

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE VERMONT AGENCY OF TRANSPORTATION 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE 2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, AND THEIR LATEST REVISIONS.
2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
3. ALL PRECAST SUBSTRUCTURE AND APPROACH SLAB CONCRETE ELEMENTS SHALL BE FABRICATED TO THE SPECIFIED DIMENSIONS AND ERECTED IN THE SPECIFIED LOCATIONS, ALL WITHIN TOLERANCES DEFINED ON THE PLANS AND IN THE PRECAST/PRESTRESSED CONCRETE INSTITUTE TOLERANCE MANUAL FOR PRECAST AND PRESTRESSED CONCRETE CONSTRUCTION, MNL 135-00, AND ITS LATEST REVISIONS.

EARTHWORK

4. ITEM 529.15 "REMOVAL OF STRUCTURE" SHALL INCLUDE:
 - THE REMOVAL OF THE EXISTING SUPERSTRUCTURE AND ANY PORTION OF THE EXISTING ABUTMENTS AND PIERS NOT REMOVED UNDER STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION.
 - THE CONCRETE PIER SHALL BE CUT OFF AT STREAM BED ELEVATION.
 - COMPLETE REMOVAL OF LAID-UP STONE UNDER EXSITING WINGWALL #4.
5. ABUTMENT STONE FILL: PLACE STONE FILL UNDER THE BRIDGE BEFORE SETTING THE STRUCTURAL STEEL.
6. REMOVAL OF THE EXISTING BOX CULVERT HEADWALL FOR DRAINAGE INSTALLATION SHALL BE TO THE ELEVATION SHOWN ON THE PLANS. PAYMENT SHALL BE MADE UNDER ITEM 203.16, SOLID ROCK EXCAVATION.

CONCRETE AND REINFORCING STEEL

7. ITEM 514.10, "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON THE BRIDGE SUPERSTRUCTURE, INCLUDING THE SIDEWALK INSIDE THE COVERED WALKWAY, AND SUBSTRUCTURE, WITH THE EXCEPTION OF THE BOTTOM OF THE DECK BETWEEN THE DRIP NOTCHES.
8. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH BY 1 INCH, UNLESS OTHERWISE NOTED.
9. CONCRETE CURE TIMES SPECIFIED IN TABLE 501.17A OF THE SPECIFICATIONS SHALL BE REDUCED TO THE FOLLOWING FOR THE SPECIFIED COMPONENTS ONLY:
 - DECK: 7 DAYS
 - ABUTMENTS: 4 DAYS
 - WINGWALLS: 4 DAYS
10. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
11. ITEM 501.33, HIGH PERFORMANCE CONCRETE, CLASS A: USE FOR THE DECK, WALKWAY SIDEWALK, BRIDGE RAIL AND INTEGRAL ABUTMENT CURTAIN WALL AND WINGWALLS ABOVE THE PILE CAP CONSTRUCTION JOINT.
12. ALL PRECAST SUBSTRUCTURE AND APPROACH SLAB CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 540 – PRECAST CONCRETE.
13. ALL CONCRETE FOR PRECAST APPROACH SLAB CLOSURE POURS AND ABUTMENT PILE CAVITIES SHALL MEET THE REQUIREMENTS OF ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
14. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".
15. ALL REINFORCING STEEL IN THE SUPERSTRUCTURE, INCLUDING THE DECK, WALKWAY SIDEWALK, BRIDGE RAIL AND ANY STEEL EXTENDING INTO HPC, CLASS A SHALL MEET THE REQUIREMENTS FOR LEVEL III CORROSION RESISTANCE, SOLID STAINLESS REINFORCING STEEL IN ACCORDANCE WITH SECTION 507.
16. ALL REINFORCING STEEL IN THE PRECAST APPROACH SLABS, ABUTMENTS, WINGWALLS AND RETAINING WAL SHALL MEET THE REQUIREMENTS FOR LEVEL II CORROSION RESISTANCE IN ACCORDANCE WITH SECTION 507. PAYMENT FOR ALL APPROACH SLAB AND PRECAST ABUTMENT REINFORCING WILL BE MADE UNDER THE APPROPRIATE SECTION 540 CONTRACT ITEM. THE ADDITIONAL LONGITUDINAL STEEL IN THE APPROACH SLAB CLOSURE POURS SHALL BE LEVEL II AND BE INCIDENTAL TO THE PRECAST APPROACH SLAB CONTRACT ITEMS.
17. ALL GROUTED COUPLERS FOR BAR REINFORCEMENT SHALL MEET THE REQUIREMENTS OF SECTION 507. REINFORCING STEEL CORROSION RESISTANCE FOR ALL GROUTED COUPLERS SHALL MATCH THE BARS THAT THEY ARE INTENDED TO SPLICE.
18. GROUT FOR GROUTED COUPLERS FOR BAR REINFORCEMENT SHALL BE APPROVED BY THE SPLICE MANUFACTURER. THE CONTRACTOR SHALL SUBMIT A GROUTING PROCEDURE PROPOSAL TO THE ENGINEER, INCLUDING A PREMIX NAME BRAND FOR APPROVAL.
19. A TEMPLATE SHALL BE USED FOR THE LAYOUT OF GROUTED COUPLERS FOR BAR REINFORCEMENT. THE SAME TEMPLATE SHALL BE USED FOR MATCHING FACES OF EACH CONNECTION.
20. ALL CONNECTIONS BETWEEN PRECAST UNITS SHALL BE DRY FIT PRIOR TO DELIVERY TO THE PROJECT SITE.
21. PAYMENT FOR GROUTED COUPLER CONNECTORS SHALL BE INCIDENTAL TO ITEMS 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #1)" AND "PRECAST CONCRETE STRUCTURE (ABUTMENT #2)".

