



PAPER MILL GENERAL NOTES

- 1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, ADOPTED 1995, AND ITS LATEST REVISIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 16TH EDITION, DATED 1996, AND ITS LATEST REVISIONS.
2. DESIGN OF THE REHABILITATED STRUCTURE IS FOR AASHTO M-18 TRUCK LOADING.
3. BRIDGE NO. 31 WILL CONTINUE TO BE CLOSED TO ALL PEDESTRIAN AND VEHICULAR TRAFFIC DURING CONSTRUCTION. TRAFFIC WILL BE MAINTAINED ON EXISTING TEMPORARY BRIDGE.
4. ALTHOUGH THIS PROJECT INVOLVES MAJOR REHABILITATION OF THE BRIDGE, INCLUDING REPLACEMENT OF MANY MEMBERS, THE INTENT OF THE PROJECT IS TO MAINTAIN THE DIMENSIONAL GEOMETRY OF THE BRIDGE, ALONG WITH MOST OF THE CONNECTION TYPES AND DETAILS. ALL EXISTING DIMENSIONS, SHOWN ON THE PLANS, SHALL BE CHECKED IN THE FIELD PRIOR TO COMMENCING THE WORK. ACTUAL WORK SHALL MATCH FIELD CONDITIONS. SIDING AND ROOF LINES SHALL MATCH EXISTING CONDITIONS. NO CHANGE IN VERTICAL PROFILE IS INTENDED AND NO CONCRETE WORK IS REQUIRED.
5. ALL NEW SAWN STRUCTURAL TIMBERS SHALL BE SOUTHERN PINE, SELECT STRUCTURAL, FULL SAWN (DIMENSIONS EQUAL TO NOMINAL SIZING), EXCEPT AS NOTED. IF SOUTHERN PINE IS NOT AVAILABLE IN THE SIZES INDICATED, DOUGLAS FIR, SELECT STRUCTURAL, MAY BE SUBSTITUTED.
FULL SAWN STRUCTURAL TIMBERS INCLUDE THE FOLLOWING MEMBERS:
STRUCTURAL UNTREATED (ITEM 522.20)
- NEW KNEE BRACES
- NEW AND REPLACEMENT LATERAL ROOF BRACING
- REPLACEMENT LATTICE MEMBERS
- REPLACEMENT UPPER BRACING COMPONENTS (IF REQUIRED)
- NEW RAFTERS (SPRUCE-PINE-FIR, NO. 1 GRADE ACCEPTABLE)
- NEW CROSS TIE BEAMS
- REPLACEMENT RIDGE BEAM (IF REQUIRED)
- TRUNNELS
- COLLAR TIES
- ROOF MAILERS
STRUCTURAL TREATED (ITEM 522.25)
- BEARING BLOCKS, & BEDDING TIMBERS
- REPLACEMENT UPPER TOP CHORDS
- REPLACEMENT LOWER TOP CHORDS
- REPLACEMENT UPPER BOTTOM CHORDS
- REPLACEMENT LOWER BOTTOM CHORDS
- REPLACEMENT END POSTS
- BOTTOM LATERAL BRACING
\* (TREATMENT SHALL COMPLY WITH STD. SPEC 726.01 PRESERVATIVE TYPE IV).
\*\* (TREATMENT SHALL COMPLY WITH STD. SPEC 726.01 PRESERVATIVE TYPE II).
6. NON-STRUCTURAL LUMBER - UNTREATED (ITEM 522.30) SHALL INCLUDE:
- SIDING FOR REPLACEMENT OF DAMAGED PIECES
- NAILING STRIPS
- ROOF BLOCKING
7. NON-STRUCTURAL LUMBER - TREATED (522.35) SHALL INCLUDE:
- BLOCKING BETWEEN BOTTOM CHORDS AT NEW BOLTS BENEATH FLOOR BEAMS \*\*
- CURBS AND BLOCKING \*\*
8. NEW STRUCTURAL GLUED LAMINATED MEMBERS SHALL BE AS FOLLOWS:
FLOOR BEAMS: SOUTHERN PINE #24F-E2 SP/SP, PENTA TREATED 2400 PSI FIBER BONDING STRESS PRIOR TO TREATMENT.
