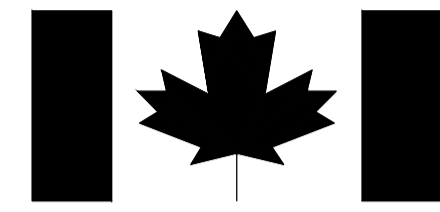


ISSUED FOR TENDER

30/04/2021



Public Services
and Procurement
Canada

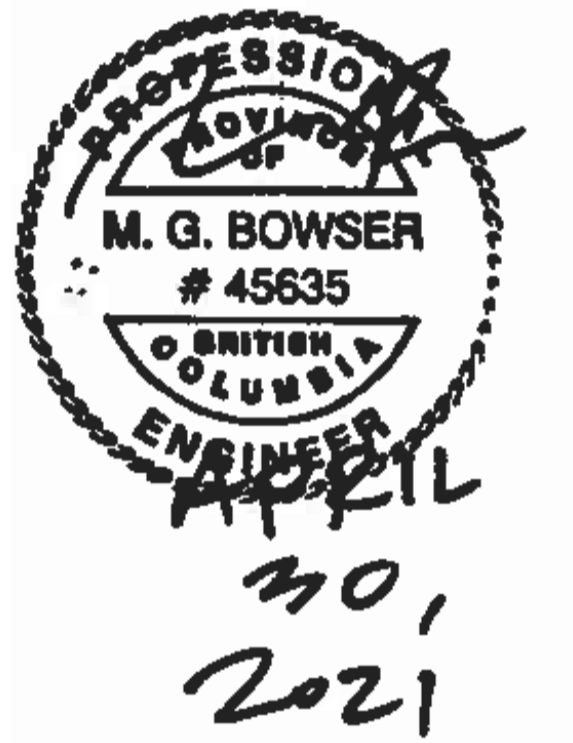
Services publics et
Approvisionnement
Canada

BRIDGE REPLACEMENT

KEOGH RIVER BRIDGE

PORT HARDY BRITISH COLUMBIA

Public Services and Procurement Canada / Services publics et Approvisionnement Canada
REAL PROPERTY SERVICES / Pacific Region / SERVICES IMMOBILIERS / Région de Pacifique



LIST OF STRUCTURAL DRAWINGS	
DRAWING NUMBER	DRAWING TITLE
S1	COVER SHEET
S2	GENERAL NOTES
S3	REMOVALS
S4	GENERAL ARRANGEMENT
S5	PILE CAP DETAILS
S6	STEEL GIRDER LAYOUT
S7	STEEL GIRDER DETAILS - SHEET 1 OF 2
S8	STEEL GIRDER DETAILS - SHEET 2 OF 2
S9	BEARING DETAILS
S10	PRECAST DECK PANELS
S11	BALLAST WALL AND THRIE BEAM DETAILS
S12	BOREHOLE LOGS

LIST OF CIVIL DRAWINGS	
DRAWING NUMBER	DRAWING TITLE
C1	SITE PLAN
C2	PLAN AND PROFILE
C3	PLAN AND PROFILE - ACCESS ROAD
C4	GRADING PLAN
C5	TYPICAL SECTIONS AND DETAILS
C6	THRIE BEAM DETAILS
C7	CROSS SECTIONS

KEY MAP
N.T.S.

Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20



Project title: **BRITISH COLUMBIA PORT HARDY**
KEOGH RIVER BRIDGE REPLACEMENT

Designed by: R.KABIR, EIT / K.FRIESEN, P.ENG. / Conçu par

Drawn by: H.RYU / Dessiné par

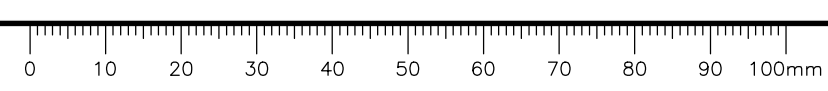
Approved by: M.BOWSER, P.ENG. / Approuvé par

PWSSC Project Manager: T.GREER, P.ENG. / Administrateur de Projets TPSOC

Drawing title: **COVER SHEET** / Titre du dessin

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	S1 OF S12	0

DATE: 2021-04-29 -- 4:02pm (harry.yu) P:\GC-19000\RS\19M-01601-02 - PWSSC Keogh Bridge Replacement\Drawings\082 - Bridges\PSPC Keogh Bridge Replacement\cover page.dwg LAYOUT_102.dwg



GENERAL STRUCTURAL NOTES:

1. GENERAL

1.1 THE METRIC SYSTEM OF MEASUREMENT IS USED ON ALL DRAWINGS. ELEVATIONS AND STATIONS ARE SHOWN IN METRES AND ALL OTHER DIMENSIONS ARE SHOWN IN MILLIMETRES.

2. DESIGN DATA

- 2.1 DESIGN REFERENCES:
 -CAN/CSA S6-19
 -MINISTRY OF FOREST, LANDS NATURAL RESOURCE OPERATIONS (FLNRO) BRIDGE DESIGN AND CONSTRUCTION MANUAL
 -MINISTRY OF FOREST, LANDS NATURAL RESOURCE OPERATIONS (FLNRO) INTERIM BRIDGE DESIGN GUIDELINES
- 2.2 DESIGN LOADS :
 - LIVE LOAD : BCL-625
 DYNAMIC LOAD ALLOWANCE (DLA) IN ACCORDING WITH S6-19 BARRIER PERFORMANCE LEVEL PL-1
 - FUTURE DEAD LOAD ALLOWANCE : 50 mm THICK CONCRETE OVERLAY
 - FATIGUE DESIGN :
 HIGHWAY CLASS D
 NUMBER OF LOAD CYCLES: 500,000
 FATIGUE EVALUATION COMPLETED ASSUMING 50-50 LOAD DISTRIBUTION AND TRUCK CENTRED ON ROADWAY.
 FATIGUE EVALUATION COMPLETED BASED ON 100% OF BCL-625 DESIGN VEHICLE AND S6-19 STRESS RANGES.
 - SEISMIC DESIGN :
 IMPORTANCE CATEGORY: "OTHER" BRIDGE
 SITE CLASS: D
 SEISMIC PERFORMANCE: SPC 3
 BASIC SEISMIC HAZARD USING 5TH GENERATION UHRS VALUES PUBLISHED BY GSC FOR SITE CLASS C CONDITIONS.

DESIGN SPECTRAL ACCELERATION VALUES FOR 1/2475 SEISMIC EVENT:

PERIOD T(s)	SPECTRAL ACCELERATION MODIFIED FOR SITE CLASS D
0.2	0.806
1.0	0.591

- DAILY MEAN TEMPERATURE : MAX. +24°C & MIN. -15°C
 - HOURLY MEAN WIND PRESSURES:
 50-YEARS RETURN PERIOD: 625 Pa
 10-YEARS RETURN PERIOD: 485 Pa
 -MAXIMUM LIVE LOAD DEFLECTION:
 SPAN/350 (BCL-625 TRUCK CENTERED IN ROADWAY; 50-50 LOAD DISTRIBUTION; INCLUDES DLA DEFLECTION)
 -CONSTRUCTION LOAD:
 SELF WEIGHT OF THE STRUCTURE, SUPPORTED AT THE BEARINGS, INCLUDING ALL DECK PANELS IN POSITION BUT UN-GROUTED.
 A VERTICAL LIVE LOAD OF 445 kN (40 TON EQUIPMENT + 10 TON PANEL) DISTRIBUTED OVER A LENGTH OF 4m
 THE EQUIPMENT SHALL BE POSITIONED ALONG THE CENTERLINE OF THE BRIDGE WITH ECCENTRICITY NOT MORE THAN 100 mm
 DLA = 10% (DESIGN SPEED = 10 km/hr)
 LOAD FACTORS IN ACCORDANCE WITH CAN/CSA-S6-19

- 2.3 HYDROTECHNICAL
 -DESIGN FLOW: Q100 = 317 m3/s
 -CLIMATE PROJECTIONS NOT INCLUDED
 -DESIGN WATER LEVEL INCLUDES FLOW OVER WEST APPROACH

3. FOUNDATION

- 3.1 STEEL PIPE PILES SHALL CONFORM TO ASTM A252 GRADE 3.
 3.2 ALL WELDS FOR STEEL PIPE PILES SHALL CONFORM TO CAN/CSA STANDARD W59.

4. PRECAST CONCRETE

- 4.1 ALL PRECAST CONCRETE TO HAVE MINIMUM COMPRESSIVE STRENGTH OF 35 MPA AT 28 DAYS. PRECAST CONCRETE SHALL CONFORM TO CAN/CSA A23.1, EXPOSURE CLASS C1.
 4.2 CONCRETE COVER TO REINFORCEMENT SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE (mm):

TOP OF PRECAST DECK PANEL:	50
UNDERSIDE OF PRECAST DECK PANEL:	25
VERTICAL FACE OF EXPOSED PRECAST DECK EDGE:	50
FACE OF STUD POCKET:	25
VERTICAL FACE OF TRANSVERSE GROUTED JOINT:	25
PRECAST CONCRETE BALLAST WALL:	35

- 4.3 ALL EXPOSED CONCRETE EDGES SHALL TO BE CHAMFERED 20mm UNLESS NOTED OTHERWISE.
 4.4 PRECAST CONCRETE TO BE FABRICATED IN ACCORDANCE WITH CSA A23.4 BY A PLANT CERTIFIED IN ACCORDANCE WITH CSA A23.4
 4.5 FABRICATION TOLERANCES TO CSA-A23.4
 4.6 CONCRETE SURFACE SHALL BE CONFORMING TO CSA-A23.4 AND AS FOLLOWS:
 TOP OF DECK PANELS: TRANSVERSE BROOM FINISH
 CONCRETE NOT EXPOSED TO VIEW: ROUGH FORM FINISH
 CONCRETE EXPOSED TO VIEW: SMOOTH FORM FINISH.

5. GROUT

- 5.1 GROUT TO HAVE MINIMUM COMPRESSIVE STRENGTH OF 35 MPA AT 28 DAYS. GROUT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
 - GROUT FOR BLOCK-OUTS SHALL BE TARGET TRAFFIC PATCH WITH COARSE AGGREGATE, OR ALTERNATE EQUIVALENT PRODUCT. EQUIVALENT PRODUCTS MUST BE APPROVED BY THE DEPARTMENTAL REPRESENTATIVE PRIOR TO USE.
 - GROUT FOR PANEL JOINTS SHALL BE TARGET TRAFFIC PATCH WITH FINE AGGREGATE, OR ALTERNATE EQUIVALENT PRODUCT. EQUIVALENT PRODUCTS MUST BE APPROVED BY THE DEPARTMENTAL REPRESENTATIVE PRIOR TO USE.
 5.2 COLD WEATHER GROUTING: WHERE IT IS ANTICIPATED THAT THE TEMPERATURE MAY DROP BELOW 5°C DURING GROUTING (OR WITHIN 24 HOURS PRIOR TO GROUTING), THE CONTRACTOR SHALL IMPLEMENT COLD WEATHER CONCRETING PROCEDURES IN ACCORDANCE WITH CAN/CSA A23.1. COLD WEATHER PROTECTION SHALL REMAIN IN PLACE FOR 5 DAYS MIN. AFTER GROUTING. PRIOR TO COMMENCING THE GROUTING OPERATION, THE CONTRACTOR SHALL PROVIDE THE DEPARTMENTAL REPRESENTATIVE WITH WRITTEN COLD WEATHER CONCRETING PROCEDURES.

6. REINFORCING STEEL

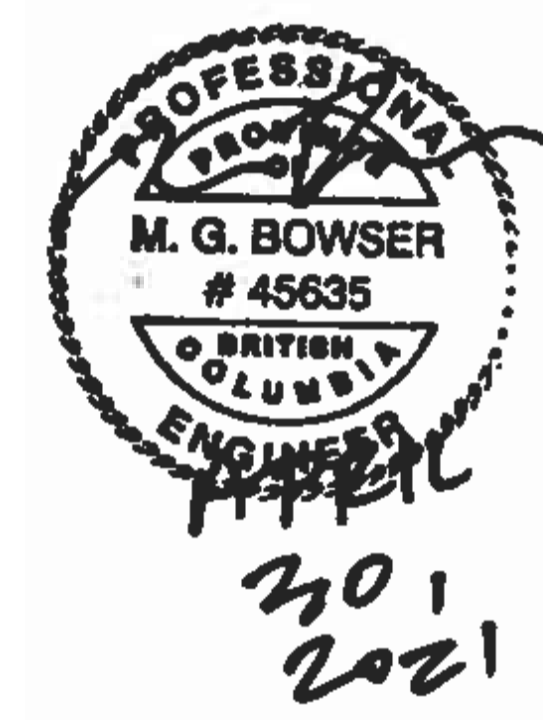
- 6.1 ALL REINFORCING STEEL TO CONFORM TO CAN/CSA-G30.18 GRADE 400R.
 6.2 WELDING OF REINFORCING STEEL IS NOT PERMITTED.

7. STEEL WORK

- 7.1 SEE DWG. S6.

8. BEARINGS

- 8.1 SEE DWG. S9.



Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20



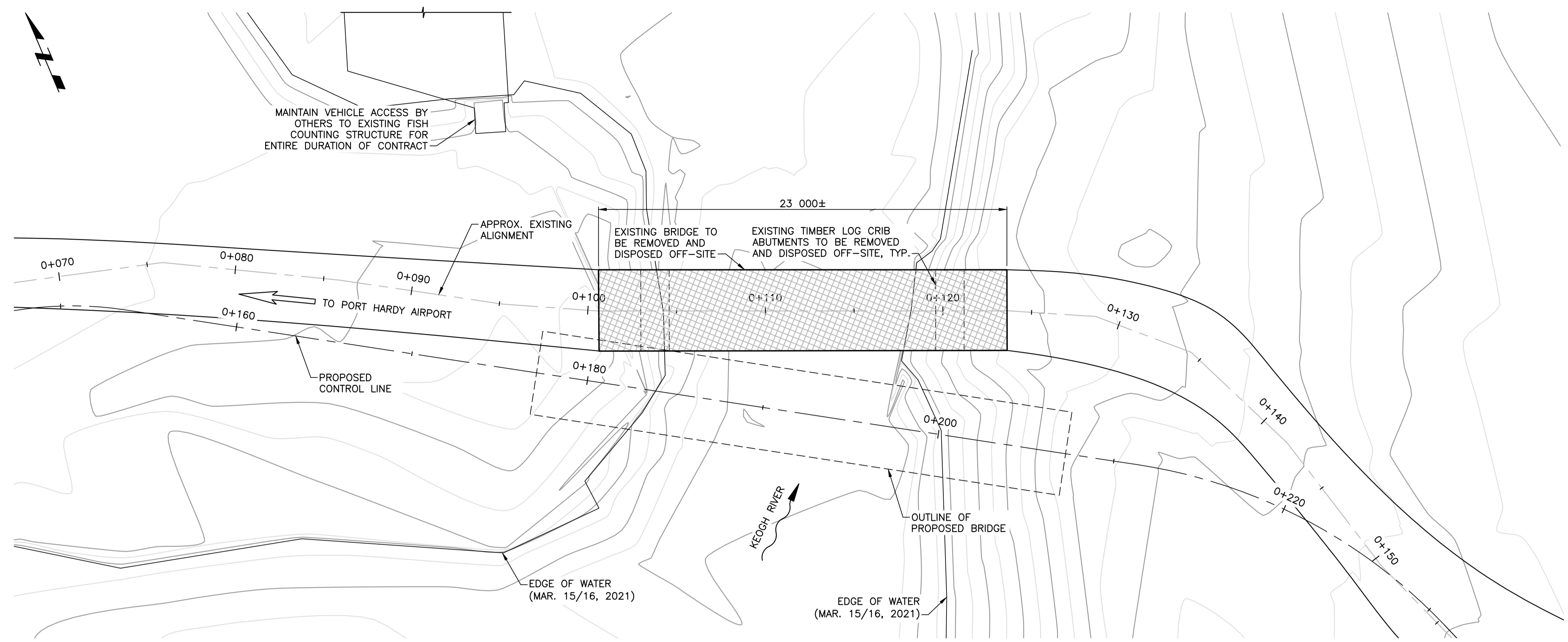
Project title: **BRITISH COLUMBIA PORT HARDY**
KEOGH RIVER BRIDGE REPLACEMENT

Designed by R.KABIR, EIT	Conçu par
Drawn by H.RYU	Dessiné par
Approved by M.BOWSER, P.ENG.	Approuvé par
PM/SCC Project Manager T.GREER, P.ENG.	Administrateur de Projets TPS/CC

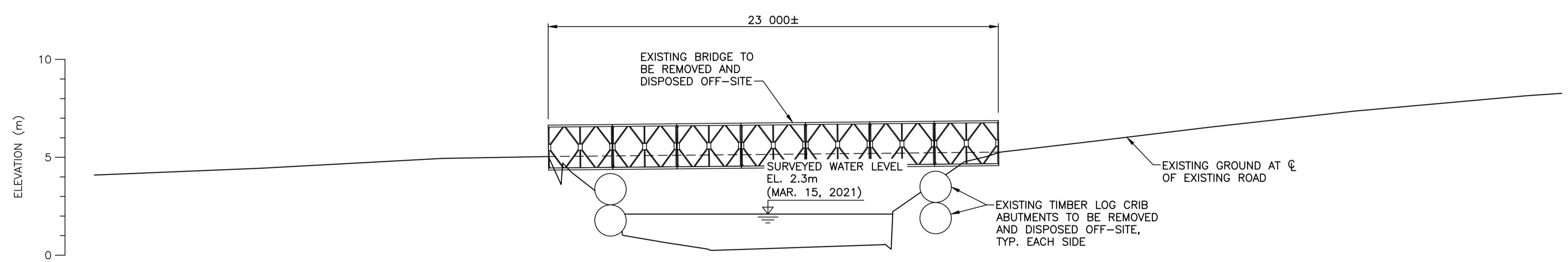
Drawing title: **GENERAL NOTES**

Project no./No. du projet R.109401.001	Drawing no./No. du dessin S2 OF S12	Revision no. 0
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DATE: 2021-04-30 11:15pm (harry.yu) P:\SCC\Keogh Bridge Replacement\Drawings\082 - Bridges\PSPC Keogh Bridge Replacement_new.dwg LAYOUT_GENERAL NOTES



SITE PLAN
 SCALE 1:150
 0 1.5m 2m 2.5m 3m 3.5m



ELEVATION
 SCALE 1:150
 0 1.5m 2m 2.5m 3m 3.5m

PROFESSIONAL ENGINEER
 M. G. BOWSER
 # 45635
 BRITISH COLUMBIA
 30,
 2021

Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20



Project title: **BRITISH COLUMBIA PORT HARDY**
KEOGH RIVER BRIDGE REPLACEMENT

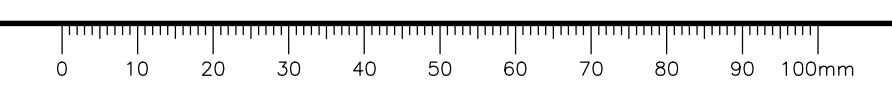
Designed by: **K.FRIESEN, P.ENG.**
 Drawn by: **H.RYU**
 Approved by: **M.BOWSER, P.ENG.**
 PWSSC Project Manager: **T.GREER, P.ENG.**

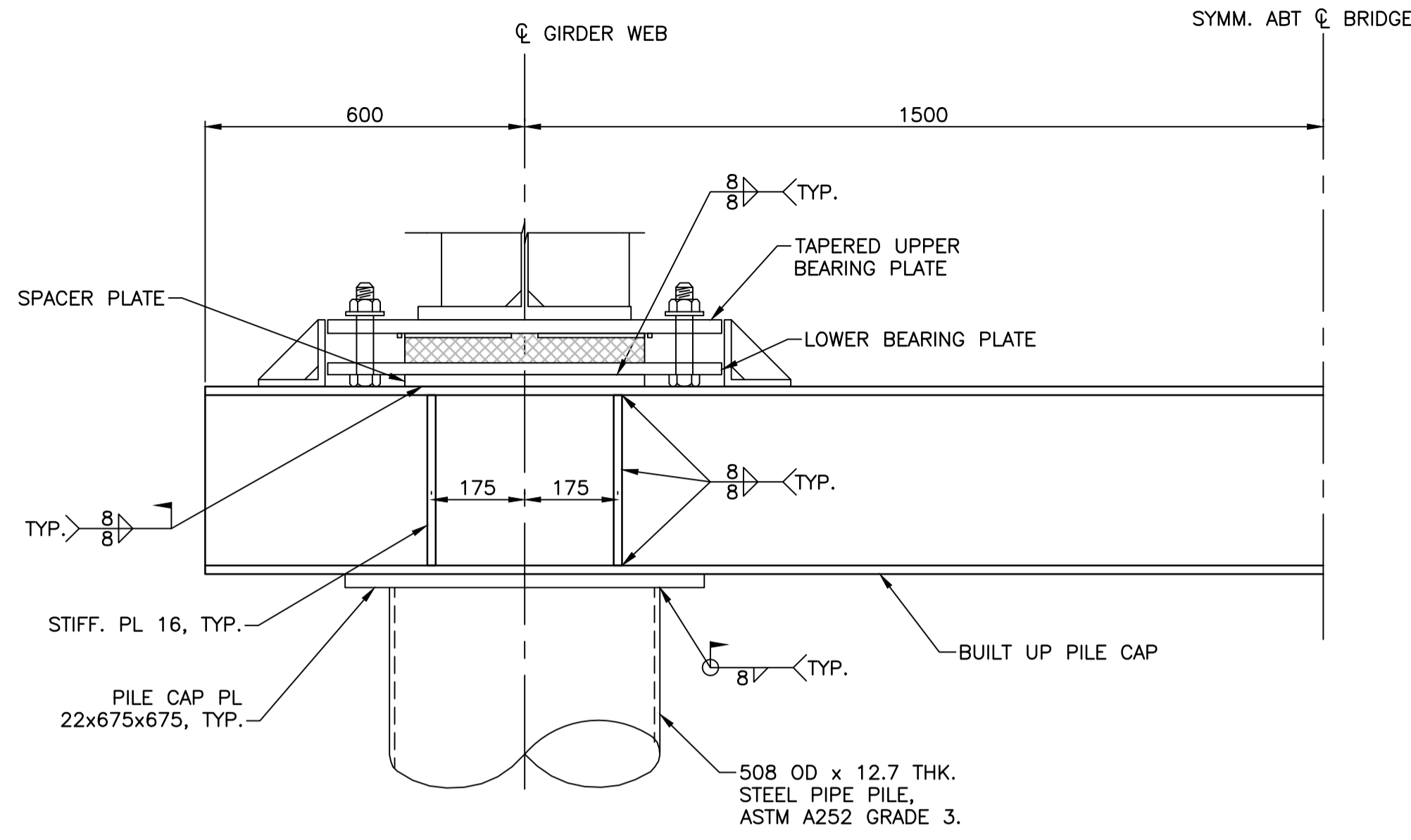
REMOVALS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	S3 OF S12	0

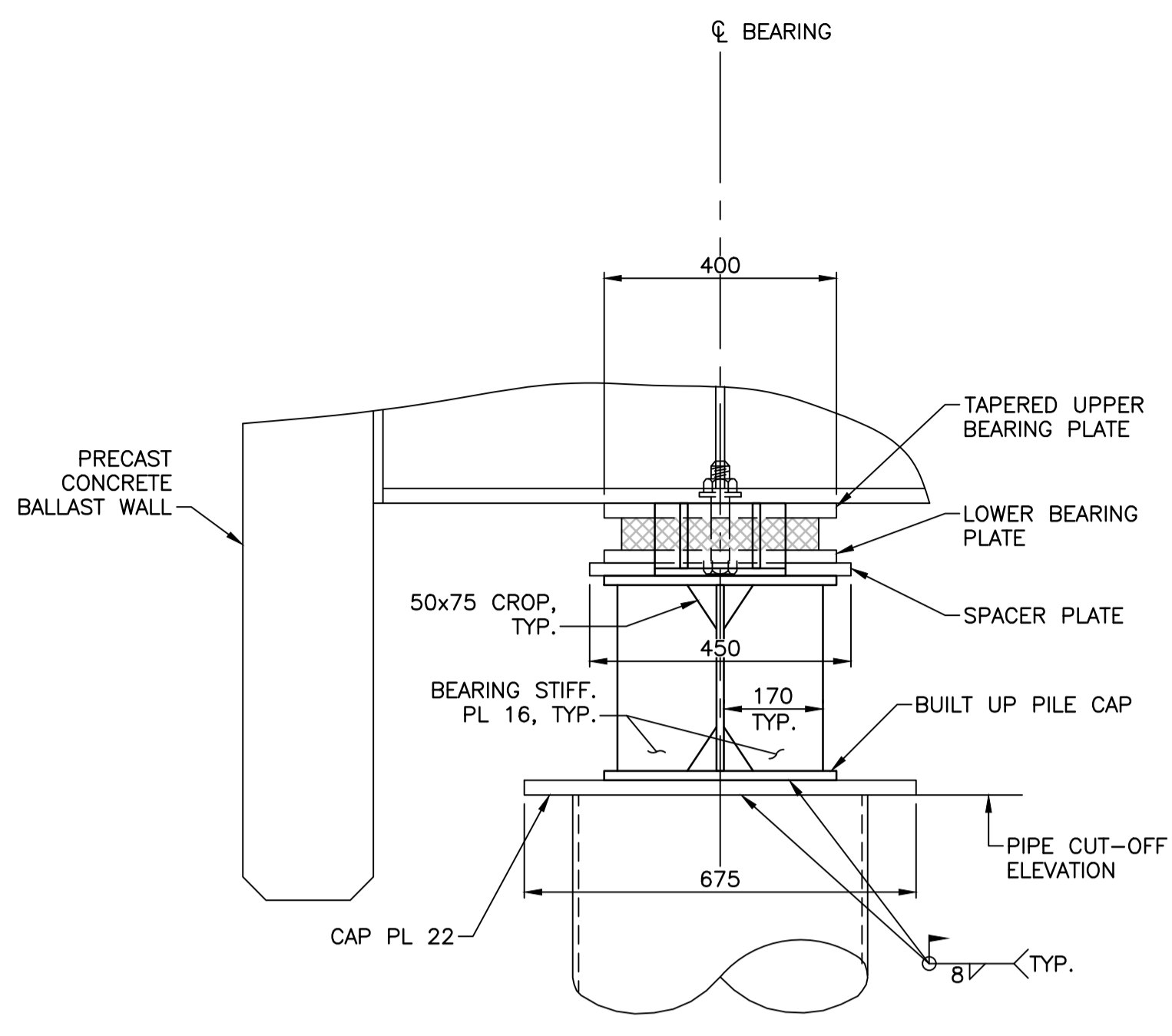
- NOTES:**
- FOR GENERAL NOTES SEE DWG. S2.
 - EXISTING BRIDGE IS POSTED FOR MAXIMUM VEHICLE WEIGHT 9,100kg.
 - THE CONTRACTOR SHALL REMOVE ALL DECK BOARDS AND RUNNING BOARDS FROM THE EXISTING BRIDGE AND REMOVE ALL NAILS AND FASTENERS FROM THE BOARDS. THE DECK BOARDS SHALL THEN BE DELIVERED AT THE CONTRACTORS EXPENSE TO A LOCATION THAT IS WITHIN 25KM OF THE BRIDGE SITE. THE DEPARTMENTAL REPRESENTATIVE WILL ADVISE OF THE LOCATION WHERE THE DECK BOARDS WILL BE DELIVERED TO.

