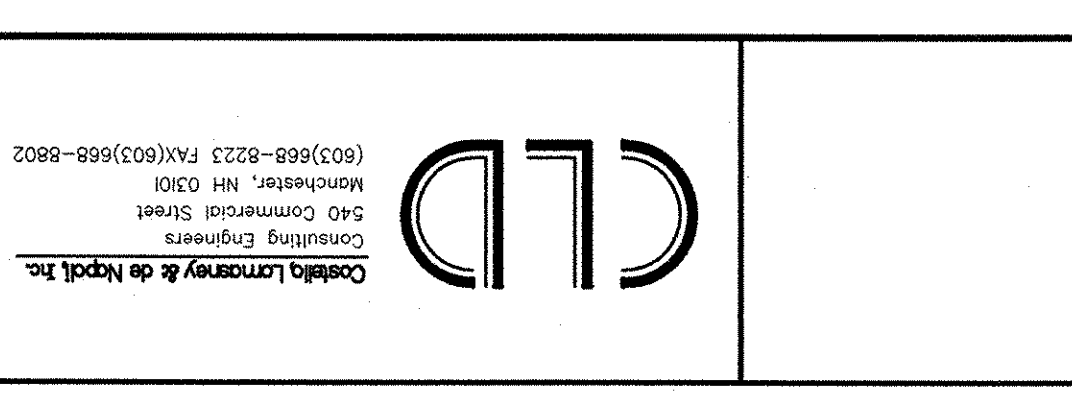
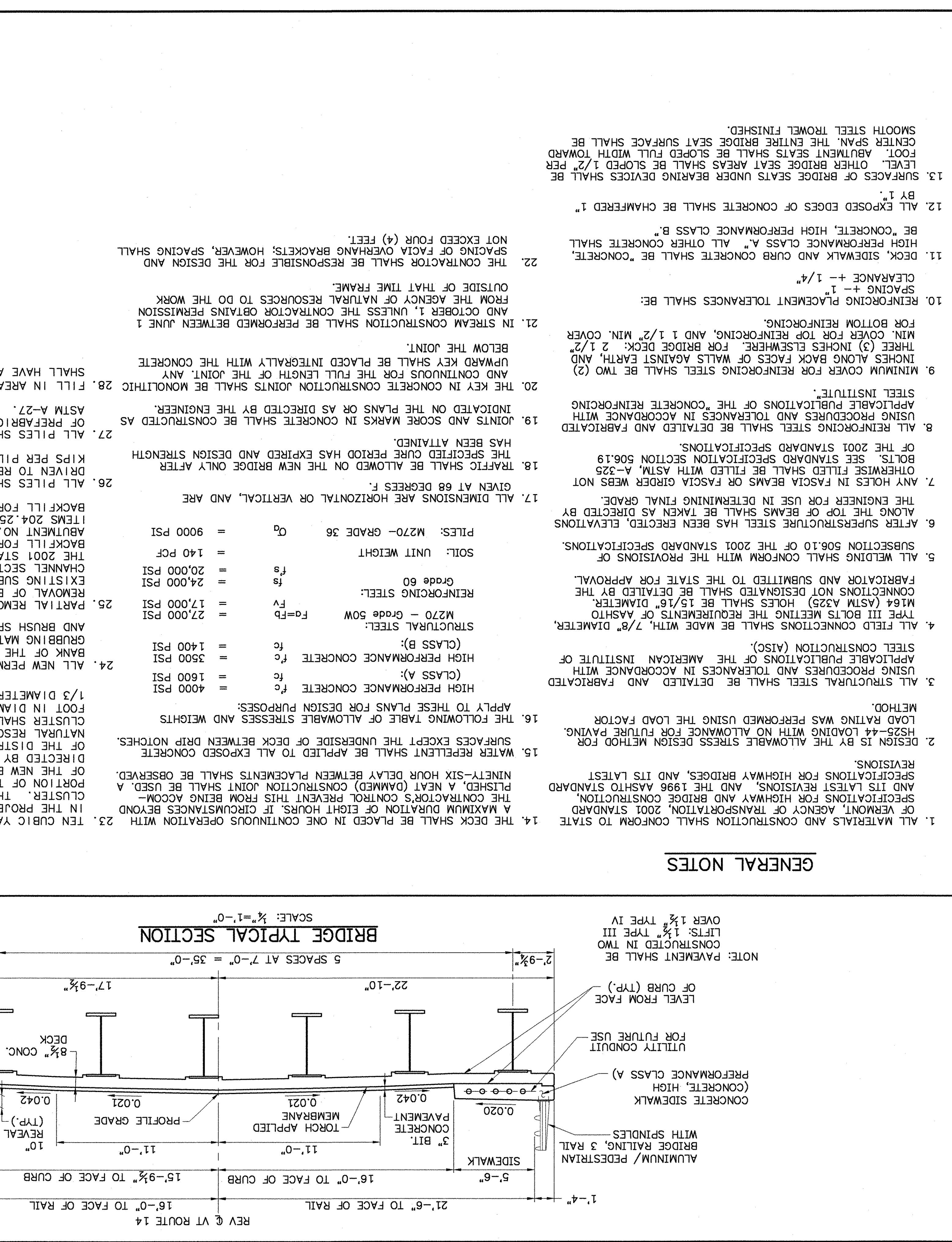


HYDRAULIC DATA CHARACTER OF TERRAIN: MOUNTAINOUS, MODERATE RELIEF CHARACTER AND TYPE OF STREAM: SMALL PERENNIAL BUT FLASHY NATURE OF STREAMBED: SHALLOW SANDS AND SILTS AND SOME GRAVEL OVER BEDROCK DRAINAGE AREA: 103.59 AC. DATE OF FLOOD OR RECORD: 1927 WATER SURFACE ELEVATION: 10 = 6.9 fps (approach section) * ESTIMATED DISCHARGE NATURAL STREAM VELOCITY @ 0.10 = 10.2 fps (9.7 fpa) = 11.2 fps (10.1 fpa) = 12.8 fps (11.7 fpa) 8. LONG TERM STREAM BED CHANGES: NARROW FLOOD PLAIN: ALLUVIAL FREQUENCY: ** 9. IS THE ROADWAY OVERTOPPED BELOW THE 0.100? NO 10. RELIEF ELEVATION: ** DISCHARGE OVER ROAD @100: 1.5 MILES 11. UPSTREAM STRUCTURE: TH 12 STR. NO. 27 DISTANCE 1.5 MILES CLEAR HEIGHT: 10' 12. DOWNSTREAM STRUCTURE: N/A STR. NO. N/A DISTANCE N/A CLEAR HEIGHT: N/A																			
EXISTING STRUCTURE 1. STRUCTURE TYPE: 3-SPAN REINFORCED CONCRETE T-BEAM YEAR BUILT: 1928 2. SPAN NORMAL TO STREAM: 32'-56"-32' 3. VERTICAL CLEARANCE ABOVE STREAM: 18'-2'-/- 4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM): 1440 SF 5. DISPOSITION OF STRUCTURE: SUPERSTRUCTURE AND PORTIONS OF SUBSTRUCTURE TO BE REMOVED 6. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL: SPREAD FOOTINGS ON SANDY SILT AND/OR LEDGE 7. WATER SURFACE ELEVATION @ 0.25: 462.6 @APPROACH AREA VELOCITY = 7.6 fps 10.2 fps (9.7 fpa) = 11.2 fps (10.1 fpa) = 12.8 fps (11.7 fpa) 8. LONG TERM STREAM BED CHANGES: NARROW FLOOD PLAIN: ALLUVIAL FREQUENCY: ** 9. IS THE ROADWAY OVERTOPPED BELOW THE 0.100? NO 10. RELIEF ELEVATION: ** DISCHARGE OVER ROAD @100: 1.5 MILES 11. UPSTREAM STRUCTURE: TH 12 STR. NO. 27 DISTANCE 1.5 MILES CLEAR HEIGHT: 10' 12. DOWNSTREAM STRUCTURE: N/A STR. NO. N/A DISTANCE N/A CLEAR HEIGHT: N/A																			
