

GENERAL NOTES

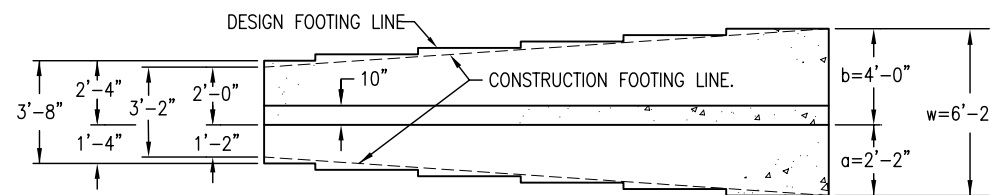
- ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4 IN.
- WINGWALL FOOTINGS AND FLOOR OF BOX CULVERT SHALL BE PLACED MONOLITHICALLY.
- DIMENSIONS "h", "B₀", "RISE", "k", "L", "m" AND ANGLES FOR WINGWALLS SHALL BE AS SHOWN ON THE PLANS.
- REINFORCING STEEL SHALL BE GRADE 60.
- THE MINIMUM SPLICE LENGTH FOR COMMON BAR SIZES SHALL BE:

BAR	#4	#5	#6
SPLICE LENGTH	1'-3"	1'-7"	2'-0"

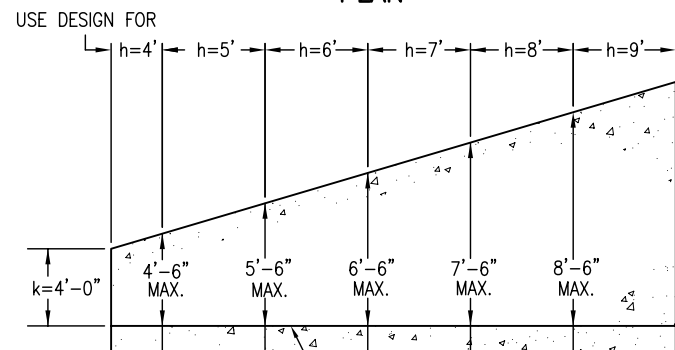
	1'-6"	1'-6"	1'-6"	1'-6"	1'-6"	1'-4"	1'-3"	11'	9"	7"
e =	1'-6"	1'-6"	1'-6"	1'-6"	1'-6"	1'-4"	1'-3"	11'	9"	7"
h =	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'
a =	1'-0"	1'-2"	1'-4"	1'-6"	1'-8"	1'-10"	2'-0"	2'-2"	2'-4"	2'-6"
b =	1'-8"	2'-0"	2'-4"	2'-8"	3'-0"	3'-4"	3'-8"	4'-0"	4'-4"	4'-8"
w =	2'-8"	3'-2"	3'-8"	4'-2"	4'-8"	5'-2"	5'-8"	6'-2"	6'-8"	7'-2"
c & d BARS	#4@1'-6"	#4@1'-6"	#4@1'-6"	#4@1'-6"	#4@1'-6"	#4@1'-4"	#5@1'-3"	#5@1'-3"	#6@9"	#6@7"
* CONC. CU. YD./L.F.	0.161	0.210	0.259	0.308	0.358	0.407	0.457	0.506	0.556	0.604
* REINF. LB./L.F.	8.0	9.3	10.7	12.1	14.3	16.4	23.0	28.6	41.8	54.6