DATE: 2021-04-30 - 11:53am (herryryu)
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 LAYOUT SITE PLAN

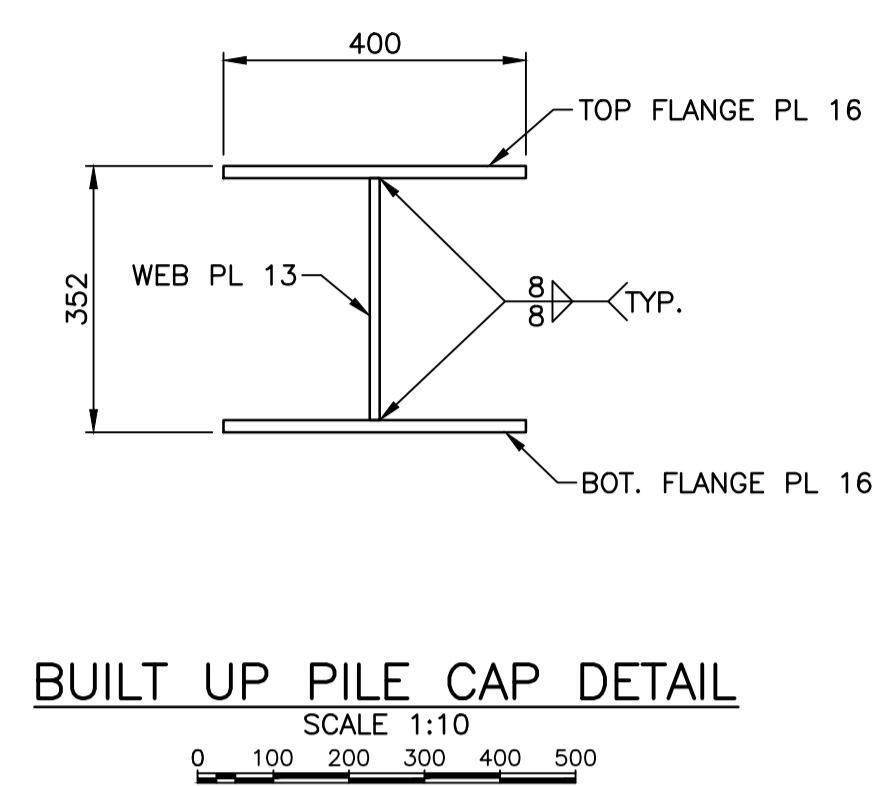




STEEL CAP BEAM DETAIL
SCALE 1:10
0 100 200 300 400 500



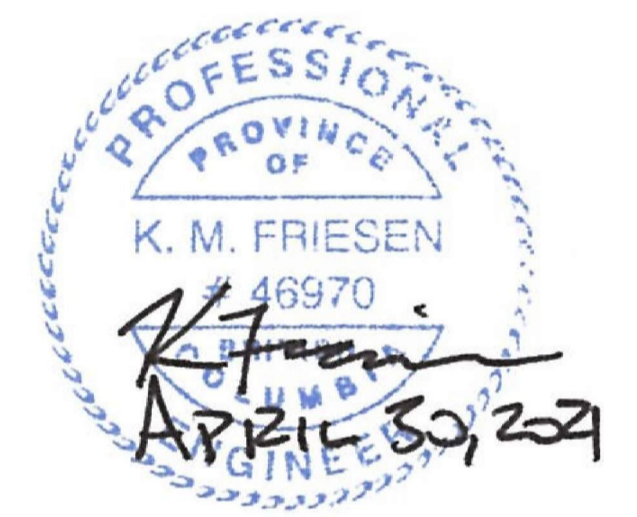
STEEL CAP BEAM SECTION VIEW
SCALE 1:10
0 100 200 300 400 500



BUILT UP PILE CAP DETAIL
SCALE 1:10
0 100 200 300 400 500

ELEVATIONS		
PILE No.	ESTIMATED VALUES	
	PILE TIP ELEVATION (m)	PILE CUT-OFF ELEVATION (m)
P1	-5.009	4.616
P2	-5.012	4.616
P3	-3.886	5.206
P4	-3.874	5.206

PILE AXIAL FORCES (KN)		
LOAD PER PILE	SLS 1	ULS 1
DEAD	376	440
LIVE (EXLC DLA)	360	680
TOTAL	736	1120



Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20



Project title: **BRITISH COLUMBIA PORT HARDY**
KEOGH RIVER BRIDGE REPLACEMENT

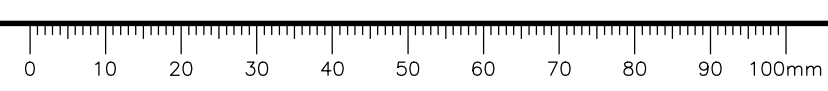
Designed by: **R.KABIR, EIT.**
Drawn by: **H.RYU**
Approved by: **M.BOWSER, P.ENG.**
PWSSC Project Manager: **T.GREER, P.ENG.**

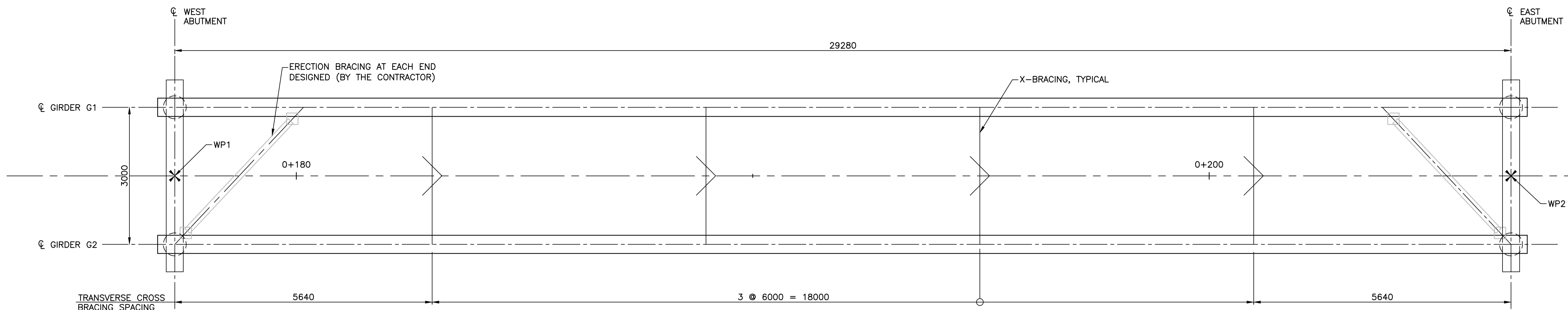
Drawing title: **PILE CAP DETAILS**

NOTES:
1. FOR GENERAL NOTES SEE DWG. S2

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	S5 OF S12	0

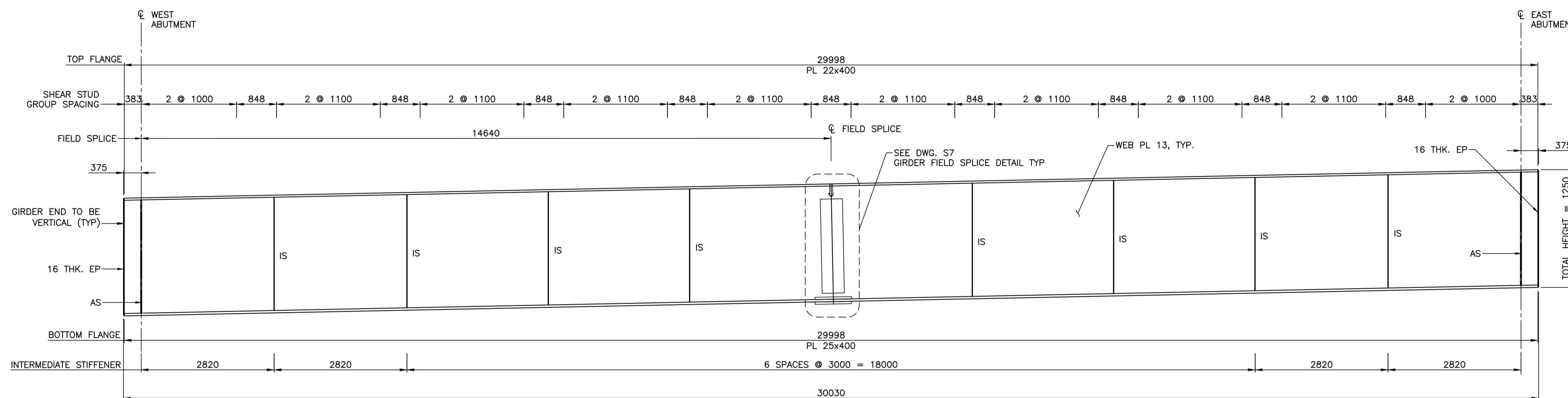
DATE: 2021-04-30 11:43am (herry.yj) PWSSC Project Manager - 01601-02 - PISPC Keogh Bridge Replacement Drawings\082 - Bridges\PSPC Keogh Bridge Replacement_new.dwg LAYOUT: PILE CAP DETAILS





STEEL GIRDER PLAN

SCALE 1:50
0 500 1000 1500 2000 2500



STEEL GIRDER ELEVATION

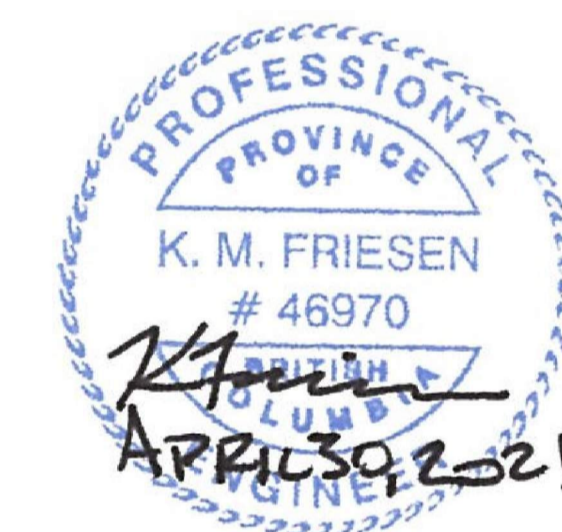
SCALE 1:50
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LEGEND:

- AS: ABUTMENT BEARING STIFFENER
(BOTH SIDES OF WEB FOR ALL GIRDERS)
- IS: INTERMEDIATE STIFFENER
(INTERIOR SIDE FOR GIRDER G1 & G2)
- EP: GIRDER END PLATE

NOTES:

1. FOR GENERAL NOTES SEE DRAWING S2.
2. ALL STEELWORK SHALL CONFORM TO CAN/CSA - G40.21M GRADE 350AT CATEGORY 3 EXCEPT TRANSVERSE CROSS BRACING AND MISCELLANEOUS STRUCTURAL STEEL TO CONFORM TO CAN/CSA-G40.21M GRADE 350A.
3. ALL BOLTS SHALL BE HIGH STRENGTH STRUCTURAL BOLTS CONFORMING TO ASTM F3125 GRADE A325, TYPE 3 UNLESS NOTED OTHERWISE, BOLTS SHALL BE M22 DIAMETER WITH THREADS EXCLUDED FROM THE SHEAR PLANE, C/W WASHERS AND NUTS CONFORMING TO ASTM A436 TYPE 3.
4. ALL HOLES FOR BOLTS SHALL BE 24Ø UNLESS NOTED OTHERWISE.
5. SHEAR STUDS SHALL CONFORM TO CSA W59 TYPE B WITH $F_u = 450MPa$ OR APPROVED EQUIVALENT.
6. FLANGE TO WEB WELDS SHALL BE BY AUTOMATIC PROCESS WHICH PROVIDES A CONTINUOUS WELD THROUGHOUT THE LENGTH OF EACH GIRDER SEGMENT.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND PROVISION OF ANY TEMPORARY BRACING REQUIRED TO STABILIZE THE GIRDER DURING TRANSPORTATION, ERECTION, HANDLING AND DECK SLAB CONSTRUCTION UNTIL THE STRUCTURE IS COMPLETE.
8. GIRDER SHALL BE CAMBERED TO VALUES SHOWN ON CAMBER DIAGRAM ON DRAWING S7.
9. ALL WELDING SHALL BE UNDER TAKEN BY A COMPANY CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA-W47.1 DIVISION 2 OR BETTER.
10. WITH THE EXCEPTION OF CROSS BRACING, ALL THE CONTACT SURFACE OF BOLTED CONNECTIONS SHALL CONFORM TO CLASS B AS SPECIFIED IN CAN/CSA-S6-19. CROSS BRACING SHALL CONFORM TO CLASS A OR BETTER.
11. BEARING STIFFENERS AND GIRDER END PLATES TO BE VERTICAL. INTERMEDIATE STIFFENERS AND CROSS BRACINGS TO BE AT RIGHT ANGLES TO GIRDER TOP FLANGE.
12. CONSTRUCTION REFERENCE TEMPERATURE IS 15°C
13. CONTRACTOR SHALL BE RESPONSIBLE FOR STRENGTH AND STABILITY OF GIRDERS DURING SHIPPING AND ALL STAGES OF ERECTION.



Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20



Project title: **BRITISH COLUMBIA PORT HARDY**

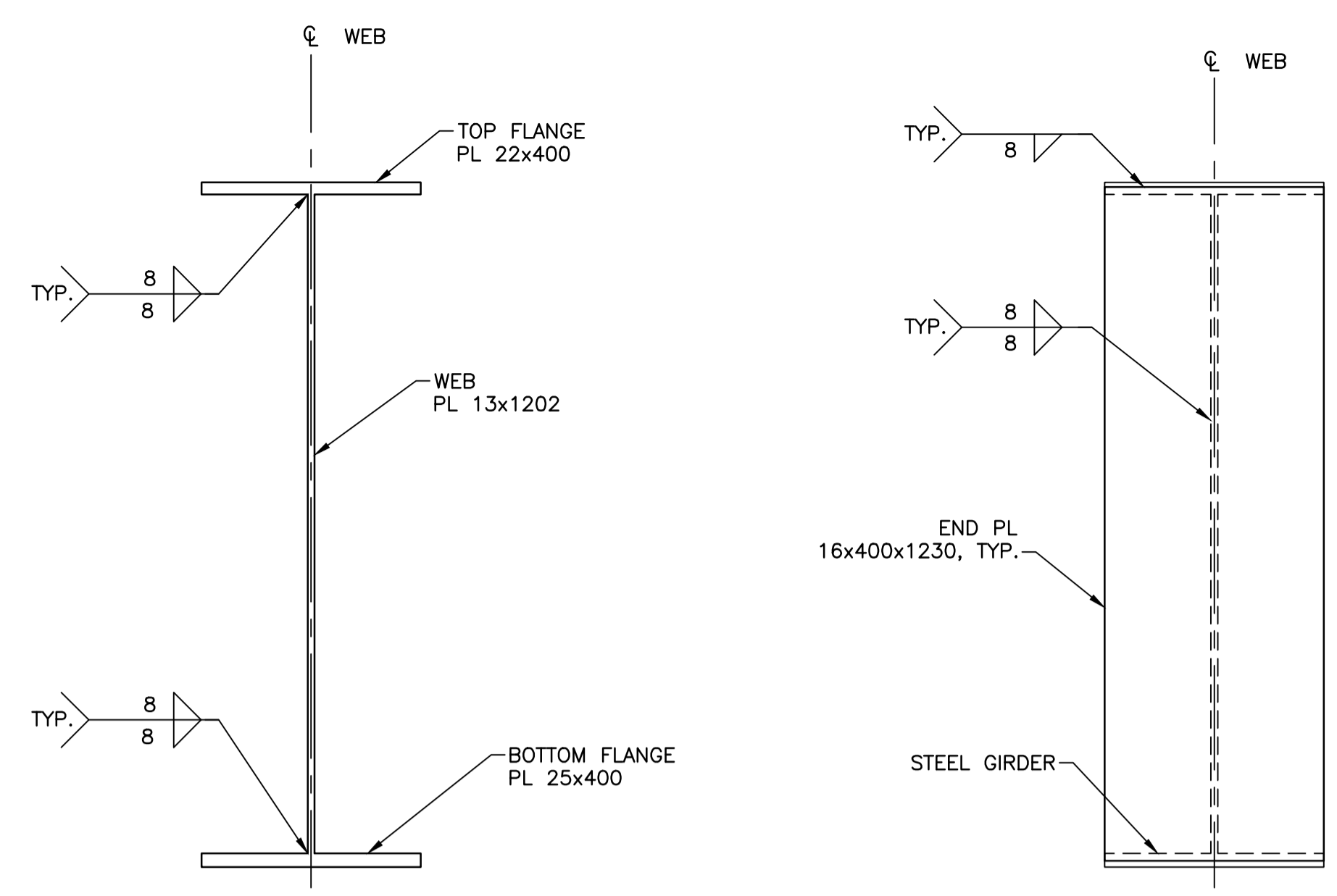
KEOGH RIVER BRIDGE REPLACEMENT

Designed by R.KABIR, EIT.	Conçu par
Drawn by H.RYU	Dessiné par
Approved by M.BOWSER, P.ENG.	Approuvé par
PWGSC Project Manager T.GREER, P.ENG.	Administrateur de Projets TPSGC
Drawing title	Titre du dessin

STEEL GIRDER LAYOUT

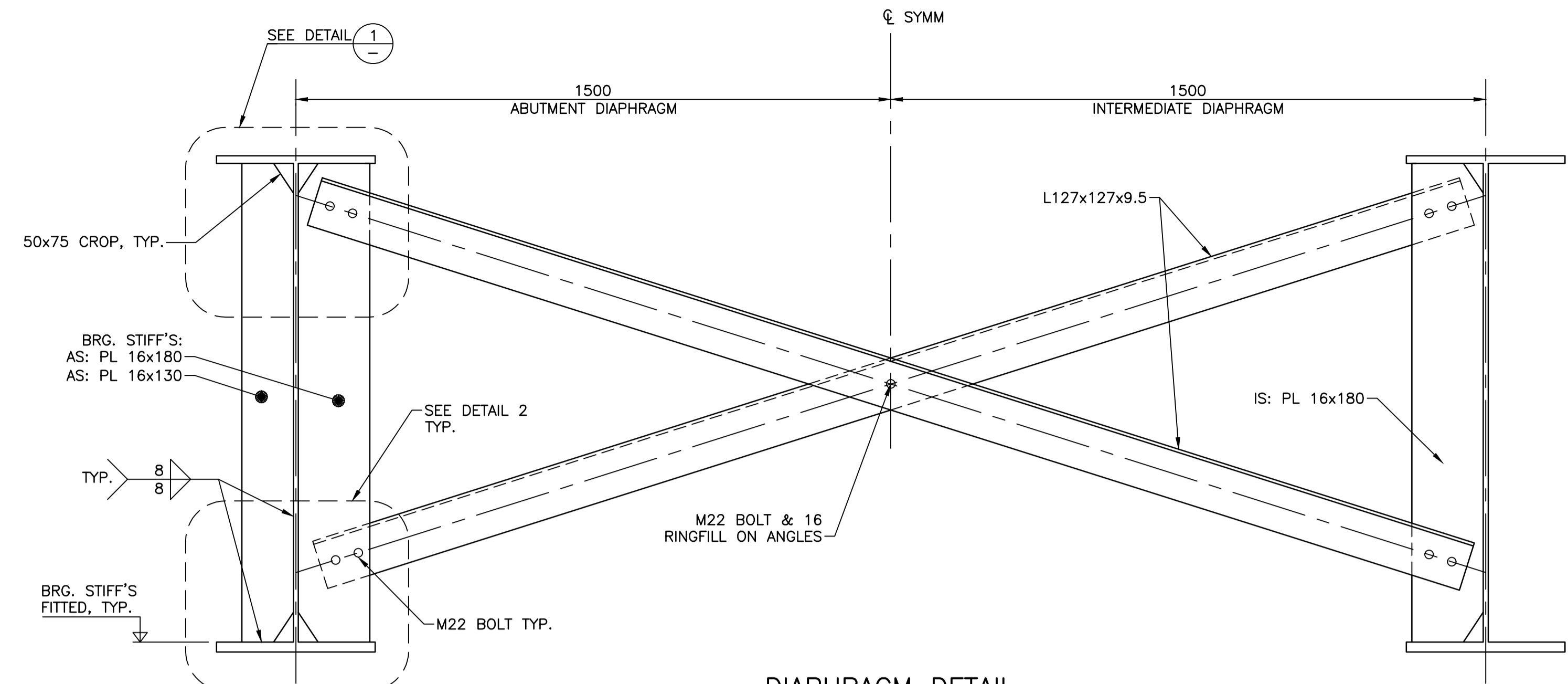
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	S6 OF S12	0

DATE: 2021-04-28 - 5:37pm (harry.yu) - P:\0601-02 - P\SC Keogh Bridge Replacement\Drawings\082 - Bridges\PSPC Keogh Bridge Replacement-Girder Layout.dwg

