Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	8	109

REGISTERED CIVIL ENGINEER — 6-27-16 DATE

MARK GONZALEZ No. 73897 Exp. 6-30-17 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-27-16
PLANS APPROVAL DATE

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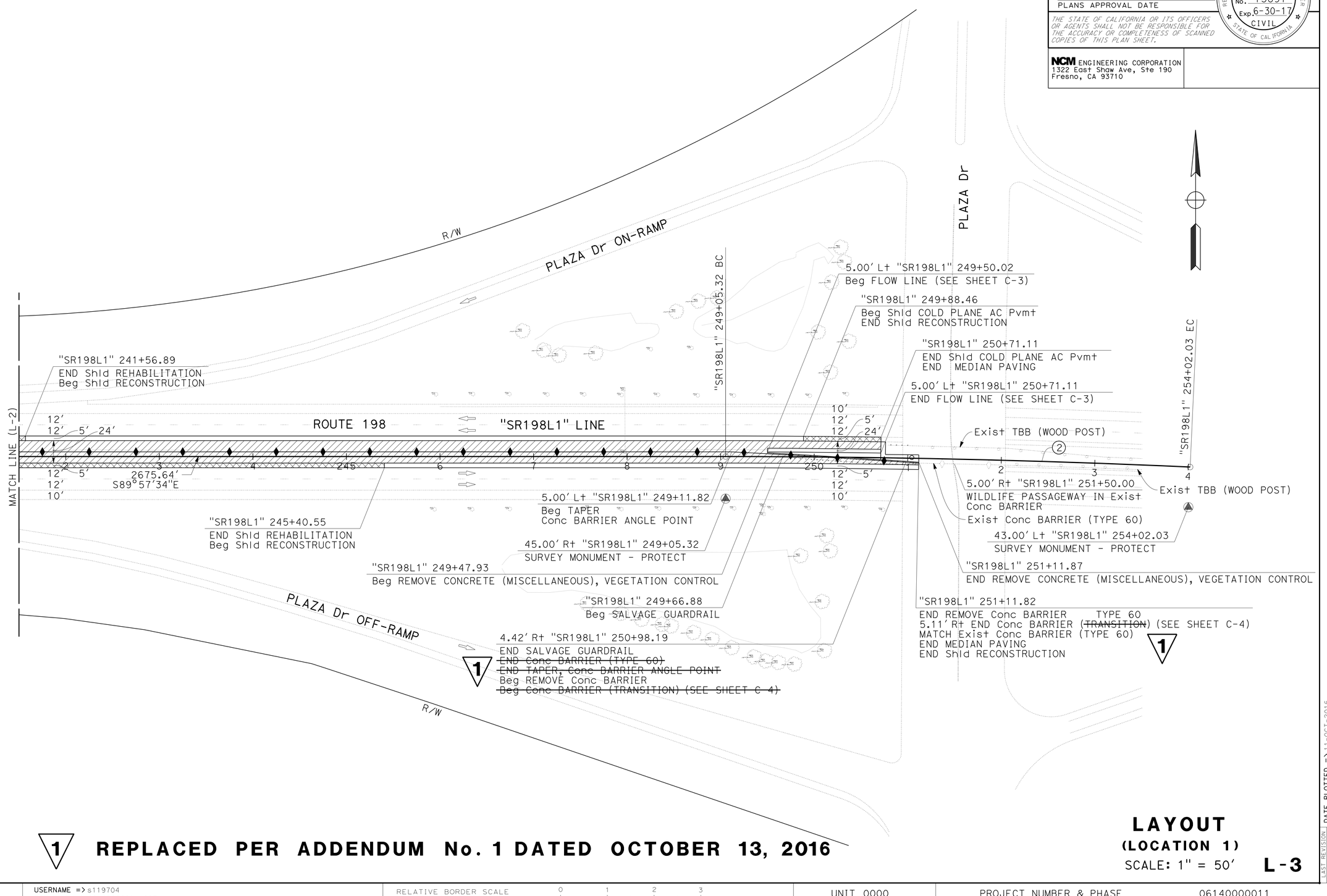
NCM ENGINEERING CORPORATION
1322 East Shaw Ave, Ste 190
Fresno, CA 93710

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

CURVE DATA

No.	R	Δ	T	L
(2)	11,000.00	2°35'14"	248.40	496.71



1 **REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016**

LAYOUT
(LOCATION 1)
SCALE: 1" = 50'

L-3

LAST REVISION: DATE PLOTTED => 11-OCT-2016
TIME PLOTTED => 6:34
06-27-16

REVISED BY | DATE REVISED
MARK GONZALEZ | ED NG
CALCULATED-DESIGNED BY | CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR: STEVE MISLINSKI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

BORDER LAST REVISED 7/2/2010 | USERNAME => s119704 | DGN FILE => 0614000001ea003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 06140000011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	9	109

REGISTERED CIVIL ENGINEER — DATE: 6-27-16

MARK GONZALEZ No. 73897 Exp. 6-30-17 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

PLANS APPROVAL DATE: 6-27-16

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NOTE:

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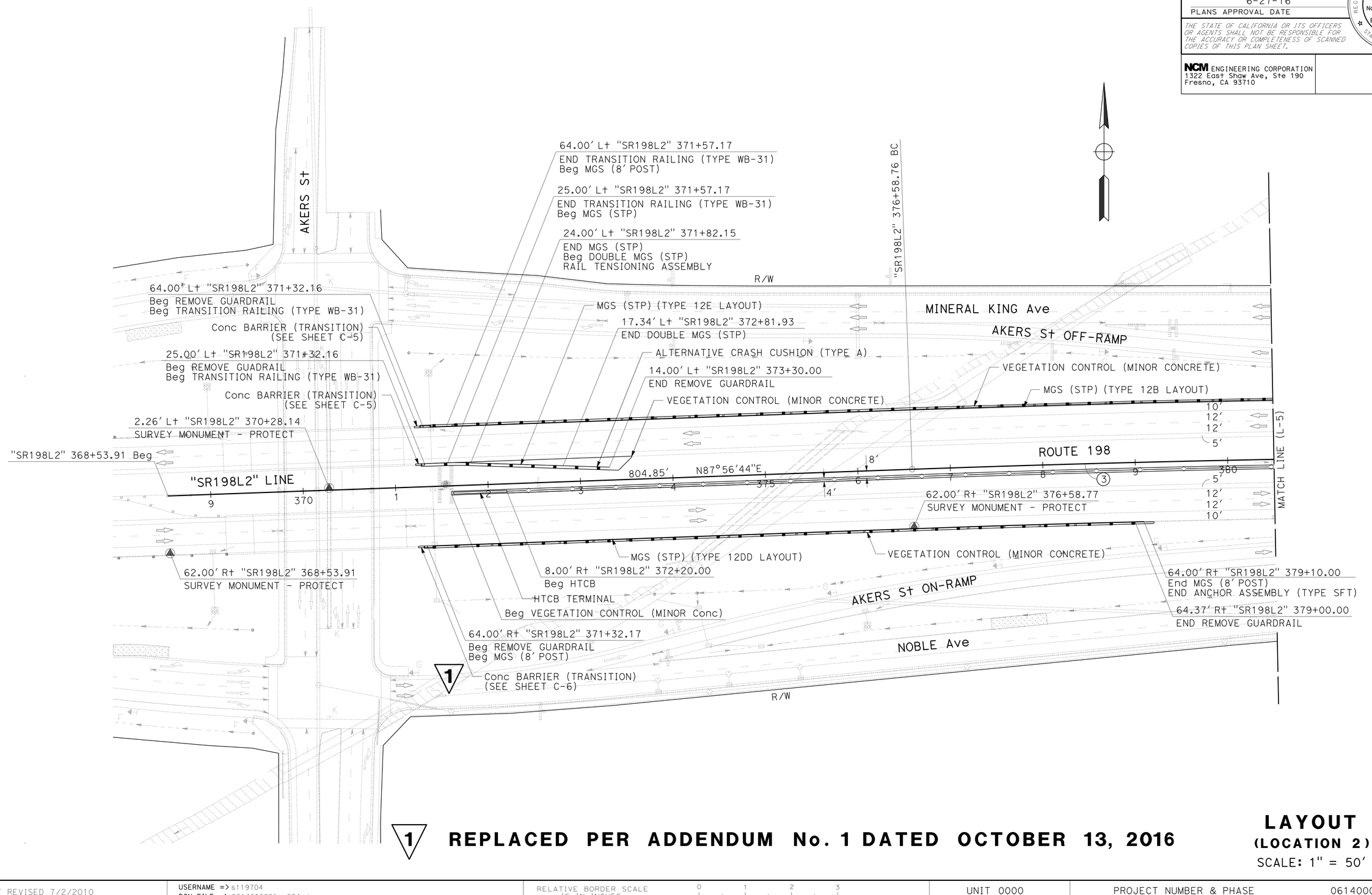
CURVE DATA

No.	R	Δ	T	L
③	23,000.00	2°0'20"	402.60	805.11



1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

LAYOUT
(LOCATION 2)

SCALE: 1" = 50'

L-4

CALCULATED-DESIGNED BY

CHECKED BY

MARK GONZALEZ — ED NG

REVISED BY — DATE REVISED

CONSULTANT FUNCTIONAL SUPERVISOR — STEVE MISLINSKI

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06-27-16

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USERNAME => s119704
DGN FILE => 0614000001ea004.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 06140000011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	47	109

REGISTERED CIVIL ENGINEER — DATE 6-27-16

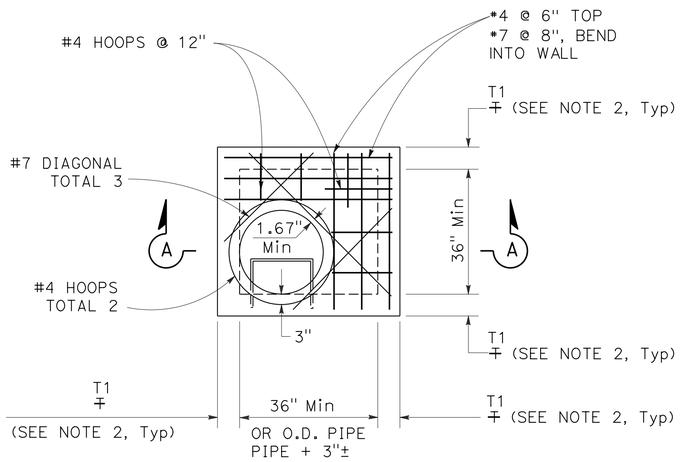
PLANS APPROVAL DATE 6-27-16

REGISTERED PROFESSIONAL ENGINEER — CHRISTOPHER SEWELL — No. 64807 — Exp 6/30/17 — CIVIL — STATE OF CALIFORNIA

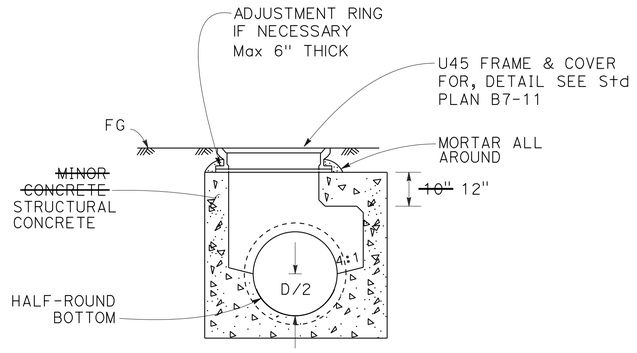
WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

NOTES:

1. FOR DETAILS NOT SHOWN, SEE Std PLAN ~~D73~~ RSP D73B - TYPE G2 INLET.
2. REFER TO ~~TABLE A ON Std PLAN D73~~ TABLE 1 ON Std PLAN RSP D73B FOR WALL THICKNESS.



PLAN

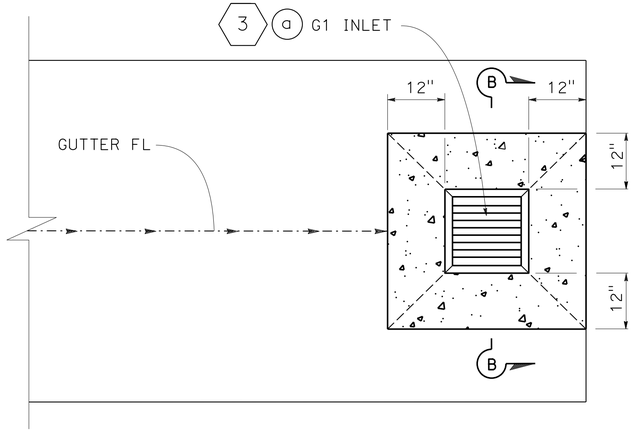


SECTION A-A

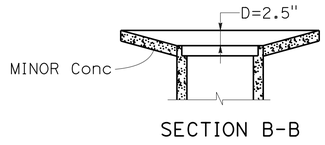
G2 MANHOLE

NO SCALE

3 c e



PLAN



SECTION B-B

GUTTER TRANSITION TO INLET

1 **REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016**

DRAINAGE DETAILS

NO SCALE

DD-2

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06-27-16

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CALCULATED-DESIGNED BY: RAJA PERIKETI
CHECKED BY: CHRISTOPHER SEWELL
REVISED BY / DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	48	109

6-27-16
REGISTERED CIVIL ENGINEER DATE

6-27-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER SEWELL
No. 64807
Exp. 6/30/17
CIVIL
STATE OF CALIFORNIA

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

DRAINAGE QUANTITIES

DRAINAGE SYSTEM No. ⬡	DRAINAGE UNIT ◯	ABANDON CULVERT LF	REMOVE CULVERT LF	JACKED 18" WELDED STEEL PIPE (0.5" THICK) LF	REINFORCED Conc PIPE 18" LF	CAP INLET EA	STRUCTURAL CONCRETE, DRAINAGE INLET ~~MINOR CONCRETE (MINOR STRUCTURE)~~ CY	MISCELLANEOUS IRON AND STEEL LB	INLET FRAME & GRATE (Type 24-12X) (N) EA	MANHOLE FRAME & GRATE (Type U45) (N) EA	HEIGHT OF INLET (N)	ROCK SLOPE PROTECTION (60 LB, CLASS II, METHOD B) CY	ROCK SLOPE PROTECTION FABRIC (CLASS 8) SQYD	18" Conc FES EA	SAND BACKFILL (N) CY	DESCRIPTION	STATION	DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No. ⬡	DRAINAGE UNIT ◯
1	a					1										CAP DI	5.23′ Lt "SR198L1" 233+97.71	D-2	1	a
	b		3.0													Remove 18" Culv (PORTION)	10.47′ Lt "SR198L1" 247+97.62 TO 13.07′ Lt "SR198L1" 247+97.62			b
	c						1.25~~1.31~~	239	1		2.11					G2 DI	11.77′ Lt "SR198L1" 247+97.62			c
2	a					1										CAP DI	5.04′ Lt "SR198L1" 247+97.62	D-3	2	a
	b	69.0													4.5	Abn 18" CULV	74.04′ Lt "SR198L1" 247+97.62			b
3	a						0.96	239	1		3.03					G1 DI	6.82′ Lt "SR198L1" 250+75.07		3	a
	b			58.0												JACKED 18" WSP	6.82′ Lt "SR198L1" 250+75.07 TO 66.82′ Lt "SR198L1" 250+69.00			b
	c						1.31~~1.37~~	435		1	3.24					G2 MH	66.82′ Lt "SR198L1" 250+69.00			c
	d				67.3											18" RCP	66.82′ Lt "SR198L1" 250+69.00 TO 67.00′ Lt "SR198L1" 249+97.00			d
	e						1.25~~1.31~~	435		1	2.58					G2 MH	67.00′ Lt "SR198L1" 249+97.00			e
	f				69.6											18" RCP	67.00′ Lt "SR198L1" 249+97.00 TO 134.45′ Lt "SR198L1" 249+72.78			f
	g													1		18" Conc FES	134.45′ Lt "SR198L1" 249+72.78			g
	h											3.5	15.1			RSP	134.45′ Lt "SR198L1" 249+72.78			h
TOTAL		69.0	3.0	58.0	136.9	2	4.77~~4.95~~	1,348				3.5	15.1	1		TOTAL				

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1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

DRAINAGE QUANTITIES
DQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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DATE REVISED

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06-27-16 | TIME PLOTTED => 16:34

BORDER LAST REVISED 7/2/2010 | USERNAME => s119704 | DGN FILE => 0614000001id001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 06140000011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	64	109

REGISTERED CIVIL ENGINEER — DATE: 6-27-16

6-27-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MARK GONZALEZ
No. 73897
Exp. 6-30-17
CIVIL
STATE OF CALIFORNIA

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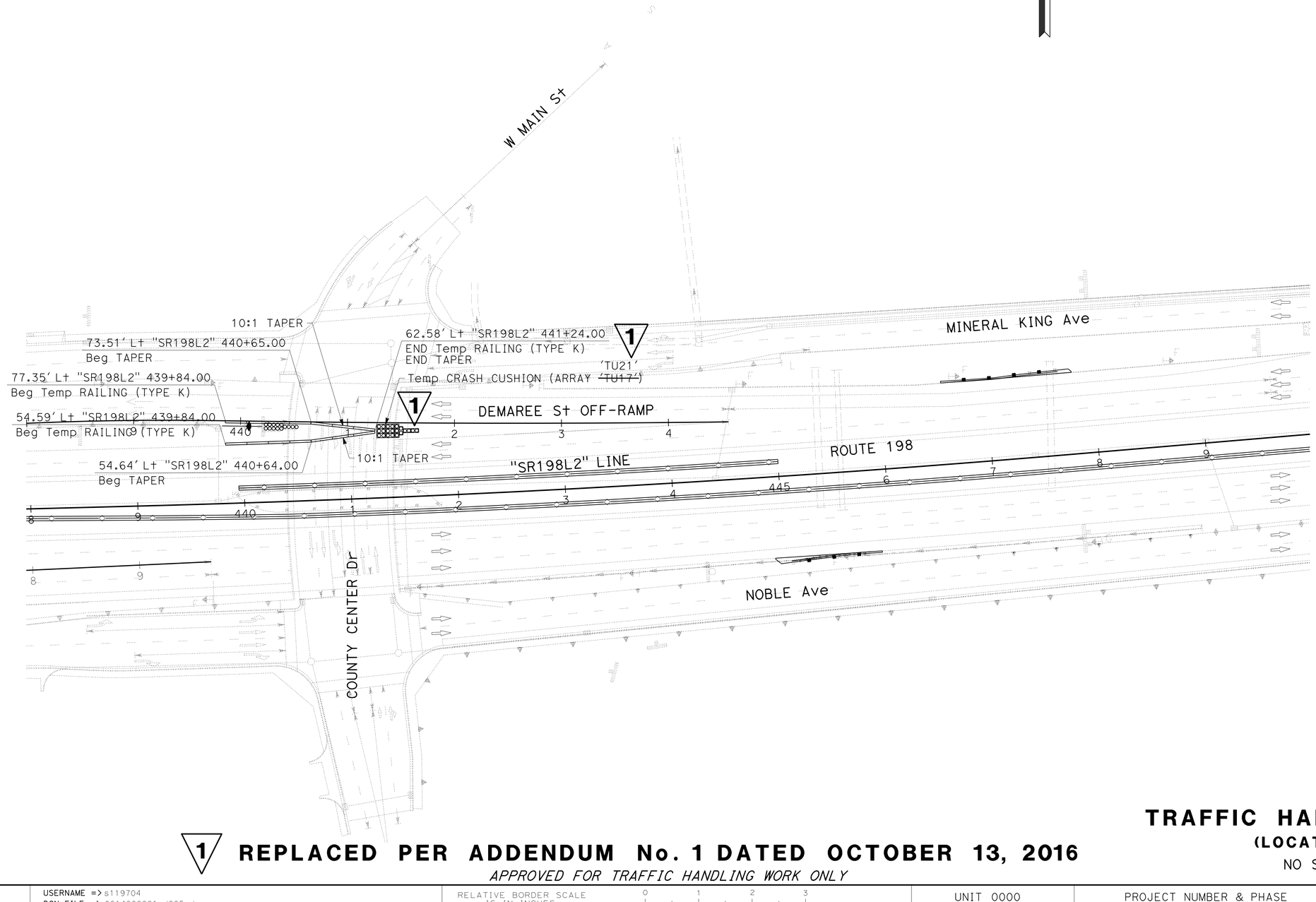

