

GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION DATED 2010, AND ITS LATEST REVISIONS.
2. FOUNDATION DESIGN IS FOR HL-93 LIVE LOADING, IMPACT EXCLUDED.
3. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, ESPECIALLY THE DISCHARGE OF RAW CONCRETE, INTO ROARING BRANCH AS DIRECTED BY THE RESIDENT ENGINEER AND STANDARD SPECIFICATION SECTION 105.
4. THE MINIMUM COVER FOR REINFORCING STEEL IN THE SUBSTRUCTURES SHALL BE THREE INCHES UNLESS DETAILED OTHERWISE.
5. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).

REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:
SPACING +/- 1"
CLEARANCE +/- 1/4"
6. THE COFFERDAM LIMITS SHOWN IN PLAN REPRESENT THE MAXIMUM COFFERDAM SIZE PERMISSIBLE TO SATISFY PERMITTING AND ENVIRONMENTAL REQUIREMENTS. ACTUAL COFFERDAM LIMITS TO BE DETERMINED BY THE CONTRACTOR.
7. TWO-WAY TRAFFIC WILL BE MAINTAINED ON THE EXISTING STRUCTURE, ALTHOUGH DURING THE DAILY CONSTRUCTION PERIOD, THE CONTRACTOR MAY USE ALTERNATING ONE-WAY TRAFFIC WITH FLAGGERS.
8. UTILITY RELOCATIONS ARE NOT ANTICIPATED AS PART OF THIS PROJECT; HOWEVER, THE CONTRACTOR SHALL COORDINATE WITH THE TOWN OF BENNINGTON PRIOR TO EXCAVATION AT THE PIERS TO ENSURE THE INTEGRITY OF THE 16" DUCTILE IRON WATER MAIN ATTACHED TO THE EXISTING BRIDGE IS PRESERVED AND PROTECTED DURING CONSTRUCTION. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
9. THE CONTRACTOR SHALL CONDUCT WORK IN A MANNER AS TO PREVENT, OR REDUCE TO A MINIMUM, POLLUTION ON VERMONT ROUTE 9 BY DEBRIS OR SEDIMENT; OR FROM THE MANIPULATION OF EQUIPMENT AND/OR MATERIALS. THE CONTRACTOR SHALL KEEP VERMONT ROUTE 9 PAVEMENT AND SHOULDER CLEAN AT ALL TIMES AS DIRECTED BY THE ENGINEER. PAYMENT UNDER ITEM 608.31 POWER BROOM RENTAL, TYPE II.

CONCRETE NOTES:

10. ALL PORTIONS OF THE SUBSTRUCTURES INCLUDING THE PROPOSED PILE CAPS AND NOSING ON UPSTREAM FACE SHALL BE "CONCRETE, HIGH PERFORMANCE - CLASS B".
11. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1"
12. THE VERTICAL FACES OF THE EXISTING PIER COLUMNS, VERTICAL FACES OF THE EXISTING PIER WEB WALL, AND TOPS OF EXISTING FOOTINGS WHERE FRESH CONCRETE IS PLACED AGAINST HARDENED CONCRETE SHALL BE INTENTIONALLY ROUGHENED OR THOROUGHLY SANDBLASTED TO REMOVE ALL LAITANCE AND TO PRODUCE A ROUGHENED SURFACE FOR BONDING TO THE FRESH CONCRETE. THE ROUGHENED SURFACE SHALL HAVE AN AMPLITUDE OF APPROXIMATELY 1/4". AFTER ROUGHENING IS COMPLETED, ALL SURFACES SHALL BE AIR-BLOWN OR VACUUM-CLEANED.

IMMEDIATELY PRIOR TO PLACING THE NEW CONCRETE, EPOXY BONDING COMPOUND WHICH CONFORMS TO THE REQUIREMENTS OF SUBSECTION 719.02 SHALL BE APPLIED TO THE PREPARED SURFACES BY MEANS OF STIFF BRUSHES OR OTHER MEANS ACCEPTABLE TO THE ENGINEER. THE COST OF SURFACE TREATMENT, INCLUDING EPOXY BONDING COMPOUND, WILL NOT BE PAID FOR SEPARATELY BUT WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE FOR ITEM 501.34 CONCRETE, HIGH PERFORMANCE CLASS B.
13. THE COST OF ANY LABOR, EQUIPMENT, OR MATERIAL REQUIRED FOR LOCATING THE EXISTING PIER REINFORCEMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 501.34 CONCRETE, HIGH PERFORMANCE CLASS B.
14. ALL PERMANENTLY EXPOSED CONCRETE SURFACES AT PIER 1 AND PIER 2 SHALL BE TREATED WITH WATER REPELLENT, SILANE IN ACCORDANCE WITH SECTION 514. THE TREATED SURFACES SHALL INCLUDE THE TOPS AND SIDES OF NEW PILE CAP CONSTRUCTION, PIER NOSINGS, EXISTING COLUMNS, EXISTING WEB WALLS, AND TOPS AND SIDES OF EXISTING PIER CAPS. PRIOR TO APPLICATION OF THE SILANE WATER REPELLENT, ALL EXPOSED CONCRETE AT PIER 1 AND PIER 2 WHICH WAS CONSTRUCTED PRIOR TO THIS PROJECT SHALL BE PREPARED IN ACCORDANCE WITH SUBSECTION 514.04.

