

BRITISH  
COLUMBIA

Ministry of Transportation and Infrastructure

Bridge Project

No. xxxxx-0000

Wright Creek Bridge No. 06805 Replacement

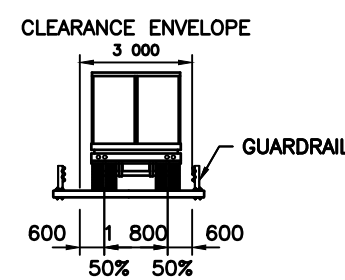
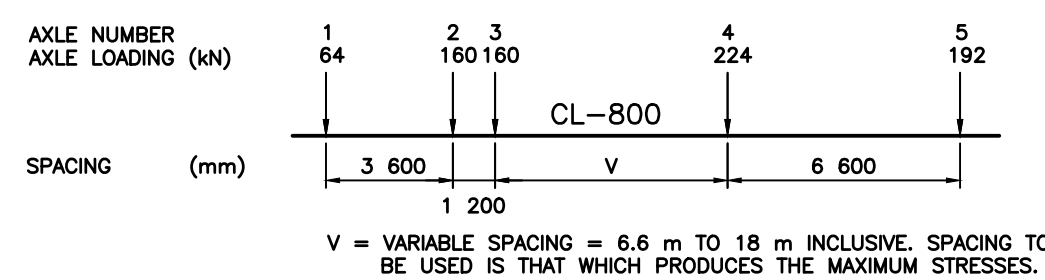
**GENERAL**

- FOR INSTALLATION BY OTHERS; NO RESPONSIBILITY CAN BE ACCEPTED FOR WORK BY OTHERS.
- ALL DIMENSIONS IN MILLIMETERS UNLESS NOTED OTHERWISE.

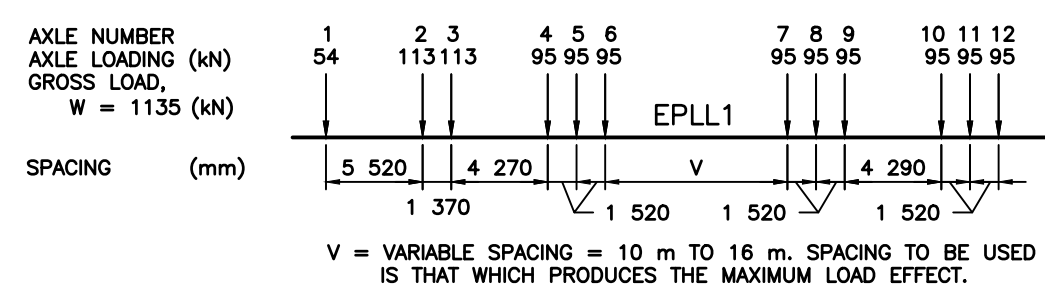
**BRIDGE DESIGN**

- CONFORM TO CANADIAN HIGHWAY BRIDGE DESIGN CODE (CHBDC) CSA S6:19.
- CONFORM TO BC MoTI BRIDGE STANDARDS AND PROCEDURES MANUAL, VOLUME 1 – SUPPLEMENT TO CHBDC S6:19, JULY 2022.
- BRIDGE DESIGN LIFE IS 45 YEARS.
- VEHICULAR LOADS:

**DESIGN LOAD: CL-800**

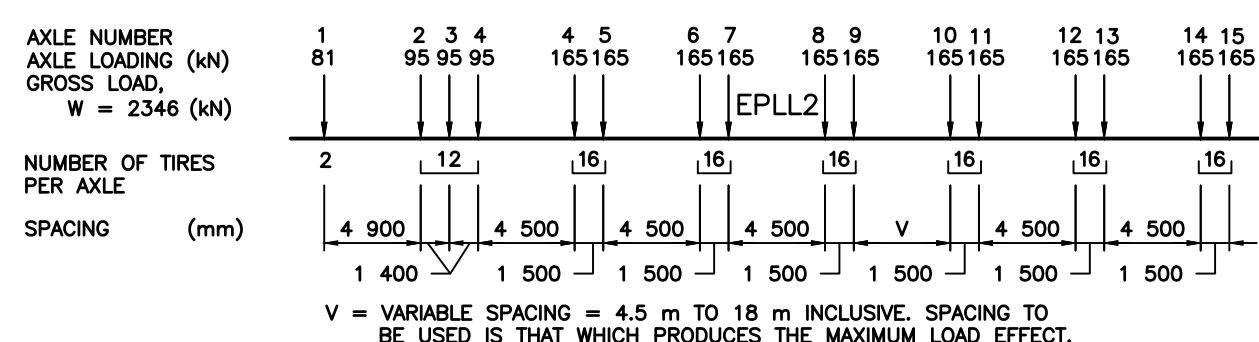


**OVERLOAD: EPLL1**

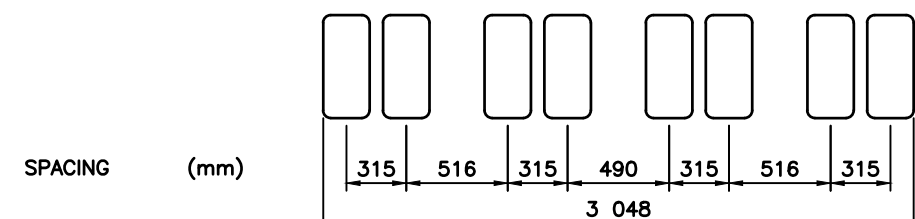


**OVERLOAD: EPLL2**

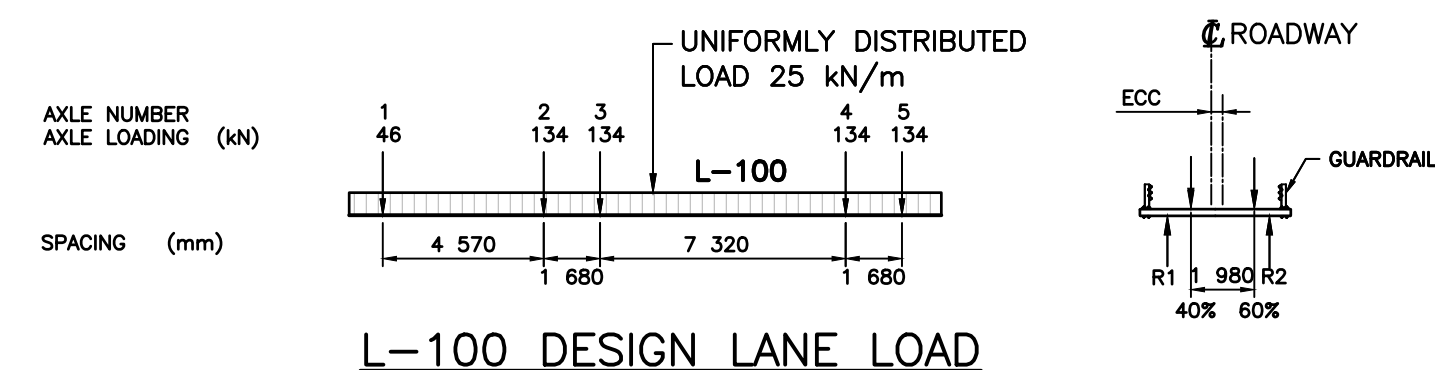
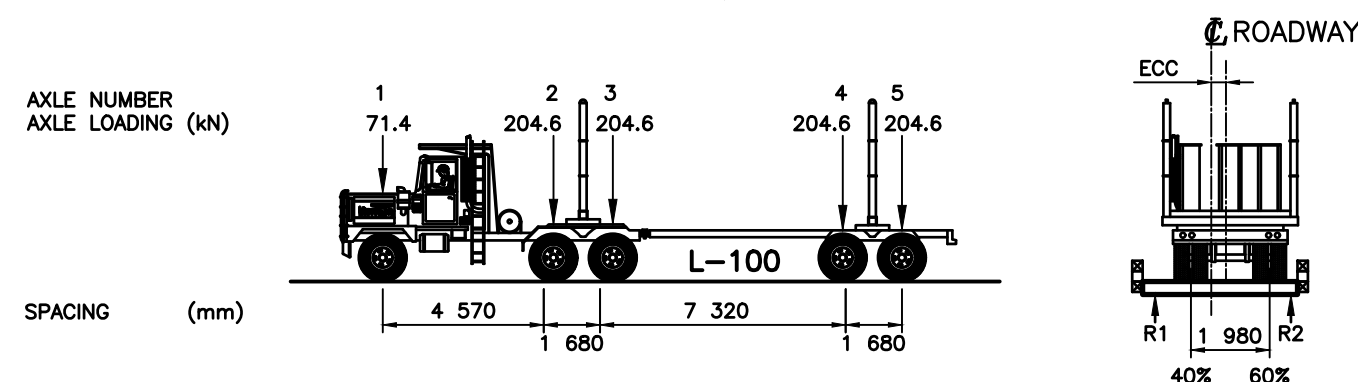
- MAXIMUM VEHICLE VELOCITY ACROSS BRIDGE SPAN OF 10 km/hr
- MAXIMUM VEHICLE ECCENTRICITY OF 450 mm FROM CENTRE OF DECK



**TRANSVERSE WHEEL SPACINGS FOR 16 WHEEL TANDEM AXLES OF EPLL2**



- FATIGUE: 500 000 CYCLES OF THE BCL-625 DESIGN VEHICLE.
- BRIDGE DECK ONLY, DESIGNED TO BCFS L-100 (90 680 G.V.W.) IN ACCORDANCE WITH "MINISTRY OF FORESTS BRIDGE STANDARDS MANUAL", 2023.



- GIRDERS TO BE FABRICATED AS FRACTURE CRITICAL COMPONENTS IN ACCORDANCE WITH: CSA S6:19, CSA W59
- CONSTRUCTION LOAD: THE BRIDGE HAS BEEN DESIGNED FOR THE FOLLOWING MAXIMUM CONSTRUCTION LOADS:
  - SELF WEIGHT OF THE STRUCTURE, SUPPORTED AT THE BEARINGS, INCLUDING ALL DECK PANELS IN POSITION.
  - A VERTICAL LIVE LOAD OF 445 kN (40 ton EQUIPMENT +10 ton PANEL) DISTRIBUTED OVER A LENGTH OF 4 m, POSITIONED ON THE BRIDGE TO PRODUCE THE MAXIMUM EFFECT; MAXIMUM ECCENTRICITY = 100 mm MEASURED FROM CENTRELINE OF BRIDGE DECK; ASSUMES MACHINE TRAVELS AT REDUCED SPEED TO MINIMIZE DYNAMIC LOAD EFFECTS.
- THE GIRDERS HAVE NOT BEEN DESIGNED FOR ERECTION WHEN THE WIND SPEED EXCEEDS 10 km/hr.
- ABUTMENT AND BEARINGS DESIGN TO BE THE RESPONSIBILITY OF OTHERS.
- IT IS PREFERABLE TO INSTALL THE BRIDGE ON A LONGITUDINAL GRADE TO FACILITATE DRAINAGE.
- NOTE FOR INSTALLATION PRECAST DECK PANELS ARE NOT SYMMETRICAL ABOUT DECK CENTRELINE.

**MATERIALS**

- STEEL: TO CSA G40.21M GIRDERS: GRADE 350AT CAT 3 OTHER PLATES & ROLLED SECTIONS: GRADE 350A U.N.O.
- STRUCTURAL BOLTS: ASTM F3125 GRADE A325 TYPE 22 DIA. U.N.O. INSTALLED IN ACCORDANCE WITH CSA S6:19.
- ANCHOR RODS: ASTM A193 TYPE B7 THREADED ROD.
- STUDS: ASTM A108 GRADE 1015, 1018, 1020.
- STEEL FABRICATION: ALL WELDS TO BE COMPLETED IN ACCORDANCE WITH CSA W59. ALL BUTT WELDS TO BE INSPECTED BY ULTRASONIC EXAMINATION IN ACCORDANCE WITH CSA W59. FABRICATOR TO BE CERTIFIED FOR DIVISION 1 OR 2 IN ACCORDANCE WITH CSA W47.1 6 mm FILLET WELD UNLESS NOTED OTHERWISE.
- WELDING: CSA W59 MIN. FILLET WELD 6 mm UNLESS NOTED OTHERWISE.
- GALVANIZING: HARDWARE TO BE GALVANIZED TO ASTM 123A AND ASTM A385.
- REINFORCING: CONFORM TO CAN/CSA G30.18M GRADE 400R.
- PRECAST CONCRETE: CSA A23.1 EXPOSURE CLASS C1, f'c = 35 MPa AT 28 DAYS. CHAMFER ALL CORNERS 20 x 20 UNLESS NOTED OTHERWISE. PRECAST CONCRETE TO BE FABRICATED IN ACCORDANCE WITH CSA A23.4 BY CSA CERTIFIED PLANT MINIMUM STRENGTH OF 20 MPa BEFORE STRIPPING. MINIMUM STRENGTH OF 25 MPa BEFORE HANDLING.
- CONCRETE FINISHES: ALL DECK TOP SURFACES MUST BE COARSE TRANSVERSE BROOM FINISH.
- THRIE BEAM: AS PER BC MoTI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, SECTION 312.
- CHAIN LINK FENCE: AS PER BC MoTI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, SECTION 316.

BILL OF MATERIAL				
No.	ITEM	APPROX. QUANTITY	UNIT	NOTE
1	STEEL GIRDER BRIDGE WITH DIAPHRAGMS AND APPLICABLE HARDWARE	1	EA.	SEE DRAWING 06805-103 & 06805-104
2	300 x 300 x 5 300 LG. ROUGH SAWN DOUGLAS FIR SILL	4	EA.	SEE DRAWING 06805-102
3	GALVANIZED 19 Ø x 100 LG. LAG SCREW	16	EA.	SEE DRAWING 06805-102
4	GALVANIZED 19 Ø x 650 LG. C/W 2 NUTS AND 2 MALLEABLE IRON WASHERS PER BOLT	4	EA.	SEE DRAWING 06805-102 (SILL CONNECTION)
5	100 x 300 x 6 000 ROUGH SAWN. DOUGLAS FIR	16	EA.	SEE DRAWING 06805-102
6	GALVANIZED 19 Ø BOLT x 125 LG. C/W NUTS AND MALLEABLE WASHERS	10	EA.	SEE DRAWING 06805-102 (CONNECT TO BALLAST)
7	GALVANIZED 25 Ø A307 GRADE B THREADED BAR	8	EA.	SEE DRAWING 06805-102
8	PRECAST CONCRETE DECK PANEL	12	EA.	SEE DRAWING 06805-105
9	DECK CLIP ASSEMBLY INCLUDING GALV. ASTM A307 25 Ø x 140 LG. BOLT	48	EA.	SHIP LOOSE, SEE DRAWING 06805-105
10	25 Ø ANCHOR RODS THREADED 100 BOTH ENDS C/W NUTS AND 4 WASHERS (GALVANIZED)	192	EA.	SEE DRAWING 06805-106
11	W150 x 22 BARRIER POST C/W 22 x 270 x 300 BASE PLATE (GALV.)	48	EA.	SEE DRAWING 06805-106 C/W SHIM PLATES
12	THRIE BEAM GUARDRAIL	74	m	THRIE-BEAM SEGMENTS (9 x 7 620 NOMINAL LENGTH AND 2 x 3 810 NOMINAL LENGTH) AND 4 TERMINAL CONNECTOR C/W BOLTS, NUTS AND WASHERS. PRE-DRILL ALL HOLES FOR SEGMENTS TO SUIT POST SPACING AND TERMINAL CONNECTOR. TOUCH-UP ALL HOLES AND CUT ENDS USING ZINGA GALVANIZED COATING
13	1 500 HIGH GALVANIZED WIRE CHAIN LINK FENCE PANELS C/W 48 Ø GALVANIZED PIPE FRAME	74	m	SEE DRAWING 06805-106
14	GALVANIZED 10M U-BOLT SADDLE CLAMPS C/W NUT AND WASHER	156	EA.	SEE DRAWING 06805-106
15	L152 x 152 x 9.5 x 506 LG. GALVANIZED (GRADE 300W)	4	EA.	SEE DRAWING 06805-106 C/W SHIM PLATES
16	CUSTOM PRECAST CONCRETE TRANSITION BARRIER	4	EA.	SEE DRAWING 06805-107
17	DOWELS FOR PRECAST CONCRETE TRANSITION BARRIER	16	EA.	30M x 2 000 LG.
18	19 Ø A307 GALVANIZED BOLT C/W WASHER	12	EA.	CONNECT THRIE BEAM TO CONCRETE TRANSITION BARRIER
19	ZINGA GALVANIZED COATING	2	GAL.	US GALLON – GALVANIZED COATING
20	SIKAFLEX 1A	5	GAL.	SEE DRAWING 06805-106

DRAWING LIST	
DRAWING NO.	DRAWING TITLE
06805-100	COVER SHEET
06805-101	GENERAL NOTES
06805-102	GENERAL ARRANGEMENT
06805-103	STEEL GIRDER DETAILS – SHEET 1
06805-104	STEEL GIRDER DETAILS – SHEET 2
06805-105	PRECAST CONCRETE DECK PANEL DETAILS
06805-106	TL-2 THRIE BEAM GUARDRAIL DETAILS
06805-107	PRECAST CONCRETE TRANSITION BARRIER DETAILS

