




Ministry of Forests

STANDARD BRIDGE DRAWINGS:
STEEL GIRDER CONCRETE DECK

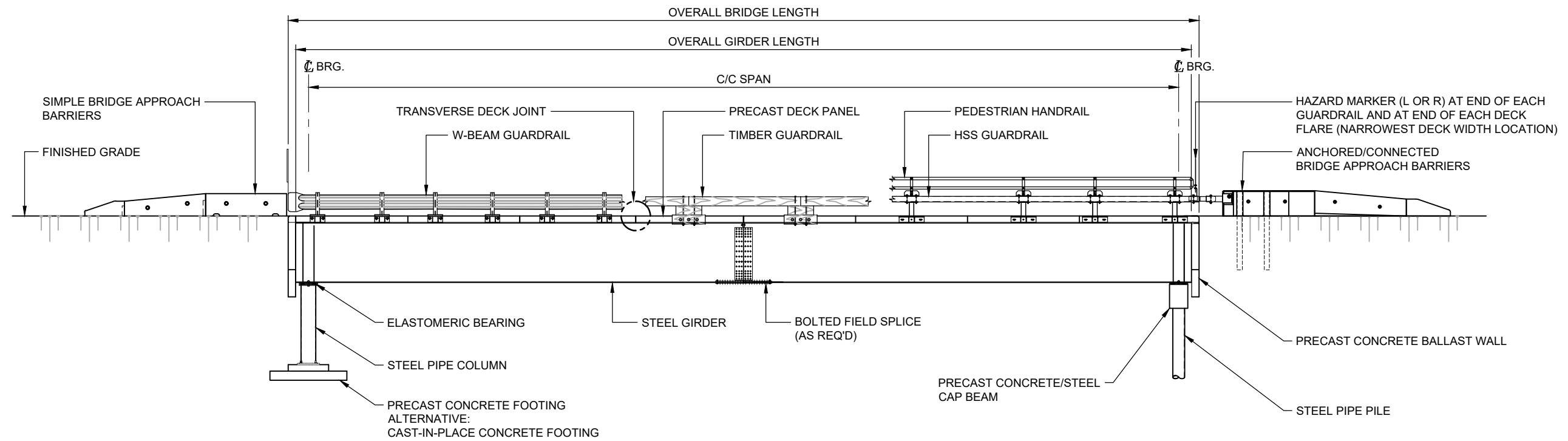
DRAWING SCHEDULE			
DRAWING NUMBER	DRAWING TITLE	REV.	DATE
STD-EC-030-01	GENERAL NOTES	0	DECEMBER 4, 2023
STD-EC-030-02	GENERAL ARRANGEMENT	0	DECEMBER 4, 2023
STD-EC-030-03	STEEL DETAILS	0	DECEMBER 4, 2023
STD-EC-030-04	DECK PANEL - TYPES	0	DECEMBER 4, 2023
STD-EC-030-05	REINFORCING PLAN - SQUARE & FLARED PANELS	0	DECEMBER 4, 2023
STD-EC-030-06	REINFORCING PLAN - SKEWED PANELS	0	DECEMBER 4, 2023
STD-EC-030-07	MISC. PANEL DETAILS	0	DECEMBER 4, 2023
STD-EC-030-08	PANEL BLOCKOUT & TRANSVERSE DECK JOINT DETAILS	0	DECEMBER 4, 2023
STD-EC-030-09	DECK END JOINT DETAILS	0	DECEMBER 4, 2023
STD-EC-030-10	DECK END ARMOUR OPTIONS	0	DECEMBER 4, 2023

