

PROJECT NOTES

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT, AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, LRFD SIXTH EDITION, DATED 2012 AND ITS LATEST REVISIONS.
2. THE BRIDGE IS DESIGNED FOR HL-93 LIVE LOADING.
3. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT UNLESS OTHERWISE NOTED.
4. ITEM 529.15, "REMOVAL OF STRUCTURE" WILL INCLUDE THE REMOVAL AND DISPOSAL OF THE EXISTING STRUCTURE INCLUDING THE ENTIRE SUPERSTRUCTURE, AND THE EXISTING PIER TO THE TOP OF ITS FOOTING.
5. ABUTMENT 1 SHALL BE REMOVED TO ELEVATION 720. THE COST FOR REMOVAL OF ABUTMENT 1 SHALL BE INCLUDED IN ITEM 203.27 UNCLASSIFIED CHANNEL EXCAVATION.
6. ABUTMENT 2 SHALL BE REMOVED TO ELEVATION 711. THE COST FOR REMOVAL OF ABUTMENT 2 WILL BE INCLUDED IN ITEM 204.25 STRUCTURE EXCAVATION.
7. THE EXISTING STRUCTURAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSAL OF THE REMOVED EXISTING STRUCTURAL STEEL.
8. ALL PRECAST CONCRETE ELEMENTS SHALL 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.
9. FOR TRAFFIC CONTROL NOTES, SEE SHEET 17.

EARTHWORK

10. TEMPORARY CONSTRUCTION FILLS WITHIN THE WATERCOURSE FOR ANY PURPOSE SHALL CONSIST OF CLEAN STONE FILL ONLY. NO OTHER FILLING IN THE STREAM SHALL OCCUR WITHOUT THE APPROVAL OF THE STREAM ALTERATION ENGINEER.
11. THE STONE FILL TYPE III UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE STEEL GIRDERS ARE SET.
12. AT ABUTMENT NO. 1, THE FILL BEHIND THE ABUTMENTS SHALL NOT BE PLACED ABOVE THE LEVEL OF THE BRIDGE SEAT UNTIL THE GIRDERS ARE SET ON THE BRIDGE SEAT.
13. AT ABUTMENT NO. 2, THE MSE ABUTMENT BACKFILL SECTION SHALL BE PLACED TO THE UPPER PAY LIMIT OF THE ITEM PRIOR TO SETTING THE GIRDERS ON THE BRIDGE SEAT.
14. GUARDRAIL APPROACH RAIL AND STEEL BEAM GUARDRAIL SHALL BE CORED INTO ROCK WHERE REQUIRED AS DIRECTED BY AND TO THE SATISFACTION OF THE ENGINEER. ALL ASSOCIATED COSTS WILL BE INCLUDED IN THE UNIT BID PRICE FOR THE APPROPRIATE RAIL ITEM.

CONCRETE

15. ALL CONCRETE PLACED IN THE ~~TRANSVERSE AND LONGITUDINAL CLOSURE POURS OF THE DECK AND END OF DECK PANELS AT EXPANSION JOINT~~ ^{APPROACH SLABS} WILL BE ITEM 900.608 SPECIAL PROVISION (ULTRA HIGH PERFORMANCE CONCRETE)(FPQ).
16. ALL CONCRETE PLACED IN ABUTMENT BACKWALL HEADERS, ~~APPROACH SLAB CLOSURE POURS,~~ AND PILE VOIDS WILL BE PAID ITEM 900.608 (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPQ).
17. ALL CONCRETE PLACED IN THE BRUSH CURBS, WINGWALL CURBS, AND SUBFOOTING (WHERE REQUIRED) WILL BE PAID UNDER ITEM 501.33, CONCRETE, HIGH PERFORMANCE CLASS A.
18. ALL PRECAST SUPERSTRUCTURE, SUBSTRUCTURE AND APPROACH SLAB CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 540 - PRECAST CONCRETE.
19. ALL REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF SECTION 507 FOR REINFORCING STEEL, LEVEL II. ALL REINFORCING STEEL PLACED IN THE BRUSH CURBS, END OF DECK, APPROACH SLAB CLOSURE POURS AND BACKWALL HEADERS WILL BE PAID FOR UNDER ITEM 507.12, "REINFORCING STEEL, LEVEL II". ALL REINFORCING STEEL IN THE PRECAST ELEMENTS WILL BE INCLUDED IN THE UNIT BID PRICE FOR THE APPROPRIATE PRECAST CONCRETE PAY ITEM.
20. ITEM 514.10, "WATER REPELLENT, SILANE", SHALL BE APPLIED TO ALL EXPOSED CONCRETE SUPERSTRUCTURE AND SUBSTRUCTURE SURFACES, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN DRIP NOTCHES.

