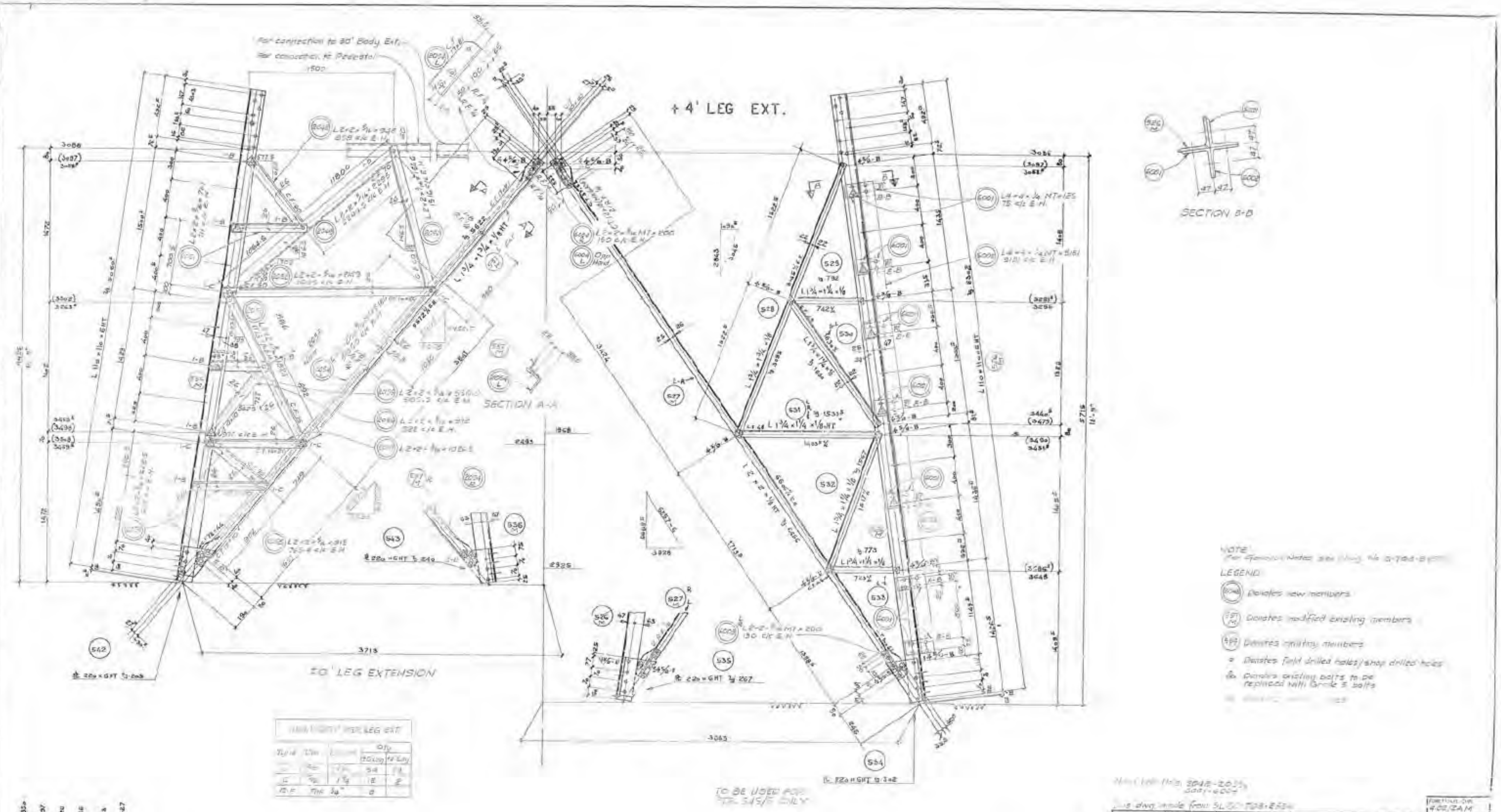


NOTE:
For General Notes see Dwg. No. ...

LEGEND:
Denotes new members
Denotes modified existing members
Denotes existing members
Denotes field drilled holes/shop drilled holes
Denotes existing bolts to be replaced with Grade 5 bolts

This dwg. made from SL-...

2	Revised as built	JL	[redacted]	
1	Revised bolts; Revised Mk 2050			

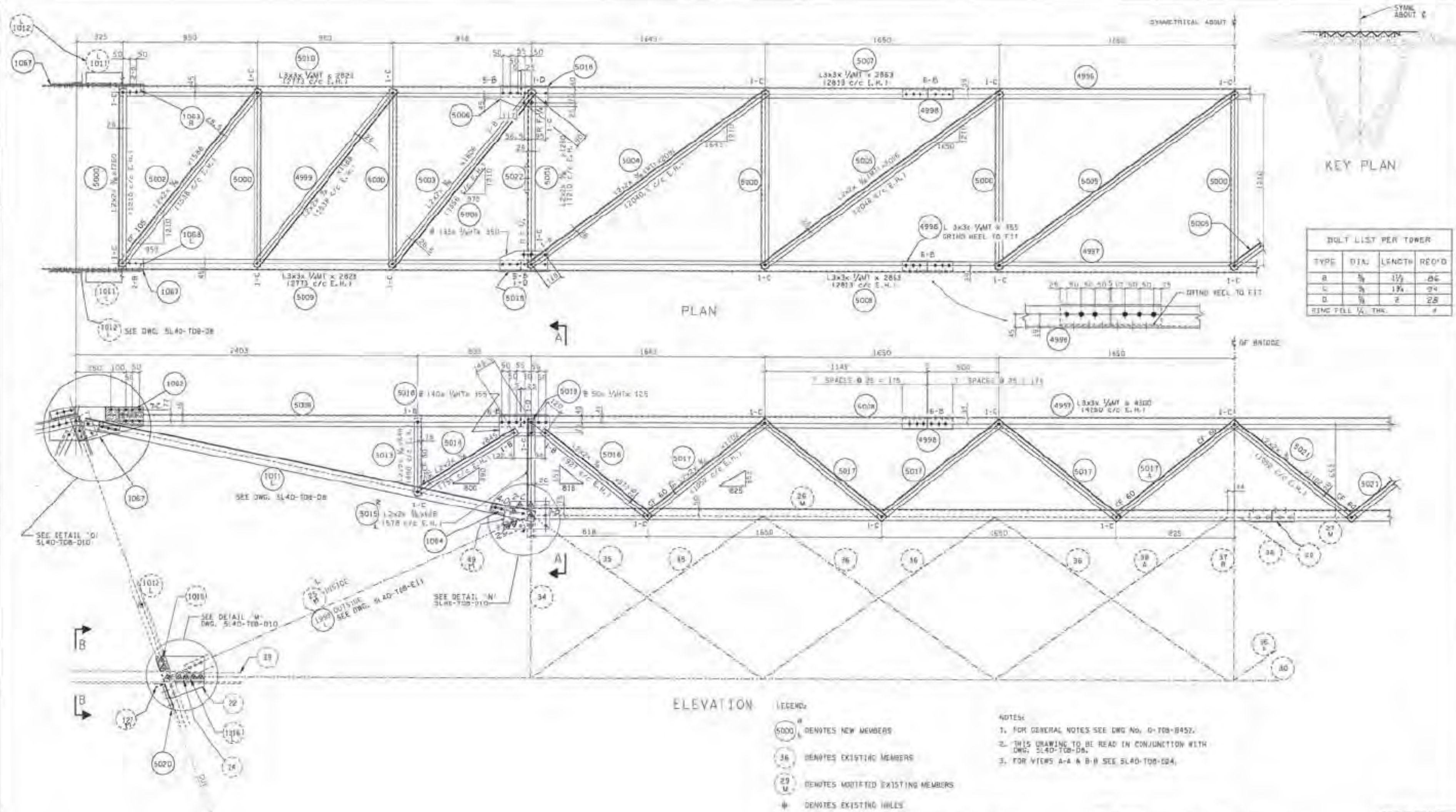
[redacted]

BC Hydro

KELLY LAKE-CLAYBURN-MACLADOW 500 KV T/L
CLAYBURN LOOP
TYPE 2AM SELF SUPPORTING TOWER
STR'S. 545/2, 545/3, 545/4 & 545/5 (CIR. 5L40)
STR. 541/2 (CIR. 5L41)
10' & +4' LEG EXTENSIONS DETAILS

4.02/2AM

L40-TOP-E16



BOLT LIST PER TOWER			
TYPE	DIA.	LENGTH	REQ'D
B	5/8	1½	86
C	5/8	1¾	94
D	5/8	2	28
RING FILL ¼ THK.			#

LEGEND:

- (5000) DENOTES NEW MEMBERS
- (36) DENOTES EXISTING MEMBERS
- (29 M) DENOTES MODIFIED EXISTING MEMBERS
- DENOTES EXISTING HOLES
- DENOTES FIELD DRILLED HOLES/SHOP DRILLED HOLES
- DENOTES EXISTING BOLTS TO BE REPLACED WITH GRADE 5 BOLTS

NOTES:

1. FOR GENERAL NOTES SEE DWG No. 0-T08-8452.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DWG. 5L40-T08-D8.
3. FOR VIEWS A-A & B-B SEE 5L40-T08-D24.

NEW Mk No's. 4996-5010, 5013-5019, 5021

4.02/2AM

BC Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CLAYBURN-INGLEDOW 500 kV T/L
CLAYBURN LOOP
TYPE 2AM SELF SUPPORTING TOWER
STR. No. 545/5 CIRCUIT 5L40
STR. No. 544/2 CIRCUIT 5L41
BRIDGE REINFORCEMENT
DETAILS

[redacted] SUBMITTED / INSPECTED / INSPECTED / INSPECTED

SEAL

DATE 8 Dec 93 | SCALE — | DWG No. 5L40-T08-D23 | R 2

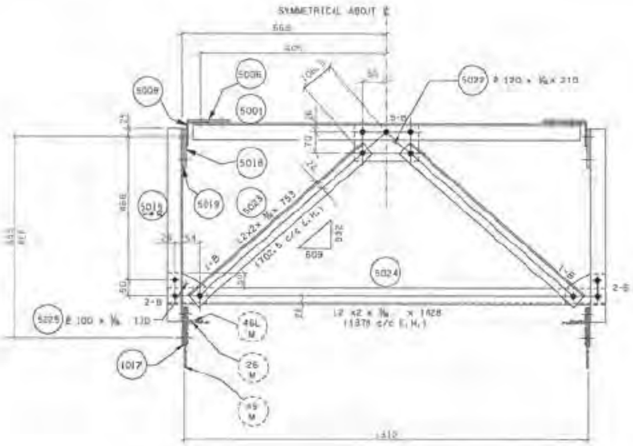
No.	REVISIONS	MADE CHKD SUBD APPD	DATE
2	Revised as built	[redacted]	
1	Bolts revised		

[redacted]

5L65-T08-E183 TYPE 2A SELF SUPPORTING TWR. BRIDGE

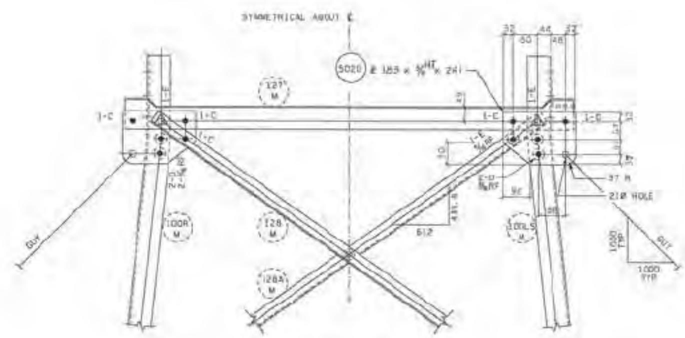
REFERENCE DRAWING | REFERENCE DRAWINGS | REVISIONS

D



VIEW A-A

BOLT LIST PER TOWER			
TYPE	DIA.	LENGTH	REQ'D
B	⅝	1½	22
C	¾	1¾	10
D	⅝	2	8
E	⅝	2¼	6
RING FILL ⅛ THK.			10
RING FILL ⅝ THK.			2



VIEW B-B

LEGEND

(7000) R L DENOTES NEW MEMBERS

(36) DENOTES EXISTING MEMBERS

(29 M) DENOTES MODIFIED EXISTING MEMBERS

DENOTES EXISTING HOLES

DENOTES FIELD DRILLED HOLES/SHOP DRILLED HOLES

DENOTES EXISTING BOLTS TO BE REPLACED WITH GRADE 5 BOLTS

NOTES:

1. FOR GENERAL NOTES SEE DWG No G-TOB-8452
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DWG. 5L40-TOB-023.

NEW Mk No's. 5020, 5023-5025

SL40-TOB-D8 TYPE 2A SELF SUPPORTING TWR. BRIDGE

No.	REVISIONS	MADE / CHKD / SUBD / APPD / INSP	DATE
3	Revised as built	[redacted]	
2	Mk 5020 # bolts revised		
1	HT added to Mk 5020		

REFERENCE DRAWINGS

[redacted]

SUBMITTED / INSPECTED / INSPECTED / INSPECTED

SEAL

DATE

FUNCTIONAL CODE 4.02/2AM

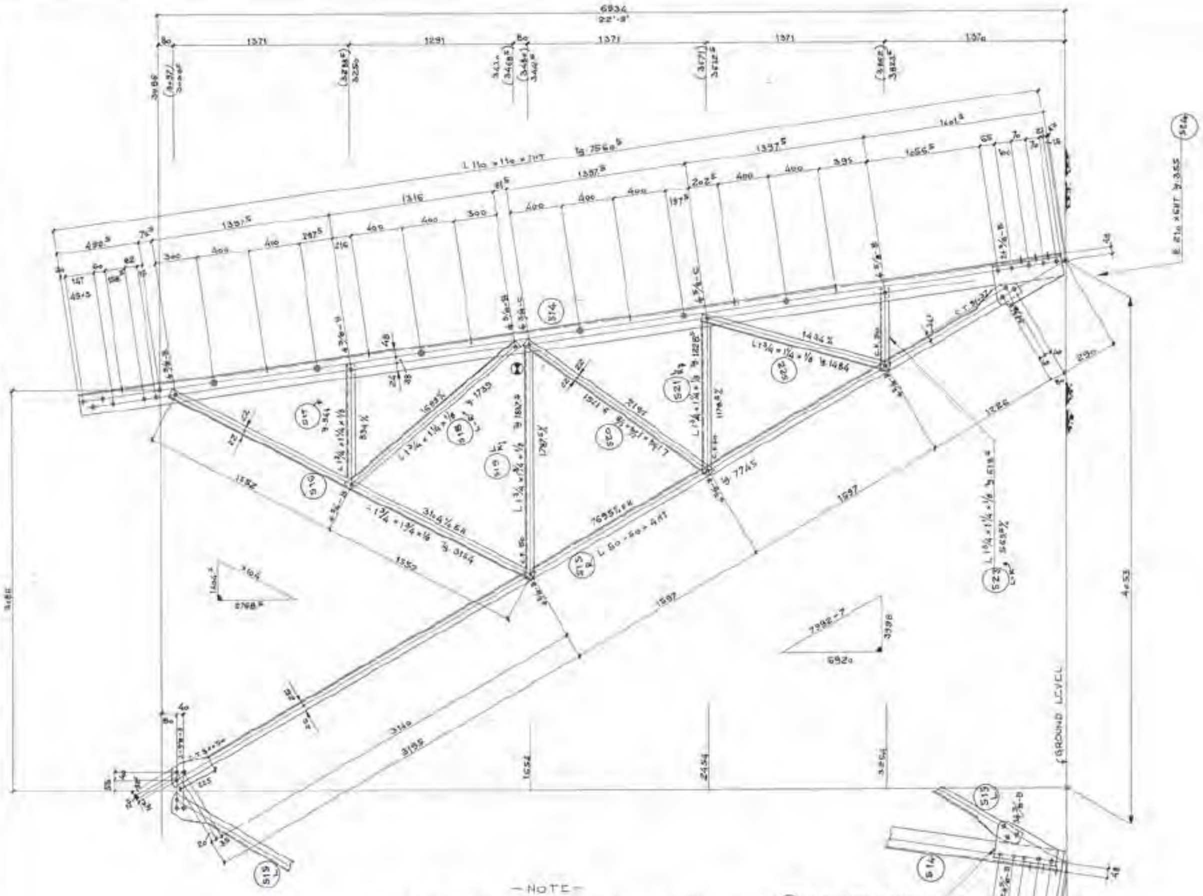
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CLAYBURN-INGLEDOW 500 KV T/L
CLAYBURN LOOP
TYPE 2AM SELF SUPPORTING TOWER
STR. No. 545/5 CIRCUIT 5L40
STR. No. 544/2 CIRCUIT 5L41
BRIDGE VIEWS A-A & B-B
DETAILS

SCALE —

DWG. No. 5L40-TOB-D24 # 3

D



VERTICAL
2 tg β = 0,278995
1 tg β = 0,139497
2 sec β = 1,0928
1 sec β = 1,00966

IN FACE
1 tg β = 0,138163
1 sec β = 1,009527

— NOTE —

1 — All bolts to have mechanical characteristics as per ASTM A394 and dimensions per table GT.3963b type 6bj.
2 — All members to be of standard steel except members marked with "HT, to be of high tensile steel.
3 — Mechanical characteristics of standard steel to be equivalent to CSA standard G.40.4-1959; mechanical characteristics of high tensile steel to be equivalent to CSA standard G.40.8-1960 (with guaranteed yield point of 51200 lbs/sq.inc): both qualities of steel to pass the impact test for grade "B" of CSA standard G.40.8-1960, appendix "A".
4 — All bolts are 5/8" dia.
5 — All holes are 11/16 = 17.5 mm dia, unless otherwise noted.
6 — All material to be hot dip galvanized after fabrication.
7 — ● = 11/16" = 17.5 mm dia. holes for step bolt DA.1482, on one leg only.
8 — For top part of tower see drw. P.
9 — For grillage & concrete found. ns, see drw. R36305-06
10 — Where indicated ⓘ used strut as step bolts.-
11 — For oblique bracing see drw. P 37280.

BOLTS	REQUIRED
5/8-C	4
5/8-B	32
Step bolts	12

Boll. 3363
Mark .514 ÷ 526

					[redacted]			
					As built Mark 514	Revised title box	Added note 11	MODIFICHE
f	e	h	e	d	c	b	a	

S.A.E.
SOCIETÀ ANONIMA ELETTRIFICAZIONE
S.p.A. MILANO

B.C. HYDRO AND POWER AUTHORITY
500KV PEACE RIVER TRANS. LINE N.1
FOR MARK III TOWER

TYPE -A-
SELF SUPPORTING TOWER

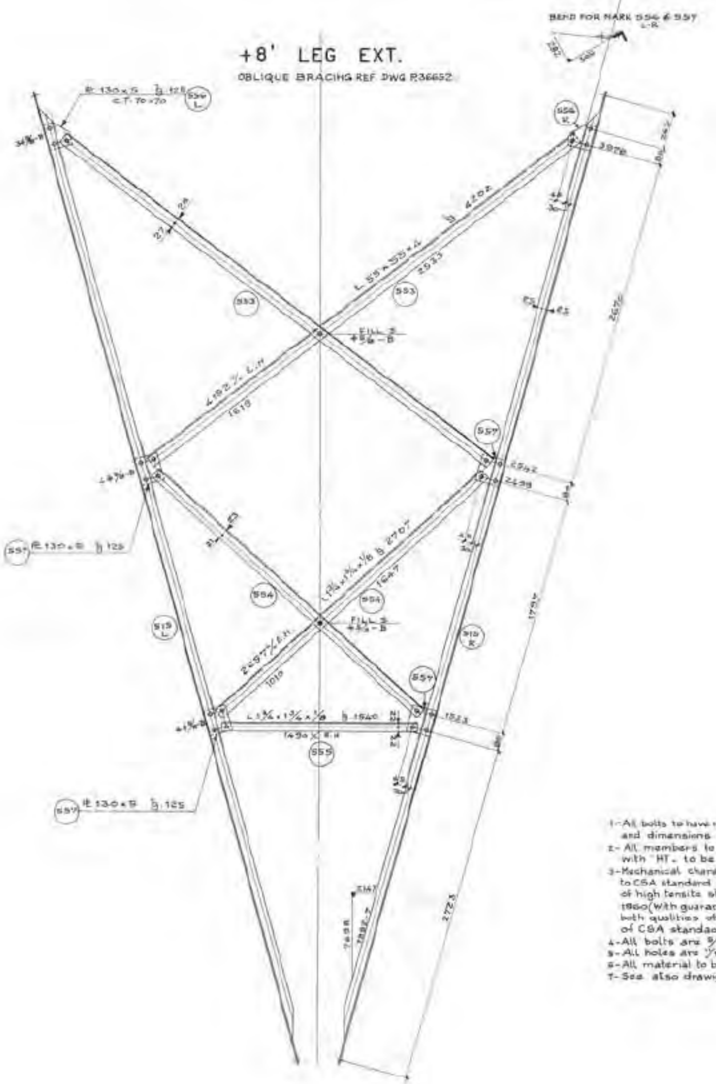
+8' Leg Ext.

Esecutore	[redacted]	SCALA 1:11	DATA 11-8-66
Approvazione		P36652 d bc	
Visto	—		
Controllo			

IPEC DWG. No. 500GS-T08-E555

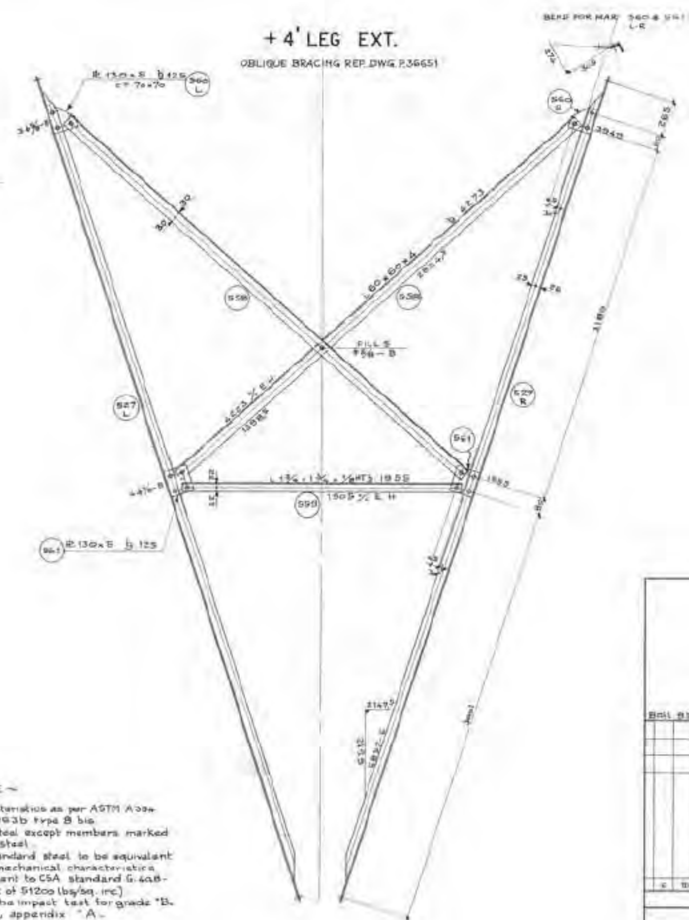
+8' LEG EXT.

OBLIQUE BRACING REF DWG P.36652



+ 4' LEG EXT.

OBLIQUE BRACING REF DWG P.36651



BOLTS	PER OBL. BR. + 8'	PER OBL. BR. + 4'
4 5/8 - B	24	15

~ NOTE ~

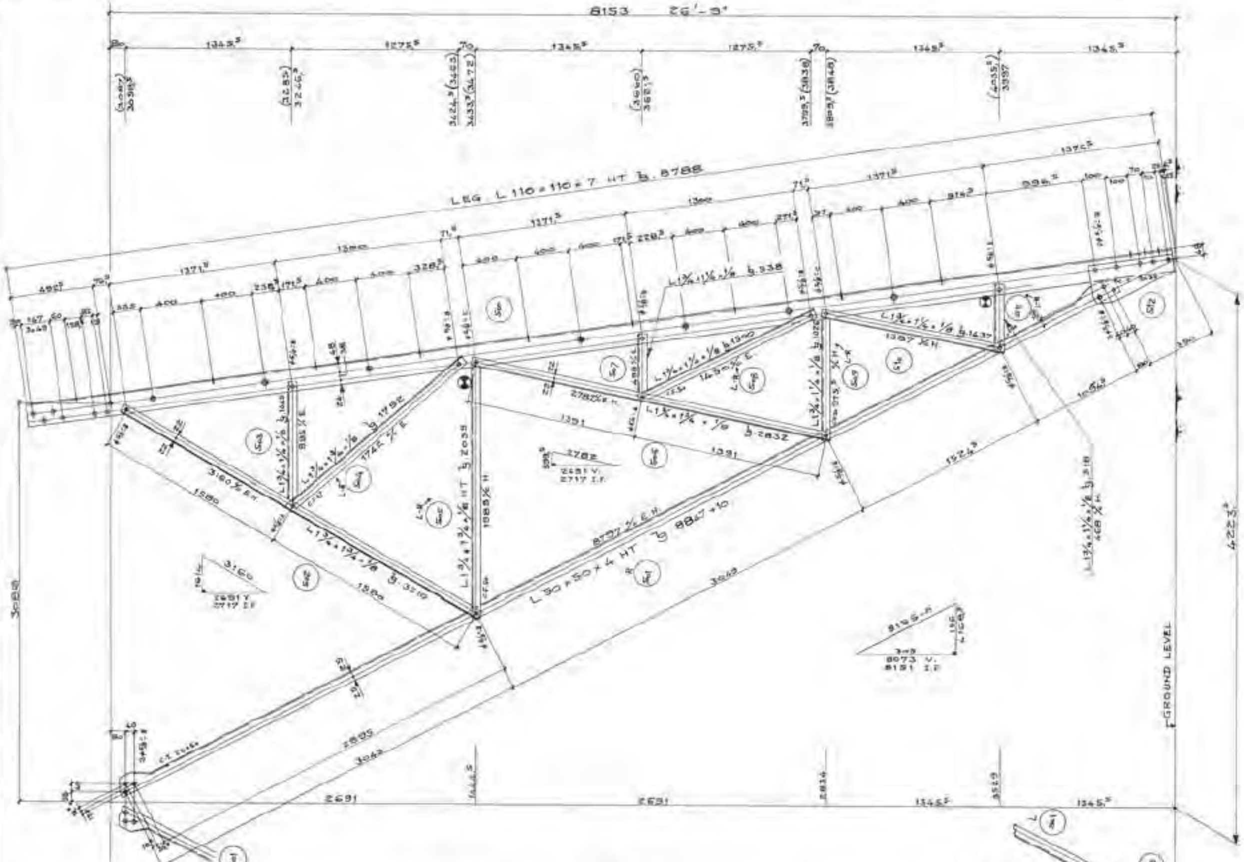
1- All bolts to have mechanical characteristics as per ASTM A394 and dimensions per table OT.3893b type B bis
2- All members to be of standard steel except members marked with "HT" to be of high tensile steel.
3- Mechanical characteristics of standard steel to be equivalent to CSA standard G 40.4-1959; mechanical characteristics of high tensile steel to be equivalent to CSA standard G 40.8-1960 (with guaranteed yield point of 51200 lbs/sq. inc) both qualities of steel to pass the impact test for grade "B" of CSA standad G 40.8-1960, appendix "A".
4- All bolts are 5/8" dia.
5- All holes are 11/16" = 17.5 mm dia. unless otherwise noted
6- All material to be hot dip galvanized after fabrication
7- See also drawigs P.36651

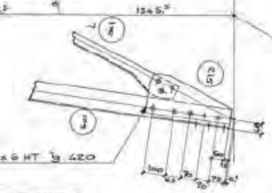
BMI 8963

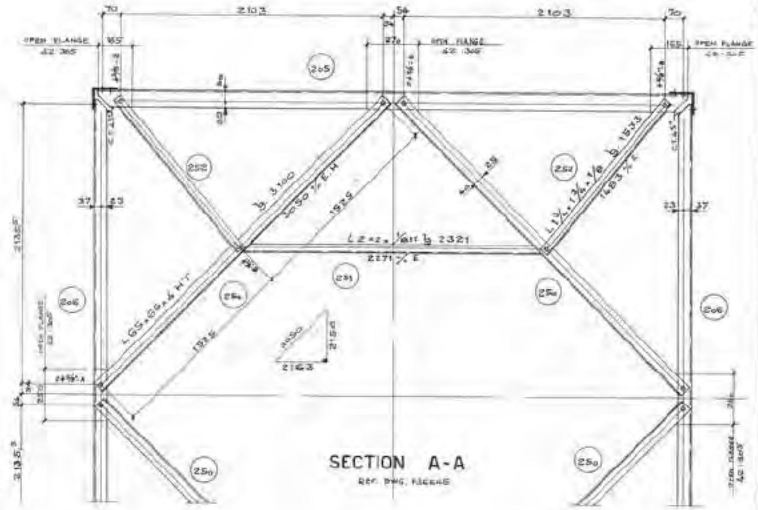
MARK = 558 → 561
553 → 557

						[redacted]		Data	SAE SOCIETA' ANONIMA ELETTRIFICAZIONE S.p.A. MILANO
						AO Shop revision	Revised title box	Modifiche	B.C. HYDRO AND POWER AUTHORITY ROCKY PEACE RIVER TRANS LINE N.1 FOR MARK II TOWER TYPE - A - SELF SUPPORTING TOWER
									OBLIQUE BRACING FOR +4' & +8'
									Disegnatore [redacted] SCALA 1:15 DATA 12-10-62
									Approvazione / Visto / Controllo P. 37239 ab
e	d	c	b	a	a	a	a		

IPEC DWG. No. 500GS-T08-E556







VERTICAL
2 tg ∠β = 0,278885
1 tg ∠β = 0,139497
2 sec ∠β = 1,01928
1 sec ∠β = 1,00966

IN FACE
1 tg ∠β = 0,138163
1 sec ∠β = 1,009527

~ NOTE ~

1 – All bolts to have mechanical characteristics as per ASTM A394 and dimensions per table DT.3963 b type B bis
2 – All members to be of standard steel except members marked with "HT" to be of high tensile steel.
3 – Mechanical characteristics of standard steel to be equivalent to CSA standard G 40,4 – 1939; mechanical characteristics of high tensile steel to be equivalent to CSA standard G. 40,8 – 1960 (With guaranteed yield point of 51200 lbs/sq inc): both qualities of steel to pass the impack text for grade "B" of CSA standad G 40,8 – 1960, appendix "A".
4 – All bolts are 5/8" dia.
5 – All holes are 11/16" = 17.5 mm dia, unless otherwise noted.
6 – All material to be hot dip galvanized after fabrication.
7 – ø = 11/16" = 17.5 mm dia. holes for step bolts DA 1482, on one leg only.
8 – For top part of tower see dwg. P. 36652 ÷ 56
9 – For grillage & concrete found.n, see dwg. P. 36365 – 66
10 – Where indicated used strut as step bolts.
11 – For oblique bracing see drawing T 36853.

TR 200 x 6 HT b 420

Bolts	Required leg ext.	Required for section A-A
ø 5/8" - A		
B	38	
C	4	
Step bolts	16/4	

Boll. 9363

Soo – 913
Mark. 26a ÷ 262

[redacted]									
As Built MARK. Boly 26a	Revised title bolt		Added ½ Mark	MODIFICHE					

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SOCIETA' ANONIMA ELETTRIFICAZIONE
S.p.A. MILANO

B.C. HYDRO AND POWER AUTHORITY
500 kV PEACE RIVER TRANS. LINE #1
FOR MARK E TOWER

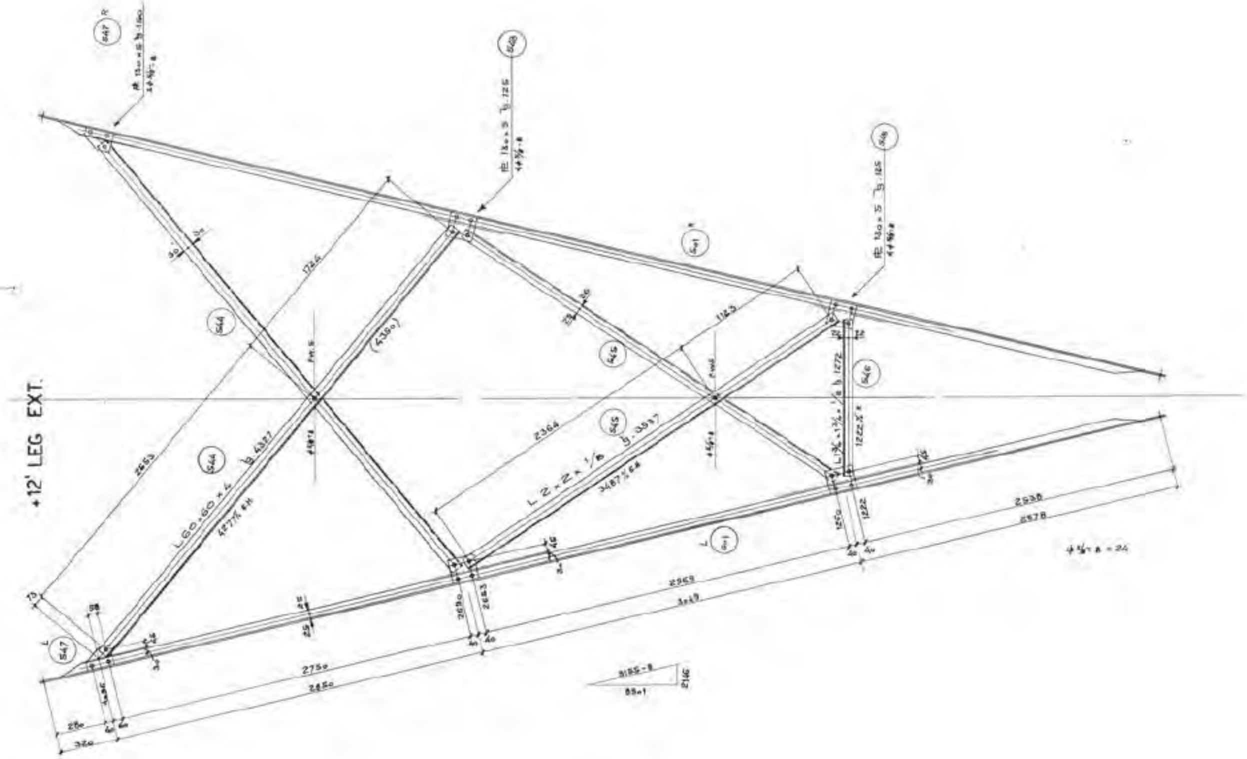
TYPE -A-
SELF SUPPORTING TOWER

12' LEG EXTENSION & SECTION A-A

Disegnatore [redacted] SCALA 1:10 – 1:12 DATA 6-9-66
Approvazione
Visto
Controllo

P. 36653 d

IPEC DWG. No. 500GS-T08-E557



NB. FOR GENERAL NOTES & LEG EXTENSION
SEE DRW. P 36653

Boll. 10844
Boll. 9563

Mark 544÷548

c	As built Mark 544/545÷548
b	As built Mark 547
a	Revised title box
	MODIFICHE

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S. p. A. MILANO

B. C. HYDRO AND POWER AUTHORITY
500 KV PEACE RIVER TRANS. LINE N.1
FOR MARK II TOWER

TYPE -A-
SELF SUPPORTING TOWER

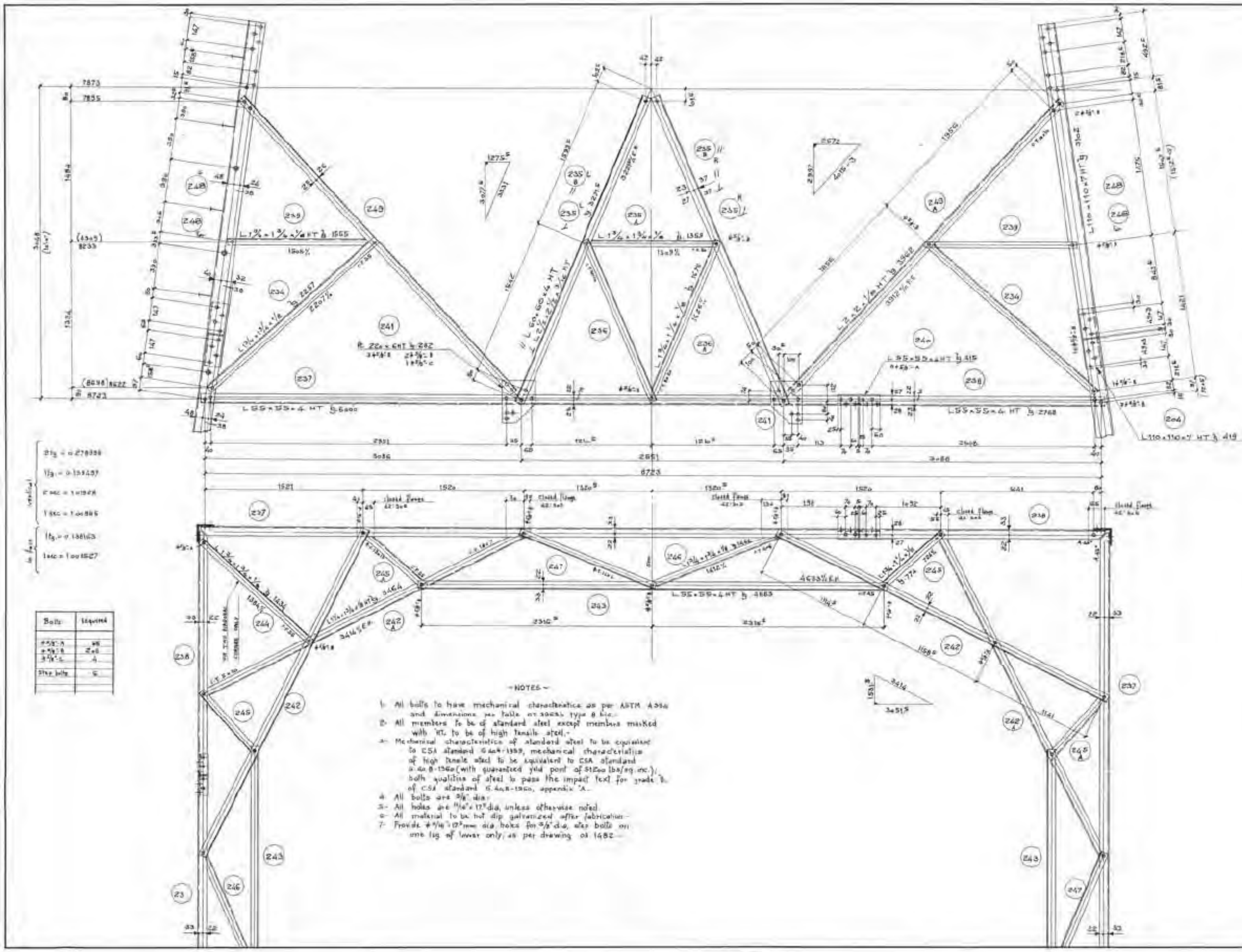
OBLIQUE BRACING FOR +12' LEG EXT.

Disegnatore [redacted]
Approvazione
Visto
Controllo
SCALA 1:10-1:15
DATA 16-5-66

P. 36853 abc

M

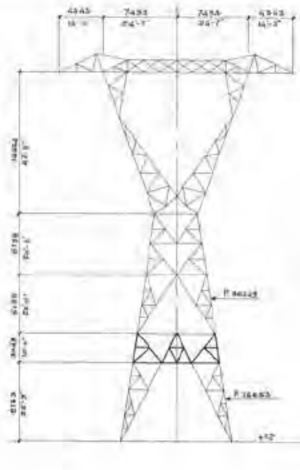
IPEC DWG. No. 500CS-T08 E558



Bolts	Required
#5/8"-A	96
#5/8"-B	2x6
3 5/8"-C	4
Step bolts	6

-NOTES-

1- All bolts to have mechanical characteristics as per ASTM A394 and dimensions per table of 3963 type B bis.-
2- All members to be of standard steel except members marked with "HT" to be of high tensile steel.-
3- Mechanical characteristics of standard steel to be equivalent to CSA standard G40.4-1959, mechanical characteristics of high tensile steel to be equivalent to CSA standard G40.8-1960 (with guaranteed yield point of 51200 lbs/sq.inc.); both qualities of steel to pass the impact test for grade B of CSA standard G.40.8-1960, appendix "A".-
4- All bolts are 5/8" dia.
5- All holes are 11/16"x17.5 dia, unless otherwise noted.
6- All material to be hot dip galvanized after fabrication.-
7- Provide #11/16"x17.5 mm dia holes for 5/8" dia. step bolts on one leg of lower only, as per drawing of 1482.-



Boll. 9563

F.C. 2-02/2A
Mark. 234÷249

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S.p.A. MILANO

B.C. HYDRO AND POWER AUTHORITY
500 kV PEACE RIVER TRANS. LINE N.1
FOR MARK E TOWER

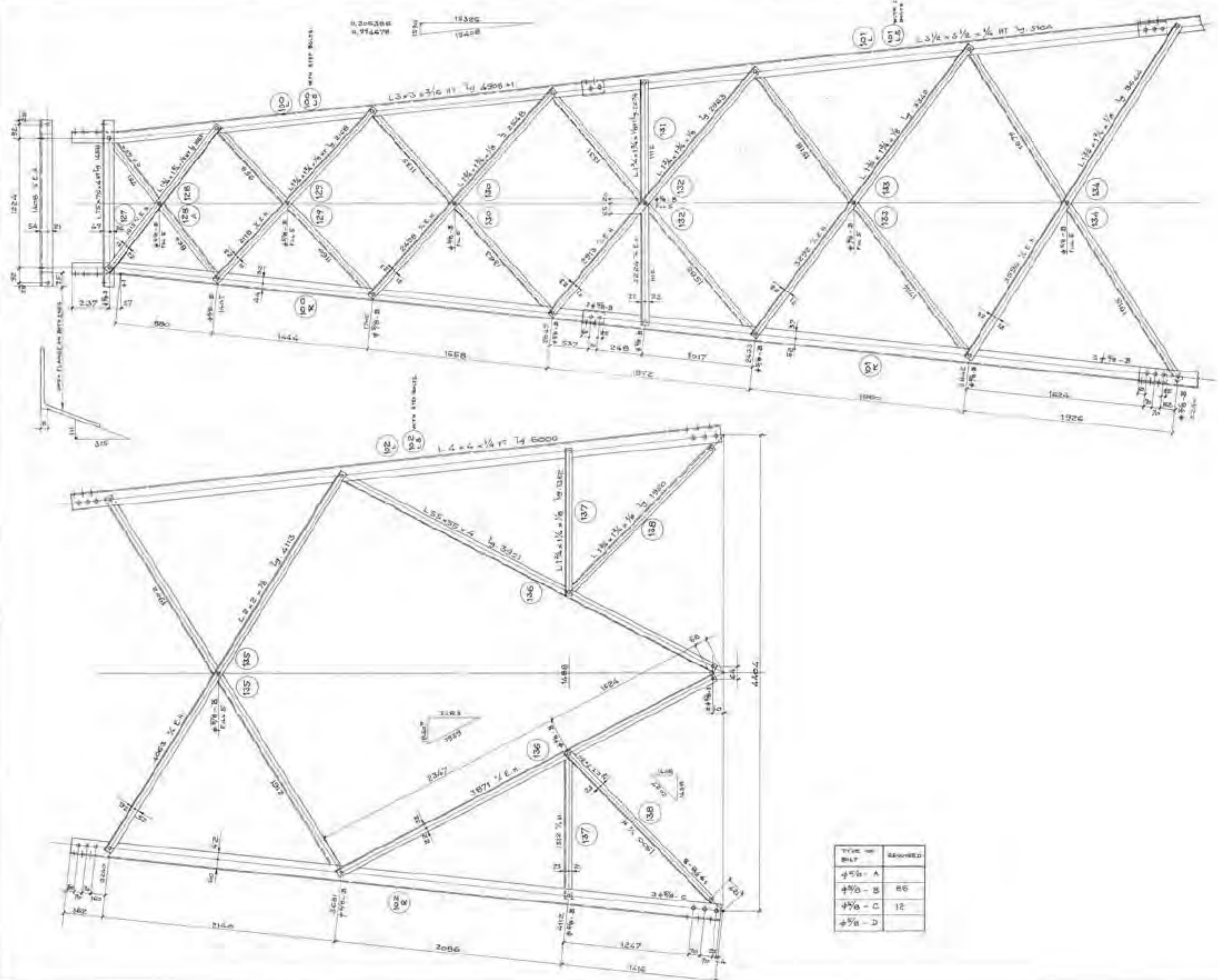
TYPE -A-
SELF SUPPORTING TOWER

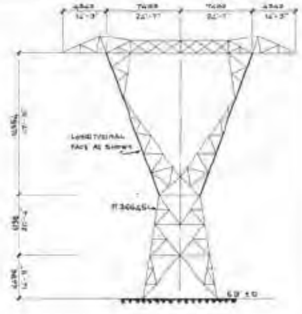
LOWER PORTION OF 30' BODY EXT.

Disegnatore [redacted] SCALA 1:10-1:15 DATA 6-9-64
Approvazione
Visto
Controllo

P. 36650 abcd

IPEC DWG. No. 500GS-T08-E561





~ NOTES ~

1 - All bolts to have mechanical characteristics as per ASTM A394 and dimensions per table of A394, type B.
2 - All members to be of standard steel except members marked with "HT", to be of high tensile steel.
3 - Mechanical characteristics of standard steel to be equivalent to CSA standard G 40.4-1959; mechanical characteristics of high tensile steel to be equivalent to CSA standard G 40.8-1960 (with guaranteed yield point of 51200 lbs/sq. inc.); both qualities of steel to pass the impact test for grade "B" of CSA standard G 40.8-1960, appendix "A".
4 - All bolts are 5/8" dia.
5 - All holes are 11/16" = 17.5 mm dia. unless otherwise noted.
6 - All material to be hot dip galvanized after fabrication.
7 - For others parts of tower see drawings P.36642

TYPE OF BOLT	REQUIRED
⌀5/8 - A	
⌀5/8 - B	66
⌀5/8 - C	12
⌀5/8 - D	

Boll. 1963

Mark 127 ÷ 138

[redacted]

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SOCIETA' ANONIMA ELETTRIFICAZIONE
S. p. A. MILANO

B.C. HYDRO AND POWER AUTHORITY
500 KV PEACE RIVER TRANS. LINE N.1
FOR MARK II TOWER

TYPE ·A·
SELF SUPPORTING TOWER

LONGITUDINAL FACE OF H FRAME

As built mark 39A

Revised title box

Modifiche

Disegnatore [redacted] SCALA 1:15 DATA 28 Aug 1962

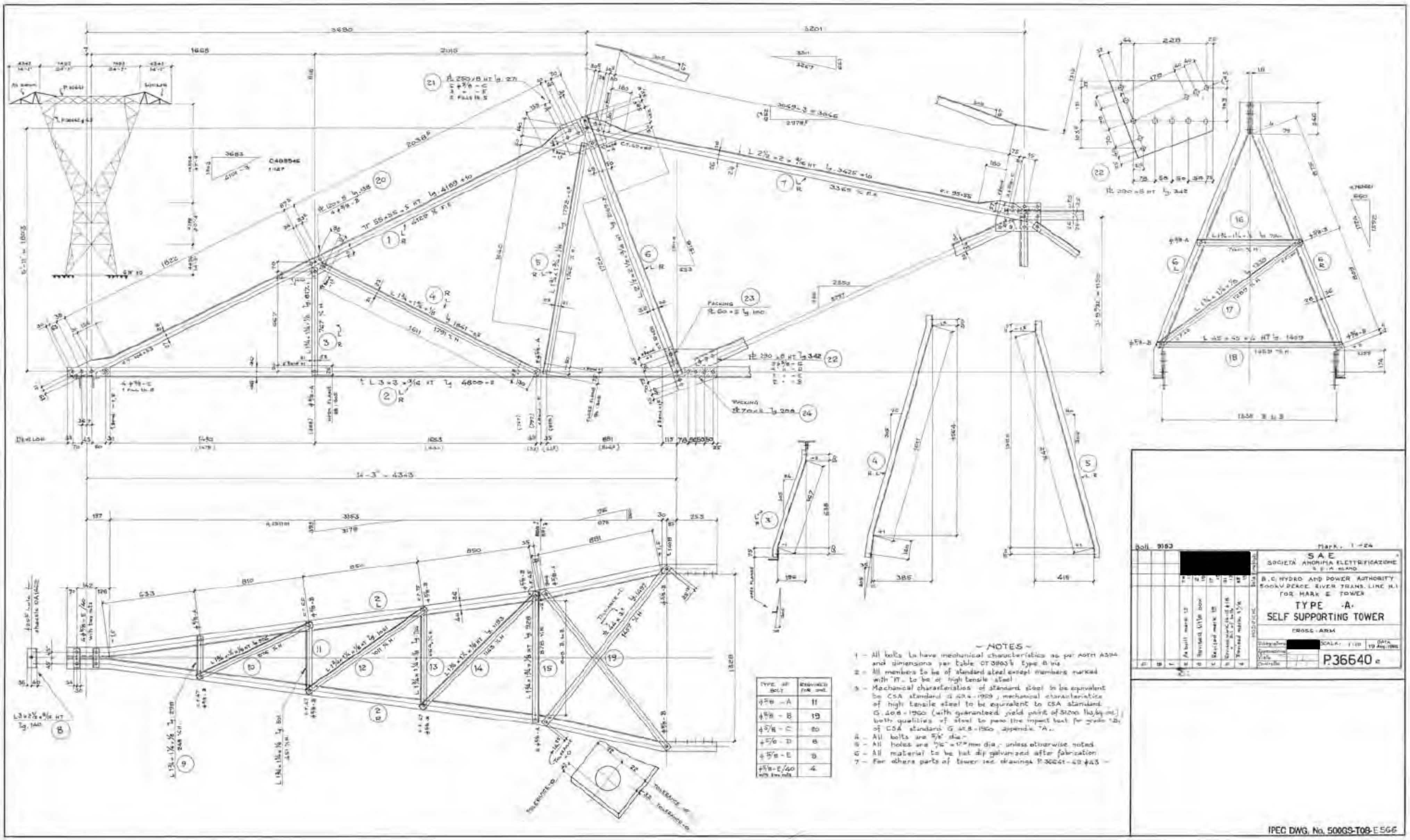
Approvato

Visto

Controllo

P.36643 ab

IPEC DWG. No. 500GS-T08-E 563



TYPE OF BOLT	REQUIRED FOR ONE
ϕ5/8 - A	11
ϕ5/8 - B	19
ϕ5/8 - C	80
ϕ5/8 - D	8
ϕ5/8 - E	8
ϕ5/8 - E/40 with two nuts	4

— NOTES —

1 – All bolts to have mechanical characteristics as per ASTM A394 and dimensions per table OT 3863 b type B via
2 – All members to be of standard steel except members marked with "HT" to be of high tensile steel
3 – Mechanical characteristics of standard steel to be equivalent to CSA standard G 40.4 - 1959; mechanical characteristics of high tensile steel to be equivalent to CSA standard G 40.8 - 1960 (with guaranteed yield point of 51200 lbs/sq.inc.); both qualities of steel to pass the impact test for grade "B" of CSA standard G 40.8 - 1960 appendix "A".
4 – All bolts are 5/8" dia.
5 – All holes are 11/16" = 17 mm dia. unless otherwise noted
6 – All material to be hot dip galvanized after fabrication
7 – For others parts of tower see drawings P.36641 - 42 & 43 –

Boll. 9163

Mark. 1 – 24

[redacted]

As built mark 12
Revised title box
Revised mark 18
Revised mark 14 & 18, list of bolts
Revised mark 17/18

MODIFICHE

SAE
SOCIETÀ ANONIMA ELETTRIFICAZIONE
S. p. A. MILANO

B.C. HYDRO AND POWER AUTHORITY
500 KV PEACE RIVER TRANS. LINE N.1
FOR MARK E TOWER

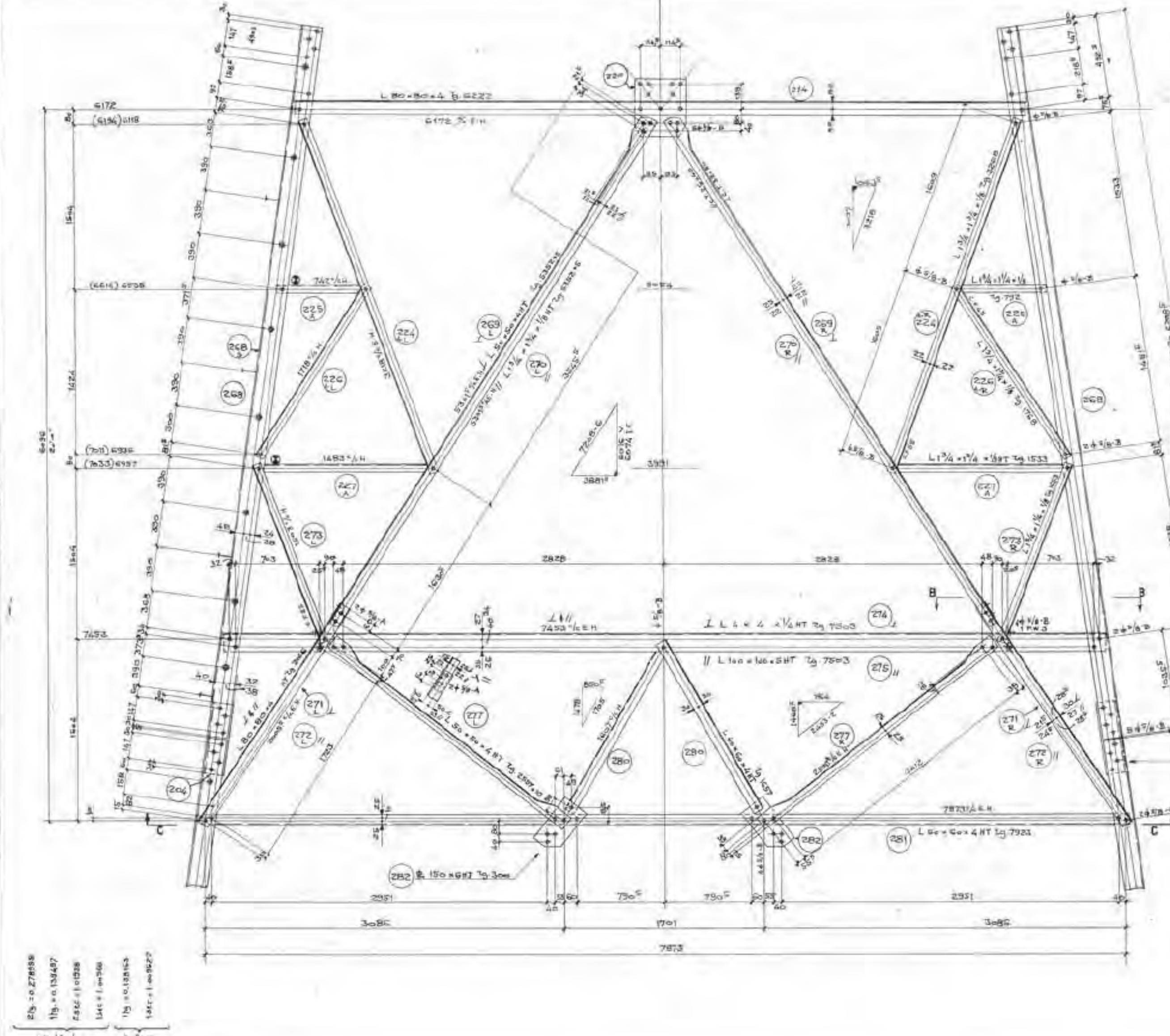
TYPE -A-
SELF SUPPORTING TOWER

CROSS - ARM

Disegnatore [redacted]
SCALA: 1:10
DATA 19 Aug. 1966

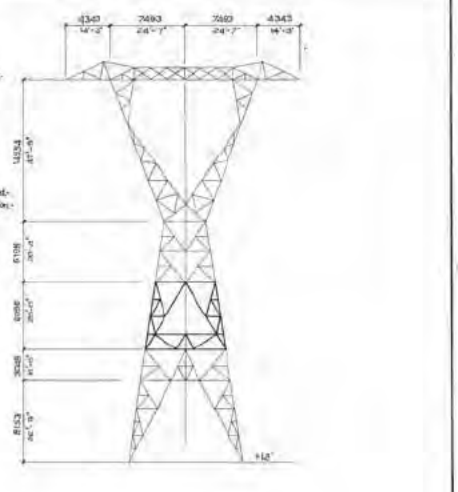
P.36640 e

IPEC DWG. No. 500GS-T08-E566

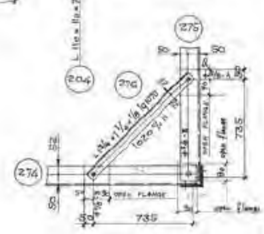


-NOTES-

1- All bolts to have mechanical characteristics as per ASTM A394 and dimension per table 0T.3963 b Type III ltr.-
2- All members to be of standard steel except members marked with HT, to be of high tensile steel.
3- Mechanical characteristics of standard steel to be equivalent to CSA standard G.40.4 - 1959; mechanical characteristics of high tensile steel to be equivalent to CSA standard G.40.8 - 1960 (With guaranteed yeld point of 51200 lbs/sq. inc.); both qualities of steel to pass the impact test for grade "B" of CSA standard G.40.8 - 1960, appendix "A".-
4- All bolts are 5/8" dia. -
5- All holes are 11/16" = 17.5 dia., unless otherwise noted.-
6- All material to be hot dip galvanized after fabrication.-
7- Provide ϕ 11/16" = 17.5 mm dia. holes for 5/8" dia. step bolts on one leg of tower only, as per drawing DA. 1482
8- For top part see drw P. 36645
9- For bottom part see drw P. 36648 - 53
10- For section C-C see drw. P 36648



Bolts	Required
A	40
B	228
C	20
Step bolts	12



SECTION B-B

Bolt 10Add
Bolt 9563

Mark. 268 ÷ 282

[redacted]

S.A.E.
SOCIETA' ANONIMA ELETTRIFICAZIONE
S. p. A. MILANO

B. C. HYDRO AND POWER AUTHORITY
500 kV PEACE RIVER TRANS. LINE N.1
FOR MARK II TOWER

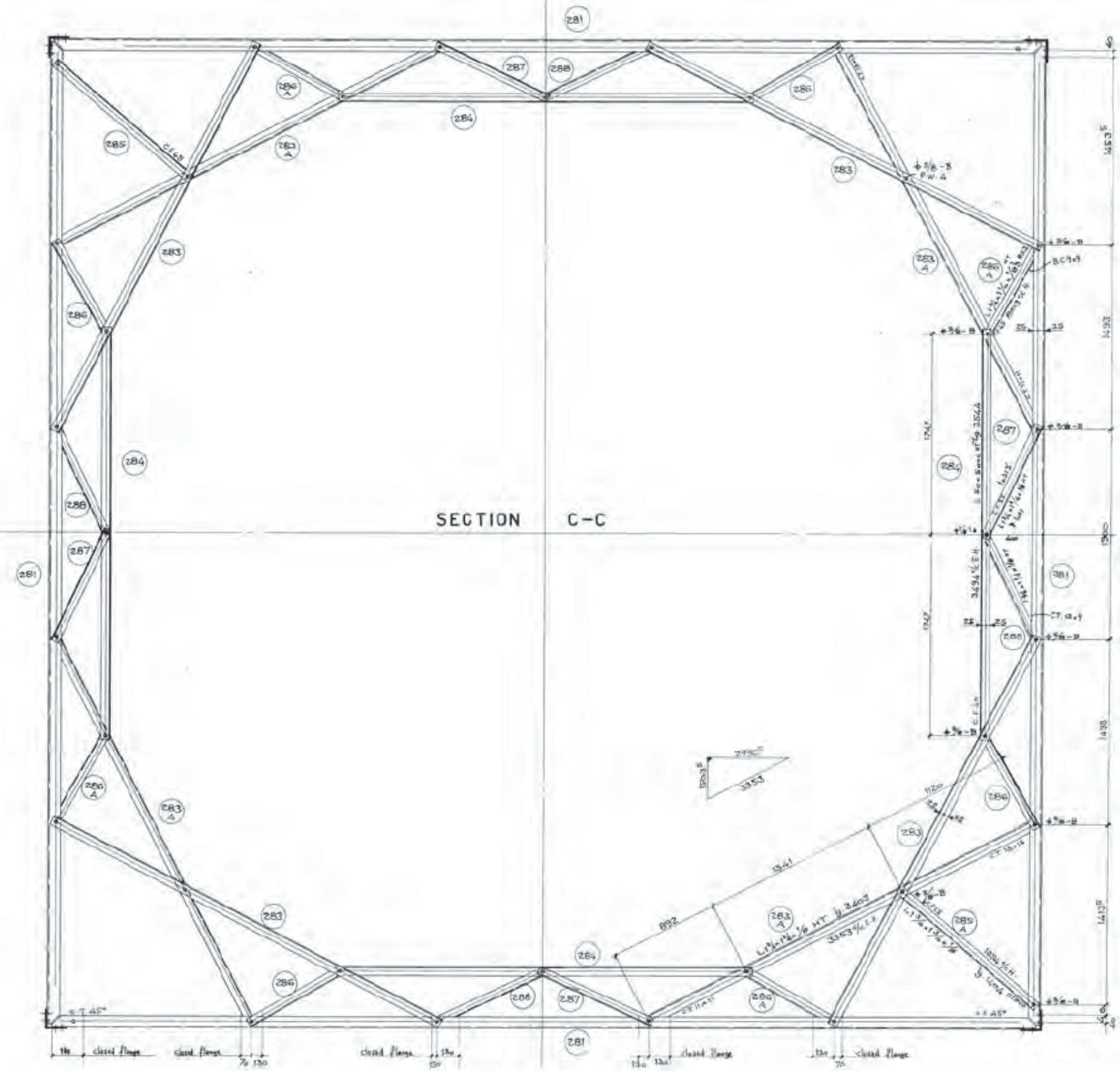
TYPE -A-
SELF SUPPORTING TOWER

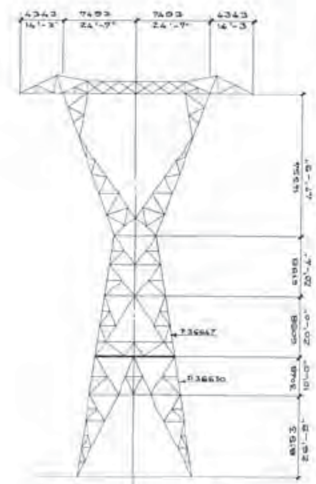
20' BODY EXT.

Disegnatore	[redacted]	SCALA 1:15/1:10	DATA 16 Sept. '66
Approvazione		P 36647 abcde	
Visto			
Controllo			

Revisions: As built (NW); Modified mark 274 & 280; As built; Revised title box; Added mark 214 & 204; Added (A) Mark 224 ... 268 ... 282; MODIFICHE

IPEC DWG. No. 500GS-T08 E 567 R2





BOLTS	REQUIRED
⌀5/8-A	2
⌀5/8-B	32

~NOTES~

1-All bolts to have mechanical characteristics as per ASTM A394 and dimensions per table OT 3963b type B bis.-
2-All members to be of standard steel except members marked with "HT" to be of high tensile steel.-
3-Mechanical characteristics of standard steel to be equivalent to CSA standard G.40.4-1959; mechanical characteristics of high tensile steel to be equivalent to CSA standard G 40.8-1960 (with guaranteed yield point of 51200 lbs/sq.inc.); both qualities of steel to pass the impact text for grade "B" of CSA standard G 40,8-1960, appendix "A".
4-All bolts are 5/8" dia.-
5-All holes are 11/16" = 17,5 dia. unless otherwise noted.-
6-All material to be hot dip galvanized after fabrication.-
7-See also dwg. P 36647

Built 10844
9 off 9563

Mark. 283÷288

[redacted]

S.A.E.
SOCIETÀ ANONIMA ELETTRIFICAZIONE
S.p.A. MILANO

B.C. HYDRO AND POWER AUTHORITY
500 KV PEACE RIVER TRANS. LINE N.1
FOR MARK II TOWER

TYPE ·A·
SELF SUPPORTING TOWER

SECTION C-C

c — As built revised mark 283A
b — As built
a — Revised title box
MODIFICHE

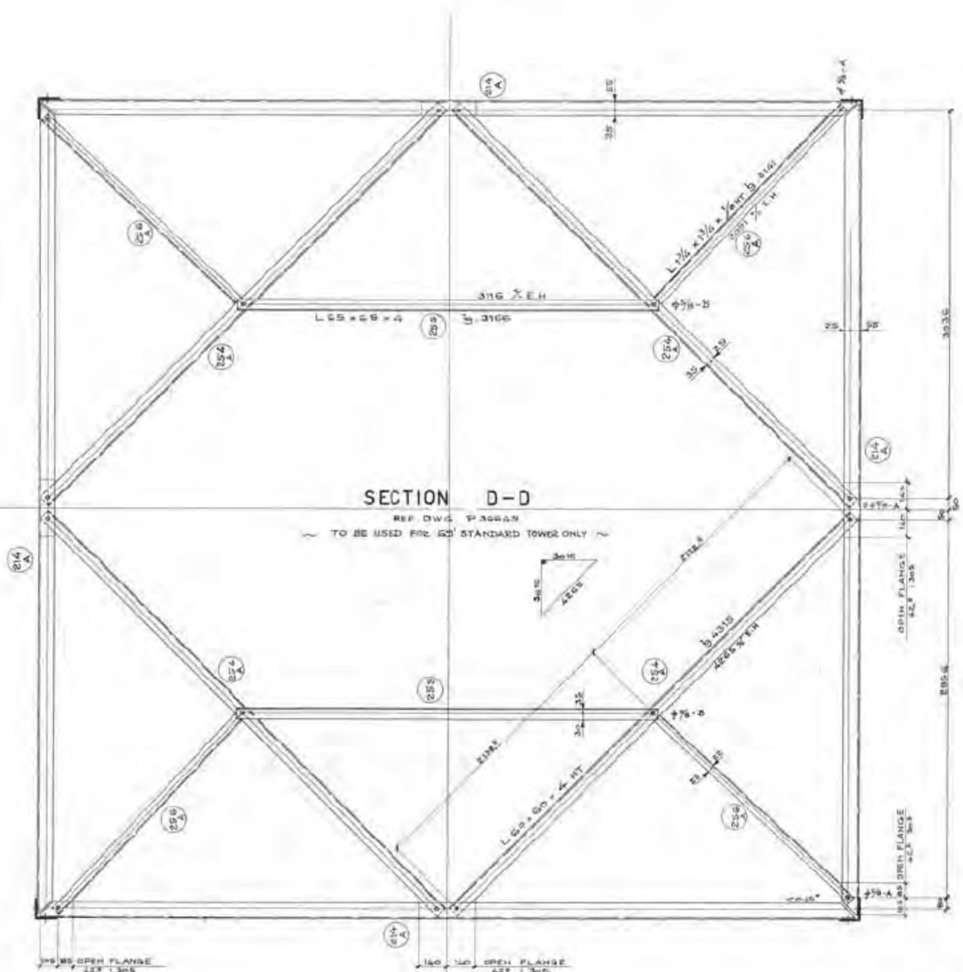
Disegnatore [redacted]
Approvazione
Visto
Controllo

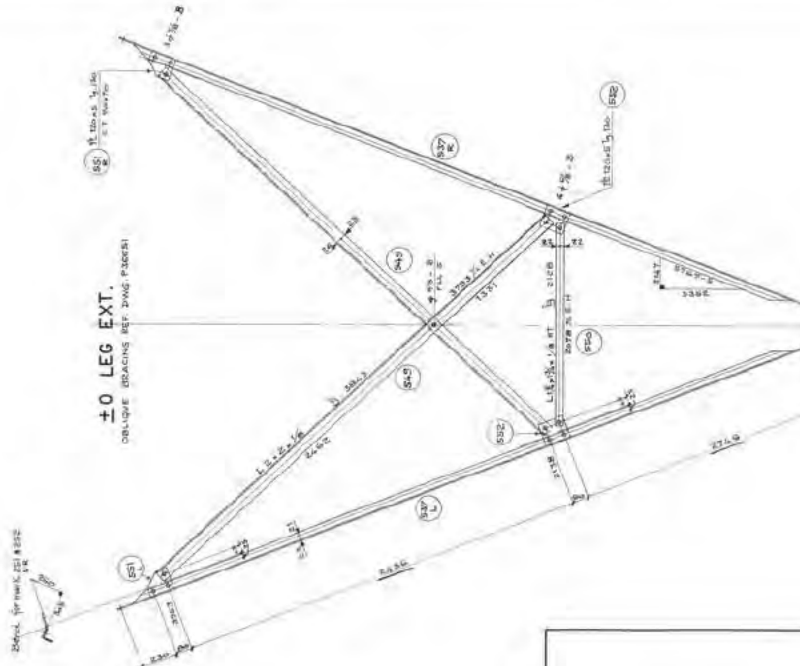
SCALA 1:10
DATA

P. 36648 abc

M

IPEC DWG. No. 5005S708 E 568





~NOTE~

1-All bolts to have mechanical characteristics as per ASTM A394 and dimensions per table DT. 3963 b type B bis
2-All members to be of standard steel except members marked with "HT", to be of high tensile steel.
3-Mechanical characteristics of standard steel to be equivalent to CSA standard G.40,4-1959; mechanical characteristics of high tensile steel to be equivalent to CSA standard G.40,8-1960(with guaranteed yield point of 51200 lbs/sq.inc): both qualities of steel to pass the impact test for grade "B" of CSA standard G.40,8-1960, appendix "A".
4-All bolts are 5/8" dia.
5-All holes are 11/16" = 17,5 mm dia, unless otherwise noted.
6-All material to be hot dip galvanized after fabrication.
7-See also drws P36645 & P36651.

[illegible]	[illegible]	[illegible]
⌀5/8-A	12	
" -B	4	12
" -C		

Boll 3963

Mark 549 ÷ 552
250 ÷ 252

[redacted]

MODIFICHE

No. shop revision
Revised title
Added ...

SAE
SOCIETA' ANONIMA ELETTRIFICAZIONE
S.p.A. MILANO

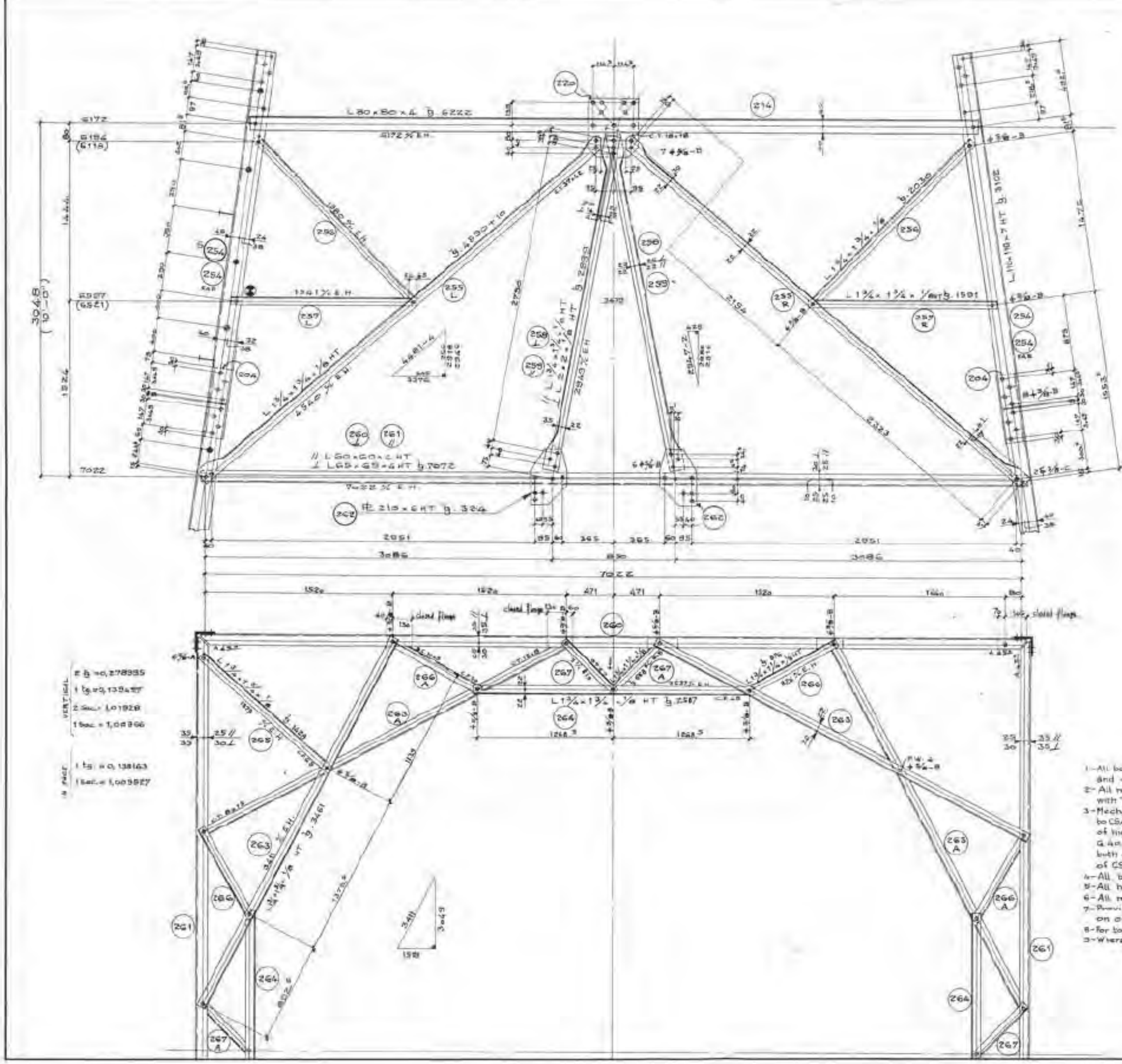
B.C. HYDRO AND POWER AUTHORITY
SMOKY PEACE RIVER TRANS LINE N.1
FOR MARK II TOWER

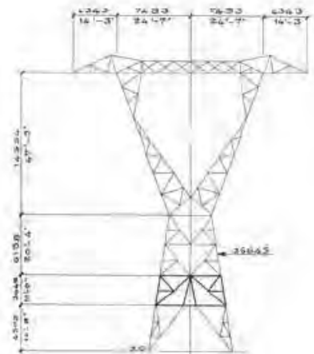
TYPE ·A·
SELF SUPPORTING TOWER

SECTION "D-D" & OBLIQUE BRACING FOR ±0 L.E.

Disegnatore	[redacted]	SCALA 1:15	DATA 13 Ott. 1966
Approvazione			
Visto		P.37238 abc	
Controllo			

IPEC DWG. No. 500GS-T08-E 569





BOLTS	REQUIED
⌀ 5/8 - A	2
⌀ 5/8 - B	196
⌀ 5/8 - C	16
Step bolts	6

~ NOTES ~

1 - All bolts to have mechanical characteristics as per ASTM A394 and dimensions per table DT.39636 type B bis. -
2 - All members to be of standard steel except members marked with "HT" to be of high tensile steel. -
3 - Mechanical characteristics of standard steel to be equivalent to CSA standard G 40.4-1959; mechanical characteristics of high tensile steel to be equivalent to CSA standard G 40.8-1960 (with guaranteed yield point of 51200 lbs/sq inc) both qualities of steel to pass the impact test for grade "B" of CSA standard G-40.8-1960, appendix "A". -
4 - All bolts are 5/8" dia. -
5 - All holes are 11/16" = 17.5 dia unless otherwise noted
6 - All material to be hot dip galvanized after fabrication
7 - Provide 4 11/16" = 17.5 mm dia holes for 5/8" dia. step bolts on one leg of tower only as per drawing DA.1482. -
8 - For top part of tower see drw. P. 36645
9 - Where indicated ⊕ used strut as step bolts. -

Boll. 9563 - 10844

Mark. 254 - 267

				[redacted]				Data
								Modifiche
				As Built	As Built mark 260, 263, 255	Revised title box	Added mark 260 ⌀ 130 and revised title block	
C	B	A	9	8	7	6	5	

S.A.E.
SOCIETA' ANONIMA ELETTRIFICAZIONE
S. p. A. - MILANO

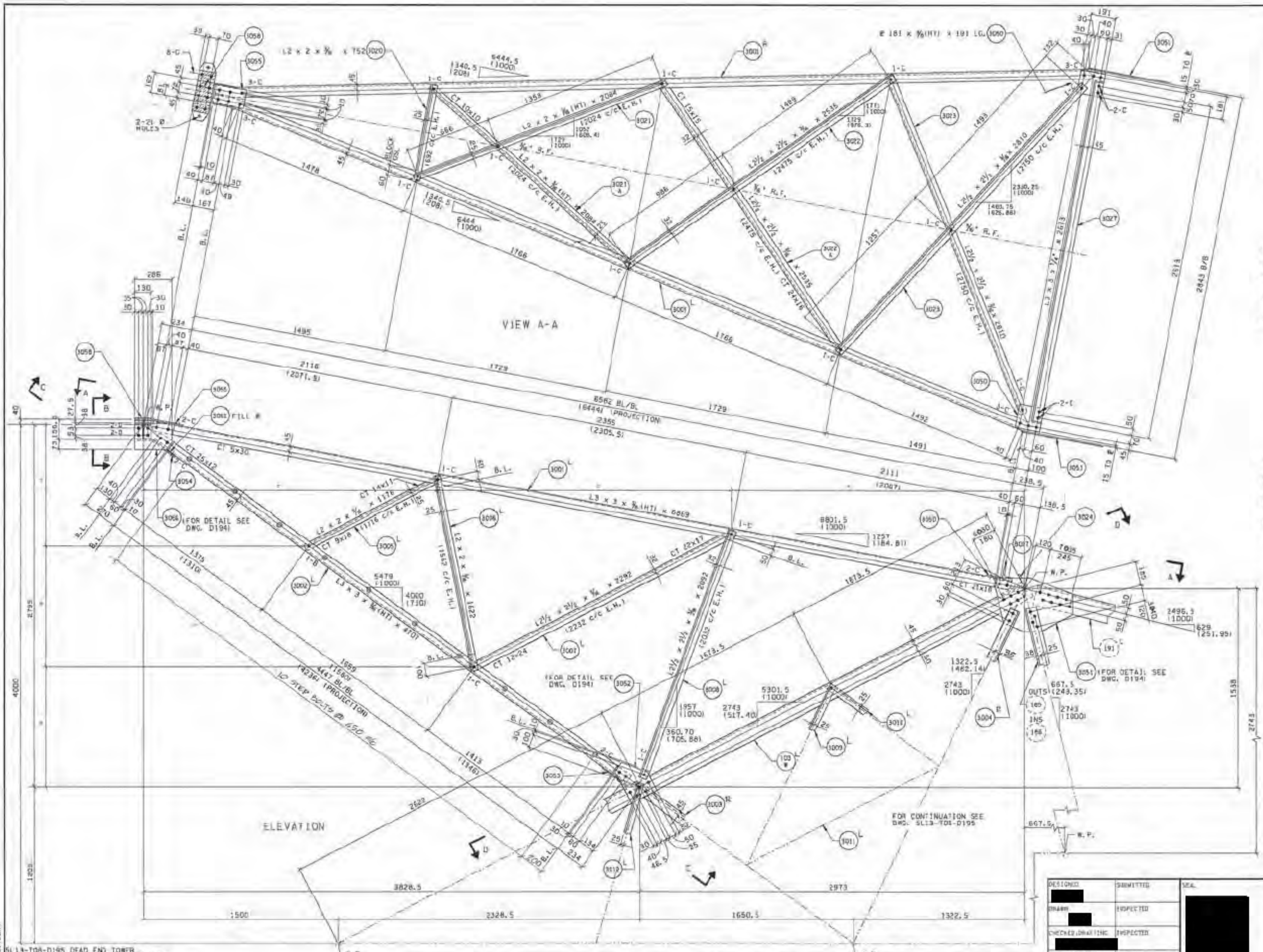
B.C. HYDRO AND POWER AUTHORITY
500 kV PEACE RIVER TRANS. LINE N.1
FOR MARK E TOWER

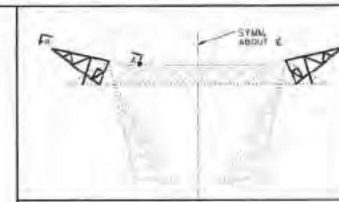
TYPE ·A·
SELF SUPPORTING TOWER

10' BODY EXT.

Disegnato	[redacted]	SCALA: 1:15	DATA 13-8-1966
Approvato		P. 36646 cd	
Visto			
Controllo			

PEC DWG. No. 5003S-T08- E 570





NOTES:

1. FOR GENERAL NOTES SEE DWG No 5L13-T08-B54-R1.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DWG. 5L13-T08-D193 TO D196.
3. FOR BEND DETAILS OF MEMBERS MK 3005 AND 3008 SEE DWG. 5L13-T08-D194.
4. FOR DETAILS OF STEP BOLTS SEE DRAWING No G-T08-A271.

LEGEND:

- (3001) DENOTES NEW MEMBERS
- (103 W) DENOTES MODIFIED EXISTING MEMBERS
- (191) DENOTES EXISTING MEMBERS
- DENOTES EXISTING HOLES
- DENOTES HOLES FOR NEW MEMBERS

BOLT LIST PER TOWER			
TYPE	DIA.	LENGTH	REQ'D
STEP	3/4	8	20
B	3/4	1½	4
C	3/4	1⅞	102
D	3/4	2	16
G	3/4	2¾	18
RING FILL 3/32 THK.			4
RING FILL 5/8 THK.			2

MK Nos. 3001, 3002, 3005 – 3008, 3020 – 3023, 3027, 3050

REFERENCE DRAWINGS
5L13-T08-D195 DEAD END TOWER CROSSARM DETAILS
5L13-T08-D196 DEAD END TOWER BRIDGE-LATERAL PORTION

No.	REVISIONS	APPD	DATE
2	HOLE DIA CHANGED MK 3057		
1	R & L REMOVED FROM ITEMS 3050, 3051 & 3056		

DESIGNED [redacted] DRAWN [redacted] CHECKED DRAWING [redacted] CHECKED DESIGN [redacted]

SEAL [redacted]

[redacted]

DATE 90 OCT/92

BC Hydro
TRANSMISSION ENGINEERING DIVISION

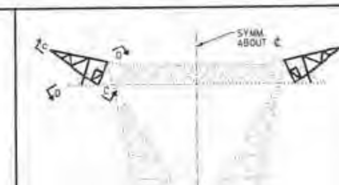
WILLISTON - KELLY LAKE 500 KV T/L

TYPE 8KGT DEAD END TOWER GROUND WIRE PEAK - DETAILS NORTH AMERICAN SECTIONS

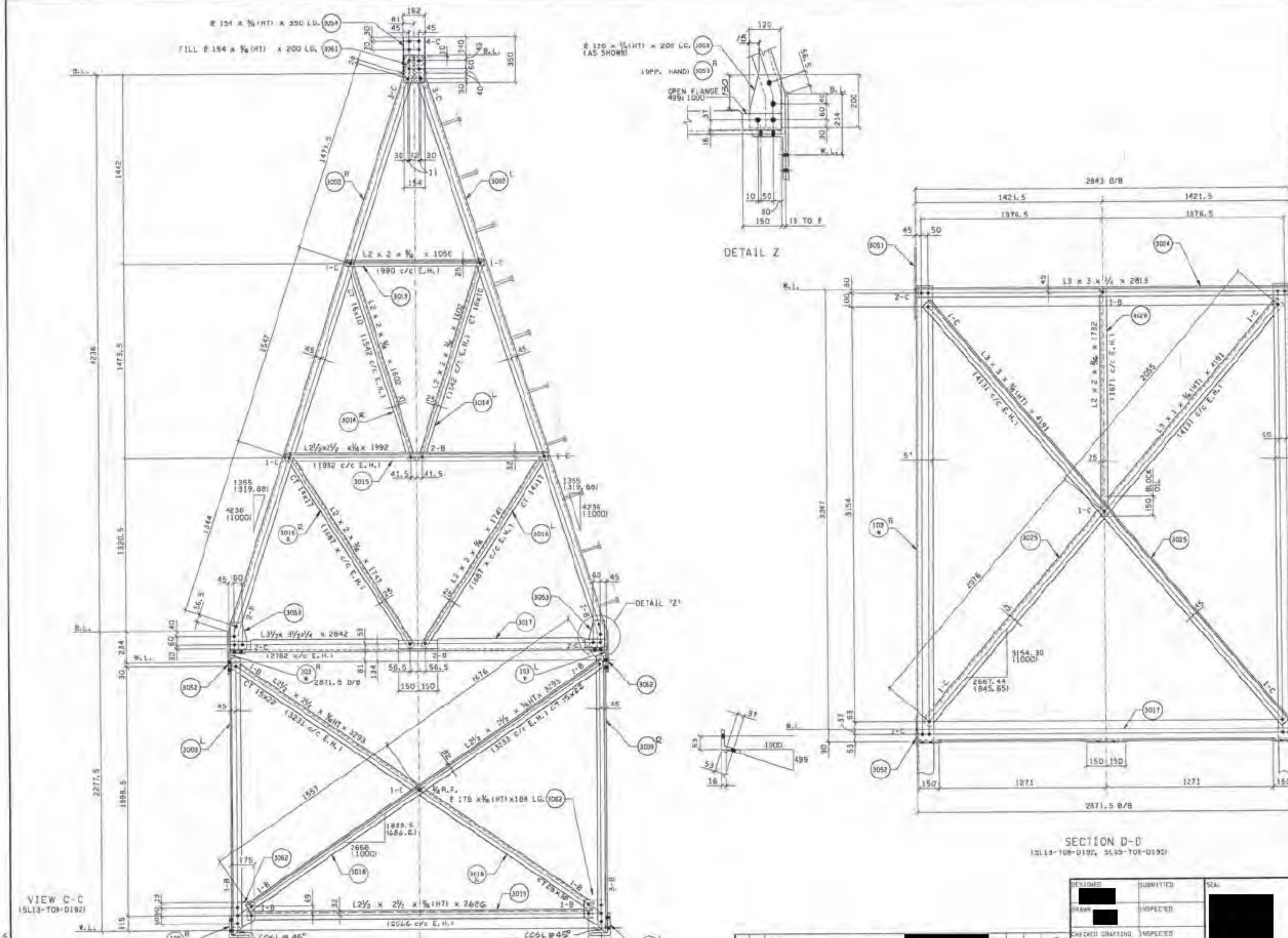
FUNCTIONAL CODE: 4.02/8KGT

DWG. No. 5L13-T08-D192 | 2

D



KEY PLAN



BOLT LIST PER TOWER			
TYPE	DIA.	LENGTH	REQ'D
B	3/4	1 1/2	42
C	3/4	1 3/4	64
RING FILL 5/8" THK			2

MK Nos. 3013-3019, 3024-3026, 3053, 3054, 1061, 3062

NOTES:

1. FOR NOTES AND LEGEND SEE DWG No 5L13-T08-D192.
2. FOR GENERAL NOTES SEE DWG No 5L13-T08-B54-91.
3. FOR STEP BOLT DETAILS SEE DWG. No. G-T08-A271.

FUNCTIONAL CODE 4.02/8KGT

REFERENCE DRAWINGS:
5L13-T08-D195 DEAD END TOWER CROSSARM DETAILS
5L13-T08-D196 DEAD END TOWER BRIDGE-LATERAL PORTION

REVISIONS:
1 R & L REMOVED FROM ITEMS 3051, 3052 & 3053. ITEMS 3014R, 3014L, 3016R, 3016L & 3025 WERE 3014A, 3014, 3016A, 3016 & 3025A. R & L REMOVED FROM ITEM 3062 [redacted]

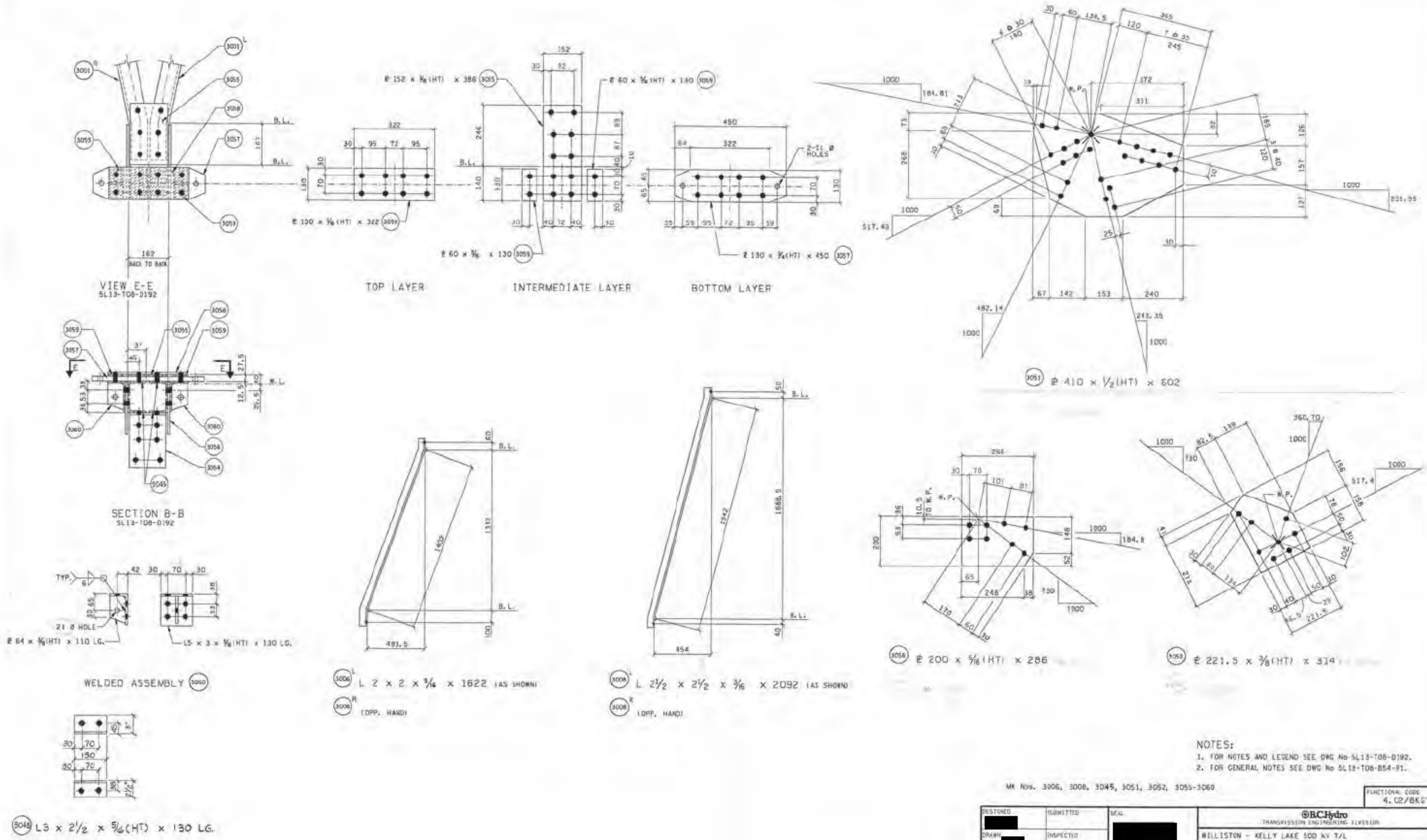
DESIGNED [redacted] SUBMITTED
DRAWN [redacted] INSPECTED
CHECKED DRAFTING [redacted] INSPECTED
CHECKED DESIGN [redacted] INSPECTED
[redacted]
SEAL [redacted]
DATE 30 OCT 92

B.C. Hydro
TRANSMISSION ENGINEERING DIVISION

WILLISTON - KELLY LAKE 500 kV T/L
TYPE 8KGT DEAD END TOWER
GROUND WIRE PEAK - DETAILS
NORTH AMERICAN SECTIONS

SCALE — DWG. No. 5L13-T08-D193 REV 1

D



NOTES:
1. FOR NOTES AND LEGEND SEE DWG No 5L13-T08-0192.
2. FOR GENERAL NOTES SEE DWG No 5L13-T08-854-P1.

MK Nos. 3006, 3008, 3045, 3051, 3052, 3055-3060

REFERENCE DRAWINGS
5L13-T08-0195 DEAD END TOWER CROSSARM DETAILS
5L13-T08-0196 DEAD END TOWER BRIDGE-LATERAL PORTION

No.	REVISIONS	MADE	APPD	DATE
2	HOLE DIA. CHANGED MK3057&3060	GSR	PLW	3/mar/94
1	R & L REMOVED FROM ITEMS 3051, 3052, 3055, 3056, 3059 & 3060. DIMENSIONS ADDED TO 3051, 3052	[redacted]		

DESIGNED [redacted] SUBMITTED
DRAWN [redacted] INSPECTED
CHECKED DRAFTING [redacted] INSPECTED
CHECKED DESIGN [redacted] INSPECTED
[redacted]
SEAL [redacted]
DATE 30 OCT 92

FUNCTIONAL CODE 4.02/8KGT

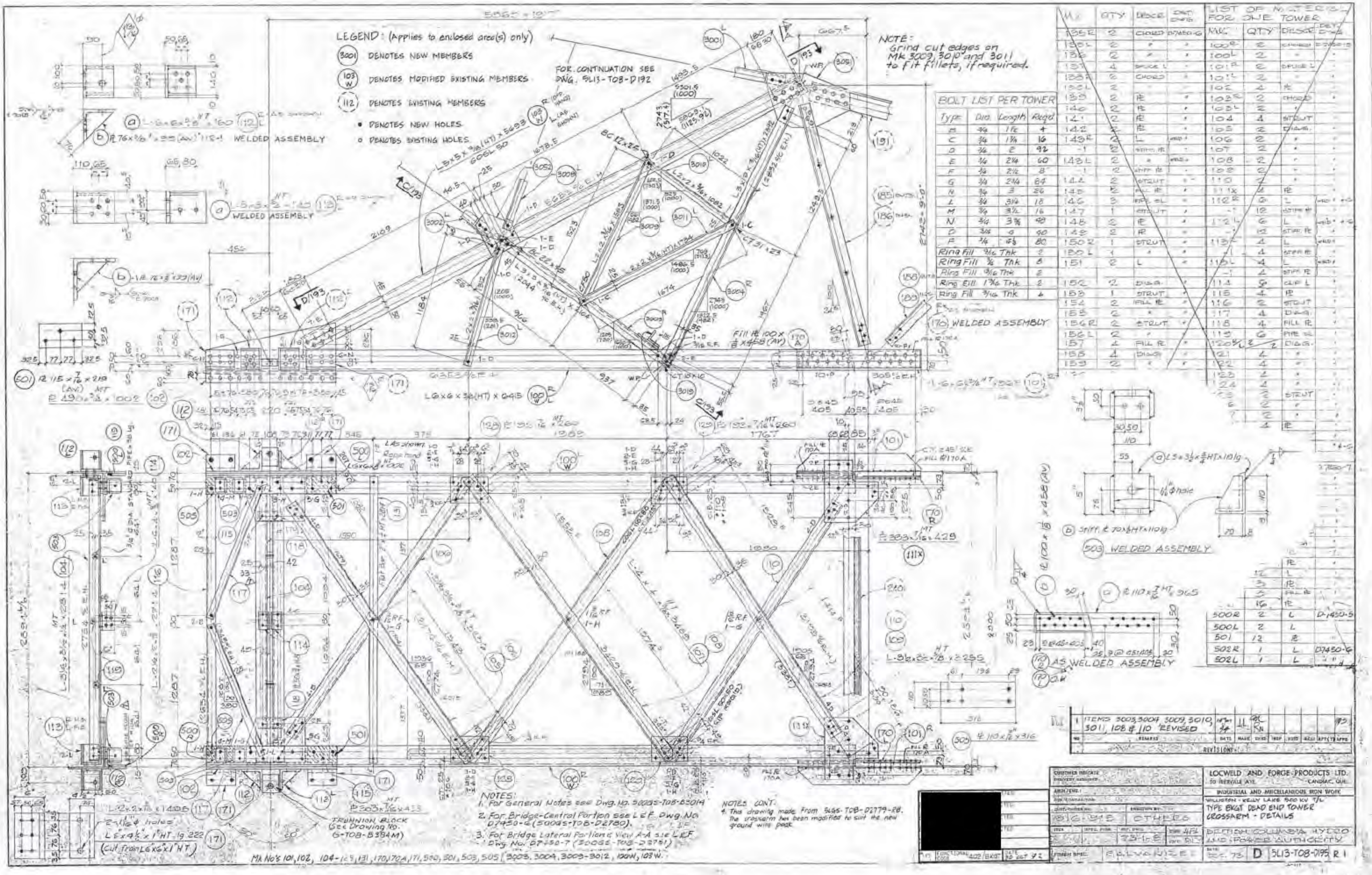
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

WILLISTON - KELLY LAKE 500 KV T/L
TYPE 8KGT DEAD END TOWER
GROUND WIRE PEAK - DETAILS
NORTH AMERICAN SECTIONS

SCALE — DWG. No. 5L13-T08-0194 REV 2

CAD FILE No. (DGN)

D



BOLT LIST PER TOWER			
Type	Dia.	Length	Req'd
B	3/4	1 1/2	4
C	3/4	1 3/4	16
D	3/4	2	92
E	3/4	2 1/4	60
F	3/4	2 1/2	8
G	3/4	2 3/4	64
H	3/4	3	26
L	3/4	3 1/4	18
M	3/4	3 1/2	16
N	3/4	3 3/4	48
O	3/4	4	40
P	3/4	4 1/2	80
Ring Fill 9/16 Thk			2
Ring Fill 3/4 Thk			8
Ring Fill 9/16 Thk			2
Ring Fill 1 5/16 Thk			2
Ring Fill 3/16 Thk			4

LIST OF MATERIAL FOR ONE TOWER

Mk	Qty	Desc	Det. Dwg
500R	2	L	D7450-5
500L	2	L	
501	12	R	
502R	1	L	D7450-6
502L	1	L	

No	Remarks	Date
1	ITEMS 3003, 3004, 3009, 3010, 3011, 108 & 110 REVISED	14 Jan 74

REVISIONS

[redacted]

FUNCTIONAL CODE 402/BKGT — DATE 30 OCT 72

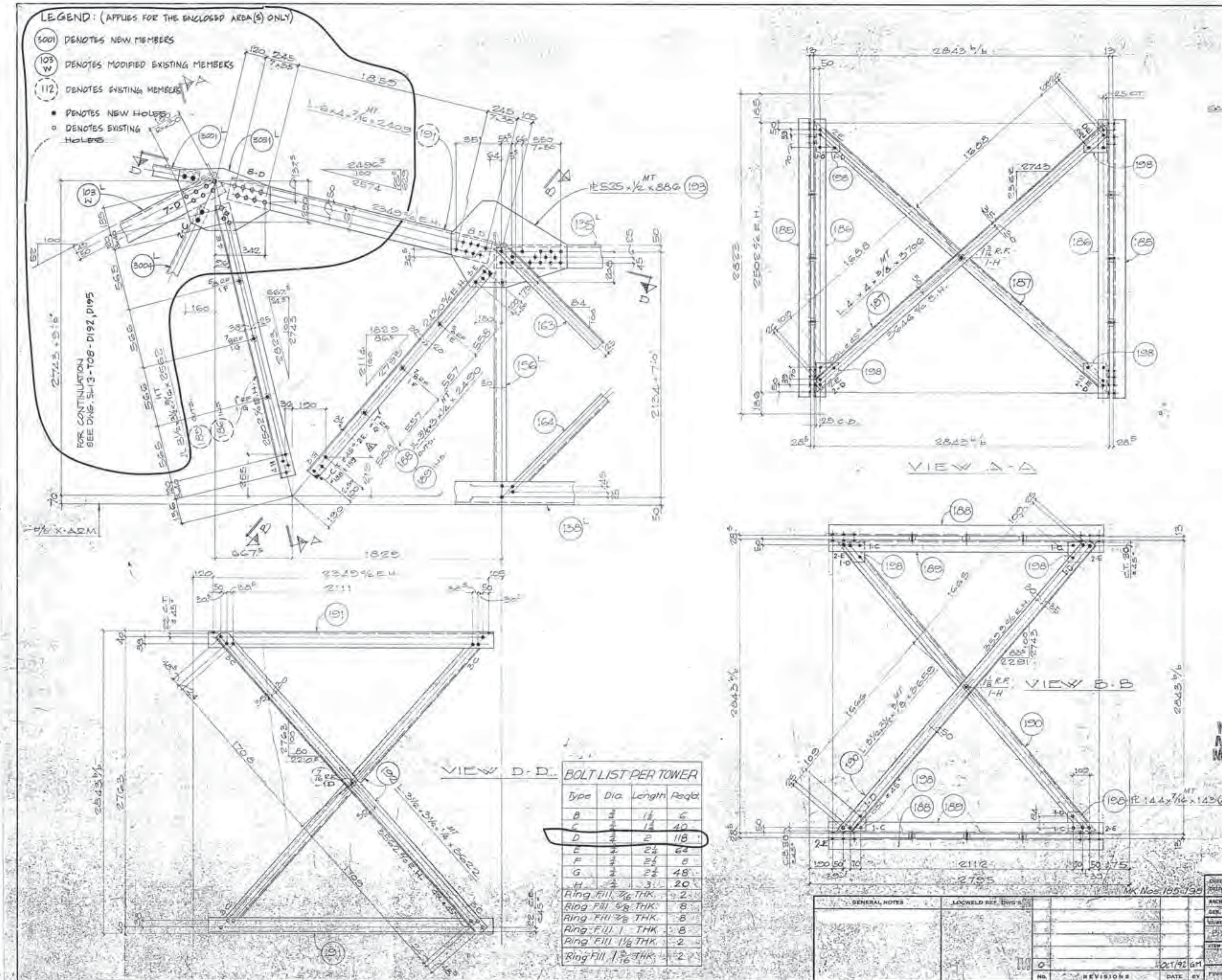
LOCWELD AND FORGE PRODUCTS LTD.
50 IBERVILLE AVE. CANDIAC, QUE.
INDUSTRIAL AND MISCELLANEOUS IRON WORK

WILLISTON - KELLY LAKE 500 KV T/L
TYPE BKGT DEAD END TOWER
CROSSARM - DETAILS

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

FINISH SPEC: GALVANIZED

D 5L13-T08-D195 R 1



BOLT LIST PER TOWER			
Type	Dia.	Length	Reqd.
B	3/4	1 1/4	6
C	3/4	1 1/2	40
D	3/4	2	118
E	3/4	2 1/4	64
F	3/4	2 1/2	8
G	3/4	2 3/4	48
H	3/4	3	20
Ring Fill 7/16 THK.			2
Ring Fill 5/8 THK.			8
Ring Fill 7/8 THK.			8
Ring Fill 1 THK.			8
Ring Fill 1 1/8 THK.			2
Ring Fill 1 3/16 THK.			2

NOTES:
1. For General Notes see drawing No. 500GS-T08-B3014
2. For Crossarm see L&F Dwg. No.
3. For Bridge-Central Portion see L&F Dwg. No. D7450-G (500GS-T08-D2780)
4. This dwg. made from 5LGS-T08-D2781-R6. Plate Mk 3051 replaces original Mk 120 & members #3001 and 3004 are added to suit the new ground wire peak.

NO	REMARKS	DATE	MADE	CHKD	INSP	SUBD	RECD	APP(T)	APPD
2	Bolts & Ring Fills revised	II-76	GP	GSR	KSB	AV			
1	MT was ... HT was ..., Note 1 revised	III-77	NMH			AV		AV	
0	Recd. R6, Notes added & Title revised	X 75	DCS	AZ		AV	LWB		

REVISIONS

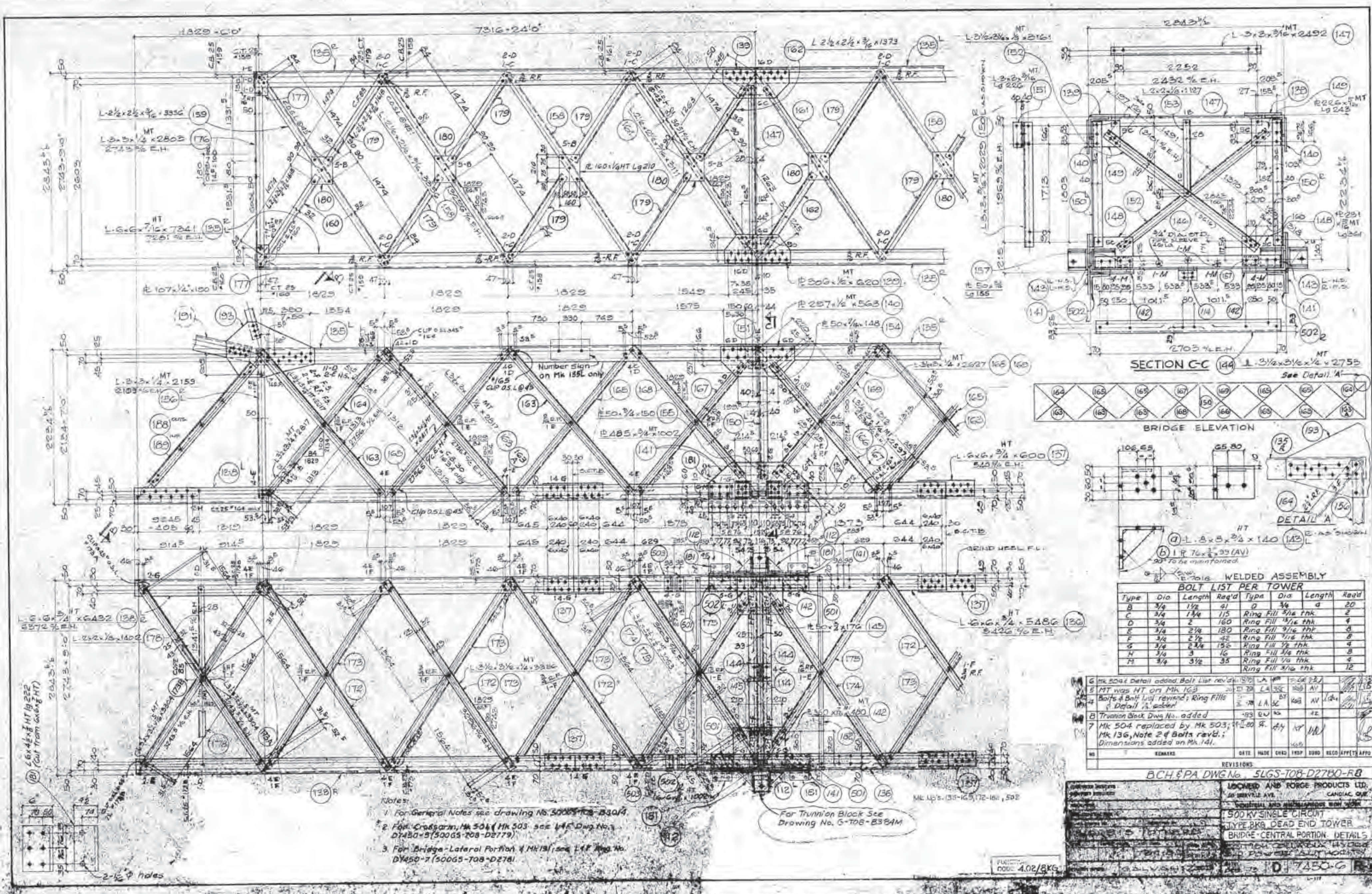
DESIGNED: P.W.
CHECKED DRAFTING
CHECKED DESIGN
APPROVED
FUNCTIONAL CODE 402/BKGT
DATE 30 OCT 92

LOCWELD AND FORGE PRODUCTS LTD.
50 IBERVILLE AVE. CANDIAC, QUE

BC HYDRO

WILLISTON - KELLY LAKE 500 KV T/L
TYPE BKGT DEAD END TOWER
BRIDGE LATERAL PORTION

FINISH SPEC. GALVANIZED
ERECTION BY: OTHERS
DATE: DEC. 73
D
5L13-T08-D196 R



Notes:

1. For General Notes see drawing No. 500GS-T08-B3014
2. For Crossarm, Mk 504 & Mk 503 see L+F Dwg No. D7450-5 (500GS-T08-D2779)
3. For Bridge-Lateral Portion & Mk 191, see L+F Dwg No. D7450-7 (500GS-T08-D2781

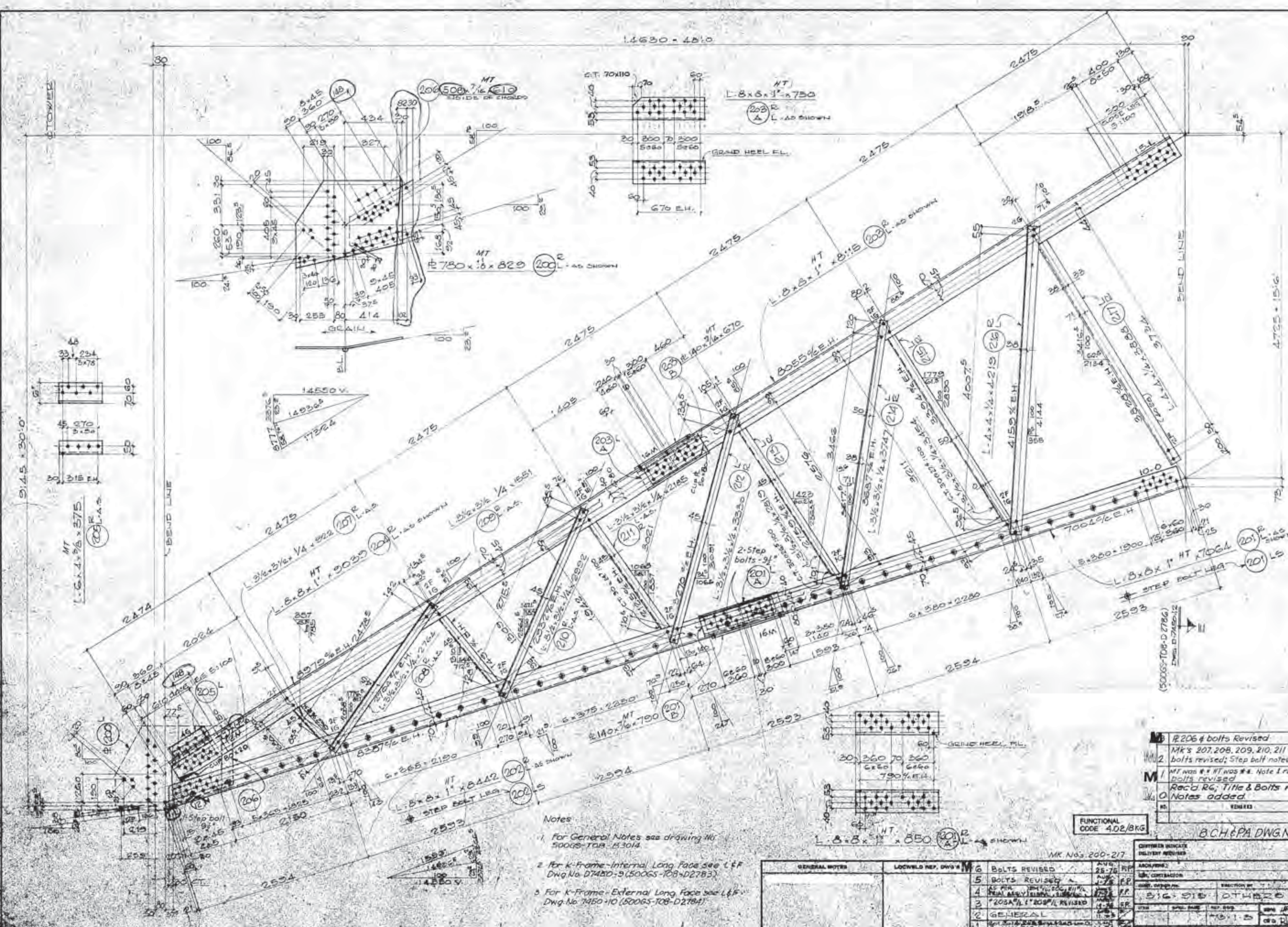
BOLT LIST PER TOWER							
Type	Dia	Length	Req'd	Type	Dia	Length	Req'd
B	3/4	1½	41	O	3/4	a	20
C	3/4	1¾	115	Ring Fill 5/16 thk.			2
D	3/4	2	160	Ring Fill 13/16 thk.			4
E	3/4	2¼	180	Ring Fill 9/16 thk			8
F	3/4	2½	42	Ring Fill 7/16 thk			8
G	3/4	2¾	156	Ring Fill ½ thk.			4
H	3/4	3	16	Ring Fill 3/4 thk			8
M	3/4	3½	35	Ring Fill 1/4 thk			4
				Ring Fill 3/16 thk			12

NO	REMARKS	DATE	MADE	CHKD	INSP	SUBD	RECD	APP(T)	APPD
6	Mk 504 & Detail added; Bolt List rev'd.		LA						
5	MT was HT on Mk 163	20-III-79	LA			AV			
4	Bolts & Bolt List revised; Ring Fills & Detail 'A' added		LA	SC		AV			
8	Trunnion Block Dwg No. added	-83							
7	Mk 504 replaced by Mk 503; Mk 136, Note 2 & Bolts rev'd.; Dimensions added on Mk 141.	-II-80							

REVISIONS

BCH & PA DWG No. 5LGS-T08-D2780-R8

LOCKEED AND FORGE PRODUCTS LTD.
CANDIAC, QUE.
INDUSTRIAL AND MISCELLANEOUS IRON WORK
500 KV SINGLE CIRCUIT
TYPE BKG DEAD END TOWER
BRIDGE - CENTRAL PORTION DETAILS
BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
GALVANIZED
D 7450-6



BOLT LIST PER TOWER

Type	Dia.	Length	Reqd.
F	$\frac{3}{4}$	$2\frac{1}{2}$	92
G	$\frac{3}{4}$	$2\frac{3}{4}$	60
L	$\frac{3}{4}$	$3\frac{1}{4}$	64
M	$\frac{3}{4}$	$3\frac{1}{2}$	134
N	$\frac{3}{4}$	$3\frac{3}{4}$	99
O	$\frac{3}{4}$	4	40
Step Bolt $\frac{3}{4}\phi$ x 8 lg			38
Step Bolt $\frac{3}{4}\phi$ x $9\frac{1}{2}$ lg			3

LIST OF MATERIAL FOR 2 X-ARM SUPPORTS (ONE TOWER)

MK	QTY	DESCR.	DET. DWGS.
200 R	2	PL	D-7450-8
200 L	2	PL	"
201 R	2	CHORD	"
201 L	1	"	"
201 B	1	"	"
202 R	2	"	"
202 L	1	"	"
202 LS	1	"	"
203 R	2	"	"
203 L	2	"	"
204 R	2	"	"
204 L	2	"	"
205 R	2	L	"
205 L	2	L	"
201 B	8	SPLICE PL	"
203 B	8	"	"
207 R	2	DIAG.	"
207 L	2	"	"
208 R	2	"	"
208 L	2	"	"
209 R	2	"	"
209 L	2	"	"
210 R	2	"	"
210 L	2	"	"
211 R	2	"	"
211 L	2	"	"
212 R	2	"	"
212 L	2	"	"
213 R	2	"	"
213 L	2	"	"
214 R	2	"	"
214 L	2	"	"
215 R	2	"	"
215 L	2	"	"
216 R	2	"	"
216 L	2	"	"
217 R	2	"	"
217 L	2	"	"
201AR	2	SPLICE L	"
201AL	2	"	"
203AR	2	"	"
203AL	2	"	"
206	4	PL	"

Notes

1. For General Notes see drawing No. 500GS-T08-B3014.
2. For K-Frame-Internal Long Face see L&F Dwg No. D7450-9 (500GS-T08-D2783).
3. For K-Frame-External Long Face see L&F Dwg No. 7450-10 (500GS-T08-D2784).

MK. No's. 200-217

FUNCTIONAL CODE 4.02/8KG

NO.	REMARKS	DATE	MADE	CHKD					
3	PL 206 & bolts Revised	8-XI-81	PMB	MDB					
2	Mk's 207, 208, 209, 210, 211 and bolts revised; Step bolt notes added	II-78	GP			AV			
1	HT was ... HT was ... Note 1 revised; bolts revised					AV		AV	
0	Rec'd RG; Title & Bolts rev'd Notes added	24-V-76	DCS J.S.			AV			

REVISIONS

B.C.H.&P.A. DWG. No. 5LGS-T08-D2782-R3

GENERAL NOTES	LOCWELD REF. DWG'S	NO.	REVISIONS	DATE	BY
		6	BOLTS REVISED	AUG. 25-75	R.P.
		5	BOLTS REVISED	AUG. 1-75	F.P.
		4	AS PER TRIAL ASSY		F.P.
		3	"203A"R/L & "208"R/L REVISED	14-75	F.P.
		2	GENERAL	11-75	
		1		14-74	

LOCWELD AND FORGE PRODUCTS LTD.

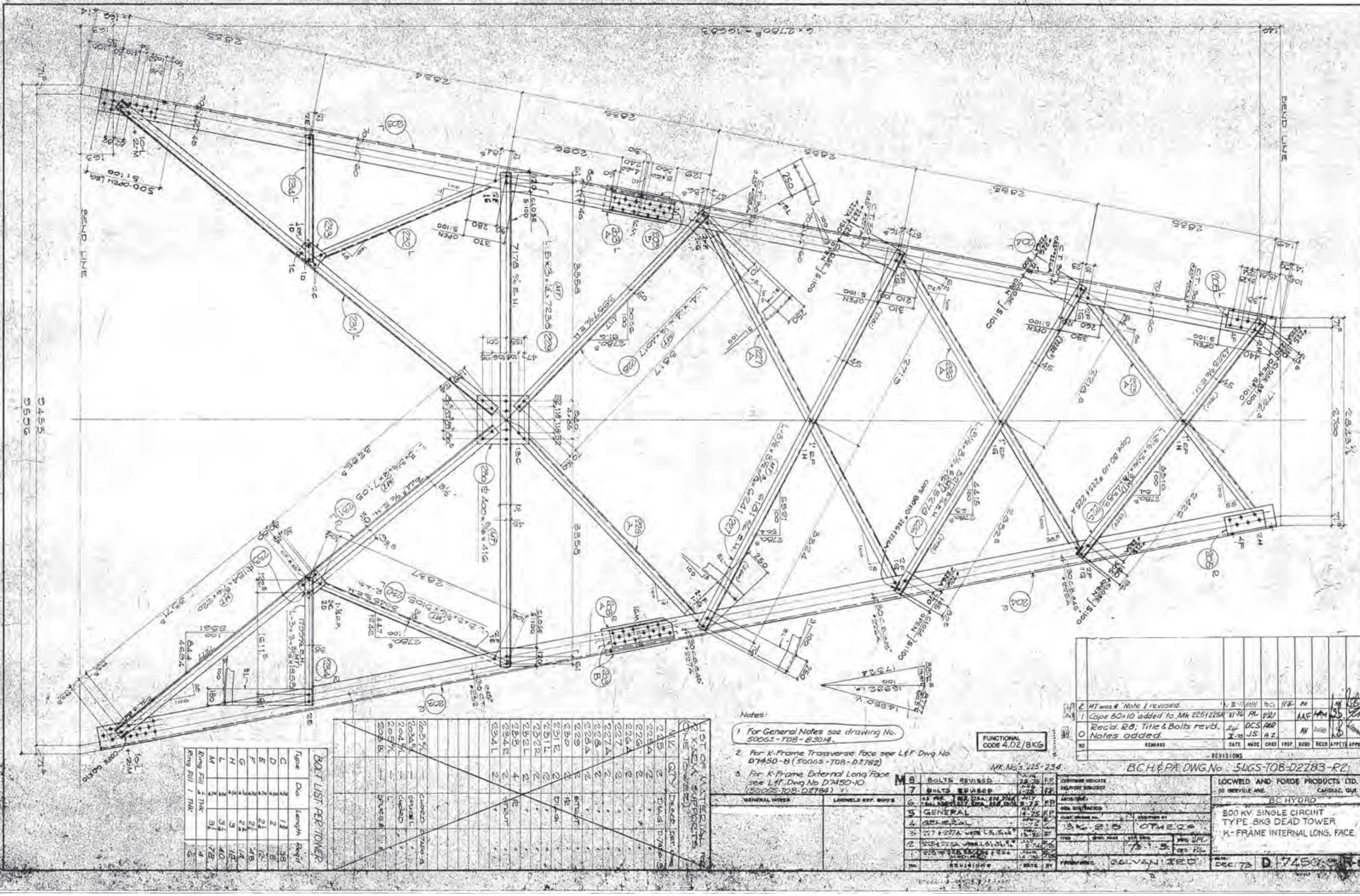
B.C. HYDRO

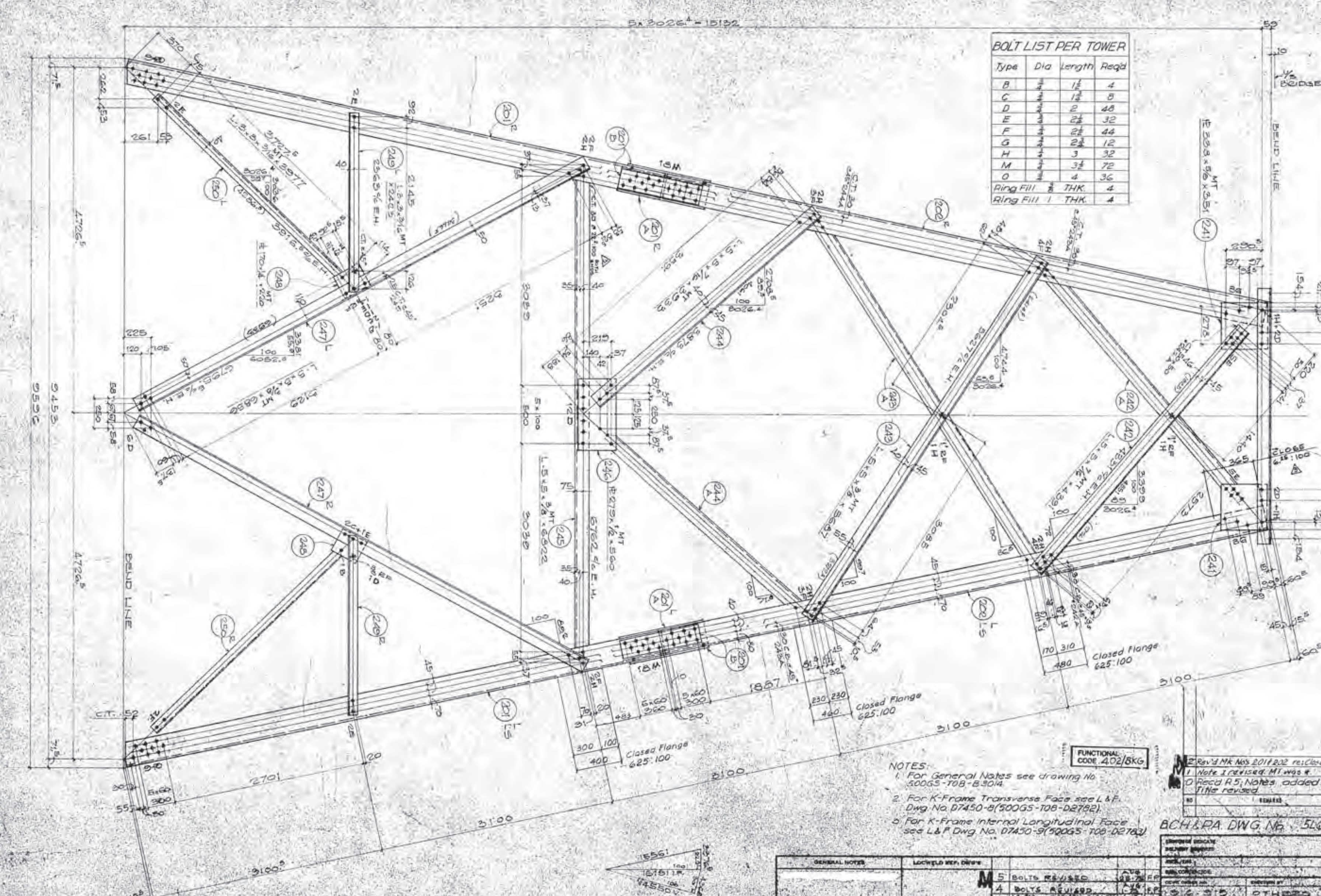
500 KV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
K-FRAME TRANSVERSE FACE

FINISH SPEC.: GALVANIZED

DATE: DEC '73

D. 7450-8


BEND LINE
Notes:
1 For General Notes see drawing No. 500GS-T08-B3014.
2 For K-Frame Transverse Face see L&F Dwg No D7450-8 (500GS-T08-D2782)
3 For K-Frame External Long. Face see L&F Dwg No D7450-10 (500GS-T08-D2784)
FUNCTIONAL CODE 4.02/8KG
MK No's 225-234
2 MT was #. Note 1 revised.
1 Cope 80x10 added to Mk 225 & 225A
0 Rec'd. R8; Title & Bolts revd., Notes added.
REVISIONS
B.C.H.& P.A. DWG. No. 5UGS-T08-D2783-R2
8 BOLTS REVISED
7 BOLTS REVISED
5 GENERAL
4 GENERAL
GENERAL NOTES
LOCWELD REF. DWG'S
LOCWELD AND FORGE PRODUCTS LTD.
BC HYDRO
500 KV SINGLE CIRCUIT
TYPE 8KG DEAD TOWER
K-FRAME INTERNAL LONG. FACE
GALVANIZED
DEC. 73
D 7450
BOLT LIST PER TOWER
LIST OF MATERIAL FOR 2 X-ARM SUPPORTS (ONE TOWER)



BOLT LIST PER TOWER

Type	Dia	Length	Req'd
B	$\frac{3}{4}$	$1\frac{1}{2}$	4
C	$\frac{3}{4}$	$1\frac{3}{4}$	8
D	$\frac{3}{4}$	2	48
E	$\frac{3}{4}$	$2\frac{1}{4}$	32
F	$\frac{3}{4}$	$2\frac{1}{2}$	44
G	$\frac{3}{4}$	$2\frac{3}{4}$	12
H	$\frac{3}{4}$	3	32
M	$\frac{3}{4}$	$3\frac{1}{2}$	72
O	$\frac{3}{4}$	4	36
Ring Fill $\frac{3}{8}$ THK.			4
Ring Fill 1 THK.			4

LIST OF MATERIAL 2 X-ARM SUPPORTS (ONE TOWER)

MK	QTY	DESCR.	DET. DWG.
240	2	STRUT	D-7450-10
241	4	℞	"
242	2	DIAG.	"
242 A	2	"	"
243	2	"	"
243 A	2	"	"
244	2	"	"
244 A	2	"	"
245	2	STRUT	"
246	2	℞	"
247 R	2	DIAG.	"
247 L	2	"	"
248	4	℞	"
249 R	2	STRUT	"
249 L	2	"	"
250 R	2	DIAG.	"
250 L	2	"	"
201 R/LS	—	CHORD	D-7450-8
202 R/LS	—	"	"
201 AR/L	—	SPLICE L	"
201 B	—	SPLICE ℞	"

FUNCTIONAL CODE 402/8KG

NOTES:
1. For General Notes see drawing No. 500GS-T08-B3014.
2. For K-Frame Transverse Face see L&F. Dwg. No. D7450-8(500GS-T08-D2782).
3. For K-Frame Internal Longitudinal Face see L&F Dwg. No. D7450-9(500GS-T08-D2783).

NO.	REMARKS	DATE	MADE	CHKD
2	Rev'd Mk Nos 201 & 202 re: Closed Flg.	1-8-78	LA	
1	Note 1 revised. M1 was 4.			
0	Rec'd R5; Notes added & Title revised.	8-75	DCS	A.Z.

REVISIONS

BCH & PA. DWG. No. 5LGS-T08-D2784-R2

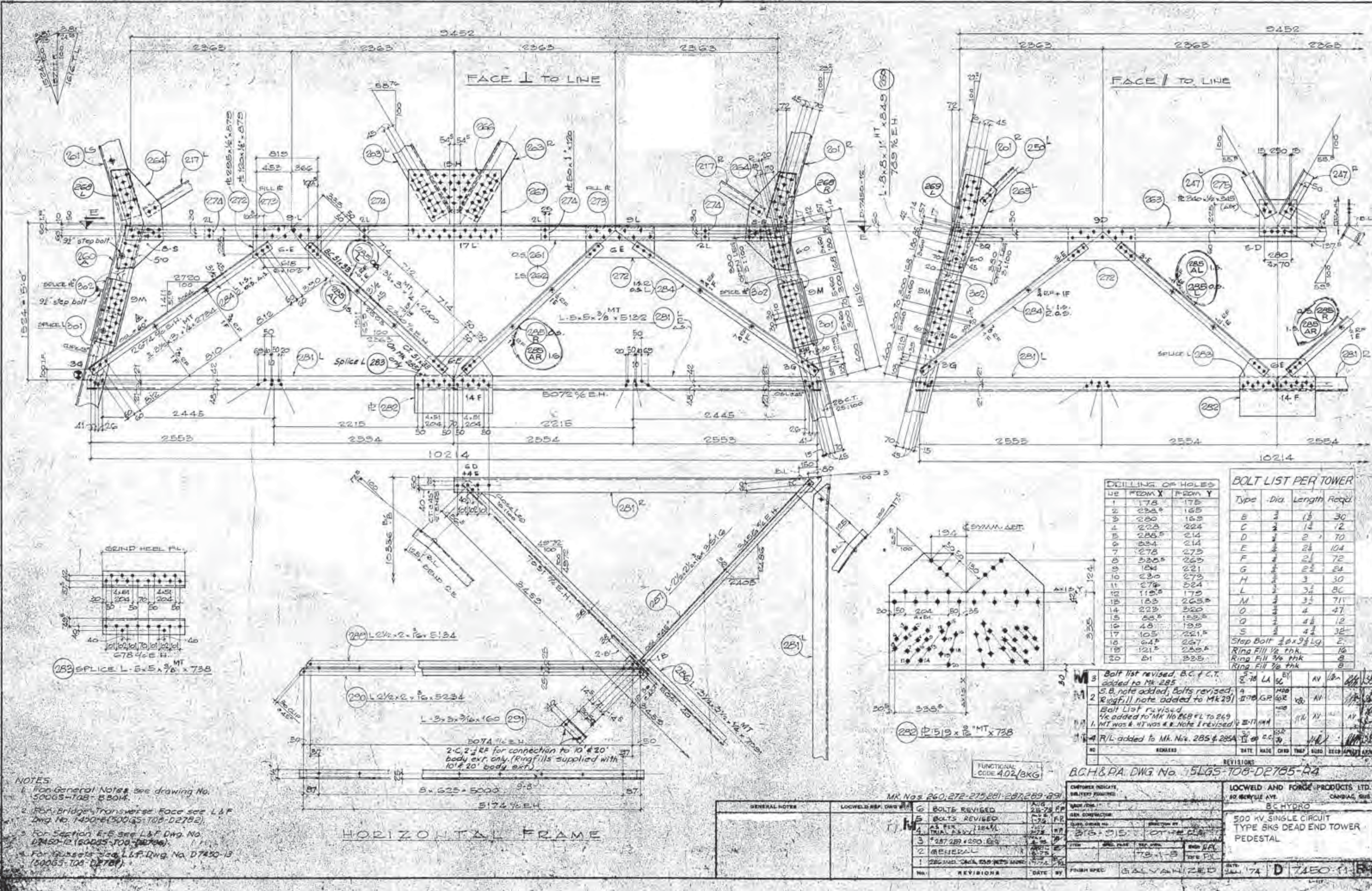
NO.	REVISIONS
5	BOLTS REVISED
4	BOLTS REVISED
3	[illegible]
2	GENERAL

LOCWELD AND FORGE PRODUCTS LTD.

BC HYDRO

500 KV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
K-FRAME EXTERNAL LONG. FACE

D 7450-10



DRILLING OF HOLES		
No	FROM X	FROM Y
1	178	175
2	238.5	165
3	280	163
4	228	224
5	288.5	214
6	334	214
7	278	273
8	338.5	263
9	184	221
10	230	273
11	276	324
12	115.5	175
13	183	265.5
14	223	320
15	88.5	153.5
16	48	199
17	105	221.5
18	64.5	267
19	121.5	259.5
20	81	325

BOLT LIST PER TOWER			
Type	Dia.	Length	Reqd.
B	¾	1½	30
C	¾	1¾	12
D	¾	2	70
E	¾	2¼	104
F	¾	2½	72
G	¾	2¾	24
H	¾	3	30
L	¾	3¼	86
M	¾	3½	71
O	¾	4	47
Q	¾	4½	12
S	¾	4¾	32
Step Bolt ¾ ø x 9½ Lg			2
Ring Fill ½ thk.			16
Ring Fill ¾ thk			8
Ring Fill ⅞ thk			8

NO	REMARKS	DATE	MADE	CHKD
3	Bolt list revised, B.C. & C.T. added to Mk 285	5-II-78	LA	SC
2	S.B. note added; Bolts revised; Ringfill note added to Mk 291	4-II-78	GP	GR
1	Bolt List revised ¼ added to Mk No 268 & L to 269 MT was ⅝, HT was ⅝, Note 1 revised	III-77		
4	R/L added to Mk. No's. 285 & 285A	30-II	C.C.	GR

REVISIONS

B.C.H.&P.A. DWG No. 5LGS-T08-D2785-R4

NOTES:
1. For General Notes see drawing No. 500GS-T08-B3014.
2. For Bridge, Transverse Face see L&F Dwg. No. 7450-6 (500GS-T08-D2782).
3. For Section E-E see L&F Dwg. No. D7450-12 (500GS-T08-D2786).
4. For Gussets see L&F Dwg. No. D7450-13 (500GS-T08-D2787).

No.	REVISIONS	DATE	BY
6	BOLTS REVISED	AUG 25-75	FP
5	BOLTS REVISED	AUG 1-75	F.P.
4	AS PER TRIAL ASSY	JULY 2-75	
3	#287, 289 & 290: Rev	MAY 2-75	
2	GENERAL	APRIL 16-75	
1	[illegible]	17-7-74	

GENERAL NOTES | LOCWELD REF. DWG'S

CLIENT ORDER NO. 316-315 | ERECTION BY OTHERS
REF. DWG. 73-1-8
FINISH SPEC. GALVANIZED

LOCWELD AND FORGE PRODUCTS LTD.
CANDIAC, QUE.

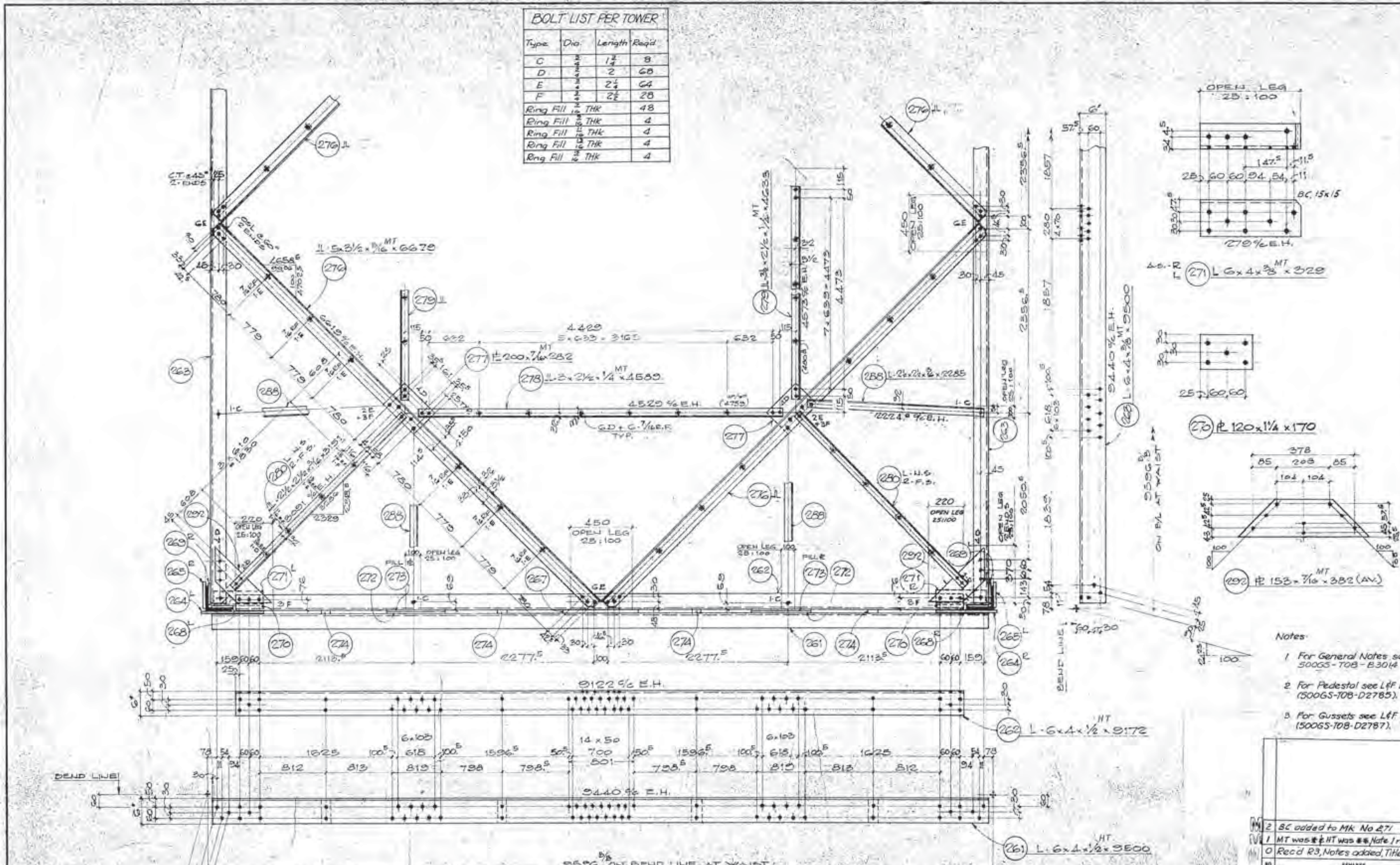
B.C. HYDRO

500 KV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
PEDESTAL

DATE: JAN. '74 | D | 7450-11-R4

BOLT LIST PER TOWER

Type	Dia.	Length	Reqd
C	3/4	1 3/4	8
D	3/4	2	68
E	3/4	2 1/4	64
F	3/4	2 1/2	28
Ring Fill 1/4 THK			48
Ring Fill 5/16 THK			4
Ring Fill 11/16 THK			4
Ring Fill 1/16 THK			4
Ring Fill 3/8 THK			4



LIST OF MATERIAL FOR ONE TOWER

MK	QTY	DESCR.	DET. DWG
~~260~~ 260A	~~2~~ 2	LEG L	D-7450-11
261	2	CHORD	D-7450-12
262	2	"	"
263	2	"	"
264R	2	PL	D-7450-13
264L	2	PL	"
265R	2	PL	"
265L	2	PL	"
266	2	PL ASSY	"
-10	2	PL	WELD
-11	2	PL	"
267	2	PL	"
268R	2	PL	"
268L	2	PL	"
269R	2	PL	"
269L	2	PL	"
270	4	FILL PL	D-7450-12
271R	2	CLIP L	"
271L	2	"	"
272	8	PL	D-7450-11
273	4	FILL PL	"
274	8	"	"
275	2	PL	"
276	8	DIAG.	D-7450-12
277	4	PL	D-7450-12
278	4	STRUT	"
279	4	"	"
280%	4/4	DIAG.	"
281R	4	CHORD	D-7450-11
281L	4	"	"
282	4	PL UNIV.	"
283	4	SPLICE L	"
284R	8	DIAG.	"
284L	8	"	"
~~285~~ 285A	~~8~~ 8	"	"
286	4	"	"
287	4	"	"
301	—	SPLICE L	D-7450-14
302	—	SPLICE PL	"
288	8	STRUT	D-7450-12
	2	3/4" x 8 1/2" LG STEP BOLTS	B.C. DWG. 500GS-T08-B783
289	2	STRUT	D-7450-11
290	2	"	"
291	4	C.P. L	"
292	4	PL	D-7450-12

Notes:

1. For General Notes see drawing No. 500GS-T08-B3014
2. For Pedestal see L&F Dwg No. D7450-11 (500GS-T08-D2785).
3. For Gussets see L&F Dwg No. D7450-13 (500GS-T08-D2787).

REVISIONS

NO	REMARKS	DATE	MADE	CHKD	INSP	SUBD	RECD	APP(T)	APPD
2	BC added to MK No 271	9-3-78	LA	BC MDB	HB	AV			
1	MT was ✱✱ HT was ✱✱, Note 1 revised	9-21-77	HH	MDB	HK	AV			
0	Rec'd R3, Notes added, Title Rev'd.	-9-75	J.S.	AAB A.Z.		AV	DHB		

B.C.H.&P.A. DWG. No. 5LGS-T08-D2786-R2

FUNCTIONAL CODE 4.02/8KG

MK No's 261-263, 270, 271, 276-280, 288, 292

GENERAL NOTES	LOCWELD REF. DWG'S

NO.	REVISIONS	DATE	BY
3	BOLTS REVISED	AUG 25-76	FR
2	GENERAL	APRIL 15-75	
1	280%, 285 changed to 285A; 262, 272, 278, 279, 280 & 288 ... 4 PL 268 ADDED		

CUSTOMER INDICATE DELIVERY REQUIRED

ARCH./ENG.:

GEN. CONTRACTOR:

CUST. ORDER No.: 316-315

ERECTION BY: OTHERS

REF. DWG.: 73-1-5

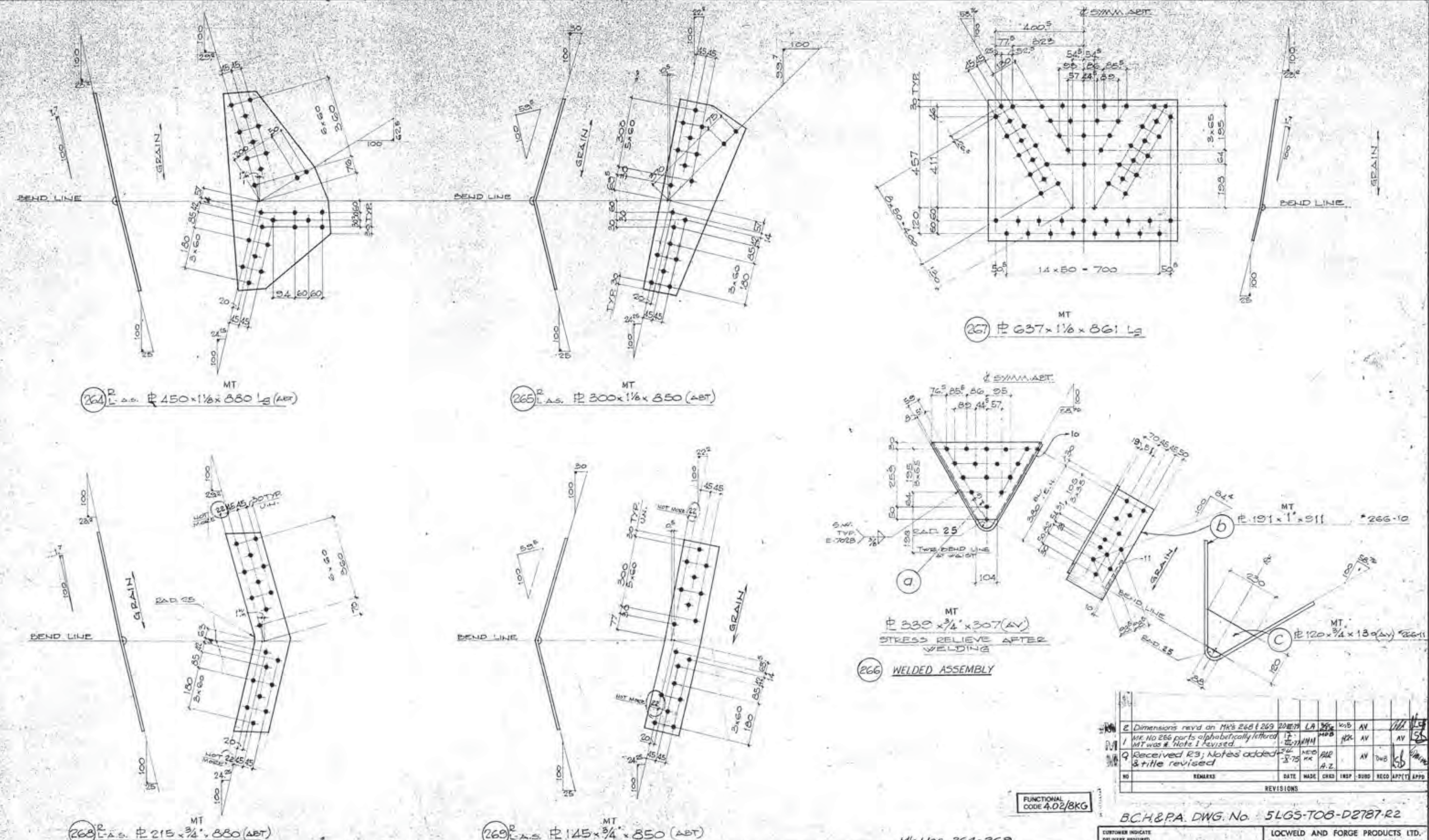
FINISH SPEC.: GALVANIZED

LOCWELD AND FORGE PRODUCTS LTD.
50 IBERVILLE AVE. CANDIAC, QUE.

