

GENERAL

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND THE 2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, AND THEIR LATEST REVISIONS.
- A TEMPORARY BRIDGE WAS PLACED UPSTREAM OF THE EXISTING, FAILED STRUCTURE. REMOVAL OF THIS TEMPORARY BRIDGE AND ITS APPROACHES SHALL BE PAID FOR UNDER ITEM 900.645 "SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE AND APPROACHES)". THE TEMPORARY BRIDGE IS THE PROPERTY OF VTRANS AND SHALL BE RETURNED TO THE VTRANS MAINTENANCE FACILITY IN SPRINGFIELD, VT. CONTACT HOBERT GATES AT (802) 524-5926 TO MAKE NECESSARY ARRANGEMENTS AS PER THE SPECIAL PROVISIONS.
- DURING CONSTRUCTION, TRAFFIC SHALL BE MAINTAINED ON AN EXISTING TWO-WAY TEMPORARY BRIDGE LOCATED UPSTREAM OF THE EXISTING STRUCTURE. ALL WORK ASSOCIATED WITH THE MAINTENANCE OF THE EXISTING TEMPORARY BRIDGE AND ITS APPROACHES, INCLUDING TEMPORARY TRAFFIC BARRIER, ENERGY ABSORPTION ATTENUATORS, PAVEMENT AND PAVEMENT MARKINGS WILL BE INCLUDED IN THE UNIT PRICE FOR CONTRACT ITEM 527.10, "MAINTENANCE OF STRUCTURES AND APPROACHES".
- PAYMENT FOR ALL NEW ON AND OFF-PROJECT CONSTRUCTION SIGNING AND TRAFFIC CONTROL DEVICES, INCLUDING DRUMS AND BARRICADES, WILL BE MADE UNDER CONTRACT ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
- FULL ACCESS TO ALL SIDE ROADS AND DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
- ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
- THE CONTRACTOR SHALL INSTALL TWO GRANITE PLAQUES SUPPLIED BY THE STATE IN LOCATIONS AS SHOWN ON THE PLANS. THE PLAQUES SHALL BE INSTALLED TO THE SATISFACTION OF THE TOWN OF JAMAICA AND THE ENGINEER. INSTALLATION OF THE PLAQUES SHALL BE INCIDENTAL TO THE BRIDGE RAIL CONCRETE.
- THE CONTRACTOR SHOULD NOTE THAT THE EXISTING TEMPORARY BRIDGE APPROACH AND APPROACH RAIL CONFLICTS WITH THE LOCATION OF WINGWALL #1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DEVELOP A PLAN, ACCEPTABLE TO THE ENGINEER, FOR THE CONSTRUCTION OF WINGWALL #1 IN ITS PROPOSED LOCATION AND DIMENSION. THIS PLAN SHALL BE SUBMITTED TO THE ENGINEER AT THE PRECONSTRUCTION MEETING. THE DEVELOPMENT OF THIS PLAN, ALL MATERIALS, LABOR, ETC. REQUIRED TO CONSTRUCT WINGWALL #1 AS PER THE CONTRACTOR'S PLAN WILL BE CONSIDERED INCLUDED IN THE BID PRICE FOR ITEM 501.33 "CONCRETE, HIGH PERFORMANCE, CLASS A"; AND ITEM 501.34 "CONCRETE, HIGH PERFORMANCE CLASS B." MECHANICAL SPLICE CONNECTORS ARE SHOWN IN THE DETAILS FOR WINGWALL #1 SHOULD THE CONTRACTOR CHOOSE TO PHASE ITS CONSTRUCTION. TEMPORARY TRAFFIC WILL BE ALLOWED ON THE NEW BRIDGE ONCE THE DECK HAS CURED AND PROVISIONS HAVE BEEN MADE FOR SAFE VEHICULAR TRAVEL. THE APPROACH SLAB AT ABUTMENT #1 NEED NOT BE IN PLACE FOR TEMPORARY TRAFFIC.

EARTHWORK AND RELATED ITEMS

- THE "STONE FILL, TYPE IV" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW STEEL GIRDERS ARE SET.