- 20A. CONCRETE FOR CAST IN-PLACE PORTIONS OF THE DECK SHALL MEET THE REQUIREMENTS OF SECTION 501 FOR CONCRETE, HIGH PERFORMANCE CLASS A.
- 20B. CONCRETE USED FOR BEDDING MATERIAL BENEATH PRECAST PRESTRESSED CONCRETE DECK PANELS SHALL MEET THE REQUIREMENTS OF SECTION 501 FOR CONCRETE, HIGH PERFORMANCE CLASS AA.

21. ALL PRECAST CONCRETE SURFACES LABELED WITH "EXPOSED COARSE AGGREGATE FINISH" SHALL BE TREATED TO PROVIDE A ROUGHENED/EXPOSED COARSE AGGREGATE SURFACE. THE AMPLITUDE OF THE EXPOSED AGGREGATE SHALL BE A MINIMUM OF 1/8" AND BE COMPLETED PRIOR TO FINAL PLACEMENT OF THE PRECAST COMPONENT. THE FABRICATOR SHALL INDICATE THE METHOD USED TO ACHIEVE THIS PROFILE AND THE METHOD USED TO PROTECT THE REINFORCING STEEL ON THE FABRICATION DRAWINGS.

22. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
ALONG BACK FACES OF WALLS AGAINST EARTH 2.0 INCH
ALONG TOP SURFACE OF DECK SLAB 2.5 INCH 3.0 INCHES
ALONG BOTTOM SURFACE OF DECK SLAB 1.5 INCH
ELSEWHERE UNLESS OTHERWISE NOTED 3.0 INCH

STRUCTURAL STEEL

23. ALL NEW STRUCTURAL STEEL SHALL CONFORM TO AASHTO M270/M270M GRADE 50W AND WILL BE PAID FOR UNDER ITEM 506.55 "STRUCTURAL STEEL PLATE GIRDER" (FPQ) UNLESS NOTED OTHERWISE.
24. ALL MEMBERS MARKED CVN MUST MEET CHARPY V-NOTCH TESTING REQUIREMENTS AS INDICATED IN SUBSECTION 714.01.
25. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SECTION 506. ANY CONNECTION NOT DESIGNATED SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED WITH SHOP DRAWINGS.
26. TEMPORARY SUPPORTS FOR GIRDER ERECTION WILL BE INCLUDED IN ITEM 506.55 "STRUCTURAL STEEL, PLATE GIRDER" (FPQ). THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE TEMPORARY GIRDER SUPPORT SYSTEM. STABILITY OF THE GIRDERS UNTIL FULL DEAD LOAD IS APPLIED IS THE RESPONSIBILITY OF THE CONTRACTOR.
27. THE CROSSFRAMES SHALL BE DETAILED TO THE STEEL DEAD LOAD FIT CONDITION.
28. THE ENDS OF THE GIRDERS ARE EXPECTED TO BE OUT-OF-PLUMB UNDER FULL DEAD LOAD.

