

PRECAST CONCRETE BOX NOTES

DESIGN CRITERIA:

1.
 - A. SOIL UNIT WEIGHT = 140 PCF
 - B. DESIGN LIVE LOAD = HL-93
 - C. REINFORCING STEEL GRADE = 60 KSI
 - D. CONCRETE, HIGH PERFORMANCE CLASS A f_c : 4000
CONCRETE, HIGH PERFORMANCE CLASS B f_c : 3500
 - E. MAX. WINGWALL FOOTING PRESSURE = 4 KSF
 - F. FACTOR OF SAFETY FOR SLIDING \geq 2.0
 - G. FACTOR OF SAFETY FOR OVERTURNING \geq 1.5
 - H. DESIGN FILL OVER BOX = 11.7 FT
2. ALL CONCRETE SHALL BE PRECAST. PRECAST BOX STRUCTURE SHALL MEET THE REQUIREMENTS OF 2011 STANDARD SPECIFICATION FOR CONSTRUCTION SECTION 540 - PRECAST CONCRETE. ITEM 540.10 PRECAST CONCRETE STRUCTURE INCLUDES ALL BOX SEGMENTS, HEADWALLS, WINGWALLS, AND MEMBRANE WATERPROOFING, AND WATER REPELLENT. ALL CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR AND SHALL BE CONSIDERED INCIDENTAL TO ITEM 540.10. WORKING DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH SUBSECTION 105.03
3. THE PRECAST BOX SECTIONS ARE SHOWN FOR REFERENCE ONLY. THE ACTUAL DIMENSIONS AND SHAPE WILL BE DEPENDENT ON THE FABRICATOR. ALL UNITS EXCEPT THE FIRST AND LAST WILL BE THE SAME SHAPE AND THE SAME LENGTH. THE INSIDE DIMENSIONS SHALL BE 7'-0" RISE AND 12'-0" SPAN. THE OVERALL LENGTH OF THE BOX SHALL BE 80'-0" ALONG THE DEPICTED VERTICAL ALIGNMENT.
4. 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. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 540.10.
5. A TWO (2) FOOT WIDE STRIP OF SHEET MEMBRANE WATERPROOFING SHALL BE APPLIED TO THE SIDES AT EACH BOX JOINT, AND TO THE ENTIRE TOP OF THE BOX CULVERT. MEMBRANE SHALL BE CENTERED ON THE JOINT AND COVER THE FULL WIDTH OF THE TOP AND 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. PAYMENT FOR THE SHEET MEMBRANE SHALL BE CONSIDERED INCIDENTAL TO ITEM 540.10 PRECAST CONCRETE STRUCTURE.
6. THE STRUCTURE WILL BE INSTALLED AT A GRADE OF 5.2490%.
7. WATER REPELLENT, SILANE SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 514 AND 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 3 FEET INTO THE BOX, INCLUDING THE BOTTOM SURFACE OF THE TOP OF THE BOX.
8. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:
SPACING +/- 1"
CLEARANCE +/- 1/4"
9. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1".
10. THE PROPOSED BOX CULVERT SHALL BE INSTALLED IN DRY CONDITIONS, ANY USE OF A DIVERSION PIPE OR BYPASS PUMPING TO ACHIEVE THESE CONDITIONS SHALL BE PAID UNDER ITEM 900.645 SPECIAL PROVISION (TEMPORARY RELOCATION OF STREAM).

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PRECAST CONCRETE BOX NOTES	SHEET 3 OF 35