

CULVERT GENERAL NOTES:

1. REFERENCE STANDARDS:
AASHTO "LRFD BRIDGE DESIGN SPECIFICATIONS"
ASTM C1577
2. DESIGN PARAMETERS:
LIVE LOAD: HL-93
EARTH COVER: 2.0' TO 2.5'
CONCRETE: DESIGN STRENGTH F'C = 5000 PSI
STRIPPING STRENGTH F'C = 2500 PSI
UNIT WEIGHT = 150 PCF
REINFORCING: CULVERT, WINGWALLS & FOOTINGS - XM-28 (STAINLESS),
ASTM A955, UNS24100 (VTAOT LEVEL III), EXCEPT
MECHANICAL SPLICERS SHALL BE LEVEL 1 EPOXY COATED)
SOIL UNIT WEIGHT = 140 PCF
MINIMUM LATERAL PRESSURE COEFFICIENT .25
MAXIMUM LATERAL PRESSURE COEFFICIENT .50
COVER TO REINFORCING: 2" U.N.O.
3. DIMENSIONS INCLUDE A JOINT CREEP. OVERALL CULVERT LENGTH WILL VARY SLIGHTLY DEPENDING ON INSTALLATION.
4. NO DAMPPROOFING OR WATERPROOFING SUPPLIED BY CSI. ALL MEMBRANE WATERPROOFING SUPPLIED AND FIELD APPLIED BY OTHERS. (SEE NOTE #8)
5. DBS ARE DOWEL BAR SPLICERS AND DI ARE DOWEL INS. BOTH ARE SUPPLIED BY CSI.
6. HEADWALLS ARE NOT DESIGNED FOR IMPACT LOAD.
7. END SECTIONS TO BE SET PLUMB AND VERTICAL.
8. WATER REPELLENT, SILANE SHALL BE SHOP APPLIED TO ALL EXPOSED EXTERIOR SURFACES OF PRECAST CONCRETE STRUCTURE INCLUDING HEADWALLS, CUTOFF WALLS AND INSIDE OF CULVERT SURFACES.
9. CURING PROCEDURE (APPLIES TO ALL PIECES):
 - 9.a. COVER UNIT IN MOLD AFTER FINISHING FOR 16 HOURS. CURE CYLINDERS WITH PIECE.
 - 9.b. ONCE CYLINDER BREAK INDICATES STRENGTH IS 2500 PSI OR GREATER, REMOVE PIECE FROM MOLD.
 - 9.c. STORE INDOORS (OR OUTDOORS IF TEMPERATURE IS ABOVE 50°F) UNTIL DESIGN STRENGTH IS REACHED.
 - 9.d. USE CURING COMPOUND IF BELOW DESIGN STRENGTH.
 - 9.e. REMOVE CURING COMPOUND PRIOR TO APPLICATION OF SILANE.
10. FORMLINER ON CULVERT INTERIOR FLOOR (TOP OF BASE SLAB) TO BE PER CUSTOM AS PER DETAIL 1 ON SHEET 4.

WINGWALL GENERAL NOTES:

1. REFERENCE STANDARD:
AASHTO LRFD SPECIFICATIONS
2. DESIGN PARAMETERS:
ASSUMED SOIL ALLOWABLE BEARING PRESSURE = 4 KSF
(ENGINEER TO VERIFY)
CONCRETE: DESIGN STRENGTH F'C = 5000 PSI
UNIT WEIGHT = 150 PCF
REINFORCING: XM-28 (STAINLESS),
ASTM A955, UNS24100 (VTAOT LEVEL III), EXCEPT
MECHANICAL SPLICERS SHALL BE LEVEL 1 EPOXY COATED
SOIL UNIT WEIGHT = 140 PCF
MINIMUM LATERAL PRESSURE COEFFICIENT .25
MAXIMUM LATERAL PRESSURE COEFFICIENT .50
COVER TO REINFORCING: 2" U.N.O.
3. THE WINGWALLS HAVE BEEN DESIGNED FOR GENERAL SITE CONDITIONS. THE PROJECT ENGINEER SHALL BE RESPONSIBLE FOR THE STRUCTURE'S SUITABILITY TO THE EXISTING SITE CONDITIONS AND FOR THE HYDRAULIC EVALUATION, INCLUDING SCOUR AND CONFIRMATION OF SOIL CONDITIONS.
4. PRIOR TO CONSTRUCTION, CONTRACTOR MUST VERIFY ALL ELEVATIONS SHOWN THROUGH THE ENGINEER.
5. WATER REPELLENT, CERTI-VEX PENSEAL 244-40% AIM SHALL BE SHOP APPLIED TO ALL EXPOSED EXTERIOR SURFACES OF PRECAST WINGWALLS.
6. ALL VOIDS LEFT IN PLACE TO BE FILLED WITH NON-SHRINK GROUT.

MEMBRANE WATERPROOFING, STRIP FILTER FABRIC, REINFORCING STEEL, DOWEL BARS, GROUT, HARDWARE, ETC. THAT IS USED OR APPLIED EITHER BY THE FABRICATOR AT THE SHOP OR BY OTHERS IN THE FIELD RELATING TO THE CATTLE PASS WILL BE INCIDENTAL TO ITEM 540.10 (SEE PROJECT PLANS GENERAL NOTES 21 AND 29). THE EXCEPTION WILL BE WATER REPELLENT SILANCE WHICH WILL BE UNDER ITEM 514.10.

ALL PERMANENT HARDWARE AND ATTACHMENTS THAT ARE NOT REMOVED FROM THE ELEMENTS SHOULD BE GALVANIZED AND MEET BUY AMERICA REQUIREMENTS.

ALL EXPOSED EDGES OF CONCRETE TO RECEIVE 1" CHAMFER.

5			
4	12/13/17	NO CHANGES TO THIS SHEET	BSS
3	12/01/17	ADD GENERAL NOTES PER CUSTOMER	BSS
2	11/02/17	REV CURING PROCEDURE NOTES/ADD WW NOTE 6.	BSS
1	08/17/17	REV PER CUSTOMER REVIEW	BSS
Rev.	Date	DESCRIPTION	By
REVISIONS			

CONCRETE SYSTEMS INC.
9 Commercial Street
Hudson, New Hampshire 03051
(800) 342-3374 (603) 889-4163
FAX (603) 889-0039 www.csigroup.com

Drawn By B. SKELTON	Date 07/10/2017	B	CULVERT & WINGWALL GENERAL NOTES	REV 4
Reviewed By B.K./M.S.	Date 07/17/2017			
Approved By B. SKELTON	Date 01/03/2018		Proj. No: STP HES 030-2(28)	SHEET 2