

PROJECT NOTES

GENERAL

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION, AND ITS LATEST REVISIONS.
- 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.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING CONSISTENCY BETWEEN FABRICATOR'S SHOP DRAWINGS AND ENSURING THAT ALL PRECAST AND RAIL COMPONENTS FIT TOGETHER.
- ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
- NO ADJUSTMENTS TO THE BITUMINOUS WEARING SURFACE ON THE BRIDGE SHALL BE MADE TO ACCOUNT FOR THE DIFFERENCE BETWEEN THE ACTUAL 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.
- NO CAST-IN-PLACE SUBSTITUTIONS WILL BE PERMITTED FOR PRECAST CONCRETE.
- THE EXISTING BRIDGE CONTAINS STRUCTURAL STEEL. THE STRUCTURAL STEEL MAY BE PAINTED WITH 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.
- THE REMOVAL OF THE EXISTING BRIDGE WILL BE PAID FOR UNDER ITEM 529.15 "REMOVAL OF STRUCTURE". THIS WORK WILL INCLUDE THE COMPLETE REMOVAL AND DISPOSAL OF THE EXISTING BRIDGE SUPERSTRUCTURE, INCLUDING ALL BEARINGS, ANCHOR BOLTS, AND THE BRIDGE SUBSTRUCTURE THAT FALL OUTSIDE THE LIMITS COVERED BY THE CONTRACT EXCAVATION ITEMS.

TRAFFIC CONTROL

- THE CONTRACTOR SHALL IMPLEMENT THE ROAD CLOSURE, TRAFFIC CONTROL, AND DETOUR AS SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL NOTIFY THE TOWN AND RESIDENTS WITHIN THE PROJECT LIMITS A MINIMUM OF TWO (2) WEEKS PRIOR TO CLOSING THE ROAD.
- FULL ACCESS TO ALL SIDE ROADS WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL".
- ACCESS TO ALL DRIVES SHALL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE WITH MS. PROCTOR AND THE ENGINEER ON CONSTRUCTING MS. PROCTOR'S DRIVEWAYS. MS. PROCTOR SHALL NOT BE DELAYED BY NO MORE THAN TEN (10) MINUTES DUE TO CONSTRUCTION. MS. PROCTOR SHALL BE NOTIFIED AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO ANY DELAY GREATER THAN TEN (10) MINUTES. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL".
- UNLESS COVERED UNDER INDIVIDUAL PAY ITEMS OR NOTED OTHERWISE, ALL COSTS FOR WORK SHOWN ON THE TRAFFIC CONTROL SHEETS AND FOR TEMPORARY TRAFFIC CONTROL DEVICES WILL BE INCLUDED IN THE CONTRACT ITEM 641.10, "TRAFFIC CONTROL". THIS INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING ITEMS:
 - TEMPORARY TRAFFIC BARRIERS
 - RETROREFLECTIVE DRUMS & CONES
 - TEMPORARY SIGNS
 - SIGN POSTS
 - INSTALLATION OF TEMPORARY SIGNS AND SIGN POSTSTEMPORARY TRAFFIC BARRIER SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 621.
- ALL SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) DATED 2009 AND ITS LATEST REVISIONS AND THE "STANDARD HIGHWAY SIGNS AND MARKINGS" BOOK (SHSM), AND THE 2012 SUPPLEMENT TO THE 2004 EDITION (SHSM) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).

EARTHWORK

- THE "STONE FILL, TYPE IV" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW BEAMS ARE SET.
- REMOVAL OF EXISTING BRIDGE PAVEMENT WILL BE PAID UNDER ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT".
- 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 SHALL BE INCIDENTAL TO 203.31 "SAND BORROW".

CONCRETE

- 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.
- ALL RECESSED LIFTING POINTS AND BLOCKOUTS SHALL BE FILLED WITH A TYPE IV MORTAR PER SUBSECTIONS 707.03. PAYMENT WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.
- 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 MAY BE REQUIRED. IN NO CASE SHALL THE CONTRACTOR ATTACH ADDITIONAL FORM OF SCREED SUPPORTS BY DRILLING OR SIMILAR MEANS INTO ANY PRECAST/PRESTRESSED SUPERSTRUCTURE UNIT.
- ALL FORM SUPPORTS AND FORM TIES THAT ARE TO REMAIN PERMANENTLY IN THE CONCRETE ABOVE THE BRIDGE SEAT SHALL BE AT A MINIMUM PROTECTION LEVEL OF GALVANIZED AND CONFORM TO SECTION 726 OF THE STANDARD SPECIFICATIONS.
- WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON THE BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE, WITH THE EXCEPTION OF THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.
- ALL EXPOSED EDGES SHALL HAVE A 1"x1" CHAMFER UNLESS OTHERWISE NOTED.

