Span, S			12′												14′												16′											
Wall Height, H			6′		8′		10′		12′		14′		15′		6′		8′		10′		12′		14′		15′		6′		8′		10′		12′		14′		15′	
Max Earth Cover			10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′
Concrete	Roof T1		11"	1′-2"	1′-0"	1′-3"	1′-3"	1′-5"	1′-6"	1′-8"	2′-1"	2′-1"	2′-3"	2′-3"	11"	1′-3"	1′-1"	1′-4"	1′-3"	1′-5"	1′-6"	1′-8"	1′-10"	2′-0"	1′-11"	2′-4"	1′-2"	1′-4"	1′-3"	1′-5"	1′-4"	1′-6"	1′-7"	1′-9"	1′-10"	2′-0"	2′-0"	2′-2"
Concrete	Walls T2		11"	1′-2"	1′-0"	1′-3"	1′-3"	1′-5"	1′-6"	1′-8"	1′-9"	2′-0"	1′-11"	2′-2"	11"	1′-2"	1′-0"	1′-4"	1′-3"	1′-5"	1′-6"	1′-8"	1′-10"	2′-0"	2′-0"	2′-3"	11"	1′-3"	1′-1"	1′-3"	1′-3"	1′-5"	1′-7"	1′-9"	1′-10"	2′-1"	2′-1"	2′-3"
Reinforcement	Spacing		12"	10"	12"	9"	12"	9"	11"	9"	10"	9"	9"	8"	10"	9"	10"	8"	10"	8"	10"	8"	10"	8"	9"	8"	10"	9"	10"	9"	10"	8"	10"	8"	10"	8"	10"	8"
Reinforcement	"a"	Bar size	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9
Reinforcement	"b"	Bar size	#6	#6	#6	#6	#7	#6	#9	#8	#10	10	#10	#10	#6	#7	#6	#6	#6	#7	#8	#8	#10	#8	#10	#9	#6	#8	#6	#8	#6	#8	#7	#8	#9	#8	#9	#9
Reinforcement	"b"	"Bw" - Cut-off Length	Full Height																																			
Reinforcement	"c"	Bar size	#6	#6	#6	#6	#6	#6	#7	#7	#7	#7	#7	#7	#6	#7	#6	#7	#6	#7	#7	#7	#8	#8	#8	#8	#6	#8	#6	#8	#6	#8	#7	#8	#8	#8	#8	#8
Reinforcement	"c"	"C" - Cut-off Length	2′-0"	2′-0"	2′-0"	2′-0"	2′-0"	2′-6"	2′-6"	2′-9"	2′-6"	3′-0"	2′-6"	3′-3"	2′-0"	2′-6"	2′-0"	2′-6"	2′-0"	3′-0"	2′-6"	3′-3"	2′-9"	4′-6"	3′-0"	4′-6"	2′-0"	2′-0"	2′-0"	2′-0"	2′-0"	3′-3"	2′-6"	3′-6"	2′-9"	3′-9"	3′-0"	4′-0"
Reinforcement	"d"	Bar size	#6	#6	#6	#6	#6	#6	#7	#7	#8	#8	#8	#8	#6	#6	#6	#6	#6	#6	#7	#7	#8	#8	#8	#8	#6	#6	#6	#6	#6	#6	#7	#7	#8	#8	#8	#8
Reinforcement	"e"	Bar size	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4
Quantities	Concrete CF/LF		24.7	31.7	31.0	39.1	44.1	50.3	59.5	66.6	82.3	90.3	94.1	102.8	26.5	35.4	34.3	44.6	46.6	53.2	62.5	69.9	84.7	93.0	95.5	106.6	32.8	40.7	41.0	47.2	50.7	57.6	69.3	77.1	88.4	99.7	103.8	112.9
Quantities	Reinforcement lb/LF		220	264	252	328	307	374	484	547	694	773	807	912	275	312	313	411	354	467	512	638	743	819	863	921	298	448	336	499	374	618	504	745	715	885	833	990