1. GENERAL NOTES

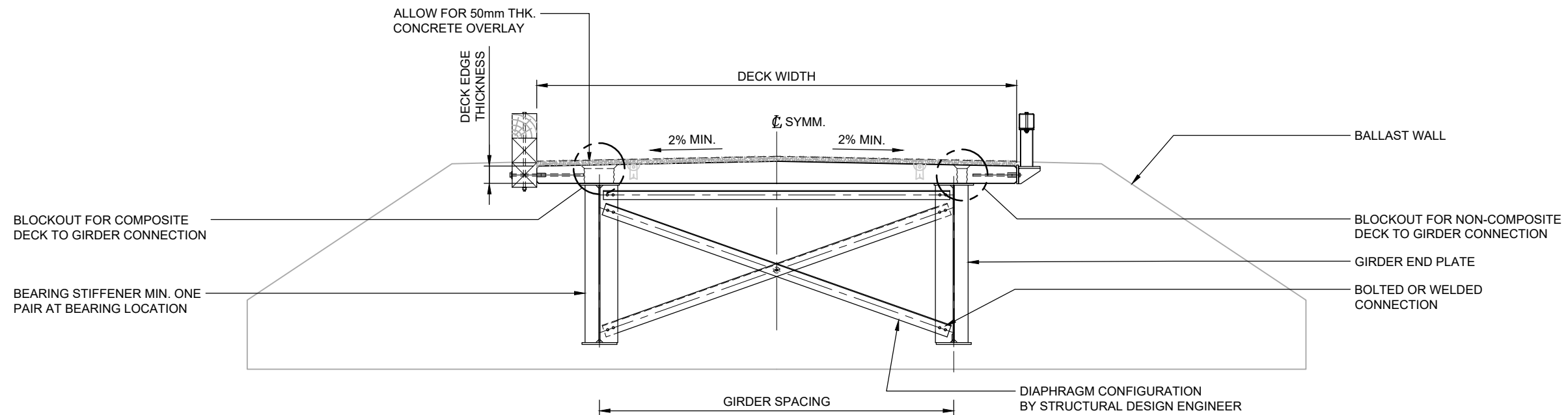
- 1.1
- THESE STANDARD DRAWINGS APPLY TO SINGLE LANE STEEL GIRDER BRIDGES WITH COMPOSITE (COMP.) OR NON-COMPOSITE (NON-COMP.) PRECAST CONCRETE DECK PANELS.
- 1.2
- APPLICABLE BRIDGE GIRDER LENGTH (OUT-TO-OUT):
 - COMPOSITE: 9.14 m (30') TO 39.624 M (130');
 - NON-COMPOSITE: 6.1 m (20') TO 39.624 m (130').
- 1.3
- SPECIAL INVESTIGATION AND MINISTRY ENGINEER APPROVAL WILL BE REQUIRED FOR UNUSUAL SITUATIONS INCLUDING BUT NOT LIMITED TO:
 - GIRDER LENGTHS > THOSE SPECIFIED ABOVE;
 - BRIDGE WIDTHS > STD. SINGLE LANE WIDTHS;
 - MULTI-SPAN BRIDGES.
- 1.4
- UNLESS OTHERWISE SPECIFIED ON THESE DRAWINGS, ALL WORK ASSOCIATED WITH THESE DRAWINGS SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE MINISTRY BRIDGE STANDARDS MANUAL (BSM) INCLUDING BUT NOT LIMITED TO:
 - DESIGN;
 - MATERIALS AND FABRICATION;
 - LIFTING, TRANSPORTATION AND INSTALLATION; AND
 - CERTIFICATION AND QUALITY CONTROL.
- 1.5
- WHERE APPLICABLE, BARRIERS AND SUBSTRUCTURE COMPONENTS SHALL BE DETAILED IN ACCORDANCE WITH THE FOLLOWING MINISTRY STANDARD DRAWINGS:
 - BARRIERS (STD-EC-010 SERIES); AND
 - SUBSTRUCTURES (STD-EC-050 SERIES).
- 1.6
- ALL DIMENSIONS IN mm UNLESS NOTED OTHERWISE.
- 1.7
- NON-COMPOSITE BRIDGES ARE INTENDED TO BE USED AT MULTIPLE SITES OVER THEIR DESIGN LIFE. SQUARE PANELS ARE TO BE USED FOR NON-COMPOSITE BRIDGES SO THE BRIDGE WILL BE MOST ADAPTABLE FOR USE AT FUTURE BRIDGE SITES.
- 1.8
- WHEN THESE DRAWINGS REFER TO DECK PANELS, "SQUARE" INDICATES THAT PANELS ARE NOT SKEWED OR FLARED. IT DOES NOT MEAN THAT ALL 4 SIDES OF A PANEL ARE EQUAL LENGTH.
- 1.9
- THESE DRAWINGS HAVE COMBINED 2 PREVIOUSLY SEPARATE STANDARD DRAWING SETS (ONE FOR COMPOSITE BRIDGES AND ONE FOR NON-COMPOSITE BRIDGES) AND MOVED THE PREVIOUSLY SEPARATE STEEL ARMOUR FOR DECK ENDS STANDARD DRAWING INTO THIS SET.
- 1.10
- THE ENGINEERS SPECIFIED IN THE TITLE BLOCK HAVE WORKED IN ACCORDANCE WITH THEIR FIRMS' ENGINEERS AND GEOSCIENTISTS BC PERMITS TO PRACTICE IN COMBINING THE PREVIOUS SETS AND UPDATING CERTAIN ASPECTS BUT HAVE NOT UNDERTAKEN DETAILED REVIEW OF ALL ASPECTS OF THE DRAWINGS. ENGINEERS SPECIFIED IN TITLE BLOCKS OF PREVIOUS DRAWING SETS WERE RESPONSIBLE FOR WORK RELATING TO ASPECTS OF THESE DRAWINGS THAT HAVE NOT BEEN REVISED. THE MINISTRY OWNS, AND RETAINS FULL OVERALL RESPONSIBILITY FOR, THESE DRAWINGS AND RETAINS THE SUPERSEDED DRAWINGS IN MINISTRY FILES.
- 1.11
- SIGNIFICANT CHANGES MADE IN THIS STANDARD DRAWING SET ARE DESCRIBED IN THE BSM REVISION HISTORY.
- 1.12
- MINISTRY STANDARD BRIDGE DRAWINGS PROVIDE STANDARDS THAT SHALL BE USED, WHERE APPROPRIATE, BY ENGINEERS RESPONSIBLE FOR SPECIFIC FOREST SERVICE ROAD (FSR) BRIDGE PROJECTS.
- 1.13
- STANDARD BRIDGE DRAWINGS ARE NOT TO BE USED DIRECTLY FOR CONSTRUCTION (I.E.; FABRICATION AND/OR INSTALLATION.) PROJECT SPECIFIC DRAWINGS SHALL BE CREATED FOR CONSTRUCTION OF SPECIFIC PROJECTS.
- 1.14
- ENGINEERS INVOLVED WITH SPECIFIC PROJECTS SHALL DETERMINE WHETHER STANDARD DRAWING REQUIREMENTS ARE APPROPRIATE FOR THEIR PROJECT. IF THEY DETERMINE THAT CERTAIN REQUIREMENTS ARE INAPPROPRIATE, THEY SHALL PROPOSE VARIATIONS FOR APPROVAL BY THE MINISTRY ENGINEER.

REV #	DATE	REVISION DESCRIPTION	DRAFTING	DESIGN	CHECK / REVIEW	APPROVAL	<div><div><div>BRITISH COLUMBIA Ministry of Forests</div></div><div>STANDARD BRIDGE DRAWING</div></div>
0	DEC. 4, 2023	UPDATED & COMBINED COMP. & NON-COMP. DWG. SETS.	N.HARVEY (CREEKSIDE)	M. PENNER (MINISTRY)	J. HENLEY (ASSOC. ENG.)	J. HARVEY (MINISTRY)	
							STEEL GIRDER CONCRETE DECK
							SHEET 01 OF 10
							GENERAL NOTES
							DWG #: STD-EC-030-01


