



MEMORIA ESTRUCTURAL PARA EL PUENTE LOCALIZADO EN EL SECTOR K38+800

INFORME ESTRUCTURAL - VERSIÓN 3

CONTRATO DE OBRA -2096-2022



INVIAS
INSTITUTO NACIONAL DE VIAS

ABRIL DE 2024

Aprobaciones

REALIZÓ	APROBÓ
	
MAURICIO BUSTAMANTE ESPECIALISTA EN ESTRUCTURAS MAT. No	EDGAR ENRIQUE NIETO ESPECIALISTA EN ESTRUCTURAS MAT. 2520268013 CND

Control de Cambios

VERSIÓN	FECHA	OBSERVACIONES
V1	30/01/2023	Atención de observaciones Interv
V2	15/03/2024	Atención de observaciones Interv
V3	26/04/2024	Atención de observaciones Interv

CONTENIDO

1	CARACTERÍSTICAS PRINCIPALES DEL PROYECTO	4
2	DIMENSIONAMIENTO DE LA ARMADURA DE FLEXIÓN Y CORTE	5
3	ACCIONES, COEFICIENTES DE SEGURIDAD Y COMBINACIONES DE CARGA	5
3.1	CARGAS DE DISEÑO	5
3.2	COEFICIENTES DE COMBINACIONES DE CARGAS	6
3.3	COMBINACIONES DE DISEÑO	6
3.4	AVALÚO DE CARGAS	8
3.4.1	CARGA VIVA	8
3.4.2	CARGA DE VIENTO	10
3.4.3	FUERZA DE FRENADO	10
3.4.4	CARGAS MUERTAS	11
3.4.5	GRADIENTE DE TEMPERATURA	11
3.5	GEOMETRÍA Y ESQUEMA ESTRUCTURAL	12
3.5.1	MATERIALES	13
4	DISEÑO SUPERESTRUCTURA	14
4.1	CARACTERÍSTICAS GEOMÉTRICAS	14
4.2	MOMENTO MÁXIMO CARGA VIVA DE DISEÑO	14
4.3	VERIFICACIÓN SECCIÓN SIMPLE	15
4.4	VERIFICACIÓN SECCIÓN COMPUESTA	23
4.5	DEFLEXIONES	30
5	VERIFICACIÓN RIGIDIZADOR	30
6	VERIFICACIÓN CONECTOR DE CORTANTE	31
7	DISEÑO TABLERO	32
7.1	DISEÑO A FLEXIÓN TABLERO	32
8	DISEÑO INFRAESTRUCTURA	34
8.1	MODELACIÓN INFRAESTRUCTURA	36
8.2	PARÁMETROS SUELOS Y DETERMINACIÓN DE CARGAS SÍSMICAS	37
8.2.1	MATERIAL DEL RELLENO	38

8.2.2	EMPUJES SOBRE EL ESTRIBO (T.M)	38
8.2.3	EH (T.M)	39
8.2.4	LS (T.M)	39
8.2.5	EQ (PSEIS) (T.M)	40
8.2.6	EQ (HBU) (T.M)	40
8.2.7	EV(T.M)	41
8.2.8	CARGA MUERTA SOBRE EL ESTRIBO	41
8.2.9	CARGA VIVA SOBRE EL ESTRIBO	42
8.2.10	FUERZA DE FRENADO	43
8.2.11	EMPUJES SOBRE LA ALETA	44
8.3	COMBINACIONES PARA EL DISEÑO DE LA INFRAESTRUCTURA:	47
8.4	DISEÑO ELEMENTOS:	51
8.4.1	VÁSTAGO	51
8.4.2	ZARPA	55
8.4.3	ALETAS	57
8.4.4	DISEÑO PILOTES:	59
9	DISEÑO NEOPRENOS	66
10	DISEÑO LOSA DE APROXIMACIÓN:	67
11	DISEÑO MÉNSULA	69
12	DISEÑO TOPE SÍSMICO	69
13	DISEÑO DIAFRAGMA	70
13.1	CARGAS	70
13.2	GEOMETRÍA	70
14	DISEÑO BARANDA	75

TABLA DE ILUSTRACIONES

Ilustración 1 Camión de diseño CCP-14	8
Ilustración 2 Tándem de diseño CCP-14	8
Ilustración 3 Carga de carril	9
Ilustración 4 Alzado puente	12
Ilustración 5 Planta	12
Ilustración 6 sección del tablero	13
Ilustración 7 Condiciones sísmicas del proyecto	34
Ilustración 8 Módulos de reacción	34
Ilustración 9 Modelo General Estribo	36
Ilustración 10 Empujes sobre estribo	38
Ilustración 11 EH	39
Ilustración 12 LS	39
Ilustración 13 EQ1	40
Ilustración 14 EQ2	40
Ilustración 15 EV	41
Ilustración 16 Carga muerta sobre estribo	41
Ilustración 17 Carga viva sobre estribo	42
Ilustración 18 Fuerza frenado sobre estribo	43
Ilustración 19 Empuje sobre aleta	44
Ilustración 20 EH Aleta	45
Ilustración 21 LS Aleta	45
Ilustración 22 EQ aleta	46
Ilustración 23 Solicitaciones elementos verticales (t.m)	59
Ilustración 24 Solicitaciones elementos verticales (t.m)	60
Ilustración 25 Solicitaciones elementos verticales (t.m)	61

ÍNDICE DE TABLAS

Tabla 1 Datos Generales Del Puente	4
Tabla 2 Combinaciones y factores de carga (fuente CCP-14)	7
Tabla 3 Factores de carga (fuente CCP-14)	7
Tabla 4 Amplificación por carga dinámica IM	9
Tabla 5 Factores de presencia múltiple	9
Tabla 6 deflexiones	30
Tabla 7 Propiedades material de relleno	35
Tabla 8 Parámetros Mononobe Okabe	35

1 CARACTERÍSTICAS PRINCIPALES DEL PROYECTO

Tabla 1 Datos Generales Del Puente

LOCALIZACIÓN:	VÍA ATACO - PLANADAS
USO:	PTE VEHICULAR
TIPO DE PUENTE:	METÁLICO RECTO
TIPO DE VIGAS:	TIPO T
PASO:	SUPERIOR
NUMERO LUCES:	1
LUZ EJES 1-2:	25
Nº VIGAS PRINCIPALES:	4
SEPARACIÓN ENTRE VIGAS	2.65
DIAFRAGMAS	4
ANCHO DE TABLERO:	9.9
ANCHO CALZADA:	8
Nº DE VÍAS:	DOS (2)
PERALTE PROMEDIO:	7.23%
PENDIENTE LONGITUDINAL:	+0.1%
BORDILLOS:	0
BARRERA TRAFICO :	SI
ANDENES:	0
INFRAESTRUCTURA:	TIPO SILLETA
CIMENTACIÓN:	PILOTES 1.20
NORMAS DE DISEÑO:	
Norma Colombiana de Diseño de Puentes – LRFD – CCP14	
AASHTO LRFD 2014	

Perfil	C
S1	0.25
Fv	1.55
PGA	0.25
SS	0.5
Fpga	1.3
SD1	0.3875
ZDS	3

2 DIMENSIONAMIENTO DE LA ARMADURA DE FLEXIÓN Y CORTE

El dimensionamiento de las armaduras de flexión y cortante de los elementos se realiza con los criterios establecidos por “Norma Colombiana de Diseño de Puentes – LRFD – CCP14”.

El cálculo de las armaduras para secciones sometidas a flexión para el conjunto de elementos (áreas y barras de los modelos) que constituyen la estructura y para todas aquellas hipótesis o combinaciones de cálculo que se hayan contemplado en el análisis estructural de acuerdo con los criterios de la normativa vigente.

Las armaduras horizontales de flexión tanto transversal como longitudinal se colocan de acuerdo con los valores mínimos exigidos por la Normativa “Norma Colombiana de Diseño de Puentes – LRFD – CCP14”.

Las vigas son diseñadas con análisis realizados mediante hojas de cálculo.

Para el análisis y diseño de la infraestructura se elabora un modelo matemático tridimensional por medio del software Midas, considerando la modelación de los distintos elementos que componen la estructura. El software Midas es un software integrado, creado en 1989, para el análisis y el diseño de estructuras; cuenta con un sistema de diseño óptimo que involucra un potente algoritmo de solución basado en FEA (análisis de elementos finitos) y modernas teorías de análisis estructural para generar resultados prácticos y precisos.

3 ACCIONES, COEFICIENTES DE SEGURIDAD Y COMBINACIONES DE CARGA

3.1 CARGAS DE DISEÑO

De acuerdo con lo descrito en la sección 3 del CCP-14, son aplicadas las cargas mencionadas a continuación.

I. CARGAS PERMANENTES

DC (1)= Peso propio de elementos estructurales
NOES (2)= Peso Propio de accesorios no estructurales
LOSA = Peso propio de carpeta de rodamiento

II. CARGAS TRANSITORIAS

LL= Carga viva vehicular
CE= Fuerza centrífuga vehicular
IM=Incremento de carga dinámica vehicular
BR=Fuerza de frenado vehicular

EQ=Carga sísmica
TG=fuerzas debidas a gradiente de temperatura
TU=Fuerza debida a temperatura uniforme
WS=Carga de viento sobre la estructura
WL=carga de viento sobre la carga viva
EL= Fuerzas Miscelaneas resultantes del proceso de Construcción

3.2 COEFICIENTES DE COMBINACIONES DE CARGAS

COEFICIENTES DE SEGURIDAD PARA LA RESISTENCIA

A continuación se especifican los coeficientes de seguridad adoptados para la resistencia según el artículo 5.5.4.2.1:

Flexión y tracción en concreto reforzado.....	$\phi = 0.90$
Cortante y torsión en concreto de densidad normal.....	$\phi = 0.90$
Apoyo en concreto	$\phi = 0.70$
Compresión en modelos de bielas y tirantes.....	$\phi = 0.70$
Compresión en zonas de anclaje para concreto de densidad normal...	$\phi = 0.80$
Tracción en el acero en zonas de anclaje.....	$\phi = 1.00$

COEFICIENTES DE SEGURIDAD PARA LAS CARGAS

Conforme a lo previsto en la sección 1 del código de diseño, se considerará la estructura como no redundantes bajo cargas de relleno y redundantes bajo carga viva. Introduciendo el factor η a todos los factores dados en la Tabla 2 y Tabla 3.

3.3 COMBINACIONES DE DISEÑO

Las combinaciones utilizadas para el diseño son tomadas del capítulo 3.4.1 de la Norma Colombiana de Diseño de Puentes – LRFD – CCP14

Tabla 2 Combinaciones y factores de carga (fuente CCP-14)

Estado Límite de la Combinación de carga	DC DL EH EF ES EC FS CR SM	LL IM CM CS AS PS CR SM	LL IM CM CS AS PS CR SM	LL IM CM CS AS PS CR SM	LL IM CM CS AS PS CR SM	LL IM CM CS AS PS CR SM	LL IM CM CS AS PS CR SM	LL IM CM CS AS PS CR SM	LL IM CM CS AS PS CR SM	LL IM CM CS AS PS CR SM	LL IM CM CS AS PS CR SM	Uno o más de estos a la vez					
												DC	DL	EH	EF	ES	EC
Resistencia I (a menos que se indique)	γ_F	1.25	1.00	-	-	1.00	0.90/1.20	γ_{FD}	γ_{FD}	-	-	-	-	-	-	-	-
Resistencia II	γ_F	1.25	1.00	-	-	1.00	0.90/1.20	γ_{FD}	γ_{FD}	-	-	-	-	-	-	-	-
Resistencia III	γ_F	-	1.00	1.40/0	-	1.00	0.90/1.20	γ_{FD}	γ_{FD}	-	-	-	-	-	-	-	-
Resistencia IV	γ_F	-	1.00	-	-	1.00	0.90/1.20	-	-	-	-	-	-	-	-	-	-
Resistencia V	γ_F	1.25	1.00	0.40/0	1.0	1.00	0.90/1.20	γ_{FD}	γ_{FD}	-	-	-	-	-	-	-	-
Evento Extremo I	γ_F	γ_{ED}	1.00	-	-	1.00	-	-	-	1.00	-	-	-	-	-	-	-
Evento Extremo II	γ_F	0.50	1.00	-	-	1.00	-	-	-	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Servicio I	1.00	1.00	1.00	0.20/0	1.0	1.00	1.00/1.20	γ_{FD}	γ_{FD}	-	-	-	-	-	-	-	-
Servicio II	1.00	1.25	1.00	-	-	1.00	1.00/1.20	-	-	-	-	-	-	-	-	-	-
Servicio III	1.00	0.80	1.00	-	-	1.00	1.00/1.20	γ_{FD}	γ_{FD}	-	-	-	-	-	-	-	-
Servicio IV	1.00	-	1.00	0.70/0	-	1.00	1.00/1.20	-	1.0	-	-	-	-	-	-	-	-
Fatiga I - Sólo LL, IM & CR	-	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fatiga I B - Sólo LL, IM & CR	-	0.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Tabla 3 Factores de carga (fuente CCP-14)

Tabla 3.4.1-2 — Factores para cargas permanentes, γ_F

Tipo de Carga, tipo de cimentación, y Método para Calcular la fricción negativa		Factor de Carga	
		Máximo	Mínimo
DC: Componentes y Accesorios		1.25	0.90
DC: Sólo Resistencia IV		1.50	0.90
DD: Fricción negativa	Pilas, Método α Tomlinson	1.4	0.25
	Pilas, Método β	1.05	0.30
	Pozos perforados, Método O'Neill and Reese (1969)	1.25	0.35
DH: Superficie de rodadura e instalaciones		1.50	0.65
EH: Presión horizontal de suelo			
• Activa		1.50	0.90
• En reposo		1.35	0.90
• AEP para muros anclados		1.35	N/A
EL: Tensiones residuales de Construcción		1.00	1.00
EF: Presión vertical de suelo			
• Estabilidad general		1.00	N/A
• Muros de Contención y Estribos		1.35	1.00
• Estructuras Rígidas Enterradas		1.30	0.90
• Marcos Rígidos		1.35	0.90
• Estructuras Flexibles Enterradas			
◦ Alcantarillas Metálicas y Alcantarillas Armadas Estructurales Corrugadas Profundas		1.5	0.9
◦ Alcantarillas Termoplásticas		1.3	0.9
◦ Todas las demás		1.35	0.9
ES: Sobrecarga de suelo		1.50	0.75

Tabla 3.4.1-3 — Factores para cargas permanentes debidas a deformaciones sobreimpuestas, γ_F

Componentes	FS	CR, SM
Superestructuras por segmentos	1.0	Ver γ_F para DC, Tabla 3.4.1-2
Subestructuras de concreto soportando superestructuras por segmentos (ver 3.12.4, 3.12.5)		
Superestructuras de concreto no segmentadas	1.0	1.0
Subestructuras soportando Superestructuras no segmentadas		
• Usando I_g	0.5	0.5
• Usando $I_{g,efectiva}$	1.0	1.0
Subestructuras de acero	1.0	1.0

3.4 AVALÚO DE CARGAS

3.4.1 Carga viva

Carriles de tráfico

Número de carriles = $\lceil T/3.60m \rceil = 12.4 / 3.60 = 3.0$

Vehículo de diseño

A partir de las disposiciones en la sección 3.6 del CCP-14 se realiza el cálculo y la aplicación de las cargas en el modelo teniendo en cuenta que Para el diseño estructural a momentos positivos se debe diseñar para el mayor efecto producido para:

- Tándem de diseño + Carga de Carril de diseño
- Camión de diseño + Carga de carril Camión de diseño:



Ilustración 1 Camión de diseño CCP-14

Tándem de diseño:

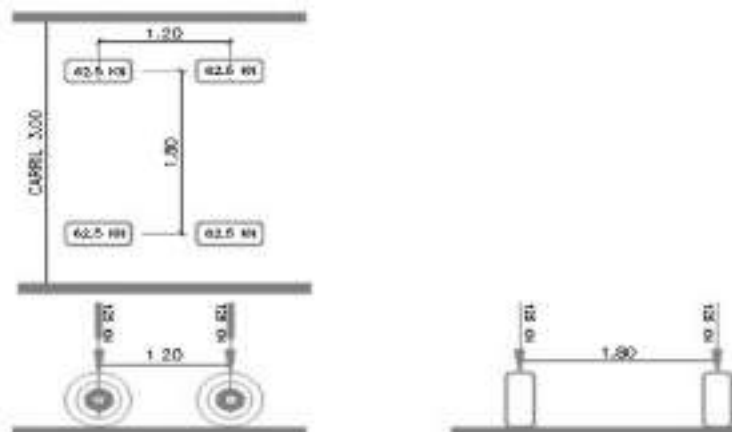


Ilustración 2 Tándem de diseño CCP-14

Carril de diseño:



Ilustración 3 Carga de carril

Amplificación dinámica

El factor de Amplificación dinámica (impacto) es aplicado de acuerdo con CCP-2014 3.6.2 a los elementos de la superestructura

Tabla 4 Amplificación por carga dinámica IM

Componente	IM
Juntas de Tablero-Todos los Estados Limite	75%
Todos los demás componentes:	
• Estado Limite de Fatiga y Fractura	15%
• Todos los demás Estados Limite	33%

(Fuente CCP-14)

De acuerdo con 3.6.1.2.4 al carril de diseño no se le aplica el mencionado factor.

No se aplica impacto a los elementos de las infraestructura sobre la cimentación; ni a los elementos de apoyo (neoprenos).

Fracción de carril

El análisis realizado para la determinación de las solicitaciones corresponde a un método exacto; por lo que no se deben incluir los factores de rueda

Factores de presencia múltiple

Para crear el caso de carga móvil correspondiente se aplican los factores de presencia múltiple de carga viva mencionados en 3.6.1.1.2.

Tabla 5 Factores de presencia múltiple

Número de Carriles Cargados	Factores de presencia Múltiple, <i>m</i>
1	1.20
2	1.00
3	0.85
>3	0.65

(Fuente CCP-14)

3.4.2 CARGA DE VIENTO

Condición	Campo abierto
Vo	13.2 km/h
Zo	0.07 m
V30	40 km/h
Vdz	41.72153131 km/h
Pd	0.000163189 MPa
H (viga +baranda)	2.507 m
WS	0.409115647 kN/m
Wsmin	4.5 kN/m

3.4.3 Fuerza de frenado

FUERZA DE FRENADO	
Camión CCP-14	36.7 t
Tándem	25.48 t
Carril de diseño	1.05 t/m
Vigas	4
FUERZA DE FRENADO	
25% peso del camión de diseño	9.175 t
25 % tándem de diseño	6.37 t
5% camión CCP-14 + carril diseño	3.41 t
5% tándem más carril de diseño	2.85 t
BR máx	9.18
carriles	2
factor simultaneidad	1.00
BR	18.35 t
BR/viga	4.5875 t
Pilotes	3.00 t
BR/pilote	6.12 t

3.4.4 CARGAS MUERTAS

Wlosa	1.01 t/m
Chaflán	0.01 t/m
Wviga	0.43 t/m
Personal y equipos	0.16 t/m

CARGAS SOBRE IMPUESTAS

Riostras	0,01 t/m	MD	1	Reacciones	0,2
Barandas	0,10 t/m		8		1,3
Wasfalto	0,07		31		5,0

Elemento	Longitud (m/m)	Peso (Kg/m)	Cantidad	Total (Kg/m)
Tubería F4"x4mm con junta	1	10.800	5.01	54.05
Abrazaderas F4" PL4"x1/8x328	0.35	1.308	2.50	1.14
Tubería f2"x4mm con junta	1	5.560	1.03	5.70
Abrazaderas f2"	0.2	0.748	0.50	0.07
Paral (200*200*5)	1.32	30.110	0.50	19.87
Tapas paral 20*20*6.35	1	1.994	2.00	3.99
Tapa F4"x6mm	1	0.448	0.25	0.11
Tapa F2"x6mm	1	0.112	1.25	0.14
Platina anclaje 25*25*19,5	1	9.346	0.50	4.67
SUBTOTAL/m				89.74

3.4.5 GRADIENTE DE TEMPERATURA

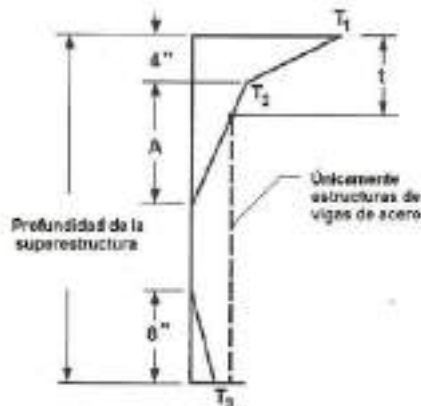


Figura 3.12.3-1 - Gradiente Positivo de Temperatura Vertical en Superestructuras de Concreto y de Acero

Tabla 3.12.3-1-Bases para Gradientes de Temperatura

Zona	T ₁ , °C	T ₂ , °C
1	30	7.8
2	25	6.7
3	23	6
4	21	5

TPG

ZONA	3
T1	23 °C
T2	6 °C
L	25 m
WTPG	0.07936 t/m
MTPG	6.2 t.m

3.5 GEOMETRÍA Y ESQUEMA ESTRUCTURAL

En esta memoria se presenta el diseño el cual tiene una luz recta de 25 m entre apoyos. La superestructura es del tipo vigas metálicas y losa reforzada, apoyada en neoprenos ubicados sobre cargaderos de concreto reforzado, cimentados sobre zarpas. Los apoyos son ortogonales al trazado vial.

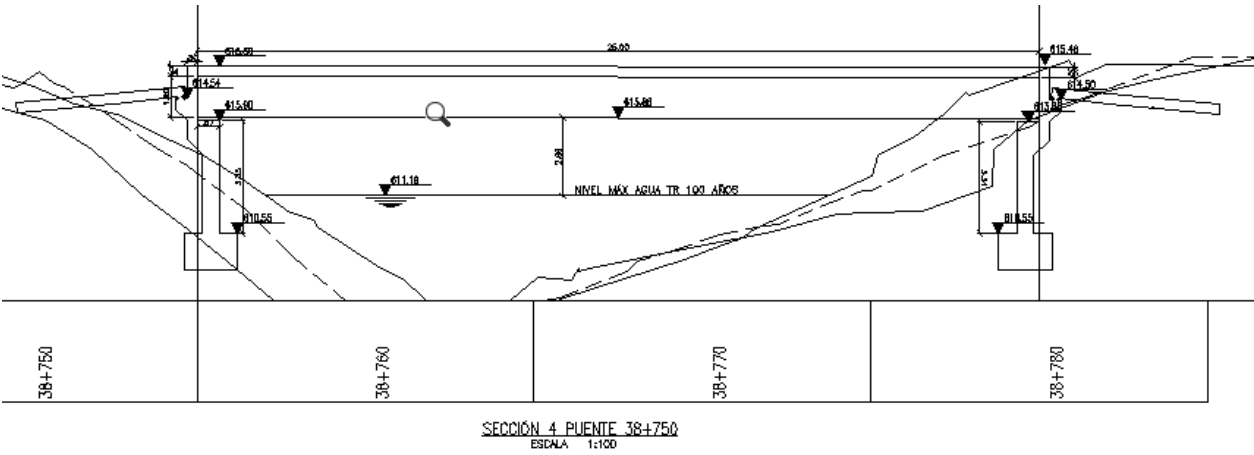


Ilustración 4 Alzado puente

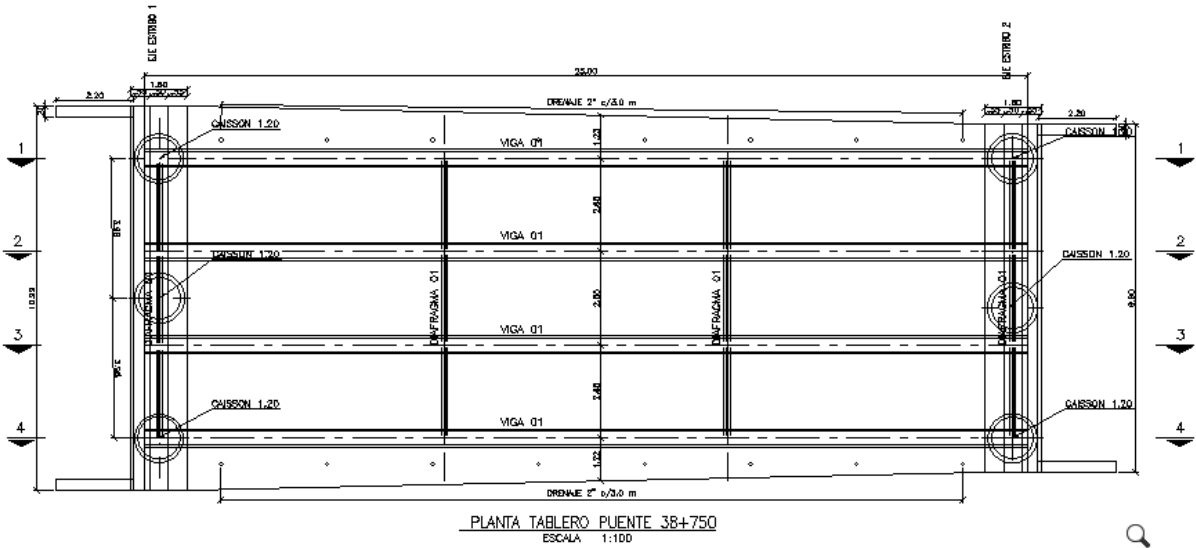


Ilustración 5 Planta

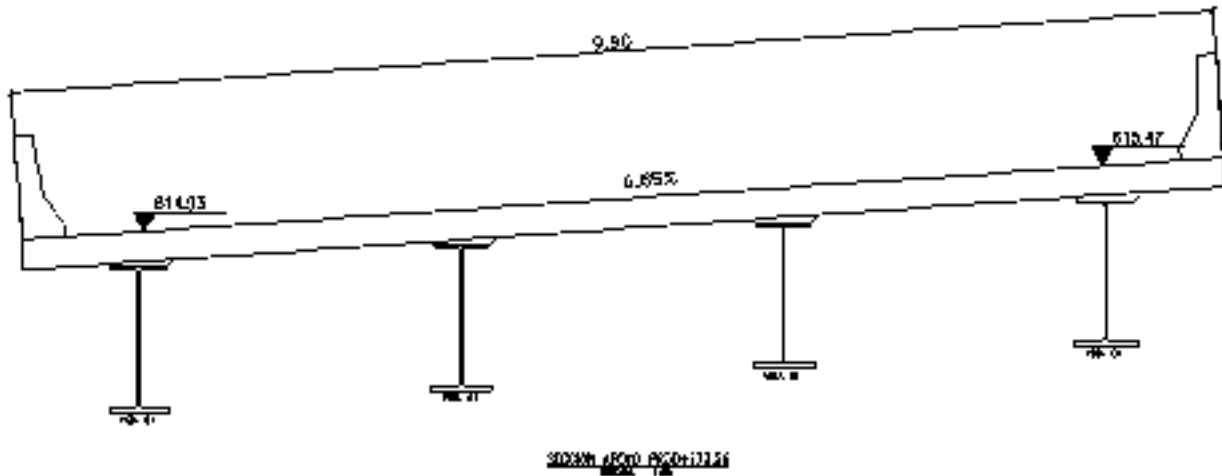


Ilustración 6 sección del tablero

3.5.1 MATERIALES

CONCRETOS

- | | |
|------------------------|----------------------|
| • Concreto de limpieza | $f'c = 14\text{MPa}$ |
| • Pilotes y caisson | $f'c = 28\text{MPa}$ |
| • Dados | $f'c = 28\text{MPa}$ |
| • Alzados de estribos | $f'c = 28\text{MPa}$ |
| • Alzados de pilas | $f'c = 28\text{MPa}$ |
| • Tablero | $f'c = 28\text{MPa}$ |
| • Barreras | $f'c = 21\text{MPa}$ |
| • Losa de aproximación | $f'c = 21\text{MPa}$ |

ACEROS

Acero refuerzo:

- Refuerzo hormigón armado $f_y = 4200\text{kg/cm}^2$.
- Acero de alta resistencia grado 270 Low relax.
- Vigas metálicas en Acero A 709W Grado 50.
- Láminas de Acero A 709W Grado 50.
- Ángulos metálicos A 709W Grado 50.
- Soldadura AWS E7018W-E8018C3.

4 DISEÑO SUPERESTRUCTURA

4.1 CARACTERÍSTICAS GEOMÉTRICAS

S1 2.65 m
Hminplaca 0.19 m

Hplaca 0.2 m

altura de las vigas

S2 para luces simples 24.7 25 m
Hmin 0.83 m

Se toma una altura de la viga de 1.2 m

4.2 MOMENTO MÁXIMO CARGA VIVA DE DISEÑO

factores distribución vigas interiores

S	2.1	$1.1 < S < 4.9$
ts	0.2	$0.11 < ts < 0.30$
L	25	$6 < L < 73$
Nb	4	$Nb \geq 4$
n	8	
eg	0.86	
lb	0.0141	
Ab	0.05	
kg	0.43	$0.00416 < kg < 2.91$

mg(1c)i 0.45
mg(2c)i 0.62 4.6.2.2.2b-1

M tandém + carril 183.66 t.m
M camión + carril 199.63 t.m

4.3 VERIFICACIÓN SECCIÓN SIMPLE



H	1.2000	m
B1	0.4500	m
tw	0.0127	m
tf1	0.0318	m
B2	0.5000	m
tf2	0.0500	m
r1	0.0000	m
r2	0.0000	m

Área	539.340	m ²
Asy	328.333	m ²
Asz	156.000	m ²
Ixx	2659.731	m ⁴
Iyy=Ixx	1406712.000	m ⁴
Izz=Iyy	76403.800	m ⁴
Cyp	25.000	m
Cym	25.000	m
Czp	70.818	m
Czm	49.182	m
Qyb	9953.326	m ²
Qzb	289.329	m ²
Peri:O	427.400	m
Peri:I	0.000	m
Center:y	25.000	m
Center:z	49.182	m
y1	-22.500	m
z1=ys	70.818	m
y2	22.500	m
z2	70.818	m
y3	25.000	m
z3	-49.182	m
y4	-25.000	m
z4	-49.182	m

Hmin 0.825 OK

$$\frac{b_f}{2t_f} \leq 12 \quad 7.08661417 \text{ OK}$$

$$b_f \geq \frac{D}{6} \quad 0.186 \text{ OK}$$

$$t_f \geq 1,1t_w \quad 0.01397 \text{ OK}$$

$$0,10 \leq \frac{I_{yc}}{I_{yt}} \leq 0,90 \quad 0.462915 \text{ OK}$$

Sin rigidizadores longitudinales en el alma

$$\frac{D}{t_w} < 150 \quad 88.05 \text{ ok}$$

Ancho de la aleta

$$b_f \geq \frac{L}{85} \quad 0.294 \text{ OK}$$

D_c = Profundidad del alma en compresión en el rango elástico.

$$\frac{2D_c}{t_w} < 5,7 \sqrt{\frac{E}{F_{yc}}} \quad 137.239873$$

106.524457 OK

$$\frac{I_{yc}}{I_{yt}} \geq 0,30 \quad 0.46 \text{ OK}$$

Verificación rango aplicación

Sección transversal tipo (A) 4.6.2.2.1-1

S 2.1 OK

ts e losa 0.2 OK

I 25 OK

[AASHTO-LRFD16]

- *. MEMBER NO = 2, ELEMENT TYPE = Beam
- *. LOADCOMB NO = 3, MATERIAL NO = 2, SECTION NO = 3
- *. UNIT SYSTEM : tonf, m
- *. SECTION PROPERTIES : Designation = V120
 - Shape = I - Section. (Built-up)
 - Depth = 1.200, Top F Width = 0.450, Bot.F Width = 0.500
 - Web Thick = 0.013, Top F Thick = 0.032, Bot.F Thick = 0.050
 - Area = 5.39340e-002, Asy = 2.62667e-002, Asz = 1.56000e-002
 - Ybar = 2.50000e-001, Zbar = 4.91820e-001, Qyb = 9.95333e-001, Qzb = 2.89329e-002
 - Syy = 1.98638e-002, Szz = 3.05615e-003, Zyy = 2.47815e-002, Zzz = 4.79224e-003
 - Iyy = 1.40671e-002, Izz = 7.64038e-004, Iyz = 0.00000e+000
 - ry = 5.10706e-001, rz = 1.19022e-001
 - J = 2.65973e-005, Cwp = 2.22573e-004
- *. DESIGN PARAMETERS FOR STRENGTH EVALUATION :
 - Ly = 8.00000e+000, Lz = 8.00000e+000, Lb = 8.00000e+000
 - Ky = 1.00000e+000, Kz = 1.00000e+000
- *. MATERIAL PROPERTIES :
 - Fy = 3.51535e+004, Es = 2.03890e+007, MATERIAL NAME = A709-50

[[[*]]] COMPUTE MOMENT MAGNIFICATION FACTORS AND MAGNIFIED MOMENTS.

- (). Compute moment magnification factors(B1y,B1z).
 - . If tension or bending member.
 - . Assumed B1y = 1.00
 - . Assumed B1z = 1.00
- (). Magnification factors for sidesway moments(B2y,B2z).
 - . B2y = 1.00 (Default value)
 - . B2z = 1.00 (Default value)
- (). Given factored axial forces and moments at <1/2>.

Load Case	Pu	My	Mz
DL	0.00	49.69	0.00
LL	0.00	0.00	0.00
DL+LL	0.00	49.69	0.00
OTHER CASES	0.00	0.00	0.00
TOTAL	0.00	49.69	0.00

(). Compute magnified moments.

$$-. M_{uy} = B1y * My(DL+LL) + B2y * My(OTHERS) = 49.69 \text{ tonf-m.}$$

$$-. M_{uz} = B1z * Mz(DL+LL) + B2z * Mz(OTHERS) = 0.00 \text{ tonf-m.}$$

[[[*]]] CHECK AXIAL STRENGTH.

(). Check slenderness ratio of axial tension member (l/r).

[AASHTO-LRFD16 Specification 6.8.4]

$$-. l/r = 67.2 < 200.0 \text{ ---> O.K.}$$

[[[*]]] CHECK SECTION PROPORTION LIMITS

(). Check Web Proportions (AASHTO-LRFD16 Eq.6.10.2.1.1-1)

$$-. \text{Limit Value} = 150$$

$$-. D/t_w = 86.00 < \text{Limit Value} \text{ ---> O.K.}$$

(). Check Flange Proportions (AASHTO-LRFD16 Eq.6.10.2.2-1)

$$-. b_f/2t_f = 7.03 < 12.00 \text{ ---> O.K.}$$

(). Check Flange Proportions (AASHTO-LRFD16 Eq.6.10.2.2-2)

$$-. b_f > D/6 = 0.19 \text{ ---> O.K.}$$

(). Check Flange Proportions (AASHTO-LRFD16 Eq.6.10.2.2-3)

$$-. t_f > 1.1 * t_w = 0.01 \text{ ---> O.K.}$$

(). Check general proportions

$$-. 0.1 < \frac{l_{zc}}{l_{zt}} = \frac{0.0002}{0.0005} = 0.467 < 10 \text{ ---> O.K.}$$

=> Flexural Resistance is Checked by AASHTO-LRFD16 Specification

[[[*]]] CHECK SECTION SLENDERNESS

(). Check Flange ratio

$$-\frac{l_{zc}}{l_{zt}} = \frac{0.0002}{0.0005} = 0.467 > 0.3$$

(). Check web slenderness

$$-\text{Limit Value} = 5.7 \cdot \text{SQRT}[E/F_{yc}] = 137.27$$

$$-\frac{2D_c}{t_w} = 104.03 < \text{Limit Value}$$

$$-F_{yc} = 50 \text{ ksi} < 70.0 \text{ ksi}$$

=> Section is Checking by AASHTO-LRFD16 Appendix 6

=====
[[[*]]] CHECK FLEXURAL STRENGTH ABOUT MAJOR AXIS.
=====

(). Check Web Compactness Length

[AASHTO-LRFD16 Specification A6.2.1]

$$-D_{cp} = 0.97 \text{ m.}$$

$$-D_c = 0.68 \text{ m.}$$

$$-M_p = 797.97 \text{ tonf-m.}$$

$$-M_y = 1005.47 \text{ tonf-m.}$$

$$-R_h = 1.00 (\text{homogenous section})$$

$$-\lambda_{rw} = 5.7 \cdot \text{SQRT}[E_s/F_{yc}] = 137.27$$

$$-\lambda_{pw}(D_{cp})_{cal} = \frac{\text{SQRT}[E_s/F_{yc}]}{(0.54 \cdot M_p / (R_h \cdot M_y) - 0.09)^2} = 210.11$$

$$-\lambda_{pw}(D_{cp})_{lim} = \lambda_{rw} \cdot (D_{cp}/D_c) = 196.25$$

$$-\lambda_{pw}(D_{cp}) = \min[\lambda_{pw}(D_{cp})_{cal}, \lambda_{pw}(D_{cp})_{lim}] = 196.25$$

$$-\lambda_w(D_{cp}) = 2 \cdot D_{cp}/t_w = 148.72$$

$$-\lambda_w(D_{cp}) < \lambda_{pw}(D_{cp}) \rightarrow \text{compact web}$$

(). Web Plastification Factor

[AASHTO-LRFD16 Specification A6.2.1]

$$-M_{yc} = F_{yc} \cdot I_{yy}/y_c = 698.28 \text{ tonf-m.}$$

$$-M_{yt} = F_{yt} \cdot I_{yy}/y_t = 1005.47 \text{ tonf-m.}$$

$$-R_{pc} = M_p/M_{yc} = 1.14$$

$$-R_{pt} = M_p/M_{yt} = 0.79$$

(). Check compression-flange compactness

- $\lambda_{pf} = 0.38 \sqrt{E/F_y} = 9.15$
- $\lambda_f = b_f/2t_f = 7.03 < \lambda_{pf} \rightarrow$ Compact.

(). Compute nominal flexural strength of the Compression Flange (M_{nc}).

[AASHTO-LRFD16 Specification A6.3.2]

- $R_{pc} = 1.14$
- $M_{yc} = 698.28 \text{ tonf-m}$.
- $M_{nc_FLB} = R_{pc} M_{yc} = 797.97 \text{ tonf-m}$.

(). Effective Radius of Gyration for Lateral Torsional Buckling (r_t)

- depth of the web in compression (D_c) = 0.68 m.

$$r_t = \frac{b_{fc}}{\sqrt{12 \left(1 + \frac{D_c^2 t_w}{3 b_{fc}^2 t_{fc}} \right)}} = 0.12 \text{ m}.$$

(). Unbraced Length Limit (L_r)

- $y_c = 0.71 \text{ m}$.
- $y_t = 0.49 \text{ m}$.
- $M_{yc} = F_{yc} I_{yy}/y_c = 698.28 \text{ tonf-m}$.
- $M_{yt} = F_{yt} I_{yy}/y_t = 1005.47 \text{ tonf-m}$.
- $S_{xc} = M_{yc}/F_{yc} = 0.02 \text{ m}^3$.
- $S_{xt} = M_{yt}/F_{yt} = 0.03 \text{ m}^3$.
- $F_{yr_cal} = \min[0.7 F_{yc}, R_h F_{yt} S_{xt}/S_{xc}, F_{yw}] = 24607.44 \text{ tonf/m}^2$.
- $F_{yr_lim} = 0.5 F_{yc} = 17576.74 \text{ tonf/m}^2$.
- $F_{yr} = \max[F_{yr_cal}, F_{yr_lim}] = 24607.44 \text{ tonf/m}^2$.
- $J = 2.66 \times 10^{-5} \text{ m}^4$.
- $h = 1.16 \text{ m}$.
- $X_1 = J/(S_{xc} h) = 1.16 \times 10^{-3}$
- $X_2 = \sqrt{1 + 6.76 (F_{yr}/E_s S_{xc} h/J)^2} = 2.89$
- $L_r = 1.95 r_t E_s / F_{yr} \sqrt{X_1} \sqrt{1 + X_2} = 12.83 \text{ m}$.

(). Unbraced Length (L_b) Check

- $L_b = 8.00 \text{ m}$.
- $L_p = 1.0 r_t \sqrt{E_s/F_y} = 2.85 \text{ m}$.

- $L_p < L_b < L_r \rightarrow$ noncompact unbraced length

(). Calculate bending coefficient (C_b).

[AASHTO-LRFD16 Specification A6.3.3]

- $C_b = 1.000$ (User defined or default value)

(). Compute Lateral Torsional Buckling Resistance of Compression Flange (Mnc_LTB)

[AASHTO-LRFD16 Specification A6.3.3]

-. Mnc_lim = R_{pc}*M_{yc} = 797.97 tonf-m.

$$-. Mnc_calc = C_b * \left[1 - \left(1 - \frac{F_{yr} * S_{xc}}{R_{pc} * M_{yc}} \right) * \left(\frac{L_b - L_p}{L_r - L_p} \right) \right] * R_{pc} * M_{yc} = 638.50 \text{ tonf-m.}$$

-. Mnc_LTB = min[Mnc_calc, Mnc_lim] = 638.50 tonf-m.

(). Compute nominal flexural strength of Compression Flange (Mnc)

-. Mnc = min[Mnc_FLB, Mnc_LTB] = 638.50 tonf-m.

(). Compute nominal flexural strength of Tension Flange (Mnt).

[AASHTO-LRFD16 Specification A6.4]

-. R_{pt} = 0.79

-. M_{yt} = 1005.47 tonf-m.

-. Mnt = R_{pt}*M_{yt} = 797.97 tonf-m.

-. M_n = min(Mnc, Mnt) = 638.50 tonf-m.

(). Compute flexural strength about major axis (phiM_{ny}).

-. Resistance factor for flexure : phi = 1.00

-. phiM_{ny} = phi*M_{ny} = 638.50 tonf-m.

(). Check ratio of flexural strength (M_{uy}/phiM_{ny}).

$$-. \frac{M_{uy}}{\phi M_{ny}} = \frac{49.69}{638.50} = 0.078 < 1.000 \text{ ---> O.K.}$$

=====

[[[*]]] CHECK FLEXURAL STRENGTH ABOUT MINOR AXIS.

=====

(). Slenderness ratio for flange (lamda_f)

[AASHTO-LRFD16 Specification 6.12.2.2]

-. lamda_f = b_f/(2*t_f) = 7.03

-. lamda_pf = 0.038*SQRT(E_s/F_{yf}) = 0.92

-. lamda_rf = 0.83*SQRT(E_s/F_{yf}) = 19.99

-. lamda_pf < lamda_f < lamda_rf ---> noncompact flange

(). Compute nominal flexural strength of the flange (M_n).

[AASHTO-LRFD16 Specification 6.12.2.2]

$$-. M_n = \left[1 - \left(1 - \frac{S_{zz}}{0.45 * \text{SQRT}[E_s / F_y]} \right) * \left(\frac{\lambda_f - \lambda_{pf}}{\lambda_{rf} - \lambda_{pf}} \right) \right] * F_y * Z_{zz} = 134.02 \text{ tonf-m.}$$

(). Compute flexural strength about minor axis (ϕM_{nz}).

- $M_{nz} = 134.02 \text{ tonf-m.}$
- Resistance factor for flexure : $\phi = 1.00$
- $\phi M_{nz} = \phi * M_{nz} = 134.02 \text{ tonf-m.}$

(). Check ratio of flexural strength ($M_{uz}/\phi M_{nz}$).

$$-\frac{M_{uz}}{\phi M_{nz}} = \frac{0.00}{134.02} = 0.000 < 1.000 \rightarrow \text{O.K.}$$

=====

[[[*]]] CHECK INTERACTION OF COMBINED STRENGTH.

=====

(). Check interaction ratio of combined strength.

[AASHTO-LRFD16 Specification 6.9.2.2]

- $P_u/\phi P_n < 0.20 \rightarrow \text{Formula(6.9.2.2-2)}$

$$-\text{ComRat} = \frac{P_u}{2*\phi P_n} + \left[\frac{M_{uy}}{\phi M_{ny}} + \frac{M_{uz}}{\phi M_{nz}} \right]$$

$$= 0.000 + [0.078 + 0.000]$$

$$= 0.078 < 1.000 \rightarrow \text{O.K.}$$

=====

[[[*]]] CHECK SHEAR STRENGTH.

=====

(). Calculate nominal shear strength in local-z direction (V_{nz}).

[AASHTO-LRFD16 Specification 6.10.9.2]

- Resistance factor for shear : $\phi = 1.00$
- $C = 0.60$
- $V_p = 0.58 * F_y * A_{sz} = 318.07 \text{ tonf.}$
- $V_{nz} = C * V_p = 189.57 \text{ tonf.}$

(). Check ratio of shear strength ($V_u/\phi V_n$).

(LCB = 3, POS = J)

- Applied shear force : $V_{uz} = 2.54 \text{ tonf.}$

$$-\frac{V_{uz}}{\phi V_{nz}} = \frac{2.54}{189.57} = 0.013 < 1.000 \rightarrow \text{O.K.}$$

4.4 VERIFICACIÓN SECCIÓN COMPUESTA

I. Design Condition (Positive Flexure)

1. Section Properties

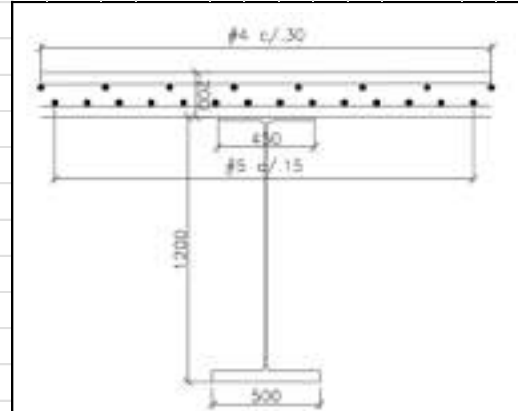
1) Slab Properties

B_s	=	82.677 in
t_s	=	7.874 in
t_h	=	1.260 in
f'_c	=	4.000 ksi
E_c	=	3644.147 ksi
A_r	=	5.740 in ²
F_{yr}	=	60.000 ksi

2) Girder Properties

[Section]

b_{fc}	=	15.748 in	b_{ft}	=	19.685 in
t_{fc}	=	1.260 in	t_{ft}	=	2.008 in
D	=	43.976 in	t_w	=	0.500 in
H	=	47.244 in			



Position	Material	Thick(in)	f_y (ksi)	f_u (ksi)	Note
Compression Flange	A709-50	1.260	50.000	65.000	less than 2 in.
Tension Flange	A709-50	2.008	50.000	65.000	
Web	A709-50	0.500	50.000	65.000	less than 2 in.

[Design Strength]

F_{yc}	=	50.000 ksi	(Compression Flange Yield Strength)
F_{yw}	=	50.000 ksi	(Web Yield Strength)
F_{yt}	=	50.000 ksi	(Tension Flange Yield Strength)
E_s	=	29000.000 ksi	(Elastic Modulus of Steel)

3) Transverse Stiffener Properties

Position	Type	f_y (ksi)	H(in)	B(in)	t_w (in)	t_r (in)	d_0 (in)
Web	1Side	0.000	0.000	0.000	-	-	0.000

2. Elastic Section Properties

1) Steel Section

A (in ²)	81.353	I_y (in ⁴)	32002.480	I_z (in ⁴)	1686.820
d_{Top} (in)	28.903	d_{Bot} (in)	18.341		
S_{Top} (in ³)	1107.251	S_{Bot} (in ³)	1744.817		
S_L (in ³)	171.381	S_R (in ³)	171.381		
w_1 (in ²)	267.399	w_2 (in ²)	-267.399	I_w (in ⁶)	6.456732E+05
w_3 (in ²)	100.022	w_4 (in ²)	-100.022		

2) Short-term Composite Section							
$A_{(n)}(\text{in}^2)$	163.158	$I_{y(n)}(\text{in}^4)$	76414.019	$I_{z(n)}(\text{in}^4)$	48285.075		
$d_{\text{Top}(n)}(\text{in})$	12.437	$d_{\text{Bot}(n)}(\text{in})$	34.807				
$S_{\text{Top}(n)}(\text{in}^3)$	6143.909	$S_{\text{Bot}(n)}(\text{in}^3)$	2195.380				
$S_{L(n)}(\text{in}^3)$	4905.764	$S_{R(n)}(\text{in}^3)$	4905.764				
$w_1(\text{in}^2)$	2.590	$w_2(\text{in}^2)$	-2.585	$I_{w(n)}(\text{in}^6)$	3.241227E+06		
$w_3(\text{in}^2)$	462.430	$w_4(\text{in}^2)$	-462.431				
3) Long-term Composite Section ($E_s/E_c = 3n$ (or n for time dependent material properties defined since the analysis results take into account the long term effects))							
$A_{(3n)}(\text{in}^2)$	163.158	$I_{y(3n)}(\text{in}^4)$	76414.019	$I_{z(3n)}(\text{in}^4)$	48285.075		
$d_{\text{Top}(3n)}(\text{in})$	12.437	$d_{\text{Bot}(3n)}(\text{in})$	34.807				
$S_{\text{Top}(3n)}(\text{in}^3)$	6143.909	$S_{\text{Bot}(3n)}(\text{in}^3)$	2195.380				
$S_{L(3n)}(\text{in}^3)$	4905.764	$S_{R(3n)}(\text{in}^3)$	4905.764				
$w_1(\text{in}^2)$	2.590	$w_2(\text{in}^2)$	-2.585	$I_{w(3n)}(\text{in}^6)$	3.241227E+06		
$w_3(\text{in}^2)$	462.430	$w_4(\text{in}^2)$	-462.431				
II. Strength Limit State - Flexural Resistance							
1. Flexure							
■ Positive moment							
1) Design Forces and Stresses							
Load Combination Name : scLCB3							
Load Combination Type : -							
Component		M_u (kips-in)				V_u (kips)	T (kips-in)
		Steel (M_{D1})	Long-term (M_{D2})	Short-term	Sum		
Forces	(+)	0.000	12980.484	0.000	12980.484	-18.807	0.000
Component		$f_{c,t}$ (ksi)					
		Steel (M_{D1})	Long-term (M_{D2})	Short-term	Sum		
Stresses	Top	0.000	-2.113	0.000	-2.113		
	Bot	0.000	5.913	0.000	5.913		
2) Cross-section Proportions							
① Web Proportions (AASHTO LRFD Bridge, 2017, 6.10.2.1)							
$\frac{D}{t_w}$	=	87.953	≤	150		 OK	
② Flange Proportions (AASHTO LRFD Bridge, 2017, 6.10.2.2)							
$\frac{b_f}{2t_f}$	=	6.250	≤	12		 OK	
b_f	=	15.748	≥	$D/6 = 7.329$		 OK	
t_f	=	1.260	≥	$1.1t_w = 0.550$		 OK	
$I_{yc} = \frac{t_{fc} \cdot b_{fc}^3}{12}$	=	410.028 in ⁴					
$I_{yt} = \frac{t_{ft} \cdot b_{ft}^3}{12}$	=	1276.333 in ⁴					
0.1	≤	$\frac{I_{yc}}{I_{yt}}$	=	0.321	≤	10.0	 OK

3) Flexural Strength Limit State in positive flexure

- Section Classification (AASHTO LRFD Bridge, 2017, 6.10.6.2)

$$\min (F_{yc}, F_{yt}) = 50.000 \text{ ksi} \leq 70.000 \text{ ksi} \quad \text{..... OK}$$

$$\frac{D}{t_w} = 87.953 \leq 150 \quad \text{..... OK}$$

$$\frac{2 \cdot D_{cp}}{t_w} = 0.000 \leq 3.76 \sqrt{\frac{E_s}{F_{yc}}} = 90.553 \quad \text{..... OK}$$

in which :

$$D_{cp} = 0.000 \text{ in} \quad (\text{Reinforcement under compression is conservatively neglected})$$

∴ **Compact section.**

- Hybrid Factor, R_h (AASHTO LRFD Bridge, 2017, 6.10.1.10.1)

$$R_h = 1.000 \quad (\text{homogeneous section})$$

- Plastic Moment(M_p) (AASHTO LRFD Bridge, 2017, D6.1)

① Plastic Forces

- Plastic Forces

$$P_{rt} = F_{yt} A_{rt} = 0.000 \text{ kips}$$

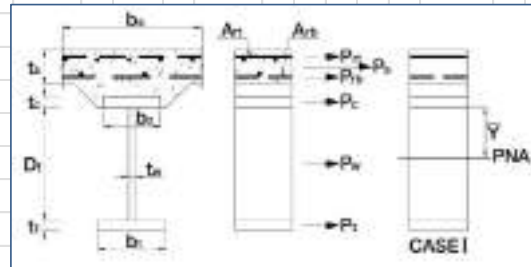
$$P_{rb} = F_{yt} A_{rb} = 0.000 \text{ kips}$$

$$P_t = b_{ft} \cdot t_{ft} \cdot F_{yt} = 1976.254 \text{ kips}$$

$$P_w = D \cdot t_w \cdot F_{yw} = 1099.409 \text{ kips}$$

$$P_c = b_{fc} \cdot t_{fc} \cdot F_{yc} = 992.002 \text{ kips}$$

$$P_s = 0.85 f_{ck} \cdot B_s \cdot t_s = 2213.404 \text{ kips}$$



- Distance from the plastic neutral axis

$$d_{rt} = 7.083 \text{ in} \quad (\text{distance from the PNA to the centerline of the top layer of reinforcement})$$

$$d_{rb} = 3.146 \text{ in} \quad (\text{distance from the PNA to the centerline of the bottom layer of reinforcement})$$

$$d_t = 45.063 \text{ in} \quad (\text{distance from the plastic neutral axis to midthickness of the tension flange})$$

$$d_w = 22.071 \text{ in} \quad (\text{distance from the plastic neutral axis to middepth of the web})$$

$$d_c = 0.548 \text{ in} \quad (\text{distance from the plastic neutral axis to midthickness of the compression flange})$$

$$d_s = 5.114 \text{ in} \quad (\text{distance from the plastic neutral axis to midthickness of the concrete deck})$$

② Plastic moment

- Check the case of the plastic neutral axis

$$P_t + P_w + P_c = 4067.665 \text{ kips} \geq P_s + P_{rb} + P_{rt} = 2213.404 \text{ kips} \quad \text{..... OK}$$

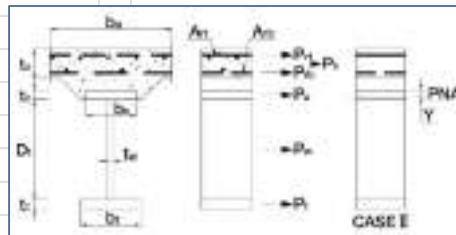
∴ PNA in Top Flange

- Distance of the plastic neutral axis

$$Y = \frac{t_c}{2} \cdot \left(\frac{P_w + P_t - P_s - P_{rt} - P_{rb}}{P_c} + 1 \right) = 1.177 \text{ in}$$

- Plastic Moment

$$M_p = \frac{P_c}{2t_c} \cdot [Y^2 + (t_c - Y)^2] + [P_s \cdot d_s + P_{rt} \cdot d_{rt} + P_{rb} \cdot d_{rb} + P_w \cdot d_w + P_t \cdot d_t] = 125188.818 \text{ kips-in}$$



• Yield Moment(M_y) (AASHTO LRFD Bridge, 2017, D6.2.2)									
① Yield Moment of Top Flange									
F_y	$=$	$\frac{M_{D1}}{S_{Top}}$	$+$	$\frac{M_{D2}}{S_{Top(3n)}}$	$+$	$\frac{M_{AD}}{S_{Top(n)}}$	$=$	$\frac{0.000E+00}{1.107E+03} + \frac{1.298E+04}{6.144E+03} + \frac{M_{AD}}{6.144E+03}$	$=$ 50.000 ksi
M_{AC}	$=$	2.942E+05 kips-in							
M_{yTop}	$=$	$M_{D1} + M_{D2} + M_{AC}$	$=$	3.072E+05 kips-in					
② Yield Moment of Bottom Flange									
F_y	$=$	$\frac{M_{D1}}{S_{Bot}}$	$+$	$\frac{M_{D2}}{S_{Bot(3n)}}$	$+$	$\frac{M_{AD}}{S_{Bot(n)}}$	$=$	$\frac{0.000E+00}{1.745E+03} + \frac{1.298E+04}{2.195E+03} + \frac{M_{AD}}{2.195E+03}$	$=$ 50.000 ksi
M_A	$=$	9.679E+04 kips-in							
M_{yBot}	$=$	$M_{D1} + M_{D2} + M_{AC}$	$=$	1.098E+05 kips-in					
$\therefore M_y$	$=$	$\min (M_{yTop}, M_{yBot}) = 1.098E+05$ kips-in							
in which :									
S	:	noncomposite section modulus (in ³)							
S_{3n}	:	long-term composite section modulus (in ³)							
S_n	:	short-term composite section modulus (in ³)							
M_D	:	moment of noncomposite section (kips-in)							
M_D	:	moment of long-term composite section (kips-in)							
M_A	:	additional yield moment of short-term composite section (kips-in)							
• Flange Lateral bending Stress (AASHTO LRFD Bridge, 2017, 6.10.1.6)									
Because of discretely braced tension flange.									
f_l	$=$	$\frac{M_{Dz1}}{S_g}$	$+$	$\frac{M_{Dz2}}{S_{LT}}$	$+$	$\frac{M_{Dz3}}{S_{ST}}$	$=$	0.000 ksi	
Because of torsional warping									
$f_{l,w}$	$=$	$\frac{M_{b1} \cdot w_g}{I_{w,g}}$	$+$	$\frac{M_{b2} \cdot w_{LT}}{I_{w,LT}}$	$+$	$\frac{M_{b3} \cdot w_{ST}}{I_{w,ST}}$	$=$	0.000 ksi	
in which :									
M_b	:	Bi-moment							
I_w	:	Warping constant							
w	:	Warping function at stress point							
f_l	$=$	$f_{l,b}$	$+$	$f_{l,w}$	$=$	0.000	$\leq$	$0.6F_{yf} =$	30.000 ksi OK
• Flexural Resistance of Composite compact section (AASHTO LRFD Bridge, 2017, 6.10.7.1.2)									
i . Nominal Flexural Resistance in a continuous span									
M_n	$=$	$1.3 R_h \cdot M_y$	$=$	142699.729 kips-in					
ii. Nominal Flexural Resistance by D_p									
$D_p > 0.1D$ therefore,									
M_n	$=$	M_p	$($	$1.07 - 0.7 \frac{D_p}{D_t}$	$) =$	119561.119 kips-in			
$\therefore M_n$	$=$	$\min (M_{n1}, M_{n2}) = 119561.119$ kips-in							
• Check Flexural Resistance of Composite compact section (AASHTO LRFD Bridge, 2017, 6.10.7.1)									
$M_{uy} + \frac{1}{3} f_l \cdot S_{xt}$	$=$	12980.484	$\leq$	$\Phi_f \cdot M_n$	$=$	119561.119 kips-in OK			

in which :																													
$M_{uy} =$	12980.484 kips-in																												
$S_{xt} =$	2195.380 in ³ (= M_{yt}/F_{yt})																												
$\Phi_f =$	1.000																												
• Ductility Requirement (AASHTO LRFD Bridge, 2017, 6.10.7.3)																													
$D_p =$	9.051 ≤ 0.42 D_t = 23.150 in OK																												
in which :																													
$D_p =$	9.051 in (distance from the top of the concrete deck to the neutral axis of the composite section at the plastic moment)																												
$D_t =$	55.118 in (total depth of the composite section)																												
III. Design Condition (Negative Flexure)																													
1. Section Properties																													
1) Slab Properties																													
$B_s =$	82.677 in																												
$t_s =$	7.874 in																												
$t_h =$	1.260 in																												
$f_{ck} =$	4.000 ksi																												
$E_c =$	3644.147 ksi																												
$A_r =$	5.740 in ²																												
$F_{yr} =$	60.000 ksi																												
2) Girder Properties																													
[Section]																													
$b_{fc} =$	19.685 in	$b_{ft} =$	15.748 in																										
$t_{fc} =$	2.008 in	$t_{ft} =$	1.260 in																										
$D =$	43.976 in	$t_w =$	0.500 in																										
$H =$	47.244 in																												
<table border="1"> <thead> <tr> <th>Position</th> <th>Material</th> <th>Thick(in)</th> <th>f_y(ksi)</th> <th>f_u(ksi)</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>Compression Flange</td> <td>A709-50</td> <td>2.008</td> <td>50.000</td> <td>65.000</td> <td></td> </tr> <tr> <td>Tension Flange</td> <td>A709-50</td> <td>1.260</td> <td>50.000</td> <td>65.000</td> <td>less than 2 in.</td> </tr> <tr> <td>Web</td> <td>A709-50</td> <td>0.500</td> <td>50.000</td> <td>65.000</td> <td>less than 2 in.</td> </tr> </tbody> </table>						Position	Material	Thick(in)	f_y (ksi)	f_u (ksi)	Note	Compression Flange	A709-50	2.008	50.000	65.000		Tension Flange	A709-50	1.260	50.000	65.000	less than 2 in.	Web	A709-50	0.500	50.000	65.000	less than 2 in.
Position	Material	Thick(in)	f_y (ksi)	f_u (ksi)	Note																								
Compression Flange	A709-50	2.008	50.000	65.000																									
Tension Flange	A709-50	1.260	50.000	65.000	less than 2 in.																								
Web	A709-50	0.500	50.000	65.000	less than 2 in.																								
[Design Strength]																													
$F_{yc} =$	50.000 ksi (Compression Flange Yield Strength)																												
$F_{yw} =$	50.000 ksi (Web Yield Strength)																												
$F_{yt} =$	50.000 ksi (Tension Flange Yield Strength)																												
$E_s =$	29000.000 ksi (Elastic Modulus of Steel)																												
3) Transverse Stiffener Properties																													
<table border="1"> <thead> <tr> <th>Position</th> <th>Type</th> <th>F_y(ksi)</th> <th>H(in)</th> <th>B(in)</th> <th>t_w(in)</th> <th>t_f(in)</th> <th>d_o(in)</th> </tr> </thead> <tbody> <tr> <td>Web</td> <td>1Side</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td>-</td> <td>-</td> <td>0.000</td> </tr> </tbody> </table>						Position	Type	F_y (ksi)	H(in)	B(in)	t_w (in)	t_f (in)	d_o (in)	Web	1Side	0.000	0.000	0.000	-	-	0.000								
Position	Type	F_y (ksi)	H(in)	B(in)	t_w (in)	t_f (in)	d_o (in)																						
Web	1Side	0.000	0.000	0.000	-	-	0.000																						

2. Elastic Section Properties

1) Steel Section

$A(\text{in}^2)$	81.353	$I_y(\text{in}^4)$	32002.480	$I_z(\text{in}^4)$	1686.820
$d_{\text{Top}}(\text{in})$	28.903	$d_{\text{Bot}}(\text{in})$	18.341		
$S_{\text{Top}}(\text{in}^3)$	1107.251	$S_{\text{Bot}}(\text{in}^3)$	1744.817		
$S_L(\text{in}^3)$	171.381	$S_R(\text{in}^3)$	171.381		
$w_1(\text{in}^2)$	267.399	$w_2(\text{in}^2)$	-267.399	$I_w(\text{in}^6)$	6.456732E+05
$w_3(\text{in}^2)$	100.022	$w_4(\text{in}^2)$	-100.022		

2) Short-term Composite Section

$A_n(\text{in}^2)$	163.158	$I_{yn}(\text{in}^4)$	76414.019	$I_{zn}(\text{in}^4)$	48285.075
$d_{\text{Top}(n)}(\text{in})$	12.437	$d_{\text{Bot}(n)}(\text{in})$	34.807		
$S_{\text{Top}(n)}(\text{in}^3)$	6143.909	$S_{\text{Bot}(n)}(\text{in}^3)$	2195.380		
$S_{Ln}(\text{in}^3)$	4905.764	$S_{Rn}(\text{in}^3)$	4905.764		
$w_{1(n)}(\text{in}^2)$	2.590	$w_{2(n)}(\text{in}^2)$	-2.585	$I_{wn}(\text{in}^6)$	3.241227E+06
$w_{3(n)}(\text{in}^2)$	462.430	$w_{4(n)}(\text{in}^2)$	-462.431		

3) Long-term Composite Section

($E_s/E_c = 3n$ (or n for time dependent material properties defined since the analysis results take into account the long term))

$A_n(\text{in}^2)$	163.158	$I_{yn}(\text{in}^4)$	76414.019	$I_{zn}(\text{in}^4)$	48285.075
$d_{\text{Top}(n)}(\text{in})$	12.437	$d_{\text{Bot}(n)}(\text{in})$	34.807		
$S_{\text{Top}(n)}(\text{in}^3)$	6143.909	$S_{\text{Bot}(n)}(\text{in}^3)$	2195.380		
$S_{Ln}(\text{in}^3)$	4905.764	$S_{Rn}(\text{in}^3)$	4905.764		
$w_{1(n)}(\text{in}^2)$	2.590	$w_{2(n)}(\text{in}^2)$	-2.585	$I_{wn}(\text{in}^6)$	3.241227E+06
$w_{3(n)}(\text{in}^2)$	462.430	$w_{4(n)}(\text{in}^2)$	-462.431		

4) Short-term Composite Section(Long. Reinforcement)

$A_{(R)}(\text{in}^2)$	87.093	$I_{y(R)}(\text{in}^4)$	37451.700	$I_{z(R)}(\text{in}^4)$	4952.517
$d_{\text{Top}(R)}(\text{in})$	26.805	$d_{\text{Bot}(R)}(\text{in})$	20.439		
$S_{\text{Top}(R)}(\text{in}^3)$	1397.204	$S_{\text{Bot}(R)}(\text{in}^3)$	1832.334		
$S_{L(R)}(\text{in}^3)$	508.985	$S_{R(R)}(\text{in}^3)$	497.498		
$w_{1(R)}(\text{in}^2)$	2.590	$w_{2(R)}(\text{in}^2)$	-2.585	$I_{w(R)}(\text{in}^6)$	3.241227E+06
$w_{3(R)}(\text{in}^2)$	462.430	$w_{4(R)}(\text{in}^2)$	-462.431		

5) Long-term Composite Section(Long. Reinforcement/3)

$A_{(R3)}(\text{in}^2)$	83.267	$I_{y(R3)}(\text{in}^4)$	33902.081	$I_{z(R3)}(\text{in}^4)$	2775.596
$d_{\text{Top}(R3)}(\text{in})$	28.171	$d_{\text{Bot}(R3)}(\text{in})$	19.073		
$S_{\text{Top}(R3)}(\text{in}^3)$	1203.430	$S_{\text{Bot}(R3)}(\text{in}^3)$	1777.501		
$S_{L(R3)}(\text{in}^3)$	283.127	$S_{R(R3)}(\text{in}^3)$	280.883		
$w_{1(R3)}(\text{in}^2)$	2.590	$w_{2(R3)}(\text{in}^2)$	-2.585	$I_{w(R3)}(\text{in}^6)$	3.241227E+06
$w_{3(R3)}(\text{in}^2)$	462.430	$w_{4(R3)}(\text{in}^2)$	-462.431		

IV. Strength Limit State - Flexural Resistance

1. Flexure

■ Negative moment

1) Design Forces and Stresses

Negative load combination does not exist. Skip this check.

V. Strength Limit State - Shear Resistance

1. Shear

■ Max

1) Design Forces and Stresses				
Load Combination Name : sLCB3				
Load Combination Type : -				
Component	V _u (kips)			
	Steel	Long-term	Short-term	Sum
Forces	0.000	-18.807	0.000	-18.807

2) Shear Resistance (AASHTO LRFD Bridge, 2017, 6.10.9)

- Ratio of the shear-buckling resistance to the shear yield strength, C (AASHTO LRFD Bridge, 2017, 6.10.9.3.2)
- Web Classification

Longitudinal Stiffener : Not Exist
Transverse Stiffener : Not Exist

Transverse Spacing = 0.000 in < 3 D = 131.929 in

So, this web is considere unstiffened web

shear-buckling coefficient of unstiffened Webs

k = 5.000

$\frac{D}{t_w} = 87.953 > 1.40 \sqrt{\frac{E \cdot k}{F_{yw}}} = 75.392$

therefore,

$C = \frac{1.57}{\left(\frac{D}{t_w}\right)^2} \cdot \left(\frac{E \cdot k}{F_{yw}}\right) = 0.589$

- Nominal Resistance of Unstiffened interior Webs or End panel (AASHTO LRFD Bridge, 2017, 6.10.9.3.3)

$V_p = 0.58 F_{yw} \cdot D \cdot t_w = 637.657$ kips
 $V_n = V_{cr} = C \cdot V_p = 375.307$ kips

in which :

C = ratio of the shear-buckling resistance to the shear yield strength
 = 0.589

Transverse Spacing = 0.000 in < 1.5 D = 65.965 in OK

$V_u = -18.807 \leq \Phi_v \cdot V_n = 375.307$ kips OK

in which :

$\Phi_v = 1.000$

VI. Service Limit State

■ **Positive/Negative moment**

1) Design Forces and Stresses

There is no service load combination. Skip this check.

■ **Positive/Negative moment**

1) Design Forces and Stresses

There is no service load combination. Skip this check.

4.5 DEFLEXIONES

Tabla 6 deflexiones

CASO CARGA	DEFLEXIÓN (m)
Peso propio	-0.00519
Losa	-0.00928
Sobre impuestas	-0.00404
Viva	-0.01469
I/800	-0.03125
Deformaciones permanentes	DEFLEXIÓN (m)
Estado Límite Servicio II	-0.037610967 ACEPTABLE

5 VERIFICACIÓN RIGIDIZADOR

Rigidizador PL	15 mm 1117 mm 190 mm	
bt	20.36	OK
b/t	12.67 12.73	OK
Apn	48.83 m ²	
Rsb	170.8903 t	
Vu	92 t	OK
φPn	109.86 t	OK

6 VERIFICACIÓN CONECTOR DE CORTANTE

Lc	0.2000 m
d	0.1520 m
tw	0.0051 m
tf	0.0087 m



C6"x8.2

Área	15.442 m ²		
Asy	7.105 m ²		
Asz	7.803 m ²	ADTT1	2550
Ixx	2.677 m ⁴	ADTT2	26
Iyy=Ixx	550.336 m ⁴		
Izz=Iyy	35.606 m ⁴	Zr	7.645 t
Cyp	3.433 m	B	545
Cym	1.467 m	Zr	11.111 t
Czp	7.650 m		
Czm	7.650 m	R(LL+IM)fat	32.6 t
Qyb	83.293 m ²		
Qzb	5.893 m ²	Separación en apoyos	
Peri:O	49.180 m	r	0.34 m
Peri:I	0.000 m		
Center:y	1.467 m	Qn	58.11 t
Center:z	7.650 m	Qr	49.3935 t
y1	-1.467 m		
z1=Ys	7.650 m	P1p	999.6 t
y2	3.433 m		
z2	7.650 m	Número de conectores	
y3	3.433 m	n >	40 un
z3	-7.650 m	s	0.62 m
y4	-1.467 m		
z4	-7.650 m	S max	0.34 m

7 DISEÑO TABLERO

7.1 DISEÑO A FLEXIÓN TABLERO

S1 2.1 m
Hminplaca 0.17 m

Hplaca 0.2 m

altura de las vigas

S2 para luces simples 24.7 25 m
Hmin 1.13 m

Se toma una altura de la viga de 1.2 m

AVALÚO DE CARGAS

Carga muerta debida a la losa

Wlosa 1.01 t/m

Refuerzo mínimo:

fc	280 kg/cm2	Mcr	2.21 t.m
b	1 m	1.2Mcr	2.65 t.m
h	0.2 m		
y	0.1 m		
lc	7E-04 m4		

Armadura de repartición				
Refuerzo principal perpendicular al tráfico				
AR	$AR = \frac{121}{\sqrt{S}} = < 67\%$		61.27 %	
AR definitivo			61.27 %	
AR			9.90 cm ²	
#			5	
Av			1.98 cm ²	
Separación			19.99 cm	

Materiales			Geometría	
$f_y =$	4200	kg/cm ²	$b =$	100 cm
$f'_c =$	280	kg/cm ²	$h =$	20 cm
β_1	0.85		$\phi =$	0.9
$E_c =$	25426.08	MPa		

Resistencia Última

	d' (cm)	d (cm)	M _u (ton.m)	ρ	A _c (cm ² /m)	A _{cmin} (cm ² /m)	1.33A _c	M _{cr}	A _{s mcr}
M _{ppal} ⁺	7.50	12.50	2.70	0.0048	5.97	2.50	7.96	2.10	4.593108
M _{ppal} ⁻	7.50	12.50	2.10	0.0037	4.59	2.50	6.13	2.10	4.593108
M _{hor} ⁺	7.50	12.50	5.90	0.0111	13.84	2.50	18.46	2.10	4.593108
M _{hor} ⁻	7.50	12.50	4.90	0.0090	11.27	2.50	15.03	2.10	4.593108

REFUERZO

Calculado				Suministrado		
A _{calculada} (cm ² /m)	A _{barra} (cm ²)	ϕ	Barra	Cantidad	ϕ Barra	Refuerzo
5.97	1.27	1/2	# 4 c./ 0.21		1/2	#4 c./ 0.20
4.59	1.27	1/2	# 4 c./ 0.27		1/2	#4 c./ 0.20
13.84	2.84	3/4	# 6 c./ 0.2		3/4	#6 c./ 0.20
11.27	1.98	5/8	# 5 c./ 0.17		5/8	#5 c./ 0.15

CORTE

$$V_{ud} = 8.85 \text{ ton}$$

$$d = 12.50 \text{ cm}$$

$$\beta = 2.15$$

$$\phi_v = \phi_0.083B \cdot \sqrt{f'_c(MPa)} = 9.43 \text{ kg/cm}^2$$

$$v_{ud} = \frac{V_u}{b \cdot d} = 7.08 \text{ kg/cm}^2$$

$$v_u < \phi_v \text{ CUMPLE}$$

5.7.3.4 Control de agrietamiento

γ_e	1
Bs	1.8571
s <	255.13 mm
	25.513 cm OK

5.7.3.3.2 Refuerzo mínimo

γ_1	1.6
γ_3	0.75
M _{cr}	21 kN m

5.10.8 Retracción y temperatura

A _{sr} =	148.81 mm ² /m
A _{st} =	148.81 mm ² /m

8 DISEÑO INFRAESTRUCTURA

DETERMINACIÓN DE CARGAS SÍSMICAS



Ilustración 7 Condiciones sísmicas del proyecto

Módulos reacción horizontal

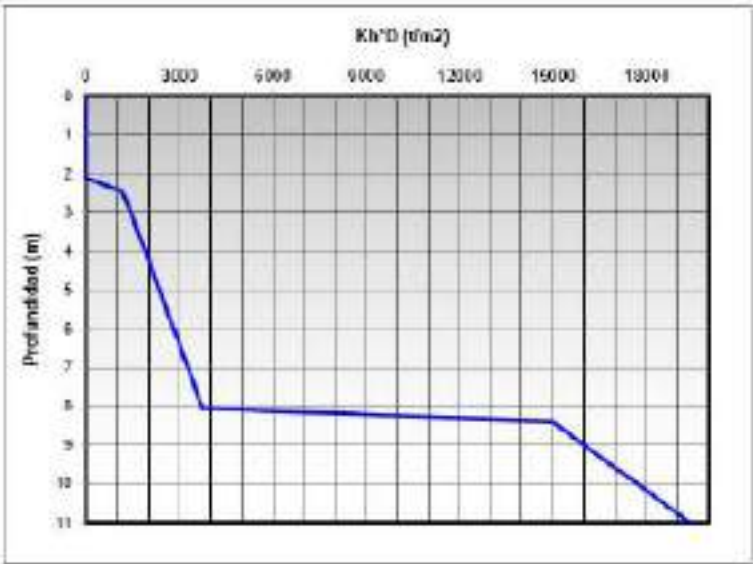


Ilustración 8 Módulos de reacción

Material del relleno

Tabla 7 Propiedades material de relleno

Aceleración A_a	0,25	CCP-14
Peso unitario del material de Relleno	2	t/m ³
Angulo de fricción interna	30	(°)
Sobrecarga tránsito vehicular (H.5.1.2 — Estados Limite de Falla-NSR-10)	1,5	t/m ²
Coeficiente de presión activa (K_a)		
$K_a = (1 - \sin \phi) / (1 + \sin \phi)$		
$K_a =$	0,333	

Análisis de Mononobe Okabe

Tabla 8 Parámetros Mononobe Okabe

CALCULO DE MONONOBE OKABE	
A_a	0,25
A_v	0
ϕ	30
δ	20
ψ	-
DA	2,262684636
K_a (mononobe okabe)	0,5082
K_o	0,5000
K_a	0,3333

8.1 MODELACIÓN INFRAESTRUCTURA

Para el análisis y diseño de la infraestructura se elabora un modelo matemático tridimensional por medio del software Midas, considerando la modelación de los distintos elementos que componen la estructura. El software Midas es un software integrado, creado en 1989, para el análisis y el diseño de estructuras; cuenta con un sistema de diseño óptimo que involucra un potente algoritmo de solución basado en FEA (análisis de elementos finitos) y modernas teorías de análisis estructural para generar resultados prácticos y precisos.

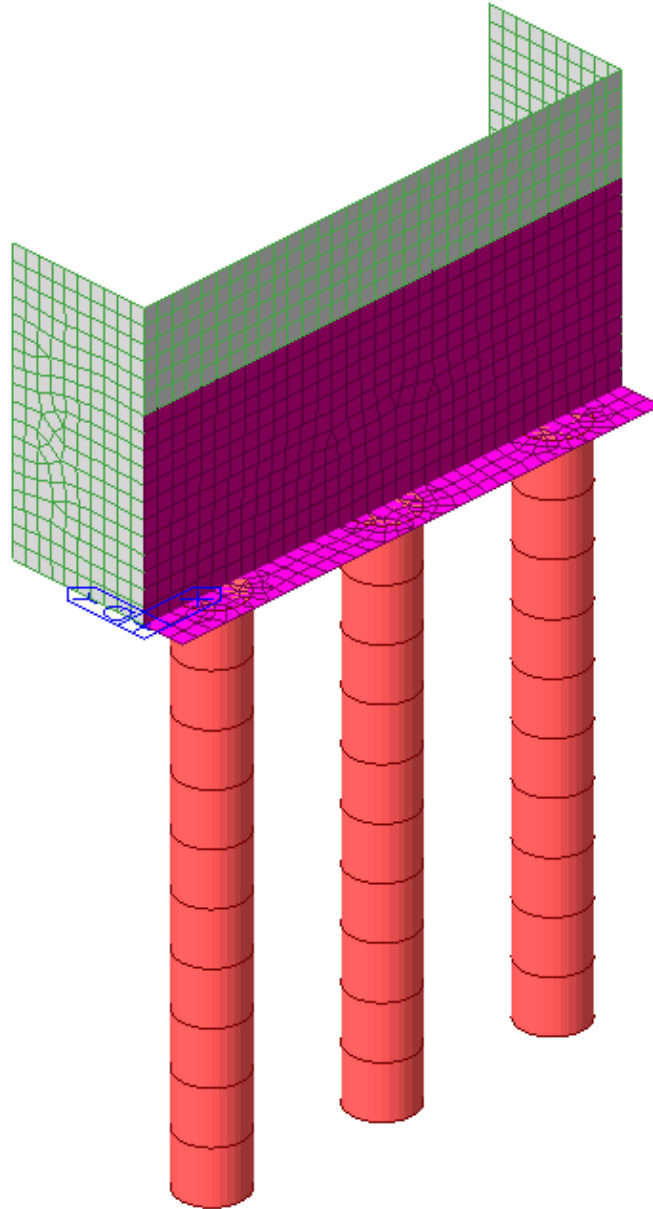


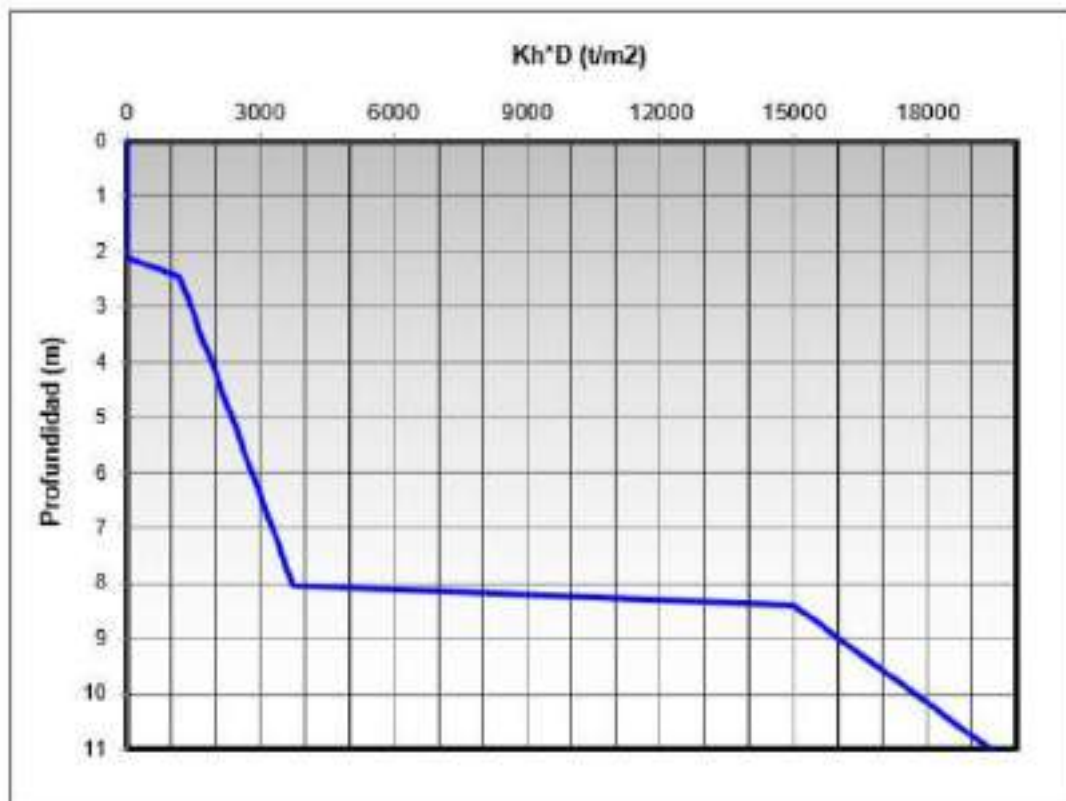
Ilustración 9 Modelo General Estribo

8.2 PARÁMETROS SUELOS Y DETERMINACIÓN DE CARGAS SÍSMICAS

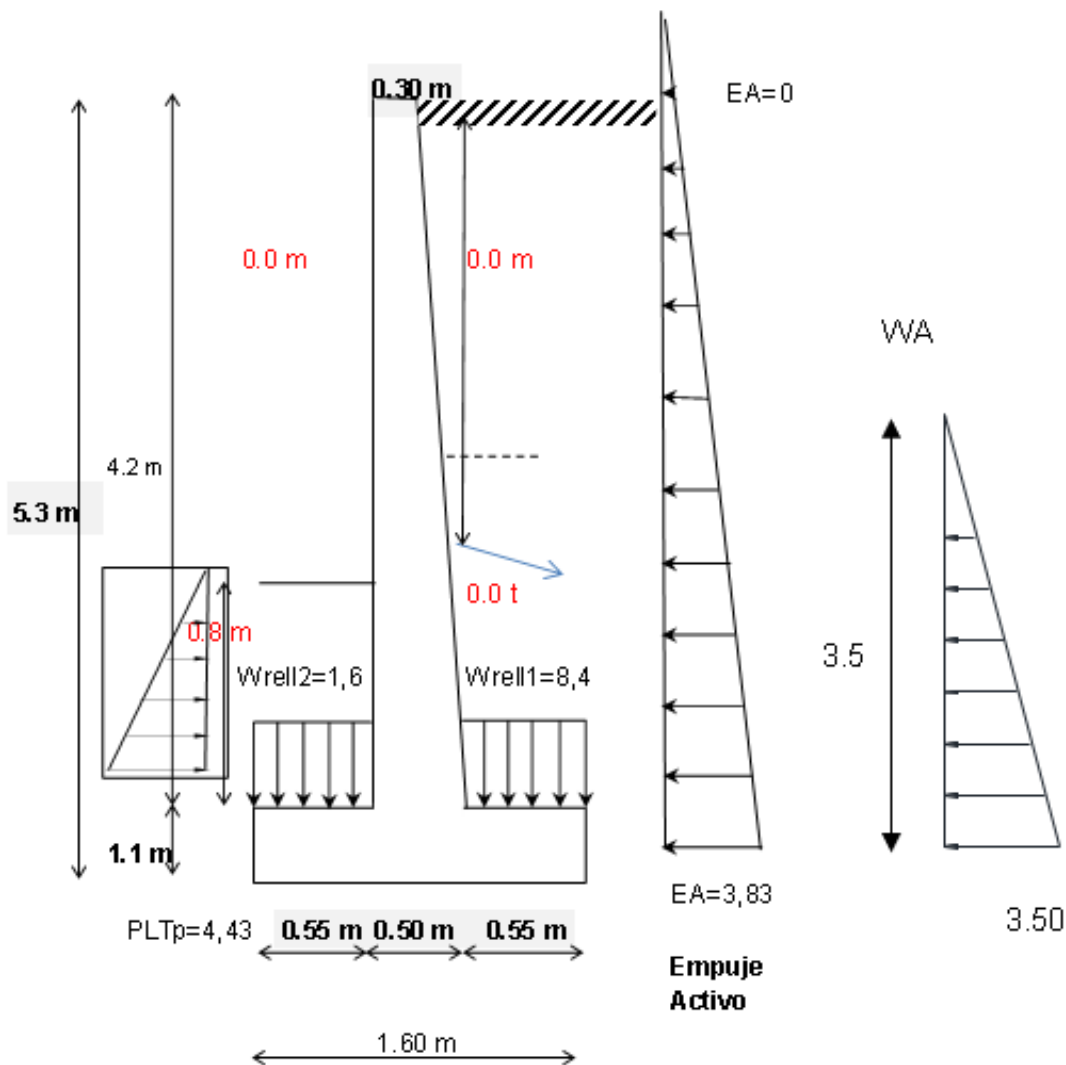
Para este puente las recomendaciones geotécnicas estipulan que el puente esta sobre un perfil tipo C en términos de respuesta sísmica.

