GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, WITH ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 6TH EDITION, AND THE PCI NORTHEAST GUIDELINES FOR NEXT BEAM 1ST EDITION.
2. THE BRIDGE IS DESIGNED FOR HL-93 LIVE LOADING.
3. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE BASED ON 68° F OR AS NOTED OTHERWISE.
4. THE CONTRACTOR IS RESPONSIBLE FOR FIELD CHECKING ANY AND ALL DIMENSIONS AND ELEVATIONS APPLICABLE TO THIS WORK PRIOR TO COMMENCING WORK OR ORDERING MATERIAL.
5. NO ADJUSTMENT 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 ON THE BRIDGE SHALL BE SHIMMED TRANSVERSELY AS NECESSARY TO ACCOUNT FOR POTENTIAL DIFFERENTIAL CAMBER OF ADJACENT BEAMS AND TO FORM THE ROADWAY CROWN.
6. THE TOWN WILL MAINTAIN RESPONSIBILITY FOR SNOW REMOVAL ON THE EXISTING BRIDGE THROUGHOUT THE DURATION OF THE PROJECT.
7. ALL WORK SHALL TAKE PLACE WITHIN THE EXISTING RIGHT-OF-WAY. NO PROVISIONS HAVE BEEN MADE FOR THE CONTRACTOR TO PERFORM WORK OR SETUP STAGING OUTSIDE THE EXISTING RIGHT-OF-WAY.
8. EXISTING AERIAL ELECTRIC AND TELEPHONE LINES AND POLES SHALL BE REMOVED AND PERMANENTLY RELOCATED BY OTHERS. CONTRACTOR SHALL COORDINATE ALL BRIDGE REPLACEMENT AND APPROACH RECONSTRUCTION WORK WITH UTILITY RELOCATION WORK AS REQUIRED. SEE UTILITY SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
9. EXISTING UTILITY CONDUIT ON THE BRIDGE IS ABANDONED AND WILL BE REMOVED TO LIMITS REQUIRED TO PERFORM THE WORK.
10. THE CONTRACTOR IS HEREBY NOTIFIED THAT AGENCY PERSONNEL WILL PERFORM A VIDEO INSPECTION OF THE NEARBY BUILDINGS AND STUCTURES ADJACENT TO THE PROJECT AND APPROACH LIMITS. A VIDEO INSPECTION WILL BE PERFORMED PRIOR TO THE BEGINNING OF CONSTRUCTION AND FOLLOWING THE COMPLETION OF CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE BUILDINGS AND STRUCTURES AS A RESULT OF THE CONTRACTOR'S ACTIVITIES AT NO ADDITIONAL COMPENSATION.
11. THE CONTRACTOR SHALL CONDUCT CONSTRUCTION VIBRATION AND CRACK MONITORING IN ACCORDANCE WITH SPECIAL PROVISION (CONSTRUCTION VIBRATION AND CRACK MONITORING). THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO ADJACENT STRUCTURES OR BUILDINGS CAUSED BY THE CONTRACTOR'S ACTIVITIES. NO SEPARATE PAYMENT WILL BE MADE FOR ANY REPAIRS OF EXISTING STRUCTURES OR BUILDINGS. PAYMENT FOR CONSTRUCTION VIBRATION AND CRACK MONITORING SHALL BE MADE UNDER CONTRACT ITEM 900.645 SPECIAL PROVISION (CONSTRUCTION VIBRATION AND CRACK MONITORING).

EARTHWORK

1. ITEM 613.10, "STONE FILL, TYPE I", UNDER THE BRIDGE AT THE ABUTMENTS AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW BEAMS ARE SET.
2. ITEM 613.10, "STONE FILL, TYPE I" SHALL BE USED TO REPAIR AREAS OF EMBANKMENT AND SLOPE EROSION AS ORDERED BY THE ENGINEER.