Consultant Logo			
Rev	Date	Description	Init

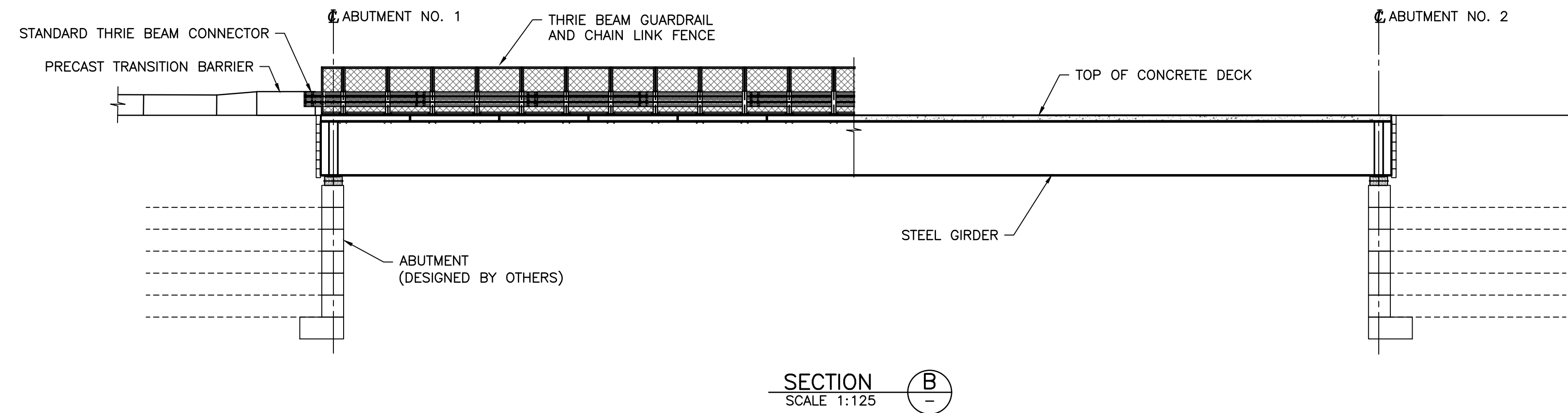
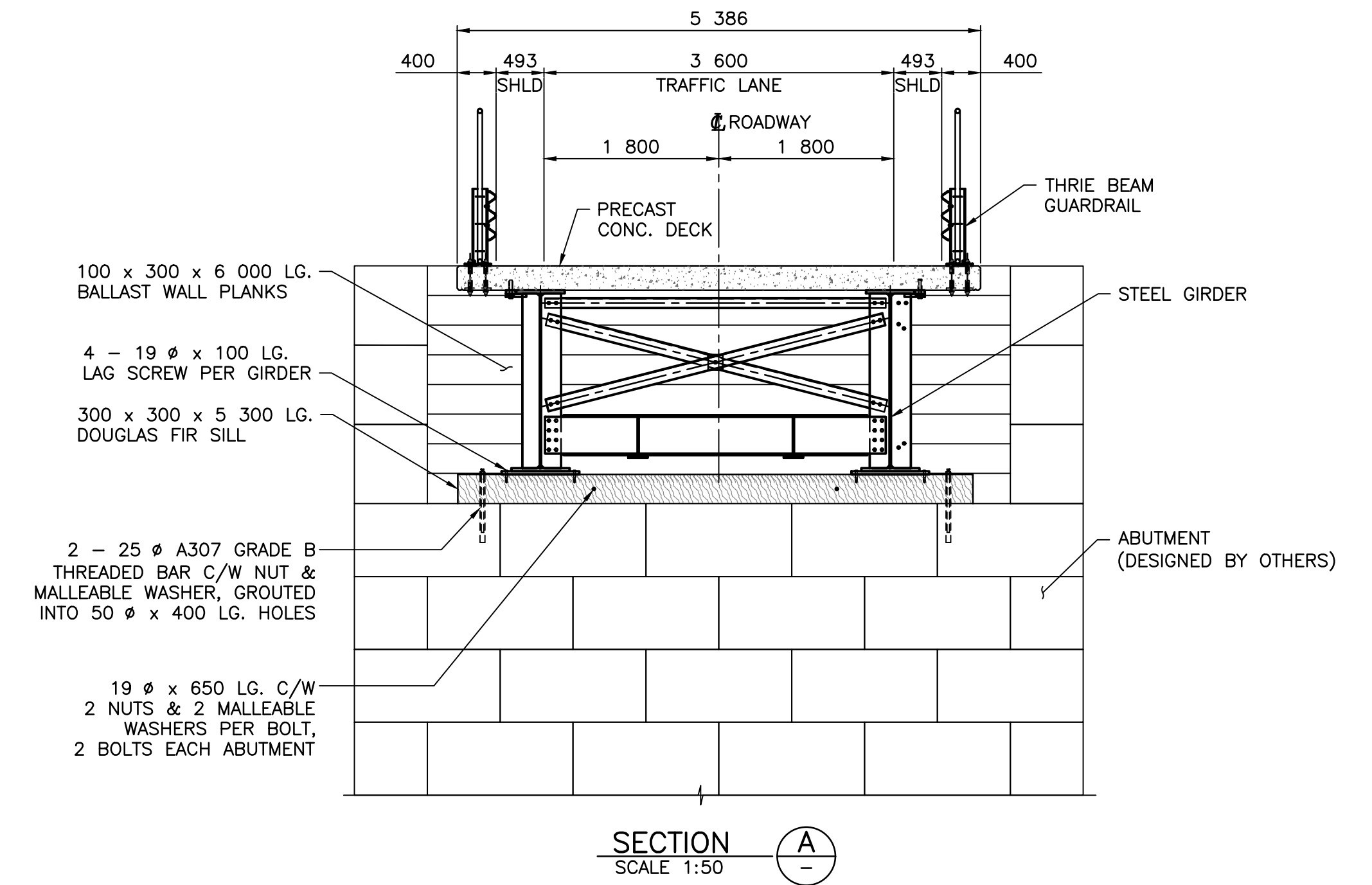
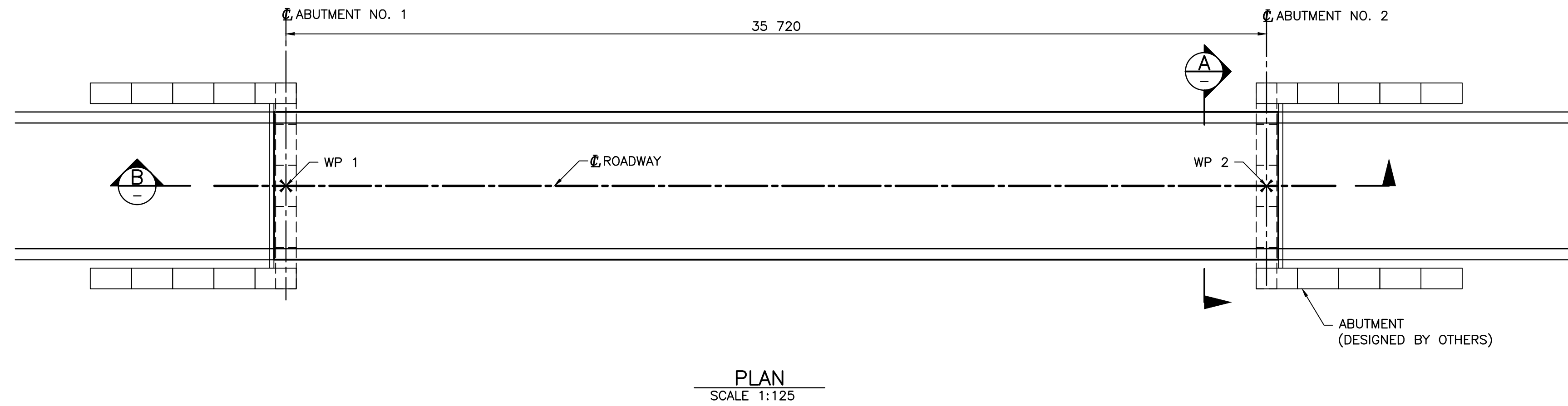
R E V I S I O N S

Ministry of Transportation and Infrastructure  
Northern Region

**WRIGHT CREEK BRIDGE NO. 06805 REPLACEMENT GENERAL NOTES**

PREPARED UNDER THE DIRECTION OF		DESIGNED <u>N. RENEHAN</u> DATE 2024-02-23	
ENGINEER OF RECORD		CHECKED <u>J. JIAO</u> DATE 2024-02-23	
NEAL RENEHAN, P. ENG.		DRAWN <u>J. MORO</u> DATE 2024-02-23	
DATE 2024-02-23		SCALE AS NOTED	
FILE No. 2023-2809-04		NEGATIVE No.	
PROJECT No.		REG. DRAWING No.	
3		06805-101	

PERMIT TO PRACTICE  
ASSOCIATED ENGINEERING (B.C.) LTD.  
PERMIT NUMBER: 1000163  
Engineers & Geoscientists BC



NOTES:

- FOR GENERAL NOTES, SEE DWG. 06805-101.

Rev	Date	Description	Init

REVISIONS

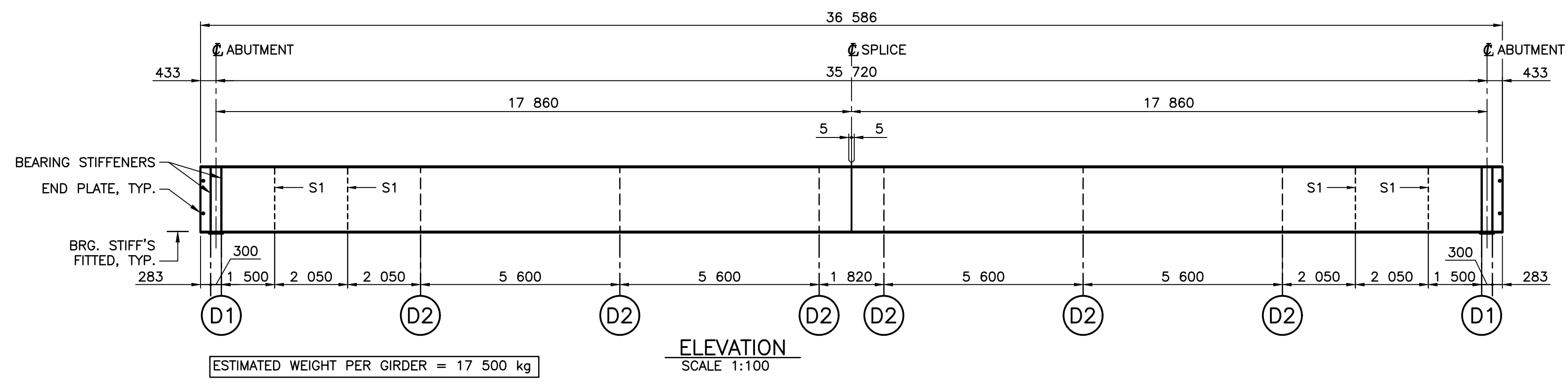


Ministry of Transportation and Infrastructure  
Northern Region

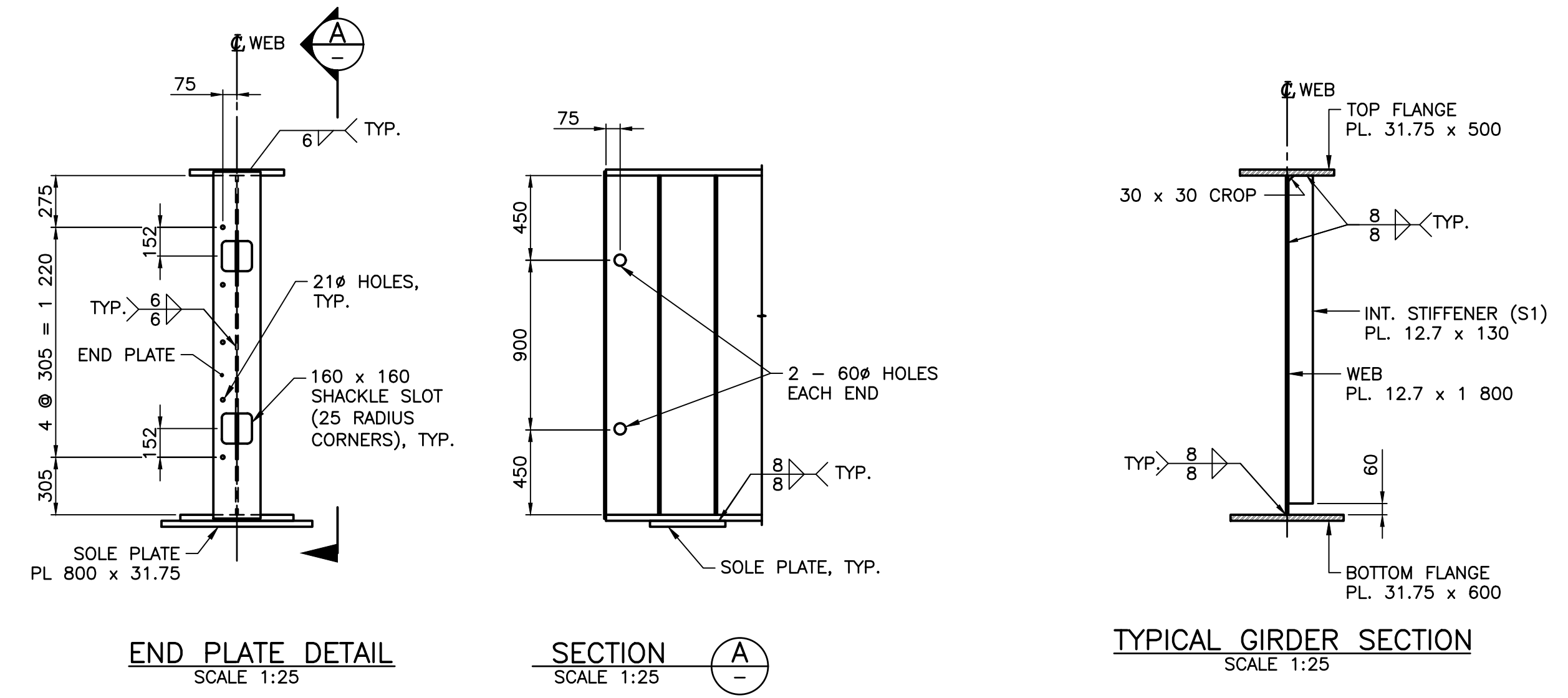
WRIGHT CREEK BRIDGE NO. 06805 REPLACEMENT  
GENERAL ARRANGEMENT

PERMIT TO PRACTICE  
ASSOCIATED ENGINEERING (B.C.) LTD.  
PERMIT NUMBER: 1000163  
Engineers & Geoscientists BC

PREPARED UNDER THE DIRECTION OF <b>NEAL RENEHAN, P. ENG.</b> ENGINEER OF RECORD DATE 2024-02-23	DESIGNED BY <b>N. RENEHAN</b> DATE 2024-02-23 CHECKED BY <b>J. JIAO</b> DATE 2024-02-23 DRAWN BY <b>J. MORO</b> DATE 2024-02-23 SCALE AS NOTED NEGATIVE No.
FILE No. <b>2023-2809-04</b>	PROJECT No. <b>3</b>
DRAWING No. <b>06805-102</b>	