STRUCTURAL STEEL

- STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01.
- ANY HOLES IN THE WEBS OF FASCIA GIRDERS NOT OTHERWISE FILLED SHALL BE FILLED WITH BUTTON HEAD BOLTS. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTIONS 506.19.
- ANY CONNECTIONS NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.
- ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.
- ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SECTION 506 UNLESS OTHERWISE NOTED.
- FLEMING BRACKETS OR SIMILAR FALSE WORK SHALL BE PLACED AT A MAXIMUM SPACING OF 4 FEET. THE BRACKETS SHALL BEAR NEAR THE BOTTOM FLANGE AND IN NO CASE SHALL THEY BEAR ABOVE THE BOTTOM QUARTER WEB.
- AFTER THE GIRDERS HAVE BEEN ERECTED, ELEVATIONS SHALL BE TAKEN ALONG THE TOP OF THE GIRDERS AS DIRECTED BY THE RESIDENT ENGINEER, FOR USE IN DETERMINING THE FINISHED GRADE.
- GIRDER WEBS AND CROSS FRAMES SHALL BE PLUMB IN FINAL POSITION.

PILES

- THE PILES SHALL BE HP 12 X 84.
 - IF NO BEDROCK IS ENCOUNTERED, THE PILES SHALL BE DRIVEN TO A NOMINAL PILE DRIVING RESISTANCE OF 380 KIPS WITH A MINIMUM DEPTH OF 20 FEET BELOW THE BOTTOM OF THE PILE CAP AND THEREFORE NO PRE-BORING IS REQUIRED. IF BEDROCK IS ENCOUNTERED AT DEPTHS SHALLOWER THAN 20 FEET BELOW THE BOTTOM OF PILE CAP, THE PILE LOCATIONS SHALL BE PRE-BORED WITH A PENETRATION OF 3 FEET INTO BEDROCK. IF BEDROCK IS ENCOUNTERED SHALLOWER THAN 5 FEET, PRE-BORING TO A MINIMUM DEPTH OF 8 FEET BELOW THE PILE CAP IS REQUIRED WHILE ONLY BACKFILLING THE BOTTOM THREE FEET WITH CONCRETE.
 - ALL PRE-BORED HOLES SHALL BE 24 INCHES IN DIAMETER. THE BOTTOM THREE (3) FEET IN BEDROCK SHALL BE FILLED WITH CONCRETE AFTER PLACEMENT OF THE PILE. SAND SHALL BE USED TO BACKFILL THE ANNULAR SPACE ABOVE THE CONCRETE TO THE BOTTOM OF GRANULAR BACKFILL FOR STRUCTURES. REFER TO THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
 - TO PREVENT DAMAGE TO THE PILES, PILE SHOES ARE REQUIRED FOR DRIVEN PILES AND SHALL CONFORM TO SUBSECTION 505.04 (f).
 - PILE TESTING AND SEQUENCE
 - A MINIMUM OF 3 DYNAMIC TESTS SHALL BE PERFORMED DURING INSTALLATION. NO LESS THAN 1 TEST SHALL BE PERFORMED AT EACH ABUTMENT. THE REMAINING PILES SHOULD BE CALIBRATED BY WAVE EQUATION ANALYSIS.
 - ABUTMENT PILES SHALL BE DRIVEN STARTING AT THE CENTERLINE OF VT 30 AND WORKING OUTWARD SO THAT THE EXTERIOR PILES ARE DRIVEN LAST.
 - FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY.