DECK PANELS: SOUTHERN PINE #16F-V1SP/SP (OR COMBINATION 46 SP)
TREATMENT OF STRUCTURAL GLUED LAMINATED MEMBERS SHALL COMPLY WITH STD. SPEC. 726.01 TYPE D IF TREATED AFTER GLUING, OR STD. SPEC. 726.01 TYPE II IF TREATED PRIOR TO GLUING.

- 9. REGARDING DECK PANELS:
CONTRACTOR SHALL SUBMIT SHOP PLANS SHOWING NUMBER, WIDTH, LENGTH, AND CONNECTION DETAILS FOR DECK PANELS. FOR REVIEW AND COMMENT BY ENGINEER. APPROVAL IS REQUIRED PRIOR TO FABRICATION. PANELS SHALL BE NON-INTERCONNECTED. USE 4 PANELS OF EQUAL WIDTH ACROSS THE SECTION OF THE BRIDGE. USE PANELS OF MINIMUM LENGTH OF 6.4 m. STAGGER END JOINTS OVER FLOOR BEAMS. ALUMINUM DECK BRACKETS SHALL CONFORM TO MANUFACTURER'S SPECIFICATIONS.
10. ALL NEW WOOD TRUNNELS SHALL BE UNTREATED, DRIED (MAX. MOISTURE CONTENT 19%), WHITE OAK OR WHITE ASH, AND SHALL BE DRIVEN IN A MANNER WHICH AVOIDS SPLITTING OF THE TRUNNELS OR THE PIECES CONNECTED BY THEM. TRUNNELS SHALL BE 50 MM DIAMETER. TRUNNELS MAY BE DIPPED IN BOILED LINSEED OIL PRIOR TO DRYING. TRUNNELS WILL BE PAID FOR UNDER ITEM 522.20.
11. REGARDING SIDING:
THE EXISTING SIDING SHALL BE REMOVED CAREFULLY. ALL SIDING IN GOOD CONDITION SHALL BE SAVED AND REUSED ON THE NORTH-FACING SIDE OF THE BRIDGE. (SEE NOTE 20)
ALL NEW SIDING SHALL BE NO. 1 GRADE WHITE PINE OR EASTERN SPRUCE.
ALL SIDING SHALL BE FASTENED WITH NO. 8 GALVANIZED SCREWS 65mm (2 1/2") LONG, COST INCIDENTAL TO SIDING.
SIDING SHALL BE PAINTED TO MATCH EXISTING COLORS. AFTER INSTALLATION IS COMPLETE, ALL SIDING IS TO BE PAINTED. NEW SIDING IS TO BE PRIMED AND PAINTED.
12. REGARDING ROOF:
THE OVERHANG DIMENSIONS SHALL REMAIN THE SAME ON ALL FOUR EDGES. ANY ROOF BOARDS DETERMINED BY THE RESIDENT ENGINEER TO BE IN GOOD CONDITION SHALL BE REUSED. REUSING THE EXISTING ROOF BOARDS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO ITEM 665J8 - METAL ROOFING. ANY ADDITIONAL BOARDS REQUIRED WILL BE PAID FOR UNDER ITEM 522.20 - STRUCTURAL LUMBER (UNTREATED).
SEE SPECIAL PROVISIONS FOR OTHER ROOF REQUIREMENTS.
13. THE INITIAL CAMBER BEFORE SHORING REMOVAL SHALL BE NOT LESS THAN 100 MM AT MID-SPAN. THE BRIDGE SHALL BE STRAIGHT ALONG A HORIZONTAL LINE BETWEEN THE ABUTMENTS. THE BRIDGE SHALL NOT BE RACKED WHEN COMPLETED.