REINFORCING STEEL

- ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
- 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 BID PRICE FOR THE APPROPRIATE PRECAST ITEM.
- ALL REINFORCEMENT SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR LEVEL II REINFORCING STEEL. PAYMENT FOR STEEL REINFORCEMENT IN NEXT D BEAMS OR PBUS, INCLUDING REINFORCING FOR THE CLOSURE POUR WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAMS)(NEXT 28D)(FPQ)" OR ITEM 900.640, "SPECIAL PROVISION (PRECAST BRIDGE UNIT SUPERSTRUCTURE)(FPQ)". PAYMENT FOR STEEL REINFORCEMENT IN PRECAST SUBSTRUCTURE UNITS AND APPROACH SLABS, INCLUDING REINFORCING FOR THE CLOSURE POUR, WILL BE INCLUDED IN THE APPROPRIATE PRECAST CONTRACT ITEM.
- CUTTING AND REPAIRING DAMAGED AREAS OF COATED REINFORCING STEEL SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 507.04.
- MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

ALONG TOP SURFACE OF DECK SLAB:	2½ INCH
ALONG BOTTOM SURFACE OF NEXT BEAM:	1¾ INCH
ALONG BOTTOM SURFACE OF PBUS:	1½ INCH
ELSEWHERE UNLESS OTHERWISE NOTED:	3 INCH

PRECAST ABUTMENTS AND POST-TENSIONING

- IF A VERTICAL CONSTRUCTION JOINT IS REQUIRED BY THE CONTRACTOR FOR SHIPMENT OF THE ABUTMENTS, THEN THE SECTIONS SHALL BE KEYPED AND MATCH CAST. A JOINT DETAIL SHALL BE SHOWN ON THE FABRICATION DRAWINGS. NO LESS THAN TWO PILES SHALL SUPPORT EACH PRECAST ABUTMENT SECTION.
- 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.
- ITEM 524.21, JOINT SEALER, POLYURETHANE, SHALL BE APPLIED TO THE OUTSIDE FAR FACE OF ALL VERTICAL MATCH CAST CONSTRUCTION JOINTS.
- POST-TENSIONING AND ASSOCIATED ITEMS ARE ONLY REQUIRED IF THE PILE CAP IS CONSTRUCTED OF MORE THAN ONE UNIT. ANY POST-TENSIONING STRANDS AND CONDUIT SHALL ADHERE 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 NO. 1)" OR "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 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.
- GALVANIZE ANCHOR ASSEMBLIES AFTER FABRICATION ACCORDING TO AASHTO M232M/M232.
- DESIGN VALUES
 - CONCRETE COMPRESSIVE STRENGTH: $f'c = 5,000$ PSI.
 - POST-TENSIONING STRANDS: 0.5 INCH DIAMETER, 270 KSI, LOW RELAXATION 7-WIRE STRANDS.
 - ASSUMED MODULUS OF ELASTICITY IS 28,500 KSI.
 - THERE SHALL BE 2 STRANDS PER CONDUIT.
 - JACKING FORCE PER STRAND = 32 KIPS.
- 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 FURNISHING AND PLACING THE CORRUGATED STEEL PIPE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE PRECAST ITEM.

- THE CONCRETE FOR THE ABUTMENT PILE CAVITIES WILL BE PAID FOR UNDER ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPQ)". SEE SPECIAL PROVISIONS FOR REQUIREMENTS.
- 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 3'-0" TO THE ABUTMENT DURING THE ERECTION OF THE SUPERSTRUCTURE.
- THE CONTRACTOR SHALL PROVIDE THREE (3) ASSEMBLED SPLICE TUBES PER SPLICE CONNECTOR SIZE FOR TESTING. THE CONNECTION SHALL BE ASSEMBLED IN THE FIELD BY THE CONTRACTOR AND WITNESSED BY THE ENGINEER. THE MECHANICAL COUPLER CONNECTORS SHALL BE PAID FOR UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1)" AND "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)".

