PREFABRICATED PONY TRUSS DETAILING NOTES:

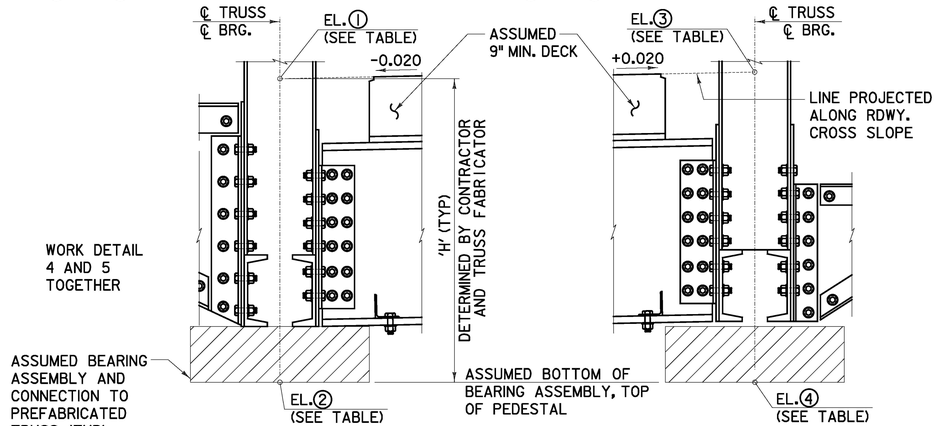
1. THE SUBSTRUCTURE PEDESTAL ELEVATIONS SHOWN ON THE CONTRACT PLANS WERE CALCULATED BASED ON AN ASSUMED DIMENSION 'H' OF 4'-0" MEASURED FROM A POINT (EL.① AND ③) AT THE ASSUMED CENTERLINE OF TRUSS TO THE ASSUMED TOP OF PEDESTAL. POINTS ① AND ③ WERE DETERMINED BASED ON THE TOP OF DECK ELEVATION AT THE HCL AT THE STATION OF THE ASSUMED FLOORBEAMS AND PROJECTED ALONG THE PROPOSED CROSS-SLOPE OF THE ROADWAY TO THE INTERSECTION WITH THE ASSUMED CENTERLINE OF THE TRUSSES.
2. THE ACTUAL VALUE OF DIMENSION 'H' WILL BE DEPENDENT ON THE FINAL FLOOR SYSTEM DESIGN AND DETAILING, TO BE COMPLETED BY THE TRUSS FABRICATOR, AND REQUIRED BEARING HEIGHT WHICH MUST BE COORDINATED WITH THE CONTRACTOR. THE TRUSS FABRICATOR SHALL COMPLETE THE TABLES BELOW AND INCLUDE WITH THE WORKING DRAWING SUBMITTAL FOR ITEM 900.645 SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE). IF REQUIRED, SUBSTRUCTURE PEDESTAL ELEVATIONS SHOWN ON THE CONTRACT PLANS SHALL BE ADJUSTED AND COORDINATED WITH THE CONTRACTOR THROUGH THE WORKING DRAWING SUBMITTAL PROCESS.

		NORTH TRUSS (LT)		
		EL.①	'H'	EL.②*
FB0	ASSUMED	527.51	4'-0"	523.51
	ACTUAL			
FB8	ASSUMED	528.76	4'-0"	524.76
	ACTUAL			
FB9	ASSUMED	528.76	4'-0"	524.76
	ACTUAL			
FBI9	ASSUMED	526.21	4'-0"	522.21
	ACTUAL			

*EL.② = EL.① - 'H'

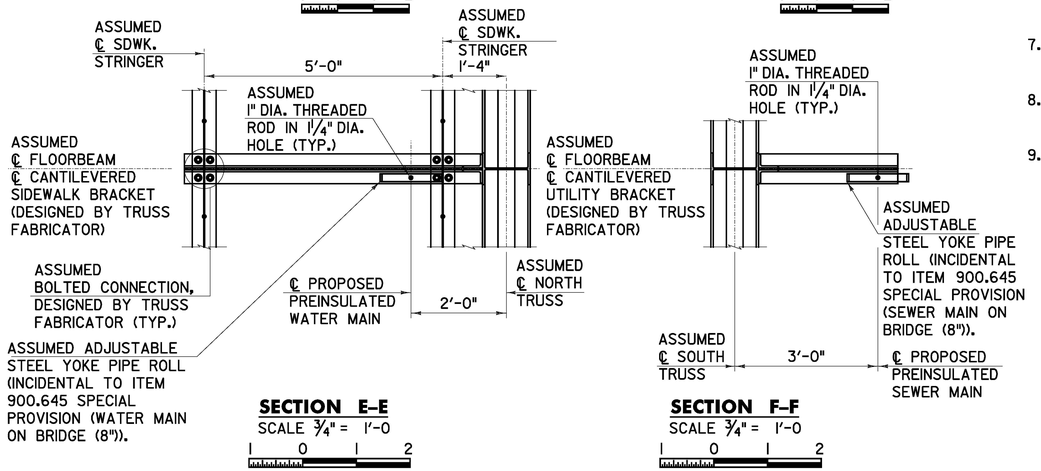
		SOUTH TRUSS (RT)		
		EL. ③	'H'	EL.④*
FB0	ASSUMED	528.17	4'-0"	524.17
	ACTUAL			
FB8	ASSUMED	529.42	4'-0"	525.42
	ACTUAL			
FB9	ASSUMED	529.42	4'-0"	525.42
	ACTUAL			
FBI9	ASSUMED	526.87	4'-0"	522.87
	ACTUAL			

