




Ministry of Forests

STANDARD BRIDGE DRAWINGS:
STEEL GIRDER TIMBER DECK

DRAWING SCHEDULE			
DRAWING NUMBER	DRAWING TITLE	REV.	DATE
STD-EC-020-01	GENERAL NOTES - SHEET 1	0	NOVEMBER 23, 2023
STD-EC-020-02	GENERAL NOTES - SHEET 2	0	NOVEMBER 23, 2023
STD-EC-020-03	PERMANENT, CONTINUOUS TIMBER DECK BRIDGE GENERAL ARRANGEMENT	1	MARCH 26, 2012
STD-EC-020-04	PORTABLE, CONTINUOUS TIMBER DECK BRIDGE GENERAL ARRANGEMENT	1	MARCH 26, 2012
STD-EC-020-05	MODULAR TIMBER DECK PANEL, GENERAL ARRANGEMENT & DETAILS	1	MARCH 26, 2012
STD-EC-020-06	MODULAR TIMBER DECK PANELS, ATTACHMENT DETAILS - NEW BRIDGES	1	MARCH 26, 2012
STD-EC-020-07	MODULAR TIMBER DECK PANELS, ATTACHMENT DETAILS FIELD RETROFIT TO EXISTING BRIDGES	1	MARCH 26, 2012


1. GENERAL NOTES

- 1.1 THESE STANDARD DRAWINGS APPLY TO SINGLE LANE STEEL GIRDER BRIDGES WITH TIMBER DECKS.
- 1.2 APPLICABLE BRIDGE GIRDER LENGTH (OUT-TO-OUT): 6.096 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 THE ENGINEERS SPECIFIED IN THE TITLE BLOCK HAVE WORKED IN ACCORDANCE WITH THEIR FIRMS' ENGINEERS AND GEOSCIENTISTS BC PERMITS TO PRACTICE. THE MINISTRY OWNS, AND RETAINS FULL OVERALL RESPONSIBILITY FOR, THESE DRAWINGS AND RETAINS SUPERSEDED VERSIONS OF THESE DRAWINGS IN MINISTRY FILES.
- 1.8 SIGNIFICANT CHANGES MADE IN THIS STANDARD DRAWING SET ARE DESCRIBED IN THE BSM REVISION HISTORY.
- 1.9 MINISTRY STANDARD BRIDGE DRAWINGS PROVIDE STANDARDS THAT SHALL BE USED, WHERE APPROPRIATE, BY ENGINEERS RESPONSIBLE FOR SPECIFIC FOREST SERVICE ROAD (FSR) BRIDGE PROJECTS.
- 1.10 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.
- 1.11 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	
0	NOV. 23, 2023	NEW GENERAL NOTES & MISC. DWG. REVS	M. DAVIES (SNT ENG.)	M. PENNER (MINISTRY)	C. DIPASQUALE (SNT ENG.)	J. HARVEY (MINISTRY)	 BRITISH COLUMBIA Ministry of Forests STANDARD BRIDGE DRAWING
							STEEL GIRDER TIMBER DECK
							SHEET 01 OF 07
							GENERAL NOTES - SHEET 1
							DWG #: STD-EC-020-01

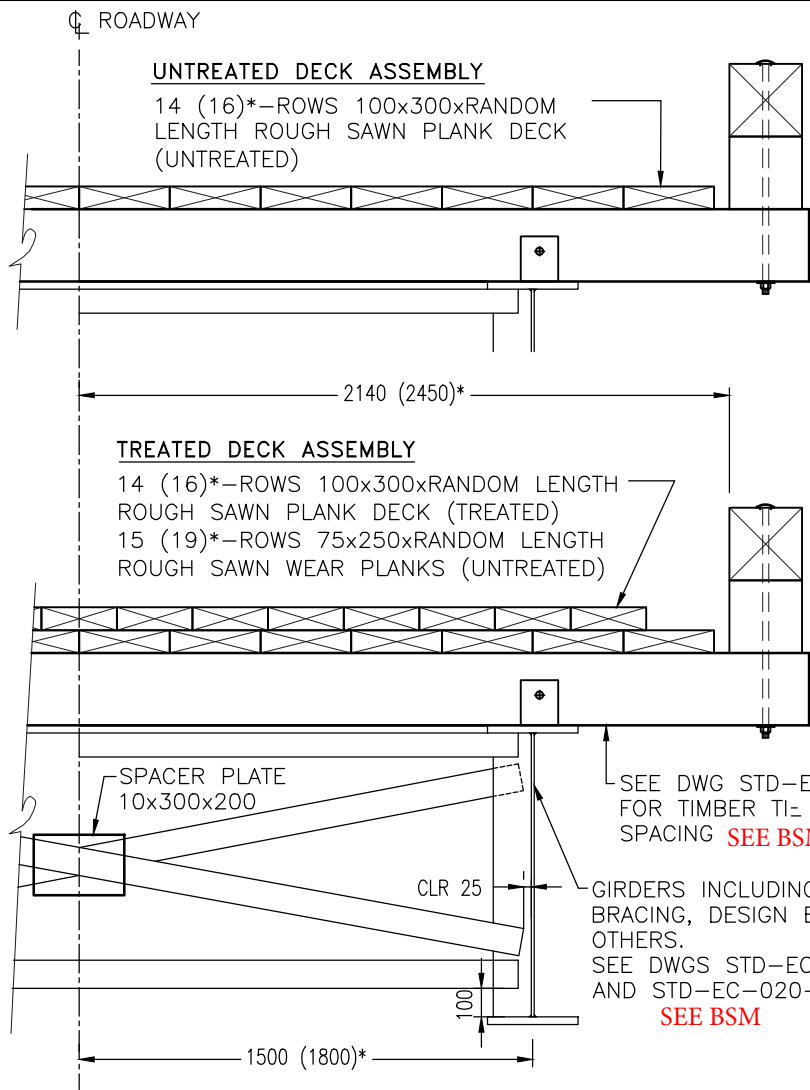
**NOT FOR CONSTRUCTION
ASSUME NOT TO SCALE**

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REV #	DATE	REVISION DESCRIPTION	DRAFTING	DESIGN	CHECK / REVIEW	APPROVAL	
0	NOV. 23, 2023	NEW GENERAL NOTES & MISC. DWG. REVS	M. DAVIES (SNT ENG.)	M. PENNER (MINISTRY)	C. DIPASQUALE (SNT ENG.)	J. HARVEY (MINISTRY)	 BRITISH COLUMBIA Ministry of Forests STANDARD BRIDGE DRAWING
							STEEL GIRDER TIMBER DECK
							SHEET 02 OF 07
							GENERAL NOTES - SHEET 2
							DWG #: STD-EC-020-02

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2009/02/19 \\STUDY-PC\Public\Documents\ACAD Dwg

