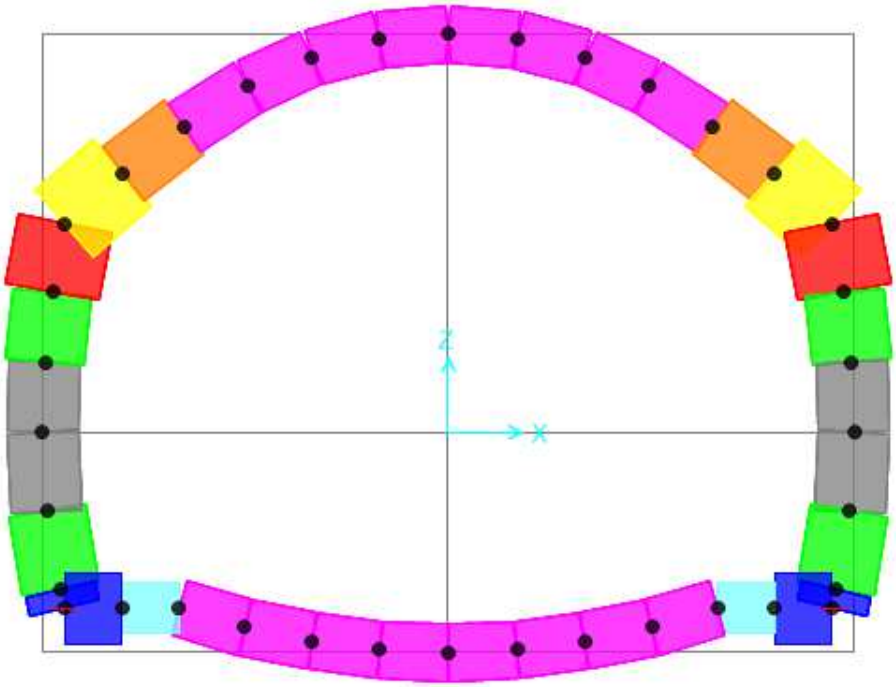

Figura 8: Sezione GA: modello sezione trasversale - Sezioni

L'interazione terreno-struttura è stata simulata utilizzando delle molle lineari lungo gli elementi in grado di trasmettere alla struttura, solo se compressi, una reazione pari alla pressione di contatto terreno-struttura. La determinazione dei parametri di rigidezza delle molle è stata condotta mediante le formulazioni proposte da Boussinesq per le superfici piane (piedritti) e da Galerkin per le superfici curve (arco rovescio e calotta) nell'ipotesi di deformazioni piane.

- Boussinesq (per superfici piane o assimilabili, ovvero per i piedritti):

$$k_B = \frac{E}{\left(1-\nu^2\right)\cdot B \cdot C_d} \quad [F/L^3]$$

Essendo:

E modulo di elasticità del terreno;

ν coefficiente di Poisson;

C_d coefficiente di forma.

Per il calcolo della rigidezza delle molle sui piedritti è stata considerata la rigidezza E di ricarico della terra rinforzata (E_{vc}=60 MPa come da Tabella 1).

Il coefficiente di forma è assegnato in funzione delle proprietà geometriche della superficie di contatto terreno-struttura L e B, rispettivamente lunghezza e base della ipotetica fondazione (si veda Tabella 4). Nel caso in esame, la grandezza L è stata assunta 12m pari alla lunghezza di un concio di galleria mentre per la grandezza B è stata considerata l'altezza del piedritto pari a 6.2m.

TABELLA	
L/B	C_d
1.5	1.15
2	1.30
3	1.52
5	1.83
10	2.25
100	3.7
1000	5.15
10000	6.6

Tabella 4

La legge forza-spostamento adottata è schematizzata nella Figura 9.

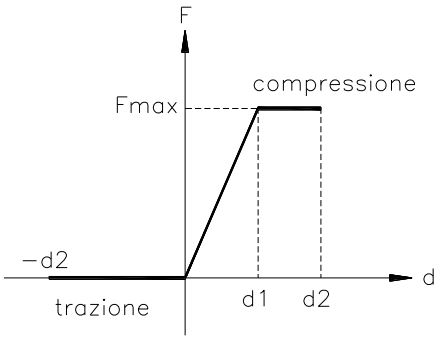

Figura 9: Legge forza-spostamento link

dove d_1 è maggiore del massimo spostamento atteso per il generico nodo della struttura (ad esempio 1.0m).

- Galerkin (per superfici curve, ovvero per arco rovescio e calotta):

$$k_G = \frac{E}{(1+\nu)\cdot R_{eq}} \qquad [F/L^3]$$

Essendo:

E modulo di elasticità del terreno;

ν coefficiente di Poisson;

R_{eq} raggio di curvatura equivalente.

Per l'arco rovescio è stato considerato il modulo elastico di ricarico della FMA (E_{ur}=2400 Mpa come da Tabella 1) e un raggio equivalente R_{eq} pari a 11.60m. In calotta, date le ridotte coperture, è stata trascurata la rigidezza offerta dal terreno.

La rigidezza flessionale della muretta è simulata attraverso una molla rotazionale applicata nei nodi 24 e 36 avente una rigidezza rotazionale calcolata con la formulazione proposta da Boussinesq:

$$k_{B\theta} = k_{BV}\frac{B_B^3}{12} \qquad [F/L]$$

Essendo:

k_{BV} rigidezza verticale di Bussinesq alla base della muretta

B_B dimensione trasversale della superficie piana della muretta.

Inoltre, alla base della muretta, è stata considerata anche una rigidezza verticale calcolata con la formula di Bussinesq per superfici piane per una lunghezza di 2.29m, pari alla sezione di base della muretta, applicata alle aste 24-25 e 34-35.

Per quanto riguarda la costante di Boussinesq, è stato posto come limite superiore un valore pari a 3 volte la costante ottenuta con il metodo di Galerkin sull'arco rovescio.

La Tabella 5 esplicita la rigidezza attribuita a ciascuna asta/nodo del modello.

	Aste* / Nodi**	Rigidezze
$k_{G(calotta)}$	6-17 (*)	0 [kPa/m]
$k_{hB(ritti)}$	1-5; 18-23; 36 (*)	2 500 [kPa/m]
$k_{G(ar)}$	26-33 (*)	150 000 [kPa/m]
$k_{v(mur)}$	24-25; 34-35 (*)	450 000 [kPa/m]
$k_{\theta(mur)}$	24; 36 (**)	450 000 [kN*m]

Tabella 5

Dato il comportamento non lineare delle molle, l'analisi a struttura è stata condotta con un'analisi di tipo elastico-non lineare.

6.4 Analisi dei carichi

6.4.1 Peso proprio

Il peso proprio della struttura è valutato in ragione di 25.0 kN/m^3 ed è computato automaticamente dal programma di calcolo. Il peso proprio è parte della condizione di carico **PP**.

6.4.2 Peso del ricoprimento

Il peso del ricoprimento costituisce un carico permanente verticale valutato in funzione dello spessore e del peso di un terreno di riempimento pari a 19 kN/m^3 (peso naturale).

È stata considerata una copertura in asse di 3m con profilo del terreno orizzontale tenendo in conto che, al diminuire della quota del rivestimento definitivo cresce il carico dovuto al ricoprimento del terreno applicato su di esso. Il peso del terreno di copertura è stato inserito nelle condizioni di carico **Pv_dx_dis e PV_sx_dis** ed è applicato a tutti i nodi nella parte superiore del modello.

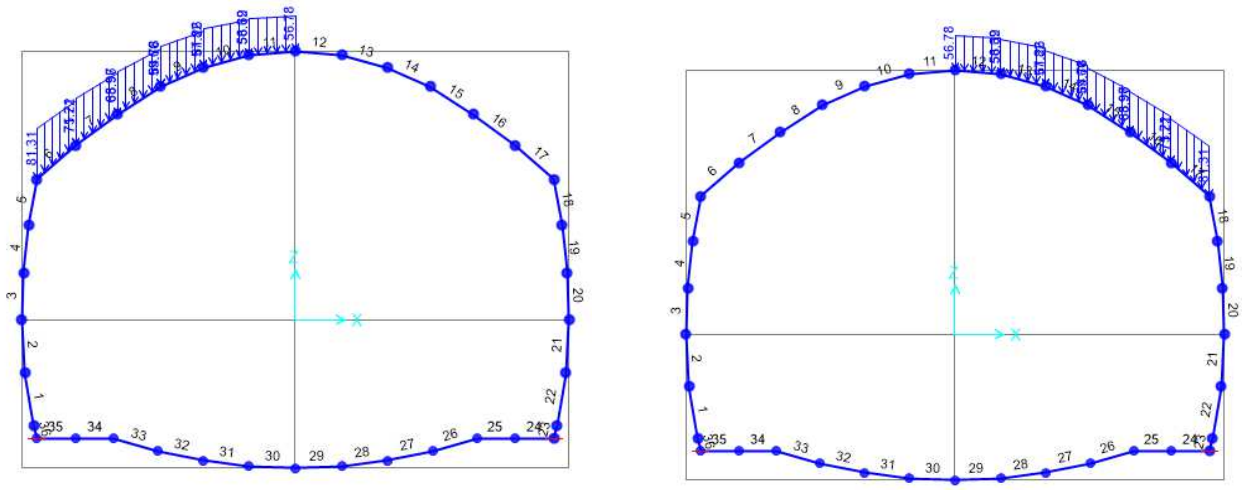

Figura 10: Sezione – Pv_dx_dis e Pv_sx_dis

6.4.3 Spinte laterali del terreno

Sui lati della galleria sono state considerate le spinte orizzontali del terreno. Tali spinte agenti sulla parte a sinistra e a destra della galleria sono state inserite rispettivamente nella condizione di carico **Ph_sx** e **Ph_dx**.

Le spinte orizzontali sono quelle generate dal terreno dei muri in terra rinforzata e sono state ottenute facendo il prodotto tra lo sforzo verticale e il coefficiente di spinta a riposo. Lo sforzo verticale e il coefficiente di spinta

k_0 (calcolato come: k_0 = (1-sin φ)) sono stati calcolati in ragione del peso (19 kN/m^3) e dell'angolo d'attrito (φ=35°) del terreno che costituisce le terre rinforzate.

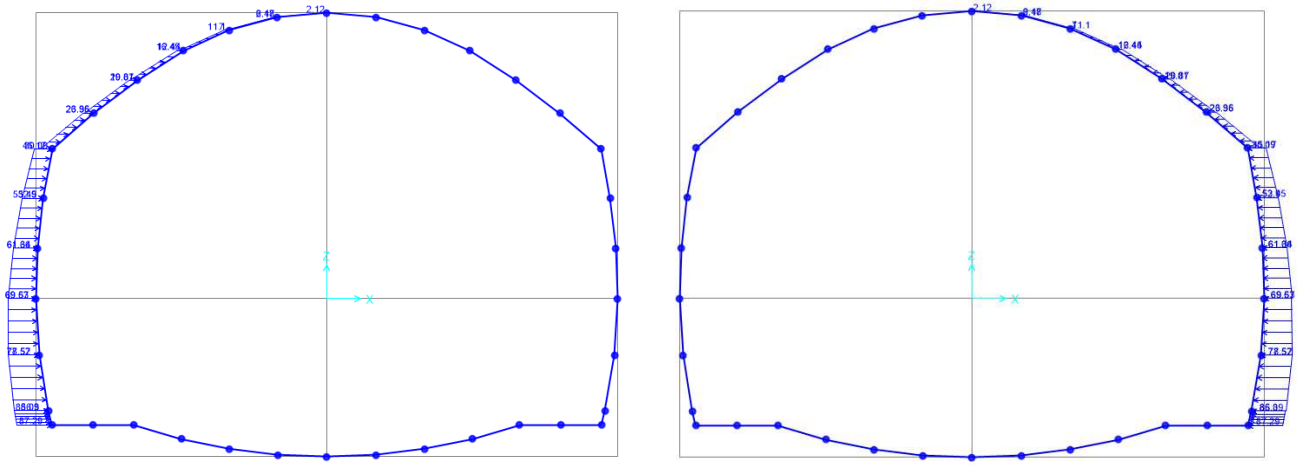

Figura 11: Sezione – Ph_sx e Ph_dx

6.4.4 Carichi in calotta e arco rovescio

Si considera un carico accidentale di 10kPa sulla copertura della galleria artificiale per tener conto dei mezzi per la realizzazione della terra rinforzata.

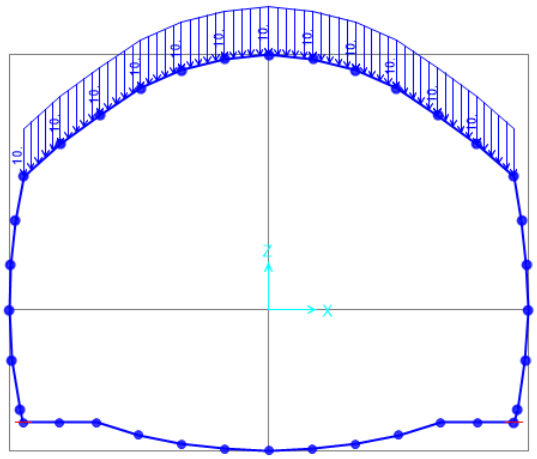

Figura 12: Sezione – Sovracc calotta

Si trascura a favore di sicurezza il carico della sovrastruttura stradale e il carico accidentale del traffico sull'arco rovescio in quanto concorrerebbero a ridurre il momento che tende le fibre di intradosso nella porzione centrale dello stesso arco rovescio (si vedano le sollecitazioni al Par 6.6).

6.4.5 Spinta idrostatica dell'acqua di falda

La falda si trova al disotto delle opere in progetto e quindi la spinta della acqua non è stata considerata nelle analisi.

6.4.6 Azione sismica

6.4.6.1 Periodo di riferimento per l'azione sismica

L'accelerazione orizzontale massima attesa al sito dipende dal periodo di riferimento considerato per la definizione dell'azione sismica. Data la tipologia della struttura in progetto si ritiene di attribuire, ai sensi della tabella 2.4.I del D.M. 17.01.2018, una vita nominale $V_N \geq 50$ anni. Si è scelto di adottare una classe d'uso IV, come definita al par 2.4.2 del DM 17.01.2018. In base alla tabella 2.4.II il coefficiente d'uso vale $C_U = 2$.

Pertanto il periodo di riferimento per l'azione sismica vale:

$$V_R = V_N \cdot C_U = 50 \cdot 2 = 100\ anni$$

6.4.6.2 Parametri sismici

I parametri sismici di base sono riportati nella Relazione sismica allegata al presente progetto [3].

I valori di accelerazione massima attesa a_g su sito di riferimento rigido orizzontale e i valori dell'amplificazione dello spettro in accelerazione orizzontale F_0, per i periodi di ritorno T_R associati a ciascuno stato limite valgono:

Stato Limite	T_R [anni]	a_g [g]	F_0 [-]	T_C^* [s]
SLO	60	0.098	2.347	0.274
SLD	101	0.124	2.334	0.281
SLV	949	0.288	2.398	0.314
SLC	1950	0.360	2.409	0.327

Tabella 6 – Coefficienti sismici associati agli stati limite

6.4.6.3 Categoria sismica dei suoli di fondazione e coefficiente di amplificazione stratigrafica

Ai fini della progettazione geotecnica e strutturale delle opere, la galleria artificiale in oggetto si trova in un materiale di **categoria B** sulla base di cui sono stati ottenuti i seguenti valori del coefficiente di amplificazione stratigrafica S_S (cfr. Tabella 3.2.IV del D.M. 17/01/18), funzione anch'essi dello stato limite considerato:

nel caso di verifiche **SLV** (a_g=0,288g, F_o=2,398 e T_c^*=0,314):

Categoria sottosuolo	S_S	
B	$1.00 \leq 1.40-0.40 \times F_0 \times a_g/g = 1.124 \leq 1.20$	**-> 1.124**

Tabella 7 – Coefficiente di amplificazione stratigrafica

6.4.6.4 Coefficiente di amplificazione topografica

In base alle condizioni topografiche presenti in sito (T2= Pendii con inclinazione media i > 15°) è stato ottenuto il seguente valore dei coefficienti di amplificazione topografica S_T (cfr. Tabella 3.2.V del D.M. 17.01.18), considerando che le opere si trovino alla base del pendio:

Categoria topografica	S_T
T2	1

Tabella 8 - Coefficiente di amplificazione topografica

6.4.6.5 Forze d'inerzia sulle masse dovute a peso proprio e permanenti

Si calcolano i coefficienti sismici:

- Coefficiente per forze orizzontali SLV: Kh,slv = ± ag/g x SS x ST = ± 0.288 x 1.124 x 1.0 = ± 0.324
- Coefficiente per le forze verticali SLV: Kv,slv = ± 0.5 x Kh,slv = 0.162

Moltiplicando i pesi propri delle strutture e del terreno per i coefficienti sismici appena calcolati si trovano le forze d'inerzia delle masse causate dal sisma (forza d'inerzia verticale: $F_{iV} = \pm K_{V,SLV} \cdot W$ e forza d'inerzia orizzontale:$F_{iH} = \pm K_{H,SLV} \cdot W$).

Le forze d'inerzia verticali vengono tenute in conto nelle stesse combinazioni **PP** e **Pv** dove le forze d'inerzia vengono sommate o sottratte ai pesi traducendosi in un'amplificazione o una riduzione del peso:

- Forza d'inerzia verso l'alto: Fiv +W = W x Kv,slv +W = (1+ Kv,slv)W = 1.162 W
- Forza d'inerzia verso il basso: Fiv +W = W x Kv,slv +W = (1+ Kv,slv)W = 0.838 W

Le forze d'inerzia orizzontali della massa di cls sono pari a Fih = ± $K_{h,slv}$ x W = ± 0.388 W e sono state inserite nel programma di calcolo nelle condizioni di carico col nome **In_sx e In_dx**.

La spinta sismica trasmessa alla galleria dalla terra armata è stata considerata attraverso il carico sismico di Wood (1973) secondo il quale l'azione sismica su una parete di altezza H=8.83 m (dalla base della muretta alla chiave della calotta) è una pressione uniforme pari a:

$$p_{sism} = a_{max}/g \; x \; \gamma \; x \; H = 54.3 \text{ kN/m}$$

La cui risultante applicata ad H/2 è pari a:

$$P_{sism} = p_{sism} \text{ x } H = a_{max}/g \; x \; \gamma \; x \; H^2 = 480 \text{ kN}$$

La figura sottostante mostra la combinazione di carico **Wood_sx** e **Wood_dx** inserite nel programma di calcolo.

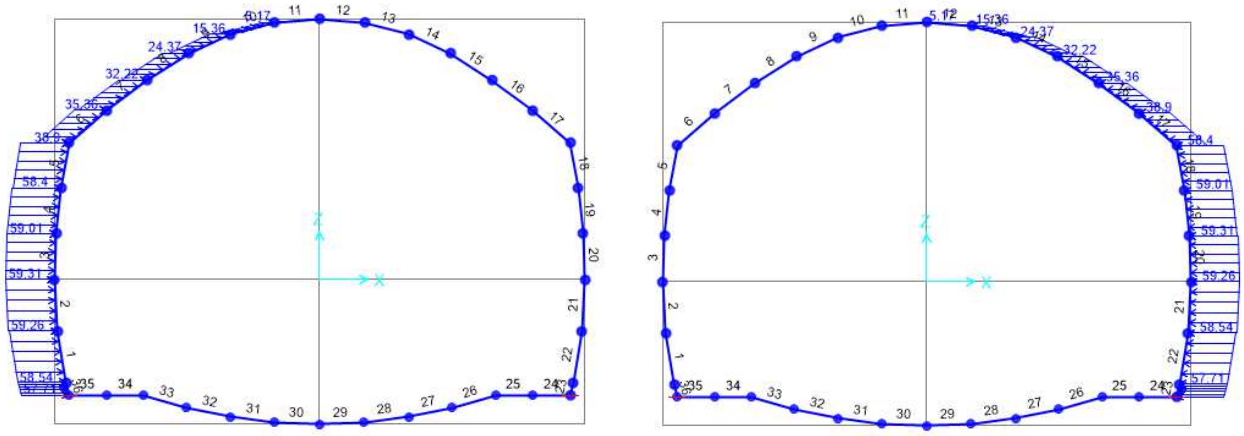

Figura 13: Sezione – Wood_sx e Wood dx

6.5 Quadro delle combinazioni adottate

Nella Tabella 9 sono riassunte le combinazioni di carico che sono state utilizzate per fare le verifiche agli stati limite ultimi e agli stati limite di esercizio secondo il D.M. 17 gennaio 2018 Par. 2.5.3.

Per quanto riguarda la combinazione agli Stati Limiti Ultimi, si considera la combinazione *fondamentale* (indicata come **SLU**) con i coefficienti A1(STR) che si trovano nella Tabella 6.2.I del D.M. 17 gennaio 2018.

Per le combinazioni sismiche non sono previsti dei coefficienti di amplificazione dei carichi; i coefficienti che si leggono nella tabella sottostante traducono la presenza combinata del carico stesso e dell'inerzia per il sisma come illustrato nel Par. 6.4.6.5. Inoltre, poiché in fase statica la galleria si trova in condizioni geometriche e di carico simmetriche, nel seguito si presenta, per brevità, solo la condizione in cui l'accelerazione sismica è diretta da sinistra verso destra in quanto l'applicazione della medesima accelerazione in direzione opposta fornirebbe le stesse sollecitazioni "specchiate. Le combinazioni sismiche considerate sono dunque **SLV_DX_D e SLV_DX_U**.

Per quanto riguarda gli stati limite di Esercizio, si considerano la combinazione *caratteristica (***SLE_car***), frequente* e *quasi permanente (***SLE_fq-qp)**. Si sottolinea che, assimilando la calotta della galleria ad una "copertura", in funzione della tabella 2.5.I delle NTC2018, risulta che il sovraccarico in calotta viene amplificato per 0 sia nella combinazione frequente che quasi permanente che pertanto risultano coincidenti.

	PP	Pv	Ph_dx	Ph_sx	Sorvacc calotta	In_dx	Wood_ dx
SLE_car	1	1	1	1	1	0	0
SLE_fq-qp	1	1	1	1	0	0	0
SLU	1,3	1,3	1,3	1,3	1,5	0	0
SLV_DX_D	1.162	1	1	1	1	1	1
SLV_DX_U	0.838	1	1	1	1	1	1

Tabella 9 – Combinazioni di carico

6.6 Sollecitazioni

Si riportano nel seguito i grafici delle sollecitazioni nelle combinazioni di carico **SLE_car**, **SLE_fq-qp**, **SLU** e la combinazione sismica più gravosa (**SLV_DX_D**).

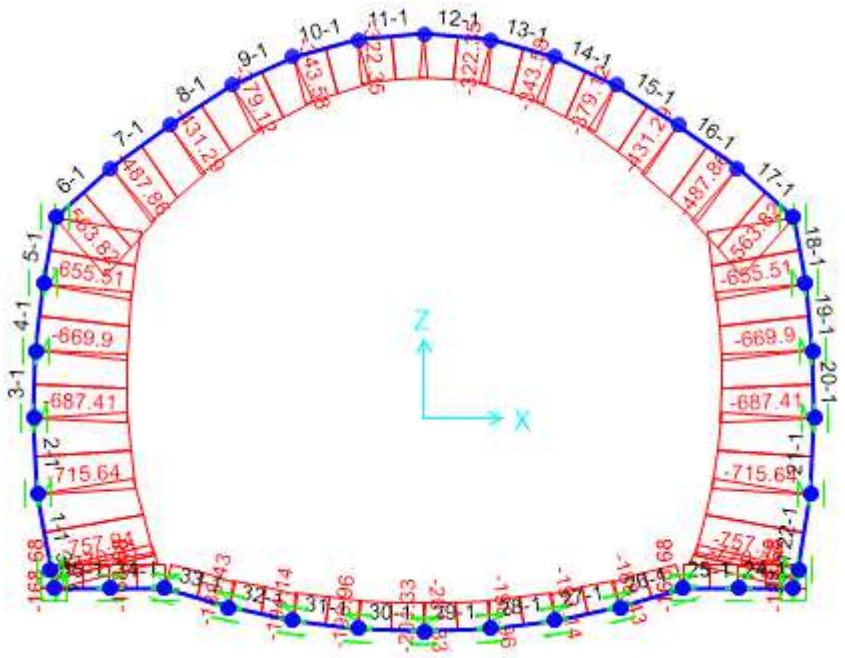

Figura 14: Andamento dell'azione assale nella combinazione SLE_car.

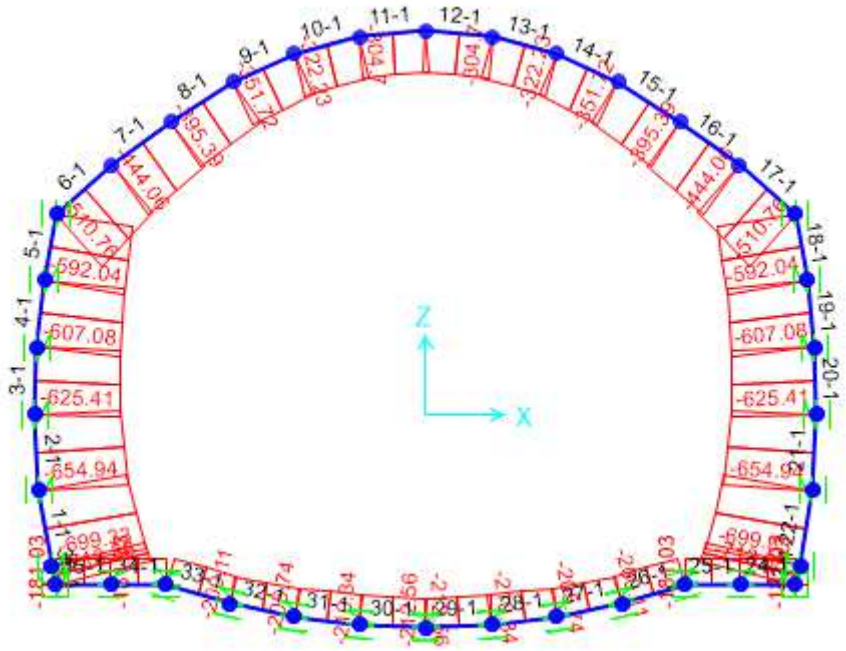

Figura 15: Andamento dell'azione assale nella combinazione SLE_fq-qp.

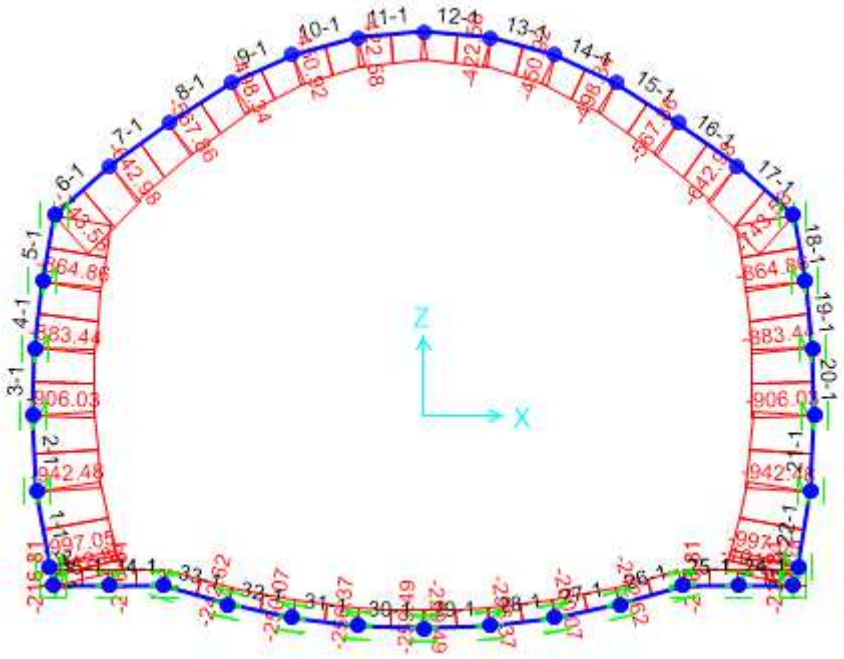

Figura 16: Andamento dell'azione assale nella combinazione SLU.

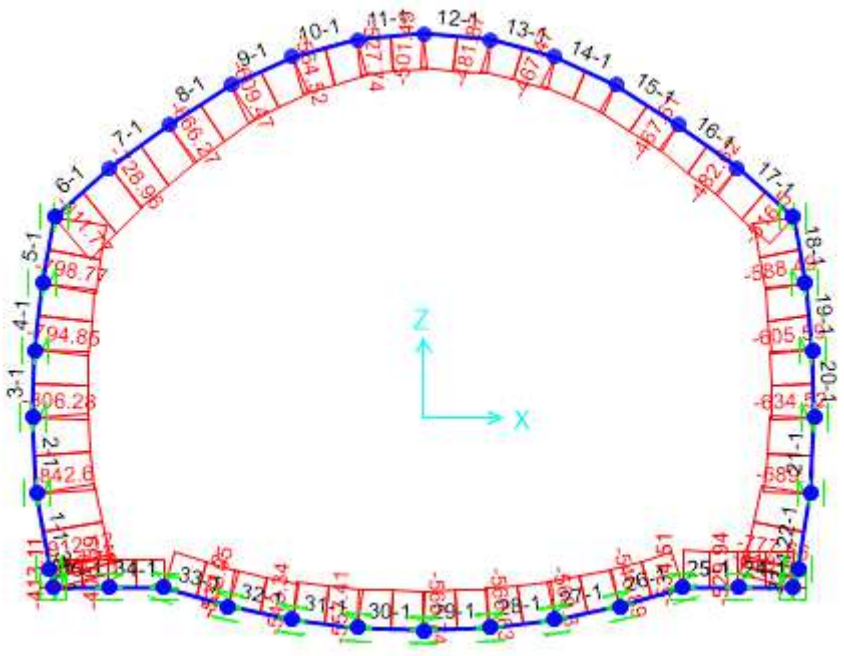

Figura 17: Andamento dell'azione assale nella combinazione SLV_DX_D.

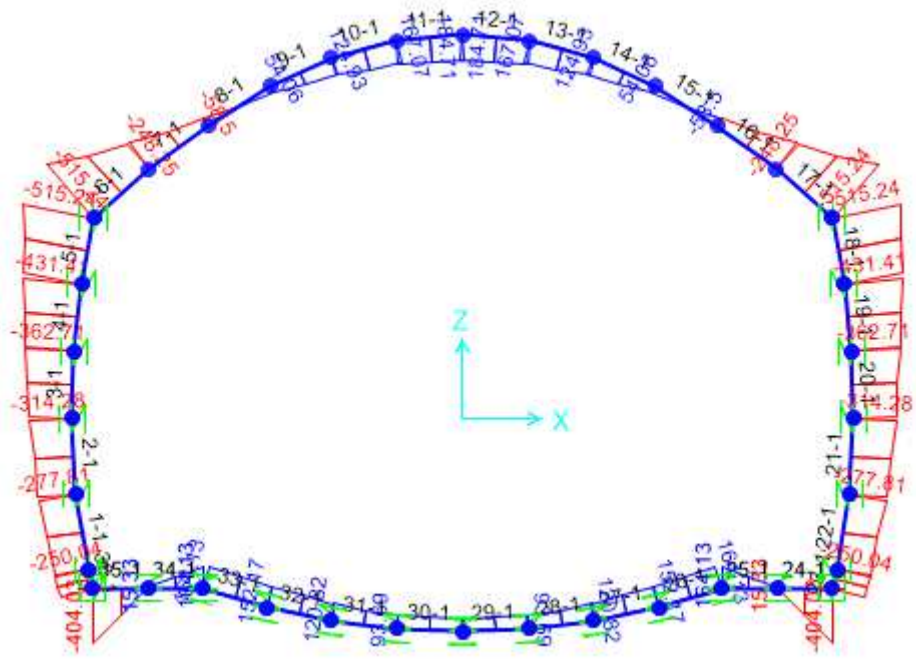

Figura 18: Andamento del momento flettente nella combinazione SLE_car

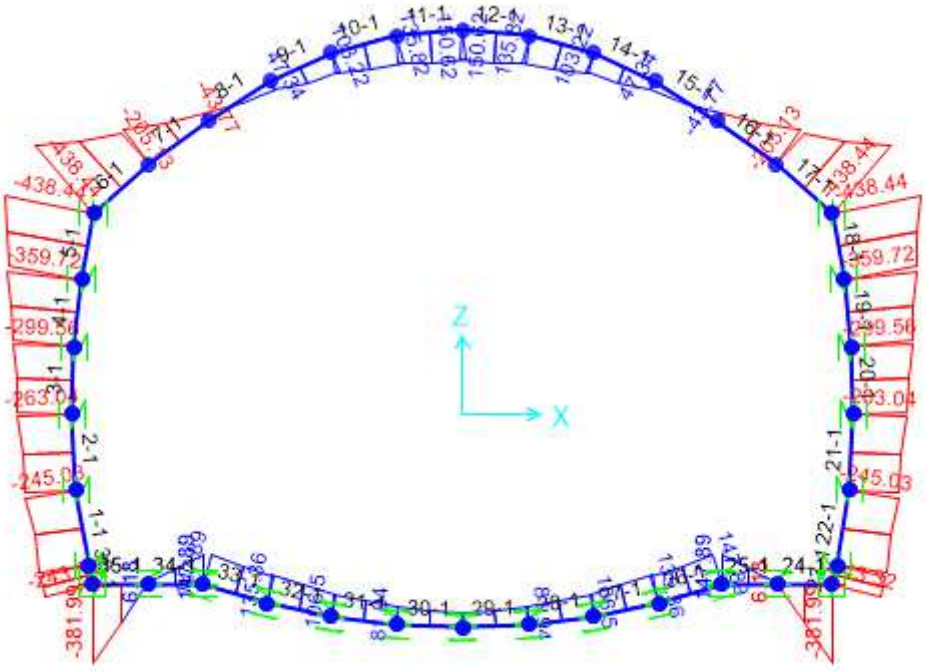

Figura 19: Andamento del momento flettente nella combinazione SLE_fq-qp

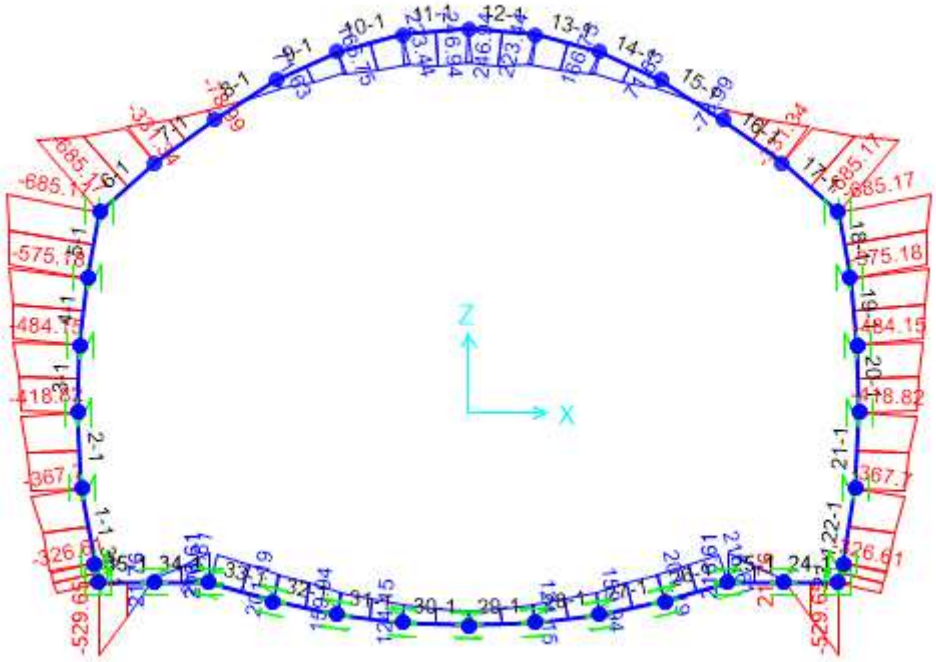

Figura 20: Andamento del momento flettente nella combinazione SLU.

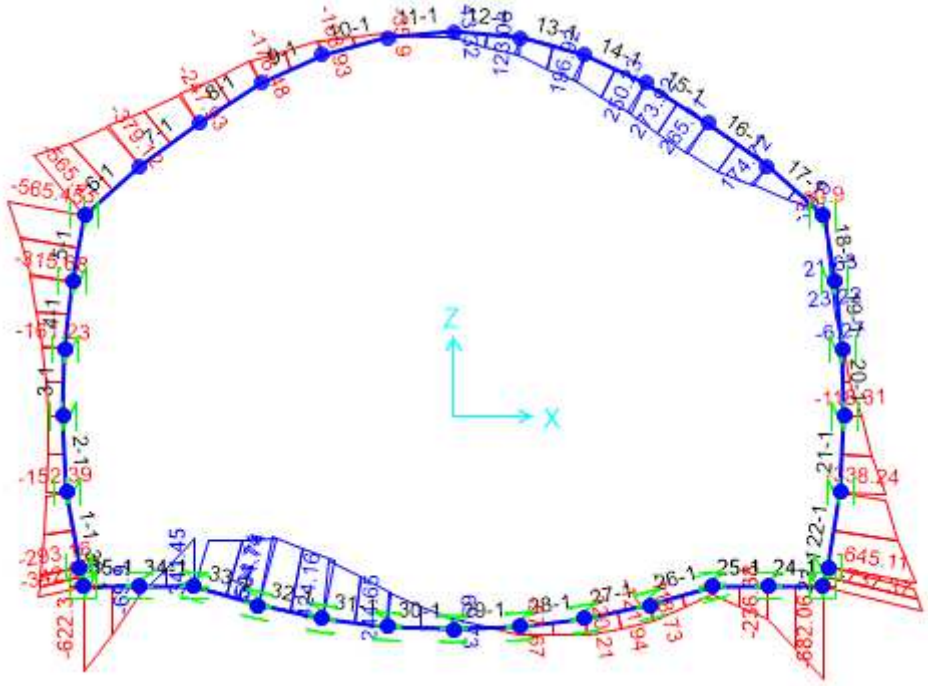

Figura 21: Andamento del momento flettente nella combinazione SLV_DX_D.

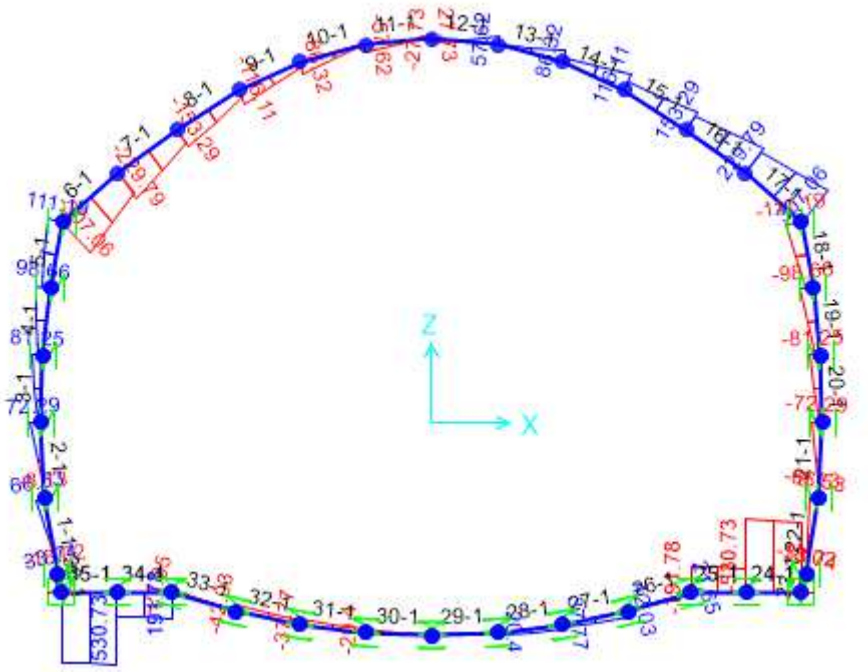

Figura 22: Andamento del taglio nella combinazione SLE_car.

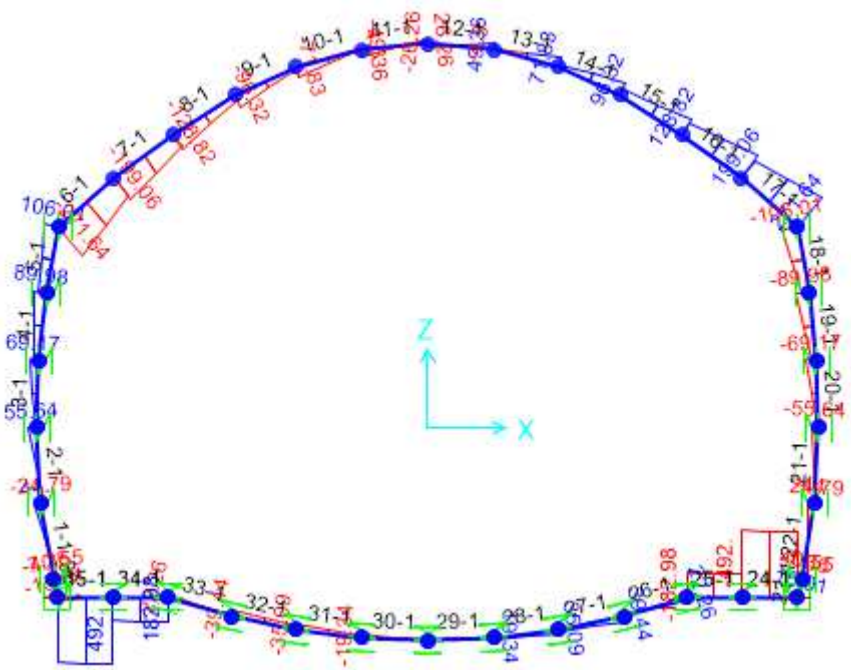

Figura 23: Andamento del taglio nella combinazione SLE_fq-qp.

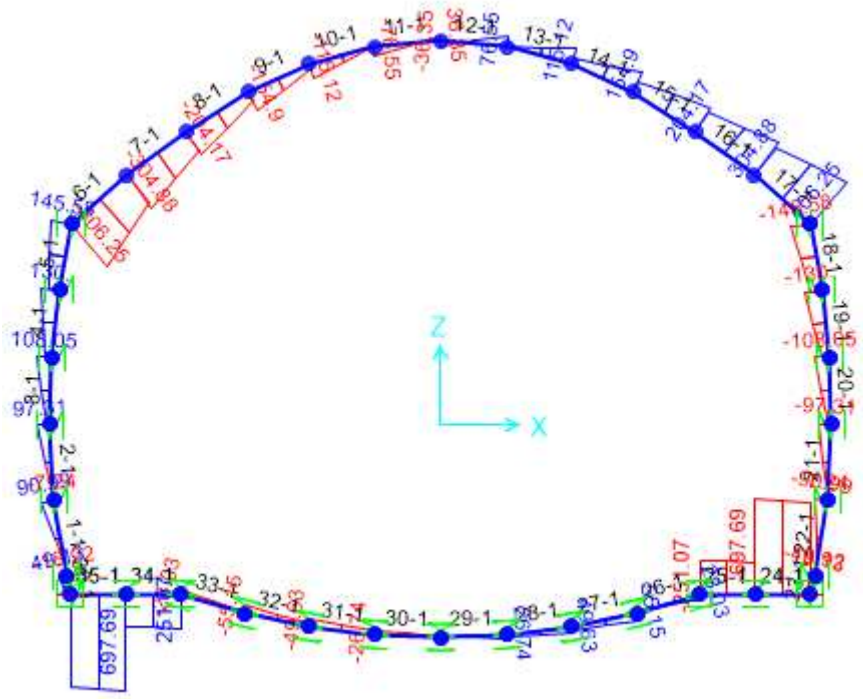

Figura 24: Andamento del taglio nella combinazione SLU.