* DOES NOT INCLUDE TOE WALL QUANTITIES

DESIGN TABLE

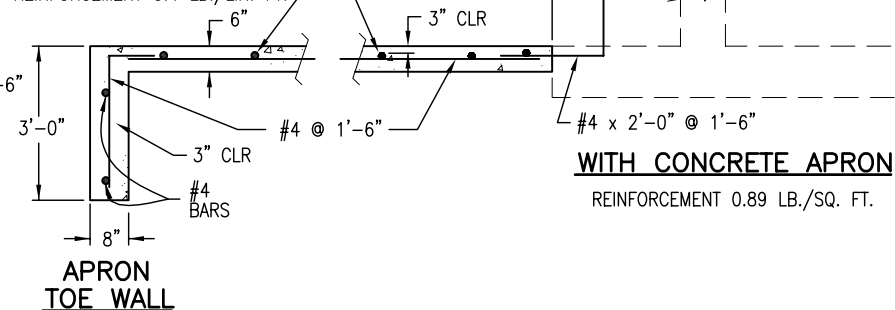


PLAN

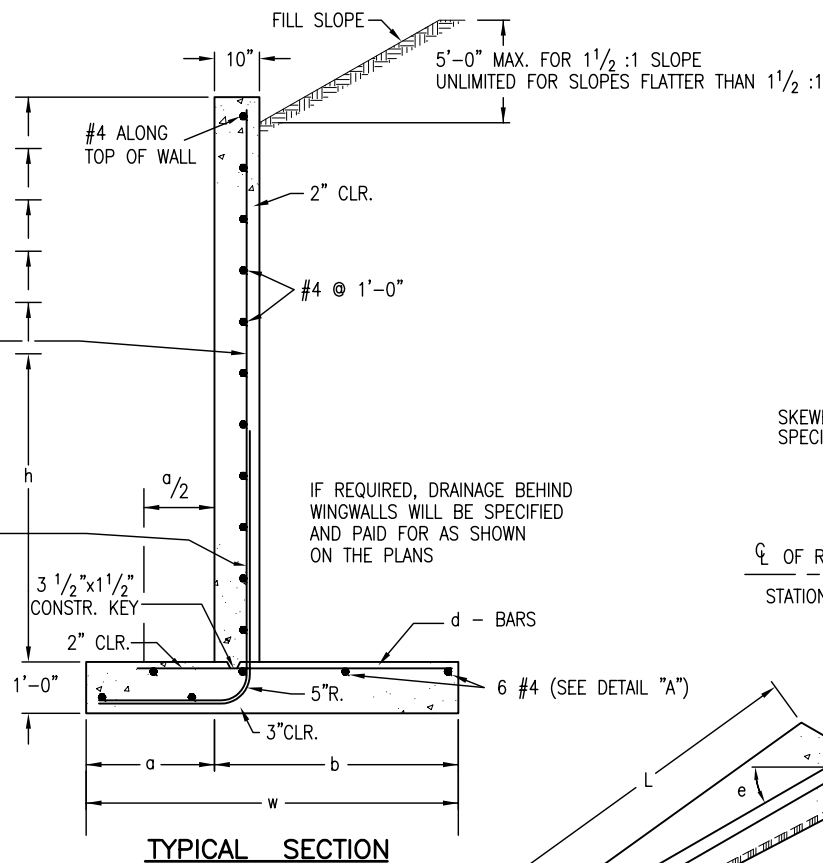


DESIGN EXAMPLE

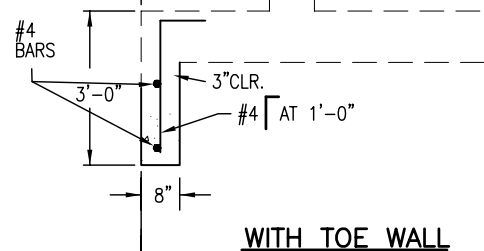
QUANTITIES FOR TOE WALL ONLY
CONCRETE 0.049 CU. YD./LIN. FT.
REINFORCEMENT 3.4 LB./LIN. FT.