 - THE TOPS OF THE PILES AFTER DRIVING SHALL NOT VARY FROM THE POSITION SHOWN ON THE PLANS BY MORE THAN 3 INCHES. THE PILE ORIENTATION SHALL NOT VARY BY MORE THAN 5 DEGREES. THE CONTRACTOR SHALL DEMONSTRATE TO THE SATISFACTION OF THE ENGINEER HOW THE TOLERANCES WILL BE MET. THESE MEASURES SHALL BE DEMONSTRATED IN A SUBMITTAL TO BE ACCEPTED BEFORE PILE DRIVING COMMENCES.
 - PRE-BORING AT ABUTMENT 1 PILE LOCATIONS IS OPTIONAL, PROVIDED ALL PILE DRIVING REQUIREMENTS CAN BE MET. PRE-BORING AT ABUTMENT 2 PILE LOCATIONS IS REQUIRED. PAYMENT SHALL BE PAID FOR 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)".
- CONCRETE
- THE DECK, BRIDGE RAIL, ABUTMENTS & WINGWALLS ABOVE BRIDGE SEAT SHALL BE CONCRETE, HIGH PERFORMANCE CLASS A.
 - ALL OTHER SUBSTRUCTURE CONCRETE SHALL BE CONCRETE, HIGH PERFORMANCE CLASS B.
 - CONCRETE PORTIONS OF ABUTMENTS AND WINGWALLS ABOVE ADJACENT BRIDGE SEAT ELEVATIONS SHALL NOT BE PLACED UNTIL FINISH GRADES HAVE BEEN DETERMINED BY THE RESIDENT ENGINEER.
 - IN ACCORDANCE WITH SUBSECTION 506.23(A) AND AS DIRECTED BY THE RESIDENT ENGINEER, THE CONTRACTOR SHALL TAKE MEASURES NECESSARY TO PROTECT ALL SUBSTRUCTURE CONCRETE FROM STAINING DUE TO OXIDE FORMATION ON THE STRUCTURAL STEEL PRIOR TO PLACEMENT OF THE DECK. THESE MEASURES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B". ANY SUCH STAINING THAT OCCURS PRIOR TO DECK PLACEMENT SHALL BE REMOVED AT NO ADDITIONAL COST TO THE STATE.
 - THE DECK IS TO BE POURED IN ONE CONTINUOUS POUR WITH A MAXIMUM DURATION OF EIGHT HOURS. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A TRANSVERSE CONSTRUCTION JOINT SHALL BE USED BETWEEN ADJACENT POURS. A MINIMUM 96 HOUR DELAY BETWEEN ADJACENT POURS SHALL BE OBSERVED.
 - ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH X 1 INCH.
 - ITEM 514.10 "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.
 - JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS SHOWN IN THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.
 - THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT. UPWARD KEYS SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.
 - REINFORCING STEEL ABOVE THE BRIDGE SEATS IN THE ABUTMENTS, BRIDGE RAIL, AND APPROACH SLABS SHALL BE LEVEL II REINFORCING STEEL IN ACCORDANCE WITH SECTION 507.
 - REINFORCING STEEL BELOW THE BRIDGE SEATS IN THE ABUTMENTS SHALL BE LEVEL I REINFORCING STEEL IN ACCORDANCE WITH SECTION 507.

