

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 PRECAST CONCRETE ELEMENTS TO BE FABRICATED TO THE SPECIFIED DIMENSIONS WITHIN THE TOLERANCES DICTATED IN THE PRECAST/PRESTRESSED CONCRETE INSTITUTE TOLERANCE MANUAL FOR PRECAST AND PRESTRESSED CONCRETE CONSTRUCTION, MNL 135-00, AND ITS LATEST REVISIONS.
- 3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING CONSISTENCY BETWEEN FABRICATOR'S SHOP DRAWINGS AND ENSURING THAT ALL PRECAST AND RAIL COMPONENTS FIT TOGETHER.
- 4. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
- 5. NO ADJUSTMENTS TO THE BITUMINOUS WEARING SURFACE ON THE BRIDGE SHALL BE MADE TO ACCOUNT FOR THE DIFFERENCE BETWEEN BEAM CAMBER AND THE THEORETICAL ROADWAY PROFILE. THE WEARING SURFACE SHALL BE SHIMMED TRANSVERSELY AS NECESSARY TO ACCOUNT FOR POTENTIAL DIFFERENTIAL CAMBER OF THE ADJACENT BEAMS.
- 6. NO CAST IN PLACE CONCRETE SUBSTITUTIONS WILL BE PERMITTED FOR PRECAST CONCRETE.
- 7. THE REMOVAL OF EXISTING STRUCTURE WILL BE PAID FOR UNDER ITEM 529.15, "REMOVAL OF STRUCTURE". THIS WORK SHALL INCLUDE REMOVAL OF THE ENTIRE SUPERSTRUCTURE AND ANY PORTIONS OF THE EXISTING ABUTMENTS THAT FALL OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION.

TRAFFIC CONTROL

- 8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF A SITE SPECIFIC TRAFFIC CONTROL PLAN FOR ALL STAGES OF CONSTRUCTION. THE PLAN SHALL CLEARLY DETAIL HOW TRAFFIC WILL BE MAINTAINED. THE PLAN SHALL SPECIFY ALL CONSTRUCTION ACTIVITIES REQUIRING ALTERNATING ONE WAY TRAFFIC, RELATE THOSE ACTIVITIES TO THE CONSTRUCTION SCHEDULE, AND SHOW APPROPRIATE TEMPORARY TRAFFIC CONTROL. THE CONTRACTOR SHALL SUBMIT DETAILED TRAFFIC CONTROL PLANS TO THE ENGINEER FOR APPROVAL PER SUBSECTION 105.03. ALL COSTS WILL BE INCLUDED IN ITEM 900.645 "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
- 9. ALL ITEMS REQUIRED TO IMPLEMENT THE CONTRACTOR'S TRAFFIC CONTROL PLAN WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED INCIDENTAL TO THE BID PRICE FOR ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
- 10. INSTALLATION OF TEMPORARY TRAFFIC CONTROL SIGNS SHALL NOT BLOCK ANY EXISTING TRAFFIC CONTROL SIGN ASSEMBLIES. THE CONTRACTOR SHALL TRY TO MAINTAIN AT LEAST 200 FEET BETWEEN SIGN ASSEMBLIES.
- 11. TH3 IN PROXIMITY OF THE PROJECT WILL BE CLOSED DURING THE BRIDGE CLOSURE PERIOD. IF THE TOWN ELECTS TO SIGN A LOCAL DETOUR, THEN NO SIGNS WILL BE PERMITTED IN A STATE HIGHWAY RIGHT OF WAY. ANY DETOUR SIGNED IS THE SOLE RESPONSIBILITY OF THE TOWN OF CLARENDON.

EARTHWORK

- 12. THE "STONE FILL, TYPE III" AND "SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL) (TYPE I)" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW BEAMS ARE SET.
- 13. THE GRAVEL DRIVES OFF OF WING WALLS 3 AND 4 SHALL BE PLACED AND GRADED TO THE SATISFACTION OF THE PROPERTY OWNER. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 401.10 "AGGREGATE SURFACE COURSE".
- 14. THE CONTRACTOR MAY SUBSTITUTE SUBBASE MATERIAL FOR THE SAND BORROW SHOWN IN THE MATERIALS TRANSITION. 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 ITEM 649.11 "GEOTEXTILE FOR ROAD BED SEPARATOR" SHALL BE PLACED BETWEEN THE SUBGRADE AND SUBBASE MATERIAL. ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING THE GEOTEXTILE WILL BE INCIDENTAL TO 203.31 "SAND BORROW".

