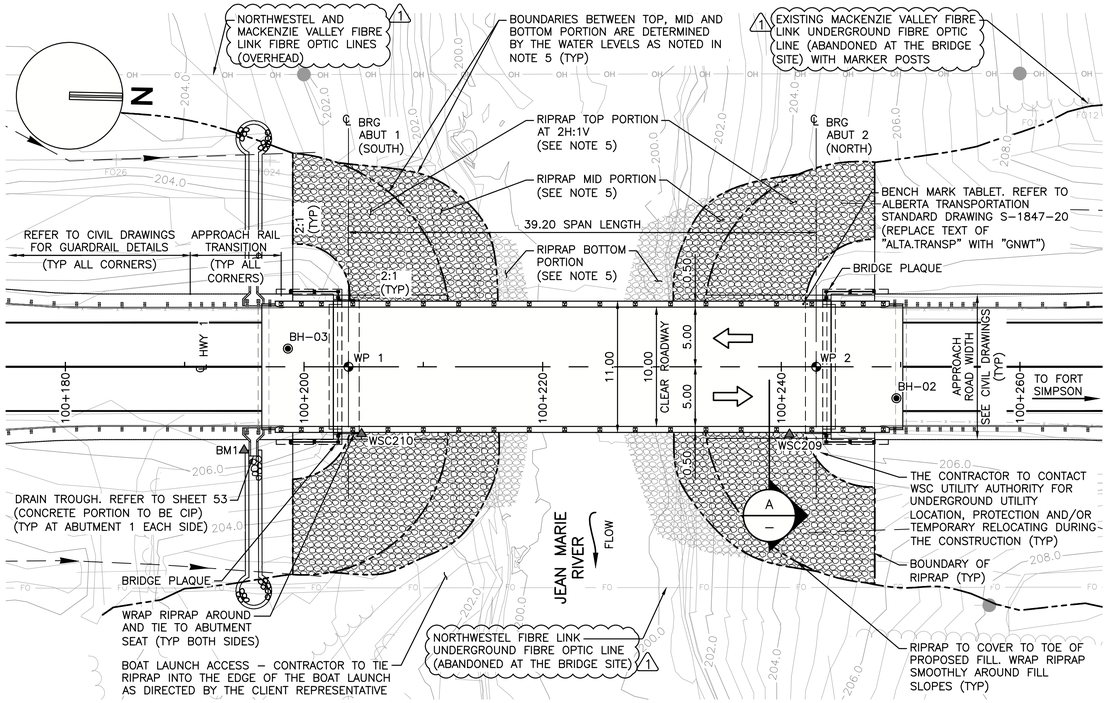
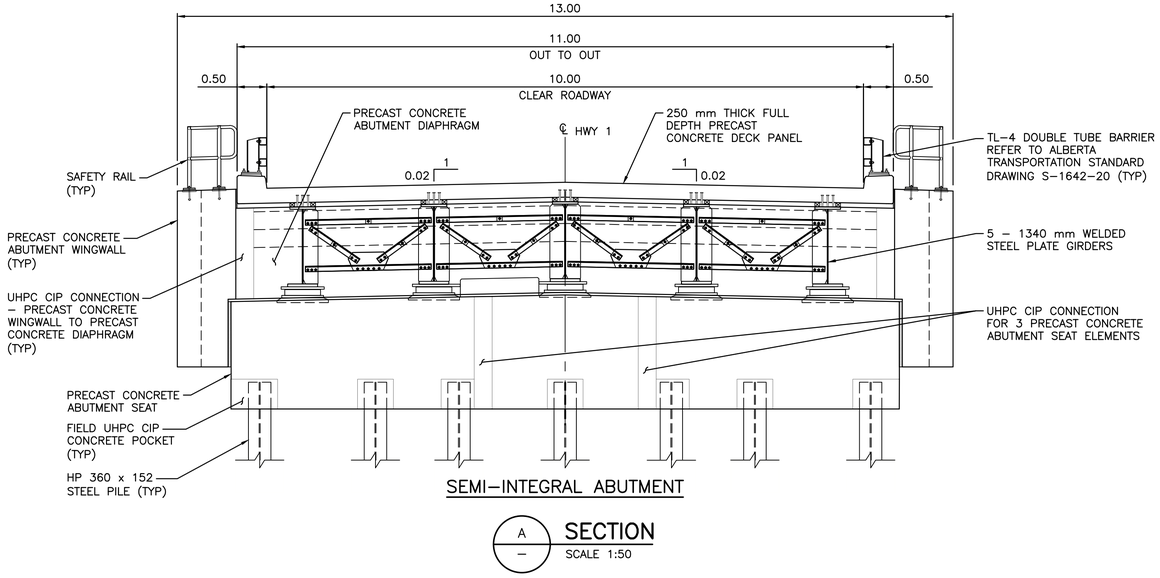


PLAN
SCALE 1:250



SEMI-INTEGRAL ABUTMENT

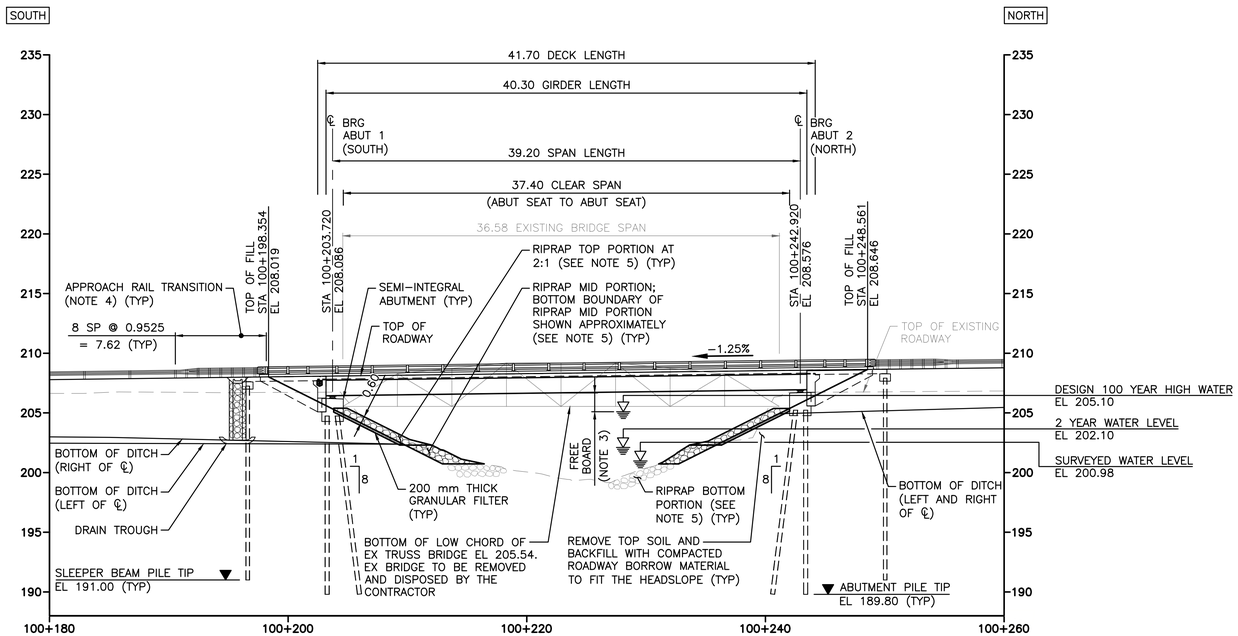
A - A SECTION
SCALE 1:50

WORK POINT SCHEDULE

WORK POINT	NORTHING	EASTING	STATION	OFFSET	ELEVATION
WP 1	6813599.524	593974.476	100+203.720	0.00	208.086
WP 2	6813638.714	593973.606	100+242.920	0.00	208.576

BENCHMARK POINT TABLE

DESCRIPTION	NORTHING	EASTING	ELEVATION
BM1	6813590.94	593981.66	206.55
WSC 209	6813636.61	593979.31	205.21
WSC 210	6813600.75	593980.07	205.16



ELEVATION
SCALE 1:250

NOTES

1. DIMENSIONS ON THIS DRAWING ARE IN METRES UNLESS NOTED OTHERWISE.
2. ELEVATIONS ARE GIVEN TO THE TOP OF ROADWAY ALONG THE HIGHWAY 1 CONTROL LINE.
3. REQUIRED MINIMUM FREE BOARD = 1.20 m
   FREE BOARD PROVIDED AT ABUTMENT 1 = 1.20 m
   FREE BOARD PROVIDED AT ABUTMENT 2 = 1.67 m
   FREE BOARD PROVIDED AT MID-SPAN = 1.44 m
4. APPROACH RAIL TRANSITION: FIRST SIX SPACES AT 952.5 mm TO BE TWO LAYERS OF 2.7 mm THICK THRIE BEAM GUARDRAIL WITH TERMINAL CONNECTOR. LAST TWO SPACES AT 952.5 mm TO BE 2.7 mm THICK W-THRIE BEAM TRANSITION SECTION. REFER TO ALBERTA TRANSPORTATION STANDARD DRAWINGS S-1642-20, S-1643-20 AND SHEET 53 FOR DETAILS.
5. RIPRAP SHALL BE PLACED AS BELOW:

   TOP PORTION:
   (ABOVE THE 1:2-YEAR WATER LEVEL OF 202.10 m TO THE TOP OF RIPRAP ELEVATION OF 205.4 m FOR BOTH ABUTMENTS)
   USE A COMBINATION OF SALVAGED EXISTING RIPRAP AND IMPORTED CLASS 1 HEAVY ROCK RIPRAP UNDERLAIN BY 200 mm THICK GRANULAR FILTER BASE. IMPORTED CLASS 1 HEAVY ROCK RIPRAP AND SORTED SALVAGED RIPRAP MEETING THE CLASS 1 GRADATION SHALL BE PLACED ON THE BANK TO A THICKNESS OF 600 mm. THE TRANSITIONS BETWEEN THE SLOPE ARMOURING AND THE ADJACENT NATURAL/EXISTING BANK SHALL BE SMOOTH AND TO THE SATISFACTION OF THE HYDROTECHNICAL ENGINEER. GRANULAR FILTER BASE MATERIAL SHALL BE APPROVED EITHER AS WELL GRADED CRUSHED GRANULAR MATERIAL WITH D100 OF 100 mm OR EQUIVALENT WELL GRADED UNCRUSHED BANK PITRUN GRAVEL. THE CONTRACTOR SHALL SUBMIT THE PROPOSED MATERIAL FOR APPROVAL BY THE HYDROTECHNICAL ENGINEER AT LEAST 2 WEEKS PRIOR TO THE WORKS.

   MID PORTION:
   (BELOW THE 1:2-YEAR WATER LEVEL OF 202.10 m AND ABOVE THE WATER LEVEL AT THE TIME OF THE RIPRAP PLACEMENT FOR THIS PORTION. RIPRAP FOR THIS PORTION SHALL BE PLACED DURING LOWER WATER LEVEL SEASON(S))
   ADD CLASS 1 HEAVY ROCK RIPRAP TO THE VOIDS OF THE EXISTING RIPRAP SURFACE TO AREAS WITH NOMINAL 1.0 m THICKNESS TO THE SATISFACTION OF THE HYDROTECHNICAL ENGINEER.

   BOTTOM PORTION:
   (EXISTING RIPRAP BELOW THE WATER LEVEL AT THE TIME OF PLACING MID PORTION RIPRAP DURING LOWER WATER LEVEL SEASON)
   NO NEW RIPRAP PLACEMENT BELOW THE WATER LEVEL. EXISTING RIPRAP BELOW THE WATER LEVEL SHALL REMAIN AND UNDISTURBED.
   (THIS PORTION OF RIPRAP SHOWN ON THE DRAWING IS SCHEMATIC)

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024-12-06	ISSUED FOR CONSTRUCTION	YL
0	2024-07-19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories
HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2
JEAN MARIE RIVER BRIDGE
GENERAL LAYOUT

DESIGNED	YL	DATE	2024-12-06
CHECKED	JZ	DATE	2024-12-06
DRAWN	KK	DATE	2024-12-06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
0465699 CANADA INC. O/A JACOBS CONSULTANCY CANADA INC.
Signature ____ Date 4 Dec 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024-12-06
2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	23 OF 55	SC-INF01-6081-S001 | 1

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PLOTTED: Friday, December 6, 2024

GENERAL

READ THESE GENERAL NOTES IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS, DRAWINGS, AND OTHER CONTRACT DOCUMENTS.

OBTAIN CLARIFICATION FROM THE ENGINEER IN THE EVENT THAT INFORMATION CONTAINED ELSEWHERE IN THE CONTRACT DOCUMENTS APPEARS TO CONFLICT WITH THESE GENERAL NOTES.

DO NOT SCALE DRAWINGS.

ALL DIMENSIONS ARE IN MILLIMETERS (mm OR MM) UNO.

ALL STATIONS, ELEVATIONS, EASTINGS, AND NORTHINGS ARE IN METERS (m OR M) UNO.

STATIONS, NORTHINGS, EASTINGS AND DIMENSIONS ARE GIVEN IN GRID COORDINATES AND VALUES UNO.

ANY UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL–INCLUSIVE. THE CONTRACTOR SHALL DETERMINE THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AND PROTECT AS REQUIRED. FOR RELOCATING EXISTING UNDERGROUND UTILITIES, REFER TO SPECIAL PROVISIONS.

ALL CONSTRUCTION SHALL CONFORM TO SPECIAL PROVISIONS, GOVERNMENT OF NORTHWEST TERRITORIES STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION (SSBC) (EDITION 1 2021), AND THESE DRAWINGS.

ALL CONSTRUCTION MATERIALS NOT SPECIFIED HEREIN AND IN THE DRAWINGS SHALL CONFORM TO THE REQUIREMENTS IN SSBC.

DESIGN CRITERIA & LOADING

DESIGN IS BASED ON:

1. CAN/CSA–S6–19 'CANADIAN HIGHWAY BRIDGE DESIGN CODE' (REFERRED TO HEREAFTER AS 'CSA S6').
2. DESIGN CRITERIA / STANDARDS BY GOVERNMENT OF NORTHWEST TERRITORIES (GNWT) WITH APPROVED DESIGN EXCEPTIONS (DE)
3. ALBERTA TRANSPORTATION BRIDGE STRUCTURES DESIGN CRITERIA, VERSION 9.0, JANUARY 2022

DESIGN LIFE OF THE BRIDGE STRUCTURE: 75 YEARS

DESIGN LIVE LOAD: CL–800

BARRIERS DESIGNED FOR PERFORMANCE LEVEL: TL–4

CONSTRUCTION LIVE LOAD ON DECK = 1.5 kPa (NOT ON THE DECK CANTILEVER UNLESS BALANCED)

50–YEAR RETURN PERIOD MINIMUM AND MAXIMUM DAILY MEAN TEMPERATURES = –48 AND 28 °C
MINIMUM AND MAXIMUM EFFECTIVE TEMPERATURES = –46 AND 43 °C

LONGITUDINAL BRAKING FORCE = 228 kN

MEAN WIND PRESSURE FOR 50 YEAR RETURN PERIOD = 0.41 kPa
MEAN WIND PRESSURE FOR 10 YEAR RETURN PERIOD (DURING CONSTRUCTION) = 0.30 kPa

DESIGN HORIZONTAL WIND PRESSURE = 1.64 kPa

DESIGN VERTICAL WIND PRESSURE = 0.82 kPa

SAFETY RAIL DESIGN LOAD: A CONCENTRATED LOAD OF 1.0 kN APPLIED AT ANY POINT SO AS TO PRODUCE THE MOST CRITICAL EFFECT, AS PER NATIONAL BUILDING CODE, CL 7.4.5.14 (B), APPLICABLE TO WHERE THE GATHERING OF MANY PEOPLE IS IMPROBABLE.

SEISMIC:

LIFELINE BRIDGE

SITE CLASS: C

SEISMIC PERFORMANCE CATEGORY: 1

S(0.2) = 0.169

SEISMIC CONNECTION HORIZONTAL LOAD AT ABUTMENTS: 455 kN, EACH DIRECTION

(TRANSVERSE DIRECTION RESTRAINED BY SHEAR BLOCKS; LONGITUDINAL DIRECTION RESTRAINED BY BACKFILL PASSIVE EARTH PRESSURE BEHIND ABUTMENT DIAPHRAGMS)

CAST–IN–PLACE CONCRETE

DRAIN TROUGHS AND SHEAR BLOCKS ON ABUTMENT SEATS:
CLASS C, 28–DAY STRENGTH 35 MPa

PRECAST CONCRETE ELEMENT CONNECTIONS, POCKETS AND GIRDER HAUNCHES:
APPROVED 120 MPa UHPC WITH 2% FIBER

ALL UHPC CASTING FORMWORK SHALL BE WATER–TIGHT TESTED PRIOR TO THE CONCRETE PLACEMENT.

PRECAST CONCRETE

DECK PANELS, DIAPHRAGMS AND APPROACH SLABS:
CLASS HPC, 28–DAY STRENGTH 45 MPa

ALL OTHER PRECAST CONCRETE ELEMENTS:
CLASS C, 28–DAY STRENGTH 35 MPa

REINFORCING STEEL SHALL HAVE 50 mm CLEAR CONCRETE COVER, EXCEPT THAT POCKET AND UHPC CONNECTION JOINT SURFACES TO HAVE MINIMUM 25 mm CLEAR CONCRETE COVER, UNLESS NOTED OTHERWISE.

ALL CORNERS (NOT INCLUDING CORNERS AT POCKET AND UHPC CONNECTION SURFACES) SHALL BE CONSTRUCTED WITH A MINIMUM 20 mm CHAMFER OR FILLET UNO.

THE CONTRACTOR IS RESPONSIBLE FOR ALL ASPECTS OF LIFTING (INCLUDING DESIGN OF LIFTING AND LEVELING DEVICES), HANDLING, ERECTION AND INSTALLATION OF PRECAST ELEMENTS AND TEMPORARY WORKS. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE PLANS AND DRAWINGS, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER IN THE NORTHWEST TERRITORIES INDICATING ALL LOADS, AND ANY TEMPORARY SUPPORT SYSTEM REQUIRED AT LEAST 2 WEEKS PRIOR TO THE FABRICATION. THE SUBMISSION SHALL VERIFY THAT THE PRECAST ELEMENTS ARE CAPABLE OF RESISTING ALL CONSTRUCTION LOADS SAFELY AND WITHOUT DAMAGE.

ALL JOINT AND POCKET SURFACES OF PRECAST ELEMENTS SHALL BE PRE–ROUGHENED (AT PLANT) BY ABRASIVE BLASTING TO ICRI CSP NO. 6, AS PER SSBC SECTION 7.2.5.15.

THE ESTIMATED MASS OF PRECAST CONCRETE ELEMENTS SHOWN IN THE DRAWINGS ARE FOR THE GOVERNMENT OF NORTHWEST TERRITORIES USE ONLY AND THE DEPARTMENT ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY OR USE BY OTHERS.

REINFORCING STEEL

PLAIN REINFORCING STEEL SHALL CONFORM TO CAN/CSA–G30.18–M. GRADE 400W.

STAINLESS STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A276 AND A955/A955M (INCLUDING ANNEXES) WITH MINIMUM YIELD STRENGTH OF 420 MPa.

BAR MARK SUFFIX SS DENOTES SOLID STAINLESS STEEL BARS.

WELDING OF REINFORCEMENT IS NOT PERMITTED WITHOUT THE WRITTEN APPROVAL FROM THE ENGINEER.

STRUCTURAL STEEL & MISC METAL

PILES: STEEL SHALL CONFORM TO CAN/CSA–G40.21 GRADE 350W.

ALL STEEL FOR GIRDERS, STIFFENERS, SPLICE PLATES, AND ALL MATERIALS WELDED TO THE GIRDERS, INCLUDING PLATES EMBEDDED IN PRECAST CONCRETE ABUTMENT DIAPHRAGM FOR GIRDER CONNECTIONS, SHALL CONFORM TO CSA G40.21M–350AT, CATEGORY 4, WITH CHARPY V–NOTCH STRENGTH OF 27 JOULES AT –45°C. 1

ALL OTHER STEEL INCLUDING DIAPHRAGM ELEMENTS AND LATERAL BRACINGS SHALL CONFORM TO CSA G40.21M–350A.

SHEAR STUDS (EXCEPT STAINLESS STEEL STUDS IN ABUTMENT SEAT SHEAR BLOCKS):
ASTM STANDARD A108, GRADES 1015, 1018, OR 1020, AND CONFORMING TO AWS D1.5 TABLE 7.1 FOR TYPE B STUDS

BOLTS:
STRUCTURAL BOLTS TO WEATHERING STEEL APPLICATIONS SHALL BE ASTM A325M – TYPE 3;
STRUCTURAL BOLTS TO GALVANIZED STEEL APPLICATIONS SHALL BE A325M – TYPE 1 GALVANIZED IN ACCORDANCE WITH ASTM F2329

NUTS AND WASHERS FOR GIRDERS:
MARKED WITH A "3" TO DENOTE WEATHERING GRADE

USE TWO WASHERS FOR ALL CONNECTIONS.

BRIDGERAIL AND APPROACH RAIL TRANSITION MATERIALS SHALL BE IN ACCORDANCE WITH ALBERTA TRANSPORTATION STANDARD DRAWING S–1642–20.

ALL MATERIALS AND CONNECTIONS ARE DESIGNED BASED ON METRIC UNITS. CHANGING TO IMPERIAL UNITS SHALL NOT BE DONE WITHOUT APPROVAL FROM THE ENGINEER. IMPERIAL SIZE COMPONENTS LARGER THAN METRIC SPECIFIED SHALL NOT BE AN EXTRA COST TO THE CONTRACT.

GALVANIZED COMPONENTS:
ALL COMPONENTS, EXCEPT WEATHERING STEEL, SHALL BE HOT DIP GALVANIZED, IN ACCORDANCE WITH ASTM A123M WITH A MINIMUM NET RETENTION OF 600 g/m^2, UNO.

GRIND ALL WELDS SMOOTH BEFORE GALVANIZING.

FIELD WELDS AND DAMAGED AREAS OF GALVANIZING SHALL BE METALLIZED IN ACCORDANCE WITH SSBC SECTION 6.2.7.3.3

EMBEDDED GALVANIZED STEEL ELEMENTS IN CONTACT WITH PLAIN OR STAINLESS REINFORCING STEEL SHALL BE SEPARATED BY PLASTIC ISOLATOR CLIPS OR APPROVED EQUIVALENT. WEATHERING STEEL COMPONENTS IN CONTACT WITH GALVANIZED ELEMENTS SHALL BE ISOLATED USING AN APPROVED COATING.

SEE SPECIFICATIONS AND THE DRAWINGS FOR FABRICATION AND INSTALLATION DETAILS, AND MATERIALS NOT SPECIFIED ABOVE.

STEEL GIRDERS

ALL BOLTED CONNECTIONS SHALL BE MADE WITH 22 mm DIAMETER UNO. BOLTED CONNECTIONS SHALL BE DETAILED WITH THREAD EXCLUDED FROM THE SHEAR PLANE.

THE ESTIMATED MASS OF THE STEEL GIRDER (GIRDERS AND DIAPHRAGMS BUT NOT BEARINGS, STUDS, BOLTS, ETC.) IS 23 TONNES. THIS ESTIMATE IS FOR THE GOVERNMENT OF NORTHWEST TERRITORIES USE ONLY AND THE DEPARTMENT ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY OR USE BY OTHERS.

DESIGN

DISTRIBUTION FACTORS

SHEAR (ULS, SLS)	=	0.647
BENDING (ULS, SLS)	=	0.578
SHEAR (FLS)	=	0.611
BENDING (FLS)	=	0.398
DEAD LOAD:		
GIRDER	=	6.66 kN/m (MID–SPAN) / 6.26 kN/m (END SPAN) PER GIRDER
DECK AND HAUNCH	=	18.3 kN/m PER GIRDER

FATIGUE: ACCORDING TO CAN/CSA–S6–19, HIGHWAY CLASS A

ASSUMED CONSTRUCTION LOADS = 1.5 kPa

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW CONSTRUCTION PLANS, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE NORTHWEST TERRITORIES INDICATING ALL LOADS, PROPOSED METHODS AND SEQUENCES OF CONSTRUCTION, AND ANY TEMPORARY SUPPORT SYSTEMS REQUIRED. THE SUBMISSION SHALL VERIFY THAT THE GIRDERS ARE CAPABLE OF RESISTING THE ACTUAL LOADS SAFELY AND WITHOUT DAMAGE.

FABRICATION

FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH SSBC.

ALL GIRDER DIMENSIONS ARE CORRECT AT 20°C AND GIRDER LENGTHS ARE MEASURED ALONG THE BOTTOM FLANGE.

ALL WELDING, CUTTING AND PREPARATION SHALL BE IN ACCORDANCE WITH THE AWS BRIDGE WELDING CODE, D1.5.

BEARING STIFFENERS UNDER FULL BRIDGE DEAD LOAD SHALL BE VERTICAL. INTERMEDIATE WEB STIFFENERS AND DIAPHRAGM CONNECTION STIFFENERS SHALL BE INSTALLED PERPENDICULAR TO THE GIRDER FLANGES.

THE CONTRACTOR SHALL SUBMIT WELD SIZES AND WELDING PROCEDURE TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.

ALL WELD METAL DEPOSITS SHALL HAVE CHARPY V NOTCH IMPACT STRENGTH OF AT LEAST 27 JOULES AT –45°C. ALL WELD METAL DEPOSITS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER AND SHALL PRODUCE BOTH THE CORROSION RESISTANCE AND THE COLOUR PROPERTIES OF THE BASE METAL.

ALL BOLT HOLES SHALL BE DRILLED 2 mm LARGER THAN THE SPECIFIED BOLT DIAMETER UNLESS NOTED OTHERWISE.

TIGHTENING OF ALL HIGH STRENGTH BOLTS SHALL BE DONE BY THE TURN OF NUT METHOD ONLY IN ACCORDANCE WITH SSBC. BEFORE FINAL TIGHTENING THERE SHALL BE A SUFFICIENT NUMBER OF BOLTS BROUGHT TO A SNUG TIGHT CONDITION TO ENSURE THAT PARTS OF THE JOINT ARE BROUGHT INTO FULL CONTACT WITH EACH OTHER.

GIRDERS SHALL MEET THE CAMBER REQUIREMENTS AS SHOWN ON GIRDER CAMBER DIAGRAM.

ALL STEEL SHALL BE BLAST CLEANED AFTER FABRICATION IN ACCORDANCE WITH SSBC SECTION 6.2.7.1

TEMPORARY SUPPORT

THE CONTRACTOR SHALL INSTALL TEMPORARY SUPPORTING STRUCTURES TO MAINTAIN THE GIRDER'S STABILITY SOON AFTER THE GIRDERS ARE ERECTED.

GIRDERS SHALL BE TEMPORARILY RESTRAINED SOON AFTER BEING PLACED ON THE BEARINGS AND PRIOR TO RELEASING THE LIFTING DEVICE TO AVOID SLIDING. THE RESTRAINING SYSTEM SHALL REMAIN IN PLACE UNTIL BACKFILL WITH COMPACTION BEHIND ABUTMENT DIAPHRAGMS IS MINIMUM 1.2 m ABOVE THE BOTTOM OF THE DIAPHRAGMS TO RETAIN THE SLIDING FORCE.

INSPECTION & NON–DESTRUCTIVE TESTING

WELD INSPECTION AND TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH SSBC.

BRIDGE ELEMENTS LIFTING & ERECTION

THE CONTRACTOR SHALL SUBMIT GIRDER AND PRECAST CONCRETE ELEMENT LIFTING AND ERECTION PROCEDURES TO THE ENGINEER FOR REVIEW AT LEAST 2 WEEKS PRIOR TO THE WORKS AS PER THE CONTRACT SPECIAL PROVISION AND SSBC.

THE LIFTING AND ERECTION PROCEDURES FOR ALL BRIDGE ELEMENTS SHALL BE DESIGNED, STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE NORTHWEST TERRITORIES.

HYDROTECHNICAL DATA

HYDROTECHNICAL DESIGN REPORT PREPARED BY MATRIX SOLUTIONS INC. DATED JANUARY 16, 2024.

DESIGN FLOOD RETURN PERIOD: 1:100 YEAR
DESIGN FLOW: 210 m^3/s
DESIGN WATER LEVEL: 205.10 m
DESIGN VELOCITY: 2.1 m/s

GEOTECHNICAL

GEOTECHNICAL REPORT WAS COMPLETED BY MASKWA ENGINEERING LTD., DATED OCTOBER 30, 2023.

SURVEY

TOPOGRAPHICAL SURVEY WAS COMPLETED BY STANTEC CONSULTING LTD. IN 2019. SUPPLEMENTAL TOPOGRAPHICAL SURVEY WAS COMPLETED BY MASKWA ENGINEERING LTD. IN JUNE 2023.

BRIDGE CONSTRUCTION SEQUENCE

BELOW IS A GENERAL DESCRIPTION OF THE CONSTRUCTION SEQUENCE ASSUMED FOR THE PURPOSE OF THE DESIGN OF THE WORKS. IT IS NOT A DETAILED WORK PLAN AND HIGHLIGHTS ONLY CERTAIN ACTIVITIES REQUIRED TO COMPLETE THE WORK. SPECIFIC WORK PLANNING AND DETAILS OF THE CONSTRUCTION EXECUTION AND SCHEDULING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE CONTRACTOR'S PLAN IS SUBJECT TO THE REVIEW AND ACCEPTANCE OF THE ENGINEER AS WELL AS OTHER AUTHORITIES HAVING JURISDICTION.

AN ALTERNATE SEQUENCE PLAN WILL BE GIVEN CONSIDERATION BY THE ENGINEER SO LONG AS THE CONTRACTOR SUBMITS A COMPLETE PROPOSAL FOR REVIEW. SUCH AN ALTERNATIVE SEQUENCE PLAN MAY OR MAY NOT BE GIVEN ACCEPTANCE BY THE ENGINEER AND THE ENGINEER'S RULING SHALL GOVERN.

- SURVEY EXISTING BRIDGE PILE ROW LOCATIONS AS PER DRAWING S005 AND S006 (SHEET 27 AND 28);
- BUILD DETOUR ROAD AND TEMPORARY BRIDGE;
- REMOVE THE EXISTING BRIDGE;
- INSTALL PILES;
- INSTALL ABUTMENT SEATS AND UHPC CONNECTION JOINTS;
- INSTALL SLEEPER BEAM (FLEXIBLE STAGE AS DETERMINED BY THE CONTRACTOR);
- INSTALL HEAD SLOPE AND RIPRAP (FLEXIBLE STAGE AS DETERMINED BY THE CONTRACTOR);
- INSTALL BEARINGS, BUT DO NOT GROUT THE BEARING POCKETS;
- INSTALL GIRDERS AND PROVIDE GIRDER TEMPORARY STABILITY SUPPORTS, ALSO INCLUDING THE SUPPORT SYSTEM TO PREVENT GIRDER LONGITUDINAL SLIDING. THE LONGITUDINAL SUPPORT SYSTEM TO STAY IN PLACE UNTIL BACKFILL BEHIND ABUTMENTS IS COMPLETED;
- INSTALL GIRDER INTERMEDIATE DIAPHRAGMS;
- GROUT BEARING POCKETS;
- INSTALL PRECAST CONCRETE ABUTMENT DIAPHRAGMS;
- INSTALL PRECAST CONCRETE WINGWALLS WITH TEMPORARY SUPPORTS (LATERALLY AND VERTICALLY) AND UHPC CONNECTION JOINTS;
- BACKFILL BEHIND ABUTMENTS UP TO 1.2 m ABOVE BOTTOM OF ABUTMENT DIAPHRAGMS WITH BALANCED METHOD SPECIFIED IN THE DRAWINGS;
- INSTALL PRECAST CONCRETE DECK PANELS AND UHPC CONNECTION JOINTS;
- COMPLETE BACKFILL AND INSTALL APPROACH SLAB ELEMENTS AND UHPC CONNECTION JOINTS;
- INSTALL BRIDGERAILS AND APPROACH RAIL POSTS;
- INSTALL CIP CONCRETE DRAIN TROUGHS

IN ADDITION TO SUBMITTING EXISTING BRIDGE PILE ROW SURVEY DATA, THE CONTRACTOR SHALL HAVE THE BEARINGS DESIGNED AND SUBMIT THE SHOP DRAWINGS AT AN EARLIEST POSSIBLE TIME FOR THE ENGINEER'S REVIEW PRIOR TO THE FABRICATION OF BRIDGE ELEMENTS THAT ARE RELATED TO ACTUAL BEARING ASSEMBLY SIZES.

LEGEND & ABBREVIATIONS

BH (symbol)	BOREHOLE	GALV	GALVANIZED
℄	CENTRELINE	HPC	HIGH PERFORMANCE CONCRETE
⊗	STUD WELDING	HORIZ	HORIZONTAL
▲	SURVEY CONTROL POINT	HWY	HIGHWAY
∇	WATER LEVEL	INT	INTERIOR
WP (symbol)	WORK POINT	LG	LONG
ABUT	ABUTMENT	MIN	MINIMUM
AIFB	ASPHALT IMPREGNATED FIBREBOARD	MISC	MISCELLANEOUS
APP	APPROACH	NOM	NOMINAL
B/W	BETWEEN	NTS	NOT TO SCALE
BRG	BEARING	OH	OVERHEAD FIBRE OPTIC LINE 1
BOTT	BOTTOM	PL	PLATE
C/W	COMPLETE WITH	PROJ	PROJECTION
CIP	CAST–IN–PLACE	QTY	QUANTITY
CJ	CONSTRUCTION JOINT	SIM	SIMILAR
CLR	CLEAR	SS	STAINLESS STEEL BAR
CONT	CONTINUOUS	STA	STATION
CSP	CORRUGATED STEEL PIPE	SYM	SYMMETRICAL
DIA	DIAMETER	TYP	TYPICAL
DIAPH	DIAPHRAGM	UHPC	ULTRA HIGH PERFORMANCE CONCRETE
EL	ELEVATION	UNO	UNLESS NOTED OTHERWISE
EX	EXISTING	VERT	VERTICAL
EXT	EXTERIOR	WSC	WATER SURVEY OF CANADA
FO	FIBRE OPTIC CABLE (BURIED)	WW	WINGWALL

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories
HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2
JEAN MARIE RIVER BRIDGE
GENERAL NOTES

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
6446506 CANADA INC. O/A JACOBS CONSULTANCY CANADA INC.
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROJECT No.	SHEET No.	DRAWING No.	
CE857700	24 OF 55	SC–INF01–6081–S002	1

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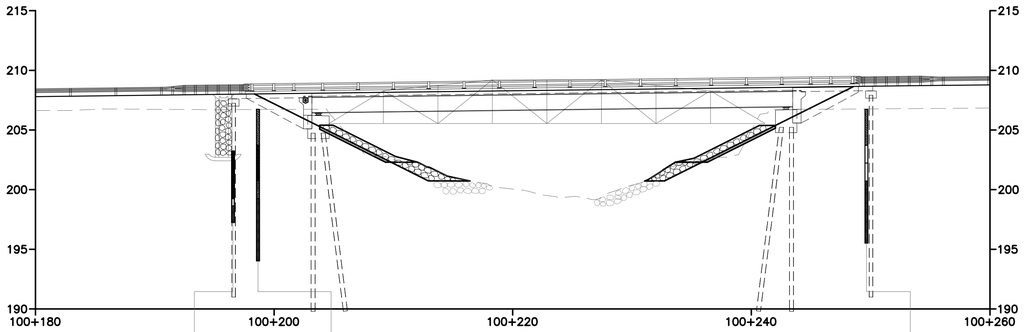
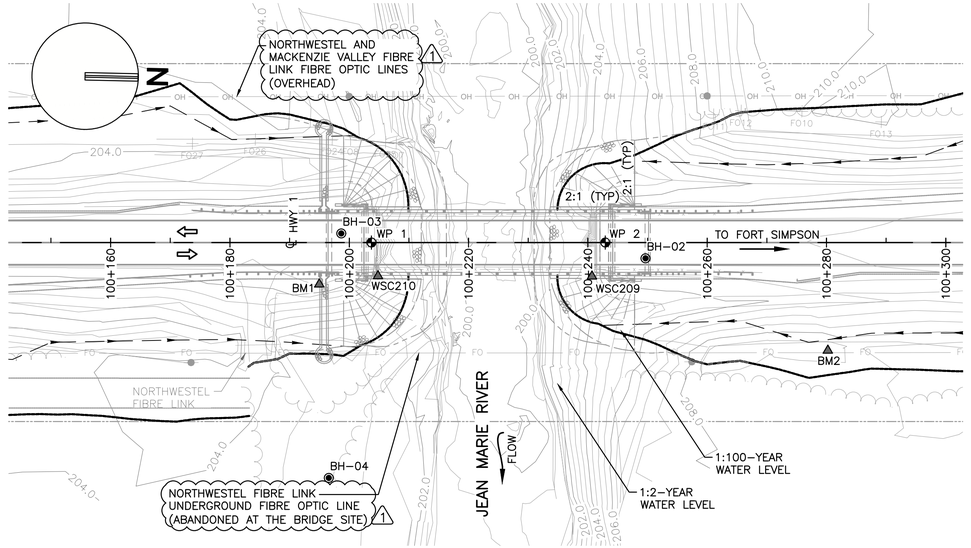
PLOTTED : Friday, December 6, 2024



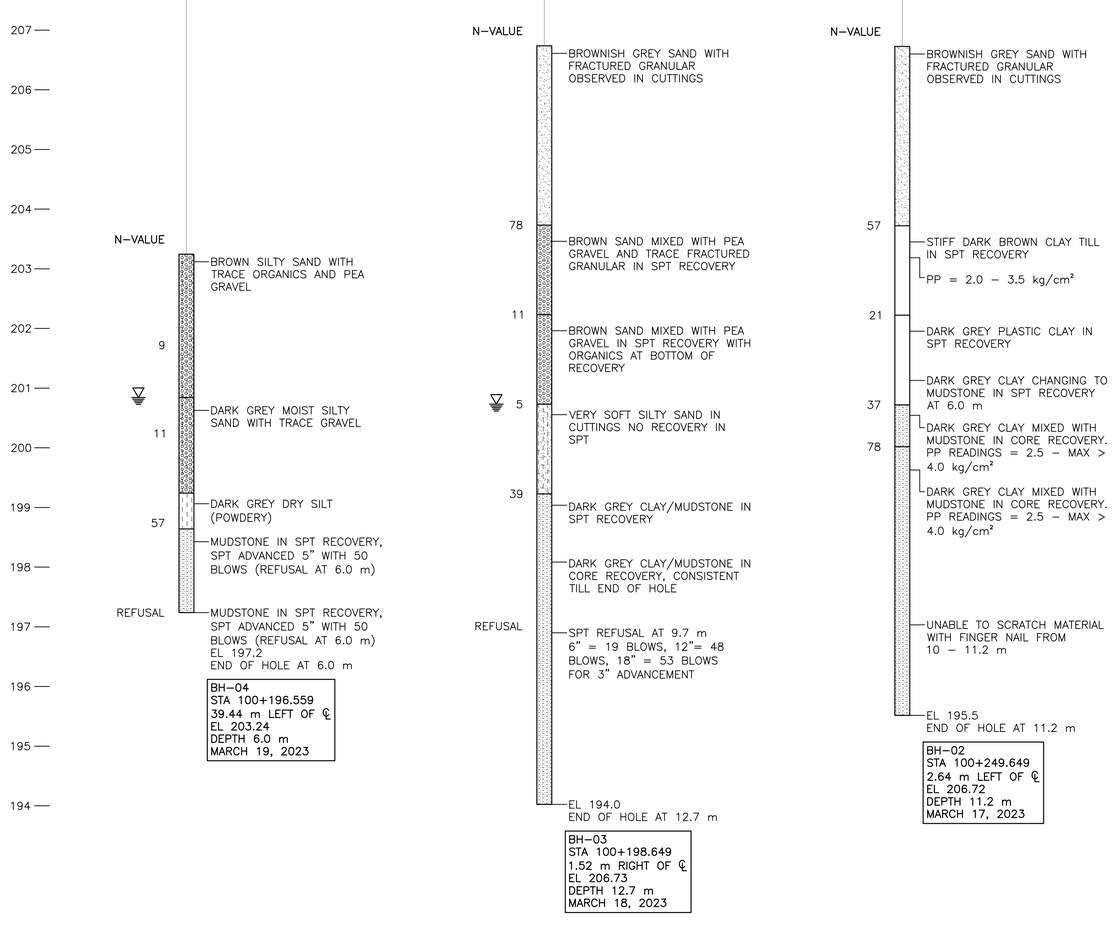
BRIDGE ELEVATION

SCALE 1:250



SITE PLAN

SCALE 1:500



BOREHOLE LOGS

SCALE 1:50

NOTES

1. ALL GEOTECHNICAL INFORMATION PROVIDED FOR THIS PROJECT HAS BEEN COMPILED FOR THE GOVERNMENT OF NORTHWEST TERRITORIES FOR DESIGN PURPOSES ONLY. WHILE IT IS BELIEVED TO CORRECTLY REPRODUCE OR SUMMARIZE OBSERVATIONS MADE DURING TESTING, IT IS ONLY VALID FOR THE PRECISE LOCATION(S) SHOWN, AND IS NOT TO BE CONSTRUED AS GUARANTEEING THE ACTUAL MATERIALS AND CONDITIONS EXISTING THROUGHOUT THE SITE. THE TESTING METHODS USED MAY NOT HAVE DETERMINED THE PRESENCE, ABSENCE OR EXTENT OF BOULDERS, HARD OR SOFT FORMATIONS, WATER TABLES, ARTESIAN CONDITIONS AND OTHER VARIABLES. IT IS THE RESPONSIBILITY OF OTHERS USING THIS INFORMATION TO ENSURE THAT IT IS ADEQUATE FOR THEIR PURPOSES, OR TO SUPPLEMENT IT WITH ADDITIONAL INFORMATION.
2. THE INFORMATION IS COMPILED FOR CONVENIENCE FROM HIGHWAY 1 JEAN MARIE RIVER BRIDGE REPLACEMENT GEOTECHNICAL INVESTIGATION REPORT BY MASKWA ENGINEERING LTD. ALL DISCLAIMERS IN THIS REPORT ARE APPLICABLE. REFER TO REPORT FOR FULL GEOTECHNICAL INFORMATION AND IN CASE OF DISCREPANCY THE GEOTECHNICAL REPORT GOVERNS.
3. FOR PILE DRIVING REFUSAL CRITERIA REFER TO THE GEOTECHNICAL REPORT BY MASKWA ENGINEERING LTD.