NOT FOR CONSTRUCTION
ASSUME NOT TO SCALE



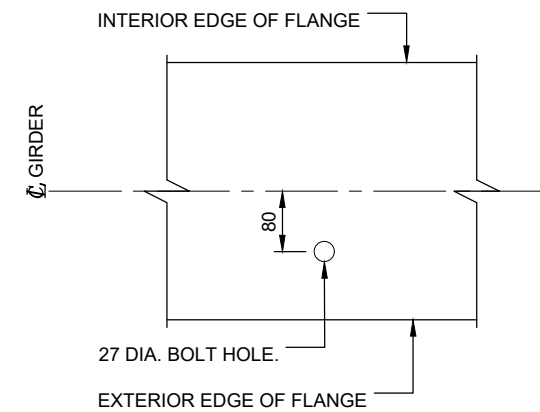
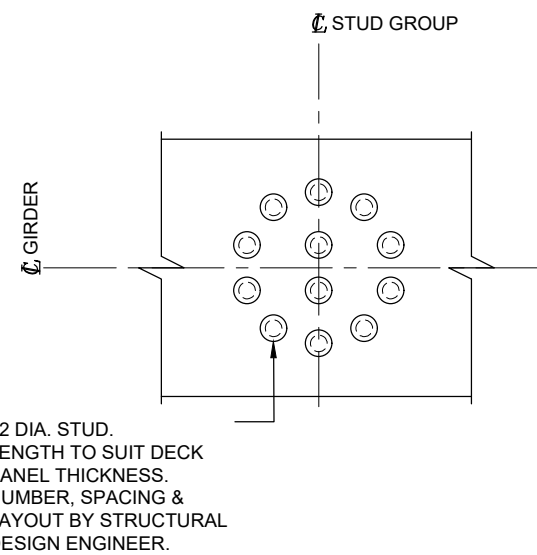
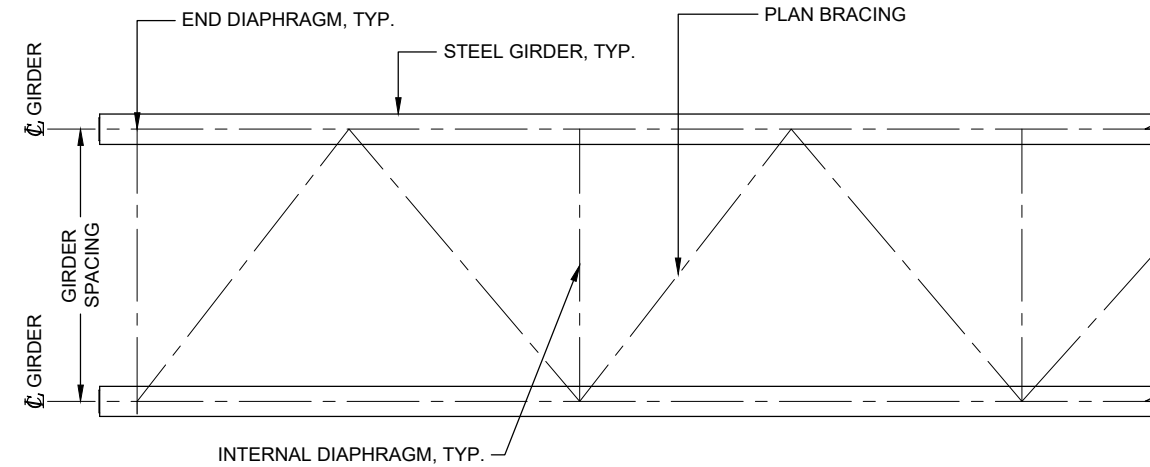
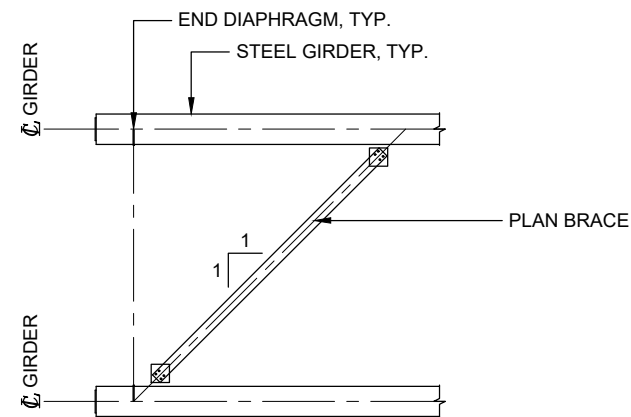
BRIDGE ELEVATION (SHOWING SOME TYPICAL STANDARD COMPONENTS AND OPTIONS)
1:125




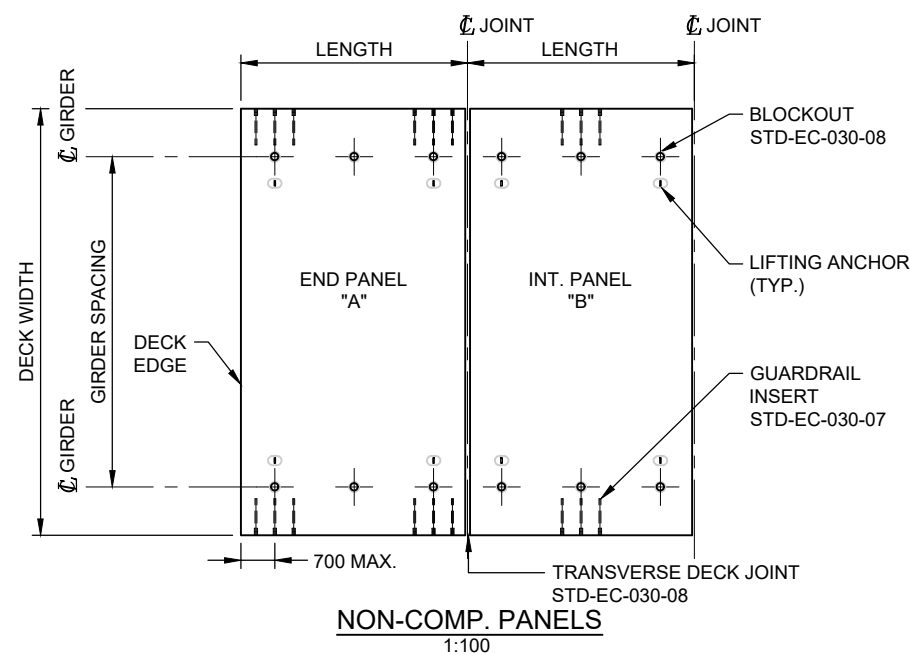
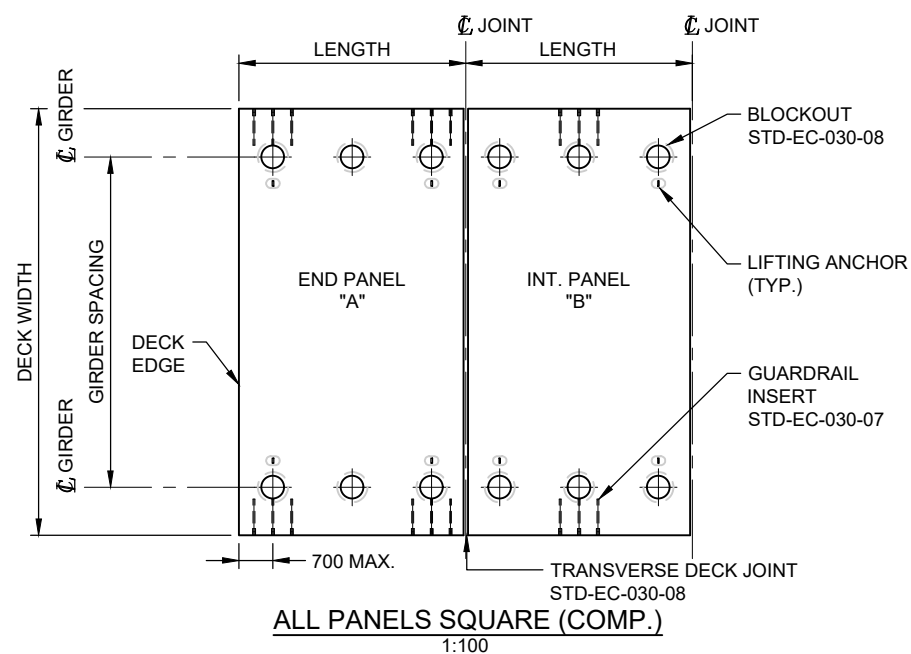
BRIDGE SECTION (SHOWING SOME TYPICAL STANDARD COMPONENTS AND OPTIONS)
1:50