BC HYDRO

500 KV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
PEDESTAL-SECTION E-E

D 7450-12 R



NO	REMARKS	DATE	MADE	CHKD	INSP	SUBD	RECO	APP'D	APPD
2	Dimensions rev'd on Mk's 268 & 269		LA			AV			
1	Mk. No 266 parts alphabetically lettered. MT was #. Note 1 revised.					AV			
0	Received R3; Notes added & title revised	75				AV			

REVISIONS

FUNCTIONAL CODE 4.02/8KG

B.C.H.&P.A. DWG. No. 5LGS-T08-D2787-R2

Mk. Nos. 264-269

NOTES:
1. For General Notes see drawing No. 500GS-T08-83014
2. For Pedestal see L&F Dwg. No. D7450-11 (500GS-T08-D2785)
3. For Pedestal-section E-E see L&F Dwg. No. D7450-12 (500GS-T08-D2786)

GENERAL NOTES	LOCWELD REF. DWG'S

No.	REVISIONS	DATE	BY
3	AS PER TRIAL ASS'Y. #266-10 & 266-11	JULY 75	F.P.
2	GENERAL	APRIL 75	
1	PL 267 - HOLES ADDED	JUNE 75	

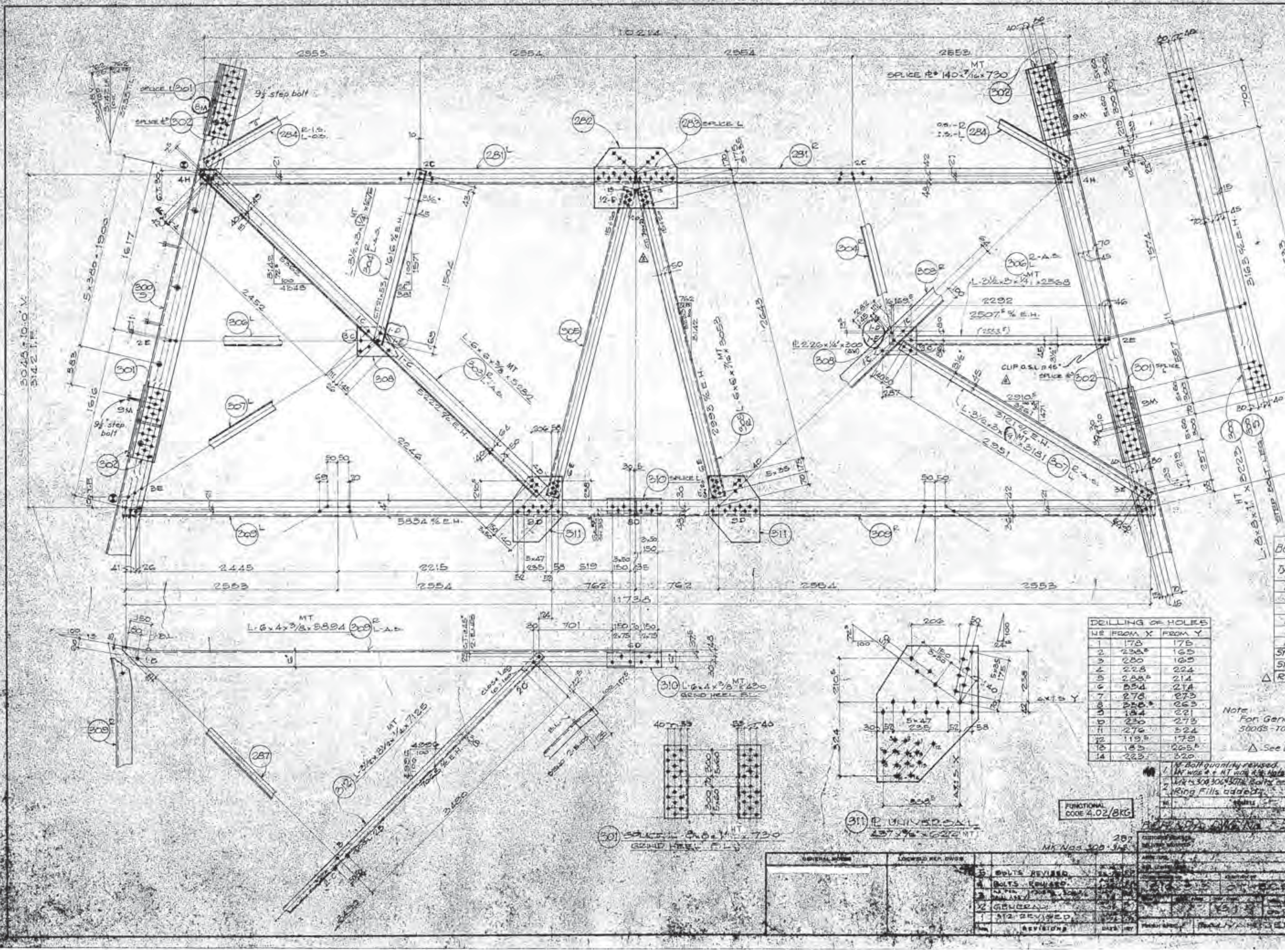
CUSTOMER INDICATE DELIVERY REQUIRED
CUST. ORDER No. 316 915
ERECTION BY OTHERS
FINISH SPEC. GALVANIZED

LOCWELD AND FORGE PRODUCTS LTD.
50 IBERVILLE AVE. CANDIAC, QUE.

BC HYDRO

500 KV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
PEDESTAL - GUSSETS

D 7450-13 R-3



LIST OF MATERIAL FOR ONE EXTENSION

MK.	QTY	DESCR.	DET. DWG.
300	3	LEG L	D-7450-14
300 S	1	"	"
301	4	SPLICE L	"
302	8	" PL	"
303R	4	DIAG.	"
303L	4	"	"
304R	4	"	"
304L	4	"	"
305R	4	"	"
305L	4	"	"
306R	4	STRUT	"
306L	4	"	"
307R	4	DIAG.	"
307L	4	"	"
308	8	PL	"
309R	4	CHORD	"
309L	4	"	"
310	4	SPLICE L	"
311	8	PL UNIV.	"
312	4	DIAG.	"
287	4	"	D7450-11
281R/L	—	CHORD	"
282	—	PL UNIV.	"
283	—	SPLICE L	"
284R/L	—	DIAG	"

BOLT LIST PER TOWER

Type	Dia.	Length	Reqd.
B	3/4	1 1/2	4
C	3/4	1 3/4	84
D	3/4	2	168
E	3/4	2 1/4	144
H	3/4	3	32
M	3/4	3 1/2	142
Step Bolt 3/4 ⌀ × 8 Lg.			5
Step Bolt 3/4 ⌀ × 9 1/2 Lg.			2
△ Ring Fill 3/8 THK.			8

DRILLING OF HOLES

No	FROM X	FROM Y
1	178	175
2	238.5	165
3	280	165
4	228	224
5	288.5	214
6	354	214
7	278	273
8	338.5	263
9	184	221
10	230	273
11	276	324
12	119.5	179
13	183	265.5
14	223	320

Note:
For General Notes see drawing No. 50065-T08-B3014.

△ See Dwg.-D2785-Horizontal Frame

NO.	REVISIONS	DATE	MADE
1	Bolt quantity revised. MT was 4 & MT was 4... Note 1 rev'd	7-5-77	
2	Mk's 300, 306 & 307 Bolts revised. Ring Fills added.		GR

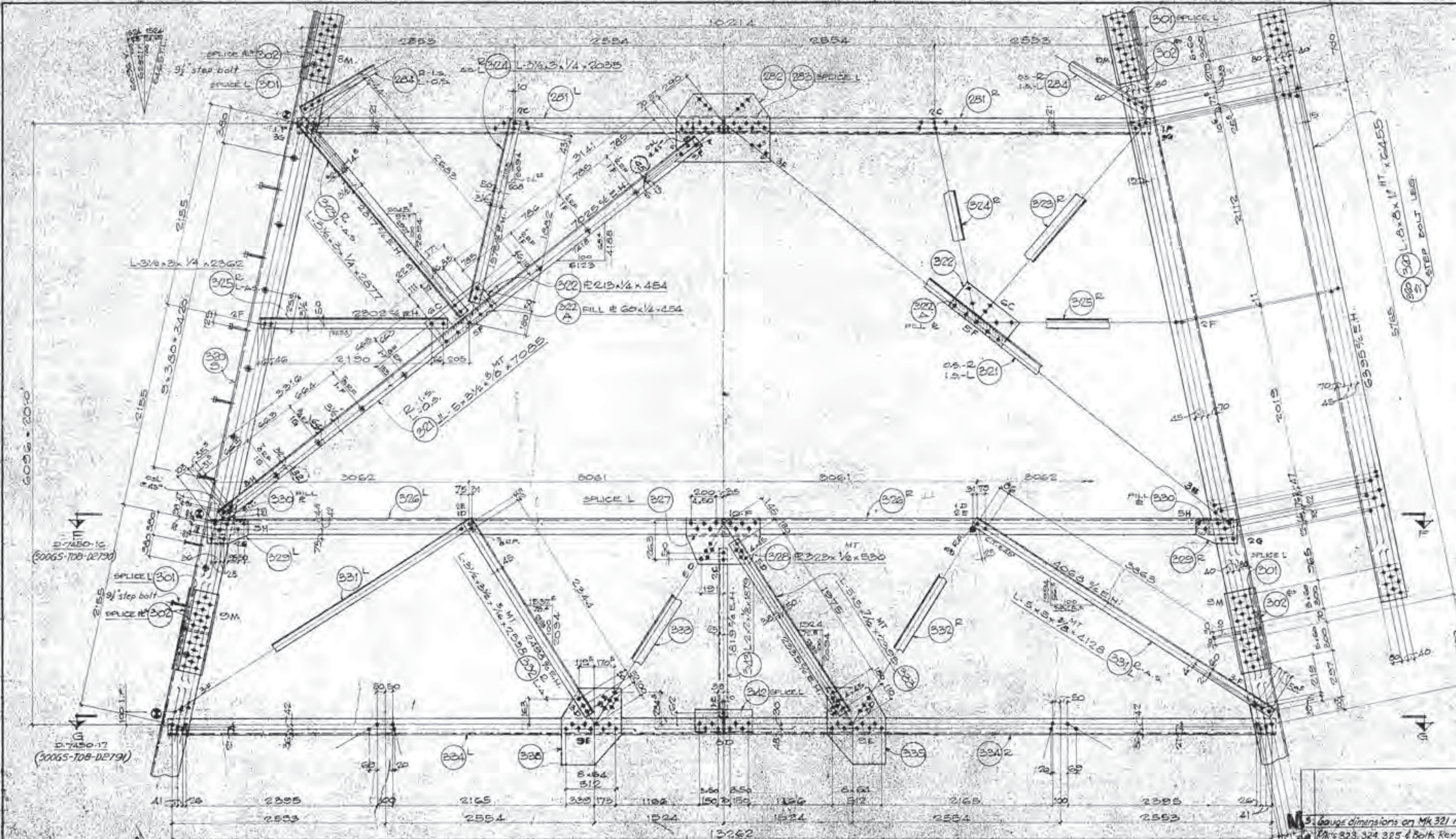
FUNCTIONAL CODE 4.02/8KG

NO.	REVISIONS
5	BOLTS REVISED
4	BOLTS REVISED
3	
2	GENERAL
1	312 REVISED

LOCWELD AND FORGE PRODUCTS LTD.

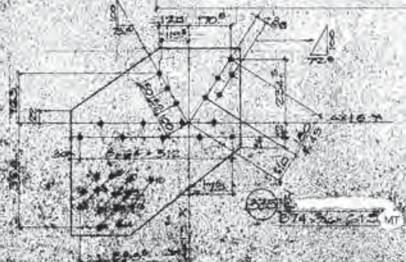
BC HYDRO

500 KV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
10 FT. BODY EXTENSION



LIST OF MATERIAL FOR ONE EXTENSION

MK	QTY	DESCR.	DET. DWG
320	8	LEG L	D-7450-15
320S	1	"	"
321R	8	DIAG.	"
321L	8	"	"
322	8	℔	"
322A	8	FILL ℔	"
323R	4	DIAG.	"
323L	4	"	"
324R	4	"	"
324L	4	"	"
325R	4	STRUT	"
325L	4	"	"
326R	4	CHORD	D-7450-16
326L	4	"	"
327	4	SPLICE L	"
328	4	℔	D-7450-15
329R	4	℔	D-7450-16
329L	4	℔	"
330	8	FILL ℔	"
331R	4	DIAG.	D-7450-15
331L	4	"	"
332R	4	"	"
332L	4	"	"
333	8	"	"
334R	4	CHORD	D-7450-17
334L	4	"	"
335	8	℔ UNIV.	D-7450-15
336	4	DIAG.	D-7450-17
337	4	CHORD	D-7450-16
338	4	DIAG.	"
339	8	"	"
340	4	"	"
341R	4	"	"
341L	4	"	"
342	4	SPLICE L	D-7450-17
287	4	DIAG.	D-7450-11
301	4	SPLICE L	D-7450-14
302	8	SPLICE ℔	"
343	4	STRUT	D-7450-15
344	4	"	D-7450-16



DRILLING OF HOLES

№	FROM X	FROM Y
1	178	178
2	238.5	165
3	280	169
4	228	224
5	288.5	214
6	334	214
7	278	273
8	333.5	263
9	[illegible]	[illegible]
10	239	273
11	276	322
12	[illegible]	175
13	[illegible]	[illegible]
14	223	249

BOLT LIST PER TOWER

Type	Dia	Length	Req'd	Type	Dia	Length	Req'd
				Ring Fill $\frac{1}{4}$ THK			24
C	$\frac{3}{4}$	$1\frac{3}{4}$	76	Ring Fill $\frac{3}{8}$ THK			16
D	$\frac{3}{4}$	2	104	Ring Fill $\frac{3}{4}$ THK			8
E	$\frac{3}{4}$	$2\frac{1}{4}$	128	Ring Fill $\frac{7}{8}$ THK			8
F1	$\frac{3}{4}$	$2\frac{1}{2}$	192	Step Bolt $\frac{3}{4}$ dia x 8 lg			12
G	$\frac{3}{4}$	$2\frac{3}{4}$	56	Step Bolt $\frac{3}{4}$ dia x $9\frac{1}{2}$ lg			2
H	$\frac{3}{4}$	3	64				
N	$\frac{3}{4}$	$3\frac{1}{2}$	142				
Ring Fill $\frac{1}{8}$ THK			8				
△ Ring Fill $\frac{1}{2}$ THK.			8				

△ SEE DWG. D2785 HORIZONTAL FRAME

Notes:

1. For General Notes see drawing No. 500GS-T08-88014
2. For 20 Ft. Body Ext. - Section F-F see L&F Dwg No. D7450-16 (500GS-T08-D2790)
3. For 20 Ft. Body Ext. - Section G-G see L&F Dwg No. D7450-17 (500GS-T08-D2791)

FUNCTIONAL CODE 4.02/8KG

MK No's. 320-325, 328, 331-333, 339-343

REVISIONS

No	REMARKS	DATE	NAME	CHKD
5	Gauge dimensions on Mk 321 rev'd	5-2-76	LA	
4	Mk's 323, 324, 325 & Bolts Revised, Ring Fills & Step bolt note added	3-78	GP	SSR
3	MT was ... Note 1 revised ... Bolt quantity revised.	[illegible]	[illegible]	
0	Rec'd R4; R.F. added to Bolt List & Notes added.	2/ -75	DCS J.S.	PAR A.Z.

B.C.H. & P.A. DWG. No. 5LGS-T08-D2789-R3

No	REVISIONS
4	BOLTS REVISED
3	BOLTS REVISED
2	GENERAL
1	[illegible]

LOCWELD AND FORGE PRODUCTS LTD

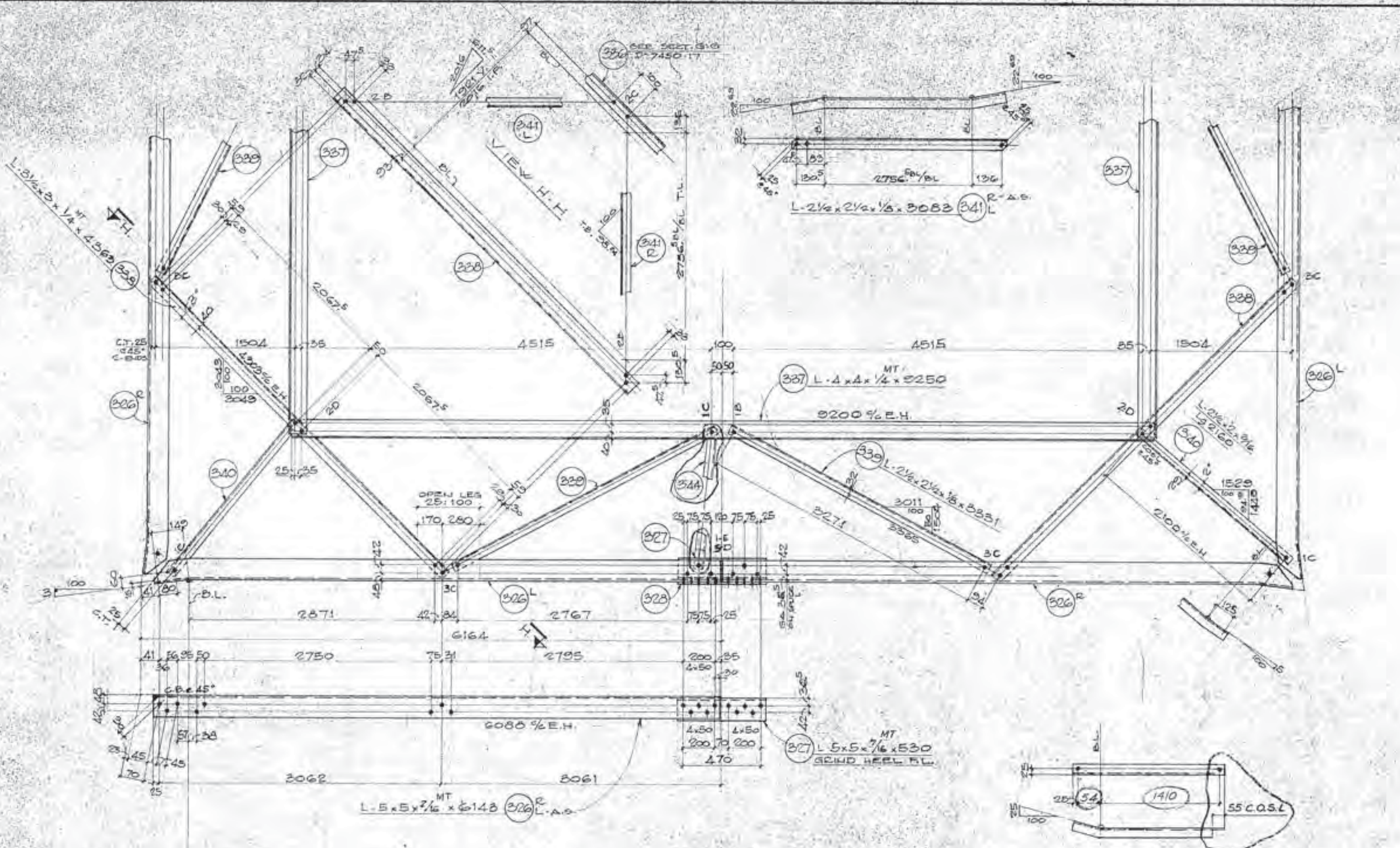
BC HYDRO

500 KV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
20 FT. BODY EXTENSION

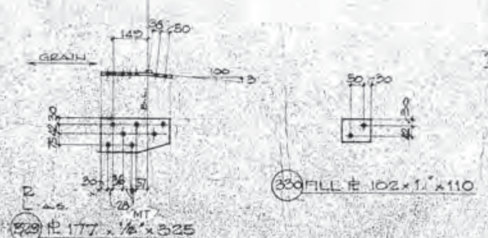
FINISH SPEC. GALVANIZED

DATE Jan '74

D 7450-15



SECTION F-F
20'-0" BODY EXTENSION



BOLT LIST PER TOWER			
Type	Dia	Length	Req'd
B	3/4	1½	20
C	3/4	1¾	40
D	3/4	2	28
E	3/4	2¼	4

NOTES:
1. For General Notes see drawing No. 500G5-T08-B3014.
2. For 20 Ft Body Ext. see L&F Dwg. No. D7450-15 (500G5-T08-D2789).
3. For 20 Ft. Body Ext-Sect. G-G see L&F Dwg. No. D7450-17 (500G5-T08-D2791).

NO	REMARKS	DATE	MADE	CHKD	INSP	SUBD	RECD	APP(T)	APPD
3	Mk 344 revised	14-III-80	MEB	JD	VDB				
2	Mk 338, 344 & bolts revised	9-II-78	GP	MDB GSK	VDB	AV			
1	MT was ¢. Note 1 revised.	17-II-77		MDB		AV		AV	
0	Rec'd R4; Bolts revised; Notes added.	24-X-75	DCS	PAR A.Z.		AV			

REVISIONS

FUNCTIONAL CODE 4.02/8KG

MK. Nos. 326, 327, 329, 330, 337-341, 344

B.C.H.&P.A. DWG. No. 5LGS-T08-D2790-R3

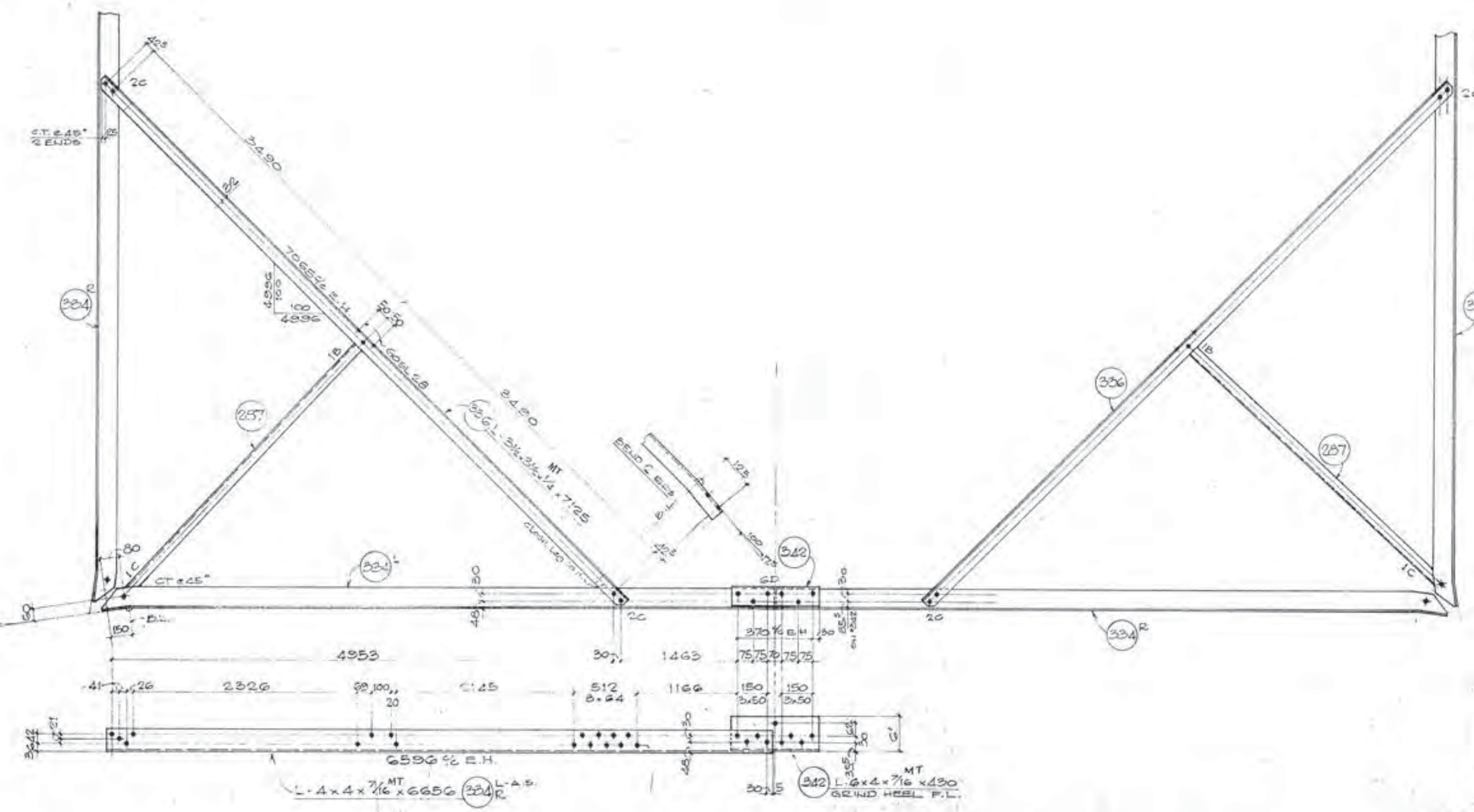
LOCWELD AND FORGE PRODUCTS LTD.

B.C. HYDRO

500 kV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
20 FT. BODY EXT. SECT. F-F

GALVANIZED

7450



SECTION G-G

20'-0" BODY EXTENSION

BOLT LIST PER TOWER			
Type	Dia.	Length	Req'd
B	3/4	1 1/2	4
C	3/4	1 3/4	20
D	3/4	2	(24)

NOTES:
1. For General Notes see drawing No. 500GS-T08-B3014.
2. For 20 Ft. Body Ext. see L&F Dwg No. D7450-15 (500GS-T08-D2789).
3. For 20 Ft. Body Ext - Sect. F-F see L&F Dwg No. D7450-16 (500GS-T08-D2790).

NO	REMARKS	DATE	MADE	CHKD	INSP	SUBD	RECD	APP(T)	APPD
2	Bolt list revised	9-II-78	GP	MOB	VDB	AV			
1	MT was #. Note 1 revised.	9-II-17	HHM	MOB		AV		AV	
0	Recd. R4; Notes added.	X-75	DCS			AV			

REVISIONS

FUNCTIONAL CODE 4.02/8KG

B.C.H.& P.A. DWG. No. 5LGS-T08-D2791-R2

MK. Nos. 334, 336, 342

GENERAL NOTES	LOCWELD REF. DWG'S	No.	REVISIONS	DATE	BY
		4	BOLTS COUNT ADDED	AUG. 26-75	F.P.
		3	BOLTS - REVISED	AUG. 1-75	F.P.
		2	#336 REVISED	APRIL 15-75	
		1	336 & 342 MODIFIED	JUNE 18-74	

CUSTOMER INDICATE DELIVERY REQUIRED

ARCH./ENG.:

GEN. CONTRACTOR:

CUST. ORDER No.: 316-915

ERECTION BY: OTHERS

ITEM / SPEC. PAGE / REF. DWG.: 73-1-5

DWN: LFL

CKD: PV

FINISH SPEC.: GALVANIZED

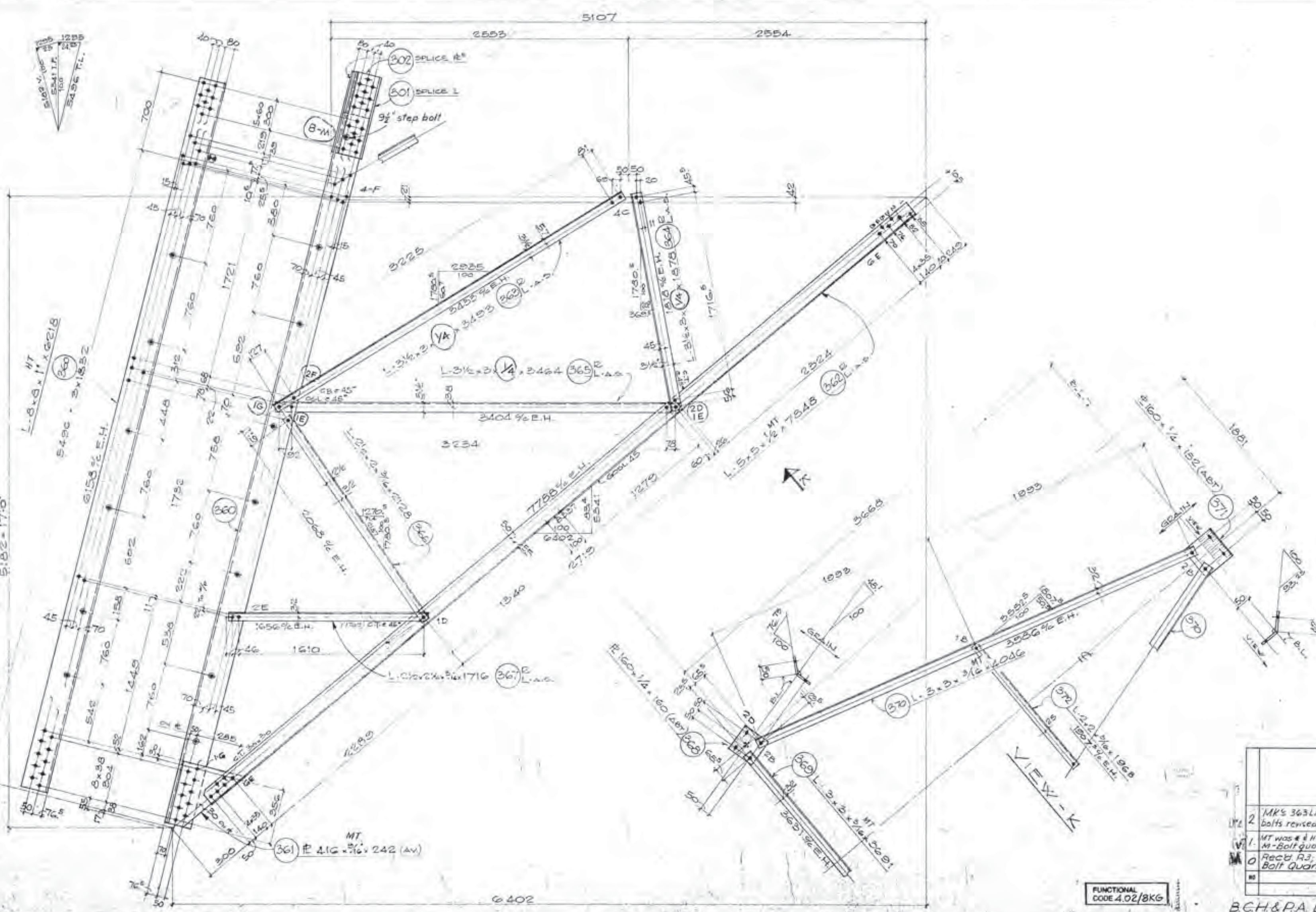
LOCWELD AND FORGE PRODUCTS LTD.
50 IBERVILLE AVE. CANDIAC, QUE.

BC HYDRO

500 KV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
20 FT BODY EXT.-SECT. G-G

DATE: FEB. '74

D 7450-17 R-2



±0' LEG EXTENSION

NOTE:
For General Notes see drawing No. 500GS-T08-B3014.

LIST OF MATERIAL FOR ONE EXTENSION			
MK	QTY	DESCR	DET. DWG
360	1	LEG L	D-7450-18
361	2	℞	"
362 R	1	CHORD	"
362 L	1	"	"
363 R	1	RED.	"
363 L	1	"	"
364 R	1	"	"
364 L	1	"	"
365 R	1	"	"
365 L	1	"	"
366	2	"	"
367 R	1	"	"
367 L	1	"	"
368	2	℞	"
369	1	STRUT	"
370	2	RED.	"
371	1	℞	"
372	1	STRUT	"
301	1	SPLICE L	D-7450-14
302	2	SPLICE ℞	"

BOLT LIST PER LEG

Type	Dia.	Length	Reqd.
B	3/4	1½	8
C	3/4	1¾	8
D	3/4	2	10
E	3/4	2¼	32
F	3/4	2½	12
G	3/4	2¾	34
M	3/4	3½	17
Step Bolt ¾ ø × 8 Lg.			13
Step Bolt ¾ ø × 9½ Lg.			1

NO	REMARKS	DATE	MADE	CHKD	INSP	SUBD	RECD	APP(T)	APPD
2	MK'S 363 L/R, 364 L/R, 365 L/R & bolts revised. Step Bolt Note Added	9 II-78	GP	SSR		AV			
1	MT was ⊕ & HT was ⊕⊕. Note rev'd. M-Bolt quantity revised.	II-77				AV		AV	
0	Rec'd R3; Note added & Bolt Quantity & List Rev'd	X-75	DCS	A.Z.		AV	DWB		

REVISIONS

FUNCTIONAL CODE 4.02/8KG

B.C.H.& P.A. DWG. No. 5UGS-T08-D2792-R2

MK. Nos. 360-372

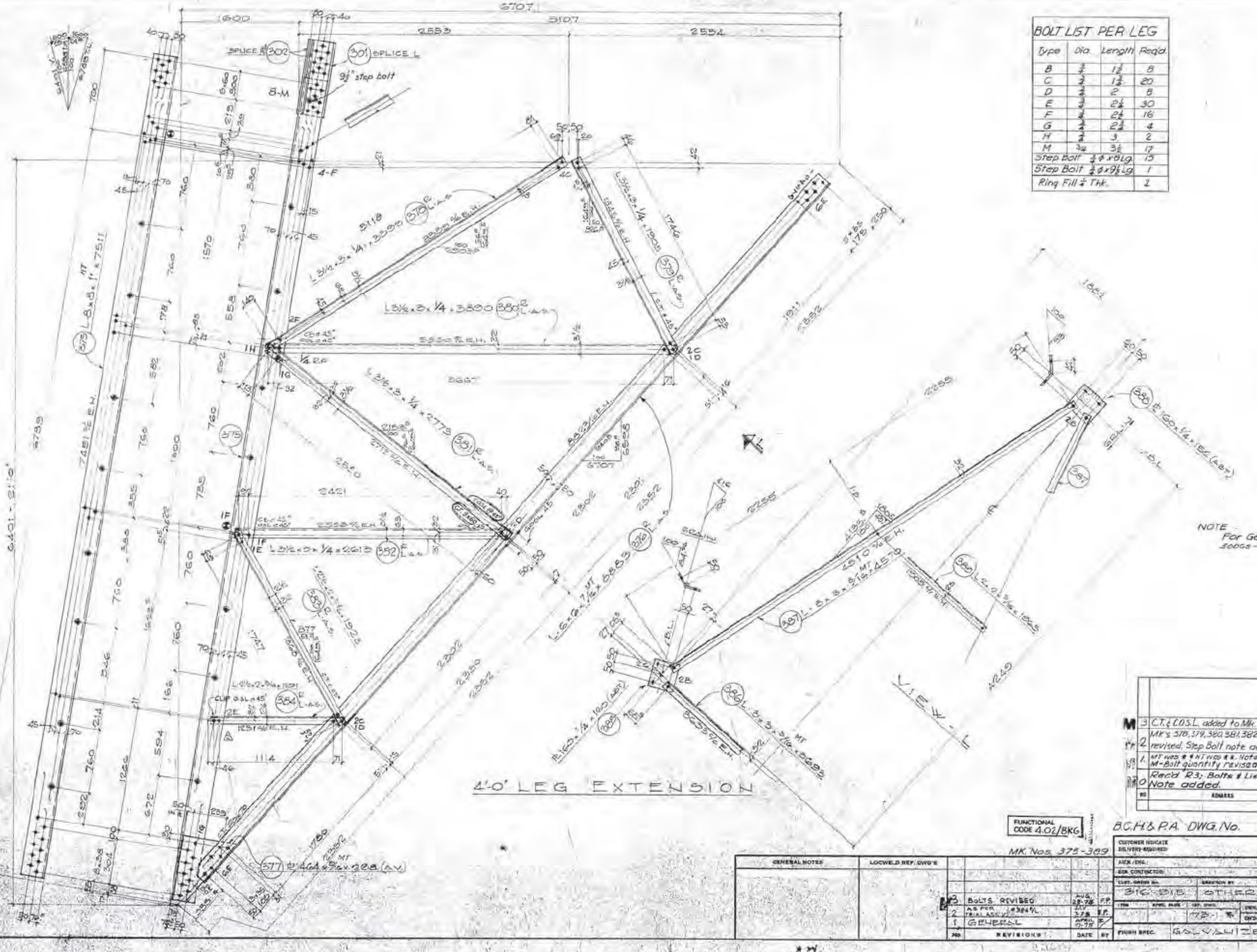
GENERAL NOTES	LOCWELD REF. DWG'S	No.	REVISIONS	DATE	BY
		3	BOLTS REVISED	AUG. 29-75	F.P.
		2	GENERAL	APRIL 16-75	
		1	361 & 362 MODIFIED	JUNE 18-74	

CUSTOMER INDICATE DELIVERY REQUIRED
ARCH./ENG.:
GEN. CONTRACTOR:
CUST. ORDER No.: 316-915
ERECTION BY: OTHERS
REF. DWG.: 73-1-5
DWN. DPL
CKD. P.L.
FINISH SPEC.: GALVANIZED

LOCWELD AND FORGE PRODUCTS LTD.
50 IBERVILLE AVE. CANDIAC QUE.

BC HYDRO
500 KV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
±0 FT LEG EXTENSION

DATE: FEB. '74 D 7450-18 R-3



BOLT LIST PER LEG

Type	Dia.	Length	Req'd
B	¾	1½	8
C	¾	1¾	20
D	¾	2	8
E	¾	2¼	30
F	¾	2½	16
G	¾	2¾	4
H	¾	3	2
M	¾	3½	17
Step Bolt ¾ ∅ x 8 Lg.			15
Step Bolt ¾ ∅ x 9½ Lg.			1
Ring Fill ¼ Thk.			2

LIST OF MATERIAL FOR ONE EXTENSION

MK.	QTY	DESCR.	DET. DWG.
375	1	LEG L	D-7450-19
376R	1	CHORD	"
376L	1	"	"
377	2	℞	"
378R	1	RED.	"
378L	1	"	"
379R	1	"	"
379L	1	"	"
380R	1	"	"
380L	1	"	"
381R	1	"	"
381L	1	"	"
382R	1	"	"
382L	1	"	"
383R	1	"	"
383L	1	"	"
384R	1	"	"
384L	1	"	"
385	2	℞	"
386	1	STRUT	"
387	2	RED.	"
388	1	℞	"
389	1	STRUT	"
301	1	SPLICE L	D-7450-14
302	2	SPLICE ℞	"

NOTE
For General Notes see drawing No. 50005-T08-D3014.

NO	REMARKS	DATE	MADE	CHKD	INSP	SUBD	RECD	APP'D	APPD
3	C.T. & C.O.S.L. added to Mk. 381 L/R	24-I-77	JM		KGB	AV		[redacted]	
2	MK's 378, 379, 380, 381, 382, & Bolts revised. Step Bolt note added.	4-III-76	GP	GSR		AV			
1	MT was ★ & HT was ★★. Note rev'd. M-Bolt quantity revised.	17-II-77	HHH			AV			
0	Rec'd R3; Bolts & List Rev'd Note added.	24-X-75	DCS	RZ		AV			

REVISIONS

FUNCTIONAL CODE 4.02/8KG

B.C.H.& P.A. DWG. No. 5LG5-T08-D2793-R3

MK. Nos. 375-389

NO	REVISIONS	DATE	BY
3	BOLTS REVISED	AUG. 28-75	F.P.
2	AS PER TRIAL ASS'Y #384 L	JULY 3-75	F.P.
1	GENERAL	APRIL 17-75	

GENERAL NOTES | LOCWELD REF. DWG'S

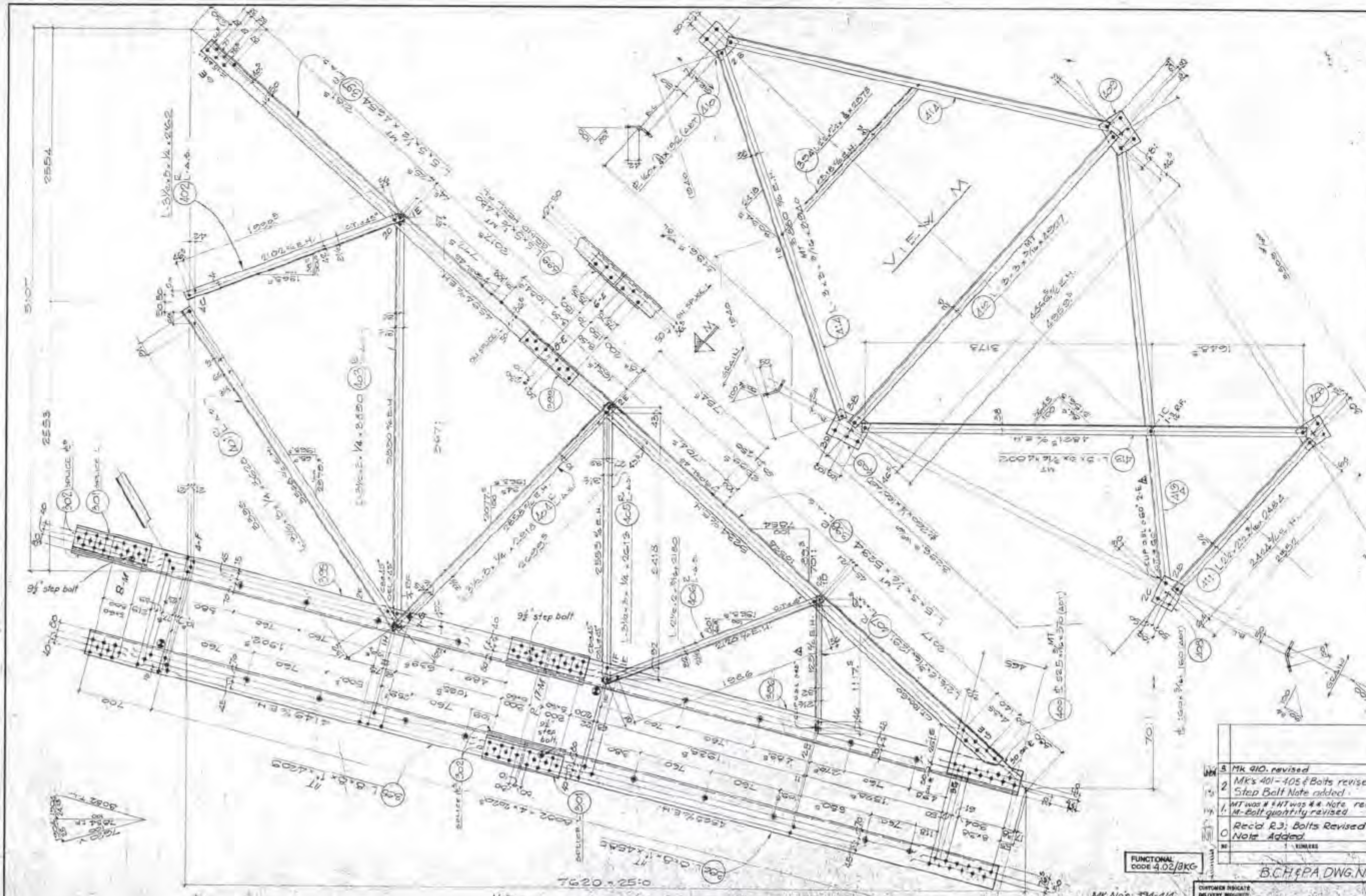
CUSTOMER INDICATE DELIVERY REQUIRED
ARCH./ENG.:
GEN. CONTRACTOR:
CUST. ORDER No. 316-815
ERECTION BY OTHERS
DRN. LFL
CKD. RL
FINISH SPEC. GALVANIZED

LOCWELD AND FORGE PRODUCTS LTD.
50 IBERVILLE AVE. CANDIAC, QUE.

BC HYDRO

500 KV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
+4' LEG EXTENSION

DATE: FEB. 74 | D | 7450-19 | R-3



Note
For General Notes see drawing No. 500GS-T08-B3014.

LIST OF MATERIAL FOR ONE EXTENSION			
MK	QTY	DESCR.	DET. DWG.
395	1	LEG L	D-7450-20
396	1	"	"
397R	1	CHORD	"
397L	1	"	"
398R	1	"	"
398L	1	"	"
399	2	SPLICE L	"
400	2	R	"
401R	1	RED.	"
401L	1	"	"
402R	1	"	"
402L	1	"	"
403R	1	"	"
403L	1	"	"
404R	1	"	"
404L	1	"	"
405R	1	"	"
405L	1	"	"
406R	1	"	"
406L	1	"	"
407R	1	"	"
407L	1	"	"
408	2	R	"
409	2	R	"
410	1	R	"
411	1	RED.	"
412	1	"	"
413	1	"	"
413A	1	"	"
414	2	"	"
301	[redacted] 2	SPLICE L	D-7450-14
302	[redacted] 4	SPLICE R	"
394	1	STRUT	D-7450-20

BOLT LIST PER LEG			
Type	Dia.	Length	Req'd
B	3/4	1 1/2	14
C	3/4	1 3/4	17
D	3/4	2	12
E	3/4	2 1/4	64
F	3/4	2 1/2	16
G	3/4	2 3/4	8
H	3/4	3	2
M	5/8	3 1/2	51
Step Bolt 5/8 ϕ x 8 lg			17
Step Bolt 5/8 ϕ x 9 7/8 lg			13
Ring Fill 3/16 Thk.			1
Ring Fill 1/4 Thk.			2

No.	Remarks	
3	Mk 410. revised	[redacted]
2	MK's 401-405 & Bolts revised Step Bolt Note added	
1	MT was # & HT was ##. Note rev'd. M-Bolt quantity revised	
0	Rec'd R3; Bolts Revised & Note Added	

REVISIONS

FUNCTIONAL CODE 4.02/8KG

B.C.H.&P.A. DWG. No. 5LGS-T08-D2794-R3

No.	REVISIONS	DATE	BY
3	BOLTS REVISED	AUG. 23-78	F.P.
2	AS PER TRIAL ASS'Y [407R/L, 413A]	7-17-75	K.P.
1	GENERAL	APRIL 17-75	

GENERAL NOTES

LOCWELD REF. DWG'S

CUSTOMER INDICATE DELIVERY REQUIRED

ARCH./ENG.:

GEN. CONTRACTOR:

CUST. ORDER No.: 316-315

ERECTION BY: OTHERS

FINISH SPEC.: GALVANIZED

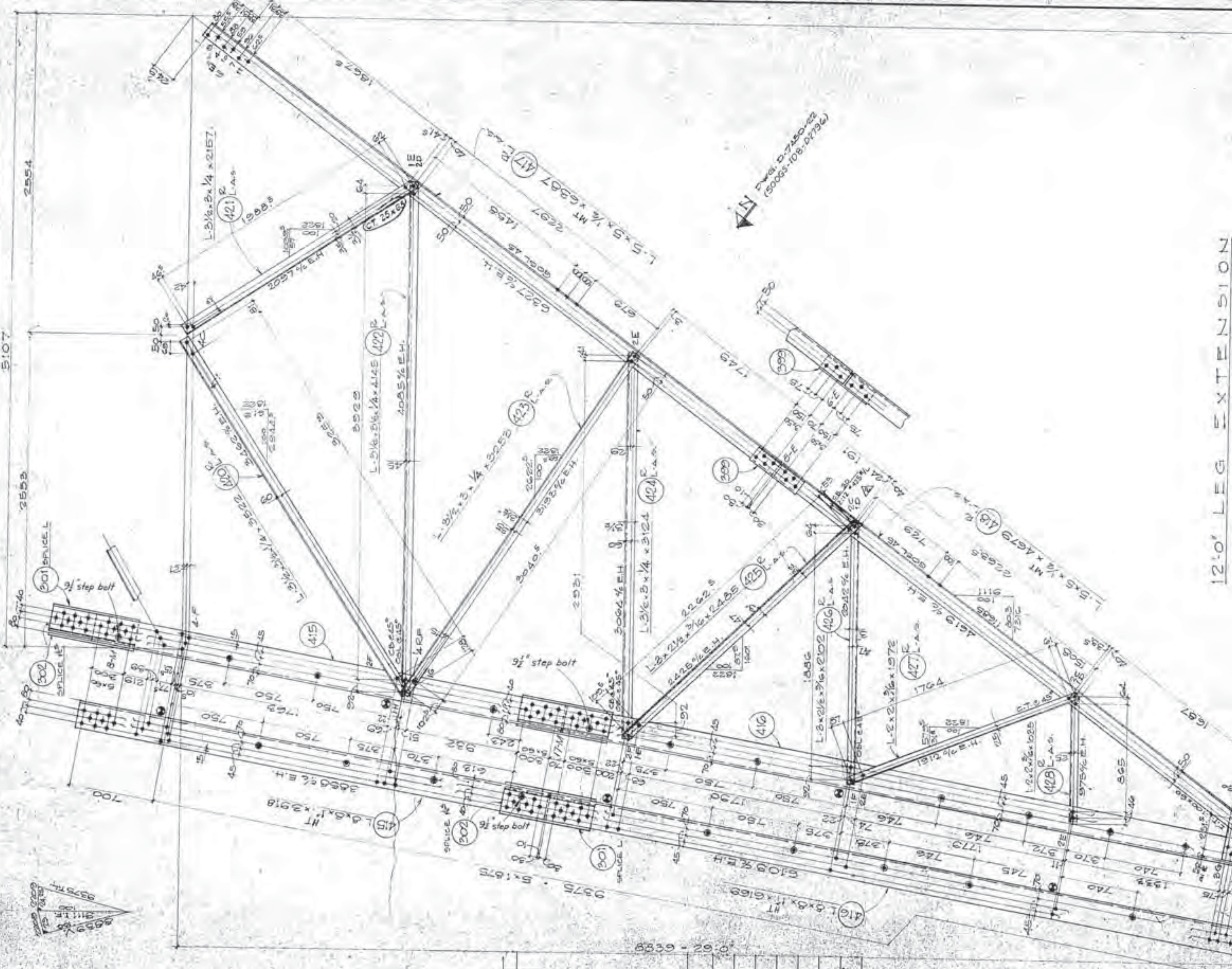
DRN: [illegible] CH'D: [illegible]

LOCWELD AND FORGE PRODUCTS, LTD.
50 IBERVILLE AVE. CANDIAC, QUE.
INDUSTRIAL AND MISCELLANEOUS IRON WORK

500 KV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
+8 FT. LEG EXTENSION

DATE: [illegible]/74

D. 7450-23 R3



BOLT LIST PER LEG			
Type	Dia	Length	Req'd.
C	3/4	1 3/4	16
D	3/4	2	8
E	3/4	2 1/4	68
F	3/4	2 1/2	18
G	3/4	2 3/4	8
H	3/4	3	2
M	3/4	3 1/2	51
Step Bolt 3/4 ϕ x 8 lg.			17
Step Bolt 3/4 ϕ x 9 1/2 lg.			3
Ring Fill 1/4 Thk.			2

LIST OF MATERIAL FOR ONE EXTENSION

MK	QTY	DESCR.	DET. DWG
415	1	LEG L	D-7450-21
416	1	"	"
417R	1	CHORD	"
417L	1	"	"
418R	1	"	"
418L	1	"	"
419	2	℄	"
420R	1	RED.	"
420L	1	"	"
421R	1	"	"
421L	1	"	"
422R	1	"	"
422L	1	"	"
423R	1	"	"
423L	1	"	"
424R	1	"	"
424L	1	"	"
425R	1	"	"
425L	1	"	"
426R	1	"	"
426L	1	"	"
427R	1	"	"
427L	1	"	"
428R	1	"	"
428L	1	"	"
429	2	℄	D-7450-22
430	2	℄	"
431	1	STRUT	"
432	1	℄	"
433	1	RED.	"
433A	1	"	"
458	1	STRUT	D-7450-24
434	2	RED.	D-7450-22
435	1	STRUT	"
301	2	SPLICE L	D-7450-14
302	4	SPLICE ℄	"
399	2	SPLICE L	D-7450-20

Notes:

1. For General Notes see drawing No. 500GS-T08-83014.
2. For +12' Leg Extension – View N see L&F Dwg. No. D7450-22 (500GS-T08-D2796)

FUNCTIONAL CODE 4.02/8KG

B.C.H. & P.A. DWG No. 5LGS-T08-D2795-R.3

NO	REMARKS	DATE	MADE	CHKD	INSP	SUBD	RECD	APP'D	APPD
3	CT revised on Mk. No. 421 L/R	20-8-81	LA			AZ			
2	Mk's 421 L/R, 423 L/R, 424 L/R & Bolts Revised. Step Bolt Note added	9-11-78	GP			AV			
1	M-Bolt quantity revised. MT was # & HT was #R. Note 1 revised.					AV		AV	
0	Rec'd R3; Bolts Revised & Notes Added.	24-2-75	DCS JS			AV			

REVISIONS

GENERAL NOTES

LOCWELD REF. DWG'S

NO.	REVISIONS	DATE	BY
3	BOLTS REVISED	18-75	EP
2	AS PER TRIAL ASS'Y 495R/L	JULY 4-75	EP
1	GENERAL	APRIL 17-75	

CUSTOMER INDICATE DELIVERY REQUIRED

ARCH./ENG.:

GEN. CONTRACTOR:

CUST. ORDER NO. 316-815

ERECTION BY: OTHERS

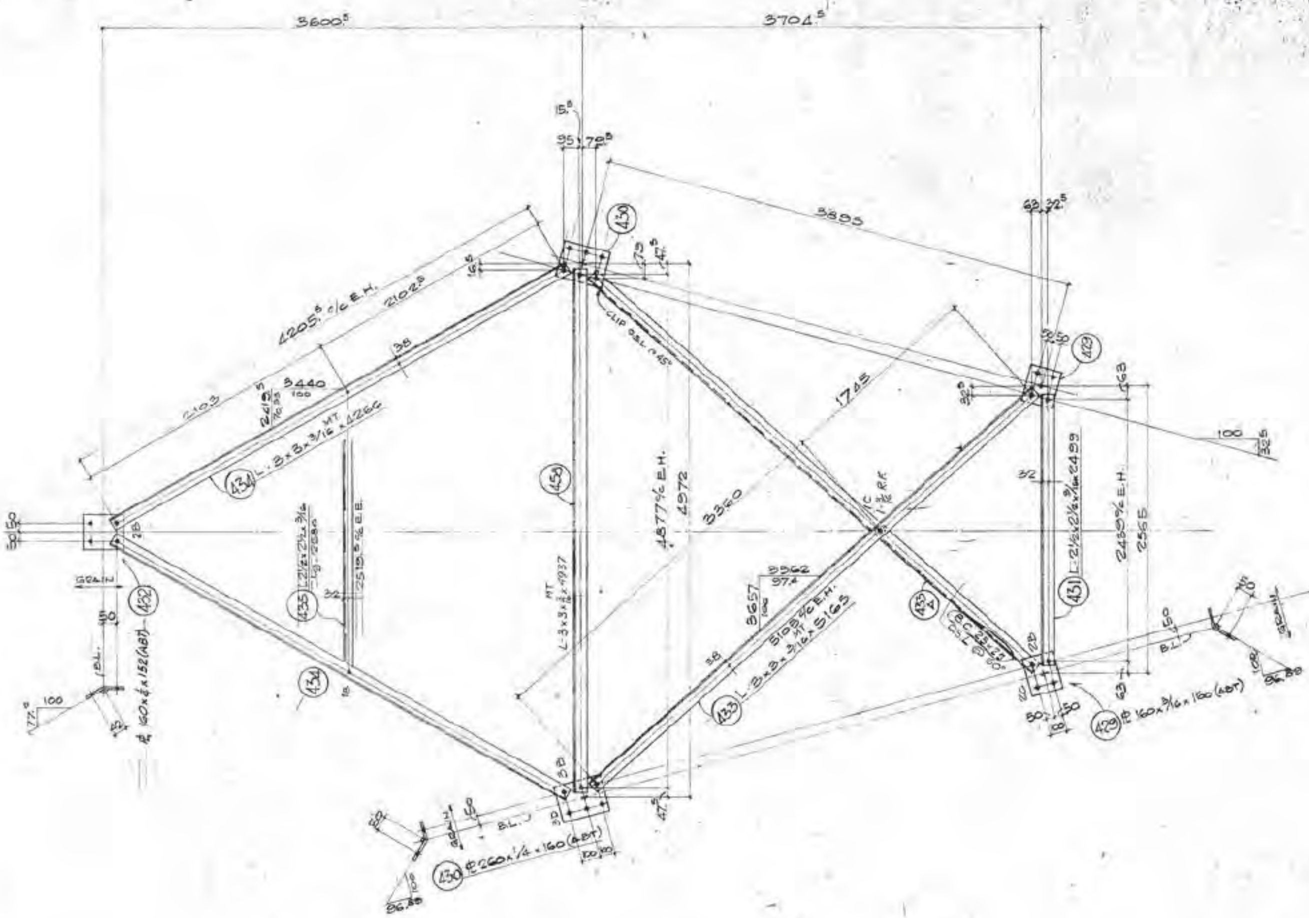
ITEM | SPEC. PAGE | REF. DWG. 78-11-84 | DWN: AFL | CHK: RL

FINISH SPEC. GALVANIZED

LOCWELD AND FORGE PRODUCTS LTD.
50 IBERVILLE AVE. CANDIAC, QUE.
INDUSTRIAL AND MISCELLANEOUS IRON WORK

500KV SINGLE CIRCUIT,
TYPE 8KG DEAD END TOWER
+12' LEG EXTENSION
BRITISH COLUMBIA HYDRO & POWER AUTHORITY

DATE: FEB 74 | D | 7450-21



V I E W 7

Notes:

1. For General Notes see drawing No. 500GS-T08-B3014.
2. For +12' Leg Extension see L&F Dwg. No. D7450-21 (500GS-T08-D2795)

BOLT LIST PER LEG			
Type	Dia	Length	Reqd
B	[illegible]	1¼	16
C	[illegible]	1½	5
D	[illegible]	2	6
Ring Fill - 3/16 THK.			1

FUNCTIONAL CODE 4.02/ 346

NO	REMARKS	DATE	MADE	CHKD	INSP	SUBD	RECD	APP'D	APPD
4	B.C revised in Mk No. 433	[illegible]	[redacted]						
3	Mk No. 432 revised	5-X-78							
2	Mk-458 sized, ring fill added. Bolts revised.	9-II-78							
1	MT was ✱ Note 1 revised	12-II-77							
0	Recd R3, Notes added	24-X-75							

REVISIONS

B.C.H. & P.A. DWG. No. 5LCS-T08-D2796-R4

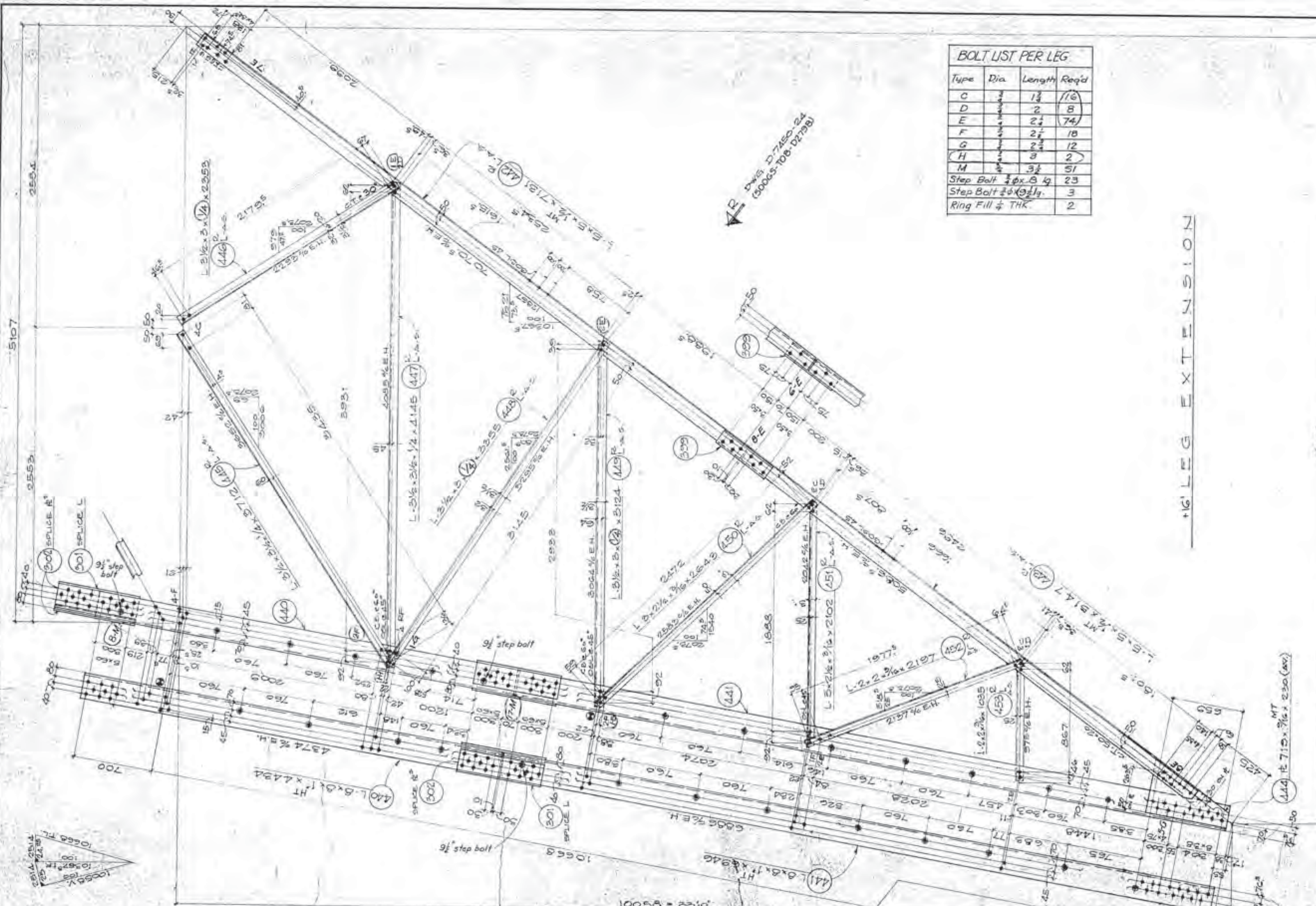
Mk No's. 429-435, 458

GENERAL NOTES

LOCWELD REF. DWG'S

3 Bolts revised

500KV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
+12'



BOLT LIST PER LEG			
Type	Dia	Length	Req'd
C	¾	1¾	16
D	¾	2	8
E	¾	2¼	74
F	¾	2½	18
G	¾	2¾	12
H	¾	3	2
M	¾	3½	51
Step Bolt ¾ ϕx 8 lg.			23
Step Bolt ¾ ϕx 9½ lg.			3
Ring Fill ¼ THK.			2

LIST OF MATERIAL FOR ONE EXTENSION			
MK	QTY	DESCR.	DET. DWG
440	1	LEG L	D-7450-23
441	1	"	"
442 R	1	CHORD	"
442 L	1	"	"
443 R	1	"	"
443 L	1	"	"
444	2	⅊	"
445 R	1	RED.	"
445 L	1	"	"
446 R	1	"	"
446 L	1	"	"
447 R	1	"	"
447 L	1	"	"
448 R	1	"	"
448 L	1	"	"
449 R	1	"	"
449 L	1	"	"
450 R	1	"	"
450 L	1	"	"
451 R	1	"	"
451 L	1	"	"
452 R	1	"	"
452 L	1	"	"
453 R	1	"	"
453 L	1	"	"
454	2	⅊	D7450-24
455	2	⅊	"
456	1	STRUT	"
457	1	RED.	"
458	1	STRUT	"
459	2	RED.	"
460	1	⅊	"
457A	1	RED.	"
461	1	STRUT	"
301	[redacted] 2	SPLICE L	D7450-14
302	[redacted] 4	SPLICE ⅊	"
399	2	SPLICE L	D7450-20

Notes:

1. For General Notes see drawing No. 500GS-T08-E3014.
2. For +16' Leg Extension - View R see L&F Dwg. No. D7450-24 (500GS-T08-D2798)

FUNCTIONAL CODE 4.02/8KG

B.C.H.&P.A. DWG No. 500GS-T08-D2797 R2

Mk No. 301, 302, 399, 440-453

NO	REMARKS	DATE	MADE	CHKD	APPR		RECD	APP'D	APP'D
2	Mk's 446 L/R, 448 L/R, 449 L/R & Bolts revised. Step Bolt Notes added	9-II-78	GP	HDB GSK	VoN	AY			
1	MT was ¾ HT was ⅞ Note 1 rev'd.	17-II-77	HMN	HDB	??	AY		AY	
0	Rec'd. R4; Bolts Revised & Notes Added	21-5-75	RGS J.S.	FAR A.Z.		AV			

REVISIONS

GENERAL NOTES	LOCWELD REF. DWG'S

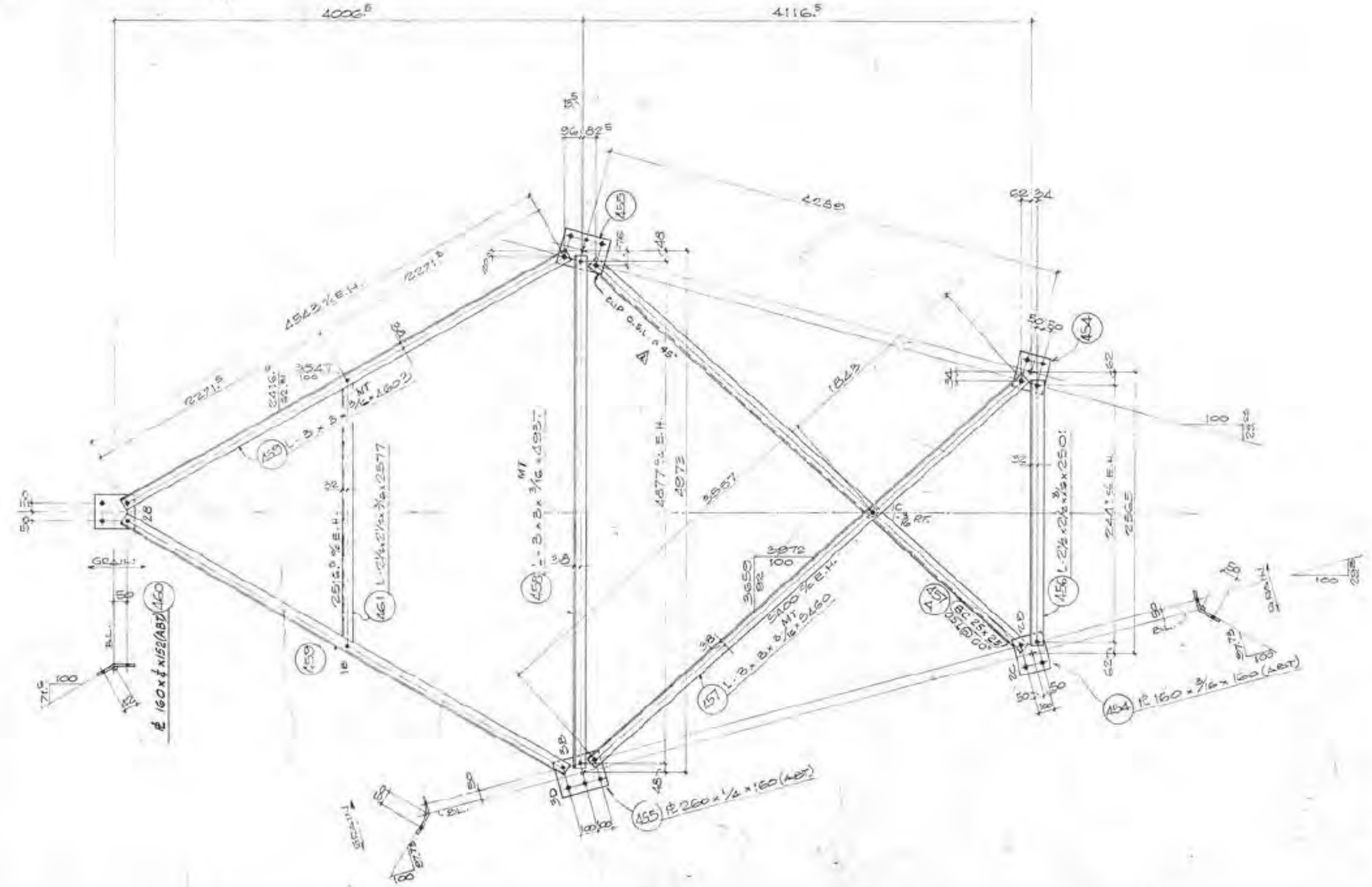
No.	REVISIONS	DATE	BY
4	BOLTS REVISED	AUG 23-74	F.P.
3	BOLTS REVISED	AUG 1-74	F.P.
2	GENERAL	APRIL 16-75	F.
1	441, 443 R/L + 444 REVISED	AUG 11-74	F.

CUSTOMER INDICATE DELIVERY REQUIRED
ARCH./ENG.:
GEN. CONTRACTOR:
CUST. ORDER No. 316.316 ERECTION BY OTHERS
ITEM / SPEC. PAGE / REF. DWG. 73-1-5 / DWN. UFL / CHK. FJL
FINISH SPEC. GALVANIZED

LOCWELD AND FORGE PRODUCTS LTD.
50 IBERVILLE AVE. CANDIAC, QUE.
INDUSTRIAL AND MISCELLANEOUS IRON WORK

500 KV SINGLE CIRCUIT
TYPE 8KG DEAD END TOWER
+16 FT. LEG EXTENSION

DATE FEB '74 D 7450-23 R4



VIEW - R

BOLT LIST PER LEG			
Type	Dia	Length	Req'd
B	$\frac{3}{4}$	$1\frac{1}{2}$	14
C	$\frac{3}{4}$	$1\frac{3}{4}$	5
D	$\frac{3}{4}$	2	6
Ring Fill $\frac{3}{16}$ THK			1

Notes:

1. For General Notes see drawing No. 500GS-T08-B3014.
2. For +16' Leg Extension see L&F Dwg No. D7450-23 (500GS-T08-D2797)

FUNCTIONAL CODE 402/8KG

NO	REMARKS	DATE	MADE	CHKD	INSP	SUBD	RECD	APP(T)	APPD
4	B.C. revised on Mk. No. 457A	26-X-82	[redacted]						
3	Mk. No. 460 revised	5-X-81							
2	Bolts revised, ring fill added.	9-II-78							
1	MT was ℄ Note 1 revised	13-III-77							
0	Rec'd R3 & Notes added	24-X-76							

REVISIONS

B.C.H.&P.A. DWG. No. 5LGS-T08-D2798-R4

Mk. No's. 454-461

GENERAL NOTES	LOCWELD REF. DWG'S

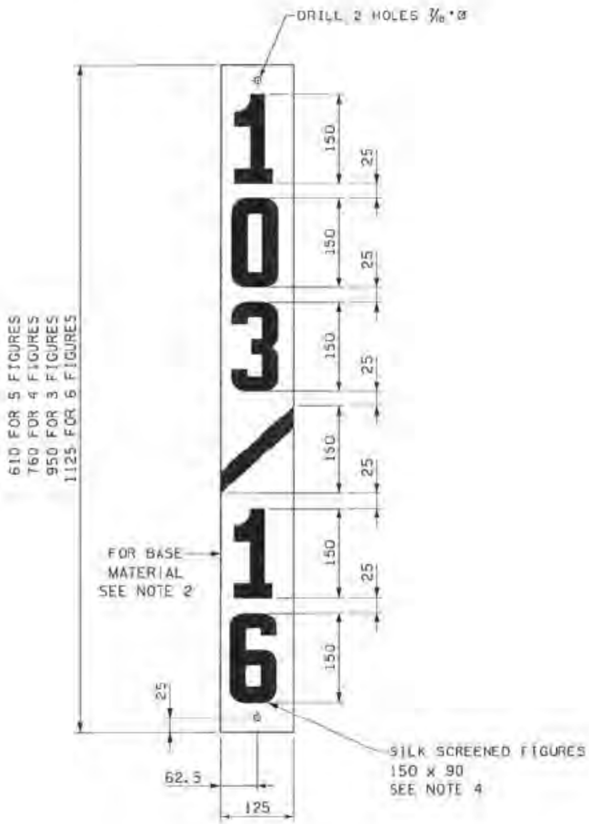
No.	REVISIONS	DATE	BY
3	BOLTS REVISED	AUG 27-75	[redacted]
2	AS PER TRIAL ASS'Y 457A	JULY 8-75	
1	GENERAL	APRIL 15-75	

CUSTOMER INDICATE DELIVERY REQUIRED
ARCH./ENG.:
GEN. CONTRACTOR:
CUST. ORDER No.: 316-815
ERECTED BY: OTHERS
ITEM / SPEC. PAGE / REF. DWG.: 73-1-5
DWN: HFL
CKD: PL
FINISH SPEC.: GALVANIZED

LOCWELD AND FORGE PRODUCTS LTD.
10 IBERVILLE AVE. CANDIAC, QUE.
INDUSTRIAL AND MISCELLANEOUS IRON WORK

500 kV SINGLE CIRCUIT
TYPE BKG DEAD END TOWER
+16 FT LEG EXTENSION - VIEW R
BRITISH COLUMBIA HYDRO & POWER AUTHORITY

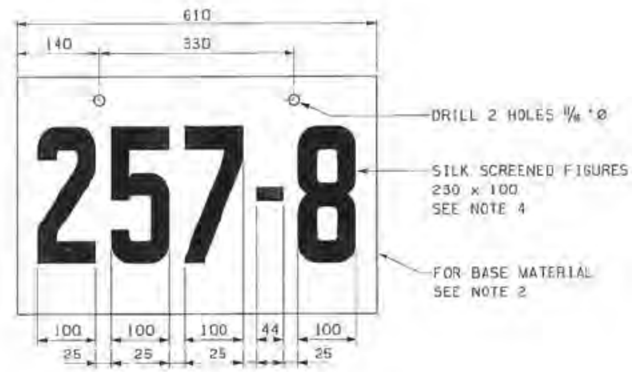
DATE: FEB '74 | D | 7450-24 | R-3



ITEM 1

STEEL POLE STRUCTURES

WOOD POLE STRUCTURES - POLE MOUNTED



ITEM 2

LATTICE TOWERS

WOOD POLE STRUCTURES - CROSSARM MOUNTED

1. DIMENSIONS ARE IN MILLIMETRES.
2. BASE MATERIAL SHALL BE 12 GA (0.081") 5052-H38 SIGN GRADE ALUMINUM PLATE.
3. SURFACE MATERIAL SHALL BE PRISMATIC LENS YELLOW REFLECTIVE SHEETING TO ASTM D4956 STANDARD TYPE XI.
4. INKS USED FOR SILK SCREENING MUST BE RECOMENDED BY THE SHEETING MANUFACTURER.
5. THE SIGNS SHALL BE FABRICATED BY A CERTIFIED HIGH INTENSITY 3M FABRICATOR AND SHALL BE WARRANTIED FOR TWELVE YEARS.
6. THE MANUFACTURER'S NAME AND THE YEAR OF PRODUCTION SHALL BE PERMANENTLY MARKED ON THE BACK OF EACH SIGN.
7. SIGNS TO BE INSTALLED AS PER BCH DWG Nos. :

STEEL LATTICE TOWERS	G-T08-B483
WOOD POLE STRUCTURES	G-T08-B484
STEEL POLE STRUCTURES/STEEL HSS CROSSARMS	G-T08-B485
WISHBONE STRUCTURES USING STEEL CROSSARMS	1LGS-T08-D137

THIS DRAWING SUPERCEDES DWG Nos. G-T08-B125M-R1, G-T08-B331M-R1, G-T08-B352M

NO	REMARKS	DATE	DESIGNED	INDEP CHK	DFTG	DFTG CHK	INSP	REV	ACPT
3	NOTES 3,4 & 5 REVISED	2012-07	R. Ma	[redacted]					DYD
2	SUPERCEDES NOTE ADDED	2010-12							RH
1	STEEL POLE AND WOOD POLE REFERENCE DRAWING NUMBERS SWITCHED IN NOTE 7	JULY 23/01							BFD

REVISIONS

DSGN / INDEP CHK / DFTG / DFTG CHK / DISP / REV / ACPT: [redacted]

BChydro

SPECIFICATION CONTROL DRAWING

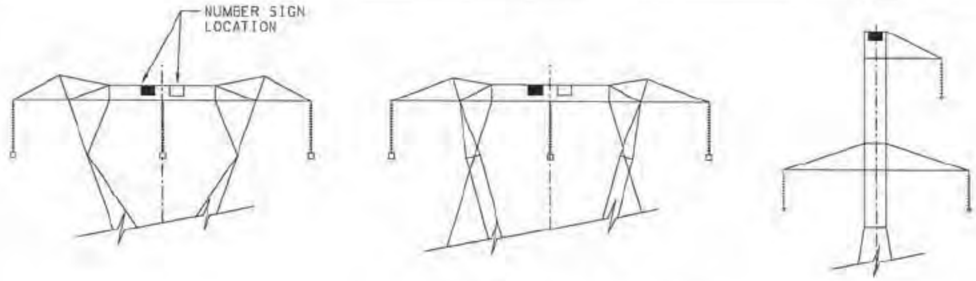
STRUCTURE NUMBER SIGNS
FABRICATION DETAILS

DATE	DISTR	DWG NO.	SIZE	R
17 JULY 2000		G-T08-00482	B	3

NOT TO BE REPRODUCED WITHOUT PERMISSION

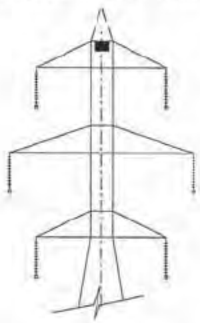
Issued for Construction

ITEM	QTY	HU	BCH STOCK No. /DWG No.	DESCRIPTION
BILL OF MATERIAL FOR ONE NUMBER SIGN ASSEMBLY				
1	2	EA	100-2355	BOLT, MACHINE, ⅝"Ø x 2", GALVANIZED, c/w NUT
2	2	EA	102-3043	WASHER, FLAT, ROUND, FOR ⅝"Ø BOLT
3	2	EA	102-4158	WASHER, HELICAL SPRING, FOR ⅝"Ø BOLT
4	1	EA	G-T08-B482	PLATE, NUMBER SIGN

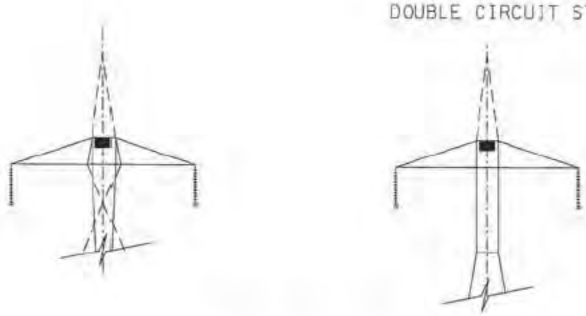


SINGLE CIRCUIT STEEL TOWERS

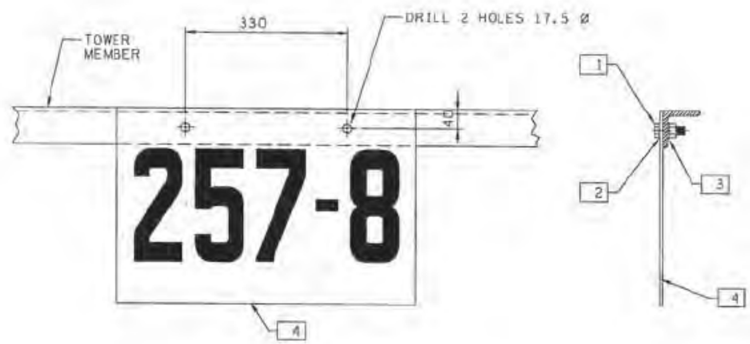
SINGLE PHASE MAST



DOUBLE CIRCUIT STEEL TOWERS



TWO PHASE TOWERS



NOTE:

ALL DIMENSIONS ARE IN MILLIMETRES EXCEPT AS OTHERWISE NOTED.

THIS DRAWING SUPERCEDES DWG No. ESN41-H0004-01R00 AND G-T08-B446

S	1	NOTE 2 DELETED; G-T08-B446 ADDED TO SUPERCEDED LIST	2007-03	R. [signature]	[redacted]					
#	NO	REMARKS	DATE	DESIGNED	INDEP CHK	DFTG	DFTG CHK	INSP	REV	ACPT
REVISIONS										

DSGN	
INDEP CHK	
DFTG	[redacted]
DFTG CHK	
INSP	
REV	
ACPT	[redacted]

DATE 17 JULY 2000

BChydro

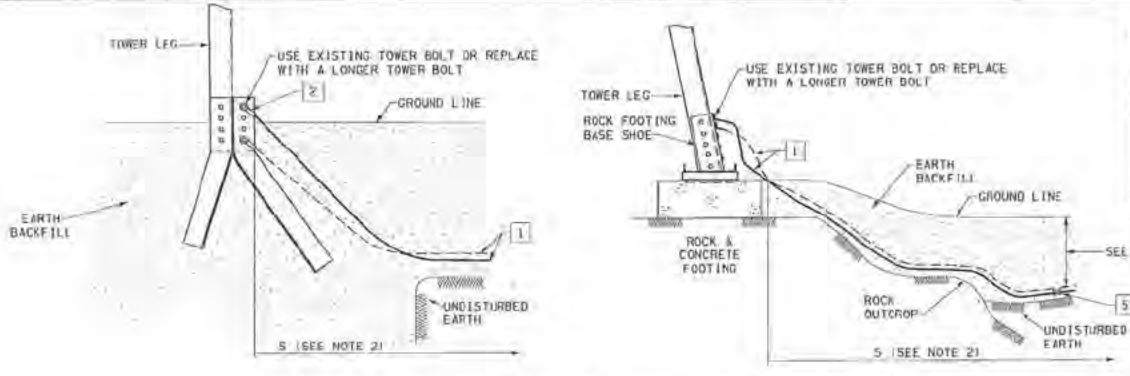
INSTALLATION OF NUMBER SIGNS ON LATTICE TOWERS

DWG NO CAD G-T08-B483

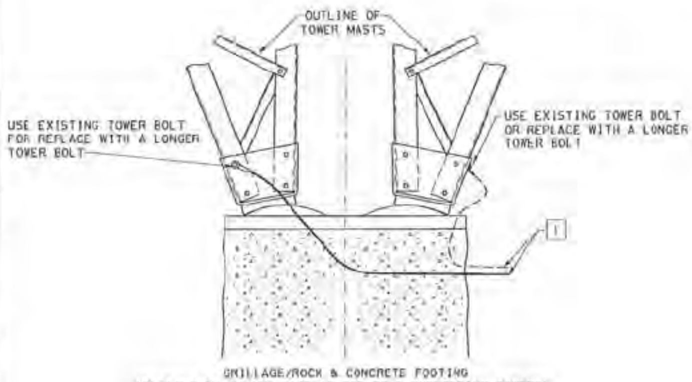
R 1

CAD FILE No. : $FILE$ $DATE$ $TIME$: $USER$

BILL OF MATERIAL FOR ONE ASSEMBLY				
ITEM	QTY	HU	BCH STOCK No.	DESCRIPTION
1	AS REQ'D	m	382-4236	WIRE, COUNTERPOISE, SIZE 10, GRADE 1300
2	1	EA	413-2690	TERMINAL, COMPRESSION, FOR SIZE 10 COUNTERPOISE (SEE NOTE 9)
3	1	EA	96021970	3/8"Ø x 3.5" WEDGE TYPE STUD BOLT ANCHOR, c/w NUT AND WASHER
4	1	EA	96021971	CABLE SUSPENSION CLAMP
5	1	EA	96001438	SPLICE, COMPRESSION, STEEL, FOR SIZE 10 GALV. STEEL WIRE
6	1	EA	96021976	DRILL BIT, MASONARY 3/8" x 6"

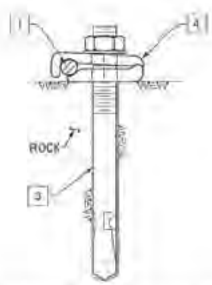


COUTERPOISE CONNECTION (SELF SUPPORTING TOWERS)



(DETAILS OF BURIED WIRE AS PER SELF SUPPORTING TOWERS)

COUNTERPOISE CONNECTION (GUYED TOWERS)

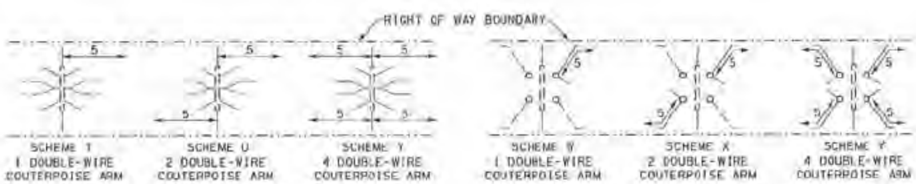


ROCK ANCHOR INSTALLATION DETAIL

(SEE NOTE 5)

NOTES:

1. DIMENSIONS SHOWN ARE IN MILLIMETRES.
2. THE COUNTERPOISE LENGTH, S, AND THE INSTALLATION SCHEME TO BE USED AT EACH TOWER ARE TO BE SPECIFIED BY THE ENGINEER. LENGTH S APPLIES ONLY TO THE PORTION OF THE COUNTERPOISE WIRE BURIED ACCORDING TO NOTE 3. AFTER THE INSTALLATION OF THE SPECIFIED LENGTH OF BURIED COUNTERPOISE, AND PRIOR TO THE INSTALLATION OF ANY OVERHEAD GROUNDWIRE, THE ENGINEER WILL MEASURE THE TOWER RESISTANCE-TO-GROUND AND MAY REQUIRE THE INSTALLATION OF ADDITIONAL COUNTERPOISE (ITEMS 1 & 6).
3. THE COUNTERPOISE WIRE (ITEM 1) SHALL BE BURIED IN A 500 mm DEEP TRENCH AND BACKFILLED. FILL SHOULD BE COMPACTED AS DETERMINED BY THE ENGINEER. IF A ROCK OUTCROP IS ENCOUNTERED, THE DEPTH OF THE TRENCH OVER THE OUTCROP MAY BE REDUCED TO 300 mm. DOUBLE WIRE COUNTERPOISE SHALL BE INSTALLED IN A TRENCH HAVING A MINIMUM WIDTH OF 450 mm AND THE TWO WIRES SHALL BE SEPARATED TO THE FULL WIDTH OF THE TRENCH.
4. IF THE ENGINEER DETERMINES THAT THE DEPTH OF THE TRENCH OVER A ROCK OUTCROP IS INSUFFICIENT, THE COUNTERPOISE WIRE WILL BE TREATED AS IF IT WAS EXPOSED (SEE NOTE 5).
5. IF THE COUNTERPOISE WIRE MUST CROSS AN EXPOSED ROCK SURFACE, THE COUNTERPOISE WIRE SHALL BE PLACED ON THE ROCK SURFACE. IF THE EXPOSED LENGTH IS BETWEEN 2000 mm AND 3000 mm, A ROCK ANCHOR (ITEM 3) IS TO BE INSTALLED AS SHOWN ON INSTALLATION DETAIL AT THE CENTRE OF THE EXPOSED LENGTH. IF THE EXPOSED LENGTH IS GREATER THAN 3000 mm, ROCK ANCHORS ARE TO BE INSTALLED AT INTERVALS OF 1500 mm MAXIMUM.
   THE PURPOSE OF THE ROCK ANCHOR IS TO MECHANICALLY SECURE THE EXPOSED COUNTERPOISE WIRE. WITH THE APPROVAL OF THE ENGINEER, ALTERNATE ANCHORING METHODS MAY BE USED.
6. AT ROAD CROSSINGS THE COUNTERPOISE WIRE SHALL BE BURIED AT A DEPTH OF 500 mm MINIMUM.
7. BLASTING IS NOT PERMITTED FOR THE INSTALLATION OF COUNTERPOISE.
8. ALL COUNTERPOISE INSTALLATIONS SHALL BE WITHIN THE BOUNDARY OF THE RIGHT-OF-WAY AND NOT LESS THAN 10 m FROM THE GROUNDING FACILITIES OF OTHER CIRCUITS. ANY EXCEPTION REQUIRES PRIOR AUTHORIZATION FROM THE ENGINEER.
9. USE ALCAN DIE JOA7 TO INSTALL ITEM 2 AND ALCAN DIE JOS11 TO INSTALL ITEM 5.
10. DO NOT DISTURB SPECIAL TOWER DRAINAGE SYSTEMS, IF THESE EXIST.



GUYED TOWERS
(DOTTED LINES SHOW ALTERNATE POSITIONS)

SELF SUPPORTING TOWERS
(DOTTED LINES SHOW ALTERNATE POSITIONS)

SUPERCEDES DRAWING ES41-S0101-01.

NO.	REMARKS	DATE	DESIGNED	INDEP CHK	DFTG	DFTG CHK	INSP	REV	ACPT

REVISIONS

DSGN
INDEP CHK
DFTG
DFTG CHK
INSP
REV
ACPT
[redacted]

DATE 02-02-15

DISTR

BChydro

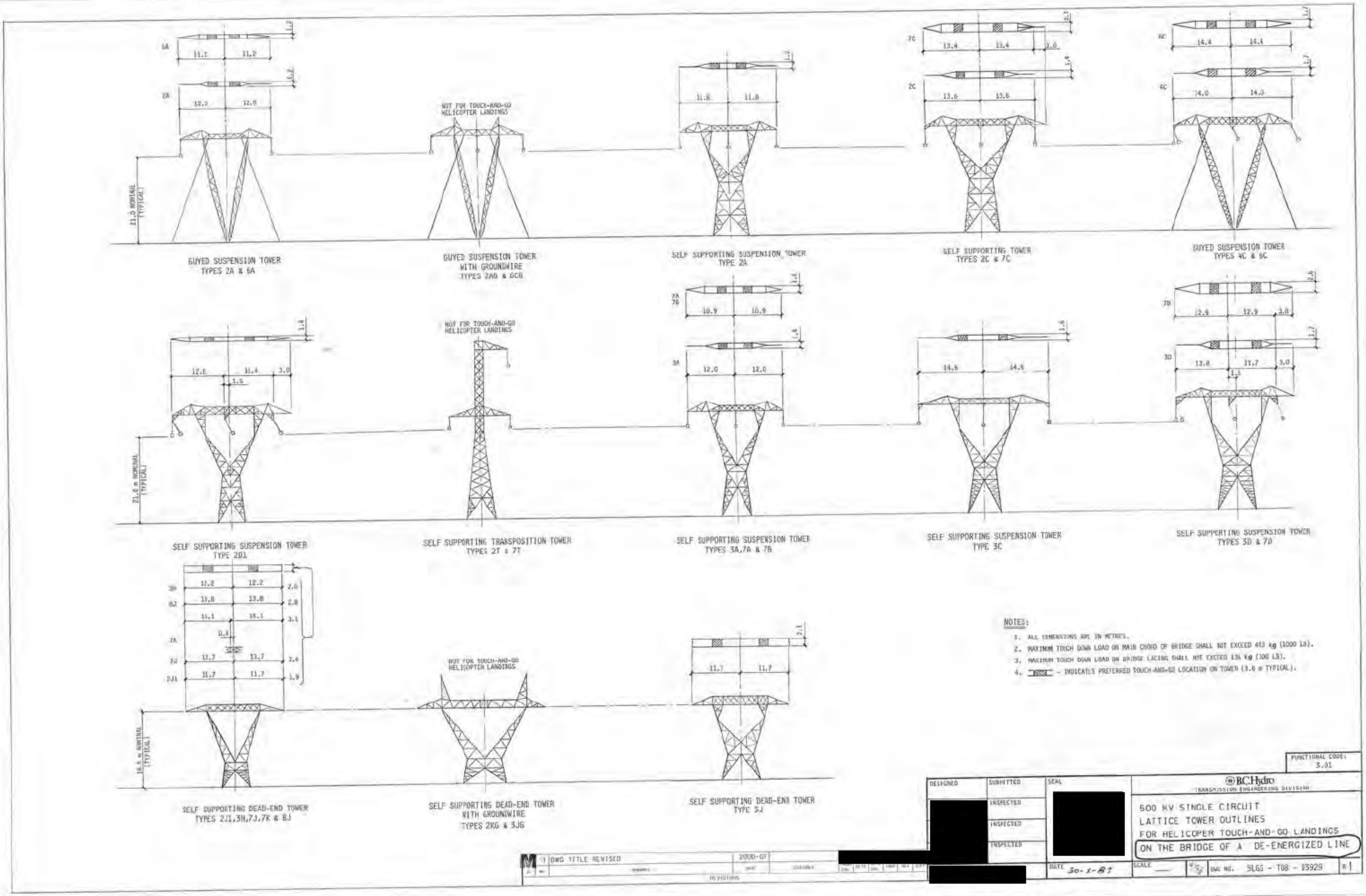
SPECIFICATION CONTROL DRAWING

STANDARD COUNTERPOISE
FOR STEEL TOWERS
INSTALLATION DETAILS

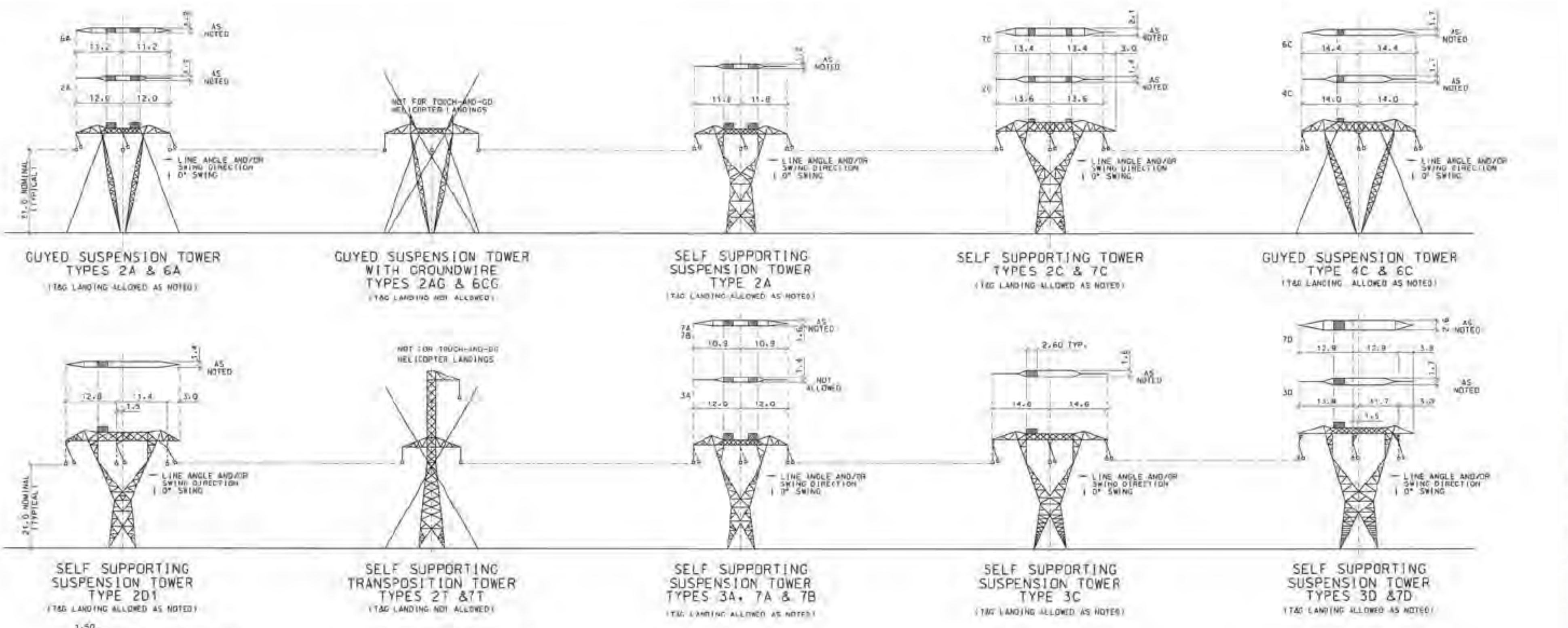
DWG NO. G-T08-00619 | SIZE B | R 0

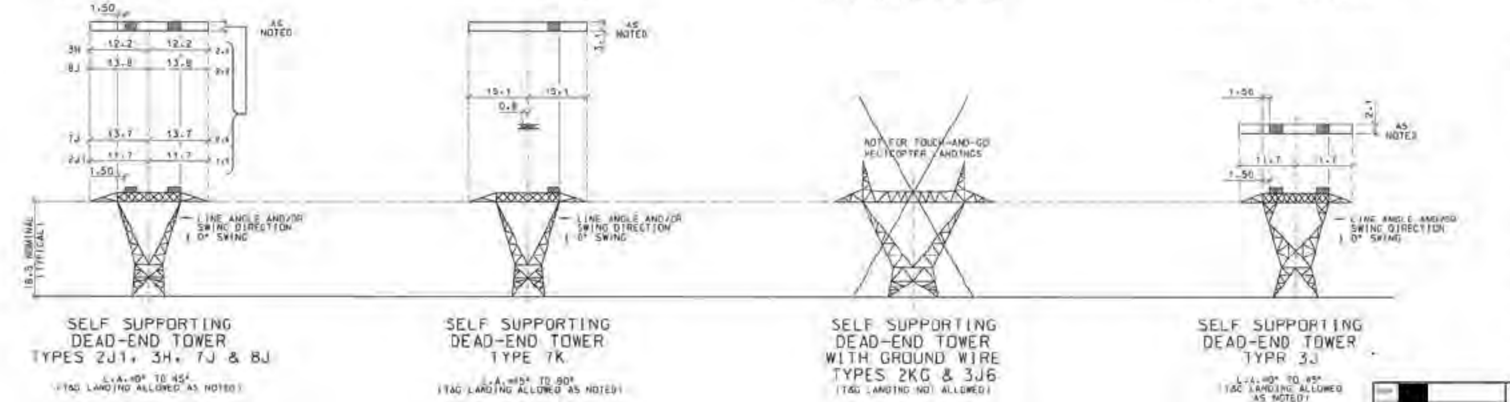
NOT TO BE REPRODUCED WITHOUT PERMISSION

Issued for Record Drawing



NOT FOR TOUCH-AND-GO HELICOPTER LANDINGS
21.0 NOMINAL (TYPICAL)
GUYED SUSPENSION TOWER TYPES 2A & 6A
GUYED SUSPENSION TOWER WITH GROUNDWIRE TYPES 2AG & 6CG
SELF SUPPORTING SUSPENSION TOWER TYPE 2A
SELF SUPPORTING TOWER TYPES 2C & 7C
GUYED SUSPENSION TOWER TYPES 4C & 6C
21.0 m NOMINAL (TYPICAL)
SELF SUPPORTING SUSPENSION TOWER TYPE 2D1
SELF SUPPORTING TRANSPOSITION TOWER TYPES 2T & 7T
SELF SUPPORTING SUSPENSION TOWER TYPES 3A,7A & 7B
SELF SUPPORTING SUSPENSION TOWER TYPE 3C
SELF SUPPORTING SUSPENSION TOWER TYPES 3D & 7D
18.5 m NOMINAL (TYPICAL)
SELF SUPPORTING DEAD-END TOWER TYPES 2J1,3H,7J,7K & 8J
SELF SUPPORTING DEAD-END TOWER WITH GROUNDWIRE TYPES 2KG & 3JG
SELF SUPPORTING DEAD-END TOWER TYPE 3J
NOTES:
1. ALL DIMENSIONS ARE IN METRES.
2. MAXIMUM TOUCH DOWN LOAD ON MAIN CHORD OF BRIDGE SHALL NOT EXCEED 453 kg (1000 LB).
3. MAXIMUM TOUCH DOWN LOAD ON BRIDGE LACING SHALL NOT EXCEED 136 kg (300 LB).
4. - INDICATES PREFERRED TOUCH-AND-GO LOCATION ON TOWER (3.6 m TYPICAL).
FUNCTIONAL CODE: 3.01
DESIGNED [redacted]
SUBMITTED
INSPECTED
INSPECTED
INSPECTED
SEAL [redacted]
DATE 30-X-81
BC Hydro
TRANSMISSION ENGINEERING DIVISION
500 KV SINGLE CIRCUIT
LATTICE TOWER OUTLINES
FOR HELICOPER TOUCH-AND-GO LANDINGS
ON THE BRIDGE OF A DE-ENERGIZED LINE
SCALE —
DWG NO. 5LGS - T08 - 03929
1 DWG TITLE REVISED 2000-07
REVISIONS





NOTES:

1. ALL DIMENSIONS ARE IN METRES.
2. ▨ INDICATES ALLOWED TOUCH-AND-GO LANDING AREA.
3. MINIMUM ELECTRICAL CLEARANCE = 6.00 METRE.
4. HELICOPTER TOUCH-AND-GO LANDING SHOULD NOT PROCEED UNDER THE FOLLOWING CONIDITIONS:
   - WHEN THE WEATHER CONDITIONS ARE MARGINAL.
   - THE WIND SPEED EXCEEDS 25 km/h (15 mph).
   - THE HORIZONTAL DISTANCE FROM ANY POINT OF THE CONDUCTORS THAT IS AT OR ABOVE THE BOTTOM ELEVATION OF THE BRIDGE (INCLUDING ADAJACENT LINES) SHALL NOT BE LESS THAN 25 METRES.
5. THE SAFE TOUCH-DOWN LOADS (INCLUDING IMPACT OF THE HELICOPTER) IN THE AREA SPECIFIED ARE 1000 LBS (453 KG) ON THE MAIN CHORDS AND 300 LBS (136 KG) ON THE LACINGS OF THE TOWER BRIDGE.
6. IMPACT SHOULD BE AVOIDED. IF IT OCCURS, THE TOUCH-DOWN SHOULD BE ABORTED AND THE TOWER CHECKED FOR POSSIBLE DAMAGE.
7. FOR HELICOPTER TOUCH-AND-GO PROCEDURE REFER TO BCH'S 'FIELD SERVICES HELICOPTER TOUCH-AND-GO STANDARD'.
8. ALL WORK SHALL BE CARRIED OUT IN CONFORMANCE WITH THE SPECIFIC CONDITIONS OF THE WCB OCCUPATIONAL HEALTH AND SAFETY REGULATION.
9. LANDING RESTRICTION AS SHOWN ON THIS DRAWING APPLIES TO HELICOPTER T&G LANDING ON THE 500 KV ENERGIZED LINE ONLY. FOR HELICOPTER T&G LANDING ON THE DE-ENERGIZED LINE SEE DWG 5LGS-T08-D3929-R1.

NO	REMARKS	DATE		
3	T&G LANDING ON TYPE 2A&6A GUYED 2A SUSP., 2C, 7C, 3A, 7A & 7B PERMITTED	2002-07		[redacted]
2	NOTES NO. 4, 7 AND 8 REVISED. REDRAWN TO CAD. WAS 'B' SIZE.	2002-07		

[redacted]

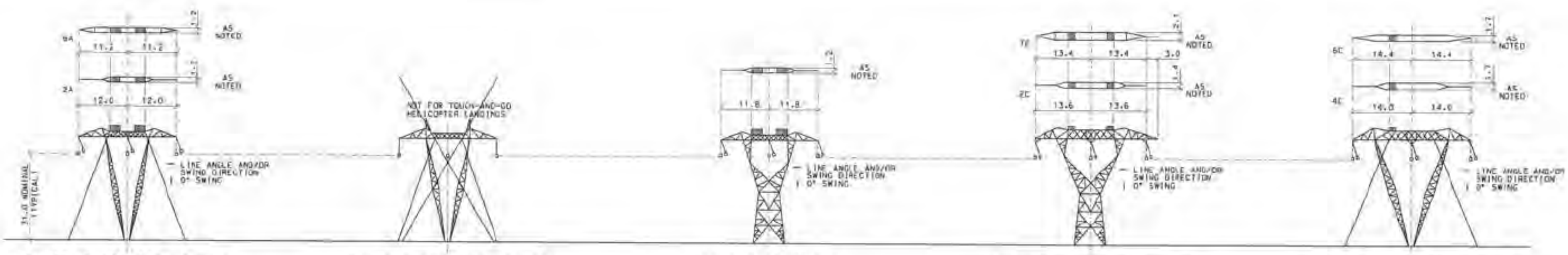
[redacted]

BChydro

500 KV SINGLE CIRCUIT LATTICE TOWER
HELICOPTER TOUCH-AND-GO LANDING ON
THE BRIDGE OF AN ENERGIZED LINE
LANDING WIDTH=2.600 METRE

DATE 2000-01 | DWG NO. 5LGS-T08-D4001 | R 3

USER : STL
06.APR 2000



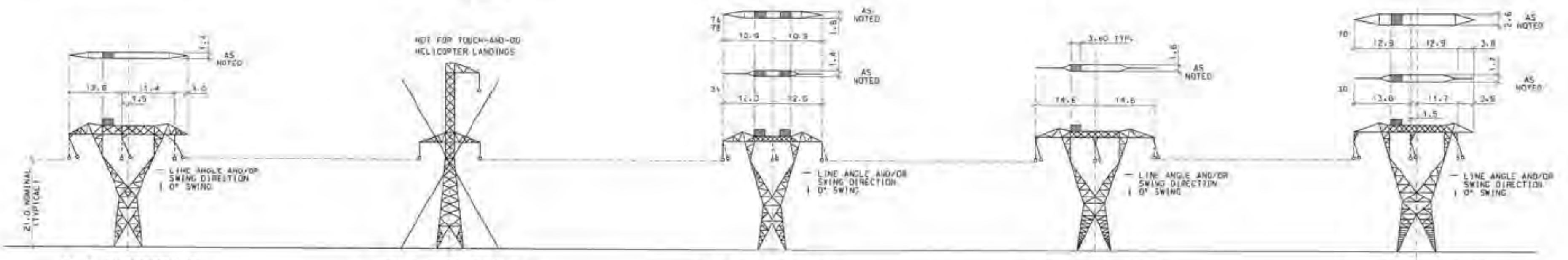
GUYED SUSPENSION TOWER
TYPES 2A & 6A
(T&G LANDING ALLOWED AS NOTED)

GUYED SUSPENSION TOWER
WITH GROUNDWIRE
TYPES 2AG & 6CG
(T&G LANDING NOT ALLOWED)

SELF SUPPORTING
SUSPENSION TOWER
TYPE 2A
(T&G LANDING ALLOWED AS NOTED)

SELF SUPPORTING TOWER
TYPES 2C & 7C
(T&G LANDING ALLOWED AS NOTED)

GUYED SUSPENSION TOWER
TYPE 4C & 6C
(T&G LANDING ALLOWED AS NOTED)



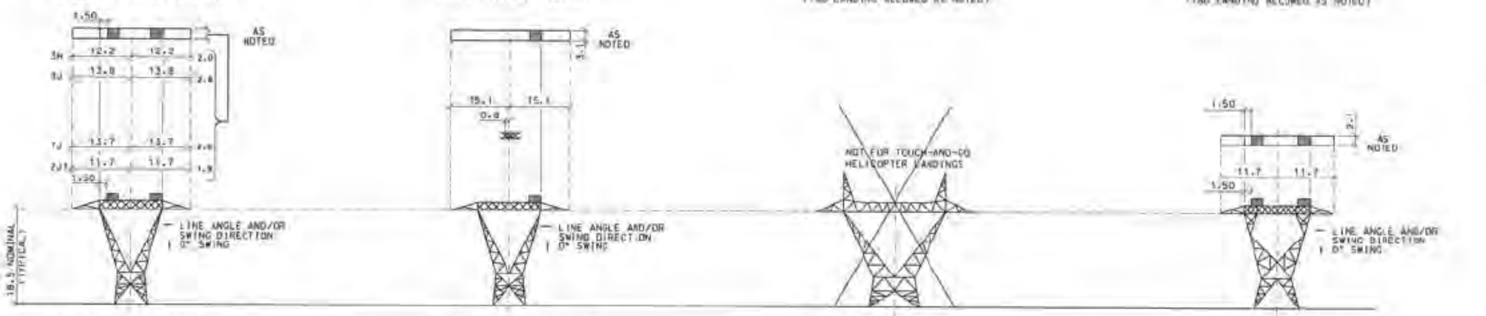
SELF SUPPORTING
SUSPENSION TOWER
TYPE 2D1
(T&G LANDING ALLOWED AS NOTED)

SELF SUPPORTING
TRANSPOSITION TOWER
TYPES 2T &7T
(T&G LANDING NOT ALLOWED)

SELF SUPPORTING
SUSPENSION TOWER
TYPES 3A, 7A & 7B
(T&G LANDING ALLOWED AS NOTED)

SELF SUPPORTING
SUSPENSION TOWER
TYPE 3C
(T&G LANDING ALLOWED AS NOTED)

SELF SUPPORTING
SUSPENSION TOWER
TYPES 3D &7D
(T&G LANDING ALLOWED AS NOTED)



SELF SUPPORTING
DEAD-END TOWER
TYPES 2J1, 3H, 7J & 8J
L.A.=0° TO 45°
(T&G LANDING ALLOWED AS NOTED)

SELF SUPPORTING
DEAD-END TOWER
TYPE 7K
L.A.=45° TO 90°
(T&G LANDING ALLOWED AS NOTED)

SELF SUPPORTING
DEAD-END TOWER
WITH GROUND WIRE
TYPES 2KG & 3J6
(T&G LANDING NOT ALLOWED)

SELF SUPPORTING
DEAD-END TOWER
TYPR 3J
L.A.=0° TO 45°
(T&G LANDING ALLOWED AS NOTED)

NOTES:

1. ALL DIMENSIONS ARE IN METRES.
2. INDICATES ALLOWED TOUCH-AND-GO LANDING AREA.
3. MINIMUM ELECTRICAL CLEARANCE = 6.00 METRE.
4. HELICOPTER TOUCH-AND-GO LANDING SHOULD NOT PROCEED UNDER THE FOLLOWING CONIDITIONS:
   - WHEN THE WEATHER CONDITIONS ARE MARGINAL.
   - THE WIND SPEED EXCEEDS 25 km/h (15 mph).
   - THE HORIZONTAL DISTANCE FROM ANY POINT OF THE CONDUCTORS THAT IS AT OR ABOVE THE BOTTOM ELEVATION OF THE BRIDGE (INCLUDING ADAJACENT LINES) SHALL NOT BE LESS THAN 75 METRES.
5. THE SAFE TOUCH-DOWN LOADS (INCLUDING IMPACT OF THE HELICOPTER) IN THE AREA SPECIFIED ARE 1000 LBS (453 KG) ON THE MAIN CHORDS AND 300 LBS (136 KG) ON THE LACINGS OF THE TOWER BRIDGE.
6. IMPACT SHOULD BE AVOIDED. IF IT OCCURS, THE TOUCH-DOWN SHOULD BE ABORTED AND THE TOWER CHECKED FOR POSSIBLE DAMAGE.
7. FOR HELICOPTER TOUCH-AND-GO PROCEDURE REFER TO BCH'S 'FIELD SERVICES HELICOPTER TOUCH-AND-GO STANDARD'.
8. ALL WORK SHALL BE CARRIED OUT IN CONFORMANCE WITH THE SPECIFIC CONDITIONS OF THE WCB OCCUPATIONAL HEALTH AND SAFETY REGULATION.
9. LANDING RESTRICTION AS SHOWN ON THIS DRAWING APPLIES TO HELICOPTER T&G LANDING ON THE 500 KV ENERGIZED LINE ONLY. FOR HELICOPTER T&G LANDING ON THE DE-ENERGIZED LINE SEE DWG 5LCS-T08-03929-R1.

No.	REVISIONS	DATE	
3	T&G LANDING ON TYPE 2A&6A GUYED 2A SUSP., 2C, 7C, 3A, 7A & 7B PERMITTED	2012-07	
2	NOTES NO. 4, 7 AND 8 REVISED. REDRAWN TO CAD. WAS 'B' SIZE.	2002-07	RH

[redacted]

[redacted]

[redacted]

BChydro

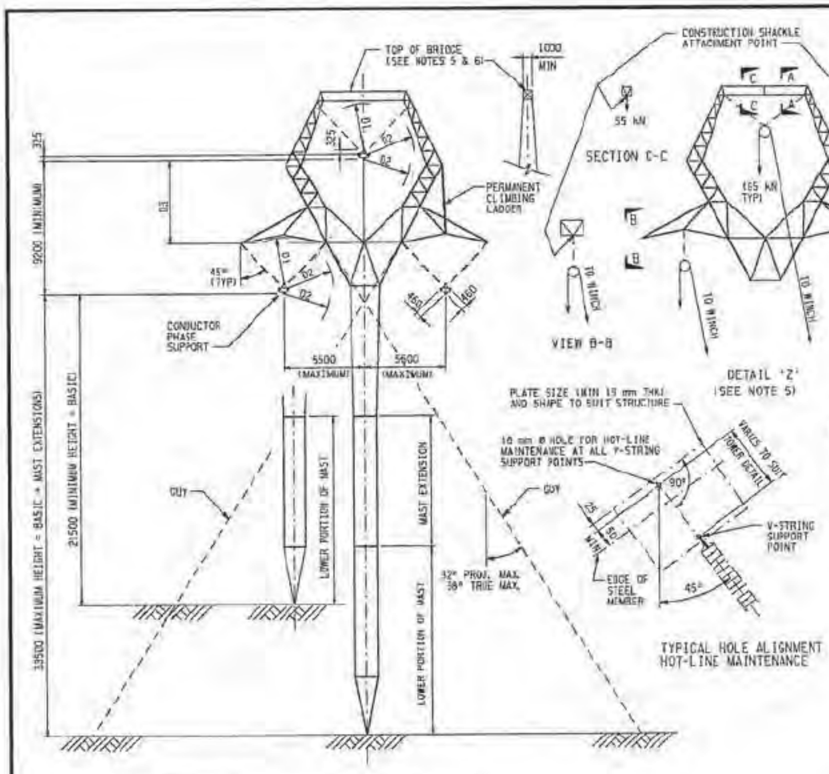
500 KV SINGLE CIRCUIT LATTICE TOWER
HELICOPTER TOUCH-AND-GO LANDING ON
THE BRIDGE OF AN ENERGIZED LINE
LANDING WIDTH=3.600 METRE

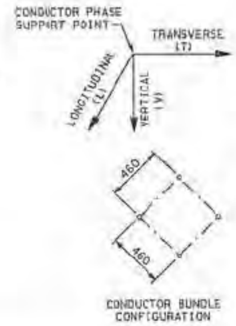
2000-01

5LCS-T08-D4002 | 3

USER : STC
06.APR 2000

Issued for Construction





TOWER DESIGN LOADS AND APPLICATIONS							
WORKING CONDUCTOR PHASE LOADS PER PHASE (kN)					LOAD FACTOR		LOAD APPLICATIONS
CASE		V	T	L	TOWER STEEL	FOOTING STEEL	
1		87.1	8.0	0.0	1.5	1.75	FOR ALL CASES, APPLY THE 'V', 'T' AND 'L' TO ANY ONE, ANY TWO OR ALL THREE PHASE SUPPORT POINTS IN COMBINATION WITH WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION OR AT 45° TO IT.
2		65.7	21.6	0.0	1.5	1.75	
3		66.5	4.2	5.8	2.0	2.0	
4		33.1	3.6	0.0	2.0	2.0	
5	A	49.9	4.8	26.0	1.5	1.75	APPLY LOADS 'A' TO ANY ONE, ANY TWO OR ALL THREE SUPPORT POINTS AND LOADS 'B' TO THE REMAINING SUPPORT POINTS IN COMBINATION WITH WIND APPLIED ON THE TOWER IN THE LONGITUDINAL DIRECTION OR AT 45° TO IT.
	B	87.1	8.0	0.0			

NOTES :

(1) ALL DIMENSIONS ARE IN MILLIMETRES EXCEPT AS OTHERWISE NOTED.

(2) LOAD CASES :

CASE 1 : 13 mm ICE, 0 WIND, -20° C
CASE 2 : 13 mm ICE, 0.213 kN/m² WIND, -20° C
CASE 3 : 0 ICE, 0 WIND, -20° C (STRINGING)
SNUB ANGLE = 20° FROM HORIZONTAL
CASE 4 : 0 ICE, 0 WIND, -1° C (EVERYDAY LOADING)
CASE 5 : 13 mm UNEQUAL ICE, 0 WIND, -20° C

(3) ULTIMATE TOWER DESIGN LOADS :

(A) CONDUCTOR PHASE LOADS : FOR ALL CASES, THE ULTIMATE TOWER DESIGN LOADS SHALL BE THE WORKING CONDUCTOR PHASE LOAD TIMES THE LOAD FACTOR AS SPECIFIED IN THE LOAD TABLE.

(B) ULTIMATE TOWER WIND LOADS (kN/m²):

	CASE 1, 2 & 5	CASE 3 & 4
ABOVE CROSSARMS	2.2	0.2
BELOW CROSSARMS	2.0	0.2

(4) LOAD APPLICATION:

(A) THE TRANSVERSE LOADS SHOWN IN THE LOAD TABLE ARE REVERSIBLE.

(B) THE LONGITUDINAL LOADS SHOWN IN THE LOAD TABLE ARE REVERSIBLE.

(C) ALL HORIZONTAL AND DIAGONAL MEMBERS SHALL BE DESIGNED TO WITHSTAND A VERTICAL LOAD CONCENTRATED AT THE CENTRE OF THE UNSUPPORTED LENGTH OF THE MEMBER WITHOUT PERMANENT DEFORMATION. THIS VERTICAL LOAD SHALL BE 0.3 kN IN COMBINATION WITH THE MAXIMUM AXIAL MEMBER FORCE DERIVED FROM STRUCTURAL ANALYSIS, OR 1.35 kN UNCOMBINED, WHICHEVER GOVERNS.

(5) THE BRIDGE SHALL BE DESIGNED TO SUPPORT A VERTICAL LOAD OF 55 kN CONCENTRATED AT THE CENTRE OF THE BRIDGE. THE TOWER SHALL ALSO BE DESIGNED TO SUPPORT A LOAD OF 65 kN APPLIED AT ANY ONE PHASE SUPPORT POINT IN THE PULLEY SYSTEM AS SHOWN IN DETAIL 'Z' IN COMBINATION WITH THE LOADS OF CASE 4 APPLIED TO NONE, ANY ONE OR ANY TWO OF THE REMAINING PHASE SUPPORT POINTS. CONSTRUCTION HOLES, 21 mm Ø, SHALL BE PROVIDED AT JOINTS WHERE THE CONSTRUCTION SHACKLES ARE TO BE ATTACHED.

(6) THE OUTSTANDING LEG OF ALL STEEL ANGLES ON THE TOP PLANE OF BRIDGE SHALL FACE DOWNWARDS. THE BRIDGE MAIN TOP CHORD MEMBERS SHALL BE CAPABLE OF SUPPORTING A VERTICAL LOAD OF 4.45 kN CONCENTRATED AT CENTRE OF THE UNSUPPORTED LENGTH OF THE MEMBER IN COMBINATION WITH THE AXIAL MEMBER FORCE DERIVED FROM LOAD CASE 4 WITHOUT PERMANENT DEFORMATION.

(7) THE MINIMUM ELECTRICAL CLEARANCES FROM CONDUCTOR TO THE EDGE OF STEEL OR GUY WIRE SHALL BE AS FOLLOWS:

D1 = 2850 mm
D2 = 3350 mm
D3 = 5000 mm
D4 = 2300 mm

(8) THE MAXIMUM INSULATOR SWING ANGLE (θ) IN THE LONGITUDINAL DIRECTION TO BE 20 °.

(9) THE MAXIMUM CONDUCTOR SLOPE FROM HORIZONTAL IS:
β_1 = -10° (UPLIFT) β_2 = 20° (DOWNHILL)

(10) THE MAXIMUM CONDUCTOR SWING AT MIDSPAN TO BE 21° FROM VERTICAL.

(11) FOR SPECIFICATION OF STEP BOLT LEGS, SEE DWG No. 5L46-T08-B10.

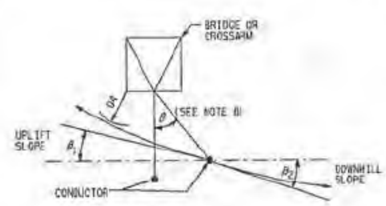
(12) FOR DETAILS OF V-STRING, SEE DWG No. 5L46-T08-B15.

(13) FOR SPECIFICATIONS FOR HELICOPTER TOUCH-AND-GO SEE DWG No. 5L46-T08-A18.

(14) FOR LOCATION OF TOWER NUMBER SIGNS SEE DWG No. G-T08-B446.

PERMISSIBLE MAST EXTENSION COMBINATIONS				
TOWER HEIGHT (m)	MAST EXTENSIONS (m)			
	1.5	3.0	6.0	9.0
21.5	0	0	0	0
23.0	1	0	0	0
24.5	0	1	0	0
26.0	1	1	0	0
27.5	0	0	1	0
29.0	1	0	1	0
30.5	0	0	0	1
32.0	1	0	0	1
33.5	0	1	0	1

MAST EXTENSIONS



CONDUCTOR SLOPE (SEE NOTE 9)

FUNCTIONAL CODE 3.01/52A

⊕B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY-LAKE CHEEKYE 500 kV T/L

TYPE 52A GUYED SUSPENSION TOWER (0°-2°) SPECIFICATION DRAWING

[redacted]

No	REVISIONS	MADE	CHKD	SUBD	APPD	INSP	INSP	INSP	DATE

SEAL

APPROVED [redacted]

DATE 91-3-22

SCALE —

DWG. No 5L46-T08-B1

R

B

CAD FILE No. \DGN\5L46\T08B001.DGN

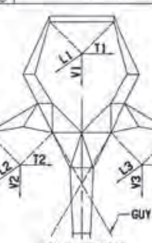
TOWER DESIGN LOADS AND APPLICATIONS

CASE	DESCRIPTION OF CONDITIONS	ASSUMP-TION CASE NO	TOP CONDUCTOR PHASE V1	T1	L1	LEFT CONDUCTOR PHASE V2	T2	L2	RIGHT CONDUCTOR PHASE V3	T3	L3	LOAD FACTOR TOWER STEEL	FOOTING STEEL	APPLIED WIND DIRECTION ON TOWER
			WORKING CONDUCTOR PHASE LOADS UNIT - "KN"											
1	1) 19MM ICE 2) 0 WIND 3) -20° C	1A	87.1	8.0	0.0	-	-	-	-	-	-	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
		1B	-	-	-	87.1	8.0	0.0	-	-	-	1.5	1.75	
		1C	-	-	-	-	-	-	87.1	8.0	0.0	1.5	1.75	
		1D	87.1	8.0	0.0	87.1	8.0	0.0	-	-	-	1.5	1.75	
		1E	87.1	8.0	0.0	-	-	-	87.1	8.0	0.0	1.5	1.75	
		1F	-	-	-	87.1	8.0	0.0	87.1	8.0	0.0	1.5	1.75	
		1G	87.1	8.0	0.0	87.1	8.0	0.0	87.1	8.0	0.0	1.5	1.75	
2	1) 13MM ICE 2) 0.213KN/M² WIND 3) -20° C	2A	65.7	21.6	0.0	-	-	-	-	-	-	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
		2B	-	-	-	65.7	21.6	0.0	-	-	-	1.5	1.75	
		2C	-	-	-	-	-	-	65.7	21.6	0.0	1.5	1.75	
		2D	65.7	21.6	0.0	65.7	21.6	0.0	-	-	-	1.5	1.75	
		2E	65.7	21.6	0.0	-	-	-	65.7	21.6	0.0	1.5	1.75	
		2F	-	-	-	65.7	21.6	0.0	65.7	21.6	0.0	1.5	1.75	
		2G	65.7	21.6	0.0	65.7	21.6	0.0	65.7	21.6	0.0	1.5	1.75	
3	1) 0 ICE 2) 0 WIND 3) -20° C 4) STRINGING SNUB ANGLE = 20° FROM HORIZONTAL	3A	66.5	4.2	5.6	-	-	-	-	-	-	2.0	2.0	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 0.2 BELOW CROSSARMS : 0.2
		3B	-	-	-	66.5	4.2	5.6	-	-	-	2.0	2.0	
		3C	-	-	-	-	-	-	66.5	4.2	5.6	2.0	2.0	
		3D	66.5	4.2	5.6	66.5	4.2	5.6	-	-	-	2.0	2.0	
		3E	66.5	4.2	5.6	-	-	-	66.5	4.2	5.6	2.0	2.0	
		3F	-	-	-	66.5	4.2	5.6	66.5	4.2	5.6	2.0	2.0	
		3G	66.5	4.2	5.6	66.5	4.2	5.6	66.5	4.2	5.6	2.0	2.0	
4	1) 0 ICE 2) 0 WIND 3) -1° C 4) EVERYDAY LOADING	4A	33.1	3.6	0.0	-	-	-	-	-	-	2.0	2.0	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 0.2 BELOW CROSSARMS : 0.2
		4B	-	-	-	33.1	3.6	0.0	-	-	-	2.0	2.0	
		4C	-	-	-	-	-	-	33.1	3.6	0.0	2.0	2.0	
		4D	33.1	3.6	0.0	33.1	3.6	0.0	-	-	-	2.0	2.0	
		4E	33.1	3.6	0.0	-	-	-	33.1	3.6	0.0	2.0	2.0	
		4F	-	-	-	33.1	3.6	0.0	33.1	3.6	0.0	2.0	2.0	
		4G	33.1	3.6	0.0	33.1	3.6	0.0	33.1	3.6	0.0	2.0	2.0	
5	1) 13MM UNEQUAL ICE 2) 0 WIND 3) -20° C	5A	49.9	4.8	26.0	87.1	8.0	0.0	87.1	8.0	0.0	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE LONGITUDINAL DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
		5B	87.1	8.0	0.0	49.9	4.8	26.0	87.1	8.0	0.0	1.5	1.75	
		5C	87.1	8.0	0.0	87.1	8.0	0.0	49.9	4.8	26.0	1.5	1.75	
		5D	49.9	4.8	26.0	49.9	4.8	26.0	87.1	8.0	0.0	1.5	1.75	
		5E	49.9	4.8	26.0	87.1	8.0	0.0	49.9	4.8	26.0	1.5	1.75	
		5F	87.1	8.0	0.0	49.9	4.8	26.0	49.9	4.8	26.0	1.5	1.75	
		5G	49.9	4.8	26.0	49.9	4.8	26.0	49.9	4.8	26.0	1.5	1.75	

CASE	DESCRIPTION OF CONDITIONS	ASSUMP-TION CASE NO	TOP CONDUCTOR PHASE V1	T1	L1	LEFT CONDUCTOR PHASE V2	T2	L2	RIGHT CONDUCTOR PHASE V3	T3	L3	LOAD FACTOR TOWER STEEL	FOOTING STEEL	APPLIED WIND DIRECTION ON TOWER
			WORKING CONDUCTOR PHASE LOADS UNIT - "KN"											
1	1) 19MM ICE 2) 0 WIND 3) -20° C	10A	87.1	8.0	0.0	-	-	-	-	-	-	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
		10B	-	-	-	87.1	8.0	0.0	-	-	-	1.5	1.75	
		10C	-	-	-	-	-	-	87.1	8.0	0.0	1.5	1.75	
		10D	87.1	8.0	0.0	87.1	8.0	0.0	-	-	-	1.5	1.75	
		10E	87.1	8.0	0.0	-	-	-	87.1	8.0	0.0	1.5	1.75	
		10F	-	-	-	87.1	8.0	0.0	87.1	8.0	0.0	1.5	1.75	
		10G	87.1	8.0	0.0	87.1	8.0	0.0	87.1	8.0	0.0	1.5	1.75	
2	1) 13MM ICE 2) 0.213KN/M² WIND 3) -20° C	20A	65.7	21.6	0.0	-	-	-	-	-	-	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
		20B	-	-	-	65.7	21.6	0.0	-	-	-	1.5	1.75	
		20C	-	-	-	-	-	-	65.7	21.6	0.0	1.5	1.75	
		20D	65.7	21.6	0.0	65.7	21.6	0.0	-	-	-	1.5	1.75	
		20E	65.7	21.6	0.0	-	-	-	65.7	21.6	0.0	1.5	1.75	
		20F	-	-	-	65.7	21.6	0.0	65.7	21.6	0.0	1.5	1.75	
		20G	65.7	21.6	0.0	65.7	21.6	0.0	65.7	21.6	0.0	1.5	1.75	
3	1) 0 ICE 2) 0 WIND 3) -20° C 4) STRINGING SNUB ANGLE = 20° FROM HORIZONTAL	30A	66.5	4.2	5.6	-	-	-	-	-	-	2.0	2.0	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 0.2 BELOW CROSSARMS : 0.2
		30B	-	-	-	66.5	4.2	5.6	-	-	-	2.0	2.0	
		30C	-	-	-	-	-	-	66.5	4.2	5.6	2.0	2.0	
		30D	66.5	4.2	5.6	66.5	4.2	5.6	-	-	-	2.0	2.0	
		30E	66.5	4.2	5.6	-	-	-	66.5	4.2	5.6	2.0	2.0	
		30F	-	-	-	66.5	4.2	5.6	66.5	4.2	5.6	2.0	2.0	
		30G	66.5	4.2	5.6	66.5	4.2	5.6	66.5	4.2	5.6	2.0	2.0	
4	1) 0 ICE 2) 0 WIND 3) -1° C 4) EVERYDAY LOADING	40A	33.1	3.6	0.0	-	-	-	-	-	-	2.0	2.0	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 0.2 BELOW CROSSARMS : 0.2
		40B	-	-	-	33.1	3.6	0.0	-	-	-	2.0	2.0	
		40C	-	-	-	-	-	-	33.1	3.6	0.0	2.0	2.0	
		40D	33.1	3.6	0.0	33.1	3.6	0.0	-	-	-	2.0	2.0	
		40E	33.1	3.6	0.0	-	-	-	33.1	3.6	0.0	2.0	2.0	
		40F	-	-	-	33.1	3.6	0.0	33.1	3.6	0.0	2.0	2.0	
		40G	33.1	3.6	0.0	33.1	3.6	0.0	33.1	3.6	0.0	2.0	2.0	
5	1) 13MM UNEQUAL ICE 2) 0 WIND 3) -20° C	50A	49.9	4.8	26.0	87.1	8.0	0.0	87.1	8.0	0.0	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
		50B	87.1	8.0	0.0	49.9	4.8	26.0	87.1	8.0	0.0	1.5	1.75	
		50C	87.1	8.0	0.0	87.1	8.0	0.0	49.9	4.8	26.0	1.5	1.75	
		50D	49.9	4.8	26.0	49.9	4.8	26.0	87.1	8.0	0.0	1.5	1.75	
		50E	49.9	4.8	26.0	87.1	8.0	0.0	49.9	4.8	26.0	1.5	1.75	
		50F	87.1	8.0	0.0	49.9	4.8	26.0	49.9	4.8	26.0	1.5	1.75	
		50G	49.9	4.8	26.0	49.9	4.8	26.0	49.9	4.8	26.0	1.5	1.75	

NOTES

1) ALL LOADS ARE IN "KN" EXCEPT AS OTHERWISE NOTED
2) LOAD APPLICATION
   A) THE TRANSVERSE LOADS SHOWN IN THE LOAD TABLE ARE REVERSIBLE. THE LONGITUDINAL LOADS SHOWN IN THE LOAD TABLE ARE REVERSIBLE.
   B) ULTIMATE TOWER DESIGN LOADS FOR ALL CASES SHALL BE THE WORKING CONDUCTOR PHASE LOADS TIMES THE LOAD FACTOR AS SPECIFIED IN THE LOAD TABLE.
   C) ALL HORIZONTAL AND DIAGONAL MEMBERS SHALL BE DESIGNED TO WITHSTAND AN ULTIMATE VERTICAL LOAD CONCENTRATED AT THE CENTER OF THE UNSUPPORTED LENGTH OF ANY MEMBER WITHOUT PERMANENT DEFORMATION. THIS VERTICAL LOAD SHALL BE 0.9KN IN COMBINATION WITH THE MAXIMUM AXIAL MEMBER FORCE DERIVED FROM STRUCTURAL ANALYSIS OR 1.35KN UNCOMBINED, WHICHEVER GOVERNS.
   D) THE BRIDGE SHALL BE DESIGNED TO SUPPORT AN ULTIMATE VERTICAL LOAD OF 65KN CONCENTRATED AT THE CENTRE OF THE BRIDGE. THE TOWER SHALL ALSO BE DESIGNED TO SUPPORT AN ULTIMATE LOAD OF 65KN APPLIED AT ANY ONE PHASE SUPPORT POINT IN THE PULLEY SYSTEM IN COMBINATION WITH THE LOADS OF CASE 4 AS SPECIFIED IN NOTE 5 OF THE SPECIFICATION DRAWING NO. 5L46-T08-B1.
   E) THE BRIDGE MAIN TOP CHORD MEMBERS SHALL BE CAPABLE OF SUPPORTING AN ULTIMATE VERTICAL LOADS OF 4.45KN CONCENTRATED AT CENTRE OF THE UNSUPPORTED LENGTH OF THE MEMBER IN COMBINATION WITH THE AXIAL MEMBER FORCE DERIVED FROM LOAD CASE 4 WITHOUT PERMANENT DEFORMATION.
3) V1-V3, T1-T3 AND L1-L3 DENOTE THE VERTICAL, TRANSVERSE AND LONGITUDINAL LOADS AS SHOWN IN "KEY LOAD MARK".
4) UNLESS OTHERWISE NOTED, REFER TO SPECIFICATION DRAWING NO. 5L46-T08-B1.



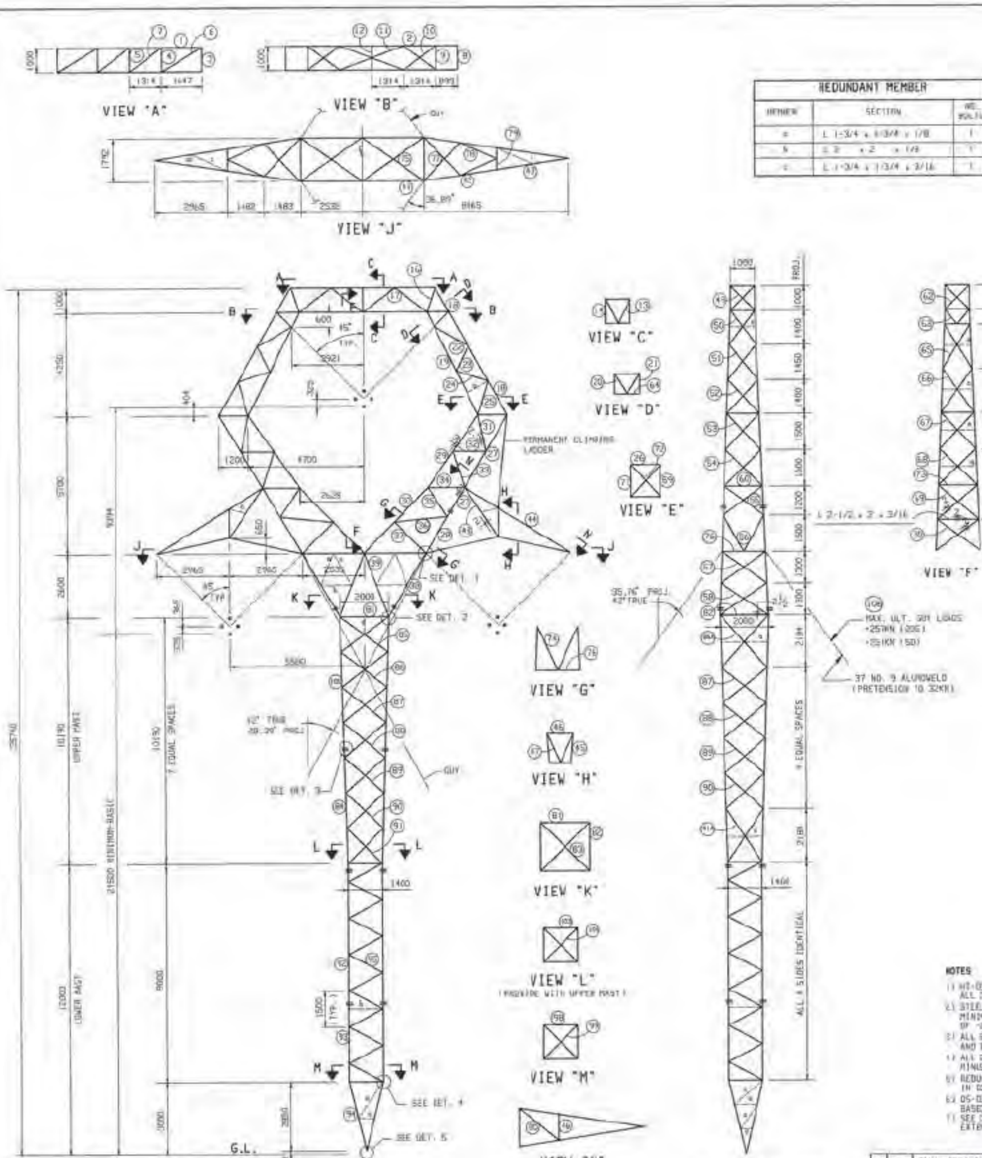
KEY LOAD MARK

DRAWING CHECKED FOR CONTENT ONLY

Δ	NO	REVISIONS	MADE	CHKD	SUBD	APPD	INSP	INSP	INSP	DATE
	R1	REVISED NOTES 2 (C,D,E)								'91.5.30
	0	ISSUED FOR APPROVAL								'91.5.17

DESIGNED	SUBMITTED	SEAL	DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD. — FUNCTIONAL CODE 3.03
DRAWN	INSPECTED		BRITISH COLUMBIA HYDRO AND POWER AUTHORITY TRANSMISSION DESIGN DEPARTMENT
CHECKED DRAFTING	INSPECTED		KELLY LAKE-CHEEKYE 500KV TRANSMISSION LINE
CHECKED DESIGN	INSPECTED		LOADING TREE TABLE DRAWING FOR TYPE "52A" GUYED SUSPENSION TOWER (0°-2°)
APPROVED		DATE	SCALE M — DWG. NO. 5L46-T08-C28 — REV. 1

CAD FILE NO. L/DGN/



REDUNDANT MEMBER		
MEMBER	SECTION	NO. BOLTS
a	L 1-3/4 x 1-3/4 x 1/8	1
b	L 2 x 2 x 1/8	1
c	L 1-3/4 x 1-3/4 x 3/16	1

MAX. ULTIMATE MAST FOUNDATION REACTIONS

VERTICAL = 1079KN (50B)
TRANS. SHEAR = 86KN (2E)
LONGIT. SHEAR = 74KN (50D)
(1.75 LOAD FACTOR)

MEMBER NO.	MEMBER SIZE	MAX. ULT. LOADS (kN) COMPR.	CASE	TENSION	CASE	MAX. NO. HOLES REMOVED (TENSION)	NO. BOLTS
1	L 3 x 3 x 1/4	-68	5A	+6	20A	2	2
2	L 2-1/2 x 2-1/2 x 3/16	-52	41	+44	50A	2	2
3	L 1-3/4 x 1-3/4 x 3/16	-12	2G	+12	2G	1	1
4	L 1-3/4 x 1-3/4 x 3/16	-9	2G	+9	2G	1	1
5	L 1-3/4 x 1-3/4 x 3/16	-14	4H	+19	30G	1	1
6	L 2 x 2 x 3/16	-17	20G	+17	20G	1	1
7	L 1-3/4 x 1-3/4 x 3/16	-10	40H	+10	40H	1	1
8	L 1-3/4 x 1-3/4 x 3/16	-21	30A	+7	4L	1	1
9	L 1-3/4 x 1-3/4 x 3/16	-10	2G	+1	2A	1	1
10	L 1-3/4 x 1-3/4 x 3/16	-3	50A	+2	40I	1	1
11	L 1-3/4 x 1-3/4 x 3/16	-4	4I	+6	50A	1	1
12	L 3 x 3 x 3/16	--		--		2	1
13	L 1-3/4 x 1-3/4 x 3/16	-5	5A	+31	40H	1	1
14	L 1-3/4 x 1-3/4 x 3/16	-29	40H	+4	5A	2	1
16	L 1-3/4 x 1-3/4 x 3/16	-6	2A	+44	20G	2	2
17	L 2 x 2 x 3/16	-25	40H	+24	40H	1	1
18	L 2-1/2 x 2-1/2 x 3/16	-74	40L	+40	50B	2	2/4
19	L 2-1/2 x 2-1/2 x 3/16	-88	5D	+77	20G	2	3/4
20	L 3 x 2 x 3/16	-10	40K	+61	5E	1	2
21	L 1-3/4 x 1-3/4 x 3/16	-39	50A	+59	41	2	2
22	L 1-3/4 x 1-3/4 x 3/16	--		+67	50A	1	2
23	L 2 x 2 x 3/16	-42	50A	--		1	2
24	L 1-3/4 x 1-3/4 x 3/16	--		+46	50A	1	2
25	L 2-1/2 x 2 x 3/16	-44	50A	--		1	2
26	L 2-1/2 x 2-1/2 x 3/16	-60	10D	--		2	3
27	L 3 x 3-1/2 x 3/16	-90	5E	+108	50D	2	4/40S
28	L 4 x 4 x 3/8 HT	-178	5A	+65	50D	4	
29	L 3 x 2-1/2 x 1/4	-91	50A	+23	20A	2	3
30	L 3 x 3 x 1/4	-64	20E	+155	20E	2	3
31	L 3 x 2-1/2 x 3/16	-71	5D	+59	50D	1	2
32	L 2 x 2 x 3/16	+46	50D	+62	5D	1	2
33	L 2-1/2 x 2-1/2 x 3/16	-60	5D	+48	50D	1	2
34	L 2-1/2 x 2-1/2 x 3/16	-9	10C	+116	5E	1	3
35	L 3 x 3 x 3/16	-102	5E	--		1	3
36	L 2-1/2 x 2-1/2 x 3/16	--		+114	5E	1	2
37	L 3-1/2 x 3-1/2 x 1/4	-125	5A	+2	20C	2	3
38	L 4 x 4 x 3/8 HT	-467	50D	+13	1C	4	7
39	L 3-1/2 x 3-1/2 x 5/16 HT	-200	5E	+250	1E	1	4
41	L 2-1/2 x 2-1/2 x 3/16	-36	5A	+74	50F	2	2
42	L 4 x 4 x 1/4 HT	-132	50B	+2	50B	3	4
43	L 4 x 4 x 1/4 HT	-168	30G	--		3	4
44	L 3-1/2 x 3-1/2 x 1/4	-1	40K	+139	50A	2	3
45	L 2-1/2 x 2-1/2 x 3/16	-66	40H	+8	50B	2	2
46	L 1-3/4 x 1-3/4 x 3/16	-24	40H	--		1	1
47	L 1-3/4 x 1-3/4 x 3/16	-16	30B	+72	40B	1	2
48	L 3 x 2 x 3/16	-73	30A	+70	40B	1	2
49	L 1-3/4 x 1-3/4 x 3/16	-25	50A	+3	1E	1	1
50	L 1-3/4 x 1-3/4 x 3/16	-24	5A	+18	5A	1	1
51	L 1-3/4 x 1-3/4 x 3/16	-16	5A	+21	5A	1	1
52	L 1-3/4 x 1-3/4 x 3/16	-18	5A	+14	5A	1	1
53	L 1-3/4 x 1-3/4 x 3/16	-9	5D	+16	50D	1	1
54	L 1-3/4 x 1-3/4 x 3/16	-14	50D	+6	5D	1	1
55	L 1-3/4 x 1-3/4 x 3/16	-7	50B	+9	50B	1	1
56	L 2 x 2 x 3/16	-15	50B	+11	50B	1	1
57	L 2 x 2 x 3/16	-18	5E	+21	50D	1	2
58	L 2 x 2 x 3/16	-19	50D	+16	5E	1	2
59	L 1-3/4 x 1-3/4 x 3/16	-1	2A	+8	2G	2	1
60	L 1-3/4 x 1-3/4 x 3/16	-11	4I	+3	1A	1	1
62	L 1-3/4 x 1-3/4 x 3/16	-3	2A	+25	20G	1	1
63	L 1-3/4 x 1-3/4 x 3/16	-14	50A	+10	50D	1	1
64	L 3 x 3 x 3/16	-8	40L	+2	50G	2	1
65	L 1-3/4 x 1-3/4 x 3/16	-6	40I	+16	4L	1	1
66	L 1-3/4 x 1-3/4 x 3/16	-13	4L	+5	4I	1	1
67	L 1-3/4 x 1-3/4 x 3/16	-33	5D	+27	5D	1	1
68	L 1-3/4 x 1-3/4 x 3/16	-24	5D	+29	5D	1	1
69	L 2-1/2 x 2 x 3/16	+46	5A	+13	5D	1	2
70	L 2-1/2 x 2 x 3/16	-37	5D	+7	5E	1	1
71	L 2-1/2 x 2-1/2 x 3/16	--		+14	30G	2	1
72	L 1-3/4 x 1-3/4 x 3/16	-31	5A	+13	5A	1	1
73	L 1-3/4 x 1-3/4 x 3/16	-5	2A	+15	30F	1	1
74	L 2 x 2 x 3/16	-8	10E	+67	5D	1	2
75	L 2 x 2 x 3/16	-17	50D	+38	50B	1	1
76	L 3 x 3 x 1/4	-2	3E	+117	50D	2	3
77	L 1-3/4 x 1-3/4 x 3/16	-2	5B	+2	5B	1	1
78	L 1-3/4 x 1-3/4 x 3/16	-6	5B	+6	5B	1	1
79	L 2 x 3 x 3/16	-5	5E	--		2	1
80	L 2-1/2 x 2 x 3/16	-7	50B	+7	50B	1	1
81	L 3-1/2 x 3-1/2 x 1/4 HT	-169	50B	--		2	3
82	L 2-1/2 x 2 x 3/16	-9	2E	+50	50B	2	2
83	L 2 x 2 x 3/16	-23	50B	--		1	1
84	L 4 x 4 x 3/8 HT	-517	20E	+216	2E	4	6DS
85	L 1-3/4 x 1-3/4 x 3/16	-12	2E	+7	2E	1	1
85A	L 2 x 2 x 3/16	-14	2E	+8	2E	1	1
86	L 1-3/4 x 1-3/4 x 3/16	-7	2E	+11	2E	1	1
87	L 1-3/4 x 1-3/4 x 3/16	-13	2E	+6	2E	1	1
88	L 1-3/4 x 1-3/4 x 3/16	-7	2E	+13	2E	1	1
89	L 1-3/4 x 1-3/4 x 3/16	-15	2E	+7	2E	1	1
90	L 1-3/4 x 1-3/4 x 3/16	-8	2E	+15	2E	1	1
91	L 1-3/4 x 1-3/4 x 3/16	-16	2E	+8	2E	1	1
91A	L 2 x 2 x 3/16	-22	2E	+10	2E	1	1
92	L 4 x 4 x 5/16 HT	-431	20E	+109	2E	4	6DS
93	L 4 x 4 x 1/4 HT	-317	50B	--		4	6
94	L 3-1/2 x 3-1/2 x 1/4 HT	-287	50B	--		3	6
95	L 2-1/2 x 2 x 3/16	-39	2E	+39	2E	1	1
96	L 2-1/2 x 2 x 3/16	-7	20E	+1	50B	2	1
97	L 1-3/4 x 1-3/4 x 3/16	-2	50B	--		1	1
98	L 2-1/2 x 2-1/2 x 3/16	--		+47	50B	2	2
99	L 1-3/4 x 1-3/4 x 3/16	--		+24	50B	1	1
100	L 4 x 4 x 3/8 HT	-527	20E	+202	20E	4	6DS
103	L 2-1/2 x 2 x 3/16	-19	20E	+6	2E	2	1
104	L 1-3/4 x 1-3/4 x 3/16	-4	50D	--		1	1
105	L 4 x 4 x 3/8 HT	-514	2E	+226	2E	4	6DS
106	37 NO. 9 ALUMOWELD			+257	20G		

NOTES

1) HT-DENOTES MEMBERS OF 35 KN/CM² MINIMUM YIELD POINT. ALL OTHER MEMBERS MAY HAVE A MINIMUM YIELD POINT OF 26 KN/CM².
2) STEEL SHALL CONFORM TO THE REQUIREMENTS OF A CHARPY V-NOTCH, MINIMUM AVERAGE ABSORBED ENERGY VALUE OF 20J AT TEMPERATURE OF -20°C.
3) ALL BOLTS TO BE IN ACCORDANCE WITH CSA STANDARD G33.4 GRADE 5 AND TO BE 5/8" DIAMETER WITH HELICAL MEDIUM SPRING WASHERS.
4) ALL DIMENSIONS ARE IN MILLIMETERS AND ALL FORCES ARE IN "KN" MINUS SIGN DENOTES COMPRESSION AND PLUS SIGN DENOTES TENSION.
5) REDUNDANT MEMBERS SHALL SUBDIVIDE THE MEMBERS BEING BRACED IN EQUAL LENGTHS.
6) DS-DENOTES AS DOUBLE SHEAR. NUMBER OF BOLTS TABULATED IS BASED ON SINGLE SHEAR.
7) SEE DWG. NO. 5L46-T0B-D38 FOR MAST EXTENSIONS, FOUNDATIONS AND TOWER CONNECTIONS.

NO.	REVISIONS		DATE
5	FINAL REVISION PER BC HYDRO COMMENTS	[redacted]	3/93
4	REVISED PER HSI, BC HYDRO COMMENTS		2/93
3	REVISED PER TEST 53A TOWER		9/92
2	REVISED PER HSI, BC HYDRO COMMENTS		1/29
1	REVISED PER HSI, BC HYDRO COMMENTS		11/27

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL IND. CO., LTD.