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024-12-06	ISSUED FOR CONSTRUCTION	YL
0	2024-07-19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

GEOTECHNICAL INFORMATION SHEET

DESIGNED	YL	DATE	2024-12-06
CHECKED	JZ	DATE	2024-12-06
DRAWN	KK	DATE	2024-12-06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
84690B CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature
Date: 6 Dec 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF

YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024-12-06

PROFESSIONAL ENGINEER
YING YI LI
R7153
2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.	
CE857700	25 OF 55	SC-INF01-6081-S003	1

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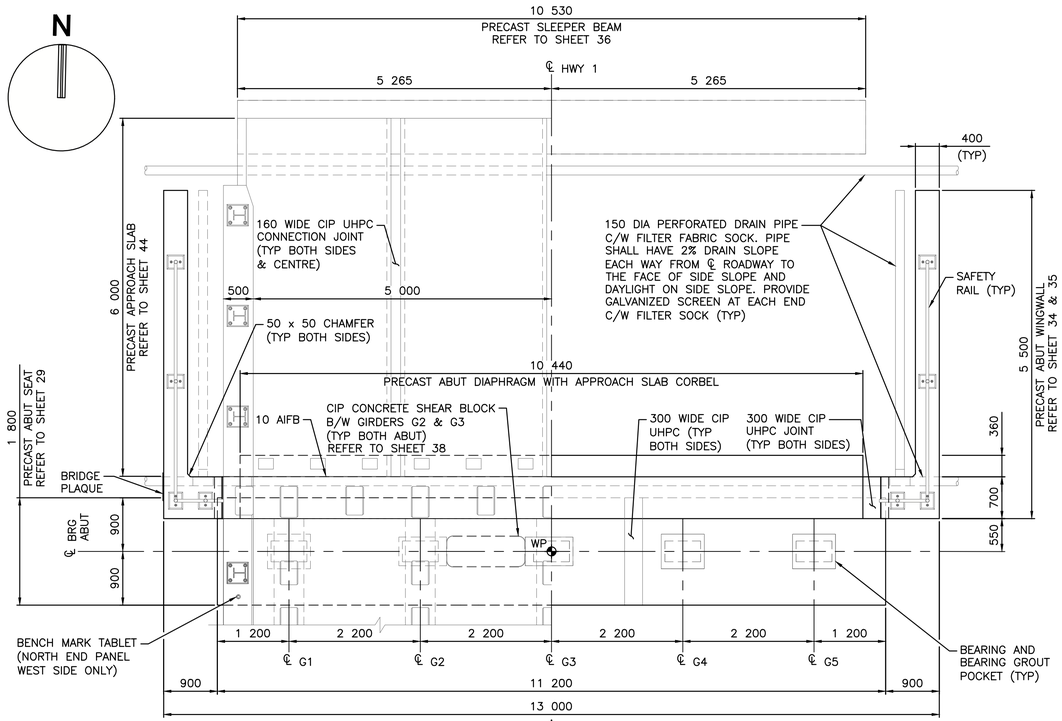
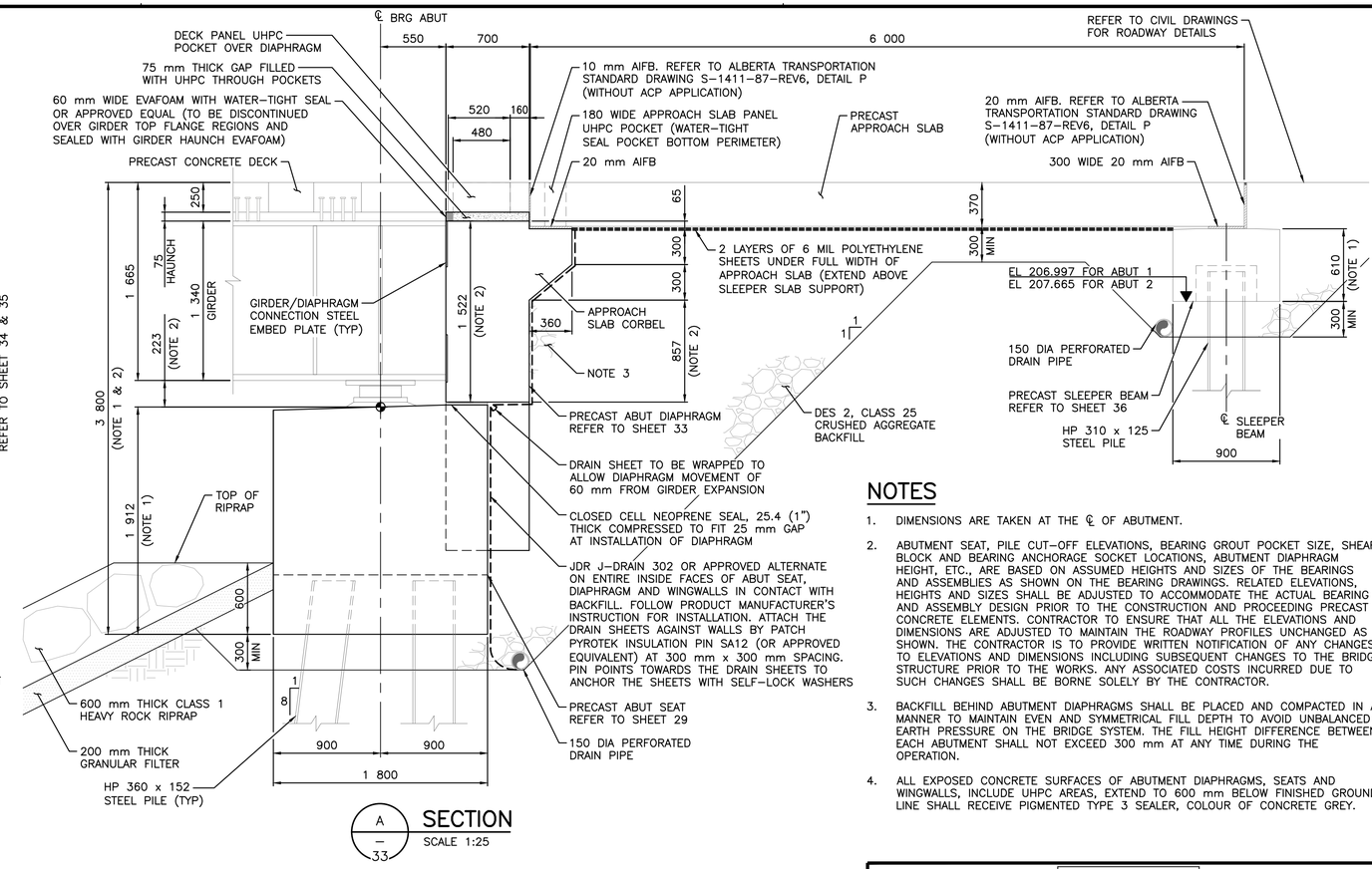
PLOTTED: Friday, December 6, 2024



ABUTMENT PLAN

SCALE 1:50 ABUT 2 (NORTH) SHOWN
ABUT 1 (SOUTH) SIMILAR

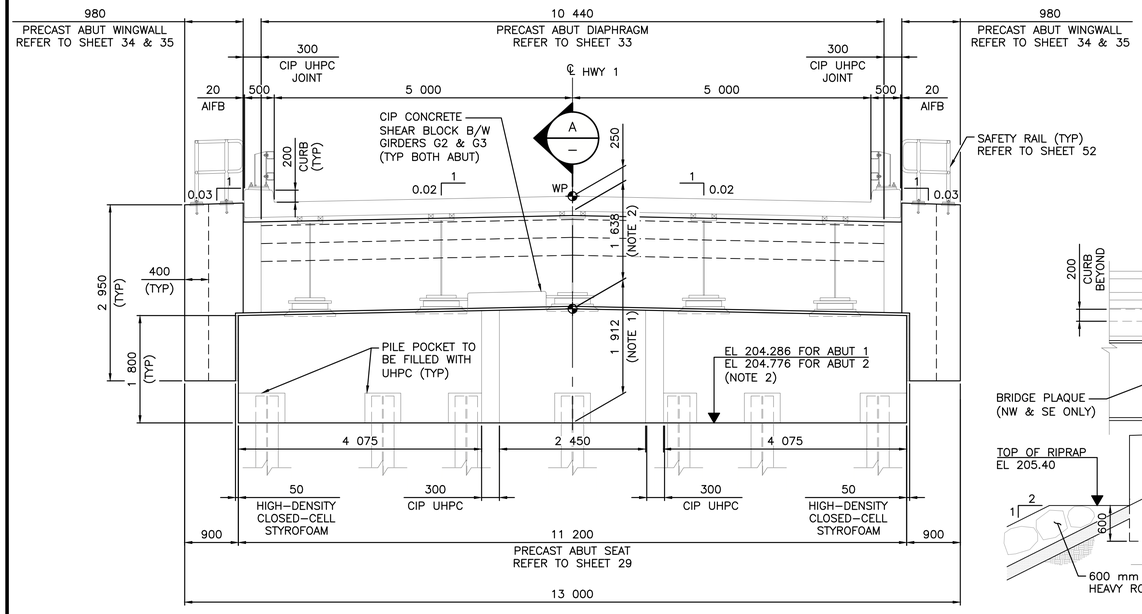


SECTION

A – 33
SCALE 1:25

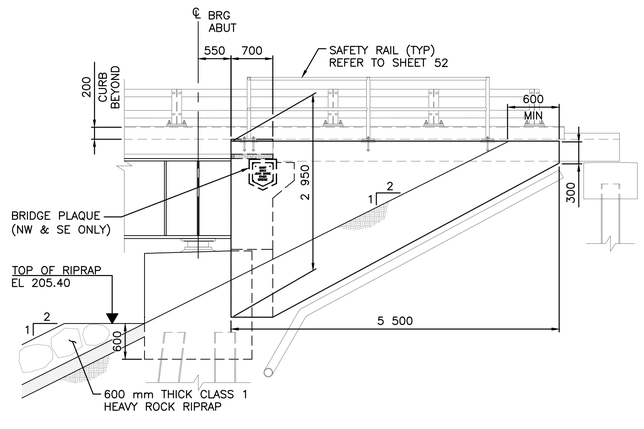
NOTES

1. DIMENSIONS ARE TAKEN AT THE ℄ OF ABUTMENT.
2. ABUTMENT SEAT, PILE CUT–OFF ELEVATIONS, BEARING GROUT POCKET SIZE, SHEAR BLOCK AND BEARING ANCHORAGE SOCKET LOCATIONS, ABUTMENT DIAPHRAGM HEIGHT, ETC., ARE BASED ON ASSUMED HEIGHTS AND SIZES OF THE BEARINGS AND ASSEMBLIES AS SHOWN ON THE BEARING DRAWINGS. RELATED ELEVATIONS, HEIGHTS AND SIZES SHALL BE ADJUSTED TO ACCOMMODATE THE ACTUAL BEARING AND ASSEMBLY DESIGN PRIOR TO THE CONSTRUCTION AND PROCEEDING PRECAST CONCRETE ELEMENTS. CONTRACTOR TO ENSURE THAT ALL THE ELEVATIONS AND DIMENSIONS ARE ADJUSTED TO MAINTAIN THE ROADWAY PROFILES UNCHANGED AS SHOWN. THE CONTRACTOR IS TO PROVIDE WRITTEN NOTIFICATION OF ANY CHANGES TO ELEVATIONS AND DIMENSIONS INCLUDING SUBSEQUENT CHANGES TO THE BRIDGE STRUCTURE PRIOR TO THE WORKS. ANY ASSOCIATED COSTS INCURRED DUE TO SUCH CHANGES SHALL BE BORNE SOLELY BY THE CONTRACTOR.
3. BACKFILL BEHIND ABUTMENT DIAPHRAGMS SHALL BE PLACED AND COMPACTED IN A MANNER TO MAINTAIN EVEN AND SYMMETRICAL FILL DEPTH TO AVOID UNBALANCED EARTH PRESSURE ON THE BRIDGE SYSTEM. THE FILL HEIGHT DIFFERENCE BETWEEN EACH ABUTMENT SHALL NOT EXCEED 300 mm AT ANY TIME DURING THE OPERATION.
4. ALL EXPOSED CONCRETE SURFACES OF ABUTMENT DIAPHRAGMS, SEATS AND WINGWALLS, INCLUDE UHPC AREAS, EXTEND TO 600 mm BELOW FINISHED GROUND LINE SHALL RECEIVE PIGMENTED TYPE 3 SEALER, COLOUR OF CONCRETE GREY.



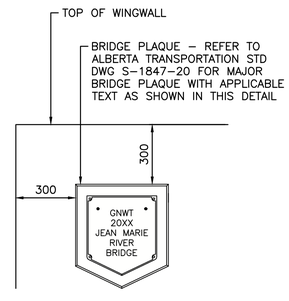
ABUTMENT ELEVATION

SCALE 1:50 ABUT 1 (SOUTH) SIMILAR
ABUT 2 (NORTH) SHOWN



WINGWALL ELEVATION

SCALE 1:50 NE & SW SHOWN,
NW & SE ON OPPOSITE



NOTE: 20XX IS THE YEAR OF
THE BRIDGE TO BE BUILT

BRIDGE PLAQUE

NTS (TO BE PRE–INSTALLED IN PRECAST CONCRETE WINGWALL ON NW & SE ELEMENTS AND EXPOSED FACE TO BE PROTECTED WITH TEMPORARY PLASTIC COVER SHEET UNTIL ELEMENT INSTALLED)

Government of Northwest Territories

Consultant Logo

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Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

ABUTMENT LAYOUT

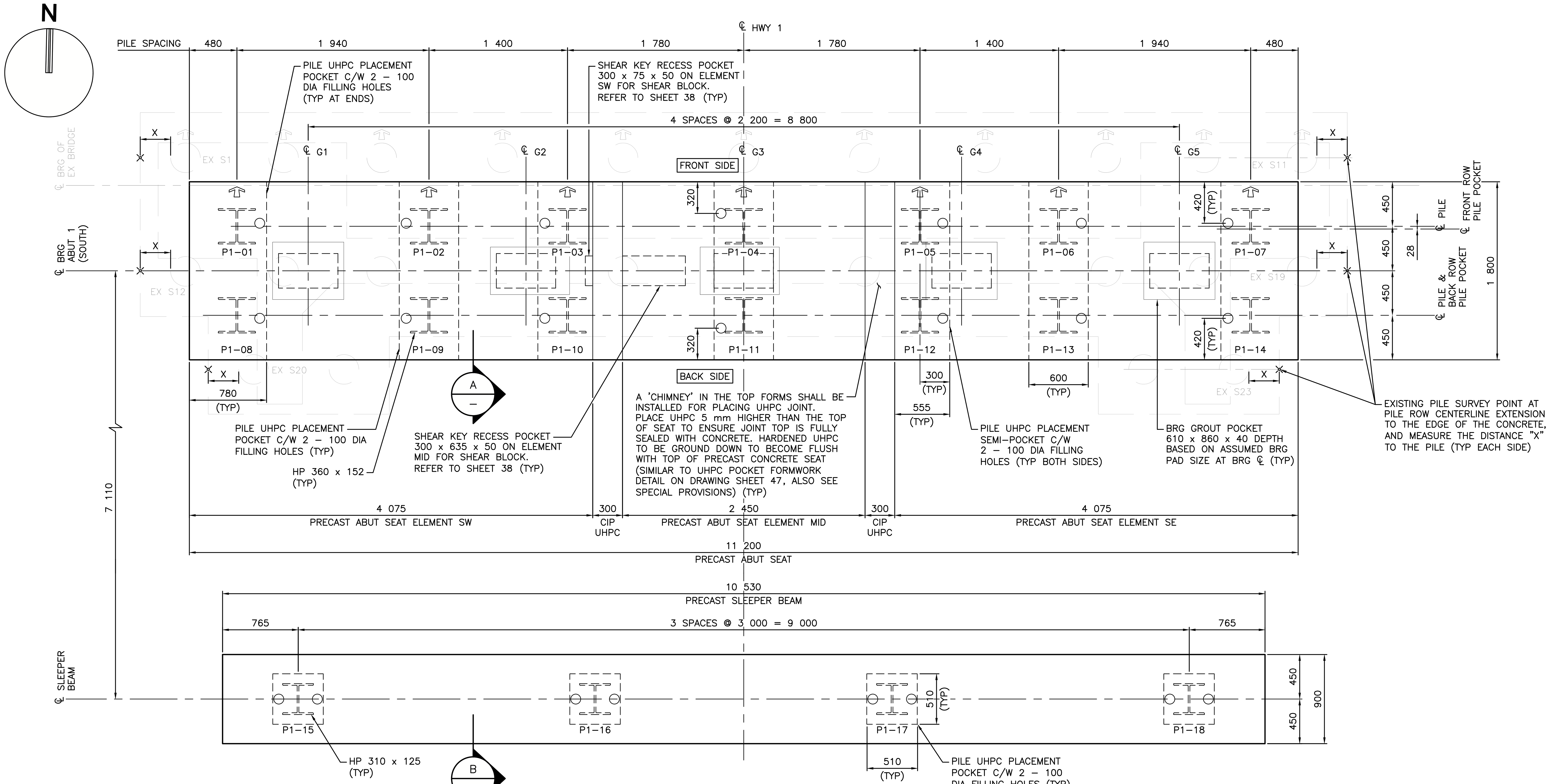
DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
8495696 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature ____ Date 4 Dec 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06
2024 Dec 06

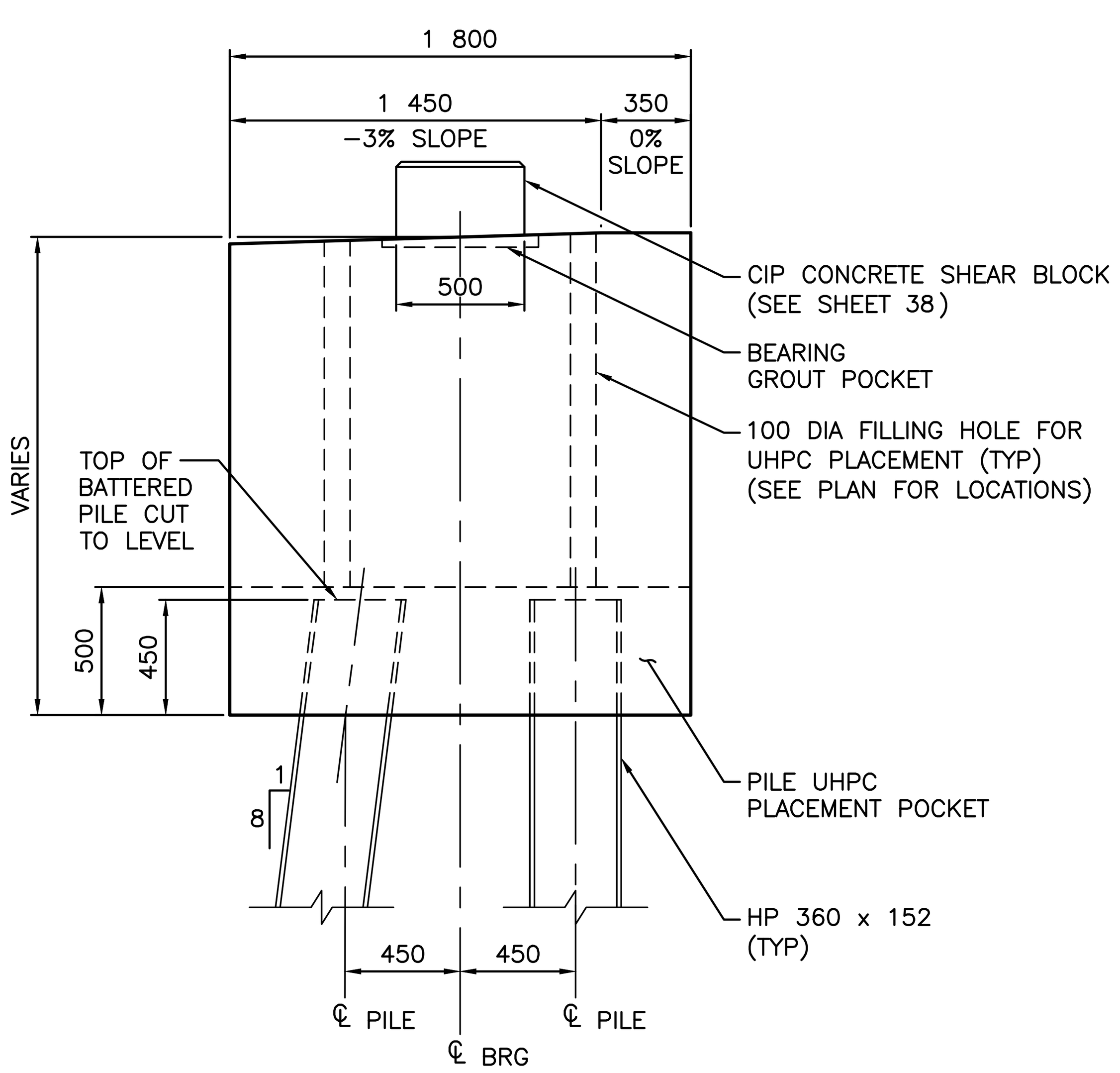
PROJECT No.	SHEET No.	DRAWING No.
CE857700	26 OF 55	SC–INF01–6081–S004 1

FILE: C:\pw_workdir\jacobs-us-vs-pw-02\dms92401a\S004.dwg
PLOTTED: Friday, December 6, 2024

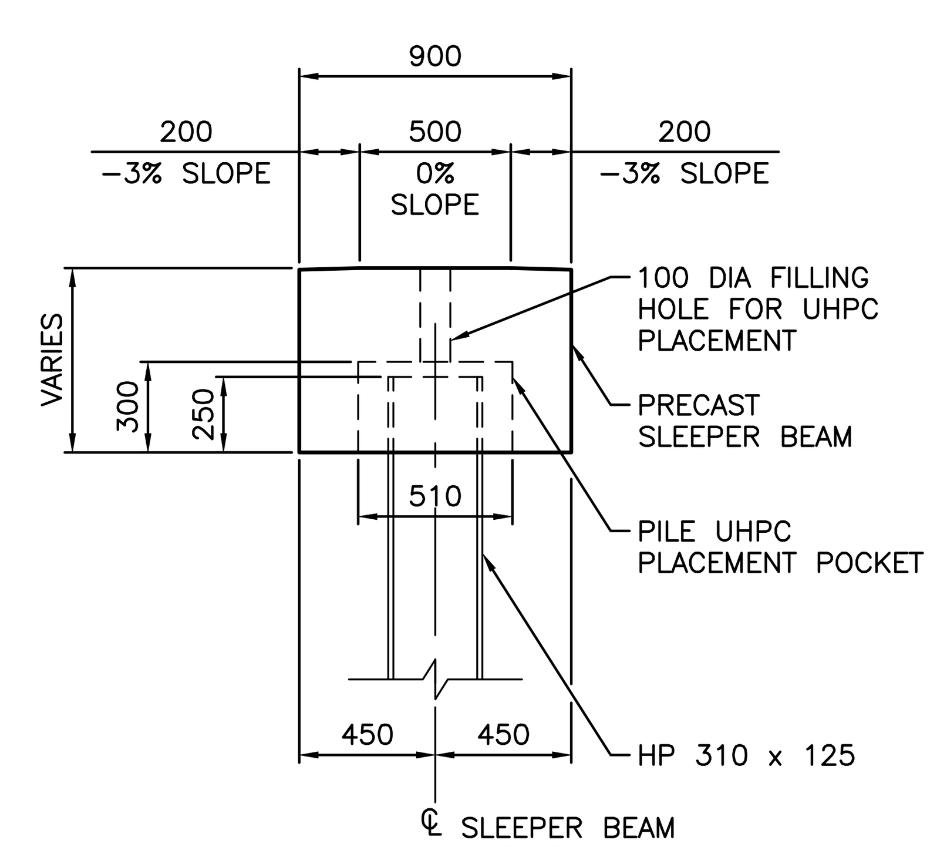


FOUNDATION LAYOUT – ABUTMENT 1

SCALE 1:25 (SHEAR BLOCK NOT SHOWN FOR CLARITY)



A – 28 29 **SECTION** SCALE 1:25



B – 28 36 **SECTION** SCALE 1:25

LEGEND

- 8V:1H BATTERED PILE
- 4V:1H EXISTING BATTERED PILE
- NEW BRIDGE STRUCTURE
- EXISTING BRIDGE FOUNDATION WITH 305 mm DIAMETER x 7.62 m LONG TIMBER PILES

NOTES

1. THE EXISTING BRIDGE FOUNDATION LAYOUT SHOWN IN THIS DRAWING AND NEXT DRAWING ARE BASED ON THE EXISTING BRIDGE RECORD DRAWINGS. ACTUAL EXISTING PILE LOCATIONS FOR BOTH ABUTMENTS MAY DIFFER FROM THESE LAYOUTS. PRIOR TO FABRICATION OF ABUTMENT PRECAST CONCRETE SEAT ELEMENTS, THE CONTRACTOR SHALL TEMPORARILY EXCAVATE ALONG THE SIDES OF THE EXISTING BRIDGE ABUTMENT FOUNDATIONS TO EXPOSE THE TOP OF THE EXTERIOR PILES AND SURVEY EACH ROW OF THE EXISTING PILES LOCATIONS AT THE REQUIRED SURVEY POINTS NOTED ON THE DRAWINGS AND PROVIDED THE DATA SHOWN IN THE "PILE SCHEDULE – EXISTING PILES" FOR EACH ABUTMENT. THE SURVEY DATA SHALL BE SUBMITTED TO THE ENGINEER IMMEDIATELY AFTER THE SURVEY. THE TEMPORARY EXCAVATION FOR THE EXISTING PILE SURVEY SHALL BE BACKFILLED TO ITS ORIGINAL CONDITION IMMEDIATELY AFTER THE SURVEY. THE ENGINEER WILL COMPARE THE ROWS OF EXISTING PILES AGAINST THE ROWS OF THE NEW PILES ON THE FOUNDATION LAYOUTS. IF THE EXISTING ROWS OF PILES DO NOT MATCH THE DRAWINGS AND ARE EXPECTED TO CONFLICT WITH NEW PILE INSTALLATION, PILE LOCATION ADJUSTMENT SHALL BE MADE AS NECESSARY BY THE ENGINEER. THERE SHALL BE NO ADDITIONAL COST TO THE CONTRACT IF SUCH ADJUSTMENT IS MADE. FABRICATION OF PRECAST ABUTMENT SEATS IS A HOLD POINT FOR THE SURVEY AND THE ENGINEER'S REVIEW OF THE SURVEY DATA.
2. PILES SHALL BE DRIVEN TO, BUT NOT PAST PRACTICAL REFUSAL TO AVOID DAMAGE. THE PRACTICAL REFUSAL IS DETERMINED AS 10 BLOWS PER 25 mm FOR THE LAST 250 mm, OR AS SPECIFIED BY THE ENGINEER'S REPRESENTATIVE – A QUALIFIED GEOTECHNICAL ENGINEER.
3. PILE TIP REINFORCEMENT SHALL BE PROVIDED FOR ALL PILES.
4. REFER TO ALBERTA TRANSPORTATION STANDARD DRAWING S–1850–20 FOR PILE SPLICE AND TIP REINFORCEMENT DETAILS FOR THE STEEL PILES.
5. PILES SHALL NOT BE DRIVEN WITH A VARIATION OF MORE THAN 50 mm FROM THE HORIZONTAL POSITION SHOWN ON THE DRAWINGS TO ENSURE THE PILES FIT IN THE PRECAST ABUTMENT SEAT POCKETS. ANY PILE OUT OF THE SPECIFIED TOLERANCE SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE TO THE FULL SATISFACTION OF THE ENGINEER.
6. ALL EXISTING BRIDGE TIMBER PILES SHALL BE CUT TO MINIMUM 0.3 m BELOW BOTTOM OF NEW ABUTMENT SEAT, EXCEPT FRONT ROWS OF EXISTING PILES, WHICH SHALL BE CUT TO MINIMUM 1.0 m BELOW THE NEW FINISHED SOIL GROUND (BOTTOM OF RIPRAP).
7. PILE DESIGN LOADS AS BELOW:
   ABUTMENT SEAT PILES
   SLS PERMANENT LOADS ONLY: 500 kN
   SLS EXTREME LOADS (COMBINATION # 1): 700 kN
   ULS PERMANENT LOADS ONLY: 560 kN
   ULS EXTREME LOADS (COMBINATION # 1): 905 kN
   ABUTMENT SLEEPER BEAM PILES
   SLS PERMANENT LOADS ONLY: 150 kN
   SLS EXTREME LOADS (COMBINATION # 1): 450 kN
   ULS PERMANENT LOADS ONLY: 165 kN
   ULS EXTREME LOADS (COMBINATION # 1): 510 kN
8. PDA TESTING SHALL BE COMPLETED ON PILES P–01, P1–04, P1–07, P2–01, P2–04 AND P2–07

PILE SCHEDULE – ABUTMENT 1

PILE MARK	NORTHING	EASTING	CUT OFF ELEVATION	APPROXIMATE TIP ELEVATION	PILE LENGTH
P1–01	6813599.86	593969.35	204.736	189.800	14.936
P1–02	6813599.90	593971.29	204.736	189.800	14.936
P1–03	6813599.93	593972.69	204.736	189.800	14.936
P1–04	6813599.97	593974.47	204.736	189.800	14.936
P1–05	6813600.01	593976.25	204.736	189.800	14.936
P1–06	6813600.04	593977.65	204.736	189.800	14.936
P1–07	6813600.09	593979.58	204.736	189.800	14.936
P1–08	6813598.96	593969.37	204.736	189.800	15.052
P1–09	6813599.00	593971.31	204.736	189.800	15.052
P1–10	6813599.03	593972.71	204.736	189.800	15.052
P1–11	6813599.07	593974.49	204.736	189.800	15.052
P1–12	6813599.11	593976.27	204.736	189.800	15.052
P1–13	6813599.14	593977.67	204.736	189.800	15.052
P1–14	6813599.19	593979.60	204.736	189.800	15.052
P1–15	6813592.32	593970.13	207.247	191.000	16.247
P1–16	6813592.38	593973.13	207.247	191.000	16.247
P1–17	6813592.45	593976.13	207.247	191.000	16.247
P1–18	6813592.52	593979.13	207.247	191.000	16.247

PILE SCHEDULE – EXISTING PILES

PILE MARK	NORTHING*	EASTING*	NORTHING**	EASTING**	OFFSET "X"
EX S1	6813600.54	593968.81			
EX S11	6813600.79	593980.09			
EX S12	6813599.39	593968.84			
EX S19	6813599.64	593980.11			
EX S20	6813598.42	593969.55			
EX S23	6813598.64	593979.45			

NOTE:

* THEORETICAL NORTHING/EASTING AT CENTRE OF PILES BASED ON GEOMETRIC INFORMATION FROM RECORD DRAWINGS

** SURVEY POINT NORTHING/EASTING AND OFFSET DISTANCE "X" TO BE PROVIDED BY THE CONTRACTOR

Government of Northwest Territories

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Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

FOUNDATION LAYOUT

SHEET 1

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
JACOBS CONSULTANCY CANADA INC.
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROJECT No. CE857700 | SHEET No. 27 OF 55 | DRAWING No. SC–INF01–6081–S005 | 1

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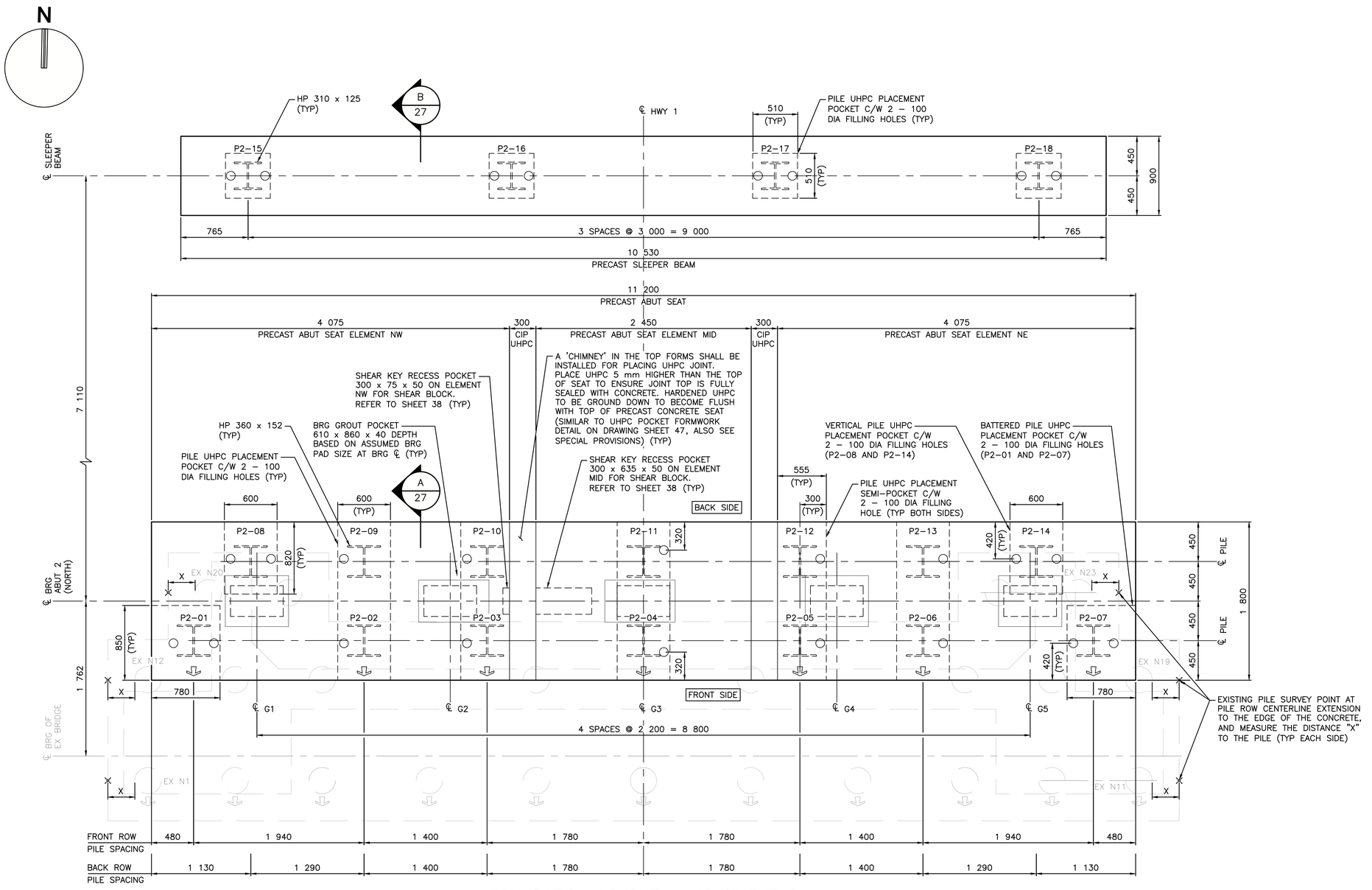
PLOTTED : Friday, December 6, 2024



FOUNDATION LAYOUT – ABUTMENT 2

SCALE 1:25 (SHEAR BLOCK NOT SHOWN FOR CLARITY)

LEGEND

- 8V:1H BATTERED PILE
- 4V:1H EXISTING BATTERED PILE
- NEW BRIDGE STRUCTURE
- EXISTING BRIDGE FOUNDATION WITH 305 mm DIAMETER x 7.62 m LONG TIMBER PILES

PILE SCHEDULE – ABUTMENT 2

PILE MARK	NORTHING	EASTING	CUT OFF ELEVATION	APPROXIMATE TIP ELEVATION	PILE LENGTH
P2–01	6813638.15	593968.50	205.226	189.800	15.426
P2–02	6813638.19	593970.44	205.226	189.800	15.426
P2–03	6813638.22	593971.84	205.226	189.800	15.426
P2–04	6813638.26	593973.62	205.226	189.800	15.426
P2–05	6813638.30	593975.40	205.226	189.800	15.426
P2–06	6813638.33	593976.80	205.226	189.800	15.426
P2–07	6813638.38	593978.73	205.226	189.800	15.426
P2–08	6813639.06	593969.13	205.226	189.800	15.546
P2–09	6813639.09	593970.42	205.226	189.800	15.546
P2–10	6813639.12	593971.82	205.226	189.800	15.546
P2–11	6813639.16	593973.60	205.226	189.800	15.546
P2–12	6813639.20	593975.38	205.226	189.800	15.546
P2–13	6813639.23	593976.78	205.226	189.800	15.546
P2–14	6813639.26	593978.06	205.226	189.800	15.546
P2–15	6813645.72	593968.95	207.915	191.000	16.915
P2–16	6813645.79	593971.95	207.915	191.000	16.915
P2–17	6813645.86	593974.95	207.915	191.000	16.915
P2–18	6813645.92	593977.94	207.915	191.000	16.915

PILE SCHEDULE – EXISTING PILES

PILE MARK	NORTHING*	EASTING*	NORTHING**	EASTING**	OFFSET "X"
EX N1	6813636.55	593968.01			
EX N11	6813636.80	593979.29			
EX N12	6813637.70	593967.99			
EX N19	6813637.95	593979.26			
EX N20	6813638.70	593968.65			
EX N23	6813638.92	593978.55			

NOTE:
* THEORETICAL NORTHING/EASTING AT CENTRE OF PILES BASED ON GEOMETRIC INFORMATION FROM RECORD DRAWINGS
** SURVEY POINT NORTHING/EASTING AND OFFSET DISTANCE "X" TO BE PROVIDED BY THE CONTRACTOR

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

FOUNDATION LAYOUT

SHEET 2

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06

SCALE AS SHOWN

PERMIT TO PRACTICE
8446006 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature
Date 4 Dec. 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF

YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

NT/NU PROFESSIONAL ENGINEER
2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	28 OF 55	SC–INF01–6081–S006 | 1

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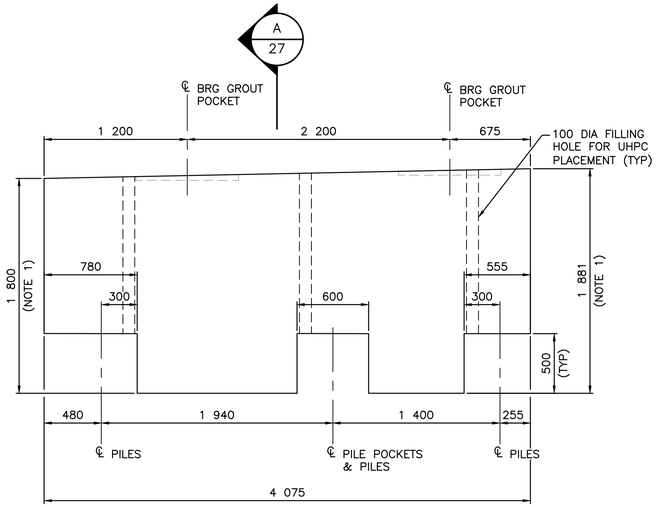
PLOTTED : Friday, December 6, 2024

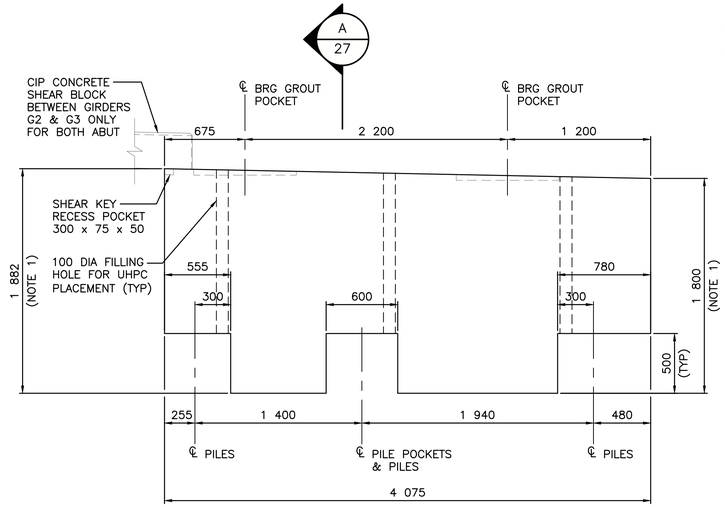
NOTES

1. DIMENSIONS ARE TAKEN AT THE ℄ OF BEARING.
2. FOR PRECAST ABUTMENT SEAT ELEMENT PLAN, REFER TO SHEET 27 AND 28.
3. FOR BEARING AND SHEAR BLOCK DETAILS, REFER TO SHEET 38.



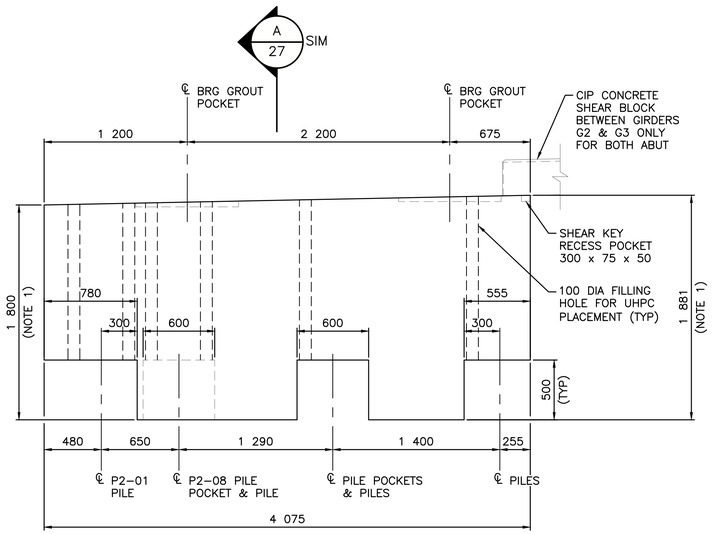
PRECAST ABUTMENT SEAT ELEVATION ELEMENT SE (FOR ABUTMENT 1)

SCALE 1:25 LOOKING SOUTH (1 REQUIRED)
(ELEMENT ESTIMATED WEIGHT: 28 800 kg, EACH)



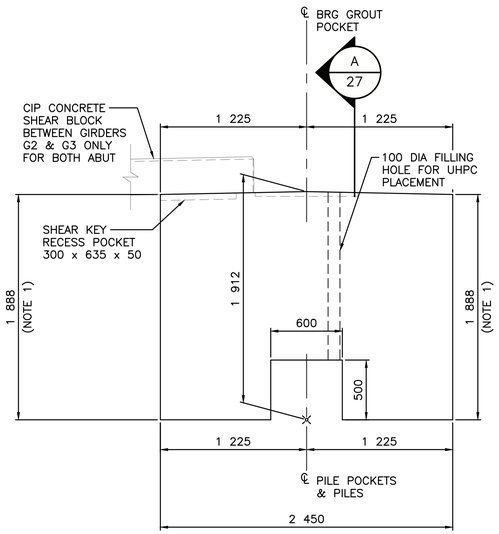
PRECAST ABUTMENT SEAT ELEVATION ELEMENT SW (FOR ABUTMENT 1)

SCALE 1:25 LOOKING SOUTH (1 REQUIRED)
(ELEMENT ESTIMATED WEIGHT: 28 800 kg, EACH)



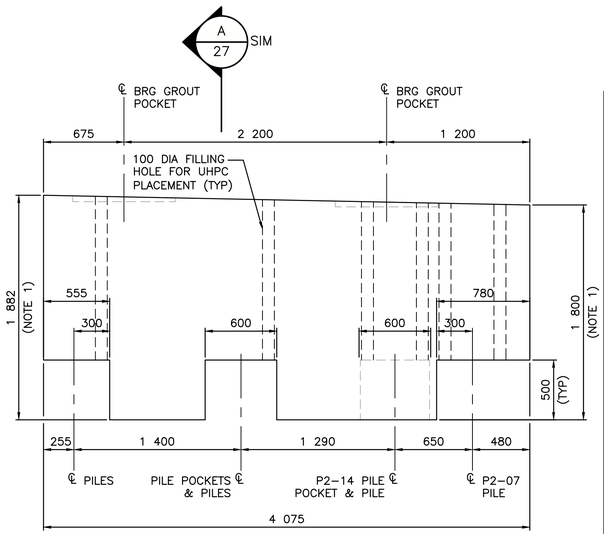
PRECAST ABUTMENT SEAT ELEVATION ELEMENT NW (FOR ABUTMENT 2)

SCALE 1:25 LOOKING NORTH (1 REQUIRED)
(ELEMENT ESTIMATED WEIGHT: 29 100 kg, EACH)



PRECAST ABUTMENT SEAT ELEVATION ELEMENT MID (FOR BOTH ABUTMENTS)

SCALE 1:25 (1 REQUIRED FOR EACH ABUTMENT)
(ELEMENT ESTIMATED WEIGHT: 19 200 kg, EACH)



PRECAST ABUTMENT SEAT ELEVATION ELEMENT NE (FOR ABUTMENT 2)

SCALE 1:25 LOOKING NORTH (1 REQUIRED)
(ELEMENT ESTIMATED WEIGHT: 29 100 kg, EACH)

Government of Northwest Territories

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Rev	Date	Description	Init
1	2024-12-06	ISSUED FOR CONSTRUCTION	YL
0	2024-07-19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

PRECAST ABUTMENT SEAT ELEMENT DETAILS

SHEET 1

DESIGNED	YL	DATE	2024-12-06
CHECKED	JZ	DATE	2024-12-06
DRAWN	KK	DATE	2024-12-06

SCALE AS SHOWN

PERMIT TO PRACTICE
846698 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature
Date 4 Dec. 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF

YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024-12-06

NWT PROFESSIONAL ENGINEER
2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	29 OF 55	SC-INF01-6081-S007 | 1

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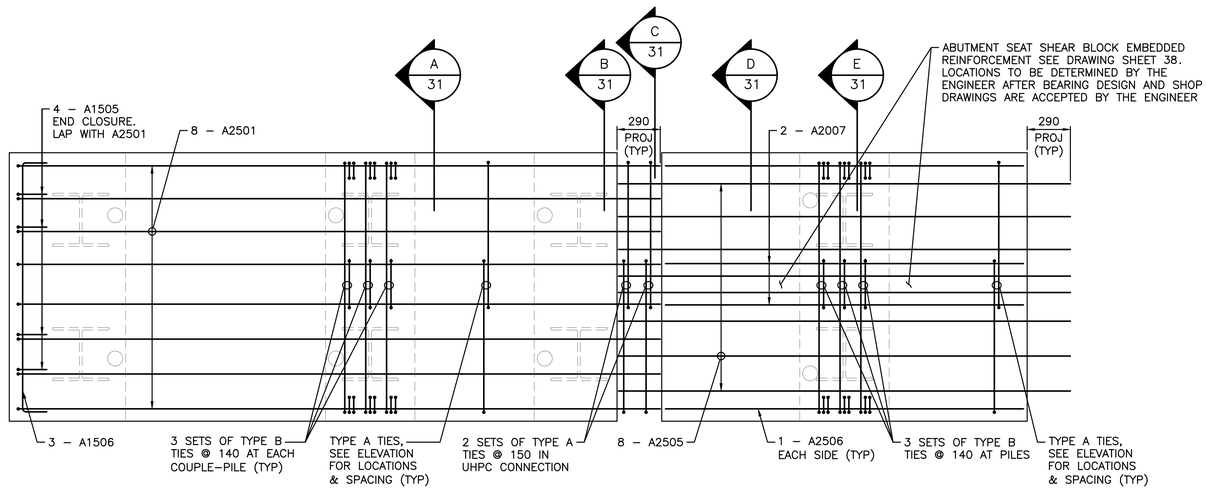
PLOTTED : Friday, December 6, 2024

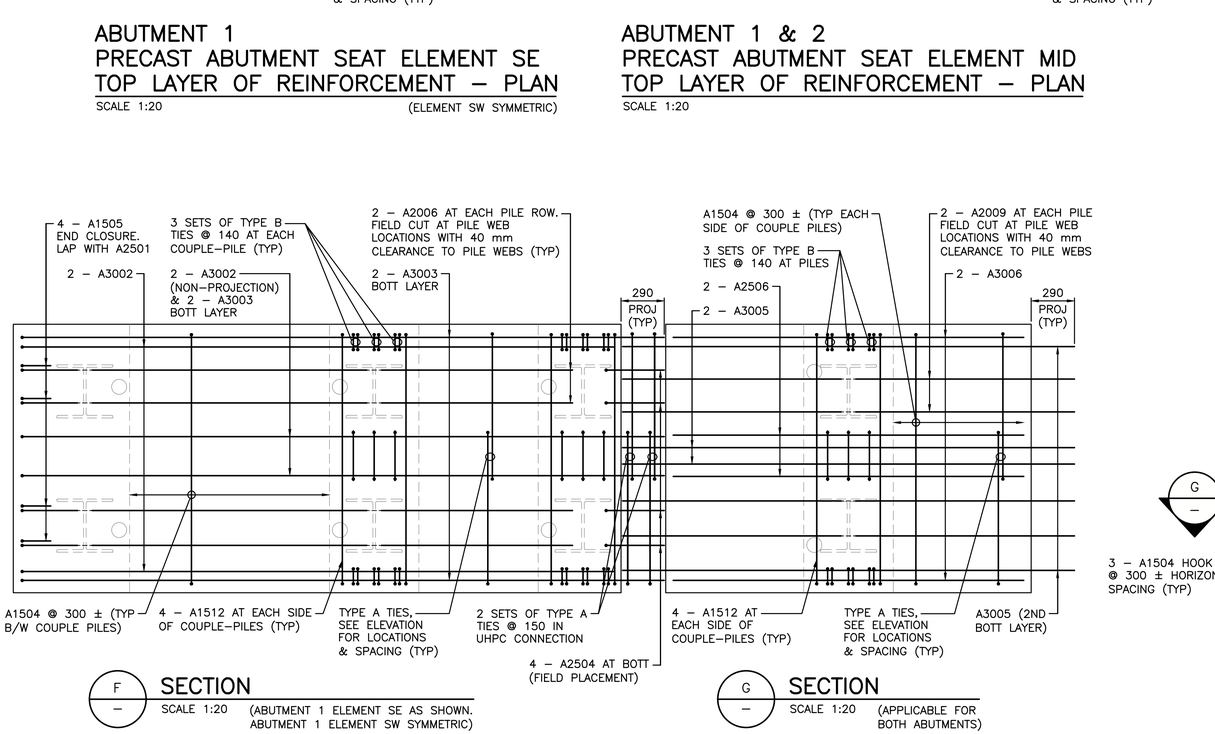
NOTES

1. A SET OF TYPE A TIES (BEYOND PILE LOCATIONS) CONSISTS OF A PAIR OF A2001, A PAIR OF A2002 AND 3–A1501 HOOK TIES AS SHOWN ON SECTION A, C AND D ON SHEET 31.
2. A SET OF TYPE B TIES (AT A PAIR OF PILES) CONSISTS OF ONE BUNDLE OF TWO PAIRS OF A1503, ONE BUNDLE OF TWO PAIRS OF A1502 ON EACH SIDE AND 4–A2003 HOOKS AS SHOWN ON SECTION B AND E ON SHEET 31.
3. A SET OF TYPE C TIES (AT PILE P2–01) CONSISTS OF A PAIR OF A2002 AND ONE BUNDLE OF 2 PAIRS OF A1502 CLOSED TIES, A PAIR OF A2005 AND 4–A2003 AS SHOWN ON SECTION H ON SHEET 32.
4. A SET OF TYPE D TIES (AT PILE P2–08) CONSISTS OF A PAIR OF A2001 AND ONE BUNDLE OF 2 PAIRS OF A1502 CLOSED TIES, A PAIR OF A2005 AND 4–A2003 AS SHOWN ON SECTION J ON SHEET 32.
5. SHEAR BLOCK EMBEDDED BARS NOT SHOWN FOR CLARITY. REFER TO SHEET 38 FOR DETAILS.