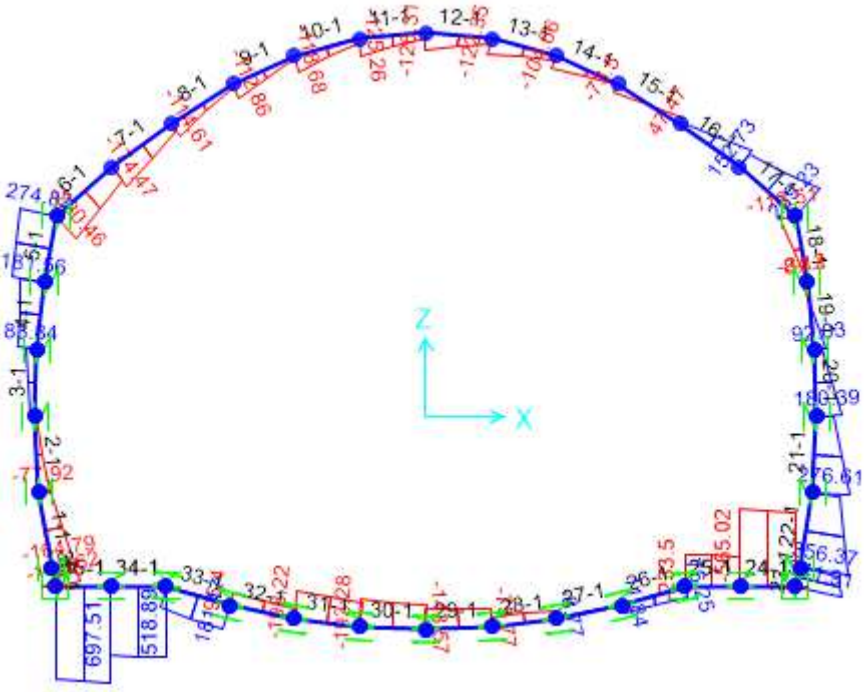

Figura 25: Andamento del taglio nella combinazione SLV_DX_D

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6.7 Verifiche agli Stati Limite Ultimi

Tabella 10 riassume le armature previste nelle sezioni. Le armature indicate si riferiscono a 1.0 m di struttura.

Armatura longitudinale	Calotta	Φ24/20 simmetrica
	AR	Φ24/20 simmetrica

Tabella 10 – Armatura della galleria artificiale

Sull'intero sviluppo della sezione sono previsti dei ferri ripartitori Φ12 a passo 25cm.

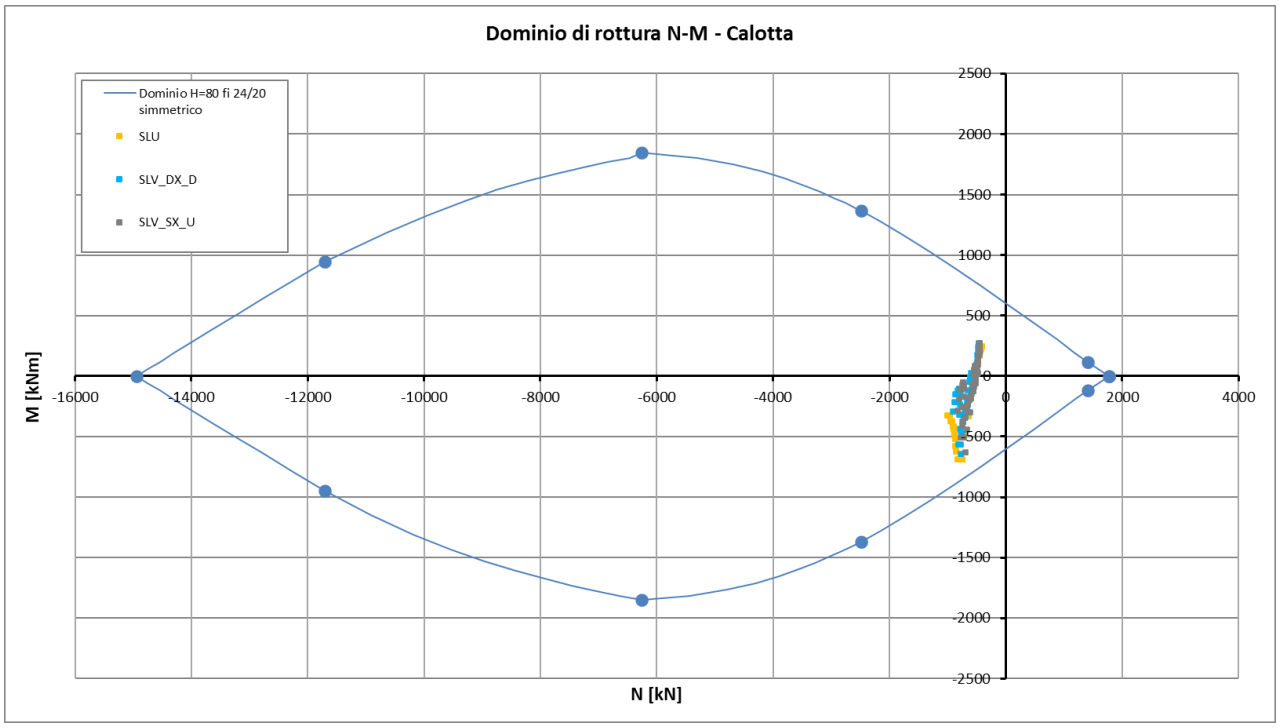
Nel presente capitolo con il termine "Calotta" si intende tutta la parte di sezione sopra le murette.

6.7.1 Verifica per sollecitazioni di presso/tenso-flessione

Le verifiche agli stati limite di presso/tenso flessione vengono effettuate verificando che tutte le coppie M-N delle combinazioni SLU e sismiche, ricadano all'interno del dominio M-N limite ricavato in funzione dalla geometria della sezione e dalle armature.

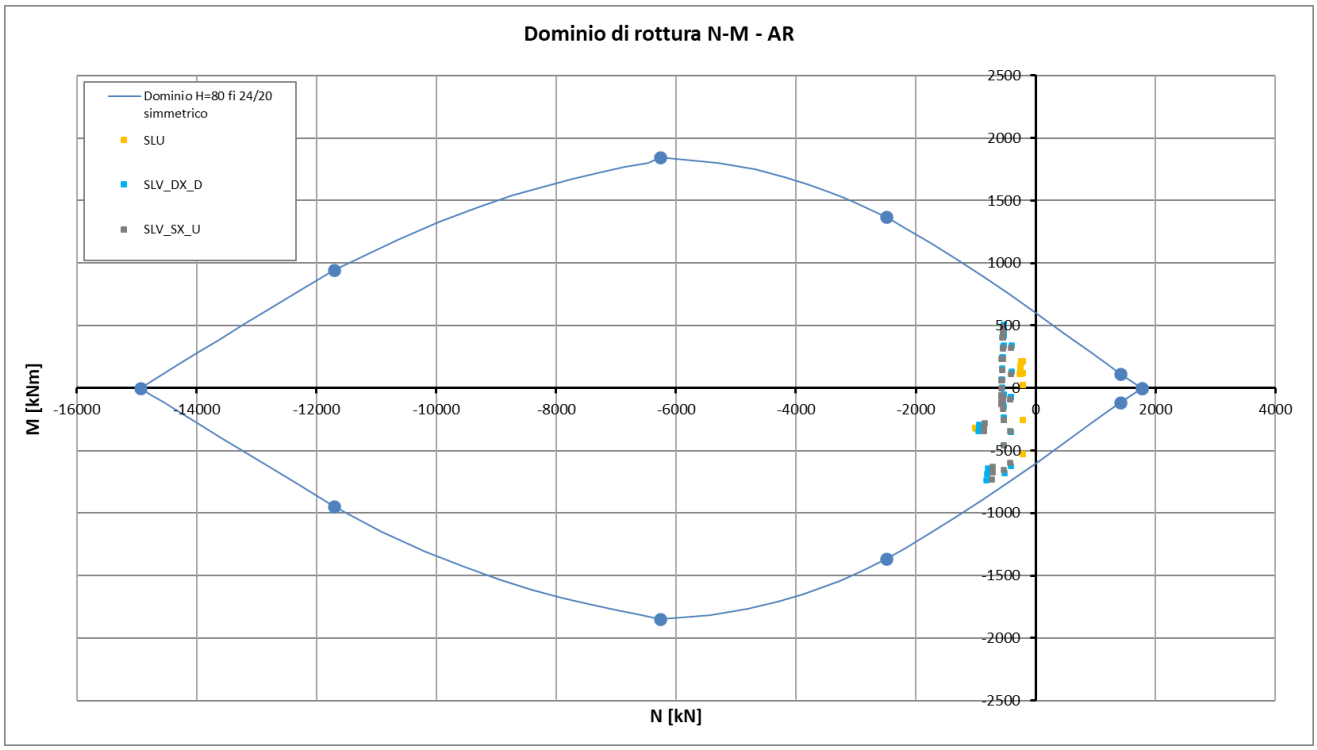
6.7.1.1 Calotta

Nel seguito si riporta la verifica di tutte le sezioni in calotta considerando la sezione di altezza minima pari a 80cm; la verifica viene rispettata con Φ24/20 sia in intradosso che in estradosso.



6.7.1.2 Arco rovescio

Nel seguito si riporta la verifica di tutte le sezioni in arco rovescio considerando la sezione di altezza minima pari a 80cm, la verifica viene rispettata con Φ24/20 sia in intradosso che in estradosso.



6.7.2 Verifica per sollecitazioni di taglio

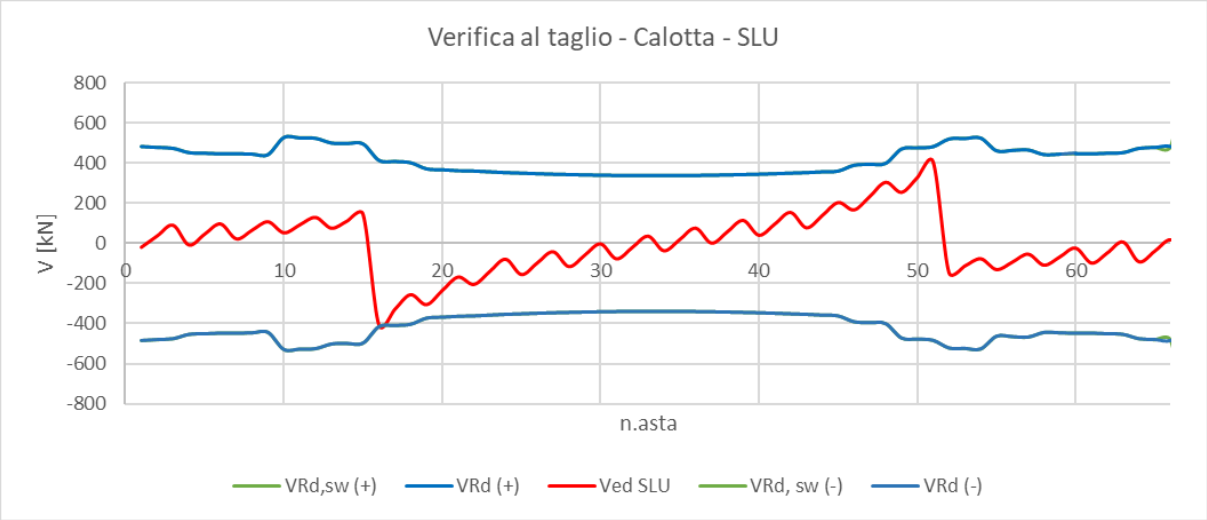
I grafici sottostanti mostrano l'andamento del taglio resistente e del taglio sollecitante lungo la calotta e l'arco rovescio nella combinazione di carico SLU e nelle diverse combinazioni di carico sismiche.

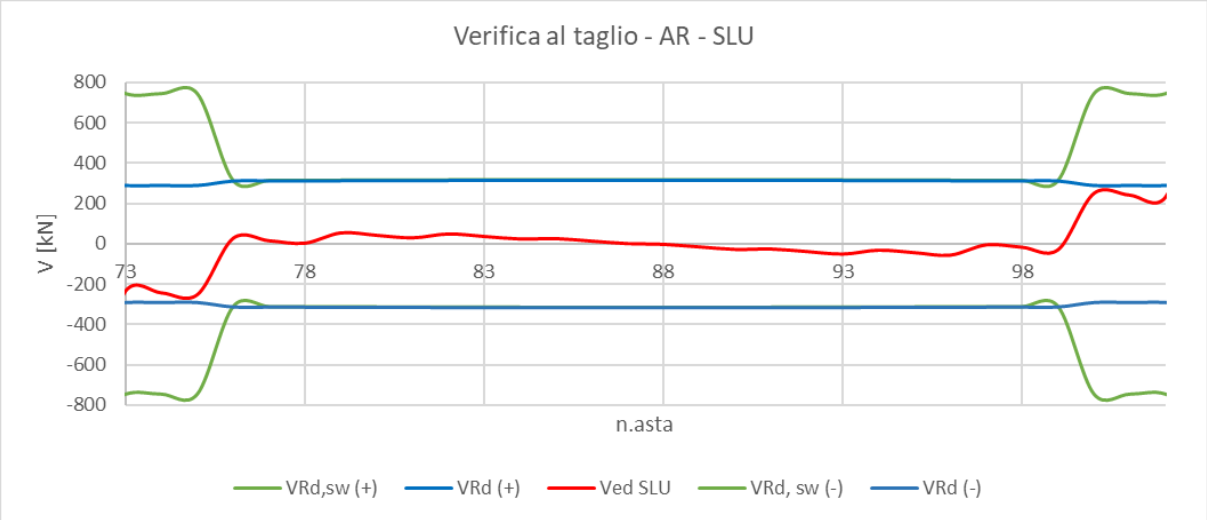
Il taglio resistente è stato calcolato per ogni sezione in accordo con la teoria illustrata al Par.5.2 considerando una sezione in cls con un'altezza variabile in funzione dell'elemento considerato e le armature longitudinali definite al paragrafo precedente.

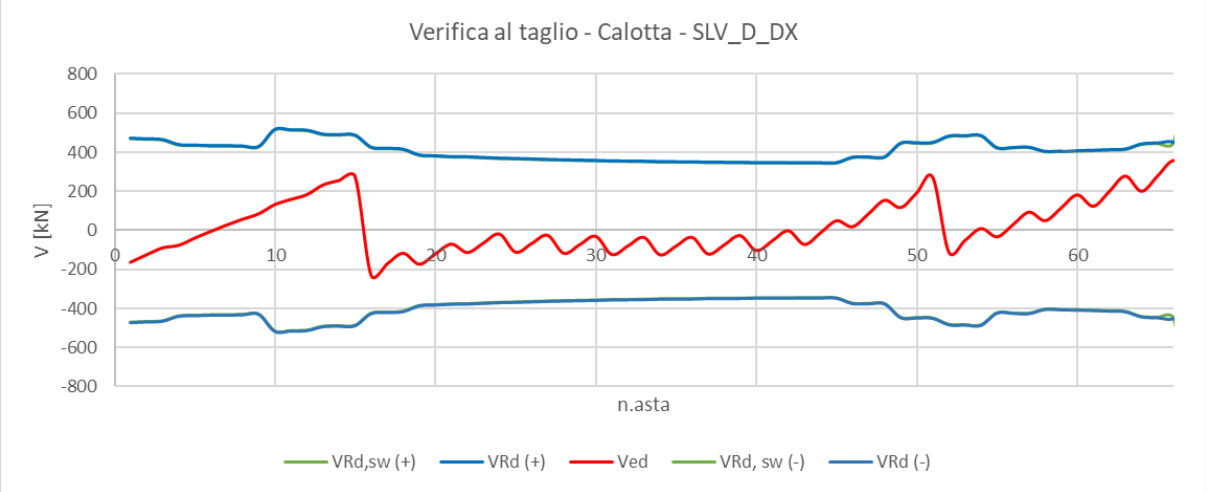
Sull'asse delle ascisse è riportato un numero progressivo crescente che identifica:

- le aste della calotta che vanno dalla muretta sinistra alla muretta destra in senso orario;
- le aste dell'arco rovescio che vanno dalla muretta destra alla muretta sinistra in senso orario.

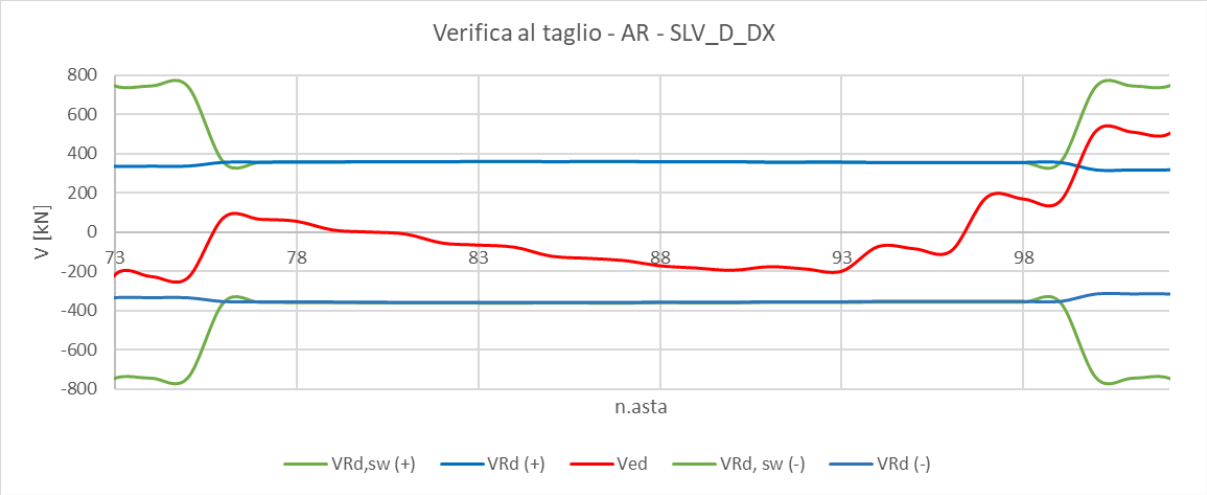
Le verifiche al taglio in calotta e in arco rovescio sono soddisfatte considerando il solo contributo delle armature longitudinali ad eccezione del primo metro dell'arco rovescio, sotto le murette. In queste zone si prevedono delle staffe Φ12/25 a 3 braccia.

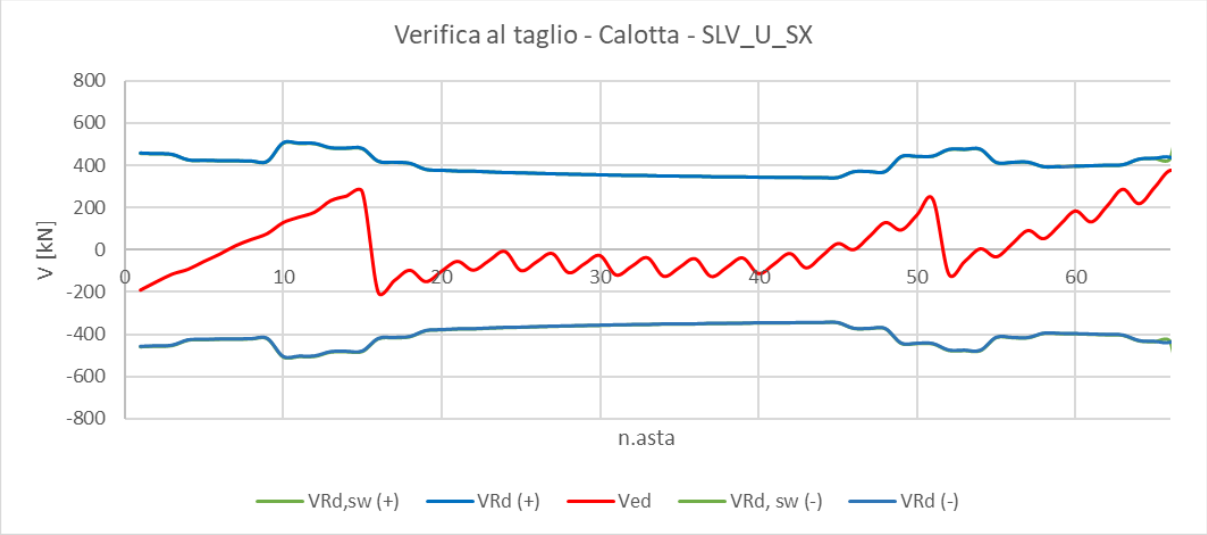


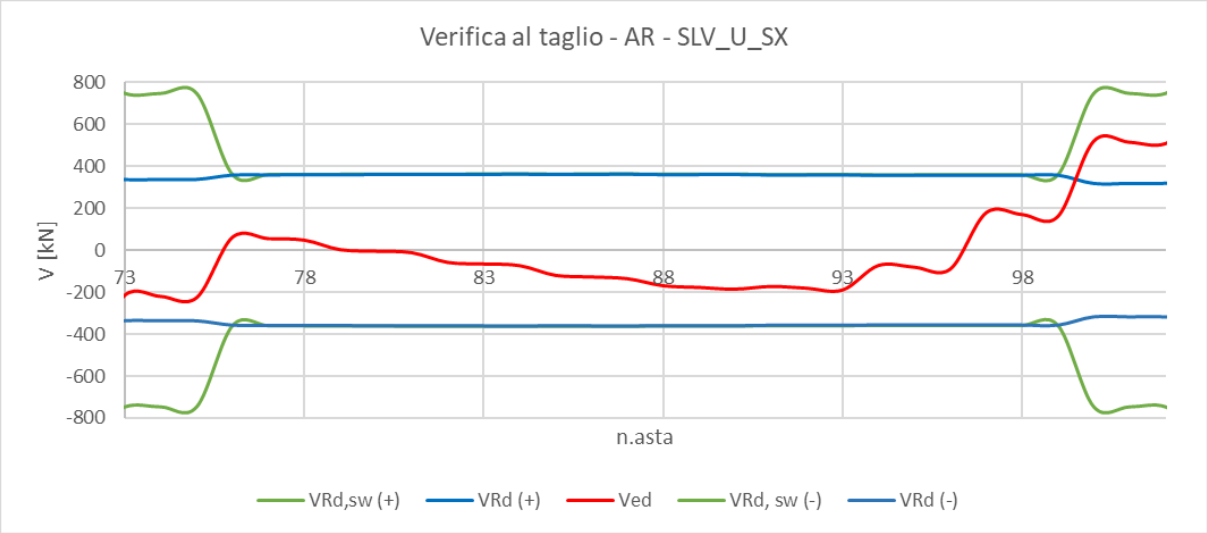




RTP di progettazione: ***Mandataria:*** ***Mandanti:***


Verifica al taglio - AR - SLV_D_DX
V [kN]
800
600
400
200
0
-200
-400
-600
-800
73
78
83
88
93
98
n.asta
VRd,sw (+)
VRd (+)
Ved
VRd, sw (-)
VRd (-)


Verifica al taglio - Calotta - SLV_U_SX
V [kN]
800
600
400
200
0
-200
-400
-600
-800
0
10
20
30
40
50
60
n.asta
VRd,sw (+)
VRd (+)
Ved
VRd, sw (-)
VRd (-)


Verifica al taglio - AR - SLV_U_SX
V [kN]
800
600
400
200
0
-200
-400
-600
-800
73
78
83
88
93
98
n.asta
VRd,sw (+)
VRd (+)
Ved
VRd, sw (-)
VRd (-)

6.8 Verifiche agli stati limite di esercizio

6.8.1 Verifica di limitazione delle tensioni

Nel presente paragrafo sono riportati dei grafici che mostrano l'andamento delle tensioni massime nel calcestruzzo e nell'acciaio lungo la calotta e l'arco rovescio nelle combinazioni SLE.

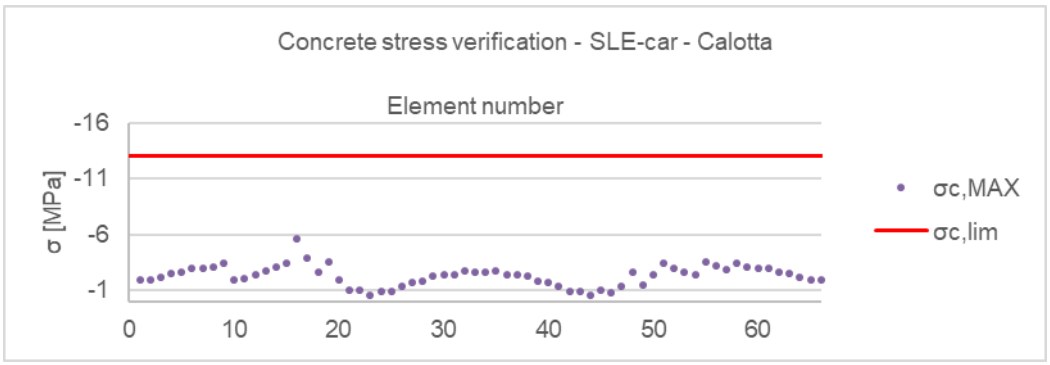
Le sollecitazioni sono state calcolate per ogni asta in funzione della geometria e quantità di armatura. Sull'asse delle ascisse è riportato un numero progressivo crescente che identifica:

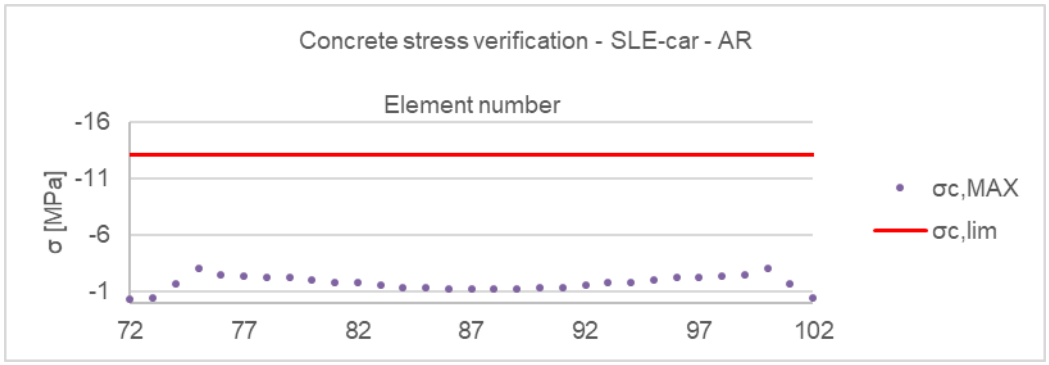
- le aste della calotta che vanno dalla muretta sinistra alla muretta destra in senso orario;
- le aste dell'arco rovescio che vanno dalla muretta destra alla muretta sinistra in senso orario.

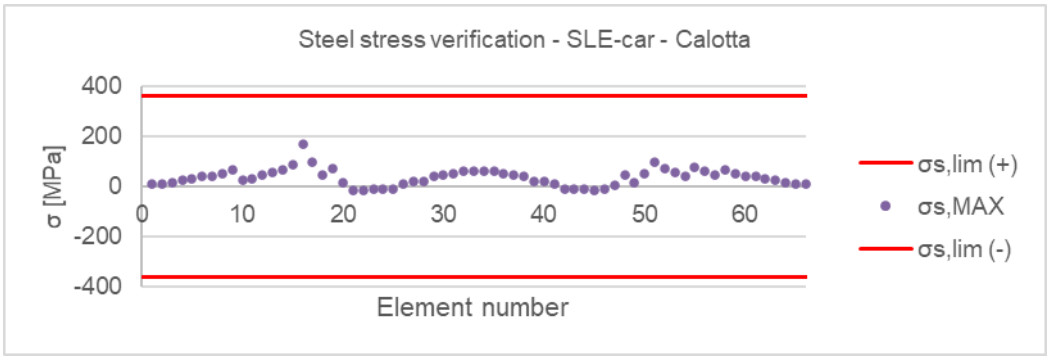
Negli stessi grafici sono riportate le sollecitazioni massime ammesse da normativa come riportate nel Par. 5.3.

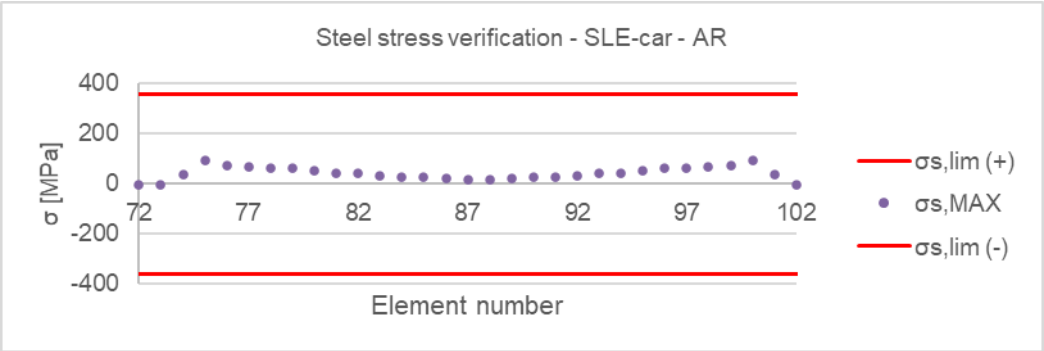
Le tensioni nel calcestruzzo e nell'acciaio sono inferiori ai valori previsti da normativa, dunque le verifiche sono soddisfatte.

6.8.1.1 Combinazione SLE-car

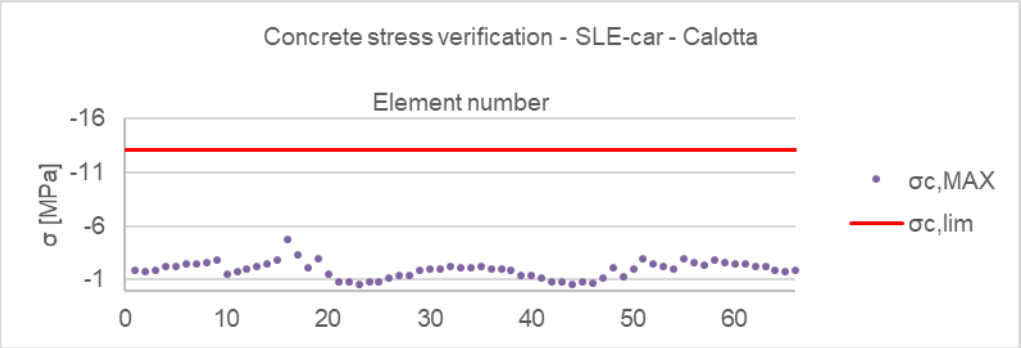


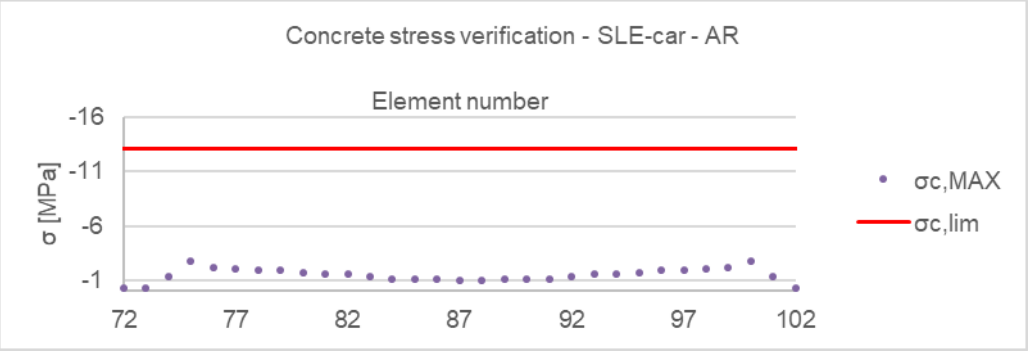


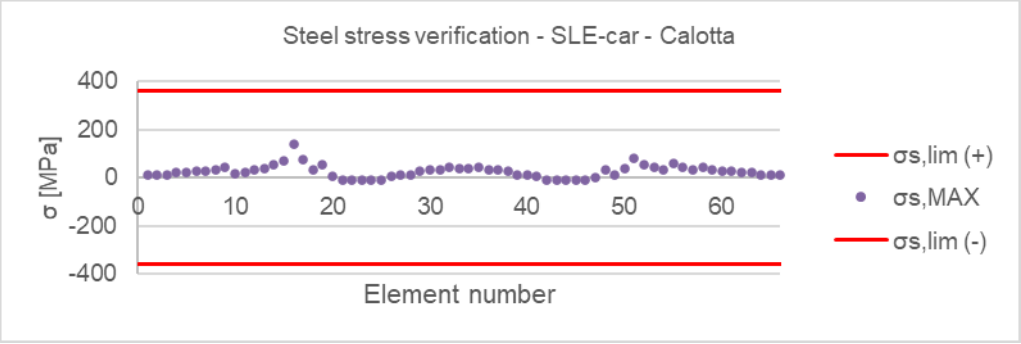


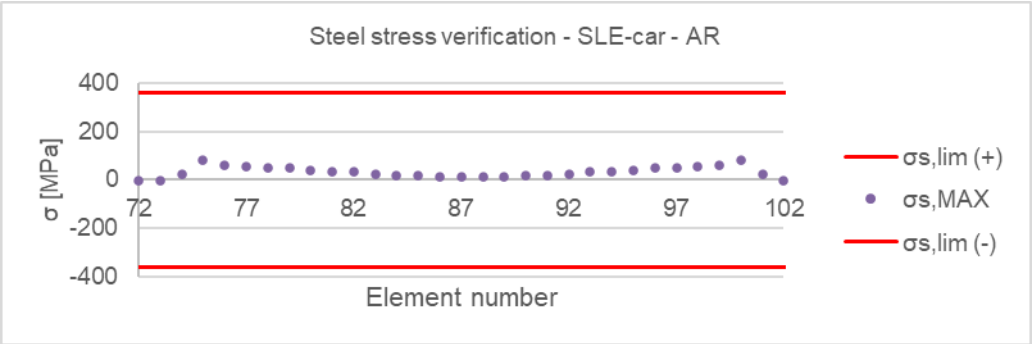


6.8.1.2 Combinazione SLE-fq-qp









6.8.2 Verifiche a fessurazione

Dal confronto delle tensioni nell'acciaio dei grafici precedenti con le tabelle della normativa (riportate nel Par. 5.3. e nelle figure qui sotto) che definiscono i diametri massimi e la spaziatura massima delle barre in funzione della tensione dell'acciaio per il controllo della fessurazione, si deduce che l'apertura delle fessure rientra nel limite 0.3 sia per la calotta che per l'arco rovescio.

Infatti, per delle tensioni dell'armatura ottenute che sono intorno ai 160kPa, per avere fessurazioni accettabili, si prescrivono diametri dei ferri longitudinali inferiori a 32mm e spaziature inferiori a 300mm che sono ampiamente garantite dai ferri previsti in progetto pari a Φ24 a passo 200mm.

Tabella C4.1.II *Diametri massimi delle barre per il controllo di fessurazione*

Tensione nell'acciaio σ_s [MPa]	Diametro massimo ϕ delle barre (mm)		
	$w_3 = 0{,}4$ mm	$w_2 = 0{,}3$ mm	$w_1 = 0{,}2$ mm
160	40	32	25
200	32	25	16
240	20	16	12
280	16	12	8
320	12	10	6
360	10	8	-

Figura 26

Tabella C4.1.III *Spaziatura massima delle barre per il controllo di fessurazione*

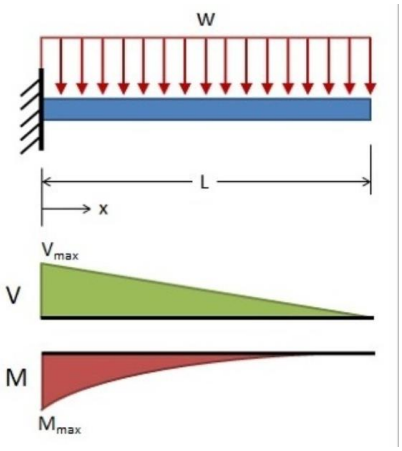
Tensione nell'acciaio σ_s [MPa]	Spaziatura massima s delle barre (mm)		
	w_3 = 0,4 mm	w_2 = 0,3 mm	w_1 = 0,2 mm
160	300	300	200
200	300	250	150
240	250	200	100
280	200	150	50
320	150	100	-
360	100	50	-

Figura 27

7 BECCO DI FLAUTO

La galleria artificiale termina con un becco di flauto a “berretto di fantino” avente uno sbalzo massimo di 3.35m e uno spessore di calcestruzzo pari a 80cm.

A favore di sicurezza, il comportamento del becco di flauto può essere schematizzato con una mensola di larghezza unitaria incastrata in corrispondenza della sezione di galleria artificiale soggetta solamente al suo peso proprio (p=25kN/m^3 x 0.8m x 1m = 20kN/m).



Il momento massimo e il taglio massimo si trovano all’incastro e risultano essere pari a:

$$\mathrm{M_{max}} = -\frac{pL^2}{2} = -\frac{20\ x\ 3.35^2}{2} = -112\ kNm$$

$$V_{\mathrm{max}} = pL = 20\ x\ 3.35 = 67\ kN$$

Come mostrato in Figura 28, il momento flettente è assorbito dai ferri longitudinali della mensola che coincidono con i ripartitori della galleria (ferri Φ12/25):

$$\mathrm{M_{Ed}} = 112\,\mathrm{kNm} < 137\,\mathrm{kNm} = \mathrm{M_{Rd}}$$

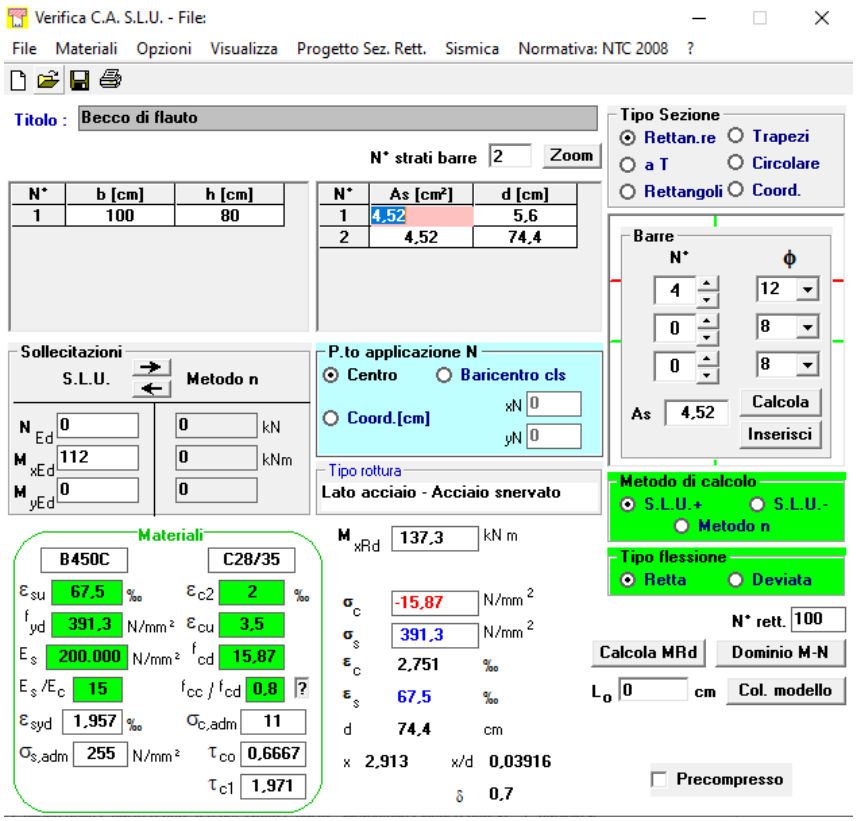


Figura 28 - Verifica a flessione del becco di flauto

Anche la verifica taglio è soddisfatta considerando il solo contributo dei ripartitori.

VERIFICHE A TAGLIO SECONDO D.M. 17/01/2018 (§ 4.1.2.3.5)

Caratteristiche dei materiali:

Resistenza caratteristica a compressione cubica cls	R_{ck}	=	35	N/mm²
Resistenza caratteristica a compressione cilindrica cls	f_{ck}	=	29	N/mm²
Resistenza di calcolo a compressone del cls	f_{cd}	=	16,46	N/mm²
Resistenza di calcolo a trazione dell'acciaio	f_{yd}	=	391,30	N/mm²

Sollecitazioni di verifica (S.L.U.):

Valore di calcolo dello sforzo di taglio agente	V_{Ed}	=	67	kN
Valore di calcolo della forza assiale associata a V_{Ed}	$N (V_{Ed})$	=	0	kN
Valore di calcolo del momento flettente associato a V_{Ed}	$M (V_{Ed})$	=	0	kNm

Caratteristiche geometriche della sezione:

Altezza utile della sezione	d	=	744	mm
Larghezza minima della sezione	b_w	=	1000	mm

Armatura della sezione in zona tesa:

Diametro ferri longitudinali	∅	=	12	mm

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Numero tondini longitudinali utilizzati	n	=	**4**	--
Area totale di armatura longitudinale in zona tesa	A_{sl}	=	452	mm^2
Rapporto geometrico dell'armatura longitudinale (≤ 0.02)	ρ_l	=	0,0006	--

VERIFICA SENZA ARMATURA TRASVERSALE RESISTENTE A TAGLIO (§ 4.1.2.3.5.1)

Fattore dipendente dall'altezza utile della sezione (≤ 2)	k	=	1,52	--
Tensione dipendente dal fattore k e dalla resistenza del cls	v_{min}	=	0,35	N/mm^2
Tensione media di compressione nella sezione (≤ 0.2×f_{cd})	σ_{cp}	=	0,00	N/mm^2
Resistenza ultima a taglio minima	$V_{Rd,min}$	=	262,62	kN
Resistenza ultima a taglio ($V_{Rd} \geq V_{Rd,min}$)	V_{Rd}	=	**262,62**	**kN**

VERIFICA SODDISFATTA:
non occorre armatura trasversale resistente a taglio.

RTP di progettazione: ***Mandataria:*** ***Mandanti:***
PRO ITER Progetto Infrastrutture Territorio s.r.l. — erreVia s.r.l. Ricerca Viabilità Ambiente — sinergo

8 ELENCO ALLEGATI

- **ALLEGATO 1: Tabulato di calcolo SAP2000 Galleria Artificiale**

9 ALLEGATO 1

Tabulato di calcolo SAP2000 - Sezione “GA-C3”

SAP2000 Analysis Report

Prepared by

Pro Iter srl

Model Name: 2022.07.21_GA-Guinza-Umbria.sdb

21 luglio 2022

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List of Tables

1. Model geometry

This section provides model geometry information, including items such as joint coordinates, joint restraints, and element connectivity.