Eeq		41,31 kN
Wm		72,00
Ws		46,20
Pir=	$Kh(Wm+Ws)$	28,37 kN
Pae=		109,47 kN
Dpae+.5Pir=		123,66 kN
.5DPae+Pir=		83,11 kN
EH=		123,66
Pu e v ext I		114.4 t/viga
μ		0.2
Hbu		22.88 t/viga

Coefficiente de reacción horizontal



Sobrecarga 3.11.6.4	
H	5,3 m
h equivalente	0,9 m
LS (heq.g.ka)	0,9 t/m



8.2.3 EH (t.m)

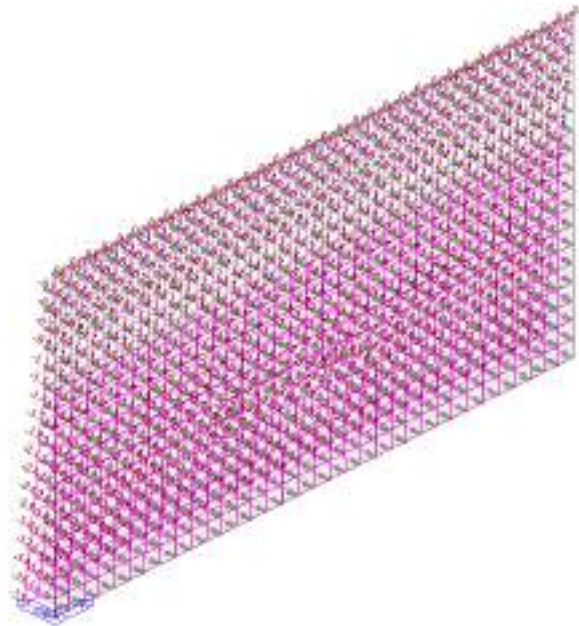


Ilustración 11 EH

8.2.4 LS (t.m)

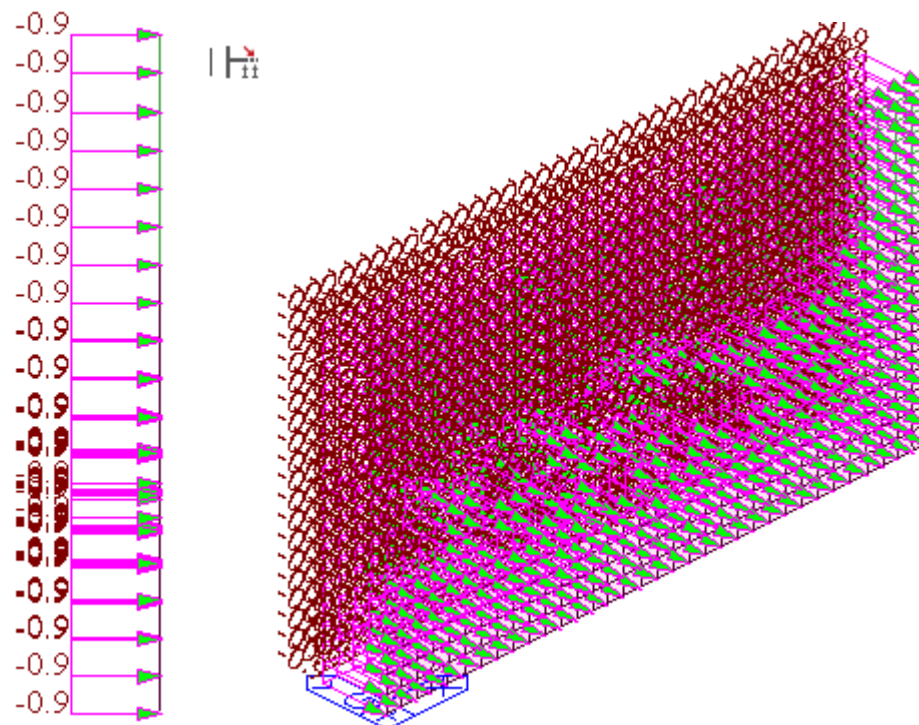


Ilustración 12 LS

8.2.5 EQ (Pseis) (t.m)

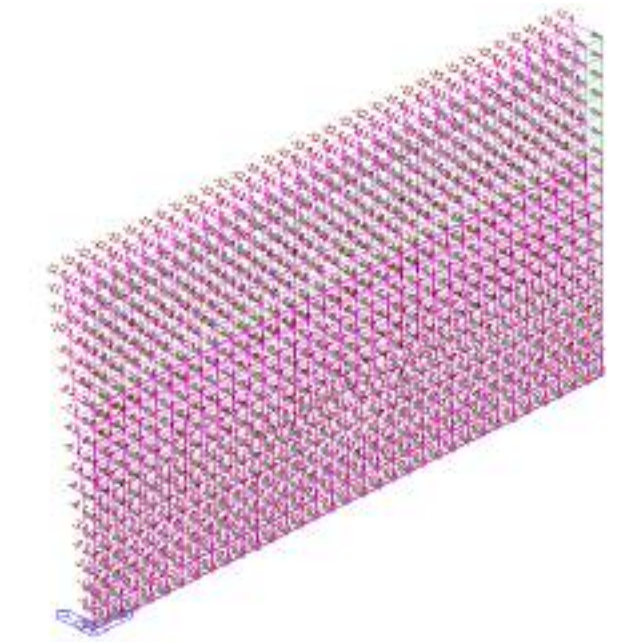


Ilustración 13 EQ1

8.2.6 EQ (Hbu) (t.m)

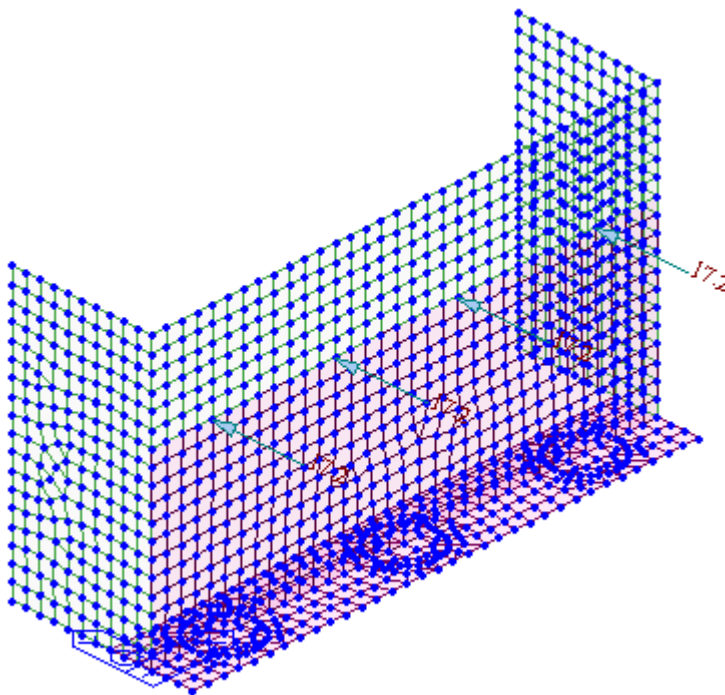


Ilustración 14 EQ2

8.2.7 EV(t.m)

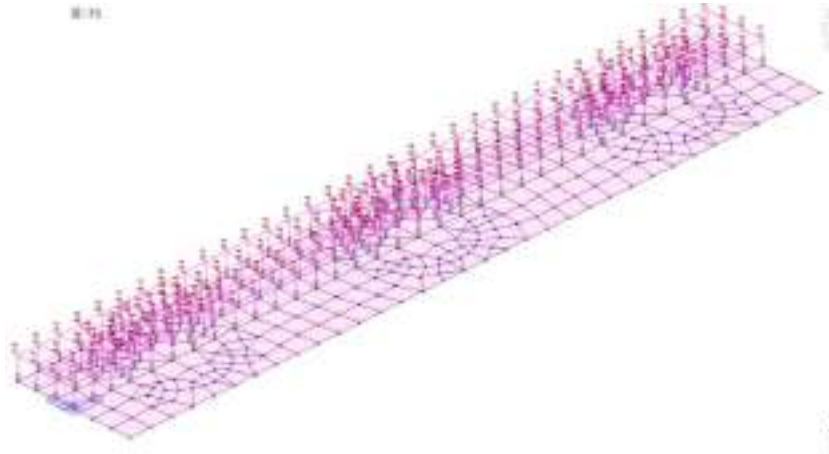


Ilustración 15 EV

8.2.8 Carga muerta sobre el estribo

Node	Load	FX (tonf)	FY (tonf)	FZ (tonf)
289	Dead Load	1.495493	-0.551567	51.13849
290	Dead Load	1.5422	0	54.576252
291	Dead Load	1.495493	0.551567	51.13849
295	Dead Load	-1.495493	-0.551567	51.13849
296	Dead Load	-1.5422	0	54.576252
297	Dead Load	-1.495493	0.551567	51.13849

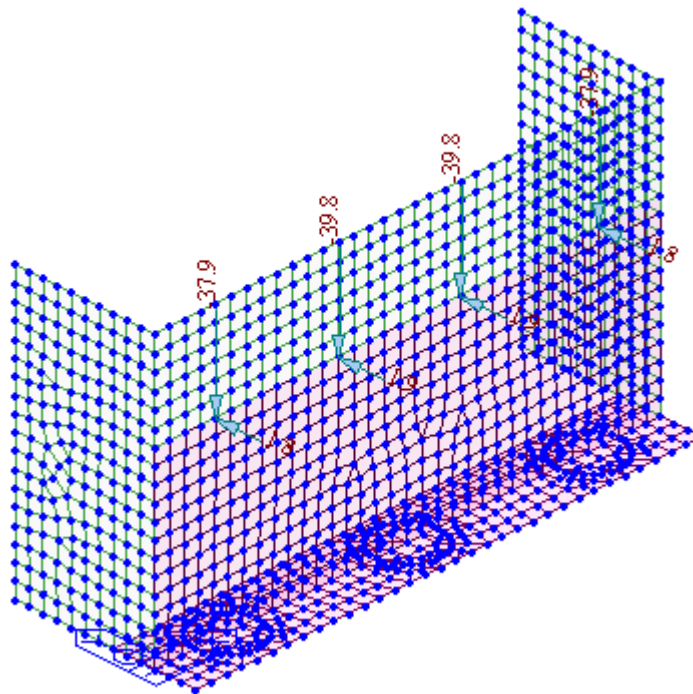


Ilustración 16 Carga muerta sobre estribo

8.2.9 Carga viva sobre el estribo

Node	Load	FX (tonf)	FY (tonf)	FZ (tonf)	MX (tonf*m)	MY (tonf*m)	MZ (tonf*m)
289	LL(max)	0.988285	0.108246	67.901067	0.003962	0.015724	0
290	LL(max)	0.593362	0.110745	47.769581	0.003876	0.010232	0
291	LL(max)	0.988285	0.113191	67.901067	0.003789	0.015724	0
295	LL(max)	0.536714	0.108246	67.901067	0.003962	0.016914	0
296	LL(max)	0.021599	0.110745	47.769581	0.003876	0.012328	0
297	LL(max)	0.536714	0.113191	67.901067	0.003789	0.016914	0

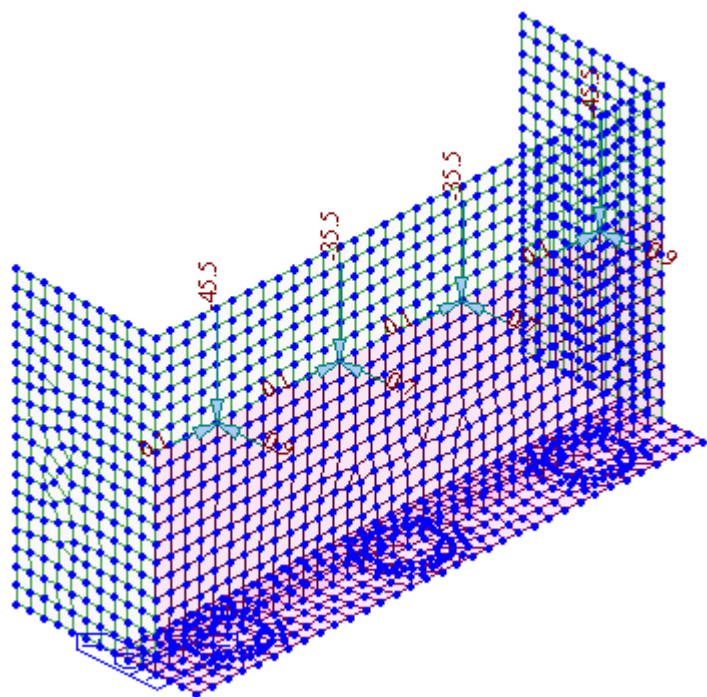


Ilustración 17 Carga viva sobre estribo

8.2.10 Fuerza de frenado

FUERZA DE FRENADO	
Camión CCP-14	36.7 t
Tándem	25.48 t
Carril de diseño	1.05 t/m
L	30.00 m
Vigas	4
FUERZA DE FRENADO	
25% peso del camión de diseño	9.175 t
25 % tándem de diseño	6.37 t
5% camión CCP-14 + carril diseño	3.41 t
5% tándem más carril de diseño	2.85 t
BR máx	9.18
carriles	2
factor simultaneidad	1.00
BR	18.35 t
BR/viga	4.5875 t
Pilotes	3.00 t
BR/pilote	6.12 t

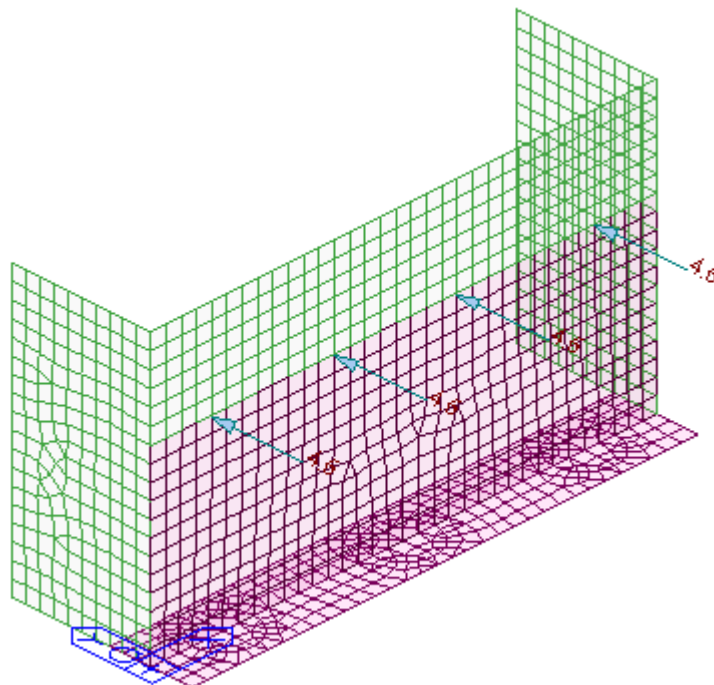


Ilustración 18 Fuerza frenado sobre estribo

8.2.11 Empujes sobre la aleta

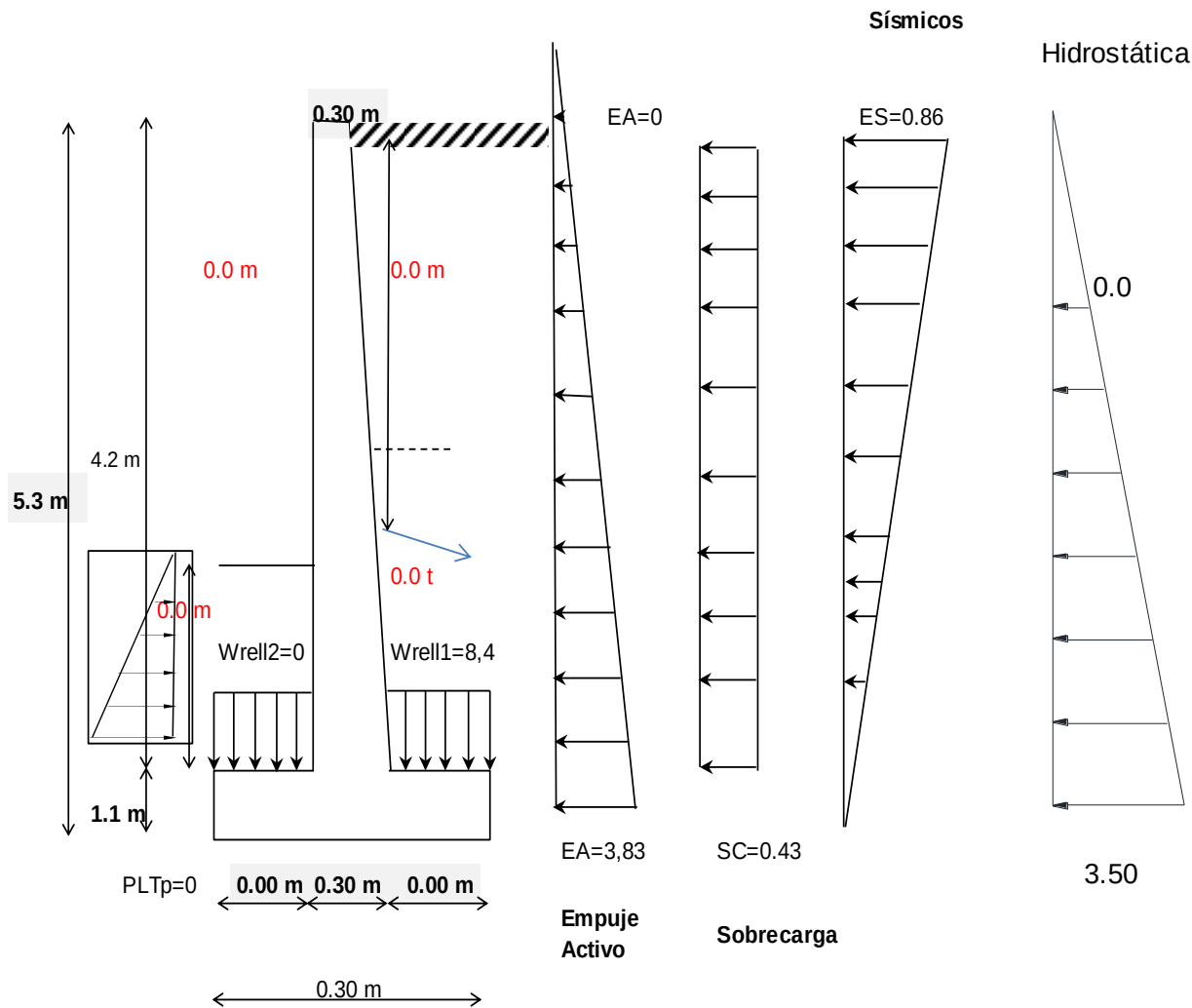
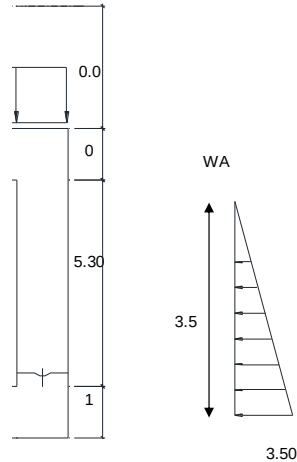


Ilustración 19 Empuje sobre aleta



EH (t.m)

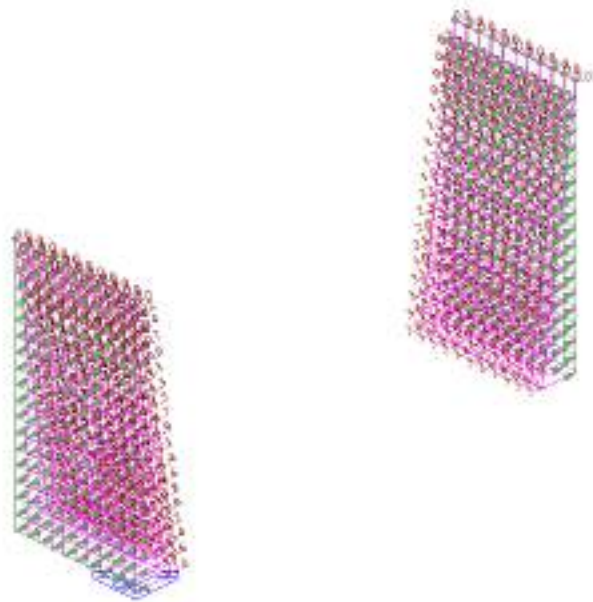


Ilustración 20 EH Aleta

LS (t.m)

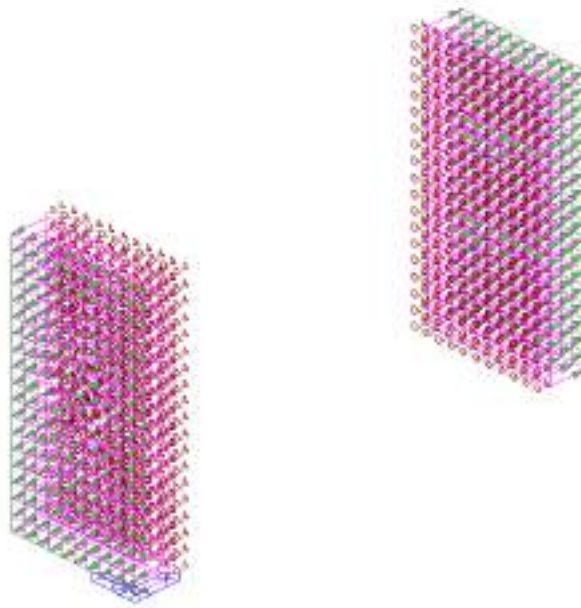


Ilustración 21 LS Aleta

EQ (t.m)

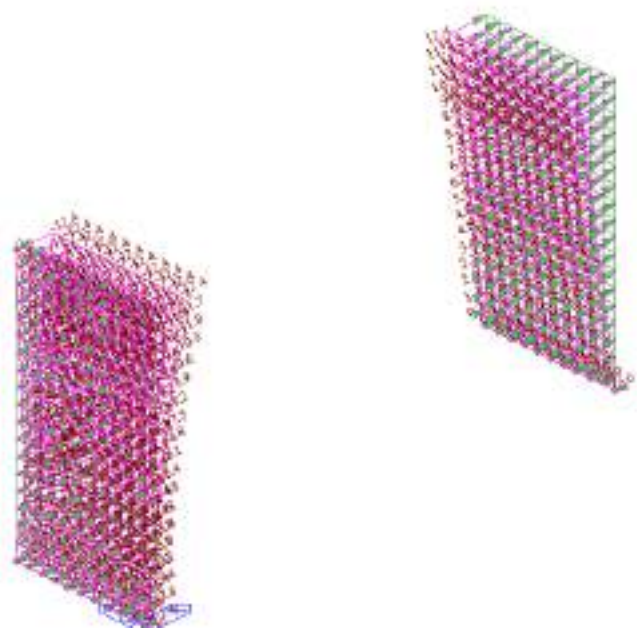
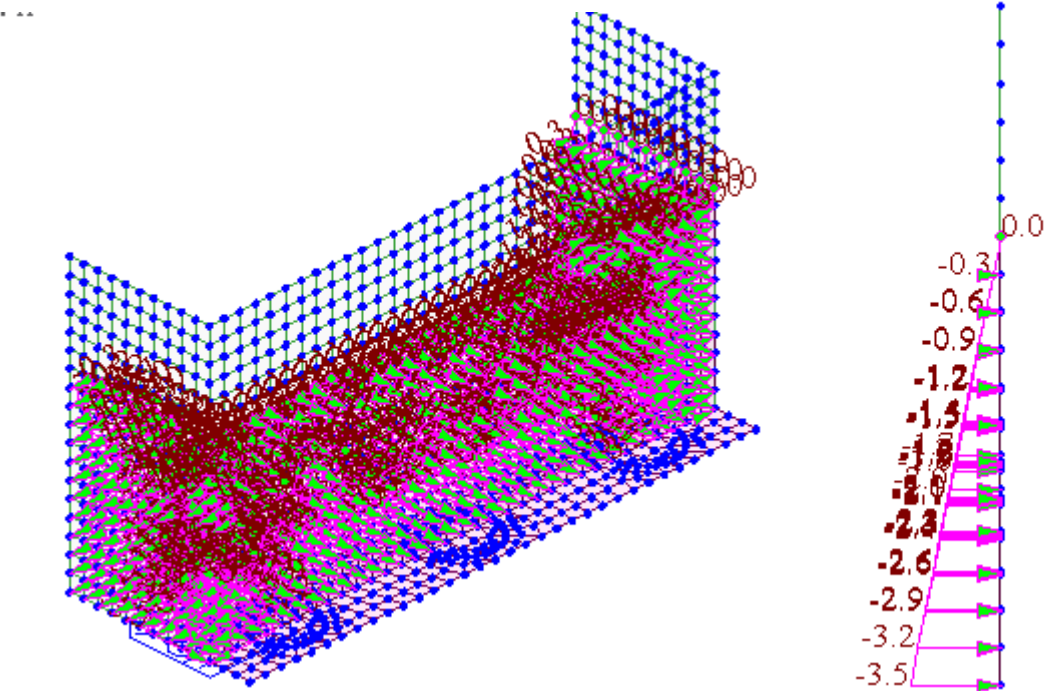


Ilustración 22 EQ aleta

WA (t.m)



8.3 COMBINACIONES PARA EL DISEÑO DE LA INFRAESTRUCTURA:

LISTA DE COMBINACIONES DE CARGA

NUM	NAME	ACTIVE	TYPE	LOADCASE(FACTOR) +	LOADCASE(FACTOR) +	LOADCASE(FACTOR)
1	cLCB1	Strength/Stress	Add	ppropio(1.250) + + BR(1.750) + + LS(1.750) +	muerta(1.250) + EH(1.500) + WA(1.000)	viva(1.750) EV(1.350)
2	cLCB2	Strength/Stress	Add	ppropio(1.250) + + BR(1.750) + + LS(1.750) +	muerta(1.250) + EH(1.500) + WA(1.000)	viva(1.750) EV(1.000)
3	cLCB3	Strength/Stress	Add	ppropio(1.250) + + BR(1.750) + + LS(1.750) +	muerta(1.250) + EH(0.900) + WA(1.000)	viva(1.750) EV(1.350)
4	cLCB4	Strength/Stress	Add	ppropio(1.250) + + BR(1.750) + + LS(1.750) +	muerta(1.250) + EH(0.900) + WA(1.000)	viva(1.750) EV(1.000)
5	cLCB5	Strength/Stress	Add	ppropio(0.900) + + BR(1.750) + + LS(1.750) +	muerta(0.900) + EH(1.500) + WA(1.000)	viva(1.750) EV(1.350)
6	cLCB6	Strength/Stress	Add	ppropio(0.900) + + BR(1.750) + + LS(1.750) +	muerta(0.900) + EH(1.500) + WA(1.000)	viva(1.750) EV(1.000)
7	cLCB7	Strength/Stress	Add	ppropio(0.900) + + BR(1.750) + + LS(1.750) +	muerta(0.900) + EH(0.900) + WA(1.000)	viva(1.750) EV(1.350)
8	cLCB8	Strength/Stress	Add	ppropio(0.900) + + BR(1.750) + + LS(1.750) +	muerta(0.900) + EH(0.900) + WA(1.000)	viva(1.750) EV(1.000)
9	cLCB9	Strength/Stress	Add	ppropio(1.250) + + BR(1.350) + + LS(1.350) +	muerta(1.250) + EH(1.500) + WA(1.000)	viva(1.350) EV(1.350)
10	cLCB10	Strength/Stress	Add	ppropio(1.250) + + BR(1.350) + + LS(1.350) +	muerta(1.250) + EH(1.500) + WA(1.000)	viva(1.350) EV(1.000)
11	cLCB11	Strength/Stress	Add			

		ppropio(1.250) + + BR(1.350) + + LS(1.350) +	muerta(1.250) + EH(0.900) + WA(1.000)	viva(1.350) EV(1.350)
12	cLCB12	Strength/Stress	Add	
		ppropio(1.250) + + BR(1.350) + + LS(1.350) +	muerta(1.250) + EH(0.900) + WA(1.000)	viva(1.350) EV(1.000)
13	cLCB13	Strength/Stress	Add	
		ppropio(0.900) + + BR(1.350) + + LS(1.350) +	muerta(0.900) + EH(1.500) + WA(1.000)	viva(1.350) EV(1.350)
14	cLCB14	Strength/Stress	Add	
		ppropio(0.900) + + BR(1.350) + + LS(1.350) +	muerta(0.900) + EH(1.500) + WA(1.000)	viva(1.350) EV(1.000)
15	cLCB15	Strength/Stress	Add	
		ppropio(0.900) + + BR(1.350) + + LS(1.350) +	muerta(0.900) + EH(0.900) + WA(1.000)	viva(1.350) EV(1.350)
16	cLCB16	Strength/Stress	Add	
		ppropio(0.900) + + BR(1.350) + + LS(1.350) +	muerta(0.900) + EH(0.900) + WA(1.000)	viva(1.350) EV(1.000)
17	cLCB17	Strength/Stress	Add	
		ppropio(1.500) + + EV(1.350) +	muerta(1.500) + WA(1.000)	EH(1.500)
18	cLCB18	Strength/Stress	Add	
		ppropio(1.500) + + EV(1.000) +	muerta(1.500) + WA(1.000)	EH(1.500)
19	cLCB19	Strength/Stress	Add	
		ppropio(1.500) + + EV(1.350) +	muerta(1.500) + WA(1.000)	EH(0.900)
20	cLCB20	Strength/Stress	Add	
		ppropio(1.500) + + EV(1.000) +	muerta(1.500) + WA(1.000)	EH(0.900)
21	cLCB21	Strength/Stress	Add	
		ppropio(0.900) + + EV(1.350) +	muerta(0.900) + WA(1.000)	EH(1.500)
22	cLCB22	Strength/Stress	Add	
		ppropio(0.900) + + EV(1.000) +	muerta(0.900) + WA(1.000)	EH(1.500)
23	cLCB23	Strength/Stress	Add	
		ppropio(0.900) + + EV(1.350) +	muerta(0.900) + WA(1.000)	EH(0.900)
24	cLCB24	Strength/Stress	Add	
		ppropio(0.900) +	muerta(0.900) +	EH(0.900)

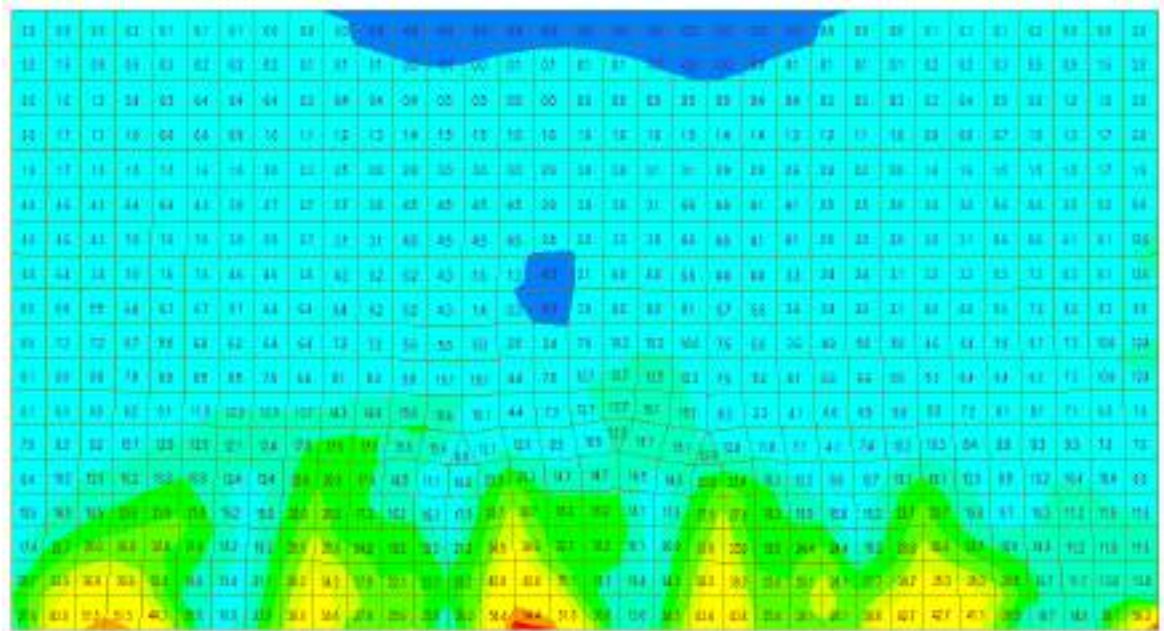
+	EV(1.000) +	WA(1.000)	
25	cLCB25	Strength/Stress	Add
	ppropio(1.000) +	muerta(1.000) +	viva(0.500)
+	BR(0.500) +	EH(1.500) +	EV(1.350)
+	LS(0.500) +	eq(1.000) +	WA(1.000)
26	cLCB26	Strength/Stress	Add
	ppropio(1.000) +	muerta(1.000) +	viva(0.500)
+	BR(0.500) +	EH(1.500) +	EV(1.350)
+	LS(0.500) +	eq(1.000) +	WA(1.000)
27	cLCB27	Strength/Stress	Add
	ppropio(1.000) +	muerta(1.000) +	viva(0.500)
+	BR(0.500) +	EH(1.500) +	EV(1.000)
+	LS(0.500) +	eq(1.000) +	WA(1.000)
28	cLCB28	Strength/Stress	Add
	ppropio(1.000) +	muerta(1.000) +	viva(0.500)
+	BR(0.500) +	EH(1.500) +	EV(1.000)
+	LS(0.500) +	eq(1.000) +	WA(1.000)
29	cLCB29	Strength/Stress	Add
	ppropio(1.000) +	muerta(1.000) +	viva(0.500)
+	BR(0.500) +	EH(0.900) +	EV(1.350)
+	LS(0.500) +	eq(1.000) +	WA(1.000)
30	cLCB30	Strength/Stress	Add
	ppropio(1.000) +	muerta(1.000) +	viva(0.500)
+	BR(0.500) +	EH(0.900) +	EV(1.350)
+	LS(0.500) +	eq(1.000) +	WA(1.000)
31	cLCB31	Strength/Stress	Add
	ppropio(1.000) +	muerta(1.000) +	viva(0.500)
+	BR(0.500) +	EH(0.900) +	EV(1.000)
+	LS(0.500) +	eq(1.000) +	WA(1.000)
32	cLCB32	Strength/Stress	Add
	ppropio(1.000) +	muerta(1.000) +	viva(0.500)
+	BR(0.500) +	EH(0.900) +	EV(1.000)
+	LS(0.500) +	eq(1.000) +	WA(1.000)
33	cLCB33	Serviceability	Add
	ppropio(1.000) +	muerta(1.000) +	viva(1.000)
+	BR(1.000) +	EH(1.000) +	EV(1.000)
+	LS(1.000) +	WA(1.000)	
34	cLCB34	Serviceability	Add
	ppropio(1.000) +	muerta(1.000) +	viva(1.300)
+	BR(1.300) +	EH(1.000) +	EV(1.000)
+	LS(1.300) +	WA(1.000)	
35	cLCB35	Serviceability	Add
	ppropio(1.000) +	muerta(1.000) +	viva(0.800)
+	BR(0.800) +	EH(1.000) +	EV(1.000)
+	LS(0.800) +	WA(1.000)	
36	cLCB36	Serviceability	Add
	ppropio(1.000) +	muerta(1.000) +	EH(1.000)

+	EV(1.000) +	WA(1.000)	
37	cLCB37	Serviceability	Add
	viva(1.500) +	WA(1.000)	
38	cLCB38	Serviceability	Add
	viva(0.750) +	WA(1.000)	
39	ELR	Strength/Stress	Envelope
	cLCB1(1.000) +	cLCB2(1.000) +	cLCB3(1.000)
+	cLCB4(1.000) +	cLCB5(1.000) +	cLCB6(1.000)
+	cLCB7(1.000) +	cLCB8(1.000) +	cLCB9(1.000)
+	cLCB10(1.000) +	cLCB11(1.000) +	cLCB12(1.000)
+	cLCB13(1.000) +	cLCB14(1.000) +	cLCB15(1.000)
+	cLCB16(1.000) +	cLCB17(1.000) +	cLCB18(1.000)
+	cLCB19(1.000) +	cLCB20(1.000) +	cLCB21(1.000)
+	cLCB22(1.000) +	cLCB23(1.000) +	cLCB24(1.000)
40	ELS	Serviceability	Envelope
	cLCB33(1.000) +	cLCB34(1.000) +	cLCB35(1.000)
+	cLCB36(1.000)		
41	ELE	Strength/Stress	Envelope
	cLCB25(1.000) +	cLCB26(1.000) +	cLCB27(1.000)
+	cLCB28(1.000) +	cLCB29(1.000) +	cLCB30(1.000)
+	cLCB31(1.000) +	cLCB32(1.000)	

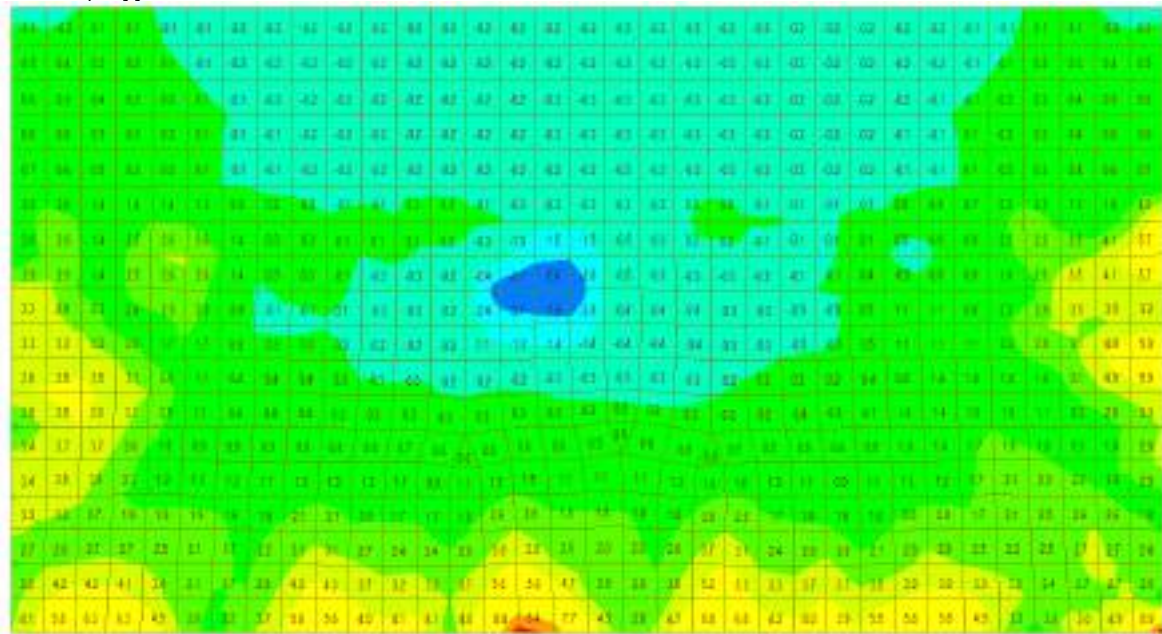
8.4 DISEÑO ELEMENTOS:

8.4.1 Vástago

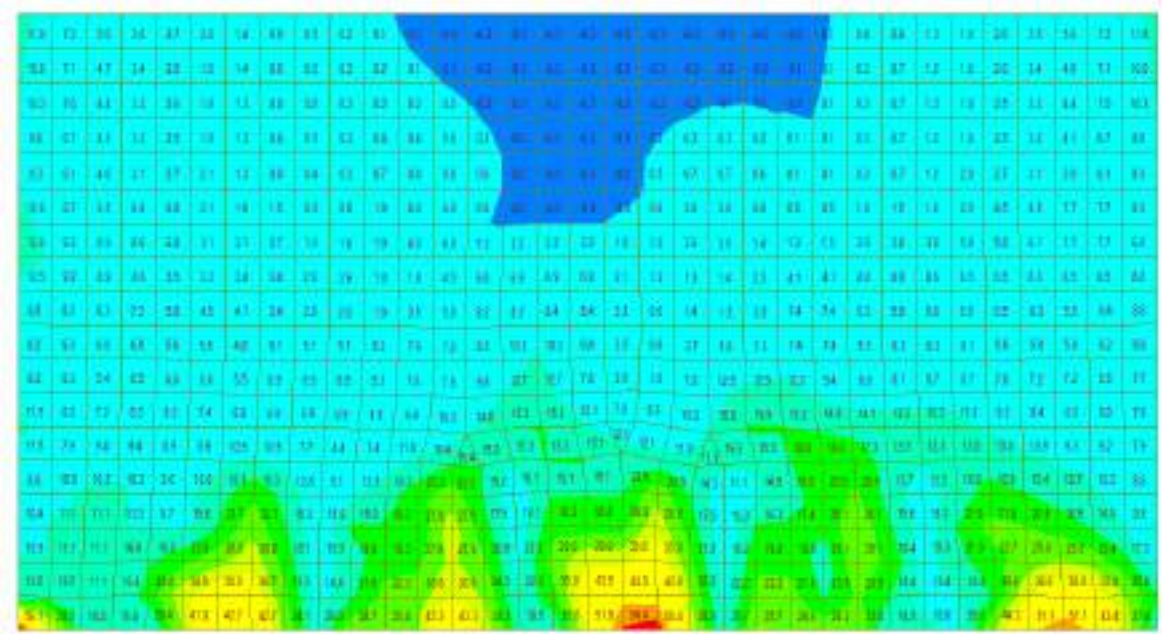
8.4.1.1 Fuerzas (Envolvente) Myy+



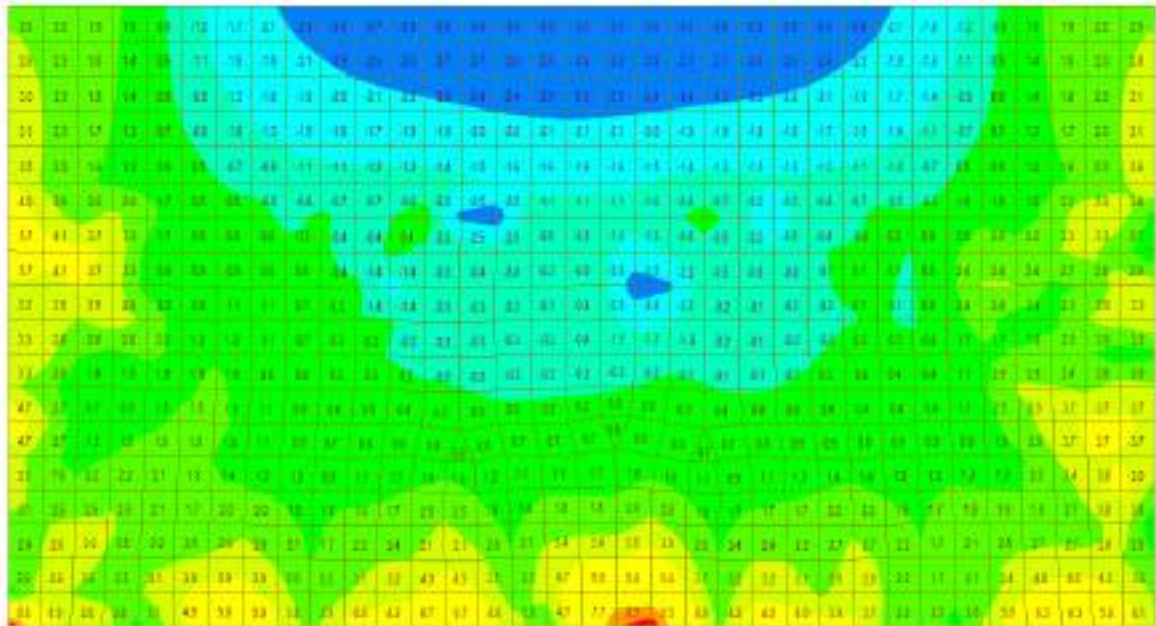
(Envolvente) Myy-



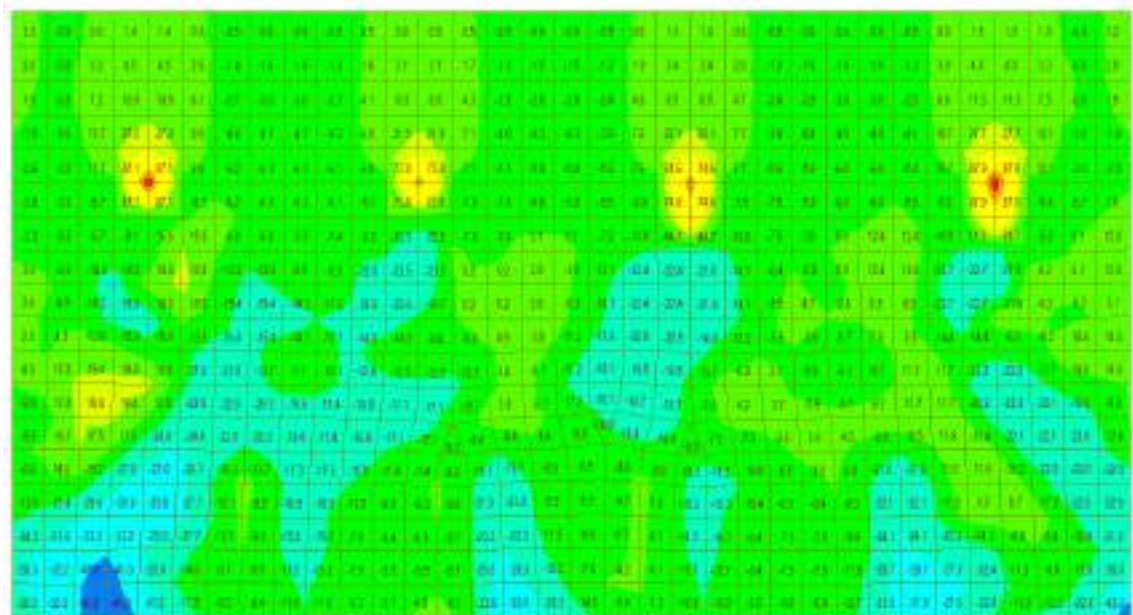
(Envolvente) Mxx+



(Envolvente) Mxx-



(Envolvente) V23-



8.4.1.2 Diseño estribo

Materiales				Geometría						
$f_y =$	4200	kg/cm ²		$b =$	100	cm				
$f'_c =$	280	kg/cm ²		$h =$	50	cm				
β_1	0.85			$\phi =$	0.9					
Resistencia Última										
	d' (cm)	d (cm)	M _u (ton.m)	ρ	A _s (cm ² /m)	A _{s min} (cm ² /m)	As ryt	As Mcr	As1.33Mu	Mcr
M _{ppal} ⁺	7.50	42.50	37.10	0.0057	24.33	2.93	2.98	5.29	32.98	8.40
M _{ppal} ⁻	5.00	45.00	8.40	0.0011	4.99	2.93	2.98	5.29	6.65	8.40
M _{hor} ⁺	7.50	42.50	15.10	0.0023	9.59	2.93	2.98	5.29	12.84	8.40
M _{hor} ⁻	5.00	45.00	8.40	0.0011	4.99	2.93	2.98	5.29	6.65	8.40
Calculado				Suministrado						
	A _{s calculada} (cm ² /m)	A _{s barra} (cm ²)	ϕ Barra	Refuerzo	ϕ Barra	Refuerzo				
✓	24.33	3.87	7/8	# 7 c./ 0.15	7/8	#7 c./	0.15			
	5.29	1.27	1/2	# 4 c./ 0.24	1/2	#4 c./	0.15			
	9.59	1.98	5/8	# 5 c./ 0.2	5/8	#5 c./	0.20			
	5.29	1.27	1/2	# 4 c./ 0.24	1/2	#4 c./	0.20			
CORTE										
V _{ud} =	25.10	ton								
d =	42.50	cm								
$\beta =$	1.59									
$= \phi 0.083 B \cdot \sqrt{f'_c (Mpa)} = 6.99 \text{ kg/cm}^2 \quad v_{ud} = \frac{V_u}{b \cdot d} = 5.91 \text{ kg/cm}^2 \quad v_n < \phi v_c \text{ CUMPLE}$										

5.7.3.4 Control de agrietamiento

γ_e	1
Bs	1.2521
s<	211.65 mm
	21.165 cm
	OK

5.7.3.3.2 Refuerzo mínimo

γ_1	1.6
γ_3	0.75
Mcr	83.99 kN m

5.10.8 Retracción y temperatura

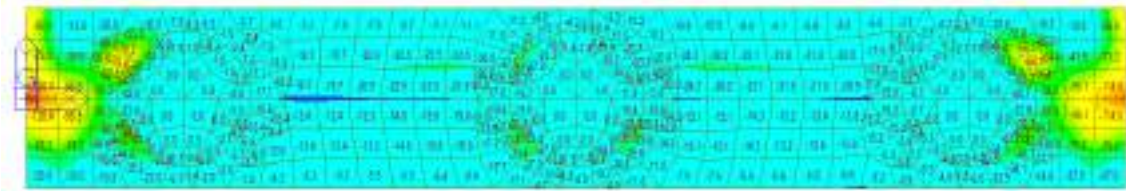
A _s ≥	297.62 mm ² /m
A _s ≥	297.62 mm ² /m

8.4.2 Zarpa

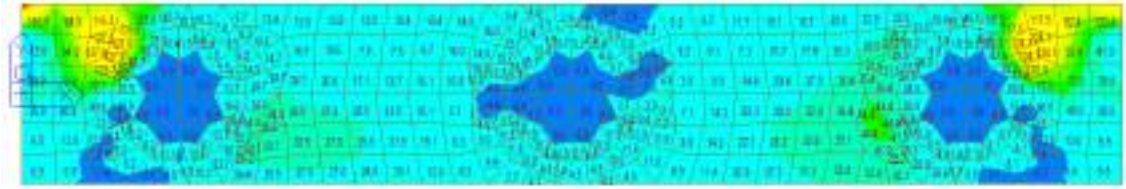
8.4.2.1 Fuerzas (t.m) (Envolvente) Myy+



(Envolvente) Myy-



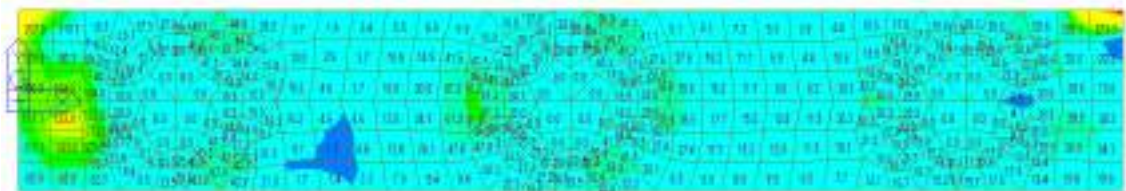
(Envolvente) Mxx+



(Envolvente) Mxx-



(Envolvente) V23-



8.4.2.2 Diseño zarpa estribo

Materiales					Geometría				
$f_y =$	4200	kg/cm ²			$b =$	100	cm		
$f'_c =$	280	kg/cm ²			$h =$	110	cm		
β_1	0.85				$\phi =$	0.9			
$E_c =$	25426.08	MPa							
Resistencia Última									
	d' (cm)	d (cm)	M _u (ton.m)	ρ	A _s (cm ² /m)	A _{s min} (cm ² /m)	As ryt	As1.33Mu	As mcr
M _{ppal} ⁺	7.50	102.50	25.08	0.0006	6.51	34.17	18.45	8.67	10.755381
M _{ppal} ⁻	7.50	102.50	22.99	0.0006	5.96	34.17	18.45	7.95	10.755381
M _{hor} ⁺	7.50	102.50	31.02	0.0008	8.06	20.50	18.45	10.75	10.755381
M _{hor} ⁻	7.50	102.50	29.48	0.0007	7.66	20.50	18.45	10.21	10.755381

REFUERZO

Calculado					Suministrado		
A _s calculada (cm ² /m)	A _s barra (cm ²)	ϕ Barra	Cantidad		ϕ Barra	Refuerzo	
10.76	1.98	5/8	# 5 c./ 0.18		5/8	#5 c./	0.15
10.76	1.98	5/8	# 5 c./ 0.18		5/8	#5 c./	0.15
10.75	1.98	5/8	# 5 c./ 0.18		1/2	#4 c./	0.15
10.21	1.98	5/8	# 5 c./ 0.19		1/2	#4 c./	0.15

CORTE

$$V_{ud} = 30.23 \text{ ton}$$

$$d = 102.50 \text{ cm}$$

$$\beta = 1.05$$

$$\phi v_c = \phi 0.083 B \cdot \sqrt{f'_c (Mpa)} = 4.61 \text{ kg/cm}^2 \quad v_{ud} = \frac{V_u}{b \cdot d} = 2.95 \text{ kg/cm}^2 \quad v_n < \phi v_c \text{ CUMPLE}$$

5.7.3.4 Control de agrietamiento

$$\gamma_e = 1$$

$$B_s = 1.1045$$

$$s < \begin{matrix} 241.3 \text{ mm} \\ 24.13 \text{ cm} \end{matrix} \quad \text{OK}$$

5.7.3.3.2 Refuerzo mínimo

$$\gamma_1 = 1.6$$

$$\gamma_3 = 0.75$$

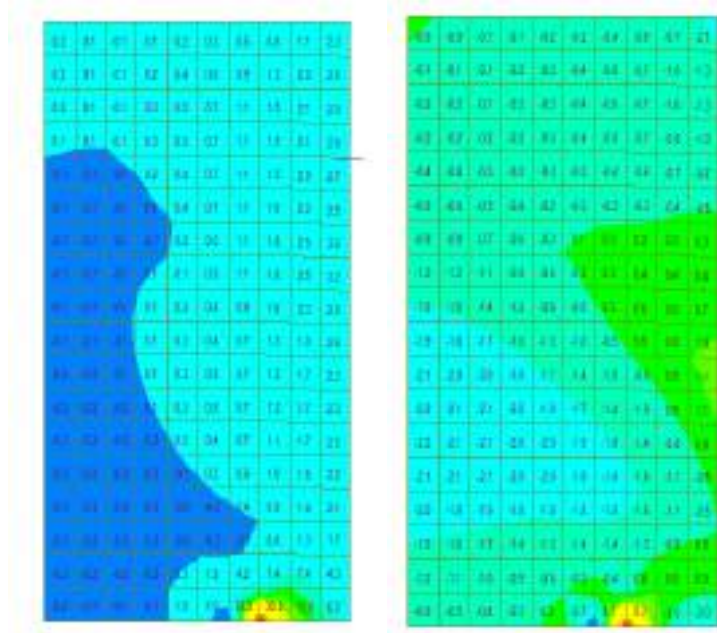
$$M_{cr} = 412.8 \text{ kN m}$$

5.10.8 Retracción y temperatura

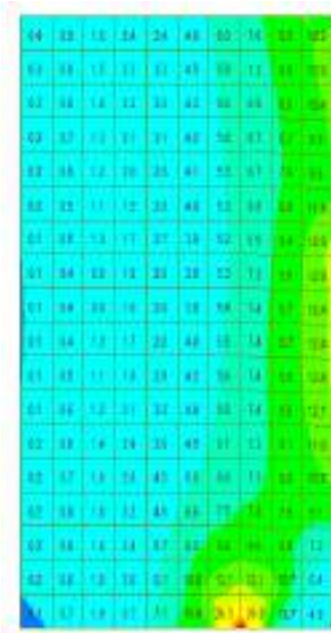
$$A_s \geq 467.68707 \text{ mm}^2/\text{m}$$

$$A_s \geq 467.68707 \text{ mm}^2/\text{m}$$

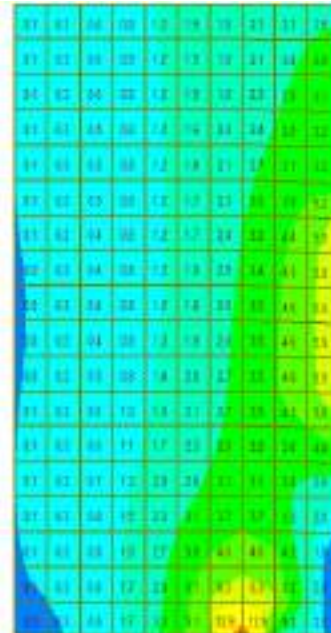
8.4.3 Aletas
(Envolventes) (t.m)
M22 -



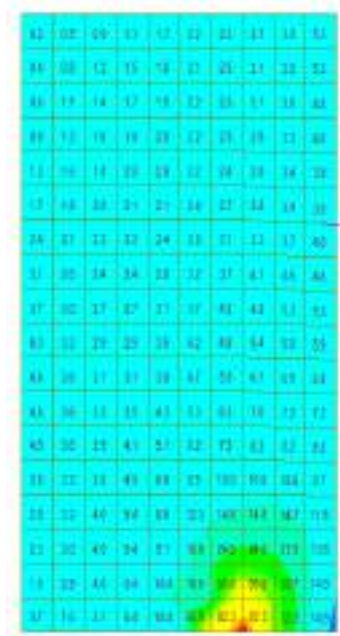
M11-



M11+



V23



8.4.3.1 Diseño aleta

Materiales

$f_y = 4200 \text{ kg/cm}^2$
 $f'_c = 210 \text{ kg/cm}^2$
 $\beta_1 = 0.85$
 $E_c = 22019.63 \text{ MPa}$

Geometría

$b = 100 \text{ cm}$
 $h = 30 \text{ cm}$
 $\phi = 0.9$

Resistencia Última

	d' (cm)	d (cm)	M _u (ton.m)	ρ	A _s (cm ² /m)	A _{s min} (cm ² /m)	1.33A _s	M _{cr}	As mcr	As ryt cm2
M _{ppal} ⁺	7.50	22.50	7.40	0.0041	9.14	3.75	12.19	0.69	0.81	4.05
M _{ppal} ⁻	7.50	22.50	2.00	0.0011	2.38	3.75	3.18	0.69	0.81	3.24
M _{hor} ⁺	7.50	22.50	9.70	0.0054	12.18	4.50	16.24	0.69	0.81	4.05
M _{hor} ⁻	7.50	22.50	2.50	0.0013	2.99	4.50	3.98	0.69	0.81	3.24

REFUERZO

Calculado			Suministrado		
A _s calculada (cm ² /m)	A _s barra (cm ²)	Barra	Refuerzo	Barra	Refuerzo
9.14	1.98	5/8	# 5 c./ 0.21	5/8	#5 c./ 0.20
3.24	1.27	1/2	# 4 c./ 0.39	1/2	#4 c./ 0.25
12.18	1.98	5/8	# 5 c./ 0.16	5/8	#5 c./ 0.15
3.98	1.27	1/2	# 4 c./ 0.31	1/2	#4 c./ 0.25

CORTE

$V_{ud} = 12.30 \text{ ton}$
 $d = 22.50 \text{ cm}$
 $\beta = 1.92$

$$\phi v_c = \phi 0.083 B \cdot \sqrt{f'_c (Mpa)} = 7.3130 \text{ kg/cm}^2 \quad v_{ud} = \frac{V_u}{b \cdot d} = 5.47 \text{ kg/cm}^2 \quad v_n < \phi v_c \text{ CUMPLE}$$

5.7.3.4 Control de agrietamiento

$\gamma_e = 1$
 $B_s = 1.4762$
 $s < 311.11 \text{ mm}$
 $31.111 \text{ cm} \quad \text{OK}$

5.7.3.3.2 Refuerzo mínimo

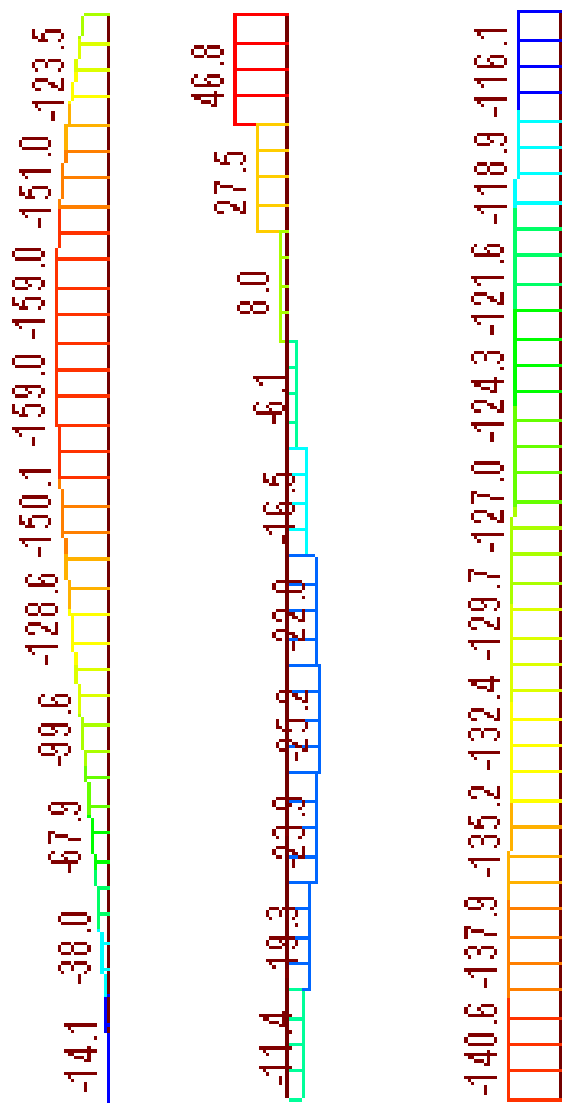
$\gamma_1 = 1.6$
 $\gamma_3 = 0.75$
 $M_{cr} = 6.863 \text{ kN m}$

5.10.8 Retracción y temperatura

$A_s \geq 206.04 \text{ mm}^2/\text{m}$
 $A_s \geq 206.04 \text{ mm}^2/\text{m}$

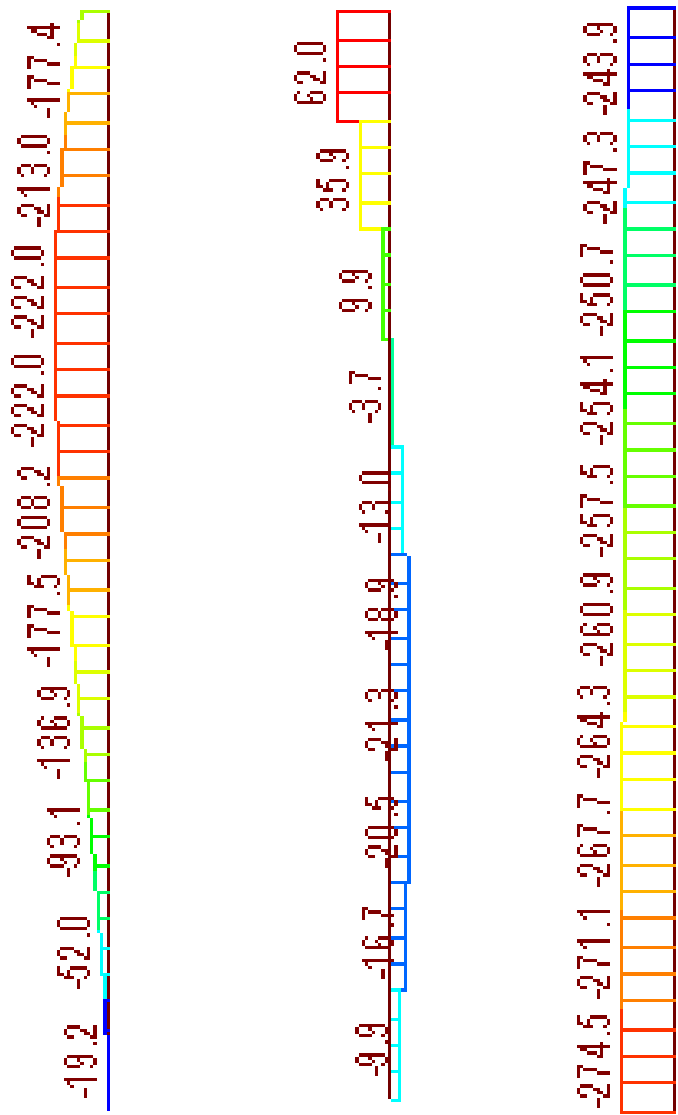
8.4.4 DISEÑO PILOTES:

SOLICITACIONES ELS (t.m)



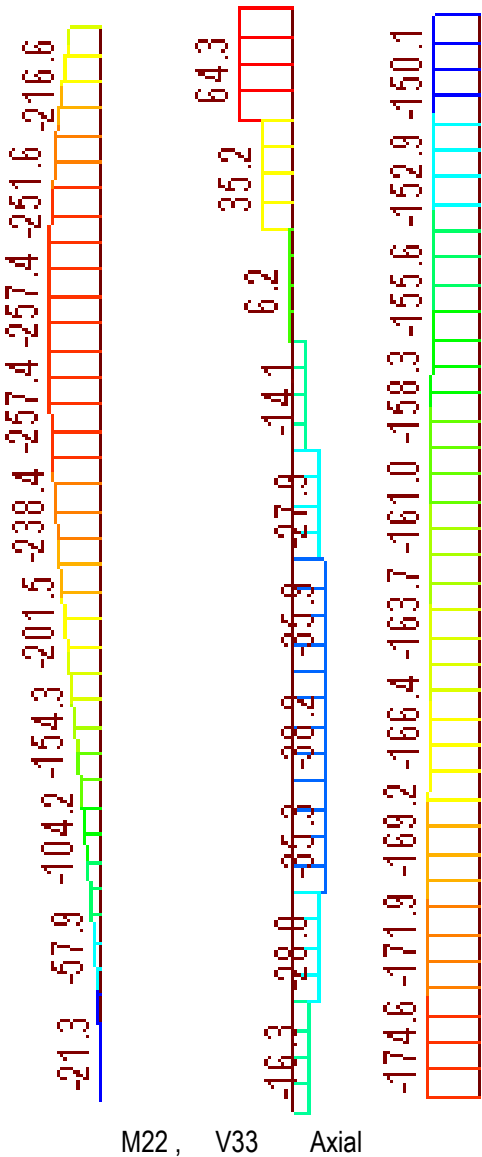
M22 , V33 Axial
Ilustración 23 Solicitaciones elementos verticales (t.m)

SOLICITACIONES ELR (t.m)



M22 , V33 Axial
Ilustración 24 Solicitaciones elementos verticales (t.m)

SOLICITACIONES ELE (t.m)

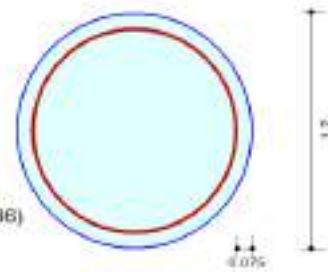


M22 , V33 Axial
Ilustración 25 Solicitaciones elementos verticales (t.m)

8.4.4.1 Diseño elementos verticales cimentación

1. Design Condition

Design Code AASHTO-LRFD16
Unit System tonf, m
Member Number 1232 (PM), 1241 (Shear)
Material Data $f_c = 2812.28$, $f_y = 42184.2$, $f_{ys} = 42184.2$ tonf/m²
Column Height 1 m
Section Property c120 (No : 1)
Rebar Pattern Total Rebar Area Axl = 0.0153742 m² (Rho1 = 0.0136)



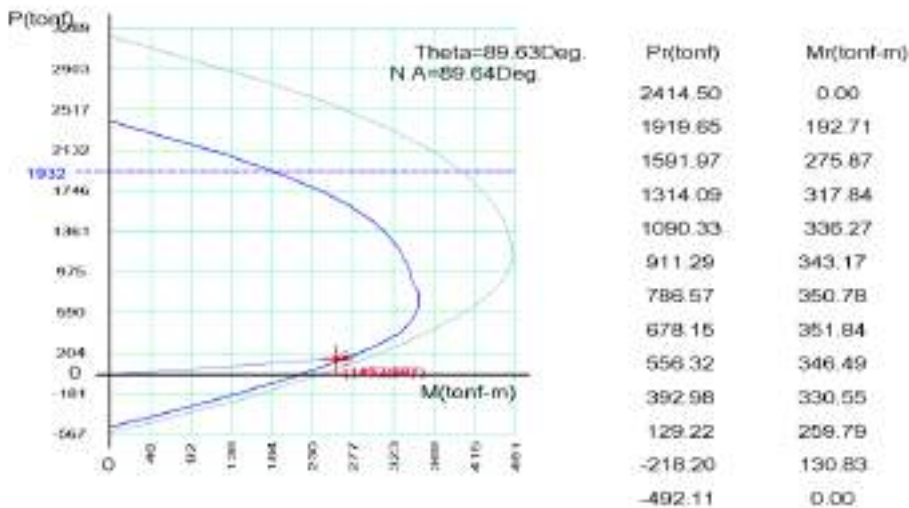
2. Applied Loads

Load Combination 27 AT (J) Point
 $P_u = 147.438$ tonf, $M_{cy} = 1.42955$, $M_{cz} = -257.36$, $M_c = 257.363$ tonf-m

3. Axial Forces and Moments Capacity Check

Concentric Max. Axial Load	P_{r-max}	= 1931.60 tonf	
Axial Load Ratio	P_u/P_r	= 147.438 / 153.278	= 0.962 < 1.000 O.K
Moment Ratio	M_{cy}/M_{ry}	= 1.42955 / 1.70499	= 0.838 < 1.000 O.K
	M_{cz}/M_{rz}	= -257.36 / 267.301	= -0.963 < 1.000 O.K
	M_c/M_r	= 257.363 / 267.306	= 0.963 < 1.000 O.K

4. P-M Interaction Diagram



5. Shear Force Capacity Check

Applied Shear Force	V_u	= 64.1459 tonf (Load Combination 27)
Shear Strength by Conc	ΦV	= 83.4955 tonf
Shear Strength by Reber	ΦV_s	= 67.7358 tonf (2.0-#3 @110)
Shear Ratio	V_u/V_r	= 64.1459 / 151.231 = 0.424 < 1.000 O.K

Suministrar 32varillas No 8.

TIPO DE REFUERZO TRANSVERSAL

Estribos (A)/ Espiral (S)	A
Barra	4
F_{yh} (kg/cm ²)=	4200
ϕV_c (T)=	76.62

RESISTENCIA AL CORTE CON M_{pr}

M_{pr} (Tm)=	48.01
$V_u = 2M_{pc}/h_c$ (T)=	40.01
$Av/S_{req.}$ (cm ² /cm) =	-0.091
$S_{m\acute{a}x}$ (cm)=	0.0

SOLICITACIÓN DE CORTE V_u

$V_u = 2M_{pc}/h_c$ (T)=	64
$Av/S_{req.}$ (cm ² /cm) =	-0.041
$S_{m\acute{a}x}$ (cm)=	0.0

REVISIÓN CONFINAMIENTO

	Valor (cm)	$S_{m\acute{a}x}$ (cm)
L_o	240	7.5
Fuera L_o	-	11.5
Nudo	-	10.0

RESUMEN ESPACIAMIENTO

L_o : $S_{m\acute{a}x}$ (cm)=	No 5	9.0	OK
Fuera L_o : $S_{m\acute{a}x}$ (cm)=	No 4	10.0	OK

Cuantía volumétrica

ps 0.12fc/fy	0.00800
rs .45	0.00570
rs real	0.00800

8.4.4.2 Verificación de la capacidad portante ELR

Diam (m)	Carga de trabajo (ton)				
	Longitud (m)				
	11	13	15	17	20
1,20	931,39	1026,219	1121,049	1215,878	1358,122
1,3	1093,090	1204,382	1315,68	1426,968	1593,91
1,4	1267,725	1396,799	1525,872	1654,945	1848,555
1,5	1455,30	1603,468	1751,64	1899,809	2122,066
1,6	1655,804	1824,390	1992,975	2161,561	2414,439

*carga en toneladas

Carga actuante 274.5 t OK

8.4.4.3 Verificación de la capacidad portante ELE

Tabla 12. Capacidad de carga de seguridad para los caisson K38+300 – Puente, estado límite de evento extremo

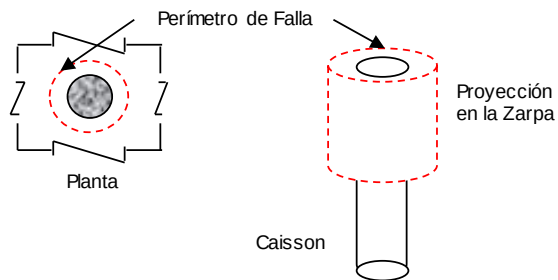
Diam (m)	Carga de trabajo (ton)				
	Longitud (m)				
	11	13	15	17	20
1,20	2794,17	3078,658	3363,146	3647,634	4074,366
1,3	3279,269	3613,147	3947,03	4280,904	4781,72
1,4	3803,176	4190,396	4577,615	4964,835	5545,665
1,5	4365,89	4810,403	5254,92	5699,428	6366,197
1,6	4967,413	5473,170	5978,926	6484,683	7243,318

*carga en toneladas

Carga actuante 175 t OK

8.4.4.4 Punzonamiento

PUNZONAMIENTO EN LA ZARPA



Especificaciones de los materiales:

$f_c = 280 \text{ kg/cm}^2$
 $f_y = 4200 \text{ kg/cm}^2$
 $W_c = 2400 \text{ kg/m}^3$

ϕ	60.0	cm
d	160.0	cm
Perímetro de Falla (b_o)	188.5	cm
Axial Máximo	161.00	ton
Punzonamiento Actuante	5.34	kg/cm ²
β_c	1.00	
α_s	20	

Punzonamiento Resistente (3 Consideraciones)

$$1 \quad 1.06 \sqrt{f'_c} \quad 17.74 \text{ kg/cm}^2$$

$$2 \quad 1.06 \sqrt{f'_c} \left(0.5 + \frac{1}{\beta_c} \right) \quad 26.6 \text{ kg/cm}^2$$

$$3 \quad 1.06 \sqrt{f'_c} \left(0.5 + \frac{\alpha_s d}{2b_{oc}} \right) \quad 159.43 \text{ kg/cm}^2$$

$$\phi V_c = 15.1 \text{ kg/cm}^2 \quad \text{O.K.}$$

9 DISEÑO NEOPRENOS

DISEÑO APOYO ELASTOMÉRICO

Reacciones en cada apoyo de la viga debidas a las cargas de servicio

Carga muerta	39.83 t
Carga viva sin impacto	45.5 t
Carga Total	85.33 t
Carga por viga	85.33 t/por viga
DT	15 °
dilatación térmica del concreto	0.000011 mmm/mmm/°C
Deformación unitaria del concreto debida a la variación de temperatura	
e	0.000165
deformación debida a la retracción del fraguado	
erf	0.0003
Movimiento apoyo	
Ds	0.01395 m
Ds	13.95 mm
Dsmáx	16.74 mm

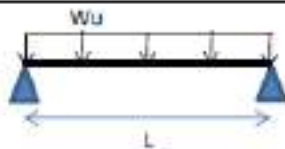
Evaluación de la altura del apoyo elastomérico

hrt >	33.48 mm
hrt escogido	50 mm
hri	10 mm
Esfuerzo promedio a compresión Sctl	
Sctl	70 kg/cm2
Factor de forma	
W	300 mm
factor de modificación B	1
FF	9.38
L	500 mm
L escogido	50 cm
Esfuerzo promedio a compresión	
Módulo de cortante Tabla A.10.2.3-1	
G	9.1 kg/cm2
Spc	85.3125 kg/cm2
FF.Spc	7.7

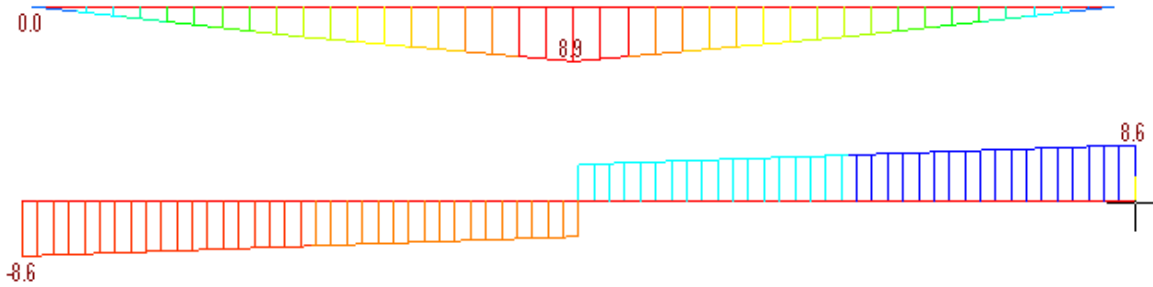
esfuerzo efectivo a compresión

s	56.88666667	CUMPLE
Verificación de estabilidad		CUMPLE
L/3	16.67 cm	
W/3	10.00 cm	
APOYO DE	300X500X50	

10 DISEÑO LOSA DE APROXIMACIÓN:

DISEÑO PLACA DE APROXIMACIÓN				
1. Avalúo de cargas				
	e (m)	γ (T/m ³)	W (T/m ²)	
W losa	0.30	2.40	0.72	
W rodadura	0.05	2.00	0.10	
W relleno	0.35	2.00	0.70	
1. Carga Muerta "DC"	0.72 T/m ²	Carga muerta actuante		
2. Peso carpeta rodadura "DW"	0.10 T/m ²	carga de carpeta de rodadura		
3. Peso del relleno "EV"	0.70 T/m ²	Carga del relleno		
Carga viva				
F.P.M.	1.20	factor de presencia múltiple		
I	1.33 %	Impacto		
P camión	8.00 T			
S	4.00 m	Espaciamiento de componentes de apoyo		
A = 660+0.55*S	2.00 m	Ancho de franjas interiores equivalentes		
4. Carga viva (LL)	6.38 T/m	Carga viva actuante		
2. Combinaciones de carga				
Combinaciones de carga				
	1. (DC)	2. (EV)	3. (DW)	4. (LL)
Cargas actuantes	0.72	0.70	0.10	6.38
F.C (Resistencia 1)	1.25	1.95	1.50	1.75
Cargas verticales (T/m ²)				ΣP (T/m ²)
F.C (Resistencia 1) Carga dist.	0.90	1.37	0.15	2.42
F.C (Resistencia 1) Carga Punt.				11.17
				11.17
resentan el análisis estructural de la losa de aproximación				
3. Análisis Estructural				
				
Solicitaciones				
Wu	2.42 T/m ²	Carga última actuante distribuida		
Pu	11.17 T/m	Carga puntual actuante última		

Solicitaciones:



Mu = 8.9 t.m

Vu = 8.3 t

Materiales			Geometría	
f_y	4200	kg/cm ²	b	100 cm
f'_c	280	kg/cm ²	h	30 cm
β_1	0.85		ϕ	0.9
E_c	25426.08	MPa		

Resistencia Última

	d' (cm)	d (cm)	Mu (ton.m)	ρ	A_s (cm ² /m)	$A_{s \text{ min}}$ (cm ² /m)	1.33A _s	Mcr	As mcr	As ryt cm2
M _{ppal} ⁺	7.50	22.50	1.43	0.0008	1.69	3.75	2.26	1.43	1.69	4.05
M _{ppal} ⁻	7.50	22.50	8.90	0.0049	10.93	3.75	14.58	1.43	1.69	4.05
M _{hor} ⁺	7.50	22.50	1.43	0.0008	1.69	4.50	2.26	1.43	1.69	4.05
M _{hor} ⁻	7.50	22.50	1.43	0.0008	1.69	4.50	2.26	1.43	1.69	4.05

REFUERZO

Calculado			Suministrado		
A_s calculada (cm ² /m)	$A_{s \text{ barra}}$ (cm ²)	ϕ Barra	Refuerzo	ϕ Barra	Refuerzo
4.05	1.27	1/2	# 4 c./ 0.31	1/2	#4 c./ 0.30
10.93	2.84	3/4	# 6 c./ 0.25	3/4	#6 c./ 0.25
4.05	1.27	1/2	# 4 c./ 0.31	1/2	#4 c./ 0.30
4.05	1.27	1/2	# 4 c./ 0.31	1/2	#4 c./ 0.30

CORTE

V_{ud}	8.30	ton
d	22.50	cm
β	1.92	

$$\phi v_c = \phi 0.083B \cdot \sqrt{f'_c (Mpa)} = 8.4444 \text{ kg/cm}^2 \quad v_{ud} = \frac{V_u}{b \cdot d} = 3.69 \text{ kg/cm}^2$$

Vs requerido	N/A	t	Barra No	4	
			separación máxima	N/A	cm
					OK

5.7.3.4 Control de agrietamiento	
γ_e	1
Bs	1.4762
s<	307.85 mm
	30.785 cm
	OK

5.7.3.3.2 Refuerzo mínimo	
γ_1	1.6
γ_3	0.75
Mcr	14.26 kN m

5.10.8 Retracción y temperatura	
$A_s \geq$	206.04 mm ² /m
$A_s \geq$	206.04 mm ² /m

11 DISEÑO MÉNSULA

MÉNSULA

FLEXIÓN

Materiales		Geometría	
$f_y =$	4200 kg/cm ²	$b =$	100 cm
$f'_c =$	210 kg/cm ²	$h =$	60 cm
β_1	0.85	$\phi =$	0.9
$E_c =$	22019.63 MPa		

V_u losa aproximación	10.42 t/m
V losa	0.72 t/m

CORTE

$V_{ud} =$	11.14 ton
$d =$	52.50 cm
$\beta =$	1.47

$$\phi v_c = \phi 0.083 B \cdot \sqrt{f'_c (Mpa)} = 5.57 \text{ kg/cm}^2 \quad v_{ud} = \frac{V_u}{b \cdot d} = 2.12 \text{ kg/cm}^2 \quad v_n < \phi v_c \text{ CUMPLE}$$

12 DISEÑO TOPE SÍSMICO

Materiales		Geometría	
$f_y =$	4200 kg/cm ²	$b =$	50 cm
$f'_c =$	280 kg/cm ²	$h =$	67 cm
β_1	0.85	$\phi =$	0.9
$E_c =$	25426.08 MPa		

CORTE

$V_{ud} =$	15.24 ton
$d =$	58.50 cm
$\beta =$	1.39

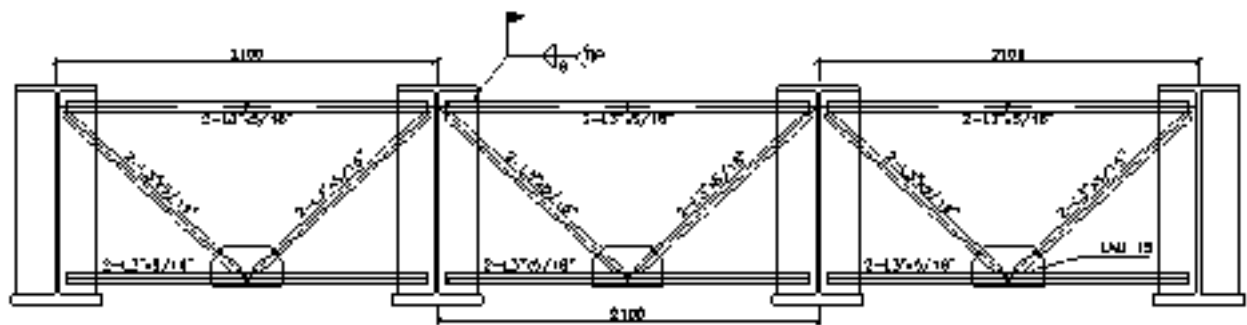
$$\phi v_c = \phi 0.083 B \cdot \sqrt{f'_c (Mpa)} = 6.10 \text{ kg/cm}^2 \quad v_{ud} = \frac{V_u}{b \cdot d} = 5.12 \text{ kg/cm}^2 \quad v_n < \phi v_c \text{ CUMPLE}$$

13 DISEÑO DIAFRAGMA

13.1 CARGAS

Wsmin	4.5 kN/m
H Viga	1.2 m
Carga riostra	5.4 kN

13.2 GEOMETRÍA



*. SECTION PROPERTIES : Designation = 2L3X3X5/16
 Shape = 2L - Section. (Rolled)
 Depth = 0.076, Flg Width = 0.076, BTB Spacing = 0.000
 Web Thick = 0.008, Flg Thick = 0.008

 Area = 2.29677e-003, Asy = 8.07740e-004, Asz = 8.07740e-004
 Ybar = 7.62000e-002, Zbar = 5.43560e-002, Qyb = 1.47729e-003, Qzb = 2.90322e-003
 Syy = 2.29419e-005, Szz = 3.10750e-005, Zyy = 4.12954e-005, Zzz = 1.75017e-004
 Iyy = 1.24869e-006, Izz = 2.36791e-006, Iyz = 0.00000e+000
 ry = 2.33172e-002, rz = 3.20040e-002
 J = 1.22308e-007, Cwp = 1.93927e-011

 *. DESIGN PARAMETERS FOR STRENGTH EVALUATION :
 Ly = 2.08981e+000, Lz = 2.08981e+000, Lb = 2.08981e+000
 Ky = 1.00000e+000, Kz = 1.00000e+000

 *. MATERIAL PROPERTIES :
 Fy = 2.53105e+004, Es = 2.03890e+007, MATERIAL NAME = A36

(.). Factored force/moments caused by unit load case.
 *.Load combination ID = 3

Load Case	Pu	Myi	Myj	Mzi	Mzj
DL	-0.04	0.00	0.00	-6.82e-003	-0.01
LL	0.00	0.00	0.00	0.00	0.00
DL+LL	-0.04	0.00	0.00	-6.82e-003	-0.01
OTHER CASES	-0.51	0.00	0.00	2.30e-003	-1.20e-003
TOTAL	-0.55	0.00	0.00	-4.52e-003	-0.01

*.Member end moments caused by gravity load(DL+LL).

My1G = 0.00, My2G = 0.00
Mz1G = 6.82e-003, Mz2G = 0.01

(). Compute equivalent moment factor (Cmy, Cmz).

- Cmy = 1.000 (User defined or default value)
- Cmz = 1.000 (User defined or default value)

(). Compute moment magnification factors(B1y,B1z).

- Pu = Pu(DL+LL) + Pu(WL(EL)) = 0.55 tonf.
- About major(Local-y) axis.
SLENy = Ky*Ly/ry = 89.63
Lambda = (SLENy/pi)*SQRT(Fy/Es) = 1.0052
Pey = (Area*Fy)/Lambda^2 = 57.54 tonf.
B1y = Cmy / (1-Pu/(0.9*Pey)) = 1.01
- About minor(Local-z) axis.
SLENz = Kz*Lz/rz = 65.30
Lambda = (SLENz/pi)*SQRT(Fy/Es) = 0.7323
Pez = (Area*Fy)/Lambda^2 = 108.39 tonf.
B1z = Cmz / (1-Pu/(0.9*Pez)) = 1.01

(). Magnification factors for sidesway moments(B2y,B2z).

- B2y = 1.00 (Default value)
- B2z = 1.00 (Default value)

(). Given factored axial forces and moments at <J>.

Load Case	Pu	My	Mz
DL	-0.04	0.00	-0.01
LL	0.00	0.00	0.00
DL+LL	-0.04	0.00	-0.01
OTHER CASES	-0.51	0.00	-1.20e-003
TOTAL	-0.55	0.00	-0.01

(). Compute magnified moments.

- Muy = B1y*My(DL+LL) + B2y*My(OTHERS) = 0.00 tonf-m.
- Muz = B1z*Mz(DL+LL) + B2z*Mz(OTHERS) = -0.01 tonf-m.

=====
[[[*]]] CHECK AXIAL STRENGTH.
=====

(). Check slenderness ratio of axial compression member (Kl/r).

[AASHTO-LRFD16 Specification 6.9.3]
- Kl/r = 89.6 < 120.0 ----> O.K.

(). Check width-thickness ratio of legs of angle (BTR).

[AASHTO-LRFD16 Specification 6.9.4.2]
- Lambda_r = 0.45*SQRT(Es/Fy) = 12.77
- BTR = bf/ty = 9.58 < Lambda_r ----> NON-SLENDER SECTION !

(). Calculate reduction factor of unstiffened elements (Qs).

- Qs = 1.0 (Unstiffened elements are not Slender.)

(). Calculate reduction factor of stiffened elements (Qa).

- Qa = 1.0 (There are no Stiffened elements.)

(). Full reduction factor for slender section (QsQa).

[AASHTO-LRFD16 Specification 6.9.4.2]
- Q = Qs*Qa = 1.000

- Po = Q*Fy*Area = 58.1324 tonf.

(). Calculate Flexural Buckling Resistance (Pe_FB).

[AASHTO-LRFD16 Specification 6.9.4.1]

$$- Pe_{FB} = \frac{\pi^2 \cdot E}{(Kl/r)^2} \cdot Area = 57.5376 \text{ tonf.}$$

- (). Torsional and flexural-torsional buckling resistance (Pe_{FTB})
[AASHTO-LRFD16 Specification 6.9.4.1 (6.9.4.1.3-2)]
- Singly symmetric shape where z is the axis of symmetry
- $G_s = 7841932.3680 \text{ tonf/m}^2$.
- $K_x = 1.00$ (Conservatively taken value).
- $L = 2.090 \text{ m}$.
- $r_0^2 = 0.002 \text{ m}^2/\text{m}$.
- $H = 1 - (y_0^2 + z_0^2)/r_0^2 = 0.831$
- $Pe_z = \pi^2 \cdot E_s / (K_z \cdot L_z / r_z)^2 \cdot Area = 108.3945 \text{ tonf}$.
- $Pe_x = [\pi^2 \cdot E_s \cdot C_{wp} / (K_x \cdot L)^2 + G_s \cdot J] / (r_0^2) = 506.8903 \text{ tonf}$.
- $Pe_{FTB} = (Pe_z + Pe_x) / (2 \cdot H) \cdot [1 - \sqrt{1 - 4 \cdot Pe_z \cdot Pe_x \cdot H / (Pe_z + Pe_x)^2}]$
= 103.8803 tonf.

- (). Elastic Critical Buckling Resistance (Pe).
- $Pe = \min[Pe_{FB}, Pe_{FTB}] = 57.5376 \text{ tonf}$.

- (). Calculate axial compressive strength (ϕP_n).
[AASHTO-LRFD16 Specification 6.9.4.1.1]
- $\phi = 0.95$
- $Pe/P_o = 0.99 \geq 0.44$
- $P_n = [0.658 \cdot (P_o/Pe)] \cdot P_o = 38.09 \text{ tonf}$.
- $\phi P_n = \phi \cdot P_n = 36.18 \text{ tonf}$.

- (). Check ratio of axial strength ($P_u/\phi P_n$).
$$\frac{P_u}{\phi P_n} = \frac{0.55}{36.18} = 0.02 < 1.000 \rightarrow \text{O.K.}$$

=====

[[[]]] CHECK FLEXURAL STRENGTH ABOUT MAJOR AXIS.

=====

- (). Calculate limiting width-thickness ratio of flange for flexure.
[AISC(14th) Specification B4. <Table B4.1>]
- $\lambda_{p} = 0.38 \cdot \sqrt{E_s/F_y} = 10.79$
- $\lambda_{r} = 1.00 \cdot \sqrt{E_s/F_y} = 28.38$

- (). Check width-thickness ratio of flange (BTR).
[AISC(14th) Specification B4. <Table B4.1>]
- $BTR = 9.58 < \lambda_p = 10.79 \rightarrow \text{COMPACT}$.

[*] Check Yielding (Y).

- (). Calculate nominal flexural strength for Yielding (Y).
- $M_n = \min[F_y \cdot Z_{yy}, 1.6 \cdot M_y] = 0.93 \text{ tonf-m}$.

[*] Check Lateral-Torsional Buckling (LTB).

- (). Calculate nominal flexural strength for Lateral flexural buckling (LTB).
$$B = 2.3 \cdot \frac{d}{L_b} \cdot \sqrt{\frac{I_{zz}}{J}} = 0.37 \text{ (Stem is in Tension.)}$$

$$M_{cr} = \frac{\pi^2 \cdot \sqrt{E_s \cdot I_{zz} \cdot G_s \cdot J}}{L_b} \cdot (B + \sqrt{1 + B^2}) = 14.68 \text{ tonf-m}$$

[*] Check Flange Local Buckling (FLB).

- (). Elastic section modulus referred to tension and compression flanges.

- Syc = 5.7164e-005 m³.
- Syt = 2.2973e-005 m³.

- (). Compute flexural strength about major axis (phiMny).
- Mny = MIN [Mn1, Mn2] = 0.93 tonf-m.
- Resistance factor for flexure : phi = 1.00
- phiMny = phi*Mny = 0.93 tonf-m.

- (). Check ratio of flexural strength (Muy/phiMny).
- Muy 0.00
- $\frac{\text{Muy}}{\text{phiMny}} = \frac{0.00}{0.93} = 0.000 < 1.000 \rightarrow \text{O.K.}$

=====
[[[*]]] CHECK FLEXURAL STRENGTH ABOUT MINOR AXIS.
=====

- (). Calculate limiting width-thickness ratio of flange for flexure.
- [AISC(14th) Specification B4. <Table B4.1>]
- Lambda_p = 0.38*SQRT[Es/Fy] = 10.79
- Lambda_r = 1.00*SQRT[Es/Fy] = 28.38

- (). Check width-thickness ratio of flange (BTR).
- [AISC(14th) Specification B4. <Table B4.1>]
- BTR = 9.58 < Lambda_p = 10.79 ----> COMPACT.

=====
[*] Check Yielding (Y).
=====

- (). Calculate nominal flexural strength for Yielding (Y).
- Fn = Fy = 25310.5127 tonf/m².
- Mn = Fn*Szz = 0.79 tonf-m.

- (). Compute flexural strength about minor axis (phiMnz).
- Mnz = 0.79 tonf-m.
- Resistance factor for flexure : phi = 1.00
- phiMnz = phi*Mnz = 0.79 tonf-m.

- (). Check ratio of flexural strength (Muz/phiMnz).
- Muz 0.01
- $\frac{\text{Muz}}{\text{phiMnz}} = \frac{0.01}{0.79} = 0.016 < 1.000 \rightarrow \text{O.K.}$

=====
[[[*]]] CHECK INTERACTION OF COMBINED STRENGTH.
=====

- (). Check interaction ratio of combined strength.
- [AASHTO-LRFD16 Specification 6.9.2.2]
- Pu/phiPn < 0.20 ----> Formula(6.9.2.2-2)
- Pu [Muy Muz]
- ComRat = $\frac{\text{Pu}}{2*\text{phiPn}} + \left[\frac{\text{Muy}}{\text{phiMny}} + \frac{\text{Muz}}{\text{phiMnz}} \right]$
- = 0.008 + [0.000 + 0.016]
- = 0.023 < 1.000 ----> O.K.

=====
[[[*]]] CHECK SHEAR STRENGTH.
=====

- (). Calculate nominal shear strength in local-y direction (Vny).
- [AASHTO-LRFD16 Specification 6.10.9.2]
- Resistance factor for shear : phi = 1.00
- C = 1.00
- Vp = 0.58*Fyw*Asy = 11.86 tonf.
- Vny = C*Vp = 11.86 tonf.

- (). Check ratio of shear strength (Vu/phiVn).
- (LCB = 3, POS = J)
- Applied shear force : Vuy = 0.03 tonf.

$$V_{uy} = \frac{0.03}{1.0} = 0.003 < 1.000 \rightarrow \text{O.K.}$$

SOLDADURA		FE _{xx}	=	70 ksi = 480 Mpa	Soldadura manual con electrodo revestido
		F _y	=	250 MPa	
ACERO		F _u	=	400 MPa	
ELEMENTO	PU PARA UN ANGULO	Perfil			
Superior	KN	Ancho (mm)	Espesor (mm)	Area (mm²)	x" (mm)
97	5.4	75	9	1277	21.8

PLATINA e= 13/22 in = 15.00 mm

a mín	a máx	a escogido
mm	mm	mm
5	13.00	8.00

1) REVISIÓN DEL ANGULO DE LA CONEXIÓN

$$\phi P_n = \phi * F_y * A_g = 0.9 * 250 * 1277 = 287325 \text{ N} = 287.325 \text{ OK}$$

2) DISEÑO DE LA SOLDADURA

Soldadura 70xx e 1/4"

Resistencia de diseño de soldadura de filete (ϕR_{nw})

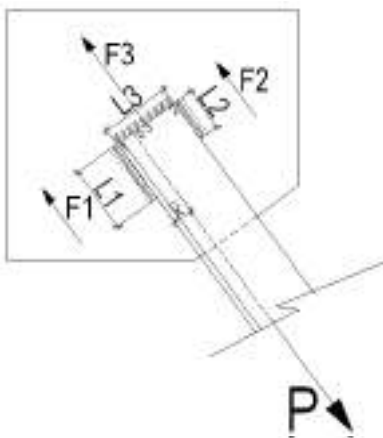
$\phi R_{nw} =$	0.75	x	0.6	x	FE _{70XX}	x	A _w
-----------------	------	---	-----	---	--------------------	---	----------------

$$A_w = 0.707 * 8.00 = 5.66 \text{ mm}^2$$

$$\phi R_{nw} = 0.75 * 0.6 * 480 * 5.66 = 1222 \text{ N/mm} < \text{Resistencia mínima de Tensión de la soldadura en la tabla}$$

longitud requerida de soldadura (L)

$$L_{\text{REQUERIDO}} = \frac{287325 \text{ N}}{1222 \text{ N/mm}} = 235 \text{ mm}$$



$$1) \sum M_o = 0 = F_1(X) - F_2(L_3 - X) - F_3((L_3/2) - X)$$

$$2) L_1(X) = L_2(L_3 - X) + L_3((L_3/2) - X)$$

$$3) F_1 + F_2 + F_3 = P = 5.4 \text{ KN}$$

$$4) L_1 + L_2 + L_3 = L_{\text{REQUERIDO}} = 235 \text{ mm}$$

$$5) L_3 = 75 \text{ mm}$$

$$L_1 = 160 - L_2$$

REEMPLAZANDO EN 2 Y DESPEJANDO L2 TENEMOS

$$L_2 = 31 \text{ mm}$$

$$L_1 = 129 \text{ mm}$$

14 DISEÑO BARRANDA

Para el diseño de la barrera de tráfico tipo New Jersey, se utiliza una tipología de tráfico TL-4. El diseño de estos elementos se presenta a continuación.

CARGAS DE IMPACTO Y DISEÑO

Por tratarse de una vía principal, las barreras del puente se diseñan para un nivel de prueba 4 (TL4). De este modo los parámetros de diseño son los presentados a continuación:

$$\begin{aligned} F_T &= 240 \text{ KN} & L_T &= 1070 \text{ mm} \\ F_L &= 80 \text{ KN} & L_L &= 1070 \text{ mm} \\ F_v &= 80 \text{ KN} & L_v &= 5500 \text{ mm} \\ H_n &= 850 \text{ mm} \\ H_{e_{min}} &= 810 \text{ mm} \end{aligned}$$

Momento Resistente Horizontal

$$\phi M_{nW} = 32.6 \text{ KN.m}$$

Momento Resistente Vertical

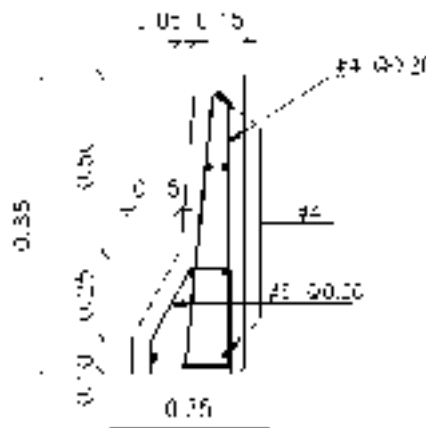
$$\phi M_{nC} = 99.6 \text{ KN.m}$$

Longitud Crítica de la Barrera

$$L_C = 1072 \text{ mm}$$

Resistencia Nominal de la Barrera al Impacto nivel TL-4

$$R_W = 251 \text{ KN } R_W > F_t \text{ OK!!}$$



TRANSFERENCIA DE CORTE BARRERA - LOSA

Factores de cohesión y fricción para concreto hormigonado contra una superficie de concreto limpia, libre de lechada pero rugosidad intencional.

$$c = 0.52 \text{ MPa}$$

$$\mu = 0.6$$

$$K_1 = 0.2$$

$$K_2 = 5.5 \text{ MPa}$$

$$\phi V_n \geq V_{ult}$$

$$V_n = cA_{cv} + \mu (A_{vf} f_y + P_c) \leq \begin{cases} K_1 f'_c A_{cv} \\ K_2 A_{cv} \end{cases}$$

$$A_{cv} = 300000 \text{ mm}^2$$

$$\# \text{ de ramas: } 2 \quad \text{Barras No: } 5$$

$$s = 20 \text{ cm}$$

$$A_{vf} = 1990 \text{ mm}^2$$

$$\phi V_n = 591.732 \text{ KN/m}$$

$$V_u = 234.761 \text{ KN/m } \text{OK!!}$$

Este documento no podrá ser alterado o modificado sin autorización explícita del autor y en caso de encontrar condiciones diferentes a las aquí expuestas se deberá dar aviso oportuno al departamento de diseño para tomar las medidas correspondientes.

Elaboró

MAURICIO BUSTAMANTE GÓMEZ
Especialista en Estructuras.