Span, S			18′												20′											
Wall Height, H			6′		8′		10′		12′		14′		15′		6′		8′		10′		12′		14′		15′	
Max Earth Cover			10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′	10′	20′
Concrete	Roof T1		1′-4"	1′-6"	1′-4"	1′-7"	1′-5"	1′-8"	1′-7"	1′-9"	1′-11"	2′-1"	2′-1"	2′-3"	1′-6"	1′-8"	1′-6"	1′-9"	1′-7"	1′-10"	1′-9"	2′-2"	2′-0"	2′-2"	2′-1"	2′-4"
Concrete	Walls T2		11"	1′-3"	1′-0"	1′-3"	1′-4"	1′-6"	1′-7"	1′-8"	1′-9"	2′-2"	2′-1"	2′-4"	11"	1′-4"	1′-0"	1′-6"	1′-2"	1′-7"	1′-7"	1′-9"	1′-11"	2′-2"	2′-2"	2′-4"
Reinforcement	Spacing		11"	9"	11"	9"	11"	8"	11"	8"	11"	8"	11"	8"	11"	9"	11"	8"	11"	8"	11"	8"	11"	8"	11"	8"
Reinforcement	"a"	Bar size	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9	#8	#9
Reinforcement	"b"	Bar size	#7	#8	#7	#8	#7	#8	#7	#8	#8	#8	#9	#9	#7	#8	#8	#8	#8	#8	#8	#8	#8	#8	#9	#9
Reinforcement	"b"	"Bw" - Cut-off Length	Full Height																							
Reinforcement	"c"	Bar size	#7	#7	#7	#8	#7	#7	#7	#8	#7	#7	#8	#8	#7	#8	#7	#7	#7	#7	#7	#7	#7	#7	#8	#8
Reinforcement	"c"	"C" - Cut-off Length	2′-0"	3′-0"	2′-0"	3′-3"	2′-0"	3′-6"	2′-6"	3′-9"	3′-9"	4′-3"	4′-3"	4′-3"	2′-0"	3′-6"	2′-0"	3′-9"	2′-0"	4′-0"	2′-6"	4′-3"	3′-0"	4′-6"	3′-6"	4′-6"
Reinforcement	"d"	Bar size	#6	#6	#6	#6	#6	#6	#7	#7	#8	#8	#8	#8	#6	#6	#6	#6	#6	#6	#7	#7	#8	#8	#8	#8
Reinforcement	"e"	Bar size	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4
Quantities	Concrete CF/LF		38.4	46.8	43.7	53.5	56.9	66.0	72.5	78.3	96.5	108.2	109.7	119.1	44.8	54.8	50.0	65.3	60.0	75.1	79.5	93.9	102.3	114.4	116.7	122.8
Quantities	Reinforcement lb/LF		325	469	394	568	438	639	516	743	653	827	760	1028	346	583	446	622	490	679	574	791	675	922	783	1069

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

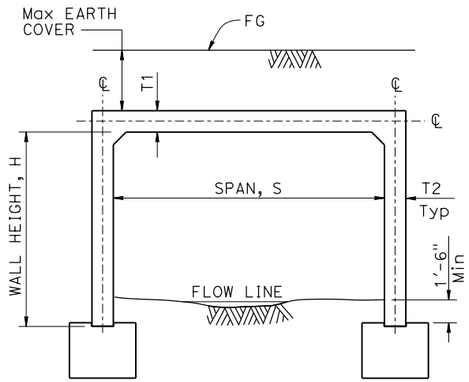
REGISTERED CIVIL ENGINEER — DATE X

PLANS APPROVAL DATE

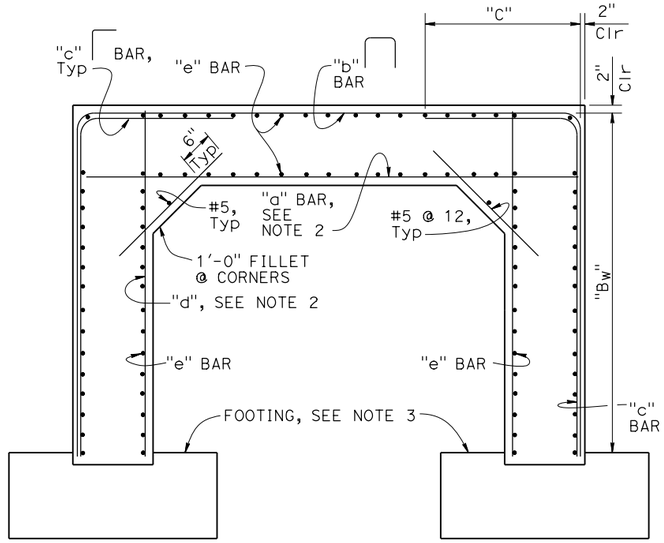
REGISTERED PROFESSIONAL ENGINEER — No. X — Exp. X — CIVIL — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

THE REGISTERED CIVIL ENGINEER FOR THE PROJECT IS RESPONSIBLE FOR THE SELECTION AND PROPER APPLICATION OF THE COMPONENT DESIGN AND ANY MODIFICATIONS SHOWN.



BOTTOMLESS CULVERT



NOTES:

1. For height less than that shown in table, use next greater table height slab, wall dimensions, and reinforcing steel. Make necessary changes in bar lengths, number of spacers, and quantities.
2. The "a" and "d" bars are at half spacings.
3. For footing details not shown, see "CIP BOTTOMLESS CULVERT FOUNDATION DETAILS" sheet.
4. Quantities are approximate and for design purpose only.

TYPICAL REINFORCEMENT

NO SCALE

BRIDGE STANDARD DETAILS

xs17-052	September 2023	The components of the Bridge Standard Details have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California
FILE NO.	APPROVAL DATE	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. XX-XXXX
POST MILE X.X

CIP BOTTOMLESS CULVERT FOOTINGS ON SOIL

Refer to: http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheets/index.html

DATE PLOTTED => 1-SEP-2023 TIME PLOTTED => 15:32
FILE => 201605-xs17-052.dgn USERNAME => s136481
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: XXXX COUNTY/ROUTE/ZONE: XXX/XXX/X
PROJECT NUMBER & PHASE: XXXXXXXXXX1 CONTRACT No.: XX-XXXXX4

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES					SHEET	OF
					X	X