

1 GENERAL

- 1.1.** ALL MATERIALS, CONSTRUCTION AND DESIGN SHALL CONFORM TO THE STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS AND AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION DATED 2010 AND ITS LATEST REVISIONS
- 1.2.** THE EXISTING STEEL TRUSS IS COATED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS MATERIAL. THE REMOVED STRUCTURAL STEEL SHALL BECOME THE PROPERTY OF THE CONTRACTOR WHO SHALL BE RESPONSIBLE FOR ITS REMOVAL FROM THE SITE AND DISPOSAL. THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE STATE, THE TOWN OF WARREN, AS WELL AS ITS OFFICERS, AND THEIR EMPLOYEES, CONCERNING THE DISPOSITION OF THIS MATERIAL.
- 1.3.** UNLESS OTHERWISE NOTED IN THE PLANS, ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT.
- 1.4.** ITEM 529.15, REMOVAL OF STRUCTURE, IS FOR THE COMPLETE REMOVAL OF THE SUPERSTRUCTURE AND ANY PORTIONS OF THE ABUTMENTS WHICH ARE OUTSIDE OF THE LIMITS OF EITHER COFFERDAM EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION. ALL OF THE EXISTING ABUTMENT CONCRETE SHALL BE REMOVED. EXISTING TIMBER PILES AT THE ABUTMENTS SHALL BE REMOVED TO ELEVATION 772. RECORD PLANS OF THE EXISTING TRUSS AND TIMBER PILES HAVE BEEN PROVIDED AT THE END OF THIS PLAN SET FOR REFERENCE ONLY.
- 1.5.** THE EXISTING MAILBOXES LOCATED IN THE GENERAL PROXIMITY OF TOWN HIGHWAYS 9 AND 41 WITH THE INTERSECTION OF VT100 WILL BE RELOCATED AS PER STD J-3 AND SECTION 617 OF THE SPECIFICATIONS. THE LOCATION OF THE NEW MAIL BOXES WILL BE AS APPROVED BY THE OWNERS AND THE LOCAL U.S. POSTAL SERVICE DELIVERY PERSON, 802-496-2908.
- 1.6.** THE CONTRACTOR MAY SUBSTITUTE SUBBASE MATERIAL FOR THE SAND BORROW SHOWN ON THE PLANS. THE SUBBASE MATERIAL SHALL BE THE TYPE SPECIFIED IN THE CONTRACT AND SHALL BE PLACED TO MEET THE SUBBASE SPECIFICATIONS. IF SUBBASE IS PLACED IN LIEU OF SAND BORROW, A GEOTEXTILE MEETING THE REQUIREMENTS OF SECTION 649 FOR GEOTEXTILE FOR ROAD BED SEPARATOR SHALL BE PLACED BETWEEN THE SUBGRADE AND THE SUBBASE MATERIAL. ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING THE GEOTEXTILE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 203.31 SAND BORROW.
- 1.7.** "STRUCTURES DETAIL SHEETS" LISTED ON THE INDEX ARE PROVIDED AFTER THE PLAN SHEETS. DETAILS AND DIMENSIONS SHOWN IN THE PROJECT PLAN SHEETS SHALL TAKE PRECEDENCE OVER THOSE SHOWN IN THE "STRUCTURES DETAIL SHEETS".