-

MODELO DIAFRAGMA

```
*VERSION
9.0.0

*UNIT ; Unit System
; FORCE, LENGTH, HEAT, TEMPER
KN , M, BTU, C

*PROJINFO ; Project Information
; PROJECT, REVISION, USER, EMAIL, ADDRESS, TEL, FAX, CLIENT, TITLE, ENGINEER, EDATE ; One Line per Data
; CHECK1, CDATE1, CHECK2, CDATE2, CHECK3, CDATE3, APPROVE, ADATE, COMMENT ; One Line per Data
USER=hj6kiq@hotmail.com
ADDRESS=cc

*STRUCTYPE ; Structure Type
; ISTYP, IMASS, ISMAS, bMASSOFFSET, bSELFWEIGHT, GRAV, TEMPER, bALIGNBEAM, bALIGNSLAB, bROTIGRID
1, 1, 1, NO, YES, 9.806, 0, NO, NO, NO

*REBAR-MATL-CODE ; Rebar Material Code
; CONC_CODE, CONC_MDB, SRC_CODE, SRC_MDB
ASTM(RC), Grade 60, ASTM(RC), Grade 60

*NODE ; Nodes
; iNO, X, Y, Z
1, 551.526019476643, 0, -155.023138007827
2, 553.615832828826, 0, -155.023138007827
4, 553.615832828826, 0, -155.972338008091
5, 552.570926152735, 0, -155.972338008091
6, 555.705646181009, 0, -155.023138007827
7, 555.705646181009, 0, -155.972338008091
8, 554.660739504917, 0, -155.972338008091
9, 557.795459533192, 0, -155.023138007827
10, 557.795459533192, 0, -155.972338008091
11, 556.7505528571, 0, -155.972338008091
12, 551.526019476643, 0, -155.972338008091

*ELEMENT ; Elements
; iEL, TYPE, iMAT, iPRO, iN1, iN2, ANGLE, iSUB, ; Frame Element
; iEL, TYPE, iMAT, iPRO, iN1, iN2, ANGLE, iSUB, EXVAL, EXVAL2, bLMT ; Comp/Tens Truss
; iEL, TYPE, iMAT, iPRO, iN1, iN2, iN3, iN4, iSUB, iWID, LCAXIS ; Planar Element
; iEL, TYPE, iMAT, iPRO, iN1, iN2, iN3, iN4, iN5, iN6, iN7, iN8 ; Solid Element
1, BEAM , 1, 6, 1, 2, 90, 0
3, BEAM , 1, 6, 5, 4, 90, 0
4, BEAM , 1, 6, 2, 5, -90, 0
5, BEAM , 1, 6, 1, 5, 90, 0
6, BEAM , 1, 6, 2, 6, 90, 0
7, BEAM , 1, 6, 4, 8, 90, 0
8, BEAM , 1, 6, 8, 7, 90, 0
9, BEAM , 1, 6, 6, 8, -90, 0
10, BEAM , 1, 6, 2, 8, 90, 0
11, BEAM , 1, 6, 6, 9, 90, 0
12, BEAM , 1, 6, 7, 11, 90, 0
13, BEAM , 1, 6, 11, 10, 90, 0
14, BEAM , 1, 6, 9, 11, -90, 0
15, BEAM , 1, 6, 6, 11, 90, 0
16, BEAM , 1, 6, 1, 12, 90, 0
17, BEAM , 1, 6, 2, 4, 90, 0
18, BEAM , 1, 6, 6, 7, 90, 0
19, BEAM , 1, 6, 9, 10, 90, 0
20, BEAM , 1, 6, 12, 5, 0, 0

*GROUP ; Group
; NAME, NODE_LIST, ELEM_LIST, PLANE_TYPE
EJES , , 1 3to19, 0

*MATERIAL ; Material
; iMAT, TYPE, MNAME, SPHEAT, HEATCO, PLAST, TUNIT, bMASS, DAMPRATIO, [DATA1] ; STEEL, CONC, USER
; iMAT, TYPE, MNAME, SPHEAT, HEATCO, PLAST, TUNIT, bMASS, DAMPRATIO, [DATA2], [DATA2] ; SRC
; [DATA1] : 1, STANDARD, CODE/PRODUCT, DB, USEELAST, ELAST
; [DATA1] : 2, ELAST, POISN, THERMAL, DEN, MASS
```

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

```
; [DATA1] : 3, Ex, Ey, Ez, Tx, Ty, Tz, Sxy, Sxz, Syz, Pxy, Pxz, Pyz, DEN, MASS ; Orthotropic
; [DATA2] : 1, STANDARD, CODE/PRODUCT, DB, USEELAST, ELAST or 2, ELAST, POISN, THERMAL, DEN, MASS
1, STEEL, A36 , 0, 0, , C, NO, 0.02, 1, ASTM(S) , , A36 , NO, 1.99948e+008
2, STEEL, A709-50 , 0, 0, , C, NO, 0.02, 1, ASTM(S) , , A709-50 , NO, 1.99948e+008
3, CONC , Grade C4000 , 0, 0, , C, NO, 0.05, 1, ASTM(RC) , , Grade C4000 , NO, 2.51255e+007

*MATL-COLOR
; iMAT, W_R, W_G, W_B, HF_R, HF_G, HF_B, HE_R, HE_G, HE_B, bBLEND, FACT
1, 34, 77, 0, 85, 192, 0, 34, 77, 0, NO, 0.5
2, 255, 0, 0, 0, 255, 0, 0, 0, 255, NO, 0.5
3, 125, 125, 0, 255, 255, 87, 125, 125, 0, NO, 0.5

*SECTION ; Section
; iSEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, [DATA1], [DATA2] ; 1st line - DB/USER
; iSEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, BLT, D1, ..., D8, iCEL ; 1st line - VALUE
; AREA, ASy, ASz, Ixx, Iyy, Izz ; 2nd line
; CyP, CyM, CzP, CzM, QyB, QzB, PERI_OUT, PERI_IN, Cy, Cz ; 3rd line
; Y1, Y2, Y3, Y4, Z1, Z2, Z3, Z4, Zyy, Zzz ; 4th line
; iSEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, ELAST, DEN, POIS, POIC, SF, THERMAL ; 1st line - SRC
; D1, D2, [SRC] ; 2nd line
; iSEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, 1, DB, NAME1, NAME2, D1, D2 ; 1st line - COMBINED
; iSEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, 2, D11, D12, D13, D14, D15, D21, D22, D23, D24
; iSEC, TYPE, SNAME, [OFFSET2], bSD, bWE, SHAPE, iyVAR, izVAR, STYPE ; 1st line - TAPERED
; DB, NAME1, NAME2 ; 2nd line(STYPE=DB)
; [DIM1], [DIM2] ; 2nd line(STYPE=USER)
; D11, D12, D13, D14, D15, D16, D17, D18 ; 2nd line(STYPE=VALUE)
; AREA1, ASy1, ASz1, Ixx1, Iyy1, Izz1 ; 3rd line(STYPE=VALUE)
; CyP1, CyM1, CzP1, CzM1, QyB1, QzB1, PERI_OUT1, PERI_IN1, Cy1, Cz1 ; 4th line(STYPE=VALUE)
; Y11, Y12, Y13, Y14, Z11, Z12, Z13, Z14, Zyy1, Zyy2 ; 5th line(STYPE=VALUE)
; D21, D22, D23, D24, D25, D26, D27, D28 ; 6th line(STYPE=VALUE)
; AREA2, ASy2, ASz2, Ixx2, Iyy2, Izz2 ; 7th line(STYPE=VALUE)
; CyP2, CyM2, CzP2, CzM2, QyB2, QzB2, PERI_OUT2, PERI_IN2, Cy2, Cz2 ; 8th line(STYPE=VALUE)
; Y21, Y22, Y23, Y24, Z21, Z22, Z23, Z24, Zyy2, Zzz2 ; 9th line(STYPE=VALUE)
; OPT1, OPT2, [JOINT] ; 2nd line(STYPE=PSC)
; ELAST, DEN, POIS, POIC, THERMAL ; 2nd line(STYPE=PSC-CMPW)
; bSHEARCHK, [SCHK-I], [SCHK-J], [WT-I], [WT-J], WI, WJ, bSYM, bSIDEHOLE ; 3rd line(STYPE=PSC)
; bSHEARCHK, bSYM, bHUNCH, [CMPWEB-I], [CMPWEB-J] ; 3rd line(STYPE=PSC-CMPW)
; bUSERDEFMESH SIZE, MESH SIZE, bUSERINPSTIFF, [STIFF-I], [STIFF-J] ; 4th line(STYPE=PSC)
; [SIZE-A]-i ; 5th line(STYPE=PSC)
; [SIZE-B]-i ; 6th line(STYPE=PSC)
; [SIZE-C]-i ; 7th line(STYPE=PSC)
; [SIZE-D]-i ; 8th line(STYPE=PSC)
; [SIZE-A]-j ; 9th line(STYPE=PSC)
; [SIZE-B]-j ; 10th line(STYPE=PSC)
; [SIZE-C]-j ; 11th line(STYPE=PSC)
; [SIZE-D]-j ; 12th line(STYPE=PSC)
; GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, bMULTI, EsEc-L, EsEc-S ; 2nd line(STYPE=CMP-B/I)
; SW_i, Hw_i, tw_i, B_i, Bf1_i, tf1_i, B2_i, Bf2_i, tf2_i ; 3rd line(STYPE=CMP-B/I)
; SW_j, Hw_j, tw_j, B_j, Bf1_j, tf1_j, B2_j, Bf2_j, tf2_j ; 4th line(STYPE=CMP-B/I)
; N1, N2, Hr, Hr2, tr1, tr2 ; 5th line(STYPE=CMP-B)
; GN, CTC, Bc, Tc, Hh, EgdEsb, DgdDsb, Pgd, Psb, bSYM, SW_i, SW_j ; 2nd line(STYPE=CMP-CI/CT)
; OPT1, OPT2, [JOINT] ; 3rd line(STYPE=CMP-CI/CT)
; [SIZE-A]-i ; 4th line(STYPE=CMP-CI/CT)
; [SIZE-B]-i ; 5th line(STYPE=CMP-CI/CT)
; [SIZE-C]-i ; 6th line(STYPE=CMP-CI/CT)
; [SIZE-D]-i ; 7th line(STYPE=CMP-CI/CT)
; [SIZE-A]-j ; 8th line(STYPE=CMP-CI/CT)
; [SIZE-B]-j ; 9th line(STYPE=CMP-CI/CT)
; [SIZE-C]-j ; 10th line(STYPE=CMP-CI/CT)
; [SIZE-D]-j ; 11th line(STYPE=CMP-CI/CT)
; iSEC, TYPE, SNAME, [OFFSET], bSD, bWE, STYPE1, STYPE2 ; 1st line - CONSTRUCT
; SHAPE, ...(same with other type data from shape) ; Before (STYPE1)
; SHAPE, ...(same with other type data from shape) ; After (STYPE2)
; iSEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-B
; Hw, tw, B1, Bf1, tf1, B2, Bf2, tf2 ; 2nd line
; [SHAPE-NUM], [STIFF-SHAPE], [STIFF-POS] (1~4) ; 3rd line
; SW, GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, TsTc, bMulti, Elong, Esh ; 4th line
; iSEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-I
; Hw, tw, B1, tf1, B2, tf2 ; 2nd line
; [SHAPE-NUM], [STIFF-SHAPE], [STIFF-POS] (1~2) ; 3rd line
; SW, GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, TsTc, bMulti, Elong, Esh ; 4th line
; iSEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-TUB
; Hw, tw, B1, Bf1, tf1, B2, Bf2, tf2, Bf3, tfp ; 2nd line
; [SHAPE-NUM], [STIFF-SHAPE], [STIFF-POS] (1~3) ; 3rd line
```

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

```
; SW, GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, TsTc, bMulti, Elong, Esh ; 4th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-CI/CT
; OPT1, OPT2, [JOINT] ; 2nd line
; [SIZE-A] ; 3rd line
; [SIZE-B] ; 4th line
; [SIZE-C] ; 5th line
; [SIZE-D] ; 6th line
; SW, GN, CTC, Bc, Tc, Hh, EgDsb, DgdDsb, Pgd, Psb ; 7th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - PSC
; OPT1, OPT2, [JOINT] ; 2nd line
; bSHEARCHK, [SCHK], [WT], WIDTH, bSYM, bSIDEHOLE ; 3rd line
; bUSERDEFMESH SIZE, MESH SIZE, bUSERINPSTIFF, [STIFF] ; 4th line
; bWE, [WARPING POINT]-i, [WARPING POINT]-j ; 5th line
; [SIZE-A] ; 6th line
; [SIZE-B] ; 7th line
; [SIZE-C] ; 8th line
; [SIZE-D] ; 9th line
; [DATA1] : 1, DB, NAME or 2, D1, D2, D3, D4, D5, D6, D7, D8, D9, D10
; [DATA2] : CCSHAPE or iCEL or iN1, iN2
; [SRC] : 1, DB, NAME1, NAME2 or 2, D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, iN1, iN2
; [DIM1], [DIM2] : D1, D2, D3, D4, D5, D6, D7, D8
; [OFFSET] : OFFSET, iCENT, iREF, iHORZ, HUSER, iVERT, VUSER
; [OFFSET2] : OFFSET, iCENT, iREF, iHORZ, HUSERI, HUSERJ, iVERT, VUSERI, VUSERJ
; [SHAPE-NUM] : SHAPE-NUM, POS, STIFF-NUM1, STIFF-NUM2, STIFF-NUM3, STIFF-NUM4
; [STIFF-SHAPE] : SHAPE-NUM, for(SHAPE-NUM) { NAME, SIZE1~8 }
; [STIFF-POS] : STIFF-NUM, for(STIFF-NUM) { SPACING, iSHAPE, bCALC }
; [JOINT] : 8(1CELL, 2CELL), 13(3CELL), 9(PSCM), 8(PSCH), 9(PSCT), 2(PSCB), 0(nCELL), 2(nCEL2)
; [SIZE-A] : 6(1CELL, 2CELL), 10(3CELL), 10(PSCM), 6(PSCH), 8(PSCT), 10(PSCB), 5(nCELL), 11(nCEL2)
; [SIZE-B] : 6(1CELL, 2CELL), 12(3CELL), 6(PSCM), 6(PSCH), 8(PSCT), 6(PSCB), 8(nCELL), 18(nCEL2)
; [SIZE-C] : 10(1CELL, 2CELL), 13(3CELL), 9(PSCM), 10(PSCH), 7(PSCT), 8(PSCB), 0(nCELL), 11(nCEL2)
; [SIZE-D] : 8(1CELL, 2CELL), 13(3CELL), 6(PSCM), 7(PSCH), 8(PSCT), 5(PSCB), 0(nCELL), 18(nCEL2)
; [STIFF] : AREA, ASy, ASz, Ixx, Iyy, Izz
; [SCHK] : bAUTO_Z1, Z1, bAUTO_Z3, Z3
; [WT] : bAUTO_TOR, TOR, bAUTO_SHR1, SHR1, bAUTO_SHR2, SHR2, bAUTO_SHR3, SHR3
; [CMPWEB] : EFD, LRF, A, B, H, T
; [WARPING POINT] : nWarpingCheck, X1,X2,X3,X4,X5,X6, Y1,Y2,Y3,Y4,Y5,Y6
1, DBUSER , v118 , CC, 0, 0, 0, 0, 0, YES, NO, H , 2, 1.255, 0.4, 0.013, 0.025, 0.48, 0.05, 0, 0, 0, 0
2, COMPOSITE , com1 , CC, 0, 0, 0, 0, 0, YES, NO, I
1.117, 0.0127, 0.4, 0.032, 0.5, 0.051
0, 0, 0, 0, 0, 0
0
0
0
2.1, 1, 2.1, 2.1, 0.2, 0, 7.95797, 3.27168, 0.3, 0.2, 1.3, NO, ,
3, DBUSER , v120 , CC, 0, 0, 0, 0, 0, YES, NO, H , 2, 1.2, 0.45, 0.013, 0.032, 0.5, 0.05, 0, 0, 0, 0
4, DBUSER , c6x82 , CC, 0, 0, 0, 0, 0, YES, NO, C , 2, 0.153, 0.049, 0.0051, 0.0087, 0.049, 0.0087, 0, 0, 0, 0
5, DBUSER , v100 , CC, 0, 0, 0, 0, 0, YES, NO, H , 2, 1, 0.2, 0.013, 0.025, 0.2, 0.05, 0, 0, 0, 0
6, DBUSER , 2L3X3X5/16 , CC, 0, 0, 0, 0, 0, YES, NO, 2L , 1, AISC10(US), 2L3X3X5/16

*SECT-COLOR
; ISEC, W_R, W_G, W_B, HF_R, HF_G, HF_B, HE_R, HE_G, HE_B, bBLEND, FACT
1, 0, 33, 66, 0, 128, 255, 0, 33, 66, NO, 0.5
2, 255, 0, 0, 0, 255, 0, 0, 0, 255, NO, 0.5
3, 255, 0, 0, 0, 255, 0, 0, 0, 255, NO, 0.5
4, 255, 0, 0, 0, 255, 0, 0, 0, 255, NO, 0.5
5, 0, 72, 72, 0, 192, 192, 0, 72, 72, NO, 0.5
6, 108, 0, 54, 255, 0, 128, 108, 0, 54, NO, 0.5

*COMP-GEN-SECT-PSC-DESIGN ; Composite Section for PSC Design
; SECT, bCompPSC, (Z1, Z2, Z3, t1, t2, t3, TotT)-I, (Z1, Z2, Z3, t1, t2, t3, TotT)-J
2, NO, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

*DGN-SECT
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, [DATA1], [DATA2] ; 1st line - DB/USER
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, BLT, D1, ..., D8, iCEL ; 1st line - VALUE
; AREA, ASy, ASz, Ixx, Iyy, Izz ; 2nd line
; CyP, CyM, CzP, CzM, QyB, QzB, PERI_OUT, PERI_IN, Cy, Cz ; 3rd line
; Y1, Y2, Y3, Y4, Z1, Z2, Z3, Z4, Zyy, Zzz ; 4th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, ELAST, DEN, POIS, SF, THERMAL ; 1st line - SRC
; D1, D2, [SRC] ; 2nd line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, 1, DB, NAME1, NAME2, D1, D2 ; 1st line - COMBINED
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, 2, D11, D12, D13, D14, D15, D21, D22, D23, D24
; ISEC, TYPE, SNAME, [OFFSET2], bSD, bWE, SHAPE, iyVAR, izVAR, STYPE ; 1st line - TAPERED
; DB, NAME1, NAME2 ; 2nd line(STYPE=DB)
; [DIM1], [DIM2] ; 2nd line(STYPE=USER)
```

```

; D11, D12, D13, D14, D15, D16, D17, D18 ; 2nd line(STYPE=VALUE)
; AREA1, ASy1, ASz1, Ixx1, Iyy1, Izz1 ; 3rd line(STYPE=VALUE)
; CyP1, CyM1, CzP1, CzM1, QyB1, QzB1, PERI_OUT1, PERI_IN1, Cy1, Cz1 ; 4th line(STYPE=VALUE)
; Y11, Y12, Y13, Y14, Z11, Z12, Z13, Z14, Zyy1, Zyy2 ; 5th line(STYPE=VALUE)
; D21, D22, D23, D24, D25, D26, D27, D28 ; 6th line(STYPE=VALUE)
; AREA2, ASy2, ASz2, Ixx2, Iyy2, Izz2 ; 7th line(STYPE=VALUE)
; CyP2, CyM2, CzP2, CzM2, QyB2, QzB2, PERI_OUT2, PERI_IN2, Cy2, Cz2 ; 8th line(STYPE=VALUE)
; Y21, Y22, Y23, Y24, Z21, Z22, Z23, Z24, Zyy2, Zzz2 ; 9th line(STYPE=VALUE)
; OPT1, OPT2, [JOINT] ; 2nd line(STYPE=PSC)
; ELAST, DEN, POIS, POIC, THERMAL ; 2nd line(STYPE=PSC-CMPW)
; bSHEARCHK, [SCHK-I], [SCHK-J], [WT-I], [WT-J], WI, WJ, bSYM, bSIDEHOLE ; 3rd line(STYPE=PSC)
; bSHEARCHK, bSYM, bHUNCH, [CMPWEB-I], [CMPWEB-J] ; 3rd line(STYPE=PSC-CMPW)
; bUSERDEFMESH SIZE, MESH SIZE, bUSERINPSTIFF, [STIFF-I], [STIFF-J] ; 4th line(STYPE=PSC)
; [SIZE-A]-i ; 5th line(STYPE=PSC)
; [SIZE-B]-i ; 6th line(STYPE=PSC)
; [SIZE-C]-i ; 7th line(STYPE=PSC)
; [SIZE-D]-i ; 8th line(STYPE=PSC)
; [SIZE-A]-j ; 9th line(STYPE=PSC)
; [SIZE-B]-j ; 10th line(STYPE=PSC)
; [SIZE-C]-j ; 11th line(STYPE=PSC)
; [SIZE-D]-j ; 12th line(STYPE=PSC)
; GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, bMULTI, EsEc-L, EsEc-S ; 2nd line(STYPE=CMP-B/I)
; SW_i, Hw_i, tw_i, B_i, Bf1_i, tf1_i, B2_i, Bf2_i, tf2_i ; 3rd line(STYPE=CMP-B/I)
; SW_j, Hw_j, tw_j, B_j, Bf1_j, tf1_j, B2_j, Bf2_j, tf2_j ; 4th line(STYPE=CMP-B/I)
; N1, N2, Hr, Hr2, tr1, tr2 ; 5th line(STYPE=CMP-B)
; GN, CTC, Bc, Tc, Hh, EgDEsb, DgdDsb, Pgd, Psb, bSYM, SW_i, SW_j ; 2nd line(STYPE=CMP-CI/CT)
; OPT1, OPT2, [JOINT] ; 3rd line(STYPE=CMP-CI/CT)
; [SIZE-A]-i ; 4th line(STYPE=CMP-CI/CT)
; [SIZE-B]-i ; 5th line(STYPE=CMP-CI/CT)
; [SIZE-C]-i ; 6th line(STYPE=CMP-CI/CT)
; [SIZE-D]-i ; 7th line(STYPE=CMP-CI/CT)
; [SIZE-A]-j ; 8th line(STYPE=CMP-CI/CT)
; [SIZE-B]-j ; 9th line(STYPE=CMP-CI/CT)
; [SIZE-C]-j ; 10th line(STYPE=CMP-CI/CT)
; [SIZE-D]-j ; 11th line(STYPE=CMP-CI/CT)
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, STYPE1, STYPE2 ; 1st line - CONSTRUCT
; SHAPE, ...(same with other type data from shape) ; Before (STYPE1)
; SHAPE, ...(same with other type data from shape) ; After (STYPE2)
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-B
; Hw, tw, B1, Bf1, tf1, B2, Bf2, tf2 ; 2nd line
; [SHAPE-NUM], [STIFF-SHAPE], [STIFF-POS] (1~4) ; 3rd line
; SW, GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, TsTc, bMulti, Elong, Esh ; 4th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-I
; Hw, tw, B1, tf1, B2, tf2 ; 2nd line
; [SHAPE-NUM], [STIFF-SHAPE], [STIFF-POS] (1~2) ; 3rd line
; SW, GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, TsTc, bMulti, Elong, Esh ; 4th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-TUB
; Hw, tw, B1, Bf1, tf1, B2, Bf2, tf2, Bf3, tfp ; 2nd line
; [SHAPE-NUM], [STIFF-SHAPE], [STIFF-POS] (1~3) ; 3rd line
; SW, GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, TsTc, bMulti, Elong, Esh ; 4th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-CI/CT
; OPT1, OPT2, [JOINT] ; 2nd line
; [SIZE-A] ; 3rd line
; [SIZE-B] ; 4th line
; [SIZE-C] ; 5th line
; [SIZE-D] ; 6th line
; SW, GN, CTC, Bc, Tc, Hh, EgDEsb, DgdDsb, Pgd, Psb ; 7th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - PSC
; OPT1, OPT2, [JOINT] ; 2nd line
; bSHEARCHK, [SCHK], [WT], WIDTH, bSYM, bSIDEHOLE ; 3rd line
; bUSERDEFMESH SIZE, MESH SIZE, bUSERINPSTIFF, [STIFF] ; 4th line
; bWE, [WARPING POINT]-i, [WARPING POINT]-j ; 5th line
; [SIZE-A] ; 6th line
; [SIZE-B] ; 7th line
; [SIZE-C] ; 8th line
; [SIZE-D] ; 9th line
; [DATA1] : 1, DB, NAME or 2, D1, D2, D3, D4, D5, D6, D7, D8, D9, D10
; [DATA2] : CCSHAPE or iCEL or iN1, iN2
; [SRC] : 1, DB, NAME1, NAME2 or 2, D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, iN1, iN2
; [DIM1], [DIM2] : D1, D2, D3, D4, D5, D6, D7, D8
; [OFFSET] : OFFSET, iCENT, iREF, iHORZ, HUSER, iVERT, VUSER
; [OFFSET2]: OFFSET, iCENT, iREF, iHORZ, HUSERI, HUSERJ, iVERT, VUSERI, VUSERJ
; [SHAPE-NUM]: SHAPE-NUM, POS, STIFF-NUM1, STIFF-NUM2, STIFF-NUM3, STIFF-NUM4
; [STIFF-SHAPE]: SHAPE-NUM, for(SHAPE-NUM) { NAME, SIZE1~8 }
; [STIFF-POS]: STIFF-NUM, for(STIFF-NUM) { SPACING, iSHAPE, bCALC }

```

```
; [JOINT] : 8(1CELL, 2CELL), 13(3CELL), 9(PSCM), 8(PSCH), 9(PSCT), 2(PSCB), 0(nCELL), 2(nCEL2)
; [SIZE-A] : 6(1CELL, 2CELL), 10(3CELL), 10(PSCM), 6(PSCH), 8(PSCT), 10(PSCB), 5(nCELL), 11(nCEL2)
; [SIZE-B] : 6(1CELL, 2CELL), 12(3CELL), 6(PSCM), 6(PSCH), 8(PSCT), 6(PSCB), 8(nCELL), 18(nCEL2)
; [SIZE-C] : 10(1CELL, 2CELL), 13(3CELL), 9(PSCM), 10(PSCH), 7(PSCT), 8(PSCB), 0(nCELL), 11(nCEL2)
; [SIZE-D] : 8(1CELL, 2CELL), 13(3CELL), 6(PSCM), 7(PSCH), 8(PSCT), 5(PSCB), 0(nCELL), 18(nCEL2)
; [STIFF] : AREA, ASy, ASz, Ixx, Iyy, Izz
; [SCHK] : bAUTO_Z1, Z1, bAUTO_Z3, Z3
; [WT] : bAUTO_TOR, TOR, bAUTO_SHR1, SHR1, bAUTO_SHR2, SHR2, bAUTO_SHR3, SHR3
; [CMPWEB] : EFD, LRF, A, B, H, T
; [WARPING POINT] : nWarpingCheck, X1,X2,X3,X4,X5,X6, Y1,Y2,Y3,Y4,Y5,Y6
1, DBUSER , v118 , CC, 0, 0, 0, 0, 0, YES, NO, H , 2, 1.255, 0.4, 0.013, 0.025, 0.48, 0.05, 0, 0, 0, 0
2, COMPOSITE , com1 , CC, 0, 0, 0, 0, 0, YES, NO, I
1.117, 0.0127, 0.4, 0.032, 0.5, 0.051
0, 0, 0, 0, 0, 0
0
0
0
2.1, 1, 2.1, 2.1, 0.2, 0, 7.95797, 3.27168, 0.3, 0.2, 1.3, NO, ,
3, DBUSER , V120 , CC, 0, 0, 0, 0, 0, YES, NO, H , 2, 1.2, 0.45, 0.013, 0.032, 0.5, 0.05, 0, 0, 0, 0
4, DBUSER , c6x82 , CC, 0, 0, 0, 0, 0, YES, NO, C , 2, 0.153, 0.049, 0.0051, 0.0087, 0.049, 0.0087, 0, 0, 0, 0
5, DBUSER , v100 , CC, 0, 0, 0, 0, 0, YES, NO, H , 2, 1, 0.2, 0.013, 0.025, 0.2, 0.05, 0, 0, 0, 0
6, DBUSER , 2L3X3X5/16 , CC, 0, 0, 0, 0, 0, YES, NO, 2L , 1, AISC10(US), 2L3X3X5/16
```

```
*THICKNESS ; Thickness
; iTHK, NAME, TYPE, bSAME, THIK-IN, THIK-OUT, bOFFSET, OFFTYPE, VALUE ; TYPE=VALUE
; iTHK, TYPE, SUBTYPE, RPOS, WEIGHT ; TYPE=STIFFENED, SUBTYPE=VALUE
; SHAPE, THIK-IN, THIK-OUT, HU, HL ; for yz section
; SHAPE, THIK-IN, THIK-OUT, HU, HL ; for xz section
; iTHK, TYPE, SUBTYPE, RPOS, PLATETHIK ; TYPE=STIFFENED, SUBTYPE=USER
; bRIB {, SHAPE, DIST, SIZE1, SIZE2, ..., SIZE6} ; for yz section
; bRIB {, SHAPE, DIST, SIZE2, SIZE2, ..., SIZE6} ; for xz section
; iTHK, TYPE, SUBTYPE, RPOS, PLATETHIK, DBNAME ; TYPE=STIFFENED, SUBTYPE=DB
; bRIB {, SHAPE, DIST, SNAME} ; for yz section
; bRIB {, SHAPE, DIST, SNAME} ; for xz section
1, VALUE, 1, YES, 0.1, 0, NO, 0, 0
```

```
*THIK-COLOR
; iTHK, W_R, W_G, W_B, HF_R, HF_G, HF_B, HE_R, HE_G, HE_B, bBLEND, FACT
1, 85, 0, 57, 192, 0, 128, 85, 0, 57, NO, 0.5
```

```
*MAIN-DOMAIN ; Main Domain
; NAME, TYPE, iMAT, iPRO, iSUB
1, 4, 0, 0, 2
```

```
*STLDCASE ; Static Load Cases
; LCNAME, LCTYPE, DESC
ppropio, D ,
muerta, D ,
viva , L ,
TPG , TPG,
W , W ,
```

```
*DGN-STEEL ; Steel Design Code
; CODE=CODE, bBRACED, bDEFLECT, iWTL ; line 1
; [AISC-LRFD93] : PHI-T1, PHI-T2, PHI-C, PHI-B, PHI-V ; line 2
; [AISC-LRFD2K] : PHI-T1, PHI-T2, PHI-C, PHI-B, PHI-V ; line 2
; [AIK-LSD97] : PHI-T1, PHI-T2, PHI-C, PHI-B, PHI-V ; line 2
; [TWN-LSD90] : PHI-T1, PHI-T2, PHI-C, PHI-B, PHI-V ; line 2
; [TWN-LSD96] : PHI-T1, PHI-T2, PHI-C, PHI-B, PHI-V, bSPECIAL, FRAMETYPE, bSCWB ; line 2
; [KSSC-LSD09] : PHI-T1, PHI-T2, PHI-C, PHI-B, PHI-V, bSPECIAL, FRAMETYPE, bSCWB ; line 2
; [KSSC-LSD16] : PHI-T1, PHI-T2, PHI-C, PHI-B, PHI-V, bSPECIAL, FRAMETYPE, bSCWB ; line 2
; [AISC(13th)-LRFD05] : PHI-T1, PHI-T2, PHI-C, PHI-B, PHI-V, bSPECIAL, FRAMETYPE, bSCWB ; line 2
; [AISC(14th)-LRFD10] : PHI-T1, PHI-T2, PHI-C, PHI-B, PHI-V, bSPECIAL, FRAMETYPE, bSCWB ; line 2
; [AISC(13th)-ASD05] : OMEGA-T1, OMEGA-T2, OMEGA-C, OMEGA-B, OMEGA-V, bSPECIAL, FRAMETYPE , bSCWB ; line 2
; [AISC(13th)-ASD10] : OMEGA-T1, OMEGA-T2, OMEGA-C, OMEGA-B, OMEGA-V, bSPECIAL, FRAMETYPE , bSCWB ; line 2
; [EUROCODE3] : GAMMA-M0, GAMMA-M1, GAMMA-M2, iSCODE, iUseMaxForce ; line 2
; [EUROCODE3:05] : GAMMA-M0, GAMMA-M1, GAMMA-M2, iSCODE, iUseMaxForce ; line 2
; [EUROCODE3-2:05] : GAMMA-M0, GAMMA-M1, GAMMA-M2, iSCODE, iUseMaxForce ; line 2
; [BS5950-90] : GAMMA-M1, GAMMA-M2 ; line 2
; [BS5950-2K] : GAMMA-M ; line 2
; [CSA-S16-01] : PHI ; line 2
; [CSA-S6-14] : PHI ; line 2
; [AISC-ASD89] : ;
```

```
; [KSSC-ASD03] : ;
; [AISI-CFSD86] : ;
; [AISI-CFSD08] : ;
; [AIK-ASD83] : ;
; [KSCE-ASD96] : ;
; [AIJ-ASD02] : ;
; [AISC-CFSD86] : ;
; [AIK-CFSD98] : ;
; [GBJ17-88] : bSPECIAL, iCLASS, NetGrossAreaRatio ; line 2
; [GB50017-03] : bSPECIAL, iCLASS, NetGrossAreaRatio ; line 2
; [GB50017-17] : bSPECIAL, iCLASS, SafeLevel, EqGrade, BendingEnvelope, NetGrossAreaRatio ; line 2
; [GB50017-15] : iCLASS, AreaRatio, iSeis, bSPECIAL, bWeldBeam, bStiffRib, StiffRibSpace; line 2
; [IS:800-1984] : ;
; [IS:800-2007] : GAMMA-M0, GAMMA-M1 ;
; [AASHTO-LRFD02] : PHI-T1, PHI-T2, PHI-C, PHI-B, PHI-V ; line 2
; [AASHTO-LFD96] : ;
; [AASHTO-ASD96] : ;
; [JTJ025-86] : ;
; [TWN-BRG-LSD90] : ;
; [TWN-ASD90] : ;
; [TWN-ASD96] : PHI-T1, PHI-T2, PHI-C, PHI-B, PHI-V, bSPECIAL, FRAMETYPE, bSCWB ; line 2
; [TWN-BRG-ASD90] : ;
; [KSCE-ASD05] : iDGN_LCOM, bENVE_FORCE1, ... bENVE_FORCE12; line2
; : bPRINT_CHK1, ... bPRINT_CHK5 ; line3
CODE=AASHTO-LRFD16, NO, YES, 0
0, 0, 0, 0, 0

*CONSTRAINT ; Supports
; NODE_LIST, CONST(Dx,Dy,Dz,Rx,Ry,Rz), GROUP
4 7 10 12, 111000,

*USE-STLD, ppropio

*SELFWEIGHT ; Self Weight
; X, Y, Z, GROUP
0, 0, -1,

; End of data for load case [ppropio] -----

*USE-STLD, W

*CONLOAD ; Nodal Loads
; NODE_LIST, FX, FY, FZ, MX, MY, MZ, GROUP
1, 5.29559, 0, 0, 0, 0, 0,

; End of data for load case [W] -----

*LOADCOMB ; Combinations
; NAME=NAME, KIND, ACTIVE, bES, iTYPE, DESC, iSERV-TYPE, nLCOMTYPE, nSEISTYPE ; line 1
; ANAL1, LCNAME1, FACT1, ... ; from line 2
NAME=gLCB1, GEN, ACTIVE, 0, 0, Strength-I:1.25DC, 0, 0, 0
ST, ppropio, 1.25, ST, muerta, 1.25, ST, viva, 1.75
NAME=gLCB2, GEN, ACTIVE, 0, 0, Strength-I:0.9DC, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, viva, 1.75
NAME=gLCB3, GEN, ACTIVE, 0, 0, Strength-IV:1.5DC, 0, 0, 0
ST, ppropio, 1.5, ST, muerta, 1.5
NAME=gLCB4, GEN, ACTIVE, 0, 0, Fatigue-I:1.5L, 0, 0, 0
ST, viva, 1.5
NAME=gLCB5, GEN, ACTIVE, 0, 0, Fatigue-II:0.75L, 0, 0, 0
ST, viva, 0.75
NAME=STL_ENV_STR, GEN, ACTIVE, 0, 1, Steel Strength Envelope, 0, 0, 0
CB, gLCB1, 1, CB, gLCB2, 1, CB, gLCB3, 1
NAME=STL_ENV_SER, GEN, ACTIVE, 0, 1, Steel Serviceability Envelope, 0, 0, 0
CB, gLCB4, 1, CB, gLCB5, 1
NAME=sLCB1, STEEL, STRENGTH, 0, 0, Strength-I:1.25DC, 0, 0, 0
ST, ppropio, 1.25, ST, muerta, 1.25, ST, viva, 1.75, ST, W, 1.4
NAME=sLCB2, STEEL, STRENGTH, 0, 0, Strength-I:0.9DC, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, viva, 1.75, ST, W, 1.4
NAME=sLCB3, STEEL, STRENGTH, 0, 0, Strength-IV:1.5DC, 0, 0, 0
ST, ppropio, 1.5, ST, muerta, 1.5, ST, W, 1.4
NAME=sLCB4, STEEL, SERVICE, 0, 0, Fatigue-I:1.5L, 0, 0, 0
ST, viva, 1.5, ST, W, 1.4
NAME=sLCB5, STEEL, SERVICE, 0, 0, Fatigue-II:0.75L, 0, 0, 0
ST, viva, 0.75, ST, W, 1.4
```

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

```
NAME=scLCB1, STLCOMP, STRENGTH, 0, 0, Strength-I:1.25DC, 0, 0, 0
ST, ppropio, 1.25
NAME=scLCB2, STLCOMP, STRENGTH, 0, 0, Strength-I:0.9DC, 0, 0, 0
ST, ppropio, 0.9
NAME=scLCB3, STLCOMP, STRENGTH, 0, 0, Strength-IV:1.5DC, 0, 0, 0
ST, ppropio, 1.5
NAME=scLCB4, STLCOMP, SERVICE, 0, 0, "Fatigue-I:1.0DC,1.75L", 0, 1, 0
ST, ppropio, 1, ST, viva, 1.75
NAME=scLCB5, STLCOMP, SERVICE, 0, 0, Fatigue-I:1.0DC, 0, 1, 0
ST, ppropio, 1
NAME=scLCB6, STLCOMP, SERVICE, 0, 0, "Fatigue-II:1.0DC,0.8L", 0, 2, 0
ST, ppropio, 1, ST, viva, 0.8

*LC-COLOR ; Diagram Color for Load Case
; ANAL, LCNAME, iR1(ALL), iG1(ALL), iB1(ALL), iR2(MIN), iG2(MIN), iB2(MIN), iR3(MAX), iG2(MAX), iB2(MAX)
ST, ppropio, 255, 255, 255, 163, 255, 160, 192, 0, 128
CBS, sLCB1, 192, 72, 0, 255, 128, 0, 85, 0, 192
ST, muerta, 93, 255, 87, 163, 255, 160, 128, 192, 0
ST, viva, 255, 160, 255, 146, 0, 255, 255, 0, 192
CBS, sLCB2, 0, 192, 128, 128, 192, 0, 163, 255, 160
CBS, sLCB3, 0, 128, 57, 0, 157, 192, 148, 87, 255
CBS, sLCB4, 0, 128, 57, 255, 87, 87, 210, 210, 210
CBS, sLCB5, 255, 87, 128, 0, 157, 192, 146, 0, 255
CBSC, scLCB1, 0, 192, 192, 212, 160, 255, 160, 255, 255
CBSC, scLCB2, 255, 160, 255, 128, 192, 0, 210, 210, 210
CBSC, scLCB3, 0, 128, 57, 93, 255, 87, 0, 192, 128
CBSC, scLCB4, 255, 255, 255, 78, 0, 255, 93, 255, 87
CBSC, scLCB5, 212, 160, 255, 148, 87, 255, 212, 160, 255
CBSC, scLCB6, 192, 72, 0, 210, 210, 210, 0, 128, 255
CB, gLCB1, 160, 255, 255, 78, 0, 255, 255, 160, 255
CB, gLCB2, 255, 87, 87, 0, 128, 57, 192, 0, 192
CB, gLCB3, 85, 0, 192, 0, 157, 192, 78, 0, 255
CB, gLCB4, 255, 255, 87, 85, 192, 0, 255, 255, 255
CB, gLCB5, 255, 0, 192, 255, 0, 192, 93, 255, 87
CB, STL ENV_STR, 0, 128, 192, 0, 157, 192, 210, 210, 210
CB, STL ENV_SER, 0, 128, 128, 192, 72, 0, 255, 192, 160
ST, TPG, 255, 160, 255, 0, 128, 57, 0, 192, 128
ST, W, 192, 72, 0, 212, 160, 255, 255, 192, 160

*DGN-MATL ; Modify Steel(Concrete) Material
; iMAT, TYPE, MNAME, [DATA1] ; STEEL
; iMAT, TYPE, MNAME, [DATA2], [R-DATA], FCI, bSERV, SHORT, LONG ; CONC
; iMAT, TYPE, MNAME, [DATA3], [DATA2], [R-DATA] ; SRC
; iMAT, TYPE, MNAME, [DATA5] ; STEEL(None) & KSCE-ASD05
; [DATA1] : 1, DB, CODE, NAME or 2, ELAST, POISN, FU, FY1, FY2, FY3, FY4
; FY5, FY6, AFT, AFT2, AFT3, FY, AFV, AFV2, AFV3
; [DATA2] : 1, DB, CODE, NAME or 2, FC, CHK, LAMBDA, bFCI, FCI
; [DATA3] : 1, DB, CODE, NAME or 2, ELAST, FU, FY1, FY2, FY3, FY4
; FY5, FY6, AFT, AFT2, AFT3, FY, AFV, AFV2, AFV3
; [DATA4] : 1, DB, CODE, NAME or 2, FC
; [DATA5] : 3, ELAST, POISN, AL1, AL2, AL3, AL4, AL5, AL6, AL7, AL8, AL9, AL10
; MIN1, MIN2, MIN3
; [R-DATA]: RBCODE, RBMAIN, RBSUB, FY(R), FYS
1, STEEL, A36, 1, ASTM(S), A36, 1, EN04(RC), , , , , 0, 0, NO, 0.0000e+000, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
2, STEEL, A709-50, 1, ASTM(S), A709-50, 1, ASTM(RC), , , , , Grade C4000, ASTM(RC), Grade 60, , ,
, NO, 0.0000e+000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
3, CONC, Grade C4000, 1, ASTM(RC), , , , , Grade C4000, NO, 1, NO, 0, , , , 0, 0, 19305.3264306529, NO, 0, 0,
, 0, NO, 1, , , , 0, 0, 0

*DGN-PLATEGIRDER ; Composite Plate Girder Design
; iDGNCODE, bSERV2, bSERV2, bSTR2, bSTR2, bSTR3, bSTR4, bSTR5, bSTR6 \
; GAMMA_C, GAMMA_S, GAMMA_M0, GAMMA_M2, GAMMA_V, GAMMA_Ff, GAMMA_Mf, GAMMA_Mfs, DL
; GAMMA_M_ser, K1, K2, K3, KS, Phi_y, Phi_u, Phi_c, Phi_f, Phi_v, Phi_se, Phi_b, dCSLcbFactor0, dCSLcbFactor1, dCSLcbFactor2,
dCSLcbFactor3, dCSLcbFactor4
; nGirderType, nForceType, bDesignParameter0, bDesignParameter1, bDesignParameter2, bDesignParameter3, bDesignParameter4,
bDesignParameter5, bDesignParameter6, nBridgeType, bAppendix6
; bDistortion, b1p3RhMy, bPBTFA4SH
; Phi_S_Tension, Phi_S_Torsion, bCHK_CS, bIRC_ChkDefln, bIRC_ChkCrackWidth, dIRC_LoadCycles, dIRC_DeflLimit, dIRC_Crack_k3
1915, YES, YES, YES, YES, YES, YES, YES, YES, \
1.5, 1.15, 1, 1.1, 1.25, 1, 1, 1, 100, 1, 0.6, 0.45, 0.8, 0.75, 0.95, 0.8, 0.9, 1, 1, 0.85, 1, 1.25, 1.25, 1.25, 1.25, 1, 0, YES, YES, YES,
YES, YES, YES, YES, 0, YES, YES, YES, YES, YES, 0.95, 0.9, NO, YES, YES, 5e+006, 0.87, 0.3333

*ENDDATA
```

MODELO ESTRIBOS

*UNIT ; Unit System

; FORCE, LENGTH, HEAT, TEMPER

TONF, M, BTU, F

*STRUCTYPE ; Structure Type

; iSTYP, iMASS, iSMAS, bMASSOFFSET, bSELFWEIGHT, GRAV, TEMPER, bALIGNBEAM, bALIGNSLAB, bROTIGRID

0, 1, 1, NO, YES, 9.806, 0, NO, NO, NO

*REBAR-MATL-CODE ; Rebar Material Code

; CONC_CODE, CONC_MDB, SRC_CODE, SRC_MDB

ASTM(RC), Grade 60, ASTM(RC), Grade 60

*NODE ; Nodes

; iNO, X, Y, Z

1, 0, 0, 0

2, 9.8, 0, 0

3, 0, 0, 3.5

4, 9.8, 0, 3.5

5, 0, 0, 5.3

6, 9.8, 0, 5.3

98, 0, 0.8, 0

99, 9.8, 0.8, 0

100, 0, -0.8, 0

101, 9.8, -0.8, 0

102, 1.4, 0, 0

103, 4.9, 0, 0

104, 8.4, 0, 0

105, 2, 0, 0

106, 5.5, 0, 0

107, 9, 0, 0

108, 1.4, 0.6, 0

109, 4.9, 0.6, 0

110, 8.4, 0.6, 0

111, 1.98495674730909, 0.133512560373789, 0

112, 1.94058132074145, 0.260330243470535, 0

113, 1.86909888948082, 0.37409388111524, 0

114, 1.77409388111524, 0.469098889480818, 0

115, 1.66033024347053, 0.540581320741452, 0

116, 1.53351256037379, 0.584956747309094, 0

117, 1.26648743962621, 0.584956747309094, 0

118, 1.13966975652946, 0.540581320741451, 0

119, 1.02590611888476, 0.469098889480818, 0

120, 0.930901110519182, 0.37409388111524, 0

121, 0.859418679258548, 0.260330243470535, 0

122, 0.815043252690906, 0.133512560373789, 0

123, 0.8, 7.34788079488412e-017, 0

124, 0.815043252690906, -0.133512560373789, 0

125, 0.859418679258548, -0.260330243470535, 0

126, 0.930901110519182, -0.37409388111524, 0

127, 1.02590611888476, -0.469098889480818, 0

128, 1.13966975652947, -0.540581320741452, 0

129, 1.26648743962621, -0.584956747309094, 0

130, 1.4, -0.6, 0

131, 1.53351256037379, -0.584956747309094, 0

132, 1.66033024347053, -0.540581320741452, 0

133, 1.77409388111524, -0.469098889480818, 0

134, 1.86909888948082, -0.37409388111524, 0

135, 1.94058132074145, -0.260330243470535, 0

136, 1.98495674730909, -0.133512560373789, 0

137, 5.48495674730909, 0.133512560373789, 0

138, 5.44058132074145, 0.260330243470535, 0

139, 5.36909888948082, 0.37409388111524, 0

140, 5.27409388111524, 0.469098889480818, 0

141, 5.16033024347054, 0.540581320741451, 0

142, 5.03351256037379, 0.584956747309094, 0

143, 4.76648743962621, 0.584956747309094, 0

144, 4.63966975652947, 0.540581320741451, 0

145, 4.52590611888476, 0.469098889480817, 0

146, 4.43090111051918, 0.37409388111524, 0

147, 4.35941867925855, 0.260330243470535, 0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

148, 4.31504325269091, 0.133512560373789, 0
149, 4.3, 7.34788079488412e-017, 0
150, 4.31504325269091, -0.133512560373789, 0
151, 4.35941867925855, -0.260330243470535, 0
152, 4.43090111051918, -0.37409388111524, 0
153, 4.52590611888476, -0.469098889480818, 0
154, 4.63966975652947, -0.540581320741451, 0
155, 4.76648743962621, -0.584956747309094, 0
156, 4.9, -0.6, 0
157, 5.03351256037379, -0.584956747309094, 0
158, 5.16033024347054, -0.540581320741451, 0
159, 5.27409388111524, -0.469098889480818, 0
160, 5.36909888948082, -0.37409388111524, 0
161, 5.44058132074145, -0.260330243470535, 0
162, 5.48495674730909, -0.133512560373789, 0
163, 8.9849567473091, 0.133512560373789, 0
164, 8.94058132074145, 0.260330243470535, 0
165, 8.86909888948082, 0.37409388111524, 0
166, 8.77409388111524, 0.469098889480818, 0
167, 8.66033024347053, 0.540581320741451, 0
168, 8.53351256037379, 0.584956747309094, 0
169, 8.26648743962621, 0.584956747309094, 0
170, 8.13966975652947, 0.540581320741451, 0
171, 8.02590611888476, 0.469098889480817, 0
172, 7.93090111051918, 0.37409388111524, 0
173, 7.85941867925855, 0.260330243470535, 0
174, 7.81504325269091, 0.133512560373789, 0
175, 7.8, 7.34788079488412e-017, 0
176, 7.81504325269091, -0.133512560373789, 0
177, 7.85941867925855, -0.260330243470535, 0
178, 7.93090111051918, -0.37409388111524, 0
179, 8.02590611888476, -0.469098889480818, 0
180, 8.13966975652947, -0.540581320741451, 0
181, 8.26648743962621, -0.584956747309094, 0
182, 8.4, -0.6, 0
183, 8.53351256037379, -0.584956747309094, 0
184, 8.66033024347053, -0.540581320741451, 0
185, 8.77409388111524, -0.469098889480818, 0
186, 8.86909888948082, -0.37409388111524, 0
187, 8.94058132074145, -0.260330243470535, 0
188, 8.9849567473091, -0.133512560373789, 0
205, 1.1, 0, 0
206, 1.7, 0, 0
207, 1.55930068483609, -0.440093086509751, 0
208, 1.23736705868154, -0.444735846306607, 0
209, 1.41086163946393, -0.421169616323804, 0
210, 1.39975611324488, -0.23883457973983, 0
211, 1.80079136130083, -0.21837496138418, 0
212, 0.999208638699166, -0.21837496138418, 0
213, 1.64714128637031, -0.286563996184968, 0
214, 1.13139550352954, -0.290376375476677, 0
231, 8.1, 0, 0
232, 8.7, 0, 0
233, 8.23736705868154, -0.444735846306607, 0
234, 8.55930068483609, -0.440093086509751, 0
235, 8.41086163946393, -0.421169616323803, 0
236, 8.39975611324488, -0.238834579739831, 0
237, 8.80079136130083, -0.21837496138418, 0
238, 7.99920863869917, -0.21837496138418, 0
239, 8.13139550352954, -0.290376375476677, 0
240, 8.6471412863703, -0.286563996184968, 0
249, 4.9, 0.3, 0
251, 5.2, 0, 0
252, 5.12912282948152, 0.229834666875693, 0
253, 5.05287063754429, 0.388930924106552, 0
254, 5.28373614275831, 0.151709647379714, 0
265, 4.6, 0, 0
266, 4.67016533312431, 0.229122829481523, 0
267, 4.51106907589345, 0.152870637544287, 0
268, 4.74829035262029, 0.383736142758309, 0
287, 4.73736705868154, -0.444735846306607, 0
288, 5.05930068483609, -0.440093086509751, 0
289, 4.91086163946393, -0.421169616323803, 0
290, 4.89975611324488, -0.238834579739831, 0
291, 4.49920863869917, -0.21837496138418, 0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

292, 5.30079136130083, -0.21837496138418, 0
293, 4.63139550352954, -0.290376375476677, 0
294, 5.14714128637031, -0.286563996184968, 0
316, 0.296969696969697, -0.8, 0
317, 0.593939393939394, -0.8, 0
318, 0.890909090909091, -0.8, 0
319, 1.18787878787879, -0.8, 0
320, 1.48484848484849, -0.8, 0
321, 1.78181818181818, -0.8, 0
322, 2.07878787878788, -0.8, 0
323, 2.37575757575758, -0.8, 0
324, 2.67272727272727, -0.8, 0
325, 2.96969696969697, -0.8, 0
326, 3.26666666666667, -0.8, 0
327, 3.56363636363636, -0.8, 0
328, 3.86060606060606, -0.8, 0
329, 4.15757575757576, -0.8, 0
330, 4.45454545454546, -0.8, 0
331, 4.75151515151515, -0.8, 0
332, 5.04848484848485, -0.8, 0
333, 5.34545454545455, -0.8, 0
334, 5.64242424242424, -0.8, 0
335, 5.93939393939394, -0.8, 0
336, 6.23636363636364, -0.8, 0
337, 6.53333333333333, -0.8, 0
338, 6.83030303030303, -0.8, 0
339, 7.12727272727273, -0.8, 0
340, 7.42424242424242, -0.8, 0
341, 7.72121212121212, -0.8, 0
342, 8.01818181818182, -0.8, 0
343, 8.31515151515152, -0.8, 0
344, 8.61212121212121, -0.8, 0
345, 8.90909090909091, -0.8, 0
346, 9.20606060606061, -0.8, 0
347, 9.5030303030303, -0.8, 0
353, 9.8, -0.266666666666667, 0
354, 9.8, -0.533333333333333, 0
358, 0, -0.266666666666667, 0
359, 0, -0.533333333333333, 0
380, 0.266666666666667, 0, 0
381, 0.533333333333333, 0, 0
382, 2.2875, 0, 0
383, 2.575, 0, 0
384, 2.8625, 0, 0
385, 3.15, 0, 0
386, 3.4375, 0, 0
387, 3.725, 0, 0
388, 4.0125, 0, 0
389, 5.7875, 0, 0
390, 6.075, 0, 0
391, 6.3625, 0, 0
392, 6.65, 0, 0
393, 6.9375, 0, 0
394, 7.225, 0, 0
395, 7.5125, 0, 0
396, 9.26666666666667, 0, 0
397, 9.53333333333333, 0, 0
398, 4.03450941782384, -0.525220486665172, 0
399, 5.78864620317075, -0.51504965731657, 0
400, 2.10727216310624, -0.588082596912611, 0
401, 7.70972800913887, -0.604460356398899, 0
402, 9.51584824861854, -0.265487291708626, 0
403, 0.28132602610783, -0.265822052876625, 0
404, 9.49357665849623, -0.532963117329956, 0
405, 0.289909809698642, -0.528755778097724, 0
406, 4.34969943509308, -0.585100418202628, 0
407, 5.48022612398611, -0.584331461630698, 0
408, 1.90012528030287, -0.603195726774002, 0
409, 7.89987471969713, -0.603195726774002, 0
410, 8.97853685391772, -0.586167232999306, 0
411, 0.821463146082279, -0.586167232999306, 0
412, 3.74627754522313, -0.267440410899144, 0
413, 6.07348761254221, -0.288195259048779, 0
414, 2.6167757639336, -0.268528248696413, 0
415, 2.90196297043838, -0.265652295294307, 0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

416, 3.18781023406468, -0.265704997314165, 0
417, 3.47104931302445, -0.265880792019562, 0
418, 6.33447133370215, -0.274296754961681, 0
419, 6.61313525698571, -0.264473766129305, 0
420, 6.90145910032486, -0.264966417737627, 0
421, 7.18142003772679, -0.260825514910531, 0
422, 2.6540712614402, -0.529919699459935, 0
423, 2.93954174332874, -0.532031027745149, 0
424, 3.22832736422181, -0.533374564937096, 0
425, 3.51443419280265, -0.534459724522933, 0
426, 6.28985112232218, -0.542293908380659, 0
427, 6.57949340384747, -0.537700186372295, 0
428, 6.87603440389988, -0.53160836584099, 0
429, 7.19321392082919, -0.527006240445002, 0
430, 2.37214199154124, -0.552382119025716, 0
431, 3.78503621188947, -0.534707722051266, 0
432, 6.02647240703604, -0.549711393379858, 0
433, 7.4940621660254, -0.507543111733485, 0
434, 0.56429046501706, -0.254974126401679, 0
435, 9.23570953498294, -0.254974126401679, 0
436, 4.00341488362318, -0.27640399468561, 0
437, 5.82341019326939, -0.276129971220804, 0
438, 7.42458426932018, -0.26546186222383, 0
439, 2.34276831814383, -0.275294341979101, 0
440, 0.582628856574967, -0.517538443433525, 0
441, 9.20002417930085, -0.509539081310417, 0
442, 2.17410258223632, -0.190109516717396, 0
443, 7.62379870545626, -0.214676343627796, 0
444, 4.53185923083038, -0.656869707425407, 0
445, 5.27215024963907, -0.665911176634315, 0
446, 4.14341654120916, -0.178491099875715, 0
447, 5.67612344071474, -0.163112484688908, 0
448, 9.06713411789358, -0.322411797946542, 0
449, 0.732865882106415, -0.322411797946541, 0
450, 2.10059940280062, -0.357191535501488, 0
451, 7.69827838072715, -0.34613316083406, 0
452, 1.9729749973572, -0.465210947099739, 0
453, 7.80760931147536, -0.466412496887815, 0
454, 4.21897172267062, -0.301140639330484, 0
455, 5.63037631466518, -0.28367199055056, 0
456, 9.02227299995222, -0.453569879938566, 0
457, 0.766581405128056, -0.461257697237307, 0
458, 4.25882950988644, -0.448511453929684, 0
459, 5.56526367068664, -0.430226116743674, 0
478, 0.296969696969697, 0.8, 0
479, 0.593939393939394, 0.8, 0
480, 0.890909090909091, 0.8, 0
481, 1.18787878787879, 0.8, 0
482, 1.48484848484849, 0.8, 0
483, 1.78181818181818, 0.8, 0
484, 2.07878787878788, 0.8, 0
485, 2.37575757575758, 0.8, 0
486, 2.67272727272727, 0.8, 0
487, 2.96969696969697, 0.8, 0
488, 3.26666666666667, 0.8, 0
489, 3.56363636363636, 0.8, 0
490, 3.86060606060606, 0.8, 0
491, 4.15757575757576, 0.8, 0
492, 4.45454545454546, 0.8, 0
493, 4.75151515151515, 0.8, 0
494, 5.04848484848485, 0.8, 0
495, 5.34545454545455, 0.8, 0
496, 5.64242424242424, 0.8, 0
497, 5.93939393939394, 0.8, 0
498, 6.23636363636364, 0.8, 0
499, 6.53333333333333, 0.8, 0
500, 6.83030303030303, 0.8, 0
501, 7.12727272727273, 0.8, 0
502, 7.42424242424242, 0.8, 0
503, 7.72121212121212, 0.8, 0
504, 8.01818181818182, 0.8, 0
505, 8.31515151515152, 0.8, 0
506, 8.61212121212121, 0.8, 0
507, 8.90909090909091, 0.8, 0
508, 9.20606060606061, 0.8, 0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

509, 9.5030303030303, 0.8, 0
511, 9.8, 0.533333333333333, 0
512, 9.8, 0.266666666666667, 0
514, 0, 0.533333333333333, 0
515, 0, 0.266666666666667, 0
563, 4.01135379682925, 0.51504965731657, 0
564, 5.76549058217616, 0.525220486665172, 0
565, 7.69272783689376, 0.588082596912611, 0
566, 2.09199867001963, 0.605979859620022, 0
567, 9.51867397389217, 0.265822052876625, 0
568, 0.284151751381462, 0.265487291708626, 0
569, 0.30642334150377, 0.532963117329956, 0
570, 9.51009019030136, 0.528755778097724, 0
571, 5.45030056490692, 0.585100418202628, 0
572, 4.31977387601389, 0.584331461630698, 0
573, 1.89772187162659, 0.606420985655634, 0
574, 7.89987471969713, 0.603195726774002, 0
575, 8.97853685391772, 0.586167232999306, 0
576, 0.821463146082279, 0.586167232999306, 0
577, 3.73230364179297, 0.272728101723932, 0
578, 6.05372245477687, 0.267440410899144, 0
579, 2.62061577080709, 0.27899126517111, 0
580, 2.90483617498586, 0.269959432976778, 0
581, 3.19397335375371, 0.267228172352016, 0
582, 3.46890345446207, 0.269209483313198, 0
583, 6.32895068697555, 0.265880792019562, 0
584, 6.61218976593532, 0.265704997314165, 0
585, 6.89803702956162, 0.265652295294307, 0
586, 7.18322423606641, 0.268528248696413, 0
587, 2.62059891610566, 0.542313047739363, 0
588, 2.92717850896973, 0.540526820184296, 0
589, 3.22672805476318, 0.539524693967276, 0
590, 3.51185900730842, 0.543299921669216, 0
591, 6.28556580719735, 0.534459724522933, 0
592, 6.57167263577819, 0.533374564937096, 0
593, 6.86045825667127, 0.532031027745149, 0
594, 7.1459287385598, 0.529919699459935, 0
595, 2.31392623379186, 0.506117449509714, 0
596, 3.77352759296396, 0.549711393379858, 0
597, 6.01496378811053, 0.534707722051266, 0
598, 7.42785800845876, 0.552382119025716, 0
599, 9.23570953498294, 0.254974126401679, 0
600, 0.56429046501706, 0.254974126401679, 0
601, 5.79658511637682, 0.27640399468561, 0
602, 3.97658980673061, 0.276129971220804, 0
603, 2.37987298604144, 0.282303228875787, 0
604, 7.45723168185617, 0.275294341979101, 0
605, 0.599975820699154, 0.509539081310417, 0
606, 9.21737114342503, 0.517538443433525, 0
607, 2.17624597919932, 0.21443335587262, 0
608, 7.62589741776368, 0.190109516717396, 0
609, 5.26814076916962, 0.656869707425407, 0
610, 4.52784975036093, 0.665911176634315, 0
611, 5.65658345879084, 0.178491099875715, 0
612, 4.12387655928526, 0.163112484688908, 0
613, 9.06713411789358, 0.322411797946542, 0
614, 0.732865882106416, 0.322411797946541, 0
615, 2.10197646246001, 0.345467268519529, 0
616, 7.69940059719938, 0.357191535501487, 0
617, 1.99657305750484, 0.469530756012405, 0
618, 7.8270250026428, 0.465210947099739, 0
619, 5.58102827732939, 0.301140639330484, 0
620, 4.16962368533482, 0.28367199055056, 0
621, 9.03341859487194, 0.461257697237307, 0
622, 0.777727000047778, 0.453569879938566, 0
623, 5.54117049011356, 0.448511453929684, 0
624, 4.23473632931336, 0.430226116743674, 0
627, 1.4, 0.3, 0
636, 1.62912282948152, 0.229834666875693, 0
637, 1.55287063754429, 0.388930924106553, 0
638, 1.78373614275831, 0.151709647379714, 0
643, 8.4, 0.3, 0
650, 8.62912282948152, 0.229834666875693, 0
651, 8.55287063754429, 0.388930924106553, 0
652, 8.78373614275831, 0.151709647379714, 0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

664, 8.17016533312431, 0.229122829481524, 0
665, 8.01106907589345, 0.152870637544287, 0
666, 8.24829035262029, 0.38373614275831, 0
678, 1.17016533312431, 0.229122829481524, 0
679, 1.01106907589345, 0.152870637544287, 0
680, 1.24829035262029, 0.383736142758309, 0
682, 0.296969696969697, 0, 3.5
683, 0.593939393939394, 0, 3.5
684, 0.890909090909091, 0, 3.5
685, 1.18787878787879, 0, 3.5
686, 1.48484848484849, 0, 3.5
687, 1.78181818181818, 0, 3.5
688, 2.07878787878788, 0, 3.5
689, 2.37575757575758, 0, 3.5
690, 2.67272727272727, 0, 3.5
691, 2.96969696969697, 0, 3.5
692, 3.26666666666667, 0, 3.5
693, 3.56363636363636, 0, 3.5
694, 3.86060606060606, 0, 3.5
695, 4.15757575757576, 0, 3.5
696, 4.45454545454546, 0, 3.5
697, 4.75151515151515, 0, 3.5
698, 5.04848484848485, 0, 3.5
699, 5.34545454545455, 0, 3.5
700, 5.64242424242424, 0, 3.5
701, 5.93939393939394, 0, 3.5
702, 6.23636363636364, 0, 3.5
703, 6.53333333333333, 0, 3.5
704, 6.83030303030303, 0, 3.5
705, 7.12727272727273, 0, 3.5
706, 7.42424242424242, 0, 3.5
707, 7.72121212121212, 0, 3.5
708, 8.01818181818182, 0, 3.5
709, 8.31515151515152, 0, 3.5
710, 8.61212121212121, 0, 3.5
711, 8.90909090909091, 0, 3.5
712, 9.20606060606061, 0, 3.5
713, 9.5030303030303, 0, 3.5
715, 9.8, 0, 3.8
716, 9.8, 0, 4.1
717, 9.8, 0, 4.4
718, 9.8, 0, 4.7
719, 9.8, 0, 5
721, 9.5030303030303, 0, 5.3
722, 9.20606060606061, 0, 5.3
723, 8.90909090909091, 0, 5.3
724, 8.61212121212121, 0, 5.3
725, 8.31515151515152, 0, 5.3
726, 8.01818181818182, 0, 5.3
727, 7.72121212121212, 0, 5.3
728, 7.42424242424242, 0, 5.3
729, 7.12727272727273, 0, 5.3
730, 6.83030303030303, 0, 5.3
731, 6.53333333333333, 0, 5.3
732, 6.23636363636364, 0, 5.3
733, 5.93939393939394, 0, 5.3
734, 5.64242424242424, 0, 5.3
735, 5.34545454545455, 0, 5.3
736, 5.04848484848485, 0, 5.3
737, 4.75151515151515, 0, 5.3
738, 4.45454545454546, 0, 5.3
739, 4.15757575757576, 0, 5.3
740, 3.86060606060606, 0, 5.3
741, 3.56363636363636, 0, 5.3
742, 3.26666666666667, 0, 5.3
743, 2.96969696969697, 0, 5.3
744, 2.67272727272727, 0, 5.3
745, 2.37575757575758, 0, 5.3
746, 2.07878787878788, 0, 5.3
747, 1.78181818181818, 0, 5.3
748, 1.48484848484848, 0, 5.3
749, 1.18787878787879, 0, 5.3
750, 0.890909090909091, 0, 5.3
751, 0.593939393939394, 0, 5.3
752, 0.296969696969697, 0, 5.3

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

754, 0, 0, 5
755, 0, 0, 4.7
756, 0, 0, 4.4
757, 0, 0, 4.1
758, 0, 0, 3.8
759, 0.296969696969697, 0, 3.8
760, 0.296969696969697, 0, 4.1
761, 0.296969696969697, 0, 4.4
762, 0.296969696969697, 0, 4.7
763, 0.296969696969697, 0, 5
764, 0.593939393939394, 0, 3.8
765, 0.593939393939394, 0, 4.1
766, 0.593939393939394, 0, 4.4
767, 0.593939393939394, 0, 4.7
768, 0.593939393939394, 0, 5
769, 0.890909090909091, 0, 3.8
770, 0.890909090909091, 0, 4.1
771, 0.890909090909091, 0, 4.4
772, 0.890909090909091, 0, 4.7
773, 0.890909090909091, 0, 5
774, 1.18787878787879, 0, 3.8
775, 1.18787878787879, 0, 4.1
776, 1.18787878787879, 0, 4.4
777, 1.18787878787879, 0, 4.7
778, 1.18787878787879, 0, 5
779, 1.48484848484849, 0, 3.8
780, 1.48484848484849, 0, 4.1
781, 1.48484848484849, 0, 4.4
782, 1.48484848484849, 0, 4.7
783, 1.48484848484849, 0, 5
784, 1.78181818181818, 0, 3.8
785, 1.78181818181818, 0, 4.1
786, 1.78181818181818, 0, 4.4
787, 1.78181818181818, 0, 4.7
788, 1.78181818181818, 0, 5
789, 2.07878787878788, 0, 3.8
790, 2.07878787878788, 0, 4.1
791, 2.07878787878788, 0, 4.4
792, 2.07878787878788, 0, 4.7
793, 2.07878787878788, 0, 5
794, 2.37575757575758, 0, 3.8
795, 2.37575757575758, 0, 4.1
796, 2.37575757575758, 0, 4.4
797, 2.37575757575758, 0, 4.7
798, 2.37575757575758, 0, 5
799, 2.67272727272727, 0, 3.8
800, 2.67272727272727, 0, 4.1
801, 2.67272727272727, 0, 4.4
802, 2.67272727272727, 0, 4.7
803, 2.67272727272727, 0, 5
804, 2.96969696969697, 0, 3.8
805, 2.96969696969697, 0, 4.1
806, 2.96969696969697, 0, 4.4
807, 2.96969696969697, 0, 4.7
808, 2.96969696969697, 0, 5
809, 3.26666666666667, 0, 3.8
810, 3.26666666666667, 0, 4.1
811, 3.26666666666667, 0, 4.4
812, 3.26666666666667, 0, 4.7
813, 3.26666666666667, 0, 5
814, 3.56363636363636, 0, 3.8
815, 3.56363636363636, 0, 4.1
816, 3.56363636363636, 0, 4.4
817, 3.56363636363636, 0, 4.7
818, 3.56363636363636, 0, 5
819, 3.86060606060606, 0, 3.8
820, 3.86060606060606, 0, 4.1
821, 3.86060606060606, 0, 4.4
822, 3.86060606060606, 0, 4.7
823, 3.86060606060606, 0, 5
824, 4.15757575757576, 0, 3.8
825, 4.15757575757576, 0, 4.1
826, 4.15757575757576, 0, 4.4
827, 4.15757575757576, 0, 4.7
828, 4.15757575757576, 0, 5

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

829, 4.45454545454546, 0, 3.8
830, 4.45454545454546, 0, 4.1
831, 4.45454545454546, 0, 4.4
832, 4.45454545454546, 0, 4.7
833, 4.45454545454546, 0, 5
834, 4.75151515151515, 0, 3.8
835, 4.75151515151515, 0, 4.1
836, 4.75151515151515, 0, 4.4
837, 4.75151515151515, 0, 4.7
838, 4.75151515151515, 0, 5
839, 5.04848484848485, 0, 3.8
840, 5.04848484848485, 0, 4.1
841, 5.04848484848485, 0, 4.4
842, 5.04848484848485, 0, 4.7
843, 5.04848484848485, 0, 5
844, 5.34545454545455, 0, 3.8
845, 5.34545454545455, 0, 4.1
846, 5.34545454545455, 0, 4.4
847, 5.34545454545454, 0, 4.7
848, 5.34545454545455, 0, 5
849, 5.64242424242424, 0, 3.8
850, 5.64242424242424, 0, 4.1
851, 5.64242424242424, 0, 4.4
852, 5.64242424242424, 0, 4.7
853, 5.64242424242424, 0, 5
854, 5.93939393939394, 0, 3.8
855, 5.93939393939394, 0, 4.1
856, 5.93939393939394, 0, 4.4
857, 5.93939393939394, 0, 4.7
858, 5.93939393939394, 0, 5
859, 6.23636363636364, 0, 3.8
860, 6.23636363636364, 0, 4.1
861, 6.23636363636364, 0, 4.4
862, 6.23636363636364, 0, 4.7
863, 6.23636363636364, 0, 5
864, 6.53333333333333, 0, 3.8
865, 6.53333333333333, 0, 4.1
866, 6.53333333333333, 0, 4.4
867, 6.53333333333333, 0, 4.7
868, 6.53333333333333, 0, 5
869, 6.83030303030303, 0, 3.8
870, 6.83030303030303, 0, 4.1
871, 6.83030303030303, 0, 4.4
872, 6.83030303030303, 0, 4.7
873, 6.83030303030303, 0, 5
874, 7.12727272727273, 0, 3.8
875, 7.12727272727273, 0, 4.1
876, 7.12727272727273, 0, 4.4
877, 7.12727272727273, 0, 4.7
878, 7.12727272727273, 0, 5
879, 7.42424242424243, 0, 3.8
880, 7.42424242424242, 0, 4.1
881, 7.42424242424242, 0, 4.4
882, 7.42424242424242, 0, 4.7
883, 7.42424242424243, 0, 5
884, 7.72121212121212, 0, 3.8
885, 7.72121212121212, 0, 4.1
886, 7.72121212121212, 0, 4.4
887, 7.72121212121212, 0, 4.7
888, 7.72121212121212, 0, 5
889, 8.01818181818182, 0, 3.8
890, 8.01818181818182, 0, 4.1
891, 8.01818181818182, 0, 4.4
892, 8.01818181818182, 0, 4.7
893, 8.01818181818182, 0, 5
894, 8.31515151515152, 0, 3.8
895, 8.31515151515152, 0, 4.1
896, 8.31515151515152, 0, 4.4
897, 8.31515151515152, 0, 4.7
898, 8.31515151515152, 0, 5
899, 8.61212121212121, 0, 3.8
900, 8.61212121212121, 0, 4.1
901, 8.61212121212121, 0, 4.4
902, 8.61212121212121, 0, 4.7
903, 8.61212121212121, 0, 5

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

904, 8.90909090909091, 0, 3.8
905, 8.90909090909091, 0, 4.1
906, 8.90909090909091, 0, 4.4
907, 8.90909090909091, 0, 4.7
908, 8.90909090909091, 0, 5
909, 9.20606060606061, 0, 3.8
910, 9.20606060606061, 0, 4.1
911, 9.20606060606061, 0, 4.4
912, 9.20606060606061, 0, 4.7
913, 9.20606060606061, 0, 5
914, 9.5030303030303, 0, 3.8
915, 9.5030303030303, 0, 4.1
916, 9.5030303030303, 0, 4.4
917, 9.5030303030303, 0, 4.7
918, 9.5030303030303, 0, 5
986, 9.8, 0, 0.291666666666667
987, 9.8, 0, 0.583333333333333
988, 9.8, 0, 0.875
989, 9.8, 0, 1.166666666666667
990, 9.8, 0, 1.458333333333333
991, 9.8, 0, 1.75
992, 9.8, 0, 2.041666666666667
993, 9.8, 0, 2.333333333333333
994, 9.8, 0, 2.625
995, 9.8, 0, 2.916666666666667
996, 9.8, 0, 3.208333333333333
999, 0, 0, 3.208333333333333
1000, 0, 0, 2.916666666666667
1001, 0, 0, 2.625
1002, 0, 0, 2.333333333333333
1003, 0, 0, 2.041666666666667
1004, 0, 0, 1.75
1005, 0, 0, 1.458333333333333
1006, 0, 0, 1.166666666666667
1007, 0, 0, 0.875
1008, 0, 0, 0.583333333333333
1009, 0, 0, 0.291666666666667
1010, 4.49102199494147, 0, 1.74392395793619
1011, 5.31147870636491, 0, 1.7959250983027
1012, 5.06006990730311, 0, 1.79446746389008
1013, 4.78344681937437, 0, 1.74496328038081
1014, 9.50410570667643, 0, 3.20739727158873
1015, 0.29569901520427, 0, 3.20740190222128
1016, 9.52706409745756, 0, 0.291075500714368
1017, 0.268409157752895, 0, 0.289800306573004
1018, 2.28910723447887, 0, 0.290999769673025
1019, 2.57678769588114, 0, 0.28923382251264
1020, 2.8625, 0, 0.287499997615814
1021, 3.1498803950698, 0, 0.287199452122
1022, 3.43742224405495, 0, 0.287188245678381
1023, 3.72502150388694, 0, 0.287332501303144
1024, 4.0125, 0, 0.287499997615815
1025, 5.78319685703696, 0, 0.291595291175665
1026, 6.07269992126018, 0, 0.289577277999461
1027, 6.36156516349132, 0, 0.288232801353055
1028, 6.64934645477983, 0, 0.287807607688176
1029, 6.93705202710851, 0, 0.287571471620955
1030, 7.225, 0, 0.287499997615815
1031, 7.51175469681973, 0, 0.290213006728838
1032, 9.51798831734036, 0, 0.583441540650385
1033, 0.278601275896392, 0, 0.582827592567397
1034, 9.51522767584186, 0, 0.876469752354819
1035, 9.51259571573133, 0, 1.16824352300574
1036, 9.51075604111501, 0, 1.45958672802368
1037, 9.50954018785585, 0, 1.75084561603956
1038, 9.50822441041721, 0, 2.0421151970091
1039, 9.50691663198701, 0, 2.3332777212991
1040, 9.50609373488229, 0, 2.62434551079616
1041, 9.50489316919148, 0, 2.91574474830395
1042, 0.294354462189062, 0, 2.91598148231866
1043, 0.29333333333325476, 0, 2.62457570113064
1044, 0.2926359300647, 0, 2.33322859333019
1045, 0.291679516251976, 0, 2.04205937321886
1046, 0.290376400189789, 0, 1.7509608633485
1047, 0.288935804937643, 0, 1.4596613470905

1048, 0.287147878149261, 0, 1.16809076173463
1049, 0.284037996222595, 0, 0.876455195647154
1050, 0.592530081393362, 0, 3.20665204020462
1051, 0.889328556860036, 0, 3.20657506180727
1052, 1.18632751733263, 0, 3.20610395104249
1053, 1.4832967877598, 0, 3.20571640614385
1054, 1.78045925287729, 0, 3.20522926508275
1055, 2.07774844368801, 0, 3.20459028281181
1056, 2.37451240572607, 0, 3.20439033679951
1057, 2.67202023197632, 0, 3.203448352981
1058, 2.96951076672799, 0, 3.20270918798738
1059, 3.2667785696685, 0, 3.20232853475794
1060, 3.56349414944595, 0, 3.20195232698838
1061, 3.85945434944355, 0, 3.20201284785508
1062, 4.15680488914698, 0, 3.20206670444487
1063, 4.45385889251559, 0, 3.20387092195779
1064, 4.75151105654858, 0, 3.20438704687412
1065, 5.04934870963266, 0, 3.20576176371396
1066, 5.34657941295816, 0, 3.20525901055762
1067, 5.64386738460109, 0, 3.20419796718773
1068, 5.94120296322159, 0, 3.20362498448209
1069, 6.2388043556067, 0, 3.20348172924257
1070, 6.53574666764601, 0, 3.20355922201034
1071, 6.83317407850741, 0, 3.20415212017098
1072, 7.12941021208518, 0, 3.20438051820586
1073, 7.42561450581102, 0, 3.20435869927424
1074, 7.72219089795665, 0, 3.20442391893439
1075, 8.01952612361935, 0, 3.20514164851504
1076, 8.31639901996717, 0, 3.20529793654808
1077, 8.61341023309426, 0, 3.2057387223165
1078, 8.91042288312131, 0, 3.206158001114
1079, 9.20737450662725, 0, 3.2070046035896
1080, 4.59665702870845, 0, 0.294725647792347
1081, 8.09696355461642, 0, 0.293509727651054
1082, 1.7027432096813, 0, 0.293979564209678
1083, 5.19702323827616, 0, 0.295751826540485
1084, 1.4038482764653, 0, 0.296939059454763
1085, 4.89626824798612, 0, 0.295877169376108
1086, 8.39695318821704, 0, 0.296709410650686
1087, 1.10806439042881, 0, 0.294662955480774
1088, 8.69363801266722, 0, 0.293725038850155
1089, 1.99807495774079, 0, 0.293314499155459
1090, 5.4931792491014, 0, 0.293748177296887
1091, 4.3, 0, 0.293746007862144
1092, 7.8, 0, 0.293746007862145
1093, 8.98605879926475, 0, 0.287820420423539
1094, 0.815873570665721, 0, 0.291003099238978
1095, 0.540686440032902, 0, 0.286769251206036
1096, 9.25781119200115, 0, 0.289931589587595
1097, 0.590729103833608, 0, 2.91503960721759
1098, 9.20894861741731, 0, 2.91464514913689
1099, 0.551686056894644, 0, 0.583276261731368
1100, 9.24661788412281, 0, 0.583280553624362
1101, 2.58109599461818, 0, 0.578551362270439
1102, 2.86621261744506, 0, 0.576399825702772
1103, 3.15, 0, 0.575310891209821
1104, 3.437263110008, 0, 0.574789786523677
1105, 3.725, 0, 0.575310891209821
1106, 6.07268396775977, 0, 0.577390225614224
1107, 6.36090234164793, 0, 0.576444850029213
1108, 6.64833450253896, 0, 0.575786843702542
1109, 6.93609179279248, 0, 0.575496496880739
1110, 7.22149547044083, 0, 0.57756261973952
1111, 9.21582883222604, 0, 2.04180869856036
1112, 9.21280390365382, 0, 2.33233706046927
1113, 0.586523454120696, 0, 2.3327625026253
1114, 0.584122675980144, 0, 2.04217194803066
1115, 9.2184161990847, 0, 1.75119064244524
1116, 0.581434510387687, 0, 1.75122827007949
1117, 9.21069657146504, 0, 2.62322491918765
1118, 0.588610370011563, 0, 2.62368724083115
1119, 9.22128942385926, 0, 1.46022882036722
1120, 0.578643958352201, 0, 1.46017747504722
1121, 9.22615331587186, 0, 1.16944134862499
1122, 0.573589954317245, 0, 1.16854653784979

1123, 9.23595622912311, 0, 0.876834311876373
1124, 0.563346980355889, 0, 0.877133599639019
1125, 0.887261141319167, 0, 2.91441203842954
1126, 8.91229214045703, 0, 2.91364679650736
1127, 1.18416611989827, 0, 2.91312113388525
1128, 8.61531076687074, 0, 2.91241351294788
1129, 1.48146496694205, 0, 2.91167173568213
1130, 8.31818482336372, 0, 2.91118651606594
1131, 2.67075137566908, 0, 2.90752247784978
1132, 2.37300035926759, 0, 2.90892402785778
1133, 2.96869273309178, 0, 2.90656224230028
1134, 3.26679362173724, 0, 2.90604618770874
1135, 3.56309323670299, 0, 2.90381393546758
1136, 3.85902933816403, 0, 2.90402619257264
1137, 6.24046850758745, 0, 2.90680362752852
1138, 5.94243787443872, 0, 2.90722064107019
1139, 6.5380947507499, 0, 2.90742991741577
1140, 6.83626762890613, 0, 2.90848819415794
1141, 7.13237986916761, 0, 2.90921937179949
1142, 7.42840105150497, 0, 2.90977168440622
1143, 4.15510770816934, 0, 2.90585962148422
1144, 5.64546430437588, 0, 2.90858053628586
1145, 2.07629069929528, 0, 2.90949115365231
1146, 7.72451512238252, 0, 2.91011393794103
1147, 1.77834707072059, 0, 2.91125871567598
1148, 8.02141399834773, 0, 2.91076155940777
1149, 4.45355951158842, 0, 2.90941485580023
1150, 5.34803776413834, 0, 2.91267898156232
1151, 4.7517416778845, 0, 2.91155586919669
1152, 5.04970039285508, 0, 2.91333932708805
1153, 8.38763639294927, 0, 0.58881358715084
1154, 1.41190805810849, 0, 0.590618771825637
1155, 4.89097635161427, 0, 0.592683440822873
1156, 1.70924747477625, 0, 0.586846218134159
1157, 8.09144691634074, 0, 0.586062164944402
1158, 5.19212057186461, 0, 0.592627766884822
1159, 4.59043782555896, 0, 0.589670316663787
1160, 8.96538344834312, 0, 0.583267295527033
1161, 0.830168519609638, 0, 0.586251390101934
1162, 2.29447583536152, 0, 0.581279544679061
1163, 4.00936149581166, 0, 0.575868856825436
1164, 5.78241998119664, 0, 0.581310812328305
1165, 7.50822908241672, 0, 0.581077143166939
1166, 8.67752000220128, 0, 0.585049668390559
1167, 1.12065090671353, 0, 0.587403056584634
1168, 7.79820709236183, 0, 0.585729743806329
1169, 2.00354740727145, 0, 0.585077116078374
1170, 4.29437203222505, 0, 0.587575322439861
1171, 5.48822133677296, 0, 0.588618420323941
1172, 0.884620311976984, 0, 2.6226950792195
1173, 8.91460440444485, 0, 2.62197357425553
1174, 7.21524964873323, 0, 0.867645839767889
1175, 2.58856155018541, 0, 0.868091380628315
1176, 3.72147790720399, 0, 0.861189042080858
1177, 6.07423735880796, 0, 0.86352982476078
1178, 2.87316194219959, 0, 0.865893058548633
1179, 3.15561670725771, 0, 0.864661162646991
1180, 3.4375, 0, 0.863432510554129
1181, 6.36060330447512, 0, 0.86538522528554
1182, 6.64565302841646, 0, 0.864644899442023
1183, 6.9301598444459, 0, 0.865047120004078
1184, 8.92206906242576, 0, 2.04060912938227
1185, 8.91756111457644, 0, 2.32980852007261
1186, 0.881381327776345, 0, 2.3317907251369
1187, 0.877377352201772, 0, 2.04152319785384
1188, 0.87240196450593, 0, 1.75156362759034
1189, 8.92759435004617, 0, 1.75147457522627
1190, 0.86642523129471, 0, 1.46133926130766
1191, 8.93357658440684, 0, 1.4608891238849
1192, 0.857479596016772, 0, 1.17009244562664
1193, 8.94115060545598, 0, 1.16915016945931
1194, 8.61818468428954, 0, 2.6201130777319
1195, 1.18122931957308, 0, 2.62091739853384
1196, 2.66870292670015, 0, 2.61208959174063
1197, 2.37031891759996, 0, 2.6143746205961

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1198, 2.96756258563026, 0, 2.61076250189575
1199, 3.26666666666667, 0, 2.61005604079288
1200, 3.56261049477874, 0, 2.60565318093286
1201, 3.85894588614599, 0, 2.60456647671497
1202, 6.24253494565125, 0, 2.61033931982038
1203, 5.94492433047763, 0, 2.61064581368128
1204, 6.54153088762876, 0, 2.61189100654218
1205, 6.84005339689404, 0, 2.61336270633986
1206, 7.13624766700784, 0, 2.61466286490731
1207, 7.43174746920462, 0, 2.61558309076554
1208, 5.6488225957774, 0, 2.61527204076525
1209, 4.15516213295493, 0, 2.60844751313867
1210, 8.32090712716404, 0, 2.61801545797553
1211, 1.47851437185815, 0, 2.61889010647322
1212, 2.07323939135872, 0, 2.61580740084875
1213, 7.72796941717583, 0, 2.61664881230974
1214, 5.34917544229625, 0, 2.62142191896598
1215, 4.45537674420341, 0, 2.61590837189576
1216, 1.77556830114668, 0, 2.61771954961732
1217, 8.02447311682201, 0, 2.61745039771794
1218, 5.05055225827338, 0, 2.62270366549926
1219, 4.7526220830052, 0, 2.61921278597188
1220, 4.88555954280096, 0, 0.890580152011855
1221, 8.3755867323775, 0, 0.879090015991579
1222, 1.42331547062038, 0, 0.881444822120046
1223, 8.66395175035418, 0, 0.877231728070415
1224, 1.13350113373875, 0, 0.879661501435449
1225, 4.58185313591462, 0, 0.886430388463303
1226, 5.18929428561533, 0, 0.892395798615996
1227, 1.71878352184708, 0, 0.87819992127689
1228, 8.08294643885625, 0, 0.877402056011919
1229, 4.28363889574605, 0, 0.882229630472308
1230, 5.48790158682892, 0, 0.883730959382502
1231, 7.79268513292764, 0, 0.876519728868809
1232, 2.01262066958847, 0, 0.874367859267886
1233, 7.50207138362218, 0, 0.871493548262222
1234, 2.30236943690969, 0, 0.871228453550218
1235, 4.00343553893724, 0, 0.866381840256228
1236, 5.78540162730815, 0, 0.869006849425663
1237, 0.846011380153186, 0, 0.87848880258016
1238, 8.95172800195821, 0, 0.876717234258461
1239, 1.17729628408713, 0, 2.32968483680197
1240, 8.62182077821239, 0, 2.32839779501693
1241, 2.88373622509117, 0, 1.1563746277526
1242, 6.35584250187121, 0, 1.15763338177023
1243, 3.4442202499477, 0, 1.15576742162893
1244, 6.92318823581208, 0, 1.15413395056704
1245, 3.16685870906361, 0, 1.15669279788441
1246, 6.64087734117164, 0, 1.15425748498058
1247, 8.62788263059597, 0, 2.03947308859992
1248, 1.17194043335084, 0, 2.03954541511226
1249, 1.16414596096249, 0, 1.75106003764096
1250, 8.63652100911328, 0, 1.75175465579304
1251, 2.96231052963193, 0, 2.31565749069532
1252, 2.66500380979274, 0, 2.31733351077811
1253, 3.25900931472863, 0, 2.31299502493438
1254, 3.56041303079548, 0, 2.30631665373723
1255, 6.54652333456168, 0, 2.31678692149117
1256, 6.24566209941984, 0, 2.31548471115922
1257, 6.84493089672498, 0, 2.31883771589011
1258, 7.14154676639903, 0, 2.32089827934338
1259, 2.36668789092204, 0, 2.32008393130189
1260, 3.85766716493609, 0, 2.30358795798102
1261, 5.94592913516283, 0, 2.31584606498472
1262, 7.43721553983892, 0, 2.32265569587616
1263, 5.64658282138542, 0, 2.32482928644011
1264, 4.15625081921267, 0, 2.31174942645475
1265, 2.06922550549456, 0, 2.32260272675066
1266, 7.7331334074974, 0, 2.32433436304219
1267, 5.34751474631116, 0, 2.33553625108024
1268, 4.45771240763784, 0, 2.321382784234
1269, 8.32424714426479, 0, 2.32498077515109
1270, 1.47473120105632, 0, 2.326673125495
1271, 1.77125487297783, 0, 2.32557194768249
1272, 8.02907734931275, 0, 2.3253435158978

1273, 5.05116615897257, 0, 2.33639894021789
1274, 4.75489635415256, 0, 2.3279596868104
1275, 7.20662956155278, 0, 1.15694719541463
1276, 2.59956309348938, 0, 1.15817014555673
1277, 3.7236110394258, 0, 1.14500202126625
1278, 6.07662136357107, 0, 1.14572405795614
1279, 4.87851900891237, 0, 1.18793078770476
1280, 5.4985109397815, 0, 1.1741346087823
1281, 4.26841355813901, 0, 1.17638569474484
1282, 2.02450806408548, 0, 1.16354622820869
1283, 7.7815826639392, 0, 1.1662491734138
1284, 1.43623409725338, 0, 1.17073211895126
1285, 8.36460652706489, 0, 1.17053367906207
1286, 4.56766419680708, 0, 1.18248104956259
1287, 5.18782383045269, 0, 1.19782500779751
1288, 1.73177549593798, 0, 1.16717246175387
1289, 8.07257414252952, 0, 1.16910135664313
1290, 7.49267268792896, 0, 1.16097406840795
1291, 2.31384714307092, 0, 1.16102115957099
1292, 3.99551797745191, 0, 1.14867015992417
1293, 5.79981404956068, 0, 1.14943523325035
1294, 1.15369345692654, 0, 1.46313110127629
1295, 8.64430602612431, 0, 1.46091603856656
1296, 1.14502308294953, 0, 1.1710537355617
1297, 8.65368581594974, 0, 1.16957550591605
1298, 1.46903142699907, 0, 2.03580977481037
1299, 8.33167619995575, 0, 2.0360744225473
1300, 3.46018520048861, 0, 1.45464766198268
1301, 6.33981573476396, 0, 1.45464853629028
1302, 6.91385475263932, 0, 1.44168315561122
1303, 2.89535435547044, 0, 1.44432633157838
1304, 6.62909950013993, 0, 1.44521250751097
1305, 3.1826283500223, 0, 1.44925808900074
1306, 2.36084732504037, 0, 2.02665090926722
1307, 2.0639893350521, 0, 2.02983259816681
1308, 7.74095261441833, 0, 2.03394985729177
1309, 7.4447703790791, 0, 2.03092124370413
1310, 5.94638002501951, 0, 2.01458284748341
1311, 5.63866777393076, 0, 2.03401095005895
1312, 4.15707133120458, 0, 2.01798312106879
1313, 3.85601308780229, 0, 1.99988333999233
1314, 2.95027931520463, 0, 2.02191149417016
1315, 2.65663430825778, 0, 2.02379127340249
1316, 3.24566917168047, 0, 2.02170653842844
1317, 3.55672802065723, 0, 2.0105305176787
1318, 6.55329128381695, 0, 2.02255295609787
1319, 6.24753612574808, 0, 2.02232128458706
1320, 6.85269080922611, 0, 2.02482303377515
1321, 7.14961343596488, 0, 2.02802933794451
1322, 5.33852170427339, 0, 2.05844828071653
1323, 4.46574584353422, 0, 2.02792595321618
1324, 1.76700068251532, 0, 2.0324576590376
1325, 8.0366246903676, 0, 2.03581930485793
1326, 5.05364539182703, 0, 2.05723268074209
1327, 4.76102892843518, 0, 2.03633495323062
1328, 5.53019061833351, 0, 1.4585714058088
1329, 4.24852040242753, 0, 1.47053969626153
1330, 2.03886341906262, 0, 1.45349249732132
1331, 7.76810300843076, 0, 1.45642266530852
1332, 7.19370015346793, 0, 1.44620673695547
1333, 2.61537172738461, 0, 1.44861974524273
1334, 3.73853269957197, 0, 1.41443091072907
1335, 6.06881868040133, 0, 1.42130325863962
1336, 4.84941380008144, 0, 1.47512449248178
1337, 1.45963285194411, 0, 1.74778498442496
1338, 8.34211209419637, 0, 1.74961470933161
1339, 4.54039708221299, 0, 1.4701384966143
1340, 5.18717727274239, 0, 1.52380136415622
1341, 8.06020327547228, 0, 1.45889945763607
1342, 1.74409050149563, 0, 1.4569747279795
1343, 3.97999276620442, 0, 1.41239555489239
1344, 7.48047627958585, 0, 1.45016372843614
1345, 2.32914667940406, 0, 1.45111620397552
1346, 5.82741824600312, 0, 1.4125865463029
1347, 1.44763383913378, 0, 1.460466891564

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1348, 8.35295909661835, 0, 1.46026023230282
1349, 2.05155684003952, 0, 1.7423045642794
1350, 7.75160500966224, 0, 1.7454587594801
1351, 7.45763423834511, 0, 1.74145991574908
1352, 2.34601152724816, 0, 1.73962378086175
1353, 1.75626919351254, 0, 1.74458764793633
1354, 8.04753805010431, 0, 1.74794079549548
1355, 5.61029515152491, 0, 1.74654333057681
1356, 4.18276177915916, 0, 1.73444286612082
1357, 7.16873558478396, 0, 1.73857034537065
1358, 2.63654452490427, 0, 1.73803143731422
1359, 3.85551909985948, 0, 1.67783045157108
1360, 5.95314566581877, 0, 1.6970234521522
1361, 6.87420824577566, 0, 1.73425390817393
1362, 2.92585075900786, 0, 1.73607865998796
1363, 6.57664444797099, 0, 1.72977670689149
1364, 3.22212684722162, 0, 1.73472591381642
1365, 3.52825846309648, 0, 1.7237410514985
1366, 6.27214486900036, 0, 1.73379939808052
1367, 1.4, 0, -1
1368, 4.9, 0, -1
1369, 8.4, 0, -1
1370, 1.4, 0, -2
1371, 4.9, 0, -2
1372, 8.4, 0, -2
1373, 1.4, 0, -3
1374, 4.9, 0, -3
1375, 8.4, 0, -3
1376, 1.4, 0, -4
1377, 4.9, 0, -4
1378, 8.4, 0, -4
1379, 1.4, 0, -5
1380, 4.9, 0, -5
1381, 8.4, 0, -5
1382, 1.4, 0, -6
1383, 4.9, 0, -6
1384, 8.4, 0, -6
1385, 1.4, 0, -7
1386, 4.9, 0, -7
1387, 8.4, 0, -7
1388, 1.4, 0, -8
1389, 4.9, 0, -8
1390, 8.4, 0, -8
1391, 1.4, 0, -9
1392, 4.9, 0, -9
1393, 8.4, 0, -9
1394, 1.4, 0, -10
1395, 4.9, 0, -10
1396, 8.4, 0, -10
1397, 0, 2.7, 0
1398, 9.8, 2.7, 0
1399, 0, 2.7, 5.3
1400, 9.8, 2.7, 5.3
1401, 0, 0.8, 5.3
1402, 9.8, 0.8, 5.3
1404, 0, 0.266666666666667, 5.3
1405, 0, 0.533333333333333, 5.3
1407, 0, 0.8, 5.00555555555556
1408, 0, 0.8, 4.71111111111111
1409, 0, 0.8, 4.41666666666667
1410, 0, 0.8, 4.12222222222222
1411, 0, 0.8, 3.82777777777778
1412, 0, 0.8, 3.53333333333333
1413, 0, 0.8, 3.23888888888889
1414, 0, 0.8, 2.94444444444444
1415, 0, 0.8, 2.65
1416, 0, 0.8, 2.35555555555556
1417, 0, 0.8, 2.06111111111111
1418, 0, 0.8, 1.76666666666667
1419, 0, 0.8, 1.47222222222222
1420, 0, 0.8, 1.17777777777778
1421, 0, 0.8, 0.883333333333334
1422, 0, 0.8, 0.588888888888889
1423, 0, 0.8, 0.294444444444444
1445, 0, 0.266754949990123, 5.00219227476494