14. THE CONTRACTOR SHALL SUBMIT JACKING AND SHORING PLANS TO THE ENGINEER FOR REVIEW AND COMMENT. APPROVAL OF THE INFORMATION IS REQUIRED PRIOR TO COMMENCEMENT OF THE WORK.
15. THE INTENDED ERECTION SEQUENCE FOR THE FLOOR BEAMS ASSUMES INSTALLATION OF NEW TRUSS LATTICE AND LOWER BOTTOM CHORDS AND TIE RODS BENEATH FLOOR BEAMS, FOLLOWED BY INSTALLATION OF FLOOR BEAMS AND BRACING, THEN UPPER BOTTOM CHORDS. ACCORDINGLY, NO NOTCHING OF THE TOPS OF THE FLOOR BEAMS IS REQUIRED.
16. ALL STRUCTURAL MEMBERS AND CONNECTORS INDICATED TO BE RETAINED AND/OR REUSED, SHALL BE CHECKED IN THE FIELD FOR DAMAGE AND DECAY AND SHALL BE REMOVED AND REPLACED AS DEEMED NECESSARY BY THE ENGINEER IN THE FIELD. PAYMENT SHALL BE UNDER THE APPROPRIATE LUMBER PAY ITEM.
17. STRUCTURAL STEEL ITEMS SHALL INCLUDE ALL TIE RODS THROUGH BOTTOM CHORDS BENEATH THE FLOOR BEAMS, TIE RODS BETWEEN THE TRUSSES AT THE BOTTOM CHORD AND TIE BEAM ANCHOR BOLTS. STRUCTURAL STEEL SHALL BE AASHTO M270, GRADE 345. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232. ALL OTHER HARDWARE SHALL BE PAID FOR SUBSIDIARY TO THE ITEM TO WHICH IT IS ATTACHED. ALL NEW BOLTS, LAG SCREWS, NUTS AND WASHERS SHALL BE ASTM A307 AND GALVANIZED IN ACCORDANCE WITH AASHTO M232. THE CONTRACTOR SHALL SUBMIT A TYPE A CERTIFICATION IN ACCORDANCE WITH VAOT SPECIFICATIONS. REFER ALSO TO SPECIAL PROVISIONS.

- 18. 'UNTREATED LUMBER AND TIMBER' AND 'TREATED LUMBER AND TIMBER' QUANTITIES ARE FOR ESTIMATING PURPOSES ONLY. ACTUAL QUANTITIES MAY VARY DEPENDING ON CONDITION OF LUMBER SCHEDULED TO BE RETAINED.
19. REPAIR OF SPLITS AND CHECKS IN EXISTING LATTICE TO BE RETAINED, OR OTHER LOCATIONS, SHALL BE MADE WITH APPROVED WATERPROOF GLUE AND CLAMPING TO ACHIEVE FULL STRENGTH OF THE REPAIRED MEMBERS. CONTRACTOR SHALL SUBMIT MATERIAL SPECIFICATION AND PROCEDURE DESCRIPTION TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING THE WORK. PAYMENT TO BE INCLUDED UNDER ITEM 522.20.
20. ITEM 529.20 'PARTIAL REMOVAL OF STRUCTURE' SHALL INCLUDE, BUT NOT BE LIMITED TO:
- THE COMPLETE DISMANTLING OF THE EXISTING SUPERSTRUCTURE.
- REMOVAL OF BEDDING TIMBERS AND CLEANING OF BEARING AREAS TO THE SATISFACTION OF THE ENGINEER.
- REMOVAL AND STOCKPILING OF THE EXISTING STEEL BRACING SYSTEM ON SITE. STEEL TO BE REMOVED FROM THE SITE BY THE TOWN OF BENNINGTON.