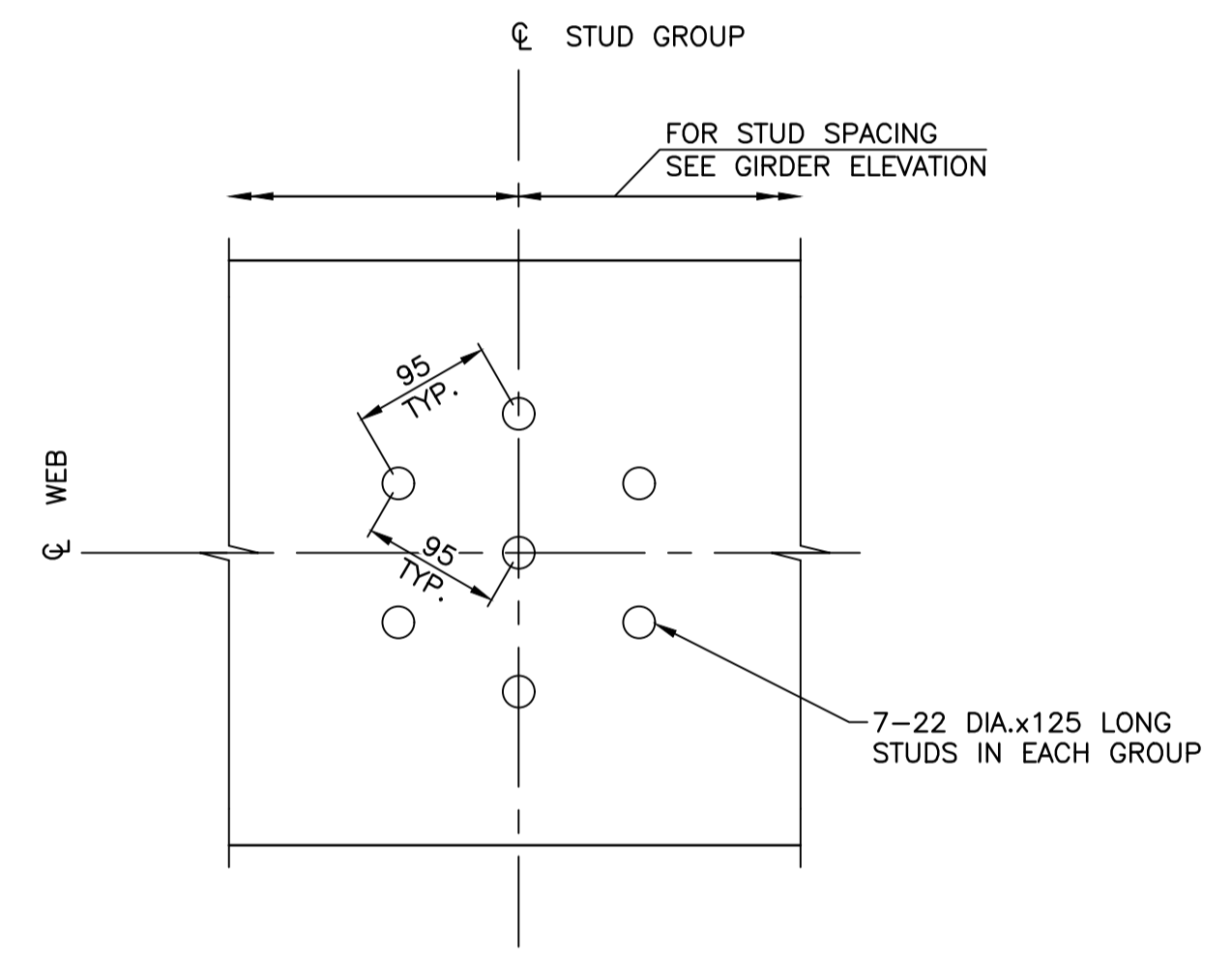


TYPICAL GIRDER SECTION
 SCALE 1:10
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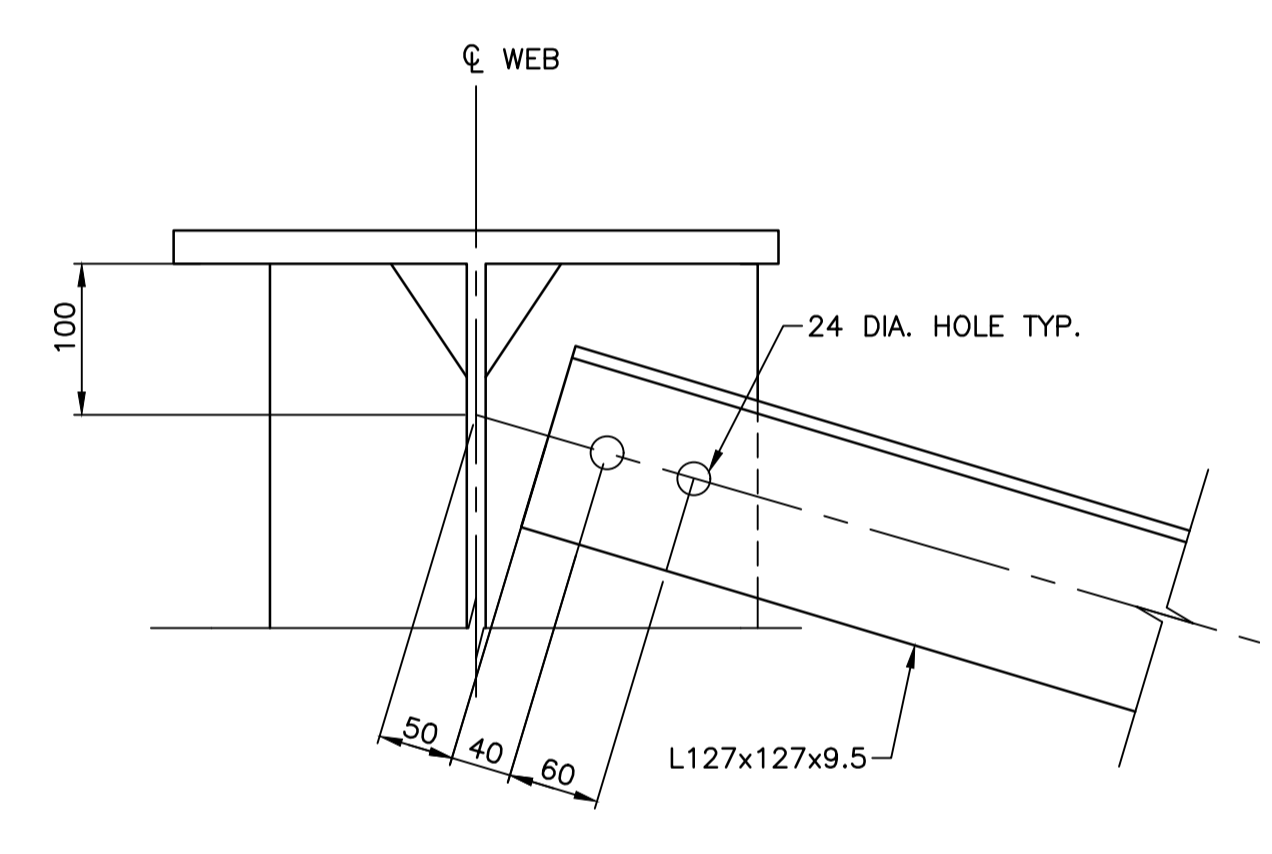
GIRDER END PLATE CONNECTION DETAILS
 SCALE 1:10
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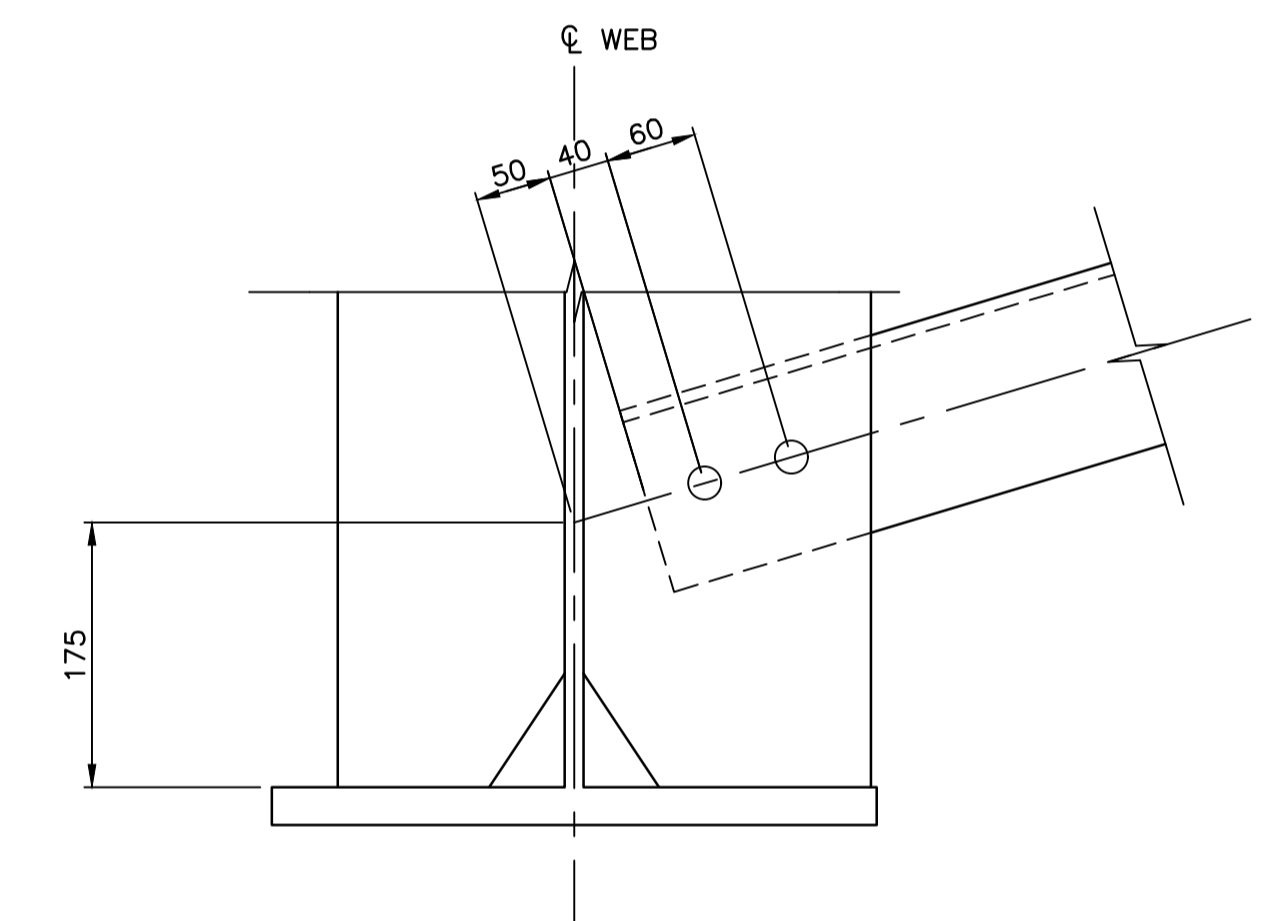
DIAPHRAGM DETAIL
 SCALE 1:10
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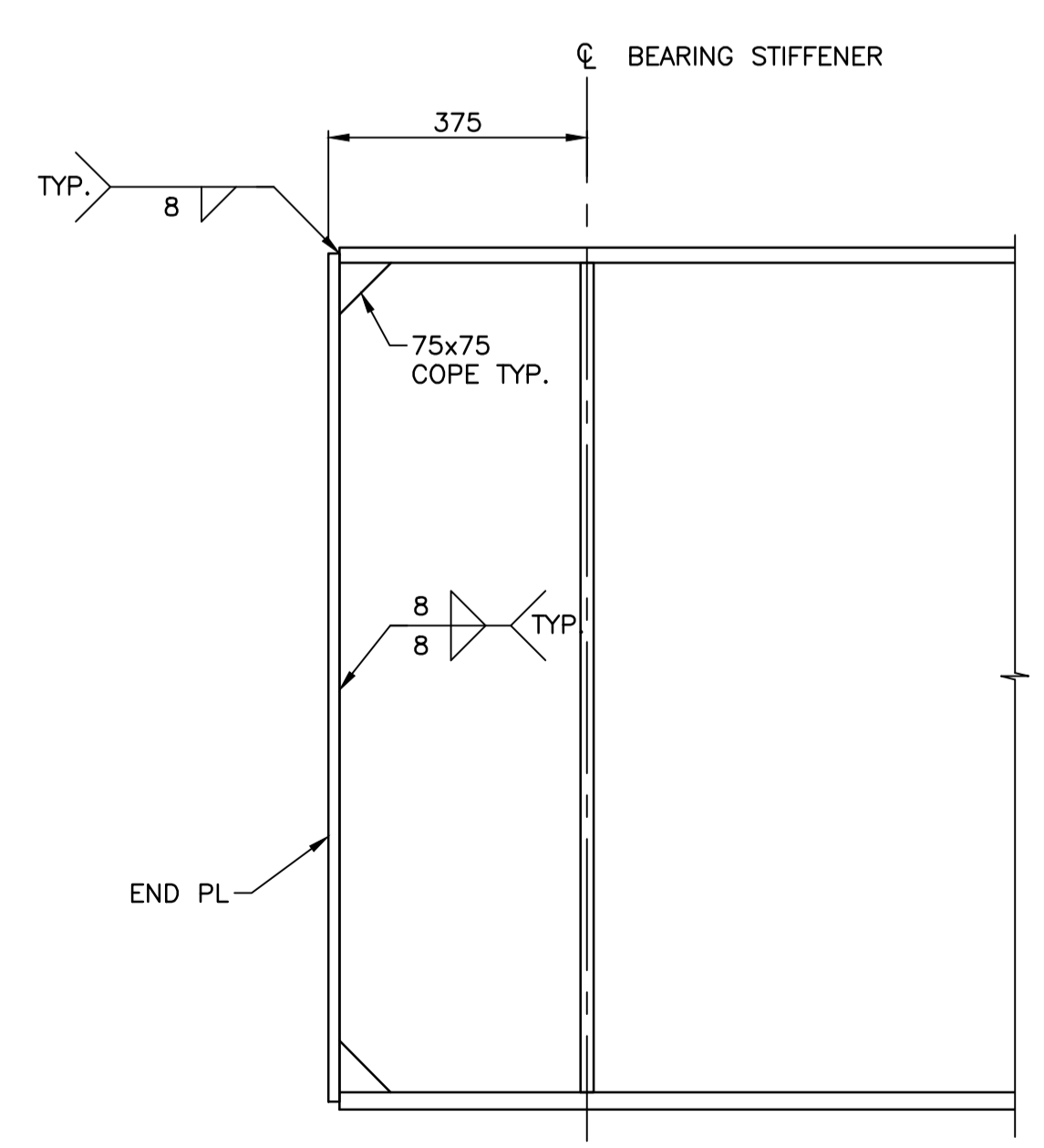
STUD GROUP
 SCALE 1:5
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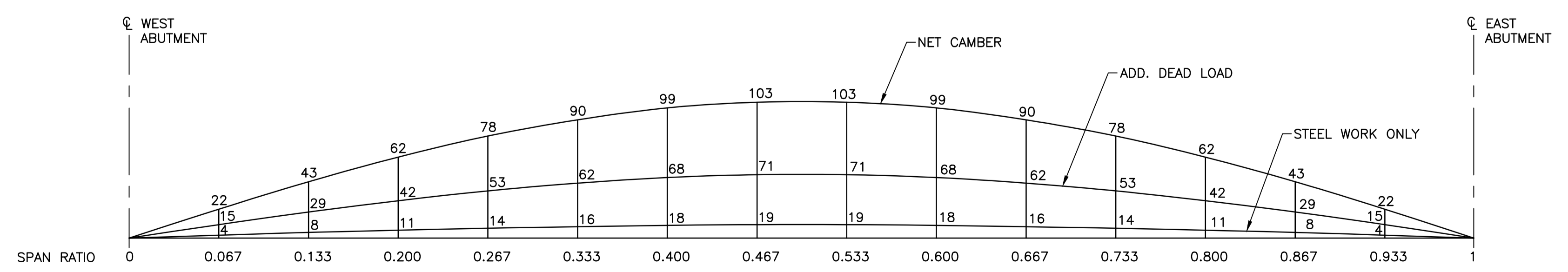
DETAIL 1
 SCALE 1:5
 0 50 100 150 200 250



DETAIL 2
 SCALE 1:5
 0 50 100 150 200 250



GIRDER END DETAIL
 SCALE 1:10
 0 100 200 300 400 500



CAMBER DIAGRAM
 SCALE: N.T.S.
 NOTE: ALL DIMENSION ARE IN MILLIMETERS
 (GEOMETRY CAMBER - 0mm)

NOTES:
 1. FOR GENERAL NOTES SEE DWG. S2



Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20



Project title **BRITISH COLUMBIA PORT HARDY**

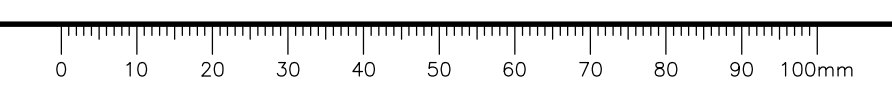
KEOGH RIVER BRIDGE REPLACEMENT

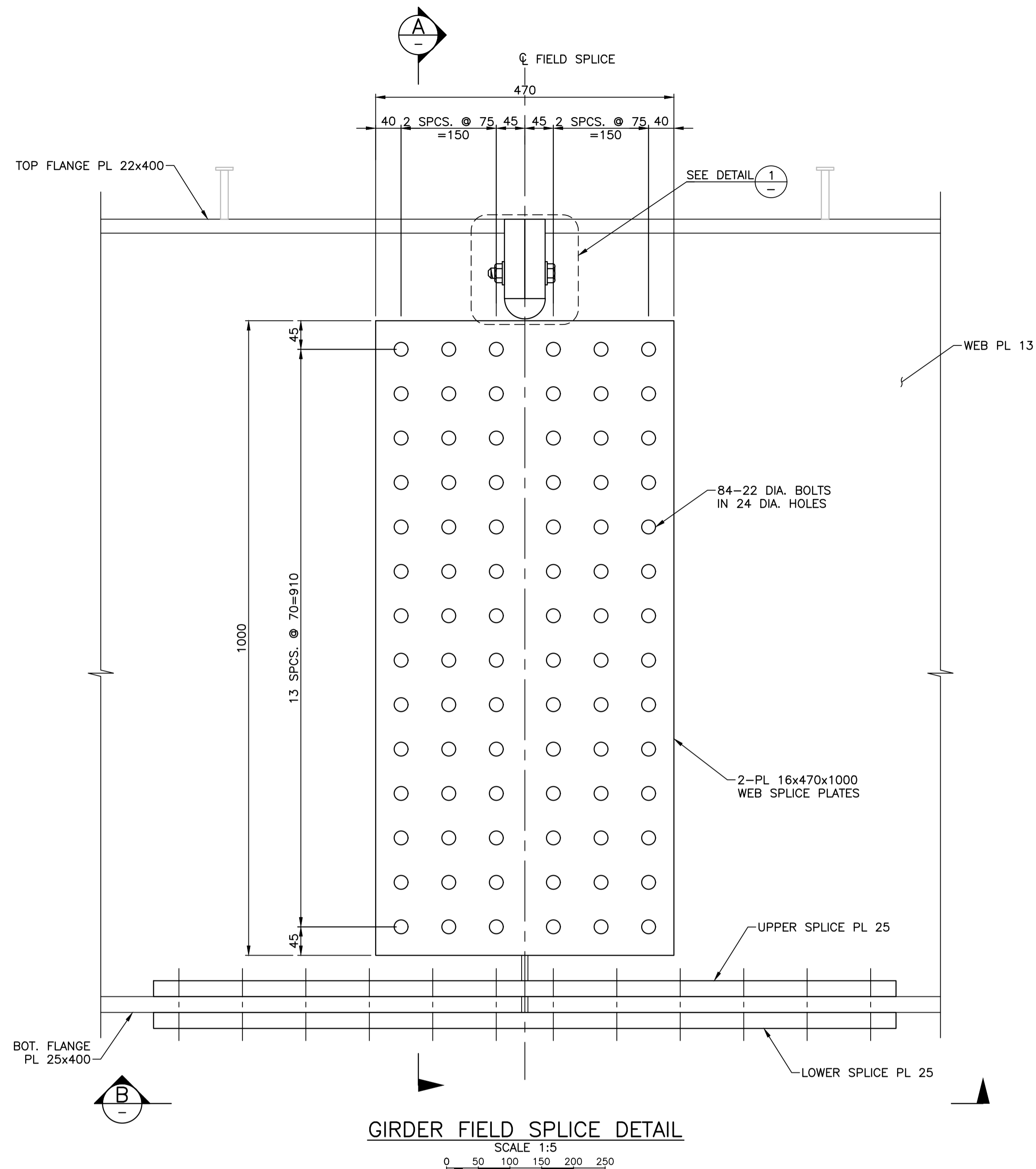
Designed by **R.KABIR, EIT.**
 Drawn by **H.RYU**
 Approved by **M.BOWSER, P.ENG.**
 PWSCC Project Manager **T.GREER, P.ENG.**

STEEL GIRDER DETAILS SHEET 1 OF 2

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	S7 OF S12	0

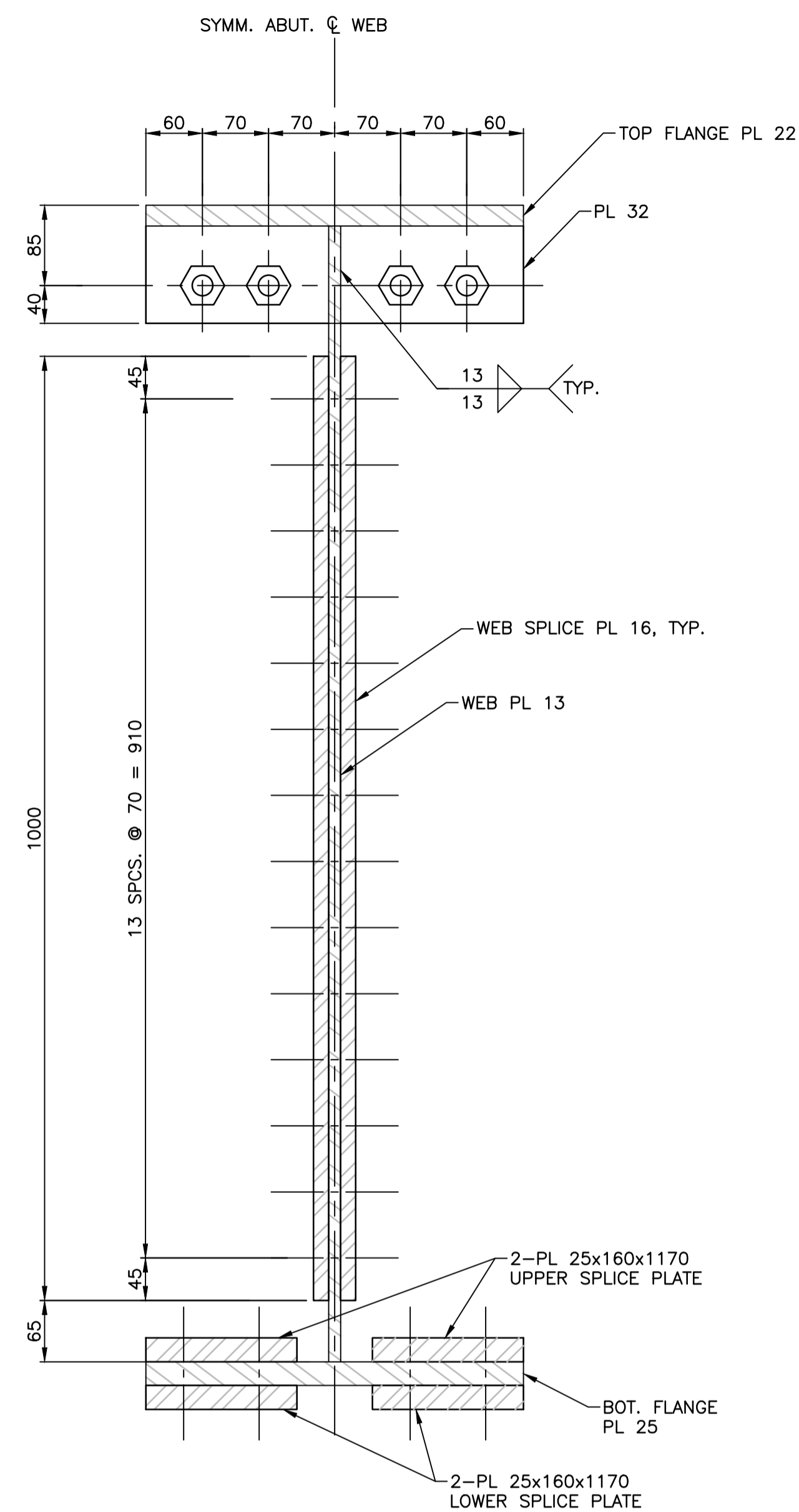
DATE: 2021-04-28 5:35pm (harry.yu) PWSCC Keogh Bridge Replacement Drawings\082 - Bridges\PSPC Keogh Bridge Replacement\new.dwg LAYOUT STEEL GIRDER DETAILS





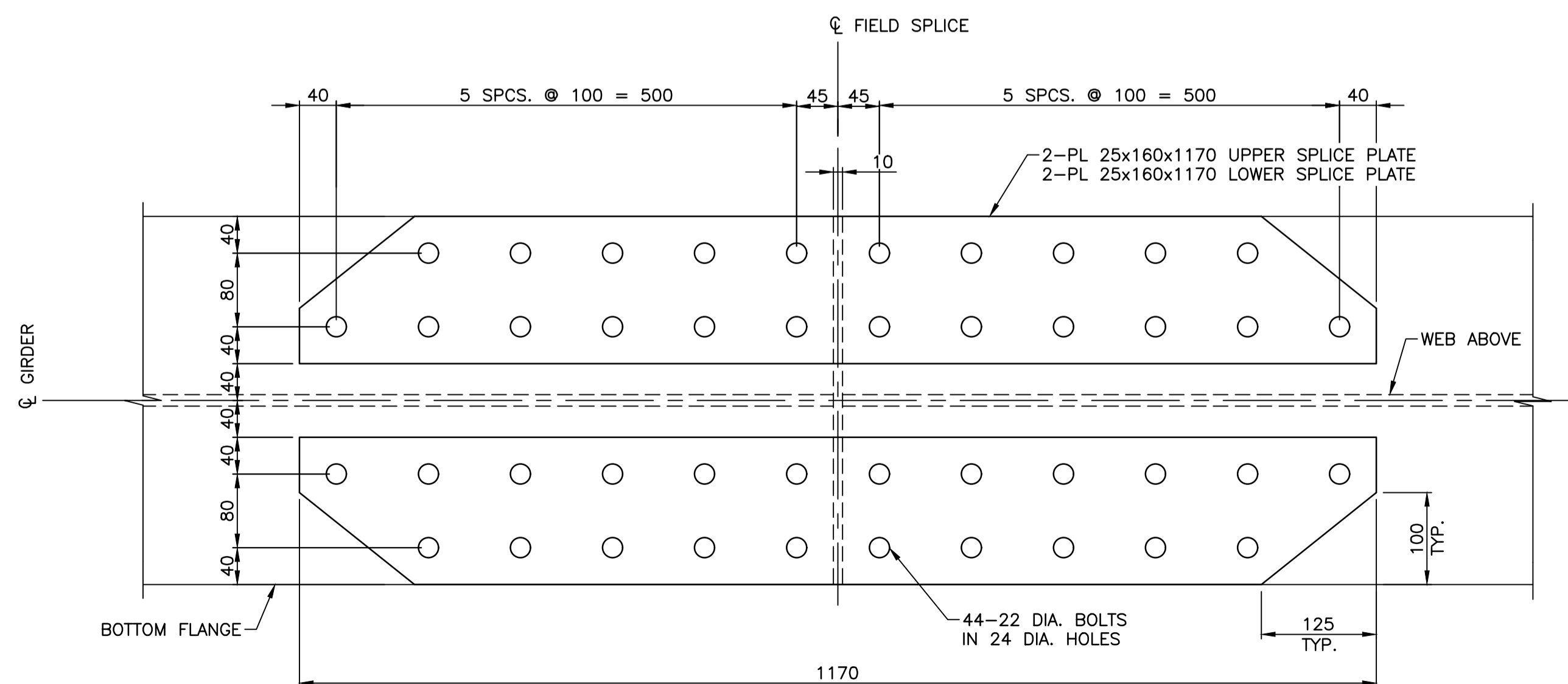
GIRDER FIELD SPICE DETAIL

SCALE 1:5
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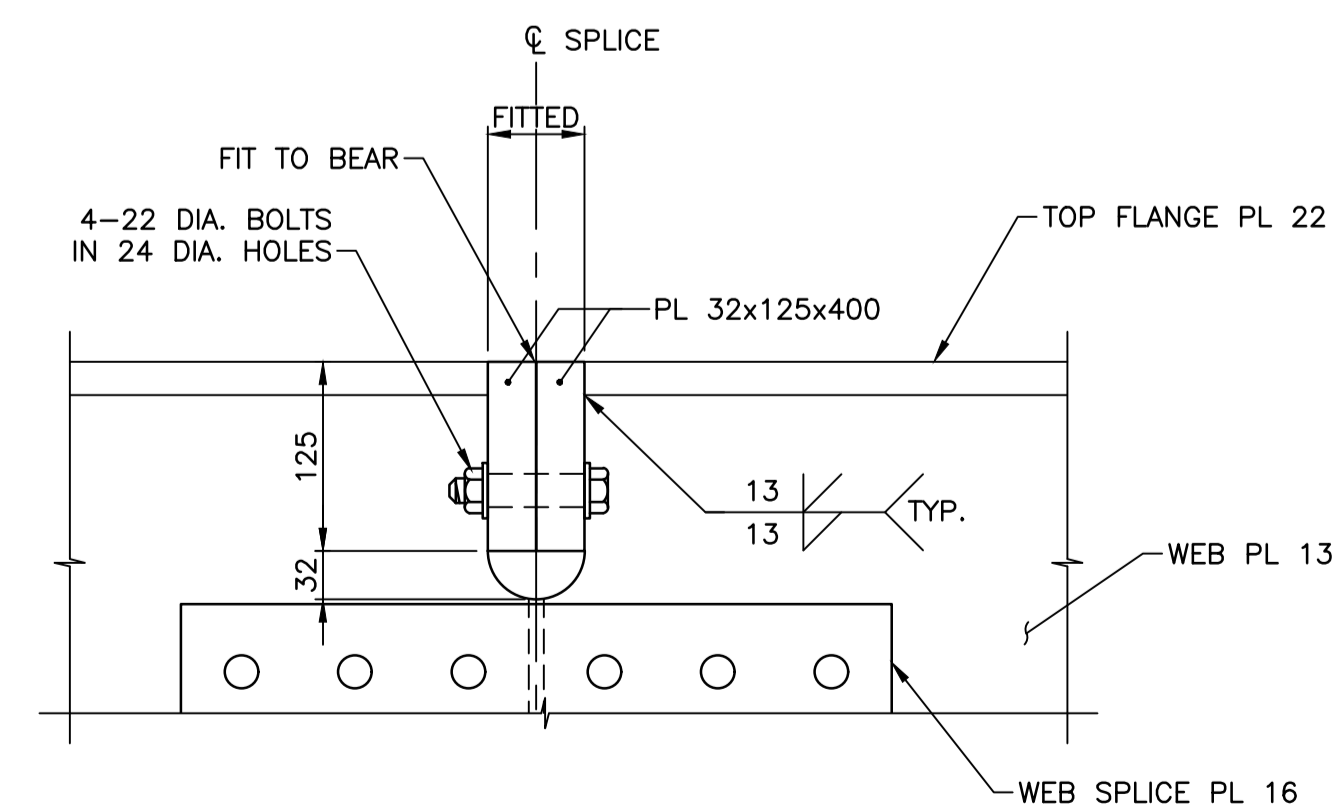
SECTION A

SCALE 1:5
0 50 100 150 200 250



SECTION B

SCALE 1:5
0 50 100 150 200 250



DETAIL 1

SCALE 1:5
0 50 100 150 200 250

NOTES:

- FOR GENERAL NOTES SEE DWG. S2.
- FOR STEEL WORK NOTES SEE DWG. S6.



Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20



Project title: **BRITISH COLUMBIA PORT HARDY**

KEOGH RIVER BRIDGE REPLACEMENT

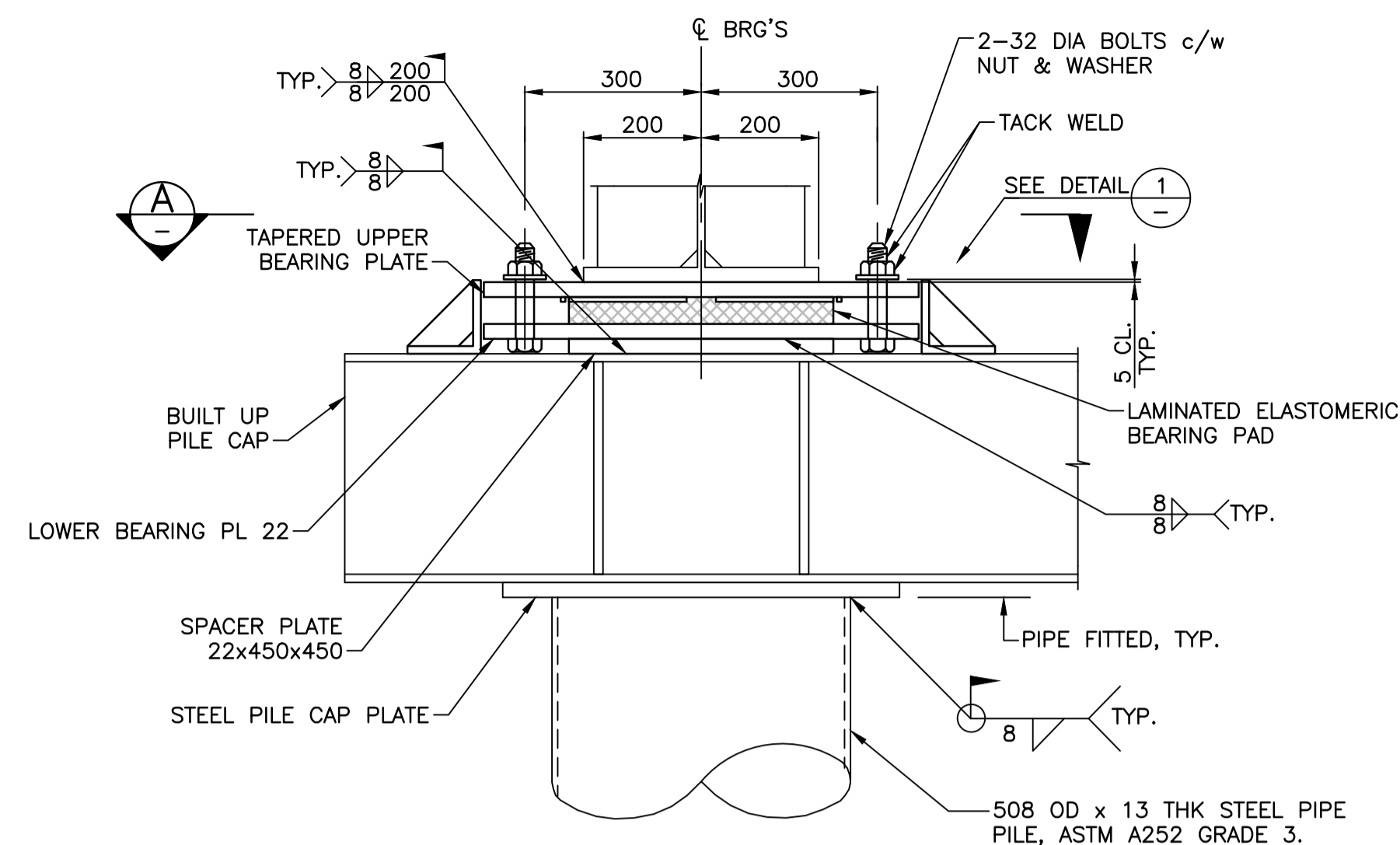
Designed by R.KABIR, EIT.	Conçu par
Drawn by H.RYU	Dessiné par
Approved by M.BOWSER, P.ENG.	Approuvé par
PWSSC Project Manager T.GREER, P.ENG.	Administrateur de Projets TPSOC
Drawing title	Titre du dessin

STEEL GIRDER DETAILS SHEET 2 OF 2

Project no./No. du projet R.109401.001	Drawing no./No. du dessin S8	Revision no. 0
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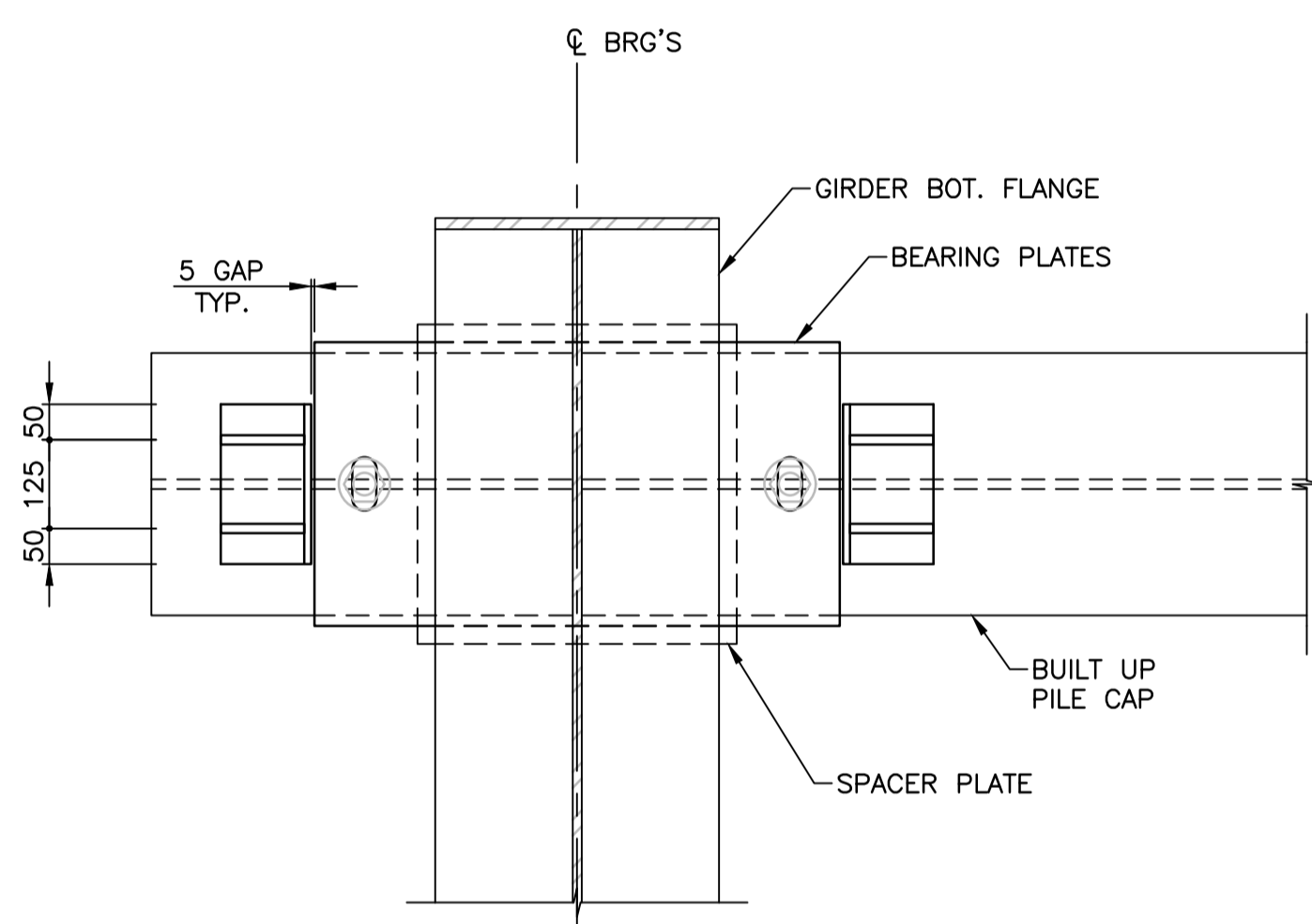
DATE: 2021-04-28 = 5:35pm (harry.yu) (19M-01601-02 - PSCC Keogh Bridge Replacement Drawings)082 - Bridges\PSCC Keogh Bridge Replacement_new.dwg
LAYOUT SPLICE DETAILS