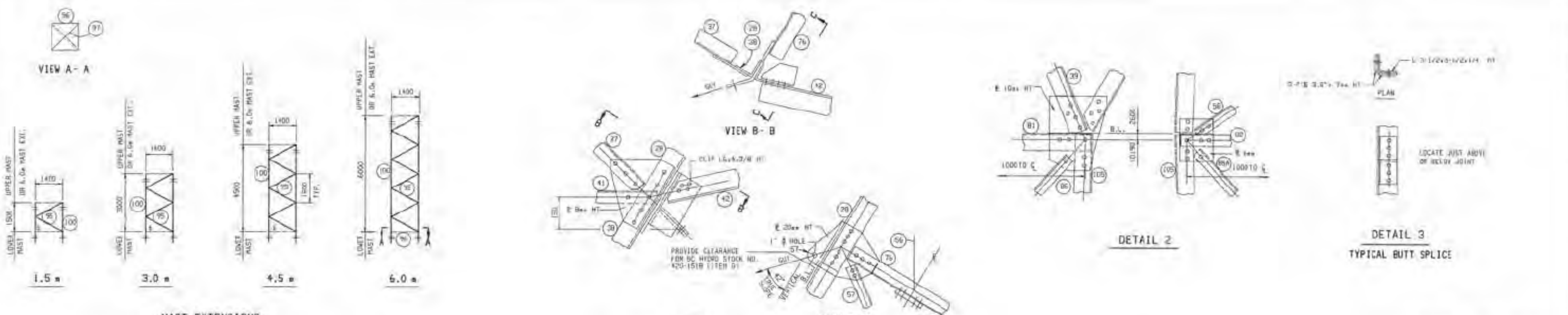
FUNCTIONAL CODE 3.01/52A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500KV T/L

TYPE 52A GUYED SUSP. TOWER (0'-2')
DESIGN DRAWING

DATE OCT. 16, 1991 | SCALE 1:100 | DWG. NO. 5L46-T0B-D37 | 5

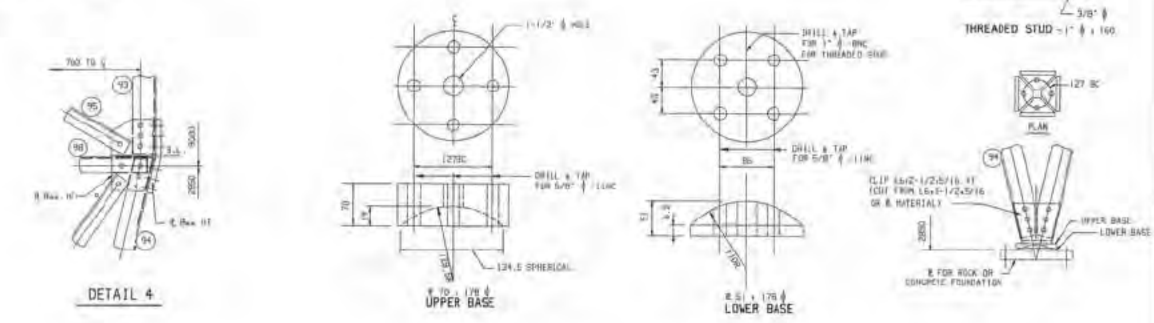


MAST EXTENSIONS

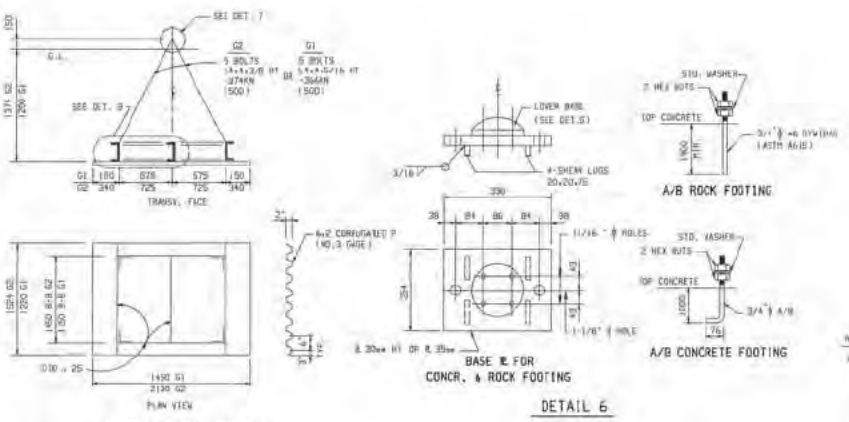
DETAIL 1
TYPICAL GUY ATTACHMENT

PERMISSIBLE MAST EXTENSION COMBINATIONS				
TOWER HEIGHT (m)	MAST EXTENSION (m)			
	1.5	3.0	4.5	6.0
21.5	0	0	0	0
23.0	1	0	0	0
24.5	0	1	0	0
26.0	0	0	1	0
27.5	0	0	0	1
29.0	1	0	0	1
30.5	0	1	0	1
32.0	0	0	1	1
33.5	0	0	0	2

REDUNDANT MEMBER		
MEMBER	SECTION	NO. BOLTS
[illegible]	L 1-3/4 x 1-3/4 x 1/8	1
[illegible]	L 2 x 2 x 1/8	1
[illegible]	L 1-3/4 x 1-3/4 x 3/16	1

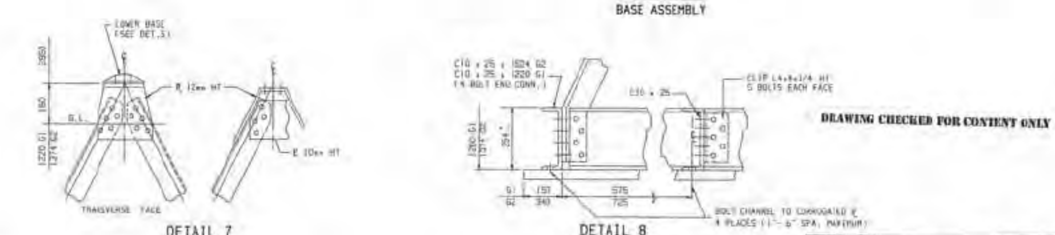


DETAIL 5
BASE ASSEMBLY



G1 GRILLAGE (GOOD SOIL)
G2 GRILLAGE (POOR SOIL)

DETAIL 6



DETAIL 7

DETAIL 8

DRAWING CHECKED FOR CONTENT ONLY

NOTES:

1. SEE DWG 5L46-T08-037 FOR BASIC TOWER DESIGN AND GENERAL NOTES.

4	FINAL REVISION PER BC HYDRO COMMENTS	[redacted]	3/93
3	REVISED ISSUE PER BCH'S COMMENTS		2/93
2	REVISED PER HSI, BC HYDRO COMMENTS		1/29
1	REVISED SIZE GRILLAGE CHANNEL		11/27
NO.	REVISIONS		DATE

DESIGNED BY
HYUNDAI STEEL IND. CO., LTD

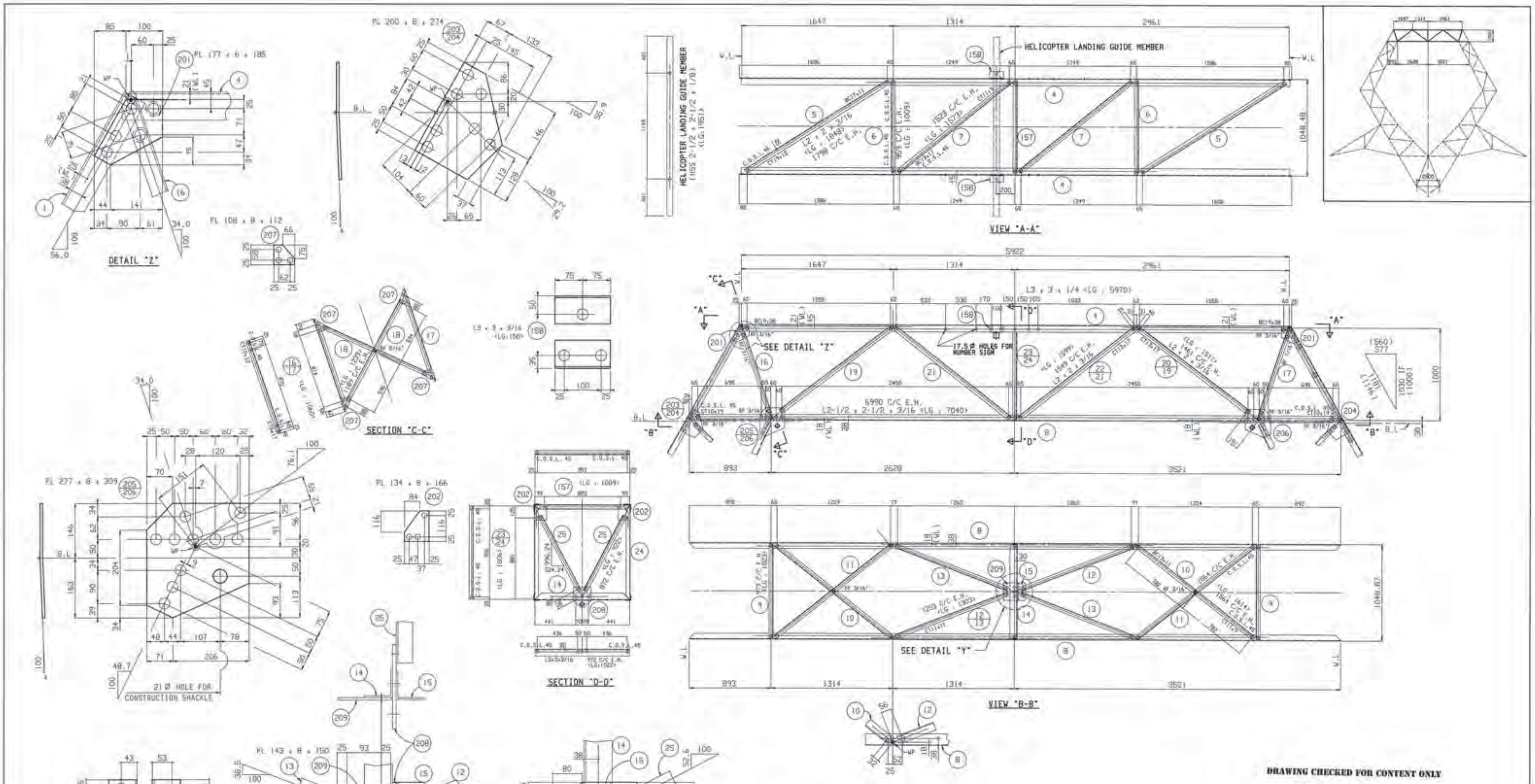
3.01/52A

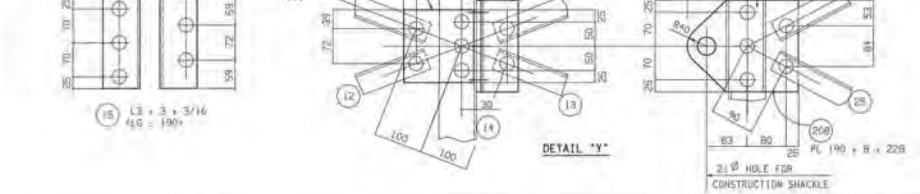
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500KV T/L

TYPE 52A GUYED SUSP. TOWER (0'-2')
DESIGN DRAWING

DATE: OCT.16, 1991 | SCALE: 1:100 | DWG. No. 5L46-T08-D38 | 4





DRAWING CHECKED FOR CONTENT ONLY

NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B78
2. MARK NUMBER DESIGNATION:
(35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 4 TO 25, 157 & 158
Mk Nos(PLATE) : 201 TO 209

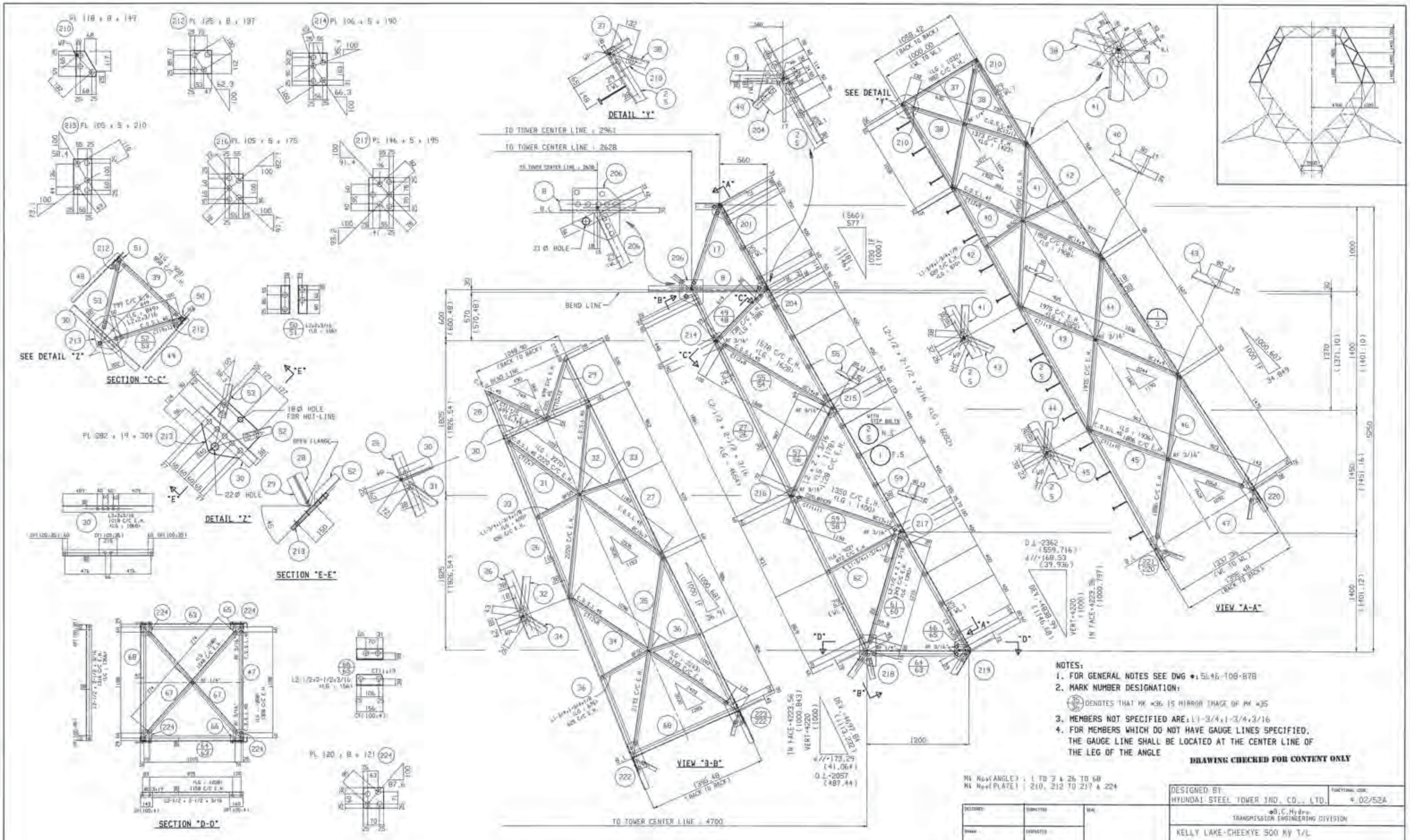
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD | 4.02/52A

B.C.Hydro TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "52A" TYPE TOWER
(BRIDGE)

5L46-T08-B81



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

DRAWING CHECKED FOR CONTENT ONLY

MK Nos(ANGLE) : 1 TO 3 & 26 TO 68
MK Nos(PLATE) : 210, 212 TO 217 & 224

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

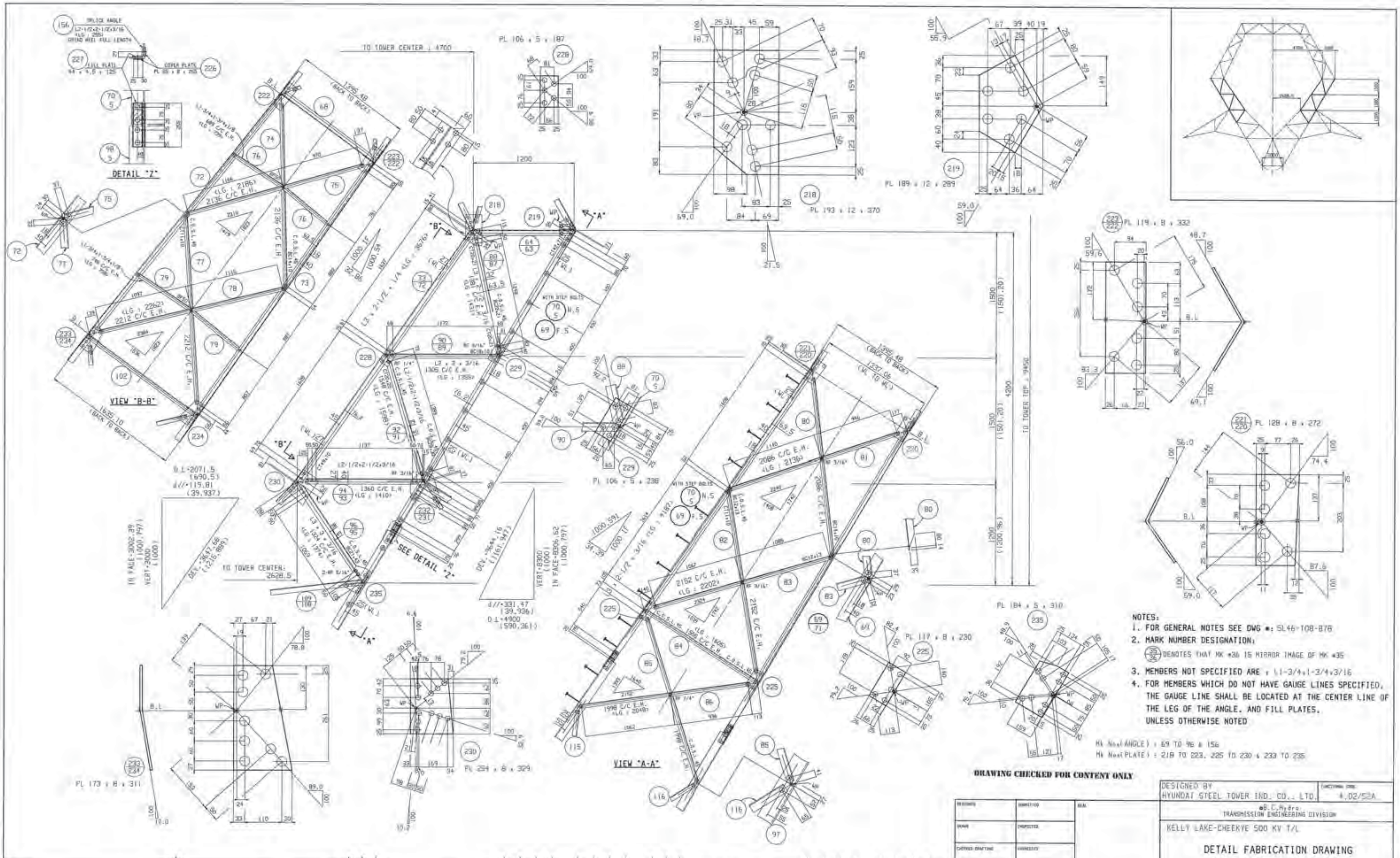
4.02/52A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "52A" TYPE TOWER
(UPPER PART I)

5L46-T08-082



NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE. AND FILL PLATES. UNLESS OTHERWISE NOTED

Mk Nos(ANGLE) : 69 TO 96 & 156
Mk Nos(PLATE) : 218 TO 223, 225 TO 230 & 233 TO 235

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

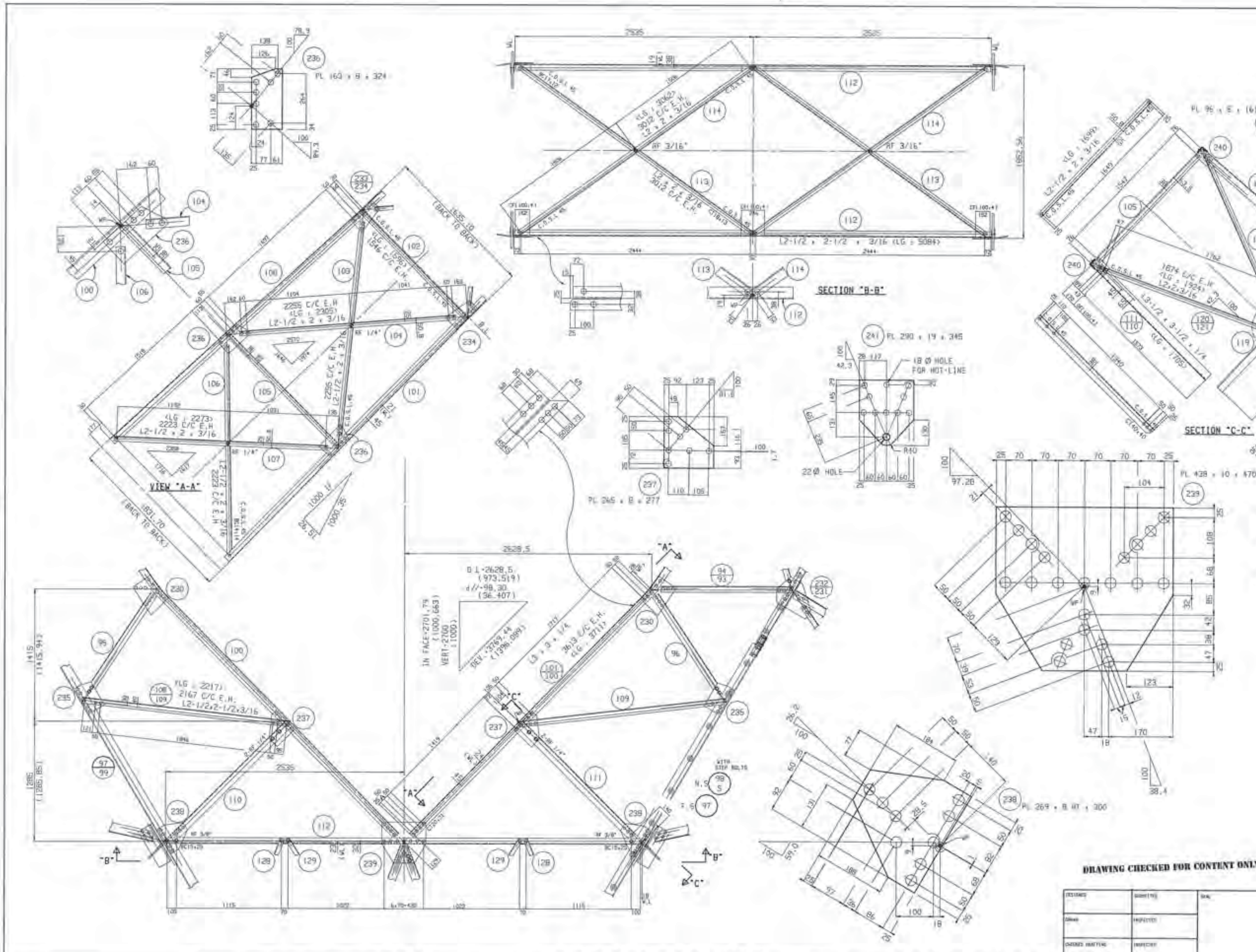
4.02/52A

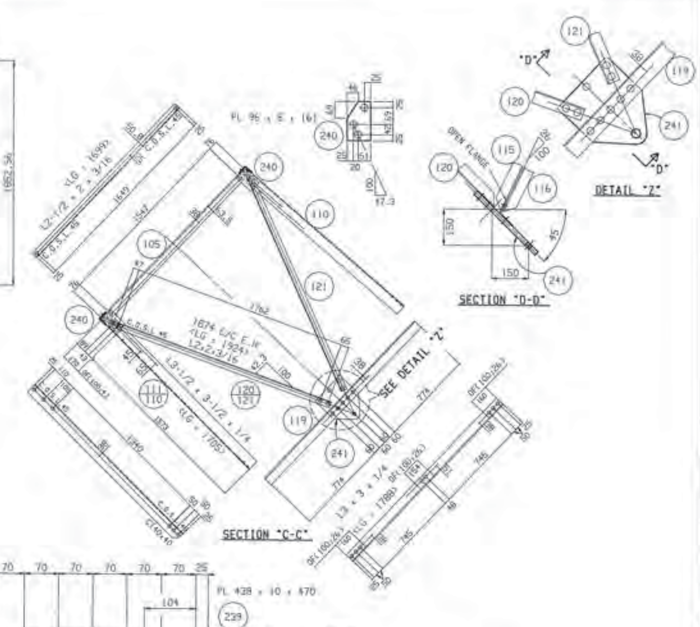
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "52A" TYPE TOWER
(UPPER PART 2)

SL46-T08-083



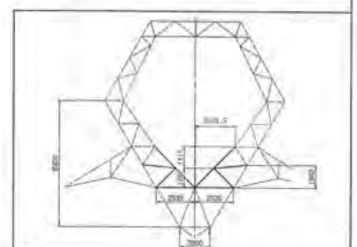


NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T08-B78
2. MARK NUMBER DESIGNATION:

   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK Nos(ANGLE) : 100 TO 114, 120 & 121
MK Nos(PLATE) : 236 TO 241



DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

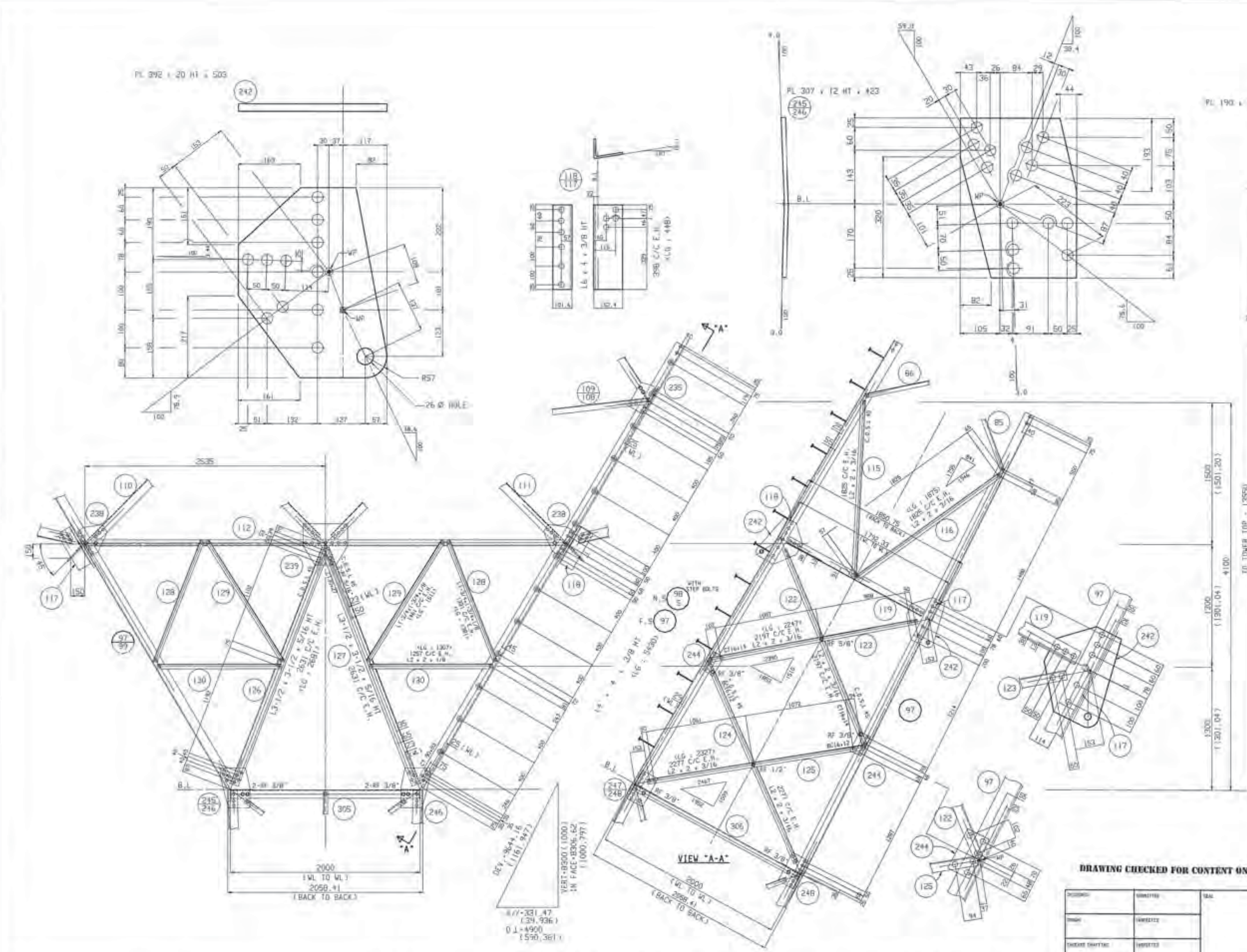
4.02/52A

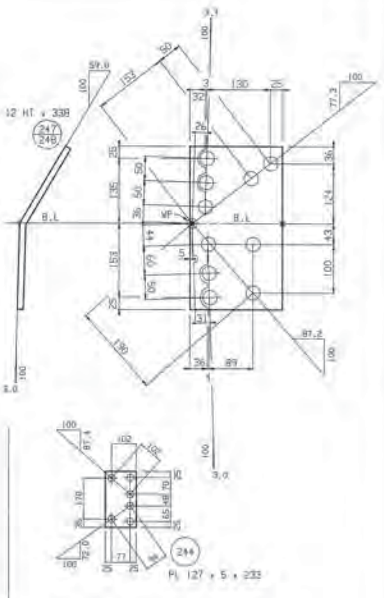
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "52A" TYPE TOWER
(UPPER PART 3)

SL46-T08-D84

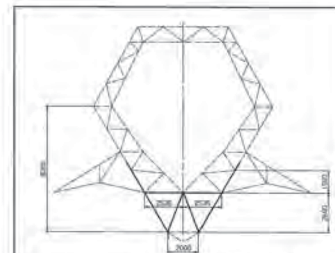




NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 97 TO 98, 115 TO 117 & 122 TO 130
Mk Nos(PLATE) : 242, 244 TO 248



DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

FUNCTIONAL CODE: 4.02/S2A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

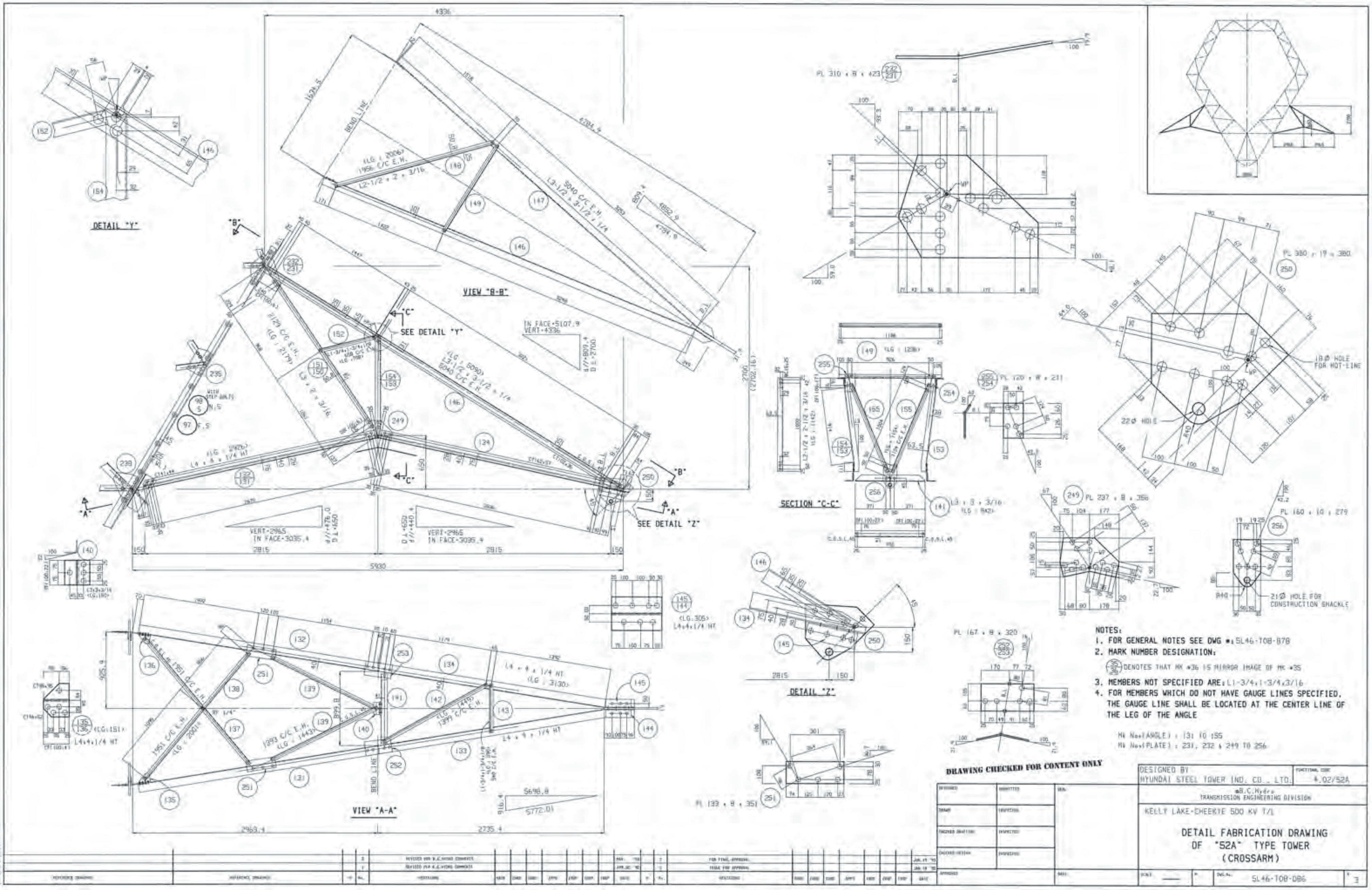
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "S2A" TYPE TOWER
(UPPER PART 4)

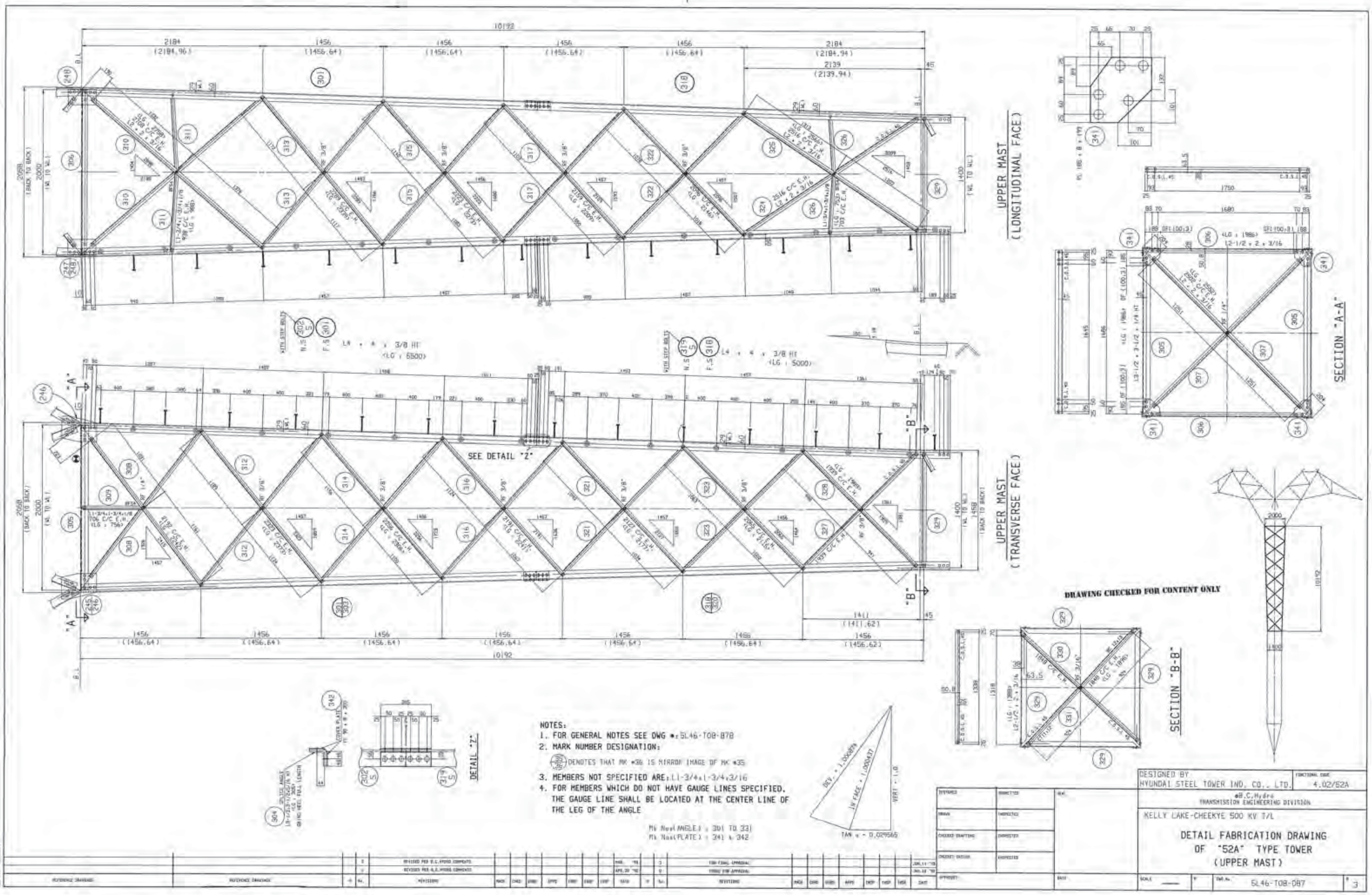
SCALE: ——

DWG No. 5L46-T08-085

3



DETAIL "Y"
VIEW "B-B"
SEE DETAIL "Y"
SECTION "C-C"
VIEW "A-A"
DETAIL "Z"
SEE DETAIL "Z"
IN FACE-5107.9
VERT-4336
VERT-2965
IN FACE-3035.4
5930
PL 310 x 8 x 423
PL 380 x 19 x 380
18 Ø HOLE FOR HOT-LINE
22 Ø HOLE
PL 120 x 8 x 231
PL 237 x 8 x 356
PL 160 x 10 x 279
21 Ø HOLE FOR CONSTRUCTION SHACKLE
PL 167 x 8 x 320
PL 133 x 8 x 351
NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE
Mk No.(ANGLE) : 131 TO 155
Mk No.(PLATE) : 231, 232 & 249 TO 256
DRAWING CHECKED FOR CONTENT ONLY
DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.
4.02/52A
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION
KELLY LAKE-CHEEKYE 500 KV T/L
DETAIL FABRICATION DRAWING
OF "52A" TYPE TOWER
(CROSSARM)
5L46-T08-086
3



NOTES:
1. FOR GENERAL NOTES SEE DWG #:5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (36/35) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4xL1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 301 TO 331
Mk Nos(PLATE) : 341 & 342

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/52A

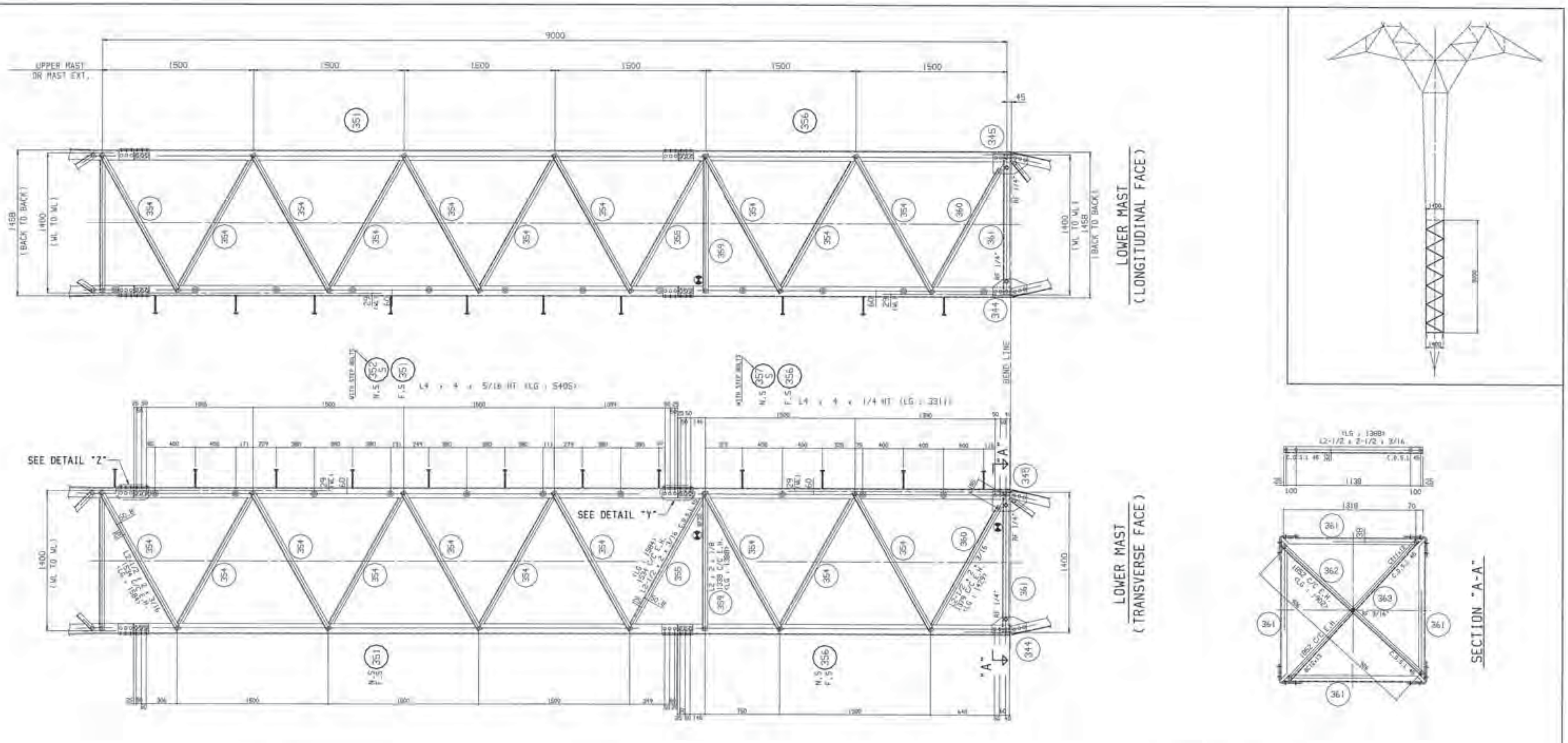
B.C.Hydro TRANSMISSION ENGINEERING DIVISION

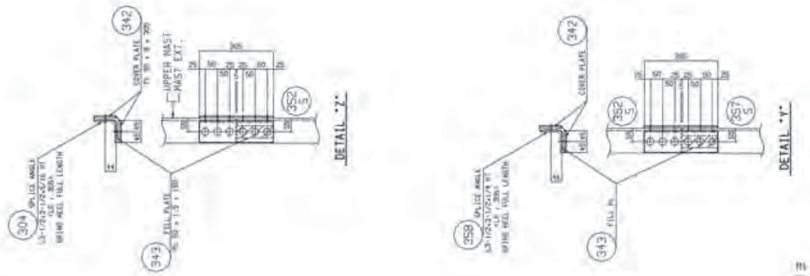
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING OF "52A" TYPE TOWER (UPPER MAST)

5L46-T08-087 | 3

REVISED PER B.C.HYDRO COMMENTS
FOR FINAL APPROVAL
ISSUED FOR APPROVAL





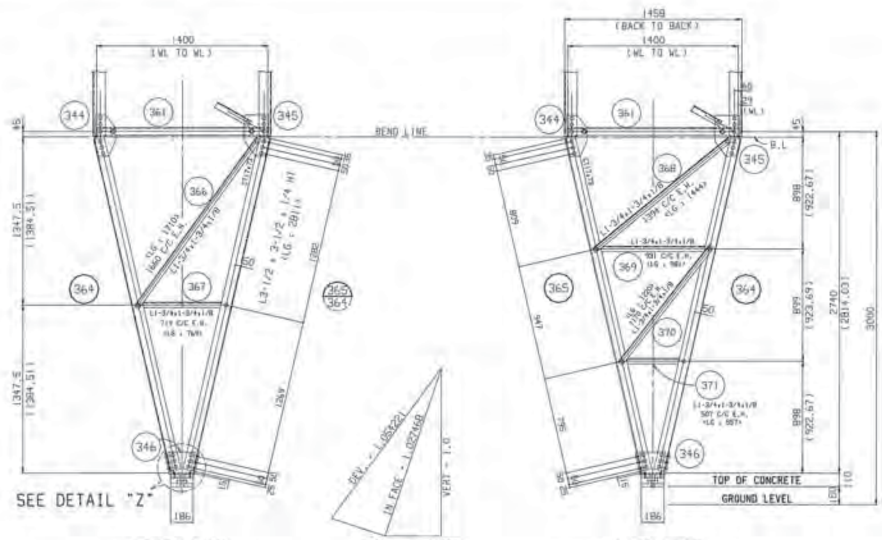
MK Nos(ANGLE) : 304, 351, 352 & 354 TO 363
MK Nos(PLATE) : 342 & 343

NOTES:
1. FOR GENERAL NOTES SEE DWG #: SL46-T08-B78
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE, AND FILL PLATES, UNLESS OTHERWISE NOTED

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	FUNCTIONAL CODE 4.02/52A
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "52A" TYPE TOWER (LOWER MAST 1)	
SCALE —	DWG.No. SL46-T08-D88

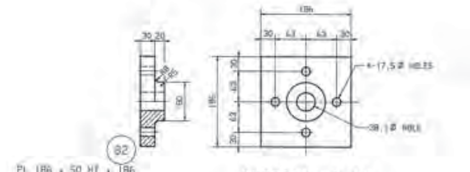
REVISIONS	
REVISED PER B.C.HYDRO COMMENTS	
FOR FINAL APPROVAL	
ISSUE FOR APPROVAL	



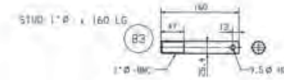
SEE DETAIL "Z"

LOWER MAST
(TRANSVERSE FACE)

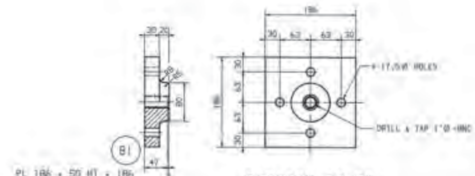
LOWER MAST
(LONGITUDINAL FACE)



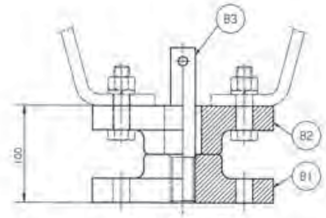
SECTION "A-A"
(UPPER BASE)



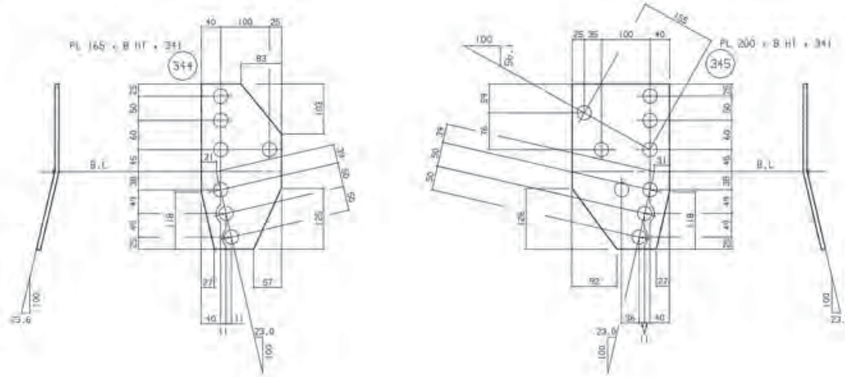
THREADED STUD

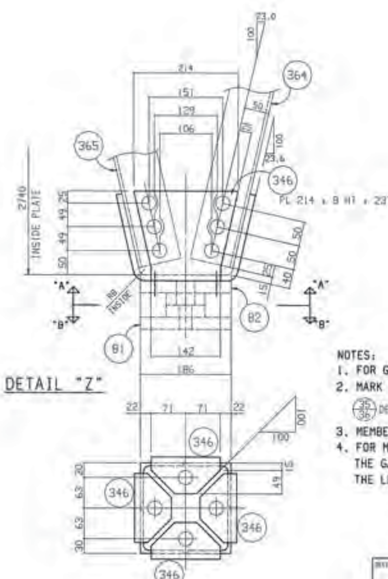


SECTION "B-B"
(LOWER BASE)



BASE ASSEMBLY





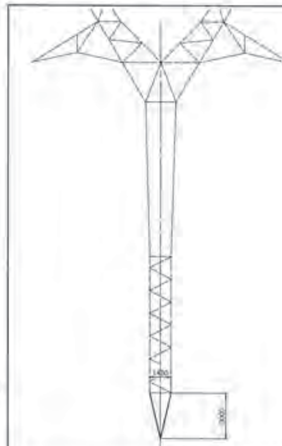
DETAIL "Z"

DRAWING CHECKED FOR CONTENT ONLY

NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 364 TO 371
Mk No.(PLATE) : 344 TO 346



DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/52A

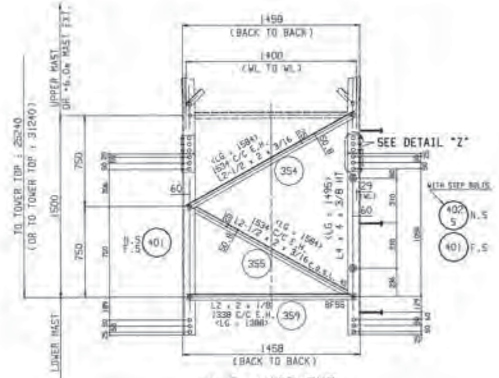
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

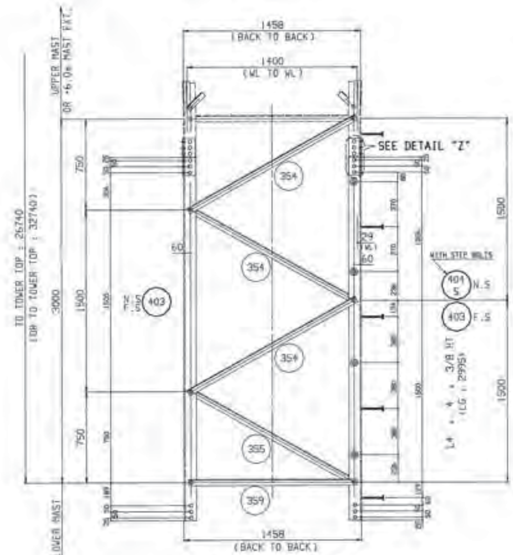
DETAIL FABRICATION DRAWING
OF "52A" TYPE TOWER
(LOWER MAST 2)

5L46-T08-089

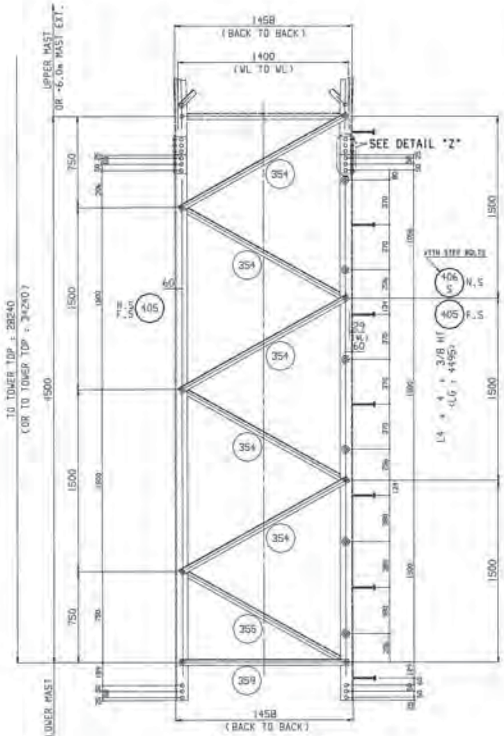
4



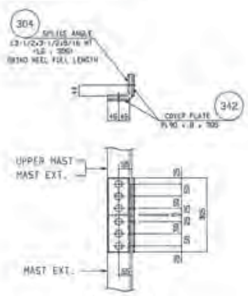
+1.5m MAST EXT.
(4-FACES IDENTICAL)



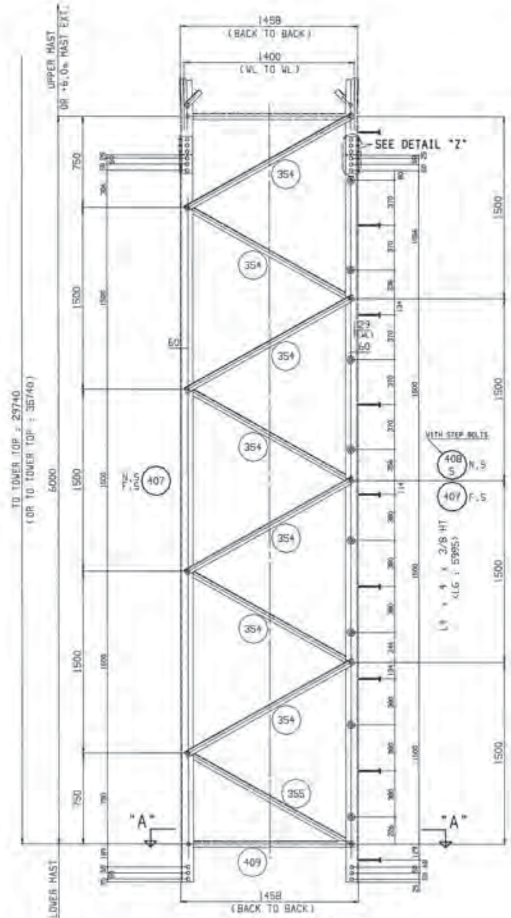
+3.0m MAST EXT.
(4-FACES IDENTICAL)



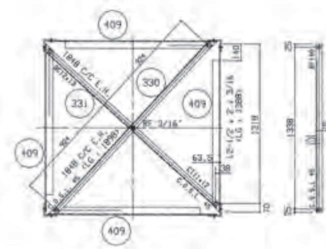
+4.5m MAST EXT.
(4-FACES IDENTICAL)



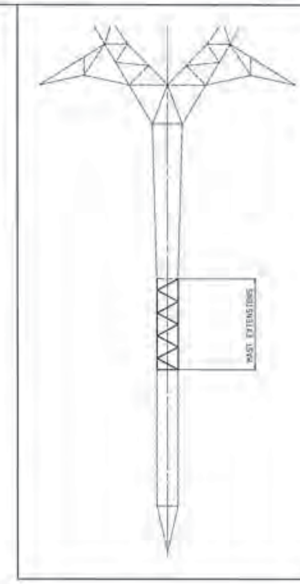
DETAIL "Z"



+6.0m MAST EXT.
(4-FACES IDENTICAL)



SECTION "A-A"



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4, 1-3/4, 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 304, 330, 331, 354, 355, 359 & 401 TO 409
Mk No.(PLATE) : 342

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.

FUNCTIONAL CODE 4.02/52A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

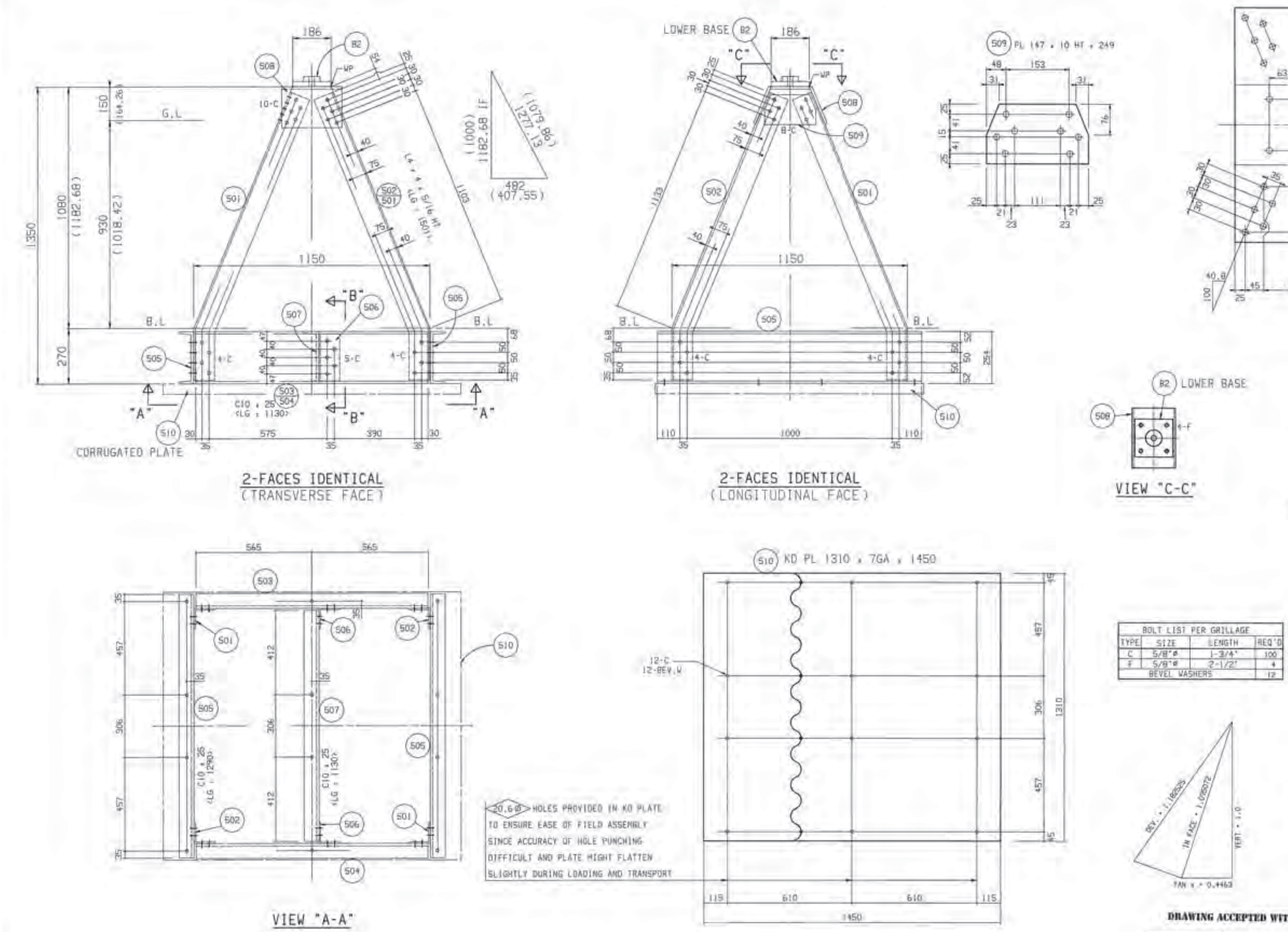
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "52A" TYPE TOWER
(MAST EXTENSIONS)

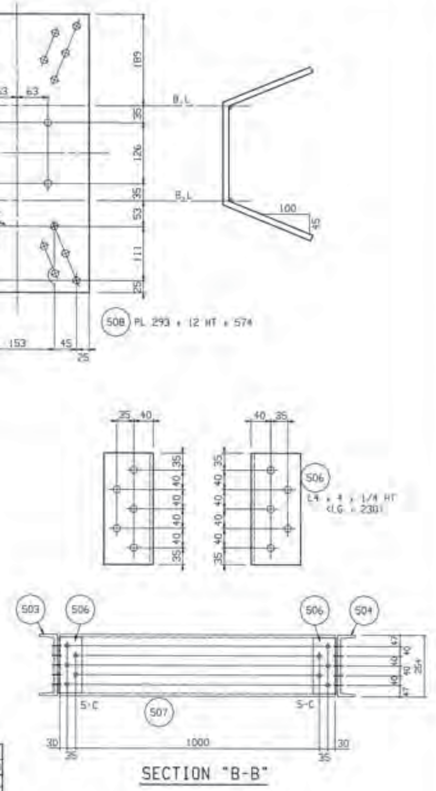
DWG.No. 5L46-T08-090

3

DETAIL FABRICATION DRAWING OF "52A" TYPE TOWER (G1 GRILLAGE FOUNDATION)



BOLT LIST PER GRILLAGE			
TYPE	SIZE	LENGTH	REQ'D
C	5/8"Ø	1-3/4"	100
F	5/8"Ø	2-1/2"	4
BEVEL WASHERS			12



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T0B-B78
2. MARK NUMBER DESIGNATION:
(35/35) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35

Mk-Nos: 501 TO 510

DRAWING ACCEPTED WITHOUT CHECKING

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

FUNCTIONAL CODE 4.02/52A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "52A" TYPE TOWER
(G1 GRILLAGE FOUNDATION)

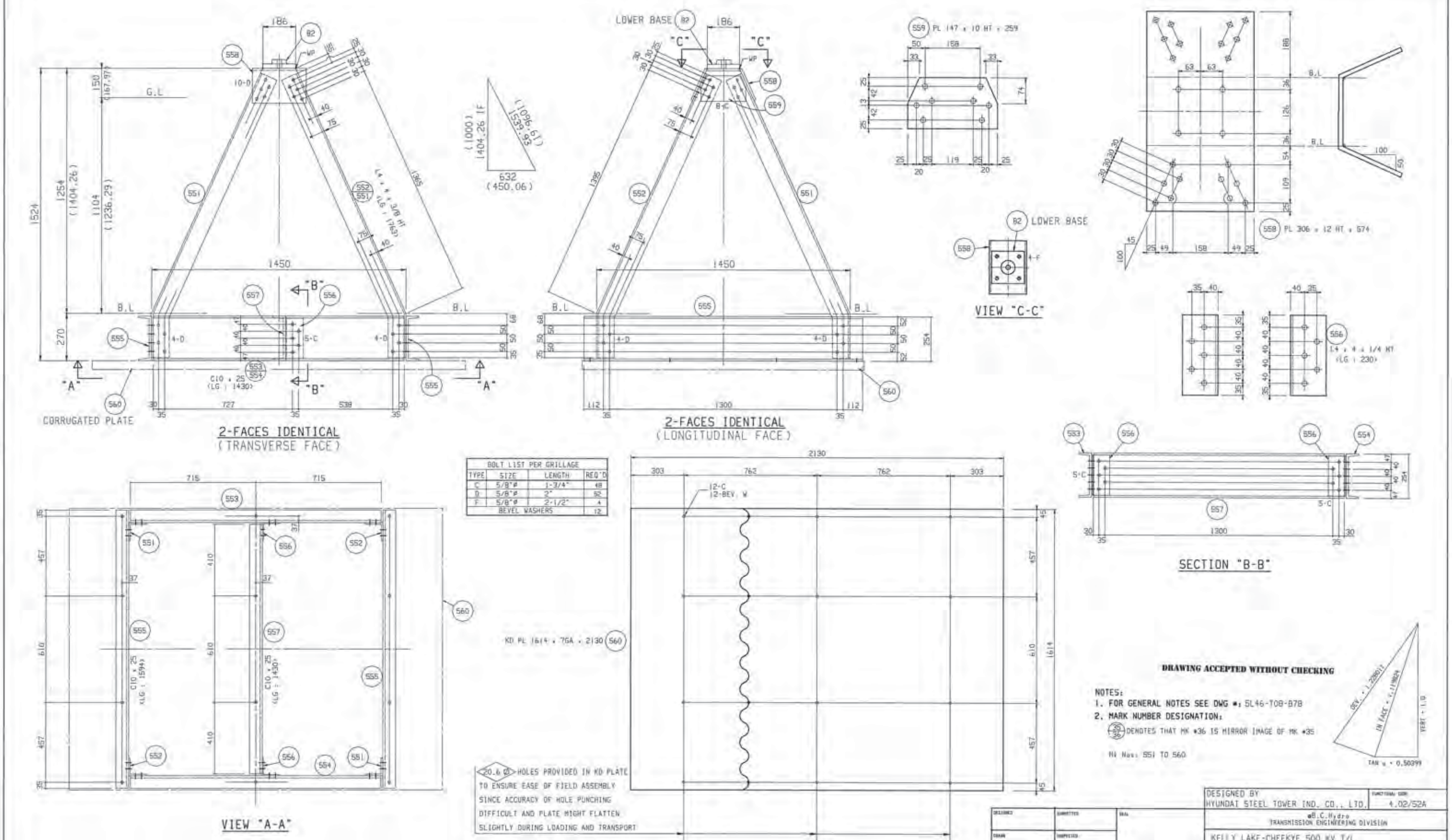
DWG.No. 5L46-T0B-D91 | 2

5L46-T0B-D99 : LOWER MAST — REFERENCE DRAWINGS

REVISED PER B.C.HYDRO COMMENTS

FOR FINAL APPROVAL

ISSUE FOR APPROVAL



BOLT LIST PER GRILLAGE			
TYPE	SIZE	LENGTH	REQ'D
C	5/8"Ø	1-3/4"	48
D	5/8"Ø	2"	52
F	5/8"Ø	2-1/2"	4
BEVEL WASHERS			12

DRAWING ACCEPTED WITHOUT CHECKING

NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35

MK Nos: 551 TO 560

TAN α = 0.50399

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.

FUNCTIONAL CODE 4.02/52A

B.C.Hydro TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "52A" TYPE TOWER
(G2 GRILLAGE FOUNDATION)

DWG No. 5L46-T08-092 — 2

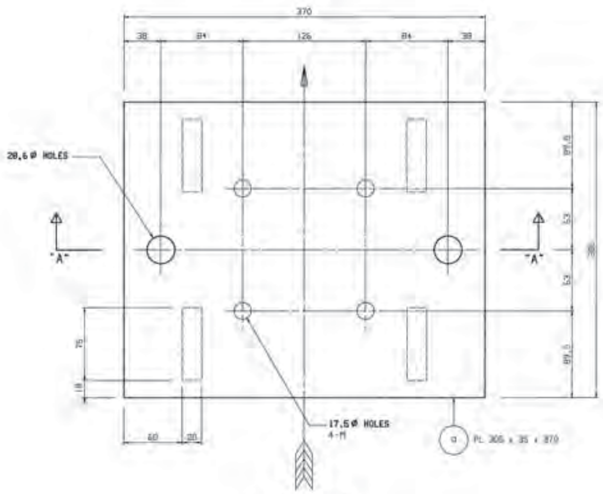
5L46-T08-099 : LOWER MAST — REFERENCE DRAWING

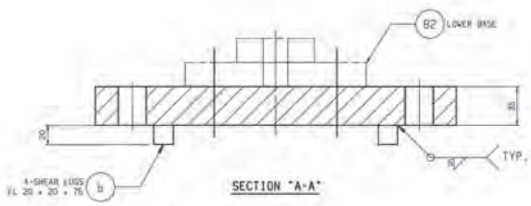
REVISED PER B.C.HYDRO COMMENTS

FOR FINAL APPROVAL

ISSUE FOR APPROVAL

FOUNDATION FOR CONCRETE & ROCK

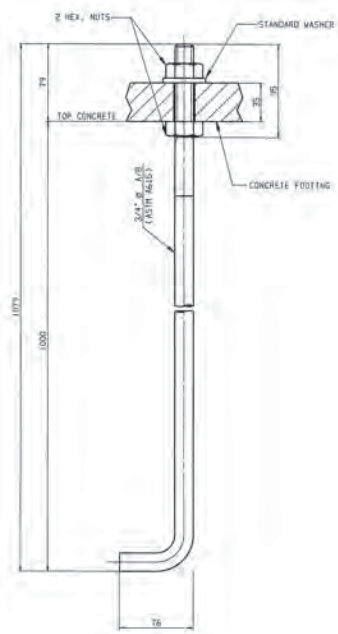




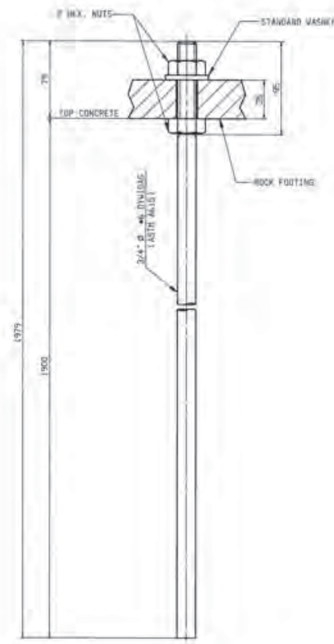
SECTION "A-A"

581 WELDED ASSEMBLY

A/B CONCRETE FOOTING



A/B ROCK FOOTING



BOLT LIST PER TOWER			
TYPE	SIZE	LENGTH	REQ'D
M	5/8"Ø	3-1/2"	4

NOTE:
FOR GENERAL NOTES SEE DWG #: SL46-T08-878

Mk No. : 581

DRAWING ACCEPTED WITHOUT CHECKING

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

FUNCTIONAL CODE 4.02/52A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "52A" TYPE TOWER
(FOUNDATION FOR CONCRETE & ROCK FOOTING)

SCALE ——— DWG No. SL46-T08-D93 # 2

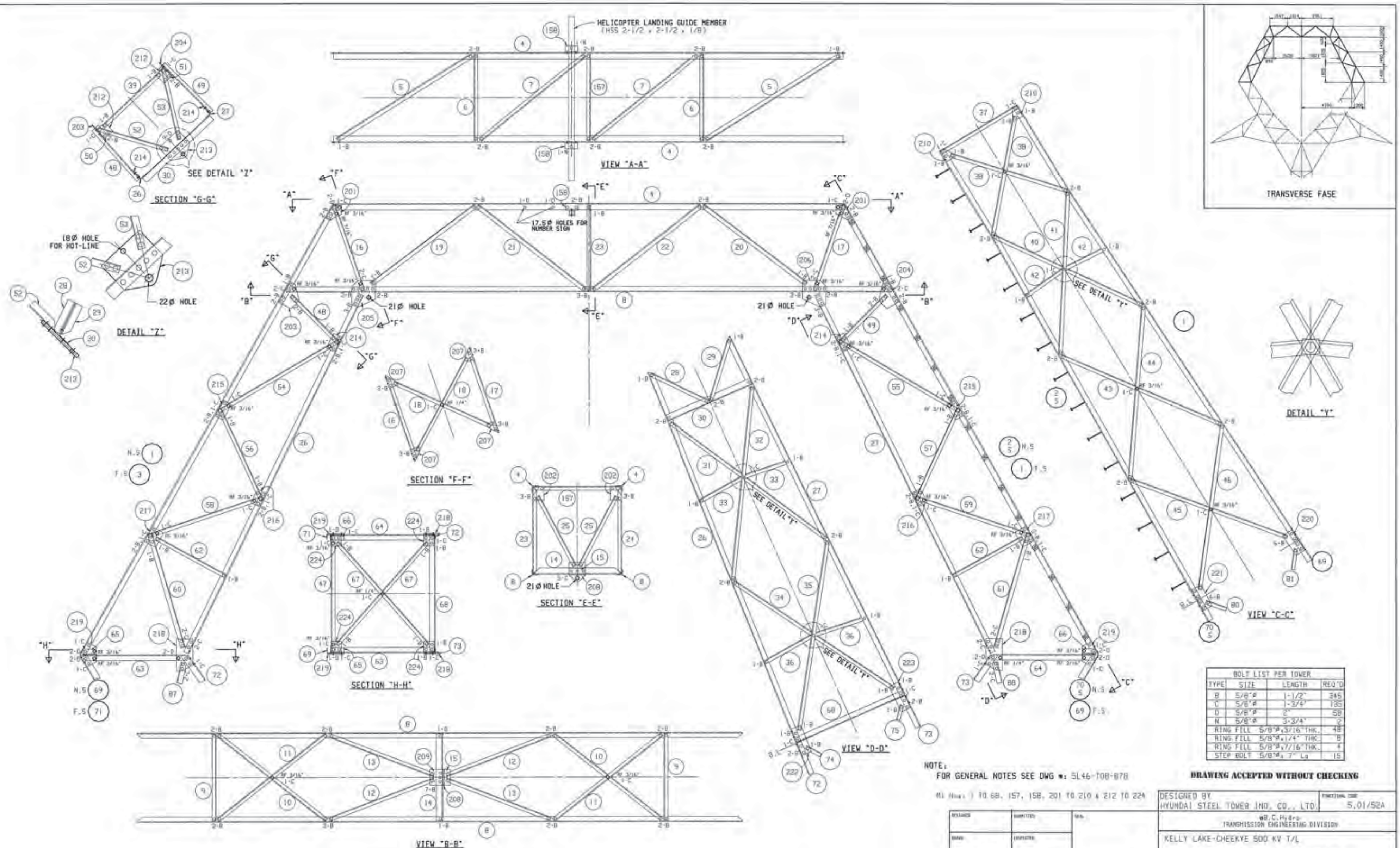
SL46-T08-D99 : LOWER MAST

REFERENCE DRAWINGS

REVISIONS

FOR FINAL APPROVAL

ISSUE FOR APPROVAL



BOLT LIST PER TOWER			
TYPE	SIZE	LENGTH	REQ'D
B	5/8"Ø	1-1/2"	346
C	5/8"Ø	1-3/4"	135
D	5/8"Ø	2"	58
N	5/8"Ø	3-3/4"	2
RING FILL	5/8"Ø x 3/16" THK.		48
RING FILL	5/8"Ø x 1/4" THK.		8
RING FILL	5/8"Ø x 7/16" THK.		4
STEP BOLT	5/8"Ø x 7" Lg		15

NOTE:
FOR GENERAL NOTES SEE DWG #: 5L46-T0B-878

Mk Nos: 1 TO 68, 157, 158, 201 TO 210 & 212 TO 224

DRAWING ACCEPTED WITHOUT CHECKING

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

5.01/52A

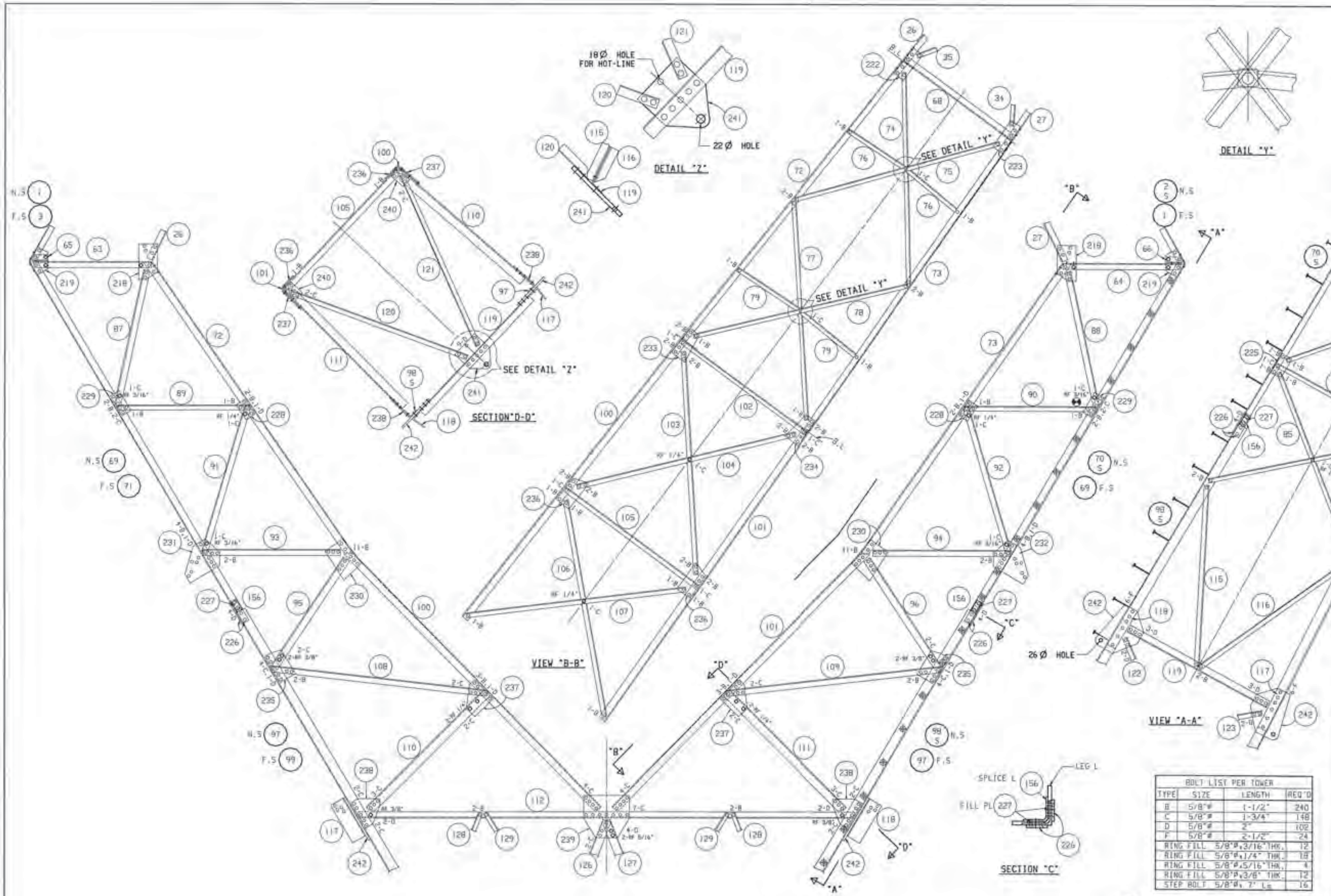
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

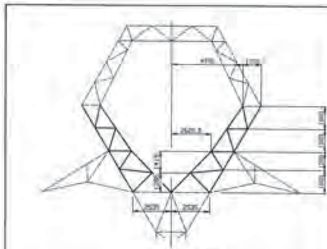
TYPE 52A GUYED TOWER
BRIDGE & UPPER PART 1
ERECTION DIAGRAM

5L46-T0B-D94

5L46-T0B-D95 : UPPER PART 2



BOLT LIST PER TOWER			
TYPE	SIZE	LENGTH	REQ'D
B	5/8"Ø	1-1/2"	240
C	5/8"Ø	1-3/4"	148
D	5/8"Ø	2"	102
F	5/8"Ø	2-1/2"	24
RING FILL 5/8"Ø,3/16"THK.			12
RING FILL 5/8"Ø,1/4" THK.			18
RING FILL 5/8"Ø,5/16"THK.			4
RING FILL 5/8"Ø,3/8" THK.			12
STEP BOLT 5/8"Ø, 7" Lg			16



TRANSVERSE FASE

DRAWING ACCEPTED WITHOUT CHECKING

NOTE:
FOR GENERAL NOTES SEE DWG #: 5L46-T08-878

Mk Nos: 69 TO 111, 115 TO 121, 156 & 225 TO 242

SL46-T08-097 : CROSSARM
SL46-T08-096 : UPPER PART 3
SL46-T08-094 : BRIDGE & UPPER PART 1

REVISED FOR B.C.HYDRO COMMENTS

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

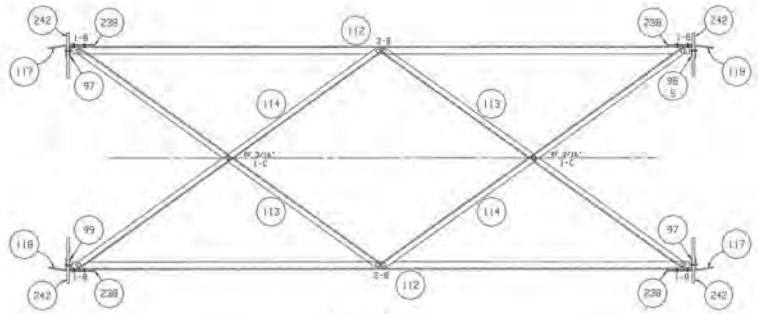
5.01/52A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

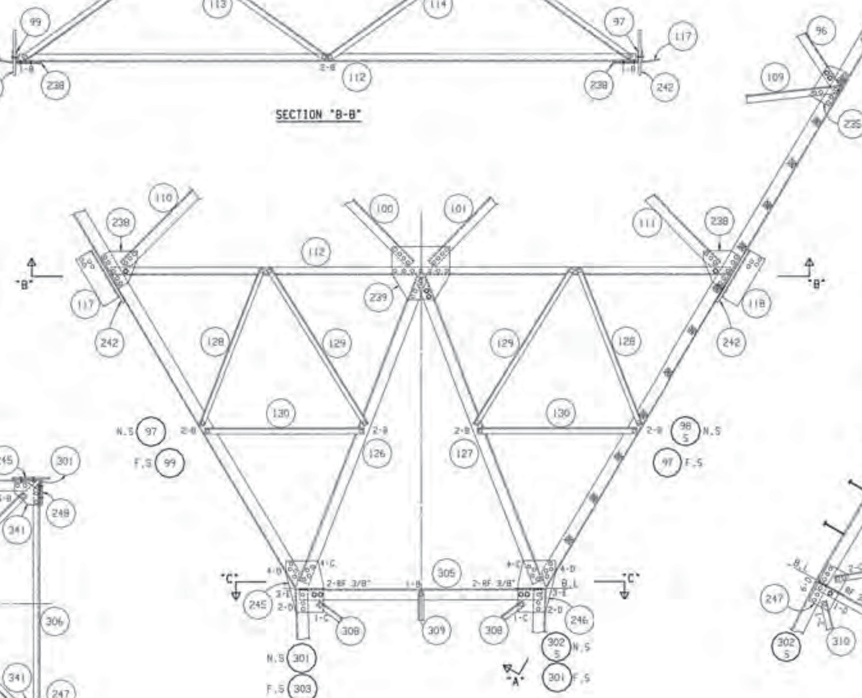
KELLY LAKE-CHEEKYE 500 KV T/L

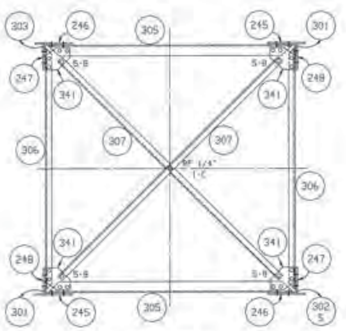
TYPE 52A GUYED TOWER
UPPER PART 2
ERECTION DIAGRAM

5L46-T08-095

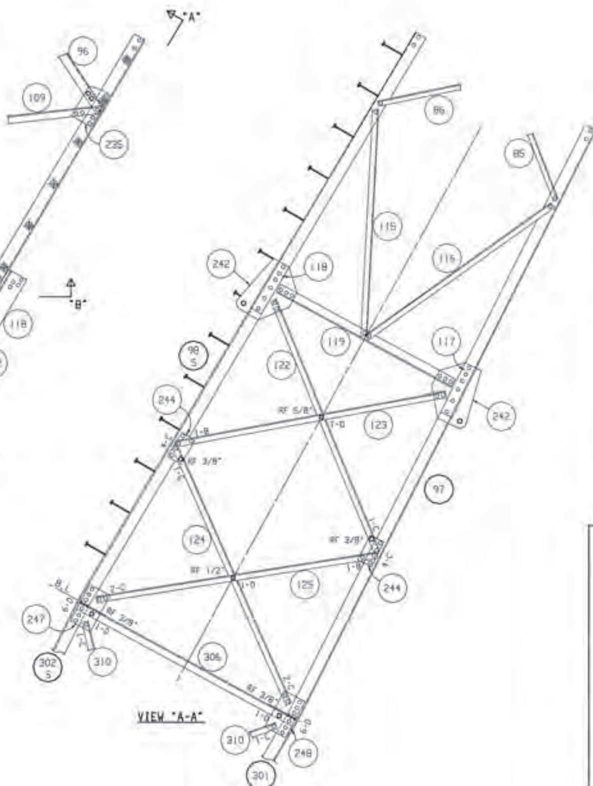


SECTION "B-B"



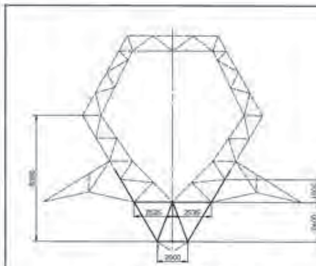


SECTION "C-C"



VIEW "A-A"

BOLT LIST PER TOWER			
TYPE	SIZE	LENGTH	REQ'D
B	5/8"Ø	1-1/2"	50
C	5/8"Ø	1-3/4"	55
D	5/8"Ø	2"	56
E	5/8"Ø	2-1/4"	12
RING FILL	5/8"Ø x 3/16" THK.		2
RING FILL	5/8"Ø x 1/4" THK.		1
RING FILL	5/8"Ø x 3/8" THK.		8
RING FILL	5/8"Ø x 1/2" THK.		2
RING FILL	5/8"Ø x 5/8" THK.		2
STEP BOLT	5/8"Ø x 7" Lg.		7



TRANSVERSE FASE

DRAWING ACCEPTED WITHOUT CHECKING

NOTE:
FOR GENERAL NOTES SEE DWG #: SL46-T08-878

Mk Nos: 112, 114, 122 TO 130, 244 TO 248, 305 TO 307 & 341

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

5.01/52A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

TYPE 52A GUYED TOWER
UPPER PART 3
ERECTION DIAGRAM

SL46-T08-D96

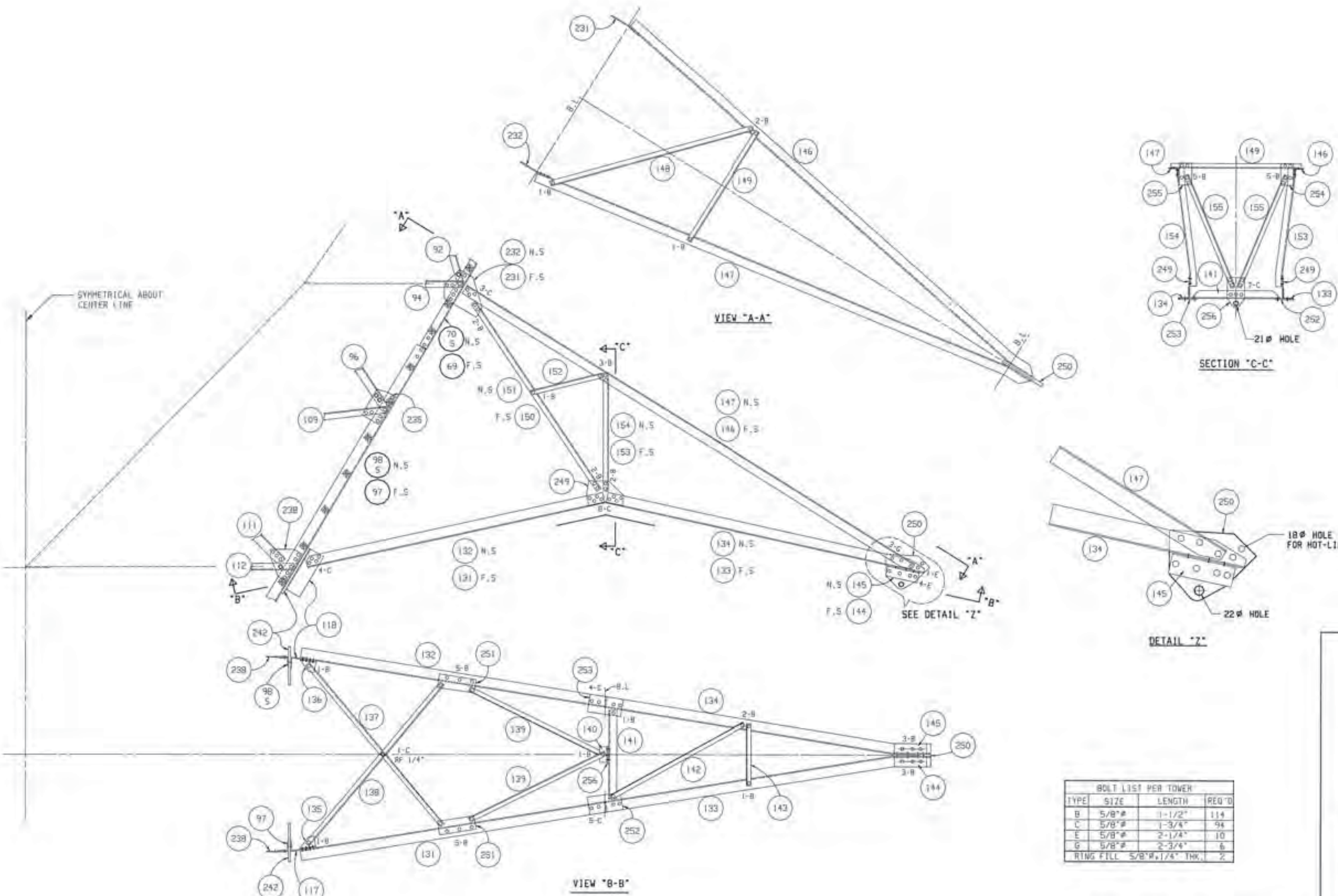
SL46-T08-D95 : UPPER PART 2

SL46-T08-D98 : UPPER MAST
SL46-T08-D97 : CROSSARM

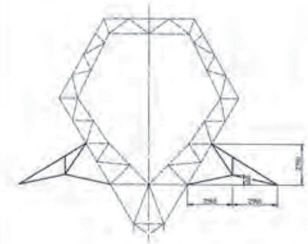
REFERENCE DRAWINGS

REVISED PER B.C.HYDRO COMMENTS

REVISIONS



BOLT LIST PER TOWER			
TYPE	SIZE	LENGTH	REQ'D
B	5/8"Ø	1-1/2"	114
C	5/8"Ø	1-3/4"	94
E	5/8"Ø	2-1/4"	10
G	5/8"Ø	2-3/4"	6
RING FILL 5/8"Ø, 1/4" THK.			2



DRAWING ACCEPTED WITHOUT CHECKING

NOTE:
FOR GENERAL NOTES SEE DWG #: SL46-TDB-B78

Mk Nos: 131 TO 155 & 249 TO 256

SL46-TDB-D95 : UPPER PART 2

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.

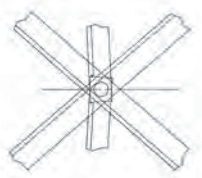
5.01/52A

B.C.Hydro TRANSMISSION ENGINEERING DIVISION

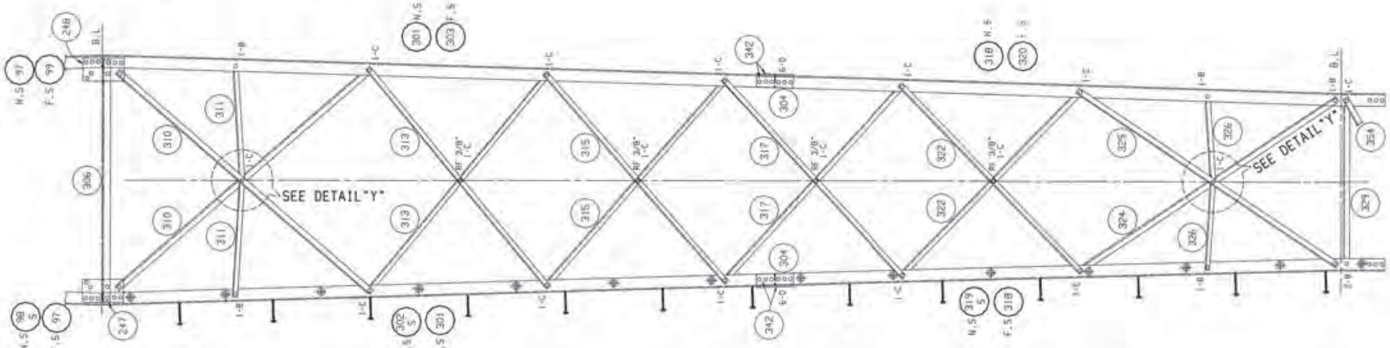
KELLY LAKE-CHEEKYE 500 KV T/L

TYPE 52A GUYED TOWER
CROSSARM
ERECTION DIAGRAM

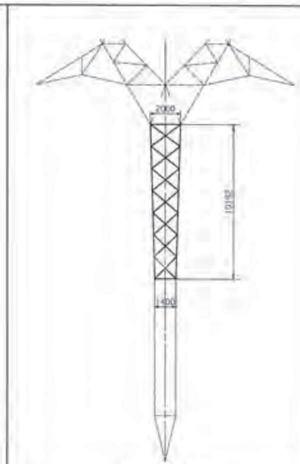
SL46-TDB-D97



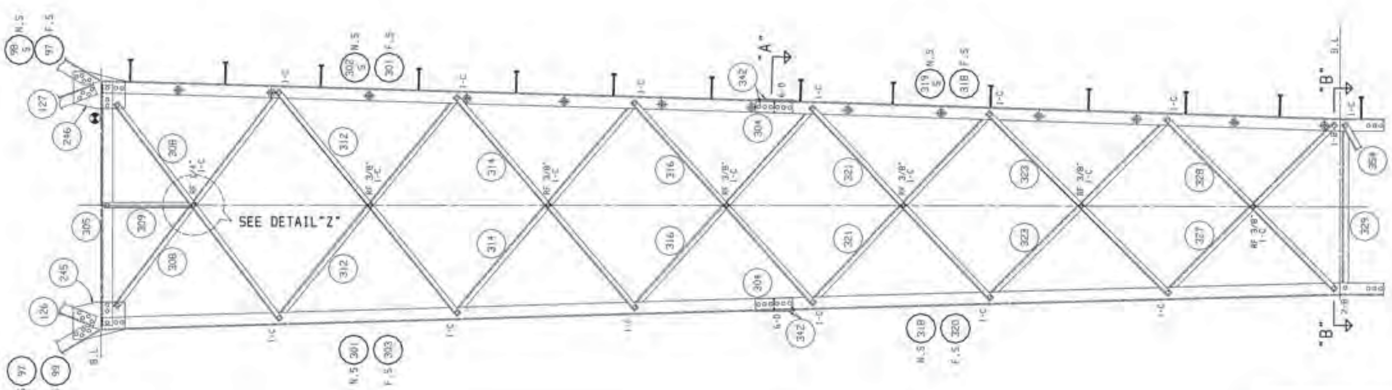
DETAIL "Y"



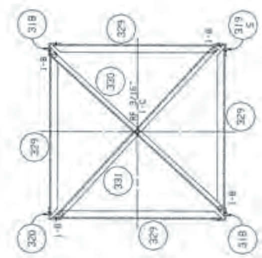
UPPER MAST
(LONGITUDINAL FACE)



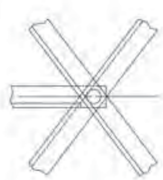
TRANSVERSE FACE



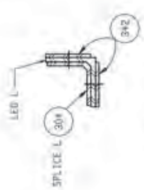
UPPER MAST
(TRANSVERSE FACE)



SECTION "B-B"



DETAIL "Z"



SECTION "A"

BOLT LIST PER TOWER			
TYPE	SIZE	LENGTH	REQ'D
B	5/8"Ø	1-1/2"	24
C	5/8"Ø	1-3/4"	75
D	5/8"Ø	2"	48
RING FILL	5/8"Ø, 3/16" THK.		1
RING FILL	5/8"Ø, 1/4" THK.		2
RING FILL	5/8"Ø, 3/8" THK.		20
STEP BOLT	5/8"Ø, 7" Lg.		27

DRAWING ACCEPTED WITHOUT CHECKING

NOTE:
FOR GENERAL NOTES SEE DWG #: SL46-T08-B78

Mk Nos.: 301 TO 304, 308 TO 331 & 342

REFERENCE DRAWINGS	REFERENCE DRAWINGS
	SL46-T08-D100 : MAST EXTENSIONS
SL46-T08-D96 : UPPER PART 3	SL46-T08-D99 : LOWER MAST

REVISED PER B.C. HYDRO COMMENTS

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

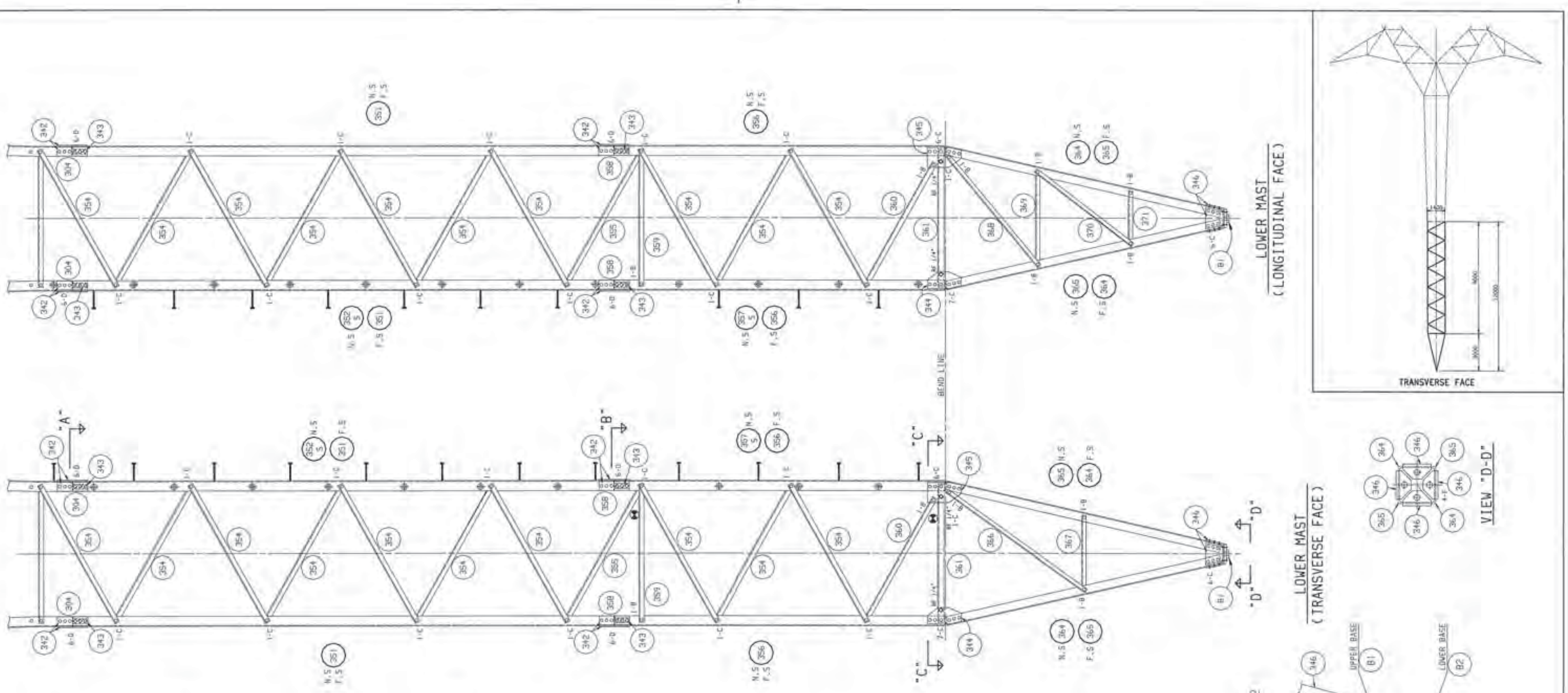
FUNCTIONAL CODE 5.01/52A

B.C. Hydro
TRANSMISSION ENGINEERING DIVISION

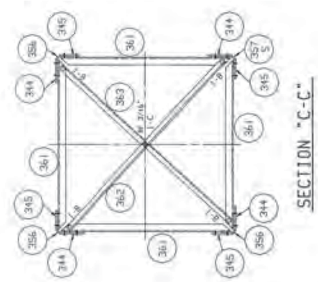
KELLY LAKE-CHEEKYE 500 KV T/L

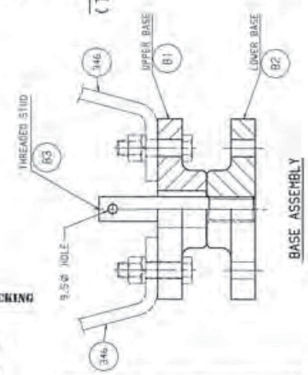
TYPE 52A GUYED TOWER
UPPER MAST
ERECTION DIAGRAM

SCALE ——— DWG. No. SL46-T08-D98 1



BOLT LIST PER TOWER			
TYPE	SIZE	LENGTH	REQ'D
B	5/8"ø	1-1/2"	28
C	5/8"ø	1-3/4"	125
D	5/8"ø	2"	96
F	5/8"ø	2-1/2"	4
RING FILL 5/8"ø,3/16"THK.			1
RING FILL 5/8"ø,1/4" THK.			8
STEP BOLT 5/8"ø, 7" Lg.			21





DRAWING ACCEPTED WITHOUT CHECKING

NOTE:
FOR GENERAL NOTES SEE DWG #: 5L46-T08-878

M: No.s:304, 342 TO 346, 351, 352 & 354 TO 371

5L46-T08-0100 : MAST EXTENSIONS	5L46-T08-093 : FOUND. FOR CONCR. & ROCK FOOTING
	5L46-T08-092 : G2 GRILLAGE FOUND.
5L46-T08-090 : UPPER MAST	5L46-T08-091 : G1 GRILLAGE FOUND.
REFERENCE DRAWINGS	REFERENCE DRAWING

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

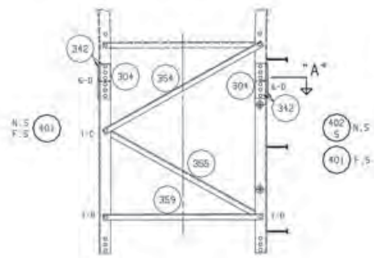
5.01/52A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

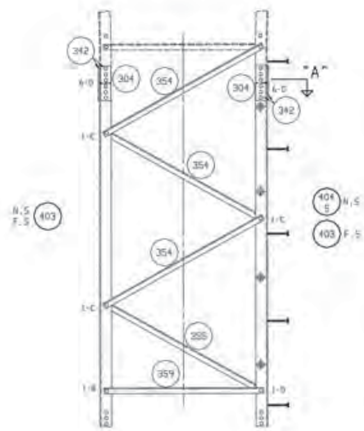
KELLY LAKE-CHEEKYE 500 KV T/L

TYPE 52A GUYED TOWER
LOWER MAST
ERECTION DIAGRAM

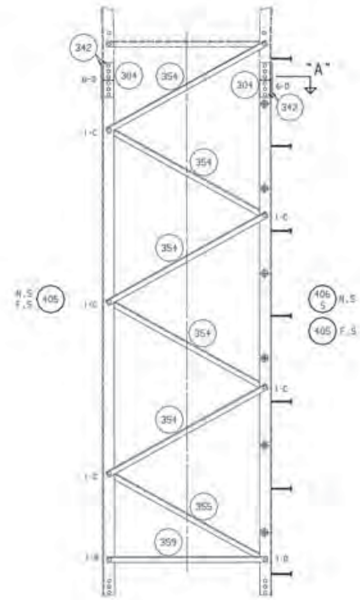
DWG No. 5L46-T08-D99



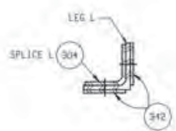
+1.5m MAST EXTENSION
(4-FACES IDENTICAL)



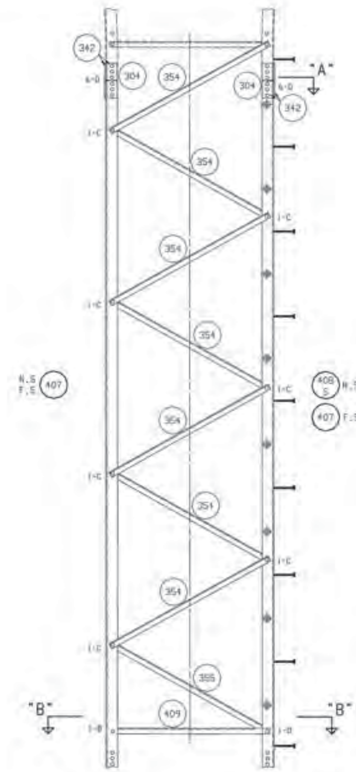
+3.0m MAST EXTENSION
(4-FACES IDENTICAL)



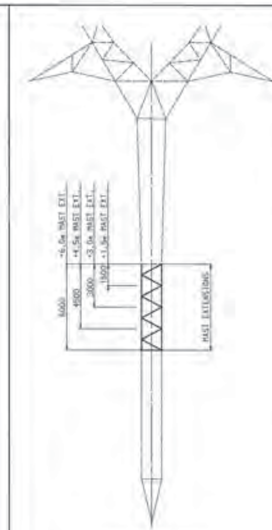
+4.5m MAST EXTENSION
(4-FACES IDENTICAL)



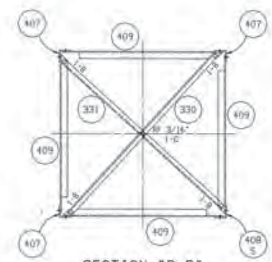
SECTION "A"



+6.0m MAST EXTENSION
(4-FACES IDENTICAL)



TRANSVERSE FASE



SECTION "B-B"

BOLT LIST PER TOWER						
TYPE	SIZE	LENGTH	REQ'D			
			+1.5m	+3.0m	+4.5m	+6.0m
B	5/8"Ø	1-1/2"	4	4	4	9
C	5/8"Ø	1-3/4"	4	12	20	28
D	5/8"Ø	2"	52	52	52	52
RING FILL 5/8"Ø,3/16"THK.			-	-	-	1
STEP BOLT 5/8"Ø, 7" Lg.			4	8	12	16

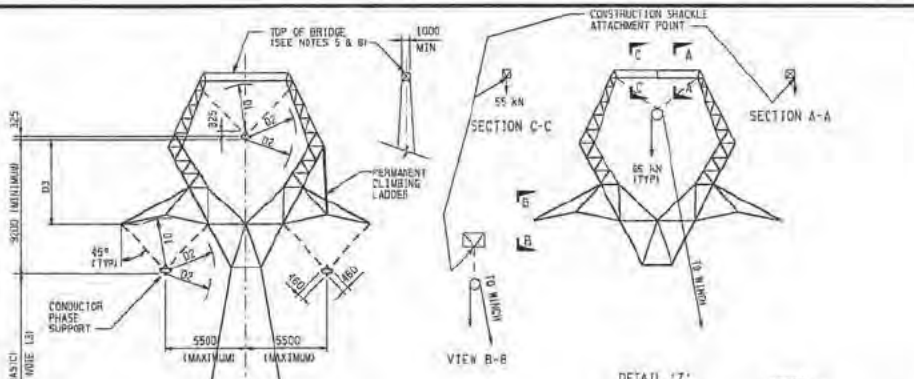
NOTE:
FOR GENERAL NOTES SEE DWG #: 5L46-T08-B78

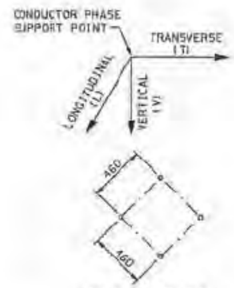
Mk Nos:304, 330, 331, 342, 354, 355, 359 & 401 TO 409

DRAWING ACCEPTED WITHOUT CHECKING

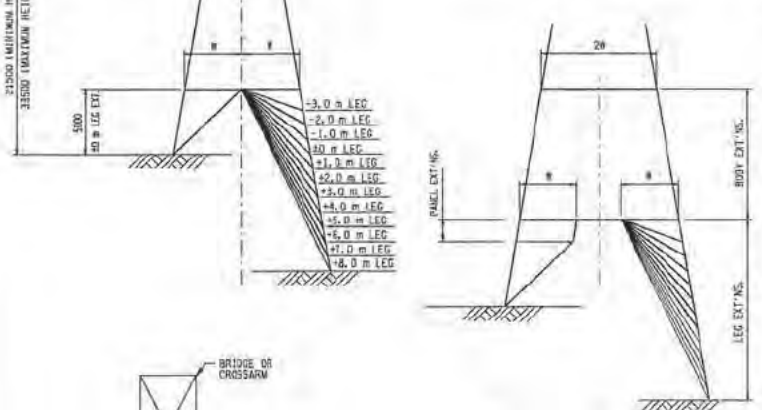
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	5.01/52A
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
TYPE 52A GUYED TOWER MAST EXTENSIONS ERECTION DIAGRAM	
5L46-T08-D100	1

5L46-T08-D98 : UPPER MAST
5L46-T08-D99 : LOWER MAST
REFERENCE DRAWINGS
REVISED PER B.C.HYDRO COMMENTS



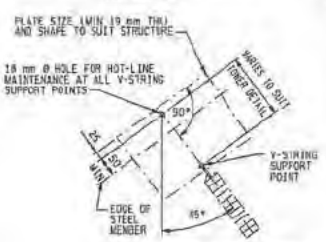


CONDUCTOR BUNDLE CONFIGURATION



BODY, PANEL AND LEG EXTENSIONS (SEE NOTE 13)

CONDUCTOR SLOPE (SEE NOTE 9)



TYPICAL HOLE ALIGNMENT HOT-LINE MAINTENANCE

TOWER DESIGN LOADS AND APPLICATIONS

WORKING CONDUCTOR PHASE LOADS PER PHASE (kN)					LOAD FACTOR		LOAD APPLICATIONS
CASE		V	T	L	TOWER STEEL	FOOTING STEEL	
1		93.7	8.0	0.0	1.5	1.75	FOR ALL CASES, APPLY THE 'V', 'T' AND 'L' TO ANY ONE, ANY TWO OR ALL THREE PHASE SUPPORT POINTS IN COMBINATION WITH WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION OR AT 45° TO IT.
2		70.6	23.5	0.0	1.5	1.75	
3		66.4	4.2	5.3	2.0	2.0	
4		35.5	3.6	0.0	2.0	2.0	
5	A	53.6	4.9	30.0	1.5	1.75	APPLY LOADS 'A' TO ANY ONE, ANY TWO OR ALL THREE SUPPORT POINTS AND LOADS 'B' TO THE REMAINING SUPPORT POINTS IN COMBINATION WITH WIND APPLIED ON THE TOWER IN THE LONGITUDINAL DIRECTION OR AT 45° TO IT.
	B	93.7	0.0	0.0			

NOTES :

(1) ALL DIMENSIONS ARE IN MILLIMETRES EXCEPT AS OTHERWISE NOTED.

(2) LOAD CASES :
- CASE 1 : 19 mm ICE, 0 WIND, -20° C
- CASE 2 : 13 mm ICE, 0.213 kN/m² WIND, -20° C
- CASE 3 : 0 ICE, 0 WIND, -20° C (STRINGING) SNUB ANGLE = 20° FROM HORIZONTAL
- CASE 4 : 0 ICE, 0 WIND, -1° C (EVERYDAY LOADING)
- CASE 5 : 13 mm UNEQUAL ICE, 0 WIND, -20° C

(3) ULTIMATE TOWER DESIGN LOADS :

(A) CONDUCTOR PHASE LOADS : FOR ALL CASES, THE ULTIMATE TOWER DESIGN LOADS SHALL BE THE WORKING CONDUCTOR PHASE LOAD TIMES THE LOAD FACTOR AS SPECIFIED IN THE LOAD TABLE.

(B) ULTIMATE TOWER WIND LOADS (kN/m²):

	CASE 1,2 & 5	CASE 3 & 4
ABOVE CROSSARMS	2.2	0.2
BELOW CROSSARMS	2.0	0.2

(4) LOAD APPLICATION:

(A) THE TRANSVERSE LOADS SHOWN IN THE LOAD TABLE ARE REVERSIBLE.

(B) THE LONGITUDINAL LOADS SHOWN IN THE LOAD TABLE ARE REVERSIBLE.

(C) ALL HORIZONTAL AND DIAGONAL MEMBERS SHALL BE DESIGNED TO WITHSTAND A VERTICAL LOAD CONCENTRATED AT THE CENTRE OF THE UNSUPPORTED LENGTH OF THE MEMBER WITHOUT PERMANENT DEFORMATION. THIS VERTICAL LOAD SHALL BE 0.3 kN IN COMBINATION WITH THE MAXIMUM AXIAL MEMBER FORCE DERIVED FROM STRUCTURAL ANALYSIS, OR 1.35 kN UNCOMBINED, WHICHEVER GOVERNS.

(5) THE BRIDGE SHALL BE DESIGNED TO SUPPORT A VERTICAL LOAD OF 55 kN CONCENTRATED AT THE CENTRE OF THE BRIDGE. THE TOWER SHALL ALSO BE DESIGNED TO SUPPORT A LOAD OF 65 kN APPLIED AT ANY ONE PHASE SUPPORT POINT IN THE PULLEY SYSTEM AS SHOWN IN DETAIL 'Z' IN COMBINATION WITH THE LOADS OF CASE 4 APPLIED TO NONE, ANY ONE OR ANY TWO OF THE REMAINING PHASE SUPPORT POINTS. CONSTRUCTION HOLES, 21 mm Ø, SHALL BE PROVIDED AT JOINTS WHERE THE CONSTRUCTION SHACKLES ARE TO BE ATTACHED.

(6) THE OUTSTANDING LEG OF ALL STEEL ANGLES ON THE TOP PLANE OF BRIDGE SHALL FACE DOWNWARDS. THE BRIDGE MAIN TOP CHORD MEMBERS SHALL BE CAPABLE OF SUPPORTING A VERTICAL LOAD OF 4.45 kN CONCENTRATED AT THE CENTRE OF THE UNSUPPORTED LENGTH OF THE MEMBER IN COMBINATION WITH THE AXIAL MEMBER FORCE DERIVED FROM LOAD CASE 4 WITHOUT PERMANENT DEFORMATION.

(7) THE MINIMUM ELECTRICAL CLEARANCES FROM CONDUCTOR TO THE EDGE OF STEEL OR GUY WIRE SHALL BE AS FOLLOWS:
- D1 = 2850 mm
- D2 = 3350 mm
- D3 = 5000 mm
- D4 = 2300 mm

(8) THE MAXIMUM INSULATOR SWING ANGLE (θ) IN THE LONGITUDINAL DIRECTION TO BE 32 °.

(9) THE MAXIMUM CONDUCTOR SLOPE FROM HORIZONTAL IS:

β_1 = -10° (UPLIFT) β_2 = 25° (DOWNHILL)

(10) THE MAXIMUM CONDUCTOR SWING AT MIDSPAN FROM VERTICAL TO BE 21°.

(11) FOR SPECIFICATION OF STEP BOLT LEGS, SEE DWG No. 5L46-T08-B10.

(12) FOR DETAILS OF V-STRING, SEE DWG No. 5L46-T08-B15.

(13) COMPONENTS FOR EXTENSION OF STRUCTURE HEIGHT :-
- BODY EXTENSIONS TO BE +3.0 m, +6.0 m, 9.0m AND +12.0 m
- LEG EXTENSIONS TO BE FROM -3.0 m TO +8.0 m IN 1 m INCREMENTS
- PANEL EXTENSIONS TO BE +1.0 m AND +1.5 m

THE MAXIMUM HEIGHT OF THE LOWEST CONDUCTOR OF THE BOTTOM PHASE FROM THE GROUND SHALL NOT EXCEED 33.5 m.

(14) DIMENSION 'W' SHALL BE CONSTANT TO ENABLE BODY, PANEL AND LEG EXTENSIONS TO BE INTERCHANGEABLE.

(15) A DIAPHRAGM IS REQUIRED AT THE BOTTOM OF ALL BODY EXTENSIONS AND, IF NO BODY EXTENSIONS ARE REQUIRED, AT THE BOTTOM OF THE BASIC TOWER BODY.

(16) FOR DESIGN OF SNOW COMPONENTS SEE DWG No. 5L46-T08-B11.

(17) FOR SPECIFICATIONS FOR HELICOPTER TOUCH-AND-GO SEE DWG No. 5L46-T08-A18.

(18) FOR LOCATION OF TOWER NUMBER SIGNS SEE DWG No. G-T08-B446.

FUNCTIONAL CODE 3.01/53A

[redacted]

SEAL [redacted]

BC Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

TYPE 53A SELF SUPPORTING SUSPENSION TOWER (0°-2°) SPECIFICATION DRAWING

No	REVISIONS	MADE	CHKD	SUBD	APPD	INSP	INSP	INSP	DATE

DATE 91-3-22 | SCALE — | DWG. No 5L46-T08-B3 | R

CAD FILE No. \DDN\5L46\T08B0003.DGN

B

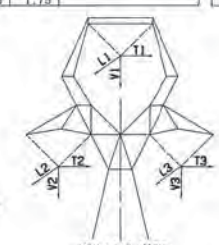
TOWER DESIGN LOADS AND APPLICATIONS

CASE	DESCRIPTION OF CONDITIONS	ASSUMP-TION CASE NO	WORKING CONDUCTOR PHASE LOADS UNIT = "KN" TOP CONDUCTOR PHASE V1	T1	L1	LEFT CONDUCTOR PHASE V2	T2	L2	RIGHT CONDUCTOR PHASE V3	T3	L3	LOAD FACTOR TOWER STEEL	FOOTING STEEL	APPLIED WIND DIRECTION ON TOWER
1	1) 19MM ICE	1A	93.7	8.0	0.0	-	-	-	-	-	-	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
	2) 0 WIND	1B	-	-	-	93.7	8.0	0.0	-	-	-	1.5	1.75	
	3) -20° C	1C	-	-	-	-	-	-	93.7	8.0	0.0	1.5	1.75	
		1D	93.7	8.0	0.0	93.7	8.0	0.0	-	-	-	1.5	1.75	
		1E	93.7	8.0	0.0	-	-	-	93.7	8.0	0.0	1.5	1.75	
		1F	-	-	-	93.7	8.0	0.0	93.7	8.0	0.0	1.5	1.75	
		1G	93.7	8.0	0.0	93.7	8.0	0.0	93.7	8.0	0.0	1.5	1.75	
2	1) 13MM ICE	2A	70.6	23.5	0.0	-	-	-	-	-	-	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
	2) 0.213KN/M² WIND	2B	-	-	-	70.6	23.5	0.0	-	-	-	1.5	1.75	
	3) -20° C	2C	-	-	-	-	-	-	70.6	23.5	0.0	1.5	1.75	
		2D	70.6	23.5	0.0	70.6	23.5	0.0	-	-	-	1.5	1.75	
		2E	70.6	23.5	0.0	-	-	-	70.6	23.5	0.0	1.5	1.75	
		2F	-	-	-	70.6	23.5	0.0	70.6	23.5	0.0	1.5	1.75	
		2G	70.6	23.5	0.0	70.6	23.5	0.0	70.6	23.5	0.0	1.5	1.75	
3	1) 0 ICE	3A	68.4	4.2	5.3	-	-	-	-	-	-	2.0	2.0	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 0.2 BELOW CROSSARMS : 0.2
	2) 0 WIND	3B	-	-	-	68.4	4.2	5.3	-	-	-	2.0	2.0	
	3) -20° C	3C	-	-	-	-	-	-	68.4	4.2	5.3	2.0	2.0	
	4) STRINGING	3D	68.4	4.2	5.3	68.4	4.2	5.3	-	-	-	2.0	2.0	
	SNUB ANGLE = 20°	3E	68.4	4.2	5.3	-	-	-	68.4	4.2	5.3	2.0	2.0	
	FROM HORIZONTAL	3F	-	-	-	68.4	4.2	5.3	68.4	4.2	5.3	2.0	2.0	
		3G	68.4	4.2	5.3	68.4	4.2	5.3	68.4	4.2	5.3	2.0	2.0	
4	1) 0 ICE	4A	33.5	3.6	0.0	-	-	-	-	-	-	2.0	2.0	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 0.2 BELOW CROSSARMS : 0.2
	2) 0 WIND	4B	-	-	-	33.5	3.6	0.0	-	-	-	2.0	2.0	
	3) -1° C	4C	-	-	-	-	-	-	33.5	3.6	0.0	2.0	2.0	
	4) EVERYDAY LOADING	4D	33.5	3.6	0.0	33.5	3.6	0.0	-	-	-	2.0	2.0	
		4E	33.5	3.6	0.0	-	-	-	33.5	3.6	0.0	2.0	2.0	
		4F	-	-	-	33.5	3.6	0.0	33.5	3.6	0.0	2.0	2.0	
		4G	33.5	3.6	0.0	33.5	3.6	0.0	33.5	3.6	0.0	2.0	2.0	
5	1) 13MM UNEQUAL ICE	5A	53.6	4.9	30.0	93.7	8.0	0.0	93.7	8.0	0.0	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE LONGITUDINAL DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
	2) 0 WIND	5B	93.7	8.0	0.0	53.6	4.9	30.0	93.7	8.0	0.0	1.5	1.75	
	3) -20° C	5C	93.7	8.0	0.0	93.7	8.0	0.0	53.6	4.9	30.0	1.5	1.75	
		5D	53.6	4.9	30.0	53.6	4.9	30.0	93.7	8.0	0.0	1.5	1.75	
		5E	53.6	4.9	30.0	93.7	8.0	0.0	53.6	4.9	30.0	1.5	1.75	
		5F	93.7	8.0	0.0	53.6	4.9	30.0	53.6	4.9	30.0	1.5	1.75	
		5G	53.6	4.9	30.0	53.6	4.9	30.0	53.6	4.9	30.0	1.5	1.75	

CASE	DESCRIPTION OF CONDITIONS	ASSUMP-TION CASE NO	WORKING CONDUCTOR PHASE LOADS UNIT = "KN" TOP CONDUCTOR PHASE V1	T1	L1	LEFT CONDUCTOR PHASE V2	T2	L2	RIGHT CONDUCTOR PHASE V3	T3	L3	LOAD FACTOR TOWER STEEL	FOOTING STEEL	APPLIED WIND DIRECTION ON TOWER
1	1) 19MM ICE	10A	93.7	8.0	0.0	-	-	-	-	-	-	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
	2) 0 WIND	10B	-	-	-	93.7	8.0	0.0	-	-	-	1.5	1.75	
	3) -20° C	10C	-	-	-	-	-	-	93.7	8.0	0.0	1.5	1.75	
		10D	93.7	8.0	0.0	93.7	8.0	0.0	-	-	-	1.5	1.75	
		10E	93.7	8.0	0.0	-	-	-	93.7	8.0	0.0	1.5	1.75	
		10F	-	-	-	93.7	8.0	0.0	93.7	8.0	0.0	1.5	1.75	
		10G	93.7	8.0	0.0	93.7	8.0	0.0	93.7	8.0	0.0	1.5	1.75	
2	1) 13MM ICE	20A	70.6	23.5	0.0	-	-	-	-	-	-	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
	2) 0.213KN/M² WIND	20B	-	-	-	70.6	23.5	0.0	-	-	-	1.5	1.75	
	3) -20° C	20C	-	-	-	-	-	-	70.6	23.5	0.0	1.5	1.75	
		20D	70.6	23.5	0.0	70.6	23.5	0.0	-	-	-	1.5	1.75	
		20E	70.6	23.5	0.0	-	-	-	70.6	23.5	0.0	1.5	1.75	
		20F	-	-	-	70.6	23.5	0.0	70.6	23.5	0.0	1.5	1.75	
		20G	70.6	23.5	0.0	70.6	23.5	0.0	70.6	23.5	0.0	1.5	1.75	
3	1) 0 ICE	30A	68.4	4.2	5.3	-	-	-	-	-	-	2.0	2.0	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 0.2 BELOW CROSSARMS : 0.2
	2) 0 WIND	30B	-	-	-	68.4	4.2	5.3	-	-	-	2.0	2.0	
	3) -20° C	30C	-	-	-	-	-	-	68.4	4.2	5.3	2.0	2.0	
	4) STRINGING	30D	68.4	4.2	5.3	68.4	4.2	5.3	-	-	-	2.0	2.0	
	SNUB ANGLE = 20°	30E	68.4	4.2	5.3	-	-	-	68.4	4.2	5.3	2.0	2.0	
	FROM HORIZONTAL	30F	-	-	-	68.4	4.2	5.3	68.4	4.2	5.3	2.0	2.0	
		30G	68.4	4.2	5.3	68.4	4.2	5.3	68.4	4.2	5.3	2.0	2.0	
4	1) 0 ICE	40A	33.5	3.6	0.0	-	-	-	-	-	-	2.0	2.0	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 0.2 BELOW CROSSARMS : 0.2
	2) 0 WIND	40B	-	-	-	33.5	3.6	0.0	-	-	-	2.0	2.0	
	3) -1° C	40C	-	-	-	-	-	-	33.5	3.6	0.0	2.0	2.0	
	4) EVERYDAY LOADING	40D	33.5	3.6	0.0	33.5	3.6	0.0	-	-	-	2.0	2.0	
		40E	33.5	3.6	0.0	-	-	-	33.5	3.6	0.0	2.0	2.0	
		40F	-	-	-	33.5	3.6	0.0	33.5	3.6	0.0	2.0	2.0	
		40G	33.5	3.6	0.0	33.5	3.6	0.0	33.5	3.6	0.0	2.0	2.0	
5	1) 13MM UNEQUAL ICE	50A	53.6	4.9	30.0	93.7	8.0	0.0	93.7	8.0	0.0	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
	2) 0 WIND	50B	93.7	8.0	0.0	53.6	4.9	30.0	93.7	8.0	0.0	1.5	1.75	
	3) -20° C	50C	93.7	8.0	0.0	93.7	8.0	0.0	53.6	4.9	30.0	1.5	1.75	
		50D	53.6	4.9	30.0	53.6	4.9	30.0	93.7	8.0	0.0	1.5	1.75	
		50E	53.6	4.9	30.0	93.7	8.0	0.0	53.6	4.9	30.0	1.5	1.75	
		50F	93.7	8.0	0.0	53.6	4.9	30.0	53.6	4.9	30.0	1.5	1.75	
		50G	53.6	4.9	30.0	53.6	4.9	30.0	53.6	4.9	30.0	1.5	1.75	

NOTES

1) ALL LOADS ARE IN "KN" EXCEPT AS OTHERWISE NOTED
2) LOAD APPLICATION
   A) THE TRANSVERSE LOADS SHOWN IN THE LOAD TABLE ARE REVERSIBLE. THE LONGITUDINAL LOADS SHOWN IN THE LOAD TABLE ARE REVERSIBLE.
   B) ULTIMATE TOWER DESIGN LOADS FOR ALL CASES SHALL BE THE WORKING CONDUCTOR PHASE LOADS TIMES THE LOAD FACTOR AS SPECIFIED IN THE LOAD TABLE.
   C) ALL HORIZONTAL AND DIAGONAL MEMBERS SHALL BE DESIGNED TO WITHSTAND AN ULTIMATE VERTICAL LOAD CONCENTRATED AT THE CENTER OF THE UNSUPPORTED LENGTH OF ANY MEMBER WITHOUT PERMANENT DEFORMATION. THIS VERTICAL LOAD SHALL BE 0.3KN IN COMBINATION WITH THE MAXIMUM AXIAL MEMBER FORCE DERIVED FROM STRUCTURAL ANALYSIS OR 1.35KN UNCOMBINED, WHICHEVER GOVERNS.
   D) THE BRIDGE SHALL BE DESIGNED TO SUPPORT AN ULTIMATE VERTICAL LOAD OF 55KN CONCENTRATED AT THE CENTRE OF THE BRIDGE. THE TOWER SHALL ALSO BE DESIGNED TO SUPPORT AN ULTIMATE LOAD OF 65KN APPLIED AT ANY ONE PHASE SUPPORT POINT IN THE PULLEY SYSTEM IN COMBINATION WITH THE LOADS OF CASE 4 AS SPECIFIED IN NOTE 5 OF THE SPECIFICATION DRAWING NO. 5L46-T00-03.
   E) THE BRIDGE MAIN TOP CHORD MEMBERS SHALL BE CAPABLE OF SUPPORTING AN ULTIMATE VERTICAL LOADS OF 4.45KN CONCENTRATED AT CENTRE OF THE UNSUPPORTED LENGTH OF THE MEMBER IN COMBINATION WITH THE AXIAL MEMBER FORCE DERIVED FROM LOAD CASE 4 WITHOUT PERMANENT DEFORMATION.
3) V1-V3, T1-T3 AND L1-L3 DENOTE THE VERTICAL, TRANSVERSE AND LONGITUDINAL LOADS AS SHOWN IN "KEY LOAD MARK".
4) UNLESS OTHERWISE NOTED, REFER TO SPECIFICATION DRAWING NO. 5L46-T00-03.



KEY LOAD MARK

DRAWING CHECKED FOR CONTENT ONLY

NO	REVISIONS	MADE	CHKD	SUBD	APPD	INSP	INSP	INSP	DATE
R1	REVISED NOTES 2 (C.D.E)								'91.5.30
0	ISSUED FOR APPROVAL								'91.5.17

DESIGNED	SUBMITTED	SEAL
DRAWN	INSPECTED	
CHECKED DRAFTING	INSPECTED	
CHECKED DESIGN	INSPECTED	
APPROVED		DATE

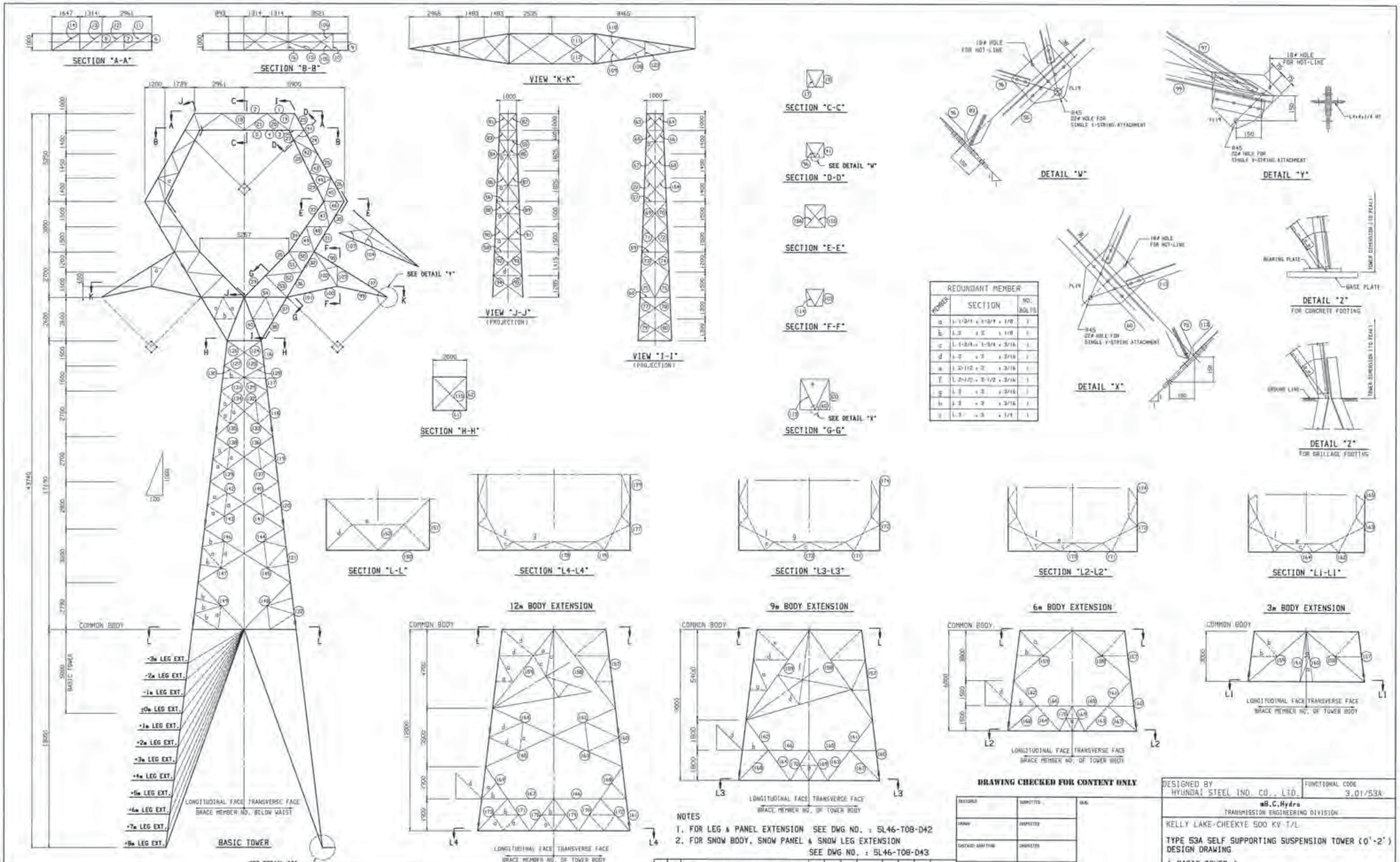
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD. FUNCTIONAL CODE 3.03

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
TRANSMISSION DESIGN DEPARTMENT

KELLY LAKE-CHEEKYE 500KV TRANSMISSION LINE

LOADING TREE TABLE DRAWING FOR TYPE "53A" SELF SUPPORTING SUSPENSION TOWER (0°-2°)

SCALE | M | DWG. NO. 5L46-T08-C30 | REV. 1



REDUNDANT MEMBER		
MEMBER	SECTION	NO. BOLTS
a	L 1-3/4 x 1-3/4 x 1/8	1
b	L 2 x 2 x 1/8	1
c	L 1-3/4 x 1-3/4 x 3/16	1
d	L 2 x 2 x 3/16	1
e	L 2-1/2 x 2 x 3/16	1
f	L 2-1/2 x 2-1/2 x 3/16	1
g	L 3 x 2 x 3/16	1
h	L 3 x 3 x 3/16	1
i	L 3 x 3 x 1/4	1

NOTES

1. FOR LEG & PANEL EXTENSION SEE DWG NO. : 5L46-T08-D42
2. FOR SNOW BODY, SNOW PANEL & SNOW LEG EXTENSION SEE DWG NO. : 5L46-T08-D43

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL IND. CO., LTD.

FUNCTIONAL CODE 3.01/53A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

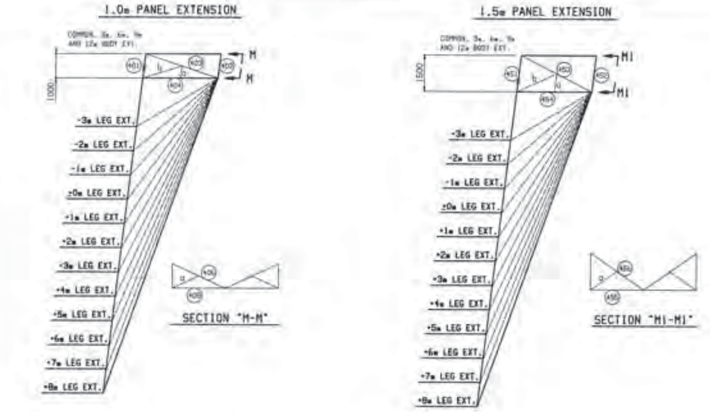
KELLY LAKE-CHEEKYE 500 KV T/L

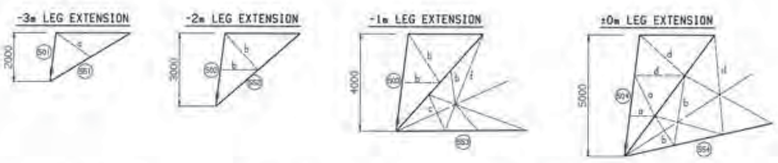
TYPE 53A SELF SUPPORTING SUSPENSION TOWER (0'-2')
DESIGN DRAWING

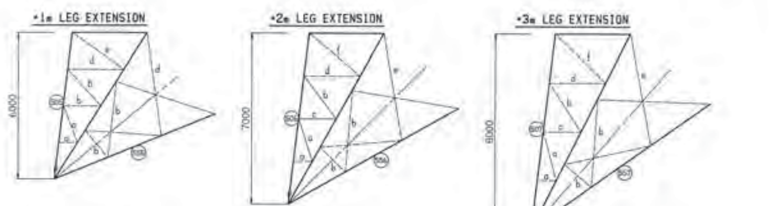
(BASIC TOWER)
(3m, 6m, 9m, AND 12m BODY EXTENSION)

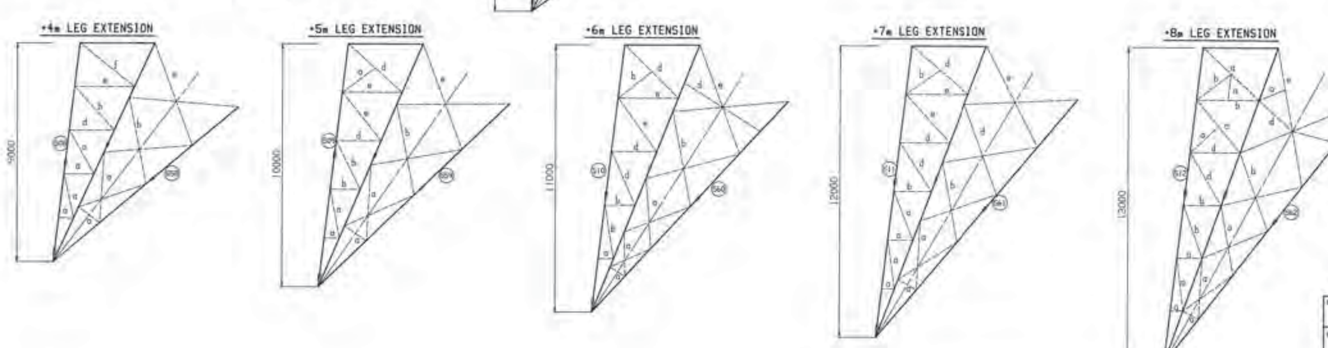
2	FINAL REVISION PER BC HYDRO COMMENTS			
1	REVISED ISSUE FOR APPROVAL			SEP.16 '91
No.	REVISIONS			DATE

DATE JULY. 8 '91 — SCALE 1/100 — DWG. No. 5L46-T08-D41 — 3









MEMBER	MAX. FORCE	SECTION	NO. BOLTS
COMMON BODY			
1	-10.29 +9.03	L 3 x 3 x 1/4	2
2	-48.92 0	L 3 x 3 x 1/4	—
3	-37.24 +22.45	L 2-1/2 x 2-1/2 x 3/16	2
4	-22.67 +87.23	L 2-1/2 x 2-1/2 x 3/16	-
5	-30.63 +67.96	L 2-1/2 x 2-1/2 x 3/16	—
6	-1.79 -2.21	L 1-3/4 x 1-3/4 x 3/16	1
7	-2.60 -3.30	L 1-3/4 x 1-3/4 x 3/16	1
8	-13.04 -2.13	L 1-3/4 x 1-3/4 x 3/16	1
9	-21.99 +5.87	L 1-3/4 x 1-3/4 x 3/16	1
10	-11.02 +1.03	L 1-3/4 x 1-3/4 x 3/16	1
11	-4.32 +5.01	L 2 x 2 x 3/16	1
12	-3.70 +4.29	L 1-3/4 x 1-3/4 x 3/16	1
13	-6.44 0	L 1-3/4 x 1-3/4 x 3/16	1
14	-6.35 0	L 2 x 2 x 3/16	1
15	-2.56 +14.51	L 1-3/4 x 1-3/4 x 3/16	1
16	-0.52 +0.02	L 3 x 3 x 3/16	1
17	-4.95 +20.88	L 1-3/4 x 1-3/4 x 3/16	1
18	-27.98 +4.13	L 1-3/4 x 1-3/4 x 3/16	1
19	-7.49 +44.86	L 1-3/4 x 1-3/4 x 3/16	2
20	-24.52 +14.64	L 2 x 2 x 3/16	1
21	-35.04 +24.13	L 2 x 2 x 3/16	1
22	-7.96 +12.78	L 1-3/4 x 1-3/4 x 3/16	1
23	-49.80 +9.93	L 2-1/2 x 2-1/2 x 3/16	2
24	-72.75 0	L 2-1/2 x 2-1/2 x 3/16	-
25	-18.14 +28.89	L 2-1/2 x 2-1/2 x 3/16	-
26	0 +66.43	L 2-1/2 x 2-1/2 x 3/16	4
27	-33.26 +71.17	L 2-1/2 x 2-1/2 x 3/16	3
28	-59.25 +10.81	L 2-1/2 x 2-1/2 x 3/16	—
29	-80.51 +13.39	L 2-1/2 x 2-1/2 x 3/16	4
30	0 -61.11	L 2-1/2 x 2-1/2 x 3/16	4
31	-35.32 -94.61	L 2-1/2 x 2-1/2 x 3/16	—
32	-75.45 +33.00	L 2-1/2 x 2-1/2 x 3/16	4DS
33	-109.82 0	L 3 x 2-1/2 x 3/16	3
34	-103.61 +27.25	L 3 x 2-1/2 x 3/16	3
35	-29.12 +129.83	L 3 x 3 x 1/4	3
36	-161.30 -33.36	L 3-1/2 x 3-1/2 x 5/16 HT	4DS
37	-288.09 +33.34	L 3-1/2 x 3-1/2 x 5/16 HT	—
38	-310.77 -89.69	L 3-1/2 x 3-1/2 x 5/16 HT	5
39	-50.53 +177.65	L 3 x 3 x 1/4	4
40	-170.09 +223.96	L 3-1/2 x 3-1/2 x 1/4 HT	4
41	-41.56 0	L 1-3/4 x 1-3/4 x 3/16	2
42	0 +67.58	L 1-3/4 x 1-3/4 x 3/16	2
43	-43.58 0	L 1-3/4 x 1-3/4 x 3/16	2
44	0 +47.70	L 1-3/4 x 1-3/4 x 3/16	2
45	-40.34 0	L 2-1/2 x 2 x 3/16	2
46	-56.98 0	L 2-1/2 x 2-1/2 x 3/16	2
47	-88.33 +49.11	L 2-1/2 x 2-1/2 x 3/16	2
48	-38.38 -54.09	L 2 x 2 x 3/16	2
49	-56.06 +29.89	L 2-1/2 x 2-1/2 x 3/16	2
50	-2.91 +106.21	L 2-1/2 x 2-1/2 x 3/16	3
51	-98.47 0	L 3 x 3 x 3/16	3
52	0 +109.84	L 2-1/2 x 2-1/2 x 3/16	3
53	-132.37 0	L 3 x 3 x 1/4	3
54	-53.10 +79.41	L 2-1/2 x 2 x 3/16	2
55	-6.97 -3.09	L 3 x 3 x 3/16	1
56	0 +14.71	L 2-1/2 x 2-1/2 x 3/16	3
57	-1.80 +8.23	L 1-3/4 x 1-3/4 x 3/16	1
58	-5.00 +17.29	L 1-3/4 x 1-3/4 x 3/16	1
59	-12.30 +4.32	L 1-3/4 x 1-3/4 x 3/16	1
60	-16.43 +24.25	L 3 x 3 x 3/16	1
61	-156.16 +3.21	L 4 x 3-1/2 x 1/4 HT	3
62	-6.51 +22.22	L 2-1/2 x 2 x 3/16	1
63 64	-26.02 +1.61	L 1-3/4 x 1-3/4 x 3/16	1
65 66	-24.30 +17.66	L 1-3/4 x 1-3/4 x 3/16	1
67 68	-15.24 +20.94	L 1-3/4 x 1-3/4 x 3/16	1
69 70	-8.53 +16.74	L 1-3/4 x 1-3/4 x 3/16	1
71 72	-19.70 +7.46	L 1-3/4 x 1-3/4 x 3/16	1
73 74	+4.03 +4.56	L 1-3/4 x 1-3/4 x 3/16	1
75 76	-7.22 +6.39	L 2 x 2 x 3/16	1
77 78	-55.05 +52.68	L 2 x 2 x 3/16	2
79 80	+48.84 +51.02	L 2 x 2 x 3/16	2
81 82	-4.18 +22.53	L 1-3/4 x 1-3/4 x 3/16	1
83	-14.48 +9.91	L 1-3/4 x 1-3/4 x 3/16	1
84 85	-6.01 +13.54	L 1-3/4 x 1-3/4 x 3/16	1
86 87	-10.95 +4.83	L 1-3/4 x 1-3/4 x 3/16	1
88 89	-32.66 +27.53	L 1-3/4 x 1-3/4 x 3/16	1
90 91	-24.14 +28.61	L 1-3/4 x 1-3/4 x 3/16	1
92 93	-49.16 +8.48	L 2-1/2 x 2 x 3/16	2
94 95	-38.17 -9.85	L 2-1/2 x 2 x 3/16	1
96	-6.13 +65.11	L 2 x 2 x 3/16	2
97	-0.47 +143.00	L 3-1/2 x 3-1/2 x 1/4	3
98	-0.47 +146.96	L 3-1/2 x 3-1/2 x 1/4	3
99	-162.87 +1.44	L 4 x 4 x 1/4 HT	4
100	-124.96 +1.35	L 4 x 3 x 1/4 HT	-
101	-136.20 +4.96	L 4 x 4 x 1/4 HT	4
102	-76.55 +69.87	L 3 x 2 x 3/16	2
103	-66.05 +15.84	L 2-1/2 x 2 x 3/16	2
104	-24.39 +2.16	L 1-3/4 x 1-3/4 x 3/16	1
105 106	-8.52 +2.09	L 1-3/4 x 1-3/4 x 3/16	1
107	-5.72 -16.14	L 2-1/2 x 2 x 3/16	1
108	-14.30 +14.30	L 1-3/4 x 1-3/4 x 3/16	1
109 110	-4.71 +4.69	L 1-3/4 x 1-3/4 x 3/16	1
111 112	-16.24 +29.18	L 1-3/4 x 1-3/4 x 3/16	1
113	-1.17 +64.85	L 2 x 2 x 3/16	2
114	-17.79 +71.80	L 1-3/4 x 1-3/4 x 3/16	2
115	-43.03 +18.10	L 2-1/2 x 2 x 3/16	2
116	-363.26 +253.89	L 4 x 4 x 5/16 HT	5
117	-423.87 +263.77	L 4 x 4 x 5/16 HT	—
118	-410.83 +272.68	L 4 x 4 x 5/16 HT	6DS
119	-483.40 -323.74	L 4 x 4 x 3/8 HT	—
120	-492.47 +341.53	L 4 x 4 x 3/8 HT	6DS
121	-537.71 +372.04	L 4 x 4 x 3/8 HT	—
122	-549.47 +390.34	L 4 x 4 x 3/8 HT	6DS
123	-4.00 -0.07	L 3 x 3 x 3/16	1
124 127	-78.83 +73.67	L 2-1/2 x 2-1/2 x 3/16	2
128 131	-60.44 +64.51	L 2-1/2 x 2-1/2 x 3/16	2
132 135	-62.55 +58.38	L 3 x 2 x 3/16	2
136 139	+45.85 +48.76	L 3 x 2 x 3/16	2
140 143	-39.75 +37.12	L 3 x 2 x 3/16	1
144 147	-33.25 +35.19	L 3 x 2-1/2 x 3/16	1
148 149	-35.27 +33.00	L 3 x 2 x 3/16	1
150 151	-29.24 +32.03	L 2-1/2 x 2 x 3/16	1
152	-13.83 +13.65	L 3 x 2 x 3/16	1
153		SPRING MEMBER	
154	-17.39 +1.62	L 1-3/4 x 1-3/4 x 3/16	1
155 156	-33.11 +14.55	L 1-3/4 x 1-3/4 x 3/16	1
+3m BODY EXT.			
157	-308.96 +267.30	L 5 x 5 x 3/8 HT	6DS
158 159	-51.35 +77.33	L 3 x 2-1/2 x 1/4	2
160 161	-84.42 +70.33	L 3 x 3 x 3/16	3
162 163	-52.88 +34.33	L 3 x 2 x 3/16	3
164 165	-42.97 +40.83	L 3 x 2 x 3/16	—
+6m BODY EXT.			
157	-501.72 -353.66	L 5 x 5 x 3/8 HT	—
158 159	-37.48 -36.71	L 3 x 2-1/2 x 3/16	2
160	-372.82 +409.21	L 5 x 5 x 3/8 HT	6DS
161 162	-32.77 +33.11	L 3 x 2-1/2 x 3/16	2
163 164	-51.66 +34.14	L 3 x 2-1/2 x 3/16	2
165 166	-57.09 +50.06	L 3 x 3 x 1/4	3
167 168	-43.34 +49.17	L 3 x 2-1/2 x 3/16	2
169 170	-71.34 +71.02	L 2-1/2 x 2 x 3/16	2
171 172	-58.08 +50.46	L 3 x 2 x 3/16	3
173 174	-89.55 -55.69	L 3 x 2 x 3/16	
+9m BODY EXT.			
157	-491.71 +343.01	L 5 x 5 x 3/8 HT	—
158 159	-46.57 +47.00	L 3 x 2-1/2 x 3/16	2
160	-583.84 +419.05	L 5 x 5 x 3/8 HT	6DS
161 162	-33.93 -32.41	L 3 x 3 x 3/16	2
163 164	-53.56 -35.07	L 3 x 3 x 3/16	2
165 166	-61.33 +90.68	L 3-1/2 x 3-1/2 x 1/4	2
167 168	-50.78 +74.34	L 3 x 3 x 3/16	2
169 170	-71.22 +70.84	L 2-1/2 x 2 x 3/16	2
173 174	-88.42 +52.58	L 3 x 2-1/2 x 3/16	3
+12.0m BODY EXT.			
157	-479.89 +330.25	L 5 x 5 x 3/8 HT	6DS
158 159	-47.15 +46.40	L 3 x 2-1/2 x 3/16	2
160	-553.09 -385.82	L 5 x 5 x 3/8 HT	—
161	-593.87 +426.67	L 5 x 5 x 3/8 HT	6DS
162 165	-26.98 +26.79	L 4 x 3 x 1/4	1
166 167	-65.88 -88.12	L 3 x 2 x 3/16	2
168 171	-49.19 +44.62	L 2-1/2 x 2 x 3/16	2
172 173	-56.02 +74.49	L 2-1/2 x 2 x 3/16	2
174 175	-71.80 -71.01	L 2-1/2 x 2 x 3/16	2
176 177	-60.29 +53.51	L 3 x 2-1/2 x 3/16	2
178 179	-90.13 +56.40	L 3 x 3 x 3/16	3
+1.0m PANEL EXT.			
401	-493.31 +328.32	L 5 x 5 x 3/8 HT	6DS
402	-88.84 +73.70	L 2-1/2 x 2-1/2 x 3/16	3
403	-17.44 +20.24	L 2-1/2 x 2 x 3/16	1
404	-1.20 +0.75	L 2 x 2 x 3/16	1
405	-0.34 +0.1	L 3 x 3 x 3/16	1
406	0 +0.47	L 1-3/4 x 1-3/4 x 3/16	1
+1.5m PANEL EXT.			
451	-583.13 +490.88	L 5 x 5 x 3/8 HT	6DS
452	-88.87 +74.50	L 3 x 2-1/2 x 3/16	3
453	-36.16 +34.43	L 2-1/2 x 2 x 3/16	1
454	-0.24 0	L 2 x 2 x 3/16	1
455	-0.17 0	L 3 x 2 x 3/16	1
456	0 -0.25	L 1-3/4 x 1-3/4 x 3/16	1
POST OF LEG EXT.			
501	-505.75 +405.25	L 5 x 5 x 3/8 HT	6DS
502	-555.19 +391.20	L 5 x 5 x 3/8 HT	6DS
503	-544.64 +382.14	L 5 x 5 x 3/8 HT	6DS
504	-534.08 +273.09	L 5 x 5 x 3/8 HT	6DS
505	-523.53 +364.04	L 5 x 5 x 3/8 HT	6DS
506	-512.97 +354.98	L 5 x 5 x 3/8 HT	6DS
507	-502.42 -345.93	L 5 x 5 x 3/8 HT	6DS
508	-491.86 +336.87	L 5 x 5 x 3/8 HT	6DS
509	-481.31 +327.82	L 5 x 5 x 3/8 HT	6DS
510	-470.75 +318.77	L 5 x 5 x 3/8 HT	6DS
511	-460.20 +309.71	L 5 x 5 x 3/8 HT	6DS
512	-449.64 +300.66	L 5 x 5 x 3/8 HT	6DS
BRACE OF LEG EXT.			
551	-28.24 +57.89	L 3 x 3 x 1/4	2
552	-81.37 +81.01	L 3-1/2 x 3 x 1/4	2
553	-66.15 +64.77	L 3 x 3 x 3/16	2
554	-68.97 +68.56	L 3 x 3 x 3/16	2
555	-72.59 +72.15	L 3 x 3 x 3/16	2
556	-75.91 +75.46	L 3 x 3 x 3/16	2
557	-78.94 +78.47	L 3 x 3 x 1/4	2
558	-81.69 +81.20	L 3 x 3 x 1/4	2
559	-84.17 +83.67	L 3 x 3 x 1/4	2
560	-86.42 -85.92	L 3 x 3 x 1/4	2
561	-88.49 +87.95	L 3 x 3 x 1/4	2
562	-90.39 +89.81	L 3-1/2 x 3 x 1/4	2

NOTES

1) HT-DENOTES MEMBERS OF 35 KN/CM² MINIMUM YIELD POINT. ALL OTHER MEMBERS MAY HAVE A MINIMUM YIELD POINT OF 25 KN/CM².
2) STEEL SHALL CONFORM TO THE REQUIREMENTS OF A CHARPY V-NOTCH MINIMUM AVERAGE ABSORBED ENERGY VALUE OF 20J AT TEMPERATURE OF -20°C.
3) ALL BOLTS TO BE IN ACCORDANCE WITH CSA STANDARD B33.4 GRADE 5 AND TO BE 5/8" DIAMETER WITH HELICAL HEAVY SPRING WASHERS.
4) ALL DIMENSIONS ARE IN MILLIMETERS AND ALL FORCES ARE IN "KN". MINUS SIGN DENOTES COMPRESSION AND PLUS SIGN DENOTES TENSION.
5) REDUNDANT MEMBERS SHALL SUBDIVIDE THE MEMBERS BEING BRACED IN EQUAL LENGTHS UNLESS OTHERWISE SPECIFIED.
6) DS-DENOTES AS DOUBLE SHEAR. NUMBER OF BOLTS TABULATED IS BASED ON SINGLE SHEAR.
7) ABOVE MAX. FORCES WERE SELECTED BY WORST CASE WITH CONSIDERING UNEQUAL, EQUAL LEG DESIGN FOR BODY EXT. AND PANEL EXT.

