

COUNTY OF SAN DIEGO

**STANDARD DRAWINGS
1972**

COUNTY OF SAN DIEGO
CALIFORNIA
COUNTY ENGINEER DEPARTMENT

Rev. 2/11/74

1 of 6

INDEX OF STANDARD DRAWINGS

Drainage

<u>Number</u>	<u>Description</u>
100-2	Curb Inlet, Type A-2
102-1	Cleanout, Storm Drain, Types A, B, C, D, & E
107-2	Catch Basin, Type D
108-1	Curb Inlet, Type H
111-4	Frame and Grates for Drainage Structures
118-1	Headwalls & Endwalls Types U & Wing
122	Drop Inlet, Type C
124-1	Tapered Inlet and Down Drain Flume - Asphalt Concrete Spillway
125-1	Entrance Taper and Down Drain Pipe
126-1	Straight Headwall, Single & Double
127-1	L Type Headwall
128-1	Channel or Pipe Outlet Rock Slope Protection - Protection and Flow Interruption
129-2	Inlet Apron, Type A for Culverts up to 42" Diameter
130-1	Inlet, Culvert - Flared
140-1	Standard Single Box Culverts
141-1	Standard Double Box Culverts
142-1	Standard Triple Box Culverts
143-1	Standard Box Culvert Miscellaneous Details
144-1	Standard Culvert Headwalls & Endwalls, Types A, B. & C
145-1	Standard Culvert Headwalls & Endwalls, Types D & E
146-1	Standard Reinforced Concrete Warped Wing - Headwalls & Endwalls
147-1	Standard Construction Loads on Culverts

180-1	Safe Overfills for R.C.P. or C.M.P.
181-1	Safe Overfills for Field Assembled Plate Pipe
D-1	Headwall, Gravity Type
D-4	Notes & Details, Inlet & Cleanouts
D-5	Curb Inlet - Type A
D-6	Curb Inlet - Type B
D-7	Curb Inlet - Type C
D-9	Rounded Pipe Ends
D-11	Storm Drain Cleanout - Type A
D-12	Concrete Lug
D-14	Pipe Collar
D-15	Inlets, Type I & J
D-18	Inlet Frame & Cover
D-20	Standard Drainage Outlet (For Sidewalk Area)
D-24	Headwall, Wing & U-Type (For 42" to 84" Pipes)
D-25	Spillway Inlets & Underdrain, Type A, B, & C
D-28	Curtain Wall
D-34	Curb Inlet - Type G
D-35	Curb Outlet
D-40	Drainage Channel
D-61	Trash Fence
M-23	Manhole Frame & Cover (22")
M-54	Manhole Frame and Two Concentric Covers (36")
S-27	Concrete Anchor

Pavement, Sidewalk, Curb & Gutter

<u>Number</u>	<u>Description</u>
201-2	Asphalt Concrete Dikes
207-4T	Concrete Driveways
208-1T	Grading of Slopes
209	Required Setbacks
212-3T	P.C.C. Sidewalks
218-1	Street Survey Monuments
219-1	Survey Monuments Locations
220-1	Excavation & Backfill - Culverts, Retaining Walls & Headwalls
221-1	Excavation & Backfill - Roadway, Wingwalls & Slope Protection

222-1	Excavation & Backfill - Bridge Piers, Abutment & Adjoining Wingwalls
223-1	Standard Gutter Depressions for Type K, & K-1 Curb Inlets
224-1	Standard Gutter Depressions for Curb Inlets with Grate
225	Ramp for Curb, Gutter, & Sidewalk
226	Special Mountable Curb
227	Asphalt Concrete Driveways
231 T	Lot Grading
232 T	Fencing Cut Banks
G-11	Concrete Pavement-Alley Section (20' width, or less)
G-12	Concrete Pavement-Alley Section (20' to 40')
G-27	Cutoff Wall at End of Pavement
G-28	Cutoff Wall at End of Alley Pavement
G-32	Cross Gutter Type A
G-33	P.C.C. Curb, Gutter, Sidewalk & Pavement Removal & Replacement
G-35	Concrete Cross Gutter & Return Segment
G-39	Alley Apron
G-42	P.C.C. Joints for Pavement, Sidewalk, Curb, & Cross Gutter
G-43	Curbs & Gutters Typical Plans
G-44	6" & 8" Curb Sections & Gutter Section
G-45	Curb Sections - Types G & H
G-46	Curb Sections - Type B
G-57	Curb Section - Type "D" Roll Curb
T-9	Guard Post and Fence Assembly for Terminating Streets
T-15	Metal Beam Guard Rail Installation
T-16	Metal Beam Guard Rail Detail

Location & Geometrics for Pavement,
Sidewalks, Curbs, Driveways, Utilities, etc.