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING PLAN

(LOCATION 2)

NO SCALE

TH-5

	REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY: MARK GONZALEZ
CHECKED BY: ED NG
CONSULTANT FUNCTIONAL SUPERVISOR: STEVE MISLINSKI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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DGN FILE => 0614000001md005.dgn

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UNIT 0000

PROJECT NUMBER & PHASE 06140000011

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	65	109

REGISTERED CIVIL ENGINEER — DATE: 6-27-16

PLANS APPROVAL DATE: 6-27-16

REGISTERED PROFESSIONAL ENGINEER — MARK GONZALEZ — No. 73897 — Exp. 6-30-17 — CIVIL — STATE OF CALIFORNIA

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TRAFFIC HANDLING QUANTITIES

1

SHEET No.	STATION	TEMPORARY RAILING (TYPE K)	TEMPORARY CRASH CUSHION MODULE	TEMPORARY ALTERNATIVE CRASH CUSHION SYSTEM
		LF	EA	EA
TH-1	"SR198L1" Sta 223+79.00 TO Sta 227+58.00	380		
	"SR198L1" Sta 225+07.00 TO Sta 228+87.00	380		
TH-2	"SR198L1" Sta 232+23.00 TO Sta 236+43.00	420		
	"SR198L1" Sta 233+52.00 TO Sta 237+72.00	420		
TH-3	"SR198L1" Sta 249+12.00 TO Sta 251+91.00	280		
TH-4	"DMR4" Sta 426+66.00 TO Sta 427+47.00	80		1
	"DMR4" Sta 426+66.00 TO Sta 427+47.00	80		
TH-5	"SR198L2" Sta 439+84.00 TO Sta 441+24.00	140	~~17~~ 21	
	"SR198L2" Sta 439+84.00 TO Sta 441+24.00	140		
TOTAL		2320	~~17~~ 21	1

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

TRAFFIC HANDLING QUANTITIES

THQ-1

REVISED BY | DATE REVISED: MARK GONZALEZ | 06-27-16
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	74	109

REGISTERED CIVIL ENGINEER — 6-27-16 DATE

MARK GONZALEZ No. 73897 Exp. 6-30-17 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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MINOR CONCRETE (GUTTER)

STATION	MINOR CONCRETE (GUTTER)
	LF
Sta 249+50.00 TO Sta 250+71.11	121
TOTAL	121

DITCH EXCAVATION 1

STATION	DITCH EXCAVATION
	CY
Sta 393+50.00 TO Sta 394+50.00	~~2.58~~ 2.66
TOTAL	~~2.58~~ 2.66

TREE REMOVAL (N)

STATION	EA
Sta 224+40	1
Sta 229+40	1
Sta 237+40	1

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

IRRIGATION CONDUIT

SHEET No.	LOCATION	SIDE		PLASTIC PIPE (CLASS 315) (SUPPLY LINE)	SPRINKLER CONTROL CONDUIT (N)	CORRUGATED HIGH DENSITY POLYETHYLENE PIPE CONDUIT			
	STATION "LINE"	L↑	R↑	3"	2"	8"			
				LF	LF	LF			
IP-1	Sta 250+00 TO Sta 250+90	X		90	90	90			
SUBTOTAL				90	90	90			
TOTAL				*	90	90			

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* - QUANTITY INCLUDED IN IRRIGATION QUANTITIES, IQ-1

ROADWAY QUANTITIES 1 1

STATION	LOCATION	ROADWAY EXCAVATION	EMBANKMENT (N)	IMPORTED BORROW	HOT MIX ASPHALT (TYPE A)	TACK COAT	CLASS 2 AGGREGATE BASE	REMOVE ASPHALT CONCRETE DIKE	PLACE HOT MIX ASPHALT DIKE (TYPE C)
		CY	CY	CY	TON	TON	CY	LF	LF
Sta 219+03.55 TO Sta 251+11.82	1	761.53	970.74	209.20	~~2859.49~~ 2,842.43	~~2.42~~ 2.54	293		
Sta 382+87.50 TO Sta 383+05.18	2				0.11			17.86	17.86
TOTAL		761.53		209.20	~~2859.60~~ 2,842.54	~~2.42~~ 2.54	293	17.86	17.86

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

PAVEMENT DELINEATION

STATION	DIRECTION	DETAIL 25
		4" THERMOPLASTIC TRAFFIC STRIPE
		LF
Sta 219+03.55 TO Sta 251+11.82	EB	2,882
Sta 222+29.68 TO Sta 250+71.11	WB	3,089
TOTAL		5,971

CONCRETE BARRIER 1 1

STATION	LOCATION	REMOVE CONCRETE BARRIER	CONCRETE BARRIER (TRANSITION)	CONCRETE BARRIER (TYPE 60)	CONCRETE BARRIER (TYPE 60F)	CONCRETE BARRIER (TYPE 60P)	WILDLIFE PASSAGEWAY (TYPE S)	
		LF	LF	LF	LF	LF	SPACING	EA
Sta 219+84.26 TO Sta 225+50.31	1			~~567.86~~ 568.00			150′	4
Sta 225+50.31 TO Sta 227+15.20	1				164.89			
Sta 227+15.20 TO Sta 233+95.61	1			~~680.41~~ 680.00			150′	6
Sta 233+95.61 TO Sta 235+99.73	1				204.12			
Sta 235+99.73 TO Sta 251+11.82	1	13.77	~~13.77~~	~~1498.57~~ 1,512.00			150′	12
Sta 439+81.29 TO Sta 440+18.42	2	37.00	15.00	10.00		12.00		
FROM MGS QUANTITIES			72.00					
TOTAL		50.77	~~100.77~~ 87.00	~~2,756.84~~ 2,770.00	369.01	12.00		22

SIGN STRUCTURE QUANTITIES

SIGN TYPE	STATION	FURNISH SIGN STRUCTURE (TRUSS)	INSTALL SIGN STRUCTURE (TRUSS)	60" CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)
		LB	LB	LF
CMS MODEL 500	Sta 394+00.00	14,644	14,644	26
TOTAL		14,644	14,644	26

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

SUMMARY OF QUANTITIES

Q-1

REVISED BY | DATE REVISED
MARK GONZALEZ | ED NG
CALCULATED-DESIGNED BY | CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR | STEVE MISLINSKI
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	75	109

REGISTERED CIVIL ENGINEER — DATE 6-27-16

MARK GONZALEZ No. 73897 Exp. 6-30-17 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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CRASH CUSHION

PLAN SHEET No.	LOCATION	REMOVE CRASH CUSHION (SAND FILLED)	ALTERNATIVE CRASH CUSHION SYSTEM (TYPE A)	ALTERNATIVE CRASH CUSHION SYSTEM (TYPE B)
		EA	EA	EA
L-4	2		1	
L-8	2	1		1
L-9	2	1		1
TOTAL		2	1	2

ALTERNATIVE HIGH TENSION CABLE BARRIER

1

PLAN SHEET No.	STATION	ALTERNATIVE HIGH TENSION CABLE BARRIER	ALTERNATIVE HIGH TENSION CABLE BARRIER TERMINAL	VEGETATION CONTROL (MINOR CONCRETE)	
		LF	EA	SQYD	
L-4,5,6	"SR198L2" Sta 371+60.50 TO Sta 397+04.50	2,424.8	2	1,130.5	
L-6,7	"SR198L2" Sta 392+88.50 TO Sta 411+54.50	1,747.0	2	829.2	
L-7,8	"SR198L2" Sta 408+35.50 TO Sta 424+29.50	1,476.4	2	709.1	
L-8,9,10	"SR198L2" Sta 421+50.50 TO Sta 453+34.50	3,064.6	2	1,414.9	
L-9,10	"SR198L2" Sta 439+80.50 TO Sta 445+19.50	419.6	2	~~120.6~~	239.3
SUBTOTAL		9,132.4	10	~~4,204.3~~	4,323.0
TOTAL		9,132.4	10	*	

* - SEE MIDWEST GUARDRAIL SYSTEM TABLE FOR TOTAL VEGETATION CONTROL (MINOR CONCRETE) QUANTITY

MIDWEST GUARDRAIL SYSTEM

1

PLAN SHEET No.	STATION	LOCATION	DIRECTION	LAYOUT TYPE	REMOVE GUARDRAIL	SALVAGE GUARDRAIL	REMOVE CONCRETE (MISCELLANEOUS)	TREATED WOOD WASTE	MGS (STEEL POST)	MGS (8' POST)	DOUBLE MGS (STEEL POST)	ALTERNATIVE FLARED TERMINAL SYSTEM	END ANCHOR ASSEMBLY (TYPE SFT)	RAIL TENSIONING ASSEMBLY	TRANSITION RAILING (TYPE WB-31)	CONCRETE BARRIER (TRANSITION)	VEGETATION CONTROL (MINOR CONRETE)	
					LF	LF	SQFT	LB	LF	LF	LF	EA	EA	EA	EA	LF	SQYD	
L-1	"SR198L1" Sta 225+36.62 TO Sta 227+26.61	1	MEDIAN			334.0	1,349											
L-1	"SR198L1" Sta 226+10.00 TO Sta 227+00.00	1	WB	16B		76.0			50			1	1					
L-2	"SR198L1" Sta 234+03.34 TO Sta 235+93.14	1	MEDIAN			334.0	1,355											
L-2	"SR198L1" Sta 234+70.00 TO Sta 235+65.00	1	WB	16B		76.0			50			1	1					
L-2	"SR198L1" Sta 235+12.79 TO Sta 236+31.06	1	EB	16B	76.0			817	50			1	1				112.7	
L-3	"SR198L1" Sta 249+47.91 TO Sta 250+97.80	1	MEDIAN				1,268											
L-3	"SR198L1" Sta 249+66.88 TO Sta 250+98.19	1	MEDIAN			263.4												
L-3	"SR198L1" Sta 250+71.11 TO Sta 251+11.82	1	MEDIAN				340										36.1	
L-4	"SR198L2" Sta 371+22.51 TO Sta 373+56.26	2	MEDIAN	12E	150.0			1,635	25		100			1	1	12	196.1	
L-4	"SR198L2" Sta 371+22.51 TO Sta 379+18.88	2	EB	12DD	763.9			8,311 ~~8,309~~		775			1			12	175.4	
L-4/L-5	"SR198L2" Sta 371+22.51 TO Sta 382+95.96	2	WB	12B	1,133.3			12,330 ~~12,320~~		1,075		1			1	12	247.2	
L-6	"SR198L2" Sta 395+40.00 TO Sta 396+95.00	2	MEDIAN		320.2			3,474										
L-7	"SR198L2" Sta 408+95.00 TO Sta 410+90.00	2	MEDIAN		397.4			4,291										
L-8	"SR198L2" Sta 422+15.00 TO Sta 424+10.00	2	MEDIAN		397.7			4,291										
L-8/L-9	"SR198L2" Sta 439+90.00 TO Sta 441+80.00	2	MEDIAN		397.4			4,291										
L-9	"SR198L2" Sta 444+91.95 TO Sta 445+91.41	2	EB	16C	68.8			749		75			1				30.5	
L-9	"SR198L2" Sta 446+57.33 TO Sta 447+80.36	2	WB	16C	100.0			1,090		100			1				25.1	
L-7	"DMR1" Sta 410+81.10 TO Sta 411+82.78	2	ON-RAMP	12B	65.3			681 ~~613~~				1			1	12	52.1	
L-8	"DMR2" Sta 418+54.30 TO Sta 419+42.05	2	ON-RAMP	12B	62.8			681				1			1	12	14.1	
L-8	"DMR4" Sta 425+08.81 TO Sta 426+09.67	2	ON-RAMP	12B	75.0			817				1			1	12	47.2	
	FROM HTCB QUANTITIES																~~4,204.3~~	4,323.0
	FROM SIGN QUANTITIES							492										
SUBTOTAL																72		
TOTAL					4,009.8	1,083.4	4,312	43,950 ~~43,870~~	175	2,025	100	7	6	1	5	*	~~5,140.8~~	5,259.5

* - SEE CONCRETE BARRIER TABLE FOR TOTAL CONCRETE BARRIER (TRANSITION) QUANTITY

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

SUMMARY OF QUANTITIES

Q-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans®
CONSULTANT FUNCTIONAL SUPERVISOR: STEVE MISLINSKI
CALCULATED-DESIGNED BY: MARK GONZALEZ
CHECKED BY: ED NG
REVISED BY / DATE REVISED

LAST REVISION DATE PLOTTED => 11-OCT-2016
TIME PLOTTED => 16:34

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	89A	109

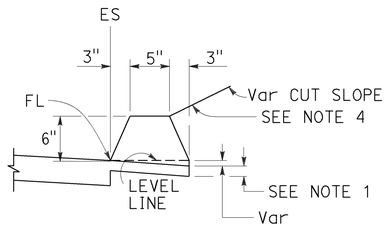
1

REGISTERED CIVIL ENGINEER

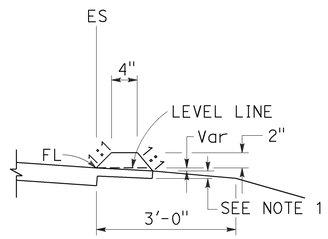
January 15, 2016
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Michael Janzen
No. 44788
Exp. 3-31-16
CIVIL
STATE OF CALIFORNIA

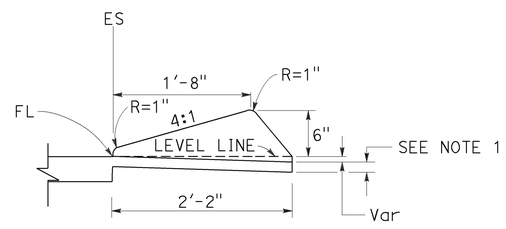
TO ACCOMPANY PLANS DATED 6-27-16



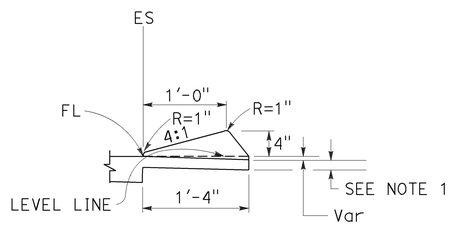
TYPE A
See Notes 3 and 5



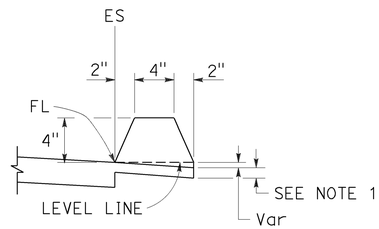
TYPE C



TYPE D

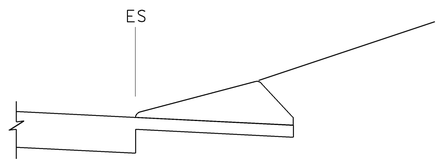


TYPE E

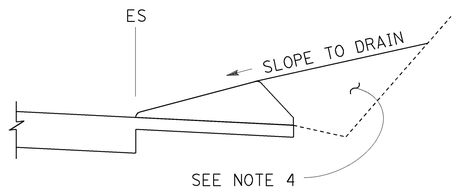


TYPE F
See Note 5

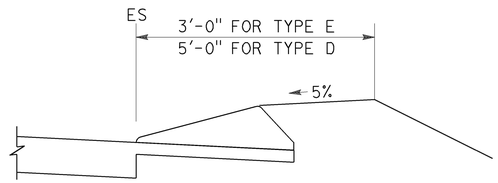
DIKES



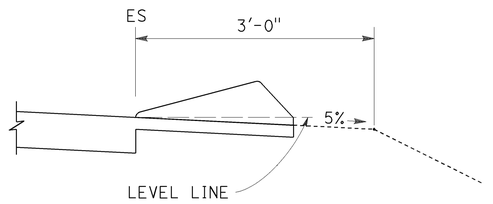
CASE C-1
Cut Slope



CASE C-2
Cut Slope



CASE F



CASE R
See Note 2

TYPE D AND E BACKFILL DETAILS

NOTES:

1. For HMA shoulders only, extend top layer of HMA placed on the shoulder under dike with no joint at the ES. For projects with OGFC shoulders, do not extend OGFC under dike. See project plans for modified dike detail.
2. Case R applies to retrofit only projects where restrictive conditions do not provide enough width for Case F backfill.
3. Type A dike only to be used where restrictive slope conditions do not provide enough width to use Type D or Type E dike.
4. Fill and compact with excavated material to top of dike.
5. Use Type A or F dike, where dike is required with guardrail installations. See Standard Plan A77N4 for dike positioning details. See Standard Plan A77N3 for hinge point offsets with guardrail.

DIKE QUANTITIES

TYPE	CUBIC YARDS PER LINEAR FOOT
A	0.0135
C	0.0038
D	0.0293
E	0.0130
F	0.0066

Quantities based on 5% cross slope.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

HOT MIX ASPHALT DIKES

NO SCALE

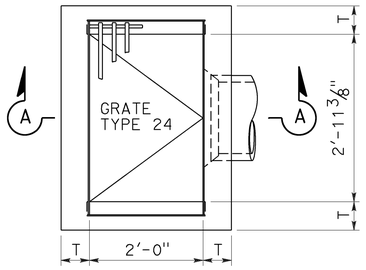
1 **REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016**

RSP A87B DATED JANUARY 15, 2016 SUPERSEDES STANDARD PLAN A87B
DATED OCTOBER 30, 2015 - PAGE 126 OF THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP A87B

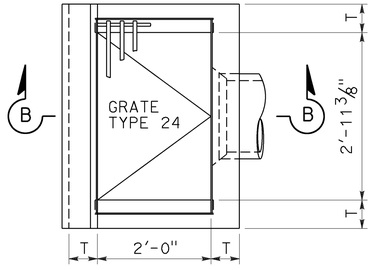
2015 REVISED STANDARD PLAN RSP A87B

11-17-15



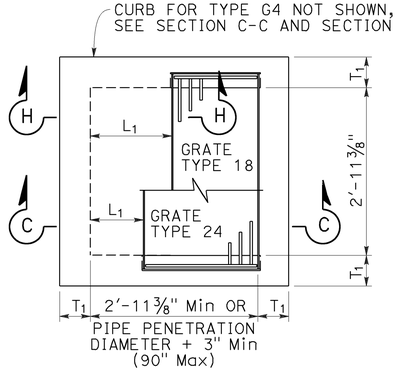
PLAN

TYPE G1



PLAN

TYPE G3

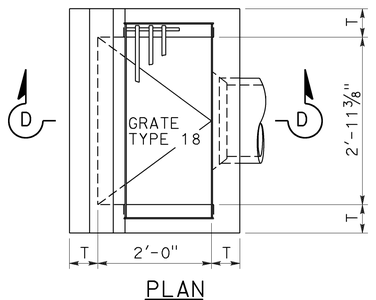


PLAN

STANDARD

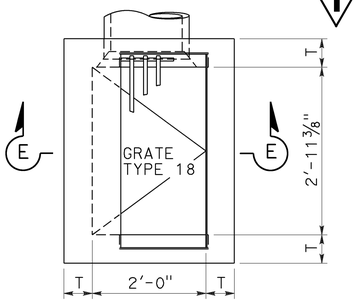
TYPE G2 OR G4

FOR "L_1", "L_2" AND "T_1" VALUES, SEE "TABLE 1"



PLAN

TYPE G5



PLAN

TYPE G6

1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	90	109

REGISTERED CIVIL ENGINEER

July 15, 2016

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Carl M. Duan — No. C59976 — Exp. 6-30-18 CIVIL — STATE OF CALIFORNIA