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1446, 0, 0.266704877564979, 4.70399489675326
1447, 0, 0.266741465358403, 4.40570822158459
1448, 0, 0.266773854932943, 4.10770398053388
1449, 0, 0.266781539066772, 3.80988640278682
1450, 0, 0.2670628377146, 3.51392458199485
1451, 0, 0.267561446029508, 3.21995694845367
1452, 0, 0.267593725552654, 2.92684934380562
1453, 0, 0.267287681977707, 2.63373351701553
1454, 0, 0.267492585682567, 2.34113884858912
1455, 0, 0.267440354678292, 2.04843302253079
1456, 0, 0.267403080982184, 1.75577101614215
1457, 0, 0.267378110625349, 1.46313377352573
1458, 0, 0.267361687244399, 1.17051050576556
1459, 0, 0.267350754518103, 0.877895097205698
1460, 0, 0.267014770508705, 0.585231817267357
1461, 0, 0.26718067607316, 0.292152635027393
1462, 0, 0.533333333333333, 5.0037037037037
1463, 0, 0.533333333333333, 4.70740740740741
1464, 0, 0.533333333333334, 4.41111111111111
1465, 0, 0.533333333333333, 4.11481481481481
1466, 0, 0.533333333333333, 3.81851851851852
1467, 0, 0.53329346805663, 3.52359708968685
1468, 0, 0.533435468702453, 3.22952708747241
1469, 0, 0.533436618602873, 2.93565683735375
1470, 0, 0.533127697070519, 2.64177156988671
1471, 0, 0.53307604695677, 2.34822524565231
1472, 0, 0.533050179493989, 2.05469093320933
1473, 0, 0.533036875843712, 1.7611624522852
1474, 0, 0.53302973023633, 1.46763679334249
1475, 0, 0.533025635083973, 1.1741124868293
1476, 0, 0.533023087664737, 0.880588831645729
1477, 0, 0.533021360606661, 0.587065484221391
1478, 0, 0.533304780833645, 0.293252952969124
1497, 0, 2.42857142857143, 0
1498, 0, 2.15714285714286, 0
1499, 0, 1.88571428571429, 0
1500, 0, 1.61428571428571, 0
1501, 0, 1.34285714285714, 0
1502, 0, 1.07142857142857, 0
1505, 0, 1.07142857142857, 5.3
1506, 0, 1.34285714285714, 5.3
1507, 0, 1.61428571428571, 5.3
1508, 0, 1.88571428571429, 5.3
1509, 0, 2.15714285714286, 5.3
1510, 0, 2.42857142857143, 5.3
1512, 0, 2.7, 5.00555555555556
1513, 0, 2.7, 4.71111111111111
1514, 0, 2.7, 4.41666666666667
1515, 0, 2.7, 4.12222222222222
1516, 0, 2.7, 3.82777777777778
1517, 0, 2.7, 3.53333333333333
1518, 0, 2.7, 3.23888888888889
1519, 0, 2.7, 2.94444444444444
1520, 0, 2.7, 2.65
1521, 0, 2.7, 2.35555555555556
1522, 0, 2.7, 2.06111111111111
1523, 0, 2.7, 1.76666666666667
1524, 0, 2.7, 1.47222222222222
1525, 0, 2.7, 1.17777777777778
1526, 0, 2.7, 0.883333333333334
1527, 0, 2.7, 0.58888888888889
1528, 0, 2.7, 0.294444444444444
1529, 0, 1.95192458027339, 2.24026106092645
1530, 0, 1.89715266821056, 1.61155733800311
1531, 0, 1.89746387400131, 3.10277923665224
1532, 0, 1.96736339610934, 1.88466416896963
1533, 0, 2.42831933173931, 0.298222126624746
1534, 0, 1.07392513031805, 0.294818046863344
1535, 0, 1.0739992522584, 5.00301787544584
1536, 0, 2.42617758395868, 5.00371296798914
1537, 0, 1.88975587027228, 0.304665839945808
1538, 0, 1.61852093742851, 0.301363353798348
1539, 0, 1.61597804782376, 5.00230097760832
1540, 0, 1.88519578686241, 5.00397783893609
1541, 0, 1.07453512831176, 4.70312996768042

1542, 0, 1.07537796675021, 0.588876043782791
1543, 0, 2.42538056137936, 4.70322818278844
1544, 0, 2.42950949582707, 0.602639148184625
1545, 0, 1.07467209912579, 4.40040071233981
1546, 0, 1.07488482529668, 4.10018394486005
1547, 0, 1.07074721909909, 3.80161350009766
1548, 0, 1.070704281461, 3.51083949182259
1549, 0, 1.06935200833073, 3.22126417178486
1550, 0, 1.06953889078496, 2.93214524580107
1551, 0, 1.0827508974063, 2.64783315243184
1552, 0, 1.07501332670506, 2.35119281431565
1553, 0, 1.0872690649701, 2.05682331621405
1554, 0, 1.08638647684118, 1.76298985261753
1555, 0, 1.07036817540753, 1.46642355019791
1556, 0, 1.06782384607711, 1.17444214858614
1557, 0, 1.07285811939881, 0.882928475459165
1558, 0, 2.42562853470278, 4.40250297711746
1559, 0, 2.43648625936769, 4.10973006741831
1560, 0, 2.44459643478129, 3.82452625369434
1561, 0, 2.45164672938186, 3.55017384668973
1562, 0, 2.43657859054648, 3.2649594543244
1563, 0, 2.4339107599023, 2.97711877574359
1564, 0, 2.40988614748326, 2.67175536154199
1565, 0, 2.43427005924884, 2.37766800165301
1566, 0, 2.43906572089837, 2.07312530191291
1567, 0, 2.44813369030846, 1.78687567459676
1568, 0, 2.44313083952531, 1.50073761002988
1569, 0, 2.44231539616624, 1.21012143269428
1570, 0, 2.438066229655, 0.908037044067732
1571, 0, 2.15927298328633, 0.299999746669949
1572, 0, 1.34562786526439, 0.297688948373124
1573, 0, 1.3461115877226, 5.00228436923222
1574, 0, 2.15552227583333, 5.00107356145392
1575, 0, 2.16209100399761, 0.611311697176993
1576, 0, 1.34701680227016, 4.69780361177242
1577, 0, 1.34719494215677, 0.595083016401749
1578, 0, 2.15337829252732, 4.69718437223257
1579, 0, 1.34823687063644, 4.07677513100237
1580, 0, 1.34708305757674, 4.38791913497705
1581, 0, 1.34251979086815, 3.77136195815777
1582, 0, 1.34109028234195, 3.48375230252389
1583, 0, 1.34141189641709, 3.20251652094505
1584, 0, 1.33191187793781, 2.91900173459753
1585, 0, 1.35715297948469, 2.64252040448711
1586, 0, 1.35188056021026, 2.35101033892562
1587, 0, 1.38492328661298, 2.0530425523982
1588, 0, 1.35757823258864, 1.74756998361938
1589, 0, 1.33072952502836, 1.45073989612854
1590, 0, 1.33024057421306, 1.17052365398372
1591, 0, 1.34051481494708, 0.884610233483307
1592, 0, 2.15329313544382, 4.39002070039735
1593, 0, 2.15739823861011, 4.09019432463971
1594, 0, 2.19035273707329, 3.8123233404037
1595, 0, 2.2033537393052, 3.57697213346852
1596, 0, 2.17182881620274, 3.30521324701151
1597, 0, 2.16315713290247, 3.0081955147949
1598, 0, 2.08589021949958, 2.67372356298816
1599, 0, 2.17897580372405, 2.36883568836951
1600, 0, 2.15085905851904, 2.07316941804441
1601, 0, 2.20435903425321, 1.79819175556881
1602, 0, 2.1768232405471, 1.53473841721405
1603, 0, 2.17288630002759, 1.24584593082401
1604, 0, 2.16690638738415, 0.928295887660644
1605, 0, 1.62211039123522, 0.604523905171538
1606, 0, 1.88296526971736, 4.69360910928087
1607, 0, 1.89494838255828, 0.616505215869936
1608, 0, 1.6152905136658, 4.69345539542909
1609, 0, 1.89406596519272, 0.937162628094959
1610, 0, 1.61334088272405, 4.37461444857688
1611, 0, 1.61702795818051, 4.04959910704511
1612, 0, 1.61867902346212, 3.73437982613194
1613, 0, 1.62735997136326, 3.45029107952343
1614, 0, 1.62372753085975, 3.17652397012832
1615, 0, 1.59282001561449, 2.91581339975392
1616, 0, 1.64544065606929, 2.64763913808663

1617, 0, 1.61827740970422, 2.34775044297644
1618, 0, 1.70836384467516, 2.04906233276055
1619, 0, 1.62961742653605, 1.71132107461788
1620, 0, 1.59165054472414, 1.42905404181609
1621, 0, 1.59095257380698, 1.17644168178735
1622, 0, 1.87988976938771, 4.37814289191712
1623, 0, 1.62196995327331, 0.903521757907007
1624, 0, 1.93234781714019, 3.69861229995181
1625, 0, 1.8389915724745, 2.47345228660629
1626, 0, 1.8650078898413, 1.28803695330796
1627, 0, 1.88552918885731, 4.04795022389198
1628, 0, 1.90624137048481, 3.39307192241685
1629, 0, 1.83019230019087, 2.84023358985753
1645, 9.8, 0.8, 0.294444444444444
1646, 9.8, 0.8, 0.588888888888889
1647, 9.8, 0.8, 0.883333333333333
1648, 9.8, 0.8, 1.17777777777778
1649, 9.8, 0.8, 1.47222222222222
1650, 9.8, 0.8, 1.76666666666667
1651, 9.8, 0.8, 2.06111111111111
1652, 9.8, 0.8, 2.35555555555556
1653, 9.8, 0.8, 2.65
1654, 9.8, 0.8, 2.94444444444444
1655, 9.8, 0.8, 3.23888888888889
1656, 9.8, 0.8, 3.53333333333333
1657, 9.8, 0.8, 3.82777777777778
1658, 9.8, 0.8, 4.12222222222222
1659, 9.8, 0.8, 4.41666666666667
1660, 9.8, 0.8, 4.71111111111111
1661, 9.8, 0.8, 5.00555555555556
1663, 9.8, 0.533333333333333, 5.3
1664, 9.8, 0.266666666666667, 5.3
1672, 9.8, 0.267179509298486, 0.292151092397303
1673, 9.8, 0.267012872875066, 0.585229334670067
1674, 9.8, 0.26734403286842, 0.877886604607195
1675, 9.8, 0.26734998523007, 1.17049621288911
1676, 9.8, 0.267358164749384, 1.46311021736973
1677, 9.8, 0.267370005710185, 1.75573327650608
1678, 9.8, 0.267387547032499, 2.04837496364869
1679, 9.8, 0.267412871738647, 2.34105501759911
1680, 9.8, 0.267445532358964, 2.63381432501834
1681, 9.8, 0.267473941871401, 2.92673802066991
1682, 9.8, 0.267450903077363, 3.21995745504361
1683, 9.8, 0.267062835403777, 3.51392458199485
1684, 9.8, 0.266814727474077, 3.80989004817424
1685, 9.8, 0.266804563720649, 4.10768662553358
1686, 9.8, 0.266789421233509, 4.40566519037875
1687, 9.8, 0.266777890413421, 4.70373649907402
1688, 9.8, 0.266770729105355, 5.00223568984691
1689, 9.8, 0.533304413180003, 0.293252452893854
1690, 9.8, 0.533020774298488, 0.587064793022341
1691, 9.8, 0.533021922147061, 0.88058745406319
1692, 9.8, 0.533023318617281, 1.17410974076681
1693, 9.8, 0.533025134187287, 1.46763131582807
1694, 9.8, 0.533027768607276, 1.7611515278533
1695, 9.8, 0.533032165593855, 2.05466914203318
1696, 9.8, 0.533040476144213, 2.34818177389196
1697, 9.8, 0.533057589246521, 2.64168482668517
1698, 9.8, 0.533094565998971, 2.93516945224842
1699, 9.8, 0.533333333333333, 3.2287037037037
1700, 9.8, 0.533333333333333, 3.52222222222222
1701, 9.8, 0.533333333333334, 3.81851851851852
1702, 9.8, 0.533333333333334, 4.11481481481481
1703, 9.8, 0.533333333333333, 4.41111111111111
1704, 9.8, 0.533333333333333, 4.70740740740741
1705, 9.8, 0.533333333333334, 5.0037037037037
1708, 9.8, 2.42857142857143, 0
1709, 9.8, 2.15714285714286, 0
1710, 9.8, 1.88571428571429, 0
1711, 9.8, 1.61428571428571, 0
1712, 9.8, 1.34285714285714, 0
1713, 9.8, 1.07142857142857, 0
1732, 9.8, 1.07142857142857, 5.3
1733, 9.8, 1.34285714285714, 5.3
1734, 9.8, 1.61428571428571, 5.3

1735, 9.8, 1.88571428571429, 5.3
1736, 9.8, 2.15714285714286, 5.3
1737, 9.8, 2.42857142857143, 5.3
1739, 9.8, 2.7, 5.00555555555556
1740, 9.8, 2.7, 4.71111111111111
1741, 9.8, 2.7, 4.41666666666667
1742, 9.8, 2.7, 4.12222222222222
1743, 9.8, 2.7, 3.82777777777778
1744, 9.8, 2.7, 3.53333333333333
1745, 9.8, 2.7, 3.23888888888889
1746, 9.8, 2.7, 2.94444444444444
1747, 9.8, 2.7, 2.65
1748, 9.8, 2.7, 2.35555555555556
1749, 9.8, 2.7, 2.06111111111111
1750, 9.8, 2.7, 1.76666666666667
1751, 9.8, 2.7, 1.47222222222222
1752, 9.8, 2.7, 1.17777777777778
1753, 9.8, 2.7, 0.883333333333334
1754, 9.8, 2.7, 0.58888888888889
1755, 9.8, 2.7, 0.294444444444444
1756, 9.8, 1.07142857142857, 0.294444444444444
1757, 9.8, 1.07142857142857, 0.588888888888889
1758, 9.8, 1.07142857142857, 0.883333333333333
1759, 9.8, 1.07142857142857, 1.17777777777778
1760, 9.8, 1.07142857142857, 1.47222222222222
1761, 9.8, 1.07142857142857, 1.76666666666667
1762, 9.8, 1.07142857142857, 2.06111111111111
1763, 9.8, 1.07142857142857, 2.35555555555556
1764, 9.8, 1.07142857142857, 2.65
1765, 9.8, 1.07142857142857, 2.94444444444444
1766, 9.8, 1.07142857142857, 3.23888888888889
1767, 9.8, 1.07142857142857, 3.53333333333333
1768, 9.8, 1.07142857142857, 3.82777777777778
1769, 9.8, 1.07142857142857, 4.12222222222222
1770, 9.8, 1.07142857142857, 4.41666666666666
1771, 9.8, 1.07142857142857, 4.71111111111111
1772, 9.8, 1.07142857142857, 5.00555555555556
1773, 9.8, 1.34285714285714, 0.294444444444444
1774, 9.8, 1.34285714285714, 0.588888888888889
1775, 9.8, 1.34285714285714, 0.883333333333333
1776, 9.8, 1.34285714285714, 1.17777777777778
1777, 9.8, 1.34285714285714, 1.47222222222222
1778, 9.8, 1.34285714285714, 1.76666666666667
1779, 9.8, 1.34285714285714, 2.06111111111111
1780, 9.8, 1.34285714285714, 2.35555555555556
1781, 9.8, 1.34285714285714, 2.65
1782, 9.8, 1.34285714285714, 2.94444444444444
1783, 9.8, 1.34285714285714, 3.23888888888889
1784, 9.8, 1.34285714285714, 3.53333333333333
1785, 9.8, 1.34285714285714, 3.82777777777778
1786, 9.8, 1.34285714285714, 4.12222222222222
1787, 9.8, 1.34285714285714, 4.41666666666667
1788, 9.8, 1.34285714285714, 4.71111111111111
1789, 9.8, 1.34285714285714, 5.00555555555556
1790, 9.8, 1.61428571428572, 0.294444444444444
1791, 9.8, 1.61428571428571, 0.588888888888889
1792, 9.8, 1.61428571428571, 0.883333333333333
1793, 9.8, 1.61428571428571, 1.17777777777778
1794, 9.8, 1.61428571428571, 1.47222222222222
1795, 9.8, 1.61428571428571, 1.76666666666667
1796, 9.8, 1.61428571428571, 2.06111111111111
1797, 9.8, 1.61428571428572, 2.35555555555556
1798, 9.8, 1.61428571428571, 2.65
1799, 9.8, 1.61428571428571, 2.94444444444444
1800, 9.8, 1.61428571428571, 3.23888888888889
1801, 9.8, 1.61428571428571, 3.53333333333333
1802, 9.8, 1.61428571428571, 3.82777777777778
1803, 9.8, 1.61428571428571, 4.12222222222222
1804, 9.8, 1.61428571428571, 4.41666666666667
1805, 9.8, 1.61428571428571, 4.71111111111111
1806, 9.8, 1.61428571428571, 5.00555555555556
1807, 9.8, 1.88571428571429, 0.294444444444444
1808, 9.8, 1.88571428571429, 0.588888888888889
1809, 9.8, 1.88571428571429, 0.883333333333334
1810, 9.8, 1.88571428571429, 1.17777777777778

1811, 9.8, 1.88571428571429, 1.47222222222222
1812, 9.8, 1.88571428571429, 1.76666666666667
1813, 9.8, 1.88571428571429, 2.06111111111111
1814, 9.8, 1.88571428571429, 2.35555555555556
1815, 9.8, 1.88571428571429, 2.65
1816, 9.8, 1.88571428571429, 2.94444444444444
1817, 9.8, 1.88571428571429, 3.23888888888889
1818, 9.8, 1.88571428571429, 3.53333333333333
1819, 9.8, 1.88571428571429, 3.82777777777778
1820, 9.8, 1.88571428571429, 4.12222222222222
1821, 9.8, 1.88571428571429, 4.41666666666667
1822, 9.8, 1.88571428571429, 4.71111111111111
1823, 9.8, 1.88571428571429, 5.00555555555556
1824, 9.8, 2.15714285714286, 0.294444444444444
1825, 9.8, 2.15714285714286, 0.588888888888889
1826, 9.8, 2.15714285714286, 0.883333333333334
1827, 9.8, 2.15714285714286, 1.17777777777778
1828, 9.8, 2.15714285714286, 1.47222222222222
1829, 9.8, 2.15714285714286, 1.76666666666667
1830, 9.8, 2.15714285714286, 2.06111111111111
1831, 9.8, 2.15714285714286, 2.35555555555556
1832, 9.8, 2.15714285714286, 2.65
1833, 9.8, 2.15714285714286, 2.94444444444444
1834, 9.8, 2.15714285714286, 3.23888888888889
1835, 9.8, 2.15714285714286, 3.53333333333333
1836, 9.8, 2.15714285714286, 3.82777777777778
1837, 9.8, 2.15714285714286, 4.12222222222222
1838, 9.8, 2.15714285714286, 4.41666666666667
1839, 9.8, 2.15714285714286, 4.71111111111111
1840, 9.8, 2.15714285714286, 5.00555555555556
1841, 9.8, 2.42857142857143, 0.294444444444444
1842, 9.8, 2.42857142857143, 0.588888888888889
1843, 9.8, 2.42857142857143, 0.883333333333334
1844, 9.8, 2.42857142857143, 1.17777777777778
1845, 9.8, 2.42857142857143, 1.47222222222222
1846, 9.8, 2.42857142857143, 1.76666666666667
1847, 9.8, 2.42857142857143, 2.06111111111111
1848, 9.8, 2.42857142857143, 2.35555555555556
1849, 9.8, 2.42857142857143, 2.65
1850, 9.8, 2.42857142857143, 2.94444444444444
1851, 9.8, 2.42857142857143, 3.23888888888889
1852, 9.8, 2.42857142857143, 3.53333333333333
1853, 9.8, 2.42857142857143, 3.82777777777778
1854, 9.8, 2.42857142857143, 4.12222222222222
1855, 9.8, 2.42857142857143, 4.41666666666667
1856, 9.8, 2.42857142857143, 4.71111111111111
1857, 9.8, 2.42857142857143, 5.00555555555556
1858, 1.4, 0, -11
1859, 4.9, 0, -11
1860, 8.4, 0, -11

*ELEMENT ; Elements

; iEL, TYPE, iMAT, iPRO, iN1, iN2, ANGLE, iSUB, ; Frame Element
; iEL, TYPE, iMAT, iPRO, iN1, iN2, ANGLE, iSUB, EXVAL, EXVAL2, bLMT ; Comp/Tens Truss
; iEL, TYPE, iMAT, iPRO, iN1, iN2, iN3, iN4, iSUB, iWID, LCAXIS ; Planar Element
; iEL, TYPE, iMAT, iPRO, iN1, iN2, iN3, iN4, iN5, iN6, iN7, iN8 ; Solid Element

183, PLATE , 1, 3, 209, 207, 213, 210, 3, 0
184, PLATE , 1, 3, 123, 124, 212, 205, 3, 0
185, PLATE , 1, 3, 207, 209, 130, 131, 3, 0
186, PLATE , 1, 3, 211, 136, 105, 206, 3, 0
187, PLATE , 1, 3, 128, 208, 214, 127, 3, 0
188, PLATE , 1, 3, 130, 209, 208, 129, 3, 0
189, PLATE , 1, 3, 211, 213, 133, 134, 3, 0
190, PLATE , 1, 3, 209, 210, 214, 208, 3, 0
191, PLATE , 1, 3, 132, 133, 213, 207, 3, 0
192, PLATE , 1, 3, 102, 210, 213, 206, 3, 0
193, PLATE , 1, 3, 212, 126, 127, 214, 3, 0
194, PLATE , 1, 3, 102, 205, 214, 210, 3, 0
195, PLATE , 1, 3, 211, 134, 135, 0, 3, 0
196, PLATE , 1, 3, 212, 125, 126, 0, 3, 0
197, PLATE , 1, 3, 212, 124, 125, 0, 3, 0
198, PLATE , 1, 3, 212, 214, 205, 0, 3, 0
199, PLATE , 1, 3, 211, 206, 213, 0, 3, 0
200, PLATE , 1, 3, 208, 128, 129, 0, 3, 0
201, PLATE , 1, 3, 211, 135, 136, 0, 3, 0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

202, PLATE ,	1,	3,	131,	132,	207,	0,	3,	0
203, PLATE ,	1,	3,	237,	240,	185,	186,	3,	0
204, PLATE ,	1,	3,	240,	234,	184,	185,	3,	0
205, PLATE ,	1,	3,	180,	233,	239,	179,	3,	0
206, PLATE ,	1,	3,	175,	176,	238,	231,	3,	0
207, PLATE ,	1,	3,	234,	235,	182,	183,	3,	0
208, PLATE ,	1,	3,	238,	178,	179,	239,	3,	0
209, PLATE ,	1,	3,	239,	233,	235,	236,	3,	0
210, PLATE ,	1,	3,	235,	234,	240,	236,	3,	0
211, PLATE ,	1,	3,	239,	236,	104,	231,	3,	0
212, PLATE ,	1,	3,	104,	236,	240,	232,	3,	0
213, PLATE ,	1,	3,	182,	235,	233,	181,	3,	0
214, PLATE ,	1,	3,	107,	232,	237,	188,	3,	0
215, PLATE ,	1,	3,	233,	180,	181,	0,	3,	0
216, PLATE ,	1,	3,	237,	186,	187,	0,	3,	0
217, PLATE ,	1,	3,	238,	177,	178,	0,	3,	0
218, PLATE ,	1,	3,	237,	187,	188,	0,	3,	0
219, PLATE ,	1,	3,	238,	239,	231,	0,	3,	0
220, PLATE ,	1,	3,	237,	232,	240,	0,	3,	0
221, PLATE ,	1,	3,	238,	176,	177,	0,	3,	0
222, PLATE ,	1,	3,	183,	184,	234,	0,	3,	0
223, PLATE ,	1,	3,	142,	109,	249,	253,	3,	0
224, PLATE ,	1,	3,	138,	139,	252,	254,	3,	0
225, PLATE ,	1,	3,	103,	251,	254,	252,	3,	0
226, PLATE ,	1,	3,	253,	252,	139,	140,	3,	0
227, PLATE ,	1,	3,	251,	106,	137,	254,	3,	0
228, PLATE ,	1,	3,	252,	253,	249,	103,	3,	0
229, PLATE ,	1,	3,	140,	141,	253,	0,	3,	0
230, PLATE ,	1,	3,	253,	141,	142,	0,	3,	0
231, PLATE ,	1,	3,	254,	137,	138,	0,	3,	0
232, PLATE ,	1,	3,	148,	149,	265,	267,	3,	0
233, PLATE ,	1,	3,	267,	266,	145,	146,	3,	0
234, PLATE ,	1,	3,	249,	109,	143,	268,	3,	0
235, PLATE ,	1,	3,	144,	145,	266,	268,	3,	0
236, PLATE ,	1,	3,	103,	249,	268,	266,	3,	0
237, PLATE ,	1,	3,	266,	267,	265,	103,	3,	0
238, PLATE ,	1,	3,	267,	147,	148,	0,	3,	0
239, PLATE ,	1,	3,	146,	147,	267,	0,	3,	0
240, PLATE ,	1,	3,	268,	143,	144,	0,	3,	0
241, PLATE ,	1,	3,	149,	150,	291,	265,	3,	0
242, PLATE ,	1,	3,	103,	265,	293,	290,	3,	0
243, PLATE ,	1,	3,	292,	162,	106,	251,	3,	0
244, PLATE ,	1,	3,	292,	294,	159,	160,	3,	0
245, PLATE ,	1,	3,	154,	287,	293,	153,	3,	0
246, PLATE ,	1,	3,	294,	288,	158,	159,	3,	0
247, PLATE ,	1,	3,	293,	287,	289,	290,	3,	0
248, PLATE ,	1,	3,	289,	288,	294,	290,	3,	0
249, PLATE ,	1,	3,	103,	290,	294,	251,	3,	0
250, PLATE ,	1,	3,	156,	289,	287,	155,	3,	0
251, PLATE ,	1,	3,	153,	293,	291,	152,	3,	0
252, PLATE ,	1,	3,	288,	289,	156,	157,	3,	0
253, PLATE ,	1,	3,	292,	161,	162,	0,	3,	0
254, PLATE ,	1,	3,	287,	154,	155,	0,	3,	0
255, PLATE ,	1,	3,	292,	251,	294,	0,	3,	0
256, PLATE ,	1,	3,	291,	293,	265,	0,	3,	0
257, PLATE ,	1,	3,	291,	150,	151,	0,	3,	0
258, PLATE ,	1,	3,	292,	160,	161,	0,	3,	0
259, PLATE ,	1,	3,	157,	158,	288,	0,	3,	0
260, PLATE ,	1,	3,	291,	151,	152,	0,	3,	0
261, PLATE ,	1,	3,	451,	443,	438,	433,	3,	0
262, PLATE ,	1,	3,	318,	319,	129,	128,	3,	0
263, PLATE ,	1,	3,	184,	183,	344,	345,	3,	0
264, PLATE ,	1,	3,	345,	410,	185,	184,	3,	0
265, PLATE ,	1,	3,	128,	127,	411,	318,	3,	0
266, PLATE ,	1,	3,	433,	401,	453,	451,	3,	0
267, PLATE ,	1,	3,	420,	419,	427,	428,	3,	0
268, PLATE ,	1,	3,	176,	175,	395,	443,	3,	0
269, PLATE ,	1,	3,	434,	381,	380,	403,	3,	0
270, PLATE ,	1,	3,	434,	440,	457,	449,	3,	0
271, PLATE ,	1,	3,	434,	124,	123,	381,	3,	0
272, PLATE ,	1,	3,	443,	451,	177,	176,	3,	0
273, PLATE ,	1,	3,	180,	342,	343,	181,	3,	0
274, PLATE ,	1,	3,	441,	410,	345,	346,	3,	0
275, PLATE ,	1,	3,	391,	418,	419,	392,	3,	0
276, PLATE ,	1,	3,	158,	157,	332,	445,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

277, PLATE ,	1,	3,	458,	152,	151,	454,	3,	0
278, PLATE ,	1,	3,	433,	429,	339,	340,	3,	0
279, PLATE ,	1,	3,	432,	399,	334,	335,	3,	0
280, PLATE ,	1,	3,	458,	406,	153,	152,	3,	0
281, PLATE ,	1,	3,	135,	134,	452,	450,	3,	0
282, PLATE ,	1,	3,	429,	433,	438,	421,	3,	0
283, PLATE ,	1,	3,	320,	130,	129,	319,	3,	0
284, PLATE ,	1,	3,	430,	323,	324,	422,	3,	0
285, PLATE ,	1,	3,	428,	429,	421,	420,	3,	0
286, PLATE ,	1,	3,	425,	417,	416,	424,	3,	0
287, PLATE ,	1,	3,	421,	394,	393,	420,	3,	0
288, PLATE ,	1,	3,	353,	402,	404,	354,	3,	0
289, PLATE ,	1,	3,	342,	180,	179,	409,	3,	0
290, PLATE ,	1,	3,	389,	106,	162,	447,	3,	0
291, PLATE ,	1,	3,	430,	400,	322,	323,	3,	0
292, PLATE ,	1,	3,	342,	409,	401,	341,	3,	0
293, PLATE ,	1,	3,	336,	337,	427,	426,	3,	0
294, PLATE ,	1,	3,	154,	153,	406,	444,	3,	0
295, PLATE ,	1,	3,	457,	411,	127,	126,	3,	0
296, PLATE ,	1,	3,	334,	399,	459,	407,	3,	0
297, PLATE ,	1,	3,	435,	448,	456,	441,	3,	0
298, PLATE ,	1,	3,	453,	409,	179,	178,	3,	0
299, PLATE ,	1,	3,	452,	134,	133,	408,	3,	0
300, PLATE ,	1,	3,	413,	418,	391,	390,	3,	0
301, PLATE ,	1,	3,	187,	448,	435,	188,	3,	0
302, PLATE ,	1,	3,	327,	328,	431,	425,	3,	0
303, PLATE ,	1,	3,	388,	446,	150,	149,	3,	0
304, PLATE ,	1,	3,	418,	413,	432,	426,	3,	0
305, PLATE ,	1,	3,	440,	317,	318,	411,	3,	0
306, PLATE ,	1,	3,	435,	396,	107,	188,	3,	0
307, PLATE ,	1,	3,	331,	332,	157,	156,	3,	0
308, PLATE ,	1,	3,	158,	445,	407,	159,	3,	0
309, PLATE ,	1,	3,	424,	416,	415,	423,	3,	0
310, PLATE ,	1,	3,	414,	383,	382,	439,	3,	0
311, PLATE ,	1,	3,	437,	455,	459,	399,	3,	0
312, PLATE ,	1,	3,	414,	422,	423,	415,	3,	0
313, PLATE ,	1,	3,	412,	436,	388,	387,	3,	0
314, PLATE ,	1,	3,	447,	162,	161,	455,	3,	0
315, PLATE ,	1,	3,	380,	1,	358,	403,	3,	0
316, PLATE ,	1,	3,	183,	182,	343,	344,	3,	0
317, PLATE ,	1,	3,	397,	396,	435,	402,	3,	0
318, PLATE ,	1,	3,	442,	136,	135,	450,	3,	0
319, PLATE ,	1,	3,	406,	458,	398,	329,	3,	0
320, PLATE ,	1,	3,	353,	2,	397,	402,	3,	0
321, PLATE ,	1,	3,	426,	427,	419,	418,	3,	0
322, PLATE ,	1,	3,	413,	390,	389,	437,	3,	0
323, PLATE ,	1,	3,	186,	456,	448,	187,	3,	0
324, PLATE ,	1,	3,	402,	435,	441,	404,	3,	0
325, PLATE ,	1,	3,	321,	408,	133,	132,	3,	0
326, PLATE ,	1,	3,	398,	458,	454,	436,	3,	0
327, PLATE ,	1,	3,	399,	432,	413,	437,	3,	0
328, PLATE ,	1,	3,	431,	412,	417,	425,	3,	0
329, PLATE ,	1,	3,	151,	150,	446,	454,	3,	0
330, PLATE ,	1,	3,	439,	430,	422,	414,	3,	0
331, PLATE ,	1,	3,	339,	429,	428,	338,	3,	0
332, PLATE ,	1,	3,	412,	387,	386,	417,	3,	0
333, PLATE ,	1,	3,	449,	457,	126,	125,	3,	0
334, PLATE ,	1,	3,	459,	455,	161,	160,	3,	0
335, PLATE ,	1,	3,	422,	324,	325,	423,	3,	0
336, PLATE ,	1,	3,	382,	105,	136,	442,	3,	0
337, PLATE ,	1,	3,	431,	328,	329,	398,	3,	0
338, PLATE ,	1,	3,	325,	326,	424,	423,	3,	0
339, PLATE ,	1,	3,	453,	178,	177,	451,	3,	0
340, PLATE ,	1,	3,	456,	186,	185,	410,	3,	0
341, PLATE ,	1,	3,	383,	414,	415,	384,	3,	0
342, PLATE ,	1,	3,	459,	160,	159,	407,	3,	0
343, PLATE ,	1,	3,	407,	445,	333,	334,	3,	0
344, PLATE ,	1,	3,	337,	338,	428,	427,	3,	0
345, PLATE ,	1,	3,	392,	419,	420,	393,	3,	0
346, PLATE ,	1,	3,	395,	394,	421,	438,	3,	0
347, PLATE ,	1,	3,	415,	416,	385,	384,	3,	0
348, PLATE ,	1,	3,	440,	434,	403,	405,	3,	0
349, PLATE ,	1,	3,	321,	322,	400,	408,	3,	0
350, PLATE ,	1,	3,	385,	416,	417,	386,	3,	0
351, PLATE ,	1,	3,	440,	405,	316,	317,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

352, PLATE ,	1,	3,	405,	403,	358,	359,	3,	0
353, PLATE ,	1,	3,	359,	100,	316,	405,	3,	0
354, PLATE ,	1,	3,	450,	400,	430,	439,	3,	0
355, PLATE ,	1,	3,	320,	321,	132,	131,	3,	0
356, PLATE ,	1,	3,	336,	426,	432,	335,	3,	0
357, PLATE ,	1,	3,	331,	155,	154,	444,	3,	0
358, PLATE ,	1,	3,	436,	412,	431,	398,	3,	0
359, PLATE ,	1,	3,	347,	101,	354,	404,	3,	0
360, PLATE ,	1,	3,	347,	404,	441,	346,	3,	0
361, PLATE ,	1,	3,	125,	124,	434,	449,	3,	0
362, PLATE ,	1,	3,	329,	330,	444,	406,	3,	0
363, PLATE ,	1,	3,	341,	401,	433,	340,	3,	0
364, PLATE ,	1,	3,	424,	326,	327,	425,	3,	0
365, PLATE ,	1,	3,	438,	443,	395,	0,	3,	0
366, PLATE ,	1,	3,	456,	410,	441,	0,	3,	0
367, PLATE ,	1,	3,	445,	332,	333,	0,	3,	0
368, PLATE ,	1,	3,	156,	155,	331,	0,	3,	0
369, PLATE ,	1,	3,	444,	330,	331,	0,	3,	0
370, PLATE ,	1,	3,	446,	388,	436,	0,	3,	0
371, PLATE ,	1,	3,	440,	411,	457,	0,	3,	0
372, PLATE ,	1,	3,	439,	442,	450,	0,	3,	0
373, PLATE ,	1,	3,	439,	382,	442,	0,	3,	0
374, PLATE ,	1,	3,	437,	389,	447,	0,	3,	0
375, PLATE ,	1,	3,	454,	446,	436,	0,	3,	0
376, PLATE ,	1,	3,	131,	130,	320,	0,	3,	0
377, PLATE ,	1,	3,	400,	450,	452,	0,	3,	0
378, PLATE ,	1,	3,	181,	343,	182,	0,	3,	0
379, PLATE ,	1,	3,	401,	409,	453,	0,	3,	0
380, PLATE ,	1,	3,	437,	447,	455,	0,	3,	0
381, PLATE ,	1,	3,	400,	452,	408,	0,	3,	0
382, PLATE ,	1,	3,	167,	166,	575,	507,	3,	0
383, PLATE ,	1,	3,	595,	566,	617,	615,	3,	0
384, PLATE ,	1,	3,	118,	117,	481,	480,	3,	0
385, PLATE ,	1,	3,	615,	607,	603,	595,	3,	0
386, PLATE ,	1,	3,	507,	506,	168,	167,	3,	0
387, PLATE ,	1,	3,	480,	576,	119,	118,	3,	0
388, PLATE ,	1,	3,	120,	622,	614,	121,	3,	0
389, PLATE ,	1,	3,	599,	163,	107,	396,	3,	0
390, PLATE ,	1,	3,	397,	567,	599,	396,	3,	0
391, PLATE ,	1,	3,	600,	568,	380,	381,	3,	0
392, PLATE ,	1,	3,	123,	122,	600,	381,	3,	0
393, PLATE ,	1,	3,	389,	390,	578,	601,	3,	0
394, PLATE ,	1,	3,	589,	488,	487,	588,	3,	0
395, PLATE ,	1,	3,	489,	590,	596,	490,	3,	0
396, PLATE ,	1,	3,	572,	145,	144,	610,	3,	0
397, PLATE ,	1,	3,	145,	572,	624,	146,	3,	0
398, PLATE ,	1,	3,	563,	596,	577,	602,	3,	0
399, PLATE ,	1,	3,	507,	575,	606,	508,	3,	0
400, PLATE ,	1,	3,	595,	485,	484,	566,	3,	0
401, PLATE ,	1,	3,	147,	146,	624,	620,	3,	0
402, PLATE ,	1,	3,	501,	594,	598,	502,	3,	0
403, PLATE ,	1,	3,	590,	589,	581,	582,	3,	0
404, PLATE ,	1,	3,	114,	573,	483,	115,	3,	0
405, PLATE ,	1,	3,	489,	488,	589,	590,	3,	0
406, PLATE ,	1,	3,	623,	571,	140,	139,	3,	0
407, PLATE ,	1,	3,	605,	576,	480,	479,	3,	0
408, PLATE ,	1,	3,	117,	108,	482,	481,	3,	0
409, PLATE ,	1,	3,	174,	608,	395,	175,	3,	0
410, PLATE ,	1,	3,	586,	594,	593,	585,	3,	0
411, PLATE ,	1,	3,	617,	113,	112,	615,	3,	0
412, PLATE ,	1,	3,	395,	604,	586,	394,	3,	0
413, PLATE ,	1,	3,	382,	607,	111,	105,	3,	0
414, PLATE ,	1,	3,	593,	594,	501,	500,	3,	0
415, PLATE ,	1,	3,	170,	169,	505,	504,	3,	0
416, PLATE ,	1,	3,	592,	584,	585,	593,	3,	0
417, PLATE ,	1,	3,	596,	563,	491,	490,	3,	0
418, PLATE ,	1,	3,	512,	511,	570,	567,	3,	0
419, PLATE ,	1,	3,	599,	606,	621,	613,	3,	0
420, PLATE ,	1,	3,	168,	506,	505,	110,	3,	0
421, PLATE ,	1,	3,	599,	613,	164,	163,	3,	0
422, PLATE ,	1,	3,	582,	577,	596,	590,	3,	0
423, PLATE ,	1,	3,	391,	392,	584,	583,	3,	0
424, PLATE ,	1,	3,	594,	586,	604,	598,	3,	0
425, PLATE ,	1,	3,	173,	172,	618,	616,	3,	0
426, PLATE ,	1,	3,	611,	619,	138,	137,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

427, PLATE ,	1,	3,	389,	611,	137,	106,	3,	0
428, PLATE ,	1,	3,	393,	394,	586,	585,	3,	0
429, PLATE ,	1,	3,	572,	610,	492,	491,	3,	0
430, PLATE ,	1,	3,	579,	580,	588,	587,	3,	0
431, PLATE ,	1,	3,	579,	603,	382,	383,	3,	0
432, PLATE ,	1,	3,	577,	582,	386,	387,	3,	0
433, PLATE ,	1,	3,	580,	384,	385,	581,	3,	0
434, PLATE ,	1,	3,	607,	615,	112,	111,	3,	0
435, PLATE ,	1,	3,	603,	579,	587,	595,	3,	0
436, PLATE ,	1,	3,	587,	588,	487,	486,	3,	0
437, PLATE ,	1,	3,	141,	609,	494,	142,	3,	0
438, PLATE ,	1,	3,	512,	567,	397,	2,	3,	0
439, PLATE ,	1,	3,	141,	140,	571,	609,	3,	0
440, PLATE ,	1,	3,	482,	116,	115,	483,	3,	0
441, PLATE ,	1,	3,	478,	569,	605,	479,	3,	0
442, PLATE ,	1,	3,	595,	587,	486,	485,	3,	0
443, PLATE ,	1,	3,	388,	602,	577,	387,	3,	0
444, PLATE ,	1,	3,	591,	583,	584,	592,	3,	0
445, PLATE ,	1,	3,	602,	620,	624,	563,	3,	0
446, PLATE ,	1,	3,	121,	614,	600,	122,	3,	0
447, PLATE ,	1,	3,	618,	172,	171,	574,	3,	0
448, PLATE ,	1,	3,	623,	139,	138,	619,	3,	0
449, PLATE ,	1,	3,	148,	612,	388,	149,	3,	0
450, PLATE ,	1,	3,	580,	581,	589,	588,	3,	0
451, PLATE ,	1,	3,	568,	600,	605,	569,	3,	0
452, PLATE ,	1,	3,	391,	583,	578,	390,	3,	0
453, PLATE ,	1,	3,	571,	623,	564,	496,	3,	0
454, PLATE ,	1,	3,	165,	164,	613,	621,	3,	0
455, PLATE ,	1,	3,	511,	99,	509,	570,	3,	0
456, PLATE ,	1,	3,	621,	575,	166,	165,	3,	0
457, PLATE ,	1,	3,	491,	563,	624,	572,	3,	0
458, PLATE ,	1,	3,	565,	574,	504,	503,	3,	0
459, PLATE ,	1,	3,	616,	565,	598,	604,	3,	0
460, PLATE ,	1,	3,	515,	568,	569,	514,	3,	0
461, PLATE ,	1,	3,	496,	564,	597,	497,	3,	0
462, PLATE ,	1,	3,	144,	143,	493,	610,	3,	0
463, PLATE ,	1,	3,	114,	113,	617,	573,	3,	0
464, PLATE ,	1,	3,	496,	495,	609,	571,	3,	0
465, PLATE ,	1,	3,	592,	499,	498,	591,	3,	0
466, PLATE ,	1,	3,	383,	384,	580,	579,	3,	0
467, PLATE ,	1,	3,	583,	591,	597,	578,	3,	0
468, PLATE ,	1,	3,	499,	592,	593,	500,	3,	0
469, PLATE ,	1,	3,	483,	573,	566,	484,	3,	0
470, PLATE ,	1,	3,	622,	120,	119,	576,	3,	0
471, PLATE ,	1,	3,	504,	574,	171,	170,	3,	0
472, PLATE ,	1,	3,	392,	393,	585,	584,	3,	0
473, PLATE ,	1,	3,	564,	623,	619,	601,	3,	0
474, PLATE ,	1,	3,	173,	616,	608,	174,	3,	0
475, PLATE ,	1,	3,	385,	386,	582,	581,	3,	0
476, PLATE ,	1,	3,	606,	599,	567,	570,	3,	0
477, PLATE ,	1,	3,	509,	508,	606,	570,	3,	0
478, PLATE ,	1,	3,	498,	497,	597,	591,	3,	0
479, PLATE ,	1,	3,	601,	578,	597,	564,	3,	0
480, PLATE ,	1,	3,	478,	98,	514,	569,	3,	0
481, PLATE ,	1,	3,	612,	148,	147,	620,	3,	0
482, PLATE ,	1,	3,	622,	605,	600,	614,	3,	0
483, PLATE ,	1,	3,	380,	568,	515,	1,	3,	0
484, PLATE ,	1,	3,	503,	502,	598,	565,	3,	0
485, PLATE ,	1,	3,	494,	493,	143,	109,	3,	0
486, PLATE ,	1,	3,	602,	388,	612,	0,	3,	0
487, PLATE ,	1,	3,	482,	108,	116,	0,	3,	0
488, PLATE ,	1,	3,	602,	612,	620,	0,	3,	0
489, PLATE ,	1,	3,	565,	616,	618,	0,	3,	0
490, PLATE ,	1,	3,	169,	110,	505,	0,	3,	0
491, PLATE ,	1,	3,	609,	495,	494,	0,	3,	0
492, PLATE ,	1,	3,	621,	606,	575,	0,	3,	0
493, PLATE ,	1,	3,	604,	395,	608,	0,	3,	0
494, PLATE ,	1,	3,	610,	493,	492,	0,	3,	0
495, PLATE ,	1,	3,	619,	611,	601,	0,	3,	0
496, PLATE ,	1,	3,	109,	142,	494,	0,	3,	0
497, PLATE ,	1,	3,	604,	608,	616,	0,	3,	0
498, PLATE ,	1,	3,	603,	607,	382,	0,	3,	0
499, PLATE ,	1,	3,	566,	573,	617,	0,	3,	0
500, PLATE ,	1,	3,	565,	618,	574,	0,	3,	0
501, PLATE ,	1,	3,	605,	622,	576,	0,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

502, PLATE ,	1,	3,	611,	389,	601,	0,	3,	0
503, PLATE ,	1,	3,	102,	206,	638,	636,	3,	0
504, PLATE ,	1,	3,	112,	113,	636,	638,	3,	0
505, PLATE ,	1,	3,	637,	636,	113,	114,	3,	0
506, PLATE ,	1,	3,	206,	105,	111,	638,	3,	0
507, PLATE ,	1,	3,	627,	637,	116,	108,	3,	0
508, PLATE ,	1,	3,	636,	637,	627,	102,	3,	0
509, PLATE ,	1,	3,	114,	115,	637,	0,	3,	0
510, PLATE ,	1,	3,	637,	115,	116,	0,	3,	0
511, PLATE ,	1,	3,	638,	111,	112,	0,	3,	0
512, PLATE ,	1,	3,	651,	650,	165,	166,	3,	0
513, PLATE ,	1,	3,	104,	232,	652,	650,	3,	0
514, PLATE ,	1,	3,	168,	110,	643,	651,	3,	0
515, PLATE ,	1,	3,	232,	107,	163,	652,	3,	0
516, PLATE ,	1,	3,	164,	165,	650,	652,	3,	0
517, PLATE ,	1,	3,	650,	651,	643,	104,	3,	0
518, PLATE ,	1,	3,	166,	167,	651,	0,	3,	0
519, PLATE ,	1,	3,	651,	167,	168,	0,	3,	0
520, PLATE ,	1,	3,	652,	163,	164,	0,	3,	0
521, PLATE ,	1,	3,	170,	171,	664,	666,	3,	0
522, PLATE ,	1,	3,	665,	664,	171,	172,	3,	0
523, PLATE ,	1,	3,	231,	665,	174,	175,	3,	0
524, PLATE ,	1,	3,	104,	643,	666,	664,	3,	0
525, PLATE ,	1,	3,	643,	110,	169,	666,	3,	0
526, PLATE ,	1,	3,	664,	665,	231,	104,	3,	0
527, PLATE ,	1,	3,	665,	173,	174,	0,	3,	0
528, PLATE ,	1,	3,	666,	169,	170,	0,	3,	0
529, PLATE ,	1,	3,	172,	173,	665,	0,	3,	0
530, PLATE ,	1,	3,	118,	119,	678,	680,	3,	0
531, PLATE ,	1,	3,	679,	678,	119,	120,	3,	0
532, PLATE ,	1,	3,	205,	679,	122,	123,	3,	0
533, PLATE ,	1,	3,	102,	627,	680,	678,	3,	0
534, PLATE ,	1,	3,	627,	108,	117,	680,	3,	0
535, PLATE ,	1,	3,	678,	679,	205,	102,	3,	0
536, PLATE ,	1,	3,	679,	121,	122,	0,	3,	0
537, PLATE ,	1,	3,	680,	117,	118,	0,	3,	0
538, PLATE ,	1,	3,	120,	121,	679,	0,	3,	0
617, PLATE ,	1,	1,	3,	682,	759,	758,	3,	0
618, PLATE ,	1,	1,	758,	759,	760,	757,	3,	0
619, PLATE ,	1,	1,	757,	760,	761,	756,	3,	0
620, PLATE ,	1,	1,	756,	761,	762,	755,	3,	0
621, PLATE ,	1,	1,	755,	762,	763,	754,	3,	0
622, PLATE ,	1,	1,	754,	763,	752,	5,	3,	0
623, PLATE ,	1,	1,	682,	683,	764,	759,	3,	0
624, PLATE ,	1,	1,	759,	764,	765,	760,	3,	0
625, PLATE ,	1,	1,	760,	765,	766,	761,	3,	0
626, PLATE ,	1,	1,	761,	766,	767,	762,	3,	0
627, PLATE ,	1,	1,	762,	767,	768,	763,	3,	0
628, PLATE ,	1,	1,	763,	768,	751,	752,	3,	0
629, PLATE ,	1,	1,	683,	684,	769,	764,	3,	0
630, PLATE ,	1,	1,	764,	769,	770,	765,	3,	0
631, PLATE ,	1,	1,	765,	770,	771,	766,	3,	0
632, PLATE ,	1,	1,	766,	771,	772,	767,	3,	0
633, PLATE ,	1,	1,	767,	772,	773,	768,	3,	0
634, PLATE ,	1,	1,	768,	773,	750,	751,	3,	0
635, PLATE ,	1,	1,	684,	685,	774,	769,	3,	0
636, PLATE ,	1,	1,	769,	774,	775,	770,	3,	0
637, PLATE ,	1,	1,	770,	775,	776,	771,	3,	0
638, PLATE ,	1,	1,	771,	776,	777,	772,	3,	0
639, PLATE ,	1,	1,	772,	777,	778,	773,	3,	0
640, PLATE ,	1,	1,	773,	778,	749,	750,	3,	0
641, PLATE ,	1,	1,	685,	686,	779,	774,	3,	0
642, PLATE ,	1,	1,	774,	779,	780,	775,	3,	0
643, PLATE ,	1,	1,	775,	780,	781,	776,	3,	0
644, PLATE ,	1,	1,	776,	781,	782,	777,	3,	0
645, PLATE ,	1,	1,	777,	782,	783,	778,	3,	0
646, PLATE ,	1,	1,	778,	783,	748,	749,	3,	0
647, PLATE ,	1,	1,	686,	687,	784,	779,	3,	0
648, PLATE ,	1,	1,	779,	784,	785,	780,	3,	0
649, PLATE ,	1,	1,	780,	785,	786,	781,	3,	0
650, PLATE ,	1,	1,	781,	786,	787,	782,	3,	0
651, PLATE ,	1,	1,	782,	787,	788,	783,	3,	0
652, PLATE ,	1,	1,	783,	788,	747,	748,	3,	0
653, PLATE ,	1,	1,	687,	688,	789,	784,	3,	0
654, PLATE ,	1,	1,	784,	789,	790,	785,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

655, PLATE ,	1,	1,	785,	790,	791,	786,	3,	0
656, PLATE ,	1,	1,	786,	791,	792,	787,	3,	0
657, PLATE ,	1,	1,	787,	792,	793,	788,	3,	0
658, PLATE ,	1,	1,	788,	793,	746,	747,	3,	0
659, PLATE ,	1,	1,	688,	689,	794,	789,	3,	0
660, PLATE ,	1,	1,	789,	794,	795,	790,	3,	0
661, PLATE ,	1,	1,	790,	795,	796,	791,	3,	0
662, PLATE ,	1,	1,	791,	796,	797,	792,	3,	0
663, PLATE ,	1,	1,	792,	797,	798,	793,	3,	0
664, PLATE ,	1,	1,	793,	798,	745,	746,	3,	0
665, PLATE ,	1,	1,	689,	690,	799,	794,	3,	0
666, PLATE ,	1,	1,	794,	799,	800,	795,	3,	0
667, PLATE ,	1,	1,	795,	800,	801,	796,	3,	0
668, PLATE ,	1,	1,	796,	801,	802,	797,	3,	0
669, PLATE ,	1,	1,	797,	802,	803,	798,	3,	0
670, PLATE ,	1,	1,	798,	803,	744,	745,	3,	0
671, PLATE ,	1,	1,	690,	691,	804,	799,	3,	0
672, PLATE ,	1,	1,	799,	804,	805,	800,	3,	0
673, PLATE ,	1,	1,	800,	805,	806,	801,	3,	0
674, PLATE ,	1,	1,	801,	806,	807,	802,	3,	0
675, PLATE ,	1,	1,	802,	807,	808,	803,	3,	0
676, PLATE ,	1,	1,	803,	808,	743,	744,	3,	0
677, PLATE ,	1,	1,	691,	692,	809,	804,	3,	0
678, PLATE ,	1,	1,	804,	809,	810,	805,	3,	0
679, PLATE ,	1,	1,	805,	810,	811,	806,	3,	0
680, PLATE ,	1,	1,	806,	811,	812,	807,	3,	0
681, PLATE ,	1,	1,	807,	812,	813,	808,	3,	0
682, PLATE ,	1,	1,	808,	813,	742,	743,	3,	0
683, PLATE ,	1,	1,	692,	693,	814,	809,	3,	0
684, PLATE ,	1,	1,	809,	814,	815,	810,	3,	0
685, PLATE ,	1,	1,	810,	815,	816,	811,	3,	0
686, PLATE ,	1,	1,	811,	816,	817,	812,	3,	0
687, PLATE ,	1,	1,	812,	817,	818,	813,	3,	0
688, PLATE ,	1,	1,	813,	818,	741,	742,	3,	0
689, PLATE ,	1,	1,	693,	694,	819,	814,	3,	0
690, PLATE ,	1,	1,	814,	819,	820,	815,	3,	0
691, PLATE ,	1,	1,	815,	820,	821,	816,	3,	0
692, PLATE ,	1,	1,	816,	821,	822,	817,	3,	0
693, PLATE ,	1,	1,	817,	822,	823,	818,	3,	0
694, PLATE ,	1,	1,	818,	823,	740,	741,	3,	0
695, PLATE ,	1,	1,	694,	695,	824,	819,	3,	0
696, PLATE ,	1,	1,	819,	824,	825,	820,	3,	0
697, PLATE ,	1,	1,	820,	825,	826,	821,	3,	0
698, PLATE ,	1,	1,	821,	826,	827,	822,	3,	0
699, PLATE ,	1,	1,	822,	827,	828,	823,	3,	0
700, PLATE ,	1,	1,	823,	828,	739,	740,	3,	0
701, PLATE ,	1,	1,	695,	696,	829,	824,	3,	0
702, PLATE ,	1,	1,	824,	829,	830,	825,	3,	0
703, PLATE ,	1,	1,	825,	830,	831,	826,	3,	0
704, PLATE ,	1,	1,	826,	831,	832,	827,	3,	0
705, PLATE ,	1,	1,	827,	832,	833,	828,	3,	0
706, PLATE ,	1,	1,	828,	833,	738,	739,	3,	0
707, PLATE ,	1,	1,	696,	697,	834,	829,	3,	0
708, PLATE ,	1,	1,	829,	834,	835,	830,	3,	0
709, PLATE ,	1,	1,	830,	835,	836,	831,	3,	0
710, PLATE ,	1,	1,	831,	836,	837,	832,	3,	0
711, PLATE ,	1,	1,	832,	837,	838,	833,	3,	0
712, PLATE ,	1,	1,	833,	838,	737,	738,	3,	0
713, PLATE ,	1,	1,	697,	698,	839,	834,	3,	0
714, PLATE ,	1,	1,	834,	839,	840,	835,	3,	0
715, PLATE ,	1,	1,	835,	840,	841,	836,	3,	0
716, PLATE ,	1,	1,	836,	841,	842,	837,	3,	0
717, PLATE ,	1,	1,	837,	842,	843,	838,	3,	0
718, PLATE ,	1,	1,	838,	843,	736,	737,	3,	0
719, PLATE ,	1,	1,	698,	699,	844,	839,	3,	0
720, PLATE ,	1,	1,	839,	844,	845,	840,	3,	0
721, PLATE ,	1,	1,	840,	845,	846,	841,	3,	0
722, PLATE ,	1,	1,	841,	846,	847,	842,	3,	0
723, PLATE ,	1,	1,	842,	847,	848,	843,	3,	0
724, PLATE ,	1,	1,	843,	848,	735,	736,	3,	0
725, PLATE ,	1,	1,	699,	700,	849,	844,	3,	0
726, PLATE ,	1,	1,	844,	849,	850,	845,	3,	0
727, PLATE ,	1,	1,	845,	850,	851,	846,	3,	0
728, PLATE ,	1,	1,	846,	851,	852,	847,	3,	0
729, PLATE ,	1,	1,	847,	852,	853,	848,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

730, PLATE ,	1,	1,	848,	853,	734,	735,	3,	0
731, PLATE ,	1,	1,	700,	701,	854,	849,	3,	0
732, PLATE ,	1,	1,	849,	854,	855,	850,	3,	0
733, PLATE ,	1,	1,	850,	855,	856,	851,	3,	0
734, PLATE ,	1,	1,	851,	856,	857,	852,	3,	0
735, PLATE ,	1,	1,	852,	857,	858,	853,	3,	0
736, PLATE ,	1,	1,	853,	858,	733,	734,	3,	0
737, PLATE ,	1,	1,	701,	702,	859,	854,	3,	0
738, PLATE ,	1,	1,	854,	859,	860,	855,	3,	0
739, PLATE ,	1,	1,	855,	860,	861,	856,	3,	0
740, PLATE ,	1,	1,	856,	861,	862,	857,	3,	0
741, PLATE ,	1,	1,	857,	862,	863,	858,	3,	0
742, PLATE ,	1,	1,	858,	863,	732,	733,	3,	0
743, PLATE ,	1,	1,	702,	703,	864,	859,	3,	0
744, PLATE ,	1,	1,	859,	864,	865,	860,	3,	0
745, PLATE ,	1,	1,	860,	865,	866,	861,	3,	0
746, PLATE ,	1,	1,	861,	866,	867,	862,	3,	0
747, PLATE ,	1,	1,	862,	867,	868,	863,	3,	0
748, PLATE ,	1,	1,	863,	868,	731,	732,	3,	0
749, PLATE ,	1,	1,	703,	704,	869,	864,	3,	0
750, PLATE ,	1,	1,	864,	869,	870,	865,	3,	0
751, PLATE ,	1,	1,	865,	870,	871,	866,	3,	0
752, PLATE ,	1,	1,	866,	871,	872,	867,	3,	0
753, PLATE ,	1,	1,	867,	872,	873,	868,	3,	0
754, PLATE ,	1,	1,	868,	873,	730,	731,	3,	0
755, PLATE ,	1,	1,	704,	705,	874,	869,	3,	0
756, PLATE ,	1,	1,	869,	874,	875,	870,	3,	0
757, PLATE ,	1,	1,	870,	875,	876,	871,	3,	0
758, PLATE ,	1,	1,	871,	876,	877,	872,	3,	0
759, PLATE ,	1,	1,	872,	877,	878,	873,	3,	0
760, PLATE ,	1,	1,	873,	878,	729,	730,	3,	0
761, PLATE ,	1,	1,	705,	706,	879,	874,	3,	0
762, PLATE ,	1,	1,	874,	879,	880,	875,	3,	0
763, PLATE ,	1,	1,	875,	880,	881,	876,	3,	0
764, PLATE ,	1,	1,	876,	881,	882,	877,	3,	0
765, PLATE ,	1,	1,	877,	882,	883,	878,	3,	0
766, PLATE ,	1,	1,	878,	883,	728,	729,	3,	0
767, PLATE ,	1,	1,	706,	707,	884,	879,	3,	0
768, PLATE ,	1,	1,	879,	884,	885,	880,	3,	0
769, PLATE ,	1,	1,	880,	885,	886,	881,	3,	0
770, PLATE ,	1,	1,	881,	886,	887,	882,	3,	0
771, PLATE ,	1,	1,	882,	887,	888,	883,	3,	0
772, PLATE ,	1,	1,	883,	888,	727,	728,	3,	0
773, PLATE ,	1,	1,	707,	708,	889,	884,	3,	0
774, PLATE ,	1,	1,	884,	889,	890,	885,	3,	0
775, PLATE ,	1,	1,	885,	890,	891,	886,	3,	0
776, PLATE ,	1,	1,	886,	891,	892,	887,	3,	0
777, PLATE ,	1,	1,	887,	892,	893,	888,	3,	0
778, PLATE ,	1,	1,	888,	893,	726,	727,	3,	0
779, PLATE ,	1,	1,	708,	709,	894,	889,	3,	0
780, PLATE ,	1,	1,	889,	894,	895,	890,	3,	0
781, PLATE ,	1,	1,	890,	895,	896,	891,	3,	0
782, PLATE ,	1,	1,	891,	896,	897,	892,	3,	0
783, PLATE ,	1,	1,	892,	897,	898,	893,	3,	0
784, PLATE ,	1,	1,	893,	898,	725,	726,	3,	0
785, PLATE ,	1,	1,	709,	710,	899,	894,	3,	0
786, PLATE ,	1,	1,	894,	899,	900,	895,	3,	0
787, PLATE ,	1,	1,	895,	900,	901,	896,	3,	0
788, PLATE ,	1,	1,	896,	901,	902,	897,	3,	0
789, PLATE ,	1,	1,	897,	902,	903,	898,	3,	0
790, PLATE ,	1,	1,	898,	903,	724,	725,	3,	0
791, PLATE ,	1,	1,	710,	711,	904,	899,	3,	0
792, PLATE ,	1,	1,	899,	904,	905,	900,	3,	0
793, PLATE ,	1,	1,	900,	905,	906,	901,	3,	0
794, PLATE ,	1,	1,	901,	906,	907,	902,	3,	0
795, PLATE ,	1,	1,	902,	907,	908,	903,	3,	0
796, PLATE ,	1,	1,	903,	908,	723,	724,	3,	0
797, PLATE ,	1,	1,	711,	712,	909,	904,	3,	0
798, PLATE ,	1,	1,	904,	909,	910,	905,	3,	0
799, PLATE ,	1,	1,	905,	910,	911,	906,	3,	0
800, PLATE ,	1,	1,	906,	911,	912,	907,	3,	0
801, PLATE ,	1,	1,	907,	912,	913,	908,	3,	0
802, PLATE ,	1,	1,	908,	913,	722,	723,	3,	0
803, PLATE ,	1,	1,	712,	713,	914,	909,	3,	0
804, PLATE ,	1,	1,	909,	914,	915,	910,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

805, PLATE ,	1,	1,	910,	915,	916,	911,	3,	0
806, PLATE ,	1,	1,	911,	916,	917,	912,	3,	0
807, PLATE ,	1,	1,	912,	917,	918,	913,	3,	0
808, PLATE ,	1,	1,	913,	918,	721,	722,	3,	0
809, PLATE ,	1,	1,	713,	4,	715,	914,	3,	0
810, PLATE ,	1,	1,	914,	715,	716,	915,	3,	0
811, PLATE ,	1,	1,	915,	716,	717,	916,	3,	0
812, PLATE ,	1,	1,	916,	717,	718,	917,	3,	0
813, PLATE ,	1,	1,	917,	718,	719,	918,	3,	0
814, PLATE ,	1,	1,	918,	719,	6,	721,	3,	0
815, PLATE ,	1,	2,	1340,	1336,	1279,	1287,	3,	0
816, PLATE ,	1,	2,	707,	1074,	1075,	708,	3,	0
817, PLATE ,	1,	2,	1050,	683,	682,	1015,	3,	0
818, PLATE ,	1,	2,	1062,	1063,	696,	695,	3,	0
819, PLATE ,	1,	2,	710,	1077,	1078,	711,	3,	0
820, PLATE ,	1,	2,	1281,	1286,	1339,	1329,	3,	0
821, PLATE ,	1,	2,	105,	1089,	1082,	206,	3,	0
822, PLATE ,	1,	2,	1244,	1302,	1304,	1246,	3,	0
823, PLATE ,	1,	2,	1319,	1366,	1363,	1318,	3,	0
824, PLATE ,	1,	2,	1047,	1048,	1122,	1120,	3,	0
825, PLATE ,	1,	2,	1327,	1326,	1273,	1274,	3,	0
826, PLATE ,	1,	2,	1000,	1001,	1043,	1042,	3,	0
827, PLATE ,	1,	2,	1351,	1344,	1331,	1350,	3,	0
828, PLATE ,	1,	2,	394,	395,	1031,	1030,	3,	0
829, PLATE ,	1,	2,	1026,	1025,	389,	390,	3,	0
830, PLATE ,	1,	2,	1255,	1318,	1320,	1257,	3,	0
831, PLATE ,	1,	2,	1267,	1273,	1326,	1322,	3,	0
832, PLATE ,	1,	2,	1336,	1013,	1010,	1339,	3,	0
833, PLATE ,	1,	2,	1356,	1329,	1339,	1010,	3,	0
834, PLATE ,	1,	2,	1317,	1316,	1364,	1365,	3,	0
835, PLATE ,	1,	2,	1068,	701,	700,	1067,	3,	0
836, PLATE ,	1,	2,	1350,	1331,	1341,	1354,	3,	0
837, PLATE ,	1,	2,	1333,	1303,	1362,	1358,	3,	0
838, PLATE ,	1,	2,	1056,	1055,	1145,	1132,	3,	0
839, PLATE ,	1,	2,	1342,	1330,	1349,	1353,	3,	0
840, PLATE ,	1,	2,	1300,	1334,	1359,	1365,	3,	0
841, PLATE ,	1,	2,	1263,	1267,	1322,	1311,	3,	0
842, PLATE ,	1,	2,	1253,	1316,	1317,	1254,	3,	0
843, PLATE ,	1,	2,	1313,	1359,	1356,	1312,	3,	0
844, PLATE ,	1,	2,	689,	1056,	1057,	690,	3,	0
845, PLATE ,	1,	2,	1074,	707,	706,	1073,	3,	0
846, PLATE ,	1,	2,	1025,	1026,	1106,	1164,	3,	0
847, PLATE ,	1,	2,	1266,	1262,	1309,	1308,	3,	0
848, PLATE ,	1,	2,	1166,	1223,	1221,	1153,	3,	0
849, PLATE ,	1,	2,	1083,	251,	106,	1090,	3,	0
850, PLATE ,	1,	2,	1359,	1343,	1329,	1356,	3,	0
851, PLATE ,	1,	2,	1340,	1328,	1355,	1011,	3,	0
852, PLATE ,	1,	2,	1253,	1251,	1314,	1316,	3,	0
853, PLATE ,	1,	2,	1329,	1343,	1292,	1281,	3,	0
854, PLATE ,	1,	2,	1292,	1343,	1334,	1277,	3,	0
855, PLATE ,	1,	2,	1014,	1041,	995,	996,	3,	0
856, PLATE ,	1,	2,	388,	149,	1091,	1024,	3,	0
857, PLATE ,	1,	2,	1084,	102,	206,	1082,	3,	0
858, PLATE ,	1,	2,	1050,	1015,	1042,	1097,	3,	0
859, PLATE ,	1,	2,	1035,	989,	990,	1036,	3,	0
860, PLATE ,	1,	2,	392,	393,	1029,	1028,	3,	0
861, PLATE ,	1,	2,	685,	1052,	1053,	686,	3,	0
862, PLATE ,	1,	2,	1319,	1256,	1261,	1310,	3,	0
863, PLATE ,	1,	2,	1261,	1263,	1311,	1310,	3,	0
864, PLATE ,	1,	2,	986,	987,	1032,	1016,	3,	0
865, PLATE ,	1,	2,	1256,	1319,	1318,	1255,	3,	0
866, PLATE ,	1,	2,	713,	1014,	996,	4,	3,	0
867, PLATE ,	1,	2,	1034,	988,	989,	1035,	3,	0
868, PLATE ,	1,	2,	1276,	1241,	1303,	1333,	3,	0
869, PLATE ,	1,	2,	1081,	1092,	175,	231,	3,	0
870, PLATE ,	1,	2,	1344,	1351,	1357,	1332,	3,	0
871, PLATE ,	1,	2,	1051,	1052,	685,	684,	3,	0
872, PLATE ,	1,	2,	1279,	1336,	1339,	1286,	3,	0
873, PLATE ,	1,	2,	992,	993,	1039,	1038,	3,	0
874, PLATE ,	1,	2,	1085,	103,	251,	1083,	3,	0
875, PLATE ,	1,	2,	1074,	1146,	1148,	1075,	3,	0
876, PLATE ,	1,	2,	1250,	1189,	1184,	1247,	3,	0
877, PLATE ,	1,	2,	1227,	1156,	1169,	1232,	3,	0
878, PLATE ,	1,	2,	988,	1034,	1032,	987,	3,	0
879, PLATE ,	1,	2,	382,	383,	1019,	1018,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

880, PLATE ,	1,	2,	1320,	1361,	1357,	1321,	3,	0
881, PLATE ,	1,	2,	1363,	1304,	1302,	1361,	3,	0
882, PLATE ,	1,	2,	1007,	1008,	1033,	1049,	3,	0
883, PLATE ,	1,	2,	1291,	1276,	1333,	1345,	3,	0
884, PLATE ,	1,	2,	1291,	1345,	1330,	1282,	3,	0
885, PLATE ,	1,	2,	1264,	1260,	1313,	1312,	3,	0
886, PLATE ,	1,	2,	1216,	1147,	1129,	1211,	3,	0
887, PLATE ,	1,	2,	385,	1021,	1020,	384,	3,	0
888, PLATE ,	1,	2,	1158,	1083,	1090,	1171,	3,	0
889, PLATE ,	1,	2,	1328,	1280,	1293,	1346,	3,	0
890, PLATE ,	1,	2,	1280,	1328,	1340,	1287,	3,	0
891, PLATE ,	1,	2,	1223,	1297,	1285,	1221,	3,	0
892, PLATE ,	1,	2,	1055,	1056,	689,	688,	3,	0
893, PLATE ,	1,	2,	1202,	1137,	1138,	1203,	3,	0
894, PLATE ,	1,	2,	1242,	1246,	1304,	1301,	3,	0
895, PLATE ,	1,	2,	704,	703,	1070,	1071,	3,	0
896, PLATE ,	1,	2,	682,	3,	999,	1015,	3,	0
897, PLATE ,	1,	2,	1328,	1346,	1360,	1355,	3,	0
898, PLATE ,	1,	2,	1127,	1125,	1172,	1195,	3,	0
899, PLATE ,	1,	2,	1011,	1355,	1311,	1322,	3,	0
900, PLATE ,	1,	2,	149,	265,	1080,	1091,	3,	0
901, PLATE ,	1,	2,	1330,	1345,	1352,	1349,	3,	0
902, PLATE ,	1,	2,	1361,	1320,	1318,	1363,	3,	0
903, PLATE ,	1,	2,	1070,	1069,	1137,	1139,	3,	0
904, PLATE ,	1,	2,	1354,	1325,	1308,	1350,	3,	0
905, PLATE ,	1,	2,	1321,	1357,	1351,	1309,	3,	0
906, PLATE ,	1,	2,	1366,	1301,	1304,	1363,	3,	0
907, PLATE ,	1,	2,	1301,	1366,	1360,	1335,	3,	0
908, PLATE ,	1,	2,	1120,	1122,	1192,	1190,	3,	0
909, PLATE ,	1,	2,	1313,	1317,	1365,	1359,	3,	0
910, PLATE ,	1,	2,	1118,	1043,	1044,	1113,	3,	0
911, PLATE ,	1,	2,	1022,	1021,	385,	386,	3,	0
912, PLATE ,	1,	2,	1060,	693,	692,	1059,	3,	0
913, PLATE ,	1,	2,	1355,	1360,	1310,	1311,	3,	0
914, PLATE ,	1,	2,	1026,	1027,	1107,	1106,	3,	0
915, PLATE ,	1,	2,	1143,	1062,	1061,	1136,	3,	0
916, PLATE ,	1,	2,	1117,	1040,	1041,	1098,	3,	0
917, PLATE ,	1,	2,	1010,	1323,	1312,	1356,	3,	0
918, PLATE ,	1,	2,	1307,	1324,	1353,	1349,	3,	0
919, PLATE ,	1,	2,	205,	102,	1084,	1087,	3,	0
920, PLATE ,	1,	2,	1023,	387,	388,	1024,	3,	0
921, PLATE ,	1,	2,	684,	683,	1050,	1051,	3,	0
922, PLATE ,	1,	2,	1225,	1229,	1170,	1159,	3,	0
923, PLATE ,	1,	2,	1169,	1089,	1018,	1162,	3,	0
924, PLATE ,	1,	2,	1265,	1259,	1197,	1212,	3,	0
925, PLATE ,	1,	2,	1045,	1003,	1004,	1046,	3,	0
926, PLATE ,	1,	2,	1060,	1059,	1134,	1135,	3,	0
927, PLATE ,	1,	2,	1358,	1362,	1314,	1315,	3,	0
928, PLATE ,	1,	2,	1310,	1360,	1366,	1319,	3,	0
929, PLATE ,	1,	2,	1167,	1087,	1084,	1154,	3,	0
930, PLATE ,	1,	2,	123,	205,	1087,	1094,	3,	0
931, PLATE ,	1,	2,	387,	1023,	1022,	386,	3,	0
932, PLATE ,	1,	2,	1303,	1305,	1364,	1362,	3,	0
933, PLATE ,	1,	2,	1362,	1364,	1316,	1314,	3,	0
934, PLATE ,	1,	2,	1085,	1080,	265,	103,	3,	0
935, PLATE ,	1,	2,	1013,	1012,	1326,	1327,	3,	0
936, PLATE ,	1,	2,	1029,	393,	394,	1030,	3,	0
937, PLATE ,	1,	2,	1017,	1095,	1099,	1033,	3,	0
938, PLATE ,	1,	2,	1323,	1010,	1013,	1327,	3,	0
939, PLATE ,	1,	2,	1152,	1150,	1066,	1065,	3,	0
940, PLATE ,	1,	2,	1345,	1333,	1358,	1352,	3,	0
941, PLATE ,	1,	2,	1338,	1299,	1325,	1354,	3,	0
942, PLATE ,	1,	2,	1110,	1030,	1031,	1165,	3,	0
943, PLATE ,	1,	2,	1063,	1149,	1151,	1064,	3,	0
944, PLATE ,	1,	2,	1223,	1166,	1160,	1238,	3,	0
945, PLATE ,	1,	2,	1131,	1057,	1056,	1132,	3,	0
946, PLATE ,	1,	2,	1052,	1127,	1129,	1053,	3,	0
947, PLATE ,	1,	2,	380,	381,	1095,	1017,	3,	0
948, PLATE ,	1,	2,	1022,	1023,	1105,	1104,	3,	0
949, PLATE ,	1,	2,	1038,	1039,	1112,	1111,	3,	0
950, PLATE ,	1,	2,	1159,	1080,	1085,	1155,	3,	0
951, PLATE ,	1,	2,	1103,	1102,	1020,	1021,	3,	0
952, PLATE ,	1,	2,	687,	1054,	1055,	688,	3,	0
953, PLATE ,	1,	2,	231,	104,	1086,	1081,	3,	0
954, PLATE ,	1,	2,	1165,	1233,	1174,	1110,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