	TOTAL VERTICAL LOAD PER BEARING (kN)				HORIZONTAL MOVEMENT IN LONGITUDINAL DIRECTION (mm)		ROTATIONAL DEMAND (rad)		
	SLS1		ULS1		SLS1	SLS4	ULS1	ALLOWANCE	TOTAL
	DEAD	TOTAL	DEAD	TOTAL					
MAX	372	822	434	1284	-4.5	-7.0	0.008	0.02	0.028
MIN	372	372	311	311	+4.0	+6.5	-	-	-



BEARING DETAIL

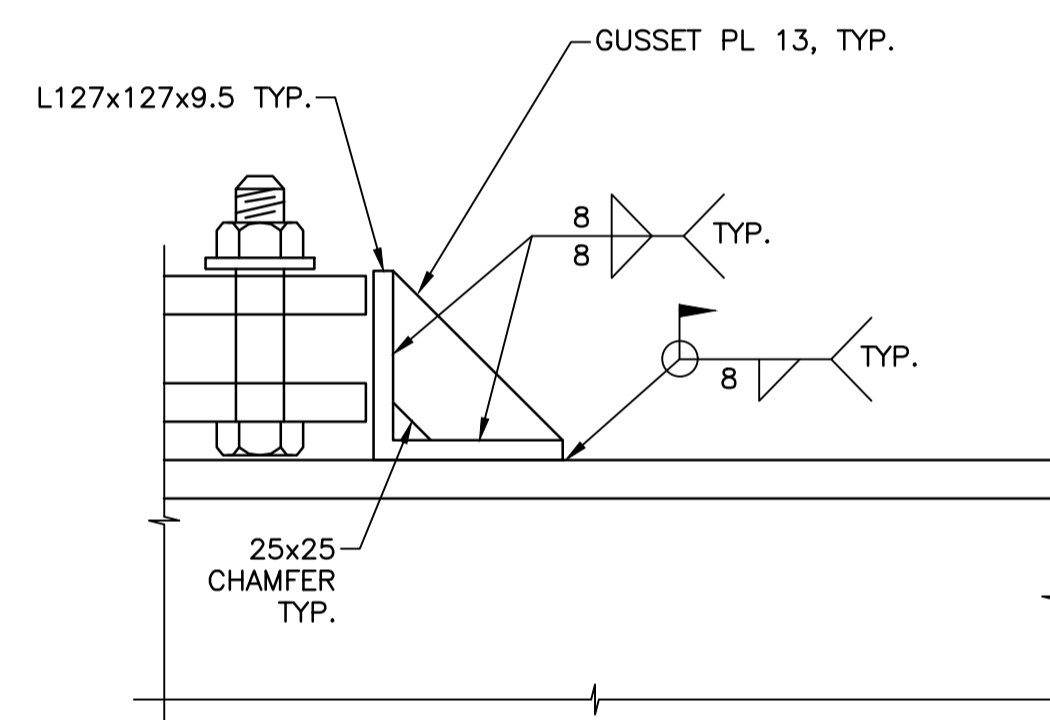
SCALE 1:10
0 100 200 300 400 500



SECTION A

SCALE 1:10

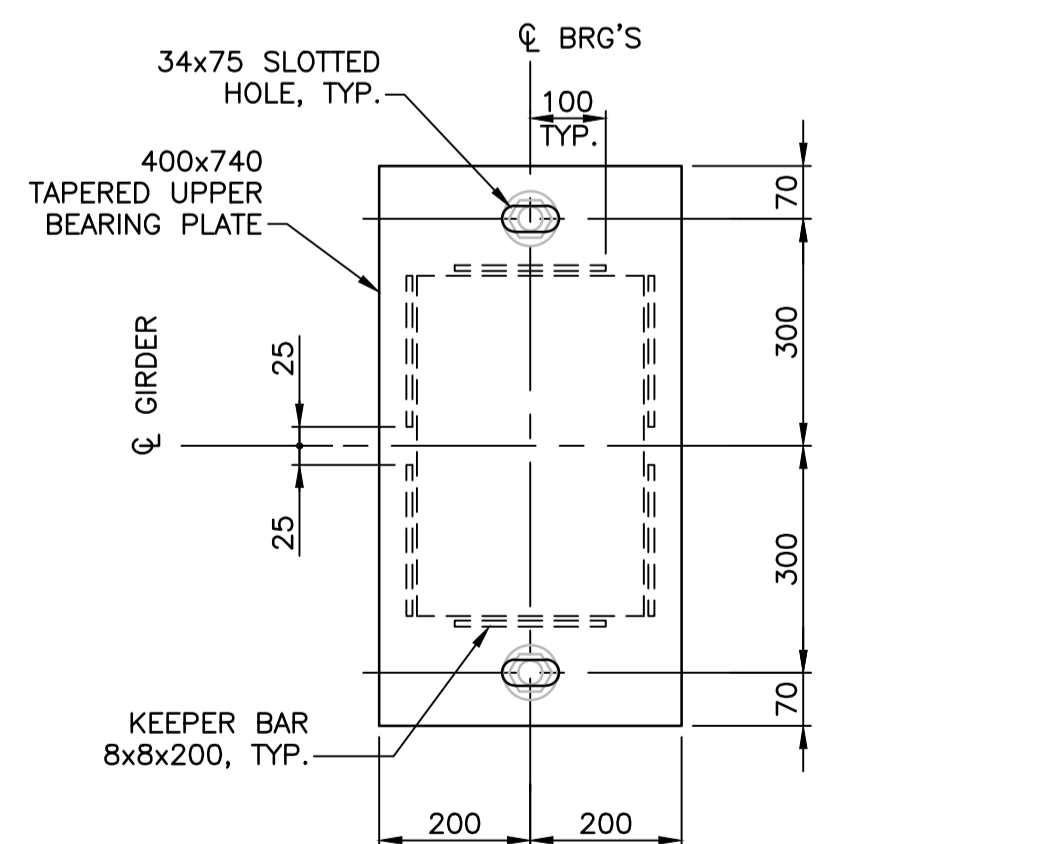
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DETAIL 1

SCALE 1:5

0 50 100 150 200 250

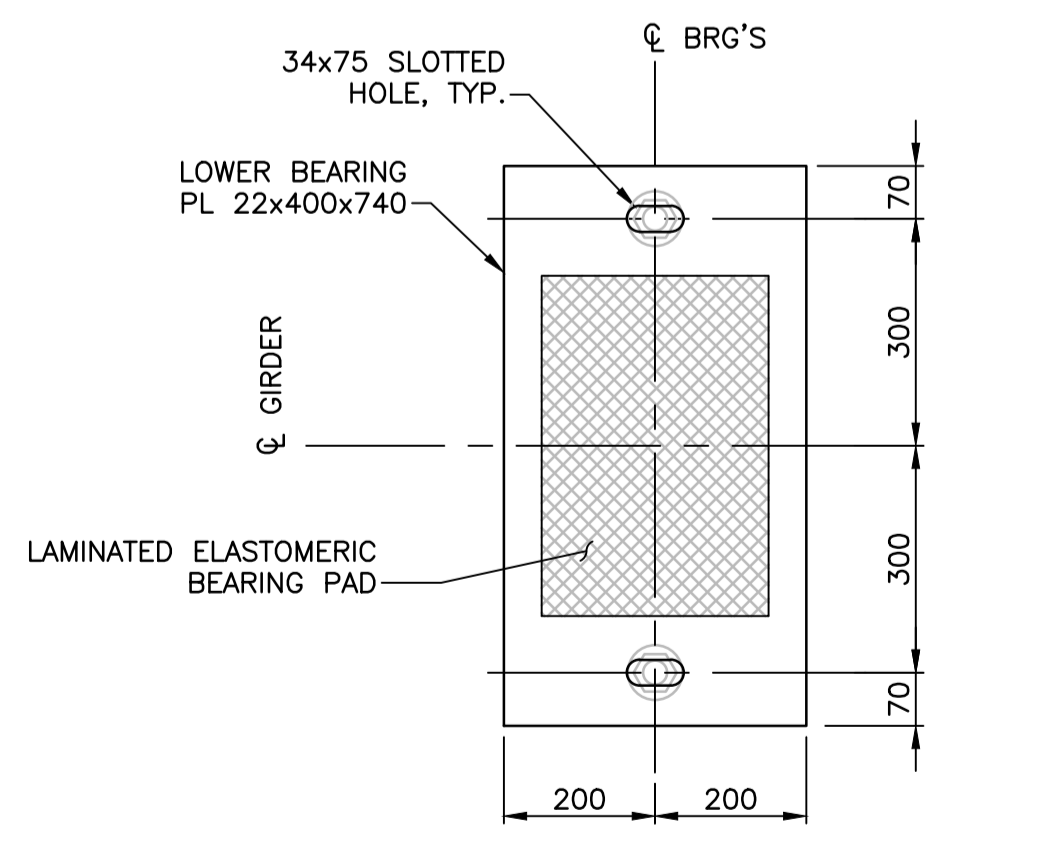


PLAN - TAPERED UPPER BEARING PLATE

(4 REQUIRED)

SCALE 1:10

0 100 200 300 400 500

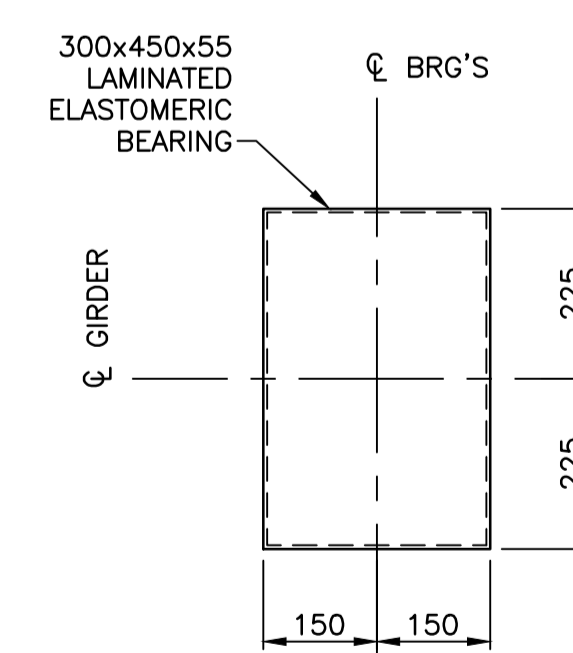


PLAN - LOWER BEARING PLATE

(4 REQUIRED)

SCALE 1:10

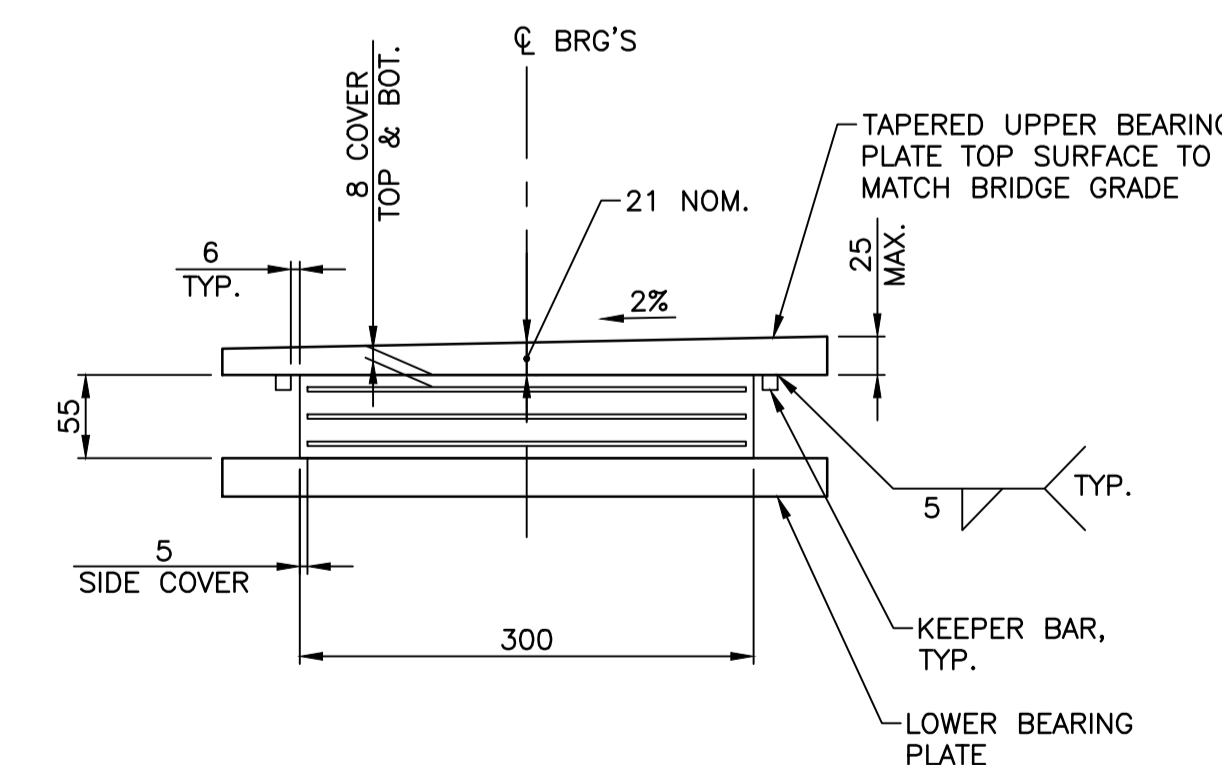
0 100 200 300 400 500



ELASTOMERIC BEARING (4 REQUIRED)

SCALE 1:10

0 100 200 300 400 500



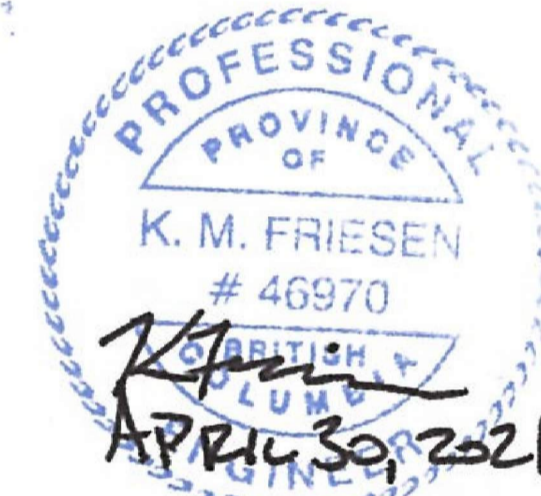
BEARING ELEVATION VIEW

SCALE 1:5

0 50 100 150 200 250

NOTES:

- FOR GENERAL NOTES SEE DWG. S2.
- LAMINATED ELASTOMERIC BEARING SHALL CONFORM TO CAN/CSA-S6-19 CLAUSE 11.6.6.
- THE ELASTOMER SHALL BE VIRGIN NATURAL RUBBER (POLYISOPRENE) WITH DUROMETER HARDNESS OF 55. PHYSICAL PROPERTIES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CAN/CSA-S6-19, TABLE 11.5.
- ALL STEEL BEARINGS PLATES, SPACER PLATES, BUILT-UP PILE CAP, ANGLES AND BOLTS SHALL CONFORM TO CAN/CSA-G40.21M, GRADE 350A UNLESS NOTED OTHERWISE.



Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20



Project title **BRITISH COLUMBIA PORT HARDY** Projet

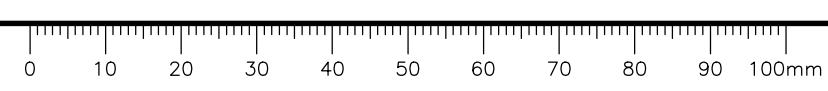
KEOGH RIVER BRIDGE REPLACEMENT

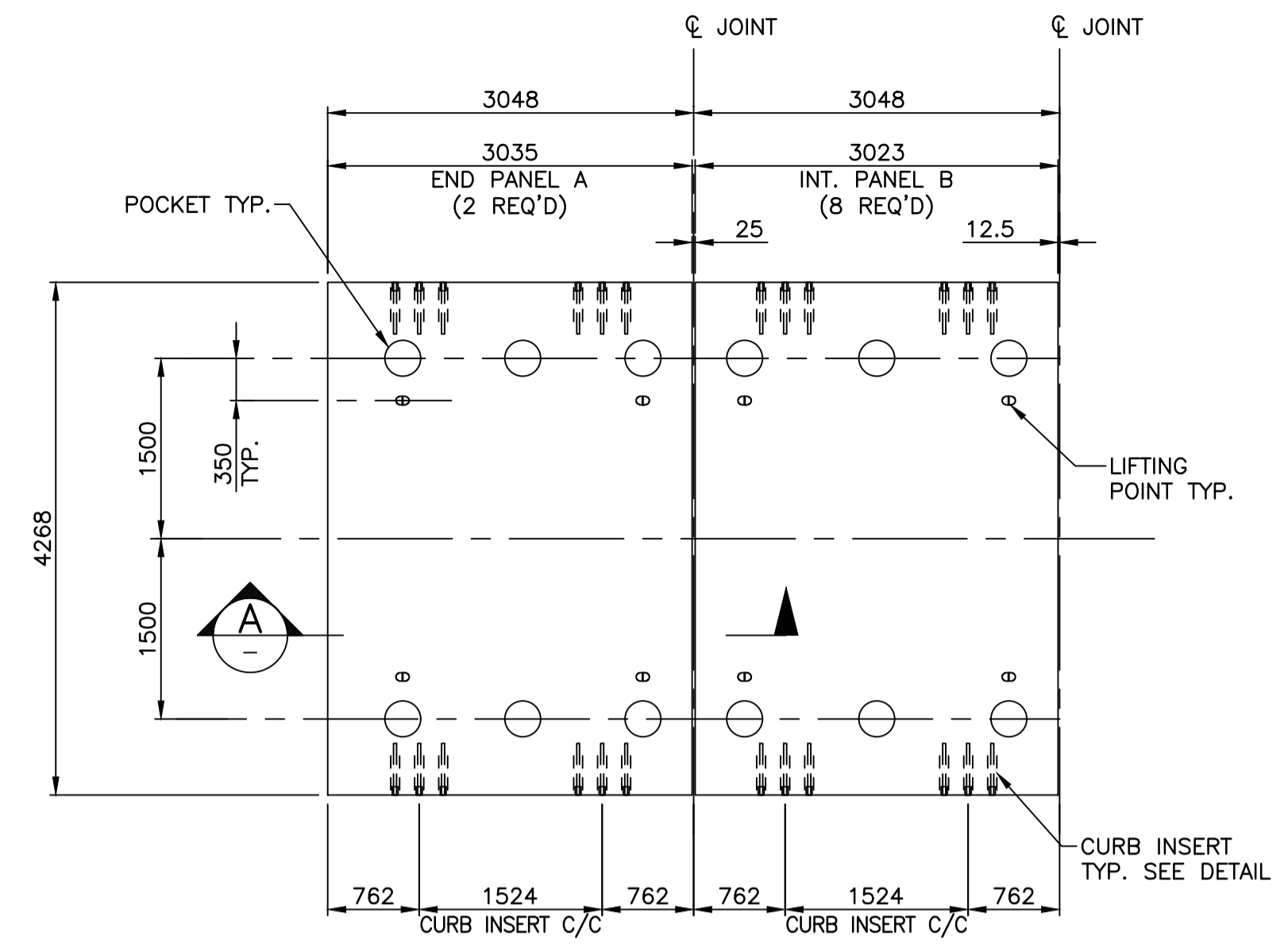
Designed by **R.KABIR, EIT.** Conçu par
 Drawn by **H.RYU** Dessiné par
 Approved by **M.BOWSER, P.ENG.** Approuvé par
 PWSCC Project Manager / Administrateur de Projets TPSOC
T.GREER, P.ENG.

BEARING DETAILS

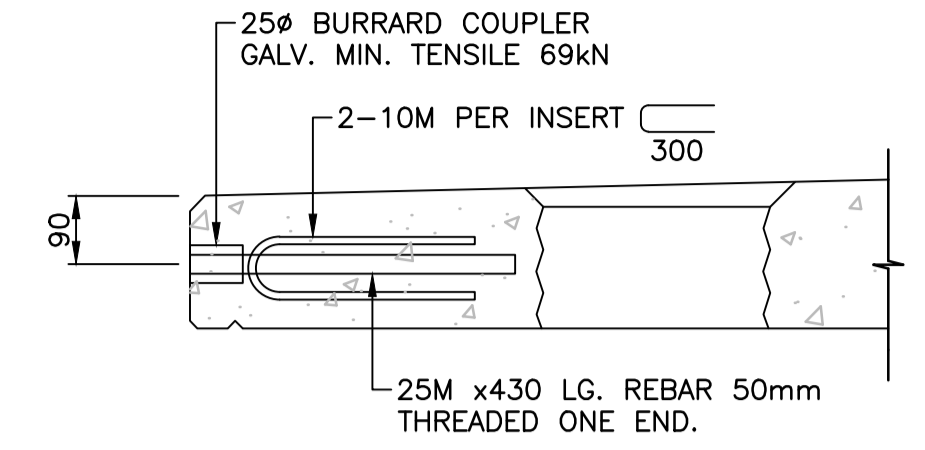
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	S9 OF S12	0

DATE: 2021-04-29 - 10:05am (herry.yu) PWSCC Project Manager / Administrateur de Projets TPSOC T.GREER, P.ENG. LAYOUT: BEARING DETAILS PWGSC - A1 - 841x594

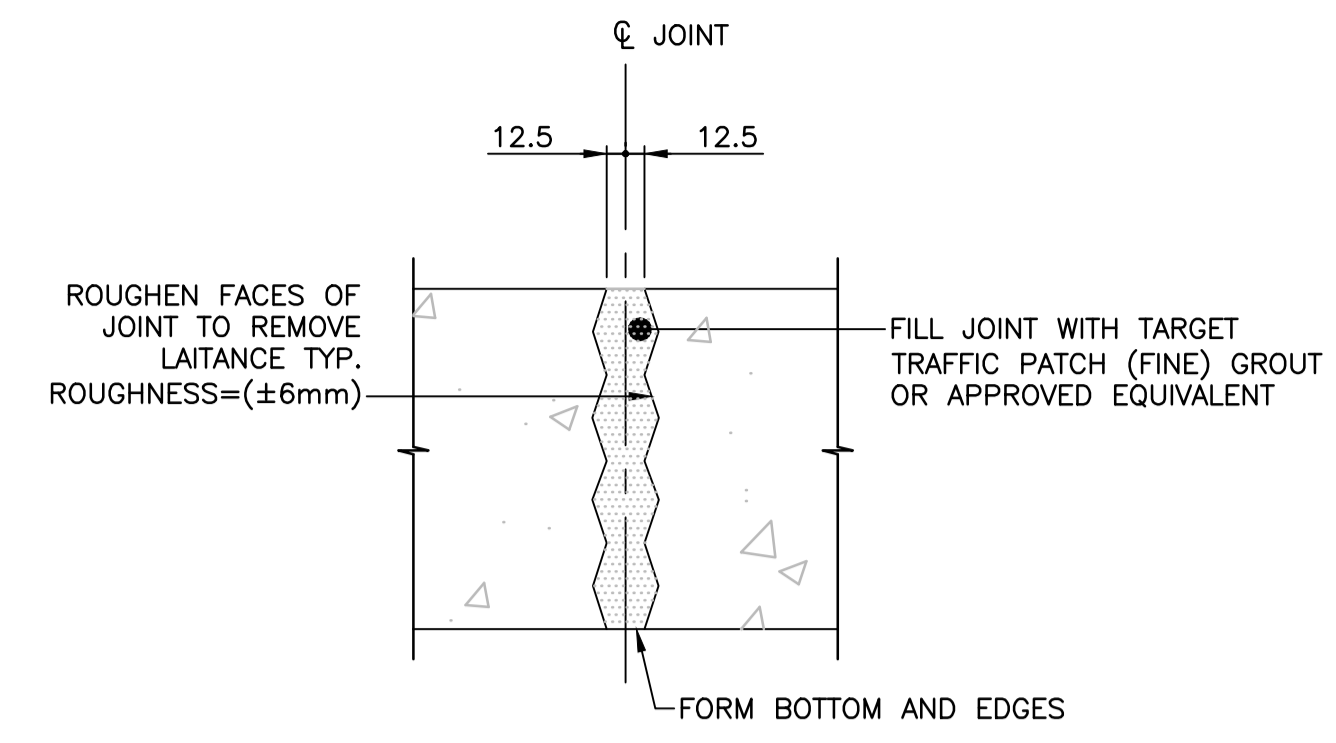




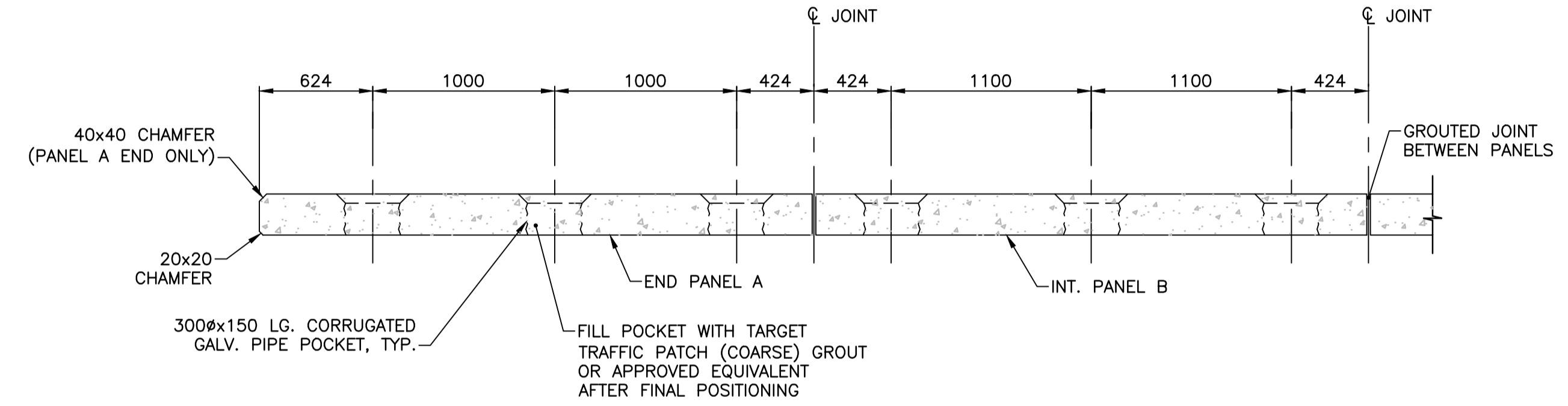
PLAN VIEW
 SCALE 1:50
 0 500 1000 1500 2000 2500