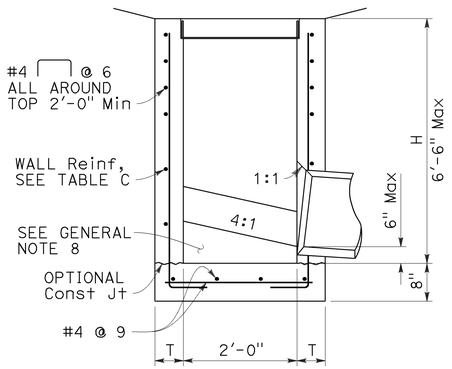
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 6-27-16

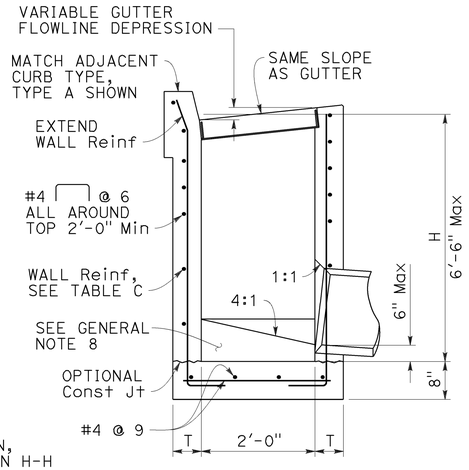
NOTE:

1. For notes and Table 2, See Revised Standard Plan RSP D72C.

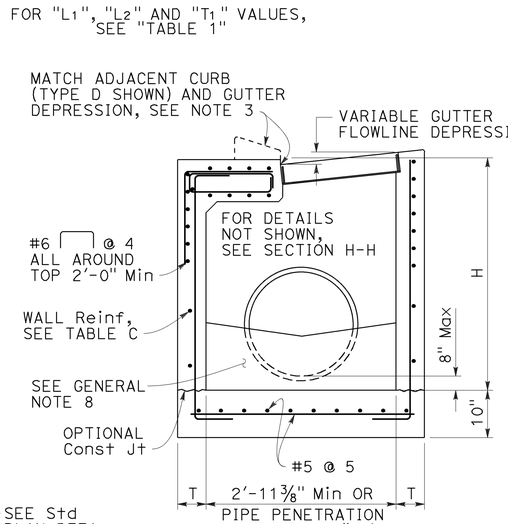
TABLE 1		
	T_1	Vert BARS
L_1 AND L_2 < 2'-10"	9"	#4 @ 12
L_1 OR L_2 > 2'-10"	12"	#5 @ 12



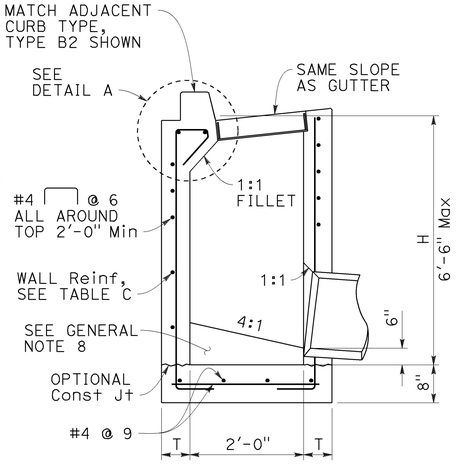
SECTION A-A



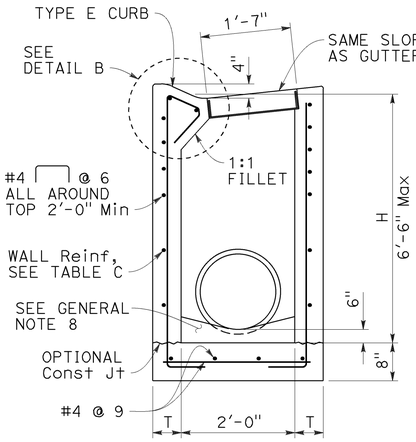
SECTION B-B



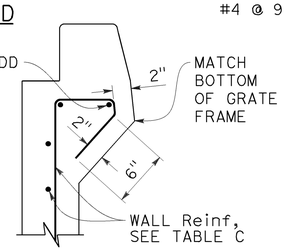
SECTION C-C



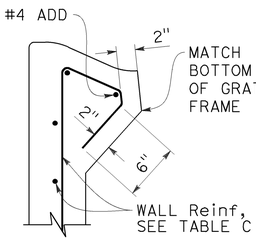
SECTION D-D



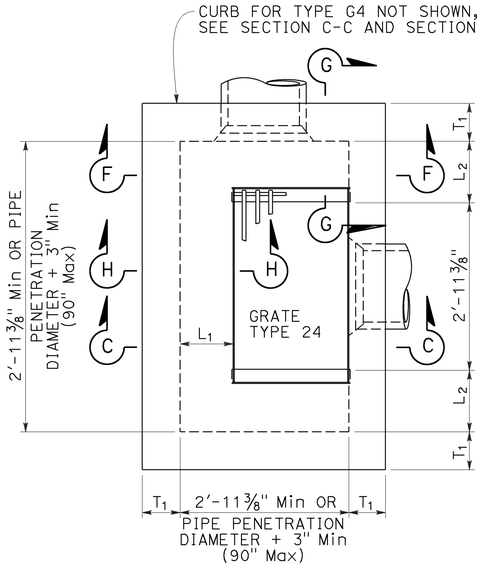
SECTION E-E



DETAIL A



DETAIL B



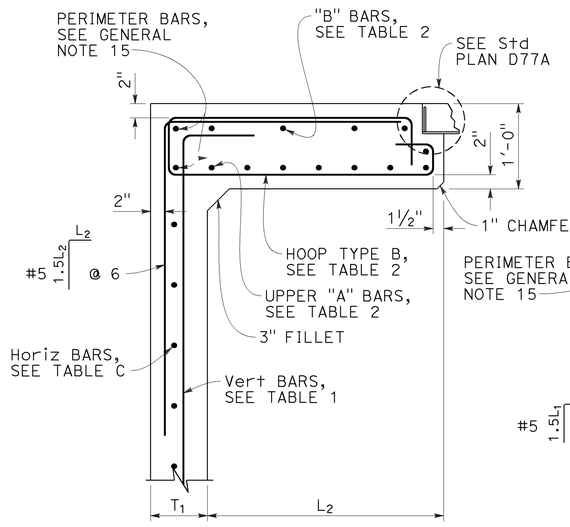
PLAN

EXPANDED

TYPE G2 OR G4

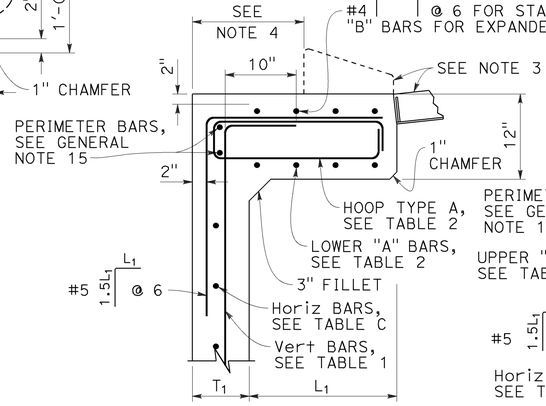
(INTEGRAL TOP ALTERNATIVE)

FOR "L" AND "T" VALUES, SEE TABLE 1



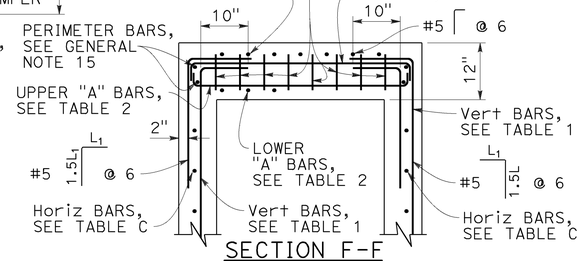
SECTION G-G

FOR "L_1", "L_2" AND "T_1" VALUES, SEE "TABLE 1"



SECTION H-H

FOR "L_1", "L_2" AND "T_1" VALUES, SEE "TABLE 1"



SECTION F-F

FOR "L_1", "L_2" AND "T_1" VALUES, SEE "TABLE 1"

RSP D72A DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2015.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CIP DRAINAGE INLETS TYPES G1, G2, G3, G4, G5 AND G6

NO SCALE

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

2015 REVISED STANDARD PLAN RSP D72B

REVISED STANDARD PLAN RSP D72B

6-20-16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	91	109

1

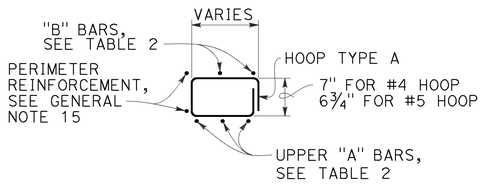
REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

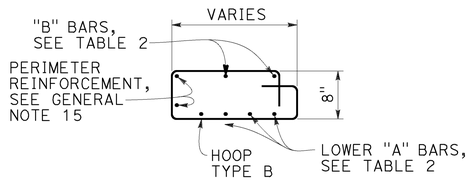
Carl M. Duan
No. C59976
Exp. 6-30-18
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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.

TO ACCOMPANY PLANS DATED 6-27-16



HOOP TYPE A

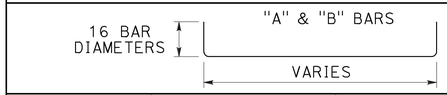


HOOP TYPE B

NOTES:

1. See Revised Standard Plan RSP D72F for General Notes and additional details. See Revised Standard Plan RSP D72G for tables and quantities.
2. Type G4 inlet can use Grate Type 18 or 24. Type G2 inlet uses Grate Type 24.
3. Type G4 inlet details are similar to Type G2 inlet details, except for the addition of a curb and sloped grate to match the adjacent curb and gutter depression.
4. Dimension will vary with different grates, curb types, box width and wall thickness.

TABLE 2 - TOP SLAB REINFORCEMENT



	W/ CURB	W/O CURB
"A" BARS	#4 @ 5 (2 BARS Min)	#5 @ 5 (3 BARS Min)
"B" BARS	#4 @ 10 (2 BARS Min)	#4 @ 12 (2 BARS Min)
HOOPS ("A" & "B")	#4 @ 5	#5 @ 5

ROTATE "A" AND "B" BARS SO HOOKED ENDS WILL MAINTAIN 2" CLEAR COVERAGE.

1 **REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CIP DRAINAGE INLETS TYPES G1, G2, G3, G4, G5 AND G6

NO SCALE

RSP D72C DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP D72C

2015 REVISED STANDARD PLAN RSP D72C

6-20-16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	92	109

REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Carl M. Duan — No. C59976 — Exp. 6-30-18 — CIVIL — STATE OF CALIFORNIA

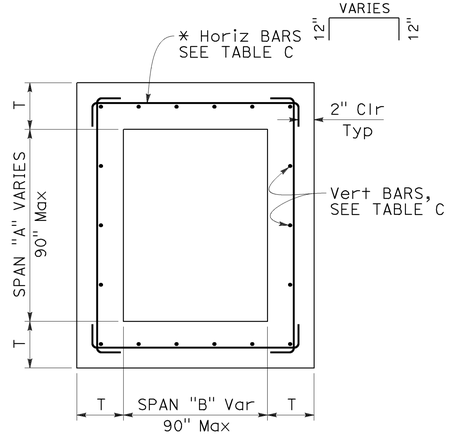
TO ACCOMPANY PLANS DATED 6-27-16

GENERAL NOTES:

1. "H" is measured from top of bottom slab to the normal gutter grade line undepressed at the curb face.
2. For "T" wall thickness and reinforcement, see Table C on Revised Standard Plan RSP D72G.
3. Wall reinforcement must be placed in the center of the wall thickness with horizontal bars placed on the exterior face. Bottom slab concrete cover must be 3" clear on the interior face unless otherwise noted. Top slab concrete cover must be 2" clear on the exterior face unless otherwise noted. Reinforcement spacing is in inches unless otherwise noted.
4. Steps - None required where "H" is less than 2'-6". Where "H" is 2'-6" or more, install steps with lowest rung 1'-0" above the floor and highest rung not more than 6" below bottom of lid. The distance between steps must not exceed 1'-0" and be uniform throughout the length of the wall. Place steps in the wall without an opening. Steps inserts may be substituted for the bar steps. Step inserts must comply with State Industrial Safety Requirements. See Revised Standard Plan RSP D74 for step details.
5. Pipe(s) can be placed in any wall. Adjacent to each side of the opening, place additional reinforcement equivalent to half the interupted main reinforcement. For larger pipes greater than or equal to 42" diameter, also add 4 diagonal bars, 1 bar each side. Bars must be the same size as the larger of the main vertical or horizontal bars. Extend bars one development length past the intersection with the adjacent diagonal bar, or where bars intersect mid thickness of adjacent wall bottom or top of non-continuous wall, bend ends as required into same plane.
6. Set inlet so that grate bars are parallel to direction of principal surface flow.
7. Curb section must match adjacent curb.
8. Except for inlets used as junction boxes, basin floors must have wood trowel finish and a minimum slope of 4:1, unless otherwise noted, from all directions toward outlet pipe by casting grout fill on top of the bottom slab. The additional volume to achieve the 4:1 slope may also be achieved by casting the bottom slab and fill as a composite concrete element.
9. See Standard Plans D77A and D77B for grate and frame details and weights of miscellaneous iron and steel.
10. See Standard Plans D78A and D78B for gutter depression details.
11. See Standard Plan A87A and Revised Standard Plan RSP A87B for curb and dike details.
12. Details shown apply to metal, concrete and plastic pipe(s).
13. The Contractor may use WWR instead of bar reinforcement. The ratio of bar reinforcement to WWR shall be based on the yield strength ratio.
14. Cast-in-place (CIP) inlets to be formed around all pipes/stubs intersecting the inlet, and concrete poured in one continuous operation.
15. Perimeter reinforcement must not be smaller than main bars and #4 and serves as a rigid frame to position and attach the required structural reinforcement and may be tack welded at outer corners when using ASTM A706 weldable bars.

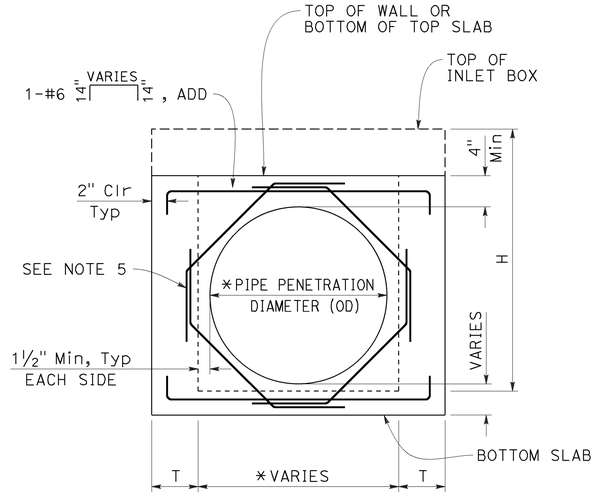
DESIGN NOTES:

1. Design Specifications: AASHTO LRFD Bridge Design Specifications, 6th edition with 2012 Interims and Errata and CA Amendments.
2. Live Load (AASHTO LRFD 3.6.1.2):
   HL-93, consists of design truck or tandem, and design lane load.
   Dynamic Load Allowance, IM = 33%
   Multiple Presence Factor, m = 1.0
   Design lane load was excluded in Top Slab design.
   A wheel load of 8 kips without impact factor was used for top slabs that are above a curb.
3. Earth Load:
   Vertical pressure = 140 pcf
   Lateral pressure:
   = 100 pcf for walls with flat embankment
   = 140 pcf For walls with slope embankment, 1.5:1 Max
4. Downdrag: ϕ = 34°and γ_E = 120 pcf.
5. Buoyancy: γ_W = 62.4 pcf to finished grade
6. Reinforced Concrete: f'c = 3.6 ksi, fy = 60.0 ksi.
7. Soil pressures shown are factored per AASHTO LRFD and include self-weight, live load and downdrag.



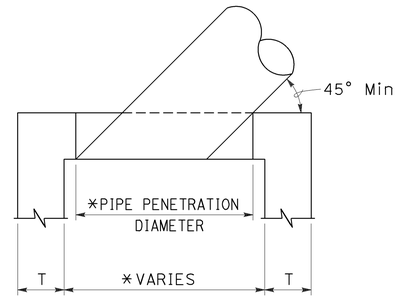
TYPICAL INLET PLAN

* ALTERNATIVE HORIZONTAL BARS



TYPICAL WALL W/ PIPE OPENING

* SEE "SKEWED PIPE PLAN"



SKEWED PIPE PLAN

* ADJUST PIPE PENETRATION AND BOX WIDTH FOR SKEWED PIPES.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CIP DRAINAGE INLET NOTES

NO SCALE

RSP D72F DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP D72F

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

2015 REVISED STANDARD PLAN RSP D72F

6-20-16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	93	109

1

REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

Carl M. Duan
No. C59976
Exp. 6-30-18
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-27-16

2015 REVISED STANDARD PLAN RSP D72G

TABLE A - CONCRETE QUANTITIES

TYPE	H=3'-0" TO 8'-0"		H=8'-1" TO 20'-0"	
	H=3'-0" (CY)	ADDITIONAL CONCRETE PER FOOT (CY)	H=8'-1" (CY)	ADDITIONAL CONCRETE PER FOOT (CY)
G1	0.95	0.220	SEE NOTE 2	SEE NOTE 2
G2*	2.00	0.411	5.11	0.525
G3	1.03	0.220	SEE NOTE 2	SEE NOTE 2
G4 (TYPE 18)*	2.02	0.411	5.14	0.525
G4 (TYPE 24)*	1.99	0.411	5.10	0.525
G5	1.02	0.220	SEE NOTE 2	SEE NOTE 2
G6	1.04	0.220	SEE NOTE 2	SEE NOTE 2
OS	1.53	0.278	5.08	0.504
OL7	2.06	0.278	6.17	0.566
OL10	2.85	0.278	6.85	0.566
OL14	3.81	0.278	7.78	0.566
OL21	5.71	0.278	9.62	0.566
GOL7	2.48	0.313	6.89	0.630
GOL10	3.41	0.313	7.85	0.630
GT1	1.72	0.248	SEE NOTE 2	SEE NOTE 2
GT2	2.93	0.530	7.73	0.762
GT3	1.74	0.348	SEE NOTE 2	SEE NOTE 2
GT4	2.83	0.530	7.62	0.762
GO	1.26	0.245	4.90	0.506
GDO	1.74	0.322	6.33	0.647

* Quantities are based on the minimum interior dimensions.

TABLE B - REINFORCEMENT QUANTITIES

TYPE	H=3'-0" TO 8'-0"		H=8'-1" TO 20'-0"	
	H=3'-0" (LB)	ADDITIONAL REINFORCEMENT PER FOOT (LB)	H=8'-1" (LB)	ADDITIONAL REINFORCEMENT PER FOOT (LB)
G1	118	22.20	SEE NOTE 2	SEE NOTE 2
G2*	729	86.48	1794	171.79
G3	118	22.20	SEE NOTE 2	SEE NOTE 2
G4 (TYPE 18)*	647	86.48	1675	171.79
G4 (TYPE 24)*	647	86.48	1675	171.79
G5	118	22.20	SEE NOTE 2	SEE NOTE 2
G6	118	22.20	SEE NOTE 2	SEE NOTE 2
OS	245	49.88	1057	120.77
OL7	458	50.53	1324	126.75
OL10	729	50.53	1595	126.75
OL14	982	50.53	1849	126.75
OL21	1453	50.53	2320	126.75
GOL7	644	83.57	1969	148.79
GOL10	883	83.57	2208	148.79
GT1	486	96.91	SEE NOTE 2	SEE NOTE 2
GT2	1040	117.08	2543	233.37
GT3	486	96.91	SEE NOTE 2	SEE NOTE 2
GT4	1001	117.08	2556	237.88
GO	308	32.44	1013	96.56
GDO	519	57.09	1654	165.66

* Quantities are based on the minimum interior dimensions.