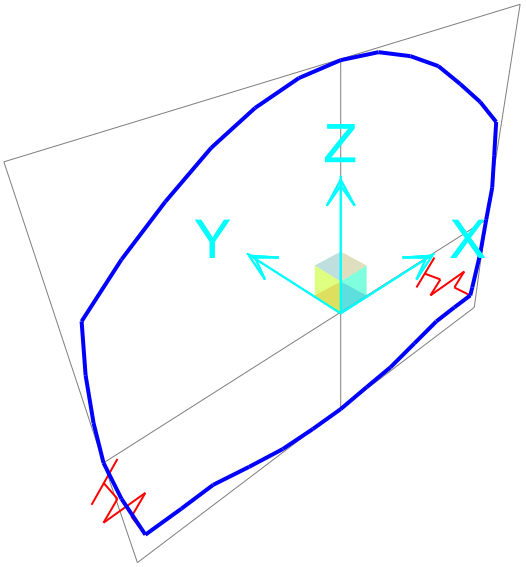

Figure 1: Finite element model

1.1. Joint coordinates

Table 1: Joint Coordinates

Table 1: Joint Coordinates

Joint	CoordSys	CoordType	GlobalX	GlobalY	GlobalZ
			m	m	m
1	GLOBAL	Cartesian	-5.45584	0.	-2.20002
2	GLOBAL	Cartesian	-5.63877	0.	-1.10676
3	GLOBAL	Cartesian	-5.7	0.	-8.730E-07
4	GLOBAL	Cartesian	-5.66466	0.	0.98456
5	GLOBAL	Cartesian	-5.55882	0.	1.96404
6	GLOBAL	Cartesian	-5.38303	0.	2.93342
7	GLOBAL	Cartesian	-4.57175	0.	3.63747
8	GLOBAL	Cartesian	-3.70906	0.	4.27749
9	GLOBAL	Cartesian	-2.80651	0.	4.86099
10	GLOBAL	Cartesian	-1.91532	0.	5.26228
11	GLOBAL	Cartesian	-0.97243	0.	5.51492
12	GLOBAL	Cartesian	1.747E-07	0.	5.6
13	GLOBAL	Cartesian	0.97243	0.	5.51492
14	GLOBAL	Cartesian	1.91532	0.	5.26228
15	GLOBAL	Cartesian	2.80651	0.	4.86099
16	GLOBAL	Cartesian	3.70906	0.	4.27749
17	GLOBAL	Cartesian	4.57175	0.	3.63747
18	GLOBAL	Cartesian	5.38303	0.	2.93342
19	GLOBAL	Cartesian	5.55882	0.	1.96404
20	GLOBAL	Cartesian	5.66466	0.	0.98456
21	GLOBAL	Cartesian	5.7	0.	-8.730E-07
22	GLOBAL	Cartesian	5.63877	0.	-1.10676
23	GLOBAL	Cartesian	5.45584	0.	-2.20002

Table 1: Joint Coordinates

Joint	CoordSys	CoordType	GlobalX	GlobalY	GlobalZ
			m	m	m
24	GLOBAL	Cartesian	5.38895	0.	-2.47896
25	GLOBAL	Cartesian	4.58349	0.	-2.47896
26	GLOBAL	Cartesian	3.77804	0.	-2.47896
27	GLOBAL	Cartesian	2.85567	0.	-2.74931
28	GLOBAL	Cartesian	1.91437	0.	-2.94371
29	GLOBAL	Cartesian	0.96037	0.	-3.06086
30	GLOBAL	Cartesian	2.524E-06	0.	-3.10021
31	GLOBAL	Cartesian	-0.96037	0.	-3.06086
32	GLOBAL	Cartesian	-1.91437	0.	-2.94371
33	GLOBAL	Cartesian	-2.85567	0.	-2.74931
34	GLOBAL	Cartesian	-3.77804	0.	-2.47896
35	GLOBAL	Cartesian	-4.58349	0.	-2.47896
36	GLOBAL	Cartesian	-5.38895	0.	-2.47896

1.2. Element connectivity

Table 2: Connectivity - Frame

Table 2: Connectivity - Frame

Frame	JointI	JointJ	Length
			m
1	1	2	1.10845
2	2	3	1.10845
3	3	4	0.98519
4	4	5	0.98519
5	5	6	0.98519
6	6	7	1.07417
7	7	8	1.07417
8	8	9	1.07475
9	9	10	0.97737
10	10	11	0.97615
11	11	12	0.97615
12	12	13	0.97615
13	13	14	0.97615
14	14	15	0.97737
15	15	16	1.07475
16	16	17	1.07417
17	17	18	1.07417
18	18	19	0.98519
19	19	20	0.98519
20	20	21	0.98519
21	21	22	1.10845
22	22	23	1.10845
23	23	24	0.28686
24	24	25	0.80545
25	25	26	0.80545
26	26	27	0.96117
27	27	28	0.96117
28	28	29	0.96117
29	29	30	0.96117
30	30	31	0.96118
31	31	32	0.96117
32	32	33	0.96117

Table 2: Connectivity - Frame

Frame	JointI	JointJ	Length m
33	33	34	0.96117
34	34	35	0.80545
35	35	36	0.80545
36	36	1	0.28686

Table 3: Frame Section Assignments

Table 3: Frame Section Assignments

Frame	AnalSect	DesignSect	MatProp
1	C110	C110	Default
2	C100	C100	Default
3	C100	C100	Default
4	C110	C110	Default
5	C135	C135	Default
6	C125	C125	Default
7	C095	C095	Default
8	C080	C080	Default
9	C080	C080	Default
10	C080	C080	Default
11	C080	C080	Default
12	C080	C080	Default
13	C080	C080	Default
14	C080	C080	Default
15	C080	C080	Default
16	C095	C095	Default
17	C125	C125	Default
18	C135	C135	Default
19	C110	C110	Default
20	C100	C100	Default
21	C100	C100	Default
22	C110	C110	Default
23	muretta	muretta	Default
24	muretta	muretta	Default
25	C070	C070	Default
26	C080	C080	Default
27	C080	C080	Default
28	C080	C080	Default
29	C080	C080	Default
30	C080	C080	Default
31	C080	C080	Default
32	C080	C080	Default
33	C080	C080	Default
34	C070	C070	Default
35	muretta	muretta	Default
36	muretta	muretta	Default

2. Material properties

This section provides material property information for materials used in the model.

Table 4: Material Properties 02 - Basic Mechanical Properties

Table 4: Material Properties 02 - Basic Mechanical Properties

Material	UnitWeight	UnitMass	E1	G12	U12	A1
	KN/m3	KN-s2/m4	KN/m2	KN/m2		1/C
4000Psi	2.3563E+01	2.4028E+00	24855578.06	10356490.86	0.2	9.9000E-06
A416Gr270	7.6973E+01	7.8490E+00	196500599.9			1.1700E-05
A992Fy50	7.6973E+01	7.8490E+00	199947978.8	76903068.77	0.3	1.1700E-05
B450C	7.6973E+01	7.8490E+00	210000000.			1.1700E-05
C28/35	2.4993E+01	2.5485E+00	32308000.	13461666.67	0.2	1.0000E-05

Table 5: Material Properties 03a - Steel Data

Table 5: Material Properties 03a - Steel Data

Material	Fy	Fu	FinalSlope
	KN/m2	KN/m2	
A992Fy50	344737.89	448159.26	-0.1

Table 6: Material Properties 03b - Concrete Data

Table 6: Material Properties 03b - Concrete Data

Material	Fc	eFc	FinalSlope
	KN/m2	KN/m2	
4000Psi	27579.03	27579.03	-0.1
C28/35	28000.	28000.	-0.1

Table 7: Material Properties 03e - Rebar Data

Table 7: Material Properties 03e - Rebar Data

Material	Fy	Fu	FinalSlope
	KN/m2	KN/m2	
B450C	450000.	540000.	-0.1

Table 8: Material Properties 03f - Tendon Data

Table 8: Material Properties 03f - Tendon Data

Material	Fy	Fu	FinalSlope
	KN/m2	KN/m2	
A416Gr270	1689905.16	1861584.63	-0.1

3. Section properties

This section provides section property information for objects used in the model.

3.1. Frames

Table 9: Frame Section Properties 01 - General, Part 1 of 4

Table 9: Frame Section Properties 01 - General, Part 1 of 4

SectionName	Material	Shape	t3	t2	Area	TorsConst	I33	I22
			m	m	m2	m4	m4	m4
C070	C28/35	Rectangular	0.7	1.	0.7	0.064921	0.028583	0.058333
C080	C28/35	Rectangular	0.8	1.	0.8	0.087587	0.042667	0.066667
C095	C28/35	Rectangular	0.95	1.	0.95	0.126355	0.071448	0.079167
C100	C28/35	Rectangular	1.	1.	1.	0.140833	0.083333	0.083333
C110	C28/35	Rectangular	1.1	1.	1.1	0.168619	0.110917	0.091667
C125	C28/35	Rectangular	1.25	1.	1.25	0.213835	0.16276	0.104167
C135	C28/35	Rectangular	1.35	1.	1.35	0.245269	0.205031	0.1125
muretta	C28/35	Rectangular	1.	1.	1.	0.140833	0.083333	0.083333

Table 9: Frame Section Properties 01 - General, Part 2 of 4

Table 9: Frame Section Properties 01 - General, Part 2 of 4

SectionName	I23	AS2	AS3
	m4	m2	m2
C070	0.	0.583333	0.583333
C080	0.	0.666667	0.666667
C095	0.	0.791667	0.791667
C100	0.	0.833333	0.833333
C110	0.	0.916667	0.916667
C125	0.	1.041667	1.041667
C135	0.	1.125	1.125
muretta	0.	0.833333	0.833333

Table 9: Frame Section Properties 01 - General, Part 3 of 4

Table 9: Frame Section Properties 01 - General, Part 3 of 4

SectionName	S33	S22	Z33	Z22	R33	R22
	m3	m3	m3	m3	m	m
C070	0.081667	0.116667	0.1225	0.175	0.202073	0.288675
C080	0.106667	0.133333	0.16	0.2	0.23094	0.288675
C095	0.150417	0.158333	0.225625	0.2375	0.274241	0.288675
C100	0.166667	0.166667	0.25	0.25	0.288675	0.288675
C110	0.201667	0.183333	0.3025	0.275	0.317543	0.288675
C125	0.260417	0.208333	0.390625	0.3125	0.360844	0.288675
C135	0.30375	0.225	0.455625	0.3375	0.389711	0.288675
muretta	0.166667	0.166667	0.25	0.25	0.288675	0.288675

Table 9: Frame Section Properties 01 - General, Part 4 of 4

Table 9: Frame Section Properties 01 - General, Part 4 of 4

SectionName	AMod	A2Mod	A3Mod	JMod	I2Mod	I3Mod	MMod	WMod
C070	1.	1.	1.	1.	1.	1.	1.	1.
C080	1.	1.	1.	1.	1.	1.	1.	1.
C095	1.	1.	1.	1.	1.	1.	1.	1.
C100	1.	1.	1.	1.	1.	1.	1.	1.
C110	1.	1.	1.	1.	1.	1.	1.	1.

Table 9: Frame Section Properties 01 - General, Part 4 of 4

SectionName	AMod	A2Mod	A3Mod	JMod	I2Mod	I3Mod	MMod	WMod
C125	1.	1.	1.	1.	1.	1.	1.	1.
C135	1.	1.	1.	1.	1.	1.	1.	1.
muretta	1.	1.	1.	1.	1.	1.	1.	1.

Table 10: Frame Section Properties 02 - Concrete Column, Part 1 of 2

Table 10: Frame Section Properties 02 - Concrete Column, Part 1 of 2

SectionName	RebarMatL	RebarMatC	ReinfConfig	LatReinf	Cover	NumBars3Dir	NumBars2Dir
					m		
C070	B450C	B450C	Rectangular	Ties	0.05	5	2
C080	B450C	B450C	Rectangular	Ties	0.05	5	2
C095	B450C	B450C	Rectangular	Ties	0.05	5	2
C100	B450C	B450C	Rectangular	Ties	0.05	5	2
C110	B450C	B450C	Rectangular	Ties	0.05	5	2
C125	B450C	B450C	Rectangular	Ties	0.05	5	2
C135	B450C	B450C	Rectangular	Ties	0.05	5	2
muretta	B450C	B450C	Rectangular	Ties	0.05	5	2

Table 10: Frame Section Properties 02 - Concrete Column, Part 2 of 2

Table 10: Frame Section Properties 02 - Concrete Column, Part 2 of 2

SectionName	BarSizeL	BarSizeC	SpacingC	NumCBars2	NumCBars3
			m		
C070	#9	#4	0.15	3	3
C080	#9	#4	0.15	3	3
C095	#9	#4	0.15	3	3
C100	#9	#4	0.15	3	3
C110	#9	#4	0.15	3	3
C125	#9	#4	0.15	3	3
C135	#9	#4	0.15	3	3
muretta	#9	#4	0.15	3	3

3.2. Areas

Table 11: Area Section Properties, Part 1 of 3

Table 11: Area Section Properties, Part 1 of 3

Section	Material	AreaType	Type	DrillDOF	Thickness	BendThick	F11Mod
					m	m	
ASEC1	4000Psi	Shell	Shell-Thin	Yes	0.25	0.25	1.

Table 11: Area Section Properties, Part 2 of 3

Table 11: Area Section Properties, Part 2 of 3

Section	F22Mod	F12Mod	M11Mod	M22Mod	M12Mod	V13Mod	V23Mod
ASEC1	1.	1.	1.	1.	1.	1.	1.

Table 11: Area Section Properties, Part 3 of 3

Table 11: Area Section Properties, Part 3 of 3

Section	MMod	WMod
ASEC1	1.	1.

3.3. Solids

Table 12: Solid Property Definitions

Table 12: Solid Property Definitions

SolidProp	Material	MatAngleA	MatAngleB	MatAngleC
		Degrees	Degrees	Degrees
Solid1	4000Psi	0.	0.	0.

4. Load patterns

This section provides loading information as applied to the model.

4.1. Definitions

Table 13: Load Pattern Definitions

Table 13: Load Pattern Definitions

LoadPat	DesignType	SelfWtMult	AutoLoad
PP	Dead	1.	
ph_sx_k0_dis	Dead	0.	
ph_dx_k0_dis	Dead	0.	
pv_sx_dis	Dead	0.	
pv_dx_dis	Dead	0.	
Sorvacc calotta	Dead	0.	
Inerzia_h_dx	Dead	0.	
Wood_dx	Dead	0.	

5. Load cases

This section provides load case information.

5.1. Definitions

Table 14: Load Case Definitions, Part 1 of 2

Table 14: Load Case Definitions, Part 1 of 2

Case	Type	InitialCond	ModalCase	BaseCase	MassSource	DesActOpt
SLE_car	NonStatic	Zero				Prog Det
SLE_fq-qp	NonStatic	Zero				Prog Det
SLU	NonStatic	Zero				Prog Det
SLU-1	NonStatic	Zero				Prog Det
SLV_DX_U	NonStatic	Zero				Prog Det
SLV_DX_U-1	NonStatic	Zero				Prog Det
SLV_DX_D	NonStatic	Zero				Prog Det
PP	NonStatic	Zero				Prog Det
ph_sx_k0	NonStatic	Zero				Prog Det
ph_sx_k0_dis	NonStatic	Zero				Prog Det
ph_dx_k0	NonStatic	Zero				Prog Det
ph_dx_k0_dis	NonStatic	Zero				Prog Det
pv_sx	NonStatic	Zero				Prog Det
pv_sx_dis	NonStatic	Zero				Prog Det
pv_dx	NonStatic	Zero				Prog Det
pv_dx_dis	NonStatic	Zero				Prog Det
deltaT	NonStatic	Zero				Prog Det
Traffico	NonStatic	Zero				Prog Det
Sorvacc calotta	NonStatic	Zero				Prog Det
Inerzia_h_dx	NonStatic	Zero				Prog Det
Inerzia_h_sx	NonStatic	Zero				Prog Det
Inerzia_v_up	NonStatic	Zero				Prog Det
Inerzia_v_dwn	NonStatic	Zero				Prog Det
Wood_dx	NonStatic	Zero				Prog Det
Wood_sx	NonStatic	Zero				Prog Det
Sovrastr str	NonStatic	Zero				Prog Det

Table 14: Load Case Definitions, Part 2 of 2

Table 14: Load Case Definitions, Part 2 of 2

Case	DesignAct
SLE_car	Non-Composite
SLE_fq-qp	Non-Composite
SLU	Non-Composite
SLU-1	Non-Composite
SLV_DX_U	Non-Composite
SLV_DX_U-1	Non-Composite
SLV_DX_D	Non-Composite
PP	Non-Composite
ph_sx_k0	Non-Composite
ph_sx_k0_dis	Non-Composite
ph_dx_k0	Non-Composite

Table 14: Load Case Definitions, Part 2 of 2

Case	DesignAct
ph_dx_k0_dis	Non-Composite
pv_sx	Non-Composite
pv_sx_dis	Non-Composite
pv_dx	Non-Composite
pv_dx_dis	Non-Composite
deltaT	Non-Composite
Traffico	Non-Composite
Sorvacc calotta	Non-Composite
Inerzia_h_dx	Non-Composite
Inerzia_h_sx	Non-Composite
Inerzia_v_up	Non-Composite
Inerzia_v_dwn	Non-Composite
Wood_dx	Non-Composite
Wood_sx	Non-Composite
Sovrastr str	Non-Composite

5.2. Static case load assignments

Table 15: Case - Static 1 - Load Assignments

Table 15: Case - Static 1 - Load Assignments

Case	LoadType	LoadName	LoadSF
SLE_car	Load pattern	ph_dx_k0_dis	1.
SLE_car	Load pattern	ph_sx_k0_dis	1.
SLE_car	Load pattern	PP	1.
SLE_car	Load pattern	pv_sx_dis	1.
SLE_car	Load pattern	pv_dx_dis	1.
SLE_car	Load pattern	Sorvacc calotta	1.
SLE_fq-qp	Load pattern	ph_dx_k0_dis	1.
SLE_fq-qp	Load pattern	ph_sx_k0_dis	1.
SLE_fq-qp	Load pattern	PP	1.
SLE_fq-qp	Load pattern	pv_sx_dis	1.
SLE_fq-qp	Load pattern	pv_dx_dis	1.
SLE_fq-qp	Load pattern	Sorvacc calotta	0.
SLU	Load pattern	ph_dx_k0_dis	1.3
SLU	Load pattern	ph_sx_k0_dis	1.3
SLU	Load pattern	PP	1.3
SLU	Load pattern	pv_sx_dis	1.3

Table 15: Case - Static 1 - Load Assignments

Case	LoadType	LoadName	LoadSF
SLU	Load pattern	pv_dx_dis	1.3
SLU	Load pattern	Sorvacc calotta	1.5
SLU-1	Load pattern	ph_dx_k0_dis	1.3
SLU-1	Load pattern	ph_sx_k0_dis	1.3
SLU-1	Load pattern	PP	1.3
SLU-1	Load pattern	pv_sx_dis	1.3
SLU-1	Load pattern	pv_dx_dis	1.3
SLU-1	Load pattern	Sorvacc calotta	0.
SLV_DX_U	Load pattern	ph_dx_k0_dis	1.
SLV_DX_U	Load pattern	ph_sx_k0_dis	1.
SLV_DX_U	Load pattern	PP	0.838
SLV_DX_U	Load pattern	pv_sx_dis	1.
SLV_DX_U	Load pattern	pv_dx_dis	1.
SLV_DX_U	Load pattern	Inerzia_h_dx	1.
SLV_DX_U	Load pattern	Wood_dx	1.
SLV_DX_U	Load pattern	Sorvacc calotta	1.
SLV_DX_U-1	Load pattern	ph_dx_k0_dis	1.
SLV_DX_U-1	Load pattern	ph_sx_k0_dis	1.
SLV_DX_U-1	Load pattern	PP	0.838
SLV_DX_U-1	Load pattern	pv_sx_dis	1.
SLV_DX_U-1	Load pattern	pv_dx_dis	1.
SLV_DX_U-1	Load pattern	Inerzia_h_dx	1.
SLV_DX_U-1	Load pattern	Wood_dx	1.
SLV_DX_U-1	Load pattern	Sorvacc calotta	1.
SLV_DX_U-1	Load pattern	Sovrastr str	0.
SLV_DX_D	Load pattern	ph_dx_k0_dis	1.
SLV_DX_D	Load pattern	ph_sx_k0_dis	1.
SLV_DX_D	Load pattern	PP	1.162
SLV_DX_D	Load pattern	pv_sx_dis	1.
SLV_DX_D	Load pattern	pv_dx_dis	1.
SLV_DX_D	Load pattern	Inerzia_h_dx	1.
SLV_DX_D	Load pattern	Wood_dx	1.
SLV_DX_D	Load pattern	Sorvacc calotta	1.
PP	Load pattern	PP	1.
ph_sx_k0	Load pattern	ph_sx_k0	1.
ph_sx_k0_dis	Load pattern	ph_sx_k0_dis	1.
ph_dx_k0	Load pattern	ph_dx_k0	1.
ph_dx_k0_dis	Load pattern	ph_dx_k0_dis	1.
pv_sx	Load pattern	pv_sx	1.
pv_sx_dis	Load pattern	pv_sx_dis	1.
pv_dx	Load pattern	pv_dx	1.
pv_dx_dis	Load pattern	pv_dx_dis	1.
deltaT	Load pattern	deltaT	1.
Traffico	Load pattern	Traffico	1.
Sorvacc calotta	Load pattern	Sorvacc calotta	1.
Inerzia_h_dx	Load pattern	Inerzia_h_dx	1.
Inerzia_h_sx	Load pattern	Inerzia_h_sx	1.
Inerzia_v_up	Load pattern	Inerzia_v_up	1.
Inerzia_v_dwn	Load pattern	Inerzia_v_dwn	1.
Wood_dx	Load pattern	Wood_dx	1.
Wood_sx	Load pattern	Wood_sx	1.
Sovrastr str	Load pattern	Sovrastr str	1.

5.3. Response spectrum case load assignments

Table 16: Function - Response Spectrum - User

Table 16: Function - Response Spectrum - User

Name	Period	Accel	FuncDamp
	Sec		
UNIFRS	0.	1.	0.05
UNIFRS	1.	1.	

6. Structure results

This section provides structure results, including items such as structural periods and base reactions.

6.1. Mass summary

Table 17: Assembled Joint Masses, Part 1 of 2

Table 17: Assembled Joint Masses, Part 1 of 2

Joint	MassSource	U1	U2	U3	R1	R2	R3	CenterX
		KN-s2/m	KN-s2/m	KN-s2/m	KN-m-s2	KN-m-s2	KN-m-s2	m
1	MSSSRC1	1.92	1.92	1.92	0.	0.	0.	-5.45584
2	MSSSRC1	2.97	2.97	2.97	0.	0.	0.	-5.63877
3	MSSSRC1	2.67	2.67	2.67	0.	0.	0.	-5.7
4	MSSSRC1	2.64	2.64	2.64	0.	0.	0.	-5.66466
5	MSSSRC1	3.08	3.08	3.08	0.	0.	0.	-5.55882
6	MSSSRC1	3.41	3.41	3.41	0.	0.	0.	-5.38303
7	MSSSRC1	3.01	3.01	3.01	0.	0.	0.	-4.57175
8	MSSSRC1	2.4	2.4	2.4	0.	0.	0.	-3.70906
9	MSSSRC1	2.09	2.09	2.09	0.	0.	0.	-2.80651
10	MSSSRC1	1.99	1.99	1.99	0.	0.	0.	-1.91532
11	MSSSRC1	1.99	1.99	1.99	0.	0.	0.	-0.97243
12	MSSSRC1	1.99	1.99	1.99	0.	0.	0.	1.747E-07
13	MSSSRC1	1.99	1.99	1.99	0.	0.	0.	0.97243
14	MSSSRC1	1.99	1.99	1.99	0.	0.	0.	1.91532
15	MSSSRC1	2.09	2.09	2.09	0.	0.	0.	2.80651
16	MSSSRC1	2.4	2.4	2.4	0.	0.	0.	3.70906
17	MSSSRC1	3.01	3.01	3.01	0.	0.	0.	4.57175
18	MSSSRC1	3.41	3.41	3.41	0.	0.	0.	5.38303
19	MSSSRC1	3.08	3.08	3.08	0.	0.	0.	5.55882
20	MSSSRC1	2.64	2.64	2.64	0.	0.	0.	5.66466
21	MSSSRC1	2.67	2.67	2.67	0.	0.	0.	5.7
22	MSSSRC1	2.97	2.97	2.97	0.	0.	0.	5.63877
23	MSSSRC1	1.92	1.92	1.92	0.	0.	0.	5.45584
24	MSSSRC1	1.39	1.39	1.39	0.	0.	0.	5.38895
25	MSSSRC1	1.74	1.74	1.74	0.	0.	0.	4.58349
26	MSSSRC1	1.7	1.7	1.7	0.	0.	0.	3.77804
27	MSSSRC1	1.96	1.96	1.96	0.	0.	0.	2.85567
28	MSSSRC1	1.96	1.96	1.96	0.	0.	0.	1.91437
29	MSSSRC1	1.96	1.96	1.96	0.	0.	0.	0.96037
30	MSSSRC1	1.96	1.96	1.96	0.	0.	0.	2.524E-06
31	MSSSRC1	1.96	1.96	1.96	0.	0.	0.	-0.96037
32	MSSSRC1	1.96	1.96	1.96	0.	0.	0.	-1.91437
33	MSSSRC1	1.96	1.96	1.96	0.	0.	0.	-2.85567

Table 17: Assembled Joint Masses, Part 1 of 2

Joint	MassSource	U1	U2	U3	R1	R2	R3	CenterX
		KN-s2/m	KN-s2/m	KN-s2/m	KN-m-s2	KN-m-s2	KN-m-s2	m
34	MSSSRC1	1.7	1.7	1.7	0.	0.	0.	-3.77804
35	MSSSRC1	1.74	1.74	1.74	0.	0.	0.	-4.58349
36	MSSSRC1	1.39	1.39	1.39	0.	0.	0.	-5.38895
24~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	5.38895
25~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	4.58349
26~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	3.77804
34~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	-3.77804
35~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	-4.58349
36~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	-5.38895
27~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	2.85567
28~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	1.91437
29~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	0.96037
30~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	2.524E-06
31~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	-0.96037
32~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	-1.91437
33~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	-2.85567
1~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	-5.45584
2~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	-5.63877
3~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	-5.7
4~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	-5.66466
5~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	-5.55882
6~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	-5.38303
18~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	5.38303
19~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	5.55882
20~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	5.66466
21~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	5.7
22~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	5.63877
23~Link	MSSSRC1	0.	0.	0.	0.	0.	0.	5.45584
SumAccelUX	MSSSRC1	81.68	0.	0.	0.	0.	0.	1.748E-07
SumAccelUY	MSSSRC1	0.	81.68	0.	0.	0.	0.	1.748E-07
SumAccelUZ	MSSSRC1	0.	0.	81.68	0.	0.	0.	1.748E-07

Table 17: Assembled Joint Masses, Part 2 of 2

Table 17: Assembled Joint Masses, Part 2 of 2

Joint	MassSource	CenterY	CenterZ
		m	m
1	MSSSRC1	0.	-2.20002
2	MSSSRC1	0.	-1.10676
3	MSSSRC1	0.	-8.730E-07
4	MSSSRC1	0.	0.98456
5	MSSSRC1	0.	1.96404
6	MSSSRC1	0.	2.93342
7	MSSSRC1	0.	3.63747
8	MSSSRC1	0.	4.27749
9	MSSSRC1	0.	4.86099
10	MSSSRC1	0.	5.26228
11	MSSSRC1	0.	5.51492
12	MSSSRC1	0.	5.6
13	MSSSRC1	0.	5.51492
14	MSSSRC1	0.	5.26228
15	MSSSRC1	0.	4.86099
16	MSSSRC1	0.	4.27749
17	MSSSRC1	0.	3.63747
18	MSSSRC1	0.	2.93342

Table 17: Assembled Joint Masses, Part 2 of 2

Joint	MassSource	CenterY	CenterZ
		m	m
19	MSSSRC1	0.	1.96404
20	MSSSRC1	0.	0.98456
21	MSSSRC1	0.	-8.730E-07
22	MSSSRC1	0.	-1.10676
23	MSSSRC1	0.	-2.20002
24	MSSSRC1	0.	-2.47896
25	MSSSRC1	0.	-2.47896
26	MSSSRC1	0.	-2.47896
27	MSSSRC1	0.	-2.74931
28	MSSSRC1	0.	-2.94371
29	MSSSRC1	0.	-3.06086
30	MSSSRC1	0.	-3.10021
31	MSSSRC1	0.	-3.06086
32	MSSSRC1	0.	-2.94371
33	MSSSRC1	0.	-2.74931
34	MSSSRC1	0.	-2.47896
35	MSSSRC1	0.	-2.47896
36	MSSSRC1	0.	-2.47896
24~Link	MSSSRC1	0.	-2.47896
25~Link	MSSSRC1	0.	-2.47896
26~Link	MSSSRC1	0.	-2.47896
34~Link	MSSSRC1	0.	-2.47896
35~Link	MSSSRC1	0.	-2.47896
36~Link	MSSSRC1	0.	-2.47896
27~Link	MSSSRC1	0.	-2.74931
28~Link	MSSSRC1	0.	-2.94371
29~Link	MSSSRC1	0.	-3.06086
30~Link	MSSSRC1	0.	-3.10021
31~Link	MSSSRC1	0.	-3.06086
32~Link	MSSSRC1	0.	-2.94371
33~Link	MSSSRC1	0.	-2.74931
1~Link	MSSSRC1	0.	-2.20002
2~Link	MSSSRC1	0.	-1.10676
3~Link	MSSSRC1	0.	-8.730E-07
4~Link	MSSSRC1	0.	0.98456
5~Link	MSSSRC1	0.	1.96404
6~Link	MSSSRC1	0.	2.93342
18~Link	MSSSRC1	0.	2.93342
19~Link	MSSSRC1	0.	1.96404
20~Link	MSSSRC1	0.	0.98456
21~Link	MSSSRC1	0.	-8.730E-07
22~Link	MSSSRC1	0.	-1.10676
23~Link	MSSSRC1	0.	-2.20002
SumAccelUX	MSSSRC1	0.	0.91435
SumAccelUY	MSSSRC1	0.	0.91435
SumAccelUZ	MSSSRC1	0.	0.91435

6.2. Base reactions

Table 18: Base Reactions

Table 18: Base Reactions

OutputCase	StepType	GlobalFX	GlobalFY	GlobalFZ	GlobalMX	GlobalMY	GlobalMZ
		KN	KN	KN	KN-m	KN-m	KN-m
SLE_car	Max	-5.619E-12	-3.824E-14	1725.675	-1.055E-13	-3.015E-04	0.
SLE_car	Min	-5.619E-12	-3.824E-14	1725.675	-1.055E-13	-3.015E-04	0.
SLE_fq-qp	Max	-4.577E-12	-3.804E-14	1602.62	-1.055E-13	-2.800E-04	0.
SLE_fq-qp	Min	-4.577E-12	-3.804E-14	1602.62	-1.055E-13	-2.800E-04	0.
SLU	Max	-7.483E-12	-4.975E-14	2267.989	-1.371E-13	-3.963E-04	0.
SLU	Min	-7.483E-12	-4.975E-14	2267.989	-1.371E-13	-3.963E-04	0.
SLV_DX_U	Max	738.963	-9.377E-14	1596.042	-2.571E-13	985.3989	2.562E-13
SLV_DX_U	Min	738.963	-9.377E-14	1596.042	-2.571E-13	985.3989	2.562E-13
SLV_DX_D	Max	738.966	-9.769E-14	1855.558	-2.683E-13	985.4075	2.640E-13
SLV_DX_D	Min	738.966	-9.769E-14	1855.558	-2.683E-13	985.4075	2.640E-13

7. Joint results

This section provides joint results, including items such as displacements and reactions.

Table 19: Joint Displacements, Part 1 of 2

Table 19: Joint Displacements, Part 1 of 2

Joint	OutputCase	StepType	U1	U2	U3	R1	R2
			m	m	m	Radians	Radians
1	SLE_car	Max	-0.000178	0.	-0.00136	0.	-0.00033
1	SLE_car	Min	-0.000178	0.	-0.00136	0.	-0.00033
1	SLE_fq-qp	Max	-0.000147	0.	-0.001231	0.	-0.000282
1	SLE_fq-qp	Min	-0.000147	0.	-0.001231	0.	-0.000282
1	SLU	Max	-0.000238	0.	-0.001794	0.	-0.000439
1	SLU	Min	-0.000238	0.	-0.001794	0.	-0.000439
1	SLV_DX_U	Max	-0.011772	0.	-0.000956	0.	-0.000534
1	SLV_DX_U	Min	-0.011772	0.	-0.000956	0.	-0.000534
1	SLV_DX_D	Max	-0.011568	0.	-0.001188	0.	-0.000587
1	SLV_DX_D	Min	-0.011568	0.	-0.001188	0.	-0.000587
2	SLE_car	Max	-0.000495	0.	-0.001437	0.	-0.000251
2	SLE_car	Min	-0.000495	0.	-0.001437	0.	-0.000251
2	SLE_fq-qp	Max	-0.000413	0.	-0.001297	0.	-0.000209
2	SLE_fq-qp	Min	-0.000413	0.	-0.001297	0.	-0.000209
2	SLU	Max	-0.000661	0.	-0.001896	0.	-0.000335
2	SLU	Min	-0.000661	0.	-0.001896	0.	-0.000335
2	SLV_DX_U	Max	-0.012301	0.	-0.00107	0.	-0.000475
2	SLV_DX_U	Min	-0.012301	0.	-0.00107	0.	-0.000475
2	SLV_DX_D	Max	-0.012153	0.	-0.001314	0.	-0.00052
2	SLV_DX_D	Min	-0.012153	0.	-0.001314	0.	-0.00052
3	SLE_car	Max	-0.000711	0.	-0.001473	0.	-0.000132
3	SLE_car	Min	-0.000711	0.	-0.001473	0.	-0.000132
3	SLE_fq-qp	Max	-0.000589	0.	-0.001328	0.	-0.000108
3	SLE_fq-qp	Min	-0.000589	0.	-0.001328	0.	-0.000108
3	SLU	Max	-0.000949	0.	-0.001943	0.	-0.000177
3	SLU	Min	-0.000949	0.	-0.001943	0.	-0.000177
3	SLV_DX_U	Max	-0.0128	0.	-0.001123	0.	-0.000443
3	SLV_DX_U	Min	-0.0128	0.	-0.001123	0.	-0.000443
3	SLV_DX_D	Max	-0.012694	0.	-0.001372	0.	-0.00047
3	SLV_DX_D	Min	-0.012694	0.	-0.001372	0.	-0.00047
4	SLE_car	Max	-0.000788	0.	-0.001491	0.	-0.00001
4	SLE_car	Min	-0.000788	0.	-0.001491	0.	-0.00001

Table 19: Joint Displacements, Part 1 of 2

Joint	OutputCase	StepType	U1	U2	U3	R1	R2
			m	m	m	Radians	Radians
4	SLE_fq-qp	Max	-0.000651	0.	-0.001345	0.	-6.915E-06
4	SLE_fq-qp	Min	-0.000651	0.	-0.001345	0.	-6.915E-06
4	SLU	Max	-0.001052	0.	-0.001967	0.	-0.000014
4	SLU	Min	-0.001052	0.	-0.001967	0.	-0.000014
4	SLV_DX_U	Max	-0.01323	0.	-0.00113	0.	-0.000417
4	SLV_DX_U	Min	-0.01323	0.	-0.00113	0.	-0.000417
4	SLV_DX_D	Max	-0.01314	0.	-0.00138	0.	-0.000422
4	SLV_DX_D	Min	-0.01314	0.	-0.00138	0.	-0.000422
5	SLE_car	Max	-0.000754	0.	-0.001513	0.	0.000097
5	SLE_car	Min	-0.000754	0.	-0.001513	0.	0.000097
5	SLE_fq-qp	Max	-0.000622	0.	-0.001365	0.	0.000082
5	SLE_fq-qp	Min	-0.000622	0.	-0.001365	0.	0.000082
5	SLU	Max	-0.001007	0.	-0.001996	0.	0.00013
5	SLU	Min	-0.001007	0.	-0.001996	0.	0.00013
5	SLV_DX_U	Max	-0.013633	0.	-0.001107	0.	-0.000369
5	SLV_DX_U	Min	-0.013633	0.	-0.001107	0.	-0.000369
5	SLV_DX_D	Max	-0.01354	0.	-0.001359	0.	-0.000358
5	SLV_DX_D	Min	-0.01354	0.	-0.001359	0.	-0.000358
6	SLE_car	Max	-0.000635	0.	-0.001549	0.	0.000167
6	SLE_car	Min	-0.000635	0.	-0.001549	0.	0.000167
6	SLE_fq-qp	Max	-0.000522	0.	-0.001396	0.	0.000141
6	SLE_fq-qp	Min	-0.000522	0.	-0.001396	0.	0.000141
6	SLU	Max	-0.000848	0.	-0.002044	0.	0.000222
6	SLU	Min	-0.000848	0.	-0.002044	0.	0.000222
6	SLV_DX_U	Max	-0.013986	0.	-0.001059	0.	-0.000313
6	SLV_DX_U	Min	-0.013986	0.	-0.001059	0.	-0.000313
6	SLV_DX_D	Max	-0.013878	0.	-0.001315	0.	-0.000293
6	SLV_DX_D	Min	-0.013878	0.	-0.001315	0.	-0.000293
7	SLE_car	Max	-0.000486	0.	-0.001743	0.	0.000243
7	SLE_car	Min	-0.000486	0.	-0.001743	0.	0.000243
7	SLE_fq-qp	Max	-0.000396	0.	-0.001561	0.	0.000205
7	SLE_fq-qp	Min	-0.000396	0.	-0.001561	0.	0.000205
7	SLU	Max	-0.000649	0.	-0.002302	0.	0.000324
7	SLU	Min	-0.000649	0.	-0.002302	0.	0.000324
7	SLV_DX_U	Max	-0.014182	0.	-0.000863	0.	-0.000228
7	SLV_DX_U	Min	-0.014182	0.	-0.000863	0.	-0.000228
7	SLV_DX_D	Max	-0.014056	0.	-0.001142	0.	-0.000198
7	SLV_DX_D	Min	-0.014056	0.	-0.001142	0.	-0.000198
8	SLE_car	Max	-0.000307	0.	-0.002012	0.	0.00031
8	SLE_car	Min	-0.000307	0.	-0.002012	0.	0.00031
8	SLE_fq-qp	Max	-0.000247	0.	-0.001787	0.	0.000259
8	SLE_fq-qp	Min	-0.000247	0.	-0.001787	0.	0.000259
8	SLU	Max	-0.00041	0.	-0.00266	0.	0.000413
8	SLU	Min	-0.00041	0.	-0.00266	0.	0.000413
8	SLV_DX_U	Max	-0.014297	0.	-0.000749	0.	-0.000097
8	SLV_DX_U	Min	-0.014297	0.	-0.000749	0.	-0.000097
8	SLV_DX_D	Max	-0.014146	0.	-0.001061	0.	-0.000057
8	SLV_DX_D	Min	-0.014146	0.	-0.001061	0.	-0.000057
9	SLE_car	Max	-0.00013	0.	-0.002316	0.	0.000305
9	SLE_car	Min	-0.00013	0.	-0.002316	0.	0.000305
9	SLE_fq-qp	Max	-0.000102	0.	-0.002039	0.	0.000251
9	SLE_fq-qp	Min	-0.000102	0.	-0.002039	0.	0.000251
9	SLU	Max	-0.000175	0.	-0.003065	0.	0.000407
9	SLU	Min	-0.000175	0.	-0.003065	0.	0.000407
9	SLV_DX_U	Max	-0.014324	0.	-0.000755	0.	0.00006
9	SLV_DX_U	Min	-0.014324	0.	-0.000755	0.	0.00006

Table 19: Joint Displacements, Part 1 of 2

Joint	OutputCase	StepType	U1	U2	U3	R1	R2
			m	m	m	Radians	Radians
9	SLV_DX_D	Max	-0.014149	0.	-0.001107	0.	0.000102
9	SLV_DX_D	Min	-0.014149	0.	-0.001107	0.	0.000102
10	SLE_car	Max	-0.000029	0.	-0.002574	0.	0.000237
10	SLE_car	Min	-0.000029	0.	-0.002574	0.	0.000237
10	SLE_fq-qp	Max	-0.000021	0.	-0.002252	0.	0.000194
10	SLE_fq-qp	Min	-0.000021	0.	-0.002252	0.	0.000194
10	SLU	Max	-0.00004	0.	-0.00341	0.	0.000316
10	SLU	Min	-0.00004	0.	-0.00341	0.	0.000316
10	SLV_DX_U	Max	-0.014295	0.	-0.000873	0.	0.000165
10	SLV_DX_U	Min	-0.014295	0.	-0.000873	0.	0.000165
10	SLV_DX_D	Max	-0.014104	0.	-0.00126	0.	0.000198
10	SLV_DX_D	Min	-0.014104	0.	-0.00126	0.	0.000198
11	SLE_car	Max	6.354E-06	0.	-0.002756	0.	0.000128
11	SLE_car	Min	6.354E-06	0.	-0.002756	0.	0.000128
11	SLE_fq-qp	Max	6.770E-06	0.	-0.002401	0.	0.000104
11	SLE_fq-qp	Min	6.770E-06	0.	-0.002401	0.	0.000104
11	SLU	Max	8.178E-06	0.	-0.003654	0.	0.000172
11	SLU	Min	8.178E-06	0.	-0.003654	0.	0.000172
11	SLV_DX_U	Max	-0.014262	0.	-0.001073	0.	0.000226
11	SLV_DX_U	Min	-0.014262	0.	-0.001073	0.	0.000226
11	SLV_DX_D	Max	-0.014065	0.	-0.001486	0.	0.000244
11	SLV_DX_D	Min	-0.014065	0.	-0.001486	0.	0.000244
12	SLE_car	Max	-3.545E-12	0.	-0.002822	0.	1.512E-13
12	SLE_car	Min	-3.545E-12	0.	-0.002822	0.	1.512E-13
12	SLE_fq-qp	Max	-2.982E-12	0.	-0.002454	0.	1.358E-13
12	SLE_fq-qp	Min	-2.982E-12	0.	-0.002454	0.	1.358E-13
12	SLU	Max	-4.721E-12	0.	-0.003742	0.	1.996E-13
12	SLU	Min	-4.721E-12	0.	-0.003742	0.	1.996E-13
12	SLV_DX_U	Max	-0.014261	0.	-0.001313	0.	0.000237
12	SLV_DX_U	Min	-0.014261	0.	-0.001313	0.	0.000237
12	SLV_DX_D	Max	-0.014063	0.	-0.001735	0.	0.000237
12	SLV_DX_D	Min	-0.014063	0.	-0.001735	0.	0.000237
13	SLE_car	Max	-6.354E-06	0.	-0.002756	0.	-0.000128
13	SLE_car	Min	-6.354E-06	0.	-0.002756	0.	-0.000128
13	SLE_fq-qp	Max	-6.770E-06	0.	-0.002401	0.	-0.000104
13	SLE_fq-qp	Min	-6.770E-06	0.	-0.002401	0.	-0.000104
13	SLU	Max	-8.178E-06	0.	-0.003654	0.	-0.000172
13	SLU	Min	-8.178E-06	0.	-0.003654	0.	-0.000172
13	SLV_DX_U	Max	-0.014299	0.	-0.001534	0.	0.000192
13	SLV_DX_U	Min	-0.014299	0.	-0.001534	0.	0.000192
13	SLV_DX_D	Max	-0.014101	0.	-0.001946	0.	0.000173
13	SLV_DX_D	Min	-0.014101	0.	-0.001946	0.	0.000173
14	SLE_car	Max	0.000029	0.	-0.002574	0.	-0.000237
14	SLE_car	Min	0.000029	0.	-0.002574	0.	-0.000237
14	SLE_fq-qp	Max	0.000021	0.	-0.002252	0.	-0.000194
14	SLE_fq-qp	Min	0.000021	0.	-0.002252	0.	-0.000194
14	SLU	Max	0.00004	0.	-0.00341	0.	-0.000316
14	SLU	Min	0.00004	0.	-0.00341	0.	-0.000316
14	SLV_DX_U	Max	-0.014355	0.	-0.001675	0.	0.000089
14	SLV_DX_U	Min	-0.014355	0.	-0.001675	0.	0.000089
14	SLV_DX_D	Max	-0.01415	0.	-0.00206	0.	0.000054
14	SLV_DX_D	Min	-0.01415	0.	-0.00206	0.	0.000054
15	SLE_car	Max	0.00013	0.	-0.002316	0.	-0.000305
15	SLE_car	Min	0.00013	0.	-0.002316	0.	-0.000305
15	SLE_fq-qp	Max	0.000102	0.	-0.002039	0.	-0.000251
15	SLE_fq-qp	Min	0.000102	0.	-0.002039	0.	-0.000251

Table 19: Joint Displacements, Part 1 of 2

Joint	OutputCase	StepType	U1	U2	U3	R1	R2
			m	m	m	Radians	Radians
15	SLU	Max	0.000175	0.	-0.003065	0.	-0.000407
15	SLU	Min	0.000175	0.	-0.003065	0.	-0.000407
15	SLV_DX_U	Max	-0.01438	0.	-0.001689	0.	-0.000065
15	SLV_DX_U	Min	-0.01438	0.	-0.001689	0.	-0.000065
15	SLV_DX_D	Max	-0.014159	0.	-0.002036	0.	-0.00011
15	SLV_DX_D	Min	-0.014159	0.	-0.002036	0.	-0.00011
16	SLE_car	Max	0.000307	0.	-0.002012	0.	-0.00031
16	SLE_car	Min	0.000307	0.	-0.002012	0.	-0.00031
16	SLE_fq-qp	Max	0.000247	0.	-0.001787	0.	-0.000259
16	SLE_fq-qp	Min	0.000247	0.	-0.001787	0.	-0.000259
16	SLU	Max	0.00041	0.	-0.00266	0.	-0.000413
16	SLU	Min	0.00041	0.	-0.00266	0.	-0.000413
16	SLV_DX_U	Max	-0.0143	0.	-0.00153	0.	-0.000274
16	SLV_DX_U	Min	-0.0143	0.	-0.00153	0.	-0.000274
16	SLV_DX_D	Max	-0.014051	0.	-0.001834	0.	-0.00032
16	SLV_DX_D	Min	-0.014051	0.	-0.001834	0.	-0.00032
17	SLE_car	Max	0.000486	0.	-0.001743	0.	-0.000243
17	SLE_car	Min	0.000486	0.	-0.001743	0.	-0.000243
17	SLE_fq-qp	Max	0.000396	0.	-0.001561	0.	-0.000205
17	SLE_fq-qp	Min	0.000396	0.	-0.001561	0.	-0.000205
17	SLU	Max	0.000649	0.	-0.002302	0.	-0.000324
17	SLU	Min	0.000649	0.	-0.002302	0.	-0.000324
17	SLV_DX_U	Max	-0.014094	0.	-0.001227	0.	-0.00039
17	SLV_DX_U	Min	-0.014094	0.	-0.001227	0.	-0.00039
17	SLV_DX_D	Max	-0.013818	0.	-0.001491	0.	-0.000428
17	SLV_DX_D	Min	-0.013818	0.	-0.001491	0.	-0.000428
18	SLE_car	Max	0.000635	0.	-0.001549	0.	-0.000167
18	SLE_car	Min	0.000635	0.	-0.001549	0.	-0.000167
18	SLE_fq-qp	Max	0.000522	0.	-0.001396	0.	-0.000141
18	SLE_fq-qp	Min	0.000522	0.	-0.001396	0.	-0.000141
18	SLU	Max	0.000848	0.	-0.002044	0.	-0.000222
18	SLU	Min	0.000848	0.	-0.002044	0.	-0.000222
18	SLV_DX_U	Max	-0.013809	0.	-0.000879	0.	-0.000416
18	SLV_DX_U	Min	-0.013809	0.	-0.000879	0.	-0.000416
18	SLV_DX_D	Max	-0.013508	0.	-0.001115	0.	-0.000445
18	SLV_DX_D	Min	-0.013508	0.	-0.001115	0.	-0.000445
19	SLE_car	Max	0.000754	0.	-0.001513	0.	-0.000097
19	SLE_car	Min	0.000754	0.	-0.001513	0.	-0.000097
19	SLE_fq-qp	Max	0.000622	0.	-0.001365	0.	-0.000082
19	SLE_fq-qp	Min	0.000622	0.	-0.001365	0.	-0.000082
19	SLU	Max	0.001007	0.	-0.001996	0.	-0.00013
19	SLU	Min	0.001007	0.	-0.001996	0.	-0.00013
19	SLV_DX_U	Max	-0.013407	0.	-0.000794	0.	-0.000426
19	SLV_DX_U	Min	-0.013407	0.	-0.000794	0.	-0.000426
19	SLV_DX_D	Max	-0.013083	0.	-0.001024	0.	-0.000446
19	SLV_DX_D	Min	-0.013083	0.	-0.001024	0.	-0.000446
20	SLE_car	Max	0.000788	0.	-0.001491	0.	0.00001
20	SLE_car	Min	0.000788	0.	-0.001491	0.	0.00001
20	SLE_fq-qp	Max	0.000651	0.	-0.001345	0.	6.915E-06
20	SLE_fq-qp	Min	0.000651	0.	-0.001345	0.	6.915E-06
20	SLU	Max	0.001052	0.	-0.001967	0.	0.000014
20	SLU	Min	0.001052	0.	-0.001967	0.	0.000014
20	SLV_DX_U	Max	-0.012979	0.	-0.000733	0.	-0.000446
20	SLV_DX_U	Min	-0.012979	0.	-0.000733	0.	-0.000446
20	SLV_DX_D	Max	-0.012642	0.	-0.00096	0.	-0.000451
20	SLV_DX_D	Min	-0.012642	0.	-0.00096	0.	-0.000451

