

**PRESTRESSED CONCRETE GENERAL NOTES:**

1. ALL BOX BEAMS AND SOLID SLABS SHALL HAVE ENDS OF STRANDS RECESSED AND GROUTED AS PER STANDARD PRACTICE.
2. THE PRICE PER BOX BEAM AND SOLID SLAB UNIT SHALL INCLUDE ALL OF THE MATERIALS, LABOR, AND ANY OTHER COSTS ASSOCIATED WITH THE INSTALLATION OF THE TRANSVERSE TENDONS.
3. ALL OF THE MATERIALS, LABOR, AND ANY OTHER COSTS ASSOCIATED WITH THE GROUTING OF THE SHEAR KEYS WITH MORTAR TYPE IV SHALL BE PAID AS ITEM 510.24, GROUTING SHEAR KEYS.
4. THE PRICE PER BOX BEAM AND SOLID SLAB UNIT SHALL INCLUDE ALL OF THE MATERIALS, LABOR, AND ANY OTHER COSTS ASSOCIATED WITH THE ANCHOR BOLTS AND THEIR INSTALLATION.
5. THE TOP SURFACE OF THE BOX BEAM AND SOLID SLAB UNITS SHALL BE ROUGHENED TO AN AMPLITUDE OF 6 MILLIMETERS.
6. AN ALTERNATE STRAND CONFIGURATION FOR THE BOX BEAM AND/OR SOLID SLAB UNITS MAY BE SUBMITTED FOR APPROVAL TO THE RESIDENT ENGINEER, PROVIDED THE DESIGN IS SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT AND THE DESIGN MEETS ALL THE APPLICABLE DESIGN CRITERIA, LOADINGS AND CODES.
7. THE PRESTRESSED UNITS SHALL BE ALLOWED TO SET ON THE BEARINGS FOR 24 HOURS PRIOR TO STRESSING THE TRANSVERSE TENDONS AND GROUTING THE SHEAR KEYS.
8. AFTER THE PRESTRESSED UNITS HAVE BEEN SET ON THE BEARINGS, ELEVATIONS SHALL BE TAKEN ALONG THE TOP OF EACH BEAM UNDER THE DIRECTION OF THE RESIDENT ENGINEER. THESE ELEVATIONS SHALL BE USED IN DETERMINING THE FINAL GRADE.
9. ALL EXPOSED CORNERS SHALL BE CHAMFERED 20 MILLIMETERS.
10. ENDS OF ALL PRECAST UNITS AND ANCHOR BOLTS SHALL BE VERTICAL IN FINAL ERECTED POSITION.