TABLE D

INLET	CURB USED IN QUANTITIES
G1	-
G2	-
G3	A1-6
G4 (Type 18)	A1-6
G4 (Type 24)	A1-6
G5	B1-4
G6	½E
OS	-
OL7	-
OL10	-
OL14	-
OL21	-
GOL7	-
GOL10	-
GT1	D-6
GT2	E
GT3	A2-8
GT4	A2-8
GO	-
GDO	-

TABLE C - WALL REINFORCEMENT

TYPE	H≤8 (T=6",UON)		8<H≤20 (T=11",UON)	
	HORIZ	VERTICAL	HORIZ	VERTICAL
OS	#4 @ 8	#4 @ 6	#5 @ 6	#6 @ 4.5
OL	#4 @ 6	#4 @ 6	#5 @ 6	#6 @ 4.5
GOL	#5 @ 6	#5 @ 8	#6 @ 5	#6 @ 4.5
G1 (H≤6-6")	#3 @ 6	#3 @ 6	-	-
G2	T=9" #5 @ 5	#5 @ 5	T=11" #6 @ 4	#6 @ 4.5
G3 (H≤6-6")	#3 @ 6	#3 @ 6	-	-
G4	T=9" #5 @ 5	#5 @ 5	T=11" #6 @ 4	#6 @ 4.5
G5 (H≤6-6")	#3 @ 6	#3 @ 6	-	-
G6 (H≤6-6")	#3 @ 6	#3 @ 6	-	-
GT1 (H≤6-6")	#5 @ 6	#5 @ 6	-	-
GT2	T=8" #5 @ 6	#5 @ 6	#6 @ 4	#6 @ 4.5
GT3 (H≤6-6")	#5 @ 6	#5 @ 6	-	-
GT4	T=8" #5 @ 6	#5 @ 6	#6 @ 4	#6 @ 4.5
GO	#4 @ 9	#4 @ 6	#4 @ 6	#6 @ 4.5
GDO	#4 @ 6	#4 @ 6	#5 @ 4	#6 @ 4.5

TABLE E

SOIL PRESSURE BELOW BASE SLAB (ksf)		
TYPE	H=8'-0"	8'-0"< H ≤20'-0"
OS	2.93	5.56
OL*	2.93	5.56
GOL*	2.50	5.06
G1	3.67	-
G2	2.99	5.91
G3	3.67	-
G4	2.99	5.91
G5	3.67	-
G6	3.67	-
GT1	3.66	-
GT2	3.91	6.07
GT3	3.86	-
GT4	3.91	6.07
GO	3.42	6.11
GDO	2.52	6.95

* Main Box

NOTES:

1. No deduction or adjustment was made to the quantities of concrete and reinforcement for pipe openings, floor alternatives or curb type.
2. Maximum allowable height is 6'-6".
3. Quantities are approximate and for design purposes only.
4. Design is based on envelope of level and sloped ground.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CIP DRAINAGE INLET TABLES

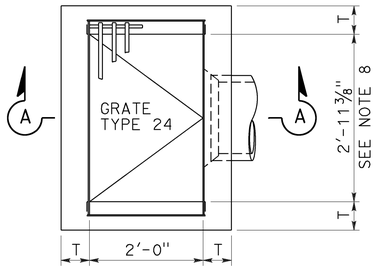
NO SCALE

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

RSP D72G DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2015.

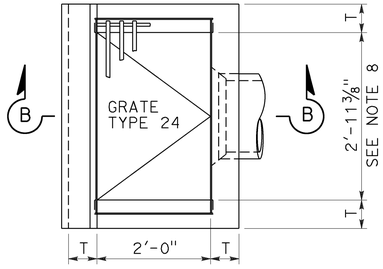
REVISED STANDARD PLAN RSP D72G

6-20-16



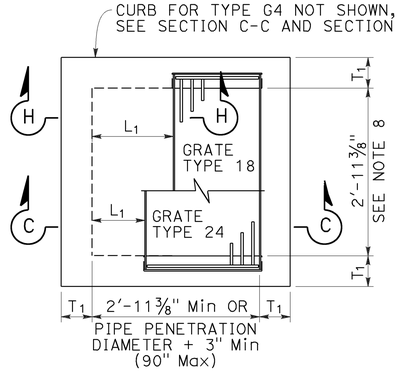
PLAN

TYPE G1



PLAN

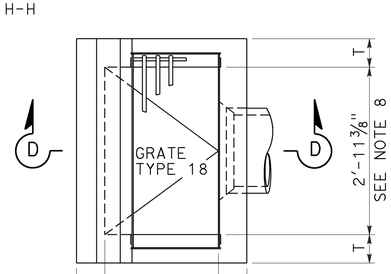
TYPE G3



PLAN

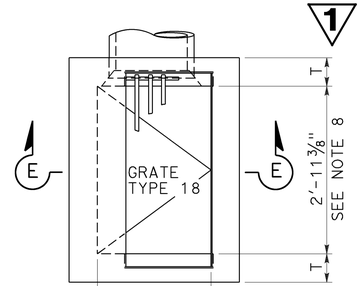
STANDARD TYPE G2 OR G4

(INTEGRAL TOP ALTERNATIVE)
FOR "L" AND "T" VALUES, SEE TABLE 1



PLAN

TYPE G5



PLAN

TYPE G6

1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	94	109

REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Carl M. Duan
No. C59976
Exp. 6-30-18
CIVIL
STATE OF CALIFORNIA

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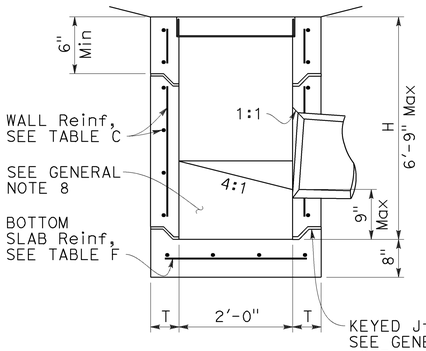
TO ACCOMPANY PLANS DATED 6-27-16

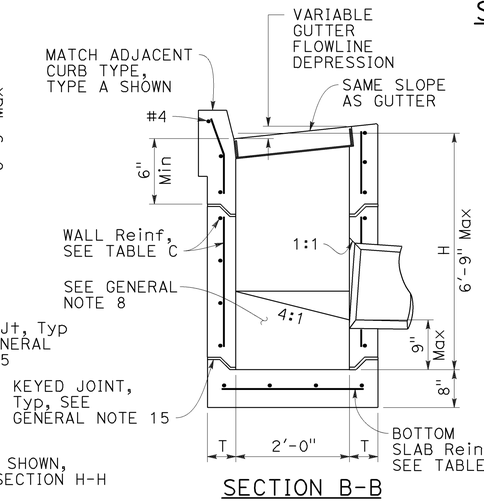
NOTE:

1. For notes and Table 2, See Revised Standard Plan RSP D73C.

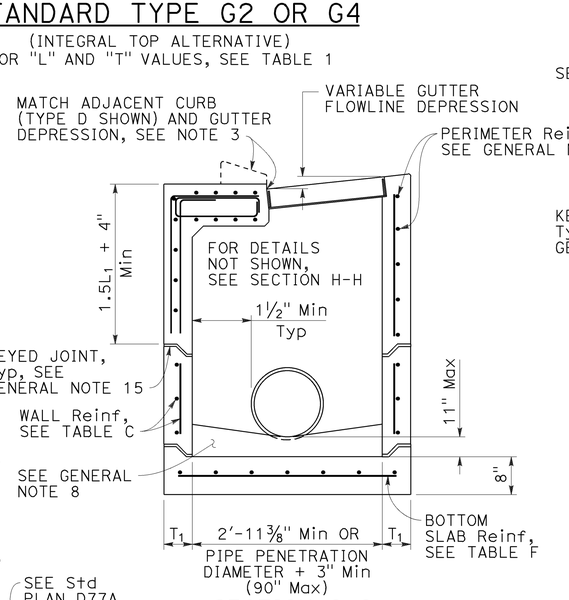
TABLE 1		
	T_1	Vert BARS
L_1 AND L_2 < 2'-10"	8"	#4 @ 12
L_1 OR L_2 > 2'-10"	12"	#5 @ 12



SECTION A-A

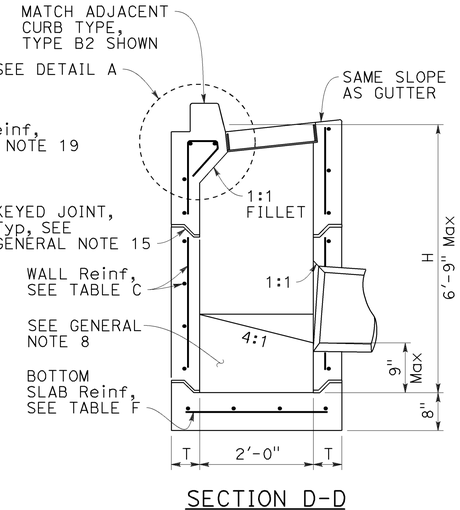


SECTION B-B

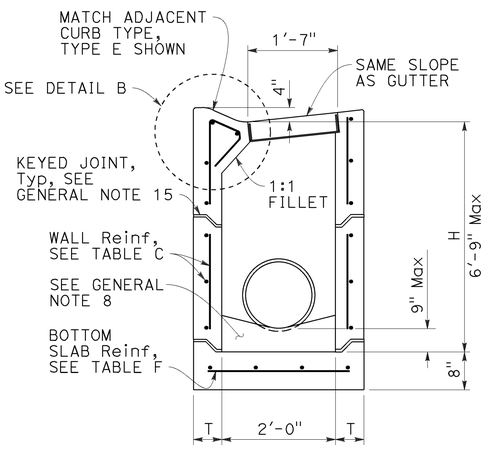


SECTION C-C

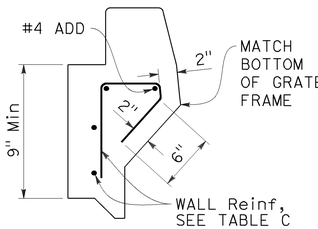
FOR "L_1", "L_2" AND "T_1" VALUES, SEE "TABLE 1"



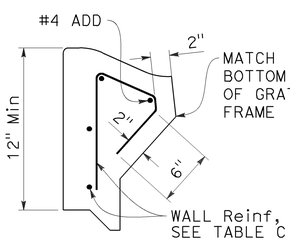
SECTION D-D



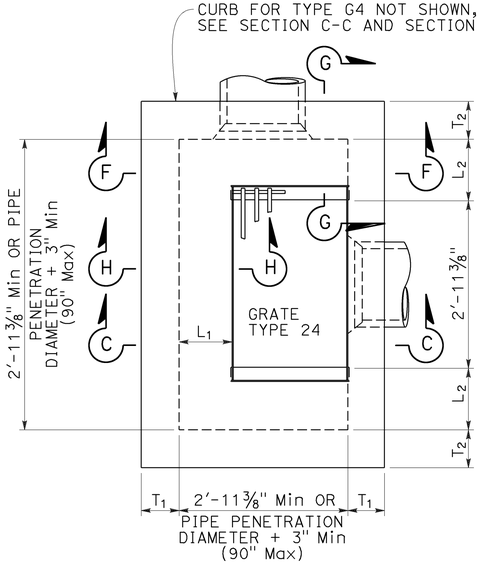
SECTION E-E



DETAIL A



DETAIL B

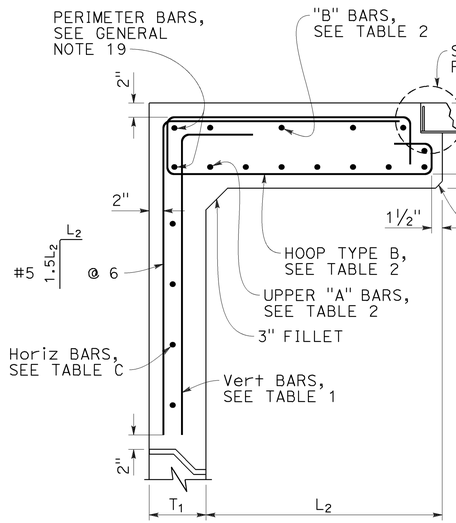


PLAN

EXPANDED

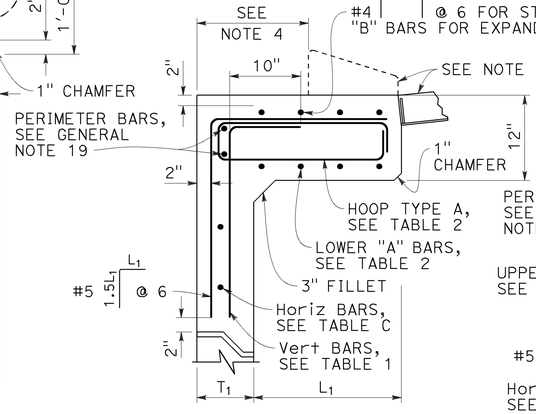
TYPE G2 OR G4

(INTEGRAL TOP ALTERNATIVE)
FOR "L_1", "L_2" AND "T_1" VALUES, SEE "TABLE 1"



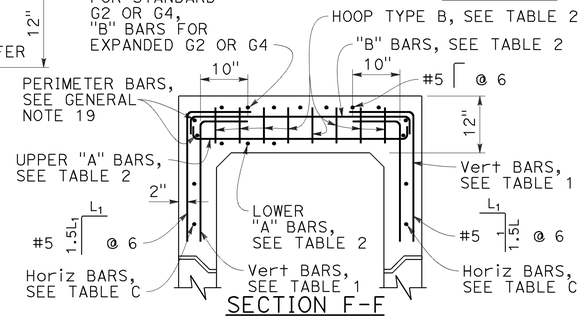
SECTION G-G

FOR "L_1", "L_2" AND "T_1" VALUES, SEE "TABLE 1"



SECTION H-H

FOR "L_1", "L_2" AND "T_1" VALUES, SEE "TABLE 1"



SECTION F-F

FOR "L_1", "L_2" AND "T_1" VALUES, SEE "TABLE 1"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PRECAST DRAINAGE INLETS TYPES G1, G2, G3, G4, G5 AND G6

NO SCALE

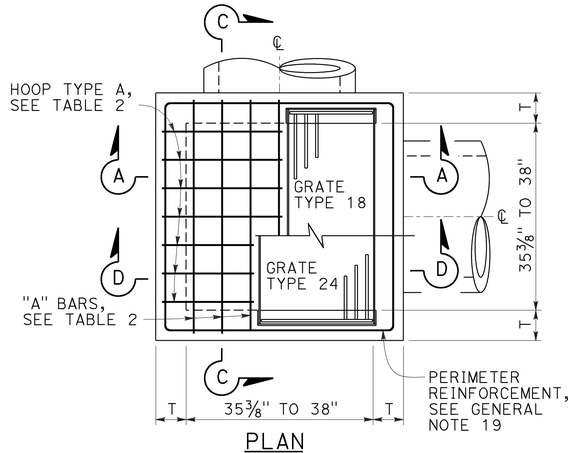
RSP D73B DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2015.

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

REVISED STANDARD PLAN RSP D73B

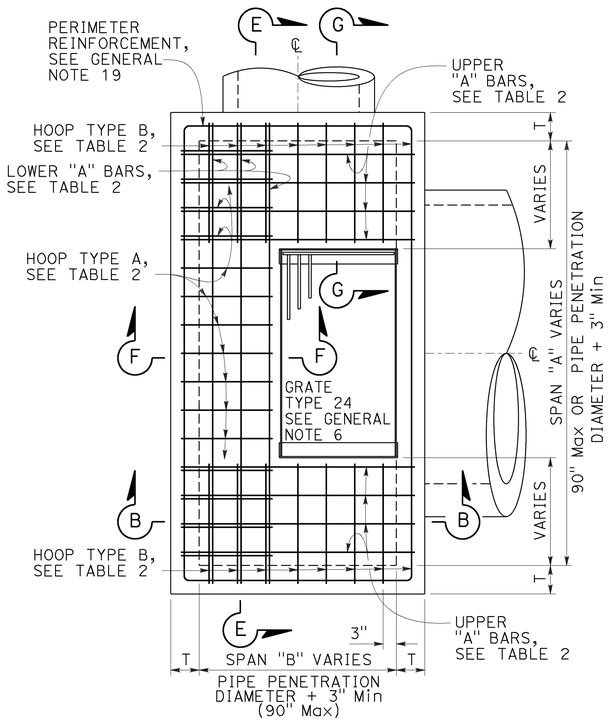
2015 REVISED STANDARD PLAN RSP D73B

6-29-16



PLAN

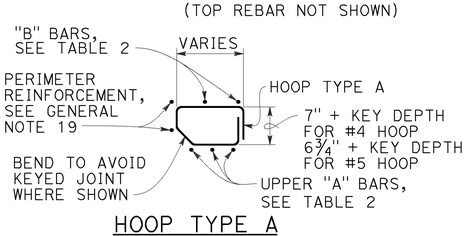
STANDARD TYPE G2 OR G4



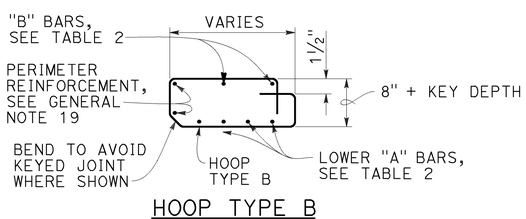
PLAN

EXPANDED TYPE G2 OR G4

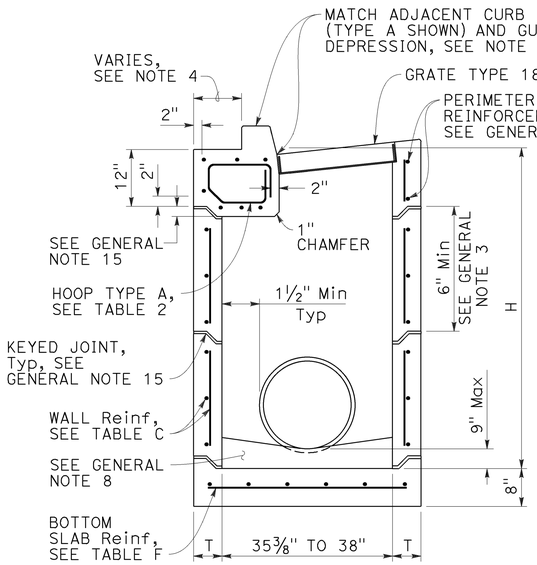
(TOP REBAR NOT SHOWN)



HOOP TYPE A

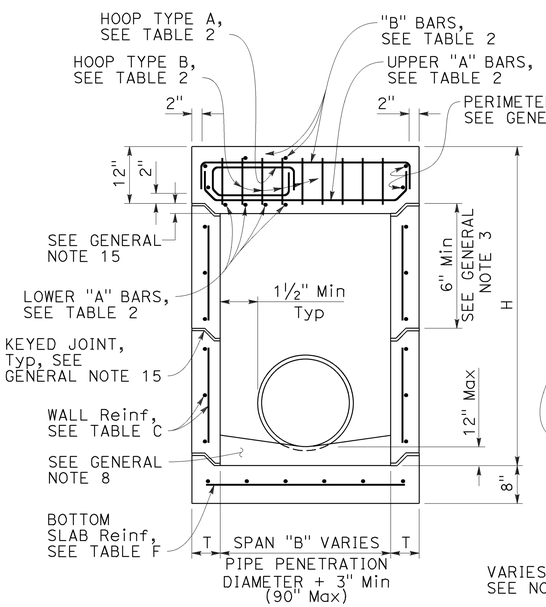


HOOP TYPE B



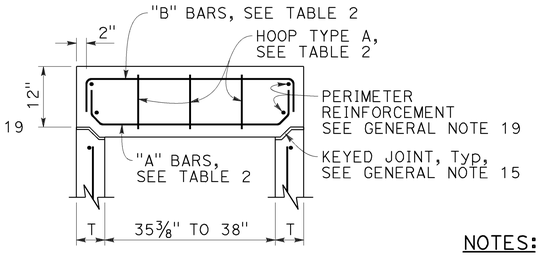
SECTION A-A

(WITH G4 TOP)