ABUTMENT 1
PRECAST ABUTMENT SEAT ELEMENT SE
TOP LAYER OF REINFORCEMENT – PLAN

SCALE 1:20 (ELEMENT SW SYMMETRIC)



F / – SECTION

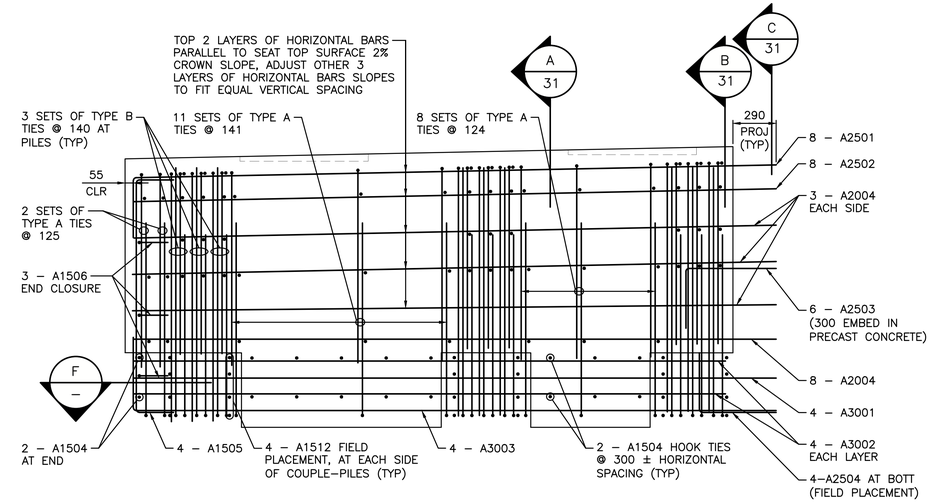
SCALE 1:20 (ABUTMENT 1 ELEMENT SE AS SHOWN. ABUTMENT 1 ELEMENT SW SYMMETRIC)

ABUTMENT 1 & 2
PRECAST ABUTMENT SEAT ELEMENT MID
TOP LAYER OF REINFORCEMENT – PLAN

SCALE 1:20

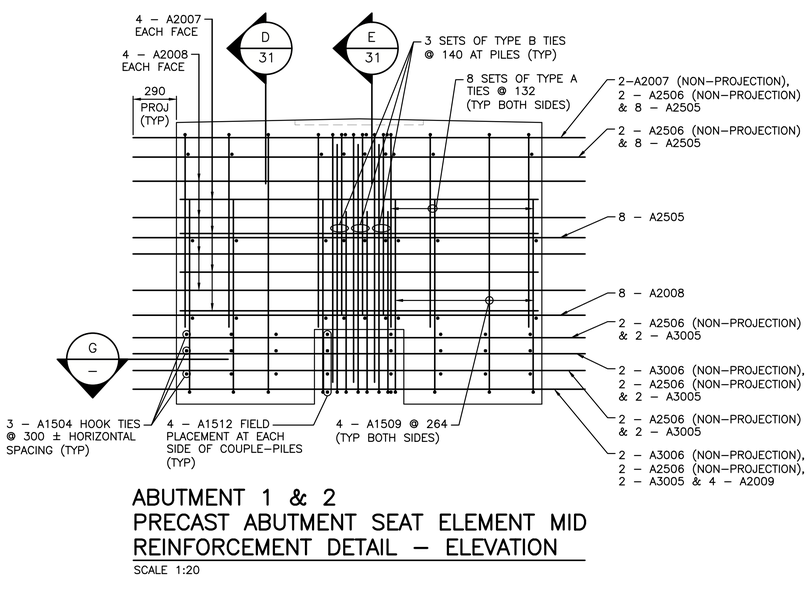
G / – SECTION

SCALE 1:20 (APPLICABLE FOR BOTH ABUTMENTS)



ABUTMENT 1
PRECAST ABUTMENT SEAT ELEMENT SE
REINFORCEMENT DETAIL – ELEVATION

SCALE 1:20 (ELEMENT SW SYMMETRIC)



ABUTMENT 1 & 2
PRECAST ABUTMENT SEAT ELEMENT MID
REINFORCEMENT DETAIL – ELEVATION

SCALE 1:20

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories
HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2
JEAN MARIE RIVER BRIDGE
PRECAST ABUTMENT SEAT ELEMENT DETAILS
SHEET 2

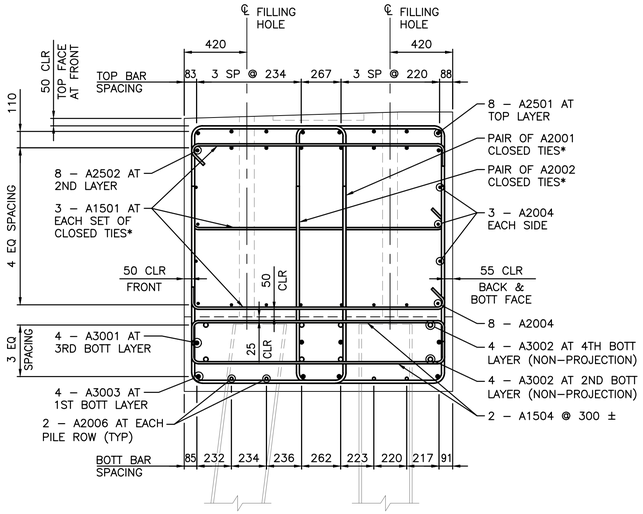
DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
8446006 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature _____ Yk LY591
Date 4 Dec 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06
REVIEWED 2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	30 OF 55	SC–INF01–6081–S008 | 1

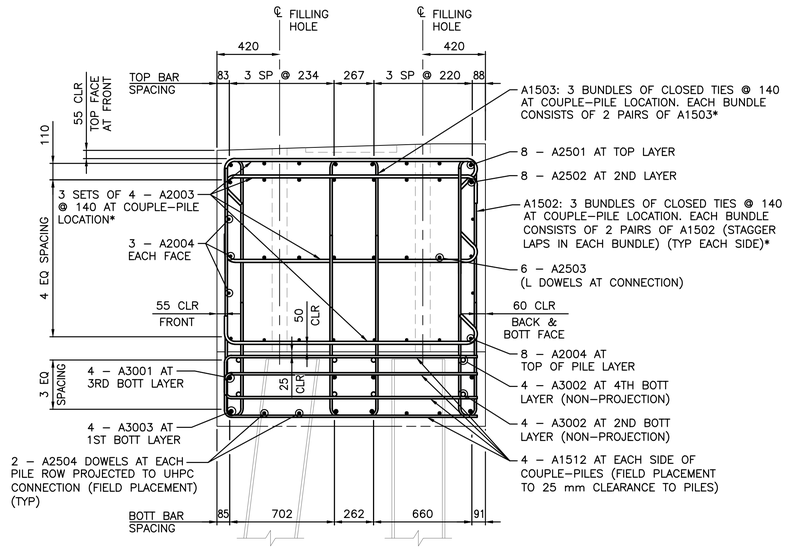
FILE: c:\pw_workdir\jacobs-us-vd-pw-02\dms92401a\S008.dwg
PLOTTED : Friday, December 6, 2024



A 30/32 **SECTION**

SCALE 1:20 (BETWEEN PAIR OF PILES)

NOTE:
- ○ DENOTES NON–PROJECTION BARS
- • DENOTES PROJECTION BARS
- * DENOTES BARS AS A PART OF TYPE A CLOSED TIES



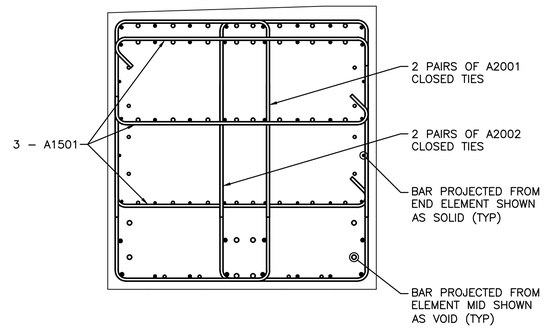
B 30/32 **SECTION**

SCALE 1:20 (AT COUPLE–PILES)

NOTE:
- ○ DENOTES NON–PROJECTION BARS
- • DENOTES PROJECTION BARS
- * DENOTES BARS AS A PART OF TYPE B CLOSED TIES

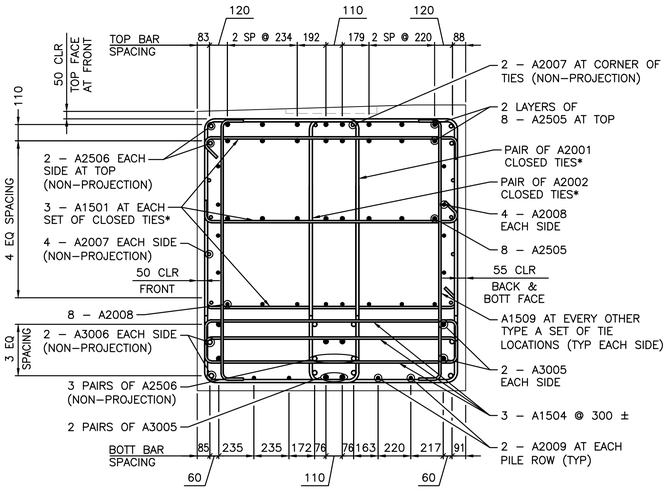
NOTES

1. SHEAR BLOCK EMBEDDED BARS NOT SHOWN FOR CLARITY. REFER TO SHEET 38 FOR DETAILS.



C 30/32 **SECTION**

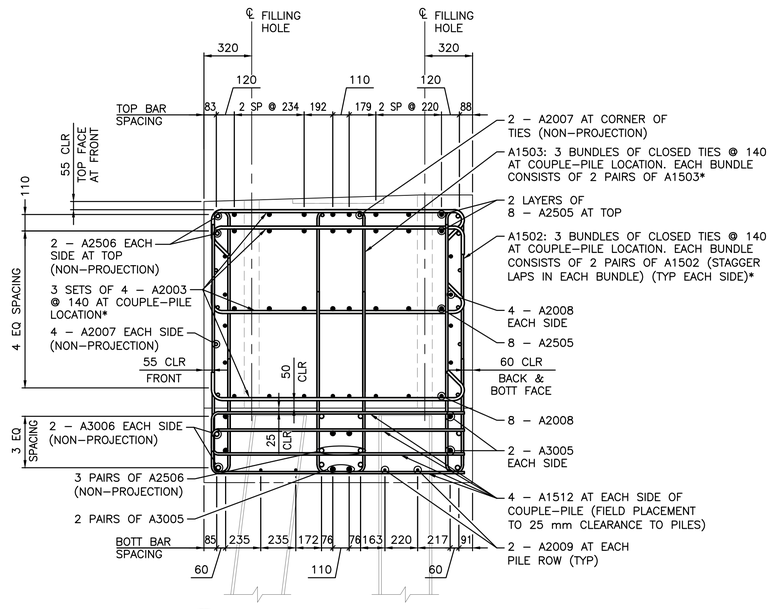
SCALE 1:20 (AT UHPC CONNECTION REGION. APPLICABLE TO BOTH ABUTMENTS)



D 30 **SECTION**

SCALE 1:20

NOTE:
- ○ DENOTES NON–PROJECTION BARS
- • DENOTES PROJECTION BARS
- * DENOTES BARS AS A PART OF TYPE A CLOSED TIES



E 30 **SECTION**

SCALE 1:20 (AT PILES)

NOTE:
- ○ DENOTES NON–PROJECTION BARS
- • DENOTES PROJECTION BARS
- * DENOTES BARS AS A PART OF TYPE B CLOSED TIES

Government of Northwest Territories

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Jacobs

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

PRECAST ABUTMENT SEAT ELEMENT DETAILS

SHEET 3

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06

SCALE AS SHOWN

PERMIT TO PRACTICE
0446006 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature
Date: 9 Dec 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

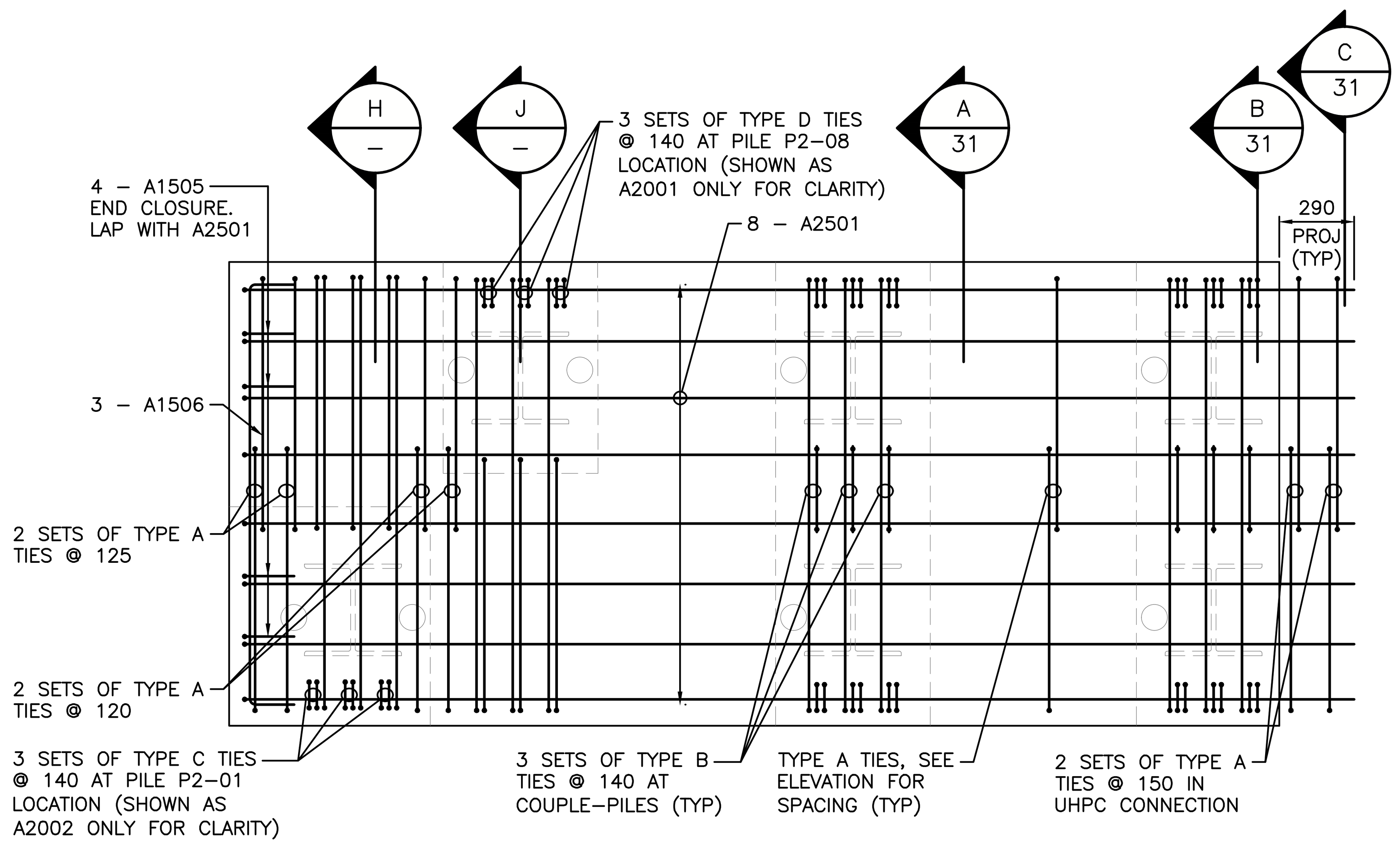
PROFESSIONAL ENGINEER YING YI LI R1703 2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	31 OF 55	SC–INF01–6081–S009 | 1

FILE: C:\pw_workdir\jacobs-us-vd-pw-02\dms92401a\S009.dwg
PLOTTED : Friday, December 6, 2024

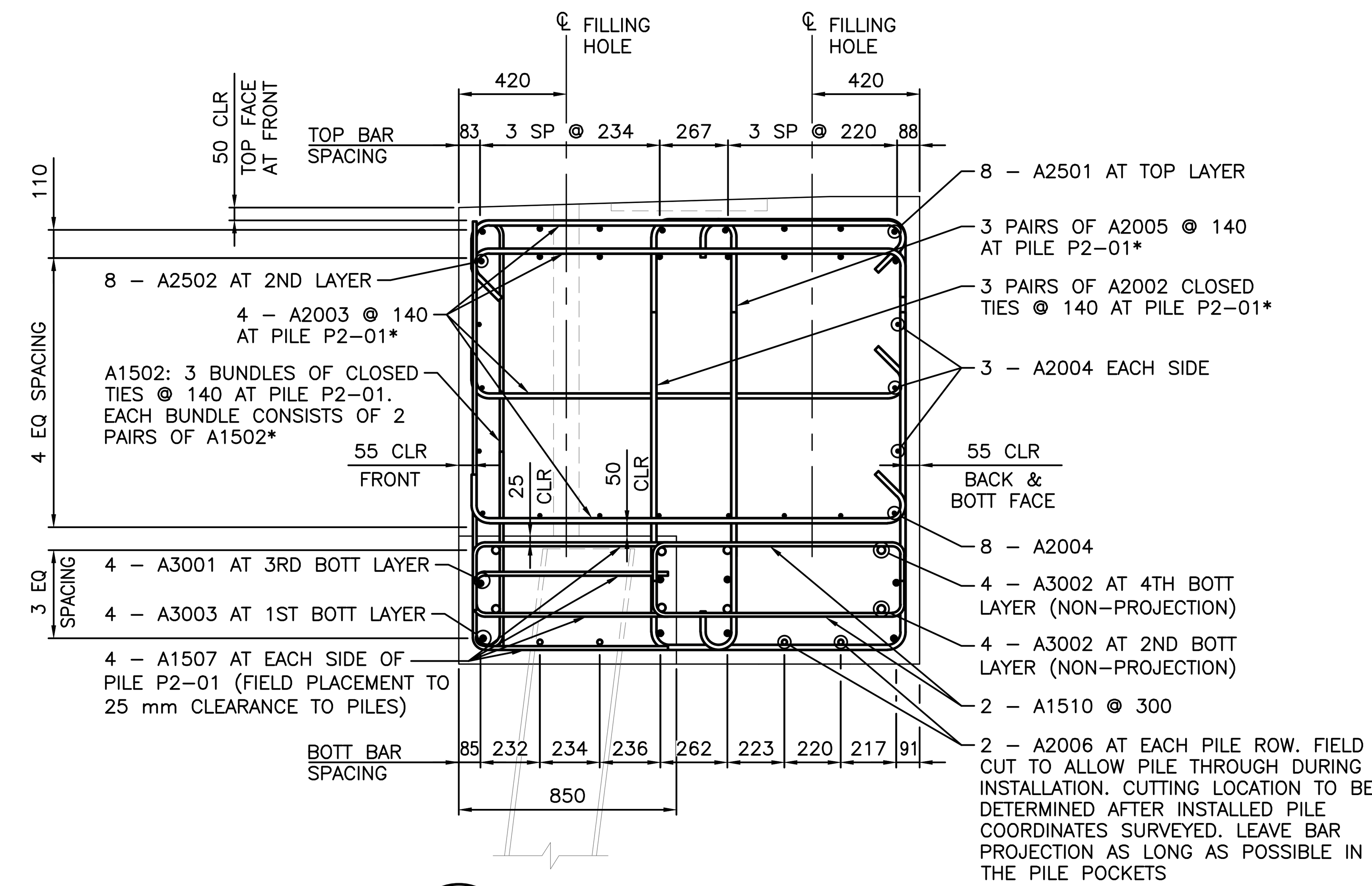
NOTES

1. SHEAR BLOCK EMBEDDED BARS NOT SHOWN FOR CLARITY. REFER TO SHEET 38 FOR DETAILS.



ABUTMENT 2
PRECAST ABUTMENT SEAT ELEMENT NW
TOP LAYER OF REINFORCEMENT – PLAN

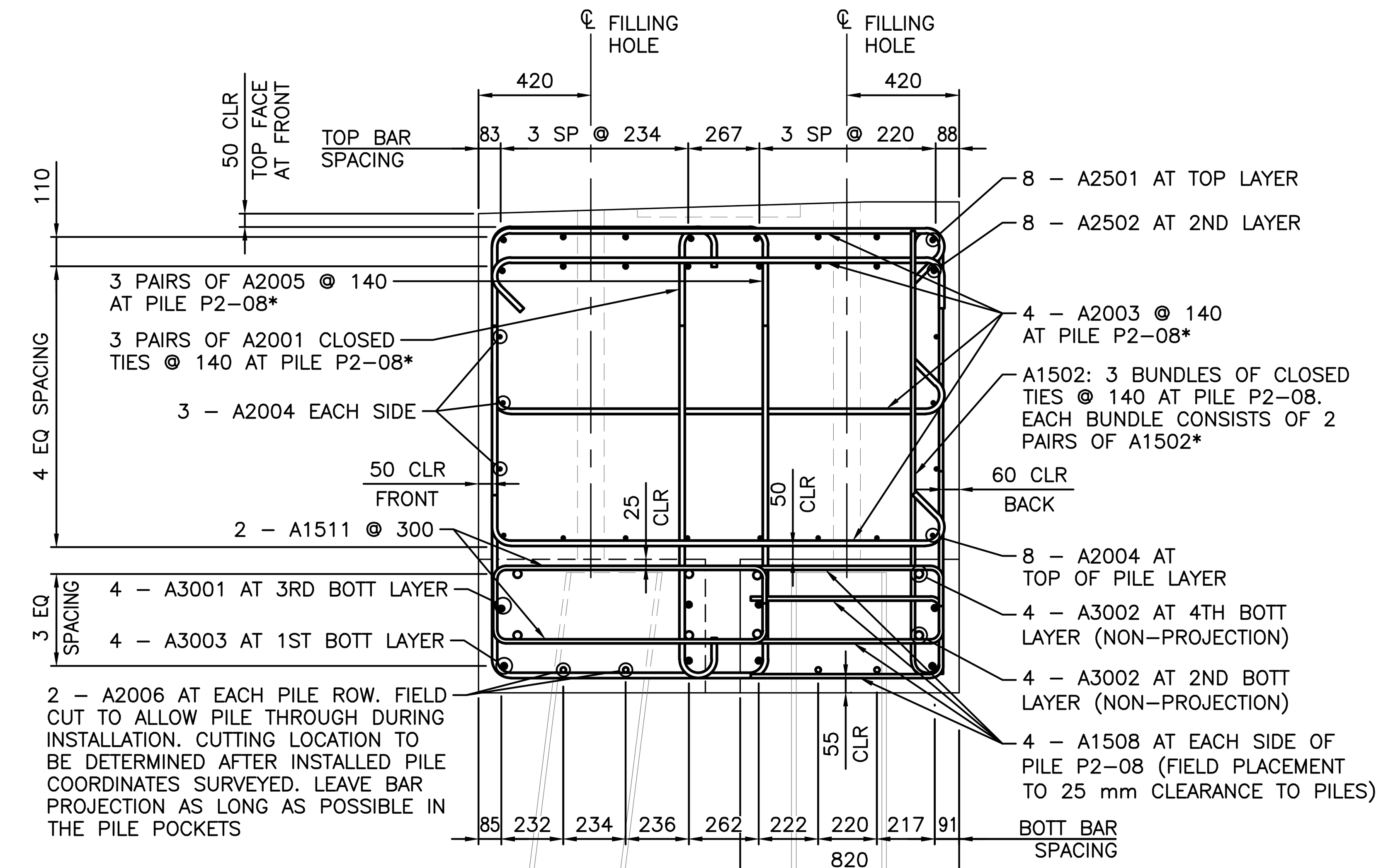
SCALE 1:20 (ELEMENT NE SYMMETRIC)



H – SECTION

SCALE 1:20 (AT PILE P2–01)

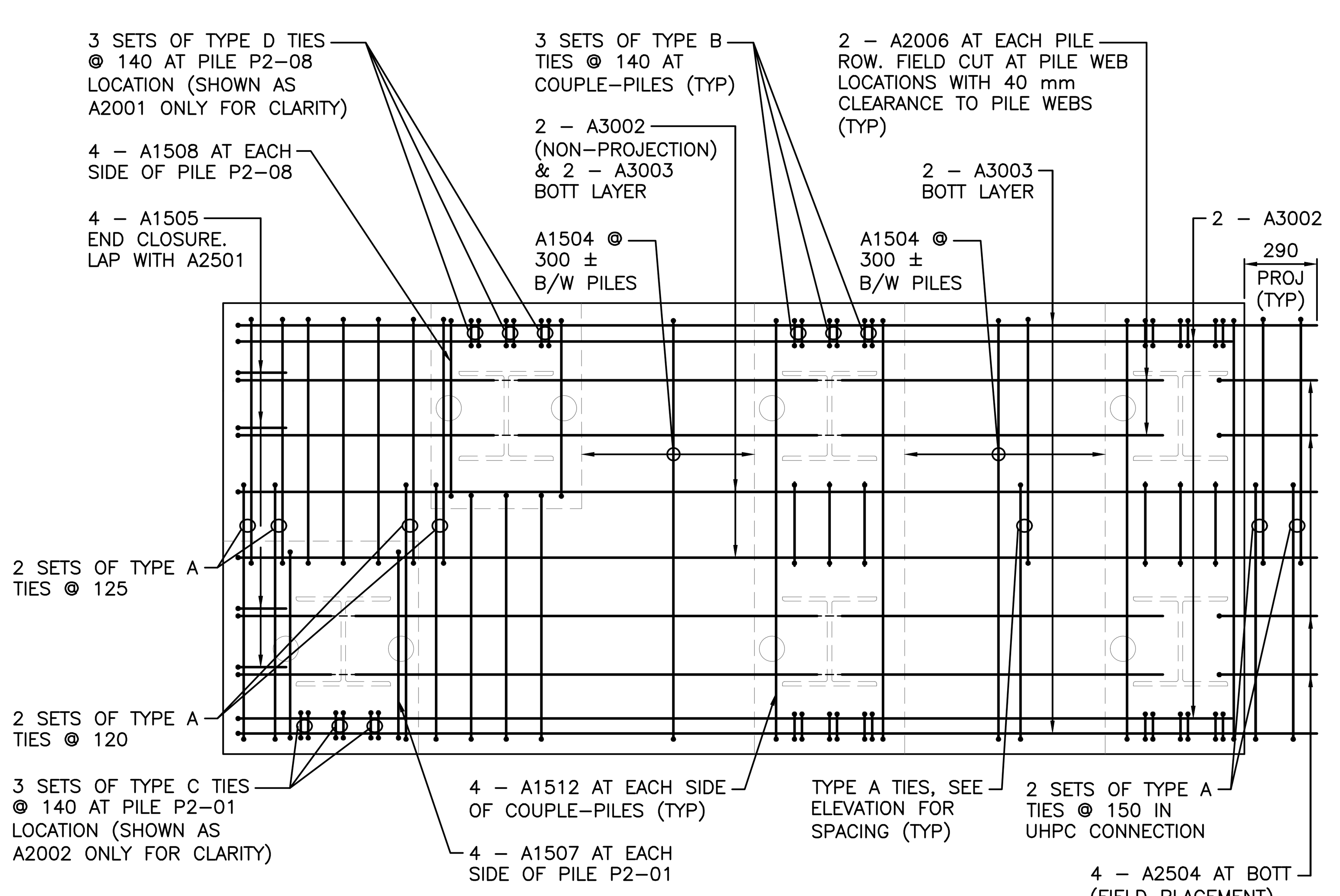
NOTE:
- DENOTES NON–PROJECTION BARS
- DENOTES PROJECTION BARS
- DENOTES BARS AS A PART OF TYPE C CLOSED TIES



J – SECTION

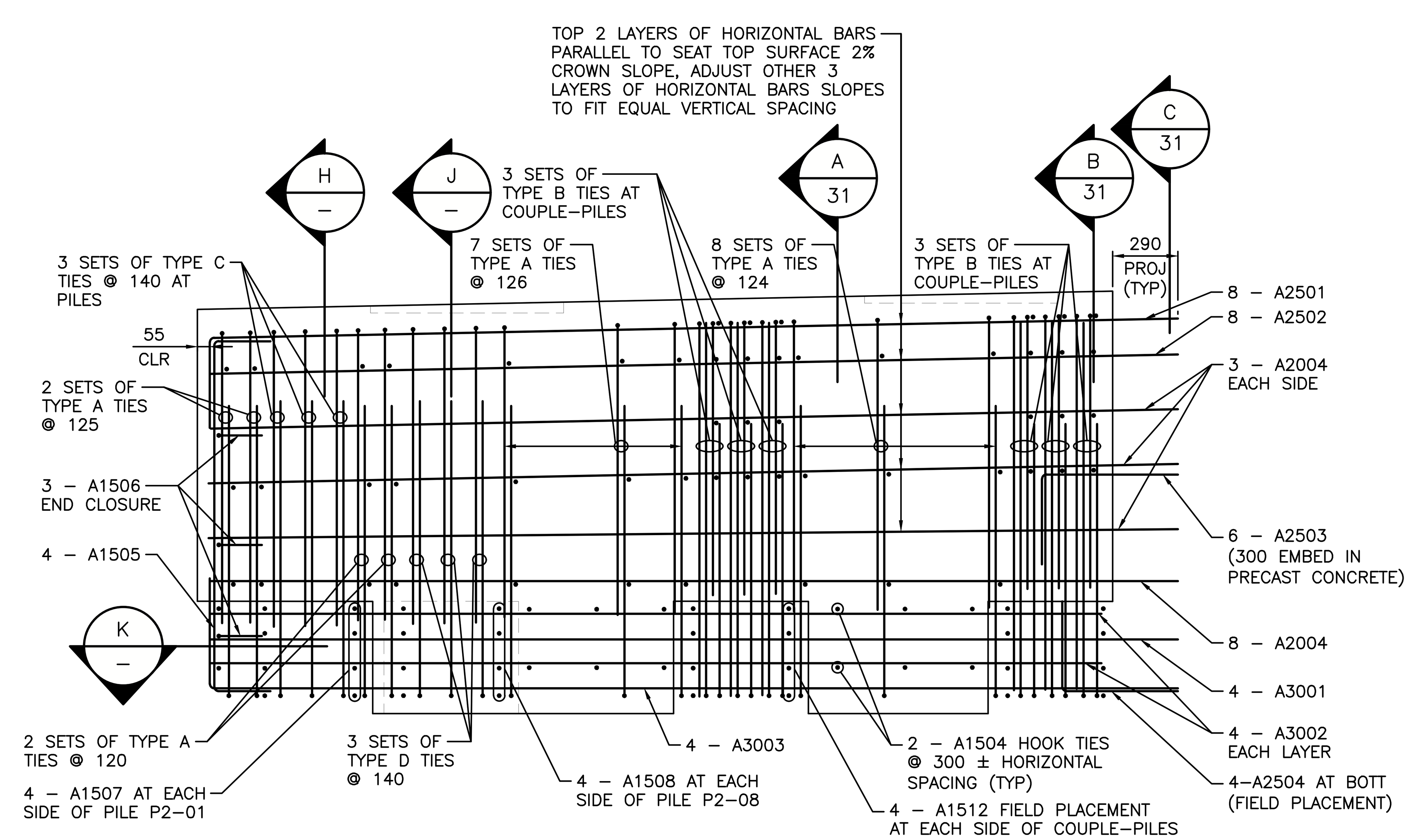
SCALE 1:20 (AT PILE P2–08)

NOTE:
- DENOTES NON–PROJECTION BARS
- DENOTES PROJECTION BARS
- DENOTES BARS AS A PART OF TYPE C CLOSED TIES



K – SECTION

SCALE 1:20 (ABUTMENT 2 ELEMENT NW AS SHOWN. ABUTMENT 2 ELEMENT NE SYMMETRIC)



ABUTMENT 2
PRECAST ABUTMENT SEAT ELEMENT NW
REINFORCEMENT DETAIL – ELEVATION

SCALE 1:20 (ELEMENT NE SYMMETRIC)

Government of Northwest Territories

Consultant Logo

Jacobs.

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

R E V I S I O N S

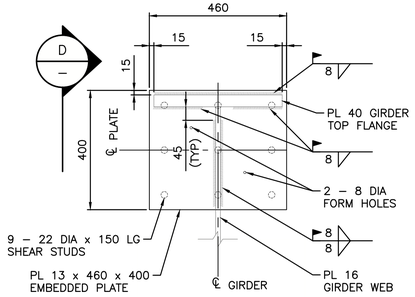
Government of Northwest Territories
HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2
JEAN MARIE RIVER BRIDGE
PRECAST ABUTMENT SEAT ELEMENT DETAILS
SHEET 4

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

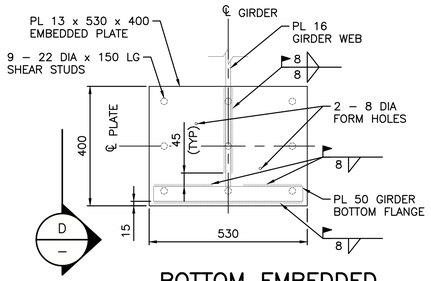
PERMIT TO PRACTICE
6446606 CANADA INC. O/A JACOBS CONSULTANCY CANADA INC.
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

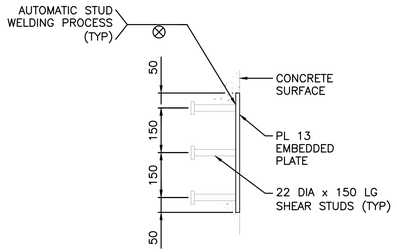
PROJECT No.	SHEET No.	DRAWING No.	
CE857700	32 OF 55	SC–INF01–6081–S010	1



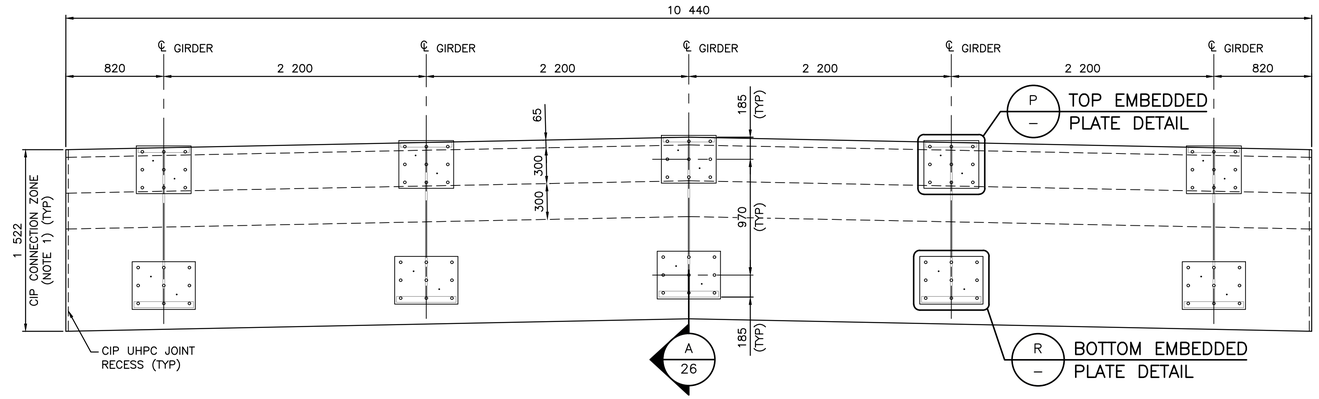
P – TOP EMBEDDED PLATE DETAIL
SCALE 1:10



R – BOTTOM EMBEDDED PLATE DETAIL
SCALE 1:10

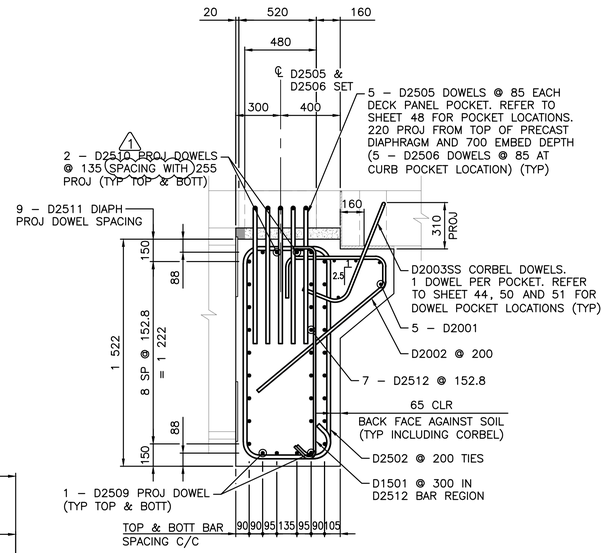


D – EMBEDDED PLATE SECTION
SCALE 1:10 GIRDER NOT SHOWN FOR CLARITY

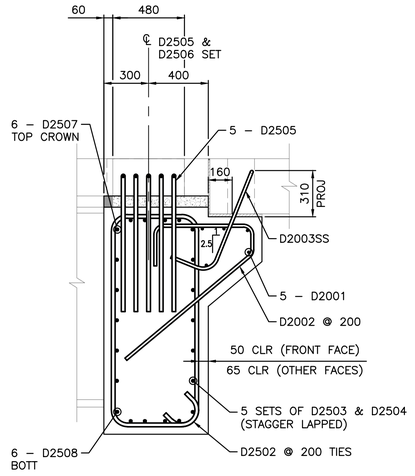


PRECAST ABUTMENT DIAPHRAGM ELEMENT ELEVATION

SCALE 1:25 (2 REQUIRED)
(ELEMENT ESTIMATED WEIGHT: 31 400 kg, EACH)



B – SECTION
SCALE 1:20



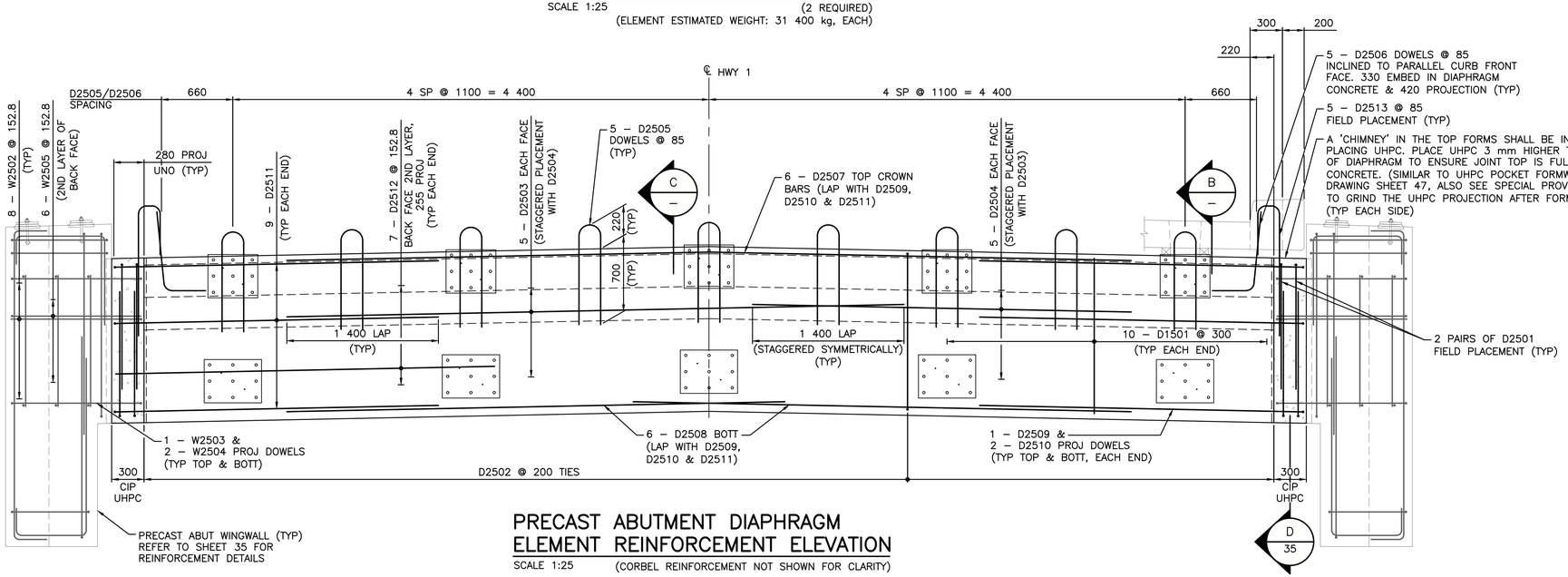
C – SECTION
SCALE 1:20

NOTES

1. DIMENSIONS ARE BASED ON THE ASSUMED HEIGHT OF ELASTOMERIC BEARING PAD (103 mm) AND NEED TO BE ADJUSTED BASED ON ACTUAL BEARING PAD THICKNESS.
2. STEEL EMBEDDED PLATES SHALL CONFORM TO CAN/CSA G40.21M–350AT, CATEGORY 4, 1 WITH CHARPY V–NOTCH STRENGTH OF 27 JOULES AT –45˚C.
3. SHEAR STUDS SHALL BE CONFORM TO SUBSECTION 6.2.4.3, STUD SHEAR CONNECTORS, OF STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION.

PRECAST ABUTMENT DIAPHRAGM ELEMENT REINFORCEMENT ELEVATION

SCALE 1:25 (CORBEL REINFORCEMENT NOT SHOWN FOR CLARITY)



Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

PRECAST ABUTMENT DIAPHRAGM ELEMENT DETAILS

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06

SCALE AS SHOWN

PERMIT TO PRACTICE
8446606 CANADA INC. O/A JACOBS CONSULTANCY CANADA INC.
Signature ____ Date 4 Dec. 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

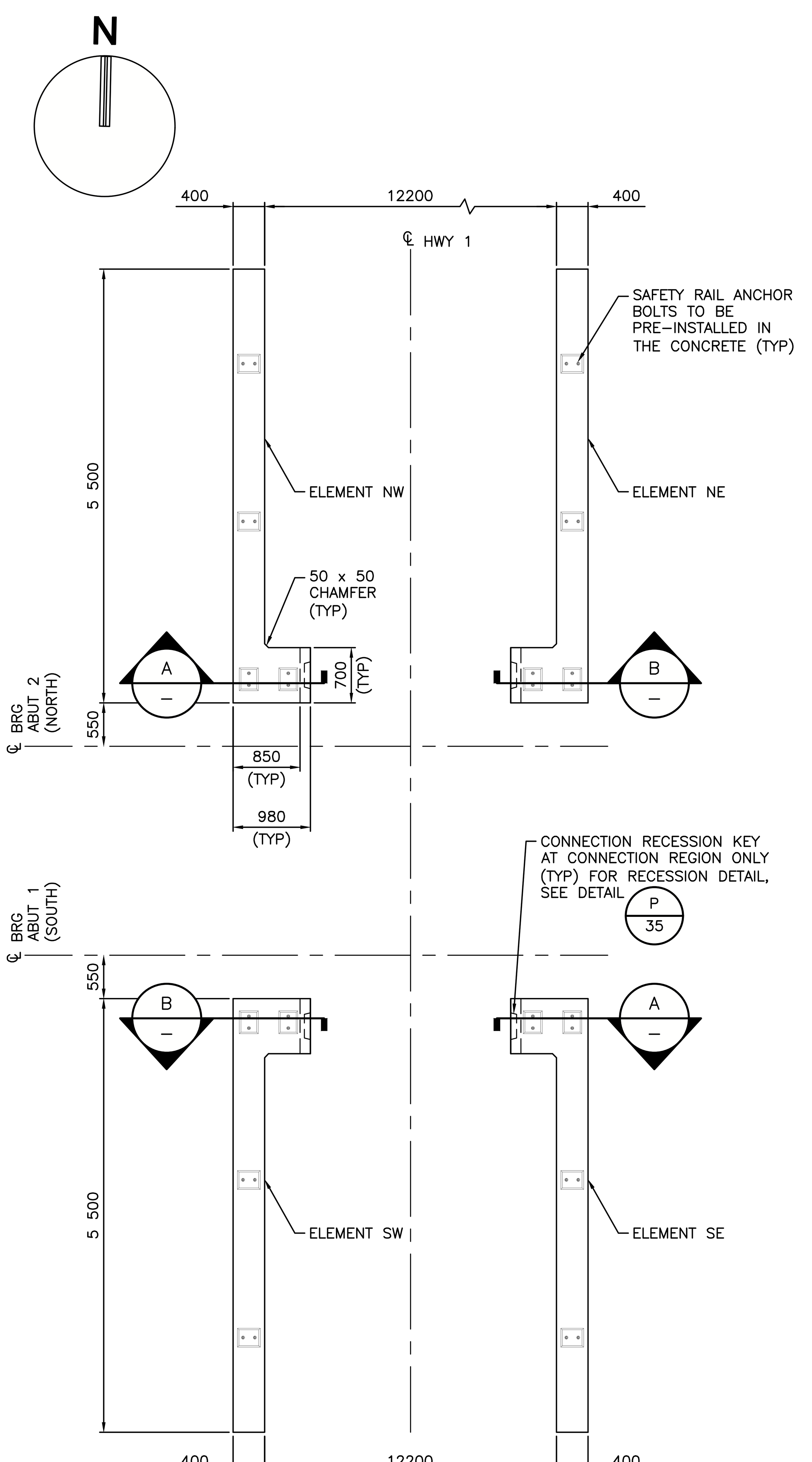
PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	33 OF 55	SC–INF01–6081–S011 | 1

FILE: C:\pw_workdir\jacobs-us-vd-pw-02\dms92401a\S011.dwg
PLOTTED : Friday, December 6, 2024

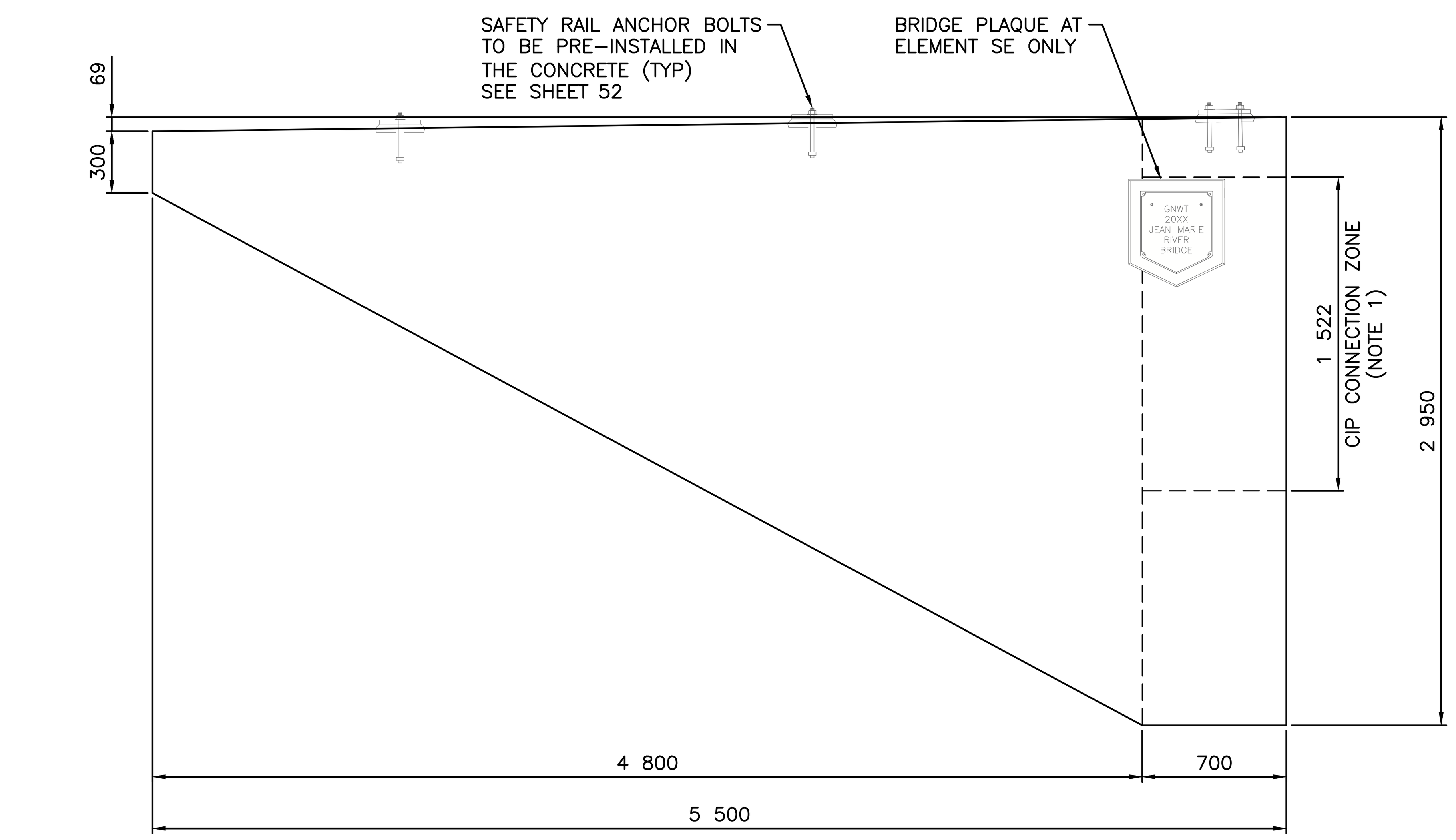
NOTES

1. DIMENSIONS ARE BASED ON THE ASSUMED HEIGHT OF ELASTOMERIC BEARING PAD (103 mm) AND NEED TO BE ADJUSTED BASED ON ACTUAL BEARING PAD THICKNESS.



