

BRIDGE #27

EARTHWORK AND RELATED ITEMS

- 22. THE BACKFILL BEHIND THE ABUTMENTS SHALL NOT BE PLACED HIGHER THAN THE BRIDGE SEATS UNTIL THE ABUTMENTS AND DECK CONSTRUCTION IS COMPLETED. THE DIFFERENCE IN ELEVATION OF FILL BEHIND THE ABUTMENTS AT ANY TIME DURING BACKFILLING OPERATIONS SHALL NOT EXCEED 2 FEET.
- 23. IF LEDGE IS ENCOUNTERED IN THE SLOPE FROM APPROXIMATELY STA. 383+00 RT TO STA. 385+00 RT THE ENGINEER SHALL BE CONTACTED AND THE PLANS WILL BE REVISED ACCORDINGLY. PAYMENT FOR ANY LEDGE REMOVAL IN THE SLOPE SHALL BE PAID FOR UNDER ITEM 203.16, "SOLID ROCK EXCAVATION".

CONCRETE

- 24. ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A" SHALL BE USED FOR THE DECK, BRIDGE RAIL, INTEGRAL ABUTMENT CURTAIN WALL AND WINGWALLS ABOVE THE PILE CAP CONSTRUCTION JOINT. ALL SUBSTRUCTURE BELOW THE BRIDGE SEATS AND THE APPROACH SLAB CONCRETE SHALL BE ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B." THE RAIL CONCRETE WILL BE CONCRETE, HIGH PERFORMANCE CLASS SCC AND SHALL BE PAID FOR UNDER ITEM 525.45 BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION.
- 25. AESTHETIC DETAIL "B" SHALL BE USED ON THE TRAFFIC SIDE FACES OF THE CONCRETE FOR BRIDGE RAIL, GALVANIZED STEEL TUBING/CONCRETE COMBINATION. SEE STANDARD S-352A FOR DETAILS.
- 26. REINFORCING STEEL IN THE BRIDGE RAIL, DESIGNATED "BR" IN THE PLANS, SHALL BE PAID FOR UNDER ITEM 525.45 BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION. ALL BRIDGE RAIL REINFORCING STEEL SHALL BE LEVEL II.

SUBSTRUCTURE

- 27. ITEM 505.165 "STEEL PILING, HP 12 X 84". REINFORCE THE DRIVING TIP ACCORDING TO SUBSECTION 505.04(F).
- 28. ITEM 505.45 "DYNAMIC PILE LOADING TEST". A MINIMUM OF ONE DYNAMIC PILE TEST SHALL BE CONDUCTED PER ABUTMENT. MORE TESTS MAY BE REQUIRED BY THE RESIDENT ENGINEER. THE NOMINAL PILE DRIVING RESISTANCE FOR EACH PILE IS 612 KIPS. A PILE RESISTANCE FACTOR OF 0.65 WAS USED BASED ON THE DYNAMIC TESTING REQUIREMENT.
- 29. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AND ARE SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY. PILES SHALL HAVE A MINIMUM EMBEDMENT OF 45 FT MEASURED FROM THE BOTTOM OF THE PILE CAP.
- 30. PILE SHOES SHALL BE REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04.

TRAFFIC CONTROL

- 31. TRAFFIC SHALL BE MAINTAINED ON THE EXISTING BRIDGE #27 DURING CONSTRUCTION. ANY MAINTAINANCE OF THE EXISTING SUBSTRUCTURE, SUPERSTRUCTURE, OR BRIDGE SURFACE TO KEEP THE BRIDGE SAFE TO THE TRAVELLING PUBLIC WILL BE PAID UNDER ITEM 527.10 "MAINTENANCE OF STRUCTURES AND APPROACHES".

MISCELLANEOUS

- 32. THE 12 STONE POSTS FROM STA. 392+93.4 LT TO STA. 395+22.4 RT SHALL BE SAVED AND RETURNED TO THE PROPERTY OWNER.
- 33. A WOOD FENCE AND STONE WALL ON THE SMITH/FREEMAN PROPERTY CLOSE TO THE PROJECT LIMITS ARE NOT TO BE DISTURBED.

CATTLE PASS

CONCRETE

- 34. THE BOX CULVERT, HEADWALLS, WINGWALLS AND FOOTINGS SHALL BE PRECAST CONCRETE CONFORMING TO SECTION 540 OF THE SPECIFICATIONS, AND SHALL MEET THE DIMENSIONS INDICATED ON THE PLANS. ALL PRECAST COMPONENTS OF THE STRUCTURE WILL BE PAID FOR UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (8'-0" X 6'-0" X 36'-4" BOX)".
- 35. TRANSVERSE GROOVING SHALL BE PROVIDED ALONG THE LENGTH OF THE PRECAST BOX INVERT.
- 36. JOINTS BETWEEN ALL ABUTTING PRECAST UNITS SHALL BE WATERTIGHT AND MECHANICALLY CONNECTED.