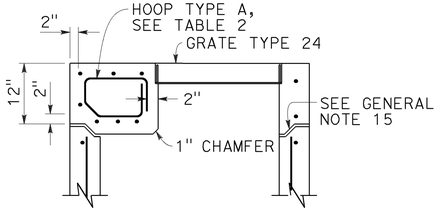


SECTION B-B

(WITH G2 TOP)

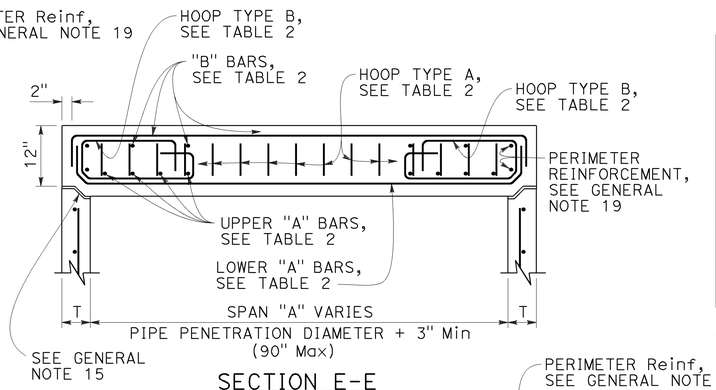


SECTION C-C

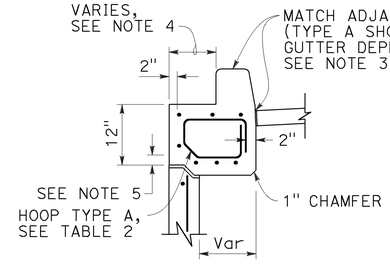


SECTION D-D

(WITH G2 TOP)

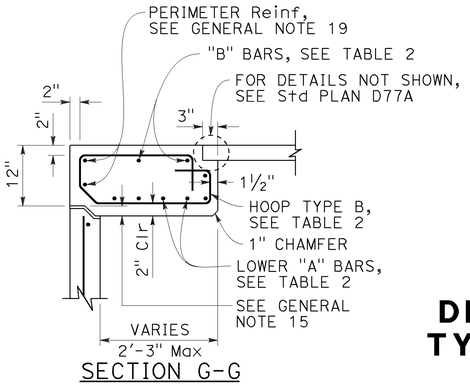


SECTION E-E



SECTION F-F

(WITH G4 TOP)



SECTION G-G

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	95	109

REGISTERED CIVIL ENGINEER

July 15, 2016

PLANS APPROVAL DATE

Carl M. Duan No. C59976 Exp. 6-30-18 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-27-16

NOTES:

1. See Revised Standard Plan RSP D73F for General Notes and additional details. See Revised Standard Plan RSP D73G for additional tables, wall thickness "T" and quantities.
2. Type G4 inlet can use Grate Type 18 or 24. Type G2 inlet uses Grate Type 24.
3. G4 inlet details are the same as the G2 with the addition of a curb and sloped grate that matches the adjacent curb and gutter depression.
4. Dimension will vary with different grates, curb types, box width and wall thickness.
5. 2" unless inlet is expanded in the Span "A" direction, then clearance is 2" plus the diameter of the lower "A" bar.
6. See Revised Standard Plan RSP D73B for integral top slab alternative.
7. Interior dimension of lower sections of inlet may be 3'-0" provided top section conforms to the requirements for frame and grate types on Standard Plan D77A. The wall thickness of top sections may transition from "T" to "T"+5/16" to meet this requirement. Minimum height of thickened wall shall = "T".

TABLE 2 - TOP SLAB REINFORCEMENT

16 BAR DIAMETERS — "A" & "B" BARS — VARIES — BEND TO AVOID KEYED JOINT WHERE SHOWN

	W/ CURB	W/O CURB
"A" BARS	#4 @ 5 (2 BARS Min)	#5 @ 5 (3 BARS Min)
"B" BARS	#4 @ 10 (2 BARS Min)	#4 @ 10 (2 BARS Min)
HOOPS ("A" & "B")	#4 @ 5	#5 @ 5

ROTATE "A" AND "B" BARS SO HOOKED ENDS WILL MAINTAIN 2" CLEAR COVERAGE.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PRECAST DRAINAGE INLETS TYPES G2 AND G4

NO SCALE

RSP D73C DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP D73C

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016 TO THE 2015 REVISED STANDARD PLAN RSP D73C

6-29-16

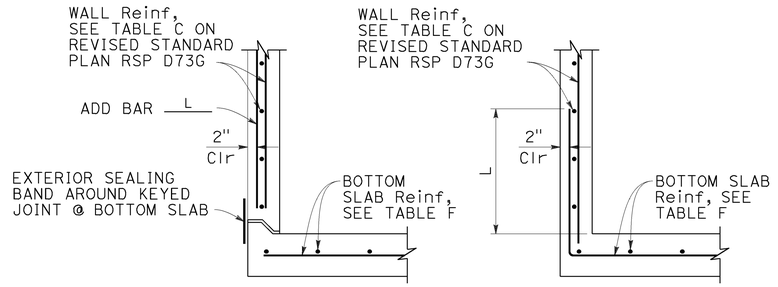
GENERAL NOTES:

1. "H" is measured from top of bottom slab to the normal gutter grade line undepressed at the curb face.
2. For "T" wall thickness and reinforcement, see Table C on Revised Standard Plan RSP D73G.
3. Wall reinforcement must be placed at the center of wall thickness with horizontal bars placed on the exterior face. Bottom slab concrete cover must be 3" clear on the interior side face unless otherwise noted. Top slab concrete cover must be 2" clear on the exterior face unless otherwise noted. Short independent wall sections or height adjustment rings 6" to 24" high must have a minimum of two #4 horizontal bars. Reinforcement spacing is in inches unless otherwise noted.
4. Steps - None required where "H" is less than 2'-6". Where "H" is 2'-6" or more, install steps with lowest rung 1'-0" above the floor and highest rung not more than 6" below bottom of lid. The distance between steps must not exceed 1'-0" and be uniform throughout the length of the wall. Place steps in the wall without an opening. Steps inserts may be substituted for the bar steps. Step inserts must comply with State Industrial Safety Requirements. See Revised Standard Plan RSP D74 for step details.
5. Pipe(s) can be placed in any wall. Adjacent to each side of the opening, place additional reinforcement equivalent to half the interupted main reinforcement. For larger pipes greater than or equal to 42" diameter, also add 4 diagonal bars, 1 bar each side. Bars must be the same size as the larger of the main vertical or horizontal bars. Extend bars one development length past the intersection with the adjacent diagonal bar, or where bars intersect mid thickness of adjacent wall bottom or top of non-continuous wall, bend ends as required into same plane.
6. Set inlet so that grate bars are parallel to direction of principal surface flow.
7. Curb section must match adjacent curb.
8. Except for inlets used as junction boxes, basin floors must have wood trowel finish and a minimum slope of 4:1, unless otherwise noted, from all directions toward outlet pipe by casting grout on top of the bottom slab. Grout must be placed prior to backfill.
9. See Standard Plans D77A and D77B for grate and frame details and weights of miscellaneous iron and steel.
10. See Standard Plans D78A and D78B for gutter depression details.
11. See Standard Plan A87A and Revised Standard Plan RSP A87B for curb and dike details.
12. Details shown apply to metal, concrete and plastic pipe(s).
13. The Contractor may use WWR instead of bar reinforcement. The ratio of bar reinforcement to WWR shall be based on the yield strength ratio.
14. Seal precast inlets connection openings between wall and pipe with non-shrink grout or resilient connectors as specified in the Special Provisions. Precast inlets shall have mortared connections conforming to details for Type GCP Inlet shown on Standard Plan D75B. See Standard Specifications for mortar composition.
15. Where shown, provide precast inlets with separate top sections for final grade adjustment. Provide keyed joints with butyl rubber sealant between the top section and wall, multiple wall sections, and wall and bottom slab. Joint design may vary but must be 1" to 3" in depth. For tongue type joints, tongue down orientation is not allowed. For keyed joints, keyway up, keyway down or tongue up configurations are allowed. Only one key type is allowed for each drainage inlet.
16. Non-shrink grout can be used for upper most joint to facilitate final top grade adjustment.
17. Provide a level and firm sand bedding on which to place precast inlets. Extend sand bedding under all structure backfill.
18. For Integral Base, see Detail "A".
19. Perimeter reinforcement must not be smaller than main bars and #4 and serves as a rigid frame to position and attach the required structural reinforcement and may be tack welded at outer corners when using ASTM A706 weldable bars.
20. Inlet extensions may be cast in place after placement of main box and placement and compaction of backfill. Concrete strength must be 3.6 ksi minimum. All slab and wall thicknesses must be per Revised Standard Plan RSP D72A. All reinforcement shall extend a minimum of 24" from precast main inlet box.

DESIGN NOTES:

1. Design Specifications: AASHTO LRFD Bridge Design Specifications, 6th edition with 2012 Interims and Errata and CA Amendments.
2. Live Load (AASHTO LRFD 3.6.1.2):
   HL-93, consists of design truck or tandem, and design lane load.
   Dynamic Load Allowance, IM = 33%
   Multiple Presence Factor, m = 1.0
   Design lane load was excluded in Top Slab design.
   A wheel load of 8 kips without impact factor was used for top slabs that are above a curb.
3. Earth Load:
   Vertical pressure = 140 pcf
   Lateral pressure:
   = 100 pcf for walls with flat embankment
   = 140 pcf For walls with slope embankment, 1.5:1 Max
4. Downdrag: ϕ = 34°and γ_E = 120 pcf.
5. Buoyancy: γ_W = 62.4 pcf to finished grade.
6. Reinforced Concrete: f'c = 5.0 ksi, fy = 60.0 ksi.
7. Tables are based on the worst case from the level ground and sloped ground.
8. Soil pressures shown are factored per AASHTO LRFD and include self-weight, live load and downdrag.

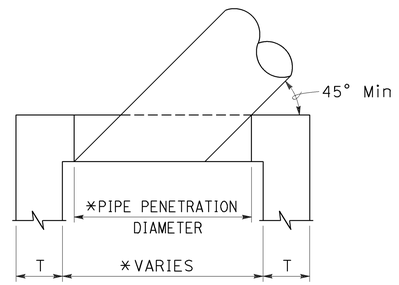
SPAN "A" OR "B" (IN)	L (IN)
<38	34
38 TO 50	40
51 TO 64	47
65 TO 76	53
77 TO 90	60



BASE WITH KEYED JOINT INTEGRAL BASE

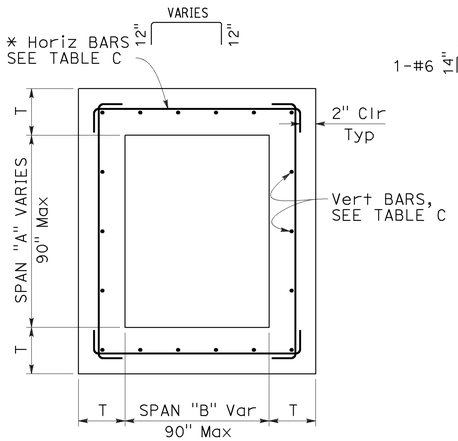
DETAIL "A"

FOR INTEGRAL BASE, CLEARANCE BETWEEN PIPE PENETRATION AND BASE SLAB MAY BE AS SHOWN IN CIP ALTERNATIVE STANDARD PLAN SHEET.



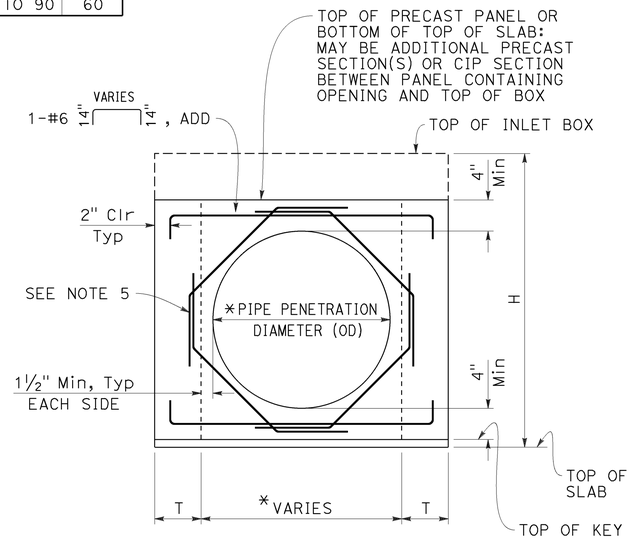
SKEWED PIPE PLAN

* ADJUST PIPE PENETRATION AND BOX WIDTH FOR SKEWED PIPES.

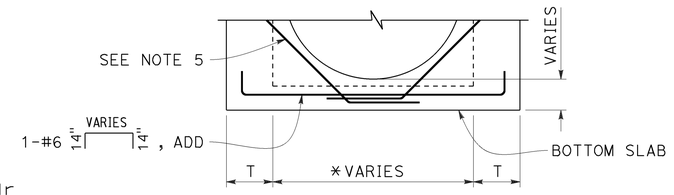


TYPICAL INLET PLAN

* ALTERNATIVE HORIZONTAL BARS



BASE WITH KEYED JOINT



INTEGRAL BASE

FOR DETAILS NOT SHOWN, SEE "BASE WITH KEYED JOINT"

TYPICAL WALL W/ PIPE OPENING

* SEE "SKEWED PIPE PLAN"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PRECAST DRAINAGE INLET NOTES

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	96	109

1

REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Carl M. Duan — No. C59976 — Exp. 6-30-18 — CIVIL — STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-27-16

2015 REVISED STANDARD PLAN RSP D73F

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

RSP D73F DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP D73F

6-20-16

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	97	109

1

REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

Carl M. Duan
No. C59976
Exp. 6-30-18
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-27-16

2015 REVISED STANDARD PLAN RSP D73G

TABLE A - CONCRETE QUANTITIES

TYPE	H=3′-0" TO 8′-0"		H=8′-1" TO 20′-0"	
	H=3′-0" (CY)	ADDITIONAL CONCRETE PER FOOT (CY)	H=8′-1" (CY)	ADDITIONAL CONCRETE PER FOOT (CY)
G1	0.95	0.220	SEE NOTE 2	SEE NOTE 2
G2*	1.25	0.255	2.55	0.255
G3	1.06	0.220	SEE NOTE 2	SEE NOTE 2
G4 (TYPE 18)*	1.41	0.255	2.71	0.255
G4 (TYPE 24)*	1.36	0.255	2.65	0.255
G5	1.09	0.220	SEE NOTE 2	SEE NOTE 2
G6	1.14	0.220	SEE NOTE 2	SEE NOTE 2
OS	1.28	0.278	2.69	0.278
OL7	1.92	0.278	3.33	0.278
OL10	2.43	0.278	3.84	0.278
OL14	3.16	0.278	4.57	0.278
OL21	4.58	0.278	5.99	0.278
GOL7	2.36	0.313	4.04	0.434
GOL10	2.84	0.313	4.53	0.434
GT1	2.30	0.480	SEE NOTE 2	SEE NOTE 2
GT2	2.71	0.530	5.40	0.530
GT3	2.29	0.480	SEE NOTE 2	SEE NOTE 2
GT4	2.69	0.530	5.39	0.530
GO	1.25	0.245	2.37	0.245
GDO	1.64	0.322	3.37	0.446

* Quantities are based on the minimum interior dimensions.

TABLE B - REINFORCEMENT QUANTITIES

TYPE	H=3′-0" TO 8′-0"		H=8′-1" TO 20′-0"	
	H=3′-0" (LB)	ADDITIONAL REINFORCEMENT PER FOOT (LB)	H=8′-1" (LB)	ADDITIONAL REINFORCEMENT PER FOOT (LB)
G1	88.5	21.90	SEE NOTE 2	SEE NOTE 2
G2*	151.5	24.54	277.4	38.64
G3	92.9	21.90	SEE NOTE 2	SEE NOTE 2
G4 (TYPE 18)*	134.4	24.54	260.3	38.64
G4 (TYPE 24)*	125.1	24.54	251.0	38.64
G5	92.5	21.90	SEE NOTE 2	SEE NOTE 2
G6	92.5	21.90	SEE NOTE 2	SEE NOTE 2
OS	145.8	35.57	327.8	49.60
OL7	328.0	35.57	510.0	49.60
OL10	467.5	35.57	649.5	49.60
OL14	667.5	35.57	849.5	49.60
OL21	1056.1	35.57	1238.1	49.60
GOL7	474.7	45.17	706.8	74.02
GOL10	604.9	45.17	836.9	74.02
GT1	349.0	80.48	SEE NOTE 2	SEE NOTE 2
GT2	403.7	86.82	849.1	135.15
GT3	347.0	80.48	SEE NOTE 2	SEE NOTE 2
GT4	403.7	86.82	849.1	135.15
GO	99.8	23.75	221.7	37.46
GDO	208.8	46.22	446.2	75.61

* Quantities are based on the minimum interior dimensions.

TABLE D

INLET	CURB USED IN QUANTITIES
G1	-
G2	-
G3	A1-6
G4 (Type 18)	A1-6
G4 (Type 24)	A1-6
G5	B1-4
G6	½E
OS	-
OL7	-
OL10	-
OL14	-
OL21	-
GOL7	-
GOL10	-
GT1	D-6
GT2	E
GT3	A2-8
GT4	A2-8
GO	-
GDO	-

TABLE C - WALL REINFORCEMENT

TYPE	H ≤8′-0" (T=6", UON)			8′-0"< H ≤20′-0" (T=8", UON)		
	HORIZONTAL	VERTICAL	*ADD	HORIZONTAL	VERTICAL	*ADD
OS	#4@6	#3@8	#3@8	#4@4 (T=6")	#3@8	#3@8
OL	#4@6	#3@8	#3@8	#4@4 (T=6")	#3@8	#3@8
GOL	#4@5	#3@8	#3@8	#5@5	#3@6	#3@6
G1 (H ≤6′-9")	#4@9	#3@8	#3@8	-	-	-
G2 & G4 (a** ≤38")	#4@9	#3@8	#3@8	#4@5 (T=6")	#3@8	#3@8
G2 & G4 (38" < a** ≤50")	#4@6	#3@8	#3@8	#4@4 (T=6")	#3@8	#3@8
G2 & G4 (50" < a** ≤64")	#4@5	#3@8	#3@8	#5@5	#3@6	#3@6
G2 & G4 (64"< a** ≤76")	#5@7 (T=8")	#3@6	#3@6	#5@4	#3@6	#5@6
G2 & G4 (76" < a** ≤90")	#5@5 (T=8")	#3@6	#3@6	#5@3	#3@6	#5@6
G3 (H ≤6′-9")	#4@9	#3@8	#3@8	-	-	-
G5 (H ≤6′-9")	#4@9	#3@8	#3@8	-	-	-
G6 (H ≤6′-9")	#4@9	#3@8	#3@8	-	-	-
GT1 (H ≤6′-9")	#5@5 (T=8")	#3@6	#3@6	-	-	-
GT2	#5@5 (T=8")	#3@6	#3@6	#5@3	#3@6	#5@6
GT3 (H ≤6′-9")	#5@5 (T=8")	#3@6	#3@6	-	-	-
GT4	#5@5 (T=8")	#3@6	#3@6	#5@3	#3@6	#5@6
GO	#4@9	#3@8	#3@8	#4@5 (T=6")	#3@8	#3@8
GDO	#4@5	#3@8	#3@8	#5@5	#3@6	#3@6

* See Detail A on Revised Standard Plan RSP D73F for additional vertical bars at the base.
** a = Larger interior span

TABLE E

SOIL PRESSURE BELOW BASE SLAB (ksf)		
TYPE	H ≤8′-0"	8′-0"< H ≤20′-0"
OS	2.89	5.68
OL*	2.89	5.68
GOL*	2.36	4.93
G1 (H ≤6′-9")	3.51	-
G2 & G4 (a** ≤38")	2.96	5.79
G2 & G4 (38" < a** ≤50")	2.21	4.51
G2 & G4 (50" < a** ≤64")	3.19	4.89
G2 & G4 (64"< a** ≤76")	2.50	4.23
G2 & G4 (76" < a** ≤90")	2.04	3.56
G3 (H ≤6′-9")	3.51	-
G5 (H ≤6′-9")	3.51	-
G6 (H ≤6′-9")	3.51	-
GT1 (H ≤6′-9")	3.41	-
GT2	3.60	6.42
GT3 (H ≤6′-9")	3.41	-
GT4	3.60	6.42
GO	3.37	6.46
GDO	2.48	7.30

