GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2012, AND THEIR LATEST REVISIONS.

2. THE BRIDGE DESIGN, FOR ELEMENTS SHOWN ON SHEETS 27 THRU 30 AND 32 THRU 43, WAS COMPLETED AND PROVIDED BY: VANASSE HANGEN BRUSTLIN, INC., 7056 US ROUTE 7, NORTH FERRISBURGH, VT 05473.

3. DURING CONSTRUCTION, TRAFFIC SHALL BE MAINTAINED ON AN EXISTING TWO-WAY TEMPORARY BRIDGE CONSTRUCTED UPSTREAM OF THE EXISTING STRUCTURE.

4. REMOVAL OF THE TEMPORARY BRIDGE SHALL BE PAID FOR UNDER ITEM 900.645 "SPECIAL PROVISION (REMOVAL OF TEMPORARY BRIDGE AND APPROACHES)". THE TEMPORARY BRIDGE IS THE PROPERTY OF MABEY BRIDGE & SHORE. CONTRACTOR SHALL CONTACT KEVIN TRAYNOR AT (410) 365-0101 TO MAKE NECESSARY ARRANGEMENTS FOR A REPRESENTATIVE TO BE PRESENT DURING DELAUNCHING AND DISASSEMBLY.

5. FULL ACCESS TO ALL SIDE ROADS AND DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".

6. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.

7. EMULSIFIED ASPHALT SHALL BE APPLIED BETWEEN ALL LIFTS OF PAVEMENT AT A RATE 0.025 TO 0.040 GAL/SY.

EARTHWORK AND RELATED ITEMS

8. THE "STONE FILL, TYPE IV" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW STEEL GIRDERS ARE SET.

STRUCTURAL STEEL

9. STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01.

10. ALL FIELD CONNECTIONS SHALL BE MADE USING 7/8" DIAMETER HIGH STRENGTH BOLTS MEETING SUBSECTION 714.05, IN 15/16" DIAMETER HOLES, PER SECTION 506 UNLESS OTHERWISE NOTED.

11. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.

12. ANY CONNECTIONS NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.

13. AFTER THE GIRDERS HAVE BEEN ERECTED, ELEVATIONS SHALL BE TAKEN ALONG THE TOP OF THE GIRDERS AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING FINISHED GRADES.

14. FLEMING BRACKETS OR SIMILAR FALSE WORK SHALL BE PLACED AT A MAXIMUM SPACING OF 4 FEET. THE BRACKETS SHALL BEAR NEAR THE BOTTOM FLANGE AND IN NO CASE SHALL THEY BEAR ABOVE THE BOTTOM QUARTER WEB.

15. ANY BOLT HOLES IN THE WEBS OF FASCIA GIRDERS THAT ARE NOT OTHERWISE FILLED, SHALL BE FILLED WITH BUTTON HEAD. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19.

16. GIRDER WEBS AND CROSS FRAMES SHALL BE PLUMB IN FINAL POSITION.

17. THE FAYING SURFACES ON THE CONNECTION PLATES SHALL BE PREPARED AS CLASS "B". THESE SURFACES SHALL BE PROTECTED FROM DAMAGE AND CORROSION.

PILES

18. ABUTMENT PILES:
    a. THE PILES SHALL BE HP 14 X 102.
    b. THE PILES SHALL BE DRIVEN TO A NOMINAL RESISTANCE OF 305 KIPS PROVIDED A MINIMUM OF 45 FEET BELOW THE BOTTOM OF PILE CAP HAS BEEN ACHIEVED.

19. TO PREVENT DAMAGE TO THE PILES, PILE SHOES ARE REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04 (f).

20. PIER PILES:
    a. THE PILES SHALL BE HP 14 X 102.
    b. THE PILES SHALL BE DRIVEN TO A NOMINAL RESISTANCE OF 477 KIPS PROVIDED A MINIMUM OF 45 FEET BELOW THE BOTTOM OF PIER FOOTING HAS BEEN ACHIEVED.