REV #	DATE	REVISION DESCRIPTION	DRAFTING	DESIGN	CHECK / REVIEW	APPROVAL	 BRITISH COLUMBIA Ministry of Forests STANDARD BRIDGE DRAWING
0	DEC. 4, 2023	UPDATED & COMBINED COMP. & NON-COMP. DWG. SETS.	N. HARVEY (CREEKSIDE)	M. PENNER (MINISTRY)	J. HENLEY (ASSOC. ENG.)	J. HARVEY (MINISTRY)	
							STEEL GIRDER CONCRETE DECK
							SHEET 02 OF 10
							GENERAL ARRANGEMENT
							DWG #: STD-EC-030-02

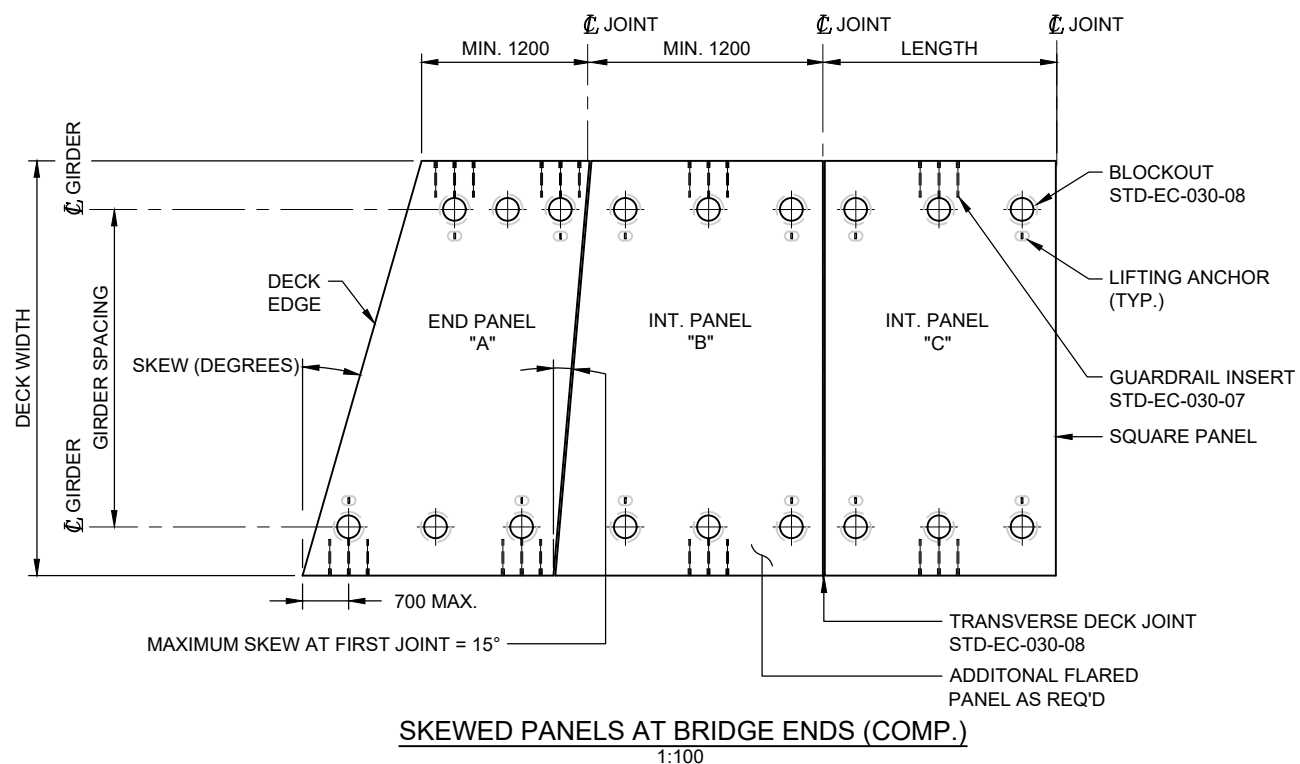
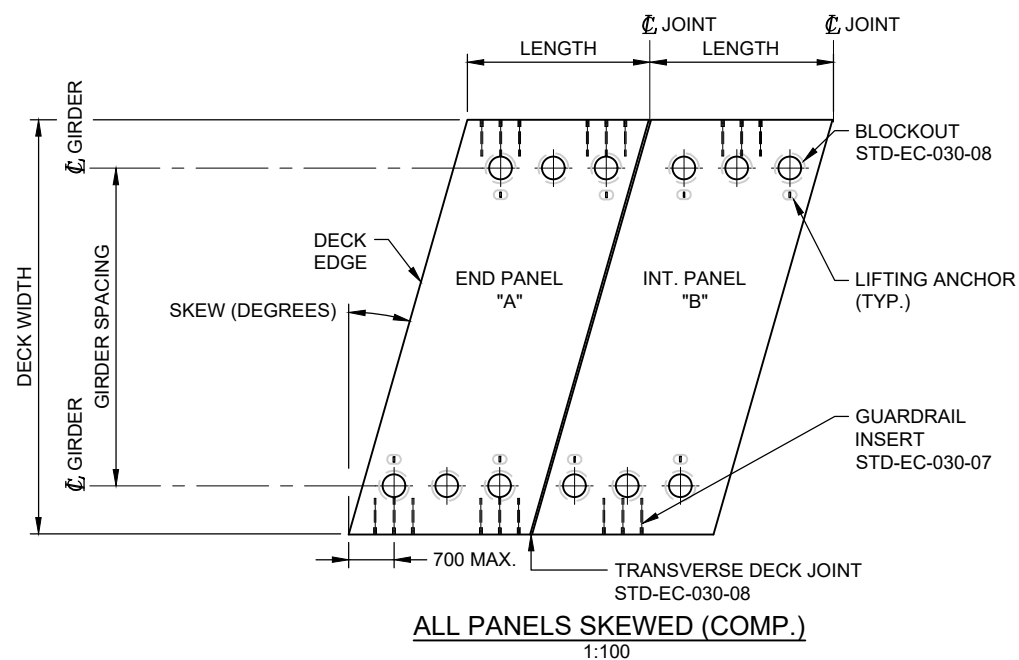
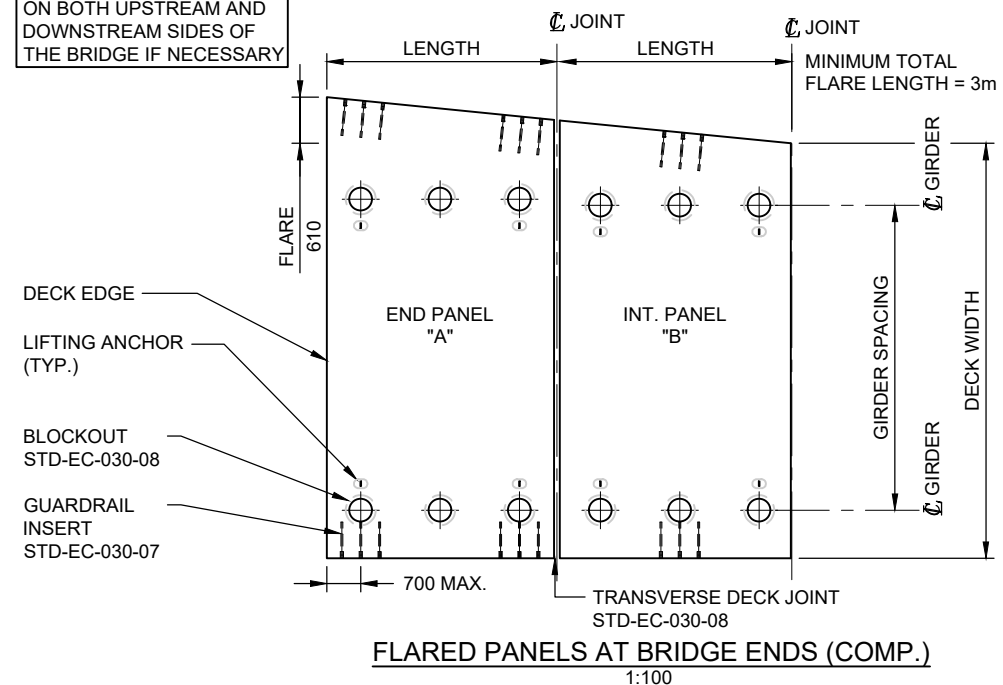
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							STANDARD BRIDGE DRAWING
							STEEL GIRDER CONCRETE DECK
							SHEET 03 OF 10
							STEEL DETAILS
							DWG #: STD-EC-030-03

