

PRESTRESSED CONCRETE GENERAL NOTES:

- ALL BOX BEAMS SHALL HAVE ENDS OF STRANDS RECESSED AND GROUTED AS PER STANDARD PRACTICE, EXCEPT AS NOTED IN THE PLANS.
- THE PRICE PER LINEAR FOOT OF BOX BEAM SHALL INCLUDE ALL OF THE MATERIALS, LABOR, AND ANY OTHER COSTS ASSOCIATED WITH THE INSTALLATION OF THE TRANSVERSE TENDONS.
- 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.
- THE PRICE PER LINEAR FOOT OF BOX BEAM SHALL INCLUDE ALL OF THE MATERIALS, LABOR, AND OTHER COSTS ASSOCIATED WITH THE ANCHOR BOLTS AND THEIR INSTALLATION.
- THE TOP SURFACE OF THE BOX BEAM UNITS SHALL BE ROUGHENED TO AN AMPLITUDE OF 1/4".
- AN ALTERNATE STRAND CONFIGURATION FOR THE BOX BEAM UNITS MAY BE SUBMITTED FOR APPROVAL TO THE STRUCTURES ENGINEER. THE DESIGN MUST BE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT AND THE DESIGN MUST MEET ALL THE APPLICABLE DESIGN CRITERIA, LOADINGS AND CODES.
- THE BOX BEAMS SHALL SET ON THE BEARINGS FOR 24 HOURS PRIOR TO STRESSING THE TRANSVERSE TENDONS AND GROUTING THE SHEAR KEYS.
- AFTER THE BOX BEAMS 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.
- ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
- ENDS OF ALL PRECAST UNITS AND ANCHOR BOLTS SHALL BE VERTICAL IN FINAL ERECTED POSITION.
- METAL STAY-IN-PLACE FORMS MAY BE USED BETWEEN BOX BEAM UNITS (1 & 4 AND 6 & 9) AT THE CONTRACTOR'S OPTION. DETAILS OF ANY METAL STAY-IN-PLACE FORMS OR ANY OTHER PROPOSED CONNECTION TO THE BOX BEAMS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING THE WORK. ALL COSTS SHALL BE INCIDENTAL TO ITEM 501.32, CONCRETE, HIGH PERFORMANCE CLASS AA (MOD. - RAPID CURE).
- ALL COSTS FOR BOX BEAMS SHALL BE PAID UNDER ITEM 510.21, PRESTRESSED CONCRETE BOX BEAMS (27"x36") (MOD. - LIGHTWEIGHT) OR (27"x48") (MOD. - LIGHTWEIGHT).
- LENGTHS OF BOX BEAMS WERE BASED UPON LIMITED INFORMATION TAKEN FROM EXISTING PLANS AND MAY NOT REFLECT ACTUAL CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO STARTING WORK. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED UNDER ITEM 635.11, MOBILIZATION/DEMobilIZATION.

BOX BEAM CONSTRUCTION AND PLACEMENT SEQUENCE:

- 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.
- THE BRIDGE SEAT ELEVATIONS SHALL BE VERIFIED TO BE CORRECT PRIOR TO ERECTING THE PRESTRESSED UNITS. IF NECESSARY THE SEATS SHALL BE GROUND TO THE PROPER ELEVATION OR THE ELASTOMERIC BEARINGS SHALL BE SHIMMED TO PROVIDE EVEN LOAD DISTRIBUTION TO ALL BEARINGS AND PREVENT THE PRESTRESSED UNITS FROM "ROCKING". WHERE REQUIRED, SHIMS SHALL BE IN ACCORDANCE WITH SECTION 531.05. 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 ITEM 531.10, BEARING DEVICE ASSEMBLY (ELASTOMERIC).
- 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. THE WEDGES SHALL BE REMOVED AND THE AFFECTED AREAS PATCHED PRIOR TO THE PLACING OF THE COMPOSITE OVERLAY.
- 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 1/8" GREATER THAN THE VOID BETWEEN UNITS AND SHALL BE INSTALLED UNIFORMLY IN THE BOTTOM OF THE SHEAR KEY.
- DRILL INTO BRIDGE SEATS AT PIERS AND INSTALL ANCHOR BOLTS AT THE ENDS OF THE PRESTRESSED UNITS AFTER BEAMS HAVE BEEN SET.
- INSTALL TRANSVERSE TIES AND POST TENSION TO 5000 LB TO REMOVE SAGS AND TO SEAT THE CHUCK.
- 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. MIX DESIGN FOR MORTAR TYPE IV SHALL BE SUBMITTED FOR APPROVAL.
- THE FINAL POST TENSIONING OF THE TRANSVERSE TIES TO 30,000 LB SHALL BE DONE ONCE THE MORTAR HAS ATTAINED 1500 PSI COMPRESSIVE STRENGTH.