* Main Box
** a = Larger interior span

TABLE F

BASE SLAB REINFORCEMENT (T=8", UON)		
TYPE	H ≤8′-0"	8′-0"< H ≤20′-0"
OS	#4@8 (EW)	#4@5 (EW)
OL*	#4@8 (EW)	#4@5 (EW)
GOL*	#4@6 (EW)	#4@4 (EW)
G1 (H ≤6′-9")	#4@10 (EW)	-
G2 & G4 (a** ≤38")	#4@10 (EW)	#4@6 (EW)
G2 & G4 (38" < a** ≤50")	#4@8 (EW)	#4@5 (EW)
G2 & G4 (50" < a** ≤64")	#4@6 (EW)	#4@4 (EW)
G2 & G4 (64"< a** ≤76")	#4@5 (EW)	#4@3 (EW)
G2 & G4 (76" < a** ≤90")	#4@4 (EW)	#5@3 (EW)
G3 (H ≤6′-9")	#4@10 (EW)	-
G5 (H ≤6′-9")	#4@10 (EW)	-
G6 (H ≤6′-9")	#4@10 (EW)	-
GT1 (H ≤6′-9")	#4@4 (EW)	-
GT2	#4@4 (EW)	#5@3 (EW)
GT3 (H ≤6′-9")	#4@4 (EW)	-
GT4	#4@4 (EW)	#5@3 (EW)
GO	#4@10 (EW)	#4@6 (EW)
GDO	#4@6 (EW)	#4@4 (EW)

(EW) Each Way
* Main Box
** a = Larger interior span

NOTES:

1. No deduction or adjustment was made to the quantities of concrete and reinforcement for pipe openings, floor alternatives or curb type.
2. Maximum allowable height is 6′-9".
3. Quantities are approximate and for design purposes only.
4. Design is based on envelope of level and sloped ground.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PRECAST DRAINAGE INLET TABLES

NO SCALE

RSP D73G DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP D73G

6-20-16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	98	109

REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

Carl M. Duan
No. C59976
Exp. 6-30-18
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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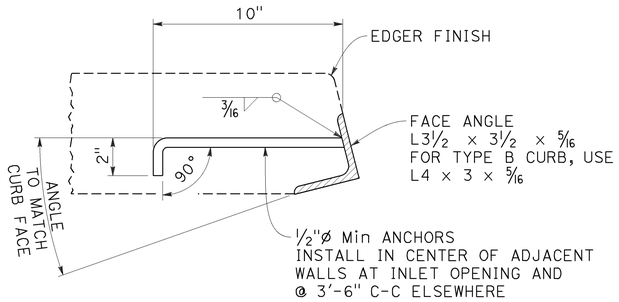
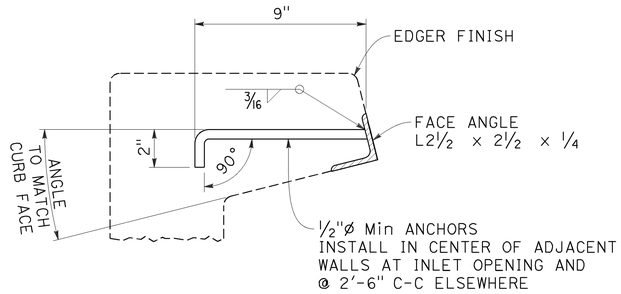
TO ACCOMPANY PLANS DATED 6-27-16

FACE ANGLE DETAIL "A"	
LENGTH OF CURB OPENING	No. OF ANCHORS
3'-6" OR LESS	2
7'-0"	3
10'-0"	4
14'-0"	5
21'-0"	7



DETAIL "A"

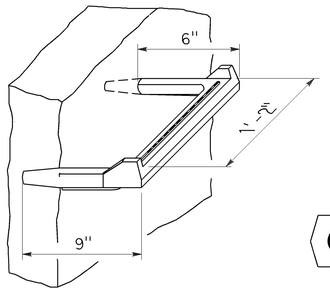


DETAIL "B"

FACE ANGLE AND ANCHOR

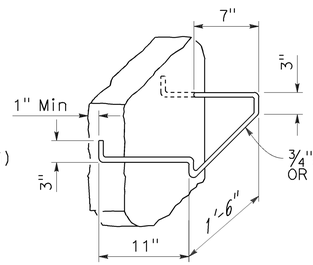
NOTE:

1. When shown on the project plans, place a ¾"Ø plain round protection bar horizontally across the length of the opening and bend back 4" into the inlet wall on each side.



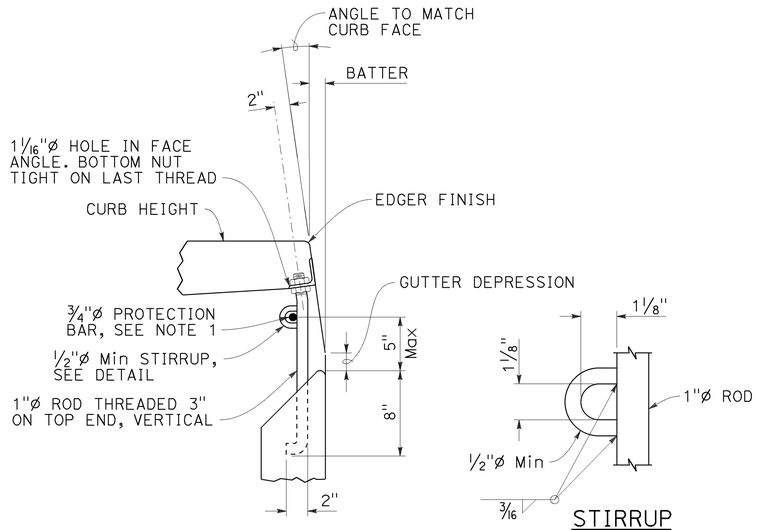
STEP INSERT

TYPICAL SECTION
(STEP INSERT)



BAR STEP

STEP DETAILS

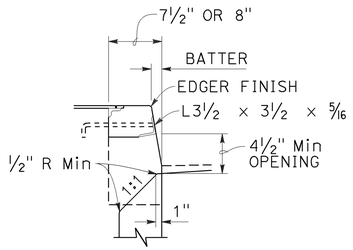


DETAIL "C"

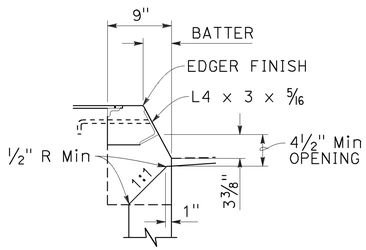
STIRRUP

CURB SUPPORT

CURB SUPPORTS SHALL BE EVENLY SPACED AND MINIMAL IN NUMBER SUCH THAT MAXIMUM SPAN OF UNSUPPORTED CURB IS 7'-0".



TYPE A CURBS



TYPE B CURBS

CURB OPENING DETAILS

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DRAINAGE INLET DETAILS

NO SCALE

RSP D74 DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2015.

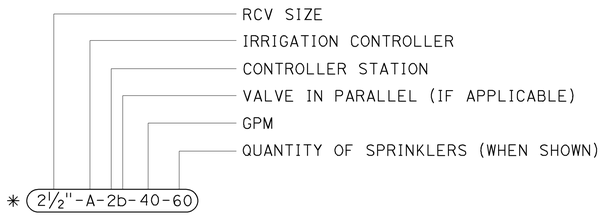
REVISED STANDARD PLAN RSP D74

2015 REVISED STANDARD PLAN RSP D74

6-20-16

EXISTING	NEW	ITEM DESCRIPTION
		WATER METER (WM)
		BACKFLOW PREVENTER ASSEMBLY (BPA)
		BACKFLOW PREVENTER ENCLOSURE (BPE)
		BOOSTER PUMP (BP)
		TRUCK LOADING STANDPIPE (TLS)
	FS	FLOW SENSOR (FS)
		MASTER IRRIGATION CONTROLLER (MIC)
		AUXILIARY IRRIGATION CONTROLLER (AIC)
		IRRIGATION CONTROLLER (IC) IRRIGATION CONTROLLER (IC) (BATTERY) IRRIGATION CONTROLLER (IC) (SOLAR) IRRIGATION CONTROLLER (IC) (TWO WIRE)
		IRRIGATION CONTROLLER(S) IN CONTROLLER ENCLOSURE CABINET (ICC)
acc	ACC	ARMOR-CLAD CONDUCTORS (ACC)
		CONTROL AND NEUTRAL CONDUCTORS (CNC)
		IRRIGATION CONDUIT
		IRRIGATION SLEEVE
dip	DIP	DUCTILE IRON PIPE (SUPPLY LINE) (MAIN) (DIP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (MAIN) (GSP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (LATERAL) (GSP)
		PLASTIC PIPE (SUPPLY LINE) (MAIN)
		PLASTIC PIPE (SUPPLY LINE) (LATERAL)
cp	CP	COPPER PIPE (SUPPLY LINE)
dit	DIT	DRIP IRRIGATION TUBING
		REMOTE CONTROL VALVE (RCV) REMOTE CONTROL VALVE (MASTER) (RCVM) REMOTE CONTROL VALVE (MASTER) W/FLOW METER (RCVMF)
		REMOTE CONTROL VALVE W/PRESSURE REGULATOR (RCVP)
		EXISTING MANUAL CONTROL VALVE (MCV)
		DRIP VALVE ASSEMBLY (DVA)
		WYE STRAINER ASSEMBLY (WSA)

EXISTING	NEW	ITEM DESCRIPTION
		GATE VALVE (GV)
		BALL VALVE (BV)
		QUICK COUPLING VALVE (QCV)
		CAM COUPLER ASSEMBLY (CCA)
		GARDEN VALVE ASSEMBLY (GARVA)
		PRESSURE REGULATING VALVE (PRV)
		PRESSURE RELIEF VALVE (PRLV)
		FLOW CONTROL VALVE (FCV)
		COMBINATION AIR RELEASE VALVE (CARV)
		CHECK VALVE (CV)
		FLUSH VALVE (FV)
		EXISTING NOZZLE LINE W/TURNING UNION
		EXISTING IRRIGATION SYSTEM
		EXISTING IRRIGATION SYSTEM TO BE REMOVED
		CHAIN LINK GATE
		QUICK COUPLING VALVE W/SPRINKLER PROTECTOR
3	3	SPRINKLER W/SPRINKLER PROTECTOR
	C	CONNECT TO EXISTING SYSTEM
		CAP
		CAP EXISTING
	\\\FR\\\	FIBER ROLL
	\\\CS\\\	COMPOST SOCK



VALVE CODE

* VALVE CODES FOR EXISTING VALVES ARE SHOWN IN A DASHED ENCLOSURE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	99	109

LICENSED LANDSCAPE ARCHITECT

July 15, 2016
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT — Vincent V. Ferrara 3859 — Registered — 9-30-17 Renewal Date — Date — STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-27-16

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

LANDSCAPE AND EROSION CONTROL SYMBOLS

NO SCALE

RSP H1 DATED JULY 15, 2016 SUPERSEDES STANDARD PLAN H1
DATED OCTOBER 30, 2015 - PAGE 230 OF THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP H1

2015 REVISED STANDARD PLAN RSP H1

5-24-16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	100	109

LICENSED LANDSCAPE ARCHITECT

April 15, 2016
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
Miguel V. Ferrara 3859
9-30-17
Renewal Date
Date
STATE OF CALIFORNIA

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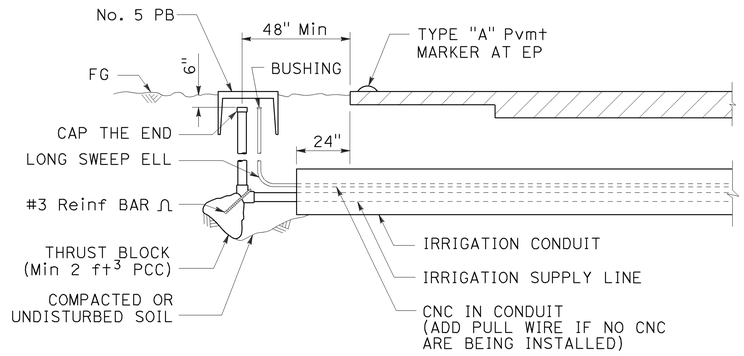
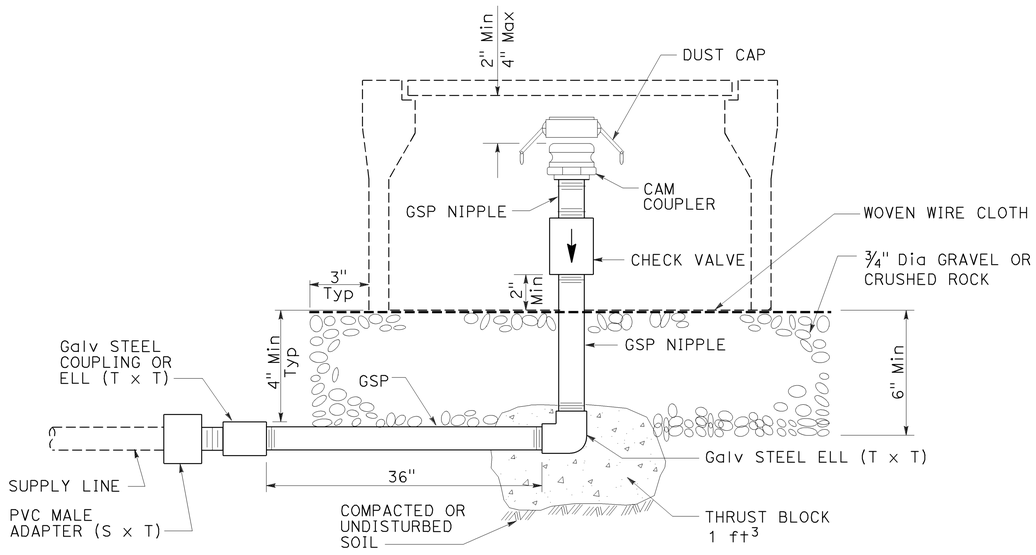
TO ACCOMPANY PLANS DATED 6-27-16



SECTION

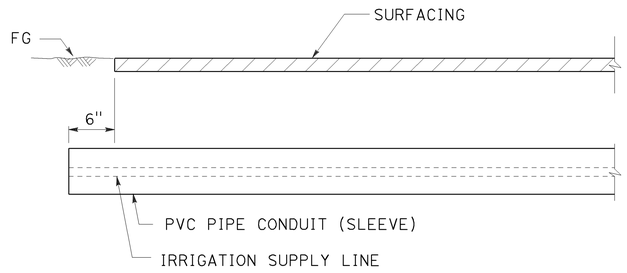
IRRIGATION CONDUIT

UNDER TRAVELED WAY



ELEVATION

CAM COUPLER ASSEMBLY



SECTION

PVC PIPE CONDUIT (SLEEVE)

UNDER SIDEWALKS, DRIVEWAYS AND PATHS

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

LANDSCAPE DETAILS

NO SCALE

RSP H8 DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN H8
DATED OCTOBER 30, 2015 - PAGE 237 OF THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP H8

2015 REVISED STANDARD PLAN RSP H8

3-24-16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	101	109

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

April 15, 2016
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Theresa Aziz Gabriel — No. E15129 — Exp. 6-30-16 — ELECTRICAL — STATE OF CALIFORNIA

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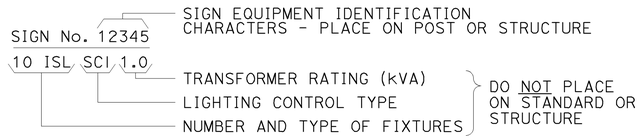
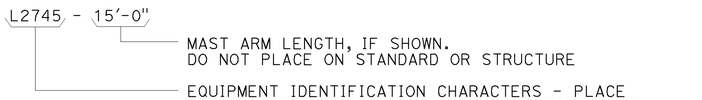
TO ACCOMPANY PLANS DATED 6-27-16

EQUIPMENT IDENTIFICATION

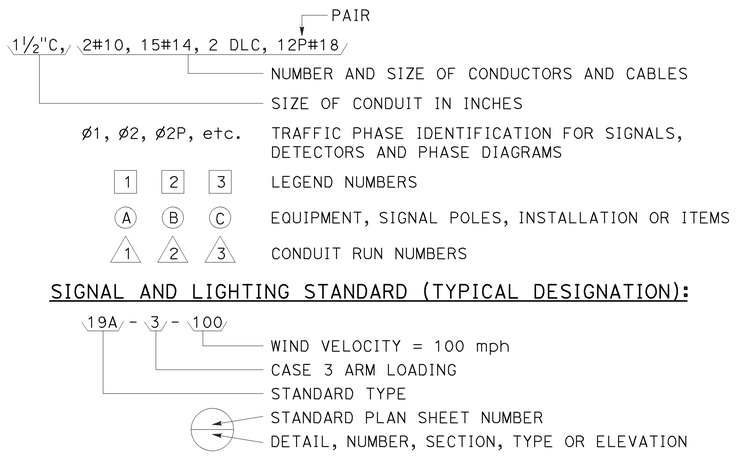
ILLUMINATED SIGN IDENTIFICATION:



ELECTROLIER OR EQUIPMENT IDENTIFICATION:



CONDUIT AND CONDUCTOR IDENTIFICATION:



SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):

MISCELLANEOUS EQUIPMENT

NEW	EXISTING	
CMS	cms	CHANGEABLE MESSAGE SIGN
		CLOSED CIRCUIT TELEVISION CAMERA
		HIGHWAY ADVISORY RADIO POLE AND ANTENNA
EMS	ems	LED EXTINGUISHABLE MESSAGE SIGN
M V	m v	DETECTION DEVICE M = MICROWAVE SENSOR V = VIDEO IMAGE SENSOR

WIRING DIAGRAM LEGEND

----	EXTERNAL CONDUCTOR
——	CONDUCTOR OR BUS
—●—	TIE POINT
—∿—	CONTACTOR COIL
—||—	CONTACTOR, NO CONTACT
—⊗—	TERMINAL BLOCKS
—|/|—	CONTACTOR, NC CONTACT
⏚	ENCLOSURE BOND
⏚	GROUNDING ELECTRODE
—●—	CIRCUIT BREAKER
Ⓡ	RECEPTACLE

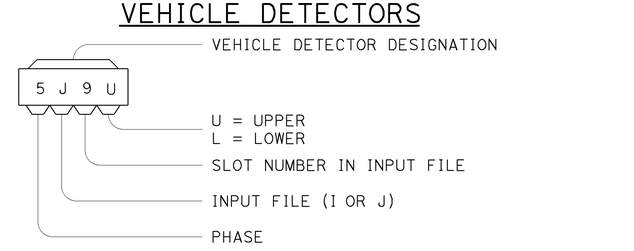
PULL BOXES

NEW	EXISTING	
		PULL BOX, No. 5 UNLESS OTHERWISE INDICATED OR NOTED
3	9A(21)	PULL BOX, ADDITIONAL DESIGNATIONS OR DESCRIPTIONS

3 No. 3½ PULL BOX
5 No. 5 PULL BOX
6 No. 6 PULL BOX
7 No. 7 PULL BOX (CEILING)
8 No. 8 PULL BOX
9 No. 9 PULL BOX (STRUCTURE)
9A No. 9A PULL BOX (STRUCTURE)

(C) COMMUNICATIONS PULL BOX
(E) PULL BOX WITH EXTENSION
(S) SPRINKLER CONTROL PULL BOX
(21) ANCHOR BOLTS AND CONDUIT FOR FUTURE INSTALLATION OF TYPE 21 STANDARD
(T) TRAFFIC PULL BOX

VEHICLE DETECTORS



NEW	EXISTING	
		TYPE A LOOP DETECTOR. OUTLINE OF SAW CUT SHOWN
		TYPE B LOOP DETECTOR. OUTLINE OF SAW CUT SHOWN
		TYPE C LOOP DETECTOR. OUTLINE OF SAW CUT SHOWN
		TYPE D LOOP DETECTOR. OUTLINE OF SAW CUT SHOWN
		TYPE E LOOP DETECTOR. OUTLINE OF SAW CUT SHOWN
		TYPE Q LOOP DETECTOR. OUTLINE OF SAW CUT SHOWN
DH	dh	DETECTOR HANDHOLE
		MICROWAVE OR VIDEO DETECTION ZONE

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-1C
DATED OCTOBER 30, 2015 - PAGE 420 OF THE STANDARD PLANS BOOK DATED 2015.