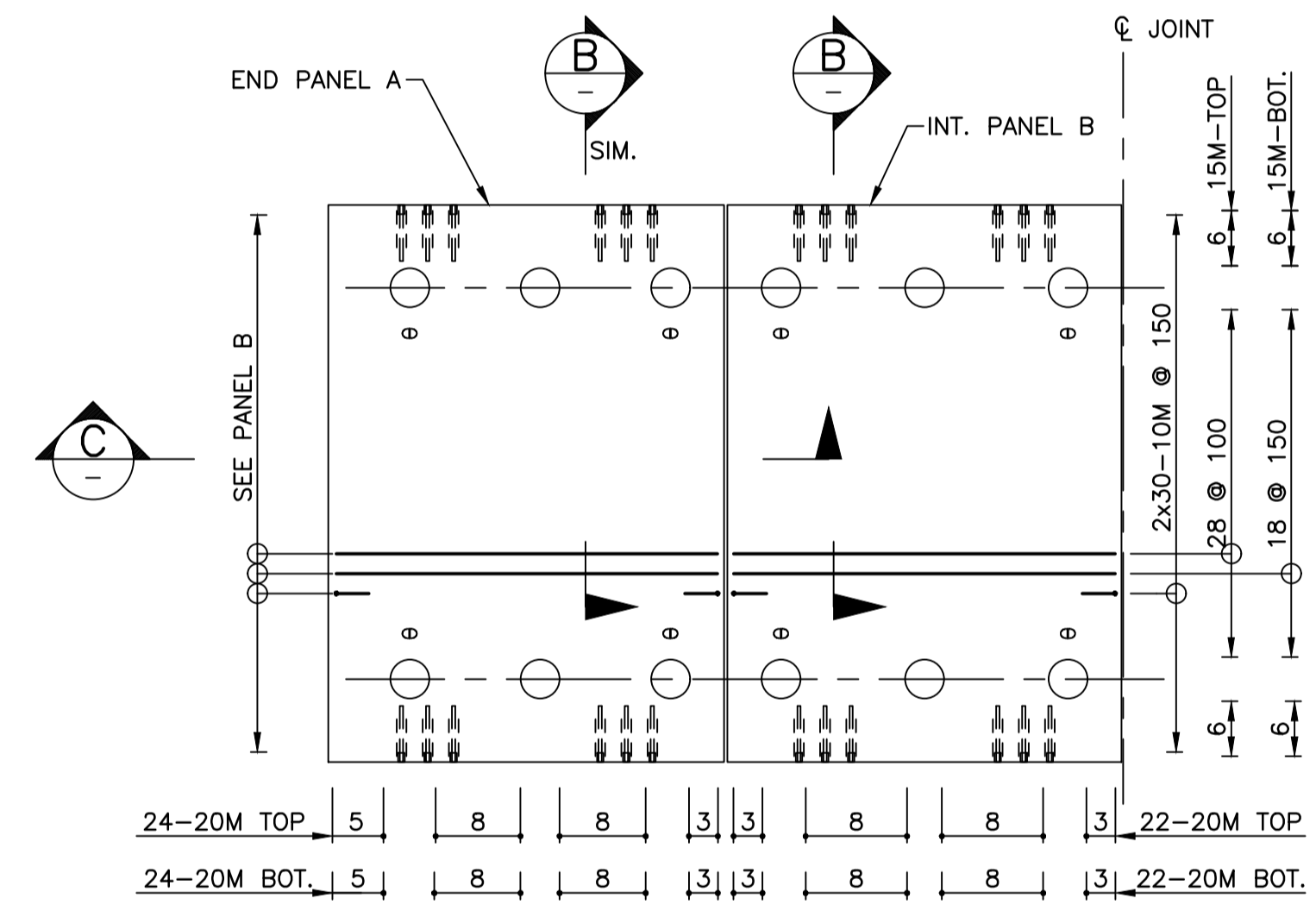
CURB INSERT DETAIL
 SCALE 1:10
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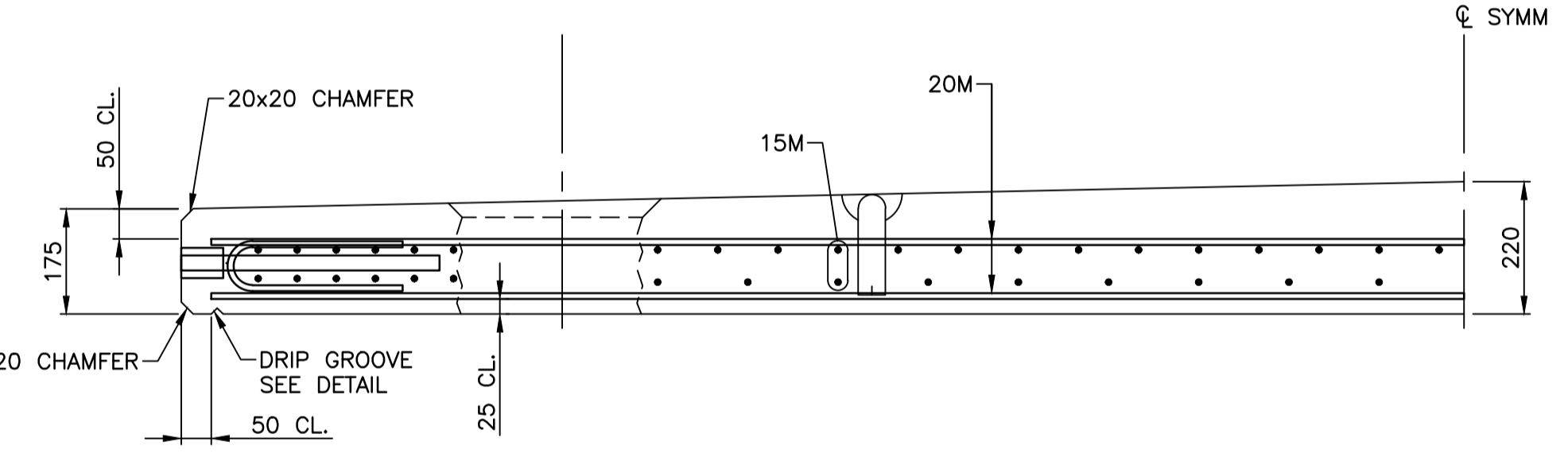
GROUT JOINT DETAIL
 SCALE 1:5
 0 50 100 150 200 250



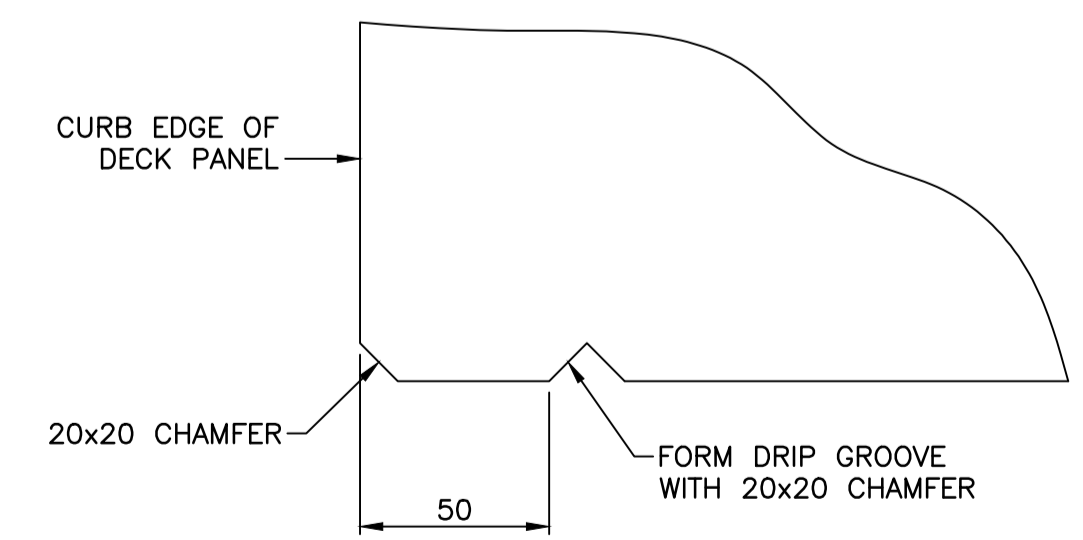
SECTION A
 SCALE 1:25
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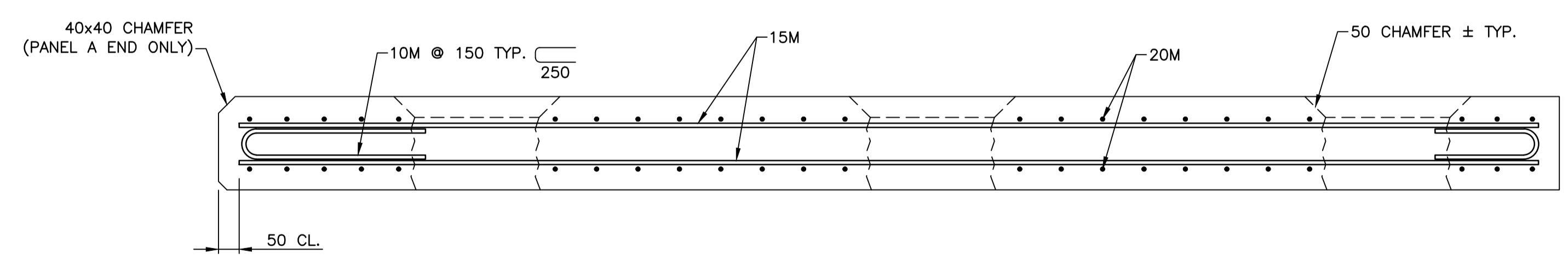
REINFORCEMENT PLAN
 SCALE 1:50
 0 500 1000 1500 2000 2500



SECTION B
 SCALE 1:10
 0 100 200 300 400 500



DRIP GROOVE DETAIL
 SCALE 1:2
 0 20 40 60 80 100



SECTION C
 SCALE 1:10
 0 100 200 300 400 500



Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20



Project title: **BRITISH COLUMBIA PORT HARDY**

KEOGH RIVER BRIDGE REPLACEMENT

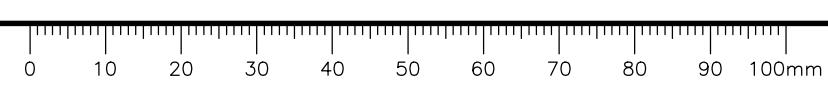
Designed by: **R.KABIR, EIT.**
 Drawn by: **H.RYU**
 Approved by: **M.BOWSER, P.ENG.**
 PWSSC Project Manager: **T.GREER, P.ENG.**

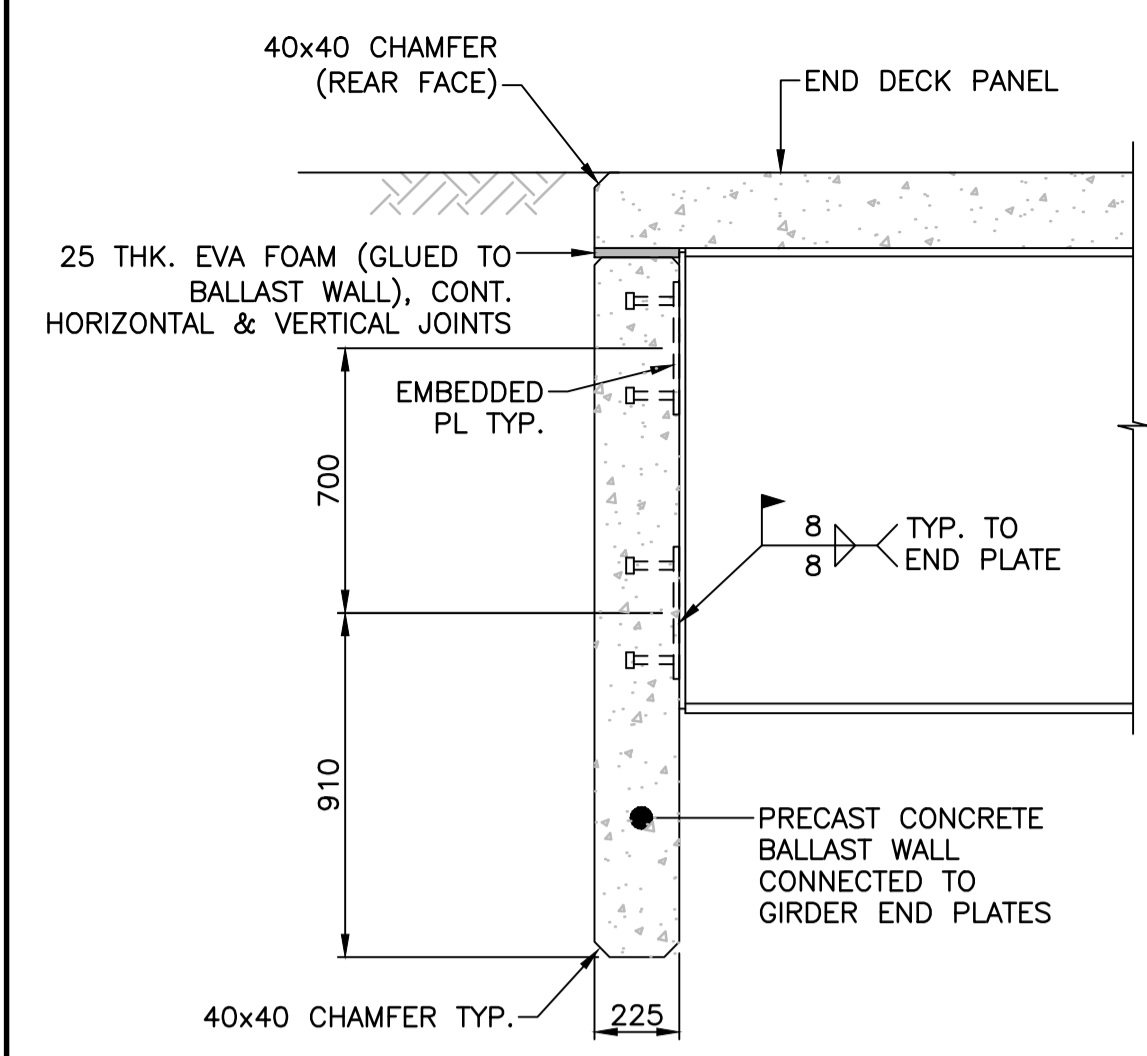
PRECAST DECK PANELS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	S10 OF S12	0

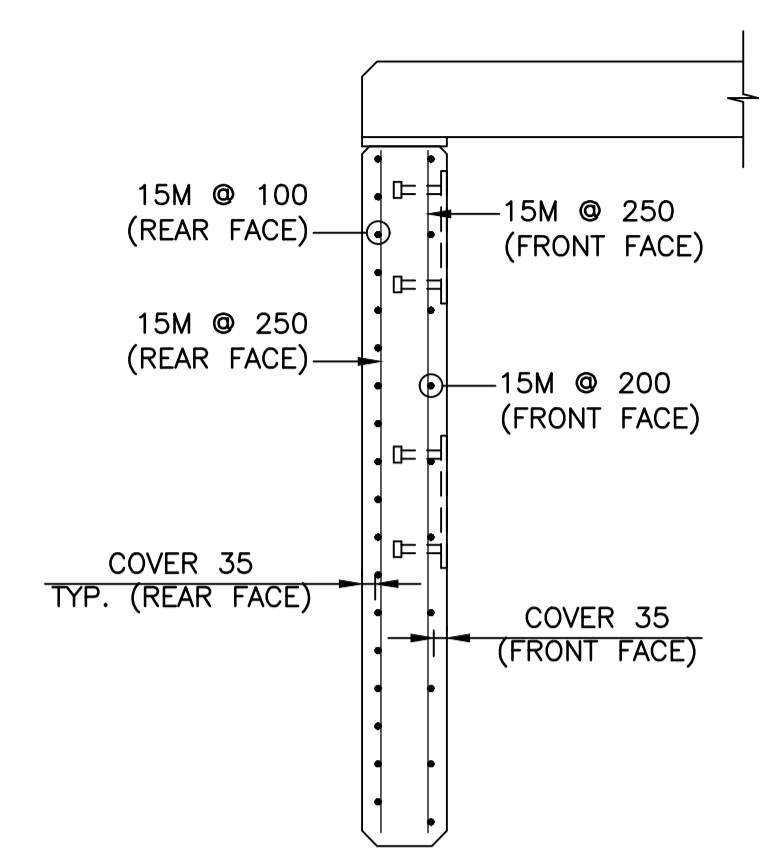
- NOTES:
- FOR GENERAL NOTES SEE DWG. S2
 - LIFTING DEVICES AND EMBEDDED HARDWARE TO BE DESIGNED BY THE CONTRACTOR.
 - ABUTMENT SIDE OF THE END PANELS ONLY.

DATE: 2021-04-29 - 4:29pm (harry.yu) P:\SSC\Projects\01601-02 - PSC Keogh Bridge Replacement\Drawings\082 - Bridges\SSC Keogh Bridge Replacement_new.dwg
 LAYOUT: PRECAST DECK PANEL

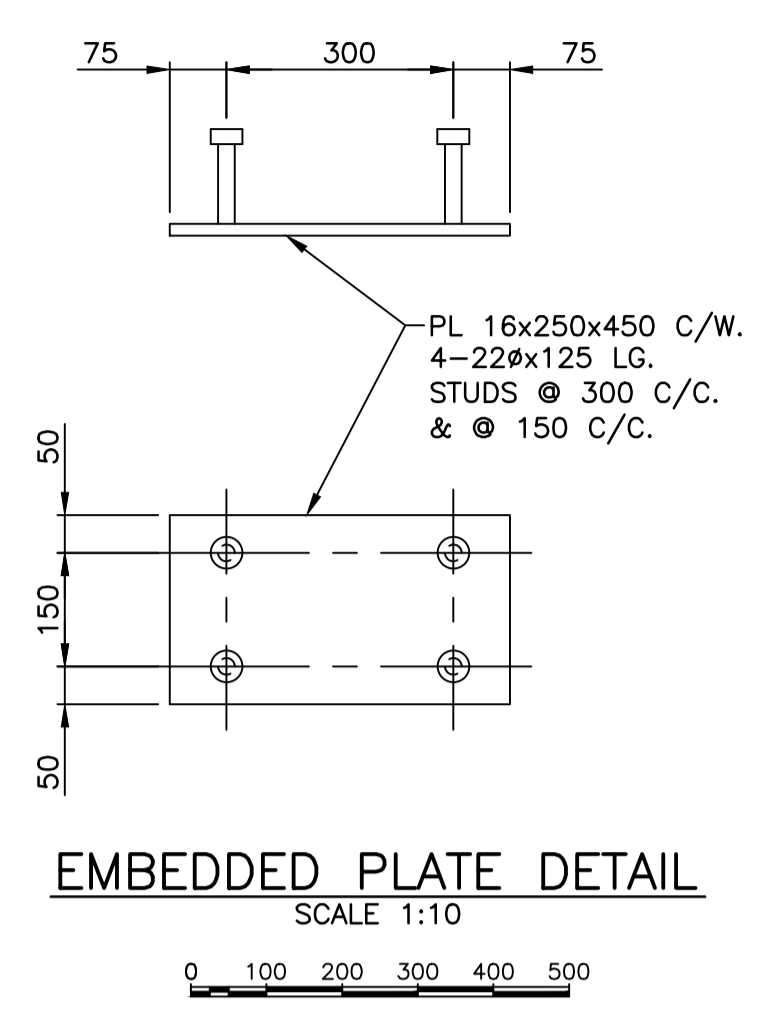




CONNECTION DETAIL

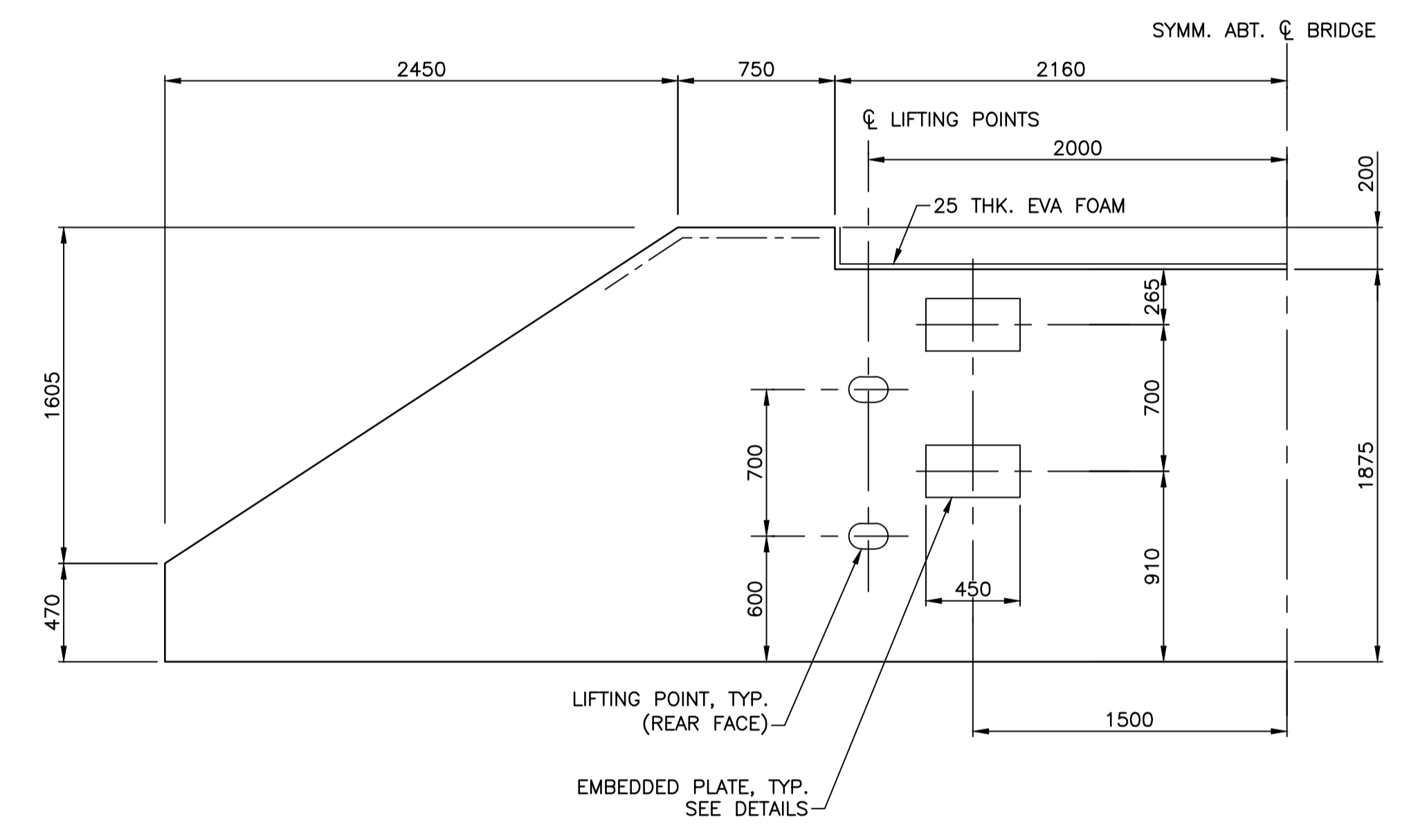


REINFORCEMENT DETAIL

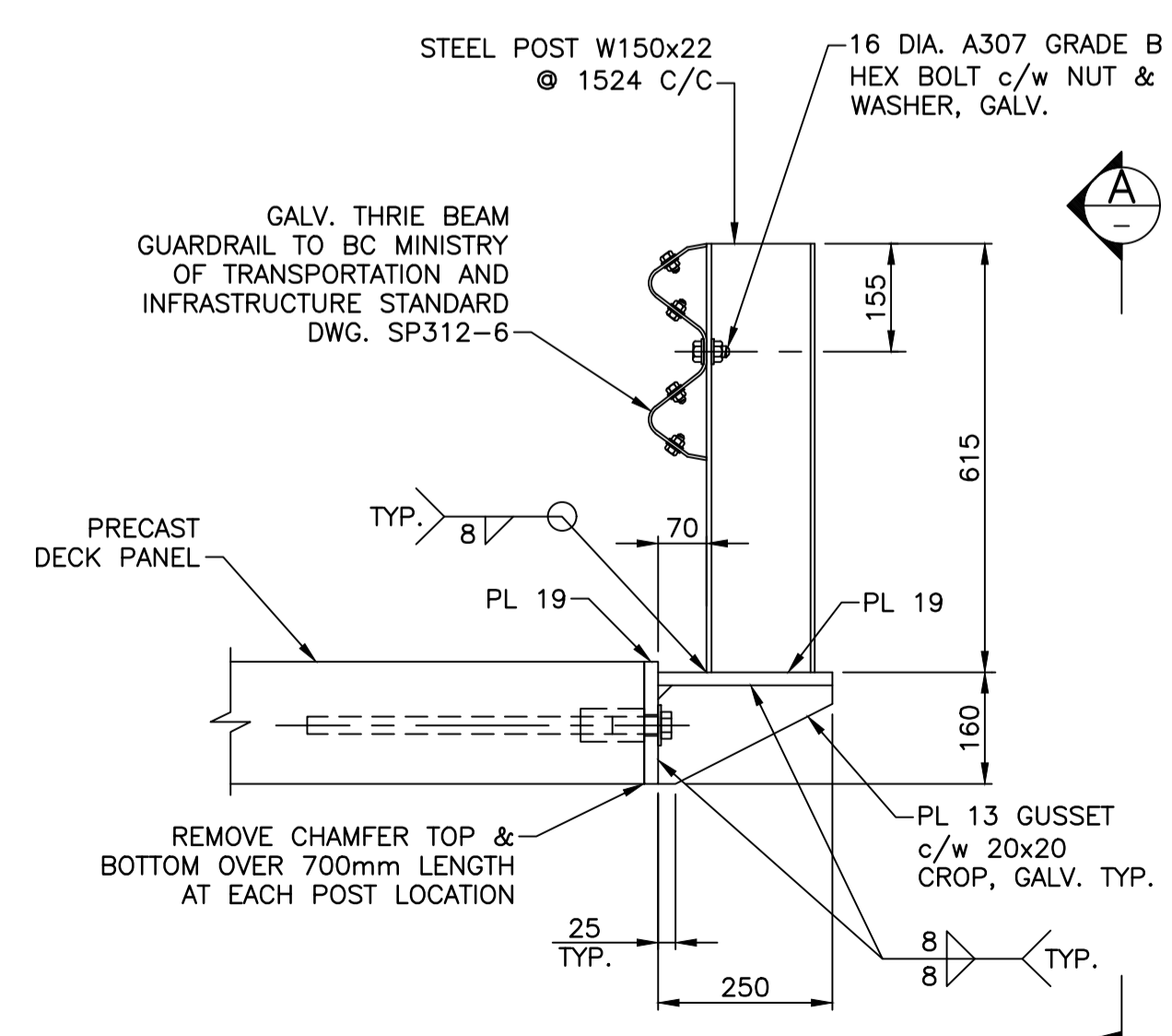


EMBEDDED PLATE DETAIL
SCALE 1:10

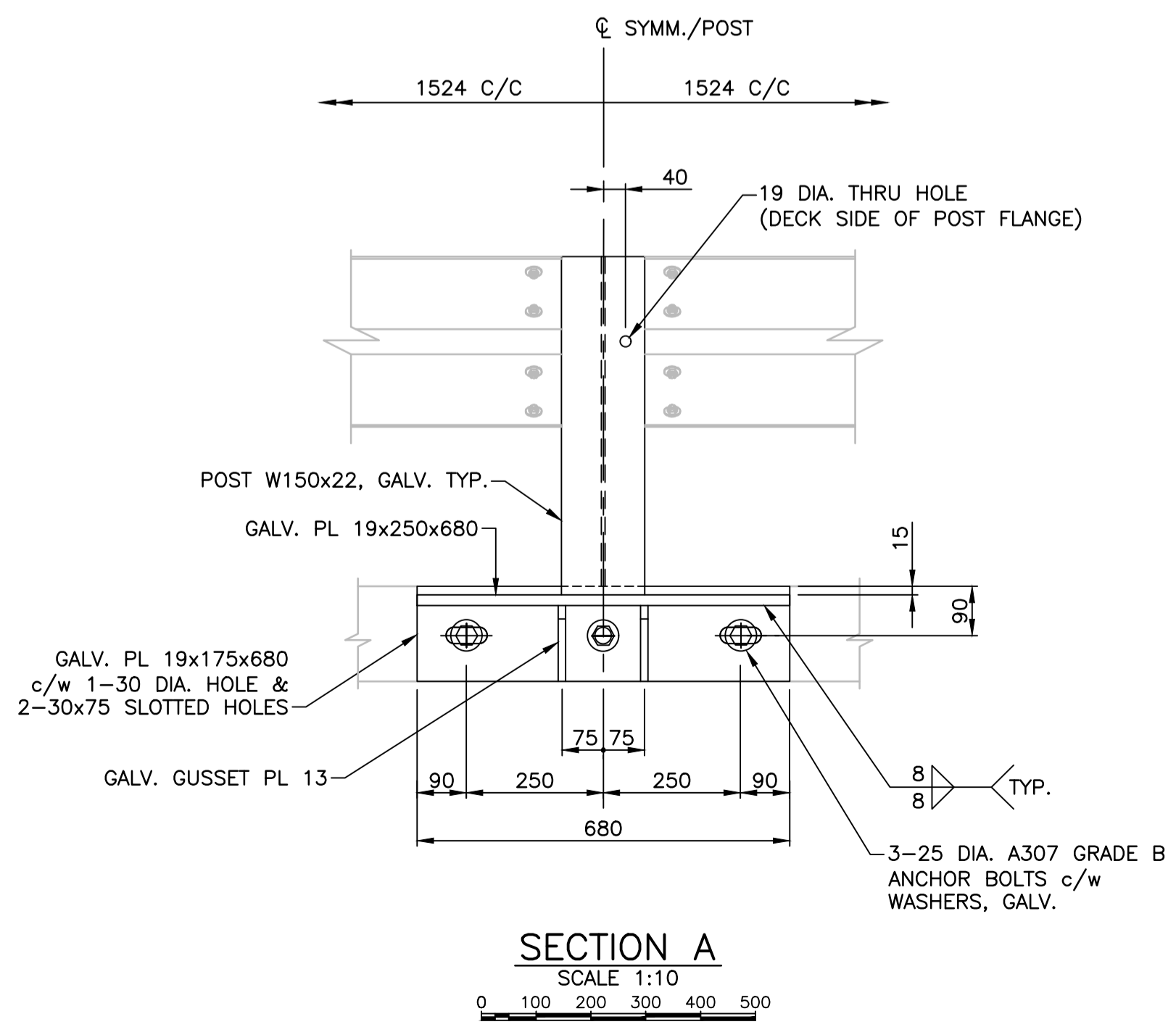
BALLAST WALL DETAILS
SCALE 1:20



BALLAST WALL ELEVATION
SCALE 1:25

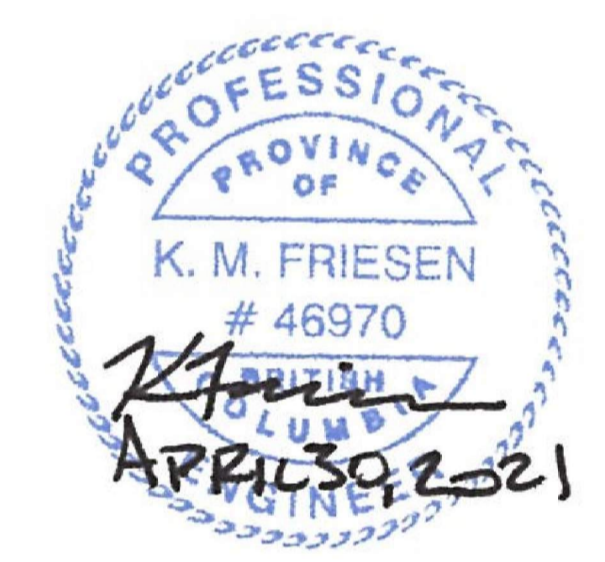


THRIE BEAM GUARDRAIL DETAIL
SCALE 1:10



SECTION A
SCALE 1:10

- NOTES:
- FOR GENERAL NOTES SEE DWG. S2
 - CONTRACTOR TO DESIGN AND DETAIL THE LIFTING LOOPS AND LIFTING POINTS.



Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20



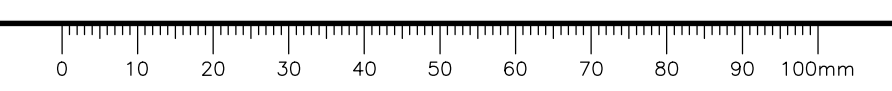
Project title **BRITISH COLUMBIA PORT HARDY**
KEOGH RIVER BRIDGE REPLACEMENT

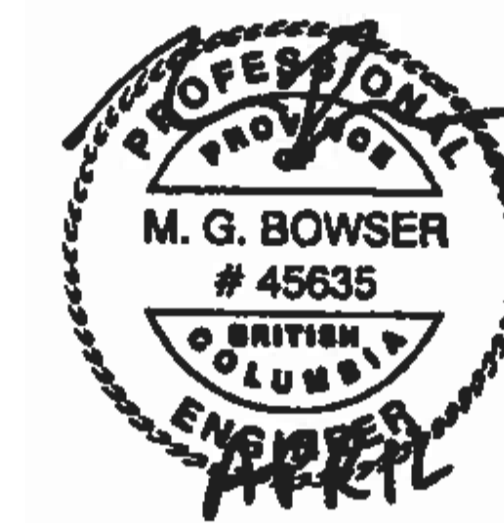
Designed by **R.KABIR, EIT**
 Drawn by **H.RYU**
 Approved by **M.BOWSER, P.ENG.**
 PWSCC Project Manager / Administrateur de Projets TPSOC: **T.GREER, P.ENG.**

Drawing title **BALLAST WALL AND THRIE BEAM DETAILS**

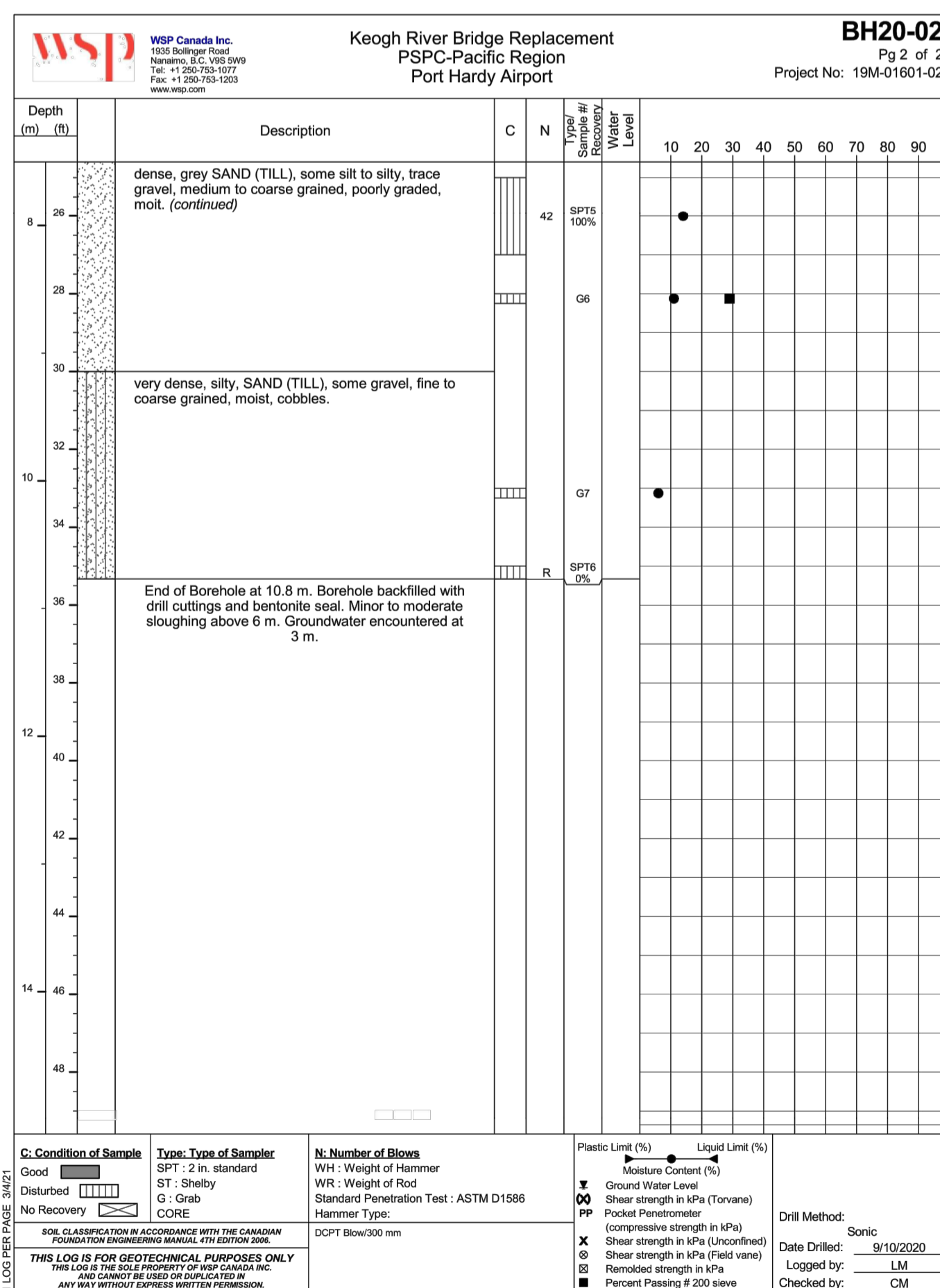
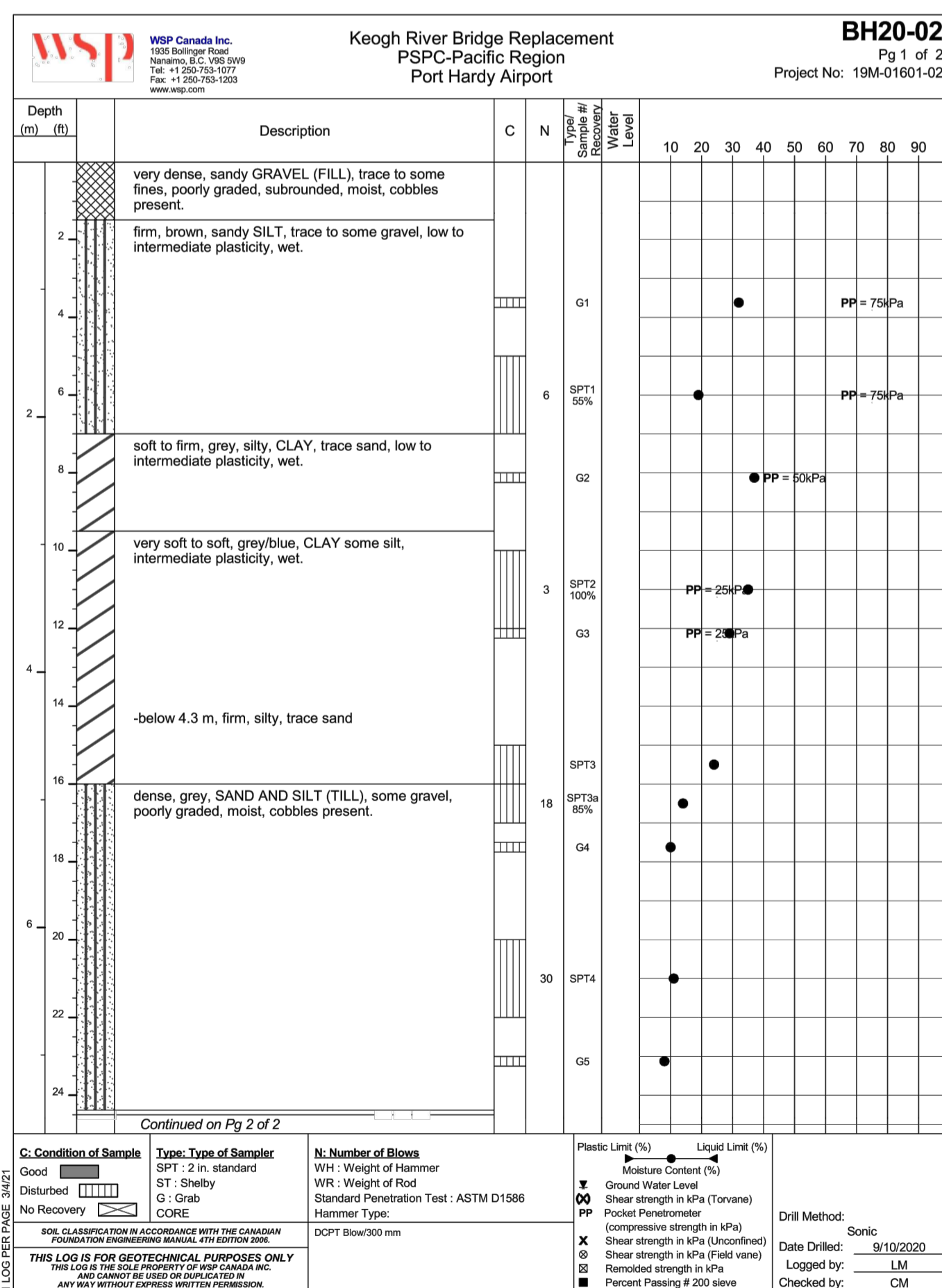
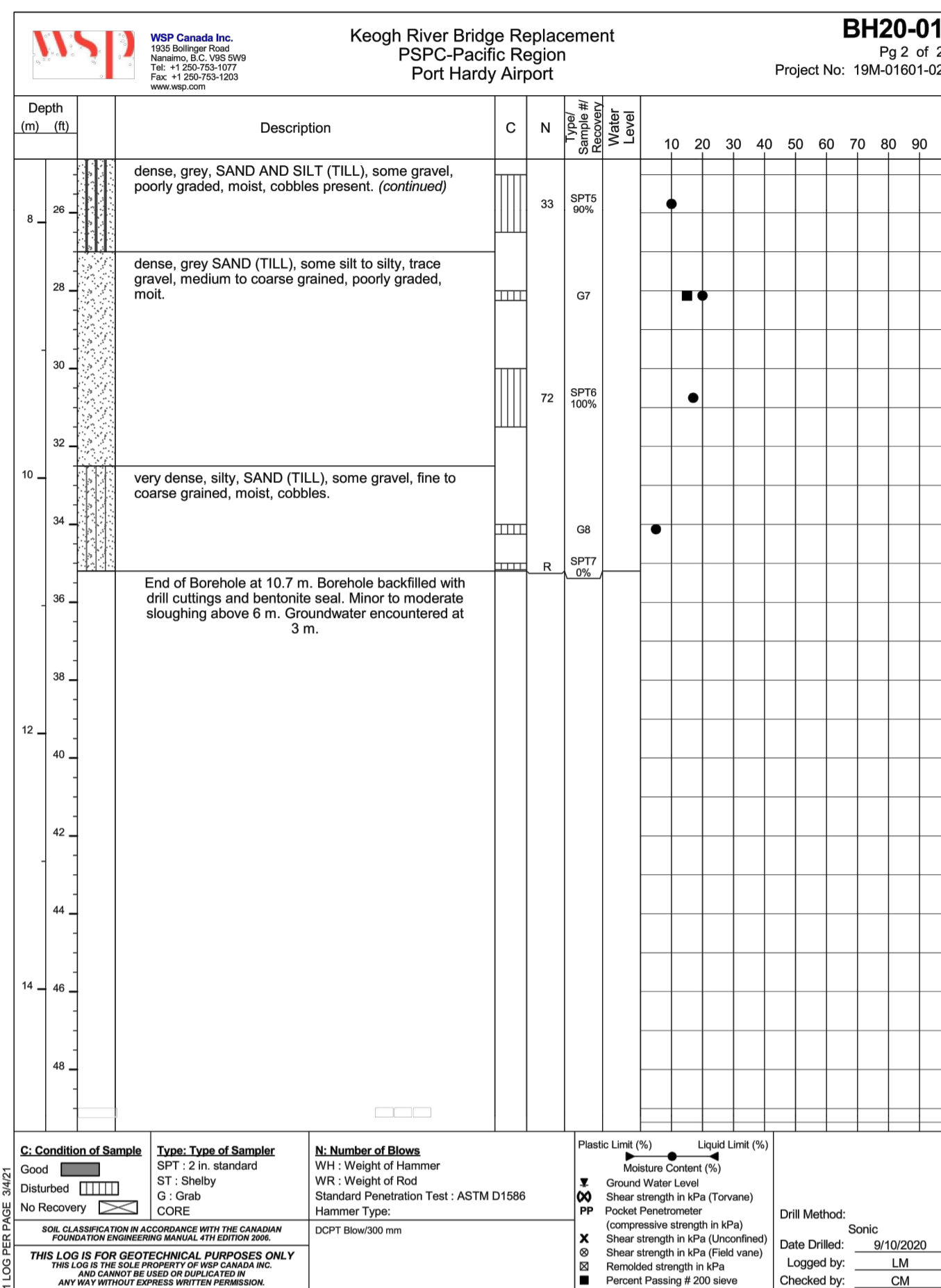
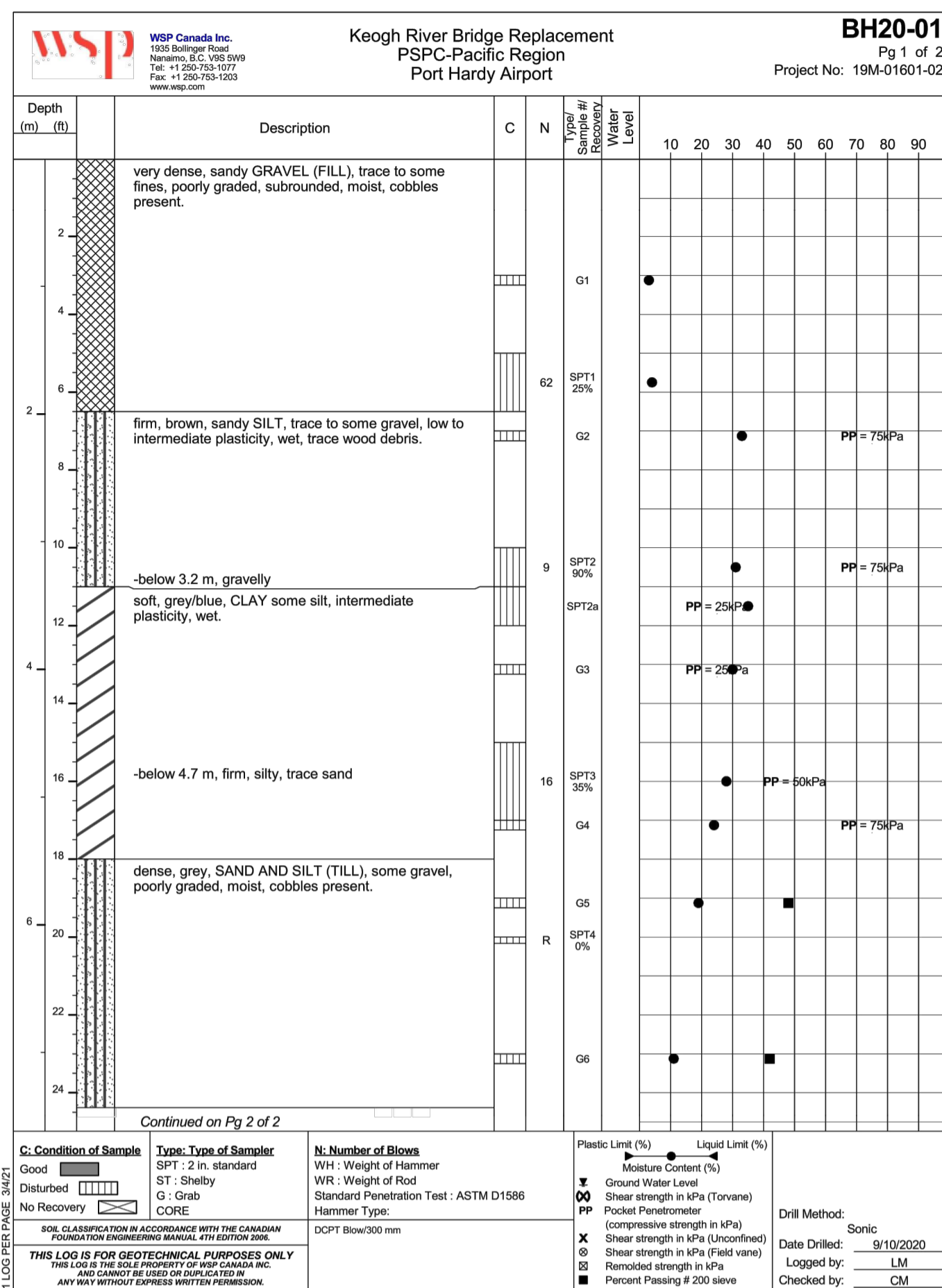
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	S11 OF S12	0

DATE: 2021-04-30 - 11:53 am (herryryu) C:\Users\herryryu\OneDrive\Documents\Drawings\082 - Bridges\PSPC Keogh Bridge Replacement\new.dwg LAYOUT BALLAST WALL & GUARD DETAILS





30,
2021



0	ISSUED FOR TENDER	21/04/20
Revision	Description	Date

Client: client



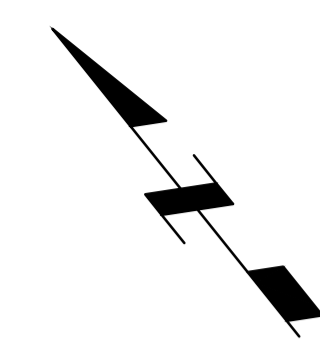
Project title: BRITISH COLUMBIA PORT HARDY

KEOGH RIVER BRIDGE REPLACEMENT

Designed by	Conçu par	K.FRIESEN, P.ENG.
Drawn by	Dessiné par	H.RYU
Approved by	Approuvé par	M.BOWSER, P.ENG.
PWSSC Project Manager	Administrateur de Projets TPSGC	T.GREER, P.ENG.
Drawing title	Titre du dessin	BOREHOLE LOGS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	S12 OF S12	0

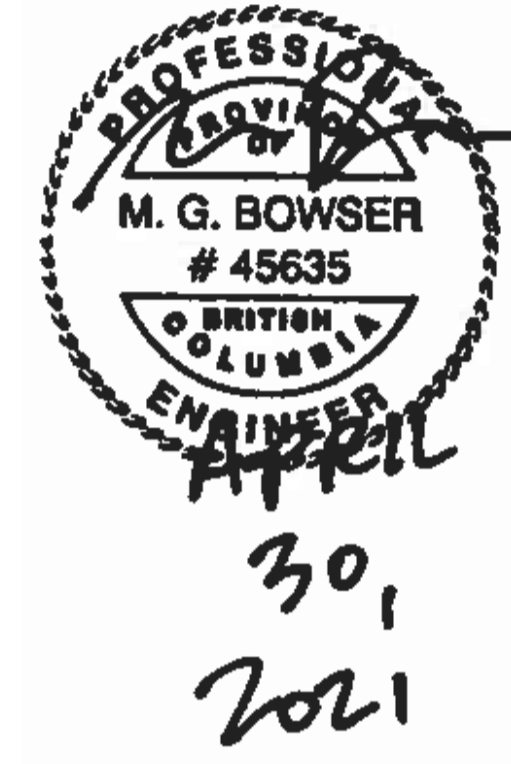
DATE: 2021-04-28 10:54am (herryryu) C:\Users\herryryu\Documents\Bridges\PSPC Keogh Bridge Replacement\Drawings\082 - Bridges\PSPC Keogh Bridge Replacement_new.dwg LAYOUT_BOREHOLE_LOGS_SHEET_1



40m X 60m STAGING AND LAYDOWN AREA FOR USE BY CONTRACTOR. REFER TO THE PLAN OF CONSTRUCTION OPERATIONS THAT IS APPENDED TO THE CONTRACT SPECIFICATIONS FOR HEIGHT LIMITATIONS AND OTHER OPERATIONAL CONSTRAINTS.

CONTROLLED ACCESS GATE LOCATED HERE. THE CLEAR OPENING OF THE GATE IN ITS OPEN POSITION IS 4.0m.

CONSTRUCTION AREA; SEE DWG. C2 FOR CONSTRUCTION LIMITS



NOTE: AERIAL IMAGERY OBTAINED FROM GOOGLE EARTH PRO ON 21/02/17.

THE HORIZONTAL DATUM USED FOR THIS DRAWING IS IN REFERENCE TO UTM (NAD 83) ZONE 9.

Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20

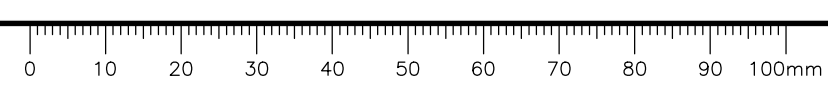


Project title: **BRITISH COLUMBIA PORT HARDY**
KEOGH RIVER BRIDGE REPLACEMENT

Designed by: **K. YANG, EIT**
 Drawn by: **I. LOZADA**
 Approved by: **M. BOWSER, P. ENG.**
 PWSC Project Manager: **T. GREER, P. ENG.**

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	C1 OF C7	0

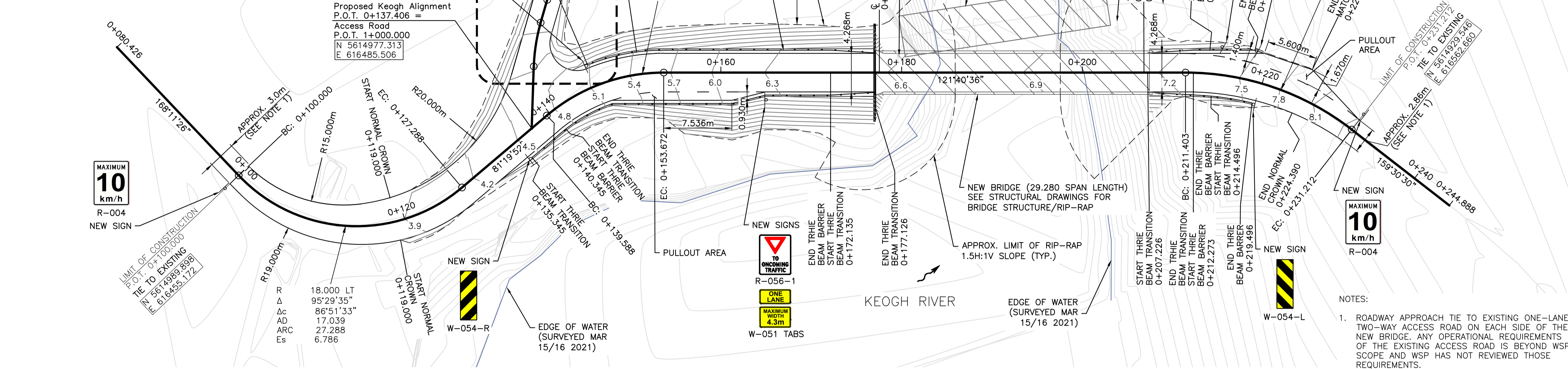
SITE PLAN
SCALE 1:2000



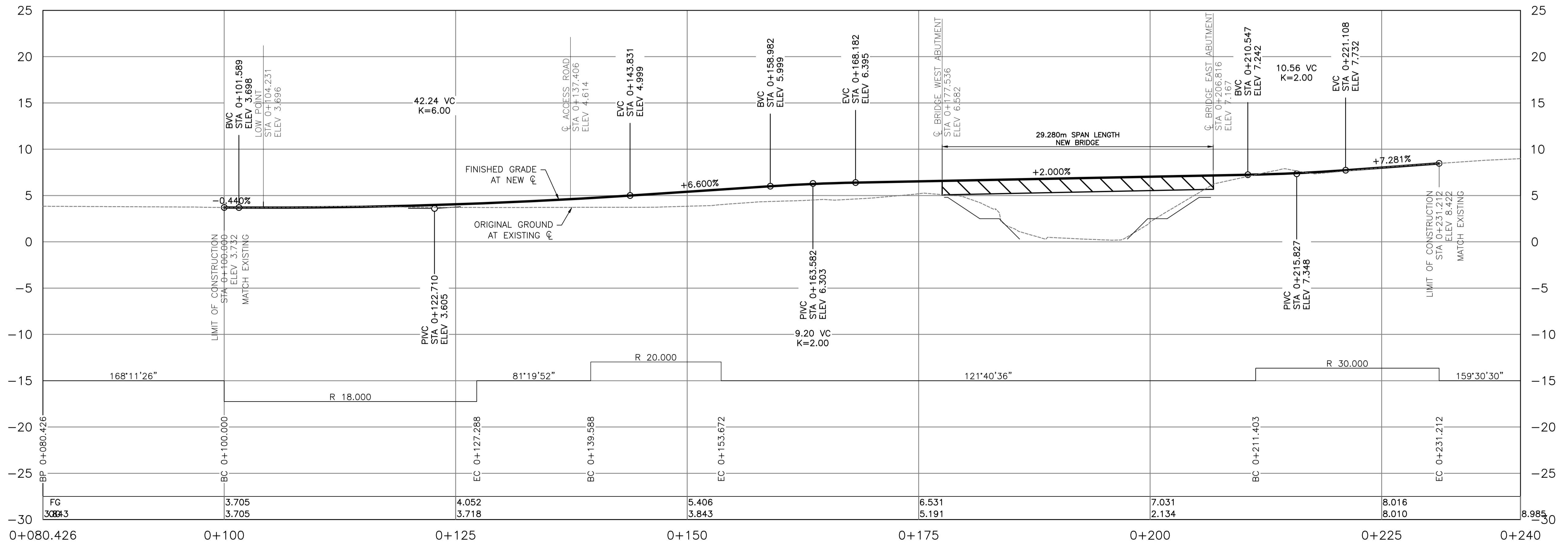
DATE: 2021-04-30 - 7:40am (CAL071096)
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 LAYOUT: C0

SIGNS				
SIGN TYPE	No. REQUIRED SIGNS	POSTS	LOCATION	DESCRIPTION
R-004	1	1	STA 0+100.000 RT	MAX. POSTED SPEED 10 km/h
W-054-R	1	1	STA 0+139.588 RT	OBJECT MARKER - RIGHT
W-054-L	1	1	STA 0+145.991 LT	OBJECT MARKER - LEFT
R-056-1	3	1	STA 0+165.000 RT	YIELD TO ONCOMING TRAFFIC ONE LANE & MAXIMUM WIDTH
W-051 TABS	3	1	STA 0+215.000 LT	YIELD TO ONCOMING TRAFFIC ONE LANE & MAXIMUM WIDTH
R-056-1	3	1	STA 0+218.333 LT	YIELD TO ONCOMING TRAFFIC ONE LANE & MAXIMUM WIDTH
W-054-R	1	1	STA 0+219.496 RT	OBJECT MARKER - RIGHT
W-054-L	1	1	STA 0+231.212 LT	OBJECT MARKER - LEFT
R-004	1	1	STA 0+231.212 LT	MAX. POSTED SPEED 10 km/h

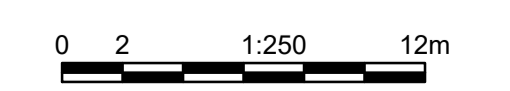
LEGEND:
 EX. BRIDGE
 NEW BRIDGE
 THREE BEAM BARRIER
 TOE OF SLOPE
 6.0 NEW CONTOUR
 EXISTING CONTOUR



SITE PLAN
 SCALE 1:250



PROFILE
 SCALE 1:250H
 1:250V



DESIGN SPEED 10 km/h
 DESIGN VEHICLE: PASSENGER CAR (P)

NOTES:
 1. ROADWAY APPROACH TIE TO EXISTING ONE-LANE, TWO-WAY ACCESS ROAD ON EACH SIDE OF THE NEW BRIDGE. ANY OPERATIONAL REQUIREMENTS OF THE EXISTING ACCESS ROAD IS BEYOND WSP SCOPE AND WSP HAS NOT REVIEWED THOSE REQUIREMENTS.



