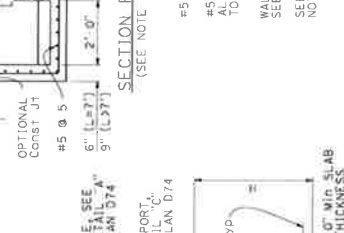
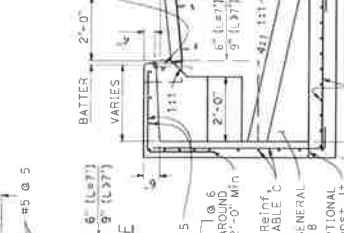
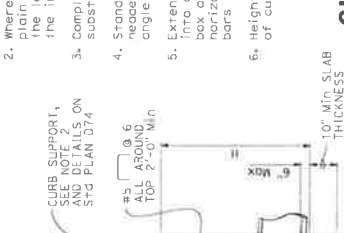
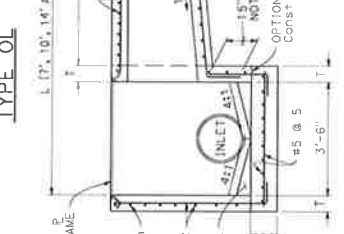
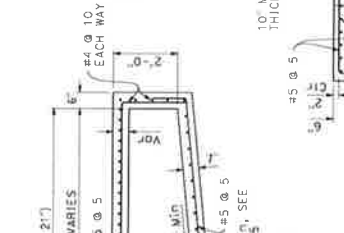
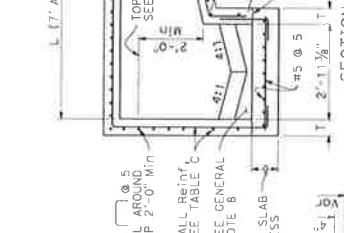
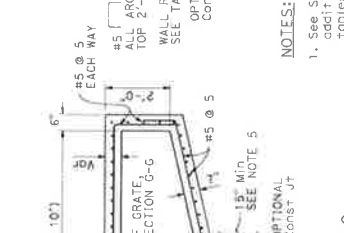
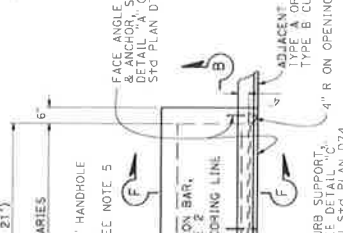
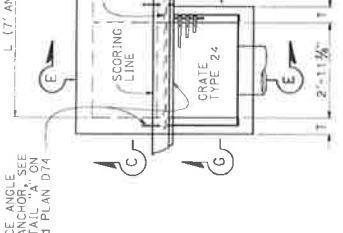
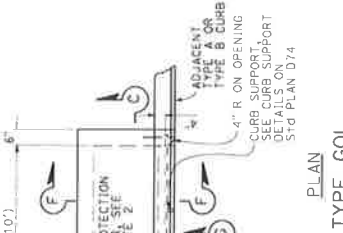


May 31, 2018
 STATE OF CALIFORNIA
 PROFESSIONAL ENGINEER
 LICENSE NO. 53916
 MECHANICAL
 EXPIRES MAY 31, 2021



NOTES:

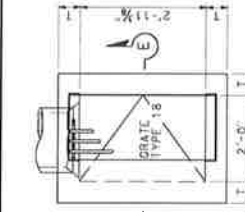
- See Standard Plan D72E for General Notes and additional details. See Standard Plan D720 for tables, wall thickness "1" and quantities.
- Where shown on the project plans, place a 3/4" dia. protection bar horizontally across the length of the curb and bend back 4" into the inlet wall on each side.
- Complete joint penetration burr welds may be substituted for the fillet welds on all anchors.
- Standard square, hexagon, round or equivalent angle anchors may be used if equivalent angle hooks on the anchors shown on this plan.
- Extend all horizontal bars from inlet extensions into adjacent concrete elements of main inlet box a minimum of 15". Where shown, bend bars to maintain 2" clear coverage.
- Height of curb opening will vary with the type of curb and the depth of the local depression.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
CIP DRAINAGE INLETS
TYPES OS, OL AND GOL
 NO SCALE
D72A