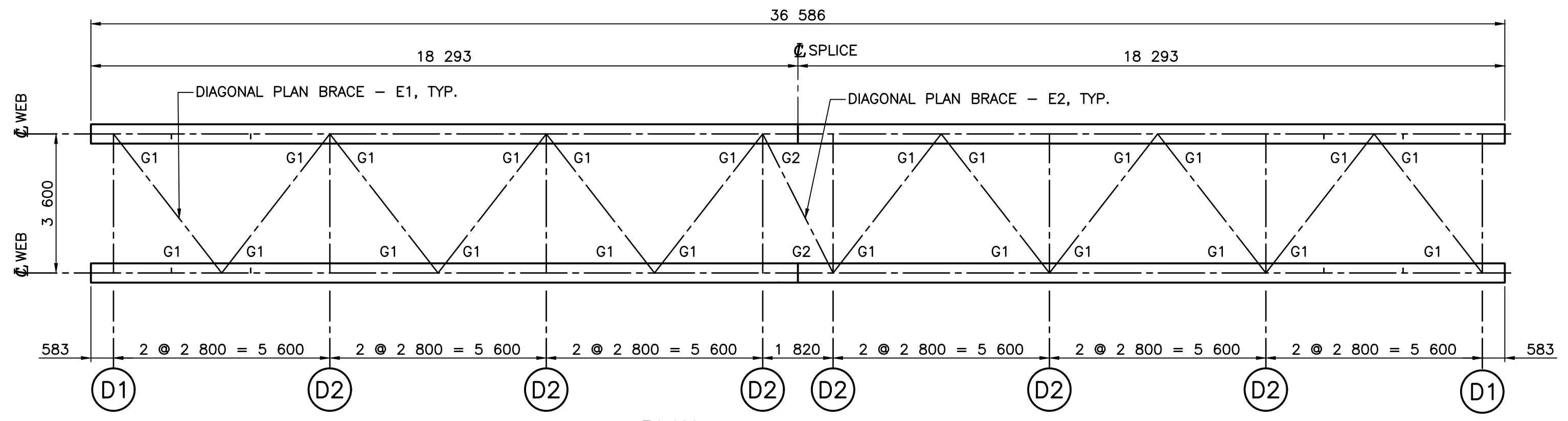
ELEVATION  
SCALE 1:100



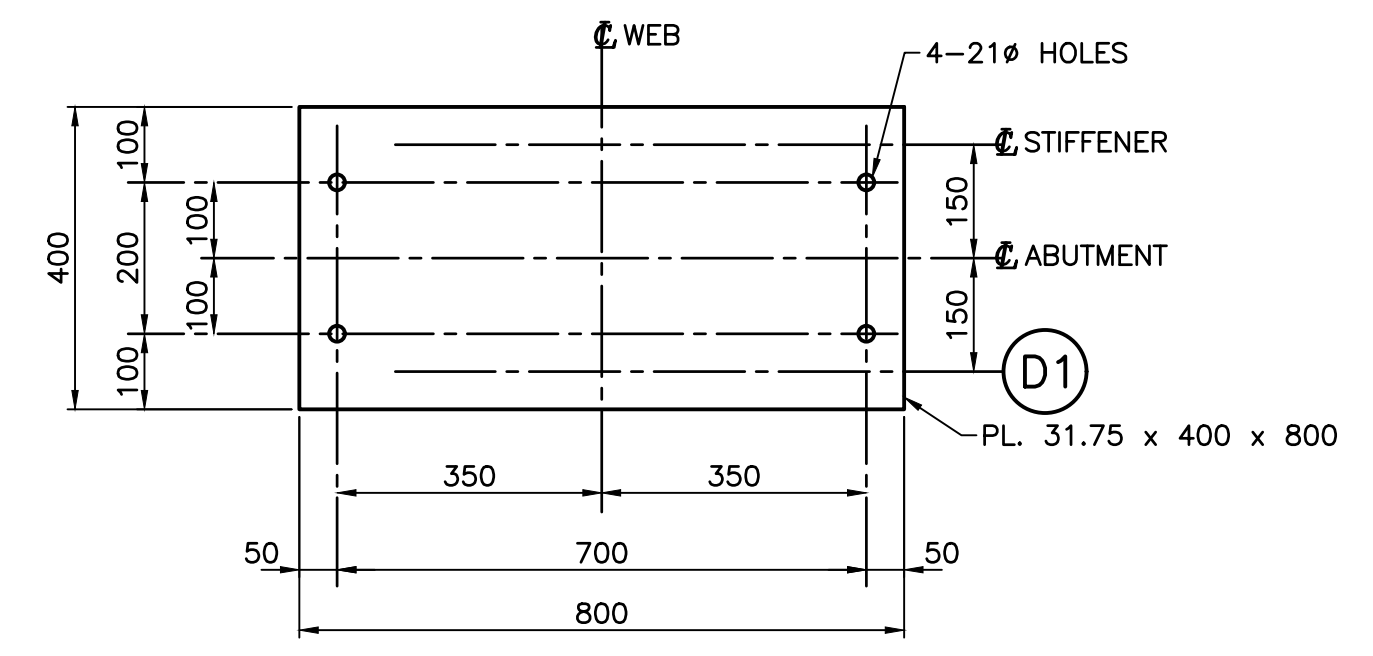
END PLATE DETAIL  
SCALE 1:25

SECTION (A)  
SCALE 1:25

TYPICAL GIRDER SECTION  
SCALE 1:25



PLAN  
SCALE 1:100

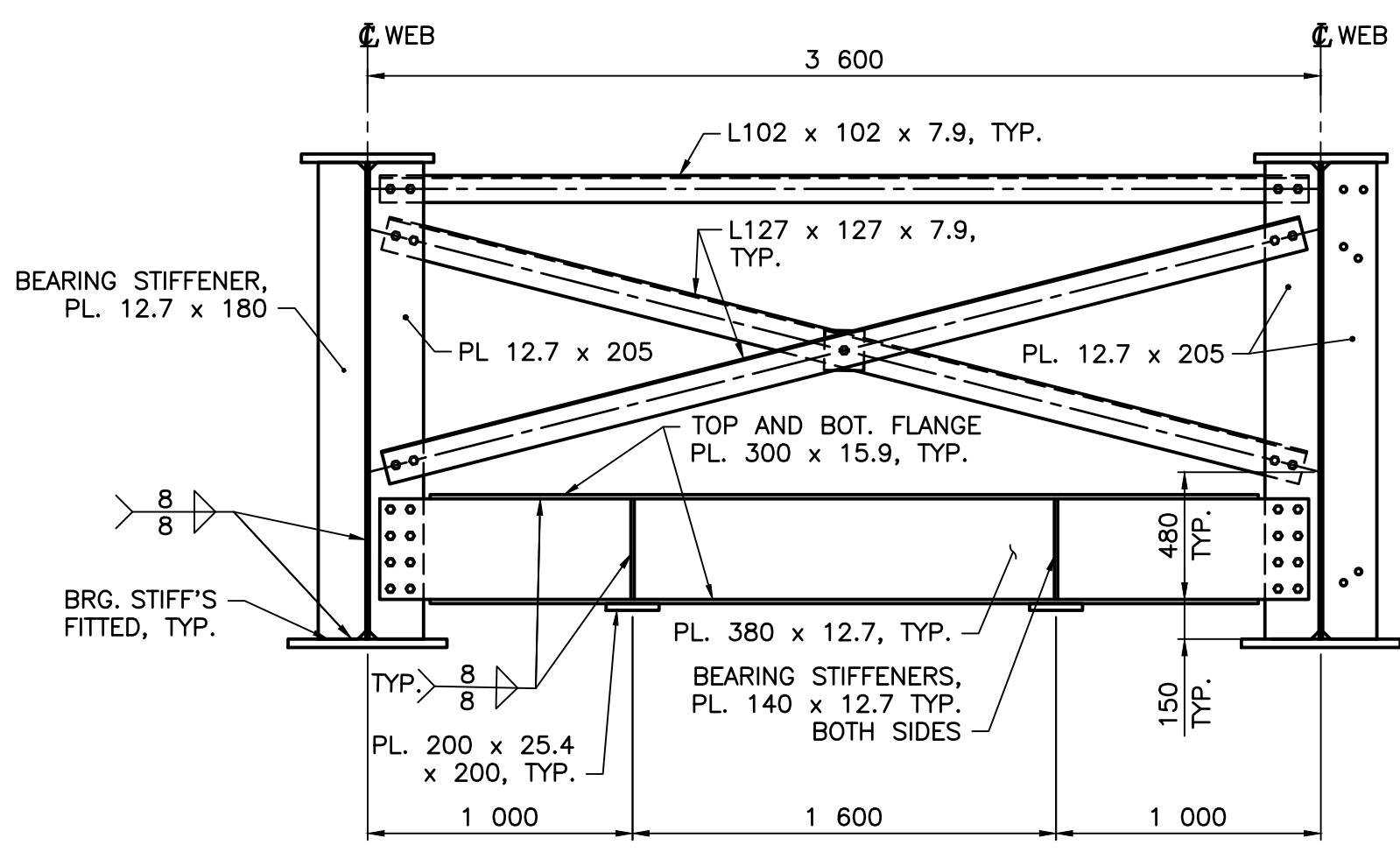


PLAN - SOLE PLATE DETAIL  
SCALE 1:10

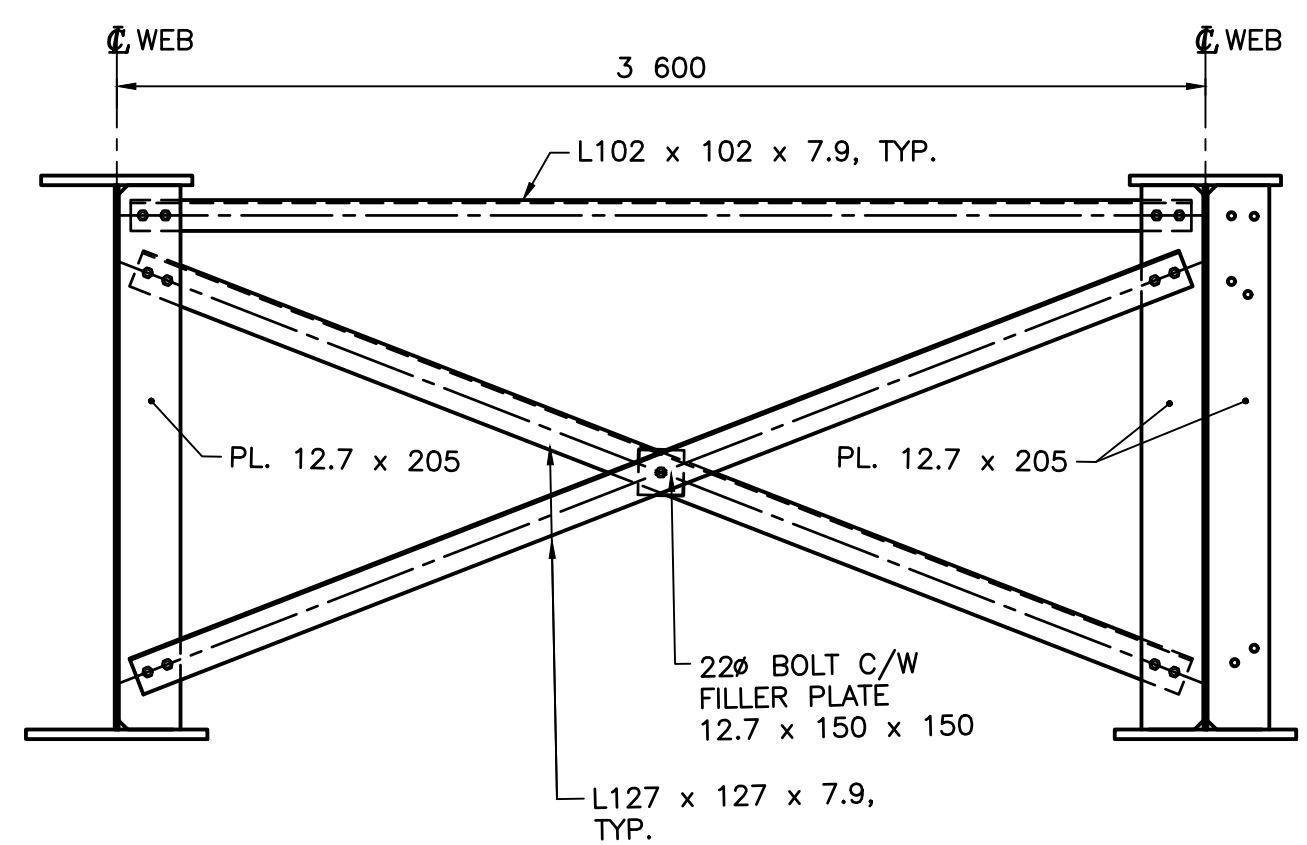
BEARING TABLE						
TOTAL VERTICAL DEMAND PER BEARING AS PER S6:19 SECTION 3 (kN)						
	SLS			ULS		
	DEAD LOAD	LIVE LOAD	TOTAL	DEAD LOAD	LIVE LOAD	TOTAL
CL-800	400	440	840	450	750	1200

NOTES:

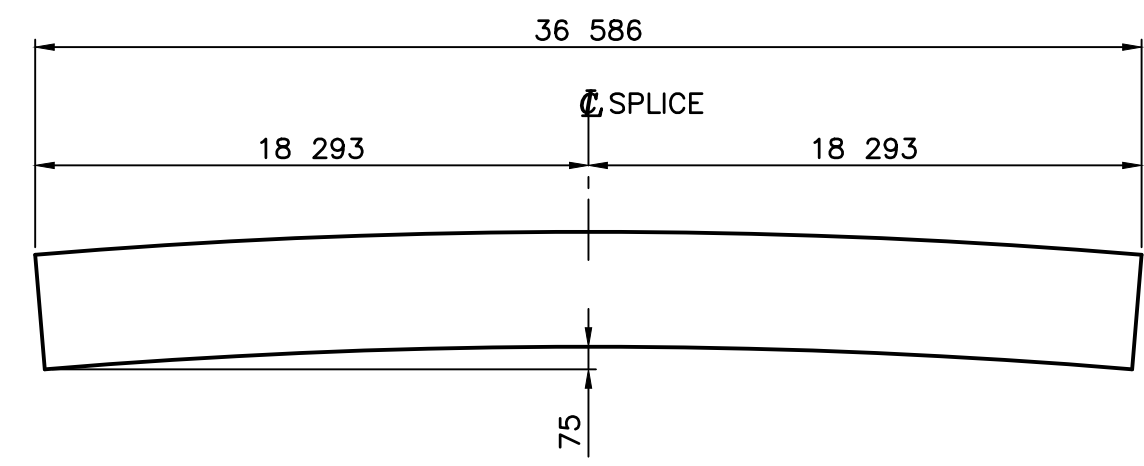
- FOR GENERAL NOTES, SEE DWG. 06805-101.
- ANY REQUIRED MODIFICATIONS TO THE SOLE PLATE TO ACCOMMODATE GIRDER MOVEMENTS ARE THE RESPONSIBILITY OF OTHERS.



D1 DIAPHRAGM DETAIL  
SCALE 1:25



D2 DIAPHRAGM DETAIL  
SCALE 1:25



CAMBER DIAGRAM  
N.T.S.

Consultant Logo: Associated Engineering (A.E.)