REMOVAL OF EXISTING STRUCTURE

1. PARTIAL REMOVAL OF THE EXISTING STRUCTURE SHALL BE UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE". THIS WORK SHALL INCLUDE REMOVAL OF THE SUPERSTRUCTURE AND PARTIAL REMOVAL OF EXISTING ABUTMENTS. THE CONTRACTOR'S METHODS FOR PARTIAL REMOVAL OF THE EXISTING STRUCTURE SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY REMOVAL WORK.
2. THE EXISTING BRIDGE SUPERSTRUCTURE AND REMOVED PORTIONS OF THE SUBSTRUCTURE AND APPROACH SHALL BECOME THE PROPERTY OF THE CONTRACTOR AFTER DEMOLITION. RECORD PLANS HAVE BEEN INCLUDED AS PART OF THIS PLAN SET.
3. THE EXISTING STRUCTURAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE REMOVED EXISTING STRUCTURAL STEEL.
4. THE EXISTING PAVEMENT ON THE BRIDGE DECK SHALL BE REMOVED UNDER ITEM 529.10, REMOVAL OF BRIDGE PAVEMENT.
5. PAYMENT FOR MAINTAINING THE EXISTING STRUCTURE AND ROADWAY FOR ACCEPTABLE USE DURING PHASED CONSTRUCTION WILL BE MADE UNDER CONTRACT ITEM 527.10 "MAINTENANCE OF STRUCTURES AND APPROACHES".

CONCRETE

1. THE ABUTMENTS BELOW THE BRIDGE SEAT CONSTRUCTION JOINT, PIER PEDESTALS, AND APPROACH SLABS SHALL BE ITEM 501.34 "CONCRETE, HIGH PERFORMANCE – CLASS B".
2. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1", UNLESS NOTED OTHERWISE.
3. ITEM 514.10 "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, INCLUDING EXISTING PIERS, EXCEPT THE UNDERSIDE OF THE NEXT D BEAMS BETWEEN DRIP NOTCHES.
4. ALL REINFORCING STEEL IN THE NEXT D BEAMS, CLOSURE POURS, CONCRETE BRIDGE RAILING, ABUTMENTS AND PIERS SHALL BE LEVEL II IN ACCORDANCE WITH SECTION 507. APPROACH SLAB REINFORCING SHALL BE LEVEL I (EPOXY COATED) IN ACCORDANCE WITH SECTION 507. PAYMENT FOR STEEL REINFORCEMENT IN BRIDGE RAILING WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 525.45. PAYMENT FOR STEEL REINFORCEMENT IN NEXT D BEAMS WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 900.640. PAYMENT FOR STEEL REINFORCEMENT IN APPROACH SLABS WILL BE MADE UNDER CONTRACT ITEM 507.11. PAYMENT FOR STEEL REINFORCEMENT IN DECK CLOSURE POURS, CONCRETE DIAPHRAGMS, ABUTMENTS, AND PIERS WILL BE MADE UNDER CONTRACT ITEM 507.12.
5. REINFORCEMENT PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:
   - SPACING +/- 1"
   - CLEARANCE +/- ¼"
6. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
   - CONCRETE BRIDGE RAILING 3.0 INCH
   - SURFACES CAST AGAINST EARTH 3.0 INCH
   - ELSEWHERE, UNLESS NOTED OTHERWISE 2.0 INCH
7. THE KEY-IN CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINTS.
8. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
9. JOINTS IN CONCRETE BRIDGE RAILING SHALL BE SPACED AT 15' - 0" MAXIMUM. POUR SEQUENCE SHALL BE IN ALTERNATING SECTIONS.
10. REINFORCING STEEL SHALL CONFORM TO AASHTO M 31, GRADE 420 (GRADE 60) AND SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
11. PIER CONCRETE REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. A THOROUGH INSPECTION BY THE ENGINEER WILL BE MADE OF ALL PIER SUBSTRUCTURE AREAS PRIOR TO COMMENCING ANY WORK AND THOSE AREAS FOUND TO HAVE SPALLED, DELAMINATED, OR TO OTHERWISE BE UNSOUND CONCRETE WILL BE REPAIRED. THE CONTRACTOR SHALL SUPPLY ANY STAGING REQUIRED FOR THIS INSPECTION, THE COST FOR WHICH SHALL BE INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.
12. ALL REINFORCING STEEL LAP LENGTHS WERE DESIGNED ASSUMING DUAL-COATED STEEL.
13. MECHANICAL CONNECTORS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 507 FOR LEVEL II REINFORCING.
14. UNLESS OTHERWISE NOTED, ALL CAST-IN-PLACE PORTIONS OF THE SUPERSTRUCTURE AND THE PORTION OF THE ABUTMENTS ABOVE THE HORIZONTAL CONSTRUCTION JOINT LOCATED BELOW THE BEAMS SHALL BE ITEM 501.33 "CONCRETE, HIGH PERFORMANCE CLASS A".
15. FORM A 1" V-GROOVE ON THE FASCIAS AT THE HORIZONTAL JOINT BETWEEN THE CONCRETE BRIDGE RAILING AND THE PRECAST PRESTRESSED CONCRETE NEXT D BEAM FLANGE
16. CONSTRUCTION JOINTS SHALL BE PROVIDED IN THE CONCRETE PARAPET PORTION OF THE BRIDGE RAILING CONSISTENT WITH THE REQUIREMENTS AND DETAILS FOR CONCRETE CURBS AS SHOWN ON STRUCTURES DETAIL SHEET SD-502.00