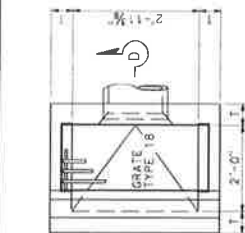
REGISTERED PROFESSIONAL ENGINEER
 RICHARD M. BROWN
 No. 12301
 State of California
 CIVIL ENGINEER
 MAY 31, 2018
 EXPIRES ANNUAL DATE
 THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 DIVISION OF HIGHWAYS
 DIVISION OF HIGHWAYS

NOTES:
 1. For notes and Table 2, see Standard Plan D72C.
 2. For L₁ or L₂ greater than 2'-10", see Table 2 for wall thickness dimension, for reinforcement. Otherwise, see Table C in Standard Plan D72B for wall thickness and reinforcement.

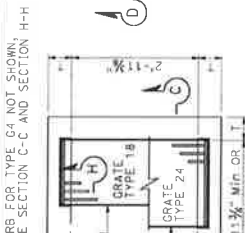
TABLE 1	
L ₁ OR L ₂ > 2'-10"	T
L ₁ OR L ₂ ≤ 2'-10"	T ²



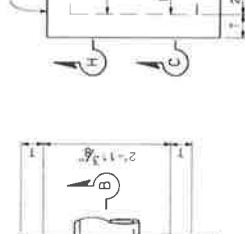
PLAN TYPE G1



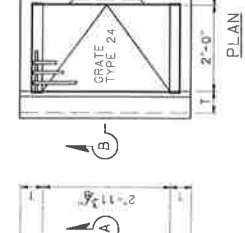
PLAN STANDARD TYPE G2 OR G4



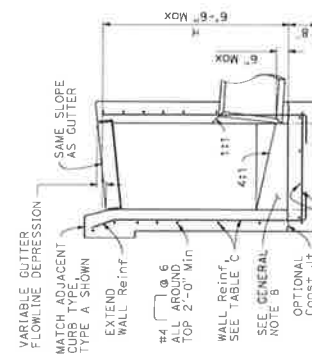
PLAN TYPE G3



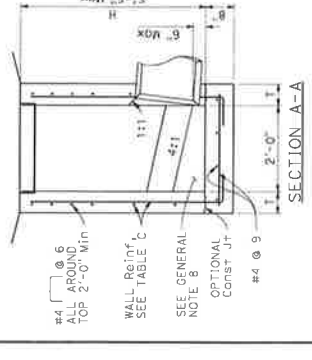
PLAN TYPE G5



PLAN TYPE G6



SECTION A-A



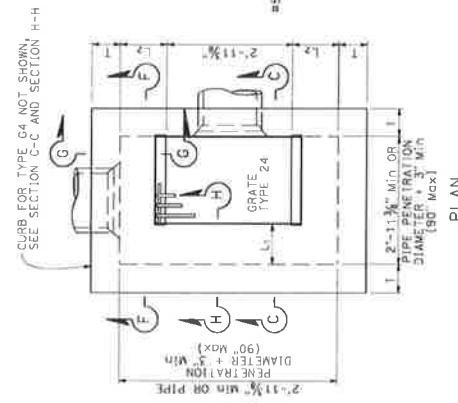
SECTION B-B



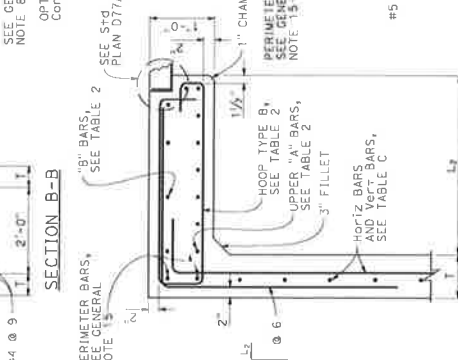
SECTION C-C

SECTION D-D

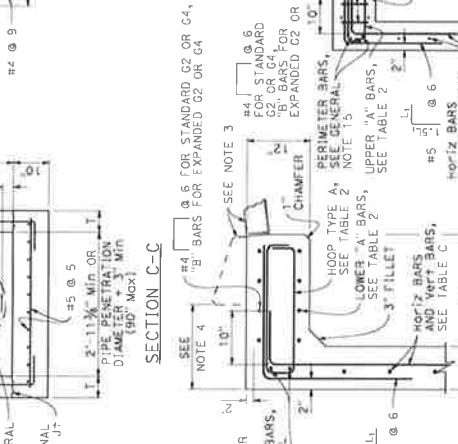
SECTION E-E



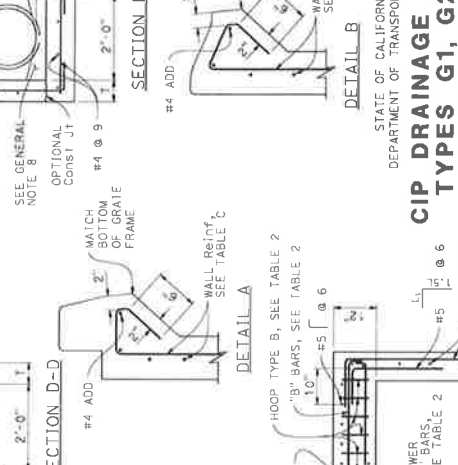
PLAN EXPANDED TYPE G2 OR G4



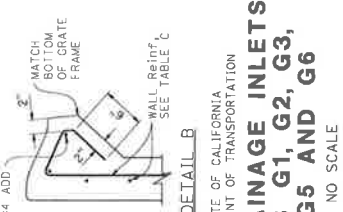
SECTION G-G



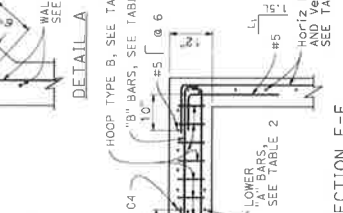