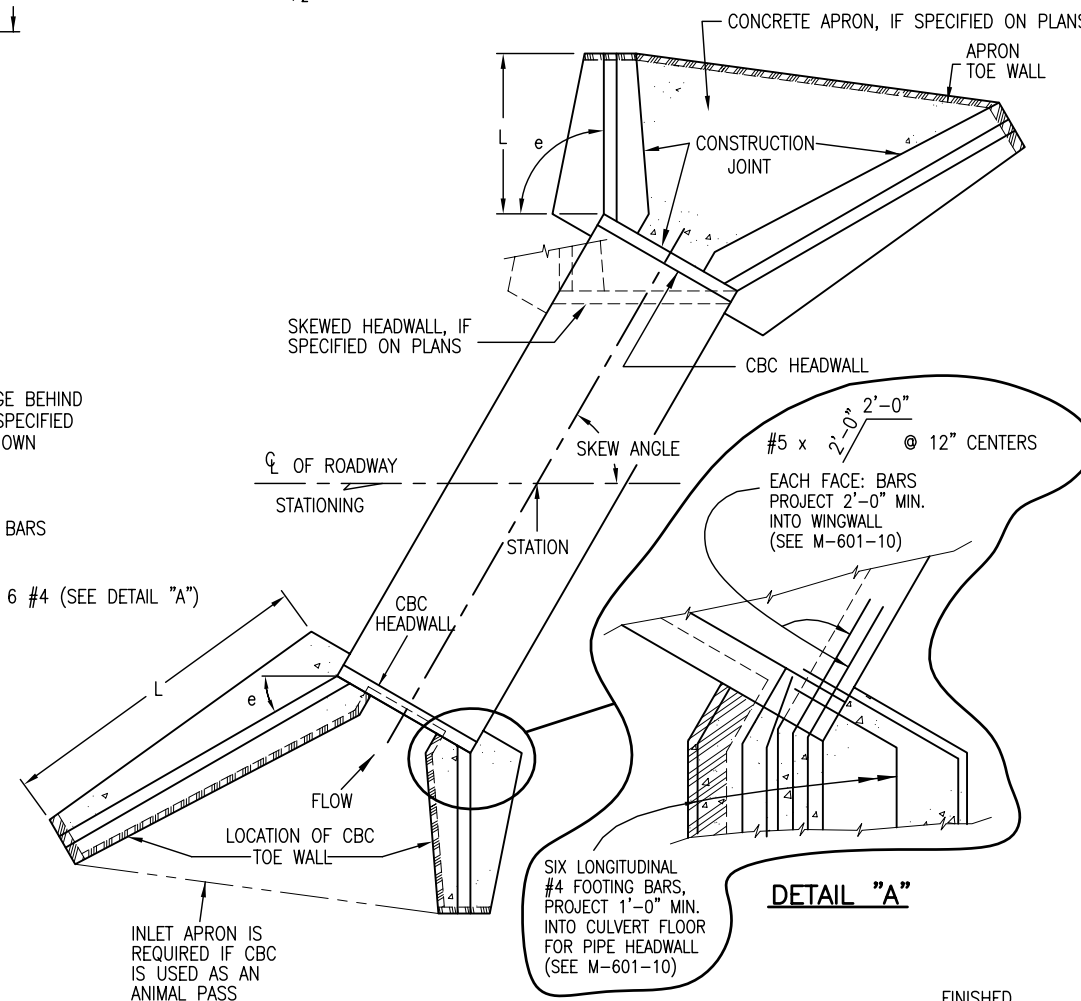
WITH CONCRETE APRON
REINFORCEMENT 0.89 LB./SQ. FT.



TYPICAL SECTION



WITH TOE WALL



TYPICAL CULVERT LAYOUT

DESIGN DATA:

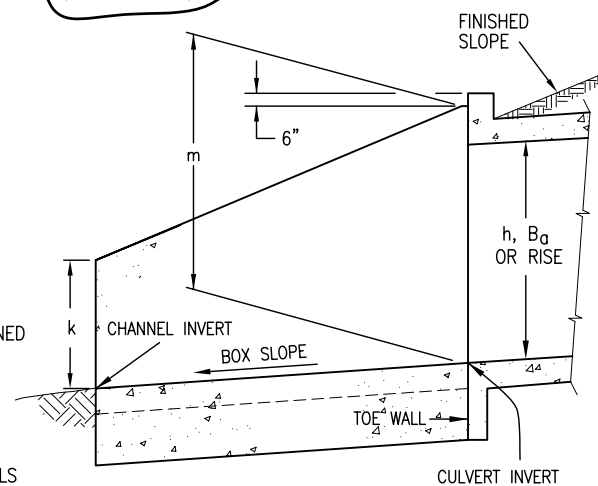
UNIT STRESSES: $f_s = 24,000$ PSI
 $f_c = 1,200$ PSI
 $n = 9$

EQUIVALENT FLUID PRESSURE = 36 LBS./CU. FT.
MAXIMUM TOE PRESSURE = 1 TON/SQ. FT.

ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE CONCRETE IS POURED.

WINGWALL AND APRON CONCRETE SHALL BE:
CONCRETE CLASS B, OR D (BOX CULVERT) FOR CBC'S.
CONCRETE CLASS B, OR D (WALL) FOR PIPES.

LIVE LOAD SURCHARGE HAS NOT BEEN CONSIDERED. WALLS WITHIN 1/2 OF THE EDGE OF THE ROADWAY SHOULDER WILL REQUIRE A SPECIAL DESIGN IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.



BOX ELEVATION

$m = h, B_0 \text{ OR RISE} + (1'-4")$
UNLESS OTHERWISE SHOWN ON PLANS

Computer File Information

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Last Modification Date: 07/04/06	Initials: LTA
Full Path: www.dot.state.co.us/DesignSupport/	
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CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

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Sheet Revisions

Date:	Comments:

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Project Development Branch SRJ/LTA

WINGWALLS FOR PIPE OR BOX CULVERTS

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STANDARD PLAN NO.

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