SUBSTRUCTURE

- 37. ALL PRECAST CONCRETE COMPONENTS INCLUDING THE BOX CULVERT, HEADWALLS, WINGWALLS, FOOTINGS, AND ALL CONNECTIONS BETWEEN THESE COMPONENTS SHALL BE DESIGNED BY THE PRECAST FABRICATOR. THE SOIL PROPERTIES AND DESIGN PARAMETERS USED FOR THE BRIDGE SITE ARE AS INDICATED BELOW:

NOMINAL BEARING RESISTANCE:	4.0 KSF
FOUNDATION SOIL UNIT WEIGHT:	115 LB/SF
FOUNDATION SOIL FRICTION ANGLE:	29 DEGREES
BEARING RESISTANCE FACTOR:	0.45
SLIDING RESISTANCE FACTOR:	SEE AASHTO 10.6.3.4
DESIGN FILL OVER BOX:	IN ADDITION TO 9" OF PAVEMENT, APPROXIMATELY 30" OF SUBBASE WILL BE PLACED OVER THE BOX STRUCTURE.

- 38. THE DESIGN OF THE PRECAST CONCRETE BOX SHALL BE FOR HL-93 LIVE LOADING AND FOR A 75 YEAR DESIGN LIFE.

- 39. ALL REINFORCING STEEL IN THE PRECAST BOX SHALL BE LEVEL I, EPOXY COATED.

- 40. MEMBRANE WATERPROOFING SHALL BE APPLIED TO THE ENTIRE TOP OF THE CONCRETE BOX. A TWO (2) FOOT WIDE STRIP OF MEMBRANE SHALL BE PLACED AT EACH VERTICAL JOINT (SIDES). MEMBRANE SHALL BE CENTERED ON THE JOINT AND COVER THE FULL HEIGHT. THE SIDES SHALL BE COVERED PRIOR TO THE TOP. ANY OVERLAPPING OF MEMBRANE SHALL BE DONE IN A SINGLE TYPE STYLE TO SHED WATER AND SHALL OVERLAP A MINIMUM OF ONE FOOT. PAYMENT FOR MEMBRANE WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE CONTRACT ITEM 540.10.

TRAFFIC CONTROL

- 41. AT A MINIMUM, ONE-LANE SHALL BE OPEN TO TRAFFIC AT ALL TIMES.

MISCELLANEOUS

- 42. THE 5 STONE POSTS FROM STA. 399+70.48 RT TO STA. 400+80.69 RT SHALL BE REMOVED, SAVED AND RETURNED TO THE PROPERTY OWNER.

BRIDGE #28

STRUCTURAL STEEL

- 43. THE WESTERN ENDS OF ALL FIVE GIRDERS SHALL BE PAINTED FOR A DISTANCE OF 10 FEET FROM THE CENTERLINE OF BEARING AT ABUTMENT 1. ALL CROSS-FRAMES, DIAPHRAGMS AND CONNECTION OR STIFFENER PLATES IN THIS AREA SHALL ALSO BE PAINTED. THE FINAL COLOR SHALL BE BROWN IN CONFORMANCE WITH SUBSECTION 708.03 OF THE STANDARD SPECIFICATIONS. BROWN GREASE, CONFORMING TO SUBSECTION 708.04 SHALL BE APPLIED TO ALL PAINTED AREAS. PAYMENT WILL BE MADE UNDER ITEM 900.645 SPECIAL PROVISION (QC/QA CLEANING AND PAINTING STRUCTURAL COMPONENTS).

- 44. THE DOWNSPOUT LOCATED AT ABUTMENT #1 WILL BE PAID FOR UNDER ITEM 506.75, STRUCTURAL STEEL.

CONCRETE

- 45. ALL APPROACH SLAB AND SUBSTRUCTURE CONCRETE SHALL BE CONCRETE, HIGH PERFORMANCE CLASS B UNLESS OTHERWISE NOTED AND SHALL BE PAID FOR UNDER ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B". THE DECK CONCRETE SHALL BE CONCRETE, HIGH PERFORMANCE CLASS A AND SHALL BE PAID FOR UNDER ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A". ANY CONCRETE REQUIRED FOR SUBFOOTINGS SHALL BE CONCRETE, CLASS C AND SHALL BE PAID FOR UNDER ITEM 541.30 "CONCRETE, CLASS C". THE RAIL CONCRETE WILL BE CONCRETE, HIGH PERFORMANCE CLASS ~~SCC~~ AND SHALL BE PAID FOR UNDER ITEM 900.640 SPECIAL PROVISION (BRIDGE RAILING, TEXAS). CHANGED TO CONCRETE CLASS AA

- 46. REINFORCING STEEL IN THE BRIDGE RAIL, DESIGNATED "BR" IN THE PLANS, SHALL BE PAID FOR UNDER ITEM 900.640 SPECIAL PROVISION (BRIDGE RAILING, TEXAS). ALL BRIDGE RAIL REINFORCING STEEL SHALL BE LEVEL II.