PRECAST ABUTMENT WINGWALL ELEMENT PLAN

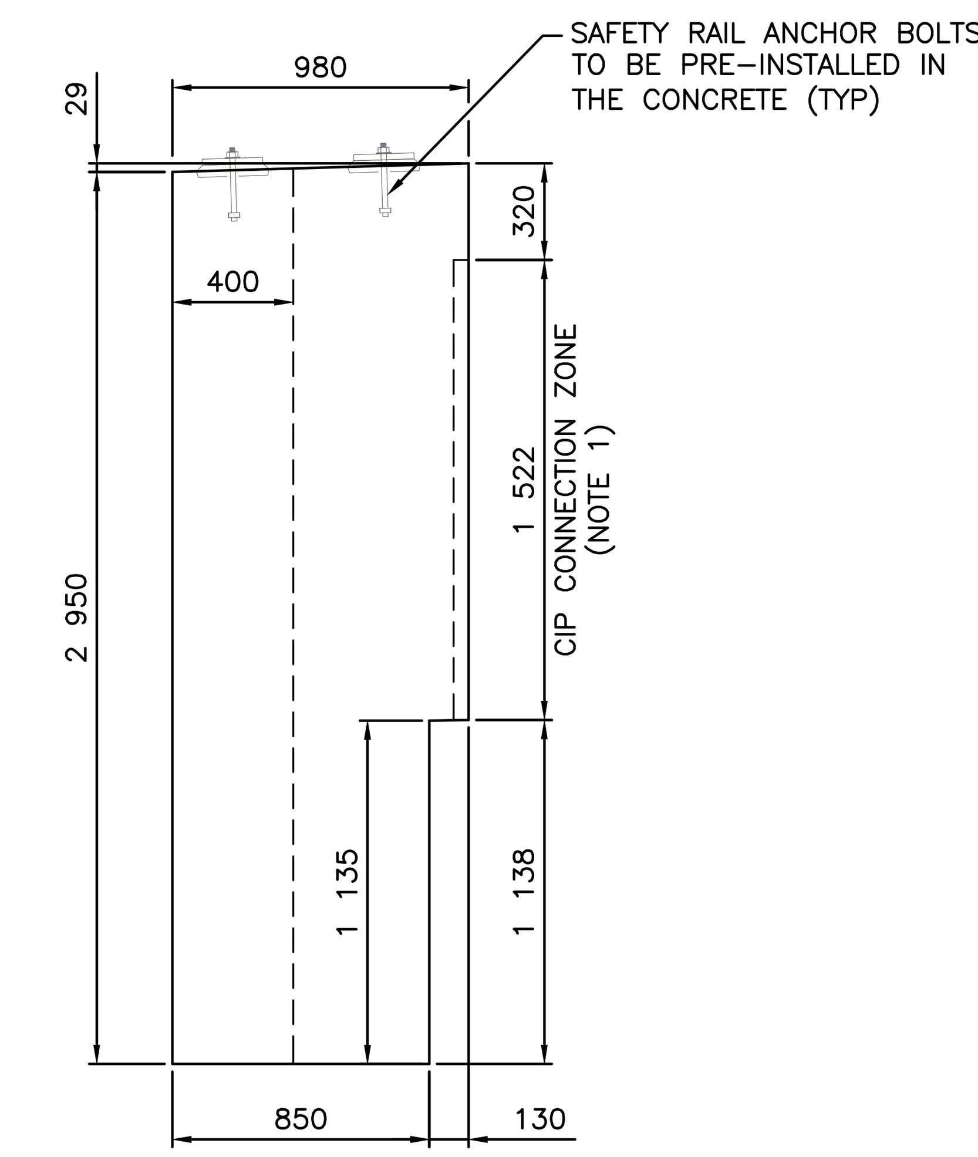
SCALE 1:50



PRECAST ABUTMENT WINGWALL ELEVATION ELEMENT SE OR SW FOR ABUTMENT 1

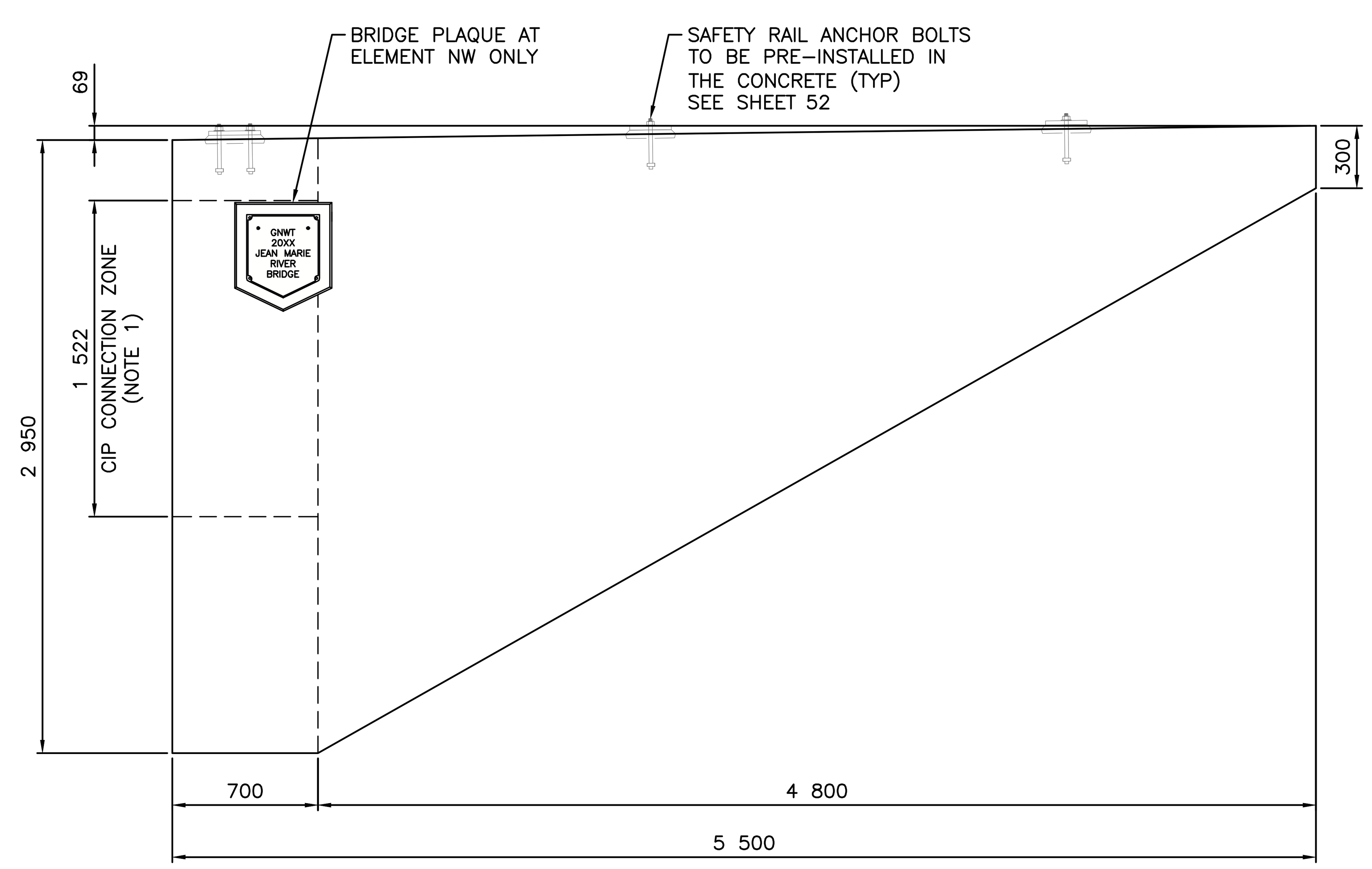
SCALE 1:25

ELEMENT SE SHOWN, SW OPPOSITE ON CORNER
(1 REQUIRED EACH CORNER)
(ELEMENT ESTIMATED WEIGHT: 12 400 kg, EACH)



A – PRECAST ABUTMENT WINGWALL SECTION ELEMENT NW OR SE

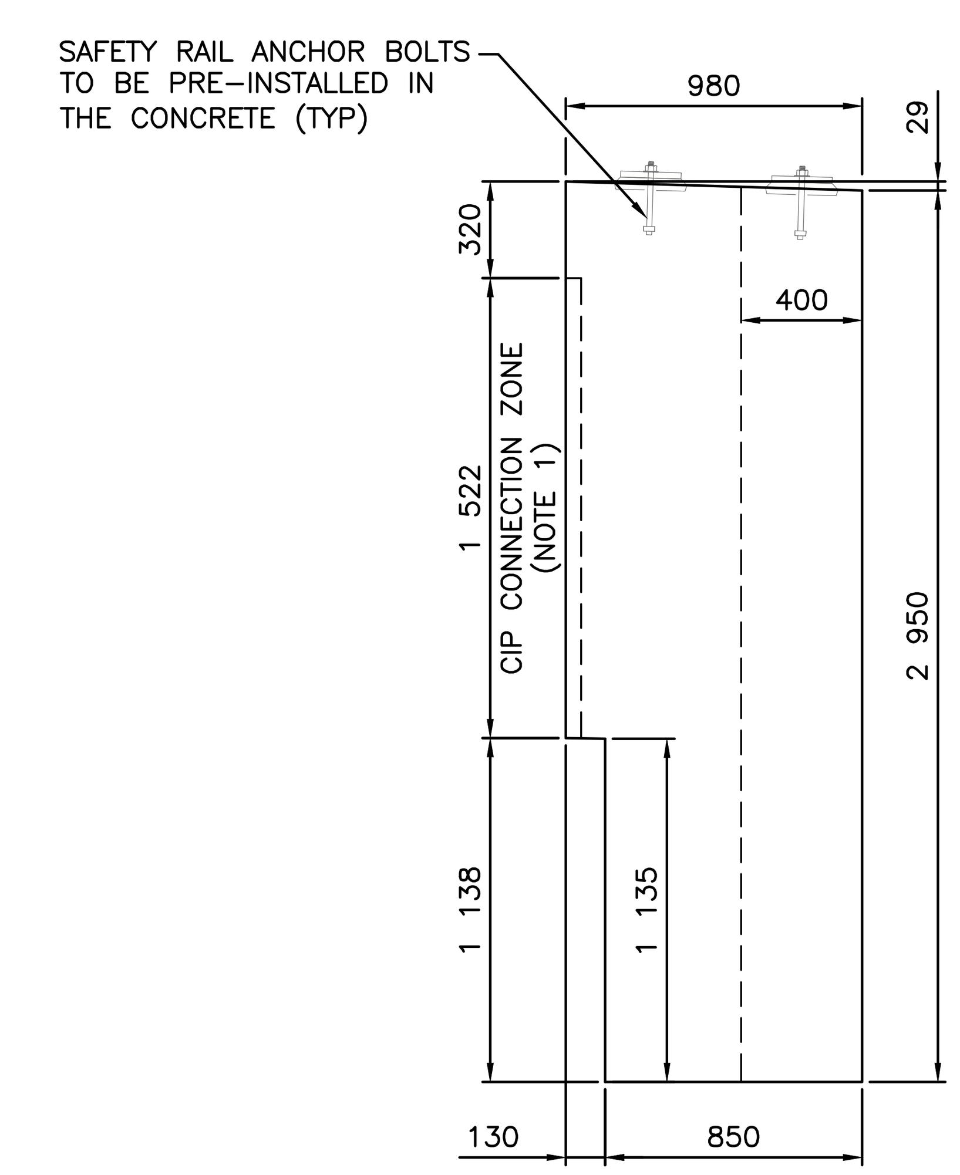
SCALE 1:25 (1 REQUIRED EACH CORNER)



PRECAST ABUTMENT WINGWALL ELEVATION ELEMENT NE OR NW FOR ABUTMENT 2

SCALE 1:25

ELEMENT NE SHOWN, NW OPPOSITE ON CORNER
(1 REQUIRED EACH CORNER)
(ELEMENT ESTIMATED WEIGHT: 12 400 kg, EACH)



B – PRECAST ABUTMENT WINGWALL SECTION ELEMENT NE OR SW

SCALE 1:25 (1 REQUIRED EACH CORNER)

Government of Northwest Territories

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Jacobs.

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

PRECAST ABUTMENT WINGWALL ELEMENT DETAILS

SHEET 1

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
6448506 CANADA INC. O/A JACOBS CONSULTANCY CANADA INC.
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROJECT No.	SHEET No.	DRAWING No.	
CE857700	34 OF 55	SC–INF01–6081–S012	1

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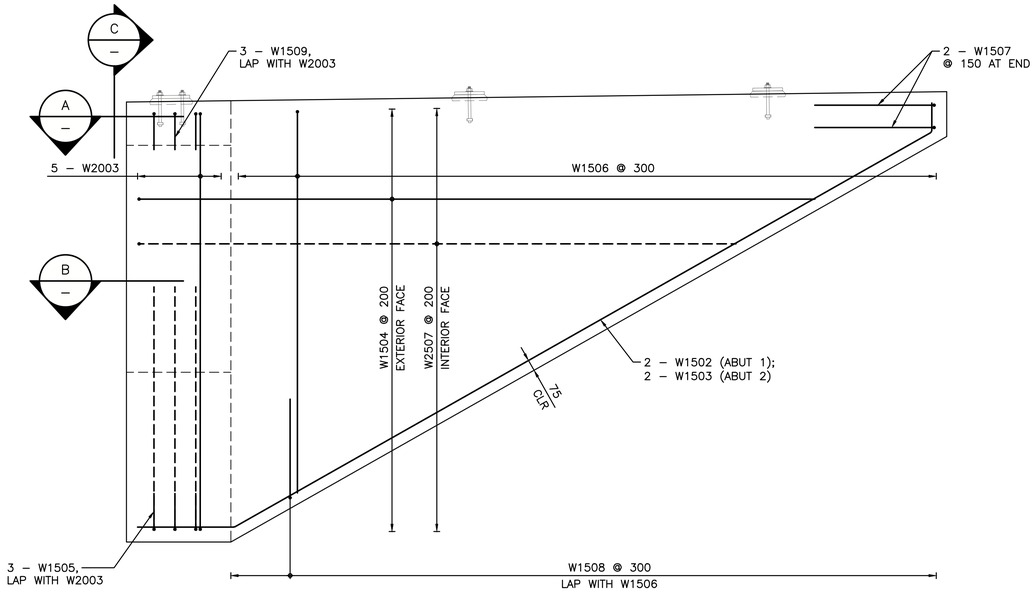
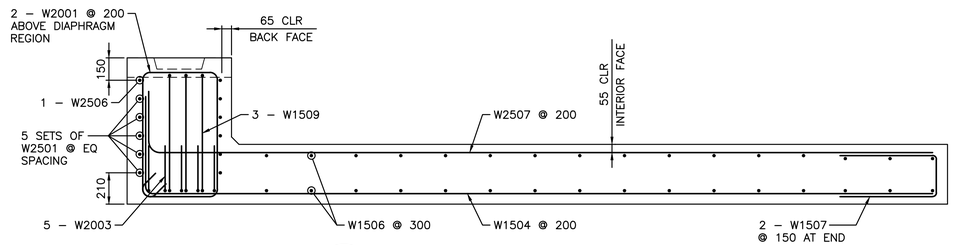
PLOTTED : Friday, December 6, 2024



TYPICAL REINFORCEMENT PRECAST ABUTMENT WINGWALL ELEVATION

SCALE 1:20

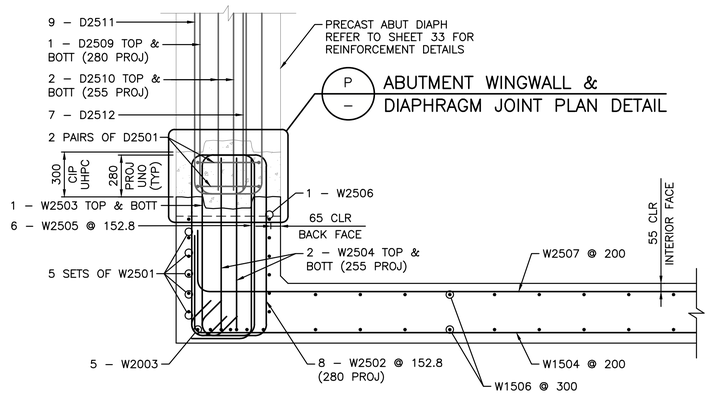
(BARS FROM DIAPHRAGM CONNECTION SIDE NOT SHOWN FOR CLARITY)



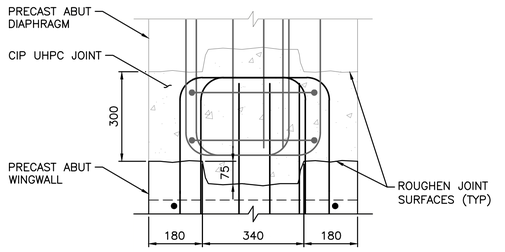
A — SECTION

SCALE 1:20

(BRIDGERAIL ANCHOR BOLTS NOT SHOWN FOR CLARITY)



P — ABUTMENT WINGWALL & DIAPHRAGM JOINT PLAN DETAIL



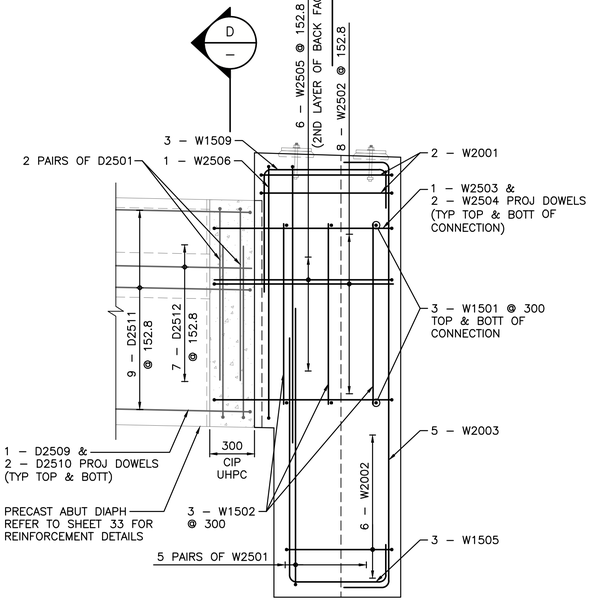
P — 34 ABUTMENT WINGWALL & DIAPHRAGM JOINT PLAN DETAIL

NTS

(REBAR SHOWN SCHEMATICALLY)

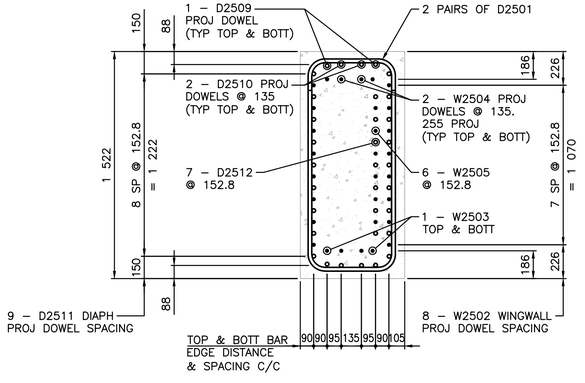
B — SECTION

SCALE 1:20



C — SECTION

SCALE 1:20

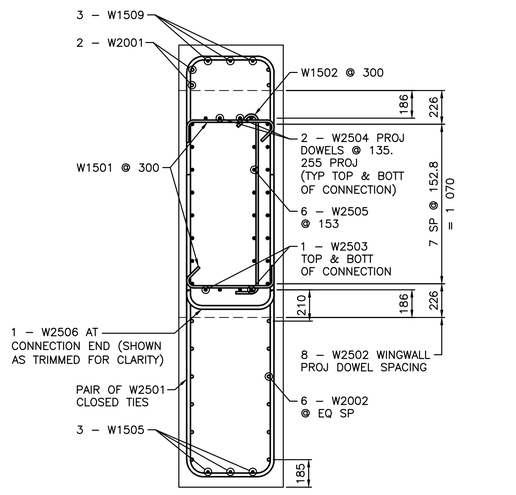


D — 33 SECTION

SCALE 1:20

NOTE:

- • DENOTES PROJECTION BARS FROM WINGWALL
- ○ DENOTES PROJECTION BARS FROM DIAPHRAGM



E — SECTION

SCALE 1:20

NOTE:

- • DENOTES PROJECTION BARS FROM WINGWALL
- ○ DENOTES NON–PROJECTION BARS

Government of Northwest Territories

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Jacobs

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

PRECAST ABUTMENT WINGWALL ELEMENT DETAILS

SHEET 2

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
0465696 CANADA INC. O/A JACOBS CONSULTANCY CANADA INC.
Signature _____ No. ±15 91
Date 4 Dec 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF

YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

NORTHWEST TERRITORIES PROFESSIONAL ENGINEER YING YI LI 15391 2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	35 OF 55	SC–INF01–6081–S013 | 1

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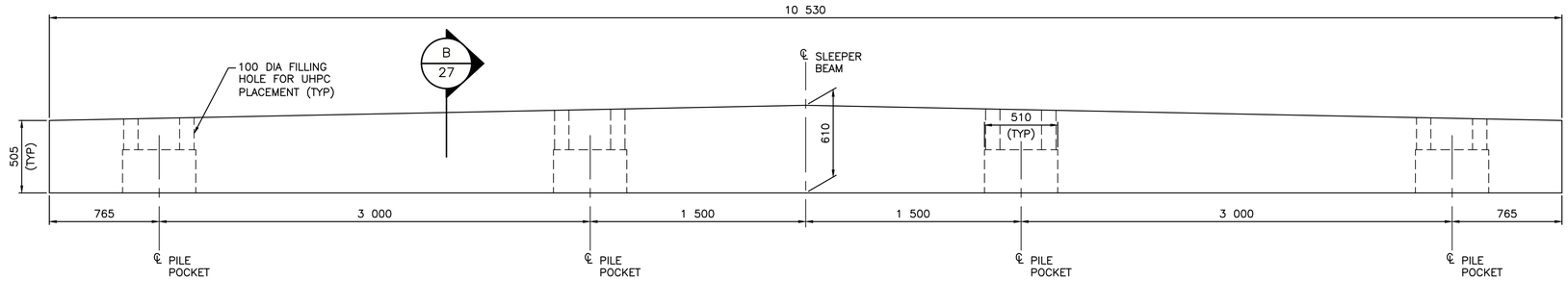
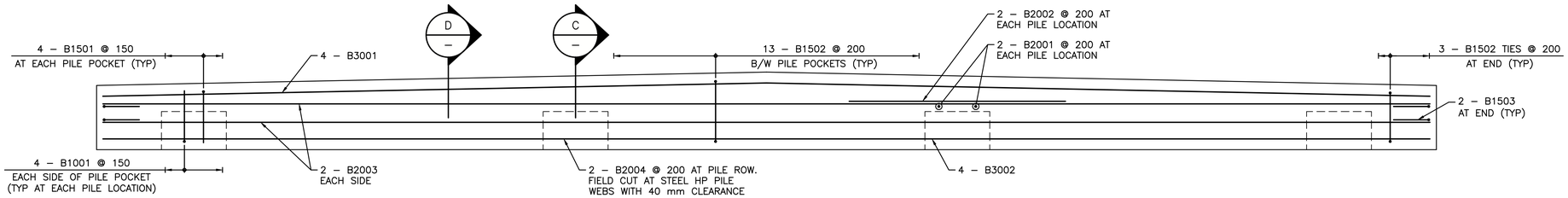
PLOTTED: Friday, December 6, 2024



PRECAST SLEEPER BEAM ELEMENT ELEVATION

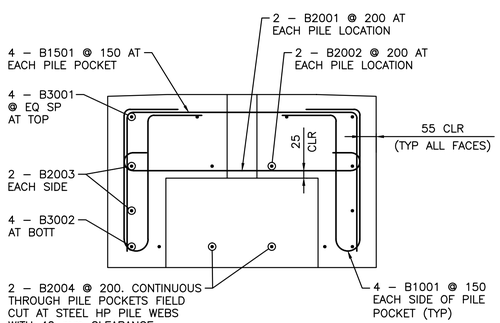
SCALE 1:20

(2 REQUIRED)
(ELEMENT ESTIMATED WEIGHT: 12 950 kg, EACH)



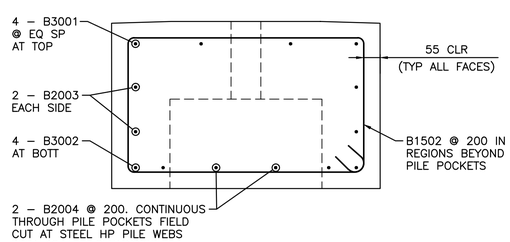
PRECAST SLEEPER BEAM ELEMENT REINFORCEMENT ELEVATION

SCALE 1:20



C – SECTION

SCALE 1:10



D – SECTION

SCALE 1:10

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024-12-06	ISSUED FOR CONSTRUCTION	YL
0	2024-07-19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

PRECAST SLEEPER BEAM ELEMENT DETAILS

DESIGNED	YL	DATE	2024-12-06
CHECKED	JZ	DATE	2024-12-06
DRAWN	KK	DATE	2024-12-06

SCALE AS SHOWN

PERMIT TO PRACTICE
0495606 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature _____ No. L1591
Date 4 Dec 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

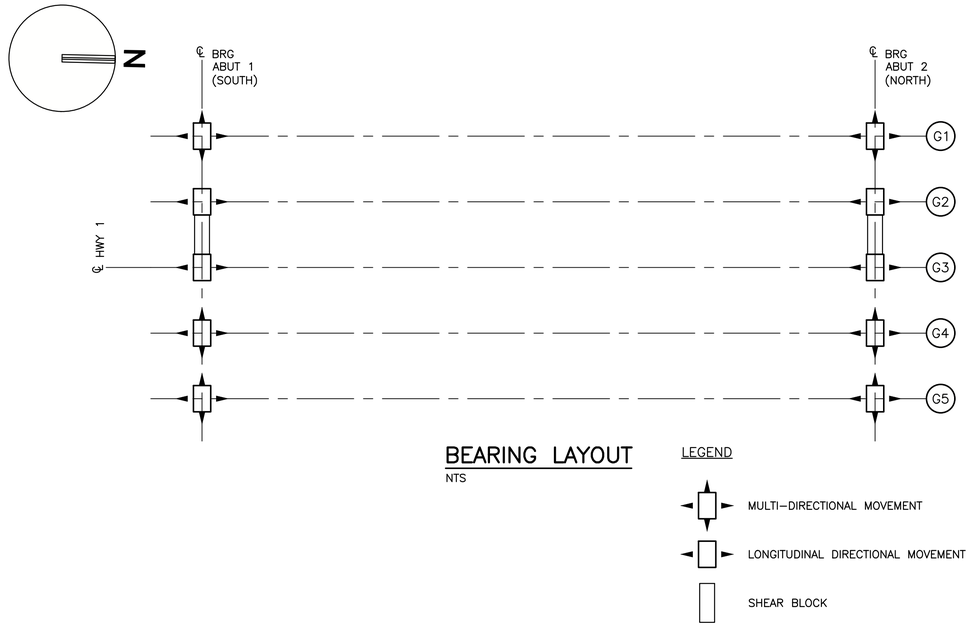
PREPARED UNDER THE DIRECTION OF

YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024-12-06

NORTHWEST TERRITORIES ASSOCIATION OF PROFESSIONAL ENGINEERS AND GEOSCIENTISTS
YING YI LI
L1591
2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	36 OF 55	SC-INF01-6081-S014 | 1

FILE: C:\pw_workdir\jacobs-us--vs-pw-02\dms92401a\S014.dwg
PLOTTED: Friday, December 6, 2024

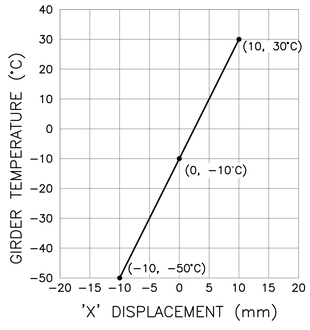


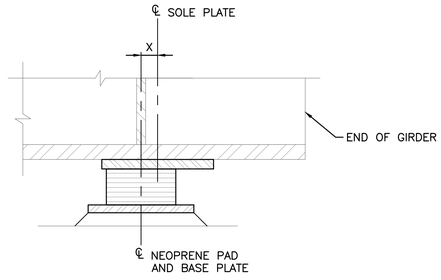
BEARING LAYOUT

NTS

LEGEND

- MULTI–DIRECTIONAL MOVEMENT
- LONGITUDINAL DIRECTIONAL MOVEMENT
- SHEAR BLOCK





ABUTMENT EXPANSION BEARING SETTING CHART

'X' IS POSITIVE WHEN MEASURED FROM ℄ BASE PLATE TOWARD NEAREST GIRDER END

BEARING NOTES

GENERAL

1. ALL BEARINGS SHALL BE DESIGNED BY BEARING MANUFACTURER AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE NORTHWEST TERRITORIES.
2. LAMINATED ELASTOMERIC BEARING PADS AND ALL OTHER COMPONENTS INCLUDING BUT NOT LIMITED TO TOP PLATES, STAINLESS STEEL SLIDING PLATES, BASE PLATES, CONNECTIONS, ANCHOR RODS SHALL BE DESIGNED IN ACCORDANCE WITH CAN/CSA–S6–19 AND THE ALBERTA TRANSPORTATION STRUCTURES DESIGN CRITERIA V9.0 APPENDIX D.
3. ALL REQUIREMENTS OF GNWT STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION (SSBC) SECTION 6 FOR THE SUPPLY OF STRUCTURAL STEEL AND SECTION 8 SHALL BE MET.
4. ABUTMENT SEAT AND PILE CUT–OFF ELEVATIONS, AND RELATED BRIDGE ELEMENT SIZES SHALL BE ADJUSTED TO ACCOMMODATE THE PROPOSED BEARING ASSEMBLIES AS PER ACCEPTED SHOP DRAWINGS. THE CONTRACTOR SHALL ENSURE THAT THE ROADWAY PROFILE IS MAINTAINED AS SHOWN. THE CONTRACTOR IS TO PROVIDE WRITTEN NOTIFICATION OF ANY CHANGE TO ELEVATIONS AND PRECAST CONCRETE ELEMENT DIMENSIONS INCLUDING ANY SUBSEQUENT CHANGES TO THE BRIDGE STRUCTURE. ANY ASSOCIATED COSTS INCURRED DUE TO SUCH CHANGES SHALL BE BORNE SOLELY BY THE CONTRACTOR.
5. FABRICATION OF BEARINGS SHALL NOT COMMENCE UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND ACCEPTED BY THE ENGINEER.
6. THE CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING COMPANY AT THE CONTRACTOR'S EXPENSE TO PERFORM TESTING OF THE BEARINGS. THE TESTING SHALL BE IN ACCORDANCE AS DESCRIBED IN SSBC.

INSTALLATION

1. BEARING GROUT PADS SHALL BE GROUTED AFTER GIRDERS ARE ERECTED AND INTERMEDIATE DIAPHRAGMS ARE INSTALLED. PRECAST CONCRETE DECK AND ABUTMENT DIAPHRAGM ELEMENTS INSTALLATION SHALL NOT BE STARTED UNTIL GROUT PADS HAVE A MINIMUM COMPRESSIVE STRENGTH OF 35 MPa.
2. ALL BEARINGS SHALL BE SUPPLIED COMPLETE WITH SOLE PLATES, BASE PLATES AND BOLTS AS DETAILED.
3. ALL WELDING SHALL CONFORM TO CURRENT AWS BRIDGE WELDING CODE D1.5.

MATERIALS

1. GROUT PADS AND ANCHOR BOLT VOIDS SHALL BE GROUTED WITH SIKA 212, FLOWABLE GROUT OR APPROVED EQUIVALENT. GROUT SHALL HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 45 MPa AND SHALL NOT BE DRY PACKED.
2. SOLE PLATE STEEL SHALL CONFORM TO CSA G40.21M–350 AT CATEGORY 4 WITH CHARPY V–NOTCH STRENGTH OF 27 JOULES AT –45°C. THE STEEL FOR BASE PLATE, KEEPER BARS, PINTELS AND SHIMS SHALL CONFORM TO THE REQUIREMENTS OF CSA G40.21 GRADE 300W. (1)
3. STAINLESS STEEL PLATES AND STUDS FOR ABUTMENT SEAT SHEAR BLOCKS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN IRON AND STEEL INSTITUTE (AISI) TYPE 304. THE CHEMICAL AND MECHANICAL PROPERTIES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A240/A240M .

GALVANIZING

1. GALVANIZING SHALL BE HOT DIP METHOD AFTER FABRICATION IN ACCORDANCE WITH THE CURRENT EDITION OF ASTM A123/A123M STANDARD SPECIFICATION FOR ZINC (HOT–DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS AND ASTM F2329 STANDARD SPECIFICATION FOR ZINC COATING (HOT–DIP).

JACKING LOADS

PERMANENT DEAD LOAD:	825 kN (UN–FACTORED)
PERMANENT DEAD LOAD + 1 LANE OF CL 800 TRUCK (AT CENTER OF ROADWAY):	990 kN (UN–FACTORED)

(ABOVE JACKING LOADS PROVIDED BY ASSUMING NO BACKFILL SOIL FRICTION ON DIAPHRAGMS AND WINGWALLS DURING THE JACKING)

BEARING SCHEDULE

BEARING				G1, G4, G5		G2 & G3	
				VALUE	LC	VALUE	LC
DESIGN BEARING REACTION (kN)	SLS	VERT	MAX	1320		1320	
			PERM	825		825	
			MIN	825		825	
		LONG		135		135	
		TRANS		135		135	
	ULS	VERT	MAX	1840	ULS1	1840	ULS1
			PERM	910	ULS1	910	ULS1
			MIN	750	ULS1	750	ULS1
		LONG		455 (ULS 5)*			
		TRANS		455 (ULS 5)*			
	FLS	VERT		420		420	
DESIGN BEARING MOVEMENT (mm)		LONG		±60		±60	
		TRANS		±12		±2	
DESIGN BEARING ROTATION (rad)	SLS	LONG		0.025		0.025	
		TRANS		–		–	

NOTE: * BEARING TRAVERSE LOAD IS RESISTED BY EACH SHEAR BLOCK; LONGITUDINAL LOAD IS RESISTED BY BACKFILL SOIL BEHIND EACH ABUTMENT DIAPHRAGM.

GIRDER AND BEARING ELEVATIONS AT ℄ OF BEARING

ABUT 1 (SOUTH)	G1	G2	G3	G4	G5
TOP OF GROUT PAD ELEVATION (m)					
BEARING HEIGHT (mm)					
UNDERSIDE OF GIRDER ELEVATION (m)	206.333	206.377	206.421	206.377	206.333
ABUT 2 (NORTH)	**G1**	**G2**	**G3**	**G4**	**G5**
TOP OF GROUT PAD ELEVATION (m)					
BEARING HEIGHT (mm)					
UNDERSIDE OF GIRDER ELEVATION (m)	206.823	206.867	206.911	206.867	206.823

NOTE: TOP OF GROUT PAD ELEVATIONS AND BEARING HEIGHTS TO BE DETERMINED AFTER BEARING SHOP DRAWINGS ARE APPROVED AT CONSTRUCTION STAGE WHEN THE DESIGN BEARING HEIGHTS ARE KNOWN

Government of Northwest Territories

Consultant Logo

Jacobs

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REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

BEARING LAYOUT

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
0446006 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature
Date 5 Dec. 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF

YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	37 OF 55	SC–INF01–6081–S015 | 1

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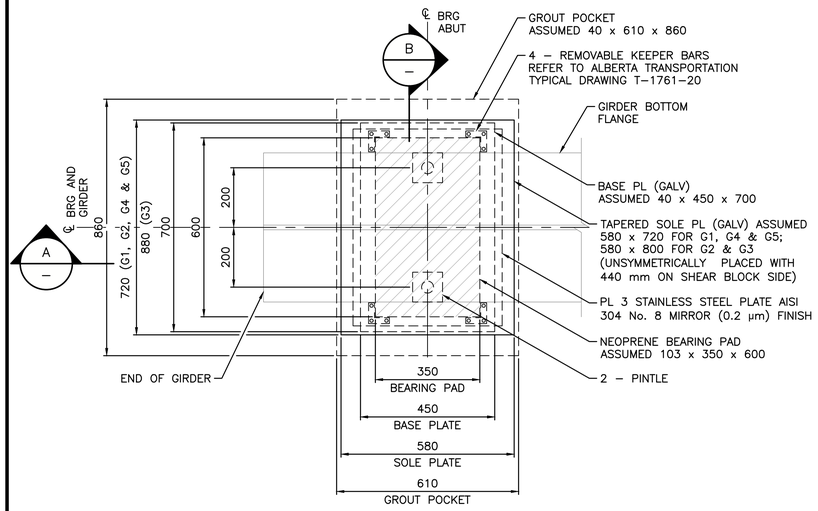
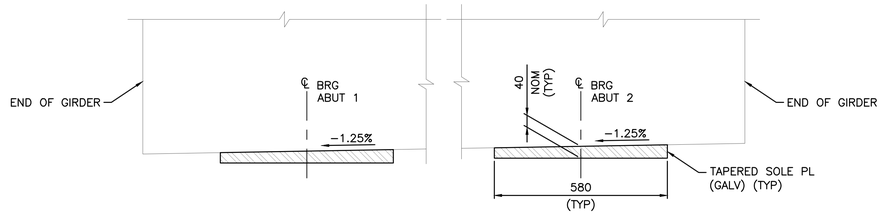


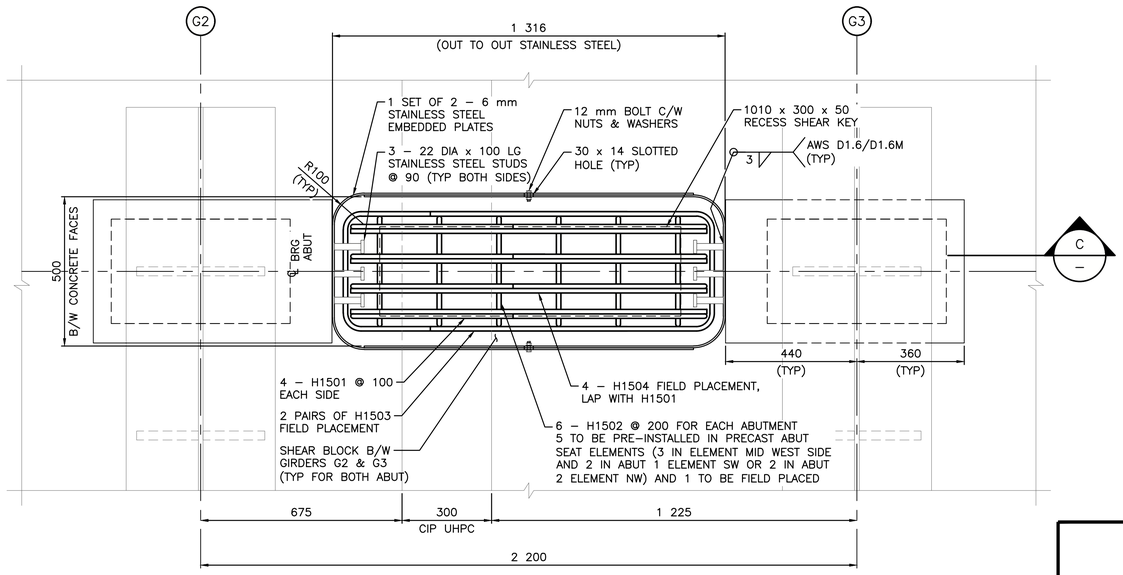
BEARING PLAN

SCALE 1:10



P — TAPERED SOLE PLATE DETAIL

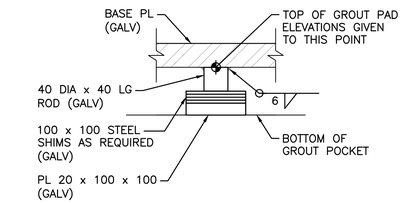
SCALE 1:10



SHEAR BLOCK PLAN

SCALE 1:10

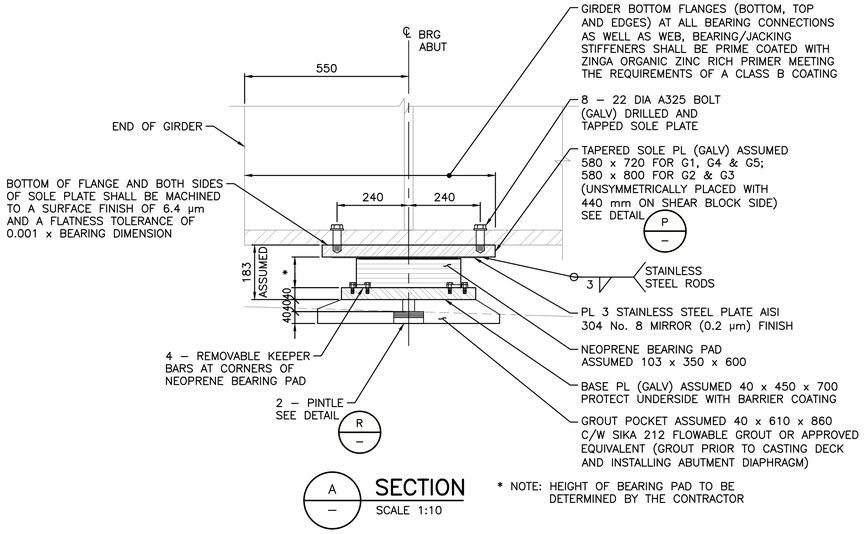
NOTE: SHEAR BLOCK ASSEMBLY SIZES TO BE ADJUSTED BASED ON ACTUAL BEARING DESIGN



NOTE: GALVANIZE AFTER FABRICATION

R — PINTLE DETAIL

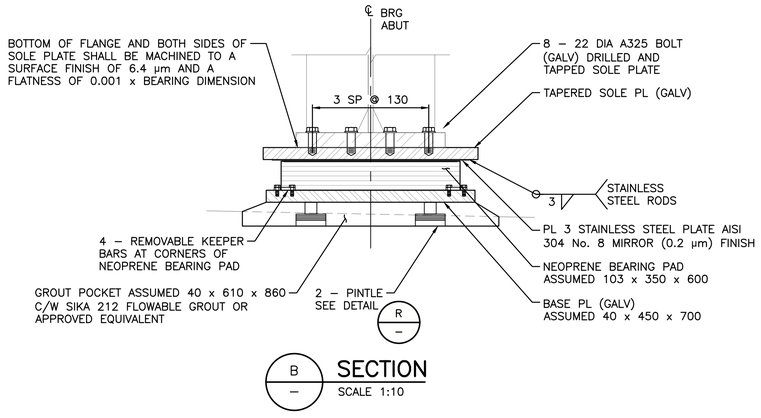
SCALE 1:5



A — SECTION

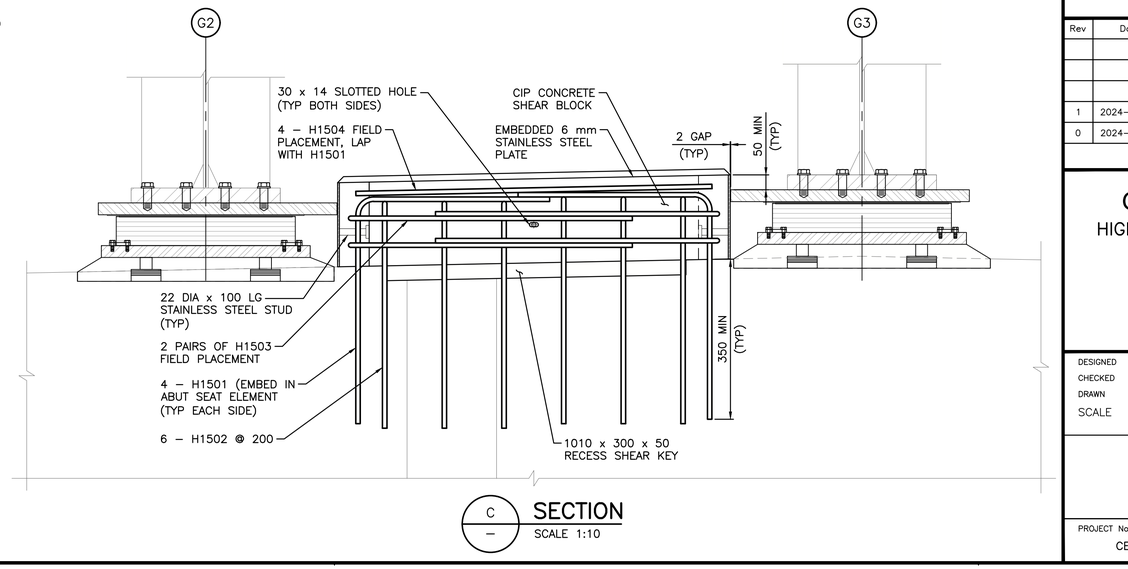
SCALE 1:10

* NOTE: HEIGHT OF BEARING PAD TO BE DETERMINED BY THE CONTRACTOR



B — SECTION

SCALE 1:10



C — SECTION

SCALE 1:10

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

BEARING AND SHEAR BLOCK DETAILS

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06

SCALE: AS SHOWN

PERMIT TO PRACTICE
8446606 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature ... Date ... 30 Dec 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06
2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	38 OF 55	SC–INF01–6081–S016 | 1

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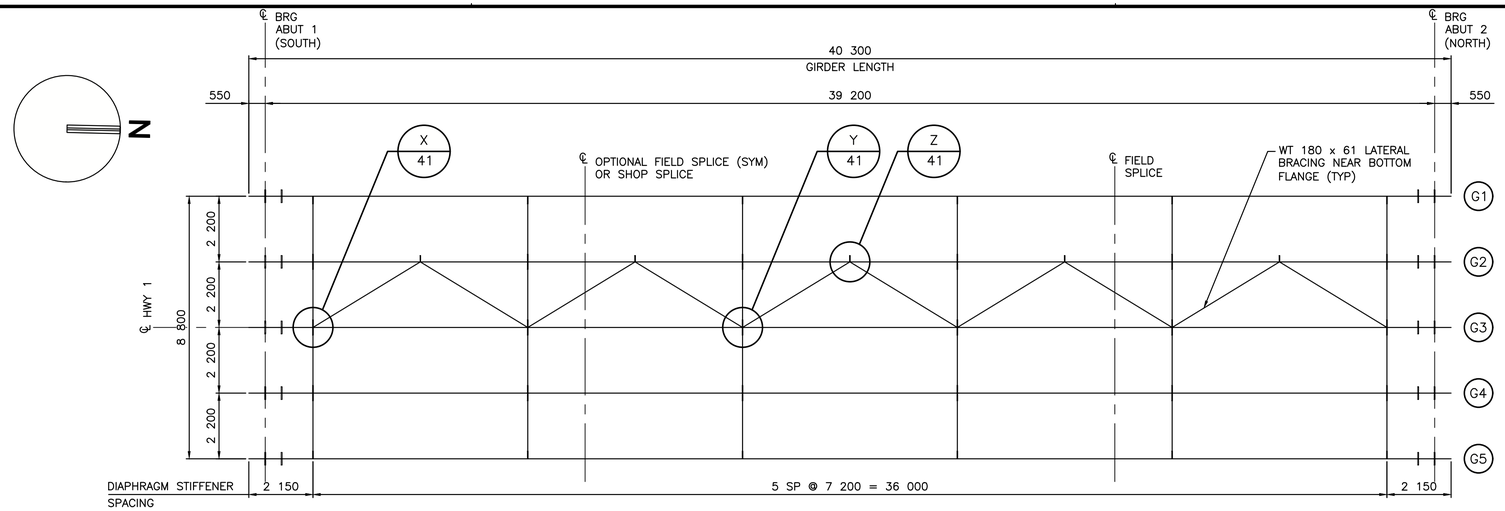
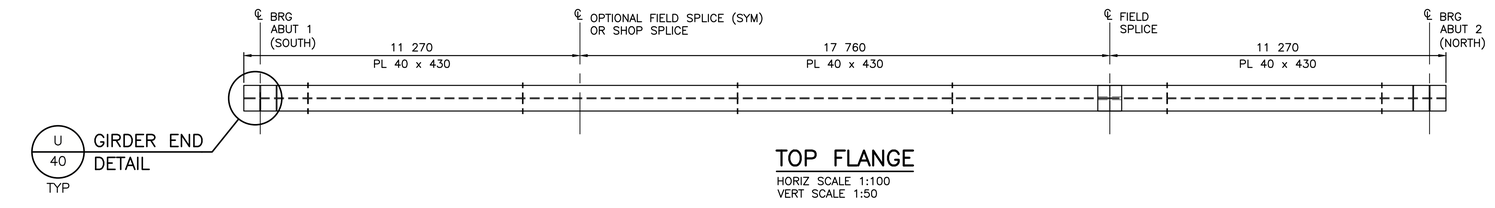


