

3. MATERIALS AND FABRICATION

3.1 ALL MATERIALS UTILIZED IN FABRICATION SHALL BE NEW, NOT PREVIOUSLY USED IN ANY APPLICATION

3.2 STRUCTURAL STEEL

- TO CAN/CSA-G40.21M
 - STEEL GIRDER FLANGES AND WEB PLATES GRADE 350AT CATEGORY 3
 - OTHER STEEL PLATE: 350A
 - BRACING (DIAPHRAGMS AND PLAN BRACING): GRADE 350A
 - ANY REQUIRED VARIATIONS REQUIRE MINISTRY APPROVAL... IF NON WEATHERING STEEL IS APPROVED BY THE MINISTRY, A CORROSION PROTECTION SYSTEM APPROVED BY THE MINISTRY WILL BE REQUIRED
- COMPLETE ALL WELDS IN ACCORDANCE WITH CSA W59. WELD METAL OF PRIMARY TENSION MEMBERS AND FRACTURE CRITICAL MEMBERS SHALL MEET THE CVN TOUGHNESS REQUIREMENTS OF TABLE 10.14 OF CAN/CSA S6
- INSPECT ALL BUTT WELDS BY ULTRASONIC OR X-RAY EXAMINATION IN ACCORDANCE WITH CSA W59
- FABRICATOR TO BE CERTIFIED FOR DIVISION 1 OR 2 IN ACCORDANCE WITH CSA W47.1 THROUGHOUT THE DURATION OF THE PROJECT
- FIELD WELDING BY COMPANY CERTIFIED TO CSA W47.1 DIVISION 1, 2 OR 3
- FABRICATE GIRDERS AS FRACTURE CRITICAL MEMBERS IN ACCORDANCE WITH CAN/CSA-S6-06, AS NOTED ON DESIGN DRAWINGS. STEEL PLATES FOR BOTTOM FLANGES AND WEBS SHALL CONFORM TO THE REQUIREMENTS FOR FRACTURE CRITICAL IN ACCORDANCE WITH CAN/CSA-S6, EXCEPT THAT CHARPY V-NOTCH TESTING RESULTS ARE ONLY REQUIRED ON A PER HEAT FREQUENCY
- MAKE ALL I-GIRDER FLANGE TO WEB WELDS USING SUBMERGED ARC WELDING
- SHOP TRIAL FIT ALL FIELD SPLICES UNLESS CNC EQUIPMENT IS USED

3.3 STRUCTURAL BOLTS:

- ALL BOLTS INCORPORATED INTO STEEL GIRDER CONNECTIONS (BOLTED FIELD SPLICES, DIAPHRAGMS AND BRACING) TO BE ASTM A325 TYPE 3 M22 U.N.O. INSTALLED IN ACCORDANCE WITH CAN/CSA-S6

3.4 GALVANIZING:

- ALL ITEMS SPECIFIED AS GALVANIZED ARE TO BE GALVANIZED TO CSA G164

3.5 BEARINGS:

- TO CAN/CSA-S6: OZONE RESISTING NATURAL RUBBER (NATURAL POLYISOPRENE)
- WHERE EXPANSION JOINTS ARE USED, ENGINEER TO INCLUDE SUFFICIENT INFORMATION TO FACILITATE INSTALLATION AT VARIOUS TEMPERATURES

3.6 TIMBER DECK MATERIALS:

- ALLOWABLE WOOD SPECIES, LUMBER GRADES, GRADING CRITERIA AND REQUIRED DOCUMENTATION SHALL BE AS PER MINISTRY: *BRIDGE TIMBER AND LUMBER MATERIAL STANDARD*

3.8 TIMBER DECK HARDWARE:

- LAG SCREWS, BOLTS, NUTS, WASHERS TO BE ASTM A307 (GALVANIZED)
- DECK NAILING PATTERN TO BE AS SHOWN ON DRAWINGS

3.9 TIMBER PRESERVATIVE TREATMENT:

- ALL TREATED WOOD SHALL BE COASTAL DOUGLAS-FIR, TREATED USING CHROMATE COPPER ARSENATE (CCA) TREATMENT, AND THIRD PARTY INSPECTED, IN ACCORDANCE WITH THE MINISTRY *PROCESS SPECIFICATION FOR CCA TREATMENT OF COASTAL DOUGLAS-FIR WOOD*

4. TRANSPORTATION AND ERECTION OF BRIDGES

4.1 SUPPORT STEEL GIRDERS IN SUCH A WAY THAT THEY SUSTAIN NO DAMAGE DURING TRANSPORTATION. WHEN TRANSPORTING STEEL GIRDERS ON THE FLAT, PROVIDE A TRANSPORTATION PLAN PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA.

5. STEEL CERTIFICATION AND QUALITY CONTROL

5.1 PROVIDE MILL CERTIFICATES FOR ALL STEEL MATERIAL

**ASSUME NOT TO SCALE
NOT FOR CONSTRUCTION**



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

SCALE		AS SHOWN		Designed _____ Date: _____		
				Checked _____ Date: _____		
				Drawn _____ Date: _____		
Rev.	Date	DESCRIPTION	Init			
				STANDARD BRIDGE DRAWING TIMBER DECK BRIDGES GENERAL NOTES – SHEET 2		
			ORIGINAL SIGNED and SEALED BY: _____ FLNLR ENGINEER: DATE			
			DESIGN ENGINEER _____ APPROVED BY: BRIAN CHOW, P.Eng, CHIEF ENGINEER DATE			
			DATE _____ FILE No. _____ DRAWING No. _____			
			DATE _____ DRAWING No. _____			
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REVISIONS						

STD-EC-020-02