955, PLATE ,	1,	2,	1033,	1008,	1009,	1017,	3,	0
956, PLATE ,	1,	2,	1233,	1231,	1283,	1290,	3,	0
957, PLATE ,	1,	2,	1039,	1040,	1117,	1112,	3,	0
958, PLATE ,	1,	2,	1114,	1116,	1188,	1187,	3,	0
959, PLATE ,	1,	2,	703,	702,	1069,	1070,	3,	0
960, PLATE ,	1,	2,	700,	699,	1066,	1067,	3,	0
961, PLATE ,	1,	2,	706,	705,	1072,	1073,	3,	0
962, PLATE ,	1,	2,	713,	712,	1079,	1014,	3,	0
963, PLATE ,	1,	2,	1018,	1019,	1101,	1162,	3,	0
964, PLATE ,	1,	2,	1274,	1219,	1215,	1268,	3,	0
965, PLATE ,	1,	2,	1105,	1023,	1024,	1163,	3,	0
966, PLATE ,	1,	2,	1037,	1036,	990,	991,	3,	0
967, PLATE ,	1,	2,	390,	391,	1027,	1026,	3,	0
968, PLATE ,	1,	2,	1068,	1067,	1144,	1138,	3,	0
969, PLATE ,	1,	2,	1097,	1125,	1051,	1050,	3,	0
970, PLATE ,	1,	2,	383,	384,	1020,	1019,	3,	0
971, PLATE ,	1,	2,	1148,	1130,	1076,	1075,	3,	0
972, PLATE ,	1,	2,	1051,	1125,	1127,	1052,	3,	0
973, PLATE ,	1,	2,	1059,	692,	691,	1058,	3,	0
974, PLATE ,	1,	2,	1077,	710,	709,	1076,	3,	0
975, PLATE ,	1,	2,	1075,	1076,	709,	708,	3,	0
976, PLATE ,	1,	2,	1226,	1158,	1171,	1230,	3,	0
977, PLATE ,	1,	2,	1016,	1032,	1100,	1096,	3,	0
978, PLATE ,	1,	2,	1096,	396,	397,	1016,	3,	0
979, PLATE ,	1,	2,	686,	1053,	1054,	687,	3,	0
980, PLATE ,	1,	2,	1079,	1098,	1041,	1014,	3,	0
981, PLATE ,	1,	2,	392,	1028,	1027,	391,	3,	0
982, PLATE ,	1,	2,	1092,	1031,	395,	175,	3,	0
983, PLATE ,	1,	2,	1115,	1037,	1038,	1111,	3,	0
984, PLATE ,	1,	2,	107,	1093,	1088,	232,	3,	0
985, PLATE ,	1,	2,	1138,	1137,	1069,	1068,	3,	0
986, PLATE ,	1,	2,	995,	1041,	1040,	994,	3,	0
987, PLATE ,	1,	2,	1000,	1042,	1015,	999,	3,	0
988, PLATE ,	1,	2,	1349,	1352,	1306,	1307,	3,	0
989, PLATE ,	1,	2,	1086,	1088,	1166,	1153,	3,	0
990, PLATE ,	1,	2,	1160,	1093,	1096,	1100,	3,	0
991, PLATE ,	1,	2,	698,	1065,	1066,	699,	3,	0
992, PLATE ,	1,	2,	1094,	1095,	381,	123,	3,	0
993, PLATE ,	1,	2,	1043,	1001,	1002,	1044,	3,	0
994, PLATE ,	1,	2,	993,	994,	1040,	1039,	3,	0
995, PLATE ,	1,	2,	1171,	1090,	1025,	1164,	3,	0
996, PLATE ,	1,	2,	1007,	1049,	1048,	1006,	3,	0
997, PLATE ,	1,	2,	1166,	1088,	1093,	1160,	3,	0
998, PLATE ,	1,	2,	1230,	1171,	1164,	1236,	3,	0
999, PLATE ,	1,	2,	396,	1096,	1093,	107,	3,	0
1000, PLATE ,	1,	2,	1083,	1158,	1155,	1085,	3,	0
1001, PLATE ,	1,	2,	1009,	1,	380,	1017,	3,	0
1002, PLATE ,	1,	2,	1131,	1133,	1058,	1057,	3,	0
1003, PLATE ,	1,	2,	1024,	1091,	1170,	1163,	3,	0
1004, PLATE ,	1,	2,	1078,	1079,	712,	711,	3,	0
1005, PLATE ,	1,	2,	397,	2,	986,	1016,	3,	0
1006, PLATE ,	1,	2,	694,	693,	1060,	1061,	3,	0
1007, PLATE ,	1,	2,	1157,	1168,	1092,	1081,	3,	0
1008, PLATE ,	1,	2,	1121,	1035,	1036,	1119,	3,	0
1009, PLATE ,	1,	2,	1167,	1161,	1094,	1087,	3,	0
1010, PLATE ,	1,	2,	1046,	1004,	1005,	1047,	3,	0
1011, PLATE ,	1,	2,	1117,	1098,	1126,	1173,	3,	0
1012, PLATE ,	1,	2,	701,	1068,	1069,	702,	3,	0
1013, PLATE ,	1,	2,	382,	1018,	1089,	105,	3,	0
1014, PLATE ,	1,	2,	704,	1071,	1072,	705,	3,	0
1015, PLATE ,	1,	2,	691,	690,	1057,	1058,	3,	0
1016, PLATE ,	1,	2,	698,	697,	1064,	1065,	3,	0
1017, PLATE ,	1,	2,	389,	1025,	1090,	106,	3,	0
1018, PLATE ,	1,	2,	1231,	1233,	1165,	1168,	3,	0
1019, PLATE ,	1,	2,	695,	694,	1061,	1062,	3,	0
1020, PLATE ,	1,	2,	232,	1088,	1086,	104,	3,	0
1021, PLATE ,	1,	2,	1235,	1292,	1277,	1176,	3,	0
1022, PLATE ,	1,	2,	1005,	1006,	1048,	1047,	3,	0
1023, PLATE ,	1,	2,	696,	1063,	1064,	697,	3,	0
1024, PLATE ,	1,	2,	1153,	1157,	1081,	1086,	3,	0
1025, PLATE ,	1,	2,	1142,	1073,	1072,	1141,	3,	0
1026, PLATE ,	1,	2,	1227,	1222,	1154,	1156,	3,	0
1027, PLATE ,	1,	2,	992,	1038,	1037,	991,	3,	0
1028, PLATE ,	1,	2,	1002,	1003,	1045,	1044,	3,	0
1029, PLATE ,	1,	2,	1098,	1079,	1078,	1126,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1030, PLATE ,	1,	2,	1149,	1063,	1062,	1143,	3,	0
1031, PLATE ,	1,	2,	1281,	1292,	1235,	1229,	3,	0
1032, PLATE ,	1,	2,	1213,	1146,	1142,	1207,	3,	0
1033, PLATE ,	1,	2,	1033,	1099,	1124,	1049,	3,	0
1034, PLATE ,	1,	2,	1113,	1114,	1187,	1186,	3,	0
1035, PLATE ,	1,	2,	1130,	1128,	1077,	1076,	3,	0
1036, PLATE ,	1,	2,	1118,	1097,	1042,	1043,	3,	0
1037, PLATE ,	1,	2,	1114,	1113,	1044,	1045,	3,	0
1038, PLATE ,	1,	2,	1089,	1169,	1156,	1082,	3,	0
1039, PLATE ,	1,	2,	1128,	1130,	1210,	1194,	3,	0
1040, PLATE ,	1,	2,	1241,	1276,	1175,	1178,	3,	0
1041, PLATE ,	1,	2,	1286,	1225,	1220,	1279,	3,	0
1042, PLATE ,	1,	2,	1168,	1165,	1031,	1092,	3,	0
1043, PLATE ,	1,	2,	1167,	1154,	1222,	1224,	3,	0
1044, PLATE ,	1,	2,	1073,	1142,	1146,	1074,	3,	0
1045, PLATE ,	1,	2,	1163,	1235,	1176,	1105,	3,	0
1046, PLATE ,	1,	2,	1108,	1109,	1183,	1182,	3,	0
1047, PLATE ,	1,	2,	1095,	1094,	1161,	1099,	3,	0
1048, PLATE ,	1,	2,	1053,	1129,	1147,	1054,	3,	0
1049, PLATE ,	1,	2,	1211,	1195,	1239,	1270,	3,	0
1050, PLATE ,	1,	2,	1149,	1215,	1219,	1151,	3,	0
1051, PLATE ,	1,	2,	1022,	1104,	1103,	1021,	3,	0
1052, PLATE ,	1,	2,	1099,	1161,	1237,	1124,	3,	0
1053, PLATE ,	1,	2,	1189,	1250,	1295,	1191,	3,	0
1054, PLATE ,	1,	2,	1217,	1210,	1130,	1148,	3,	0
1055, PLATE ,	1,	2,	1091,	1080,	1159,	1170,	3,	0
1056, PLATE ,	1,	2,	1178,	1102,	1103,	1179,	3,	0
1057, PLATE ,	1,	2,	1183,	1109,	1110,	1174,	3,	0
1058, PLATE ,	1,	2,	1154,	1084,	1082,	1156,	3,	0
1059, PLATE ,	1,	2,	1125,	1097,	1118,	1172,	3,	0
1060, PLATE ,	1,	2,	1128,	1126,	1078,	1077,	3,	0
1061, PLATE ,	1,	2,	1220,	1226,	1287,	1279,	3,	0
1062, PLATE ,	1,	2,	1046,	1047,	1120,	1116,	3,	0
1063, PLATE ,	1,	2,	1177,	1181,	1242,	1278,	3,	0
1064, PLATE ,	1,	2,	1179,	1245,	1241,	1178,	3,	0
1065, PLATE ,	1,	2,	1037,	1115,	1119,	1036,	3,	0
1066, PLATE ,	1,	2,	1106,	1107,	1181,	1177,	3,	0
1067, PLATE ,	1,	2,	1262,	1258,	1321,	1309,	3,	0
1068, PLATE ,	1,	2,	1180,	1179,	1103,	1104,	3,	0
1069, PLATE ,	1,	2,	1059,	1058,	1133,	1134,	3,	0
1070, PLATE ,	1,	2,	1144,	1150,	1214,	1208,	3,	0
1071, PLATE ,	1,	2,	1029,	1030,	1110,	1109,	3,	0
1072, PLATE ,	1,	2,	1048,	1049,	1124,	1122,	3,	0
1073, PLATE ,	1,	2,	1060,	1135,	1136,	1061,	3,	0
1074, PLATE ,	1,	2,	1045,	1046,	1116,	1114,	3,	0
1075, PLATE ,	1,	2,	1150,	1144,	1067,	1066,	3,	0
1076, PLATE ,	1,	2,	1100,	1123,	1238,	1160,	3,	0
1077, PLATE ,	1,	2,	1032,	1034,	1123,	1100,	3,	0
1078, PLATE ,	1,	2,	1123,	1121,	1193,	1238,	3,	0
1079, PLATE ,	1,	2,	1177,	1236,	1164,	1106,	3,	0
1080, PLATE ,	1,	2,	1035,	1121,	1123,	1034,	3,	0
1081, PLATE ,	1,	2,	1203,	1208,	1263,	1261,	3,	0
1082, PLATE ,	1,	2,	1070,	1139,	1140,	1071,	3,	0
1083, PLATE ,	1,	2,	1155,	1158,	1226,	1220,	3,	0
1084, PLATE ,	1,	2,	1211,	1129,	1127,	1195,	3,	0
1085, PLATE ,	1,	2,	1181,	1107,	1108,	1182,	3,	0
1086, PLATE ,	1,	2,	1161,	1167,	1224,	1237,	3,	0
1087, PLATE ,	1,	2,	1361,	1302,	1332,	1357,	3,	0
1088, PLATE ,	1,	2,	1287,	1226,	1230,	1280,	3,	0
1089, PLATE ,	1,	2,	1153,	1221,	1228,	1157,	3,	0
1090, PLATE ,	1,	2,	1064,	1151,	1152,	1065,	3,	0
1091, PLATE ,	1,	2,	1019,	1020,	1102,	1101,	3,	0
1092, PLATE ,	1,	2,	1146,	1213,	1217,	1148,	3,	0
1093, PLATE ,	1,	2,	1192,	1122,	1124,	1237,	3,	0
1094, PLATE ,	1,	2,	1072,	1071,	1140,	1141,	3,	0
1095, PLATE ,	1,	2,	1028,	1029,	1109,	1108,	3,	0
1096, PLATE ,	1,	2,	1028,	1108,	1107,	1027,	3,	0
1097, PLATE ,	1,	2,	1055,	1054,	1147,	1145,	3,	0
1098, PLATE ,	1,	2,	1249,	1248,	1187,	1188,	3,	0
1099, PLATE ,	1,	2,	1244,	1183,	1174,	1275,	3,	0
1100, PLATE ,	1,	2,	1139,	1137,	1202,	1204,	3,	0
1101, PLATE ,	1,	2,	1117,	1173,	1185,	1112,	3,	0
1102, PLATE ,	1,	2,	1332,	1275,	1290,	1344,	3,	0
1103, PLATE ,	1,	2,	1189,	1115,	1111,	1184,	3,	0
1104, PLATE ,	1,	2,	1248,	1239,	1186,	1187,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1105, PLATE ,	1,	2,	1229,	1235,	1163,	1170,	3,	0
1106, PLATE ,	1,	2,	1185,	1184,	1111,	1112,	3,	0
1107, PLATE ,	1,	2,	1236,	1177,	1278,	1293,	3,	0
1108, PLATE ,	1,	2,	1194,	1240,	1185,	1173,	3,	0
1109, PLATE ,	1,	2,	1208,	1214,	1267,	1263,	3,	0
1110, PLATE ,	1,	2,	1186,	1172,	1118,	1113,	3,	0
1111, PLATE ,	1,	2,	1216,	1212,	1145,	1147,	3,	0
1112, PLATE ,	1,	2,	1285,	1348,	1341,	1289,	3,	0
1113, PLATE ,	1,	2,	1260,	1201,	1200,	1254,	3,	0
1114, PLATE ,	1,	2,	1259,	1306,	1315,	1252,	3,	0
1115, PLATE ,	1,	2,	1338,	1348,	1295,	1250,	3,	0
1116, PLATE ,	1,	2,	1212,	1216,	1271,	1265,	3,	0
1117, PLATE ,	1,	2,	1192,	1296,	1294,	1190,	3,	0
1118, PLATE ,	1,	2,	1327,	1274,	1268,	1323,	3,	0
1119, PLATE ,	1,	2,	1272,	1217,	1213,	1266,	3,	0
1120, PLATE ,	1,	2,	1295,	1297,	1193,	1191,	3,	0
1121, PLATE ,	1,	2,	1178,	1175,	1101,	1102,	3,	0
1122, PLATE ,	1,	2,	1337,	1298,	1248,	1249,	3,	0
1123, PLATE ,	1,	2,	1288,	1227,	1232,	1282,	3,	0
1124, PLATE ,	1,	2,	1243,	1245,	1179,	1180,	3,	0
1125, PLATE ,	1,	2,	1237,	1224,	1296,	1192,	3,	0
1126, PLATE ,	1,	2,	1140,	1205,	1206,	1141,	3,	0
1127, PLATE ,	1,	2,	1155,	1220,	1225,	1159,	3,	0
1128, PLATE ,	1,	2,	1209,	1143,	1136,	1201,	3,	0
1129, PLATE ,	1,	2,	1168,	1157,	1228,	1231,	3,	0
1130, PLATE ,	1,	2,	1119,	1191,	1193,	1121,	3,	0
1131, PLATE ,	1,	2,	1296,	1284,	1347,	1294,	3,	0
1132, PLATE ,	1,	2,	1134,	1133,	1198,	1199,	3,	0
1133, PLATE ,	1,	2,	1238,	1193,	1297,	1223,	3,	0
1134, PLATE ,	1,	2,	1135,	1134,	1199,	1200,	3,	0
1135, PLATE ,	1,	2,	1324,	1307,	1265,	1271,	3,	0
1136, PLATE ,	1,	2,	1143,	1209,	1215,	1149,	3,	0
1137, PLATE ,	1,	2,	1132,	1145,	1212,	1197,	3,	0
1138, PLATE ,	1,	2,	1115,	1189,	1191,	1119,	3,	0
1139, PLATE ,	1,	2,	1142,	1141,	1206,	1207,	3,	0
1140, PLATE ,	1,	2,	1247,	1184,	1185,	1240,	3,	0
1141, PLATE ,	1,	2,	1239,	1248,	1298,	1270,	3,	0
1142, PLATE ,	1,	2,	1136,	1135,	1200,	1201,	3,	0
1143, PLATE ,	1,	2,	1197,	1196,	1131,	1132,	3,	0
1144, PLATE ,	1,	2,	1268,	1215,	1209,	1264,	3,	0
1145, PLATE ,	1,	2,	1138,	1144,	1208,	1203,	3,	0
1146, PLATE ,	1,	2,	1131,	1196,	1198,	1133,	3,	0
1147, PLATE ,	1,	2,	1116,	1120,	1190,	1188,	3,	0
1148, PLATE ,	1,	2,	1150,	1152,	1218,	1214,	3,	0
1149, PLATE ,	1,	2,	1266,	1213,	1207,	1262,	3,	0
1150, PLATE ,	1,	2,	1251,	1253,	1199,	1198,	3,	0
1151, PLATE ,	1,	2,	1151,	1219,	1218,	1152,	3,	0
1152, PLATE ,	1,	2,	1139,	1204,	1205,	1140,	3,	0
1153, PLATE ,	1,	2,	1162,	1101,	1175,	1234,	3,	0
1154, PLATE ,	1,	2,	1162,	1234,	1232,	1169,	3,	0
1155, PLATE ,	1,	2,	1105,	1176,	1180,	1104,	3,	0
1156, PLATE ,	1,	2,	1128,	1194,	1173,	1126,	3,	0
1157, PLATE ,	1,	2,	1198,	1196,	1252,	1251,	3,	0
1158, PLATE ,	1,	2,	1322,	1326,	1012,	1011,	3,	0
1159, PLATE ,	1,	2,	1365,	1364,	1305,	1300,	3,	0
1160, PLATE ,	1,	2,	1221,	1285,	1289,	1228,	3,	0
1161, PLATE ,	1,	2,	1201,	1260,	1264,	1209,	3,	0
1162, PLATE ,	1,	2,	1305,	1303,	1241,	1245,	3,	0
1163, PLATE ,	1,	2,	1347,	1342,	1353,	1337,	3,	0
1164, PLATE ,	1,	2,	1302,	1244,	1275,	1332,	3,	0
1165, PLATE ,	1,	2,	1182,	1246,	1242,	1181,	3,	0
1166, PLATE ,	1,	2,	1273,	1267,	1214,	1218,	3,	0
1167, PLATE ,	1,	2,	1283,	1289,	1341,	1331,	3,	0
1168, PLATE ,	1,	2,	1244,	1246,	1182,	1183,	3,	0
1169, PLATE ,	1,	2,	1297,	1295,	1348,	1285,	3,	0
1170, PLATE ,	1,	2,	1299,	1247,	1240,	1269,	3,	0
1171, PLATE ,	1,	2,	1350,	1308,	1309,	1351,	3,	0
1172, PLATE ,	1,	2,	1306,	1259,	1265,	1307,	3,	0
1173, PLATE ,	1,	2,	1259,	1252,	1196,	1197,	3,	0
1174, PLATE ,	1,	2,	1247,	1299,	1338,	1250,	3,	0
1175, PLATE ,	1,	2,	1289,	1283,	1231,	1228,	3,	0
1176, PLATE ,	1,	2,	1305,	1245,	1243,	1300,	3,	0
1177, PLATE ,	1,	2,	1294,	1249,	1188,	1190,	3,	0
1178, PLATE ,	1,	2,	1354,	1341,	1348,	1338,	3,	0
1179, PLATE ,	1,	2,	1325,	1272,	1266,	1308,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1180, PLATE ,	1,	2,	1204,	1202,	1256,	1255,	3,	0
1181, PLATE ,	1,	2,	1276,	1291,	1234,	1175,	3,	0
1182, PLATE ,	1,	2,	1294,	1347,	1337,	1249,	3,	0
1183, PLATE ,	1,	2,	1290,	1283,	1331,	1344,	3,	0
1184, PLATE ,	1,	2,	1195,	1172,	1186,	1239,	3,	0
1185, PLATE ,	1,	2,	1206,	1258,	1262,	1207,	3,	0
1186, PLATE ,	1,	2,	1260,	1254,	1317,	1313,	3,	0
1187, PLATE ,	1,	2,	1013,	1336,	1340,	1012,	3,	0
1188, PLATE ,	1,	2,	1293,	1278,	1335,	1346,	3,	0
1189, PLATE ,	1,	2,	1277,	1334,	1300,	1243,	3,	0
1190, PLATE ,	1,	2,	1236,	1293,	1280,	1230,	3,	0
1191, PLATE ,	1,	2,	1205,	1257,	1258,	1206,	3,	0
1192, PLATE ,	1,	2,	1301,	1335,	1278,	1242,	3,	0
1193, PLATE ,	1,	2,	1222,	1227,	1288,	1284,	3,	0
1194, PLATE ,	1,	2,	1229,	1225,	1286,	1281,	3,	0
1195, PLATE ,	1,	2,	1243,	1180,	1176,	1277,	3,	0
1196, PLATE ,	1,	2,	1284,	1288,	1342,	1347,	3,	0
1197, PLATE ,	1,	2,	1314,	1251,	1252,	1315,	3,	0
1198, PLATE ,	1,	2,	1342,	1288,	1282,	1330,	3,	0
1199, PLATE ,	1,	2,	1202,	1203,	1261,	1256,	3,	0
1200, PLATE ,	1,	2,	1219,	1274,	1273,	1218,	3,	0
1201, PLATE ,	1,	2,	1199,	1253,	1254,	1200,	3,	0
1202, PLATE ,	1,	2,	1210,	1217,	1272,	1269,	3,	0
1203, PLATE ,	1,	2,	1210,	1269,	1240,	1194,	3,	0
1204, PLATE ,	1,	2,	1211,	1270,	1271,	1216,	3,	0
1205, PLATE ,	1,	2,	1204,	1255,	1257,	1205,	3,	0
1206, PLATE ,	1,	2,	1234,	1291,	1282,	1232,	3,	0
1207, PLATE ,	1,	2,	1233,	1290,	1275,	1174,	3,	0
1208, PLATE ,	1,	2,	1224,	1222,	1284,	1296,	3,	0
1209, PLATE ,	1,	2,	1337,	1353,	1324,	1298,	3,	0
1210, PLATE ,	1,	2,	1299,	1269,	1272,	1325,	3,	0
1211, PLATE ,	1,	2,	1323,	1268,	1264,	1312,	3,	0
1212, PLATE ,	1,	2,	1315,	1306,	1352,	1358,	3,	0
1213, PLATE ,	1,	2,	1271,	1270,	1298,	1324,	3,	0
1214, PLATE ,	1,	2,	1258,	1257,	1320,	1321,	3,	0
1215, PLATE ,	1,	2,	1359,	1334,	1343,	0,	3,	0
1216, PLATE ,	1,	2,	1360,	1346,	1335,	0,	3,	0
1217, PLATE ,	1,	2,	1012,	1340,	1011,	0,	3,	0
1218, BEAM ,	1,	1,	102,	1367,	0,	0		
1219, BEAM ,	1,	1,	103,	1368,	0,	0		
1220, BEAM ,	1,	1,	104,	1369,	0,	0		
1221, BEAM ,	1,	1,	1367,	1370,	0,	0		
1222, BEAM ,	1,	1,	1368,	1371,	0,	0		
1223, BEAM ,	1,	1,	1369,	1372,	0,	0		
1224, BEAM ,	1,	1,	1370,	1373,	0,	0		
1225, BEAM ,	1,	1,	1371,	1374,	0,	0		
1226, BEAM ,	1,	1,	1372,	1375,	0,	0		
1227, BEAM ,	1,	1,	1373,	1376,	0,	0		
1228, BEAM ,	1,	1,	1374,	1377,	0,	0		
1229, BEAM ,	1,	1,	1375,	1378,	0,	0		
1230, BEAM ,	1,	1,	1376,	1379,	0,	0		
1231, BEAM ,	1,	1,	1377,	1380,	0,	0		
1232, BEAM ,	1,	1,	1378,	1381,	0,	0		
1233, BEAM ,	1,	1,	1379,	1382,	0,	0		
1234, BEAM ,	1,	1,	1380,	1383,	0,	0		
1235, BEAM ,	1,	1,	1381,	1384,	0,	0		
1236, BEAM ,	1,	1,	1382,	1385,	0,	0		
1237, BEAM ,	1,	1,	1383,	1386,	0,	0		
1238, BEAM ,	1,	1,	1384,	1387,	0,	0		
1239, BEAM ,	1,	1,	1385,	1388,	0,	0		
1240, BEAM ,	1,	1,	1386,	1389,	0,	0		
1241, BEAM ,	1,	1,	1387,	1390,	0,	0		
1242, BEAM ,	1,	1,	1388,	1391,	0,	0		
1243, BEAM ,	1,	1,	1389,	1392,	0,	0		
1244, BEAM ,	1,	1,	1390,	1393,	0,	0		
1245, BEAM ,	1,	1,	1391,	1394,	0,	0		
1246, BEAM ,	1,	1,	1392,	1395,	0,	0		
1247, BEAM ,	1,	1,	1393,	1396,	0,	0		
1275, PLATE ,	1,	1,	5,	1404,	1445,	754,	3,	0
1276, PLATE ,	1,	1,	754,	1445,	1446,	755,	3,	0
1277, PLATE ,	1,	1,	755,	1446,	1447,	756,	3,	0
1278, PLATE ,	1,	1,	756,	1447,	1448,	757,	3,	0
1279, PLATE ,	1,	1,	757,	1448,	1449,	758,	3,	0
1280, PLATE ,	1,	1,	758,	1449,	1450,	3,	3,	0
1281, PLATE ,	1,	1,	3,	1450,	1451,	999,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1282, PLATE ,	1,	1,	999,	1451,	1452,	1000,	3,	0
1283, PLATE ,	1,	1,	1000,	1452,	1453,	1001,	3,	0
1284, PLATE ,	1,	1,	1001,	1453,	1454,	1002,	3,	0
1285, PLATE ,	1,	1,	1002,	1454,	1455,	1003,	3,	0
1286, PLATE ,	1,	1,	1003,	1455,	1456,	1004,	3,	0
1287, PLATE ,	1,	1,	1004,	1456,	1457,	1005,	3,	0
1288, PLATE ,	1,	1,	1005,	1457,	1458,	1006,	3,	0
1289, PLATE ,	1,	1,	1006,	1458,	1459,	1007,	3,	0
1290, PLATE ,	1,	1,	1007,	1459,	1460,	1008,	3,	0
1291, PLATE ,	1,	1,	1008,	1460,	1461,	1009,	3,	0
1292, PLATE ,	1,	1,	1009,	1461,	515,	1,	3,	0
1293, PLATE ,	1,	1,	1404,	1405,	1462,	1445,	3,	0
1294, PLATE ,	1,	1,	1445,	1462,	1463,	1446,	3,	0
1295, PLATE ,	1,	1,	1446,	1463,	1464,	1447,	3,	0
1296, PLATE ,	1,	1,	1447,	1464,	1465,	1448,	3,	0
1297, PLATE ,	1,	1,	1448,	1465,	1466,	1449,	3,	0
1298, PLATE ,	1,	1,	1449,	1466,	1467,	1450,	3,	0
1299, PLATE ,	1,	1,	1450,	1467,	1468,	1451,	3,	0
1300, PLATE ,	1,	1,	1451,	1468,	1469,	1452,	3,	0
1301, PLATE ,	1,	1,	1452,	1469,	1470,	1453,	3,	0
1302, PLATE ,	1,	1,	1453,	1470,	1471,	1454,	3,	0
1303, PLATE ,	1,	1,	1454,	1471,	1472,	1455,	3,	0
1304, PLATE ,	1,	1,	1455,	1472,	1473,	1456,	3,	0
1305, PLATE ,	1,	1,	1456,	1473,	1474,	1457,	3,	0
1306, PLATE ,	1,	1,	1457,	1474,	1475,	1458,	3,	0
1307, PLATE ,	1,	1,	1458,	1475,	1476,	1459,	3,	0
1308, PLATE ,	1,	1,	1459,	1476,	1477,	1460,	3,	0
1309, PLATE ,	1,	1,	1460,	1477,	1478,	1461,	3,	0
1310, PLATE ,	1,	1,	1461,	1478,	514,	515,	3,	0
1311, PLATE ,	1,	1,	1405,	1401,	1407,	1462,	3,	0
1312, PLATE ,	1,	1,	1462,	1407,	1408,	1463,	3,	0
1313, PLATE ,	1,	1,	1463,	1408,	1409,	1464,	3,	0
1314, PLATE ,	1,	1,	1464,	1409,	1410,	1465,	3,	0
1315, PLATE ,	1,	1,	1465,	1410,	1411,	1466,	3,	0
1316, PLATE ,	1,	1,	1466,	1411,	1412,	1467,	3,	0
1317, PLATE ,	1,	1,	1467,	1412,	1413,	1468,	3,	0
1318, PLATE ,	1,	1,	1468,	1413,	1414,	1469,	3,	0
1319, PLATE ,	1,	1,	1469,	1414,	1415,	1470,	3,	0
1320, PLATE ,	1,	1,	1470,	1415,	1416,	1471,	3,	0
1321, PLATE ,	1,	1,	1471,	1416,	1417,	1472,	3,	0
1322, PLATE ,	1,	1,	1472,	1417,	1418,	1473,	3,	0
1323, PLATE ,	1,	1,	1473,	1418,	1419,	1474,	3,	0
1324, PLATE ,	1,	1,	1474,	1419,	1420,	1475,	3,	0
1325, PLATE ,	1,	1,	1475,	1420,	1421,	1476,	3,	0
1326, PLATE ,	1,	1,	1476,	1421,	1422,	1477,	3,	0
1327, PLATE ,	1,	1,	1477,	1422,	1423,	1478,	3,	0
1328, PLATE ,	1,	1,	1478,	1423,	98,	514,	3,	0
1348, PLATE ,	1,	1,	1605,	1577,	1591,	1623,	3,	0
1349, PLATE ,	1,	1,	1412,	1548,	1549,	1413,	3,	0
1350, PLATE ,	1,	1,	1548,	1547,	1581,	1582,	3,	0
1351, PLATE ,	1,	1,	1554,	1588,	1589,	1555,	3,	0
1352, PLATE ,	1,	1,	1418,	1554,	1555,	1419,	3,	0
1353, PLATE ,	1,	1,	1416,	1552,	1553,	1417,	3,	0
1354, PLATE ,	1,	1,	1551,	1585,	1586,	1552,	3,	0
1355, PLATE ,	1,	1,	1555,	1589,	1590,	1556,	3,	0
1356, PLATE ,	1,	1,	1565,	1599,	1598,	1564,	3,	0
1357, PLATE ,	1,	1,	1569,	1525,	1526,	1570,	3,	0
1358, PLATE ,	1,	1,	1618,	1587,	1586,	1617,	3,	0
1359, PLATE ,	1,	1,	1497,	1533,	1528,	1397,	3,	0
1360, PLATE ,	1,	1,	1579,	1580,	1610,	1611,	3,	0
1361, PLATE ,	1,	1,	1591,	1590,	1621,	1623,	3,	0
1362, PLATE ,	1,	1,	1587,	1618,	1619,	1588,	3,	0
1363, PLATE ,	1,	1,	1626,	1620,	1619,	1530,	3,	0
1364, PLATE ,	1,	1,	1420,	1419,	1555,	1556,	3,	0
1365, PLATE ,	1,	1,	1626,	1603,	1604,	1609,	3,	0
1366, PLATE ,	1,	1,	1608,	1606,	1622,	1610,	3,	0
1367, PLATE ,	1,	1,	1569,	1570,	1604,	1603,	3,	0
1368, PLATE ,	1,	1,	1524,	1525,	1569,	1568,	3,	0
1369, PLATE ,	1,	1,	1609,	1623,	1621,	1626,	3,	0
1370, PLATE ,	1,	1,	1509,	1510,	1536,	1574,	3,	0
1371, PLATE ,	1,	1,	1546,	1410,	1409,	1545,	3,	0
1372, PLATE ,	1,	1,	1628,	1596,	1597,	1531,	3,	0
1373, PLATE ,	1,	1,	1584,	1583,	1614,	1615,	3,	0
1374, PLATE ,	1,	1,	1530,	1619,	1618,	1532,	3,	0
1375, PLATE ,	1,	1,	1514,	1515,	1559,	1558,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1376, PLATE ,	1,	1,	1623,	1609,	1607,	1605,	3,	0
1377, PLATE ,	1,	1,	1534,	1572,	1501,	1502,	3,	0
1378, PLATE ,	1,	1,	1590,	1589,	1620,	1621,	3,	0
1379, PLATE ,	1,	1,	1518,	1519,	1563,	1562,	3,	0
1380, PLATE ,	1,	1,	1624,	1595,	1596,	1628,	3,	0
1381, PLATE ,	1,	1,	1422,	1542,	1534,	1423,	3,	0
1382, PLATE ,	1,	1,	1586,	1585,	1616,	1617,	3,	0
1383, PLATE ,	1,	1,	1606,	1578,	1592,	1622,	3,	0
1384, PLATE ,	1,	1,	1597,	1596,	1562,	1563,	3,	0
1385, PLATE ,	1,	1,	1507,	1539,	1573,	1506,	3,	0
1386, PLATE ,	1,	1,	1531,	1597,	1598,	1629,	3,	0
1387, PLATE ,	1,	1,	1556,	1557,	1421,	1420,	3,	0
1388, PLATE ,	1,	1,	1535,	1541,	1408,	1407,	3,	0
1389, PLATE ,	1,	1,	1543,	1513,	1514,	1558,	3,	0
1390, PLATE ,	1,	1,	1423,	1534,	1502,	98,	3,	0
1391, PLATE ,	1,	1,	1627,	1593,	1594,	1624,	3,	0
1392, PLATE ,	1,	1,	1532,	1601,	1602,	1530,	3,	0
1393, PLATE ,	1,	1,	1530,	1602,	1603,	1626,	3,	0
1394, PLATE ,	1,	1,	1579,	1546,	1545,	1580,	3,	0
1395, PLATE ,	1,	1,	1571,	1537,	1607,	1575,	3,	0
1396, PLATE ,	1,	1,	1616,	1629,	1598,	1625,	3,	0
1397, PLATE ,	1,	1,	1595,	1594,	1560,	1561,	3,	0
1398, PLATE ,	1,	1,	1520,	1521,	1565,	1564,	3,	0
1399, PLATE ,	1,	1,	1576,	1580,	1545,	1541,	3,	0
1400, PLATE ,	1,	1,	1537,	1499,	1500,	1538,	3,	0
1401, PLATE ,	1,	1,	1552,	1416,	1415,	1551,	3,	0
1402, PLATE ,	1,	1,	1411,	1410,	1546,	1547,	3,	0
1403, PLATE ,	1,	1,	1560,	1594,	1593,	1559,	3,	0
1404, PLATE ,	1,	1,	1565,	1521,	1522,	1566,	3,	0
1405, PLATE ,	1,	1,	1625,	1598,	1599,	1529,	3,	0
1406, PLATE ,	1,	1,	1539,	1507,	1508,	1540,	3,	0
1407, PLATE ,	1,	1,	1527,	1528,	1533,	1544,	3,	0
1408, PLATE ,	1,	1,	1505,	1535,	1407,	1401,	3,	0
1409, PLATE ,	1,	1,	1584,	1585,	1551,	1550,	3,	0
1410, PLATE ,	1,	1,	1560,	1516,	1517,	1561,	3,	0
1411, PLATE ,	1,	1,	1498,	1571,	1533,	1497,	3,	0
1412, PLATE ,	1,	1,	1600,	1532,	1618,	1529,	3,	0
1413, PLATE ,	1,	1,	1596,	1595,	1561,	1562,	3,	0
1414, PLATE ,	1,	1,	1517,	1518,	1562,	1561,	3,	0
1415, PLATE ,	1,	1,	1571,	1498,	1499,	1537,	3,	0
1416, PLATE ,	1,	1,	1600,	1599,	1565,	1566,	3,	0
1417, PLATE ,	1,	1,	1573,	1539,	1608,	1576,	3,	0
1418, PLATE ,	1,	1,	1534,	1542,	1577,	1572,	3,	0
1419, PLATE ,	1,	1,	1541,	1545,	1409,	1408,	3,	0
1420, PLATE ,	1,	1,	1536,	1512,	1513,	1543,	3,	0
1421, PLATE ,	1,	1,	1535,	1505,	1506,	1573,	3,	0
1422, PLATE ,	1,	1,	1535,	1573,	1576,	1541,	3,	0
1423, PLATE ,	1,	1,	1533,	1571,	1575,	1544,	3,	0
1424, PLATE ,	1,	1,	1542,	1422,	1421,	1557,	3,	0
1425, PLATE ,	1,	1,	1500,	1501,	1572,	1538,	3,	0
1426, PLATE ,	1,	1,	1579,	1581,	1547,	1546,	3,	0
1427, PLATE ,	1,	1,	1536,	1543,	1578,	1574,	3,	0
1428, PLATE ,	1,	1,	1575,	1604,	1570,	1544,	3,	0
1429, PLATE ,	1,	1,	1544,	1570,	1526,	1527,	3,	0
1430, PLATE ,	1,	1,	1553,	1554,	1418,	1417,	3,	0
1431, PLATE ,	1,	1,	1508,	1509,	1574,	1540,	3,	0
1432, PLATE ,	1,	1,	1609,	1604,	1575,	1607,	3,	0
1433, PLATE ,	1,	1,	1587,	1588,	1554,	1553,	3,	0
1434, PLATE ,	1,	1,	1512,	1536,	1510,	1399,	3,	0
1435, PLATE ,	1,	1,	1524,	1568,	1567,	1523,	3,	0
1436, PLATE ,	1,	1,	1520,	1564,	1563,	1519,	3,	0
1437, PLATE ,	1,	1,	1522,	1523,	1567,	1566,	3,	0
1438, PLATE ,	1,	1,	1414,	1413,	1549,	1550,	3,	0
1439, PLATE ,	1,	1,	1624,	1612,	1611,	1627,	3,	0
1440, PLATE ,	1,	1,	1605,	1607,	1537,	1538,	3,	0
1441, PLATE ,	1,	1,	1577,	1542,	1557,	1591,	3,	0
1442, PLATE ,	1,	1,	1601,	1567,	1568,	1602,	3,	0
1443, PLATE ,	1,	1,	1605,	1538,	1572,	1577,	3,	0
1444, PLATE ,	1,	1,	1591,	1557,	1556,	1590,	3,	0
1445, PLATE ,	1,	1,	1516,	1560,	1559,	1515,	3,	0
1446, PLATE ,	1,	1,	1627,	1611,	1610,	1622,	3,	0
1447, PLATE ,	1,	1,	1415,	1414,	1550,	1551,	3,	0
1448, PLATE ,	1,	1,	1411,	1547,	1548,	1412,	3,	0
1449, PLATE ,	1,	1,	1616,	1585,	1584,	1615,	3,	0
1450, PLATE ,	1,	1,	1622,	1592,	1593,	1627,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1451, PLATE ,	1,	1,	1587,	1553,	1552,	1586,	3,	0
1452, PLATE ,	1,	1,	1614,	1583,	1582,	1613,	3,	0
1453, PLATE ,	1,	1,	1613,	1582,	1581,	1612,	3,	0
1454, PLATE ,	1,	1,	1612,	1581,	1579,	1611,	3,	0
1455, PLATE ,	1,	1,	1610,	1580,	1576,	1608,	3,	0
1456, PLATE ,	1,	1,	1539,	1540,	1606,	1608,	3,	0
1457, PLATE ,	1,	1,	1583,	1549,	1548,	1582,	3,	0
1458, PLATE ,	1,	1,	1564,	1598,	1597,	1563,	3,	0
1459, PLATE ,	1,	1,	1620,	1589,	1588,	1619,	3,	0
1460, PLATE ,	1,	1,	1629,	1615,	1614,	1531,	3,	0
1461, PLATE ,	1,	1,	1566,	1567,	1601,	1600,	3,	0
1462, PLATE ,	1,	1,	1628,	1613,	1612,	1624,	3,	0
1463, PLATE ,	1,	1,	1550,	1549,	1583,	1584,	3,	0
1464, PLATE ,	1,	1,	1574,	1578,	1606,	1540,	3,	0
1465, PLATE ,	1,	1,	1529,	1618,	1617,	1625,	3,	0
1466, PLATE ,	1,	1,	1558,	1592,	1578,	1543,	3,	0
1467, PLATE ,	1,	1,	1558,	1559,	1593,	1592,	3,	0
1468, PLATE ,	1,	1,	1531,	1614,	1613,	1628,	3,	0
1469, PLATE ,	1,	1,	1569,	1603,	1602,	1568,	3,	0
1470, PLATE ,	1,	1,	1629,	1616,	1615,	0,	3,	0
1471, PLATE ,	1,	1,	1625,	1617,	1616,	0,	3,	0
1472, PLATE ,	1,	1,	1624,	1594,	1595,	0,	3,	0
1473, PLATE ,	1,	1,	1626,	1621,	1620,	0,	3,	0
1474, PLATE ,	1,	1,	1532,	1600,	1601,	0,	3,	0
1475, PLATE ,	1,	1,	1529,	1599,	1600,	0,	3,	0
1499, PLATE ,	1,	1,	2,	512,	1672,	986,	3,	0
1500, PLATE ,	1,	1,	986,	1672,	1673,	987,	3,	0
1501, PLATE ,	1,	1,	987,	1673,	1674,	988,	3,	0
1502, PLATE ,	1,	1,	988,	1674,	1675,	989,	3,	0
1503, PLATE ,	1,	1,	989,	1675,	1676,	990,	3,	0
1504, PLATE ,	1,	1,	990,	1676,	1677,	991,	3,	0
1505, PLATE ,	1,	1,	991,	1677,	1678,	992,	3,	0
1506, PLATE ,	1,	1,	992,	1678,	1679,	993,	3,	0
1507, PLATE ,	1,	1,	993,	1679,	1680,	994,	3,	0
1508, PLATE ,	1,	1,	994,	1680,	1681,	995,	3,	0
1509, PLATE ,	1,	1,	995,	1681,	1682,	996,	3,	0
1510, PLATE ,	1,	1,	996,	1682,	1683,	4,	3,	0
1511, PLATE ,	1,	1,	4,	1683,	1684,	715,	3,	0
1512, PLATE ,	1,	1,	715,	1684,	1685,	716,	3,	0
1513, PLATE ,	1,	1,	716,	1685,	1686,	717,	3,	0
1514, PLATE ,	1,	1,	717,	1686,	1687,	718,	3,	0
1515, PLATE ,	1,	1,	718,	1687,	1688,	719,	3,	0
1516, PLATE ,	1,	1,	719,	1688,	1664,	6,	3,	0
1517, PLATE ,	1,	1,	512,	511,	1689,	1672,	3,	0
1518, PLATE ,	1,	1,	1672,	1689,	1690,	1673,	3,	0
1519, PLATE ,	1,	1,	1673,	1690,	1691,	1674,	3,	0
1520, PLATE ,	1,	1,	1674,	1691,	1692,	1675,	3,	0
1521, PLATE ,	1,	1,	1675,	1692,	1693,	1676,	3,	0
1522, PLATE ,	1,	1,	1676,	1693,	1694,	1677,	3,	0
1523, PLATE ,	1,	1,	1677,	1694,	1695,	1678,	3,	0
1524, PLATE ,	1,	1,	1678,	1695,	1696,	1679,	3,	0
1525, PLATE ,	1,	1,	1679,	1696,	1697,	1680,	3,	0
1526, PLATE ,	1,	1,	1680,	1697,	1698,	1681,	3,	0
1527, PLATE ,	1,	1,	1681,	1698,	1699,	1682,	3,	0
1528, PLATE ,	1,	1,	1682,	1699,	1700,	1683,	3,	0
1529, PLATE ,	1,	1,	1683,	1700,	1701,	1684,	3,	0
1530, PLATE ,	1,	1,	1684,	1701,	1702,	1685,	3,	0
1531, PLATE ,	1,	1,	1685,	1702,	1703,	1686,	3,	0
1532, PLATE ,	1,	1,	1686,	1703,	1704,	1687,	3,	0
1533, PLATE ,	1,	1,	1687,	1704,	1705,	1688,	3,	0
1534, PLATE ,	1,	1,	1688,	1705,	1663,	1664,	3,	0
1535, PLATE ,	1,	1,	511,	99,	1645,	1689,	3,	0
1536, PLATE ,	1,	1,	1689,	1645,	1646,	1690,	3,	0
1537, PLATE ,	1,	1,	1690,	1646,	1647,	1691,	3,	0
1538, PLATE ,	1,	1,	1691,	1647,	1648,	1692,	3,	0
1539, PLATE ,	1,	1,	1692,	1648,	1649,	1693,	3,	0
1540, PLATE ,	1,	1,	1693,	1649,	1650,	1694,	3,	0
1541, PLATE ,	1,	1,	1694,	1650,	1651,	1695,	3,	0
1542, PLATE ,	1,	1,	1695,	1651,	1652,	1696,	3,	0
1543, PLATE ,	1,	1,	1696,	1652,	1653,	1697,	3,	0
1544, PLATE ,	1,	1,	1697,	1653,	1654,	1698,	3,	0
1545, PLATE ,	1,	1,	1698,	1654,	1655,	1699,	3,	0
1546, PLATE ,	1,	1,	1699,	1655,	1656,	1700,	3,	0
1547, PLATE ,	1,	1,	1700,	1656,	1657,	1701,	3,	0
1548, PLATE ,	1,	1,	1701,	1657,	1658,	1702,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1549, PLATE ,	1,	1,	1702,	1658,	1659,	1703,	3,	0
1550, PLATE ,	1,	1,	1703,	1659,	1660,	1704,	3,	0
1551, PLATE ,	1,	1,	1704,	1660,	1661,	1705,	3,	0
1552, PLATE ,	1,	1,	1705,	1661,	1402,	1663,	3,	0
1553, PLATE ,	1,	1,	99,	1713,	1756,	1645,	3,	0
1554, PLATE ,	1,	1,	1645,	1756,	1757,	1646,	3,	0
1555, PLATE ,	1,	1,	1646,	1757,	1758,	1647,	3,	0
1556, PLATE ,	1,	1,	1647,	1758,	1759,	1648,	3,	0
1557, PLATE ,	1,	1,	1648,	1759,	1760,	1649,	3,	0
1558, PLATE ,	1,	1,	1649,	1760,	1761,	1650,	3,	0
1559, PLATE ,	1,	1,	1650,	1761,	1762,	1651,	3,	0
1560, PLATE ,	1,	1,	1651,	1762,	1763,	1652,	3,	0
1561, PLATE ,	1,	1,	1652,	1763,	1764,	1653,	3,	0
1562, PLATE ,	1,	1,	1653,	1764,	1765,	1654,	3,	0
1563, PLATE ,	1,	1,	1654,	1765,	1766,	1655,	3,	0
1564, PLATE ,	1,	1,	1655,	1766,	1767,	1656,	3,	0
1565, PLATE ,	1,	1,	1656,	1767,	1768,	1657,	3,	0
1566, PLATE ,	1,	1,	1657,	1768,	1769,	1658,	3,	0
1567, PLATE ,	1,	1,	1658,	1769,	1770,	1659,	3,	0
1568, PLATE ,	1,	1,	1659,	1770,	1771,	1660,	3,	0
1569, PLATE ,	1,	1,	1660,	1771,	1772,	1661,	3,	0
1570, PLATE ,	1,	1,	1661,	1772,	1732,	1402,	3,	0
1571, PLATE ,	1,	1,	1713,	1712,	1773,	1756,	3,	0
1572, PLATE ,	1,	1,	1756,	1773,	1774,	1757,	3,	0
1573, PLATE ,	1,	1,	1757,	1774,	1775,	1758,	3,	0
1574, PLATE ,	1,	1,	1758,	1775,	1776,	1759,	3,	0
1575, PLATE ,	1,	1,	1759,	1776,	1777,	1760,	3,	0
1576, PLATE ,	1,	1,	1760,	1777,	1778,	1761,	3,	0
1577, PLATE ,	1,	1,	1761,	1778,	1779,	1762,	3,	0
1578, PLATE ,	1,	1,	1762,	1779,	1780,	1763,	3,	0
1579, PLATE ,	1,	1,	1763,	1780,	1781,	1764,	3,	0
1580, PLATE ,	1,	1,	1764,	1781,	1782,	1765,	3,	0
1581, PLATE ,	1,	1,	1765,	1782,	1783,	1766,	3,	0
1582, PLATE ,	1,	1,	1766,	1783,	1784,	1767,	3,	0
1583, PLATE ,	1,	1,	1767,	1784,	1785,	1768,	3,	0
1584, PLATE ,	1,	1,	1768,	1785,	1786,	1769,	3,	0
1585, PLATE ,	1,	1,	1769,	1786,	1787,	1770,	3,	0
1586, PLATE ,	1,	1,	1770,	1787,	1788,	1771,	3,	0
1587, PLATE ,	1,	1,	1771,	1788,	1789,	1772,	3,	0
1588, PLATE ,	1,	1,	1772,	1789,	1733,	1732,	3,	0
1589, PLATE ,	1,	1,	1712,	1711,	1790,	1773,	3,	0
1590, PLATE ,	1,	1,	1773,	1790,	1791,	1774,	3,	0
1591, PLATE ,	1,	1,	1774,	1791,	1792,	1775,	3,	0
1592, PLATE ,	1,	1,	1775,	1792,	1793,	1776,	3,	0
1593, PLATE ,	1,	1,	1776,	1793,	1794,	1777,	3,	0
1594, PLATE ,	1,	1,	1777,	1794,	1795,	1778,	3,	0
1595, PLATE ,	1,	1,	1778,	1795,	1796,	1779,	3,	0
1596, PLATE ,	1,	1,	1779,	1796,	1797,	1780,	3,	0
1597, PLATE ,	1,	1,	1780,	1797,	1798,	1781,	3,	0
1598, PLATE ,	1,	1,	1781,	1798,	1799,	1782,	3,	0
1599, PLATE ,	1,	1,	1782,	1799,	1800,	1783,	3,	0
1600, PLATE ,	1,	1,	1783,	1800,	1801,	1784,	3,	0
1601, PLATE ,	1,	1,	1784,	1801,	1802,	1785,	3,	0
1602, PLATE ,	1,	1,	1785,	1802,	1803,	1786,	3,	0
1603, PLATE ,	1,	1,	1786,	1803,	1804,	1787,	3,	0
1604, PLATE ,	1,	1,	1787,	1804,	1805,	1788,	3,	0
1605, PLATE ,	1,	1,	1788,	1805,	1806,	1789,	3,	0
1606, PLATE ,	1,	1,	1789,	1806,	1734,	1733,	3,	0
1607, PLATE ,	1,	1,	1711,	1710,	1807,	1790,	3,	0
1608, PLATE ,	1,	1,	1790,	1807,	1808,	1791,	3,	0
1609, PLATE ,	1,	1,	1791,	1808,	1809,	1792,	3,	0
1610, PLATE ,	1,	1,	1792,	1809,	1810,	1793,	3,	0
1611, PLATE ,	1,	1,	1793,	1810,	1811,	1794,	3,	0
1612, PLATE ,	1,	1,	1794,	1811,	1812,	1795,	3,	0
1613, PLATE ,	1,	1,	1795,	1812,	1813,	1796,	3,	0
1614, PLATE ,	1,	1,	1796,	1813,	1814,	1797,	3,	0
1615, PLATE ,	1,	1,	1797,	1814,	1815,	1798,	3,	0
1616, PLATE ,	1,	1,	1798,	1815,	1816,	1799,	3,	0
1617, PLATE ,	1,	1,	1799,	1816,	1817,	1800,	3,	0
1618, PLATE ,	1,	1,	1800,	1817,	1818,	1801,	3,	0
1619, PLATE ,	1,	1,	1801,	1818,	1819,	1802,	3,	0
1620, PLATE ,	1,	1,	1802,	1819,	1820,	1803,	3,	0
1621, PLATE ,	1,	1,	1803,	1820,	1821,	1804,	3,	0
1622, PLATE ,	1,	1,	1804,	1821,	1822,	1805,	3,	0
1623, PLATE ,	1,	1,	1805,	1822,	1823,	1806,	3,	0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1624, PLATE , 1, 1, 1806, 1823, 1735, 1734, 3, 0
1625, PLATE , 1, 1, 1710, 1709, 1824, 1807, 3, 0
1626, PLATE , 1, 1, 1807, 1824, 1825, 1808, 3, 0
1627, PLATE , 1, 1, 1808, 1825, 1826, 1809, 3, 0
1628, PLATE , 1, 1, 1809, 1826, 1827, 1810, 3, 0
1629, PLATE , 1, 1, 1810, 1827, 1828, 1811, 3, 0
1630, PLATE , 1, 1, 1811, 1828, 1829, 1812, 3, 0
1631, PLATE , 1, 1, 1812, 1829, 1830, 1813, 3, 0
1632, PLATE , 1, 1, 1813, 1830, 1831, 1814, 3, 0
1633, PLATE , 1, 1, 1814, 1831, 1832, 1815, 3, 0
1634, PLATE , 1, 1, 1815, 1832, 1833, 1816, 3, 0
1635, PLATE , 1, 1, 1816, 1833, 1834, 1817, 3, 0
1636, PLATE , 1, 1, 1817, 1834, 1835, 1818, 3, 0
1637, PLATE , 1, 1, 1818, 1835, 1836, 1819, 3, 0
1638, PLATE , 1, 1, 1819, 1836, 1837, 1820, 3, 0
1639, PLATE , 1, 1, 1820, 1837, 1838, 1821, 3, 0
1640, PLATE , 1, 1, 1821, 1838, 1839, 1822, 3, 0
1641, PLATE , 1, 1, 1822, 1839, 1840, 1823, 3, 0
1642, PLATE , 1, 1, 1823, 1840, 1736, 1735, 3, 0
1643, PLATE , 1, 1, 1709, 1708, 1841, 1824, 3, 0
1644, PLATE , 1, 1, 1824, 1841, 1842, 1825, 3, 0
1645, PLATE , 1, 1, 1825, 1842, 1843, 1826, 3, 0
1646, PLATE , 1, 1, 1826, 1843, 1844, 1827, 3, 0
1647, PLATE , 1, 1, 1827, 1844, 1845, 1828, 3, 0
1648, PLATE , 1, 1, 1828, 1845, 1846, 1829, 3, 0
1649, PLATE , 1, 1, 1829, 1846, 1847, 1830, 3, 0
1650, PLATE , 1, 1, 1830, 1847, 1848, 1831, 3, 0
1651, PLATE , 1, 1, 1831, 1848, 1849, 1832, 3, 0
1652, PLATE , 1, 1, 1832, 1849, 1850, 1833, 3, 0
1653, PLATE , 1, 1, 1833, 1850, 1851, 1834, 3, 0
1654, PLATE , 1, 1, 1834, 1851, 1852, 1835, 3, 0
1655, PLATE , 1, 1, 1835, 1852, 1853, 1836, 3, 0
1656, PLATE , 1, 1, 1836, 1853, 1854, 1837, 3, 0
1657, PLATE , 1, 1, 1837, 1854, 1855, 1838, 3, 0
1658, PLATE , 1, 1, 1838, 1855, 1856, 1839, 3, 0
1659, PLATE , 1, 1, 1839, 1856, 1857, 1840, 3, 0
1660, PLATE , 1, 1, 1840, 1857, 1737, 1736, 3, 0
1661, PLATE , 1, 1, 1708, 1398, 1755, 1841, 3, 0
1662, PLATE , 1, 1, 1841, 1755, 1754, 1842, 3, 0
1663, PLATE , 1, 1, 1842, 1754, 1753, 1843, 3, 0
1664, PLATE , 1, 1, 1843, 1753, 1752, 1844, 3, 0
1665, PLATE , 1, 1, 1844, 1752, 1751, 1845, 3, 0
1666, PLATE , 1, 1, 1845, 1751, 1750, 1846, 3, 0
1667, PLATE , 1, 1, 1846, 1750, 1749, 1847, 3, 0
1668, PLATE , 1, 1, 1847, 1749, 1748, 1848, 3, 0
1669, PLATE , 1, 1, 1848, 1748, 1747, 1849, 3, 0
1670, PLATE , 1, 1, 1849, 1747, 1746, 1850, 3, 0
1671, PLATE , 1, 1, 1850, 1746, 1745, 1851, 3, 0
1672, PLATE , 1, 1, 1851, 1745, 1744, 1852, 3, 0
1673, PLATE , 1, 1, 1852, 1744, 1743, 1853, 3, 0
1674, PLATE , 1, 1, 1853, 1743, 1742, 1854, 3, 0
1675, PLATE , 1, 1, 1854, 1742, 1741, 1855, 3, 0
1676, PLATE , 1, 1, 1855, 1741, 1740, 1856, 3, 0
1677, PLATE , 1, 1, 1856, 1740, 1739, 1857, 3, 0
1678, PLATE , 1, 1, 1857, 1739, 1400, 1737, 3, 0
1679, BEAM , 1, 1, 1394, 1858, 0, 0
1680, BEAM , 1, 1, 1395, 1859, 0, 0
1681, BEAM , 1, 1, 1396, 1860, 0, 0

*GROUP ; Group

; NAME, NODE_LIST, ELEM_LIST, PLANE_TYPE

VASTAGO , 1to6 102to107 123 149 175 205 206 231 232 251 265 380to397 \
682to713 715to719 721to752 754to918 986to996 999to1366, 617to1217, 0
ZARPA , 1 2 98to188 205to214 231to240 249 251to254 265to268 287to294 \
316to347 353 354 358 359 380to459 478to509 511 512 514 515 563to624 627 \
636to638 643 650to652 664to666 678to680, 183to538, 0
ALETAIZQ , 1 3 5 98 514 515 754to758 999to1009 1397 1399 1401 1404 1405 \
1407to1423 1445to1478 1497to1502 1505to1510 1512to1629, 1275to1328 \
1348to1475, 0
ALETA DER , 2 4 6 99 511 512 715to719 986to996 1398 1400 1402 1645to1661 \
1663 1664 1672to1705 1708to1713 1732to1737 1739to1857, 1499to1678, 0
ptos carga, 685 693 701 710, , 0
pilotes , , 1218to1247, 0

*MATERIAL ; Material

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

```
; IMAT, TYPE, MNAME, SPHEAT, HEATCO, PLAST, TUNIT, bMASS, DAMPRATIO, [DATA1] ; STEEL, CONC, USER
; IMAT, TYPE, MNAME, SPHEAT, HEATCO, PLAST, TUNIT, bMASS, DAMPRATIO, [DATA2], [DATA2] ; SRC
; [DATA1] : 1, STANDARD, CODE/PRODUCT, DB, USEELAST, ELAST
; [DATA1] : 2, ELAST, POISN, THERMAL, DEN, MASS
; [DATA1] : 3, Ex, Ey, Ez, Tx, Ty, Tz, Sxy, Sxz, Syz, Pxy, Pxz, Pyz, DEN, MASS ; Orthotropic
; [DATA2] : 1, STANDARD, CODE/PRODUCT, DB, USEELAST, ELAST or 2, ELAST, POISN, THERMAL, DEN, MASS
; 1, CONC , Grade C4000 , 0, 0, , C, NO, 0.05, 1, ASTM(RC) , , Grade C4000 , NO, 2.56209e+006
; 2, CONC , Grade C5000 , 0, 0, , C, NO, 0.05, 1, ASTM(RC) , , Grade C5000 , NO, 2.8645e+006
```

*MATL-COLOR

```
; IMAT, W_R, W_G, W_B, HF_R, HF_G, HF_B, HE_R, HE_G, HE_B, bBLEND, FACT
; 1, 255, 0, 0, 0, 255, 0, 0, 0, 255, NO, 0.5
; 2, 255, 0, 0, 0, 255, 0, 0, 0, 255, NO, 0.5
```

*SECTION ; Section

```
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, [DATA1], [DATA2] ; 1st line - DB/USER
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, BLT, D1, ..., D8, iCEL ; 1st line - VALUE
; AREA, ASy, ASz, Ixx, Iyy, Izz ; 2nd line
; CyP, CyM, CzP, CzM, QyB, QzB, PERI_OUT, PERI_IN, Cy, Cz ; 3rd line
; Y1, Y2, Y3, Y4, Z1, Z2, Z3, Z4, Zyy, Zzz ; 4th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, ELAST, DEN, POIS, POIC, SF, THERMAL ; 1st line - SRC
; D1, D2, [SRC] ; 2nd line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, 1, DB, NAME1, NAME2, D1, D2 ; 1st line - COMBINED
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, 2, D11, D12, D13, D14, D15, D21, D22, D23, D24
; ISEC, TYPE, SNAME, [OFFSET2], bSD, bWE, SHAPE, iyVAR, izVAR, STYPE ; 1st line - TAPERED
; DB, NAME1, NAME2 ; 2nd line(STYPE=DB)
; [DIM1], [DIM2] ; 2nd line(STYPE=USER)
; D11, D12, D13, D14, D15, D16, D17, D18 ; 2nd line(STYPE=VALUE)
; AREA1, ASy1, ASz1, Ixx1, Iyy1, Izz1 ; 3rd line(STYPE=VALUE)
; CyP1, CyM1, CzP1, CzM1, QyB1, QzB1, PERI_OUT1, PERI_IN1, Cy1, Cz1 ; 4th line(STYPE=VALUE)
; Y11, Y12, Y13, Y14, Z11, Z12, Z13, Z14, Zyy1, Zyy2 ; 5th line(STYPE=VALUE)
; D21, D22, D23, D24, D25, D26, D27, D28 ; 6th line(STYPE=VALUE)
; AREA2, ASy2, ASz2, Ixx2, Iyy2, Izz2 ; 7th line(STYPE=VALUE)
; CyP2, CyM2, CzP2, CzM2, QyB2, QzB2, PERI_OUT2, PERI_IN2, Cy2, Cz2 ; 8th line(STYPE=VALUE)
; Y21, Y22, Y23, Y24, Z21, Z22, Z23, Z24, Zyy2, Zzz2 ; 9th line(STYPE=VALUE)
; OPT1, OPT2, [JOINT] ; 2nd line(STYPE=PSC)
; ELAST, DEN, POIS, POIC, THERMAL ; 2nd line(STYPE=PSC-CMPW)
; bSHEARCHK, [SCHK-I], [SCHK-J], [WT-I], [WT-J], WI, WJ, bSYM, bSIDEHOLE ; 3rd line(STYPE=PSC)
; bSHEARCHK, bSYM, bHUNCH, [CMPWEB-I], [CMPWEB-J] ; 3rd line(STYPE=PSC-CMPW)
; bUSERDEFMESH SIZE, MESH SIZE, bUSERINPSTIFF, [STIFF-I], [STIFF-J] ; 4th line(STYPE=PSC)
; [SIZE-A]-i ; 5th line(STYPE=PSC)
; [SIZE-B]-i ; 6th line(STYPE=PSC)
; [SIZE-C]-i ; 7th line(STYPE=PSC)
; [SIZE-D]-i ; 8th line(STYPE=PSC)
; [SIZE-A]-j ; 9th line(STYPE=PSC)
; [SIZE-B]-j ; 10th line(STYPE=PSC)
; [SIZE-C]-j ; 11th line(STYPE=PSC)
; [SIZE-D]-j ; 12th line(STYPE=PSC)
; GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, bMULTI, EsEc-L, EsEc-S ; 2nd line(STYPE=CMP-B/I)
; SW_i, Hw_i, tw_i, B_i, Bf1_i, tf1_i, B2_i, Bf2_i, tf2_i ; 3rd line(STYPE=CMP-B/I)
; SW_j, Hw_j, tw_j, B_j, Bf1_j, tf1_j, B2_j, Bf2_j, tf2_j ; 4th line(STYPE=CMP-B/I)
; N1, N2, Hr, Hr2, tr1, tr2 ; 5th line(STYPE=CMP-B)
; GN, CTC, Bc, Tc, Hh, EgdEsb, DgdDsb, Pgd, Psb, bSYM, SW_i, SW_j ; 2nd line(STYPE=CMP-CI/CT)
; OPT1, OPT2, [JOINT] ; 3rd line(STYPE=CMP-CI/CT)
; [SIZE-A]-i ; 4th line(STYPE=CMP-CI/CT)
; [SIZE-B]-i ; 5th line(STYPE=CMP-CI/CT)
; [SIZE-C]-i ; 6th line(STYPE=CMP-CI/CT)
; [SIZE-D]-i ; 7th line(STYPE=CMP-CI/CT)
; [SIZE-A]-j ; 8th line(STYPE=CMP-CI/CT)
; [SIZE-B]-j ; 9th line(STYPE=CMP-CI/CT)
; [SIZE-C]-j ; 10th line(STYPE=CMP-CI/CT)
; [SIZE-D]-j ; 11th line(STYPE=CMP-CI/CT)
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, STYPE1, STYPE2 ; 1st line - CONSTRUCT
; SHAPE, ...(same with other type data from shape) ; Before (STYPE1)
; SHAPE, ...(same with other type data from shape) ; After (STYPE2)
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-B
; Hw, tw, B1, Bf1, tf1, B2, Bf2, tf2 ; 2nd line
; [SHAPE-NUM], [STIFF-SHAPE], [STIFF-POS] (1~4) ; 3rd line
; SW, GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, TsTc, bMulti, Elong, Esh ; 4th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-I
; Hw, tw, B1, tf1, B2, tf2 ; 2nd line
; [SHAPE-NUM], [STIFF-SHAPE], [STIFF-POS] (1~2) ; 3rd line
; SW, GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, TsTc, bMulti, Elong, Esh ; 4th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-TUB
```

```

; Hw, tw, B1, Bf1, tf1, B2, Bf2, tf2, Bf3, tfp ; 2nd line
; [SHAPE-NUM], [STIFF-SHAPE], [STIFF-POS] (1~3) ; 3rd line
; SW, GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, TsTc, bMulti, Elong, Esh ; 4th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-CI/CT
; OPT1, OPT2, [JOINT] ; 2nd line
; [SIZE-A] ; 3rd line
; [SIZE-B] ; 4th line
; [SIZE-C] ; 5th line
; [SIZE-D] ; 6th line
; SW, GN, CTC, Bc, Tc, Hh, EgdEsb, DgdDsb, Pgd, Psb ; 7th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - PSC
; OPT1, OPT2, [JOINT] ; 2nd line
; bSHEARCHK, [SCHK], [WT], WIDTH, bSYM, bSIDEHOLE ; 3rd line
; bUSERDEFMESH SIZE, MESH SIZE, bUSERINPSTIFF, [STIFF] ; 4th line
; bWE, [WARPING POINT]-i, [WARPING POINT]-j ; 5th line
; [SIZE-A] ; 6th line
; [SIZE-B] ; 7th line
; [SIZE-C] ; 8th line
; [SIZE-D] ; 9th line
; [DATA1] : 1, DB, NAME or 2, D1, D2, D3, D4, D5, D6, D7, D8, D9, D10
; [DATA2] : CCSHAPE or iCEL or iN1, iN2
; [SRC] : 1, DB, NAME1, NAME2 or 2, D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, iN1, iN2
; [DIM1], [DIM2] : D1, D2, D3, D4, D5, D6, D7, D8
; [OFFSET] : OFFSET, iCENT, iREF, iHORZ, HUSER, iVERT, VUSER
; [OFFSET2]: OFFSET, iCENT, iREF, iHORZ, HUSERI, HUSERJ, iVERT, VUSERI, VUSERJ
; [SHAPE-NUM]: SHAPE-NUM, POS, STIFF-NUM1, STIFF-NUM2, STIFF-NUM3, STIFF-NUM4
; [STIFF-SHAPE]: SHAPE-NUM, for(SHAPE-NUM) { NAME, SIZE1~8 }
; [STIFF-POS]: STIFF-NUM, for(STIFF-NUM) { SPACING, iSHAPE, bCALC }
; [JOINT] : 8(1CELL, 2CELL), 13(3CELL), 9(PSCM), 8(PSCH), 9(PSCT), 2(PSCB), 0(nCELL), 2(nCEL2)
; [SIZE-A] : 6(1CELL, 2CELL), 10(3CELL), 10(PSCM), 6(PSCH), 8(PSCT), 10(PSCB), 5(nCELL), 11(nCEL2)
; [SIZE-B] : 6(1CELL, 2CELL), 12(3CELL), 6(PSCM), 6(PSCH), 8(PSCT), 6(PSCB), 8(nCELL), 18(nCEL2)
; [SIZE-C] : 10(1CELL, 2CELL), 13(3CELL), 9(PSCM), 10(PSCH), 7(PSCT), 8(PSCB), 0(nCELL), 11(nCEL2)
; [SIZE-D] : 8(1CELL, 2CELL), 13(3CELL), 6(PSCM), 7(PSCH), 8(PSCT), 5(PSCB), 0(nCELL), 18(nCEL2)
; [STIFF] : AREA, ASy, ASz, Ixx, Iyy, Izz
; [SCHK] : bAUTO_Z1, Z1, bAUTO_Z3, Z3
; [WT] : bAUTO_TOR, TOR, bAUTO_SHR1, SHR1, bAUTO_SHR2, SHR2, bAUTO_SHR3, SHR3
; [CMPWEB] : EFD, LRF, A, B, H, T
; [WARPING POINT] : nWarpingCheck, X1,X2,X3,X4,X5,X6, Y1,Y2,Y3,Y4,Y5,Y6
; 1, DBUSER , c120 , CC, 0, 0, 0, 0, 0, YES, NO, SR , 2, 1.2, 0, 0, 0, 0, 0, 0, 0, 0
; 2, DBUSER , temp , CC, 0, 0, 0, 0, 0, YES, NO, SB , 2, 0.01, 0.01, 0, 0, 0, 0, 0, 0, 0, 0

*SECT-COLOR
; ISEC, W_R, W_G, W_B, HF_R, HF_G, HF_B, HE_R, HE_G, HE_B, bBLEND, FACT
; 1, 115, 0, 0, 255, 87, 87, 115, 0, 0, NO, 0.5
; 2, 96, 0, 96, 255, 160, 255, 96, 0, 96, NO, 0.5

*DGN-SECT
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, [DATA1], [DATA2] ; 1st line - DB/USER
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, BLT, D1, ..., D8, iCEL ; 1st line - VALUE
; AREA, ASy, ASz, Ixx, Iyy, Izz ; 2nd line
; CyP, CyM, CzP, CzM, QyB, QzB, PERI_OUT, PERI_IN, Cy, Cz ; 3rd line
; Y1, Y2, Y3, Y4, Z1, Z2, Z3, Z4, Zyy, Zzz ; 4th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, ELAST, DEN, POIS, POIC, SF, THERMAL ; 1st line - SRC
; D1, D2, [SRC] ; 2nd line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, 1, DB, NAME1, NAME2, D1, D2 ; 1st line - COMBINED
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE, 2, D11, D12, D13, D14, D15, D21, D22, D23, D24
; ISEC, TYPE, SNAME, [OFFSET2], bSD, bWE, SHAPE, iyVAR, izVAR, STYPE ; 1st line - TAPERED
; DB, NAME1, NAME2 ; 2nd line(STYPE=DB)
; [DIM1], [DIM2] ; 2nd line(STYPE=USER)
; D11, D12, D13, D14, D15, D16, D17, D18 ; 2nd line(STYPE=VALUE)
; AREA1, ASy1, ASz1, Ixx1, Iyy1, Izz1 ; 3rd line(STYPE=VALUE)
; CyP1, CyM1, CzP1, CzM1, QyB1, QzB1, PERI_OUT1, PERI_IN1, Cy1, Cz1 ; 4th line(STYPE=VALUE)
; Y11, Y12, Y13, Y14, Z11, Z12, Z13, Z14, Zyy1, Zyy2 ; 5th line(STYPE=VALUE)
; D21, D22, D23, D24, D25, D26, D27, D28 ; 6th line(STYPE=VALUE)
; AREA2, ASy2, ASz2, Ixx2, Iyy2, Izz2 ; 7th line(STYPE=VALUE)
; CyP2, CyM2, CzP2, CzM2, QyB2, QzB2, PERI_OUT2, PERI_IN2, Cy2, Cz2 ; 8th line(STYPE=VALUE)
; Y21, Y22, Y23, Y24, Z21, Z22, Z23, Z24, Zyy2, Zzz2 ; 9th line(STYPE=VALUE)
; OPT1, OPT2, [JOINT] ; 2nd line(STYPE=PSC)
; ELAST, DEN, POIS, POIC, THERMAL ; 2nd line(STYPE=PSC-CMPW)
; bSHEARCHK, [SCHK-I], [SCHK-J], [WT-I], [WT-J], WI, WJ, bSYM, bSIDEHOLE ; 3rd line(STYPE=PSC)
; bSHEARCHK, bSYM, bHUNCH, [CMPWEB-I], [CMPWEB-J] ; 3rd line(STYPE=PSC-CMPW)
; bUSERDEFMESH SIZE, MESH SIZE, bUSERINPSTIFF, [STIFF-I], [STIFF-J] ; 4th line(STYPE=PSC)
; [SIZE-A]-i ; 5th line(STYPE=PSC)
; [SIZE-B]-i ; 6th line(STYPE=PSC)
; [SIZE-C]-i ; 7th line(STYPE=PSC)

```

```

; [SIZE-D]-i ; 8th line(STYPE=PSC)
; [SIZE-A]-j ; 9th line(STYPE=PSC)
; [SIZE-B]-j ; 10th line(STYPE=PSC)
; [SIZE-C]-j ; 11th line(STYPE=PSC)
; [SIZE-D]-j ; 12th line(STYPE=PSC)
; GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, bMULTI, EsEc-L, EsEc-S ; 2nd line(STYPE=CMP-B/I)
; SW_i, Hw_i, tw_i, B_i, Bf1_i, tf1_i, B2_i, Bf2_i, tf2_i ; 3rd line(STYPE=CMP-B/I)
; SW_j, Hw_j, tw_j, B_j, Bf1_j, tf1_j, B2_j, Bf2_j, tf2_j ; 4th line(STYPE=CMP-B/I)
; N1, N2, Hr, Hr2, tr1, tr2 ; 5th line(STYPE=CMP-B)
; GN, CTC, Bc, Tc, Hh, EgdEsb, DgdDsb, Pgd, Psb, bSYM, SW_i, SW_j ; 2nd line(STYPE=CMP-CI/CT)
; OPT1, OPT2, [JOINT] ; 3rd line(STYPE=CMP-CI/CT)
; [SIZE-A]-i ; 4th line(STYPE=CMP-CI/CT)
; [SIZE-B]-i ; 5th line(STYPE=CMP-CI/CT)
; [SIZE-C]-i ; 6th line(STYPE=CMP-CI/CT)
; [SIZE-D]-i ; 7th line(STYPE=CMP-CI/CT)
; [SIZE-A]-j ; 8th line(STYPE=CMP-CI/CT)
; [SIZE-B]-j ; 9th line(STYPE=CMP-CI/CT)
; [SIZE-C]-j ; 10th line(STYPE=CMP-CI/CT)
; [SIZE-D]-j ; 11th line(STYPE=CMP-CI/CT)
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, STYPE1, STYPE2 ; 1st line - CONSTRUCT
; SHAPE, ...(same with other type data from shape) ; Before (STYPE1)
; SHAPE, ...(same with other type data from shape) ; After (STYPE2)
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-B
; Hw, tw, B1, Bf1, tf1, B2, Bf2, tf2 ; 2nd line
; [SHAPE-NUM], [STIFF-SHAPE], [STIFF-POS] (1~4) ; 3rd line
; SW, GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, TsTc, bMulti, Elong, Esh ; 4th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-I
; Hw, tw, B1, tf1, B2, tf2 ; 2nd line
; [SHAPE-NUM], [STIFF-SHAPE], [STIFF-POS] (1~2) ; 3rd line
; SW, GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, TsTc, bMulti, Elong, Esh ; 4th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-TUB
; Hw, tw, B1, Bf1, tf1, B2, Bf2, tf2, Bf3, tfp ; 2nd line
; [SHAPE-NUM], [STIFF-SHAPE], [STIFF-POS] (1~3) ; 3rd line
; SW, GN, CTC, Bc, Tc, Hh, EsEc, DsDc, Ps, Pc, TsTc, bMulti, Elong, Esh ; 4th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - COMPOSITE-CI/CT
; OPT1, OPT2, [JOINT] ; 2nd line
; [SIZE-A] ; 3rd line
; [SIZE-B] ; 4th line
; [SIZE-C] ; 5th line
; [SIZE-D] ; 6th line
; SW, GN, CTC, Bc, Tc, Hh, EgdEsb, DgdDsb, Pgd, Psb ; 7th line
; ISEC, TYPE, SNAME, [OFFSET], bSD, bWE, SHAPE ; 1st line - PSC
; OPT1, OPT2, [JOINT] ; 2nd line
; bSHEARCHK, [SCHK], [WT], WIDTH, bSYM, bSIDEHOLE ; 3rd line
; bUSERDEFMESH SIZE, MESH SIZE, bUSERINPSTIFF, [STIFF] ; 4th line
; bWE, [WARPING POINT]-i, [WARPING POINT]-j ; 5th line
; [SIZE-A] ; 6th line
; [SIZE-B] ; 7th line
; [SIZE-C] ; 8th line
; [SIZE-D] ; 9th line
; [DATA1] : 1, DB, NAME or 2, D1, D2, D3, D4, D5, D6, D7, D8, D9, D10
; [DATA2] : CCSHAPE or iCEL or iN1, iN2
; [SRC] : 1, DB, NAME1, NAME2 or 2, D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, iN1, iN2
; [DIM1], [DIM2] : D1, D2, D3, D4, D5, D6, D7, D8
; [OFFSET] : OFFSET, iCENT, iREF, iHORZ, HUSER, iVERT, VUSER
; [OFFSET2]: OFFSET, iCENT, iREF, iHORZ, HUSERI, HUSERJ, iVERT, VUSERI, VUSERJ
; [SHAPE-NUM]: SHAPE-NUM, POS, STIFF-NUM1, STIFF-NUM2, STIFF-NUM3, STIFF-NUM4
; [STIFF-SHAPE]: SHAPE-NUM, for(SHAPE-NUM) { NAME, SIZE1~8 }
; [STIFF-POS]: STIFF-NUM, for(STIFF-NUM) { SPACING, iSHAPE, bCALC }
; [JOINT] : 8(1CELL, 2CELL), 13(3CELL), 9(PSCM), 8(PSCH), 9(PSCT), 2(PSCB), 0(nCELL), 2(nCEL2)
; [SIZE-A] : 6(1CELL, 2CELL), 10(3CELL), 10(PSCM), 6(PSCH), 8(PSCT), 10(PSCB), 5(nCELL), 11(nCEL2)
; [SIZE-B] : 6(1CELL, 2CELL), 12(3CELL), 6(PSCM), 6(PSCH), 8(PSCT), 6(PSCB), 8(nCELL), 18(nCEL2)
; [SIZE-C] : 10(1CELL, 2CELL), 13(3CELL), 9(PSCM), 10(PSCH), 7(PSCT), 8(PSCB), 0(nCELL), 11(nCEL2)
; [SIZE-D] : 8(1CELL, 2CELL), 13(3CELL), 6(PSCM), 7(PSCH), 8(PSCT), 5(PSCB), 0(nCELL), 18(nCEL2)
; [STIFF] : AREA, ASy, ASz, Ixx, Iyy, Izz
; [SCHK] : bAUTO_Z1, Z1, bAUTO_Z3, Z3
; [WT] : bAUTO_TOR, TOR, bAUTO_SHR1, SHR1, bAUTO_SHR2, SHR2, bAUTO_SHR3, SHR3
; [CMPWEB] : EFD, LRF, A, B, H, T
; [WARPING POINT] : nWarpingCheck, X1,X2,X3,X4,X5,X6, Y1,Y2,Y3,Y4,Y5,Y6
; 1, DBUSER , c120 , CC, 0, 0, 0, 0, 0, 0, YES, NO, SR , 2, 1.2, 0, 0, 0, 0, 0, 0, 0, 0
; 2, DBUSER , temp , CC, 0, 0, 0, 0, 0, 0, YES, NO, SB , 2, 0.01, 0.01, 0, 0, 0, 0, 0, 0, 0, 0

```

*THICKNESS ; Thickness

; iTHK, NAME, TYPE, bSAME, THIK-IN, THIK-OUT, bOFFSET, OFFTYPE, VALUE ; TYPE=VALUE

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

```
; iTHK, TYPE, SUBTYPE, RPOS, WEIGHT          ; TYPE=STIFFENED, SUBTYPE=VALUE
;   SHAPE, THIK-IN, THIK-OUT, HU, HL          ;   for yz section
;   SHAPE, THIK-IN, THIK-OUT, HU, HL          ;   for xz section
; iTHK, TYPE, SUBTYPE, RPOS, PLATETHIK        ; TYPE=STIFFENED, SUBTYPE=USER
;   bRIB {, SHAPE, DIST, SIZE1, SIZE2, ..., SIZE6} ;   for yz section
;   bRIB {, SHAPE, DIST, SIZE2, SIZE2, ..., SIZE6} ;   for xz section
; iTHK, TYPE, SUBTYPE, RPOS, PLATETHIK, DBNAME ; TYPE=STIFFENED, SUBTYPE=DB
;   bRIB {, SHAPE, DIST, SNAME}                ;   for yz section
;   bRIB {, SHAPE, DIST, SNAME}                ;   for xz section
1, VALUE, 1, YES, 0.3, 0, NO, 0, 0
2, VALUE, 2, YES, 0.5, 0, NO, 0, 0
3, VALUE, 3, YES, 1.1, 0, NO, 0, 0
```

```
*THIK-COLOR
; iTHK, W_R, W_G, W_B, HF_R, HF_G, HF_B, HE_R, HE_G, HE_B, bBLEND, FACT
1, 65, 165, 65, 192, 192, 192, 65, 165, 65, NO, 0.5
2, 85, 0, 57, 192, 0, 128, 85, 0, 57, NO, 0.5
3, 121, 0, 91, 255, 0, 192, 121, 0, 91, NO, 0.5
```

```
*DOMAIN-ELEMENT ; Domain Element
; iKEY, iTYPE, iDOMAIN, MADONAME
```

```
183, 0, 1, 1
184, 0, 1, 1
185, 0, 1, 1
186, 0, 1, 1
187, 0, 1, 1
188, 0, 1, 1
189, 0, 1, 1
190, 0, 1, 1
191, 0, 1, 1
192, 0, 1, 1
193, 0, 1, 1
194, 0, 1, 1
195, 0, 1, 1
196, 0, 1, 1
197, 0, 1, 1
198, 0, 1, 1
199, 0, 1, 1
200, 0, 1, 1
201, 0, 1, 1
202, 0, 1, 1
203, 0, 1, 1
204, 0, 1, 1
205, 0, 1, 1
206, 0, 1, 1
207, 0, 1, 1
208, 0, 1, 1
209, 0, 1, 1
210, 0, 1, 1
211, 0, 1, 1
212, 0, 1, 1
213, 0, 1, 1
214, 0, 1, 1
215, 0, 1, 1
216, 0, 1, 1
217, 0, 1, 1
218, 0, 1, 1
219, 0, 1, 1
220, 0, 1, 1
221, 0, 1, 1
222, 0, 1, 1
223, 0, 1, 1
224, 0, 1, 1
225, 0, 1, 1
226, 0, 1, 1
227, 0, 1, 1
228, 0, 1, 1
229, 0, 1, 1
230, 0, 1, 1
231, 0, 1, 1
232, 0, 1, 1
233, 0, 1, 1
234, 0, 1, 1
235, 0, 1, 1
236, 0, 1, 1
```

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

237, 0, 1, 1
238, 0, 1, 1
239, 0, 1, 1
240, 0, 1, 1
241, 0, 1, 1
242, 0, 1, 1
243, 0, 1, 1
244, 0, 1, 1
245, 0, 1, 1
246, 0, 1, 1
247, 0, 1, 1
248, 0, 1, 1
249, 0, 1, 1
250, 0, 1, 1
251, 0, 1, 1
252, 0, 1, 1
253, 0, 1, 1
254, 0, 1, 1
255, 0, 1, 1
256, 0, 1, 1
257, 0, 1, 1
258, 0, 1, 1
259, 0, 1, 1
260, 0, 1, 1
261, 0, 1, 1
262, 0, 1, 1
263, 0, 1, 1
264, 0, 1, 1
265, 0, 1, 1
266, 0, 1, 1
267, 0, 1, 1
268, 0, 1, 1
269, 0, 1, 1
270, 0, 1, 1
271, 0, 1, 1
272, 0, 1, 1
273, 0, 1, 1
274, 0, 1, 1
275, 0, 1, 1
276, 0, 1, 1
277, 0, 1, 1
278, 0, 1, 1
279, 0, 1, 1
280, 0, 1, 1
281, 0, 1, 1
282, 0, 1, 1
283, 0, 1, 1
284, 0, 1, 1
285, 0, 1, 1
286, 0, 1, 1
287, 0, 1, 1
288, 0, 1, 1
289, 0, 1, 1
290, 0, 1, 1
291, 0, 1, 1
292, 0, 1, 1
293, 0, 1, 1
294, 0, 1, 1
295, 0, 1, 1
296, 0, 1, 1
297, 0, 1, 1
298, 0, 1, 1
299, 0, 1, 1
300, 0, 1, 1
301, 0, 1, 1
302, 0, 1, 1
303, 0, 1, 1
304, 0, 1, 1
305, 0, 1, 1
306, 0, 1, 1
307, 0, 1, 1
308, 0, 1, 1
309, 0, 1, 1
310, 0, 1, 1
311, 0, 1, 1

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

312, 0, 1, 1
313, 0, 1, 1
314, 0, 1, 1
315, 0, 1, 1
316, 0, 1, 1
317, 0, 1, 1
318, 0, 1, 1
319, 0, 1, 1
320, 0, 1, 1
321, 0, 1, 1
322, 0, 1, 1
323, 0, 1, 1
324, 0, 1, 1
325, 0, 1, 1
326, 0, 1, 1
327, 0, 1, 1
328, 0, 1, 1
329, 0, 1, 1
330, 0, 1, 1
331, 0, 1, 1
332, 0, 1, 1
333, 0, 1, 1
334, 0, 1, 1
335, 0, 1, 1
336, 0, 1, 1
337, 0, 1, 1
338, 0, 1, 1
339, 0, 1, 1
340, 0, 1, 1
341, 0, 1, 1
342, 0, 1, 1
343, 0, 1, 1
344, 0, 1, 1
345, 0, 1, 1
346, 0, 1, 1
347, 0, 1, 1
348, 0, 1, 1
349, 0, 1, 1
350, 0, 1, 1
351, 0, 1, 1
352, 0, 1, 1
353, 0, 1, 1
354, 0, 1, 1
355, 0, 1, 1
356, 0, 1, 1
357, 0, 1, 1
358, 0, 1, 1
359, 0, 1, 1
360, 0, 1, 1
361, 0, 1, 1
362, 0, 1, 1
363, 0, 1, 1
364, 0, 1, 1
365, 0, 1, 1
366, 0, 1, 1
367, 0, 1, 1
368, 0, 1, 1
369, 0, 1, 1
370, 0, 1, 1
371, 0, 1, 1
372, 0, 1, 1
373, 0, 1, 1
374, 0, 1, 1
375, 0, 1, 1
376, 0, 1, 1
377, 0, 1, 1
378, 0, 1, 1
379, 0, 1, 1
380, 0, 1, 1
381, 0, 1, 1
382, 0, 1, 1
383, 0, 1, 1
384, 0, 1, 1
385, 0, 1, 1
386, 0, 1, 1

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

387, 0, 1, 1
388, 0, 1, 1
389, 0, 1, 1
390, 0, 1, 1
391, 0, 1, 1
392, 0, 1, 1
393, 0, 1, 1
394, 0, 1, 1
395, 0, 1, 1
396, 0, 1, 1
397, 0, 1, 1
398, 0, 1, 1
399, 0, 1, 1
400, 0, 1, 1
401, 0, 1, 1
402, 0, 1, 1
403, 0, 1, 1
404, 0, 1, 1
405, 0, 1, 1
406, 0, 1, 1
407, 0, 1, 1
408, 0, 1, 1
409, 0, 1, 1
410, 0, 1, 1
411, 0, 1, 1
412, 0, 1, 1
413, 0, 1, 1
414, 0, 1, 1
415, 0, 1, 1
416, 0, 1, 1
417, 0, 1, 1
418, 0, 1, 1
419, 0, 1, 1
420, 0, 1, 1
421, 0, 1, 1
422, 0, 1, 1
423, 0, 1, 1
424, 0, 1, 1
425, 0, 1, 1
426, 0, 1, 1
427, 0, 1, 1
428, 0, 1, 1
429, 0, 1, 1
430, 0, 1, 1
431, 0, 1, 1
432, 0, 1, 1
433, 0, 1, 1
434, 0, 1, 1
435, 0, 1, 1
436, 0, 1, 1
437, 0, 1, 1
438, 0, 1, 1
439, 0, 1, 1
440, 0, 1, 1
441, 0, 1, 1
442, 0, 1, 1
443, 0, 1, 1
444, 0, 1, 1
445, 0, 1, 1
446, 0, 1, 1
447, 0, 1, 1
448, 0, 1, 1
449, 0, 1, 1
450, 0, 1, 1
451, 0, 1, 1
452, 0, 1, 1
453, 0, 1, 1
454, 0, 1, 1
455, 0, 1, 1
456, 0, 1, 1
457, 0, 1, 1
458, 0, 1, 1
459, 0, 1, 1
460, 0, 1, 1
461, 0, 1, 1

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

462, 0, 1, 1
463, 0, 1, 1
464, 0, 1, 1
465, 0, 1, 1
466, 0, 1, 1
467, 0, 1, 1
468, 0, 1, 1
469, 0, 1, 1
470, 0, 1, 1
471, 0, 1, 1
472, 0, 1, 1
473, 0, 1, 1
474, 0, 1, 1
475, 0, 1, 1
476, 0, 1, 1
477, 0, 1, 1
478, 0, 1, 1
479, 0, 1, 1
480, 0, 1, 1
481, 0, 1, 1
482, 0, 1, 1
483, 0, 1, 1
484, 0, 1, 1
485, 0, 1, 1
486, 0, 1, 1
487, 0, 1, 1
488, 0, 1, 1
489, 0, 1, 1
490, 0, 1, 1
491, 0, 1, 1
492, 0, 1, 1
493, 0, 1, 1
494, 0, 1, 1
495, 0, 1, 1
496, 0, 1, 1
497, 0, 1, 1
498, 0, 1, 1
499, 0, 1, 1
500, 0, 1, 1
501, 0, 1, 1
502, 0, 1, 1
503, 0, 1, 1
504, 0, 1, 1
505, 0, 1, 1
506, 0, 1, 1
507, 0, 1, 1
508, 0, 1, 1
509, 0, 1, 1
510, 0, 1, 1
511, 0, 1, 1
512, 0, 1, 1
513, 0, 1, 1
514, 0, 1, 1
515, 0, 1, 1
516, 0, 1, 1
517, 0, 1, 1
518, 0, 1, 1
519, 0, 1, 1
520, 0, 1, 1
521, 0, 1, 1
522, 0, 1, 1
523, 0, 1, 1
524, 0, 1, 1
525, 0, 1, 1
526, 0, 1, 1
527, 0, 1, 1
528, 0, 1, 1
529, 0, 1, 1
530, 0, 1, 1
531, 0, 1, 1
532, 0, 1, 1
533, 0, 1, 1
534, 0, 1, 1
535, 0, 1, 1
536, 0, 1, 1

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

537, 0, 1, 1
538, 0, 1, 1
617, 0, 2, 2
618, 0, 2, 2
619, 0, 2, 2
620, 0, 2, 2
621, 0, 2, 2
622, 0, 2, 2
623, 0, 2, 2
624, 0, 2, 2
625, 0, 2, 2
626, 0, 2, 2
627, 0, 2, 2
628, 0, 2, 2
629, 0, 2, 2
630, 0, 2, 2
631, 0, 2, 2
632, 0, 2, 2
633, 0, 2, 2
634, 0, 2, 2
635, 0, 2, 2
636, 0, 2, 2
637, 0, 2, 2
638, 0, 2, 2
639, 0, 2, 2
640, 0, 2, 2
641, 0, 2, 2
642, 0, 2, 2
643, 0, 2, 2
644, 0, 2, 2
645, 0, 2, 2
646, 0, 2, 2
647, 0, 2, 2
648, 0, 2, 2
649, 0, 2, 2
650, 0, 2, 2
651, 0, 2, 2
652, 0, 2, 2
653, 0, 2, 2
654, 0, 2, 2
655, 0, 2, 2
656, 0, 2, 2
657, 0, 2, 2
658, 0, 2, 2
659, 0, 2, 2
660, 0, 2, 2
661, 0, 2, 2
662, 0, 2, 2
663, 0, 2, 2
664, 0, 2, 2
665, 0, 2, 2
666, 0, 2, 2
667, 0, 2, 2
668, 0, 2, 2
669, 0, 2, 2
670, 0, 2, 2
671, 0, 2, 2
672, 0, 2, 2
673, 0, 2, 2
674, 0, 2, 2
675, 0, 2, 2
676, 0, 2, 2
677, 0, 2, 2
678, 0, 2, 2
679, 0, 2, 2
680, 0, 2, 2
681, 0, 2, 2
682, 0, 2, 2
683, 0, 2, 2
684, 0, 2, 2
685, 0, 2, 2
686, 0, 2, 2
687, 0, 2, 2
688, 0, 2, 2
689, 0, 2, 2

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

690, 0, 2, 2
691, 0, 2, 2
692, 0, 2, 2
693, 0, 2, 2
694, 0, 2, 2
695, 0, 2, 2
696, 0, 2, 2
697, 0, 2, 2
698, 0, 2, 2
699, 0, 2, 2
700, 0, 2, 2
701, 0, 2, 2
702, 0, 2, 2
703, 0, 2, 2
704, 0, 2, 2
705, 0, 2, 2
706, 0, 2, 2
707, 0, 2, 2
708, 0, 2, 2
709, 0, 2, 2
710, 0, 2, 2
711, 0, 2, 2
712, 0, 2, 2
713, 0, 2, 2
714, 0, 2, 2
715, 0, 2, 2
716, 0, 2, 2
717, 0, 2, 2
718, 0, 2, 2
719, 0, 2, 2
720, 0, 2, 2
721, 0, 2, 2
722, 0, 2, 2
723, 0, 2, 2
724, 0, 2, 2
725, 0, 2, 2
726, 0, 2, 2
727, 0, 2, 2
728, 0, 2, 2
729, 0, 2, 2
730, 0, 2, 2
731, 0, 2, 2
732, 0, 2, 2
733, 0, 2, 2
734, 0, 2, 2
735, 0, 2, 2
736, 0, 2, 2
737, 0, 2, 2
738, 0, 2, 2
739, 0, 2, 2
740, 0, 2, 2
741, 0, 2, 2
742, 0, 2, 2
743, 0, 2, 2
744, 0, 2, 2
745, 0, 2, 2
746, 0, 2, 2
747, 0, 2, 2
748, 0, 2, 2
749, 0, 2, 2
750, 0, 2, 2
751, 0, 2, 2
752, 0, 2, 2
753, 0, 2, 2
754, 0, 2, 2
755, 0, 2, 2
756, 0, 2, 2
757, 0, 2, 2
758, 0, 2, 2
759, 0, 2, 2
760, 0, 2, 2
761, 0, 2, 2
762, 0, 2, 2
763, 0, 2, 2
764, 0, 2, 2

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

765, 0, 2, 2
766, 0, 2, 2
767, 0, 2, 2
768, 0, 2, 2
769, 0, 2, 2
770, 0, 2, 2
771, 0, 2, 2
772, 0, 2, 2
773, 0, 2, 2
774, 0, 2, 2
775, 0, 2, 2
776, 0, 2, 2
777, 0, 2, 2
778, 0, 2, 2
779, 0, 2, 2
780, 0, 2, 2
781, 0, 2, 2
782, 0, 2, 2
783, 0, 2, 2
784, 0, 2, 2
785, 0, 2, 2
786, 0, 2, 2
787, 0, 2, 2
788, 0, 2, 2
789, 0, 2, 2
790, 0, 2, 2
791, 0, 2, 2
792, 0, 2, 2
793, 0, 2, 2
794, 0, 2, 2
795, 0, 2, 2
796, 0, 2, 2
797, 0, 2, 2
798, 0, 2, 2
799, 0, 2, 2
800, 0, 2, 2
801, 0, 2, 2
802, 0, 2, 2
803, 0, 2, 2
804, 0, 2, 2
805, 0, 2, 2
806, 0, 2, 2
807, 0, 2, 2
808, 0, 2, 2
809, 0, 2, 2
810, 0, 2, 2
811, 0, 2, 2
812, 0, 2, 2
813, 0, 2, 2
814, 0, 2, 2
815, 0, 3, 3
816, 0, 3, 3
817, 0, 3, 3
818, 0, 3, 3
819, 0, 3, 3
820, 0, 3, 3
821, 0, 3, 3
822, 0, 3, 3
823, 0, 3, 3
824, 0, 3, 3
825, 0, 3, 3
826, 0, 3, 3
827, 0, 3, 3
828, 0, 3, 3
829, 0, 3, 3
830, 0, 3, 3
831, 0, 3, 3
832, 0, 3, 3
833, 0, 3, 3
834, 0, 3, 3
835, 0, 3, 3
836, 0, 3, 3
837, 0, 3, 3
838, 0, 3, 3
839, 0, 3, 3

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

840, 0, 3, 3
841, 0, 3, 3
842, 0, 3, 3
843, 0, 3, 3
844, 0, 3, 3
845, 0, 3, 3
846, 0, 3, 3
847, 0, 3, 3
848, 0, 3, 3
849, 0, 3, 3
850, 0, 3, 3
851, 0, 3, 3
852, 0, 3, 3
853, 0, 3, 3
854, 0, 3, 3
855, 0, 3, 3
856, 0, 3, 3
857, 0, 3, 3
858, 0, 3, 3
859, 0, 3, 3
860, 0, 3, 3
861, 0, 3, 3
862, 0, 3, 3
863, 0, 3, 3
864, 0, 3, 3
865, 0, 3, 3
866, 0, 3, 3
867, 0, 3, 3
868, 0, 3, 3
869, 0, 3, 3
870, 0, 3, 3
871, 0, 3, 3
872, 0, 3, 3
873, 0, 3, 3
874, 0, 3, 3
875, 0, 3, 3
876, 0, 3, 3
877, 0, 3, 3
878, 0, 3, 3
879, 0, 3, 3
880, 0, 3, 3
881, 0, 3, 3
882, 0, 3, 3
883, 0, 3, 3
884, 0, 3, 3
885, 0, 3, 3
886, 0, 3, 3
887, 0, 3, 3
888, 0, 3, 3
889, 0, 3, 3
890, 0, 3, 3
891, 0, 3, 3
892, 0, 3, 3
893, 0, 3, 3
894, 0, 3, 3
895, 0, 3, 3
896, 0, 3, 3
897, 0, 3, 3
898, 0, 3, 3
899, 0, 3, 3
900, 0, 3, 3
901, 0, 3, 3
902, 0, 3, 3
903, 0, 3, 3
904, 0, 3, 3
905, 0, 3, 3
906, 0, 3, 3
907, 0, 3, 3
908, 0, 3, 3
909, 0, 3, 3
910, 0, 3, 3
911, 0, 3, 3
912, 0, 3, 3
913, 0, 3, 3
914, 0, 3, 3

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

915, 0, 3, 3
916, 0, 3, 3
917, 0, 3, 3
918, 0, 3, 3
919, 0, 3, 3
920, 0, 3, 3
921, 0, 3, 3
922, 0, 3, 3
923, 0, 3, 3
924, 0, 3, 3
925, 0, 3, 3
926, 0, 3, 3
927, 0, 3, 3
928, 0, 3, 3
929, 0, 3, 3
930, 0, 3, 3
931, 0, 3, 3
932, 0, 3, 3
933, 0, 3, 3
934, 0, 3, 3
935, 0, 3, 3
936, 0, 3, 3
937, 0, 3, 3
938, 0, 3, 3
939, 0, 3, 3
940, 0, 3, 3
941, 0, 3, 3
942, 0, 3, 3
943, 0, 3, 3
944, 0, 3, 3
945, 0, 3, 3
946, 0, 3, 3
947, 0, 3, 3
948, 0, 3, 3
949, 0, 3, 3
950, 0, 3, 3
951, 0, 3, 3
952, 0, 3, 3
953, 0, 3, 3
954, 0, 3, 3
955, 0, 3, 3
956, 0, 3, 3
957, 0, 3, 3
958, 0, 3, 3
959, 0, 3, 3
960, 0, 3, 3
961, 0, 3, 3
962, 0, 3, 3
963, 0, 3, 3
964, 0, 3, 3
965, 0, 3, 3
966, 0, 3, 3
967, 0, 3, 3
968, 0, 3, 3
969, 0, 3, 3
970, 0, 3, 3
971, 0, 3, 3
972, 0, 3, 3
973, 0, 3, 3
974, 0, 3, 3
975, 0, 3, 3
976, 0, 3, 3
977, 0, 3, 3
978, 0, 3, 3
979, 0, 3, 3
980, 0, 3, 3
981, 0, 3, 3
982, 0, 3, 3
983, 0, 3, 3
984, 0, 3, 3
985, 0, 3, 3
986, 0, 3, 3
987, 0, 3, 3
988, 0, 3, 3
989, 0, 3, 3

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

990, 0, 3, 3
991, 0, 3, 3
992, 0, 3, 3
993, 0, 3, 3
994, 0, 3, 3
995, 0, 3, 3
996, 0, 3, 3
997, 0, 3, 3
998, 0, 3, 3
999, 0, 3, 3
1000, 0, 3, 3
1001, 0, 3, 3
1002, 0, 3, 3
1003, 0, 3, 3
1004, 0, 3, 3
1005, 0, 3, 3
1006, 0, 3, 3
1007, 0, 3, 3
1008, 0, 3, 3
1009, 0, 3, 3
1010, 0, 3, 3
1011, 0, 3, 3
1012, 0, 3, 3
1013, 0, 3, 3
1014, 0, 3, 3
1015, 0, 3, 3
1016, 0, 3, 3
1017, 0, 3, 3
1018, 0, 3, 3
1019, 0, 3, 3
1020, 0, 3, 3
1021, 0, 3, 3
1022, 0, 3, 3
1023, 0, 3, 3
1024, 0, 3, 3
1025, 0, 3, 3
1026, 0, 3, 3
1027, 0, 3, 3
1028, 0, 3, 3
1029, 0, 3, 3
1030, 0, 3, 3
1031, 0, 3, 3
1032, 0, 3, 3
1033, 0, 3, 3
1034, 0, 3, 3
1035, 0, 3, 3
1036, 0, 3, 3
1037, 0, 3, 3
1038, 0, 3, 3
1039, 0, 3, 3
1040, 0, 3, 3
1041, 0, 3, 3
1042, 0, 3, 3
1043, 0, 3, 3
1044, 0, 3, 3
1045, 0, 3, 3
1046, 0, 3, 3
1047, 0, 3, 3
1048, 0, 3, 3
1049, 0, 3, 3
1050, 0, 3, 3
1051, 0, 3, 3
1052, 0, 3, 3
1053, 0, 3, 3
1054, 0, 3, 3
1055, 0, 3, 3
1056, 0, 3, 3
1057, 0, 3, 3
1058, 0, 3, 3
1059, 0, 3, 3
1060, 0, 3, 3
1061, 0, 3, 3
1062, 0, 3, 3
1063, 0, 3, 3
1064, 0, 3, 3

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1065, 0, 3, 3
1066, 0, 3, 3
1067, 0, 3, 3
1068, 0, 3, 3
1069, 0, 3, 3
1070, 0, 3, 3
1071, 0, 3, 3
1072, 0, 3, 3
1073, 0, 3, 3
1074, 0, 3, 3
1075, 0, 3, 3
1076, 0, 3, 3
1077, 0, 3, 3
1078, 0, 3, 3
1079, 0, 3, 3
1080, 0, 3, 3
1081, 0, 3, 3
1082, 0, 3, 3
1083, 0, 3, 3
1084, 0, 3, 3
1085, 0, 3, 3
1086, 0, 3, 3
1087, 0, 3, 3
1088, 0, 3, 3
1089, 0, 3, 3
1090, 0, 3, 3
1091, 0, 3, 3
1092, 0, 3, 3
1093, 0, 3, 3
1094, 0, 3, 3
1095, 0, 3, 3
1096, 0, 3, 3
1097, 0, 3, 3
1098, 0, 3, 3
1099, 0, 3, 3
1100, 0, 3, 3
1101, 0, 3, 3
1102, 0, 3, 3
1103, 0, 3, 3
1104, 0, 3, 3
1105, 0, 3, 3
1106, 0, 3, 3
1107, 0, 3, 3
1108, 0, 3, 3
1109, 0, 3, 3
1110, 0, 3, 3
1111, 0, 3, 3
1112, 0, 3, 3
1113, 0, 3, 3
1114, 0, 3, 3
1115, 0, 3, 3
1116, 0, 3, 3
1117, 0, 3, 3
1118, 0, 3, 3
1119, 0, 3, 3
1120, 0, 3, 3
1121, 0, 3, 3
1122, 0, 3, 3
1123, 0, 3, 3
1124, 0, 3, 3
1125, 0, 3, 3
1126, 0, 3, 3
1127, 0, 3, 3
1128, 0, 3, 3
1129, 0, 3, 3
1130, 0, 3, 3
1131, 0, 3, 3
1132, 0, 3, 3
1133, 0, 3, 3
1134, 0, 3, 3
1135, 0, 3, 3
1136, 0, 3, 3
1137, 0, 3, 3
1138, 0, 3, 3
1139, 0, 3, 3

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1140, 0, 3, 3
1141, 0, 3, 3
1142, 0, 3, 3
1143, 0, 3, 3
1144, 0, 3, 3
1145, 0, 3, 3
1146, 0, 3, 3
1147, 0, 3, 3
1148, 0, 3, 3
1149, 0, 3, 3
1150, 0, 3, 3
1151, 0, 3, 3
1152, 0, 3, 3
1153, 0, 3, 3
1154, 0, 3, 3
1155, 0, 3, 3
1156, 0, 3, 3
1157, 0, 3, 3
1158, 0, 3, 3
1159, 0, 3, 3
1160, 0, 3, 3
1161, 0, 3, 3
1162, 0, 3, 3
1163, 0, 3, 3
1164, 0, 3, 3
1165, 0, 3, 3
1166, 0, 3, 3
1167, 0, 3, 3
1168, 0, 3, 3
1169, 0, 3, 3
1170, 0, 3, 3
1171, 0, 3, 3
1172, 0, 3, 3
1173, 0, 3, 3
1174, 0, 3, 3
1175, 0, 3, 3
1176, 0, 3, 3
1177, 0, 3, 3
1178, 0, 3, 3
1179, 0, 3, 3
1180, 0, 3, 3
1181, 0, 3, 3
1182, 0, 3, 3
1183, 0, 3, 3
1184, 0, 3, 3
1185, 0, 3, 3
1186, 0, 3, 3
1187, 0, 3, 3
1188, 0, 3, 3
1189, 0, 3, 3
1190, 0, 3, 3
1191, 0, 3, 3
1192, 0, 3, 3
1193, 0, 3, 3
1194, 0, 3, 3
1195, 0, 3, 3
1196, 0, 3, 3
1197, 0, 3, 3
1198, 0, 3, 3
1199, 0, 3, 3
1200, 0, 3, 3
1201, 0, 3, 3
1202, 0, 3, 3
1203, 0, 3, 3
1204, 0, 3, 3
1205, 0, 3, 3
1206, 0, 3, 3
1207, 0, 3, 3
1208, 0, 3, 3
1209, 0, 3, 3
1210, 0, 3, 3
1211, 0, 3, 3
1212, 0, 3, 3
1213, 0, 3, 3
1214, 0, 3, 3

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1215, 0, 3, 3
1216, 0, 3, 3
1217, 0, 3, 3
1275, 0, 4, 4
1276, 0, 4, 4
1277, 0, 4, 4
1278, 0, 4, 4
1279, 0, 4, 4
1280, 0, 4, 4
1281, 0, 4, 4
1282, 0, 4, 4
1283, 0, 4, 4
1284, 0, 4, 4
1285, 0, 4, 4
1286, 0, 4, 4
1287, 0, 4, 4
1288, 0, 4, 4
1289, 0, 4, 4
1290, 0, 4, 4
1291, 0, 4, 4
1292, 0, 4, 4
1293, 0, 4, 4
1294, 0, 4, 4
1295, 0, 4, 4
1296, 0, 4, 4
1297, 0, 4, 4
1298, 0, 4, 4
1299, 0, 4, 4
1300, 0, 4, 4
1301, 0, 4, 4
1302, 0, 4, 4
1303, 0, 4, 4
1304, 0, 4, 4
1305, 0, 4, 4
1306, 0, 4, 4
1307, 0, 4, 4
1308, 0, 4, 4
1309, 0, 4, 4
1310, 0, 4, 4
1311, 0, 4, 4
1312, 0, 4, 4
1313, 0, 4, 4
1314, 0, 4, 4
1315, 0, 4, 4
1316, 0, 4, 4
1317, 0, 4, 4
1318, 0, 4, 4
1319, 0, 4, 4
1320, 0, 4, 4
1321, 0, 4, 4
1322, 0, 4, 4
1323, 0, 4, 4
1324, 0, 4, 4
1325, 0, 4, 4
1326, 0, 4, 4
1327, 0, 4, 4
1328, 0, 4, 4
1348, 0, 5, 5
1349, 0, 5, 5
1350, 0, 5, 5
1351, 0, 5, 5
1352, 0, 5, 5
1353, 0, 5, 5
1354, 0, 5, 5
1355, 0, 5, 5
1356, 0, 5, 5
1357, 0, 5, 5
1358, 0, 5, 5
1359, 0, 5, 5
1360, 0, 5, 5
1361, 0, 5, 5
1362, 0, 5, 5
1363, 0, 5, 5
1364, 0, 5, 5
1365, 0, 5, 5

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1366, 0, 5, 5
1367, 0, 5, 5
1368, 0, 5, 5
1369, 0, 5, 5
1370, 0, 5, 5
1371, 0, 5, 5
1372, 0, 5, 5
1373, 0, 5, 5
1374, 0, 5, 5
1375, 0, 5, 5
1376, 0, 5, 5
1377, 0, 5, 5
1378, 0, 5, 5
1379, 0, 5, 5
1380, 0, 5, 5
1381, 0, 5, 5
1382, 0, 5, 5
1383, 0, 5, 5
1384, 0, 5, 5
1385, 0, 5, 5
1386, 0, 5, 5
1387, 0, 5, 5
1388, 0, 5, 5
1389, 0, 5, 5
1390, 0, 5, 5
1391, 0, 5, 5
1392, 0, 5, 5
1393, 0, 5, 5
1394, 0, 5, 5
1395, 0, 5, 5
1396, 0, 5, 5
1397, 0, 5, 5
1398, 0, 5, 5
1399, 0, 5, 5
1400, 0, 5, 5
1401, 0, 5, 5
1402, 0, 5, 5
1403, 0, 5, 5
1404, 0, 5, 5
1405, 0, 5, 5
1406, 0, 5, 5
1407, 0, 5, 5
1408, 0, 5, 5
1409, 0, 5, 5
1410, 0, 5, 5
1411, 0, 5, 5
1412, 0, 5, 5
1413, 0, 5, 5
1414, 0, 5, 5
1415, 0, 5, 5
1416, 0, 5, 5
1417, 0, 5, 5
1418, 0, 5, 5
1419, 0, 5, 5
1420, 0, 5, 5
1421, 0, 5, 5
1422, 0, 5, 5
1423, 0, 5, 5
1424, 0, 5, 5
1425, 0, 5, 5
1426, 0, 5, 5
1427, 0, 5, 5
1428, 0, 5, 5
1429, 0, 5, 5
1430, 0, 5, 5
1431, 0, 5, 5
1432, 0, 5, 5
1433, 0, 5, 5
1434, 0, 5, 5
1435, 0, 5, 5
1436, 0, 5, 5
1437, 0, 5, 5
1438, 0, 5, 5
1439, 0, 5, 5
1440, 0, 5, 5

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1441, 0, 5, 5
1442, 0, 5, 5
1443, 0, 5, 5
1444, 0, 5, 5
1445, 0, 5, 5
1446, 0, 5, 5
1447, 0, 5, 5
1448, 0, 5, 5
1449, 0, 5, 5
1450, 0, 5, 5
1451, 0, 5, 5
1452, 0, 5, 5
1453, 0, 5, 5
1454, 0, 5, 5
1455, 0, 5, 5
1456, 0, 5, 5
1457, 0, 5, 5
1458, 0, 5, 5
1459, 0, 5, 5
1460, 0, 5, 5
1461, 0, 5, 5
1462, 0, 5, 5
1463, 0, 5, 5
1464, 0, 5, 5
1465, 0, 5, 5
1466, 0, 5, 5
1467, 0, 5, 5
1468, 0, 5, 5
1469, 0, 5, 5
1470, 0, 5, 5
1471, 0, 5, 5
1472, 0, 5, 5
1473, 0, 5, 5
1474, 0, 5, 5
1475, 0, 5, 5
1499, 0, 6, 6
1500, 0, 6, 6
1501, 0, 6, 6
1502, 0, 6, 6
1503, 0, 6, 6
1504, 0, 6, 6
1505, 0, 6, 6
1506, 0, 6, 6
1507, 0, 6, 6
1508, 0, 6, 6
1509, 0, 6, 6
1510, 0, 6, 6
1511, 0, 6, 6
1512, 0, 6, 6
1513, 0, 6, 6
1514, 0, 6, 6
1515, 0, 6, 6
1516, 0, 6, 6
1517, 0, 6, 6
1518, 0, 6, 6
1519, 0, 6, 6
1520, 0, 6, 6
1521, 0, 6, 6
1522, 0, 6, 6
1523, 0, 6, 6
1524, 0, 6, 6
1525, 0, 6, 6
1526, 0, 6, 6
1527, 0, 6, 6
1528, 0, 6, 6
1529, 0, 6, 6
1530, 0, 6, 6
1531, 0, 6, 6
1532, 0, 6, 6
1533, 0, 6, 6
1534, 0, 6, 6
1535, 0, 6, 6
1536, 0, 6, 6
1537, 0, 6, 6
1538, 0, 6, 6

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1539, 0, 6, 6
1540, 0, 6, 6
1541, 0, 6, 6
1542, 0, 6, 6
1543, 0, 6, 6
1544, 0, 6, 6
1545, 0, 6, 6
1546, 0, 6, 6
1547, 0, 6, 6
1548, 0, 6, 6
1549, 0, 6, 6
1550, 0, 6, 6
1551, 0, 6, 6
1552, 0, 6, 6
1553, 0, 6, 6
1554, 0, 6, 6
1555, 0, 6, 6
1556, 0, 6, 6
1557, 0, 6, 6
1558, 0, 6, 6
1559, 0, 6, 6
1560, 0, 6, 6
1561, 0, 6, 6
1562, 0, 6, 6
1563, 0, 6, 6
1564, 0, 6, 6
1565, 0, 6, 6
1566, 0, 6, 6
1567, 0, 6, 6
1568, 0, 6, 6
1569, 0, 6, 6
1570, 0, 6, 6
1571, 0, 6, 6
1572, 0, 6, 6
1573, 0, 6, 6
1574, 0, 6, 6
1575, 0, 6, 6
1576, 0, 6, 6
1577, 0, 6, 6
1578, 0, 6, 6
1579, 0, 6, 6
1580, 0, 6, 6
1581, 0, 6, 6
1582, 0, 6, 6
1583, 0, 6, 6
1584, 0, 6, 6
1585, 0, 6, 6
1586, 0, 6, 6
1587, 0, 6, 6
1588, 0, 6, 6
1589, 0, 6, 6
1590, 0, 6, 6
1591, 0, 6, 6
1592, 0, 6, 6
1593, 0, 6, 6
1594, 0, 6, 6
1595, 0, 6, 6
1596, 0, 6, 6
1597, 0, 6, 6
1598, 0, 6, 6
1599, 0, 6, 6
1600, 0, 6, 6
1601, 0, 6, 6
1602, 0, 6, 6
1603, 0, 6, 6
1604, 0, 6, 6
1605, 0, 6, 6
1606, 0, 6, 6
1607, 0, 6, 6
1608, 0, 6, 6
1609, 0, 6, 6
1610, 0, 6, 6
1611, 0, 6, 6
1612, 0, 6, 6
1613, 0, 6, 6

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1614, 0, 6, 6
1615, 0, 6, 6
1616, 0, 6, 6
1617, 0, 6, 6
1618, 0, 6, 6
1619, 0, 6, 6
1620, 0, 6, 6
1621, 0, 6, 6
1622, 0, 6, 6
1623, 0, 6, 6
1624, 0, 6, 6
1625, 0, 6, 6
1626, 0, 6, 6
1627, 0, 6, 6
1628, 0, 6, 6
1629, 0, 6, 6
1630, 0, 6, 6
1631, 0, 6, 6
1632, 0, 6, 6
1633, 0, 6, 6
1634, 0, 6, 6
1635, 0, 6, 6
1636, 0, 6, 6
1637, 0, 6, 6
1638, 0, 6, 6
1639, 0, 6, 6
1640, 0, 6, 6
1641, 0, 6, 6
1642, 0, 6, 6
1643, 0, 6, 6
1644, 0, 6, 6
1645, 0, 6, 6
1646, 0, 6, 6
1647, 0, 6, 6
1648, 0, 6, 6
1649, 0, 6, 6
1650, 0, 6, 6
1651, 0, 6, 6
1652, 0, 6, 6
1653, 0, 6, 6
1654, 0, 6, 6
1655, 0, 6, 6
1656, 0, 6, 6
1657, 0, 6, 6
1658, 0, 6, 6
1659, 0, 6, 6
1660, 0, 6, 6
1661, 0, 6, 6
1662, 0, 6, 6
1663, 0, 6, 6
1664, 0, 6, 6
1665, 0, 6, 6
1666, 0, 6, 6
1667, 0, 6, 6
1668, 0, 6, 6
1669, 0, 6, 6
1670, 0, 6, 6
1671, 0, 6, 6
1672, 0, 6, 6
1673, 0, 6, 6
1674, 0, 6, 6
1675, 0, 6, 6
1676, 0, 6, 6
1677, 0, 6, 6
1678, 0, 6, 6

