

GENERAL

- 1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006, AND ITS LATEST REVISIONS, THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FIFTH EDITION, AND ITS LATEST REVISIONS AND THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, THIRD EDITION, AND ITS LATEST REVISIONS.
- 2. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
- 3. ITEM 529.15 "REMOVAL OF STRUCTURE" IS FOR THE REMOVAL OF THE EXISTING SUPERSTRUCTURE, INCLUDING THE BRIDGE RAIL, THE SOUTH ABUTMENT DOWN TO ELEVATION 1016' AS WELL AS ANY PORTION OF THE ABUTMENT THAT WILL AFFECT NEW CONSTRUCTION, AND THE ENTIRE NORTH ABUTMENT.
- 4. THERE ARE GRAVE SITES LOCATED IN THE VICINITY OF WINGWALL #1. THE CONTRACTOR SHALL CONTACT VTRANS ARCHAEOLOGIST JEANNINE RUSSELL AT 802-828-3981 A MINIMUM OF TWO WEEKS PRIOR TO PERFORMING EXCAVATION IN THIS AREA. A REPRESENTATIVE OF THE STATE WILL BE PRESENT DURING THE EXCAVATION IN THIS AREA. THIS WORK WILL BE INCLUDED IN THE BID PRICE OF THE APPROPRIATE EXCAVATION ITEM. IN NO CASE SHALL THE CONTRACTOR DISTURB EARTH OUTSIDE OF THE BARRIER FENCE AS SHOWN IN THE EROSION CONTROL PLANS. SEE SPECIAL PROVISIONS FOR MORE INFORMATION.
- 5. THERE IS A FENCE TO BE REMOVED BETWEEN STATIONS 97+61 RT AND 98+50 RT. THE CONTRACTOR SHALL STOCKPILE THIS FENCE AT A LOCATION ACCEPTABLE TO THE PROPERTY OWNER.

CONCRETE

- 6. ITEM 514.10 "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE SUPERSTRUCTURE BETWEEN DRIP NOTCHES.
- 7. THE OVERLAY AND SUBSTRUCTURE CONCRETE ABOVE THE CONSTRUCTION JOINT SHALL BE SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT)
- 8. THE SUBSTRUCTURE CONCRETE BELOW THE CONSTRUCTION JOINT SHALL BE CONCRETE, HIGH PERFORMANCE CLASS B.
- 9. THE DECK WILL HAVE A LONGITUDINAL GROOVED FINISH. THIS WORK WILL BE PAID FOR UNDER ITEM 900.675 SPECIAL PROVISION (LONGITUDINAL DECK GROOVING).
- 10. THE TOP SURFACE OF THE PILE CAP SHALL INITIALLY BE GIVEN A FLOAT FINISH TO GRADE. THE CONCRETE WITHIN THE REINFORCING CAGE SHALL THEN BE ROUGHENED BY RAKING PARALLEL TO THE FACE OF THE ABUTMENT TO AN AMPLITUDE OF 1/2 INCH. THE CONCRETE OUTSIDE THE REINFORCING CAGE AND UNDER THE BEARING PADS SHALL REMAIN SMOOTH.
- 11. TO FACILITATE COMPLETE CONSOLIDATION OF CONCRETE BETWEEN THE TOP OF THE BRIDGE SEAT AND THE BOTTOM OF THE BEAM, VENT HOLES MAY BE PROVIDED FOR THE INSERTION OF A VIBRATOR IN THE FRONT FORM UNDER EACH BEAM. IF CONCRETE DOES NOT CONSOLIDATE IN THIS AREA, THE CONTRACTOR SHALL REPAIR THIS AREA TO THE SATISFACTION OF THE ENGINEER.

PRESTRESSED BOX BEAMS

- 12. TRANSVERSE TENDONS PLATES AND CHUCKS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M 232M/M 232.
- 13. ITEM 510.24 "GROUTING SHEAR KEYS": FILL THE JOINTS BETWEEN THE BEAMS WITH MORTAR, TYPE IV, AS DESCRIBED IN SUBSECTION 510.13 AND AS FOLLOWS:
 - A. CLEAN JOINTS WITH AN OIL FREE AIR-BLAST IMMEDIATELY BEFORE GROUT PLACEMENT. VERIFY THAT THE BACKER ROD IS STILL IN PLACE.
 - B. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR ADDITIONAL JOINT PREPARATION AND GROUT PLACEMENT.
 - C. CAREFULLY ROD JOINTS TO ELIMINATE ANY POSSIBILITY OF VOIDS.
- 14. DESIGN VALUES
 - A. CONCRETE: $f_c = 7$ ksi AND STRENGTH @ RELEASE = 5.5 ksi
 - B. LIVE LOAD: AASHTO HL-93
 - C. PRESTRESSING STRANDS: 0.6" DIAMETER, 270 ksi, LOW-RELAXATION 7-WIRE STRANDS PULLED TO 75% OF THEIR YIELD STRENGTH
 - D. POST-TENSIONING STRANDS: 0.6" DIAMETER, 270 ksi, LOW-RELAXATION 7-WIRE STRANDS.
 - E. THE ASSUMED MODULUS OF ELASTICITY FOR THE STRAND IS 28,500 KSI.
 - F. TRANSVERSE TENDONS SHALL BE COVERED BY SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF THE STRAND. TIES SHALL BE TENSIONED TO 47 KIPS FOR EACH 0.6" DIAMETER STRAND.