REDUNDANT MEMBER

MEMBER	SECTION	NO. BOLTS
a	L 1-3/4 x 1-3/4 x 1/8	1
b	L 2 x 2 x 1/8	1
c	L 1-3/4 x 1-3/4 x 3/16	1
d	L 2 x 2 x 3/16	1
e	L 2-1/2 x 2 x 3/16	1
f	L 2-1/2 x 2-1/2 x 3/16	1
g	L 3 x 3 x 3/16	1
h	L 3 x 2 x 3/16	1
i	L 3 x 2 x 1/4	1

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DESIGNED BY HYUNDAI STEEL IND. CO., LTD.

FUNCTIONAL CODE 3.01/S3A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

TYPE 53A SELF SUPPORTING SUSPENSION TOWER (0°-2°)
DESIGN DRAWING
(1.0m AND 1.5m PANEL EXTENSION)
(-3m TO +8m LEG EXTENSION)

DATE OCT 15 '91 — SCALE 1/100 — DWG. No. 5L46-T0B-042 — 3

REV.	DESCRIPTION	DATE
3	FINAL REVISION PER BC HYDRO COMMENTS	JAN.15.'93
2	REVISED PER BCH'S COMMENTS AND RESULT OF TOWER TEST	
1	REVISED PER BCH'S COMMENTS	FEB.27.'92

GENERAL NOTES

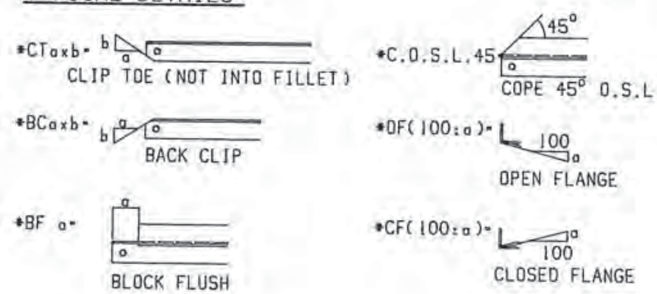
1. 'HT' DENOTES MEMBERS OF 350 MPa (N/MM2) MINIMUM YIELD POINT. ALL OTHER MEMBERS SHALL HAVE A MINIMUM YIELD POINT OF 260 MPa.
2. ALL STEEL MATERIAL FOR MEMBERS SHALL CONFORM TO THE CHARPY IMPACT TEST REQUIREMENTS OF 20 JOULES @ -20° C.
3. ALL BOLTS SHALL BE 5/8" DIAMETER, EXCEPT AS OTHERWISE NOTED. ALL BOLTS SHALL BE SUPPLIED WITH HELICAL SPRING LOCK WASHERS.
4. ALL BOLTS SHALL BE IN ACCORDANCE WITH CSA STANDARD B33.4 GRADE 5, EXCEPT AS OTHERWISE NOTED.
5. ALL STEPBOLTS SHALL BE 5/8" DIA. x 7" LONG, UNLESS OTHERWISE NOTED AND SHALL BE SUPPLIED WITH HELICAL SPRING LOCK WASHERS.
6. ALL STEPBOLTS SHALL BE IN ACCORDANCE WITH CSA STANDARD B33.4 GRADE 5, EXCEPT AS OTHERWISE NOTED.
7. GALVANIZED HELICAL SPRING LOCK WASHERS SHALL BE HEAVY SERIES IN ACCORDANCE WITH CSA STANDARD B19.2.
8. ALL BOLT HOLES SHALL BE 11/16" (17.5MM) DIAMETER, EXCEPT AS OTHERWISE NOTED
9. MINIMUM EDGE DISTANCE FOR 5/8" DIA BOLTS SHALL BE 22MM FOR A ROLLED EDGE AND 25MM FOR A SHEARED EDGE, EXCEPT AS OTHERWISE NOTED.
10. ALL MATERIAL SHALL BE HOT DIP GALVANIZED AFTER FABRICATION, IN ACCORDANCE WITH CSA STANDARD G164.
11. STRUCTURAL SHAPES SHALL BE SHOWN IN ACCORDANCE WITH CURRENT NORTH AMERICAN PRACTICE. DIMENSIONS FOR BOLTS, WASHER AND RINGFILLS SHALL BE SHOWN IN INCHES. ALL OTHER DIMENSIONS SHALL BE SHOWN IN MILLIMETRES.
12. QUANTITIES SHOWN FOR BOLTS, NUTS AND WASHERS, ARE NET.
13. OUTSIDE DIAMETER FOR STANDARD 5/8" RINGFILL SHALL BE 1-1/4".
14. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE.
15. ALL MEMBER MARK NUMBERS SHALL BE PREFIXED AS FOLLOWS:

TOWER TYPE	PREFIX
52A	X52A
52C	X52C
53A	X53A
53C	X53C
53D	X53D
53T	X53T

WHERE "X" IS THE MANUFACTURER'S IDENTIFICATION CODE.

16. LEGEND
   - *LG : LENGTH OF MEMBER
   - *CG : CENTER OF GRAVITY
   - *WL : WORKING LINE
   - *RF : RING FILL
   - *"ST" : LEG MEMBERS WITH STEP BOLT
   - *N.S : MEMBER NUMBER FOR NEAR SIDE
   - *F.S : MEMBER NUMBER FOR FAR SIDE
   - * ⌖ ━ : STEP BOLT MARKS
   - * ⊖ : STRUT USED AS A STEP BOLT

TYPICAL DETAILS



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M	No	REVISIONS	MADE	CHKD	SUBD	APPD	INSP	INSP	INSP	DATE
	4	FOR FINAL APPROVAL								JUN.19 '93
	3	REVISED PER B.C.HYDRO COMMENTS								MAR. '93
	2	REVISED PER B.C.HYDRO COMMENTS								JAN.28 '92
	1	REVISED FOR APPROVAL								DEC.10 '91
	0	ISSUE FOR APPROVAL								OCT.25 '91

CAD FILE No.

DESIGNED	SUBMITTED
DRAWN	INSPECTED
CHECKED DRAFTING	INSPECTED
CHECKED DESIGN	INSPECTED
APPROVED	

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

FUNCTIONAL CODE
4.02

SEAL

DATE

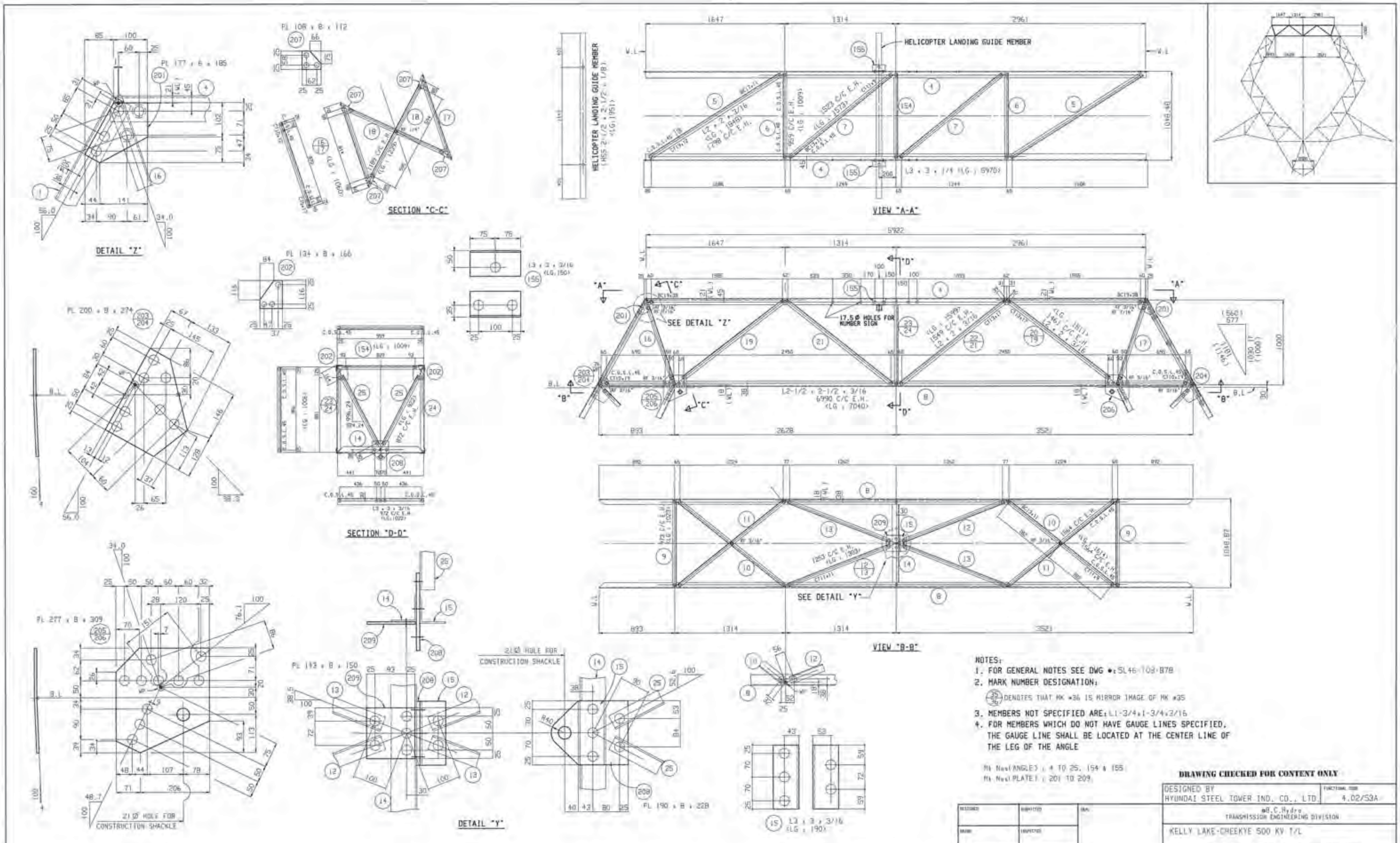
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

GENERAL NOTES
TYPE 52A,52C,53A,53C,53D & 53T TOWER

SCALE	M	DWG. No	R
—		5L46-T08-B78	4

B



NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-108-B78
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 4 TO 25, 154 & 155
Mk Nos(PLATE) : 201 TO 209

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

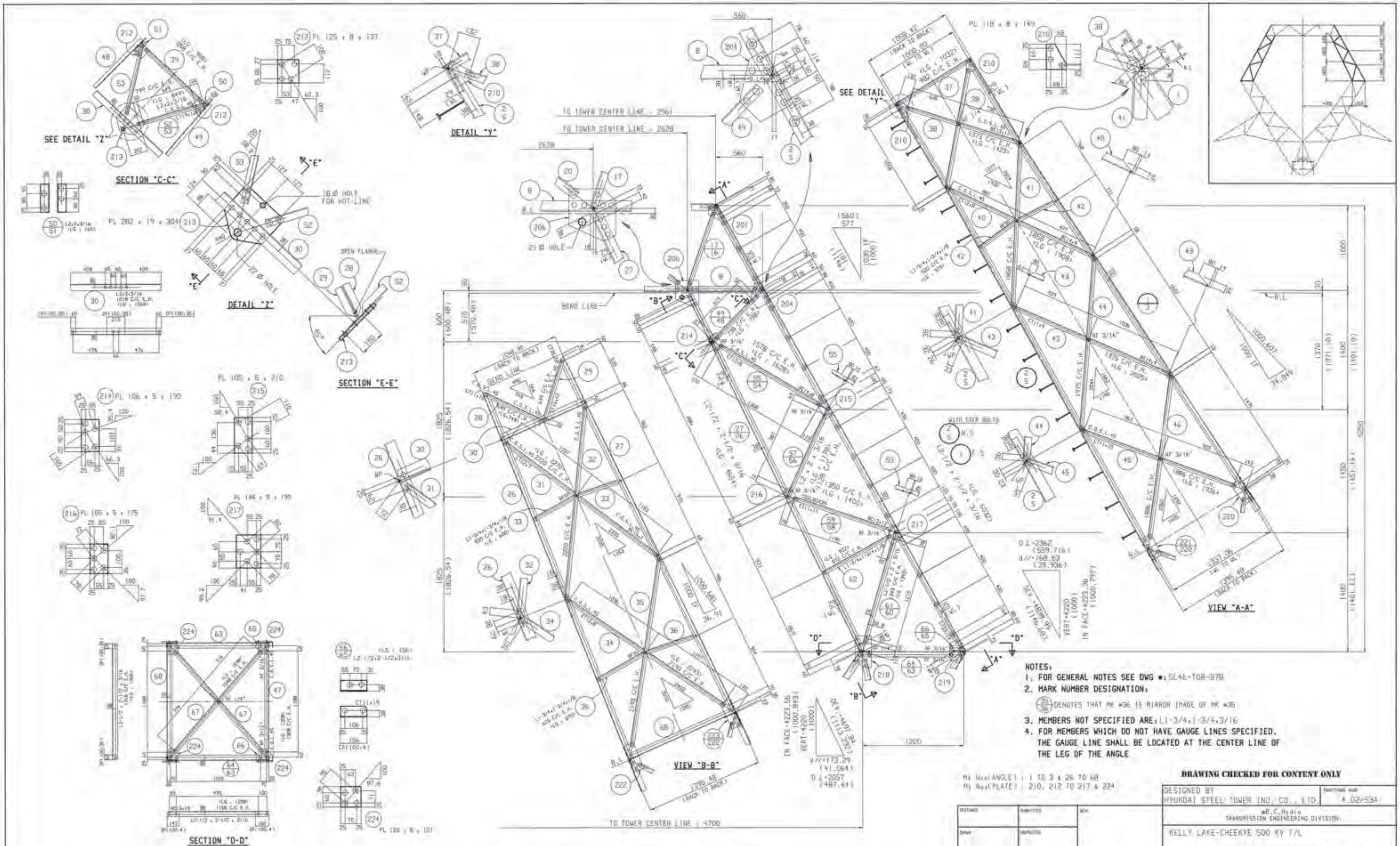
FUNCTIONAL CODE 4.02/53A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(BRIDGE)

DWG No. SL46-108-D141



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-078
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4, 1-3/4, 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 1 TO 3 & 26 TO 68
Mk Nos(PLATE) : 210, 212 TO 217 & 224

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53A

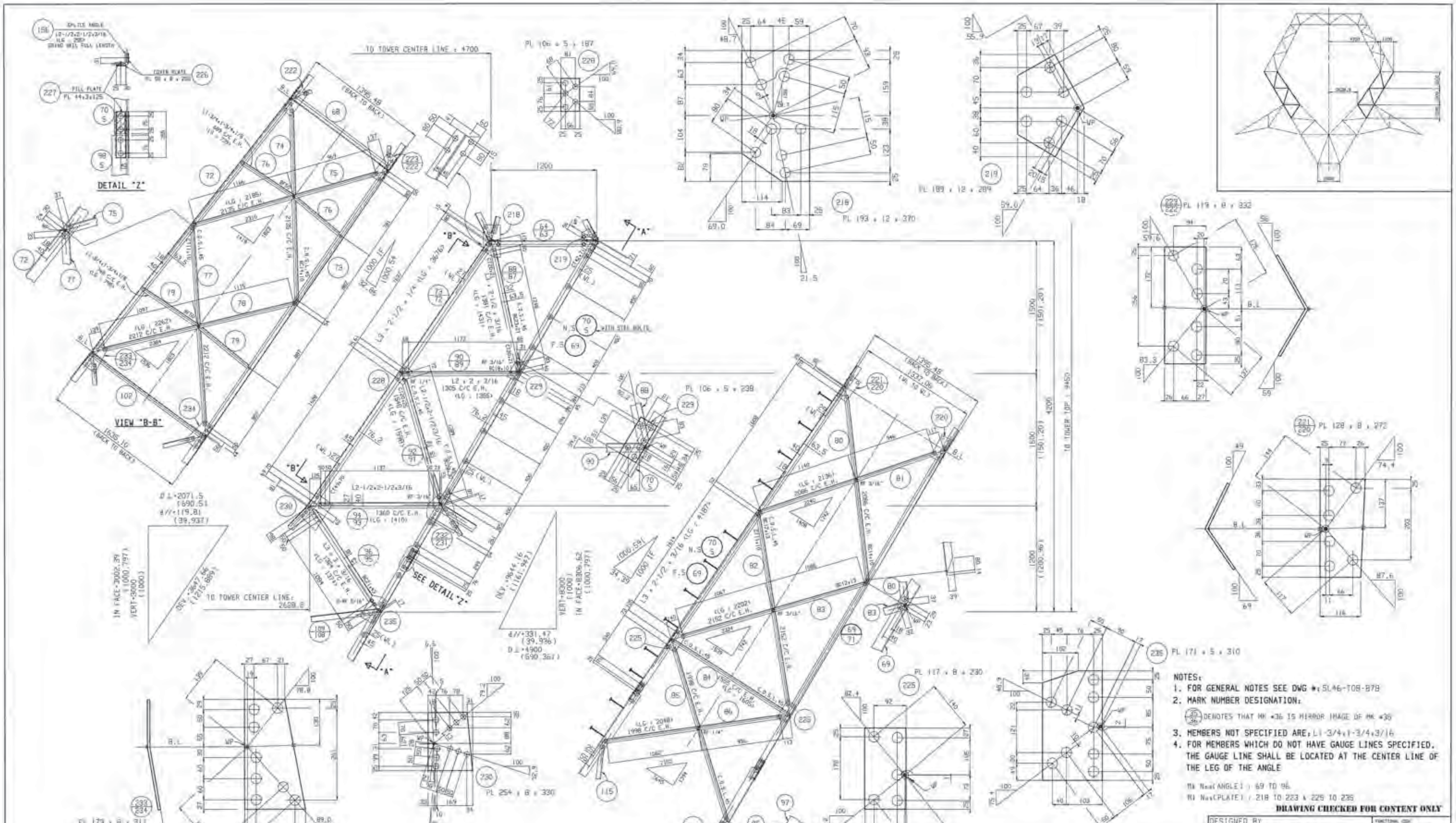
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(UPPER PART I)

DWG No. 5L46-T08-0142

5



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B78
2. MARK NUMBER DESIGNATION:

   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35

3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 69 TO 96

Mk Nos(PLATE) : 218 TO 223 & 225 TO 235

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53A

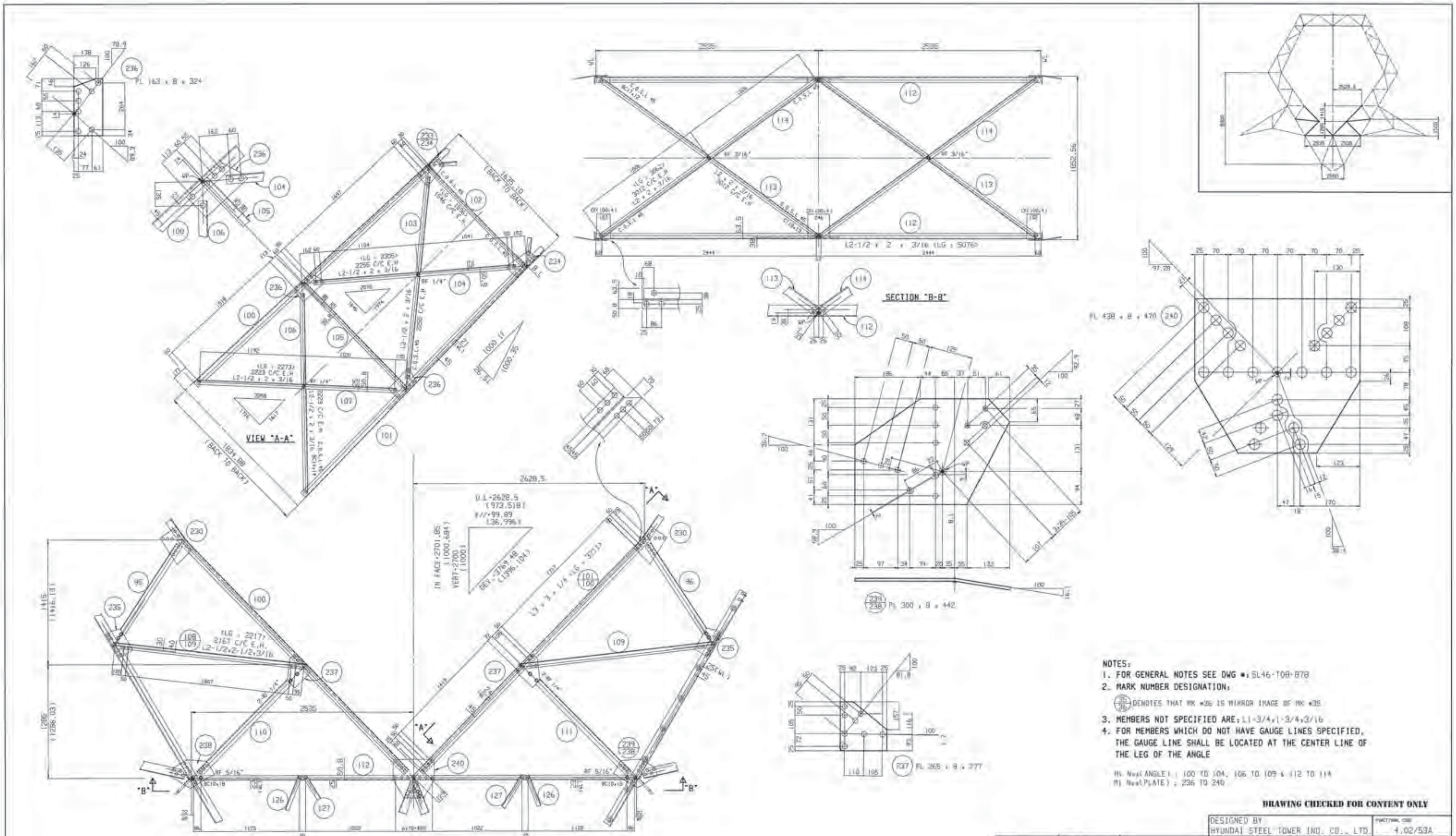
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(UPPER PART 2)

5L46-T08-D143

4



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4, 1-3/4, 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 100 TO 104, 106 TO 109 & 112 TO 114
Mk No.(PLATE) : 236 TO 240

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

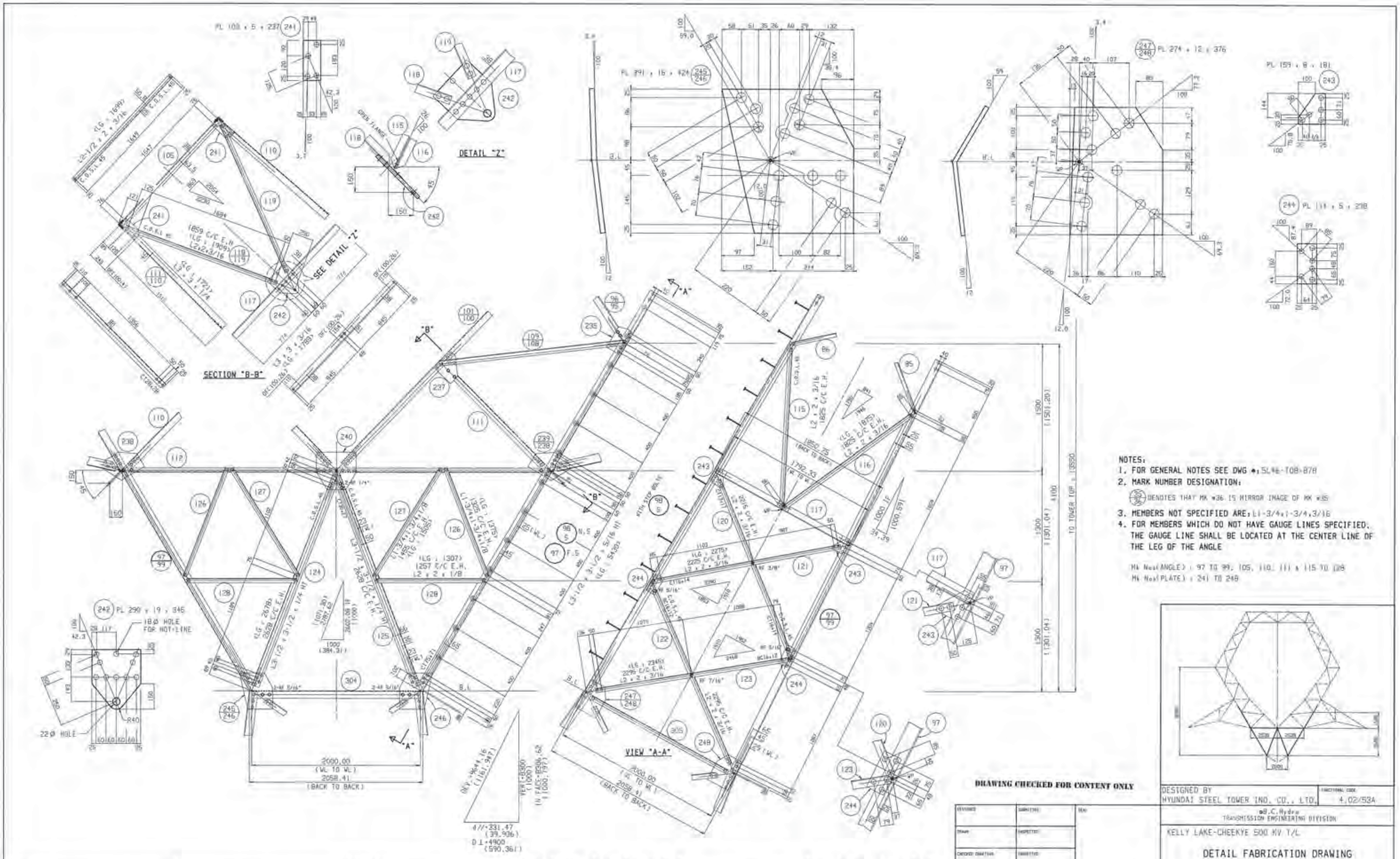
FUNCTIONAL CODE 4.02/53A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(UPPER PART 3)

DWG No. 5L46-T08-0144



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 97 TO 99, 105, 110, 111 & 115 TO 128
Mk Nos(PLATE) : 241 TO 248

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.

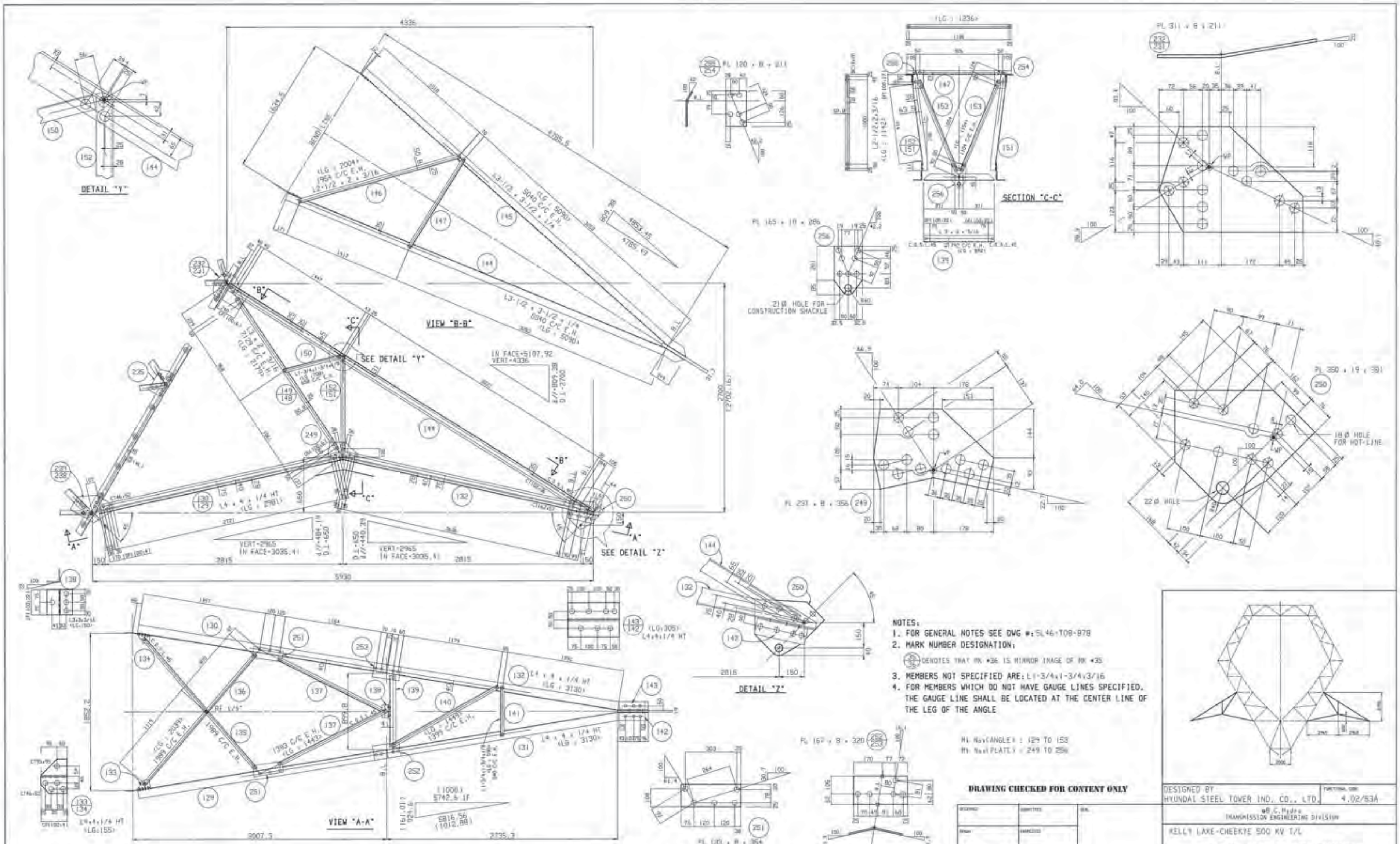
FUNCTIONAL CODE 4.02/53A

B.C.Hydro TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING OF "53A" TYPE TOWER (UPPER PART 4)

DWG.No. 5L46-T08-0145



NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 129 TO 153
Mk No.(PLATE) : 249 TO 256

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DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

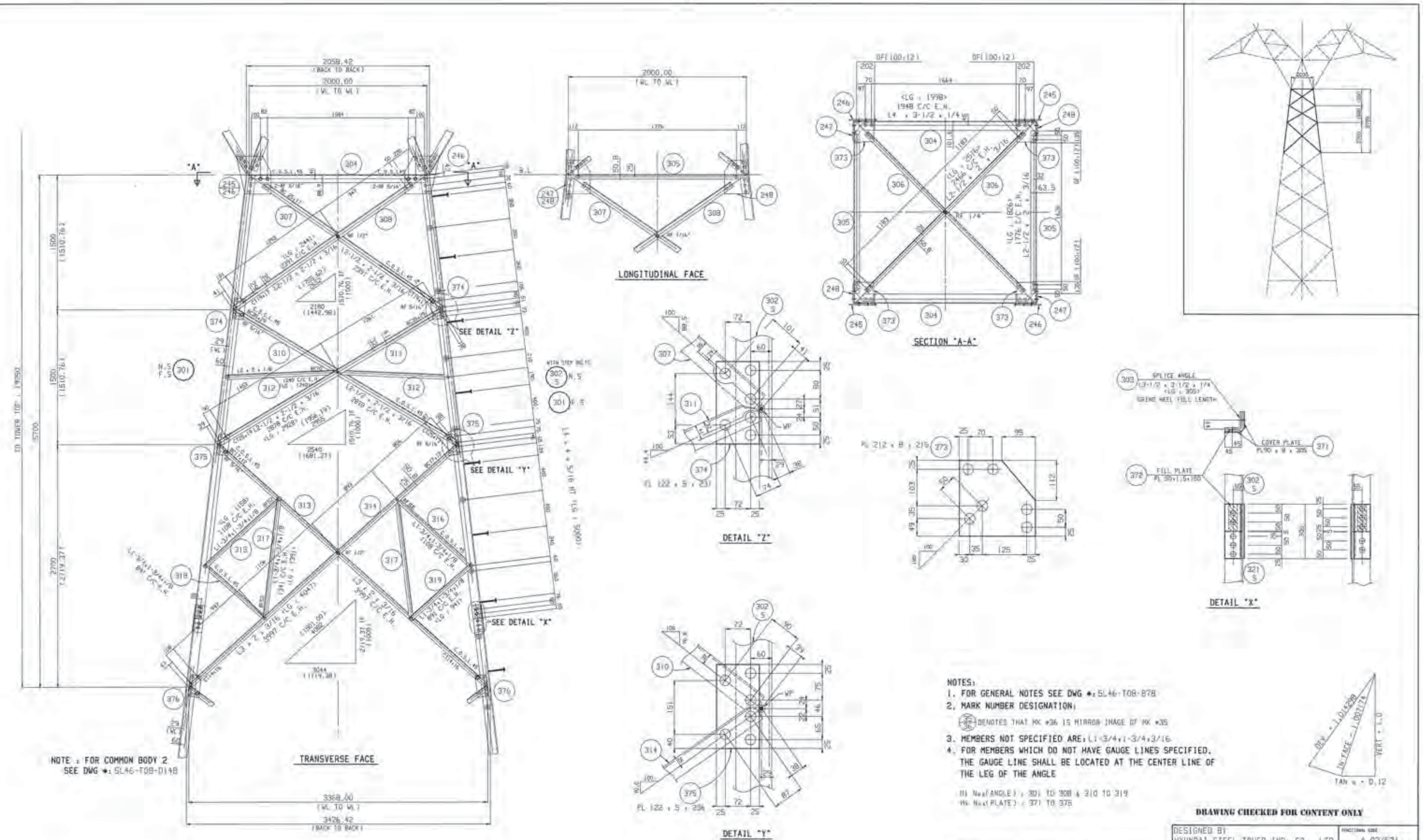
4.02/53A

B.C. Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(CROSSARM)

SL46-T08-D146



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T0B-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 301 TO 308 & 310 TO 319
Mk No.(PLATE) : 371 TO 376

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

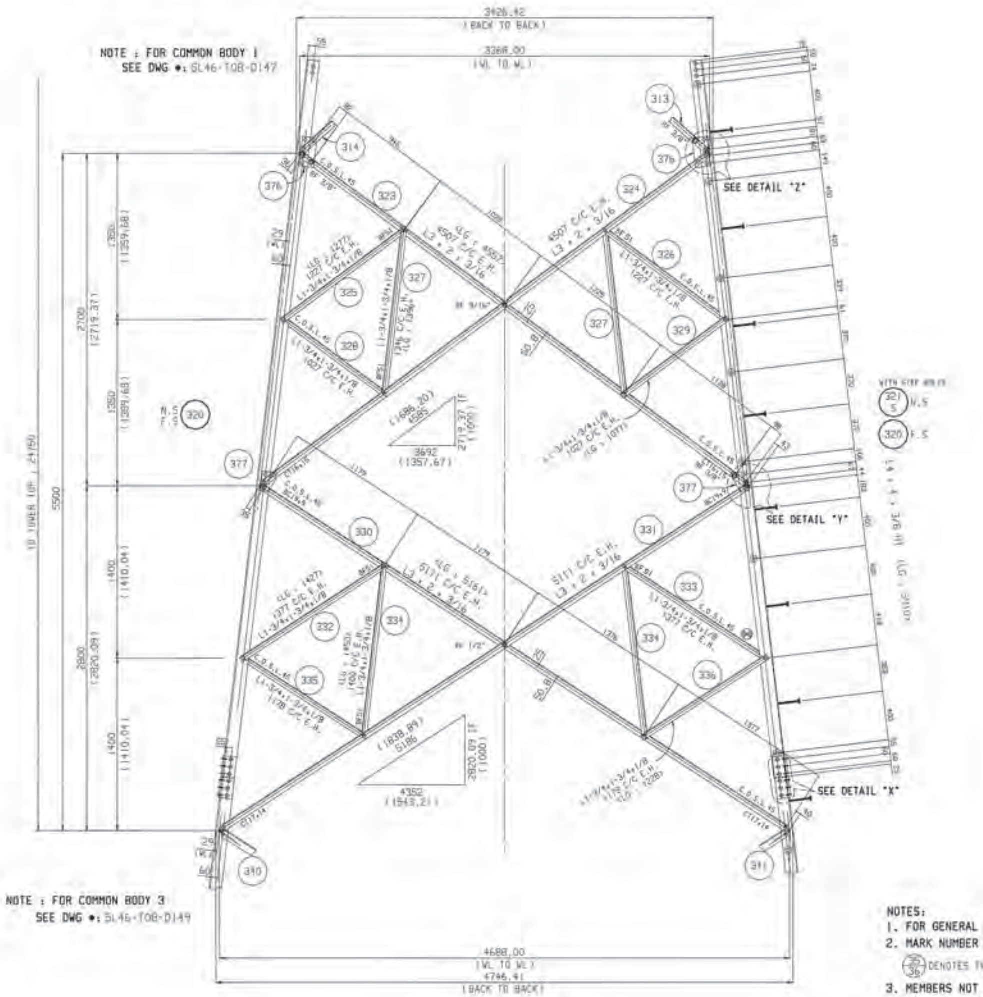
FUNCTIONAL CODE 4.02/53A

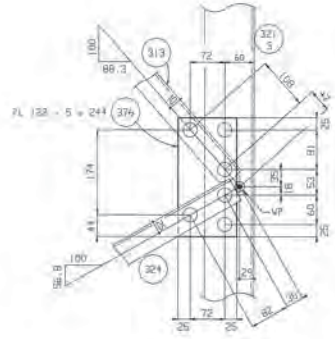
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

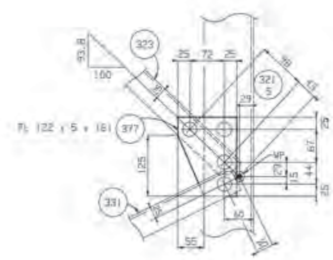
DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(COMMON BODY 1)

DWG. No. 5L46-T0B-0147

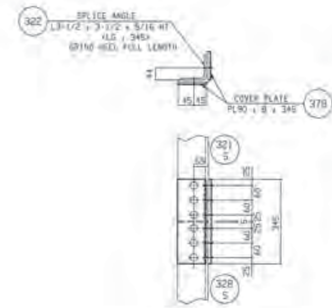




DETAIL "Z"



DETAIL "Y"



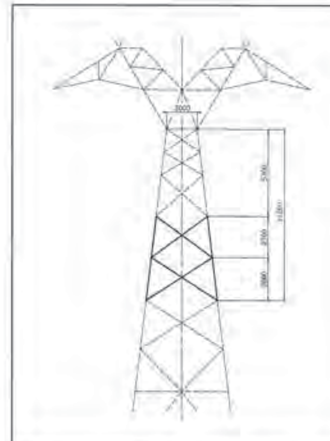
DETAIL "X"

NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T0B-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 320 TO 336
Mk Nos(PLATE) : 376 TO 378

DRAWING CHECKED FOR CONTENT ONLY



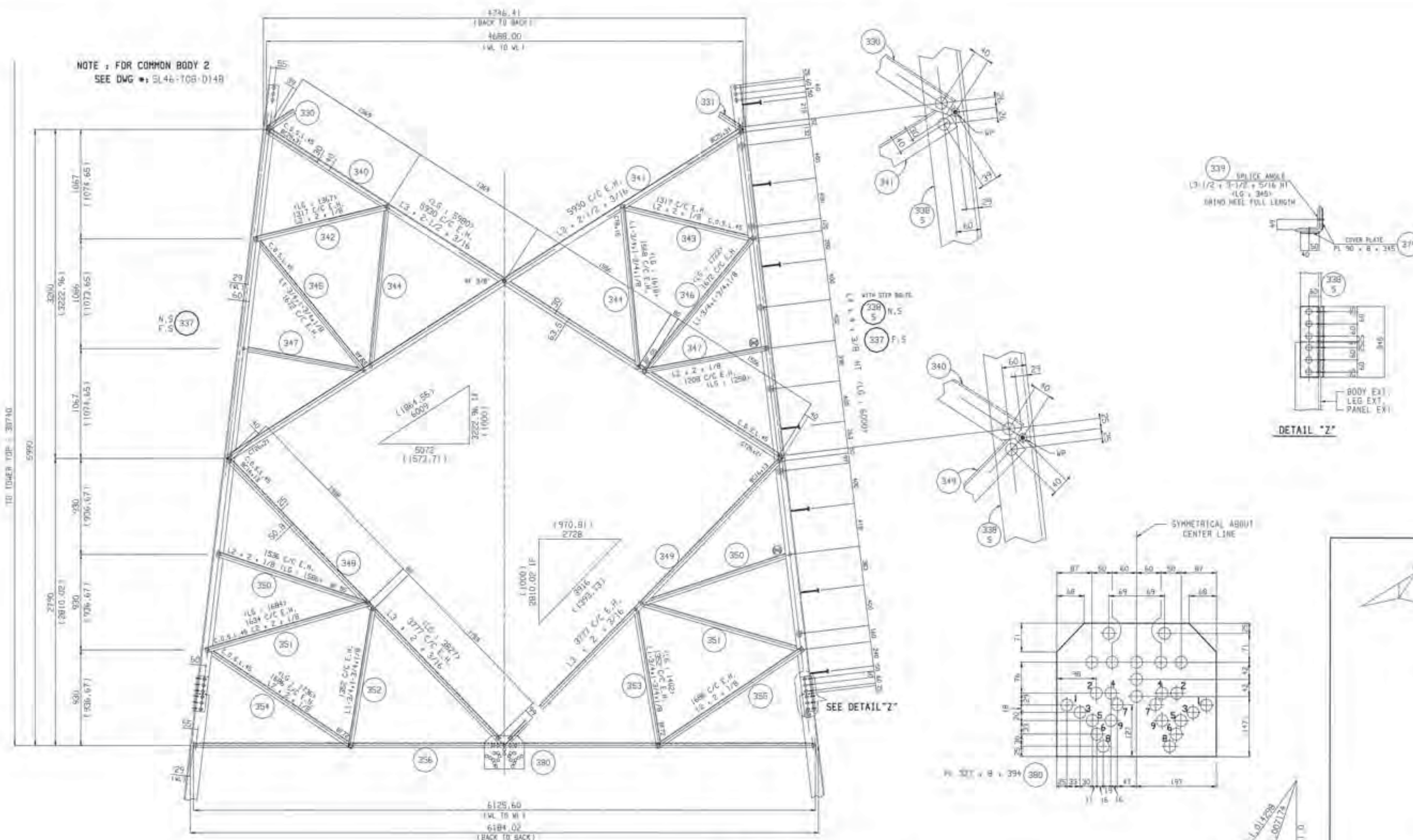
DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD. | #.02/53A

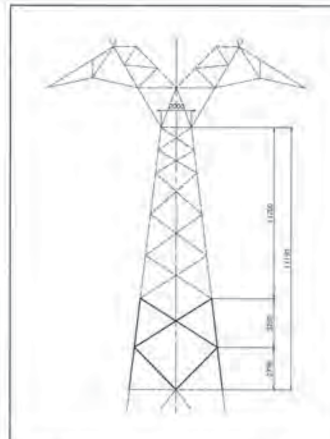
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(COMMON BODY 2)

SL46-T0B-0148 | 3





NOTES:
1. FOR GENERAL NOTES SEE DWG #: SL46-T08-87B
2. MARK NUMBER DESIGNATION:
(35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK No.(ANGLE) : 337 TO 355
MK No.(PLATE) : 379 & 380

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53A

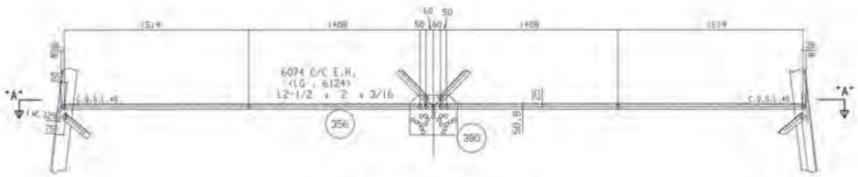
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

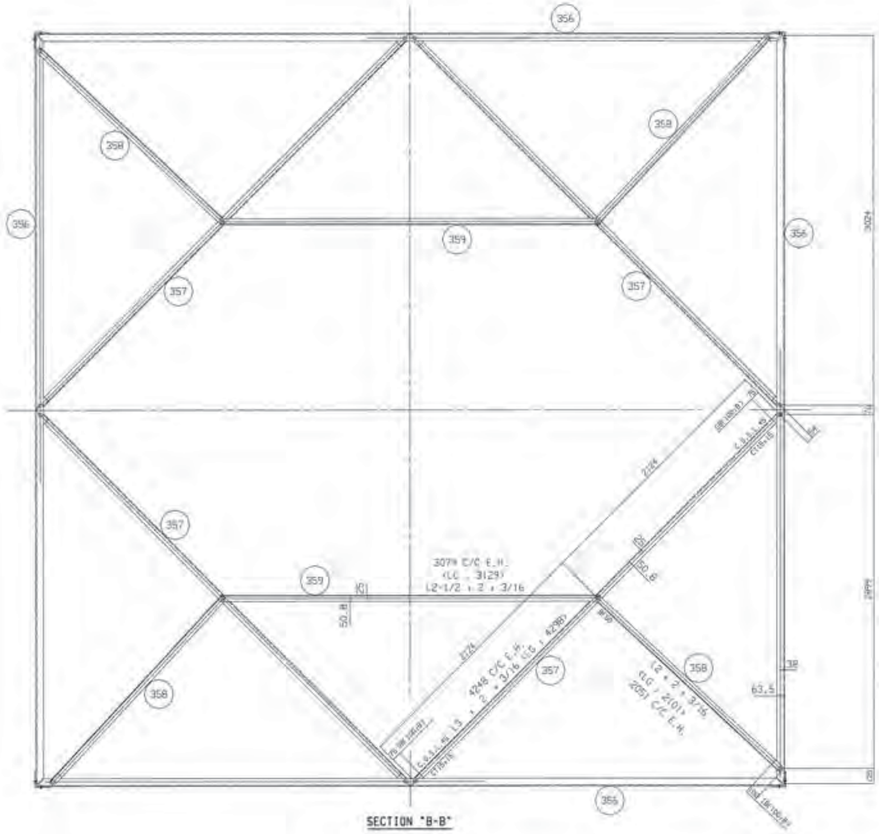
DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(COMMON BODY 3)

Scale		Dwg. No.	
—		SL46-T08-D149	3

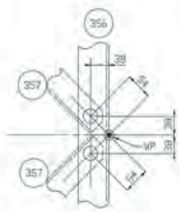
No.	Revisions	Date
3	FOR FINAL APPROVAL	JAN.19 '93
2	ISSUE FOR APPROVAL	OCT.22 '91



REFER TO DWG #: 5L46-T0B-D149



SECTION "B-B"



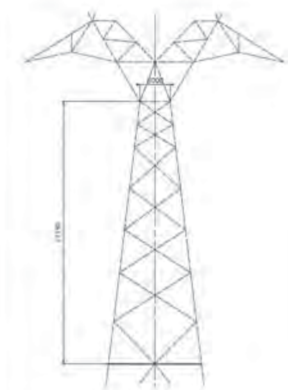
NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T0B-B78
2. MARK NUMBER DESIGNATION:

   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35

3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No. (ANGLE) : 356 TO 359



DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

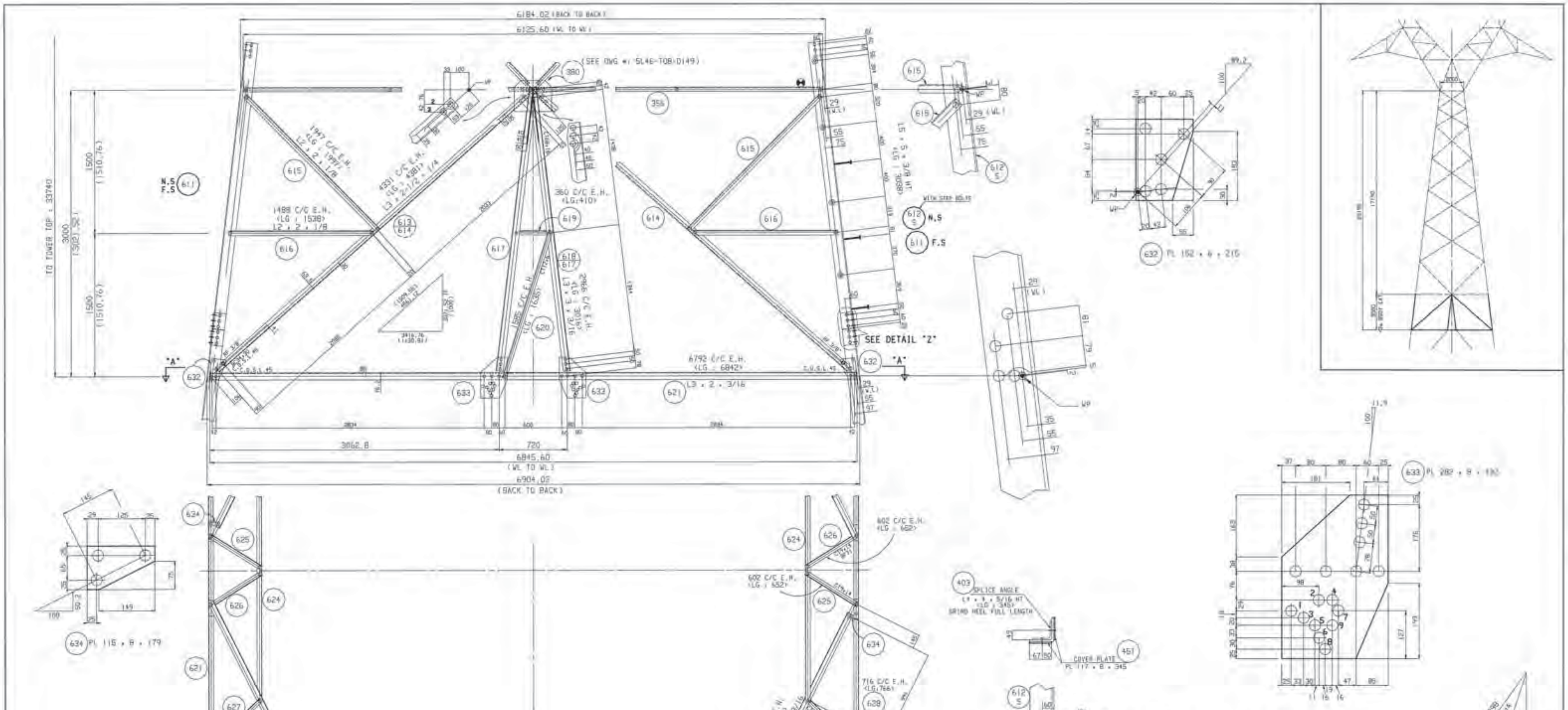
FUNCTIONAL CODE 4.02/53A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(HORIZONTAL DIAPHRAGM)

DWG No. 5L46-T0B-D150 3



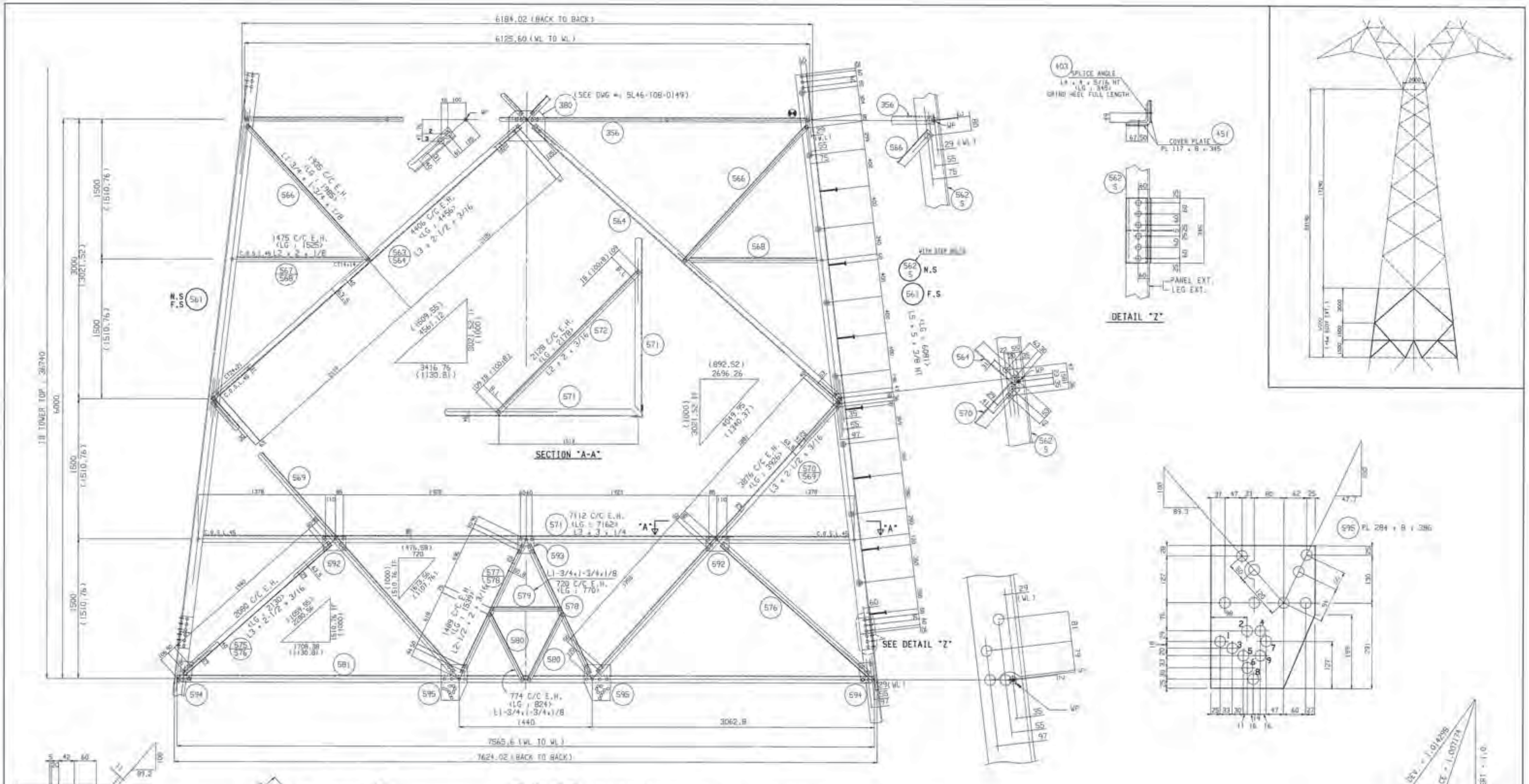
NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B78
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

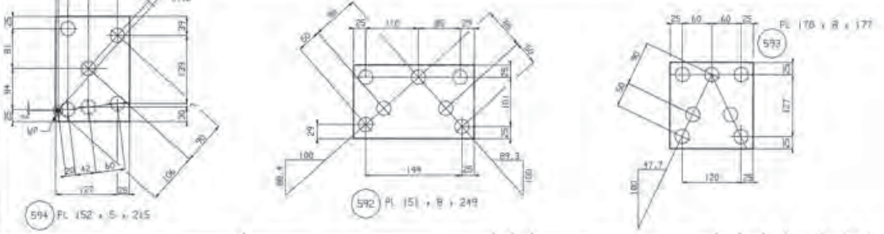
MK Nos(ANGLE) : 403 & 611 TO 628
MK Nos(PLATE) : 454 & 631 TO 635

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	FUNCTIONAL CODE #.02/53A
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53A" TYPE TOWER (+3m BODY EXTENSION)	
SCALE —	DWG No. 5L46-T08-D151 # 2

FOR FINAL APPROVAL	JAN.13 '93
ISSUE FOR APPROVAL	SEP.20 '92
REVISED PER B.C.HYDRO COMMENTS	





NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-TOB-878
2. MARK NUMBER DESIGNATION:

35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35

3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 403 & 561 TO 580
Mk Nos(PLATE) : 454 & 591 TO 595

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53A

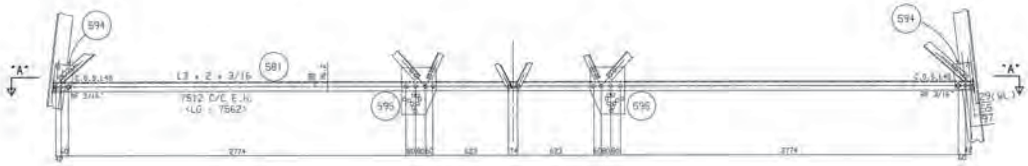
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

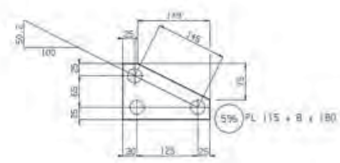
DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+6m BODY EXTENSION)

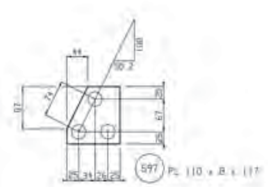
5L46-TOB-0152

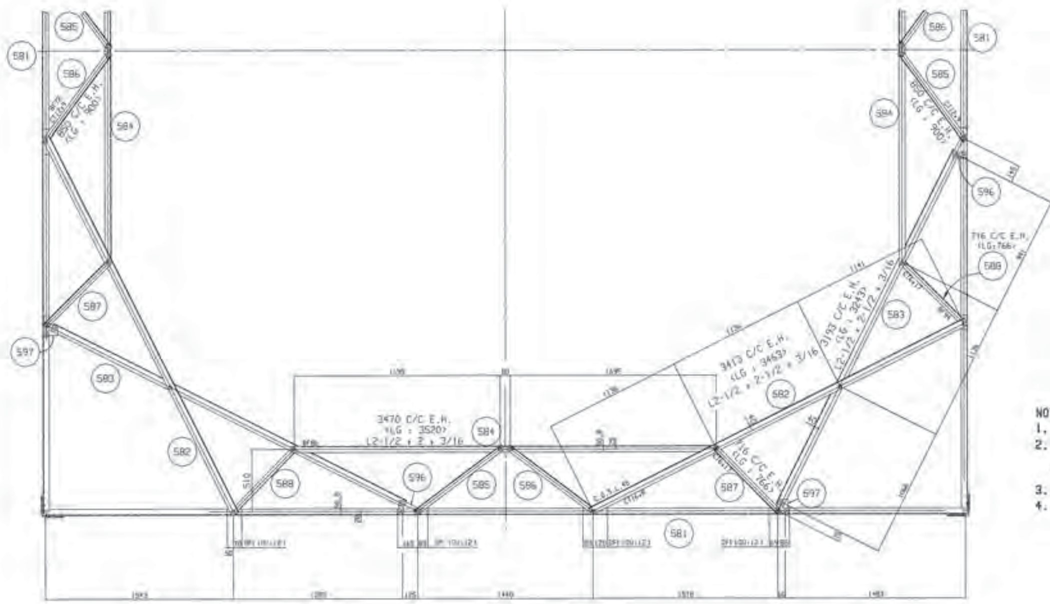
2



REFER TO DWG #:5L46-T08-0152



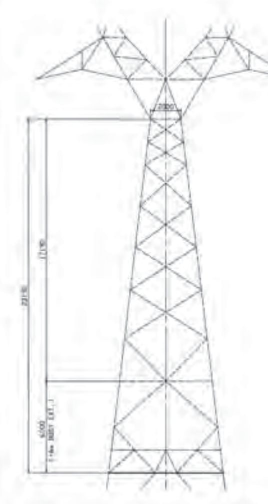




SECTION "A-A"

NOTES:
1. FOR GENERAL NOTES SEE DWG #:5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 581 TO 588
Mk No.(PLATE) : 596 & 597



DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53A

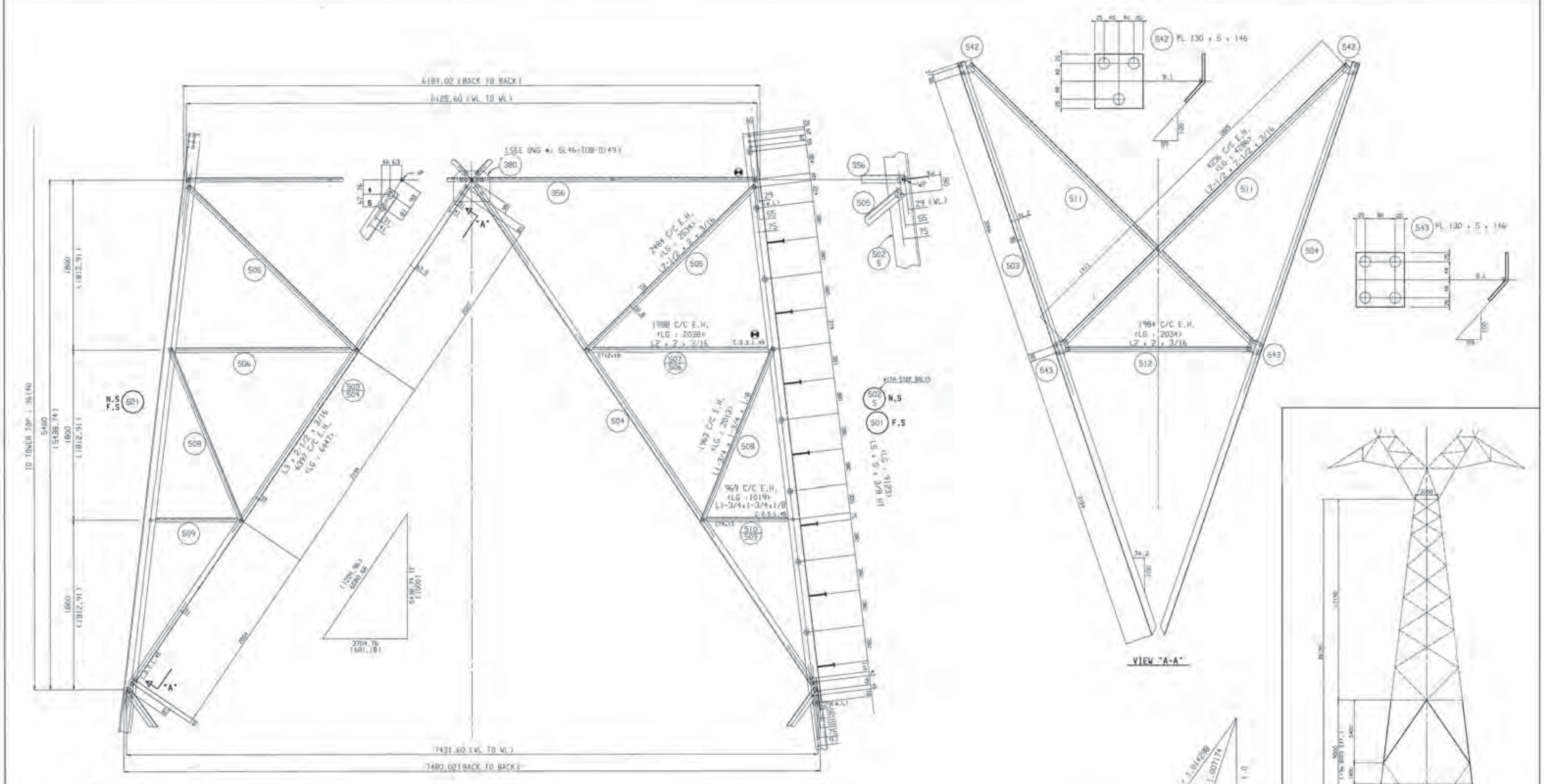
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+6m BODY EXTENSION DIAPHRAGM)

5L46-T08-0153

2



NOTE : FOR EXTENSION 2
SEE DWG #: 5L46-T08-0155

NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 501 TO 512
Mk No.(PLATE) : 541 TO 543

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

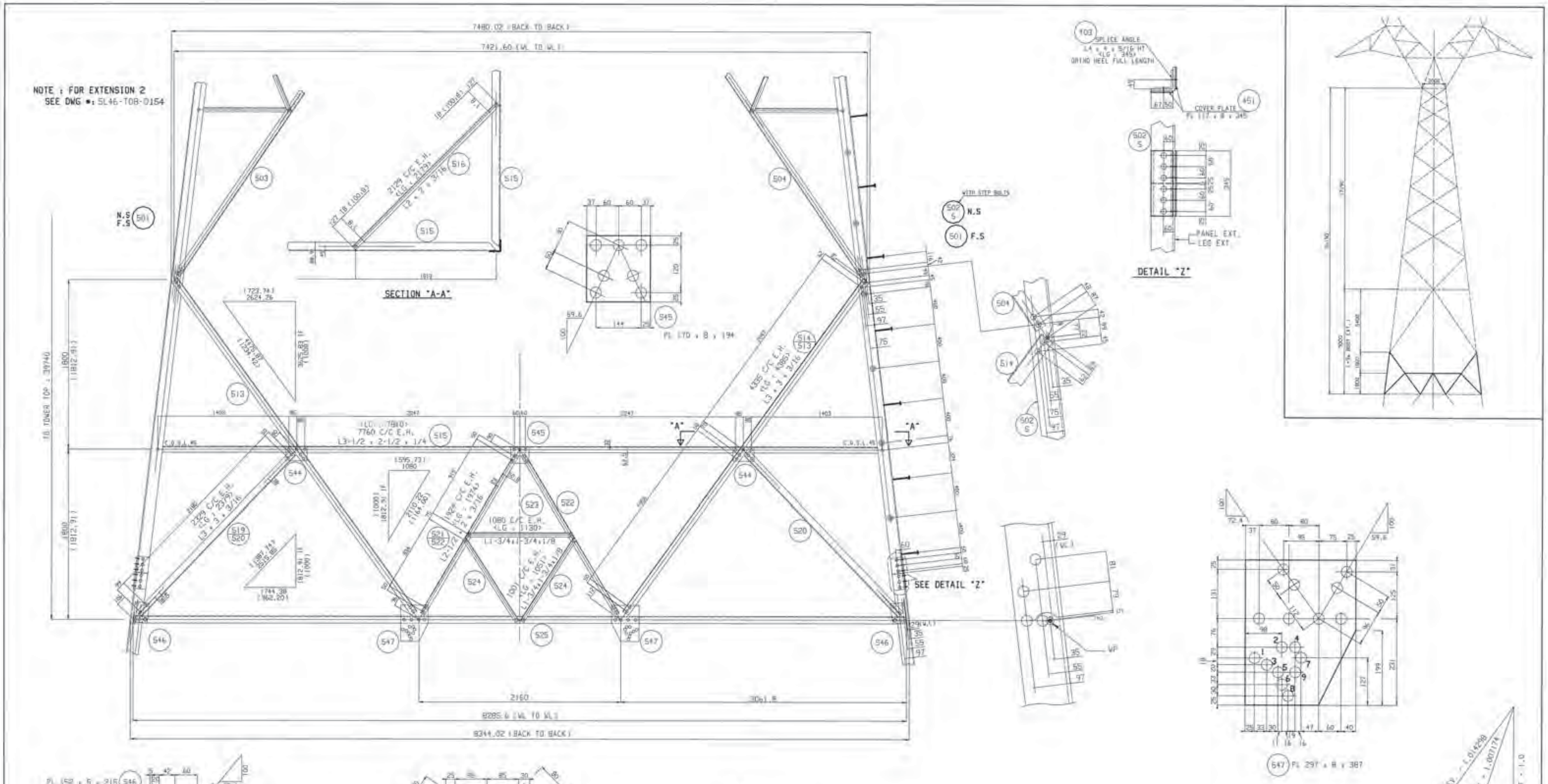
4.02/53A

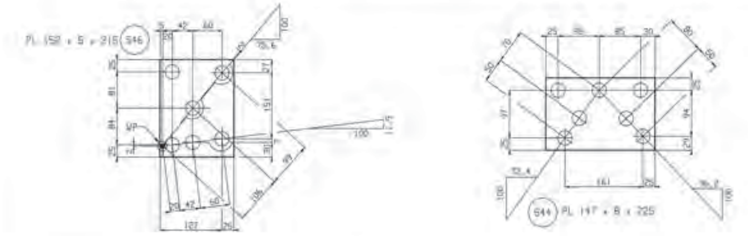
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+9m BODY EXTENSION 1)

5L46-T08-0154 2





NOTES:
1. FOR GENERAL NOTES SEE DWG #: SL46-T08-878
2. MARK NUMBER DESIGNATION:
35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

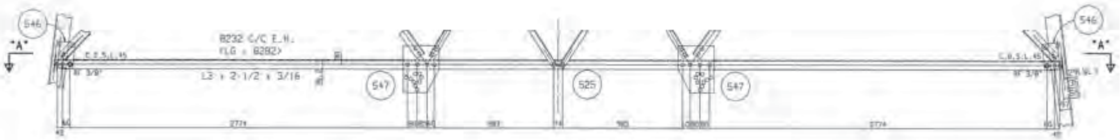
Mk Nos(ANGLE) : 403 & 513 TO 524
Mk Nos(PLATE) : 454 & 544 TO 547

DRAWING CHECKED FOR CONTENT ONLY

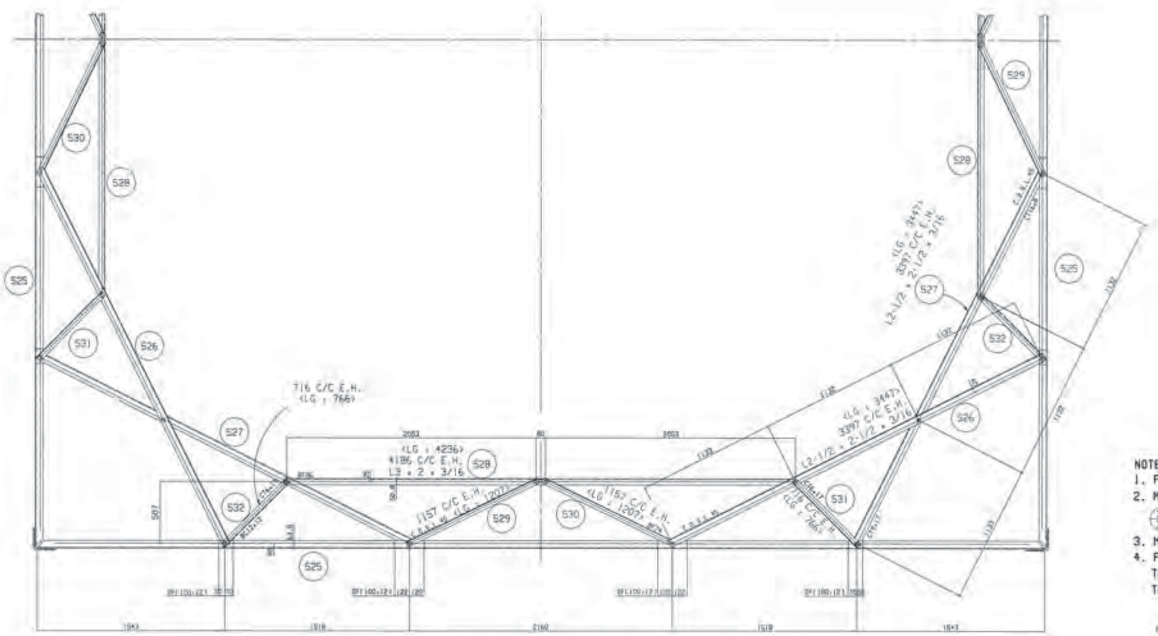
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	4.02/53A
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L DETAIL FABRICATION DRAWING OF "53A" TYPE TOWER (+9m BODY EXTENSION 2)	
SL46-T08-0155	2

1. FOR FINAL APPROVAL
0. ISSUE FOR APPROVAL

D



REFER TO DWG #:5L46-T0B-D155



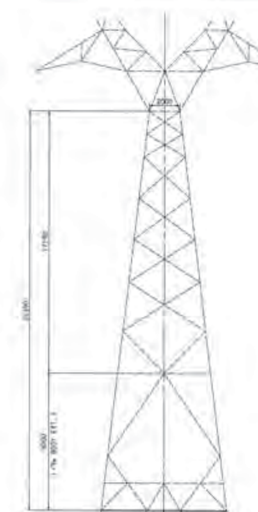
SECTION "A-A"

NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T0B-078
2. MARK NUMBER DESIGNATION:
   DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK No. (ANGLE) : 525 TO 532

DRAWING CHECKED FOR CONTENT ONLY



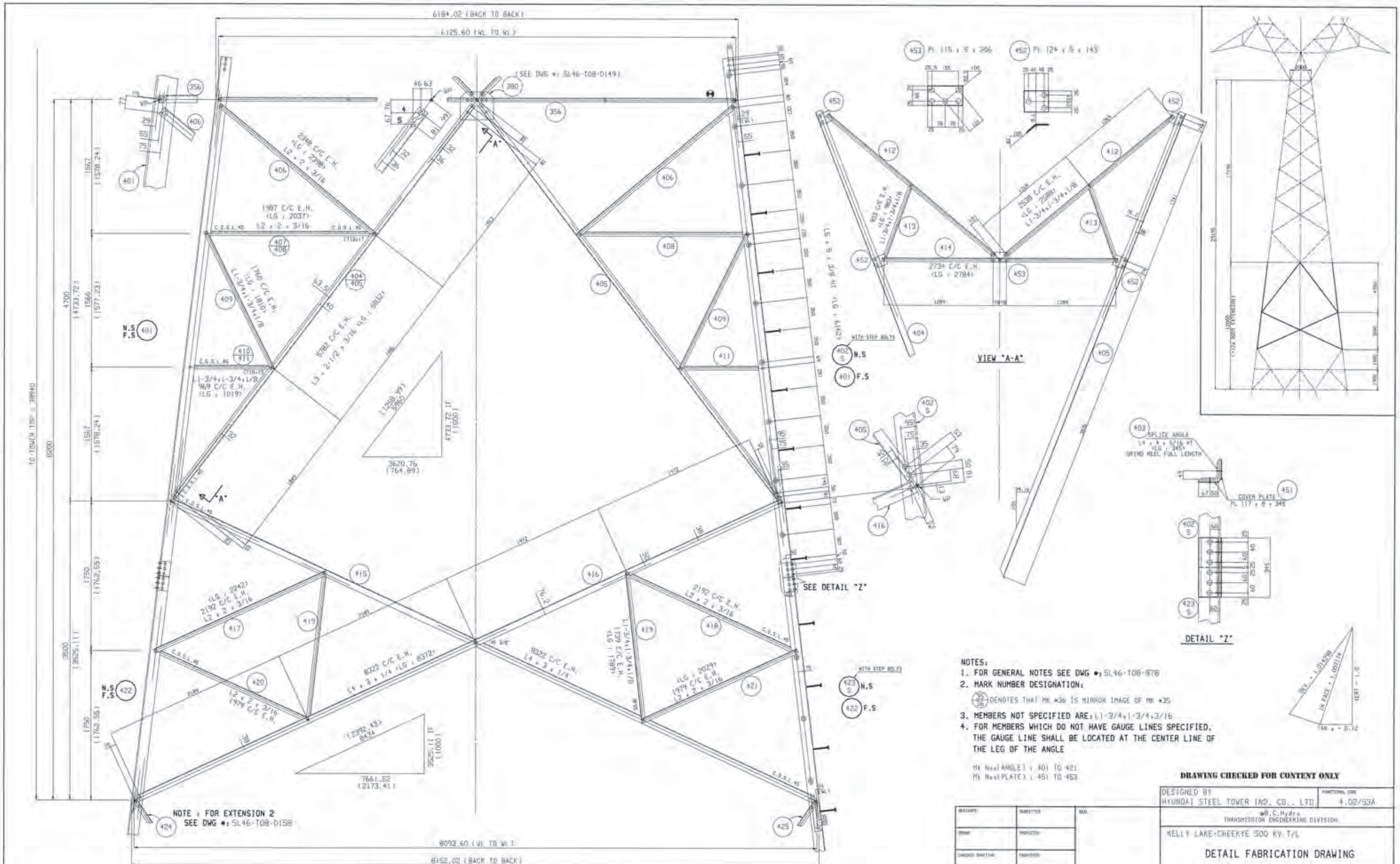
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD. | 4.02/53A

B.C. Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+9m BODY EXTENSION DIAPHRAGM)

5L46-T0B-D156 | 2



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-978
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK Nos(ANGLE) : 401 TO 421
MK Nos(PLATE) : 451 TO 453

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53A

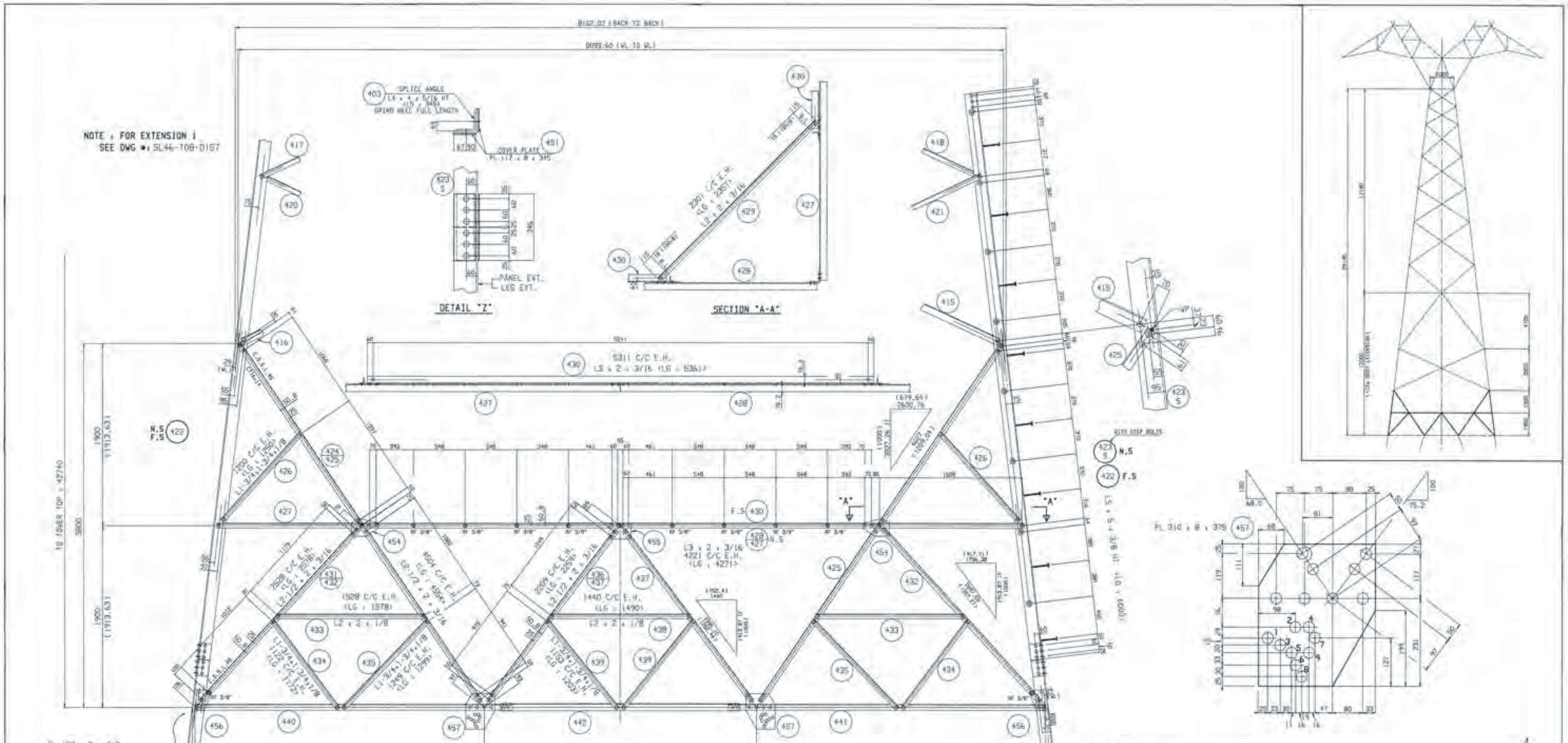
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

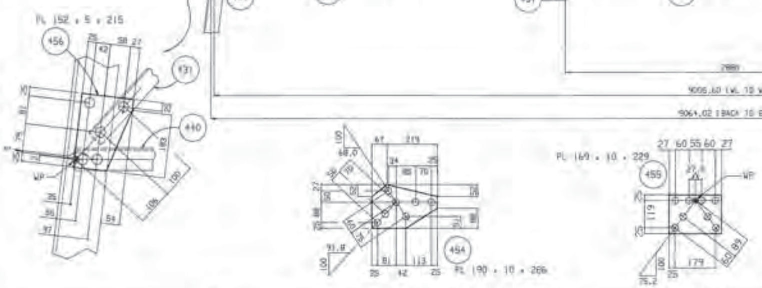
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+12m BODY EXTENSION 1)

5L46-T08-D157

3





NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T0B-878
2. MARK NUMBER DESIGNATION:
   36/35 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 403 & 422 TO 439
Mk No.(PLATE) : 451 & 454 TO 457

DEV. : 1.014238
IN FACE : 1.007174
VERT : 1.0
TAN a : 0.12

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

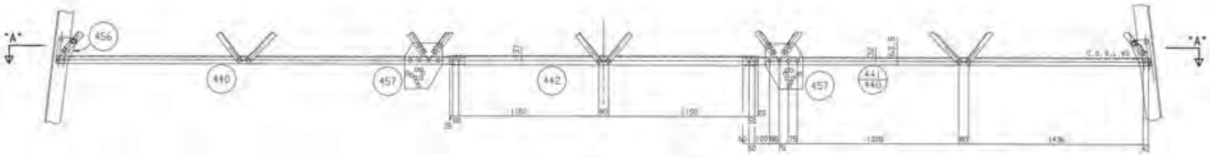
FUNCTIONAL CODE: 4.02/63A

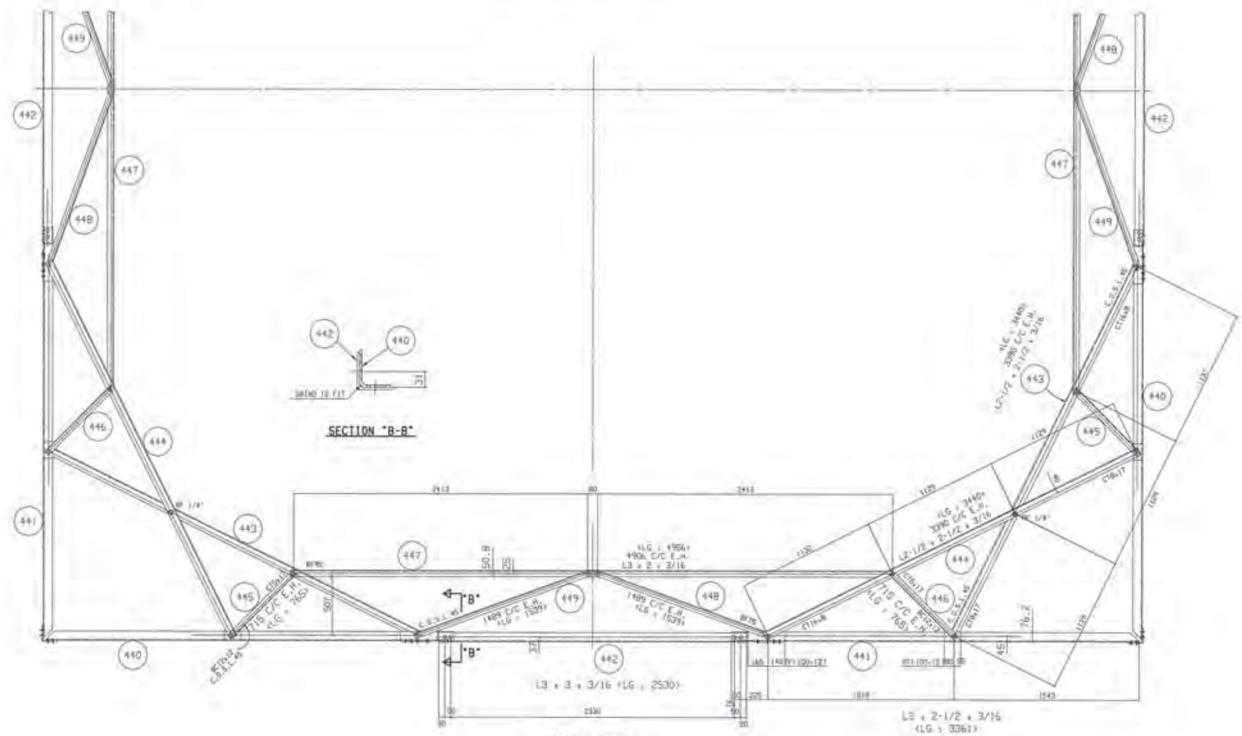
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

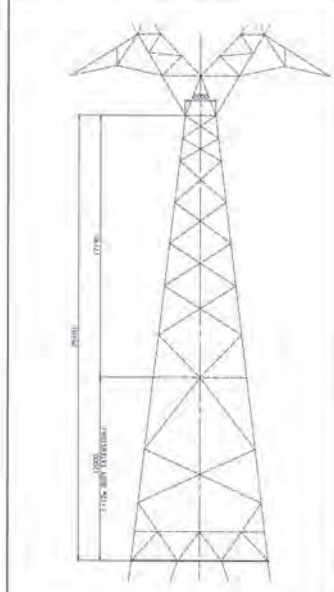
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+12m BODY EXTENSION 2)

DWG No. 5L46-T0B-D158







NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK No.(ANGLE) : 440 TO 449

DRAWING CHECKED FOR CONTENT ONLY

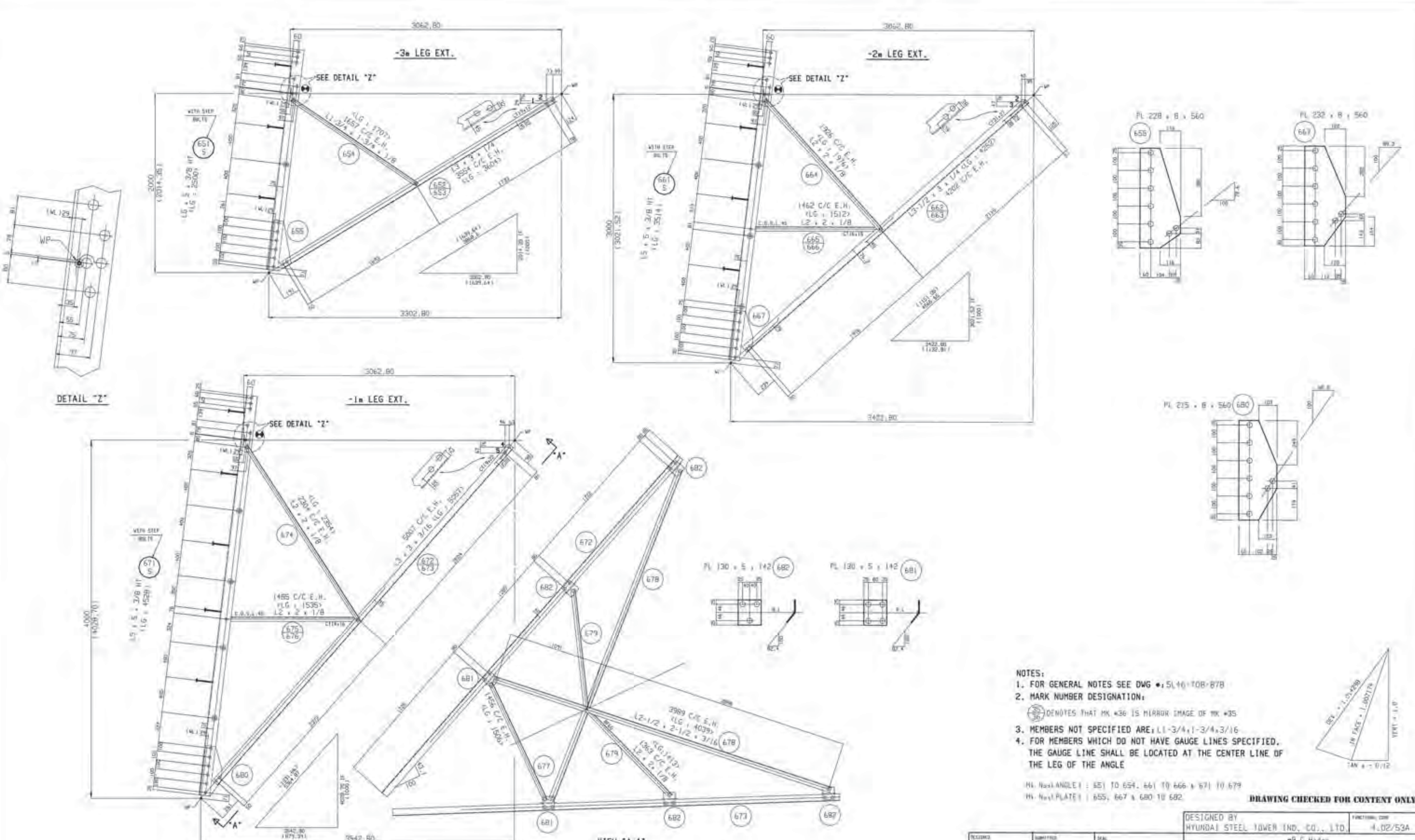
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD. | 4.02/53A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+12m BODY EXTENSION DIAPHRAGM)

5L46-T08-0159 | 3



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T0B-B78
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK. No.(ANGLE) : 651 TO 654, 661 TO 666 & 671 TO 679
MK. No.(PLATE) : 655, 667 & 680 TO 682

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

FUNCTIONAL CODE 4.02/53A

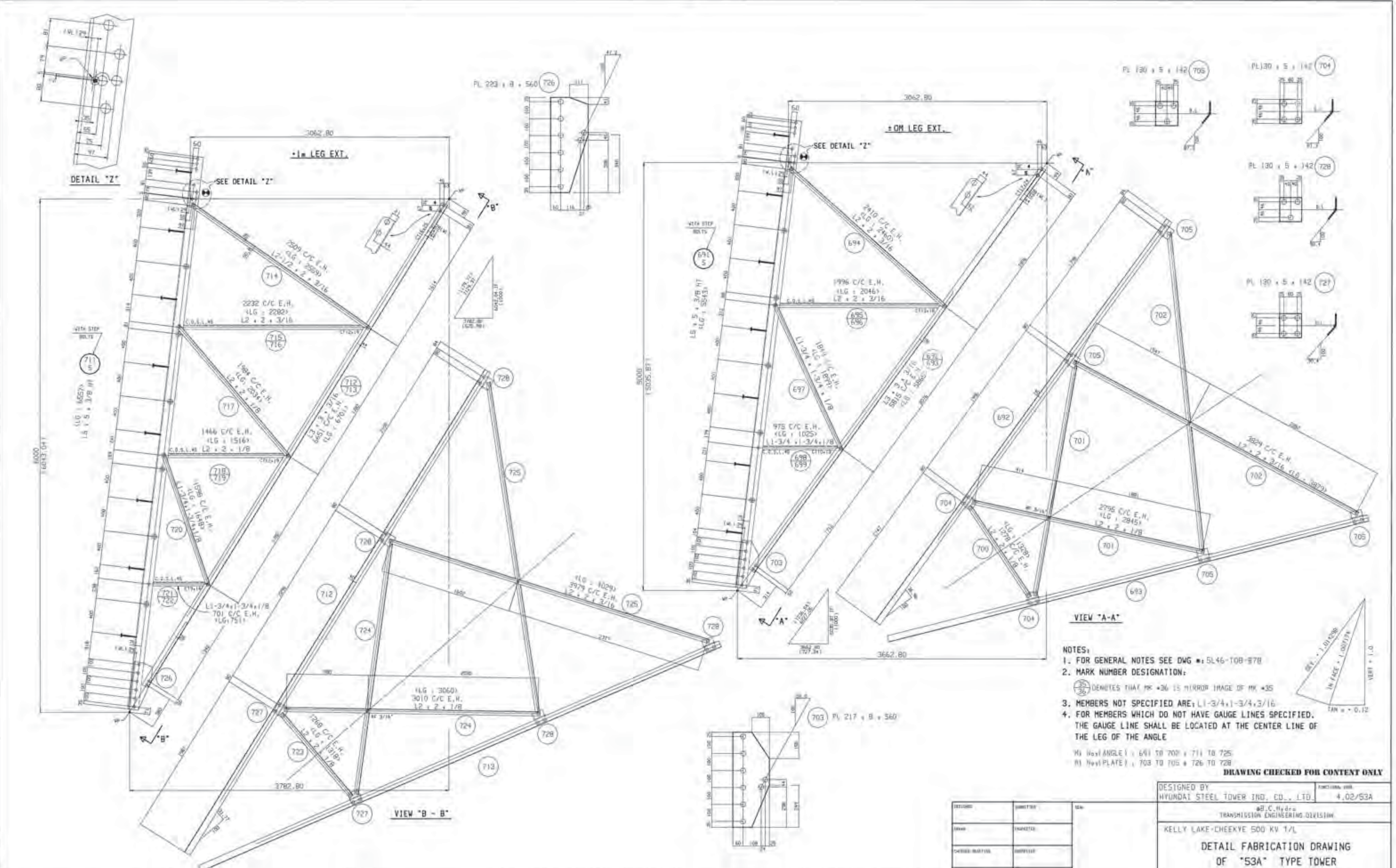
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(-3m, -2m & -1m LEG EXTENSIONS)

DWG No. 5L46-T0B-D160

2



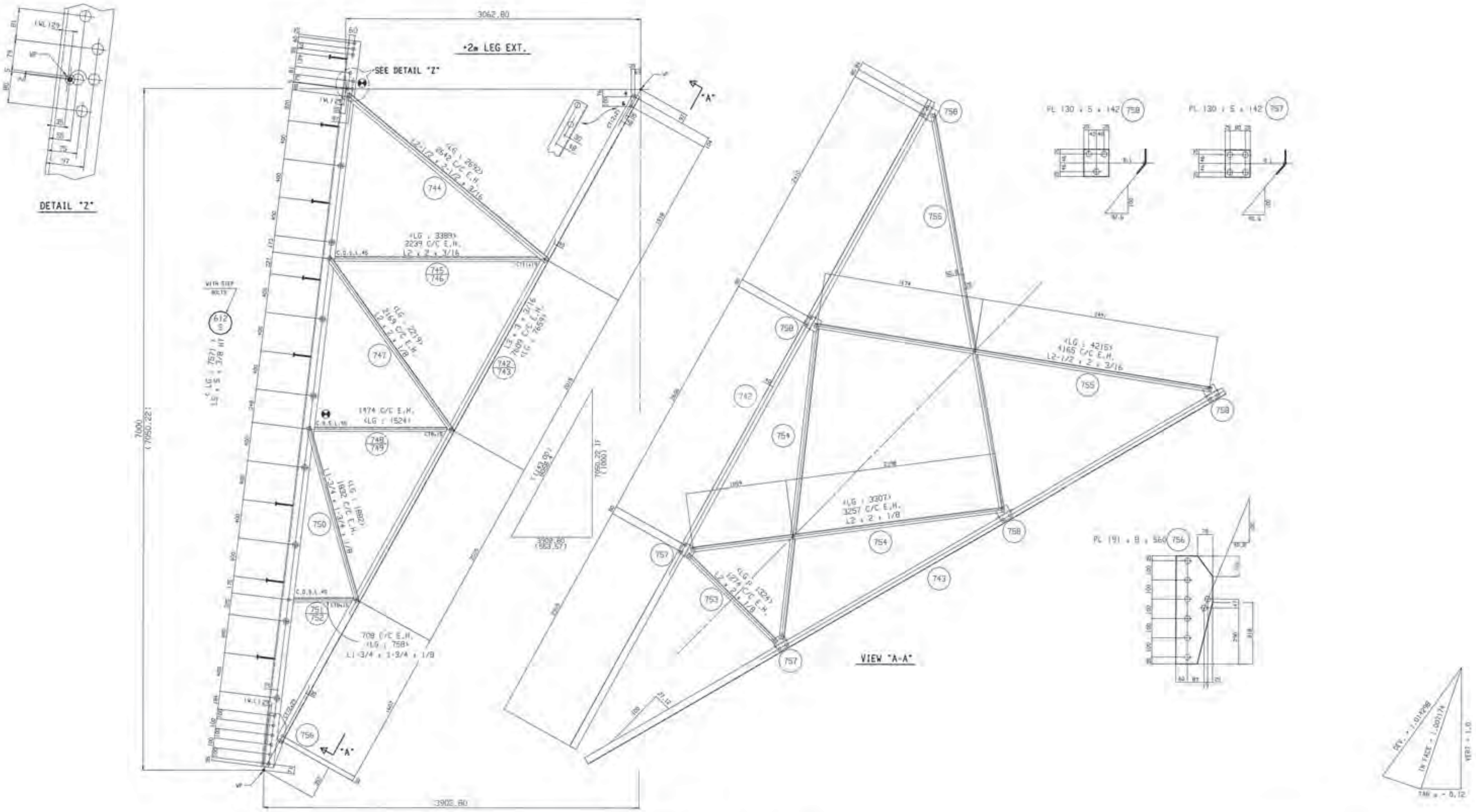
NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK No.(ANGLE) : 691 TO 702 & 711 TO 725
MK No.(PLATE) : 703 TO 705 & 726 TO 728

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	4.02/53A
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53A" TYPE TOWER (±0m & +1m LEG EXTENSIONS)	
5L46-T08-0161	2



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B78
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 741 TO 755
Mk Nos(PLATE) : 756 TO 758

DRAWING CHECKED FOR CONTENT ONLY

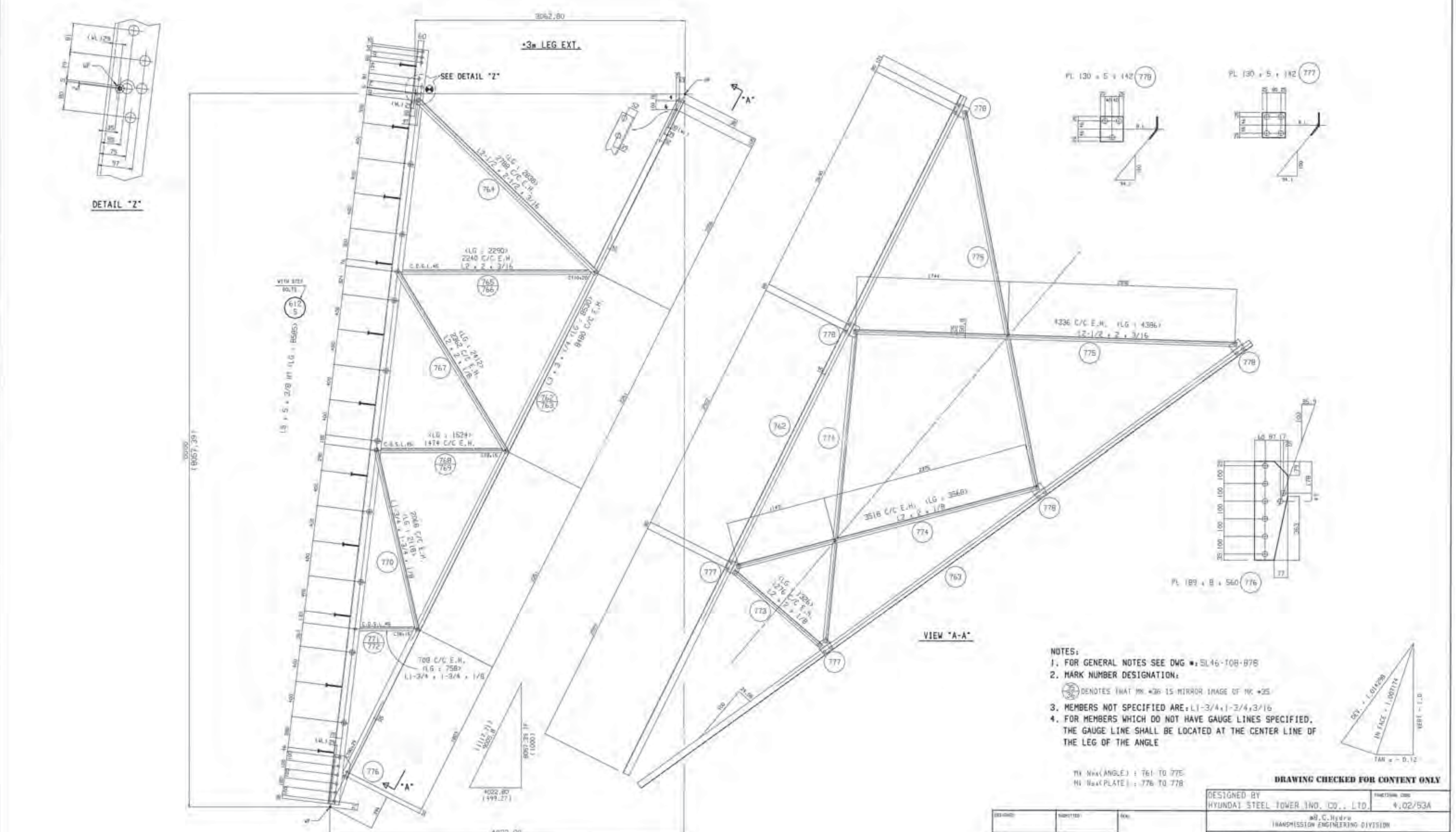
DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.
4.02/53A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+2m LEG EXTENSION)

5L46-T08-0162
2



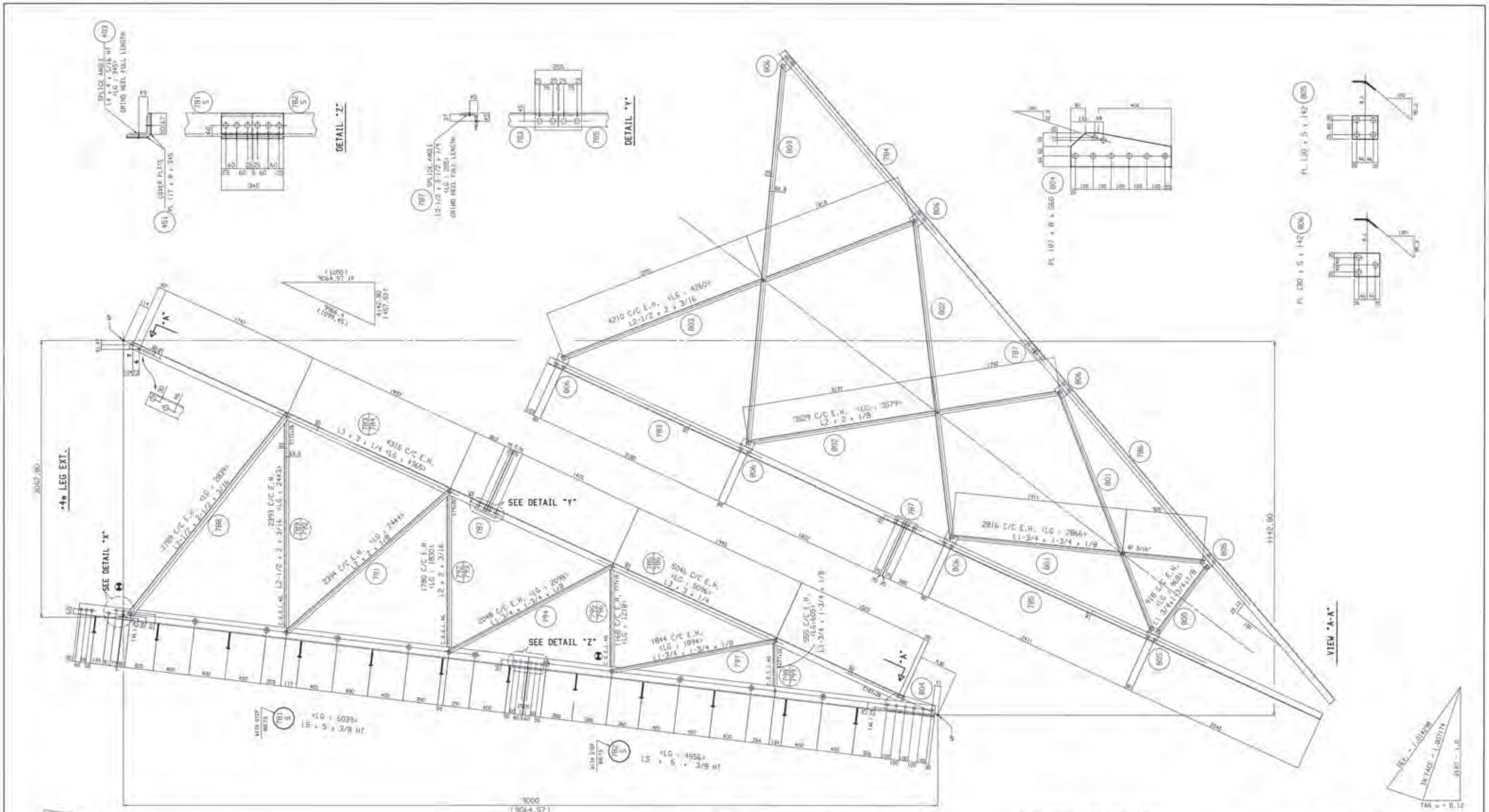
NOTES:
1. FOR GENERAL NOTES SEE DWG #: SL46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

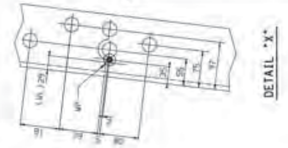
MK No.(ANGLE) : 761 TO 775
MK No.(PLATE) : 776 TO 778

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	4.02/53A
B.C. Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53A" TYPE TOWER (+3m LEG EXTENSION)	
SL46-T08-0163	2

D





NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 403 & 781 TO 803
Mk No.(PLATE) : 454 & 804 TO 806

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53A

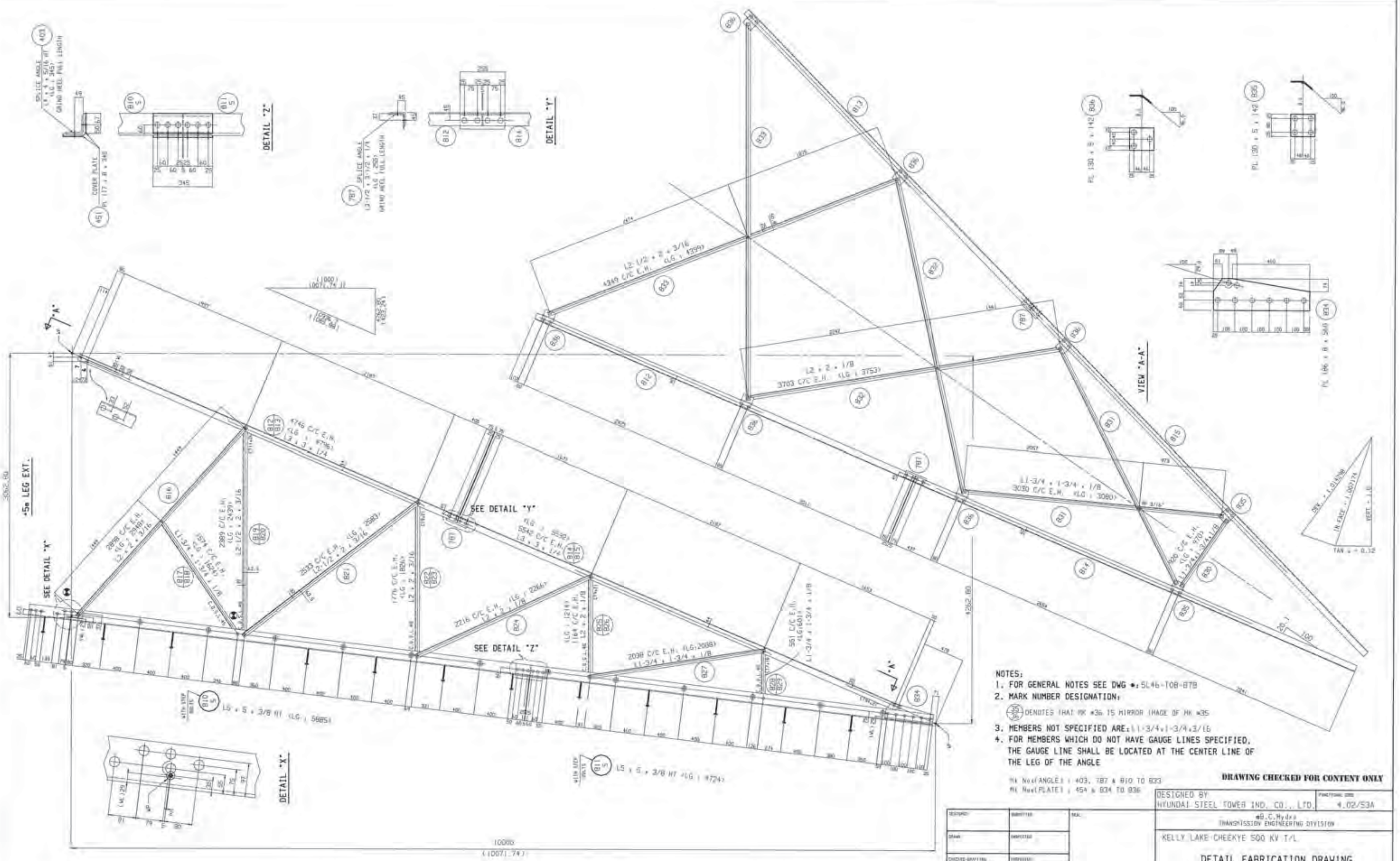
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+4m LEG EXTENSION)

5L46-T08-0164

2



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 403, 787 & 810 TO 833
Mk Nos(PLATE) : 454 & 834 TO 836

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53A

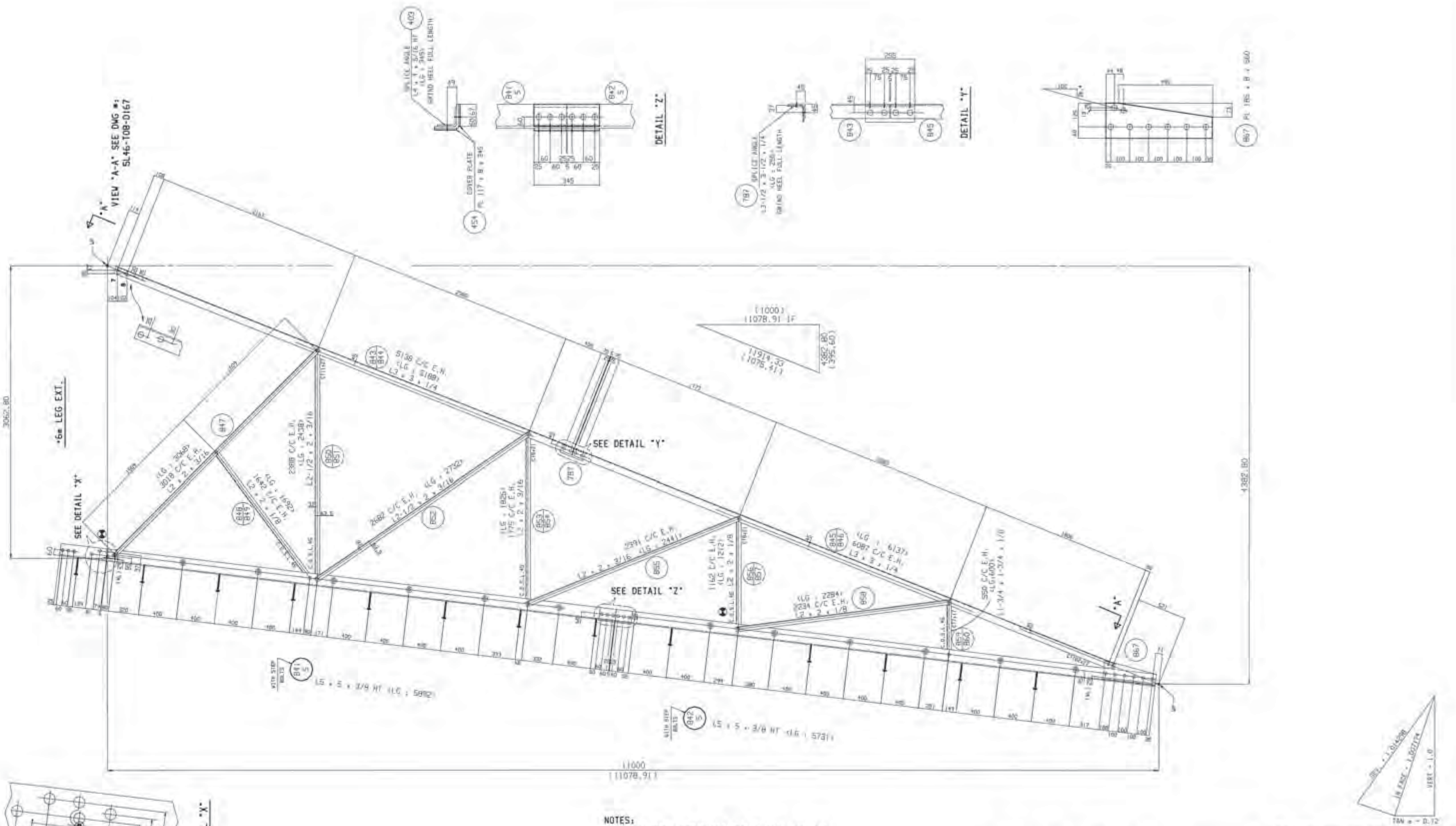
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+5m LEG EXTENSION)

5L46-T08-0165

2



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
(35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 403, 787 & 841 TO 860
Mk No.(PLATE) : 454 & 867

DRAWING CHECKED FOR CONTENT ONLY

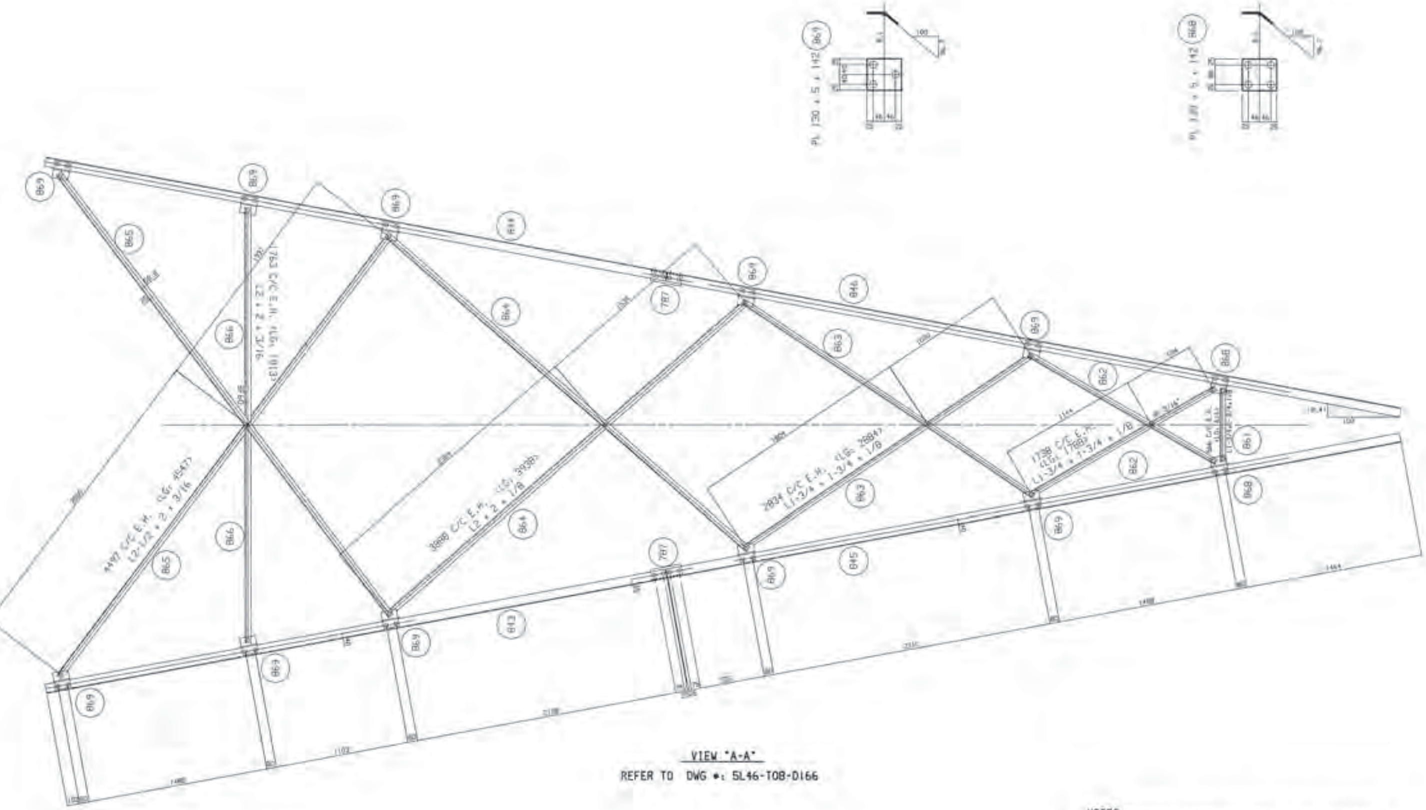
DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.
4.02/53A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+6m LEG EXTENSION)

DWG No. 5L46-T08-0166
2



VIEW "A-A"

REFER TO DWG #: 5L46-T08-D166

NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK Nos.(ANGLE) : 861 TO 866
MK Nos.(PLATE) : 868 & 869

DRAWING CHECKED FOR CONTENT ONLY

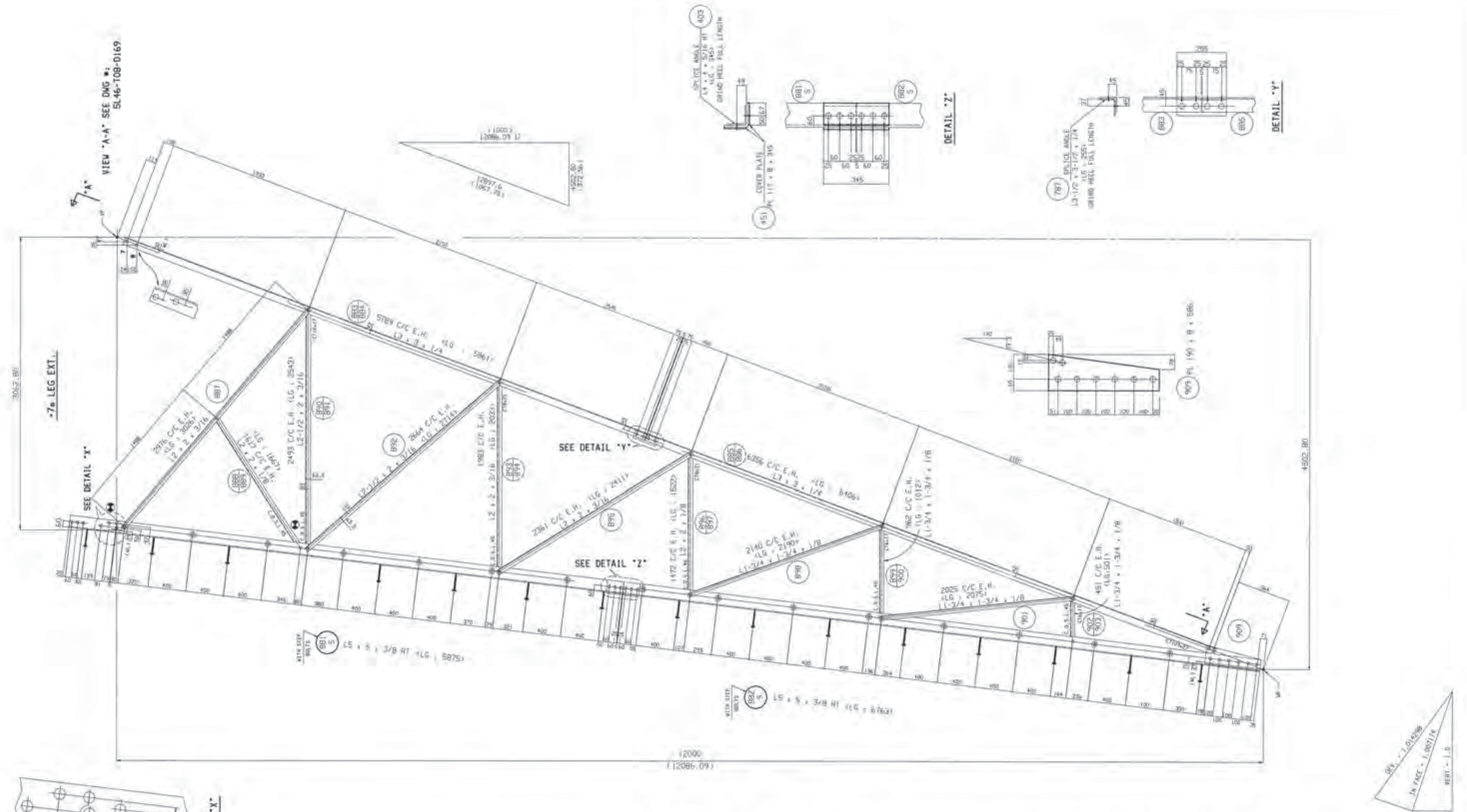
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD. | FUNCTIONAL CODE 4.02/53A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+6m LEG OBLIQUE BRACING)

DWG No. 5L46-T08-D167 | 2



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B78
2. MARK NUMBER DESIGNATION:

(35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35

3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 409,787 & 881 TO 903
Mk Nos(PLATE) : 454 & 909

DRAWING CHECKED FOR CONTENT ONLY

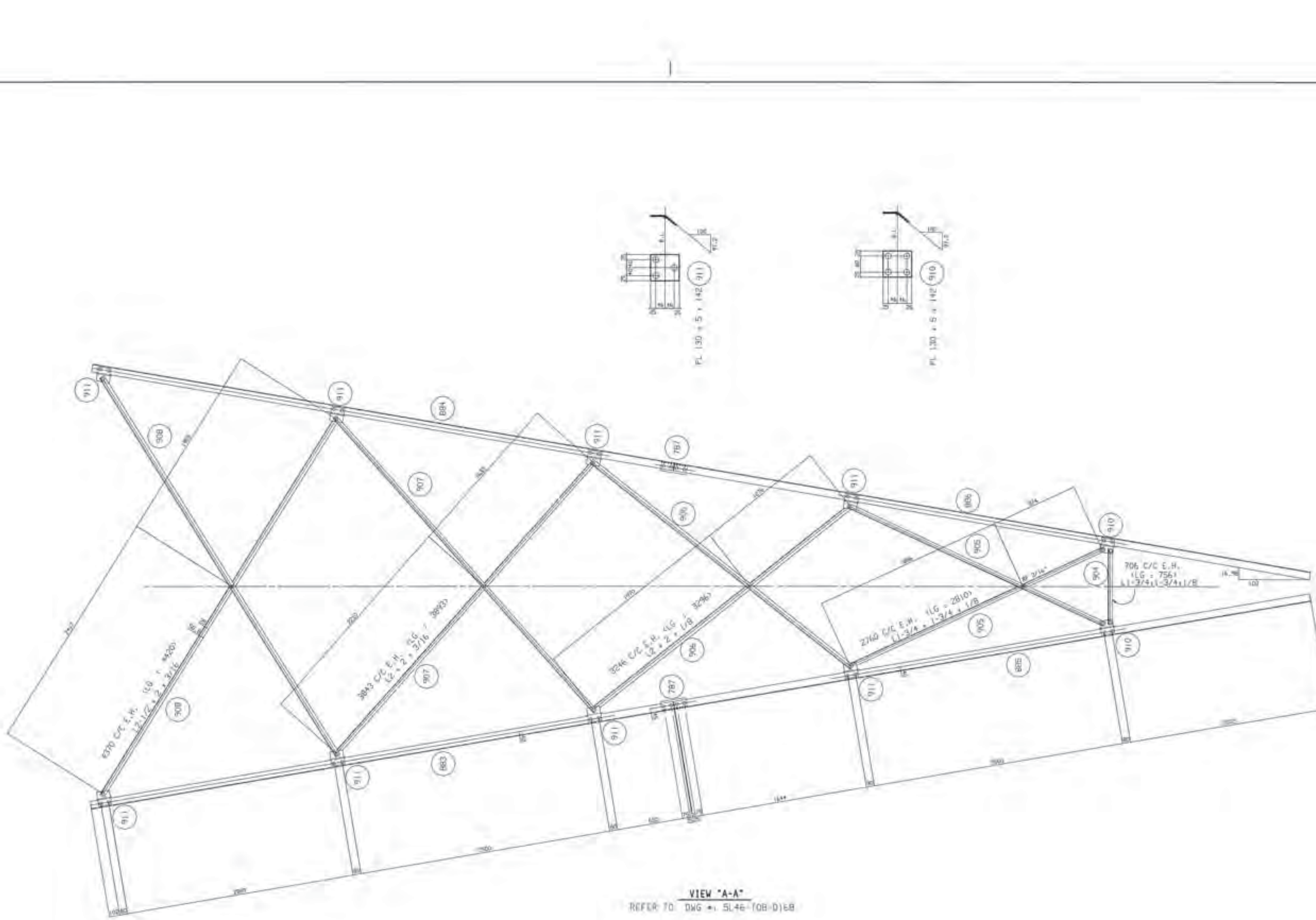
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD. 4.02/53A

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+7m LEG EXTENSION)

DWG No. 5L46-T08-D168 2



VIEW "A-A"
REFER TO DWG #: 5L46-T08-D168

NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4×1-3/4×3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

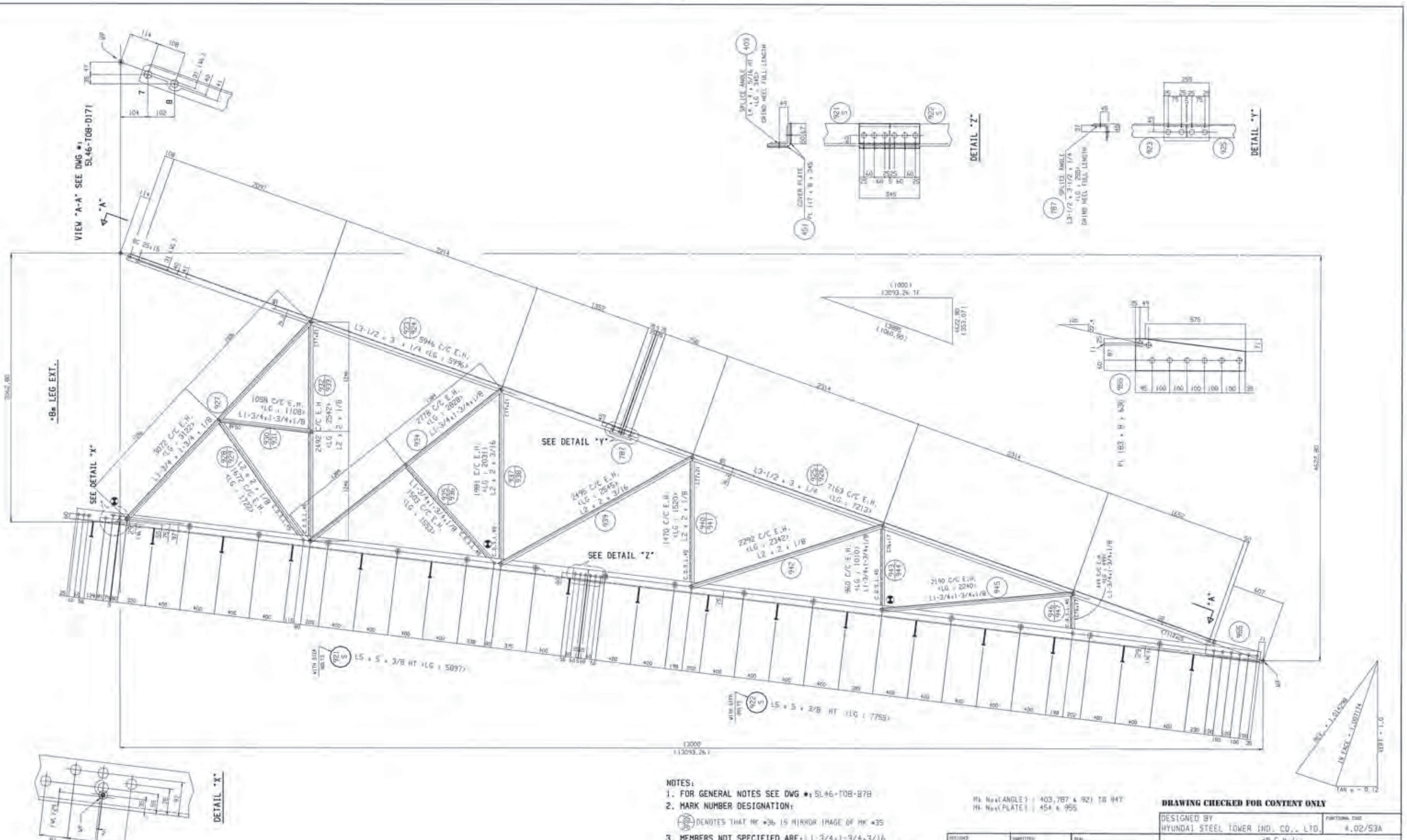
Mk No.(ANGLE) : 904 TO 908
Mk No.(PLATE) : 910 & 911

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	FUNCTIONAL CODE 4_02/53A
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L DETAIL FABRICATION DRAWING OF "53A" TYPE TOWER (+7m LEG OBLIQUE BRACING)	
DWG No. 5L46-T08-D169	2

1	REVISED PER B.C.HYDRO COMMENTS		
0	FOR FINAL APPROVAL		
0	ISSUE FOR APPROVAL		
No.	REVISIONS		DATE

REFERENCE DRAWING



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:

   (36/35) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 403,787 & 921 TO 947
Mk No.(PLATE) : 454 & 955

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53A

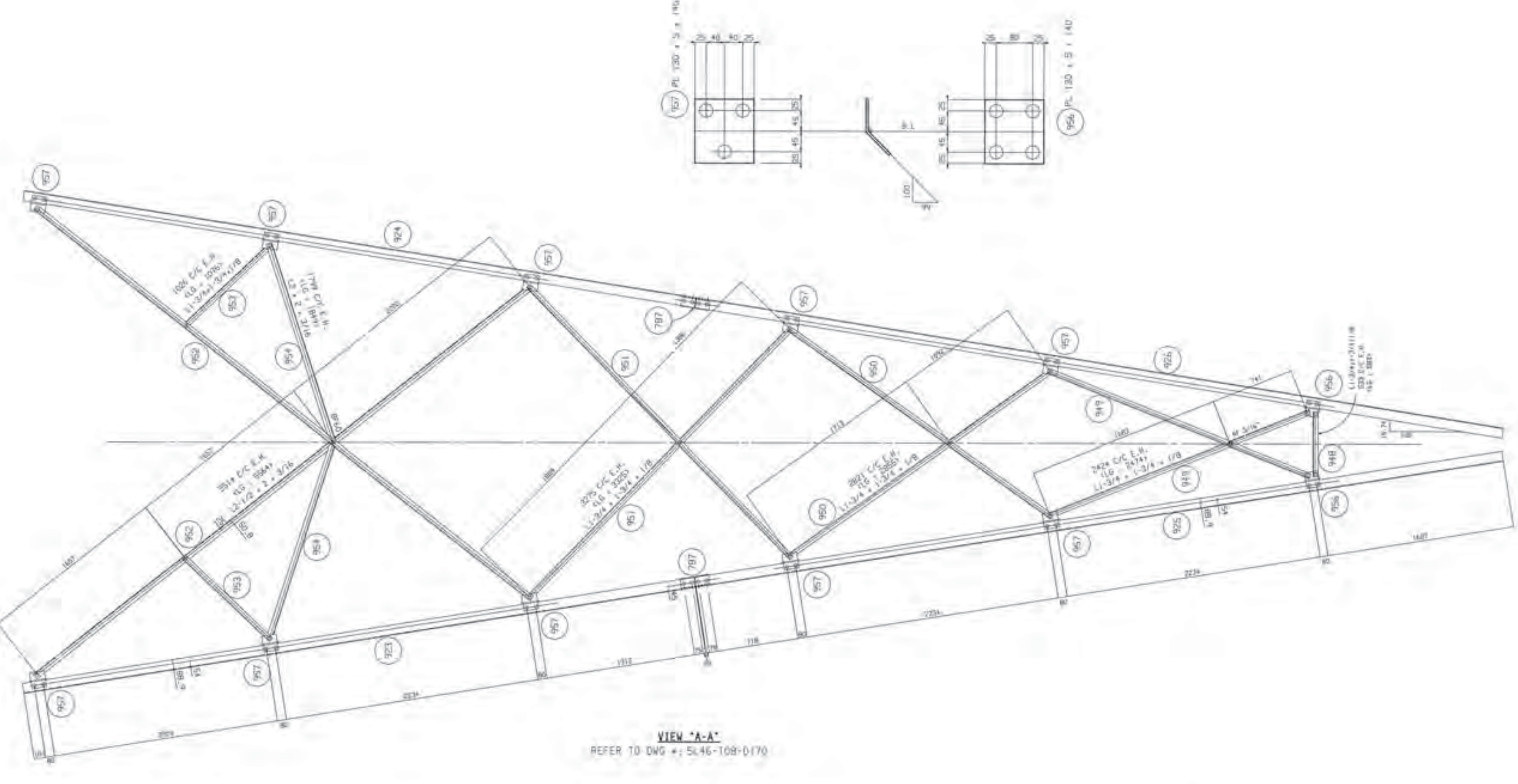
B.C. Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+8m LEG EXTENSION)

5L46-T08-D170

3



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-978
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 923 TO 926 & 948 TO 954
Mk No.(PLATE) : 956 & 957

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53A

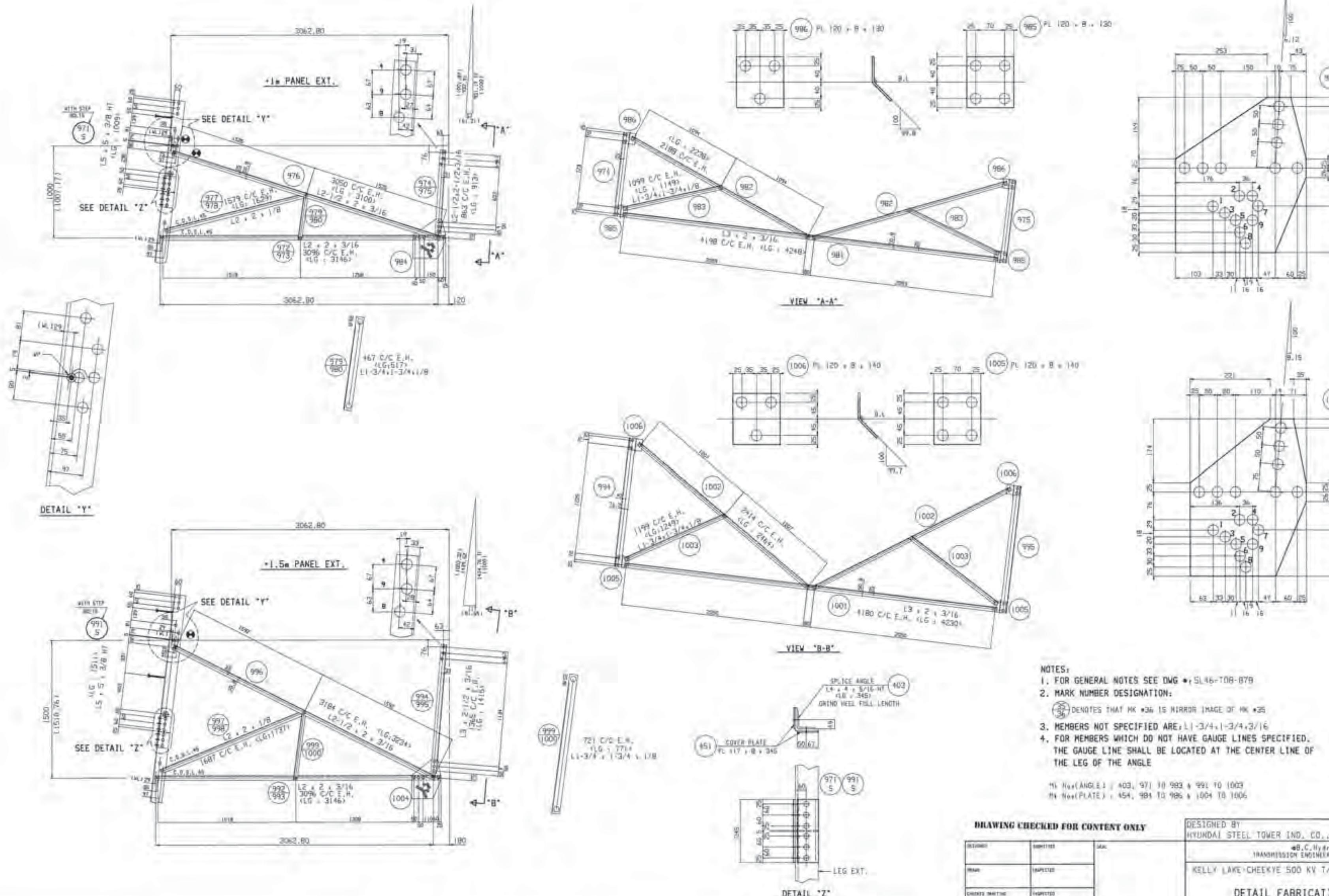
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+8m LEG OBLIQUE BRACING)

5L46-T08-0171

3



NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 403, 971 TO 983 & 991 TO 1003
Mk No.(PLATE) : 454, 984 TO 986 & 1004 TO 1006

DRAWING CHECKED FOR CONTENT ONLY

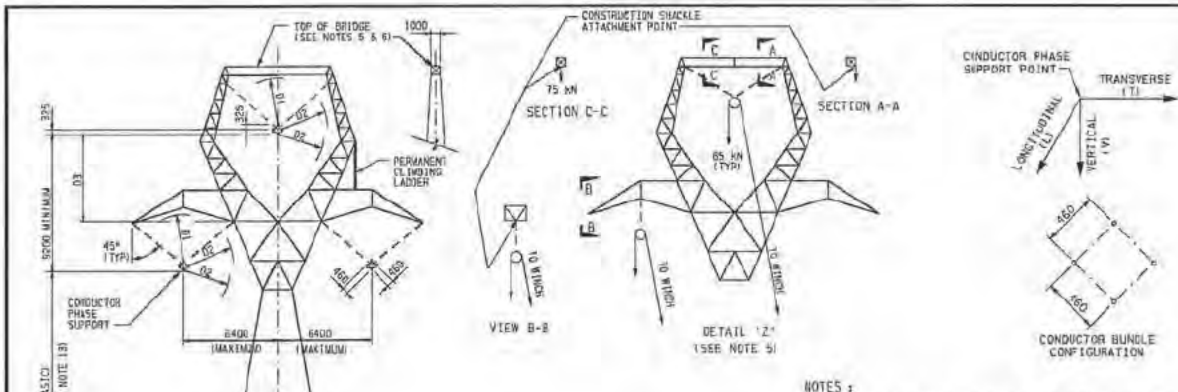
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD. | 4.02/53A

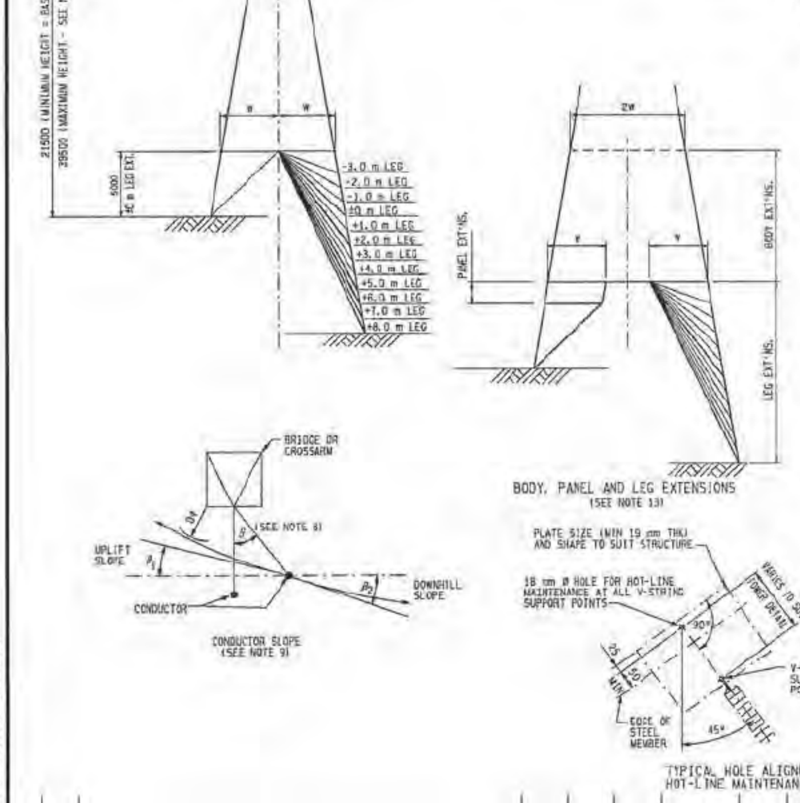
B.C. Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53A" TYPE TOWER
(+1m & +1.5m PANEL EXTENSIONS)

SL46-T08-0172 | 3





TOWER DESIGN LOADS AND APPLICATIONS

WORKING CONDUCTOR PHASE LOADS PER PHASE (kN)					LOAD FACTOR		LOAD APPLICATIONS
CASE		V	T	L	TOWER STEEL	FOOTING STEEL	
1		128.2	32.0	0.0	1.5	1.75	FOR ALL CASES, APPLY THE 'V', 'T' AND 'L' TO ANY ONE, ANY TWO OR ALL THREE PHASE SUPPORT POINTS IN COMBINATION WITH WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION OR AT 45° TO IT.
2		96.3	47.0	0.0	1.5	1.75	
3		88.2	16.6	7.7	2.0	2.0	
4		48.3	14.3	0.0	2.0	2.0	
5	A	72.8	21.3	45.5	1.5	1.75	APPLY LOADS 'A' TO ANY ONE, ANY TWO OR ALL THREE SUPPORT POINTS AND LOADS 'B' TO THE REMAINING SUPPORT POINTS IN COMBINATION WITH WIND APPLIED ON THE TOWER IN THE LONGITUDINAL DIRECTION OR AT 45° TO IT.
	B	128.2	32.0	0.0			

NOTES :

(1) ALL DIMENSIONS ARE IN MILLIMETRES EXCEPT AS OTHERWISE NOTED.

