

GENERAL PROJECT NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 2011, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, FIFTH EDITION DATED 2010, AND ITS LATEST REVISIONS AND PCI NORTHEAST'S NEXT D BEAM STANDARDS DATED JANUARY 2010.
2. THE BRIDGE IS DESIGNED FOR AN HL-93 LIVE LOAD.
3. REMOVAL OF ANY PORTION OF THE EXISTING SUBSTRUCTURE ENCOUNTERED WITHIN THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION SHALL BE CONSIDERED INCIDENTAL TO THOSE ITEMS.
4. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
5. ALL CONSTRUCTION AND ACCESS SHALL BE WITHIN THE RIGHT OF WAY UNLESS SHOWN ON THE ROW PLANS OR APPROVED IN WRITING BY THE PROPERTY OWNER AND VTRANS ENVIRONMENTAL PERMITTING. THE CONTRACTOR SHALL COORDINATE DIRECTLY WITH THE PROPERTY OWNER(S) TO OBTAIN WRITTEN APPROVAL OF LAND USE OUTSIDE THE RIGHT OF WAY. THE CONTRACTOR SHALL SUBMIT COPIES OF THE WRITTEN PROPERTY AGREEMENTS TO THE RESIDENT ENGINEER.
6. TEMPORARY BRIDGE APPROACHES SHALL BE REMOVED AFTER CONSTRUCTION OF BRIDGE NO. 36 AND THE AREA DISTURBED SHALL BE RE-GRADED AND RE-VEGETATED. PAYMENT FOR REMOVAL OF TEMPORARY BRIDGE APPROACHES AND RE-VEGETATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 528.10.

CONCRETE AND REINFORCING STEEL

7. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1 INCH.
8. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
9. REINFORCING PLACEMENT TOLERANCES SHALL BE: SPACING 1 INCH CLEARANCE +/- 1/4 INCH
10. ITEM 514.10 WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF DECK BETWEEN DRIP BEADS.
11. ALL MILD STEEL REINFORCEMENT IN THE SUPERSTRUCTURE (INCLUDING BRIDGE RAILING AND CURTAIN WALLS) SHALL PROVIDE LEVEL II CORROSION RESISTANCE. LEVEL I CORROSION RESISTANCE IS ACCEPTABLE FOR THE SUBSTRUCTURE. PAYMENT FOR STEEL REINFORCEMENT IN BRIDGE RAILING WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 525.45. PAYMENT FOR ALL OTHER STEEL REINFORCEMENT IN SUPERSTRUCTURE WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 900.640. PAYMENT FOR STEEL REINFORCEMENT IN SUBSTRUCTURE CONCRETE WILL BE PAID UNDER CONTRACT ITEM 507.11.
12. CONCRETE FOR THE SUBSTRUCTURE SHALL BE HIGH PERFORMANCE CLASS B AND WILL BE PAID FOR UNDER ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B UNLESS OTHERWISE NOTED.
13. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED 1/4 INCH PER FOOT. THE ABUTMENT SEATS SHALL BE SLOPED FULL WIDTH TOWARD MIDSPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE GIVEN A MAGNESIUM FLOAT FINISH.
14. NO CONCRETE SHALL BE PLACED IN THE ABUTMENTS OR WINGWALLS ABOVE THE ADJACENT BEAM SEAT ELEVATIONS UNTIL THE BEAMS HAVE BEEN SET.
15. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE CONCRETE REINFORCING STEEL INSTITUTE.
16. MINIMUM COVER FOR REINFORCING STEEL IN THE ABUTMENTS AND WINGWALLS SHALL BE 3 INCHES UNLESS DETAILED OTHERWISE.
17. ALL EXPOSED VERTICAL FACES OF THE WINGWALLS SHALL BE FORMED WITH A "RIVER ROCK" TYPE FORM LINER PATTERN AND SHALL EXTEND ONE FOOT BELOW GRADE LINES. THE STONE PATTERN SHALL BE STAINED IN NATURAL COLORS USING CONCRETE ACID COLOR STAINS. THE FORM LINER SYSTEM AND STAIN COLORS SHALL BE DEMONSTRATED TO THE RESIDENT ENGINEER FOR APPROVAL IN A SAMPLE POUR, PRIOR TO CASTING THE ACTUAL SUBSTRUCTURE COMPONENTS. ALL COSTS ASSOCIATED WITH THE CONCRETE FORM LINER, COLOR STAINING, AND TEST POUR WILL BE CONSIDERED INCIDENTAL TO ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B.