2 PREFABRICATED TRUSS BRIDGE

- 2.1.** THE PREFABRICATED GALVANIZED STEEL TRUSS BRIDGE FOR THIS PROJECT SHALL MEET THE SPECIFICATION REQUIREMENTS FOR ITEM 900.645, SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE). THE TRUSS SHALL BE DESIGNED, DETAILED, FABRICATED, TRANSPORTED TO THE SITE AND ERECTED BY THE FABRICATOR/CONTRACTOR. THE TRUSS PROVIDED SHALL BE SIMILAR IN GENERAL APPEARANCE AND CONFIGURATION TO THE ONE SHOWN IN THESE PLANS.
- 2.2.** THE NEW BRIDGE SHALL BE A SINGLE SPAN TRUSS MEETING THE FOLLOWING CRITERIA:
 - A.** MUST BE A PONY TRUSS, I.E. NO CONNECTION BETWEEN THE TOP CHORDS OF THE TWO TRUSSES AND ALL CONNECTIONS SHALL BE BOLTED.
 - B.** DESIGN SPECIFICATION SHALL BE THE AASHTO LRFD BRIDGE SPECIFICATIONS, FIFTH EDITION DATED 2010 AND ITS LATEST REVISIONS.
 - C.** THE DESIGN VEHICULAR LIVE LOAD SHALL BE THE HL-93 AASHTO DESIGNATED LOAD.
 - D.** THE CAST IN PLACE CONCRETE DECK SHALL BE COMPOSITE WITH THE MEMBERS OF THE PREFABRICATED TRUSS.
 - E.** MUST CONFORM TO THE LINE, WIDTH, AND MINIMUM SPAN AS SHOWN ON THE PLANS. MINOR MODIFICATIONS TO THE PROPOSED GRADE SHALL BE ALLOWED ONLY WITH THE APPROVAL OF THE RESIDENT ENGINEER.
 - F.** LOWEST STEEL ELEVATION OF STRUCTURE (EXCLUDING BEARINGS) SHALL BE AT OR ABOVE EL. 789.28 FT
 - G.** FLOOR SYSTEM MUST NOT EXTEND BELOW THE BOTTOM CHORD.
 - H.** TRUSSES MUST BE CAMBERED FOR FULL DEAD LOAD WITH A RESIDUAL CAMBER OF APPROXIMATELY 1.75 INCHES.
 - I.** TRUSS SHALL HAVE JACKING STIFFENERS OR MEMBERS SHALL BE DESIGNED TO ALLOW FUTURE JACKING FOR BEARING REPLACEMENT UNDER ONE LANE OF VEHICULAR LIVE LOAD.

2.3. THE FABRICATOR/ CONTRACTOR SHALL DESIGN AND DETAIL THE DECK SLAB TO MEET THE FOLLOWING DESIGN CRITERIA:

- A.** CONCRETE SHALL BE HIGH PERFORMANCE CLASS A CONCRETE AND SHALL MEET THE REQUIREMENTS OF SECTION 501 OF THE STANDARD SPECIFICATIONS.
- B.** REINFORCING STEEL SHALL BE LEVEL II AND SHALL MEET THE REQUIREMENTS OF SECTION 507 OF THE STANDARD SPECIFICATIONS.
- C.** MINIMUM SLAB THICKNESS SHALL BE 8.5 INCHES
- D.** THE MINIMUM REINFORCING STEEL SHALL BE #5 BARS SPACED 12 INCHES CENTER TO CENTER IN EACH DIRECTION AND ON EACH FACE.
- E.** MINIMUM COVER FOR REINFORCING STEEL SHALL BE: 2.5 INCHES FOR THE TOP OF CONCRETE DECK, 3 INCHES FOR CURB, AND 1.5 INCHES FOR BOTTOM OF THE CONCRETE DECK.

2.4. THE COST FOR DECK SLAB CONCRETE AND DECK SLAB REINFORCING STEEL SHALL BE PAID FOR UNDER ITEM 900.645, SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE.)

2.5. THE FABRICATOR/ CONTRACTOR SHALL DESIGN THE TRUSS MEMBERS AND CONCRETE DECK USING A 300 LB/LF LOAD FOR RAIL AND CURB, ON EACH SIDE.

2.6. THE CONCRETE BRIDGE CURB SHALL BE CAST-IN PLACE HIGH PERFORMANCE CLASS A CONCRETE AS SHOWN ON THE PLANS AND PAID FOR UNDER ITEM 501.33, CONCRETE, HIGH PERFORMANCE CLASS A. THE REINFORCING STEEL FOR CONCRETE BRIDGE CURB SHALL BE LEVEL II REINFORCING STEEL, PLACED AS SHOWN ON THE PLANS AND PAID FOR UNDER ITEM 507.12 REINFORCING STEEL, LEVEL II.