*MAIN-DOMAIN ; Main Domain
; NAME, TYPE, iMAT, iPRO, iSUB
1, 4, 0, 0, 2
2, 4, 0, 0, 2
3, 4, 0, 0, 2
4, 4, 0, 0, 2
5, 4, 0, 0, 2
6, 4, 0, 0, 2

```
; LCNAME, LCTYPE, DESC
```

muerta, D ,

BR , BRK,

EV, EV,

eq , E ,

```
; CODE=CODE, RHOC, RHOR, RHOW, I
```

; [ACI318-95] : bSPECIAL, PHI-B, PHI-T, PHIC1, PHI-C2, PHI-V ; line 2

; [ACI318-02] : bSPECIAL, PHI-B, PHI-T, PHIC1, PHI-C2, PHI-V, TLF, SLF, TSLCB ;

; [ACI318-08] : bSPECIAL, PHI-B, PHI-T, PHIC1, PHI-C2, PHI-V, TLF, SLF, TSLCB, SPW

; [ACI318-11] : bCHEKCB EAM, bSPECIAL, PHI-B, PHI-T, PHIC1, PHI-C2, PHI-V, TLF, SI

; [ACI318-14] : bCHEKCBEAM, bSPECIAL, PHI-B, PHI-T, PHIC1, PHI-C2, PHI-V, TLF, STRENGTHREDUCTIONFACTOR
BONDGRUB BPHOS LTOP TREP LG JOINT BMSURVEMETHOD "0"

END

; [ACI318M-14] : bCHECKCBEAM, bSPECIAL, PHI-B, PHI-T, PHIC1, PH

; [NSR-10] : bCHECKBEAM, bSPECIAL, PHI-B, PHI-1, PHIC1, PHI-
2NDGRUP, PHOC, bPG JOINT, PMGRUP/EMETHOD; line 3

; [TWN-USD03] : bSPECIAL, PHI-B, PHI-T, PHIC1, PHI-C2, PHI-V, b

; [KCI-USD99] : bSPECIAL PHI-B PHI-T PHIC1 PHI-C2 PHI-V TI

: [KCI-US007] : bSPECIAL, PHI-B, PHI-T, PHIC1, PHI-C3, PHI-V, TI

: [KCTD13D12] : bSPECIAL PHI-B PHI-T PHIC1 PHI-C2 PHI-V TI

: [BS8110-97] : GAMMA-MC, GAMMA-MS, GAMMA-MV

: [EUROCODE2:04] : GAMMA-CE, GAMMA-CA, GAMMA-SE, GAMMA-SA

FRAMETYPE, AUA1, SPLCK, SOILFACTOR, TB, TC, TD, A

STRUT-ANG, bBEHAVIOR-FACT, BEHAVIOR-FACT-VALU

```

; bSHELL, dSHELLHORIZ, DSHELLVERT, PMCURVEMETHC

```

```

; bSHELL, dSHELLHORIZ, DSHELLVERT ; line 2

```

; [GB50010-02] : bSPECIAL, GAMMA-C, GAMMA-S, KIND, iSlabType

; [CSA-A23.3-94] : bSPECIAL, PHI-C, PHI-S, PHI-M

```
; [AIJ-WSD99] : bSPECIAL, KIND
```

; [AASHTO-LRFD02] : bSPECIAL, PHI-B, PHI-T, PHI-C1, PHI-C2, PHI-V

; [KSCE-USD05] : bSPECIAL, PHI-B, PHI-T, PHI-C1, PHI-C2, PHI-V
[KSCE-USD06] : bSPECIAL, PHI-B, PHI-T, PHI-C1, PHI-C2, PHI-V

; [KSCE-RAIL-USE04] : bSPECIAL, PHI-B, PHI-T, PHI-C1, PHI-C2, PHI-

; [J1]023-85] : GAMMA-C, GAMMA-S, KIND
; [CSA 66 00] : bSPECIAL, PHI C, PHI S, KIND; [CSA-S6-14] : BSPECIAL, PHI-C, PHI-S, KIND
; [IBC-31-2000] : GAMMA-C, GAMMA-S

; [SP 35 13330 2011] : pBRIDGE bmb7mb8 mb7mb8Type mb7 mb8

bCANTIL bUNDER-BM/COLM

NO: 0: 0: 0: 0: 0: 0

TES, TES, TES, TES, TES, TES, TES, TES, TES, TES, TES, TES, TES, TES,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

```
*CONSTRAINT ; Supports
; NODE_LIST, CONST(Dx,Dy,Dz,Rx,Ry,Rz), GROUP
1858to1860, 001000,

*SPRING ; Point Spring Supports
; NODE_LIST, Type, F_SDx, F_SDy, F_SDz, F_SRx, F_Sry, F_SRz, SDx, SDy, SDz, SRx, Sry, SRz ...
; DAMPING, Cx, Cy, Cz, CRx, CRy, CRz, GROUP, [DATA1] ; LINEAR
; NODE_LIST, Type, Direction, Vx, Vy, Vz, Stiffness, GROUP, [DATA1] ; COMP, TENS
; NODE_LIST, Type, Direction, Vx, Vy, Vz, FUNCTION, GROUP, [DATA1] ; MULTI
; [DATA1] EFFAREA, Kx, Ky, Kz
1394to1396, LINEAR, NO, NO, NO, NO, NO, NO, 17900, 17900, 0, 0, 0, 0, NO, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
102to104, LINEAR, NO, NO, NO, NO, NO, NO, 1, 1, 0, 0, 0, 0, NO, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
1388to1390, LINEAR, NO, NO, NO, NO, NO, NO, 3800, 3800, 0, 0, 0, 0, NO, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
1385to1387, LINEAR, NO, NO, NO, NO, NO, NO, 3200, 3200, 0, 0, 0, 0, NO, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
1382to1384, LINEAR, NO, NO, NO, NO, NO, NO, 2900, 2900, 0, 0, 0, 0, NO, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
1379to1381, LINEAR, NO, NO, NO, NO, NO, NO, 2400, 2400, 0, 0, 0, 0, NO, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
1376to1378, LINEAR, NO, NO, NO, NO, NO, NO, 2000, 2000, 0, 0, 0, 0, NO, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
1373to1375, LINEAR, NO, NO, NO, NO, NO, NO, 1500, 1500, 0, 0, 0, 0, NO, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
1858to1860, LINEAR, NO, NO, NO, NO, NO, NO, 19300, 19300, 0, 0, 0, 0, NO, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
1391to1393, LINEAR, NO, NO, NO, NO, NO, NO, 16000, 16000, 0, 0, 0, 0, NO, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

*RIGIDLINK ; Rigid Link
; M-NODE, DOF, S-NODE LIST, GROUP
102, 111111, 105 108 111to136 205to214 627 636to638 678to680,
103, 111111, 106 109 137to162 249 251to254 265to268 287to294,
104, 111111, 107 110 163to188 231to240 643 650to652 664to666,

*USE-STLD, ppropio

*SELFWEIGHT ; Self Weight
; X, Y, Z, GROUP
0, 0, -1,

; End of data for load case [ppropio] -----

*USE-STLD, muerta

*CONLOAD ; Nodal Loads
; NODE_LIST, FX, FY, FZ, MX, MY, MZ, GROUP
685, 0, 1.83, -37.89, 0, 0, 0,
693, 0, 1.85, -39.83, 0, 0, 0,
701, 0, 1.85, -39.83, 0, 0, 0,
710, 0, 1.83, -37.89, 0, 0, 0,

; End of data for load case [muerta] -----

*USE-STLD, viva

*CONLOAD ; Nodal Loads
; NODE_LIST, FX, FY, FZ, MX, MY, MZ, GROUP
685, 0.11, 0.88, -45.5, 0, 0, 0,
693, 0.09, 0.69, -35.5, 0, 0, 0,
701, 0.09, 0.69, -35.5, 0, 0, 0,
710, 0.11, 0.88, -45.5, 0, 0, 0,

; End of data for load case [viva] -----

*USE-STLD, BR

*CONLOAD ; Nodal Loads
; NODE_LIST, FX, FY, FZ, MX, MY, MZ, GROUP
685, 0, 4.59, 0, 0, 0, 0,
693, 0, 4.59, 0, 0, 0, 0,
701, 0, 4.59, 0, 0, 0, 0,
710, 0, 4.59, 0, 0, 0, 0,

; End of data for load case [BR] -----

*USE-STLD, EH

*PRESSURE ; Pressure Loads
; ELEM_LIST, CMD, ETYP, LTYP, DIR, VX, VY, VZ, bPROJ, PU, P1, P2, P3, P4, GROUP ; ETYP=PLATE, LTYP=FACE
; ELEM_LIST, CMD, ETYP, LTYP, iEDGE, DIR, VX, VY, VZ, PU, P1, P2, GROUP ; ETYP=PLATE, LTYP=EDGE
; ELEM_LIST, CMD, ETYP, iEDGE, DIR, VX, VY, VZ, PU, P1, P2, GROUP ; ETYP=PLANE
; ELEM_LIST, CMD, ETYP, iFACE, DIR, VX, VY, VZ, bPROJ, PU, P1, P2, P3, P4, GROUP ; ETYP=SOLID
```

617	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.30075	-1.30075	-1.08396	-1.08396
618	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.08396	-1.08396	-0.867168	-0.867168
619	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.867168	-0.867168	-0.650376	-0.650376
620	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.650376	-0.650376	-0.433584	-0.433584
621	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.433584	-0.433584	-0.216792	-0.216792
622	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.216792	-0.216792	0	0
623	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.30075	-1.30075	-1.08396	-1.08396
624	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.08396	-1.08396	-0.867168	-0.867168
625	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.867168	-0.867168	-0.650376	-0.650376
626	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.650376	-0.650376	-0.433584	-0.433584
627	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.433584	-0.433584	-0.216792	-0.216792
628	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.216792	-0.216792	0	0
629	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.30075	-1.30075	-1.08396	-1.08396
630	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.08396	-1.08396	-0.867168	-0.867168
631	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.867168	-0.867168	-0.650376	-0.650376
632	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.650376	-0.650376	-0.433584	-0.433584
633	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.433584	-0.433584	-0.216792	-0.216792
634	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.216792	-0.216792	0	0
635	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.30075	-1.30075	-1.08396	-1.08396
636	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.08396	-1.08396	-0.867168	-0.867168
637	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.867168	-0.867168	-0.650376	-0.650376
638	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.650376	-0.650376	-0.433584	-0.433584
639	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.433584	-0.433584	-0.216792	-0.216792
640	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.216792	-0.216792	0	0
641	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.30075	-1.30075	-1.08396	-1.08396
642	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.08396	-1.08396	-0.867168	-0.867168
643	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.867168	-0.867168	-0.650376	-0.650376
644	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.650376	-0.650376	-0.433584	-0.433584
645	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.433584	-0.433584	-0.216792	-0.216792
646	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.216792	-0.216792	0	0
647	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.30075	-1.30075	-1.08396	-1.08396
648	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.08396	-1.08396	-0.867168	-0.867168
649	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.867168	-0.867168	-0.650376	-0.650376
650	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.650376	-0.650376	-0.433584	-0.433584
651	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.433584	-0.43		

691	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.867168	-0.867168	-0.650376	-0.650376
692	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.650376	-0.650376	-0.433584	-0.433584
693	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.433584	-0.433584	-0.216792	-0.216792
694	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.216792	-0.216792	0	0
695	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.30075	-1.30075	-1.08396	-1.08396
696	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.08396	-1.08396	-0.867168	-0.867168
697	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.867168	-0.867168	-0.650376	-0.650376
698	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.650376	-0.650376	-0.433584	-0.433584
699	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.433584	-0.433584	-0.216792	-0.216792
700	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.216792	-0.216792	0	0
701	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.30075	-1.30075	-1.08396	-1.08396
702	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.08396	-1.08396	-0.867168	-0.867168
703	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.867168	-0.867168	-0.650376	-0.650376
704	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.650376	-0.650376	-0.433584	-0.433584
705	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.433584	-0.433584	-0.216792	-0.216792
706	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.216792	-0.216792	0	0
707	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.30075	-1.30075	-1.08396	-1.08396
708	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.08396	-1.08396	-0.867168	-0.867168
709	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.867168	-0.867168	-0.650376	-0.650376
710	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.650376	-0.650376	-0.433584	-0.433584
711	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.433584	-0.433584	-0.216792	-0.216792
712	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.216792	-0.216792	0	0
713	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.30075	-1.30075	-1.08396	-1.08396
714	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.08396	-1.08396	-0.867168	-0.867168
715	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.867168	-0.867168	-0.650376	-0.650376
716	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.650376	-0.650376	-0.433584	-0.433584
717	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.433584	-0.433584	-0.216792	-0.216792
718	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.216792	-0.216792	0	0
719	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.30075	-1.30075	-1.08396	-1.08396
720	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.08396	-1.08396	-0.867168	-0.867168
721	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.867168	-0.867168	-0.650376	-0.650376
722	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.650376	-0.650376	-0.433584	-0.433584
723	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.433584	-0.433584	-0.216792	-0.216792
724	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-0.216792	-0.216792	0	0
725	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-1.30075	-1.30075	-1	

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

766, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.216792, -0.216792, 0, 0,
767, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.08396, -1.08396,
768, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.08396, -1.08396, -0.867168, -0.867168,
769, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.867168, -0.867168, -0.650376, -0.650376,
770, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.650376, -0.650376, -0.433584, -0.433584,
771, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.433584, -0.433584, -0.216792, -0.216792,
772, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.216792, -0.216792, 0, 0,
773, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.08396, -1.08396,
774, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.08396, -1.08396, -0.867168, -0.867168,
775, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.867168, -0.867168, -0.650376, -0.650376,
776, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.650376, -0.650376, -0.433584, -0.433584,
777, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.433584, -0.433584, -0.216792, -0.216792,
778, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.216792, -0.216792, 0, 0,
779, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.08396, -1.08396,
780, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.08396, -1.08396, -0.867168, -0.867168,
781, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.867168, -0.867168, -0.650376, -0.650376,
782, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.650376, -0.650376, -0.433584, -0.433584,
783, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.433584, -0.433584, -0.216792, -0.216792,
784, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.216792, -0.216792, 0, 0,
785, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.08396, -1.08396,
786, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.08396, -1.08396, -0.867168, -0.867168,
787, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.867168, -0.867168, -0.650376, -0.650376,
788, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.650376, -0.650376, -0.433584, -0.433584,
789, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.433584, -0.433584, -0.216792, -0.216792,
790, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.216792, -0.216792, 0, 0,
791, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.08396, -1.08396,
792, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.08396, -1.08396, -0.867168, -0.867168,
793, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.867168, -0.867168, -0.650376, -0.650376,
794, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.650376, -0.650376, -0.433584, -0.433584,
795, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.433584, -0.433584, -0.216792, -0.216792,
796, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.216792, -0.216792, 0, 0,
797, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.08396, -1.08396,
798, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.08396, -1.08396, -0.867168, -0.867168,
799, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.867168, -0.867168, -0.650376, -0.650376,
800, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.650376, -0.650376, -0.433584, -0.433584,
801, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.433584, -0.433584, -0.216792, -0.216792,
802, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.216792, -0.216792, 0, 0,
803, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.08396, -1.08396,
804, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.08396, -1.08396, -0.867168, -0.867168,
805, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.867168, -0.867168, -0.650376, -0.650376,
806, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.650376, -0.650376, -0.433584, -0.433584,
807, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.433584, -0.433584, -0.216792, -0.216792,
808, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.216792, -0.216792, 0, 0,
809, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.08396, -1.08396,
810, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.08396, -1.08396, -0.867168, -0.867168,
811, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.867168, -0.867168, -0.650376, -0.650376,
812, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.650376, -0.650376, -0.433584, -0.433584,
813, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.433584, -0.433584, -0.216792, -0.216792,
814, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.216792, -0.216792, 0, 0,
815, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72883, -2.76401, -2.97155, -2.9644,
816, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.51435, -1.51383, -1.30075,
817, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51274, -1.30075, -1.30075, -1.5122,
818, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51605, -1.51475, -1.30075, -1.30075,
819, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.5134, -1.51309, -1.30075,
820, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.97989, -2.97548, -2.76761, -2.76732,
821, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.61803, -3.61755, -3.82999,
822, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99597, -2.78817, -2.78562, -2.99588,
823, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.36858, -2.57708, -2.57999, -2.36841,
824, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.77518, -2.98588, -2.98555, -2.77481,
825, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35845, -2.34335, -2.14162, -2.14772,
826, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72229, -1.93306, -1.93337, -1.72279,
827, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.57154, -2.78205, -2.77752, -2.56865,
828, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.82999, -3.62027, -3.62223,
829, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62073, -3.61927, -3.82999, -3.82999,
830, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15579, -2.36841, -2.36677, -2.15431,
831, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.14224, -2.14162, -2.34335, -2.34247,
832, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.76401, -2.56901, -2.56976, -2.76761,
833, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.57661, -2.76732, -2.76761, -2.56976,
834, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.3771, -2.36903, -2.57641, -2.58435,
835, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51492, -1.30075, -1.30075, -1.51451,
836, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56865, -2.77752, -2.77573, -2.56686,
837, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.78316, -2.78626, -2.57543, -2.57402,
838, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51437, -1.51423, -1.72748, -1.72789,
839, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.77712, -2.77964, -2.57093, -2.56928,
840, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.77881, -2.80787, -2.61752, -2.58435,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

841, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.14998, -2.14224, -2.34247, -2.36013,
842, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15853, -2.36903, -2.3771, -2.16336,
843, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.3848, -2.61752, -2.57661, -2.37172,
844, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.51437, -1.51505, -1.30075,
845, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51435, -1.30075, -1.30075, -1.51439,
846, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61927, -3.62073, -3.41275, -3.40991,
847, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15034, -2.15155, -2.36237, -2.36018,
848, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40721, -3.19607, -3.19473, -3.40449,
849, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61627, -3.82999, -3.82999, -3.61772,
850, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.61752, -2.80934, -2.76732, -2.57661,
851, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72883, -2.77597, -2.56787, -2.53218,
852, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15853, -2.15661, -2.36888, -2.36903,
853, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.76732, -2.80934, -2.99992, -2.97989,
854, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99992, -2.80934, -2.80787, -3.00257,
855, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.5122, -1.72296, -1.72229, -1.51152,
856, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.82999, -3.61772, -3.62223,
857, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61541, -3.82999, -3.82999, -3.61755,
858, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51274, -1.5122, -1.72279, -1.72347,
859, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98577, -2.98691, -2.77614, -2.77524,
860, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.82999, -3.62218, -3.62201,
861, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.51313, -1.51341, -1.30075,
862, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.36858, -2.15673, -2.15647, -2.37417,
863, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15647, -2.14998, -2.36013, -2.37417,
864, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61922, -3.40845, -3.40837, -3.61965,
865, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15673, -2.36858, -2.36841, -2.15579,
866, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.5122, -1.51152, -1.30075,
867, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19662, -3.19768, -2.98691, -2.98577,
868, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99305, -2.99435, -2.78626, -2.78316,
869, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61789, -3.61772, -3.82999, -3.82999,
870, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.78205, -2.57154, -2.57363, -2.78491,
871, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51279, -1.51313, -1.30075, -1.30075,
872, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.97155, -2.76401, -2.76761, -2.97548,
873, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.3546, -2.14383, -2.14387, -2.35428,
874, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61618, -3.82999, -3.82999, -3.61627,
875, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51435, -1.72703, -1.72656, -1.51383,
876, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.5641, -2.56431, -2.35537, -2.35619,
877, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19537, -3.40591, -3.40719, -3.19814,
878, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19768, -3.19662, -3.40837, -3.40845,
879, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.82999, -3.62098, -3.6197,
880, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.36677, -2.57675, -2.57363, -2.36446,
881, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.57999, -2.78562, -2.78817, -2.57675,
882, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19768, -3.40845, -3.40882, -3.19663,
883, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99099, -2.99305, -2.78316, -2.78136,
884, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99099, -2.78136, -2.77964, -2.98917,
885, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15943, -2.16533, -2.3848, -2.37172,
886, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93832, -1.7262, -1.7259, -1.93748,
887, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.62245, -3.62223, -3.82999,
888, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40174, -3.61627, -3.61772, -3.40463,
889, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.77597, -2.98152, -2.99936, -2.8092,
890, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98152, -2.77597, -2.72883, -2.9644,
891, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19607, -2.98481, -2.98412, -3.19473,
892, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51423, -1.51437, -1.30075, -1.30075,
893, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.94366, -1.72942, -1.72912, -1.94343,
894, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99344, -2.99588, -2.78562, -2.7788,
895, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.51497, -1.51454,
896, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.51152, -1.5122,
897, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.77597, -2.8092, -2.60365, -2.56787,
898, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72485, -1.72392, -1.93473, -1.93601,
899, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.53218, -2.56787, -2.36013, -2.34247,
900, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.82999, -3.61701, -3.61772,
901, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.77964, -2.78136, -2.57287, -2.57093,
902, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.57675, -2.36677, -2.36841, -2.57999,
903, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51497, -1.51503, -1.72942, -1.72897,
904, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56686, -2.35883, -2.36018, -2.56865,
905, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.36446, -2.57363, -2.57154, -2.36237,
906, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.57708, -2.7788, -2.78562, -2.57999,
907, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.7788, -2.57708, -2.60365, -2.8029,
908, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.77481, -2.98555, -2.98444, -2.77397,
909, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.3848, -2.3771, -2.58435, -2.61752,
910, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93401, -1.93337, -2.14391, -2.14424,
911, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62246, -3.62245, -3.82999, -3.82999,
912, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51613, -1.30075, -1.30075, -1.51586,
913, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56787, -2.60365, -2.37417, -2.36013,
914, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62073, -3.6217, -3.41343, -3.41275,
915, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.7301, -1.51605, -1.51609, -1.73143,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

916, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93434, -1.93353, -1.72296, -1.72375,
917, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56976, -2.36453, -2.37172, -2.57661,
918, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.36315, -2.36126, -2.56928, -2.57093,
919, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.82999, -3.61541, -3.61706,
920, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62235, -3.82999, -3.82999, -3.62223,
921, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.51274, -1.51279,
922, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.18942, -3.19246, -3.40539, -3.40387,
923, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40719, -3.61803, -3.6197, -3.40994,
924, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15159, -2.15341, -1.94074, -1.9397,
925, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35432, -2.3546, -2.56537, -2.56468,
926, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51613, -1.51586, -1.72997, -1.73158,
927, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.57402, -2.57543, -2.36888, -2.36752,
928, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.37417, -2.60365, -2.57708, -2.36858,
929, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40551, -3.61706, -3.61541, -3.40319,
930, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.82999, -3.61706, -3.6197,
931, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.62235, -3.62246, -3.82999,
932, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.78626, -2.7827, -2.57641, -2.57543,
933, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.57543, -2.57641, -2.36903, -2.36888,
934, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61618, -3.61701, -3.82999, -3.82999,
935, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56901, -2.53324, -2.34335, -2.35845,
936, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62218, -3.82999, -3.82999, -3.62223,
937, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62057, -3.62276, -3.40849, -3.40882,
938, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.36453, -2.56976, -2.56901, -2.35845,
939, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.7247, -1.72517, -1.51374, -1.51338,
940, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.78136, -2.78316, -2.57402, -2.57287,
941, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56565, -2.35864, -2.35883, -2.56686,
942, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.41262, -3.62223, -3.62027, -3.41008,
943, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51475, -1.72753, -1.72599, -1.51437,
944, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19607, -3.40721, -3.4085, -3.19644,
945, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.7289, -1.51505, -1.51437, -1.72789,
946, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51313, -1.72485, -1.7259, -1.51341,
947, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.82999, -3.62276, -3.62057,
948, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62246, -3.62235, -3.41425, -3.41463,
949, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35428, -2.14387, -2.14455, -2.3545,
950, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40387, -3.61701, -3.61618, -3.4017,
951, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.41425, -3.41346, -3.62223, -3.62245,
952, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.51377, -1.51423, -1.30075,
953, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.82999, -3.61558, -3.61789,
954, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.41008, -3.20022, -3.203, -3.41262,
955, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40882, -3.40845, -3.61922, -3.62057,
956, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20022, -3.19658, -2.98721, -2.99103,
957, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.14387, -1.93353, -1.93434, -2.14455,
958, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35424, -2.56448, -2.56424, -2.35471,
959, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.51503, -1.51497,
960, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.51374, -1.51451,
961, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.51438, -1.51439,
962, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.51248, -1.5122,
963, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.6197, -3.62098, -3.41191, -3.40994,
964, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.14772, -1.93724, -1.93963, -2.15247,
965, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.41425, -3.62235, -3.62223, -3.41385,
966, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56476, -2.77524, -2.77614, -2.56537,
967, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.82999, -3.6217, -3.62073,
968, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51492, -1.51451, -1.72814, -1.72912,
969, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72347, -1.72392, -1.51279, -1.51274,
970, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.82999, -3.62223, -3.62098,
971, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72656, -1.72625, -1.51372, -1.51383,
972, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51279, -1.72392, -1.72485, -1.51313,
973, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51586, -1.30075, -1.30075, -1.51559,
974, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.5134, -1.30075, -1.30075, -1.51372,
975, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51383, -1.51372, -1.30075, -1.30075,
976, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.18511, -3.40174, -3.40463, -3.19137,
977, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61965, -3.40837, -3.40849, -3.62048,
978, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62048, -3.82999, -3.82999, -3.61965,
979, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.51341, -1.51377, -1.30075,
980, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51248, -1.72375, -1.72296, -1.5122,
981, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.62201, -3.6217, -3.82999,
982, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61772, -3.62027, -3.82999, -3.82999,
983, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56451, -2.56476, -2.35428, -2.3545,
984, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.622, -3.61773, -3.82999,
985, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72912, -1.72942, -1.51503, -1.51492,
986, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72229, -1.72296, -1.93353, -1.93306,
987, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72229, -1.72279, -1.5122, -1.51152,
988, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.57093, -2.57287, -2.36545, -2.36315,
989, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61558, -3.61773, -3.40721, -3.40449,
990, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.4085, -3.622, -3.62048, -3.40849,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

991, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.51338, -1.51374, -1.30075,
992, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.6197, -3.62276, -3.82999, -3.82999,
993, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93337, -1.93306, -2.14383, -2.14391,
994, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.14383, -1.93306, -1.93353, -2.14387,
995, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40463, -3.61772, -3.61927, -3.40991,
996, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19768, -3.19663, -2.98588, -2.98691,
997, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40721, -3.61773, -3.622, -3.4085,
998, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19137, -3.40463, -3.40991, -3.20201,
999, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.62048, -3.622, -3.82999,
1000, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61627, -3.40174, -3.4017, -3.61618,
1001, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61922, -3.82999, -3.82999, -3.62057,
1002, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.7289, -1.72959, -1.51559, -1.51505,
1003, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62223, -3.61772, -3.40539, -3.41385,
1004, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51309, -1.51248, -1.30075, -1.30075,
1005, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.82999, -3.61922, -3.61965,
1006, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.51613, -1.51609,
1007, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40648, -3.40672, -3.61772, -3.61789,
1008, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98491, -2.98577, -2.77524, -2.77477,
1009, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40551, -3.40634, -3.6197, -3.61706,
1010, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56468, -2.56537, -2.77614, -2.77518,
1011, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93434, -1.72375, -1.72447, -1.93525,
1012, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.51492, -1.51503, -1.30075,
1013, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.6197, -3.61803, -3.82999,
1014, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.51454, -1.51438, -1.30075,
1015, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.51505, -1.51559,
1016, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.51437, -1.51338,
1017, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.61927, -3.61772, -3.82999,
1018, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19658, -3.20022, -3.41008, -3.40672,
1019, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.30075, -1.51609, -1.51605,
1020, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.82999, -3.61773, -3.61558, -3.82999,
1021, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20391, -2.99992, -3.00257, -3.20766,
1022, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.77614, -2.98691, -2.98588, -2.77518,
1023, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.30075, -1.51475, -1.51437, -1.30075,
1024, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40449, -3.40648, -3.61789, -3.61558,
1025, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72727, -1.51439, -1.51438, -1.72767,
1026, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19537, -3.19302, -3.40319, -3.40591,
1027, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.3546, -2.35428, -2.56476, -2.56537,
1028, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.14383, -2.3546, -2.35432, -2.14391,
1029, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72375, -1.51248, -1.51309, -1.72447,
1030, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72753, -1.51475, -1.51605, -1.7301,
1031, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.97989, -2.99992, -3.20391, -3.19246,
1032, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.9391, -1.72703, -1.72727, -1.93987,
1033, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40882, -3.40849, -3.19614, -3.19663,
1034, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.14424, -2.35424, -2.35471, -2.14495,
1035, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72625, -1.72537, -1.5134, -1.51372,
1036, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93401, -1.72347, -1.72279, -1.93337,
1037, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35424, -2.14424, -2.14391, -2.35432,
1038, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61803, -3.40719, -3.40591, -3.61755,
1039, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72537, -1.72625, -1.93811, -1.93659,
1040, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99435, -2.99305, -3.20267, -3.20426,
1041, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.97548, -3.18942, -3.18642, -2.97155,
1042, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40672, -3.41008, -3.62027, -3.61772,
1043, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40551, -3.40319, -3.19302, -3.19431,
1044, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51439, -1.72727, -1.72703, -1.51435,
1045, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.41385, -3.20391, -3.20766, -3.41425,
1046, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.41391, -3.41412, -3.20487, -3.20517,
1047, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62276, -3.6197, -3.40634, -3.40849,
1048, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51341, -1.7259, -1.7262, -1.51377,
1049, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93748, -1.93601, -2.14647, -2.14864,
1050, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72753, -1.93963, -1.93724, -1.72599,
1051, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62246, -3.41463, -3.41425, -3.62245,
1052, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40849, -3.40634, -3.19516, -3.19614,
1053, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56431, -2.5641, -2.77428, -2.7743,
1054, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93852, -1.93811, -1.72625, -1.72656,
1055, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.61772, -3.61701, -3.40387, -3.40539,
1056, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20426, -3.41346, -3.41425, -3.20515,
1057, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20487, -3.41412, -3.41262, -3.203,
1058, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40319, -3.61541, -3.61755, -3.40591,
1059, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72392, -1.72347, -1.93401, -1.93473,
1060, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72537, -1.72447, -1.51309, -1.5134,
1061, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.18642, -3.18511, -2.9644, -2.97155,
1062, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56468, -2.77518, -2.77481, -2.56448,
1063, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20597, -3.20463, -2.99344, -3.00205,
1064, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20515, -2.99412, -2.99435, -3.20426,
1065, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56476, -2.56451, -2.77477, -2.77524,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1066, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.41275, -3.41343, -3.20463, -3.20597,
1067, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15155, -2.15282, -2.36446, -2.36237,
1068, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20604, -3.20515, -3.41425, -3.41463,
1069, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51586, -1.51559, -1.72959, -1.72997,
1070, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72814, -1.72517, -1.93565, -1.94009,
1071, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62218, -3.62223, -3.41262, -3.41412,
1072, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98588, -3.19663, -3.19614, -2.98555,
1073, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51613, -1.73158, -1.73143, -1.51609,
1074, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35432, -2.56468, -2.56448, -2.35424,
1075, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72517, -1.72814, -1.51451, -1.51374,
1076, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40849, -3.19636, -3.19644, -3.4085,
1077, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40837, -3.19662, -3.19636, -3.40849,
1078, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19636, -2.98491, -2.98512, -3.19644,
1079, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20597, -3.20201, -3.40991, -3.41275,
1080, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98577, -2.98491, -3.19636, -3.19662,
1081, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.94343, -1.94009, -2.14998, -2.15647,
1082, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51497, -1.72897, -1.7282, -1.51454,
1083, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.4017, -3.40174, -3.18511, -3.18642,
1084, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93748, -1.7259, -1.72485, -1.93601,
1085, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20463, -3.41343, -3.41391, -3.20517,
1086, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40634, -3.40551, -3.19431, -3.19516,
1087, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.57675, -2.78817, -2.78491, -2.57363,
1088, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9644, -3.18511, -3.19137, -2.98152,
1089, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40449, -3.19473, -3.19595, -3.40648,
1090, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51437, -1.72599, -1.7247, -1.51338,
1091, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62098, -3.62223, -3.41346, -3.41191,
1092, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72703, -1.9391, -1.93852, -1.72656,
1093, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98444, -2.98555, -3.19614, -3.19516,
1094, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51438, -1.51454, -1.7282, -1.72767,
1095, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62201, -3.62218, -3.41412, -3.41391,
1096, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.62201, -3.41391, -3.41343, -3.6217,
1097, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.51423, -1.51377, -1.7262, -1.72748,
1098, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56461, -2.35613, -2.35471, -2.56424,
1099, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99597, -3.20487, -3.203, -2.99394,
1100, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72897, -1.72942, -1.94366, -1.94254,
1101, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93434, -1.93525, -2.14638, -2.14455,
1102, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.78491, -2.99394, -2.99103, -2.78205,
1103, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56431, -2.56451, -2.3545, -2.35537,
1104, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35613, -2.14647, -2.14495, -2.35471,
1105, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19246, -3.20391, -3.41385, -3.40539,
1106, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.14638, -2.35537, -2.3545, -2.14455,
1107, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20201, -3.20597, -3.00205, -2.99936,
1108, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93659, -2.1474, -2.14638, -1.93525,
1109, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.94009, -1.93565, -2.14224, -2.14998,
1110, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.14495, -1.93473, -1.93401, -2.14424,
1111, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93832, -1.9397, -1.72748, -1.7262,
1112, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98412, -2.77475, -2.77573, -2.98515,
1113, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.16533, -1.94783, -1.94704, -2.16336,
1114, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15341, -2.36545, -2.36752, -2.15539,
1115, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56565, -2.77475, -2.77428, -2.5641,
1116, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.9397, -1.93832, -2.14944, -2.15159,
1117, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98444, -2.98374, -2.77267, -2.77397,
1118, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35845, -2.14772, -2.15247, -2.36453,
1119, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.14961, -1.93852, -1.9391, -2.15034,
1120, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.77428, -2.98481, -2.98512, -2.7743,
1121, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20426, -3.20267, -3.41191, -3.41346,
1122, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56697, -2.35883, -2.35613, -2.56461,
1123, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98655, -3.19537, -3.19814, -2.98917,
1124, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99479, -2.99412, -3.20515, -3.20604,
1125, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19516, -3.19431, -2.98374, -2.98444,
1126, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.7282, -1.94147, -1.94053, -1.72767,
1127, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.4017, -3.18642, -3.18942, -3.40387,
1128, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.94502, -1.7301, -1.73143, -1.94783,
1129, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40672, -3.40648, -3.19595, -3.19658,
1130, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.77477, -2.7743, -2.98512, -2.98491,
1131, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98374, -2.98397, -2.7746, -2.77267,
1132, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72997, -1.72959, -1.94335, -1.94386,
1133, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19644, -2.98512, -2.98481, -3.19607,
1134, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.73158, -1.72997, -1.94386, -1.94704,
1135, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.36126, -2.36315, -2.15159, -2.14944,
1136, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.7301, -1.94502, -1.93963, -1.72753,
1137, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72789, -1.72748, -1.9397, -1.94074,
1138, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56451, -2.56431, -2.7743, -2.77477,
1139, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72727, -1.72767, -1.94053, -1.93987,
1140, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35619, -2.35537, -2.14638, -2.1474,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1141, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.14647, -2.35613, -2.35883, -2.14864,
1142, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.73143, -1.73158, -1.94704, -1.94783,
1143, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.94074, -1.94239, -1.7289, -1.72789,
1144, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15247, -1.93963, -1.94502, -2.15943,
1145, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72912, -1.72814, -1.94009, -1.94343,
1146, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.7289, -1.94239, -1.94335, -1.72959,
1147, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56448, -2.77481, -2.77397, -2.56424,
1148, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72517, -1.7247, -1.93472, -1.93565,
1149, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15034, -1.9391, -1.93987, -2.15155,
1150, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15661, -2.15853, -1.94386, -1.94335,
1151, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72599, -1.93724, -1.93472, -1.7247,
1152, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72897, -1.94254, -1.94147, -1.7282,
1153, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40994, -3.41191, -3.20267, -3.20041,
1154, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.40994, -3.20041, -3.19814, -3.40719,
1155, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.41425, -3.20766, -3.20604, -3.41463,
1156, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72537, -1.93659, -1.93525, -1.72447,
1157, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.94335, -1.94239, -2.15539, -2.15661,
1158, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.34247, -2.34335, -2.53324, -2.53218,
1159, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.58435, -2.57641, -2.7827, -2.77881,
1160, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19473, -2.98412, -2.98515, -3.19595,
1161, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.94783, -2.16533, -2.15943, -1.94502,
1162, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.7827, -2.78626, -2.99435, -2.99412,
1163, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.7746, -2.77712, -2.56928, -2.56697,
1164, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.78817, -2.99597, -2.99394, -2.78491,
1165, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20517, -2.99588, -2.99344, -3.20463,
1166, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.14162, -2.14224, -1.93565, -1.93472,
1167, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98721, -2.98515, -2.77573, -2.77752,
1168, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99597, -2.99588, -3.20517, -3.20487,
1169, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98481, -2.77428, -2.77475, -2.98412,
1170, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35864, -2.35619, -2.1474, -2.14987,
1171, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56865, -2.36018, -2.36237, -2.57154,
1172, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.36545, -2.15341, -2.15159, -2.36315,
1173, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15341, -2.15539, -1.94239, -1.94074,
1174, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35619, -2.35864, -2.56565, -2.5641,
1175, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98515, -2.98721, -3.19658, -3.19595,
1176, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.7827, -2.99412, -2.99479, -2.77881,
1177, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.77267, -2.56461, -2.56424, -2.77397,
1178, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56686, -2.77573, -2.77475, -2.56565,
1179, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35883, -2.14961, -2.15034, -2.36018,
1180, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.94254, -1.94366, -2.15673, -2.15579,
1181, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99305, -2.99099, -3.20041, -3.20267,
1182, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.77267, -2.7746, -2.56697, -2.56461,
1183, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99103, -2.98721, -2.77752, -2.78205,
1184, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93601, -1.93473, -2.14495, -2.14647,
1185, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.94053, -2.15282, -2.15155, -1.93987,
1186, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.16533, -2.16336, -2.3771, -2.3848,
1187, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56901, -2.76401, -2.72883, -2.53324,
1188, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99936, -3.00205, -2.8029, -2.8092,
1189, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.00257, -2.80787, -2.77881, -2.99479,
1190, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20201, -2.99936, -2.98152, -3.19137,
1191, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.94147, -2.15431, -2.15282, -1.94053,
1192, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.7788, -2.8029, -3.00205, -2.99344,
1193, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19302, -3.19537, -2.98655, -2.98397,
1194, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19246, -3.18942, -2.97548, -2.97989,
1195, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.99479, -3.20604, -3.20766, -3.00257,
1196, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.98397, -2.98655, -2.77712, -2.7746,
1197, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.36888, -2.15661, -2.15539, -2.36752,
1198, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.77712, -2.98655, -2.98917, -2.77964,
1199, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.94366, -1.94343, -2.15647, -2.15673,
1200, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93724, -2.14772, -2.14162, -1.93472,
1201, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.94386, -2.15853, -2.16336, -1.94704,
1202, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93811, -1.93852, -2.14961, -2.14987,
1203, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93811, -2.14987, -2.1474, -1.93659,
1204, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.93748, -2.14864, -2.14944, -1.93832,
1205, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.94254, -2.15579, -2.15431, -1.94147,
1206, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20041, -2.99099, -2.98917, -3.19814,
1207, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20022, -2.99103, -2.99394, -3.203,
1208, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.19431, -3.19302, -2.98397, -2.98374,
1209, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.56697, -2.56928, -2.36126, -2.35883,
1210, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35864, -2.14987, -2.14961, -2.35883,
1211, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.36453, -2.15247, -2.15943, -2.37172,
1212, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.36752, -2.36545, -2.57287, -2.57402,
1213, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.14944, -2.14864, -2.35883, -2.36126,
1214, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.15282, -2.15431, -2.36677, -2.36446,
1215, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.61752, -2.80787, -2.80934, 0,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1216, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.60365, -2.8092, -2.8029, 0,
1217, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.53324, -2.72883, -2.53218, 0,
1275, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0, -0.215208, -0.216792,
1276, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.216792, -0.215208, -0.430697, -0.433584,
1277, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.433584, -0.430697, -0.646251, -0.650376,
1278, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.650376, -0.646251, -0.861601, -0.867168,
1279, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.867168, -0.861601, -1.07682, -1.08396,
1280, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.08396, -1.07682, -1.29069, -1.30075,
1281, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.30075, -1.29069, -1.50312, -1.51152,
1282, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.51152, -1.50312, -1.71493, -1.72229,
1283, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.72229, -1.71493, -1.92675, -1.93306,
1284, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.93306, -1.92675, -2.13819, -2.14383,
1285, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.14383, -2.13819, -2.34971, -2.3546,
1286, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.3546, -2.34971, -2.5612, -2.56537,
1287, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.56537, -2.5612, -2.77267, -2.77614,
1288, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.77614, -2.77267, -2.98413, -2.98691,
1289, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.98691, -2.98413, -3.19559, -3.19768,
1290, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.19768, -3.19559, -3.40708, -3.40845,
1291, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.40845, -3.40708, -3.61887, -3.61922,
1292, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.61922, -3.61887, -3.82999, -3.82999,
1293, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0, -0.214116, -0.215208,
1294, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.215208, -0.214116, -0.428231, -0.430697,
1295, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.430697, -0.428231, -0.642347, -0.646251,
1296, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.646251, -0.642347, -0.856462, -0.861601,
1297, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.861601, -0.856462, -1.07058, -1.07682,
1298, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.07682, -1.07058, -1.2837, -1.29069,
1299, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.29069, -1.2837, -1.49621, -1.50312,
1300, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.50312, -1.49621, -1.70857, -1.71493,
1301, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.71493, -1.70857, -1.92094, -1.92675,
1302, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.92675, -1.92094, -2.13307, -2.13819,
1303, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.13819, -2.13307, -2.34519, -2.34971,
1304, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.34971, -2.34519, -2.55731, -2.5612,
1305, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.5612, -2.55731, -2.76942, -2.77267,
1306, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.77267, -2.76942, -2.98153, -2.98413,
1307, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.98413, -2.98153, -3.19364, -3.19559,
1308, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.19559, -3.19364, -3.40575, -3.40708,
1309, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.40708, -3.40575, -3.61808, -3.61887,
1310, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.61887, -3.61808, -3.82999, -3.82999,
1311, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0, -0.212777, -0.214116,
1312, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.214116, -0.212777, -0.425555, -0.428231,
1313, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.428231, -0.425555, -0.638332, -0.642347,
1314, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.642347, -0.638332, -0.851109, -0.856462,
1315, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.856462, -0.851109, -1.06389, -1.07058,
1316, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.07058, -1.06389, -1.27666, -1.2837,
1317, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.2837, -1.27666, -1.48944, -1.49621,
1318, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.49621, -1.48944, -1.70222, -1.70857,
1319, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.70857, -1.70222, -1.915, -1.92094,
1320, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.92094, -1.915, -2.12777, -2.13307,
1321, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.13307, -2.12777, -2.34055, -2.34519,
1322, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.34519, -2.34055, -2.55333, -2.55731,
1323, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.55731, -2.55333, -2.76611, -2.76942,
1324, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.76942, -2.76611, -2.97888, -2.98153,
1325, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.98153, -2.97888, -3.19166, -3.19364,
1326, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.19364, -3.19166, -3.40444, -3.40575,
1327, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.40575, -3.40444, -3.61721, -3.61808,
1328, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.61808, -3.61721, -3.82999, -3.82999,
1348, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.39314, -3.39996, -3.19074, -3.17707,
1349, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.27666, -1.29292, -1.50218, -1.48944,
1350, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.29292, -1.08279, -1.10465, -1.31249,
1351, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.55599, -2.56713, -2.78163, -2.7703,
1352, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.55333, -2.55599, -2.7703, -2.76611,
1353, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.12777, -2.13093, -2.34365, -2.34055,
1354, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.91656, -1.9204, -2.13106, -2.13093,
1355, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.7703, -2.78163, -2.98412, -2.98129,
1356, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.11179, -2.11818, -1.89785, -1.89927,
1357, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.95551, -2.97888, -3.19166, -3.17381,
1358, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.34926, -2.34638, -2.13106, -2.13341,
1359, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.82999, -3.61448, -3.61721, -3.82999,
1360, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.883951, -0.659106, -0.668721, -0.90359,
1361, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.19074, -2.98412, -2.97985, -3.17707,
1362, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.34638, -2.34926, -2.59332, -2.56713,
1363, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.8992, -2.7973, -2.59332, -2.66542,
1364, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.97888, -2.76611, -2.7703, -2.98129,
1365, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.8992, -2.92969, -3.15917, -3.15276,
1366, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.438313, -0.438202, -0.666171, -0.668721,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1367, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.95551, -3.17381, -3.15917, -2.92969,
1368, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.76611, -2.97888, -2.95551, -2.7455,
1369, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.15276, -3.17707, -2.97985, -2.8992,
1370, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0, 0, -0.214109, -0.216016,
1371, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.867035, -0.851109, -0.638332, -0.650086,
1372, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.37802, -1.44151, -1.65615, -1.5878,
1373, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.7206, -1.51573, -1.53451, -1.72291,
1374, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.66542, -2.59332, -2.34926, -2.46806,
1375, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.638332, -0.851109, -0.860137, -0.648567,
1376, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.17707, -3.15276, -3.38448, -3.39314,
1377, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.61694, -3.61487, -3.82999, -3.82999,
1378, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.98412, -2.78163, -2.7973, -2.97985,
1379, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.48944, -1.70222, -1.67861, -1.4706,
1380, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.15723, -1.24513, -1.44151, -1.37802,
1381, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.40444, -3.40445, -3.61694, -3.61721,
1382, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.13106, -1.9204, -1.9167, -2.13341,
1383, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.438202, -0.435619, -0.657587, -0.666171,
1384, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.65615, -1.44151, -1.4706, -1.67861,
1385, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0, 0, -0.215129, -0.215141, 0,
1386, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.5878, -1.65615, -1.89785, -1.77753,
1387, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.98129, -3.19195, -3.19166, -2.97888,
1388, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.214611, -0.431322, -0.425555, -0.212777,
1389, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.431251, -0.425555, -0.638332, -0.648567,
1390, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.61721, -3.61694, -3.82999, -3.82999,
1391, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.904781, -0.874254, -1.07505, -1.15723,
1392, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.46806, -2.53055, -2.72093, -2.66542,
1393, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.66542, -2.72093, -2.92969, -2.8992,
1394, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.883951, -0.867035, -0.650086, -0.659106,
1395, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.6132, -3.60983, -3.38448, -3.38823,
1396, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.9167, -1.77753, -1.89785, -2.04258,
1397, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.24513, -1.07505, -1.06624, -1.26449,
1398, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.915, -2.12777, -2.11179, -1.89927,
1399, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.435171, -0.659106, -0.650086, -0.431322,
1400, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.60983, -3.82999, -3.82999, -3.61221,
1401, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.13093, -2.12777, -1.915, -1.91656,
1402, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.06389, -0.851109, -0.867035, -1.08279,
1403, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.06624, -1.07505, -0.874254, -0.860137,
1404, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.11179, -2.12777, -2.34055, -2.33187,
1405, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.04258, -1.89785, -2.11818, -2.21109,
1406, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.215129, 0, 0, -0.213917,
1407, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.40444, -3.61721, -3.61448, -3.3945,
1408, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0, 0, -0.214611, -0.212777, 0,
1409, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.7206, -1.9204, -1.91656, -1.71111,
1410, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.06624, -1.06389, -1.27666, -1.26449,
1411, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.82999, -3.6132, -3.61448, -3.82999,
1412, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.33184, -2.46806, -2.34926, -2.21109,
1413, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.44151, -1.24513, -1.26449, -1.4706,
1414, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.27666, -1.48944, -1.4706, -1.26449,
1415, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.6132, -3.82999, -3.82999, -3.60983,
1416, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.33184, -2.11818, -2.11179, -2.33187,
1417, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.215141, -0.215129, -0.438313, -0.435171,
1418, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.61694, -3.40445, -3.39996, -3.61487,
1419, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.431322, -0.650086, -0.638332, -0.425555,
1420, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.214109, -0.212777, -0.425555, -0.431251,
1421, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.214611, 0, 0, -0.215141,
1422, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.214611, -0.215141, -0.435171, -0.431322,
1423, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.61448, -3.6132, -3.38823, -3.3945,
1424, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.40445, -3.40444, -3.19166, -3.19195,
1425, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.82999, -3.82999, -3.61487, -3.61221,
1426, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.883951, -1.10465, -1.08279, -0.867035,
1427, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.214109, -0.431251, -0.435619, -0.216016,
1428, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.38823, -3.15917, -3.17381, -3.3945,
1429, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.3945, -3.17381, -3.19166, -3.40444,
1430, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.34365, -2.55599, -2.55333, -2.34055,
1431, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0, 0, -0.216016, -0.213917,
1432, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.15276, -3.15917, -3.38823, -3.38448,
1433, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.34638, -2.56713, -2.55599, -2.34365,
1434, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.212777, -0.214109, 0, 0,
1435, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.76611, -2.7455, -2.53872, -2.55333,
1436, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.915, -1.89927, -1.67861, -1.70222,
1437, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.34055, -2.55333, -2.53872, -2.33187,
1438, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.70222, -1.48944, -1.50218, -1.71111,
1439, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.15723, -1.13138, -0.90359, -0.904781,
1440, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.39314, -3.38448, -3.60983, -3.61221,
1441, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.39996, -3.40445, -3.19195, -3.19074,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1442, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.53055, -2.53872, -2.7455, -2.72093,
1443, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.39314, -3.61221, -3.61487, -3.39996,
1444, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.19074, -3.19195, -2.98129, -2.98412,
1445, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.06389, -1.06624, -0.860137, -0.851109,
1446, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.904781, -0.90359, -0.668721, -0.666171,
1447, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.915, -1.70222, -1.71111, -1.91656,
1448, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.06389, -1.08279, -1.29292, -1.27666,
1449, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.9167, -1.9204, -1.7206, -1.72291,
1450, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.666171, -0.657587, -0.874254, -0.904781,
1451, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.34638, -2.34365, -2.13093, -2.13106,
1452, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.53451, -1.51573, -1.31249, -1.33667,
1453, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.33667, -1.31249, -1.10465, -1.13138,
1454, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.13138, -1.10465, -0.883951, -0.90359,
1455, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.668721, -0.659106, -0.435171, -0.438313,
1456, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.215129, -0.213917, -0.438202, -0.438313,
1457, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.51573, -1.50218, -1.29292, -1.31249,
1458, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.89927, -1.89785, -1.65615, -1.67861,
1459, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.7973, -2.78163, -2.56713, -2.59332,
1460, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.77753, -1.72291, -1.53451, -1.5878,
1461, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.33187, -2.53872, -2.53055, -2.33184,
1462, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.37802, -1.33667, -1.13138, -1.15723,
1463, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.71111, -1.50218, -1.51573, -1.7206,
1464, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.216016, -0.435619, -0.438202, -0.213917,
1465, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.21109, -2.34926, -2.13341, -2.04258,
1466, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.648567, -0.657587, -0.435619, -0.431251,
1467, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.648567, -0.860137, -0.874254, -0.657587,
1468, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.5878, -1.53451, -1.33667, -1.37802,
1469, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.95551, -2.92969, -2.72093, -2.7455,
1470, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.77753, -1.9167, -1.72291, 0,
1471, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.04258, -2.13341, -1.9167, 0,
1472, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.15723, -1.07505, -1.24513, 0,
1473, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.8992, -2.97985, -2.7973, 0,
1474, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.46806, -2.33184, -2.53055, 0,
1475, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.21109, -2.11818, -2.33184, 0,
1499, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.82999, 3.82999, 3.61887, 3.61922,
1500, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.61922, 3.61887, 3.40708, 3.40845,
1501, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.40845, 3.40708, 3.1956, 3.19768,
1502, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.19768, 3.1956, 2.98414, 2.98691,
1503, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.98691, 2.98414, 2.77269, 2.77614,
1504, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.77614, 2.77269, 2.56123, 2.56537,
1505, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.56537, 2.56123, 2.34975, 2.3546,
1506, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.3546, 2.34975, 2.13825, 2.14383,
1507, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.14383, 2.13825, 1.92669, 1.93306,
1508, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.93306, 1.92669, 1.71501, 1.72229,
1509, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.72229, 1.71501, 1.50312, 1.51152,
1510, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.51152, 1.50312, 1.29069, 1.30075,
1511, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.30075, 1.29069, 1.07681, 1.08396,
1512, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.08396, 1.07681, 0.861613, 0.867168,
1513, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.867168, 0.861613, 0.646282, 0.650376,
1514, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.650376, 0.646282, 0.430884, 0.433584,
1515, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.433584, 0.430884, 0.215176, 0.216792,
1516, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.216792, 0.215176, 0, 0,
1517, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.82999, 3.82999, 3.61808, 3.61887,
1518, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.61887, 3.61808, 3.40576, 3.40708,
1519, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.40708, 3.40576, 3.19364, 3.1956,
1520, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.1956, 3.19364, 2.98153, 2.98414,
1521, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.98414, 2.98153, 2.76942, 2.77269,
1522, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.77269, 2.76942, 2.55731, 2.56123,
1523, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.56123, 2.55731, 2.34521, 2.34975,
1524, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.34975, 2.34521, 2.1331, 2.13825,
1525, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.13825, 2.1331, 1.921, 1.92669,
1526, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.92669, 1.921, 1.70892, 1.71501,
1527, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.71501, 1.70892, 1.4968, 1.50312,
1528, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.50312, 1.4968, 1.28469, 1.29069,
1529, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.29069, 1.28469, 1.07058, 1.07681,
1530, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.07681, 1.07058, 0.856462, 0.861613,
1531, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.861613, 0.856462, 0.642347, 0.646282,
1532, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.646282, 0.642347, 0.428231, 0.430884,
1533, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.430884, 0.428231, 0.214116, 0.215176,
1534, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.215176, 0.214116, 0, 0,
1535, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.82999, 3.82999, 3.61721, 3.61808,
1536, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.61808, 3.61721, 3.40444, 3.40576,
1537, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.40576, 3.40444, 3.19166, 3.19364,
1538, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.19364, 3.19166, 2.97888, 2.98153,
1539, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.98153, 2.97888, 2.76611, 2.76942,

1540,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	2.76942,	2.76611,	2.55333,	2.55731,
1541,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	2.55731,	2.55333,	2.34055,	2.34521,
1542,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	2.34521,	2.34055,	2.12777,	2.1331,
1543,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	2.1331,	2.12777,	1.915,	1.921,
1544,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	1.921,	1.915,	1.70222,	1.70892,
1545,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	1.70892,	1.70222,	1.48944,	1.4968,
1546,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	1.4968,	1.48944,	1.27666,	1.28469,
1547,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	1.28469,	1.27666,	1.06389,	1.07058,
1548,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	1.07058,	1.06389,	0.851109,	0.856462,
1549,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	0.856462,	0.851109,	0.638332,	0.642347,
1550,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	0.642347,	0.638332,	0.425555,	0.428231,
1551,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	0.428231,	0.425555,	0.212777,	0.214116,
1552,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	0.214116,	0.212777,	0,	0,
1553,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	3.82999,	3.82999,	3.61721,	3.61721,
1554,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	3.61721,	3.61721,	3.40444,	3.40444,
1555,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	3.40444,	3.40444,	3.19166,	3.19166,
1556,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	3.19166,	3.19166,	2.97888,	2.97888,
1557,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	2.97888,	2.97888,	2.76611,	2.76611,
1558,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	2.76611,	2.76611,	2.55333,	2.55333,
1559,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	2.55333,	2.55333,	2.34055,	2.34055,
1560,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	2.34055,	2.34055,	2.12777,	2.12777,
1561,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	2.12777,	2.12777,	1.915,	1.915,
1562,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	1.915,	1.915,	1.70222,	1.70222,
1563,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	1.70222,	1.70222,	1.48944,	1.48944,
1564,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	1.48944,	1.48944,	1.27666,	1.27666,
1565,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	1.27666,	1.27666,	1.06389,	1.06389,
1566,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	1.06389,	1.06389,	0.851109,	0.851109,
1567,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	0.851109,	0.851109,	0.638332,	0.638332,
1568,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	0.638332,	0.638332,	0.425555,	0.425555,
1569,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	0.425555,	0.425555,	0.212777,	0.212777,
1570,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	0.212777,	0.212777,	0,	0,
1571,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	3.82999,	3.82999,	3.61721,	3.61721,
1572,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	3.61721,	3.61721,	3.40444,	3.40444,
1573,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	3.40444,	3.40444,	3.19166,	3.19166,
1574,	HYDRO,	PLATE,	FACE,	GX,	0,	0,	0,	NO,	0,	3.19166,	3.19166,		

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1615, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.12777, 2.12777, 1.915, 1.915,
1616, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.915, 1.915, 1.70222, 1.70222,
1617, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.70222, 1.70222, 1.48944, 1.48944,
1618, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.48944, 1.48944, 1.27666, 1.27666,
1619, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.27666, 1.27666, 1.06389, 1.06389,
1620, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.06389, 1.06389, 0.851109, 0.851109,
1621, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.851109, 0.851109, 0.638332, 0.638332,
1622, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.638332, 0.638332, 0.425555, 0.425555,
1623, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.425555, 0.425555, 0.212777, 0.212777,
1624, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.212777, 0.212777, 0, 0,
1625, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.82999, 3.82999, 3.61721, 3.61721,
1626, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.61721, 3.61721, 3.40444, 3.40444,
1627, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.40444, 3.40444, 3.19166, 3.19166,
1628, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.19166, 3.19166, 2.97888, 2.97888,
1629, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.97888, 2.97888, 2.76611, 2.76611,
1630, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.76611, 2.76611, 2.55333, 2.55333,
1631, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.55333, 2.55333, 2.34055, 2.34055,
1632, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.34055, 2.34055, 2.12777, 2.12777,
1633, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.12777, 2.12777, 1.915, 1.915,
1634, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.915, 1.915, 1.70222, 1.70222,
1635, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.70222, 1.70222, 1.48944, 1.48944,
1636, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.48944, 1.48944, 1.27666, 1.27666,
1637, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.27666, 1.27666, 1.06389, 1.06389,
1638, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.06389, 1.06389, 0.851109, 0.851109,
1639, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.851109, 0.851109, 0.638332, 0.638332,
1640, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.638332, 0.638332, 0.425555, 0.425555,
1641, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.425555, 0.425555, 0.212777, 0.212777,
1642, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.212777, 0.212777, 0, 0,
1643, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.82999, 3.82999, 3.61721, 3.61721,
1644, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.61721, 3.61721, 3.40444, 3.40444,
1645, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.40444, 3.40444, 3.19166, 3.19166,
1646, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.19166, 3.19166, 2.97888, 2.97888,
1647, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.97888, 2.97888, 2.76611, 2.76611,
1648, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.76611, 2.76611, 2.55333, 2.55333,
1649, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.55333, 2.55333, 2.34055, 2.34055,
1650, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.34055, 2.34055, 2.12777, 2.12777,
1651, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.12777, 2.12777, 1.915, 1.915,
1652, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.915, 1.915, 1.70222, 1.70222,
1653, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.70222, 1.70222, 1.48944, 1.48944,
1654, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.48944, 1.48944, 1.27666, 1.27666,
1655, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.27666, 1.27666, 1.06389, 1.06389,
1656, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.06389, 1.06389, 0.851109, 0.851109,
1657, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.851109, 0.851109, 0.638332, 0.638332,
1658, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.638332, 0.638332, 0.425555, 0.425555,
1659, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.425555, 0.425555, 0.212777, 0.212777,
1660, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.212777, 0.212777, 0, 0,
1661, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.82999, 3.82999, 3.61721, 3.61721,
1662, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.61721, 3.61721, 3.40444, 3.40444,
1663, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.40444, 3.40444, 3.19166, 3.19166,
1664, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.19166, 3.19166, 2.97888, 2.97888,
1665, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.97888, 2.97888, 2.76611, 2.76611,
1666, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.76611, 2.76611, 2.55333, 2.55333,
1667, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.55333, 2.55333, 2.34055, 2.34055,
1668, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.34055, 2.34055, 2.12777, 2.12777,
1669, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.12777, 2.12777, 1.915, 1.915,
1670, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.915, 1.915, 1.70222, 1.70222,
1671, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.70222, 1.70222, 1.48944, 1.48944,
1672, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.48944, 1.48944, 1.27666, 1.27666,
1673, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.27666, 1.27666, 1.06389, 1.06389,
1674, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.06389, 1.06389, 0.851109, 0.851109,
1675, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.851109, 0.851109, 0.638332, 0.638332,
1676, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.638332, 0.638332, 0.425555, 0.425555,
1677, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.425555, 0.425555, 0.212777, 0.212777,
1678, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.212777, 0.212777, 0, 0,

; End of data for load case [EH] -----

*USE-STLD, EV

*PRESSURE ; Pressure Loads

; ELEM_LIST, CMD, ETYP, LTYP, DIR, VX, VY, VZ, bPROJ, PU, P1, P2, P3, P4, GROUP ; ETYP=PLATE, LTYP=FACE

; ELEM_LIST, CMD, ETYP, LTYP, iEDGE, DIR, VX, VY, VZ, PU, P1, P2, GROUP ; ETYP=PLATE, LTYP=EDGE

; ELEM_LIST, CMD, ETYP, iEDGE, DIR, VX, VY, VZ, PU, P1, P2, GROUP ; ETYP=PLANE

; ELEM_LIST, CMD, ETYP, iFACE, DIR, VX, VY, VZ, bPROJ, PU, P1, P2, P3, P4, GROUP ; ETYP=SOLID

; [PLATE] : plate, plane stress, [PLANE] : axisymmetric, plane strain

[illegible]

[illegible]

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

514, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
515, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
516, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
517, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
518, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
519, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
520, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
521, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
522, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
523, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
524, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
525, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
526, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
527, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
528, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
529, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
530, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
531, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
532, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
533, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
534, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
535, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
536, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
537, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,
538, PRES , PLATE, FACE, GZ, 0, 0, 0, NO, -8.4, 0, 0, 0, 0,

; End of data for load case [EV] -----

*USE-STLD, LS

*PRESSURE ; Pressure Loads
; ELEM_LIST, CMD, ETYP, LTYP, DIR, VX, VY, VZ, bPROJ, PU, P1, P2, P3, P4, GROUP ; ETYP=PLATE, LTYP=FACE
; ELEM_LIST, CMD, ETYP, LTYP, iEDGE, DIR, VX, VY, VZ, PU, P1, P2, GROUP ; ETYP=PLATE, LTYP=EDGE
; ELEM_LIST, CMD, ETYP, iEDGE, DIR, VX, VY, VZ, PU, P1, P2, GROUP ; ETYP=PLANE
; ELEM_LIST, CMD, ETYP, iFACE, DIR, VX, VY, VZ, bPROJ, PU, P1, P2, P3, P4, GROUP ; ETYP=SOLID
; [PLATE] : plate, plane stress, [PLANE] : axisymmetric, plane strain
617, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
618, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
619, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
620, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
621, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
622, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
623, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
624, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
625, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
626, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
627, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
628, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
629, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
630, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
631, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
632, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
633, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
634, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
635, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
636, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
637, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
638, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
639, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
640, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
641, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
642, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
643, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
644, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
645, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
646, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
647, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
648, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
649, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
650, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
651, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
652, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
653, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
654, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
655, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

1181, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1182, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1183, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1184, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1185, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1186, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1187, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1188, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1189, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1190, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1191, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1192, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1193, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1194, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1195, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1196, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1197, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1198, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1199, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1200, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1201, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1202, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1203, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1204, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1205, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1206, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1207, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1208, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1209, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1210, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1211, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1212, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1213, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1214, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1215, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1216, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,
1217, PRES , PLATE, FACE, GY, 0, 0, 0, NO, -0.9, 0, 0, 0, 0,

; End of data for load case [LS] -----

*USE-STILD, eq

*CONLOAD ; Nodal Loads

; NODE_LIST, FX, FY, FZ, MX, MY, MZ, GROUP

685, 0, 17.2, 0, 0, 0, 0,
693, 0, 17.2, 0, 0, 0, 0,
701, 0, 17.2, 0, 0, 0, 0,
710, 0, 17.2, 0, 0, 0, 0,

*PRESSURE ; Pressure Loads

; ELEM_LIST, CMD, ETYP, LTYP, DIR, VX, VY, VZ, bPROJ, PU, P1, P2, P3, P4, GROUP ; ETYP=PLATE, LTYP=FACE

; ELEM_LIST, CMD, ETYP, LTYP, iEDGE, DIR, VX, VY, VZ, PU, P1, P2, GROUP ; ETYP=PLATE, LTYP=EDGE

; ELEM_LIST, CMD, ETYP, iEDGE, DIR, VX, VY, VZ, PU, P1, P2, GROUP ; ETYP=PLANE

; ELEM_LIST, CMD, ETYP, iFACE, DIR, VX, VY, VZ, bPROJ, PU, P1, P2, P3, P4, GROUP ; ETYP=SOLID

; [PLATE] : plate, plane stress, [PLANE] : axisymmetric, plane strain

617, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -3.22642, -3.22642,
618, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.22642, -3.22642, -3.48113, -3.48113,
619, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.48113, -3.48113, -3.73585, -3.73585,
620, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.73585, -3.73585, -3.99057, -3.99057,
621, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.99057, -3.99057, -4.24528, -4.24528,
622, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -4.24528, -4.24528, -4.5, -4.5,
623, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -3.22642, -3.22642,
624, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.22642, -3.22642, -3.48113, -3.48113,
625, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.48113, -3.48113, -3.73585, -3.73585,
626, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.73585, -3.73585, -3.99057, -3.99057,
627, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.99057, -3.99057, -4.24528, -4.24528,
628, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -4.24528, -4.24528, -4.5, -4.5,
629, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -3.22642, -3.22642,
630, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.22642, -3.22642, -3.48113, -3.48113,
631, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.48113, -3.48113, -3.73585, -3.73585,
632, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.73585, -3.73585, -3.99057, -3.99057,
633, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.99057, -3.99057, -4.24528, -4.24528,
634, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -4.24528, -4.24528, -4.5, -4.5,
635, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -3.22642, -3.22642,
636, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.22642, -3.22642, -3.48113, -3.48113,

637	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.48113	-3.48113	-3.73585	-3.73585
638	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.73585	-3.73585	-3.99057	-3.99057
639	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.99057	-3.99057	-4.24528	-4.24528
640	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-4.24528	-4.24528	-4.5	-4.5
641	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-2.9717	-2.9717	-3.22642	-3.22642
642	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.22642	-3.22642	-3.48113	-3.48113
643	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.48113	-3.48113	-3.73585	-3.73585
644	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.73585	-3.73585	-3.99057	-3.99057
645	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.99057	-3.99057	-4.24528	-4.24528
646	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-4.24528	-4.24528	-4.5	-4.5
647	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-2.9717	-2.9717	-3.22642	-3.22642
648	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.22642	-3.22642	-3.48113	-3.48113
649	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.48113	-3.48113	-3.73585	-3.73585
650	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.73585	-3.73585	-3.99057	-3.99057
651	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.99057	-3.99057	-4.24528	-4.24528
652	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-4.24528	-4.24528	-4.5	-4.5
653	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-2.9717	-2.9717	-3.22642	-3.22642
654	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.22642	-3.22642	-3.48113	-3.48113
655	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.48113	-3.48113	-3.73585	-3.73585
656	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.73585	-3.73585	-3.99057	-3.99057
657	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.99057	-3.99057	-4.24528	-4.24528
658	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-4.24528	-4.24528	-4.5	-4.5
659	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-2.9717	-2.9717	-3.22642	-3.22642
660	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.22642	-3.22642	-3.48113	-3.48113
661	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.48113	-3.48113	-3.73585	-3.73585
662	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.73585	-3.73585	-3.99057	-3.99057
663	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.99057	-3.99057	-4.24528	-4.24528
664	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-4.24528	-4.24528	-4.5	-4.5
665	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-2.9717	-2.9717	-3.22642	-3.22642
666	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.22642	-3.22642	-3.48113	-3.48113
667	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.48113	-3.48113	-3.73585	-3.73585
668	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.73585	-3.73585	-3.99057	-3.99057
669	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.99057	-3.99057	-4.24528	-4.24528
670	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-4.24528	-4.24528	-4.5	-4.5
671	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-2.9717	-2.9717	-3.22642	-3.22642
672	HYDRO	PLATE	FACE	GY	0	0	0	NO</					

712	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-4.24528	-4.24528	-4.5	-4.5
713	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-2.9717	-2.9717	-3.22642	-3.22642
714	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.22642	-3.22642	-3.48113	-3.48113
715	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.48113	-3.48113	-3.73585	-3.73585
716	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.73585	-3.73585	-3.99057	-3.99057
717	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.99057	-3.99057	-4.24528	-4.24528
718	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-4.24528	-4.24528	-4.5	-4.5
719	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-2.9717	-2.9717	-3.22642	-3.22642
720	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.22642	-3.22642	-3.48113	-3.48113
721	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.48113	-3.48113	-3.73585	-3.73585
722	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.73585	-3.73585	-3.99057	-3.99057
723	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.99057	-3.99057	-4.24528	-4.24528
724	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-4.24528	-4.24528	-4.5	-4.5
725	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-2.9717	-2.9717	-3.22642	-3.22642
726	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.22642	-3.22642	-3.48113	-3.48113
727	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.48113	-3.48113	-3.73585	-3.73585
728	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.73585	-3.73585	-3.99057	-3.99057
729	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.99057	-3.99057	-4.24528	-4.24528
730	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-4.24528	-4.24528	-4.5	-4.5
731	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-2.9717	-2.9717	-3.22642	-3.22642
732	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.22642	-3.22642	-3.48113	-3.48113
733	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.48113	-3.48113	-3.73585	-3.73585
734	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.73585	-3.73585	-3.99057	-3.99057
735	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.99057	-3.99057	-4.24528	-4.24528
736	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-4.24528	-4.24528	-4.5	-4.5
737	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-2.9717	-2.9717	-3.22642	-3.22642
738	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.22642	-3.22642	-3.48113	-3.48113
739	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.48113	-3.48113	-3.73585	-3.73585
740	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.73585	-3.73585	-3.99057	-3.99057
741	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.99057	-3.99057	-4.24528	-4.24528
742	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-4.24528	-4.24528	-4.5	-4.5
743	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-2.9717	-2.9717	-3.22642	-3.22642
744	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.22642	-3.22642	-3.48113	-3.48113
745	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.48113	-3.48113	-3.73585	-3.73585
746	HYDRO	PLATE	FACE	GY	0	0	0	NO	0	-3.73585	-3.73585	-3.99057	-3.99057
747	HYDRO	PLATE	FACE	GY	0	0	0	NO</					

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

787, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.48113, -3.48113, -3.73585, -3.73585,
788, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.73585, -3.73585, -3.99057, -3.99057,
789, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.99057, -3.99057, -4.24528, -4.24528,
790, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -4.24528, -4.24528, -4.5, -4.5,
791, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -3.22642, -3.22642,
792, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.22642, -3.22642, -3.48113, -3.48113,
793, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.48113, -3.48113, -3.73585, -3.73585,
794, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.73585, -3.73585, -3.99057, -3.99057,
795, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.99057, -3.99057, -4.24528, -4.24528,
796, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -4.24528, -4.24528, -4.5, -4.5,
797, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -3.22642, -3.22642,
798, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.22642, -3.22642, -3.48113, -3.48113,
799, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.48113, -3.48113, -3.73585, -3.73585,
800, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.73585, -3.73585, -3.99057, -3.99057,
801, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.99057, -3.99057, -4.24528, -4.24528,
802, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -4.24528, -4.24528, -4.5, -4.5,
803, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -3.22642, -3.22642,
804, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.22642, -3.22642, -3.48113, -3.48113,
805, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.48113, -3.48113, -3.73585, -3.73585,
806, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.73585, -3.73585, -3.99057, -3.99057,
807, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.99057, -3.99057, -4.24528, -4.24528,
808, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -4.24528, -4.24528, -4.5, -4.5,
809, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -3.22642, -3.22642,
810, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.22642, -3.22642, -3.48113, -3.48113,
811, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.48113, -3.48113, -3.73585, -3.73585,
812, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.73585, -3.73585, -3.99057, -3.99057,
813, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.99057, -3.99057, -4.24528, -4.24528,
814, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -4.24528, -4.24528, -4.5, -4.5,
815, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.2938, -1.25247, -1.00862, -1.01702,
816, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.72074, -2.72135, -2.9717,
817, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72263, -2.9717, -2.9717, -2.72327,
818, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.71874, -2.72027, -2.9717, -2.9717,
819, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.72185, -2.72221, -2.9717,
820, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.998821, -1.004, -1.24823, -1.24857,
821, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -0.249044, -0.249608, -3.2e-006,
822, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.979928, -1.22407, -1.22707, -0.980032,
823, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.71707, -1.4721, -1.46868, -1.71726,
824, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.23934, -0.991778, -0.992165, -1.23978,
825, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72897, -1.74671, -1.98374, -1.97657,
826, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47642, -2.22878, -2.22841, -2.47583,
827, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.4786, -1.23127, -1.23659, -1.482,
828, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -3.2e-006, -0.24641, -0.244107,
829, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.245871, -0.247584, -3.2e-006, -3.2e-006,
830, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.96709, -1.71726, -1.71919, -1.96883,
831, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.983, -1.98374, -1.74671, -1.74774,
832, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.25247, -1.48157, -1.48069, -1.24823,
833, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47264, -1.24857, -1.24823, -1.48069,
834, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.70706, -1.71655, -1.47288, -1.46356,
835, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72006, -2.9717, -2.9717, -2.72055,
836, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.482, -1.23659, -1.23869, -1.4841,
837, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.22996, -1.22632, -1.47403, -1.47569,
838, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72071, -2.72088, -2.47032, -2.46984,
839, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.23706, -1.2341, -1.47932, -1.48126,
840, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.23508, -1.20093, -1.42458, -1.46356,
841, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.97391, -1.983, -1.74774, -1.72699,
842, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.96387, -1.71655, -1.70706, -1.9582,
843, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.69802, -1.42458, -1.47264, -1.71338,
844, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.72071, -2.71991, -2.9717,
845, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72074, -2.9717, -2.9717, -2.72068,
846, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.247584, -0.245871, -0.49024, -0.493569,
847, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.97349, -1.97207, -1.72437, -1.72694,
848, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.496743, -0.744822, -0.7464, -0.499939,
849, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.251113, -3.2e-006, -3.2e-006, -0.249412,
850, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.42458, -1.19921, -1.24857, -1.47264,
851, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.2938, -1.23841, -1.48292, -1.52484,
852, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.96387, -1.96613, -1.71672, -1.71655,
853, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.24857, -1.19921, -0.975288, -0.998821,
854, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.975288, -1.19921, -1.20093, -0.972174,
855, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72326, -2.47563, -2.47642, -2.72406,
856, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -3.2e-006, -0.24941, -0.244107,
857, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.252121, -3.2e-006, -3.2e-006, -0.249608,
858, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72263, -2.72327, -2.47583, -2.47504,
859, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.991907, -0.990569, -1.23821, -1.23927,
860, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -3.2e-006, -0.244167, -0.244368,
861, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.72216, -2.72184, -2.9717,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

862, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.71707, -1.96598, -1.96629, -1.7105,
863, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.96629, -1.97391, -1.72699, -1.7105,
864, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.247645, -0.495286, -0.495378, -0.247143,
865, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.96598, -1.71707, -1.71726, -1.96709,
866, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.72326, -2.72406, -2.9717,
867, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.744175, -0.742927, -0.990569, -0.991907,
868, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.983355, -0.98183, -1.22632, -1.22996,
869, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.249209, -0.24941, -3.2e-006, -3.2e-006,
870, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.23127, -1.4786, -1.47615, -1.22791,
871, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72256, -2.72216, -2.9717, -2.9717,
872, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.00862, -1.25247, -1.24823, -1.004,
873, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.73349, -1.98113, -1.98109, -1.73387,
874, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.251219, -3.2e-006, -3.2e-006, -0.251113,
875, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72074, -2.47085, -2.4714, -2.72135,
876, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48734, -1.4871, -1.73259, -1.73163,
877, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.745644, -0.498269, -0.496766, -0.74239,
878, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.742927, -0.744175, -0.495378, -0.495286,
879, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -3.2e-006, -0.245579, -0.247078,
880, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.71919, -1.47248, -1.47615, -1.72191,
881, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.46868, -1.22707, -1.22407, -1.47248,
882, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.742927, -0.495286, -0.494856, -0.744163,
883, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.985775, -0.983355, -1.22996, -1.23208,
884, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.985775, -1.23208, -1.2341, -0.987919,
885, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.96281, -1.95588, -1.69802, -1.71338,
886, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22259, -2.47182, -2.47218, -2.22359,
887, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -0.243852, -0.244107, -3.2e-006,
888, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.503177, -0.251113, -0.249412, -0.499773,
889, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.23841, -0.996909, -0.975938, -1.19937,
890, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.996909, -1.23841, -1.2938, -1.01702,
891, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.744822, -0.993038, -0.993852, -0.7464,
892, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72088, -2.72071, -2.9717, -2.9717,
893, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.21633, -2.46804, -2.4684, -2.21659,
894, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.982899, -0.980032, -1.22707, -1.23508,
895, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -2.72, -2.72051,
896, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -2.72406, -2.72327,
897, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.23841, -1.19937, -1.44087, -1.48292,
898, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47341, -2.4745, -2.22682, -2.22531,
899, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.52484, -1.48292, -1.72699, -1.74774,
900, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -3.2e-006, -0.250242, -0.24941,
901, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.2341, -1.23208, -1.47704, -1.47932,
902, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47248, -1.71919, -1.71726, -1.46868,
903, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72, -2.71994, -2.46804, -2.46857,
904, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.4841, -1.72853, -1.72694, -1.482,
905, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72191, -1.47615, -1.4786, -1.72437,
906, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.4721, -1.23508, -1.22707, -1.46868,
907, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.23508, -1.4721, -1.44087, -1.20677,
908, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.23978, -0.992165, -0.993477, -1.24076,
909, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.69802, -1.70706, -1.46356, -1.42458,
910, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22766, -2.22841, -1.98104, -1.98065,
911, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.243842, -0.243852, -3.2e-006, -3.2e-006,
912, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.71864, -2.9717, -2.9717, -2.71896,
913, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48292, -1.44087, -1.7105, -1.72699,
914, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.245871, -0.244729, -0.489437, -0.49024,
915, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.46724, -2.71874, -2.71869, -2.46568,
916, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22727, -2.22822, -2.47563, -2.4747,
917, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48069, -1.72183, -1.71338, -1.47264,
918, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72344, -1.72567, -1.48126, -1.47932,
919, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -3.2e-006, -0.252121, -0.250189,
920, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.243965, -3.2e-006, -3.2e-006, -0.244107,
921, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -2.72263, -2.72256,
922, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.752632, -0.749066, -0.498888, -0.500666,
923, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.496766, -0.249044, -0.247078, -0.493542,
924, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.97202, -1.96988, -2.21975, -2.22097,
925, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.73383, -1.73349, -1.48585, -1.48667,
926, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.71864, -2.71896, -2.4674, -2.4655,
927, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47569, -1.47403, -1.71672, -1.71832,
928, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.7105, -1.44087, -1.4721, -1.71707,
929, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.498741, -0.250189, -0.252121, -0.501472,
930, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -3.2e-006, -0.250189, -0.247081,
931, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -0.243965, -0.243842, -3.2e-006,
932, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.22632, -1.2305, -1.47288, -1.47403,
933, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47403, -1.47288, -1.71655, -1.71672,
934, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.251219, -0.250242, -3.2e-006, -3.2e-006,
935, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48157, -1.52361, -1.74671, -1.72897,
936, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.244167, -3.2e-006, -3.2e-006, -0.244107,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

937, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.24606, -0.243486, -0.495237, -0.494856,
938, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72183, -1.48069, -1.48157, -1.72897,
939, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47359, -2.47303, -2.72145, -2.72187,
940, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.23208, -1.22996, -1.47569, -1.47704,
941, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48552, -1.72874, -1.72853, -1.4841,
942, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.490386, -0.244107, -0.24641, -0.49337,
943, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72027, -2.47026, -2.47208, -2.72071,
944, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.744822, -0.496743, -0.49523, -0.744385,
945, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.46865, -2.71991, -2.72071, -2.46984,
946, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72216, -2.47341, -2.47218, -2.72184,
947, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -3.2e-006, -0.243486, -0.24606,
948, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.243842, -0.243965, -0.488474, -0.488032,
949, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.73387, -1.98109, -1.98029, -1.73361,
950, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.500666, -0.250242, -0.251219, -0.503225,
951, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.488474, -0.489399, -0.244107, -0.243852,
952, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.72142, -2.72088, -2.9717,
953, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -3.2e-006, -0.251926, -0.249209,
954, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.49337, -0.73995, -0.736683, -0.490386,
955, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.494856, -0.495286, -0.247645, -0.24606,
956, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.73995, -0.744218, -0.990214, -0.985735,
957, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.98109, -2.22822, -2.22727, -1.98029,
958, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.73392, -1.48689, -1.48718, -1.73337,
959, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -2.71994, -2.72,
960, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -2.72145, -2.72055,
961, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -2.7207, -2.72068,
962, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -2.72293, -2.72326,
963, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.247078, -0.245579, -0.491226, -0.493542,
964, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.97657, -2.22386, -2.22106, -1.97099,
965, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.488474, -0.243965, -0.244107, -0.488948,
966, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48657, -1.23927, -1.23821, -1.48585,
967, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -3.2e-006, -0.244729, -0.245871,
968, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72006, -2.72055, -2.46955, -2.4684,
969, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47504, -2.4745, -2.72256, -2.72263,
970, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -3.2e-006, -0.244107, -0.245579,
971, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.4714, -2.47176, -2.72148, -2.72135,
972, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72256, -2.4745, -2.47341, -2.72216,
973, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.71896, -2.9717, -2.9717, -2.71928,
974, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72185, -2.9717, -2.9717, -2.72148,
975, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72135, -2.72148, -2.9717, -2.9717,
976, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.757697, -0.503177, -0.499773, -0.75034,
977, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.247143, -0.495378, -0.495241, -0.246171,
978, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.246171, -3.2e-006, -3.2e-006, -0.247143,
979, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.72184, -2.72142, -2.9717,
980, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72293, -2.4747, -2.47563, -2.72326,
981, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -0.244368, -0.244729, -3.2e-006,
982, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.24941, -0.24641, -3.2e-006, -3.2e-006,
983, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48686, -1.48657, -1.73387, -1.73361,
984, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -0.244379, -0.249392, -3.2e-006,
985, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.4684, -2.46804, -2.71994, -2.72006,
986, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47642, -2.47563, -2.22822, -2.22878,
987, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47642, -2.47583, -2.72327, -2.72406,
988, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47932, -1.47704, -1.72074, -1.72344,
989, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.251926, -0.249392, -0.496743, -0.499939,
990, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.49523, -0.244379, -0.246171, -0.495241,
991, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.72187, -2.72145, -2.9717,
992, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.247081, -0.243486, -3.2e-006, -3.2e-006,
993, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22841, -2.22878, -1.98113, -1.98104,
994, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.98113, -2.22878, -2.22822, -1.98109,
995, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.499773, -0.249412, -0.247584, -0.493569,
996, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.742927, -0.744163, -0.991778, -0.990569,
997, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.496743, -0.249392, -0.244379, -0.49523,
998, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.75034, -0.499773, -0.493569, -0.737839,
999, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -0.246171, -0.244379, -3.2e-006,
1000, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.251113, -0.503177, -0.503225, -0.251219,
1001, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.247645, -3.2e-006, -3.2e-006, -0.24606,
1002, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.46865, -2.46784, -2.71928, -2.71991,
1003, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.244107, -0.24941, -0.498888, -0.488948,
1004, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72221, -2.72293, -2.9717, -2.9717,
1005, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -3.2e-006, -0.247645, -0.247143,
1006, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -2.71864, -2.71869,
1007, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.497603, -0.497321, -0.24941, -0.249209,
1008, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.992924, -0.991907, -1.23927, -1.23982,
1009, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.498741, -0.497763, -0.247081, -0.250189,
1010, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48667, -1.48585, -1.23821, -1.23934,
1011, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22727, -2.4747, -2.47385, -2.22621,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1012, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.72006, -2.71994, -2.9717,
1013, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -0.247078, -0.249044, -3.2e-006,
1014, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.72051, -2.7207, -2.9717,
1015, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -2.71991, -2.71928,
1016, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -2.72071, -2.72187,
1017, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -0.247584, -0.249412, -3.2e-006,
1018, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.744218, -0.73995, -0.49337, -0.497321,
1019, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.9717, -2.71869, -2.71874,
1020, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2e-006, -0.249392, -0.251926, -3.2e-006,
1021, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.73561, -0.975288, -0.972174, -0.731201,
1022, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.23821, -0.990569, -0.991778, -1.23934,
1023, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9717, -2.72027, -2.72071, -2.9717,
1024, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.499939, -0.497603, -0.249209, -0.251926,
1025, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47056, -2.72068, -2.7207, -2.47009,
1026, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.745644, -0.748399, -0.501472, -0.498269,
1027, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.73349, -1.73387, -1.48657, -1.48585,
1028, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.98113, -1.73349, -1.73383, -1.98104,
1029, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.4747, -2.72293, -2.72221, -2.47385,
1030, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47026, -2.72027, -2.71874, -2.46724,
1031, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.998821, -0.975288, -0.73561, -0.749066,
1032, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22168, -2.47085, -2.47056, -2.22078,
1033, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.494856, -0.495237, -0.744739, -0.744163,
1034, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.98065, -1.73392, -1.73337, -1.97982,
1035, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47176, -2.47281, -2.72185, -2.72148,
1036, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22766, -2.47504, -2.47583, -2.22841,
1037, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.73392, -1.98065, -1.98104, -1.73383,
1038, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.249044, -0.496766, -0.498269, -0.249608,
1039, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47281, -2.47176, -2.22284, -2.22463,
1040, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.98183, -0.983355, -0.737061, -0.735195,
1041, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.004, -0.752632, -0.756156, -1.00862,
1042, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.497321, -0.49337, -0.24641, -0.24941,
1043, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.498741, -0.501472, -0.748399, -0.746885,
1044, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72068, -2.47056, -2.47085, -2.72074,
1045, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.488948, -0.73561, -0.731201, -0.488474,
1046, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.488878, -0.488632, -0.734477, -0.734135,
1047, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.243486, -0.247081, -0.497763, -0.495237,
1048, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72184, -2.47218, -2.47182, -2.72142,
1049, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22359, -2.22531, -1.97804, -1.97548,
1050, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47026, -2.22106, -2.22386, -2.47208,
1051, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.243842, -0.488032, -0.488474, -0.243852,
1052, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.495237, -0.497763, -0.745889, -0.744739,
1053, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.4871, -1.48734, -1.2404, -1.24038,
1054, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22237, -2.22284, -2.47176, -2.4714,
1055, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.24941, -0.250242, -0.500666, -0.498888,
1056, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.735195, -0.489399, -0.488474, -0.734149,
1057, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.734477, -0.488632, -0.490386, -0.736683,
1058, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.501472, -0.252121, -0.249608, -0.498269,
1059, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.4745, -2.47504, -2.22766, -2.22682,
1060, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47281, -2.47385, -2.72221, -2.72185,
1061, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.756156, -0.757697, -1.01702, -1.00862,
1062, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48667, -1.23934, -1.23978, -1.48689,
1063, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.733188, -0.734764, -0.982899, -0.972787,
1064, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.734149, -0.9821, -0.98183, -0.735195,
1065, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48657, -1.48686, -1.23982, -1.23927,
1066, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.49024, -0.489437, -0.734764, -0.733188,
1067, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.97207, -1.97058, -1.72191, -1.72437,
1068, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.733106, -0.734149, -0.488474, -0.488032,
1069, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.71896, -2.71928, -2.46784, -2.4674,
1070, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.46955, -2.47303, -2.22574, -2.22052,
1071, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.244167, -0.244107, -0.490386, -0.488632,
1072, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.991778, -0.744163, -0.744739, -0.992165,
1073, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.71864, -2.4655, -2.46568, -2.71869,
1074, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.73383, -1.48667, -1.48689, -1.73392,
1075, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47303, -2.46955, -2.72055, -2.72145,
1076, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.495241, -0.744485, -0.744385, -0.49523,
1077, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.495378, -0.744175, -0.744485, -0.495241,
1078, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.744485, -0.992924, -0.992677, -0.744385,
1079, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.733188, -0.737839, -0.493569, -0.49024,
1080, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.991907, -0.992924, -0.744485, -0.744175,
1081, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.21659, -2.22052, -1.97391, -1.96629,
1082, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72, -2.46857, -2.46947, -2.72051,
1083, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.503225, -0.503177, -0.757697, -0.756156,
1084, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22359, -2.47218, -2.47341, -2.22531,
1085, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.734764, -0.489437, -0.488878, -0.734135,
1086, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.497763, -0.498741, -0.746885, -0.745889,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1087, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47248, -1.22407, -1.22791, -1.47615,
1088, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.01702, -0.757697, -0.75034, -0.996909,
1089, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.499939, -0.7464, -0.744967, -0.497603,
1090, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72071, -2.47208, -2.47359, -2.72187,
1091, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.245579, -0.244107, -0.489399, -0.491226,
1092, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47085, -2.22168, -2.22237, -2.4714,
1093, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.993477, -0.992165, -0.744739, -0.745889,
1094, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.7207, -2.72051, -2.46947, -2.47009,
1095, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.244368, -0.244167, -0.488632, -0.488878,
1096, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.244368, -0.488878, -0.489437, -0.244729,
1097, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.72088, -2.72142, -2.47182, -2.47032,
1098, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48675, -1.73169, -1.73337, -1.48718,
1099, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.979928, -0.734477, -0.736683, -0.982316,
1100, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.46857, -2.46804, -2.21633, -2.21764,
1101, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22727, -2.22621, -1.97814, -1.98029,
1102, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.22791, -0.982316, -0.985735, -1.23127,
1103, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.4871, -1.48686, -1.73361, -1.73259,
1104, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.73169, -1.97804, -1.97982, -1.73337,
1105, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.749066, -0.73561, -0.488948, -0.498888,
1106, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.97814, -1.73259, -1.73361, -1.98029,
1107, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.737839, -0.733188, -0.972787, -0.975938,
1108, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22463, -1.97694, -1.97814, -2.22621,
1109, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22052, -2.22574, -1.983, -1.97391,
1110, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.97982, -2.22682, -2.22766, -1.98065,
1111, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22259, -2.22097, -2.47032, -2.47182,
1112, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.993852, -1.23985, -1.23869, -0.992636,
1113, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.95588, -2.21143, -2.21235, -1.9582,
1114, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.96988, -1.72074, -1.71832, -1.96755,
1115, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48552, -1.23985, -1.2404, -1.48734,
1116, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22097, -2.22259, -1.97454, -1.97202,
1117, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.993477, -0.994293, -1.24228, -1.24076,
1118, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72897, -1.97657, -1.97099, -1.72183,
1119, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.97435, -2.22237, -2.22168, -1.97349,
1120, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.2404, -0.993038, -0.992677, -1.24038,
1121, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.735195, -0.737061, -0.491226, -0.489399,
1122, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48397, -1.72852, -1.73169, -1.48675,
1123, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.990998, -0.745644, -0.74239, -0.987919,
1124, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.981314, -0.9821, -0.734149, -0.733106,
1125, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.745889, -0.746885, -0.994293, -0.993477,
1126, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.46947, -2.21889, -2.22, -2.47009,
1127, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.503225, -0.756156, -0.752632, -0.500666,
1128, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.21472, -2.46724, -2.46568, -2.21143,
1129, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.497321, -0.497603, -0.744967, -0.744218,
1130, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.23982, -1.24038, -0.992677, -0.992924,
1131, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.994293, -0.99402, -1.24002, -1.24228,
1132, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.4674, -2.46784, -2.21669, -2.21609,
1133, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.744385, -0.992677, -0.993038, -0.744822,
1134, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.4655, -2.4674, -2.21609, -2.21235,
1135, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72567, -1.72344, -1.97202, -1.97454,
1136, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.46724, -2.21472, -2.22106, -2.47026,
1137, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.46984, -2.47032, -2.22097, -2.21975,
1138, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48686, -1.4871, -1.24038, -1.23982,
1139, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47056, -2.47009, -2.22, -2.22078,
1140, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.73163, -1.73259, -1.97814, -1.97694,
1141, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.97804, -1.73169, -1.72852, -1.97548,
1142, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.46568, -2.4655, -2.21235, -2.21143,
1143, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.21975, -2.21781, -2.46865, -2.46984,
1144, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.97099, -2.22106, -2.21472, -1.96281,
1145, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.4684, -2.46955, -2.22052, -2.21659,
1146, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.46865, -2.21781, -2.21669, -2.46784,
1147, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48689, -1.23978, -1.24076, -1.48718,
1148, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47303, -2.47359, -2.22683, -2.22574,
1149, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.97349, -2.22168, -2.22078, -1.97207,
1150, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.96613, -1.96387, -2.21609, -2.21669,
1151, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47208, -2.22386, -2.22683, -2.47359,
1152, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.46857, -2.21764, -2.21889, -2.46947,
1153, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.493542, -0.491226, -0.737061, -0.739725,
1154, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.493542, -0.739725, -0.74239, -0.496766,
1155, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.488474, -0.731201, -0.733106, -0.488032,
1156, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.47281, -2.22463, -2.22621, -2.47385,
1157, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.21669, -2.21781, -1.96755, -1.96613,
1158, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.74774, -1.74671, -1.52361, -1.52484,
1159, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.46356, -1.47288, -1.2305, -1.23508,
1160, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.7464, -0.993852, -0.992636, -0.744967,
1161, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.21143, -1.95588, -1.96281, -2.21472,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1162, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.2305, -1.22632, -0.98183, -0.9821,
1163, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.24002, -1.23706, -1.48126, -1.48397,
1164, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.22407, -0.979928, -0.982316, -1.22791,
1165, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.734135, -0.980032, -0.982899, -0.734764,
1166, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.98374, -1.983, -2.22574, -2.22683,
1167, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.990214, -0.992636, -1.23869, -1.23659,
1168, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.979928, -0.980032, -0.734135, -0.734477,
1169, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.993038, -1.2404, -1.23985, -0.993852,
1170, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72874, -1.73163, -1.97694, -1.97404,
1171, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.482, -1.72694, -1.72437, -1.4786,
1172, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72074, -1.96988, -1.97202, -1.72344,
1173, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.96988, -1.96755, -2.21781, -2.21975,
1174, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.73163, -1.72874, -1.48552, -1.48734,
1175, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.992636, -0.990214, -0.744218, -0.744967,
1176, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.2305, -0.9821, -0.981314, -1.23508,
1177, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.24228, -1.48675, -1.48718, -1.24076,
1178, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.4841, -1.23869, -1.23985, -1.48552,
1179, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72853, -1.97435, -1.97349, -1.72694,
1180, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.21764, -2.21633, -1.96598, -1.96709,
1181, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.983355, -0.985775, -0.739725, -0.737061,
1182, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.24228, -1.24002, -1.48397, -1.48675,
1183, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.985735, -0.990214, -1.23659, -1.23127,
1184, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22531, -2.22682, -1.97982, -1.97804,
1185, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22, -1.97058, -1.97207, -2.22078,
1186, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.95588, -1.9582, -1.70706, -1.69802,
1187, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48157, -1.25247, -1.2938, -1.52361,
1188, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.975938, -0.972787, -1.20677, -1.19937,
1189, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.972174, -1.20093, -1.23508, -0.981314,
1190, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.737839, -0.975938, -0.996909, -0.75034,
1191, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.21889, -1.96883, -1.97058, -2.22,
1192, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.23508, -1.20677, -0.972787, -0.982899,
1193, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.748399, -0.745644, -0.990998, -0.99402,
1194, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.749066, -0.752632, -1.004, -0.998821,
1195, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.981314, -0.733106, -0.731201, -0.972174,
1196, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.99402, -0.990998, -1.23706, -1.24002,
1197, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.71672, -1.96613, -1.96755, -1.71832,
1198, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.23706, -0.990998, -0.987919, -1.2341,
1199, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.21633, -2.21659, -1.96629, -1.96598,
1200, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22386, -1.97657, -1.98374, -2.22683,
1201, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.21609, -1.96387, -1.9582, -2.21235,
1202, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22284, -2.22237, -1.97435, -1.97404,
1203, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22284, -1.97404, -1.97694, -2.22463,
1204, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.22359, -1.97548, -1.97454, -2.22259,
1205, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.21764, -1.96709, -1.96883, -2.21889,
1206, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.739725, -0.985775, -0.987919, -0.74239,
1207, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.73995, -0.985735, -0.982316, -0.736683,
1208, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.746885, -0.748399, -0.99402, -0.994293,
1209, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48397, -1.48126, -1.72567, -1.72852,
1210, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72874, -1.97404, -1.97435, -1.72853,
1211, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.72183, -1.97099, -1.96281, -1.71338,
1212, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.71832, -1.72074, -1.47704, -1.47569,
1213, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.97454, -1.97548, -1.72852, -1.72567,
1214, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.97058, -1.96883, -1.71919, -1.72191,
1215, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.42458, -1.20093, -1.19921, 0,
1216, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.44087, -1.19937, -1.20677, 0,
1217, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.52361, -1.2938, -1.52484, 0,
1275, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.86, -0.86, -0.811677, -0.811321,
1276, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.811321, -0.811677, -0.76329, -0.762642,
1277, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.762642, -0.76329, -0.714889, -0.713962,
1278, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.713962, -0.714889, -0.666533, -0.665283,
1279, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.665283, -0.666533, -0.618208, -0.616604,
1280, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.616604, -0.618208, -0.570184, -0.567925,
1281, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.567925, -0.570184, -0.522484, -0.520598,
1282, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.520598, -0.522484, -0.474923, -0.473271,
1283, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.473271, -0.474923, -0.427361, -0.425944,
1284, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.425944, -0.427361, -0.379883, -0.378617,
1285, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.378617, -0.379883, -0.332388, -0.33129,
1286, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.33129, -0.332388, -0.284899, -0.283963,
1287, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.283963, -0.284899, -0.237415, -0.236636,
1288, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.236636, -0.237415, -0.189933, -0.189309,
1289, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.189309, -0.189933, -0.142452, -0.141982,
1290, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.141982, -0.142452, -0.0949629, -0.0946548,
1291, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0946548, -0.0949629, -0.0474067, -0.0473278,
1292, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0473278, -0.0474067, -8e-007, -8e-007,
1293, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.86, -0.86, -0.811922, -0.811677,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1294, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.811677, -0.811922, -0.763844, -0.76329,
1295, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.76329, -0.763844, -0.715765, -0.714889,
1296, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.714889, -0.715765, -0.667687, -0.666533,
1297, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.666533, -0.667687, -0.619609, -0.618208,
1298, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.618208, -0.619609, -0.571754, -0.570184,
1299, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.570184, -0.571754, -0.524037, -0.522484,
1300, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.522484, -0.524037, -0.476352, -0.474923,
1301, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.474923, -0.476352, -0.428665, -0.427361,
1302, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.427361, -0.428665, -0.381033, -0.379883,
1303, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.379883, -0.381033, -0.333403, -0.332388,
1304, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.332388, -0.333403, -0.285774, -0.284899,
1305, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.284899, -0.285774, -0.238145, -0.237415,
1306, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.237415, -0.238145, -0.190517, -0.189933,
1307, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.189933, -0.190517, -0.142889, -0.142452,
1308, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.142452, -0.142889, -0.0952604, -0.0949629,
1309, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0949629, -0.0952604, -0.0475852, -0.0474067,
1310, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0474067, -0.0475852, -8e-007, -8e-007,
1311, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.86, -0.86, -0.812222, -0.811922,
1312, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.811922, -0.812222, -0.764445, -0.763844,
1313, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.763844, -0.764445, -0.716667, -0.715765,
1314, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.715765, -0.716667, -0.668889, -0.667687,
1315, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.667687, -0.668889, -0.621111, -0.619609,
1316, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.619609, -0.621111, -0.573334, -0.571754,
1317, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.571754, -0.573334, -0.525556, -0.524037,
1318, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.524037, -0.525556, -0.477778, -0.476352,
1319, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.476352, -0.477778, -0.43, -0.428665,
1320, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.428665, -0.43, -0.382223, -0.381033,
1321, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.381033, -0.382223, -0.334445, -0.333403,
1322, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.333403, -0.334445, -0.286667, -0.285774,
1323, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.285774, -0.286667, -0.238889, -0.238145,
1324, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.238145, -0.238889, -0.191112, -0.190517,
1325, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.190517, -0.191112, -0.143334, -0.142889,
1326, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.142889, -0.143334, -0.0955563, -0.0952604,
1327, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0952604, -0.0955563, -0.0477785, -0.0475852,
1328, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0475852, -0.0477785, -8e-007, -8e-007,
1348, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0980933, -0.0965614, -0.143541, -0.14661,
1349, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.573334, -0.569684, -0.522696, -0.525556,
1350, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.569684, -0.616866, -0.611957, -0.565288,
1351, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.286071, -0.283568, -0.235404, -0.237949,
1352, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.286667, -0.286071, -0.237949, -0.238889,
1353, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.382223, -0.381515, -0.333749, -0.334445,
1354, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.429649, -0.428787, -0.381485, -0.381515,
1355, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.237949, -0.235404, -0.189935, -0.19057,
1356, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.385811, -0.384378, -0.43385, -0.433531,
1357, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.19636, -0.191112, -0.143334, -0.147343,
1358, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.33249, -0.333136, -0.381485, -0.380956,
1359, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -8e-007, -0.0483915, -0.0477785, -8e-007,
1360, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.661515, -0.712002, -0.709843, -0.657105,
1361, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.143541, -0.189935, -0.190895, -0.14661,
1362, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.333136, -0.33249, -0.277687, -0.283568,
1363, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.209003, -0.231885, -0.277687, -0.261499,
1364, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.191112, -0.238889, -0.237949, -0.19057,
1365, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.209003, -0.202157, -0.15063, -0.152069,
1366, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.76158, -0.761605, -0.710416, -0.709843,
1367, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.19636, -0.147343, -0.15063, -0.202157,
1368, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.238889, -0.191112, -0.19636, -0.243516,
1369, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.152069, -0.14661, -0.190895, -0.209003,
1370, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.86, -0.86, -0.811923, -0.811495,
1371, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.665313, -0.668889, -0.716667, -0.714027,
1372, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.550574, -0.536318, -0.488123, -0.50347,
1373, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.47365, -0.519654, -0.515436, -0.473132,
1374, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.261499, -0.277687, -0.33249, -0.305814,
1375, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.716667, -0.668889, -0.666862, -0.714369,
1376, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.14661, -0.152069, -0.100037, -0.0980933,
1377, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0478392, -0.048305, -8e-007, -8e-007,
1378, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.189935, -0.235404, -0.231885, -0.190895,
1379, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.525556, -0.477778, -0.48308, -0.529786,
1380, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.600152, -0.580415, -0.536318, -0.550574,
1381, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0955563, -0.0955542, -0.0478392, -0.0477785,
1382, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.381485, -0.428787, -0.429617, -0.380956,
1383, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.761605, -0.762185, -0.712343, -0.710416,
1384, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.488123, -0.536318, -0.529786, -0.48308,
1385, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.86, -0.811694, -0.811691, -0.86,
1386, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.50347, -0.488123, -0.43385, -0.460868,
1387, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.19057, -0.143268, -0.143334, -0.191112,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1388, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.81181, -0.763149, -0.764445, -0.812222,
1389, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.763165, -0.764445, -0.716667, -0.714369,
1390, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0477785, -0.0478392, -8e-007, -8e-007,
1391, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.656837, -0.663692, -0.618604, -0.600152,
1392, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.305814, -0.291783, -0.249034, -0.261499,
1393, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.261499, -0.249034, -0.202157, -0.209003,
1394, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.661515, -0.665313, -0.714027, -0.712002,
1395, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.04868, -0.0494371, -0.100037, -0.0991947,
1396, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.429617, -0.460868, -0.43385, -0.401353,
1397, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.580415, -0.618604, -0.620584, -0.576066,
1398, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.43, -0.382223, -0.385811, -0.433531,
1399, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.762285, -0.712002, -0.714027, -0.763149,
1400, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0494371, -8e-007, -8e-007, -0.0489012,
1401, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.381515, -0.382223, -0.43, -0.429649,
1402, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.621111, -0.668889, -0.665313, -0.616866,
1403, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.620584, -0.618604, -0.663692, -0.666862,
1404, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.385811, -0.382223, -0.334445, -0.336394,
1405, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.401353, -0.43385, -0.384378, -0.363515,
1406, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.811694, -0.86, -0.86, -0.811966,
1407, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0955563, -0.0477785, -0.0483915, -0.0977874,
1408, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.86, -0.81181, -0.812222, -0.86,
1409, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.47365, -0.428787, -0.429649, -0.475782,
1410, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.620584, -0.621111, -0.573334, -0.576066,
1411, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -8e-007, -0.04868, -0.0483915, -8e-007,
1412, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.336402, -0.305814, -0.33249, -0.363515,
1413, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.536318, -0.580415, -0.576066, -0.529786,
1414, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.573334, -0.525556, -0.529786, -0.576066,
1415, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.04868, -8e-007, -8e-007, -0.0494371,
1416, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.336402, -0.384378, -0.385811, -0.336394,
1417, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.811691, -0.811694, -0.76158, -0.762285,
1418, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0478392, -0.0955542, -0.0965614, -0.048305,
1419, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.763149, -0.714027, -0.716667, -0.764445,
1420, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.811923, -0.812222, -0.764445, -0.763165,
1421, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.81181, -0.86, -0.86, -0.811691,
1422, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.81181, -0.811691, -0.762285, -0.763149,
1423, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0483915, -0.04868, -0.0991947, -0.0977874,
1424, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0955542, -0.0955563, -0.143334, -0.143268,
1425, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -8e-007, -8e-007, -0.048305, -0.0489012,
1426, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.661515, -0.611957, -0.616866, -0.665313,
1427, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.811923, -0.763165, -0.762185, -0.811495,
1428, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0991947, -0.15063, -0.147343, -0.0977874,
1429, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0977874, -0.147343, -0.143334, -0.0955563,
1430, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.333749, -0.286071, -0.286667, -0.334445,
1431, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.86, -0.86, -0.811495, -0.811966,
1432, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.152069, -0.15063, -0.0991947, -0.100037,
1433, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.333136, -0.283568, -0.286071, -0.333749,
1434, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.812222, -0.811923, -0.86, -0.86,
1435, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.238889, -0.243516, -0.289946, -0.286667,
1436, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.43, -0.433531, -0.48308, -0.477778,
1437, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.334445, -0.286667, -0.289946, -0.336394,
1438, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.477778, -0.525556, -0.522696, -0.475782,
1439, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.600152, -0.605956, -0.657105, -0.656837,
1440, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0980933, -0.100037, -0.0494371, -0.0489012,
1441, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0965614, -0.0955542, -0.143268, -0.143541,
1442, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.291783, -0.289946, -0.243516, -0.249034,
1443, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.0980933, -0.0489012, -0.048305, -0.0965614,
1444, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.143541, -0.143268, -0.19057, -0.189935,
1445, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.621111, -0.620584, -0.666862, -0.668889,
1446, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.656837, -0.657105, -0.709843, -0.710416,
1447, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.43, -0.477778, -0.475782, -0.429649,
1448, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.621111, -0.616866, -0.569684, -0.573334,
1449, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.429617, -0.428787, -0.47365, -0.473132,
1450, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.710416, -0.712343, -0.663692, -0.656837,
1451, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.333136, -0.333749, -0.381515, -0.381485,
1452, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.515436, -0.519654, -0.565288, -0.559859,
1453, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.559859, -0.565288, -0.611957, -0.605956,
1454, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.605956, -0.611957, -0.661515, -0.657105,
1455, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.709843, -0.712002, -0.762285, -0.76158,
1456, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.811694, -0.811966, -0.761605, -0.76158,
1457, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.519654, -0.522696, -0.569684, -0.565288,
1458, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.433531, -0.43385, -0.488123, -0.48308,
1459, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.231885, -0.235404, -0.283568, -0.277687,
1460, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.460868, -0.473132, -0.515436, -0.50347,
1461, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.336394, -0.289946, -0.291783, -0.336402,
1462, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.550574, -0.559859, -0.605956, -0.600152,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1463, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.475782, -0.522696, -0.519654, -0.47365,
1464, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.811495, -0.762185, -0.761605, -0.811966,
1465, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.363515, -0.33249, -0.380956, -0.401353,
1466, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.714369, -0.712343, -0.762185, -0.763165,
1467, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.714369, -0.666862, -0.663692, -0.712343,
1468, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.50347, -0.515436, -0.559859, -0.550574,
1469, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.19636, -0.202157, -0.249034, -0.243516,
1470, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.460868, -0.429617, -0.473132, 0,
1471, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.401353, -0.380956, -0.429617, 0,
1472, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.600152, -0.618604, -0.580415, 0,
1473, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.209003, -0.190895, -0.231885, 0,
1474, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.305814, -0.336402, -0.291783, 0,
1475, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.363515, -0.384378, -0.336402, 0,
1499, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 8e-007, 8e-007, 0.0474064, 0.0473278,
1500, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.0473278, 0.0474064, 0.0949625, 0.0946548,
1501, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.0946548, 0.0949625, 0.14245, 0.141982,
1502, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.141982, 0.14245, 0.18993, 0.189309,
1503, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.189309, 0.18993, 0.237411, 0.236636,
1504, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.236636, 0.237411, 0.284893, 0.283963,
1505, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.283963, 0.284893, 0.332378, 0.33129,
1506, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.33129, 0.332378, 0.37987, 0.378617,
1507, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.378617, 0.37987, 0.427374, 0.425944,
1508, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.425944, 0.427374, 0.474905, 0.473271,
1509, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.473271, 0.474905, 0.522484, 0.520598,
1510, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.520598, 0.522484, 0.570184, 0.567925,
1511, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.567925, 0.570184, 0.618209, 0.616604,
1512, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.616604, 0.618209, 0.66653, 0.665283,
1513, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.665283, 0.66653, 0.714882, 0.713962,
1514, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.713962, 0.714882, 0.763248, 0.762642,
1515, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.762642, 0.763248, 0.811684, 0.811321,
1516, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.811321, 0.811684, 0.86, 0.86,
1517, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 8e-007, 8e-007, 0.0475851, 0.0474064,
1518, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.0474064, 0.0475851, 0.0952603, 0.0949625,
1519, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.0949625, 0.0952603, 0.142888, 0.14245,
1520, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.14245, 0.142888, 0.190517, 0.18993,
1521, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.18993, 0.190517, 0.238145, 0.237411,
1522, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.237411, 0.238145, 0.285772, 0.284893,
1523, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.284893, 0.285772, 0.3334, 0.332378,
1524, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.332378, 0.3334, 0.381026, 0.37987,
1525, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.37987, 0.381026, 0.428651, 0.427374,
1526, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.427374, 0.428651, 0.476273, 0.474905,
1527, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.474905, 0.476273, 0.523903, 0.522484,
1528, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.522484, 0.523903, 0.571531, 0.570184,
1529, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.570184, 0.571531, 0.619609, 0.618209,
1530, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.618209, 0.619609, 0.667687, 0.66653,
1531, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.66653, 0.667687, 0.715765, 0.714882,
1532, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.714882, 0.715765, 0.763844, 0.763248,
1533, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.763248, 0.763844, 0.811922, 0.811684,
1534, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.811684, 0.811922, 0.86, 0.86,
1535, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 8e-007, 8e-007, 0.0477785, 0.0475851,
1536, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.0475851, 0.0477785, 0.0955563, 0.0952603,
1537, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.0952603, 0.0955563, 0.143334, 0.142888,
1538, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.142888, 0.143334, 0.191112, 0.190517,
1539, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.190517, 0.191112, 0.238889, 0.238145,
1540, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.238145, 0.238889, 0.286667, 0.285772,
1541, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.285772, 0.286667, 0.334445, 0.3334,
1542, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.3334, 0.334445, 0.382223, 0.381026,
1543, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.381026, 0.382223, 0.43, 0.428651,
1544, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.428651, 0.43, 0.477778, 0.476273,
1545, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.476273, 0.477778, 0.525556, 0.523903,
1546, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.523903, 0.525556, 0.573334, 0.571531,
1547, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.571531, 0.573334, 0.621111, 0.619609,
1548, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.619609, 0.621111, 0.668889, 0.667687,
1549, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.667687, 0.668889, 0.716667, 0.715765,
1550, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.715765, 0.716667, 0.764445, 0.763844,
1551, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.763844, 0.764445, 0.812222, 0.811922,
1552, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.811922, 0.812222, 0.86, 0.86,
1553, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 8e-007, 8e-007, 0.0477785, 0.0477785,
1554, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.0477785, 0.0477785, 0.0955563, 0.0955563,
1555, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.0955563, 0.0955563, 0.143334, 0.143334,
1556, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.143334, 0.143334, 0.191112, 0.191112,
1557, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.191112, 0.191112, 0.238889, 0.238889,
1558, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.238889, 0.238889, 0.286667, 0.286667,
1559, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.286667, 0.286667, 0.334445, 0.334445,
1560, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.334445, 0.334445, 0.382223, 0.382223,

1561	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.382223	0.382223	0.43	0.43
1562	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.43	0.43	0.477778	0.477778
1563	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.477778	0.477778	0.525556	0.525556
1564	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.525556	0.525556	0.573334	0.573334
1565	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.573334	0.573334	0.621111	0.621111
1566	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.621111	0.621111	0.668889	0.668889
1567	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.668889	0.668889	0.716667	0.716667
1568	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.716667	0.716667	0.764445	0.764445
1569	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.764445	0.764445	0.812222	0.812222
1570	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.812222	0.812222	0.86	0.86
1571	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	8e-007	8e-007	0.0477785	0.0477785
1572	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.0477785	0.0477785	0.0955563	0.0955563
1573	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.0955563	0.0955563	0.143334	0.143334
1574	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.143334	0.143334	0.191112	0.191112
1575	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.191112	0.191112	0.238889	0.238889
1576	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.238889	0.238889	0.286667	0.286667
1577	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.286667	0.286667	0.334445	0.334445
1578	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.334445	0.334445	0.382223	0.382223
1579	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.382223	0.382223	0.43	0.43
1580	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.43	0.43	0.477778	0.477778
1581	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.477778	0.477778	0.525556	0.525556
1582	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.525556	0.525556	0.573334	0.573334
1583	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.573334	0.573334	0.621111	0.621111
1584	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.621111	0.621111	0.668889	0.668889
1585	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.668889	0.668889	0.716667	0.716667
1586	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.716667	0.716667	0.764445	0.764445
1587	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.764445	0.764445	0.812222	0.812222
1588	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.812222	0.812222	0.86	0.86
1589	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	8e-007	8e-007	0.0477785	0.0477785
1590	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.0477785	0.0477785	0.0955563	0.0955563
1591	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.0955563	0.0955563	0.143334	0.143334
1592	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.143334	0.143334	0.191112	0.191112
1593	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.191112	0.191112	0.238889	0.238889
1594	HYDRO	PLATE	FACE	GX	0	0	0	NO	0	0.238889	0.238889	0.286667	

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1636, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.525556, 0.525556, 0.573334, 0.573334,
1637, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.573334, 0.573334, 0.621111, 0.621111,
1638, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.621111, 0.621111, 0.668889, 0.668889,
1639, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.668889, 0.668889, 0.716667, 0.716667,
1640, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.716667, 0.716667, 0.764445, 0.764445,
1641, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.764445, 0.764445, 0.812222, 0.812222,
1642, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.812222, 0.812222, 0.86, 0.86,
1643, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 8e-007, 8e-007, 0.0477785, 0.0477785,
1644, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.0477785, 0.0477785, 0.0955563, 0.0955563,
1645, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.0955563, 0.0955563, 0.143334, 0.143334,
1646, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.143334, 0.143334, 0.191112, 0.191112,
1647, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.191112, 0.191112, 0.238889, 0.238889,
1648, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.238889, 0.238889, 0.286667, 0.286667,
1649, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.286667, 0.286667, 0.334445, 0.334445,
1650, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.334445, 0.334445, 0.382223, 0.382223,
1651, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.382223, 0.382223, 0.43, 0.43,
1652, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.43, 0.43, 0.477778, 0.477778,
1653, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.477778, 0.477778, 0.525556, 0.525556,
1654, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.525556, 0.525556, 0.573334, 0.573334,
1655, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.573334, 0.573334, 0.621111, 0.621111,
1656, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.621111, 0.621111, 0.668889, 0.668889,
1657, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.668889, 0.668889, 0.716667, 0.716667,
1658, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.716667, 0.716667, 0.764445, 0.764445,
1659, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.764445, 0.764445, 0.812222, 0.812222,
1660, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.812222, 0.812222, 0.86, 0.86,
1661, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 8e-007, 8e-007, 0.0477785, 0.0477785,
1662, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.0477785, 0.0477785, 0.0955563, 0.0955563,
1663, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.0955563, 0.0955563, 0.143334, 0.143334,
1664, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.143334, 0.143334, 0.191112, 0.191112,
1665, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.191112, 0.191112, 0.238889, 0.238889,
1666, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.238889, 0.238889, 0.286667, 0.286667,
1667, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.286667, 0.286667, 0.334445, 0.334445,
1668, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.334445, 0.334445, 0.382223, 0.382223,
1669, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.382223, 0.382223, 0.43, 0.43,
1670, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.43, 0.43, 0.477778, 0.477778,
1671, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.477778, 0.477778, 0.525556, 0.525556,
1672, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.525556, 0.525556, 0.573334, 0.573334,
1673, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.573334, 0.573334, 0.621111, 0.621111,
1674, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.621111, 0.621111, 0.668889, 0.668889,
1675, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.668889, 0.668889, 0.716667, 0.716667,
1676, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.716667, 0.716667, 0.764445, 0.764445,
1677, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.764445, 0.764445, 0.812222, 0.812222,
1678, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.812222, 0.812222, 0.86, 0.86,

; End of data for load case [eq] -----

*USE-STLD, WA

*PRESSURE ; Pressure Loads

; ELEM_LIST, CMD, ETYP, LTYP, DIR, VX, VY, VZ, bPROJ, PU, P1, P2, P3, P4, GROUP ; ETYP=PLATE, LTYP=FACE

; ELEM_LIST, CMD, ETYP, LTYP, iEDGE, DIR, VX, VY, VZ, PU, P1, P2, GROUP ; ETYP=PLATE, LTYP=EDGE

; ELEM_LIST, CMD, ETYP, iEDGE, DIR, VX, VY, VZ, PU, P1, P2, GROUP ; ETYP=PLANE

; ELEM_LIST, CMD, ETYP, iFACE, DIR, VX, VY, VZ, bPROJ, PU, P1, P2, P3, P4, GROUP ; ETYP=SOLID

; [PLATE] : plate, plane stress, [PLANE] : axisymmetric, plane strain

815, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.9762, -2.02488, -2.31207, -2.30217,
816, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.295576, -0.294858, 0,
817, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.293348, 0, 0, -0.292598,
818, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.297933, -0.296129, 0, 0,
819, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.294261, -0.293842, 0,
820, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.32361, -2.31752, -2.02986, -2.02946,
821, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.20669, -3.20602, -3.5,
822, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.34587, -2.05832, -2.05479, -2.34574,
823, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47768, -1.7662, -1.77022, -1.47745,
824, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.04034, -2.33191, -2.33145, -2.03982,
825, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.46367, -1.44277, -1.1636, -1.17204,
826, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.583333, -0.875, -0.875424, -0.584019,
827, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.75854, -2.04984, -2.04358, -1.75454,
828, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.5, -3.20979, -3.2125,
829, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.21042, -3.2084, -3.5, -3.5,
830, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.18321, -1.47745, -1.47518, -1.18116,
831, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.16446, -1.1636, -1.44277, -1.44155,
832, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.02488, -1.75504, -1.75608, -2.02986,
833, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.76556, -2.02946, -2.02986, -1.75608,
834, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48947, -1.47829, -1.76527, -1.77626,
835, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.296375, 0, 0, -0.295802,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

836, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.75454, -2.04358, -2.0411, -1.75206,
837, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.05138, -2.05567, -1.76392, -1.76197,
838, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.29561, -0.29541, -0.590509, -0.591076,
839, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.04303, -2.04651, -1.7577, -1.75541,
840, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.04535, -2.08557, -1.82217, -1.77626,
841, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.17517, -1.16446, -1.44155, -1.46599,
842, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.187, -1.47829, -1.48947, -1.19368,
843, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.50012, -1.82217, -1.76556, -1.48202,
844, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, -0.29561, -0.296552, 0,
845, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.295576, 0, 0, -0.295641,
846, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2084, -3.21042, -2.92261, -2.91869,
847, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.17567, -1.17734, -1.46908, -1.46605,
848, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91495, -2.62277, -2.62091, -2.91119,
849, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20425, -3.5, -3.5, -3.20625,
850, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.82217, -2.0876, -2.02946, -1.76556,
851, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.9762, -2.04143, -1.75346, -1.70407,
852, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.187, -1.18434, -1.47809, -1.47829,
853, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.02946, -2.0876, -2.35133, -2.32361,
854, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35133, -2.0876, -2.08557, -2.355,
855, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.292603, -0.584255, -0.583333, -0.291667,
856, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.5, -3.20625, -3.2125,
857, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20306, -3.5, -3.5, -3.20602,
858, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.293348, -0.292598, -0.584019, -0.58496,
859, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.33176, -2.33333, -2.04167, -2.04041,
860, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.5, -3.21243, -3.21219,
861, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, -0.293896, -0.294284, 0,
862, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47768, -1.18452, -1.18415, -1.48542,
863, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.18415, -1.17517, -1.46599, -1.48542,
864, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20833, -2.91667, -2.91656, -3.20892,
865, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.18452, -1.47768, -1.47745, -1.18321,
866, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, -0.292603, -0.291667, 0,
867, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.62353, -2.625, -2.33333, -2.33176,
868, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.34183, -2.34363, -2.05567, -2.05138,
869, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20649, -3.20625, -3.5, -3.5,
870, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.04984, -1.75854, -1.76143, -2.05379,
871, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.293425, -0.293896, 0, 0,
872, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.31207, -2.02488, -2.02986, -2.31752,
873, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.45833, -1.16667, -1.16672, -1.45788,
874, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20412, -3.5, -3.5, -3.20425,
875, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.295576, -0.589886, -0.589238, -0.294858,
876, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.74825, -1.74853, -1.45939, -1.46053,
877, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.6218, -2.91315, -2.91492, -2.62563,
878, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.625, -2.62353, -2.91656, -2.91667,
879, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.5, -3.21077, -3.209,
880, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47518, -1.76575, -1.76143, -1.47197,
881, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.77022, -2.05479, -2.05832, -1.76575,
882, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.625, -2.91667, -2.91717, -2.62354,
883, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.33898, -2.34183, -2.05138, -2.04888,
884, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.33898, -2.04888, -2.04651, -2.33645,
885, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.18825, -1.19641, -1.50012, -1.48202,
886, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.88228, -0.588741, -0.588328, -0.88111,
887, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.2128, -3.2125, -3.5,
888, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.90737, -3.20425, -3.20625, -2.91138,
889, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.04143, -2.32587, -2.35056, -2.08741,
890, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.32587, -2.04143, -1.9762, -2.30217,
891, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.62277, -2.33042, -2.32947, -2.62091,
892, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.29541, -0.29561, 0, 0,
893, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.889661, -0.593196, -0.592779, -0.889354,
894, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.34237, -2.34574, -2.05479, -2.04535,
895, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, 0, -0.296441, -0.295848,
896, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, 0, -0.291667, -0.292598,
897, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.04143, -2.08741, -1.80298, -1.75346,
898, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.586879, -0.585588, -0.877305, -0.879083,
899, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.70407, -1.75346, -1.46599, -1.44155,
900, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.5, -3.20527, -3.20625,
901, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.04651, -2.04888, -1.76038, -1.7577,
902, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.76575, -1.47518, -1.47745, -1.77022,
903, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.296441, -0.296518, -0.593196, -0.59257,
904, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.75206, -1.46418, -1.46605, -1.75454,
905, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47197, -1.76143, -1.75854, -1.46908,
906, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.7662, -2.04535, -2.05479, -1.77022,
907, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.04535, -1.7662, -1.80298, -2.0787,
908, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.03982, -2.33145, -2.32991, -2.03866,
909, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.50012, -1.48947, -1.77626, -1.82217,
910, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.876313, -0.875424, -1.16677, -1.16724,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

911, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.21281, -3.2128, -3.5, -3.5,
912, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.298048, 0, 0, -0.297671,
913, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.75346, -1.80298, -1.48542, -1.46599,
914, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.21042, -3.21177, -2.92356, -2.92261,
915, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.59414, -0.297933, -0.297987, -0.595974,
916, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.876775, -0.875654, -0.584255, -0.585355,
917, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.75608, -1.47207, -1.48202, -1.76556,
918, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47017, -1.46754, -1.75541, -1.7577,
919, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.5, -3.20306, -3.20534,
920, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.21267, -3.5, -3.5, -3.2125,
921, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, 0, -0.293348, -0.293425,
922, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.61357, -2.61777, -2.91242, -2.91033,
923, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91492, -3.20669, -3.209, -2.91872,
924, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.1774, -1.17992, -0.885625, -0.884193,
925, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.45794, -1.45833, -1.75, -1.74904,
926, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.298048, -0.297671, -0.593954, -0.596186,
927, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.76197, -1.76392, -1.47809, -1.47621,
928, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.48542, -1.80298, -1.7662, -1.47768,
929, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9126, -3.20534, -3.20306, -2.90938,
930, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.5, -3.20534, -3.209,
931, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.21267, -3.21281, -3.5,
932, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.05567, -2.05074, -1.76527, -1.76392,
933, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.76392, -1.76527, -1.47829, -1.47809,
934, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20412, -3.20527, -3.5, -3.5,
935, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.75504, -1.70553, -1.44277, -1.46367,
936, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.21243, -3.5, -3.5, -3.2125,
937, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2102, -3.21323, -2.91672, -2.91717,
938, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47207, -1.75608, -1.75504, -1.46367,
939, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.586661, -0.587321, -0.294741, -0.294238,
940, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.04888, -2.05138, -1.76197, -1.76038,
941, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.75039, -1.46393, -1.46418, -1.75206,
942, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.92244, -3.2125, -3.20979, -2.91892,
943, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.296129, -0.590585, -0.588444, -0.295613,
944, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.62277, -2.91495, -2.91673, -2.62328,
945, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.592478, -0.296552, -0.29561, -0.591076,
946, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.293896, -0.586879, -0.588328, -0.294284,
947, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.5, -3.21323, -3.2102,
948, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.21281, -3.21267, -2.92469, -2.92521,
949, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.45788, -1.16672, -1.16766, -1.45819,
950, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91033, -3.20527, -3.20412, -2.90732,
951, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.92469, -2.9236, -3.2125, -3.2128,
952, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, -0.294771, -0.29541, 0,
953, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.5, -3.20329, -3.20649,
954, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91892, -2.62851, -2.63235, -2.92244,
955, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91717, -2.91667, -3.20833, -3.2102,
956, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.62851, -2.62348, -2.33375, -2.33903,
957, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.16672, -0.875654, -0.876775, -1.16766,
958, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.45783, -1.74877, -1.74844, -1.45848,
959, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, 0, -0.296518, -0.296441,
960, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, 0, -0.294741, -0.295802,
961, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, 0, -0.295619, -0.295641,
962, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, 0, -0.292995, -0.292603,
963, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.209, -3.21077, -2.92145, -2.91872,
964, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.17204, -0.880787, -0.884092, -1.17862,
965, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.92469, -3.21267, -3.2125, -2.92413,
966, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.74915, -2.04041, -2.04167, -1.75,
967, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.5, -3.21177, -3.21042,
968, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.296375, -0.295802, -0.591419, -0.592779,
969, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.58496, -0.585588, -0.293425, -0.293348,
970, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.5, -3.2125, -3.21077,
971, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.589238, -0.588813, -0.294702, -0.294858,
972, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.293425, -0.585588, -0.586879, -0.293896,
973, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.297671, 0, 0, -0.297291,
974, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.294261, 0, 0, -0.294702,
975, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.294858, -0.294702, 0, 0,
976, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.6076, -2.90737, -2.91138, -2.61627,
977, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20892, -2.91656, -2.91672, -3.21007,
978, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.21007, -3.5, -3.5, -3.20892,
979, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, -0.294284, -0.294771, 0,
980, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.292995, -0.585355, -0.584255, -0.292603,
981, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.21219, -3.21177, -3.5,
982, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20625, -3.20979, -3.5, -3.5,
983, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.74881, -1.74915, -1.45788, -1.45819,
984, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.21218, -3.20627, -3.5,
985, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.592779, -0.593196, -0.296518, -0.296375,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

986, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.583333, -0.584255, -0.875654, -0.875,
987, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.583333, -0.584019, -0.292598, -0.291667,
988, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.7577, -1.76038, -1.47335, -1.47017,
989, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20329, -3.20627, -2.91495, -2.91119,
990, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91673, -3.21218, -3.21007, -2.91672,
991, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, -0.294238, -0.294741, 0,
992, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.209, -3.21323, -3.5, -3.5,
993, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.875424, -0.875, -1.16667, -1.16677,
994, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.16667, -0.875, -0.875654, -1.16672,
995, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91138, -3.20625, -3.2084, -2.91869,
996, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.625, -2.62354, -2.33191, -2.33333,
997, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91495, -3.20627, -3.21218, -2.91673,
998, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.61627, -2.91138, -2.91869, -2.63099,
999, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.21007, -3.21218, -3.5,
1000, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20425, -2.90737, -2.90732, -3.20412,
1001, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20833, -3.5, -3.5, -3.2102,
1002, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.592478, -0.593438, -0.297291, -0.296552,
1003, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.2125, -3.20625, -2.91242, -2.92413,
1004, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.293842, -0.292995, 0, 0,
1005, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.5, -3.20833, -3.20892,
1006, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, 0, -0.298048, -0.297987,
1007, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91394, -2.91427, -3.20625, -3.20649,
1008, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.33056, -2.33176, -2.04041, -2.03977,
1009, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9126, -2.91375, -3.209, -3.20534,
1010, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.74904, -1.75, -2.04167, -2.04034,
1011, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.876775, -0.585355, -0.586353, -0.878026,
1012, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, -0.296375, -0.296518, 0,
1013, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.209, -3.20669, -3.5,
1014, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, -0.295848, -0.295619, 0,
1015, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, -0.296552, -0.297291,
1016, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, -0.295613, -0.294238,
1017, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.2084, -3.20625, -3.5,
1018, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.62348, -2.62851, -2.91892, -2.91427,
1019, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, -0.297987, -0.297933,
1020, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.5, -3.20627, -3.20329, -3.5,
1021, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.63362, -2.35133, -2.355, -2.63881,
1022, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.04167, -2.33333, -2.33191, -2.04034,
1023, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, 0, -0.296129, -0.295613, 0,
1024, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91119, -2.91394, -3.20649, -3.20329,
1025, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.590228, -0.295641, -0.295619, -0.590781,
1026, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.6218, -2.61856, -2.90938, -2.91315,
1027, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.45833, -1.45788, -1.74915, -1.75,
1028, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.16667, -1.45833, -1.45794, -1.16677,
1029, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.585355, -0.292995, -0.293842, -0.586353,
1030, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.590585, -0.296129, -0.297933, -0.59414,
1031, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.32361, -2.35133, -2.63362, -2.61777,
1032, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.883351, -0.589886, -0.590228, -0.884417,
1033, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91717, -2.91672, -2.62287, -2.62354,
1034, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.16724, -1.45783, -1.45848, -1.16821,
1035, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.588813, -0.587586, -0.294261, -0.294702,
1036, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.876313, -0.58496, -0.584019, -0.875424,
1037, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.45783, -1.16724, -1.16677, -1.45794,
1038, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20669, -2.91492, -2.91315, -3.20602,
1039, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.587586, -0.588813, -0.881985, -0.879887,
1040, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.34363, -2.34183, -2.63191, -2.63411,
1041, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.31752, -2.61357, -2.60942, -2.31207,
1042, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91427, -2.91892, -3.20979, -3.20625,
1043, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.9126, -2.90938, -2.61856, -2.62034,
1044, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.295641, -0.590228, -0.589886, -0.295576,
1045, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.92413, -2.63362, -2.63881, -2.92469,
1046, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.92421, -2.9245, -2.63495, -2.63536,
1047, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.21323, -3.209, -2.91375, -2.91672,
1048, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.294284, -0.588328, -0.588741, -0.294771,
1049, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.88111, -0.879083, -1.17032, -1.17333,
1050, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.590585, -0.884092, -0.880787, -0.588444,
1051, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.21281, -2.92521, -2.92469, -3.2128,
1052, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91672, -2.91375, -2.62151, -2.62287,
1053, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.74853, -1.74825, -2.03908, -2.03911,
1054, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.88255, -0.881985, -0.588813, -0.589238,
1055, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.20625, -3.20527, -2.91033, -2.91242,
1056, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.63411, -2.9236, -2.92469, -2.63534,
1057, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.63495, -2.9245, -2.92244, -2.63235,
1058, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.90938, -3.20306, -3.20602, -2.91315,
1059, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.585588, -0.58496, -0.876313, -0.877305,
1060, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.587586, -0.586353, -0.293842, -0.294261,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1061, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.60942, -2.6076, -2.30217, -2.31207,
1062, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.74904, -2.04034, -2.03982, -1.74877,
1063, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.63647, -2.63461, -2.34237, -2.35428,
1064, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.63534, -2.34331, -2.34363, -2.63411,
1065, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.74915, -1.74881, -2.03977, -2.04041,
1066, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.92261, -2.92356, -2.63461, -2.63647,
1067, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.17734, -1.1791, -1.47197, -1.46908,
1068, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.63657, -2.63534, -2.92469, -2.92521,
1069, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.297671, -0.297291, -0.593438, -0.593954,
1070, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.591419, -0.587321, -0.878578, -0.884728,
1071, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.21243, -3.2125, -2.92244, -2.9245,
1072, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.33191, -2.62354, -2.62287, -2.33145,
1073, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.298048, -0.596186, -0.595974, -0.297987,
1074, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.45794, -1.74904, -1.74877, -1.45783,
1075, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.587321, -0.591419, -0.295802, -0.294741,
1076, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91672, -2.62317, -2.62328, -2.91673,
1077, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91656, -2.62353, -2.62317, -2.91672,
1078, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.62317, -2.33056, -2.33085, -2.62328,
1079, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.63647, -2.63099, -2.91869, -2.92261,
1080, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.33176, -2.33056, -2.62317, -2.62353,
1081, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.889354, -0.884728, -1.17517, -1.18415,
1082, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.296441, -0.59257, -0.591512, -0.295848,
1083, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.90732, -2.90737, -2.6076, -2.60942,
1084, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.88111, -0.588328, -0.586879, -0.879083,
1085, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.63461, -2.92356, -2.92421, -2.63536,
1086, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91375, -2.9126, -2.62034, -2.62151,
1087, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.76575, -2.05832, -2.05379, -1.76143,
1088, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.30217, -2.6076, -2.61627, -2.32587,
1089, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91119, -2.62091, -2.6226, -2.91394,
1090, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.295613, -0.588444, -0.586661, -0.294238,
1091, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.21077, -3.2125, -2.9236, -2.92145,
1092, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.589886, -0.883351, -0.88255, -0.589238,
1093, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.32991, -2.33145, -2.62287, -2.62151,
1094, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.295619, -0.295848, -0.591512, -0.590781,
1095, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.21219, -3.21243, -2.9245, -2.92421,
1096, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -3.21219, -2.92421, -2.92356, -3.21177,
1097, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.29541, -0.294771, -0.588741, -0.590509,
1098, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.74894, -1.46045, -1.45848, -1.74844,
1099, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.34587, -2.63495, -2.63235, -2.34305,
1100, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.59257, -0.593196, -0.889661, -0.888109,
1101, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.876775, -0.878026, -1.17019, -1.16766,
1102, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.05379, -2.34305, -2.33903, -2.04984,
1103, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.74853, -1.74881, -1.45819, -1.45939,
1104, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.46045, -1.17032, -1.16821, -1.45848,
1105, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.61777, -2.63362, -2.92413, -2.91242,
1106, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.17019, -1.45939, -1.45819, -1.16766,
1107, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.63099, -2.63647, -2.35428, -2.35056,
1108, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.879887, -1.1716, -1.17019, -0.878026,
1109, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.884728, -0.878578, -1.16446, -1.17517,
1110, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.16821, -0.877305, -0.876313, -1.16724,
1111, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.88228, -0.884193, -0.590509, -0.588741,
1112, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.32947, -2.03974, -2.0411, -2.3309,
1113, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.19641, -0.895434, -0.894347, -1.19368,
1114, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.17992, -1.47335, -1.47621, -1.18267,
1115, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.75039, -2.03974, -2.03908, -1.74825,
1116, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.884193, -0.88228, -1.17443, -1.1774,
1117, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.32991, -2.32895, -2.03687, -2.03866,
1118, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.46367, -1.17204, -1.17862, -1.47207,
1119, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.17466, -0.88255, -0.883351, -1.17567,
1120, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.03908, -2.33042, -2.33085, -2.03911,
1121, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.63411, -2.63191, -2.92145, -2.9236,
1122, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.75222, -1.46419, -1.46045, -1.74894,
1123, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.33283, -2.6218, -2.62563, -2.33645,
1124, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.34423, -2.34331, -2.63534, -2.63657,
1125, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.62151, -2.62034, -2.32895, -2.32991,
1126, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.591512, -0.886637, -0.885337, -0.590781,
1127, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.90732, -2.60942, -2.61357, -2.91033,
1128, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.891552, -0.59414, -0.595974, -0.895434,
1129, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91427, -2.91394, -2.6226, -2.62348,
1130, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.03977, -2.03911, -2.33085, -2.33056,
1131, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.32895, -2.32927, -2.03953, -2.03687,
1132, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.593954, -0.593438, -0.889237, -0.889944,
1133, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.62328, -2.33085, -2.33042, -2.62277,
1134, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.596186, -0.593954, -0.889944, -0.894347,
1135, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.46754, -1.47017, -1.1774, -1.17443,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1136, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.59414, -0.891552, -0.884092, -0.590585,
1137, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.591076, -0.590509, -0.884193, -0.885625,
1138, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.74881, -1.74853, -2.03911, -2.03977,
1139, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.590228, -0.590781, -0.885337, -0.884417,
1140, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.46053, -1.45939, -1.17019, -1.1716,
1141, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.17032, -1.46045, -1.46419, -1.17333,
1142, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.595974, -0.596186, -0.894347, -0.895434,
1143, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.885625, -0.88791, -0.592478, -0.591076,
1144, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.17862, -0.884092, -0.891552, -1.18825,
1145, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.592779, -0.591419, -0.884728, -0.889354,
1146, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.592478, -0.88791, -0.889237, -0.593438,
1147, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.74877, -2.03982, -2.03866, -1.74844,
1148, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.587321, -0.586661, -0.877296, -0.878578,
1149, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.17567, -0.883351, -0.884417, -1.17734,
1150, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.18434, -1.187, -0.889944, -0.889237,
1151, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.588444, -0.880787, -0.877296, -0.586661,
1152, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.59257, -0.888109, -0.886637, -0.591512,
1153, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91872, -2.92145, -2.63191, -2.62877,
1154, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.91872, -2.62877, -2.62563, -2.91492,
1155, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.92469, -2.63881, -2.63657, -2.92521,
1156, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.587586, -0.879887, -0.878026, -0.586353,
1157, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.889237, -0.88791, -1.18267, -1.18434,
1158, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.44155, -1.44277, -1.70553, -1.70407,
1159, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.77626, -1.76527, -2.05074, -2.04535,
1160, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.62091, -2.32947, -2.3309, -2.6226,
1161, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.895434, -1.19641, -1.18825, -0.891552,
1162, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.05074, -2.05567, -2.34363, -2.34331,
1163, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.03953, -2.04303, -1.75541, -1.75222,
1164, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.05832, -2.34587, -2.34305, -2.05379,
1165, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.63536, -2.34574, -2.34237, -2.63461,
1166, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.1636, -1.16446, -0.878578, -0.877296,
1167, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.33375, -2.3309, -2.0411, -2.04358,
1168, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.34587, -2.34574, -2.63536, -2.63495,
1169, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.33042, -2.03908, -2.03974, -2.32947,
1170, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.46393, -1.46053, -1.1716, -1.17502,
1171, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.75454, -1.46605, -1.46908, -1.75854,
1172, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47335, -1.17992, -1.1774, -1.47017,
1173, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.17992, -1.18267, -0.88791, -0.885625,
1174, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.46053, -1.46393, -1.75039, -1.74825,
1175, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.3309, -2.33375, -2.62348, -2.6226,
1176, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.05074, -2.34331, -2.34423, -2.04535,
1177, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.03687, -1.74894, -1.74844, -2.03866,
1178, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.75206, -2.0411, -2.03974, -1.75039,
1179, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.46418, -1.17466, -1.17567, -1.46605,
1180, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.888109, -0.889661, -1.18452, -1.18321,
1181, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.34183, -2.33898, -2.62877, -2.63191,
1182, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.03687, -2.03953, -1.75222, -1.74894,
1183, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.33903, -2.33375, -2.04358, -2.04984,
1184, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.879083, -0.877305, -1.16821, -1.17032,
1185, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.885337, -1.1791, -1.17734, -0.884417,
1186, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.19641, -1.19368, -1.48947, -1.50012,
1187, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.75504, -2.02488, -1.9762, -1.70553,
1188, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.35056, -2.35428, -2.0787, -2.08741,
1189, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.355, -2.08557, -2.04535, -2.34423,
1190, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.63099, -2.35056, -2.32587, -2.61627,
1191, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.886637, -1.18116, -1.1791, -0.885337,
1192, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.04535, -2.0787, -2.35428, -2.34237,
1193, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.61856, -2.6218, -2.33283, -2.32927,
1194, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.61777, -2.61357, -2.31752, -2.32361,
1195, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.34423, -2.63657, -2.63881, -2.355,
1196, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.32927, -2.33283, -2.04303, -2.03953,
1197, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47809, -1.18434, -1.18267, -1.47621,
1198, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.04303, -2.33283, -2.33645, -2.04651,
1199, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.889661, -0.889354, -1.18415, -1.18452,
1200, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.880787, -1.17204, -1.1636, -0.877296,
1201, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.889944, -1.187, -1.19368, -0.894347,
1202, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.881985, -0.88255, -1.17466, -1.17502,
1203, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.881985, -1.17502, -1.1716, -0.879887,
1204, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.88111, -1.17333, -1.17443, -0.88228,
1205, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -0.888109, -1.18321, -1.18116, -0.886637,
1206, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.62877, -2.33898, -2.33645, -2.62563,
1207, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.62851, -2.33903, -2.34305, -2.63235,
1208, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -2.62034, -2.61856, -2.32927, -2.32895,
1209, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.75222, -1.75541, -1.46754, -1.46419,
1210, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.46393, -1.17502, -1.17466, -1.46418,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1211, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47207, -1.17862, -1.18825, -1.48202,
1212, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.47621, -1.47335, -1.76038, -1.76197,
1213, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.17443, -1.17333, -1.46419, -1.46754,
1214, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.1791, -1.18116, -1.47518, -1.47197,
1215, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.82217, -2.08557, -2.0876, 0,
1216, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.80298, -2.08741, -2.0787, 0,
1217, HYDRO, PLATE, FACE, GY, 0, 0, 0, NO, 0, -1.70553, -1.9762, -1.70407, 0,
1281, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0, -0.280043, -0.291667,
1282, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.291667, -0.280043, -0.573151, -0.583333,
1283, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.583333, -0.573151, -0.866266, -0.875,
1284, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.875, -0.866266, -1.15886, -1.16667,
1285, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.16667, -1.15886, -1.45157, -1.45833,
1286, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.45833, -1.45157, -1.74423, -1.75,
1287, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.75, -1.74423, -2.03687, -2.04167,
1288, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.04167, -2.03687, -2.32949, -2.33333,
1289, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.33333, -2.32949, -2.6221, -2.625,
1290, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.625, -2.6221, -2.91477, -2.91667,
1291, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.91667, -2.91477, -3.20785, -3.20833,
1292, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.20833, -3.20785, -3.5, -3.5,
1299, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0, -0.270473, -0.280043,
1300, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.280043, -0.270473, -0.564343, -0.573151,
1301, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.573151, -0.564343, -0.858228, -0.866266,
1302, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.866266, -0.858228, -1.15177, -1.15886,
1303, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.15886, -1.15177, -1.44531, -1.45157,
1304, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.45157, -1.44531, -1.73884, -1.74423,
1305, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.74423, -1.73884, -2.03236, -2.03687,
1306, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.03687, -2.03236, -2.32589, -2.32949,
1307, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.32949, -2.32589, -2.61941, -2.6221,
1308, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.6221, -2.61941, -2.91293, -2.91477,
1309, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.91477, -2.91293, -3.20675, -3.20785,
1310, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.20785, -3.20675, -3.5, -3.5,
1317, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0, -0.261111, -0.270473,
1318, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.270473, -0.261111, -0.555556, -0.564343,
1319, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.564343, -0.555556, -0.85, -0.858228,
1320, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.858228, -0.85, -1.14444, -1.15177,
1321, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.15177, -1.14444, -1.43889, -1.44531,
1322, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.44531, -1.43889, -1.73333, -1.73884,
1323, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.73884, -1.73333, -2.02778, -2.03236,
1324, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.03236, -2.02778, -2.32222, -2.32589,
1325, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.32589, -2.32222, -2.61667, -2.61941,
1326, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.61941, -2.61667, -2.91111, -2.91293,
1327, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.91293, -2.91111, -3.20556, -3.20675,
1328, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.20675, -3.20556, -3.5, -3.5,
1348, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.89548, -2.90492, -2.61539, -2.59648,
1349, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0, -0.278736, -0.261111,
1351, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.73701, -1.75243, -2.04926, -2.03358,
1352, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.73333, -1.73701, -2.03358, -2.02778,
1353, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.14444, -1.14881, -1.44318, -1.43889,
1354, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.852167, -0.85748, -1.14899, -1.14881,
1355, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.03358, -2.04926, -2.32948, -2.32556,
1356, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.12233, -1.13116, -0.826276, -0.828245,
1357, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.28988, -2.32222, -2.61667, -2.59196,
1358, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.45094, -1.44696, -1.14899, -1.15225,
1359, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.5, -3.20178, -3.20556, -3.5,
1361, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.61539, -2.32948, -2.32356, -2.59648,
1362, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.44696, -1.45094, -1.78868, -1.75243,
1363, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.21196, -2.07095, -1.78868, -1.88844,
1364, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.32222, -2.02778, -2.03358, -2.32556,
1365, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.21196, -2.25415, -2.5717, -2.56284,
1367, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.28988, -2.59196, -2.5717, -2.25415,
1368, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.02778, -2.32222, -2.28988, -1.99926,
1369, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.56284, -2.59648, -2.32356, -2.21196,
1372, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.106928, -0.194787, -0.491804, -0.397221,
1373, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.580998, -0.297483, -0.323476, -0.584187,
1374, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.88844, -1.78868, -1.45094, -1.61534,
1376, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.59648, -2.56284, -2.88349, -2.89548,
1377, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.20518, -3.20231, -3.5, -3.5,
1378, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.32948, -2.04926, -2.07095, -2.32356,
1379, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.261111, -0.555556, -0.522881, -0.235041,
1381, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.91111, -2.91112, -3.20518, -3.20556,
1382, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.14899, -0.85748, -0.852361, -1.15225,
1384, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.491804, -0.194787, -0.235041, -0.522881,
1386, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.397221, -0.491804, -0.826276, -0.659766,
1387, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.32556, -2.61707, -2.61667, -2.32222,
1390, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.20556, -3.20518, -3.5, -3.5,

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

1392, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.61534, -1.70181, -1.96526, -1.88844,
1393, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.88844, -1.96526, -2.25415, -2.21196,
1395, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.2, -3.19533, -2.88349, -2.88869,
1396, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.852361, -0.659766, -0.826276, -1.02655,
1398, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.85, -1.14444, -1.12233, -0.828245,
1400, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.19533, -3.5, -3.5, -3.19864,
1401, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.14881, -1.14444, -0.85, -0.852167,
1404, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.12233, -1.14444, -1.43889, -1.42687,
1405, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.02655, -0.826276, -1.13116, -1.25974,
1407, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.91111, -3.20556, -3.20178, -2.89736,
1409, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.580998, -0.85748, -0.852167, -0.567855,
1411, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.5, -3.2, -3.20178, -3.5,
1412, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.42683, -1.61534, -1.45094, -1.25974,
1415, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.2, -3.5, -3.5, -3.19533,
1416, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.42683, -1.13116, -1.12233, -1.42687,
1418, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.20518, -2.91112, -2.90492, -3.20231,
1423, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.20178, -3.2, -2.88869, -2.89736,
1424, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.91112, -2.91111, -2.61667, -2.61707,
1425, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -3.5, -3.5, -3.20231, -3.19864,
1428, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.88869, -2.5717, -2.59196, -2.89736,
1429, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.89736, -2.59196, -2.61667, -2.91111,
1430, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.44318, -1.73701, -1.73333, -1.43889,
1432, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.56284, -2.5717, -2.88869, -2.88349,
1433, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.44696, -1.75243, -1.73701, -1.44318,
1435, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.02778, -1.99926, -1.71312, -1.73333,
1436, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.85, -0.828245, -0.522881, -0.555556,
1437, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.43889, -1.73333, -1.71312, -1.42687,
1438, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.555556, -0.261111, -0.278736, -0.567855,
1440, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.89548, -2.88349, -3.19533, -3.19864,
1441, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.90492, -2.91112, -2.61707, -2.61539,
1442, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.70181, -1.71312, -1.99926, -1.96526,
1443, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.89548, -3.19864, -3.20231, -2.90492,
1444, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.61539, -2.61707, -2.32556, -2.32948,
1447, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.85, -0.555556, -0.567855, -0.852167,
1449, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.852361, -0.85748, -0.580998, -0.584187,
1451, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.44696, -1.44318, -1.14881, -1.14899,
1452, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.323476, -0.297483, -0.0162477, -0.0497089,
1457, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.297483, -0.278736, 0, -0.0162477,
1458, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.828245, -0.826276, -0.491804, -0.522881,
1459, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.07095, -2.04926, -1.75243, -1.78868,
1460, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.659766, -0.584187, -0.323476, -0.397221,
1461, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.42687, -1.71312, -1.70181, -1.42683,
1463, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.567855, -0.278736, -0.297483, -0.580998,
1465, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.25974, -1.45094, -1.15225, -1.02655,
1468, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.397221, -0.323476, -0.0497089, -0.106928,
1469, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.28988, -2.25415, -1.96526, -1.99926,
1470, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -0.659766, -0.852361, -0.584187, 0,
1471, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.02655, -1.15225, -0.852361, 0,
1473, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -2.21196, -2.32356, -2.07095, 0,
1474, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.61534, -1.42683, -1.70181, 0,
1475, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, -1.25974, -1.13116, -1.42683, 0,
1499, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.5, 3.5, 3.20785, 3.20833,
1500, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.20833, 3.20785, 2.91477, 2.91667,
1501, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.91667, 2.91477, 2.62211, 2.625,
1502, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.625, 2.62211, 2.3295, 2.33333,
1503, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.33333, 2.3295, 2.03689, 2.04167,
1504, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.04167, 2.03689, 1.74427, 1.75,
1505, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.75, 1.74427, 1.45163, 1.45833,
1506, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.45833, 1.45163, 1.15894, 1.16667,
1507, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.16667, 1.15894, 0.866186, 0.875,
1508, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.875, 0.866186, 0.573262, 0.583333,
1509, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.583333, 0.573262, 0.280043, 0.291667,
1510, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.291667, 0.280043, 0, 0,
1517, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.5, 3.5, 3.20675, 3.20785,
1518, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.20785, 3.20675, 2.91294, 2.91477,
1519, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.91477, 2.91294, 2.61941, 2.62211,
1520, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.62211, 2.61941, 2.32589, 2.3295,
1521, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.3295, 2.32589, 2.03237, 2.03689,
1522, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.03689, 2.03237, 1.73885, 1.74427,
1523, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.74427, 1.73885, 1.44533, 1.45163,
1524, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.45163, 1.44533, 1.15182, 1.15894,
1525, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.15894, 1.15182, 0.858315, 0.866186,
1526, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.866186, 0.858315, 0.564831, 0.573262,
1527, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.573262, 0.564831, 0.271296, 0.280043,
1528, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.280043, 0.271296, 0, 0,

[illegible]

1646, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.61667, 2.61667, 2.32222, 2.32222,
1647, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.32222, 2.32222, 2.02778, 2.02778,
1648, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.02778, 2.02778, 1.73333, 1.73333,
1649, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.73333, 1.73333, 1.43889, 1.43889,
1650, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.43889, 1.43889, 1.14444, 1.14444,
1651, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.14444, 1.14444, 0.85, 0.85,
1652, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.85, 0.85, 0.555556, 0.555556,
1653, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.555556, 0.555556, 0.261111, 0.261111,
1654, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.261111, 0.261111, 0, 0,
1661, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.5, 3.5, 3.20556, 3.20556,
1662, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 3.20556, 3.20556, 2.91111, 2.91111,
1663, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.91111, 2.91111, 2.61667, 2.61667,
1664, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.61667, 2.61667, 2.32222, 2.32222,
1665, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.32222, 2.32222, 2.02778, 2.02778,
1666, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 2.02778, 2.02778, 1.73333, 1.73333,
1667, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.73333, 1.73333, 1.43889, 1.43889,
1668, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.43889, 1.43889, 1.14444, 1.14444,
1669, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 1.14444, 1.14444, 0.85, 0.85,
1670, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.85, 0.85, 0.555556, 0.555556,
1671, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.555556, 0.555556, 0.261111, 0.261111,
1672, HYDRO, PLATE, FACE, GX, 0, 0, 0, NO, 0, 0.261111, 0.261111, 0, 0,

; End of data for load case [WA] -----

*LOADCOMB ; Combinations

; NAME=NAME, KIND, ACTIVE, bES, iTYPE, DESC, iSERV-TYPE, nLCOMTYPE, nSEISTYPE ; line 1

; ANAL1, LCNAME1, FACT1, ... ; from line 2

NAME=cLCB1, CONC, STRENGTH, 0, 0, Strength-I:1.25DC+1.50EH+1.35EV+1.75L+1.75BRK[1]+1.75LS, 0, 0, 0
ST, ppropio, 1.25, ST, muerta, 1.25, ST, viva, 1.75, ST, BR, 1.75

ST, EH, 1.5, ST, EV, 1.35, ST, LS, 1.75, ST, WA, 1

NAME=cLCB2, CONC, STRENGTH, 0, 0, Strength-I:1.25DC+1.50EH+1.00EV+1.75L+1.75BRK[1]+1.75LS, 0, 0, 0
ST, ppropio, 1.25, ST, muerta, 1.25, ST, viva, 1.75, ST, BR, 1.75

ST, EH, 1.5, ST, EV, 1, ST, LS, 1.75, ST, WA, 1

NAME=cLCB3, CONC, STRENGTH, 0, 0, Strength-I:1.25DC+0.90EH+1.35EV+1.75L+1.75BRK[1]+1.75LS, 0, 0, 0
ST, ppropio, 1.25, ST, muerta, 1.25, ST, viva, 1.75, ST, BR, 1.75

ST, EH, 0.9, ST, EV, 1.35, ST, LS, 1.75, ST, WA, 1

NAME=cLCB4, CONC, STRENGTH, 0, 0, Strength-I:1.25DC+0.90EH+1.00EV+1.75L+1.75BRK[1]+1.75LS, 0, 0, 0
ST, ppropio, 1.25, ST, muerta, 1.25, ST, viva, 1.75, ST, BR, 1.75

ST, EH, 0.9, ST, EV, 1, ST, LS, 1.75, ST, WA, 1

NAME=cLCB5, CONC, STRENGTH, 0, 0, Strength-I:0.90DC+1.50EH+1.35EV+1.75L+1.75BRK[1]+1.75LS, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, viva, 1.75, ST, BR, 1.75

ST, EH, 1.5, ST, EV, 1.35, ST, LS, 1.75, ST, WA, 1

NAME=cLCB6, CONC, STRENGTH, 0, 0, Strength-I:0.90DC+1.50EH+1.00EV+1.75L+1.75BRK[1]+1.75LS, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, viva, 1.75, ST, BR, 1.75

ST, EH, 1.5, ST, EV, 1, ST, LS, 1.75, ST, WA, 1

NAME=cLCB7, CONC, STRENGTH, 0, 0, Strength-I:0.90DC+0.90EH+1.35EV+1.75L+1.75BRK[1]+1.75LS, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, viva, 1.75, ST, BR, 1.75

ST, EH, 0.9, ST, EV, 1.35, ST, LS, 1.75, ST, WA, 1

NAME=cLCB8, CONC, STRENGTH, 0, 0, Strength-I:0.90DC+0.90EH+1.00EV+1.75L+1.75BRK[1]+1.75LS, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, viva, 1.75, ST, BR, 1.75

ST, EH, 0.9, ST, EV, 1, ST, LS, 1.75, ST, WA, 1

NAME=cLCB9, CONC, STRENGTH, 0, 0, Strength-II:1.25DC+1.50EH+1.35EV+1.35L+1.35BRK[1]+1.35LS, 0, 0, 0
ST, ppropio, 1.25, ST, muerta, 1.25, ST, viva, 1.35, ST, BR, 1.35

ST, EH, 1.5, ST, EV, 1.35, ST, LS, 1.35, ST, WA, 1

NAME=cLCB10, CONC, STRENGTH, 0, 0, Strength-II:1.25DC+1.50EH+1.00EV+1.35L+1.35BRK[1]+1.35LS, 0, 0, 0
ST, ppropio, 1.25, ST, muerta, 1.25, ST, viva, 1.35, ST, BR, 1.35

ST, EH, 1.5, ST, EV, 1, ST, LS, 1.35, ST, WA, 1

NAME=cLCB11, CONC, STRENGTH, 0, 0, Strength-II:1.25DC+0.90EH+1.35EV+1.35L+1.35BRK[1]+1.35LS, 0, 0, 0
ST, ppropio, 1.25, ST, muerta, 1.25, ST, viva, 1.35, ST, BR, 1.35

ST, EH, 0.9, ST, EV, 1.35, ST, LS, 1.35, ST, WA, 1

NAME=cLCB12, CONC, STRENGTH, 0, 0, Strength-II:1.25DC+0.90EH+1.00EV+1.35L+1.35BRK[1]+1.35LS, 0, 0, 0
ST, ppropio, 1.25, ST, muerta, 1.25, ST, viva, 1.35, ST, BR, 1.35

ST, EH, 0.9, ST, EV, 1, ST, LS, 1.35, ST, WA, 1

NAME=cLCB13, CONC, STRENGTH, 0, 0, Strength-II:0.90DC+1.50EH+1.35EV+1.35L+1.35BRK[1]+1.35LS, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, viva, 1.35, ST, BR, 1.35

ST, EH, 1.5, ST, EV, 1.35, ST, LS, 1.35, ST, WA, 1

NAME=cLCB14, CONC, STRENGTH, 0, 0, Strength-II:0.90DC+1.50EH+1.00EV+1.35L+1.35BRK[1]+1.35LS, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, viva, 1.35, ST, BR, 1.35

ST, EH, 1.5, ST, EV, 1, ST, LS, 1.35, ST, WA, 1

NAME=cLCB15, CONC, STRENGTH, 0, 0, Strength-II:0.90DC+0.90EH+1.35EV+1.35L+1.35BRK[1]+1.35LS, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, viva, 1.35, ST, BR, 1.35

ST, EH, 0.9, ST, EV, 1.35, ST, LS, 1.35, ST, WA, 1

NAME=cLCB16, CONC, STRENGTH, 0, 0, Strength-II:0.90DC+0.90EH+1.00EV+1.35L+1.35BRK[1]+1.35LS, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, viva, 1.35, ST, BR, 1.35

ST, EH, 0.9, ST, EV, 1, ST, LS, 1.35, ST, WA, 1
NAME=cLCB17, CONC, STRENGTH, 0, 0, Strength-IV:1.50DC+1.50EH+1.35EV, 0, 0, 0
ST, ppropio, 1.5, ST, muerta, 1.5, ST, EH, 1.5, ST, EV, 1.35, ST, WA, 1
NAME=cLCB18, CONC, STRENGTH, 0, 0, Strength-IV:1.50DC+1.50EH+1.00EV, 0, 0, 0
ST, ppropio, 1.5, ST, muerta, 1.5, ST, EH, 1.5, ST, EV, 1, ST, WA, 1
NAME=cLCB19, CONC, STRENGTH, 0, 0, Strength-IV:1.50DC+0.90EH+1.35EV, 0, 0, 0
ST, ppropio, 1.5, ST, muerta, 1.5, ST, EH, 0.9, ST, EV, 1.35, ST, WA, 1
NAME=cLCB20, CONC, STRENGTH, 0, 0, Strength-IV:1.50DC+0.90EH+1.00EV, 0, 0, 0
ST, ppropio, 1.5, ST, muerta, 1.5, ST, EH, 0.9, ST, EV, 1, ST, WA, 1
NAME=cLCB21, CONC, STRENGTH, 0, 0, Strength-IV:0.90DC+1.50EH+1.35EV, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, EH, 1.5, ST, EV, 1.35, ST, WA, 1
NAME=cLCB22, CONC, STRENGTH, 0, 0, Strength-IV:0.90DC+1.50EH+1.00EV, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, EH, 1.5, ST, EV, 1, ST, WA, 1
NAME=cLCB23, CONC, STRENGTH, 0, 0, Strength-IV:0.90DC+0.90EH+1.35EV, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, EH, 0.9, ST, EV, 1.35, ST, WA, 1
NAME=cLCB24, CONC, STRENGTH, 0, 0, Strength-IV:0.90DC+0.90EH+1.00EV, 0, 0, 0
ST, ppropio, 0.9, ST, muerta, 0.9, ST, EH, 0.9, ST, EV, 1, ST, WA, 1
NAME=cLCB25, CONC, STRENGTH, 0, 0, Extreme-I:1.00DC+1.50EH+1.35EV+0.50L+0.50BRK[1]+0.50LS+1.0E[1], 0, 0, 0
ST, ppropio, 1, ST, muerta, 1, ST, viva, 0.5, ST, BR, 0.5, ST, EH, 1.5
ST, EV, 1.35, ST, LS, 0.5, ST, eq, 1, ST, WA, 1
NAME=cLCB26, CONC, STRENGTH, 0, 0, Extreme-I:1.00DC+1.50EH+1.35EV+0.50L+0.50BRK[1]+0.50LS-1.0E[1], 0, 0, 0
ST, ppropio, 1, ST, muerta, 1, ST, viva, 0.5, ST, BR, 0.5, ST, EH, 1.5
ST, EV, 1.35, ST, LS, 0.5, ST, eq, 1, ST, WA, 1
NAME=cLCB27, CONC, STRENGTH, 0, 0, Extreme-I:1.00DC+1.50EH+1.00EV+0.50L+0.50BRK[1]+0.50LS+1.0E[1], 0, 0, 0
ST, ppropio, 1, ST, muerta, 1, ST, viva, 0.5, ST, BR, 0.5, ST, EH, 1.5
ST, EV, 1, ST, LS, 0.5, ST, eq, 1, ST, WA, 1
NAME=cLCB28, CONC, STRENGTH, 0, 0, Extreme-I:1.00DC+1.50EH+1.00EV+0.50L+0.50BRK[1]+0.50LS-1.0E[1], 0, 0, 0
ST, ppropio, 1, ST, muerta, 1, ST, viva, 0.5, ST, BR, 0.5, ST, EH, 1.5
ST, EV, 1, ST, LS, 0.5, ST, eq, 1, ST, WA, 1
NAME=cLCB29, CONC, STRENGTH, 0, 0, Extreme-I:1.00DC+0.90EH+1.35EV+0.50L+0.50BRK[1]+0.50LS+1.0E[1], 0, 0, 0
ST, ppropio, 1, ST, muerta, 1, ST, viva, 0.5, ST, BR, 0.5, ST, EH, 0.9
ST, EV, 1.35, ST, LS, 0.5, ST, eq, 1, ST, WA, 1
NAME=cLCB30, CONC, STRENGTH, 0, 0, Extreme-I:1.00DC+0.90EH+1.35EV+0.50L+0.50BRK[1]+0.50LS-1.0E[1], 0, 0, 0
ST, ppropio, 1, ST, muerta, 1, ST, viva, 0.5, ST, BR, 0.5, ST, EH, 0.9
ST, EV, 1.35, ST, LS, 0.5, ST, eq, 1, ST, WA, 1
NAME=cLCB31, CONC, STRENGTH, 0, 0, Extreme-I:1.00DC+0.90EH+1.00EV+0.50L+0.50BRK[1]+0.50LS+1.0E[1], 0, 0, 0
ST, ppropio, 1, ST, muerta, 1, ST, viva, 0.5, ST, BR, 0.5, ST, EH, 0.9
ST, EV, 1, ST, LS, 0.5, ST, eq, 1, ST, WA, 1
NAME=cLCB32, CONC, STRENGTH, 0, 0, Extreme-I:1.00DC+0.90EH+1.00EV+0.50L+0.50BRK[1]+0.50LS-1.0E[1], 0, 0, 0
ST, ppropio, 1, ST, muerta, 1, ST, viva, 0.5, ST, BR, 0.5, ST, EH, 0.9
ST, EV, 1, ST, LS, 0.5, ST, eq, 1, ST, WA, 1
NAME=cLCB33, CONC, SERVICE, 0, 0, Service-I:1.00DC+1.00EH+1.00EV+1.00L+1.00BRK[1]+1.00LS, 0, 0, 0
ST, ppropio, 1, ST, muerta, 1, ST, viva, 1, ST, BR, 1, ST, EH, 1
ST, EV, 1, ST, LS, 1, ST, WA, 1
NAME=cLCB34, CONC, SERVICE, 0, 0, Service-II:1.00DC+1.00EH+1.00EV+1.30L+1.30BRK[1]+1.30LS, 0, 0, 0
ST, ppropio, 1, ST, muerta, 1, ST, viva, 1.3, ST, BR, 1.3, ST, EH, 1
ST, EV, 1, ST, LS, 1.3, ST, WA, 1
NAME=cLCB35, CONC, SERVICE, 0, 0, Service-III:1.00DC+1.00EH+1.00EV+0.80L+0.80BRK[1]+0.80LS, 0, 0, 0
ST, ppropio, 1, ST, muerta, 1, ST, viva, 0.8, ST, BR, 0.8, ST, EH, 1
ST, EV, 1, ST, LS, 0.8, ST, WA, 1
NAME=cLCB36, CONC, SERVICE, 0, 0, Service-IV:1.00DC+1.00EH+1.00EV, 0, 0, 0
ST, ppropio, 1, ST, muerta, 1, ST, EH, 1, ST, EV, 1, ST, WA, 1
NAME=cLCB37, CONC, SERVICE, 0, 0, Fatigue-I:1.50L, 0, 0, 0
ST, viva, 1.5, ST, WA, 1
NAME=cLCB38, CONC, SERVICE, 0, 0, Fatigue-II:0.75L, 0, 0, 0
ST, viva, 0.75, ST, WA, 1
NAME=ELR, CONC, STRENGTH, 0, 1, , 0, 0, 0
CBC, cLCB1, 1, CBC, cLCB2, 1, CBC, cLCB3, 1, CBC, cLCB4, 1
CBC, cLCB5, 1, CBC, cLCB6, 1, CBC, cLCB7, 1, CBC, cLCB8, 1
CBC, cLCB9, 1, CBC, cLCB10, 1, CBC, cLCB11, 1, CBC, cLCB12, 1
CBC, cLCB13, 1, CBC, cLCB14, 1, CBC, cLCB15, 1, CBC, cLCB16, 1
CBC, cLCB17, 1, CBC, cLCB18, 1, CBC, cLCB19, 1, CBC, cLCB20, 1
CBC, cLCB21, 1, CBC, cLCB22, 1, CBC, cLCB23, 1, CBC, cLCB24, 1
NAME=ELS, CONC, SERVICE, 0, 1, , 0, 0, 0
CBC, cLCB33, 1, CBC, cLCB34, 1, CBC, cLCB35, 1, CBC, cLCB36, 1
NAME=ELE, CONC, STRENGTH, 0, 1, , 0, 0, 0
CBC, cLCB25, 1, CBC, cLCB26, 1, CBC, cLCB27, 1, CBC, cLCB28, 1
CBC, cLCB29, 1, CBC, cLCB30, 1, CBC, cLCB31, 1, CBC, cLCB32, 1

*LC-COLOR ; Diagram Color for Load Case

; ANAL, LCNAME, iR1(ALL), iG1(ALL), iB1(ALL), iR2(MIN), iG2(MIN), iB2(MIN), iR3(MAX), iG2(MAX), iB2(MAX)

ST, ppropio, 255, 0, 192, 160, 255, 255, 0, 128, 192

ST, muerta, 255, 192, 87, 255, 255, 255, 255, 255, 87

ST, viva, 0, 128, 57, 192, 192, 192, 0, 128, 255

ST, BR, 85, 0, 192, 255, 160, 255, 85, 192, 0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

ST, EH, 255, 160, 255, 160, 255, 255, 85, 192, 0
ST, EV, 192, 72, 0, 255, 160, 255, 160, 255, 255
ST, LS, 0, 192, 192, 85, 192, 0, 0, 157, 192
ST, eq, 85, 192, 0, 160, 192, 255, 148, 87, 255
CBC, cLCB1, 0, 128, 128, 255, 128, 0, 255, 192, 87
CBC, cLCB2, 192, 192, 0, 192, 72, 0, 0, 128, 57
CBC, cLCB3, 212, 160, 255, 0, 192, 128, 255, 255, 87
CBC, cLCB4, 255, 192, 160, 163, 160, 255, 255, 87, 128
CBC, cLCB5, 210, 210, 210, 255, 255, 87, 192, 192, 192
CBC, cLCB6, 212, 160, 255, 255, 192, 160, 192, 0, 192
CBC, cLCB7, 146, 0, 255, 0, 192, 192, 146, 0, 255
CBC, cLCB8, 163, 255, 160, 85, 192, 0, 192, 192, 0
CBC, cLCB9, 128, 192, 0, 163, 255, 160, 0, 157, 192
CBC, cLCB10, 192, 128, 0, 78, 0, 255, 0, 157, 192
CBC, cLCB11, 192, 192, 0, 255, 255, 87, 192, 0, 128
CBC, cLCB12, 192, 0, 192, 192, 0, 192, 160, 192, 255
CBC, cLCB13, 163, 255, 160, 192, 192, 0, 93, 255, 87
CBC, cLCB14, 255, 192, 87, 0, 192, 192, 255, 0, 192
CBC, cLCB15, 212, 160, 255, 160, 255, 255, 0, 157, 192
CBC, cLCB16, 255, 192, 87, 192, 192, 0, 160, 255, 255
CBC, cLCB17, 255, 255, 255, 210, 210, 210, 255, 192, 87
CBC, cLCB18, 255, 192, 87, 85, 0, 192, 0, 128, 255
CBC, cLCB19, 255, 160, 255, 146, 0, 255, 0, 157, 192
CBC, cLCB20, 192, 192, 0, 0, 128, 192, 192, 72, 0
CBC, cLCB21, 93, 255, 87, 163, 160, 255, 0, 128, 57
CBC, cLCB22, 255, 0, 128, 0, 128, 255, 255, 0, 128
CBC, cLCB23, 0, 128, 57, 255, 128, 0, 255, 160, 255
CBC, cLCB24, 0, 128, 255, 163, 160, 255, 146, 0, 255
CBC, cLCB25, 163, 255, 160, 146, 0, 255, 160, 255, 255
CBC, cLCB26, 192, 0, 128, 160, 192, 255, 163, 255, 160
CBC, cLCB27, 0, 128, 57, 0, 192, 192, 192, 192, 192
CBC, cLCB28, 78, 0, 255, 0, 128, 255, 85, 0, 192
CBC, cLCB29, 0, 128, 57, 192, 0, 192, 255, 87, 128
CBC, cLCB30, 192, 72, 0, 255, 87, 128, 255, 0, 128
CBC, cLCB31, 255, 87, 128, 0, 128, 255, 192, 192, 192
CBC, cLCB32, 192, 128, 0, 255, 192, 87, 192, 0, 128
CBC, cLCB33, 146, 0, 255, 78, 0, 255, 0, 192, 128
CBC, cLCB34, 255, 0, 192, 0, 128, 255, 163, 160, 255
CBC, cLCB35, 163, 160, 255, 255, 255, 87, 160, 255, 255
CBC, cLCB36, 0, 128, 255, 212, 160, 255, 255, 128, 0
CBC, cLCB37, 0, 128, 57, 192, 0, 128, 160, 255, 255
CBC, cLCB38, 255, 0, 128, 0, 128, 192, 255, 160, 255
CBC, ELR, 0, 192, 128, 0, 128, 255, 148, 87, 255
CBC, ELS, 255, 128, 0, 255, 192, 87, 85, 0, 192
ST, WA, 0, 128, 192, 255, 192, 87, 93, 255, 87
CBC, ELE, 192, 72, 0, 78, 0, 255, 255, 0, 128

*DGN-MATL ; Modify Steel(Concrete) Material
; iMAT, TYPE, MNAME, [DATA1] ; STEEL
; iMAT, TYPE, MNAME, [DATA2], [R-DATA], FCI, bSERV, SHORT, LONG ; CONC
; iMAT, TYPE, MNAME, [DATA3], [DATA2], [R-DATA] ; SRC
; iMAT, TYPE, MNAME, [DATA5] ; STEEL(None) & KSCE-ASD05
; [DATA1] : 1, DB, CODE, NAME or 2, ELAST, POISN, FU, FY1, FY2, FY3, FY4
; FY5, FY6, AFT, AFT2, AFT3, FY, AFV, AFV2, AFV3
; [DATA2] : 1, DB, CODE, NAME or 2, FC, CHK, LAMBDA, bFCI, FCI
; [DATA3] : 1, DB, CODE, NAME or 2, ELAST, FU, FY1, FY2, FY3, FY4
; FY5, FY6, AFT, AFT2, AFT3, FY, AFV, AFV2, AFV3
; [DATA4] : 1, DB, CODE, NAME or 2, FC
; [DATA5] : 3, ELAST, POISN, AL1, AL2, AL3, AL4, AL5, AL6, AL7, AL8, AL9, AL10
; MIN1, MIN2, MIN3
; [R-DATA]: RBCODE, RBMAIN, RBSUB, FY(R), FYS
1, CONC , Grade C4000 , 1, ASTM(RC) , ,Grade C4000 , NO, 1, NO, 0, ASTM(RC), Grade 60, Grade 60, , , 1968.5954358168,
NO, 0, 0, ASTM(RC) , ,Grade C4000 , 2812.27919402401, NO, 1, ASTM(RC), Grade 60, Grade 60, , , 1968.5954358168
2, CONC , Grade C5000 , 1, ASTM(RC) , ,Grade C5000 , NO, 1, NO, 0, ASTM(RC), Grade 60, Grade 60, , ,
2460.74429477101, NO, 0, 0, ASTM(RC) , ,Grade C4000 , 2812.27919402401, NO, 1, ASTM(RC), Grade 60, Grade 60, , ,
1968.5954358168

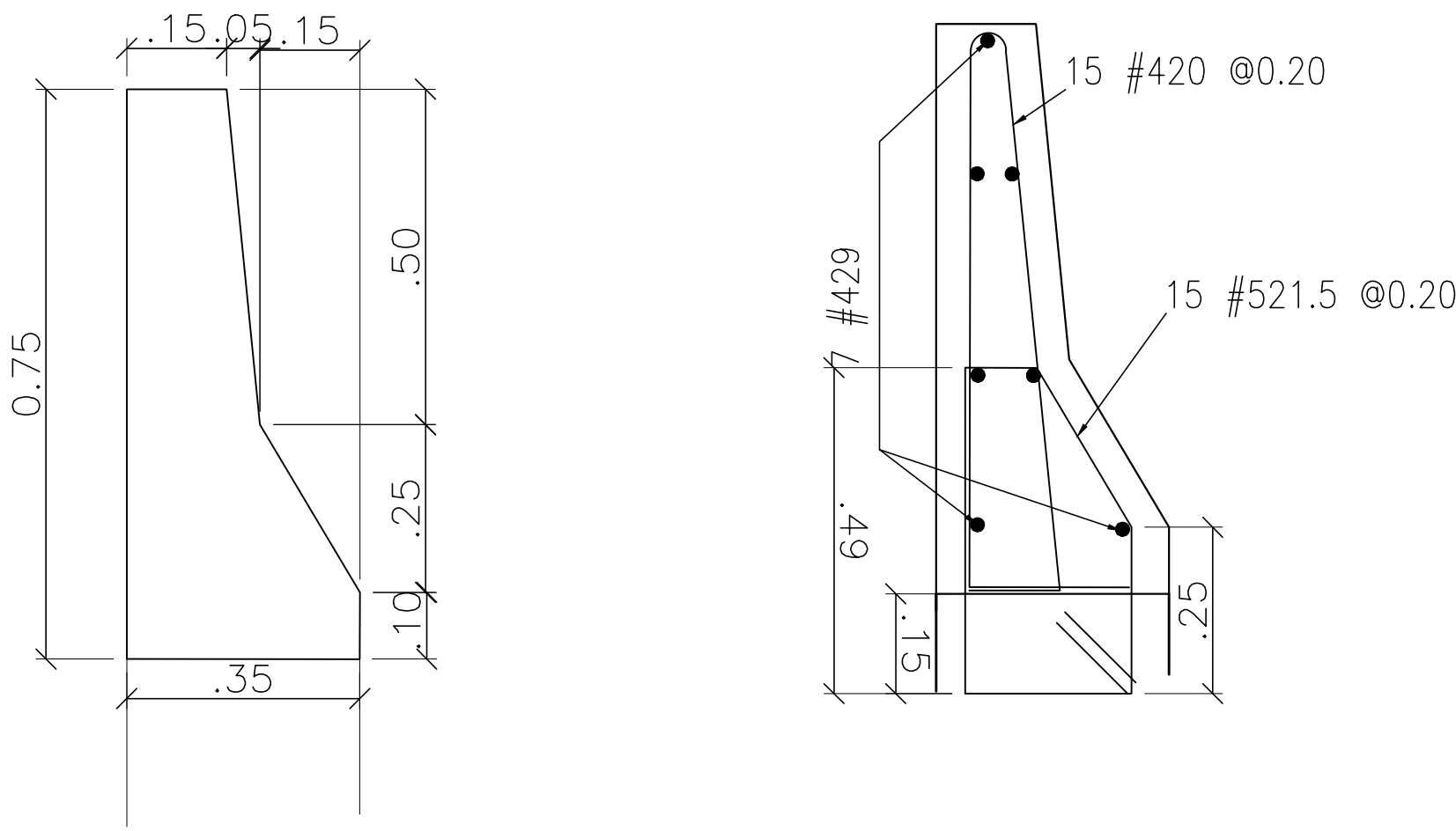
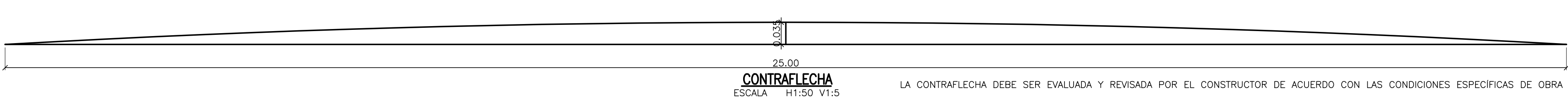
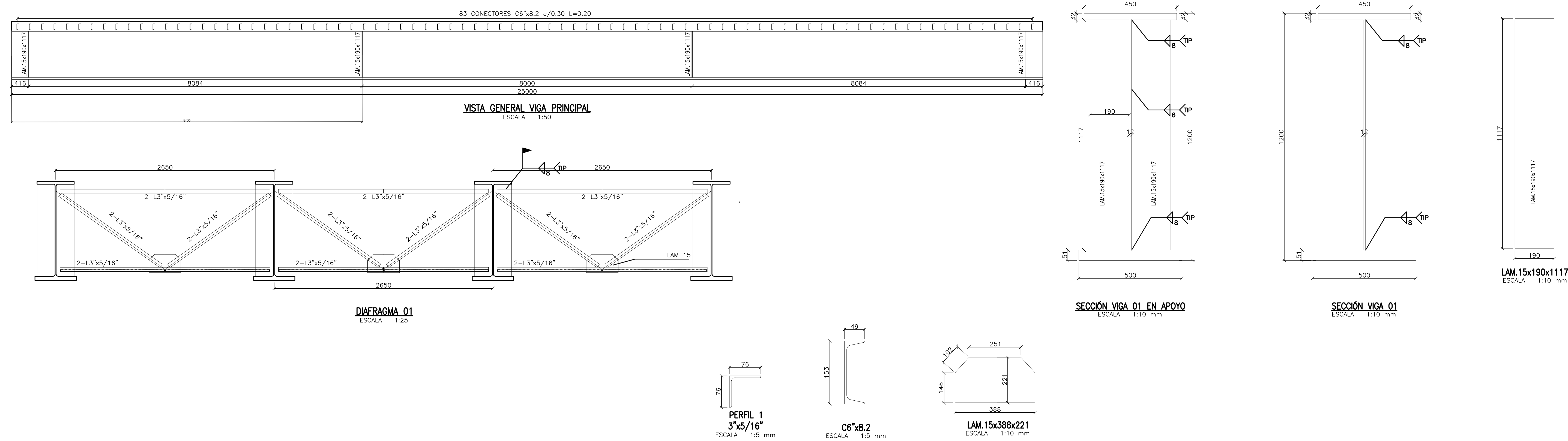
*SECTDATA-DGN ; Beam/Column Section Data for Design
; iSEC, TYPE, SAME, SBARNUM, SBARNAME, Dt, Db, bTBAR, TBAR, BUNDLE, BUNDEL_N, LBAR, LBAR_N ; TYPE=BEAM
; iSEC, TYPE, SBARNUM, SBARNAME, Dc ; TYPE=COLM
1, COLM, 2, , 0.075

*CUTLINE ; Cutting Line
; NAME, DIR, PT1X, PT1Y, PT1Z, PT2X, PT2Y, PT2Z, iR, iG, iB, TYPE
Cut-Line #1, NORMAL, 4.3, 7.34788e-017, 0, 4.15758, 0, 5.3, 255, 0, 0, 0

PUENTE ATACO PLANADAS
K38+760 DATOS ENTRADA

*CUTLINE2 ; Plate Cutting Line Diagram
; NAME, DIR, PT1X, PT1Y, PT1Z, PT2X, PT2Y, PT2Z, PT3X, PT3Y, PT3Z, iR, iG, iB
v01, INPLANE, 4.3, 7.34788e-017, 0, 4.15758, 0, 5.3, 4.45455, 0, 5.3, 0, 0, 0

*ENDDATA

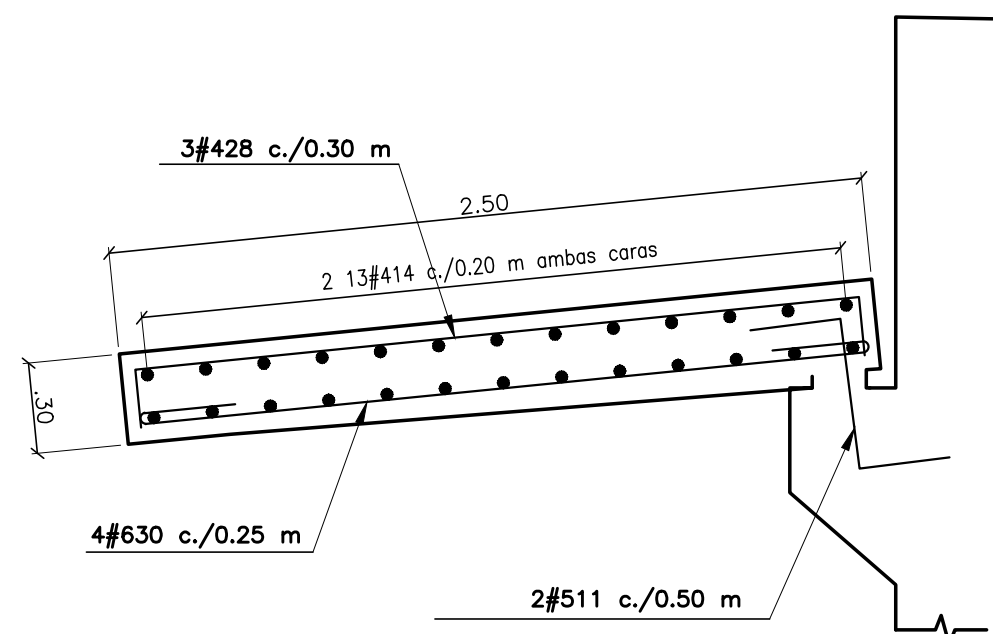


GEOMETRÍA BARANDA TRÁFICO ESCALA 1:20

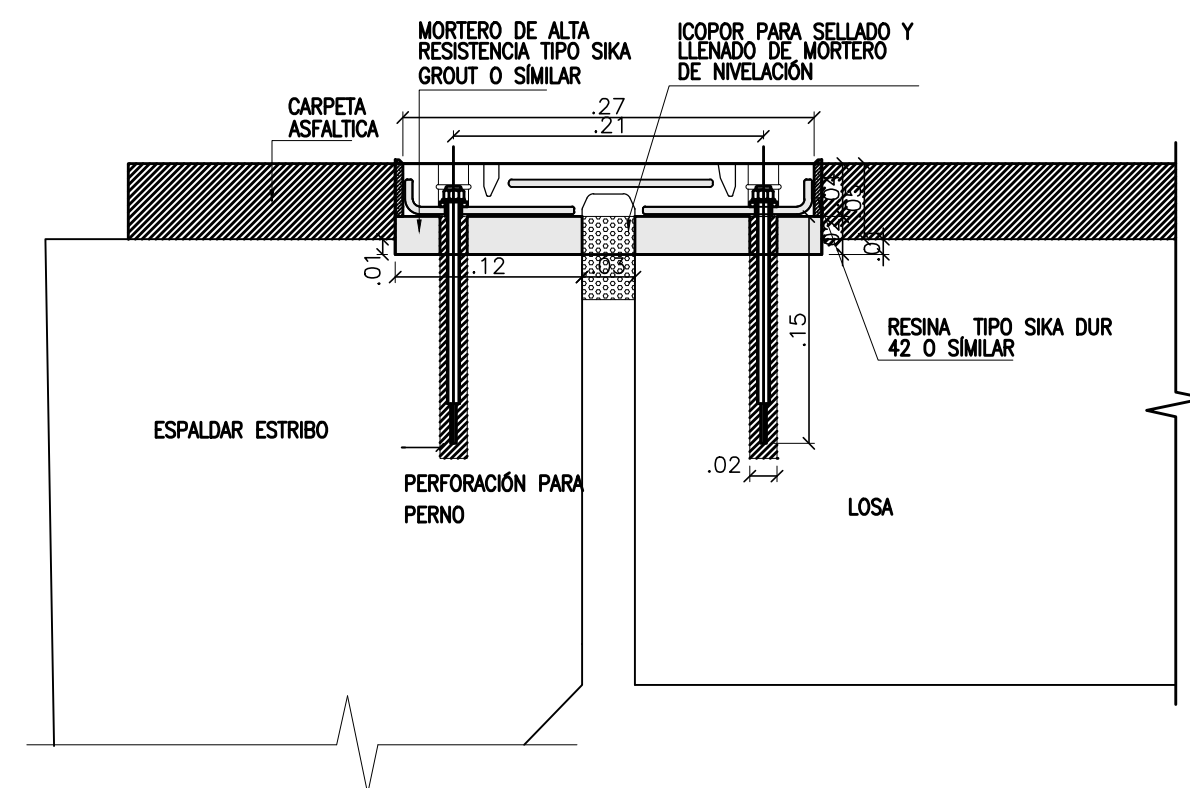
REFUERZO BARANDA TRÁFICO ESCALA 1:20

CUADRO CANTIDADES NEW JERSEY L=3.00 m					
No.	FIGURA	LONG.	CANT.		
				#4	#5
523.5		2.35	15		35.250
421		2.1	15	31.50	
429		2.90	7	20.30	
LONGITUD TOTAL REFUERZO (ML)				51.80	35.25
TOTAL ACERO DE REFUERZO (KG)		fy= 4200 Kg/cm²		51.49	54.71
				106.20	
VOLUMEN DE CONCRETO (M3)		f'c= 210 Kg/cm²		0.72	

- NORMA DE DISEÑO Y ESPECIFICACIONES
 - NORMA COLOMBIANA DE DISEÑO DE PUENTES (CCP-2014)
 - AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS-2012
 - ESPECIFICACIONES GENERALES DE CONSTRUCCIÓN DEL INVIAS
 - AASHTO- STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES
 - AWS D1.5-02 BRIDGE WELDING CODE
 - ESPECIFICACIONES PARTICULARES DEL PROYECTO
- MÉTODOS DE DISEÑO
 - CONCRETO REFORZADO Y ACERO: FACTORES DE RESISTENCIA DE CARGA EN ESTADOS LÍMITES DE RESISTENCIA Y SERVICIO.
- CARGAS DE DISEÑO:
 - PESO UNITARIO DEL ACERO: 7.85 t/m³
 - PESO UNITARIO DEL CONCRETO: 2.4 t/m³
 - CARGA VIVA: CAMIÓN, CARRIL Y TÁNDEM CCP-14 100 KPH
 - VIENTO: 2.2 t/m³
 - PAVIMENTO 5-25 cm:
- MATERIALES:
 - CONCRETO:
 - PLACA DE TABLERO: CLASE C f'c=280 kg/cm² [28 Mpa]
 - PILOTES: CLASE D f'c=280 kg/cm² [28 Mpa]
 - ESTRIBOS: CLASE D f'c=280 kg/cm² [28 Mpa]
 - ALETAS: CLASE C f'c=280 kg/cm² [28 Mpa]
 - PLACA DE APROXIMACIÓN: CLASE D f'c=280 kg/cm² [28 Mpa]
 - GROUT: SIKAGROUT 212 O SIMILAR
 - CONCRETO DE LIMPIEZA: f'c=140kg/cm²
 - RELACION AGUA/CEMENTO A/C50.45
 - TAMARO MÁXIMO DEL AGREGADO GRUESO 3/4"
 - ACERO ESTRUCTURAL
 - ESTRUCTURA ASTM A709 Gr 50(AASHTO M270-50W) fy=3500 kg/cm² [50 Mpa]
 - CONECTORES DE CORTANTE ASTM A-108
 - TORNILLERÍA ASTM A-490
 - ANCLAJES: ASTM F1554 Gr 105
 - TUERCAS: ASTM A 563-H
 - PLACA BASE: ASTM A709 Gr 50
- SOLDADURA: TODAS CONFORME AWS D1.5 F5
 - SMAW: AWS E7018W1 / E8018 C3
 - SAW: AWS E-Ni-1K
 - GMW: AWS ER-80S-N1
- NEOPRENOS: DUREZA 60 G=14 kg/cm²
- JUNTA DE DILATACION TIPO COMPOSAN EN ESTRIBO AGFlex-100 O EQUIVALENTE
- COEFICIENTES DE MODIFICACION DE RESPUESTA SISMICA
 - SUBESTRUCTURA PILOTES PARA FLEXO-COMPRESION Y CORTANTE R=1.00
 - CONEXIONES SUBESTRUCTURA AL ESTRIBO R=0.80, COLUMNAS O PILAS DE FUNDACION R=1.00
- ENSAYOS:
 - CONCRETO: CONFORME A AASHTO:
 - RESISTENCIA A LA COMPRESION AASHTO T-23 (ASTM C31)
 - CONSISTENCIA AASHTO T-119 (ASTM C143)
 - SOLDADURAS:
 - PROGRAMA DE ENSAYOS NO DESTRUCTIVOS (END) (En taller y campo)
 - JUNTAS DE COMPLETA PENETRACION
 - JUNTA EN PATIN INFERIOR: 100% RT
 - JUNTAS EN EL ALMA: 100% A 1/6 INFERIOR DE LA ALTURA DEL ALMA EL RESTO DEL ALMA 25%RT
 - RIGIDIZADOR DE APOYO: 100% CONEXION CON EL PATIN SUPERIOR E INFERIOR
 - JUNTA TRANSVERSAL EN PATIN SUPERIOR: 25% RT
 - TERMINALES DIAFRAGMAS:100% RT /UT
- *CAPACIDAD DEL SUELO
- *DIAMETRO DE LOS PILOTES 1.20m
- *PROFUNDIDAD DE LOS PILOTES 11.0m
- *CAPACIDAD DE CARGA EN (kN)
- *ESTADO LIMITE DE SERVICIO (ELS) 16293.70
- *ESTADO LIMITE DE RESISTENCIA (ELR) 8340.20
- *ESTDO LIMITE DE EVENTOS ESPECIALES (LEE) 16293.70
- PARAMETROS SISMICOS/ESPECTRO
- *LOCALIZACION ARMENIA - MONTENEGRO
- *FACTORES DE SISMO

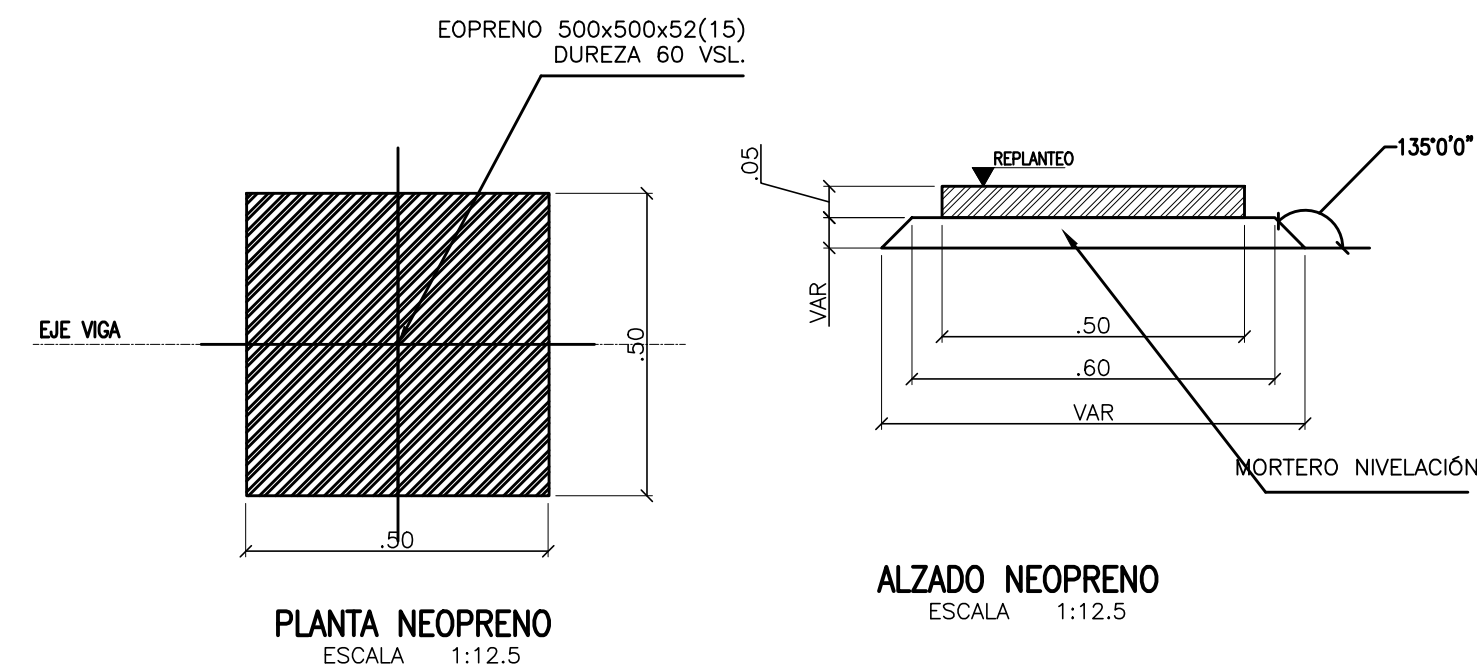


REFUERZO LOSA DE APROXIMACIÓN POR METRO
ESCALA 1:25

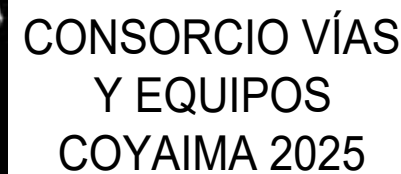


JUNTA TRANSFLEX 200 Ó T-40 (SIMILAR)
ESCALA 1:5

Technical drawing of a stepped shaft. The shaft has a central section of length L_1 and two end sections of length L_2 . The total length is $L_1 + 2L_2$. The diameter of the central section is $\varnothing 30$ mm and the diameter of the end sections is $\varnothing 20$ mm. The transition between the sections is a fillet with a radius R_3 .