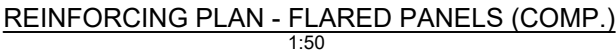
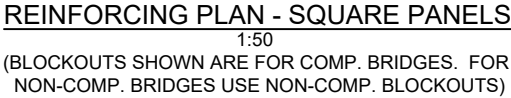


NOTE:
A PANEL MAY BE FLARED
ON BOTH UPSTREAM AND
DOWNSTREAM SIDES OF
THE BRIDGE IF NECESSARY




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							STANDARD BRIDGE DRAWING
							STEEL GIRDER CONCRETE DECK
							SHEET 04 OF 10
							DECK PANEL - TYPES
							DWG #: STD-EC-030-04

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0	DEC. 4, 2023	UPDATED & COMBINED COMP. & NON-COMP. DWG. SETS.	N.HARVEY (CREEKSIDE)	M. PENNER (MINISTRY)	J. HENLEY (ASSOC. ENG.)	J. HARVEY (MINISTRY)



BRITISH COLUMBIA Ministry of Forests

STANDARD BRIDGE DRAWING

STEEL GIRDER CONCRETE DECK

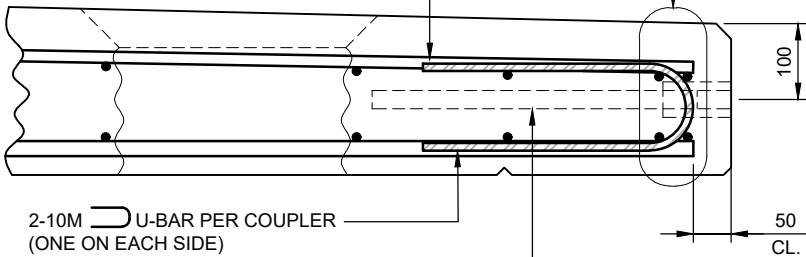
SHEET 05 OF 10

REINFORCING PLAN - SQUARE & FLARED PANELS

DWG #: STD-EC-030-05

THE FIRST AND SECOND LONGITUDINAL REINF. BARS FROM THE DECK EDGE (TOP AND BOTTOM) SHALL BE LOCATED AS SHOWN. THE FIRST REINF. BAR SHALL BE LOCATED OUTSIDE THE U-BAR WITH 50 mm SIDE COVER. THE SECOND REINF. BAR SHALL BE LOCATED AS CLOSE AS PRACTICALLY POSSIBLE TO THE FIRST REINF BAR. OTHER REINF. DETAILS TO BE DETERMINED BY STRUCTURAL DESIGN ENGINEER.

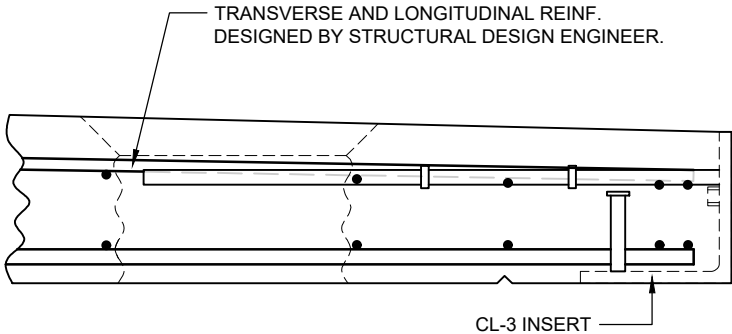
TRANSVERSE AND LONGITUDINAL REINF. DESIGNED BY STRUCTURAL DESIGN ENGINEER EXCEPT AS NOTED.



GUARDRAIL INSERT: 25 DIA. x 100 LG. GALV. THREADED COUPLER (MIN. TENSILE STRENGTH = 69 kN) C/W ONE 25M x 430 LG. REBAR (THREADED ONE END) INSERTED 40 mm INTO COUPLER. COUPLER DESIGNED TO RECEIVE 25 DIA. GALV. A307 GR. B BOLT AFTER PANEL FABRICATION. FOR NUMBER AND LOCATION, REFER TO THE STANDARD BARRIER DRAWINGS (STD-EC-010 SERIES)