*EL.④ = EL. ③ - 'H'



DETAIL 4
(NORTH TRUSS)
SCALE ½" = 1'-0

DETAIL 5
(SOUTH TRUSS)
SCALE ½" = 1'-0



SECTION E-E
SCALE ¾" = 1'-0

SECTION F-F
SCALE ¾" = 1'-0

PREFABRICATED PONY TRUSS DESIGN NOTES:

1. THE PREFABRICATED PONY TRUSS AND ALL INCIDENTAL ITEMS FURNISHED UNDER ITEM 900.645 SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE) SHALL BE DESIGNED, DETAILED AND FABRICATED IN ACCORDANCE WITH THE VERMONT AGENCY OF TRANSPORTATION (VTRANS) 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION. THE TRUSS FABRICATOR IS NOTIFIED THAT THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, IN CONJUNCTION WITH THE APPLICABLE PORTIONS OF THE 2010 VTRANS STRUCTURES DESIGN MANUAL, SHALL BE USED AS THE CODES FOR THE DESIGN, DETAILING AND FABRICATION OF ITEM 900.645 SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE). THE TRUSS FABRICATOR IS CAUTIONED THAT NO ALTERNATE CODES OR METHODOLOGIES WILL BE ACCEPTED FOR THE DESIGN, DETAILING, OR FABRICATION OF ITEM 900.645 SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE).
2. THE DESIGN INTENT IS TO FABRICATE AND FURNISH A PREFABRICATED PONY TRUSS WHICH RESEMBLES, TO THE EXTENT PRACTICAL, THE ORIGINAL SUPERSTRUCTURE (1928) AT THE PROJECT SITE. THE PREFABRICATED PONY TRUSS FURNISHED UNDER ITEM 900.645 SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE) SHALL MATCH THE GEOMETRY AND PROPORTIONS AS SHOWN ON THE PLANS.
3. THE PARAMETERS LISTED BELOW REGARDING THE PREFABRICATED TRUSS HAVE BEEN DETERMINED IN CONJUCTION WITH VTRANS SHPO AND SHALL BE MET. IT IS REQUIRED THAT THE TRUSS FABRICATOR PROVIDE PRELIMINARY LAYOUT PLANS SHOWING THE TRUSS MEMBER CONFIGURATIONS, MAJOR DIMENSIONS, AND PROPOSED MEMBER SECTIONS WITHIN 45 DAYS OF AWARD FOR REVIEW BY THE ENGINEER AND VTRANS SHPO:

   THE PREFABRICATED STEEL TRUSS SHALL MATCH THE EXISTING TRUSS MEMBERS CONFIGURATION (TOP AND BOTTOM CHORDS, DIAGONALS, AND VERTICALS). THE CONFIGURATION SHOWN IN ELEVATION ON SHEET 60 MATCHES THE EXISTING TRUSS AND SHALL BE MAINTAINED. A LATERAL STRUCTURAL SYSTEM SHALL BE PROVIDED BETWEEN NORTH AND SOUTH TRUSSES BELOW THE STRUCTURAL DECK.

   FINAL SPAN LENGTHS AND TRUSS WIDTH SHALL BE DETERMINED BY TRUSS FABRICATOR. SPAN 1/SPAN 2 LENGTH RATIO SHALL BE AS CLOSE AS POSSIBLE TO 0.82 TO MATCH EXISTING BRIDGE, BUT SHALL NOT BE OUTSIDE OF THE RANGE OF 0.82 TO 0.83. ABUTMENT LOCATIONS SHALL BE SHOWN ON PLANS. NO VALUE ENGINEERING SHALL BE ALLOWED IN REGARDS TO THE SPAN RATIO.