SECTION H-H



SECTION F-F



DETAIL B



DETAIL A

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
CIP DRAINAGE INLETS
 TYPES G1, G2, G3,
 G4, G5 AND G6
 NO SCALE

D72B

PROJECT NUMBER	DATE
REPORT	DATE
TOTAL SHEETS	NO. OF SHEETS

REGISTERED CIVIL ENGINEER

May 31, 2018

EXPIRES: MAY 31, 2021

NO. 51877B

EXPIRES: MAY 31, 2021

NO. E-30-118

STATE OF CALIFORNIA

DEPARTMENT OF INDUSTRIAL RELATIONS

FOR THE STATE BOARD OF PROFESSIONAL ENGINEERS AND SURVEYORS

FOR THE BOARD OF ARCHITECTS

FOR THE BOARD OF LAND SURVEYORS

FOR THE BOARD OF CIVIL ENGINEERS

FOR THE BOARD OF ELECTRICAL ENGINEERS

FOR THE BOARD OF MECHANICAL ENGINEERS

FOR THE BOARD OF CHEMICAL ENGINEERS

FOR THE BOARD OF AERONAUTICAL ENGINEERS

FOR THE BOARD OF NUCLEAR ENGINEERS

FOR THE BOARD OF PROFESSIONAL LAND SURVEYORS

FOR THE BOARD OF PROFESSIONAL ARCHITECTS

FOR THE BOARD OF PROFESSIONAL SURVEYORS

FOR THE BOARD OF PROFESSIONAL CIVIL ENGINEERS

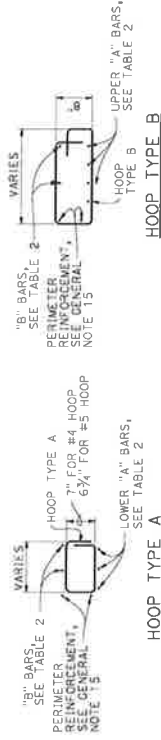
FOR THE BOARD OF PROFESSIONAL ELECTRICAL ENGINEERS

FOR THE BOARD OF PROFESSIONAL MECHANICAL ENGINEERS

FOR THE BOARD OF PROFESSIONAL CHEMICAL ENGINEERS

FOR THE BOARD OF PROFESSIONAL AERONAUTICAL ENGINEERS

FOR THE BOARD OF PROFESSIONAL NUCLEAR ENGINEERS



NOTES:

1. See Standard Plan D72C for General Notes and additional details. See Standard Plan D72C 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

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

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

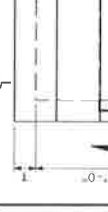
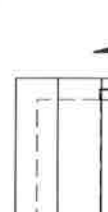
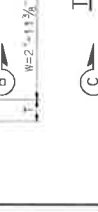
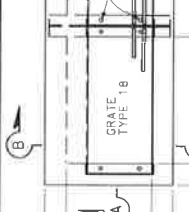
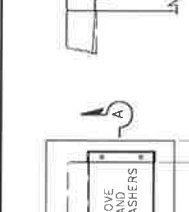
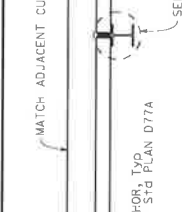
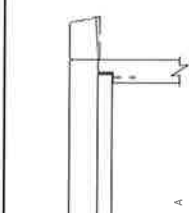
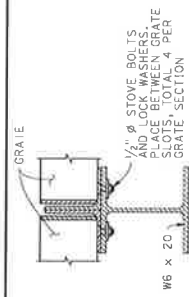
CIP DRAINAGE INLETS
TYPES G1, G2, G3,
G4, G5 AND G6

NO SCALE

D72C

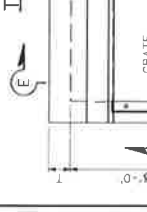
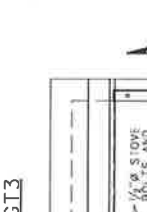
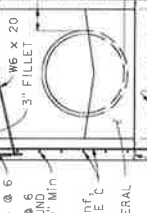
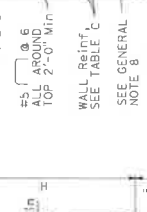
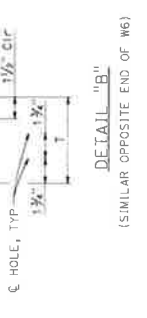
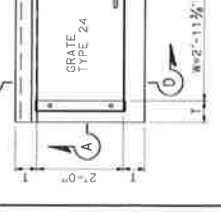
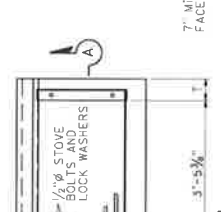
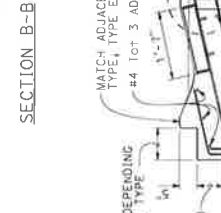
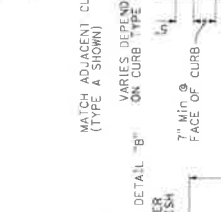
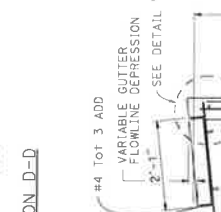
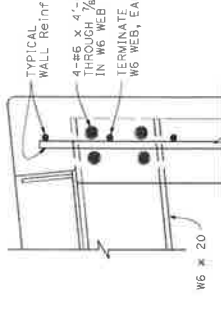
COUNTY	SHEET NO.	TOTAL SHEETS	DATE
REVISION	NO.	DATE	BY

May 31, 2018
 E. M. D. D. CIVIL ENGINEER
 1000 S. GARDEN ST. SUITE 100
 ANAHEIM, CA 92805
 TEL: 714.933.1111 FAX: 714.933.1112



NOTES:

1. See Standard Plan D72F for General Notes and additional details. See Standard Plan D72G for tables, wall thickness, "T" and quantities.
2. W=2'-11 3/4" for one grate. Add 3'-5 3/4" for additional grates in tandem.
3. Complete joint penetration butt welds may be substituted for the fillet welds on all anchors.
4. Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**CIP DRAINAGE INLETS
 TYPES GT1, GT2,
 GT3 AND GT4**
 NO SCALE