NEXT D BEAMS

18. NEXT D BEAMS ARE A NON-PROPRIETARY SHAPE DEVELOPED BY PCI NORTHEAST (PCINE). STANDARDIZED SECTION PROPERTIES AND DETAILS MAY BE FOUND AT [HTTP://PCINE.ORG](http://pcine.org).
19. DESIGN VALUES
  - A. CONCRETE COMPRESSIVE STRENGTH  $f_c = 7000$  PSI
  - B. CONCRETE COMPRESSIVE STRENGTH AT RELEASE  $f_{ci} = 5500$  PSI
  - C. PRE-STRESSING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW-RELAXATION 7-WIRE STRANDS
  - D. ASSUMED MODULUS OF ELASTICITY IS 28,500 KSI
  - E. JACKING FORCE PER STRAND = 44 KIPS
  - F. SERVICE LOADS

MEMBER MOMENT		637.0	K-FT (PER MEMBER)
SUPERIMPOSED DEADLOAD MOMENT	244.0		K-FT (PER MEMBER)
LIVE LOAD AND IMPACT MOMENT		1058.2	K-FT (PER MEMBER)
DEAD LOAD REACTION		58.8	KIPS (PER MEMBER)
LIVE LOAD AND IMPACT REACTION		94.0	KIPS (PER MEMBER)
TOTAL REACTION	152.8		KIPS (PER MEMBER)
FINAL CAMBER		3	INCHES

20. THE CURTAIN WALLS MAY BE CAST ONTO THE ENDS OF THE NEXT BEAMS BY THE FABRICATOR OR CAST-IN-PLACE. THE CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 540. PAYMENT FOR THE CURTAIN WALLS SHALL BE INCLUDED IN ITEM 900.640 "SPECIAL PROVISION (PRE-STRESSED CONCRETE NEXT D BEAMS) (NEXT 28D)." IF THE CURTAIN WALLS ARE CAST-IN-PLACE THE CONTRACTOR SHALL SUBMIT DETAILED FABRICATION DRAWINGS SHOWING SEQUENCE OF CONSTRUCTION, LIMIT OF CONCRETE PLACEMENT AND REINFORCING DETAILS FOR APPROVAL.
21. A RETARDING ADMIXTURE MAY BE PLACED ON THE FORMS FOR THE FLANGE KEYWAYS WHERE THE ENDS OF FLANGES ARE IN CONTACT WITH GROUT. THE FORMS FOR THE FLANGE ENDS SHALL THEN BE STRIPPED AND THE FLANGE ENDS POWER WASHED WITH WATER TO EXPOSE THE AGGREGATE DURING FABRICATION OF THE BEAMS. THE FLANGE ENDS SHALL BE POWER WASHED WITH WATER AGAIN PRIOR TO ERECTION OF THE BEAMS. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 900.640 SPECIAL PROVISION (PRESTRESSED CONCRETE NEXT D BEAMS)(NEXT 28D).
22. FILLING FLANGE CONNECTION WILL BE PAID UNDER TIEM 900.608 SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPQ).
23. GROUT AND CURE THE FLANGE CONNECTION BETWEEN BEAMS PRIOR TO CASTING THE BRIDGE RAIL. THE DESIGN OF THE NEXT BEAMS IS BASED ON THE FLANGES BEING FULLY CONNECTED PRIOR TO CONSTRUCTION OF THE RAIL.
24. METHOD OF FORMING FLANGE CONNECTION SHALL BE DETERMINED BY THE CONTRACTOR. THE FORMS SHALL BE REMOVABLE AND ABLE TO ACCOMMODATE DIFFERENTIAL CAMBER. FORM SUPPORTS SHALL NOT PENETRATE THROUGH THE TOP OF THE POUR UNLESS APPROVED BY THE ENGINEER. FIELD DRILLING INTO THE NEXT BEAMS WILL NOT BE ALLOWED.
25. THE FABRICATOR MAY ALTER THE DESIGN AS DETAILED IN THESE PLANS TO ACCOMMODATE THEIR SPECIFIC OPERATION. ANY ALTERATIONS MUST BE DETAILED AND DESIGNED BY A PROFESSIONAL ENGINEER AND SUBMITTED AS FABRICATION DRAWINGS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