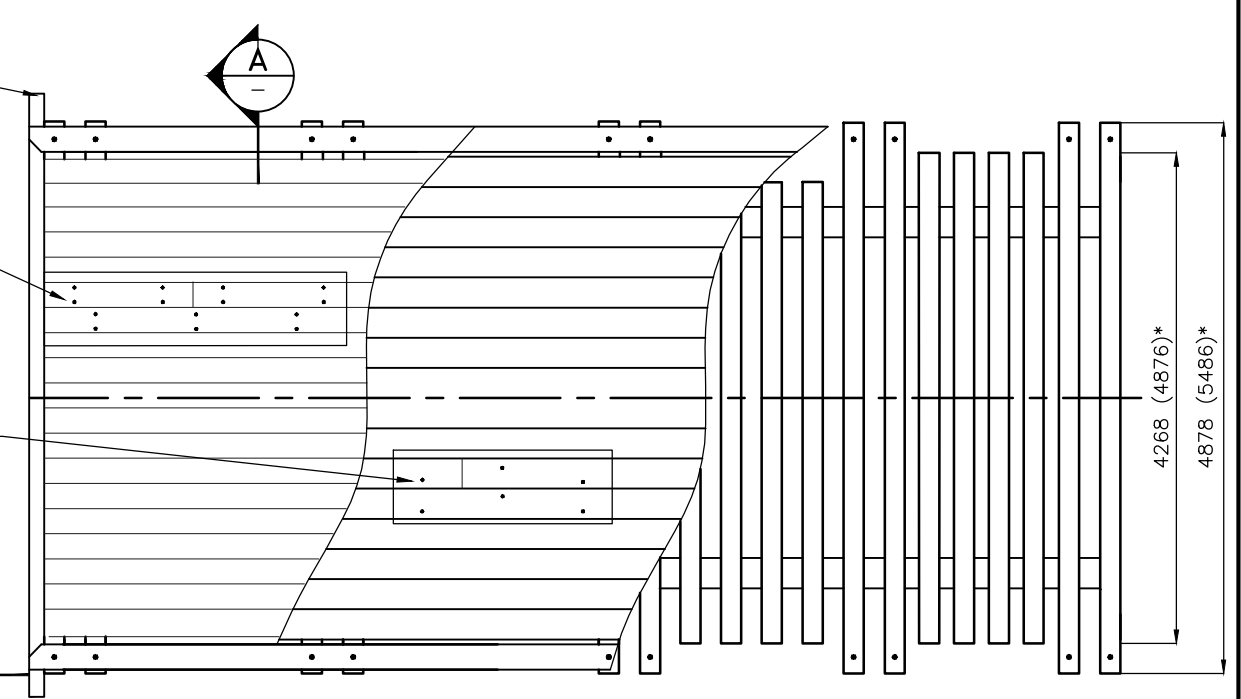
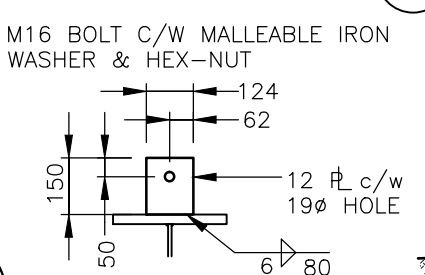
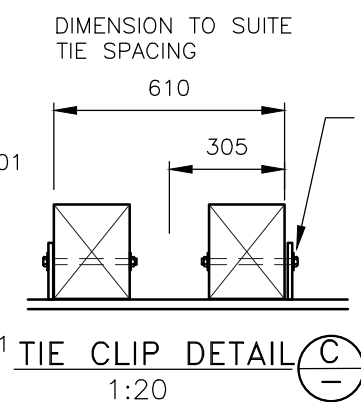


- GUARD RAILS SHALL ONLY BE BOLTED TO TIES THAT ARE BOLTED TO GIRDERS
- ALL TIMBER CROSS TIES TO BE INSTALLED WITH LONG SIDES VERTICAL
- DECK PLANK BUTT JOINTS SHALL BE CENTERED ON CROSS TIES. JOINTS IN ADJACENT LINES OF PLANKS SHALL BE STAGGERED A MINIMUM OF 2 TIE SPACES

FOR PERMANENT BRIDGES, BALLAST WALLS TO BE 150x300x6000 TREATED TIMBER BOLTED TO GIRDER END P's UNLESS SPECIFIED OTHERWISE.

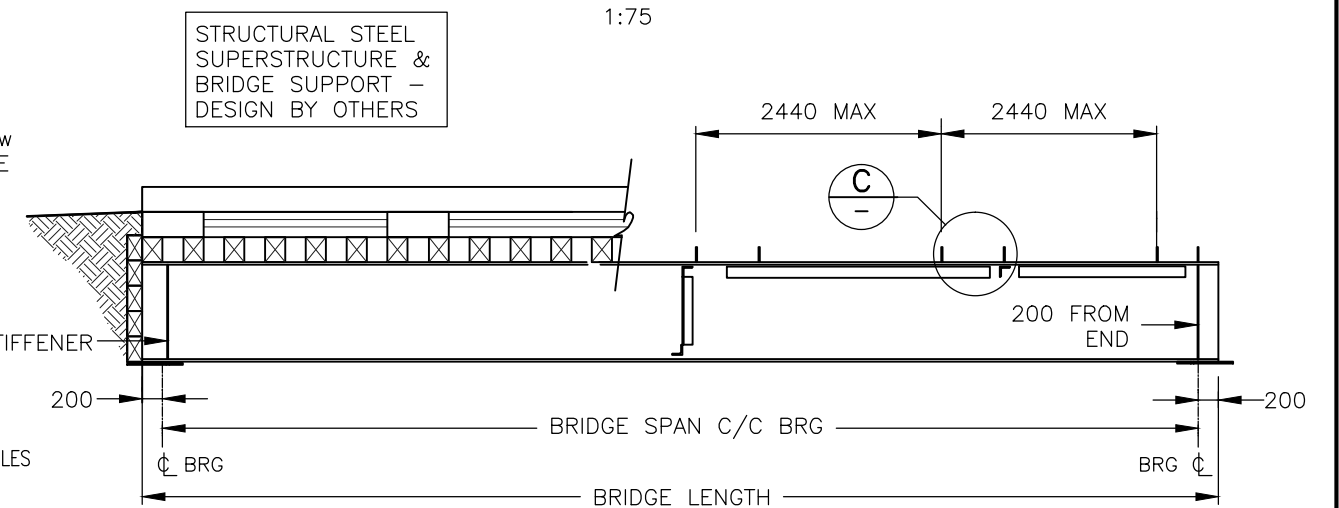
- WEAR PLANKS NAILING PATTERN:
- WEAR PLANKS TO DECK PLANKS
 - 150mm GALV. COMMON SPIKES
 - 2 @ 150 APART 300 FROM ENDS
 - 2 @ 150 APART @ +/-1000mm O/C TYPICAL

- DECK PLANKS NAILING PATTERN:
- DECK PLANKS TO CROSS-TIES
 - 200mm GALV. COMMON SPIKES
 - 1 SPIKE, CENTERED ON PLANK AND TIE AT EACH END; PRE-DRILL (6mm) TO PREVENT SPLITTING
 - 1 SPIKE EVERY TIE, STAGGERED SIDE TO SIDE @ 150 APART

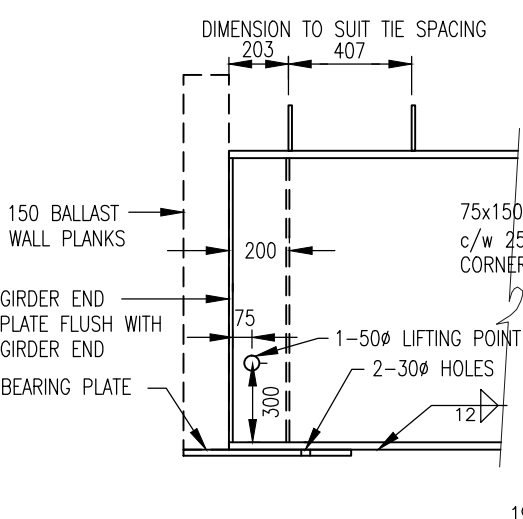


DECK PLAN
1:75

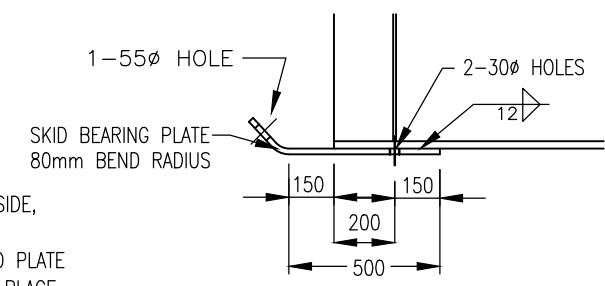
A TYPICAL DIAPHRAGM/DECK SECTION
4268 (4876)* WIDE DECK
1:25