PROPOSED STRUCTURE 1. STRUCTURE TYPE: REINFORCED CONCRETE SLAB OVER STEEL GIRDER 2. CLEAR SPAN LENGTH(S) NORMAL TO STREAM: 128.3' 3. VERTICAL CLEARANCE ABOVE STREAMBED: 18.8' 4. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? YES, CONDUIT IN SIDEWALK FOR FUTURE USE 5. ARE PROVISIONS TO BE MADE FOR FUTURE UTILITIES? YES, CONDUIT IN SIDEWALK FOR FUTURE USE 6. WATER SURFACE ELEVATION @ 0.25: 462.6 @APPROACH AREA VELOCITY = 5.6 fps 10.2 fps (9.7 fpa) = 11.2 fps (10.1 fpa) = 12.8 fps (11.7 fpa) 7. WATER SURFACE ELEVATION @ 0.25: 462.6 @APPROACH AREA VELOCITY = 7.6 fps 10.2 fps (9.7 fpa) = 11.2 fps (10.1 fpa) = 12.8 fps (11.7 fpa) 8. LONG TERM STREAM BED CHANGES: NARROW FLOOD PLAIN: ALLUVIAL FREQUENCY: ** 9. IS THE ROADWAY OVERTOPPED BELOW THE 0.100? NO 10. RELIEF ELEVATION: ** DISCHARGE OVER ROAD @100: 1.5 MILES 11. UPSTREAM STRUCTURE: TH 12 STR. NO. 27 DISTANCE 1.5 MILES CLEAR HEIGHT: 10' 12. DOWNSTREAM STRUCTURE: N/A STR. NO. N/A DISTANCE N/A CLEAR HEIGHT: N/A																			
ADDITIONAL DESIGN CONSIDERATIONS * WATER SURFACE ELEVATION FOR FLOOD OF RECORD IS UNKNOWN. ** PLANS FOR EXISTING BRIDGE INDICATE A "HIGH WATER ELEVATION" OF APPROXIMATELY 471, WHICH PROBABLY REPRESENTS THE 1925 FLOOD (LESSER EVENT THAN THE 1927 FLOOD). *** FOR HIGH FLOW ON THE WHITE RIVER CASE (CONJUNCT FLOODS), OVERTOPPING OCCURS OF THE EXISTING STRUCTURE FOR THE 100 YEAR EVENT. THE WATER SURFACE ELEVATION IS 477.04 WITH 74 SF OF ROADWAY WEIR FLOW AT A MAXIMUM DEPTH OF 10 INCHES. *** CONFLUENCE WITH WHITE RIVER IS IMMEDIATELY DOWNSTREAM OF BRIDGE.																			