   THE EXISTING TRUSSES SPAN LENGTH TO TRUSS HEIGHT RATIO OF 8.0 FOR SPAN 1 AND 10.0 FOR SPAN 2 SHALL BE MAINTAINED. LENGTHS SHALL BE BASED ON DISTANCE BETWEEN CENTERLINE OF BEARINGS AND HEIGHT SHALL BE BASED ON DISTANCE BETWEEN CENTER OF GRAVITY OF TOP AND BOTTOM CHORD MEMBERS.

   THE PREFABICATED TRUSS MEMBERS MAY BE CONSTRUCTED FROM TYPICAL ROLLED STEEL SHAPES AND DO NOT NECESSARILY NEED TO BE COMPOSED OF BUILT UP MEMBERS. HOWEVER, STEEL PIPES AND STRUCTURAL TUBING WILL NOT BE ALLOWED.

   THE FLOOR SYSTEM MAY CONSIST OF FLOORBEAMS AND STRINGERS. THE EXISTING STRUCTURE DID NOT HAVE STRINGERS, HOWEVER STRINGERS WILL BE ALLOWED TO PROMOTE THE USE OF A MORE ECONOMIC AND STANDARD DECK SYSTEM. A TYPICAL 9" MIN. CAST-IN-PLACE CONCRETE DECK IS ASSUMED, BUT ALTERNATE DECK TYPES MAY BE USED WITH PRIOR APPROVAL FROM ENGINEER AND VTRANS SHPO.

   ALL TRUSS CONNECTIONS SHALL BE BOLTED. NO WELDING WILL BE PERMITTED FOR ANY CONNECTION BETWEEN ANY OF THE FOLLOWING: TRUSS MEMBERS, GUSSET PLATES, FLOOR SYSTEM MEMBERS, SIDEWALK FLOOR SYSTEM, BOTTOM LATERAL BRACING, AND UTILITY SUPPORTS. THE USE OF CATEGORY D, E, AND E' FATIGUE DETAILS IS PROHIBITED. TRUSSES AND BEARINGS SHALL BE DESIGNED TO MEET THE MINIMUM SUPPORT LENGTHS ON THE SUBSTRUCTURES AND THE BEARINGS SHALL BE DESIGNED TO TRANSFER 0.25 TIMES ALL TRIBUTARY LOADS IN THE RESTRAINED DIRECTIONS TO THE SUBSTRUCTURE IN ACCORDANCE WITH APPLICABLE SEISMIC REQUIREMENTS.

   THE TRUSS MEMBERS (TOP AND BOTTOM CHORDS, DIAGONALS, AND VERTICALS) AND THEIR VARIOUS CONNECTIONS INCLUDING THOSE WITH THE FLOOR SYSTEM SHALL BE GALVANIZED AND PAINTED IN ACCORDANCE WITH SUBSECTION 726.08 AND 708.01 RESPECTIVELY. THE SIDEWALK FLOOR SYSTEM SHALL ALSO BE GALVANIZED AND PAINTED TO MATCH THE PREFABRICATED TRUSS. COLOR OF PAINT SHALL BE GREEN, COLOR CHIP NUMBER 14062.