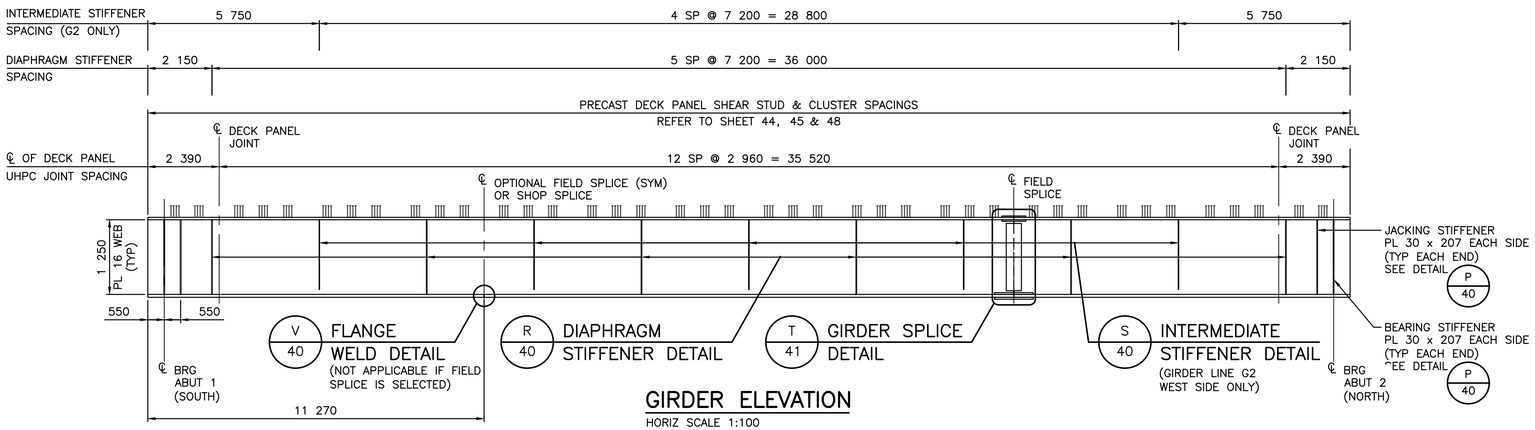
GIRDER & DIAPHRAGM LAYOUT

SCALE 1:100



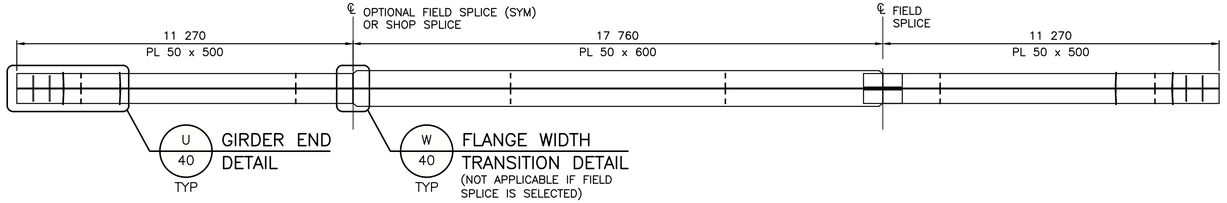
TOP FLANGE

HORIZ SCALE 1:100
VERT SCALE 1:50



GIRDER ELEVATION

HORIZ SCALE 1:100
VERT SCALE 1:50



BOTTOM FLANGE

HORIZ SCALE 1:100
VERT SCALE 1:50

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024-12-06	ISSUED FOR CONSTRUCTION	YL
0	2024-07-19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

GIRDER LAYOUT

DESIGNED	YL	DATE	2024-12-06
CHECKED	JZ	DATE	2024-12-06
DRAWN	KK	DATE	2024-12-06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
0446006 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature
Date 5 Dec 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF

YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024-12-06

PROFESSIONAL ENGINEER YING YI LI 87703 2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	39 OF 55	SC-INF01-6081-S017 | 1

FILE: C:\pw_workdir\jacobs-us-pw-02\dms92401\S017.dwg
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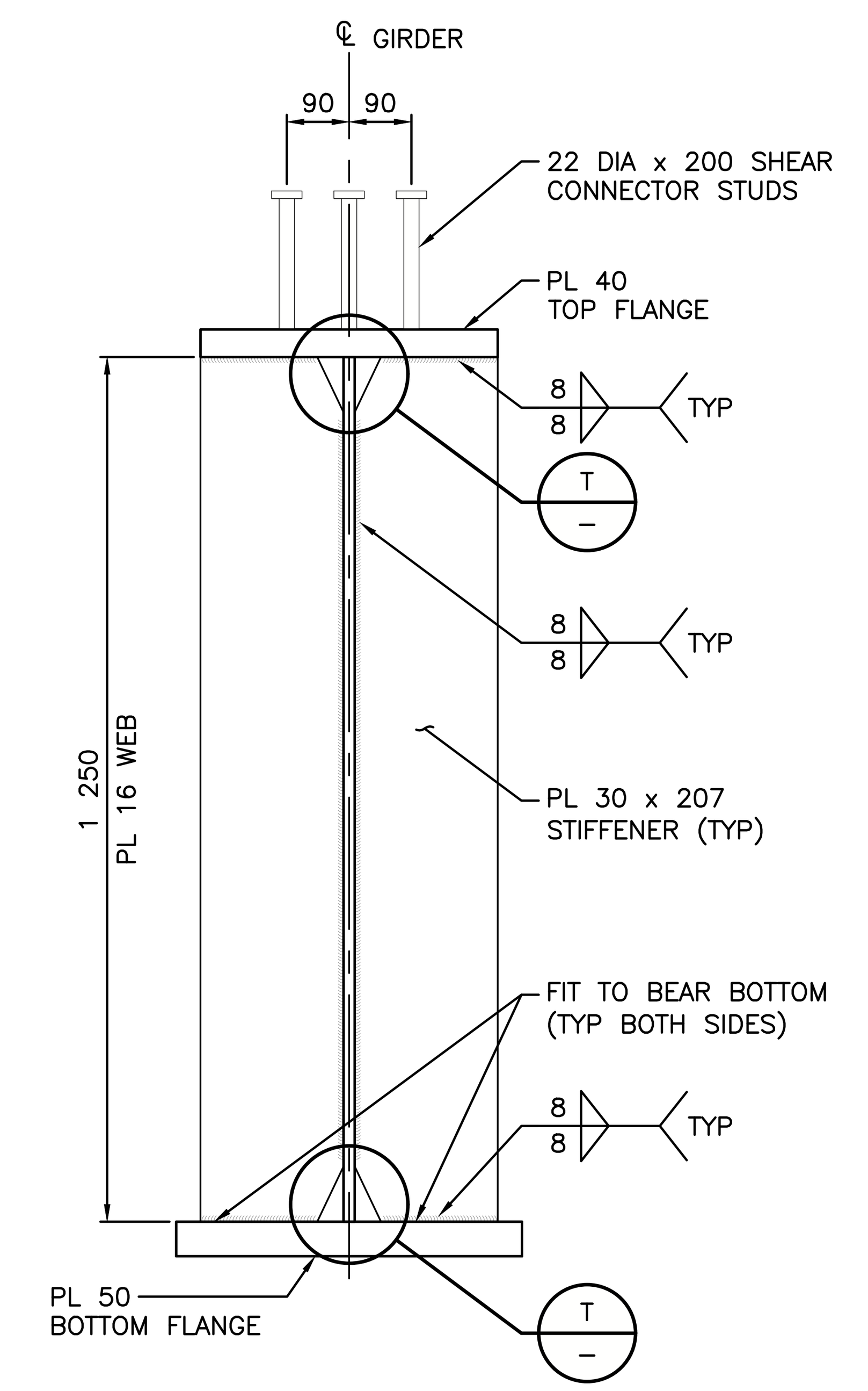
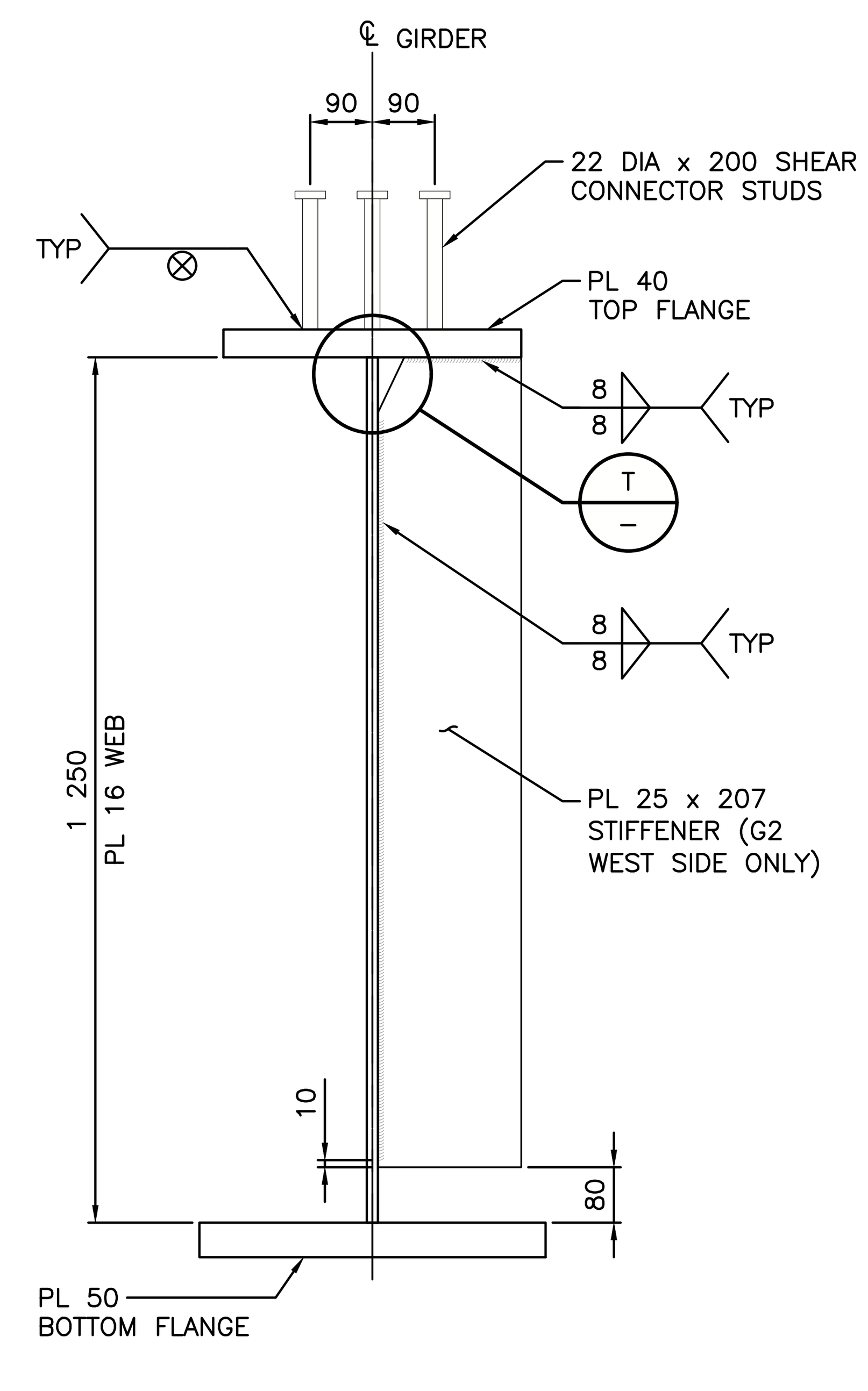


P 39 BEARING/JACKING STIFFENER DETAIL
SCALE 1:10



S 39 INTERMEDIATE STIFFENER DETAIL
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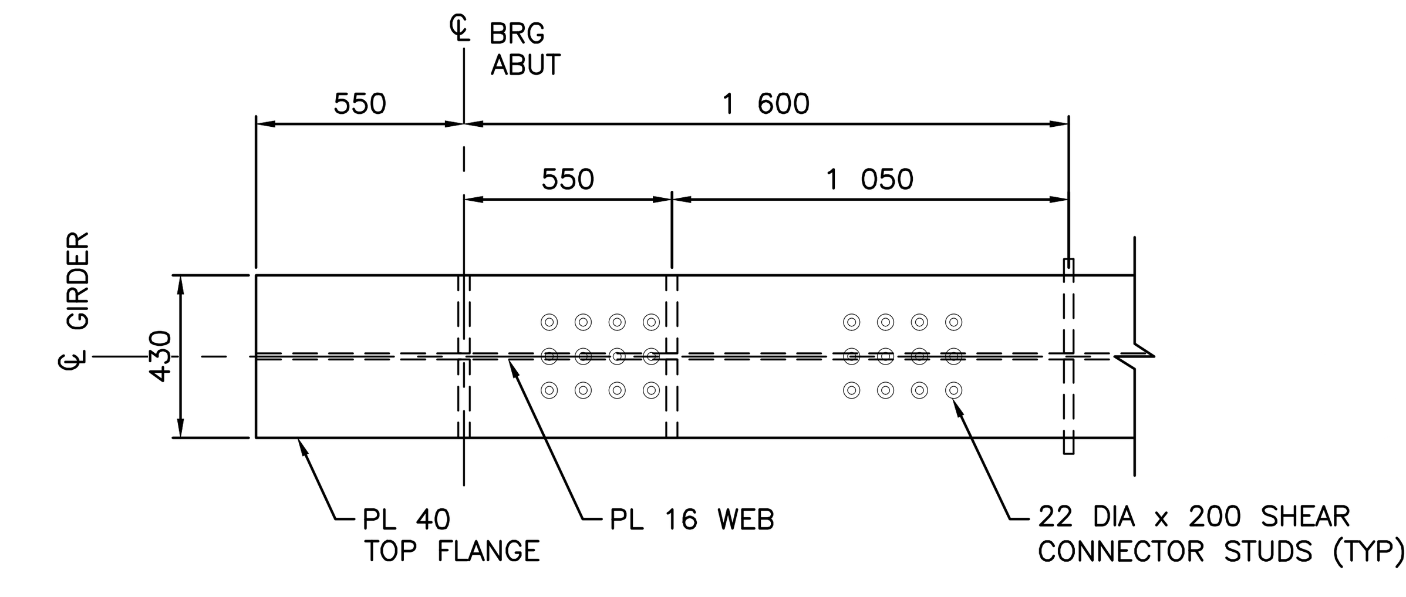
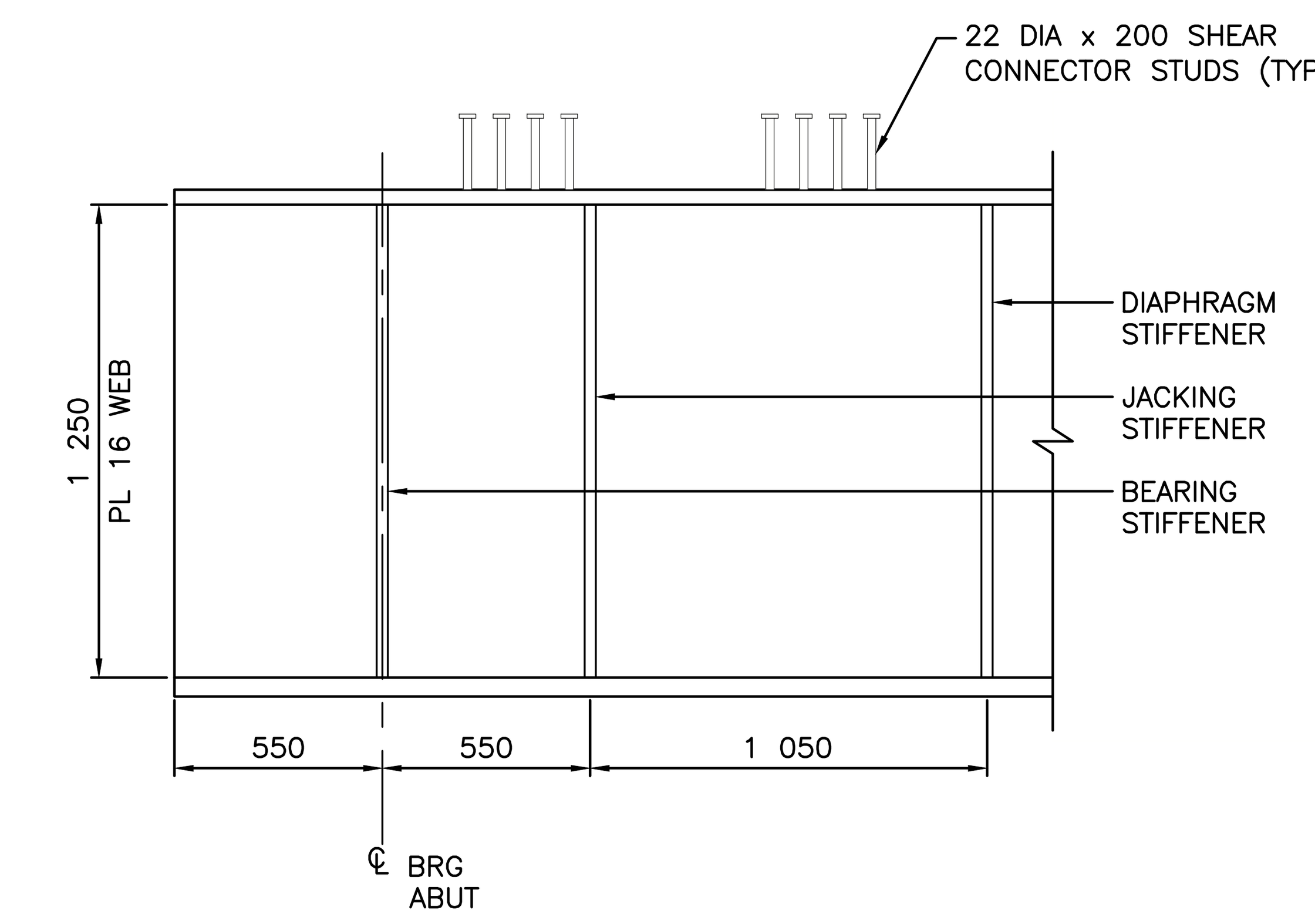
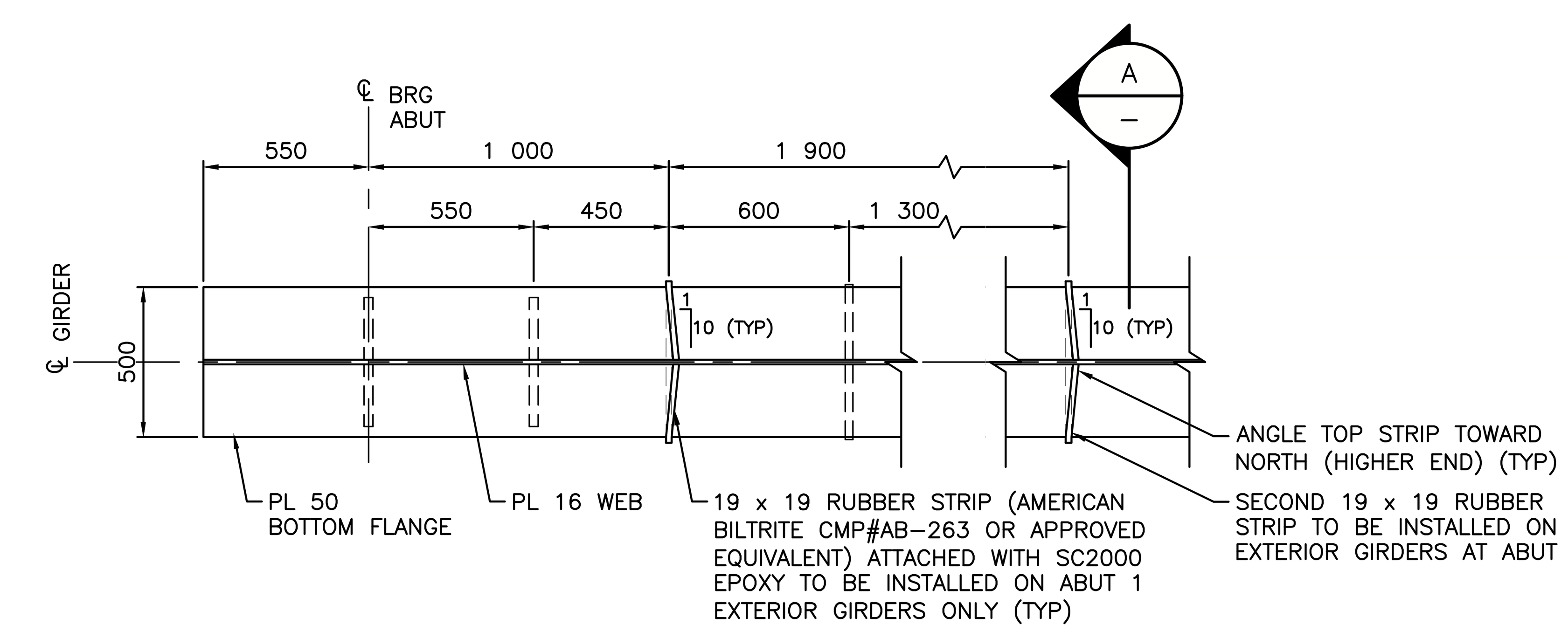


TOP FLANGE PLAN

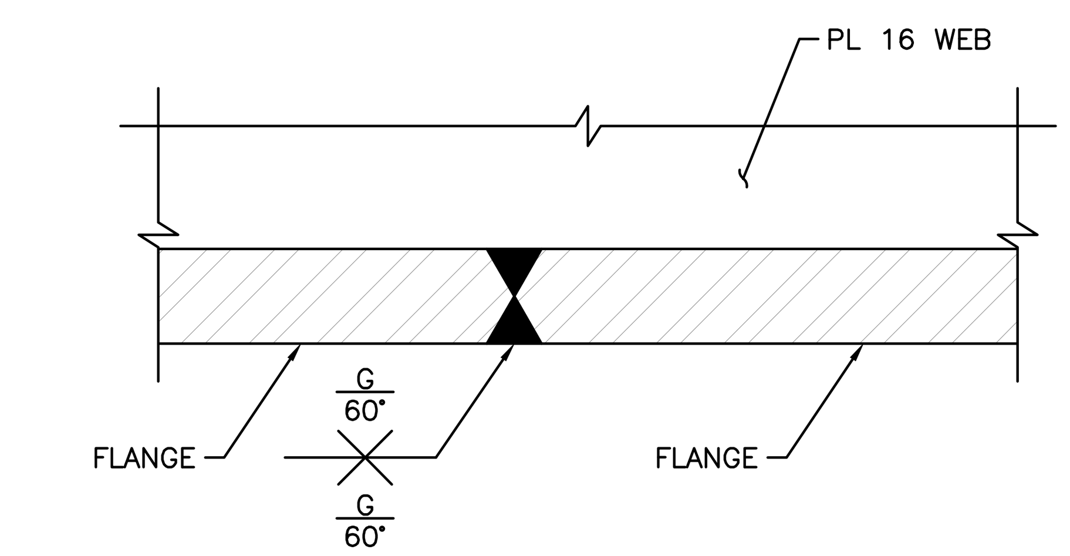


GIRDER ELEVATION

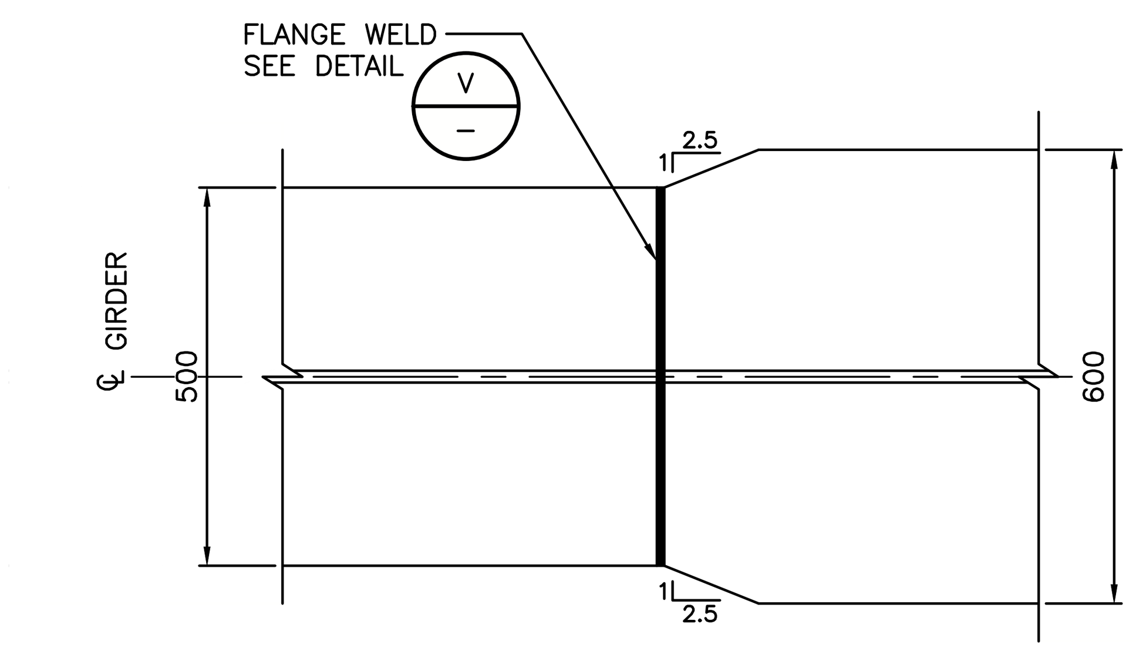


BOTTOM FLANGE PLAN

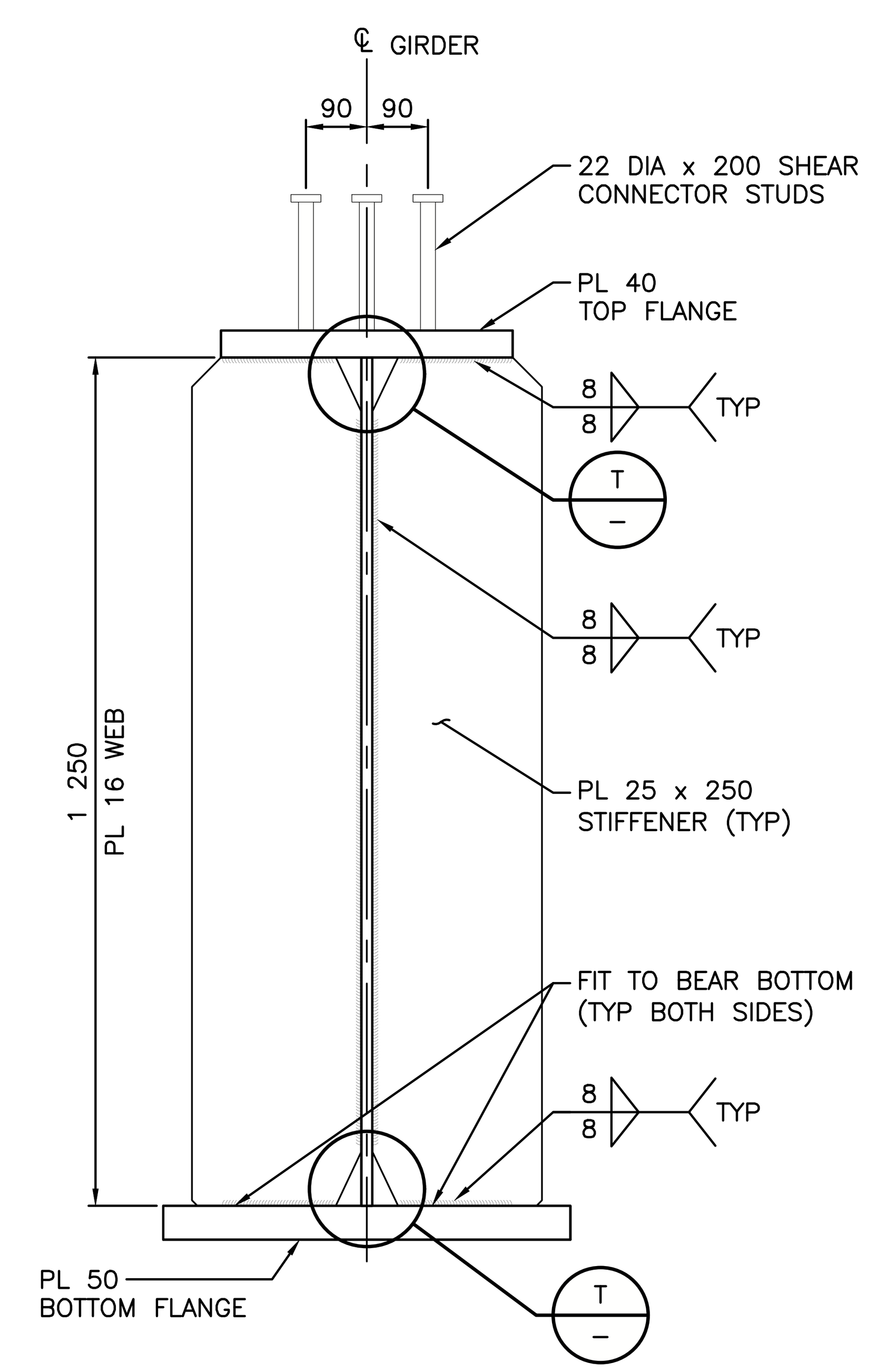
U 39 GIRDER END DETAIL
SCALE 1:20



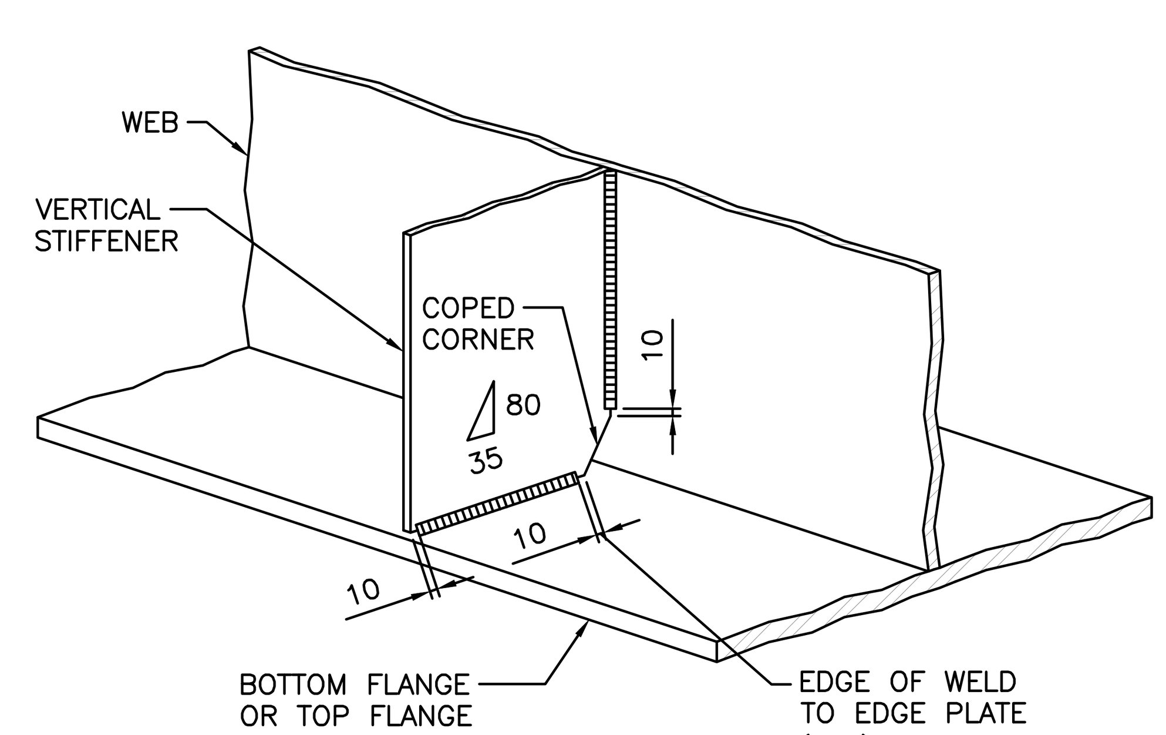
V 39 FLANGE WELD DETAIL
NTS



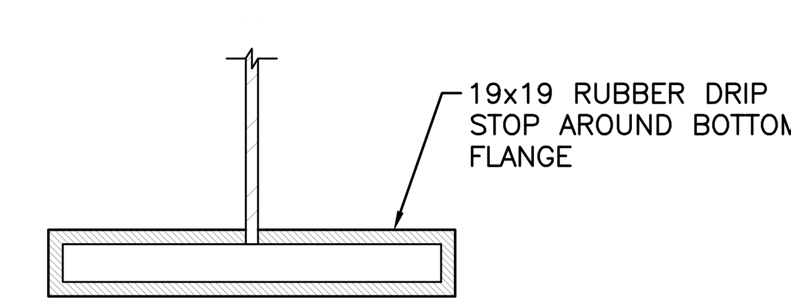
W 39 FLANGE WIDTH TRANSITION DETAIL
SCALE 1:10



R 39 DIAPHRAGM STIFFENER DETAIL
SCALE 1:10



T WELDED END OF VERTICAL STIFFENERS DETAIL
NTS



A SECTION
SCALE 1:10

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024-12-06	ISSUED FOR CONSTRUCTION	YL
0	2024-07-19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories
HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

GIRDER DETAILS

SHEET 1

DESIGNED	YL	DATE	2024-12-06
CHECKED	JZ	DATE	2024-12-06
DRAWN	KK	DATE	2024-12-06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
JACOBS CONSULTANCY CANADA INC.
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024-12-06

PROJECT No.	SHEET No.	DRAWING No.	
CE857700	40 OF 55	SC-INF01-6081-S018	1

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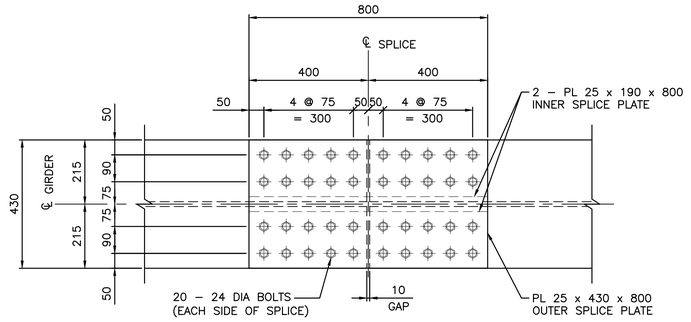
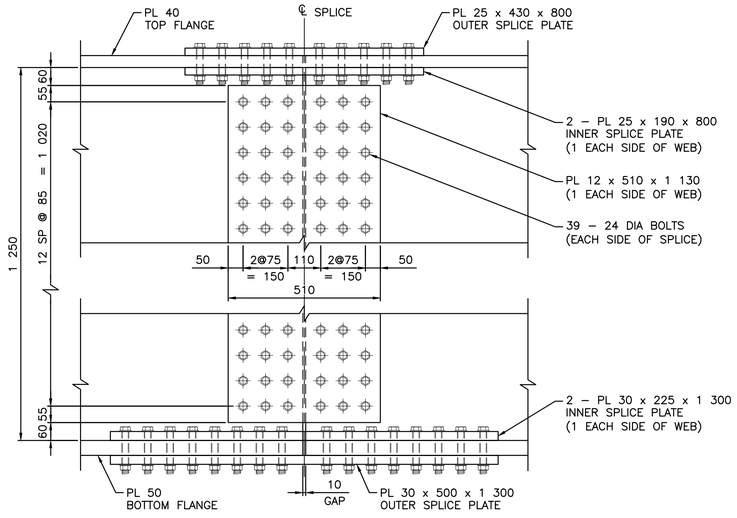
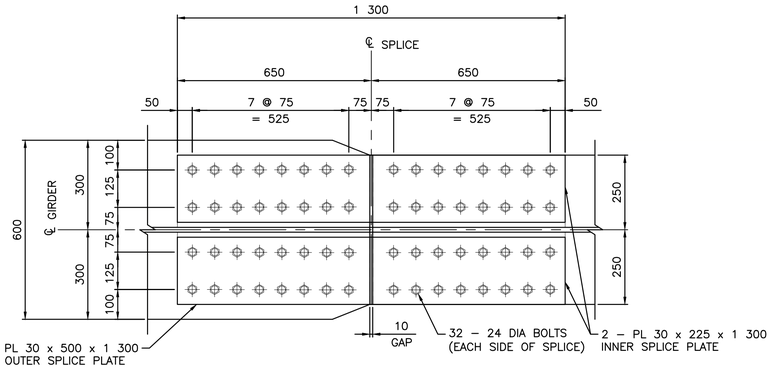
PLOTTED : Friday, December 6, 2024



TOP FLANGE PLAN

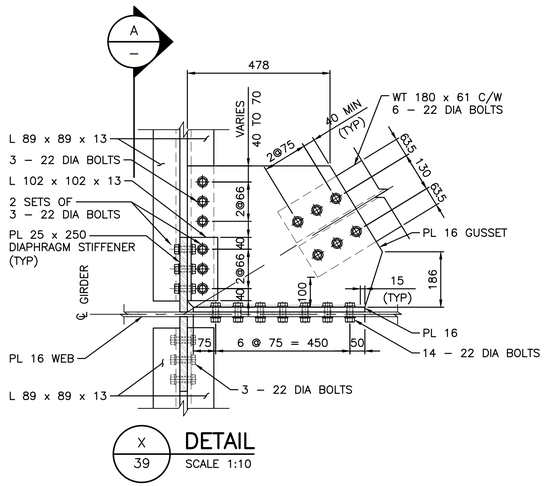


GIRDER ELEVATION

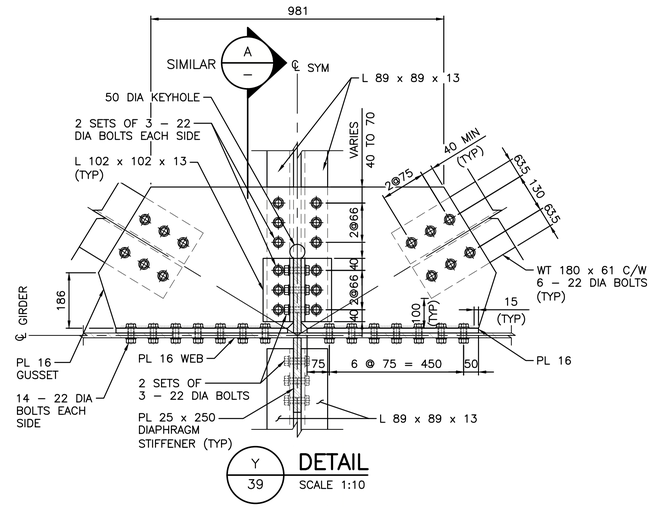


BOTTOM FLANGE PLAN

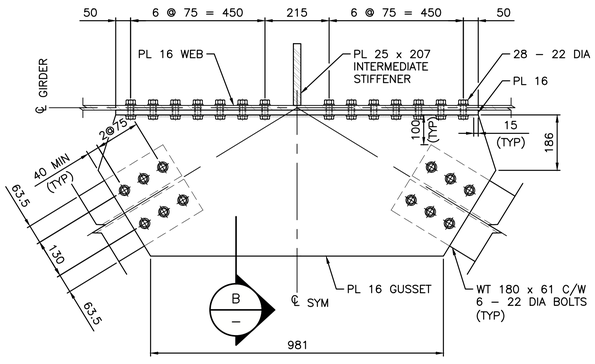
T / 39 GIRDER SPLICE DETAIL
SCALE 1:10



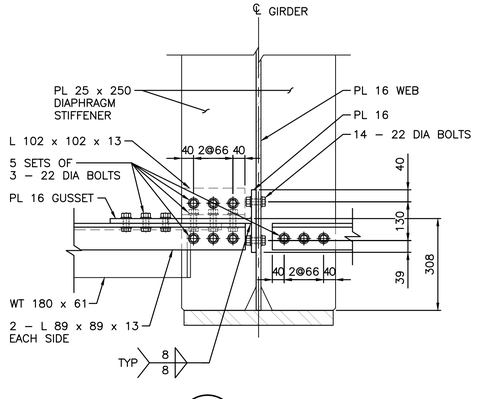
X / 39 DETAIL
SCALE 1:10



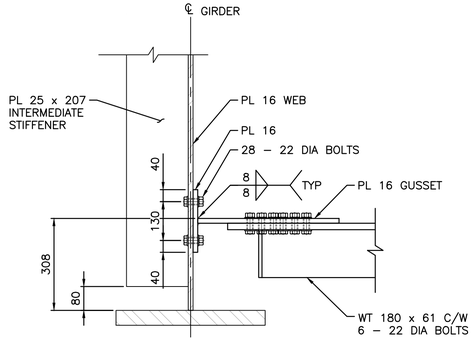
Y / 39 DETAIL
SCALE 1:10



Z / 39 DETAIL
SCALE 1:10



A / – SECTION
SCALE 1:10



B / – SECTION
SCALE 1:10

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024-12-06	ISSUED FOR CONSTRUCTION	YL
0	2024-07-19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

GIRDER DETAILS

SHEET 2

DESIGNED	KA/YL	DATE	2024-12-06
CHECKED	JZ	DATE	2024-12-06
DRAWN	KK	DATE	2024-12-06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
6446606 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature
Date 6 Dec. 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024-12-06
2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	41 OF 55	SC-INF01-6081-S019 | 1

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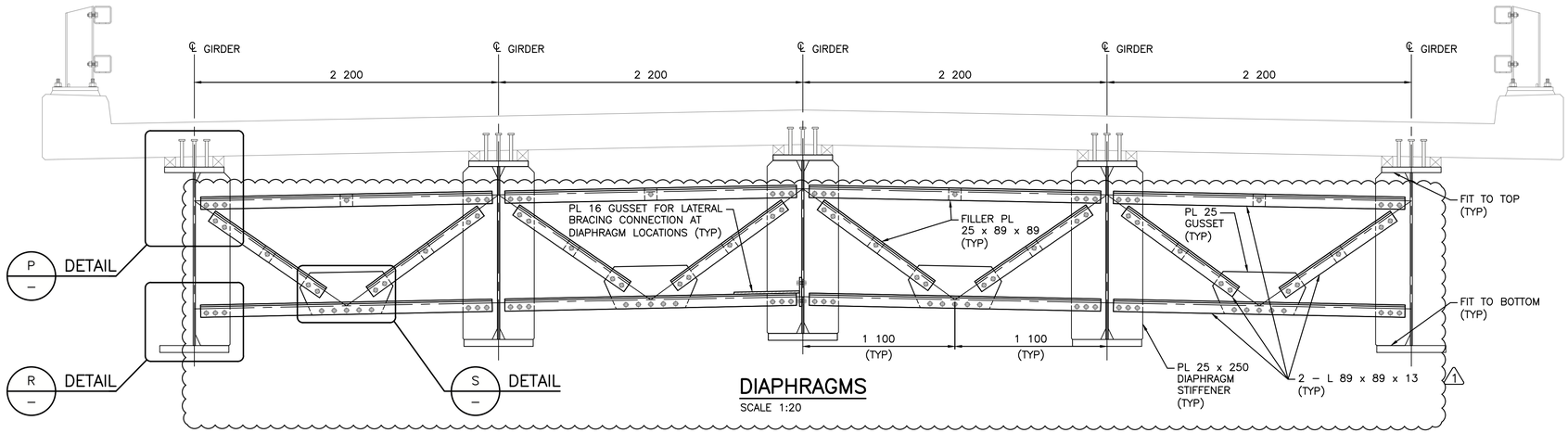
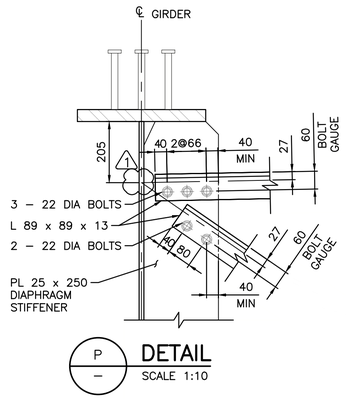
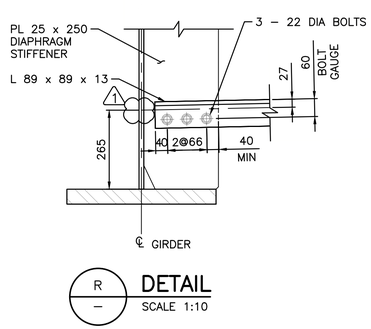
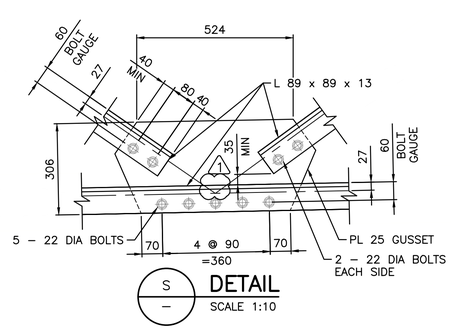
PLOTTED: Friday, December 6, 2024



DIAPHRAGMS
SCALE 1:20







Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories
HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2
JEAN MARIE RIVER BRIDGE
GIRDER DETAILS
SHEET 3

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
84656 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature _____ No. 1159 91
Date 6 Dec 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

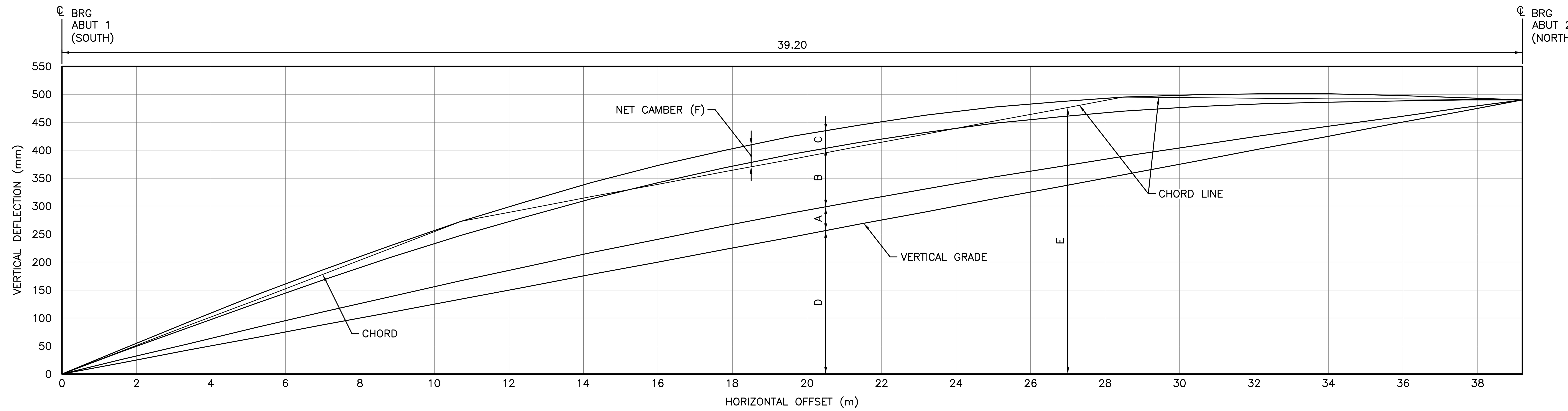
PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROFESSIONAL ENGINEER YING YI LI M1703 2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	42 OF 55	SC–INF01–6081–S020 | 1

CAMBER DIAGRAM TABLE – FOR TWO FIELD SPLICES OPTION

	DISTANCE TO ABUT 1 ℄ BRG (m)	0.00	1.60	3.40	5.20	7.00	8.80	10.72	12.40	14.20	16.00	17.80	19.60	21.40	23.20	25.00	26.80	28.48	30.40	32.20	34.00	35.80	37.60	39.20
	LOCATION NOTE	℄ BRG ABUT 1						FIELD SPLICE										FIELD SPLICE						℄ BRG ABUT 2
A	DEAD LOAD – GIRDER (mm)	0	6	12	18	23	28	33	36	39	41	43	43	43	41	39	36	33	28	23	18	12	6	0
B	DEAD LOAD – DECK + HAUNCH + DIAPHRAGM (mm)	0	14	29	43	57	69	81	89	96	101	104	105	104	101	96	89	81	69	57	43	29	14	0
C	DECK SHRINKAGE + DEAD LOAD OF RAIL (mm)	0	5	10	14	18	22	25	27	29	30	31	31	31	30	29	27	25	22	18	14	10	5	0
D	VERTICAL GRADE (mm)	0	20	43	65	88	110	134	155	178	200	223	245	268	290	313	335	356	380	403	425	448	470	490
E	CHORD (mm)	0	41	87	132	178	224	273	294	317	339	362	384	407	429	452	474	495	494	493	492	492	491	490
F	NET CAMBER (mm)	0	4	7	8	8	5	0	13	25	34	39	41	39	34	25	13	0	5	8	8	7	4	0
G	AS CONSTRUCTION EL (m)																							

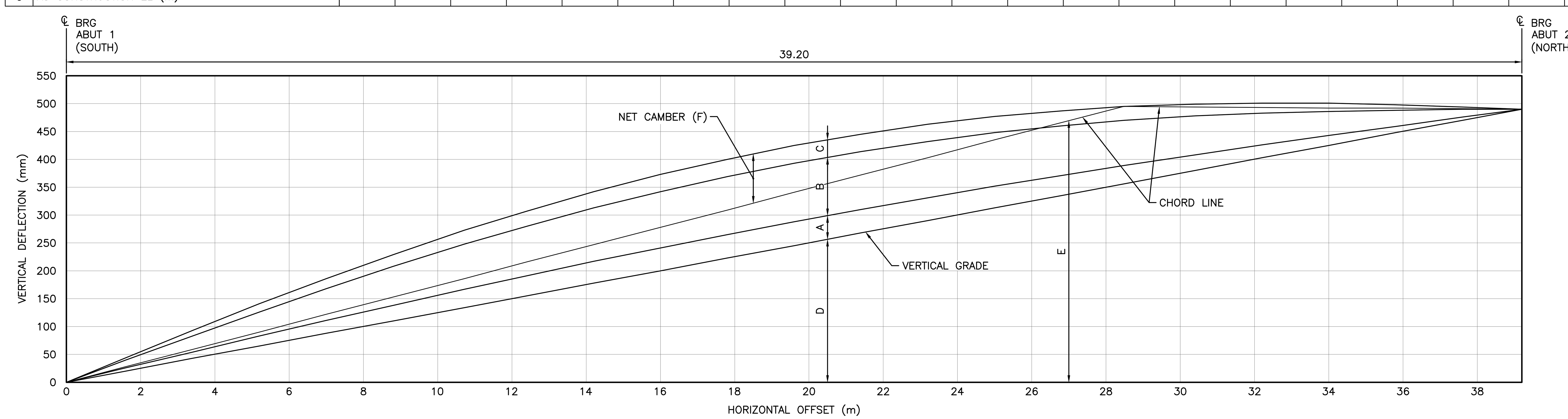


CAMBER DIAGRAM – FOR TWO FIELD SPLICES OPTION

HORIZ SCALE 1:75
VERT SCALE 1:5

CAMBER DIAGRAM TABLE – FOR ONE FIELD SPLICE OPTION

	DISTANCE TO ABUT 1 ℄ BRG (m)	0.00	1.60	3.40	5.20	7.00	8.80	10.72	12.40	14.20	16.00	17.80	19.60	21.40	23.20	25.00	26.80	28.48	30.40	32.20	34.00	35.80	37.60	39.20
	LOCATION NOTE	℄ BRG ABUT 1						SHOP SPLICE										FIELD SPLICE						℄ BRG ABUT 2
A	DEAD LOAD – GIRDER (mm)	0	6	12	18	23	28	33	36	39	41	43	43	43	41	39	36	33	28	23	18	12	6	0
B	DEAD LOAD – DECK + HAUNCH + DIAPHRAGM (mm)	0	14	29	43	57	69	81	89	96	101	104	105	104	101	96	89	81	69	57	43	29	14	0
C	DECK SHRINKAGE + DEAD LOAD OF RAIL (mm)	0	5	10	14	18	22	25	27	29	30	31	31	31	30	29	27	25	22	18	14	10	5	0
D	VERTICAL GRADE (mm)	0	20	43	65	88	110	134	155	178	200	223	245	268	290	313	335	356	380	403	425	448	470	490
E	CHORD (mm)	0	28	59	90	122	153	186	216	247	278	309	341	372	403	435	466	495	494	493	492	492	491	490
F	NET CAMBER (mm)	0	17	34	50	65	76	87	92	95	95	91	84	73	59	42	21	0	5	8	8	7	4	0
G	AS CONSTRUCTION EL (m)																							



CAMBER DIAGRAM – FOR ONE FIELD SPLICE OPTION

HORIZ SCALE 1:75
VERT SCALE 1:5

NOTES

1. NET CAMBER (F) = A + B + C + D – E
2. "NET CAMBER" FIGURES ARE FOR GIRDER SECTIONS IN ZERO LOAD CONDITIONS.
3. FABRICATOR IS RESPONSIBLE FOR MAKING ALLOWANCES SUCH THAT CAMBER ON COMPLETED GIRDER SECTIONS WILL BE WITHIN ALLOWABLE TOLERANCES. ALL PROCEDURES FOR CAMBER ADJUSTMENT MUST BE APPROVED BY THE ENGINEER PRIOR TO USE.
4. LONGITUDINAL GIRDER DIMENSIONING (SHOWN HORIZONTAL) IS CORRECT ALONG THE BOTTOM FLANGE AT 20 °C.