TYPICAL ELEVATION
1:75



END GIRDER/TIE CLIP DETAIL (B)
1:25



OPTIONAL SKID PLATE BEARING DETAIL
1:25

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BRITISH COLUMBIA
MINISTRY OF FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS
ENGINEERING BRANCH

STANDARD BRIDGE DRAWING

**PERMANENT, CONTINUOUS TIMBER DECK BRIDGE
GENERAL ARRANGEMENT**

SCALE AS SHOWN
Designed ABS Date 2012/03/12
Checked LT Date 2012/03/20
Drawn ABS Date 2012/03/12

Rev	Date	DESCRIPTION	Init
-	-	-	-

ORIGINAL SIGNED and SEALED BY:
A.B. SWAN, PEng

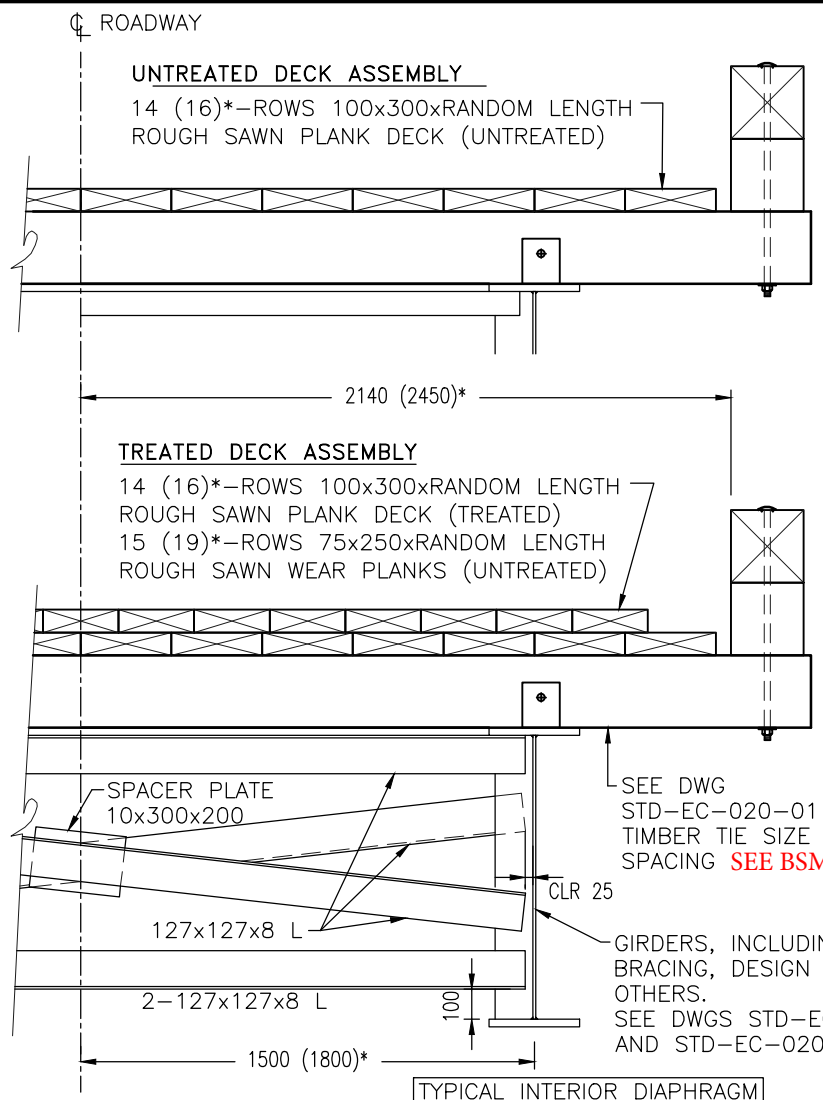
DESIGN ENGINEER: A.B. SWAN P.ENG
DATE: MARCH 26, 2012

MFR ENGINEER:
DATE

APPROVED BY: BRIAN CHOW, P.ENG, CHIEF ENGINEER
DATE:

FILE No. _____

DRAWING No.
STD-EC-020-03



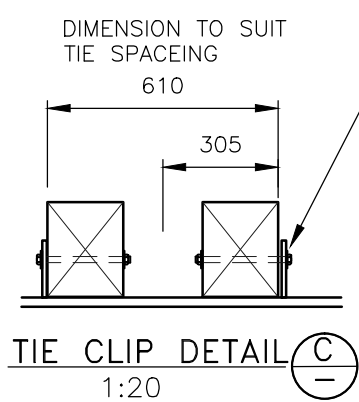
A TYPICAL END DIAPHRAGM/DECK SECTION
1:25

- GUARD RAILS SHALL ONLY BE BOLTED TO TIES THAT ARE BOLTED TO GIRDERS
- ALL TIMBER CROSS TIES TO BE INSTALLED WITH LONG SIDES VERTICAL
- DECK PLANK BUTT JOINTS SHALL BE CENTERED ON CROSS TIES. JOINTS IN ADJACENT LINES OF PLANKS SHALL BE STAGGERED A MINIMUM OF 2 TIE SPACES

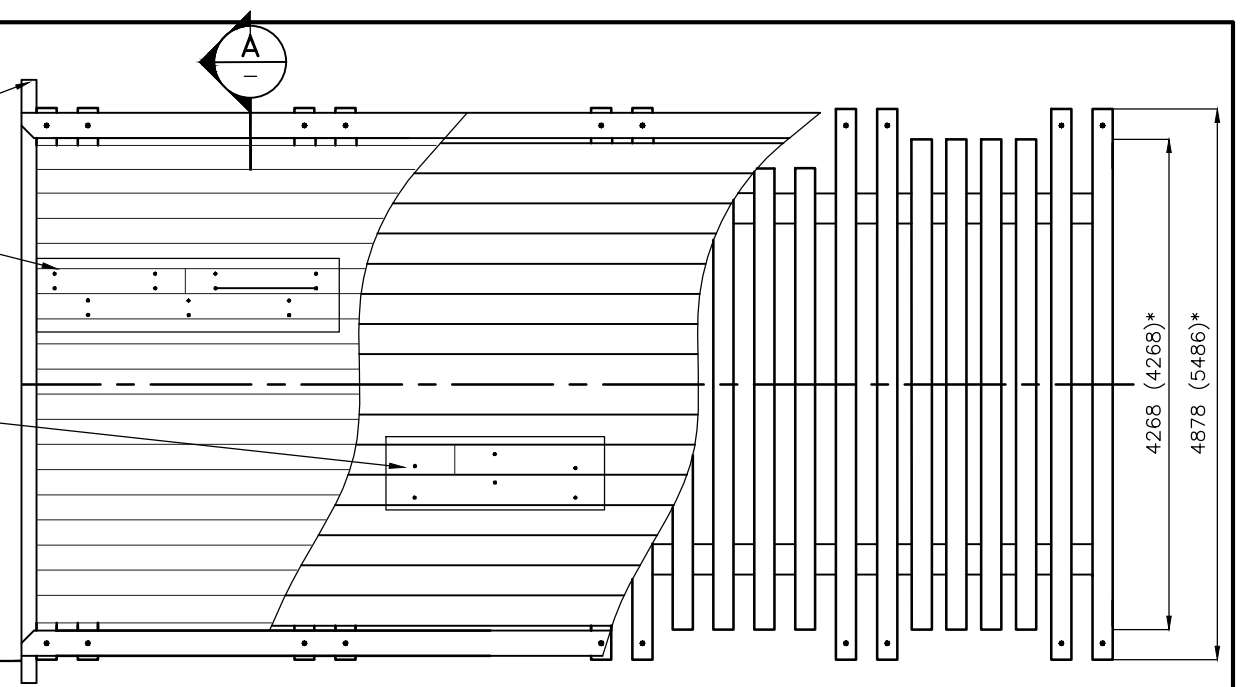
FOR PORTABLE BRIDGES BALLAST WALLS TO BE 150x300x6000 TREATED TIMBER BOLTED TO GIRDER END PL'S UNLESS SPECIFIED OTHERWISE.