GEOTECHNICAL

26. THE TOP OF THE FOOTING ELEVATION WAS SET BASED ON THE LOWEST ANTICIPATED LEDGE ELEVATION DETERMINED FROM THE BORINGS. LEDGE ELEVATIONS MAY VARY AND ADJUSTMENTS IN BOTTOM OF FOOTING ELEVATION AND GEOMETRY ARE EXPECTED.
27. IN AREAS WHERE THE FOOTINGS WILL BEAR ON BEDROCK ALL SOIL, WEATHERED ROCK AND FRACTURED ROCK SHALL BE REMOVED FROM THE BEDROCK SURFACE PRIOR TO PLACING CONCRETE FOR THE FOOTING.
28. UPON COMPLETION OF THE EXCAVATION FOR SUBSTRUCTURES FOUNDED ON BEDROCK AND PRIOR TO PLACING FORMWORK, THE ENGINEER SHALL NOTIFY THE PROJECT MANAGER AND THE VTRANS STATE GEOLOGIST. THE GEOLOGIST WILL DETERMINE IF THE BEDROCK IS COMPETENT TO OBTAIN THE NOMINAL BEARING RESISTANCE AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE GEOLOGIST 72 HOURS PRIOR TO WHEN THE ANALYSIS WILL BE NEEDED.
29. AT THE FOOTING SUBGRADE THE SLOPE OF THE BEDROCK SURFACE SHALL BE FLATTER THEN 6 HORIZONTAL TO 1 VERTICAL. WHERE THE BEDROCK SURFACE EXCEEDS A SLOPE OF 6 HORIZONTAL TO 1 VERTICAL THE BEDROCK SURFACE SHALL BE BENCHED TO CREATE STEPS OR EXCAVATED COMPLETELY TO A SLOPE LESS THEN 6 HORIZONTAL TO 1 VERTICAL.
30. A MAXIMUM OF 6" OVER BREAKAGE WILL BE REPLACED WITH "HIGH PERFORMANCE CLASS B CONCRETE. OVER BREAKAGE BEYOND 6" SHALL BE REPLACED WITH "HIGH PERFORMANCE CLASS B CONCRETE" AT THE EXPENSE OF THE CONTRACTOR.
31. THE LIMITS OF THE SUBFOOTING SHALL BE 1'-0" OUTSIDE THE LIMITS OF THE FOOTING.
32. THE ABUTMENTS HAVE BEEN DESIGNED FOR THE TOP OF THE FOOTING ELEVATIONS SHOWN THE PLANS. IF THE LEDGE ELEVATION IS GREATER THAN 1'-0" BELOW THE DESIGN BOTTOM OF FOOTING, A SUBFOOTING SHALL BE POURED SO THAT THE DESIGN TOP OF FOOTING IS AT THE REQUIRED ELEVATION, USING "CONCRETE, CLASS C"
33. FOR ALL SUBSTRUCTURES, WHERE LEDGE IS WITHIN ONE FOOT FROM THE BOTTOM OF THE FOOTING AS DESIGNED, THE FOOTING MAY BE POURED TO THE TOP OF THE LEDGE USING "CONCRETE, HIGH PERFORMANCE CLASS B"
34. IF LEDGE IS ABOVE THE DESIGN BOTTOM OF FOOTING, THE FOOTING MAY BE RAISED. BEFORE ANY UPWARD ADJUSTMENT IS MADE IN FOOTING ELEVATION, THE PROJECT MANAGEER SHALL BE CONTACTED AND PROVIDED WITH A LEDGE PROFILE. NO FURTHER WORK SHALL BE DONE UNTIL APPROVAL OF THE CONFIGURATION IS RECEIVED.
35. #8 DOWELS SHALL BE DRILLED AND GROUTED INTO THE LEDGE AS SHOWN ON THE PLANS. THE DOWELS SHALL HAVE A MINIMUM 2'-0" EMBEDMENT INTO THE LEDGE AND SHALL EXTEND INTO THE FOOTING A MINIMUM OF 1'-6". IN AREAS WHERE A SUBFOOTING IS REQUIRED #8 DOWELS WILL ALSO BE USED AT THE INTERFACE BETWEEN SUBFOOTING AND FOOTING. THE DRILLING AND GROUTING SHALL BE PAID FOR UNDER THE ITEM 507.16, "DRILLING AND GROUTING DOWELS".
36. ABUTMENT FOOTINGS SHALL BEAR ON LEDGE. WINGWALL FOOTINGS MAY BEAR ON LEDGE OR SOIL.
37. PEAT OR OTHER ORGANIC SOILS ENCOUNTERED WITHIN THE LIMITS OF WORK SHALL BE REMOVED THROUGH OVER-EXCAVATION AS DIRECTED BY THE ENGINEER. PAYMENT WILL BE IN ACCORDANCE WITH THE GOVERNING EXCAVATION ITEM. IN FOUNDATION BEARING AREAS, OVER-EXCAVATED AREAS SHALL BE BACKFILLED WITH GRANULAR BACKFILL FOR STRUCTURES.