Table 19: Joint Displacements, Part 1 of 2

Joint	OutputCase	StepType	U1	U2	U3	R1	R2
			m	m	m	Radians	Radians
21	SLE_car	Max	0.000711	0.	-0.001473	0.	0.000132
21	SLE_car	Min	0.000711	0.	-0.001473	0.	0.000132
21	SLE_fq-qp	Max	0.000589	0.	-0.001328	0.	0.000108
21	SLE_fq-qp	Min	0.000589	0.	-0.001328	0.	0.000108
21	SLU	Max	0.000949	0.	-0.001943	0.	0.000177
21	SLU	Min	0.000949	0.	-0.001943	0.	0.000177
21	SLV_DX_U	Max	-0.012526	0.	-0.0007	0.	-0.000447
21	SLV_DX_U	Min	-0.012526	0.	-0.0007	0.	-0.000447
21	SLV_DX_D	Max	-0.012195	0.	-0.000925	0.	-0.000432
21	SLV_DX_D	Min	-0.012195	0.	-0.000925	0.	-0.000432
22	SLE_car	Max	0.000495	0.	-0.001437	0.	0.000251
22	SLE_car	Min	0.000495	0.	-0.001437	0.	0.000251
22	SLE_fq-qp	Max	0.000413	0.	-0.001297	0.	0.000209
22	SLE_fq-qp	Min	0.000413	0.	-0.001297	0.	0.000209
22	SLU	Max	0.000661	0.	-0.001896	0.	0.000335
22	SLU	Min	0.000661	0.	-0.001896	0.	0.000335
22	SLV_DX_U	Max	-0.012038	0.	-0.000706	0.	-0.000378
22	SLV_DX_U	Min	-0.012038	0.	-0.000706	0.	-0.000378
22	SLV_DX_D	Max	-0.011736	0.	-0.000927	0.	-0.000344
22	SLV_DX_D	Min	-0.011736	0.	-0.000927	0.	-0.000344
23	SLE_car	Max	0.000178	0.	-0.00136	0.	0.00033
23	SLE_car	Min	0.000178	0.	-0.00136	0.	0.00033
23	SLE_fq-qp	Max	0.000147	0.	-0.001231	0.	0.000282
23	SLE_fq-qp	Min	0.000147	0.	-0.001231	0.	0.000282
23	SLU	Max	0.000238	0.	-0.001794	0.	0.000439
23	SLU	Min	0.000238	0.	-0.001794	0.	0.000439
23	SLV_DX_U	Max	-0.011661	0.	-0.000748	0.	-0.00024
23	SLV_DX_U	Min	-0.011661	0.	-0.000748	0.	-0.00024
23	SLV_DX_D	Max	-0.011404	0.	-0.000959	0.	-0.000196
23	SLV_DX_D	Min	-0.011404	0.	-0.000959	0.	-0.000196
24	SLE_car	Max	0.000084	0.	-0.001331	0.	0.000357
24	SLE_car	Min	0.000084	0.	-0.001331	0.	0.000357
24	SLE_fq-qp	Max	0.000066	0.	-0.001205	0.	0.000308
24	SLE_fq-qp	Min	0.000066	0.	-0.001205	0.	0.000308
24	SLU	Max	0.000112	0.	-0.001755	0.	0.000473
24	SLU	Min	0.000112	0.	-0.001755	0.	0.000473
24	SLV_DX_U	Max	-0.011594	0.	-0.000758	0.	-0.000167
24	SLV_DX_U	Min	-0.011594	0.	-0.000758	0.	-0.000167
24	SLV_DX_D	Max	-0.011349	0.	-0.000965	0.	-0.000123
24	SLV_DX_D	Min	-0.011349	0.	-0.000965	0.	-0.000123
25	SLE_car	Max	0.000088	0.	-0.000974	0.	0.000415
25	SLE_car	Min	0.000088	0.	-0.000974	0.	0.000415
25	SLE_fq-qp	Max	0.000071	0.	-0.000891	0.	0.000365
25	SLE_fq-qp	Min	0.000071	0.	-0.000891	0.	0.000365
25	SLU	Max	0.000118	0.	-0.001283	0.	0.00055
25	SLU	Min	0.000118	0.	-0.001283	0.	0.00055
25	SLV_DX_U	Max	-0.011581	0.	-0.000794	0.	-0.000031
25	SLV_DX_U	Min	-0.011581	0.	-0.000794	0.	-0.000031
25	SLV_DX_D	Max	-0.011336	0.	-0.00096	0.	0.000015
25	SLV_DX_D	Min	-0.011336	0.	-0.00096	0.	0.000015
26	SLE_car	Max	0.000094	0.	-0.000643	0.	0.000338
26	SLE_car	Min	0.000094	0.	-0.000643	0.	0.000338
26	SLE_fq-qp	Max	0.000077	0.	-0.000598	0.	0.000298
26	SLE_fq-qp	Min	0.000077	0.	-0.000598	0.	0.000298
26	SLU	Max	0.000125	0.	-0.000845	0.	0.000447
26	SLU	Min	0.000125	0.	-0.000845	0.	0.000447

Table 19: Joint Displacements, Part 1 of 2

Joint	OutputCase	StepType	U1	U2	U3	R1	R2
			m	m	m	Radians	Radians
26	SLV_DX_U	Max	-0.011562	0.	-0.000727	0.	0.000115
26	SLV_DX_U	Min	-0.011562	0.	-0.000727	0.	0.000115
26	SLV_DX_D	Max	-0.011317	0.	-0.000863	0.	0.000143
26	SLV_DX_D	Min	-0.011317	0.	-0.000863	0.	0.000143
27	SLE_car	Max	0.000024	0.	-0.000382	0.	0.000228
27	SLE_car	Min	0.000024	0.	-0.000382	0.	0.000228
27	SLE_fq-qp	Max	0.000017	0.	-0.000368	0.	0.000201
27	SLE_fq-qp	Min	0.000017	0.	-0.000368	0.	0.000201
27	SLU	Max	0.000033	0.	-0.000499	0.	0.000303
27	SLU	Min	0.000033	0.	-0.000499	0.	0.000303
27	SLV_DX_U	Max	-0.011581	0.	-0.000589	0.	0.000189
27	SLV_DX_U	Min	-0.011581	0.	-0.000589	0.	0.000189
27	SLV_DX_D	Max	-0.011342	0.	-0.000707	0.	0.000205
27	SLV_DX_D	Min	-0.011342	0.	-0.000707	0.	0.000205
28	SLE_car	Max	-2.776E-06	0.	-0.000215	0.	0.000134
28	SLE_car	Min	-2.776E-06	0.	-0.000215	0.	0.000134
28	SLE_fq-qp	Max	-5.159E-06	0.	-0.000221	0.	0.000117
28	SLE_fq-qp	Min	-5.159E-06	0.	-0.000221	0.	0.000117
28	SLU	Max	-3.132E-06	0.	-0.000278	0.	0.000178
28	SLU	Min	-3.132E-06	0.	-0.000278	0.	0.000178
28	SLV_DX_U	Max	-0.011606	0.	-0.000364	0.	0.000279
28	SLV_DX_U	Min	-0.011606	0.	-0.000364	0.	0.000279
28	SLV_DX_D	Max	-0.01137	0.	-0.000471	0.	0.000289
28	SLV_DX_D	Min	-0.01137	0.	-0.000471	0.	0.000289
29	SLE_car	Max	-6.344E-06	0.	-0.000126	0.	0.000061
29	SLE_car	Min	-6.344E-06	0.	-0.000126	0.	0.000061
29	SLE_fq-qp	Max	-6.909E-06	0.	-0.000143	0.	0.000053
29	SLE_fq-qp	Min	-6.909E-06	0.	-0.000143	0.	0.000053
29	SLU	Max	-8.135E-06	0.	-0.00016	0.	0.00008
29	SLU	Min	-8.135E-06	0.	-0.00016	0.	0.00008
29	SLV_DX_U	Max	-0.011622	0.	-0.000054	0.	0.000345
29	SLV_DX_U	Min	-0.011622	0.	-0.000054	0.	0.000345
29	SLV_DX_D	Max	-0.011388	0.	-0.000152	0.	0.000352
29	SLV_DX_D	Min	-0.011388	0.	-0.000152	0.	0.000352
30	SLE_car	Max	-2.408E-11	0.	-0.000098	0.	1.454E-10
30	SLE_car	Min	-2.408E-11	0.	-0.000098	0.	1.454E-10
30	SLE_fq-qp	Max	-2.426E-11	0.	-0.000119	0.	1.261E-10
30	SLE_fq-qp	Min	-2.426E-11	0.	-0.000119	0.	1.261E-10
30	SLU	Max	-3.126E-11	0.	-0.000123	0.	1.929E-10
30	SLU	Min	-3.126E-11	0.	-0.000123	0.	1.929E-10
30	SLV_DX_U	Max	-0.011616	0.	0.000299	0.	0.000345
30	SLV_DX_U	Min	-0.011616	0.	0.000299	0.	0.000345
30	SLV_DX_D	Max	-0.011382	0.	0.000207	0.	0.000349
30	SLV_DX_D	Min	-0.011382	0.	0.000207	0.	0.000349
31	SLE_car	Max	6.344E-06	0.	-0.000126	0.	-0.000061
31	SLE_car	Min	6.344E-06	0.	-0.000126	0.	-0.000061
31	SLE_fq-qp	Max	6.909E-06	0.	-0.000143	0.	-0.000053
31	SLE_fq-qp	Min	6.909E-06	0.	-0.000143	0.	-0.000053
31	SLU	Max	8.135E-06	0.	-0.00016	0.	-0.00008
31	SLU	Min	8.135E-06	0.	-0.00016	0.	-0.00008
31	SLV_DX_U	Max	-0.011582	0.	0.00061	0.	0.000244
31	SLV_DX_U	Min	-0.011582	0.	0.00061	0.	0.000244
31	SLV_DX_D	Max	-0.011348	0.	0.000519	0.	0.000241
31	SLV_DX_D	Min	-0.011348	0.	0.000519	0.	0.000241
32	SLE_car	Max	2.776E-06	0.	-0.000215	0.	-0.000134
32	SLE_car	Min	2.776E-06	0.	-0.000215	0.	-0.000134

Table 19: Joint Displacements, Part 1 of 2

Joint	OutputCase	StepType	U1	U2	U3	R1	R2
			m	m	m	Radians	Radians
32	SLE_fq-qp	Max	5.159E-06	0.	-0.000221	0.	-0.000117
32	SLE_fq-qp	Min	5.159E-06	0.	-0.000221	0.	-0.000117
32	SLU	Max	3.132E-06	0.	-0.000278	0.	-0.000178
32	SLU	Min	3.132E-06	0.	-0.000278	0.	-0.000178
32	SLV_DX_U	Max	-0.011543	0.	0.000762	0.	0.000021
32	SLV_DX_U	Min	-0.011543	0.	0.000762	0.	0.000021
32	SLV_DX_D	Max	-0.01131	0.	0.000665	0.	9.007E-06
32	SLV_DX_D	Min	-0.01131	0.	0.000665	0.	9.007E-06
33	SLE_car	Max	-0.000024	0.	-0.000382	0.	-0.000228
33	SLE_car	Min	-0.000024	0.	-0.000382	0.	-0.000228
33	SLE_fq-qp	Max	-0.000017	0.	-0.000368	0.	-0.000201
33	SLE_fq-qp	Min	-0.000017	0.	-0.000368	0.	-0.000201
33	SLU	Max	-0.000033	0.	-0.000499	0.	-0.000303
33	SLU	Min	-0.000033	0.	-0.000499	0.	-0.000303
33	SLV_DX_U	Max	-0.011546	0.	0.000645	0.	-0.000289
33	SLV_DX_U	Min	-0.011546	0.	0.000645	0.	-0.000289
33	SLV_DX_D	Max	-0.011317	0.	0.000531	0.	-0.000314
33	SLV_DX_D	Min	-0.011317	0.	0.000531	0.	-0.000314
34	SLE_car	Max	-0.000094	0.	-0.000643	0.	-0.000338
34	SLE_car	Min	-0.000094	0.	-0.000643	0.	-0.000338
34	SLE_fq-qp	Max	-0.000077	0.	-0.000598	0.	-0.000298
34	SLE_fq-qp	Min	-0.000077	0.	-0.000598	0.	-0.000298
34	SLU	Max	-0.000125	0.	-0.000845	0.	-0.000447
34	SLU	Min	-0.000125	0.	-0.000845	0.	-0.000447
34	SLV_DX_U	Max	-0.011651	0.	0.000217	0.	-0.00057
34	SLV_DX_U	Min	-0.011651	0.	0.000217	0.	-0.00057
34	SLV_DX_D	Max	-0.011431	0.	0.000075	0.	-0.000607
34	SLV_DX_D	Min	-0.011431	0.	0.000075	0.	-0.000607
35	SLE_car	Max	-0.000088	0.	-0.000974	0.	-0.000415
35	SLE_car	Min	-0.000088	0.	-0.000974	0.	-0.000415
35	SLE_fq-qp	Max	-0.000071	0.	-0.000891	0.	-0.000365
35	SLE_fq-qp	Min	-0.000071	0.	-0.000891	0.	-0.000365
35	SLU	Max	-0.000118	0.	-0.001283	0.	-0.00055
35	SLU	Min	-0.000118	0.	-0.001283	0.	-0.00055
35	SLV_DX_U	Max	-0.011636	0.	-0.000359	0.	-0.000671
35	SLV_DX_U	Min	-0.011636	0.	-0.000359	0.	-0.000671
35	SLV_DX_D	Max	-0.011416	0.	-0.000538	0.	-0.000725
35	SLV_DX_D	Min	-0.011416	0.	-0.000538	0.	-0.000725
36	SLE_car	Max	-0.000084	0.	-0.001331	0.	-0.000357
36	SLE_car	Min	-0.000084	0.	-0.001331	0.	-0.000357
36	SLE_fq-qp	Max	-0.000066	0.	-0.001205	0.	-0.000308
36	SLE_fq-qp	Min	-0.000066	0.	-0.001205	0.	-0.000308
36	SLU	Max	-0.000112	0.	-0.001755	0.	-0.000473
36	SLU	Min	-0.000112	0.	-0.001755	0.	-0.000473
36	SLV_DX_U	Max	-0.011625	0.	-0.000913	0.	-0.000567
36	SLV_DX_U	Min	-0.011625	0.	-0.000913	0.	-0.000567
36	SLV_DX_D	Max	-0.011406	0.	-0.00114	0.	-0.000621
36	SLV_DX_D	Min	-0.011406	0.	-0.00114	0.	-0.000621
24~Link	SLE_car	Max	0.	0.	0.	0.	0.
24~Link	SLE_car	Min	0.	0.	0.	0.	0.
24~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
24~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
24~Link	SLU	Max	0.	0.	0.	0.	0.
24~Link	SLU	Min	0.	0.	0.	0.	0.
24~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
24~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.

Table 19: Joint Displacements, Part 1 of 2

Joint	OutputCase	StepType	U1	U2	U3	R1	R2
			m	m	m	Radians	Radians
24~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
24~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
25~Link	SLE_car	Max	0.	0.	0.	0.	0.
25~Link	SLE_car	Min	0.	0.	0.	0.	0.
25~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
25~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
25~Link	SLU	Max	0.	0.	0.	0.	0.
25~Link	SLU	Min	0.	0.	0.	0.	0.
25~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
25~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
25~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
25~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
26~Link	SLE_car	Max	0.	0.	0.	0.	0.
26~Link	SLE_car	Min	0.	0.	0.	0.	0.
26~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
26~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
26~Link	SLU	Max	0.	0.	0.	0.	0.
26~Link	SLU	Min	0.	0.	0.	0.	0.
26~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
26~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
26~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
26~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
34~Link	SLE_car	Max	0.	0.	0.	0.	0.
34~Link	SLE_car	Min	0.	0.	0.	0.	0.
34~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
34~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
34~Link	SLU	Max	0.	0.	0.	0.	0.
34~Link	SLU	Min	0.	0.	0.	0.	0.
34~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
34~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
34~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
34~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
35~Link	SLE_car	Max	0.	0.	0.	0.	0.
35~Link	SLE_car	Min	0.	0.	0.	0.	0.
35~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
35~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
35~Link	SLU	Max	0.	0.	0.	0.	0.
35~Link	SLU	Min	0.	0.	0.	0.	0.
35~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
35~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
35~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
35~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
36~Link	SLE_car	Max	0.	0.	0.	0.	0.
36~Link	SLE_car	Min	0.	0.	0.	0.	0.
36~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
36~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
36~Link	SLU	Max	0.	0.	0.	0.	0.
36~Link	SLU	Min	0.	0.	0.	0.	0.
36~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
36~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
36~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
36~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
27~Link	SLE_car	Max	0.	0.	0.	0.	0.
27~Link	SLE_car	Min	0.	0.	0.	0.	0.
27~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
27~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.

Table 19: Joint Displacements, Part 1 of 2

Joint	OutputCase	StepType	U1	U2	U3	R1	R2
			m	m	m	Radians	Radians
27~Link	SLU	Max	0.	0.	0.	0.	0.
27~Link	SLU	Min	0.	0.	0.	0.	0.
27~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
27~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
27~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
27~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
28~Link	SLE_car	Max	0.	0.	0.	0.	0.
28~Link	SLE_car	Min	0.	0.	0.	0.	0.
28~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
28~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
28~Link	SLU	Max	0.	0.	0.	0.	0.
28~Link	SLU	Min	0.	0.	0.	0.	0.
28~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
28~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
28~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
28~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
29~Link	SLE_car	Max	0.	0.	0.	0.	0.
29~Link	SLE_car	Min	0.	0.	0.	0.	0.
29~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
29~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
29~Link	SLU	Max	0.	0.	0.	0.	0.
29~Link	SLU	Min	0.	0.	0.	0.	0.
29~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
29~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
29~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
29~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
30~Link	SLE_car	Max	0.	0.	0.	0.	0.
30~Link	SLE_car	Min	0.	0.	0.	0.	0.
30~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
30~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
30~Link	SLU	Max	0.	0.	0.	0.	0.
30~Link	SLU	Min	0.	0.	0.	0.	0.
30~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
30~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
30~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
30~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
31~Link	SLE_car	Max	0.	0.	0.	0.	0.
31~Link	SLE_car	Min	0.	0.	0.	0.	0.
31~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
31~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
31~Link	SLU	Max	0.	0.	0.	0.	0.
31~Link	SLU	Min	0.	0.	0.	0.	0.
31~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
31~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
31~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
31~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
32~Link	SLE_car	Max	0.	0.	0.	0.	0.
32~Link	SLE_car	Min	0.	0.	0.	0.	0.
32~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
32~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
32~Link	SLU	Max	0.	0.	0.	0.	0.
32~Link	SLU	Min	0.	0.	0.	0.	0.
32~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
32~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
32~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
32~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.

Table 19: Joint Displacements, Part 1 of 2

Joint	OutputCase	StepType	U1	U2	U3	R1	R2
			m	m	m	Radians	Radians
33~Link	SLE_car	Max	0.	0.	0.	0.	0.
33~Link	SLE_car	Min	0.	0.	0.	0.	0.
33~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
33~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
33~Link	SLU	Max	0.	0.	0.	0.	0.
33~Link	SLU	Min	0.	0.	0.	0.	0.
33~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
33~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
33~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
33~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
1~Link	SLE_car	Max	0.	0.	0.	0.	0.
1~Link	SLE_car	Min	0.	0.	0.	0.	0.
1~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
1~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
1~Link	SLU	Max	0.	0.	0.	0.	0.
1~Link	SLU	Min	0.	0.	0.	0.	0.
1~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
1~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
1~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
1~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
2~Link	SLE_car	Max	0.	0.	0.	0.	0.
2~Link	SLE_car	Min	0.	0.	0.	0.	0.
2~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
2~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
2~Link	SLU	Max	0.	0.	0.	0.	0.
2~Link	SLU	Min	0.	0.	0.	0.	0.
2~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
2~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
2~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
2~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
3~Link	SLE_car	Max	0.	0.	0.	0.	0.
3~Link	SLE_car	Min	0.	0.	0.	0.	0.
3~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
3~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
3~Link	SLU	Max	0.	0.	0.	0.	0.
3~Link	SLU	Min	0.	0.	0.	0.	0.
3~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
3~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
3~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
3~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
4~Link	SLE_car	Max	0.	0.	0.	0.	0.
4~Link	SLE_car	Min	0.	0.	0.	0.	0.
4~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
4~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
4~Link	SLU	Max	0.	0.	0.	0.	0.
4~Link	SLU	Min	0.	0.	0.	0.	0.
4~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
4~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
4~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
4~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
5~Link	SLE_car	Max	0.	0.	0.	0.	0.
5~Link	SLE_car	Min	0.	0.	0.	0.	0.
5~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
5~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
5~Link	SLU	Max	0.	0.	0.	0.	0.
5~Link	SLU	Min	0.	0.	0.	0.	0.

Table 19: Joint Displacements, Part 1 of 2

Joint	OutputCase	StepType	U1	U2	U3	R1	R2
			m	m	m	Radians	Radians
5~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
5~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
5~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
5~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
6~Link	SLE_car	Max	0.	0.	0.	0.	0.
6~Link	SLE_car	Min	0.	0.	0.	0.	0.
6~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
6~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
6~Link	SLU	Max	0.	0.	0.	0.	0.
6~Link	SLU	Min	0.	0.	0.	0.	0.
6~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
6~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
6~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
6~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
18~Link	SLE_car	Max	0.	0.	0.	0.	0.
18~Link	SLE_car	Min	0.	0.	0.	0.	0.
18~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
18~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
18~Link	SLU	Max	0.	0.	0.	0.	0.
18~Link	SLU	Min	0.	0.	0.	0.	0.
18~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
18~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
18~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
18~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
19~Link	SLE_car	Max	0.	0.	0.	0.	0.
19~Link	SLE_car	Min	0.	0.	0.	0.	0.
19~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
19~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
19~Link	SLU	Max	0.	0.	0.	0.	0.
19~Link	SLU	Min	0.	0.	0.	0.	0.
19~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
19~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
19~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
19~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
20~Link	SLE_car	Max	0.	0.	0.	0.	0.
20~Link	SLE_car	Min	0.	0.	0.	0.	0.
20~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
20~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
20~Link	SLU	Max	0.	0.	0.	0.	0.
20~Link	SLU	Min	0.	0.	0.	0.	0.
20~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
20~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
20~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
20~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
21~Link	SLE_car	Max	0.	0.	0.	0.	0.
21~Link	SLE_car	Min	0.	0.	0.	0.	0.
21~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
21~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
21~Link	SLU	Max	0.	0.	0.	0.	0.
21~Link	SLU	Min	0.	0.	0.	0.	0.
21~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
21~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
21~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
21~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
22~Link	SLE_car	Max	0.	0.	0.	0.	0.
22~Link	SLE_car	Min	0.	0.	0.	0.	0.

Table 19: Joint Displacements, Part 1 of 2

Joint	OutputCase	StepType	U1	U2	U3	R1	R2
			m	m	m	Radians	Radians
22~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
22~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
22~Link	SLU	Max	0.	0.	0.	0.	0.
22~Link	SLU	Min	0.	0.	0.	0.	0.
22~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
22~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
22~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
22~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.
23~Link	SLE_car	Max	0.	0.	0.	0.	0.
23~Link	SLE_car	Min	0.	0.	0.	0.	0.
23~Link	SLE_fq-qp	Max	0.	0.	0.	0.	0.
23~Link	SLE_fq-qp	Min	0.	0.	0.	0.	0.
23~Link	SLU	Max	0.	0.	0.	0.	0.
23~Link	SLU	Min	0.	0.	0.	0.	0.
23~Link	SLV_DX_U	Max	0.	0.	0.	0.	0.
23~Link	SLV_DX_U	Min	0.	0.	0.	0.	0.
23~Link	SLV_DX_D	Max	0.	0.	0.	0.	0.
23~Link	SLV_DX_D	Min	0.	0.	0.	0.	0.

Table 19: Joint Displacements, Part 2 of 2

Table 19: Joint Displacements, Part 2 of 2

Joint	R3
	Radians
1	0.
1	0.
1	0.
1	0.
1	0.
1	0.
1	0.
1	0.
1	0.
1	0.
2	0.
2	0.
2	0.
2	0.
2	0.
2	0.
2	0.
2	0.
2	0.
2	0.
3	0.
3	0.
3	0.
3	0.
3	0.
3	0.
3	0.
3	0.
3	0.

Table 19: Joint Displacements, Part 2 of 2

Joint	R3 Radians
4	0.
4	0.
4	0.
4	0.
4	0.
4	0.
4	0.
4	0.
4	0.
4	0.
5	0.
5	0.
5	0.
5	0.
5	0.
5	0.
5	0.
5	0.
5	0.
5	0.
6	0.
6	0.
6	0.
6	0.
6	0.
6	0.
6	0.
6	0.
6	0.
6	0.
6	0.
7	0.
7	0.
7	0.
7	0.
7	0.
7	0.
7	0.
7	0.
7	0.
7	0.
8	0.
8	0.
8	0.
8	0.
8	0.
8	0.
8	0.
8	0.
8	0.
8	0.
8	0.
8	0.
9	0.
9	0.
9	0.
9	0.
9	0.

Table 19: Joint Displacements, Part 2 of 2

Joint	R3 Radians
9	0.
9	0.
9	0.
9	0.
9	0.
10	0.
10	0.
10	0.
10	0.
10	0.
10	0.
10	0.
10	0.
10	0.
10	0.
10	0.
11	0.
11	0.
11	0.
11	0.
11	0.
11	0.
11	0.
11	0.
11	0.
11	0.
11	0.
12	0.
12	0.
12	0.
12	0.
12	0.
12	0.
12	0.
12	0.
12	0.
12	0.
12	0.
13	0.
13	0.
13	0.
13	0.
13	0.
13	0.
13	0.
13	0.
13	0.
13	0.
13	0.
14	0.
14	0.
14	0.
14	0.
14	0.
14	0.
14	0.
14	0.
14	0.
14	0.

Table 19: Joint Displacements, Part 2 of 2

Joint	R3 Radians
15	0.
15	0.
15	0.
15	0.
15	0.
15	0.
15	0.
15	0.
15	0.
15	0.
16	0.
16	0.
16	0.
16	0.
16	0.
16	0.
16	0.
16	0.
16	0.
16	0.
16	0.
16	0.
17	0.
17	0.
17	0.
17	0.
17	0.
17	0.
17	0.
17	0.
17	0.
17	0.
17	0.
18	0.
18	0.
18	0.
18	0.
18	0.
18	0.
18	0.
18	0.
18	0.
18	0.
18	0.
19	0.
19	0.
19	0.
19	0.
19	0.
19	0.
19	0.
19	0.
19	0.
19	0.
19	0.
20	0.
20	0.
20	0.
20	0.
20	0.

Table 19: Joint Displacements, Part 2 of 2

Joint	R3 Radians
20	0.
20	0.
20	0.
20	0.
20	0.
21	0.
21	0.
21	0.
21	0.
21	0.
21	0.
21	0.
21	0.
21	0.
21	0.
21	0.
22	0.
22	0.
22	0.
22	0.
22	0.
22	0.
22	0.
22	0.
22	0.
22	0.
22	0.
23	0.
23	0.
23	0.
23	0.
23	0.
23	0.
23	0.
23	0.
23	0.
23	0.
24	0.
24	0.
24	0.
24	0.
24	0.
24	0.
24	0.
24	0.
24	0.
24	0.
24	0.
25	0.
25	0.
25	0.
25	0.
25	0.
25	0.
25	0.
25	0.
25	0.

Table 19: Joint Displacements, Part 2 of 2

Joint	R3
	Radians
26	0.
26	0.
26	0.
26	0.
26	0.
26	0.
26	0.
26	0.
26	0.
26	0.
26	0.
27	0.
27	0.
27	0.
27	0.
27	0.
27	0.
27	0.
27	0.
27	0.
27	0.
27	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
29	0.
29	0.
29	0.
29	0.
29	0.
29	0.
29	0.
29	0.
29	0.
29	0.
29	0.
30	0.
30	0.
30	0.
30	0.
30	0.
30	0.
30	0.
30	0.
30	0.
30	0.
30	0.
31	0.
31	0.
31	0.
31	0.
31	0.

Table 19: Joint Displacements, Part 2 of 2

Joint	R3 Radians
31	0.
31	0.
31	0.
31	0.
31	0.
32	0.
32	0.
32	0.
32	0.
32	0.
32	0.
32	0.
32	0.
32	0.
32	0.
32	0.
33	0.
33	0.
33	0.
33	0.
33	0.
33	0.
33	0.
33	0.
33	0.
33	0.
33	0.
34	0.
34	0.
34	0.
34	0.
34	0.
34	0.
34	0.
34	0.
34	0.
34	0.
34	0.
35	0.
35	0.
35	0.
35	0.
35	0.
35	0.
35	0.
35	0.
35	0.
35	0.
35	0.
36	0.
36	0.
36	0.
36	0.
36	0.
36	0.
36	0.
36	0.
36	0.

Table 19: Joint Displacements, Part 2 of 2

Joint	R3 Radians
24~Link	0.
24~Link	0.
24~Link	0.
24~Link	0.
24~Link	0.
24~Link	0.
24~Link	0.
24~Link	0.
24~Link	0.
24~Link	0.
24~Link	0.
25~Link	0.
25~Link	0.
25~Link	0.
25~Link	0.
25~Link	0.
25~Link	0.
25~Link	0.
25~Link	0.
25~Link	0.
25~Link	0.
25~Link	0.
26~Link	0.
26~Link	0.
26~Link	0.
26~Link	0.
26~Link	0.
26~Link	0.
26~Link	0.
26~Link	0.
26~Link	0.
26~Link	0.
26~Link	0.
34~Link	0.
34~Link	0.
34~Link	0.
34~Link	0.
34~Link	0.
34~Link	0.
34~Link	0.
34~Link	0.
34~Link	0.
34~Link	0.
34~Link	0.
34~Link	0.
35~Link	0.
35~Link	0.
35~Link	0.
35~Link	0.
35~Link	0.
35~Link	0.
35~Link	0.
35~Link	0.
35~Link	0.
35~Link	0.
35~Link	0.
36~Link	0.
36~Link	0.
36~Link	0.
36~Link	0.
36~Link	0.

Table 19: Joint Displacements, Part 2 of 2

Joint	R3 Radians
36~Link	0.
36~Link	0.
36~Link	0.
36~Link	0.
36~Link	0.
27~Link	0.
27~Link	0.
27~Link	0.
27~Link	0.
27~Link	0.
27~Link	0.
27~Link	0.
27~Link	0.
27~Link	0.
27~Link	0.
27~Link	0.
28~Link	0.
28~Link	0.
28~Link	0.
28~Link	0.
28~Link	0.
28~Link	0.
28~Link	0.
28~Link	0.
28~Link	0.
28~Link	0.
28~Link	0.
28~Link	0.
29~Link	0.
29~Link	0.
29~Link	0.
29~Link	0.
29~Link	0.
29~Link	0.
29~Link	0.
29~Link	0.
29~Link	0.
29~Link	0.
29~Link	0.
30~Link	0.
30~Link	0.
30~Link	0.
30~Link	0.
30~Link	0.
30~Link	0.
30~Link	0.
30~Link	0.
30~Link	0.
30~Link	0.
30~Link	0.
31~Link	0.
31~Link	0.
31~Link	0.
31~Link	0.
31~Link	0.
31~Link	0.
31~Link	0.
31~Link	0.
31~Link	0.
31~Link	0.

Table 19: Joint Displacements, Part 2 of 2

Joint	R3 Radians
32~Link	0.
32~Link	0.
32~Link	0.
32~Link	0.
32~Link	0.
32~Link	0.
32~Link	0.
32~Link	0.
32~Link	0.
32~Link	0.
32~Link	0.
33~Link	0.
33~Link	0.
33~Link	0.
33~Link	0.
33~Link	0.
33~Link	0.
33~Link	0.
33~Link	0.
33~Link	0.
33~Link	0.
1~Link	0.
1~Link	0.
1~Link	0.
1~Link	0.
1~Link	0.
1~Link	0.
1~Link	0.
1~Link	0.
1~Link	0.
1~Link	0.
1~Link	0.
2~Link	0.
2~Link	0.
2~Link	0.
2~Link	0.
2~Link	0.
2~Link	0.
2~Link	0.
2~Link	0.
2~Link	0.
2~Link	0.
3~Link	0.
3~Link	0.
3~Link	0.
3~Link	0.
3~Link	0.
3~Link	0.
3~Link	0.
3~Link	0.
3~Link	0.
3~Link	0.
3~Link	0.
4~Link	0.
4~Link	0.
4~Link	0.
4~Link	0.
4~Link	0.

Table 19: Joint Displacements, Part 2 of 2

Joint	R3 Radians
4~Link	0.
4~Link	0.
4~Link	0.
4~Link	0.
4~Link	0.
5~Link	0.
5~Link	0.
5~Link	0.
5~Link	0.
5~Link	0.
5~Link	0.
5~Link	0.
5~Link	0.
5~Link	0.
5~Link	0.
5~Link	0.
6~Link	0.
6~Link	0.
6~Link	0.
6~Link	0.
6~Link	0.
6~Link	0.
6~Link	0.
6~Link	0.
6~Link	0.
6~Link	0.
18~Link	0.
18~Link	0.
18~Link	0.
18~Link	0.
18~Link	0.
18~Link	0.
18~Link	0.
18~Link	0.
18~Link	0.
18~Link	0.
19~Link	0.
19~Link	0.
19~Link	0.
19~Link	0.
19~Link	0.
19~Link	0.
19~Link	0.
19~Link	0.
19~Link	0.
19~Link	0.
20~Link	0.
20~Link	0.
20~Link	0.
20~Link	0.
20~Link	0.
20~Link	0.
20~Link	0.
20~Link	0.
20~Link	0.

Table 19: Joint Displacements, Part 2 of 2

Joint	R3
	Radians
21~Link	0.
21~Link	0.
21~Link	0.
21~Link	0.
21~Link	0.
21~Link	0.
21~Link	0.
21~Link	0.
21~Link	0.
21~Link	0.
21~Link	0.
22~Link	0.
22~Link	0.
22~Link	0.
22~Link	0.
22~Link	0.
22~Link	0.
22~Link	0.
22~Link	0.
22~Link	0.
22~Link	0.
22~Link	0.
23~Link	0.
23~Link	0.
23~Link	0.
23~Link	0.
23~Link	0.
23~Link	0.
23~Link	0.
23~Link	0.
23~Link	0.
23~Link	0.
23~Link	0.

Table 20: Joint Reactions, Part 1 of 2

Table 20: Joint Reactions, Part 1 of 2

Joint	OutputCase	StepType	F1	F2	F3	M1	M2
			KN	KN	KN	KN-m	KN-m
1	SLE_car	Max	0.996	0.	0.	0.	0.
1	SLE_car	Min	0.996	0.	0.	0.	0.
1	SLE_fq-qp	Max	0.821	0.	0.	0.	0.
1	SLE_fq-qp	Min	0.821	0.	0.	0.	0.
1	SLU	Max	1.329	0.	0.	0.	0.
1	SLU	Min	1.329	0.	0.	0.	0.
1	SLV_DX_U	Max	65.702	0.	0.	0.	0.
1	SLV_DX_U	Min	65.702	0.	0.	0.	0.
1	SLV_DX_D	Max	64.564	0.	0.	0.	0.
1	SLV_DX_D	Min	64.564	0.	0.	0.	0.
2	SLE_car	Max	4.394	0.	0.	0.	0.
2	SLE_car	Min	4.394	0.	0.	0.	0.
2	SLE_fq-qp	Max	3.659	0.	0.	0.	0.
2	SLE_fq-qp	Min	3.659	0.	0.	0.	0.
2	SLU	Max	5.859	0.	0.	0.	0.
2	SLU	Min	5.859	0.	0.	0.	0.
2	SLV_DX_U	Max	109.081	0.	0.	0.	0.

Table 20: Joint Reactions, Part 1 of 2

Joint	OutputCase	StepType	F1	F2	F3	M1	M2
			KN	KN	KN	KN-m	KN-m
2	SLV_DX_U	Min	109.081	0.	0.	0.	0.
2	SLV_DX_D	Max	107.771	0.	0.	0.	0.
2	SLV_DX_D	Min	107.771	0.	0.	0.	0.
3	SLE_car	Max	5.954	0.	0.	0.	0.
3	SLE_car	Min	5.954	0.	0.	0.	0.
3	SLE_fq-qp	Max	4.935	0.	0.	0.	0.
3	SLE_fq-qp	Min	4.935	0.	0.	0.	0.
3	SLU	Max	7.945	0.	0.	0.	0.
3	SLU	Min	7.945	0.	0.	0.	0.
3	SLV_DX_U	Max	107.193	0.	0.	0.	0.
3	SLV_DX_U	Min	107.193	0.	0.	0.	0.
3	SLV_DX_D	Max	106.303	0.	0.	0.	0.
3	SLV_DX_D	Min	106.303	0.	0.	0.	0.
4	SLE_car	Max	6.209	0.	0.	0.	0.
4	SLE_car	Min	6.209	0.	0.	0.	0.
4	SLE_fq-qp	Max	5.13	0.	0.	0.	0.
4	SLE_fq-qp	Min	5.13	0.	0.	0.	0.
4	SLU	Max	8.288	0.	0.	0.	0.
4	SLU	Min	8.288	0.	0.	0.	0.
4	SLV_DX_U	Max	104.271	0.	0.	0.	0.
4	SLV_DX_U	Min	104.271	0.	0.	0.	0.
4	SLV_DX_D	Max	103.563	0.	0.	0.	0.
4	SLV_DX_D	Min	103.563	0.	0.	0.	0.
5	SLE_car	Max	5.945	0.	0.	0.	0.
5	SLE_car	Min	5.945	0.	0.	0.	0.
5	SLE_fq-qp	Max	4.902	0.	0.	0.	0.
5	SLE_fq-qp	Min	4.902	0.	0.	0.	0.
5	SLU	Max	7.937	0.	0.	0.	0.
5	SLU	Min	7.937	0.	0.	0.	0.
5	SLV_DX_U	Max	107.447	0.	0.	0.	0.
5	SLV_DX_U	Min	107.447	0.	0.	0.	0.
5	SLV_DX_D	Max	106.718	0.	0.	0.	0.
5	SLV_DX_D	Min	106.718	0.	0.	0.	0.
6	SLE_car	Max	2.503	0.	0.	0.	0.
6	SLE_car	Min	2.503	0.	0.	0.	0.
6	SLE_fq-qp	Max	2.057	0.	0.	0.	0.
6	SLE_fq-qp	Min	2.057	0.	0.	0.	0.
6	SLU	Max	3.343	0.	0.	0.	0.
6	SLU	Min	3.343	0.	0.	0.	0.
6	SLV_DX_U	Max	55.116	0.	0.	0.	0.
6	SLV_DX_U	Min	55.116	0.	0.	0.	0.
6	SLV_DX_D	Max	54.69	0.	0.	0.	0.
6	SLV_DX_D	Min	54.69	0.	0.	0.	0.
18	SLE_car	Max	-2.503	0.	0.	0.	0.
18	SLE_car	Min	-2.503	0.	0.	0.	0.
18	SLE_fq-qp	Max	-2.057	0.	0.	0.	0.
18	SLE_fq-qp	Min	-2.057	0.	0.	0.	0.
18	SLU	Max	-3.343	0.	0.	0.	0.
18	SLU	Min	-3.343	0.	0.	0.	0.
18	SLV_DX_U	Max	0.	0.	0.	0.	0.
18	SLV_DX_U	Min	0.	0.	0.	0.	0.
18	SLV_DX_D	Max	0.	0.	0.	0.	0.
18	SLV_DX_D	Min	0.	0.	0.	0.	0.
19	SLE_car	Max	-5.945	0.	0.	0.	0.
19	SLE_car	Min	-5.945	0.	0.	0.	0.
19	SLE_fq-qp	Max	-4.902	0.	0.	0.	0.