Government of Northwest Territories

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Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

R E V I S I O N S

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

GIRDER CAMBER DIAGRAM

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
6448506 CANADA INC. O/A JACOBS CONSULTANCY CANADA INC.
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROJECT No.	SHEET No.	DRAWING No.	
CE857700	43 OF 55	SC–INF01–6081–S021	1

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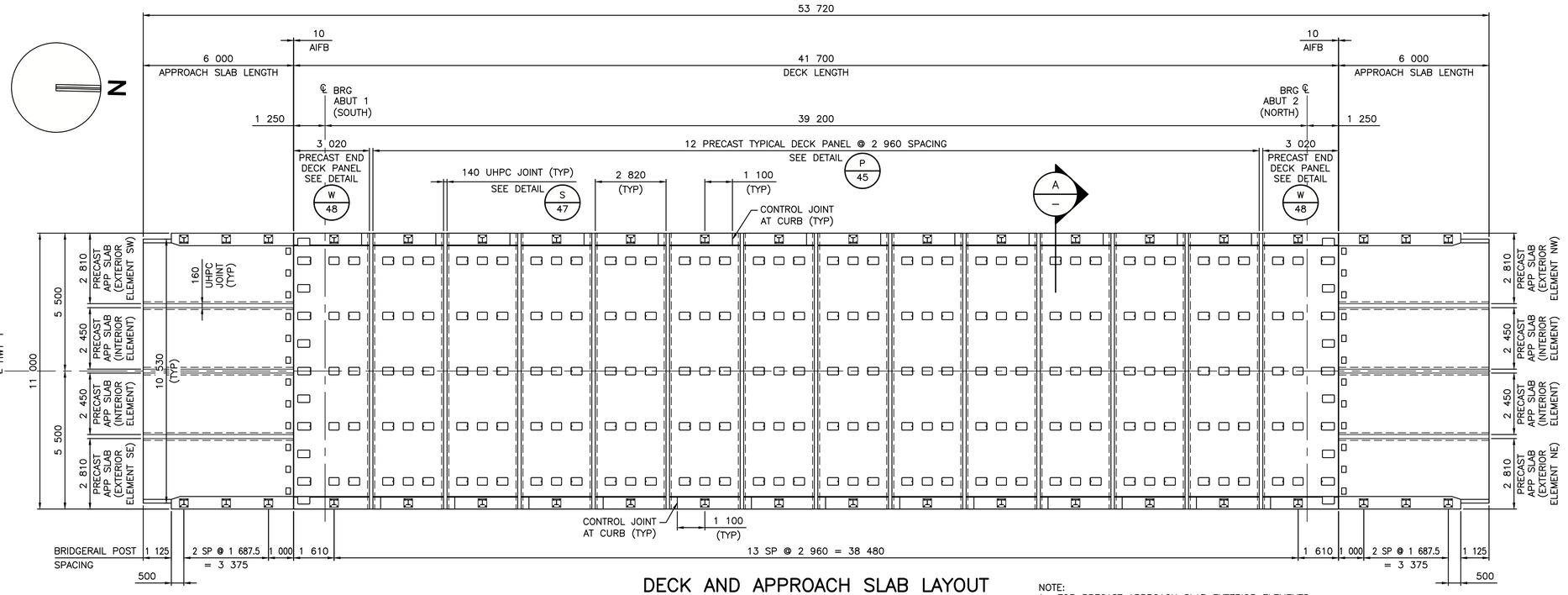
PLOTTED : Friday, December 6, 2024



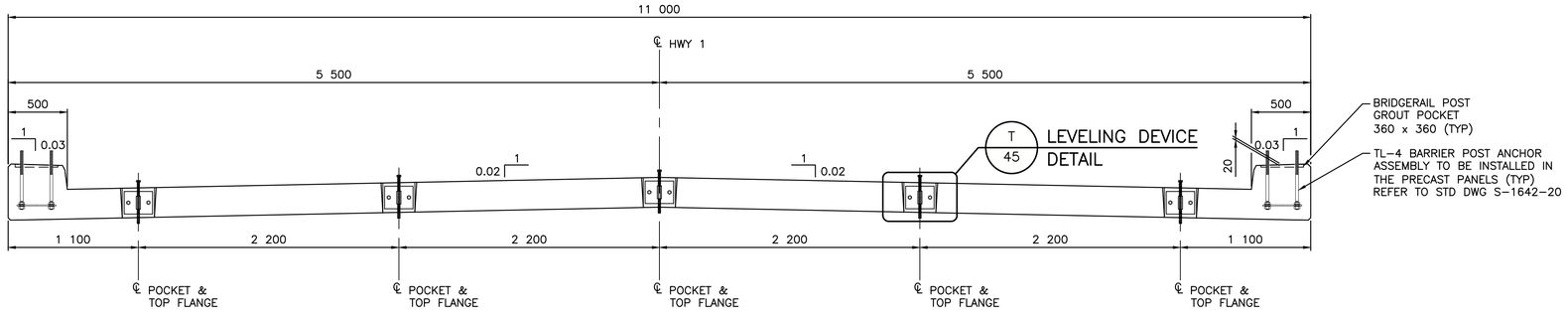
DECK AND APPROACH SLAB LAYOUT

SCALE 1:100

NOTE:
1. FOR PRECAST APPROACH SLAB EXTERIOR ELEMENTS, REFER TO SHEET 50.
2. FOR PRECAST APPROACH SLAB INTERIOR ELEMENTS, REFER TO SHEET 51.

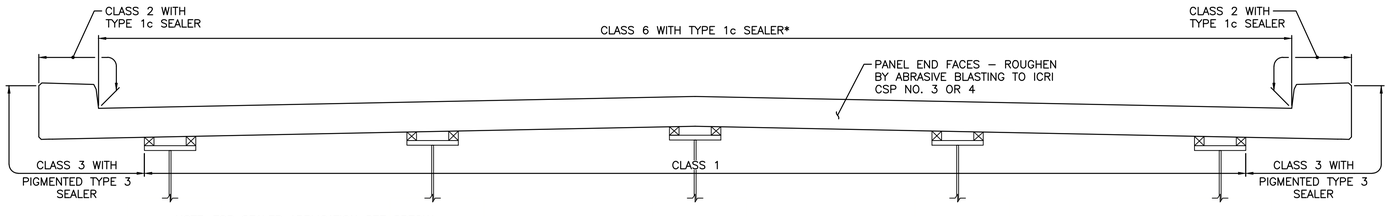
FABRICATION AND ERECTION

1. DECK PANELS SHALL BE INSTALLED AFTER ALL GIRDER DIAPHRAGMS, BRACING AND ABUTMENT DIAPHRAGMS WITH WINGWALLS ARE INSTALLED, AND BACKFILL BEHIND ABUTMENT DIAPHRAGMS ARE COMPLETED.
2. DECK PANEL FABRICATION SEQUENCE SHALL BE THE SAME AS INSTALLATION SEQUENCE.
3. DECK PANELS SHALL HAVE A MINIMUM AGE OF 60 DAYS AT TIME OF SITE–CASTING THE COMPOSITE JOINTS AND POCKETS.
4. PROVIDE TEMPORARY SUPPORTS AS REQUIRED TO ELIMINATE DIFFERENTIAL DEFLECTION BETWEEN ADJACENT DECK PANELS. PROVIDE TEMPORARY SUPPORTS AS REQUIRED AT DECK CANTILEVERS TO MAINTAIN DECK STABILITY DURING THE CONSTRUCTION.
5. EVAFOAM TO BE BONDED TO TOP OF STEEL GIRDER, TOP OF ABUTMENT DIAPHRAGMS, AND UNDERSIDE OF PRECAST PANEL WITH COMPATIBLE CONSTRUCTION ADHESIVE. ADHESIVE SHALL PROVIDE A SEAL PREVENTING UHPC LEAKING OUT DURING CASTING.
6. EACH DECK PANEL SHALL BE INITIALLY INSTALLED ON GIRDERS WITH 4 LEVELING DEVICE SUPPORT RODS AT 2 EXTERIOR GIRDERS FULLY ENGAGED TO PROVIDE SUPPORTS, THEN EXTEND THE OTHER SUPPORT RODS TO BE ENGAGED AND TO BE ADJUSTED TO FIT REQUIRED HAUNCH DEPTH. ONLY ONE LEVELING DEVICE ADJUSTMENT PERSONAL IS ALLOWED ON THE DECK PANEL UNTIL ALL THE SUPPORT RODS IN THE PANEL ARE FULLY ENGAGED ON THE GIRDERS.
7. BEFORE DECK PANELS ARE CONNECTED WITH GIRDERS, ONLY LIGHT CONSTRUCTION EQUIPMENT AND NON–MECHANICAL CONSTRUCTION CART WITH CONSTRUCTION PERSONALS ARE ALLOWED ON DECK PANELS TO TRANSPORT AND PLACE UHPC MATERIAL, AND WITH BALANCED CONSTRUCTION LOADS WHEN OPERTATING OVER DECK OVERHANG REGIONS UNLESS TEMPORARY SUPPORTS AT DECK CANTILEVERS ARE PROVIDED. THE CONTRACTOR TO PROVIDE LOADING TO BE USED ON THE DECK PANELS DURING CONSTRUCTION TO THE ENGINEER FOR REVIEW PRIOR TO STARTING THE WORK.
8. THE CONTRACTOR MAY PROPOSE CHANGES TO THE FABRICATION DETAILS SUBJECT TO THE ENGINEER'S APPROVAL. THE CONTRACTOR SHALL MAKE ALL NECESSARY ADJUSTMENTS AND SUBMIT DRAWINGS AND CALCULATIONS, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE NORTHWEST TERRITORIES, TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.
9. ALL UHPC CASTING FORMWORK SHALL BE WATER–TIGHT TESTED PRIOR TO THE CONCRETE PLACEMENT.



A — SECTION

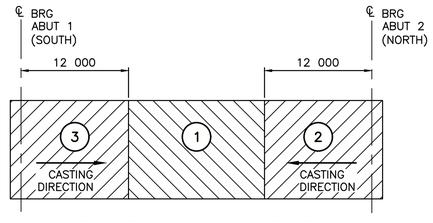
SCALE 1:25



NOTE: FOR SEALER APPLICATION SEE SPECIAL PROVISIONS. PIGMENTED TYPE 3 SEALER SHALL BE CONCRETE GREY COLOUR

TYPICAL DECK FINISHES

NTS (TYP FOR BOTH TYPICAL DECK PANELS AND END PANELS) (TYP FOR APPROACH SLAB PANELS EXCEPT ENTIRE BOTTOM FACE TO BE CLASS 1)



NOTE: CONTRACTOR MAY SUBMIT ALTERNATE CASTING SEQUENCE FOR REVIEW PRIOR TO FABRICATION OF GIRDERS

JOINT AND STUD POCKET CASTING SEQUENCE

NTS

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Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

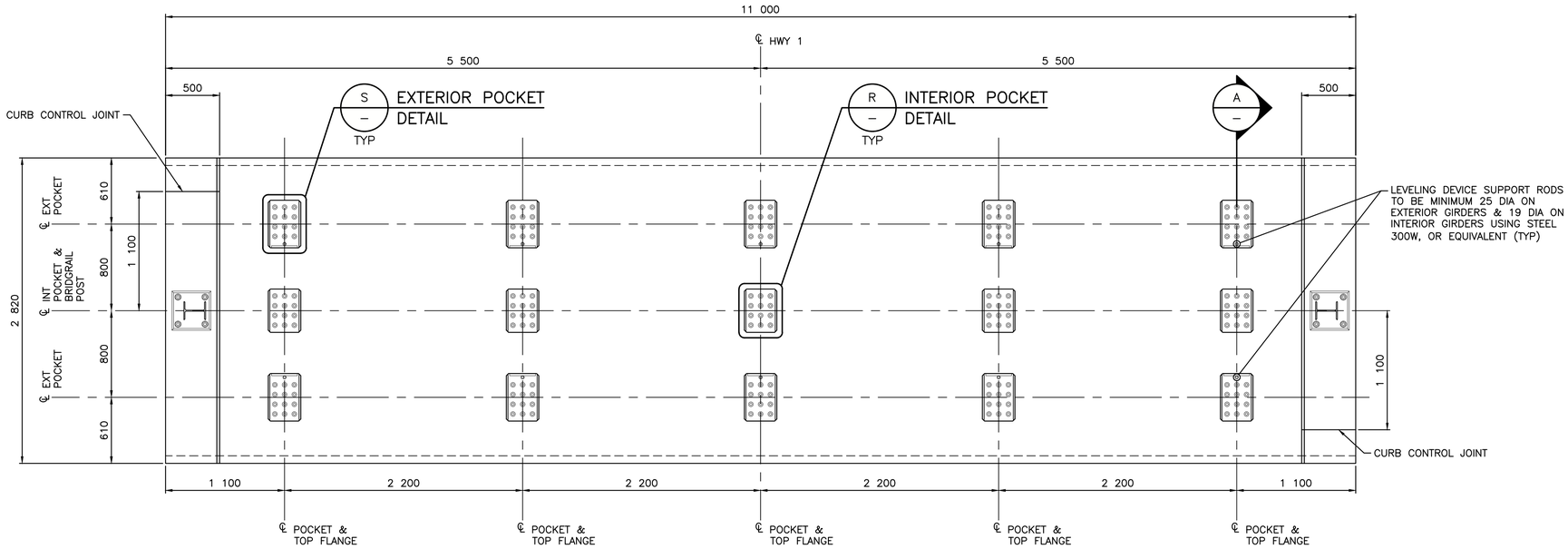
DECK AND APPROACH SLAB LAYOUT

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

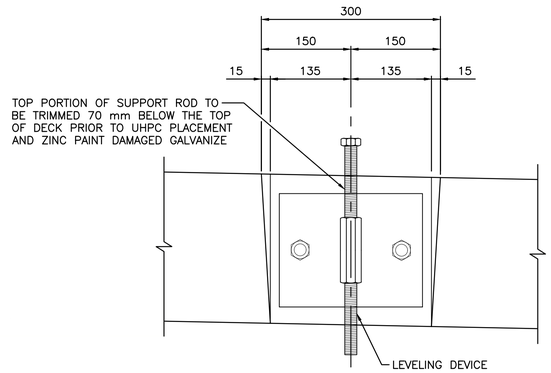
PERMIT TO PRACTICE
0.46606 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature
Date 4 Dec. 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	44 OF 55	SC–INF01–6081–S022 | 1

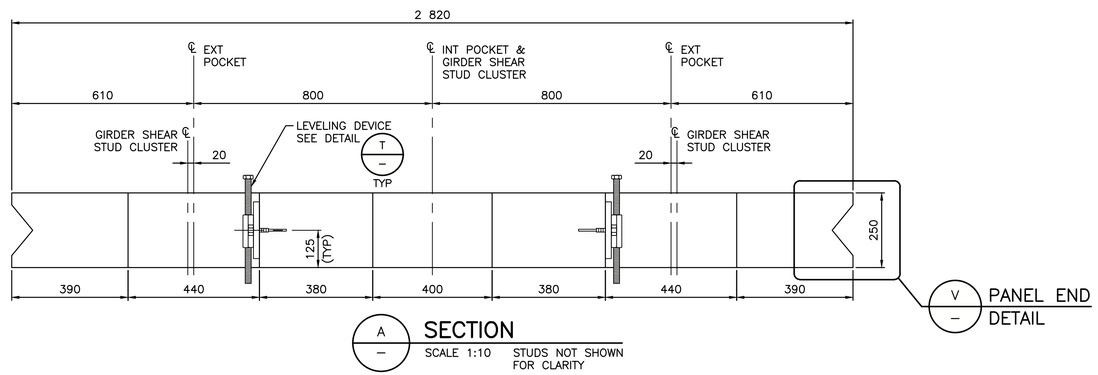


P / 44 — **PRECAST TYPICAL DECK PANEL DETAIL**
SCALE 1:25 (12 REQUIRED)
(ELEMENT ESTIMATED WEIGHT: 20 380 kg, EACH)

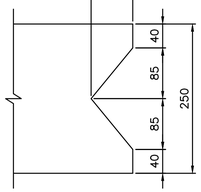


NOTE: ALL LEVELING DEVICES SHALL BE PRE–INSTALLED IN THE PRECAST DECK PANELS AND HOT–DIP GALVANIZED

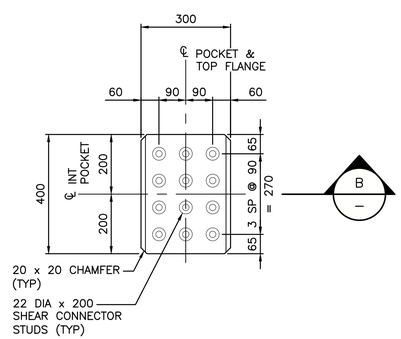
T / – / 44 47 48 49 — **LEVELING DEVICE DETAIL**
SCALE 1:5 (DESIGNED BY CONTRACTOR)



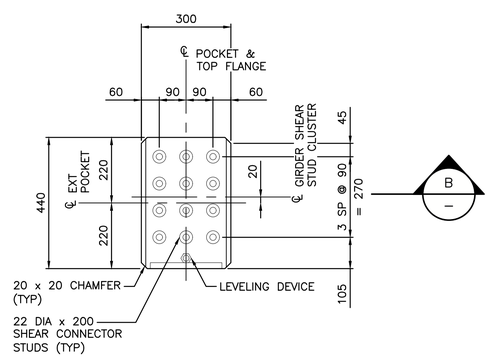
A / – — **SECTION**
SCALE 1:10 STUDS NOT SHOWN FOR CLARITY



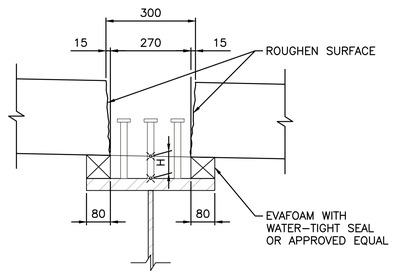
V / – / 48 — **PANEL END DETAIL**
SCALE 1:5



R / – / 48 — **INTERIOR POCKET DETAIL**
SCALE 1:10



S / – / 48 — **EXTERIOR POCKET DETAIL**
SCALE 1:10



NOTE:
H = 75 AT ABUTMENT CENTERLINE OF BEARINGS. IT MAY VARY ALONG THE GIRDERS DUE TO GIRDER FABRICATION TOLERANCE ON CAMBERS. THE CONTRACTOR SHALL SUBMIT TOP OF GIRDER ELEVATION SURVEY DATA ALONG EACH GIRDER AT CAMBER DIAGRAM CONTROL POINTS (SHOWN ON SHEET 43) AFTER GIRDERS ARE ERECTED, AND SUBMIT THE DATA TO THE ENGINEER FOR REVIEW AND PROVIDING CONFIRMATION ON THE H VALUES ALONG EACH GIRDER TO ACCOMMODATE THE CAMBERS.

B / – — **SECTION**
SCALE 1:10

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Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories
HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2
JEAN MARIE RIVER BRIDGE
PRECAST TYPICAL DECK DETAILS
SHEET 1

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	45 OF 55	SC–INF01–6081–S023 | 1

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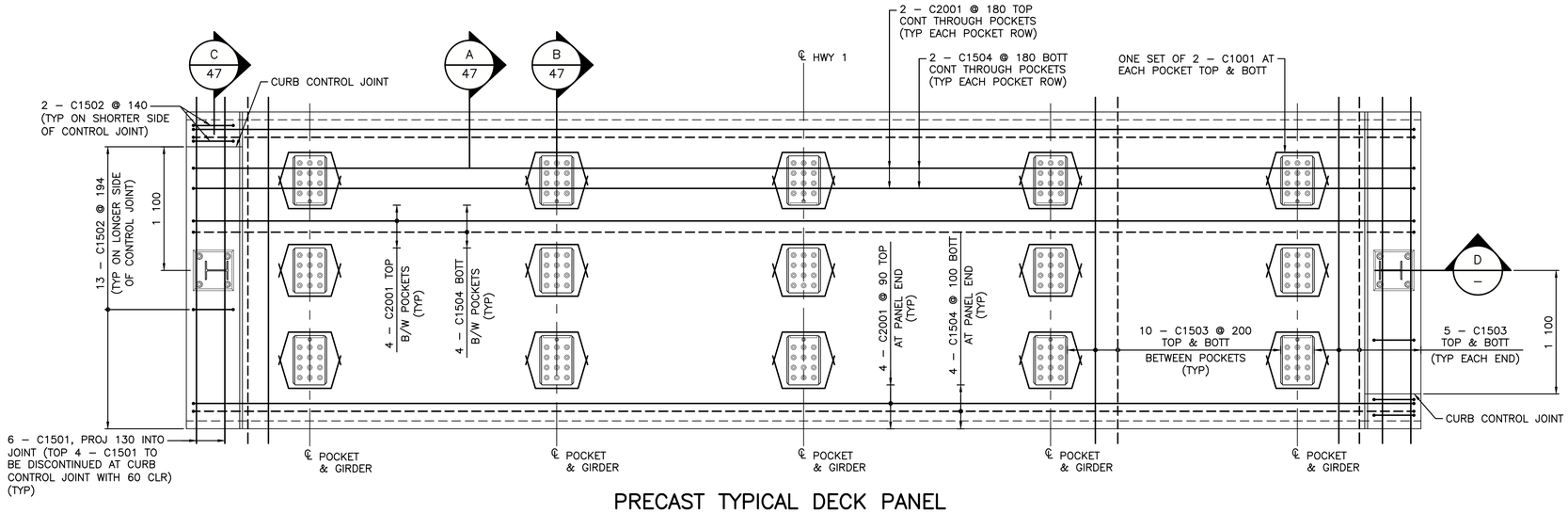
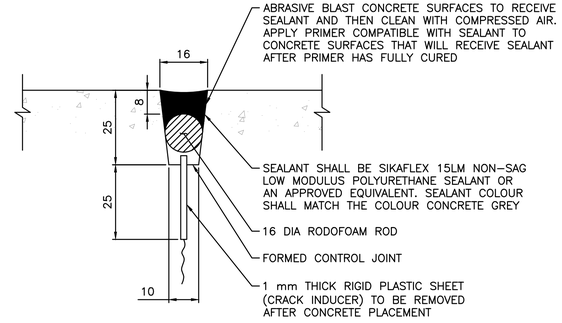
PLOTTED : Friday, December 6, 2024



PRECAST TYPICAL DECK PANEL REINFORCEMENT PLAN

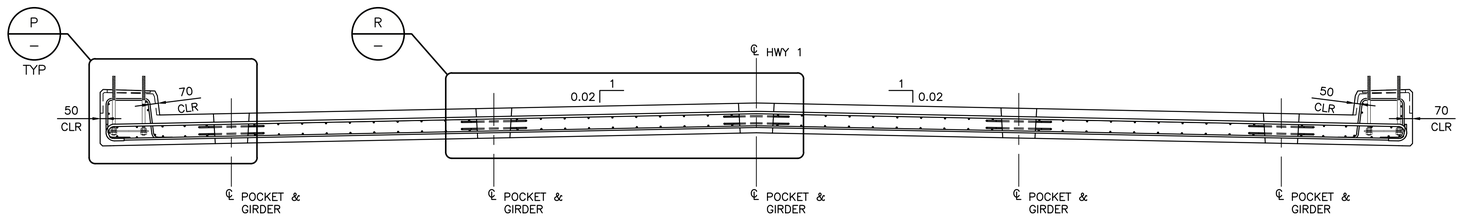
SCALE 1:25



NOTE:
- LONGITUDINAL REINFORCEMENT SHALL BE DISCONTINUOUS AT THE CONTROL JOINT AND HAVE 60 mm CLEAR CONCRETE COVER FROM THE CENTRELINE OF THE CONTROL JOINTS
- CONTROL JOINT CRACK INDUCER SHALL BE REMOVED PRIOR TO SURFACE PREPARATION AND APPLICATION OF SEALANT PRIMER
- CONTROL JOINT SEALANT SHALL BE APPLIED WITH PRECAST CONCRETE DECK PANELS

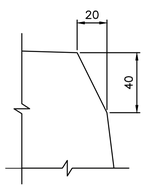
CONTROL JOINT DETAIL

SCALE 1:1



D – PRECAST TYPICAL DECK PANEL REINFORCEMENT SECTION

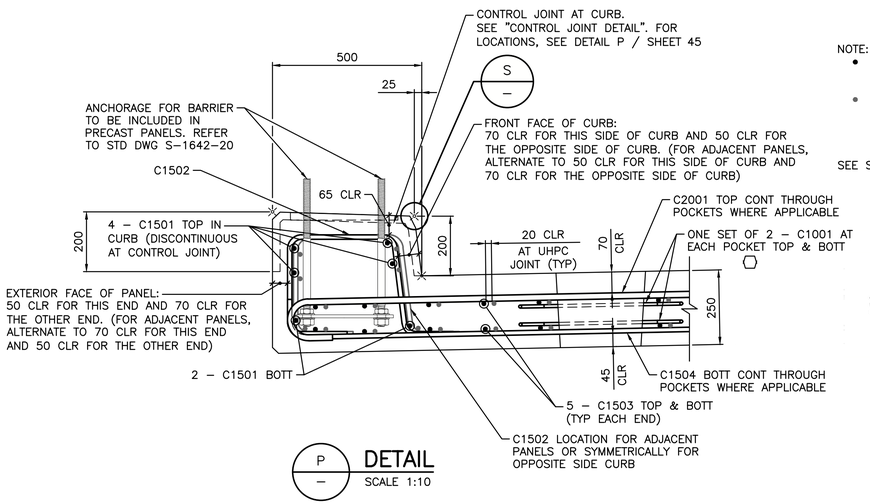
SCALE 1:25



S – DETAIL

SCALE 1:2

49
50

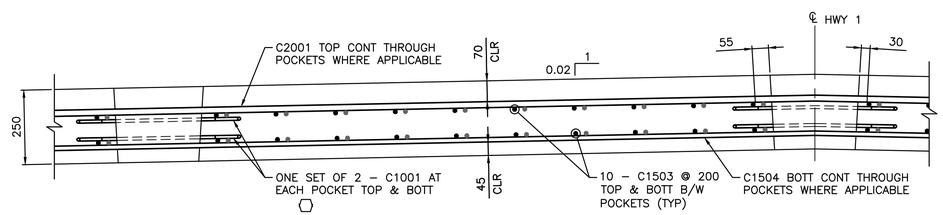


P – DETAIL

SCALE 1:10

NOTE:
- DENOTES PROJECTION BARS IN THE SHOWN PRECAST DECK PANELS
- DENOTES PROJECTION BARS IN ADJACENT PRECAST DECK PANELS (TO BE STAGGERED TO AVOID CONFLICTING IN THE UHPC JOINTS), OR PROJECTION BAR LOCATIONS IN THE SYMMETRIC OTHER END OF PANEL

SEE SECTION E / SHEET 47 (TYP FOR ALL DECK PANELS)



R – DETAIL

SCALE 1:10

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

PRECAST TYPICAL DECK DETAILS

SHEET 2

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
045606 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature _____ PERMISSION GRANTED ON 4 Dec 2024
Date 4 Dec 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	46 OF 55	SC–INF01–6081–S024 | 1

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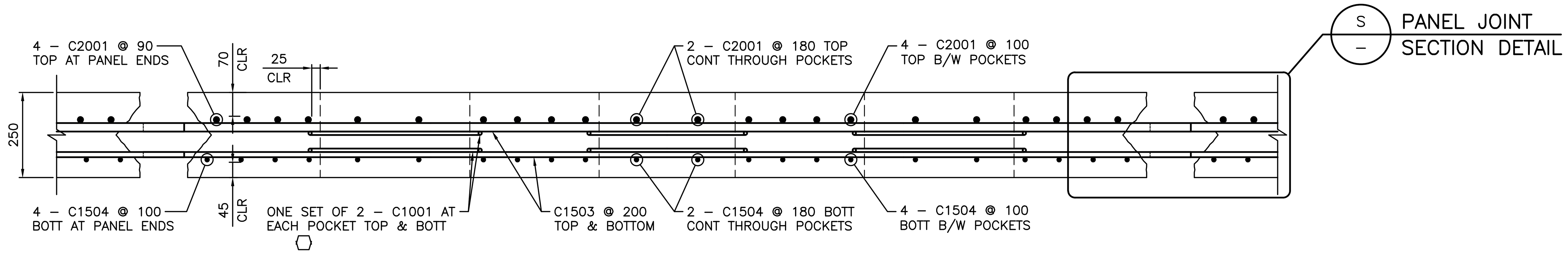
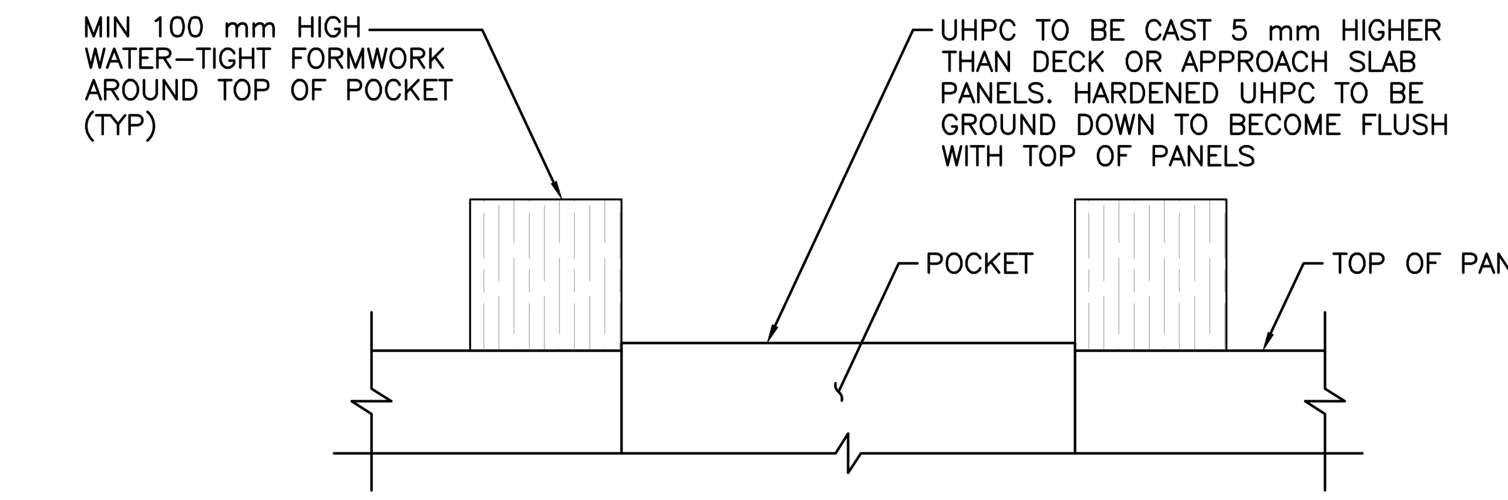
PLOTTED: Friday, December 6, 2024

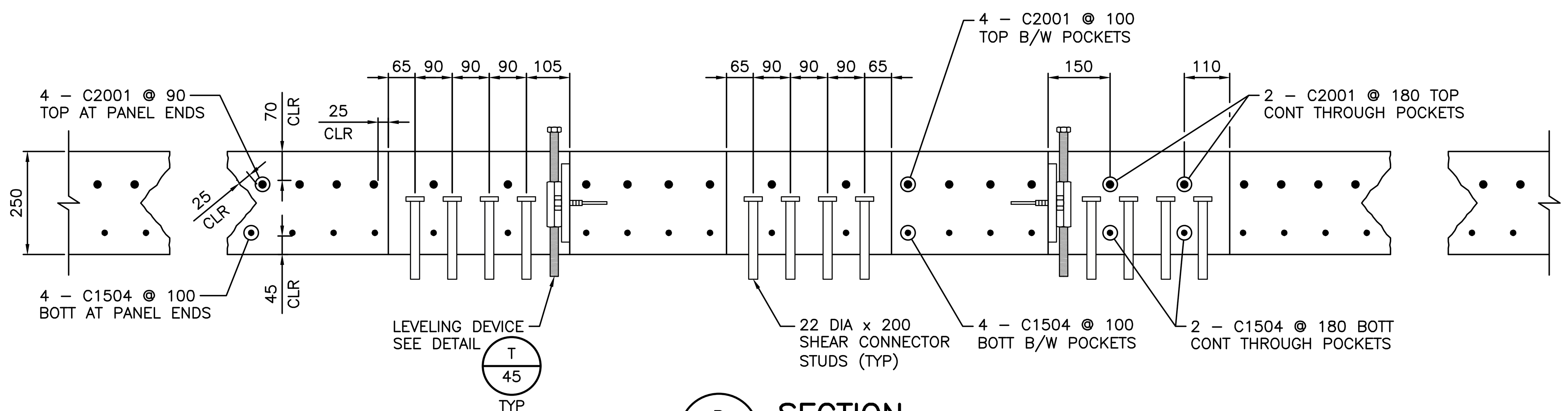


A
46
SECTION
SCALE 1:10

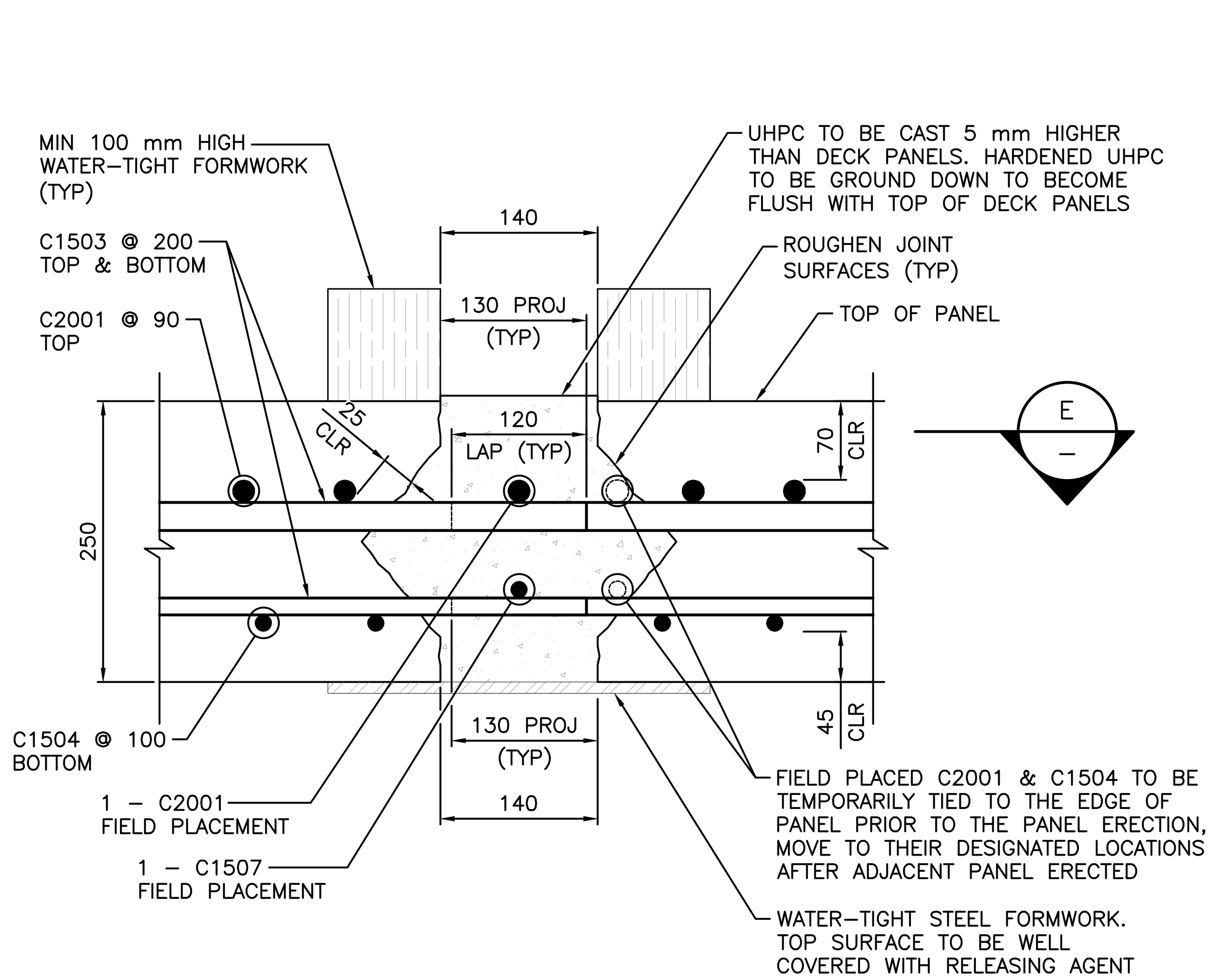


UHPC POCKET FORMWORK DETAIL
SCALE 1:5

(TYPICAL FOR DECK PANELS
AND APPROACH SLAB ELEMENTS)

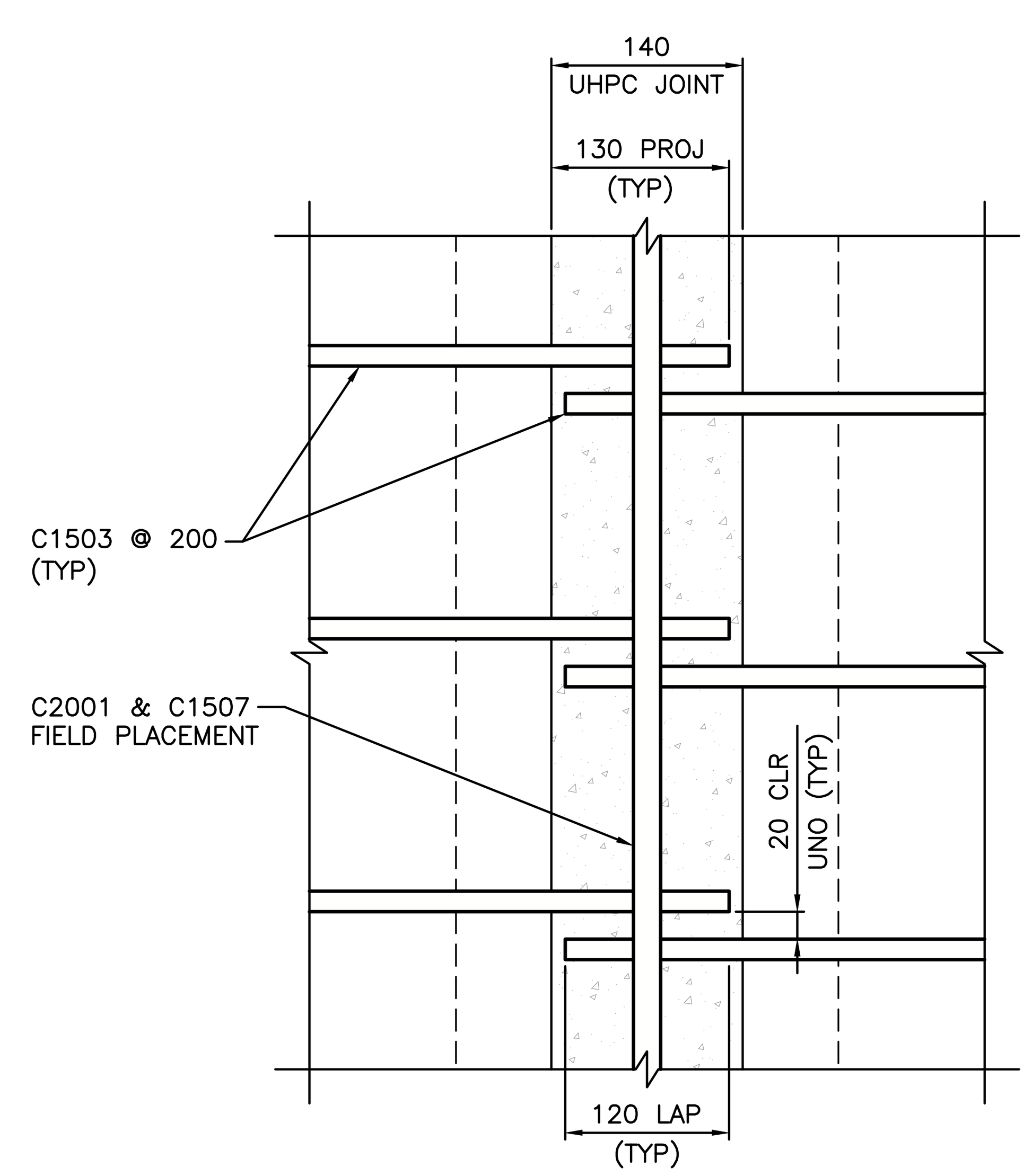


B
46
SECTION
SCALE 1:10



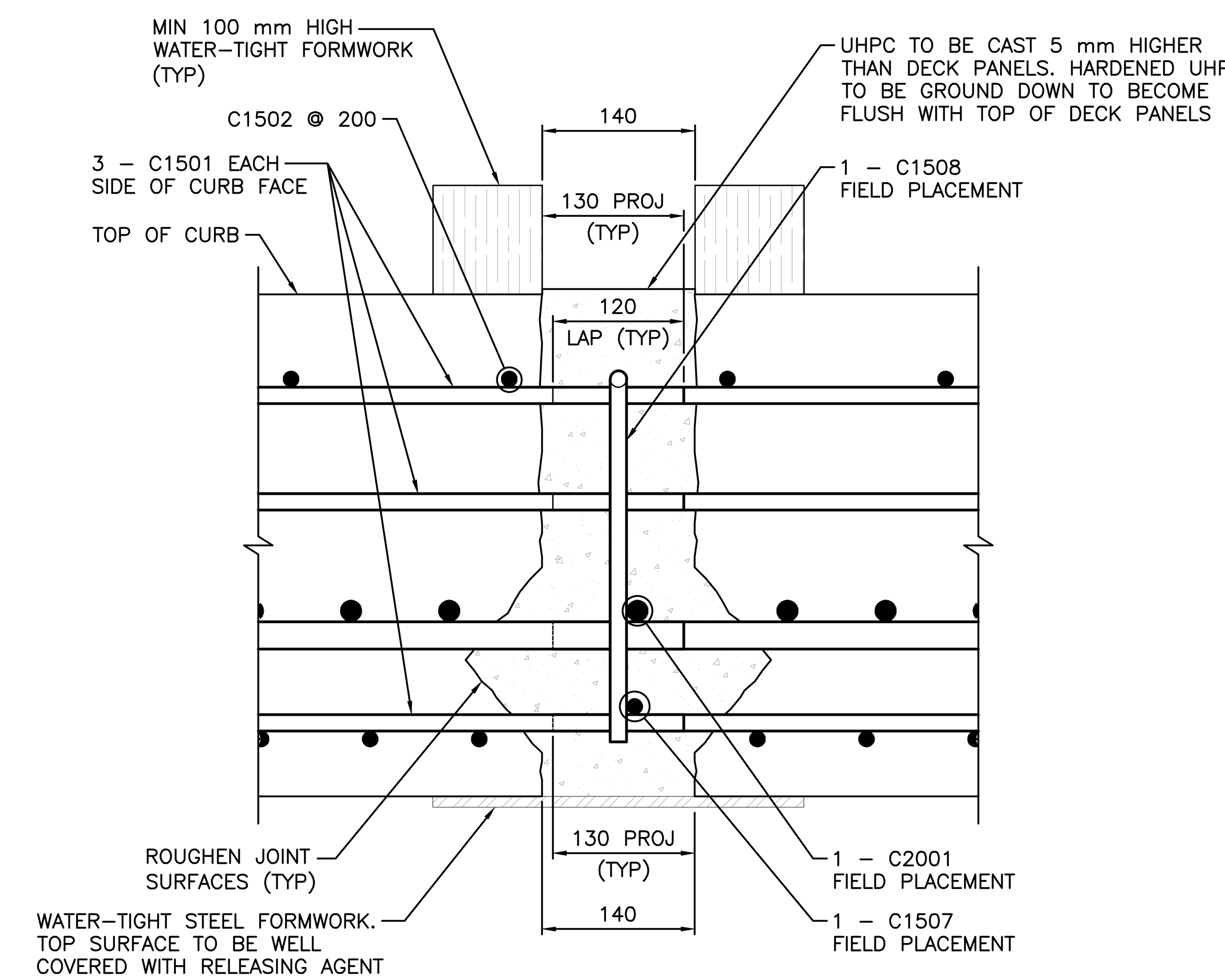
NOTE: ALL JOINT SURFACES OF PRECAST DECK PANELS SHALL BE PRE–ROUGHENED (AT PLANT) TO EXPOSE COARSE AGGREGATES

S
44
49
DECK PANEL JOINT SECTION DETAIL
SCALE 1:5



NOTE: PANEL PROJECTION BARS BETWEEN NEIGHBOURING PANELS SHALL BE PLACED STAGGERED AS SHOWN TO MAINTAIN 20 mm SPLICE CLEARANCE IN THE UHPC JOINT. OTHER BARS NOT SHOWN FOR CLARITY

E
–
DECK PANEL JOINT PLAN SECTION
SCALE 1:5



C
46
DECK PANEL JOINT SECTION AT CURB
SCALE 1:5

Government of Northwest Territories

Consultant Logo

Jacobs.