21. PILE TESTING AND SEQUENCE
    a. A MINIMUM OF ONE DYNAMIC PILE TEST SHALL BE CONDUCTED ON THE FIRST PILE DRIVEN FOR EACH SUBSTRUCTURE UNIT, FOR A TOTAL OF THREE TESTS. MORE TESTS MAY BE REQUIRED BY THE RESIDENT ENGINEER.
    b. ABUTMENT PILES SHALL BE DRIVEN STARTING AT THE CENTERLINE OF VT 100 AND WORKING OUTWARD SO THAT THE EXTERIOR PILES ARE DRIVEN LAST.

22. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY.

CONCRETE

23. THE CONCRETE IN THE ABUTMENT ABOVE THE BRIDGE SEAT, DECK AND BRIDGE RAIL SHALL BE ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A".

24. THE PIER CAP SHALL BE ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, CLASS A HIGH STRENGTH)" AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 6,000 PSI.

25. ALL OTHER SUBSTRUCTURE CONCRETE SHALL BE ITEM 501.34 " CONCRETE, HIGH PERFORMANCE CLASS B" UNLESS OTHERWISE NOTED.

26. CONCRETE PORTIONS OF ABUTMENTS AND WINGWALLS ABOVE ADJACENT BRIDGE SEAT ELEVATIONS SHALL NOT BE PLACED UNTIL FINISH GRADES HAVE BEEN DETERMINED BY THE RESIDENT ENGINEER.

27. IN ACCORDANCE WITH SUBSECTION 506.23(A) AND AS DIRECTED BY THE RESIDENT ENGINEER, THE CONTRACTOR SHALL TAKE MEASURES NECESSARY TO PROTECT ALL SUBSTRUCTURE CONCRETE FROM STAINING DUE TO OXIDE FORMATION ON THE STRUCTURAL STEEL PRIOR TO PLACEMENT OF THE DECK. THESE MEASURES WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B". ANY SUCH STAINING THAT OCCURS PRIOR TO DECK PLACEMENT SHALL BE REMOVED AT NO ADDITIONAL COST TO THE STATE.

28. THE DECK IS TO BE POURED IN ONE CONTINUOUS POUR WITH A MAXIMUM DURATION OF EIGHT HOURS. IF CIRCUMSTANCES BEYOND THE CONTRACTORS CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A TRANSVERSE CONSTRUCTION JOINT SHALL BE USED BETWEEN ADJACENT POURS. A MINIMUM 96 HOUR DELAY BETWEEN ADJACENT POURS SHALL BE OBSERVED.

29. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH X 1 INCH UNLESS OTHERWISE NOTED.

30. ITEM 514.10 "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.

31. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS SHOWN IN THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

32. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT. UPWARD KEYS SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.

33. MINIMUM COVER FOR REINFORCING STEEL SHALL BE AS INDICATED IN THE PLANS.

34. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE" (CRSI).

35. REINFORCING STEEL IN THE ABUTMENTS ABOVE THE BRIDGE SEATS, DECK, BRIDGE RAIL, PIER CAP, AND SUB-CAP SHALL BE ITEM 507.12, "REINFORCING STEEL, LEVEL II".

36. REINFORCING STEEL IN THE ABUTMENTS BELOW THE BRIDGE SEAT, PIER COLUMN, AND PIER FOOTING SHALL BE ITEM 507.11, "REINFORCING STEEL, LEVEL I".

37. ALL 1 3/8 INCH DIAMETER THREADBAR IN THE PIER CAP, SUB-CAP, AND COLUMN SHALL BE PLAIN FINISH.

38. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
    SPACING: +/- 1 INCH
    CLEARANCE: +/- 1/4 INCH

PRECAST PIER SUB-CAP

39. CONCRETE AND REINFORCING STEEL IN THE PRECAST PIER SUB-CAP SHALL BE PAID FOR UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (PIER SUB-CAP)". THIS SHALL INCLUDE ALL WORK NECESSARY TO FABRICATE, DELIVER, AND ERECT THE SUB-CAP COMPLETE AND IN-PLACE AS SHOWN ON THE PLANS, EXCEPT AS NOTED HEREIN. POST-TENSIONING OF THE SUB-CAP SHALL BE PAID FOR UNDER ITEM 900.645, "SPECIAL PROVISION (POST-TENSIONING, PIER SUB-CAP)". THIS SHALL INCLUDE ALL WORK NECESSARY TO COMPLETE POST TENSIONING OPERATIONS FOR THE SUB-CAP, COMPLETE AND IN-PLACE AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE POST TENSIONING SPECIAL PROVISION. ALL APPURTENANCES SHALL BE INCIDENTAL TO THE APPROPRIATE CONTRACT ITEM.