FOUNDATION NOTES:

15. MICROPILES, INCLUDING PILE TO FOOTING CONNECTIONS, STEEL CASING AND JOINTS, CENTRAL REINFORCING BARS, MECHANICAL SPLICES, UNCASED PILE LENGTHS, AND GROUT SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT TO HAVE BOTH SUFFICIENT STRUCTURAL RESISTANCE AND GEOTECHNICAL RESISTANCE FOR THE FOLLOWING FACTORED AXIAL LOADS AND CONCURRENT MOMENTS WITH THE CORRESPONDING UNBRACED LENGTHS:

LIMIT STATE	COMBINED AXIAL COMPRESSION AND FLEXURE (PER PILE)		COMBINED AXIAL TENSION AND FLEXURE (PER PILE)		UNBRACED LENGTH (FT)
	FACTORED AXIAL COMPRESSIVE LOAD (KIP)	FACTORED RESULTANT FLEXURAL MOMENT (KIP-FT)	FACTORED AXIAL TENSILE LOAD (KIP)	FACTORED RESULTANT FLEXURAL MOMENT (KIP-FT)	
STRENGTH	130.0	14.3	-	-	25.75
STRENGTH	-	-	12.0	10.5	25.75
EXTREME	187.0	23.6	-	-	25.75
EXTREME	-	-	109.0	28.6	25.75
SERVICE	114.4	8.8	-	-	25.75
SERVICE	-	-	0	0	25.75

AXIAL LOADS AND MOMENTS SHALL BE APPLIED CONCURRENTLY. LOAD COMBINATIONS ARE APPLICABLE FOR BOTH PIER 1 AND PIER 2 MICROPILES. SEE SPECIAL PROVISION (MICROPILE) FOR ADDITIONAL REQUIREMENTS.

16. THE MICROPILE CASING OUTSIDE DIAMETER SHALL NOT BE LESS THAN 9 5/8". SEE SPECIAL PROVISION (MICROPILE) FOR SACRIFICIAL THICKNESS AND OTHER CASING DESIGN REQUIREMENTS.
17. A TOTAL OF TWO TENSILE VERIFICATION LOAD TESTS SHALL BE PERFORMED. ONE PLUMB TEST PILE SHALL BE INSTALLED AT A LOCATION THAT IS NOT WITHIN THE PROPOSED PIER 1 PILE CAP LIMITS AND NOT MORE THAN 10 FT FROM THE NORTH END OF THE PIER 1 PILE CAP. A SECOND PLUMB TEST PILE SHALL BE INSTALLED AT A LOCATION THAT IS NOT WITHIN THE PROPOSED PIER 2 PILE CAP LIMITS AND NOT MORE THAN 10 FT FROM THE SOUTH END OF THE PIER 2 PILE CAP. THE LOCATION OF THE TEST PILES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
18. THE DESIGN TEST LOAD (DTL) FOR BOTH VERIFICATION LOAD TESTS SHALL BE 187.0 KIPS IN TENSION. PAYMENT WILL BE MADE UNDER ITEM 900.620 SPECIAL PROVISION (MICROPILE VERIFICATION LOAD TEST).
19. ONCE VERIFICATION LOAD TESTING IS COMPLETED AND ACCEPTED, TEST PILES SHALL BE REMOVED TO AN ELEVATION THAT IS A MINIMUM OF TWO FEET BELOW FINISHED GRADE.
20. A KNOWN OBSTRUCTION CONSISTING OF AN APPROXIMATELY 3.5 FT THICK TREMIE CONCRETE POUR IS LOCATED ADJACENT TO THE SOUTHEASTERLY CORNER OF PIER 2. AS INDICATED IN THE FOUNDATION PLANS. THE LIMITS OF THE TREMIE CONCRETE ARE UNKNOWN, BUT BASED ON PHOTOGRAPHIC DOCUMENTATION, IT IS ESTIMATED THAT APPROXIMATELY SEVEN PROPOSED MICROPILES WILL PENETRATE THE OBSTRUCTION. THE COST OF CORING, DRILLING, OR OTHER MEANS OF ADVANCING THE MICROPILES THROUGH THE TREMIE CONCRETE SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR ITEM 900.620 SPECIAL PROVISION (MICROPILE).

PER RESPONSE TO RFI #1 DATED 3-15-2013

$$\frac{\text{STRENGTH LIMIT STATE}}{\text{GEOTECHNICAL RESISTANCE}} = \frac{130 \text{ K}}{0.55} = -236.4$$

ACTUAL DTL = 94.6 KIPS
VERIFICATION TEST LOAD = 2.5 (94.6 KIPS) = 236.5 KIPS



PROJECT NOTES SHEET

PROJECT NAME: BENNINGTON
PROJECT NUMBER: ER BHF 010-I(45)

FILE NAME: z11b326_gn.dgn
PROJECT LEADER: D.E.G.
DESIGNED BY: K.J.K.
DWG. NO.: z11b326gn.1

PLOT DATE: 8/21/2012
DRAWN BY: M.E.D.
CHECKED BY: A.M.P.
SHEET 25 OF 40