2.7. THE FABRICATOR/ CONTRACTOR SHALL PROVIDE FINAL CONCRETE BRIDGE SEAT ELEVATIONS ON THE FABRICATION DRAWINGS FOR EACH ABUTMENT BASED ON THE ACTUAL DEPTH OF THE BRIDGE AND THE HEIGHT OF THE BEARINGS.

2.8. CONTRACTOR SHALL USE DIRECT TENSION INDICATOR METHOD AS SPECIFIED IN SUBSECTION 506.19 FOR PRETENSIONING OF ALL BOLTED TRUSS CONNECTIONS. NO OTHER BOLT TENSIONING METHOD SHALL BE PERMITTED ON THE BOLTED TRUSS CONNECTIONS.

2.9. ALL STRUCTURAL STEEL USED IN THE TRUSS BRIDGE SHALL MEET THE REQUIREMENTS OF AASHTO M 270M/M 270, GRADE 50.

2.10. ALL FASTENERS UNLESS OTHERWISE NOTED SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 164 TYPE 1.

2.11. THE FABRICATOR SHALL IDENTIFY ALL TENSILE STRUCTURAL STEEL MEMBERS AND PLATES REQUIRING A CHARPY V-NOTCH TEST ON THE PLANS BY THE INITIALS "CVN". STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01 OF THE STANDARD SPECIFICATIONS.

2.12. THE FABRICATOR SHALL IDENTIFY ALL TENSILE STRUCTURAL STEEL MEMBERS AND COMPONENTS THAT ARE CATEGORIZED AS "FRACTURE CRITICAL" ON THE PLANS BY THE INITIALS "FCM". FRACTURE CRITICAL MEMBERS SHALL MEET THE FOLLOWING CONSTRUCTION AND TESTING REQUIREMENTS:

- A.** ALL FRACTURE CRITICAL MEMBERS SHALL BE FABRICATED ACCORDING TO SECTION 12 OF THE AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE.
- B.** ALL FRACTURE CRITICAL MEMBERS SHALL BE FABRICATED IN A PLANT HAVING AN AISC FRACTURE CRITICAL ENDORSEMENT OR THE FABRICATOR SHALL PROVIDE TO THE STRUCTURES ENGINEER AN ACCEPTABLE FRACTURE CONTROL PLAN MEETING THE REQUIREMENTS OF AASHTO/AWS D1.5 PRIOR TO FABRICATION.
- C.** ALL FRACTURE CRITICAL MEMBERS SHALL BE IMPACT TESTED TO THE FRACTURE CRITICAL REQUIREMENTS AS SPECIFIED IN AASHTO M 270M/M 270.

2.13. THE INDIVIDUAL SIZE, LENGTH AND SPACING OF TRUSS MEMBERS WILL BE DETERMINED BY THE FABRICATOR.

2.14. THE SHEAR STUDS SHALL BE APPLIED BEFORE THE TRUSS MEMBERS ARE GALVANIZED. THE COST FOR THE SHEAR STUDS SHALL BE INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE).

2.15. ALL STEEL SHALL BE GALVANIZED ACCORDING TO SUBSECTION 726.08 OF THE STANDARD SPECIFICATIONS. PRIOR TO GALVANIZATION ALL SURFACES SHALL BE PREPARED ACCORDING TO SUBSECTION 506.14 OF THE STANDARD SPECIFICATIONS. GALVANIZING SHALL BE PAID FOR UNDER ITEM 900.645, SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE).

2.16. ANY DAMAGE CAUSED TO GALVANIZING BEFORE ACCEPTANCE OF THE WORK SHALL BE REPAIRED AS REQUIRED BY THE SPECIFICATIONS AND THE COST SHALL BE INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE).

2.17. THE BEARING DEVICES SHALL BE DESIGNED, DETAILED, FABRICATED, AND TRANSPORTED TO THE SITE BY THE FABRICATOR. THE BEARING DEVICES SHALL CONFORM TO THE APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731. EXPANSION BEARINGS SHALL BE ADJUSTED FOR TEMPERATURE AS SHOWN ON THE FABRICATION DRAWINGS. THE COSTS OF THE BEARINGS SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 900.645 SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE).