Rev	Date	Description	Init

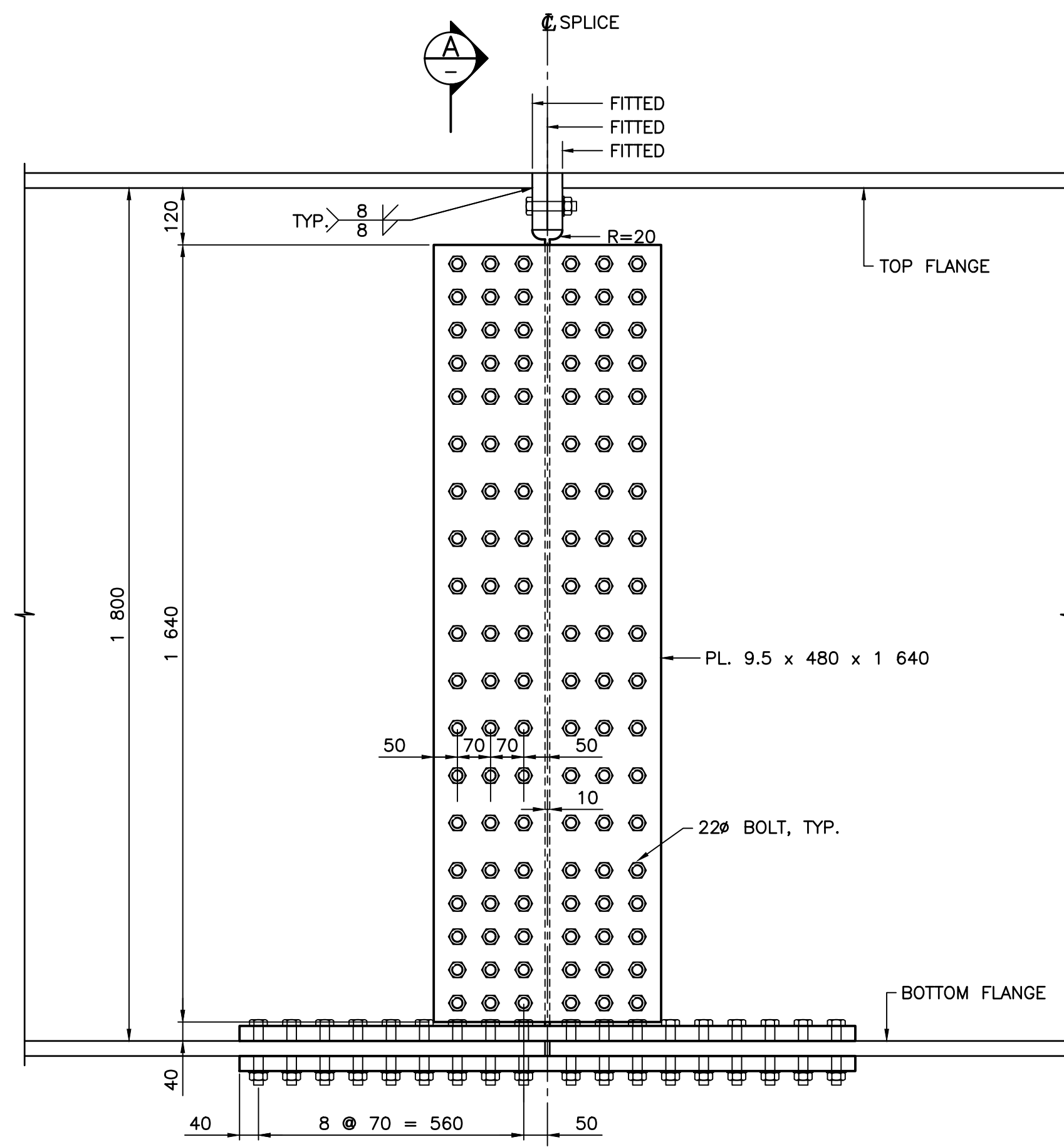
REVISIONS

BRITISH COLUMBIA Ministry of Transportation and Infrastructure Northern Region

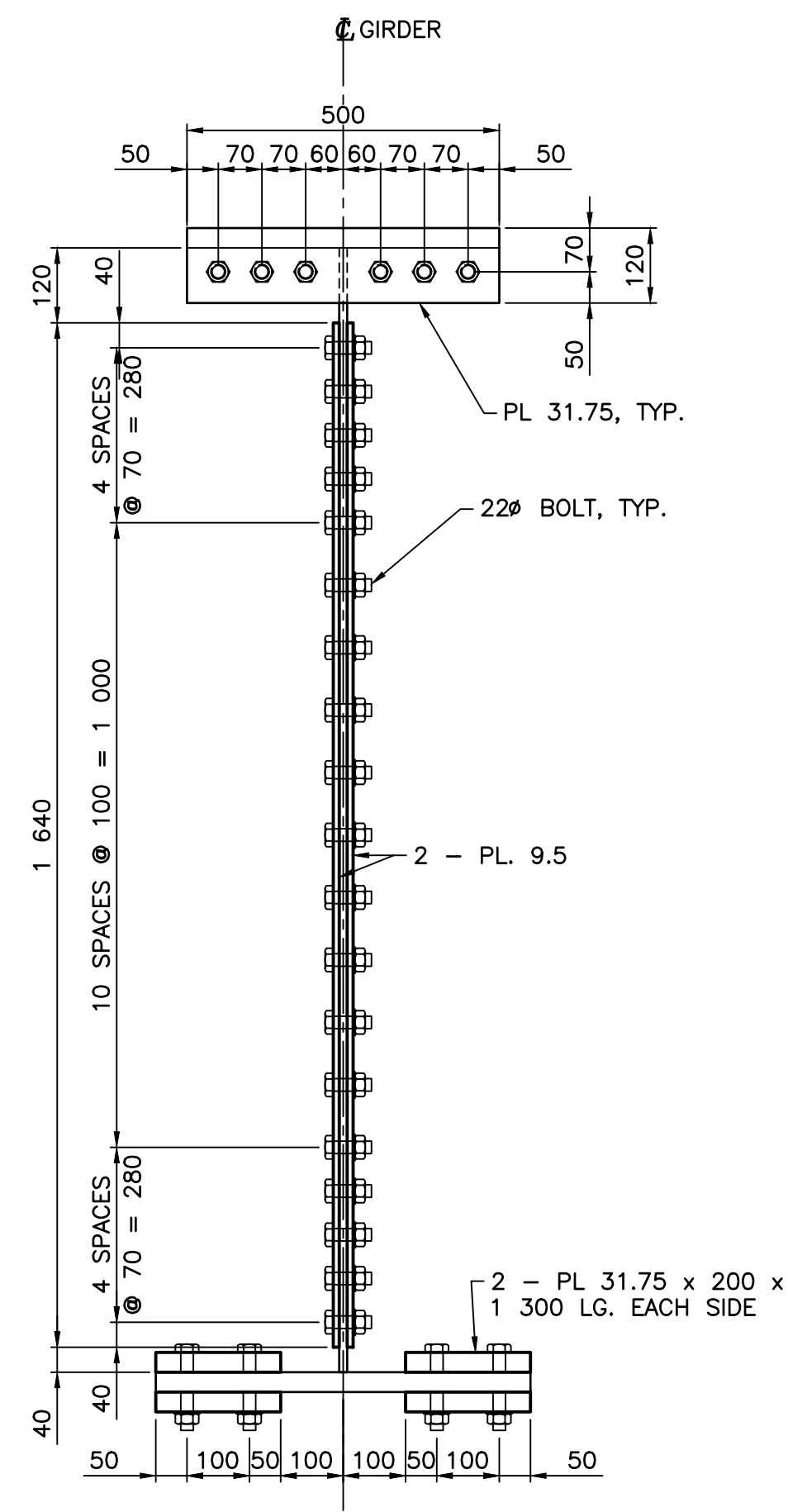
WRIGHT CREEK BRIDGE NO. 06805 REPLACEMENT  
STEEL GIRDER DETAILS - SHEET 1

PERMIT TO PRACTICE  
ASSOCIATED ENGINEERING (B.C.) LTD.  
PERMIT NUMBER: 1000163  
Engineers & Geoscientists BC

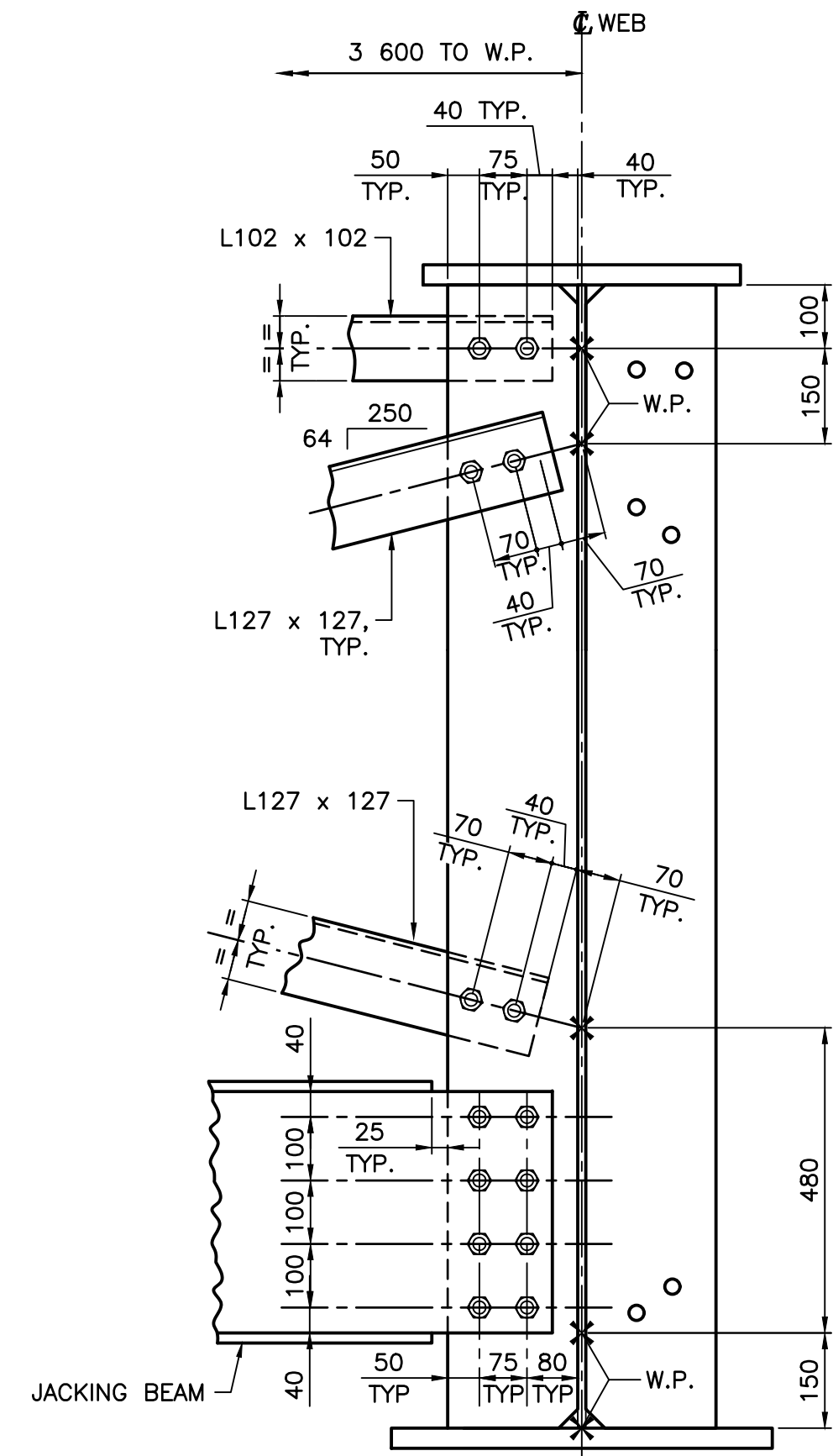
PREPARED UNDER THE DIRECTION OF ENGINEER OF RECORD NEAL RENEHAN, P. ENG. DATE 2024-02-23	DESIGNED BY N. RENEHAN DATE 2024-02-23 CHECKED BY J. JIAO DATE 2024-02-23 DRAWN BY J. MORO DATE 2024-02-23 SCALE AS NOTED NEGATIVE No.
FILE No. 2023-2809-04	DRAWING No. 06805-103



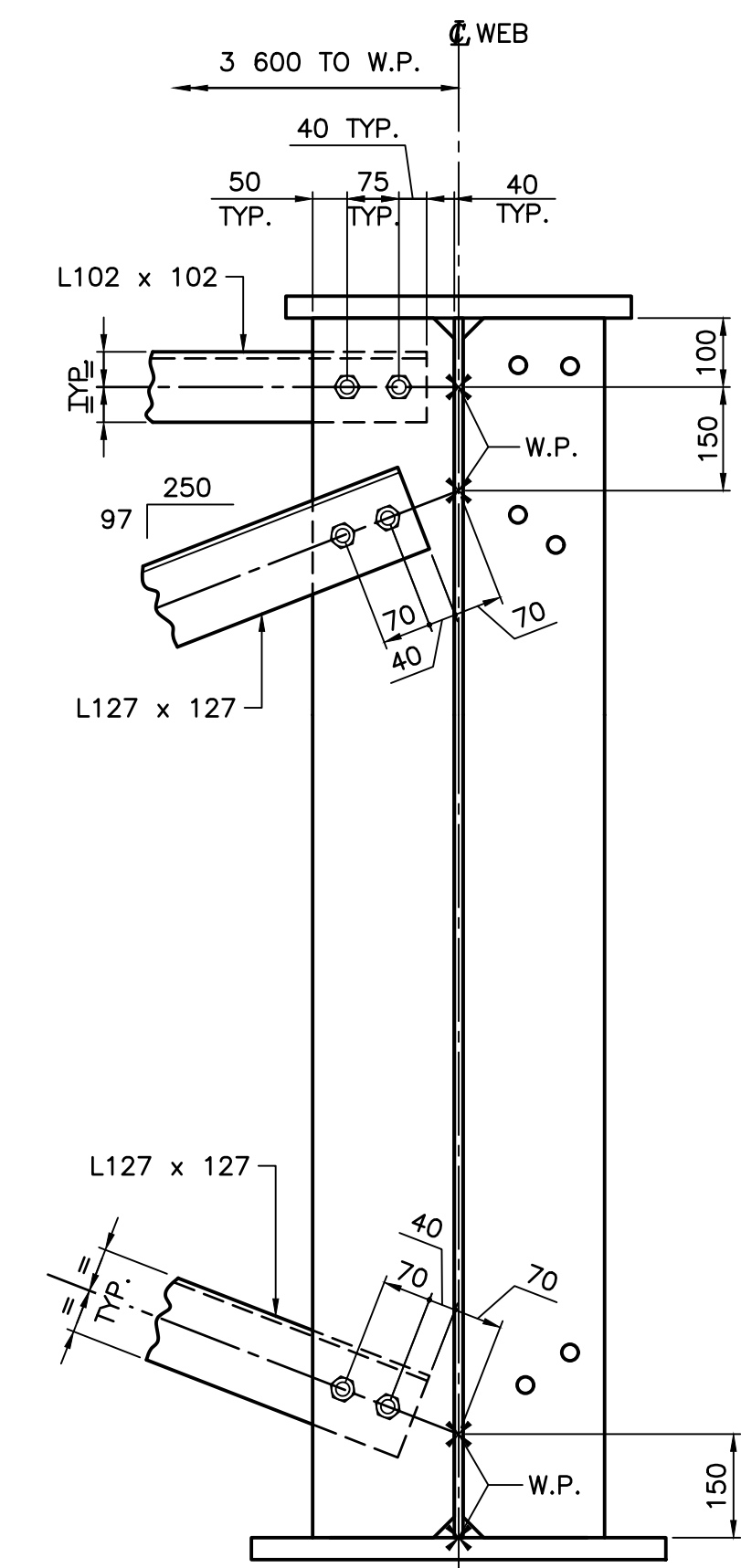
**GIRDER SPLICE DETAIL**  
SCALE 1:10



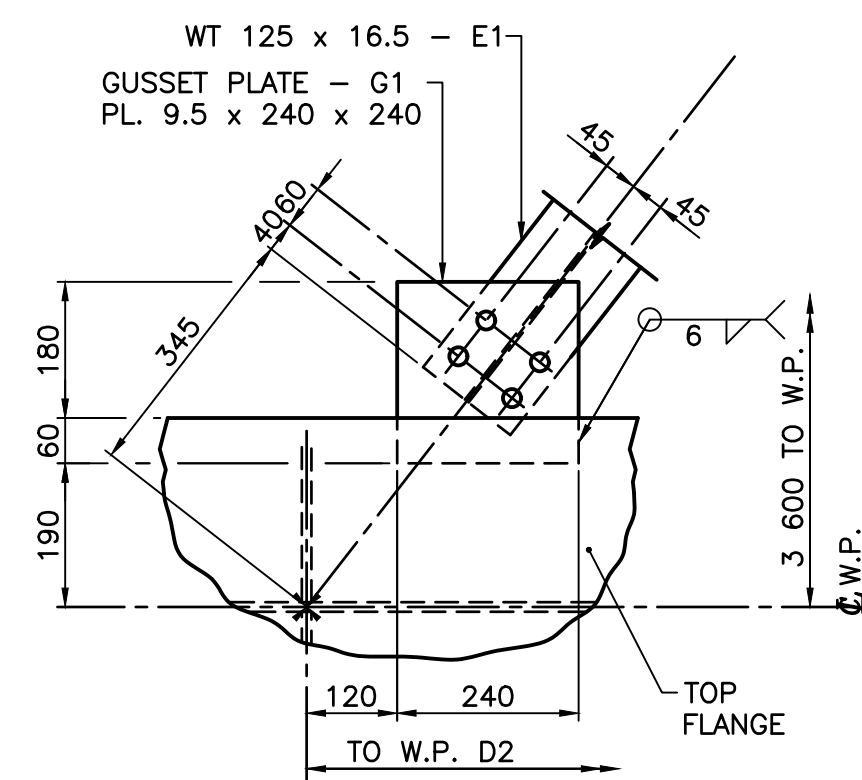
**SECTION A**  
SCALE 1:10



**D1 DIAPHRAGM CONNECTION DETAIL**  
SCALE 1:10



**D2 DIAPHRAGM CONNECTION DETAIL**  
SCALE 1:10



**PLAN BRACE CONNECTION DETAIL**  
SCALE 1:10  
(E1 SHOWN, E2 SIMILAR)

**NOTES:**

- FOR GENERAL NOTES, SEE DWG. 06805-101.