- WEAR PLANKS NAILING PATTERN:
- WEAR PLANKS TO DECK PLANKS
 - 150mm GALV. COMMON SPIKES
 - 2@150 APART 300 FROM ENDS
 - 2@150 APART @ +/- 1000mm O/C TYPICAL

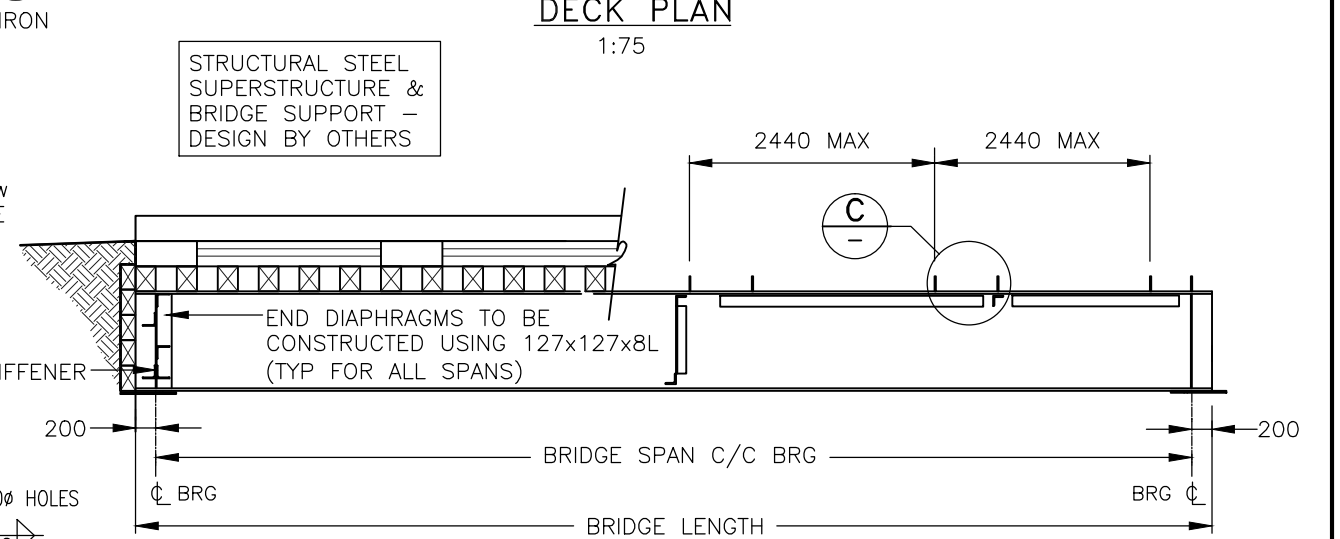
- DECK PLANKS NAILING PATTERN:
- DECK PLANKS TO CROSS-TIES
 - 200mm GALV. COMMON SPIKES
 - 1 SPIKE, CENTERED ON PLANK AND TIE AT EACH END; PRE-DRILL (6mm) TO PREVENT SPLITTING
 - 1 SPIKE EVERY TIE, STAGGERED SIDE TO SIDE @ 150 APART



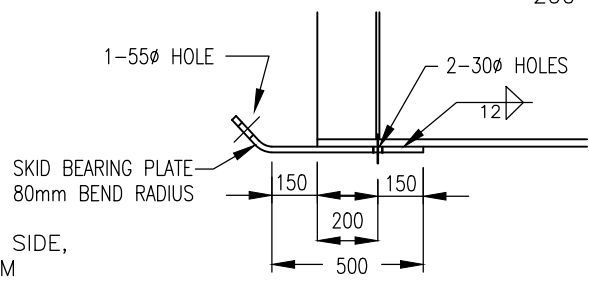
TIE CLIP DETAIL
1:20



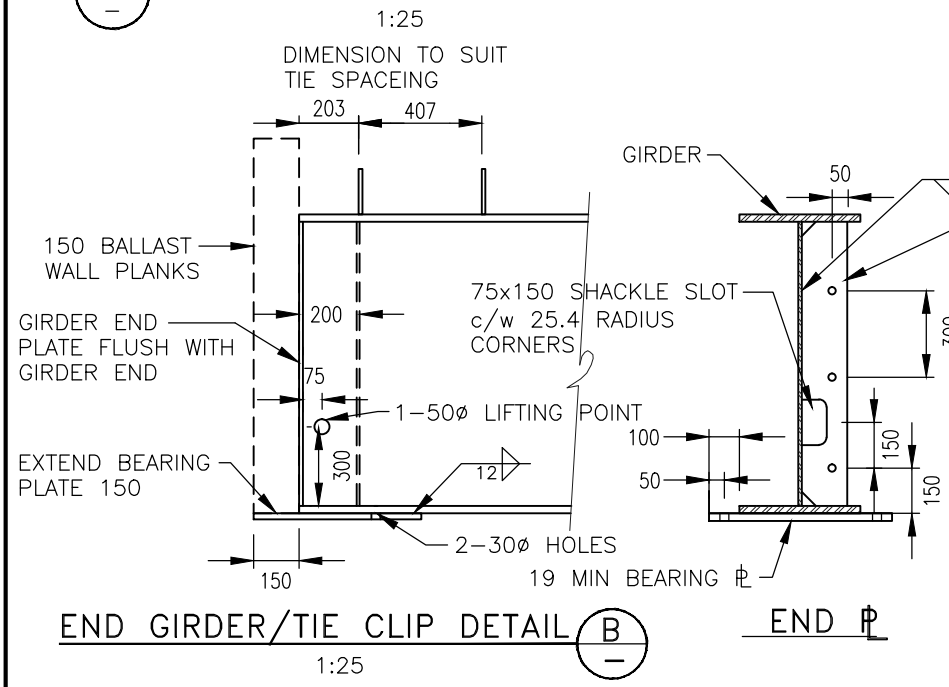
DECK PLAN
1:75



TYPICAL ELEVATION
1:75



OPTIONAL SKID PLATE BEARING DETAIL
1:25



END GIRDER/TIE CLIP DETAIL
1:25

**NOT FOR CONSTRUCTION
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SCALE	AS SHOWN	Designed	ABS	Date	2012/03/12
		Checked	LT	Date	2012/03/20
		Drawn	ABS	Date	2012/03/12
Rev	Date	DESCRIPTION	Init		
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BRITISH COLUMBIA
MINISTRY OF FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS
ENGINEERING BRANCH