NEXT D BEAMS ALTERNATE

- NEXT D BEAMS ARE A NON-PROPRIETARY SHAPE DEVELOPED BY PCI NORTHEAST ("PCINE"). STANDARDIZED SECTION PROPERTIES AND DETAILS MAY BE FOUND AT <http://www.pcine.org>
- DESIGN VALUES
 - CONCRETE COMPRESSIVE STRENGTH: $f'c = 7,000$ PSI.
 - CONCRETE COMPRESSIVE STRENGTH AT RELEASE: $f'ci = 5,500$ psi.
 - PRESTRESSING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW-RELAXATION 7-WIRE STRANDS
 - ASSUMED MODULUS OF ELASTICITY = 28,500 KSI
 - PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION FORCE OF 44.0 KIPS AFTER ACCOUNTING FOR CHUCK SLIPPAGE.
 - SERVICE LOADS

MEMBER MOMENT	653 K-FT
NON-COMPOSITE SUPERIMPOSED DEAD LOAD MOMENT	60 K-FT
COMPOSITE SUPERIMPOSED DEAD LOAD MOMENT	169 K-FT
LIVE LOAD AND IMPACT MOMENT	1,181 K-FT
DEAD LOAD REACTION	59 KIPS
LIVE LOAD AND IMPACT REACTION	95 KIPS
TOTAL REACTION	154 KIPS
FINAL CAMBER AT ERECTION	2.6 INCHES
- THE FABRICATOR SHALL PROVIDE A CALCULATED CAMBER ESTIMATE FOR THE NEXT D BEAMS AT RELEASE, ERECTION, AND FINAL CONDITIONS PRIOR TO ANY SUPERIMPOSED LOADING OF THE BEAM. MINOR ADJUSTMENTS TO THE BRIDGE SEAT ELEVATIONS AND NEXT BEAM FLANGE THICKNESS MAY BE REQUIRED DURING THE FABRICATION REVIEW PROCESS BASED OFF OF THESE VALUES. ALL WORK ASSOCIATED WITH PROVIDING AN ESTIMATED CAMBER ALONG WITH ANY ADJUSTMENTS TO THE BRIDGE SEAT ELEVATIONS OR NEXT BEAM FLANGE THICKNESS BE WILL CONSIDERED INCIDENTAL TO ITEM 900.640 "SPECIAL PROVISION (PRESTRESSED NEXT D BEAMS)(NEXT 28D) (FPQ)" AND THE APPROPRIATE ABUTMENT PAY ITEM.
- DUE TO STABILITY CONCERNS AT THE ABUTMENTS DURING THE ERECTION OF THE SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT THE ERECTION PLAN A MINIMUM OF 30 WORKING DAYS PRIOR TO THE BRIDGE CLOSURE PERIOD. UNDER NO CIRCUMSTANCES SHALL A BRIDGE CLOSURE PERIOD BEGIN PRIOR TO HAVING AN ACCEPTED ERECTION PLAN.
- THE FABRICATOR MAY ALTER THE DESIGN AS DETAILED IN THESE PLANS TO ACCOMMODATE THEIR SPECIFIC OPERATION. THIS ALTERATION SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT TO MEET THE ABOVE CRITERIA AND SHALL BE APPROVED BY THE PROJECT MANAGER.
- FORMING THE ENDS OF THE FLANGES ALONG THE LONGITUDINAL CLOSURE POUR SHALL BE TREATED WITH CONCRETE SURFACE RETARDER OR SIMILAR, TO PROVIDE A ROUGHENED/EXPOSED AGGREGATE SURFACE THAT SHALL BE POWER WASHED WITH WATER PRIOR TO ERECTION OF BEAMS.
- THE CONCRETE FOR FLANGE CLOSURE POURS WILL BE PAID FOR UNDER ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPQ)". SEE SPECIAL PROVISIONS FOR REQUIREMENTS.
- METHOD OF FORMING FLANGE CONNECTION SHALL BE DETERMINED BY THE CONTRACTOR. THE FORMS SHALL BE REMOVABLE AND ABLE TO ACCOMMODATE DIFFERENTIAL CAMBER. FORM SUPPORTS SHALL NOT BE ATTACHED TO ANY PREFABRICATED SUPERSTRUCTURE ELEMENT BY DRILLING OR SIMILAR MEANS.
- NEXT BEAMS WILL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAMS)(NEXT 28D) (FPQ)".

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PROJECT NUMBER: BF 013-2(13)

FILE NAME: z13b076pn.dgn
PROJECT LEADER: S.E. BURBANK
DESIGNED BY: J.J. WESTCOTT
PROJECT NOTES (1 OF 2)

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SHEET 7 OF 68