INSERT AND EDGE REBAR DETAIL FOR CL-1 AND CL-2 GUARDRAILS

1:10



INSERT AND EDGE REBAR DETAIL FOR CL-3 GUARDRAILS

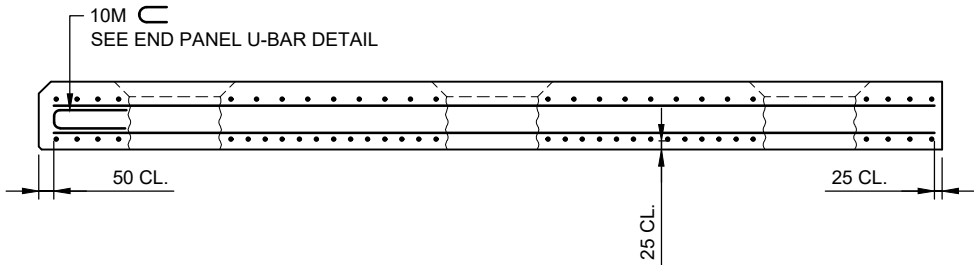
1:10

NOTES FOR PANELS WITH CL-3 GUARDRAILS

- REFER TO THE STANDARD BARRIER DRAWINGS (STD-EC-010 SERIES) FOR INSERT DETAILS.
- CL-3 INSERT MODIFICATIONS MAY BE REQUIRED TO ACCOMMODATE FLARED OR SKEWED DECK PANELS TO ADDRESS CONFLICT WITH THE DECK REINFORCEMENT, STUD POCKETS AND BALLAST WALL. MODIFICATIONS TO BE APPROVED BY MINISTRY ENGINEER.
- STANDARD BAR SPACING REQ'MENTS SHALL BE MET, CONSIDERING THE DEFORMED BARS AND STACKED STUDS TO BE EQUIVALENT TO REBAR.
- U-BARS REQ'D FOR CL-1 & CL-2 ARE NOT REQ'D FOR CL-3.

GENERAL NOTE

BLOCKOUTS SHOWN ON THIS SHEET ARE FOR COMP. BRIDGES. USE NON-COMP. BLOCKOUTS FOR NON-COMP. BRIDGES.



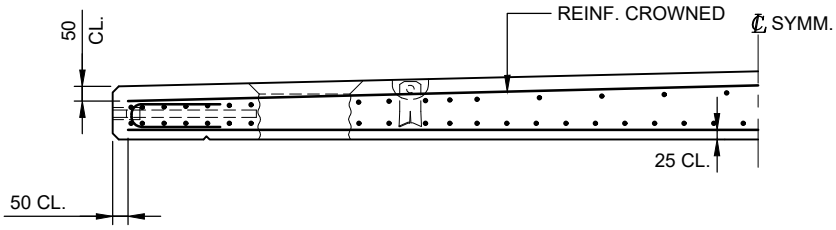
SECTION B B
1:25 05 06

PANEL SIDE CHAMFERS & DRIP GROOVE

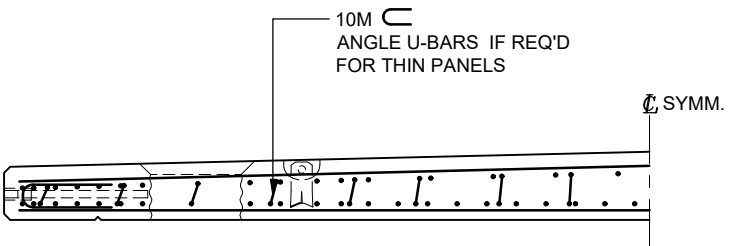
1:10

NOTE: 15 MIN. COVER TO REINF. @ DRIP GROOVE PERMITTED

NOTE: DRIP GROOVE TO BE CONTINUOUS THROUGH GROUTED JOINTS.




SECTION A A
1:25 05 06 CROWNED TOP REINF.