Table 20: Joint Reactions, Part 1 of 2

Joint	OutputCase	StepType	F1	F2	F3	M1	M2
			KN	KN	KN	KN-m	KN-m
19	SLE_fq-qp	Min	-4.902	0.	0.	0.	0.
19	SLU	Max	-7.937	0.	0.	0.	0.
19	SLU	Min	-7.937	0.	0.	0.	0.
19	SLV_DX_U	Max	0.	0.	0.	0.	0.
19	SLV_DX_U	Min	0.	0.	0.	0.	0.
19	SLV_DX_D	Max	0.	0.	0.	0.	0.
19	SLV_DX_D	Min	0.	0.	0.	0.	0.
20	SLE_car	Max	-6.209	0.	0.	0.	0.
20	SLE_car	Min	-6.209	0.	0.	0.	0.
20	SLE_fq-qp	Max	-5.13	0.	0.	0.	0.
20	SLE_fq-qp	Min	-5.13	0.	0.	0.	0.
20	SLU	Max	-8.288	0.	0.	0.	0.
20	SLU	Min	-8.288	0.	0.	0.	0.
20	SLV_DX_U	Max	0.	0.	0.	0.	0.
20	SLV_DX_U	Min	0.	0.	0.	0.	0.
20	SLV_DX_D	Max	0.	0.	0.	0.	0.
20	SLV_DX_D	Min	0.	0.	0.	0.	0.
21	SLE_car	Max	-5.954	0.	0.	0.	0.
21	SLE_car	Min	-5.954	0.	0.	0.	0.
21	SLE_fq-qp	Max	-4.935	0.	0.	0.	0.
21	SLE_fq-qp	Min	-4.935	0.	0.	0.	0.
21	SLU	Max	-7.945	0.	0.	0.	0.
21	SLU	Min	-7.945	0.	0.	0.	0.
21	SLV_DX_U	Max	0.	0.	0.	0.	0.
21	SLV_DX_U	Min	0.	0.	0.	0.	0.
21	SLV_DX_D	Max	0.	0.	0.	0.	0.
21	SLV_DX_D	Min	0.	0.	0.	0.	0.
22	SLE_car	Max	-4.394	0.	0.	0.	0.
22	SLE_car	Min	-4.394	0.	0.	0.	0.
22	SLE_fq-qp	Max	-3.659	0.	0.	0.	0.
22	SLE_fq-qp	Min	-3.659	0.	0.	0.	0.
22	SLU	Max	-5.859	0.	0.	0.	0.
22	SLU	Min	-5.859	0.	0.	0.	0.
22	SLV_DX_U	Max	0.	0.	0.	0.	0.
22	SLV_DX_U	Min	0.	0.	0.	0.	0.
22	SLV_DX_D	Max	0.	0.	0.	0.	0.
22	SLV_DX_D	Min	0.	0.	0.	0.	0.
23	SLE_car	Max	-0.996	0.	0.	0.	0.
23	SLE_car	Min	-0.996	0.	0.	0.	0.
23	SLE_fq-qp	Max	-0.821	0.	0.	0.	0.
23	SLE_fq-qp	Min	-0.821	0.	0.	0.	0.
23	SLU	Max	-1.329	0.	0.	0.	0.
23	SLU	Min	-1.329	0.	0.	0.	0.
23	SLV_DX_U	Max	0.	0.	0.	0.	0.
23	SLV_DX_U	Min	0.	0.	0.	0.	0.
23	SLV_DX_D	Max	0.	0.	0.	0.	0.
23	SLV_DX_D	Min	0.	0.	0.	0.	0.
24	SLE_car	Max	-0.096	0.	241.15	0.	-160.4779
24	SLE_car	Min	-0.096	0.	241.15	0.	-160.4779
24	SLE_fq-qp	Max	-0.076	0.	218.352	0.	-138.6744
24	SLE_fq-qp	Min	-0.076	0.	218.352	0.	-138.6744
24	SLU	Max	-0.129	0.	318.055	0.	-212.982
24	SLU	Min	-0.129	0.	318.055	0.	-212.982
24	SLV_DX_U	Max	0.	0.	137.34	0.	75.2696
24	SLV_DX_U	Min	0.	0.	137.34	0.	75.2696
24	SLV_DX_D	Max	0.	0.	174.886	0.	55.3121

Table 20: Joint Reactions, Part 1 of 2

Joint	OutputCase	StepType	F1	F2	F3	M1	M2
			KN	KN	KN	KN-m	KN-m
24	SLV_DX_D	Min	0.	0.	174.886	0.	55.3121
25	SLE_car	Max	0.	0.	353.041	0.	0.
25	SLE_car	Min	0.	0.	353.041	0.	0.
25	SLE_fq-qp	Max	0.	0.	323.106	0.	0.
25	SLE_fq-qp	Min	0.	0.	323.106	0.	0.
25	SLU	Max	0.	0.	464.94	0.	0.
25	SLU	Min	0.	0.	464.94	0.	0.
25	SLV_DX_U	Max	0.	0.	287.838	0.	0.
25	SLV_DX_U	Min	0.	0.	287.838	0.	0.
25	SLV_DX_D	Max	0.	0.	347.89	0.	0.
25	SLV_DX_D	Min	0.	0.	347.89	0.	0.
26	SLE_car	Max	-13.049	-5.682E-15	161.078	0.	0.
26	SLE_car	Min	-13.049	-5.682E-15	161.078	0.	0.
26	SLE_fq-qp	Max	-12.076	-5.258E-15	149.575	0.	0.
26	SLE_fq-qp	Min	-12.076	-5.258E-15	149.575	0.	0.
26	SLU	Max	-17.158	-7.471E-15	211.702	0.	0.
26	SLU	Min	-17.158	-7.471E-15	211.702	0.	0.
26	SLV_DX_U	Max	0.	0.	131.756	0.	0.
26	SLV_DX_U	Min	0.	0.	131.756	0.	0.
26	SLV_DX_D	Max	0.	0.	156.31	0.	0.
26	SLV_DX_D	Min	0.	0.	156.31	0.	0.
27	SLE_car	Max	-13.099	-6.643E-15	52.595	0.	0.
27	SLE_car	Min	-13.099	-6.643E-15	52.595	0.	0.
27	SLE_fq-qp	Max	-12.557	-6.369E-15	50.427	0.	0.
27	SLE_fq-qp	Min	-12.557	-6.369E-15	50.427	0.	0.
27	SLU	Max	-17.137	-8.691E-15	68.807	0.	0.
27	SLU	Min	-17.137	-8.691E-15	68.807	0.	0.
27	SLV_DX_U	Max	0.	0.	0.	0.	0.
27	SLV_DX_U	Min	0.	0.	0.	0.	0.
27	SLV_DX_D	Max	0.	0.	0.	0.	0.
27	SLV_DX_D	Min	0.	0.	0.	0.	0.
28	SLE_car	Max	-4.932	-3.734E-15	30.059	0.	0.
28	SLE_car	Min	-4.932	-3.734E-15	30.059	0.	0.
28	SLE_fq-qp	Max	-5.068	-3.837E-15	30.89	0.	0.
28	SLE_fq-qp	Min	-5.068	-3.837E-15	30.89	0.	0.
28	SLU	Max	-6.384	-4.833E-15	38.911	0.	0.
28	SLU	Min	-6.384	-4.833E-15	38.911	0.	0.
28	SLV_DX_U	Max	0.	0.	0.	0.	0.
28	SLV_DX_U	Min	0.	0.	0.	0.	0.
28	SLV_DX_D	Max	0.	0.	0.	0.	0.
28	SLV_DX_D	Min	0.	0.	0.	0.	0.
29	SLE_car	Max	-1.457	-2.198E-15	17.874	0.	0.
29	SLE_car	Min	-1.457	-2.198E-15	17.874	0.	0.
29	SLE_fq-qp	Max	-1.663	-2.508E-15	20.391	0.	0.
29	SLE_fq-qp	Min	-1.663	-2.508E-15	20.391	0.	0.
29	SLU	Max	-1.853	-2.795E-15	22.732	0.	0.
29	SLU	Min	-1.853	-2.795E-15	22.732	0.	0.
29	SLV_DX_U	Max	0.	0.	0.	0.	0.
29	SLV_DX_U	Min	0.	0.	0.	0.	0.
29	SLV_DX_D	Max	0.	0.	0.	0.	0.
29	SLV_DX_D	Min	0.	0.	0.	0.	0.
30	SLE_car	Max	8.184E-09	-1.726E-15	14.082	0.	0.
30	SLE_car	Min	8.184E-09	-1.726E-15	14.082	0.	0.
30	SLE_fq-qp	Max	8.742E-09	-2.101E-15	17.138	0.	0.
30	SLE_fq-qp	Min	8.742E-09	-2.101E-15	17.138	0.	0.
30	SLU	Max	1.053E-08	-2.169E-15	17.695	0.	0.

Table 20: Joint Reactions, Part 1 of 2

Joint	OutputCase	StepType	F1	F2	F3	M1	M2
			KN	KN	KN	KN-m	KN-m
30	SLU	Min	1.053E-08	-2.169E-15	17.695	0.	0.
30	SLV_DX_U	Max	0.522	-1.561E-15	12.733	0.	0.
30	SLV_DX_U	Min	0.522	-1.561E-15	12.733	0.	0.
30	SLV_DX_D	Max	0.764	-2.286E-15	18.654	0.	0.
30	SLV_DX_D	Min	0.764	-2.286E-15	18.654	0.	0.
31	SLE_car	Max	1.457	-2.198E-15	17.874	0.	0.
31	SLE_car	Min	1.457	-2.198E-15	17.874	0.	0.
31	SLE_fq-qp	Max	1.663	-2.508E-15	20.391	0.	0.
31	SLE_fq-qp	Min	1.663	-2.508E-15	20.391	0.	0.
31	SLU	Max	1.853	-2.795E-15	22.732	0.	0.
31	SLU	Min	1.853	-2.795E-15	22.732	0.	0.
31	SLV_DX_U	Max	7.088	-7.121E-15	57.718	0.	0.
31	SLV_DX_U	Min	7.088	-7.121E-15	57.718	0.	0.
31	SLV_DX_D	Max	7.628	-7.664E-15	62.117	0.	0.
31	SLV_DX_D	Min	7.628	-7.664E-15	62.117	0.	0.
32	SLE_car	Max	4.932	-3.734E-15	30.059	0.	0.
32	SLE_car	Min	4.932	-3.734E-15	30.059	0.	0.
32	SLE_fq-qp	Max	5.068	-3.837E-15	30.89	0.	0.
32	SLE_fq-qp	Min	5.068	-3.837E-15	30.89	0.	0.
32	SLU	Max	6.384	-4.833E-15	38.911	0.	0.
32	SLU	Min	6.384	-4.833E-15	38.911	0.	0.
32	SLV_DX_U	Max	28.862	-1.976E-14	158.611	0.	0.
32	SLV_DX_U	Min	28.862	-1.976E-14	158.611	0.	0.
32	SLV_DX_D	Max	30.157	-2.078E-14	166.851	0.	0.
32	SLV_DX_D	Min	30.157	-2.078E-14	166.851	0.	0.
33	SLE_car	Max	13.099	-6.643E-15	52.595	0.	0.
33	SLE_car	Min	13.099	-6.643E-15	52.595	0.	0.
33	SLE_fq-qp	Max	12.557	-6.369E-15	50.427	0.	0.
33	SLE_fq-qp	Min	12.557	-6.369E-15	50.427	0.	0.
33	SLU	Max	17.137	-8.691E-15	68.807	0.	0.
33	SLU	Min	17.137	-8.691E-15	68.807	0.	0.
33	SLV_DX_U	Max	78.127	-3.824E-14	302.074	0.	0.
33	SLV_DX_U	Min	78.127	-3.824E-14	302.074	0.	0.
33	SLV_DX_D	Max	79.99	-3.921E-14	309.791	0.	0.
33	SLV_DX_D	Min	79.99	-3.921E-14	309.791	0.	0.
34	SLE_car	Max	13.049	-5.682E-15	161.078	0.	0.
34	SLE_car	Min	13.049	-5.682E-15	161.078	0.	0.
34	SLE_fq-qp	Max	12.076	-5.258E-15	149.575	0.	0.
34	SLE_fq-qp	Min	12.076	-5.258E-15	149.575	0.	0.
34	SLU	Max	17.158	-7.471E-15	211.702	0.	0.
34	SLU	Min	17.158	-7.471E-15	211.702	0.	0.
34	SLV_DX_U	Max	62.216	-2.709E-14	212.268	0.	0.
34	SLV_DX_U	Min	62.216	-2.709E-14	212.268	0.	0.
34	SLV_DX_D	Max	63.731	-2.775E-14	217.437	0.	0.
34	SLV_DX_D	Min	63.731	-2.775E-14	217.437	0.	0.
35	SLE_car	Max	0.	0.	353.041	0.	0.
35	SLE_car	Min	0.	0.	353.041	0.	0.
35	SLE_fq-qp	Max	0.	0.	323.106	0.	0.
35	SLE_fq-qp	Min	0.	0.	323.106	0.	0.
35	SLU	Max	0.	0.	464.94	0.	0.
35	SLU	Min	0.	0.	464.94	0.	0.
35	SLV_DX_U	Max	0.	0.	130.21	0.	0.
35	SLV_DX_U	Min	0.	0.	130.21	0.	0.
35	SLV_DX_D	Max	0.	0.	194.994	0.	0.
35	SLV_DX_D	Min	0.	0.	194.994	0.	0.
36	SLE_car	Max	0.096	0.	241.15	0.	160.4779

Table 20: Joint Reactions, Part 1 of 2

Joint	OutputCase	StepType	F1	F2	F3	M1	M2
			KN	KN	KN	KN-m	KN-m
36	SLE_car	Min	0.096	0.	241.15	0.	160.4779
36	SLE_fq-qp	Max	0.076	0.	218.352	0.	138.6744
36	SLE_fq-qp	Min	0.076	0.	218.352	0.	138.6744
36	SLU	Max	0.129	0.	318.055	0.	212.982
36	SLU	Min	0.129	0.	318.055	0.	212.982
36	SLV_DX_U	Max	13.339	0.	165.494	0.	255.2948
36	SLV_DX_U	Min	13.339	0.	165.494	0.	255.2948
36	SLV_DX_D	Max	13.087	0.	206.629	0.	279.3229
36	SLV_DX_D	Min	13.087	0.	206.629	0.	279.3229

Table 20: Joint Reactions, Part 2 of 2

Table 20: Joint Reactions, Part 2 of 2

Joint	M3
	KN-m
1	0.
1	0.
1	0.
1	0.
1	0.
1	0.
1	0.
1	0.
1	0.
1	0.
2	0.
2	0.
2	0.
2	0.
2	0.
2	0.
2	0.
2	0.
2	0.
2	0.
3	0.
3	0.
3	0.
3	0.
3	0.
3	0.
3	0.
3	0.
3	0.
3	0.
4	0.
4	0.
4	0.
4	0.
4	0.
4	0.
4	0.
4	0.
4	0.

Table 20: Joint Reactions, Part 2 of 2

Joint	M3
	KN-m
4	0.
5	0.
5	0.
5	0.
5	0.
5	0.
5	0.
5	0.
5	0.
5	0.
5	0.
6	0.
6	0.
6	0.
6	0.
6	0.
6	0.
6	0.
6	0.
6	0.
6	0.
18	0.
18	0.
18	0.
18	0.
18	0.
18	0.
18	0.
18	0.
18	0.
18	0.
18	0.
19	0.
19	0.
19	0.
19	0.
19	0.
19	0.
19	0.
19	0.
19	0.
19	0.
20	0.
20	0.
20	0.
20	0.
20	0.
20	0.
20	0.
20	0.
20	0.
20	0.
20	0.
21	0.
21	0.
21	0.
21	0.

Table 20: Joint Reactions, Part 2 of 2

Joint	M3
	KN-m
21	0.
21	0.
21	0.
21	0.
21	0.
21	0.
22	0.
22	0.
22	0.
22	0.
22	0.
22	0.
22	0.
22	0.
22	0.
22	0.
22	0.
23	0.
23	0.
23	0.
23	0.
23	0.
23	0.
23	0.
23	0.
23	0.
23	0.
23	0.
24	0.
24	0.
24	0.
24	0.
24	0.
24	0.
24	0.
24	0.
24	0.
24	0.
24	0.
25	0.
25	0.
25	0.
25	0.
25	0.
25	0.
25	0.
25	0.
25	0.
25	0.
25	0.
26	0.
26	0.
26	0.
26	0.
26	0.
26	0.
26	0.
26	0.
26	0.

Table 20: Joint Reactions, Part 2 of 2

Joint	M3
	KN-m
26	0.
27	0.
27	0.
27	0.
27	0.
27	0.
27	0.
27	0.
27	0.
27	0.
27	0.
27	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
28	0.
29	0.
29	0.
29	0.
29	0.
29	0.
29	0.
29	0.
29	0.
29	0.
29	0.
29	0.
30	0.
30	0.
30	0.
30	0.
30	0.
30	0.
30	0.
30	0.
30	0.
30	0.
31	0.
31	0.
31	0.
31	0.
31	0.
31	0.
31	0.
31	0.
31	0.
31	0.
32	0.
32	0.
32	0.
32	0.

Table 20: Joint Reactions, Part 2 of 2

Joint	M3 KN-m
32	0.
32	0.
32	0.
32	0.
32	0.
32	0.
33	0.
33	0.
33	0.
33	0.
33	0.
33	0.
33	0.
33	0.
33	0.
33	0.
33	0.
34	0.
34	0.
34	0.
34	0.
34	0.
34	0.
34	0.
34	0.
34	0.
34	0.
34	0.
35	0.
35	0.
35	0.
35	0.
35	0.
35	0.
35	0.
35	0.
35	0.
35	0.
36	0.
36	0.
36	0.
36	0.
36	0.
36	0.
36	0.
36	0.
36	0.
36	0.

8. Frame results

This section provides frame force results.

Table 21: Element Forces - Frames, Part 1 of 2

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
1	0.	SLE_car	Max	-757.943	-18.02	-2.367E-15
1	0.55423	SLE_car	Max	-735.221	25.447	2.956E-15
1	1.10845	SLE_car	Max	-712.899	66.526	7.987E-15
1	0.	SLE_car	Min	-757.943	-18.02	-2.367E-15
1	0.55423	SLE_car	Min	-735.221	25.447	2.956E-15
1	1.10845	SLE_car	Min	-712.899	66.526	7.987E-15
1	0.	SLE_fq-qp	Max	-699.33	-40.547	-4.983E-15
1	0.55423	SLE_fq-qp	Max	-676.608	2.919	3.405E-16
1	1.10845	SLE_fq-qp	Max	-654.285	43.998	5.371E-15
1	0.	SLE_fq-qp	Min	-699.33	-40.547	-4.983E-15
1	0.55423	SLE_fq-qp	Min	-676.608	2.919	3.405E-16
1	1.10845	SLE_fq-qp	Min	-654.285	43.998	5.371E-15
1	0.	SLU	Max	-997.049	-18.92	-2.554E-15
1	0.55423	SLU	Max	-967.51	37.587	4.366E-15
1	1.10845	SLU	Max	-938.491	90.989	1.091E-14
1	0.	SLU	Min	-997.049	-18.92	-2.554E-15
1	0.55423	SLU	Min	-967.51	37.587	4.366E-15
1	1.10845	SLU	Min	-938.491	90.989	1.091E-14
1	0.	SLV_DX_U	Max	-823.342	-190.972	-2.242E-14
1	0.55423	SLV_DX_U	Max	-803.869	-151.967	-1.764E-14
1	1.10845	SLV_DX_U	Max	-784.796	-115.349	-1.316E-14
1	0.	SLV_DX_U	Min	-823.342	-190.972	-2.242E-14
1	0.55423	SLV_DX_U	Min	-803.869	-151.967	-1.764E-14
1	1.10845	SLV_DX_U	Min	-784.796	-115.349	-1.316E-14
1	0.	SLV_DX_D	Max	-912.124	-164.789	-1.937E-14
1	0.55423	SLV_DX_D	Max	-887.782	-126.599	-1.470E-14
1	1.10845	SLV_DX_D	Max	-863.84	-90.796	-1.031E-14
1	0.	SLV_DX_D	Min	-912.124	-164.789	-1.937E-14
1	0.55423	SLV_DX_D	Min	-887.782	-126.599	-1.470E-14
1	1.10845	SLV_DX_D	Min	-863.84	-90.796	-1.031E-14
2	0.	SLE_car	Max	-715.644	-8.129	-9.955E-16
2	0.55423	SLE_car	Max	-699.478	33.321	4.081E-15
2	1.10845	SLE_car	Max	-683.449	72.294	8.854E-15
2	0.	SLE_car	Min	-715.644	-8.129	-9.955E-16
2	0.55423	SLE_car	Min	-699.478	33.321	4.081E-15
2	1.10845	SLE_car	Min	-683.449	72.294	8.854E-15
2	0.	SLE_fq-qp	Max	-654.944	-24.787	-3.036E-15
2	0.55423	SLE_fq-qp	Max	-638.778	16.663	2.041E-15
2	1.10845	SLE_fq-qp	Max	-622.749	55.636	6.813E-15
2	0.	SLE_fq-qp	Min	-654.944	-24.787	-3.036E-15
2	0.55423	SLE_fq-qp	Min	-638.778	16.663	2.041E-15
2	1.10845	SLE_fq-qp	Min	-622.749	55.636	6.813E-15
2	0.	SLU	Max	-942.477	-7.236	-8.861E-16
2	0.55423	SLU	Max	-921.462	46.649	5.713E-15
2	1.10845	SLU	Max	-900.624	97.314	1.192E-14
2	0.	SLU	Min	-942.477	-7.236	-8.861E-16
2	0.55423	SLU	Min	-921.462	46.649	5.713E-15
2	1.10845	SLU	Min	-900.624	97.314	1.192E-14
2	0.	SLV_DX_U	Max	-761.259	-92.298	-1.130E-14
2	0.55423	SLV_DX_U	Max	-747.581	-55.205	-6.761E-15
2	1.10845	SLV_DX_U	Max	-734.041	-20.589	-2.521E-15
2	0.	SLV_DX_U	Min	-761.259	-92.298	-1.130E-14
2	0.55423	SLV_DX_U	Min	-747.581	-55.205	-6.761E-15
2	1.10845	SLV_DX_U	Min	-734.041	-20.589	-2.521E-15

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
2	0.	SLV_DX_D	Max	-842.601	-77.921	-9.543E-15
2	0.55423	SLV_DX_D	Max	-824.442	-41.076	-5.030E-15
2	1.10845	SLV_DX_D	Max	-806.421	-6.708	-8.215E-16
2	0.	SLV_DX_D	Min	-842.601	-77.921	-9.543E-15
2	0.55423	SLV_DX_D	Min	-824.442	-41.076	-5.030E-15
2	1.10845	SLV_DX_D	Min	-806.421	-6.708	-8.215E-16
3	0.	SLE_car	Max	-687.406	15.739	0.
3	0.4926	SLE_car	Max	-676.298	49.478	0.
3	0.98519	SLE_car	Max	-665.12	81.255	0.
3	0.	SLE_car	Min	-687.406	15.739	0.
3	0.4926	SLE_car	Min	-676.298	49.478	0.
3	0.98519	SLE_car	Min	-665.12	81.255	0.
3	0.	SLE_fq-qp	Max	-625.405	3.656	0.
3	0.4926	SLE_fq-qp	Max	-614.297	37.396	0.
3	0.98519	SLE_fq-qp	Max	-603.119	69.173	0.
3	0.	SLE_fq-qp	Min	-625.405	3.656	0.
3	0.4926	SLE_fq-qp	Min	-614.297	37.396	0.
3	0.98519	SLE_fq-qp	Min	-603.119	69.173	0.
3	0.	SLU	Max	-906.028	22.877	0.
3	0.4926	SLU	Max	-891.588	66.738	0.
3	0.98519	SLU	Max	-877.056	108.048	0.
3	0.	SLU	Min	-906.028	22.877	0.
3	0.4926	SLU	Min	-891.588	66.738	0.
3	0.98519	SLU	Min	-877.056	108.048	0.
3	0.	SLV_DX_U	Max	-732.965	19.809	0.
3	0.4926	SLV_DX_U	Max	-723.707	49.491	0.
3	0.98519	SLV_DX_U	Max	-714.379	77.21	0.
3	0.	SLV_DX_U	Min	-732.965	19.809	0.
3	0.4926	SLV_DX_U	Min	-723.707	49.491	0.
3	0.98519	SLV_DX_U	Min	-714.379	77.21	0.
3	0.	SLV_DX_D	Max	-806.276	26.155	0.
3	0.4926	SLV_DX_D	Max	-793.032	55.98	0.
3	0.98519	SLV_DX_D	Max	-779.717	83.842	0.
3	0.	SLV_DX_D	Min	-806.276	26.155	0.
3	0.4926	SLV_DX_D	Min	-793.032	55.98	0.
3	0.98519	SLV_DX_D	Min	-779.717	83.842	0.
4	0.	SLE_car	Max	-669.901	39.532	0.
4	0.4926	SLE_car	Max	-659.579	70.063	0.
4	0.98519	SLE_car	Max	-649.048	98.663	0.
4	0.	SLE_car	Min	-669.901	39.532	0.
4	0.4926	SLE_car	Min	-659.579	70.063	0.
4	0.98519	SLE_car	Min	-649.048	98.663	0.
4	0.	SLE_fq-qp	Max	-607.077	30.853	0.
4	0.4926	SLE_fq-qp	Max	-596.755	61.384	0.
4	0.98519	SLE_fq-qp	Max	-586.224	89.984	0.
4	0.	SLE_fq-qp	Min	-607.077	30.853	0.
4	0.4926	SLE_fq-qp	Min	-596.755	61.384	0.
4	0.98519	SLE_fq-qp	Min	-586.224	89.984	0.
4	0.	SLU	Max	-883.436	53.127	0.
4	0.4926	SLU	Max	-870.017	92.818	0.
4	0.98519	SLU	Max	-856.327	129.997	0.
4	0.	SLU	Min	-883.436	53.127	0.
4	0.4926	SLU	Min	-870.017	92.818	0.
4	0.98519	SLU	Min	-856.327	129.997	0.
4	0.	SLV_DX_U	Max	-729.278	129.46	0.
4	0.4926	SLV_DX_U	Max	-720.665	155.393	0.

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
4	0.98519	SLV_DX_U	Max	-711.844	179.395	0.
4	0.	SLV_DX_U	Min	-729.278	129.46	0.
4	0.4926	SLV_DX_U	Min	-720.665	155.393	0.
4	0.98519	SLV_DX_U	Min	-711.844	179.395	0.
4	0.	SLV_DX_D	Max	-794.848	130.686	0.
4	0.4926	SLV_DX_D	Max	-781.873	157.091	0.
4	0.98519	SLV_DX_D	Max	-768.69	181.564	0.
4	0.	SLV_DX_D	Min	-794.848	130.686	0.
4	0.4926	SLV_DX_D	Min	-781.873	157.091	0.
4	0.98519	SLV_DX_D	Min	-768.69	181.564	0.
5	0.	SLE_car	Max	-655.512	57.723	0.
5	0.4926	SLE_car	Max	-643.639	85.393	0.
5	0.98519	SLE_car	Max	-631.426	111.191	0.
5	0.	SLE_car	Min	-655.512	57.723	0.
5	0.4926	SLE_car	Min	-643.639	85.393	0.
5	0.98519	SLE_car	Min	-631.426	111.191	0.
5	0.	SLE_fq-qp	Max	-592.042	52.544	0.
5	0.4926	SLE_fq-qp	Max	-580.168	80.215	0.
5	0.98519	SLE_fq-qp	Max	-567.955	106.012	0.
5	0.	SLE_fq-qp	Min	-592.042	52.544	0.
5	0.4926	SLE_fq-qp	Min	-580.168	80.215	0.
5	0.98519	SLE_fq-qp	Min	-567.955	106.012	0.
5	0.	SLU	Max	-864.86	76.076	0.
5	0.4926	SLU	Max	-849.424	112.047	0.
5	0.98519	SLU	Max	-833.547	145.584	0.
5	0.	SLU	Min	-864.86	76.076	0.
5	0.4926	SLU	Min	-849.424	112.047	0.
5	0.98519	SLU	Min	-833.547	145.584	0.
5	0.	SLV_DX_U	Max	-742.047	233.619	0.
5	0.4926	SLV_DX_U	Max	-731.862	255.51	0.
5	0.98519	SLV_DX_U	Max	-721.338	275.528	0.
5	0.	SLV_DX_U	Min	-742.047	233.619	0.
5	0.4926	SLV_DX_U	Min	-731.862	255.51	0.
5	0.98519	SLV_DX_U	Min	-721.338	275.528	0.
5	0.	SLV_DX_D	Max	-798.771	230.988	0.
5	0.4926	SLV_DX_D	Max	-783.288	253.841	0.
5	0.98519	SLV_DX_D	Max	-767.465	274.82	0.
5	0.	SLV_DX_D	Min	-798.771	230.988	0.
5	0.4926	SLV_DX_D	Min	-783.288	253.841	0.
5	0.98519	SLV_DX_D	Min	-767.465	274.82	0.
6	0.	SLE_car	Max	-563.823	-307.055	0.
6	0.53709	SLE_car	Max	-533.397	-248.103	0.
6	1.07417	SLE_car	Max	-503.991	-191.857	0.
6	0.	SLE_car	Min	-563.823	-307.055	0.
6	0.53709	SLE_car	Min	-533.397	-248.103	0.
6	1.07417	SLE_car	Min	-503.991	-191.857	0.
6	0.	SLE_fq-qp	Max	-510.758	-271.641	0.
6	0.53709	SLE_fq-qp	Max	-483.852	-216.745	0.
6	1.07417	SLE_fq-qp	Max	-457.966	-164.556	0.
6	0.	SLE_fq-qp	Min	-510.758	-271.641	0.
6	0.53709	SLE_fq-qp	Min	-483.852	-216.745	0.
6	1.07417	SLE_fq-qp	Min	-457.966	-164.556	0.
6	0.	SLU	Max	-743.583	-406.255	0.
6	0.53709	SLU	Max	-703.325	-328.805	0.
6	1.07417	SLU	Max	-664.393	-254.875	0.
6	0.	SLU	Min	-743.583	-406.255	0.

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
6	0.53709	SLU	Min	-703.325	-328.805	0.
6	1.07417	SLU	Min	-664.393	-254.875	0.
6	0.	SLV_DX_U	Max	-776.567	-200.743	0.
6	0.53709	SLV_DX_U	Max	-743.817	-147.406	0.
6	1.07417	SLV_DX_U	Max	-712.086	-96.777	0.
6	0.	SLV_DX_U	Min	-776.567	-200.743	0.
6	0.53709	SLV_DX_U	Min	-743.817	-147.406	0.
6	1.07417	SLV_DX_U	Min	-712.086	-96.777	0.
6	0.	SLV_DX_D	Max	-811.766	-230.458	0.
6	0.53709	SLV_DX_D	Max	-775.453	-173.016	0.
6	1.07417	SLV_DX_D	Max	-740.159	-118.281	0.
6	0.	SLV_DX_D	Min	-811.766	-230.458	0.
6	0.53709	SLV_DX_D	Min	-775.453	-173.016	0.
6	1.07417	SLV_DX_D	Min	-740.159	-118.281	0.
7	0.	SLE_car	Max	-487.864	-229.794	0.
7	0.53709	SLE_car	Max	-463.614	-176.211	0.
7	1.07417	SLE_car	Max	-440.262	-125.228	0.
7	0.	SLE_car	Min	-487.864	-229.794	0.
7	0.53709	SLE_car	Min	-463.614	-176.211	0.
7	1.07417	SLE_car	Min	-440.262	-125.228	0.
7	0.	SLE_fq-qp	Max	-444.058	-199.057	0.
7	0.53709	SLE_fq-qp	Max	-423.009	-149.787	0.
7	1.07417	SLE_fq-qp	Max	-402.856	-103.117	0.
7	0.	SLE_fq-qp	Min	-444.058	-199.057	0.
7	0.53709	SLE_fq-qp	Min	-423.009	-149.787	0.
7	1.07417	SLE_fq-qp	Min	-402.856	-103.117	0.
7	0.	SLU	Max	-642.984	-304.88	0.
7	0.53709	SLU	Max	-610.82	-234.359	0.
7	1.07417	SLU	Max	-579.821	-167.218	0.
7	0.	SLU	Min	-642.984	-304.88	0.
7	0.53709	SLU	Min	-610.82	-234.359	0.
7	1.07417	SLU	Min	-579.821	-167.218	0.
7	0.	SLV_DX_U	Max	-702.614	-150.887	0.
7	0.53709	SLV_DX_U	Max	-676.277	-101.424	0.
7	1.07417	SLV_DX_U	Max	-650.837	-54.562	0.
7	0.	SLV_DX_U	Min	-702.614	-150.887	0.
7	0.53709	SLV_DX_U	Min	-676.277	-101.424	0.
7	1.07417	SLV_DX_U	Min	-650.837	-54.562	0.
7	0.	SLV_DX_D	Max	-728.962	-174.472	0.
7	0.53709	SLV_DX_D	Max	-700.164	-121.691	0.
7	1.07417	SLV_DX_D	Max	-672.262	-71.511	0.
7	0.	SLV_DX_D	Min	-728.962	-174.472	0.
7	0.53709	SLV_DX_D	Min	-700.164	-121.691	0.
7	1.07417	SLV_DX_D	Min	-672.262	-71.511	0.
8	0.	SLE_car	Max	-431.293	-153.292	0.
8	0.53737	SLE_car	Max	-411.391	-104.322	0.
8	1.07475	SLE_car	Max	-392.267	-57.827	0.
8	0.	SLE_car	Min	-431.293	-153.292	0.
8	0.53737	SLE_car	Min	-411.391	-104.322	0.
8	1.07475	SLE_car	Min	-392.267	-57.827	0.
8	0.	SLE_fq-qp	Max	-395.388	-128.821	0.
8	0.53737	SLE_fq-qp	Max	-378.403	-84.364	0.
8	1.07475	SLE_fq-qp	Max	-362.196	-42.382	0.
8	0.	SLE_fq-qp	Min	-395.388	-128.821	0.
8	0.53737	SLE_fq-qp	Min	-378.403	-84.364	0.
8	1.07475	SLE_fq-qp	Min	-362.196	-42.382	0.

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
8	0.	SLU	Max	-567.862	-204.173	0.
8	0.53737	SLU	Max	-541.405	-139.61	0.
8	1.07475	SLU	Max	-515.961	-78.264	0.
8	0.	SLU	Min	-567.862	-204.173	0.
8	0.53737	SLU	Min	-541.405	-139.61	0.
8	1.07475	SLU	Min	-515.961	-78.264	0.
8	0.	SLV_DX_U	Max	-645.979	-96.32	0.
8	0.53737	SLV_DX_U	Max	-624.097	-50.701	0.
8	1.07475	SLV_DX_U	Max	-602.995	-7.558	0.
8	0.	SLV_DX_U	Min	-645.979	-96.32	0.
8	0.53737	SLV_DX_U	Min	-624.097	-50.701	0.
8	1.07475	SLV_DX_U	Min	-602.995	-7.558	0.
8	0.	SLV_DX_D	Max	-666.269	-114.612	0.
8	0.53737	SLV_DX_D	Max	-642.498	-66.07	0.
8	1.07475	SLV_DX_D	Max	-619.505	-20.004	0.
8	0.	SLV_DX_D	Min	-666.269	-114.612	0.
8	0.53737	SLV_DX_D	Min	-642.498	-66.07	0.
8	1.07475	SLV_DX_D	Min	-619.505	-20.004	0.
9	0.	SLE_car	Max	-379.125	-116.11	0.
9	0.48868	SLE_car	Max	-365.852	-72.226	0.
9	0.97737	SLE_car	Max	-352.979	-30.025	0.
9	0.	SLE_car	Min	-379.125	-116.11	0.
9	0.48868	SLE_car	Min	-365.852	-72.226	0.
9	0.97737	SLE_car	Min	-352.979	-30.025	0.
9	0.	SLE_fq-qp	Max	-351.717	-96.322	0.
9	0.48868	SLE_fq-qp	Max	-340.45	-56.894	0.
9	0.97737	SLE_fq-qp	Max	-329.584	-19.149	0.
9	0.	SLE_fq-qp	Min	-351.717	-96.322	0.
9	0.48868	SLE_fq-qp	Min	-340.45	-56.894	0.
9	0.97737	SLE_fq-qp	Min	-329.584	-19.149	0.
9	0.	SLU	Max	-498.344	-154.9	0.
9	0.48868	SLU	Max	-480.688	-96.96	0.
9	0.97737	SLU	Max	-463.552	-41.208	0.
9	0.	SLU	Min	-498.344	-154.9	0.
9	0.48868	SLU	Min	-480.688	-96.96	0.
9	0.97737	SLU	Min	-463.552	-41.208	0.
9	0.	SLV_DX_U	Max	-595.014	-98.074	0.
9	0.48868	SLV_DX_U	Max	-579.505	-56.934	0.
9	0.97737	SLV_DX_U	Max	-564.395	-17.476	0.
9	0.	SLV_DX_U	Min	-595.014	-98.074	0.
9	0.48868	SLV_DX_U	Min	-579.505	-56.934	0.
9	0.97737	SLV_DX_U	Min	-564.395	-17.476	0.
9	0.	SLV_DX_D	Max	-609.467	-112.859	0.
9	0.48868	SLV_DX_D	Max	-592.657	-68.832	0.
9	0.97737	SLV_DX_D	Max	-576.248	-26.487	0.
9	0.	SLV_DX_D	Min	-609.467	-112.859	0.
9	0.48868	SLV_DX_D	Min	-592.657	-68.832	0.
9	0.97737	SLV_DX_D	Min	-576.248	-26.487	0.
10	0.	SLE_car	Max	-343.576	-86.321	0.
10	0.48807	SLE_car	Max	-335.433	-42.981	0.
10	0.97615	SLE_car	Max	-327.457	-0.767	0.
10	0.	SLE_car	Min	-343.576	-86.321	0.
10	0.48807	SLE_car	Min	-335.433	-42.981	0.
10	0.97615	SLE_car	Min	-327.457	-0.767	0.
10	0.	SLE_fq-qp	Max	-322.231	-71.828	0.
10	0.48807	SLE_fq-qp	Max	-315.351	-33.203	0.

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
10	0.97615	SLE_fq-qp	Max	-308.639	4.296	0.
10	0.	SLE_fq-qp	Min	-322.231	-71.828	0.
10	0.48807	SLE_fq-qp	Min	-315.351	-33.203	0.
10	0.97615	SLE_fq-qp	Min	-308.639	4.296	0.
10	0.	SLU	Max	-450.918	-115.115	0.
10	0.48807	SLU	Max	-440.079	-57.83	0.
10	0.97615	SLU	Max	-429.458	-2.01	0.
10	0.	SLU	Min	-450.918	-115.115	0.
10	0.48807	SLU	Min	-440.079	-57.83	0.
10	0.97615	SLU	Min	-429.458	-2.01	0.
10	0.	SLV_DX_U	Max	-554.263	-107.885	0.
10	0.48807	SLV_DX_U	Max	-543.475	-66.891	0.
10	0.97615	SLV_DX_U	Max	-532.855	-27.022	0.
10	0.	SLV_DX_U	Min	-554.263	-107.885	0.
10	0.48807	SLV_DX_U	Min	-543.475	-66.891	0.
10	0.97615	SLV_DX_U	Min	-532.855	-27.022	0.
10	0.	SLV_DX_D	Max	-564.516	-118.683	0.
10	0.48807	SLV_DX_D	Max	-552.909	-74.635	0.
10	0.97615	SLV_DX_D	Max	-541.47	-31.712	0.
10	0.	SLV_DX_D	Min	-564.516	-118.683	0.
10	0.48807	SLV_DX_D	Min	-552.909	-74.635	0.
10	0.97615	SLV_DX_D	Min	-541.47	-31.712	0.
11	0.	SLE_car	Max	-322.349	-57.618	0.
11	0.48807	SLE_car	Max	-319.659	-14.746	0.
11	0.97615	SLE_car	Max	-316.987	27.733	0.
11	0.	SLE_car	Min	-322.349	-57.618	0.
11	0.48807	SLE_car	Min	-319.659	-14.746	0.
11	0.97615	SLE_car	Min	-316.987	27.733	0.
11	0.	SLE_fq-qp	Max	-304.696	-49.364	0.
11	0.48807	SLE_fq-qp	Max	-302.431	-11.354	0.
11	0.97615	SLE_fq-qp	Max	-300.185	26.263	0.
11	0.	SLE_fq-qp	Min	-304.696	-49.364	0.
11	0.48807	SLE_fq-qp	Min	-302.431	-11.354	0.
11	0.97615	SLE_fq-qp	Min	-300.185	26.263	0.
11	0.	SLU	Max	-422.585	-76.554	0.
11	0.48807	SLU	Max	-419.002	-19.848	0.
11	0.97615	SLU	Max	-415.444	36.347	0.
11	0.	SLU	Min	-422.585	-76.554	0.
11	0.48807	SLU	Min	-419.002	-19.848	0.
11	0.97615	SLU	Min	-415.444	36.347	0.
11	0.	SLV_DX_U	Max	-520.067	-119.141	0.
11	0.48807	SLV_DX_U	Max	-514.364	-78.12	0.
11	0.97615	SLV_DX_U	Max	-508.681	-37.492	0.
11	0.	SLV_DX_U	Min	-520.067	-119.141	0.
11	0.48807	SLV_DX_U	Min	-514.364	-78.12	0.
11	0.97615	SLV_DX_U	Min	-508.681	-37.492	0.
11	0.	SLV_DX_D	Max	-527.737	-125.256	0.
11	0.48807	SLV_DX_D	Max	-521.759	-81.085	0.
11	0.97615	SLV_DX_D	Max	-515.8	-37.307	0.
11	0.	SLV_DX_D	Min	-527.737	-125.256	0.
11	0.48807	SLV_DX_D	Min	-521.759	-81.085	0.
11	0.97615	SLV_DX_D	Min	-515.8	-37.307	0.
12	0.	SLE_car	Max	-316.987	-27.733	0.
12	0.48807	SLE_car	Max	-319.659	14.746	0.
12	0.97615	SLE_car	Max	-322.349	57.618	0.
12	0.	SLE_car	Min	-316.987	-27.733	0.

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
12	0.48807	SLE_car	Min	-319.659	14.746	0.
12	0.97615	SLE_car	Min	-322.349	57.618	0.
12	0.	SLE_fq-qp	Max	-300.185	-26.263	0.
12	0.48807	SLE_fq-qp	Max	-302.431	11.354	0.
12	0.97615	SLE_fq-qp	Max	-304.696	49.364	0.
12	0.	SLE_fq-qp	Min	-300.185	-26.263	0.
12	0.48807	SLE_fq-qp	Min	-302.431	11.354	0.
12	0.97615	SLE_fq-qp	Min	-304.696	49.364	0.
12	0.	SLU	Max	-415.444	-36.347	0.
12	0.48807	SLU	Max	-419.002	19.848	0.
12	0.97615	SLU	Max	-422.585	76.554	0.
12	0.	SLU	Min	-415.444	-36.347	0.
12	0.48807	SLU	Min	-419.002	19.848	0.
12	0.97615	SLU	Min	-422.585	76.554	0.
12	0.	SLV_DX_U	Max	-494.443	-125.254	0.
12	0.48807	SLV_DX_U	Max	-491.311	-83.854	0.
12	0.97615	SLV_DX_U	Max	-488.2	-42.062	0.
12	0.	SLV_DX_U	Min	-494.443	-125.254	0.
12	0.48807	SLV_DX_U	Min	-491.311	-83.854	0.
12	0.97615	SLV_DX_U	Min	-488.2	-42.062	0.
12	0.	SLV_DX_D	Max	-501.486	-126.308	0.
12	0.48807	SLV_DX_D	Max	-498.63	-81.759	0.
12	0.97615	SLV_DX_D	Max	-495.794	-36.816	0.
12	0.	SLV_DX_D	Min	-501.486	-126.308	0.
12	0.48807	SLV_DX_D	Min	-498.63	-81.759	0.
12	0.97615	SLV_DX_D	Min	-495.794	-36.816	0.
13	0.	SLE_car	Max	-327.457	0.767	0.
13	0.48807	SLE_car	Max	-335.433	42.981	0.
13	0.97615	SLE_car	Max	-343.576	86.321	0.
13	0.	SLE_car	Min	-327.457	0.767	0.
13	0.48807	SLE_car	Min	-335.433	42.981	0.
13	0.97615	SLE_car	Min	-343.576	86.321	0.
13	0.	SLE_fq-qp	Max	-308.639	-4.296	0.
13	0.48807	SLE_fq-qp	Max	-315.351	33.203	0.
13	0.97615	SLE_fq-qp	Max	-322.231	71.828	0.
13	0.	SLE_fq-qp	Min	-308.639	-4.296	0.
13	0.48807	SLE_fq-qp	Min	-315.351	33.203	0.
13	0.97615	SLE_fq-qp	Min	-322.231	71.828	0.
13	0.	SLU	Max	-429.458	2.01	0.
13	0.48807	SLU	Max	-440.079	57.83	0.
13	0.97615	SLU	Max	-450.918	115.115	0.
13	0.	SLU	Min	-429.458	2.01	0.
13	0.48807	SLU	Min	-440.079	57.83	0.
13	0.97615	SLU	Min	-450.918	115.115	0.
13	0.	SLV_DX_U	Max	-473.479	-126.198	0.
13	0.48807	SLV_DX_U	Max	-470.749	-82.752	0.
13	0.97615	SLV_DX_U	Max	-468.187	-38.181	0.
13	0.	SLV_DX_U	Min	-473.479	-126.198	0.
13	0.48807	SLV_DX_U	Min	-470.749	-82.752	0.
13	0.97615	SLV_DX_U	Min	-468.187	-38.181	0.
13	0.	SLV_DX_D	Max	-481.868	-122.351	0.
13	0.48807	SLV_DX_D	Max	-479.957	-75.851	0.
13	0.97615	SLV_DX_D	Max	-478.214	-28.226	0.
13	0.	SLV_DX_D	Min	-481.868	-122.351	0.
13	0.48807	SLV_DX_D	Min	-479.957	-75.851	0.
13	0.97615	SLV_DX_D	Min	-478.214	-28.226	0.