2021-04-29

Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20

Client: client



Project title: **BRITISH COLUMBIA PORT HARDY**

KEOGH RIVER BRIDGE REPLACEMENT

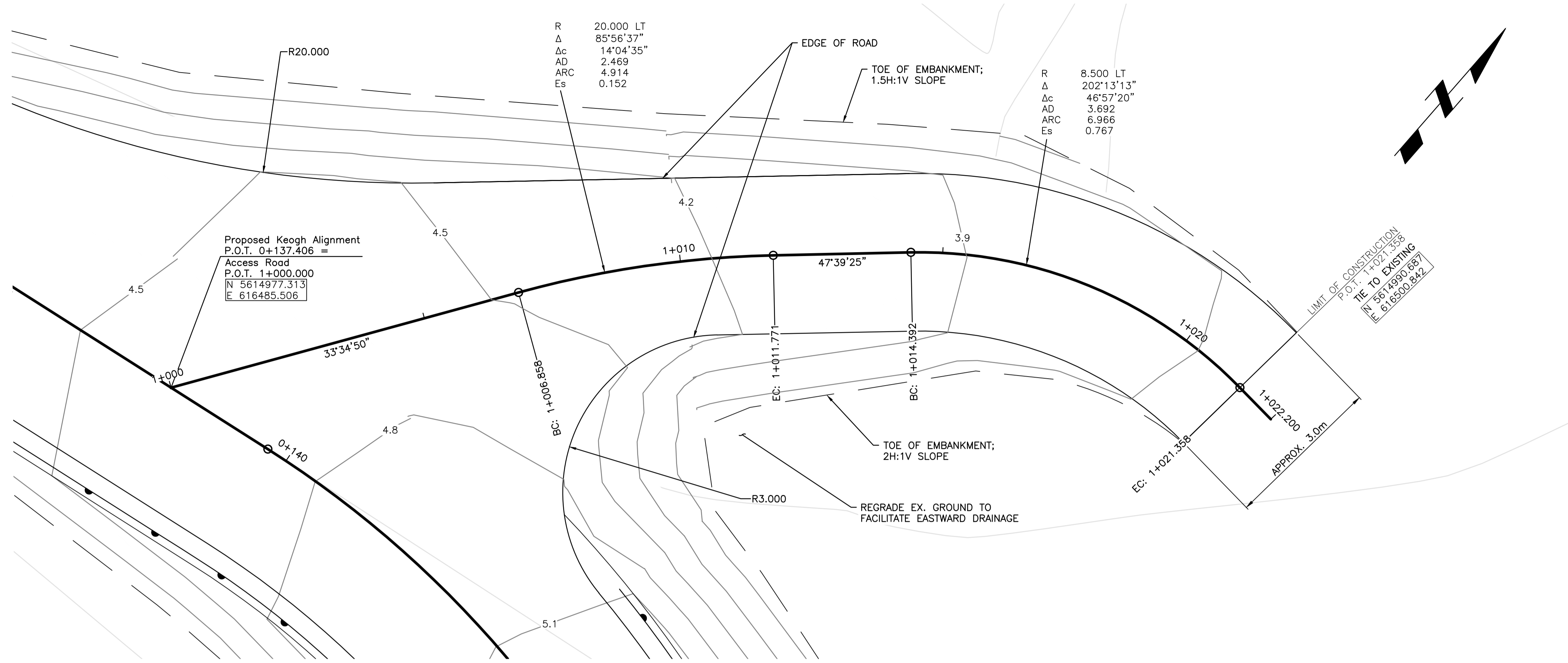
Designed by: **K. YANG, EIT**
 Drawn by: **I. LOZADA**
 Approved by: **V. TJIA, P. ENG.**
 PWSSC Project Manager: **T. GREER, P. ENG.**

PLAN AND PROFILE

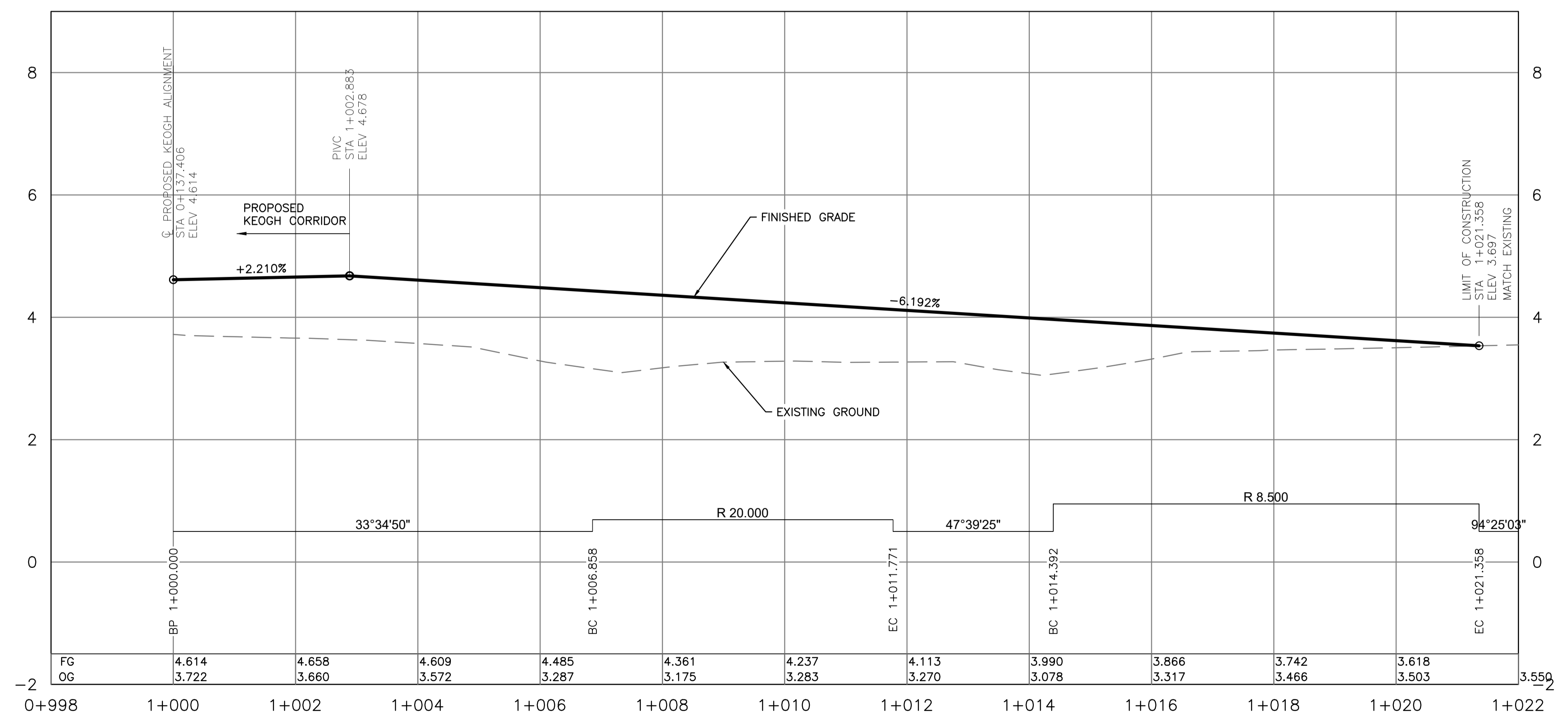
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	C2 OF C7	0



- LEGEND:
- TOE OF SLOPE
 - EDGE OF ROAD
 - THRIE BEAM BARRIER
 - 6.0 — NEW CONTOUR
 - EXISTING CONTOUR

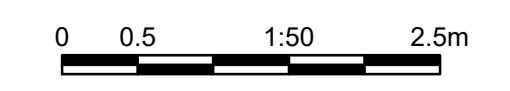


SITE PLAN
SCALE 1:50



PROFILE
SCALE 1:50H
1:50V

DESIGN SPEED 10 km/h DESIGN VEHICLE: PASSENGER CAR (P)



2021-04-29

Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20

Client: client



Project title: **BRITISH COLUMBIA PORT HARDY**

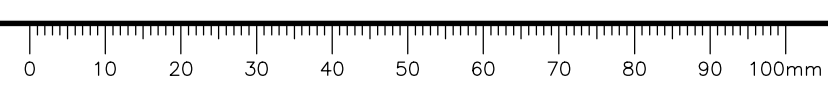
KEOGH RIVER BRIDGE REPLACEMENT

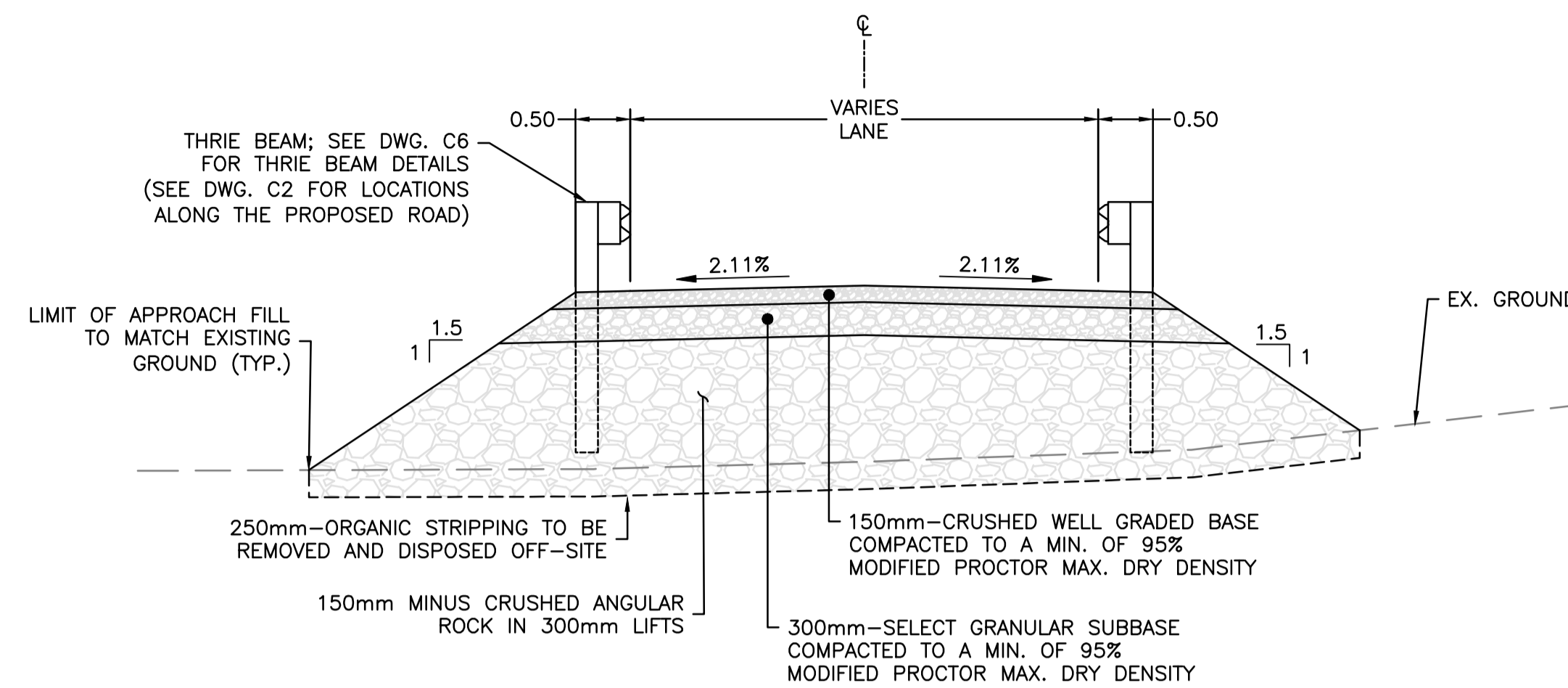
Designed by K. YANG, EIT	Conçu par
Drawn by LLOZADA	Dessiné par
Approved by V. TJIA, P. ENG.	Approuvé par
PWSSC Project Manager T. GREER, P. ENG.	Administrateur de Projets TPSGC
Drawing title	Titre du dessin

PLAN AND PROFILE ACCESS ROAD

Project no./No. du projet R.109401.001	Drawing no./No. du dessin C3 OF C7	Revision no. 0
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DATE: 2021-04-29 - 6:23am (CAL071096) C:\p\19000rns\19M-01601-02 - PISC Keogh Bridge Replacement\Drawings\060 - Highways\Production\C2 - Access Plan and Profile.dwg LAYOUT_C2 PWGSC - A1 - 841x594

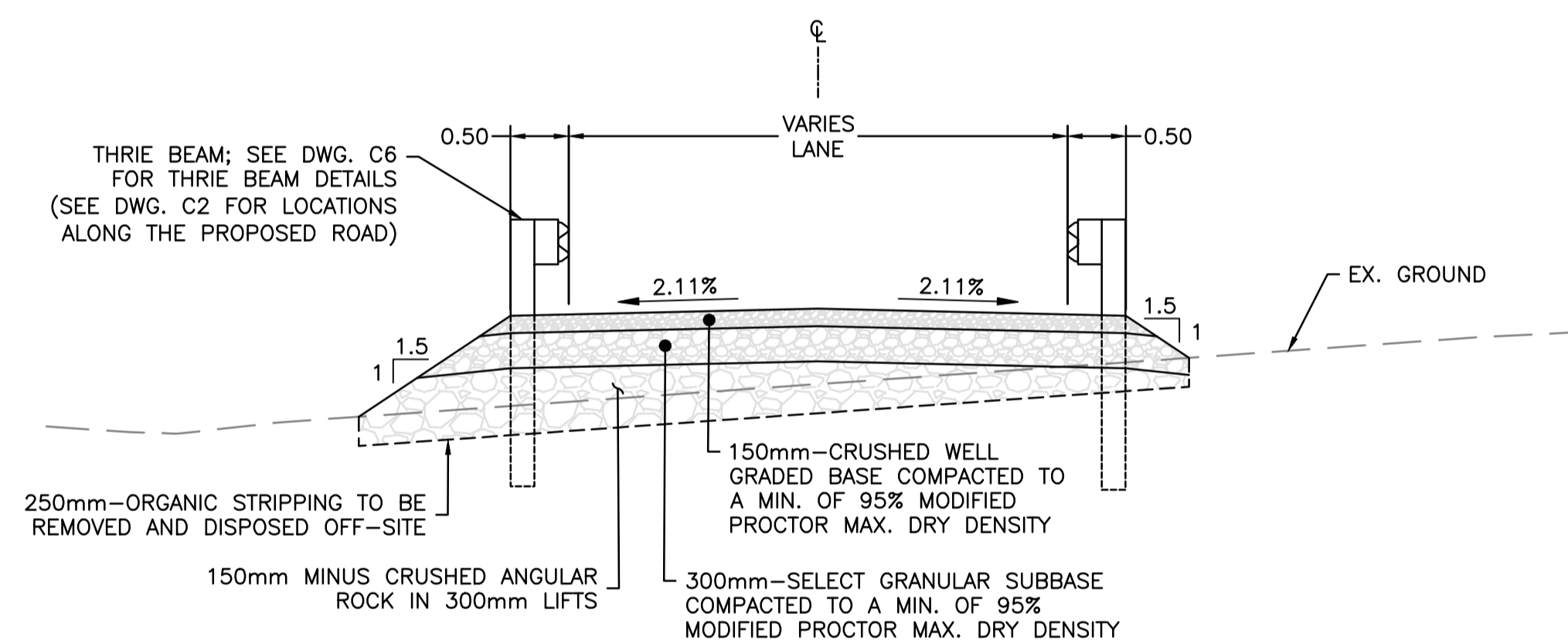




TYPICAL SECTION - WEST OF BRIDGE

SCALE 1:50

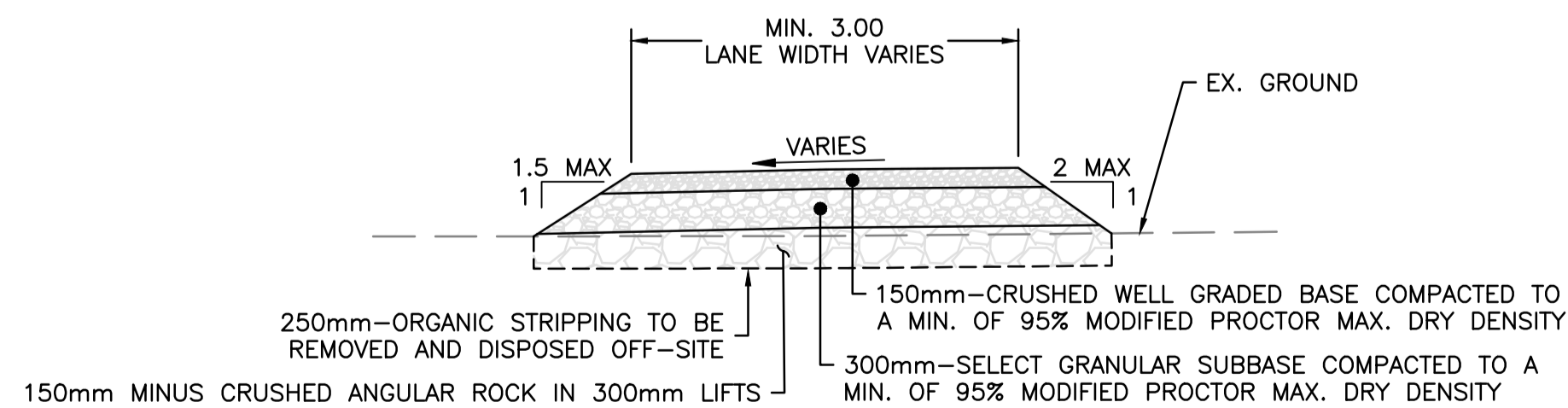
APPROX. STA. 0+100.000 TO 0+176.936



TYPICAL SECTION - EAST OF BRIDGE

SCALE 1:50

APPROX. STA. 0+207.416 TO 0+231.212



TYPICAL SECTION - ACCESS ROAD

SCALE 1:50



2021-04-29

Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20

Client: client



Project title: BRITISH COLUMBIA PORT HARDY

KEOGH RIVER BRIDGE REPLACEMENT

Designed by: K.YANG, EIT

Drawn by: L.LOZADA

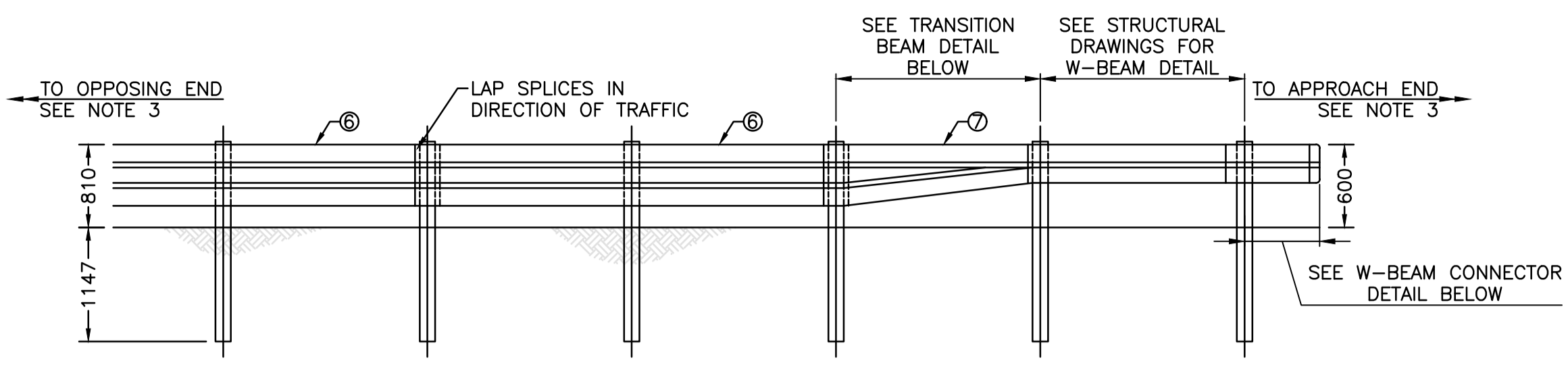
Approved by: V.TJIA, P.ENG.

PWSSC Project Manager: T. GREER, P.ENG.

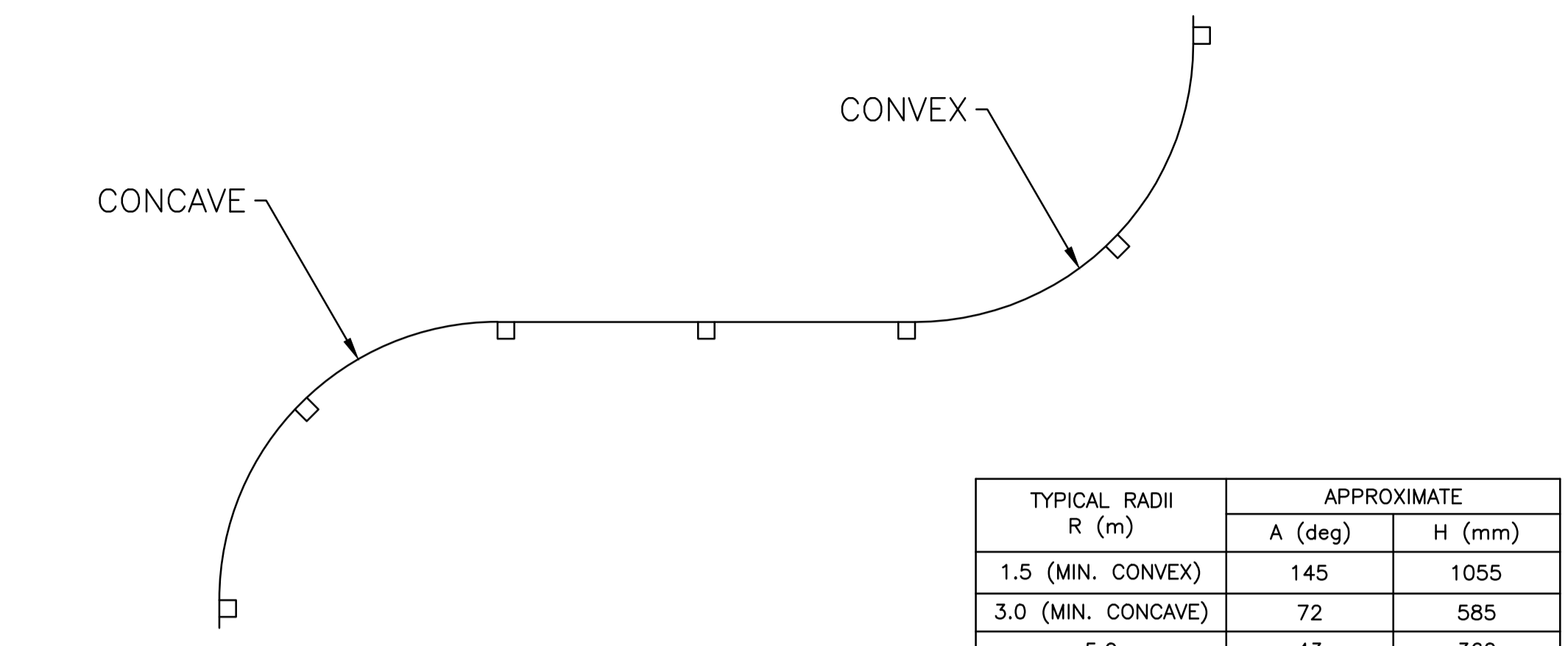
Drawing title: TYPICAL SECTIONS AND DETAILS

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	C5 OF C7	0

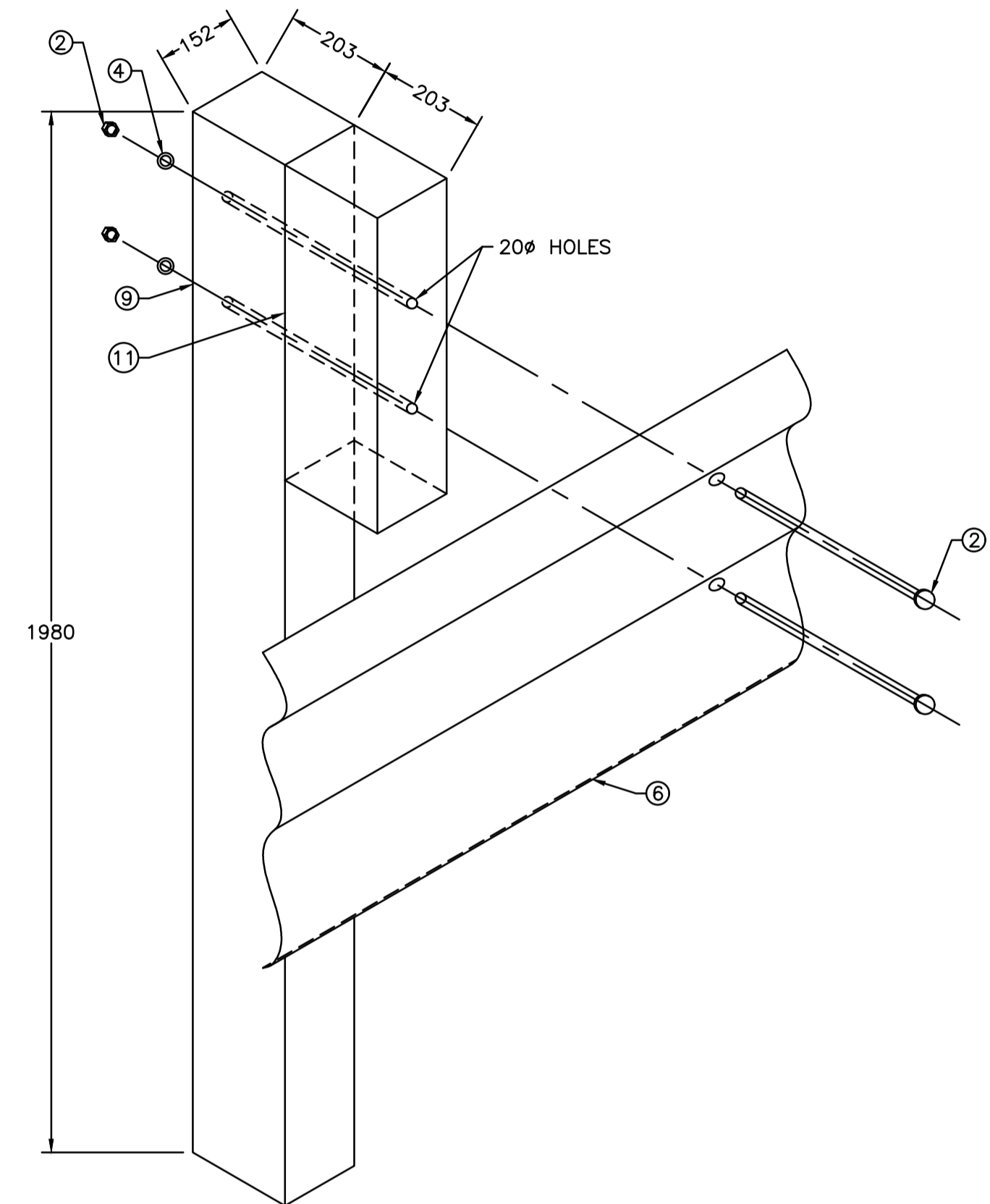




THRIE BEAM GUARDRAIL ELEVATION
 (WITH TRANSITION TO W BEAM)
 SCALE NTS



TYPICAL RADII R (m)	APPROXIMATE	
	A (deg)	H (mm)
1.5 (MIN. CONVEX)	145	1055
3.0 (MIN. CONCAVE)	72	585
5.0	43	360
7.5	29	240
10.0	21	180
12.5	17	145
15.0	14	120
18.0	12	100
21.0	10	85
25.0	8	70
30.0	7	60
35.0	6	50
40.0	5	45
45.0	4.5	40