TRAFFIC CONTROL

38. THE TRAFFIC CONTROL PLAN INCLUDED IN THIS PLAN SET IS SCHEMATIC ONLY AND SHOULD BE USED AS A REFERENCE. THE CONTRACTOR SHALL DEVELOP AND IMPLEMENT A SITE SPECIFIC TRAFFIC CONTROL PLAN FOR TEMPORARY BRIDGE PER THE LATEST VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE CONTRACTOR SHALL ALLOW THE ENGINEER 14 CALENDAR DAYS TO REVIEW AND ACCEPT THE PROPOSED PLANS BEFORE THEY ARE TO BE IMPLEMENTED. NO WORK SHALL COMMENCE UNTIL THE TRAFFIC CONTROL PLAN HAS BEEN APPROVED.
39. DEVELOPMENT AND IMPLEMENTATION OF TRAFFIC CONTROL PLAN SHALL BE PAID FOR UNDER ITEM 641.10 TRAFFIC CONTROL.
40. ACCESS TO ALL EXISTING SIDE ROADS, DRIVES AND PARKING AREAS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.

41. DESIGN OF THE SIGNAL SUPPPTS AND ANY REQUIRED GUYING IS THE RESPONSIBILITY OF THE CONTRACTOR.
42. SIGNAL TIMING / TIMING ADJUSTMENTS REQUESTED BY THE ENGINEER SHALL BE ACCOMPLISHED WITHIN A 48 HOUR PERIOD AND PAYMENT SHALL BE INCIDENTAL TO ITEM 678.40, "TEMPORARY TRAFFIC SIGNAL SYSTEM". THE ENGINEER SHALL MAKE SEVERAL TRIAL RUNS TO DETERMINE THE PROPER ALL-RED CLEARANCE INTERVAL.
43. SIGNAL FACES SHALL BE LED AND CONSIST OF 12" LENSES. (RED, YELLOW, AND GREEN).
44. THE BOTTOM OF THE HOUSING OF A SIGNAL FACE SUSPENDED OVER A ROADWAY SHALL NOT BE LESS THAN 18.5 FEET NOR MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. THE BOTTOM OF A SIGNAL FACE NOT MOUNTED OVER A ROADWAY SHALL NOT BE LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE GROUND. CAUTION SHOULD BE USED TO INSURE COMPLIANCE WITH THE HEIGHT REQUIREMENTS IN THE EVENT THE NEW APPROACH GRADES DIFFER SIGNIFICANTLY FROM THE OLD ROAD GRADE.
45. SIGNAL FACES FOR ANY ONE APPROACH SHALL NOT BE LESS THAN 8 FEET APART MEASURED HORIZONTALLY BETWEEN CENTER FACES.
46. SIGNAL HEADS MAY BE HUNG ON A SPAN WIRE OR ON A CANTILEVER MAST ARM. AT LEAST ONE SIGNAL HEAD SHALL BE UNMISTAKABLY IN LINE WITH THE CENTER OF APPROACHING TRAFFIC AT ALL TIMES. THE SECOND SIGNAL HEAD MAY BE POST MOUNTED, LOCATED AT A DISTANCE OF NO GREATER THAN 14.5 FEET FROM THE CENTER OF THE APPROACH LANE WHEN THE STOP BAR IS 40 FEET FROM THE SIGNAL HEAD. CONSULT THE CURRENT EDITION OF THE M.U.T.C.D. FOR ADDITIONAL INFORMATION CONCERNING SIGNAL PLACEMENT.
47. THE SIGNAL SYSTEM SHALL CONSIST OF POLES, SIGNS AND POSTS, WARNING SIGNS, LUMINARIES, FLASHING BEACONS, ASSOCIATED PAVEMENT MARKINGS, AND SIGNAL EQUIPMENT TO PROVIDE FOR AN ADEQUATE DESIGN. IT ALSO INCLUDES PERMITS AND COSTS ASSOCIATED WITH PROVIDING ELECTRICAL POWER.