NEXT D BEAMS

1. NEXT D BEAMS ARE A NONPROPRIETARY SHAPE DEVELOPED BY PCI NORTHEAST (PCINE). STANDARDIZED SECTION PROPERTIES AND DETAILS MAY BE FOUND AT WWW.PCINE.ORG.
2. DESIGN VALUES
   A. CONCRETE COMPRESSIVE STRENGTH: f'_c =8000 PSI.
   B. CONCRETE COMPRESSIVE STRENGTH AT RELEASE: f'_{ci} =6000 PSI.
   C. PRESTRESSING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW RELAXATION, 7-WIRE STRANDS.
   D. APPARENT MODULUS OF ELASTICITY = 28,500 KSI.
   E. JACKING FORCE PER STRAND = 44 KIPS.
3. EXCEPT AS NOTED OTHERWISE FLANGE CLOSURE POURS SHALL BE HPC RAPID SET CONCRETE IN ACCORDANCE WITH ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)." CONCRETE SHALL HAVE A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF 7000 PSI.
4. FLANGE KEYWAYS SHALL BE SANDBLASTED PRIOR TO DELIVERY AND POWER WASHED WITH WATER PRIOR THE ERECTION OF THE BEAMS.
5. METHOD OF FORMING THE FLANGE CONNECTION SHALL BE DETERMINED BY THE CONTRACTOR. THE FORMS SHALL BE REMOVABLE AND ABLE TO ACCOMMODATE DIFFERENTIAL CAMBER. FORM SUPPORTS SHALL NOT PENETRATE THROUGH THE TOP OF THE POUR UNLESS APPROVED BY THE ENGINEER.
6. THE DRILLING OF HOLES IN THE PRECAST BEAMS AND THE USE OF POWER ARTICULATED TOOLS ON THE BEAMS WILL NOT BE PERMITTED.
7. PRODUCT DIMENSIONAL TOLERANCES FOR THE PRESTRESSED CONCRETE NEXT D BEAMS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS FOR B-11 BOX BEAMS OF THE LATEST EDITION OF PCI MNL-116 MANUAL FOR QUALITY CONTROL FOR PLANTS AND PRODUCTION OF PRECAST AND PRESTRESSED PRODUCTS.