PAYMENT FOR ITEM 529.20 TO INCLUDE SALVAGE AND REUSE OF:
- CURB TIMBERS
- BOTTOM LATERAL BRACING
- END LATTICE MEMBERS AS INDICATED
- RIDGE BEAM
- UPPER KNEE BRACES
- LATERAL ROOF BRACING
- LONGITUDINAL BEAM ABOVE TIE BEAMS
- TIE BEAMS
- COLLAR TIES
- SIDING (ALSO SEE NOTE 10)
- BOTTOM LATERAL BRACING
21. SEE SPECIAL PROVISION FOR TIE DOWN ANCHOR SYSTEM. THE SYSTEM SHALL BE PAID FOR UNDER ITEM 63J0 'BEARING DEVICE ASSEMBLY (MOD.)'. THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE ANCHOR SYSTEM HAVING THE SAME CAPACITY, FOR REVIEW AND COMMENT BY THE ENGINEER. APPROVAL OF THE SYSTEM TO BE USED IS REQUIRED PRIOR TO ORDERING ANY COMPONENTS OR ANY INSTALLATION.
22. ITEM 665J5 'REMOVE EXISTING ROOFING' INCLUDES THE COST OF REMOVAL OF THE EXISTING TIMBER SHINGLES. REMOVAL OF THE TIMBER SUPPORT COMPONENTS (E.G. NAILERS AND RAFTERS) IS INCLUDED IN ITEM 529.20.
23. FOR ESTIMATING PURPOSES THE FOLLOWING MEMBERS WERE INCLUDED IN THE ESTIMATED LUMBER QUANTITIES:
- TWO TIE BEAMS.
- FOUR UPPER KNEE BRACES.
- FOUR COLLAR TIES.
- FOUR LATERAL ROOF BRACES.
- FOUR BOTTOM LATERAL BRACES.
- 30% OF SIDING
THE RESIDENT ENGINEER MAY REQUIRE ADDITIONAL MEMBERS TO BE REPLACED.
24. THE BID PRICES FOR ITEMS 522.25, 522.35 AND 522.40 SHALL NOT DIFFERENTIATE BETWEEN THE VARIOUS PRESERVATIVE TREATMENT TYPES.
25. THE EXISTING TEMPORARY BRIDGE ABUTMENTS AND EMBANKMENTS ARE TO REMAIN IN PLACE.
26. TWO COATS OF NFPA CLASS 'B', CLEAR FIRE RETARDANT SHALL BE APPLIED TO ALL INTERIOR UNTREATED WOOD SURFACES OF THE BRIDGE AS SPECIFIED BY THE MANUFACTURER. FIRE RETARDANT TO BE PAID USING ITEM 513.30, STRUCTURE PAINTING, FIELD APPLIED (MOD.). REFER TO SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
27. EXISTING CONCRETE TRAFFIC BARRIERS ARE THE TOWN OF BENNINGTON'S. WHEN COVERED BRIDGE IS OPEN TO TRAFFIC, THE BARRIER WILL BE RESET TO BLOCK ENTRANCE TO TEMPORARY BRIDGE UNTIL THE TEMPORARY BRIDGE IS REMOVED BY STATE FORCES. COST FOR REMOVAL AND RESETTING IS TO BE INCLUDED IN ALL OTHER CONTRACT ITEMS.

DESCRIPTION OF WORK

GENERAL - THIS REHABILITATION PROJECT INCLUDES AN EXTENSIVE REPLACEMENT OF STRUCTURAL COMPONENTS AS FOLLOWS:
- REPLACE TRUSSES, DECKING AND FLOOR BEAMS, AND ROOFING AND PURLINS
- RETAIN LATTICE MEMBERS AT ENDS, AS INDICATED
- RETAIN EXISTING BRACING WITH MODIFICATIONS INDICATED
- NO CONCRETE WORK IS REQUIRED
THE DESIGN HAS BEEN BASED ON REPLACEMENT OF STRUCTURAL COMPONENTS WITH THE STRUCTURE SUPPORTED BY A TEMPORARY FALSEWORK SYSTEM IN ITS CURRENT LOCATION. STRUCTURE DETAILS AND SIZES HAVE NOT BEEN EXAMINED FOR LOADING CONDITIONS RELATED TO OTHER ERECTION SCHEMES. THE REHABILITATED STRUCTURE SHALL BE OF OVERALL GEOMETRY SIMILAR TO THE EXISTING BRIDGE WITH NO CHANGE TO ROADWAY SURFACE ELEVATION.