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
14	0.	SLE_car	Max	-352.979	30.025	0.
14	0.48868	SLE_car	Max	-365.852	72.226	0.
14	0.97737	SLE_car	Max	-379.125	116.11	0.
14	0.	SLE_car	Min	-352.979	30.025	0.
14	0.48868	SLE_car	Min	-365.852	72.226	0.
14	0.97737	SLE_car	Min	-379.125	116.11	0.
14	0.	SLE_fq-qp	Max	-329.584	19.149	0.
14	0.48868	SLE_fq-qp	Max	-340.45	56.894	0.
14	0.97737	SLE_fq-qp	Max	-351.717	96.322	0.
14	0.	SLE_fq-qp	Min	-329.584	19.149	0.
14	0.48868	SLE_fq-qp	Min	-340.45	56.894	0.
14	0.97737	SLE_fq-qp	Min	-351.717	96.322	0.
14	0.	SLU	Max	-463.552	41.208	0.
14	0.48868	SLU	Max	-480.688	96.96	0.
14	0.97737	SLU	Max	-498.344	154.9	0.
14	0.	SLU	Min	-463.552	41.208	0.
14	0.48868	SLU	Min	-480.688	96.96	0.
14	0.97737	SLU	Min	-498.344	154.9	0.
14	0.	SLV_DX_U	Max	-455.979	-112.871	0.
14	0.48868	SLV_DX_U	Max	-454.458	-65.925	0.
14	0.97737	SLV_DX_U	Max	-453.336	-17.296	0.
14	0.	SLV_DX_U	Min	-455.979	-112.871	0.
14	0.48868	SLV_DX_U	Min	-454.458	-65.925	0.
14	0.97737	SLV_DX_U	Min	-453.336	-17.296	0.
14	0.	SLV_DX_D	Max	-467.474	-104.656	0.
14	0.48868	SLV_DX_D	Max	-467.252	-54.823	0.
14	0.97737	SLV_DX_D	Max	-467.43	-3.307	0.
14	0.	SLV_DX_D	Min	-467.474	-104.656	0.
14	0.48868	SLV_DX_D	Min	-467.252	-54.823	0.
14	0.97737	SLV_DX_D	Min	-467.43	-3.307	0.
15	0.	SLE_car	Max	-392.267	57.827	0.
15	0.53737	SLE_car	Max	-411.391	104.322	0.
15	1.07475	SLE_car	Max	-431.293	153.292	0.
15	0.	SLE_car	Min	-392.267	57.827	0.
15	0.53737	SLE_car	Min	-411.391	104.322	0.
15	1.07475	SLE_car	Min	-431.293	153.292	0.
15	0.	SLE_fq-qp	Max	-362.196	42.382	0.
15	0.53737	SLE_fq-qp	Max	-378.403	84.364	0.
15	1.07475	SLE_fq-qp	Max	-395.388	128.821	0.
15	0.	SLE_fq-qp	Min	-362.196	42.382	0.
15	0.53737	SLE_fq-qp	Min	-378.403	84.364	0.
15	1.07475	SLE_fq-qp	Min	-395.388	128.821	0.
15	0.	SLU	Max	-515.961	78.264	0.
15	0.53737	SLU	Max	-541.405	139.61	0.
15	1.07475	SLU	Max	-567.862	204.173	0.
15	0.	SLU	Min	-515.961	78.264	0.
15	0.53737	SLU	Min	-541.405	139.61	0.
15	1.07475	SLU	Min	-567.862	204.173	0.
15	0.	SLV_DX_U	Max	-445.591	-85.214	0.
15	0.53737	SLV_DX_U	Max	-446.305	-28.89	0.
15	1.07475	SLV_DX_U	Max	-447.798	29.909	0.
15	0.	SLV_DX_U	Min	-445.591	-85.214	0.
15	0.53737	SLV_DX_U	Min	-446.305	-28.89	0.
15	1.07475	SLV_DX_U	Min	-447.798	29.909	0.
15	0.	SLV_DX_D	Max	-461.627	-73.502	0.
15	0.53737	SLV_DX_D	Max	-464.231	-14.254	0.

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
15	1.07475	SLV_DX_D	Max	-467.614	47.468	0.
15	0.	SLV_DX_D	Min	-461.627	-73.502	0.
15	0.53737	SLV_DX_D	Min	-464.231	-14.254	0.
15	1.07475	SLV_DX_D	Min	-467.614	47.468	0.
16	0.	SLE_car	Max	-440.262	125.228	0.
16	0.53709	SLE_car	Max	-463.614	176.211	0.
16	1.07417	SLE_car	Max	-487.864	229.794	0.
16	0.	SLE_car	Min	-440.262	125.228	0.
16	0.53709	SLE_car	Min	-463.614	176.211	0.
16	1.07417	SLE_car	Min	-487.864	229.794	0.
16	0.	SLE_fq-qp	Max	-402.856	103.117	0.
16	0.53709	SLE_fq-qp	Max	-423.009	149.787	0.
16	1.07417	SLE_fq-qp	Max	-444.058	199.057	0.
16	0.	SLE_fq-qp	Min	-402.856	103.117	0.
16	0.53709	SLE_fq-qp	Min	-423.009	149.787	0.
16	1.07417	SLE_fq-qp	Min	-444.058	199.057	0.
16	0.	SLU	Max	-579.821	167.218	0.
16	0.53709	SLU	Max	-610.82	234.359	0.
16	1.07417	SLU	Max	-642.984	304.88	0.
16	0.	SLU	Min	-579.821	167.218	0.
16	0.53709	SLU	Min	-610.82	234.359	0.
16	1.07417	SLU	Min	-642.984	304.88	0.
16	0.	SLV_DX_U	Max	-448.795	1.039	0.
16	0.53709	SLV_DX_U	Max	-452.345	64.141	0.
16	1.07417	SLV_DX_U	Max	-456.792	129.843	0.
16	0.	SLV_DX_U	Min	-448.795	1.039	0.
16	0.53709	SLV_DX_U	Min	-452.345	64.141	0.
16	1.07417	SLV_DX_U	Min	-456.792	129.843	0.
16	0.	SLV_DX_D	Max	-469.699	17.287	0.
16	0.53709	SLV_DX_D	Max	-475.712	83.707	0.
16	1.07417	SLV_DX_D	Max	-482.62	152.727	0.
16	0.	SLV_DX_D	Min	-469.699	17.287	0.
16	0.53709	SLV_DX_D	Min	-475.712	83.707	0.
16	1.07417	SLV_DX_D	Min	-482.62	152.727	0.
17	0.	SLE_car	Max	-503.991	191.857	0.
17	0.53709	SLE_car	Max	-533.397	248.103	0.
17	1.07417	SLE_car	Max	-563.823	307.055	0.
17	0.	SLE_car	Min	-503.991	191.857	0.
17	0.53709	SLE_car	Min	-533.397	248.103	0.
17	1.07417	SLE_car	Min	-563.823	307.055	0.
17	0.	SLE_fq-qp	Max	-457.966	164.556	0.
17	0.53709	SLE_fq-qp	Max	-483.852	216.745	0.
17	1.07417	SLE_fq-qp	Max	-510.758	271.641	0.
17	0.	SLE_fq-qp	Min	-457.966	164.556	0.
17	0.53709	SLE_fq-qp	Min	-483.852	216.745	0.
17	1.07417	SLE_fq-qp	Min	-510.758	271.641	0.
17	0.	SLU	Max	-664.393	254.875	0.
17	0.53709	SLU	Max	-703.325	328.805	0.
17	1.07417	SLU	Max	-743.583	406.255	0.
17	0.	SLU	Min	-664.393	254.875	0.
17	0.53709	SLU	Min	-703.325	328.805	0.
17	1.07417	SLU	Min	-743.583	406.255	0.
17	0.	SLV_DX_U	Max	-465.375	94.572	0.
17	0.53709	SLV_DX_U	Max	-473.115	166.021	0.
17	1.07417	SLV_DX_U	Max	-481.874	240.177	0.
17	0.	SLV_DX_U	Min	-465.375	94.572	0.

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
17	0.53709	SLV_DX_U	Min	-473.115	166.021	0.
17	1.07417	SLV_DX_U	Min	-481.874	240.177	0.
17	0.	SLV_DX_D	Max	-492.876	115.416	0.
17	0.53709	SLV_DX_D	Max	-504.179	190.971	0.
17	1.07417	SLV_DX_D	Max	-516.501	269.233	0.
17	0.	SLV_DX_D	Min	-492.876	115.416	0.
17	0.53709	SLV_DX_D	Min	-504.179	190.971	0.
17	1.07417	SLV_DX_D	Min	-516.501	269.233	0.
18	0.	SLE_car	Max	-631.426	-111.191	0.
18	0.4926	SLE_car	Max	-643.639	-85.393	0.
18	0.98519	SLE_car	Max	-655.512	-57.723	0.
18	0.	SLE_car	Min	-631.426	-111.191	0.
18	0.4926	SLE_car	Min	-643.639	-85.393	0.
18	0.98519	SLE_car	Min	-655.512	-57.723	0.
18	0.	SLE_fq-qp	Max	-567.955	-106.012	0.
18	0.4926	SLE_fq-qp	Max	-580.168	-80.215	0.
18	0.98519	SLE_fq-qp	Max	-592.042	-52.544	0.
18	0.	SLE_fq-qp	Min	-567.955	-106.012	0.
18	0.4926	SLE_fq-qp	Min	-580.168	-80.215	0.
18	0.98519	SLE_fq-qp	Min	-592.042	-52.544	0.
18	0.	SLU	Max	-833.547	-145.584	0.
18	0.4926	SLU	Max	-849.424	-112.047	0.
18	0.98519	SLU	Max	-864.86	-76.076	0.
18	0.	SLU	Min	-833.547	-145.584	0.
18	0.4926	SLU	Min	-849.424	-112.047	0.
18	0.98519	SLU	Min	-864.86	-76.076	0.
18	0.	SLV_DX_U	Max	-526.101	-114.485	0.
18	0.4926	SLV_DX_U	Max	-529.571	-55.564	0.
18	0.98519	SLV_DX_U	Max	-532.701	5.229	0.
18	0.	SLV_DX_U	Min	-526.101	-114.485	0.
18	0.4926	SLV_DX_U	Min	-529.571	-55.564	0.
18	0.98519	SLV_DX_U	Min	-532.701	5.229	0.
18	0.	SLV_DX_D	Max	-571.294	-113.513	0.
18	0.4926	SLV_DX_D	Max	-580.062	-53.632	0.
18	0.98519	SLV_DX_D	Max	-588.491	8.122	0.
18	0.	SLV_DX_D	Min	-571.294	-113.513	0.
18	0.4926	SLV_DX_D	Min	-580.062	-53.632	0.
18	0.98519	SLV_DX_D	Min	-588.491	8.122	0.
19	0.	SLE_car	Max	-649.048	-98.663	0.
19	0.4926	SLE_car	Max	-659.579	-70.063	0.
19	0.98519	SLE_car	Max	-669.901	-39.532	0.
19	0.	SLE_car	Min	-649.048	-98.663	0.
19	0.4926	SLE_car	Min	-659.579	-70.063	0.
19	0.98519	SLE_car	Min	-669.901	-39.532	0.
19	0.	SLE_fq-qp	Max	-586.224	-89.984	0.
19	0.4926	SLE_fq-qp	Max	-596.755	-61.384	0.
19	0.98519	SLE_fq-qp	Max	-607.077	-30.853	0.
19	0.	SLE_fq-qp	Min	-586.224	-89.984	0.
19	0.4926	SLE_fq-qp	Min	-596.755	-61.384	0.
19	0.98519	SLE_fq-qp	Min	-607.077	-30.853	0.
19	0.	SLU	Max	-856.327	-129.997	0.
19	0.4926	SLU	Max	-870.017	-92.818	0.
19	0.98519	SLU	Max	-883.436	-53.127	0.
19	0.	SLU	Min	-856.327	-129.997	0.
19	0.4926	SLU	Min	-870.017	-92.818	0.
19	0.98519	SLU	Min	-883.436	-53.127	0.

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
19	0.	SLV_DX_U	Max	-531.706	-32.984	0.
19	0.4926	SLV_DX_U	Max	-536.461	28.64	0.
19	0.98519	SLV_DX_U	Max	-541.008	92.196	0.
19	0.	SLV_DX_U	Min	-531.706	-32.984	0.
19	0.4926	SLV_DX_U	Min	-536.461	28.64	0.
19	0.98519	SLV_DX_U	Min	-541.008	92.196	0.
19	0.	SLV_DX_D	Max	-587.559	-34.098	0.
19	0.4926	SLV_DX_D	Max	-596.677	27.998	0.
19	0.98519	SLV_DX_D	Max	-605.586	92.025	0.
19	0.	SLV_DX_D	Min	-587.559	-34.098	0.
19	0.4926	SLV_DX_D	Min	-596.677	27.998	0.
19	0.98519	SLV_DX_D	Min	-605.586	92.025	0.
20	0.	SLE_car	Max	-665.12	-81.255	0.
20	0.4926	SLE_car	Max	-676.298	-49.478	0.
20	0.98519	SLE_car	Max	-687.406	-15.739	0.
20	0.	SLE_car	Min	-665.12	-81.255	0.
20	0.4926	SLE_car	Min	-676.298	-49.478	0.
20	0.98519	SLE_car	Min	-687.406	-15.739	0.
20	0.	SLE_fq-qp	Max	-603.119	-69.173	0.
20	0.4926	SLE_fq-qp	Max	-614.297	-37.396	0.
20	0.98519	SLE_fq-qp	Max	-625.405	-3.656	0.
20	0.	SLE_fq-qp	Min	-603.119	-69.173	0.
20	0.4926	SLE_fq-qp	Min	-614.297	-37.396	0.
20	0.98519	SLE_fq-qp	Min	-625.405	-3.656	0.
20	0.	SLU	Max	-877.056	-108.048	0.
20	0.4926	SLU	Max	-891.588	-66.738	0.
20	0.98519	SLU	Max	-906.028	-22.877	0.
20	0.	SLU	Min	-877.056	-108.048	0.
20	0.4926	SLU	Min	-891.588	-66.738	0.
20	0.98519	SLU	Min	-906.028	-22.877	0.
20	0.	SLV_DX_U	Max	-546.226	53.164	0.
20	0.4926	SLV_DX_U	Max	-554.221	118.054	0.
20	0.98519	SLV_DX_U	Max	-562.145	184.906	0.
20	0.	SLV_DX_U	Min	-546.226	53.164	0.
20	0.4926	SLV_DX_U	Min	-554.221	118.054	0.
20	0.98519	SLV_DX_U	Min	-562.145	184.906	0.
20	0.	SLV_DX_D	Max	-610.626	48.363	0.
20	0.4926	SLV_DX_D	Max	-622.607	113.396	0.
20	0.98519	SLV_DX_D	Max	-634.517	180.391	0.
20	0.	SLV_DX_D	Min	-610.626	48.363	0.
20	0.4926	SLV_DX_D	Min	-622.607	113.396	0.
20	0.98519	SLV_DX_D	Min	-634.517	180.391	0.
21	0.	SLE_car	Max	-683.449	-72.294	-8.854E-15
21	0.55423	SLE_car	Max	-699.478	-33.321	-4.081E-15
21	1.10845	SLE_car	Max	-715.644	8.129	9.955E-16
21	0.	SLE_car	Min	-683.449	-72.294	-8.854E-15
21	0.55423	SLE_car	Min	-699.478	-33.321	-4.081E-15
21	1.10845	SLE_car	Min	-715.644	8.129	9.955E-16
21	0.	SLE_fq-qp	Max	-622.749	-55.636	-6.813E-15
21	0.55423	SLE_fq-qp	Max	-638.778	-16.663	-2.041E-15
21	1.10845	SLE_fq-qp	Max	-654.944	24.787	3.036E-15
21	0.	SLE_fq-qp	Min	-622.749	-55.636	-6.813E-15
21	0.55423	SLE_fq-qp	Min	-638.778	-16.663	-2.041E-15
21	1.10845	SLE_fq-qp	Min	-654.944	24.787	3.036E-15
21	0.	SLU	Max	-900.624	-97.314	-1.192E-14
21	0.55423	SLU	Max	-921.462	-46.649	-5.713E-15

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
21	1.10845	SLU	Max	-942.477	7.236	8.861E-16
21	0.	SLU	Min	-900.624	-97.314	-1.192E-14
21	0.55423	SLU	Min	-921.462	-46.649	-5.713E-15
21	1.10845	SLU	Min	-942.477	7.236	8.861E-16
21	0.	SLV_DX_U	Max	-576.641	132.966	1.628E-14
21	0.55423	SLV_DX_U	Max	-592.491	209.337	2.564E-14
21	1.10845	SLV_DX_U	Max	-608.478	288.185	3.529E-14
21	0.	SLV_DX_U	Min	-576.641	132.966	1.628E-14
21	0.55423	SLV_DX_U	Min	-592.491	209.337	2.564E-14
21	1.10845	SLV_DX_U	Min	-608.478	288.185	3.529E-14
21	0.	SLV_DX_D	Max	-648.302	121.884	1.493E-14
21	0.55423	SLV_DX_D	Max	-668.633	198.007	2.425E-14
21	1.10845	SLV_DX_D	Max	-689.101	276.607	3.387E-14
21	0.	SLV_DX_D	Min	-648.302	121.884	1.493E-14
21	0.55423	SLV_DX_D	Min	-668.633	198.007	2.425E-14
21	1.10845	SLV_DX_D	Min	-689.101	276.607	3.387E-14
22	0.	SLE_car	Max	-712.899	-66.526	-7.987E-15
22	0.55423	SLE_car	Max	-735.221	-25.447	-2.956E-15
22	1.10845	SLE_car	Max	-757.943	18.02	2.367E-15
22	0.	SLE_car	Min	-712.899	-66.526	-7.987E-15
22	0.55423	SLE_car	Min	-735.221	-25.447	-2.956E-15
22	1.10845	SLE_car	Min	-757.943	18.02	2.367E-15
22	0.	SLE_fq-qp	Max	-654.285	-43.998	-5.371E-15
22	0.55423	SLE_fq-qp	Max	-676.608	-2.919	-3.405E-16
22	1.10845	SLE_fq-qp	Max	-699.33	40.547	4.983E-15
22	0.	SLE_fq-qp	Min	-654.285	-43.998	-5.371E-15
22	0.55423	SLE_fq-qp	Min	-676.608	-2.919	-3.405E-16
22	1.10845	SLE_fq-qp	Min	-699.33	40.547	4.983E-15
22	0.	SLU	Max	-938.491	-90.989	-1.091E-14
22	0.55423	SLU	Max	-967.51	-37.587	-4.366E-15
22	1.10845	SLU	Max	-997.049	18.92	2.554E-15
22	0.	SLU	Min	-938.491	-90.989	-1.091E-14
22	0.55423	SLU	Min	-967.51	-37.587	-4.366E-15
22	1.10845	SLU	Min	-997.049	18.92	2.554E-15
22	0.	SLV_DX_U	Max	-636.552	219.302	2.496E-14
22	0.55423	SLV_DX_U	Max	-662.609	297.655	3.456E-14
22	1.10845	SLV_DX_U	Max	-689.065	378.396	4.445E-14
22	0.	SLV_DX_U	Min	-636.552	219.302	2.496E-14
22	0.55423	SLV_DX_U	Min	-662.609	297.655	3.456E-14
22	1.10845	SLV_DX_U	Min	-689.065	378.396	4.445E-14
22	0.	SLV_DX_D	Max	-715.406	198.902	2.260E-14
22	0.55423	SLV_DX_D	Max	-746.332	276.44	3.210E-14
22	1.10845	SLV_DX_D	Max	-777.657	356.366	4.188E-14
22	0.	SLV_DX_D	Min	-715.406	198.902	2.260E-14
22	0.55423	SLV_DX_D	Min	-746.332	276.44	3.210E-14
22	1.10845	SLV_DX_D	Min	-777.657	356.366	4.188E-14
23	0.	SLE_car	Max	-757.595	-33.735	-4.131E-15
23	0.14343	SLE_car	Max	-763.945	-22.627	-2.771E-15
23	0.28686	SLE_car	Max	-770.332	-11.365	-1.392E-15
23	0.	SLE_car	Min	-757.595	-33.735	-4.131E-15
23	0.14343	SLE_car	Min	-763.945	-22.627	-2.771E-15
23	0.28686	SLE_car	Min	-770.332	-11.365	-1.392E-15
23	0.	SLE_fq-qp	Max	-700.648	-7.359	-9.012E-16
23	0.14343	SLE_fq-qp	Max	-706.998	3.75	4.592E-16
23	0.28686	SLE_fq-qp	Max	-713.385	15.012	1.838E-15
23	0.	SLE_fq-qp	Min	-700.648	-7.359	-9.012E-16

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
23	0.14343	SLE_fq-qp	Min	-706.998	3.75	4.592E-16
23	0.28686	SLE_fq-qp	Min	-713.385	15.012	1.838E-15
23	0.	SLU	Max	-996.262	-49.131	-6.017E-15
23	0.14343	SLU	Max	-1004.518	-34.69	-4.248E-15
23	0.28686	SLU	Max	-1012.82	-20.05	-2.455E-15
23	0.	SLU	Min	-996.262	-49.131	-6.017E-15
23	0.14343	SLU	Min	-1004.518	-34.69	-4.248E-15
23	0.28686	SLU	Min	-1012.82	-20.05	-2.455E-15
23	0.	SLV_DX_U	Max	-713.698	329.584	4.036E-14
23	0.14343	SLV_DX_U	Max	-721.684	350.007	4.286E-14
23	0.28686	SLV_DX_U	Max	-729.707	370.583	4.538E-14
23	0.	SLV_DX_U	Min	-713.698	329.584	4.036E-14
23	0.14343	SLV_DX_U	Min	-721.684	350.007	4.286E-14
23	0.28686	SLV_DX_U	Min	-729.707	370.583	4.538E-14
23	0.	SLV_DX_D	Max	-800.544	301.45	3.692E-14
23	0.14343	SLV_DX_D	Max	-809.66	321.602	3.938E-14
23	0.28686	SLV_DX_D	Max	-818.813	341.908	4.187E-14
23	0.	SLV_DX_D	Min	-800.544	301.45	3.692E-14
23	0.14343	SLV_DX_D	Min	-809.66	321.602	3.938E-14
23	0.28686	SLV_DX_D	Min	-818.813	341.908	4.187E-14
24	0.	SLE_car	Max	-168.676	-510.595	-6.253E-14
24	0.40273	SLE_car	Max	-168.676	-520.66	-6.376E-14
24	0.80545	SLE_car	Max	-168.676	-530.726	-6.500E-14
24	0.	SLE_car	Min	-168.676	-510.595	-6.253E-14
24	0.40273	SLE_car	Min	-168.676	-520.66	-6.376E-14
24	0.80545	SLE_car	Min	-168.676	-530.726	-6.500E-14
24	0.	SLE_fq-qp	Max	-181.026	-471.866	-5.779E-14
24	0.40273	SLE_fq-qp	Max	-181.026	-481.931	-5.902E-14
24	0.80545	SLE_fq-qp	Max	-181.026	-491.996	-6.025E-14
24	0.	SLE_fq-qp	Min	-181.026	-471.866	-5.779E-14
24	0.40273	SLE_fq-qp	Min	-181.026	-481.931	-5.902E-14
24	0.80545	SLE_fq-qp	Min	-181.026	-491.996	-6.025E-14
24	0.	SLU	Max	-216.808	-671.52	-8.224E-14
24	0.40273	SLU	Max	-216.808	-684.604	-8.384E-14
24	0.80545	SLU	Max	-216.808	-697.689	-8.544E-14
24	0.	SLU	Min	-216.808	-671.52	-8.224E-14
24	0.40273	SLU	Min	-216.808	-684.604	-8.384E-14
24	0.80545	SLU	Min	-216.808	-697.689	-8.544E-14
24	0.	SLV_DX_U	Max	-530.525	-485.835	-5.950E-14
24	0.40273	SLV_DX_U	Max	-533.786	-494.27	-6.053E-14
24	0.80545	SLV_DX_U	Max	-537.047	-502.705	-6.156E-14
24	0.	SLV_DX_U	Min	-530.525	-485.835	-5.950E-14
24	0.40273	SLV_DX_U	Min	-533.786	-494.27	-6.053E-14
24	0.80545	SLV_DX_U	Min	-537.047	-502.705	-6.156E-14
24	0.	SLV_DX_D	Max	-523.418	-541.626	-6.633E-14
24	0.40273	SLV_DX_D	Max	-526.679	-553.321	-6.776E-14
24	0.80545	SLV_DX_D	Max	-529.94	-565.017	-6.919E-14
24	0.	SLV_DX_D	Min	-523.418	-541.626	-6.633E-14
24	0.40273	SLV_DX_D	Min	-526.679	-553.321	-6.776E-14
24	0.80545	SLV_DX_D	Min	-529.94	-565.017	-6.919E-14
25	0.	SLE_car	Max	-168.676	-177.685	-2.609E-14
25	0.40273	SLE_car	Max	-168.676	-184.731	-2.695E-14
25	0.80545	SLE_car	Max	-168.676	-191.776	-2.781E-14
25	0.	SLE_car	Min	-168.676	-177.685	-2.609E-14
25	0.40273	SLE_car	Min	-168.676	-184.731	-2.695E-14
25	0.80545	SLE_car	Min	-168.676	-191.776	-2.781E-14

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
25	0.	SLE_fq-qp	Max	-181.026	-168.891	-2.481E-14
25	0.40273	SLE_fq-qp	Max	-181.026	-175.936	-2.567E-14
25	0.80545	SLE_fq-qp	Max	-181.026	-182.982	-2.653E-14
25	0.	SLE_fq-qp	Min	-181.026	-168.891	-2.481E-14
25	0.40273	SLE_fq-qp	Min	-181.026	-175.936	-2.567E-14
25	0.80545	SLE_fq-qp	Min	-181.026	-182.982	-2.653E-14
25	0.	SLU	Max	-216.808	-232.749	-3.417E-14
25	0.40273	SLU	Max	-216.808	-241.909	-3.529E-14
25	0.80545	SLU	Max	-216.808	-251.068	-3.642E-14
25	0.	SLU	Min	-216.808	-232.749	-3.417E-14
25	0.40273	SLU	Min	-216.808	-241.909	-3.529E-14
25	0.80545	SLU	Min	-216.808	-251.068	-3.642E-14
25	0.	SLV_DX_U	Max	-537.047	-214.866	-3.149E-14
25	0.40273	SLV_DX_U	Max	-539.33	-220.77	-3.221E-14
25	0.80545	SLV_DX_U	Max	-541.612	-226.675	-3.293E-14
25	0.	SLV_DX_U	Min	-537.047	-214.866	-3.149E-14
25	0.40273	SLV_DX_U	Min	-539.33	-220.77	-3.221E-14
25	0.80545	SLV_DX_U	Min	-541.612	-226.675	-3.293E-14
25	0.	SLV_DX_D	Max	-529.94	-217.127	-3.187E-14
25	0.40273	SLV_DX_D	Max	-532.223	-225.315	-3.287E-14
25	0.80545	SLV_DX_D	Max	-534.506	-233.502	-3.388E-14
25	0.	SLV_DX_D	Min	-529.94	-217.127	-3.187E-14
25	0.40273	SLV_DX_D	Min	-532.223	-225.315	-3.287E-14
25	0.80545	SLV_DX_D	Min	-534.506	-233.502	-3.388E-14
26	0.	SLE_car	Max	-183.023	21.655	2.860E-15
26	0.48058	SLE_car	Max	-185.725	12.434	1.731E-15
26	0.96117	SLE_car	Max	-188.428	3.213	6.015E-16
26	0.	SLE_car	Min	-183.023	21.655	2.860E-15
26	0.48058	SLE_car	Min	-185.725	12.434	1.731E-15
26	0.96117	SLE_car	Min	-188.428	3.213	6.015E-16
26	0.	SLE_fq-qp	Max	-194.702	22.256	2.944E-15
26	0.48058	SLE_fq-qp	Max	-197.405	13.035	1.814E-15
26	0.96117	SLE_fq-qp	Max	-200.108	3.814	6.852E-16
26	0.	SLE_fq-qp	Min	-194.702	22.256	2.944E-15
26	0.48058	SLE_fq-qp	Min	-197.405	13.035	1.814E-15
26	0.96117	SLE_fq-qp	Min	-200.108	3.814	6.852E-16
26	0.	SLU	Max	-235.594	28.031	3.701E-15
26	0.48058	SLU	Max	-239.107	16.044	2.233E-15
26	0.96117	SLU	Max	-242.62	4.057	7.652E-16
26	0.	SLU	Min	-235.594	28.031	3.701E-15
26	0.48058	SLU	Min	-239.107	16.044	2.233E-15
26	0.96117	SLU	Min	-242.62	4.057	7.652E-16
26	0.	SLV_DX_U	Max	-546.445	61.232	8.409E-15
26	0.48058	SLV_DX_U	Max	-551.697	54.381	7.570E-15
26	0.96117	SLV_DX_U	Max	-556.949	47.529	6.730E-15
26	0.	SLV_DX_U	Min	-546.445	61.232	8.409E-15
26	0.48058	SLV_DX_U	Min	-551.697	54.381	7.570E-15
26	0.96117	SLV_DX_U	Min	-556.949	47.529	6.730E-15
26	0.	SLV_DX_D	Max	-534.639	76.246	1.045E-14
26	0.48058	SLV_DX_D	Max	-540.767	66.407	9.244E-15
26	0.96117	SLV_DX_D	Max	-546.895	56.568	8.039E-15
26	0.	SLV_DX_D	Min	-534.639	76.246	1.045E-14
26	0.48058	SLV_DX_D	Min	-540.767	66.407	9.244E-15
26	0.96117	SLV_DX_D	Min	-546.895	56.568	8.039E-15
27	0.	SLE_car	Max	-190.255	42.027	5.693E-15
27	0.48058	SLE_car	Max	-192.199	32.617	4.540E-15

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
27	0.96117	SLE_car	Max	-194.142	23.206	3.388E-15
27	0.	SLE_car	Min	-190.255	42.027	5.693E-15
27	0.48058	SLE_car	Min	-192.199	32.617	4.540E-15
27	0.96117	SLE_car	Min	-194.142	23.206	3.388E-15
27	0.	SLE_fq-qp	Max	-201.853	39.443	5.333E-15
27	0.48058	SLE_fq-qp	Max	-203.797	30.033	4.180E-15
27	0.96117	SLE_fq-qp	Max	-205.74	20.623	3.028E-15
27	0.	SLE_fq-qp	Min	-201.853	39.443	5.333E-15
27	0.48058	SLE_fq-qp	Min	-203.797	30.033	4.180E-15
27	0.96117	SLE_fq-qp	Min	-205.74	20.623	3.028E-15
27	0.	SLU	Max	-245.012	55.152	7.472E-15
27	0.48058	SLU	Max	-247.539	42.918	5.974E-15
27	0.96117	SLU	Max	-250.065	30.685	4.476E-15
27	0.	SLU	Min	-245.012	55.152	7.472E-15
27	0.48058	SLU	Min	-247.539	42.918	5.974E-15
27	0.96117	SLU	Min	-250.065	30.685	4.476E-15
27	0.	SLV_DX_U	Max	-558.968	2.014	1.589E-16
27	0.48058	SLV_DX_U	Max	-563.646	-5.242	-7.297E-16
27	0.96117	SLV_DX_U	Max	-568.323	-12.498	-1.618E-15
27	0.	SLV_DX_U	Min	-558.968	2.014	1.589E-16
27	0.48058	SLV_DX_U	Min	-563.646	-5.242	-7.297E-16
27	0.96117	SLV_DX_U	Min	-568.323	-12.498	-1.618E-15
27	0.	SLV_DX_D	Max	-549.683	11.843	1.476E-15
27	0.48058	SLV_DX_D	Max	-554.99	1.537	2.140E-16
27	0.96117	SLV_DX_D	Max	-560.297	-8.768	-1.048E-15
27	0.	SLV_DX_D	Min	-549.683	11.843	1.476E-15
27	0.48058	SLV_DX_D	Min	-554.99	1.537	2.140E-16
27	0.96117	SLV_DX_D	Min	-560.297	-8.768	-1.048E-15
28	0.	SLE_car	Max	-196.618	37.768	5.098E-15
28	0.48058	SLE_car	Max	-197.789	28.231	3.930E-15
28	0.96117	SLE_car	Max	-198.96	18.693	2.762E-15
28	0.	SLE_car	Min	-196.618	37.768	5.098E-15
28	0.48058	SLE_car	Min	-197.789	28.231	3.930E-15
28	0.96117	SLE_car	Min	-198.96	18.693	2.762E-15
28	0.	SLE_fq-qp	Max	-208.001	35.09	4.725E-15
28	0.48058	SLE_fq-qp	Max	-209.172	25.553	3.557E-15
28	0.96117	SLE_fq-qp	Max	-210.343	16.015	2.389E-15
28	0.	SLE_fq-qp	Min	-208.001	35.09	4.725E-15
28	0.48058	SLE_fq-qp	Min	-209.172	25.553	3.557E-15
28	0.96117	SLE_fq-qp	Min	-210.343	16.015	2.389E-15
28	0.	SLU	Max	-253.327	49.634	6.701E-15
28	0.48058	SLU	Max	-254.849	37.235	5.183E-15
28	0.96117	SLU	Max	-256.372	24.837	3.665E-15
28	0.	SLU	Min	-253.327	49.634	6.701E-15
28	0.48058	SLU	Min	-254.849	37.235	5.183E-15
28	0.96117	SLU	Min	-256.372	24.837	3.665E-15
28	0.	SLV_DX_U	Max	-565.42	-58.733	-8.303E-15
28	0.48058	SLV_DX_U	Max	-569.492	-66.346	-9.235E-15
28	0.96117	SLV_DX_U	Max	-573.563	-73.958	-1.017E-14
28	0.	SLV_DX_U	Min	-565.42	-58.733	-8.303E-15
28	0.48058	SLV_DX_U	Min	-569.492	-66.346	-9.235E-15
28	0.96117	SLV_DX_U	Min	-573.563	-73.958	-1.017E-14
28	0.	SLV_DX_D	Max	-557.724	-54.36	-7.746E-15
28	0.48058	SLV_DX_D	Max	-562.175	-65.062	-9.056E-15
28	0.96117	SLV_DX_D	Max	-566.626	-75.765	-1.037E-14
28	0.	SLV_DX_D	Min	-557.724	-54.36	-7.746E-15

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
28	0.48058	SLV_DX_D	Min	-562.175	-65.062	-9.056E-15
28	0.96117	SLV_DX_D	Min	-566.626	-75.765	-1.037E-14
29	0.	SLE_car	Max	-200.545	20.404	2.680E-15
29	0.48059	SLE_car	Max	-200.939	10.803	1.504E-15
29	0.96117	SLE_car	Max	-201.332	1.203	3.280E-16
29	0.	SLE_car	Min	-200.545	20.404	2.680E-15
29	0.48059	SLE_car	Min	-200.939	10.803	1.504E-15
29	0.96117	SLE_car	Min	-201.332	1.203	3.280E-16
29	0.	SLE_fq-qp	Max	-211.776	19.335	2.531E-15
29	0.48059	SLE_fq-qp	Max	-212.169	9.735	1.355E-15
29	0.96117	SLE_fq-qp	Max	-212.562	0.134	1.792E-16
29	0.	SLE_fq-qp	Min	-211.776	19.335	2.531E-15
29	0.48059	SLE_fq-qp	Min	-212.169	9.735	1.355E-15
29	0.96117	SLE_fq-qp	Min	-212.562	0.134	1.792E-16
29	0.	SLU	Max	-258.463	26.739	3.513E-15
29	0.48059	SLU	Max	-258.974	14.258	1.985E-15
29	0.96117	SLU	Max	-259.486	1.777	4.562E-16
29	0.	SLU	Min	-258.463	26.739	3.513E-15
29	0.48059	SLU	Min	-258.974	14.258	1.985E-15
29	0.96117	SLU	Min	-259.486	1.777	4.562E-16
29	0.	SLV_DX_U	Max	-565.669	-120.279	-1.687E-14
29	0.48059	SLV_DX_U	Max	-569.109	-128.197	-1.784E-14
29	0.96117	SLV_DX_U	Max	-572.549	-136.116	-1.881E-14
29	0.	SLV_DX_U	Min	-565.669	-120.279	-1.687E-14
29	0.48059	SLV_DX_U	Min	-569.109	-128.197	-1.784E-14
29	0.96117	SLV_DX_U	Min	-572.549	-136.116	-1.881E-14
29	0.	SLV_DX_D	Max	-558.608	-121.512	-1.710E-14
29	0.48059	SLV_DX_D	Max	-562.176	-132.541	-1.845E-14
29	0.96117	SLV_DX_D	Max	-565.743	-143.569	-1.980E-14
29	0.	SLV_DX_D	Min	-558.608	-121.512	-1.710E-14
29	0.48059	SLV_DX_D	Min	-562.176	-132.541	-1.845E-14
29	0.96117	SLV_DX_D	Min	-565.743	-143.569	-1.980E-14
30	0.	SLE_car	Max	-201.332	-1.203	-3.280E-16
30	0.48059	SLE_car	Max	-200.939	-10.803	-1.504E-15
30	0.96118	SLE_car	Max	-200.545	-20.404	-2.680E-15
30	0.	SLE_car	Min	-201.332	-1.203	-3.280E-16
30	0.48059	SLE_car	Min	-200.939	-10.803	-1.504E-15
30	0.96118	SLE_car	Min	-200.545	-20.404	-2.680E-15
30	0.	SLE_fq-qp	Max	-212.562	-0.134	-1.792E-16
30	0.48059	SLE_fq-qp	Max	-212.169	-9.734	-1.355E-15
30	0.96118	SLE_fq-qp	Max	-211.776	-19.335	-2.531E-15
30	0.	SLE_fq-qp	Min	-212.562	-0.134	-1.792E-16
30	0.48059	SLE_fq-qp	Min	-212.169	-9.734	-1.355E-15
30	0.96118	SLE_fq-qp	Min	-211.776	-19.335	-2.531E-15
30	0.	SLU	Max	-259.486	-1.777	-4.562E-16
30	0.48059	SLU	Max	-258.974	-14.258	-1.985E-15
30	0.96118	SLU	Max	-258.463	-26.739	-3.513E-15
30	0.	SLU	Min	-259.486	-1.777	-4.562E-16
30	0.48059	SLU	Min	-258.974	-14.258	-1.985E-15
30	0.96118	SLU	Min	-258.463	-26.739	-3.513E-15
30	0.	SLV_DX_U	Max	-559.494	-169.765	-2.377E-14
30	0.48059	SLV_DX_U	Max	-562.275	-177.938	-2.477E-14
30	0.96118	SLV_DX_U	Max	-565.056	-186.111	-2.577E-14
30	0.	SLV_DX_U	Min	-559.494	-169.765	-2.377E-14
30	0.48059	SLV_DX_U	Min	-562.275	-177.938	-2.477E-14
30	0.96118	SLV_DX_U	Min	-565.056	-186.111	-2.577E-14

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
30	0.	SLV_DX_D	Max	-552.101	-170.71	-2.395E-14
30	0.48059	SLV_DX_D	Max	-554.754	-181.994	-2.533E-14
30	0.96118	SLV_DX_D	Max	-557.408	-193.278	-2.671E-14
30	0.	SLV_DX_D	Min	-552.101	-170.71	-2.395E-14
30	0.48059	SLV_DX_D	Min	-554.754	-181.994	-2.533E-14
30	0.96118	SLV_DX_D	Min	-557.408	-193.278	-2.671E-14
31	0.	SLE_car	Max	-198.96	-18.693	-2.762E-15
31	0.48058	SLE_car	Max	-197.789	-28.231	-3.930E-15
31	0.96117	SLE_car	Max	-196.618	-37.768	-5.098E-15
31	0.	SLE_car	Min	-198.96	-18.693	-2.762E-15
31	0.48058	SLE_car	Min	-197.789	-28.231	-3.930E-15
31	0.96117	SLE_car	Min	-196.618	-37.768	-5.098E-15
31	0.	SLE_fq-qp	Max	-210.343	-16.015	-2.389E-15
31	0.48058	SLE_fq-qp	Max	-209.172	-25.553	-3.557E-15
31	0.96117	SLE_fq-qp	Max	-208.001	-35.09	-4.725E-15
31	0.	SLE_fq-qp	Min	-210.343	-16.015	-2.389E-15
31	0.48058	SLE_fq-qp	Min	-209.172	-25.553	-3.557E-15
31	0.96117	SLE_fq-qp	Min	-208.001	-35.09	-4.725E-15
31	0.	SLU	Max	-256.372	-24.837	-3.665E-15
31	0.48058	SLU	Max	-254.849	-37.235	-5.183E-15
31	0.96117	SLU	Max	-253.327	-49.634	-6.701E-15
31	0.	SLU	Min	-256.372	-24.837	-3.665E-15
31	0.48058	SLU	Min	-254.849	-37.235	-5.183E-15
31	0.96117	SLU	Min	-253.327	-49.634	-6.701E-15
31	0.	SLV_DX_U	Max	-548.088	-173.209	-2.425E-14
31	0.48058	SLV_DX_U	Max	-550.197	-181.581	-2.528E-14
31	0.96117	SLV_DX_U	Max	-552.305	-189.953	-2.630E-14
31	0.	SLV_DX_U	Min	-548.088	-173.209	-2.425E-14
31	0.48058	SLV_DX_U	Min	-550.197	-181.581	-2.528E-14
31	0.96117	SLV_DX_U	Min	-552.305	-189.953	-2.630E-14
31	0.	SLV_DX_D	Max	-539.884	-175.295	-2.459E-14
31	0.48058	SLV_DX_D	Max	-541.613	-186.756	-2.600E-14
31	0.96117	SLV_DX_D	Max	-543.342	-198.218	-2.740E-14
31	0.	SLV_DX_D	Min	-539.884	-175.295	-2.459E-14
31	0.48058	SLV_DX_D	Min	-541.613	-186.756	-2.600E-14
31	0.96117	SLV_DX_D	Min	-543.342	-198.218	-2.740E-14
32	0.	SLE_car	Max	-194.142	-23.206	-3.388E-15
32	0.48058	SLE_car	Max	-192.199	-32.617	-4.540E-15
32	0.96117	SLE_car	Max	-190.255	-42.027	-5.693E-15
32	0.	SLE_car	Min	-194.142	-23.206	-3.388E-15
32	0.48058	SLE_car	Min	-192.199	-32.617	-4.540E-15
32	0.96117	SLE_car	Min	-190.255	-42.027	-5.693E-15
32	0.	SLE_fq-qp	Max	-205.74	-20.623	-3.028E-15
32	0.48058	SLE_fq-qp	Max	-203.797	-30.033	-4.180E-15
32	0.96117	SLE_fq-qp	Max	-201.853	-39.443	-5.333E-15
32	0.	SLE_fq-qp	Min	-205.74	-20.623	-3.028E-15
32	0.48058	SLE_fq-qp	Min	-203.797	-30.033	-4.180E-15
32	0.96117	SLE_fq-qp	Min	-201.853	-39.443	-5.333E-15
32	0.	SLU	Max	-250.065	-30.685	-4.476E-15
32	0.48058	SLU	Max	-247.539	-42.918	-5.974E-15
32	0.96117	SLU	Max	-245.012	-55.152	-7.472E-15
32	0.	SLU	Min	-250.065	-30.685	-4.476E-15
32	0.48058	SLU	Min	-247.539	-42.918	-5.974E-15
32	0.96117	SLU	Min	-245.012	-55.152	-7.472E-15
32	0.	SLV_DX_U	Max	-538.83	-73.095	-1.032E-14
32	0.48058	SLV_DX_U	Max	-540.251	-81.61	-1.136E-14