22. FORMWORK FOR SURFACES ON THE PRECAST APPROACH SLABS THAT WILL BE IN CONTACT WITH LONGITUDINAL CLOSURE POURS SHALL BE TREATED WITH CONCRETE SURFACE RETARDER, OR SIMILAR, TO PROVIDE A ROUGHENED SURFACE; AND POWER WASHED WITH WATER PRIOR TO ERECTION.

PRECAST ABUTMENTS AND POST TENSIONING

23. THE UNIT PRICE FOR EACH PRECAST ABUTMENT SHALL INCLUDE THE ASSOCIATED PRECAST PORTIONS OF THE WINGWALLS, (EXCLUDING THE FREESTANDING RETAINING WALL PORTION OF WINGWALL #4) AND ALL LABOR AND MATERIALS TO CONNECT WINGWALLS TO THE PILE CAPS. THIS WORK SHALL BE PAID FOR UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #1)" AND "PRECAST CONCRETE STRUCTURE (ABUTMENT #2)" AS APPROPRIATE.
24. IF VERTICAL CONSTRUCTION JOINTS ARE REQUIRED BY THE CONTRACTOR FOR SHIPMENT OF THE ABUTMENTS, THEN THE SECTIONS SHALL BE KEYED AND MATCH CAST. A JOINT DETAIL SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
25. ALL POST-TENSIONING STRAND AND CONDUIT SHALL CONFORM TO THE REQUIREMENTS OF SECTION 510 – PRESTRESSED CONCRETE. GALVANIZED ANCHOR ASSEMBLIES, CONDUIT, AND POST-TENSIONING STRANDS SHALL BE INCLUDED UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #1)" AND "PRECAST CONCRETE STRUCTURE (ABUTMENT #2)" AS APPROPRIATE. POST-TENSIONING STRANDS SHALL BE COVERED WITH SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF THE STRAND, EXCEPT AT ANCHORAGE LOCATIONS.
26. GALVANIZE ANCHOR ASSEMBLIES AFTER FABRICATION ACCORDING TO AASHTO M232M/M 232.
27. DESIGN VALUES
 - i. CONCRETE COMPRESSIVE STRENGTH: $f_c = 5000$ PSI.
 - ii. POST-TENSIONING STRANDS: 0.5 INCH DIAMETER, 270 KSI, LOW RELAXATION 7-WIRE STRANDS.
 - iii. ASSUMED MODULUS OF ELASTICITY IS 28,500 KSI.
 - iv. THERE SHALL BE 2 STRANDS PER CONDUIT.
 - v. JACKING FORCE PER STRAND = 32 KIPS
28. THE CORRUGATED STEEL PIPE SHALL BE TYPE 1, GALVANIZED. ALL COSTS ASSOCIATED WITH PLACING THE CORRUGATED STEEL PIPE SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #1)" AND ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #2)".
29. THE FREESTANDING PORTION OF WINGWALL #4 SHALL BE PAID FOR UNDER ITEM 540.10, PRECAST CONCRETE STRUCTURE (RETAINING WALL).

