

PROJECT NOTES CONT'D...

52. DESIGN VALUES:

- A. CONCRETE: $F'_c = 6$ ksi AND $F_c = 4.8$ ksi
- B. LIVE LOAD: AASHTO HL-93
- C. PRESTRESSING STRANDS: 0.6" DIAMETER, 270 KSI, LOW-RELAXATION 7-WIRE STRANDS PULLED TO 75% OF THEIR YIELD STRENGTH
- D. POST-TENSIONING STRANDS: 1" DIAMETER, 150 KSI, THREADED STEEL ROD.
- E. THERE SHALL BE ONE (1) THREADED STEEL ROD PER POST-TENSION DUCT.
- F. THREADED STEEL RODS SHALL BE COVERED WITH CORROSION INHIBITOR GREASE FOR THE LENGTH OF THE STRAND. TIES SHALL BE TENSIONED TO 47 KIPS FOR EACH 1" DIAMETER THREADED STEEL ROD.
- G. SERVICE LOADS (INT & EXT):

MEMBER MOMENT	189.8 & 142.4 K-FT
SUPERIMPOSED DEAD LOAD MOMENT	142.5 & 101.0 K-FT
LIVE LOAD & IMPACT MOMENT	197.8 & 165.7 K-FT
DEAD LOAD REACTION	27.2 & 18.5 K
LIVE LOAD & IMPACT REACTION	41.7 K & 63.6 K
TOTAL REACTION	68.9 & 82.1 K
RELEASE CAMBER	1.033 & 0.925 IN
ERECTION CAMBER	1.095 & 0.990 IN

- 53. THE FABRICATOR MAY, WITH THE APPROVAL OF THE PROJECT MANAGER, ALTER THE DESIGN AS DETAILED TO MEET THE PLANT'S PRESTRESSING OPERATION AND MATERIAL REQUIREMENTS. ALTERNATE STRAND, TRANSVERSE TIE AND CROSS-SLOPE CONFIGURATIONS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ANY DESIGN CHANGES SHALL MEET ALL OF THE APPLICABLE DESIGN CRITERIA AND SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT.
- 54. THE PRECASTER SHALL SANDBLAST SHEAR KEY FACES PRIOR TO DELIVERY.
- 55. ALL TIES AND STIRRUPS IN THE NON-VOIDED SLABS SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR LEVEL II REINFORCEMENT. PAYMENT WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE NON-VOIDED SLABS)".
- 56. THE CONTRACTOR IS RESPONSIBLE FOR DESIGN OF ALL LIFTING POINTS, POST TENSIONING ELEMENTS IN THE ANCHORAGE ZONE AND ADDITIONAL REINFORCEMENT IN THE ANCHORAGE ZONE (REQUIRED FOR SPLITTING, BURSTING SPALLING, ETC.) INCLUDING THE LOCAL ZONE (REGION IMMEDIATELY SURROUNDING THE POST TENSIONING DEVICE). THE CONTRACTOR IS RESPONSIBLE FOR CONSIDERATION OF ADDITIONAL STRESSES DUE TO HANDLING. DESIGN MUST CONFORM TO AASHTO LRFD SPECIFICATIONS.