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

R E V I S I O N S

Government of Northwest Territories
HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

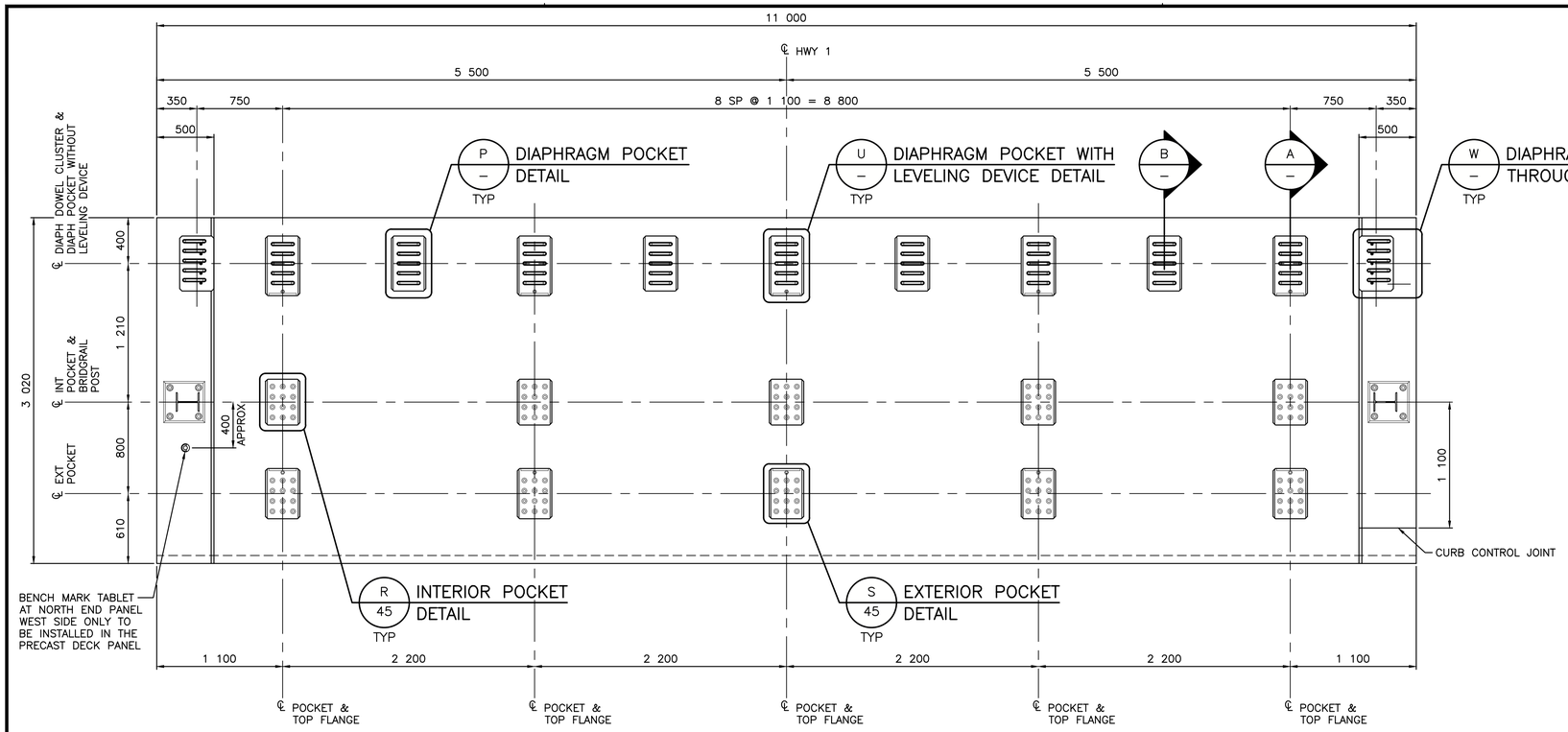
JEAN MARIE RIVER BRIDGE
PRECAST TYPICAL DECK DETAILS
SHEET 3

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

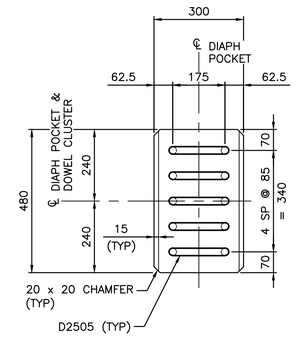
PERMIT TO PRACTICE
6448506 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

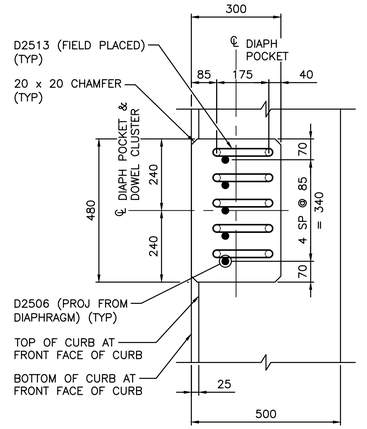
PROJECT No.	SHEET No.	DRAWING No.	
CE857700	47 OF 55	SC–INF01–6081–S025	1



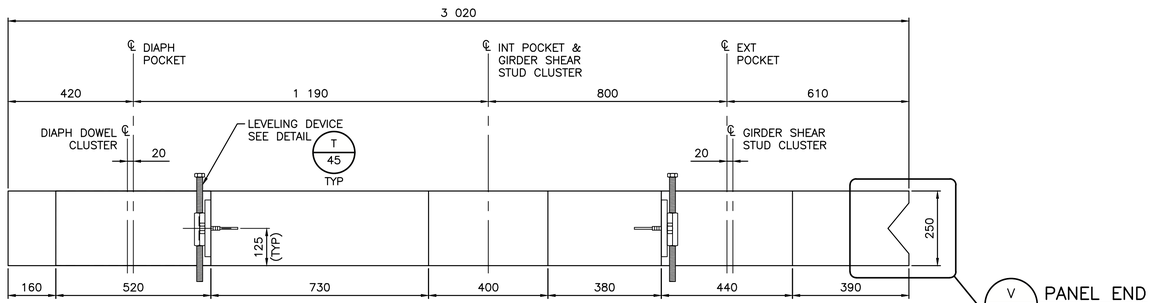
W / 44 — PRECAST END DECK PANEL DETAIL
SCALE 1:25 (2 REQUIRED)
(ELEMENT ESTIMATED WEIGHT: 21 820 kg, EACH)



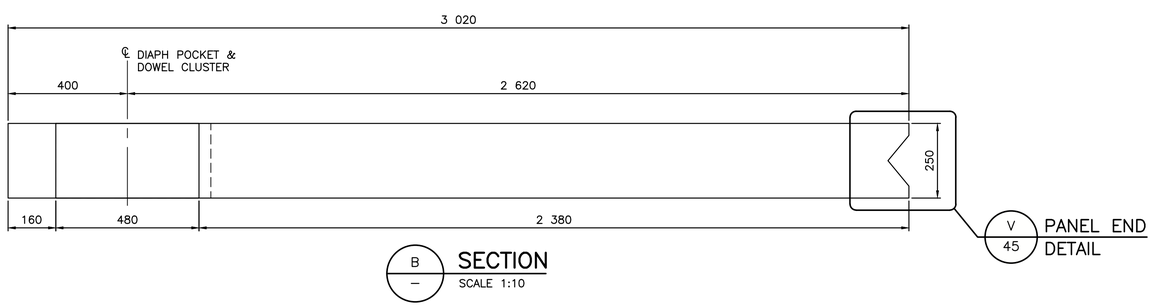
P / – DIAPHRAGM POCKET DETAIL
SCALE 1:10



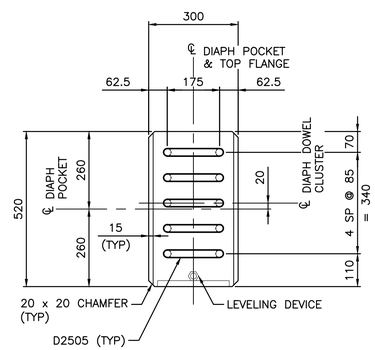
W / – DIAPHRAGM END POCKET THROUGH CURB DETAIL
SCALE 1:10



A / – SECTION
SCALE 1:10



B / – SECTION
SCALE 1:10



U / – DIAPHRAGM POCKET WITH LEVELING DEVICE DETAIL
SCALE 1:10

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

PRECAST END DECK DETAILS

SHEET 1

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
6446006 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature
Date 4 Dec. 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LU, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06
NORTHWEST TERRITORIES PROFESSIONAL ENGINEER
YING YI LU
R1703
2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	48 OF 55	SC–INF01–6081–S026 | 1

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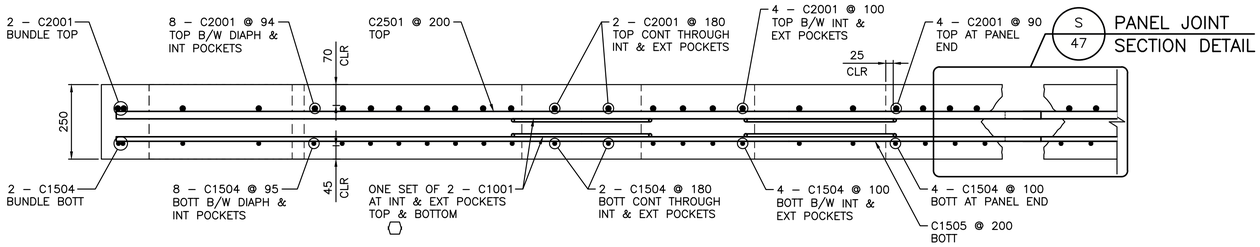
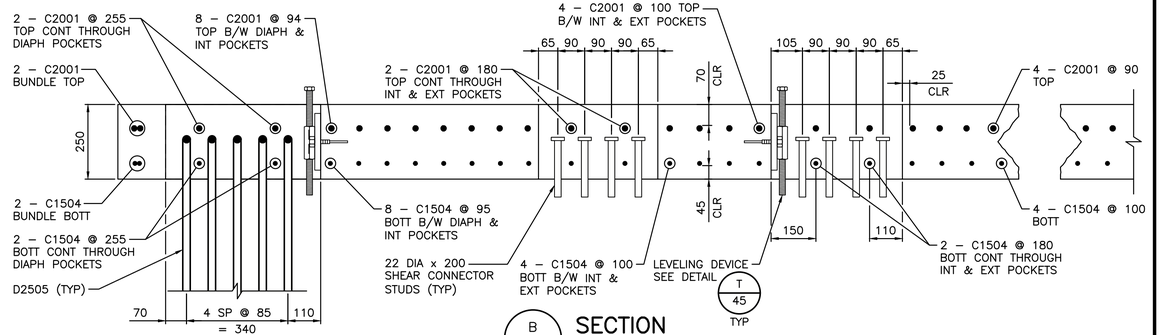
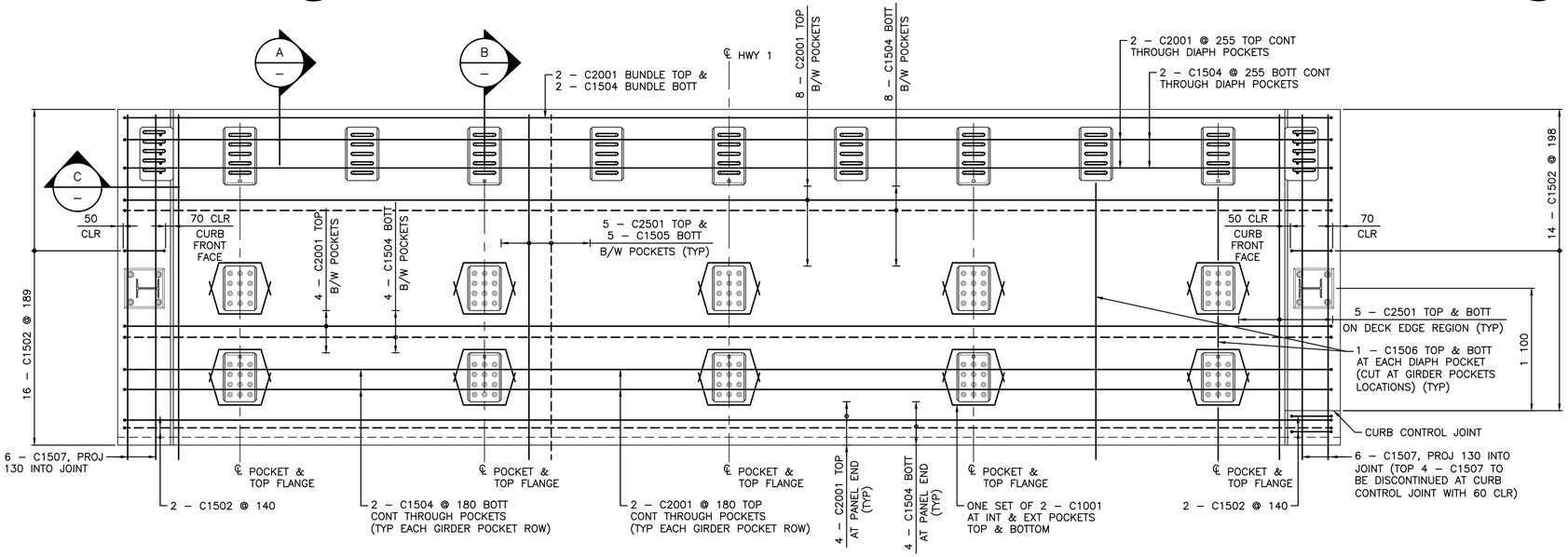
PLOTTED : Friday, December 6, 2024





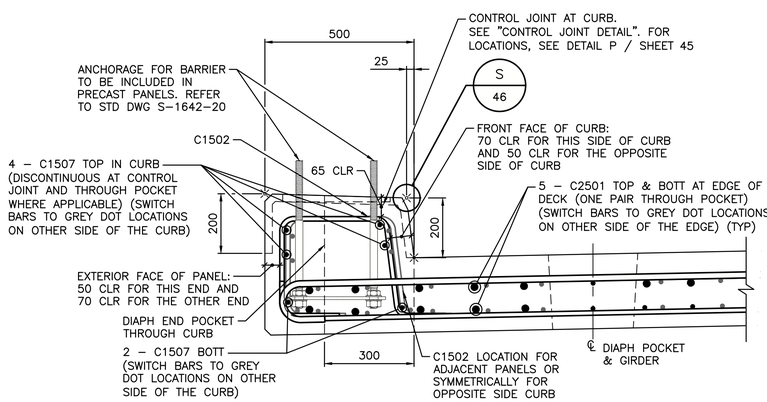
A – SECTION
SCALE 1:10

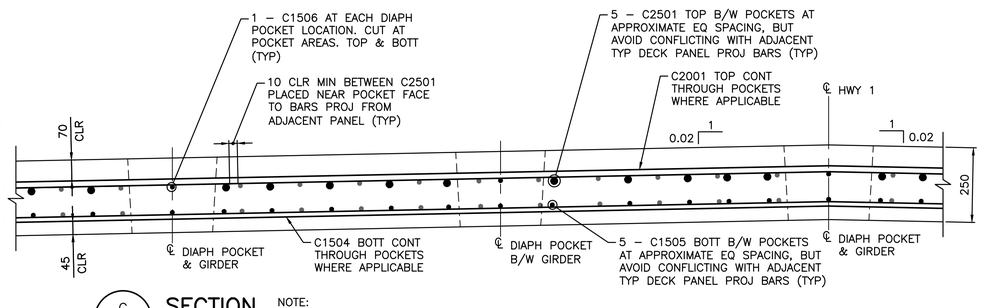
B – SECTION
SCALE 1:10



PRECAST END DECK PANEL REINFORCEMENT PLAN

SCALE 1:25





C – SECTION
SCALE 1:10

NOTE:
- DENOTES PROJECTION BARS IN THE SHOWN PRECAST DECK PANEL
- DENOTES PROJECTION BARS IN ADJACENT PRECAST DECK PANELS TO BE STAGGERED TO AVOID CONFLICTING IN THE UHPC JOINTS

SEE SECTION E / SHEET 47 (TYP FOR ALL DECK PANELS)

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024-12-06	ISSUED FOR CONSTRUCTION	YL
0	2024-07-19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

PRECAST END DECK DETAILS

SHEET 2

DESIGNED	YL	DATE	2024-12-06
CHECKED	JZ	DATE	2024-12-06
DRAWN	KK	DATE	2024-12-06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
0445606 CANADA INC. O/A JACOBS CONSULTANCY CANADA INC.
Signature
Date 4 Dec. 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024-12-06
2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	49 OF 55	SC-INF01-6081-S027 | 1

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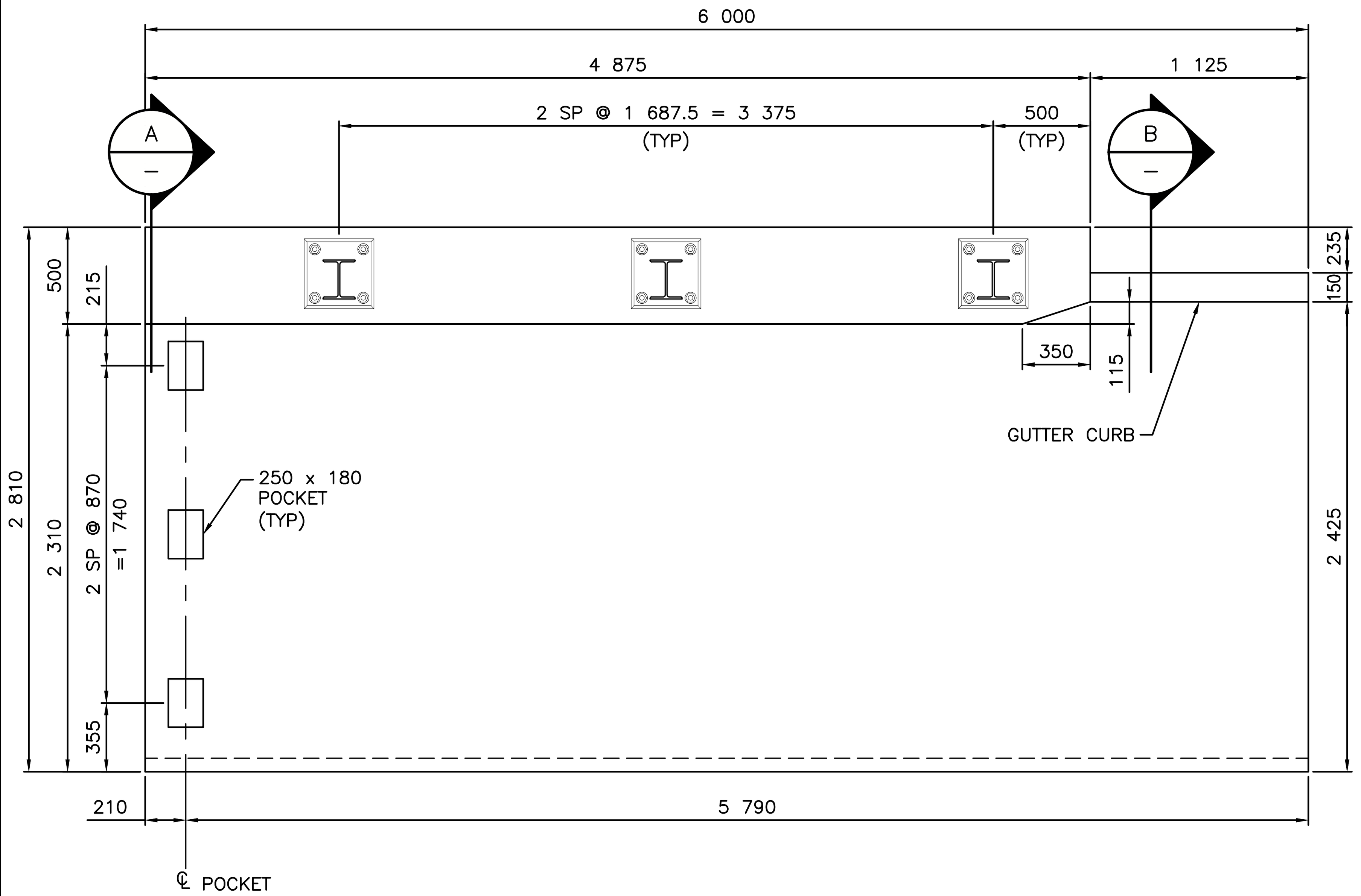
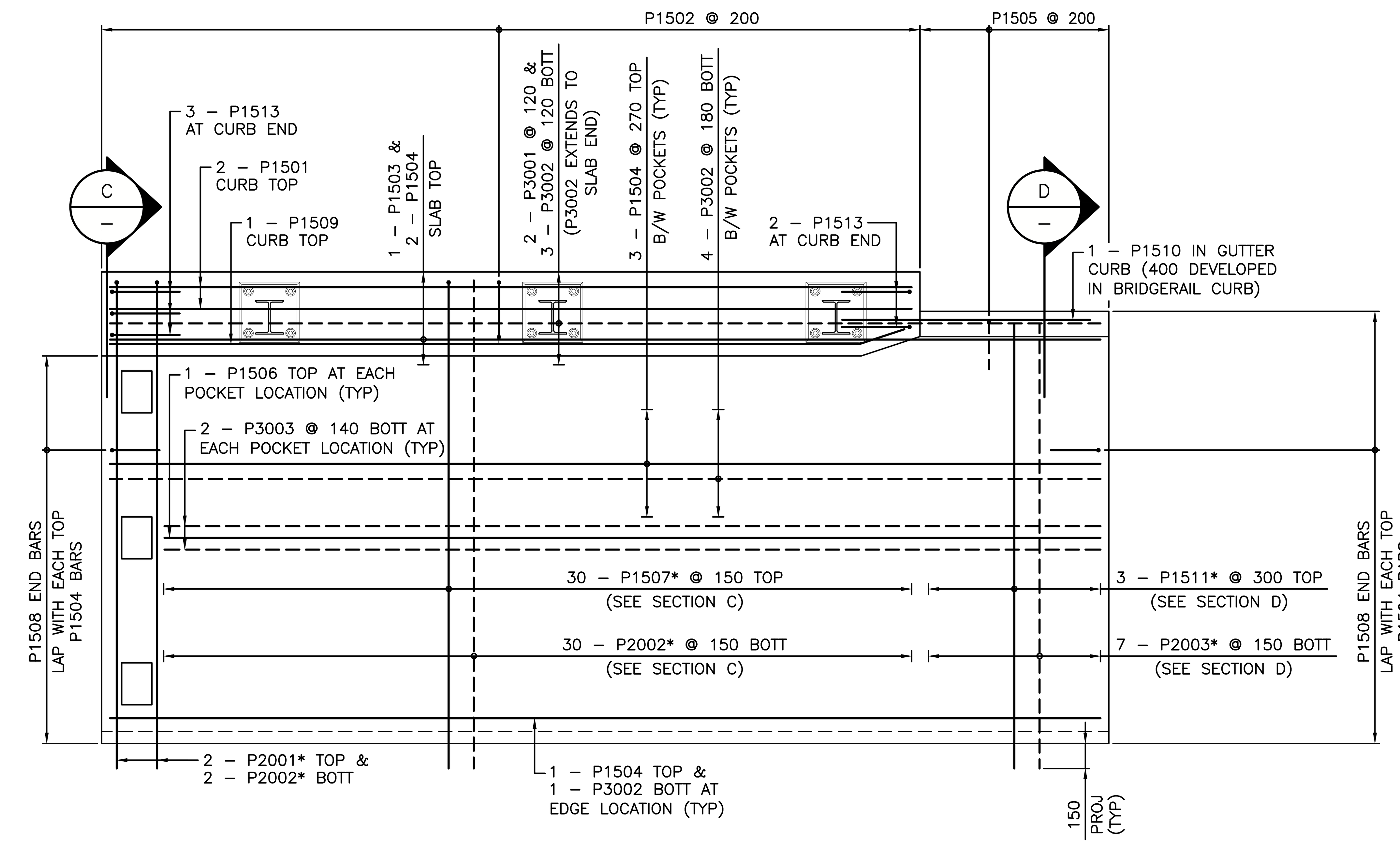


PRECAST APPROACH SLAB
EXTERIOR ELEMENT NW OR SE

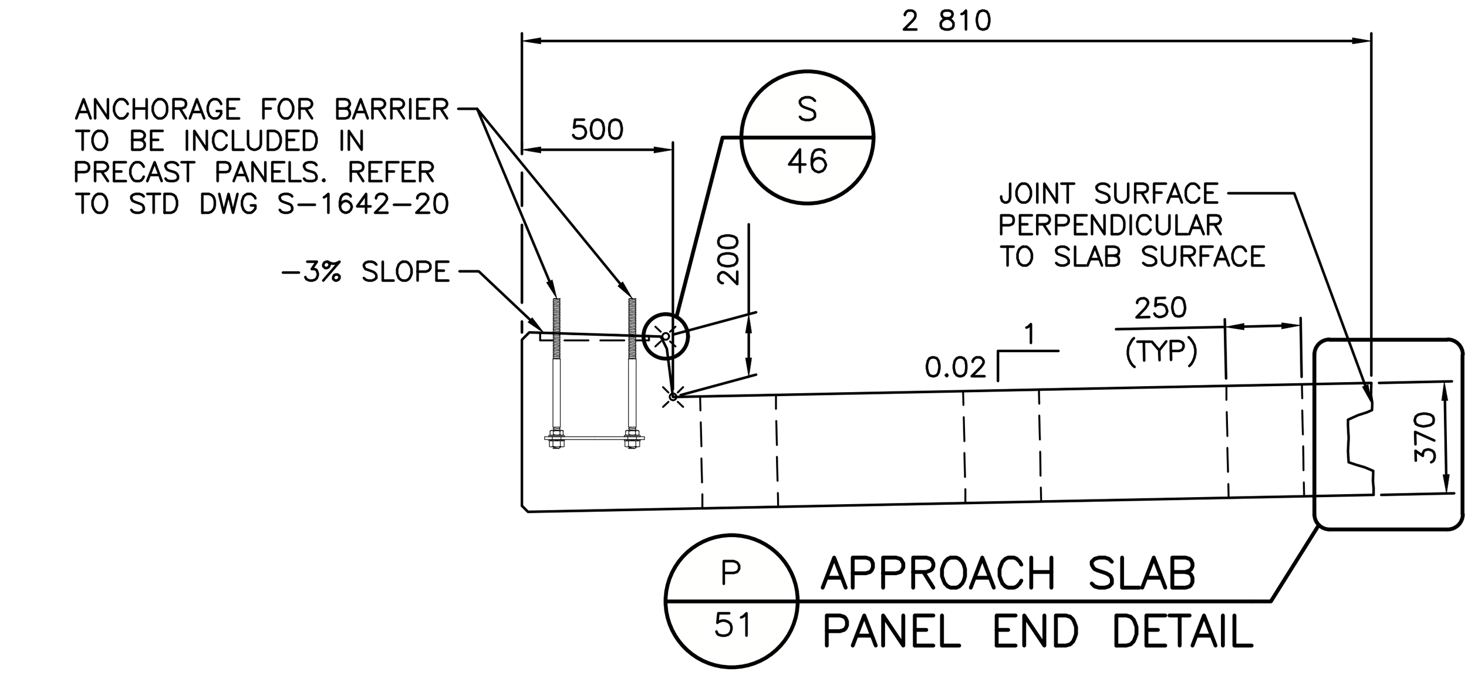
SCALE 1:25 (2 REQUIRED)
(ELEMENT ESTIMATED WEIGHT: 16 300 kg, EACH)



PRECAST APPROACH SLAB EXTERIOR
ELEMENT REINFORCEMENT PLAN

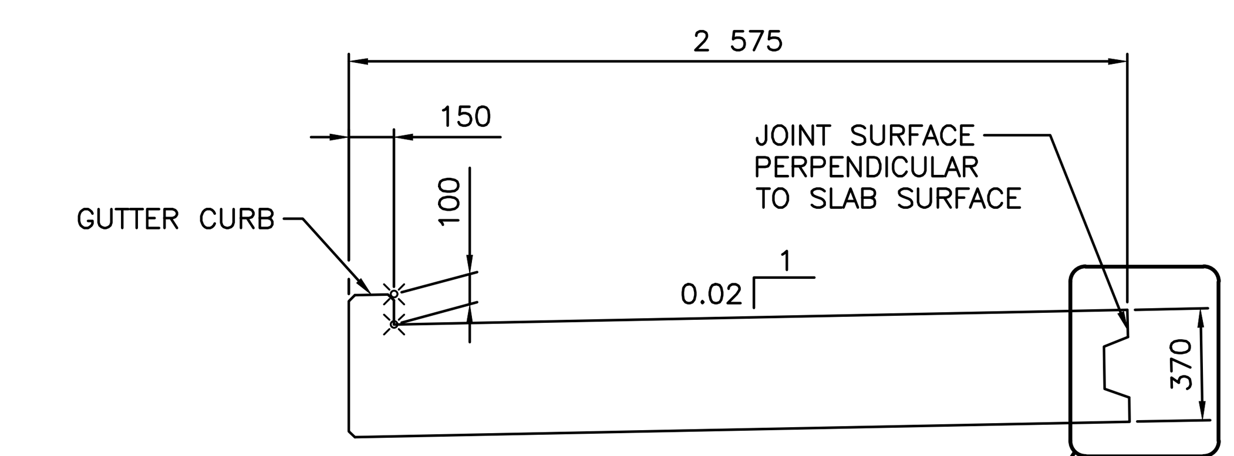
SCALE 1:25

NOTE:
* DENOTES PROJECTION BARS TO BE PLACED OFFSET FROM PRECAST APPROACH SLAB INTERIOR ELEMENT PROJECTION BARS BY CLEARANCE OF 25 mm



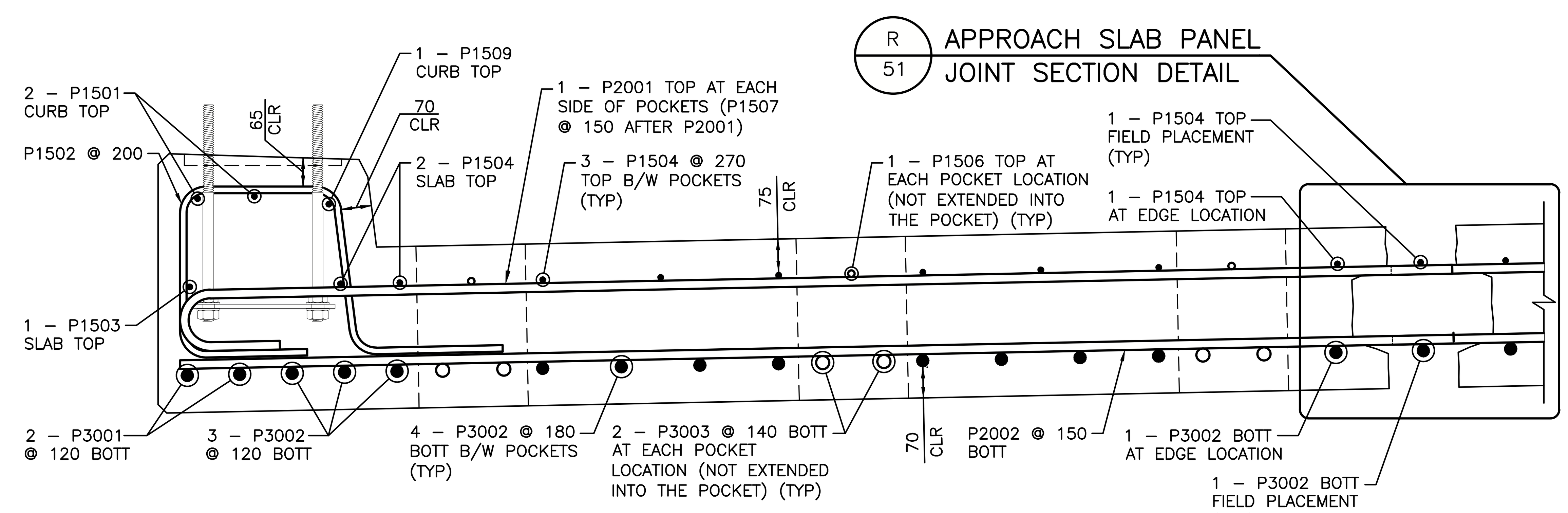
P/51 APPROACH SLAB PANEL END DETAIL

SECTION A/–
SCALE 1:25

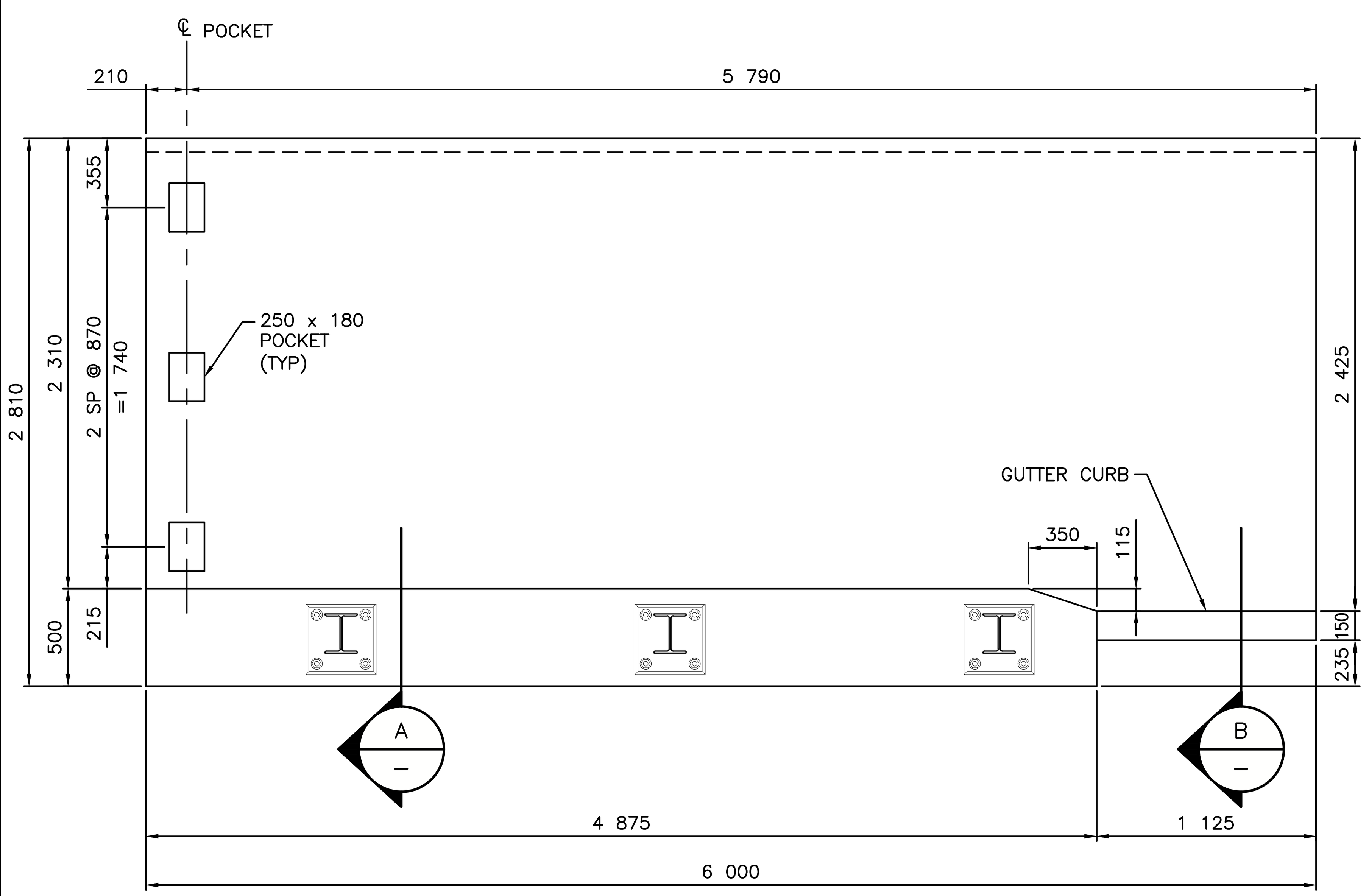


P/51 APPROACH SLAB PANEL END DETAIL

SECTION B/–
SCALE 1:25

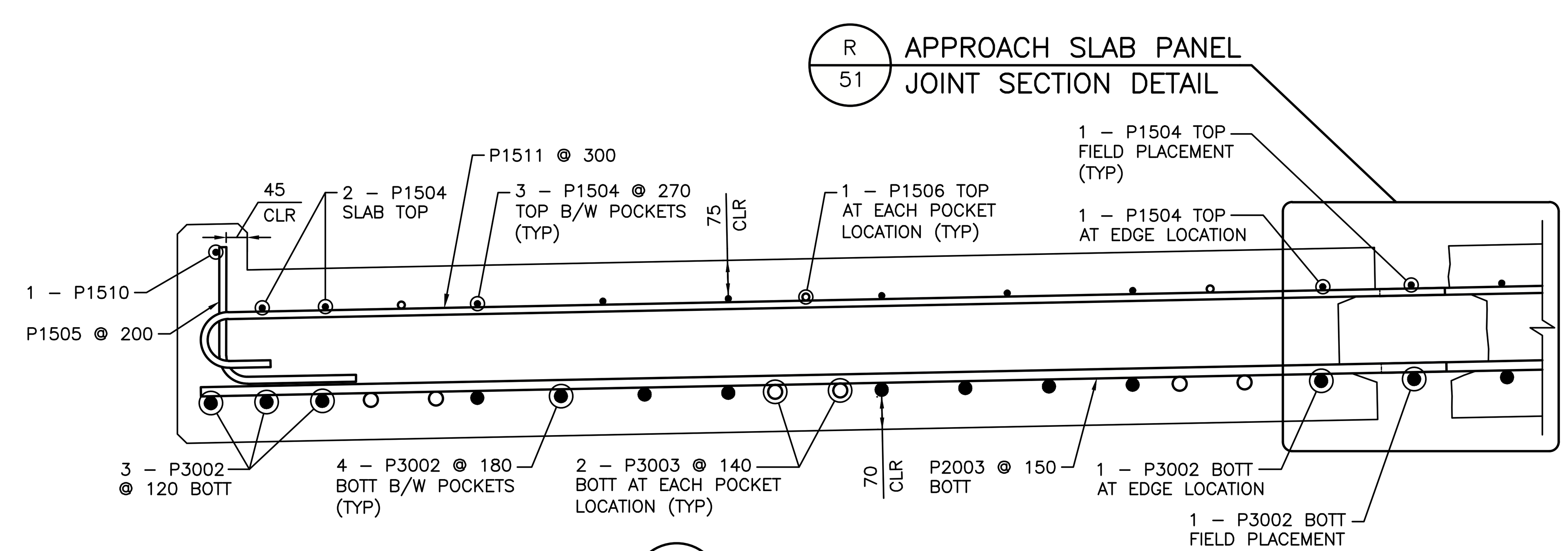


SECTION C/–
SCALE 1:10



PRECAST APPROACH SLAB
EXTERIOR ELEMENT NE OR SW

SCALE 1:25 (2 REQUIRED)
(ELEMENT ESTIMATED WEIGHT: 16 300 kg, EACH)



SECTION D/–
SCALE 1:10

Government of Northwest Territories

Consultant Logo

Jacobs.