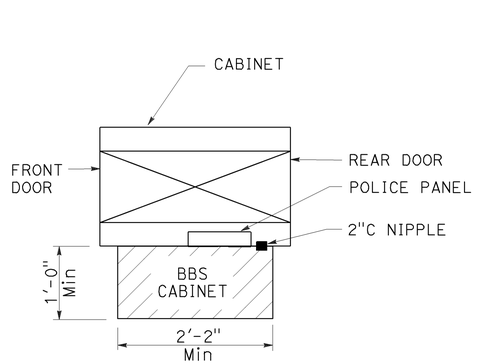
REVISED STANDARD PLAN RSP ES-1C

2015 REVISED STANDARD PLAN RSP ES-1C

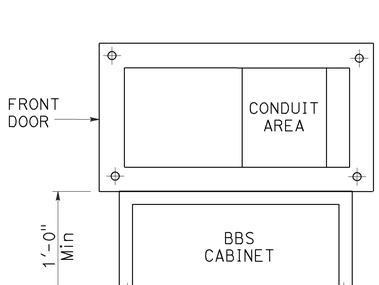
1-22-16

NOTES:

1. Controller units, plug-mounted equipment, shelf-mounted equipment and wall-mounted equipment shall be located to permit safe and easy removal or replacement without removing any other piece of equipment.
2. Cabinet fan may be installed at an alternate location near the top of the cabinet when approved by the Engineer.
3. Where telephone interconnect is required, a minimum of 5" clear vertical space shall be provided inside the cabinet for the equipment.
4. Telephone interconnect conductors shall be enclosed in a ¾"C or larger conduit through the foundation. Type 4 conduit shall be used to separate telephone and power conductors in cabinets.

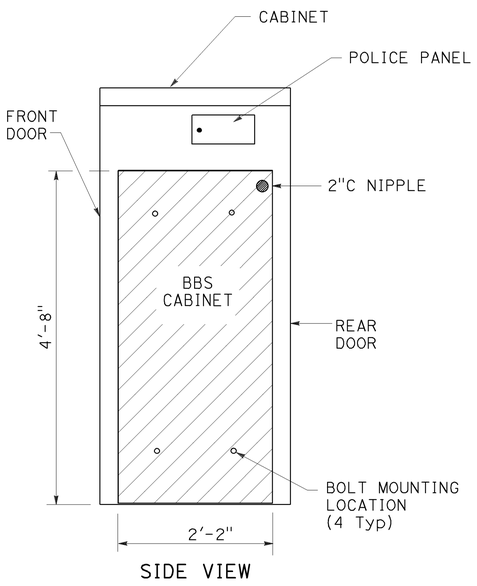


TOP VIEW



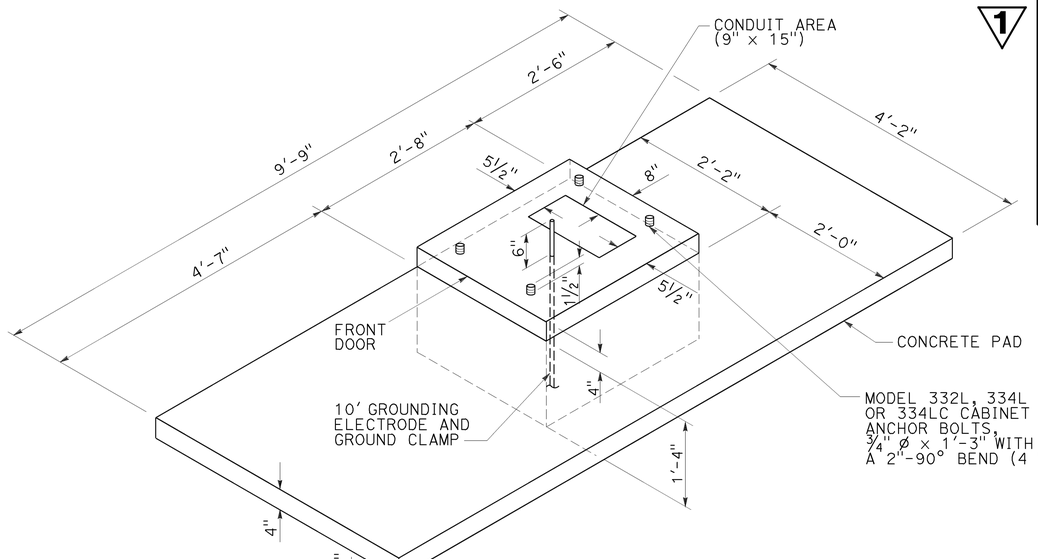
BASE PLAN FOR BBS MOUNTED TO THE MODEL 332L CABINET

(FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE CABINET HOUSING DETAILS OF THE TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATION (TEES))



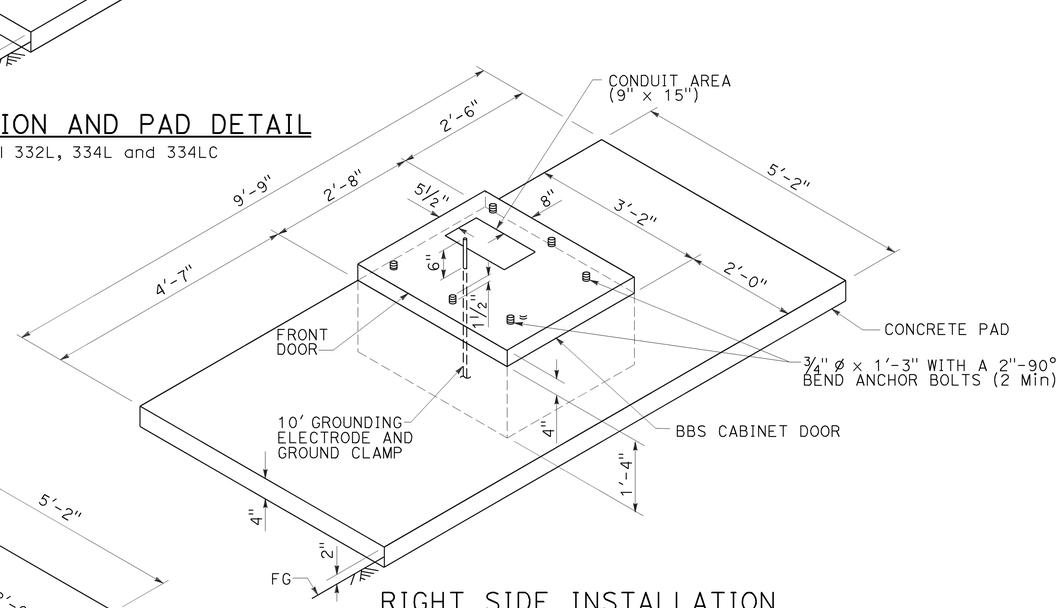
SIDE VIEW

BBS CABINET MOUNTED TO THE MODEL 332L CABINET



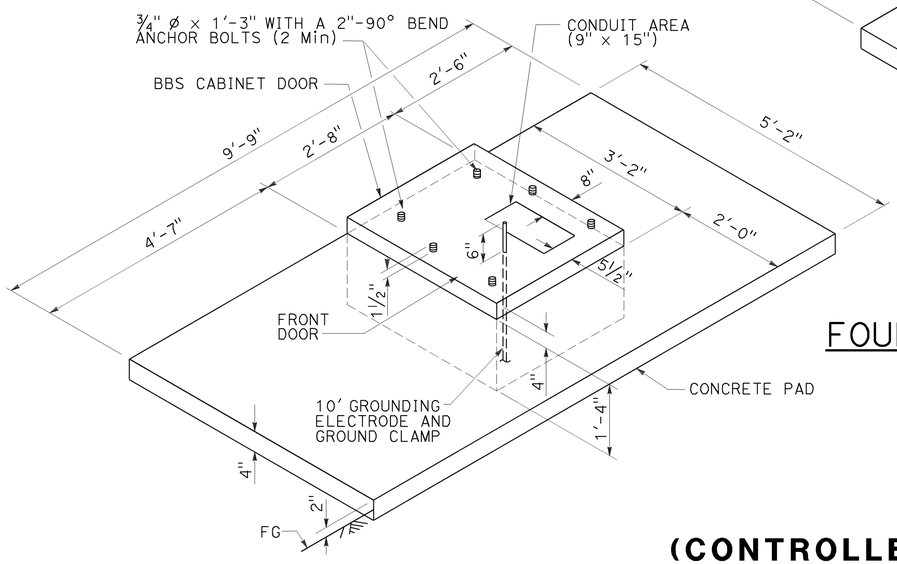
FOUNDATION AND PAD DETAIL

Model 332L, 334L and 334LC



RIGHT SIDE INSTALLATION

DETAIL B



LEFT SIDE INSTALLATION

DETAIL A

MODIFIED MODEL 332L CABINET FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (CONTROLLER CABINET FOUNDATION AND PAD DETAILS)

NO SCALE

RSP ES-3C DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-3C DATED OCTOBER 30, 2015 - PAGE 430 OF THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP ES-3C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	102	109

1

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

Theresa Aziz Gabriel No. E15129 Exp. 6-30-16 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

April 15, 2016
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 6-27-16

2015 REVISED STANDARD PLAN RSP ES-3C

1-12-16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	104	109

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

April 15, 2016
PLANS APPROVAL DATE

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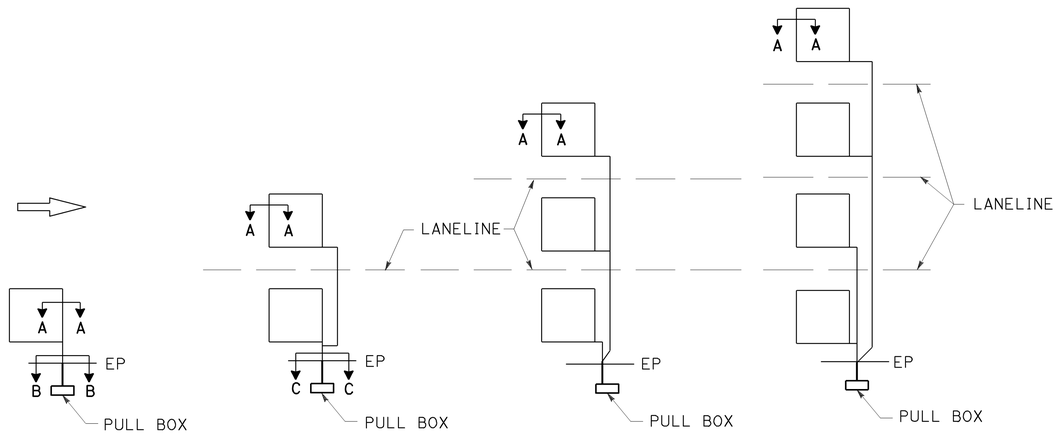
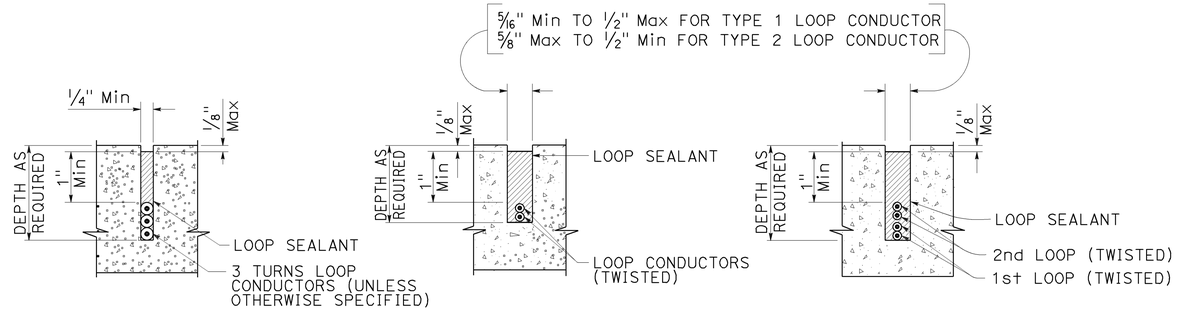
REGISTERED PROFESSIONAL ENGINEER
Theresa Aziz Gabriel
No. E15129
Exp. 6-30-16
ELECTRICAL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-27-16



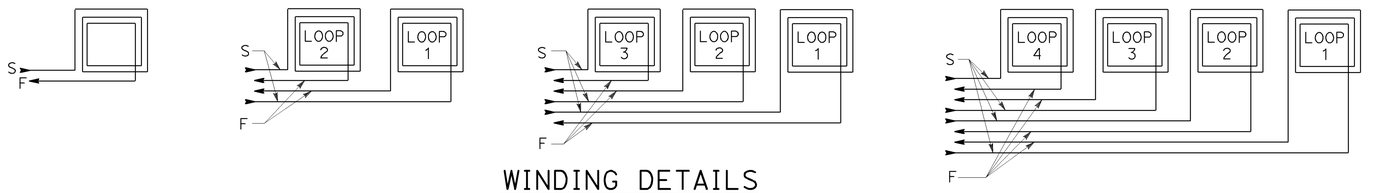
SAW CUT DETAILS

Type A loop detector configurations illustrated

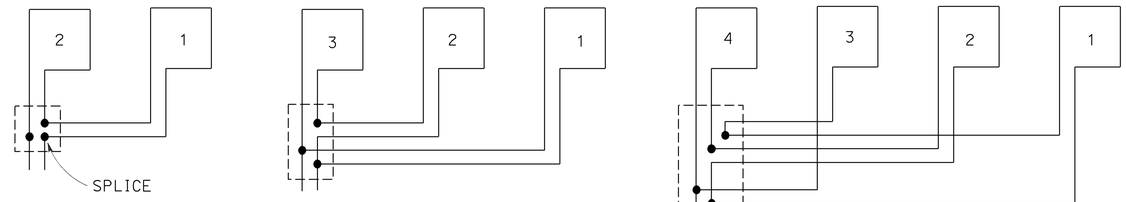


SECTION A-A SECTION B-B SECTION C-C

SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR



WINDING DETAILS



TYPICAL LOOP CONNECTIONS

Dashed lines represent the pull box

ABBREVIATIONS:

S - START
F - FINISH

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LOOP DETECTORS)

NO SCALE

RSP ES-5A DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-5A DATED OCTOBER 30, 2015 - PAGE 445 OF THE STANDARD PLANS BOOK DATED 2015.

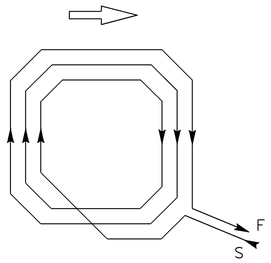
1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

REVISED STANDARD PLAN RSP ES-5A

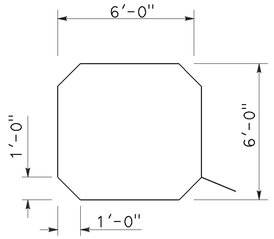
2015 REVISED STANDARD PLAN RSP ES-5A

1-12-16

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

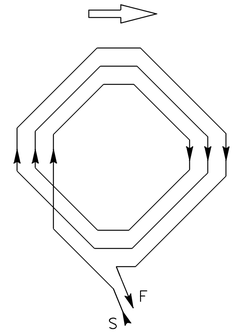


WINDING DETAIL

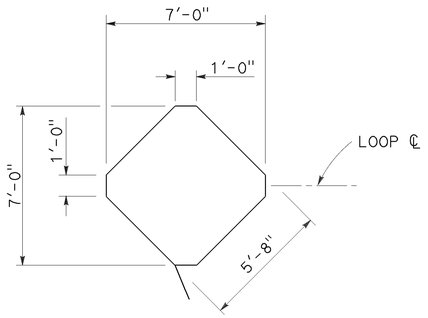


SAW CUT DETAIL

TYPE A LOOP DETECTOR CONFIGURATION

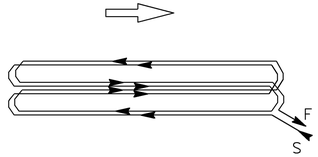


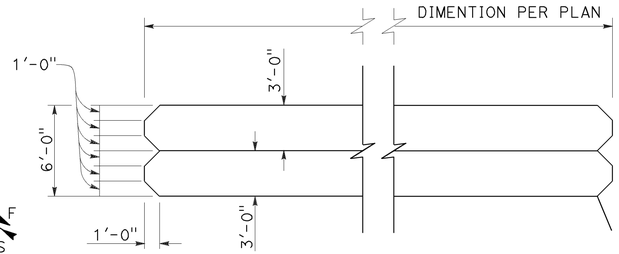
WINDING DETAIL



SAW CUT DETAIL

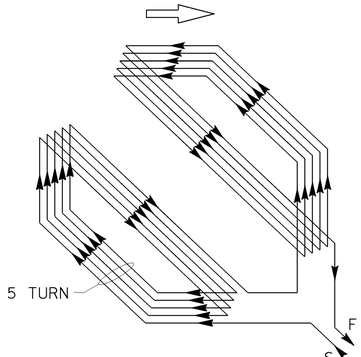
TYPE B LOOP DETECTOR CONFIGURATION

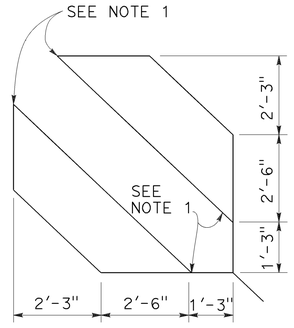




WINDING DETAIL SAW CUT DETAIL

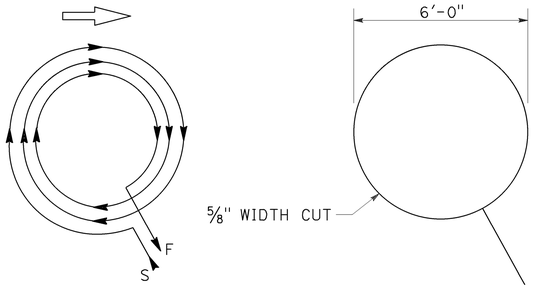
TYPE C LOOP DETECTOR CONFIGURATION





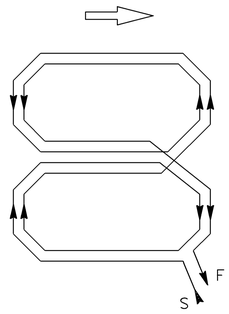
WINDING DETAIL SAW CUT DETAIL

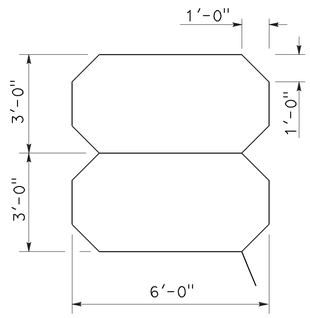
TYPE D LOOP DETECTOR CONFIGURATION



WINDING DETAIL SAW CUT DETAIL

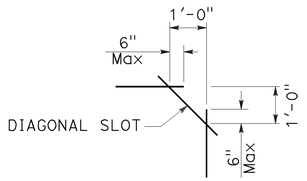
TYPE E LOOP DETECTOR CONFIGURATION





WINDING DETAIL SAW CUT DETAIL

TYPE Q LOOP DETECTOR CONFIGURATION



PLAN VIEW OF
DIAGONAL SLOT
AT CORNERS

NOTES:

1. Round corners of acute angle saw cuts to prevent damage to conductors.
2. Typical distance separating loops from edge to edge is 10' for Type A, B, D and E installation in single lane.
3. Use Type D loops for limit line detection and bicycle lanes.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	105	109

1

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

April 15, 2016
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Theresa Aziz Gabriel
No. E15129
Exp. 6-30-16
ELECTRICAL
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-27-16

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

RSP ES-5B DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-5B
DATED OCTOBER 30, 2015 - PAGE 446 OF THE STANDARD PLANS BOOK DATED 2015.