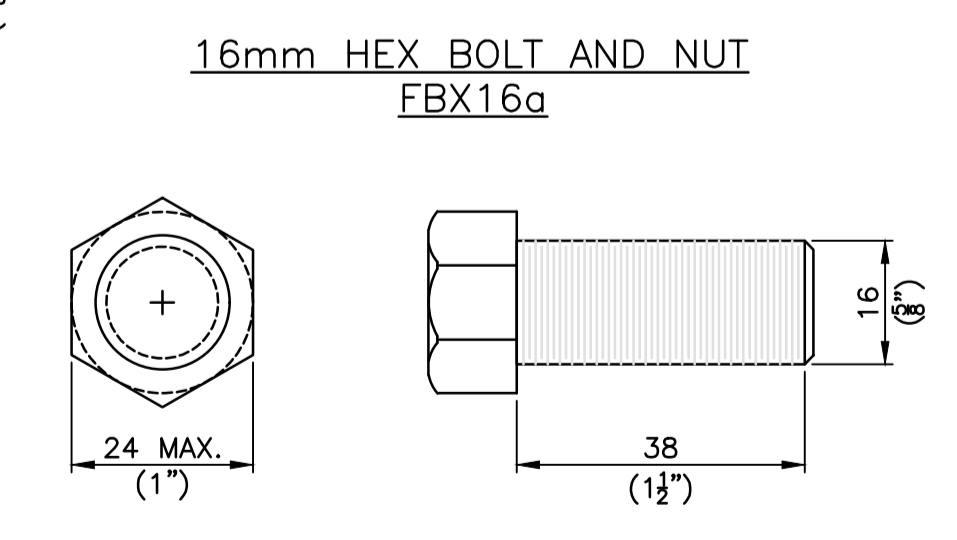
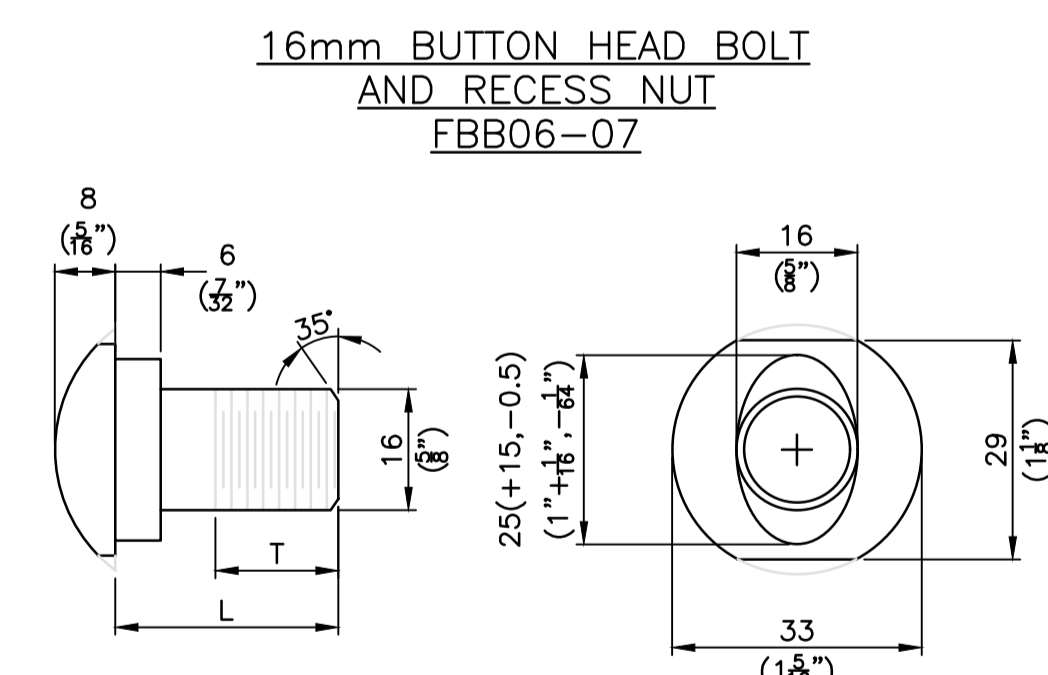
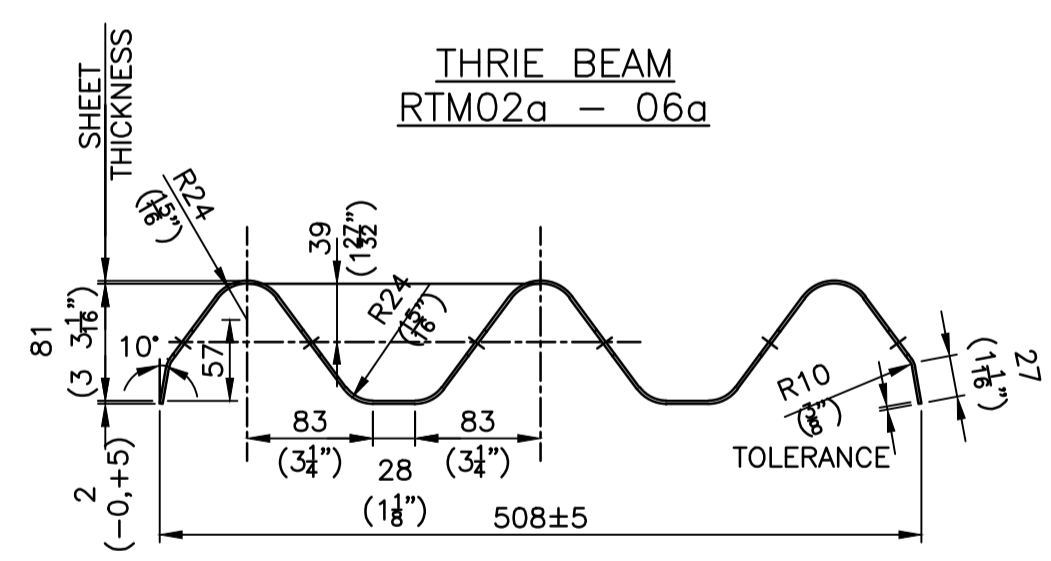
THRIE BEAM BARRIER ON TIMBER POSTS
 SCALE NTS

METAL GUARDRAIL PART LIST		
PART No.	*TF13 PART No.	DESCRIPTION
1	FBB01	16mm (5/8") BUTTON HEAD BOLT (35mm LG.) & RECESS NUT
2	FBB07	16mm (5/8") BUTTON HEAD BOLT (530mm LG.) & RECESS NUT
3	-	-
4	FC16a	WASHER FOR 16mm (5/8") BOLT
5	RWM04a-b	SGR38b/d 4-SPACE W BEAM
6	RWM02a-b	SGR09c THRIE BEAM
7	RWM02a-b	W-THRIE BEAM TRANSITION SECTION
8	PDE02/PDE18	152x203 TIMBER POST
9	PDE03	152x203 TIMBER POST
10	PDB11a-b	152x305 TIMBER BLOCKOUT (360 LG.)
11	PDB02a	152x203 TIMBER BLOCKOUT (360 LG.)

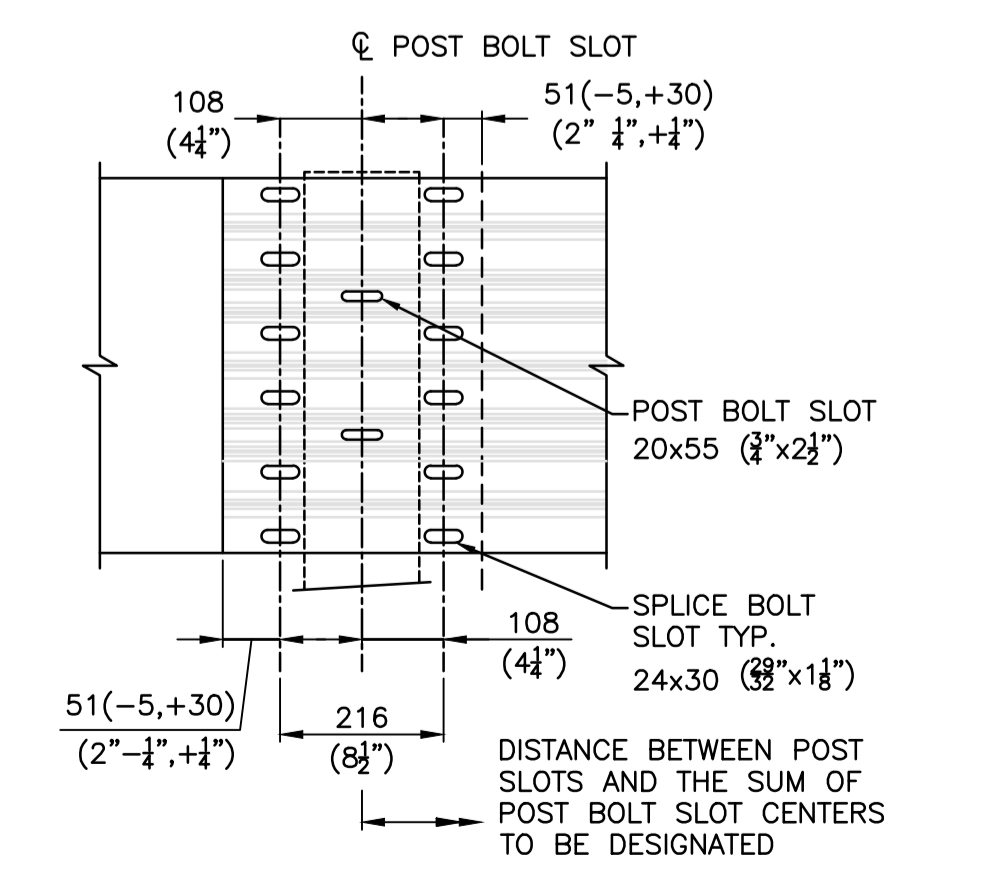
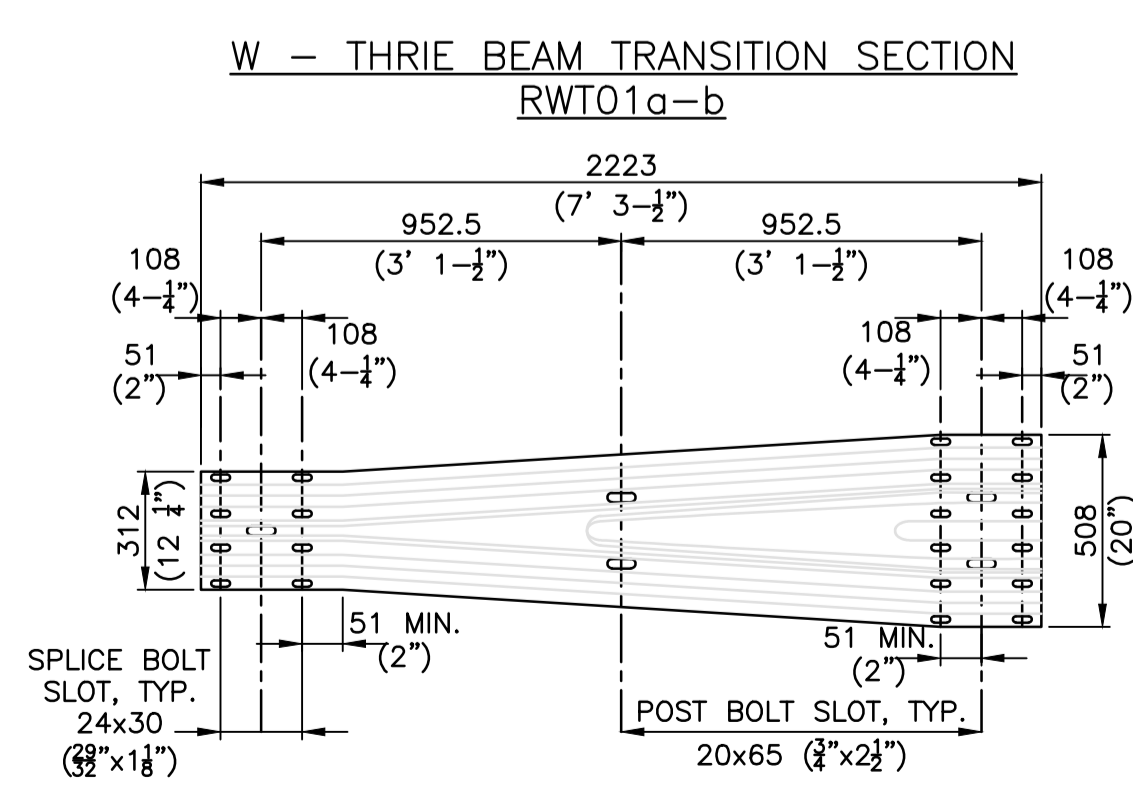
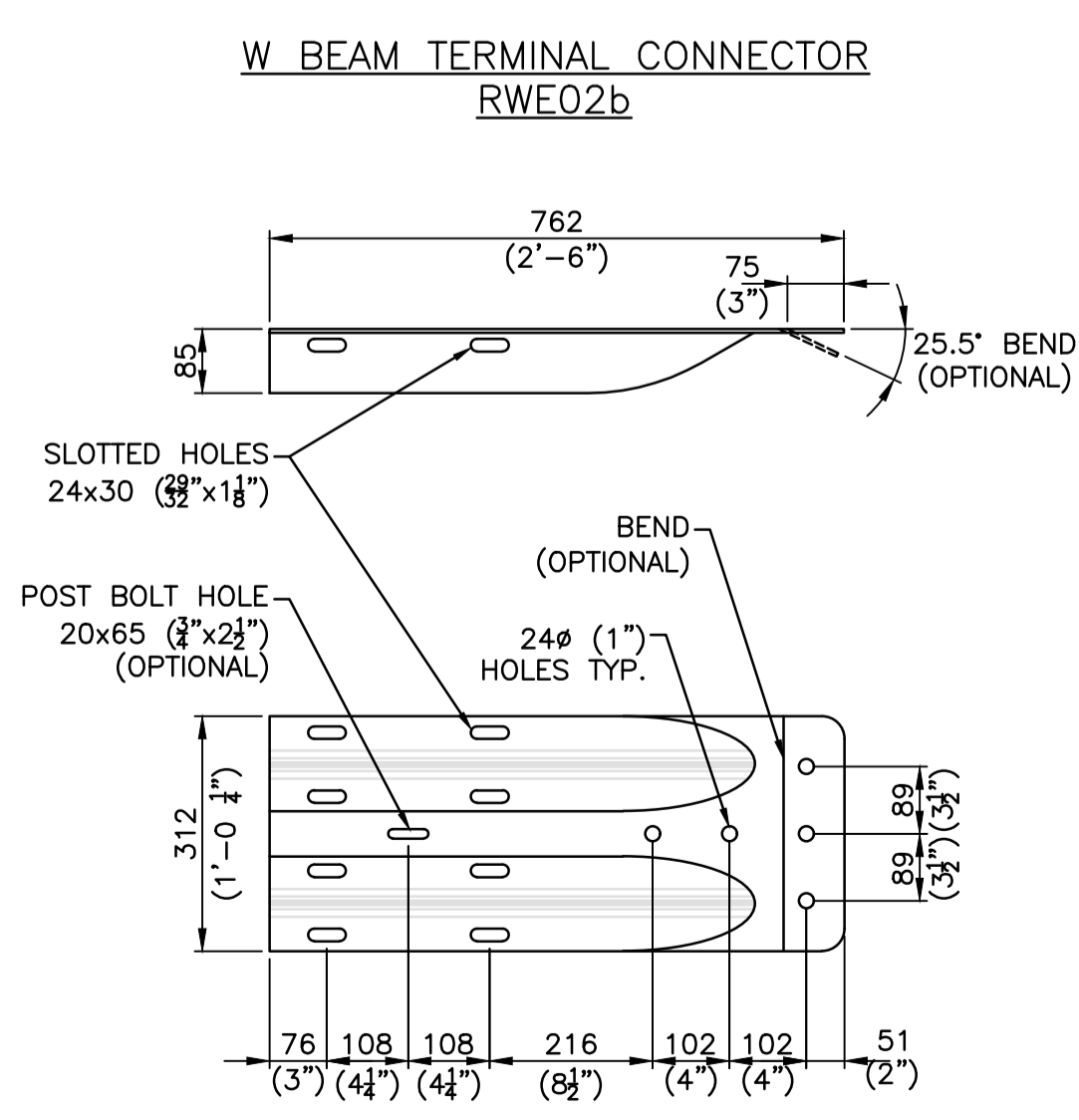
- * PARTS LIST AS PER TASK FORCE 13
- NOTES:**
- ALL DIMS. ARE IN mm UNLESS OTHERWISE NOTED.
 - THIS DRAWING TO BE USED WITH SPECIFICATION 312 IN BCMoTI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
 - ALL TRAFFIC BARRIER INSTALLATIONS WILL HAVE AN ENERGY ABSORBING TERMINAL OR BURIED END TREATMENT AT BOTH THE APPROACH AND OPPOSING ENDS TO REDUCE VEHICLE OCCUPANT HAZARD AND PROVIDE ANCHORAGE. SEE DWG. SP312-2 IN BCMoTI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION FOR DETAILS.
 - BARRIER PLACEMENT CASE 1: 1830 LONG W BEAM POST - USE WHEN THERE IS 0.61m OR GREATER SHOULDER WIDTH BEHIND THE POST.
 - BARRIER PLACEMENT CASE 2: 2285 LONG W BEAM POST - IF SIDE SLOPE IS 2:1 OR FLATTER, POSTS MAY BE PLACED AT THE SHOULDER BREAK POINT.



2021-04-29



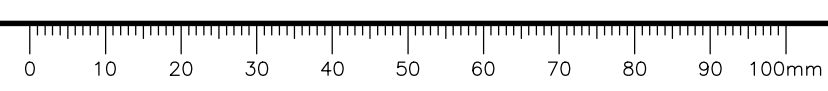
DESIGNATOR	L	T (MIN.)
FBB06	360	100
FBB07	530	100

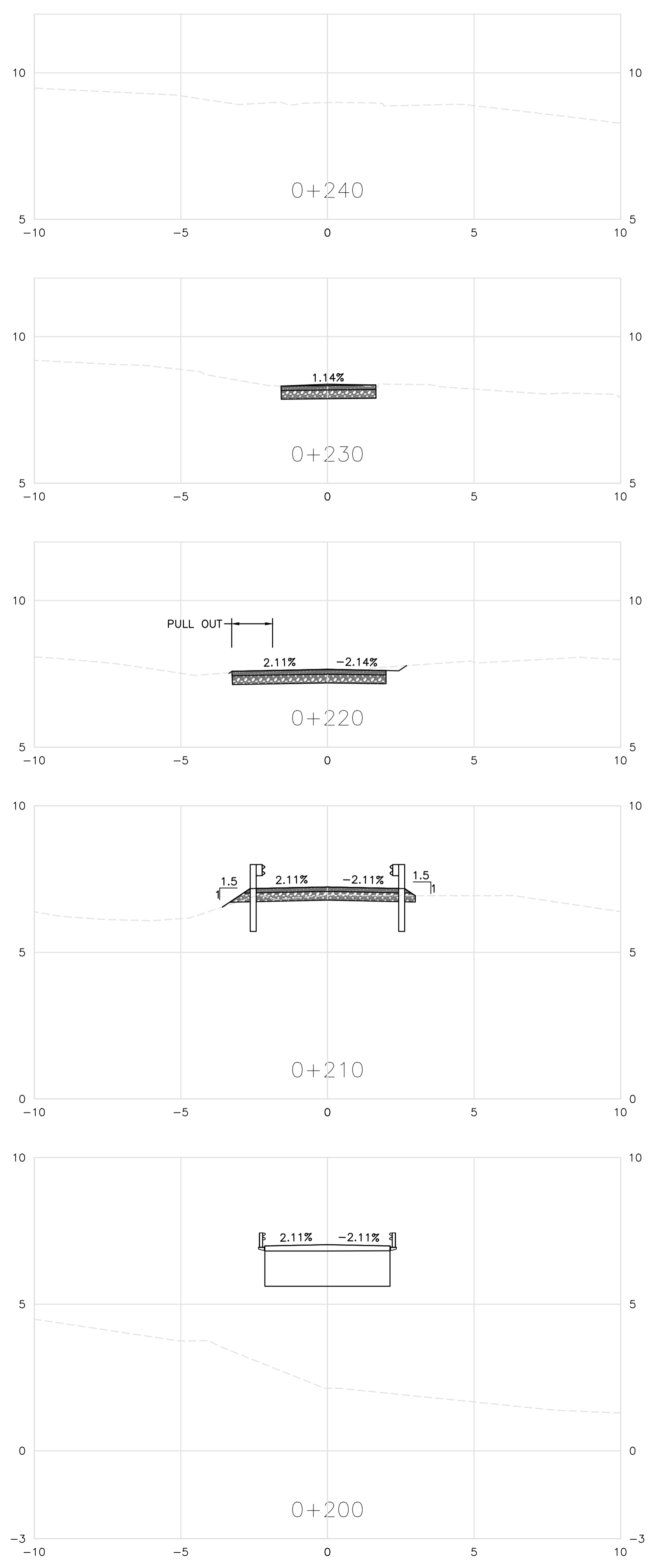
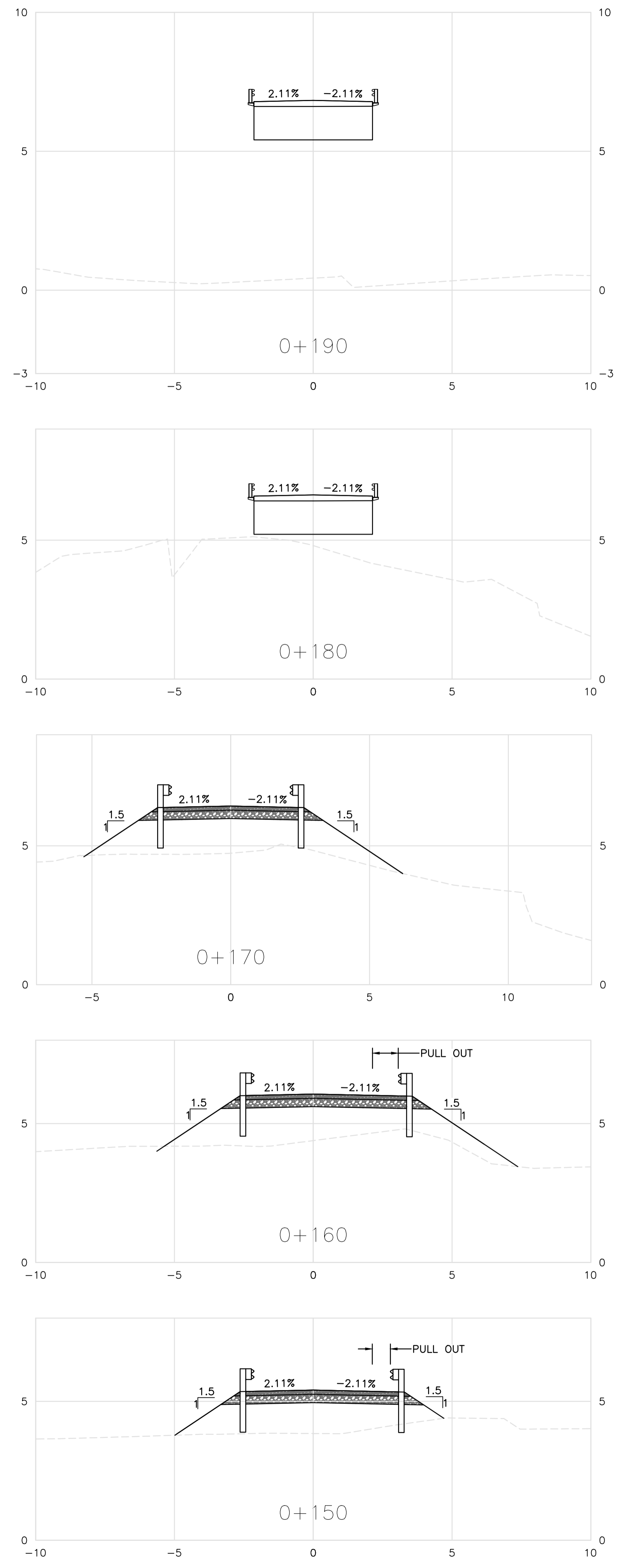
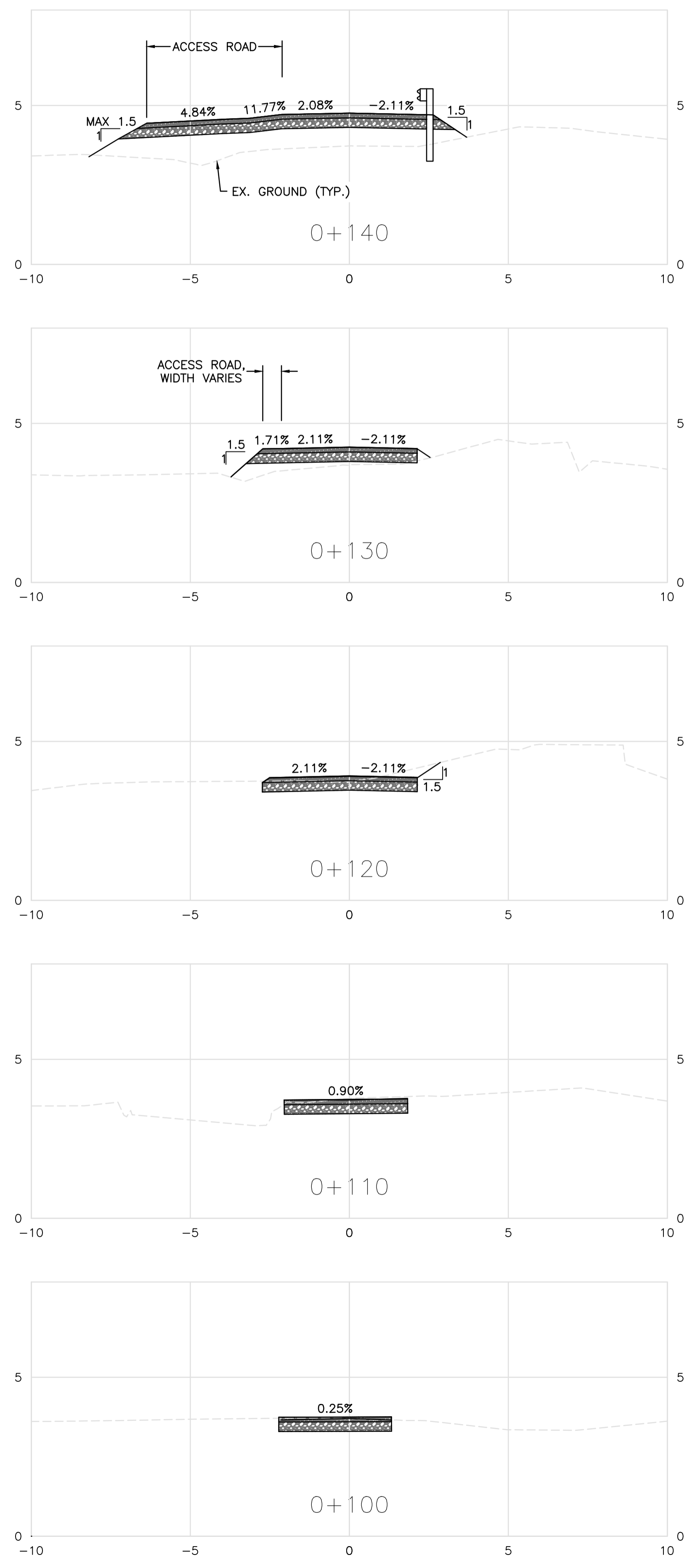


THRIE BEAM PARTS
 SCALE NTS

Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20
Client		client
Project title		Project
BRITISH COLUMBIA PORT HARDY		
KEOGH RIVER BRIDGE REPLACEMENT		
Designed by	Conçu par	
K.YANG, EIT		
Drawn by	Dessiné par	
I.LOZADA		
Approved by	Approuvé par	
V.TJIA, P. ENG.		
PIWSCC Project Manager	Administrateur de Projets TPSOC	
T. GREER, P. ENG.		
Drawing title		Titre du dessin
THRIE BEAM DETAILS		
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	C6 OF C7	0

DATE: 2021-04-29 - 3:59pm (CAL071096) P:\CG-190001RS\19M-01601-02 - FSPC Keogh Bridge Replacement\Drawings\060 - Highways\Production\C4 & C5 - Typical Sections & Details.dwg LAYOUT_C5





2021-04-29

Revision	Description	Date
0	ISSUED FOR TENDER	21/04/20



Project title: **BRITISH COLUMBIA PORT HARDY**

KEOGH RIVER BRIDGE REPLACEMENT

Designed by: **K. YANG, EIT**

Drawn by: **LLOZADA**

Approved by: **V. TJIA, P. ENG.**

PWSSC Project Manager: **T. GREER, P. ENG.**

Drawing title: **CROSS SECTIONS**

0 1 1:100 5m

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	C7 OF C7	0

DATE: 2021-04-29 5:49pm (CAL071096) C:\pwworkspace\cadd\CADMAN400\cadd\h0h0p01\Project\50-19000R5\194-01601-02 - P3PC Keogh Bridge Replacement\Drawings\060 - Highways\Production\06 - Cross Sections.dwg