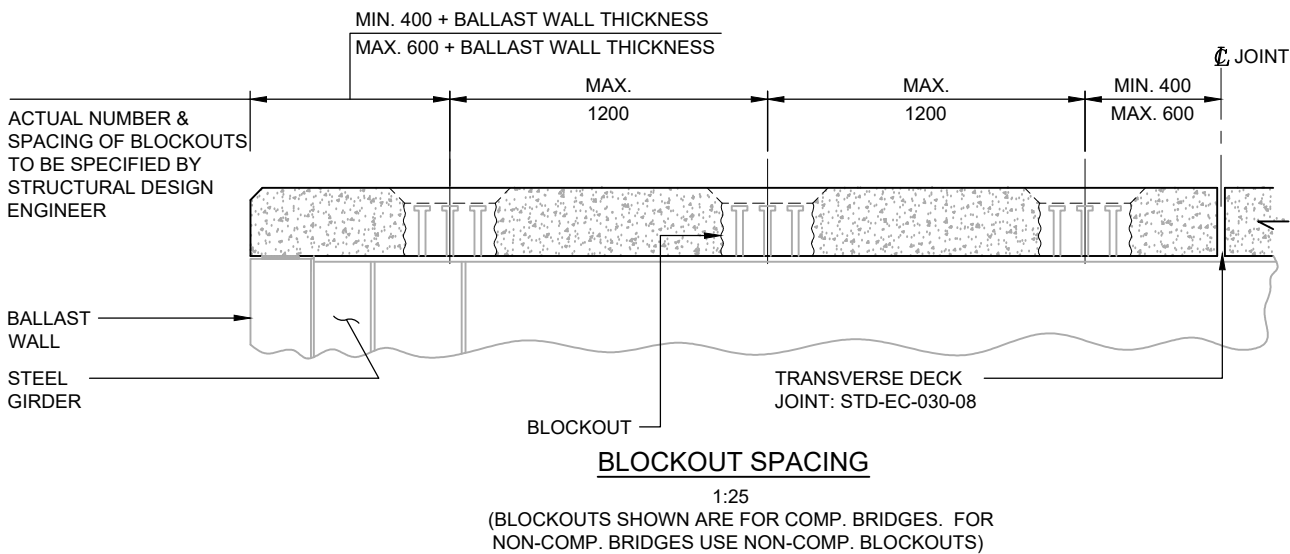
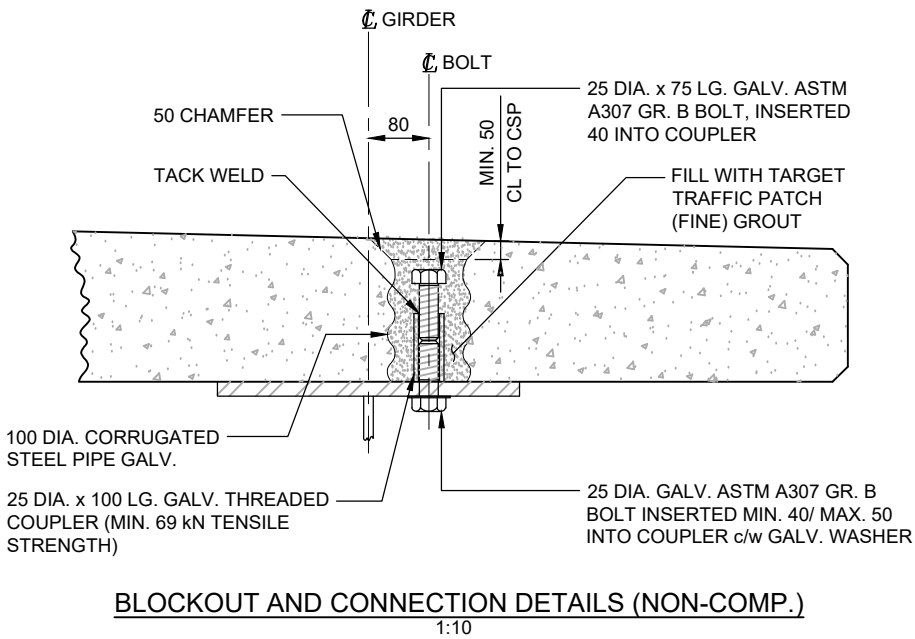
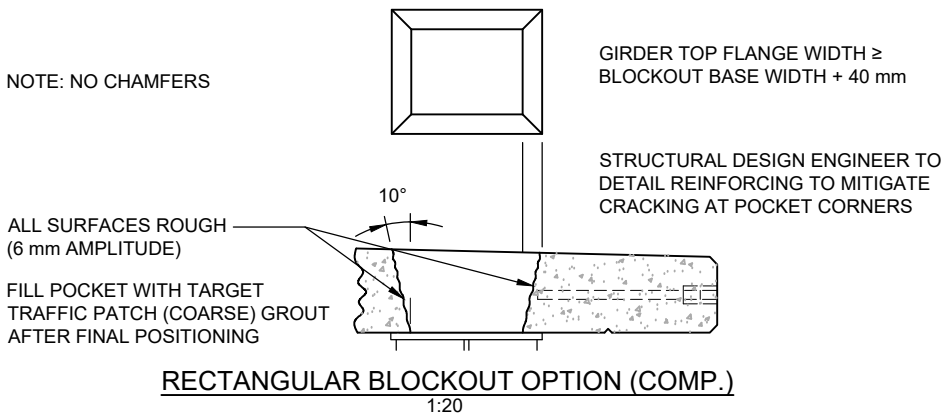
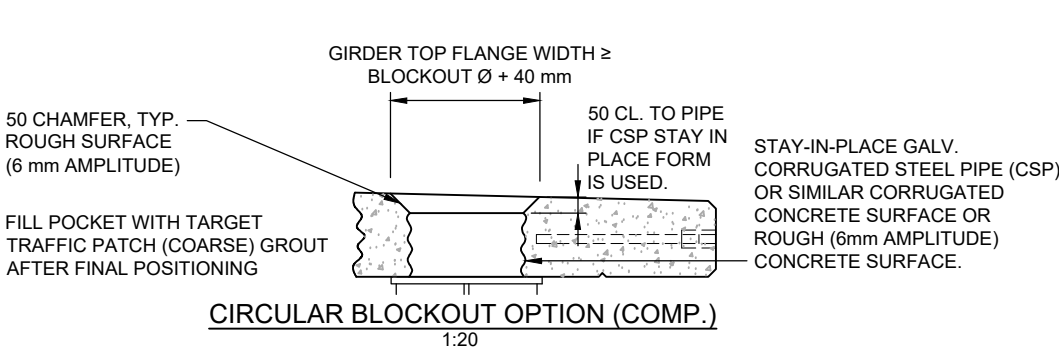
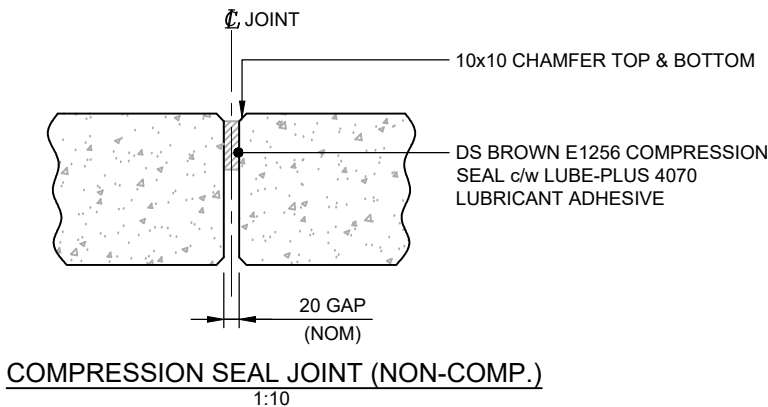
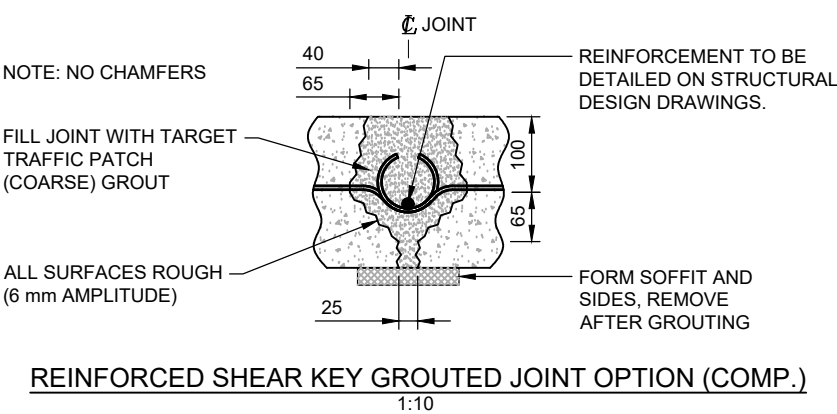
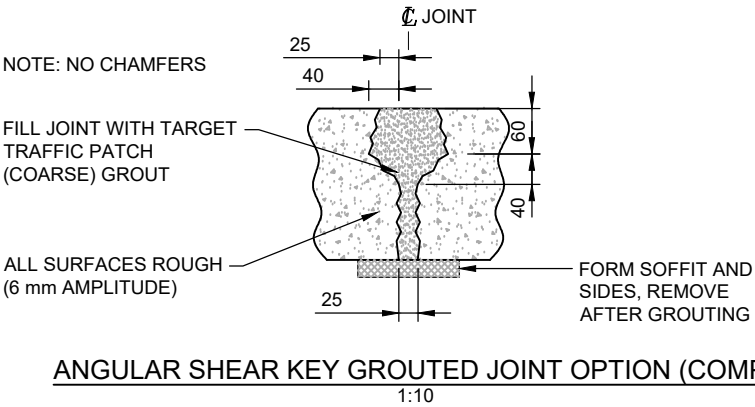
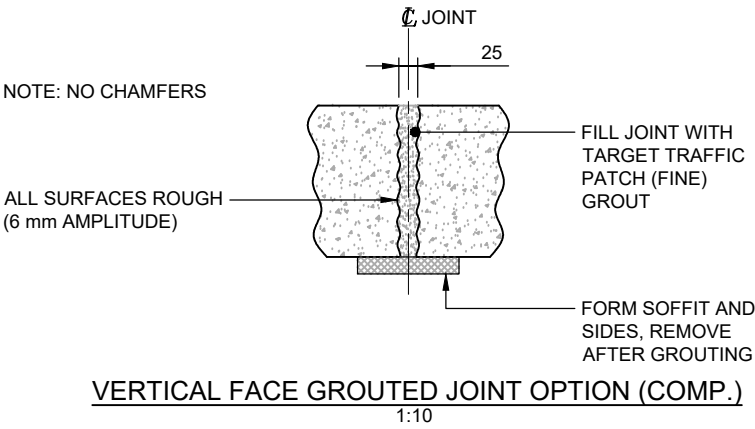