D72D

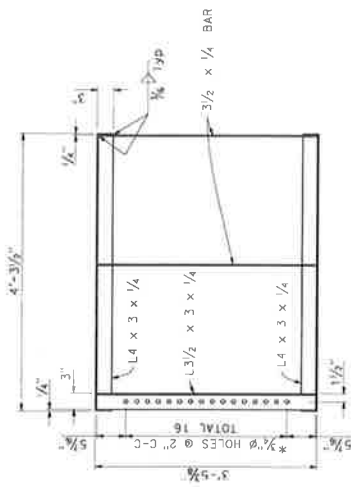
ROUTE: _____ COUNTY: _____

PROJECT NO.: _____ SHEET NO.: _____

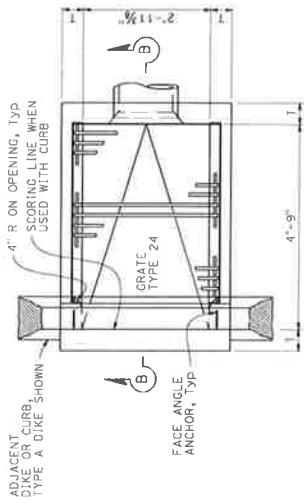
REGISTERED CIVIL ENGINEER

NOV 31, 2018

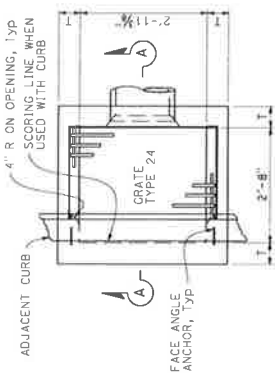
STATE OF CALIFORNIA
DIVISION OF LAND AND WATER RESOURCES
IN REPLY TO COUNTY STREET & LAND
NO. 15, 010, 010, 010, 010, 010, 010



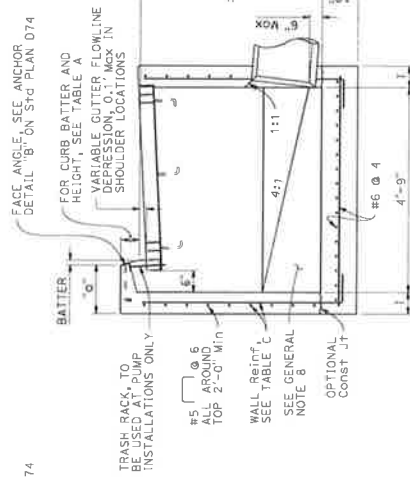
GRATE FRAME FOR TYPE GDO INLET
* HOLES REQUIRED ONLY WITH TRASH RACK



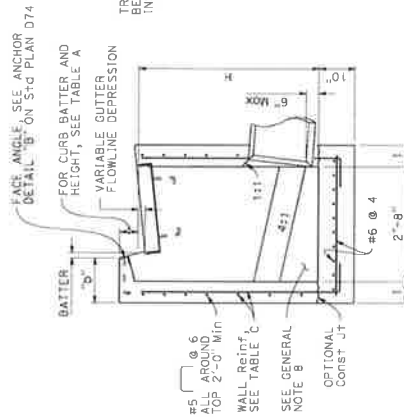
PLAN TYPE GDO



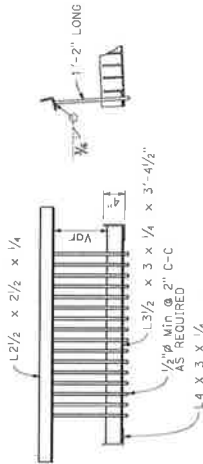
PLAN TYPE GO



SECTION B-B



SECTION A-A



TRASH RACK

(FOR USE WITH PUMP INSTALLATION)

NOTES:

1. See Standard Plan D72E for General Notes and additional details. See Standard Plan D72E for tables, wall thickness, "T" and quantities.
2. Where shown on the project plans, place a 1/2" plain round protection bar horizontally across the length of the opening and bend back 4" into the inlet wall on each side.
3. Complete joint penetration butt welds may be substituted for the fillet welds on all anchors.
4. Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.