**CONSTRUCTION AND PLACEMENT SEQUENCE:**

- A. WORKING LINES MEASURED FROM THE WORKING POINTS SHALL BE LAID OUT THE ENTIRE WIDTH OF THE BRIDGE ALONG CENTERLINE OF BEARING. THE WORKING LINES SHALL BE BASED ON THE NORMAL UNIT WIDTHS.
- B. THE BRIDGE SEAT ELEVATIONS AT BOTH ABUTMENTS SHALL BE VERIFIED TO BE CORRECT PRIOR TO ERECTING THE PRESTRESSED UNITS. IF NECESSARY THE SEATS SHALL BE GROUND TO THE PROPER ELEVATION. IF NECESSARY THE ELASTOMERIC BEARINGS SHALL BE SHIMMED TO PROVIDE EVEN LOAD DISTRIBUTION TO ALL BEARINGS AND PREVENT THE PRESTRESSED UNITS FROM "ROCKING". PRIOR TO ERECTING THE PRESTRESSED UNITS THE CONTRACTOR SHALL HAVE AN ADEQUATE SUPPLY OF APPROVED SHIMS FOR USE UNDER THE BEARINGS. ALL COSTS ASSOCIATED WITH THE GRINDING AND/OR THE INSTALLATION OF THE SHIMS IS INCIDENTAL TO THE PRESTRESSED CONCRETE ITEMS.
- C. ERECT THE PRESTRESSED UNITS TO FIT WITHIN THE WORKING LINES. AS THE WORK PROGRESSES INSTALL HARDWOOD WEDGES TO ENSURE PROPER JOINT OPENING. ONE WEDGE AT EACH TRANSVERSE TIE LOCATION SHALL BE THE MINIMUM.
- D. THE OAKUM OR EQUIVALENT BACKER ROD SHALL BE INSTALLED AFTER THE PRESTRESSED UNITS HAVE BEEN ERECTED BUT PRIOR TO INSTALLING THE HARDWOOD WEDGES. THE BACKER ROD DIAMETER SHALL BE 3 mm GREATER THEN THE VOID BETWEEN UNITS AND SHALL BE INSTALLED UNIFORMLY IN THE BOTTOM OF THE SHEAR KEY.
- E. DRILL INTO BRIDGE SEATS AND INSTALL ANCHOR BOLTS AT THE ENDS OF THE PRESTRESSED UNITS AFTER BEAMS OR SLABS HAVE BEEN SET.
- F. INSTALL TRANSVERSE TIES AND POST TENSION TO 22.25 KN TO REMOVE SAGS AND TO SEAT THE CHUCK.
- G. GROUT SHEAR KEYS WITH MORTAR TYPE IV. THE SHEAR KEYS SHALL BE CLEANED WITH OIL FREE COMPRESSED AIR TO REMOVE ANY DEBRIS. THE SHEAR KEYS SHALL BE PRE-WETTED TO A SATURATED SURFACE DRY CONDITION IMMEDIATELY PRIOR TO PLACING THE MORTAR. ALL COSTS FOR GROUTING SHEAR KEYS SHALL BE PAID AS ITEM 510.24, GROUTING SHEAR KEYS.
- H. THE FINAL POST TENSIONING OF THE TRANSVERSE TIES TO 134 KN SHALL BE DONE ONCE THE MORTAR HAS ATTAINED 10.34 MPA COMPRESSIVE STRENGTH.
- I. THE WEDGES SHALL BE REMOVED AND THE AFFECTED AREAS PATCHED PRIOR TO THE PLACING OF THE COMPOSITE OVERLAY.

**SOLID SLAB NOTES:**

1. PRESTRESSED, PRECAST SOLID SLAB MEMBERS SHALL:
  - A. CONFORM TO SECTION 510A PRESTRESSED CONCRETE.
  - B. BE DESIGNED FOR AASHTO MS22.5 LIVE LOAD.
  - C. MEET THE FOLLOWING DESIGN CRITERIA
 

PRESTRESSED CONCRETE STRENGTH  
 RELEASE  $f'c = 28$  MPA  
 SERVICE  $f'c = 45$  MPA  
 CONTAIN CORROSION INHIBITOR @ 19.8 L/CM

MAXIMUM SERVICE LOADS - SPAN 2 THRU 7

MEMBER MOMENT	51.0 kN/m
DEAD LOAD ON MEMBER MOMENT	23.0 kN/m
SUPER DEAD LOAD ON MEMBER MOMENT	19.0 kN/m
LIVE LOAD + IMPACT MOMENT	90.0 kN/m
DEAD LOAD REACTION/MEMBER	64.0 kN
LIVE LOAD REACTION/MEMBER	85.0 kN
TOTAL REACTION/MEMBER	149.0 kN
  - D. CONTAIN A TOTAL OF 7 - 13 MILLIMETER DIAMETER, 1860 MPa, LOW RELAXATION STRANDS AND CONFORM TO AASHTO M203.
  - E. CONTAIN PRESTRESSING STANDS TENSIONED WITH A FORCE OF 138 KN PER STRAND.
2. ELASTOMERIC BEARING PADS SHALL CONFORM TO 731.03. ALL COSTS FOR ELASTOMERIC BEARING PADS SHALL BE INCLUDED UNDER ITEM 531.10 BEARING DEVICE ASSEMBLY (ELASTOMERIC).
3. ALL COSTS FOR SOLID SLABS SHALL BE PAID UNDER ITEM 510.22, PRESTRESSED CONCRETE VOIDED SLABS (MOD.-SOLID SLABS).