BOX BEAM NOTES:

- PRESTRESSED BOX BEAM MEMBERS SHALL:
 - CONFORM TO SECTION 510A PRESTRESSED CONCRETE USING LIGHTWEIGHT CONCRETE.
 - BE DESIGNED FOR AASHTO HS25 LIVE LOAD.
 - MEET THE FOLLOWING DESIGN CRITERIA

PRESTRESSED CONCRETE STRENGTH
 RELEASE f'c = 5000 PSI
 SERVICE f'c = 6000 PSI
 CONTAIN CORROSION INHIBITOR @ 4 GAL/CY

MAXIMUM SERVICE LOADS - SPAN 1 AND 3	UNIT 1	UNIT 5	UNIT 2, 3, 4
MEMBER MOMENT	237 FT-K	192 FT-K	237 FT-K
DEAD LOAD ON MEMBER MOMENT	175 FT-K	97 FT-K	131 FT-K
SUPER DEAD LOAD ON MEMBER MOMENT	114 FT-K	66 FT-K	66 FT-K
LIVE LOAD + IMPACT MOMENT	35 FT-K	349 FT-K	349 FT-K
DEAD LOAD REACTION/MEMBER	37 K	25 K	30 K
LIVE LOAD REACTION/MEMBER (W/ IMPACT)	3 K	28 K	28 K
TOTAL REACTION/MEMBER	40 K	53 K	58 K

MAXIMUM SERVICE LOADS - SPAN 2	UNIT 6	UNIT 10	UNIT 7, 8, 9
MEMBER MOMENT	491 FT-K	397 FT-K	491 FT-K
DEAD LOAD ON MEMBER MOMENT	370 FT-K	239 FT-K	279 FT-K
SUPER DEAD LOAD ON MEMBER MOMENT	260 FT-K	142 FT-K	162 FT-K
LIVE LOAD + IMPACT MOMENT	72 FT-K	547 FT-K	547 FT-K
DEAD LOAD REACTION/MEMBER	54 K	38 K	45 K
LIVE LOAD REACTION/MEMBER (W/ IMPACT)	4 K	29 K	29 K
TOTAL REACTION/MEMBER	58 K	67 K	74 K

- CONTAIN 0.6 INCH DIAMETER, 270 KSI LOW RELAXATION PRESTRESSING STRANDS, AND SHALL CONFORM TO AASHTO M203.
 - PRESTRESSING STRANDS TENSIONED WITH A FORCE OF 44 KIPS PER STRAND.
 - CONTAIN VOIDS TERMINATING AS SHOWN ON THE PLANS AND SHALL BE CONTINUOUS EXCEPT AT LOCATIONS OF THE TRANSVERSE TIE TENDONS AND SCUPPER SLEEVE LOCATIONS AS SHOWN ON THE PLANS.
- VOID DRAINS SHALL BE PLACED TO CLEAR STRANDS IN EACH END OF ALL VOIDS. THE VOID SHALL BE 3/4" DIAMETER AND NON-FERROUS. THE DRAINS SHALL BE CLEANED UPON REMOVAL FROM FORMS.
 - CONCRETE SHALL NOT BE PLACED ABOVE THE BRIDGE SEAT UNTIL THE BOX BEAM UNITS HAVE BEEN SET, PROFILED, AND FINAL GRADE HAS BEEN DETERMINED.

CONCRETE NOTES:

- CONCRETE PAYMENT AND CLASSIFICATION SHALL BE AS FOLLOWS:
 - ITEM 501.32, CONCRETE, HIGH PERFORMANCE CLASS AA (MOD. - RAPID CURE): OVERLAY, CURTAIN WALLS, AND PIER CLOSURE POURS
 - ITEM 501.33, CONCRETE, HIGH PERFORMANCE CLASS A (MOD.): BRIDGE CURB AND BRIDGE SIDEWALK
 - ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B: ABUTMENTS, RETAINING WALLS, AND ALL OTHER BRIDGE CAST-IN-PLACE COMPONENTS UNLESS OTHERWISE NOTED.
 - ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B (MOD. - SCC): PIERS
- ITEM 514.10, WATER REPELLENT (MOD. - SILANE), SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON BRIDGE SUPERSTRUCTURE EXCEPT THE BOTTOM OF THE BOX BEAMS BETWEEN DRIP EDGES. WATER REPELLENT SHALL ALSO BE APPLIED TO THE EXPOSED CONCRETE ON THE RETAINING WALLS, PIERS, AND ABUTMENTS TO 1'-0" BELOW FINISH GRADE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- THE REQUIRED CONCRETE CURE TIME FOR ALL BRIDGE SEATS MAY BE REDUCED TO THREE (3) DAYS. THE CONTRACTOR MAY BEGIN BOX BEAM PLACEMENT ON THE BRIDGE SEATS AFTER A MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 1000 PSI IS ATTAINED, HOWEVER, PROPER CURING TECHNIQUES SHALL CONTINUE FOR THE THREE (3) DAY MINIMUM.
- IF THE CONTRACTOR PROPOSES TO USE A CURING COMPOUND ON ANY ELEMENT THAT WILL HAVE WATER REPELLENT APPLIED, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A WRITTEN REQUEST THAT CLEARLY IDENTIFIES WHICH ELEMENTS ARE EFFECTED, HOW LONG CURING COMPOUND WILL REMAIN IN PLACE, NAME AND PRODUCT INFORMATION FOR CURING COMPOUND, AND HOW CURING COMPOUND WILL BE REMOVED.
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" BY 1", UNLESS OTHERWISE NOTED. A 1/2" RADIUS SHALL BE USED ON THE TOP INSIDE CORNER OF CURBS AND SIDEWALKS.
- JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.
- SURFACES OF THE BRIDGE SEATS UNDER THE BEARING DEVICE SHALL BE LEVEL. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED 1/4" PER 1'-0".
- THE KEY ON CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT UNLESS OTHERWISE INDICATED. ANY UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.