TABLE A

CURB TYPE	NORMAL CURB HEIGHT	"a" CURB BATTER DIMENSION	"b" CURB BATTER DIMENSION
A1-6	6"	1/2"	T+7 1/2"
A1-8	8"	2"	T+7"
B1-6	6"	4"	T+5"
TYPE A DIKE	6"	3"	T+5"

Height of curb opening will vary with the Type of curb and the depth of the local depression.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CIP DRAINAGE INLETS
TYPES GO AND GDO**
NO SCALE

D72E

Return to Table of Contents

STATE COUNTY BRIDGE TOTAL PROJECT NO. TOTAL SHEETS

REGISTERED CIVIL ENGINEER

May 31, 2018

2018 ANNUAL BILL NO. C2973

DATE OF ISSUE 4-20-18

PROJECT NO. 10000000000000000000

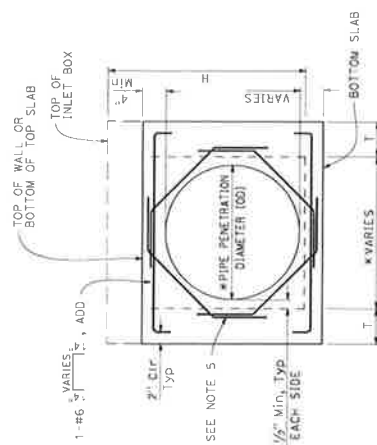
PROJECT NAME

DESIGN NOTES:

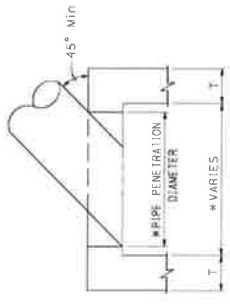
1. Design Specifications: AASHTO LRFD Bridge Design Specifications, 6th Edition with 2012 Interims and Errata and CA Amendments.
2. Live Load (AASHTO LRFD 3.6.1.2): HL-93, consists of design truck or tandem, and design lane load. Dynamic Load Allowance, $W = 33\%$. Multiple Presence Factor, $m = 1.0$. Annual load of 8 kips/ft, one-hour, 100-year design, used for top slabs that are above curb.
3. Earth Load: Vertical pressure = 140 pcf Lateral pressure = 100 pcf for walls with slope embankment, 1.5:1 Max = 140 pcf for walls with slope embankment, 1.5:1 Max
4. Downdrag: $\phi = 34^\circ$ and $\gamma_c = 120$ pcf.
5. Buoyancy: $\gamma_c = 62.4$ pcf to finished grade
6. Reinforced Concrete: $f'_c = 3.6$ ksi, $f_y = 60.0$ ksi.
7. Soil pressures shown are factored per AASHTO LRFD and include self-weight, live load and downdrag.

GENERAL NOTES:

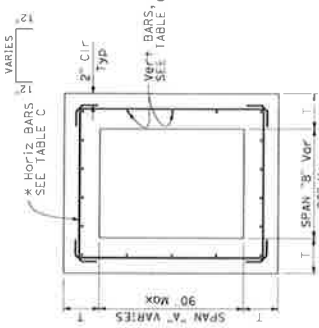
1. "h" is measured from top of bottom slab to the normal gutter grade line undepressed at the curb face.
2. For "t" wall thickness and reinforcement, see Table C on Standard Plan D72C.
3. Wall reinforcement must be placed in the center of the wall thickness with horizontal bars clear of the curb face. Concrete cover must be clear on the interior face unless otherwise noted. Top slab concrete cover must be 2" 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 the top of the curb. Reinforcing bars must be lapped and be uniform throughout the length of the curb. Steps must be cast in the curb. The reinforcing inserts may be substituted for the bar steps. Step inserts must comply with State Industrial Safety Requirements. See Standard Plan D74 for step details.
5. Pipelets can be placed in any wall. Adjacent to each side of the opening, place additional reinforcement equivalent to that of the interrupted main reinforcement. For larger pipes use pipelets with diameter less than diagonal bars. Size each side. Bars must be the same size as the diagonal bars. Reinforcement must be placed where bars intersect with the intersection with the adjacent diagonal bar or where bars intersect with thickness of adjacent wall bottom or top of non-continuous wall, bend ends as required into same plane.
6. Set inlets so that grate bars are parallel to direction of principal surface flow.
7. Curb section must match adjacent curb.
8. Except for inlets used at 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 Plans A87A and 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 cast-in-place (CIP) inlets to be formed around all pipes/stubs intersecting the inlet, and concrete poured in one continuous operation.
14. 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 or outer corners when using ASTM A706 weldable bars.