LOAD RATING (LOAD FACTOR) <table border="1"> <tr> <th>LOAD RATING</th> <th>LEVEL</th> <th>TRUCK</th> </tr> <tr> <td>INVENTORY</td> <td>44</td> <td>79</td> </tr> <tr> <td>POSTED</td> <td>44</td> <td>79</td> </tr> <tr> <td>OPERATING</td> <td>94</td> <td>165</td> </tr> <tr> <td></td> <td>182</td> <td>104</td> </tr> <tr> <td></td> <td>145</td> <td>145</td> </tr> </table> VT. Route 14 over the First Branch of the White River Bridge No. 21 Log Sta. _____ Highway No. VT. Route 14 Surv. Sta. _____ STRENGTH: $RF = \frac{M_a - 1.5M_b}{M_a + M_b + I}$ SERVICEABILITY: $RF = \frac{S_{a+1} - M_a}{S_{a+1} - M_a + M_b + I}$ I.G.C. Info. _____ PROJECT NO. ROYALTON PROJECT NO. BRS 0147(5) S Bridge Sheet No. Sheet 37 Of 76		LOAD RATING	LEVEL	TRUCK	INVENTORY	44	79	POSTED	44	79	OPERATING	94	165		182	104		145	145
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1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2001 STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, AND ITS LATEST REVISIONS.
 2. DESIGN IS BY THE ALLOWABLE STRESS DESIGN METHOD FOR HS20-44 LOADING WITH NO ALLOWANCE FOR FUTURE PAVING.
 3. ALL STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).
 4. TYPE III BOLTS MEETING THE REQUIREMENTS OF AASHTO M64 (ASTM A325) HOLES SHALL BE 15/16" DIAMETER.
 5. ALL WELDING SHALL CONFORM WITH THE PROVISIONS OF SUBSECTION 506.10 OF THE 2001 STANDARD SPECIFICATIONS.
 6. AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF BEAMS SHALL BE TAKEN AS DIRECTED BY THE ENGINEER FOR USE IN DETERMINING FINAL GRADE.
 7. ANY HOLES IN FASCIA BEAMS OR FASCIA GIRDER WEBS NOT OTHERWISE FILLED SHALL BE FILLED WITH ASTM, A-325 BOLTS. SEE STANDARD SPECIFICATION SECTION 506.19 OF THE 2001 STANDARD SPECIFICATIONS.
 8. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".
 9. MINIMUM COVER FOR REINFORCING STEEL SHALL BE TWO (2) INCHES ALONG BACK FACES OF WALLS AGAINST EARTH, AND THREE (3) INCHES ELSEWHERE. FOR BRIDGE DECK, 2 1/2" MIN. COVER FOR TOP REINFORCING, AND 1 1/2" MIN. COVER FOR BOTTOM REINFORCING.