END PANEL U-BAR DETAIL

1:25

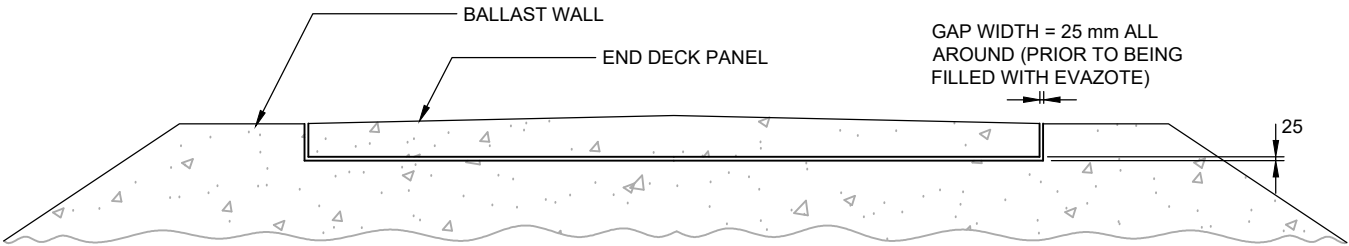
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0	DEC. 4, 2023	UPDATED & COMBINED COMP. & NON-COMP. DWG. SETS.	N. HARVEY (CREEKSIDE)	M. PENNER (MINISTRY)	J. HENLEY (ASSOC. ENG.)	J. HARVEY (MINISTRY)	
							STEEL GIRDER CONCRETE DECK
							SHEET 07 OF 10
							MISC. PANEL DETAILS
							DWG #: STD-EC-030-07

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							STEEL GIRDER CONCRETE DECK
							SHEET 08 OF 10
							PANEL BLOCKOUT & TRANSVERSE DECK JOINT DETAILS
							DWG #: STD-EC-030-08

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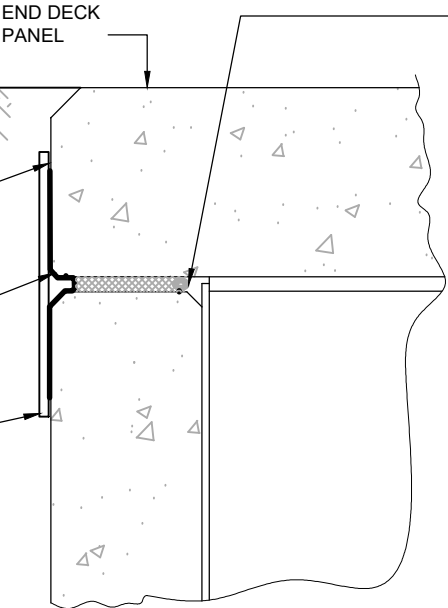
DECK END JOINT OUTLINE
1:50

NOTE: JOINT WATERPROOFING AND PROTECTION OF WATERPROOFING REQUIRED (AS DESCRIBED BELOW) FOR NON-COMP. BRIDGES INTENDED TO BE AT ONE SITE FOR > 10 YEARS AND FOR ALL COMP. BRIDGES.

CONTINUOUS DURABLE JOINT WATERPROOFING MEMBRANE (300mm WIDE) TO BE DETAILED ON STRUCTURAL DESIGN DRAWINGS. WATERPROOFING TO BE BONDED TO BOTH THE DECK PANEL AND BALLAST WALL EXCEPT AT CHAMFERS, WHERE THE WATERPROOFING EXTENDS 20 mm (UNBONDED) INTO THE JOINT TO ALLOW FOR HORIZ. BALLAST WALL MOVEMENT WITHOUT DAMAGING WATERPROOFING.

10x10 CHAMFER

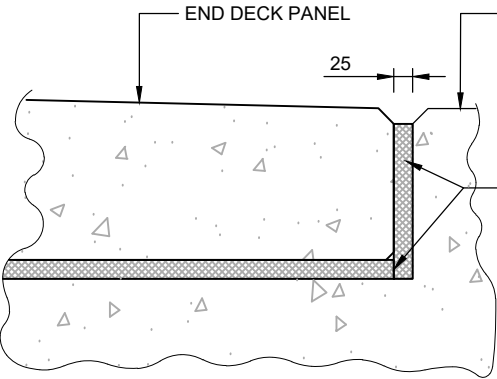
WATERPROOFING TO BE PROTECTED FROM FILL BY ASPHALT IMPREGNATED FIBREBOARD OR EQUIVALENT



BOND EVAZOTE TO BALLAST WALL WITH SIKA ANCHORFIX 3001 OR EQUIV.


NOTE: WITH THIS JOINT THE BALLAST WALL DOES NOT PROVIDE VERTICAL SUPPORT TO THE DECK PANEL. IF NECESSARY THE STRUCTURAL DESIGN DRAWINGS SHALL SHOW ALTERNATE DETAILS THAT PROVIDE SUPPORT TO THE DECK PANEL FROM THE BALLAST WALL.

DECK END JOINT - SECTION
1:10

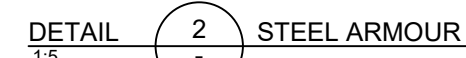
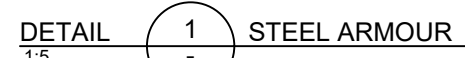
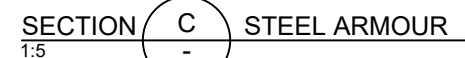
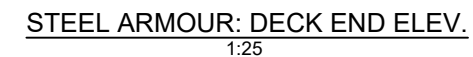



BOND EVAZOTE TO BALLAST WALL WITH SIKA ANCHORFIX 3001 OR EQUIV.

DECK END JOINT AT CORNER OF DECK PANEL
1:10

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							STANDARD BRIDGE DRAWING
							STEEL GIRDER CONCRETE DECK
							SHEET 09 OF 10
							DECK END JOINT DETAILS
							DWG #: STD-EC-030-09

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							SHEET 10 OF 10
							DECK END ARMOUR OPTIONS
							DWG #: STD-EC-030-10

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