PILE FOUNDATIONS

1. THE PILES SHALL BE HP ~~10x57~~. 12x74 (NEW DESIGN).
2. PILE SHOES ARE REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04(F) OF THE STANDARD SPECIFICATIONS.
3. THE TOPS OF PILES AFTER DRIVING SHALL NOT VARY FROM THE PLAN POSITION BY MORE THAN 3 INCHES. THE PILE ORIENTATION SHALL NOT VARY BY MORE THAN 5 DEGREES. THE CONTRACTOR SHALL DEMONSTRATE HOW THE TOLERANCES WILL BE MET TO THE SATISFACTION OF THE ENGINEER REGARDLESS OF INSTALLATION METHOD.
4. TO ENSURE THAT THE NOMINAL RESISTANCE HAS BEEN ATTAINED AND TO PREVENT THE OVERSTRESSING OF THE PILES DURING DRIVING OPERATIONS, DYNAMIC TESTING SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 505.04(D)-2 OF THE STANDARD SPECIFICATIONS. PAYMENT FOR ONE PILE TEST SHALL BE CONDUCTED ON THE FIRST PILE DRIVEN AT EACH ABUTMENT, FOR A TOTAL OF 2 TESTS. MORE TESTS MAY BE REQUIRED BY THE ENGINEER. PAY ITEM FOR TESTING, INCLUDING ANY ADDITIONAL TESTS ORDERED BY THE ENGINEER IS 505.45 "DYNAMIC PILE LOAD TEST."
5. THE PILES SHALL BE DRIVEN TO A REQUIRED NOMINAL RESISTANCE OF 265 KIPS AS DETERMINED BY THE RESULTS OF DYNAMIC TESTING, AS INTERPRETED BY THE ENGINEER PROVIDED A MINIMUM PENETRATION OF 15 FEET BELOW THE BOTTOM OF PILE CAP HAS BEEN ACHIEVED.
6. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL LENGTHS MAY VARY.

ELASTOMERIC BEARINGS

1. ELASTOMER COMPOUND SHALL HAVE A NOMINAL HARDNESS OF 60 ON THE SHORE A SCALE, AND SHALL CONFORM TO SUBSECTION 731.03.
2. STEEL REINFORCEMENT FOR THE ELASTOMERIC BEARING PADS SHALL CONFORM TO SECTION 506 FOR GRADE 50 STEEL.
3. THE ELEVATION OF THE BEARING PEDESTALS ARE DETAILED CONSIDERING PREDICTED BEAM CAMBER AND BEAM END ROTATIONS AT ERECTION (30-60 DAYS AFTER STRESSING).
4. THE CONTRACTOR IS ADVISED TO HAVE A MINIMUM OF 32 - ¼" X 11 ½" X 1'-0 ½", 16 - 1/8" X 11 ½" X 1'-0 ½", AND 32 - TAPERED $^1/_8$" TO $^3/_8$" X 11 ½" X 1'-0 ½" (TAPERED ALONG 1'-0 ½" DIRECTION) RECTANGULAR GALVANIZED STEEL SHIMS AVAILABLE FOR USE FOR ELEVATION ADJUSTMENTS UPON SETTING OF THE SUPERSTRUCTURE UNITS AT THE PIER LOCATIONS. A 1/8" THICK NEOPRENE SHEET WILL BE PROVIDED BETWEEN CONCRETE SURFACES AND THE STEEL SHIMS. THE SHIMS SHALL BE FABRICATED ACCORDING TO SECTION 531 AND SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 531.17, 'BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD".
5. THE CONTRACTOR IS ADVISED TO HAVE A MINIMUM OF 16 - ¼" X 10" X 1'-2", 8 – 1/8" X 10" X 1'-2", AND 16 – TAPERED $^1/_8$" TO $^3/_8$" X 10" X 1'-2" (TAPERED ALONG 1'-2" DIRECTION) RECTANGULAR GALVANIZED STEEL SHIMS AVAILABLE FOR USE FOR ELEVATION ADJUSTMENTS UPON SETTING OF THE SUPERSTRUCTURE UNITS AT THE ABUTMENT LOCATIONS . A 1/8" THICK NEOPRENE SHEET WILL BE PROVIDED BETWEEN CONCRETE SURFACES AND THE STEEL SHIMS. THE SHIMS SHALL BE FABRICATED ACCORDING TO SECTION 531 AND SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 531.16, 'BEARING DEVICE ASSEMBLY, PLAIN ELASTOMERIC PAD".

BRIDGE RAILING, APPROACH RAILING, AND GUARDRAIL

1. ALL STEEL COMPONENTS OF THE BRIDGE RAILING, APPROACH RAILING, AND GUARDRAIL SHALL BE COATED BLACK IN ACCORDANCE WITH ASTM D7803 FOLLOWING GALVANIZING.

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