

**GENERAL**

- 1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE VERMONT AGENCY OF TRANSPORTATION 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE 2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, AND THEIR LATEST REVISIONS.
- 2. ALL PRECAST CONCRETE ELEMENTS TO BE FABRICATED TO THE SPECIFIED DIMENSIONS WITHIN THE TOLERANCES DICTATED IN THE PRECAST/PRESTRESSED CONCRETE INSTITUTE TOLERANCE MANUAL FOR PRECAST AND PRESTRESSED CONCRETE CONSTRUCTION, MNL 135-00, AND ITS LATEST REVISIONS.
- 3. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
- 4. NO ADJUSTMENTS TO THE BITUMINOUS WEARING SURFACE ON THE BRIDGE SHALL BE MADE TO ACCOUNT FOR THE DIFFERENCE BETWEEN DECK CAMBER AND THE THEORETICAL ROADWAY PROFILE. THE WEARING SURFACE SHALL BE SHIMMED TRANSVERSELY AS NECESSARY TO ACCOUNT FOR POTENTIAL DIFFERENTIAL CAMBER OF THE ADJACENT BEAMS.
- 5. NO SUBSTITUTION FOR PRECAST CONCRETE WILL BE PERMITTED.

**TRAFFIC CONTROL**

- 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF A SITE SPECIFIC TRAFFIC CONTROL PACKAGE IDENTIFYING CONSTRUCTION ACTIVITIES BEFORE, DURING, AND AFTER THE BRIDGE CLOSURE PERIOD. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN TO THE PROJECT MANAGER FOR ALL STAGES OF CONSTRUCTION, FOR APPROVAL PER SUBSECTION 105.03. ALL COSTS SHALL BE INCLUDED IN ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)". SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
- 7. ALL ITEMS REQUIRED TO IMPLEMENT THE CONTRACTOR'S TRAFFIC CONTROL PLAN WILL NOT BE PAID FOR DIRECTLY BUT WILL BE INCLUDED IN THE BID PRICE FOR ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
- 8. TH4 WILL BE CLOSED AT THE BRIDGE FOR THE ENTIRE CLOSURE PERIOD. IF ELECTED TO DO SO, A SIGNED DETOUR WILL BE THE SOLE RESPONSIBILITY OF THE TOWN. NO DETOUR SIGNS WILL BE PERMITTED WITHIN A STATE OWNED RIGHT-OF-WAY.
- 9. ALL SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD. FOR ADDITIONAL SIGNING INSTRUCTIONS SEE THE T SERIES OF THE STANDARD DRAWINGS. WHERE CONFLICTS EXIST, THE MUTCD SHALL GOVERN.

**EARTHWORK**

- 10. REMOVAL OF THE EXISTING STRUCTURE WILL BE PAID FOR UNDER ITEM 529.15, "REMOVAL OF STRUCTURE". THIS WORK SHALL INCLUDE REMOVAL OF THE EXISTING SUPERSTRUCTURE AS WELL AS ANY PORTIONS OF THE EXISTING ABUTMENTS THAT FALL OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION.
- 11. THE "STONE FILL, TYPE IV" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW SUPERSTRUCTURE IS SET.
- 12. THE CONTRACTOR MAY SUBSTITUTE SUBBASE MATERIAL FOR THE SAND BORROW SHOWN IN THE MATERIALS TRANSITION. THE SUBBASE MATERIAL SHALL BE THE TYPE SPECIFIED IN THE CONTRACT AND SHALL BE PLACED TO MEET THE SUBBASE SPECIFICATIONS. IF SUBBASE IS PLACED IN LIEU OF SAND BORROW, A GEOTEXTILE MEETING THE REQUIREMENTS OF ITEM 649.11 "GEOTEXTILE FOR ROAD BED SEPARATOR" SHALL BE PLACED BETWEEN THE SUBGRADE AND SUBBASE MATERIAL. ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING THE GEOTEXTILE WILL BE CONSIDERED INCIDENTAL TO 203.31 "SAND BORROW".