STANDARD BRIDGE DRAWING

PORTABLE, CONTINUOUS TIMBER DECK BRIDGE
GENERAL ARRANGEMENT

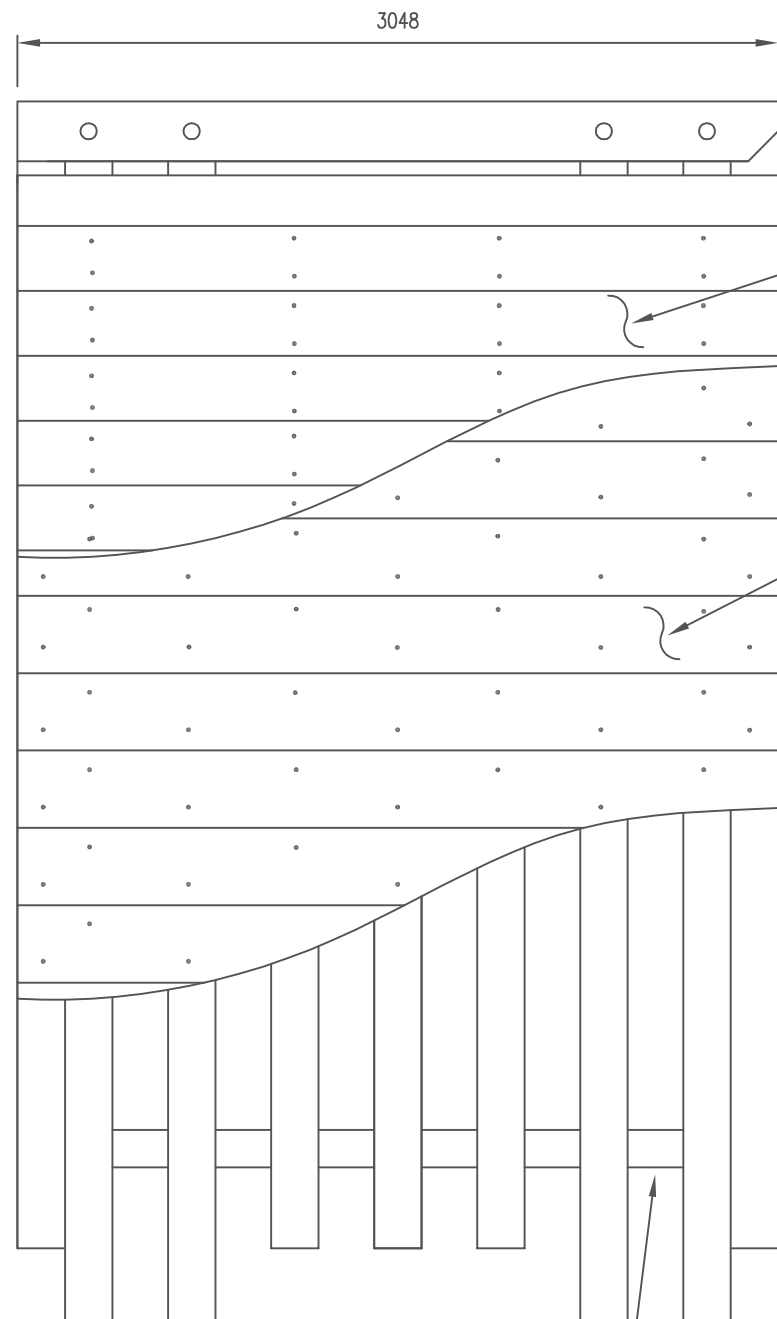
ORIGINAL SIGNED and SEALED BY:
A.B. SWAN, PEng

DESIGN ENGINEER: A.B. SWAN P.ENG
DATE: MARCH 26, 2012

MFR ENGINEER:
DATE

APPROVED BY: BRIAN CHOW, P.ENG, CHIEF ENGINEER
DATE:

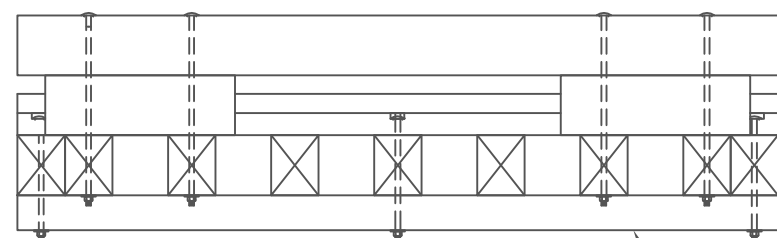
FILE No. _____ DRAWING No. STD-EC-020-04



DECK MODULE PLAN
1:30

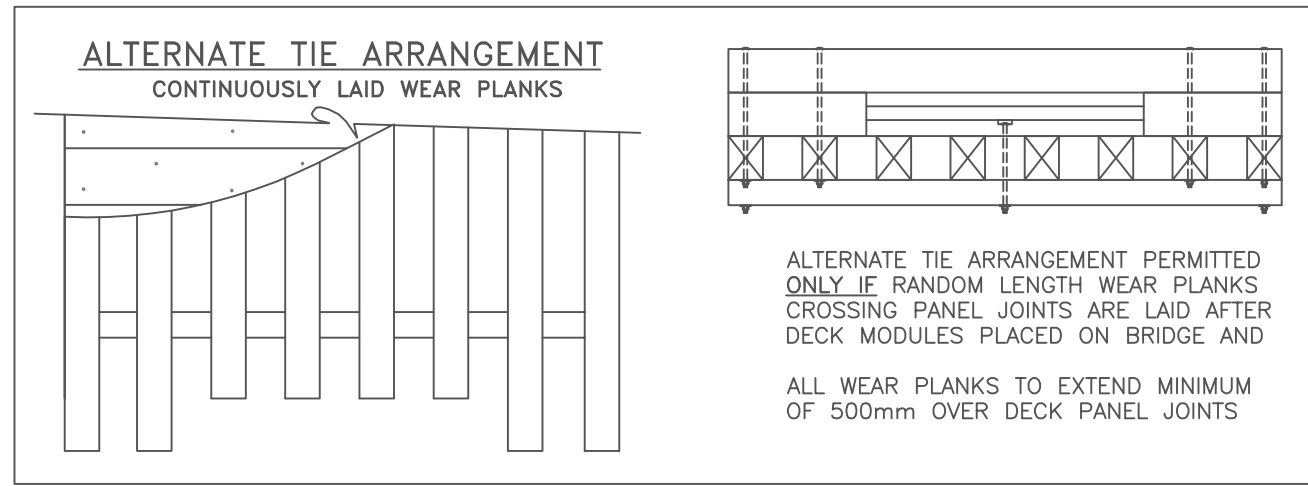
- 125x125 CHAMFER ON CURB RAILS @ ENDS OF BRIDGE ONLY
- WEAR PLANKS NAILING PATTERN:
 - WEAR PLANKS TO DECK PLANKS
 - 150mm GALV. COMMON SPIKES
 - 2 SPIKES @ 150 APART, 300 FROM ENDS
 - 2 SPIKES @ 150 APART @ +/-800mm O/C TYPICAL
- DECK PLANKS NAILING PATTERN:
 - DECK PLANKS TO CROSS-TIES
 - 200mm GALV. COMMON SPIKES
 - 1 SPIKE EVERY TIE, STAGGERED SIDE TO SIDE @150 APART
 - PRE-DRILL (6mm) PLANK END SPIKES TO PREVENT SPLITTING

OPTIONAL 150x150x3048 STIFFENING TIMBERS (2)