PRECAST CONCRETE DECK PANELS

29. THE PRECAST DECK PANEL LAYOUT SHOWN ON SHEET 25 MAY BE ALTERED BY THE CONTRACTOR PROVIDED THAT THE REINFORCING MEETS OR EXCEEDS THAT SHOWN.
30. ALL PRECAST DECK PANEL EDGES THAT ARE TO HAVE ULTRA HIGH PERFORMANCE CONCRETE CAST AGAINST THEM (EXCLUDING SHEAR CONNECTOR BLOCKOUTS) SHALL HAVE AN EXPOSED COARSE AGGREGATE FINISH.
31. ALL ULTRA HIGH PERFORMANCE CLOSURE POURS IN THE LONGITUDINAL AND TRANSVERSE JOINTS, AND DECK END JOINTS SHALL BE GROUND FLUSH WITH THE PRECAST DECK IN ACCORDANCE WITH ITEM 900.608 SPECIAL PROVISION (ULTRA HIGH PERFORMANCE CONCRETE)(FPQ).
32. SHEAR CONNECTOR BLOCKOUT GEOMETRY SHOWN ON SHEET 27 MAY BE ALTERED BY THE CONTRACTOR.
33. THE GIRDER BLOCKING DETAILS SHOWN ON SHEET 27 ARE CONCEPTUAL AND MAY BE ALTERED BY THE CONTRACTOR. ALL BLOCKING WILL BE INCLUDED IN THE UNIT BID PRICE FOR THE PRECAST CONCRETE STRUCTURE (8" DECK SLABS).
34. ALL BLOCKING AND SHIM STACK MATERIAL TO BE LEFT IN PLACE AFTER THE BRIDGE IS OPEN SHALL BE APPROVED BY THE ENGINEER.
35. THE CONTRACTOR SHALL PROVIDE STAMPED CALCULATIONS PREPARED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF VERMONT THAT SHOW THAT TENSILE STRESSES ON BOTH FACES OF THE DECK PANELS DO NOT EXCEED THE MODULUS OF RUPTURE DURING THE HANDLING, FABRICATION, SHIPPING, PRE-ASSEMBLY, AND FINAL ERECTION OF THE PANEL.

PRECAST ABUTMENTS AND POST-TENSIONING

36. ABUTMENT FOOTINGS, STEMS AND BACKWALL SHALL BE PRECAST WITH PAYMENT INCLUDED IN THE APPROPRIATE PRECAST CONCRETE PAY ITEM. PAYMENT SHALL INCLUDE ALL WORK NECESSARY TO FABRICATE, DELIVER, AND ASSEMBLE EACH UNIT COMPLETE AND IN-PLACE AS SHOWN ON THE PLANS. ALL APPURTENANCES WILL BE INCIDENTAL TO THE APPROPRIATE PRECAST CONCRETE ABUTMENT PAY ITEM. STABILITY OF ALL PRECAST SUBSTRUCTURE UNITS IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL REQUIRED BACKFILLING IS COMPLETE.
37. ALL COSTS FOR GROUTING MATERIALS USED IN PRECAST MEMBERS WILL BE INCIDENTAL TO THE APPROPRIATE PRECAST PAY ITEMS UNLESS OTHERWISE NOTED.
38. THE CONTRACTOR IS RESPONSIBLE FOR PROPER FIT-UP OF THE PRECAST AND CAST-IN-PLACE ELEMENTS, PER THE FABRICATOR'S RECOMMENDATIONS, APPROVED FABRICATION AND WORKING DRAWINGS AND TO THE SATISFACTION OF THE ENGINEER.

39. MECHANICAL GROUTED SPlice COUPLERS SHALL BE USED TO PROVIDE MOMENT CONNECTIONS BETWEEN MEMBERS AS SHOWN IN THE PLANS. GROUTED SPLICES SHALL DEVELOP A MINIMUM OF 125% OF THE SPECIFIED YIELD STRENGTH OF THE REINFORCING BAR BEING SPLICED. ALL COSTS FOR THE GROUTED SPlice COUPLERS WILL BE INCLUDED IN THE APPROPRIATE PRECAST PAY ITEM.

40. POST-TENSIONING STRANDS AND CONDUIT SHALL ADHERE TO THE REQUIREMENTS OF SECTION 510 - PRESTRESSED CONCRETE. GALVANIZED ANCHOR ASSEMBLIES, CONDUIT AND POST-TENSIONING STRANDS WILL BE INCLUDED UNDER THE APPROPRIATE PRECAST PAY ITEM. POST TENSIONING STRANDS SHALL BE COVERED WITH SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF THE STRAND, EXCEPT AT ANCHORAGE LOCATIONS.

41. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND DETAILING OF POST TENSIONING ELEMENTS. THE POST TENSIONING DESIGN SHALL FOLLOW CURRENT LRFD AND PCI MANUAL GUIDELINES. **POST TENSIONING BLOCKOUT ELEMENTS SHALL BE ORIENTED PERPENDICULAR TO THE POST-TENSIONING STRANDS.**

42. GALVANIZE ANCHOR ASSEMBLIES (SUPPORT BOLTS, NUTS, WASHERS AND LEVELING PLATES) AFTER FABRICATION ACCORDING TO AASHTO M232M/M232.

43. DESIGN VALUES:
A. CONCRETE COMPRESSIVE STRENGTH: f'c = 5000 psi
B. POST-TENSIONING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW RELAXATION 0.5 INCH* 7-WIRE STRANDS.
C. ASSUMED MODULUS OF ELASTICITY IS 28,500 KSI.
D. THERE SHALL BE 2 STRANDS PER CONDUIT.
E. THE JACKING FORCE PER STRAND = 44 KIPS; 32 KIPS*
*** AS PER APPROVED SHOP DRAWINGS**

44. THE GALVANIZED CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF SUBSECTION 711.01. ALL COSTS ASSOCIATED WITH PLACING THE CORRUGATED STEEL PIPE WILL BE INCLUDED IN THE BID PRICE FOR ITEM 540.10 "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1)" OR ITEM 540.10 "PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2)" AS APPROPRIATE.

45. **ERECTION OF THE STEEL GIRDERS SHALL NOT BE PERMITTED UNTIL THE ABUTMENT 1 FOOTING CLOSURE POUR CONCRETE HAS ACHIEVED A STRENGTH OF 1500 PSI.**

46. BACKFILLING ABUTMENT 1 & 2 SHALL NOT BE PERMITTED UNTIL THE GROUTED SPlice SLEEVE CONNECTION GROUT HAS ACHIEVED A STRENGTH OF 4000 PSI.

47. **ABUTMENT 2 POST TENSIONING SHALL OCCUR PRIOR TO PLACEMENT OF CONCRETE IN THE PILE VOIDS.**

48. PLACEMENT OF THE PRECAST FOOTINGS WITH LEVELING BOLTS SHALL NOT BE PERMITTED UNTIL THE GROUT BED AND SUBFOOTING (WHERE REQUIRED) HAS ACHIEVED A STRENGTH OF 1500 PSI.

49. **THE CONCRETE CURING REQUIREMENTS PER SECTION 501.17 OF THE STANDARD SPECIFICATIONS FOR CONCRETE, HIGH PERFORMANCE CLASS A PLACED IN THE SUBFOOTING (WHERE REQUIRED) ARE ONLY REQUIRED UNTIL THE CONCRETE HAS ACHIEVED A STRENGTH OF 1500 PSI.**