<u>Number</u>	<u>Description</u>
300	Subdivision Improvement Plan Title Block
301-2	Street Sign
302-1	Sidewalk Returns
303-1	Median Islands
304-3	Turnaround & calculations
305-3T	Driveway Location and Width Requirements

306-1	Driveway Location Adjacent to Curb Returns
307	Fire Hydrant Location
309 T	Trench Utilities Location
310-3	Typical Roadway Sections
311-1	Hillside Residential Street Alternate 1
312-1	Hillside Residential Street Alternate 2
313-1	Hillside Residential Street Alternate 3
314-1	Hillside Residential One-Way Street Alternate 4
315-1	Temporary Hammerhead Turnaround at Dead-End Street
316-1	Temporary Turnaround at Dead-End Street
317-1	Temporary Hammerhead Turnaround at Dead-End Street Hillside Standard
318	Construction Plan Symbols
P-24	Utility Line Locations

Miscellaneous

410 T;p. 1,2,3	Ornamental Street Light
C-42	Cantilever Retaining Wall - Type 1A Elevation
C-43	Cantilever Retaining Wall - Type 1A Sections
C-44	Cantilever Retaining Wall - Type 2 Elevation & Section
C-45	Cantilever Retaining Wall - Type 2 Construction Details
C-46	Cantilever Retaining Wall - Type 3 Elevation & Section
C-47	Cantilever Retaining Wall - Type 3 Construction Details
C-48	Wing Wall Details for Cantilever Walls-Elevation
C-49	Wing Wall Details for Cantilever Walls-Sections
C-50	Counterfort Retaining Wall
C-51	Counterfort Retaining Wall
C-52	General Notes for Retaining Walls
C-53	Cantilevered Masonry Retaining Wall-Misc. Details
C-54	Cantilevered Masonry Retaining Wall-Type CM-5
C-55	Cantilevered Masonry Retaining Wall-Type CM-6 (sloping backfill)
C-56	Gravity Retaining Wall

C-57	General Notes for Masonry Retaining Walls
C-58	Cantilevered Masonry Retaining Wall - Type LM-1
C-59	Cantilevered Masonry Retaining Wall - Type LM-2
C-60	Cantilevered Masonry Retaining Wall - Type LM-3
C-61	Cantilevered Masonry Retaining Wall - Type LM-4
C-63	Cantilevered Retaining Wall - Type L-1
C-64	Cantilevered Retaining Wall - Type L-2
C-67	Cantilevered Retaining Wall - Type L-5
M-4	Chain Link Fence
M-5	Chain Link Fence

Water Systems

<u>Number</u>	<u>Description</u>
700-T2	Shrubbery Sprinkler Heads Fixed Spray Type
701-T1	Lawn Sprinkler Heads Pop-up Rotary & Pop-up Spray Types
702-T2	Impact Sprinkler Head
703-T	Quick Coupling Valves
704-T	Garden Valves
705-T	Manual Valves
706-1T	Direct Burial Control Wire & Trench Detail
707-2T	Electrical Pull Box for Direct Burial Control Wires & Splice Detail
708-T1	Automatic Control Valve - Electric (angle valve)
709-T1	Automatic Control Valve - Electric (globe valve)
710-T	Electric Controller Clock Pedestal Mounting
711-T	Electric Controller Clock Wall Mounting
712-T	Atmospheric Vacuum Breaker (Type I Backflow Protection)
713-T	Continuous Pressure Vacuum Breaker Assembly (Type II Backflow Protection)
714-T1	Continuous Pressure Vacuum Breaker Assembly with Check Valves (Type III Backflow Protection)
715-T	Double Check Valve Assembly (Type IV Backflow Protection)
716-T1	Double Check Valve Assembly A.C. Pipe Service (Type IV, Backflow Protection)
717-T	Pressure Relief Valve Installed with Quick Coupling Valve

718-T	Connection Detail for New Asbestos Cement Water Mains
719-T	Connection Detail for Existing Water Mains
720-T	Concrete Thrust Blocks for Cast Iron Fittings
721-T	Concrete Thrust Blocks Bearing Areas

Traffic Signals and Safety Lighting

For general information on traffic standards used by the County Engineer, refer to the following Department of Transportation (State of California) "Division of Highways" Standard Plans:

ES-1A	Traffic	Signal	&	Highway	Lighting	Installations
ES-1B	"	"	"	"	"	"
ES-2A-10	"	"	"	"	"	"
ES-2B-6	"	"	"	"	"	"
ES-3A-6	"	"	"	"	"	"
ES-3B-18	"	"	"	"	"	"
ES-3C	"	"	"	"	"	"
ES-6B-2	"	"	"	Lighting	Standards	"
ES-6C-2	"	"	"	"	"	"

COUNTY OF SAN DIEGO
CALIFORNIA

COUNTY ENGINEER DEPARTMENT

INDEX OF SUPPLEMENTAL STANDARD DRAWINGS

The standard drawings listed in this supplemental index, approved and adopted by the Board of Supervisors, are added to the San Diego County Engineer Department Standard Drawings. These drawings are reproductions of the City of San Diego Standard Drawings and will be used for items of construction on County roads and in County subdivision construction on streets and roads being constructed to County standards.

New County of San Diego
Drawing Number
(City of San Diego
Drawing No.)