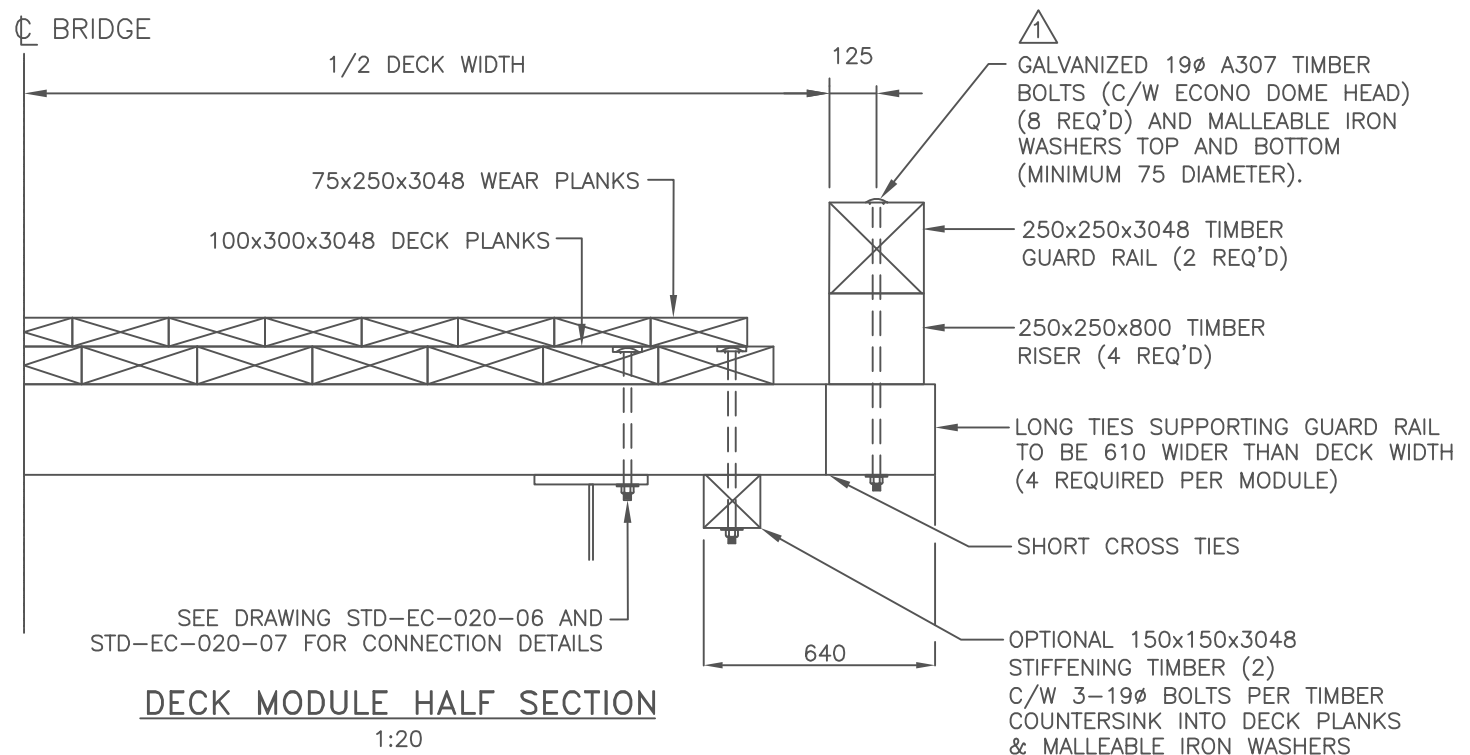


DECK MODULE ELEVATION
1:30

OPTIONAL 150x150x3048 STIFFENING TIMBERS (2)



**NOT FOR CONSTRUCTION
ASSUME NOT TO SCALE**




DECK MODULE HALF SECTION
1:20

- GALVANIZED 19Ø A307 TIMBER BOLTS (C/W ECONO DOME HEAD) (8 REQ'D) AND MALLEABLE IRON WASHERS TOP AND BOTTOM (MINIMUM 75 DIAMETER).
- 250x250x3048 TIMBER GUARD RAIL (2 REQ'D)
- 250x250x800 TIMBER RISER (4 REQ'D)
- LONG TIES SUPPORTING GUARD RAIL TO BE 610 WIDER THAN DECK WIDTH (4 REQUIRED PER MODULE)
- SHORT CROSS TIES
- OPTIONAL 150x150x3048 STIFFENING TIMBER (2) C/W 3-19Ø BOLTS PER TIMBER COUNTERSINK INTO DECK PLANKS & MALLEABLE IRON WASHERS

- NOTES
- SEE DRAWING STD-EC-020-02 FOR TIMBER CROSS TIE SIZES AND SPACINGS. **SEE BSM**
 - SEE DRAWING STD-EC-020-06 FOR NEW BRIDGE DECK MODULE CONNECTION DETAILS.
 - SEE DRAWING STD-EC-020-07 FOR RETROFIT DECK MODULE CONNECTION DETAILS.
 - WHEN TREATED MODULE SPECIFIED, ALL TIMBERS SHALL BE TREATED EXCEPT FOR WEAR PLANKS.

SCALE	AS SHOWN	Designed	ABS	Date	2012/03/12
		Checked	LT	Date	2012/03/20
		Drawn	ABS	Date	2012/03/12
Rev	Date	DESCRIPTION	Init		
1	JAN-17-14	REVISED BOLT AND WASHER DETAILS	JV		
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REVISIONS					



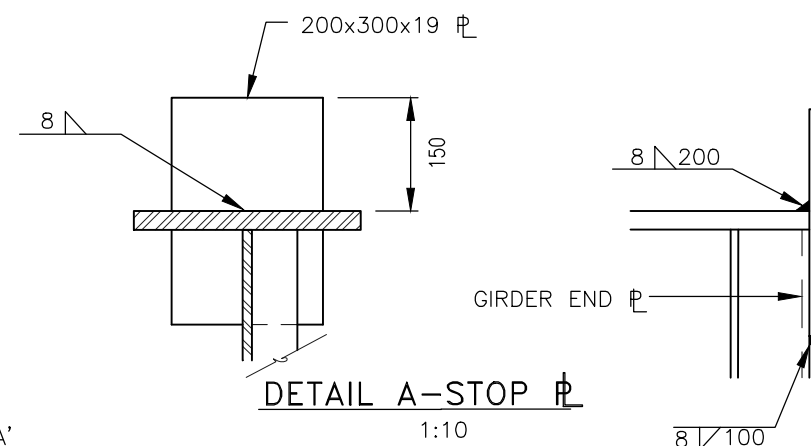
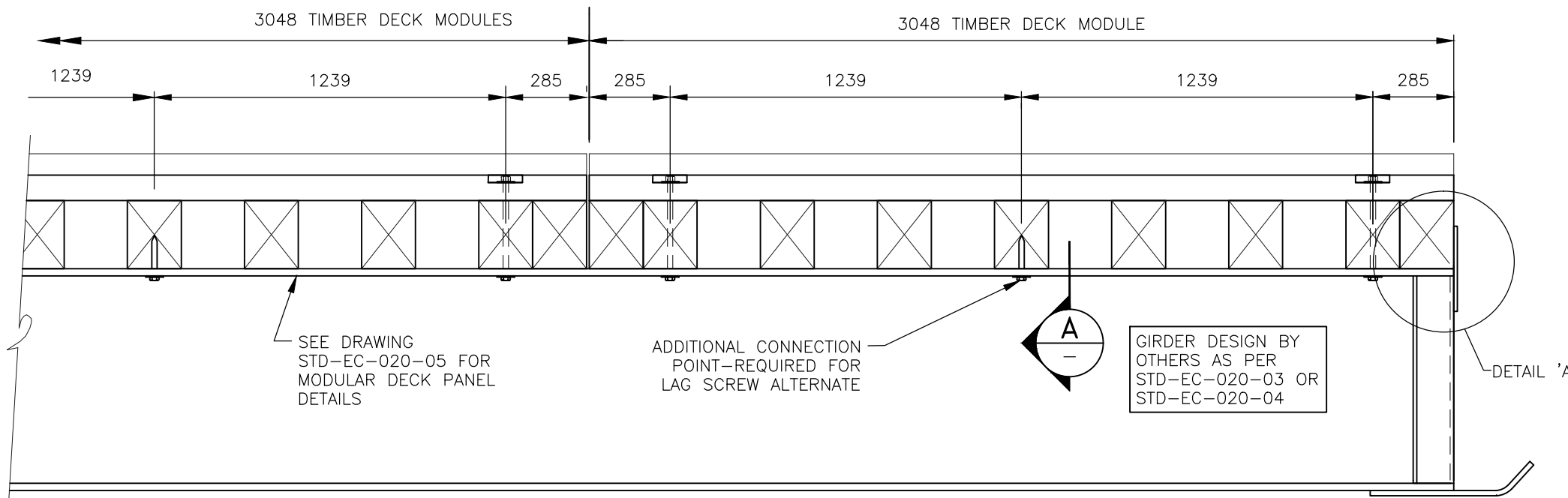
MINISTRY OF FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS
ENGINEERING BRANCH