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories
HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2
JEAN MARIE RIVER BRIDGE
PRECAST APPROACH SLAB
EXTERIOR ELEMENT DETAILS

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
JACOBS CONSULTANCY CANADA INC.
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROJECT No.	SHEET No.	DRAWING No.	
CE857700	50 OF 55	SC–INF01–6081–S028	1

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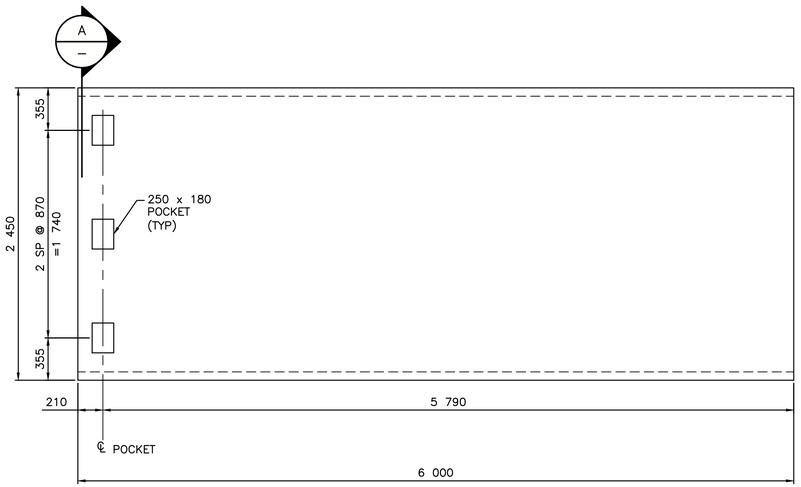
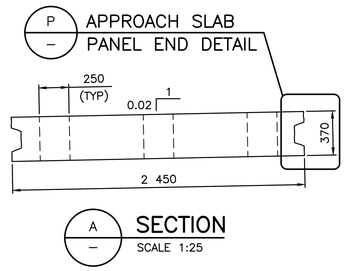
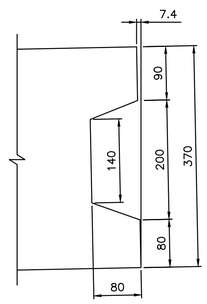
PLOTTED : Friday, December 6, 2024



PRECAST APPROACH SLAB INTERIOR ELEMENT PLAN

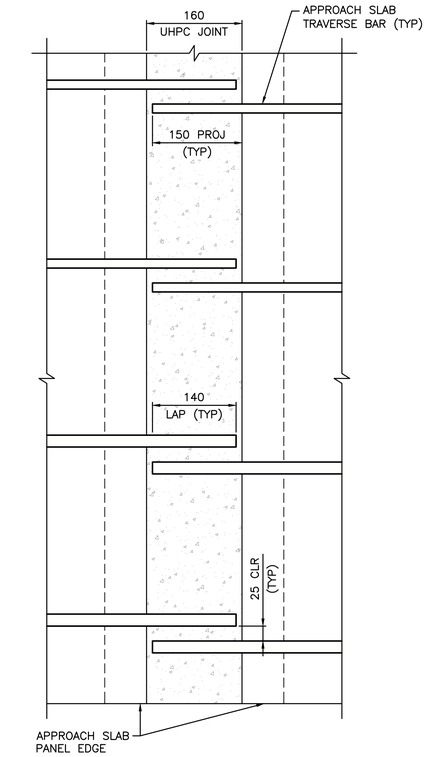
SCALE 1:25 (4 REQUIRED)
(ELEMENT ESTIMATED WEIGHT: 13 320 kg, EACH)





APPROACH SLAB PANEL END DETAIL

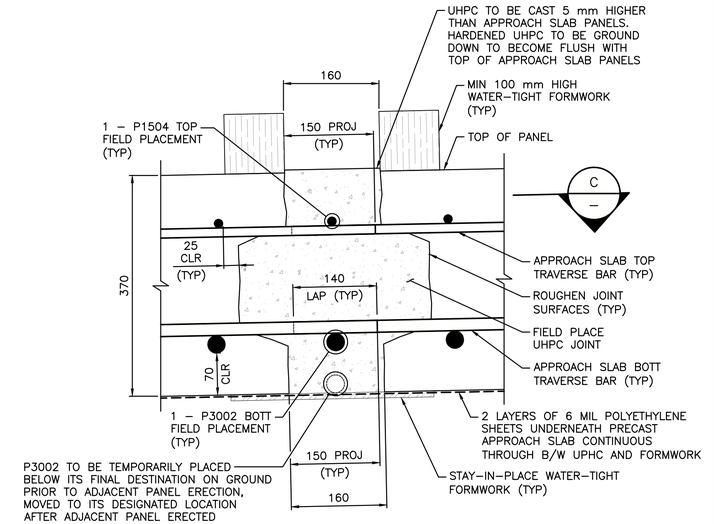
P – 50
SCALE 1:5



NOTE: PANEL TRANSVERSE PROJECTION BARS BETWEEN NEIGHBOURING PANELS SHALL BE PLACED STAGGERED TO MAINTAIN 25 mm SPLICE CLEARANCE IN THE UHPC JOINT. LONGITUDINAL BARS NOT SHOWN FOR CLARITY

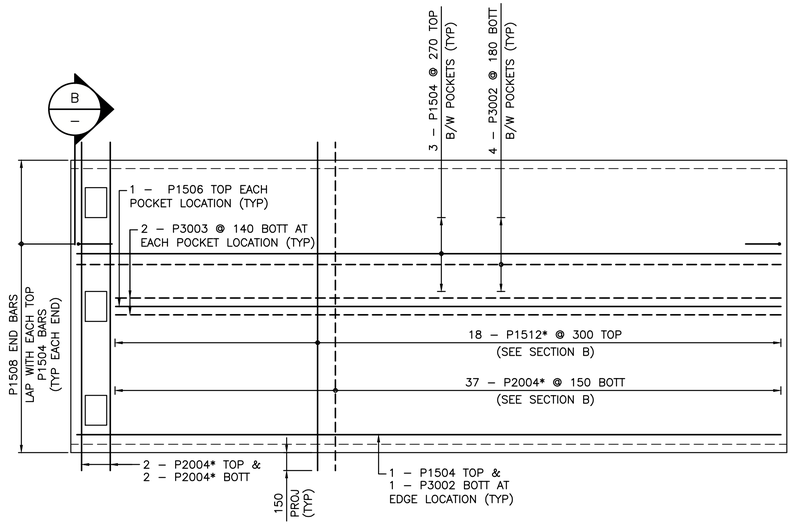
APPROACH SLAB PANEL JOINT REINFORCEMENT STAGGER DETAIL

C – SCALE 1:5



APPROACH SLAB PANEL JOINT SECTION DETAIL

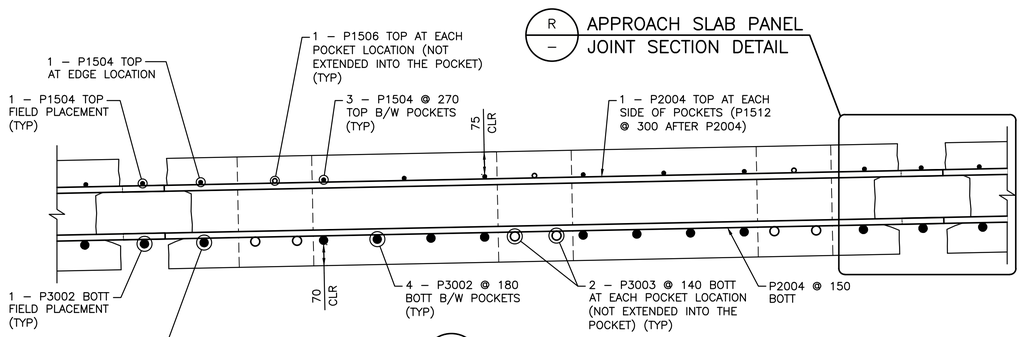
R – 50
SCALE 1:5



PRECAST APPROACH SLAB INTERIOR ELEMENT REINFORCEMENT PLAN

SCALE 1:25

NOTE:
* DENOTES PROJECTION BARS TO BE PLACED OFFSET FROM PRECAST APPROACH SLAB EXTERIOR ELEMENT PROJECTION BARS BY CLEARANCE OF 25 mm



APPROACH SLAB PANEL JOINT SECTION DETAIL

R – SCALE 1:10

SECTION

B – SCALE 1:10

Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

PRECAST APPROACH SLAB INTERIOR ELEMENT DETAILS

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
0445606 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature ____ PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists
Date 4 Dec 2024

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROJECT No. CE857700
SHEET No. 51 OF 55
DRAWING No. SC–INF01–6081–S029 | 1

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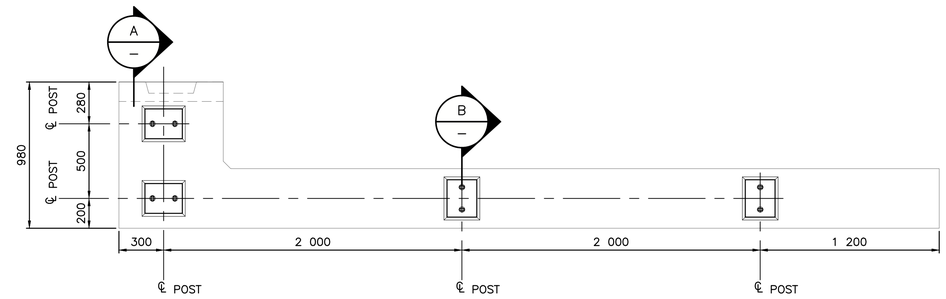
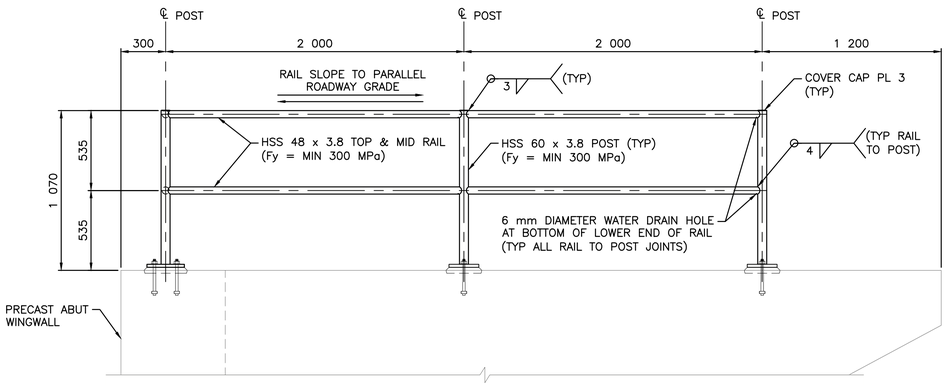


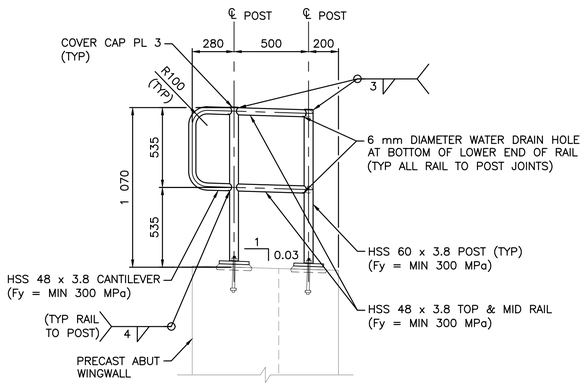
SAFETY RAIL ANCHOR PLAN

SCALE 1:20 (RAIL NOT SHOWN FOR CLARITY)
(SW AND NE SHOWN. NW AND SE OPPOSITE.)



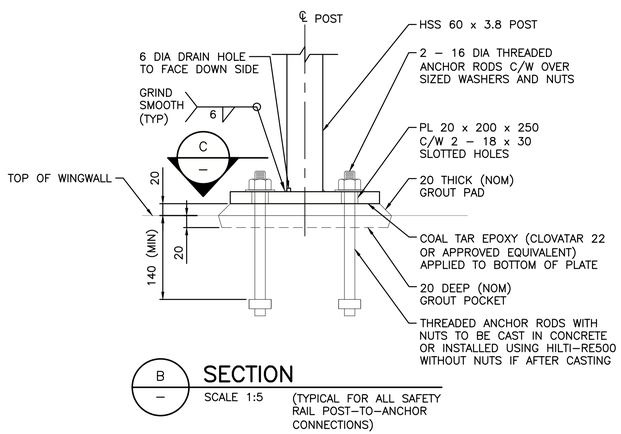
SAFETY RAIL ELEVATION

SCALE 1:20



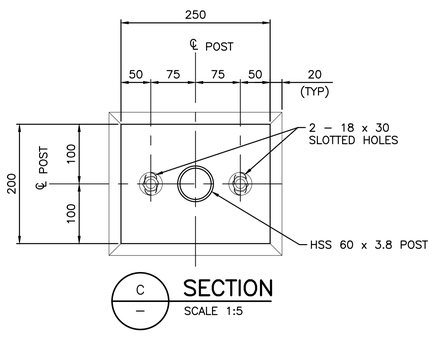
A — SECTION

SCALE 1:20



B — SECTION

SCALE 1:5 (TYPICAL FOR ALL SAFETY RAIL POST–TO–ANCHOR CONNECTIONS)



C — SECTION

SCALE 1:5

NOTES

1. POST SPACING SHOWN IS CORRECT AT 15°C. LOCATION OF THE POST ANCHOR ROD ASSEMBLIES SHALL BE ADJUSTED TO ACCOUNT FOR INSTALLATION TEMPERATURE.
2. ALL REQUIREMENTS OF GNWT SPECIFICATIONS FOR BRIDGE CONSTRUCTION (SSBC) SECTION 12 SHALL BE MET.
3. ALL STEEL SHALL CONFORM TO CSA SPECIFICATION G40.21M GRADE 300W. ANCHOR RODS SHALL CONFORM TO ASTM F1554 GRADE 55. ALL NUTS AND WASHERS SHALL CONFORM TO ASTM A563 AND ASTM F436 RESPECTIVELY.
4. ALL WELDING SHALL CONFORM TO CURRENT AWS SPECIFICATION D1.1 AND D1.5.
5. ALL MATERIALS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123/A123M AND ASTM F2329 UNLESS NOTED OTHERWISE.
6. REPAIR OF GALVANIZED SHALL BE COMPLETED AS PER THE SSBC SECTION 6.2.7.3.3, REPAIR OF GALVANIZED AND METALLIZED MATERIAL.
7. ALL EXPOSED CUT TUBE ENDS SHALL BE GROUND SMOOTH.
8. THE BOTTOM SURFACE OF THE BASE PLATES SHALL BE COATED WITH CLOVATAR 22 OR AN APPROVED EQUIVALENT SUITABLE FOR APPLICATION ON GALVANIZED STEEL TO PREVENT CONTACT BETWEEN THE ZINC AND THE GROUT. THE COLOUR SHALL BE MEDIUM GREY.
9. ALL POSTS SHALL BE VERTICAL.
10. ALL ADDITIONAL HOLES PLACED FOR GALVANIZING PROCESS SHALL BE FILLED BY ALUMINUM PLUGS AFTER GALVANIZING.

Government of Northwest Territories

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Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

SAFETY RAIL DETAILS

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

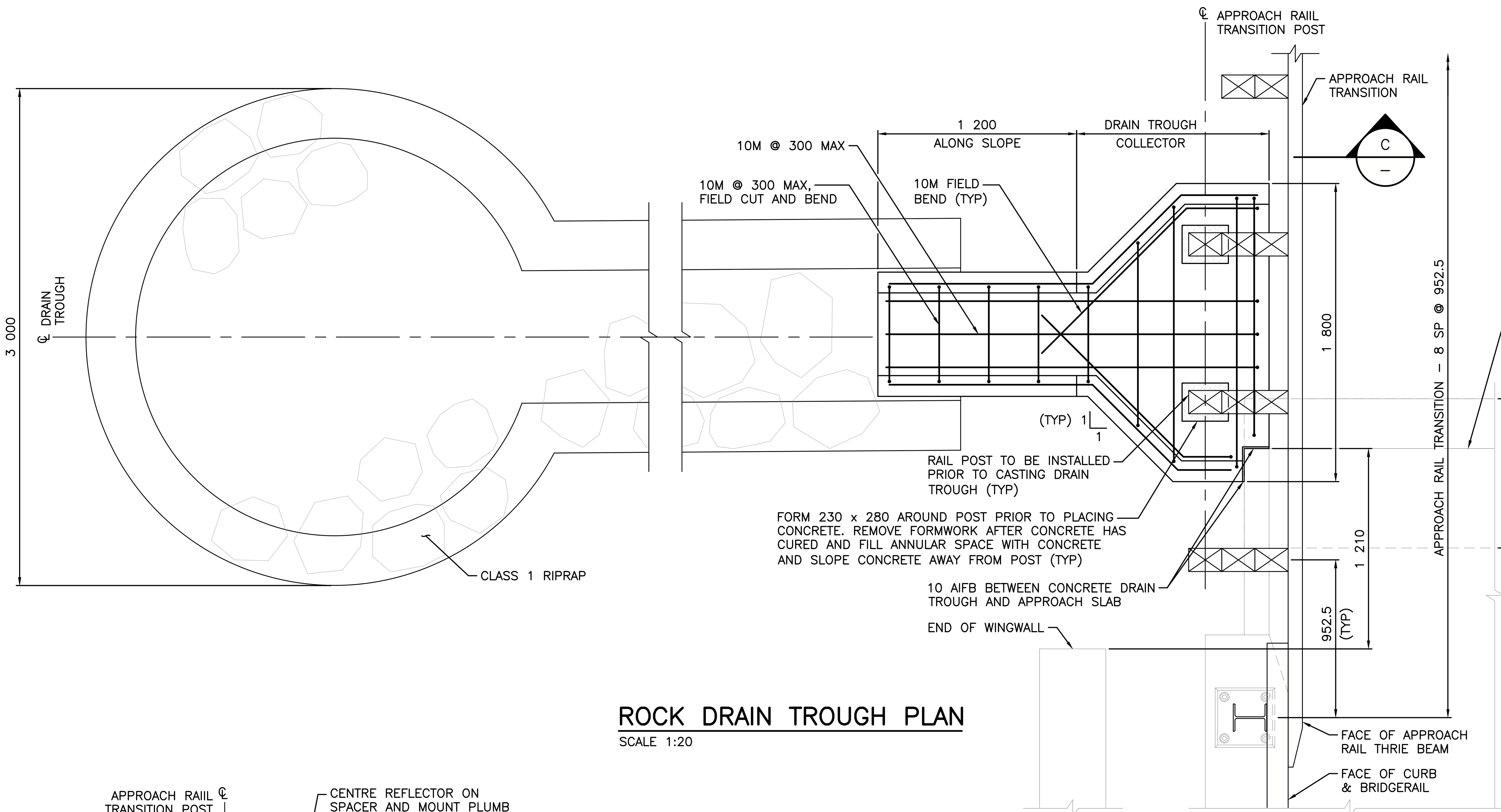
PERMIT TO PRACTICE
045606 CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature ... Date 4 Dec. 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROFESSIONAL ENGINEER YING YI LI 87765 2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	52 OF 55	SC–INF01–6081–S030 | 1

FILE: C:\pw_workdir\jacobs–us–v0–pw–02\dms92401a\S030.dwg
PLOTTED: Friday, December 6, 2024

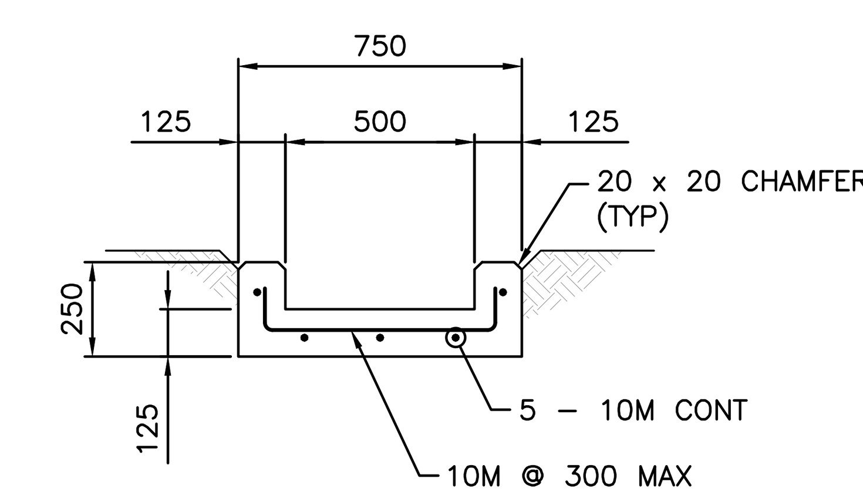


ROCK DRAIN TROUGH PLAN

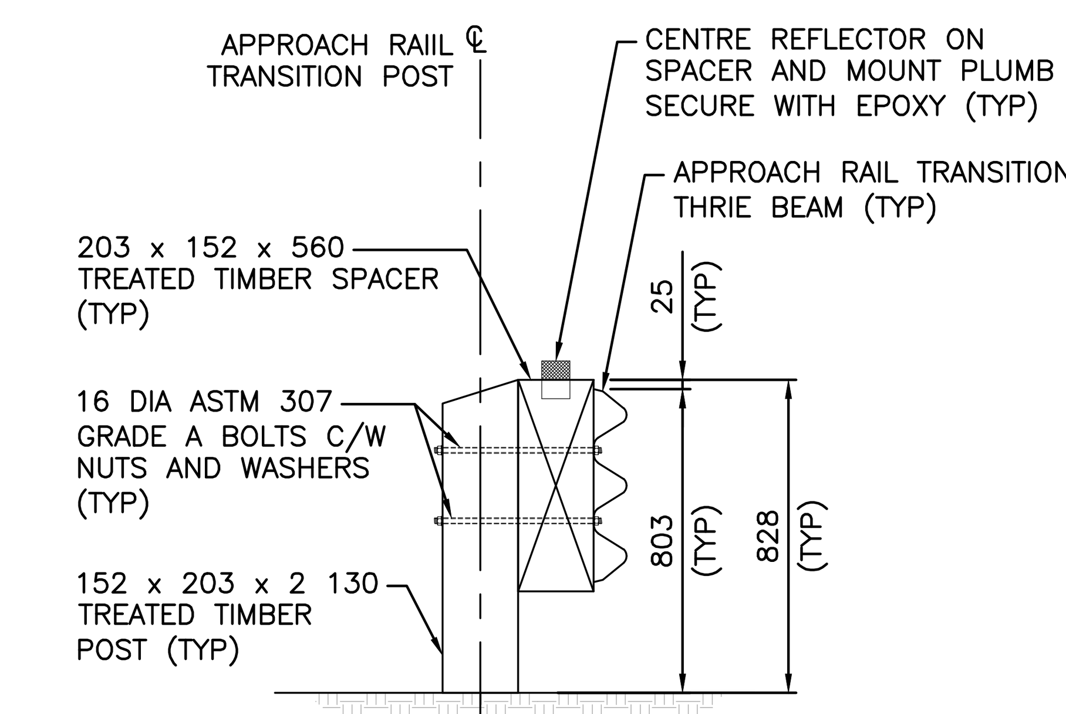
SCALE 1:20

NOTES

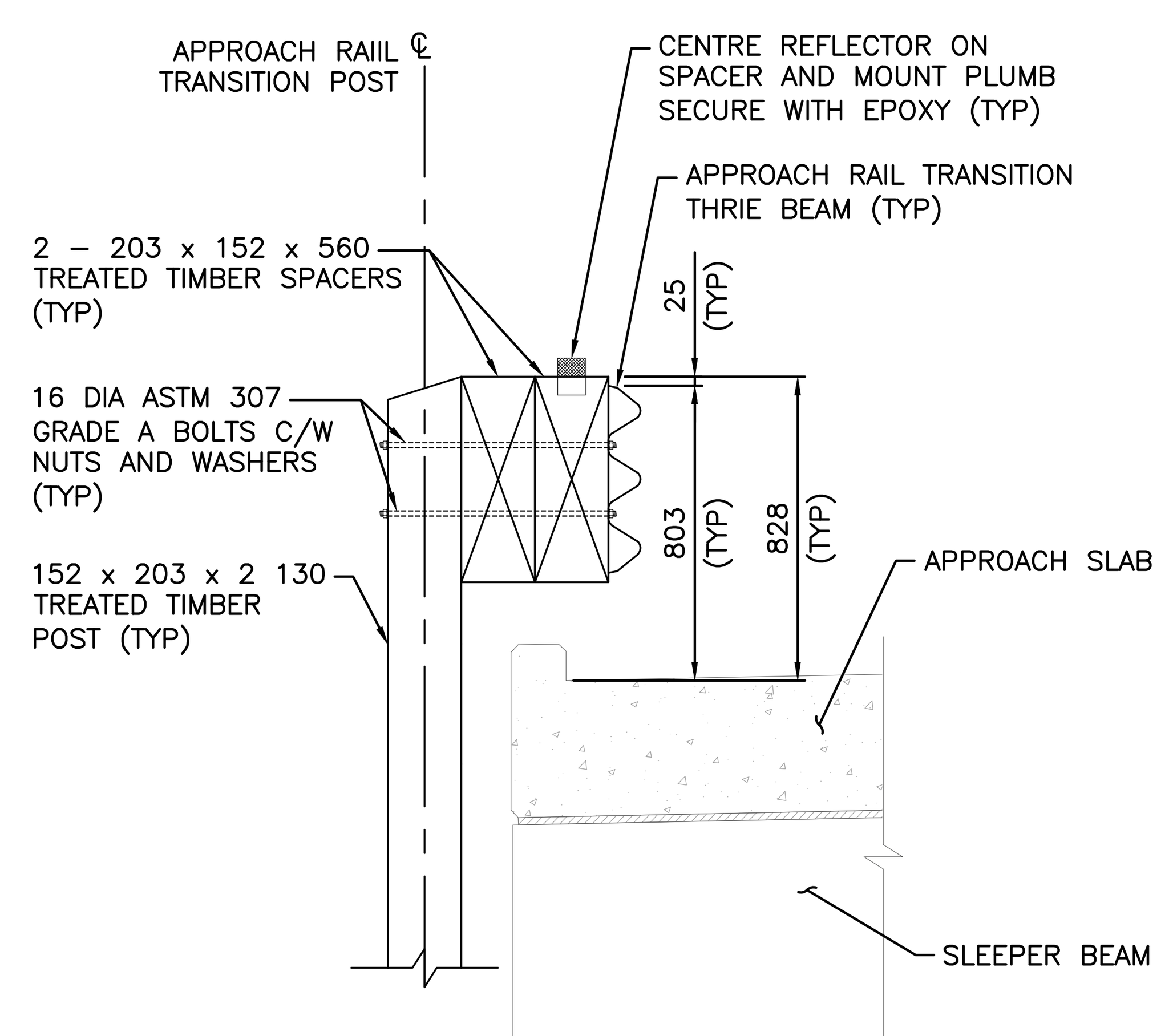
1. ALL MATERIAL SHALL BE SUPPLIED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION.
2. CAST IN PLACE CONCRETE SHALL BE CLASS C WITH CLASS 1 FINISH IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION SECTION 4.
3. SUPPLY AND PLACEMENT OF NON–WOVEN GEOTEXTILE FILTER FABRIC SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR BRIDGE CONSTRUCTION SECTION 10. NON–WOVEN GEOTEXTILE FILTER FABRIC SHALL BE KEYED 300 INTO THE SUB–GRADE ALL AROUND BENEATH THE ROCK RIPRAP IN ORDER TO ANCHOR THE FABRIC.
4. ASPHALT IMPREGNATED FIBRE BOARD (AIFB) SHALL MEET THE REQUIREMENTS OF ASTM D1751.
5. CLOSED CELL FOAM SHALL BE SIKA EMSEAL OR AN EQUIVALENT APPROVED BY THE DEPARTMENT.
6. APPROACH RAIL TRANSITION DETAILS NOT SHOWN ON THIS DRAWING REFER TO ALBERTA TRANSPORTATION STANDARD DRAWING S–1642–20 AND S–1643–20.



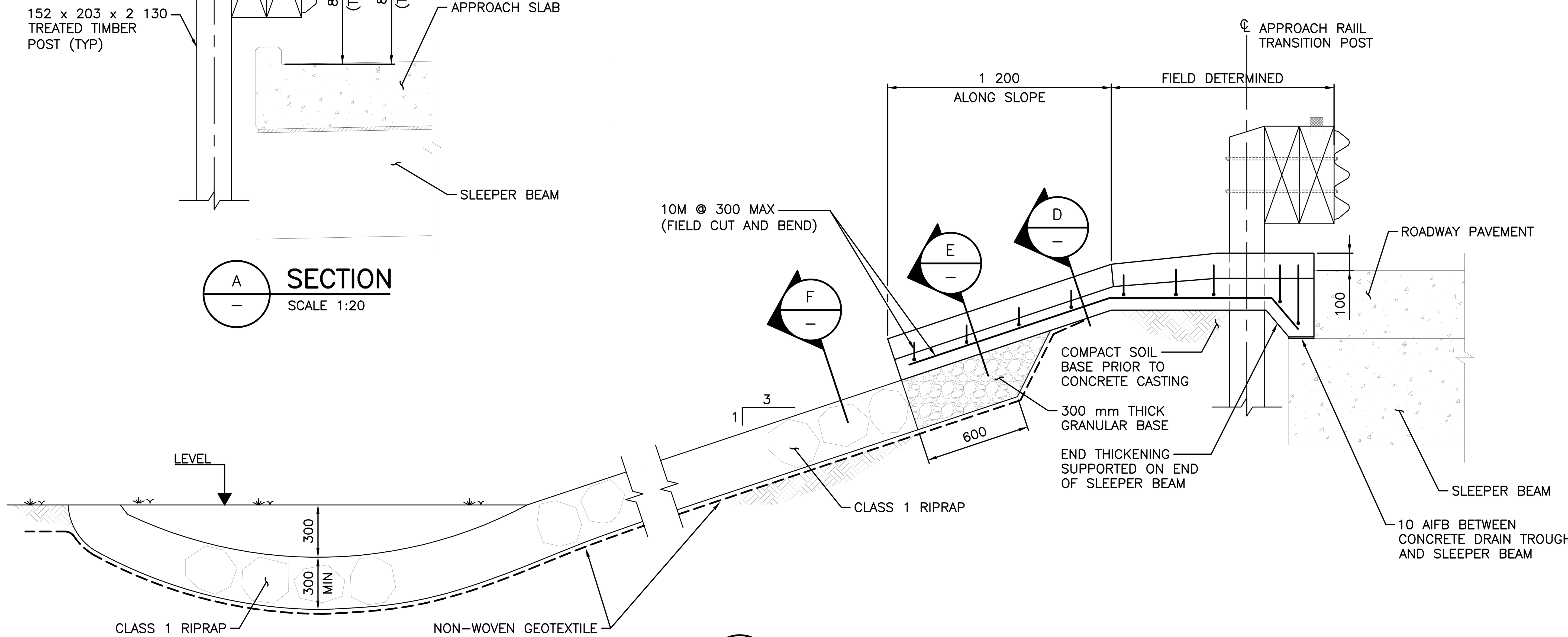
SECTION D
SCALE 1:20



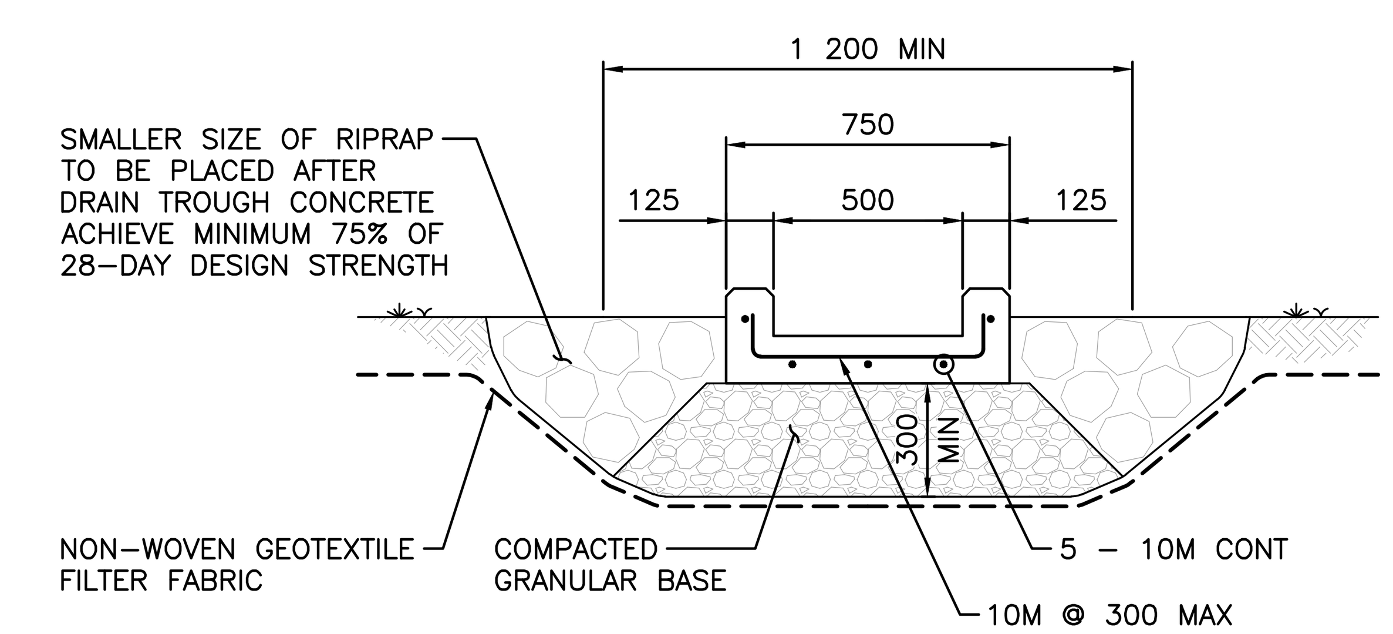
SECTION C
SCALE 1:20



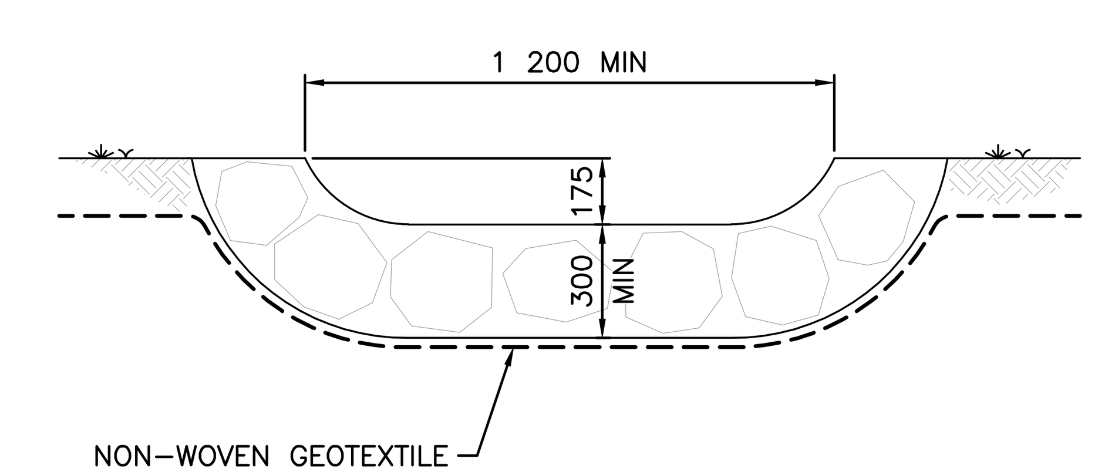
SECTION A
SCALE 1:20



SECTION B
SCALE 1:20



SECTION E
SCALE 1:20



SECTION F
SCALE 1:20

Government of Northwest Territories

Consultant Logo

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Rev	Date	Description	Init
1	2024–12–06	ISSUED FOR CONSTRUCTION	YL
0	2024–07–19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories
HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2
JEAN MARIE RIVER BRIDGE
DRAIN TROUGH AND APPROACH RAIL TRANSITION DETAILS

DESIGNED	YL	DATE	2024–12–06
CHECKED	JZ	DATE	2024–12–06
DRAWN	KK	DATE	2024–12–06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
6448506 CANADA INC. O/A JACOBS CONSULTANCY CANADA INC.
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF
YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024–12–06

PROJECT No.	SHEET No.	DRAWING No.	
CE857700	53 OF 55	SC–INF01–6081–S031	1

FILE: C:\pw_workdir\jacobs-us-va-pw-02\dms92401a\S031.dwg
PLOTTED : Friday, December 6, 2024

BAR LIST: ABUTMENT SEATS & SHEAR BLOCKS

MARK	SIZE	TYPE	X	Y	Z	LENGTH	QTY IN 1 PRECAST UNIT ABUT 1 SE OR SW ELEMENT	QTY IN 1 PRECAST UNIT ABUT 2 NE OR NW ELEMENT	QTY IN 1 PRECAST UNIT MID ELEMENT ABUT 1 OR ABUT 2	TOTAL QTY IN 6 PRECAST UNITS	QTY FIELD PLACEMENT IN PILE POCKETS ABUT 1	QTY FIELD PLACEMENT IN PILE POCKETS ABUT 2	QTY FIELD PLACEMENT IN 4 CONNECTIONS	TOTAL QTY IN FIELD PLACEMENT	MASS IN 6 PRECAST UNITS (kg)	MASS IN FIELD PLACEMENT (kg)
A1501	15	P	1 695			1 975	63	57	48	336			24	24	1 042	74
A1502	15	R	120	770	1 670	2 560	72	72	24	336					1 350	
A1503	15	G	322	1 220		2 762	36	24	12	144					624	
A1504	15	G	1 695	140		1 975	16	14	24	108					335	
A1505	15	G	1 655	200		2 055	4	4		16					52	
A1506	15	G	1 665	250		2 165	3	3		12					41	
A1507	15	E	762	140		902						16		16		23
A1508	15	E	720	140		860						16		16		22
A1509	15	G	1 756	140		2 036			16	32					102	
A1510	15	G	982	140		1 262		6		12					24	
A1511	15	G	1 024	140		1 304		6		12					25	
A1512	15	E	1 695	140		1 835					56	32		88		254
A2001	20	G	1 034	1 320		3 674	42	44	32	236			16	16	2 042	138
A2002	20	G	992	1 320		3 632	42	44	32	236			16	16	2 019	137
A2003	20	P	1 695			2 095	36	48	12	192					947	
A2004	20	STR				4 315	14	14		56					569	
A2005	20	M	1 320			1 520		12		24					86	
A2006	20	E	3 700	250		3 950	4	4		16					149	
A2007	20	STR				2 400			10	20					113	
A2008	20	STR				3 030			16	32					228	
A2009	20	STR				3 030			4	8					57	
A2501	25	E	4 315	400		4 715	8	8		32					592	
A2502	25	STR				4 315	8	8		32					542	
A2503	25	E	400	590		990	6	6		24					93	
A2504	25	E	510	400		910				0	8	8		16		57
A2505	25	STR				3 030			24	48					571	
A2506	25	STR				2 400			10	20					188	
A3001	30	STR				4 315	4	4		16					379	
A3002	30	STR				3 975	8	8		32					699	
A3003	30	E	4 315	490		4 805	4	4		16					422	
A3005	30	STR				3 030			8	16					266	
A3006	30	STR				2 400			4	8					106	
H1501	15	G	470	800		2070			6	12					39	
H1502	15	G	370	800		1970			6	12					37	
H1503	15	H	500	400		2080								8		26

PLAIN TOTAL IN 6 PRECAST ELEMENTS (kg): 13 740

PLAIN TOTAL IN FIELD PLACEMENT (kg): 731

BAR LIST: SLEEPER BEAMS

MARK	SIZE	TYPE	W	X	Y	Z	LENGTH	IN 1 PRECAST UNIT	IN 2 PRECAST UNITS	MASS (kg)
B1001	10	L		80	440 (AVE)	180	1 220	32	64	61
B1501	15	G		790	440 (AVE)		1 670	16	32	84
B1502	15	H		790	450 (AVE)		2 760	45	90	390
B1503	15	G		790	500		1 790	8	16	45
B2001	20	Y		790			1 130	8	16	43
B2002	20	STR					1 700	8	16	64
B2003	20	STR					10 440	4	8	197
B2004	20	STR					10 440	2	4	98
B3001	30	J	5 220	10 440	104	104	10 440	4	8	459
B3002	30	STR					10 440	4	8	459

PLAIN TOTAL IN 2 PRECAST ELEMENTS (kg): 1 900

NOTES

1. BARS DENOTED AS 'SS' SHALL BE SOLID STAINLESS REINFORCING STEEL.
2. DIAMETERS OF ALL BENDS AND DETAILS OF ALL HOOKS, UNLESS NOTED OTHERWISE SHALL CONFORM TO THE RECOMMENDED SIZED DETAILED IN THE CURRENT EDITION OF THE REINFORCING STEEL STANDARD PRACTICE MANUAL PUBLISHED BY THE REINFORCING STEEL INSTITUTE OF CANADA.
3. WHERE SPLICES ARE SPECIFICALLY DETAILED ON THESE DRAWINGS THE MINIMUM SPLICE LENGTHS SHALL BE THE LONGER LENGTH SHOWN IN THE SPECIFIC DETAIL OR AS SUMMARIZED IN THE FOLLOWING TABLE. FOR ALL OTHER CASES APPROVAL IN WRITING FROM THE ENGINEER IS REQUIRED.

REINFORCING SPLICE LENGTHS (UNO)

BAR SIZE	SPLICE LENGTH
10M	450
15M	650
20M	850
25M	1300
30M	1550
35M	1800

BAR LIST: ABUTMENT DIAPHRAGMS

MARK	SIZE	TYPE	V	W	X	Y	Z	LENGTH	QTY IN 1 PRECAST UNIT	QTY IN 2 PRECAST UNITS	TOTAL QTY IN FIELD PLACEMENT	MASS IN 2 PRECAST UNITS (kg)	MASS IN FIELD PLACEMENT (kg)
D1501	15	P			1 422			1 702	24	48		128	
D2001	20	J		5 155	10 310	103	103	10 310	5	10		243	
D2002	20	T	300	834	670	200	715	2 269	52	104		556	
D2003SS	20	S		300	160	750		2 260	12	24		128	
D2501	25	G			535	1 211		2 957			16		186
D2502	25	H			585	1 422		4 574	53	106		1 903	
D2503	25	STR						6 000	10	20		471	
D2504	25	STR						3 200	10	20		251	
D2505	25	G			200	950		2 100	45	90		742	
D2506	25	C			400	95	750	1161	10	20		91	
D2507	25	J		3 900	7 800	78	78	7 800	6	12		367	
D2508	25	STR						4 600	12	24		433	
D2509	25	G			350	3 000		6 350	4	8		199	
D2510	25	STR						3 000	8	16		188	
D2511	25	G			535	3 000		6 535	18	36		923	
D2512	25	STR						3 500	14	28		385	
D2513	25	R			200	1 200	450	1 850			20		145

PLAIN TOTAL IN 2 PRECAST ELEMENTS (kg): 6 881

SS TOTAL IN 2 PRECAST ELEMENTS (kg): 128

PLAIN TOTAL IN FIELD PLACEMENT (kg): 331

BAR LIST: ABUTMENT WINGWALLS

MARK	SIZE	TYPE	W	X	Y	Z	LENGTH	QTY IN 1 PRECAST UNIT ABUT 1 SE OR SW ELEMENT	QTY IN 1 PRECAST UNIT ABUT 2 NE OR NW ELEMENT	TOTAL QTY IN 4 PRECAST UNITS	MASS IN 4 PRECAST UNITS (kg)
W1501	15	P		585			865	6	6	24	33
W1502	15	P		1 205			1 485	3	3	12	28
W1502	15	F	180	4 740	2 551	630	6 193	2		4	39
W1503	15	F	180	4 740	2 687	630	6 259		2	4	39
W1504	15	E		3 400 (AVE)	750		4 280	14	14	56	376
W1505	15	R		710	1 635	250	2 595	3	3	12	49
W1506	15	G		255	1 600 (AVE)		3 455	15	15	60	325
W1507	15	G		295	620		1 535	2	2	8	19
W1508	15	G		255	620		1 495	15	15	60	141
W1509	15	R		810	820	250	1 880	3	3	12	35
W2001	20	H		535	832		3 134	2	2	8	59
W2002	20	H		535	750		2 970	6	6	24	168
W2003	20	G		2 850	300		3 450	8	8	32	260
W2501	25	G		585	2 025		4 635	10	10	40	728
W2502	25	H		535	1 210		4 290	8	8	32	539
W2503	25	H		350	1 210		3 920	2	2	8	123
W2504	25	E		1 185	400		1 585	4	4	16	100
W2505	25	E		1 210	400		1 610	6	6	24	152
W2506	25	H		585	1 742		4 150	1	1	4	65
W2507	25	E		3 400 (AVE)	400		3 800	14	14	56	835

PLAIN TOTAL IN 4 PRECAST ELEMENTS (kg): 4 113

Government of Northwest Territories

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Rev	Date	Description	Init
1	2024-12-06	ISSUED FOR CONSTRUCTION	YL
0	2024-07-19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

BAR LIST

SHEET 1

DESIGNED	YL	DATE	2024-12-06
CHECKED	JZ	DATE	2024-12-06
DRAWN	KK	DATE	2024-12-06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
84698R CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature
Date 4 Dec 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF

YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024-12-06

NORTHWEST TERRITORIES PROFESSIONAL ENGINEER
YING YI LI
L1591
NT/NU
2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	54 OF 55	SC-INF01-6081-S032 | 1

FILE: C:\pw_workdir\jacobs-us-vs-pw-02\dms924010a\S032.dwg
PLOTTED: Friday, December 6, 2024

BAR LIST: DECK PANELS

MARK	SIZE	TYPE	V	W	X	Y	Z	LENGTH	QTY IN 1 TYP DECK PANEL	QTY IN 1 END DECK PANEL	TOTAL QTY IN 14 PRECAST UNITS	TOTAL QTY IN FIELD PLACEMENT	MASS IN 14 PRECAST UNITS (kg)	MASS IN FIELD PLACEMENT (kg)
C1001	10	V			380	585	172	1 600	60	40	800		1 005	
C1501	15	STR						3 080	12		144		696	
C1502	15	U	44	250	362	350	340	1 652	30	32	424		1 100	
C1503	15	STR						3 080	100		1 200		5 803	
C1504	15	X		5 450	10 880	109	109	11 380	22	24	312	13	5 574	232
C1505	15	STR						3 100		40	80		389	
C1506	15	STR						2 495		18	36		141	
C1507	15	STR						3 100		12	24		117	
C1508	15	Z			382	340	54	1 066				26		44
C2001	20	W		5 450	10 880	109	109	11 280	22	24	312	13	8 288	345
C2501	25	STR						3 100		20	40		487	

PLAIN TOTAL IN 14 PRECAST ELEMENTS (kg): 23 600

PLAIN TOTAL IN FIELD PLACEMENT (kg): 621

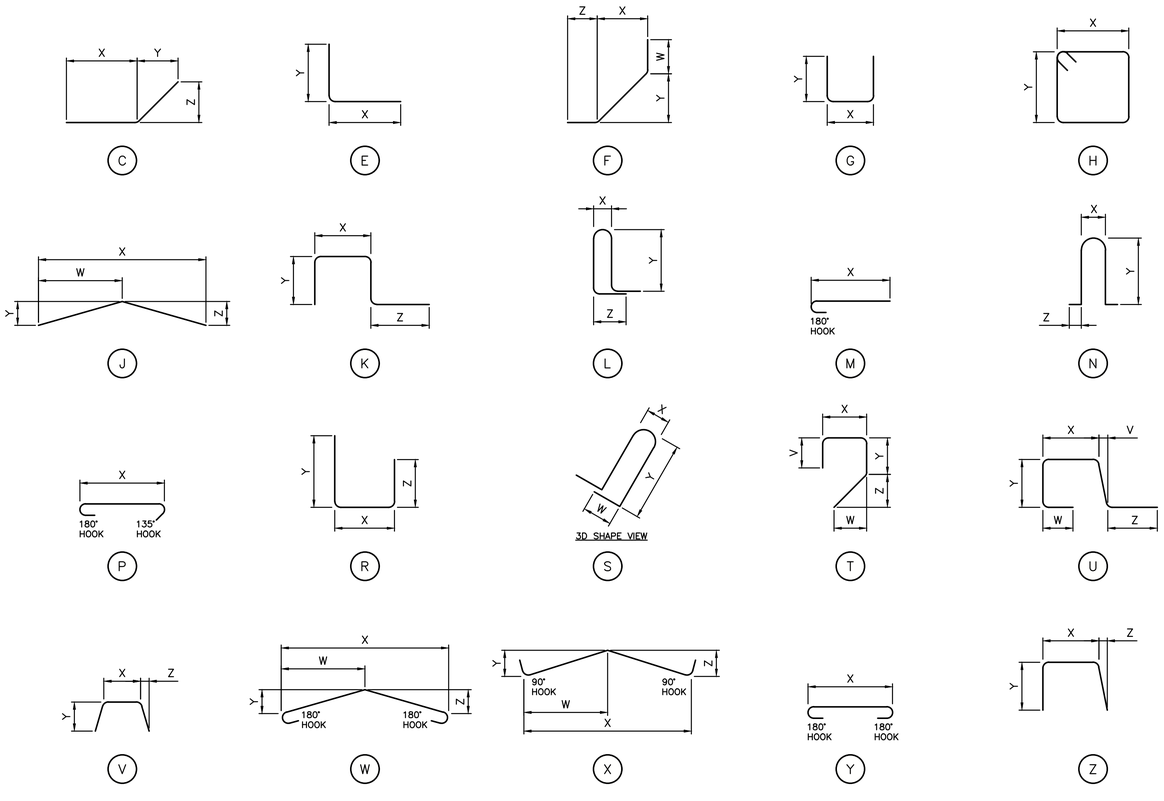
BAR LIST: APPROACH SLAB PANELS

MARK	SIZE	TYPE	V	W	X	Y	Z	LENGTH	QTY IN 1 EXTERIOR ELEMENT	QTY IN 1 INTERIOR ELEMENT	TOTAL QTY IN 8 PRECAST ELEMENTS	TOTAL No. OF BARS FOR FIELD PLACEMENT	MASS IN PRECAST ALL ELEMENTS (kg)	MASS IN FIELD PLACEMENT (kg)
P1501	15	STR						4 775	2		8		60	
P1502	15	U	50	250	362*	400	250	1 662	24		96		250	
P1503	15	STR						4 775	1		4		30	
P1504	15	STR						5 900	9	8	68	6	630	56
P1505	15	E			300	300		600	6		24		23	
P1506	15	STR						5 625	3	3	24		212	
P1507	15	M			2 910			3 080	30		120		580	
P1508	15	G			210	300		810	18	16	136		173	
P1509	15	C			4 465	308	101	4 789	1		4		30	
P1510	15	STR						1 475	1		4		9	
P1511	15	M			2 675			2 845	3		12		54	
P1512	15	STR						2 750		18	72		311	
P1513	15	G			415	250		915	5		20		29	
P2001	20	M			2 910			3 110	2		8		59	
P2002	20	STR						2 910	32		128		877	
P2003	20	STR						2 675	7		28		176	
P2004	20	STR						2 750		41	164		1 062	
P3001	30	STR						4 775	2		8		210	
P3002	30	STR						5 900	12	10	88	6	2 853	195
P3003	30	STR						5 625	6	6	48		1 484	

NOTE: * ADJUST LAST 2 END BARS TO FIT CURB END CHAMFER

PLAIN TOTAL IN 8 PRECAST ELEMENTS (kg): 9 111

PLAIN TOTAL IN FIELD PLACEMENT (kg): 250



Government of Northwest Territories

Consultant Logo

Jacobs

Rev	Date	Description	Init
1	2024-12-06	ISSUED FOR CONSTRUCTION	YL
0	2024-07-19	ISSUED FOR TENDER	YL

REVISIONS

Government of Northwest Territories

HIGHWAY No. 1 (MACKENZIE HIGHWAY) km 411.2

JEAN MARIE RIVER BRIDGE

BAR LIST

SHEET 2

DESIGNED	YL	DATE	2024-12-06
CHECKED	JZ	DATE	2024-12-06
DRAWN	KK	DATE	2024-12-06
SCALE	AS SHOWN		

PERMIT TO PRACTICE
64690R CANADA INC. O/A
JACOBS CONSULTANCY CANADA INC.
Signature
Date: 6 Dec 2024
PERMIT NUMBER: P 1453
NT/NU Association of Professional Engineers and Geoscientists

PREPARED UNDER THE DIRECTION OF

YING YI LI, P.ENG.
ENGINEER OF RECORD
DATE 2024-12-06

NORTHWEST TERRITORIES ASSOCIATION OF PROFESSIONAL ENGINEERS AND GEOSCIENTISTS
YING YI LI
R1703
2024 Dec 06

PROJECT No.	SHEET No.	DRAWING No.
CE857700	55 OF 55	SC-INF01-6081-S033 | 1