CONCRETE

- 15. ALL LIFTING POINTS IN THE SUPERSTRUCTURE SHALL BE REMOVABLE TO THE MINIMUM CLEAR COVER FOR REINFORCING STEEL SPECIFIED IN THE PLANS. THE LIFTING POINTS SHALL BE DETAILED IN THE APPROPRIATE FABRICATION DRAWING. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.

- 16. ALL RECESSED LIFTING POINTS AND BLOCKOUTS SHALL BE FILLED WITH A TYPE IV MORTAR PER SUBSECTION 707.03. PAYMENT WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.
- 17. THE METHOD OF FORMING FOR SUBSEQUENT POURS AFTER PLACING PRECAST/PRESTRESSED SUPERSTRUCTURE UNITS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR IS ENCOURAGED TO WORK WITH THE FABRICATOR IF ADDITIONAL SUPPORTS ARE REQUIRED. IN NO CASE SHALL THE CONTRACTOR ATTACH ADDITIONAL FORM OR SCREED SUPPORTS BY DRILLING OR SIMILAR MEANS INTO ANY PRECAST/PRESTRESSED SUPERSTRUCTURE UNIT.
- 18. ALL FORM SUPPORTS AND FORM TIES THAT ARE TO REMAIN PERMANENTLY IN THE CONCRETE ABOVE THE BRIDGE SEAT SHALL BE GALVANIZED AND CONFORM TO SECTION 726 OF THE STANDARD SPECIFICATIONS.
- 19. BRIDGE RAIL SHALL BE CONCRETE, HIGH PERFORMANCE CLASS A AND WILL BE PAID UNDER ITEM 525.45, "BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION". THE EFFECTIVE CURE TIME OF THE BRIDGE RAIL MAY BE REDUCED TO A MINIMUM OF (7) SEVEN DAYS PROVIDED THAT THE CONCRETE HAS REACHED 85% OF THE COMPRESSIVE STRENGTH. THE BRIDGE RAIL SHALL MEET ALL OTHER SPECIFICATIONS OF SECTION 501 OF THE STANDARD SPECIFICATIONS.
- 20. THE BRIDGE RAIL CONCRETE SHALL NOT BE SUBSTITUTED FOR HIGH PERFORMANCE CONCRETE, RAPID SET.
- 21. BRIDGE RAIL SHALL NOT BE POURED UNTIL THE CONCRETE IN THE LONGITUDINAL CLOSURE POUR BETWEEN THE BEAMS HAS REACHED A MINIMUM STRENGTH OF 4,000 PSI.
- 22. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.
- 23. ALL EXPOSED EDGES SHALL HAVE A 1"x1" CHAMFER UNLESS OTHERWISE NOTED.

REINFORCING STEEL

- 24. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".
- 25. TEST BARS SHALL BE PROVIDED IN ACCORDANCE WITH THE "VERMONT AGENCY OF TRANSPORTATION MATERIAL SAMPLING MANUAL" AVAILABLE ON THE AGENCY WEBSITE. A MINIMUM OF TWO TEST SECTIONS ARE REQUIRED FOR EACH SIZE, BRAND, AND GRADE OR TYPE OF REINFORCING. SEE THE MANUAL FOR ACCEPTABLE DIMENSIONS OF TEST SECTIONS. ALL COSTS ASSOCIATED WITH PROVIDING BARS FOR TESTING WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE PRECAST ITEM.
- 26. ALL REINFORCING STEEL IN THE NEXT BEAMS, PREFABRICATED BRIDGE UNITS, AND APPROACH SLABS SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL II" AND WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE PRECAST ITEM.
- 27. ALL REINFORCING STEEL IN BRIDGE RAIL SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL II" AND WILL BE PAID UNDER ITEM 525.45, "BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION".
- 28. BARS LABELED N7, N8, AND N9 IN THE PBU DETAILS 2 SHEET SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL II" AND WILL BE PAID UNDER 507.12 "REINFORCING STEEL, LEVEL II (FPQ)" FOR THE APPROPRIATE PBU ALTERNATE.
- 29. ALL REINFORCING STEEL IN THE CLOSURE POURS FOR THE ABUTMENT, APPROACH SLABS, AND SUPERSTRUCTURE SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL II" AND WILL BE PAID UNDER ITEM 507.12 REINFORCING STEEL, LEVEL II (FPQ) FOR THE APPROPRIATE SUPERSTRUCTURE ALTERNATE.
- 30. ALL ABUTMENT REINFORCING STEEL LOCATED OR EXTENDING ABOVE THE BRIDGE SEAT SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL II" AND WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE ABUTMENT OPTION.
- 31. ALL ABUTMENT REINFORCING STEEL LOCATED COMPLETELY BELOW THE BRIDGE SEAT SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL I" AND WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE ABUTMENT OPTION.
- 32. CUTTING AND REPAIRING DAMAGED AREAS OF COATED REINFORCING STEEL SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 507.04.

33. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

ALONG BACK FACES OF WALLS AGAINST EARTH	2 INCH
ALONG TOP SURFACE OF DECK SLAB:	2 ½ INCH
ALONG BOTTOM SURFACE OF NEXT BEAM:	1¾ INCH
ALONG BOTTOM SURFACE OF PBU:	1 ½ INCH
ELSEWHERE UNLESS OTHERWISE INDICATED:	3 INCH

PRECAST ABUTMENTS AND POST-TENSIONING

- 34. IF A VERTICAL CONSTRUCTION JOINT IS REQUIRED BY THE CONTRACTOR FOR SHIPMENT OF THE ABUTMENTS, THE SECTIONS SHALL BE KEYED AND MATCH CAST. A JOINT DETAIL SHALL BE SHOWN ON THE FABRICATION DRAWINGS. NO LESS THAN TWO PILES SHALL SUPPORT EACH PRECAST ABUTMENT SECTION.
- 35. EPOXY BONDING COMPOUND SHALL BE APPLIED TO ALL VERTICAL MATCH CAST CONSTRUCTION JOINTS. SEE AGENCY WEBSITE FOR LIST OF APPROVED EPOXY BONDING COMPOUNDS. PAYMENT FOR EPOXY WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE PRECAST ITEM.
- 36. ITEM 524.21, JOINT SEALER, POLYURETHANE, SHALL BE APPLIED TO THE OUTSIDE FAR FACE OF ALL VERTICAL MATCH CAST CONSTRUCTION JOINTS.
- 37. POST-TENSIONING AND ASSOCIATED ITEMS ARE ONLY REQUIRED IF THE PILE CAP IS CONSTRUCTED OF MORE THAN ONE UNIT. 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. ANY POST-TENSIONING STRANDS AND CONDUITS SHALL ADHERE TO THE REQUIREMENTS OF SECTION 510 - PRESTRESSED CONCRETE. GALVANIZED ANCHOR ASSEMBLIES, CONDUIT, POLYPROPYLENE SHEATH, AND POST-TENSIONING STRANDS WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE PRECAST ITEM.
- 38. POST-TENSIONING SHALL BE COMPLETED PRIOR TO POURING THE PILE CAVITY CLOSURE POUR.
- 39. GALVANIZE ANCHOR ASSEMBLIES AFTER FABRICATION ACCORDING TO AASHTO M232M/M 232.
- 40. DESIGN VALUES
 - a. CONCRETE COMPRESSIVE STRENGTH: f'c = 5,000 PSI.
 - b. POST-TENSIONING STRANDS: 0.5 INCH DIAMETER, 270 KSI, LOW RELAXATION 7-WIRE STRANDS.
 - c. ASSUMED MODULUS OF ELASTICITY IS 28,500 KSI.
 - d. THERE SHALL BE 2 STRANDS PER CONDUIT.
 - e. THE JACKING FORCE PER STRAND = 32 KIPS
- 41. THE CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF SUBSECTION 711.01 AND SHALL BE GALVANIZED PER SUBSECTION 726.08 OF THE STANDARD SPECIFICATIONS. ALL COSTS ASSOCIATED WITH PLACING THE CORRUGATED STEEL PIPE, WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE PRECAST ABUTMENT ITEM.
- 42. THE CONCRETE FOR THE ABUTMENT PILE CAVITIES WILL BE PAID FOR UNDER ITEM 900.608 SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ) AND WILL BE PAID UNDER ITEM 900.608 "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)" FOR THE APPROPRIATE SUPERSTRUCTURE ALTERNATE. SEE SPECIAL PROVISIONS FOR REQUIREMENTS.
- 43. THE BACKFILL BEHIND THE ABUTMENTS SHALL BE LIMITED TO A HEIGHT OF 3'-0" BELOW THE BRIDGE SEAT AND NO CRANES SHALL BE CLOSER THAN 1'-0" TO THE ABUTMENT DURING THE ERECTION OF THE SUPERSTRUCTURE.
- 44. LOADING OF THE ABUTMENT PILE CAVITIES AND END CLOSURE POURS SHALL CONFORM TO SUBSECTION 501.18; HOWEVER, THE COMPRESSIVE STRENGTH SHALL BE TAKEN AS THE 28 DAY COMPRESSIVE STRENGTH SPECIFIED IN THE PROJECT SPECIAL PROVISIONS. SUBSECTION 501.18(c) SHALL NOT APPLY TO THE VERTICAL CONSTRUCTION JOINT BETWEEN PRECAST ELEMENTS.

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