

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6th EDITION, WITH INTERIM LATEST REVISIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STAGING SCHEDULE. ALL WORK MUST BE DONE IN THE DRY AND ALL CULVERT SECTIONS AND BED MATERIAL SHALL BE COMPLETELY INSTALLED BEFORE THE STREAM IS ALLOWED TO FLOW THROUGH THEM. THE CONTRACTOR SHALL PREPARE AND SUBMIT A TEMPORARY STREAM DIVERSION PLAN TO CARRY THE STREAM DURING CONSTRUCTION. THE PLAN SHALL DEPICT MEASURES PROPOSED TO PREVENT EROSION AND SEDIMENTATION AND MAINTAIN STREAM QUALITY. THE STREAM DIVERSION, INCLUDING TEMPORARY PIPING OR DEWATERING SHALL BE IN ACCORDANCE WITH ITEM 900.645, "SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM)".
3. THE EXISTING CONCRETE STRUCTURE, INCLUDING WINGWALLS, SHALL BE REMOVED AND DISPOSED OF. PAYMENT FOR REMOVAL AND DISPOSAL WILL BE INCLUDED UNDER ITEM 529.15 "REMOVAL OF STRUCTURE (7'-0" X 5'-0" X 42'-0" BOX)".

SIMULATED STREAM BED NOTES

1. BED MATERIAL TO BE PLACED IN THE CULVERT IS INTENDED TO MIMIC THE NATIVE CHANNEL IN TERMS OF GRADATION, HABITAT VALUE, AND SCOUR RESISTANCE.
2. BED MATERIAL SHALL CONSIST OF WELL-GRADED, THREE FOOT MINUS NATURAL RIVER MATERIAL, REPRESENTING THE FULL RANGE OF PARTICLE SIZES PRESENT IN THE NATIVE CHANNEL. THIS IS FOR GUIDANCE ONLY. ACTUAL MATERIAL COMPOSITION WILL BE SIMILAR TO EXISTING CHANNEL CONDITIONS BOTH UP AND DOWNSTREAM. IF ON-SITE MATERIAL DOES NOT MEET GRADATION REQUIREMENTS BED MATERIAL SHALL CONSIST OF MATERIAL SUCH THAT THE FINAL MATERIAL GRADATION CONFORMS TO THE FOLLOWING:

STONE/SIEVE SIZE	% FINER, BY WEIGHT
36"	100
24"	50
2"	25

3. THE FINAL CHANNEL SURFACE SHALL BE IRREGULAR, WITH THE LARGER STONES PROTRUDING ABOVE THE FINISHED SURFACE.
4. BED MATERIAL SHALL BE PLACED SUCH THAT THERE ARE NO DISCRETE VERTICAL DROPS IN EXCESS OF THREE INCHES THAT SPAN THE CULVERT WIDTH, AND SO THAT THE FLOW OF WATER IS GENERALLY CONCENTRATED IN THE CENTER OR ALTERNATING SIDES OF THE CULVERT RATHER THAN DISPERSED ACROSS THE ENTIRE WIDTH.
5. THE CONTRACTOR IS ADVISED TO CONSIDER PLACING BED MATERIAL AS THE CULVERT IS CONSTRUCTED TO AVOID THE DIFFICULTY OF PLACING LARGER MATERIAL AFTER THE STRUCTURE IS FULLY ASSEMBLED, i.e. FILLING EACH SECTION AS IT IS PLACED.
6. INSTALLATION AND PAYMENT OF THE BED MATERIAL INSIDE OF, AS WELL AS UPSTREAM AND DOWNSTREAM OF THE BOX CULVERT WILL BE MADE UNDER ITEM 900.608 "SPECIAL PROVISION (STONE FILL, STREAM BED MATERIAL) (TYPE III)"

CONCRETE NOTES

1. DESIGN CRITERIA:
 - A. GRANULAR BACKFILL FOR STRUCTURES SOIL UNIT WEIGHT = 140 LB/CF
 - B. DESIGN LIVE LOAD = HL-93
 - C. ALLOWABLE WINGWALL BEARING PRESSURE = 3 KSF
 - D. MINIMUM CLEAR DIMENSIONS TWO INCHES.
2. ITEM 514.10, "WATER REPELLENT, SILANE" SHALL BE APPLIED TO ALL EXPOSED SURFACES OF THE WINGWALLS AND HEADWALLS. WATER REPELLENT, SILANE SHALL BE APPLIED TO THE EXPOSED INSIDE SURFACE OF THE BOX STARTING AT THE OPENING AT EACH END AND EXTENDING THREE FEET INTO THE BOX, INCLUDING THE BOTTOM SURFACE AND TOP OF THE BOX.
3. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ONE INCH BY ONE INCH.
4. ALL COMPONENTS OF THE BOX CULVERT SHALL BE PRECAST, INCLUDING CULVERT SECTIONS, HEADWALLS, WINGWALLS, AND CUT-OFF WALLS. THE DESIGN OF THE CULVERT AND ALL PRECAST COMPONENTS SHALL BE THE RESPONSIBILITY OF THE FABRICATOR. DESIGN SHALL CONFORM TO ALL APPLICABLE SECTIONS REFERRED TO IN GENERAL NOTE 1. PAYMENT FOR DESIGN, FABRICATION, AND INSTALLATION OF THE PRECAST COMPONENTS WILL BE MADE UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (14'-0" X 8'-0" X 56'-0" BOX)".
5. THE JOINTS OF EACH BOX SECTION SHALL HAVE A SELF STICKING GASKET TO BE APPROVED BY THE ENGINEER. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 540.10, "PRECAST CONCRETE STRUCTURE (15'-0" X 8'-0" X 56'-0" BOX)". THE EXTERIOR (TOP AND SIDES) OF ALL CONCRETE BOX JOINTS ALONG WITH ALL LIFTING HOLES SHALL BE FILLED WITH MORTAR TYPE IV AFTER BEING SET IN THEIR FINAL POSITION. MORTAR TYPE IV SHALL BE FROM THE AGENCY'S APPROVED PRODUCT LIST. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 540.10, "PRECAST CONCRETE STRUCTURE (14'-0" X 8'-0" X 56'-0" BOX)".
6. A TWO FOOT WIDE STRIP OF MEMBRANE WATERPROOFING SHALL BE APPLIED AT EACH BOX SIDE JOINT AND ENTIRE TOP SURFACE OF BOX. MEMBRANE SHALL BE CENTERED ON THE JOINT AND COVER THE FULL HEIGHT OF THE SIDES. THE SIDES SHALL BE COVERED FIRST AND THE TOP WILL FOLLOW. ANY OVERLAPPING OF MEMBRANE SHALL BE DONE IN A SHINGLE TYPE STYLE TO SHED WATER AND SHALL OVERLAP A MINIMUM OF ONE FOOT. MEMBRANE SHALL BE A PREFORMED SHEET FROM THE AGENCY'S APPROVED PRODUCT LIST. PAYMENT FOR MEMBRANE WILL BE CONSIDERED INCIDENTAL TO ITEM 540.10, "PRECAST CONCRETE STRUCTURE (14'-0" X 8'-0" X 56'-0" BOX)".
7. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE BOX CULVERT AND PRECAST COMPONENTS IN ACCORDANCE WITH SUBSECTION 105.03 OF THE SPECIFICATIONS.
8. THE BOX CULVERT TYPICAL SECTIONS AND DETAILS ARE FOR SCHEMATIC PURPOSES ONLY, THE ACTUAL SHAPE OF THE BOX CULVERT AND COMPONENTS WILL BE DEPENDENT UPON THE FABRICATOR.

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