Rev	Date	Description	Init

**REVISIONS**

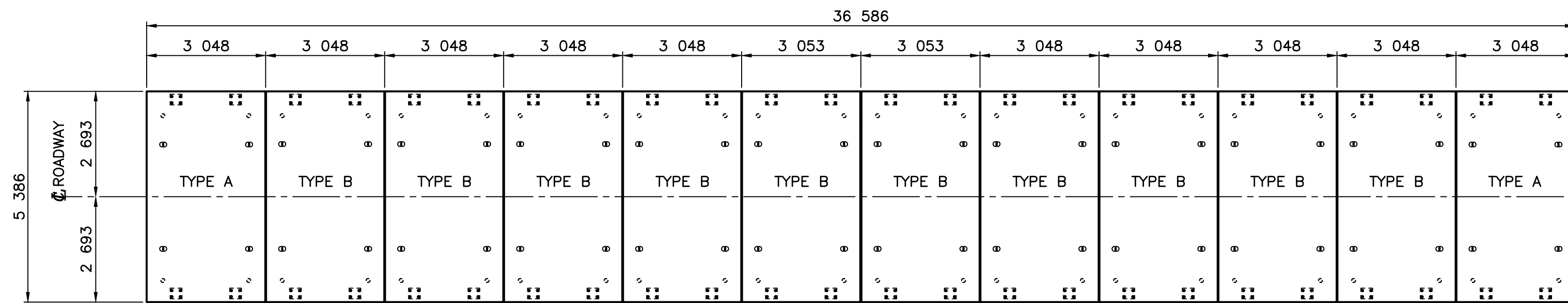


Ministry of Transportation  
and Infrastructure  
Northern Region

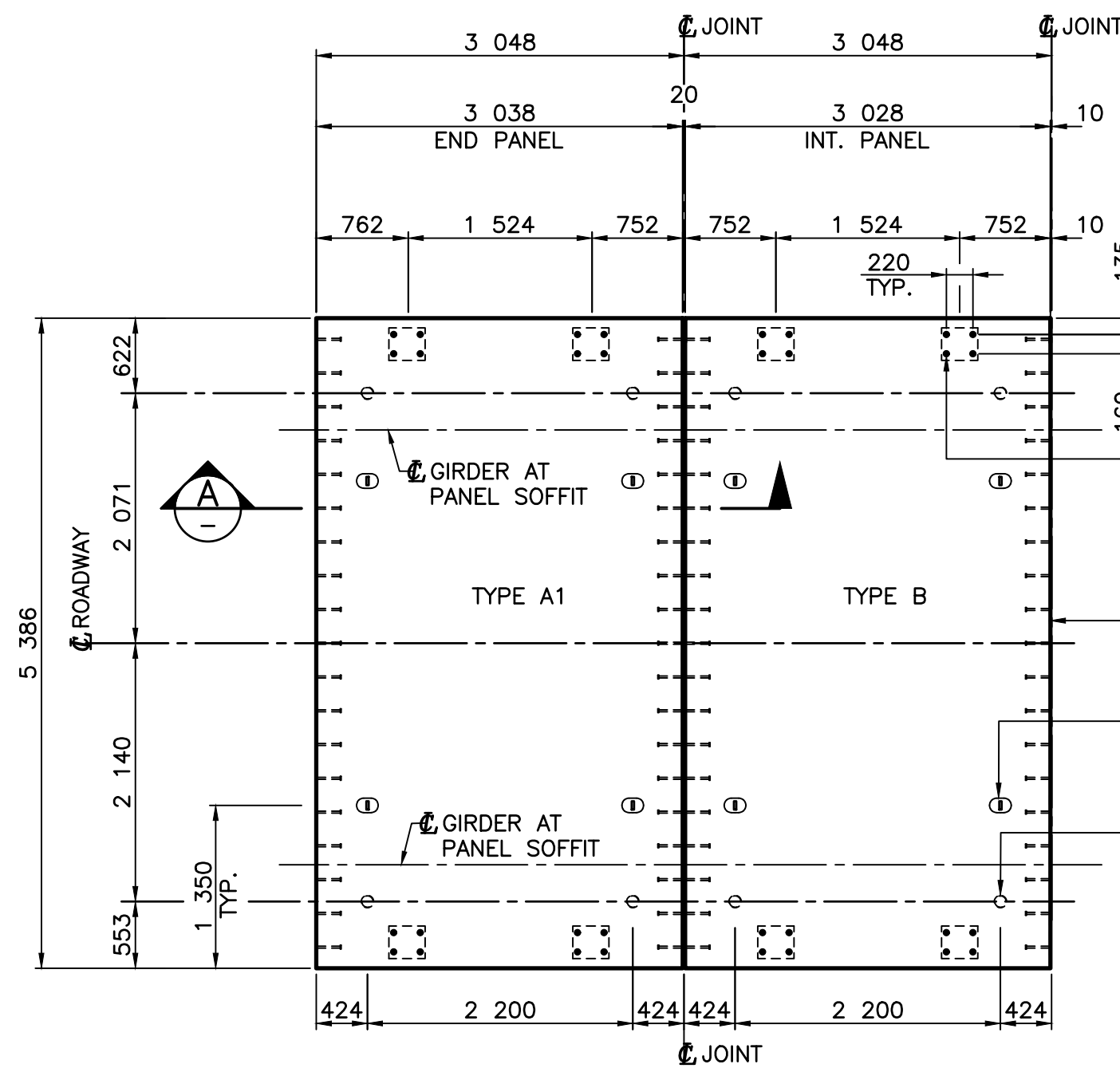
**WRIGHT CREEK BRIDGE NO. 06805 REPLACEMENT  
STEEL GIRDER DETAILS - SHEET 2**

PERMIT TO PRACTICE  
ASSOCIATED ENGINEERING (B.C.) LTD.  
PERMIT NUMBER: 1000163  
Engineers & Geoscientists BC

PREPARED UNDER THE DIRECTION OF <b>NEAL RENEHAN, P. ENG.</b>	DESIGNED <u>N. RENEHAN</u> DATE 2024-02-23 CHECKED <u>J. JIAO</u> DATE 2024-02-23 DRAWN <u>J. MORO</u> DATE 2024-02-23
ENGINEER OF RECORD DATE 2024-02-23	SCALE <b>AS NOTED</b> NEGATIVE No.
FILE No. <b>2023-2809-04</b>	PROJECT No. <b>3</b>
DRAWING No. <b>06805-104</b>	

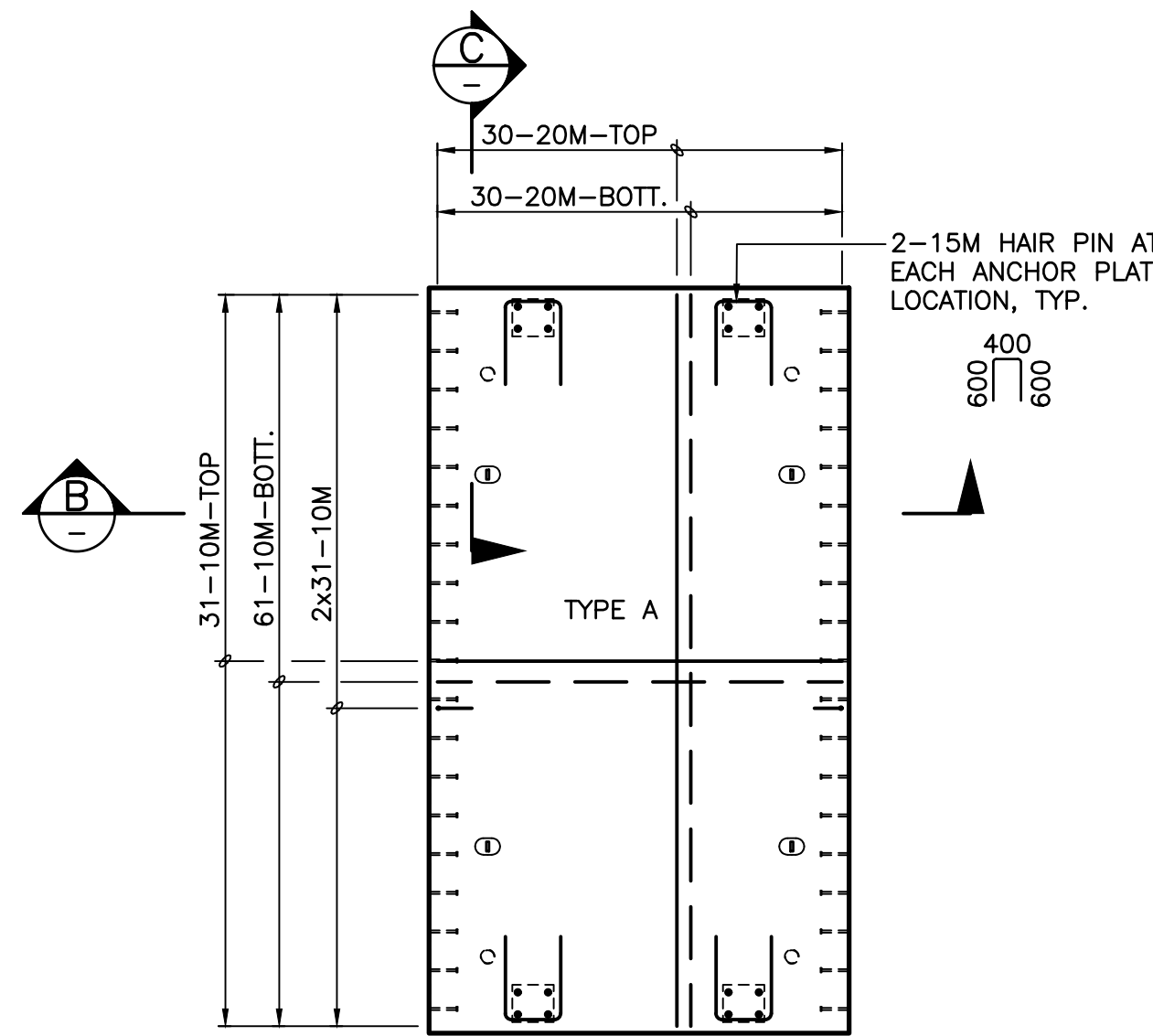


PLAN - DECK PANEL LAYOUT  
SCALE 1:100

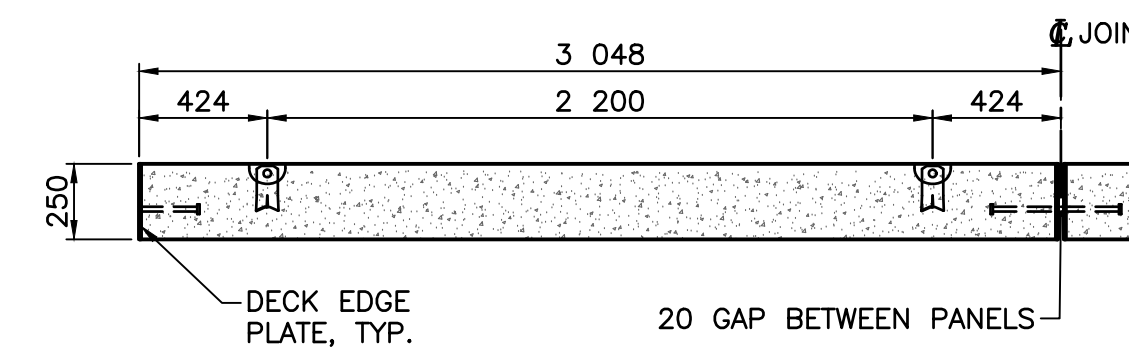


ESTIMATED WEIGHT OF DECK PANEL = 10 800 kg

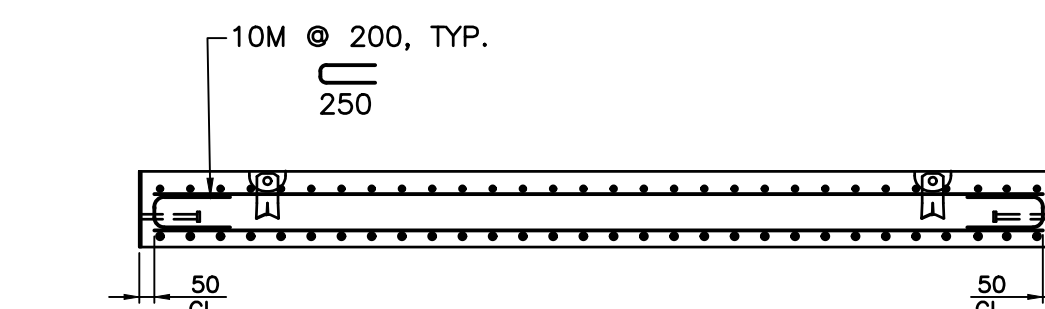
PLAN  
SCALE 1:50



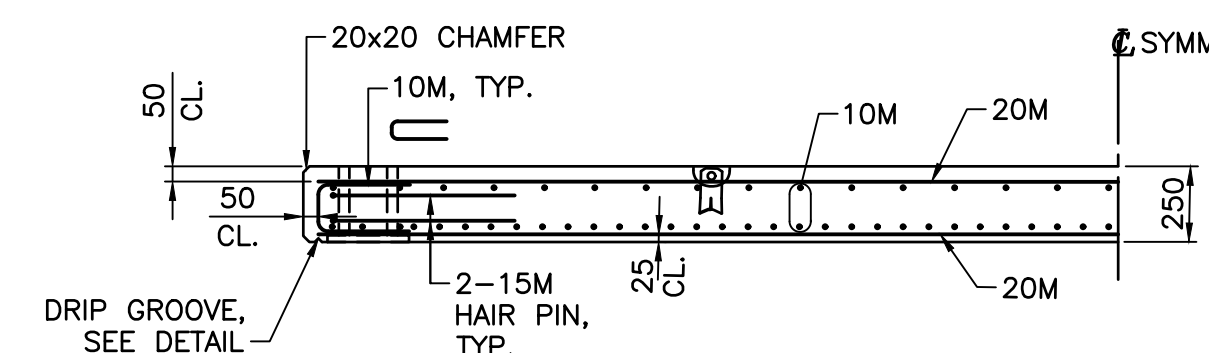
REINFORCEMENT PLAN  
SCALE 1:50  
(TYPE A SHOWN, TYPE B SIMILAR)



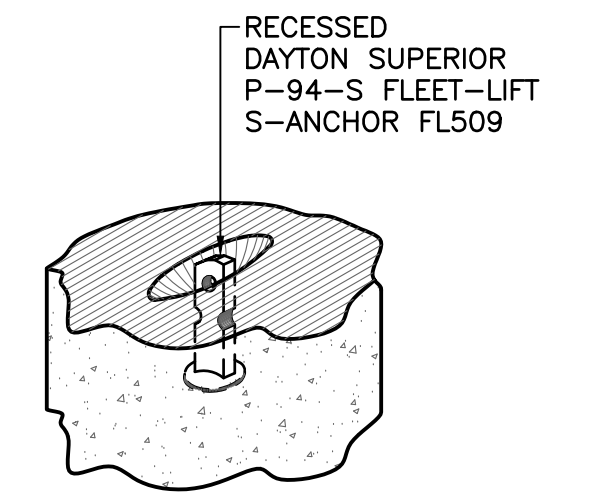
SECTION A  
SCALE 1:25



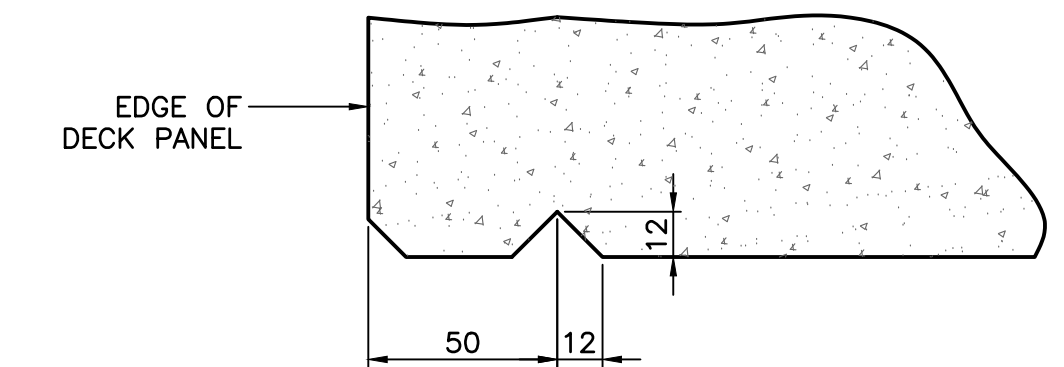
SECTION B  
SCALE 1:25



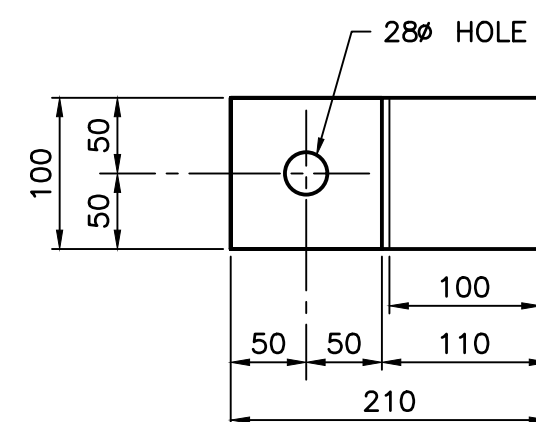
SECTION C  
SCALE 1:25



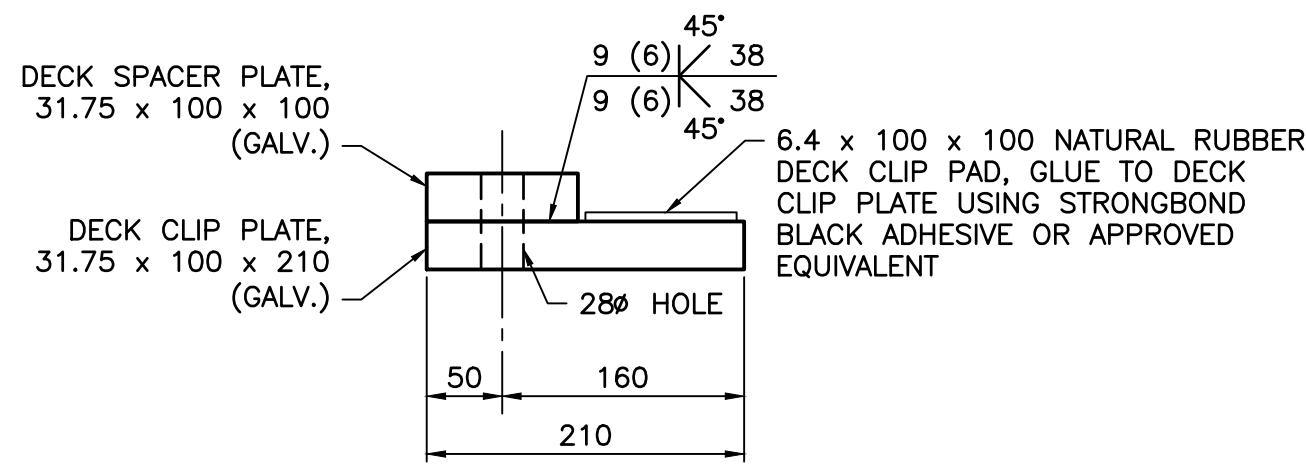
LIFTING POINT DETAIL  
N.T.S.  
(4 REQ'D PER PANEL)