(2) LOAD CASES :

CASE 1 : 19 mm ICE, 0 WIND, -20° C
CASE 2 : 13 mm ICE, 0.213 kN/m² WIND, -20° C
CASE 3 : 0 ICE, 0 WIND, -20° C (STRINGING)
SNUB ANGLE = 25° FROM HORIZONTAL
CASE 4 : 0 ICE, 0 WIND, -1° C (EVERYDAY LOADING)
CASE 5 : 13 mm UNEQUAL ICE, 0 WIND, -20° C

(3) ULTIMATE TOWER DESIGN LOADS :

(A) CONDUCTOR PHASE LOADS : FOR ALL CASES, THE ULTIMATE TOWER DESIGN LOADS SHALL BE THE WORKING CONDUCTOR PHASE LOAD TIMES THE LOAD FACTOR AS SPECIFIED IN THE LOAD TABLE.

(B) ULTIMATE TOWER WIND LOADS (kN/m²):

	CASE 1, 2 & 5	CASE 3 & 4
ABOVE CROSSARMS	2.2	0.2
BELOW CROSSARMS	2.0	0.2

(4) LOAD APPLICATION:

(A) THE TRANSVERSE LOADS SHOWN IN THE LOAD TABLE ARE REVERSIBLE.
(B) THE LONGITUDINAL LOADS SHOWN IN THE LOAD TABLE ARE REVERSIBLE.
(C) ALL HORIZONTAL AND DIAGONAL MEMBERS SHALL BE DESIGNED TO WITHSTAND A VERTICAL LOAD CONCENTRATED AT THE CENTRE OF THE UNSUPPORTED LENGTH OF THE MEMBER WITHOUT PERMANENT DEFORMATION. THIS VERTICAL LOAD SHALL BE 0.3 kN IN COMBINATION WITH THE MAXIMUM AXIAL MEMBER FORCE DERIVED FROM STRUCTURAL ANALYSIS, OR 1.35 kN UNCOMBINED, WHICHEVER GOVERNS.

(5) THE BRIDGE SHALL BE DESIGNED TO SUPPORT A VERTICAL LOAD OF 75 kN CONCENTRATED AT THE CENTRE OF THE BRIDGE. THE TOWER SHALL ALSO BE DESIGNED TO SUPPORT A LOAD OF 85 kN APPLIED AT ANY ONE PHASE SUPPORT POINT IN THE PULLEY SYSTEM AS SHOWN IN DETAIL 'Z' IN COMBINATION WITH THE LOADS OF CASE 4 APPLIED TO NONE, ANY ONE OR ANY TWO OF THE REMAINING PHASE SUPPORT POINTS. CONSTRUCTION HOLES, 21 mm Ø, SHALL BE PROVIDED AT JOINTS WHERE THE CONSTRUCTION SHACKLES ARE TO BE ATTACHED.

(6) THE OUTSTANDING LEG OF ALL STEEL ANGLES ON THE TOP PLANE OF BRIDGE SHALL FACE DOWNWARDS. THE BRIDGE MAIN TOP CHORD MEMBERS SHALL BE CAPABLE OF SUPPORTING A VERTICAL LOAD OF 4.45 kN CONCENTRATED AT THE CENTRE OF THE UNSUPPORTED LENGTH OF THE MEMBER IN COMBINATION WITH THE AXIAL MEMBER FORCE DERIVED FROM LOAD CASE 4 WITHOUT PERMANENT DEFORMATION.

(7) THE MINIMUM ELECTRICAL CLEARANCES FROM CONDUCTOR TO THE EDGE OF STEEL OR GUY WIRE SHALL BE AS FOLLOWS:

D1 = 3000 mm
D2 = 3500 mm
D3 = 5000 mm
D4 = 2300 mm

(8) THE MAXIMUM INSULATOR SWING ANGLE (θ) IN THE LONGITUDINAL DIRECTION TO BE 38 °.

(9) THE MAXIMUM CONDUCTOR SLOPE FROM HORIZONTAL IS:

θ_1 = -10° (UPLIFT) θ_2 = 25° (DOWNHILL)

(10) THE MAXIMUM CONDUCTOR SWING AT MIDSPAN FROM VERTICAL TO BE 21°.

(11) FOR SPECIFICATION OF STEP BOLT LEGS SEE DWG No. 5L46-T08-B10.

(12) FOR DETAILS OF V-STRING, SEE DWG No. 5L46-T08-B15.

(13) COMPONENTS FOR EXTENSION OF STRUCTURE HEIGHT :-

BODY EXTENSIONS TO BE +3.0 m, +6.0 m, 9.0m, +12.0 m, +15 m AND +18.0 m
LEG EXTENSIONS TO BE FROM -3.0 m TO +8.0 m IN 1 m INCREMENTS
PANEL EXTENSIONS TO BE +1.0 m AND +1.5 m

THE MAXIMUM HEIGHT OF THE LOWEST CONDUCTOR OF THE BOTTOM PHASE FROM THE GROUND SHALL NOT EXCEED 39.5 m.

(14) DIMENSION 'W' SHALL BE CONSTANT TO ENABLE BODY, PANEL AND LEG EXTENSIONS TO BE INTERCHANGEABLE.

(15) A DIAPHRAGM IS REQUIRED AT THE BOTTOM OF ALL BODY EXTENSIONS. A DIAPHRAM IS ALSO REQUIRED AT THE BOTTOM OF THE BASIC TOWER BODY, EXCEPT WHEN USED WITH A 3.0 m, 6.0 m, 9.0 m OR A 12.0 m BODY EXTENSION.

(16) FOR DESIGN OF SNOW COMPONENTS SEE DWG No. 5L46-T08-B11.

(17) FOR SPECIFICATIONS FOR HELICOPTER TOUCH-AND-GO SEE DWG No. 5L46-T08-A18.

(18) FOR LOCATION OF TOWER NUMBER SIGNS SEE DWG No. G-T08-B446.

FUNCTIONAL CODE
3.01/53C

[redacted]

SEAL
[redacted]

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 kV T/L

TYPE 53C SELF SUPPORTING SUSPENSION TOWER (0°-8°)
SPECIFICATION DRAWING

No	REVISIONS	MADE	CHKD	SUBD	APPD	INSP	INSP	INSP	DATE

DATE 91-3-22
SCALE —
DWG. No 5L46-T08-B4
R

CAD FILE No. \DGN\5L46\T08B0004.DGN

B

TOWER DESIGN LOADS AND APPLICATIONS

WORKING CONDUCTOR PHASE LOADS UNIT - "KN"

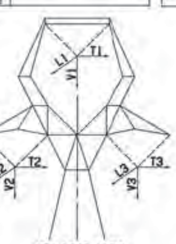
CASE	DESCRIPTION OF CONDITIONS	ASSUMP-TION CASE NO	TOP CONDUCTOR PHASE V1	TOP CONDUCTOR PHASE T1	TOP CONDUCTOR PHASE L1	LEFT CONDUCTOR PHASE V2	LEFT CONDUCTOR PHASE T2	LEFT CONDUCTOR PHASE L2	RIGHT CONDUCTOR PHASE V3	RIGHT CONDUCTOR PHASE T3	RIGHT CONDUCTOR PHASE L3	LOAD FACTOR TOWER STEEL	LOAD FACTOR FOOTING STEEL	APPLIED WIND DIRECTION ON TOWER
1	1) 19MM ICE 2) 0 WIND 3) -20° C	1A	128.2	32.0	0.0	-	-	-	-	-	-	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
		1B	-	-	-	128.2	32.0	0.0	-	-	-	1.5	1.75	
		1C	-	-	-	-	-	-	128.2	32.0	0.0	1.5	1.75	
		1D	128.2	32.0	0.0	128.2	32.0	0.0	-	-	-	1.5	1.75	
		1E	128.2	32.0	0.0	-	-	-	128.2	32.0	0.0	1.5	1.75	
		1F	-	-	-	128.2	32.0	0.0	128.2	32.0	0.0	1.5	1.75	
		1G	128.2	32.0	0.0	128.2	32.0	0.0	128.2	32.0	0.0	1.5	1.75	
2	1) 13MM ICE 2) 0.213KN/M² WIND 3) -20° C	2A	96.3	47.0	0.0	-	-	-	-	-	-	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
		2B	-	-	-	96.3	47.0	0.0	-	-	-	1.5	1.75	
		2C	-	-	-	-	-	-	96.3	47.0	0.0	1.5	1.75	
		2D	96.3	47.0	0.0	96.3	47.0	0.0	-	-	-	1.5	1.75	
		2E	96.3	47.0	0.0	-	-	-	96.3	47.0	0.0	1.5	1.75	
		2F	-	-	-	96.3	47.0	0.0	96.3	47.0	0.0	1.5	1.75	
		2G	96.3	47.0	0.0	96.3	47.0	0.0	96.3	47.0	0.0	1.5	1.75	
3	1) 0 ICE 2) 0 WIND 3) -20° C 4) STRINGING SNUB ANGLE - 25° FROM HORIZONTAL	3A	88.2	16.6	7.7	-	-	-	-	-	-	2.0	2.0	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 0.2 BELOW CROSSARMS : 0.2
		3B	-	-	-	88.2	16.6	7.7	-	-	-	2.0	2.0	
		3C	-	-	-	-	-	-	88.2	16.6	7.7	2.0	2.0	
		3D	88.2	16.6	7.7	88.2	16.6	7.7	-	-	-	2.0	2.0	
		3E	88.2	16.6	7.7	-	-	-	88.2	16.6	7.7	2.0	2.0	
		3F	-	-	-	88.2	16.6	7.7	88.2	16.6	7.7	2.0	2.0	
		3G	88.2	16.6	7.7	88.2	16.6	7.7	88.2	16.6	7.7	2.0	2.0	
4	1) 0 ICE 2) 0 WIND 3) -1° C 4) EVERYDAY LOADING	4A	48.3	14.3	0.0	-	-	-	-	-	-	2.0	2.0	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE TRANSVERSE DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 0.2 BELOW CROSSARMS : 0.2
		4B	-	-	-	48.3	14.3	0.0	-	-	-	2.0	2.0	
		4C	-	-	-	-	-	-	48.3	14.3	0.0	2.0	2.0	
		4D	48.3	14.3	0.0	48.3	14.3	0.0	-	-	-	2.0	2.0	
		4E	48.3	14.3	0.0	-	-	-	48.3	14.3	0.0	2.0	2.0	
		4F	-	-	-	48.3	14.3	0.0	48.3	14.3	0.0	2.0	2.0	
		4G	48.3	14.3	0.0	48.3	14.3	0.0	48.3	14.3	0.0	2.0	2.0	
5	1) 13MM UNEQUAL ICE 2) 0 WIND 3) -20° C	5A	72.8	21.3	45.5	128.2	32.0	0.0	128.2	32.0	0.0	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER IN THE LONGITUDINAL DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
		5B	128.2	32.0	0.0	72.8	21.3	45.5	128.2	32.0	0.0	1.5	1.75	
		5C	128.2	32.0	0.0	128.2	32.0	0.0	72.8	21.3	45.5	1.5	1.75	
		5D	72.8	21.3	45.5	72.8	21.3	45.5	128.2	32.0	0.0	1.5	1.75	
		5E	72.8	21.3	45.5	128.2	32.0	0.0	72.8	21.3	45.5	1.5	1.75	
		5F	128.2	32.0	0.0	72.8	21.3	45.5	72.8	21.3	45.5	1.5	1.75	
		5G	72.8	21.3	45.5	72.8	21.3	45.5	72.8	21.3	45.5	1.5	1.75	

WORKING CONDUCTOR PHASE LOADS UNIT - "KN"

CASE	DESCRIPTION OF CONDITIONS	ASSUMP-TION CASE NO	TOP CONDUCTOR PHASE V1	TOP CONDUCTOR PHASE T1	TOP CONDUCTOR PHASE L1	LEFT CONDUCTOR PHASE V2	LEFT CONDUCTOR PHASE T2	LEFT CONDUCTOR PHASE L2	RIGHT CONDUCTOR PHASE V3	RIGHT CONDUCTOR PHASE T3	RIGHT CONDUCTOR PHASE L3	LOAD FACTOR TOWER STEEL	LOAD FACTOR FOOTING STEEL	APPLIED WIND DIRECTION ON TOWER
1	1) 19MM ICE 2) 0 WIND 3) -20° C	10A	128.2	32.0	0.0	-	-	-	-	-	-	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
		10B	-	-	-	128.2	32.0	0.0	-	-	-	1.5	1.75	
		10C	-	-	-	-	-	-	128.2	32.0	0.0	1.5	1.75	
		10D	128.2	32.0	0.0	128.2	32.0	0.0	-	-	-	1.5	1.75	
		10E	128.2	32.0	0.0	-	-	-	128.2	32.0	0.0	1.5	1.75	
		10F	-	-	-	128.2	32.0	0.0	128.2	32.0	0.0	1.5	1.75	
		10G	128.2	32.0	0.0	128.2	32.0	0.0	128.2	32.0	0.0	1.5	1.75	
2	1) 13MM ICE 2) 0.213KN/M² WIND 3) -20° C	20A	96.3	47.0	0.0	-	-	-	-	-	-	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
		20B	-	-	-	96.3	47.0	0.0	-	-	-	1.5	1.75	
		20C	-	-	-	-	-	-	96.3	47.0	0.0	1.5	1.75	
		20D	96.3	47.0	0.0	96.3	47.0	0.0	-	-	-	1.5	1.75	
		20E	96.3	47.0	0.0	-	-	-	96.3	47.0	0.0	1.5	1.75	
		20F	-	-	-	96.3	47.0	0.0	96.3	47.0	0.0	1.5	1.75	
		20G	96.3	47.0	0.0	96.3	47.0	0.0	96.3	47.0	0.0	1.5	1.75	
3	1) 0 ICE 2) 0 WIND 3) -20° C 4) STRINGING SNUB ANGLE - 25° FROM HORIZONTAL	30A	88.2	16.6	7.7	-	-	-	-	-	-	2.0	2.0	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 0.2 BELOW CROSSARMS : 0.2
		30B	-	-	-	88.2	16.6	7.7	-	-	-	2.0	2.0	
		30C	-	-	-	-	-	-	88.2	16.6	7.7	2.0	2.0	
		30D	88.2	16.6	7.7	88.2	16.6	7.7	-	-	-	2.0	2.0	
		30E	88.2	16.6	7.7	-	-	-	88.2	16.6	7.7	2.0	2.0	
		30F	-	-	-	88.2	16.6	7.7	88.2	16.6	7.7	2.0	2.0	
		30G	88.2	16.6	7.7	88.2	16.6	7.7	88.2	16.6	7.7	2.0	2.0	
4	1) 0 ICE 2) 0 WIND 3) -1° C 4) EVERYDAY LOADING	40A	48.3	14.3	0.0	-	-	-	-	-	-	2.0	2.0	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 0.2 BELOW CROSSARMS : 0.2
		40B	-	-	-	48.3	14.3	0.0	-	-	-	2.0	2.0	
		40C	-	-	-	-	-	-	48.3	14.3	0.0	2.0	2.0	
		40D	48.3	14.3	0.0	48.3	14.3	0.0	-	-	-	2.0	2.0	
		40E	48.3	14.3	0.0	-	-	-	48.3	14.3	0.0	2.0	2.0	
		40F	-	-	-	48.3	14.3	0.0	48.3	14.3	0.0	2.0	2.0	
		40G	48.3	14.3	0.0	48.3	14.3	0.0	48.3	14.3	0.0	2.0	2.0	
5	1) 13MM UNEQUAL ICE 2) 0 WIND 3) -20° C	50A	72.8	21.3	45.5	128.2	32.0	0.0	128.2	32.0	0.0	1.5	1.75	1) WIND APPLIED ON THE PROJECTED AREA OF ONE FACE OF THE ENTIRE TOWER AT 45° DIRECTION 2) ULTIMATED TOWER WIND LOADS(KN/M²) ABOVE CROSSARMS : 2.2 BELOW CROSSARMS : 2.0
		50B	128.2	32.0	0.0	72.8	21.3	45.5	128.2	32.0	0.0	1.5	1.75	
		50C	128.2	32.0	0.0	128.2	32.0	0.0	72.8	21.3	45.5	1.5	1.75	
		50D	72.8	21.3	45.5	72.8	21.3	45.5	128.2	32.0	0.0	1.5	1.75	
		50E	72.8	21.3	45.5	128.2	32.0	0.0	72.8	21.3	45.5	1.5	1.75	
		50F	128.2	32.0	0.0	72.8	21.3	45.5	72.8	21.3	45.5	1.5	1.75	
		50G	72.8	21.3	45.5	72.8	21.3	45.5	72.8	21.3	45.5	1.5	1.75	

NOTES

1) ALL LOADS ARE IN "KN" EXCEPT AS OTHERWISE NOTED
2) LOAD APPLICATION
   A) THE TRANSVERSE LOADS SHOWN IN THE LOAD TABLE ARE REVERSIBLE. THE LONGITUDINAL LOADS SHOWN IN THE LOAD TABLE ARE REVERSIBLE.
   B) ULTIMATE TOWER DESIGN LOADS FOR ALL CASES SHALL BE THE WORKING CONDUCTOR PHASE LOADS TIMES THE LOAD FACTOR AS SPECIFIED IN THE LOAD TABLE.
   C) ALL HORIZONTAL AND DIAGONAL MEMBERS SHALL BE DESIGNED TO WITHSTAND AN ULTIMATE VERTICAL LOAD CONCENTRATED AT THE CENTER OF THE UNSUPPORTED LENGTH OF ANY MEMBER WITHOUT PERMANENT DEFORMATION. THIS VERTICAL LOAD SHALL BE 0.3KN IN COMBINATION WITH THE MAXIMUM AXIAL MEMBER FORCE DERIVED FROM STRUCTURAL ANALYSIS OR 1.35KN UNCOMBINED, WHICHEVER GOVERNS.
   D) THE BRIDGE SHALL BE DESIGNED TO SUPPORT AN ULTIMATE VERTICAL LOAD OF 75KN CONCENTRATED AT THE CENTRE OF THE BRIDGE. THE TOWER SHALL ALSO BE DESIGNED TO SUPPORT AN ULTIMATE LOAD OF 85KN APPLIED AT ANY ONE PHASE SUPPORT POINT IN THE PULLEY SYSTEM IN COMBINATION WITH THE LOADS OF CASE 4 AS SPECIFIED IN NOTE 5 OF THE SPECIFICATION DRAWING NO. 5L46-T08-84.
   E) THE BRIDGE MAIN TOP CHORD MEMBERS SHALL BE CAPABLE OF SUPPORTING AN ULTIMATE VERTICAL LOADS OF 4.45KN CONCENTRATED AT CENTRE OF THE UNSUPPORTED LENGTH OF THE MEMBER IN COMBINATION WITH THE AXIAL MEMBER FORCE DERIVED FROM LOAD CASE 4 WITHOUT PERMANENT DEFORMATION.
3) V1-V3, T1-T3 AND L1-L3 DENOTE THE VERTICAL, TRANSVERSE AND LONGITUDINAL LOADS AS SHOWN IN "KEY LOAD MARK".
4) UNLESS OTHERWISE NOTED, REFER TO SPECIFICATION DRAWING NO. 5L46-T08-84.



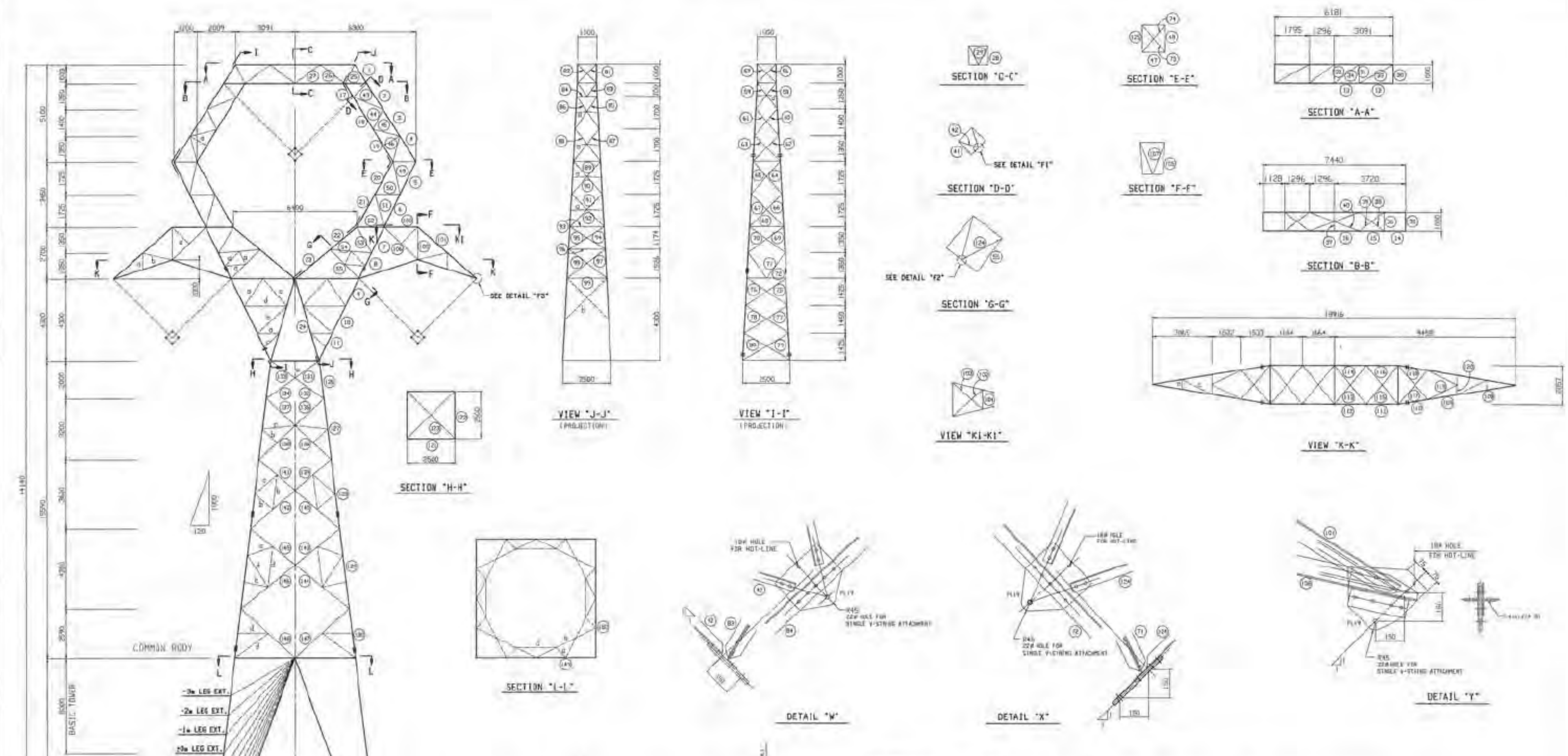
KEY LOAD MARK

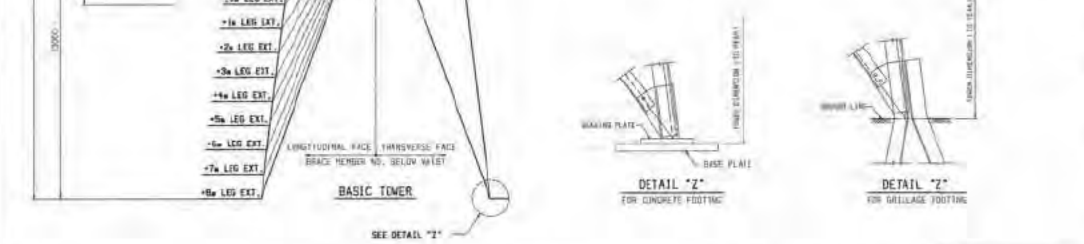
DRAWING CHECKED FOR CONTENT ONLY

	R1	REVISED NOTES 2 (C,D,E)								'91.5.30		0	ISSUED FOR APPROVAL									'91.5.17
/i	NO	REVISIONS	MADE	CHKD	SUBD	APPD	INSP	INSP	INSP	DATE	/i	NO	REVISIONS	MADE	CHKD	SUBD	APPD	INSP	INSP	INSP	DATE	

DESIGNED	SUBMITTED	SEAL	DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD. — FUNCTIONAL CODE 3.03
DRAWN	INSPECTED		BRITISH COLUMBIA HYDRO AND POWER AUTHORITY TRANSMISSION DESIGN DEPARTMENT
CHECKED DRAFTING	INSPECTED		KELLY LAKE-CHEEKYE 500KV TRANSMISSION LINE
CHECKED DESIGN	INSPECTED		LOADING TREE TABLE DRAWING FOR TYPE "53C" SELF SUPPORTING SUSPENSION TOWER (0°-8°)
APPROVED		DATE	SCALE M — DWG. NO. 5L46-T08-C31 — REV. 1

CAD FILE NO.:/DEAL/





REDUNDANT MEMBER		
MEMBER	SECTION	NO. BOLTS
a	L 1-3/4 x 1-3/4 x [illegible]	1
b	L 2 x 2 x 1/8	1
c	L 1-3/4 x 1-3/4 x 3/16	1
d	L 2 x 2 x 3/16	1
e	L 2-1/2 x 2 x 3/16	1
f	L 2-1/2 x 2-1/2 x 3/16	1
g	L 3 x 2 x 3/16	1
h	L 3 x 2-1/2 x 3/16	1
i	L 3 x 2-1/2 x 1/4	1
j	L 3-1/2 x 2-1/2 x 1/4	1

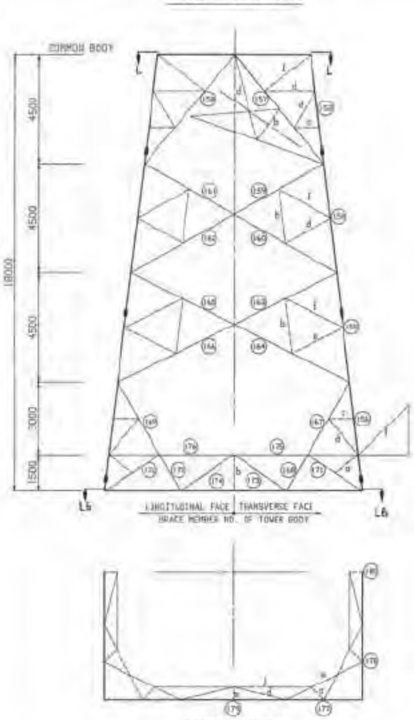
NOTES
1. FOR BODY & PANEL EXTENSION SEE DWG NO. : 5L46-T08-047
2. FOR LEGL EXTENSION SEE DWG NO. : 5L46-T08-048
3. FOR SNOW BODY & SNOW PANEL EXTENSION SEE DWG NO. : 5L46-T08-049
4. FOR SNOW LEG EXTENSION SEE DWG NO. : 5L46-T08-050

DRAWING CHECKED FOR CONTENT ONLY

FINAL REVISION PER BC HYDRO COMMENTS [redacted]

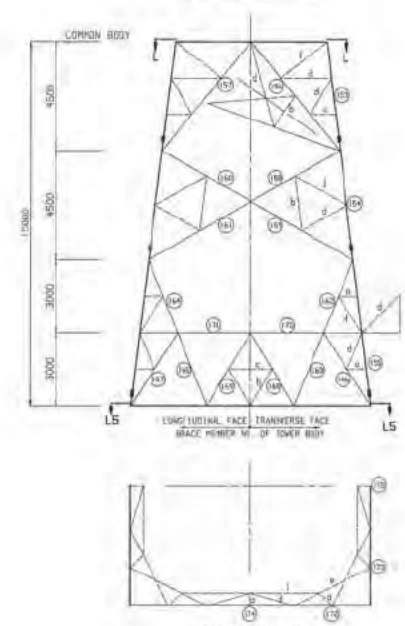
DESIGNED BY HYUNDAI STEEL IND. CO., LTD.
FUNCTIONAL CODE 3.01/53C
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION
KELLY LAKE-CHEEKYE 500 KV T/L
TYPE 53C SELF SUPPORTING SUSPENSION TOWER (0'-8')
DESIGN DRAWING
(BASIC TOWER)
DATE APR.08.1992
SCALE 1/100
DWG No. 5L46-T08-046

18m BODY EXTENSION



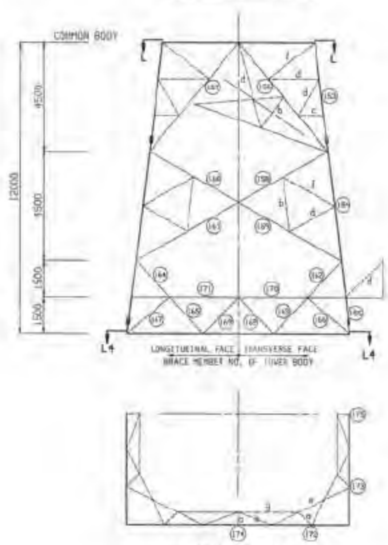
SECTION "L6-L6"

15m BODY EXTENSION



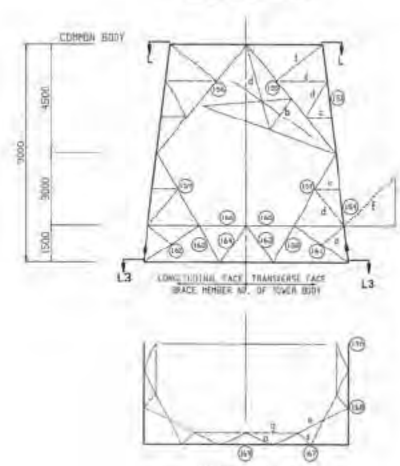
SECTION "L5-L5"

12m BODY EXTENSION



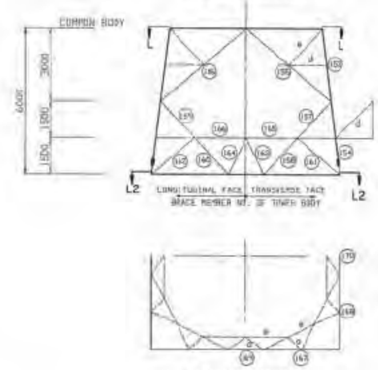
SECTION "L4-L4"

9m BODY EXTENSION



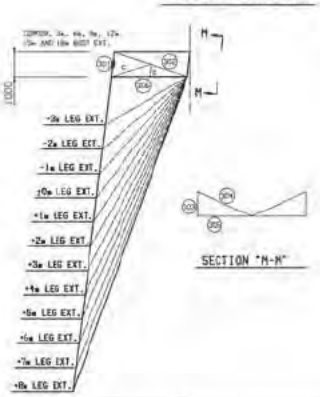
SECTION "L3-L3"

6m BODY EXTENSION



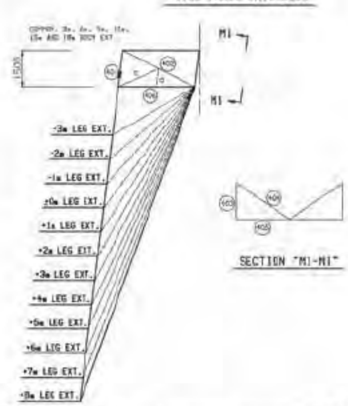
SECTION "L2-L2"

1.0m PANEL EXTENSION

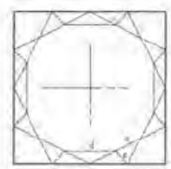


SECTION "M-M"

1.5m PANEL EXTENSION

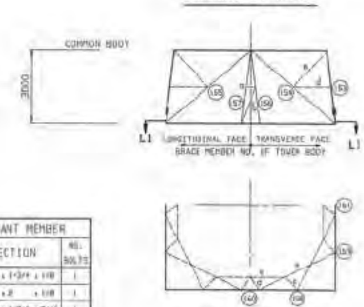


SECTION "M1-M1"



SECTION "L-L"

3m BODY EXTENSION



SECTION "L1-L1"

REDUNDANT MEMBER		
MEMBER	SECTION	NO. BOLTS
a	L 1-3/4 x 1-3/4 x 1/8	1
b	L 2 x 2 x 1/8	1
c	L 1-3/4 x 1-3/4 x 3/16	1
d	L 2 x 2 x 3/16	1
e	L 2-1/2 x 2 x 3/16	1
f	L 2-1/2 x 2-1/2 x 3/16	1
g	L 3 x 2 x 3/16	1
h	L 3 x 2-1/2 x 3/16	1
i	L 3 x 2-1/2 x 1/4	1
j	L 3-1/2 x 3-1/2 x 1/4	1

DRAWING CHECKED FOR CONTENT ONLY

[redacted]

DESIGNED BY HYUNDAI STEEL IND. CO., LTD.

FUNCTIONAL CODE 3.01/53C

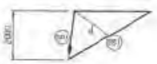
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

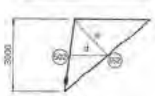
TYPE 53C SELF SUPPORTING SUSPENSION TOWER (0°-8°)
DESIGN DRAWING
(3m, 6m, 9m, 12m, 15m AND 18m BODY EXTENSION)
(1.0m AND 1.5m PANEL EXTENSION)

DATE APR.03.1992 SCALE 1/100 DWG.No. SL46-T08-D47

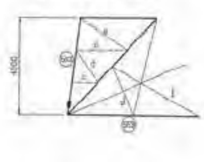
-3m LEG EXTENSION



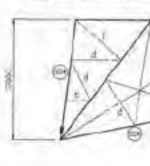
-2m LEG EXTENSION



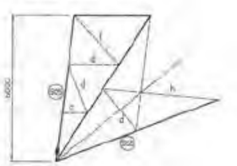
-1m LEG EXTENSION



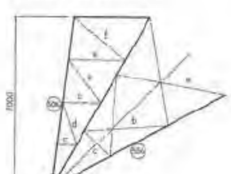
0m LEG EXTENSION



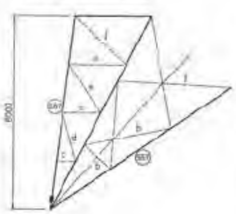
+1m LEG EXTENSION



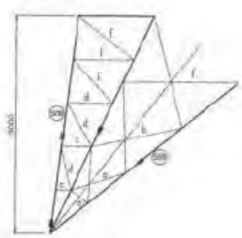
+2m LEG EXTENSION



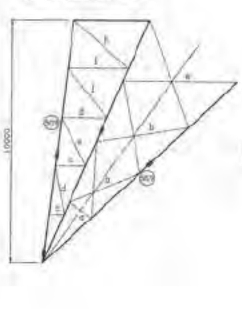
+3m LEG EXTENSION



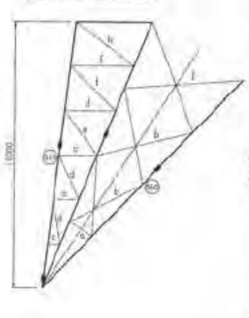
+4m LEG EXTENSION



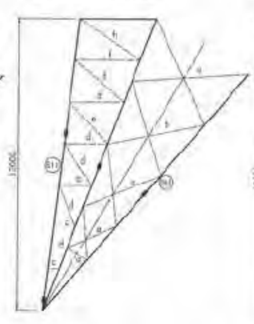
+5m LEG EXTENSION



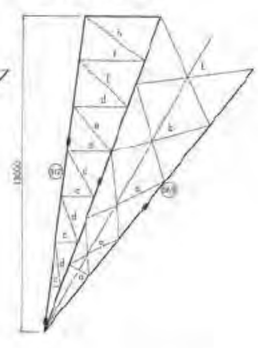
+6m LEG EXTENSION



+7m LEG EXTENSION



+8m LEG EXTENSION



MEMBER	MAX. FORCE	SECTION	NO. BOLTS
COMMON BODY			
1, 4	-106.86 +00.62	∟2-1/2 x 2-1/2 x 3/16 HT	4
5, 8	-195.05 +179.01	∟3 x 3 x 1/4 HT	6DS
9, 11	-509.70 +222.56	∟4 x 4 x 3/8 HT	5
12, 13	-109.67 +23.14	∟3 x 3 x 1/4 HT	2
14, 16	-62.78 +59.32	∟2-1/2 x 2-1/2 x 3/16	2
17, 19	-99.96 +101.61	∟2-1/2 x 2-1/2 x 3/16 HT	4
20, 21	-130.64 +62.15	∟3 x 3 x 3/16 HT	3
22, 23	-72.05 +194.73	∟3 x 3 x 1/4 HT	4
24	-295.53 +354.89	∟4 x 4 x 3/8 HT	4
25	-17.77 +77.88	∟2 x 2 x 3/16	2
26, 27	-32.92 +32.34	∟2 x 2 x 3/16	1
28	-29.36 +9.90	∟1-3/4 x 1-3/4 x 3/16	1
29	-11.32 +43.71	∟1-3/4 x 1-3/4 x 3/16 HT	1
30, 31	-18.05 +9.14	∟1-3/4 x 1-3/4 x 3/16	1
33	-10.56 +12.98	∟2-1/2 x 2 x 3/16	1
34	-8.41 +10.35	∟1-3/4 x 1-3/4 x 3/16	1
35, 36	-30.11 +9.24	∟1-3/4 x 1-3/4 x 3/16	1
37	-0.03 +0.02	∟3 x 3 x 3/16	1
38, 39	-4.79 +9.18	∟1-3/4 x 1-3/4 x 3/16	1
40–96	[illegible]	[illegible]	[illegible]
87–150	[illegible]	[illegible]	[illegible]
+18.0m BODY EXT.			
153–180	[illegible]	[illegible]	[illegible]
+15.0m BODY EXT.			
[illegible]	[illegible]	[illegible]	[illegible]
+12.0m BODY EXT.			
[illegible]	[illegible]	[illegible]	[illegible]
+9.0m BODY EXT.			
[illegible]	[illegible]	[illegible]	[illegible]
+6.0m BODY EXT.			
[illegible]	[illegible]	[illegible]	[illegible]
+3.0m BODY EXT.			
[illegible]	[illegible]	[illegible]	[illegible]
+1.0m PANEL EXT.			
[illegible]	[illegible]	[illegible]	[illegible]
+1.5m PANEL EXT.			
[illegible]	[illegible]	[illegible]	[illegible]
POST OF LEG EXT.			
501–512	[illegible]	[illegible]	[illegible]
BRACE OF LEG EXT.			
551–562	[illegible]	[illegible]	[illegible]

NOTES

1) HT-DENOTES MEMBERS OF 35 KN/CM² MINIMUM YIELD POINT. ALL OTHER MEMBERS MAY HAVE A MINIMUM YIELD POINT OF 26 KN/CM².
2) STEEL SHALL CONFORM TO THE REQUIREMENTS OF A CHARPY V-NOTCH, MINIMUM AVERAGE ABSORBED ENERGY VALUE OF 20J AT TEMPERATURE OF -29°C.
3) ALL BOLTS TO BE IN ACCORDANCE WITH CSA STANDARD G33.4 GRADE 5 AND TO BE 5/8" DIAMETER WITH HELICAL HEAVY SPRING WASHERS.
4) ALL DIMENSIONS ARE IN MILLIMETERS AND ALL FORCES ARE IN "KN". MINUS SIGN DENOTES COMPRESSION AND PLUS SIGN DENOTES TENSION.
5) REDUNDANT MEMBERS SHALL SUBDIVIDE THE MEMBERS BEING BRACED IN EQUAL LENGTHS UNLESS OTHERWISE SPECIFIED.
6) DS-DENOTES AS DOUBLE SHEAR, NUMBER OF BOLTS TABULATED IS BASED ON SINGLE SHEAR.
7) ABOVE MAX. FORCES WERE SELECTED BY WORST CASE WITH CONSIDERING UNEQUAL, EQUAL LEG DESIGN FOR BODY EXT. AND PANEL EXT.

REDUNDANT MEMBER		
MEMBER	SECTION	NO. BOLTS
a	∟1-3/4 x 1-3/4 x 1/8	1
b	∟2 x 2 x 1/8	1
c	∟1-3/4 x 1-3/4 x 3/16	1
d	∟2 x 2 x 3/16	1
e	∟2-1/2 x 2 x 3/16	1
f	∟2-1/2 x 2-1/2 x 3/16	1
g	∟3 x 2 x 3/16	1
h	∟3 x 2-1/2 x 3/16	1
i	∟3 x 2-1/2 x 1/4	1
j	∟3-1/2 x 3-1/2 x 1/4	1

DRAWING CHECKED FOR CONTENT ONLY

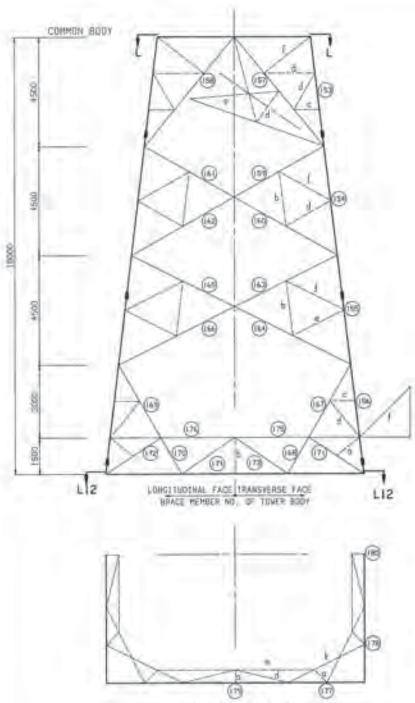
DESIGNED BY HYUNDAI STEEL IND. CO., LTD.	FUNCTIONAL CODE 3.01/53C
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
TYPE 53C SELF SUPPORTING SUSPENSION TOWER (0'-8') DESIGN DRAWING (-3.0m TO +8.0m LEG EXTENSION)	
DATE APR.03.1992	SCALE 1/200
DWG. NO. 5L4G-T00-C4B	3

REFERENCE DRAWINGS

REVISIONS

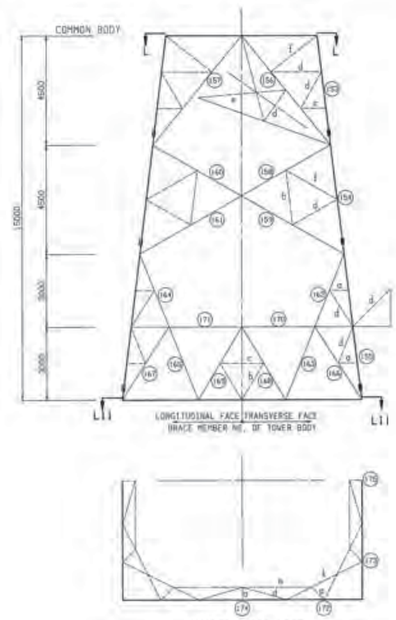
[redacted]

18m BODY EXTENSION



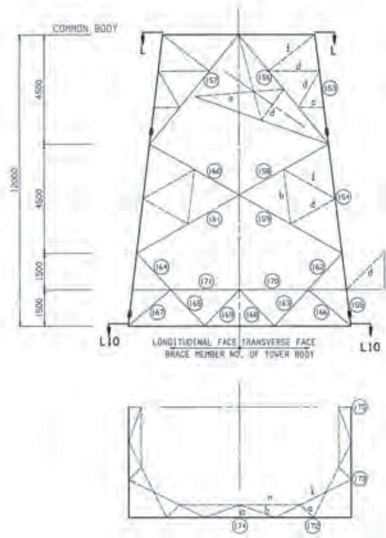
SECTION "L12-L12"

15m BODY EXTENSION



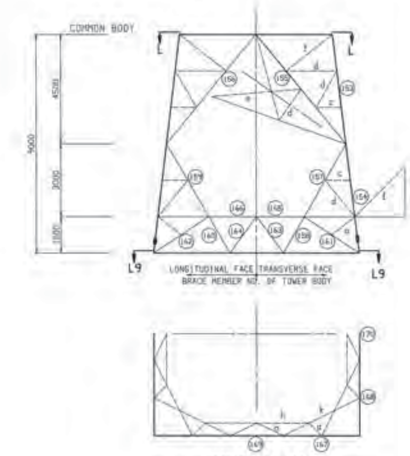
SECTION "L11-L11"

12m BODY EXTENSION



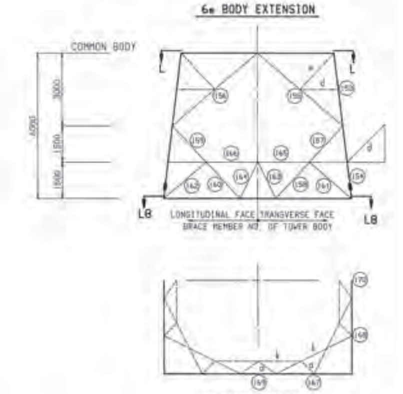
SECTION "L10-L10"

9m BODY EXTENSION



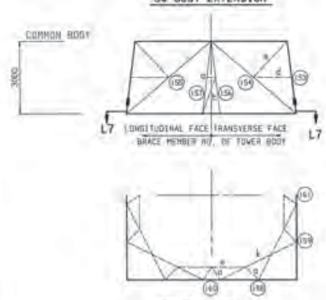
SECTION "L9-L9"

6m BODY EXTENSION



SECTION "L8-L8"

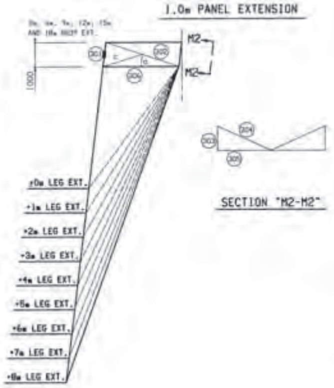
3m BODY EXTENSION



SECTION "L7-L7"

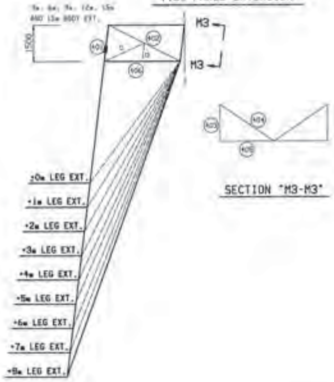
SECTION "L-L"

1.0m PANEL EXTENSION



SECTION "M2-M2"

1.5m PANEL EXTENSION



SECTION "M3-M3"

REDUNDANT MEMBER		
MEMBER	SECTION	NO. BOLTS
a	L 1-3/4 x 1-3/4 x 1/8	1
b	L 2 x 2 x 1/8	1
c	L 1-3/4 x 1-3/4 x 3/16	1
d	L 2 x 2 x 3/16	1
e	L 2-1/2 x 2 x 3/16	1
f	L 2-1/2 x 2-1/2 x 3/16	1
g	L 3 x 2 x 3/16	1
h	L 3 x 2-1/2 x 3/16	1
i	L 3 x 2-1/2 x 1/4	1
j	L 3-1/2 x 2-1/2 x 1/4	1
k	L 2-1/2 x 2-1/2 x 3/16 HT	1
m	2L 3 x 2-1/2 x 3/16	1
n	2L 2-1/2 x 2-1/2 x 3/16	1

DRAWING ACCEPTED WITHOUT CHECKING

DESIGNED BY HYUNDAI STEEL IND. CO., LTD.

FUNCTIONAL CODE 3.01/53SC

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

TYPE 53SC SELF SUPPORTING SUSPENSION TOWER (0'-8')
DESIGN DRAWING
(3M, 6M, 9M, 12M, 15M AND 18M BODY EXTENSION)
(1.0M AND 1.5M PANEL EXTENSION)

DATE: OCT.07,1992

SCALE: 1/100

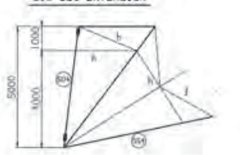
DWG No. SL46-T08-049

2

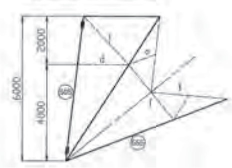
REVISED ISSUE PER BCH'S COMMENTS

D

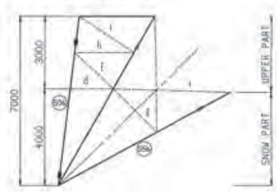
±0m LEG EXTENSION



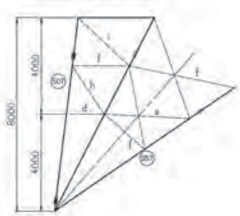
+1m LEG EXTENSION



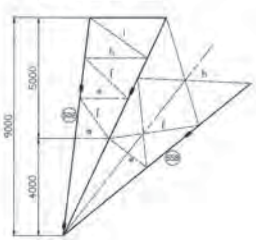
+2m LEG EXTENSION



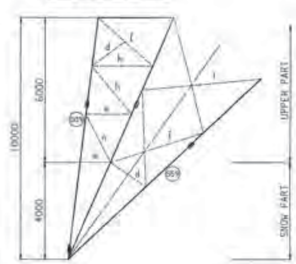
+3m LEG EXTENSION



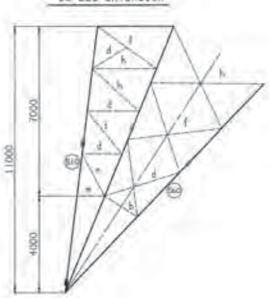
+4m LEG EXTENSION



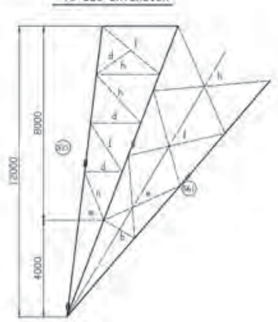
+5m LEG EXTENSION



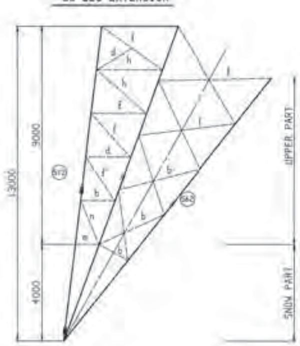
+6m LEG EXTENSION



+7m LEG EXTENSION



+8m LEG EXTENSION



MEMBER	MAX. FORCE	SECTION	NO. BOLTS
		+18.0m BODY EXT.	
153	-741.56 / +532.41	L 8 x 8 x 1/2 HT	DS
154 / 155	-819.92 / +593.82	L 6 x 6 x 1/2 HT	DS
156	-867.98 / +632.50	L 6 x 6 x 1/2 HT	DS
157 / 158	-52.90 / +51.21	L 3 x 3 x 3/16	2
159 / 162	-31.84 / +31.23	L 3 x 3 x 1/4	2
163 / 166	-29.12 / +28.71	L 3 x 3 x 1/4	2
167 / 170	-57.34 / +47.30	L 3 x 2-1/2 x 3/16	2
171 / 172	-134.29 / +141.15	L 3-1/2 x 3 x 1/4 HT	3
173 / 174	-177.32 / +169.89	2L 3 x 2-1/2 x 3/16 HT	2
175 / 176	-153.95 / +162.33	2L 3 x 3 x 1/4	2
177 / 178	-130.37 / +116.72	L 3-1/2 x 2-1/2 x 1/4 HT	2
179 / 180	-76.67 / +63.02	L 3 x 3 x 1/4 HT	2
		+15.0m BODY EXT.	
153	-724.77 / +529.97	L 8 x 8 x 1/2 HT	DS
154	-801.41 / +577.75	L 6 x 6 x 1/2 HT	DS
155	-828.87 / +613.39	L 6 x 6 x 1/2 HT	DS
156 / 157	-60.78 / +64.07	L 3 x 3 x 3/16	2
158 / 161	-33.38 / +34.80	L 3 x 3 x 1/4	2
162 / 164	-59.23 / +59.97	L 3 x 2-1/2 x 3/16	2
163 / 165	-79.22 / +50.73	2L 3 x 2-1/2 x 3/16	2
166 / 167	-90.42 / +100.12	L 3-1/2 x 3 x 1/4	2
168 / 169	-131.69 / +130.98	L 3-1/2 x 3-1/2 x 5/16	3
170 / 171	-78.59 / +87.81	2L 3 x 3 x 3/16	2
172 / 175	-74.74 / +54.26	L 3 x 3 x 3/16	2
		+12.0m BODY EXT.	
153	-740.09 / +532.65	L 8 x 8 x 1/2 HT	DS
154 / 155	-838.69 / +614.41	L 6 x 6 x 1/2 HT	DS
156 / 157	-56.67 / +53.60	L 3 x 3 x 3/16	2
158 / 161	-33.21 / +32.41	L 3 x 3 x 1/4	2
162 / 165	-66.69 / +44.82	L 3 x 3 x 1/4	2
166 / 167	-85.57 / +94.27	L 3-1/2 x 3-1/2 x 1/4	2
168 / 169	-144.72 / +143.83	L 3-1/2 x 3-1/2 x 1/4	3
170 / 171	-115.42 / +128.12	2L 3 x 3 x 3/16	2
172 / 173	-86.34 / +72.19	L 3 x 3 x 1/4	2
174 / 175	-80.73 / +48.83	L 3 x 3 x 1/4	2

MEMBER	MAX. FORCE	SECTION	NO. BOLTS
		+9.0m BODY EXT.	
153 / 154	-829.53 / +606.53	L 6 x 6 x 1/2 HT	DS
155 / 156	-52.89 / +49.18	L 3 x 3 x 3/16	2
157 / 160	-49.68 / +48.11	L 3 x 3 x 3/16	2
161 / 162	-89.52 / +97.70	L 3 x 3 x 3/16 HT	2
163 / 164	-151.75 / +151.27	L 3-1/2 x 3-1/2 x 1/4	3
165 / 166	-102.56 / +112.35	L 3-1/2 x 3-1/2 x 1/4 HT	2
167 / 168	-76.25 / +81.95	L 3 x 3 x 1/4	2
169 / 170	-76.23 / +44.18	L 3 x 3 x 1/4	2
		+6.0m BODY EXT.	
153 / 154	-821.08 / +599.49	L 6 x 6 x 1/2 HT	DS
155 / 156	-53.84 / +50.15	L 3 x 3 x 1/4	2
157 / 160	-68.50 / +47.09	L 3 x 3 x 3/16	2
161 / 162	-57.39 / +68.41	L 3 x 3 x 1/4	2
163 / 164	-161.22 / +150.85	L 3-1/2 x 3-1/2 x 1/4	3
165 / 166	-77.38 / +92.93	L 3-1/2 x 3-1/2 x 1/4	2
167 / 168	-71.08 / +58.47	L 3 x 3 x 3/16	2
169 / 170	-93.63 / +55.83	L 3 x 3 x 3/16	3
		+3.0m BODY EXT.	
153	-772.74 / +556.21	L 6 x 6 x 1/2 HT	DS
151 / 155	-68.45 / +68.45	L 3-1/2 x 3 x 1/4	2
156 / 157	-143.07 / +140.97	L 3-1/2 x 3-1/2 x 1/4	3
158 / 159	-50.37 / +45.51	L 3 x 3 x 3/16	2
160 / 161	-80.91 / +48.73	L 3 x 3 x 3/16	2
		+1.0m PANEL EXT.	
301	-779.43 / +499.80	L 6 x 6 x 1/2 HT	DS
302	-18.46 / +52.97	L 3 x 3 x 3/16	2
303	-178.27 / +143.91	L 3 x 3 x 1/4 HT	3
304	-14.56 / +15.18	L 2-1/2 x 2-1/2 x 3/16	1
305	-23.17 / +19.81	L 3 x 3 x 3/16	1
306	-11.98 / +15.41	L 3 x 3 x 3/16	1
		+1.5m PANEL EXT.	
401	-816.03 / +547.16	L 6 x 6 x 1/2 HT	DS
402	-34.24 / +54.50	L 3 x 3 x 3/16	2
403	-159.50 / +144.73	L 3-1/2 x 3-1/2 x 1/4 HT	3
404	-17.79 / +18.30	L 3 x 3 x 3/16	1
405	-23.00 / +17.55	L 3 x 3 x 3/16	1
406	-23.00 / +15.60	L 3 x 3 x 3/16	1

MEMBER	MAX. FORCE	SECTION	NO. BOLTS
		POST OF LEG EXT.	
504	-844.20	U : L 6 x 6 x 1/2 HT	DS
	+567.58	S : L 8 x 8 x 1 HT	10
505	-830.32	U : L 6 x 6 x 1/2 HT	DS
	+550.67	S : L 8 x 8 x 1 HT	10
506	-816.42	U : L 6 x 6 x 1/2 HT	DS
	+549.75	S : L 8 x 8 x 1 HT	10
507	-802.55	U : L 6 x 6 x 1/2 HT	DS
	+540.84	S : L 8 x 8 x 1 HT	10
508	-788.66	U : L 6 x 6 x 1/2 HT	DS
	+531.95	S : L 8 x 8 x 1 HT	10
509	-774.78	U : L 6 x 6 x 1/2 HT	DS
	+523.01	S : L 8 x 8 x 1 HT	10
510	-760.89	U : L 6 x 6 x 1/2 HT	DS
	+514.39	S : L 8 x 8 x 1 HT	10
511	-747.21	U : L 6 x 6 x 1/2 HT	DS
	+505.10	S : L 8 x 8 x 1 HT	10
512	-733.12	U : L 6 x 6 x 1/2 HT	DS
	+496.35	S : L 8 x 8 x 1 HT	10
		BRACE OF LEG EXT.	
554	-176.91	U : 2L 6 x 6 x 3/8 HT	[illegible]
	+122.38	S : 2L 6 x 6 x 3/8 HT	3
555	-186.05	U : 2L 6 x 6 x 3/8 HT	[illegible]
	+128.70	S : 2L 6 x 6 x 3/8 HT	3
556	-194.49	U : L 4 x 4 x 5/16 HT	3
	-134.54	S : 2L 6 x 6 x 3/8 HT	3
557	-202.19	U : L 4 x 4 x 3/8 HT	3
	+139.89	S : 2L 5 x 5 x 3/8 HT	3
558	-209.17	U : L 4 x 4 x 5/16 HT	3
	+144.70	S : 2L 5 x 5 x 3/8 HT	3
559	-215.83	U : L 4 x 4 x 5/16 HT	3
	+149.09	S : 2L 5 x 5 x 3/8 HT	3
560	-221.29	U : L 4 x 4 x 5/16 HT	3
	+153.08	S : 2L 5 x 5 x 5/16 HT	3
561	-226.58	U : L 4 x 4 x 5/16 HT	3
	+156.70	S : 2L 5 x 5 x 5/16 HT	3
562	-231.30	U : L 4 x 4 x 5/16 HT	3
	+160.01	S : 2L 5 x 5 x 5/16 HT	3

U : UPPER PART
S : SNOW PART

REDUNDANT MEMBER

MEMBER	SECTION	NO. BOLTS
a	L 1-3/4 x 1-3/4 x 1/8	1
b	L 2 x 2 x 1/8	1
c	L 1-3/4 x 1-3/4 x 3/16	1
d	L 2 x 2 x 3/16	1
e	L 2-1/2 x 2 x 3/16	1
f	L 2-1/2 x 2-1/2 x 3/16	1
g	L 3 x 2 x 3/16	1
h	L 3 x 2-1/2 x 3/16	1
i	L 3 x 3 x 3/16	1
j	L 3 x 2-1/2 x 1/4	1
k	L 3-1/2 x 2-1/2 x 1/4	1
m	L 2 x 2 x 3/16	2
n	L 3 x 3 x 3/16	2

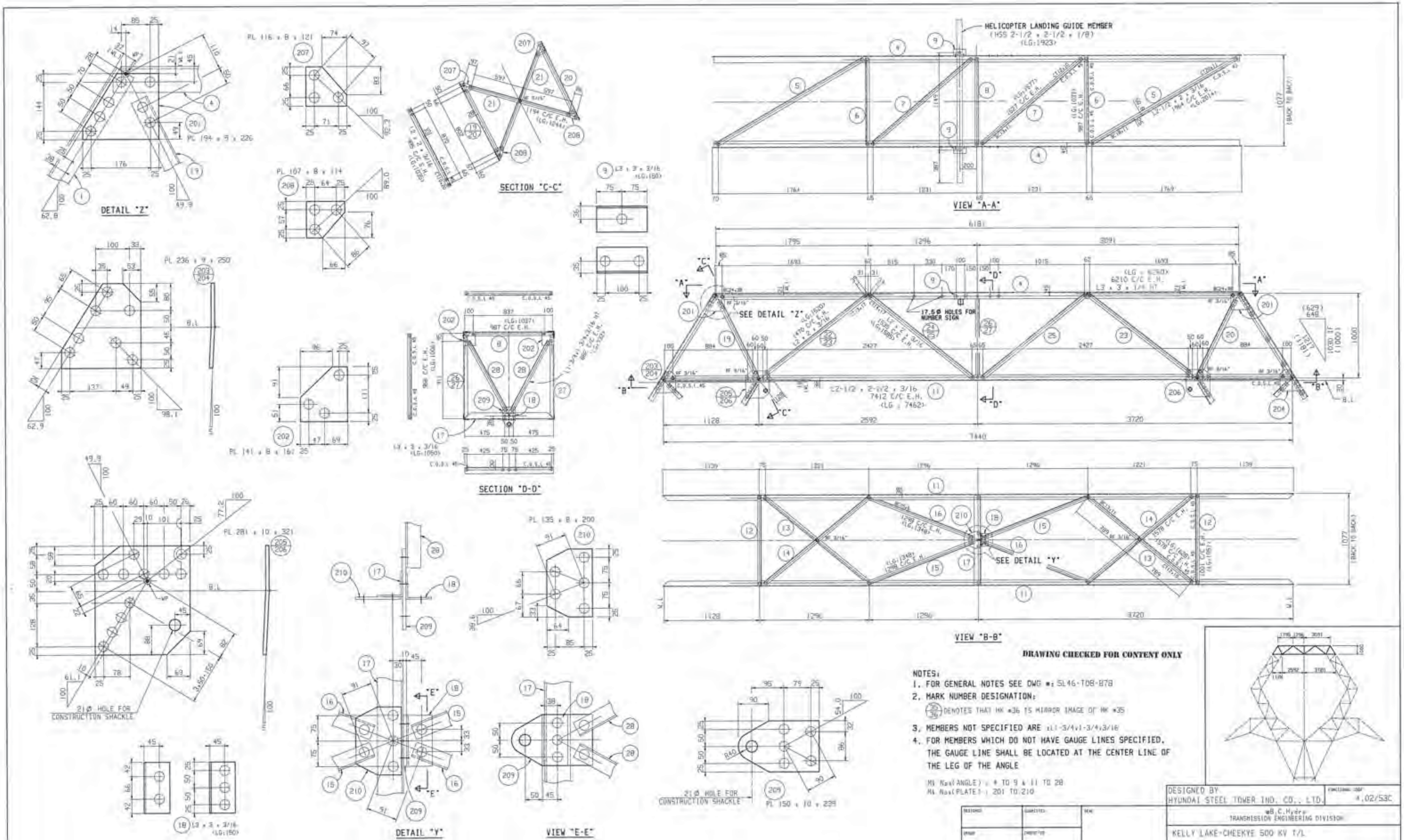
NOTES

1) HT-DENOTES MEMBERS OF 35 KN/CM² MINIMUM YIELD POINT. ALL OTHER MEMBERS MAY HAVE A MINIMUM YIELD POINT OF 26 KN/CM².
2) STEEL SHALL CONFORM TO THE REQUIREMENTS OF A CHARPY V-NOTCH, MINIMUM AVERAGE ABSORBED ENERGY VALUE OF 20J AT TEMPERATURE OF -20°C.
3) ALL BOLTS TO BE IN ACCORDANCE WITH CSA STANDARD B33.4 GRADE 5 AND TO BE 5/8" DIAMETER WITH HELICAL HEAVY SPRING WASHERS.
4) ALL DIMENSIONS ARE IN MILLIMETERS AND ALL FORCES ARE IN "KN" MINUS SIGN DENOTES COMPRESSION AND PLUS SIGN DENOTES TENSION.
5) REDUNDANT MEMBERS SHALL SUBDIVIDE THE MEMBERS BEING BRACED IN EQUAL LENGTHS UNLESS OTHERWISE SPECIFIED.
6) DS-DENOTES AS DOUBLE SHEAR. NUMBER OF BOLTS TABULATED IS BASED ON SINGLE SHEAR.
7) ABOVE MAX. FORCES WERE SELECTED BY WORST CASE WITH CONSIDERING UNEQUAL, EQUAL LEG DESIGN FOR EACH BODY EXT. AND PANEL EXT.

DRAWING ACCEPTED WITHOUT CHECKING

DESIGNED BY HYUNDAI STEEL IND. CO., LTD.
FUNCTIONAL CODE 3.01/53SC
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION
KELLY LAKE-CHEEKYE 500 KV T/L
TYPE 53SC SELF SUPPORTING SUSPENSION TOWER (0'-8')
DESIGN DRAWING
(±0M TO +8.0M LEG EXTENSION)
DATE OCT.07.1992
SCALE 1/100
DWG. No. 5L46-T08-050
2

REFERENCE DRAWINGS | REFERENCE DRAWINGS | REVISIONS | REVISIONS



DRAWING CHECKED FOR CONTENT ONLY

NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE ∠L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK No.(ANGLE) : 4 TO 9 & 11 TO 28
MK No.(PLATE) : 201 TO 210

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

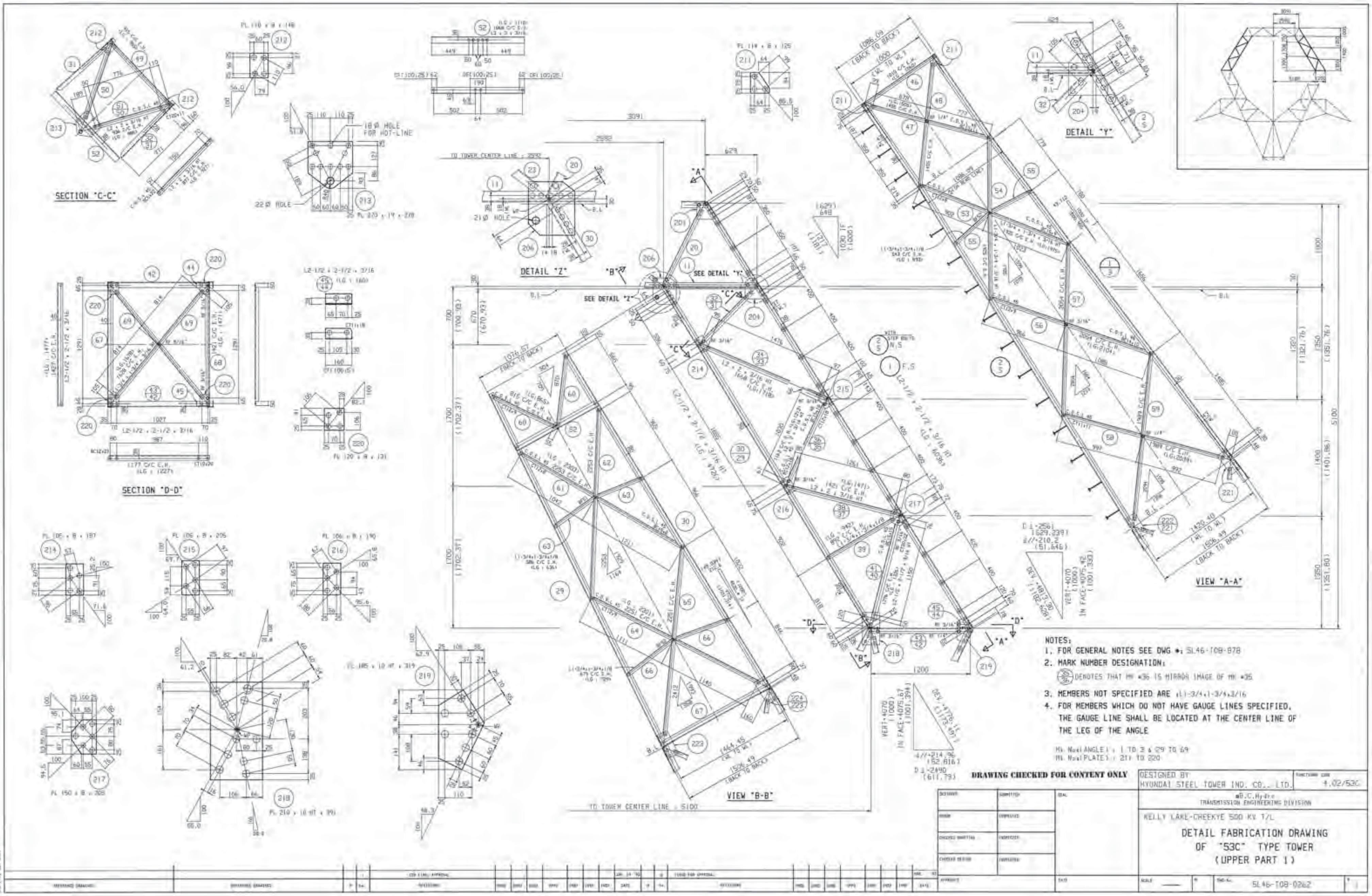
4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

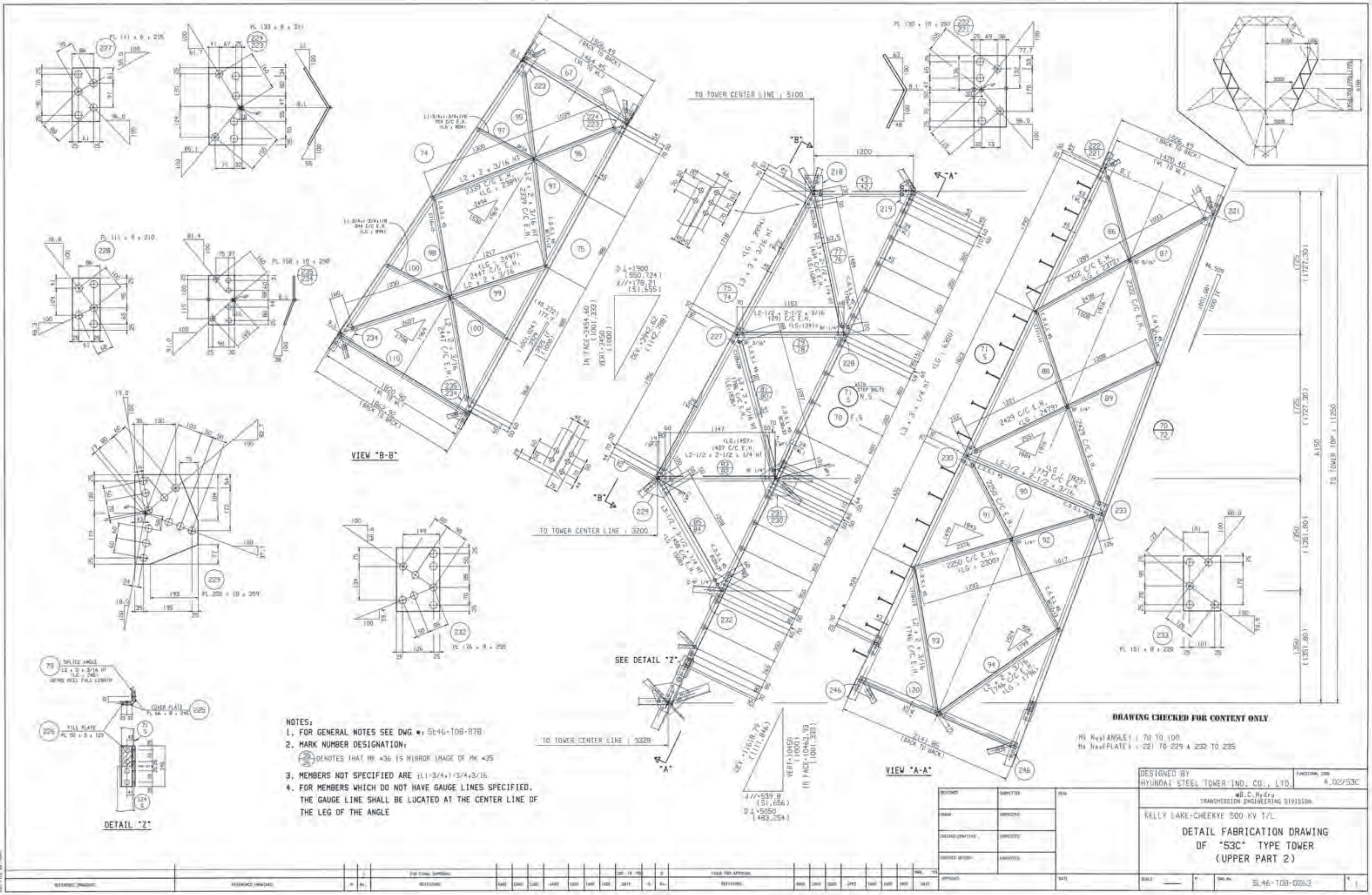
KELLY LAKE-CHEEKYE 500 KV T/L

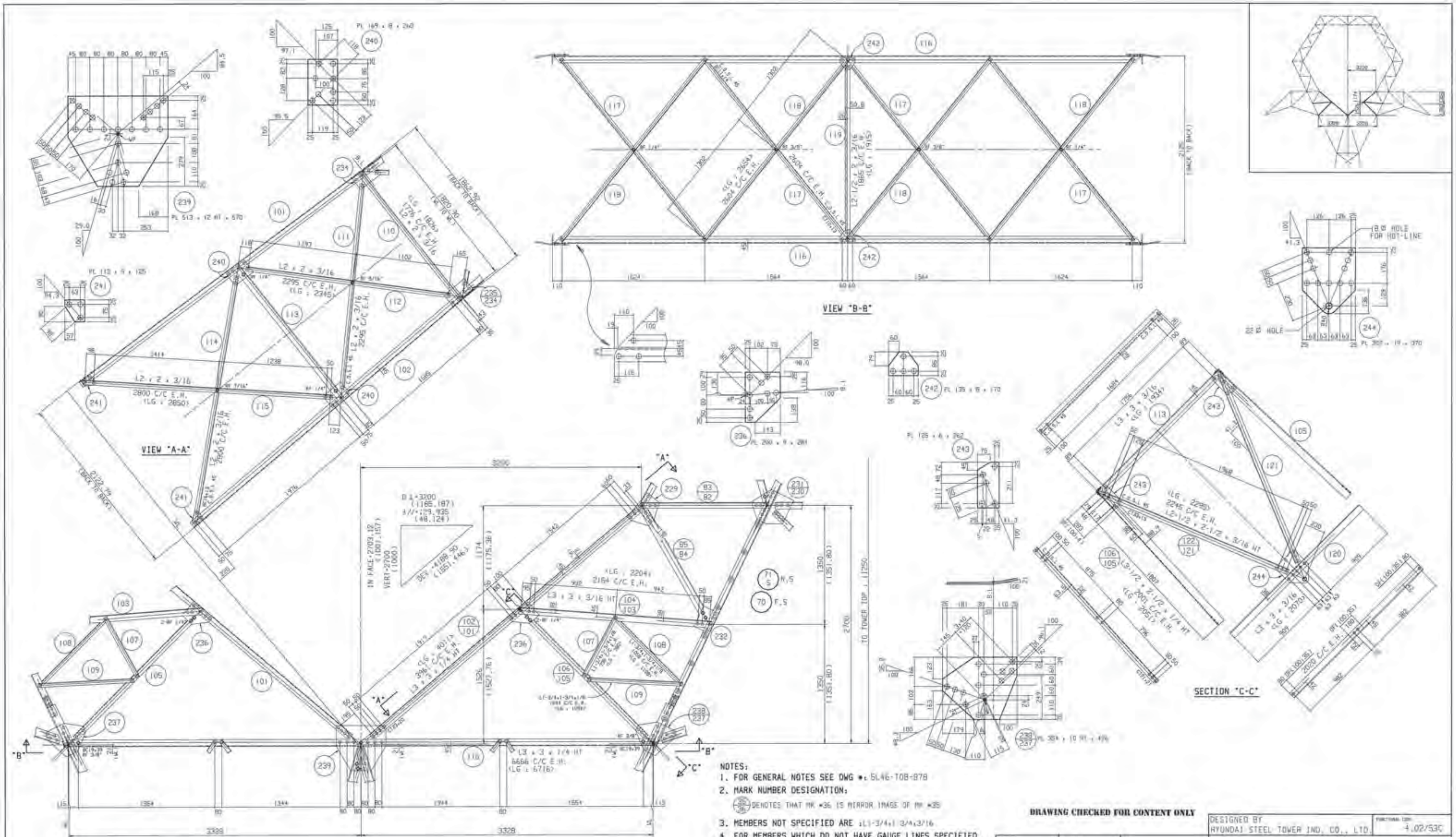
DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(BRIDGE)

DWG No. 5L46-T08-0261



SECTION "C-C"
SECTION "D-D"
DETAIL "Z"
DETAIL "Y"
VIEW "A-A"
VIEW "B-B"
SEE DETAIL "Y"
SEE DETAIL "Z"
TO TOWER CENTER LINE : 5100
18 Ø HOLE FOR HOT-LINE
22 Ø HOLE
21 Ø HOLE
NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE ∟1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE
DRAWING CHECKED FOR CONTENT ONLY
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.
B.C.Hydro TRANSMISSION ENGINEERING DIVISION
KELLY LAKE-CHEEKYE 500 KV T/L
DETAIL FABRICATION DRAWING OF "53C" TYPE TOWER (UPPER PART I)
4.02/53C
5L46-T08-0262


VIEW "B-B"
VIEW "A-A"
DETAIL "Z"
SEE DETAIL "Z"
TO TOWER CENTER LINE : 5100
TO TOWER CENTER LINE : 3200
TO TOWER CENTER LINE : 3328
TO TOWER TOP : 11250
NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE
DRAWING CHECKED FOR CONTENT ONLY
Mk No.(ANGLE) : 70 TO 100
Mk No.(PLATE) : 221 TO 229 & 232 TO 235
DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.
4.02/53C
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION
KELLY LAKE-CHEEKYE 500 KV T/L
DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(UPPER PART 2)
5L46-T08-0263



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
(35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE.

Mk Nos(ANGLE) : 101 TO 122
Mk Nos(PLATE) : 236 TO 244

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DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53C

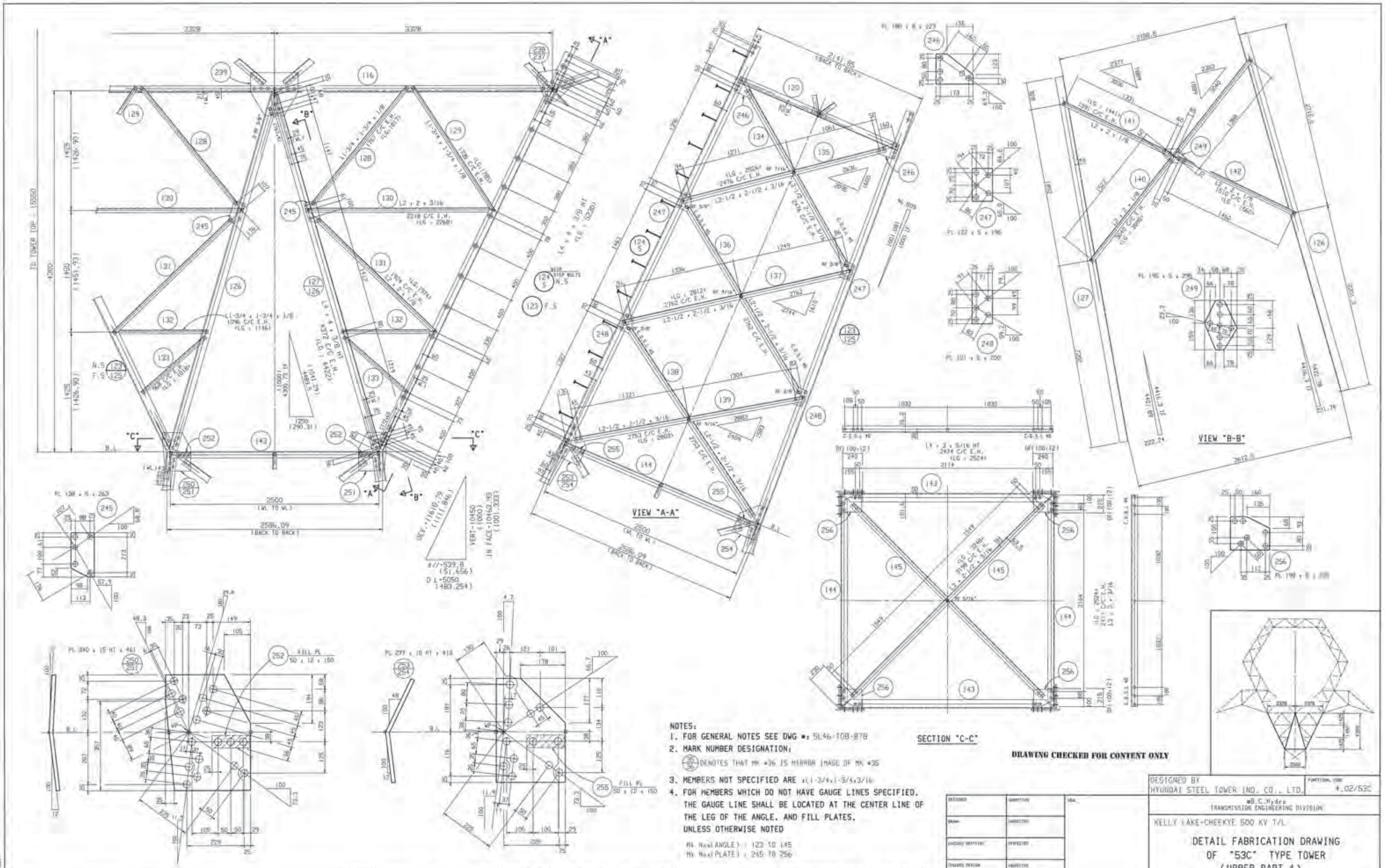
B.C. Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(UPPER PART 3)

5L46-T08-0264

1



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE ±L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE, AND FILL PLATES, UNLESS OTHERWISE NOTED

MK No.(ANGLE) : 123 TO 145
MK No.(PLATE) : 245 TO 256

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DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

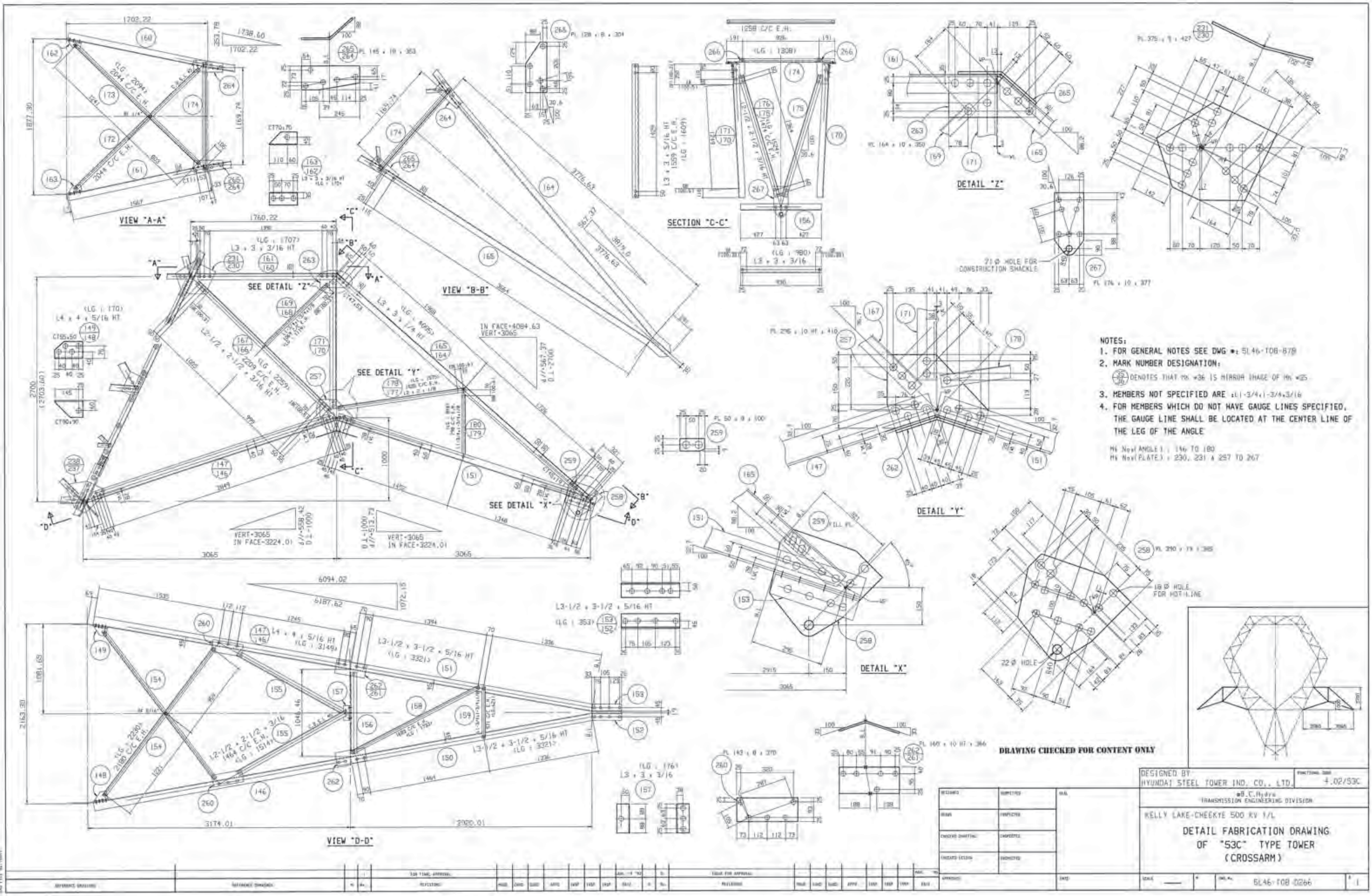
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(UPPER PART 4)

5L46-T08-0265

1

ISSUE FOR APPROVAL



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   25/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #25
3. MEMBERS NOT SPECIFIED ARE : L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK No.(ANGLE) : 146 TO 180
MK No.(PLATE) : 230, 231 & 257 TO 267

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.

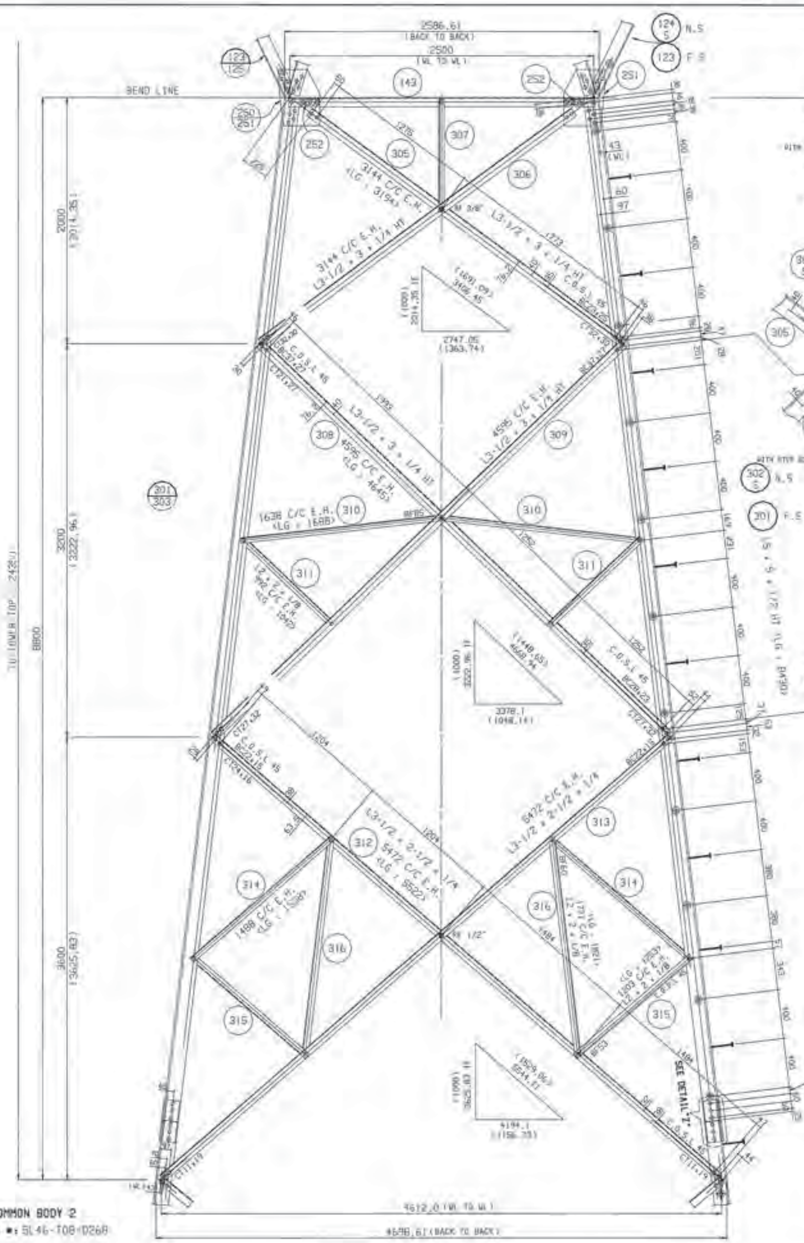
FUNCTIONAL CODE 4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

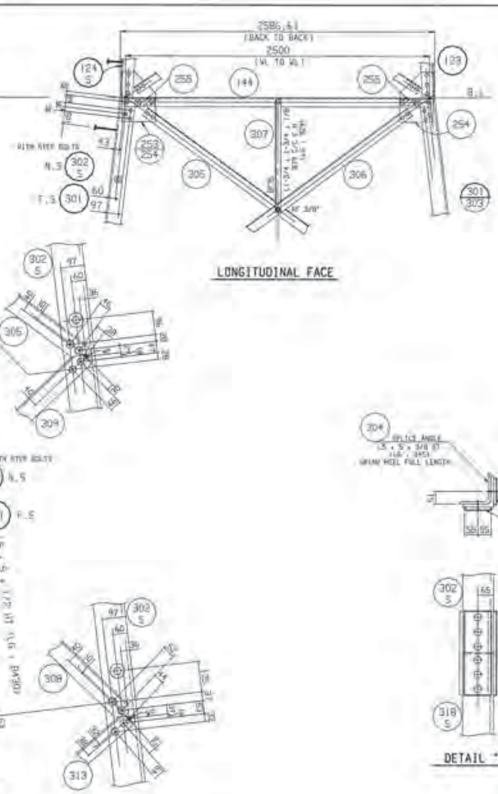
DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(CROSSARM)

DWG No. 5L46-T08-0266



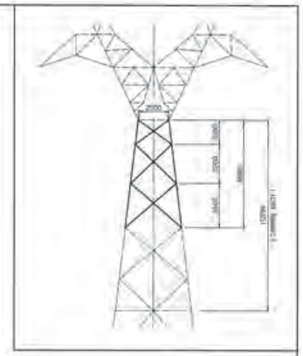
NOTE : FOR COMMON BODY 2
SEE DWG #: SL46-T08-0268

TRANSVERS FACE



LONGITUDINAL FACE

DETAIL "Z"



NOTES:
1. FOR GENERAL NOTES SEE DWG #: SL46-T08-878
2. MARK NUMBER DESIGNATION:
DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE :L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 301 TO 316
Mk No (PLATE) : 351

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DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

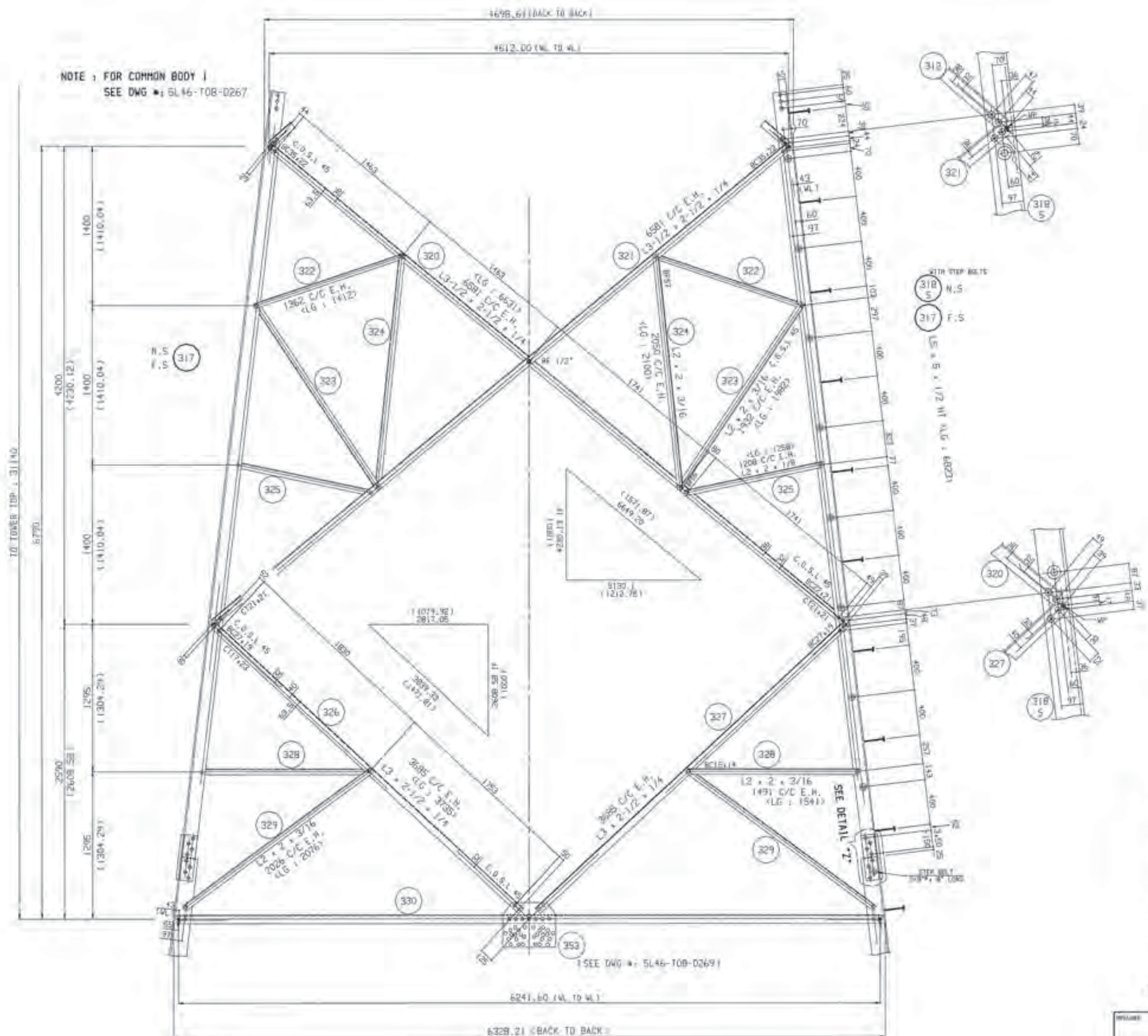
4.02/53C

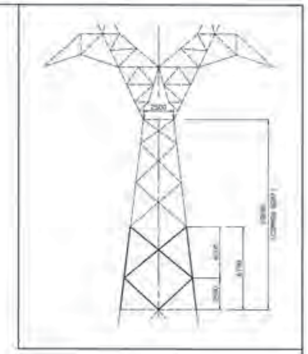
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

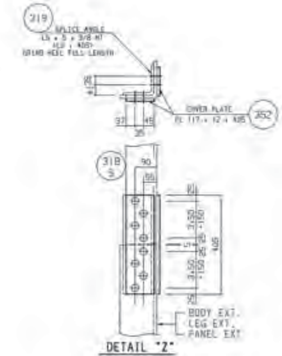
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(COMMON BODY 1)

SL46-T08-0262







NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B78
2. MARK NUMBER DESIGNATION:
   DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 317 TO 329
Mk No (PLATE) : 352

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DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

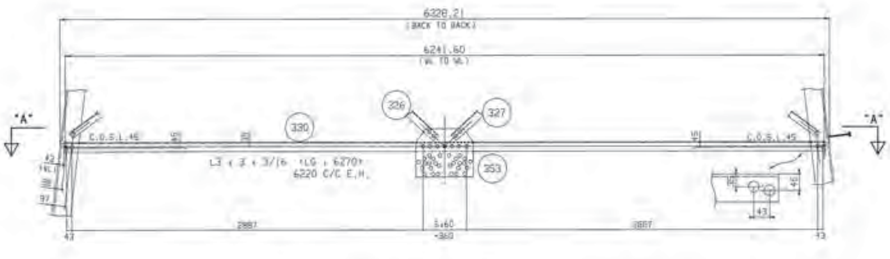
4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

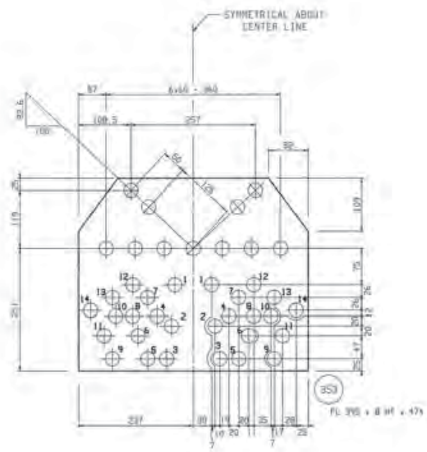
KELLY LAKE-CHEEKYE 500 KV T/L

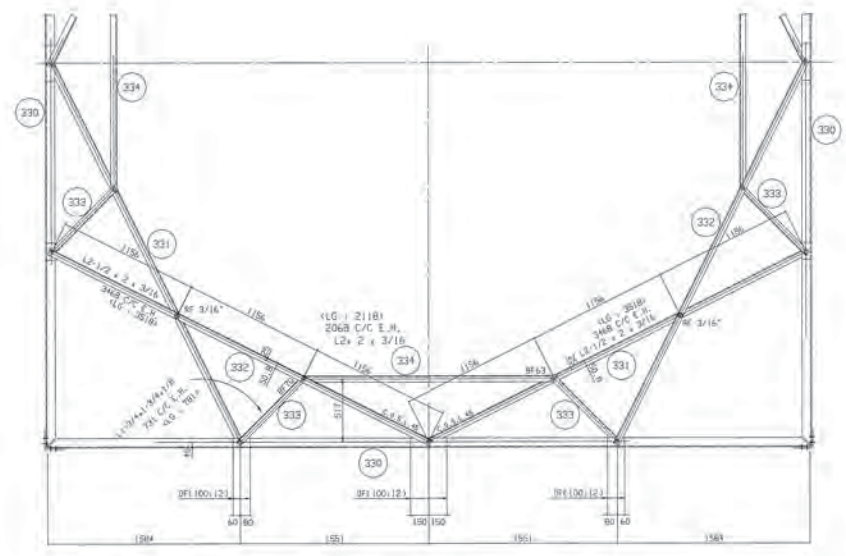
DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(COMMON BODY 2)

5L46-T08-D268



REFER TO DWG # : 5L46-T08-0268





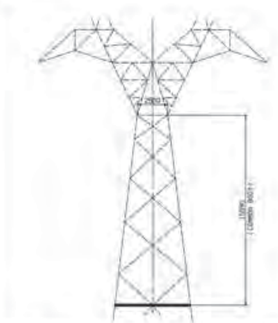
SECTION "A - A"

NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE ±L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK No.(ANGLE) : 330 TO 334
MK No (PLATE) : 353

DRAWING CHECKED FOR CONTENT ONLY



DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

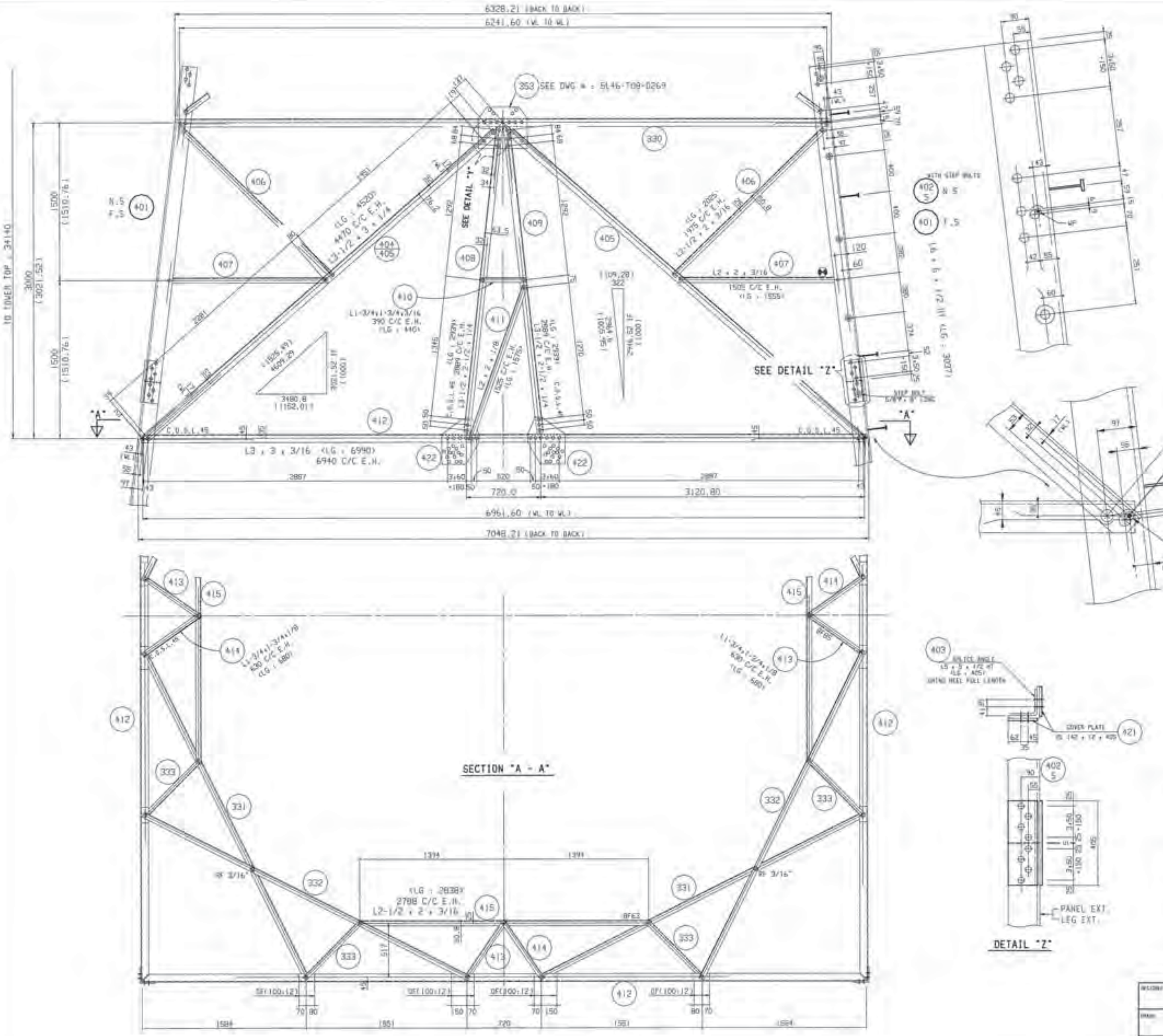
FUNCTIONAL CODE 4.02/53C

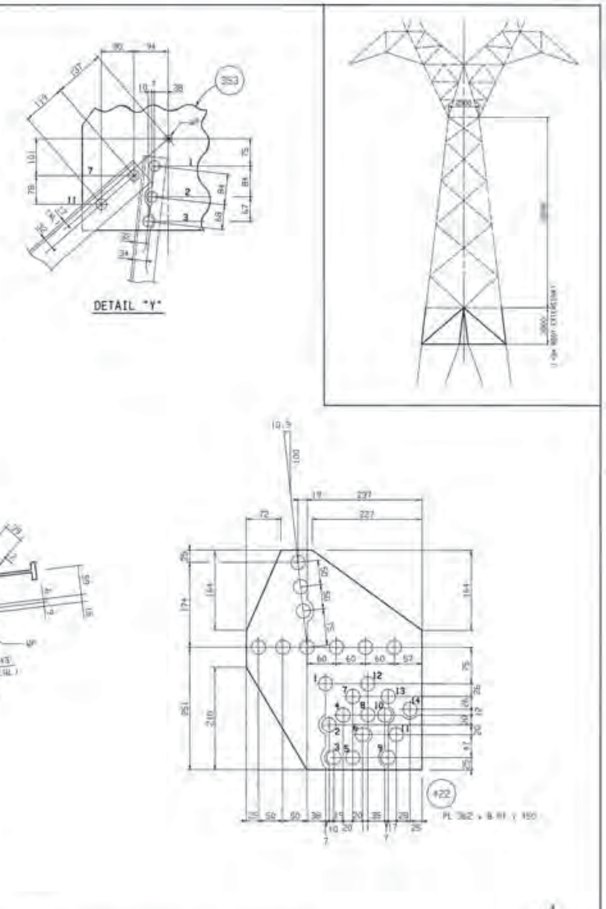
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(HORIZONTAL DIAPHRAGM)

DWG No. 5L46-T08-0269





NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B78
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 401 TO 415
Mk No.(PLATE) : 421 & 422

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DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

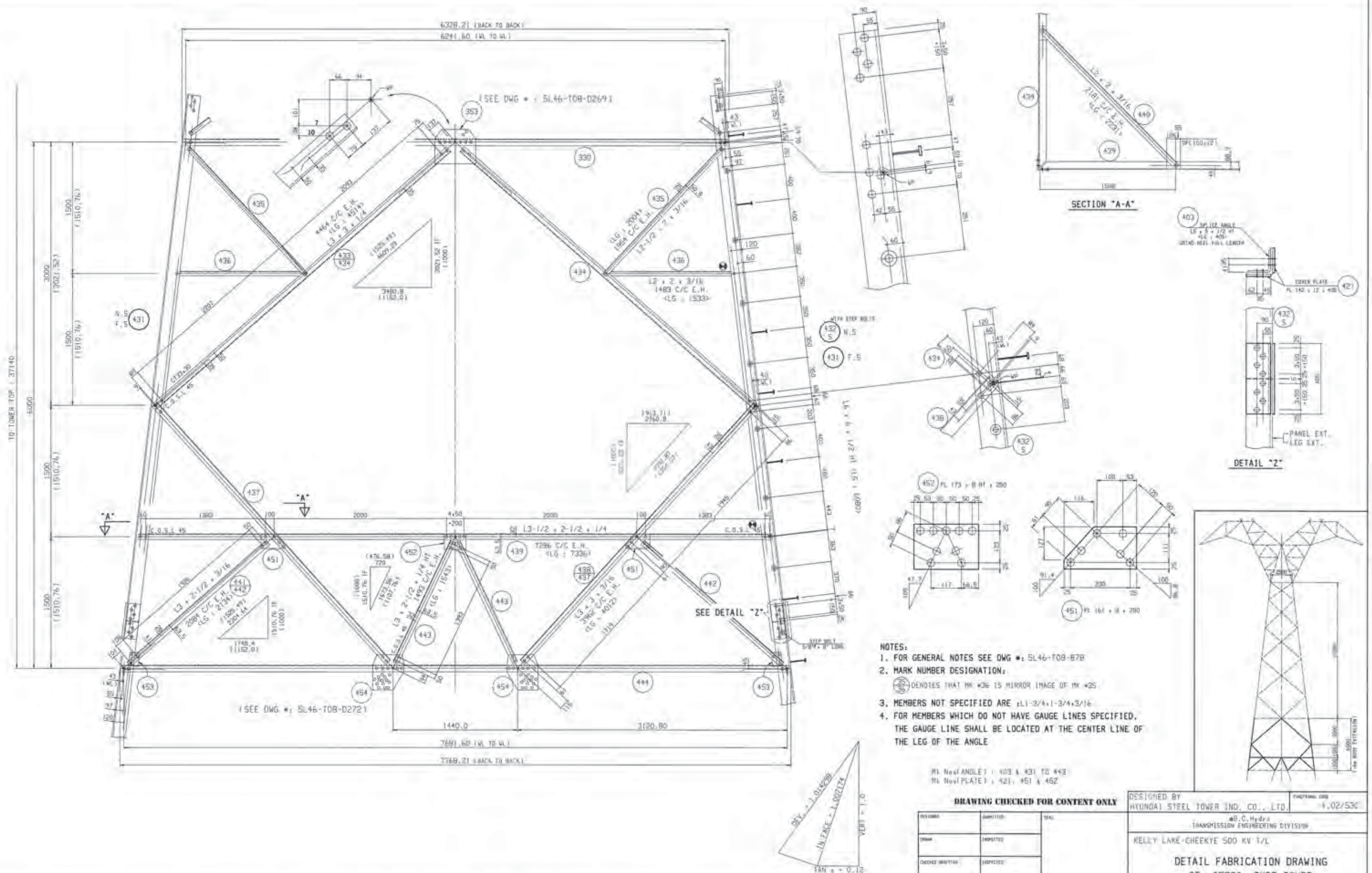
4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+3m BODY EXTENSION)

5L46-T08-D270



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE :L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 403 & 431 TO 443
Mk Nos(PLATE) : 421, 451 & 452

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED	SUBMITTED	SEAL
DRAWN	INSPECTED	
CHECKED DRAFTING	INSPECTED	
CHECKED DESIGN	INSPECTED	
APPROVED		DATE

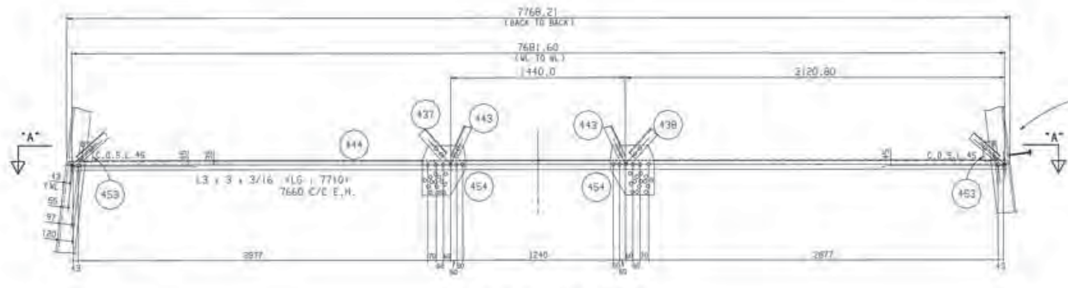
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD. — 4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

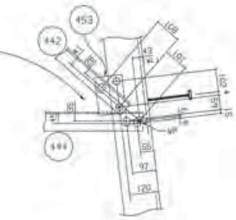
KELLY LAKE-CHEEKYE 500 KV T/L

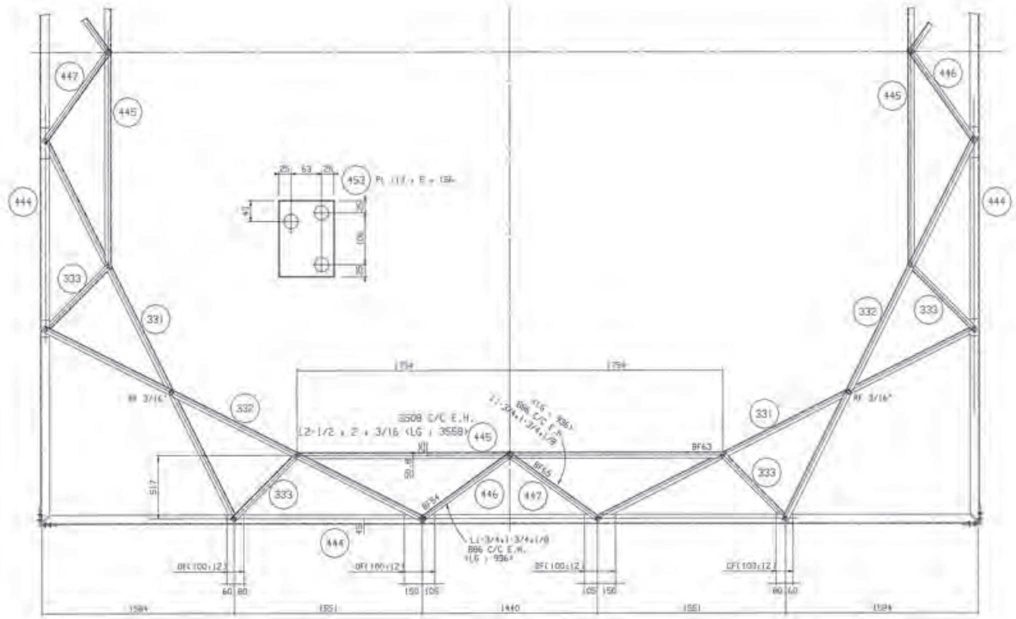
DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+6m BODY EXTENSION)

DWG.No. 5L46-T08-0271

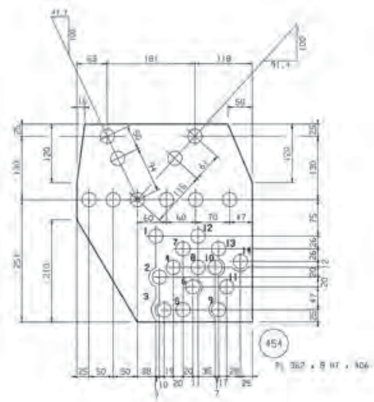


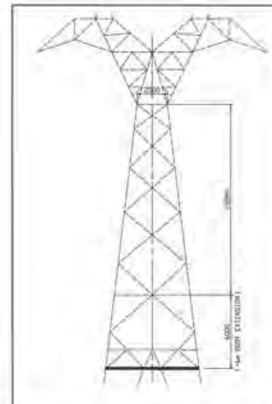
REFER TO DWG # : 5L46-T0B-0271





SECTION "A - A"





NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T0B-878
2. MARK NUMBER DESIGNATION:
(35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 444 TO 447
Mk Nos(PLATE) : 453 & 454

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HYUNDAI STEEL TOWER IND. CO., LTD.

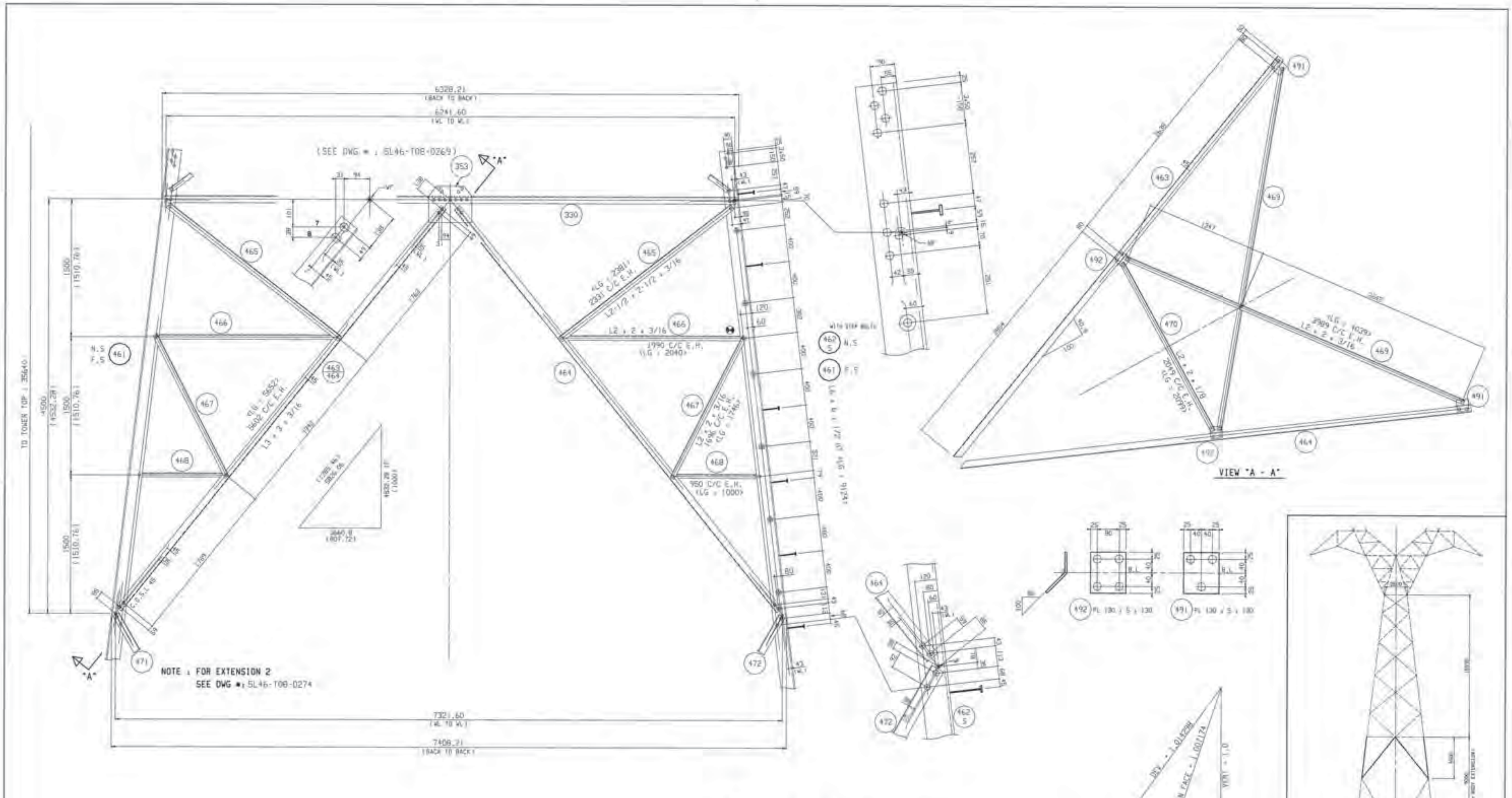
4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+6m BODY EXTENSION DIAPHRAGM)

5L46-T0B-0272



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK Nos(ANGLE) : 461 TO 470
MK Nos(PLATE) : 491 & 492

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HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53C

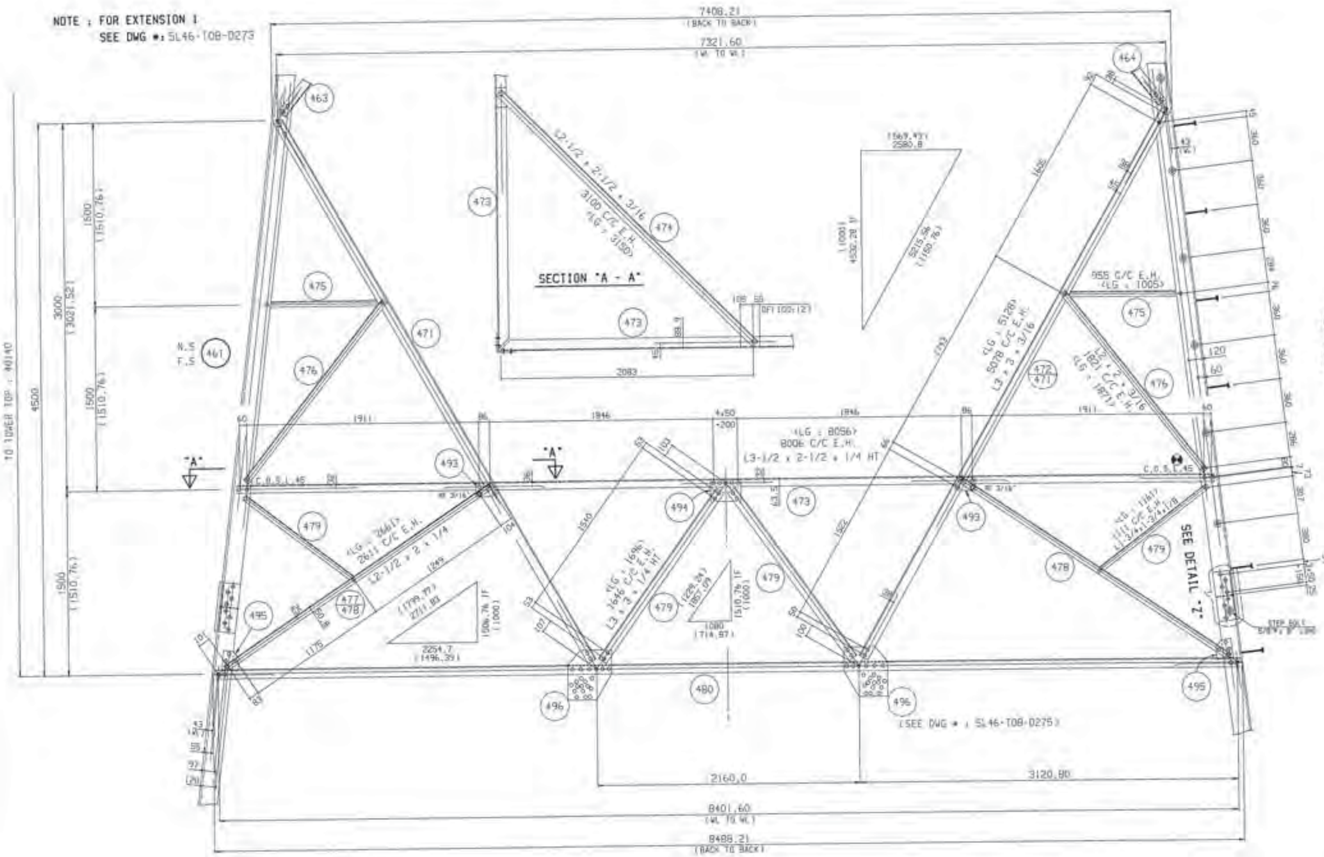
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

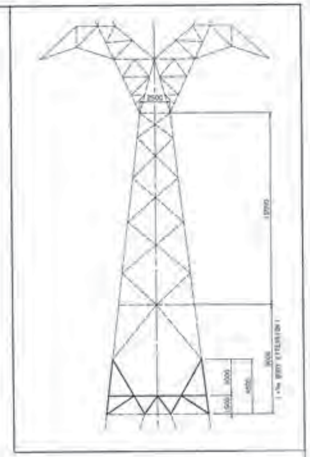
KELLY LAKE-CHEEKYE 500 KV T/L

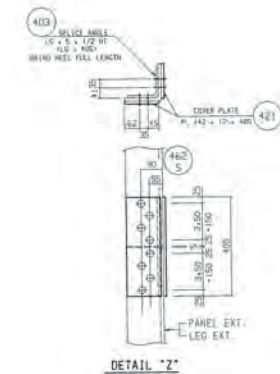
DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+9m BODY EXTENSION 1)

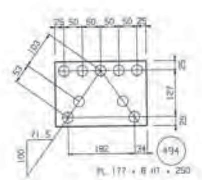
5L46-T09-0273

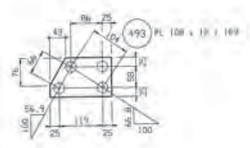
NOTE : FOR EXTENSION 1
SEE DWG #: 5L46-T08-0273











NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE :L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK Nos(ANGLE) : 403 & 471 TO 479
MK Nos(PLATE) : 421, 493 & 494

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

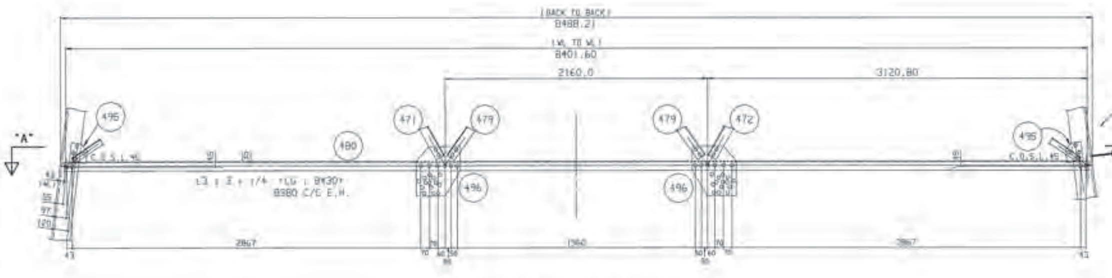
4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

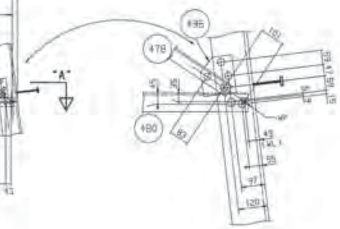
KELLY LAKE-CHEEKYE 500 KV T/L

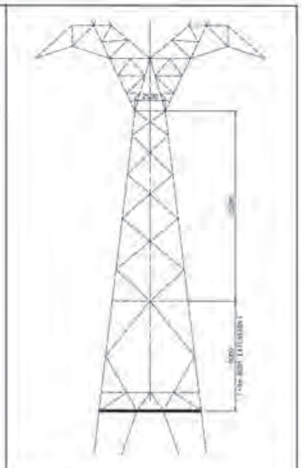
DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+9m BODY EXTENSION 2)

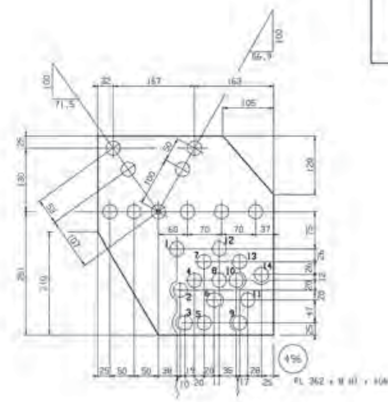
DWG No. 5L46-T08-0274

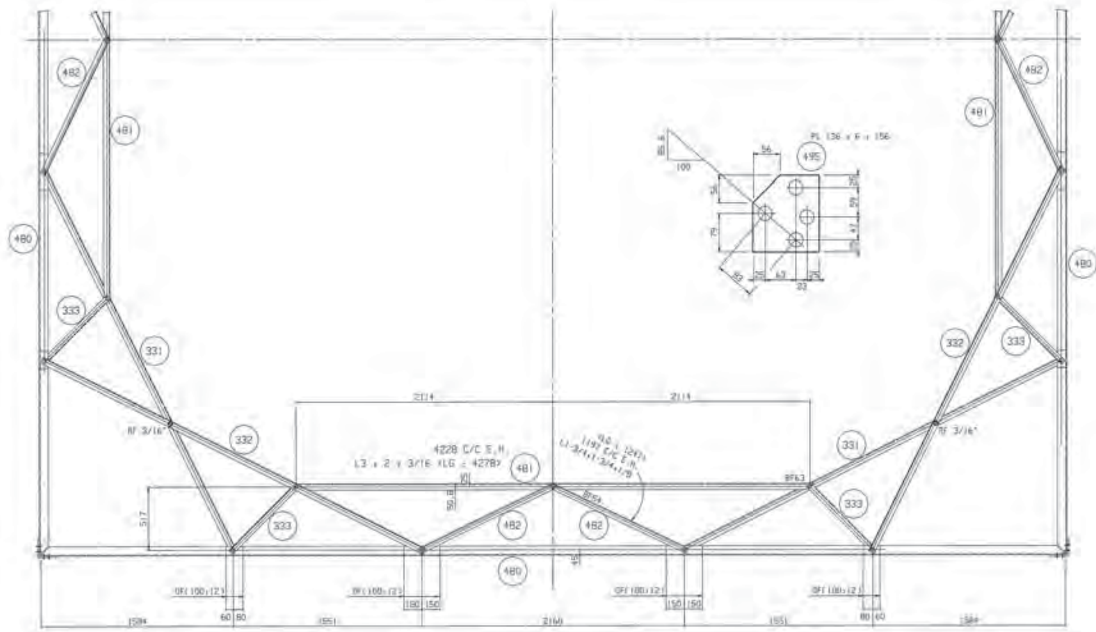


REFER TO DWG # : 5L46-T08-0274









SECTION "A - A"

NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE ∠L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 480 TO 482
Mk Nos(PLATE) : 495 & 496

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DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

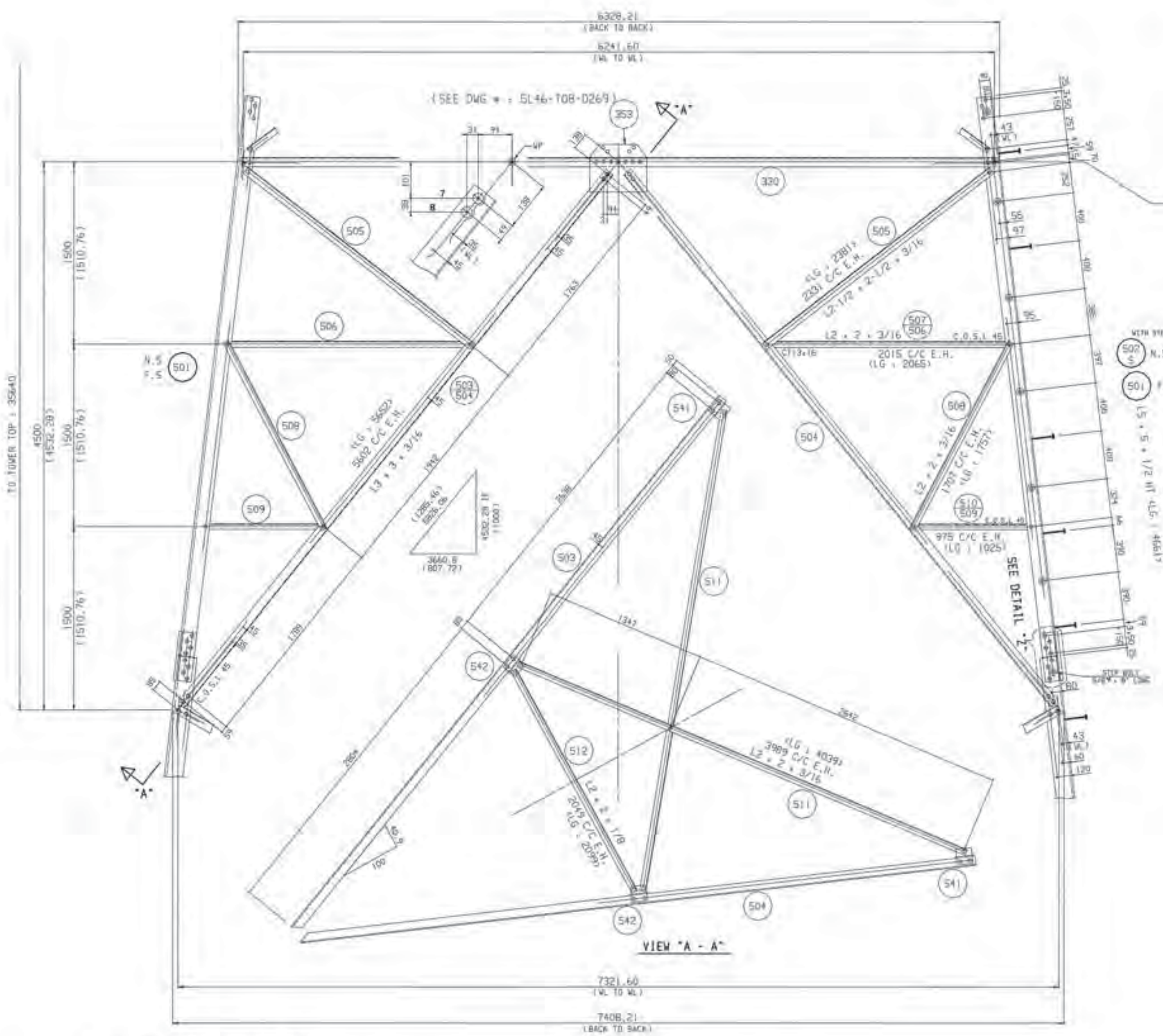
4.02/53C

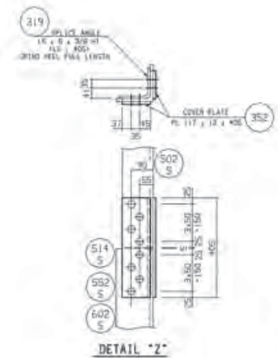
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

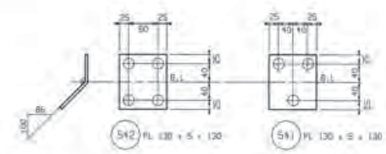
KELLY LAKE-CHEEKYE 500 KV T/L

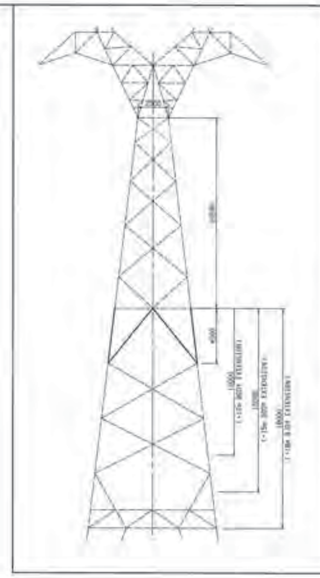
DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+9m BODY EXTENSION DIAPHRAGM)

5L46-T08-0275







DRAWING CHECKED FOR CONTENT ONLY

NOTE : FOR EXTENSION 2 SEE DWG #:

+12m : 5L46-T08-D277 (EXTENSION 2)
+15m : 5L46-T08-D279 (EXTENSION 2)
+18m : 5L46-T08-D282 (EXTENSION 2)

NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B78
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK Nos(ANGLE) : 319 & 501 TO 512
MK Nos(PLATE) : 352, 541 & 542

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

FUNCTIONAL DWG: 4.02/53C

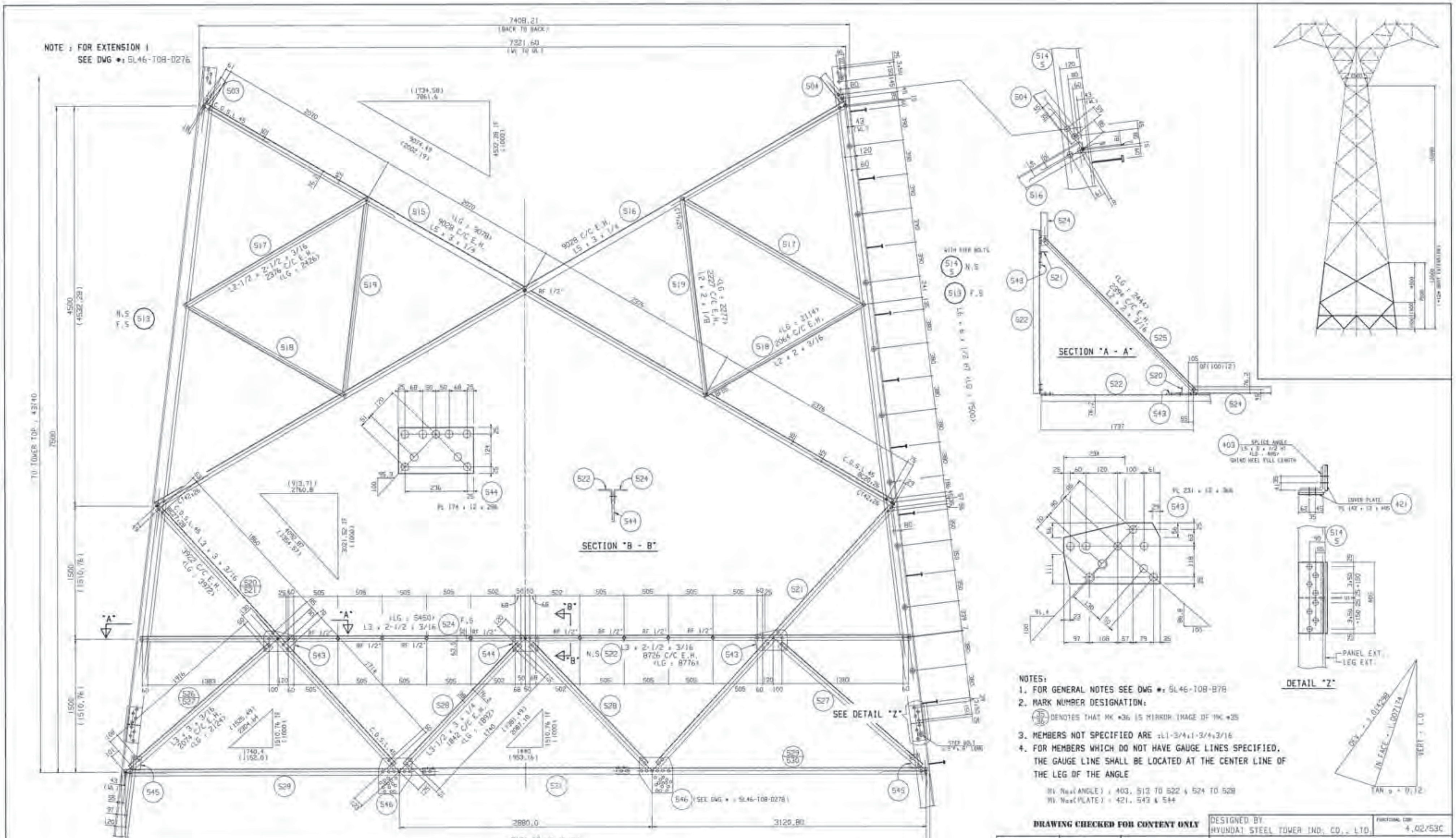
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+12m, +15m & +18m BODY EXTENSION 1)

DWG No. 5L46-T08-D276

NOTE : FOR EXTENSION 1
SEE DWG #: SL46-T08-0276



NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T08-B78
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 403, 513 TO 522 & 524 TO 528
Mk No.(PLATE) : 421, 543 & 544

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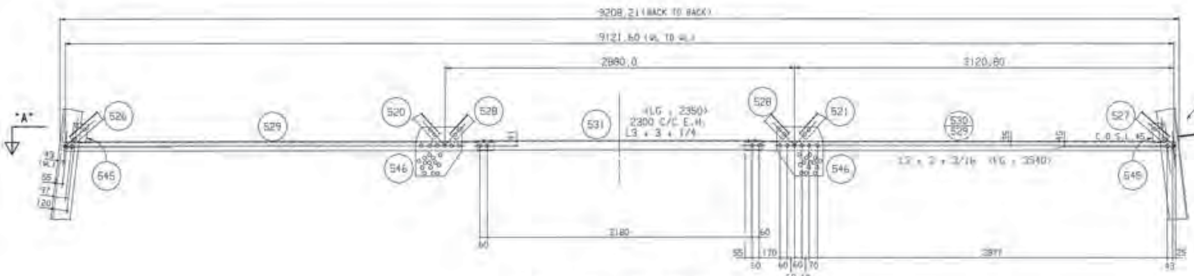
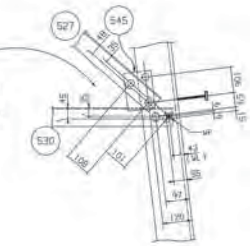
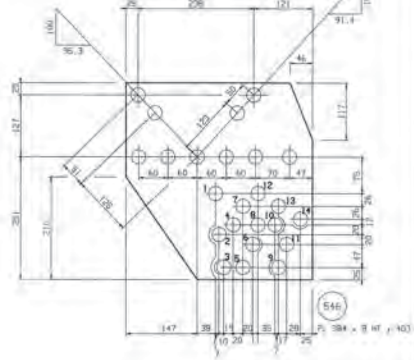
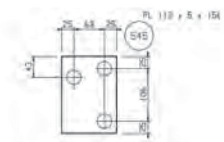
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	FUNCTIONAL CODE 4.02/53C
B.C. Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53C" TYPE TOWER (+12m BODY EXTENSION 2)	
DWG. No. SL46-T08-0277	

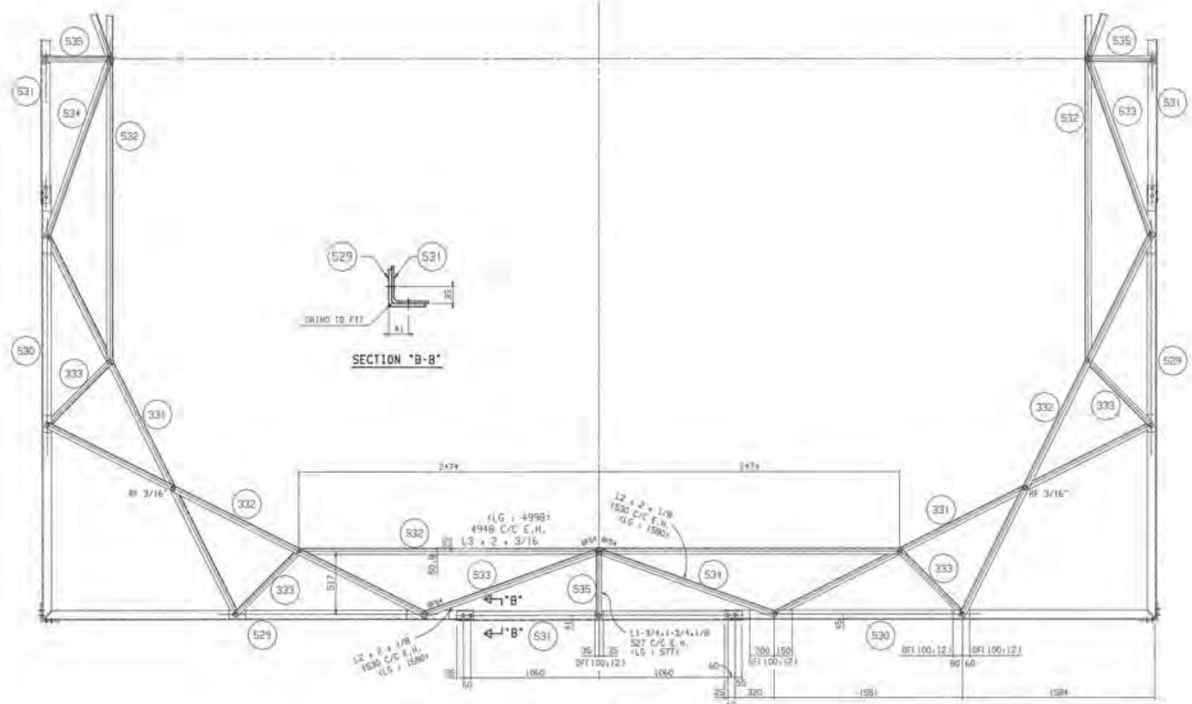


REFER TO DWG # : 5L46-T08-D277

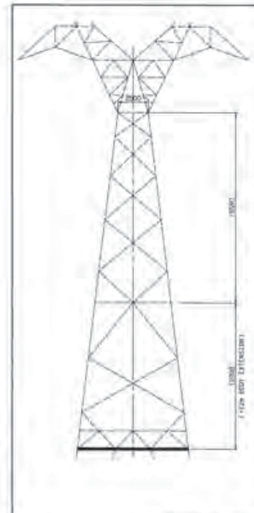








SECTION "A - A"



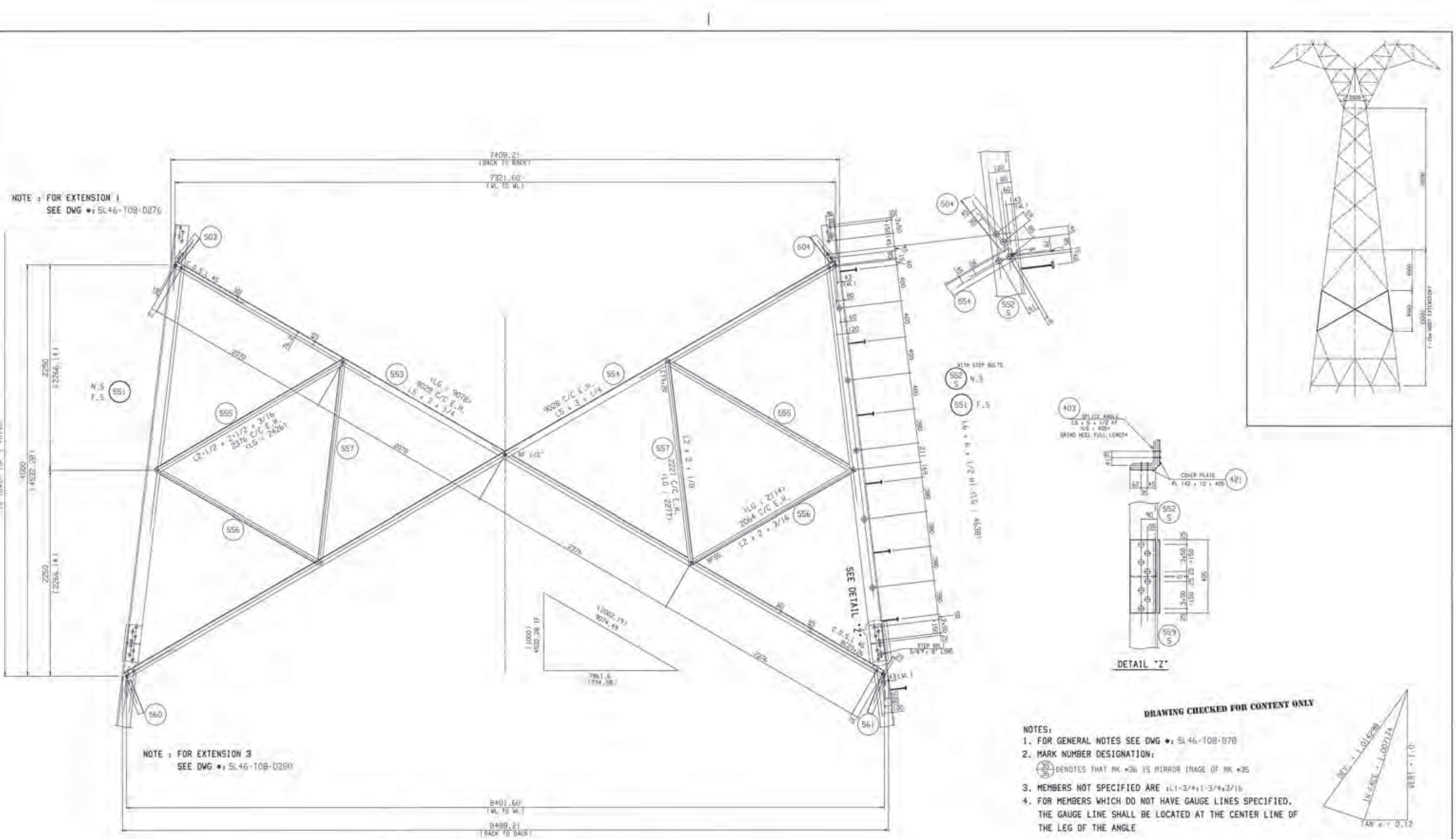
DRAWING CHECKED FOR CONTENT ONLY

NOTES;
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION;
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE ;L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK Nos(ANGLE) : 529 TO 535
MK Nos(PLATE) ; 545 & 546

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	FUNCTIONAL CODE 4.02/53C
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53C" TYPE TOWER (+12m BODY EXTENSION DIAPHRAGM)	
SCALE —	DWG No. 5L46-T08-D278

NOTE : FOR EXTENSION 1
SEE DWG #: 5L46-T08-0276



NOTE : FOR EXTENSION 3
SEE DWG #: 5L46-T08-0280

DRAWING CHECKED FOR CONTENT ONLY

NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
(35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No. (ANGLE) : 403 & 551 TO 557
Mk No. (PLATE) : 421