40. PRECAST PIER SUB-CAP CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 6,000 PSI.

41. FABRICATION DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH SECTION 540 AND SHALL INCLUDE AN ASSEMBLY PLAN WITH TEMPORARY BRACING REQUIREMENTS AS REQUIRED FOR ERECTION AND INSTALLATION. ALL COSTS SHALL BE INCIDENTAL TO CONTRACT ITEM 540.10 "PRECAST CONCRETE STRUCTURE (PIER SUB-CAP)". SEE ADDITIONAL REQUIREMENTS IN SECTION 540.

42. ALL COSTS FOR GROUTING OF VERTICAL REINFORCING STEEL AND SUB-CAP TO COLUMN MOMENT CONNECTION, INCLUDING GROUTING OF SHEAR KEY, SHALL BE INCIDENTAL TO 540.10 " PRECAST CONCRETE STRUCTURE (PIER SUB-CAP)". ALL COSTS FOR GROUTING OF TRANSVERSE POST-TENSIONING SHALL BE INCIDENTAL TO THE APPROPRIATE POST TENSIONING ITEM.

43. GROUT FOR VERTICAL REINFORCING STEEL AND HORIZONTAL JOINTS SHALL MEET THE REQUIREMENTS OF SUBSECTION 540.11. ALL GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 6,000 PSI.

44. THE REINFORCEMENT DETAILED IN THE PLANS SHALL BE UTILIZED TO THE EXTENT PRACTICABLE. THE SPACING OF SHEAR REINFORCEMENT SHALL NOT BE ADJUSTED UNLESS A RE-DESIGN IS COMPLETED. ALL NEW DESIGNS AND CALCULATIONS SHALL BE STAMPED BY A LICENSED PROFESSIONAL ENGINEER AND SUBMITTED TO THE PROJECT MANAGER FOR APPROVAL.

45. THE TOP SURFACE OF THE SUB-CAP SHALL BE ROUGHENED TO AN AMPLITUDE OF ¼ INCH.

46. THE PIER SUB-CAP SHALL BE HANDLED USING LIFTING LOOPS OR INSERTS ONLY. THE MINIMUM SLING ANGLE FROM HORIZONTAL SHALL BE 60 DEGREES. TIMBER DUNNAGE SHALL BE USED FOR STORAGE AND TRANSPORTATION. UNDER NO CIRCUMSTANCES SHALL THE SUB-CAP BE HANDLED IN OTHER THAN AN UPRIGHT POSITION.

47. SEE PIER CONSTRUCTION SEQUENCE SHEET FOR CONSTRUCTION SEQUENCING AND SUB-CAP POST-TENSION STRESSING SEQUENCE.

POST-TENSIONING

48. POST-TENSIONING SHALL BE INSTALLED, GROUTED, AND PROTECTED IN ACCORDANCE WITH THE POST TENSIONING SPECIAL PROVISION.

49. SEE PIER CONSTRUCTION SEQUENCE SHEET FOR CONSTRUCTION SEQUENCING AND POST-TENSION STRESSING SEQUENCE.

50. POST-TENSIONING BARS SHALL BE AASHTO M275 (ASTM A722) GRADE 150.

51. PIER CAP AND SUB-CAP CONCRETE SHALL OBTAIN A MINIMUM CONCRETE STRENGTH OF 4,000 PSI PRIOR TO STRESSING.

52. EACH POST-TENSIONING BAR SHALL BE PULLED TO HAVE A NET TENSION OF 156 KIPS AFTER ACCOUNTING FOR SEATING AND OTHER INSTANTANEOUS LOSSES. TENSION SHALL BE VERIFIED BY PERFORMING A LIFT-OFF TEST PRIOR TO GROUTING.

53. GALVANIZE ANCHOR ASSEMBLIES AFTER FABRICATION ACCORDING TO AASHTO M232M/M232.

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PROJECT NUMBER:	ER BRF 013-1(16)
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PROJECT LEADER: K. HIGGINS	DRAWN BY: K. FRIEDLAND
DESIGNED BY: G. LAROCHE	CHECKED BY: G. LAROCHE
GENERAL NOTES	SHEET 3 OF 85