DRIP GROOVE DETAIL  
SCALE 1:2

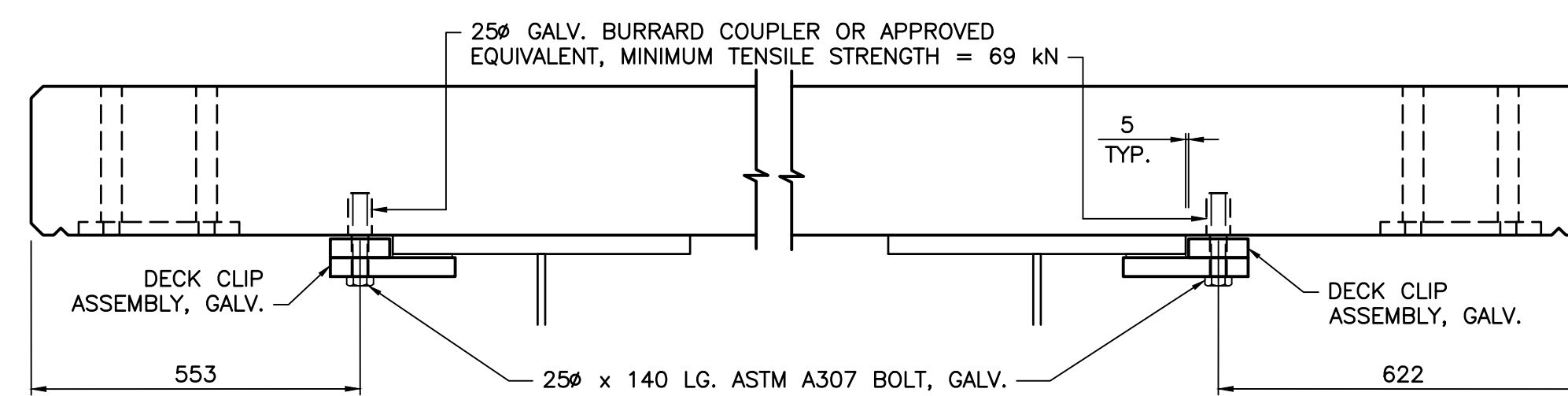


PLAN  
SCALE 1:5

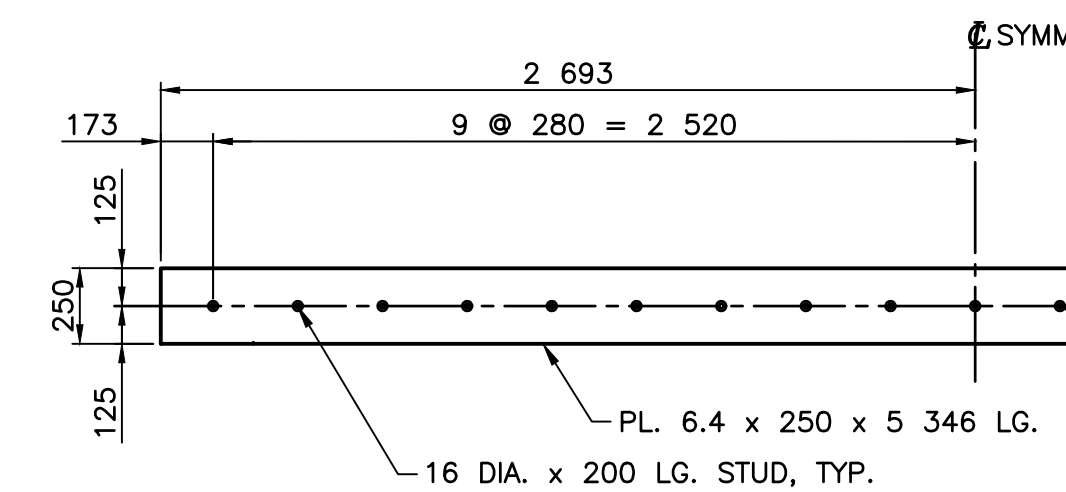


ELEVATION  
SCALE 1:5

DECK CLIP ASSEMBLY  
SCALE 1:5



DETAIL 1  
SCALE 1:10



DETAIL 2  
SCALE 1:25

NOTES:

- FOR GENERAL NOTES, SEE DWG. 06805-101.