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.
4.02/53C

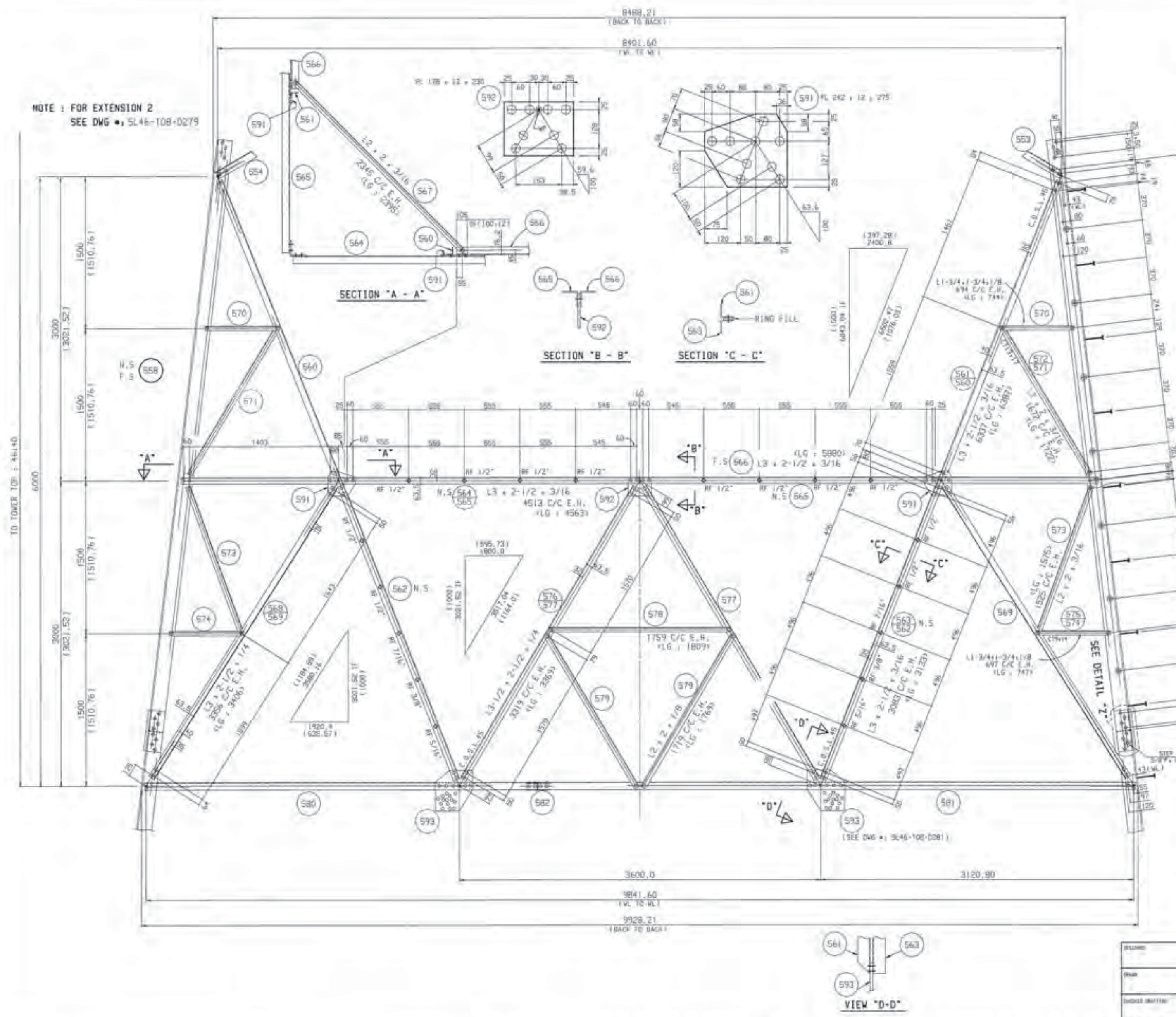
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

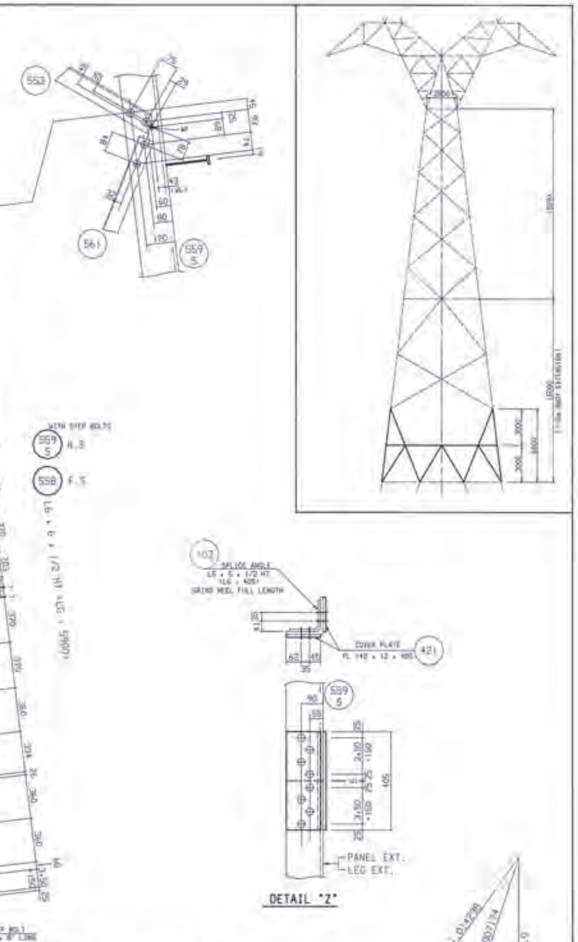
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+15m BODY EXTENSION 2)

5L46-T08-0279

NOTE : FOR EXTENSION 2
SEE DWG #: 5L46-T08-0279





NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE :L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

DRAWING CHECKED FOR CONTENT ONLY

Mk Nos(ANGLE) : 403 & 558 TO 579
Mk Nos(PLATE) : 421, 591 & 592

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

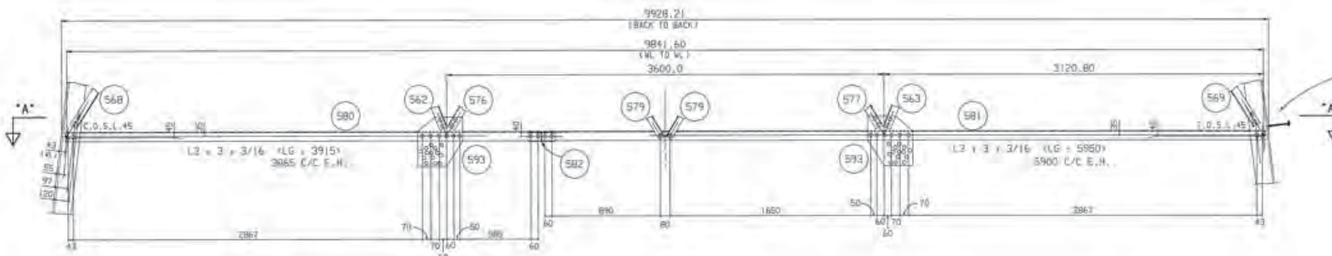
4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+15m BODY EXTENSION 3)

5L46-T08-0280



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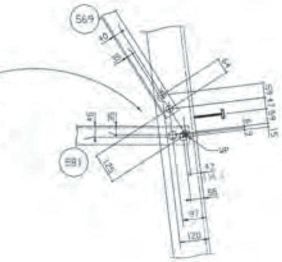
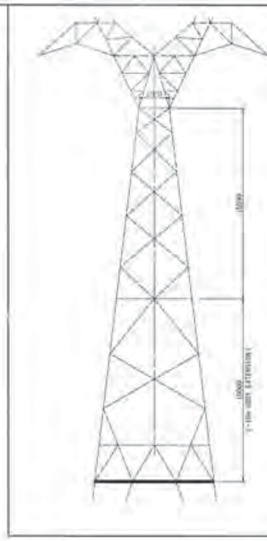
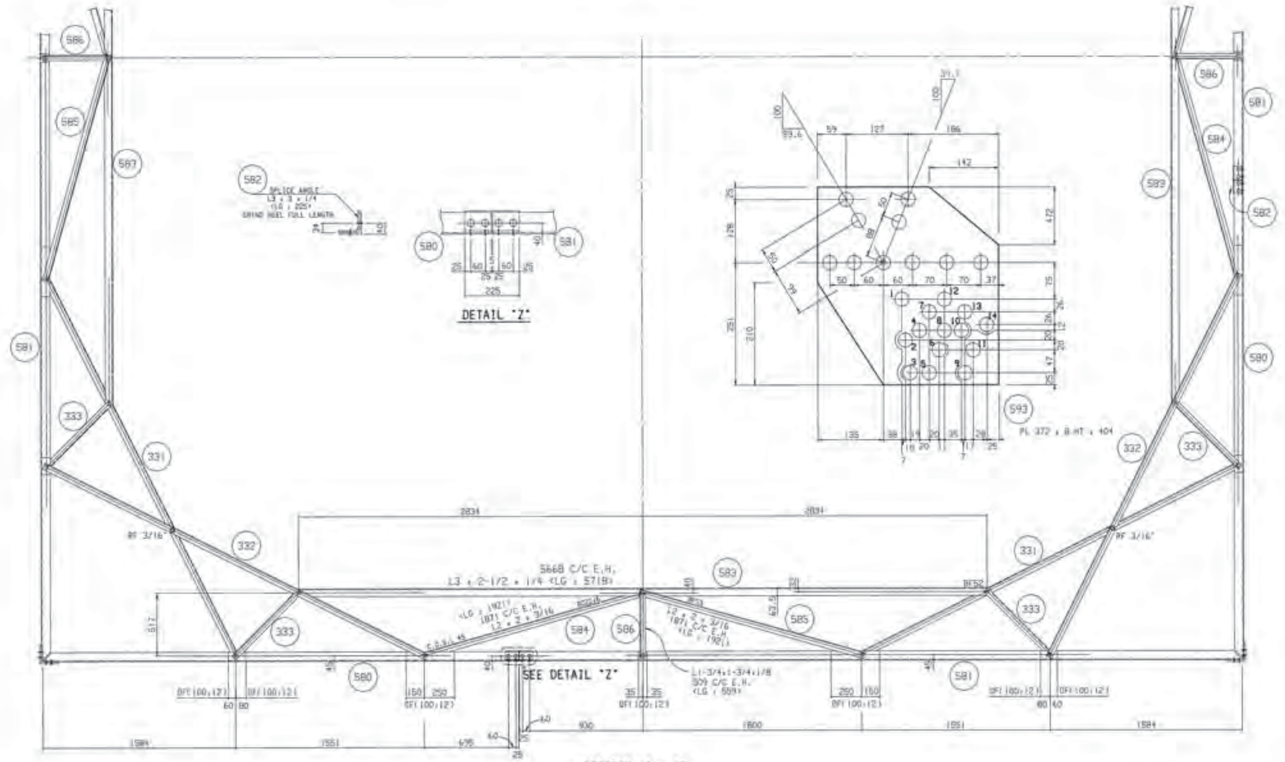






DETAIL "Z"

SECTION "A - A"

NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B78
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE :L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 580 TO 586
Mk No.(PLATE) : 593

DRAWING CHECKED FOR CONTENT ONLY

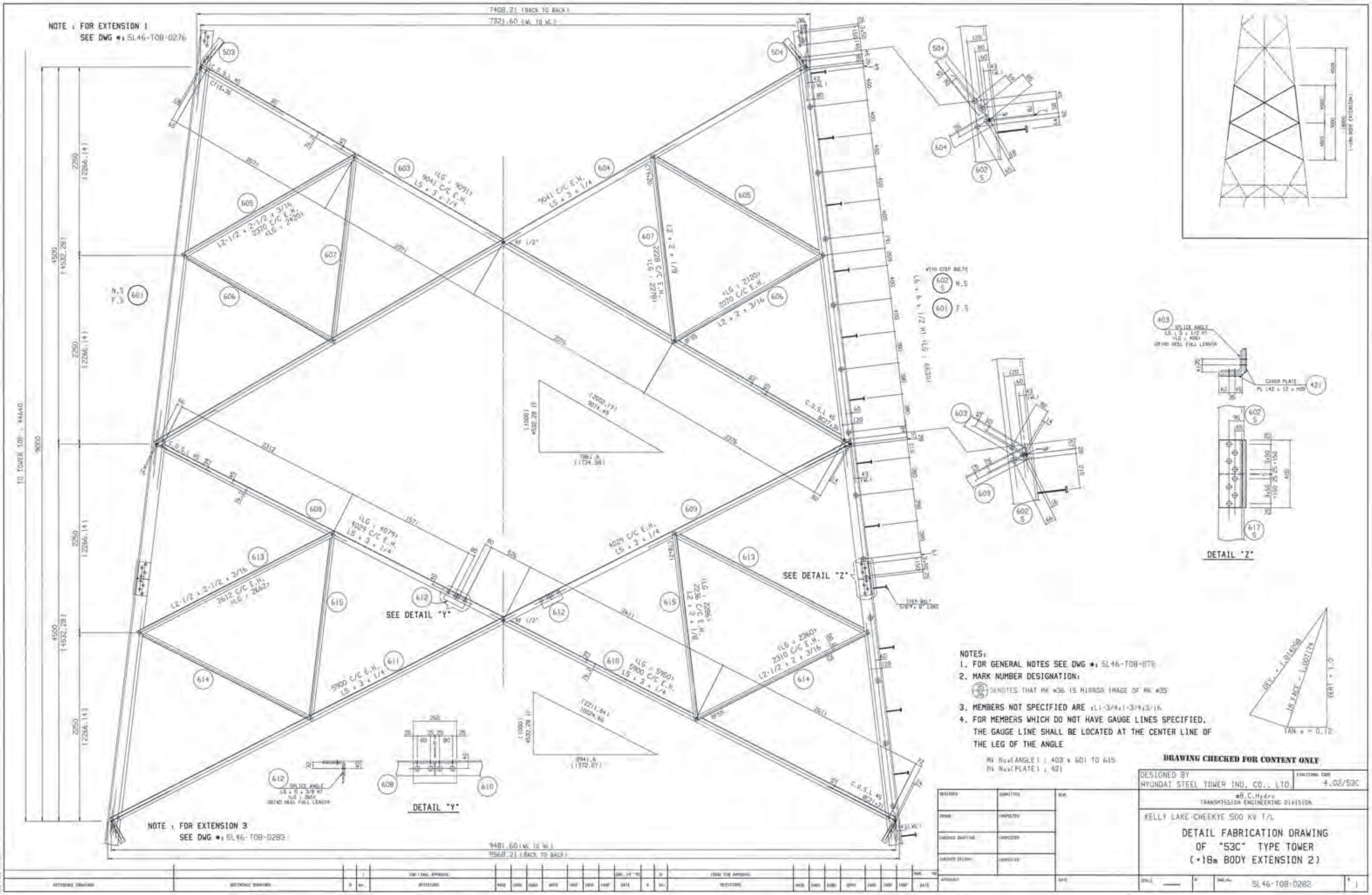
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD. | #.02/53C

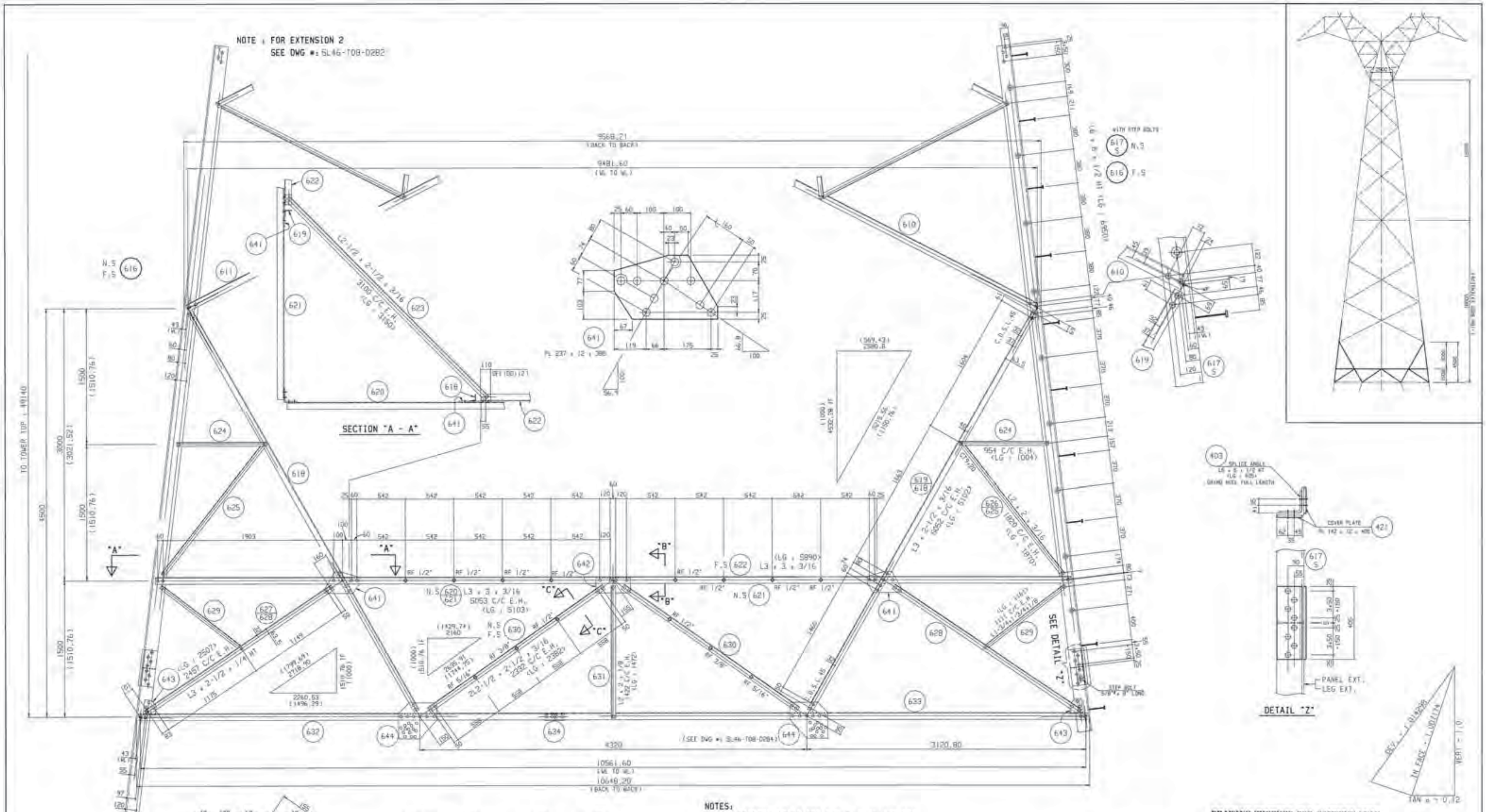
B.C.Hydro TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+15m BODY EXTENSION DIAPHRAGM)

DWG. No. 5L46-T08-D281


NOTE : FOR EXTENSION 1
SEE DWG #: SL46-T08-0276
7408.21 (BACK TO BACK)
7321.60 (WL TO WL)
N.S 601 F.S
SEE DETAIL "Y"
SEE DETAIL "Z"
DETAIL "Y"
DETAIL "Z"
NOTE : FOR EXTENSION 3
SEE DWG #: SL46-T08-0283
9481.60 (WL TO WL)
9568.21 (BACK TO BACK)
TO TOWER TOP : 44640
NOTES:
1. FOR GENERAL NOTES SEE DWG #: SL46-T08-878
2. MARK NUMBER DESIGNATION:
DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE
MK Nos(ANGLE) : 403 & 601 TO 615
MK Nos(PLATE) : 421
DRAWING CHECKED FOR CONTENT ONLY
DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.
4.02/53C
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION
KELLY LAKE-CHEEKYE 500 KV T/L
DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+18m BODY EXTENSION 2)
SL46-T08-0282



SECTION "B - B"

SECTION "C - C"

RING FILL

NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T08-B78
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE :L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 403 & 616 TO 631
Mk No.(PLATE) : 421, 641 & 642

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DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

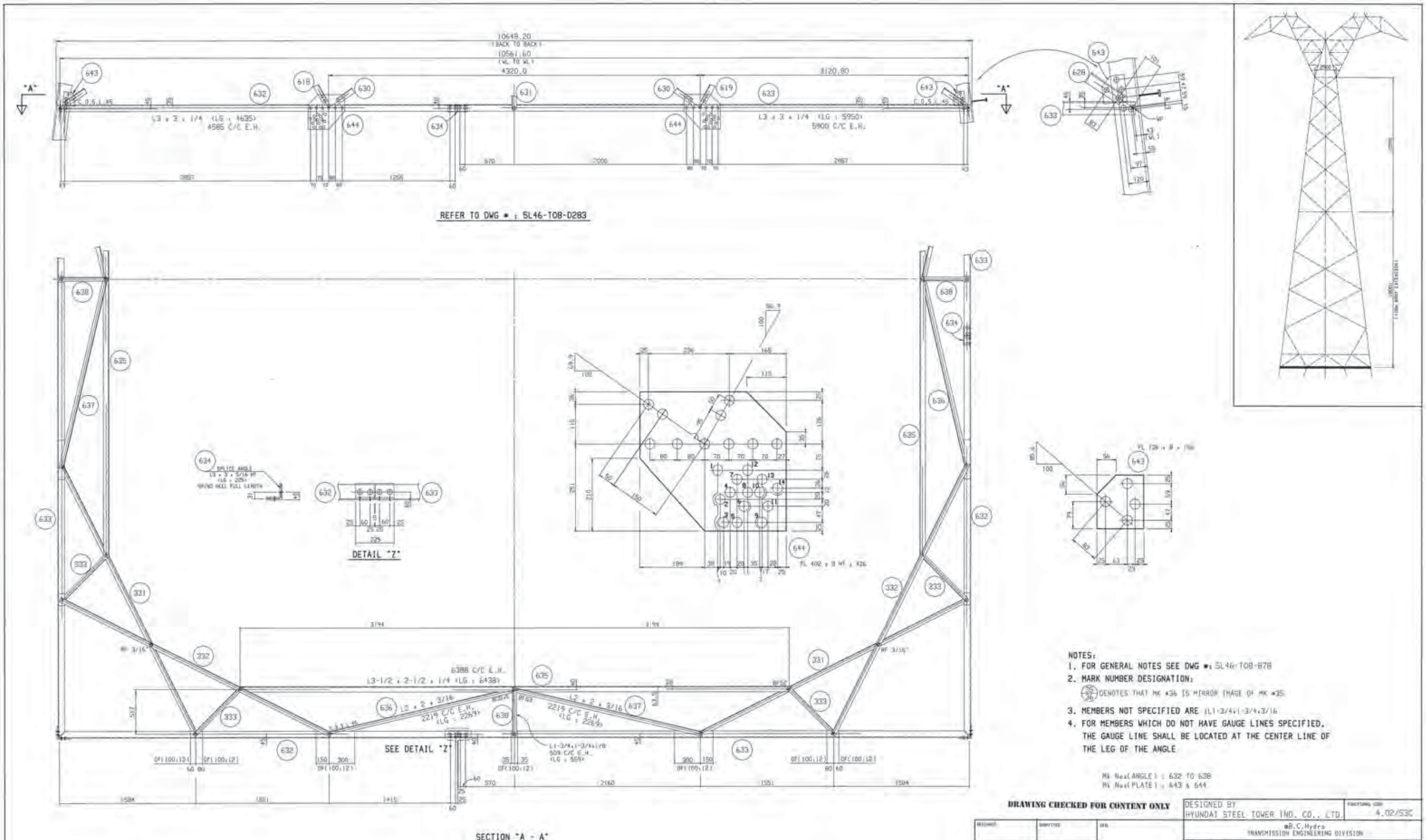
4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+18m BODY EXTENSION 3)

SL46-T08-D283



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   36/35 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE :L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 632 TO 638
Mk Nos(PLATE) : 643 & 644

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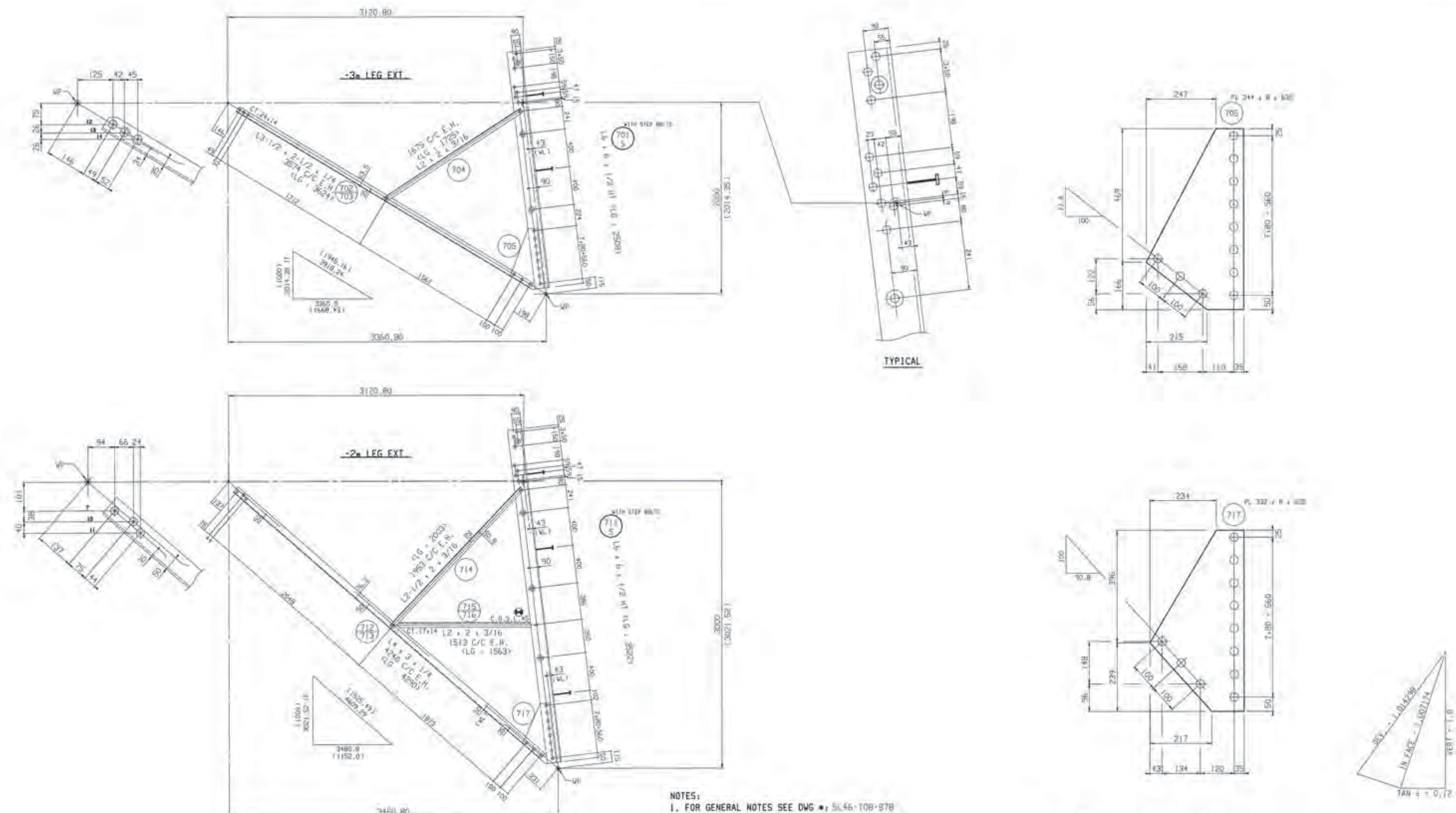
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	4.02/53C
©B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53C" TYPE TOWER (+18m BODY EXTENSION DIAPHRAGM)	
DWG.No. 5L46-T08-D284	1



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 701 TO 704 & 711 TO 716
Mk No.(PLATE) : 705, 717

DRAWING CHECKED FOR CONTENT ONLY

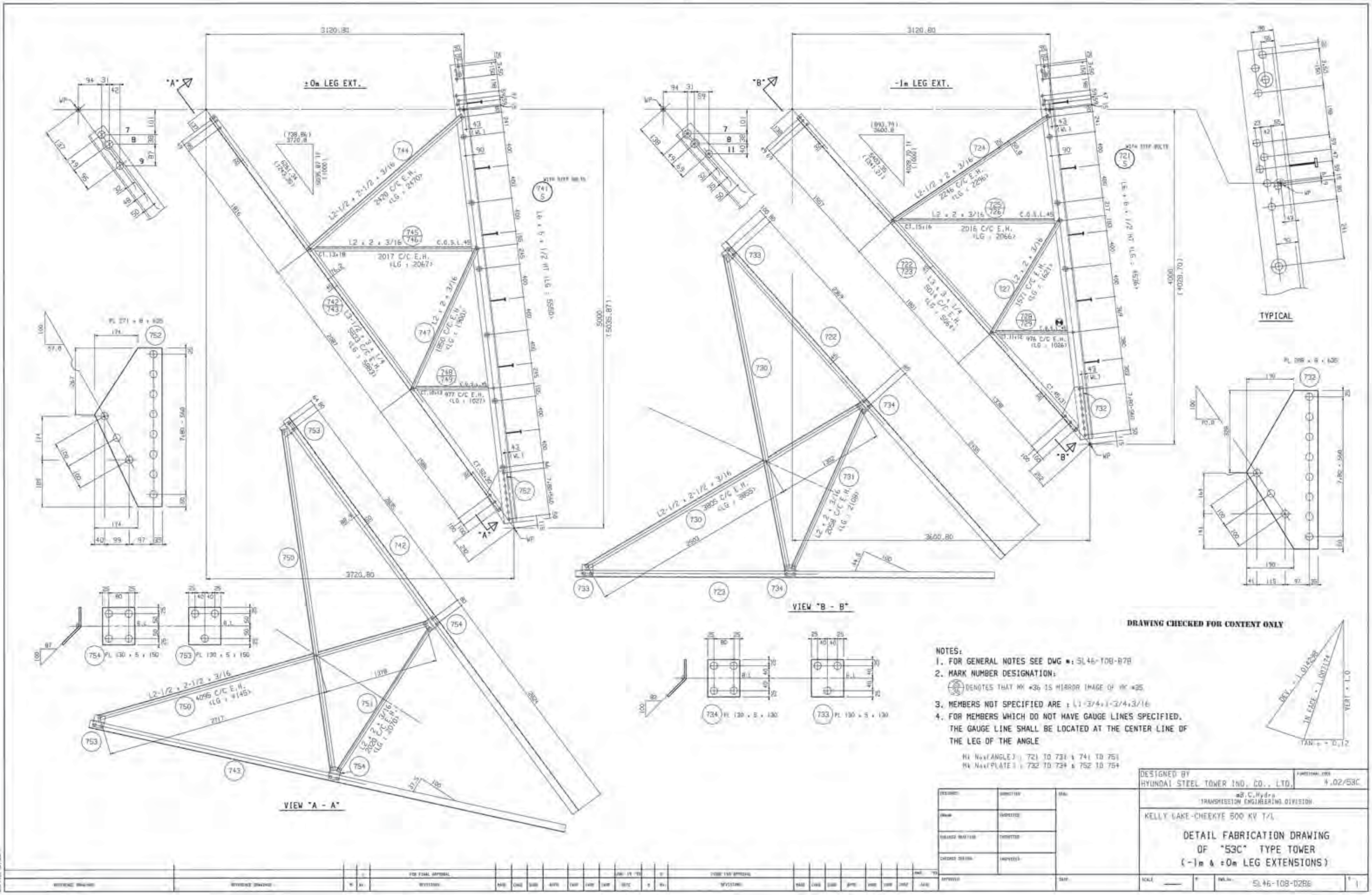
DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.
4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(-3m & -2m LEG EXTENSIONS)

DWG No. 5L46-T08-0285



NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T08-878
2. MARK NUMBER DESIGNATION:
   (25/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4×1-3/4×3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 721 TO 731 & 741 TO 751
Mk No.(PLATE) : 732 TO 734 & 752 TO 754

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.

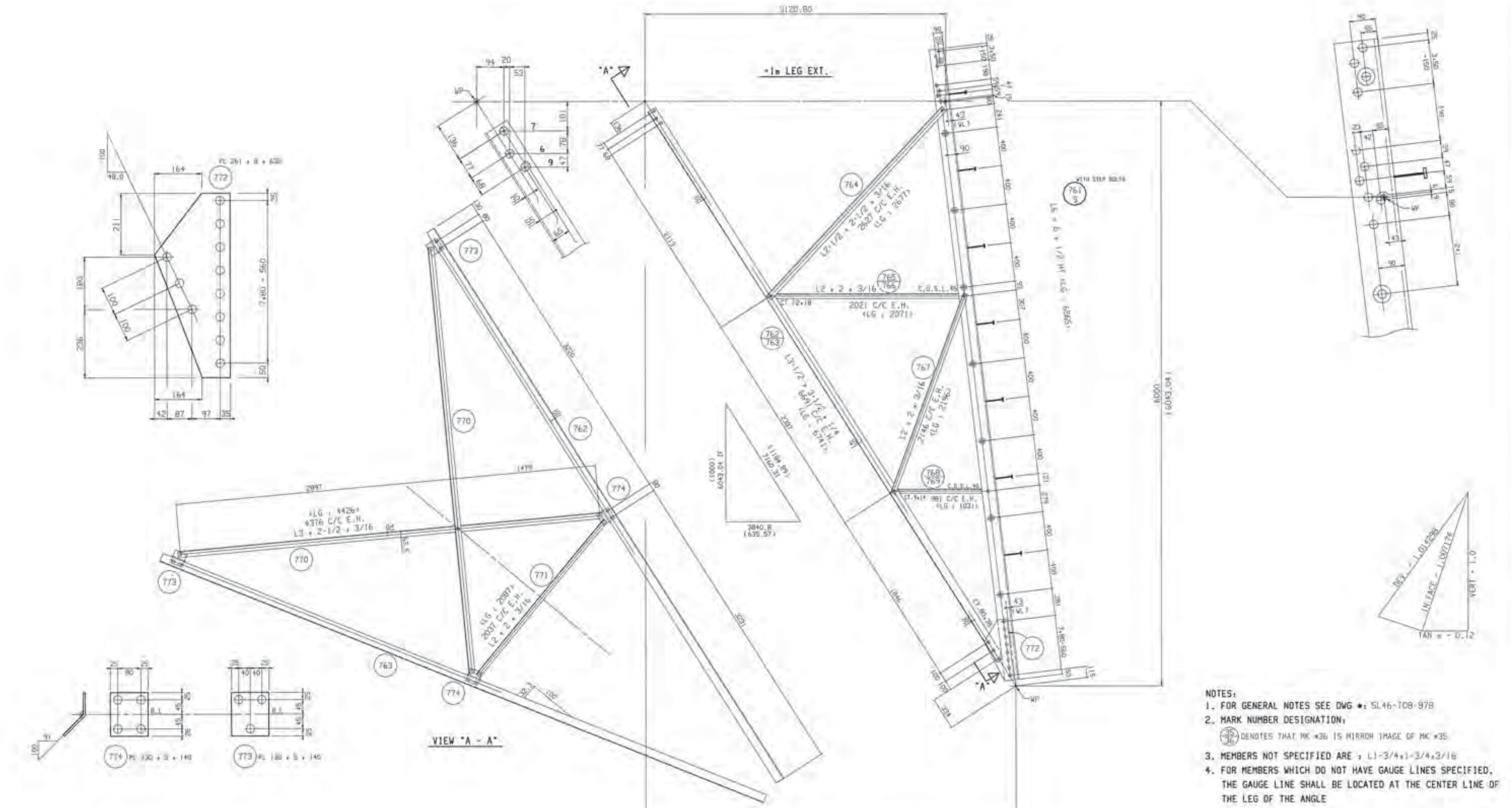
4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(-1m & ±0m LEG EXTENSIONS)

SL46-T08-0286



NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4×1-3/4×3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 761 TO 771
Mk No.(PLATE) : 772 TO 774

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DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

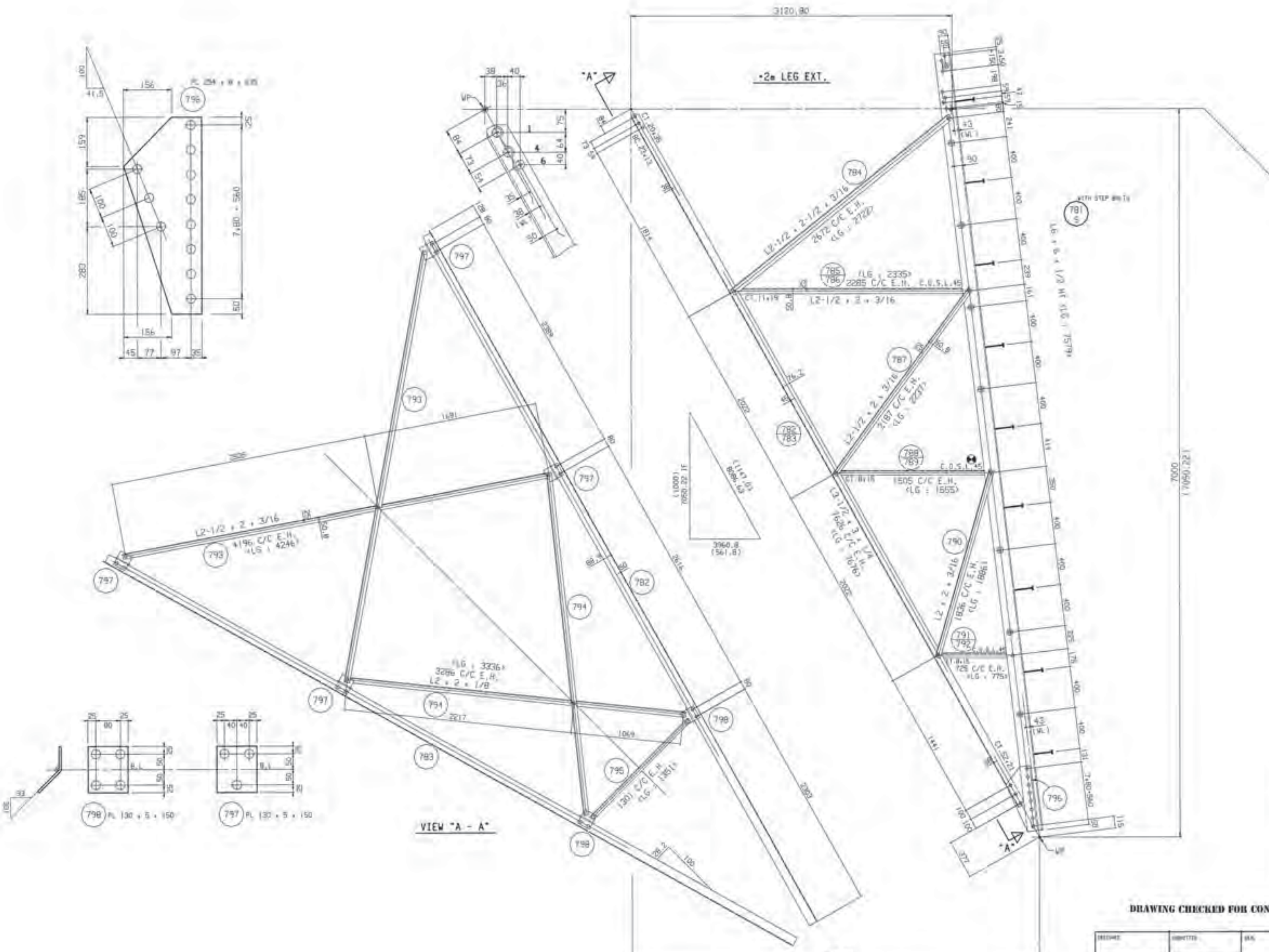
#.02/53C

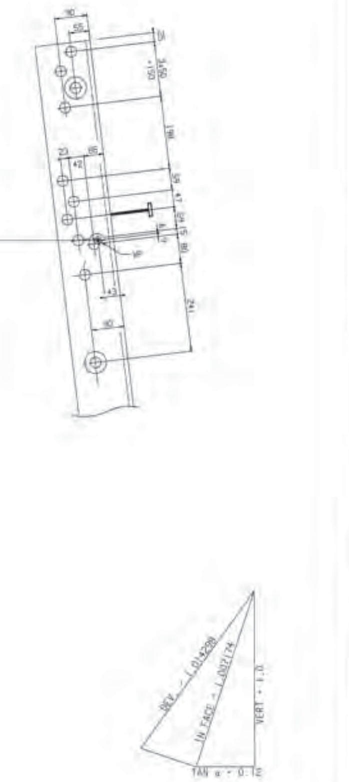
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+1m LEG EXTENSION)

SL46-T08-0287





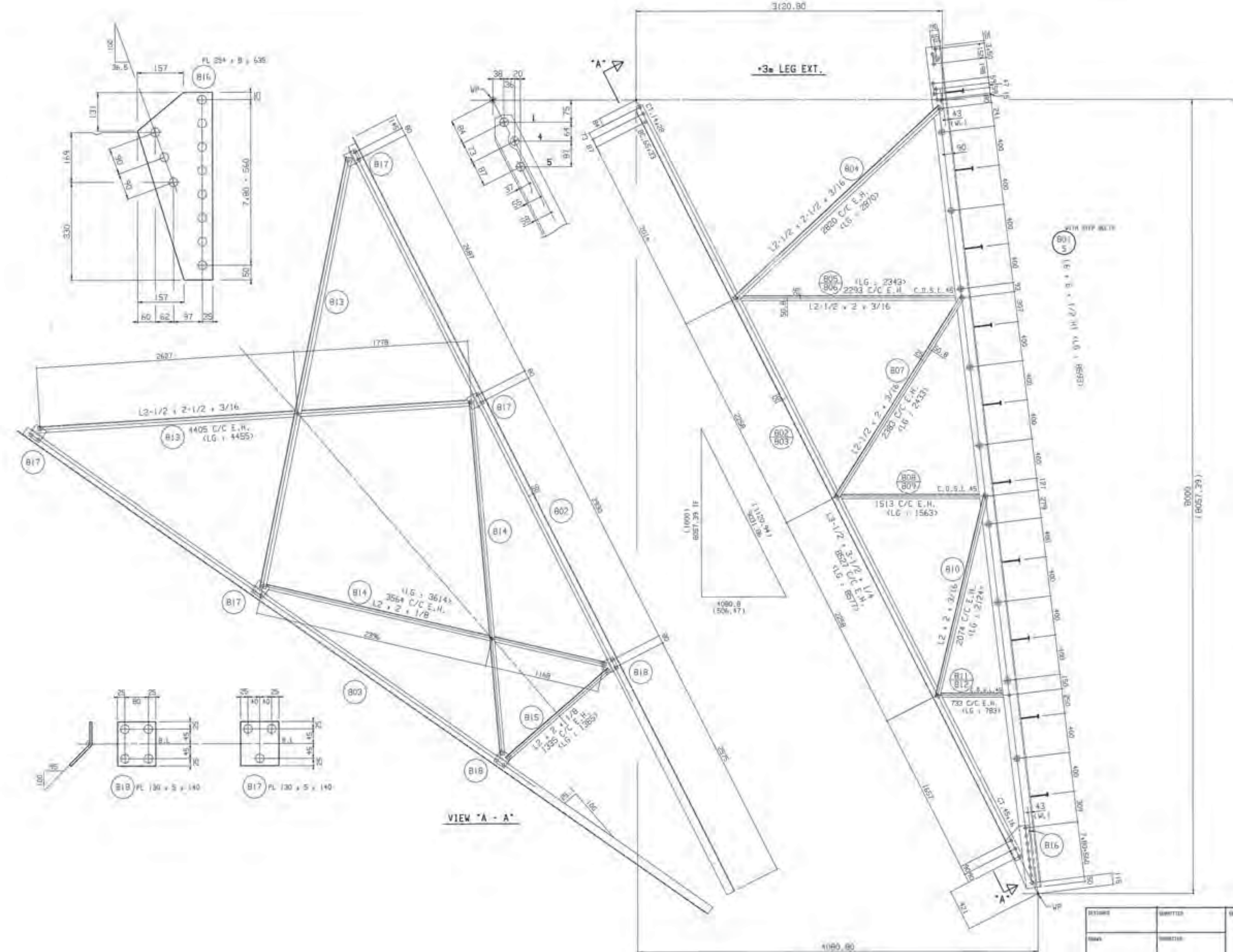
NOTES:

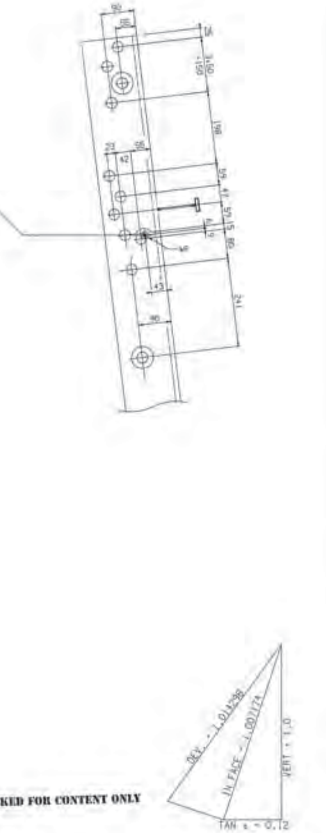
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 781 TO 795
Mk Nos(PLATE) : 796 TO 798

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	4.02/53C
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53C" TYPE TOWER (+2m LEG EXTENSION)	
5L46-T08-0288	1





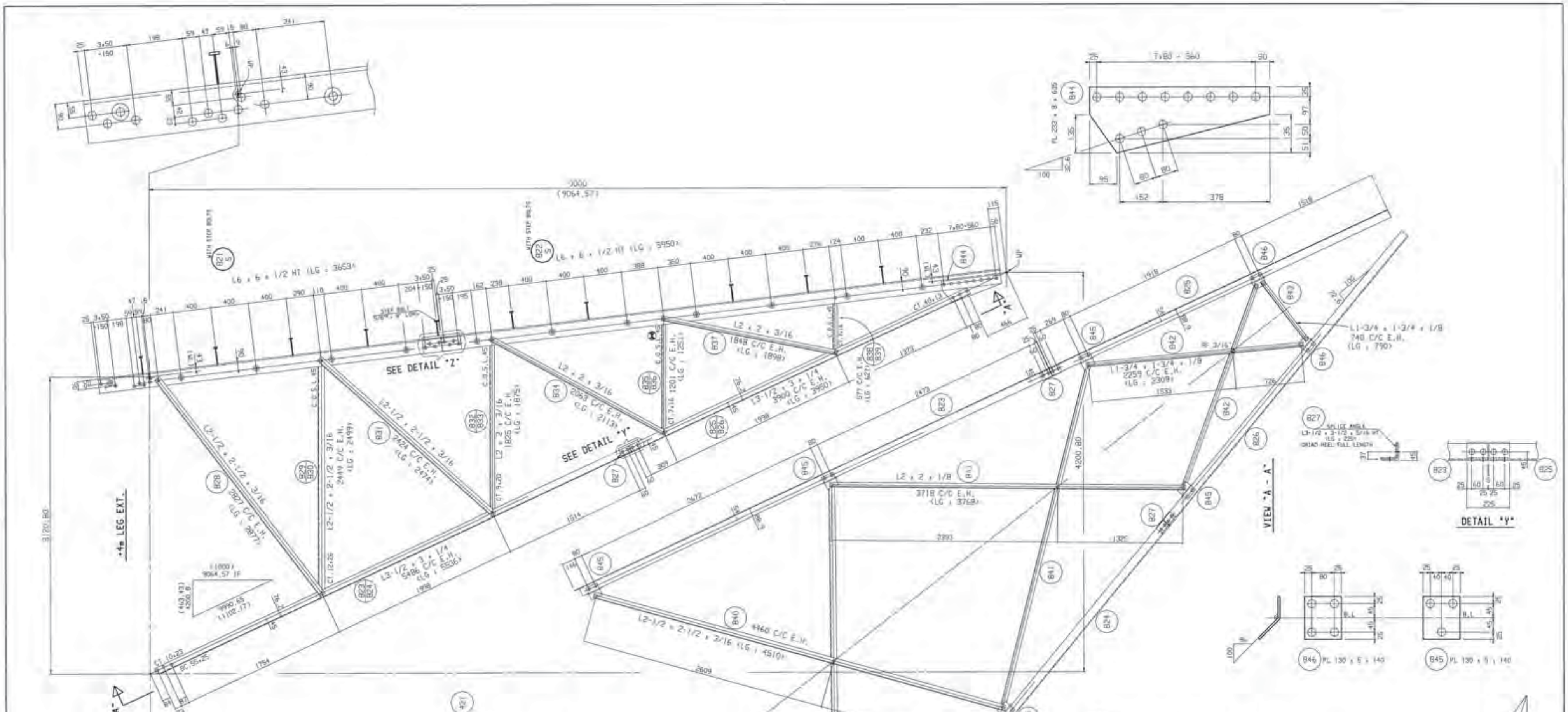
DRAWING CHECKED FOR CONTENT ONLY

NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (25/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #25
3. MEMBERS NOT SPECIFIED ARE ; L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK No.(ANGLE) : 801 TO 815
MK No.(PLATE) : 816 TO 818

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	4.02/53C
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53C" TYPE TOWER (+3m LEG EXTENSION)	
SCALE ———	DWG No. 5L46-T08-0289



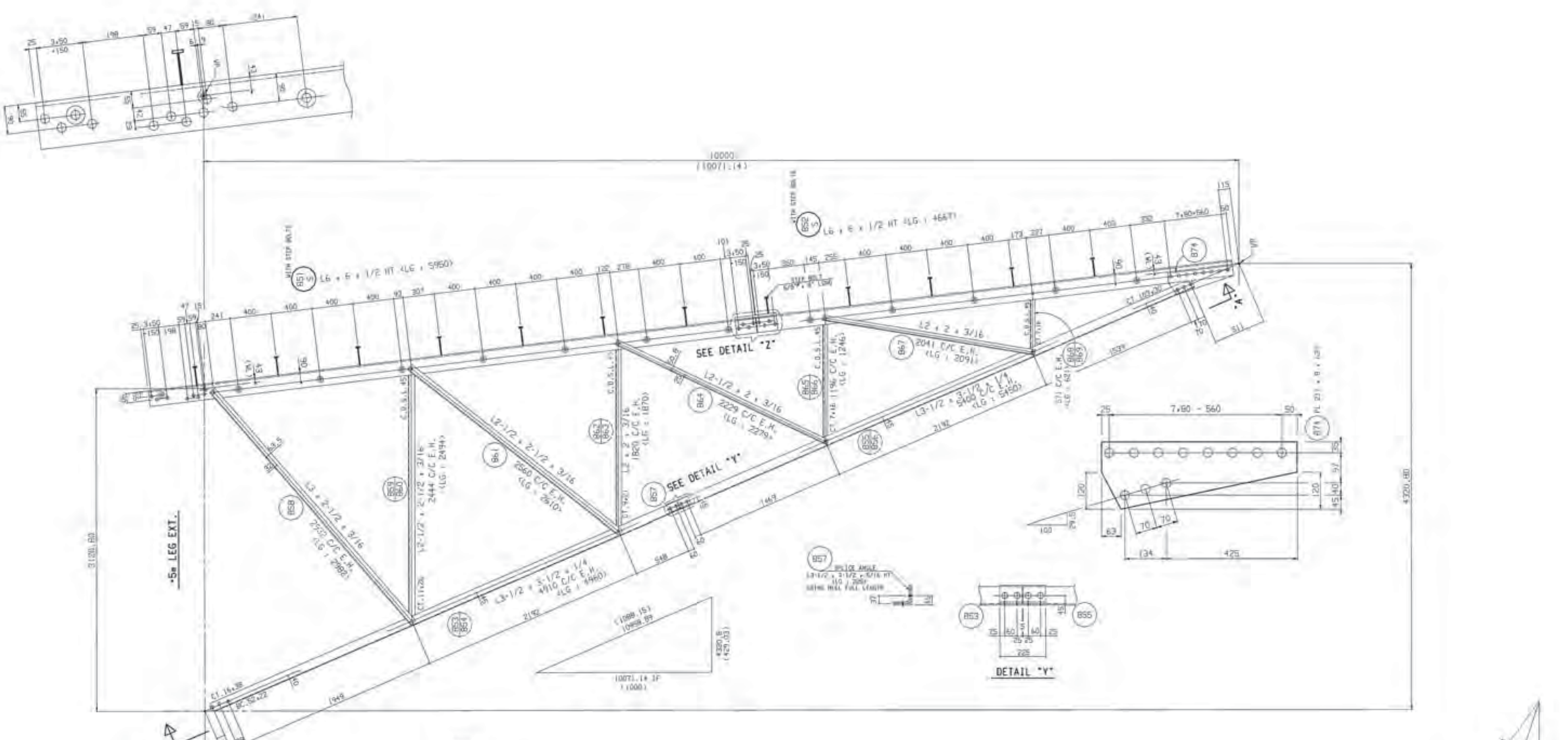
NOTES:

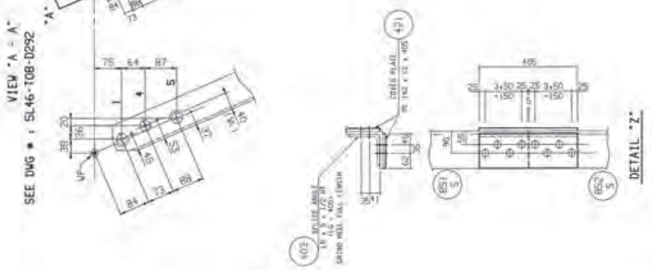
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

DRAWING CHECKED FOR CONTENT ONLY

Mk Nos(ANGLE) : 403 & 821 TO 843
Mk Nos(PLATE) : 421 & 844 TO 846

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	4.02/53C
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53C" TYPE TOWER (+4m LEG EXTENSION)	
DWG. No. 5L46-T08-0290	1





NOTES;

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (36/35) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 403 & B51 TO B69
Mk No.(PLATE) : 421 & B74

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53C

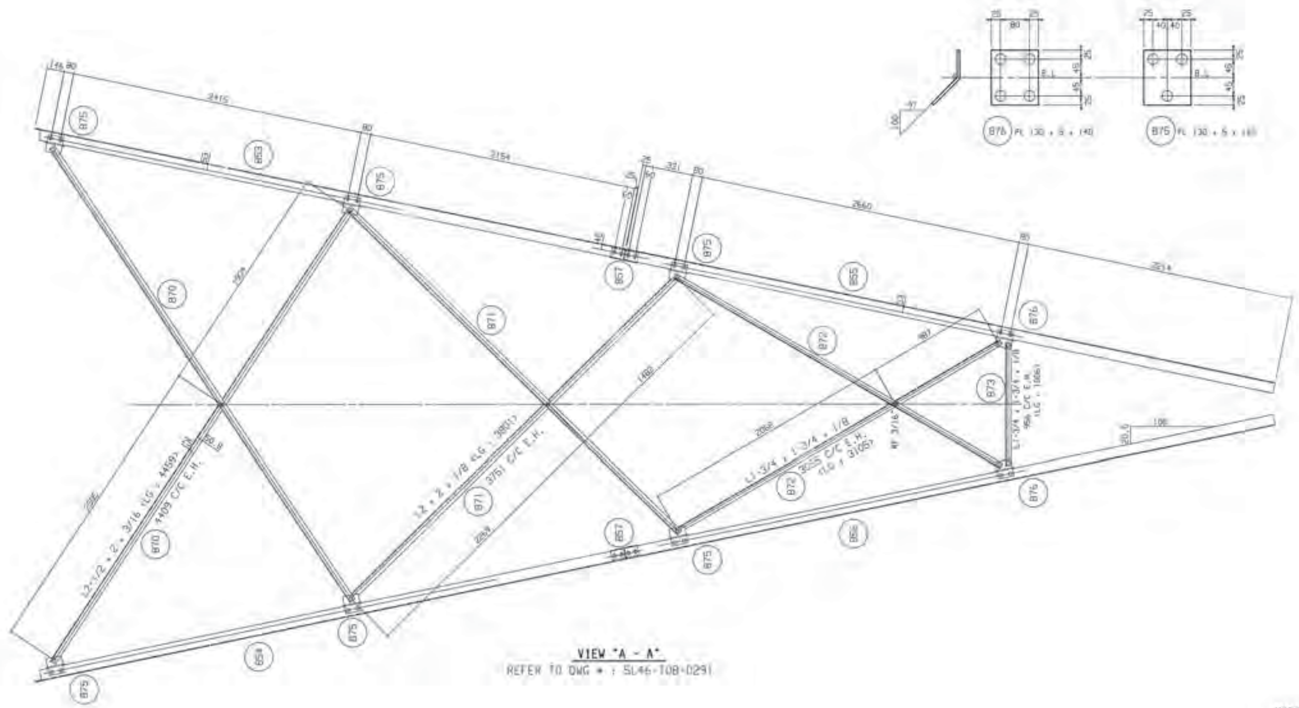
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+5m LEG EXTENSION)

DWG No. 5L46-T08-D291

D



VIEW "A - A"
REFER TO DWG # : 5L46-T08-0291

NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 870 TO 873
Mk No.(PLATE) : 875 & 876

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

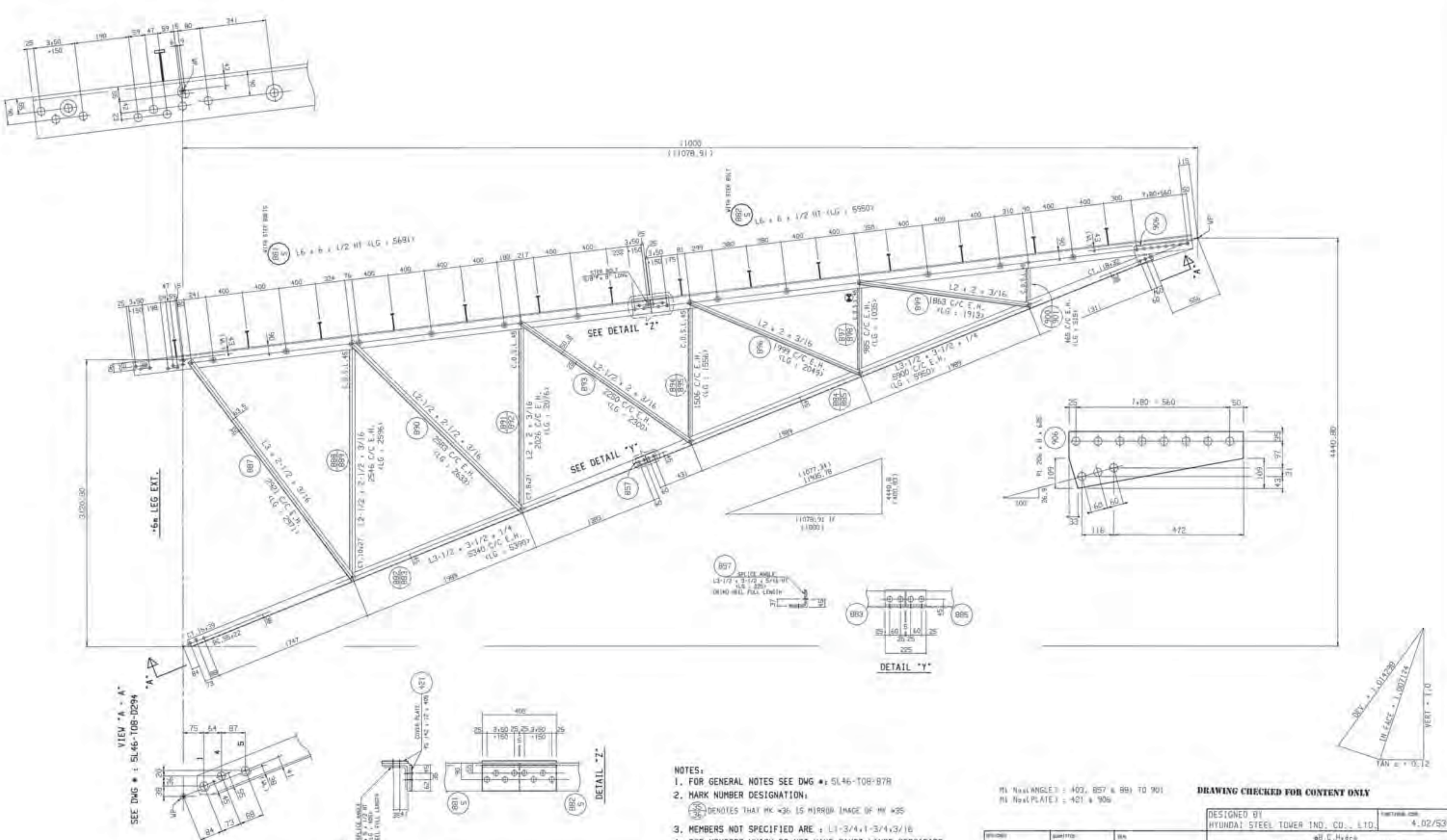
4/02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+5m LEG OBLIQUE BRACING)

5L46-T08-0292



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 403, 857 & 881 TO 901
Mk Nos(PLATE) : 421 & 906

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

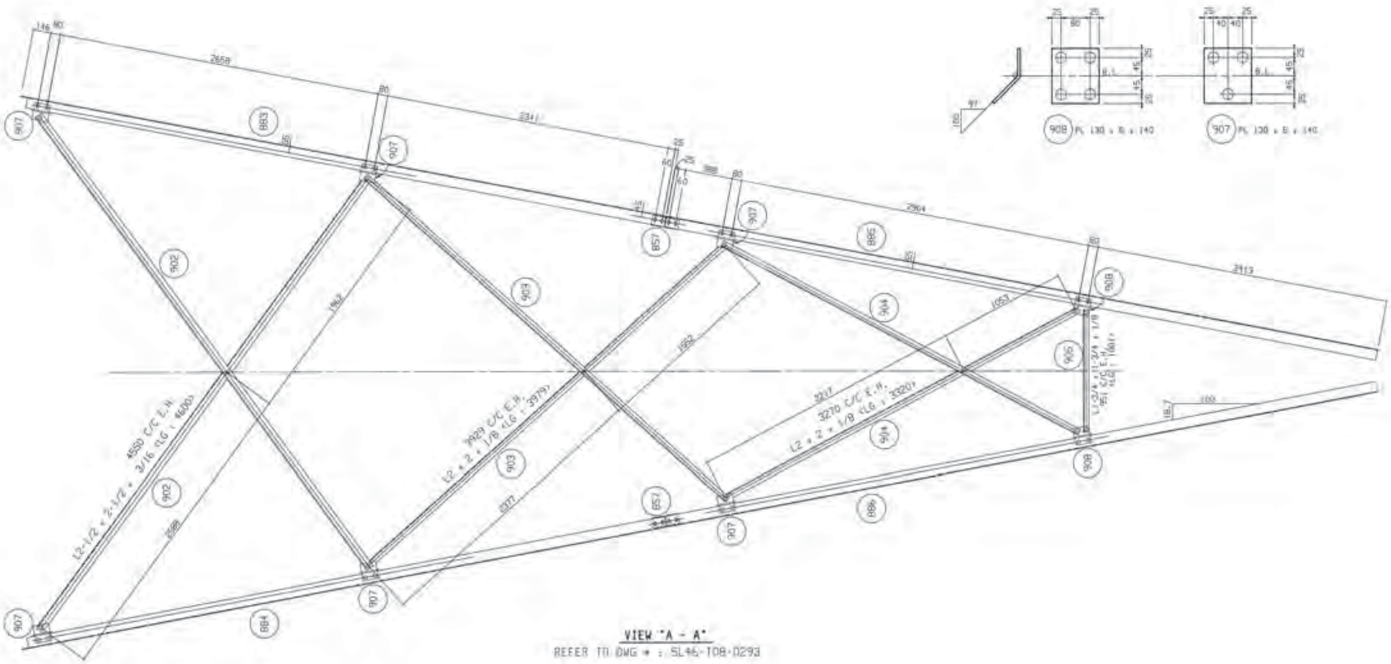
4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+6m LEG EXTENSION)

5L46-T08-0293



VIEW "A - A"
REFER TO DWG # : 5L46-T08-0293

NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
(35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 902 TO 905
Mk Nos(PLATE) : 907 & 908

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

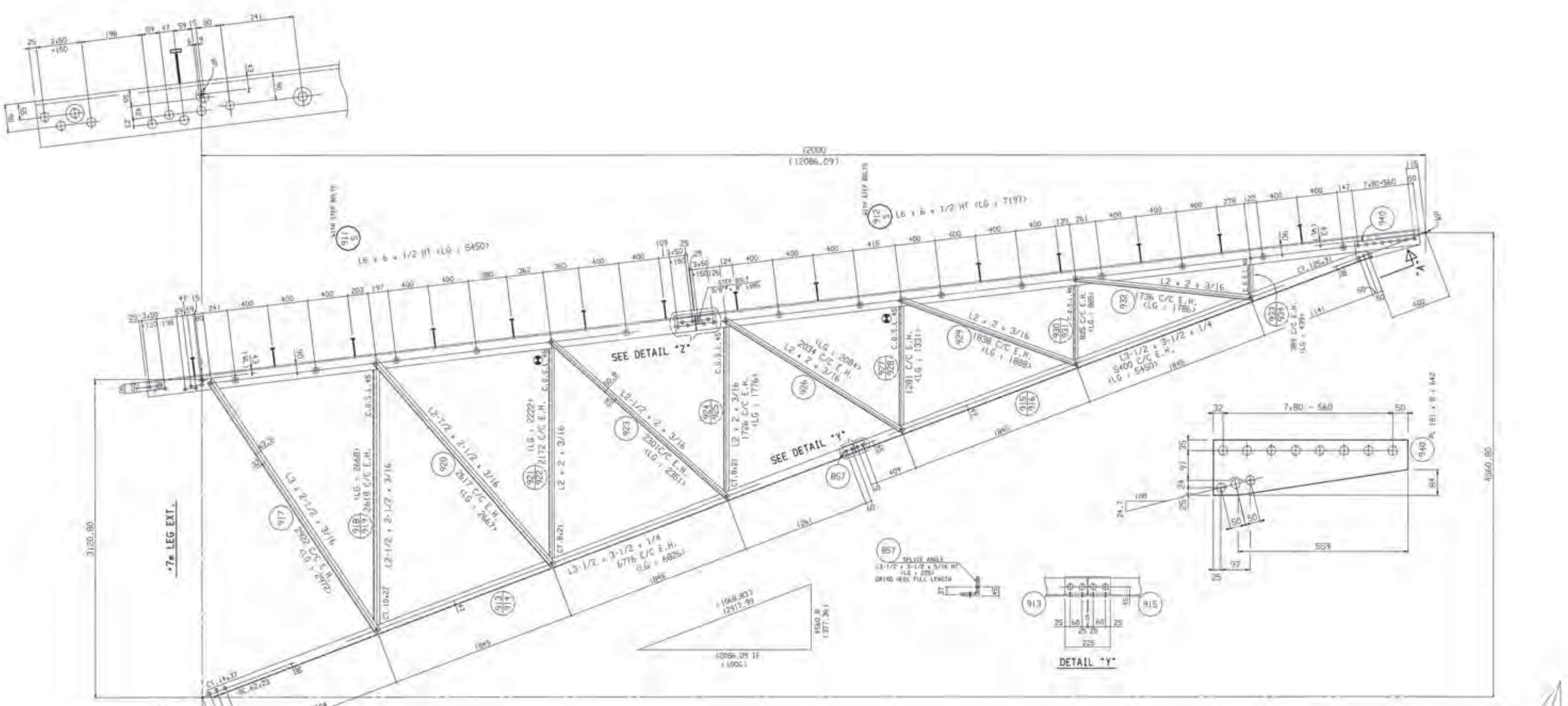
4.02/53C

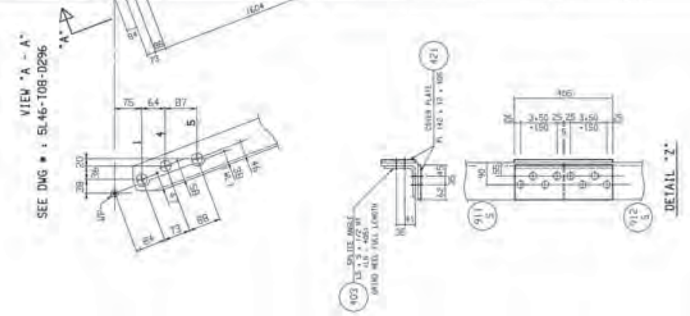
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+6m LEG OBLIQUE BRACING)

5L46-T08-0294





NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 903, 857 & 911 TO 938
Mk Nos(PLATE) : 421 & 940

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

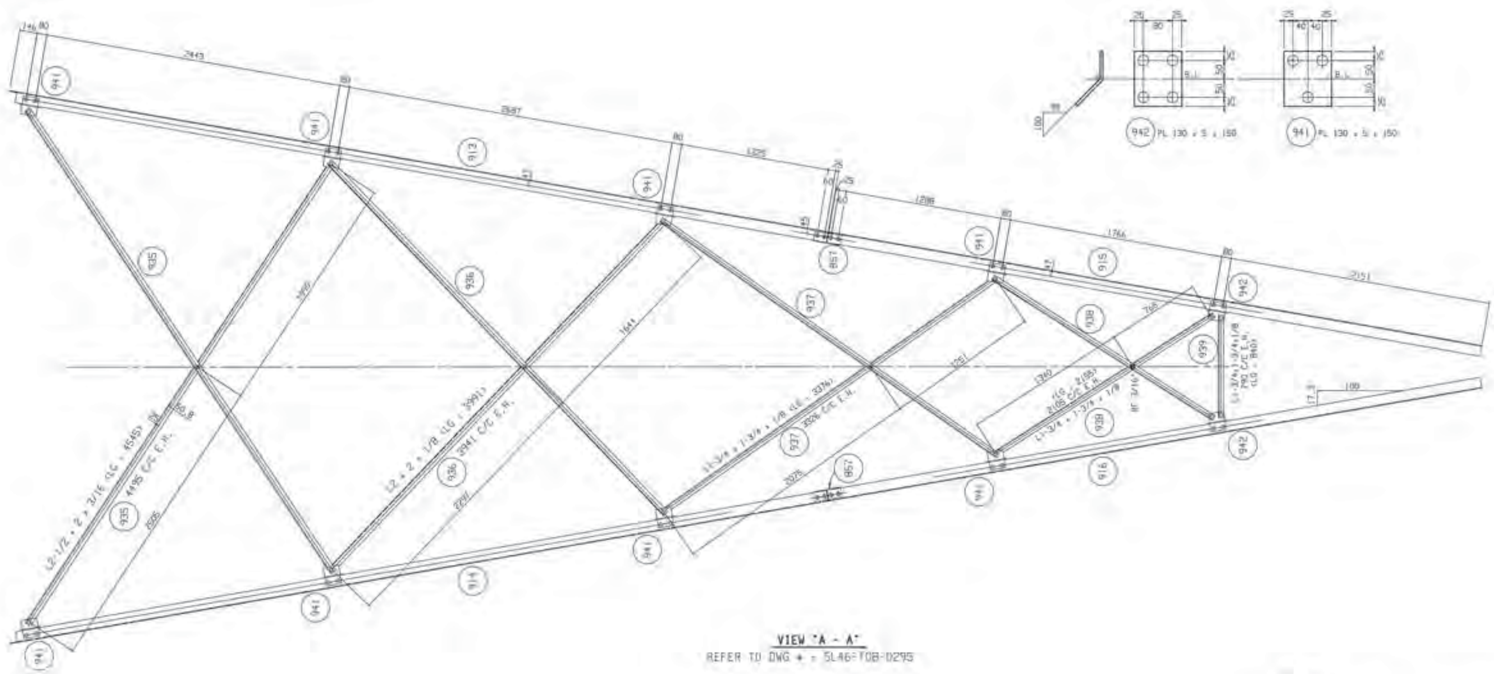
4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+7m LEG EXTENSION)

5L46-T08-0295



VIEW "A - A"
REFER TO DWG # : 5L46-T08-0295

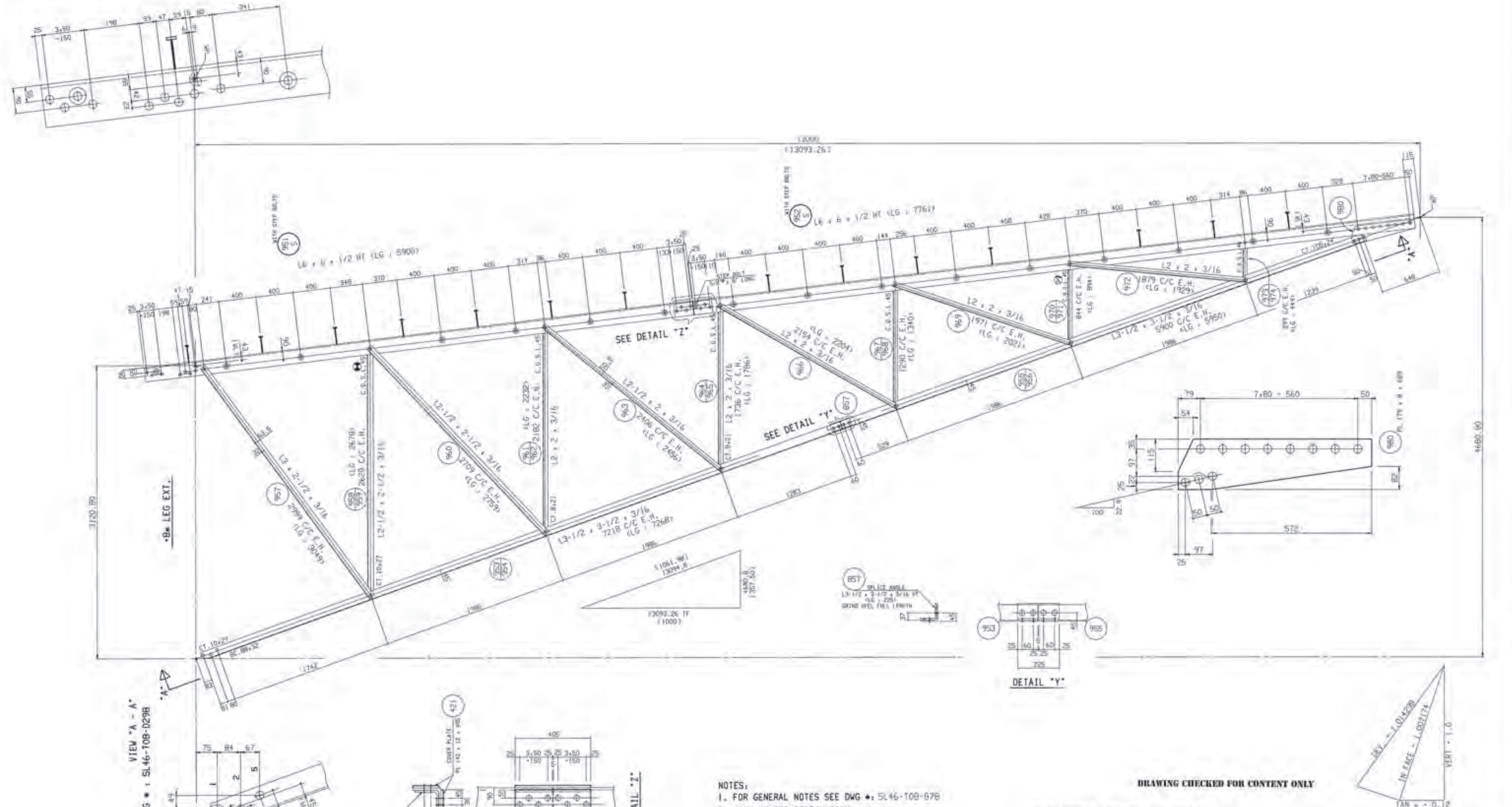
NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE ; L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 935 TO 939
Mk Nos(PLATE) : 941 & 942

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	4.02/53C
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53C" TYPE TOWER (+7m LEG OBLIQUE BRACING)	
DWG No. 5L46-T08-0296	1

D



NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

DRAWING CHECKED FOR CONTENT ONLY

Mk No.(ANGLE) : 403, 857 & 951 TO 974
Mk No.(PLATE) : 421 & 980

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

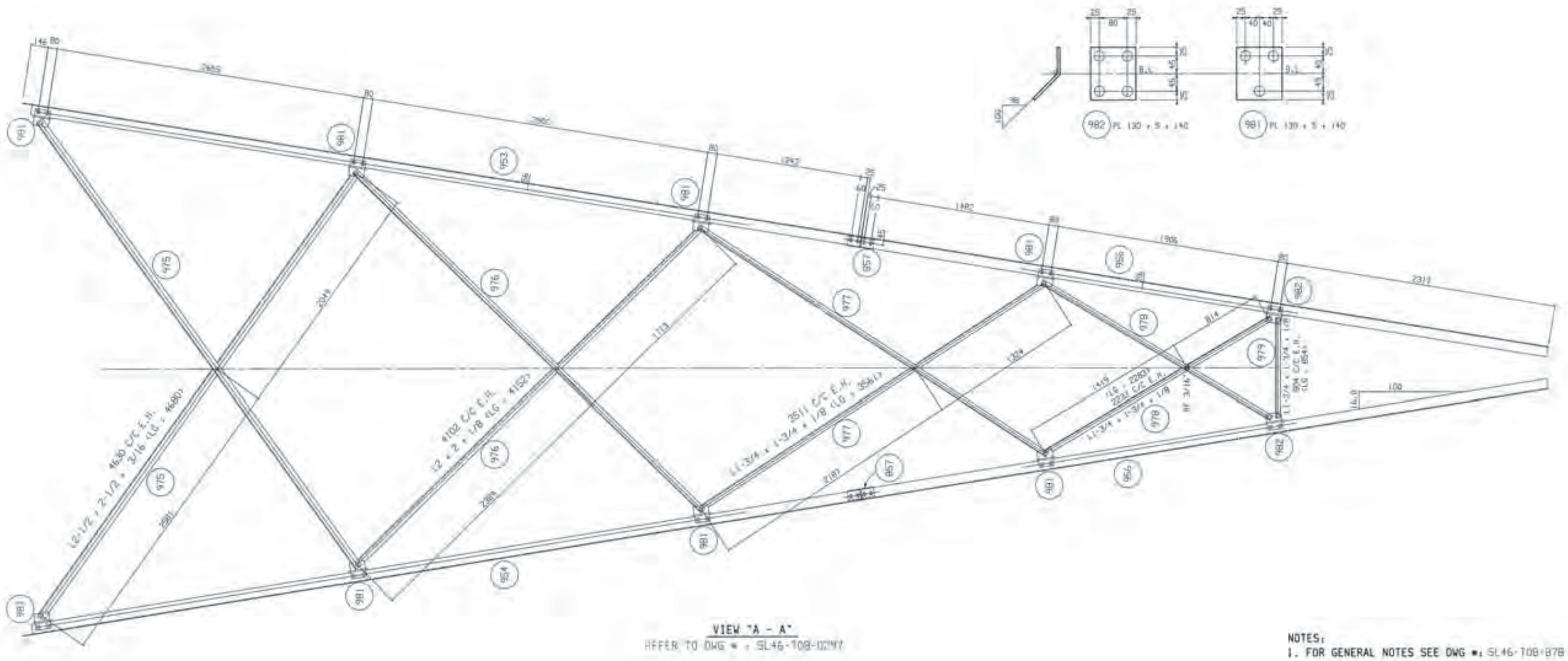
4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+8m LEG EXTENSION)

SL46-T08-0297



NOTES:
1. FOR GENERAL NOTES SEE DWG #: SL46-T08-878
2. MARK NUMBER DESIGNATION:
35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4x1-3/4x3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 975 TO 979
Mk Nos(PLATE) : 981 & 982

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

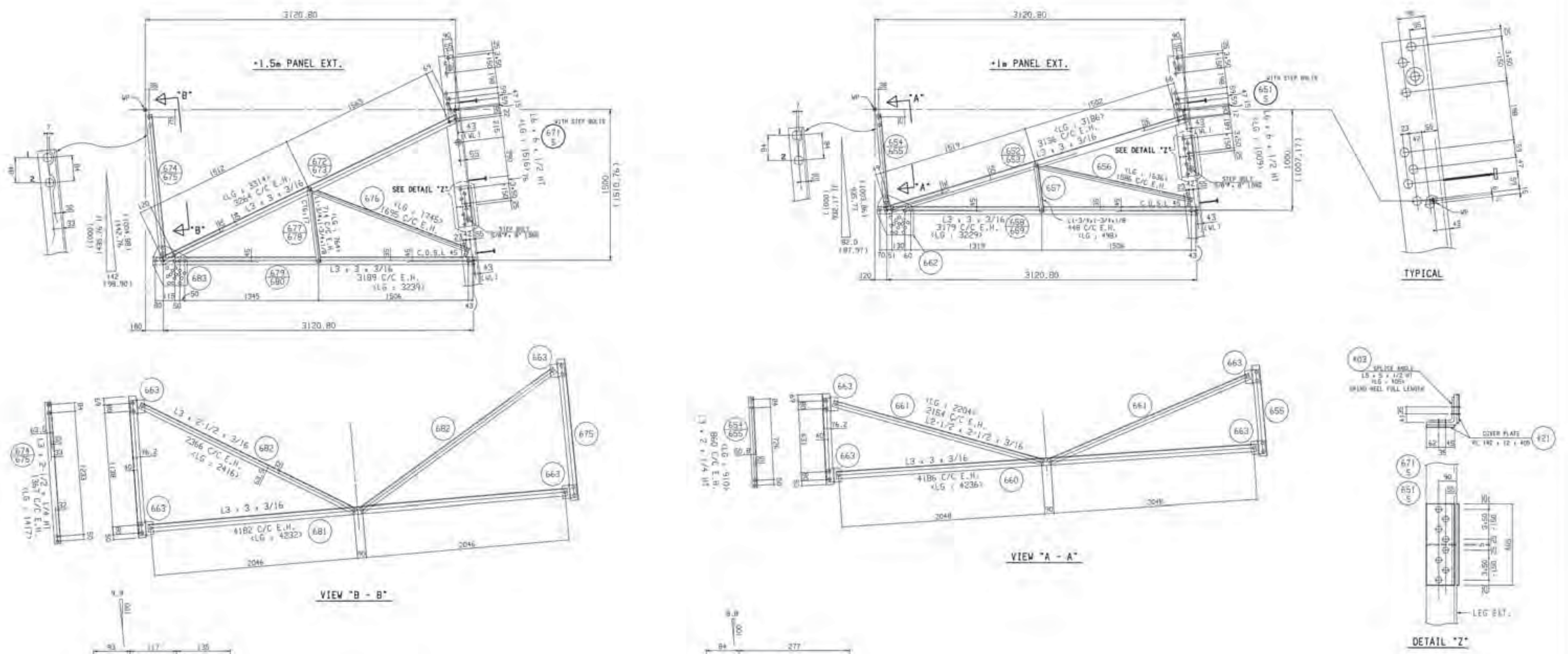
4.02/53C

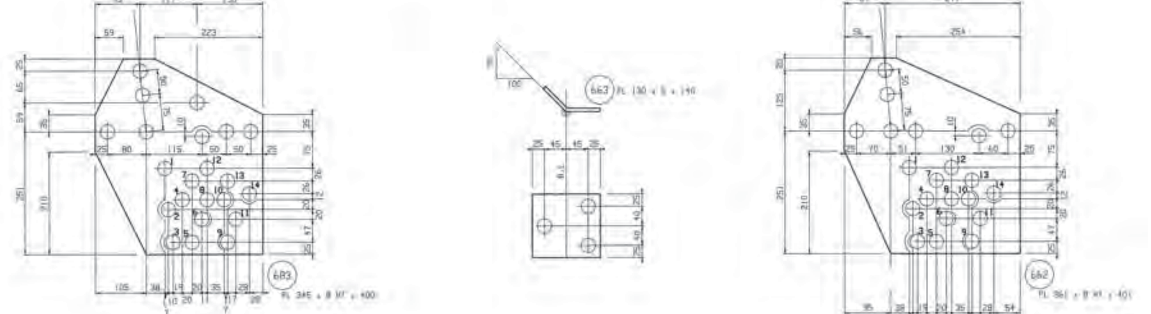
B.C. Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+8m LEG OBLIQUE BRACING)

SL46-T08-0298





NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-878
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE : L1-3/4 x 1-3/4 x 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK Nos(ANGLE) : 400, 651 TO 661 & 671 TO 682
MK Nos(PLATE) : 421, 662, 663 & 683

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

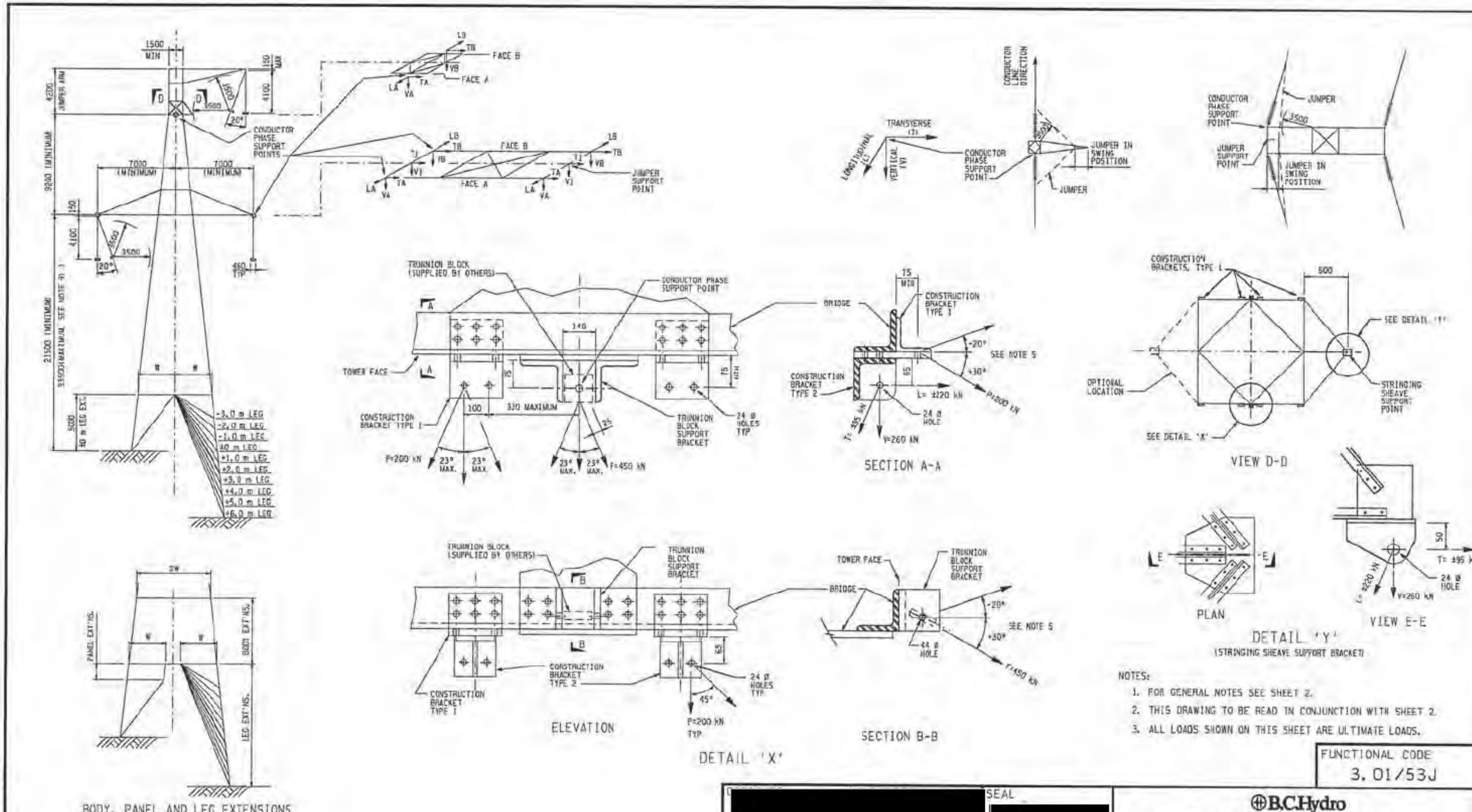
FUNCTIONAL CODE 4.02/53C

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53C" TYPE TOWER
(+1m & +1.5m PANEL EXTENSIONS)

DWG. No. 5L46-T08-0299



NOTES:

1. FOR GENERAL NOTES SEE SHEET 2.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH SHEET 2.
3. ALL LOADS SHOWN ON THIS SHEET ARE ULTIMATE LOADS.

FUNCTIONAL CODE 3.01/53J

[redacted]

SEAL

[redacted]

DATE 91-3-22

BC Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 kV T/L

TYPE 53J SELF SUPPORTING DEAD-END TOWER (0°-45°)
SPECIFICATION DRAWING

SHEET 1 OF 2

No	REVISIONS	MADE	CHKD	SUBD	APPD	INSP	INSP	INSP	DATE

SCALE —

DWG. No 5L46-T08-B7 SH.1

R

CAD FILE No. \DGN\5L46\T08B0007.DGN

B

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES EXCEPT AS OTHERWISE NOTED.
2. LOAD CASES:
   - CASE 1: 19 mm ICE, 0 WIND, -20°C (L.A. = 0°)
   - CASE 2: 19 mm ICE, 0 WIND, -20°C (L.A. = 45°)
   - CASE 3: 13 mm ICE, 0.213 kN/m² WIND, -20°C (L.A. = 0°)
   - CASE 4: 13 mm ICE, 0.213 kN/m² WIND, -20°C (L.A. = 45°)
   - CASES 5 & 6: 0 ICE, 0 WIND, -20°C (CONSTRUCTION - HARD SIDING)
   - CASE 7: SAME AS CASE 2, BUT COMBINED WITH BARE CONDUCTOR
   - CASE 8: SAME AS CASE 4, BUT COMBINED WITH BARE CONDUCTOR
3. ULTIMATE TOWER DESIGN LOADS:
   a) CONDUCTOR PHASE LOADS:
   FOR ALL LOAD CASES, THE ULTIMATE TOWER DESIGN LOADS SHALL BE THE WORKING CONDUCTOR PHASE LOAD TIMES THE LOAD FACTOR AS SPECIFIED ON THE LOAD TABLE.
   b) ULTIMATE TOWER WIND LOADS:
   FOR ALL LOAD CASES, APPLY AN ULTIMATE WIND LOAD OF 2.2 kN/m² TO THE PROJECTED AREA OF THE WINDWARD FACE OF THE ENTIRE TOWER IN THE DIRECTION SPECIFIED BELOW.
   - CASE 1, 2, 3 & 4 — LONGITUDINAL, OR AT 45° TO IT
   - CASE 5, 6 & 7 — TRANSVERSE, OR AT 45° TO IT
4. LOAD APPLICATION:
   a) THE POSITION OF FACE A AND FACE B ARE REVERSIBLE.
   b) THE TRANSVERSE LOADS SHOWN IN THE LOAD TABLE ARE REVERSIBLE.
   c) FOR ALL LOAD CASES, THE COMBINATION OF LOADS SHALL INCLUDE A VERTICAL LOAD OF 6.5 kN (VJ) AND A TRANSVERSE LOAD OF 4.0 kN (TJ) APPLIED AT THE JUMPER SUPPORT POINTS.
   d) ALL HORIZONTAL AND DIAGONAL MEMBERS SHALL BE DESIGNED TO WITHSTAND A VERTICAL LOAD OF CONCENTRATED AT THE CENTRE OF THE UNSUPPORTED LENGTH OF THE MEMBER WITHOUT PERMANENT DEFORMATION. THIS VERTICAL LOAD SHALL BE 0.3 kN IN COMBINATION WITH THE MAXIMUM AXIAL MEMBER FORCE DERIVED FROM STRUCTURAL ANALYSIS, OR 1.35 kN UNCOMBINED, WHICHEVER GOVERNS.
   e) THE OUTSTANDING LEG OF ALL STEEL ANGLES ON THE TOP PLANE OF THE JUMPER ARM SHALL FACE DOWNWARDS. THE JUMPER ARM MAIN TOP CHORD MEMBERS SHALL BE CAPABLE OF SUPPORTING A VERTICAL LOAD OF 4.45 kN CONCENTRATED AT THE CENTRE OF THE UNSUPPORTED LENGTH OF THE MEMBER IN COMBINATION WITH THE AXIAL MEMBER FORCE DERIVED FROM STRUCTURAL ANALYSIS WITHOUT PERMANENT DEFORMATION.
5. SPECIFICATIONS FOR DESIGN OF THE 'TRUNNION' BLOCK SUPPORT BRACKET AND THE CONSTRUCTION BRACKET OF TYPE 1 AND TYPE 2 ARE SHOWN IN DETAIL 'X', SHEET 1. ALL LOADS SHALL BE APPLIED WITHIN THE LIMIT OF DIRECTION SPECIFIED.
6. THE MINIMUM ELECTRICAL CLEARANCE FROM CONDUCTOR (INCLUDES JUMPER) TO THE EDGE OF STEEL TO BE 3500 mm MIN.
7. THE RANGE OF CONDUCTOR SLOPE FROM HORIZONTAL TO BE FROM -20°(UPLIFT) TO +30°(DOWNHILL).
8. FOR SPECIFICATIONS OF STEP BOLT LEG, SEE DWG. NO. 5L46-T08-B10.
9. COMPONENTS FOR EXTENSION OF STRUCTURE HEIGHT:-
   - BODY EXTENSIONS TO BE +3.0 m, +6.0 m, +9.0 m AND +12.0 m.
   - LEG EXTENSIONS TO BE FROM -3.0 m TO +6.0 m IN 1.0 m INCREMENTS.
   - PANEL EXTENSIONS TO BE +1.0 m AND +1.5 m.
10. FOR DETAILS OF DEAD-END INSULATOR STRING AND JUMPER INSULATOR STRING SEE DWG. Nos. 5L46-T08-B16 AND 5L46-T08-B17 RESPECTIVELY.
11. DIMENSION 'W' SHALL BE CONSTANT TO ENABLE BODY, PANEL AND LEG EXTENSIONS TO BE INTERCHANGEABLE.
12. A HORIZONTAL FRAME OR DIAPHRAGM IS REQUIRED AT THE BOTTOM OF ALL BODY EXTENSIONS AND, IF NO BODY EXTENSIONS ARE REQUIRED, AT THE BOTTOM OF THE BASIC TOWER BODY.
13. FOR DESIGN OF SNOW COMPONENTS SEE DWG No. 5L46-T08-B11.
14. FOR SPECIFICATIONS FOR HELICOPTER TOUCH-AND-GO SEE DWG No. 5L46-T08-A18.
15. FOR LOCATION OF TOWER NUMBER SIGNS SEE DWG No. G-T08-B446.
16. THIS DRAWING TO BE READ IN CONJUNCTION WITH SHEET 1.

WORKING CONDUCTOR PHASE LOADS (kN)

LOAD CASE		FACE A VA	FACE A TA	FACE A LA	FACE B VB	FACE B TB	FACE B LB	LOAD FACTOR TOWER STEEL	LOAD FACTOR FOOTING STEEL	LOAD APPLICATIONS	WIND LOAD (TOWER)
1		138.1	0.0	229.6	72.3 / -59.3	0.0	229.6	1.5	1.75	ON ONE FACE APPLY PHASE LOADS ON ANY ONE, ANY TWO OR ALL THREE PHASE SUPPORT POINTS WHILE APPLYING PHASE LOADS TO NONE OR ALL PHASE SUPPORT POINTS ON THE OTHER FACE.	SEE NOTE 3
2		138.1	87.9	212.2	72.3 / -59.3	87.9	212.2				
3		104.5	18.8	191.5	55.5 / -42.5	18.8	191.5				
4		104.5	92.1	176.9	55.5 / -42.5	92.1	176.9				
5		175.0	47.1	90.7				2.0	2.0	ON FACE A APPLY LOADS TO ANY ONE PHASE SUPPORT POINT AND LOADS OF CASE 7'N' TO NONE ANY ONE OR ANY TWO OF THE REMAINING SUPPORT POINTS OF THE SAME FACE IN COMBINATION WITH LOADS OF CASE 7'N' APPLIED TO NONE OR ALL THREE PHASE SUPPORT POINTS ON FACE B.	
6		46.6	47.1	-18.6	130.3	0.0	-109.3	2.0	2.0	APPLY LOADS TO BOTH FACES OF ANY ONE PHASE SUPPORT POINT AND APPLY LOADS 7'N' TO FACE A OF THE OTHER TWO PHASES.	
7	M	138.1	87.9	212.2	72.3 / -59.3	87.9	212.2	1.5	1.5	a) ON ONE FACE APPLY LOADS 'M' TO NONE, ANY ONE, ANY TWO OR ALL THREE PHASE SUPPORT POINTS AND APPLY LOADS 'N' TO THE REMAINING PHASE SUPPORT POINTS OF THE SAME FACE WHILE APPLYING LOADS 'M' OR LOADS 'N' TO ALL PHASE SUPPORT POINTS ON THE OTHER FACE.	
	N	55.1	39.2	94.7	30.8 / -17.8	39.2	94.7				
8	M	104.5	92.1	176.9	55.5 / -42.5	92.1	176.9	1.5	1.75	b) APPLY LOADS 'M' TO BOTH FACES OF ANY ONE OR ANY TWO PHASES AND APPLY LOADS 'N' TO BOTH FACES OF THE REMAINING PHASES.	
	N	55.1	51.7	100.9	30.8 / -17.8	51.7	100.9				

μ	No	REVISIONS	MADE	CHKD	SUBD	APPD	INSP	INSP	INSP	DATE

[redacted]

SEAL

[redacted]

DATE 91-1-10

FUNCTIONAL CODE 3.01/53J

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 kV T/L

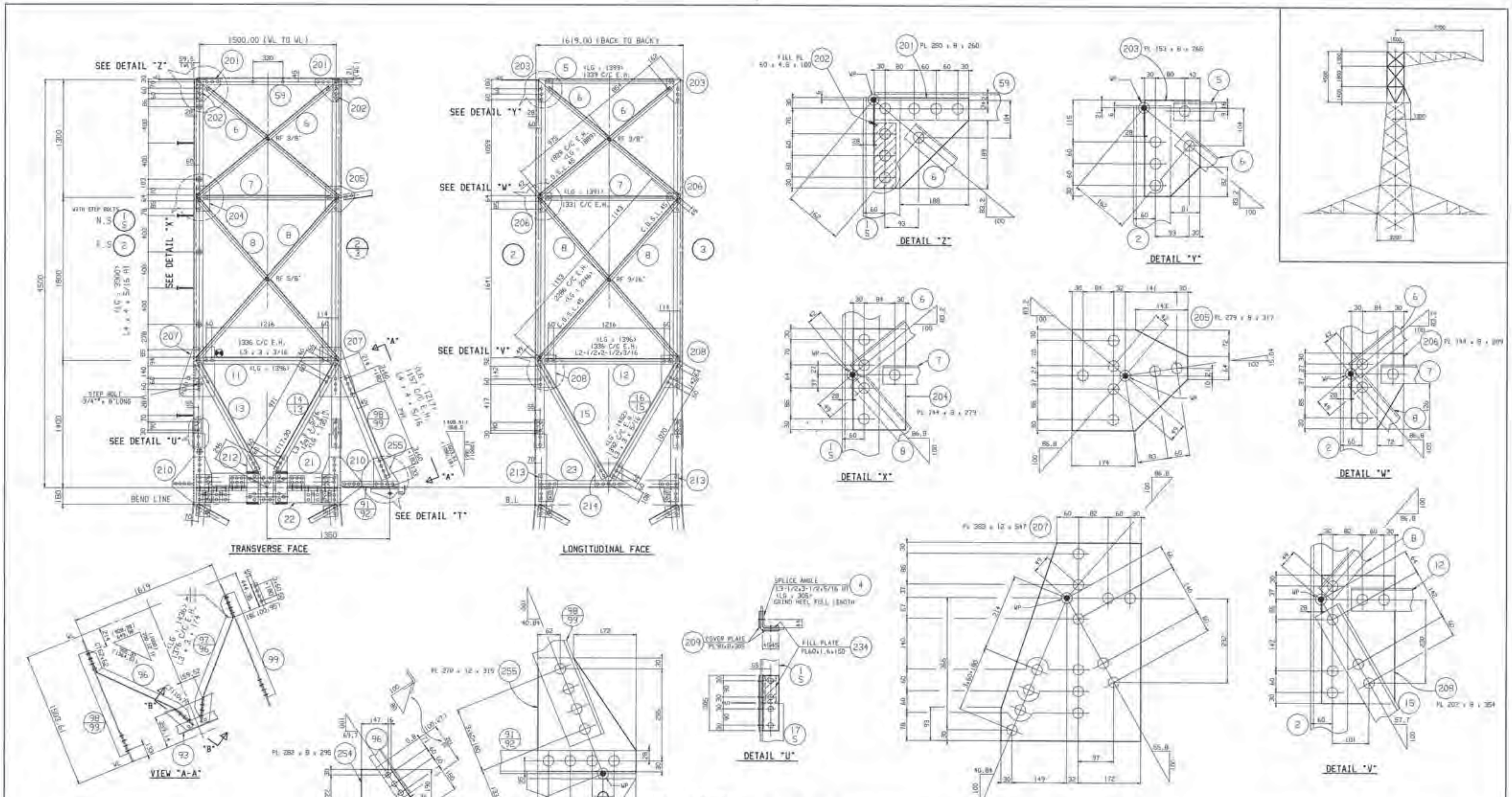
TYPE 53J SELF SUPPORTING DEAD-END TOWER (0°-45°)
SPECIFICATION DRAWING

SHEET 2 OF 2

SCALE —

DWG. No 5L46-T08-B7 SH. 2 R

CAD FILE No.\DGN\5L46\T08B007.DGN



NOTES:

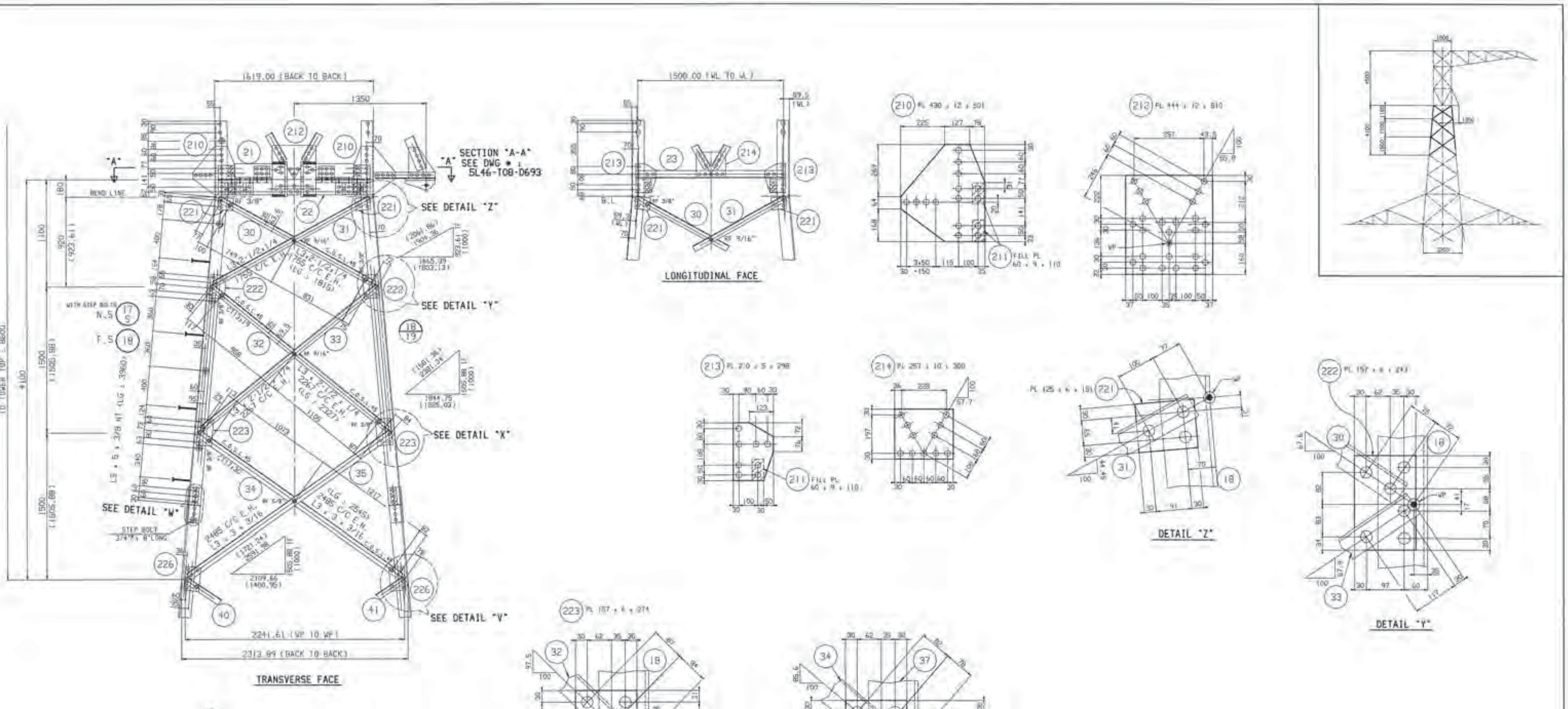
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE, AND FILL PLATES, UNLESS OTHERWISE NOTED

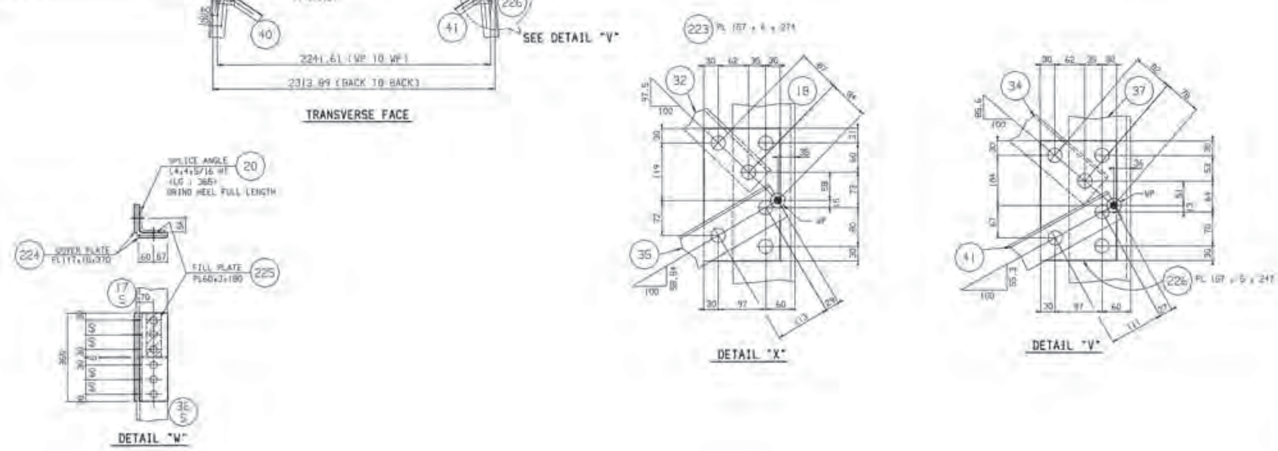
MK Nos(ANGLE) : 1 TO 8, 11 TO 16 & 96 TO 99
MK Nos(PLATE) : 201 TO 209, 234, 254 & 255

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	4.02/53J
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53J" TYPE TOWER (UPPER PART I)	
DWG No. 5L46-T08-D691	4

REV.	REVISIONS	DATE
4	FOR FINAL APPROVAL	JAN.15 '93
1	REVISED PER B.C.HYDRO COMMENTS	MAR.11 '92
0	ISSUE FOR APPROVAL	JAN.28 '92





NOTES:
1. FOR GENERAL NOTES SEE DWG #:5L46-T08-B79
2. MARK NUMBER DESIGNATION:
(35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED.
THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF
THE LEG OF THE ANGLE, AND FILL PLATES, UNLESS OTHERWISE NOTED

Mk Nos(ANGLE) : 17 TO 20 & 30 TO 35
Mk Nos(PLATE) : 210 TO 214 & 221 TO 226

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

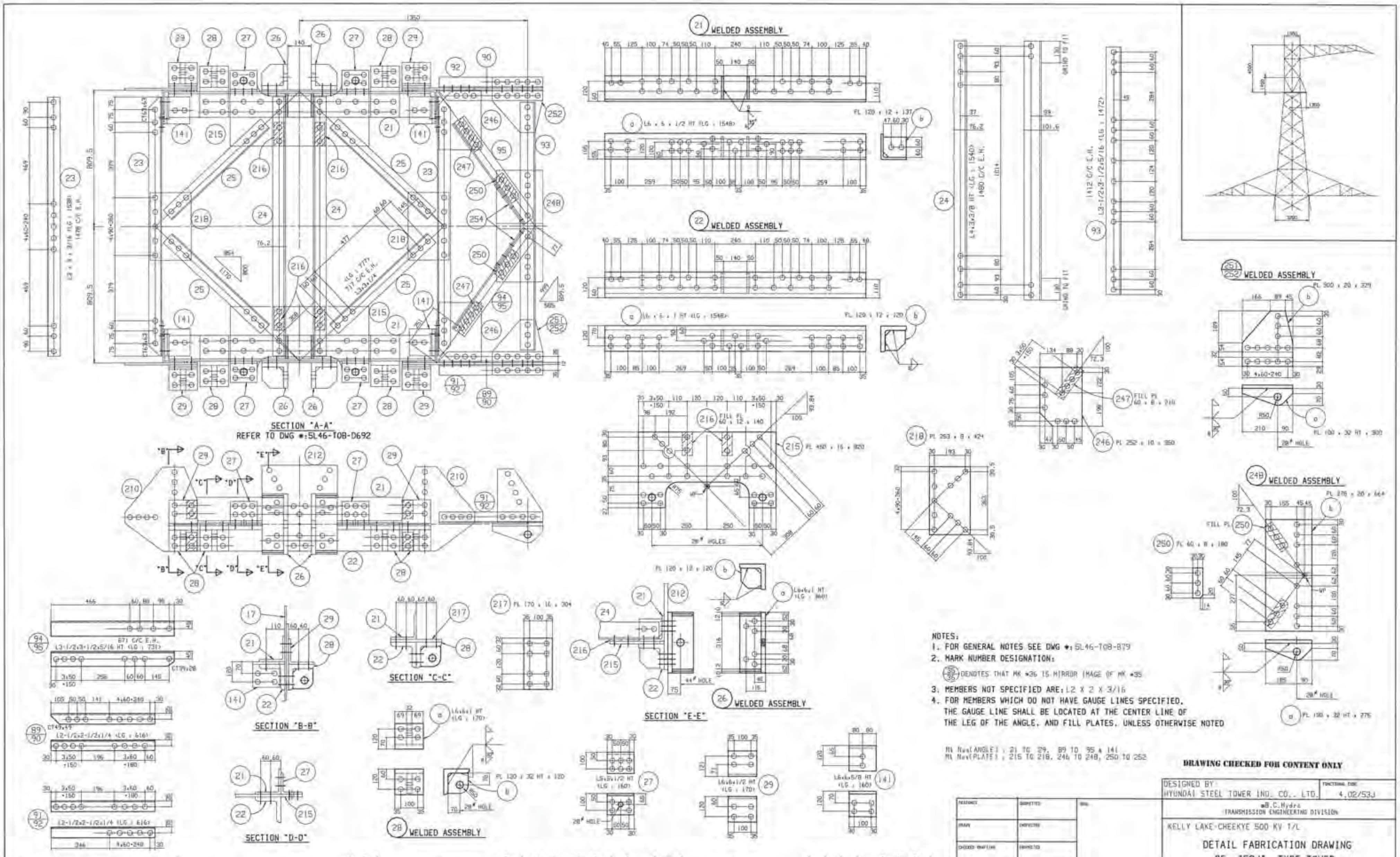
4.02/53J

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(UPPER PART 2)

5L46-T08-D692

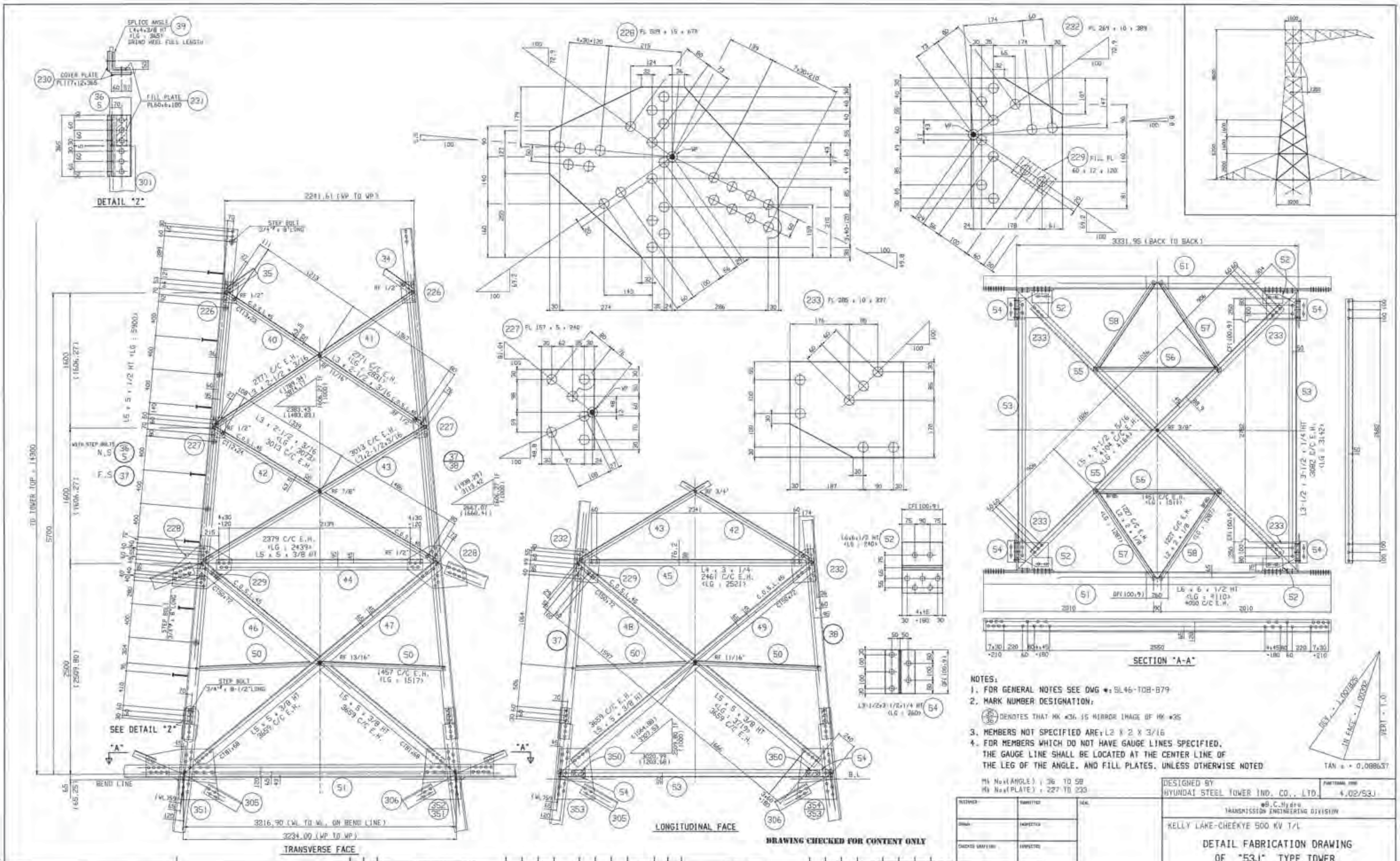


NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B79
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE, AND FILL PLATES, UNLESS OTHERWISE NOTED

Mk Nos(ANGLE) : 21 TO 29, 89 TO 95 & 141
Mk Nos(PLATE) : 215 TO 218, 246 TO 248, 250 TO 252

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY: HYUNDAI STEEL TOWER IND. CO., LTD.	FUNCTIONAL CODE: 4.02/53J
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53J" TYPE TOWER (TOP CONDUCTOR ARM)	
DWG No. 5L46-T08-D693	5



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B79
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE. AND FILL PLATES. UNLESS OTHERWISE NOTED

Mk No.(ANGLE) : 36 TO 58
Mk No.(PLATE) : 227 TO 233

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.

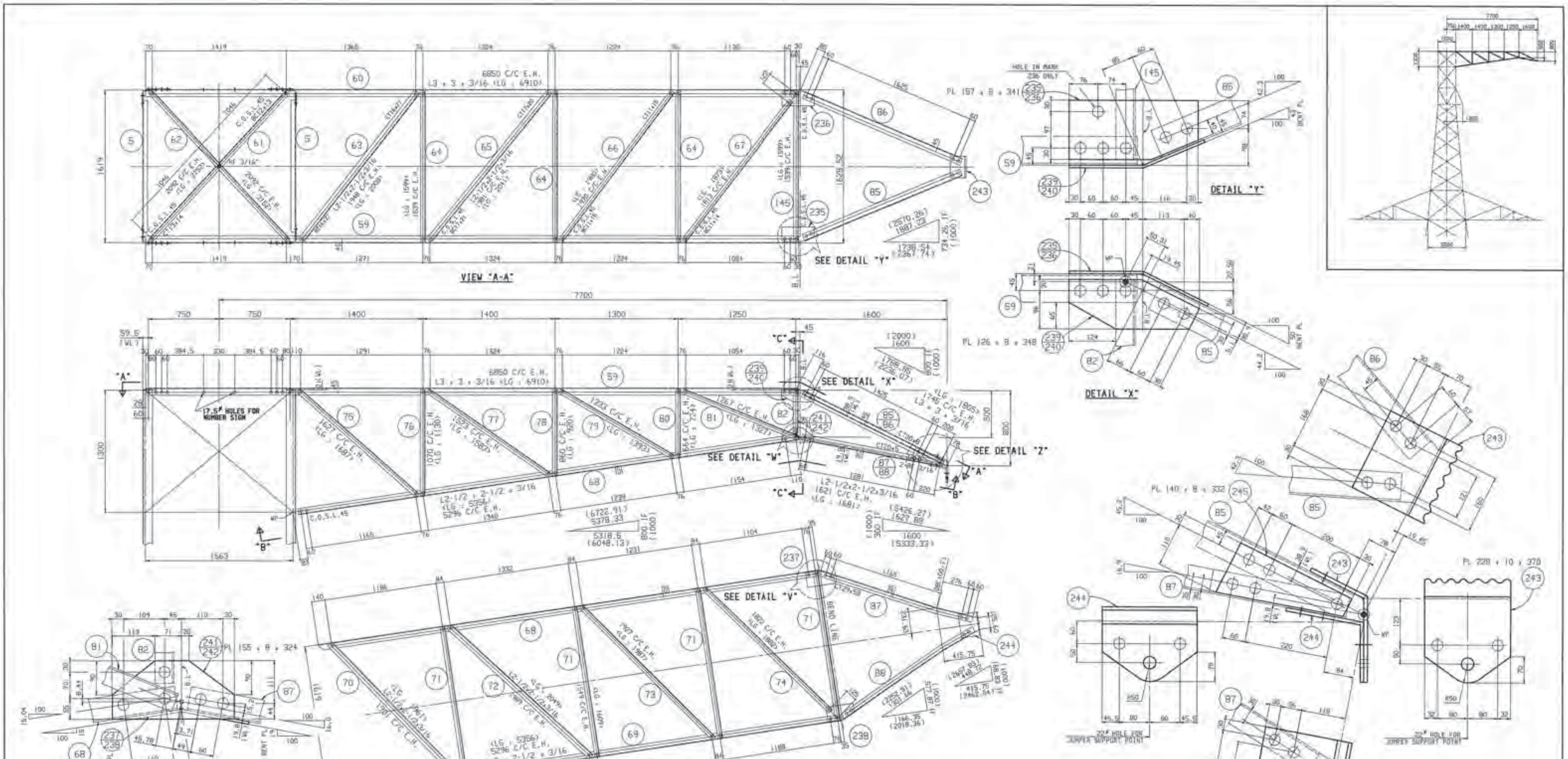
4.02/53J

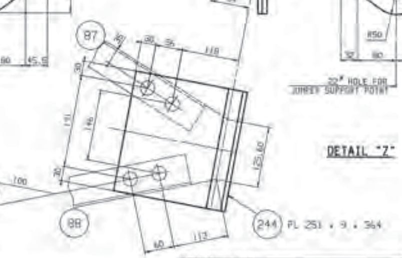
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(UPPER PART 3)

5L46-T08-D694 5





NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 59 TO 88 &145
Mk Nos(PLATE) : 235 TO 245

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

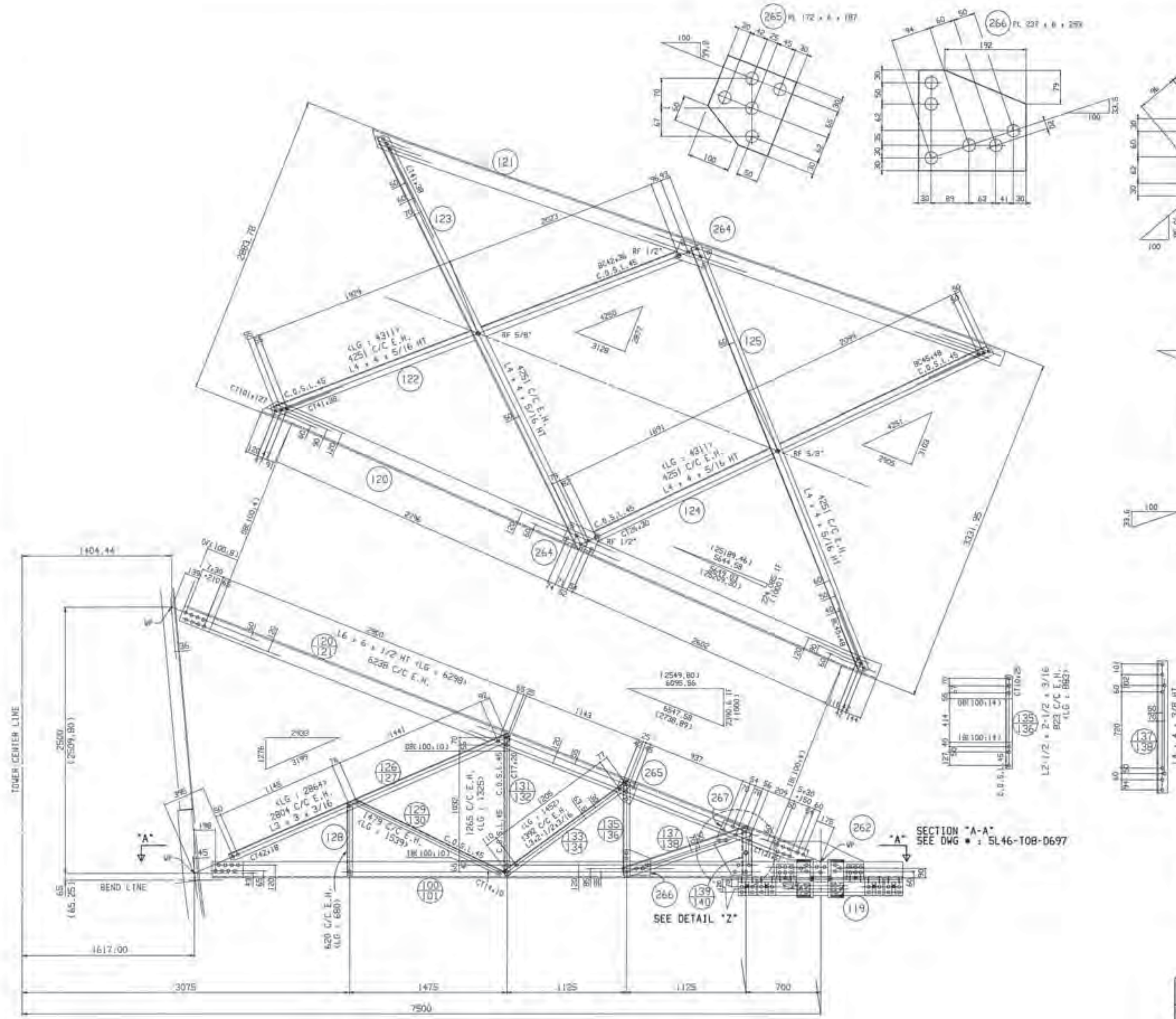
4.02/53J

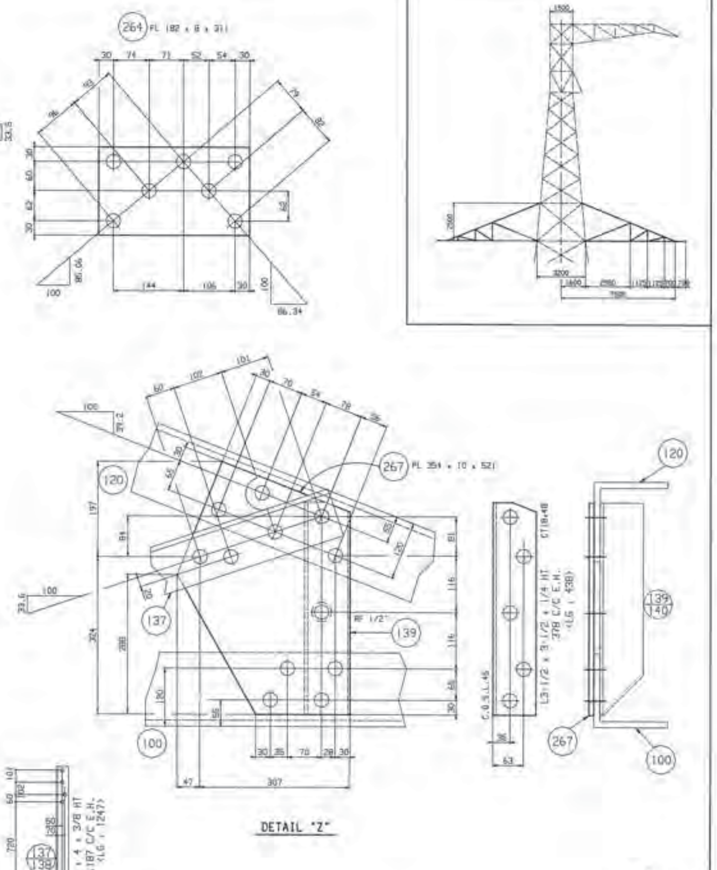
©B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(JUMPER CROSSARM)

5L46-T08-0695 3





NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 120 TO 140
Mk Nos(PLATE) : 264 TO 267

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

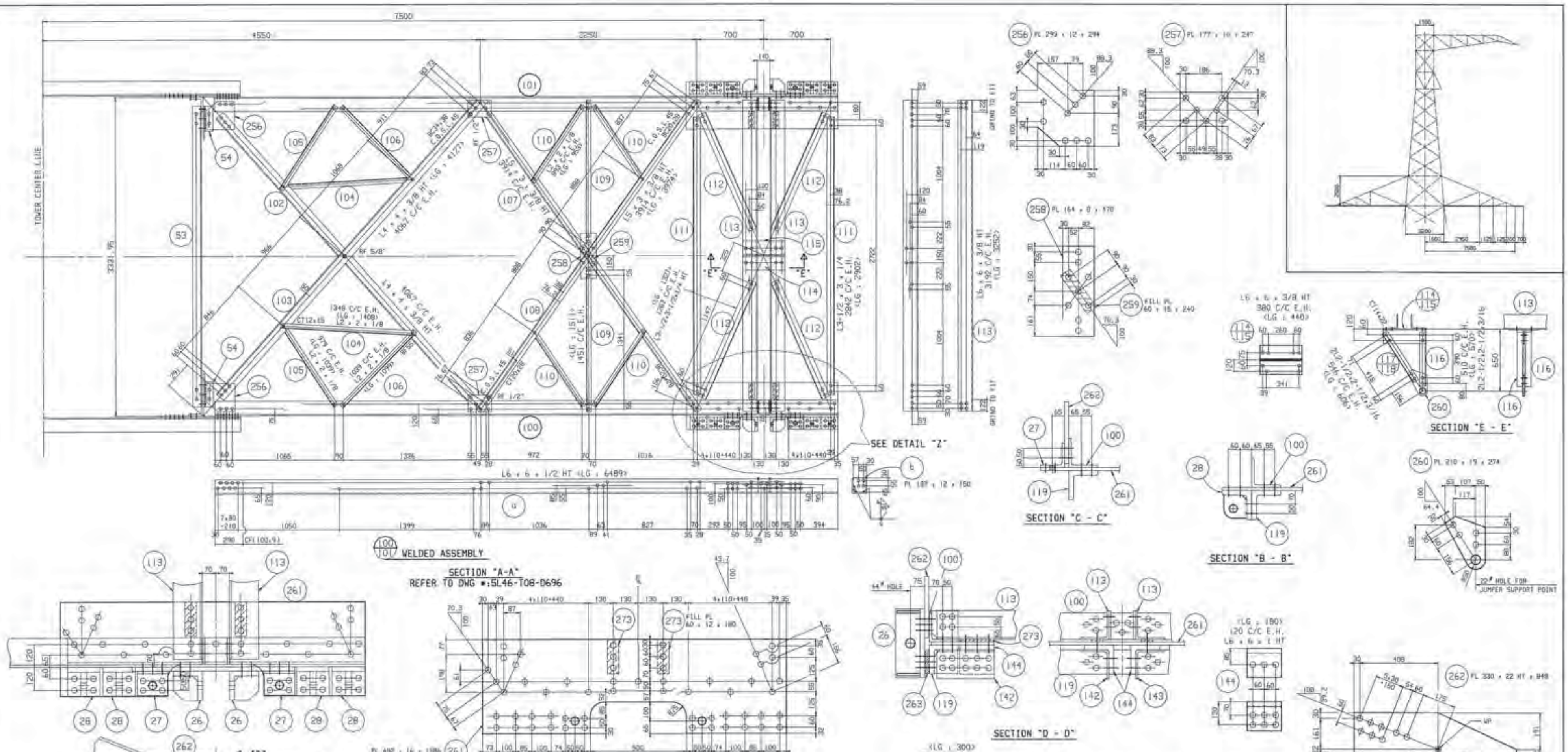
FUNCTIONAL CODE 4.02/53J

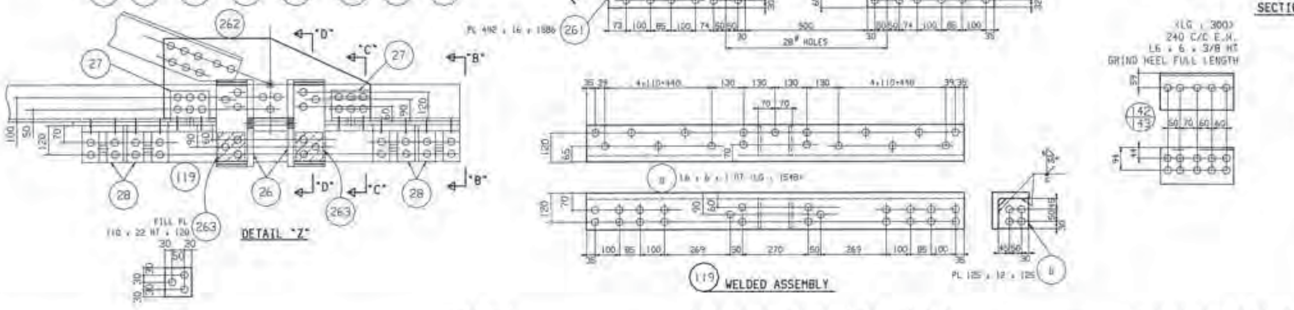
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(CONDUCTOR CROSSARM)

DWG No. 5L46-T08-D696 5





NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE, AND FILL PLATES, UNLESS OTHERWISE NOTED

Mk No.(ANGLE) : 100 TO 119 & 142 TO 144
Mk No.(PLATE) : 256 TO 263 & 273

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DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

FUNCTIONAL CODE 4.02/53J

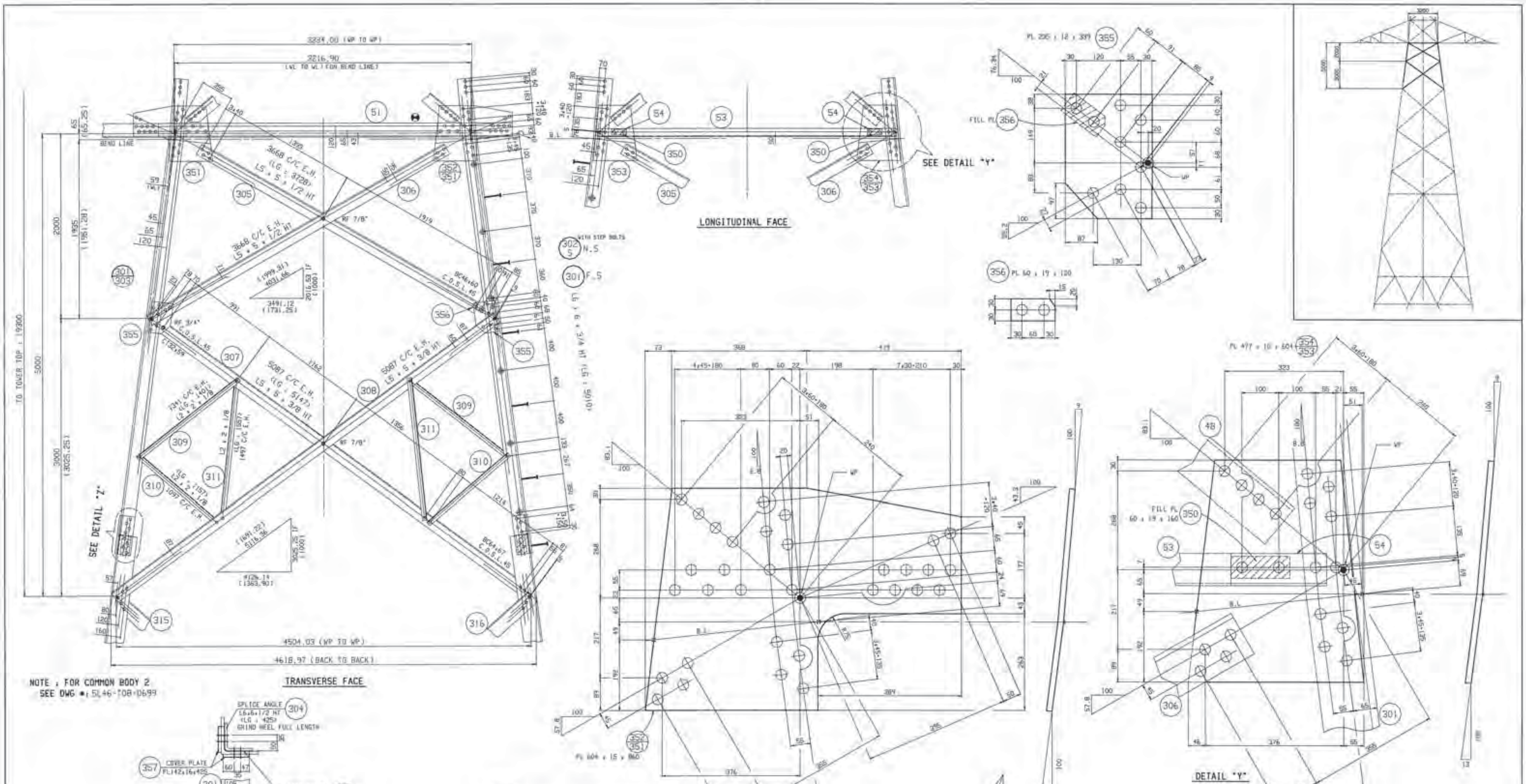
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(PLAN OF CONDUCTOR CROSSARM)

DWG.No. 5L46-T08-D697   5

REVISED PER B.C.HYDRO COMMENTS
FOR FINAL APPROVAL
ISSUE FOR APPROVAL



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:

   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE, AND FILL PLATES, UNLESS OTHERWISE NOTED

MK Nos(ANGLE) : 301 TO 311
MK Nos(PLATE) : 350 TO 358

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53J

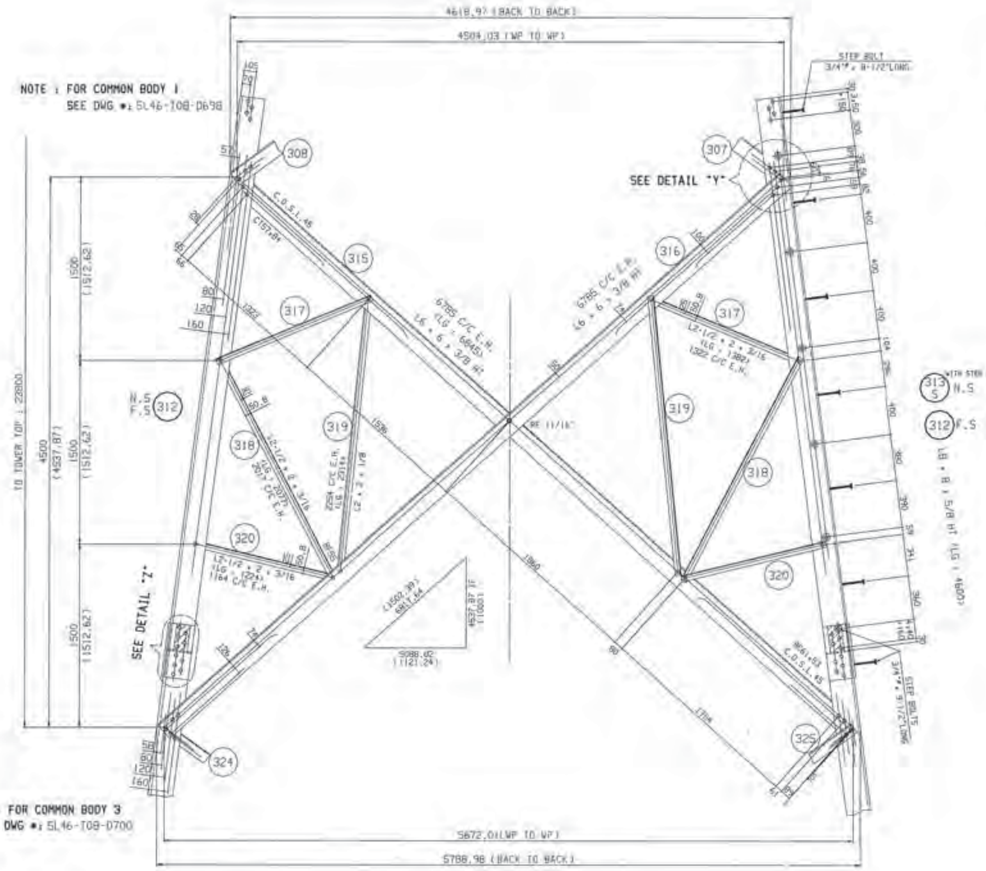
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

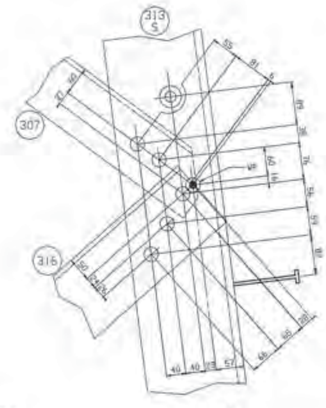
DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(COMMON BODY 1)

5L46-T08-D698

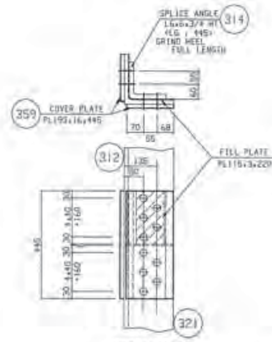
NOTE : FOR COMMON BODY 1
SEE DWG #: SL46-T08-0698



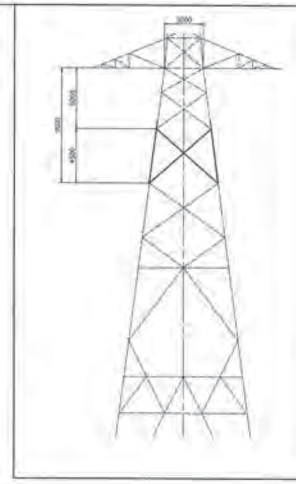
NOTE : FOR COMMON BODY 3
SEE DWG #: SL46-T08-0700



DETAIL "Y"



DETAIL "Z"



NOTES:
1. FOR GENERAL NOTES SEE DWG #: SL46-T08-B79
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 312 TO 320
Mk Nos(PLATE) : 359 & 360

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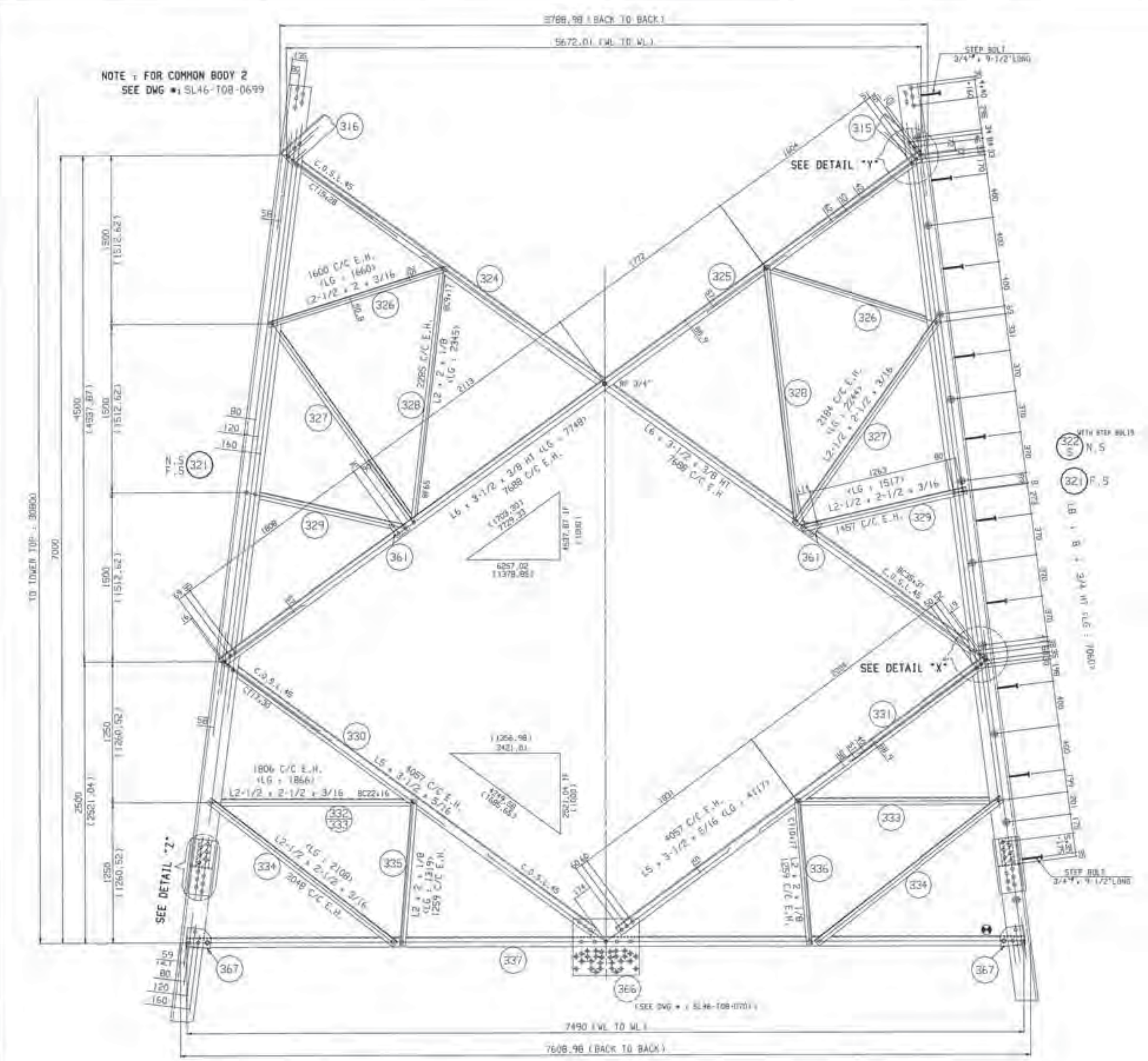
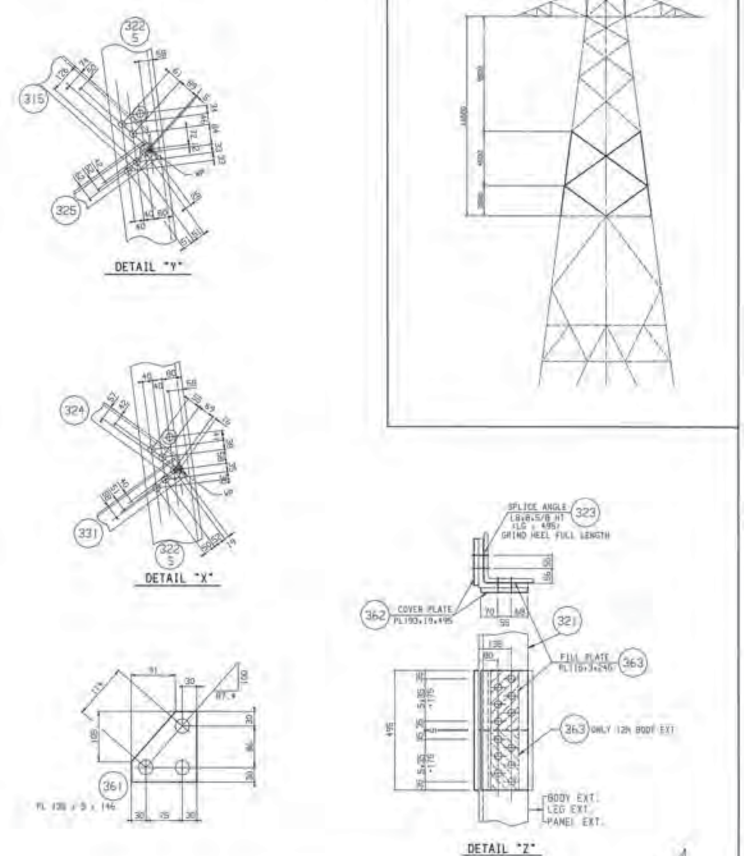
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	FUNCTIONAL CODE 4.02/53J
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53J" TYPE TOWER (COMMON BODY 2)	
DWG No. SL46-T08-0699	3





NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T08-879
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK No.(ANGLE) : 321 TO 336
MK No.(PLATE) : 361 TO 363

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DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

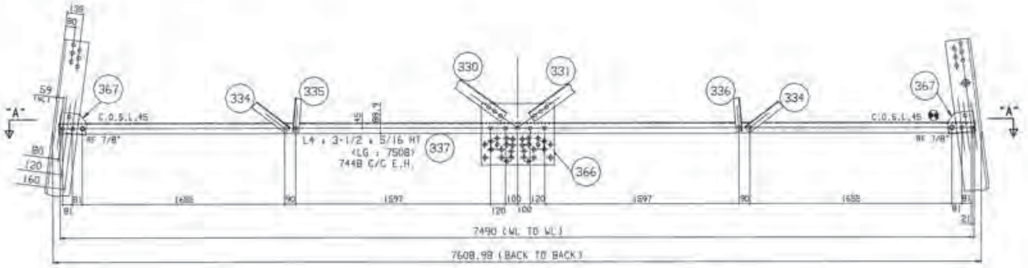
FUNCTIONAL CODE 4.02/53J

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

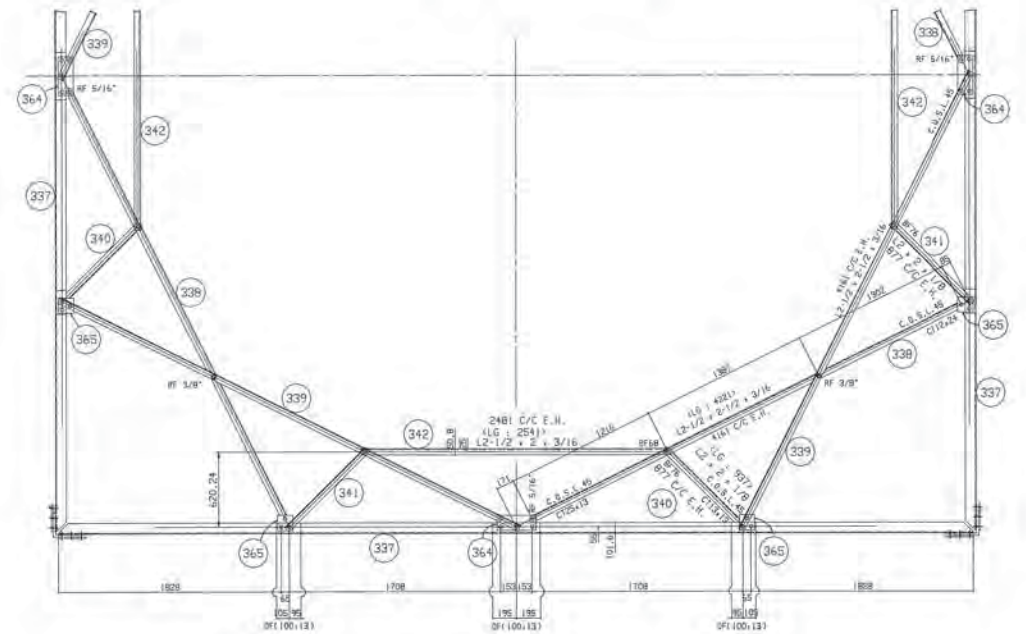
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(COMMON BODY 3)