WORK TO BE PERFORMED, INCLUDES (BUT IS NOT LIMITED TO):
1. REHABILITATION OF COVERED BRIDGE:
- TEMPORARY SHORING
- REMOVAL OF COMPONENTS - NO SALVAGE:
- ROOFING MATERIALS AND NAILERS
- RAFTERS
- ALL CHORD MEMBERS
- ALL LATTICE MEMBERS EXCEPT THOSE IDENTIFIED AT THE ENDS OF THE BRIDGE
- END POSTS OF TRUSSES
- NAIL LAMINATED DECKING
- FLOOR BEAMS
- LOWER DIAGONAL KNEEBRACES, AS INDICATED
- SUPPORT TIMBER BLOCKING AT ABUTMENTS
- COMPONENTS TO BE RETAINED FOR REUSE:
- EXTERIOR SIDING, INCLUDING THAT ON THE INSIDE AT THE ENDS OF THE BRIDGE
- TIMBER CURBS
- LOWER LATERAL BRACING
- TIE BEAMS
- LATERAL ROOF BRACING
- UPPER KNEE BRACING
- RIDGE BEAM AND LONGITUDINAL BEAM ABOVE TIE BEAM
- LATTICE MEMBERS AT THE ENDS OF THE TRUSSES, AS INDICATED
- PROVIDE AND INSTALL REPLACEMENT COMPONENTS
- ALL CHORD MEMBERS
- ALL LATTICE MEMBERS, EXCEPT THOSE SALVAGED AT THE ENDS OF THE TRUSSES
- END POSTS OF TRUSSES
- GLULAM FLOOR BEAMS
- RAFTERS
- GLULAM DECKING COMPONENTS
- BEARING BLOCKS/TIMBERS AT ABUTMENTS
- LOWER KNEEBRACES
- EXTERIOR SIDING, AS REQUIRED
- ROOF NAILERS
- METAL ROOFING
- MISCELLANEOUS WORK:
- PROVIDE AND INSTALL NEW BOLTS IN ROOF LATERAL SYSTEM AT INTERSECTIONS, AS INDICATED.
- PROVIDE AND INSTALL NEW STEEL ROD ASSEMBLIES AT EACH KNEE BRACE.
- PROVIDE AND INSTALL NEW STEEL ROD ASSEMBLIES BETWEEN TRUSSES, AS INDICATED.
- PAINT WOOD AND METAL COMPONENTS AS INDICATED.
- APPLY FIRE RETARDANT TO INSIDE AS INDICATED.

DATUM
VERTICAL \_\_\_\_\_
HORIZONTAL \_\_\_\_\_

STATE OF VERMONT AGENCY OF TRANSPORTATION
Town Of BENNINGTON Bridge No. 31
Highway No. T.H. #19 (MURPHY ROAD) Log Sta.
PAPER MILL COVERED BRIDGE REHABILITATION
Srvy. Sta.
GENERAL NOTES
Designed By J. MIECZKOWSKI Drawn By K. NICHOLS
Checked By J. MIECZKOWSKI Date 1/99 Bridge Design Supervisor P. MALACHOWSKI 1/99
PROJECT BENNINGTON PROJECT NO. 6H2 144(118)
I.G.C. Info. m:\1954810\struat\1441gen.doc
Bridge Sheet No. Sheet 4 of 22
14-MAY-1999