G. SERVICE LOADS

MEMBER MOMENT	732.1 K-FT
SUPERIMPOSED DEAD LOAD MOMENT	106.3 K-FT
LIVE LOAD & IMPACT MOMENT	499.2 K-FT
DEAD LOAD REACTION	67.4 K
LIVE LOAD & IMPACT REACTION	57.9 K
TOTAL REACTION	125.3 K
FINAL CAMBER	0.3 IN

- 15. THE FABRICATOR MAY, WITH THE APPROVAL OF THE ENGINEER, ALTER THE DESIGN AS DETAILED TO MEET THE CONTRACTOR'S CONSTRUCTION NEEDS, OR THE PLANT'S PRESTRESSING OPERATION AND MATERIAL REQUIREMENTS. ALTERNATE STRAND, TRANSVERSE TIE AND CROSS-SLOPE CONFIGURATIONS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ANY DESIGN CHANGES SHALL MEET ALL OF THE APPLICABLE DESIGN CRITERIA, LOADINGS AND CODES (THE LATEST EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND THE LATEST EDITION OF THE STRUCTURES DESIGN MANUAL), AND SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT.
- 16. THE PRECASTER SHALL SANDBLAST SHEAR KEY FACES PRIOR TO DELIVERY.
- 17. ALL TIES AND STIRRUPS IN THE BOX BEAMS SHALL BE EPOXY COATED.

PILES

- 18. THE PILES SHALL BE HP 14 X 102.
- 19. THE PILES SHALL BE EMBEDDED IN THE GROUND A MINIMUM OF 25 FEET AND SHALL BE DRIVEN TO A NOMINAL RESISTANCE OF 350 KIP. TO PREVENT DAMAGE TO THE PILES, PILE SHOES SHALL BE REQUIRED AND SHALL CONFORM TO SECTION 505.
- 20. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY.
- 21. A MINIMUM OF ONE DYNAMIC PILE TEST SHALL BE CONDUCTED FOR EACH SUBSTRUCTURE UNIT. MORE TESTS MAY BE REQUIRED BY THE ENGINEER. THE FIRST TEST PILE SHALL BE THE FIRST DRIVEN FOR THE SUBSTRUCTURE UNIT. THE PILE SHALL BE DRIVEN AT THE PLAN LOCATION AND THE PILE SHALL BE MEASURED FOR PAYMENT UNDER CONTRACT ITEM 505.29.

TRAFFIC CONTROL

- 22. THE TRAFFIC CONTROL PHASING SHOWN IN THE PLANS IS OF A CONCEPTUAL NATURE ONLY. THE CONTRACTOR SHALL SUPPLY A DETAILED TRAFFIC CONTROL PLAN, WHICH NEED NOT UTILIZE THE PHASING SHOWN IN THESE PLANS.
- 23. AS PART OF 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE), THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO THE ENGINEER FOR APPROVAL PER SUBSECTION 105.03. SEE SPECIAL PROVISIONS.
- 24. ALL SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD. FOR ADDITIONAL SIGNING INSTRUCTIONS SEE STANDARDS E-100, E-100A, E-101, E-102, E-102A, AND E-121.
- 25. ALL ITEMS REQUIRED TO IMPLEMENT THE CONTRACTOR'S TRAFFIC CONTROL PLAN WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED INCLUDED IN THE BID PRICE FOR ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE). THIS INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING ITEMS:
 - TEMPORARY TRAFFIC SIGNAL SYSTEM
 - TEMPORARY TRAFFIC BARRIER
 - TEMPORARY PAVEMENT MARKINGS (INCLUDING REMOVAL OF EXISTING MARKINGS)
 - CONSTRUCTION SIGNING
- 26. PAYMENT FOR MAINTENANCE OF THE EXISTING BRIDGE STRUCTURE FOR PHASE I TRAFFIC WILL BE MADE UNDER CONTRACT ITEM 527.10. PAYMENT FOR TEMPORARY BRIDGE WIDENING AND MAINTENANCE OF THE NEW BRIDGE STRUCTURE FOR PHASE II TRAFFIC WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 900.645 SPECIAL PROVISION (TEMPORARY BRIDGE WIDENING FOR PHASE CONSTRUCTION).
- 27. THERE ARE NUMEROUS DETAILS ON THESE PLANS THAT ARE BASED ON A PHASED CONSTRUCTION DESIGN THAT MAY OR MAY NOT BE USED BY THE CONTRACTOR. THE LOCATION OF CONSTRUCTION JOINTS, THE CONFIGURATION OF THE ABUTMENTS, AND THE DIMENSIONS OF REINFORCING STEEL WILL ALL HAVE TO BE CONSIDERED ONCE THE CONTRACTOR'S TRAFFIC CONTROL PLAN HAS BEEN ACCEPTED.

- 28. SPECIAL PROVISION (TEMPORARY BRIDGE WIDENING FOR PHASED CONSTRUCTION) IS FOR THE CONSTRUCTION OF A TEMPORARY ROADWAY AND BRIDGE COMPONENT SO THAT A 12 FOOT TRAVEL LANE, INCLUDING SHOULDERS CAN BE MAINTAINED THROUGH THE PROJECT (SEE TRAFFIC PHASING TYPICALS SHEET). THE CONTRACTOR SHALL KEEP ALL FILL SLOPES FROM THE TEMPORARY BRIDGE INSIDE THE RIGHT OF WAY LIMITS UNLESS THE CONTRACTOR CAN MAKE OTHER ARRANGEMENTS WITH PROPERTY OWNERS. IF TEMPORARY SHEET PILING IS REQUIRED TO KEEP FILLS INSIDE THE RIGHT OF WAY, COST SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR SPECIAL PROVISION (TEMPORARY BRIDGE WIDENING FOR PHASED CONSTRUCTION).

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