SUBSTRUCTURE

- 47. IT IS ANTICIPATED THAT THE BEDROCK WILL BE SEVERELY SLOPED AND VARIABLE AT WINGWALL #3.

- 48. FOOTINGS OR SUBFOOTINGS FOR SUBSTRUCTURES FOUNDED ON BEDROCK SHALL BE PLACED ON CLEAN COMPETENT ROCK. ALL LOOSE ROCK AND DEBRIS SHALL BE REMOVED.

- 49. UPON COMPLETION OF THE EXCAVATION FOR SUBSTRUCTURES FOUNDED ON BEDROCK AND PRIOR TO PLACING FORMWORK, THE RESIDENT ENGINEER SHALL NOTIFY THE PROJECT MANAGER AND THE VTRANS SOILS AND FOUNDATION ENGINEER. THE SOILS AND FOUNDATION ENGINEER WILL DETERMINE IF THE BEDROCK IS COMPETENT TO OBTAIN THE NOMINAL BEARING RESISTANCE AS SHOWN ON THE PLANS. FIVE (5) WORKING DAYS FROM NOTIFICATION SHALL BE ALLOWED TO MAKE THE INSPECTION AND THE DETERMINATION FOR THE COMPETENCY OF THE BEDROCK.

- 50. ONCE THE ELEVATION OF COMPETENT BEDROCK HAS BEEN DETERMINED, THE CONTRACTOR SHALL PROVIDE A BEDROCK PROFILE TO THE PROJECT MANAGER TO DETERMINE WHETHER THE DESIGN BOTTOM OF FOOTING ELEVATION SHALL BE RAISED OR LOWERED AND WHETHER A SUBFOOTING SHALL BE REQUIRED. FOOTING ELEVATIONS SHALL NOT BE ADJUSTED WITHOUT APPROVAL OF THE PROJECT MANAGER. THREE (3) WORKING DAYS FROM RECEIPT OF THE BEDROCK PROFILE SHALL BE ALLOWED TO MAKE THIS DETERMINATION. NO WORK SHALL BE DONE ON THE FOOTINGS UNTIL A REPLY IS RECEIVED.

- 51. THE LIMITS OF SUBFOOTINGS SHALL BE 6" OUTSIDE OF THE HORIZONTAL LIMITS OF THE FOOTING. THE TOP SURFACE OF ALL SUBFOOTINGS SHALL BE INTENTIONALLY ROUGHENED TO 1/4" AMPLITUDE.

- 52. ANY BEDROCK THAT NEEDS TO BE REMOVED SHALL BE PAID FOR WITH THE CORRESPONDING EXCAVATION ITEM INCLUDED IN THE CONTRACT.

- 53. OVERBREAKAGE BEYOND THE AVERAGE MAXIMUM ALLOWANCE SPECIFIED IN SUBSECTIONS 204.09(B) (1) AND 208.11(C) SHALL BE AT THE CONTRACTOR'S EXPENSE.

- 54. DOWELS SHALL BE DRILLED AND GROUTED INTO BEDROCK WHEN SHOWN ON THE PLANS OR AS ORDERED BY THE ENGINEER. THE DOWELS SHALL HAVE A 2'-0" MINIMUM EMBEDMENT IN THE BEDROCK AND SHALL EXTEND IN THE FOOTING OR SUBFOOTING A MINIMUM OF 1'-6", UNLESS NOTED OTHERWISE.

TRAFFIC CONTROL

- 55. TRAFFIC SHALL BE MAINTAINED ON A TWO-WAY TEMPORARY BRIDGE PLACED DOWNSTREAM OF THE EXISTING BRIDGE.

- 56. THE TEMPORARY BRIDGE APPROACHES SHALL BE PAVED.

- 57. A 14 FT WIDE TAPERED SHOULDER SHALL BE MAINTAINED FOR THE DURATION OF THE TEMPORARY BRIDGE. THE LOCATION IS SHOWN ON TRAFFIC CONTROL SHEET 100.

- 58. LIMITS OF THE TEMPORARY DETOUR MUST BE WITHIN THE TEMPORARY DETOUR RIGHT-OF-WAY. SEE ROW SHEETS.

- 59. THE AREA AROUND THE EXISTING STONE MILL SHALL BE FENCED OFF AND AVOIDED DURING CONSTRUCTION. THE ABUTMENT FOR THE TEMPORARY BRIDGE SHALL BE PLACED SO THAT THIS AREA WILL NOT BE DISTURBED DURING CONSTRUCTION.

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