STRUCTURAL STEEL

30. ALL NEW STRUCTURAL STEEL SHALL CONFORM TO AASHTO M 270M/M 270, GRADE 50W.
31. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.
32. GIRDER WEBS AND CROSS FRAMES SHALL BE PLUMB IN FINAL POSITION.
33. CHARPY V-NOTCH TEST: TEST STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS IN ACCORDANCE WITH SUBSECTION 714.01.
34. BOLTS FOR ALL BOLTED FIELD CONNECTIONS SHALL BE 7/8 INCH DIAMETER HIGH STRENGTH BOLTS IN 15/16 INCH DIAMETER HOLES UNLESS OTHERWISE NOTED.
35. CONNECTIONS NOT SHOWN IN THE PLANS SHALL BE DETAILED BY THE FABRICATOR IN THE FABRICATION DRAWINGS AND SUBMITTED TO THE RESIDENT ENGINEER FOR APPROVAL.
36. AFTER THE SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF GIRDERS SHALL BE TAKEN UNDER DIRECTION OF THE RESIDENT ENGINEER FOR USE IN DETERMINING THE FINAL GRADE AND HAUNCH DEPTHS.
37. FLEMING BRACKETS OR SIMILAR FALSE WORK: SPACE FLEMING BRACKETS OR SIMILAR FALSEWORK AS REQUIRED BY DESIGN WITH A MAXIMUM SPACING OF 4'-0". THE DESIGN OF FALSEWORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
38. HOLES IN WEB: FILL ANY BOLT HOLES IN THE WEBS OF THE BEAMS NOT OTHERWISE FILLED WITH BUTTON HEAD OR HEX HEAD BOLTS MEETING AASHTO M164 TYPE 3. TIGHTEN THE BOLTS IN ACCORDANCE WITH SUBSECTION 506.19 OF THE STANDARD SPECIFICATIONS.

H-PILES

39. PRE-EXCAVATION IS REQUIRED AT ALL PILE LOCATIONS. PAYMENT SHALL BE MADE UNDER ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENTS PILES, EARTH)" OR ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENTS PILES, ROCK)", SAND PLACED AROUND THE PILES SHALL BE INCIDENTAL TO ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENTS PILES, ROCK)".
40. THE PILE LOCATIONS SHALL BE PRE-EXCAVATED WITH A MINIMUM PENETRATION OF 3 FEET INTO COMPETENT BEDROCK. THE MINIMUM REQUIRED PILE LENGTH IS 10 FEET. IF COMPETENT BEDROCK IS ENCOUNTERED SHALLOWER THAN 7 FEET BELOW THE BOTTOM OF THE PILE CAP, PRE-EXCAVATION TO A MINIMUM DEPTH OF 10 FEET BELOW THE PILE CAP IS REQUIRED. PRE-EXCAVATED HOLES SHALL BE A MINIMUM 24 INCHES IN DIAMETER.
41. PILES SHALL BE SEATED ON BEDROCK TO THE APPROVAL OF THE ENGINEER. ANY WORK REQUIRED FOR THIS SHALL BE INCIDENTAL TO ITEM 504.10, "FURNISHING EQUIPMENT FOR PILE DRIVING".
42. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AND ARE SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY.