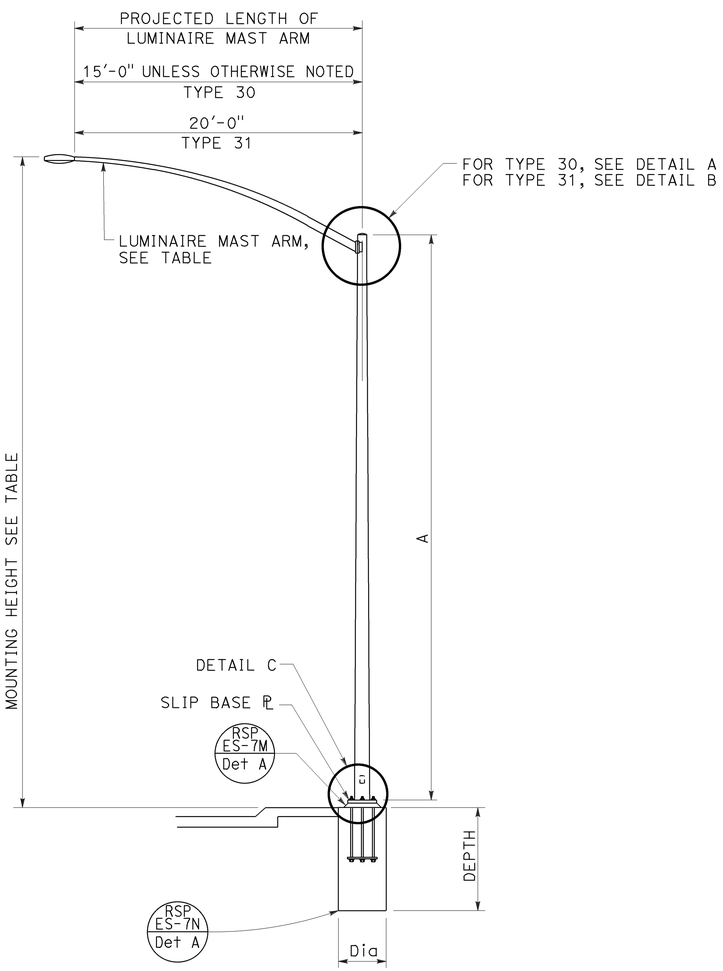
REVISED STANDARD PLAN RSP ES-5B

2015 REVISED STANDARD PLAN RSP ES-5B

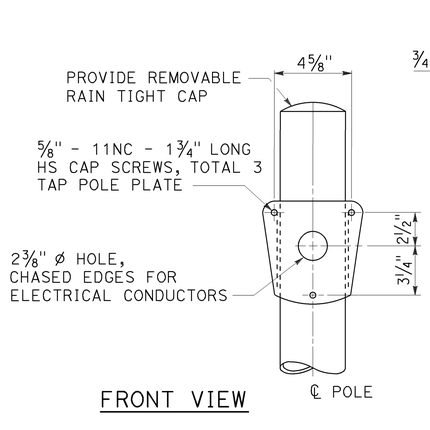
1-22-16

LUMINAIRE MAST ARM DATA			
PROJECTED LENGTH	THICKNESS	MINIMUM OD AT POLE	MOUNTING HEIGHT
* 6'-0"	0.1196"	3¼"	36'-9"±
* 8'-0"		3½"	37'-3"±
* 10'-0"		3⅞"	38'-0"±
* 12'-0"			39'-0"±
* 15'-0"		4¼"	39'-6"±
** 20'-0"	0.1793"	5"	37'-0"±

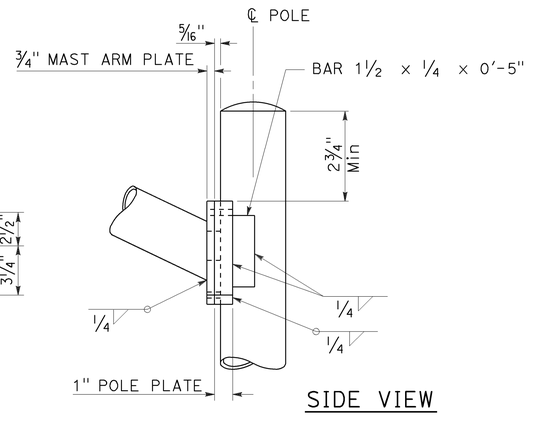
* TYPE 30
** TYPE 31



ELEVATION A



FRONT VIEW



SIDE VIEW

TYPE 30
DETAIL A

FRONT VIEW

SIDE VIEW

TYPE 31
DETAIL B

DETAIL C

POLE SPLICE

POLE TYPE	POLE DATA				CIDH PILE FOUNDATION	
	A HEIGHT	Min OD BASE	Min OD TOP	Min THICKNESS	Dia	DEPTH
30	35'-0"	8¾"	3¹¹⁄₁₆"	0.1196"	2'-6"	7'-0"
31		10¾"	5¹¹⁄₁₆"	0.1793"	3'-0"	8'-0"

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	106	109

REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Stanley P. Johnson
No. C57793
Exp. 3-31-18
CIVIL
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-27-16

NOTES:

1. For slip base plate details, see Revised Standard Plan RSP ES-6F.
2. For Type 30 fixed base use Type 15 base plate and foundation shown on Revised Standard Plan RSP ES-6A. Use 1¼" Dia x 3'-6" anchor bolts.
3. For Type 31 fixed base use Type 32 base plate, anchor bolts and foundation on Revised Standard Plan RSP ES-6G.
4. Handhole shall be located on the downstream side of traffic.
5. For additional notes and details, see Revised Standard Plans RSP ES-7M and RSP ES-7N.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LIGHTING STANDARD, TYPES 30 AND 31)

NO SCALE

RSP ES-6E DATED JULY 15, 2016 SUPERSEDES STANDARD PLAN ES-6E
DATED OCTOBER 30, 2015 - PAGE 453 OF THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP ES-6E

2015 REVISED STANDARD PLAN RSP ES-6E

6-20-16

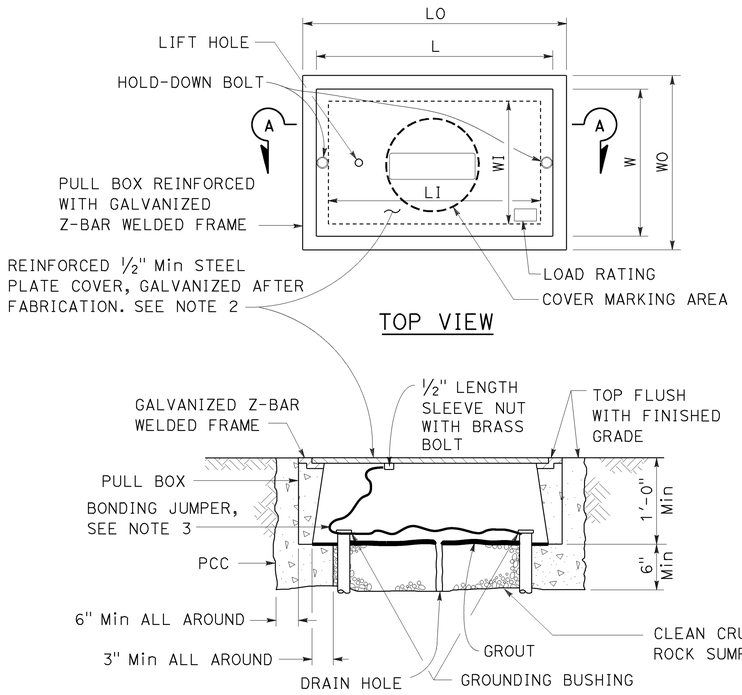
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	107	109

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

April 15, 2016
PLANS APPROVAL DATE

Theresa Aziz Gabriel No. E15129 Exp. 6-30-16 ELECTRICAL
REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-27-16



SECTION A-A

No. 3½(T), No. 5(T) AND No. 6(T) TRAFFIC PULL BOX

NOTES:

1. Traffic pull box shall be provided with steel cover and special concrete footing. Steel cover shall have embossed non-skid pattern.
2. Steel reinforcing shall be as regularly used in the standard products of the respective manufacturer.
3. Bonding jumper for metal covers shall be 3' long, minimum.
4. The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be ⅛" greater.
5. Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within ⅛".

DIMENSION TABLE

PULL BOX	PULL BOX						COVER	
	MINIMUM * THICKNESS	MINIMUM DEPTH BOX AND EXTENSION	LO	LI	WO	WI	L **	W **
No. 3½(T)	1½"	1'-0"	1'-10" - 1'-11"	1'-5" - 1'-6½"	1'-3" - 1'-4"	10" - 1'-0"	1'-8" - 1'-8½"	1'-1" - 1'-2"
No. 5(T)	1¾"	1'-0"	2'-5" - 2'-6"	2'-0" - 2'-1"	1'-6" - 1'-7"	1'-1" - 1'-2"	2'-3" - 2'-3½"	1'-4" - 1'-4½"
No. 6(T)	2"	1'-0"	2'-11" - 3'-1"	2'-6" - 2'-7"	1'-10" - 2'-0"	1'-5" - 1'-6"	2'-9" - 2'-9½"	1'-8" - 1'-8½"

* EXCLUDING CONDUIT WEB ** TOP DIMENSION

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (TRAFFIC PULL BOX)

NO SCALE

RSP ES-8B DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-8B DATED OCTOBER 30, 2015 - PAGE 474 OF THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP ES-8B

2015 REVISED STANDARD PLAN RSP ES-8B

1-22-16

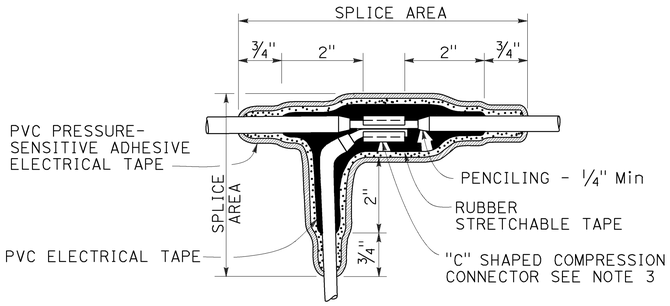
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	108	109

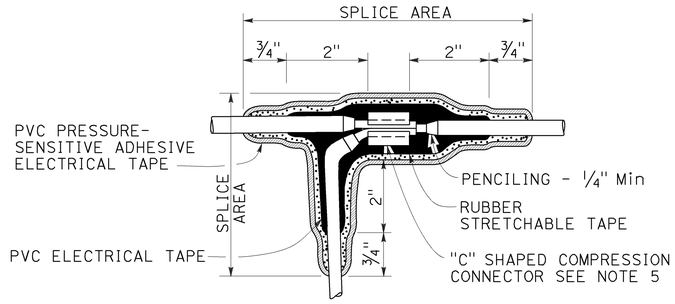
Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

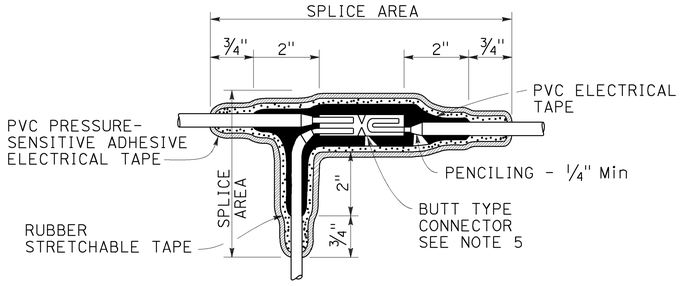
April 15, 2016
PLANS APPROVAL DATE

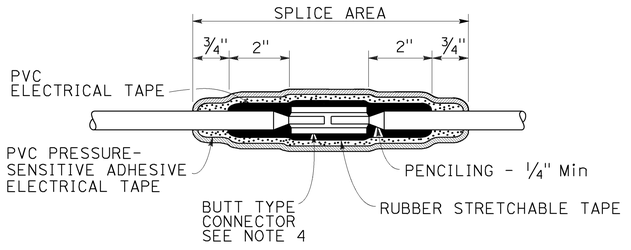
REGISTERED PROFESSIONAL ENGINEER — Theresa Aziz Gabriel — No. E15129 — Exp. 6-30-16 — ELECTRICAL — STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-27-16





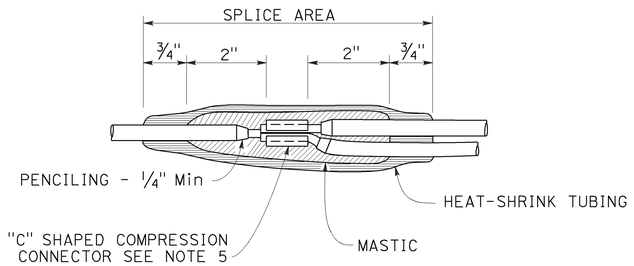


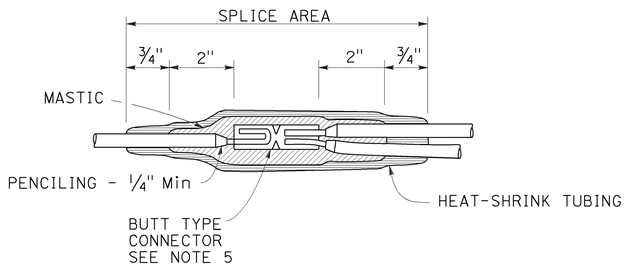


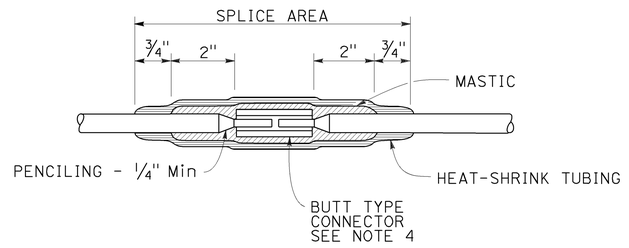
NOTES:

1. Dimensions are minimum.
2. Rubber tapes shall be rolled after application.
3. Between 1 free-end and 1 through conductor.
4. Between 2 free-end conductors.
5. Between 3 free-end conductors.

TYPICAL SPLICE INSULATION METHOD B







TYPICAL SPLICE INSULATION HEAT-SHRINK TUBING

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SPLICE INSULATION METHODS DETAILS)

NO SCALE

RSP ES-13A DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-13A DATED OCTOBER 30, 2015 - PAGE 484 OF THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP ES-13A

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

2015 REVISED STANDARD PLAN RSP ES-13A

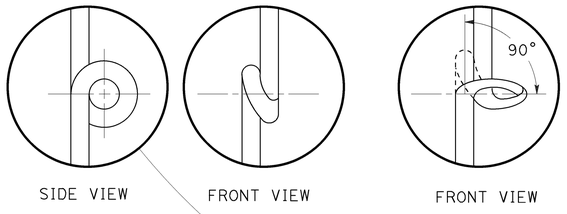
12-16-15

CIRCUIT VOLTAGE	FUSE VOLTAGE RATING	FUSE CURRENT RATING						
		HPS LAMP BALLAST		LOW PRESSURE SODIUM BALLAST	INDUCTION SIGN LIGHTING	SINGLE PHASE (TWO WIRE) TRANSFORMERS (PRIMARY SIDE)		
		70 W	100 W	180 W	85 W	1 kVA	2 kVA	3 kVA
120 V	250 V	5 A	5 A	5 A	5 A	10 A	20 A	30 A
240 V	250 V	5 A	5 A	5 A	5 A	6 A	10 A	20 A
480 V	500-600 V	5 A	5 A	3 A	1 A (SEE NOTE 2)	3 A	6 A	10 A

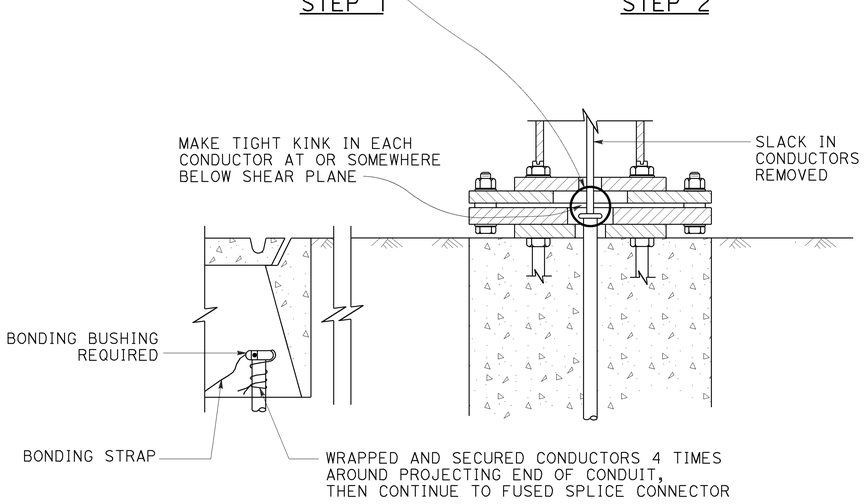
NOTES:

1. Primary lines of multiple ballasts shall be provided with fused connectors. Fuse ratings shall be as noted above.
2. See Standard Plan ES-15D, Type SC3 control.

FUSE RATINGS FOR FUSED CONNECTORS

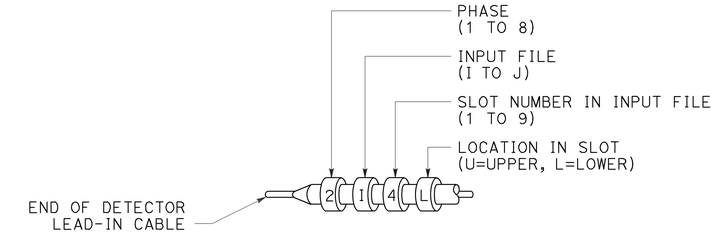


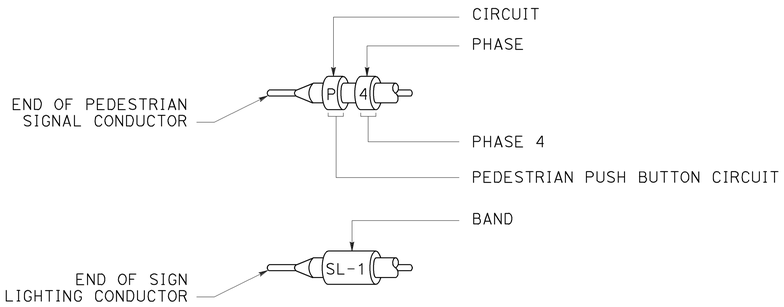
CONTINUE KINK TO AT LEAST 90° POSITION AS INDICATED IN STEP 2.



KINKING DETAIL FOR SLIP BASE STANDARDS

DETAIL A





TYPICAL BANDING DETAILS

DETAIL B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Tul	198	R4.2/R4.9, 6.8/R8.3	109	109

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

April 15, 2016
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Theresa Aziz Gabriel — No. E15129 — Exp. 6-30-16 — ELECTRICAL — STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-27-16

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (FUSE RATING, KINKING AND BANDING DETAIL)

NO SCALE

RSP ES-13B DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-13B DATED OCTOBER 30, 2015 - PAGE 485 OF THE STANDARD PLANS BOOK DATED 2015.

REVISED STANDARD PLAN RSP ES-13B

1 REPLACED PER ADDENDUM No. 1 DATED OCTOBER 13, 2016

2015 REVISED STANDARD PLAN RSP ES-13B

1-12-16