**CONCRETE**

- 13. WATER REPELLENT, SILANE SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 514 AND SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON THE BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE, WITH THE EXCEPTION OF THE BOTTOM OF THE DECK BETWEEN THE DRIP NOTCHES. ALL COSTS ASSOCIATED WITH APPLYING SILANE WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST CONCRETE ABUTMENT AND "SPECIAL PROVISION (PREFABRICATED BRIDGE UNIT SUPERSTRUCTURE)" CONTRACT ITEM AS APPLICABLE.
- 14. CONCRETE FOR THE DECK CLOSURE POUR SHALL MEET THE REQUIREMENTS OF ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)".
- 15. ALL PRECAST SUBSTRUCTURE CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 540 – PRECAST CONCRETE.
- 16. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH X 1 INCH UNLESS OTHERWISE NOTED.
- 17. THE CONCRETE EDGES ALONG THE LONGITUDINAL CLOSURE POURS SHALL BE TREATED TO PROVIDE A ROUGHENED/ EXPOSED AGGREGATE SURFACE. THE AMPLITUDE OF THE EXPOSED AGGREGATE SHALL BE A MINIMUM OF 1/8" AND BE COMPLETED PRIOR TO ERECTION OF THE BEAMS. THE FABRICATOR SHALL INDICATE THE METHOD USED TO ACHIEVE THIS SURFACE ON THE FABRICATION DRAWINGS AND METHOD USED TO PROTECT THE REINFORCING STEEL.
- 18. ALL LIFTING POINTS IN THE SUPERSTRUCTURE SHALL BE REMOVABLE TO THE MINIMUM CLEAR COVER FOR REINFORCING STEEL SPECIFIED IN THE PLANS. THE LIFTING POINTS SHALL BE DETAILED IN THE APPROPRIATE FABRICATION DRAWING. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.
- 19. ALL RECESSED LIFTING POINTS SHALL BE FILLED WITH A TYPE IV MORTAR PER SUBSECTION 707.03 AND WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.
- 20. ALL FORM SUPPORTS AND FORM TIES THAT ARE TO REMAIN PERMANENTLY IN THE CONCRETE ABOVE THE BRIDGE SEAT SHALL BE GALVANIZED AND CONFORM TO SECTION 726 OF THE STANDARD SPECIFICATIONS.

**REINFORCING STEEL**

- 21. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".

22. TEST BARS SHALL BE PROVIDED IN ACCORDANCE WITH THE "VERMONT AGENCY OF TRANSPORTATION MATERIAL SAMPLING MANUAL" AVAILABLE ON THE AGENCY WEBSITE. A MINIMUM OF TWO TEST SECTIONS ARE REQUIRED FOR EACH SIZE, BRAND, AND GRADE OR TYPE OF REINFORCING. SEE THE MANUAL FOR ACCEPTABLE DIMENSIONS OF TEST SECTIONS. ALL COSTS ASSOCIATED WITH PROVIDING BARS FOR TESTING WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.

23. ALL REINFORCING STEEL IN THE PREFABRICATED BRIDGE UNITS SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL II" AND WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.

24. ALL REINFORCING STEEL IN THE CLOSURE POURS SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL II" AND WILL BE PAID UNDER ITEM 507.12 REINFORCING STEEL, LEVEL II (FPQ)".

25. ALL REINFORCING STEEL IN THE ABUTMENTS AND WINGWALLS SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR "REINFORCING STEEL, LEVEL II" AND WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.

26. CUTTING AND REPAIRING DAMAGED AREAS OF COATED REINFORCING STEEL SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 507.04 AND WILL BE CONSIDERED INCIDENTAL TO ITEM 507.12, "REINFORCING STEEL, LEVEL II (FPQ)".

27. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

ALONG BACK FACES OF WALLS AGAINST EARTH:	2 INCH
ALONG TOP SURFACE OF DECK SLAB:	2.5 INCH
ALONG BOTTOM SURFACE OF DECK SLAB:	1.5 INCH
ELSEWHERE UNLESS OTHERWISE INDICATED:	3 INCH

**PRECAST ABUTMENTS**

28. THE UNIT PRICE FOR EACH PRECAST ABUTMENT SHALL INCLUDE THE ASSOCIATED WINGWALLS, AND ALL LABOR AND MATERIALS TO CONNECT WINGWALLS TO THE PILE CAPS. THIS WORK WILL BE PAID FOR UNDER THE APPROPRIATE PRECAST CONCRETE STRUCTURE ABUTMENT PAY ITEM.