   NO PORTION OF THE PREFABRICATED STEEL TRUSS, FLOOR SYSTEM, OR SIDEWALK FLOOR SYSTEM, INCLUDING GUSSET PLATES, BOTTOM LATERAL BRACING, AND CONNECTIONS SHALL EXTEND BELOW ELEVATION 522.50. THE UTILITIES CARRIED ON EITHER SIDE OF THE BRIDGE MAY EXTEND BELOW THIS ELEVATION AS NEEDED TO MATCH THE INVERTS AT THE BEGIN AND END OF BRIDGE.
4. THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS AND PROCEDURES FOR THE PREFABRICATED PONY TRUSS AND ALL INCIDENTAL ITEMS FURNISHED UNDER ITEM 900.645 SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE) IN ACCORDANCE WITH STANDARD SPECIFICATION SUBSECTIONS 105.03 AND 506.04. THE SUBMITTAL SHALL INCLUDE, BUT NOT BE LIMITED TO, COMPLETED TABLES FROM SHEETS 63 AND 65, COMPLETE STRUCTURAL DESIGN CALCULATIONS, FABRICATION DRAWINGS AND ALL APPLICABLE PROCEDURES. THE FABRICATION DRAWINGS SHALL IDENTIFY FRACTURE CRITICAL MEMBERS, OR MEMBER COMPONENTS, TO SATISFY THE REQUIREMENTS OF STANDARD SPECIFICATION SUBSECTION 506.11. THE SUBMITTAL SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER.
5. THE CONTRACTOR SHALL SUBMIT CONSTRUCTION DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, DETAILING THE PROPOSED METHOD AND SEQUENCE OF ERECTION OF THE PREFABRICATED PONY TRUSS AND ALL INCIDENTAL ITEMS FURNISHED UNDER ITEM 900.645 SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE) IN ACCORDANCE WITH SUBSECTION 506.18.
6. AFTER CONSTRUCTION IS SUBSTANTIALLY COMPLETE, THE TRUSS FABRICATOR SHALL LOAD RATE THE PREFABRICATED PONY TRUSS AND ALL APPLICABLE INCIDENTAL ITEMS FURNISHED UNDER ITEM 900.645 SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE) USING AS-BUILT DIMENSIONS. THE TRUSS FABRICATOR IS NOTIFIED THAT THE LOAD RATING PROCEDURE, INCLUDING ADDITIONAL, VTRANS INCLUSION VEHICLES, IS STIPULATED IN SECTION 15 OF THE 2010 VTRANS STRUCTURES DESIGN MANUAL. THE TRUSS FABRICATOR IS REMINDED THAT SECTION 15.1 OF THE 2010 VTRANS STRUCTURES MANUAL STIPULATES THE CURRENT AASHTO MANUAL FOR CONDITION EVALUATION AND LOAD AND RESISTANCE FACTOR RATING (LRFR) OF HIGHWAY BRIDGES (OR MANUAL FOR BRIDGE EVALUATION, WHICHEVER IS MOST CURRENT) AS THE APPLICABLE RATING CODE. THE TRUSS FABRICATOR IS CAUTIONED THAT NO ALTERNATE RATING CODES OR METHODOLOGIES WILL BE ACCEPTED. THE CONTRACTOR SHALL SUBMIT THE LOAD RATING PACKAGE AS AN ADDITIONAL WORKING DRAWING SUBMITTAL IN ACCORDANCE WITH SUBSECTION 105.03. THE SUBMITTAL SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER.
7. THE TRUSS FABRICATOR IS NOTIFIED THAT THE DESIGN AND RATING OF GUSSET PLATES IN STEEL TRUSS BRIDGES IS A REQUIREMENT FOR PREFABRICATED STRUCTURES, AS STIPULATED IN SECTION 6.4.5 OF THE 2010 VTRANS STRUCTURES DESIGN MANUAL. RELEVANT CALCULATIONS SHALL BE INCLUDED IN THE APPROPRIATE WORKING DRAWING SUBMITTALS.
8. THE FABRICATOR SHALL ALSO FURNISH DETAILS TO THE TRUSS MEMBERS OR FLOOR SYSTEM TO ALLOW FOR FUTURE JACKING OF THE TRUSSES FOR BEARING REPLACEMENTS UNDER ONE LANE OF LIVE LOAD. THIS LOADING CONDITION SHOULD ALSO BE CHECKED IN CASE IT CONTROLS THE DESIGN OF ANY TRUSS OR FLOOR SYSTEM MEMBERS.
9. THE FOLLOWING INFORMATION IS PROVIDED TO SUPPORT THE DESIGN OF THE PREFABRICATED PONY TRUSS AND ALL INCIDENTAL ITEMS FURNISHED UNDER ITEM 900.645 SPECIAL PROVISION (PREFABRICATED TRUSS BRIDGE):

DEAD LOADS:
- ITEM 900.645 SPECIAL PROVISION (BRIDGE RAILING STEEL/PEDESTRIAN): 50 PLF
- ITEM 900.645 SPECIAL PROVISION (WATER MAIN ON BRIDGE) (8"): 60 PLF (FULL)
- ITEM 900.645 SPECIAL PROVISION (SEWER MAIN ON BRIDGE) (8"): 60 PLF (FULL)

LIVE LOADS:
- VEHICULAR: HL-93 IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
- PEDESTRIAN: IN ACCORDANCE WITH VTRANS STRUCTURES MANUAL SECTION 3.4.3
- FATIGUE: IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (SEE ADTT 2012/2032 INCLUDED IN PRELIMINARY INFORMATION SHEET)

STRUCTURAL STEEL DETAILS

PROJECT NAME: RUTLAND CITY
PROJECT NUMBER: BRF 3000 (19)

PROJECT LEADER: M.D.S.
DESIGNED BY: D.M.D.
DWG. NO.:
PLOT DATE: 6/30/2014
DRAWN BY: D.M.D.
CHECKED BY: P.M.P.
SHEET 65 OF 245

FILE NAME = V:\Projects\VNY\K2\20615\CADD\MSTN\08_@96\consultants\208_@96steeldetail.dgn
DATE/TIME = 6/30/2014
USER = 4916