STANDARD BRIDGE DRAWING

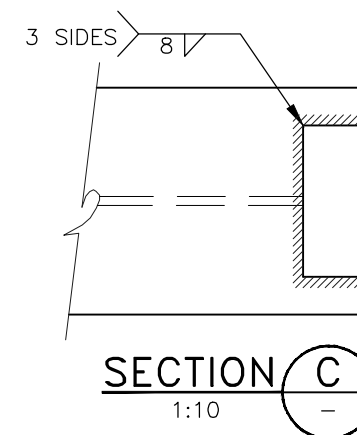
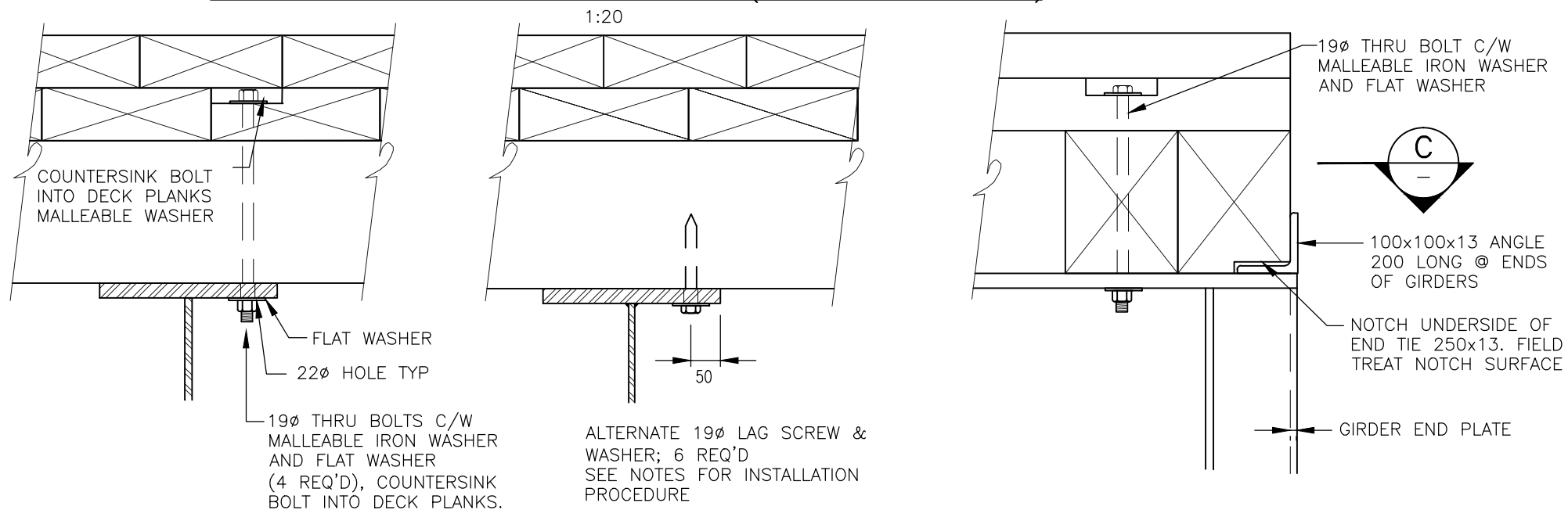
MODULAR TIMBER DECK PANEL
GENERAL ARRANGEMENT & DETAILS

ORIGINAL SIGNED and SEALED BY: A.B. SWAN, PEng	MFR ENGINEER: DATE
DESIGN ENGINEER: A.B. SWAN P.ENG DATE: MARCH 26, 2012	APPROVED BY: BRIAN CHOW, P.ENG, CHIEF ENGINEER DATE:
FILE No.	DRAWING No. STD-EC-020-05

DIMENSIONS SHOWN FOR BCL-625 7 L-100; DIMENSIONS FOR L150/L165 TO BE ADJUSTED ACCORDINGLY



DECK PANEL TO GIRDER ATTACHMENT (NEW CONSTRUCTION)



SECTION A
1:10

**NOT FOR CONSTRUCTION
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ALTERNATE DETAIL 'A' - ANGLE STOP
1:10

ALTERNATE LAG SCREW INSTALLATION NOTES:

- LAG SCREWS SHALL 19mm DIA x 200mm LONG (6 REQUIRED)
- PRE-DRILLING FOR LAG SCREW HOLES SHALL BE AS FOLLOWS:
 - 19 mm DIA HOLE FOR SHANK PENETRATION LENGTH INTO CROSSTIE ONLY
 - 12.5 mm DIA HOLE FOR FULL PENETRATION LENGTH INTO CROSSTIE ONLY
- A NON-PETROLEUM LUBRICANT (IE .SOAP) MAY BE USED TO FACILITATE INSTALLATION
- IF LAG SCREWS HAVE BEEN INSTALLED MORE THAN TWO TIMES OR IF LAG SCREWS ARE STRIPPED, USE BOLT THROUGH OPTION

SCALE AS SHOWN
Designed ABS Date 2012/03/12
Checked LT Date 2012/03/20
Drawn ABS Date 2012/03/12

Rev	Date	DESCRIPTION	Init
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REVISIONS			

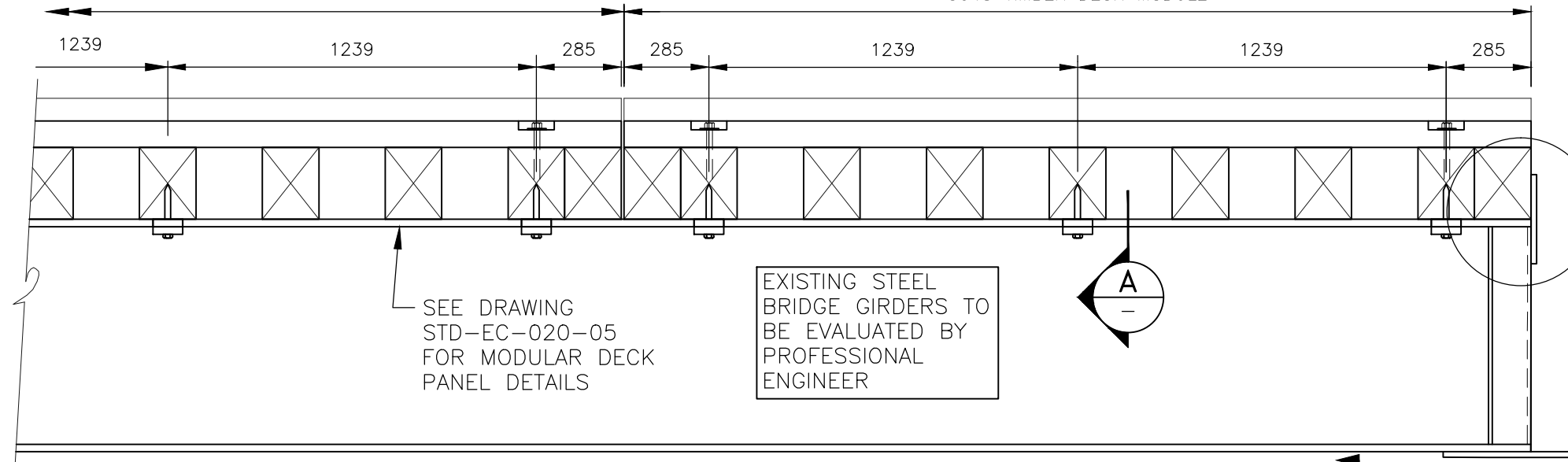
 MINISTRY OF FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS ENGINEERING BRANCH	
STANDARD BRIDGE DRAWING	
MODULAR TIMBER DECK PANELS, ATTACHMENT DETAILS-NEW BRIDGES	
ORIGINAL SIGNED and SEALED BY: A.B. SWAN, PEng	MFR ENGINEER: DATE
DESIGN ENGINEER: A.B. SWAN P.ENG DATE: MARCH 26, 2012	APPROVED BY: BRIAN CHOW, P.ENG, CHIEF ENGINEER DATE:
FILE No.	DRAWING No. STD-EC-020-06

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DIMENSIONS SHOWN FOR BCL-625 & L-100; DIMENSIONS FOR L150/L165 TO BE ADJUSTED ACCORDINGLY