29. DESIGN VALUES  
 i. CONCRETE COMPRESSIVE STRENGTH:  $f_c = 5,000$  PSI.

30. THE CONCRETE FOR THE ABUTMENT PILE CAVITIES SHALL MEET THE REQUIREMENTS OF ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) FPQ", AND SHALL BE WET CURED FOR A PERIOD OF NOT LESS THAN 24 HOURS, OR UNTIL IT ACHIEVES DESIGN STRENGTH, WHICHEVER OCCURS SOONER.

31. THE CORRUGATED STEEL PIPE FOR THE PILE CAVITIES SHALL MEET THE REQUIREMENTS OF SUBSECTION 711.01. ALL COSTS ASSOCIATED WITH PLACING THE CORRUGATED STEEL PIPE SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #1)" AND ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #2)".

32. AN OPTIONAL HORIZONTAL CONSTRUCTION JOINT IS SHOWN FOR ABUTMENTS #1 AND #2. THIS IS ALLOWED IN ORDER TO REDUCE THE WEIGHT OF THE ABUTMENTS FOR HANDLING, IF NECESSARY. ALL COSTS ASSOCIATED WITH CONSTRUCTING THE HORIZONTAL CONSTRUCTION JOINT WILL BE INCLUDED IN THE COST OF THE ASSOCIATED CONTRACT ITEM. ALL REINFORCING ACROSS THIS JOINT SHALL BE ADEQUATELY DEVELOPED EITHER BY SPLICING OR THE USE OF MECHANICAL SPLICE CONNECTORS. IF MECHANICAL SPLICE CONNECTORS ARE USED, THEY SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR LEVEL I (EPOXY COATED) AND WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.

33. LOADING OF THE ABUTMENTS SHALL CONFORM TO SUBSECTION 501.18; HOWEVER, THE COMPRESSIVE STRENGTH SHALL BE TAKEN AS THE 28 DAY COMPRESSIVE STRENGTH SPECIFIED IN THE PROJECT SPECIAL PROVISIONS. FOR THE PURPOSES OF THIS PROJECT THE PRECAST WINGWALLS ARE CONSIDERED A SUPERIMPOSED DEAD LOAD FROM SUBSEQUENT CONCRETE. SUBSECTION 501.18(c) SHALL NOT APPLY TO THE VERTICAL CONSTRUCTION JOINT BETWEEN PRECAST ELEMENTS.

34. BACKFILL SHALL NOT BE COMPLETED UNTIL SPLICE CONNECTOR GROUT HAS REACHED 85% OF THE MANUFACTURER SPECIFIED STRENGTH.

**PREFABRICATED BRIDGE UNITS**

35. PREFABRICATED BRIDGE UNITS ARE A NON-PROPRIETARY PRODUCT.

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

37. ANY HOLES IN THE WEBS OF THE FASCIA BEAMS NOT OTHERWISE FILLED SHALL BE FILLED WITH BUTTON HEAD BOLTS. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19.

38. ANY CONNECTIONS NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE PROJECT MANAGER FOR APPROVAL.

39. ALL BOLTS SHALL BE TENSIONED BY THE DIRECT TENSION INDICATOR METHOD IN ACCORDANCE WITH SUBSECTION 506.19

40. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SECTION 506 UNLESS OTHERWISE NOTED.

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

42. 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 OF THE WEB.

43. AFTER THE SUPERSTRUCTURE STEEL HAS BEEN ERECTED AT THE DECK CASTING SITE, AND BEFORE ANY FORMWORK OR OTHER LOADS ARE ADDED TO THE GIRDERS, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING DECK FORMWORK ELEVATIONS.

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

45. PBU DECKS AND CURB SHALL BE PRECAST AND MEET THE REQUIREMENTS OF "CONCRETE, HIGH PERFORMANCE CLASS A".

46. PBU STRUCTURAL STEEL SHALL MEET THE REQUIREMENTS OF SECTION 506 OF THE STANDARD SPECIFICATIONS.

47. THE PBU'S SHALL BE FABRICATED IN A MANNER SUCH THAT THE LOAD FROM THE SCREED IS EVENLY DISTRIBUTED AMONG THE BEAMS IN ORDER TO PREVENT DIFFERENTIAL DEFLECTION BETWEEN UNITS.