 10. REINFORCING PLACEMENT TOLERANCES SHALL BE: SPACING +/- 1" CLEARANCE +/- 1/4"
 11. HIGH PERFORMANCE CLASS "A" ALL OTHER CONCRETE SHALL BE "CONCRETE, HIGH PERFORMANCE CLASS B."
 12. BY 1" ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/4" SMOOTH STEEL TROWEL FINISHED.
 13. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED 1/2" PER FOOT. ABOUTMENT SEATS SHALL BE SLOPED FULL WIDTH TOWARD CENTER SPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTH STEEL TROWEL FINISHED.

14. THE DECK SHALL BE PLACED IN ONE CONTINUOUS OPERATION WITH A MAXIMUM DURATION OF EIGHT HOURS. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A NEAT (DAMPED) CONSTRUCTION JOINT SHALL BE USED. A PORTION OF THE STREAM A MINIMUM OF 30 FEET DOWNSTREAM OF THE NEW BRIDGE. FINAL LOCATION OF BOULDERS TO BE AS DIRECTED BY THE ENGINEER, BASED ON THE RECOMMENDATIONS OF THE DISTRICT FISHERIES BIOLOGIST AND/OR THE AGENCY OF NATURAL RESOURCES STREAM ALTERATION ENGINEER.
 15. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF DECK BETWEEN DRIP NOTCHES.
 16. THE FOLLOWING TABLE OF ALLOWABLE STRESSES AND WEIGHTS APPLY TO THESE PLANS FOR DESIGN PURPOSES:
 17. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES F.
 18. TRAFFIC SHALL BE ALLOWED ON THE NEW BRIDGE ONLY AFTER THE SPECIFIED CURE PERIOD HAS EXPIRED AND DESIGN STRENGTH HAS BEEN ATTAINED.
 19. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
 20. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT. ANY UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.
 21. IN STREAM CONSTRUCTION SHALL BE PERFORMED BETWEEN JUNE 1 AND OCTOBER 1, UNLESS THE CONTRACTOR OBTAINS PERMISSION FROM THE AGENCY OF NATURAL RESOURCES TO DO THE WORK OUTSIDE OF THAT TIME FRAME.
 22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND SPACING OF FACIA OVERHANG BRACKETS; HOWEVER, SPACING SHALL NOT EXCEED FOUR (4) FEET.
 23. TEN CUBIC YARDS OF STONE FILL TYPE IV HAS BEEN INCLUDED IN THE PROJECT FOR CONSTRUCTION OF A FISH HABIT BOULDER CLUSTER. THIS CLUSTER SHALL BE LOCATED IN A HIGH VELOCITY AREA OF THE STREAM A MINIMUM OF 30 FEET DOWNSTREAM OF THE NEW BRIDGE. FINAL LOCATION OF BOULDERS TO BE AS DIRECTED BY THE ENGINEER, BASED ON THE RECOMMENDATIONS OF THE DISTRICT FISHERIES BIOLOGIST AND/OR THE AGENCY OF NATURAL RESOURCES STREAM ALTERATION ENGINEER.
 24. ALL NEW PERMANENT FILL SLOPES WITHIN 50 FT OF THE TOP OF BANK OF THE WHITE RIVER SHALL BE REVEGETATED WITH BOTH GRUBBING MATERIAL AND PLANTING OF NATIVE RIPARIAN TREE AND BRUSH SPECIES. SEE SHEET 30.
 25. PARTIAL REMOVAL OF STRUCTURE SHALL INCLUDE COMPLETE REMOVAL OF EXISTING SUPERSTRUCTURE AND REMOVAL OF THE EXISTING SUBSTRUCTURE TO THE LIMITS SHOWN ON THE CHANNEL SECTIONS AND IN ACCORDANCE WITH SECTION 529 OF THE 2001 STANDARD SPECIFICATIONS. EXCAVATION AND BACKFILL FOR REMOVAL OF EXISTING ABOUTMENT COLUMNS AT ABUTMENT NO. 1 AND WINGWALL NO. 2 ARE INCLUDED IN PAY ITEMS 204.25 STRUCTURAL EXCAVATION AND 204.30 GRANULAR BACKFILL FOR STRUCTURES.
 26. ALL PILES SHALL BE ASTM A36 HP12x53 BEARING PILES DRIVEN TO REFUSAL ON BEDROCK. DESIGN LOADING IS 140 KIPS PER PILE.
 27. ALL PILES SHALL BE FURNISHED WITH A REINFORCED PILE TIP OF PREFABRICATED CAST STEEL MEETING THE REQUIREMENTS OF ASTM A-27. SEE STANDARD SPECIFICATION SECTION 505.04.
 28. FILL IN AREAS THROUGH WHICH PILES ARE TO BE DRIVEN SHALL HAVE A MAXIMUM STONE SIZE OF NINE (9) INCHES.



GENERAL NOTES

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