TYPICAL WALL W/ PIPE OPENING
* SEE "SKEWED PIPE PLAN"



SKEWED PIPE PLAN
* ADJUST PIPE PENETRATION AND BOX WIDTH FOR SKEWED PIPES.



TYPICAL INLET PLAN
* ALTERNATIVE HORIZONTAL BARS

CIP DRAINAGE INLET NOTES
NO SCALE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

D72F

Return to Table of Contents

MATTHEW J. DECKER
 CIVIL ENGINEER
 No. 52392
 State of California
 Expires 06/30/19

TABLE D

INLET	CLUBS USED IN QUANTITIES
G1	-
G2	-
G3	A1-6
G4 (Type 18)	A1-6
G4 (Type 24)	A1-6
G5	B1-4
G6	1/2E
OS	-
OL1	-
OL10	-
OL14	-
OL21	-
GOL7	-
GOL10	-
GT1	D-6
GT2	E
GT3	AZ-B
GT4	A2-B
GO	-
G00	-

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*	759	66.48	1794	171.79
G3	118	22.20	SEE NOTE 2	SEE NOTE 2
G4 (TYPE 18)*	647	66.48	1675	171.79
G4 (TYPE 24)*	647	66.48	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	1027	120.77
OL1	458	50.53	1324	126.75
OL10	729	90.53	1585	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	111.08	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
G00	519	57.09	1654	165.66

* Quantities are based on the minimum interior dimensions.

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	0.523
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
OL1	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	2.33	0.330	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
G00	1.74	0.322	6.33	0.647

* Quantities are based on the minimum interior dimensions.

TABLE C - WALL REINFORCEMENT

TYPE	H=8' (T=6" J=UN)		8' Hx20' (T=11" J=UN)	
	HORIZ	VERTICAL	HORIZ	VERTICAL
OS	#4 @ 8	#4 @ 6	#5 @ 6	#6 @ 4.5
OL	#4 @ 8	#4 @ 6	#5 @ 6	#6 @ 4.5
GOL	#5 @ 6	#5 @ 8	#6 @ 5	#6 @ 4.5
G1 (Hx6-6')	#3 @ 6	#3 @ 6	-	-
G2	T=9" #5 @ 5	#5 @ 5	T=11" #6 @ 4	#6 @ 4.5
G3 (Hx6-6')	#3 @ 6	#3 @ 6	-	-
G4	T=9" #5 @ 5	#5 @ 5	T=11" #6 @ 4	#6 @ 4.5
G5 (Hx6-6')	#3 @ 6	#3 @ 6	-	-
G6 (Hx6-6')	#3 @ 6	#3 @ 6	-	-
GT1 (Hx6-6')	#5 @ 6	#5 @ 6	-	-
GT2	T=8" #5 @ 6	#5 @ 6	#6 @ 4	#6 @ 4.5
GT3 (Hx6-6')	#5 @ 6	#5 @ 6	-	-
GT4	T=8" #5 @ 6	#5 @ 6	#6 @ 4	#6 @ 4.5
GO	#4 @ 8	#4 @ 6	#4 @ 6	#4 @ 6
G00	#4 @ 6	#4 @ 6	#5 @ 4	#6 @ 4.5

TABLE E

SOIL PRESSURE BELOW BASE	H=8'-0" (8'-0" x H x 20'-0")	
	TYPE	PSI
OS	2.93	5.56
OL*	2.93	5.56
GOL*	2.50	5.06
G1	3.67	-
G2	2.99	5.21
G3	3.87	-
G4	2.89	5.91
G5	3.67	-
G6	3.67	-
G11	3.66	-
GT2	3.91	6.07
GT3	3.86	-
GT4	3.91	6.07
GO	3.42	6.11
G00	2.52	6.95

* Main Box

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CIP DRAINAGE INLET TABLES

NO SCALE

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