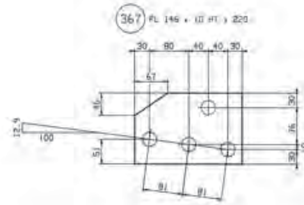
DWG No. SL46-T08-0700 3

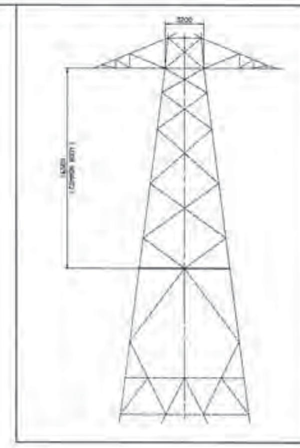


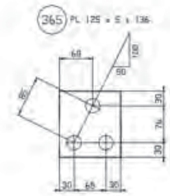
REFER TO DWG # : 5L46-T08-D700

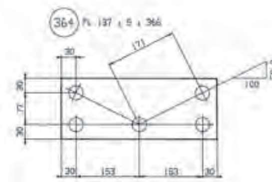


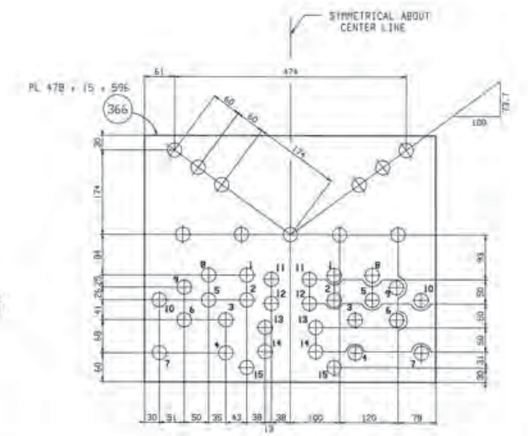
SECTION "A-A"











NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK Nos(ANGLE) : 337 TO 342
MK Nos(PLATE) : 364 TO 367

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

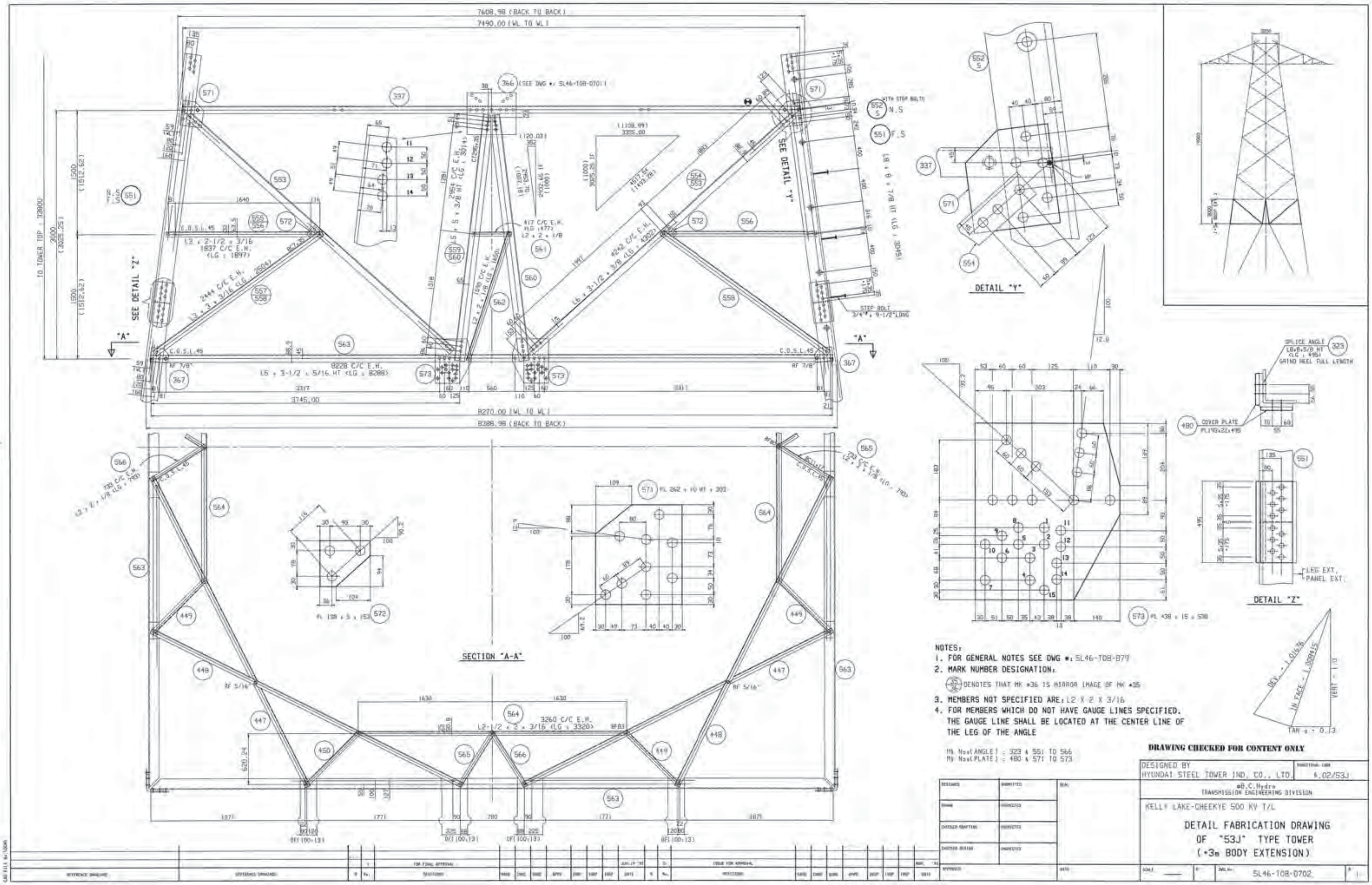
FUNCTIONAL CODE 4.02/53J

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(HORIZONTAL DIAPHRAGM)

DWG No. 5L46-T08-D701 4



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B79
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 323 & 551 TO 566
Mk Nos(PLATE) : 480 & 571 TO 573

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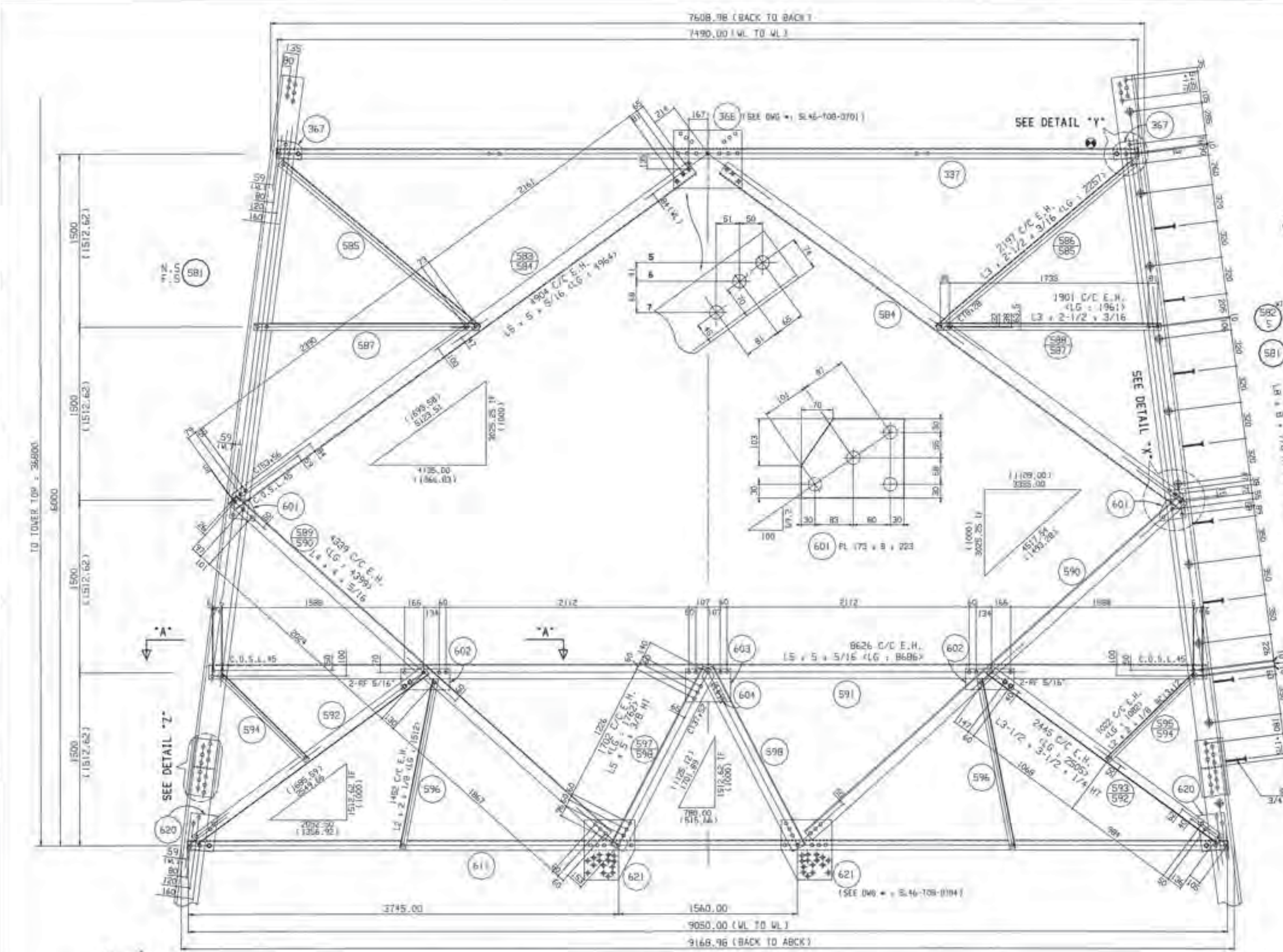
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD. | 6.02/53J

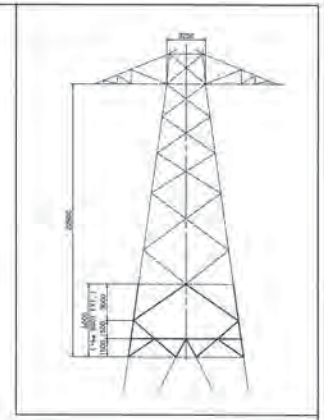
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

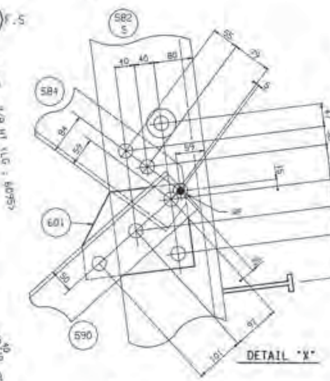
KELLY LAKE-CHEEKYE 500 KV T/L

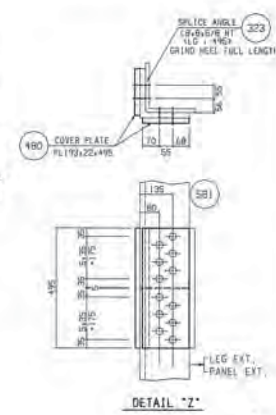
DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+3m BODY EXTENSION)

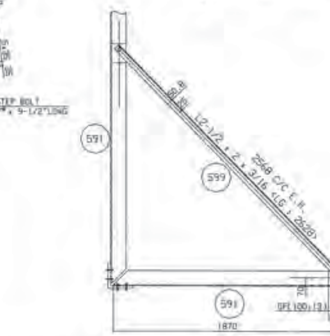
DWG No. 5L46-T08-0702

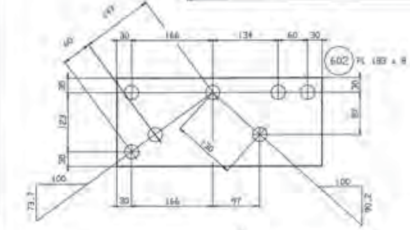


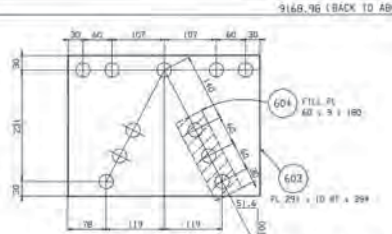












NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
(35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE, AND FILL PLATES, UNLESS OTHERWISE NOTED

Mk No(ANGLE) : 323 & 581 TO 599
Mk No(PLATE) : 480 & 601 TO 604

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

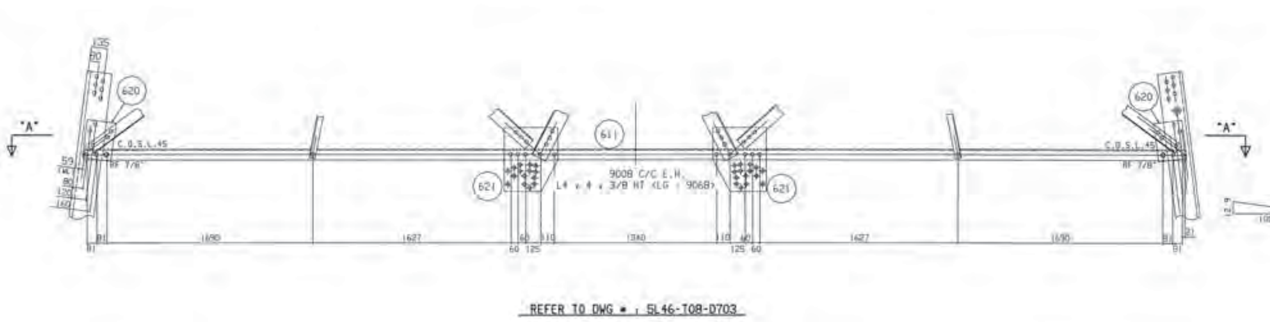
4.02/53J

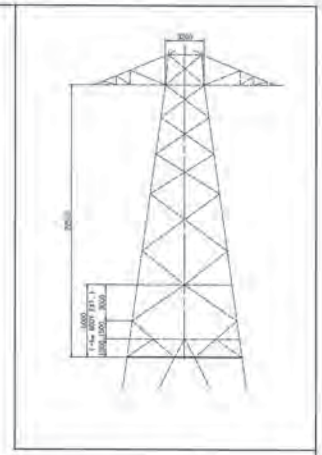
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

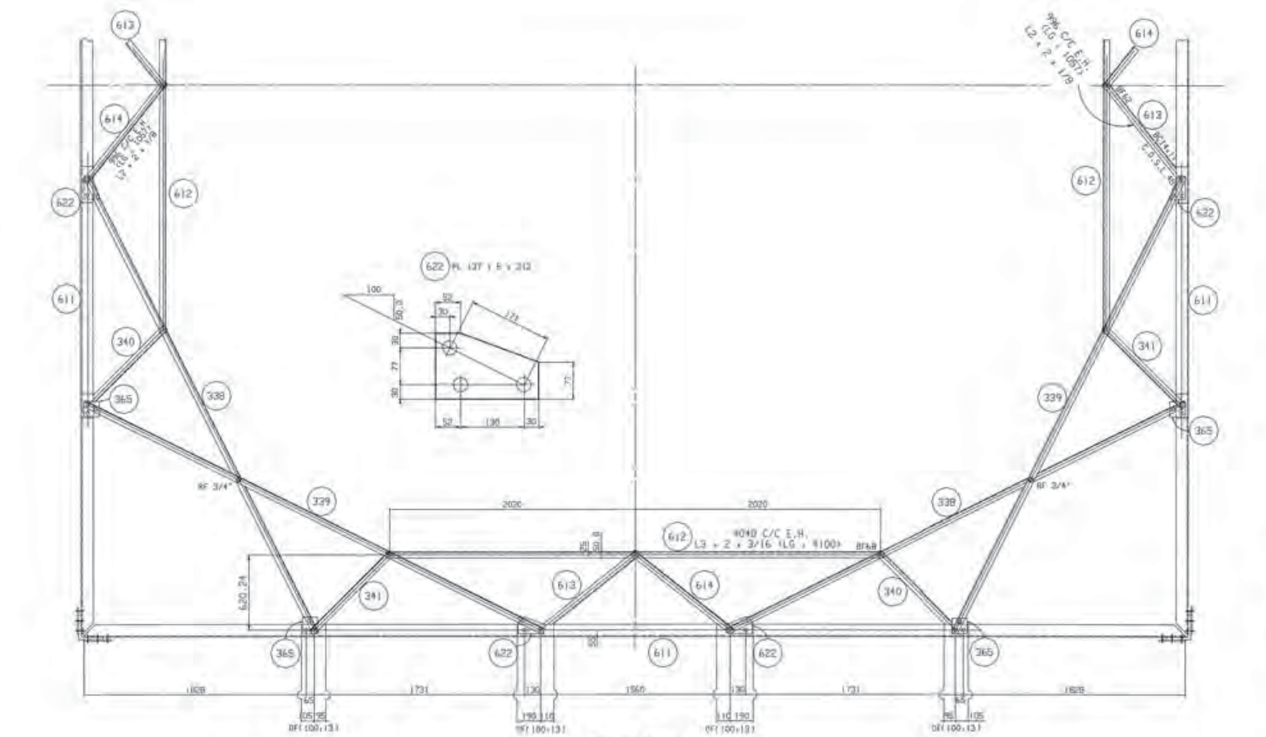
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+6m BODY EXTENSION)

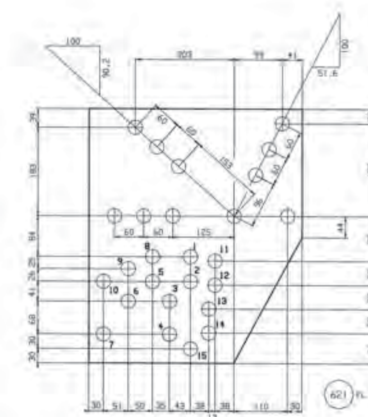
5L46-T08-0703 2







SECTION "A-A"



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B79
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

DRAWING CHECKED FOR CONTENT ONLY

MK No.(ANGLE) : 611 TO 614
MK No.(PLATE) : 620 TO 622

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

FUNCTIONAL CODE 4.02/53J

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

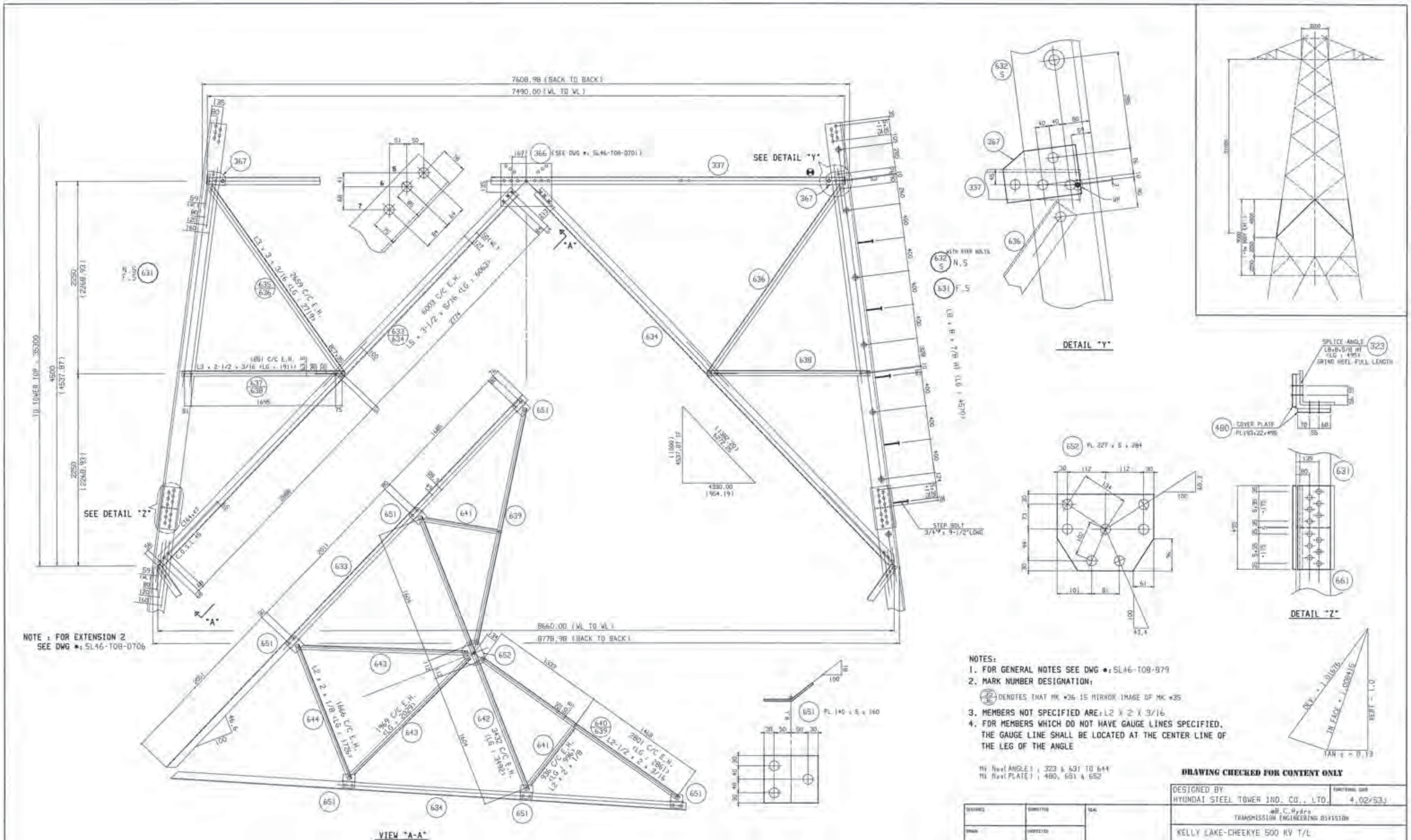
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+6m BODY EXTENSION DIAPHRAGM)

DWG No. 5L46-T08-D704

FOR FINAL APPROVAL

ISSUE FOR APPROVAL



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

DRAWING CHECKED FOR CONTENT ONLY

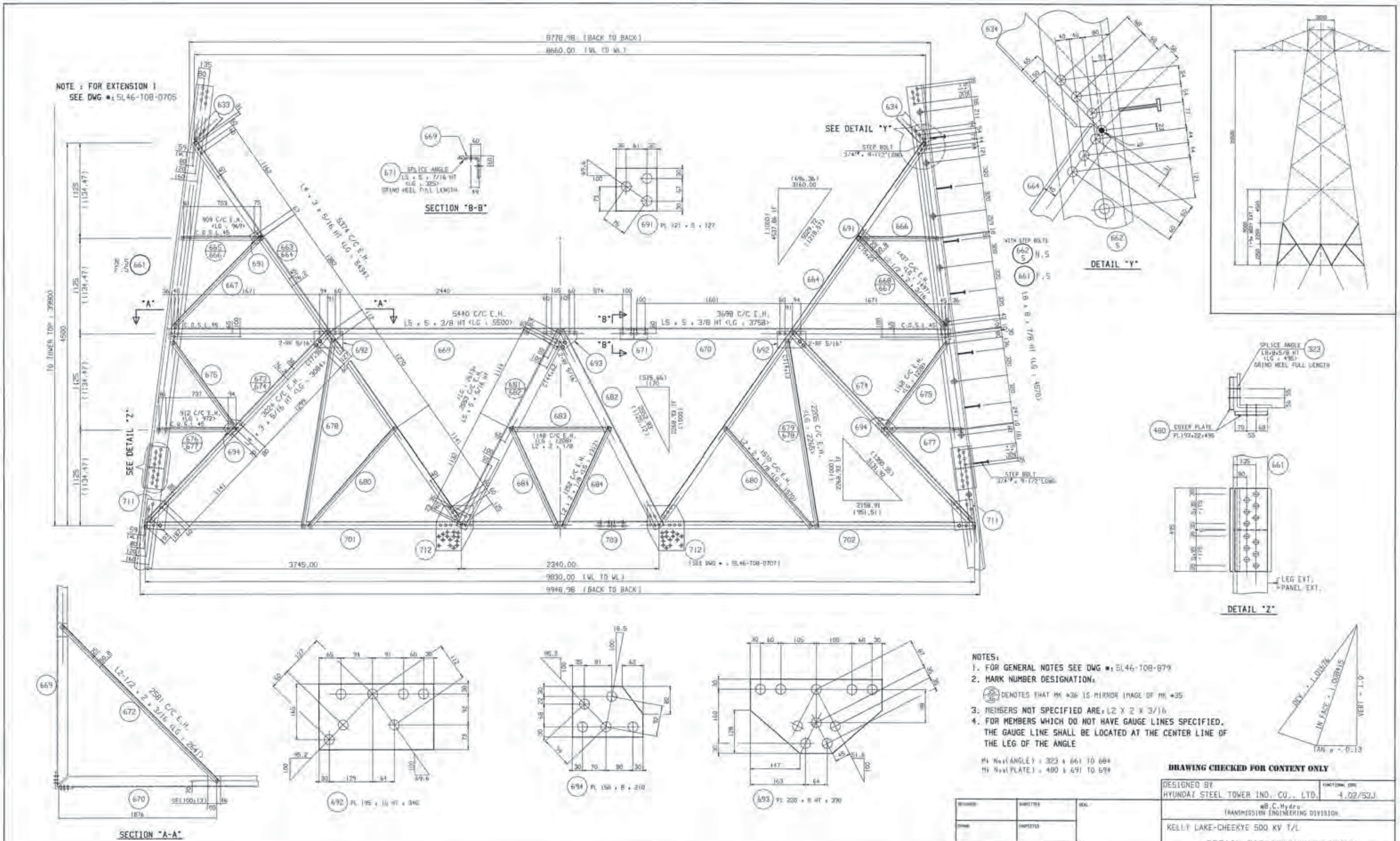
DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+9m BODY EXTENSION 1)

5L46-T08-0705



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 323 & 661 TO 684
Mk No.(PLATE) : 480 & 691 TO 694

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.
4.02/53J

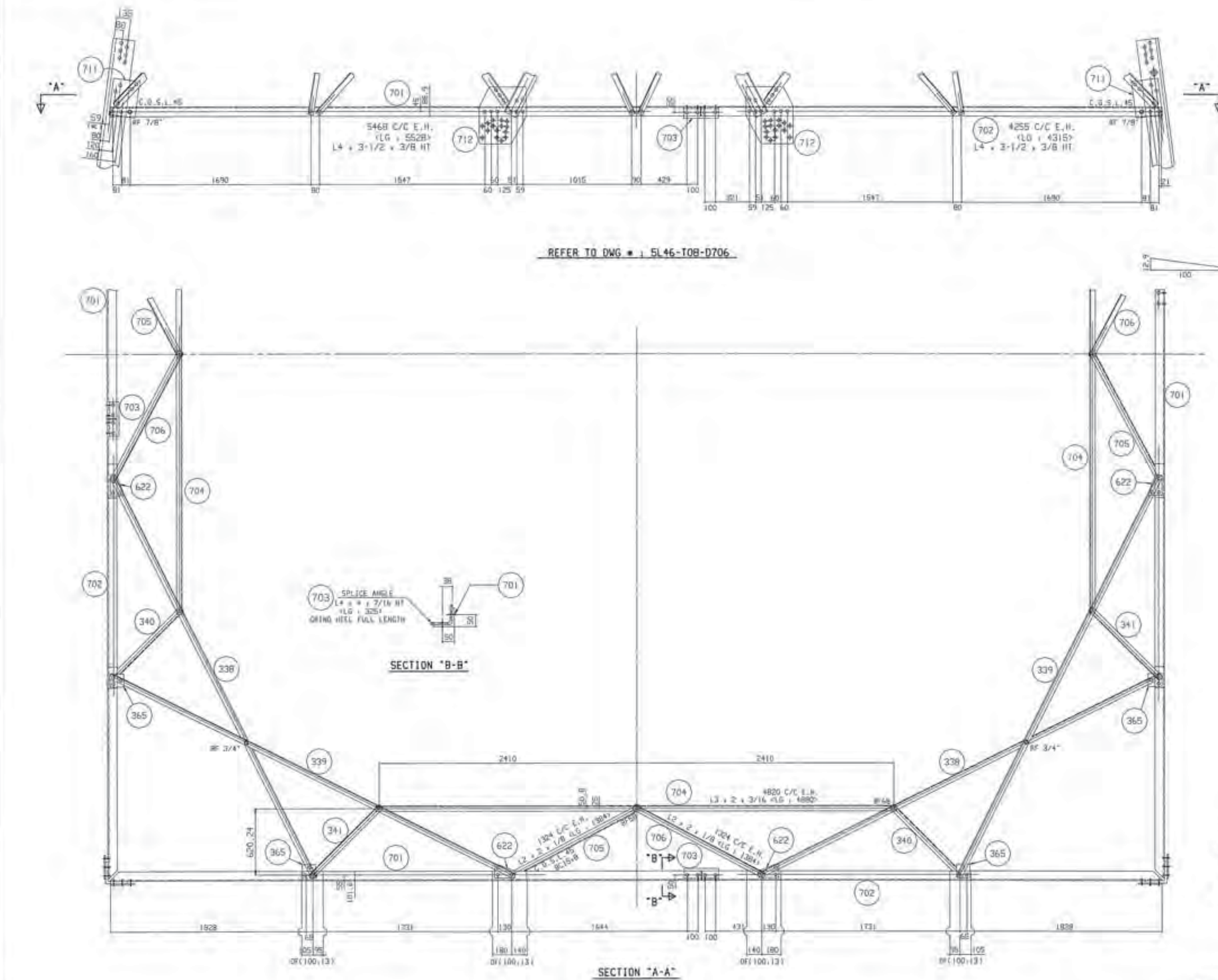
B.C. Hydro
TRANSMISSION ENGINEERING DIVISION

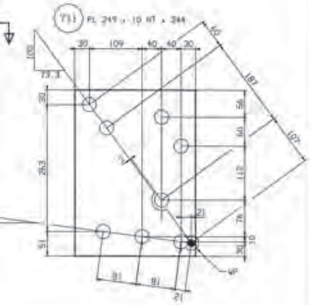
KELLY LAKE-CHEEKYE 500 KV T/L

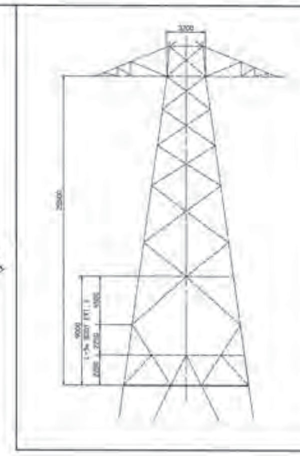
DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+9m BODY EXTENSION 2)

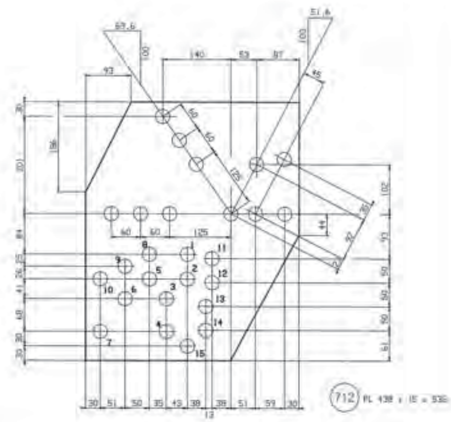
5L46-T08-0706

D









NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B79
2. MARK NUMBER DESIGNATION:

   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK Nos(ANGLE) : 701 TO 706
MK Nos(PLATE) : 711 & 712

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.

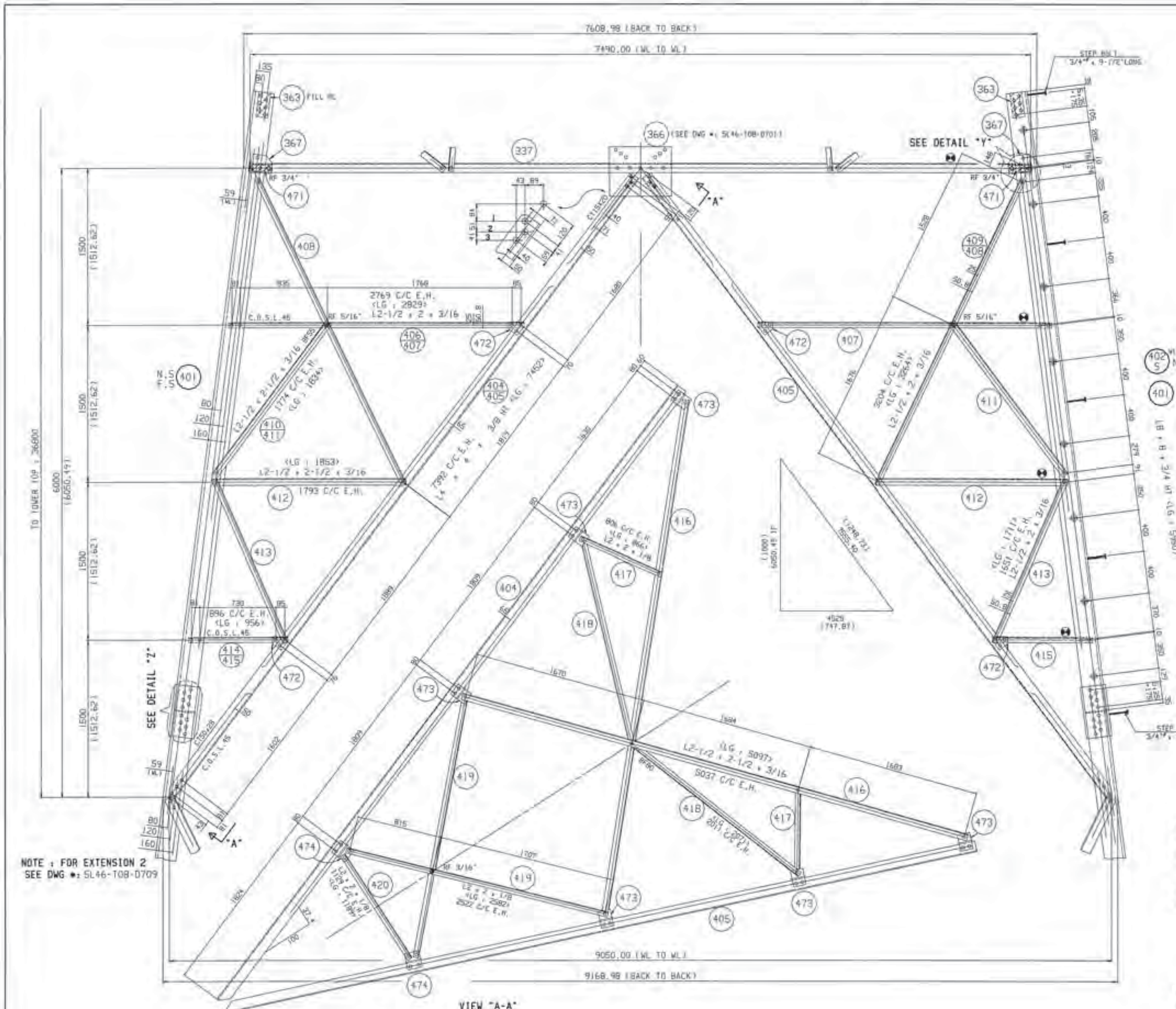
4.02/53J

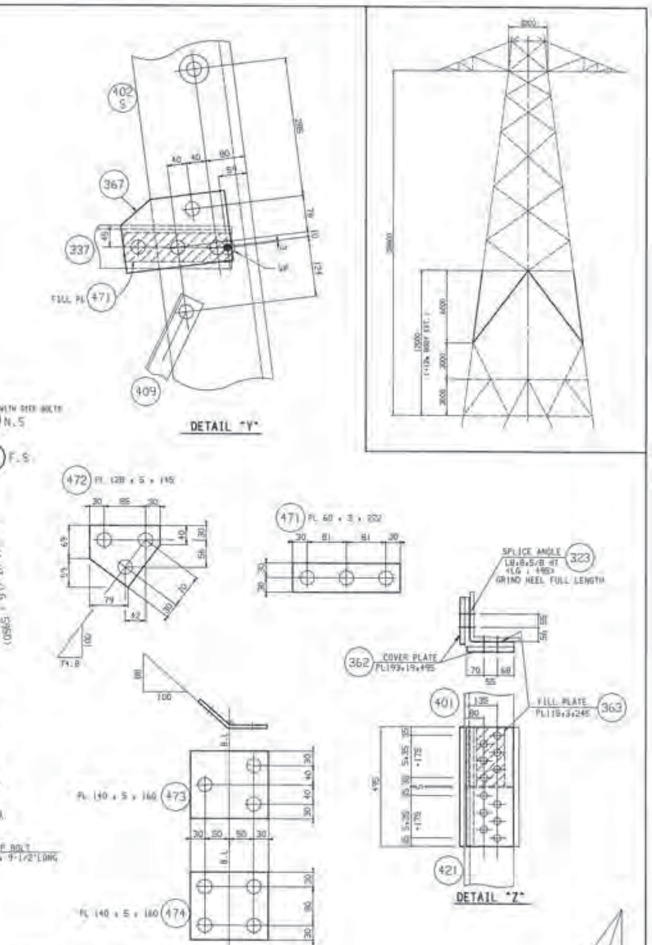
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+9m BODY EXTENSION DIAPHRAGM)

5L46-T08-D707





NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B79
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK No.(ANGLE) : 323, 401, 402 & 404 TO 420
MK No.(PLATE) : 362, 363 & 471 TO 474

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

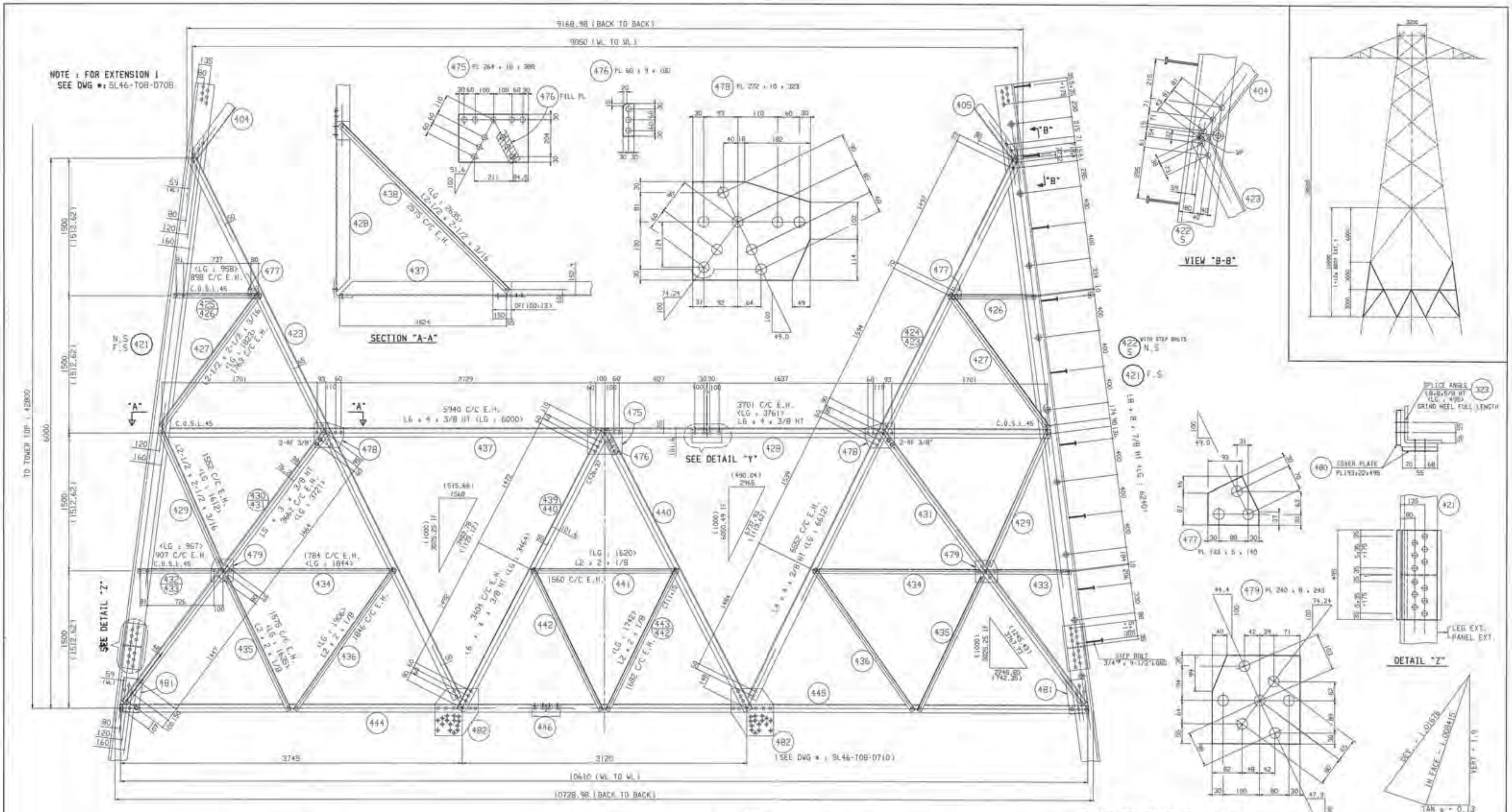
4.02/53J

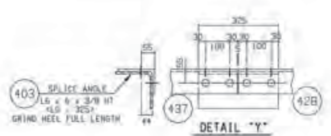
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+12m BODY EXTENSION 1)

5L46-T08-D708 3





NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B79
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

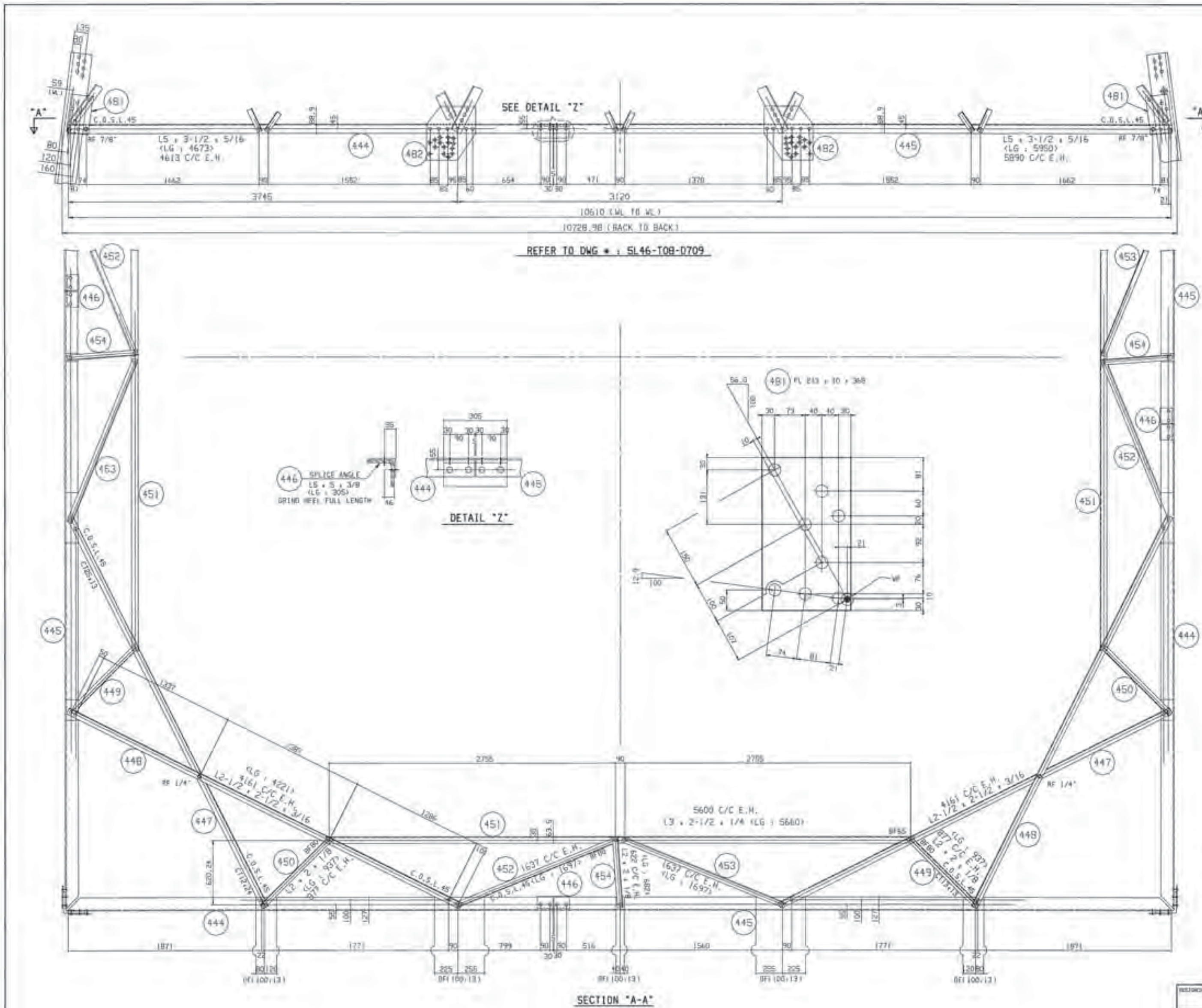
DRAWING CHECKED FOR CONTENT ONLY

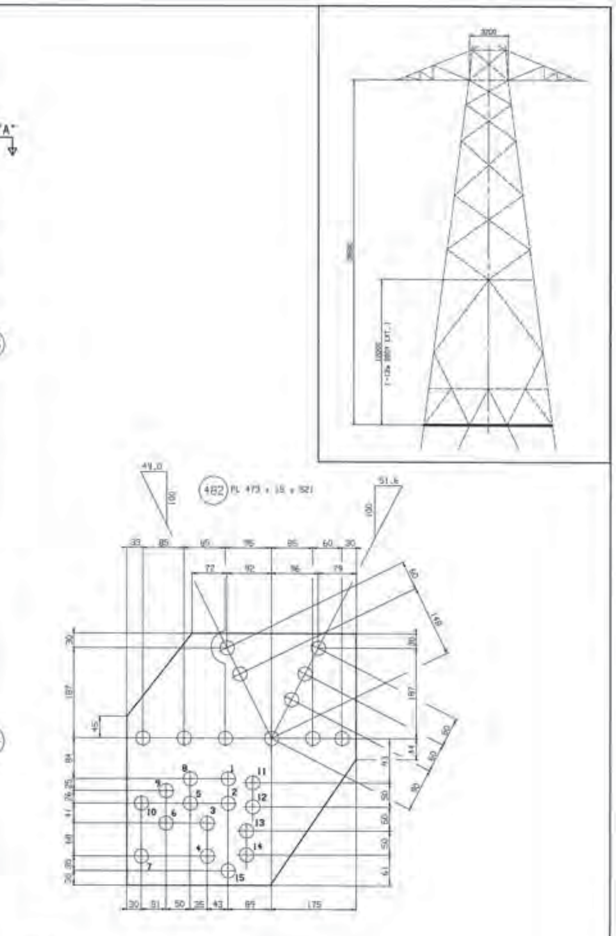
M: No.(ANGLE) : 323, 403 & 421 TO 443
M: No.(PLATE) : 475 TO 480

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.
4.02/53J
B.C.Hydro TRANSMISSION ENGINEERING DIVISION
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING OF "53J" TYPE TOWER (+12m BODY EXTENSION 2)

5L46-T08-D709 3





NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-B79
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 444 TO 454
Mk Nos(PLATE) : 481 & 482

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53J

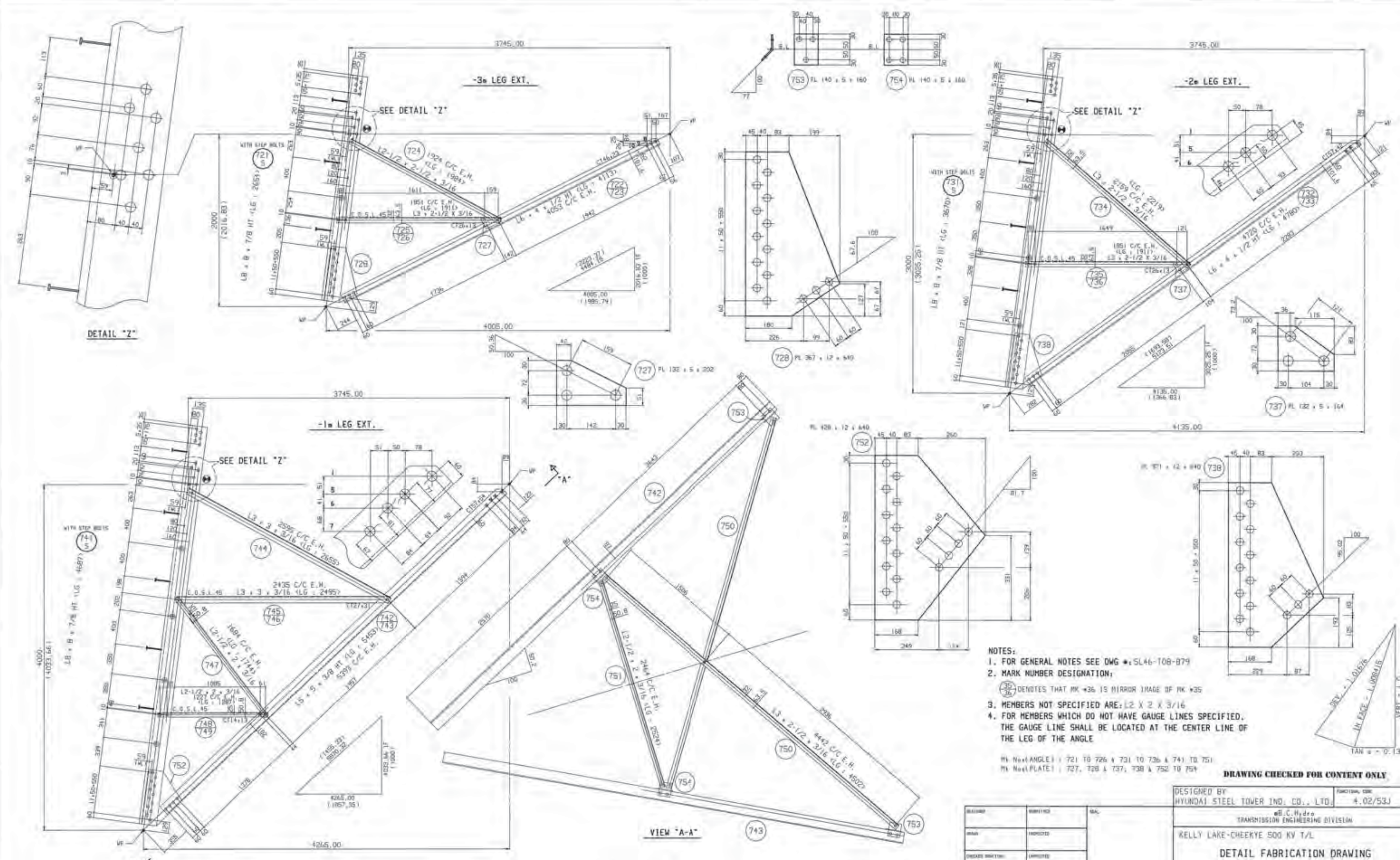
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+12m BODY EXTENSION DIAPHRAGM)

5L46-T08-D710

3



NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T08-879
2. MARK NUMBER DESIGNATION:

   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 721 TO 726 & 731 TO 736 & 741 TO 751
Mk No.(PLATE) : 727, 728 & 737; 738 & 752 TO 754

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

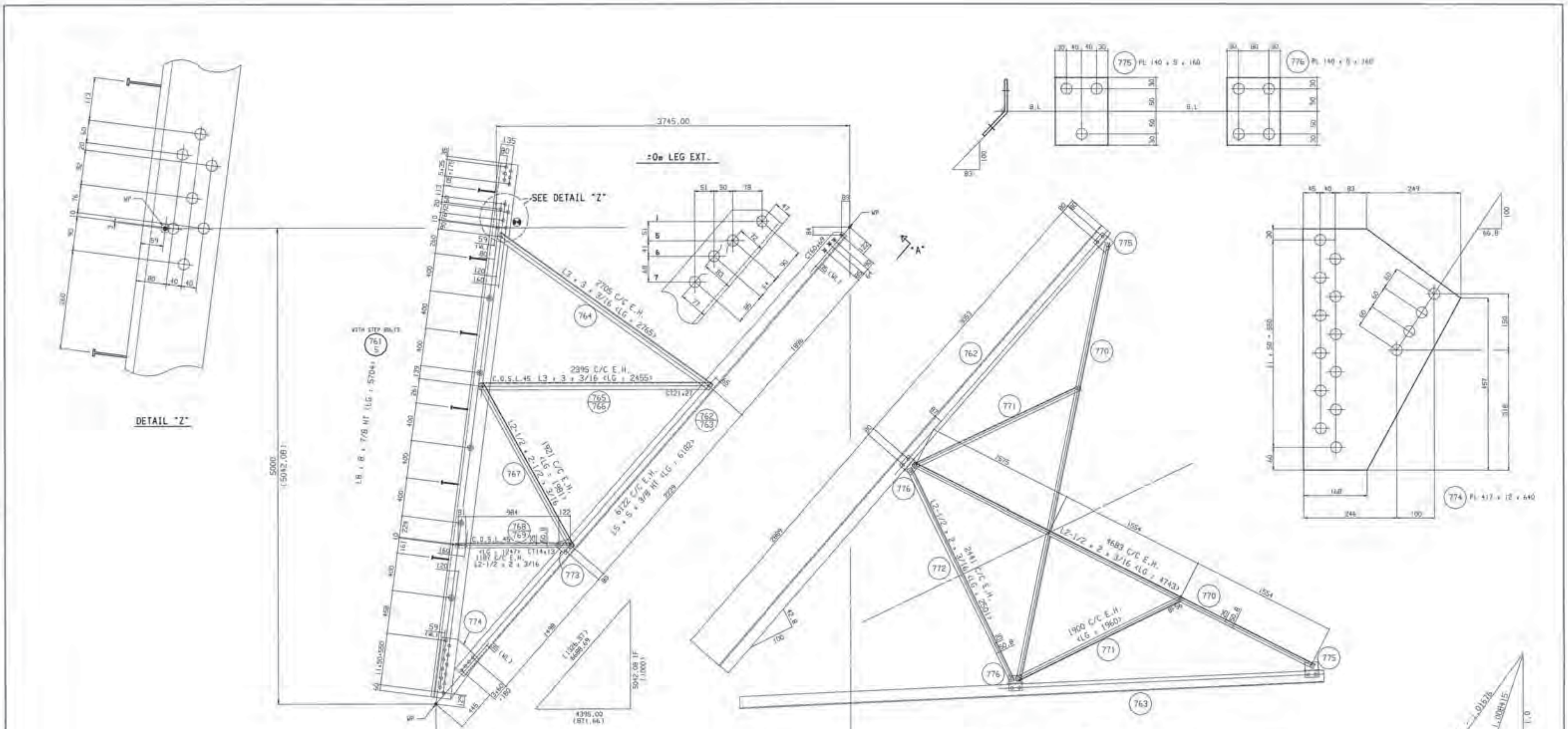
FUNCTIONAL CODE 4.02/53J

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

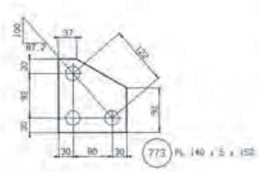
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
[-3m.-2m & -1m LEG EXTENSIONS]

DWG No. SL46-T08-0711



VIEW "A-A"



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK Nos(ANGLE) : 761 TO 772
MK Nos(PLATE) : 773 TO 776

DRAWING CHECKED FOR CONTENT ONLY

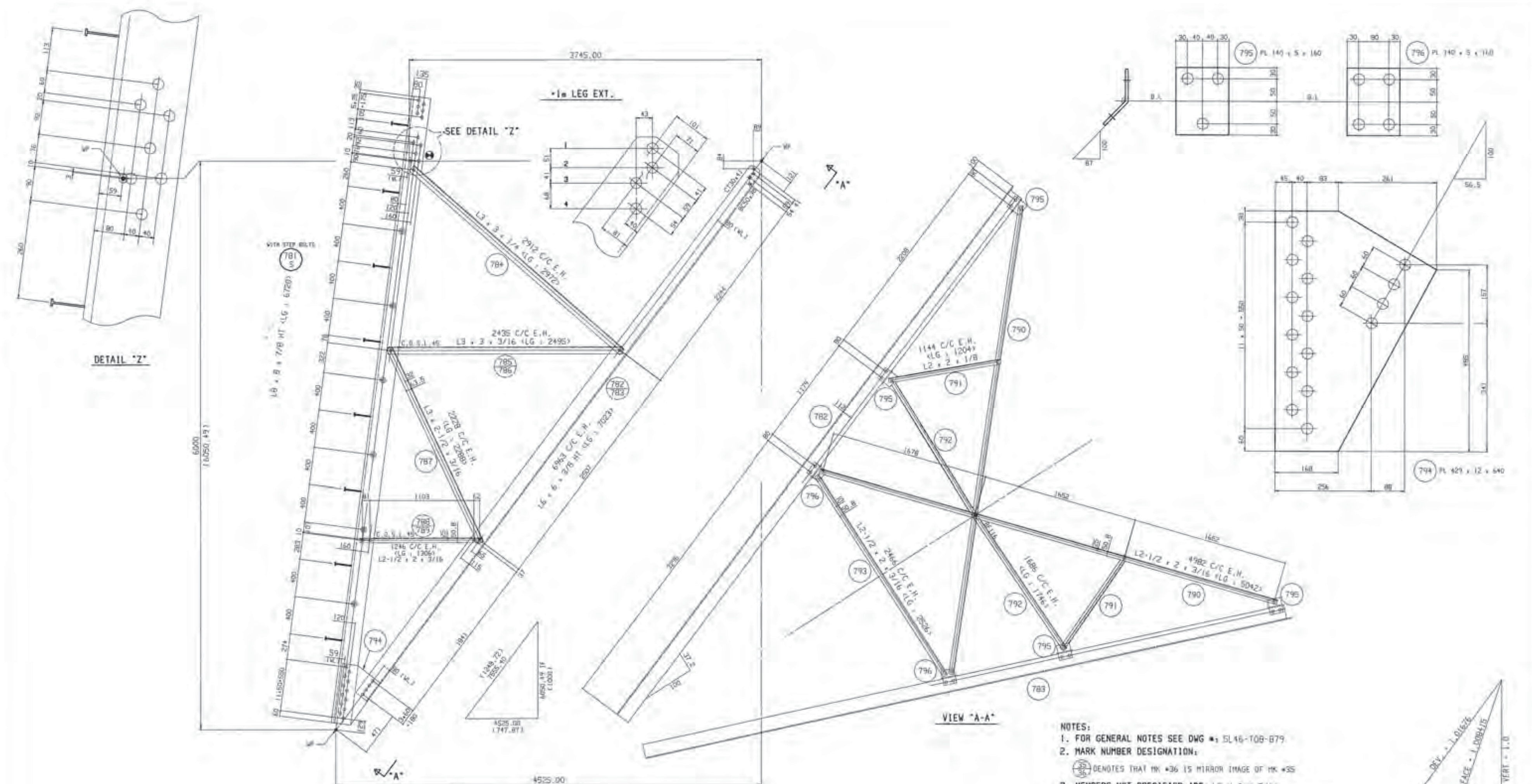
DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD. | 4.02/53J

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(±0m LEG EXTENSION)

5L46-T08-0712 | 1



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK Nos(ANGLE) : 781 TO 792
MK Nos(PLATE) : 793 TO 796

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.

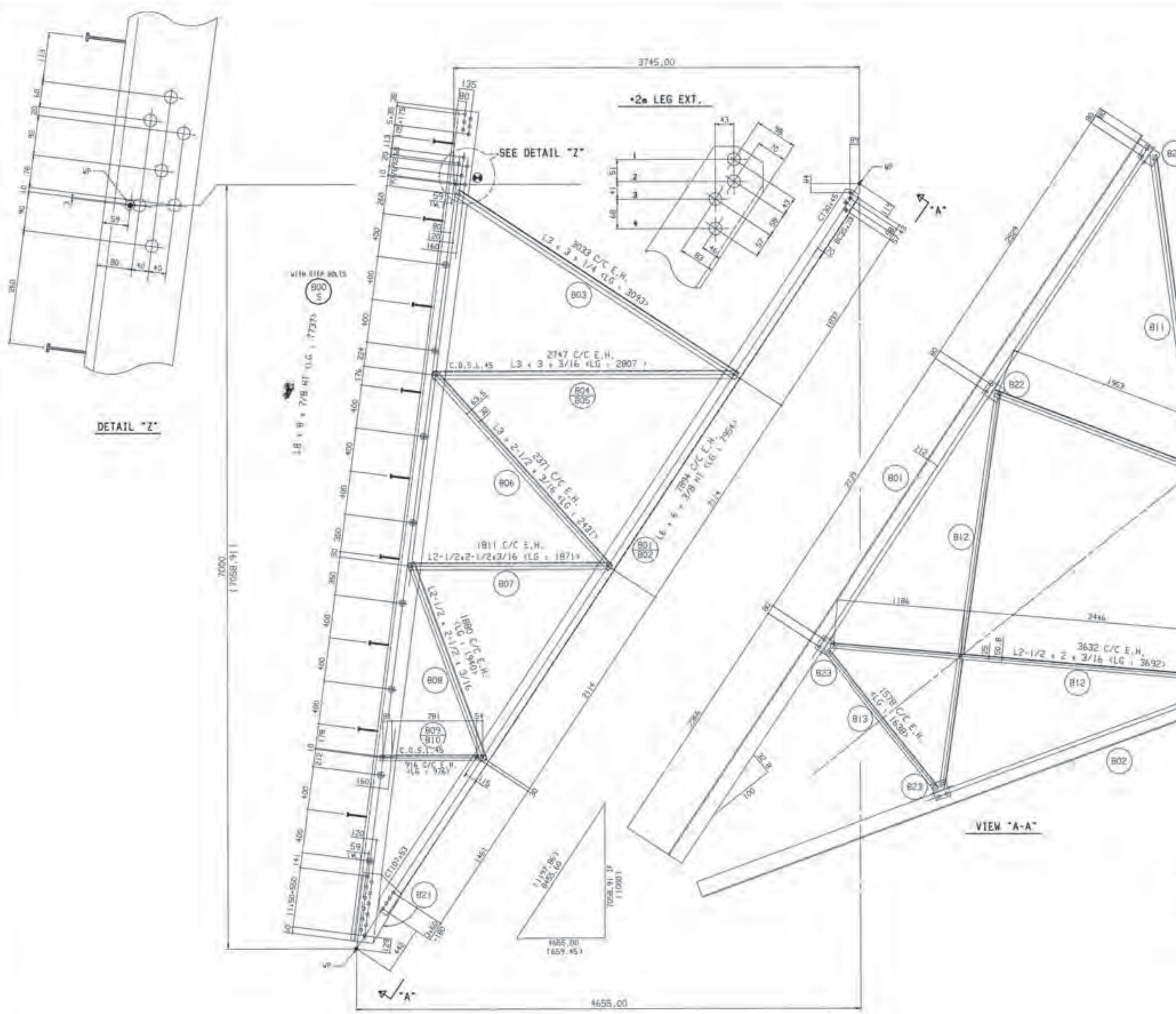
FUNCTIONAL CODE 4.02/53J

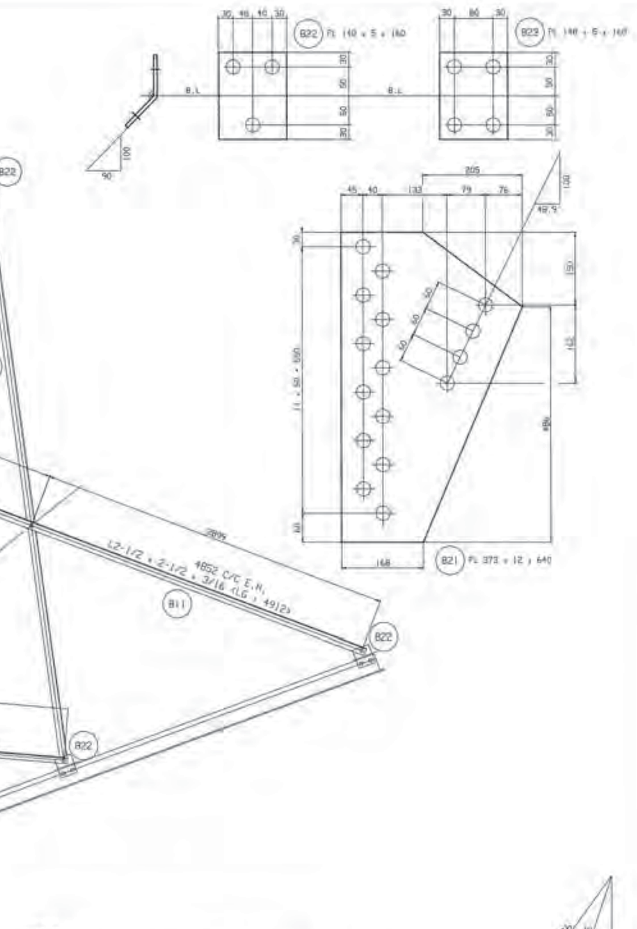
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING OF "53J" TYPE TOWER (+1m LEG EXTENSION)

DWG No. 5L46-T08-0713





NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 800 TO 813
Mk Nos(PLATE) : 821 TO 823

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

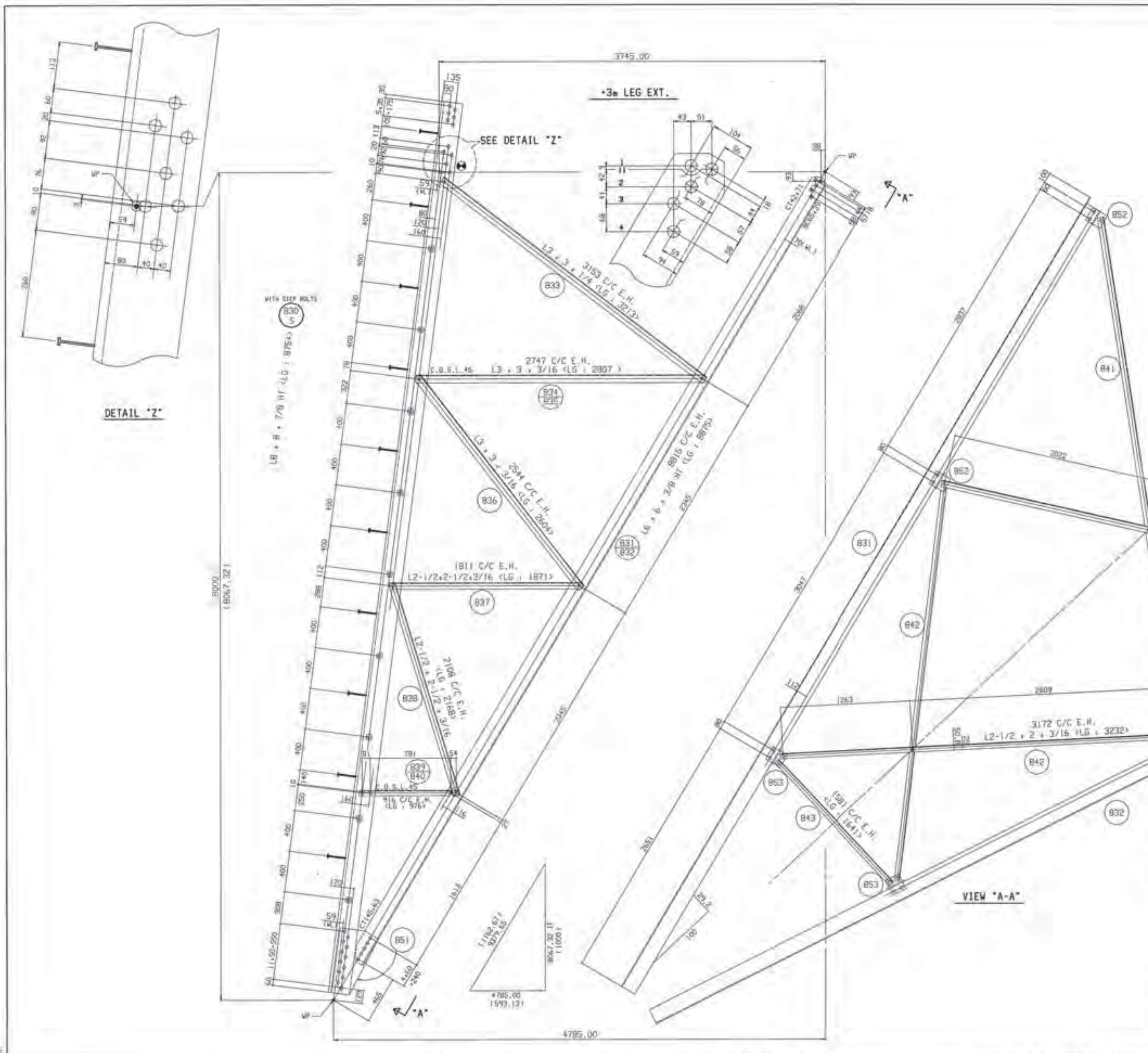
FUNCTIONAL CODE 4.02/53J

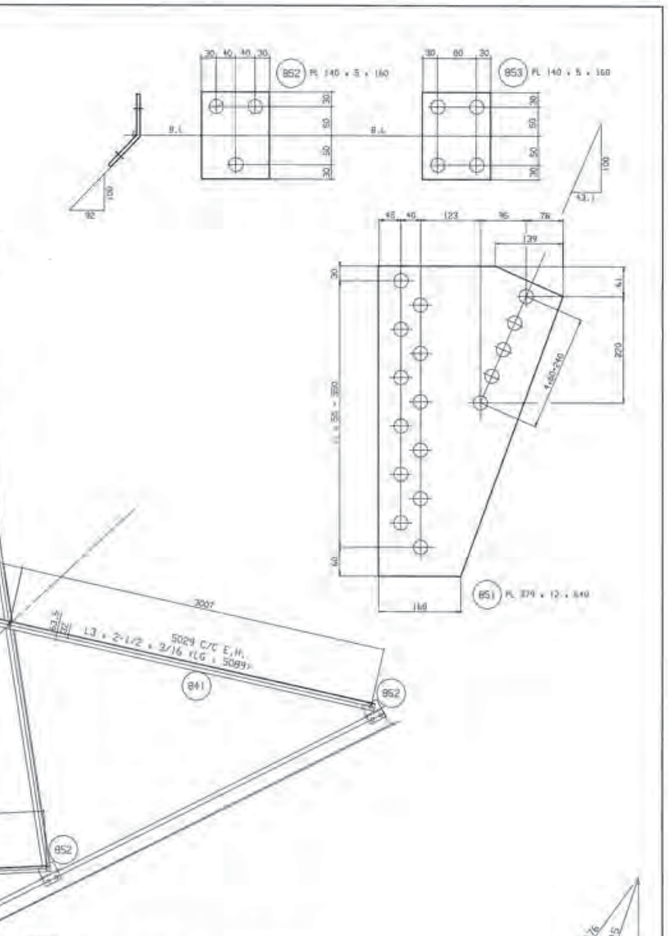
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+2m LEG EXTENSION)

DWG. No. 5L46-T08-0714





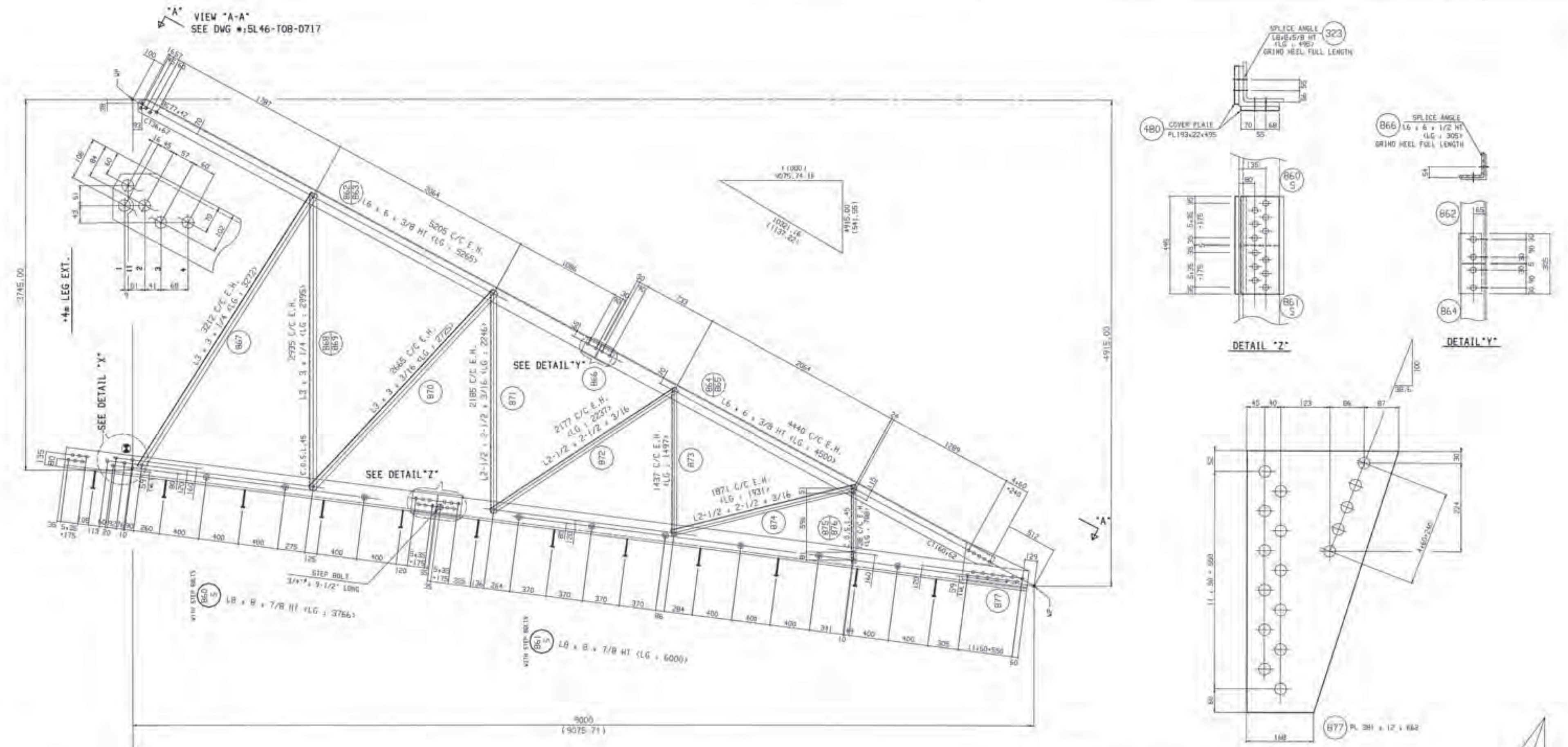
NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T08-879
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 830 TO 843
Mk Nos(PLATE) : 851 TO 853

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	FUNCTIONAL CODE 4.02/53J
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L DETAIL FABRICATION DRAWING OF "53J" TYPE TOWER (+3m LEG EXTENSION)	
DWG No. SL46-T08-0715	1



NOTES:

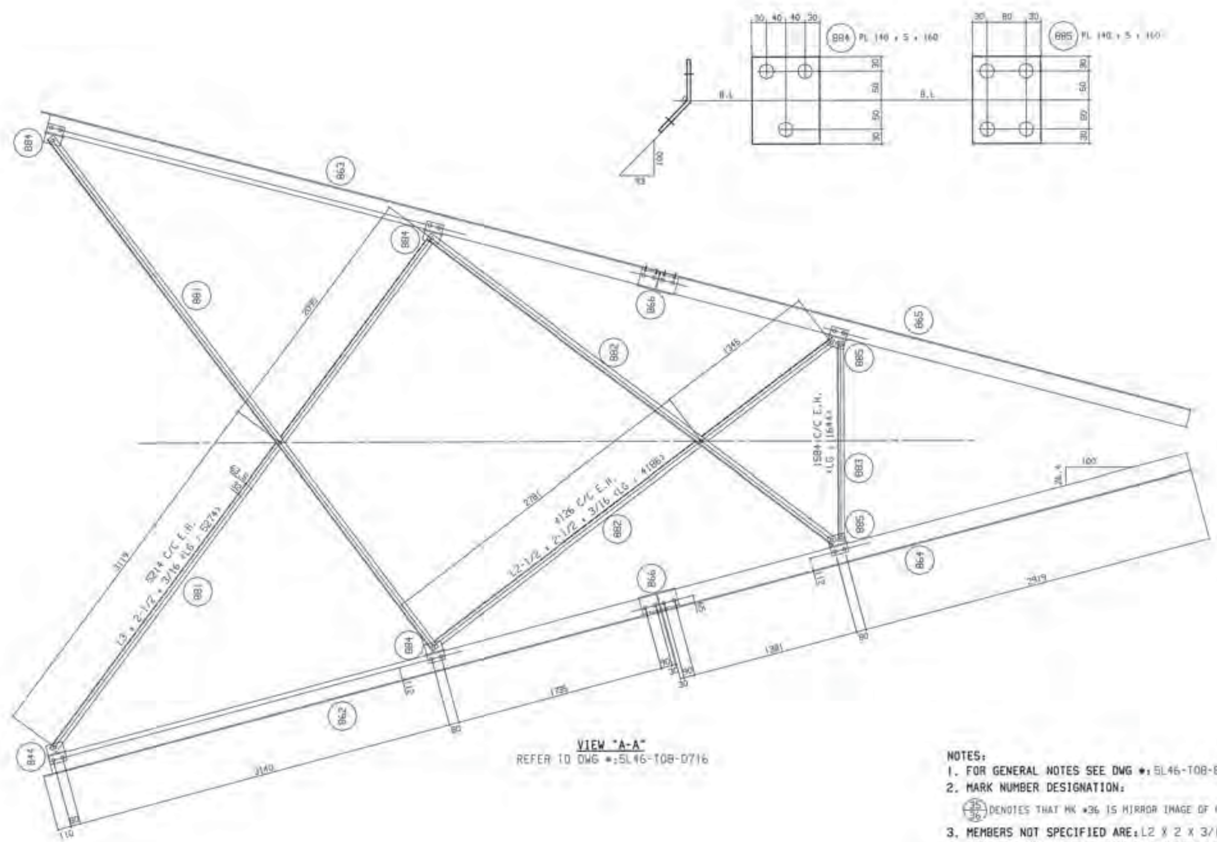
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:

   (35/36) DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

MK Nos(ANGLE) : 323 & 860 TO 876
MK Nos(PLATE) : 480 & 877

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD.	4.02/53J
B.C.Hydro TRANSMISSION ENGINEERING DIVISION	
KELLY LAKE-CHEEKYE 500 KV T/L	
DETAIL FABRICATION DRAWING OF "53J" TYPE TOWER (+4m LEG EXTENSION)	
DWG No. 5L46-T08-0716	1



NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 881 TO 883
Mk Nos(PLATE) : 884 & 885

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

4.02/53J

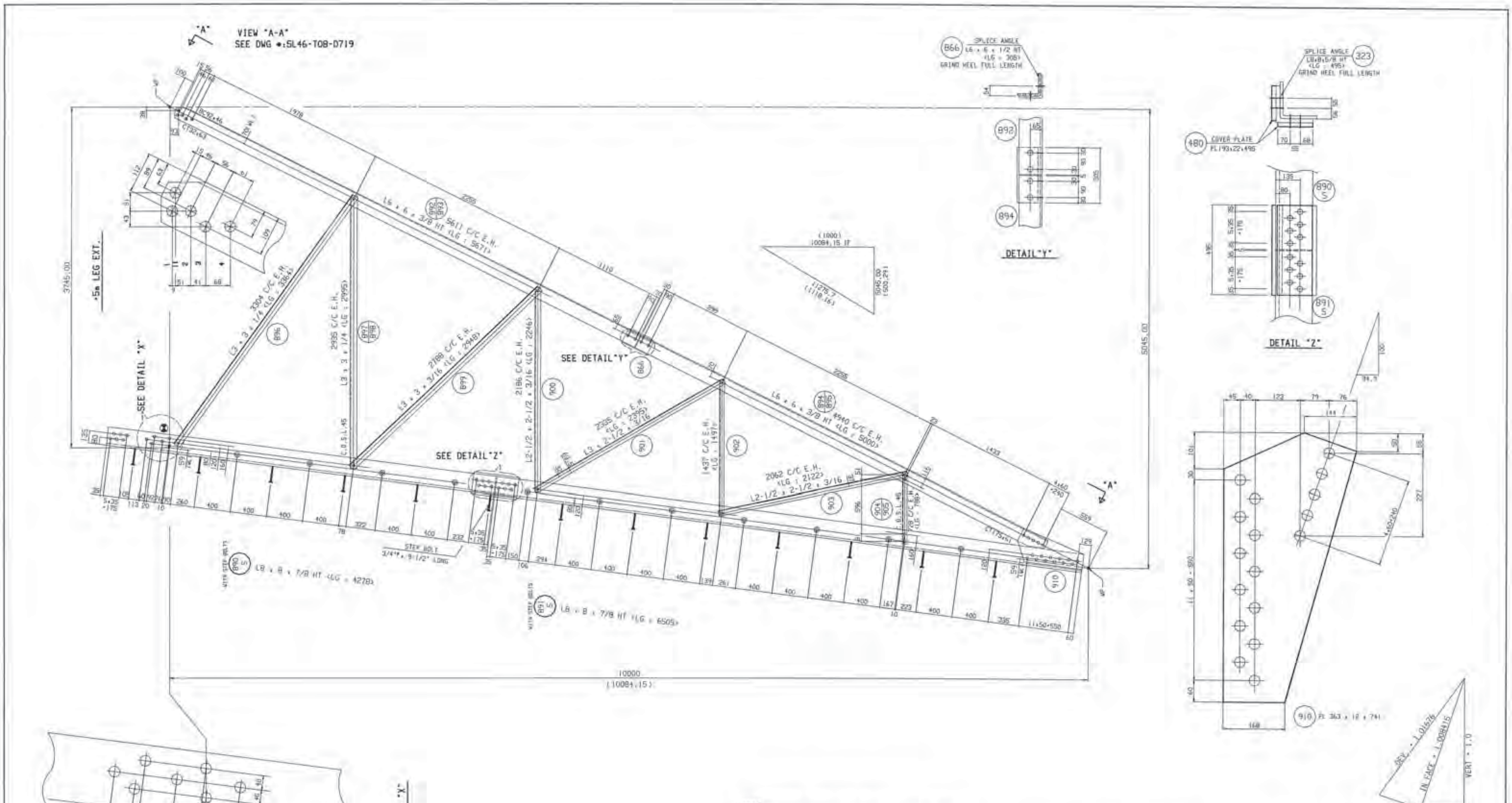
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

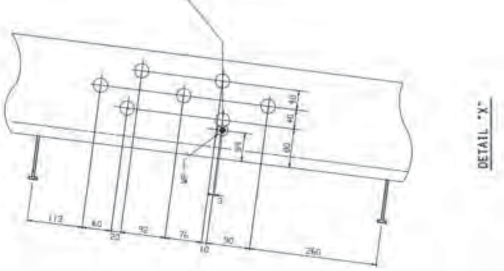
KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+4m LEG OBLIQUE BRACING)

DWG No. 5L46-T08-0717

D





NOTES:

1. FOR GENERAL NOTES SEE DWG #: SL46-T0B-879
2. MARK NUMBER DESIGNATION:

   36/35 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35

3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 323, 866 & 890 TO 905
Mk No.(PLATE) : 480 & 910

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

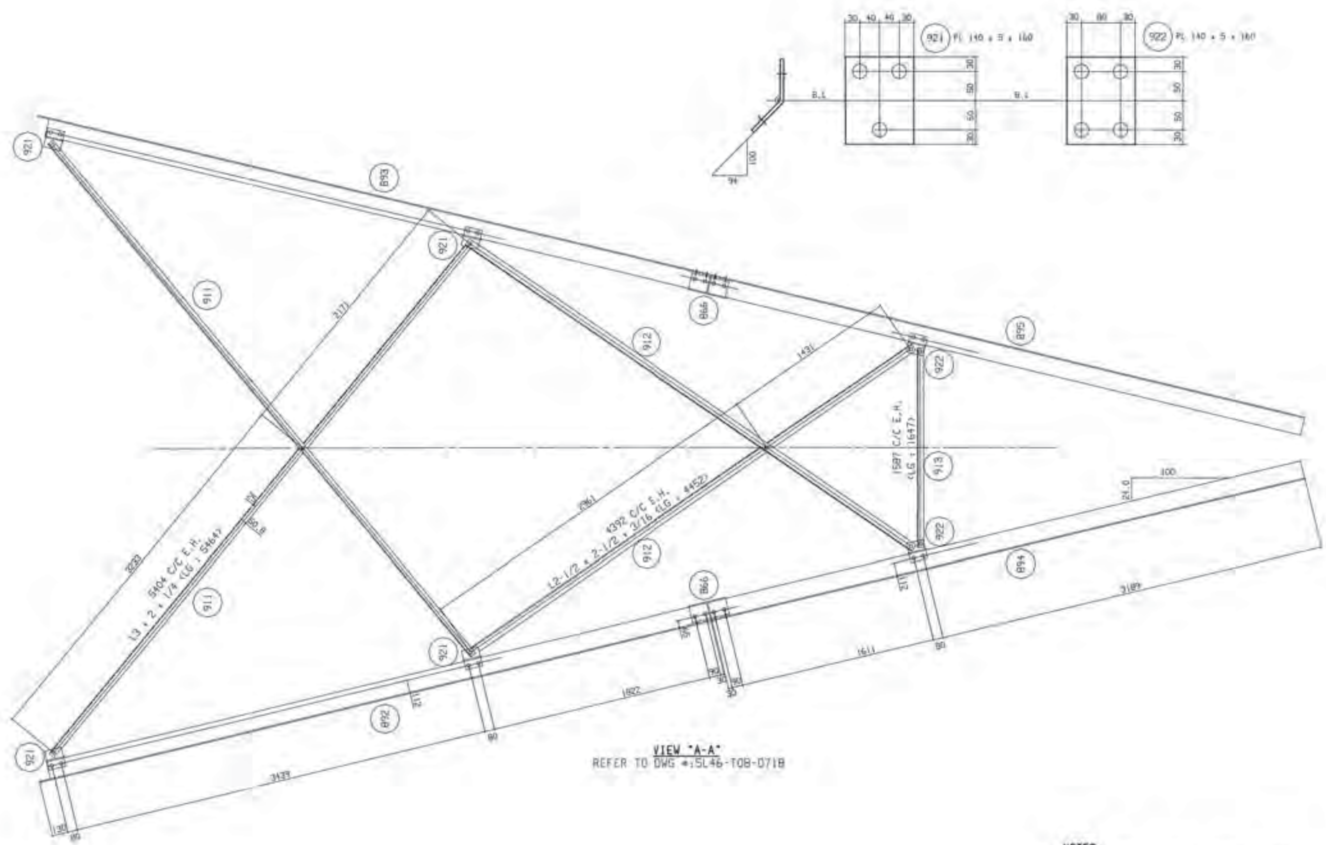
4.02/53J

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+5m LEG EXTENSION)

SL46-T0B-D718



VIEW "A-A"
REFER TO DWG #:5L46-T08-0718

NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 911 TO 913
Mk Nos(PLATE) : 921 & 922

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

FUNCTIONAL CODE: 4.02/53J

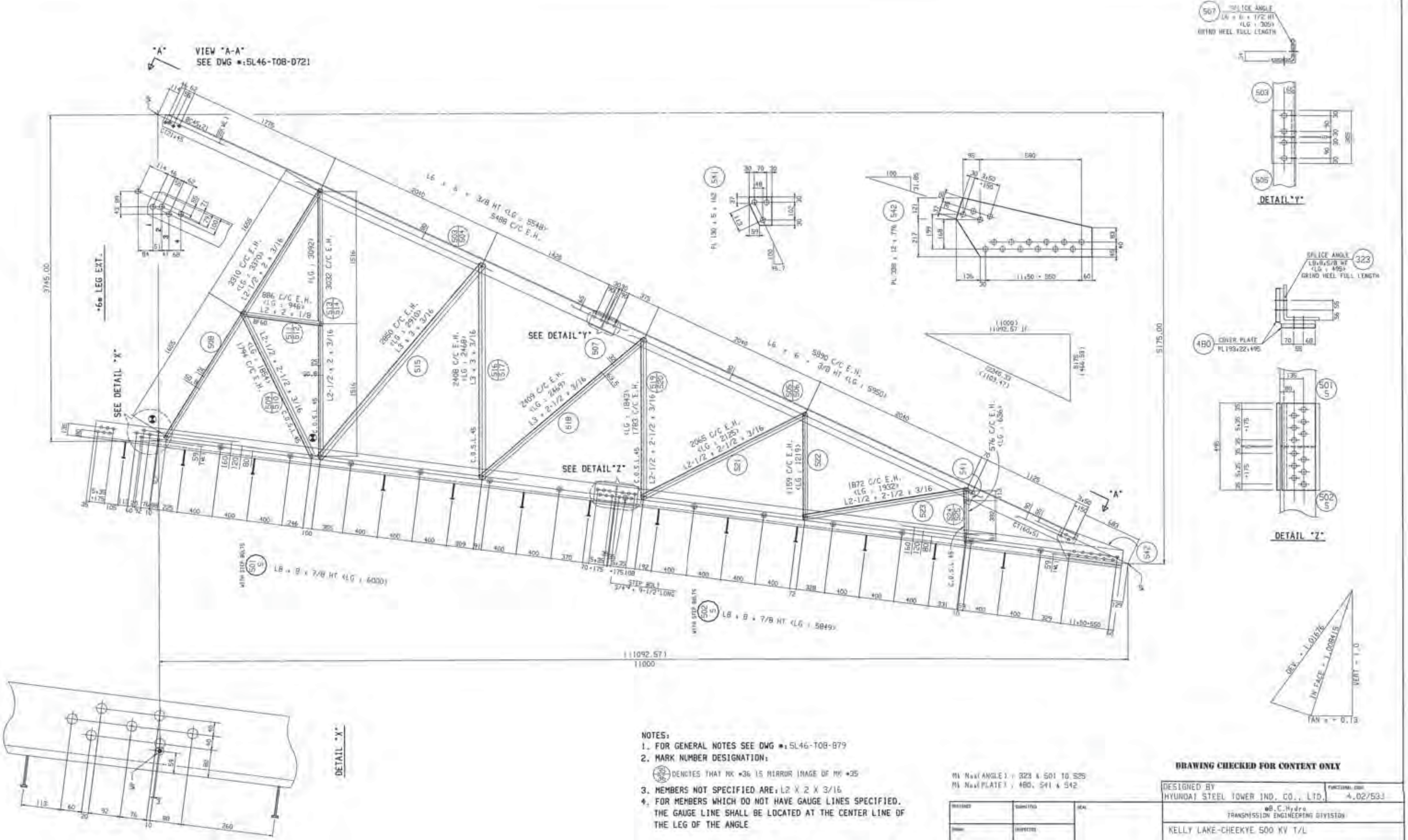
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+5m LEG OBLIQUE BRACING)

DWG No. 5L46-T08-0719 | 2

REVISED PER B.C.HYDRO COMMENTS
ISSUE FOR APPROVAL
FOR FINAL APPROVAL



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
   36/35 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 323 & 501 TO 525
Mk No.(PLATE) : 480, 541 & 542

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

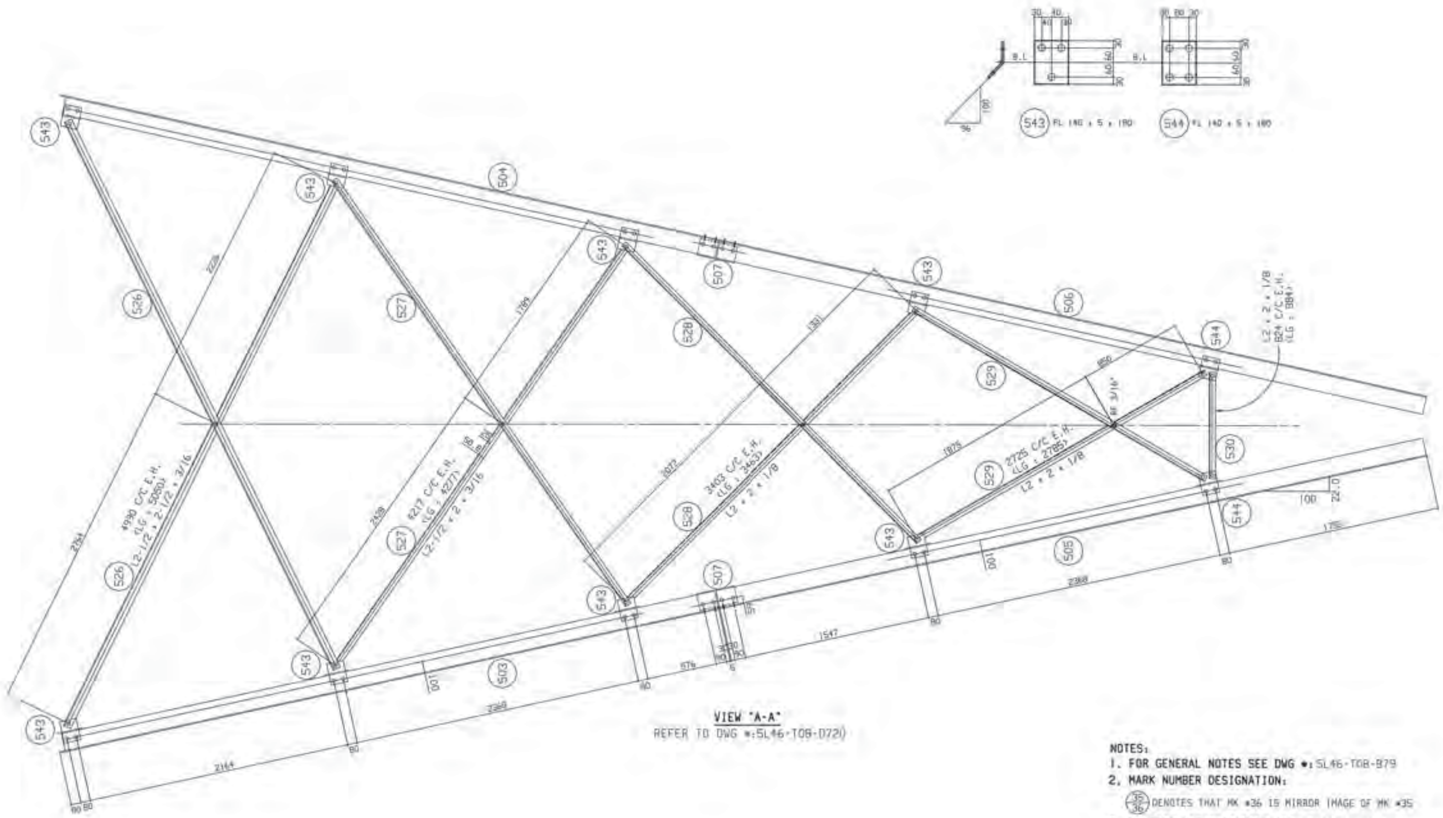
4.02/53J

B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+6m LEG EXTENSION)

5L46-T08-D720



NOTES:
1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:
   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35
3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED, THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk No.(ANGLE) : 526 TO 530
Mk No.(PLATE) : 543 & 544

DRAWING CHECKED FOR CONTENT ONLY

DESIGNED BY
HYUNDAI STEEL TOWER IND. CO., LTD.

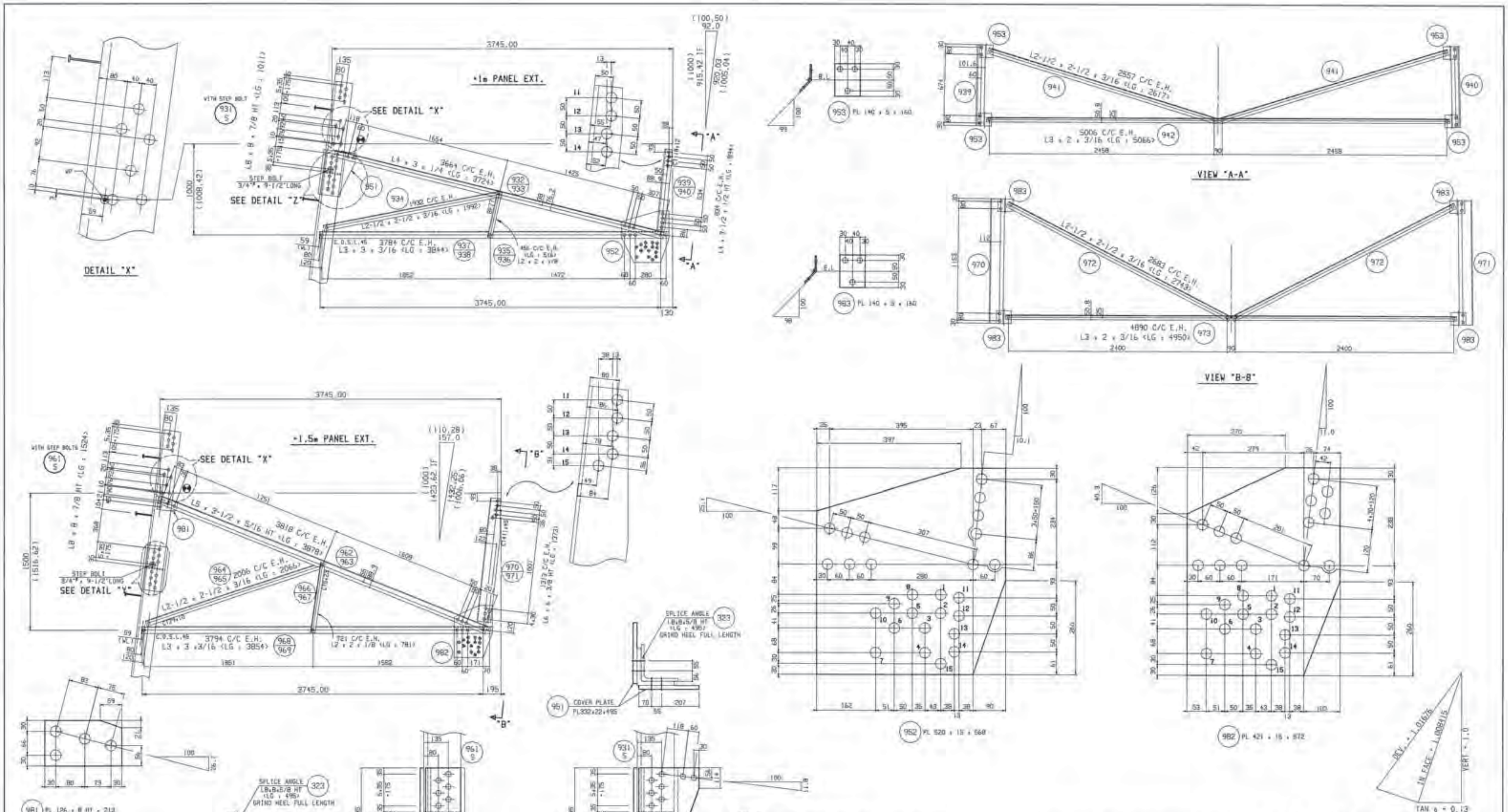
4.02/53J

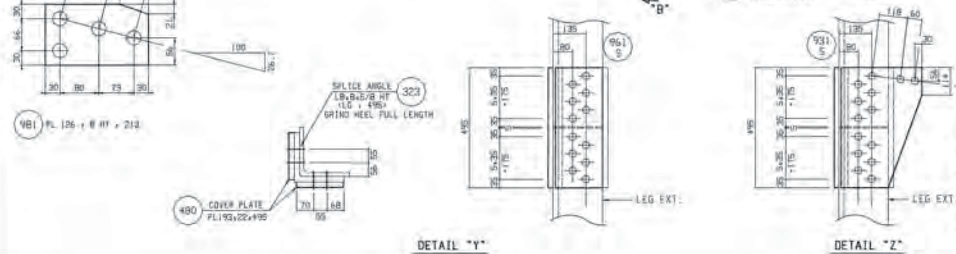
B.C.Hydro
TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING
OF "53J" TYPE TOWER
(+6m LEG OBLIQUE BRACING)

5L46-T08-0721





NOTES:

1. FOR GENERAL NOTES SEE DWG #: 5L46-T08-879
2. MARK NUMBER DESIGNATION:

   35/36 DENOTES THAT MK #36 IS MIRROR IMAGE OF MK #35

3. MEMBERS NOT SPECIFIED ARE: L2 X 2 X 3/16
4. FOR MEMBERS WHICH DO NOT HAVE GAUGE LINES SPECIFIED. THE GAUGE LINE SHALL BE LOCATED AT THE CENTER LINE OF THE LEG OF THE ANGLE

Mk Nos(ANGLE) : 323, 931 TO 942 & 961 TO 973
Mk Nos(PLATE) : 480, 951 TO 953 & 981 TO 983

DRAWING CHECKED FOR CONTENT ONLY

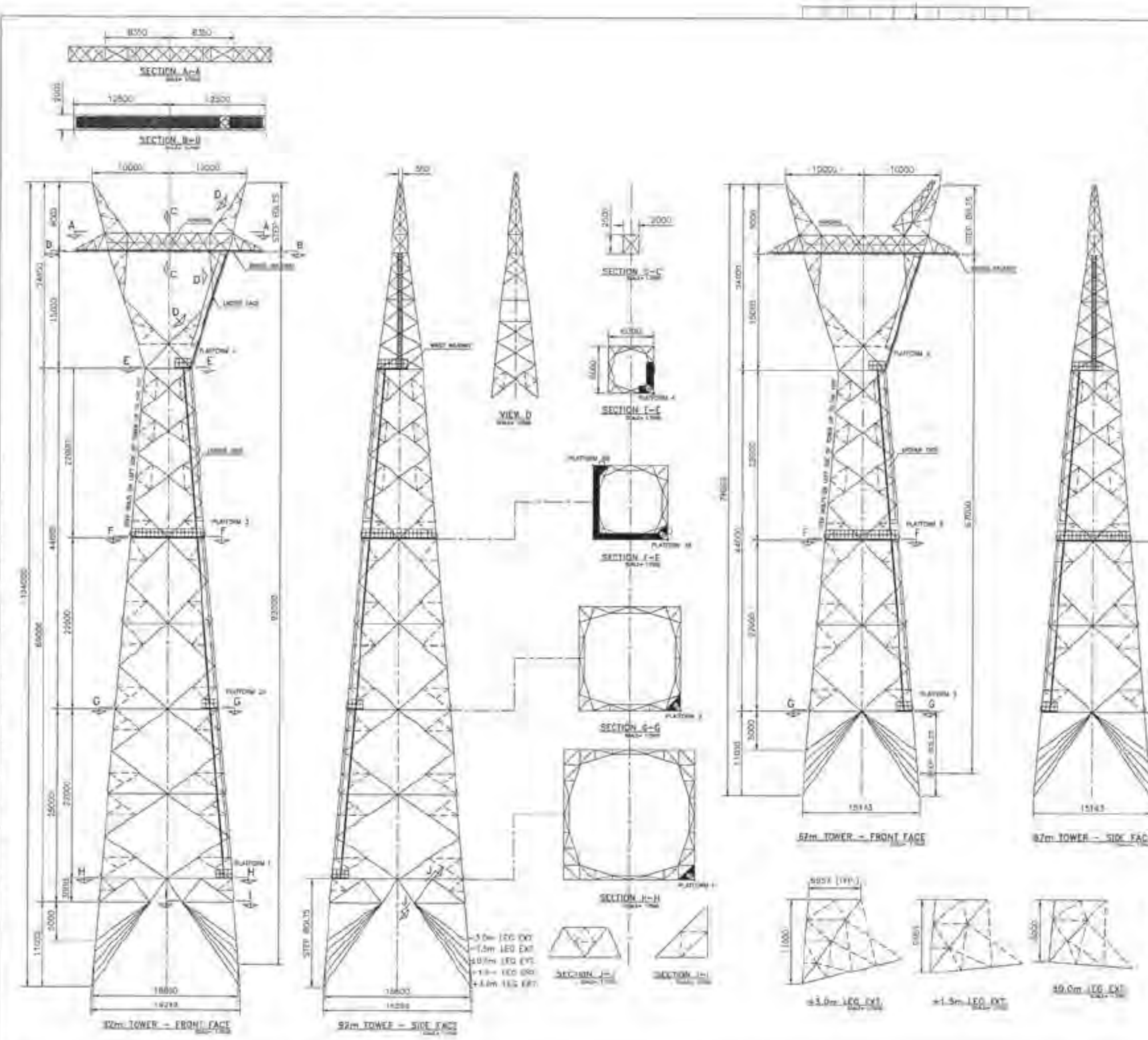
DESIGNED BY HYUNDAI STEEL TOWER IND. CO., LTD. | 4.02/53J

B.C.Hydro TRANSMISSION ENGINEERING DIVISION

KELLY LAKE-CHEEKYE 500 KV T/L

DETAIL FABRICATION DRAWING OF "53J" TYPE TOWER (+1m & +1.5m PANEL EXTENSIONS)

5L46-T08-D722 | 2



TOWER DESIGN NOTES:

1. ALL DIMENSIONS ARE IN INTERNATIONAL SYSTEM UNITS UNLESS OTHERWISE NOTED.
2. FOR TOWER DESIGN AND LOADING CRITERIA, SEE THE FOLLOWING DRAWINGS:
   - 5L044-T0B-00150-001 REV. 0
   - 5L044-T0B-00150-002 REV. 0
   - 5L044-T0B-00150-003 REV. 0
   - 5L044-T0B-00150-004 REV. 0
3. ALL MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING SPECIFICATIONS:
   - STEEL ANGLES: ASTM A572 GRADE 50
   - PLATES: ASTM A572 GRADE 50
   - BOLTS: ASTM A394 TYPE 1 WITH HEX. HEAD
   - NUTS: ASTM A563 GRADE A HEX. NUT
   - LOCKWASHER: ASTM F436
   - BOLT DIMENSIONS: ANSI/ASME B18.2.1
   - NUT DIMENSIONS: ANSI/ASME B18.2.2
   - SCREW THREADS: ANSI/ASME B1.1
   - WASHER DIMENSIONS: ASTM F436
   - STEP BOLTS: ASTM A394 TYPE 0 HEXAGONAL HEAD
4. TOWER MEMBER DESIGN SHALL BE BASED ON THE USE OF CSA STANDARD SIZES.
5. ALL MEMBER CAPACITIES SHALL BE CALCULATED AS NOTED ON REFERENCE 1.
6. MINIMUM EDGE AND END DISTANCES AND BOLT SPACING SHALL BE MET AS NOTED ON REFERENCE 1 & 2 BELOW.
7. ALL ROLLED STEEL SECTIONS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION ACCORDING TO ASTM A123.
8. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF STRUCTURAL WELDING CODE-STEEL, AWS D1.1.
9. NUTS SHALL BE TIGHTENED TO THE FOLLOWING TORQUES:

BOLT DIAM.	SAE GRADE 2	SAE GRADE 5
5/8"Ø	120 FT-LBS (163 N-m)	110 FT-LBS (150 N-m)
3/4"Ø		160 FT-LBS (220 N-m)
7/8"Ø		200 FT-LBS (270 N-m)

10. FOR ANGLE TYPE: "SAE" DENOTE SINGLE ANGLE EQUAL LEGS, "DAE" DOUBLE ANGLE EQUAL LEGS, "2EA" TWO STARED ANGLES EQUAL LEGS, "4EA" FOUR STARED ANGLES EQUAL LEGS (CRUCIFORM SECTION.)
11. FOR BOLTED CONNECTIONS, "S.S." DENOTE SINGLE SHEAR AND "D.S." DOUBLE SHEAR.
12. ALL REDUNDANT MEMBERS SHALL BE A572 GRADE 50.
13. DETAILING SHALL BE IN ACCORDANCE WITH REFERENCE 2.

REFERENCES:

1. ASCE 10-97 "DESIGN OF LATTICED STEEL TRANSMISSION STRUCTURES".
2. STANTEC/BC HYDRO – MERIDIAN-INGLEDOW 500kV T/L – STEEL LATTICE TOWER SPECIFICATION, DOC. NO. 5L044-STN-00003, REV. A, DRAFT, ISSUED BY 1/10/2013.

TWR 542-2	
Section Label	Approx. Section Weight (kg)
Ground Peaks	1,546.8
E-Arms	3,527.5
Bridge	6,867.0
K-Frame	17,067.3
Common Body	75,645.8
+25.0m Body Ext	63,441.9
Angles For Step Bolts	980.1
-3.0m Leg Ext.	2,884.1
-3.0m L.E. Step Bolt Angle	79.1
-1.5m Leg Ext.	3,381.0
-1.5m L.E. Step Bolt Angle	106.7
±0.0m Leg Ext.	4,247.3
±0.0m L.E. Step Bolt Angle	137.9
+1.5m Leg Ext.	4,712.8
+1.5m L.E. Step Bolt Angle	155.7
+3.0m Leg Ext.	5,848.7
+3.0m L.E. Step Bolt Angle	193.1
Platform 5	1,690.9
Platform 4	446.4
Platform 3	1,772.6
Platform 2	237.7
Platform 1	246.3
Ladder For K-Frame	680.0
Ladder E34	206.1
Ladder E32	358.6
Ladder E30	345.6
Ladder E28	123.0
Ladder E26	297.4
Ladder E24	203.6
Ladder E22	216.1
Ladder E20	366.3
Ladder E18	208.1
Ladder E16	226.0
Stub Angle	1,449.3
Total Twr. Wt. (kg)	208,171.1
Total Twr. Wt. (Tons)	208.2
Total Twr. Wt. (kN)	2,041.5

TWR 543-1	
Section Label	Approx. Section Weight (kg)
Ground Peaks	1,546.8
E-Arms	3,519.4
Bridge	6,867.0
K-Frame	17,067.3
Common Body	75,645.8
Angles For Step Bolts	980.1
-3.0m Leg Ext.	2,884.1
-3.0m L.E. Step Bolt Angle	79.1
-1.5m Leg Ext.	3,321.0
-1.5m L.E. Step Bolt Angle	106.7
±0.0m Leg Ext.	4,247.3
±0.0m L.E. Step Bolt Angle	137.6
+1.5m Leg Ext.	4,712.8
+1.5m L.E. Step Bolt Angle	156.7
+3.0m Leg Ext.	5,848.7
+3.0m L.E. Step Bolt Angle	193.1
Platform 5	1,836.9
Platform 4	446.4
Platform 3	1,772.6
Platform 2	237.7
Ladder For K-Frame	880.0
Ladder E34	206.1
Ladder E32	358.6
Ladder E30	345.6
Ladder E28	373.0
Ladder E26	297.4
Ladder E24	203.6
Ladder E22	216.1
Stub Angle	1,713.1
Total Twr. Wt. (kg)	144,821.7
Total Twr. Wt. (Tons)	144.8
Total Twr. Wt. (kN)	1,420.2

NOTE: SECTION WEIGHTS FROM BILL OF MATERIALS

TOWER 542-2 MAXIMUM REACTIONS

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TOWER 543-1 MAXIMUM REACTIONS

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Issued for Record Drawing

DRN	M. MENDIETA		
CHKD	M. MENDIETA		
	M. MENDIETA		
	M. MENDIETA		
1	RECORD DRAWING	10.02.2013	
0	ISSUED FOR CONSTRUCTION	07.24.2012	

SAE TOWERS

[redacted]

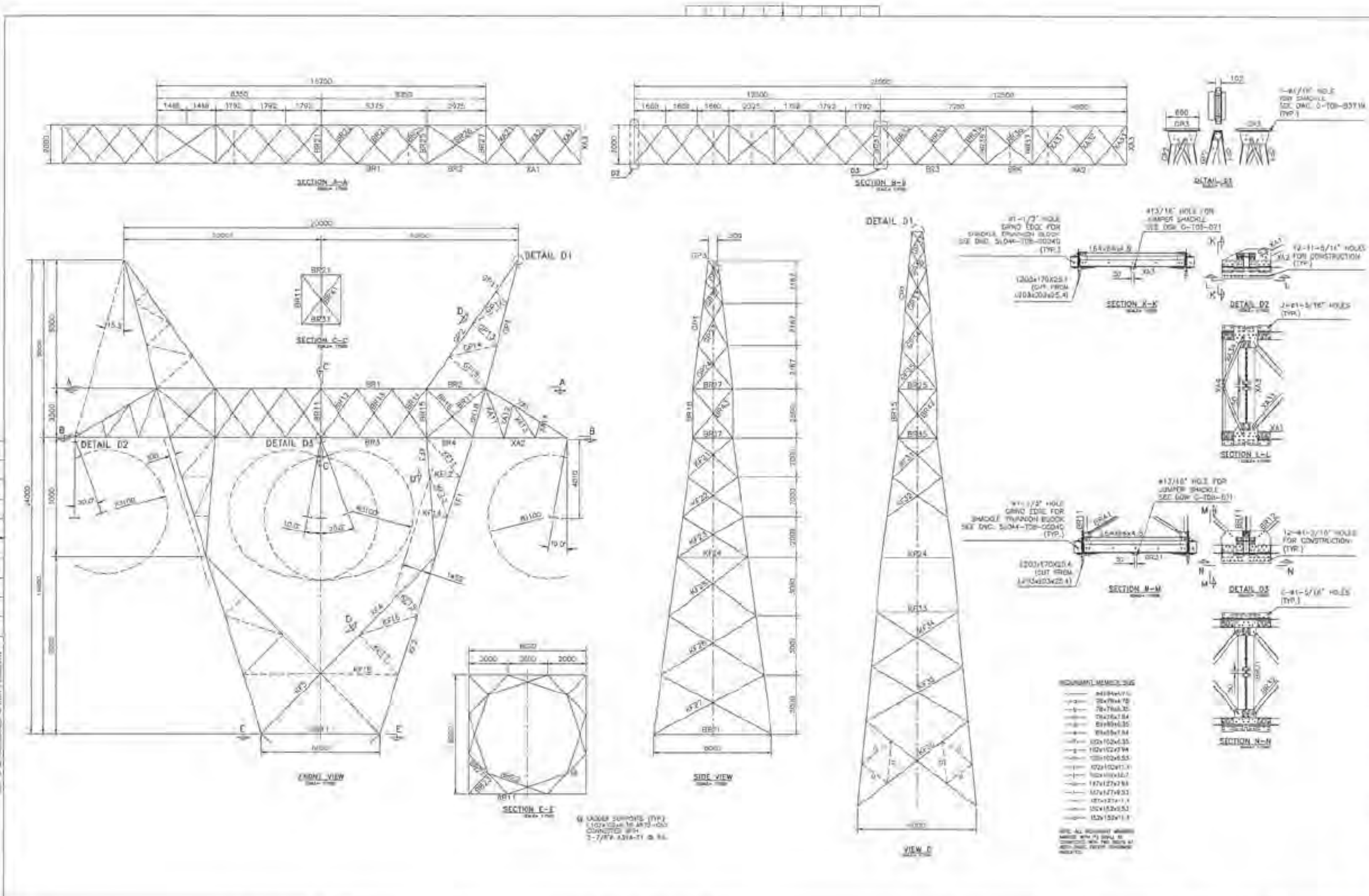
Stantec

PROJECT NUMBER: 118250009
DESCRIPTION: 5L044 REBUILD PROJECT

BChydro

MERIDIAN – INGLEDOW 500 kV T/L REBUILD PROJECT
TYPE 3JAX SELF SUPPORTING RIVER CROSSING DEADEND TOWER
TOWER LAYOUT
DESIGN LAYOUT

DATE: Oct 22, 2013 | 11 | DWG NO. 5L044-T0B-00038-001 | 0 | 1



Group Label	C (kN)	T (kN)	"L" Type	Angle Size	Fy (MPa)	# Bolts	φb (mm)	Conn. Type
GP1	-218.1	394.3	SAI	102x102x11	344.7	2	22.2	SS
GP2	-104.4	133.5	SAI	89x89x6.4	344.7	2	22.2	SS
GP3	-0.9	53.0	C	4x6.191	344.7	2	22.2	SS
GP11	-1.1	0.4	SAI	64x64x4.8	344.7	1	22.2	SS
GP12	-1.2	3.5	SAI	64x64x4.8	344.7	1	22.2	SS
GP13	-1.6	0.6	SAI	64x64x4.8	344.7	1	22.2	SS
GP14	-1.3	2.7	SAI	64x64x4.8	344.7	1	22.2	SS
GP15	-2.3	0.7	SAI	64x64x4.8	344.7	1	22.2	SS
GP21	-40.8	32.3	SAI	64x64x4.8	344.7	4	22.2	SS
GP22	-29.9	28.4	SAI	64x64x4.8	344.7	1	22.2	SS
GP23	-27.0	27.9	SAI	64x64x4.8	344.7	1	22.2	SS
GP24	-16.7	15.4	SAI	64x64x4.8	344.7	1	22.2	SS
GP31	-18.5	28.1	SAI	64x64x4.8	344.7	2	22.2	SS
GP32	-17.8	11.5	SAI	64x64x4.8	344.7	1	22.2	SS
GP33	-12.3	18.3	SAI	64x64x4.8	344.7	1	22.2	SS
GP34	-11.8	8.0	SAI	64x64x4.8	344.7	1	22.2	SS
GP35	-6.5	8.8	SAI	64x64x4.8	344.7	1	22.2	SS
XA1	-250.0	286.5	SAI	127x127x9.5	344.7	5	22.2	SS
XA2	-727.7	585.5	SAI	152x152x11	344.7	6	22.2	SS
XA3	-1.1	377.6	DAI	76x76x4.8	344.7	4	22.2	DS
XA4	-0.7	0.7	DAI	76x76x4.8	344.7	4	22.2	DS
XA11	0.0	4.4	SAI	76x76x6.4	344.7	2	22.2	SS
XA12	-2.7	0.0	SAI	89x89x6.4	344.7	2	22.2	SS
XA13	0.0	3.7	SAI	76x76x6.4	344.7	3	22.2	SS
XA14	-1.4	0.0	SAI	76x76x6.4	344.7	3	22.2	SS
XA21	-88.3	136.8	SAI	76x76x4.8	344.7	3	22.2	SS
XA22	-116.7	87.7	SAI	76x76x6.4	344.7	2	22.2	SS
XA23	-87.5	136.5	SAI	76x76x4.8	344.7	3	22.2	SS
XA31	-170.6	197.7	SAI	89x89x6.4	344.7	4	22.2	SS
XA32	-195.1	167.4	SAI	102x102x6.4	344.7	4	22.2	SS
XA33	-165.5	193.1	SAI	89x89x6.4	344.7	4	22.2	SS
XA34	-2.3	3.5	SAI	64x64x4.8	344.7	2	22.2	SS
BR1	-698.0	641.9	SAI	152x152x11	344.7	6	22.2	SS
BR2	-385.0	330.5	SAI	152x152x9.5	344.7	4	22.2	SS
BR3	-564.7	592.6	SAI	152x152x11	344.7	6	22.2	SS
BR4	-474.6	523.2	SAI	127x127x11	344.7	5	22.2	SS
BR11	-21.0	57.4	DAI	64x64x4.8	344.7	4	22.2	DS
BR12	-170.7	150.8	SAI	102x102x6.4	344.7	3	22.2	SS
BR13	-148.9	172.3	SAI	89x89x6.4	344.7	3	22.2	SS
BR14	-173.9	186.1	SAI	102x102x6.4	344.7	3	22.2	SS
BR15	-420.7	500.0	SAI	152x152x11	344.7	5	22.2	SS
BR16	-678.1	590.3	SAI	203x203x13	344.7	6	22.2	SS
BR17	-215.0	200.5	SAI	127x127x7.9	344.7	4	22.2	SS
BR18	-356.5	280.5	SAI	152x152x9.5	344.7	4	22.2	SS
BR21	-53.3	0.0	DAI	64x64x4.8	344.7	4	22.2	DS
BR22	-52.0	47.0	SAI	64x64x4.8	344.7	2	22.2	SS
BR23	-48.5	53.6	SAI	64x64x4.8	344.7	2	22.2	SS
BR24	-35.5	30.4	SAI	64x64x4.8	344.7	2	22.2	SS
BR25	-22.6	9.5	SAI	76x76x4.8	344.7	2	22.2	SS
BR26	-131.3	138.9	SAI	102x102x6.4	344.7	3	22.2	SS
BR27	-33.5	39.0	SAI	76x76x4.8	344.7	2	22.2	SS
BR31	-1.6	260.7	DAI	76x76x4.8	344.7	4	22.2	DS
BR32	-118.9	149.7	SAI	76x76x6.4	344.7	3	22.2	SS
BR33	-152.3	119.5	SAI	89x89x6.4	344.7	3	22.2	SS
BR34	-122.9	105.9	SAI	76x76x6.4	344.7	3	22.2	SS
BR35	-10.4	11.2	SAI	76x76x4.8	344.7	2	22.2	SS
BR36	-205.4	229.7	SAI	102x102x7.9	344.7	3	22.2	SS
BR37	-32.4	37.5	SAI	64x64x4.8	344.7	2	22.2	SS
BR41	-73.2	119.9	SAI	76x76x6.4	344.7	3	22.2	SS
BR42	-67.7	77.0	SAI	76x76x6.4	344.7	2	22.2	SS
BR43	-328.8	236.6	SAI	127x127x9.5	344.7	4	22.2	SS
KF1	-2169.9	1785.6	2EA	203x203x16	344.7	12	22.2	DS
KF2	-2648.2	2380.0	2EA	203x203x16	344.7	12	22.2	DS
KF3	-673.8	787.5	SAI	203x203x13	344.7	7	22.2	SS
KF4	-402.0	505.8	SAI	203x203x13	344.7	5	22.2	SS
KF5	-346.9	543.0	SAI	203x203x13	344.7	5	22.2	SS
KF11	-12.7	10.3	SAI	64x64x4.8	344.7	1	22.2	SS
KF12	-5.5	6.2	SAI	64x64x4.8	344.7	1	22.2	SS
KF13	-18.6	9.9	SAI	64x64x4.8	344.7	1	22.2	SS
KF14	-4.6	1.7	SAI	64x64x4.8	344.7	1	22.2	SS
KF15	-5.9	0.4	SAI	64x64x4.8	344.7	1	22.2	SS
KF16	-7.7	14.8	SAI	64x64x4.8	344.7	1	22.2	SS
KF17	-11.2	2.4	SAI	64x64x4.8	344.7	1	22.2	SS
KF18	-7.2	16.0	SAI	89x89x6.4	344.7	1	22.2	SS
KF21	-452.0	424.5	SAI	127x127x11	344.7	4	22.2	SS
KF22	-315.9	316.9	SAI	127x127x9.5	344.7	4	22.2	SS
KF23	-170.5	251.6	SAI	127x127x7.9	344.7	4	22.2	SS
KF24	-3.3	13.1	SAI	102x102x6.4	344.7	2	22.2	SS
KF25	-143.6	289.2	SAI	127x127x9.5	344.7	3	22.2	SS
KF26	-193.4	182.4	SAI	127x127x9.5	344.7	3	22.2	SS
KF27	-185.9	162.0	SAI	127x127x9.5	344.7	2	22.2	SS
KF31	-9.9	9.0	SAI	64x64x4.8	344.7	1	22.2	SS
KF32	-4.8	5.3	SAI	64x64x4.8	344.7	1	22.2	SS
KF33	-2.7	2.8	SAI	64x64x4.8	344.7	1	22.2	SS
KF34	-6.6	5.2	SAI	76x76x4.8	344.7	1	22.2	SS
KF35	-7.5	10.1	SAI	76x76x4.8	344.7	1	22.2	SS
KF36	-151.3	143.8	SAI	152x152x9.5	344.7	2	22.2	SS

1 RECORD DRAWING 10.02.2013
0 ISSUED FOR CONSTRUCTION 12.24.2012

M. MENDIETA
M. MENDIETA
M. MENDIETA
M. MENDIETA

SAE TOWERS

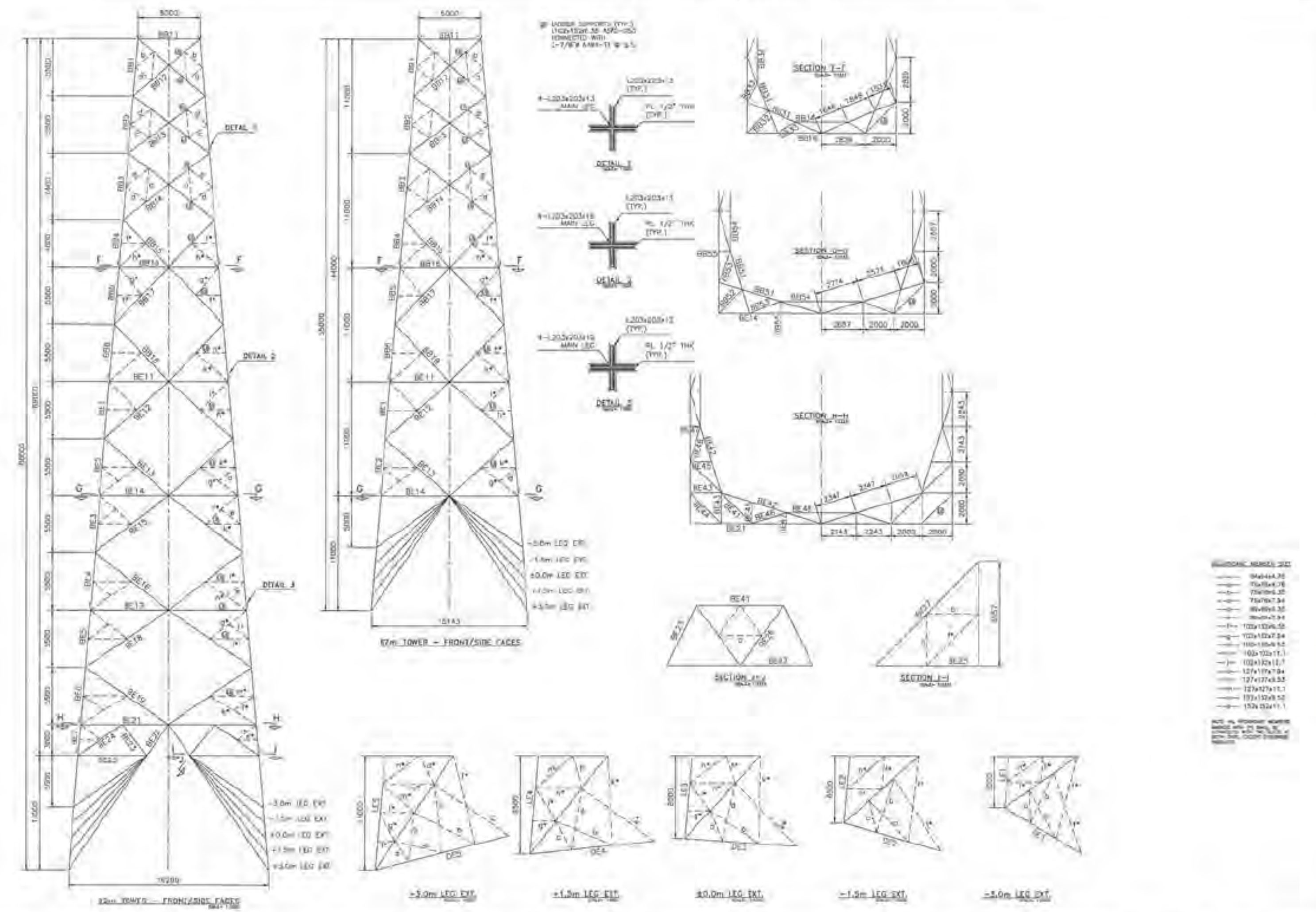
Stantec
PROJECT NUMBER - 1115200009
DESCRIPTION: 5L044 REBUILD PROJECT

BChydro

MERIDIAN – INGLEDOW 500 kV T/L
REBUILD PROJECT
TYPE 3JGX SELF SUPPORTING
RIVER CROSSING DEADEND TOWER
TOWER LAYOUT
UPPER PART

5L044-T08-00038-002 | 1

Issued for Record Drawing



Group Label	C (kN)	T (kN)	"L" Type	Angle Size	Fy (MPa)	# Bolts	ϕ_b (mm)	Conn. Type
BB1	-2994.8	2819.1	4EA	203x203x13	344.7	16	22.2	0.5
BB2	-3569.0	3268.1	4EA	203x203x13	344.7	16	22.2	0.5
BB3	-3972.1	3708.1	4EA	203x203x16	344.7	20	22.2	0.5
BB4	-4597.1	4113.1	4EA	203x203x16	344.7	20	22.2	0.5
BB5	-4623.5	4090.7	4EA	203x203x16	344.7	20	22.2	0.5
BB6	-5231.0	4704.4	4EA	203x203x16	344.7	20	22.2	0.5
BB11	-703.3	607.1	SAE	152x152x16	344.7	6	22.2	5.5
BB12	-489.8	476.1	SAE	152x152x16	344.7	4	22.2	5.5
BB13	-412.2	415.0	SAE	152x152x13	344.7	4	22.2	5.5
BB14	-387.5	378.0	SAE	203x203x13	344.7	3	22.2	5.5
BB15	-322.0	328.3	SAE	203x203x13	344.7	3	22.2	5.5
BB16	-67.1	66.0	SAE	127x127x7.9	344.7	2	22.2	5.5
BB17	-419.1	402.1	SAE	203x203x13	344.7	4	22.2	5.5
BB18	-360.1	362.6	SAE	203x203x13	344.7	3	22.2	5.5
BB21	-46.7	50.6	SAE	76x76x4.8	344.7	2	22.2	5.5
BB22	-107.9	98.1	SAE	89x89x7.9	344.7	2	22.2	5.5
BB23	-70.9	85.7	SAE	76x76x4.8	344.7	2	22.2	5.5
BB31	-111.1	107.8	SAE	102x102x11	344.7	2	22.2	5.5
BB32	-73.1	69.9	SAE	76x76x6.4	344.7	2	22.2	5.5
BB33	-11.7	11.8	SAE	64x64x4.8	344.7	1	22.2	5.5
BB34	-24.5	23.6	SAE	89x89x6.4	344.7	2	22.2	5.5
BB51	-52.1	47.3	SAE	127x127x7.9	344.7	2	22.2	5.5
BB52	-42.1	37.5	SAE	76x76x4.8	344.7	2	22.2	5.5
BB53	-19.5	18.4	SAE	64x64x4.8	344.7	1	22.2	5.5
BB54	-38.1	37.6	SAE	89x89x6.4	344.7	2	22.2	5.5
BB56	-1.8	1.5	SAE	64x64x4.8	344.7	1	22.2	5.5
BE1	-5254.5	4685.8	4EA	203x203x19	344.7	24	22.2	0.5
BE2	-5914.9	5161.1	4EA	203x203x19	344.7	24	22.2	0.5
BE3	-5512.3	4818.4	4EA	203x203x19	344.7	24	22.2	0.5
BE4	-5934.3	5269.6	4EA	203x203x19	344.7	24	22.2	0.5
BE5	-5857.5	5244.0	4EA	203x203x19	344.7	24	22.2	0.5
BE6	-6483.9	5646.2	4EA	203x203x19	344.7	24	22.2	0.5
BE7	-6500.9	5628.5	4EA	203x203x19	344.7	24	22.2	0.5
BE11	-40.1	31.8	DAE	152x152x9.5	344.7	2	22.2	0.5
BE12	-358.7	344.9	SAE	203x203x13	344.7	3	22.2	5.5
BE13	-322.2	318.7	SAE	203x203x13	344.7	3	22.2	5.5
BE14	-97.8	93.4	SAE	127x127x7.9	344.7	2	22.2	5.5
BE15	-353.7	307.2	SAE	203x203x13	344.7	3	22.2	5.5
BE16	-281.3	315.2	SAE	203x203x13	344.7	3	22.2	5.5
BE17	-49.6	38.4	DAE	203x203x13	344.7	2	22.2	0.5
BE18	-304.9	308.2	SAE	203x203x16	344.7	3	22.2	5.5
BE19	-284.1	287.3	SAE	203x203x13	344.7	3	22.2	5.5
BE21	-135.6	117.4	SAE	102x102x9.5	344.7	2	22.2	5.5
BE22	-601.4	594.7	DAE	127x127x7.9	344.7	4	22.2	0.5
BE23	-67.3	74.5	SAE	102x102x7.9	344.7	2	22.2	5.5
BE24	-116.8	83.4	SAE	127x127x7.9	344.7	2	22.2	5.5
BE25	-124.6	127.4	SAE	127x127x7.9	344.7	2	22.2	5.5
BE26	-9.3	11.7	SAE	76x76x4.8	344.7	2	22.2	5.5
BE27	-13.1	11.6	SAE	127x127x7.9	344.7	2	22.2	5.5
BE41	-25.5	25.6	SAE	102x102x7.9	344.7	2	22.2	5.5
BE42	-49.7	47.9	SAE	127x127x7.9	344.7	2	22.2	5.5
BE43	-19.4	16.8	SAE	64x64x4.8	344.7	1	22.2	5.5
BE44	-24.6	26.5	SAE	76x76x4.8	344.7	1	22.2	5.5
BE45	-0.7	0.9	SAE	64x64x4.8	344.7	1	22.2	5.5
BE46	-30.4	27.5	SAE	76x76x4.8	344.7	1	22.2	5.5
BE47	-0.7	0.5	SAE	64x64x4.8	344.7	1	22.2	5.5
BE48	-54.1	49.5	SAE	89x89x6.4	344.7	1	22.2	5.5
LE1	-6587.2	5655.8	4EA	203x203x19	344.7	24	22.2	0.5
DE1	-429.1	524.6	SAE	203x203x13	344.7	4	22.2	5.5
LE2	-6233.6	5551.7	4EA	203x203x19	344.7	24	22.2	0.5
DE2	-464.0	430.8	SAE	203x203x13	344.7	4	22.2	5.5
LE3	-6232.4	5452.2	4EA	203x203x19	344.7	24	22.2	0.5
DE3	-439.7	565.5	SAE	203x203x13	344.7	4	22.2	5.5
LE4	-6230.9	5356.8	4EA	203x203x19	344.7	24	22.2	0.5
DE4	-455.8	586.7	SAE	203x203x13	344.7	4	22.2	5.5
LE5	-6905.4	5378.7	4EA	203x203x19	344.7	24	22.2	0.5
DE5	-621.3	610.9	SAE	203x203x13	344.7	4	22.2	5.5

REV.	DATE	DESCRIPTION	DATE
1		RECORD DRAWING	10.02.2013
0		ISSUED FOR CONSTRUCTION	07.24.2012

DRWN M. MENDIETA
DSGN M. MENDIETA
CHKD M. MENDIETA
APPD M. MENDIETA

SAE TOWERS

Stantec

PROJECT NUMBER : 118250000
DESCRIPTION: SL044 REBUILD PROJECT

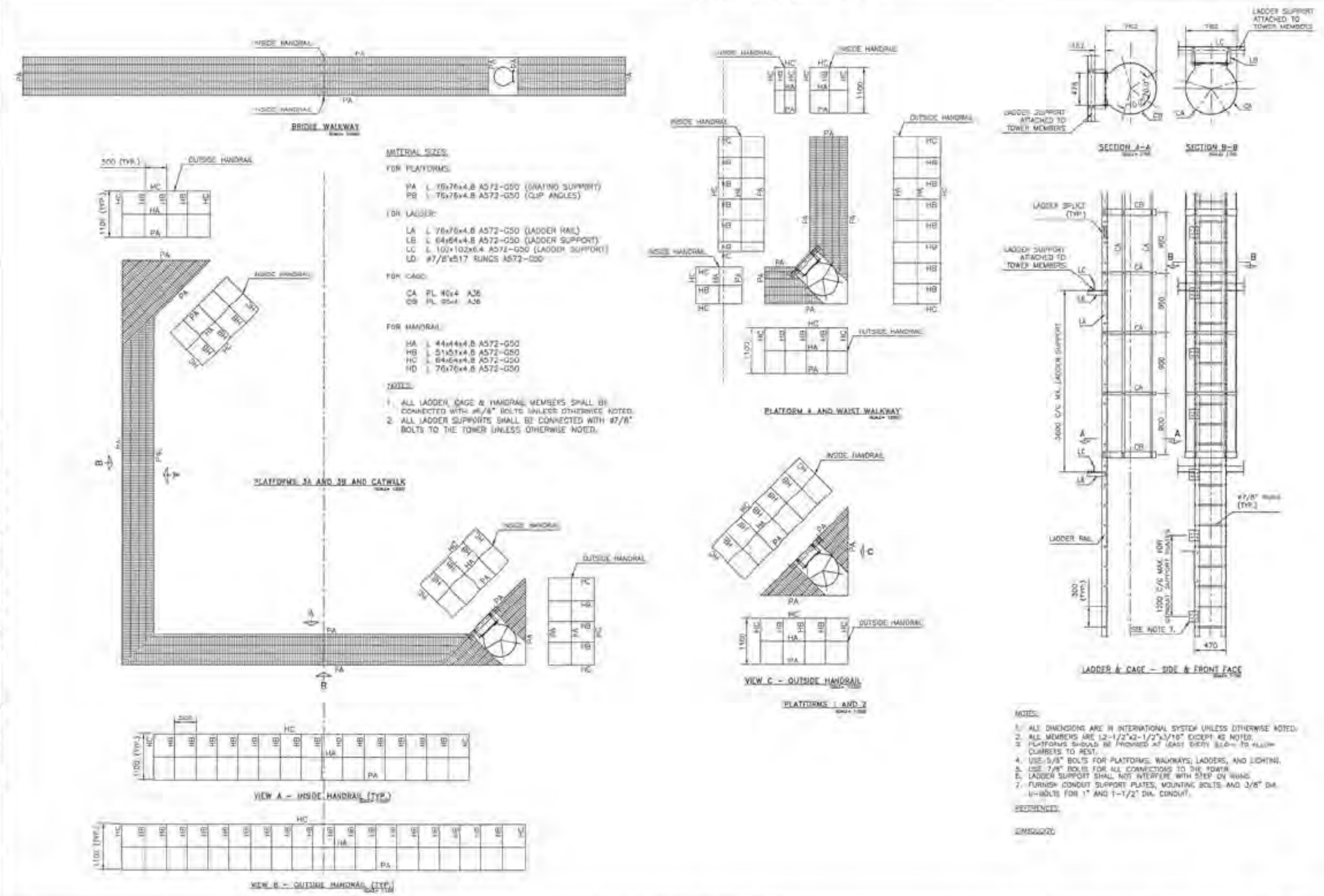
[redacted]

BChydro

MERIDIAN - INGLEDOW 500 kV T/L
REBUILD PROJECT
TYPE 3JGX SELF SUPPORTING
RIVER CROSSING DEADEND TOWER
TOWER LAYOUT
LOWER PART - BODY AND LEGS

DWG. NO. SL044-T08-00038-003 | SIZE D | R 1

Issued for Record Drawing



MATERIAL SIZES:

FOR PLATFORMS:

PA L 76x76x4.8 A572-G50 (GRATING SUPPORT)
PB L 76x76x4.8 A572-G50 (CLIP ANGLES)

FOR LADDER:

LA L 76x76x4.8 A572-G50 (LADDER RAIL)
LB L 64x64x4.8 A572-G50 (LADDER SUPPORT)
LC L 102x102x6.4 A572-G50 (LADDER SUPPORT)
LD #7/8"x517 RUNGS A572-G50

FOR CAGE:

CA PL 40x4 A36
CB PL 95x4 A36

FOR HANDRAIL:

HA L 44x44x4.8 A572-G50
HB L 51x51x4.8 A572-G50
HC L 64x64x4.8 A572-G50
HD L 76x76x4.8 A572-G50

NOTES:

1. ALL LADDER, CAGE & HANDRAIL MEMBERS SHALL BE CONNECTED WITH #5/8" BOLTS UNLESS OTHERWISE NOTED.
2. ALL LADDER SUPPORTS SHALL BE CONNECTED WITH #7/8" BOLTS TO THE TOWER UNLESS OTHERWISE NOTED.

NOTES:

1. ALL DIMENSIONS ARE IN INTERNATIONAL SYSTEM UNLESS OTHERWISE NOTED.
2. ALL MEMBERS ARE L2-1/2"x2-1/2"x3/16" EXCEPT AS NOTED.
3. PLATFORMS SHOULD BE PROVIDED AT LEAST EVERY 9.0m TO ALLOW CLIMBERS TO REST.
4. USE 5/8" BOLTS FOR PLATFORMS, WALKWAYS, LADDERS, AND LIGHTING.
5. USE 7/8" BOLTS FOR ALL CONNECTIONS TO THE TOWER.
6. LADDER SUPPORT SHALL NOT INTERFERE WITH STEP ON RUNG.
7. FURNISH CONDUIT SUPPORT PLATES, MOUNTING BOLTS AND 3/8" DIA. U-BOLTS FOR 1" AND 1-1/2" DIA. CONDUIT.

REFERENCES:

DRAWINGS:

REV.	DATE	DESCRIPTION
1	10.02.2013	RECORD DRAWING
0	07.24.2012	ISSUED FOR CONSTRUCTION

DRAWN: M. MENDIETA
DESIGN: M. MENDIETA
CHECKED: M. MENDIETA
APPROVED: M. MENDIETA

SAE TOWERS

PROJECT NUMBER - 11825009
DESCRIPTION: 5L044 REBUILD PROJECT

BChydro

MERIDIAN - INGLEDOW 500 kV T/L
REBUILD PROJECT
TYPE 3JGX SELF SUPPORTING
RIVER CROSSING DEADEND TOWER
TOWER LAYOUT
LADDER AND PLATFORM

[redacted]

DATE: 02.22.2013 | 11

DWG NO. 5L044-T08-00038-004 | SIZE D | R 1

NOT TO BE REPRODUCED WITHOUT PERMISSION.

Issued for Record Drawing

[illegible]

No.	Remarks	Date
1	RECORD DRAWING	10.02.2013
0	ISSUED FOR CONSTRUCTION	07.24.2012

DRWN M. MENDIETA
CHKD M. MENDIETA
APPD M. MENDIETA
M. MENDIETA

FOR INFORMATION ONLY
FOR APPROVAL
FOR MANUFACTURE
FOR CONSTRUCTION
AS BUILT

SAE TOWERS

[redacted]

Stantec

PROJECT NUMBER : 116250009
DESCRIPTION: 5L044 REBUILD PROJECT

BChydro

MERIDIAN – INGLEDOW 500 kV T/L
REBUILD PROJECT
TYPE 3JCX SELF SUPPORTING
RIVER CROSSING DEADEND TOWER
TOWER LAYOUT
MEMBER SCHEDULE FOR TWR 5A2-S

DATE 05.22.2013 | SHEET 11 | DWG NO 5L044-T3B-U0038-005 | SIZE D | REV 1

Issued for Record Drawing

DWN	M. MENDIETA
CHK	M. MENDIETA
CHK	M. MENDIETA
APRV	M. MENDIETA

SAE TOWERS

Stantec

PROJECT NUMBER 115250009
DESCRIPTION: 5L044 REBUILD PROJECT

BChydro

[redacted]

MERIDIAN – INGLEDOW 500 kV T/L
REBUILD PROJECT
TYPE 5L0X SELF SUPPORTING
RIVER CROSSING DEADEND TOWER
TOWER LAYOUT
MEMBER SCHEDULE FOR TOWER 94-1

REV	REVISIONS	DATE
1	RECORD DRAWING	10.03.2013
0	ISSUED FOR CONSTRUCTION	07.24.2012

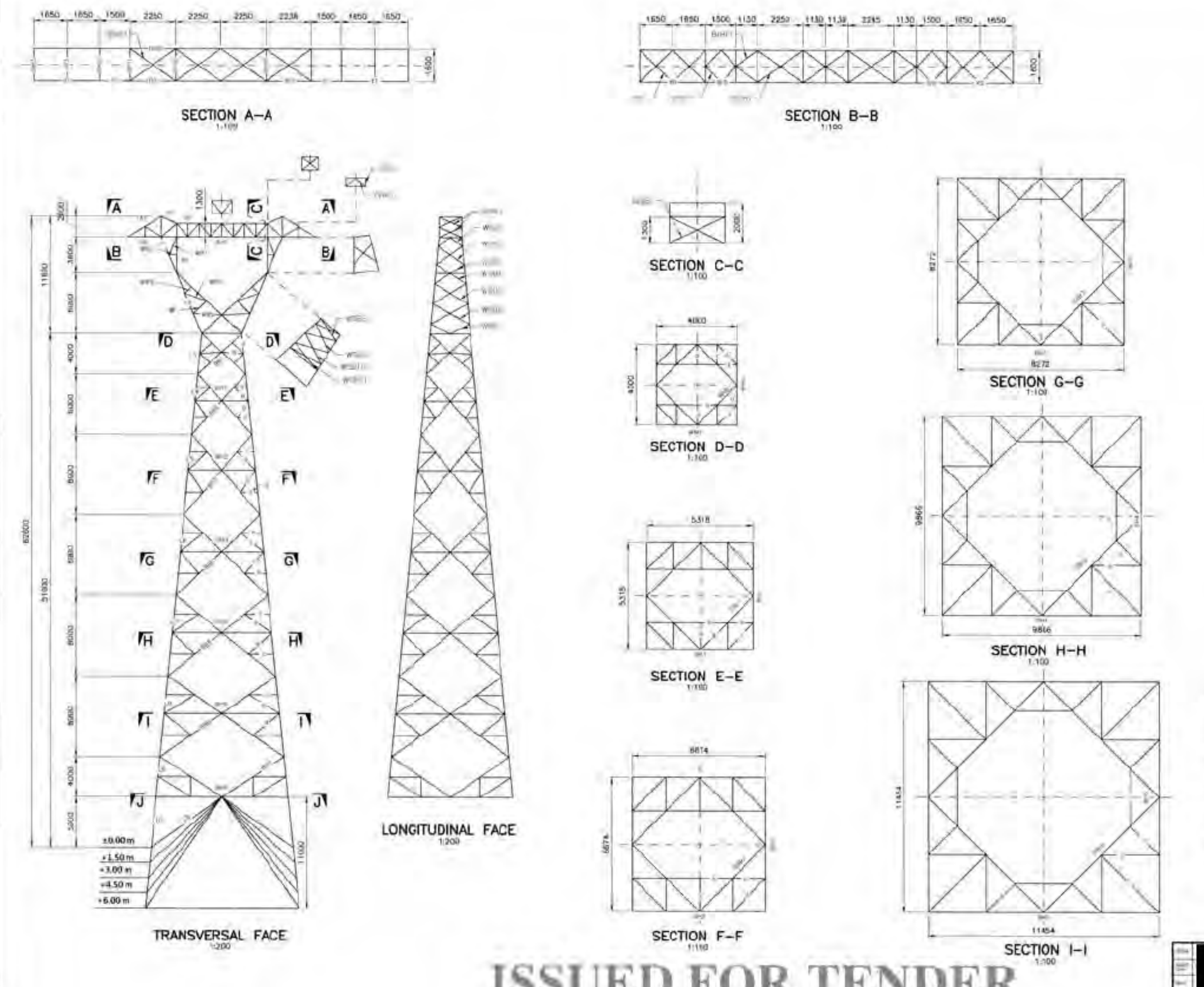
REFERENCE DRAWINGS

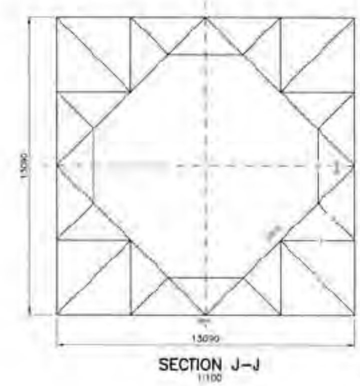
REFERENCE DRAWINGS

DATE: Oct. 22, 2013

DWG NO. 5L044-T08-00075-006

Issued for Record Drawing





Member	Section	No. Bolts
a	L44x44x4.8	1
b	L44x44x6.4	1
c	L51x51x4.8	1
d	L51x51x6.4	1
e	L64x64x6.4	1

PRELIMINARY

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND ALL FORCES ARE IN kN.
2. ALL STEEL ANGLE, PLATE AND MISCELLANEOUS MEMBERS SHALL CONFORM TO CSA G40.20/G40.21 STRUCTURAL GRADE 350W.
3. ALL MAIN MEMBERS =< 2.0 m ABOVE GROUND SHALL HAVE A MINIMUM THICKNESS OF 1/4".
4. ALL MAIN MEMBERS > 2.0 m ABOVE GROUND SHALL HAVE A MINIMUM THICKNESS OF 3/16".
5. BOLTS SHALL BE 3/4" CONFORMING TO ASTM A394 TYPE 1 WITH REGULAR HEXAGONAL NUT (ASTM A563-07a) AND HEAVY SPRING LOCK WASHER TO CSA B19.2.
6. ALL BOLT HOLES TO BE 13/16" DIAMETER.
7. ALL STEEL AND BOLTS SHALL CONFORM TO THE IMPACT REQUIREMENT OF A MINIMUM AVERAGE ENERGY OF 20J AT -20oC.
8. ALL FINISHED MATERIAL AND HARDWARE SHALL BE HOT-DIPPED GALVANIZED PER CSA STANDARD G164 , AFTER FABRICATION.