48. DUE TO STABILITY CONCERNS AT THE ABUTMENTS DURING THE ERECTION OF THE SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT THE ERECTION PLAN A MINIMUM OF 30 WORKING DAYS PRIOR TO THE BRIDGE CLOSURE PERIOD. UNDER NO CIRCUMSTANCES SHALL A BRIDGE CLOSURE PERIOD BEGIN PRIOR TO HAVING AN ACCEPTED ERECTION PLAN.

49. THE FABRICATOR MAY ALTER THE DESIGN AS DETAILED IN THESE PLANS TO ACCOMMODATE THEIR SPECIFIC OPERATION. THIS ALTERATION SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN STATE OF VERMONT TO MEET SPECIFIED CRITERIA AND SHALL BE APPROVED BY THE PROJECT MANAGER.

**H-PILES**

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

51. THE PILES SHALL BE HP 12 X 63 AT ABUTMENT 1 AND ABUTMENT 2.

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

53. THE PILES AT ABUTMENT 1 SHALL BE DRIVEN TO A NOMINAL AXIAL PILE DRIVING RESISTANCE (RNDR) OF 320 KIPS, PROVIDED A MINIMUM PENETRATION OF 23 FEET BELOW THE BOTTOM OF PILE CAP HAS BEEN ACHIEVED AND THE PILE IS SEATED ON BEDROCK.

54. THE PILE LOCATIONS AT ABUTMENT 2 SHALL BE PRE-EXCAVATED A MINIMUM OF FIVE (5) FEET INTO COMPETENT BEDROCK. THE MINIMUM REQUIRED PILE LENGTH AT ABUTMENT 2 IS 13 FEET BELOW THE BOTTOM OF THE PILE CAP. PRE-EXCAVATED HOLES SHALL BE A MINIMUM OF 23 INCHES IN DIAMETER. THE PILES AT ABUTMENT 2 SHALL BE SEATED ON THE BEDROCK WITH A PILE DRIVING HAMMER TO A NOMINAL AXIAL PILE DRIVING RESISTANCE OF 297 KIPS.

55. A MINIMUM OF TWO DYNAMIC PILE TESTS SHALL BE CONDUCTED ON PILES AT ABUTMENT 1. THIS WILL BE CONSIDERED INCIDENTAL TO ITEM 505.45, "DYNAMIC PILE LOADING TEST". NO LOAD TESTING IS REQUIRED AT ABUTMENT 2.

56. THE TOPS OF THE PILES AFTER DRIVING OR PLACEMENT SHALL NOT VARY FROM THE POSITION SHOWN ON THE PLANS BY MORE THAN 3 INCHES. THE PILE ORIENTATION SHALL NOT VARY BY MORE THAN 5 DEGREES. THE CONTRACTOR SHALL DEMONSTRATE HOW THE TOLERANCES WILL BE MET TO THE SATISFACTION OF THE ENGINEER. THESE MEASURES SHALL BE DEMONSTRATED IN A SUBMITTAL TO BE ACCEPTED BEFORE PILE DRIVING COMMENCES.

57. PAYMENT FOR PRE-EXCAVATION WILL BE CONSIDERED INCIDENTAL TO ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENTS PILES, EARTH)" OR ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENTS PILES, ROCK)". THE ENTIRE PRE-EXCAVATED HOLE SHALL BE BACKFILLED WITH SAND AFTER THE PILE IS SET, OR THE PILES MAY BE DRIVEN THROUGH THE SAND. SAND SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 703.03. REFER TO THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

**MISCELLANEOUS**

58. REMOVING AND RESETTING GATE AT STATION 13+50 RT WILL BE CONSIDERED INCIDENTAL TO ITEM 620.50, "REMOVING AND RESETTING FENCE (FPQ)". THIS WORK SHALL INCLUDE REMOVAL, STORAGE AND RESETTING AND ADJUSTING THE GATE AS NECESSARY TO ENSURE PROPER OPERATION OF THE GATE.

59. ITEM 404.65 "EMULSIFIED ASPHALT" IS TO BE APPLIED AT A RATE OF 0.025 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT AND AT THE RATE OF 0.060 GAL/SY ON ALL COLD PLANED SURFACES OR AS DIRECTED BY THE ENGINEER.

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PROJECT LEADER: R. YOUNG	DRAWN BY: W. LAMMER
DESIGNED BY: W. LAMMER	CHECKED BY: S. COLEY
GENERAL NOTES	SHEET 5 OF 42