SUBSTRUCTURE ON LEDGE

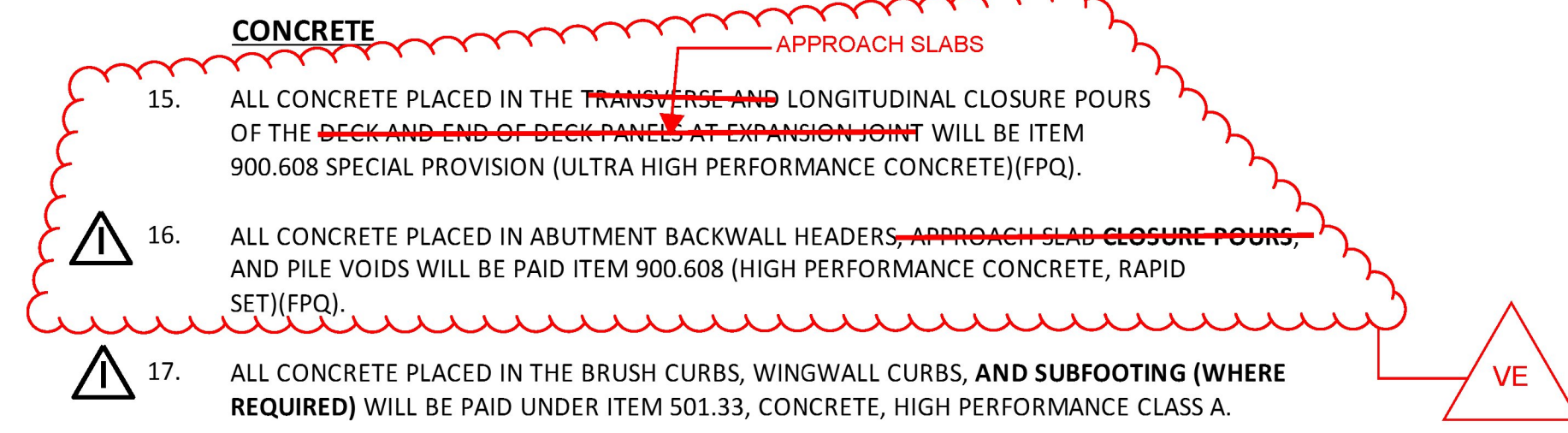
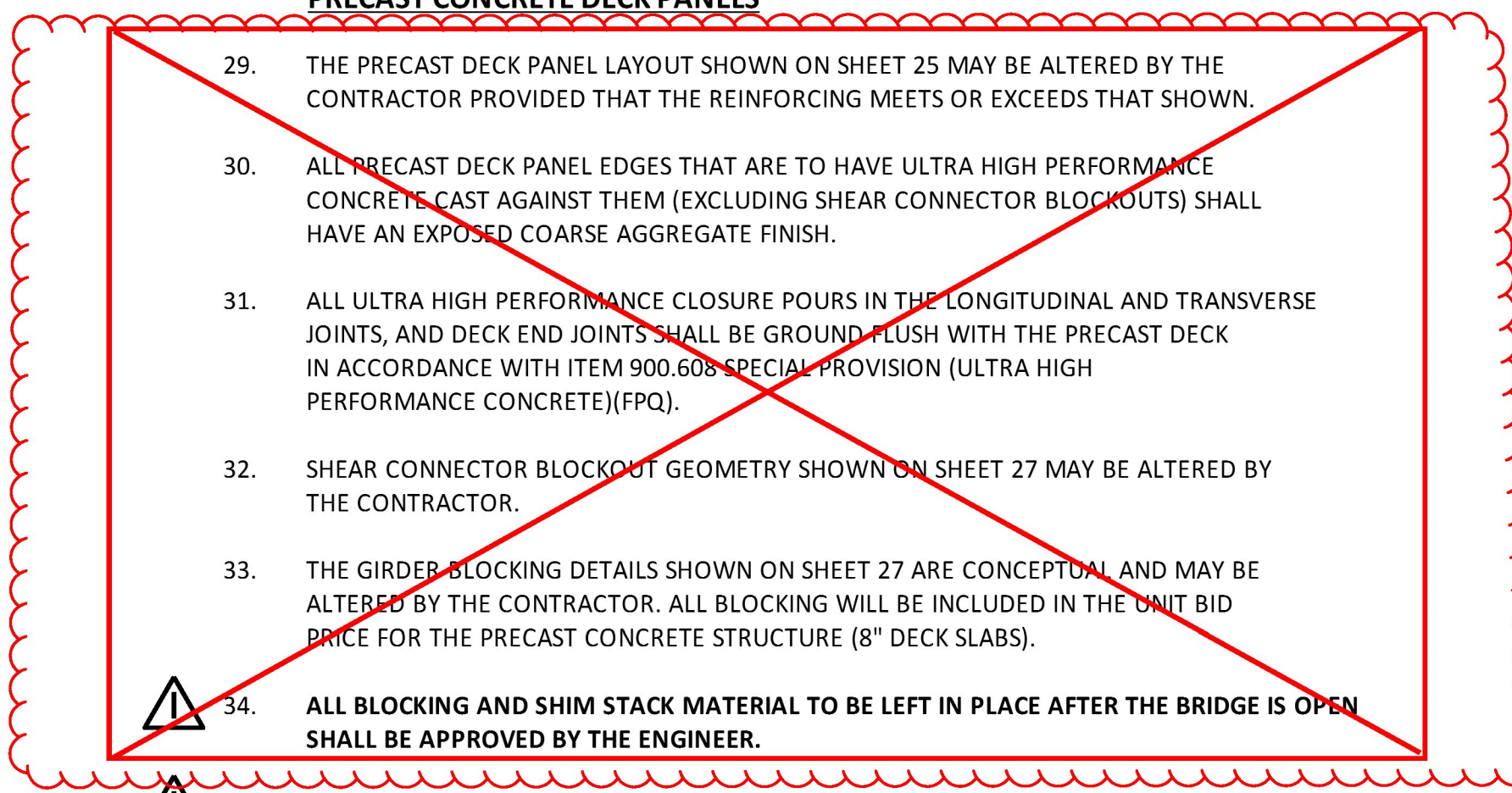
50. PRECAST FOOTINGS AT ABUTMENT 1 SHALL BE FOUNDED ON LEDGE WHICH HAS BEEN CLEANED OF ALL LOOSE ROCK AND DEBRIS TO ENSURE THAT THE SUBSTRUCTURE IS PLACED ON COMPETENT ROCK.