ISSUED FOR TENDER

[redacted] [redacted]

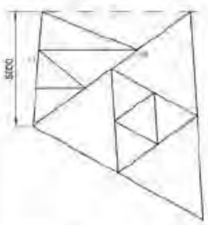
BC Hydro

TERRACE – KITIMAT 287kV T/L

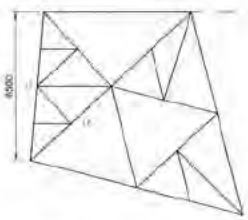
RIVER CROSSING DEAD END TOWER
(0 DEG–30 DEG)

DESIGN OUTLINE DRAWING

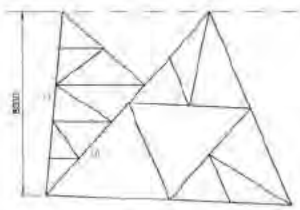
2L099-T08-00538-001 | D | A



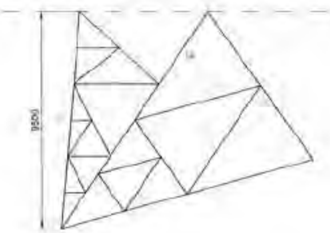
LEG EXT. +0.00 m



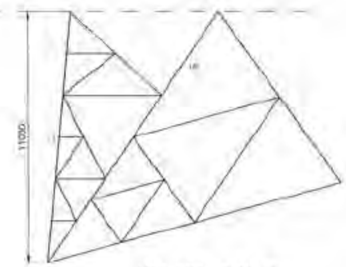
LEG EXT. +1.50 m



LEG EXT. +3.00 m



LEG EXT. +4.50 m



LEG EXT. 6.00 m

Group Label	Angle Size	Quantity	Estimated Length (m)
BB1	L102x102x9.5	8	5.96
BB2	L102x102x7.9	8	8.08
BB3	L127x127x6.4	8	10.51
BB4	L102x102x7.9	8	11.59
BB5	L127x127x6.4	8	12.77
BB6	L127x127x6.4	8	14.04
BB7	L127x127x6.4	8	7.35
BH1	L51x51x6.4	8	2.66
BH2	L51x51x6.4	8	3.34
BH3	L64x64x4.8	8	4.14
BH4	L76x76x4.8	8	4.93
BH5	L76x76x4.8	8	5.73
BH6	L76x76x6.4	4	13.09
BrB	L102x102x13	2	12.00
BrBr2	L102x102x7.9	4	1.98
BrBr3	L76x76x4.8	16	1.72
BrBr4	L64x64x4.8	8	2.76
BrBr5	L76x76x6.4	4	1.38
BrBr6	L76x76x6.4	6	2.76
BrBr7	L76x76x6.4	8	1.10
BrH1	L51x51x4.8	2	1.60
BrH2	L102x102x11	2	1.60
BrH3	L76x76x6.4	2	1.60
BrH4	L51x51x4.8	2	1.60
BrH5	L64x64x4.8	2	1.60
BrH6	L51x51x4.8	1	1.60
BrR1	L51x51x4.8	12	1.30
BrR2	L64x64x4.8	2	1.60
BrR3	L76x76x4.8	4	1.60

Group Label	Angle Size	Quantity	Estimated Length (m)
BrT	L64x64x4.8	2	9.00
BrV1	L51x51x4.8	2	1.30
BrV2	L76x76x7.9	4	1.30
BrV3	L64x64x6.4	4	2.00
BrVBr	L51x51x4.8	4	2.06
DiBr1	L64x64x4.8	4	3.76
DiBr2	L64x64x4.8	4	4.72
DiBr3	L64x64x6.4	4	5.85
DiBr4	L64x64x6.4	4	6.98
DiBr5	L76x76x4.8	4	8.10
DiBr6	L76x76x4.8	4	9.26
L1	L152x152x16	4	3.93
L10	L203x203x19	4	5.05
L2	L152x152x16	4	6.54
L3	L203x203x16	4	4.04
L4	L203x203x16	4	6.06
L5	L203x203x16	4	8.08
L6	L203x203x16	4	8.08
L7	L203x203x19	4	8.08
L8	L203x203x19	4	8.08
L9	L203x203x19	4	4.04
LB	L102x102x6.4	8	8.65
PT	L64x64x4.8	4	1.66
WABr	L102x102x7.9	4	2.83
WAHL	L127x127x7.9	2	4.00
WAHT	L152x152x7.9	2	4.00
WB1	L76x76x4.8	4	1.96
WB2	L51x51x4.8	2	1.50
WB3	L51x51x4.8	4	0.91

Group Label	Angle Size	Quantity	Estimated Length (m)
WB4	L64x64x6.4	4	2.30
WB5	L51x51x4.8	4	1.82
WB6	L64x64x6.4	4	2.84
WH1	L102x102x11	1	3.54
WH1	L102x102x11	2	2.50
WI	L127x127x13	4	8.88
WSB1	L102x102x7.9	4	1.34
WSB10	L64x64x4.8	4	3.79
WSB11	L64x64x4.8	4	3.60
WSB2	L102x102x7.9	4	2.83
WSB2	L102x102x7.9	4	2.73
WSB3	L76x76x6.4	4	1.50
WSB4	L89x89x6.4	4	1.75
WSB5	L76x76x4.8	4	3.70
WSB6	L76x76x4.8	4	4.12
WSB7	L76x76x6.4	4	2.17
WSB8	L64x64x4.8	4	2.78
WSB9	L64x64x4.8	4	3.50
WV	L76x76x7.9	4	3.63
XB	L102x102x13	2	6.60
XBr	L89x89x6.4	8	2.30
XR1	L51x51x4.8	4	1.93
XR2	L51x51x4.8	4	1.00
XR3	L51x51x4.8	2	1.60
XT	L64x64x4.8	4	3.86
XVBr1	L51x51x4.8	8	1.89
XVBr2	L51x51x4.8	2	1.89

ISSUED FOR TENDER

PRELIMINARY

[redacted]

BC Hydro

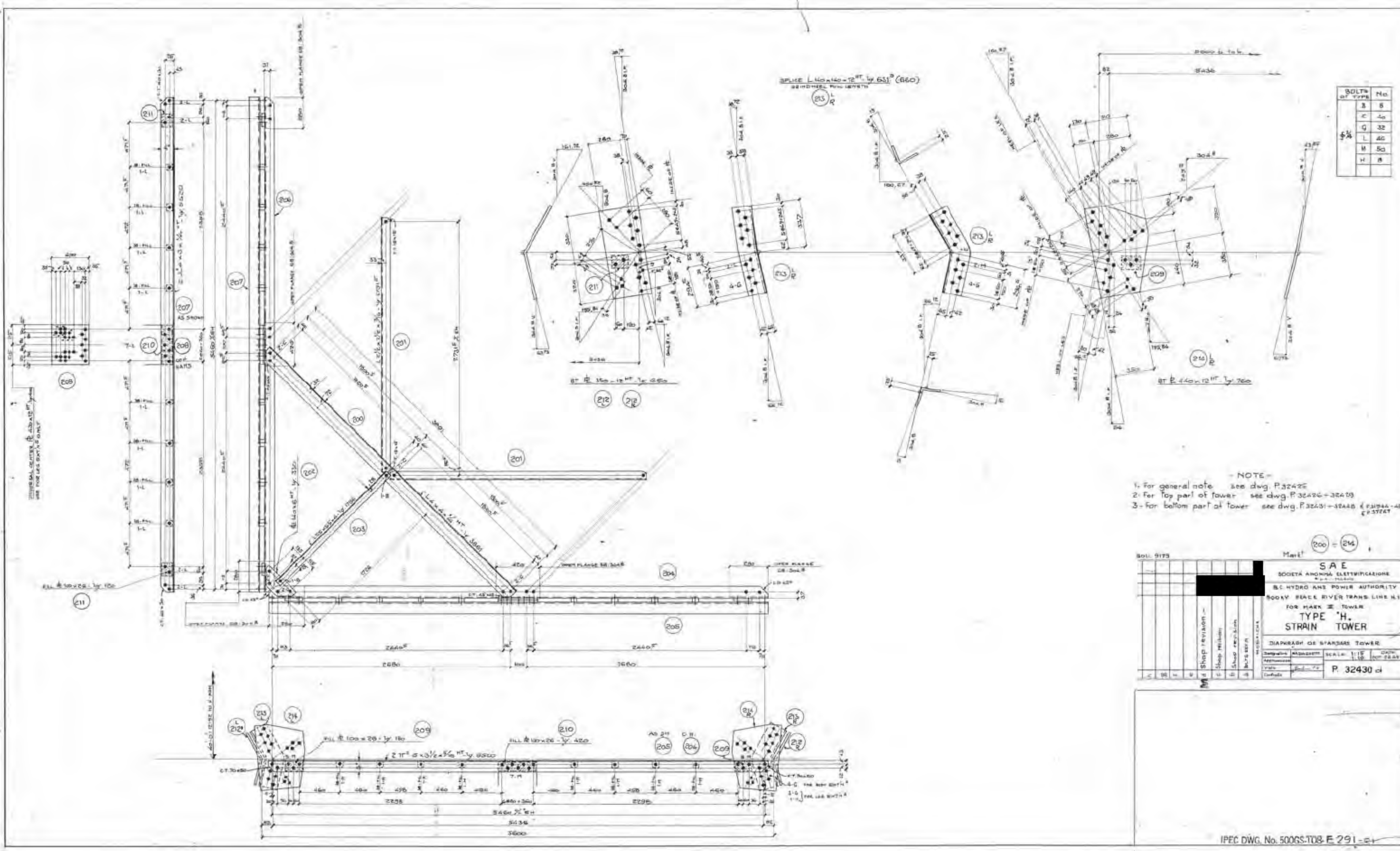
TERRACE – KITIMAT 287KV T/L

RIVER CROSSING DEAD END TOWER (0 DEG–30 DEG)

DESIGN OUTLINE DRAWING

2L099-T08-00538-002 | D | A

NOT TO BE REPRODUCED WITHOUT THE PERMISSION OF BC HYDRO



BOLTS OF TYPE	No
B	8
C	40
G	32
L	40
M	50
H	8

- NOTE -

1 - For general note see dwg. P.32425
2 - For top part of tower see dwg. P.32426 ÷ 32429
3 - For bottom part of tower see dwg. P.32431 ÷ 32448 & P.31944-45 & P.37287

Mark 200 ÷ 214

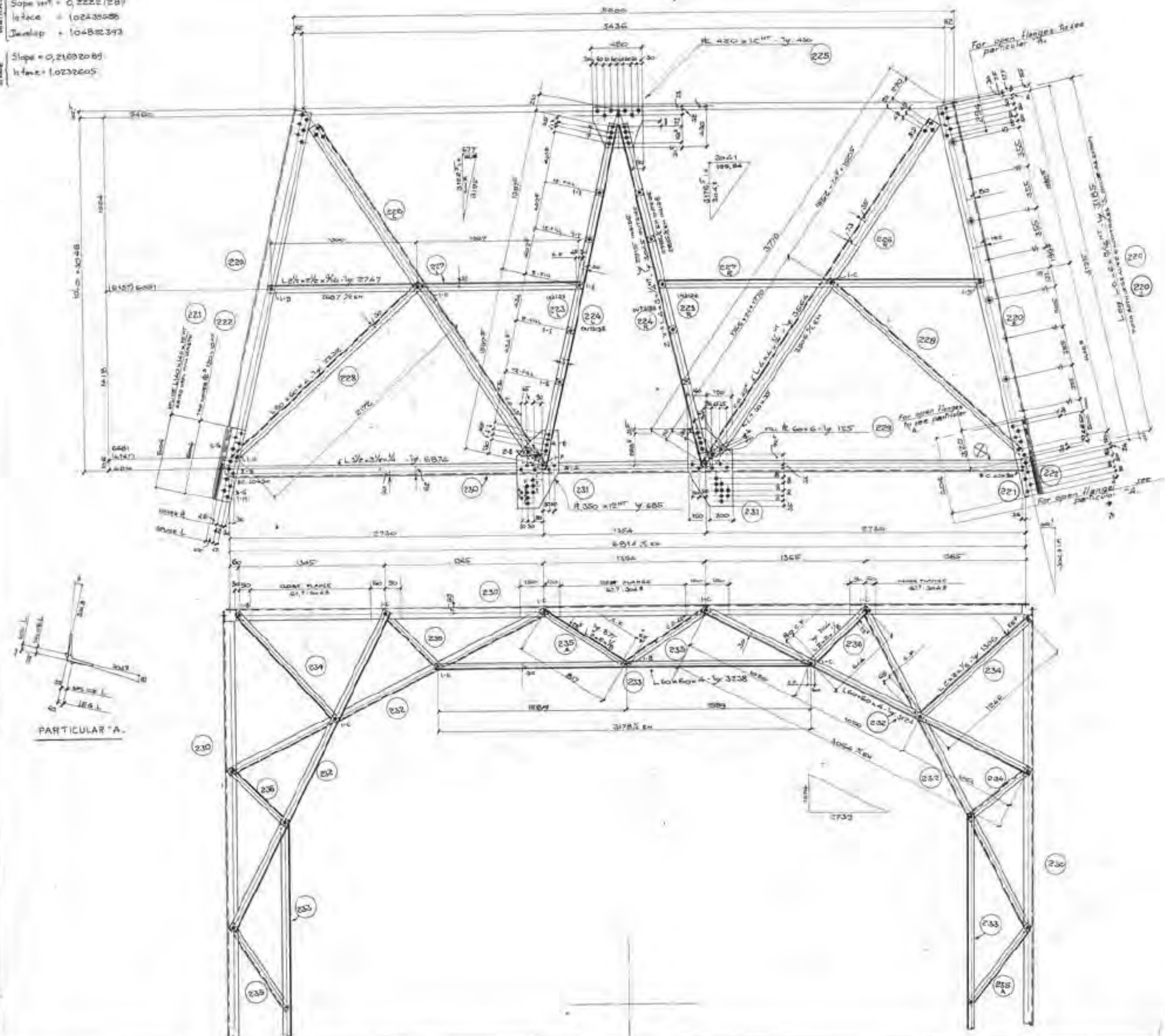
Boll. 9173

									SAE SOCIETÀ ANONIMA ELETTRIFICAZIONE
				[redacted]					B.C. HYDRO AND POWER AUTHORITY 500KV PEACE RIVER TRANS. LINE N.1 FOR MARK III TOWER
				Shop revision	Shop revision	Shop revision			TYPE "H" STRAIN TOWER
									DIAPHRAGM OF STANDARD TOWER
									SCALE 1:15 1:10
c				d					P. 32430 d

IPEC DWG. No. 500GS-T08-E 291-

VERTICAL
Double slope = 0,44442578
Slope vert = 0,22221289
In face = 1,02438088
Develop = 1,04812393

GIRDER
Slope = 0,21032089
In face = 1,0232605



BOLTS OF TYPE		No.
$\phi \frac{3}{4}''$	B	8
	C	36
	D	72
	E	120
	F	8
	G	64
	H	34

- NOTE -
1- FOR GENERAL NOTES SEE DWG. P. 32428 -
1- FOR TOP PART OF TOWER SEE DWG.S P. 32429 ÷ 32430.-
1- FOR BOTTOM PART OF TOWER SEE DWG.S P32434 - 40 & 131844 - 45 & P37767

220 ÷ 236

Mark

DALL 9173

[redacted]

Shop revision
Data rev.n
Modifiche

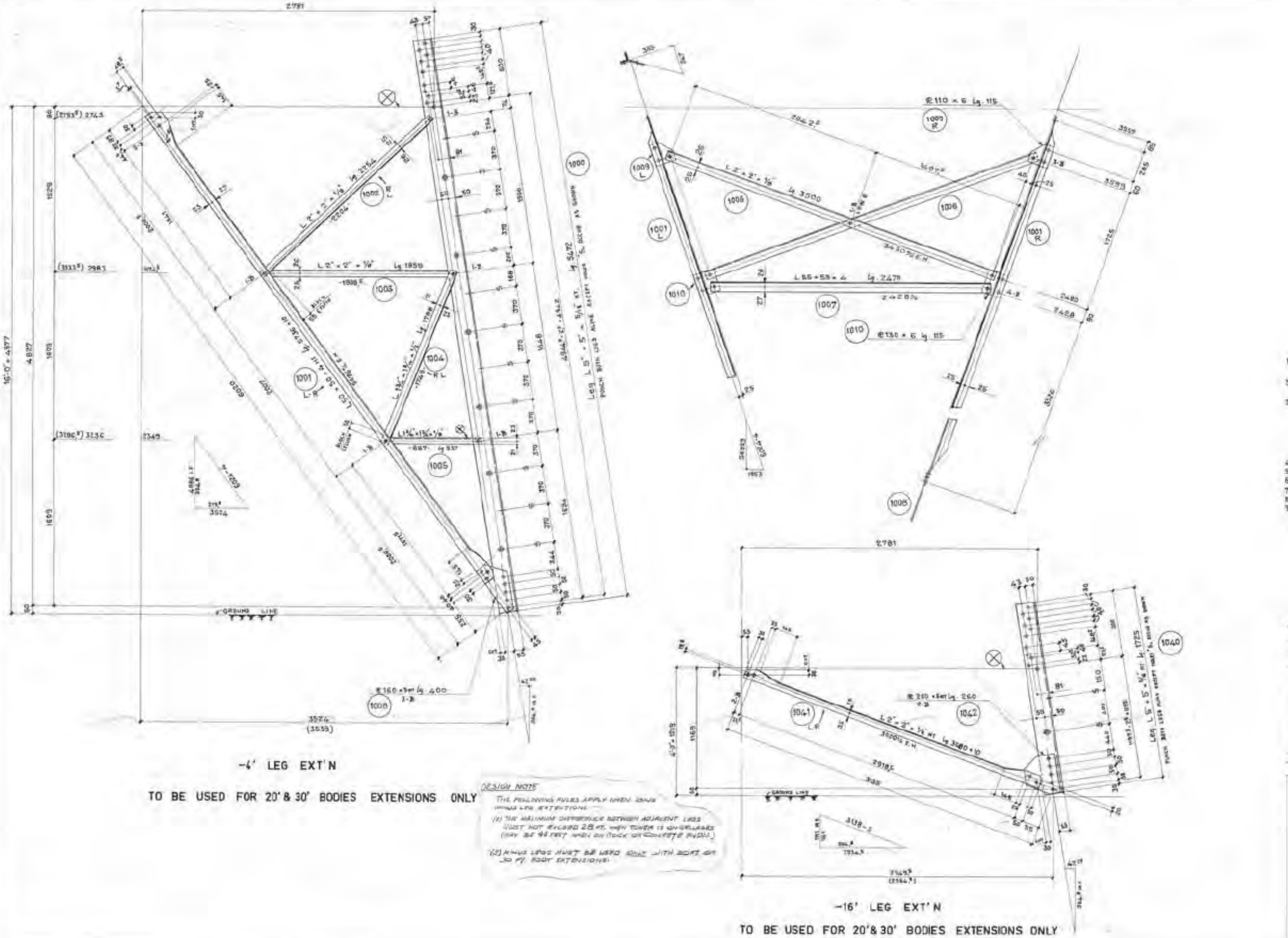
SAE
SOCIETA' ANONIMA ELETTRIFICAZIONE
S.p.A. - MILANO

B.C. HYDRO AND POWER AUTHORITY
500 kV PEACE RIVER TRANS LINE N.1
FOR MARK E - TOWER
TYPE "H."
STRAIN TOWER

10FT BODY EXTENSION

Disegnatore		Scala 1:10	Data
Aumentazione		P. 32431ab	
Visto			
Controllo			

IPEC DWG. No. 500GS-T08-E292



-4' LEG EXT'N

TO BE USED FOR 20' & 30' BODIES EXTENSIONS ONLY

-16' LEG EXT'N

TO BE USED FOR 20' & 30' BODIES EXTENSIONS ONLY

DESIGN NOTE

THE FOLLOWING RULES APPLY WHEN USING MINUS LEG EXTENTIONS

(1) THE MAXIMUM DIFFERENCE BETWEEN ADJACENT LEGS MUST NOT EXCEED 28 FT. WHEN TOWER IS ON GRILLAGES (MAY BE 44 FEET WHEN ON ROCK OR CONCRETE FNDN.)

(2) MINUS LEGS MUST BE USED ONLY WITH 20 FT OR 30 FT BODY EXTENSIONS.

Vertical: Slope = 0,1570648 — In face = 1,01225 — Develop = 1,024375

In face: Slope = 0,15316177 — In face = 1,01198

TYPE BOLTS	Leg -4'	Leg -16'
ϕ 5/8 A		
ϕ 5/8 B	37	8

— NOTE —

1 - All bolts to have mechanical characteristics as per ASTM A394 and dimensions per table ST.3063b type 8bis.-
2 - All members to be of standard steel except members marked with "HT" to be of high tensile steel.-
3 - Mechanical characteristics of standard steel to be equivalent to CSA standard G 40.4-1959; - mechanical characteristics of high tensile steel to be equivalent to CSA standard G.40.8-1960 (with guaranteed yield point of 51200 lbs/sq.in.) - both qualities of steel to pass the impact test for grade "B" of CSA standard G.40.8-1960, appendix "A".-
4 - All bolts are 5/8" dia.-
5 - All holes are 11/16" = 17.5 mm dia. unless otherwise noted.-
6 - All material to be hot dip galvanized after fabrication.-
7 - ⊗ = Holes 5/16" dia for step bolts, 0A.1482 on one leg only.-
8 - For top part of tower see dwgs. P31556 ; 31564.-
9 - For grillage & concrete foundations see dwgs. P31661 & P31662

BILL 1563

FINAL ERECTION DRAWING

MARK: 1040 ÷ 1042
MARK: 1000 ÷ 1010

[redacted]

NOTE ADDED BY I.P.E.C.

As Built Mark 1005

MODIFICHE

S A E
SOCIETÀ ANONIMA ELETTRIFICAZIONE S.p.A. - MILANO

B.C. HYDRO AND POWER AUTHORITY
500 kV PEACE RIVER TRANS. LINE N.1
FOR MARK "A" TOWER

TYPE "A"
SUSPENSION TOWER

-4' & -16' LEG EXTENSIONS FOR 20' & 30' BODIES EXTENSIONS

SCALA: 1:15 1:10 — DATA: 11 Oct. 1965

P37224

IPEC DWG. No. 5000S-T08-E574-R1

MARK	DESCRIPTION	LENGTH	WEIGHT LB/M	UNIT WEIGHT	NO OF PCS	TOTAL WEIGHT LB	DET ON DWG
	BASIC TOWER						
GA 51	L3×3×5/16 **	6083	12.17		8	592.3	D4
GA 52	L5×3×1/4 *	159	21.06		8	27.5	"
GA 53	L1¾×1¾×1/8	854	4.04		8	27.6	"
GA 54	"	902	"		8	29.2	"
GA 55	"	965	"		8	31.2	"
GA 56	"	1039	"		8	33.6	"
GA 57	"	1122	"		8	36.2	"
GA 58	"	1211	"		8	39.1	"
GA 59	"	1215	"		8	39.2	"
GA 60	"	1104	"		12	53.5	"
GA 61	PL 2½×1/4 **	301	6.92		8	16.7	"
GA 62	"	301	"		8	16.7	"
GA 63	L1¾×1¾×1/8	731	4.04		8	23.6	"
GA 73	L2½×2½×3/16	50	10.04		8	4.0	D5
GA 74	L1¾×1¾×1/8 *	1556	4.04		4	25.2	"
GA 75	L3×3×5/16 **	2414	12.17		8	[illegible]	"
GA 76	L1¾×1¾×1/8	1305	4.04		16	84.3	"
GA 77	"	1368	"		128	706.6	"
GA 78	L3×3×5/16 **	330	12.17		8	32.1	"
GA 80	"	7500	"		8	730.2	D6
GA 85	"	5960	"		4	290.2	D7
GA 86	"	5960	"		4	290.2	"
GA 87	L1¾×1¾×1/8	1217	4.04		4	19.6	"
GA 88	"	1208	"		4	19.5	"
GA 89	"	1112	"		4	17.9	"
GA 90	"	1026	"		4	16.6	"
GA 91	"	950	"		4	15.3	"
GA 92	"	889	"		4	14.3	"
GA 93	"	1114	"		4	18.0	"
GA 94	"	1293	"		4	20.9	"
GA 95	"	1390	"		8	44.9	"
GA 96	"	1406	"		4	22.7	"
GA 97	"	1422	"		4	23.0	"
GA 98	"	1439	"		4	23.2	"
GA 99	"	1456	"		4	23.5	"
GA 100	"	1377	"		4	22.2	"
GA 101	"	1264	"		4	20.4	"
GA 102	PL 5×3/8 *	309	34.89		4	43.1	"
GA 103	PL 2½×1/4 **	301	6.92		4	8.3	"
GA 104	"	301	"		4	8.3	"
GA 105	"	306	"		4	8.5	"
GA 106	"	306	"		4	8.5	"
GA 107	L1¾×1¾×1/8	668	4.04		4	10.8	"
GA 151	L3½×3×1/4 **	7970	17.39		2	277.2	D10
GA 152	L3½×3×5/16 **	6498	21.65		2	281.4	"
GA 153	L1¾×1¾×1/8	1188	4.69		4	22.3	"
GA 154	L1¾×1¾×3/16	1188	6.92		1	8.2	"
GA 155	L2×2×1/8	1667	5.38		2	17.9	"
GA 156R	L2½×2½×3/16 *	1452	10.04		2	29.2	"
GA 156L	"	1452	"		2	29.2	"
GA 157	L1¾×1¾×1/8	617	4.69		4	11.6	"
GA 158R	L3×2½×3/16 *	1536	11.15		2	34.3	"
GA 158L	"	1536	"		2	34.3	"
GA 159R	L2½×2½×3/16 *	1536	10.04		2	30.8	"
GA 159L	"	1536	"		2	30.8	"
GA 160R	L3×2½×3/16 *	1509	11.15		2	33.7	"
GA 160L	"	1509	"		2	33.7	"
GA 161	L1¾×1¾×3/16	1673	6.92		4	46.3	"
GA 162	"	1673	"		4	46.3	"
GA 163	L3½×3×5/16 **	1188	21.65		2	51.4	"
GA 164	PL 8½×3/8 *	382 (WT)	35.60		1	13.6	"
GA 165R	L2×2×3/16	1190	7.94		1	9.4	"
GA 165L	"	1190	"		1	9.4	"
GA 166	PL 7¼×3/8 *	203 (WT)	30.33		2	12.3	"
GA 167	L2×2×1/8	1766	5.38		2	19.0	"
GA 168	L1¾×1¾×1/8	1340	4.69		4	25.1	"
GA 169	"	1837	"		2	17.3	"
GA 170	"	1837	"		2	17.3	"
GA 171	L2×2×1/8	1163	5.38		2	12.5	"
GA 172	PL 3¾×1/4	166	10.44		2	3.5	"
GA 175R	L3½×3×5/16 **	3402	21.65		2	147.3	D11
GA 175L	"	3402	"		2	147.3	"
GA 176R	L3×2½×3/16 **	3193	11.15		2	71.2	"
GA 176L	"	3193	"		2	71.2	"
GA 177R	L2½×2½×3/16 *	2662	10.04		2	53.4	"
GA 177L	"	2662	"		2	53.4	"
GA 177AR	"	2662	"		2	53.4	"
GA 177AL	"	2662	"		2	53.4	"
GA 178R	L2½×2×3/16	2157	9.06		2	39.1	D11
GA 178L	"	2157	"		2	39.1	"
GA 179	"	2157	"		2	39.1	"
GA 180	"	2157	"		2	39.1	"
GA 181	PL 10¾×5/8 *	290	74.99		4	87.0	"
GA 182	PL 8×5/16 *	404 (AV)	27.88		4	45.1	"
GA 183R	L1¾×1¾×1/8	1426	4.69		2	13.4	"
GA 183L	"	1426	"		2	13.4	"
GA 184R	"	656	"		2	6.2	"
GA 184L	"	656	"		2	6.2	"
GA 185	L1¾×1¾×3/16	1803	6.92		2	25.0	"
GA 186	"	1803	"		2	25.0	"
GA 187R	L2×2×3/16	1221	7.94		2	19.4	"
GA 187L	"	1221	"		2	19.4	"
GA 188	L1¾×1¾×3/16	1809	6.92		4	50.1	"
GA 189	L1¾×1¾×1/8	1212	4.69		2	11.4	"
GA 190	"	1216	"		2	11.4	"
GA 191	"	1224	"		2	11.5	"
GA 192	L2×2×1/8	2270	5.38		4	48.9	"
GA 193	L2½×2×3/16	1211	9.06		2	21.9	"
GA 194R	L2×2×3/16	1188	7.94		2	18.9	"
GA 194L	"	1188	"		2	18.9	"
GA 195	L3×2½×3/16	1188	11.15		2	26.5	"
GA 196	PL 7×3/8 *	270 (NET)	48.9		2	26.4	"
GA 197	PL 4×1/4	152	11.21		4	6.8	"
GA 198R	L2×2×3/16	1239	7.94		4	39.3	"
GA 198L	"	1239	"		4	39.3	"
GA 199	L1¾×1¾×1/8	1778	4.69		2	16.7	"
GA 154A	L1¾×1¾×3/16	1188	6.92		2	16.4	"
GA 210R	L3½×3×1/4 **	5224 (NET)	17.39		2	181.7	D12
GA 210L	"	5224 (NET)	"		2	181.7	"
GA 211R	L3×2½×3/16 **	4797 (NET)	11.15		2	107.0	"
GA 211L	"	4797 (NET)	"		2	107.0	"
GA 212	L1¾×1¾×1/8	448	4.69		2	4.2	"
GA 213	"	765	"		2	7.2	"
GA 214	L1¾×1¾×3/16	1080	6.92		2	15.0	"
GA 215	L1¾×1¾×1/8	1311	4.69		2	12.3	"
GA 216	L2×2×1/8	1480	5.38		2	15.9	"
GA 217	L1¾×1¾×3/16	1658	6.92		2	23.0	"
GA 218	L1¾×1¾×1/8	1195	4.69		4	22.5	"
GA 219	"	1520	"		4	28.5	"
GA 220R	L2×2×1/8	2277	5.38		2	24.5	"
GA 220L	"	2277	"		2	24.5	"
GA 221R	PL 7½×3/8	292 (AV.)	26.23		2	15.3	"
GA 221L	"	292 (AV.)	"		2	15.3	"
GA 222	L1¾×1¾×1/8	755	4.69		2	7.1	"
GA 223	PL 6×1/2	257	33.4		2	17.2	"
GA 224	L3½×3×5/16 **	172	21.65		4	14.9	"
GA 225	PL 3×1/8 **	89	37.38		3	10.0	"
GA 226	L1¾×1¾×1/8	1033	4.69		2	9.7	"
GA 42	DISC PL 1½ *	7ϕ			2	32.8	D3
B2	BOLTS ϕ ¾	5½"			3	3.3	D12
B3	BOLTS ϕ 1"	3½"			4	6.4	D7
SPEC	RING FILL 2"×½				3	1.5	
SPEC	BOLTS 5/8"×1½ NO NUT	1½"			8	2.4	
	Ring fills 5/8"	3/16		0.046	5	0.2	
	" "	1/4		0.061	13	0.8	
	" "	5/16		0.076	5	0.4	
	" "	3/8		0.091	9	0.8	
	" "	1/2		0.121	9	1.1	
	" "	5/8		0.152	5	0.8	
	" "	11/16		0.167	5	0.8	
	" "	7/8		0.212	5	1.1	
				WEIGHT		7653.4	

MARK	DESCRIPTION	LENGTH	WEIGHT LB/M	UNIT WEIGHT	NO OF PCS	TOTAL WEIGHT LB	DET ON DWG
	BOLTS & NUTS & HELICAL SPRING WASHERS (GR2)						
A	BOLTS 5/8"	1¼		0.300	7	2.1	
B	"	1½		0.322	722	232.5	
C	"	1¾		0.344	210	72.2	
D	"	2		0.366	46	16.8	
E	"	2¼		0.388	21	8.1	
F	"	2½		0.410	21	8.6	
				WEIGHT		340.3	
	TOTAL WEIGHT					7993.7	

MARK	DESCRIPTION	LENGTH	WEIGHT LB/M	UNIT WEIGHT	NO OF PCS	TOTAL WEIGHT LB	DET ON DWG
	5'-0 EXTENSION (ONE MAST)						
GA 121	L3×3×5/16 **	1561	12.17		4	76.0	D9
GA 77	L1¾×1¾×1/8	1368	4.04		8	44.2	D5
GA 78	L3×3×5/16 **	330	12.17		4	16.1	"
			WEIGHT			136.3	
B	BOLTS 5/8"	1½		0.322	42	13.5	
				WEIGHT		13.5	
			TOTAL WEIGHT			149.8	
	10'-0 EXTENSION (ONE MAST)						
GA 120	L3×3×5/16 **	3127	12.17		4	152.2	D9
GA 77	L1¾×1¾×1/8	1368	4.04		16	88.3	D5
GA 78	L3×3×5/16 **	330	12.17		4	16.1	"
			WEIGHT			256.6	
B	BOLTS 5/8"	1½		0.322	50	16.1	
				WEIGHT		16.1	
			TOTAL WEIGHT			272.7	
	20'-0 EXTENSION (ONE MAST)						
GA 115	L3×3×5/16 **	6260	12.17	76.2	4	304.8	D8
GA 116	L1¾×1¾×1/8	1282	4.04	5.2	40	206.9	"
GA 78	L3×3×5/16 **	330	12.17	4.0	4	16.1	D5
			WEIGHT			527.8	
B	BOLTS 5/8"	1½		0.322	76	24.5	
				WEIGHT		24.5	
			TOTAL WEIGHT			552.3	

GENERAL NOTES:

1. ** DENOTES MEMBERS OF 50 KSI MINIMUM YIELD POINT. * DENOTES MEMBERS OF 44 KSI MINIMUM YIELD POINT. ALL OTHER MEMBERS MAY HAVE A MINIMUM YIELD POINT OF 36 KSI.
2. ALL STEEL TO PASS IMPACT TEST AS REQUIRED BY CSA STANDARD G40.8 FOR CLASS 1 TESTING TEMPERATURE AND FREQUENCY 'L'.
3. ALL BOLTS TO BE IN ACCORDANCE WITH CSA STANDARD B33.4 GRADE 2 EXCEPT AS OTHERWISE NOTED.
4. ALL BOLTS TO BE 5/8" DIAMETER, EXCEPT AS OTHERWISE NOTED.
5. ALL BOLT HOLES TO BE 11/16" DIAMETER, EXCEPT AS OTHERWISE NOTED.
6. GALVANIZED HELICAL SPRING WASHERS TO BE HEAVY SERIES IN ACCORDANCE WITH CSA STANDARD B17.1.
7. MINIMUM EDGE DISTANCE FOR 5/8" BOLTS SHALL BE 3/4" FOR A ROLLED EDGE AND 1" FOR A SHEARED EDGE, EXCEPT AS OTHERWISE NOTED.
8. ALL MATERIAL TO BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH CSA STANDARD G164.
9. STRUCTURAL SHAPES SHOWN IN ACCORDANCE WITH CURRENT NORTH AMERICAN PRACTICE. PLATE THICKNESSES, BOLT AND WASHERS SHOWN IN INCHES. PLATE WIDTHS AND ALL OTHER DIMENSIONS SHOWN IN MILLIMETERS.
10. WEIGHTS SHOWN ARE FOR BLACK STEEL.
11. QUANTITIES OF BOLTS, NUTS AND WASHERS (NOT STEP BOLTS) INCLUDE 5% EXCESS.
12. ALL MAIN MEMBERS TO BE PREFIXED AS SHOWN IN BILL OF MATERIAL.
13. FOR ERECTION DRAWINGS SEE DRAWING NO. 500GS-T08-D23[illegible]

NO	REMARKS	DATE	MADE	CHKD	INSP	SUBD	RECD	APP'T	APPD
0	Rec'd. RI Notes Added Unit Weight removed	[redacted]							

REVISIONS

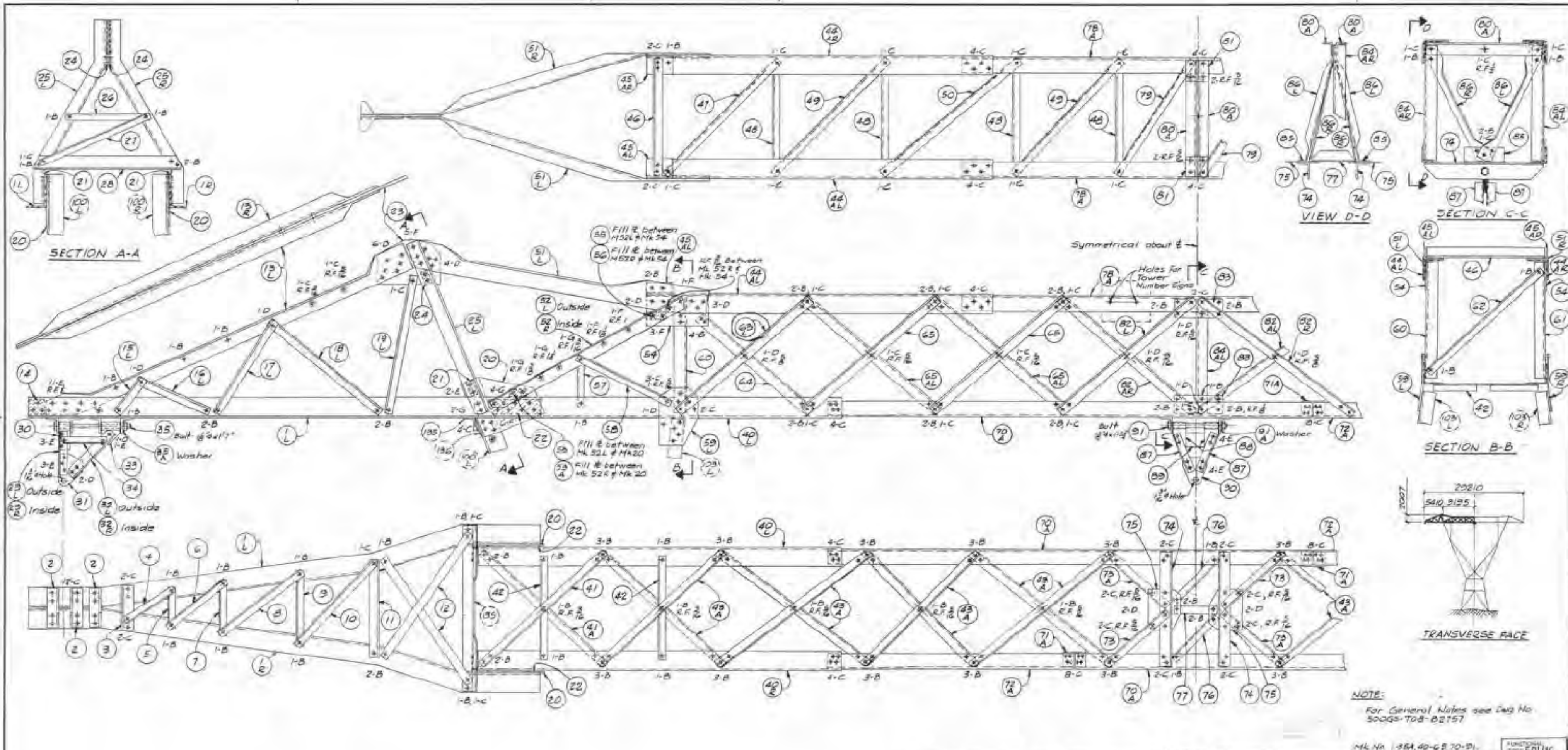
B.C.H. & P.A. DWG N. 500GS-T08-D2381-R0

CUSTOMER INDICATE DELIVERY REQUIRED	LOCWELD AND FORGE PRODUCTS LTD. 50 IBERVILLE AVE. CANDIAC, QUE.
ARCH./ENG.	INDUSTRIAL AND MISCELLANEOUS IRON WORK
GEN. CONTRACTOR	500 KV TRANS. LINES
CUST. ORDER No. 316-915 / ERECTION BY OTHERS	MK VI SUSP. TOWER TYPE: A BILL OF MATERIAL
ITEM / SPEC. PAGE / REF. DWG / DWN Y.B. / CKD M.H.	BRITISH COLUMBIA HYDRO & POWER AUTHORITY
FINISH SPEC. GALVANIZED	DATE SEPT. 23-74 / D / 7400-15 / R-1

NO.	REVISIONS	DATE	BY
1	AS PER CUST. REQUEST	8/2 74	Y.B.

GENERAL NOTES

LOCWELD REF. DWG'S



NOTE:
For General Notes see Dwg No 500GS-T08-B2757

Mk No 1-35A, 40-65, 70-91.

FUNCTIONAL CODE 5.01/3C

No.	REMARKS	DATE
4	LR added to Mk 63	07.83
3	Mk 89 reorientated	87.85
2	Mk 43A rev'd.	24-X-79
1	Outstanding legs turned down on Mk 47, 48, 50, 79.	

[redacted]

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

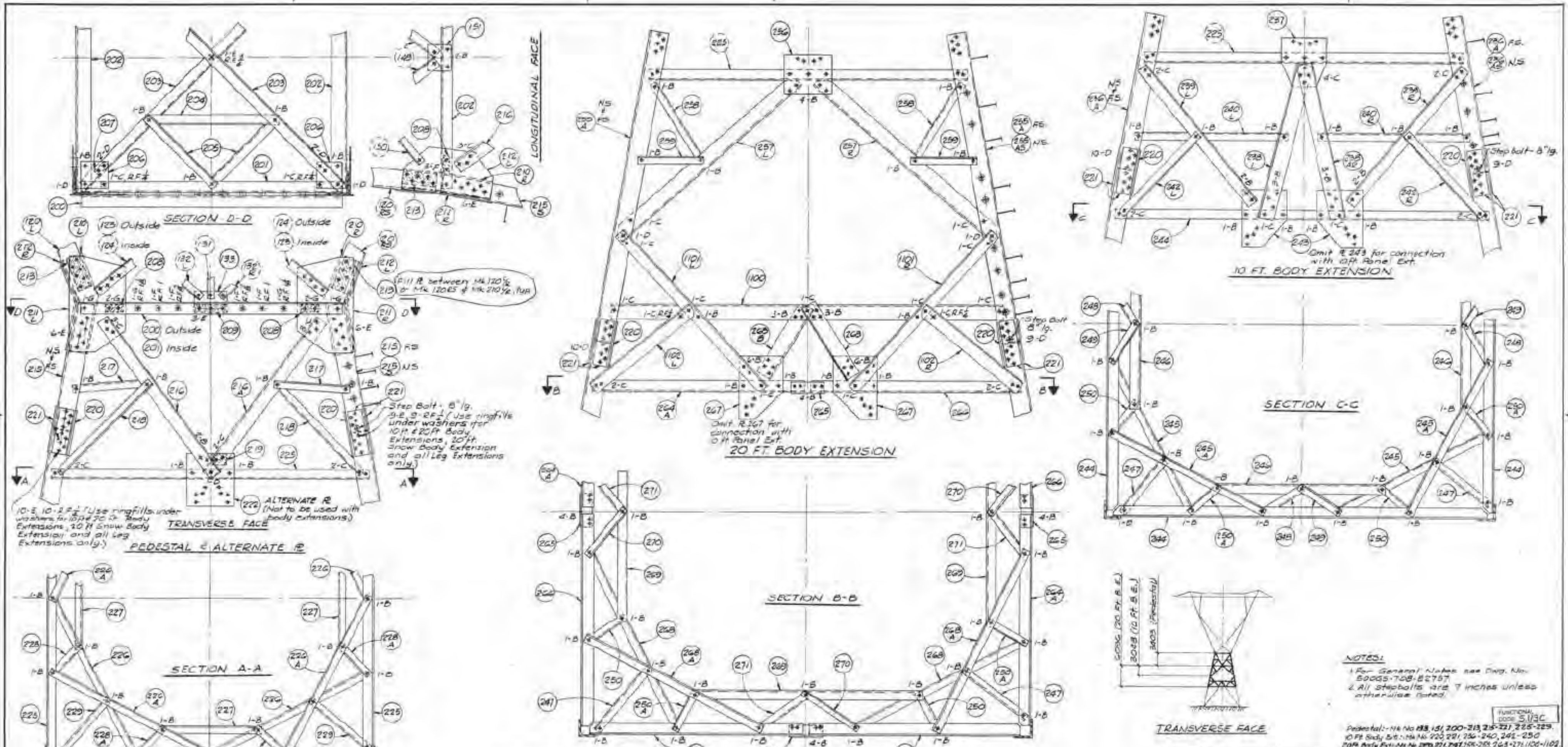
500kV SINGLE CIRCUIT
TYPE 3C SELF SUPPORTING TOWER
CROSSARM AND BRIDGE
ERECTION DIAGRAM

DWG No. 5LGS-T08-U3038 R 4

500GS-T08-U3039 K-Frame

REFERENCE DRAWINGS

REVISIONS



NOTES:

1. For General Notes see Dwg. No. 500GS-T08-E2757
2. All stepbolts are 7 inches unless otherwise noted.

FUNCTIONAL CODE 5.1/3C

Pedestal:- Mk No 133, 151, 200-213, 215-221, 225-229.
10 Ft Body Ext:- Mk No 220, 221, 236-240, 241-250
20 Ft Body Ext:- Mk No 220, 221, 247, 255-259, 263-271, 1100-1102.

REFERENCE DRAWINGS	
500GS-T08-U3042	60' Body Ext.
500GS-T08-U304	20' Body Ext & 10' Panel Ext.
500GS-T08-U3039	K-Frame

REFERENCE DRAWINGS	
500GS-T08-U3048	60' Snow Body Ext.
500GS-T08-U3047	30' Snow Body Ext.
500GS-T08-U3046	Snow Pedestal, 10' & 20' Snow Body Ext.
500GS-T08-U3045	+20' to +28' Leg Ext.
500GS-T08-U3044	+8' to +16' Leg Ext.
500GS-T08-U3043	-16' to +4' Leg Ext.

REVISIONS: 1 Note added to Mk 213 [redacted]

7-XII-77

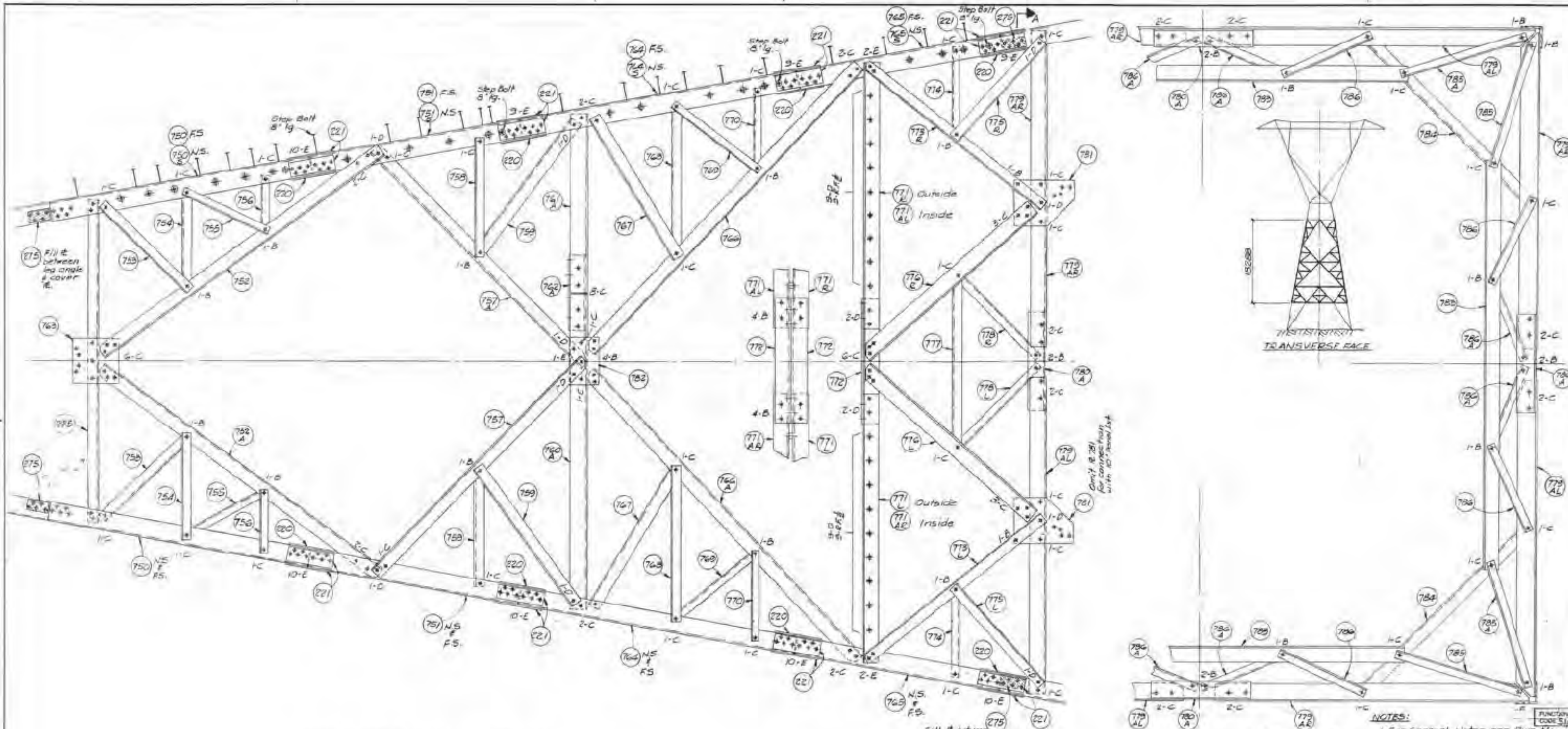
BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

500 KV SINGLE CIRCUIT
TYPE 3C SELF SUPPORTING TOWER
PEDESTAL, 10 FT. & 20 FT. BODY EXTENSIONS
ERECTION DIAGRAM

SCALE ——

DWG No. 5LGS-T08-U3040 R 1

U



NOTES:

1. For General Notes see Dwg. No. 500GS-T08-B2757.
2. All step bolts are 7 inches unless otherwise noted.

FUNCTIONAL CODE 51/IC

Mk No. 220, 221, 275, 780-786.

REFERENCE DRAWINGS	
500GS-T08-U3041	+90' Body Ext. & Special 10' Panel Ext.
500GS-T08-U3045	+20' to +28' Leg Ext.
500GS-T08-U3044	+8' to +16' Leg Ext.
500GS-T08-U3043	-16' to +4' Leg Ext.
500GS-T08-U3040	Pedestal, 10' & 20' Body Ext.

REVISIONS

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

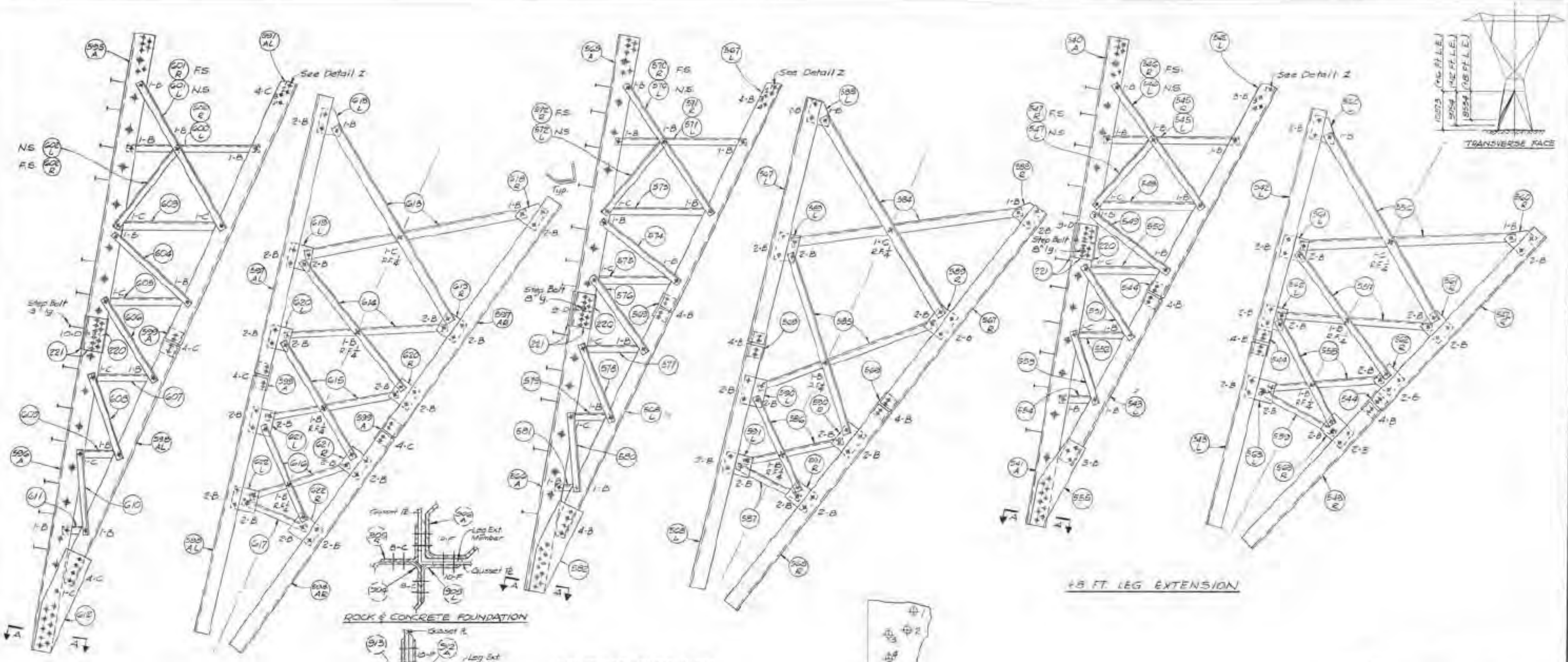
500 kV SINGLE CIRCUIT
TYPE 3C SELF SUPPORTING TOWER
60 FT. BODY EXTENSION
ERECTION DIAGRAM

[redacted]

DATE -VII-77

SCALE

DWG No. 5LGS-T08-U3042



NOTES:

1. For General Notes see Dwg. No. 500GS-T08-52757.
2. All step bolts are 7 inches unless other wise noted.

FUNCTIONAL CODE 5.1/3C

+8 Ft. Leg Ext. :- Mk. No. 220, 221, 590A-593
+12 Ft. Leg Ext. :- Mk. No. 220, 221, 566A-582, 584-591
+16 Ft. Leg Ext. :- Mk. No. 220, 221, 595A-622

500GS-T08-U3042	60' Body Ext.
500GS-T08-U3041	30' Body Ext. & 10' Panel Ext.
500GS-T08-U3040	Pedestal, 10' & 20' Body Ext.

REFERENCE DRAWINGS

REFERENCE DRAWINGS

REVISIONS

1 SECTION A-A ADDED 16-I-78 [redacted]

REVISIONS

[redacted]

-VIII-77

[redacted]

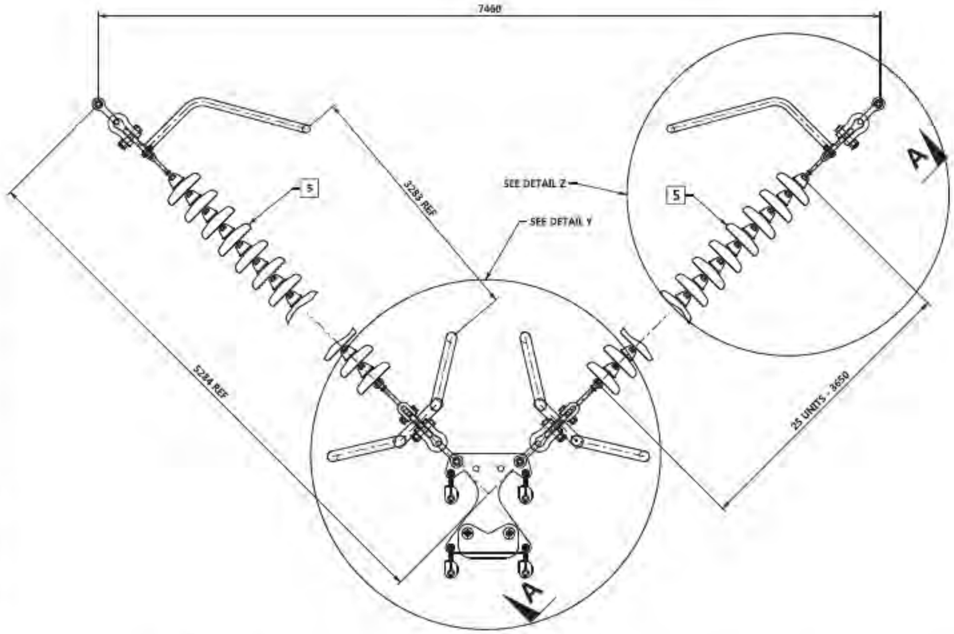
BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

500KV SINGLE CIRCUIT
TYPE 3C SELF SUPPORTING TOWER
+8 FT. +12 FT. & +16 FT. LEG EXTENSIONS
ERECTION DIAGRAM

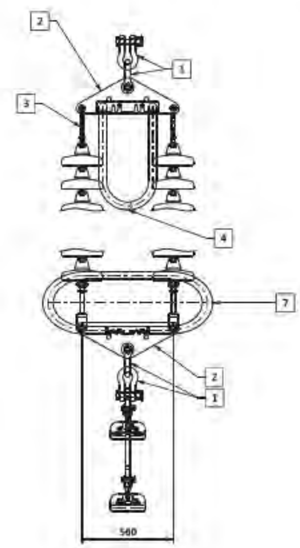
SCALE

DWG. No. 5EGS-T08-U3044 R 1

PRELIMINARY DRAWING

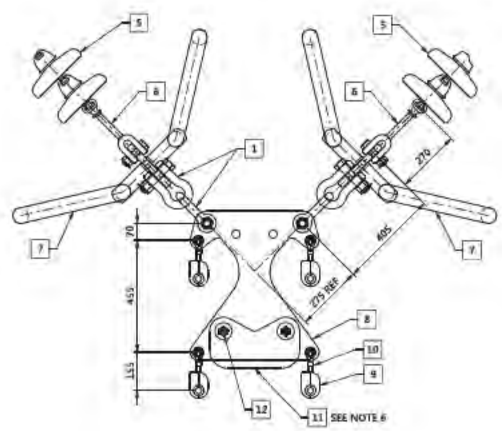


BILL OF MATERIAL FOR ONE ASSEMBLY				
ITEM	QTY	HU	BCH STOCK No.	DESCRIPTION
1	8	EA	420-1446	SHACKLE, ANCHOR, 32 Ø, 35 OPEN, 140 LG, 1¼"Ø BOLT, 440 kN
2	4	EA	97003410	PLATE, YOKE, 558 x 25 mm, 445 Kn
3	4	EA	96004259	CLEVIS, BALL, H/L, 220 kN, 270 LONG, ¾"BOLT, 30 OPEN
4	2	EA	97003411	ARCING HORN, FOR 500 kV DOUBLE STRING VEE, c/w NUTS, BOLTS AND WASHERS
5	100	EA	410-0999	INSULATOR, SUSPENSION, TOUGHENED GLASS, 146 x 254, 160 kN
6	4	EA	413-1423	CLEVIS, SOCKET, H/L, 270 LG, 29 OPEN, 1"Ø BOLT, 220 kN
7	2	EA	97003413	PLATE, YOKE, FOR FOUR BUNDLE DOUBLE STRING VEE SUSPENSION
8	2	EA	97003412	CORONA RING, FOR FOUR BUNDLE DOUBLE STRING VEE SUSPENSION
9	4	EA	97003409	CLAMP, SUSPENSION, FOR SP-926.7 CONDUCTOR w/o SOCKET EYE
10	4	EA	413-1182	CLEVIS, EYE, Y-TYPE, 90°, 100 LG, ¾"Ø BOLT, 120 kN
11	AS REQ'D	EA	96008188	WEIGHT, HOLD DOWN
12	AS REQ'D	EA	SEE TABLE	STUD, 3/4" ASSY

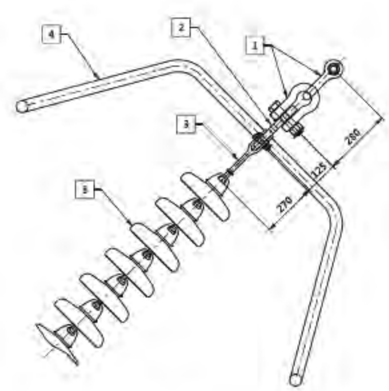


VIEW A-A

TABLE			
HOLD DOWN WEIGHT QUANTITIES REQUIRED AS PER STRUCTURE DATA SHEETS			
MASS (Kg)	QUANTITY	STUD LENGTH	STOCK No.
45	2	168	96015400
90	4	279	96015401
136	6	381	96015402
181	8	502	96015403
227	10	613	96015404
272	12	724	96015405



DETAIL Y



DETAIL Z

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. EXTRA INSULATORS TO BE ADDED WHEN SPECIFIED ON STRUCTURE DATA SHEET.
3. CLAMPING BOLTS MUST BE POSITIONED TO FACE TOWARD THE TOWER.
4. CLAMP BOLTS TO BE INSTALLED TO 90 N.M TORQUE
5. APPROXIMATE ASSEMBLY MASS = 480 KG.
6. HOLD DOWN WEIGHTS TO BE INSTALLED AS SPECIFIED ON STRUCTURE DATA SHEET. SEE 5LGS-T08-04057.
7. SPECIFICATIONS FOR BALL AND SOCKET ARE CSA C5-8.
8. MAXIMUM RESULTANT DESIGN LOAD SHALL NOT EXCEED 160 KN IN EITHER INSULATOR STRING LEG. NO DESIGN LOADS SHALL INDUCE UPLIFT IN EITHER INSULATOR STRING LEG.

BC Hydro ENGINEERING

SOUTH BANK – PEACE CANYON 500 kV T/L

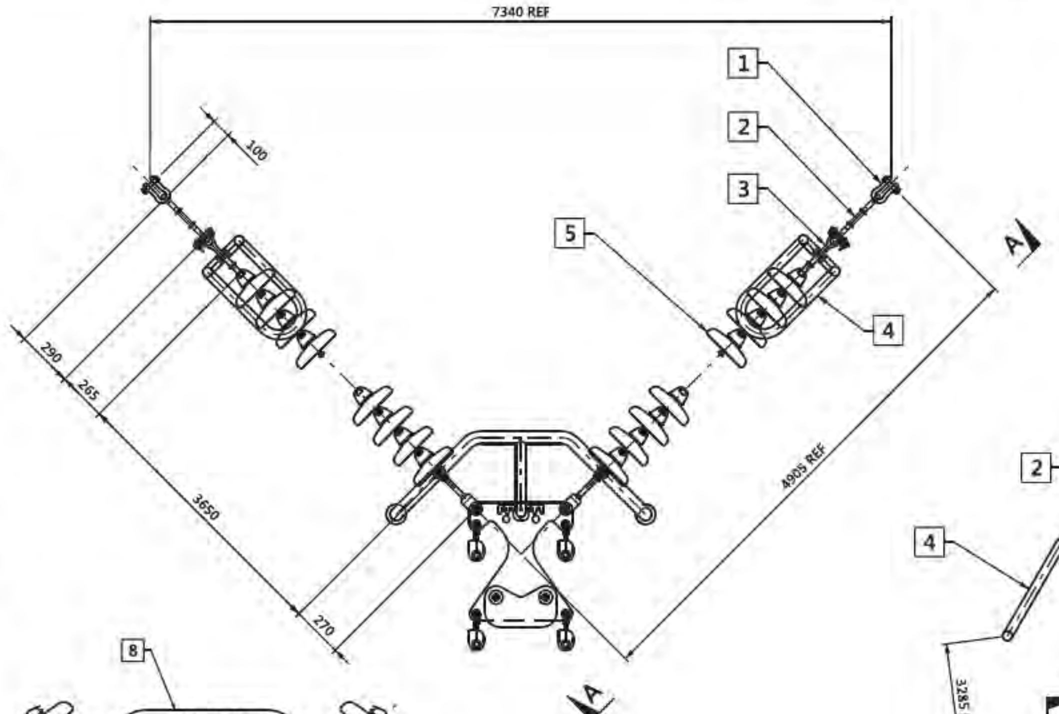
DOUBLE 160 kV INSULATOR VEE STRING SUSPENSION HARDWARE ASSEMBLY FOR FOUR SP-926.7 CONDUCTOR BUNDLE USED ON TYPE 54C TOWER

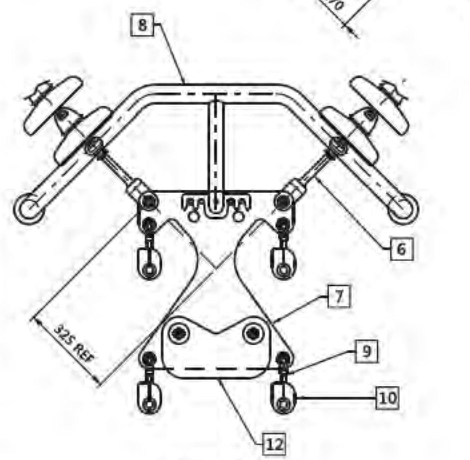
DWG NO. 5L005-T08-00024 SIZE D 0

REFERENCE DRAWINGS | REFERENCE DRAWINGS | REVISIONS

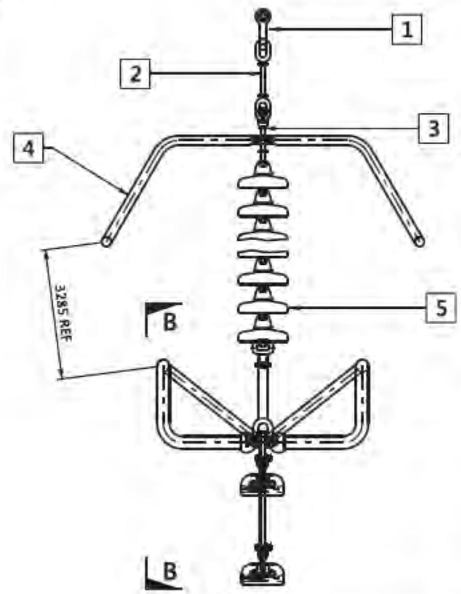
NOT TO BE REPRODUCED WITHOUT PERMISSION

PRELIMINARY DRAWING





VIEW B-B



VIEW A-A

BILL OF MATERIAL FOR ONE ASSEMBLY				
ITEM	QTY	HU	BCH STOCK No.	DESCRIPTION
1	2	EA	420-1510	SHACKLE, ANCHOR, 19 Ø, 27 OPEN, 102 LG, 3/4"Ø BOLT, 220 kN
2	2	EA	97003405	OVAL EYE, DOUBLE EXTENSION, H/L, 290 LG, 70 x 35 OPEN, 220 kN
3	2	EA	97003400	CLEVIS, BALL, Y TYPE, H/L, 270 LG, 220 kN, FOR ARCING HORN
4	2	EA	97003406	ARCING HORN, FOR 500 kV SINGLE STRING VEE, c/w NUTS, BOLTS AND WASHERS
5	50	EA	410-0999	INSULATOR, SUSPENSION, TOUGHENED GLASS, 146 x 254, 160 kN
6	2	EA	413-1423	CLEVIS, SOCKET, H/L, 270 LG, 30 OPEN, 3/4"Ø BOLT, 220 kN
7	1	EA	97003408	PLATE, YOKE, 160 kN, 1" TH, FOR 4 BUNDLE CONDUCTOR SINGLE STRING VEE SUSP.
8	2	EA	97003407	CORONA RING, FOR SINGLE STRING VEE SUSPENSION ASSEMBLY
9	4	EA	413-1182	CLEVIS, EYE, Y-TYPE, 90°, 100 LG, 3/4"Ø BOLT, 120 kN
10	4	EA	97003409	CLAMP, SUSPENSION, FOR SP-926.7 CONDUCTOR w/o SOCKET EYE
11	AS REQ'D	EA	96008188	WEIGHT, HOLD DOWN, FOR 500 kV SUSPENSION ASSEMBLY
12	AS REQ'D	EA	SEE TABLE	STUD, 3/4" ASSY

TABLE HOLD DOWN WEIGHT QUANTITIES REQUIRED AS PER STRUCTURE DATA SHEETS			
MASS (Kg)	QUANTITY	STUD LENGTH	STOCK No.
45	2	168	96015400
90	4	279	96015401
136	6	381	96015402
181	8	502	96015403
227	10	613	96015404
272	12	724	96015405

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. EXTRA INSULATORS TO BE ADDED WHEN SPECIFIED ON STRUCTURE DATA SHEETS.
3. SPECIFICATIONS FOR BALL AND SOCKET ARE CSA CS-8.
4. CLAMPING BOLTS MUST BE POSITIONED TO FACE TOWARD THE TOWER.
5. CLAMP BOLTS TO BE INSTALLED AT 90 N.m. TORQUE.
6. APPROXIMATE ASSEMBLY MASS = 260 Kg.
7. HOLD DOWN WEIGHTS TO BE INSTALLED AS SPECIFIED ON STRUCTURE DATA SHEETS, SEE 5LGS-T08-4057.
8. MAXIMUM RESULTANT DESIGN LOAD SHALL NOT EXCEED 80 KN IN EITHER INSULATOR STRING LEG. NO DESIGN LOADS SHALL INDUCE UPLIFT IN EITHER INSULATOR STRING LEG.

NO	REMARKS	DATE	DESIGNED	INDEP CHK	DFTG	DFTG CHK	INSP	REV	ACPT

REVISIONS

DSGN
INDEP CHK
DFTG
DFTG CHK
INSP
REV
ACPT

BC Hydro ENGINEERING

SOUTH BANK - PEACE CANYON 500 kV T/L

SINGLE 160 kN SUSPENSION INSULATOR VEE STRING HARDWARE ASSEMBLY FOR FOUR SP-926.7 CONDUCTOR BUNDLE USED ON TYPE 54A AND 54GA TOWERS

DATE	DISTR	DWG NO	SIZE	R
		5L005-T08-00025	B	0

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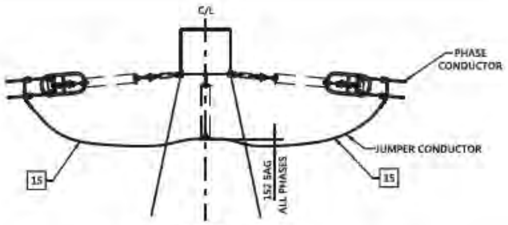
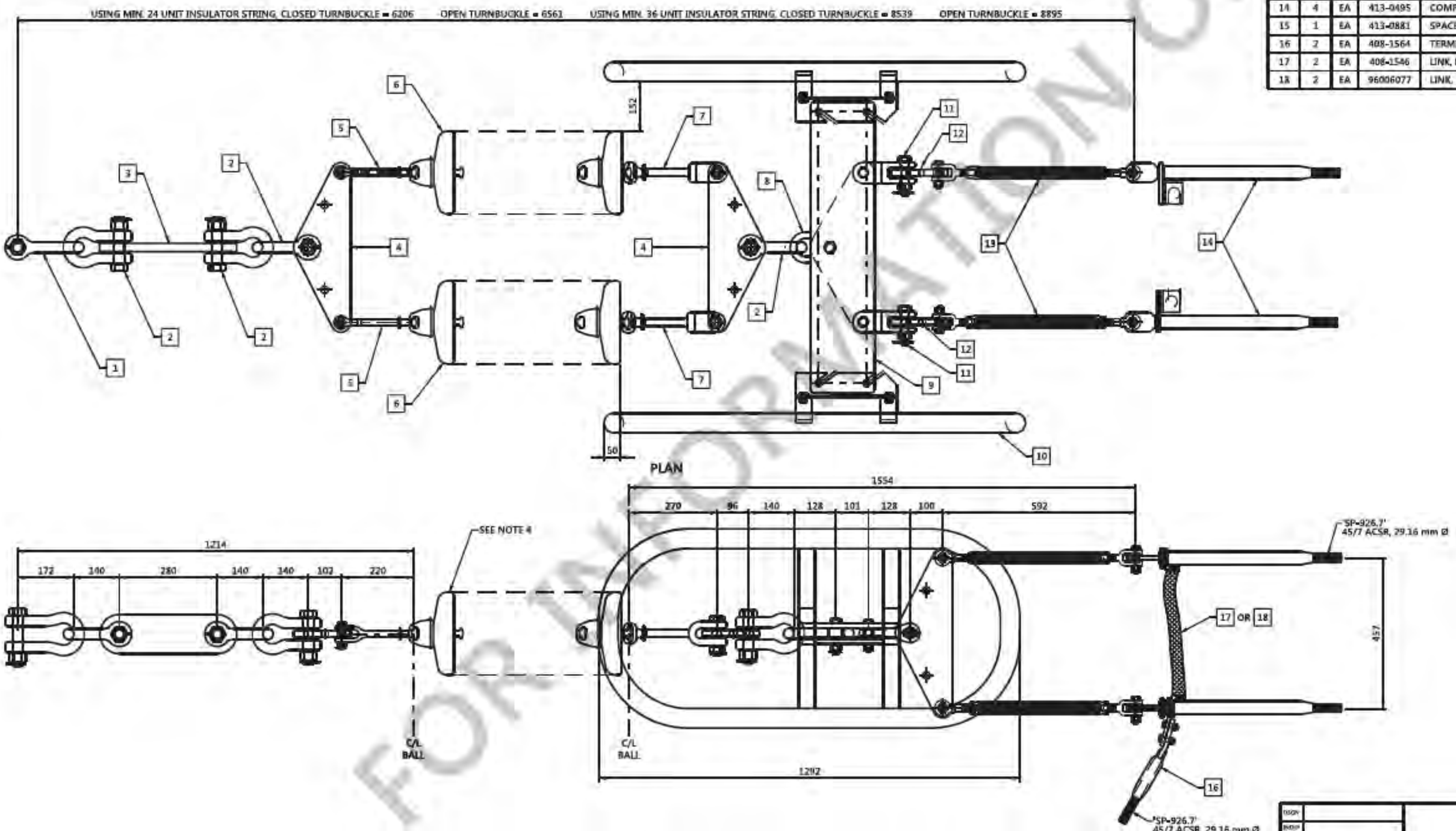


ELEVATION
SHOWING JUMPER ASSEMBLY ARRANGEMENT



BILL OF MATERIAL FOR ONE ASSEMBLY				
ITEM	QTY	HU	BCH STOCK No.	DESCRIPTION
1	1	EA	420-1444	SHACKLE, ANCHOR, 32 Ø, 48 OPEN, 172 LG, 1¼"Ø BOLT, 445 kN
2	4	EA	420-1446	SHACKLE, ANCHOR, 32 Ø, 35 OPEN, 140 LG, 1¼"Ø BOLT, 440 kN
3	1	EA	96004258	PLATE, EXTENSION, 445 kN, 1" TH, 280 LONG, 1-⅜" DIA. HOLES
4	2	EA	96004257	PLATE, YOKE, 445 kN, 1" TH, 1-⅜" Ø HOLE, 4 x 1-⅛" Ø HOLE
5	2	EA	96004259	CLEVIS, BALL, H/L, 220 kN, 270 LONG, ⅞"BOLT, 30 OPEN
6	SEE TABLE	EA	410-0998/ 408-0287	INSULATOR, SUSPENSION, TOUGHENED GLASS, 156 x 292, 220 kN
7	2	EA	413-1423	CLEVIS, SOCKET, H/L, 270 LG, 29 OPEN, ⅞"Ø BOLT, 220 kN
8	1	EA	413-1730	LINK, CHAIN, 152 x 32 Ø, 445 kN
9	1	EA	96015393	CORONA RING YOKE PLATE ASSEMBLY
10	1	EA	96015394	CORONA RING ASSEMBLY
11	2	EA	96015392	CLEVIS EYE, 127 LG, 32 OPEN, FOR 1"Ø BOLT, 220 kN
12	2	EA	96004256	PLATE, YOKE, 220 kN, ⅞" TH, 1 ⅛" Ø HOLE, 2 x ⅞" Ø HOLES
13	4	EA	96004269	TURNBUCKLE ASSEMBLY, CLEVIS - CLEVIS, 170 kN, 30 OPEN, ⅞" BOLTS
14	4	EA	413-0495	COMPRESSION DEAD-END FOR SP-926.7 CONDUCTOR
15	1	EA	413-0881	SPACER, RIGID, FOR SP-2303.5 CONDUCTOR
16	2	EA	408-1564	TERMINAL, COMPRESSION FOR SP-2303.5 CONDUCTOR
17	2	EA	408-1546	LINK, FLEX, FOR BUNDLE DEAD END
18	2	EA	96006077	LINK, FLEX, FOR BUNDLED DEAD END, EXTENDED

LINE DEFLECTION ANGLE	NUMBER OF INSULATORS PER STRING REQUIRED		
	FOR CONDUCTOR DIP, ANGLE		
	0°-20°	21°-25°	26°-30°
0° - 55°	24	24	24
55° - 60°	24	24	26
60° - 65°	24	24	27
65° - 70°	24	25	28
70° - 75°	25	27	30
75° - 80°	26	28	32
80° - 85°	28	30	34
85° - 90°	29	32	36

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. EXTRA INSULATORS TO BE ADDED WHEN SPECIFIED ON TOWER DATA SHEET.
3. FOR INSTALLATION OF COMPRESSION DEAD-END UNIT SEE DWG. No. 5LGS-T08-03923.
4. APPROXIMATE ASSEMBLY MASS:
   WITH MIN. 21 UNIT INSULATOR STRING = 551 kg
   WITH MIN. 36 UNIT INSULATOR STRING = 762 kg
5. REVERSE INSULATORS IN THIS ASSEMBLY WHEN SPECIFIED ON THE TOWER DATA SHEETS. INTERCHANGE ITEM 6 WITH ITEM 7.

BC Hydro ENGINEERING

SOUTH BANK - PEACE CANYON 500 kV T/L

DOUBLE 220 kN INSULATOR STRING DEAD-END HARDWARE ASSEMBLY FOR 4 CONDUCTOR BUNDLE WITH SP-926.7

5L005-T08-00027 | D | 0

FOR INFORMATION ONLY

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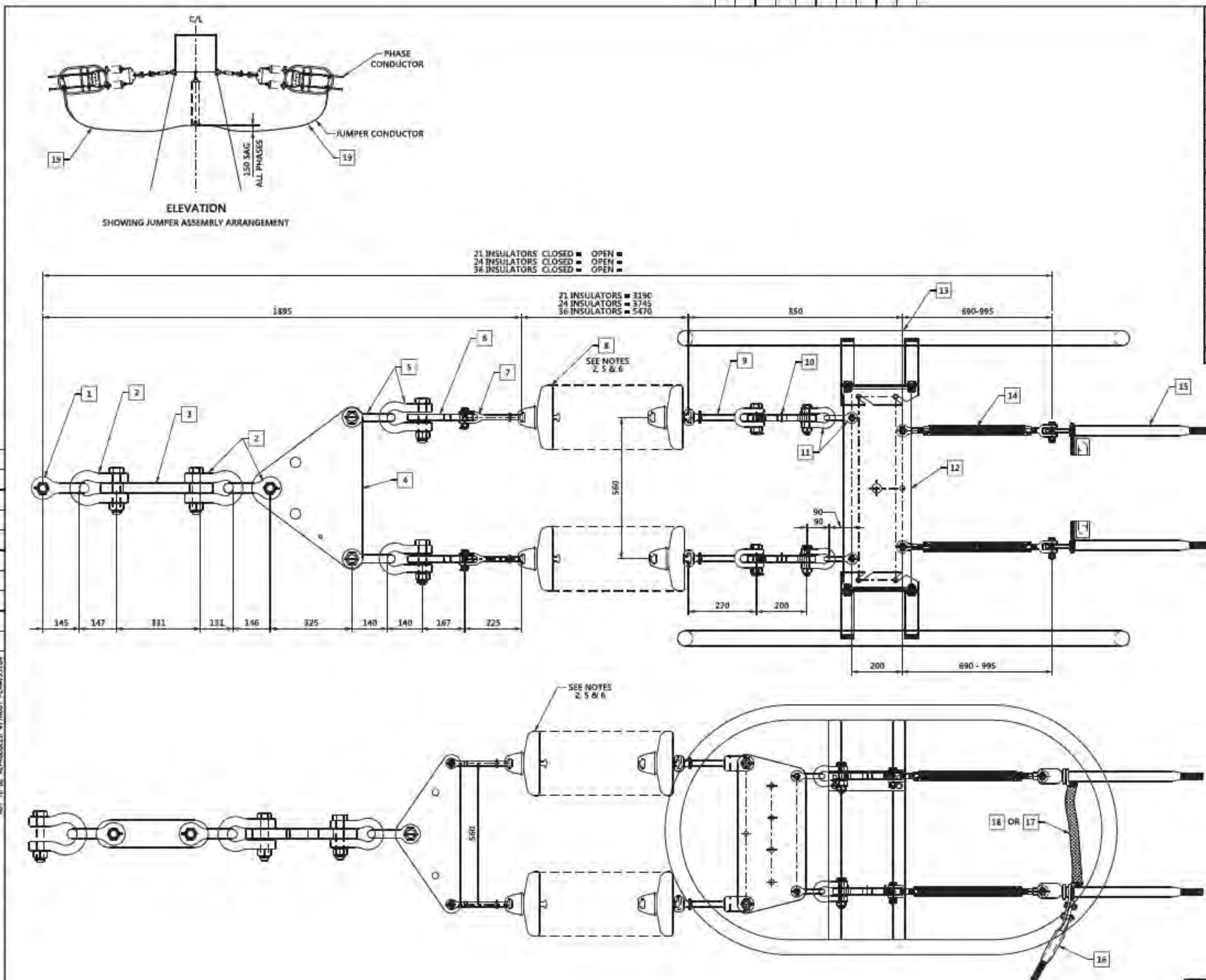
PRELIMINARY DRAWING
NOT TO BE REPRODUCED WITHOUT PERMISSION



BILL OF MATERIAL FOR ONE ASSEMBLY				
ITEM	QTY	HU	BCH STOCK No.	DESCRIPTION
1	1	EA	97003392	SHACKLE, ANCHOR, 38 Ø, 60 OPEN, 145 LG, 1½" Ø BOLT, 880 kN
2	3	EA	97003393	SHACKLE, ANCHOR, 38 Ø, 42 OPEN, 146 LG, 1½" Ø BOLT, 880 kN
3	1	EA	97003394	PLATE, EXTENSION, 880 kN, 305 LG, 1.5" TH, 1⅝" Ø HOLES
4	1	EA	97003395	PLATE, YOKE, 560 x 325 LG, 1.5" TH, 880 kN, 1⅝" Ø HOLES
5	4	EA	420-1442	SHACKLE, ANCHOR, 32 Ø, 42 OPEN, 140 LG, 1¼"Ø BOLT, 440 kN
6	2	EA	96004257	PLATE, YOKE, 445 kN, 1" TH, 1-3/8" DIA. HOLE, 4 x 1-1/8" DIA. HOLE
7	4	EA	96004259	CLEVIS, BALL, H/L, 220 kN, 270 LONG, ⅞"BOLT, 30 OPEN
8	96	EA	408-0287	INSULATOR, SUSPENSION, 220 kN, 156 x 292, CS11
9	4	EA	413-1423	CLEVIS, SOCKET, H/L, 270 LG, 29 OPEN, 1"Ø BOLT, 220 kN
10	2	EA	97003396	PLATE, YOKE, RECTANGULAR, 200 x 560 x 1" TH, 13/16" Ø HOLES, 220 kN
11	8	EA	97003397	SHACKLE, ANCHOR, 19 Ø, 32 OPEN, 90 LG, ¾" Ø BOLT, 180 kN
12	2	EA	97003398	PLATE, YOKE, RECT, 780 x 270 x 1" TH, 13/16" HOLES, 220 kN, FOR CORONA RING
13	1	EA	97003399	CORONA RING SET, 1790 x 990 x 60 Ø, FOR QUAD STRING DEAD END
14	4	EA	97002482	TURNBUCKLE ASSEMBLY, 685 TO 1040 LG, 170 kN, 1⅜" OPEN, ⅞" Ø BOLTS
15	4	EA	413-0495	COMPRESSION DEAD END FOR SP-926.7 CONDUCTOR
16	2	EA	410-1564	TERMINAL, COMPRESSION, FOR SP 2303.5 CONDUCTOR
17 OR	2	EA	408-1546	LINK, FLEX, FOR BUNDLE DEAD END
18	2	EA	96006077	LINK, FLEX, FOR BUNDLED DEAD END, EXTENDED
19	1	EA	413-0881	SPACER, TWIN BUNDLE, RIGID, FOR SP-2303.5 CONDUCTOR

LINE DEFLECTION ANGLE	NUMBER OF INSULATORS REQUIRED PER STRING		
	FOR CONDUCTOR DIP, ANGLE		
	0°-20°	21°-25°	26°-30°
0°-35°	21	21	21
35°-40°	21	21	22
40°-45°	21	21	22
45°-50°	21	21	23
50°-55°	21	22	24
55°-60°	21	23	26
60°-65°	22	24	27
65°-70°	23	25	28
70°-75°	25	27	30
75°-80°	26	28	32
80°-85°	28	30	34
85°-90°	29	32	36

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. EXTRA INSULATORS TO BE ADDED WHEN SPECIFIED ON STRUCTURE DATA SHEET.
3. FOR INSTALLATION OF COMPRESSION DEAD-END UNIT SEE DWG. No. 5LGS-T08-03923.
4. APPROXIMATE ASSEMBLY MASS:
   WITH MIN. 21 UNIT INSULATOR STRING = 1000 kg
   WITH MAX. 36 UNIT INSULATOR STRING = 1250 kg
5. REVERSE INSULATORS IN THIS ASSEMBLY WHEN SPECIFIED ON THE TOWER DATA SHEETS. INTERCHANGE ITEM 6 WITH ITEM 7.
6. MINIMUM INSULATORS PER STRING AS FOLLOWS:
   54J = 24
   8KGT = 21

BC Hydro ENGINEERING

SOUTH BANK SUB. - PEACE CANYON 500 kV T/L

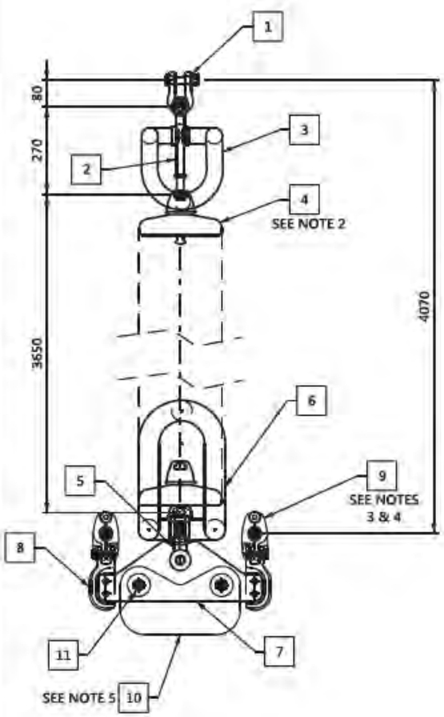
QUAD 220 kN INSULATOR STRING
DEAD-END HARDWARE ASSEMBLY
FOR FOUR SP-926.7 CONDUCTOR BUNDLE

REFERENCE DRAWINGS | REFERENCE DRAWINGS | REVISIONS

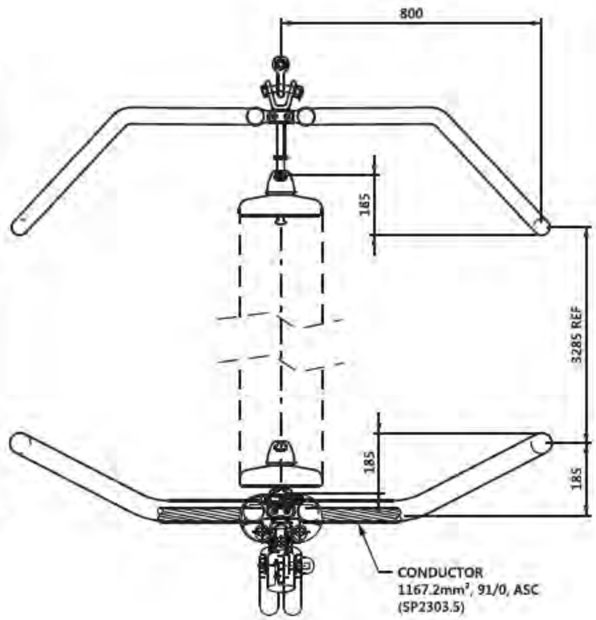
DWG NO 5L005-T08-00028 SIZE D R 0

NOT TO BE REPRODUCED WITHOUT PERMISSION

PRELIMINARY DRAWING



LONGITUDINAL VIEW



TRANSVERSE VIEW

BILL OF MATERIAL FOR ONE ASSEMBLY

ITEM	QTY	HU	BCH STOCK No.	DESCRIPTION
1	1	EA	96008189	SHACKLE, ANCHOR, 7/8"Ø, 30 OPEN ,82 LG, 240 kN
2	1	EA	96073400	CLEVIS, BALL, Y TYPE, H/L, 270 LG, 220 kN, FOR ARCING HORN
3	2	EA	97003402	ARCING HORN, FOR 500 kV JUMPER STRING
4	25	EA	410-0999	INSULATOR, SUSPENSION, TOUGHENED GLASS, 146 x 254, 160 kN
5	1	EA	97003401	SOCKET CLEVIS EXTENDED, 150 LG, 220 KN, 7/8"Ø BOLT, FOR ARCING HORN
6	2	EA	97003403	CORONA RING, FOR 500 kV JUMPER STRING
7	1	EA	97003404	PLATE, YOKE, FOR 500 kV JUMPER STRING HARDWARE ASSEMBLY
8	2	EA	96008192	BRACKET, CLAMP SUPPORT, FOR 500 kV 2 BUNDLE JUMPER, ALUMINUM, c/w 2 EA 5/8" X 2
9	2	EA	96008188	CLAMP, SUSPENSION, 'SP-2303.5' 500 kV SUSPENSION ASSY, 1.75" Ø
10	2	EA	96008190	WEIGHT, HOLD DOWN, FOR 500 kV 2 BUNDLE JUMPER, CORONA FREE
11	2	EA	SEE TABLE	BOLT FOR HOLD DOWN WEIGHT

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. EXTRA INSULATORS TO BE ADDED WHEN SPECIFIED ON STRUCTURE DATA SHEETS.
3. CLAMPING BOLTS MUST BE POSITIONED TO FACE TOWARD THE TOWER.
4. CLAMP BOLTS TO BE TORQUED TO 90 Nm.
5. MINIMUM OF TWO HOLD DOWN WEIGHTS REQUIRED UNLESS SPECIFIED OTHERWISE AS PER STRUCTURE DATA SHEETS.

MASS (Kg)	QUANTITY	STUD LENGTH	STOCK No.
45	2	168	96015400
90	4	279	96015401
136	6	381	96015402
181	8	502	96015403
227	10	613	96015404
272	12	724	96015405

6. APPROXIMATE ASSEMBLY MASS = 265 kg.
7. FOR 4-BUNDLE JUMPER HARDWARE ASSEMBLY SEE DRAWING 5LGS-T08-B4059.

NO	REMARKS	DATE	DESIGNED	INDEP CHK	DFTG	DFTG CHK	INSP	REV	ACPT

REVISIONS

DSGN	
INDEP CHK	
DFTG	
DFTG CHK	
INSP	
REV	
ACPT	

DATE

DISTR

BC Hydro ENGINEERING

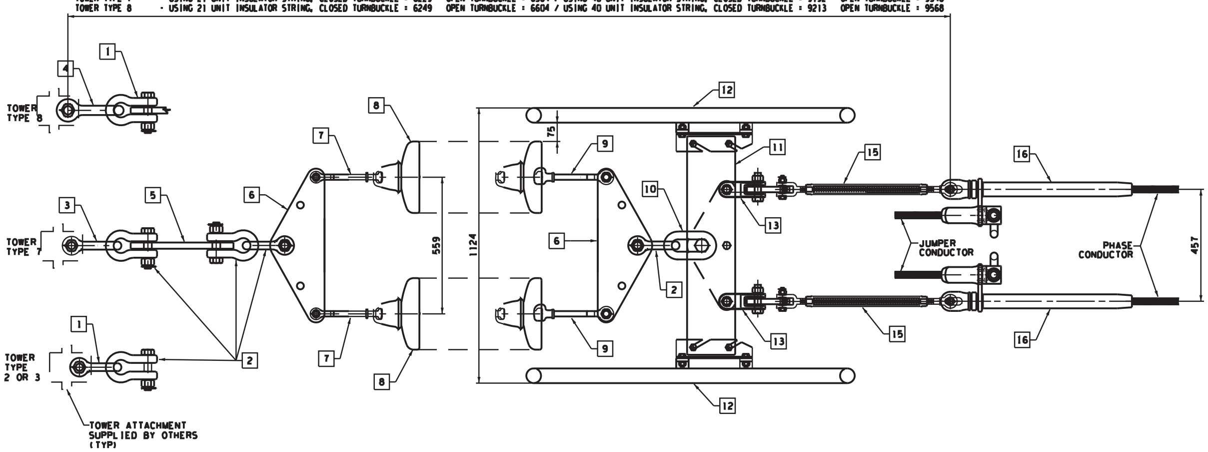
SOUTH BANK - PEACE CANYON 500 kV T/L

SINGLE 160 kN SUSPENSION INSULATOR STRING JUMPER HARDWARE ASSEMBLY

DWG NO 5L005-T08-00029 SIZE B R 0

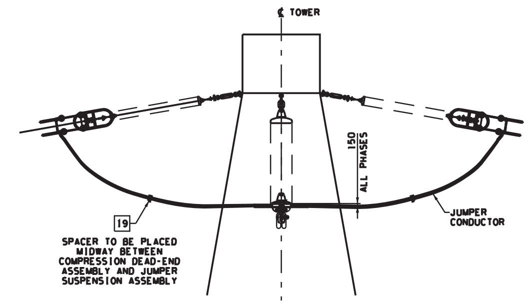
NOT TO BE REPRODUCED WITHOUT PERMISSION

TOWER TYPE 2 OR 3 - USING 21 UNIT INSULATOR STRING, CLOSED TURNBUCKLE : 6198 OPEN TURNBUCKLE : 6553 / USING 40 UNIT INSULATOR STRING, CLOSED TURNBUCKLE : 9162 OPEN TURNBUCKLE : 9517
TOWER TYPE 7 - USING 21 UNIT INSULATOR STRING, CLOSED TURNBUCKLE : 6229 OPEN TURNBUCKLE : 6584 / USING 40 UNIT INSULATOR STRING, CLOSED TURNBUCKLE : 9192 OPEN TURNBUCKLE : 9548
TOWER TYPE 8 - USING 21 UNIT INSULATOR STRING, CLOSED TURNBUCKLE : 6249 OPEN TURNBUCKLE : 6604 / USING 40 UNIT INSULATOR STRING, CLOSED TURNBUCKLE : 9213 OPEN TURNBUCKLE : 9568



BILL OF MATERIAL FOR ONE ASSEMBLY

ITEM	QTY TOWER TYPE 2 OR 3	QTY TOWER TYPE 7	QTY TOWER TYPE 8	HU	BC HYDRO STOCK NUMBER	MANUFACTURER'S IDENTIFICATION NUMBER SLACAN	JOSLYN	SAAE	DESCRIPTION
1	1	-	1	EA	420-1442	SP63175 E11	C7111-1	D73 CAN	SHACKLE, ANCHOR, 32Ø, 40 OPEN, 140 Lg. 1¼"Ø BOLT, 445 kN
2	4	4	3	EA	420-1446	SP63189-E11	C7111	D76 CAN	SHACKLE, ANCHOR, 32Ø, 35 OPEN, 140 Lg. 1¼"Ø BOLT, 445 kN
3	-	1	-	EA	420-1444	SP63188 E10	C7109-3	-	SHACKLE, ANCHOR, 32Ø, 48 OPEN, 171 Lg. 1¼"Ø BOLT, 445 kN
4	-	-	1	EA	420-1445	SP63161 E12	C7136	-	SHACKLE, CHAIN, 38Ø, 60 OPEN, 172 Lg. 1¼"Ø BOLT, 445 kN
5	1	1	1	EA	96004258	SP16291	B7112-M	D77 CAN	PLATE, LINK, 280 Lg. 25 THICK, 445 kN
6	2	2	2	EA	96004257	SP16292	C7113-M	D78 CAN	PLATE, YOKE, 128 × 560, 25 THICK, 445 kN
7	2	2	2	EA	96004259	SP63170-E8	C7499-1	D79 CAN	CLEVIS, BALL, H/L, 270 Lg. 30 OPEN, 1"Ø BOLT, 220kN
8	SEE TABLE 1	SEE TABLE 2		EA	410-0998/ 408-0287	-	-	-	INSULATOR, SUSPENSION, 156 × 292, 220 kN
9	2	2	2	EA	413-1423	SP63171-E8	C7488-1	D80 CAN	CLEVIS, SOCKET, H/L, 270 Lg. 30 OPEN, 1"Ø BOLT, 220kN
10	1	1	1	EA	413-1730	SP63172	B7116-F	D81 CAN	LINK, CHAIN, 152 Lg. 32 THICK, 445 kN
11	1	1	1	EA	96015393	SP16465	D7117	D82 CAN	CORONA RING YOKE PLATE ASSEMBLY
12	1	1	1	EA	96015394	SP16473L & R	D7124	D85 CAN	CORONA RING ASSEMBLY (RH & LH)
13	2	2	2	EA	96015392	SP63173-E8	C7122	D83 CAN	CLEVIS, EYE, 127 Lg. 32 OPEN, 1"Ø BOLT, 220kN
14	2	2	2	EA	96004256	SP16299	D7123-M	D84 CAN	PLATE, YOKE, 102 × 457, 22 THICK, 220 kN
15	4	4	4	EA	96004269	SP63174-E8	C-7131-10	D86 CAN	TURNBUCKLE ASSEMBLY
16	4	4	4	EA	96004270	-	-	-	DEAD END, COMPRESSION, ASSEMBLY (SEE NOTE 2)
17	2	2	2	EA	408-1564	-	-	-	TERMINAL, COMPRESSION, FOR SP-2303 CONDUCTOR
18	2	2	2	EA	408-1546	-	-	-	LINK, FLEX
19	1	1	1	EA	413-0881	-	-	-	SPACER



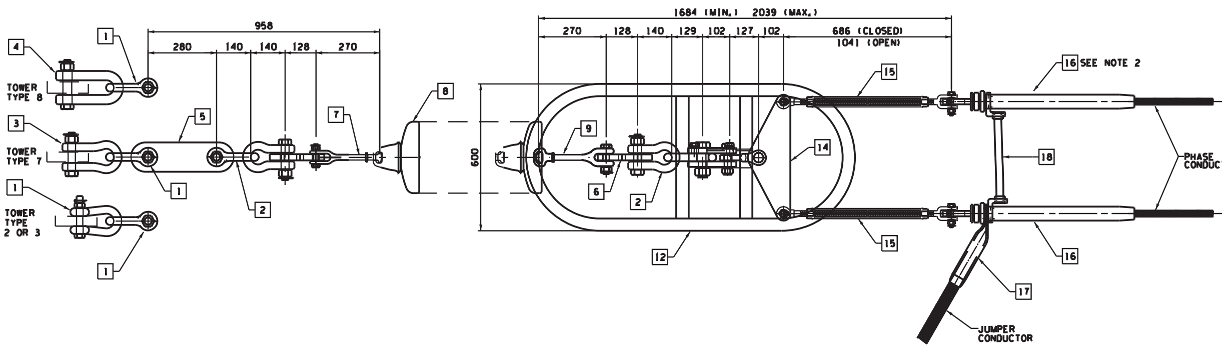
ELEVATION
SHOWING JUMPER ASSEMBLY ARRANGEMENT

TABLE 1 - TOWER TYPES 2 AND 3

LINE DEFLECTION ANGLE	NUMBER OF INSULATORS REQUIRED PER STRING FOR CONDUCTOR DIP, ANGLE 0°-20°	21°-25°	26°-30°
0°-10°	21	21	21
10°-15°	21	21	22
15°-20°	21	21	22
20°-25°	21	21	23
25°-30°	21	21	23
30°-35°	21	22	24
35°-40°	21	22	25
40°-45°	21	23	26
45°-50°	22	24	27
50°-55°	23	25	28
55°-60°	24	26	29
60°-65°	25	27	30
65°-70°	26	29	32
70°-75°	28	30	33
75°-80°	29	32	35
80°-85°	31	34	37
85°-90°	33	36	40

TABLE 2 - TOWER TYPES 7 AND 8

LINE DEFLECTION ANGLE	NUMBER OF INSULATORS REQUIRED PER STRING FOR CONDUCTOR DIP, ANGLE 0°-20°	21°-25°	26°-30°
0°-35°	21	21	21
35°-40°	21	21	22
40°-45°	21	21	22
45°-50°	21	21	23
50°-55°	21	22	24
55°-60°	21	23	26
60°-65°	22	24	27
65°-70°	23	25	28
70°-75°	25	27	30
75°-80°	26	28	32
80°-85°	28	30	34
85°-90°	29	32	36



ELEVATION

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. STOCK No. FOR MICA 6101 CONDUCTOR, FOR INSTALLATION OF COMPRESSION DEAD END UNIT SEE DRAWING No. 5LGS-T08-D3923M.
3. APPROXIMATE ASSEMBLY MASS:
   WITH MIN. 21 UNIT INSULATOR STRING = 550 kg.
   WITH MAX. 40 UNIT INSULATOR STRING = 820 kg.
4. REVERSE INSULATORS IN THIS ASSEMBLY WHEN SPECIFIED ON STRUCTURE DATA SHEETS. INTERCHANGE ITEM 7 WITH ITEM 9.

THIS DRAWING SUPERCEDES DWG Nos. 5LGS-T08-D1662, 5LGS-T08-D1662M, 5LGS-T08-D1667, 5LGS-T08-D1667M, 5LGS-T08-D1668, 5LGS-T08-D1668M, 5LGS-T08-D1669, 5LGS-T08-D1669M.

NO	REMARKS	DATE
2	ITEMS 16, 17, 18 AND 19 REVISED	2012-07
1	BCH STOCK NUMBERS ADDED	2012-04

[redacted]

REVISIONS

DESIGNED / INDEP CHK / DFTG / DFTG CHK / INSP / REV / ACPT

REF# | DRAWING NUMBER | TITLE — REFERENCE DRAWINGS

REF# | DRAWING NUMBER | TITLE — REFERENCE DRAWINGS

DSGN [redacted]
INDEP CHK
DFTG [redacted]
DFTG CHK
INSP
REV
ACPT [redacted]

500 kV TRANSMISSION LINE
DOUBLE 220 kN INSULATOR STRING
DEAD-END HARDWARE ASSEMBLY
FOR 4-CONDUCTOR BUNDLE USE
ON SELF SUPPORTING TOWER
TYPES 2, 3, 7 & 8

DATE 28 APRIL 2000 | DISTR | DWG NO 5LGS-T08-04003 | SIZE D | R 2

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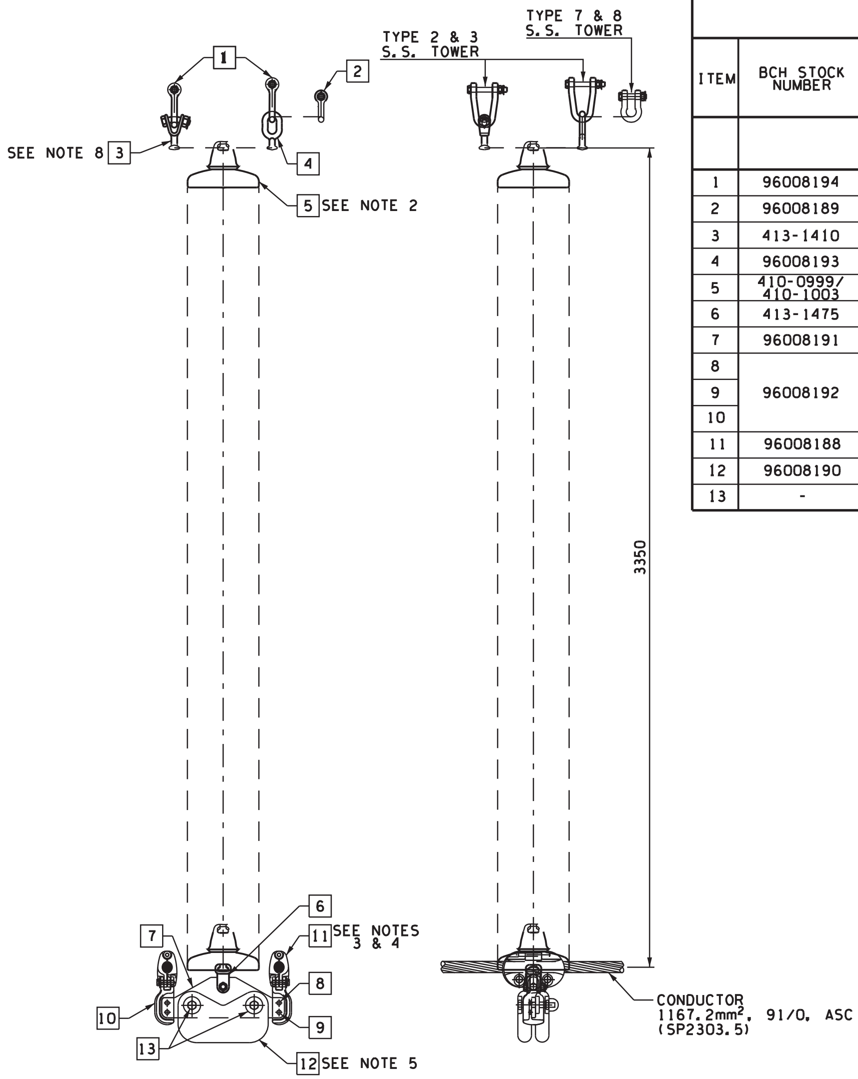

LONGITUDINAL VIEW

TRANSVERSE VIEW

BILL OF MATERIAL FOR ONE ASSEMBLY								
ITEM	BCH STOCK NUMBER	QTY		MANUFACTURERS CAT/DWG No.				DESCRIPTION
		TYPE 2&3 S.S. TOWER	TYPE 7&8 S.S. TOWER	SLATER	SLACAN	JOSLYN	NGK	
				D1878 D1995	D3797 D3798	D3880M D3881M	5L42-T08 -B135	MANUFACTURER'S ASSEMBLY DRAWING 5LGS-T08-___, OR CIRCUIT
1	96008194	1		63167-E6	63167-E6	C7542-20		SHACKLE, V, 19 DIA., 67 OPEN, 133 LONG, ¾" DIA. BOLT, 160 kN
2	96008189		1	63178-E7	63178-E7	C5288-12		SHACKLE, ANCHOR, 22 DIA., 32 OPEN, ⅞" DIA. BOLT, 220 kN
3	413-1410	1	1	60957-E7	60957-E7	BT3633	4H-2151AU	CLEVIS, Y TYPE, BALL, 105 LONG, ⅞" BOLT, 160 kN
4	96008193	1	1	63158	63158	BT3635		OVAL EYE, BALL, 220 kN
5	410-0999/ 410-1003	23	23					INSULATOR, 160 kN, 146 x 254, CSA CS-8
6	413-1475	1	1	60847-E7	60847-E7	C7655	4H-2148AU	CLEVIS, SOCKET, 90 DEGREE
7	96008191	1	1	16269-C	16269-C	C7657-M	7H-767A	PLATE, YOKE, FOR 2-BUNDLE JUMPER SUSPENSION ASSEMBLY
8	96008192	4	4					⅝" -11 UNC REG. FIN.HEX. HD. BOLT 2¼" LONG SAE GR. 5, C/W NUT, SAE GRADE 5
9		4	4	22335	22335			⅝" SPRING LOCKWASHER
10		2	2	16225-D	16225-D	D7451-1		BRACKET, CLAMP SUPPORT
11	96008188	2	2	62821	62821	D4353-100-3	1H-1143AU	CLAMP, SUB-CONDUCTOR, ASS'Y, 1.750" DIA. COND
12	96008190				16270	D7563	4H-2152A	WEIGHT, HOLD DOWN (SEE NOTE 5)
13	-	2	2					STUD, ¾" ASSEMBLY

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. EXTRA INSULATORS TO BE ADDED WHEN SPECIFIED ON STRUCTURE DATA SHEETS.
3. CLAMPING BOLTS MUST BE POSITIONED TO FACE TOWARD THE TOWER.
4. CLAMP BOLTS TO BE INSTALLED AT THE FOLLOWING TORQUES:
   SLACAN 90 N m
   JOSLYN 70 N m
5. HOLD DOWN WEIGHTS TO BE INSTALLED ON TOWER TYPES 3, 7 & 8 ONLY.

HOLD DOWN WEIGHT QUANTITIES REQUIRED
AS PER STRUCTURE DATA SHEETS

MASS (Kg)	QUANTITY	STUD LENGTH	STOCK No.
45	2	168	96015400
90	4	279	96015401
136	6	381	96015402
181	8	502	96015403
227	10	613	96015404
272	12	724	96015405

6. APPROXIMATE ASSEMBLY MASS = 195 kg. (HOLD DOWN WEIGHT NOT INCLUDED)
7. FOR 4-BUNDLE JUMPER HARDWARE ASSEMBLY SEE DRAWING 5LGS-T08-B4059.
8. FOR NGK ASSEMBLIES USE SLACAN OR JOSLYN SHACKLES FOR ITEMS 1 AND 2.

NO	REMARKS	DATE	DESIGNED	INDEP CHK	DFTG	DFTG CHK	INSP	REV	ACPT
2	STOCK NUMBERS AND ITEM 4 REVISED	2012-04	[redacted]						
1	STOCK NUMBERS ADDED AND BORDER UPDATED	2010-06							

REVISIONS

DSGN	[redacted]
INDEP CHK	
DFTG	
DFTG CHK	
INSP	
REV	
ACPT	[redacted]

[redacted]

BChydro

500 kV TRANSMISSION LINE
SINGLE 160 kN SUSPENSION INSULATOR
STRING JUMPER HARDWARE ASSEMBLY
FOR $1167.2 mm^2$ 2 CONDUCTOR BUNDLE
FOR TOWER TYPES 2, 3, 7 & 8

DATE	DISTR	DWG NO	SIZE	R
19. APR. 05	.	5LGS-T08-04057	B	2

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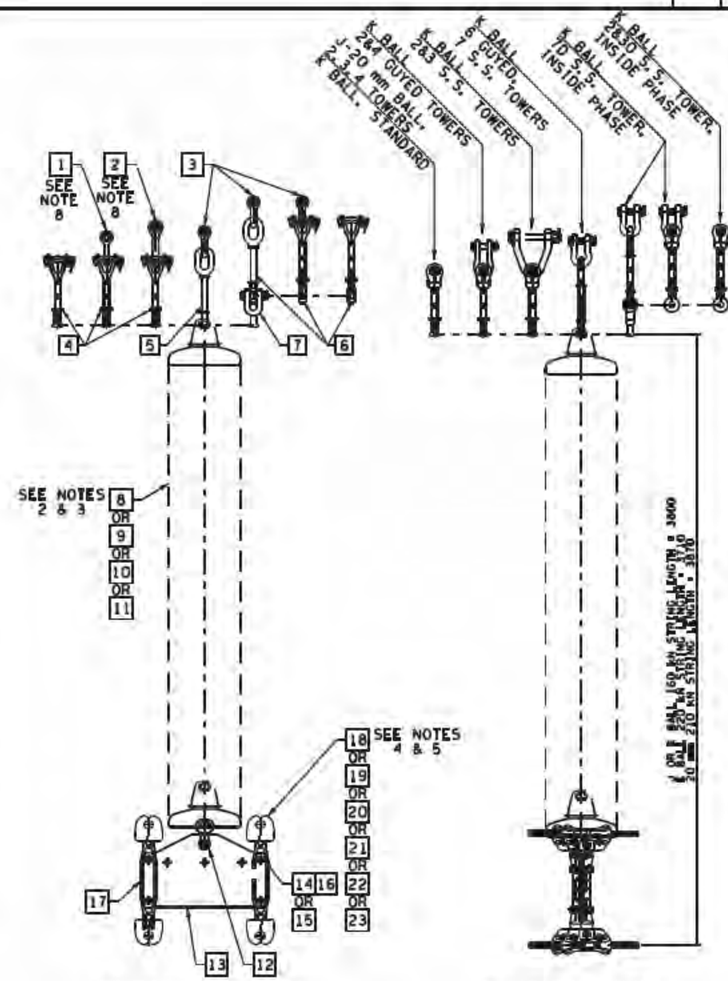

LONGITUDINAL VIEW

TRANSVERSE VIEW

BILL OF MATERIAL FOR ONE ASSEMBLY

ITEM	BCH STOCK NUMBER	QUANTITY – INSULATOR BALL TYPE – J,20mm – TOWER TYPE 2,3&4	K – STD	K – 2,4 GUYED	K – 2,3 S.S	K – 6,7	K – 2,3,7,D INSIDE PHASE	MANUFACTURERS CAT/DWG No. – INSULATOR BALL TYPE – J-160 kN PEACE – SLATER	J-160 kN PEACE – LACAL	J-160 kN PEACE – NGK	20mm - 210 kN PEACE – SLATER	20mm - 210 kN PEACE – LACAL	20mm - 210 kN PEACE – NGK	K-160 kN & 220 kN PEACE & MECA – SLATER	K – SLACAN	K – JOSLYN	DESCRIPTION
								D115-6 D161-2	5L12-T08 -D89	5L42-T08 -C134	D118 D160	5L12-T08 -D70	5L42-T08 -C134	D1852 D1993 D2009	D2958 M D3799 D3974	D3887 M D3886 M	MANUFACTURER'S ASSEMBLY DRAWING 5LGS-T08-..... OR CIRCUIT
1	420-1607			1											SP63186	C3025-3	SHACKLE, ANCHOR, 19 ⌀, 278 OPEN, 100 LG, 160 kN
2	420-1439				1										SP63185	C5276-30	SHACKLE, V, 25 ⌀, 105 OPEN, 140 LG, 220 kN
3	96006189					1	1							63178-E7	SP63178-E7	C5288-12	SHACKLE, ANCHOR, 22 ⌀, 32 OPEN, 7/8"⌀ BOLT, 220 kN
4	408-2008							60559-E	C4029	4B-2147AU	60464-E7 60665-E7	C4776	4H-2149AU	63176-E7	SP63176	C7499-10	CLEVIS, Y TYPE, BALL, HOT LINE
5	408-2007	1	1	1	1									63179	63179	BT36048C	EYE, OVAL, BALL, HOT-LINE, 220 kN
6	408-2009						1							63159 63184	SP63159	C7696-10	EYE, OVAL, EYE, OR CLEVIS, Y, HOT-LINE, 220 kN
7	413-1365						1							60574-E7	SP60574-E7	C6991-2	CLEVIS, BALL
8	-	23															INSULATOR, SUSPENSION, 146 x 292, 160 kN, CS-5 (SEE NOTE 9)
9	408-0253 408-0254	OR 20															INSULATOR, SUSPENSION, 170 x 279, 210 kN, IEC 20 mm
10	410-0999 410-1003				23												INSULATOR, SUSPENSION, 146 x 292, 160 kN, CS-8
11	408-0287 410-0898				OR 21												INSULATOR, SUSPENSION, 156 x 292, 220 kN, CS-11
12	413-1470	1	1	1	1	1	1	60557-C	C4276-2	4B-2148AU	60850-E6 60856-E6	C4782	4H-2161AU	60847-E7	60847-E7	C7655	CLEVIS, SOCKET
13		1	1	1	1	1	1	11758-B 11042-B	D4666-1 C/W B4653	7B-766A	11042-B 11656-B 11756-B	D4666-1 C/W B4653	7B-766A	16449-C	16449-C	C7656-M	PLATE, YOKE, FOR 4 BUNDLE SUSPENSION ASSEMBLY
14		4															5/8" -11 UNC REG. HD. BOLT, 1 3/4" LG. SAE GR. 5, C/W NUT, SAE GR. 2
15	408-2005		4	4	4	4	4										5/8" -11 UNC REG. HD. BOLT, 2 1/4" LG. SAE GR. 5 C/W NUT, SAE GR. 5
16		4	4	4	4	4	4	22335	LC1088		22335	LC1088		22335	22335		5/8" SPRING LOCKWASHER
17		2	2	2	2	2	2	11643-C 11158-C			11158-C 11643-C			16359-C 16442-C 16708-C	16358-D	D7450	BRACKET, CLAMP SUPPORT
18	408-2012	4	4	4	4		4	65672 65676	D4353-31	1B-1142AU	65672 65675	D4353-31	1H-1142AU	62813	SP18158 SP18159 62825		CLAMP, SUB-COND, 0.950" ⌀ COND
19	96004916	OR 4						65874 65876									CLAMP, SUB-COND, 1.108" ⌀ COND (SEE NOTE 7)
20	-	OR 4									62814						CLAMP, SUB-COND, 0.950" ⌀ COND WITH ARMOUR RODS, 1.450" ⌀
21	408-2014		OR 4	OR 4	OR 4	4	OR 4							62811 62827	SP16258 SP16259 62827		CLAMP, SUB-COND, FOR 1" DIA. COND
22	408-2018					OR 4	OR 4							62820	SP16242 SP16243		CLAMP, SUB-COND, FOR 1" ⌀ COND WITH ARMOUR RODS, 1.627" ⌀
23	408-2016					OR 4									21927-C		CLAMP, SUB-COND, 1.148" ⌀ COND

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. EXTRA INSULATORS TO BE ADDED WHEN SPECIFIED ON STRUCTURE DATA SHEETS.
3. SPECIFICATIONS FOR BALL AND SOCKET TYPES ARE AS FOLLOWS:
   J = CSA CS-5
   20 mm = IEC 20 mm
   K = CSA CS-8, CSA CS-11
4. CLAMPING BOLTS MUST BE POSITIONED TO FACE TOWARD THE TOWER.
5. CLAMP BOLTS TO BE INSTALLED AT THE FOLLOWING TORQUES:
   SLACAN 90 N m
   JOSLYN 70 N m
6. APPROXIMATE ASSEMBLY MASS = 220 Kg.
7. ITEM 19 IS USED WITH DRAKE CONDUCTOR JUMPERS ON EARLY PEACE CONSTRUCTION.
8. WHERE ITEMS 1 AND 2 ARE NGK SHACKLES, REPLACE WITH SLACAN OR JOSLYN AS SHOWN.
9. FOR REPLACEMENT OF DISCONTINUED 160 kN, CSA CS-5 (ANSI TYPE J) INSULATORS, REFER TO BCTC MAINTENANCE STANDARD 81.10-01-05, MAINTENANCE OF PORCELAIN AND TOUGHENED GLASS SUSPENSION INSULATORS.

NO	REMARKS	DATE	DESIGNED	INDEP CHK	DFTG	DFTG CHK	INSP	REV	ACPT
1	STOCK NUMBERS ADDED AND BORDER UPDATED	2012-04	[redacted]						

REVISIONS

DSGN [redacted]
INDEP CHK
DFTG
DFTG CHK
INSP
REV
ACPT [redacted]

[redacted]

BChydro

500 KV TRANSMISSION LINE

INSULATOR STRING SUSPENSION HARDWARE ASSEMBLY FOR 4 CONDUCTOR BUNDLE FOR TOWER TYPES 2 3 4 6 & 7

DATE 19. APR. 05 | DISTR | DWG NO 5LGS-T08-04059 | SIZE B | R 1

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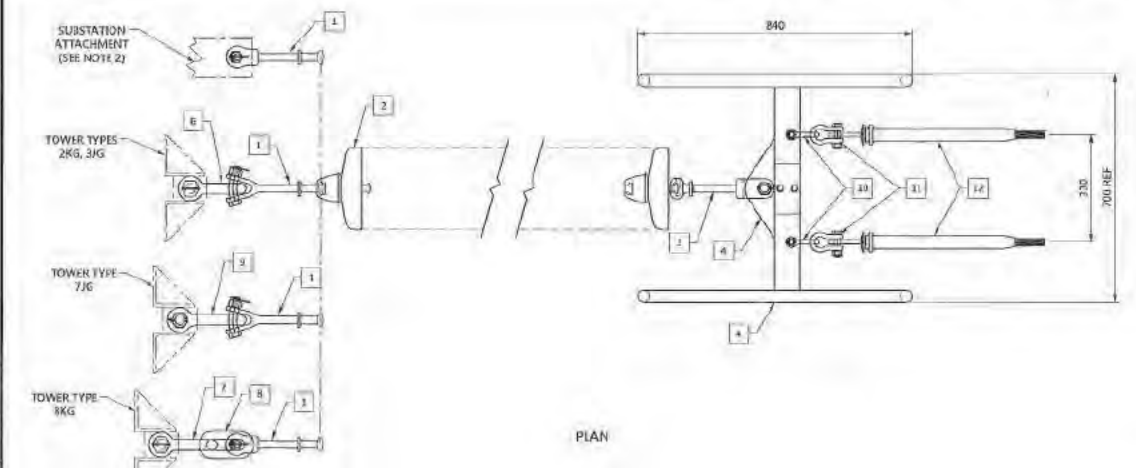
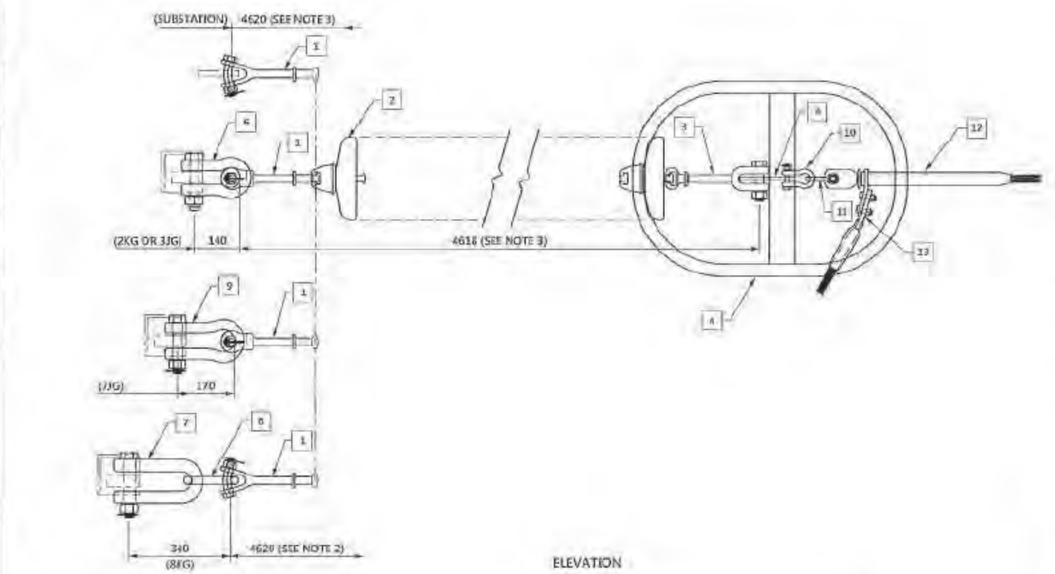


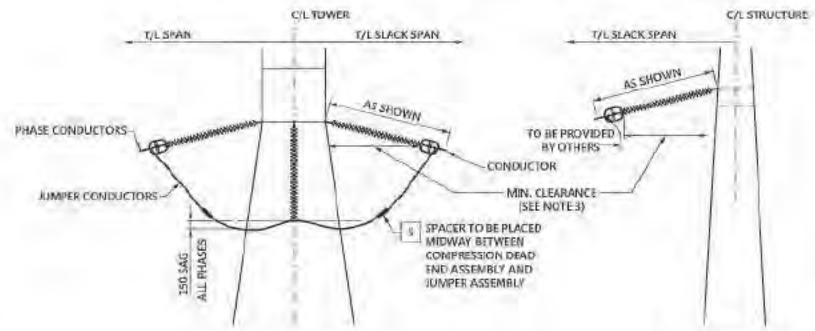
PLAN



ELEVATION

ITEM	QUANTITY					HU	BCH STOCK No.	DESCRIPTION
	TOWER TYPE				SUB STN			
	2KG	3JG	7JG	8KG				
1	1	1	1	1	1	EA	413-1397	CLEVIS, BALL, Y-TYPE, H/L, 260 Lg. ⅞"Ø BOLT, 240 kN (SEE NOTE 5)
2	28	28	28	28	28	EA	410-1003	INSULATOR, SUSPENSION, 146 x 254, 160 kN
3	1	1	1	1	1	EA	413-1423	CLEVIS, SOCKET, H/L, 270 LG, 29 OPEN, 1"Ø BOLT, 220 kN
4	1	1	1	1	1	EA	413-5101	YOKE PLATE c/w GRADING RING ASSEMBLY
5	1	1	1	1	–	EA	413-0881	SPACER, TWIN BUNDLE, FOR SP2303.5 CONDUCTOR
6	1	1	-	-	–	EA	420-1442	SHACKLE ANCHOR, 32 Ø, 42 OPEN, 140 LG, 1½"Ø BOLT, 445 kN
7	–	–	-	1	–	EA	420-1445	SHACKLE CHAIN, 38 Ø, 60 OPEN, 190 LG, 1¾"Ø BOLT, 670 kN
8	–	–	-	1	–	EA	413-1730	LINK, CHAIN, 152 x 32 Ø, 445 kN
9	–	–	1	–	–	EA	420-1444	SHACKLE, ANCHOR, 32 Ø, 48 OPEN, 172 LG, 1¾"Ø BOLT, 445 kN
10	2	2	2	2	2	EA	420-1510	SHACKLE, ANCHOR, 19 Ø, 27 OPEN, 102 LG, ¾"Ø BOLT, 220 kN
11	2	2	2	2	2	EA	420-1518	SHACKLE, ANCHOR, 22 Ø, 37 OPEN, 95 LG, 1"Ø BOLT, 240 kN
12	2	2	2	2	2	EA	97000838	DEAD END, COMPRESSION, FOR SP 2303.5 CONDUCTOR
13	2	2	2	2	2	EA	408-1564	TERMINAL, COMPRESSION, FOR SP 2303.5 CONDUCTOR

BILL OF MATERIAL FOR ONE STRUCTURE



ELEVATION
SHOWING JUMPER SUSPENSION ASSEMBLY
TRANSMISSION TOWER

ELEVATION
SHOWING DEAD END ASSEMBLY
SUBSTATION STRUCTURE

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.

2. IF EXISTING SUBSTATION STRUCTURE ATTACHMENT HOLE IS 22 mm Ø, DRILL OUT HOLE TO 25 mm Ø AND CHAMFER BOTH SIDES TO ALLOW ADEQUATE ARTICULATION OF Y CLEVIS BALL. COAT HOLE WITH ZINC-RICH PAINT.

3. ADD EXTRA INSULATORS IF NECESSARY TO MAINTAIN TO MINIMUM CLEARANCE OF:
   - 3099 mm TO 2KG AND 3JG TOWER STEEL
   - 3734 mm TO 7JG AND 8KG TOWER STEEL
   - 3650 mm TO SUBSTATION STRUCTURE STEEL

NO	REMARKS	DATE	DESIGNED	INDEP CHK	DFTG	DFTG CHK	INSP	REV	ACPT

REVISIONS

DSGN [redacted]
INDEP CHK
DFTG
DFTG CHK
INSP
REV [redacted]
ACPT

BChydro

500 kV TRANSMISSION LINE
TYPE 2KG, 3JG, 7JG, 8KG TOWERS AND SUBSTATION STRUCTURE
SINGLE INSULATOR STRING SLACK SPAN DEAD END HARDWARE ASSEMBLY FOR 44.5 mm DIA. 2 CONDUCTOR BUNDLE

DWG NO 5LGS-T08-04124 SIZE B R 0

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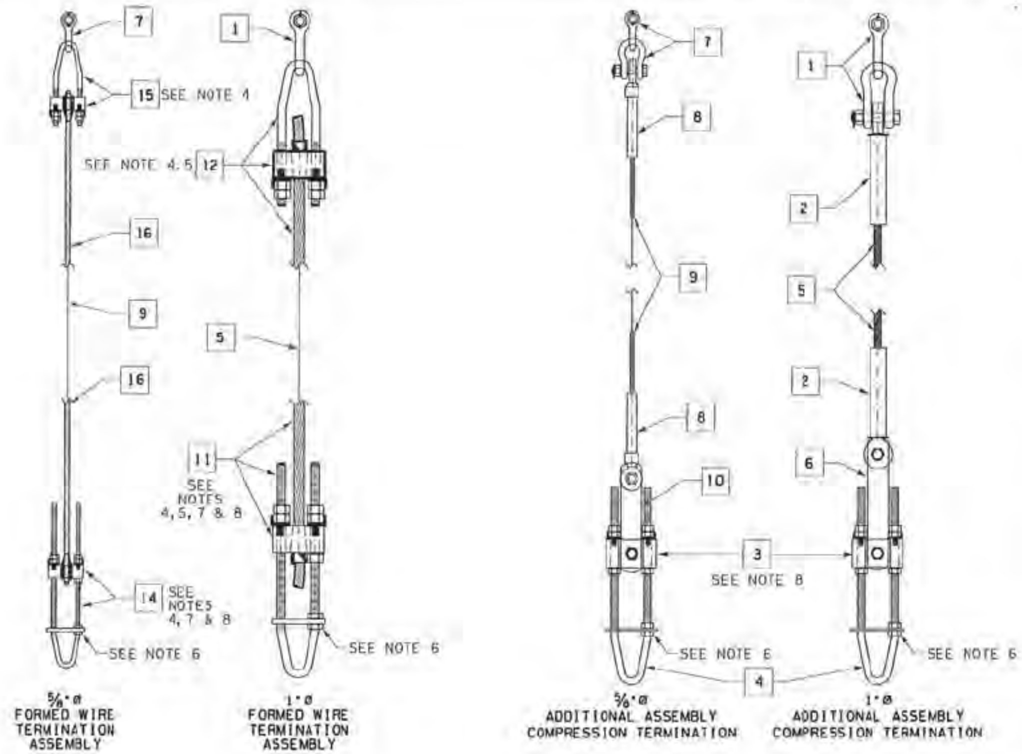


5/8"ø FORMED WIRE TERMINATION ASSEMBLY

1"ø FORMED WIRE TERMINATION ASSEMBLY

5/8"ø ADDITIONAL ASSEMBLY COMPRESSION TERMINATION

1"ø ADDITIONAL ASSEMBLY COMPRESSION TERMINATION

BILL OF MATERIAL FOR 1" ø FORMED WIRE ASSEMBLY

	QTY	HU	BCH STOCK No.	DESCRIPTION
1	1	EA	420-1444	SHACKLE, ANCHOR, 32 ø, 48 OPEN, 172 LG, 1¼"ø BOLT, 445 kN
5	AS REQ'D	EA	96004385	WIRE, GUY, SIZE 1", GRADE 220, 19 STR, 525 kN
11	1	EA	96005671	DEAD END, FOR 1"ø GUY, ANCHOR END, c/w ADJUSTABLE U-BOLT
12	1	EA	96005672	DEAD END, FOR 1"ø GUY, TOWER END, c/w U-BOLT

BILL OF MATERIAL FOR 5/8"ø FORMED WIRE ASSEMBLY

ITEM	QTY	HU	BCH STOCK No.	DESCRIPTION
7	1	EA	420-1518	SHACKLE, ANCHOR, 22ø, 37 OPEN, 95 LG, 1"ø BOLT, 240 kN
9	AS REQ'D	m	408-3003	WIRE, GUY, 5/8" DIA, GRADE 220, 19 STR, 205 kN
14	1	EA	96005673	DEAD END, FOR 5/8"ø GUY, ANCHOR END, c/w ADJUSTABLE U-BOLT
15	1	EA	96005674	DEAD END, FOR 5/8"ø GUY, TOWER END, c/w U-BOLT
16	2	EA	408-3020	GRIP, GUY, FOR 5/8" DIA, GRADE 220, 19 STR, 205 kN

BILL OF MATERIAL FOR 1" COMPRESSION ASSEMBLY

	QTY	HU	BCH STOCK No.	DESCRIPTION
1	2	EA	420-1444	SHACKLE, ANCHOR, 32 ø, 48 OPEN, 172 LG, 1¼"ø BOLT, 445 kN
2	2	EA	96004386	DEAD END, COMPRESSION, FOR SIZE 1", GRADE 220, 525 kN GUY WIRE
3	1	EA	96004389	PLATE, GUY, FOR COMPRESSION GUY D/E's, GALV STEEL
4	1	EA	96004388	ADJUSTABLE U-BOLT, 1"ø, 445 kN, C/W 8 NUTS, SPACER PLATE
5	AS REQ'D	EA	96004385	WIRE, GUY, SIZE 1", GRADE 220, 19 STR, 525 kN
6	1	EA	96005016	PLATE, LINK, SET, 445 kN, FOR 1" GUY ASSEMBLY

BILL OF MATERIAL FOR 5/8" COMPRESSION ASSEMBLY

ITEM	QTY	HU	BCH STOCK No.	DESCRIPTION
3	1	EA	96004389	PLATE, GUY, FOR COMPRESSION GUY D/E's, GALV STEEL
4	1	EA	96004388	ADJUSTABLE U-BOLT, 1"ø, 445 kN, C/W 8 NUTS, SPACER PLATE
7	2	EA	420-1518	SHACKLE, ANCHOR, 22ø, 37 OPEN, 95 LG, 1"ø BOLT, 240 kN
8	2	EA	96004387	DEAD END, COMPRESSION, FOR SIZE 5/8", GRADE 220, 205 kN GUY WIRE
9	AS REQ'D	m	408-3003	WIRE, GUY, 5/8" DIA, GRADE 220, 19 STR, 205 kN
10	1	EA	96005015	PLATE, LINK, SET, 350 kN, FOR 5/8" GUY ASSEMBLY

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES ± 2 mm TOLERANCE UNLESS OTHERWISE NOTED.
2. FOR GENERAL SPECIFICATION DATA SEE BCH SPECIFICATION 413-0000.
3. MAXIMUM ASSEMBLY CAPACITIES (WIRE BREAKING LOAD x 0.85) ARE AS FOLLOWS:
   5/8"ø GUY = 175 kN
   1"ø GUY = 445 kN
4. U-BOLTS, MANDREL AND HOUSING SHALL MEET CHARPY IMPACT TEST REQUIREMENTS STATED IN BCH SPECIFICATION 413-0000, CLAUSE 3.2, OF 20 JOULES @ -20°C.
5. MINIMUM TENSION OF 55 kN SHALL BE APPLIED TO SEAT AND MAINTAIN THE 1"ø GUY CONICAL WEDGE TERMINATION WITHOUT DAMAGE OCCURING TO THE STRUCTURE.
6. INSTALL TWO NUTS ON THE SPACE BAR SLOT.
7. INSTALLATION OF ITEM 11 & 14 SHALL BE ACCORDING TO MANUFACTURERS INSTRUCTIONS.
8. CENTRE THE HOUSING ON THE U-BOLT THREADS.

[redacted]

NO	REMARKS	DATE	DESIGNED	INDEP CHK	DFTG	DFTG CHK	INSP	REV	ACPT
4	REVISED NUT LOCATIONS ON ITEM 4,5,11,12 & 14, ADD NOTE 6 & 7	2013-02	[redacted]						
3	ADDED FORMED WIRE ASSEMBLIES	2008-03							
2	ITEMS 6 AND 10 REVISED	2007-09							
1	BOTTOM SHACKLES REPLACED WITH PLATES	2007-07							

REVISIONS

DSGN / INDEP CHK / DFTG / DFTG CHK / INSP / REV / APPD [redacted]

[redacted]

BChydro

STEEL POLE OR TOWER T/L

GUY ASSEMBLY FOR 5/8"ø AND 1"ø GUY WIRE WITH COMPRESSION OR FORMED WIRE TERMINATIONS

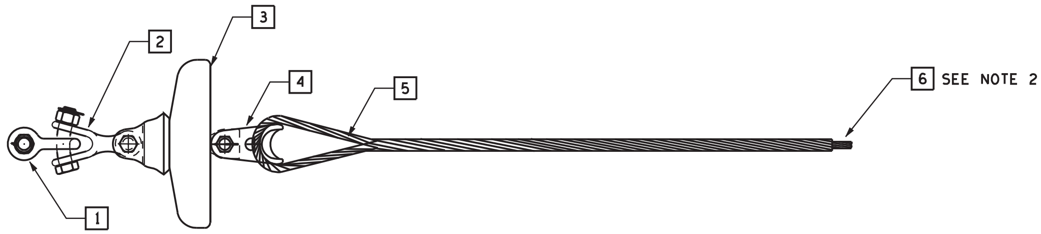
DATE 2007-05 | DISTR | DWG NO G-T08-00576 | SIZE B | R 4

NOT TO BE REPRODUCED WITHOUT PERMISSION

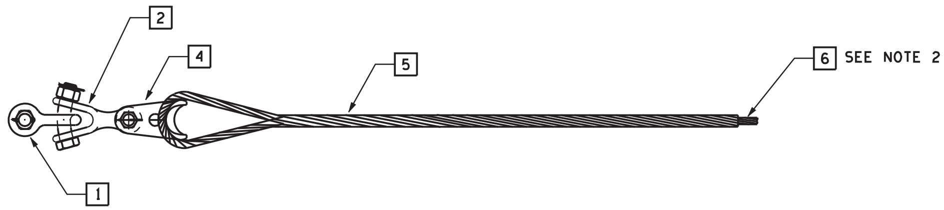
Issued for Record Drawing

BILL OF MATERIAL FOR ONE ASSEMBLY

ITEM	QTY ASS'Y A	QTY ASS'Y B	HU	BCH STOCK No.	DESCRIPTION
1	1	1	EA	420-1507	SHACKLE, ANCHOR, 18 Ø, 27 OPEN, 70 LG, 3/4"Ø BOLT, 120 kN
2	1	1	EA	413-1182	CLEVIS, EYE, Y-TYPE, 90°, 100 LG, 3/4"Ø BOLT, 120 kN
3	1	-	EA	410-1016	INSULATOR, GROUNDWIRE, CLEVIS EYE, 145 LG, 140 kN
4	1	1	EA	413-0518	CLEVIS, DEAD END, 19 OPEN, 5/8"Ø BOLT, 120 kN
5	1	1	EA	420-0974	GRIP, GUY, SIZE 9
6	AS REQ'D	AS REQ'D	m	382-4244	WIRE, GROUND, SIZE 9, GRADE 1300



ASSEMBLY A
INSULATED GROUNDWIRE DEAD END ASSEMBLY



ASSEMBLY B
NON-INSULATED GROUNDWIRE DEAD END ASSEMBLY

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. MAXIMUM GROUNDWIRE TENSION: 25 kN
3. APPROXIMATE GROUNDWIRE HARDWARE ASSEMBLY MASS = 4 Kg.

μ	NO	REMARKS	DATE	DESIGNED	INDEP CHK	DFTG	DFTG CHK	INSP	REV	ACPT

REVISIONS

DSGN / INDEP CHK / DFTG / DFTG CHK / INSP / REV / ACPT: [redacted]

[redacted]

BChydro ENGINEERING

STEEL STRUCTURE T/L

GROUNDWIRE DEAD-END
HARDWARE ASSEMBLY
STEEL POLE ATTACHMENT

DATE	DISTR	μ	DWG NO / CAD	R
2007-06			G-T08-B579	0

NOT TO BE REPRODUCED WITHOUT PERMISSION

APPENDIX K – KEY PERSONNEL, MANUFACTURING AND TESTING FACILITIES AND SUBSUPPLIERS

Key Personnel

Position	Name	Location
Project Manager/Supplier's Representative	[redacted]	Ankara
Professional Engineer	[redacted]	Toronto
Engineers	[redacted]	Ankara
Detailers	[redacted]	Ankara
Supplier's Quality Representative	[redacted]	Adana

Manufacturing and Testing Facilities

Description	Name
Lattice Tower Production	Sa-Ra Factory, Adana, Turkey
Galvanizing Plant	Sa-Ra Factory, Adana, Turkey
Bolts and Nuts Production Plant	Pacific Bolts or other BC Hydro approved sources (per SP3.6) Sa-Ra Factory, Adana, Turkey (subject to BC Hydro acceptance)
Tower Testing (including prototype assembly testing)	Electromontaj SA, Bucharest, Romania

Subsuppliers

Company	Country	Material
Arcelormittal	Romania Poland Czech Republic Luxembourg	Angles (for Steel Members)
Kocaer	Turkey	Angles
Ozkan	Turkey	Angles
Eregli Steel	Turkey	Steel Sheets
Duferco	Ukraine Macedonia	Steel Sheets
Metinvest	Ukraine Italy	Steel Sheets

APPENDIX L – TECHNICAL DATA TABLE

TECHNICAL DATA TABLE

The Proponent should provide a completed technical data table indicating details for
computation of estimated total weight included in price proposal in Schedule 2, Schedule of
Quantities and Prices. Theoretical design weight has been included (for purposes of *
establishing a comparative baseline only) based on PLS-Tower models provided by BC Hydro *
and listed in Appendix J – Drawings.

Item	Description	Theor-etical Design Weight (kg)	Member Replace. Weight (kg)	Plate Weight (kg)	Galvani-zation Weight (kg)	Fastener Weight (kg)	Step Bolt Weight (kg)	Estimated Total Weight (kg)	
1	Lattice Structures Type 54GA Dwg Nos 5L005-T08-00007 to 00010; G-T08-00271								
	(a) Basic Tower	6325	6326	1316	281	382	95	8400	*
	(b) +1.5 m Mast Extension	179	176	50	8	11	4	250	
	(c) +3.0 m Mast Extension	340	342	50	14	20	8	433	
	(d) +4.5 m Mast Extension	501	501	50	20	28	11	610	
	(e) +6.0 m Mast Extension	674	674	50	27	36	14	801	
2	Lattice Structures Type 54A Dwg Nos 5L005-T08-00011 to 00014; G-T08-00271								
	(a) Common Body	7365	7365	1450	324	441	95	9675	*
	(b) +3.0 m Body Extension	1316	1196	150	49	67	8	1471	
	(c) +6.0 m Body Extension	2001	1819	250	76	103	14	2263	
	(d) +9.0 m Body Extension	2829	2571	300	106	144	21	3142	
	(e) +12.0 m Body Extension	3614	3613	400	147	201	28	4389	
	(f) -3.0 m Leg Extension	121	109	14	5	6	5	140	
	(g) -1.5 m Leg Extension	239	217	14	8	12	9	260	
	(h) 0 m Leg Extension	312	281	22	11	15	12	342	
	(i) +1.5 m Leg Extension	446	405	22	16	21	16	480	
	(j) +3.0 m Leg Extension	543	494	22	19	26	19	579	
	(k) +4.5 m Leg Extension	657	597	35	23	32	22	709	
	(l) +6.0 m Leg Extension	762	693	55	27	37	26	838	
3	Lattice Structures Type 54C Dwg Nos 5L005-T08-00015 to 00018; G-T08-00271								
	(a) Common Body	9145	9145	1802	402	547	95	11992	*
	(b) +3.0 m Body Extension	1397	1270	159	53	71	8	1560	
	(c) +6.0 m Body Extension	2444	2222	305	93	126	14	2761	
	(d) +9.0 m Body Extension	3524	3204	374	131	179	21	3910	

Item	Description	Theor-etical Design Weight (kg)	Member Replace. Weight (kg)	Plate Weight (kg)	Galvani-zation Weight (kg)	Fastener Weight (kg)	Step Bolt Weight (kg)	Estimated Total Weight (kg)	
	(e) +12.0 m Body Extension	4588	4172	462	170	232	28	5063	
	(f) +15.0 m Body Extension	5825	5296	586	216	294	35	6427	
	(g) +18.0 m Body Extension	6720	6109	676	249	339	41	7415	*
	(h) -3.0 m Leg Extension	158	143	18	6	8	5	181	
	(i) -1.5 m Leg Extension	298	271	17	11	14	9	322	
	(j) 0 m Leg Extension	373	341	27	13	18	12	411	
	(k) +1.5 m Leg Extension	527	479	26	19	25	16	564	
	(l) +3.0 m Leg Extension	634	576	26	22	30	19	673	
	(m) +4.5 m Leg Extension	769	699	41	27	37	22	826	
	(n) +6.0 m Leg Extension	962	874	69	35	47	26	1051	
4	Lattice Structures Type 54J Dwg Nos 5L005-T08-00019 to 00022; G-T08-00271								
	(a) Common Body	17206	17189	3386	756	1029	95	22456	*
	(b) +3.0 m Body Extension	2718	2718	341	112	153	8	3331	
	(c) +6.0 m Body Extension	4845	4840	665	202	275	14	5997	
	(d) +9.0 m Body Extension	6514	6508	759	267	363	21	7919	
	(e) +12.0 m Body Extension	9627	9619	1065	393	534	28	11638	
	(f) -3.0 m Leg Extension	375	374	48	16	21	5	464	
	(g) -1.5 m Leg Extension	586	584	38	23	31	9	686	
	(h) 0 m Leg Extension	803	802	63	32	43	12	951	
	(i) +1.5 m Leg Extension	1026	1025	56	40	54	16	1190	
	(j) +3.0 m Leg Extension	1143	1141	51	44	60	19	1315	
	(k) +4.5 m Leg Extension	1434	1433	84	56	76	22	1671	
	(l) +6.0 m Leg Extension	1671	1645	131	65	89	26	1955	