**BOX BEAM NOTES:**

1. PRESTRESSED, PRECAST BOX BEAM MEMBERS SHALL:
  - A. CONFORM TO SECTION 510A PRESTRESSED CONCRETE.
  - B. BE DESIGNED FOR AASHTO MS22.5 LIVE LOAD.
  - C. MEET THE FOLLOWING DESIGN CRITERIA
 

PRESTRESSED CONCRETE STRENGTH  
 RELEASE  $f'c = 28$  MPa  
 SERVICE  $f'c = 45$  MPa  
 CONTAIN CORROSION INHIBITOR @ 19.8 L/CM

MAXIMUM SERVICE LOADS - SPAN 1

MEMBER MOMENT	616.0 kN/m
DEAD LOAD ON MEMBER MOMENT	193.0 kN/m
SUPER DEAD LOAD ON MEMBER MOMENT	215.0 kN/m
LIVE LOAD + IMPACT MOMENT	444.0 kN/m
DEAD LOAD REACTION/MEMBER	240.0 kN
LIVE LOAD REACTION/MEMBER	112.0 kN
TOTAL REACTION/MEMBER	352.0 kN

MAXIMUM SERVICE LOADS - SPAN 8

MEMBER MOMENT	1817.0 kN/m
DEAD LOAD ON MEMBER MOMENT	580.0 kN/m
SUPER DEAD LOAD ON MEMBER MOMENT	648.0 kN/m
LIVE LOAD + IMPACT MOMENT	826.0 kN/m
DEAD LOAD REACTION/MEMBER	402.0 kN
LIVE LOAD REACTION/MEMBER	113.0 kN
TOTAL REACTION/MEMBER	515.0 kN
  - D. CONTAIN 15.24 MILLIMETERS DIAMETER, 1860 MPa LOW RELAXATION PRESTRESSING STRANDS, AND SHALL CONFORM TO AASHTO M203. SPAN 1 BOX BEAMS SHALL CONTAIN 12 STRANDS AND SPAN 8 BOX BEAMS SHALL CONTAIN 28 STRANDS.
  - E. CONTAIN BOTTOM PRESTRESSING STRANDS TENSIONED WITH A FORCE OF 196 KN PER STRAND, AND CONTAIN 2 TOP PRESTRESSING STRANDS TENSIONED WITH A FORCE OF 14 KN STRAND.
  - F. CONTAIN VOIDS TERMINATING AS SHOWN ON THE PLANS AND SHALL BE CONTINUOUS EXCEPT AT LOCATIONS OF THE TRANSVERSE TIE TENDONS.
2. VOID DRAINS SHALL BE PLACED TO CLEAR STRANDS IN EACH END OF ALL VOIDS. THE VOID SHALL BE 20 mm DIAMETER AND NON-FERROUS. THE DRAINS SHALL BE CLEANED UPON REMOVAL FROM FORMS.
3. CONCRETE SHALL NOT BE PLACED ABOVE THE BRIDGE SEAT UNTIL THE BOX BEAM UNITS HAVE BEEN SET.
4. ALL COSTS FOR BOX BEAMS SHALL BE PAID UNDER ITEM 510.21, PRESTRESSED CONCRETE BOX BEAMS.

**STATE OF VERMONT  
AGENCY OF TRANSPORTATION**

Town Of COLCHESTER-SOUTH BURLINGTON	Bridge No. 6
Highway No. TH 4/3	Log Sta.
	Surv. Sta.

TH 4/3 OVER WINOOSKI RIVER & N.E.C.R.

**GENERAL NOTES (2 OF 2)**

Designed By J. T. KLEIN	Drawn By B. J. MASSE
Checked By M. A. COLGAN	Bridge Design Supervisor S. M. GUNN
Date 4/05	Date 4/05

PROJECT COLCHESTER-SOUTH BURLINGTON	PROJECT NO. BRM 5600 (6) S C/2
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