TRAFFIC CONTROL

43. TRAFFIC SHALL BE MAINTAINED ON A DETOUR AROUND THE PROJECT SITE DURING CONSTRUCTION. THE TOWN SHALL BE NOTIFIED 2 WEEKS PRIOR TO CLOSURE OF THE BRIDGE AND DETOURING OF TRAFFIC.
44. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF A SITE SPECIFIC TRAFFIC CONTROL PLAN. THIS WORK WILL BE INCIDENTAL TO ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
45. AT LEAST ONE PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) SHALL BE POSITIONED IN ADVANCE OF EACH APPROACH TO THE WORK ZONE ADVISING OF THE ACTIVITY AHEAD. PAYMENT FOR PCMS WILL BE MADE SEPARATELY UNDER CONTRACT ITEM 641.15.
46. A TEMPORARY TRAFFIC SIGNAL SHALL BE INSTALLED AT THE INTERSECTION OF WEST HILL ROAD AND VT 100 PRIOR TO CLOSURE OF THE BRIDGE. PAYMENT SHALL BE MADE UNDER ITEM 678.40, "TEMPORARY TRAFFIC SIGNAL SYSTEM".
47. ALL WORK AND ITEMS ASSOCIATED WITH THE OPENING THE BRIDGE TO TRAFFIC, INCLUDING TEMPORARY TRAFFIC BARRIER AND SIGNS SHALL BE PAID FOR UNDER ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
48. ANY REMOVAL, COVERING AND/OR RESETTING OF EXISTING TRAFFIC SIGNS, AS DEEMED NECESSARY BY THE RESIDENT ENGINEER, WILL BE INCIDENTAL TO THE ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
49. ACCESS TO ANY BUSINESSES WITHIN THE WORK ZONE SHALL BE MAINTAINED FOR BOTH VEHICLES AND PEDESTRIANS. IF THE CONTRACTOR NEEDS TO CLOSE THE ACCESSES DUE TO THEIR WORK; THEY MUST CONTACT THE PROPRTY OWNERS AT LEAST ONE (1) WEEK IN ADVANCE OF THAT WORK.
50. THE CONTRACTOR SHALL PLACE DETOUR SIGNS SO AS TO AVOID BLOCKING SIGNS OF LOCAL BUSINESSES.

COVERED WALKWAY

51. PAYMENT FOR THE ANCHOR BOLTS USED TO CONNECT THE COVERED WALKWAY TO THE BRIDGE SHALL BE INCIDENTAL TO ITEM 501.33, HIGH PERFORMANCE CONCRETE, CLASS A. THE ANCHOR BOLTS SHALL CONFORM TO ASTM A 449. NUTS AND WASHERS SHALL CONFORM TO SUBSECTION 709.01(h).
52. ALL LUMBER SHALL MEET THE REQUIREMENTS OF SECTION 522 UNLESS OTHERWISE NOTED IN THE PLANS.
53. ALL LUMBER IN THE COVERED WALKWAY SHALL BE FULL SAWN, ROUGH FINISH, EXCEPT WHERE NOTED "S4S" (DRESSED LUMBER). SEE SUBSECTION 709.01(d) FOR FULL DEFINITIONS.
54. LUMBER AND TIMBERS DESIGNATED "PT" SHALL BE PRESSURE TREATED AND MEET THE REQUIREMENTS OF SUBSECTIONS 522.13 AND 726.01.
55. ALL INTERIOR AND EXTERIOR UNTREATED WOOD SURFACES SHALL BE TREATED WITH INSECTICIDE/FUNGICIDE AND FIRE RETARDANT COATINGS IN ACCORDANCE WITH SUBSECTIONS 708.05 (b) and (c) AND SUPPLEMENTAL SPECIFICATION SECTION 660.
56. ALL NAILS AND SPIKES SHALL CONFORM TO ASTM F1667 AND BE DOUBLE HOT DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO M 232M/M 232 UNLESS OTHERWISE SPECIFIED IN THE PLANS.

MISCELLANEOUS

57. THE REMOVAL OF THE EXISTING WOODEN PEDESTRIAN RAIL LEADING UP TO THE COVERED WALKWAY SHALL BE PAID FOR UNDER ITEM 621.80, "REMOVAL AND DISPOSAL OF GUARDRAIL".
58. THE LIGHTING FOR THE COVERED WALKWAY SHALL BE PAID FOR UNDER ITEM 900.645 SPECIAL PROVISION (COVERED WALKWAY).
59. THE GRATE FOR DROP INLET #4 AT STATION 5+70.96 LT SHALL BE AS SHOWN ON THE WATER AND STORM DRAIN SHEET AND BE INCIDENTAL TO ITEM 604.18 PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE.
60. THE INSTALLATION OF THE UNDERGROUND CONDUIT FOR THE TEMPORARY SERVICE TO THE BUILDING ON THE NORTHEAST CORNER OF THE BRIDGE SHALL BE INSTALLED COINCIDENTALLY WITH THE PORTION OF THE TEMPORARY WATERLINE THAT CROSSES VT108, OR AT NIGHT.
61. ALL STEEL COMPONENTS OF BRIDGE RAILING AND BOX BEAM GUARDRAIL, INCLUDING THE RAIL CONNECTION TO THE BRIDGE RAIL, SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND SURFACE PREPARED FOR PAINTING IN ACCORDANCE WITH ASTM D 6386. COMPONENTS SHALL BE PAINTED BROWN IN ACCORDNACE WITH SUBSECTION 708.03.

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