48. INSTALL WIRING BETWEEN SIGNAL POLES BY WHATEVER MEANS POSSIBLE OR CONVENIENT TO PROVIDE FOR A SAFE INSTALLATION. ATTACHMENT TO UTILITY POLES TO BE COORDINATED BY THE CONTRACTOR WITH THE UTILITY COMPANY.
49. PLACE TEMPORARY POLES BEHIND GUARDRAIL WHERE POSSIBLE.
50. POLES SUPPORTING SPAN WIRES AND/OR MAST ARMS SHALL BE ADEQUATELY BRACED OR GUYED AND SHALL BE PLACED SO AS TO CREATE A HAZARD TO THE TRAVELING PUBLIC.
51. ALL TEMPORARY SIGNAL EQUIPMENT, SIGNS, ETC., SHALL BELONG TO THE CONTRACTOR AT THE END OF THE PROJECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR REMOVAL INCLUDING ANY TEMPORARY PAVEMENT MARKINGS, UTILITY POLES, WIRES, ETC.
52. A 250 WATT MER/150 WATT HSP LUMINAIRE AND MAST ARM SHALL BE PROVIDED ON A POLE ON EACH APPROACH AT A MOUNTING HEIGHT OF 30 FEET ABOVE THE ROADWAY CENTERLINE. THE INTENT IS TO LIGHT UP THE AREA AROUND THE SIGNAL HEADS AND STOP BAR FOR INCREASED VISIBILITY. THE ENGINEER SHALL DETERMINE THE ADEQUACY OF THE LIGHTING AND DIRECT CHANGES IF THE LIGHTING IS INSUFFICIENT. LIGHTING SHALL BE PAID INCIDENTAL TO ITEM 678.40, "TEMPORARY TRAFFIC SIGNAL SYSTEM".
53. STOP BARS SHALL BE LOCATED A MINIMUM OF 40' AND A MAXIMUM OF 120' FROM THE NEAREST SIGNAL HEAD.
54. SEE STD. E-140 FOR "STOP HERE ON RED" SIGN DETAIL. SEE STD. E-121 FOR SIGN PLACEMENT, SEE STD. E-171A AND E-172 FOR ADDITIONAL INFORMATION ON SIGNALS.
55. ALL ELECTRIC WORK SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND STATE INSPECTOR.
56. ALL STOP SIGNS AND ANY TRAFFIC SIGNS MADE IRRELEVANT DUE TO THE TEMPORARY SIGNAL SHALL BE COVERED DURING OPERATION OF THE TEMPORARY SIGNAL, OR AT THE DISCRETION OF THE ENGINEER. THE COSTS OF COVERING AND UNCOVERING THESE SIGNS SHALL BE PAID INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL".
57. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING SIGNAL PHASING. THE CONTRACTOR SHALL SUBMIT PHASING DIAGRAM TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL MAKE SIGNALS OPERATIONAL ONLY AFTER RECEIVING APPROVAL OF THE PHASING DIAGRAM BY THE ENGINEER. DEVELOPMENT OF THE PHASING DIAGRAM SHALL BE PAID INCIDENTAL TO ITEM 678.40, "TEMPORARY TRAFFIC SIGNAL SYSTEM".

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PROJECT NAME:	CORINTH
PROJECT NUMBER:	BRO 1447(29)
FILE NAME: ...drawing\201292_gen_nts.dgn	PLOT DATE: 8/4/2014
PROJECT LEADER: G. BOGUE	DRAWN BY: L. BUXTON
DESIGNED BY: G. BOGUE	CHECKED BY: M. CHENETTE
<b>PROJECT NOTES</b>	SHEET 5 OF 57