- MINIMUM COVER FOR REINFORCING STEEL SHALL BE AS INDICATED IN THE PLANS.

- REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
 - SPACING: +/- 1 INCH
 - CLEARANCE: +/- 1/4 INCH

PRECAST CONCRETE STRUCTURE

- DESIGN CRITERIA:
 - SOIL UNIT WEIGHT = 140 PCF
 - DESIGN LIVE LOAD = HL-93
 - NOMINAL BEARING RESISTANCE = 6.7 KSF
 - BEARING RESISTANCE FACTOR = 0.45
 - DESIGN FILL OVER BOX = 3 FEET
 - CONCRETE COMPRESSIVE STRENGTH = SEE SUBSECTION 540.05 (e)
 - ALL CONCRETE SHALL BE PRECAST. ITEM 540.10 "PRECAST CONCRETE STRUCTURE" INCLUDES ALL BOX SEGMENTS, RETENTION SILLS, HEADWALLS, CUTOFF WALLS AND WINGWALLS. ALL CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR AND SHALL BE CONSIDERED INCIDENTAL TO ITEM 540.10.
 - THE PRECAST BOX SECTIONS ARE SHOWN FOR REFERENCE ONLY. THE ACTUAL DIMENSIONS AND SHAPE WILL BE DEPENDENT ON THE FABRICATOR. THE MINIMUM INSIDE DIMENSIONS SHALL BE 8'-0" IN HEIGHT AND 16'-0" IN WIDTH. THE OVERALL LENGTH OF THE BOX SHALL BE 85'-0" ALONG THE STREAMBED GRADE. THE EXPOSED ENDS OF THE FIRST AND LAST UNITS SHALL BE VERTICAL.
 - THE EXTERIOR (TOP AND SIDES) OF ALL CONCRETE BOX JOINTS ALONG WITH ALL LIFTING HOLES SHALL BE FILLED WITH MORTAR TYPE IV AFTER BEING SET IN THEIR FINAL POSITION. THIS WORK WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 540.10.
 - MEMBRANE WATERPROOFING SHALL BE APPLIED TO THE ENTIRE TOP OF THE CONCRETE BOX. A TWO (2) FOOT WIDE STRIP OF MEMBRANE SHALL BE PLACED AT EACH VERTICAL JOINT (SIDES). MEMBRANE SHALL BE CENTERED ON THE JOINT AND COVER THE FULL HEIGHT. THE SIDES SHALL BE COVERED PRIOR TO THE TOP. ANY OVERLAPPING OF MEMBRANE SHALL BE DONE IN A SHINGLE TYPE STYLE TO SHED WATER AND SHALL OVERLAP A MINIMUM OF ONE FOOT. PAYMENT FOR MEMBRANE WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 540.10.
 - THE CONTRACTOR SHALL CONSIDER THE PLACEMENT OF THE BOX CULVERT SECTIONS BEGINNING AT THE OUTLET AS TO MATCH THE WINGWALL ELEVATION TO THE FINISH GRADE OF THE ABUTMENT.
 - WATER REPELLENT, SILANE SHALL BE SHOP APPLIED TO ALL EXPOSED CONCRETE SURFACES OF THE PRECAST CONCRETE STRUCTURE. PAYMENT FOR SILANE WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 540.10.
 - REINFORCING STEEL FOR THE PRECAST WINGWALLS AND HEADWALLS SHALL BE LEVEL II REINFORCING STEEL IN ACCORDANCE WITH SECTION 507. ALL REMAINING REINFORCING STEEL SHALL BE LEVEL I REINFORCING STEEL IN ACCORDANCE WITH SECTION 507.
- MISCELLANEOUS
- AFTER REMOVAL OF THE TEMPORARY BRIDGE, THE CONTRACTOR SHALL CONTACT TODD MENEES AT 802-786-8921, FOR CONSULTATION REGARDING FINAL GRADING TO CHANNEL ON THE BECKWITH PROPERTY.
 - UTILITY RELOCATION SHALL BE COMPLETE WITHIN 28 DAYS OF THE COMPLETE REMOVAL OF THE TEMPORARY BRIDGE AND DETOUR. THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANY PRIOR TO THE REMOVAL OF THE DETOUR. SEE UTILITY SPECIAL PROVISION FOR CONTACT INFORMATION.
 - AN URBAN SEED MIX SHALL BE USED WHEN RESEEDING THE AREA IMPACTED FROM REMOVAL OF THE TEMPORARY BRIDGE AND DETOUR.
 - THE REMOVAL OF THE PIPE UNDER THE EXISTING DETOUR SHALL BE INCIDENTAL TO CONTRACT ITEM 900.645 "SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE AND APPROACHES)".
 - THE REMOVAL OF THE WINGWALLS AND HEADWALLS FOR THE CONCRETE BOX THAT CROSSES UNDERNEATH VT ROUTE 30 SHALL BE PAID FOR UNDER ITEM 529.20 "PARTIAL REMOVAL OF STRUCTURE (7'-0" x 7'-0" x 90'-0" BOX).
 - ONCE THE NEW BOX CULVERT IS CONSTRUCTED, ITEM 541.45 "CONTROLLED DENSITY (FLOWABLE) FILL" SHALL BE USED TO FILL THE EXISTING BOX CULVERT THAT CROSSES UNDERNEATH VT ROUTE 30.
 - A PULL OFF SHALL BE CONSTRUCTED FROM FIRE DRIVE STA 20+38 - STA 21+42, AS SHOWN ON THE PLANS, TO ACCOMMODATE ACCESS TO A FUTURE DRY HYDRANT TO BE INSTALLED ALONG THE BANK OF BALL MOUNTAIN BROOK.
 - THE SEPTIC TANK RISER AT STATION 209+95.00 LT AND DRY WELL AT STATION 31+93.00 RIGHT SHALL NOT BE DISTURBED.

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