Rev	Date	Description	Init

REVISIONS

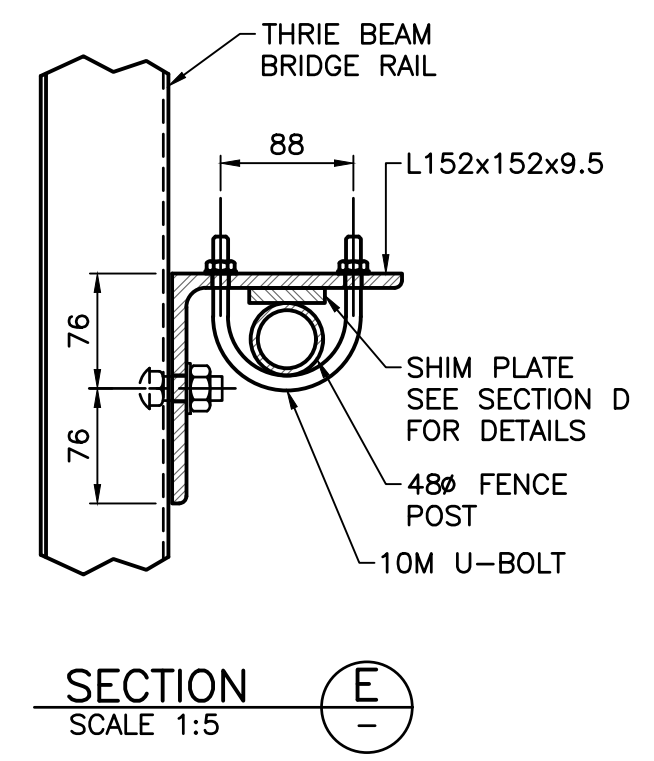
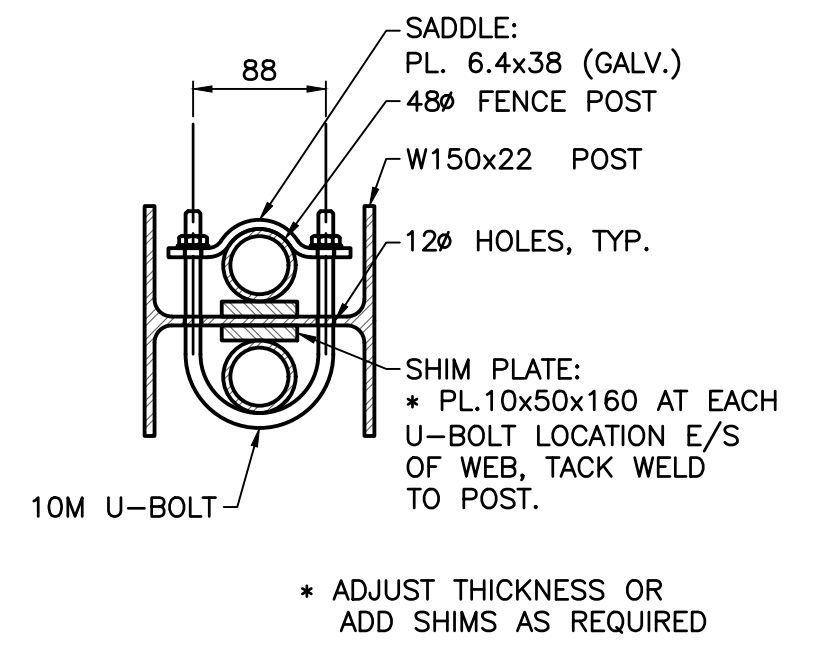
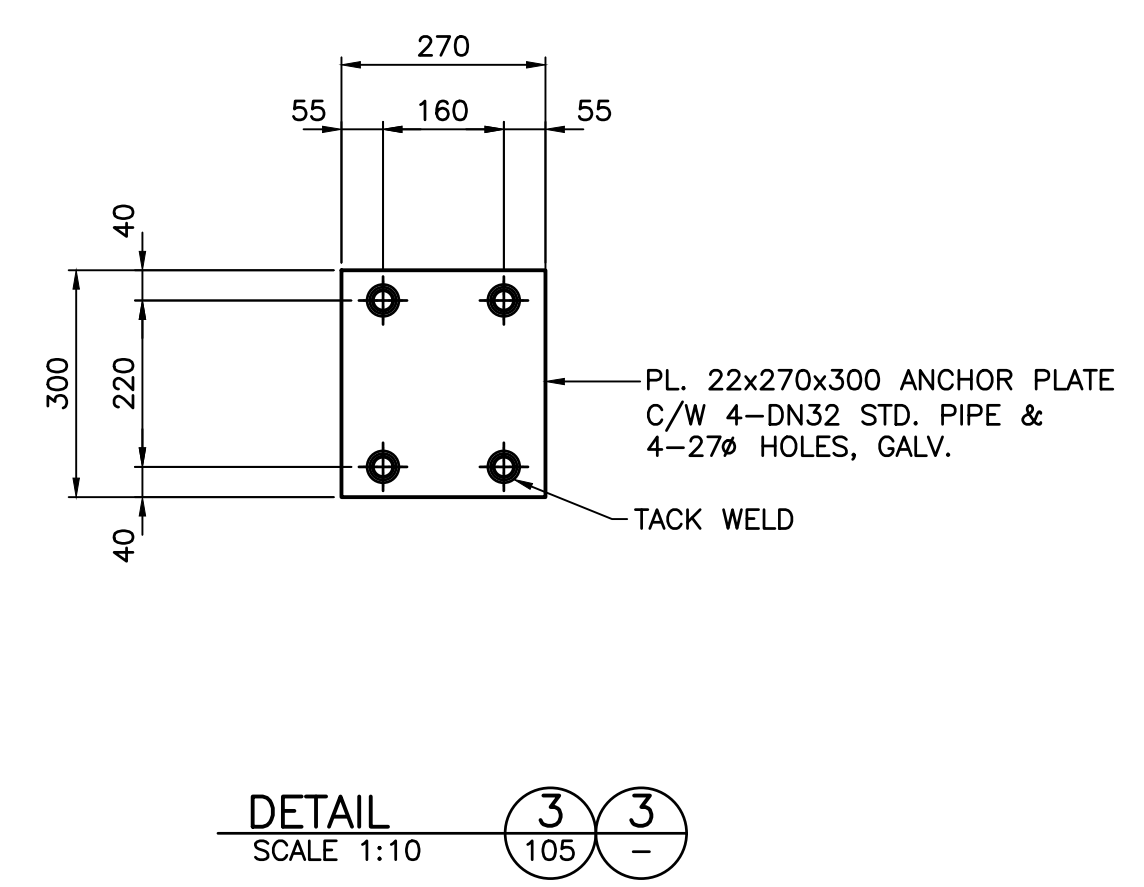
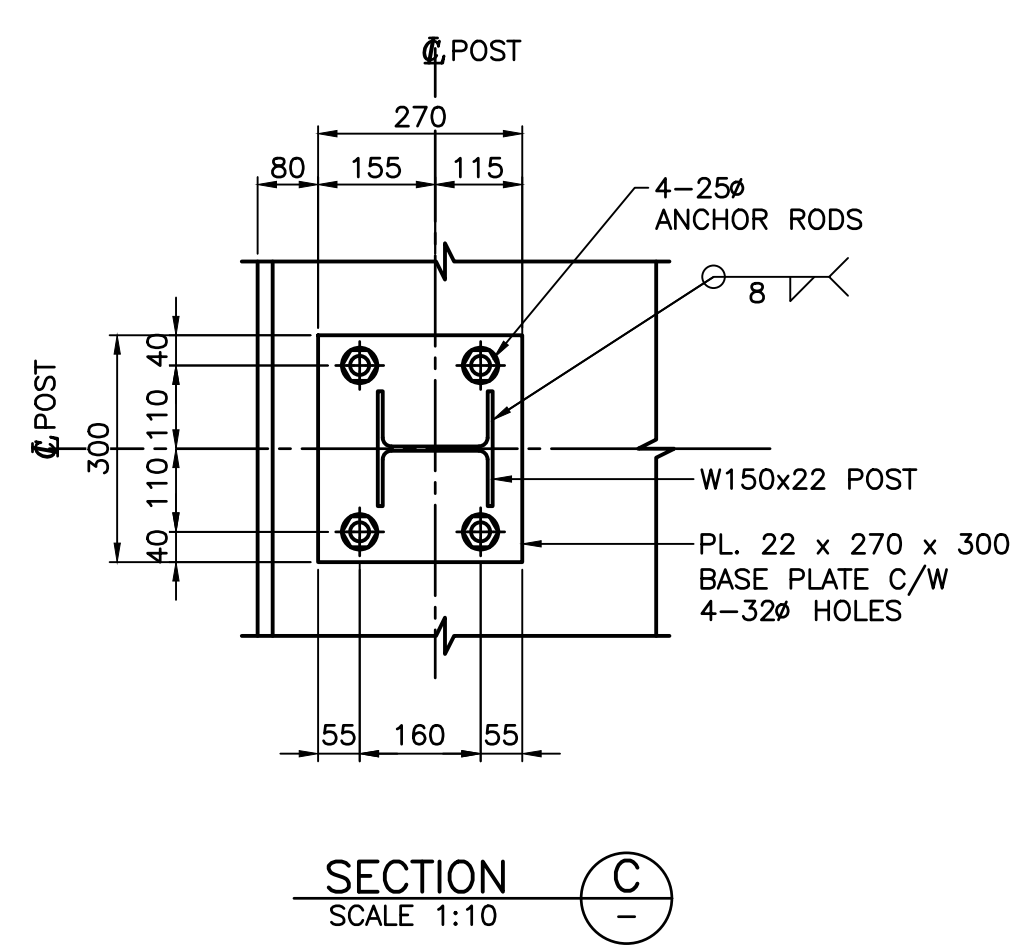
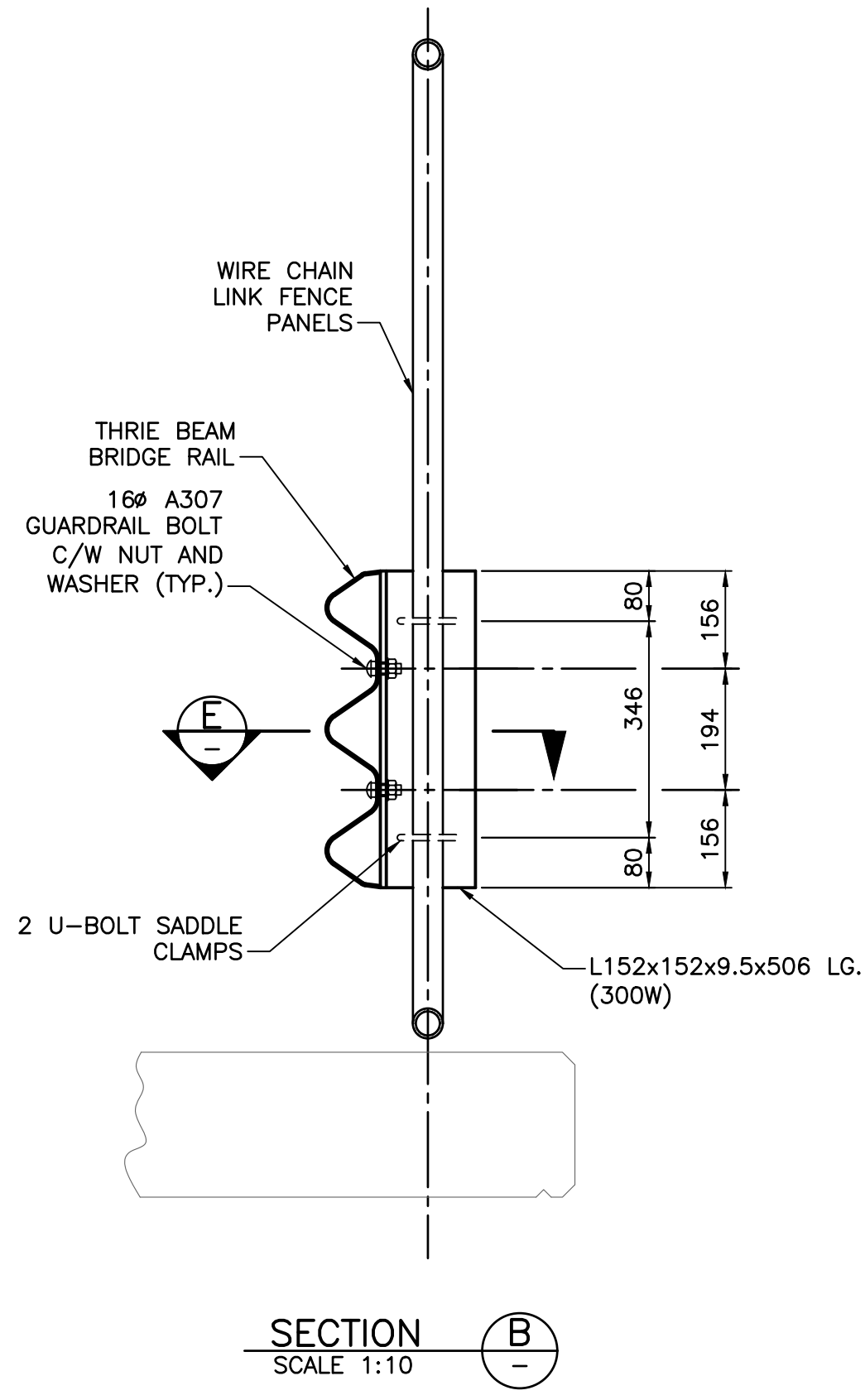
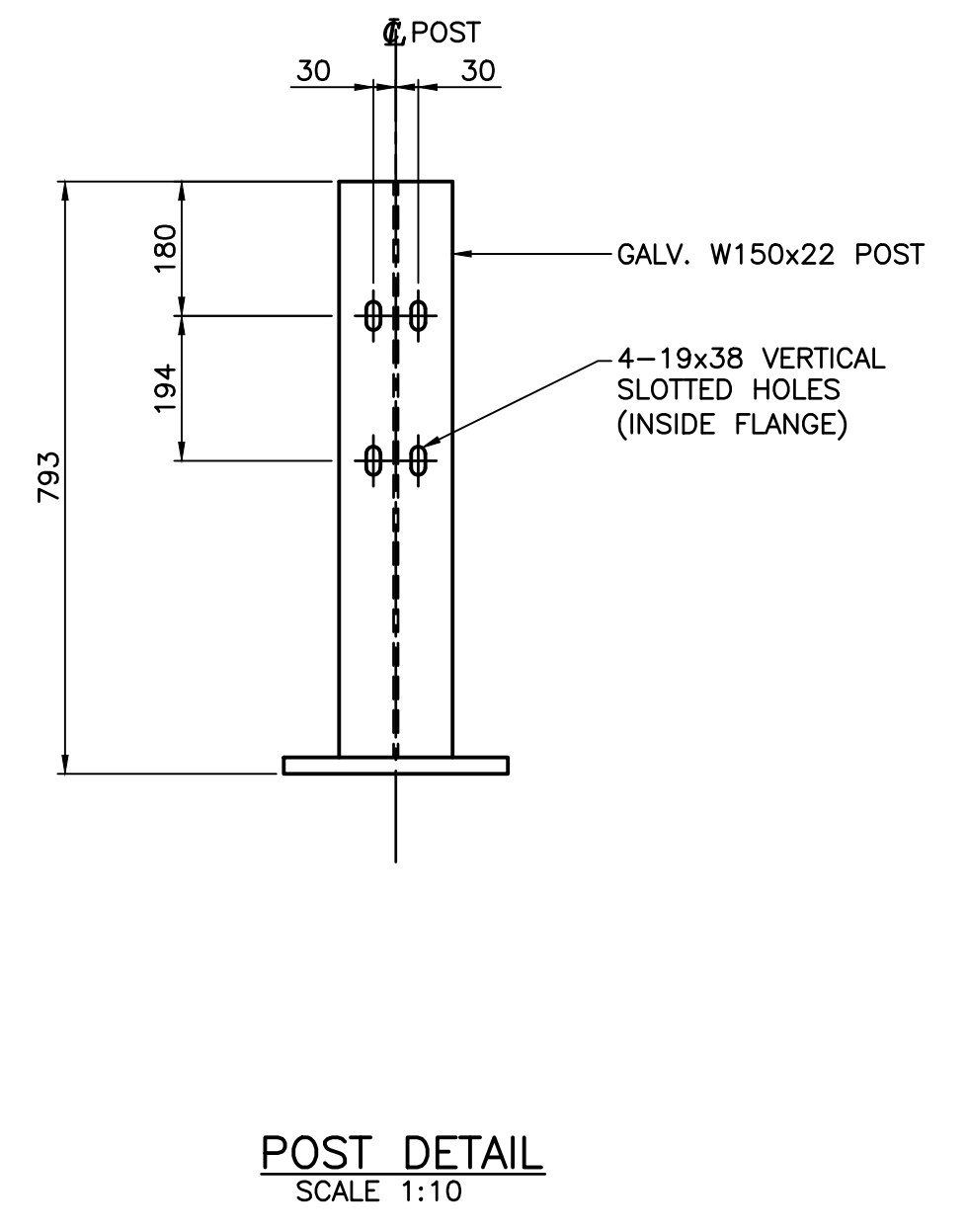
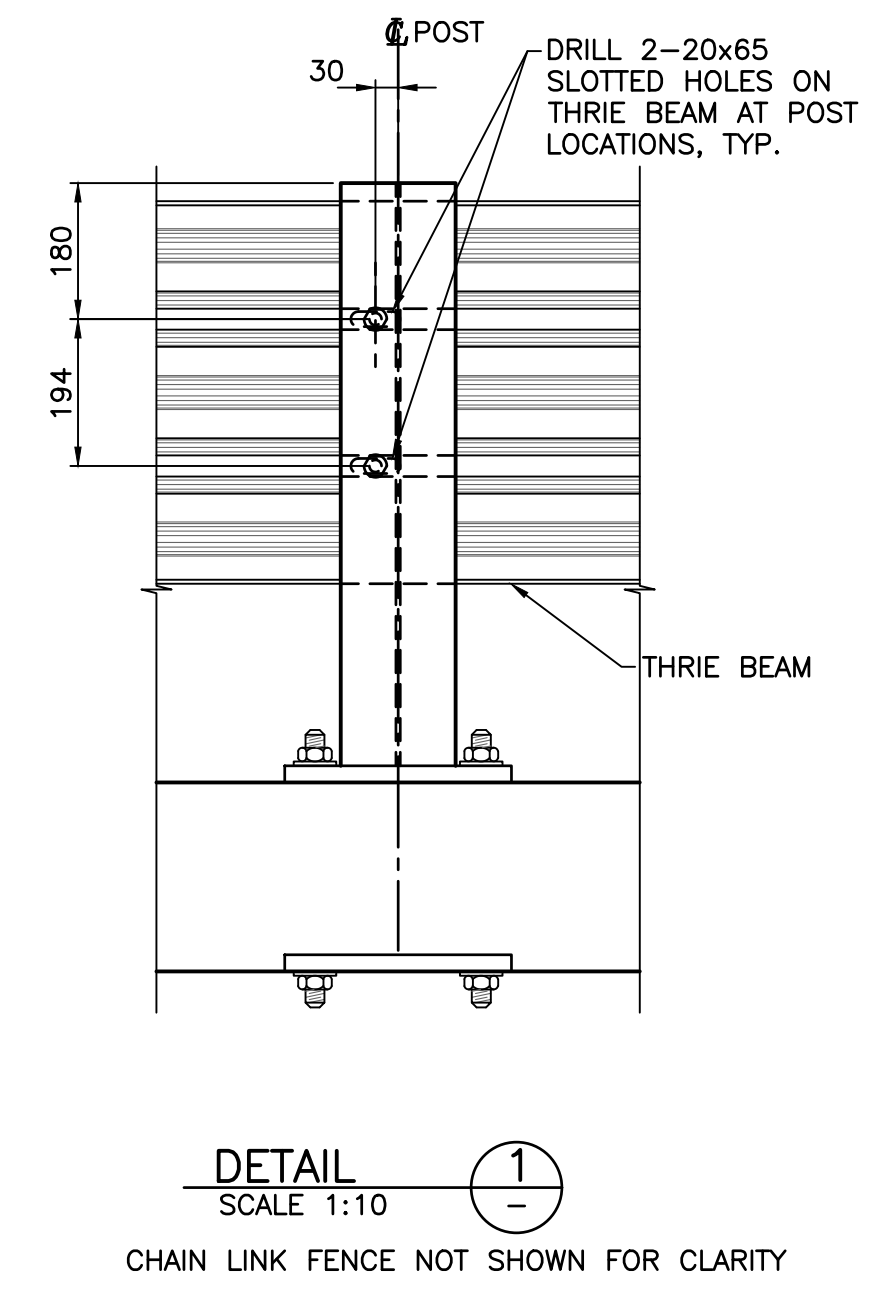
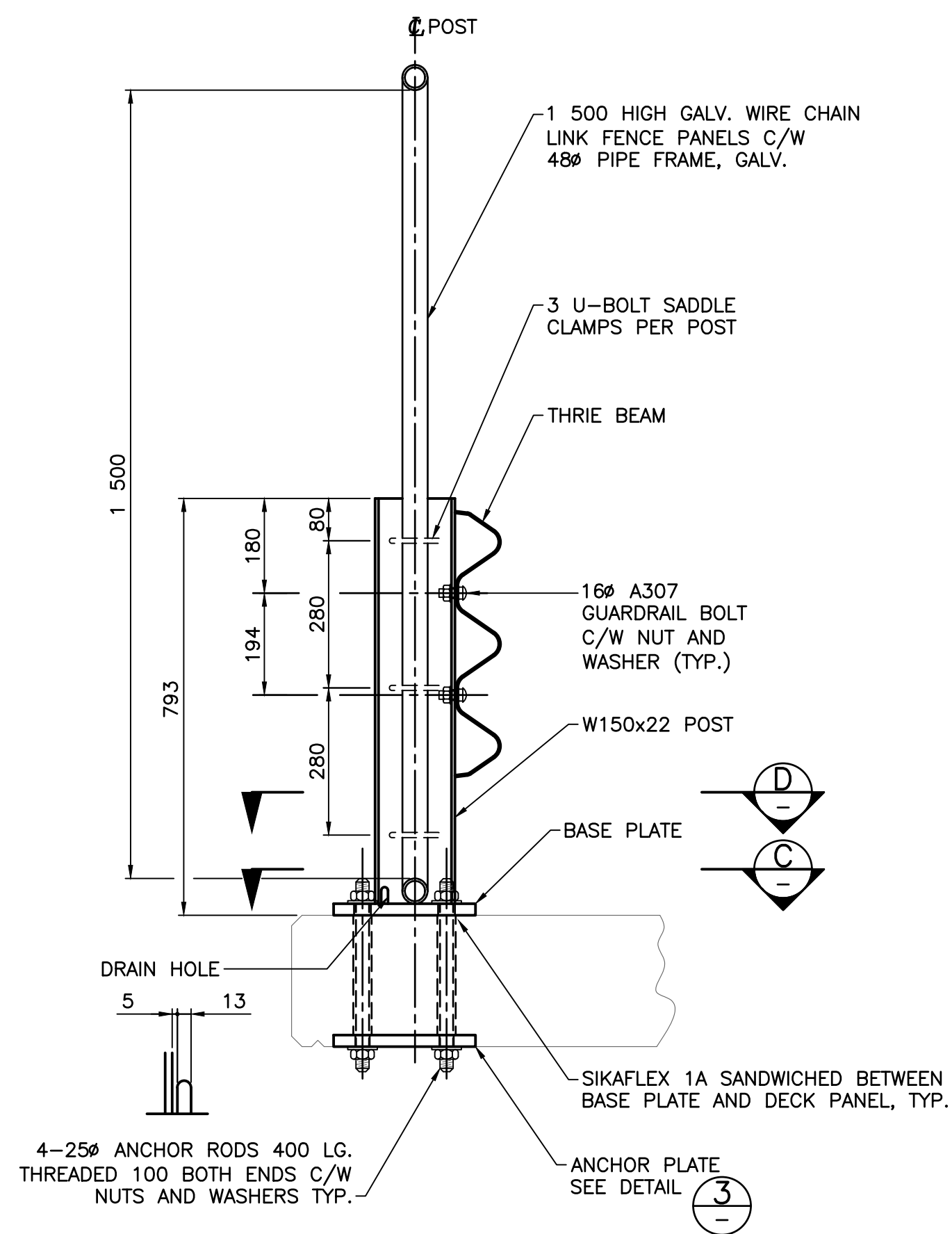
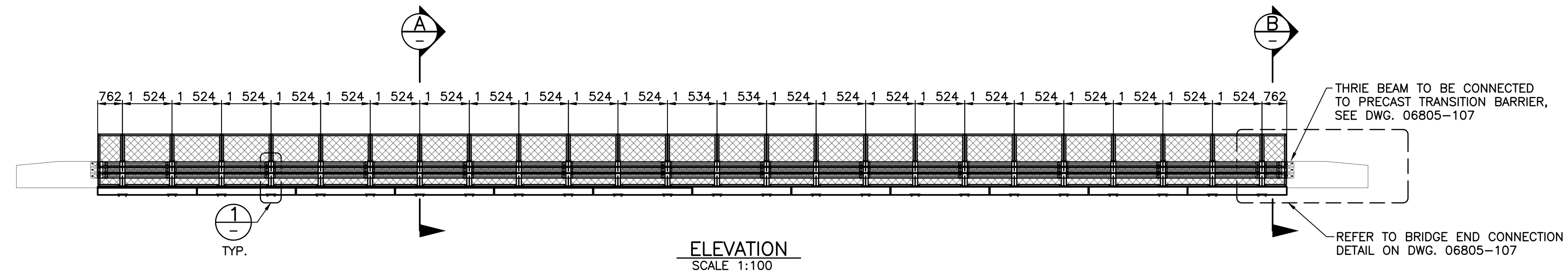


Ministry of Transportation and Infrastructure  
Northern Region

WRIGHT CREEK BRIDGE NO. 06805 REPLACEMENT  
PRECAST CONCRETE DECK PANEL DETAILS

PREPARED UNDER THE DIRECTION OF <b>NEAL RENEHAN, P. ENG.</b>	DESIGNED <u>N. RENEHAN</u> DATE 2024-02-23 CHECKED <u>J. JIAO</u> DATE 2024-02-23 DRAWN <u>J. MORO</u> DATE 2024-02-23
ENGINEER OF RECORD DATE 2024-02-23	SCALE AS NOTED NEGATIVE No.
FILE No. <b>2023-2809-04</b>	PROJECT No. <b>3</b>
REG. No. <b>2023-2809-04</b>	DRAWING No. <b>06805-105</b>

PERMIT TO PRACTICE  
ASSOCIATED ENGINEERING (B.C.) LTD.  
PERMIT NUMBER: 1000163  
Engineers & Geoscientists BC



PERMIT TO PRACTICE  
ASSOCIATED ENGINEERING (B.C.) LTD.  
PERMIT NUMBER: 1000163  
Engineers & Geoscientists BC

NOTES:

- FOR GENERAL NOTES, SEE DWG. 06805-101.