2.18. FABRICATION DRAWINGS, DESIGN CALCULATIONS AND WELD PROCEDURES MUST BE SUBMITTED IN ACCORDANCE WITH SUBSECTION 105.03(b) (6 WEEKS PRIOR TO BEGINNING FABRICATION OF THE TRUSS) TO THE STRUCTURES ENGINEER TO BE REVIEWED FOR CONFORMANCE. THE DESIGN CALCULATIONS FOR THE TRUSS, BEARINGS, BEAM PROFILES, AND DECK SLAB SHALL BE STAMPED AND SIGNED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT (STRUCTURAL OR CIVIL). THE FABRICATION DRAWINGS SHALL INCLUDE ALL TRUSS DEAD LOAD DEFLECTION AND CAMBER INFORMATION AND SHALL BE STAMPED WITH THE DESIGN ENTITY'S FABRICATION DRAWING APPROVAL STAMP OR STAMPED AND SIGNED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT (STRUCTURAL OR CIVIL).

2.19. THE FABRICATOR WILL BE RESPONSIBLE FOR SUPPLYING STAMPED LOAD RATING CALCULATIONS FOR THE NEW BRIDGE AND COMPLETING THE LOAD RATING TABLE SHOWN ON THE PRELIMINARY INFORMATION SHEET OF THE PLANS. THIS LOAD RATING MUST BE SUBMITTED WITH THE FABRICATION DRAWINGS; TRUCK CONFIGURATIONS TO BE USED IN COMPLETING THE LOAD RATING SHALL BE AS LISTED IN THE 2010 VTRANS STRUCTURES DESIGN MANUAL SECTION 15 .

2.20. THE CONTRACTOR SHALL ADHERE TO ALL INSTRUCTIONS FROM THE TRUSS SUPPLIER REGARDING ERECTION AND FIELD CONNECTIONS.

2.21. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE DETAILING OF THE HOPPER AND HOPPER DOWNSPOUT FOR THE EXPANSION JOINT. COORDINATION WILL BE REQUIRED TO ENSURE AN ADEQUATE FIT OF THE HOPPER WITH THE BRIDGE EXPANSION JOINT, TRUSS BRIDGE AND ABUTMENT BRIDGE SEAT. DETAILING, FABRICATION, TRANSPORTATION TO THE SITE AND INSTALLATION OF THE HOPPER AND DOWNSPOUT SHALL BE INCIDENTAL TO ITEM 516.11 BRIDGE EXPANSION JOINT, VERMONT. THE DOWNSPOUT SHALL EXTEND A MINIMUM OF 1 FT AND NOT MORE THAN 2 FT BELOW THE BRIDGE SEAT

3 PILES

3.1. TWO DYNAMIC PILE TESTS PER PILE SUPPORTED SUBSTRUCTURE SHALL BE CONDUCTED. THE FIRST TEST SHALL BE ON THE FIRST PILE DRIVEN FOR EACH SUBSTRUCTURE AND THE SECOND TEST SHALL BE ON THE SECOND PILE DRIVEN FOR EACH SUBSTRUCTURE.

3.2. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. ACTUAL IN PLACE LENGTHS MAY VARY.

3.3. TO PREVENT DAMAGE TO THE PILES, PILE SHOES ARE REQUIRED AND SHALL CONFORM TO SECTION 505.

3.4. THE PILES SHALL BE DRIVEN TO A NOMINAL RESISTANCE OF 461.00 KIPS.

PROJECT NAME: WARREN	
PROJECT NUMBER: BRF 013-4 (14)	
FILE NAME: s78f242forms.dgn	PLOT DATE: 27-JUL-2012
PROJECT LEADER: J. LACROIX	DRAWN BY: M. LONGSTREET
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GENERAL NOTES SHEET 1	SHEET 3 OF 83