

PRECAST ABUTMENTS AND POST-TENSIONING

28. THE UNIT PRICE FOR EACH PRECAST ABUTMENT SHALL INCLUDE THE ASSOCIATED WINGWALLS AND ALL LABOR AND MATERIALS TO CONNECT THE WINGWALLS TO THE ABUTMENT. THIS WORK SHALL BE PAID FOR UNDER THE CONTRACT OPTIONAL PRECAST ABUTMENT BID ITEM.
29. WATERSTOPS SHALL BE PLACED AT THE JOINT BETWEEN THE PRECAST ABUTMENTS AND CAST-IN-PLACE END DIAPHRAGMS. THIS WORK SHALL BE PAID FOR UNDER THE CONTRACT OPTIONAL PRECAST ABUTMENT BID ITEM.
30. IF VERTICAL CONSTRUCTION JOINTS ARE REQUIRED BY THE CONTRACTOR FOR SHIPPING OF THE ABUTMENTS THEN THE SECTIONS SHALL BE KEYED AND MATCH CAST. A JOINT DETAIL SHALL BE SHOWN ON THE FABRICATION DRAWINGS.
31. POST-TENSIONING AND ASSOCIATED ITEMS ARE ONLY REQUIRED IF THE PRECAST ABUTMENT 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 THE CONTRACT OPTIONAL PRECAST ABUTMENT BID ITEM. 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.
32. GALVANIZE ANCHOR ASSEMBLIES AFTER FABRICATION ACCORDING TO AASHTO M232M/M232.
33. 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 TWO STRANDS PER CONDUIT.
 - E. JACKING FORCE PER STRAND: 32 KIPS
34. THE CONCRETE FOR THE ABUTMENT #1 AND ABUTMENT #2 PILE CAVITIES SHALL MEET THE REQUIREMENTS OF ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
35. THE CORRUGATED STEEL PIPE SHALL BE TYPE 1 AND SHALL MEET THE REQUIREMENTS OF SUBSECTION 711.01 AND AASHTO M289. ALL COST ASSOCIATED WITH PLACING THE CORRUGATED STEEL PIPE SHALL BE INCLUDED IN THE CONTRACT OPTIONAL PRECAST ABUTMENT BID ITEM.
36. PROPOSED SEQUENCE OF CONSTRUCTION:
- A. PREPARE AND GRADE FOUNDATION TO REQUIRED ELEVATION.
 - B. DRIVE PILES.
 - C. PLACE PRECAST ABUTMENTS AND INSTALL TRANSVERSE STRANDS (IF MORE THAN ONE UNIT IS USED).
 - D. APPLY EPOXY BONDING COMPOUND TO MATCH CAST FACES OF VERTICAL CONSTRUCTION JOINT (IF MORE THAN ONE UNIT IS USED).
 - E. USE A CALIBRATED JACK TO TENSION TO 3 KIPS TO REMOVE SAG IN STRANDS.
 - F. CHECK ALIGNMENT OF PRECAST ABUTMENT ELEMENTS.
 - G. STRESS POST-TENSIONING STRANDS USING A CALIBRATED JACK.
 - H. FILL PILE CAVITIES WITH ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
 - I. PLACE PRECAST WINGWALLS AND GROUT SPLICE CONNECTORS.
 - J. BACKFILL MAY BE COMPLETED AFTER SPLICE CONNECTOR GROUT HAS REACHED 85% OF 5,000 PSI.
37. ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED TO THE VTRANS PROJECT MANAGER FOR APPROVAL.

NEXT D BEAMS

38. 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>.
39. DESIGN VALUES:
- A. CONCRETE DESIGN COMPRESSIVE STRENGTH: $f'_c = 6,000$ PSI.
 - B. CONCRETE COMPRESSIVE STRENGTH AT RELEASE: $f'_ci = 4,800$ PSI.
 - C. PRESTRESSING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW-RELAXATION 7-WIRE STRANDS.
 - D. ASSUMED MODULUS OF ELASTICITY: 28,500 KSI.
 - E. JACKING FORCE PER STRAND: 44 KIPS.
 - F. SERVICE LOADS:

MEMBER MOMENT	634.6 K-FT
SUPERIMPOSED DEAD LOAD MOMENT	173.7 K-FT
LIVE LOAD AND IMPACT MOMENT	797.1 K-FT
DEAD LOAD REACTION	74.1 KIPS
LIVE LOAD AND IMPACT REACTION	50.7 KIPS
TOTAL REACTION	124.8 KIPS
CAMBER AT RELEASE	1/8 INCHES
FINAL CAMBER	1 1/8 INCHES
40. ENDS OF FLANGES IN CONTACT WITH GROUT SHALL BE SANDBLASTED PRIOR TO DELIVERY AND POWER WASHED WITH WATER PRIOR TO ERECTION OF THE BEAMS.
41. FILL THE FLANGE TO FLANGE CONNECTION WITH ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
42. THE TOP FLANGE OF THE NEXT BEAMS, TOP OF THE FLANGE CONNECTION POUR, AND TOP OF THE BEAM-END CLOSURE POUR SHALL RECEIVE A BROOM FINISH. THE COST OF APPLYING THE BROOM FINISH SHALL BE INCLUDED IN CONTRACT ITEM 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAMS) (NEXT 28 D)" OR CONTRACT ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)", AS APPROPRIATE.
43. 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 PENETRATE THROUGH THE TOP OF POUR UNLESS APPROVED BY THE ENGINEER.
44. THE FABRICATOR MAY ALTER THE DESIGN AS DETAILED IN THESE PLANS TO ACCOMMODATE THE FABRICATOR'S SPECIFIC OPERATION. THIS ALTERATION MUST BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT, MEET THE ABOVE CRITERIA, AND SHALL BE APPROVED BY THE PROJECT MANAGER.
45. PROPOSED SEQUENCE OF CONSTRUCTION:
- A. LAY OUT WORKING LINES THE ENTIRE WIDTH OF THE BRIDGE ALONG CENTERLINE OF BEARING, MEASURED FROM A SINGLE WORKING POINT. THE WORKING LINES SHALL BE BASED ON THE NOMINAL BEAM WIDTHS.
 - B. VERIFY THE BEAM SEAT ELEVATIONS AND TAKE CORRECTIVE ACTION IF NECESSARY.
 - C. INSTALL BEARINGS.
 - D. ERECT THE BEAMS TO FIT WITHIN THE WORKING LINES.
 - E. ADJUST BEAMS TO FIT SNUG AGAINST 1/2" CORK ON INTERIOR OF CHEEK WALLS.
 - F. CONSTRUCT FORMS FOR THE FLANGE CONNECTION POUR AND BEAM-END CLOSURE POUR.
 - G. GROUT CONNECTIONS BETWEEN BEAM FLANGES, APPLY LONGITUDINAL GROOVES IN ACCORDANCE WITH SECTION 509, AND CURE.
 - H. COMPLETE BEAM-END CLOSURE POUR TO TOP OF DECK, APPLY LONGITUDINAL GROOVES IN ACCORDANCE WITH SECTION 509, AND CURE.
46. ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED TO THE VTRANS PROJECT MANAGER FOR APPROVAL.

MISCELLANEOUS

47. A TEMPORARY BRIDGE IS IN PLACE OVER THE EXISTING STRUCTURE. REMOVAL OF THE TEMPORARY BRIDGE SHALL BE PAID FOR UNDER ITEM 529.15, "REMOVAL OF STRUCTURE (EXISTING TEMPORARY STRUCTURE)". THIS WORK SHALL INCLUDE THE REMOVAL OF ANY PORTIONS OF THE SUPERSTRUCTURE AND SUBSTRUCTURE OVERLAYING THE EXISTING STRUCTURE.
48. THE EXISTING STRUCTURAL STEEL ON THIS PROJECT WAS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. 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 STRUCTURAL STEEL.

PROJECT NAME: RANDOLPH
PROJECT NUMBER: BRO 1444(57)

FILE NAME: zlj078gennotes.dgn
PROJECT LEADER: J. BYATT
DESIGNED BY: N. CARON
PROJECT NOTES (2 OF 2)

PLOT DATE: 9/9/2014
DRAWN BY: M. SMITH
CHECKED BY: J. BYATT
SHEET 6 OF 39