* indica longitud promedio y el acero debe figurarse de acuerdo con las condiciones finales de obra.



OBJETO:

MEJORAMIENTO DE LA VÍA
COYAIMA-ATACO- SEÑORITAS EN
EL DEPARTAMENTO DEL TOLIMA

DIRECTOR CONSTRUCTORA:

ING. JHON JAIRO MOLARES

ESPECIALISTA CONSTRUCTORA:

ING. MAURICIO BUSTAMANTE

DIRECTOR INTERVENTORIA:	_____
	ING. ANDRES HERNAN ANGARITA
ESPECIALISTA INTERVENTORIA:	_____
	ING. Juan Ricardo Torres Salazar MP 25202-37070CND.

MODIFICACIONES Y REVISIONES		
FECHA	MODIFICACIÓN	NOMBRE ING. RESPONSABLE
ABRIL/2022	VERSIÓN INICIAL	

TRAMO:

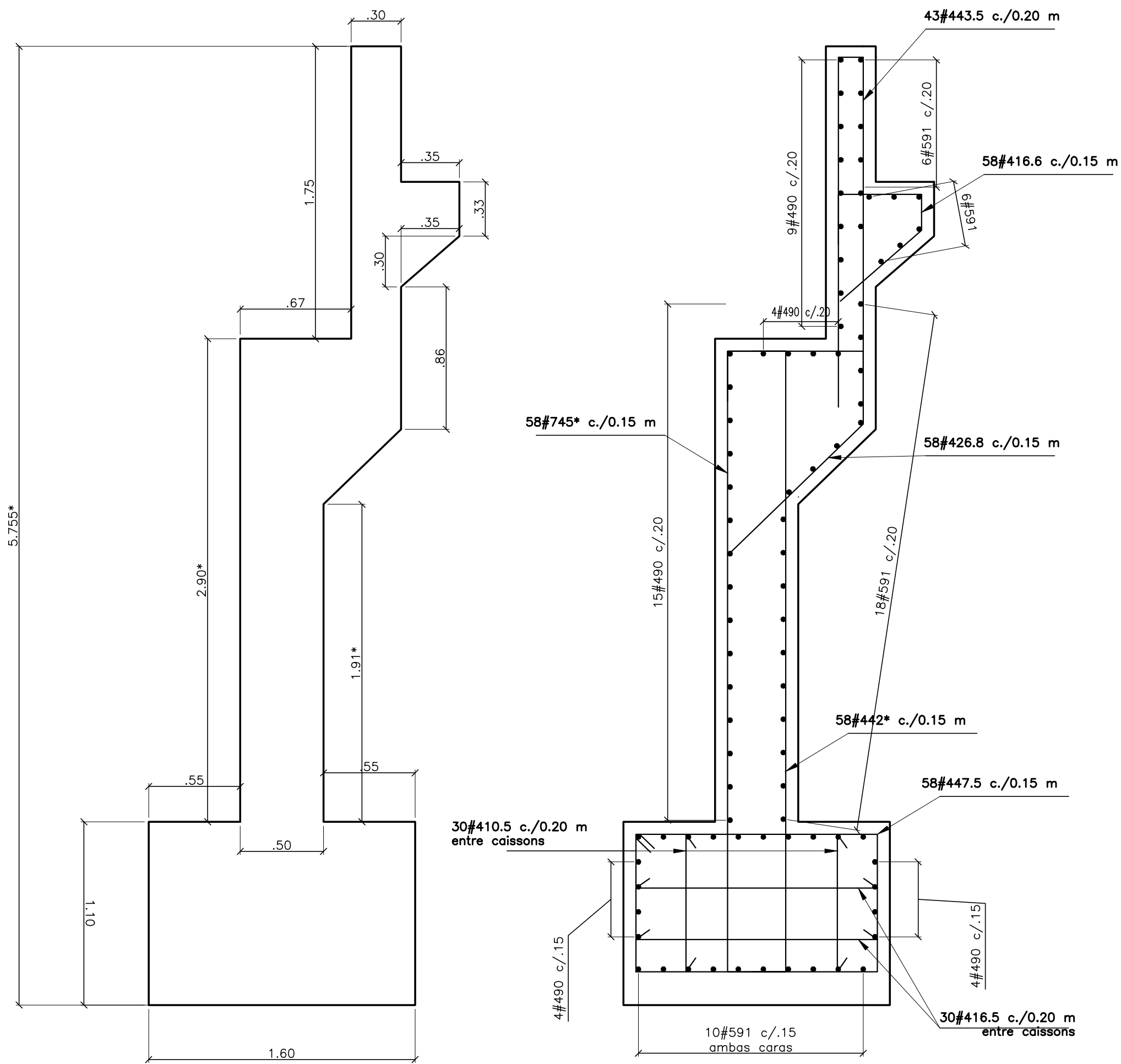
PLANADAS ATACO
ESPOLONES
K36+400 A K38+900

CONTIENE:

**DISEÑO ESTRUCTURAL
PLANADAS ATACO
PUENTE K38**

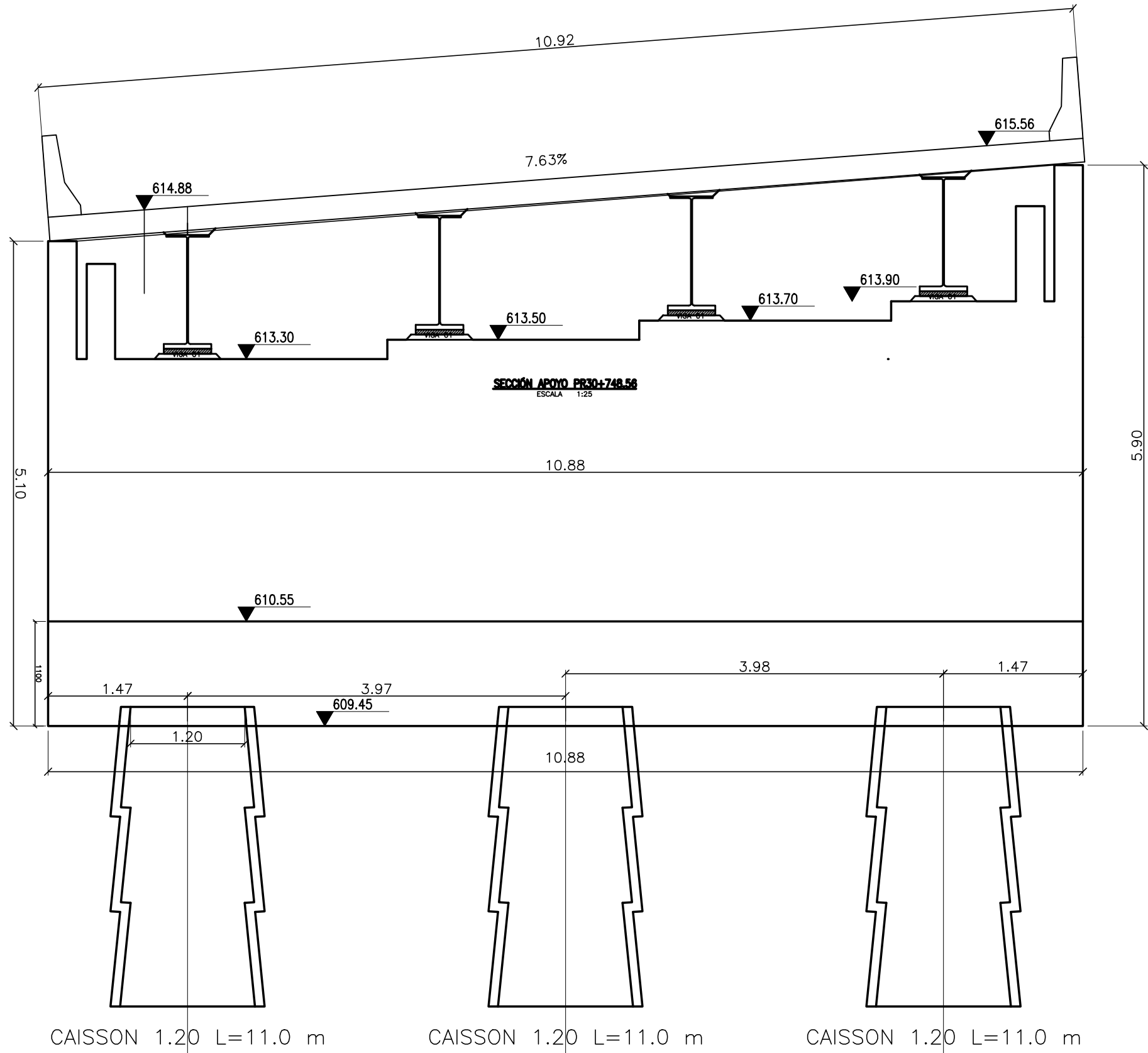
ESCALA:	INDICADAS
ARCHIVO:	puente k38 a planadas N.J.

FECHA:	03-24
PLANO :	5/6

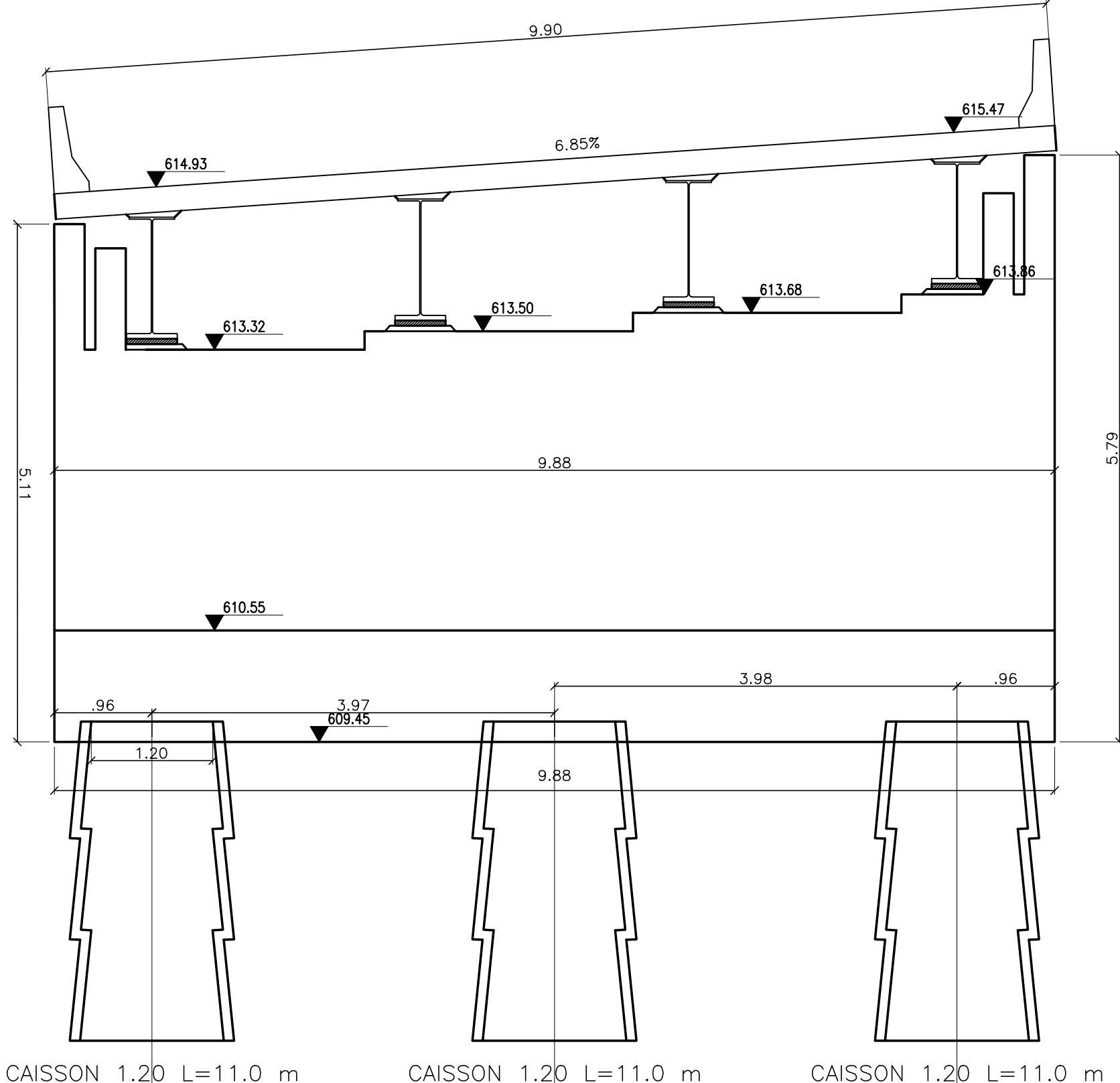


GEOMETRÍA ESTRIBO
ESCALA 1:25

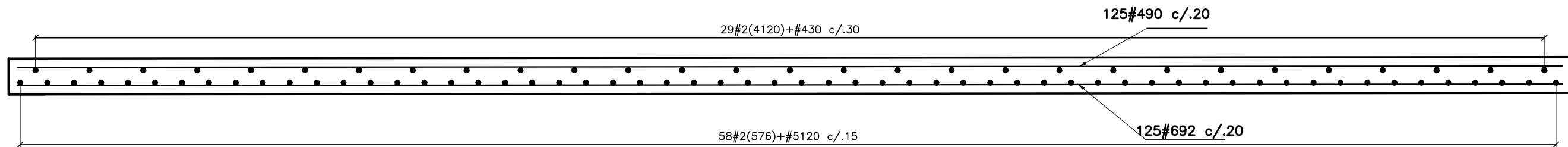
REFUERZO ESTRIBO
ESCALA 1:25



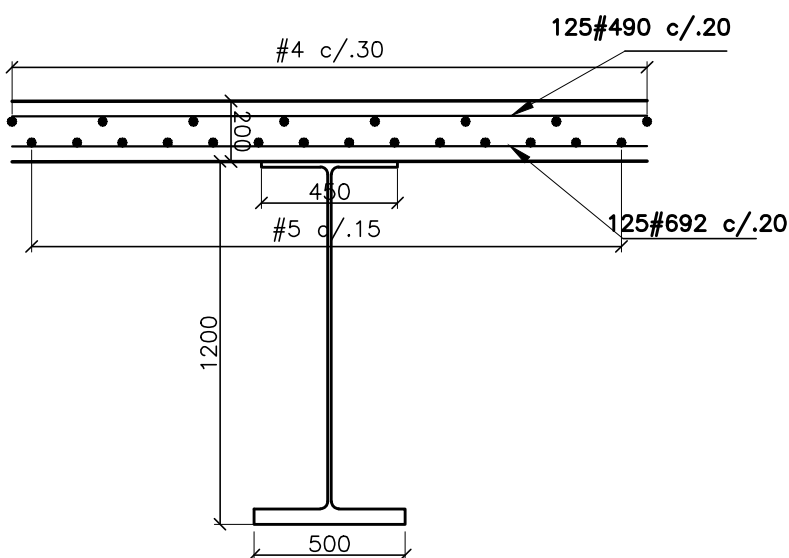
GEOMETRÍA ESTRIBO 1 PR30+748.56
ESCALA 1:50



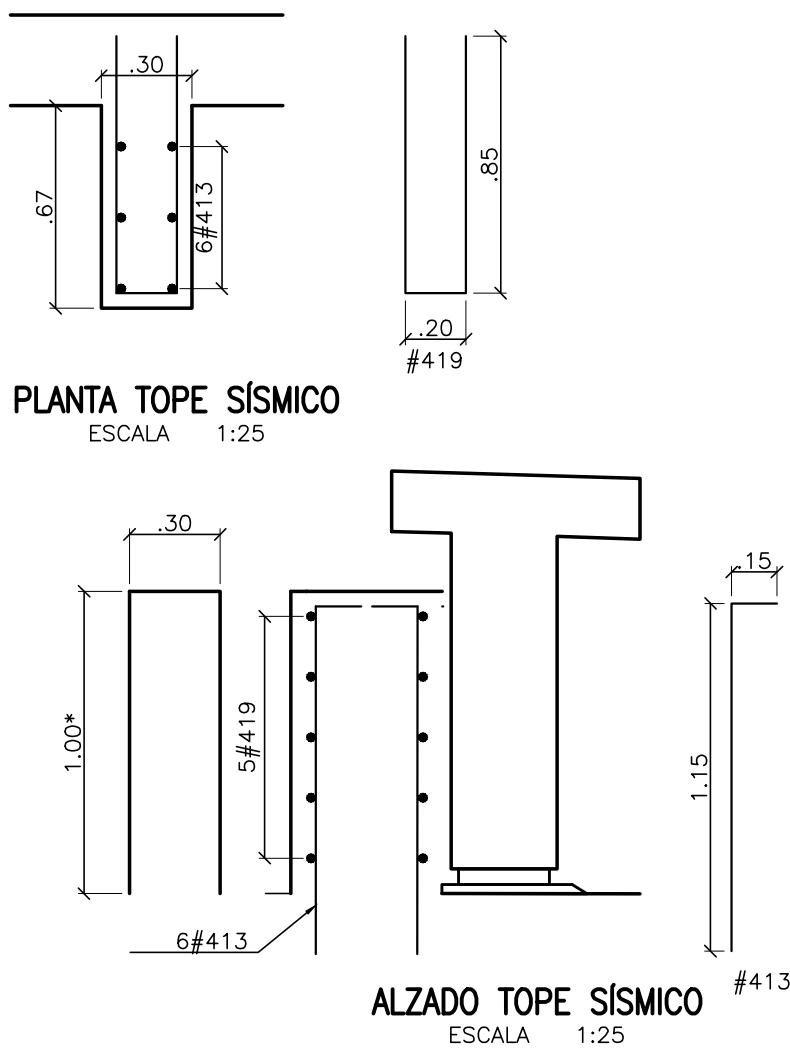
GEOMETRÍA ESTRIBO 2 PR30+748.56
ESCALA 1:50



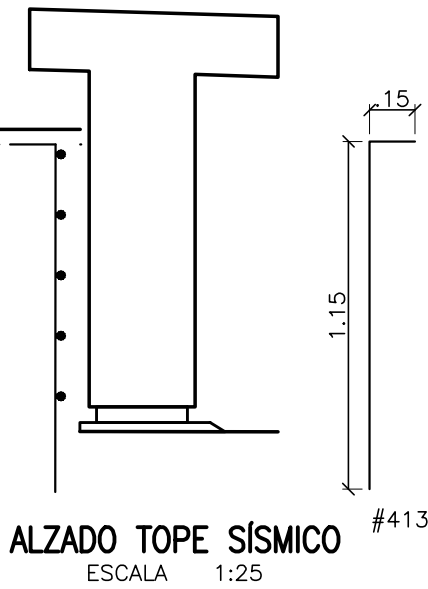
REFUERZO PLACA
ESCALA 1:25



REFUERZO PLACA
ESCALA 1:25



PLANTA TOPE SÍSMICO
ESCALA 1:25



ALZADO TOPE SÍSMICO
ESCALA 1:25

CUADRO CANTIDADES LOSA									
#	L	Cantidad	Longitud total (m)						
			φ 3"	φ 1 1/2"	φ 3/8"	φ 3/4"	φ 7/8"	φ 1"	Despiece
308.5	0.85	58	49.3						0.25 0.75
4120	12.00	64		768.0					0.20 11.80
430	3.00	32		96.0					3.0
490	9.00	125		1125.0					0.20 8.80 0.20
5120	120.00	58			6960.0				12.0
576	7.60	116			881.6				0.25 7.35
692	9.20	125				1150.0			0.30 8.60 0.30
Longitud total por diámetro (m)			0	1989.0	7841.6	1150.0	0	0	Volumen Concreto (m3) 43.5
Peso total por diámetro (kg)			0.00	1977.07	12170.16	2570.3	0.00	0.00	
Peso total Elemento (kg)			16717.48						

* Indica longitud promedio y el acero debe figurarse de acuerdo con las condiciones finales de obra.

CUADRO CANTIDADES ESTRIBO									
#	L	Cantidad	Longitud total (m)						
			φ 3"	φ 1 1/2"	φ 3/8"	φ 3/4"	φ 7/8"	φ 1"	Despiece
416.6	1.66	58		96.3					0.30 0.64 0.30
443.5	4.35	43		187.1					2.10 0.15 2.10
426.8	2.68	58		155.4	0.0				0.30 0.35 0.35
442*	4.20	58		243.6					0.20 3.80* 0.20
447.5	4.75	58		275.5					1.45 0.10 0.25
410.5	1.05	60		63.0					0.10 0.85 0.10
416.5	1.65	60		99.0					0.10 1.45 0.10
490	9.00	36		324.0					0.20 8.60 0.20
591	9.10	40			364.0				0.25 8.60 0.25
745*	4.50	58			0.0		261.0		0.35 3.80* 0.35
Longitud total por diámetro (m)			0	1443.9	364.0	0	261.0	0	Volumen Concreto (m3) 43.96
Peso total por diámetro (kg)			0.00	1435.21	564.93	0.0	793.96	0.00	
Peso total Elemento (kg)			2794.10						

* Indica longitud promedio y el acero debe figurarse de acuerdo con las condiciones finales de obra.



CONSORCIO VÍAS
Y EQUIPOS
COYAIMA 2025

OBJETO:
MEJORAMIENTO DE LA VÍA
COYAIMA-ATACO- SEÑORITAS EN
EL DEPARTAMENTO DEL TOLIMA

DIRECTOR CONSTRUCTORA:
ING. JHON JAIRO MOLARES
ESPECIALISTA CONSTRUCTORA:
ING. MAURICIO BUSTAMANTE

DIRECTOR INTERVENTORIA:
ING. ANDRÉS HERNÁN ANGARITA
ESPECIALISTA INTERVENTORIA:
ING. JUAN RICARDO TORRES SALAZAR
MP 25202-37070CND

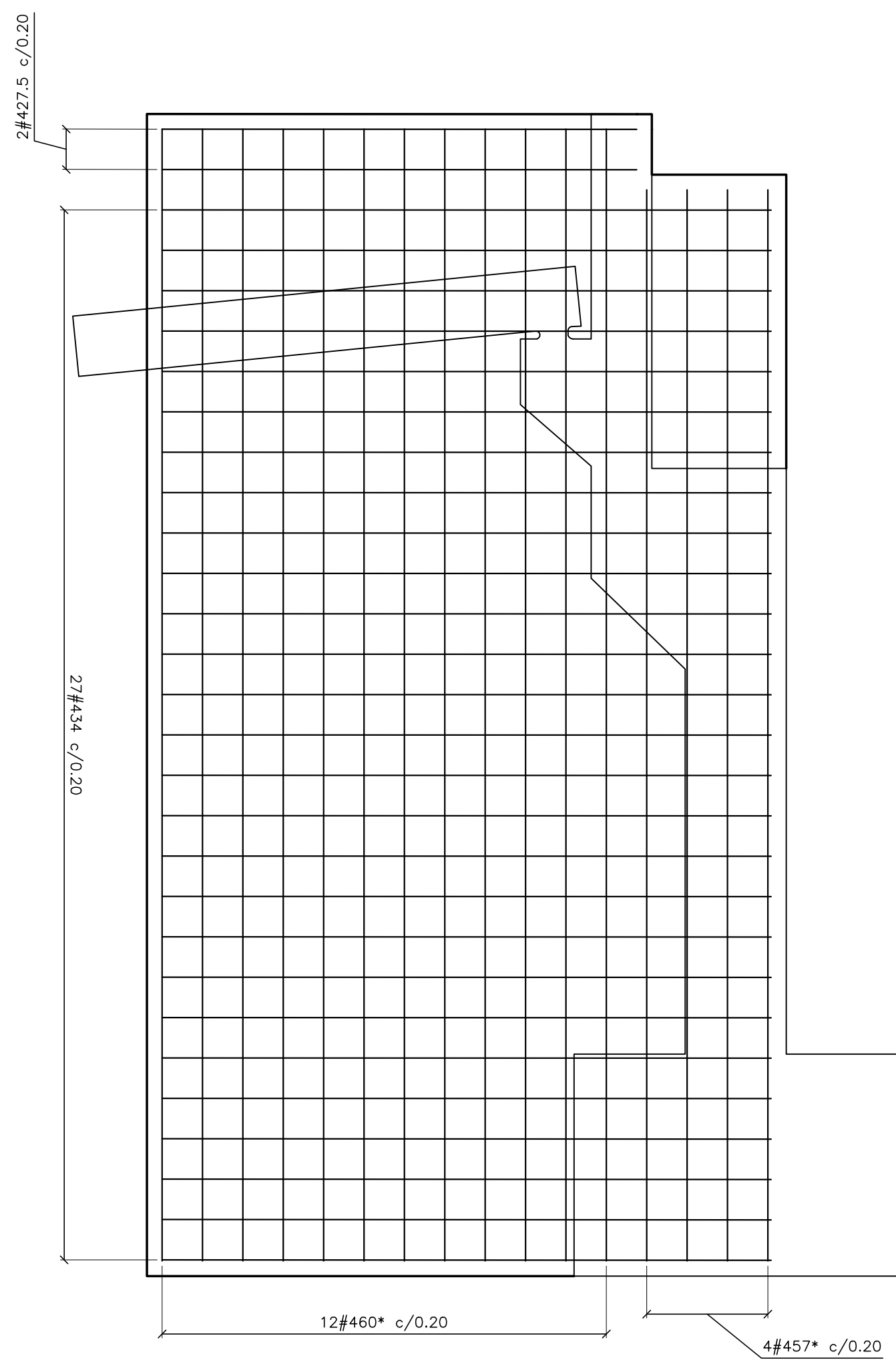
MODIFICACIONES Y REVISIONES		
FECHA	MODIFICACIÓN	NOMBRE ING. RESPONSABLE
ABRIL/2022	VERSIÓN INICIAL	

TRAMO:
PLANADAS ATACO
ESPOLONES
K36+400 A K38+900

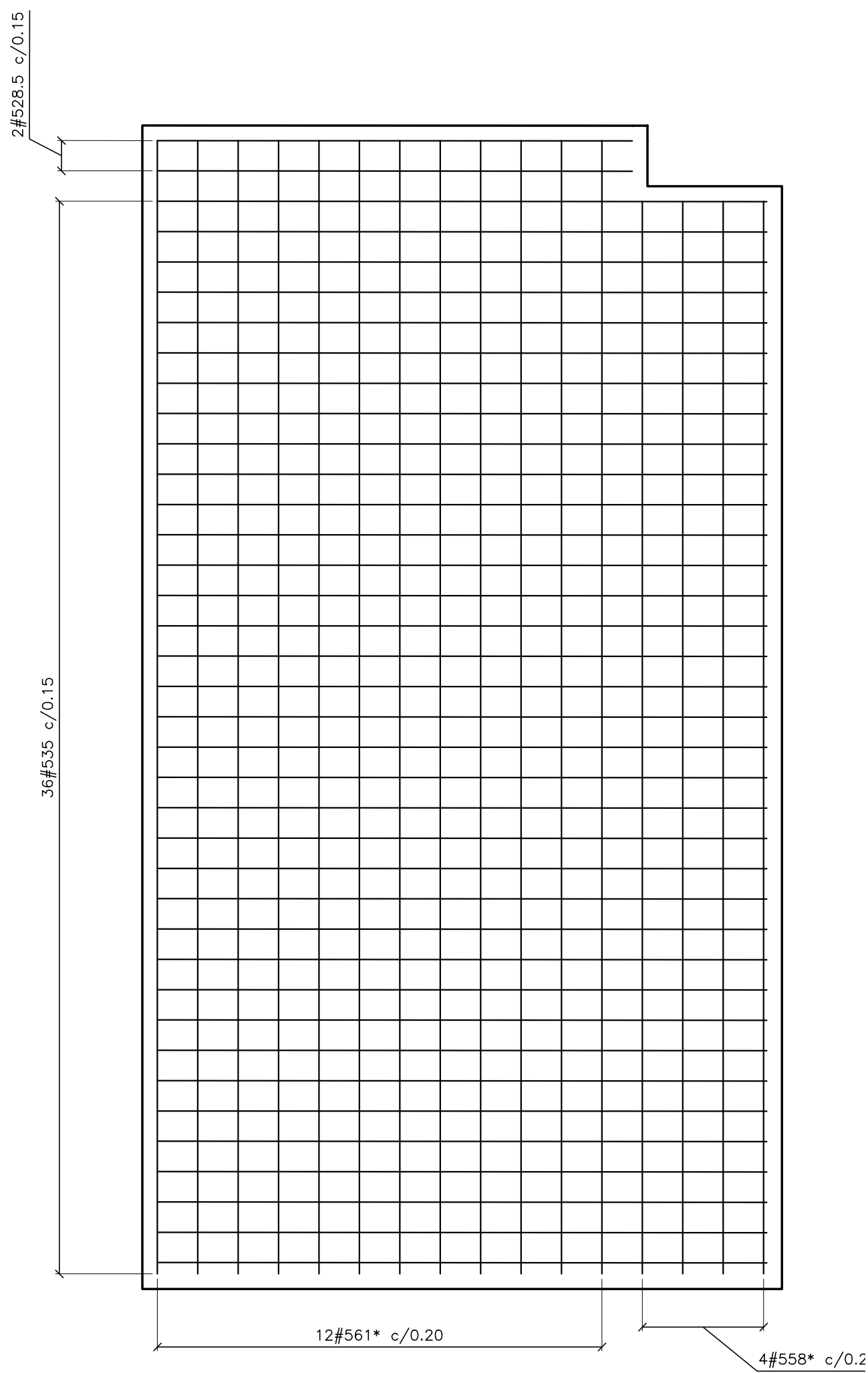
CONTIENE:
DISEÑO ESTRUCTURAL
PLANADAS ATACO
PUENTE K38

ESCALA:
INDICADAS
ARCHIVO:
puente k38 ataco
planadas NJ.dwg

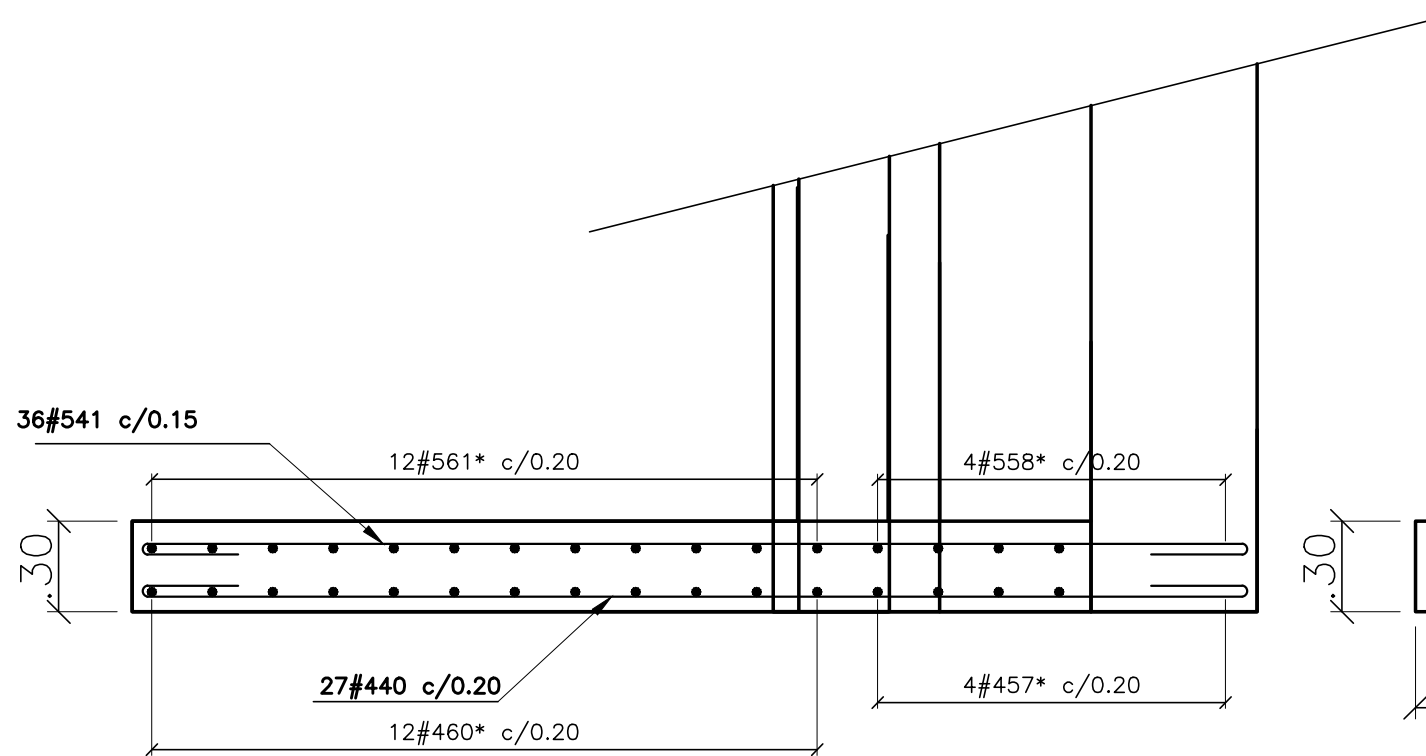
FECHA:
03-24
PLANO:
4/6
REV.
V-0



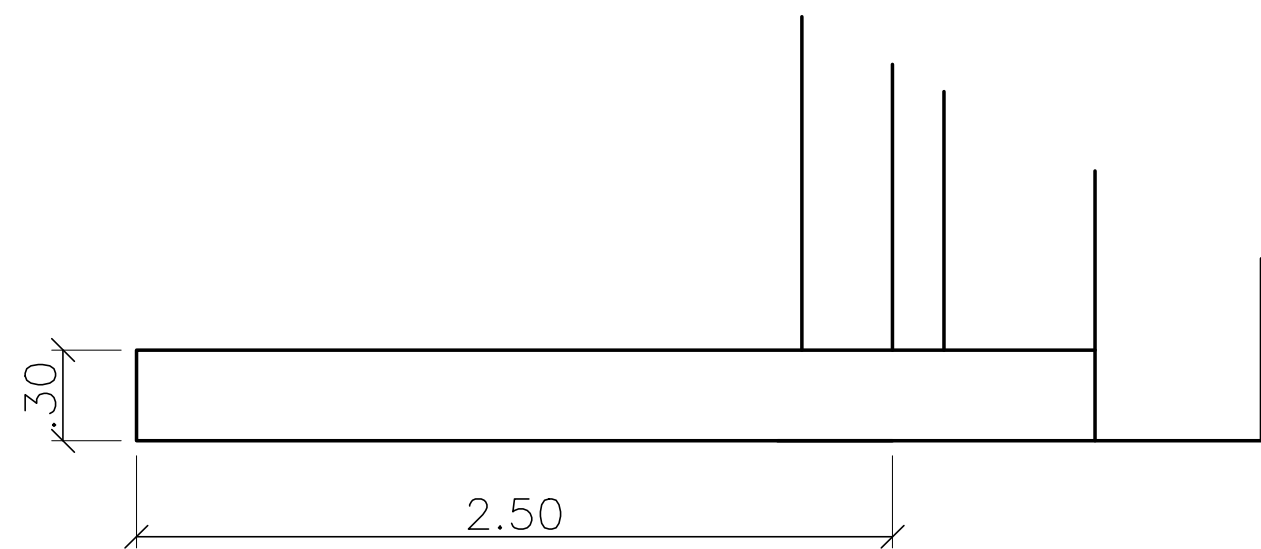
REFUERZO EXTERIOR ALETA
ESCALA 1:25



REFUERZO INTERIOR ALETA
ESCALA 1:25



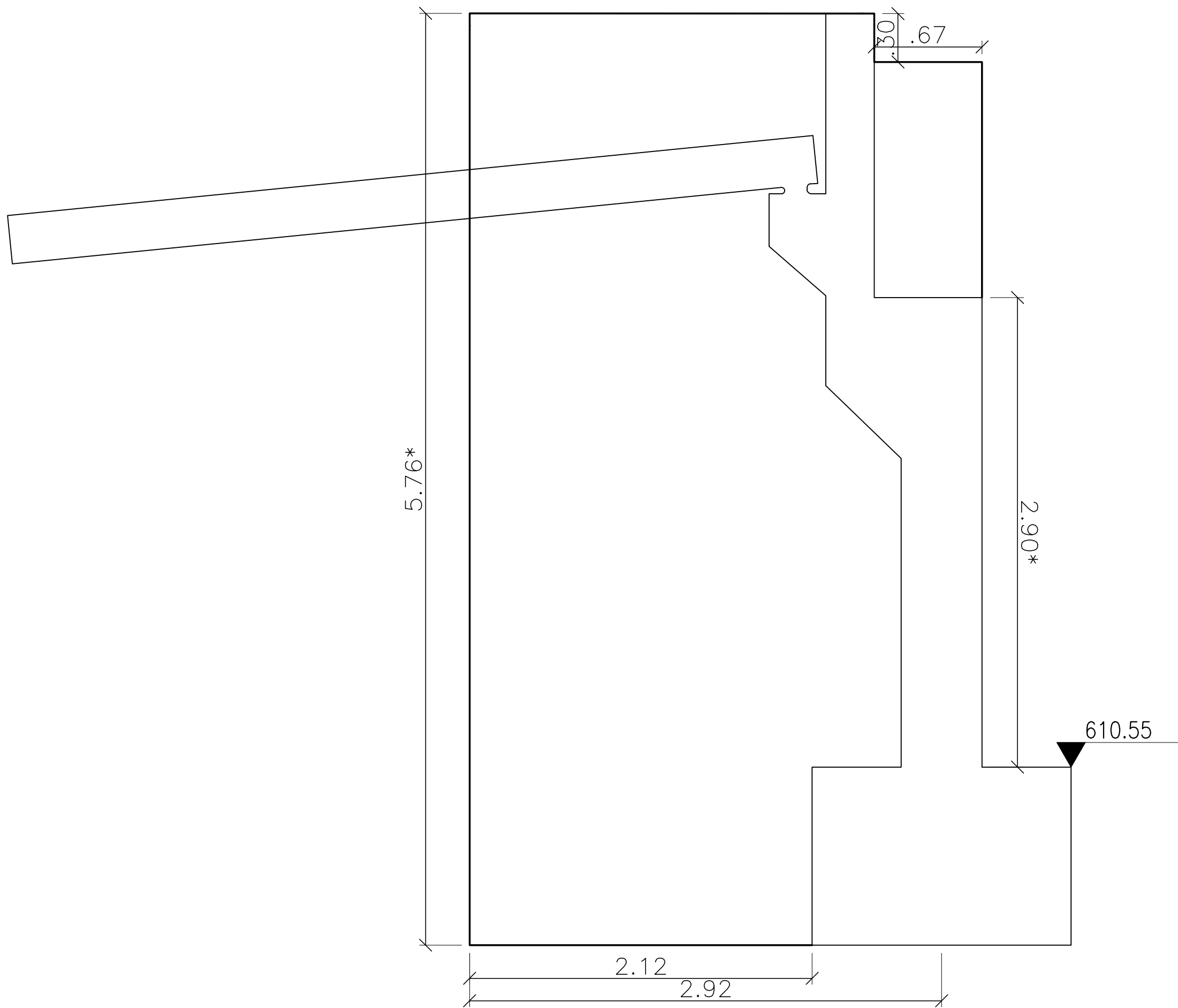
PLANTA REFUERZO ALETA
ESCALA 1:25



PLANTA GEOMETRÍA ALETA
ESCALA 1:25

CUADRO CANTIDADES POR ALETA									
#	L	Cantidad	Longitud total (m)						Despiece
			ϕ 3"	ϕ 2"	ϕ 5"	ϕ 3"	ϕ 8"	ϕ 1"	
460	6.00	12		72.0					0.20 5.60 0.20
457*	5.70	4		22.8					0.20 5.30 0.20
400	4.00	27		108.0	0.0				0.20 3.60 0.20
427.5	2.75	2		5.5					0.20 2.35 0.20
561*	6.10	12			73.2				0.25 5.60 0.25
558*	5.80	4			23.2				0.25 5.30 0.25
541	4.10	36			147.6				0.25 3.60 0.25
528.5	2.85	2							0.25 2.35 0.25
Longitud total por diámetro (m)			0	208.3	244.0	0	0	0	Volumen Concreto (m3)
Peso total por diámetro (kg)			0.00	207.05	378.69	0.0	0.00	0.00	
Peso total Elemento (kg)			585.74						5.04

* indica longitud promedio y el acero debe figurarse de acuerdo con las condiciones finales de obra.



GEOMETRÍA ESTRIBO - ALETA
ESCALA 1:25



CONSORCIO VÍAS
Y EQUIPOS
COYAIMA 2025

OBJETO:
MEJORAMIENTO DE LA VÍA
COYAIMA-ATACO- SEÑORITAS EN
EL DEPARTAMENTO DEL TOLIMA

DIRECTOR CONSTRUCTORA:
ING. JHON JAIRO MOLARES
ESPECIALISTA CONSTRUCTORA:
ING. MAURICIO BUSTAMANTE

DIRECTOR INTERVENTORIA:
ING. ANDRÉS HERNÁN ANGARITA
ESPECIALISTA INTERVENTORIA:
ING. Juan Ricardo Torres Salazar
MP 25202-37070CND.

MODIFICACIONES Y REVISIONES		
FECHA	MODIFICACIÓN	NOMBRE ING. RESPONSABLE
ABRIL/2022	VERSIÓN INICIAL	

TRAMO:
PLANADAS ATACO
ESPOLONES
K36+400 A K38+900

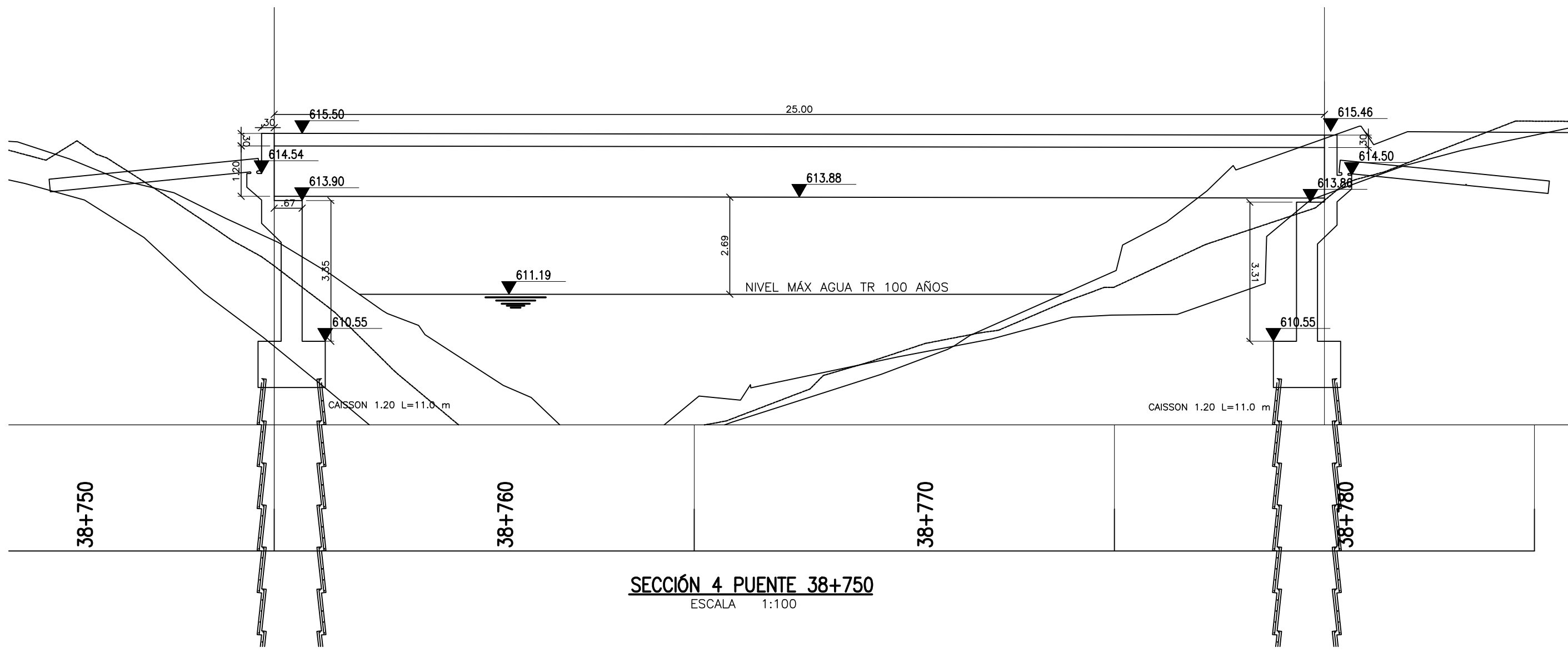
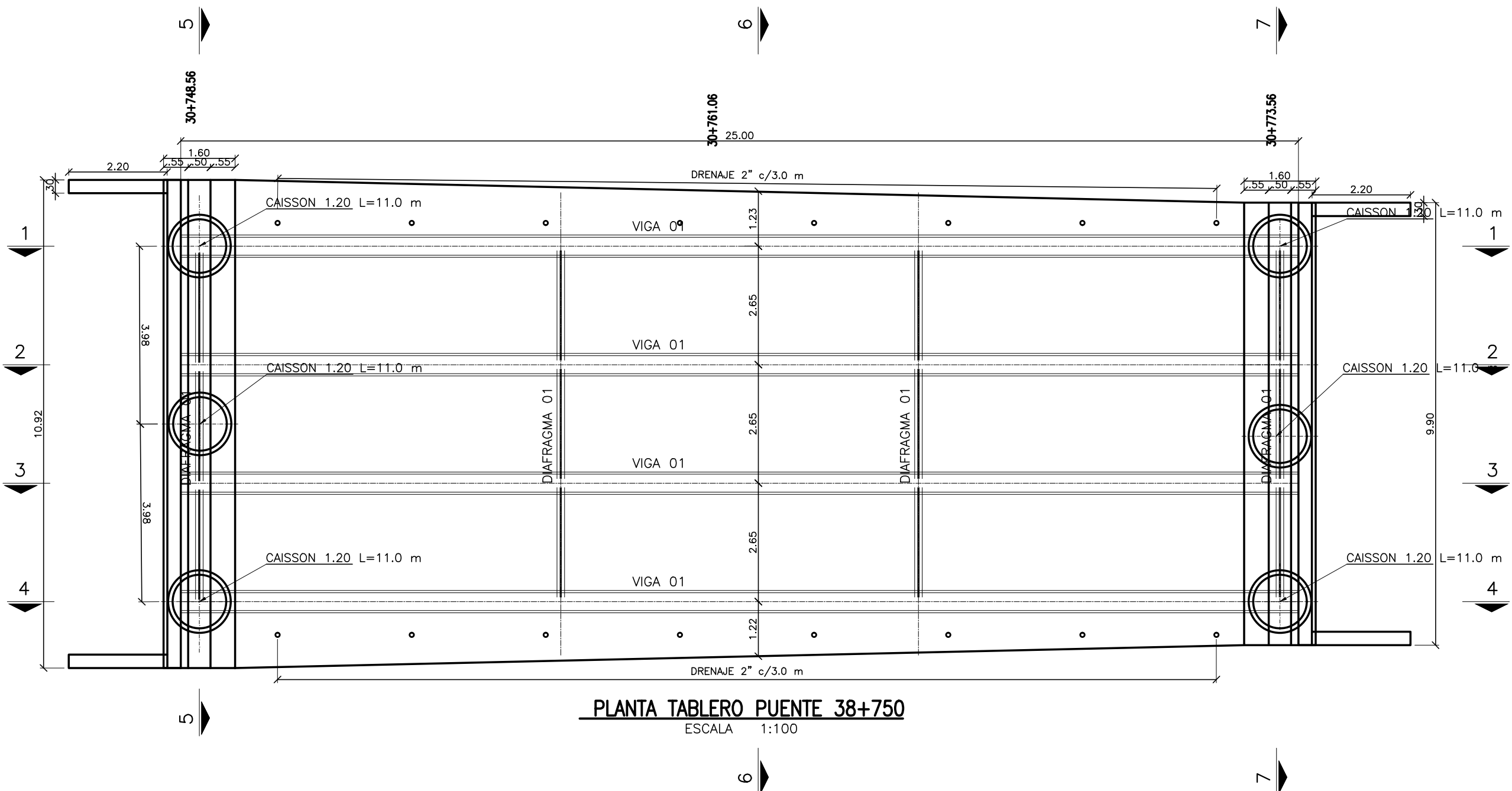
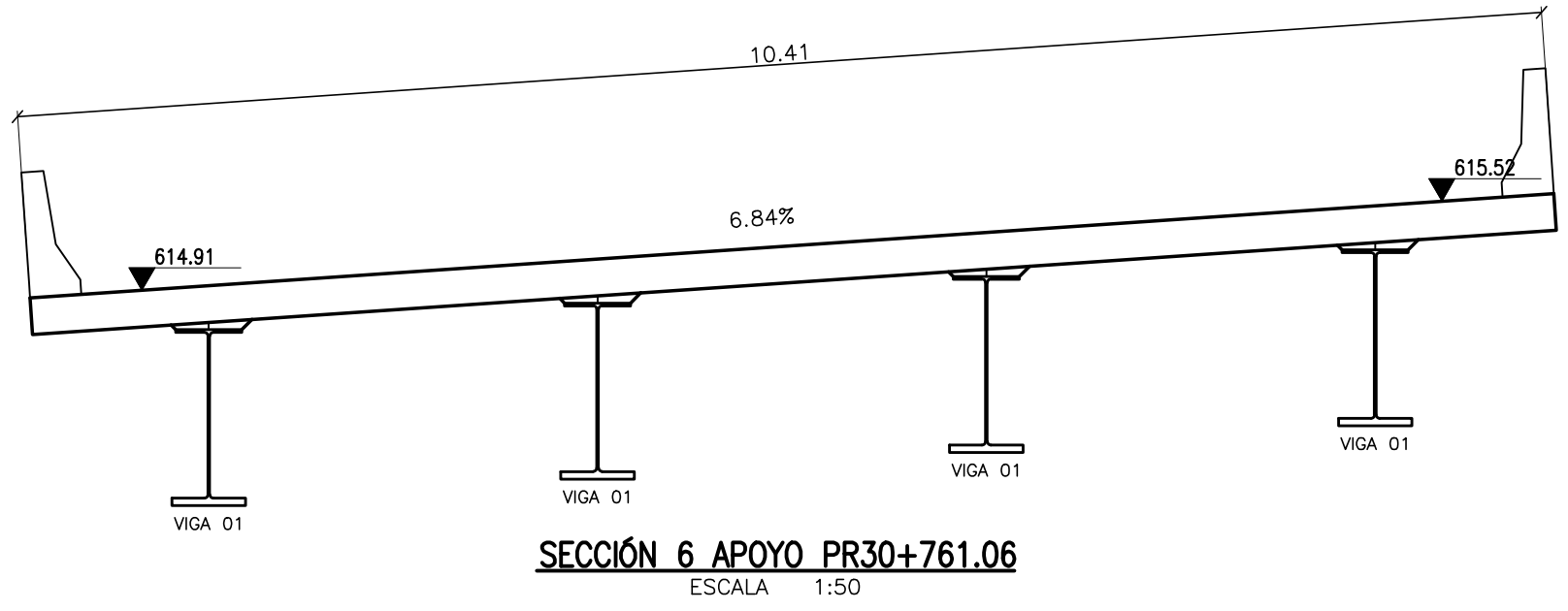
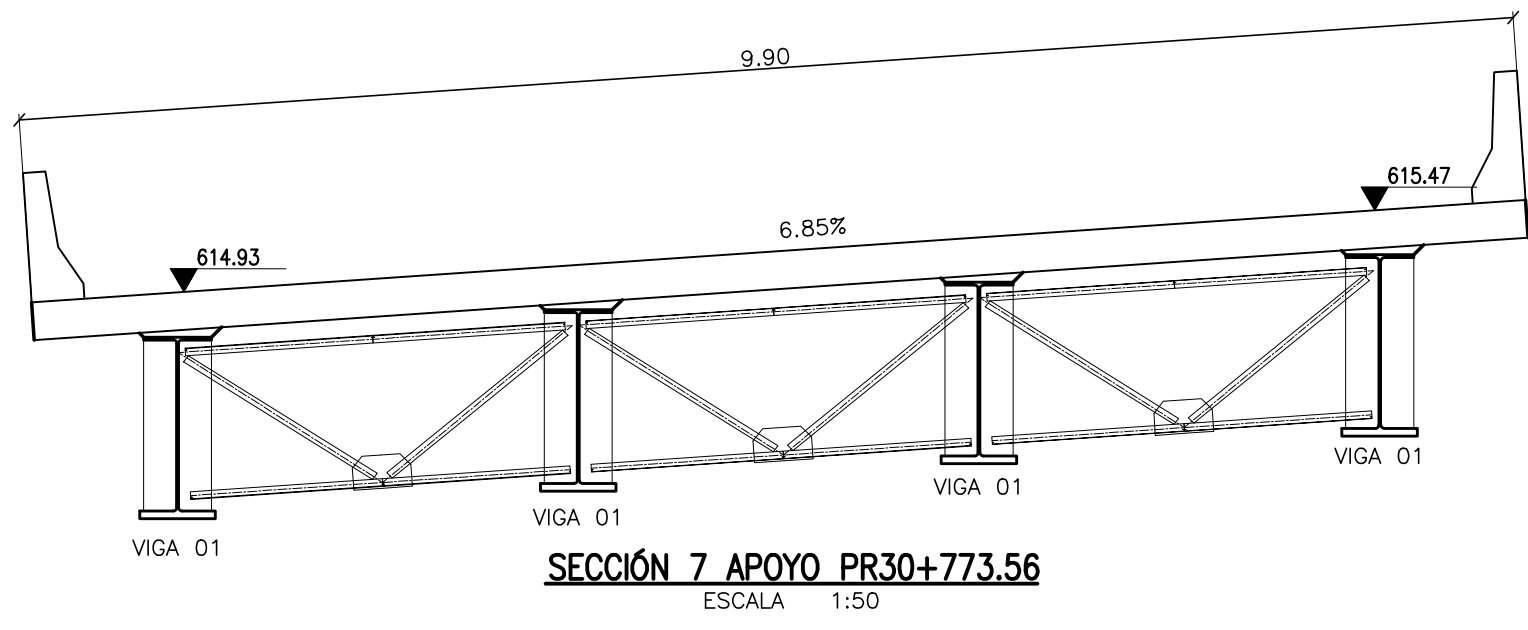
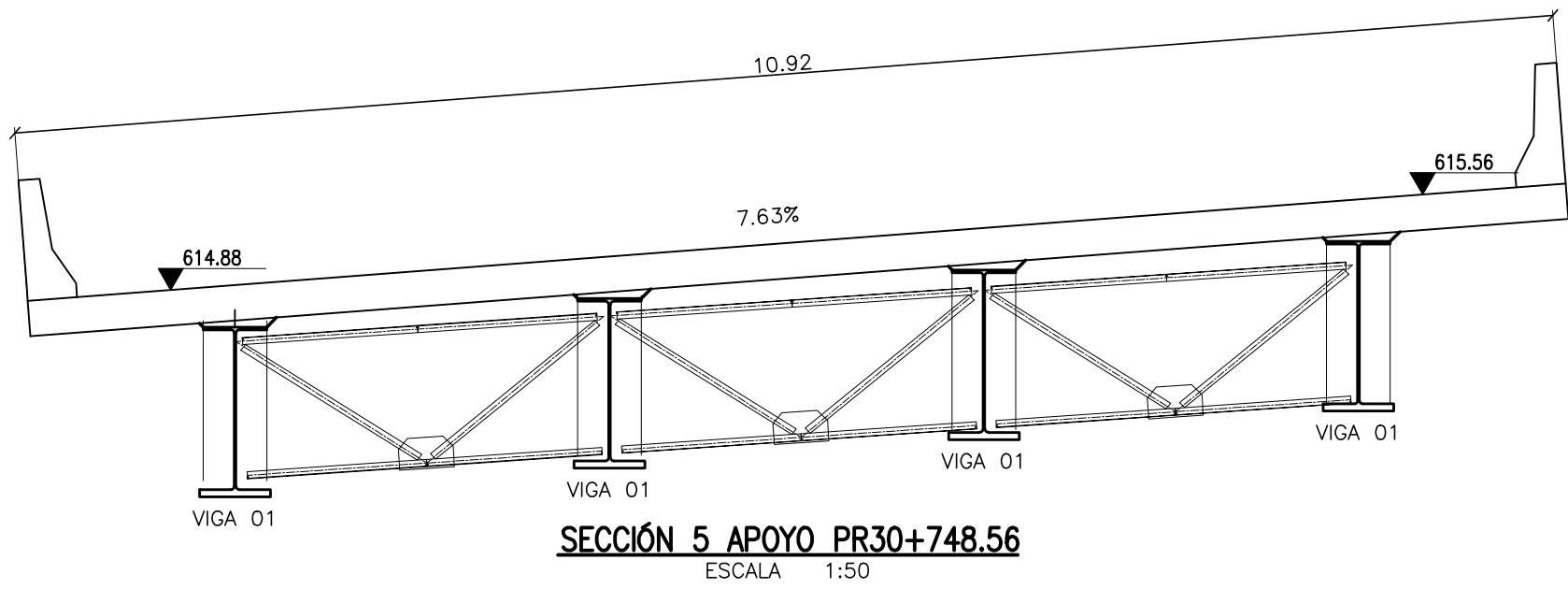
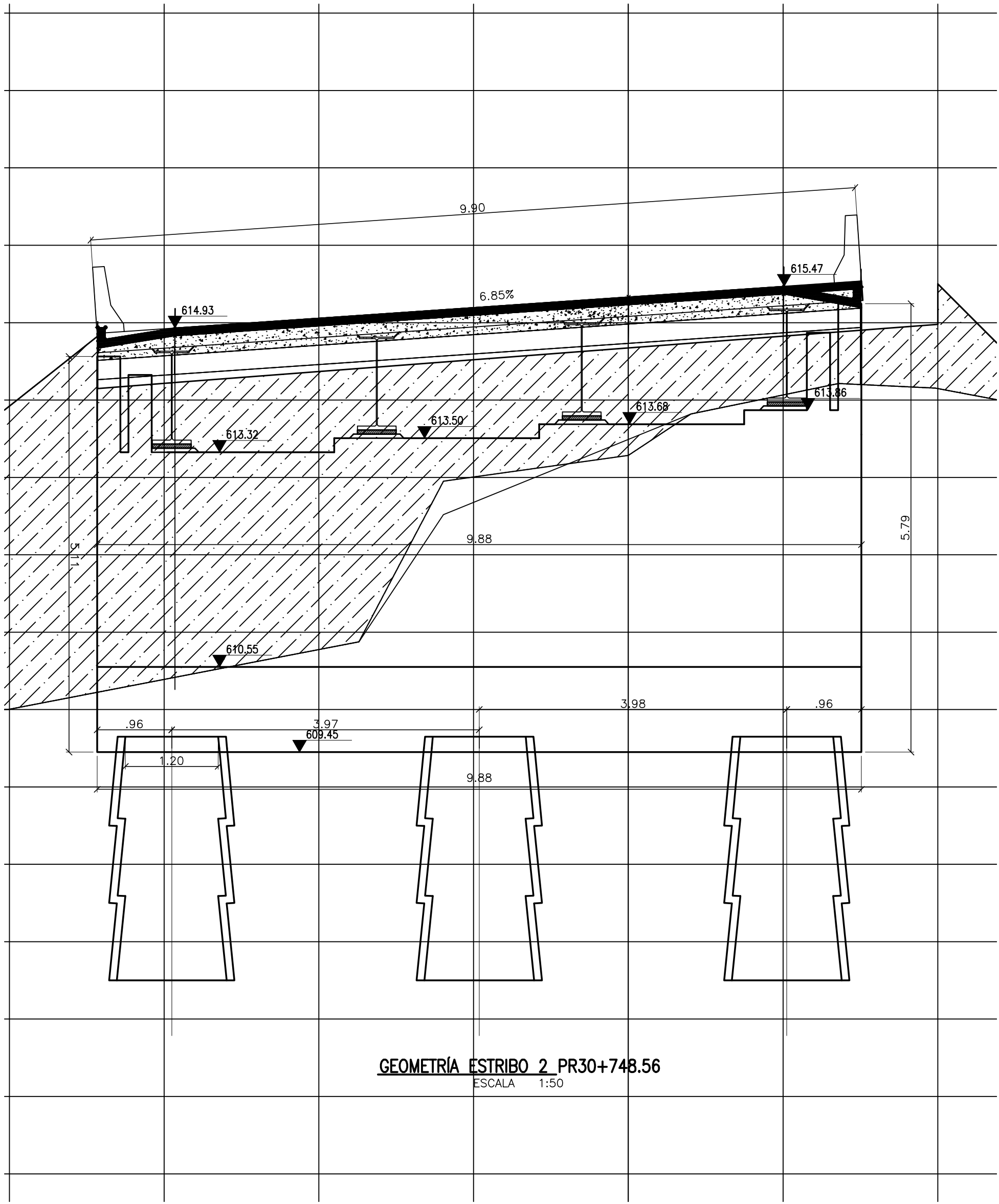
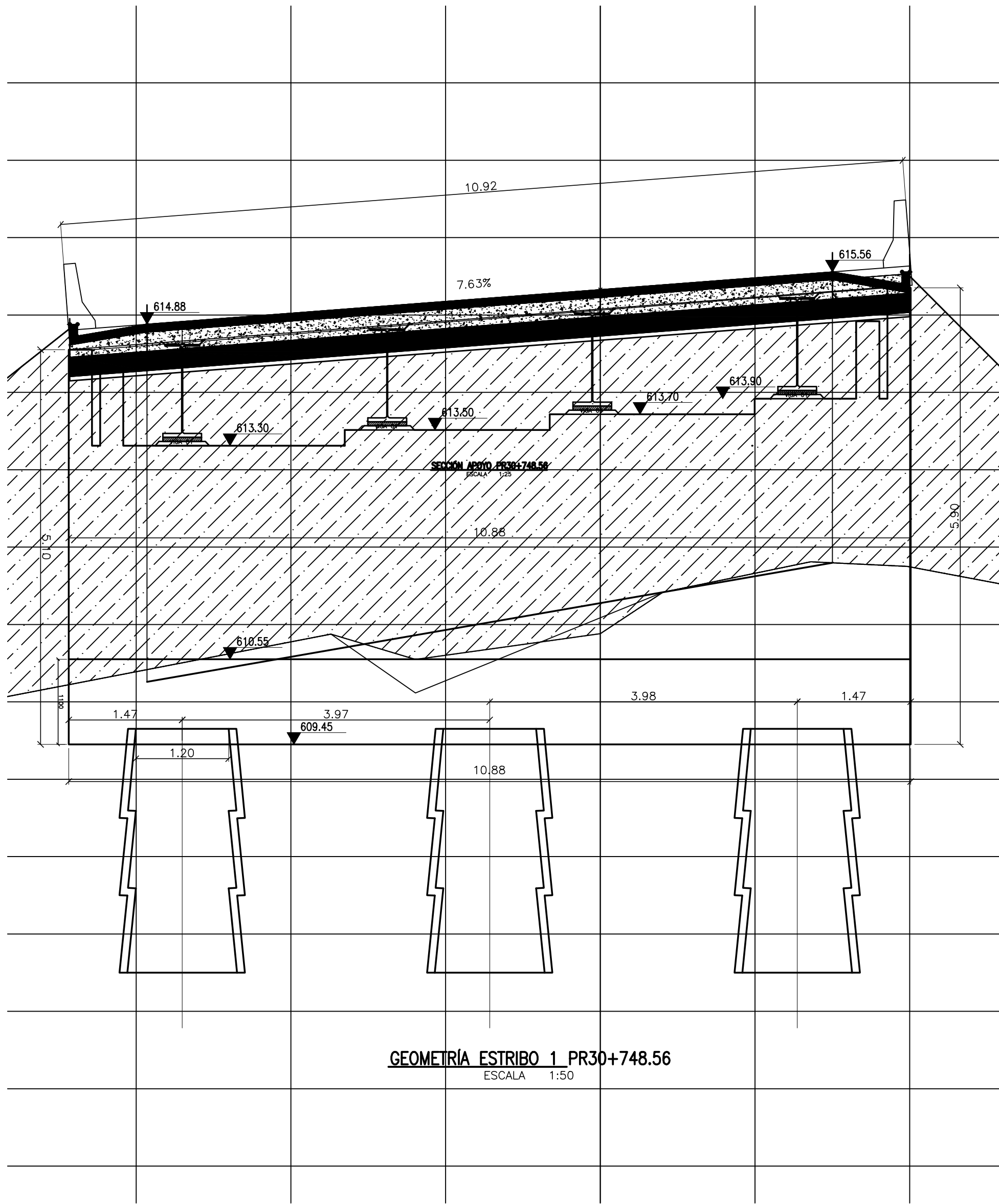
CONTIENE:
DISEÑO ESTRUCTURAL
PLANADAS ATACO
PUENTE K38

ESCALA:
INDICADAS
ARCHIVO:
puente k38 ataco
planadas NJ.dwg

FECHA:
03-24

PLANO :
3/6

REV.
V-0



CONSORCIO VÍAS Y EQUIPOS
COYAIMA 2025

OBJETO:
MEJORAMIENTO DE LA VÍA
COYAIMA-ATACO- SEÑORITAS EN
EL DEPARTAMENTO DEL TOLIMA

DIRECTOR CONSTRUCTORA:
ING. JHON JAIRO MOLARES
ESPECIALISTA CONSTRUCTORA:
ING. MAURICIO BUSTAMANTE

DIRECTOR INTERVENTORIA:
ING. ANDRÉS HERNÁN ANGARITA
ESPECIALISTA INTERVENTORIA:
ING. JUAN RICARDO TORRES SALAZAR
MP 25202-37070CND

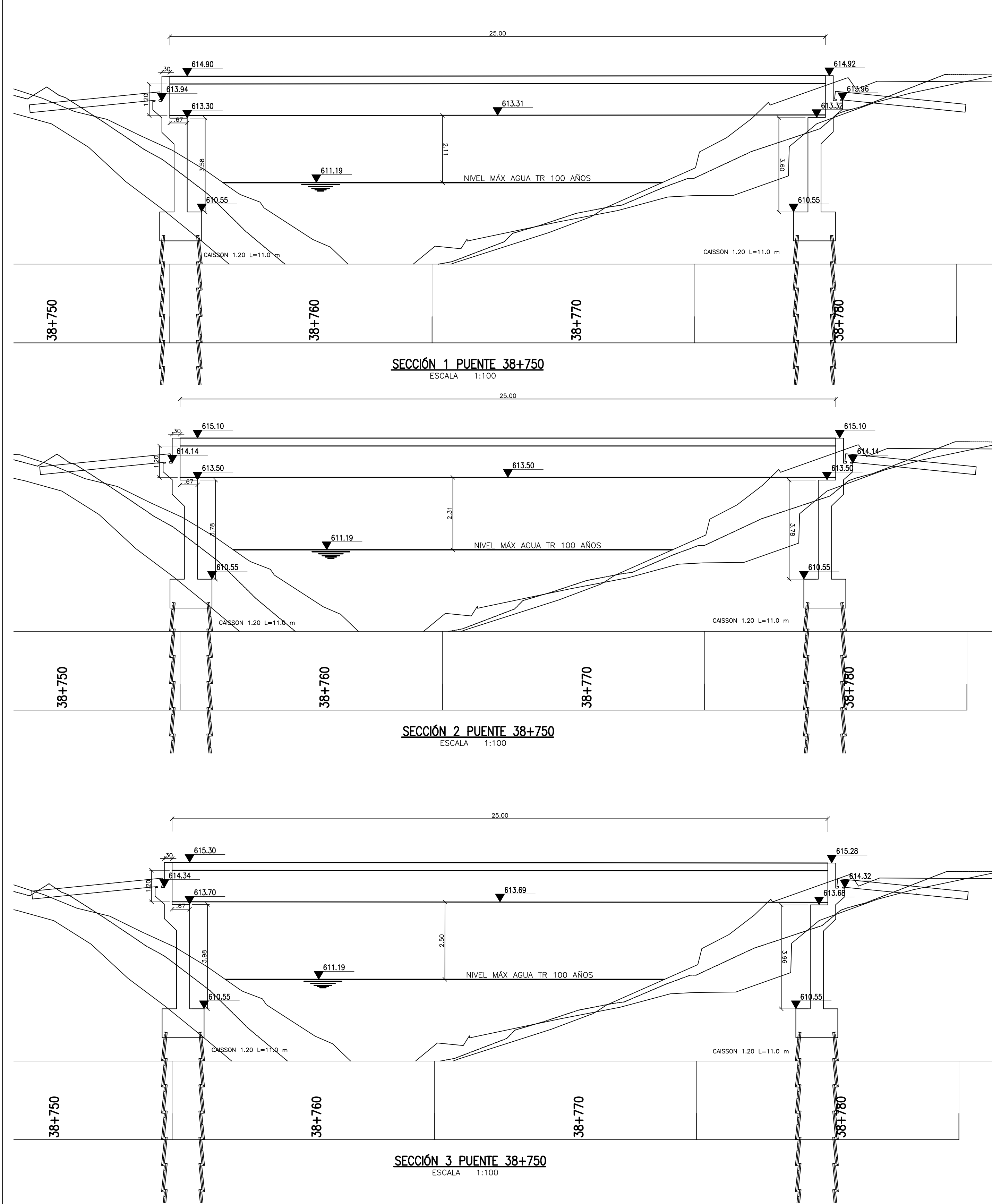
MODIFICACIONES Y REVISIONES		
FECHA	MODIFICACIÓN	NOMBRE ING. RESPONSABLE
ABRIL/2022	VERSIÓN INICIAL	

TRAMO:
PLANADAS ATACO
ESPOLONES
K36+400 A K38+900

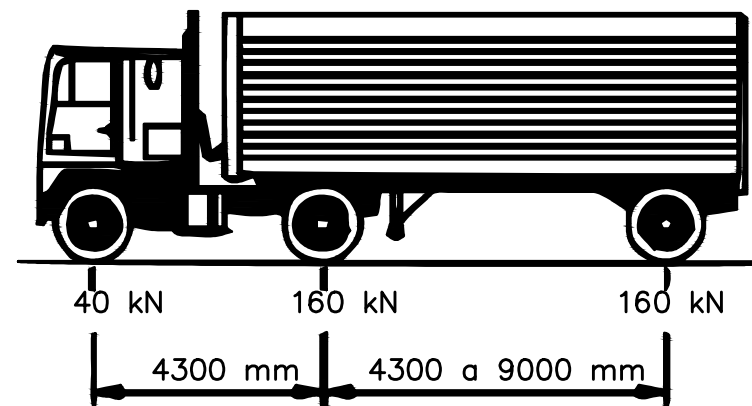
CONTIENE:
DISEÑO ESTRUCTURAL
PLANADAS ATACO
PUENTE K38

ESCALA:
INDICADAS
ARCHIVO:
puente k38 ataco
planadas NJ.dwg

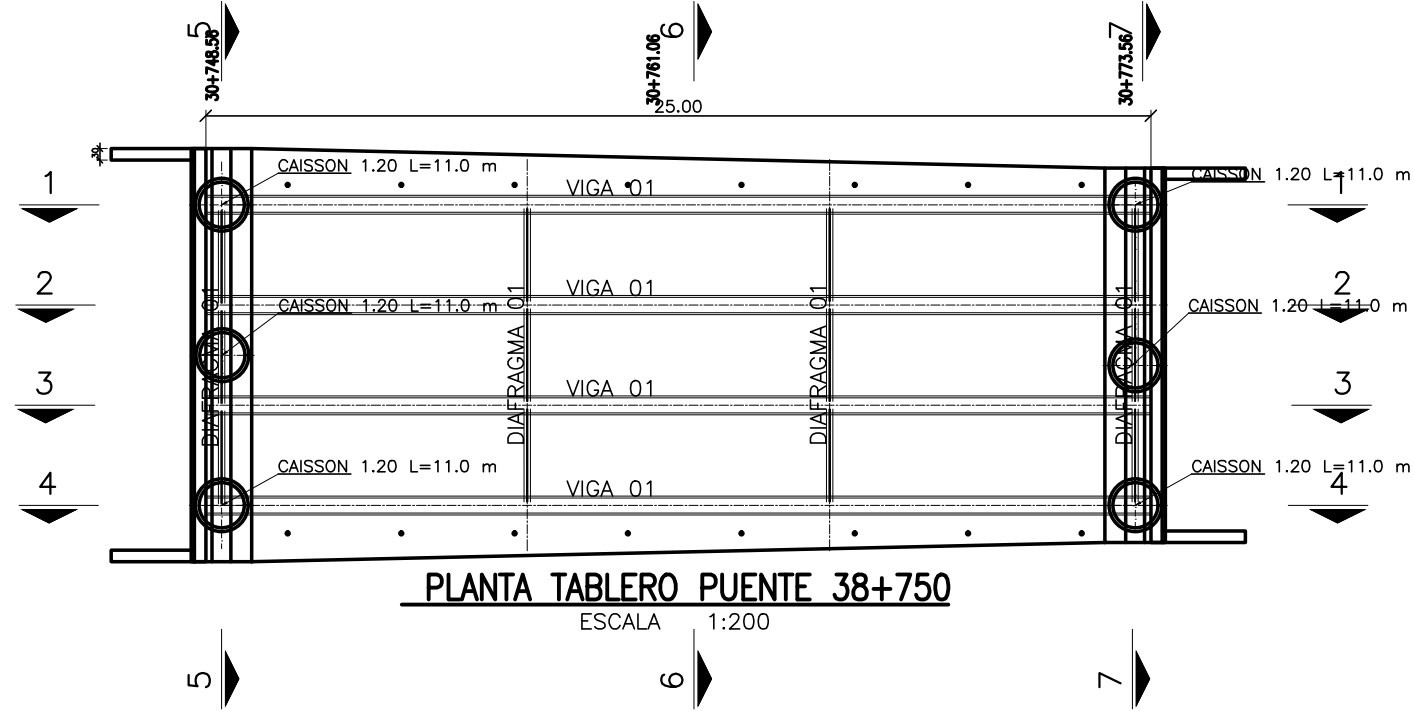
FECHA:
03-24
PLANO:
2/6
REV.
V-0



- NORMA DE DISEÑO Y ESPECIFICACIONES
 - NORMA COLOMBIANA DE DISEÑO DE PUENTES (CCP-2014)
 - AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS-2012
 - ESPECIFICACIONES GENERALES DE CONSTRUCCIÓN DEL INVIAS.
 - AASHTO- STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES
 - AWS D1.5-02 BRIDGE WELDING CODE
 - ESPECIFICACIONES PARTICULARES DEL PROYECTO
- MÉTODOS DE DISEÑO
 - CONCRETO REFORZADO Y ACERO: FACTORES DE RESISTENCIA DE CARGA EN ESTADOS LIMITES DE RESISTENCIA Y SERVICIO.
- CARGAS DE DISEÑO:
 - PESO UNITARIO DEL ACERO: 7.85 t/m²
 - PESO UNITARIO DEL CONCRETO: 2.4 t/m²
 - CARGA VIVA: CAMION, CARRIL Y TANDEM CCP-14 100 KPH
 - VIENTO: 2.2 t/m²
 - PAVIMENTO 5-25 cm:
- MATERIALES:
 - CONCRETO:
 - PLACA DE TABLERO: CLASE C f'c=280 kg/cm² [28 Mpa]
 - PILOTES: CLASE D f'c=280 kg/cm² [28 Mpa]
 - ESTRIBOS: CLASE D f'c=280 kg/cm² [28 Mpa]
 - ALETAS: CLASE C f'c=280 kg/cm² [28 Mpa]
 - PLACA DE APROXIMACION: CLASE D f'c=280 kg/cm² [28 Mpa]
 - GROUT: SIKAGROUT 212 O SIMILAR
 - CONCRETO DE LIMPIEZA: f'c=140kg/cm²
 - RELACION AGUA/CEMENTO A/C<0.45
 - TAMAÑO MÁXIMO DEL AGREGADO GRUESO 3/4"
 - ACERO DE REFUERZO ASTM-A706 fy=4200 kg/cm² [420 Mpa]
- ACERO ESTRUCTURAL
 - ESTRUCTURA ASTM A709 Gr 50 (AASHTO M270-50W) fy=3500 kg/cm² [350 Mpa]
 - CONECTORES DE CORTANTE ASTM A-108
 - TORNILLERIA ASTM A-490
 - ANCLAJES: ASTM F1554 Gr 105
 - TUERCAS: ASTM A 563-H
 - PLACA BASE: ASTM A709 Gr 50
- SOLDADURA: TODAS CONFORME AWS D1.5 F5
 - SMAW: AWS E7018W1 / E8018 C3
 - SAW: AWS E-Ni-1K
 - GMW: AWS ER-80S-N1
- NEOPRENOS: DUREZA 60 G=14 kg/cm²
- JUNTA DE DILATACION TIPO COMPOSAN EN ESTRIBO AGFlex-100 O EQUIVALENTE
- COEFICIENTES DE MODIFICACION DE RESPUESTA SISMICA
 - SUBESTRUCTURA PILOTES PARA FLEXO-COMPRESION Y CORTANTE R=1.00
 - CONEXIONES SUBESTRUCTURA AL ESTRIBO R=0.80, COLUMNAS O PILAS DE FUNDACION R=1.00
- ENSAYOS:
 - CONCRETO: CONFORME A AASHTO:
 - RESISTENCIA A LA COMPRESION AASHTO T-23 (ASTM C31)
 - CONSISTENCIA AASHTO T-119 (ASTM C143)
 - SOLDADURAS:
 - PROGRAMA DE ENSAYOS NO DESTRUCTIVOS (END) (En taller y campo)
 - JUNTAS DE COMPLETA PENETRACION
 - JUNTA EN PATIN INFERIOR: 100% RT
 - JUNTAS EN EL ALMA 100% A 1/6 INFERIOR DE LA ALTURA DEL ALMA EL RESTO DEL ALMA 25%RT
 - RIGIDIZADOR DE APOYO: 100% CONEXION CON EL PATIN SUPERIOR E INFERIOR
 - JUNTA TRANSVERSAL EN PATIN SUPERIOR: 25% RT
 - TERMINALES DIAFRAGMAS:100% RT /UT
 - SOLDADURAS DE FILETE
 - CONEXION PATIN ALMA: 25% MT DE LA LONGITUD TOTAL
 - CONEXION RIGIDIZADOR TRANSVERSALES Y LONGITUDINALES:25% MT DE LA LONGITUD TOTAL
 - DIAFRAGMAS: 100%MT
- CAPACIDAD DEL SUELO
- DIAMETRO DE LOS PILOTES 1.20m
- PROFUNDIDAD DE LOS PILOTES 11.0m
- CAPACIDAD DE CARGA EN (kN):
 - ESTADO LIMITE DE SERVICIO (ELS) 16293.70
 - ESTADO LIMITE DE RESISTENCIA (ELR) 8340.20
 - ESTDO LIMITE DE EVENTOS ESPECIALES (ELEE) 16293.70
- PARAMETROS SISMICOS/ESPECTRO
 - LOCALIZACION ARMENIA - MONTENEGRO
 - FACTORES DE SISMO



CARACTERÍSTICAS DEL CAMIÓN DE DISEÑO



- NOTAS:**
- LAS DIMENSIONES ESTÁN DADAS EN METROS Y LOS DIÁMETROS DE LAS VARILLAS EN OCTAVOS DE PULGADAS.
 - MATERIALES:
 - CONCRETO MURO: f'c=280 Kg/cm² (28 MPa)
 - ACERO CORRUGADO: fy=4200 Kg/cm² (420 MPa)
 - RELACIÓN MÁXIMA AGUA-CEMENTANTE: 0.45
 - LAS LONGITUDES DE TRASLAPLO Y DESARROLLO NO INDICADAS EN ESTE PLANO DEBERÁN AJUSTARSE A LAS INDICADAS EN LAS CP-14
 - RECUBRIMIENTOS DEL REFUERZO:
 - BASE QUE ESTARÁ EN CONTACTO CON SUELO SERÁ: 7.5 cm.
 - VÁSTAGO QUE NO ESTÉ EN CONTACTO CON LA TIERRA: 5 cm.
 - VÁSTAGO QUE ESTÉ EN CONTACTO CON LA TIERRA: 7.5 cm.
 - TODO EL REFUERZO DEBERÁ SER AMARRADO. SE PROHIBE EL USO DE SOLDADURA.
 - SOBRE EL SUELO DE BASE SE ECHARÁ UNA CAPA DE CONCRETO DE 140 kg/cm² DE ESPESOR 10 cm. COMO SOLADO DE LIMPIEZA.
 - TUBERÍA PVC SANITARIA PARA DRENES, ø=4", CADA 2 METROS HORIZONTALMENTE.
 - LAS CANTIDADES CORRESPONDEN A CÁLCULOS TEÓRICOS, Y ESTAS DEBEN SER REVISADAS DE ACUERDO CON LAS CONDICIONES FINALES DE OBRA.
 - * indica longitud promedio y el acero debe figurarse de acuerdo con las condiciones finales de obra.

Para la ejecución de los caissons se recomienda el siguiente orden constructivo:

- Etapla 1- Desmonte, limpieza y rocería:** Esta actividad deberá adelantarse para despejar el área dispuesta para la construcción de las obras proyectadas. Se debe verificar el retiro y relocalización de los individuos árboles que se localicen en la obra.
- Etapla 2- Localización y replanteo de las obras:** Esta actividad deberá adelantarse de acuerdo con lo ilustrado en los planos de detalle, por lo que se recomienda sistemas de precisión que permitan fijar adecuadamente los puntos de referencia necesarios para la construcción de los elementos de contención y drenaje recomendados
- Etapla 3- Excavación y verificación del nivel de cimentación:** Actividad realizada bajo los parámetros de protección temporal superficial como malla pañete y obras de conducción de los flujos de escorrentía. Se verificará el nivel de la cimentación indicado en los planos y se retirarán todos los ductos, desagües y raíces por debajo de la proyección de estos niveles. Se debe garantizar el retiro total de cualquier tipo de escombros o material con contenido orgánico. En caso de encontrar dicha condición se deberá sobre-excavar dicho material y plantear la nivelación de la superficie del terreno mediante la implementación de rellenos en concreto ciclópeo o material seleccionado hasta obtener una superficie nivelada, actividad que será completada con la implementación de un concreto de limpieza que mejore el comportamiento y durabilidad de la zarpa en la zona en contacto con el terreno.
- Etapla 3A- Construcción de elementos de transferencia:** En los casos en que se requiera emplear cimentación profunda mediante elementos de transferencia se recomienda en este caso emplear el sistema constructivo de pozo de cimentación "pila excavada a mano". El proceso constructivo se resume en los siguientes pasos:
- Localización geométrica y trazado del elemento en planta
 - Excavación del primer segmento, esta excavación contemplará el diámetro del elemento más el anillo de confinamiento y protección de la excavación. Se debe tener especial cuidado de conservar la forma de las paredes para no generar sobre excavaciones importantes.
 - Vaciado anillo inicial, se deberá instalar el encofrado que permita confinar el vaciado del concreto, previa instalación del acero de refuerzo, que en ningún caso deberá suprimirse, incluso deberá propender por dar continuidad entre anillos.
 - Instalación del sistema de transporte vertical y evacuación, se debe proveer de un sistema que permita el transporte y evacuación del personal, equipos, herramientas y retiro del material excavado.
 - Se deben implementar medidas de control de la posición y verticalidad del elemento durante su excavación.
 - Se debe verificar las condiciones de estabilidad de las paredes de la excavación para poder proceder con la excavación sucesiva de los anillos hasta la profundidad indicada, de manera tal que se garantice la seguridad del personal y las condiciones indicadas en los planos. Se deben planear sistemas de ventilación en las excavaciones.
 - Se procederá sistemáticamente con las etapas indicadas anteriormente hasta alcanzar la profundidad recomendada en los cálculos.
 - Posteriormente se instalará la armadura de refuerzo teniendo en cuenta los cuidados básicos como instalación de espaciadores y amarre de la armadura en profundidad y continuidad del acero de refuerzo según lo indicado en los planos de detalle.
 - Se procede con el vaciado del concreto garantizando la continuidad del elemento empleando procedimientos que eviten la segregación de la mezcla en la colocación, se curará y protegerá en los siete días secuentes y se evitará realizar procedimientos en el área de trabajo adyacente por lo menos en las 12 horas siguientes a la finalización de la fundida, por último se deberá realizar procedimientos de curado del concreto en las superficies expuestas transitoriamente.
 - Finalmente se recomienda realizar la suspensión de los descales de las alcantarillas que descargan sus aguas sobre los depósitos dispuestos en el talud inferior de la proyección de la zona de inestabilidad, en cuyo caso se deberá desplazar sus descargas a las alcantarillas adyacentes, mediante canales revestidos en concreto hasta un punto posterior al cambio de pendiente topográfica.
6. Se dejarán juntas de construcción por cada módulo, dejando la junta en el vástago, la base se puede vaciar continua.
7. La profundidad final de cimentación y los niveles de los caissons serán determinados en el terreno con base en los hallazgos durante las excavaciones y deberán ser ensayados y aprobados por el geotecnista, geotecnólogo o personal técnico de la obra.
8. Se recomienda que las excavaciones se desarrollen por módulos, evitando el desconfinamiento de la vía en grandes longitudes. Para ello se plantea acometer las excavaciones en los módulos extremos y posteriormente los intermedios.
9. Las excavaciones de los caissons se deben hacer de manera intercalada, evitando excavaciones contiguas. Se deben fundir los caissons intercalados antes de iniciar las excavaciones de los intermedios.
10. Excavación temporal deberá ir escalonada como lo muestra las secciones, y deberá ser protegida con champeado de lechada y mantenida abierta el menor tiempo posible. Para proteger la excavación se deberá implementar concreto champeado.
11. Suspender el desague de los descales que aportan flujos directos al talud inferior de la vía.

CUADRO DE TRASLAPOS DE VARILLAS

BARRA	TRASLAPOS	
	TRACCIÓN	COMPRESIÓN
2	0.550	0.300
3	0.550	0.375
4	0.727	0.500
5	0.904	0.449
6	1.080	0.563
7	1.363	0.656
8	1.610	0.792

DIMENSIONES MÍNIMAS PARA GANCHOS ESTÁNDAR

GANCHOS DE 90°				GANCHOS DE 180°				ESTRIBOS DE 135°			
Barra	Spac	Área	Spac	Barra	Spac	Área	Spac	Barra	Spac	Área	Spac
2	38	177	112	28	64	28	133	2	24	58	87
3	37	174	104	27	65	27	124	2	24	57	83
4	74	153	223	74	63	74	253	4	51	74	113
5	93	161	208	83	65	83	244	4	41	83	141
6	113	264	268	113	74	113	264	6	113	113	212
7	133	364	302	133	84	133	333	7	133	133	244
8	152	353	352	152	152	152	352	8	152	152	352

1. Espesor del acero (en milímetros) (mm)
2. Espesor del acero (en milímetros) (mm)
3. Longitud del acero (en milímetros) (mm)

CASO CARGA	DEFLEXIÓN (m)
Peso propio	-0.005
Losa	-0.009
Sobre impuestas	-0.004



CONSORCIO VÍAS Y EQUIPOS COYAIMA 2025

OBJETO:
MEJORAMIENTO DE LA VÍA COYAIMA-ATACO- SEÑORITAS EN EL DEPARTAMENTO DEL TOLIMA

DIRECTOR CONSTRUCTORA:
ING. JHON JAIRO MOLARES

ESPECIALISTA CONSTRUCTORA:
ING. MAURICIO BUSTAMANTE

DIRECTOR INTERVENTORIA:
ING. ANDRÉS HERNÁN ANGARITA

ESPECIALISTA INTERVENTORIA:
ING. JUAN RICARDO TORRES SALAZAR
MP 25202-3707CND

MODIFICACIONES Y REVISIONES		
FECHA	MODIFICACIÓN	NOMBRE ING. RESPONSABLE
ABRIL/2022	VERSIÓN INICIAL	

TRAMO:
PLANADAS ATACO ESPOLONES K36+400 A K38+900

CONTIENE:
DISEÑO ESTRUCTURAL PLANADAS ATACO PUENTE K38

ESCALA: INDICADAS	FECHA: 03-24
ARCHIVO: puente k38 ataco planadas NJ.dwg	PLANO : 1/6
	REV. V-0