51. UPON COMPLETION OF THE EXCAVATION FOR ABUTMENT 1, AND PRIOR TO PLACING THE PRECAST ABUTMENTS AND PRIOR TO PLACING MATERIAL ON BEDROCK, THE ENGINEER SHALL NOTIFY THE VTRANS GEOLOGIST. THE GEOLOGIST WILL DETERMINE IF THE BEDROCK IS STABLE AND COMPETENT TO OBTAIN THE REQUIRED NOMINAL BEARING RESISTANCE. THE CONTRACTOR SHALL NOTIFY THE GEOLOGIST 24 HOURS IN ADVANCE OF WHEN THE ANALYSIS WILL BE NEEDED.

52. LEDGE THAT IS EXCAVATED FOR PLACEMENT OF THE PRECAST FOOTING (OR SUB-FOOTING IF REQUIRED) SHALL BE EXCAVATED TO PROVIDE A LEVEL SURFACE OR AS DIRECTED BY THE ENGINEER. **THE SUBFOOTING (WHERE REQUIRED) SHALL HAVE A RAKED FINISH.**

53. **ABUTMENT 1 HAS BEEN DESIGNED FOR THE TOP OF FOOTING ELEVATIONS SHOWN ON THE PLANS. LEDGE SHALL BE EXCAVATED DOWN TO THE INDICATED BOTTOM OF FOOTING, INCLUDING 3" MIN GROUT BED, FOR THE FULL WIDTH (TOE TO HEEL) OF THE CONFIGURATION. IF THE LEDGE ELEVATION IS GREATER THAN 6" BELOW THE DESIGN BOTTOM OF FOOTING, A SUBFOOTING SHALL BE POURED SO THAT THE DESIGN TOP OF FOOTING IS AT THE REQUIRED ELEVATION. THE GROUT BED WILL BE PAID UNDER THE APPROPRIATE SECTION 540 CONTRACT ITEM. THE SUBFOOTING, IF REQUIRED, WILL BE PAID UNDER ITEM 501.33 "CONCRETE, HIGH PERFORMANCE CLASS A."**

54. ALL COSTS ASSOCIATED WITH PREVENTING ROCK FROM ENTERING THE MAD RIVER WILL BE INCLUDED IN ITEM 203.27.



REV	DATE	DESCRIPTION
△	10/13/2015	NOTE REVISIONS

REV	DATE	DESCRIPTION
△	02/03/16	NOTE REVISIONS



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PROJECT NOTES (1 OF 2)	