PROPOSED CONSTRUCTION SEQUENCE FOR PRESTRESSED NON-VOIDED SLABS

- 57. LAY OUT WORKING LINES:
 - A. LAY OUT WORKING LINES FOR THE ENTIRE BRIDGE WIDTH ON THE BEAM SEAT.
 - B. MEASURE ALL WORKING LINES FROM A COMMON WORKING POINT.
 - C. BASE THE WORKING LINES ON THE NOMINAL BEAM WIDTHS.
- 58. VERIFY BEAM SEAT ELEVATIONS:
 - A. MEASURE ELEVATIONS AT BEAM SEATS.
 - B. IF SEATS ARE HIGH OR LOW, TAKE CORRECTIVE ACTION.
 - C. INSTALL BEARINGS.
- 59. ERECT BEAMS STARTING AT THE LOWER EXTERIOR BEAM, PLACING ONE BEAM AT A TIME:
 - A. PLACE BEAMS TO FIT WITHIN THE WORKING LINES.
 - B. PRIOR TO INSTALLING INTERIOR BEAMS IN EACH PHASE OF CONSTRUCTION, INSTALL ANCHORED END OF THREADED STEEL ROD WITH ENOUGH ROD TO PASS THROUGH THE NEXT BEAM TO BE PLACED IN THE FOLLOWING PHASE OF CONSTRUCTION.
 - C. AS WORK PROGRESSES, INSTALL HARDWOOD WEDGES BETWEEN ADJACENT BEAMS TO MAINTAIN PROPER JOINT OPENING (A MINIMUM OF ONE WEDGE AT EACH POST TENSIONING DUCT).
 - D. DRILL ANCHOR BOLT HOLES.
 - E. PLACE ANCHOR BOLTS.
- 60. INSTALL BACKER ROD: PLACE FILLER BELOW THE KEYWAY BOTTOM, AS SHOWN ON THE PLANS.
- 61. INSTALL THREADED STEEL RODS:
 - A. FEED THREADED STEEL RODS THROUGH DUCTS.
 - B. VERIFY THAT HARDWOOD WEDGES ARE IN PLACE AS REQUIRED TO PREVENT SLIPPAGE OF BEAMS.
 - C. USING A CALIBRATED JACK, POST-TENSION THE THREADED STEEL RODS TO APPROXIMATELY 5 KIPS TO SEAT THE ANCHOR NUT.
- 62. GROUT SHEAR KEYS:
 - A. CLEAN JOINTS WITH AN OIL FREE AIR-BLAST IMMEDIATELY BEFORE GROUT PLACEMENT. VERIFY THAT THE BACKER ROD IS STILL IN PLACE.
 - B. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR ADDITIONAL JOINT PREPARATION AND GROUT PLACEMENT.
 - C. CAREFULLY ROD JOINTS TO ELIMINATE ANY POSSIBILITY OF VOIDS.
- 63. POST-TENSION THREADED STEEL RODS:
 - A. GROUT SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI, BASED ON THE MANUFACTURER'S RECOMMENDATIONS, PRIOR TO STRESSING. THE GROUT NEED NOT BE CURED FOR THREE DAYS PRIOR TO THE COMMENCING OF POST-TENSIONING.
 - B. PROVIDE APPROPRIATE CUBE MOLDS AS DESCRIBED IN AASHTO T106 FOR 3 SETS OF 3 DAY CUBES, 3 SETS OF 28 DAY CUBES AND AT A MINIMUM OF 3 MORE CUBES TO TEST FOR THE 1500 PSI MINIMUM COMPRESSIVE STRENGTH.
 - C. POST-TENSION THREADED STEEL RODS TO 47 KIPS USING A CALIBRATED JACK OPERATED BY QUALIFIED PERSONNEL.
- 64. FOR EACH BEAM, REPEAT THE SEQUENCE SPECIFIED IN NOTES 59-63.

- 65. END DETAILS:
 - A. GROUT ANCHOR BOLTS INTO THE SLEEVES IN THE PRESTRESSED UNITS AT THE FIXED ENDS. BEFORE THE GROUT CURES, PLACE THE WASHER PLATE, AND INSTALL THE NUT ON TOP AND TIGHTEN.
 - B. PLACE THE COLD POURED JOINT SEALER IN THE SLEEVES IN THE PRESTRESSED UNITS AT THE EXPANSION ENDS. PLACE THE WASHER PLATE AND INSTALL THE NUT ON TOP. HAND TIGHTEN AND THEN LOOSEN 1/2 TURN.
 - C. GROUT OVER THE NUT AND BOLT IN THE ANCHOR BOLT BLOCK OUT ON THE FIXED ENDS. FILL THE ANCHOR BOLT BLOCK OUTS ON THE EXPANSION ENDS WITH COLD POURED JOINT SEALER.
- 66. FINISH WORK: REMOVE WEDGES, AND PATCH SURFACE AND FASCIA BEAMS AT TRANSVERSE TENDONS.

REV.	DESCRIPTION	DATE
△	POST TENSIONING NOTES	11/20/2013
PROJECT NAME: BRATTLEBORO		
PROJECT NUMBER: BRO 1442(35)		
FILE NAME: z10j062pn.dgn		PLOT DATE: 11/20/2013
PROJECT LEADER: S.E. BURBANK		DRAWN BY: E.A. FIALA
DESIGNED BY: S.E. BURBANK		CHECKED BY: S.E. BURBANK
PROJECT NOTES (2 OF 2)		SHEET 7 OF 68