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
32	0.96117	SLV_DX_U	Max	-541.671	-90.126	-1.240E-14
32	0.	SLV_DX_U	Min	-538.83	-73.095	-1.032E-14
32	0.48058	SLV_DX_U	Min	-540.251	-81.61	-1.136E-14
32	0.96117	SLV_DX_U	Min	-541.671	-90.126	-1.240E-14
32	0.	SLV_DX_D	Max	-529.623	-72.271	-1.025E-14
32	0.48058	SLV_DX_D	Max	-530.414	-83.836	-1.167E-14
32	0.96117	SLV_DX_D	Max	-531.204	-95.4	-1.309E-14
32	0.	SLV_DX_D	Min	-529.623	-72.271	-1.025E-14
32	0.48058	SLV_DX_D	Min	-530.414	-83.836	-1.167E-14
32	0.96117	SLV_DX_D	Min	-531.204	-95.4	-1.309E-14
33	0.	SLE_car	Max	-188.428	-3.213	-6.015E-16
33	0.48058	SLE_car	Max	-185.725	-12.434	-1.731E-15
33	0.96117	SLE_car	Max	-183.023	-21.655	-2.860E-15
33	0.	SLE_car	Min	-188.428	-3.213	-6.015E-16
33	0.48058	SLE_car	Min	-185.725	-12.434	-1.731E-15
33	0.96117	SLE_car	Min	-183.023	-21.655	-2.860E-15
33	0.	SLE_fq-qp	Max	-200.108	-3.814	-6.852E-16
33	0.48058	SLE_fq-qp	Max	-197.405	-13.035	-1.814E-15
33	0.96117	SLE_fq-qp	Max	-194.702	-22.256	-2.944E-15
33	0.	SLE_fq-qp	Min	-200.108	-3.814	-6.852E-16
33	0.48058	SLE_fq-qp	Min	-197.405	-13.035	-1.814E-15
33	0.96117	SLE_fq-qp	Min	-194.702	-22.256	-2.944E-15
33	0.	SLU	Max	-242.62	-4.057	-7.652E-16
33	0.48058	SLU	Max	-239.107	-16.044	-2.233E-15
33	0.96117	SLU	Max	-235.594	-28.031	-3.701E-15
33	0.	SLU	Min	-242.62	-4.057	-7.652E-16
33	0.48058	SLU	Min	-239.107	-16.044	-2.233E-15
33	0.96117	SLU	Min	-235.594	-28.031	-3.701E-15
33	0.	SLV_DX_U	Max	-542.532	177.949	2.463E-14
33	0.48058	SLV_DX_U	Max	-543.255	169.347	2.357E-14
33	0.96117	SLV_DX_U	Max	-543.978	160.744	2.252E-14
33	0.	SLV_DX_U	Min	-542.532	177.949	2.463E-14
33	0.48058	SLV_DX_U	Min	-543.255	169.347	2.357E-14
33	0.96117	SLV_DX_U	Min	-543.978	160.744	2.252E-14
33	0.	SLV_DX_D	Max	-532.054	181.474	2.507E-14
33	0.48058	SLV_DX_D	Max	-531.901	169.884	2.365E-14
33	0.96117	SLV_DX_D	Max	-531.748	158.294	2.223E-14
33	0.	SLV_DX_D	Min	-532.054	181.474	2.507E-14
33	0.48058	SLV_DX_D	Min	-531.901	169.884	2.365E-14
33	0.96117	SLV_DX_D	Min	-531.748	158.294	2.223E-14
34	0.	SLE_car	Max	-168.676	191.776	2.781E-14
34	0.40273	SLE_car	Max	-168.676	184.731	2.695E-14
34	0.80545	SLE_car	Max	-168.676	177.685	2.609E-14
34	0.	SLE_car	Min	-168.676	191.776	2.781E-14
34	0.40273	SLE_car	Min	-168.676	184.731	2.695E-14
34	0.80545	SLE_car	Min	-168.676	177.685	2.609E-14
34	0.	SLE_fq-qp	Max	-181.026	182.982	2.653E-14
34	0.40273	SLE_fq-qp	Max	-181.026	175.936	2.567E-14
34	0.80545	SLE_fq-qp	Max	-181.026	168.891	2.481E-14
34	0.	SLE_fq-qp	Min	-181.026	182.982	2.653E-14
34	0.40273	SLE_fq-qp	Min	-181.026	175.936	2.567E-14
34	0.80545	SLE_fq-qp	Min	-181.026	168.891	2.481E-14
34	0.	SLU	Max	-216.808	251.068	3.642E-14
34	0.40273	SLU	Max	-216.808	241.909	3.529E-14
34	0.80545	SLU	Max	-216.808	232.749	3.417E-14
34	0.	SLU	Min	-216.808	251.068	3.642E-14

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
34	0.40273	SLU	Min	-216.808	241.909	3.529E-14
34	0.80545	SLU	Min	-216.808	232.749	3.417E-14
34	0.	SLV_DX_U	Max	-414.588	519.516	7.566E-14
34	0.40273	SLV_DX_U	Max	-416.871	513.612	7.494E-14
34	0.80545	SLV_DX_U	Max	-419.154	507.708	7.421E-14
34	0.	SLV_DX_U	Min	-414.588	519.516	7.566E-14
34	0.40273	SLV_DX_U	Min	-416.871	513.612	7.494E-14
34	0.80545	SLV_DX_U	Min	-419.154	507.708	7.421E-14
34	0.	SLV_DX_D	Max	-402.027	518.894	7.551E-14
34	0.40273	SLV_DX_D	Max	-404.309	510.707	7.451E-14
34	0.80545	SLV_DX_D	Max	-406.592	502.52	7.351E-14
34	0.	SLV_DX_D	Min	-402.027	518.894	7.551E-14
34	0.40273	SLV_DX_D	Min	-404.309	510.707	7.451E-14
34	0.80545	SLV_DX_D	Min	-406.592	502.52	7.351E-14
35	0.	SLE_car	Max	-168.676	530.726	6.500E-14
35	0.40273	SLE_car	Max	-168.676	520.66	6.376E-14
35	0.80545	SLE_car	Max	-168.676	510.595	6.253E-14
35	0.	SLE_car	Min	-168.676	530.726	6.500E-14
35	0.40273	SLE_car	Min	-168.676	520.66	6.376E-14
35	0.80545	SLE_car	Min	-168.676	510.595	6.253E-14
35	0.	SLE_fq-qp	Max	-181.026	491.996	6.025E-14
35	0.40273	SLE_fq-qp	Max	-181.026	481.931	5.902E-14
35	0.80545	SLE_fq-qp	Max	-181.026	471.866	5.779E-14
35	0.	SLE_fq-qp	Min	-181.026	491.996	6.025E-14
35	0.40273	SLE_fq-qp	Min	-181.026	481.931	5.902E-14
35	0.80545	SLE_fq-qp	Min	-181.026	471.866	5.779E-14
35	0.	SLU	Max	-216.808	697.689	8.544E-14
35	0.40273	SLU	Max	-216.808	684.604	8.384E-14
35	0.80545	SLU	Max	-216.808	671.52	8.224E-14
35	0.	SLU	Min	-216.808	697.689	8.544E-14
35	0.40273	SLU	Min	-216.808	684.604	8.384E-14
35	0.80545	SLU	Min	-216.808	671.52	8.224E-14
35	0.	SLV_DX_U	Max	-419.154	637.918	7.812E-14
35	0.40273	SLV_DX_U	Max	-422.415	629.484	7.709E-14
35	0.80545	SLV_DX_U	Max	-425.676	621.049	7.606E-14
35	0.	SLV_DX_U	Min	-419.154	637.918	7.812E-14
35	0.40273	SLV_DX_U	Min	-422.415	629.484	7.709E-14
35	0.80545	SLV_DX_U	Min	-425.676	621.049	7.606E-14
35	0.	SLV_DX_D	Max	-406.592	697.514	8.542E-14
35	0.40273	SLV_DX_D	Max	-409.853	685.818	8.399E-14
35	0.80545	SLV_DX_D	Max	-413.114	674.122	8.256E-14
35	0.	SLV_DX_D	Min	-406.592	697.514	8.542E-14
35	0.40273	SLV_DX_D	Min	-409.853	685.818	8.399E-14
35	0.80545	SLV_DX_D	Min	-413.114	674.122	8.256E-14
36	0.	SLE_car	Max	-770.332	11.365	1.392E-15
36	0.14343	SLE_car	Max	-763.945	22.627	2.771E-15
36	0.28686	SLE_car	Max	-757.595	33.735	4.131E-15
36	0.	SLE_car	Min	-770.332	11.365	1.392E-15
36	0.14343	SLE_car	Min	-763.945	22.627	2.771E-15
36	0.28686	SLE_car	Min	-757.595	33.735	4.131E-15
36	0.	SLE_fq-qp	Max	-713.385	-15.012	-1.838E-15
36	0.14343	SLE_fq-qp	Max	-706.998	-3.75	-4.592E-16
36	0.28686	SLE_fq-qp	Max	-700.648	7.359	9.012E-16
36	0.	SLE_fq-qp	Min	-713.385	-15.012	-1.838E-15
36	0.14343	SLE_fq-qp	Min	-706.998	-3.75	-4.592E-16
36	0.28686	SLE_fq-qp	Min	-700.648	7.359	9.012E-16

Table 21: Element Forces - Frames, Part 1 of 2

Frame	Station	OutputCase	StepType	P	V2	V3
	m			KN	KN	KN
36	0.	SLU	Max	-1012.82	20.05	2.455E-15
36	0.14343	SLU	Max	-1004.518	34.69	4.248E-15
36	0.28686	SLU	Max	-996.262	49.131	6.017E-15
36	0.	SLU	Min	-1012.82	20.05	2.455E-15
36	0.14343	SLU	Min	-1004.518	34.69	4.248E-15
36	0.28686	SLU	Min	-996.262	49.131	6.017E-15
36	0.	SLV_DX_U	Max	-861.011	-217.558	-2.664E-14
36	0.14343	SLV_DX_U	Max	-855.46	-207.29	-2.539E-14
36	0.28686	SLV_DX_U	Max	-849.945	-197.175	-2.415E-14
36	0.	SLV_DX_U	Min	-861.011	-217.558	-2.664E-14
36	0.14343	SLV_DX_U	Min	-855.46	-207.29	-2.539E-14
36	0.28686	SLV_DX_U	Min	-849.945	-197.175	-2.415E-14
36	0.	SLV_DX_D	Max	-949.752	-183.619	-2.249E-14
36	0.14343	SLV_DX_D	Max	-943.071	-173.622	-2.126E-14
36	0.28686	SLV_DX_D	Max	-936.427	-163.778	-2.006E-14
36	0.	SLV_DX_D	Min	-949.752	-183.619	-2.249E-14
36	0.14343	SLV_DX_D	Min	-943.071	-173.622	-2.126E-14
36	0.28686	SLV_DX_D	Min	-936.427	-163.778	-2.006E-14

Table 21: Element Forces - Frames, Part 2 of 2

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
1	0.	SLE_car	Max	0.	-2.527E-14	-250.0401
1	0.55423	SLE_car	Max	0.	-2.544E-14	-252.2085
1	1.10845	SLE_car	Max	0.	-2.849E-14	-277.8057
1	0.	SLE_car	Min	0.	-2.527E-14	-250.0401
1	0.55423	SLE_car	Min	0.	-2.544E-14	-252.2085
1	1.10845	SLE_car	Min	0.	-2.849E-14	-277.8057
1	0.	SLE_fq-qp	Max	0.	-2.466E-14	-242.2335
1	0.55423	SLE_fq-qp	Max	0.	-2.339E-14	-231.9166
1	1.10845	SLE_fq-qp	Max	0.	-2.499E-14	-245.0285
1	0.	SLE_fq-qp	Min	0.	-2.466E-14	-242.2335
1	0.55423	SLE_fq-qp	Min	0.	-2.339E-14	-231.9166
1	1.10845	SLE_fq-qp	Min	0.	-2.499E-14	-245.0285
1	0.	SLU	Max	0.	-3.297E-14	-326.6134
1	0.55423	SLU	Max	0.	-3.349E-14	-331.9294
1	1.10845	SLU	Max	0.	-3.774E-14	-367.7029
1	0.	SLU	Min	0.	-3.297E-14	-326.6134
1	0.55423	SLU	Min	0.	-3.349E-14	-331.9294
1	1.10845	SLU	Min	0.	-3.774E-14	-367.7029
1	0.	SLV_DX_U	Max	0.	-3.005E-14	-282.9552
1	0.55423	SLV_DX_U	Max	0.	-1.896E-14	-188.0325
1	1.10845	SLV_DX_U	Max	0.	-1.043E-14	-114.0658
1	0.	SLV_DX_U	Min	0.	-3.005E-14	-282.9552
1	0.55423	SLV_DX_U	Min	0.	-1.896E-14	-188.0325
1	1.10845	SLV_DX_U	Min	0.	-1.043E-14	-114.0658
1	0.	SLV_DX_D	Max	0.	-3.087E-14	-293.1608
1	0.55423	SLV_DX_D	Max	0.	-2.144E-14	-212.5235
1	1.10845	SLV_DX_D	Max	0.	-1.452E-14	-152.3907
1	0.	SLV_DX_D	Min	0.	-3.087E-14	-293.1608
1	0.55423	SLV_DX_D	Min	0.	-2.144E-14	-212.5235
1	1.10845	SLV_DX_D	Min	0.	-1.452E-14	-152.3907
2	0.	SLE_car	Max	0.	-3.402E-14	-277.8057

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
2	0.55423	SLE_car	Max	0.	-3.489E-14	-284.9013
2	1.10845	SLE_car	Max	0.	-3.849E-14	-314.2833
2	0.	SLE_car	Min	0.	-3.402E-14	-277.8057
2	0.55423	SLE_car	Min	0.	-3.489E-14	-284.9013
2	1.10845	SLE_car	Min	0.	-3.849E-14	-314.2833
2	0.	SLE_fq-qp	Max	0.	-3.001E-14	-245.0285
2	0.55423	SLE_fq-qp	Max	0.	-2.975E-14	-242.8918
2	1.10845	SLE_fq-qp	Max	0.	-3.221E-14	-263.0415
2	0.	SLE_fq-qp	Min	0.	-3.001E-14	-245.0285
2	0.55423	SLE_fq-qp	Min	0.	-2.975E-14	-242.8918
2	1.10845	SLE_fq-qp	Min	0.	-3.221E-14	-263.0415
2	0.	SLU	Max	0.	-4.503E-14	-367.7029
2	0.55423	SLU	Max	0.	-4.639E-14	-378.7736
2	1.10845	SLU	Max	0.	-5.129E-14	-418.8167
2	0.	SLU	Min	0.	-4.503E-14	-367.7029
2	0.55423	SLU	Min	0.	-4.639E-14	-378.7736
2	1.10845	SLU	Min	0.	-5.129E-14	-418.8167
2	0.	SLV_DX_U	Max	0.	-1.397E-14	-114.0658
2	0.55423	SLV_DX_U	Max	0.	-8.977E-15	-73.3051
2	1.10845	SLV_DX_U	Max	0.	-6.419E-15	-52.4159
2	0.	SLV_DX_U	Min	0.	-1.397E-14	-114.0658
2	0.55423	SLV_DX_U	Min	0.	-8.977E-15	-73.3051
2	1.10845	SLV_DX_U	Min	0.	-6.419E-15	-52.4159
2	0.	SLV_DX_D	Max	0.	-1.866E-14	-152.3907
2	0.55423	SLV_DX_D	Max	0.	-1.464E-14	-119.5293
2	1.10845	SLV_DX_D	Max	0.	-1.303E-14	-106.4021
2	0.	SLV_DX_D	Min	0.	-1.866E-14	-152.3907
2	0.55423	SLV_DX_D	Min	0.	-1.464E-14	-119.5293
2	1.10845	SLV_DX_D	Min	0.	-1.303E-14	-106.4021
3	0.	SLE_car	Max	0.	0.	-314.2833
3	0.4926	SLE_car	Max	0.	0.	-330.4265
3	0.98519	SLE_car	Max	0.	0.	-362.7062
3	0.	SLE_car	Min	0.	0.	-314.2833
3	0.4926	SLE_car	Min	0.	0.	-330.4265
3	0.98519	SLE_car	Min	0.	0.	-362.7062
3	0.	SLE_fq-qp	Max	0.	0.	-263.0415
3	0.4926	SLE_fq-qp	Max	0.	0.	-273.233
3	0.98519	SLE_fq-qp	Max	0.	0.	-299.5611
3	0.	SLE_fq-qp	Min	0.	0.	-263.0415
3	0.4926	SLE_fq-qp	Min	0.	0.	-273.233
3	0.98519	SLE_fq-qp	Min	0.	0.	-299.5611
3	0.	SLU	Max	0.	0.	-418.8167
3	0.4926	SLU	Max	0.	0.	-440.9932
3	0.98519	SLU	Max	0.	0.	-484.1471
3	0.	SLU	Min	0.	0.	-418.8167
3	0.4926	SLU	Min	0.	0.	-440.9932
3	0.98519	SLU	Min	0.	0.	-484.1471
3	0.	SLV_DX_U	Max	0.	0.	-52.4159
3	0.4926	SLV_DX_U	Max	0.	0.	-69.5648
3	0.98519	SLV_DX_U	Max	0.	0.	-100.8514
3	0.	SLV_DX_U	Min	0.	0.	-52.4159
3	0.4926	SLV_DX_U	Min	0.	0.	-69.5648
3	0.98519	SLV_DX_U	Min	0.	0.	-100.8514
3	0.	SLV_DX_D	Max	0.	0.	-106.4021
3	0.4926	SLV_DX_D	Max	0.	0.	-126.7123
3	0.98519	SLV_DX_D	Max	0.	0.	-161.2306

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
3	0.	SLV_DX_D	Min	0.	0.	-106.4021
3	0.4926	SLV_DX_D	Min	0.	0.	-126.7123
3	0.98519	SLV_DX_D	Min	0.	0.	-161.2306
4	0.	SLE_car	Max	0.	0.	-362.7062
4	0.4926	SLE_car	Max	0.	0.	-389.7785
4	0.98519	SLE_car	Max	0.	0.	-431.4145
4	0.	SLE_car	Min	0.	0.	-362.7062
4	0.4926	SLE_car	Min	0.	0.	-389.7785
4	0.98519	SLE_car	Min	0.	0.	-431.4145
4	0.	SLE_fq-qp	Max	0.	0.	-299.5611
4	0.4926	SLE_fq-qp	Max	0.	0.	-322.3581
4	0.98519	SLE_fq-qp	Max	0.	0.	-359.719
4	0.	SLE_fq-qp	Min	0.	0.	-299.5611
4	0.4926	SLE_fq-qp	Min	0.	0.	-322.3581
4	0.98519	SLE_fq-qp	Min	0.	0.	-359.719
4	0.	SLU	Max	0.	0.	-484.1471
4	0.4926	SLU	Max	0.	0.	-520.1961
4	0.98519	SLU	Max	0.	0.	-575.178
4	0.	SLU	Min	0.	0.	-484.1471
4	0.4926	SLU	Min	0.	0.	-520.1961
4	0.98519	SLU	Min	0.	0.	-575.178
4	0.	SLV_DX_U	Max	0.	0.	-100.8514
4	0.4926	SLV_DX_U	Max	0.	0.	-171.0893
4	0.98519	SLV_DX_U	Max	0.	0.	-253.6261
4	0.	SLV_DX_U	Min	0.	0.	-100.8514
4	0.4926	SLV_DX_U	Min	0.	0.	-171.0893
4	0.98519	SLV_DX_U	Min	0.	0.	-253.6261
4	0.	SLV_DX_D	Max	0.	0.	-161.2306
4	0.4926	SLV_DX_D	Max	0.	0.	-232.1886
4	0.98519	SLV_DX_D	Max	0.	0.	-315.6776
4	0.	SLV_DX_D	Min	0.	0.	-161.2306
4	0.4926	SLV_DX_D	Min	0.	0.	-232.1886
4	0.98519	SLV_DX_D	Min	0.	0.	-315.6776
5	0.	SLE_car	Max	0.	0.	-431.4145
5	0.4926	SLE_car	Max	0.	0.	-466.7406
5	0.98519	SLE_car	Max	0.	0.	-515.2357
5	0.	SLE_car	Min	0.	0.	-431.4145
5	0.4926	SLE_car	Min	0.	0.	-466.7406
5	0.98519	SLE_car	Min	0.	0.	-515.2357
5	0.	SLE_fq-qp	Max	0.	0.	-359.719
5	0.4926	SLE_fq-qp	Max	0.	0.	-392.4941
5	0.98519	SLE_fq-qp	Max	0.	0.	-438.4382
5	0.	SLE_fq-qp	Min	0.	0.	-359.719
5	0.4926	SLE_fq-qp	Min	0.	0.	-392.4941
5	0.98519	SLE_fq-qp	Min	0.	0.	-438.4382
5	0.	SLU	Max	0.	0.	-575.178
5	0.4926	SLU	Max	0.	0.	-621.6121
5	0.98519	SLU	Max	0.	0.	-685.166
5	0.	SLU	Min	0.	0.	-575.178
5	0.4926	SLU	Min	0.	0.	-621.6121
5	0.98519	SLU	Min	0.	0.	-685.166
5	0.	SLV_DX_U	Max	0.	0.	-253.6261
5	0.4926	SLV_DX_U	Max	0.	0.	-374.1742
5	0.98519	SLV_DX_U	Max	0.	0.	-505.0446
5	0.	SLV_DX_U	Min	0.	0.	-253.6261
5	0.4926	SLV_DX_U	Min	0.	0.	-374.1742

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
5	0.98519	SLV_DX_U	Min	0.	0.	-505.0446
5	0.	SLV_DX_D	Max	0.	0.	-315.6776
5	0.4926	SLV_DX_D	Max	0.	0.	-435.1668
5	0.98519	SLV_DX_D	Max	0.	0.	-565.4515
5	0.	SLV_DX_D	Min	0.	0.	-315.6776
5	0.4926	SLV_DX_D	Min	0.	0.	-435.1668
5	0.98519	SLV_DX_D	Min	0.	0.	-565.4515
6	0.	SLE_car	Max	0.	0.	-515.2357
6	0.53709	SLE_car	Max	0.	0.	-366.2728
6	1.07417	SLE_car	Max	0.	0.	-248.2454
6	0.	SLE_car	Min	0.	0.	-515.2357
6	0.53709	SLE_car	Min	0.	0.	-366.2728
6	1.07417	SLE_car	Min	0.	0.	-248.2454
6	0.	SLE_fq-qp	Max	0.	0.	-438.4382
6	0.53709	SLE_fq-qp	Max	0.	0.	-307.4064
6	1.07417	SLE_fq-qp	Max	0.	0.	-205.1316
6	0.	SLE_fq-qp	Min	0.	0.	-438.4382
6	0.53709	SLE_fq-qp	Min	0.	0.	-307.4064
6	1.07417	SLE_fq-qp	Min	0.	0.	-205.1316
6	0.	SLU	Max	0.	0.	-685.166
6	0.53709	SLU	Max	0.	0.	-487.9279
6	1.07417	SLU	Max	0.	0.	-331.3419
6	0.	SLU	Min	0.	0.	-685.166
6	0.53709	SLU	Min	0.	0.	-487.9279
6	1.07417	SLU	Min	0.	0.	-331.3419
6	0.	SLV_DX_U	Max	0.	0.	-505.0446
6	0.53709	SLV_DX_U	Max	0.	0.	-411.6726
6	1.07417	SLV_DX_U	Max	0.	0.	-346.2199
6	0.	SLV_DX_U	Min	0.	0.	-505.0446
6	0.53709	SLV_DX_U	Min	0.	0.	-411.6726
6	1.07417	SLV_DX_U	Min	0.	0.	-346.2199
6	0.	SLV_DX_D	Max	0.	0.	-565.4515
6	0.53709	SLV_DX_D	Max	0.	0.	-457.2223
6	1.07417	SLV_DX_D	Max	0.	0.	-379.1176
6	0.	SLV_DX_D	Min	0.	0.	-565.4515
6	0.53709	SLV_DX_D	Min	0.	0.	-457.2223
6	1.07417	SLV_DX_D	Min	0.	0.	-379.1176
7	0.	SLE_car	Max	0.	0.	-248.2454
7	0.53709	SLE_car	Max	0.	0.	-139.3318
7	1.07417	SLE_car	Max	0.	0.	-58.4989
7	0.	SLE_car	Min	0.	0.	-248.2454
7	0.53709	SLE_car	Min	0.	0.	-139.3318
7	1.07417	SLE_car	Min	0.	0.	-58.4989
7	0.	SLE_fq-qp	Max	0.	0.	-205.1316
7	0.53709	SLE_fq-qp	Max	0.	0.	-111.5682
7	1.07417	SLE_fq-qp	Max	0.	0.	-43.7688
7	0.	SLE_fq-qp	Min	0.	0.	-205.1316
7	0.53709	SLE_fq-qp	Min	0.	0.	-111.5682
7	1.07417	SLE_fq-qp	Min	0.	0.	-43.7688
7	0.	SLU	Max	0.	0.	-331.3419
7	0.53709	SLU	Max	0.	0.	-186.6841
7	1.07417	SLU	Max	0.	0.	-78.9946
7	0.	SLU	Min	0.	0.	-331.3419
7	0.53709	SLU	Min	0.	0.	-186.6841
7	1.07417	SLU	Min	0.	0.	-78.9946
7	0.	SLV_DX_U	Max	0.	0.	-346.2199

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
7	0.53709	SLV_DX_U	Max	0.	0.	-278.5796
7	1.07417	SLV_DX_U	Max	0.	0.	-236.8069
7	0.	SLV_DX_U	Min	0.	0.	-346.2199
7	0.53709	SLV_DX_U	Min	0.	0.	-278.5796
7	1.07417	SLV_DX_U	Min	0.	0.	-236.8069
7	0.	SLV_DX_D	Max	0.	0.	-379.1176
7	0.53709	SLV_DX_D	Max	0.	0.	-299.7012
7	1.07417	SLV_DX_D	Max	0.	0.	-247.9344
7	0.	SLV_DX_D	Min	0.	0.	-379.1176
7	0.53709	SLV_DX_D	Min	0.	0.	-299.7012
7	1.07417	SLV_DX_D	Min	0.	0.	-247.9344
8	0.	SLE_car	Max	0.	0.	-58.4989
8	0.53737	SLE_car	Max	0.	0.	10.6077
8	1.07475	SLE_car	Max	0.	0.	54.0642
8	0.	SLE_car	Min	0.	0.	-58.4989
8	0.53737	SLE_car	Min	0.	0.	10.6077
8	1.07475	SLE_car	Min	0.	0.	54.0642
8	0.	SLE_fq-qp	Max	0.	0.	-43.7688
8	0.53737	SLE_fq-qp	Max	0.	0.	13.4002
8	1.07475	SLE_fq-qp	Max	0.	0.	47.3443
8	0.	SLE_fq-qp	Min	0.	0.	-43.7688
8	0.53737	SLE_fq-qp	Min	0.	0.	13.4002
8	1.07475	SLE_fq-qp	Min	0.	0.	47.3443
8	0.	SLU	Max	0.	0.	-78.9946
8	0.53737	SLU	Max	0.	0.	13.2315
8	1.07475	SLU	Max	0.	0.	71.6275
8	0.	SLU	Min	0.	0.	-78.9946
8	0.53737	SLU	Min	0.	0.	13.2315
8	1.07475	SLU	Min	0.	0.	71.6275
8	0.	SLV_DX_U	Max	0.	0.	-236.8069
8	0.53737	SLV_DX_U	Max	0.	0.	-197.4151
8	1.07475	SLV_DX_U	Max	0.	0.	-181.8722
8	0.	SLV_DX_U	Min	0.	0.	-236.8069
8	0.53737	SLV_DX_U	Min	0.	0.	-197.4151
8	1.07475	SLV_DX_U	Min	0.	0.	-181.8722
8	0.	SLV_DX_D	Max	0.	0.	-247.9344
8	0.53737	SLV_DX_D	Max	0.	0.	-199.4984
8	1.07475	SLV_DX_D	Max	0.	0.	-176.4823
8	0.	SLV_DX_D	Min	0.	0.	-247.9344
8	0.53737	SLV_DX_D	Min	0.	0.	-199.4984
8	1.07475	SLV_DX_D	Min	0.	0.	-176.4823
9	0.	SLE_car	Max	0.	0.	54.0642
9	0.48868	SLE_car	Max	0.	0.	100.014
9	0.97737	SLE_car	Max	0.	0.	124.9297
9	0.	SLE_car	Min	0.	0.	54.0642
9	0.48868	SLE_car	Min	0.	0.	100.014
9	0.97737	SLE_car	Min	0.	0.	124.9297
9	0.	SLE_fq-qp	Max	0.	0.	47.3443
9	0.48868	SLE_fq-qp	Max	0.	0.	84.7126
9	0.97737	SLE_fq-qp	Max	0.	0.	103.2245
9	0.	SLE_fq-qp	Min	0.	0.	47.3443
9	0.48868	SLE_fq-qp	Min	0.	0.	84.7126
9	0.97737	SLE_fq-qp	Min	0.	0.	103.2245
9	0.	SLU	Max	0.	0.	71.6275
9	0.48868	SLU	Max	0.	0.	133.0784
9	0.97737	SLU	Max	0.	0.	166.7497

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
9	0.	SLU	Min	0.	0.	71.6275
9	0.48868	SLU	Min	0.	0.	133.0784
9	0.97737	SLU	Min	0.	0.	166.7497
9	0.	SLV_DX_U	Max	0.	0.	-181.8722
9	0.48868	SLV_DX_U	Max	0.	0.	-144.0659
9	0.97737	SLV_DX_U	Max	0.	0.	-125.9531
9	0.	SLV_DX_U	Min	0.	0.	-181.8722
9	0.48868	SLV_DX_U	Min	0.	0.	-144.0659
9	0.97737	SLV_DX_U	Min	0.	0.	-125.9531
9	0.	SLV_DX_D	Max	0.	0.	-176.4823
9	0.48868	SLV_DX_D	Max	0.	0.	-132.1564
9	0.97737	SLV_DX_D	Max	0.	0.	-108.9345
9	0.	SLV_DX_D	Min	0.	0.	-176.4823
9	0.48868	SLV_DX_D	Min	0.	0.	-132.1564
9	0.97737	SLV_DX_D	Min	0.	0.	-108.9345
10	0.	SLE_car	Max	0.	0.	124.9297
10	0.48807	SLE_car	Max	0.	0.	156.4382
10	0.97615	SLE_car	Max	0.	0.	167.0684
10	0.	SLE_car	Min	0.	0.	124.9297
10	0.48807	SLE_car	Min	0.	0.	156.4382
10	0.97615	SLE_car	Min	0.	0.	167.0684
10	0.	SLE_fq-qp	Max	0.	0.	103.2245
10	0.48807	SLE_fq-qp	Max	0.	0.	128.8102
10	0.97615	SLE_fq-qp	Max	0.	0.	135.8186
10	0.	SLE_fq-qp	Min	0.	0.	103.2245
10	0.48807	SLE_fq-qp	Min	0.	0.	128.8102
10	0.97615	SLE_fq-qp	Min	0.	0.	135.8186
10	0.	SLU	Max	0.	0.	166.7497
10	0.48807	SLU	Max	0.	0.	208.8953
10	0.97615	SLU	Max	0.	0.	223.4389
10	0.	SLU	Min	0.	0.	166.7497
10	0.48807	SLU	Min	0.	0.	208.8953
10	0.97615	SLU	Min	0.	0.	223.4389
10	0.	SLV_DX_U	Max	0.	0.	-125.9531
10	0.48807	SLV_DX_U	Max	0.	0.	-83.347
10	0.97615	SLV_DX_U	Max	0.	0.	-60.4745
10	0.	SLV_DX_U	Min	0.	0.	-125.9531
10	0.48807	SLV_DX_U	Min	0.	0.	-83.347
10	0.97615	SLV_DX_U	Min	0.	0.	-60.4745
10	0.	SLV_DX_D	Max	0.	0.	-108.9345
10	0.48807	SLV_DX_D	Max	0.	0.	-61.8036
10	0.97615	SLV_DX_D	Max	0.	0.	-35.8968
10	0.	SLV_DX_D	Min	0.	0.	-108.9345
10	0.48807	SLV_DX_D	Min	0.	0.	-61.8036
10	0.97615	SLV_DX_D	Min	0.	0.	-35.8968
11	0.	SLE_car	Max	0.	0.	167.0684
11	0.48807	SLE_car	Max	0.	0.	184.7119
11	0.97615	SLE_car	Max	0.	0.	181.5267
11	0.	SLE_car	Min	0.	0.	167.0684
11	0.48807	SLE_car	Min	0.	0.	184.7119
11	0.97615	SLE_car	Min	0.	0.	181.5267
11	0.	SLE_fq-qp	Max	0.	0.	135.8186
11	0.48807	SLE_fq-qp	Max	0.	0.	150.62
11	0.97615	SLE_fq-qp	Max	0.	0.	146.9657
11	0.	SLE_fq-qp	Min	0.	0.	135.8186
11	0.48807	SLE_fq-qp	Min	0.	0.	150.62

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
11	0.97615	SLE_fq-qp	Min	0.	0.	146.9657
11	0.	SLU	Max	0.	0.	223.4389
11	0.48807	SLU	Max	0.	0.	246.9439
11	0.97615	SLU	Max	0.	0.	242.8969
11	0.	SLU	Min	0.	0.	223.4389
11	0.48807	SLU	Min	0.	0.	246.9439
11	0.97615	SLU	Min	0.	0.	242.8969
11	0.	SLV_DX_U	Max	0.	0.	-60.4745
11	0.48807	SLV_DX_U	Max	0.	0.	-12.3514
11	0.97615	SLV_DX_U	Max	0.	0.	15.8461
11	0.	SLV_DX_U	Min	0.	0.	-60.4745
11	0.48807	SLV_DX_U	Min	0.	0.	-12.3514
11	0.97615	SLV_DX_U	Min	0.	0.	15.8461
11	0.	SLV_DX_D	Max	0.	0.	-35.8968
11	0.48807	SLV_DX_D	Max	0.	0.	14.4421
11	0.97615	SLV_DX_D	Max	0.	0.	43.3181
11	0.	SLV_DX_D	Min	0.	0.	-35.8968
11	0.48807	SLV_DX_D	Min	0.	0.	14.4421
11	0.97615	SLV_DX_D	Min	0.	0.	43.3181
12	0.	SLE_car	Max	0.	0.	181.5267
12	0.48807	SLE_car	Max	0.	0.	184.7119
12	0.97615	SLE_car	Max	0.	0.	167.0684
12	0.	SLE_car	Min	0.	0.	181.5267
12	0.48807	SLE_car	Min	0.	0.	184.7119
12	0.97615	SLE_car	Min	0.	0.	167.0684
12	0.	SLE_fq-qp	Max	0.	0.	146.9657
12	0.48807	SLE_fq-qp	Max	0.	0.	150.62
12	0.97615	SLE_fq-qp	Max	0.	0.	135.8186
12	0.	SLE_fq-qp	Min	0.	0.	146.9657
12	0.48807	SLE_fq-qp	Min	0.	0.	150.62
12	0.97615	SLE_fq-qp	Min	0.	0.	135.8186
12	0.	SLU	Max	0.	0.	242.8969
12	0.48807	SLU	Max	0.	0.	246.9439
12	0.97615	SLU	Max	0.	0.	223.4389
12	0.	SLU	Min	0.	0.	242.8969
12	0.48807	SLU	Min	0.	0.	246.9439
12	0.97615	SLU	Min	0.	0.	223.4389
12	0.	SLV_DX_U	Max	0.	0.	15.8461
12	0.48807	SLV_DX_U	Max	0.	0.	66.8922
12	0.97615	SLV_DX_U	Max	0.	0.	97.6363
12	0.	SLV_DX_U	Min	0.	0.	15.8461
12	0.48807	SLV_DX_U	Min	0.	0.	66.8922
12	0.97615	SLV_DX_U	Min	0.	0.	97.6363
12	0.	SLV_DX_D	Max	0.	0.	43.3181
12	0.48807	SLV_DX_D	Max	0.	0.	94.11
12	0.97615	SLV_DX_D	Max	0.	0.	123.0626
12	0.	SLV_DX_D	Min	0.	0.	43.3181
12	0.48807	SLV_DX_D	Min	0.	0.	94.11
12	0.97615	SLV_DX_D	Min	0.	0.	123.0626
13	0.	SLE_car	Max	0.	0.	167.0684
13	0.48807	SLE_car	Max	0.	0.	156.4382
13	0.97615	SLE_car	Max	0.	0.	124.9297
13	0.	SLE_car	Min	0.	0.	167.0684
13	0.48807	SLE_car	Min	0.	0.	156.4382
13	0.97615	SLE_car	Min	0.	0.	124.9297
13	0.	SLE_fq-qp	Max	0.	0.	135.8186

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
13	0.48807	SLE_fq-qp	Max	0.	0.	128.8102
13	0.97615	SLE_fq-qp	Max	0.	0.	103.2245
13	0.	SLE_fq-qp	Min	0.	0.	135.8186
13	0.48807	SLE_fq-qp	Min	0.	0.	128.8102
13	0.97615	SLE_fq-qp	Min	0.	0.	103.2245
13	0.	SLU	Max	0.	0.	223.4389
13	0.48807	SLU	Max	0.	0.	208.8953
13	0.97615	SLU	Max	0.	0.	166.7497
13	0.	SLU	Min	0.	0.	223.4389
13	0.48807	SLU	Min	0.	0.	208.8953
13	0.97615	SLU	Min	0.	0.	166.7497
13	0.	SLV_DX_U	Max	0.	0.	97.6363
13	0.48807	SLV_DX_U	Max	0.	0.	148.6737
13	0.97615	SLV_DX_U	Max	0.	0.	178.2317
13	0.	SLV_DX_U	Min	0.	0.	97.6363
13	0.48807	SLV_DX_U	Min	0.	0.	148.6737
13	0.97615	SLV_DX_U	Min	0.	0.	178.2317
13	0.	SLV_DX_D	Max	0.	0.	123.0626
13	0.48807	SLV_DX_D	Max	0.	0.	171.4772
13	0.97615	SLV_DX_D	Max	0.	0.	196.9216
13	0.	SLV_DX_D	Min	0.	0.	123.0626
13	0.48807	SLV_DX_D	Min	0.	0.	171.4772
13	0.97615	SLV_DX_D	Min	0.	0.	196.9216
14	0.	SLE_car	Max	0.	0.	124.9297
14	0.48868	SLE_car	Max	0.	0.	100.014
14	0.97737	SLE_car	Max	0.	0.	54.0642
14	0.	SLE_car	Min	0.	0.	124.9297
14	0.48868	SLE_car	Min	0.	0.	100.014
14	0.97737	SLE_car	Min	0.	0.	54.0642
14	0.	SLE_fq-qp	Max	0.	0.	103.2245
14	0.48868	SLE_fq-qp	Max	0.	0.	84.7126
14	0.97737	SLE_fq-qp	Max	0.	0.	47.3443
14	0.	SLE_fq-qp	Min	0.	0.	103.2245
14	0.48868	SLE_fq-qp	Min	0.	0.	84.7126
14	0.97737	SLE_fq-qp	Min	0.	0.	47.3443
14	0.	SLU	Max	0.	0.	166.7497
14	0.48868	SLU	Max	0.	0.	133.0784
14	0.97737	SLU	Max	0.	0.	71.6275
14	0.	SLU	Min	0.	0.	166.7497
14	0.48868	SLU	Min	0.	0.	133.0784
14	0.97737	SLU	Min	0.	0.	71.6275
14	0.	SLV_DX_U	Max	0.	0.	178.2317
14	0.48868	SLV_DX_U	Max	0.	0.	221.9875
14	0.97737	SLV_DX_U	Max	0.	0.	242.3903
14	0.	SLV_DX_U	Min	0.	0.	178.2317
14	0.48868	SLV_DX_U	Min	0.	0.	221.9875
14	0.97737	SLV_DX_U	Min	0.	0.	242.3903
14	0.	SLV_DX_D	Max	0.	0.	196.9216
14	0.48868	SLV_DX_D	Max	0.	0.	235.9573
14	0.97737	SLV_DX_D	Max	0.	0.	250.2293
14	0.	SLV_DX_D	Min	0.	0.	196.9216
14	0.48868	SLV_DX_D	Min	0.	0.	235.9573
14	0.97737	SLV_DX_D	Min	0.	0.	250.2293
15	0.	SLE_car	Max	0.	0.	54.0642
15	0.53737	SLE_car	Max	0.	0.	10.6077
15	1.07475	SLE_car	Max	0.	0.	-58.4989

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
15	0.	SLE_car	Min	0.	0.	54.0642
15	0.53737	SLE_car	Min	0.	0.	10.6077
15	1.07475	SLE_car	Min	0.	0.	-58.4989
15	0.	SLE_fq-qp	Max	0.	0.	47.3443
15	0.53737	SLE_fq-qp	Max	0.	0.	13.4002
15	1.07475	SLE_fq-qp	Max	0.	0.	-43.7688
15	0.	SLE_fq-qp	Min	0.	0.	47.3443
15	0.53737	SLE_fq-qp	Min	0.	0.	13.4002
15	1.07475	SLE_fq-qp	Min	0.	0.	-43.7688
15	0.	SLU	Max	0.	0.	71.6275
15	0.53737	SLU	Max	0.	0.	13.2315
15	1.07475	SLU	Max	0.	0.	-78.9946
15	0.	SLU	Min	0.	0.	71.6275
15	0.53737	SLU	Min	0.	0.	13.2315
15	1.07475	SLU	Min	0.	0.	-78.9946
15	0.	SLV_DX_U	Max	0.	0.	242.3903
15	0.53737	SLV_DX_U	Max	0.	0.	273.1595
15	1.07475	SLV_DX_U	Max	0.	0.	272.9966
15	0.	SLV_DX_U	Min	0.	0.	242.3903
15	0.53737	SLV_DX_U	Min	0.	0.	273.1595
15	1.07475	SLV_DX_U	Min	0.	0.	272.9966
15	0.	SLV_DX_D	Max	0.	0.	250.2293
15	0.53737	SLV_DX_D	Max	0.	0.	273.9191
15	1.07475	SLV_DX_D	Max	0.	0.	265.1059
15	0.	SLV_DX_D	Min	0.	0.	250.2293
15	0.53737	SLV_DX_D	Min	0.	0.	273.9191
15	1.07475	SLV_DX_D	Min	0.	0.	265.1059
16	0.	SLE_car	Max	0.	0.	-58.4989
16	0.53709	SLE_car	Max	0.	0.	-139.3318
16	1.07417	SLE_car	Max	0.	0.	-248.2454
16	0.	SLE_car	Min	0.	0.	-58.4989
16	0.53709	SLE_car	Min	0.	0.	-139.3318
16	1.07417	SLE_car	Min	0.	0.	-248.2454
16	0.	SLE_fq-qp	Max	0.	0.	-43.7688
16	0.53709	SLE_fq-qp	Max	0.	0.	-111.5682
16	1.07417	SLE_fq-qp	Max	0.	0.	-205.1316
16	0.	SLE_fq-qp	Min	0.	0.	-43.7688
16	0.53709	SLE_fq-qp	Min	0.	0.	-111.5682
16	1.07417	SLE_fq-qp	Min	0.	0.	-205.1316
16	0.	SLU	Max	0.	0.	-78.9946
16	0.53709	SLU	Max	0.	0.	-186.6841
16	1.07417	SLU	Max	0.	0.	-331.3419
16	0.	SLU	Min	0.	0.	-78.9946
16	0.53709	SLU	Min	0.	0.	-186.6841
16	1.07417	SLU	Min	0.	0.	-331.3419
16	0.	SLV_DX_U	Max	0.	0.	272.9966
16	0.53709	SLV_DX_U	Max	0.	0.	255.6096
16	1.07417	SLV_DX_U	Max	0.	0.	203.633
16	0.	SLV_DX_U	Min	0.	0.	272.9966
16	0.53709	SLV_DX_U	Min	0.	0.	255.6096
16	1.07417	SLV_DX_U	Min	0.	0.	203.633
16	0.	SLV_DX_D	Max	0.	0.	265.1059
16	0.53709	SLV_DX_D	Max	0.	0.	238.1012
16	1.07417	SLV_DX_D	Max	0.	0.	174.7247
16	0.	SLV_DX_D	Min	0.	0.	265.1059
16	0.53709	SLV_DX_D	Min	0.	0.	238.1012

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
16	1.07417	SLV_DX_D	Min	0.	0.	174.7247
17	0.	SLE_car	Max	0.	0.	-248.2454
17	0.53709	SLE_car	Max	0.	0.	-366.2728
17	1.07417	SLE_car	Max	0.	0.	-515.2357
17	0.	SLE_car	Min	0.	0.	-248.2454
17	0.53709	SLE_car	Min	0.	0.	-366.2728
17	1.07417	SLE_car	Min	0.	0.	-515.2357
17	0.	SLE_fq-qp	Max	0.	0.	-205.1316
17	0.53709	SLE_fq-qp	Max	0.	0.	-307.4064
17	1.07417	SLE_fq-qp	Max	0.	0.	-438.4382
17	0.	SLE_fq-qp	Min	0.	0.	-205.1316
17	0.53709	SLE_fq-qp	Min	0.	0.	-307.4064
17	1.07417	SLE_fq-qp	Min	0.	0.	-438.4382
17	0.	SLU	Max	0.	0.	-331.3419
17	0.53709	SLU	Max	0.	0.	-487.9279
17	1.07417	SLU	Max	0.	0.	-685.166
17	0.	SLU	Min	0.	0.	-331.3419
17	0.53709	SLU	Min	0.	0.	-487.9279
17	1.07417	SLU	Min	0.	0.	-685.166
17	0.	SLV_DX_U	Max	0.	0.	203.633
17	0.53709	SLV_DX_U	Max	0.	0.	133.7738
17	1.07417	SLV_DX_U	Max	0.	0.	24.8132
17	0.	SLV_DX_U	Min	0.	0.	203.633
17	0.53709	SLV_DX_U	Min	0.	0.	133.7738
17	1.07417	SLV_DX_U	Min	0.	0.	24.8132
17	0.	SLV_DX_D	Max	0.	0.	174.7247
17	0.53709	SLV_DX_D	Max	0.	0.	92.5676
17	1.07417	SLV_DX_D	Max	0.	0.	-30.8962
17	0.	SLV_DX_D	Min	0.	0.	174.7247
17	0.53709	SLV_DX_D	Min	0.	0.	92.5676
17	1.07417	SLV_DX_D	Min	0.	0.	-30.8962
18	0.	SLE_car	Max	0.	0.	-515.2357
18	0.4926	SLE_car	Max	0.	0.	-466.7406
18	0.98519	SLE_car	Max	0.	0.	-431.4145
18	0.	SLE_car	Min	0.	0.	-515.2357
18	0.4926	SLE_car	Min	0.	0.	-466.7406
18	0.98519	SLE_car	Min	0.	0.	-431.4145
18	0.	SLE_fq-qp	Max	0.	0.	-438.4382
18	0.4926	SLE_fq-qp	Max	0.	0.	-392.4941
18	0.98519	SLE_fq-qp	Max	0.	0.	-359.719
18	0.	SLE_fq-qp	Min	0.	0.	-438.4382
18	0.4926	SLE_fq-qp	Min	0.	0.	-392.4941
18	0.98519	SLE_fq-qp	Min	0.	0.	-359.719
18	0.	SLU	Max	0.	0.	-685.166
18	0.4926	SLU	Max	0.	0.	-621.6121
18	0.98519	SLU	Max	0.	0.	-575.178
18	0.	SLU	Min	0.	0.	-685.166
18	0.4926	SLU	Min	0.	0.	-621.6121
18	0.98519	SLU	Min	0.	0.	-575.178
18	0.	SLV_DX_U	Max	0.	0.	24.8132
18	0.4926	SLV_DX_U	Max	0.	0.	66.7728
18	0.98519	SLV_DX_U	Max	0.	0.	79.2472
18	0.	SLV_DX_U	Min	0.	0.	24.8132
18	0.4926	SLV_DX_U	Min	0.	0.	66.7728
18	0.98519	SLV_DX_U	Min	0.	0.	79.2472
18	0.	SLV_DX_D	Max	0.	0.	-30.8962