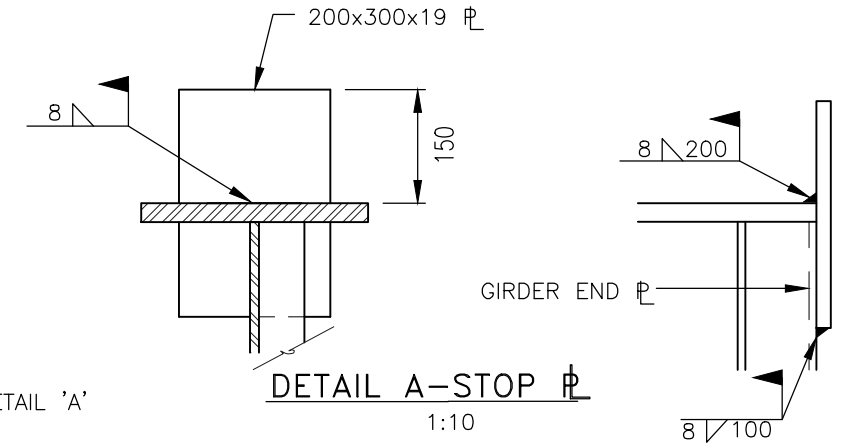
3048 TIMBER DECK MODULES

3048 TIMBER DECK MODULE



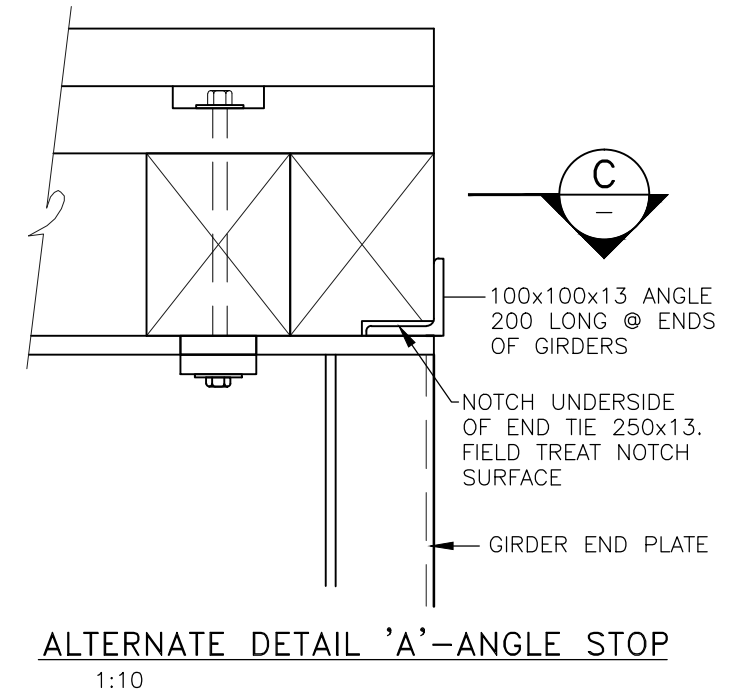
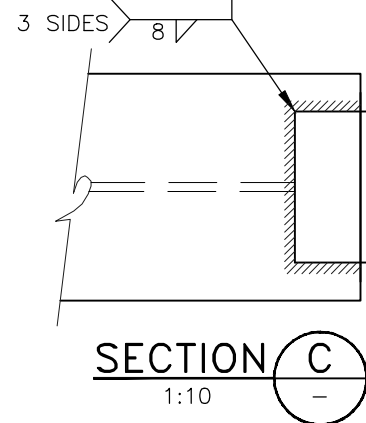
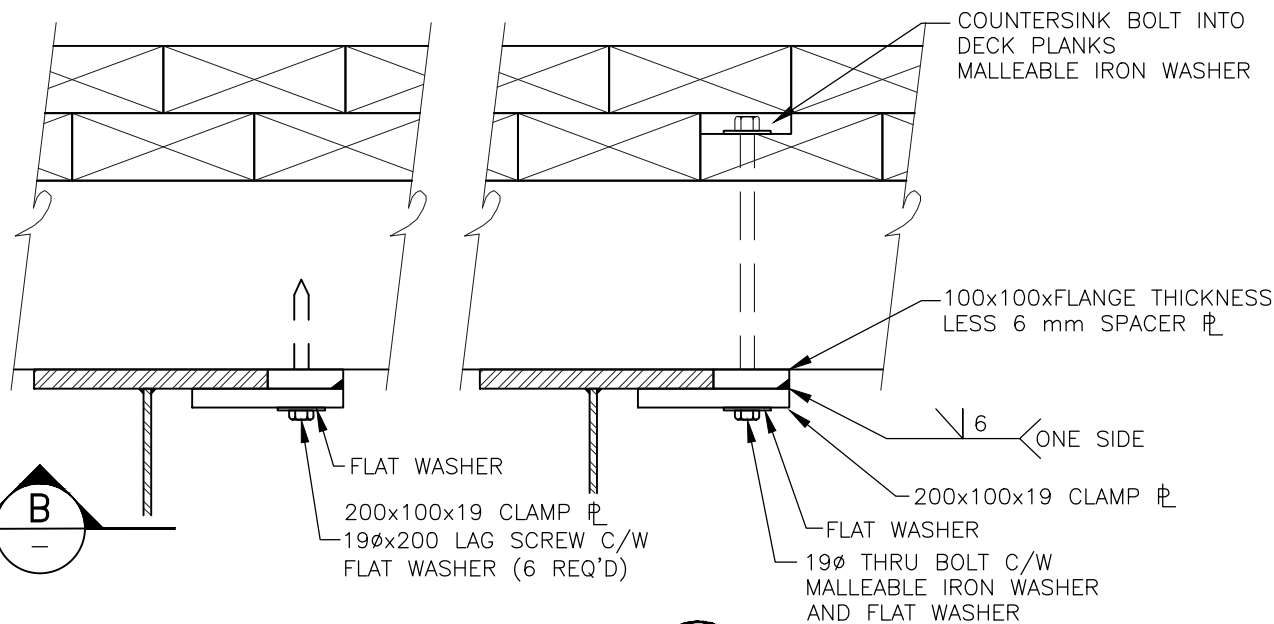
SEE DRAWING
STD-EC-020-05
FOR MODULAR DECK
PANEL DETAILS

EXISTING STEEL
BRIDGE GIRDERS TO
BE EVALUATED BY
PROFESSIONAL
ENGINEER



DECK CLAMPED TO GIRDER: RETROFIT APPLICATIONS

1:20



**NOT FOR CONSTRUCTION
ASSUME NOT TO SCALE**

ALTERNATE LAG SCREW INSTALLATION NOTES:

- LAG SCREWS SHALL 19mm DIA x 200mm LONG (6 REQUIRED)
- PRE-DRILLING FOR LAG SCREW HOLES SHALL BE AS FOLLOWS:
 - 19 mm DIA HOLE FOR SHANK PENETRATION LENGTH INTO CROSSTIE ONLY
 - 12.5 mm DIA HOLE FOR FULL PENETRATION LENGTH INTO CROSSTIE ONLY
- A NON-PETROLEUM LUBRICANT (IE .SOAP) MAY BE USED TO FACILITATE INSTALLATION
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Rev	Date	DESCRIPTION	Init
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REVISIONS

SCALE AS SHOWN
Designed ABS Date 2012/03/12
Checked LT Date 2012/03/20
Drawn ABS Date 2012/03/12

**MINISTRY OF FORESTS, LANDS AND NATURAL
RESOURCE OPERATIONS**
ENGINEERING BRANCH

STANDARD BRIDGE DRAWING

**MODULAR TIMBER DECK PANELS, ATTACHMENT DETAILS
FIELD RETROFIT TO EXISTING BRIDGES**

ORIGINAL SIGNED and SEALED BY: A.B. SWAN, PEng	MFR ENGINEER: DATE
DESIGN ENGINEER: A.B. SWAN P.ENG DATE: MARCH 26, 2012	APPROVED BY: BRIAN CHOW, P.ENG, CHIEF ENGINEER DATE:
FILE No.	DRAWING No. STD-EC-020-07

\\STUDY-PC\Public\Documents\ACAD Dwg