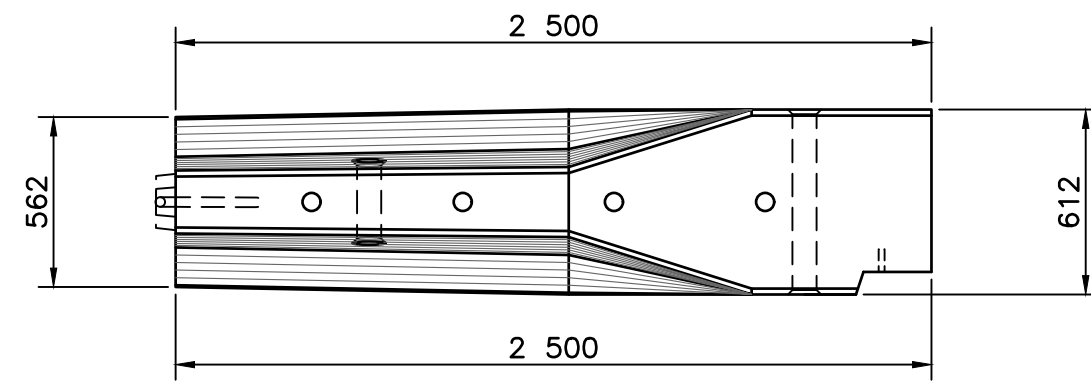
Rev	Date	Description	Init

REVISIONS

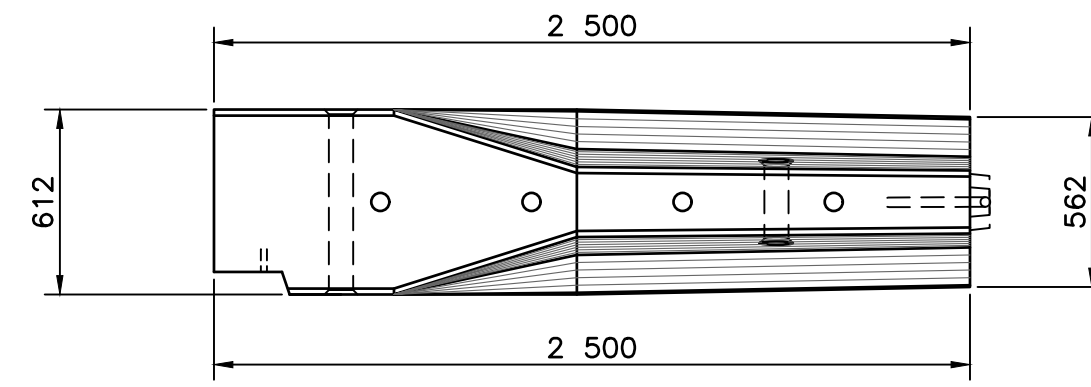


WRIGHT CREEK BRIDGE NO. 06805 REPLACEMENT  
TL-2 THRIE BEAM GUARDRAIL DETAILS

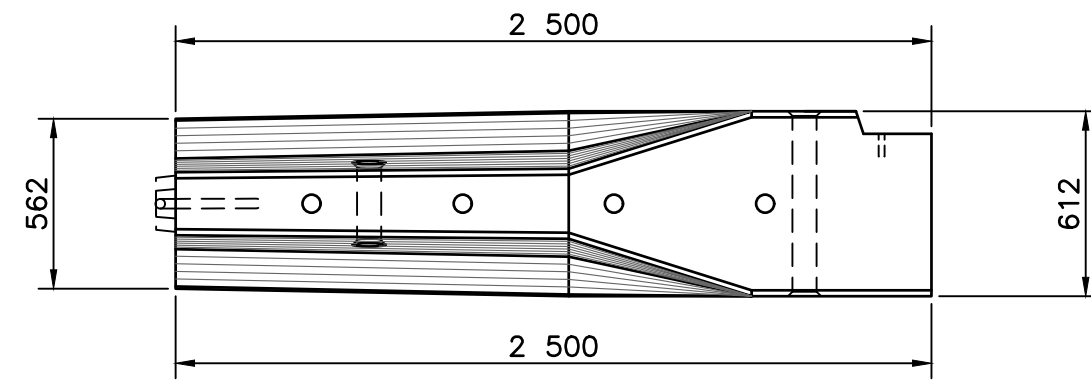
PREPARED UNDER THE DIRECTION OF <b>NEAL RENEHAN, P. ENG.</b> ENGINEER OF RECORD DATE 2024-02-23	DESIGNED <b>J. RENEHAN</b> DATE 2024-02-23 CHECKED <b>J. JIAO</b> DATE 2024-02-23 DRAWN <b>J. MORO</b> DATE 2024-02-23 SCALE AS NOTED NEGATIVE No.
FILE No. <b>2023-2809-04</b>	PROJECT No. <b>3</b>
DRAWING No. <b>06805-106</b>	



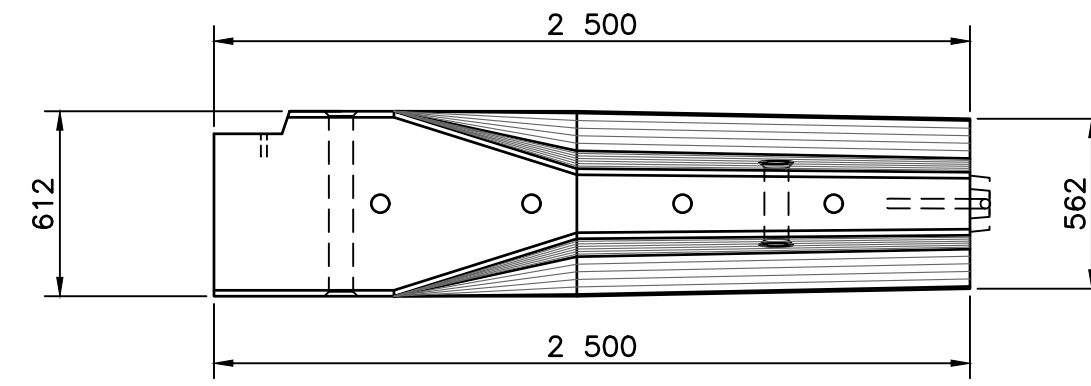
PLAN - NORTH WEST CORNER  
SCALE 1:25



PLAN - NORTH EAST CORNER  
SCALE 1:25

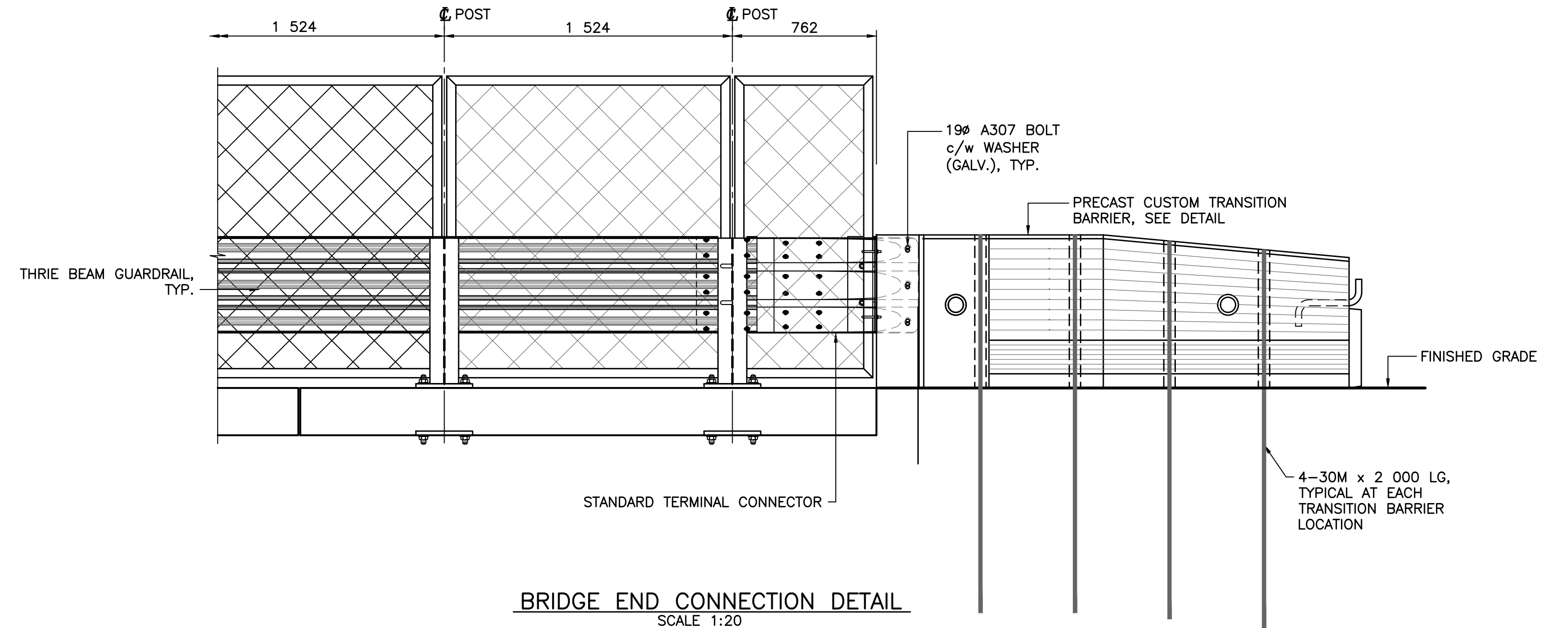


PLAN - SOUTH WEST CORNER  
SCALE 1:25

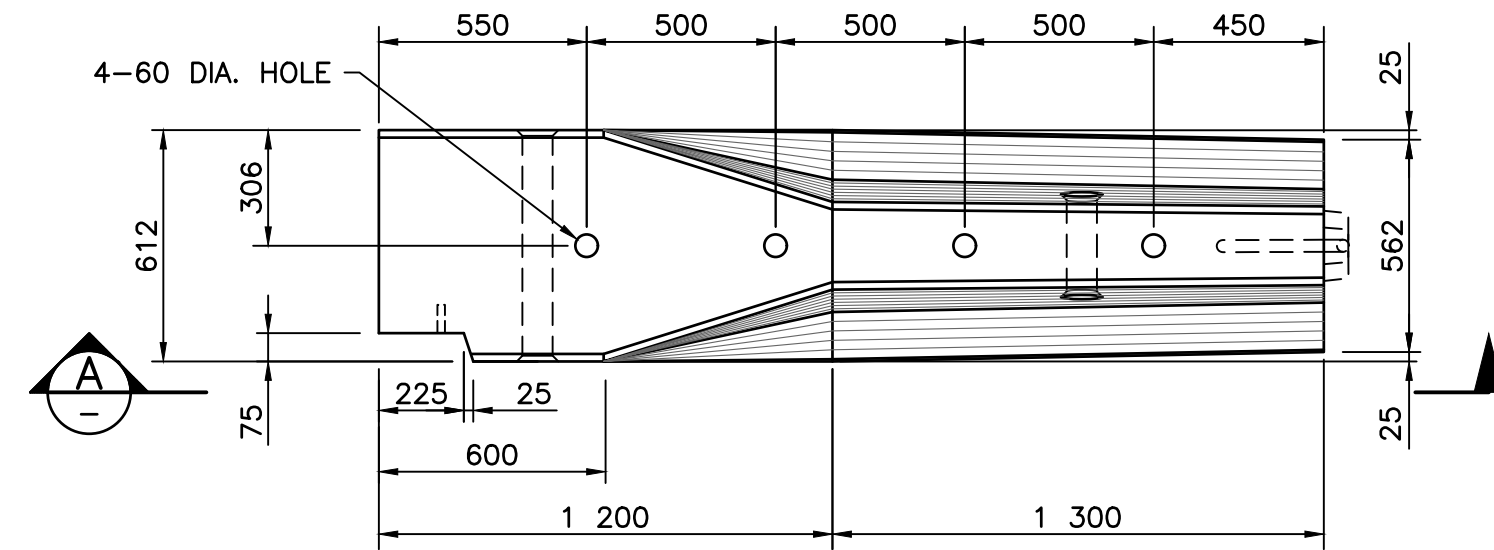


PLAN - SOUTH EAST CORNER  
SCALE 1:25

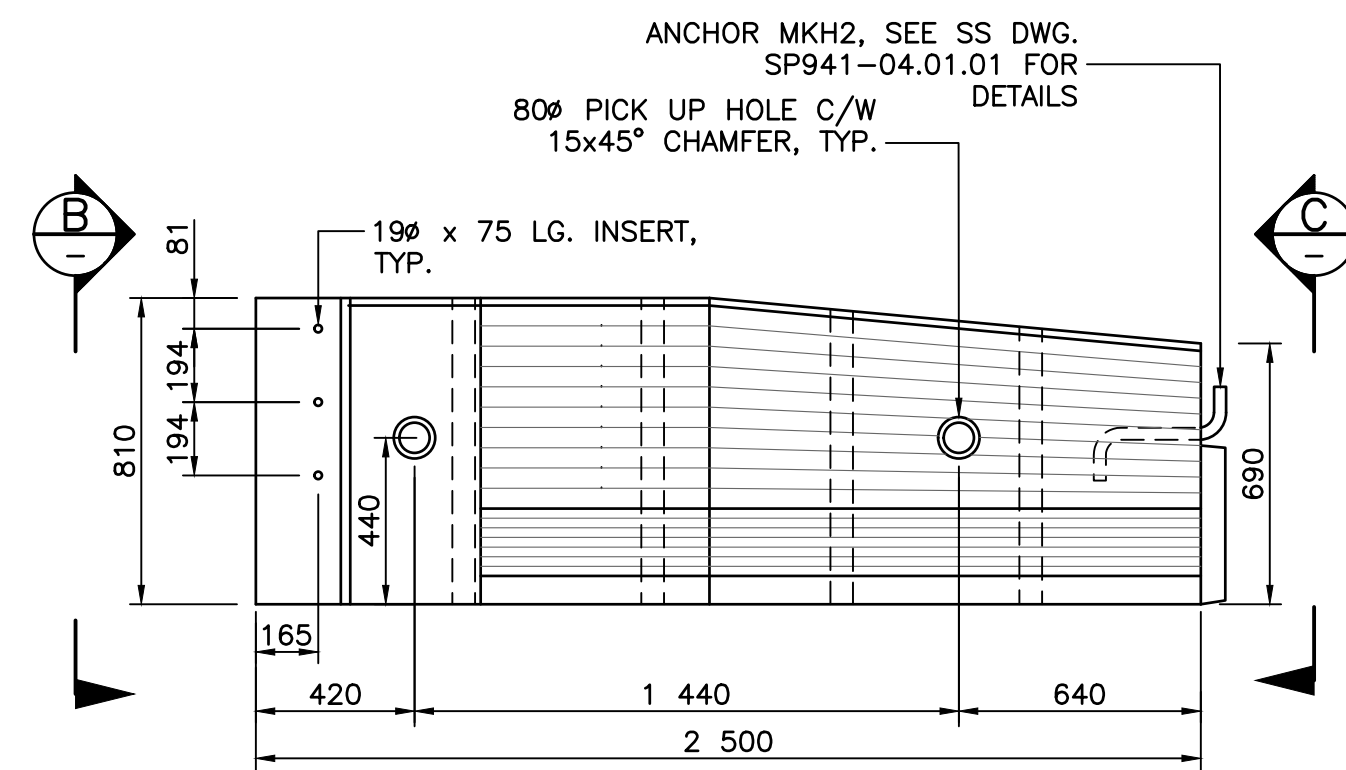
PRECAST TRANSITION BARRIER LAYOUT  
SCALE 1:25



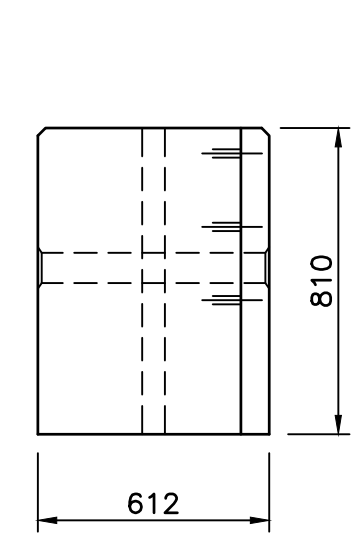
BRIDGE END CONNECTION DETAIL  
SCALE 1:20



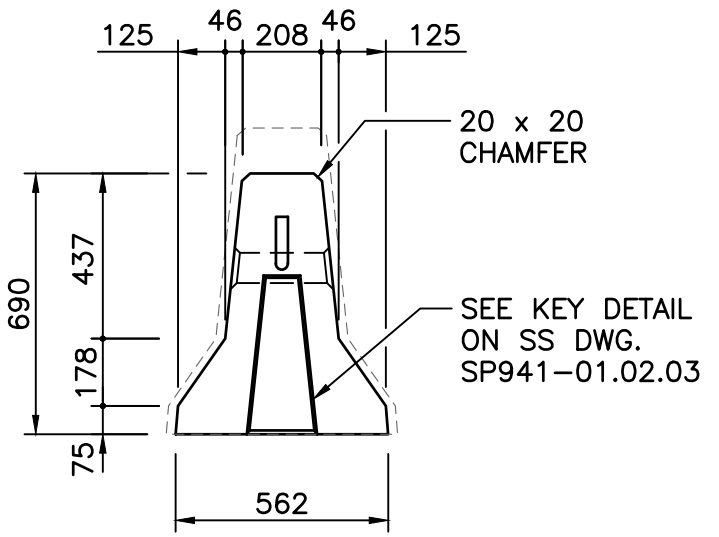
PLAN  
SCALE 1:20  
PRECAST CUSTOM TRANSITION BARRIER  
(RIGHT HAND SHOWN, LEFT HAND OPPOSITE HAND)



SECTION A-A  
SCALE 1:20



SECTION B-B  
SCALE 1:20



SECTION C-C  
SCALE 1:20

NOTES:

- FOR GENERAL NOTES, SEE DWG. 06805-101.

Consultant Logo

Rev	Date	Description	Init

REVISIONS

Ministry of Transportation and Infrastructure  
Northern Region

WRIGHT CREEK BRIDGE NO. 06805 REPLACEMENT  
PRECAST CONCRETE TRANSITION BARRIER DETAILS

PERMIT TO PRACTICE  
ASSOCIATED ENGINEERING (B.C.) LTD.  
PERMIT NUMBER: 1000163  
Engineers & Geoscientists BC

PREPARED UNDER THE DIRECTION OF <b>NEAL RENEHAN, P. ENG.</b>	DESIGNED <u>N. RENEHAN</u> DATE 2024-02-23 CHECKED <u>J. JIAO</u> DATE 2024-02-23 DRAWN <u>J. MORO</u> DATE 2024-02-23
ENGINEER OF RECORD DATE 2024-02-23	SCALE AS NOTED NEGATIVE No.
FILE No. <b>2023-2809-04</b>	PROJECT No. <b>3</b>
DRAWING No. <b>06805-107</b>	

FILE: G:\2023-2809-04\STRUA\MODEL\06805-107.DWG  
PLOTTED: February 23, 2024