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
18	0.4926	SLV_DX_D	Max	0.	0.	10.3481
18	0.98519	SLV_DX_D	Max	0.	0.	21.634
18	0.	SLV_DX_D	Min	0.	0.	-30.8962
18	0.4926	SLV_DX_D	Min	0.	0.	10.3481
18	0.98519	SLV_DX_D	Min	0.	0.	21.634
19	0.	SLE_car	Max	0.	0.	-431.4145
19	0.4926	SLE_car	Max	0.	0.	-389.7785
19	0.98519	SLE_car	Max	0.	0.	-362.7062
19	0.	SLE_car	Min	0.	0.	-431.4145
19	0.4926	SLE_car	Min	0.	0.	-389.7785
19	0.98519	SLE_car	Min	0.	0.	-362.7062
19	0.	SLE_fq-qp	Max	0.	0.	-359.719
19	0.4926	SLE_fq-qp	Max	0.	0.	-322.3581
19	0.98519	SLE_fq-qp	Max	0.	0.	-299.5611
19	0.	SLE_fq-qp	Min	0.	0.	-359.719
19	0.4926	SLE_fq-qp	Min	0.	0.	-322.3581
19	0.98519	SLE_fq-qp	Min	0.	0.	-299.5611
19	0.	SLU	Max	0.	0.	-575.178
19	0.4926	SLU	Max	0.	0.	-520.1961
19	0.98519	SLU	Max	0.	0.	-484.1471
19	0.	SLU	Min	0.	0.	-575.178
19	0.4926	SLU	Min	0.	0.	-520.1961
19	0.98519	SLU	Min	0.	0.	-484.1471
19	0.	SLV_DX_U	Max	0.	0.	79.2472
19	0.4926	SLV_DX_U	Max	0.	0.	80.3965
19	0.98519	SLV_DX_U	Max	0.	0.	50.7141
19	0.	SLV_DX_U	Min	0.	0.	79.2472
19	0.4926	SLV_DX_U	Min	0.	0.	80.3965
19	0.98519	SLV_DX_U	Min	0.	0.	50.7141
19	0.	SLV_DX_D	Max	0.	0.	21.634
19	0.4926	SLV_DX_D	Max	0.	0.	23.2158
19	0.98519	SLV_DX_D	Max	0.	0.	-6.2662
19	0.	SLV_DX_D	Min	0.	0.	21.634
19	0.4926	SLV_DX_D	Min	0.	0.	23.2158
19	0.98519	SLV_DX_D	Min	0.	0.	-6.2662
20	0.	SLE_car	Max	0.	0.	-362.7062
20	0.4926	SLE_car	Max	0.	0.	-330.4265
20	0.98519	SLE_car	Max	0.	0.	-314.2833
20	0.	SLE_car	Min	0.	0.	-362.7062
20	0.4926	SLE_car	Min	0.	0.	-330.4265
20	0.98519	SLE_car	Min	0.	0.	-314.2833
20	0.	SLE_fq-qp	Max	0.	0.	-299.5611
20	0.4926	SLE_fq-qp	Max	0.	0.	-273.233
20	0.98519	SLE_fq-qp	Max	0.	0.	-263.0415
20	0.	SLE_fq-qp	Min	0.	0.	-299.5611
20	0.4926	SLE_fq-qp	Min	0.	0.	-273.233
20	0.98519	SLE_fq-qp	Min	0.	0.	-263.0415
20	0.	SLU	Max	0.	0.	-484.1471
20	0.4926	SLU	Max	0.	0.	-440.9932
20	0.98519	SLU	Max	0.	0.	-418.8167
20	0.	SLU	Min	0.	0.	-484.1471
20	0.4926	SLU	Min	0.	0.	-440.9932
20	0.98519	SLU	Min	0.	0.	-418.8167
20	0.	SLV_DX_U	Max	0.	0.	50.7141
20	0.4926	SLV_DX_U	Max	0.	0.	8.6241
20	0.98519	SLV_DX_U	Max	0.	0.	-65.9135

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
20	0.	SLV_DX_U	Min	0.	0.	50.7141
20	0.4926	SLV_DX_U	Min	0.	0.	8.6241
20	0.98519	SLV_DX_U	Min	0.	0.	-65.9135
20	0.	SLV_DX_D	Max	0.	0.	-6.2662
20	0.4926	SLV_DX_D	Max	0.	0.	-46.0267
20	0.98519	SLV_DX_D	Max	0.	0.	-118.3054
20	0.	SLV_DX_D	Min	0.	0.	-6.2662
20	0.4926	SLV_DX_D	Min	0.	0.	-46.0267
20	0.98519	SLV_DX_D	Min	0.	0.	-118.3054
21	0.	SLE_car	Max	0.	-3.849E-14	-314.2833
21	0.55423	SLE_car	Max	0.	-3.489E-14	-284.9013
21	1.10845	SLE_car	Max	0.	-3.402E-14	-277.8057
21	0.	SLE_car	Min	0.	-3.849E-14	-314.2833
21	0.55423	SLE_car	Min	0.	-3.489E-14	-284.9013
21	1.10845	SLE_car	Min	0.	-3.402E-14	-277.8057
21	0.	SLE_fq-qp	Max	0.	-3.221E-14	-263.0415
21	0.55423	SLE_fq-qp	Max	0.	-2.975E-14	-242.8918
21	1.10845	SLE_fq-qp	Max	0.	-3.001E-14	-245.0285
21	0.	SLE_fq-qp	Min	0.	-3.221E-14	-263.0415
21	0.55423	SLE_fq-qp	Min	0.	-2.975E-14	-242.8918
21	1.10845	SLE_fq-qp	Min	0.	-3.001E-14	-245.0285
21	0.	SLU	Max	0.	-5.129E-14	-418.8167
21	0.55423	SLU	Max	0.	-4.639E-14	-378.7736
21	1.10845	SLU	Max	0.	-4.503E-14	-367.7029
21	0.	SLU	Min	0.	-5.129E-14	-418.8167
21	0.55423	SLU	Min	0.	-4.639E-14	-378.7736
21	1.10845	SLU	Min	0.	-4.503E-14	-367.7029
21	0.	SLV_DX_U	Max	0.	-8.072E-15	-65.9135
21	0.55423	SLV_DX_U	Max	0.	-1.967E-14	-160.656
21	1.10845	SLV_DX_U	Max	0.	-3.654E-14	-298.4118
21	0.	SLV_DX_U	Min	0.	-8.072E-15	-65.9135
21	0.55423	SLV_DX_U	Min	0.	-1.967E-14	-160.656
21	1.10845	SLV_DX_U	Min	0.	-3.654E-14	-298.4118
21	0.	SLV_DX_D	Max	0.	-1.449E-14	-118.3054
21	0.55423	SLV_DX_D	Max	0.	-2.533E-14	-206.8369
21	1.10845	SLV_DX_D	Max	0.	-4.142E-14	-338.2445
21	0.	SLV_DX_D	Min	0.	-1.449E-14	-118.3054
21	0.55423	SLV_DX_D	Min	0.	-2.533E-14	-206.8369
21	1.10845	SLV_DX_D	Min	0.	-4.142E-14	-338.2445
22	0.	SLE_car	Max	0.	-2.849E-14	-277.8057
22	0.55423	SLE_car	Max	0.	-2.544E-14	-252.2085
22	1.10845	SLE_car	Max	0.	-2.527E-14	-250.0401
22	0.	SLE_car	Min	0.	-2.849E-14	-277.8057
22	0.55423	SLE_car	Min	0.	-2.544E-14	-252.2085
22	1.10845	SLE_car	Min	0.	-2.527E-14	-250.0401
22	0.	SLE_fq-qp	Max	0.	-2.499E-14	-245.0285
22	0.55423	SLE_fq-qp	Max	0.	-2.339E-14	-231.9166
22	1.10845	SLE_fq-qp	Max	0.	-2.466E-14	-242.2335
22	0.	SLE_fq-qp	Min	0.	-2.499E-14	-245.0285
22	0.55423	SLE_fq-qp	Min	0.	-2.339E-14	-231.9166
22	1.10845	SLE_fq-qp	Min	0.	-2.466E-14	-242.2335
22	0.	SLU	Max	0.	-3.774E-14	-367.7029
22	0.55423	SLU	Max	0.	-3.349E-14	-331.9294
22	1.10845	SLU	Max	0.	-3.297E-14	-326.6134
22	0.	SLU	Min	0.	-3.774E-14	-367.7029
22	0.55423	SLU	Min	0.	-3.349E-14	-331.9294

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
22	1.10845	SLU	Min	0.	-3.297E-14	-326.6134
22	0.	SLV_DX_U	Max	0.	-2.805E-14	-298.4118
22	0.55423	SLV_DX_U	Max	0.	-4.453E-14	-441.5575
22	1.10845	SLV_DX_U	Max	0.	-6.641E-14	-628.7901
22	0.	SLV_DX_U	Min	0.	-2.805E-14	-298.4118
22	0.55423	SLV_DX_U	Min	0.	-4.453E-14	-441.5575
22	1.10845	SLV_DX_U	Min	0.	-6.641E-14	-628.7901
22	0.	SLV_DX_D	Max	0.	-3.226E-14	-338.2445
22	0.55423	SLV_DX_D	Max	0.	-4.740E-14	-469.8578
22	1.10845	SLV_DX_D	Max	0.	-6.789E-14	-645.1066
22	0.	SLV_DX_D	Min	0.	-3.226E-14	-338.2445
22	0.55423	SLV_DX_D	Min	0.	-4.740E-14	-469.8578
22	1.10845	SLV_DX_D	Min	0.	-6.789E-14	-645.1066
23	0.	SLE_car	Max	0.	-3.062E-14	-250.0401
23	0.14343	SLE_car	Max	0.	-3.013E-14	-245.9963
23	0.28686	SLE_car	Max	0.	-2.983E-14	-243.5567
23	0.	SLE_car	Min	0.	-3.062E-14	-250.0401
23	0.14343	SLE_car	Min	0.	-3.013E-14	-245.9963
23	0.28686	SLE_car	Min	0.	-2.983E-14	-243.5567
23	0.	SLE_fq-qp	Max	0.	-2.967E-14	-242.2335
23	0.14343	SLE_fq-qp	Max	0.	-2.963E-14	-241.9729
23	0.28686	SLE_fq-qp	Max	0.	-2.980E-14	-243.3165
23	0.	SLE_fq-qp	Min	0.	-2.967E-14	-242.2335
23	0.14343	SLE_fq-qp	Min	0.	-2.963E-14	-241.9729
23	0.28686	SLE_fq-qp	Min	0.	-2.980E-14	-243.3165
23	0.	SLU	Max	0.	-4.000E-14	-326.6134
23	0.14343	SLU	Max	0.	-3.926E-14	-320.5998
23	0.28686	SLU	Max	0.	-3.878E-14	-316.6718
23	0.	SLU	Min	0.	-4.000E-14	-326.6134
23	0.14343	SLU	Min	0.	-3.926E-14	-320.5998
23	0.28686	SLU	Min	0.	-3.878E-14	-316.6718
23	0.	SLV_DX_U	Max	0.	-7.700E-14	-628.7901
23	0.14343	SLV_DX_U	Max	0.	-8.297E-14	-677.5244
23	0.28686	SLV_DX_U	Max	0.	-8.930E-14	-729.1989
23	0.	SLV_DX_U	Min	0.	-7.700E-14	-628.7901
23	0.14343	SLV_DX_U	Min	0.	-8.297E-14	-677.5244
23	0.28686	SLV_DX_U	Min	0.	-8.930E-14	-729.1989
23	0.	SLV_DX_D	Max	0.	-7.900E-14	-645.1066
23	0.14343	SLV_DX_D	Max	0.	-8.447E-14	-689.7863
23	0.28686	SLV_DX_D	Max	0.	-9.030E-14	-737.3673
23	0.	SLV_DX_D	Min	0.	-7.900E-14	-645.1066
23	0.14343	SLV_DX_D	Min	0.	-8.447E-14	-689.7863
23	0.28686	SLV_DX_D	Min	0.	-9.030E-14	-737.3673
24	0.	SLE_car	Max	0.	-4.948E-14	-404.0346
24	0.40273	SLE_car	Max	0.	-2.405E-14	-196.3772
24	0.80545	SLE_car	Max	0.	1.878E-15	15.3338
24	0.	SLE_car	Min	0.	-4.948E-14	-404.0346
24	0.40273	SLE_car	Min	0.	-2.405E-14	-196.3772
24	0.80545	SLE_car	Min	0.	1.878E-15	15.3338
24	0.	SLE_fq-qp	Max	0.	-4.678E-14	-381.9909
24	0.40273	SLE_fq-qp	Max	0.	-2.326E-14	-189.9308
24	0.80545	SLE_fq-qp	Max	0.	7.572E-16	6.1828
24	0.	SLE_fq-qp	Min	0.	-4.678E-14	-381.9909
24	0.40273	SLE_fq-qp	Min	0.	-2.326E-14	-189.9308
24	0.80545	SLE_fq-qp	Min	0.	7.572E-16	6.1828
24	0.	SLU	Max	0.	-6.486E-14	-529.6538

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
24	0.40273	SLU	Max	0.	-3.142E-14	-256.5796
24	0.80545	SLU	Max	0.	2.665E-15	21.7641
24	0.	SLU	Min	0.	-6.486E-14	-529.6538
24	0.40273	SLU	Min	0.	-3.142E-14	-256.5796
24	0.80545	SLU	Min	0.	2.665E-15	21.7641
24	0.	SLV_DX_U	Max	0.	-8.008E-14	-653.9293
24	0.40273	SLV_DX_U	Max	0.	-5.591E-14	-456.5717
24	0.80545	SLV_DX_U	Max	0.	-3.133E-14	-255.8172
24	0.	SLV_DX_U	Min	0.	-8.008E-14	-653.9293
24	0.40273	SLV_DX_U	Min	0.	-5.591E-14	-456.5717
24	0.80545	SLV_DX_U	Min	0.	-3.133E-14	-255.8172
24	0.	SLV_DX_D	Max	0.	-8.353E-14	-682.0552
24	0.40273	SLV_DX_D	Max	0.	-5.653E-14	-461.5726
24	0.80545	SLV_DX_D	Max	0.	-2.895E-14	-236.3798
24	0.	SLV_DX_D	Min	0.	-8.353E-14	-682.0552
24	0.40273	SLV_DX_D	Min	0.	-5.653E-14	-461.5726
24	0.80545	SLV_DX_D	Min	0.	-2.895E-14	-236.3798
25	0.	SLE_car	Max	0.	1.145E-14	15.3338
25	0.40273	SLE_car	Max	0.	2.213E-14	88.3112
25	0.80545	SLE_car	Max	0.	3.316E-14	164.126
25	0.	SLE_car	Min	0.	1.145E-14	15.3338
25	0.40273	SLE_car	Min	0.	2.213E-14	88.3112
25	0.80545	SLE_car	Min	0.	3.316E-14	164.126
25	0.	SLE_fq-qp	Max	0.	8.796E-15	6.1828
25	0.40273	SLE_fq-qp	Max	0.	1.896E-14	75.6184
25	0.80545	SLE_fq-qp	Max	0.	2.947E-14	147.8915
25	0.	SLE_fq-qp	Min	0.	8.796E-15	6.1828
25	0.40273	SLE_fq-qp	Min	0.	1.896E-14	75.6184
25	0.80545	SLE_fq-qp	Min	0.	2.947E-14	147.8915
25	0.	SLU	Max	0.	1.542E-14	21.7641
25	0.40273	SLU	Max	0.	2.941E-14	117.3431
25	0.80545	SLU	Max	0.	4.385E-14	216.6107
25	0.	SLU	Min	0.	1.542E-14	21.7641
25	0.40273	SLU	Min	0.	2.941E-14	117.3431
25	0.80545	SLU	Min	0.	4.385E-14	216.6107
25	0.	SLV_DX_U	Max	0.	-5.479E-14	-255.8172
25	0.40273	SLV_DX_U	Max	0.	-4.196E-14	-168.0958
25	0.80545	SLV_DX_U	Max	0.	-2.884E-14	-77.9965
25	0.	SLV_DX_U	Min	0.	-5.479E-14	-255.8172
25	0.40273	SLV_DX_U	Min	0.	-4.196E-14	-168.0958
25	0.80545	SLV_DX_U	Min	0.	-2.884E-14	-77.9965
25	0.	SLV_DX_D	Max	0.	-4.978E-14	-236.3798
25	0.40273	SLV_DX_D	Max	0.	-3.674E-14	-147.288
25	0.80545	SLV_DX_D	Max	0.	-2.330E-14	-54.8991
25	0.	SLV_DX_D	Min	0.	-4.978E-14	-236.3798
25	0.40273	SLV_DX_D	Min	0.	-3.674E-14	-147.288
25	0.80545	SLV_DX_D	Min	0.	-2.330E-14	-54.8991
26	0.	SLE_car	Max	0.	3.099E-14	164.126
26	0.48058	SLE_car	Max	0.	2.989E-14	155.9348
26	0.96117	SLE_car	Max	0.	2.933E-14	152.175
26	0.	SLE_car	Min	0.	3.099E-14	164.126
26	0.48058	SLE_car	Min	0.	2.989E-14	155.9348
26	0.96117	SLE_car	Min	0.	2.933E-14	152.175
26	0.	SLE_fq-qp	Max	0.	2.787E-14	147.8915
26	0.48058	SLE_fq-qp	Max	0.	2.673E-14	139.4114
26	0.96117	SLE_fq-qp	Max	0.	2.613E-14	135.3626

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
26	0.	SLE_fq-qp	Min	0.	2.787E-14	147.8915
26	0.48058	SLE_fq-qp	Min	0.	2.673E-14	139.4114
26	0.96117	SLE_fq-qp	Min	0.	2.613E-14	135.3626
26	0.	SLU	Max	0.	4.091E-14	216.6107
26	0.48058	SLU	Max	0.	3.949E-14	206.0199
26	0.96117	SLU	Max	0.	3.877E-14	201.1899
26	0.	SLU	Min	0.	4.091E-14	216.6107
26	0.48058	SLU	Min	0.	3.949E-14	206.0199
26	0.96117	SLU	Min	0.	3.877E-14	201.1899
26	0.	SLV_DX_U	Max	0.	-1.636E-14	-77.9965
26	0.48058	SLV_DX_U	Max	0.	-2.020E-14	-105.7775
26	0.96117	SLV_DX_U	Max	0.	-2.364E-14	-130.2657
26	0.	SLV_DX_U	Min	0.	-1.636E-14	-77.9965
26	0.48058	SLV_DX_U	Min	0.	-2.020E-14	-105.7775
26	0.96117	SLV_DX_U	Min	0.	-2.364E-14	-130.2657
26	0.	SLV_DX_D	Max	0.	-1.228E-14	-54.8991
26	0.48058	SLV_DX_D	Max	0.	-1.701E-14	-89.1774
26	0.96117	SLV_DX_D	Max	0.	-2.116E-14	-118.7273
26	0.	SLV_DX_D	Min	0.	-1.228E-14	-54.8991
26	0.48058	SLV_DX_D	Min	0.	-1.701E-14	-89.1774
26	0.96117	SLV_DX_D	Min	0.	-2.116E-14	-118.7273
27	0.	SLE_car	Max	0.	2.820E-14	152.175
27	0.48058	SLE_car	Max	0.	2.574E-14	134.2387
27	0.96117	SLE_car	Max	0.	2.383E-14	120.8249
27	0.	SLE_car	Min	0.	2.820E-14	152.175
27	0.48058	SLE_car	Min	0.	2.574E-14	134.2387
27	0.96117	SLE_car	Min	0.	2.383E-14	120.8249
27	0.	SLE_fq-qp	Max	0.	2.505E-14	135.3626
27	0.48058	SLE_fq-qp	Max	0.	2.276E-14	118.6681
27	0.96117	SLE_fq-qp	Max	0.	2.103E-14	106.496
27	0.	SLE_fq-qp	Min	0.	2.505E-14	135.3626
27	0.48058	SLE_fq-qp	Min	0.	2.276E-14	118.6681
27	0.96117	SLE_fq-qp	Min	0.	2.103E-14	106.496
27	0.	SLU	Max	0.	3.729E-14	201.1899
27	0.48058	SLU	Max	0.	3.406E-14	177.6244
27	0.96117	SLU	Max	0.	3.155E-14	159.9381
27	0.	SLU	Min	0.	3.729E-14	201.1899
27	0.48058	SLU	Min	0.	3.406E-14	177.6244
27	0.96117	SLU	Min	0.	3.155E-14	159.9381
27	0.	SLV_DX_U	Max	0.	-2.488E-14	-130.2657
27	0.48058	SLV_DX_U	Max	0.	-2.474E-14	-129.49
27	0.96117	SLV_DX_U	Max	0.	-2.417E-14	-125.2271
27	0.	SLV_DX_U	Min	0.	-2.488E-14	-130.2657
27	0.48058	SLV_DX_U	Min	0.	-2.474E-14	-129.49
27	0.96117	SLV_DX_U	Min	0.	-2.417E-14	-125.2271
27	0.	SLV_DX_D	Max	0.	-2.287E-14	-118.7273
27	0.48058	SLV_DX_D	Max	0.	-2.328E-14	-121.9424
27	0.96117	SLV_DX_D	Max	0.	-2.308E-14	-120.2051
27	0.	SLV_DX_D	Min	0.	-2.287E-14	-118.7273
27	0.48058	SLV_DX_D	Min	0.	-2.328E-14	-121.9424
27	0.96117	SLV_DX_D	Min	0.	-2.308E-14	-120.2051
28	0.	SLE_car	Max	0.	2.231E-14	120.8249
28	0.48058	SLE_car	Max	0.	2.014E-14	104.966
28	0.96117	SLE_car	Max	0.	1.853E-14	93.6905
28	0.	SLE_car	Min	0.	2.231E-14	120.8249
28	0.48058	SLE_car	Min	0.	2.014E-14	104.966

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
28	0.96117	SLE_car	Min	0.	1.853E-14	93.6905
28	0.	SLE_fq-qp	Max	0.	1.963E-14	106.496
28	0.48058	SLE_fq-qp	Max	0.	1.764E-14	91.9241
28	0.96117	SLE_fq-qp	Max	0.	1.621E-14	81.9356
28	0.	SLE_fq-qp	Min	0.	1.963E-14	106.496
28	0.48058	SLE_fq-qp	Min	0.	1.764E-14	91.9241
28	0.96117	SLE_fq-qp	Min	0.	1.621E-14	81.9356
28	0.	SLU	Max	0.	2.953E-14	159.9381
28	0.48058	SLU	Max	0.	2.668E-14	139.0642
28	0.96117	SLU	Max	0.	2.455E-14	124.1486
28	0.	SLU	Min	0.	2.953E-14	159.9381
28	0.48058	SLU	Min	0.	2.668E-14	139.0642
28	0.96117	SLU	Min	0.	2.455E-14	124.1486
28	0.	SLV_DX_U	Max	0.	-2.238E-14	-125.2271
28	0.48058	SLV_DX_U	Max	0.	-1.817E-14	-95.1718
28	0.96117	SLV_DX_U	Max	0.	-1.351E-14	-61.4579
28	0.	SLV_DX_U	Min	0.	-2.238E-14	-125.2271
28	0.48058	SLV_DX_U	Min	0.	-1.817E-14	-95.1718
28	0.96117	SLV_DX_U	Min	0.	-1.351E-14	-61.4579
28	0.	SLV_DX_D	Max	0.	-2.149E-14	-120.2051
28	0.48058	SLV_DX_D	Max	0.	-1.745E-14	-91.5089
28	0.96117	SLV_DX_D	Max	0.	-1.278E-14	-57.6691
28	0.	SLV_DX_D	Min	0.	-2.149E-14	-120.2051
28	0.48058	SLV_DX_D	Min	0.	-1.745E-14	-91.5089
28	0.96117	SLV_DX_D	Min	0.	-1.278E-14	-57.6691
29	0.	SLE_car	Max	0.	1.755E-14	93.6905
29	0.48059	SLE_car	Max	0.	1.655E-14	86.1915
29	0.96117	SLE_car	Max	0.	1.611E-14	83.3065
29	0.	SLE_car	Min	0.	1.755E-14	93.6905
29	0.48059	SLE_car	Min	0.	1.655E-14	86.1915
29	0.96117	SLE_car	Min	0.	1.611E-14	83.3065
29	0.	SLE_fq-qp	Max	0.	1.533E-14	81.9356
29	0.48059	SLE_fq-qp	Max	0.	1.439E-14	74.9503
29	0.96117	SLE_fq-qp	Max	0.	1.403E-14	72.579
29	0.	SLE_fq-qp	Min	0.	1.533E-14	81.9356
29	0.48059	SLE_fq-qp	Min	0.	1.439E-14	74.9503
29	0.96117	SLE_fq-qp	Min	0.	1.403E-14	72.579
29	0.	SLU	Max	0.	2.326E-14	124.1486
29	0.48059	SLU	Max	0.	2.194E-14	114.2972
29	0.96117	SLU	Max	0.	2.135E-14	110.444
29	0.	SLU	Min	0.	2.326E-14	124.1486
29	0.48059	SLU	Min	0.	2.194E-14	114.2972
29	0.96117	SLU	Min	0.	2.135E-14	110.444
29	0.	SLV_DX_U	Max	0.	-8.634E-15	-61.4579
29	0.48059	SLV_DX_U	Max	0.	-2.913E-16	-1.7506
29	0.96117	SLV_DX_U	Max	0.	8.518E-15	61.7619
29	0.	SLV_DX_U	Min	0.	-8.634E-15	-61.4579
29	0.48059	SLV_DX_U	Min	0.	-2.913E-16	-1.7506
29	0.96117	SLV_DX_U	Min	0.	8.518E-15	61.7619
29	0.	SLV_DX_D	Max	0.	-7.835E-15	-57.6691
29	0.48059	SLV_DX_D	Max	0.	7.072E-16	3.378
29	0.96117	SLV_DX_D	Max	0.	9.898E-15	69.7253
29	0.	SLV_DX_D	Min	0.	-7.835E-15	-57.6691
29	0.48059	SLV_DX_D	Min	0.	7.072E-16	3.378
29	0.96117	SLV_DX_D	Min	0.	9.898E-15	69.7253
30	0.	SLE_car	Max	0.	1.611E-14	83.3065

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
30	0.48059	SLE_car	Max	0.	1.655E-14	86.1915
30	0.96118	SLE_car	Max	0.	1.755E-14	93.6905
30	0.	SLE_car	Min	0.	1.611E-14	83.3065
30	0.48059	SLE_car	Min	0.	1.655E-14	86.1915
30	0.96118	SLE_car	Min	0.	1.755E-14	93.6905
30	0.	SLE_fq-qp	Max	0.	1.403E-14	72.579
30	0.48059	SLE_fq-qp	Max	0.	1.439E-14	74.9503
30	0.96118	SLE_fq-qp	Max	0.	1.533E-14	81.9356
30	0.	SLE_fq-qp	Min	0.	1.403E-14	72.579
30	0.48059	SLE_fq-qp	Min	0.	1.439E-14	74.9503
30	0.96118	SLE_fq-qp	Min	0.	1.533E-14	81.9356
30	0.	SLU	Max	0.	2.135E-14	110.444
30	0.48059	SLU	Max	0.	2.194E-14	114.2972
30	0.96118	SLU	Max	0.	2.326E-14	124.1486
30	0.	SLU	Min	0.	2.135E-14	110.444
30	0.48059	SLU	Min	0.	2.194E-14	114.2972
30	0.96118	SLU	Min	0.	2.326E-14	124.1486
30	0.	SLV_DX_U	Max	0.	1.619E-14	61.7619
30	0.48059	SLV_DX_U	Max	0.	2.785E-14	145.313
30	0.96118	SLV_DX_U	Max	0.	3.999E-14	232.792
30	0.	SLV_DX_U	Min	0.	1.619E-14	61.7619
30	0.48059	SLV_DX_U	Min	0.	2.785E-14	145.313
30	0.96118	SLV_DX_U	Min	0.	3.999E-14	232.792
30	0.	SLV_DX_D	Max	0.	1.778E-14	69.7253
30	0.48059	SLV_DX_D	Max	0.	2.962E-14	154.4781
30	0.96118	SLV_DX_D	Max	0.	4.213E-14	244.6536
30	0.	SLV_DX_D	Min	0.	1.778E-14	69.7253
30	0.48059	SLV_DX_D	Min	0.	2.962E-14	154.4781
30	0.96118	SLV_DX_D	Min	0.	4.213E-14	244.6536
31	0.	SLE_car	Max	0.	1.853E-14	93.6905
31	0.48058	SLE_car	Max	0.	2.014E-14	104.966
31	0.96117	SLE_car	Max	0.	2.231E-14	120.8249
31	0.	SLE_car	Min	0.	1.853E-14	93.6905
31	0.48058	SLE_car	Min	0.	2.014E-14	104.966
31	0.96117	SLE_car	Min	0.	2.231E-14	120.8249
31	0.	SLE_fq-qp	Max	0.	1.621E-14	81.9356
31	0.48058	SLE_fq-qp	Max	0.	1.764E-14	91.9241
31	0.96117	SLE_fq-qp	Max	0.	1.963E-14	106.496
31	0.	SLE_fq-qp	Min	0.	1.621E-14	81.9356
31	0.48058	SLE_fq-qp	Min	0.	1.764E-14	91.9241
31	0.96117	SLE_fq-qp	Min	0.	1.963E-14	106.496
31	0.	SLU	Max	0.	2.455E-14	124.1486
31	0.48058	SLU	Max	0.	2.668E-14	139.0642
31	0.96117	SLU	Max	0.	2.953E-14	159.9381
31	0.	SLU	Min	0.	2.455E-14	124.1486
31	0.48058	SLU	Min	0.	2.668E-14	139.0642
31	0.96117	SLU	Min	0.	2.953E-14	159.9381
31	0.	SLV_DX_U	Max	0.	4.900E-14	232.792
31	0.48058	SLV_DX_U	Max	0.	6.090E-14	318.0452
31	0.96117	SLV_DX_U	Max	0.	7.330E-14	407.3217
31	0.	SLV_DX_U	Min	0.	4.900E-14	232.792
31	0.48058	SLV_DX_U	Min	0.	6.090E-14	318.0452
31	0.96117	SLV_DX_U	Min	0.	7.330E-14	407.3217
31	0.	SLV_DX_D	Max	0.	5.137E-14	244.6536
31	0.48058	SLV_DX_D	Max	0.	6.353E-14	331.6516
31	0.96117	SLV_DX_D	Max	0.	7.636E-14	424.1578

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
31	0.	SLV_DX_D	Min	0.	5.137E-14	244.6536
31	0.48058	SLV_DX_D	Min	0.	6.353E-14	331.6516
31	0.96117	SLV_DX_D	Min	0.	7.636E-14	424.1578
32	0.	SLE_car	Max	0.	2.383E-14	120.8249
32	0.48058	SLE_car	Max	0.	2.574E-14	134.2387
32	0.96117	SLE_car	Max	0.	2.820E-14	152.175
32	0.	SLE_car	Min	0.	2.383E-14	120.8249
32	0.48058	SLE_car	Min	0.	2.574E-14	134.2387
32	0.96117	SLE_car	Min	0.	2.820E-14	152.175
32	0.	SLE_fq-qp	Max	0.	2.103E-14	106.496
32	0.48058	SLE_fq-qp	Max	0.	2.276E-14	118.6681
32	0.96117	SLE_fq-qp	Max	0.	2.505E-14	135.3626
32	0.	SLE_fq-qp	Min	0.	2.103E-14	106.496
32	0.48058	SLE_fq-qp	Min	0.	2.276E-14	118.6681
32	0.96117	SLE_fq-qp	Min	0.	2.505E-14	135.3626
32	0.	SLU	Max	0.	3.155E-14	159.9381
32	0.48058	SLU	Max	0.	3.406E-14	177.6244
32	0.96117	SLU	Max	0.	3.729E-14	201.1899
32	0.	SLU	Min	0.	3.155E-14	159.9381
32	0.48058	SLU	Min	0.	3.406E-14	177.6244
32	0.96117	SLU	Min	0.	3.729E-14	201.1899
32	0.	SLV_DX_U	Max	0.	7.989E-14	407.3217
32	0.48058	SLV_DX_U	Max	0.	8.510E-14	444.4961
32	0.96117	SLV_DX_U	Max	0.	9.081E-14	485.7628
32	0.	SLV_DX_U	Min	0.	7.989E-14	407.3217
32	0.48058	SLV_DX_U	Min	0.	8.510E-14	444.4961
32	0.96117	SLV_DX_U	Min	0.	9.081E-14	485.7628
32	0.	SLV_DX_D	Max	0.	8.314E-14	424.1578
32	0.48058	SLV_DX_D	Max	0.	8.840E-14	461.6692
32	0.96117	SLV_DX_D	Max	0.	9.435E-14	504.7382
32	0.	SLV_DX_D	Min	0.	8.314E-14	424.1578
32	0.48058	SLV_DX_D	Min	0.	8.840E-14	461.6692
32	0.96117	SLV_DX_D	Min	0.	9.435E-14	504.7382
33	0.	SLE_car	Max	0.	2.933E-14	152.175
33	0.48058	SLE_car	Max	0.	2.989E-14	155.9348
33	0.96117	SLE_car	Max	0.	3.099E-14	164.126
33	0.	SLE_car	Min	0.	2.933E-14	152.175
33	0.48058	SLE_car	Min	0.	2.989E-14	155.9348
33	0.96117	SLE_car	Min	0.	3.099E-14	164.126
33	0.	SLE_fq-qp	Max	0.	2.613E-14	135.3626
33	0.48058	SLE_fq-qp	Max	0.	2.673E-14	139.4114
33	0.96117	SLE_fq-qp	Max	0.	2.787E-14	147.8915
33	0.	SLE_fq-qp	Min	0.	2.613E-14	135.3626
33	0.48058	SLE_fq-qp	Min	0.	2.673E-14	139.4114
33	0.96117	SLE_fq-qp	Min	0.	2.787E-14	147.8915
33	0.	SLU	Max	0.	3.877E-14	201.1899
33	0.48058	SLU	Max	0.	3.949E-14	206.0199
33	0.96117	SLU	Max	0.	4.091E-14	216.6107
33	0.	SLU	Min	0.	3.877E-14	201.1899
33	0.48058	SLU	Min	0.	3.949E-14	206.0199
33	0.96117	SLU	Min	0.	4.091E-14	216.6107
33	0.	SLV_DX_U	Max	0.	8.861E-14	485.7628
33	0.48058	SLV_DX_U	Max	0.	7.703E-14	402.3104
33	0.96117	SLV_DX_U	Max	0.	6.595E-14	322.9924
33	0.	SLV_DX_U	Min	0.	8.861E-14	485.7628
33	0.48058	SLV_DX_U	Min	0.	7.703E-14	402.3104

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
33	0.96117	SLV_DX_U	Min	0.	6.595E-14	322.9924
33	0.	SLV_DX_D	Max	0.	9.220E-14	504.7382
33	0.48058	SLV_DX_D	Max	0.	8.049E-14	420.3096
33	0.96117	SLV_DX_D	Max	0.	6.947E-14	341.4512
33	0.	SLV_DX_D	Min	0.	9.220E-14	504.7382
33	0.48058	SLV_DX_D	Min	0.	8.049E-14	420.3096
33	0.96117	SLV_DX_D	Min	0.	6.947E-14	341.4512
34	0.	SLE_car	Max	0.	3.316E-14	164.126
34	0.40273	SLE_car	Max	0.	2.213E-14	88.3112
34	0.80545	SLE_car	Max	0.	1.145E-14	15.3338
34	0.	SLE_car	Min	0.	3.316E-14	164.126
34	0.40273	SLE_car	Min	0.	2.213E-14	88.3112
34	0.80545	SLE_car	Min	0.	1.145E-14	15.3338
34	0.	SLE_fq-qp	Max	0.	2.947E-14	147.8915
34	0.40273	SLE_fq-qp	Max	0.	1.896E-14	75.6184
34	0.80545	SLE_fq-qp	Max	0.	8.796E-15	6.1828
34	0.	SLE_fq-qp	Min	0.	2.947E-14	147.8915
34	0.40273	SLE_fq-qp	Min	0.	1.896E-14	75.6184
34	0.80545	SLE_fq-qp	Min	0.	8.796E-15	6.1828
34	0.	SLU	Max	0.	4.385E-14	216.6107
34	0.40273	SLU	Max	0.	2.941E-14	117.3431
34	0.80545	SLU	Max	0.	1.542E-14	21.7641
34	0.	SLU	Min	0.	4.385E-14	216.6107
34	0.40273	SLU	Min	0.	2.941E-14	117.3431
34	0.80545	SLU	Min	0.	1.542E-14	21.7641
34	0.	SLV_DX_U	Max	0.	5.911E-14	322.9924
34	0.40273	SLV_DX_U	Max	0.	2.878E-14	114.9578
34	0.80545	SLV_DX_U	Max	0.	-1.251E-15	-90.699
34	0.	SLV_DX_U	Min	0.	5.911E-14	322.9924
34	0.40273	SLV_DX_U	Min	0.	2.878E-14	114.9578
34	0.80545	SLV_DX_U	Min	0.	-1.251E-15	-90.699
34	0.	SLV_DX_D	Max	0.	6.380E-14	341.4512
34	0.40273	SLV_DX_D	Max	0.	3.359E-14	134.1271
34	0.80545	SLV_DX_D	Max	0.	3.786E-15	-69.9
34	0.	SLV_DX_D	Min	0.	6.380E-14	341.4512
34	0.40273	SLV_DX_D	Min	0.	3.359E-14	134.1271
34	0.80545	SLV_DX_D	Min	0.	3.786E-15	-69.9
35	0.	SLE_car	Max	0.	1.878E-15	15.3338
35	0.40273	SLE_car	Max	0.	-2.405E-14	-196.3772
35	0.80545	SLE_car	Max	0.	-4.948E-14	-404.0346
35	0.	SLE_car	Min	0.	1.878E-15	15.3338
35	0.40273	SLE_car	Min	0.	-2.405E-14	-196.3772
35	0.80545	SLE_car	Min	0.	-4.948E-14	-404.0346
35	0.	SLE_fq-qp	Max	0.	7.572E-16	6.1828
35	0.40273	SLE_fq-qp	Max	0.	-2.326E-14	-189.9308
35	0.80545	SLE_fq-qp	Max	0.	-4.678E-14	-381.9909
35	0.	SLE_fq-qp	Min	0.	7.572E-16	6.1828
35	0.40273	SLE_fq-qp	Min	0.	-2.326E-14	-189.9308
35	0.80545	SLE_fq-qp	Min	0.	-4.678E-14	-381.9909
35	0.	SLU	Max	0.	2.665E-15	21.7641
35	0.40273	SLU	Max	0.	-3.142E-14	-256.5796
35	0.80545	SLU	Max	0.	-6.486E-14	-529.6538
35	0.	SLU	Min	0.	2.665E-15	21.7641
35	0.40273	SLU	Min	0.	-3.142E-14	-256.5796
35	0.80545	SLU	Min	0.	-6.486E-14	-529.6538
35	0.	SLV_DX_U	Max	0.	-1.111E-14	-90.699

Table 21: Element Forces - Frames, Part 2 of 2

Frame	Station	OutputCase	StepType	T	M2	M3
	m			KN-m	KN-m	KN-m
35	0.40273	SLV_DX_U	Max	0.	-4.236E-14	-345.9078
35	0.80545	SLV_DX_U	Max	0.	-7.320E-14	-597.7196
35	0.	SLV_DX_U	Min	0.	-1.111E-14	-90.699
35	0.40273	SLV_DX_U	Min	0.	-4.236E-14	-345.9078
35	0.80545	SLV_DX_U	Min	0.	-7.320E-14	-597.7196
35	0.	SLV_DX_D	Max	0.	-8.560E-15	-69.9
35	0.40273	SLV_DX_D	Max	0.	-4.267E-14	-348.4528
35	0.80545	SLV_DX_D	Max	0.	-7.621E-14	-622.2954
35	0.	SLV_DX_D	Min	0.	-8.560E-15	-69.9
35	0.40273	SLV_DX_D	Min	0.	-4.267E-14	-348.4528
35	0.80545	SLV_DX_D	Min	0.	-7.621E-14	-622.2954
36	0.	SLE_car	Max	0.	-2.983E-14	-243.5567
36	0.14343	SLE_car	Max	0.	-3.013E-14	-245.9963
36	0.28686	SLE_car	Max	0.	-3.062E-14	-250.0401
36	0.	SLE_car	Min	0.	-2.983E-14	-243.5567
36	0.14343	SLE_car	Min	0.	-3.013E-14	-245.9963
36	0.28686	SLE_car	Min	0.	-3.062E-14	-250.0401
36	0.	SLE_fq-qp	Max	0.	-2.980E-14	-243.3165
36	0.14343	SLE_fq-qp	Max	0.	-2.963E-14	-241.9729
36	0.28686	SLE_fq-qp	Max	0.	-2.967E-14	-242.2335
36	0.	SLE_fq-qp	Min	0.	-2.980E-14	-243.3165
36	0.14343	SLE_fq-qp	Min	0.	-2.963E-14	-241.9729
36	0.28686	SLE_fq-qp	Min	0.	-2.967E-14	-242.2335
36	0.	SLU	Max	0.	-3.878E-14	-316.6718
36	0.14343	SLU	Max	0.	-3.926E-14	-320.5998
36	0.28686	SLU	Max	0.	-4.000E-14	-326.6134
36	0.	SLU	Min	0.	-3.878E-14	-316.6718
36	0.14343	SLU	Min	0.	-3.926E-14	-320.5998
36	0.28686	SLU	Min	0.	-4.000E-14	-326.6134
36	0.	SLV_DX_U	Max	0.	-4.193E-14	-342.4248
36	0.14343	SLV_DX_U	Max	0.	-3.820E-14	-311.9591
36	0.28686	SLV_DX_U	Max	0.	-3.465E-14	-282.9552
36	0.	SLV_DX_U	Min	0.	-4.193E-14	-342.4248
36	0.14343	SLV_DX_U	Min	0.	-3.820E-14	-311.9591
36	0.28686	SLV_DX_U	Min	0.	-3.465E-14	-282.9552
36	0.	SLV_DX_D	Max	0.	-4.200E-14	-342.9726
36	0.14343	SLV_DX_D	Max	0.	-3.886E-14	-317.3552
36	0.28686	SLV_DX_D	Max	0.	-3.590E-14	-293.1608
36	0.	SLV_DX_D	Min	0.	-4.200E-14	-342.9726
36	0.14343	SLV_DX_D	Min	0.	-3.886E-14	-317.3552
36	0.28686	SLV_DX_D	Min	0.	-3.590E-14	-293.1608

9. Material take-off

This section provides a material take-off.

Table 22: Material List 2 - By Section Property

Table 22: Material List 2 - By Section Property

Section	ObjectType	NumPieces	TotalLength	TotalWeight
			m	KN
C080	Frame	16	15.69817	313.871
C095	Frame	2	2.14835	51.008

Table 22: Material List 2 - By Section Property

Section	ObjectType	NumPieces	TotalLength	TotalWeight
			m	KN
C135	Frame	2	1.97038	66.481
C100	Frame	4	4.18729	104.651
C110	Frame	4	4.18729	115.116
C125	Frame	2	2.14835	67.116
C070	Frame	2	1.61091	28.183
muretta	Frame	4	2.18462	54.599

RTP di progettazione: ***Mandataria:*** ***Mandanti:***
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erevia s.r.l. RICERCA VIABILITÀ AMBIENTE
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