REINFORCING STEEL NOTES:

- REINFORCING STEEL IN THE ABUTMENTS, PIERS, AND RETAINING WALLS SHALL BE PAID AS ITEM 507.15, REINFORCING STEEL. ALL OTHER REINFORCING STEEL SHALL BE EPOXY COATED AND PAID AS ITEM 507.17, EPOXY COATED REINFORCING STEEL UNLESS OTHERWISE NOTED.
- MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
 - ALONG BACK FACES OF WALLS AGAINST EARTH: 2"
 - ALONG TOP SURFACE OF DECK OVERLAY: 2"
 - ALONG BOTTOM SURFACE OF DECK OVERLAY: 1 1/2"
 - IN PIERS: 3"
 - IN PRECAST SUPERSTRUCTURE COMPONENTS: 2"
 - ELSEWHERE UNLESS OTHERWISE INDICATED: 3"
- REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
 - SPACING: ±1"
 - CLEARANCE: ± 1/4"
- ALL REINFORCING STEEL IN THE BOX BEAMS SHALL BE EPOXY COATED AND PAID UNDER ITEM 510.21, PRESTRESSED CONCRETE BOX BEAMS (27"x36") (MOD. - LIGHTWEIGHT) OR (27"x48") (MOD. - LIGHTWEIGHT).
- WHEN EPOXY COATED REINFORCING STEEL IS CUT, THE UNCOATED ENDS SHALL BE REPAIRED WITH MATERIALS AND PROCEDURES APPROVED BY THE COATING MANUFACTURER. FLAME CUTTING OF EPOXY COATED REINFORCING STEEL WILL NOT BE PERMITTED.

DRAINAGE NOTES:

- STA. 5+15.0, RT. 12.4 - STA. 5+53.0, RT. 35.7
 18" X 39.0 LF PCCSP, CAAP, OR CPEP (SL)
 PC-DI WITH GRATE, TYPE E AT STA. 5+15.0, RT. 12.4
 RIM ELEV. = 703.94
 INV. OUT = 701.00
 PC-DI SHALL CONFORM TO THE DIMENSIONS AND REINFORCING REQUIREMENTS AS SHOWN ON STANDARD SHEET D-16
- STA. 7+80.0, RT. 13.0 - STA. 7+80.0, LT. 13.0
 18" X 22.0 LF PCCSP, CAAP, RCP, OR CPEP (SL)
 PC-CB WITH GRATE, TYPE E AT STA. 7+80.0, RT. 13.0
 RIM ELEV. = 705.25
 INV. OUT = 699.75
- STA. 9+20.0, LT. 13.0 - STA. 7+80.0, LT. 13.0
 18" X 140.0 LF PCCSP, CAAP, RCP, OR CPEP (SL)
 PC-CB WITH GRATE, TYPE E AT STA. 9+20.0, LT. 13.0
 RIM ELEV. = 705.88
 INV. OUT = 700.38
- STA. 7+80.0, LT. 13.0 - STA. 7+66.8, LT. 26.0
 18" X 22.0 LF PCCSP, CAAP, OR CPEP (SL)
 PC-CB WITH GRATE, TYPE E AT STA. 7+80.0, LT. 13.0
 RIM ELEV. = 705.25
 INV. IN (E) = 699.68
 INV. IN (S) = 699.64
 INV. OUT = 697.50
 CONST. 6' WIDE X 14' LONG X 2' DEEP STONE FILL SWALE, TYPE II
- STA. 7+62.5 LT
 REMOVE EXISTING DI
 REMOVE EXISTING 8"x66' PIPE TO R.O.W. LIMITS
 (INCIDENTAL TO TRENCH EXCAVATION OF EARTH)

**STATE OF VERMONT
 AGENCY OF TRANSPORTATION**

Town Of	WOODSTOCK	Bridge No.	50
Highway No.	U.S. ROUTE 4	Log Sta.	
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER			
GENERAL NOTES (2 OF 2)			
Designed By	J. T. KLEIN	Drawn By	B. J. MASSE
Checked By	Date	Bridge Design Supervisor	
M. A. COLGAN	10/06	M. A. COLGAN Date 10/06	
PROJECT	WOODSTOCK	PROJECT NO.	
		BHF 020-2 (32)	
I.G.C. Info.			
Bridge Sheet No.	ZJ028GN2	Sheet	23 of 71

REVISION	DATE	BY
△ NOTE CHANGE	11/21/06	M. COLGAN

VHB Vanasse Hangen Brustlin, Inc.