County of San
Diego Drawing No.
to be Deleted

CONCRETE STRUCTURES

C-42	Cantilever Retaining Wall - Type 1A Elevation	---
C-43	Cantilever Retaining Wall - Type 1A Sections	---
C-44	Cantilever Retaining Wall - Type 2 Elevation & Section	---
C-45	Cantilever Retaining Wall - Type 2 Construction Details	---
C-46	Cantilever Retaining Wall - Type 3 Elevation & Section	---
C-47	Cantilever Retaining Wall - Type 3 Construction Details	---
C-48	Wing Wall Details for Cantilever Walls- Elevation	---
C-49	Wing Wall Details for Cantilever Walls- Sections	---
C-50	Counterfort Retaining Wall	---
C-51	Counterfort Retaining Wall	---

New County of San Diego
Drawing Number
(City of San Diego
Drawing No.)

County of San
Diego Drawing
No. to be deleted

C-52	General Notes for Retaining Walls	---
C-53	Cantilevered Masonry Retaining Wall-Misc. Details	---
C-54	Cantilevered Masonry Retaining Wall-Type CM-5	---
C-55	Cantilevered Masonry Retaining Wall-Type CM-6 (sloping backfill)	---
C-56	Gravity Retaining Wall	---
C-57	General Notes for Masonry Retaining Walls	---
C-58	Cantilevered Masonry Retaining Wall - Type LM-1	---
C-59	Cantilevered Masonry Retaining Wall - Type LM-2	---
C-60	Cantilevered Masonry Retaining Wall - Type LM-3	---
C-61	Cantilevered Masonry Retaining Wall - Type LM-4	---
C-63	Cantilevered Retaining Wall - Type L-1	---
C-64	Cantilevered Retaining Wall - Type L-2	---
C-67	Cantilevered Retaining Wall - Type L-5	---

DRAINAGE

D-1	Gravity Type Headwall	
	Gravity Type Headwalls for 18" Culverts	112-1
D-4	Inlets and Cleanouts-Notes & Details	
	Drainage Structure Standard Details	131
D-5	Curb Inlet - Type A	
	Type K-1 Curb Inlet	105-2
D-6	Curb Inlet - Type B	
	Type K Curb Inlet	104-2
D-7	Curb Inlet - Type C	
	Type B-2 Curb Inlet	101-2
D-9	Rounded Pipe Ends in Drainage Structures	
	Drainage Structure Standard Details	131
D-11	Storm Drain Cleanout - Type A	
	Storm Drain Cleanouts-Types F., G, H	103-1
D-12	Concrete Lug	
	Concrete Lug	110
D-14	Pipe Collar	---
D-15	Inlets - Type I and J	
	Type I and J Inlets	106-1
D-18	Inlet Frame and Cover	
	Inlet Frame and Cover	120-1
D-20	Standard Drainage Outlet (for sidewalk areas)	
	Standard Drainage Outlet (for sidewalk areas)	123
D-24	Wing and U-Type Headwalls (for 42" to 84" pipes)	
	Wing and U-Type Headwalls (for 42" to 84" pipes)	113-2
D-25	Type A, B and C Spillway Inlets & Underdrain	
	Type A, B & C Spillway Inlets & Underdrain	121

D-28	Curtain Wall	
	Curtain Wall	112-1
D-34	Curb Inlet - Type G	
	Type G Curb Inlet	109-1
D-35	Curb Outlet	
	Curb Outlet	115-1
D-40	Drainage Channel	
	Drainage Channel	116
D-61	Trash Fence	

GENERAL SURFACE IMPROVEMENTS
Pavements, Curbs, Walks, Gutters & Driveways

G-11	Concrete Pavement-Alley Section (20' width or less)	
	Pavement for Alley Sections	202-1
G-12	Concrete Pavement-Alley Section (Pavement width 20' to 40')	
	Pavement for Alley Sections	202-1
G-22	Residential Driveway - Curb & Sidewalk Contiguous	
	Concrete Residential Driveway	207-3
G-23	Residential Driveway-Curb & Sidewalk Separated	
	Concrete Residential Driveway	207-3
G-24	Commercial Driveway	
	Concrete Commercial Driveway	211-1

G-27	Cut-off Wall at End of Pavement	
	Cut-off Wall at End of Pavement	203-1
G-28	Cut-off Wall at End of Alley Pavement	
	Cut-off Wall at End of Pavement	203-1
G-32	Cross Gutter - Type A	
	Cross Gutter - Type A	216
G-33	P.C.C. Curb, Gutter, Sidewalk & Pavement, Removal and Replacement	
	Cutting for Removal of P.C.C. Curb, Gutter, Sidewalk & Pavement	213
G-35	Concrete Cross Gutter and Return Segment	
	Cross Gutter and Return Segment	205-1
G-39	Alley Apron	
	Alley Apron	215-1
G-42	P.C.C. Joints for Pavement, Sidewalk, Curb and Cross Gutter	
	Portions of several standard drawings	Various
G-43	Curbs and Gutters - Typical Plans	
	Gutters	210
G-44	6" and 8" Curb Sections & Gutter Section	
	Portland Cement Concrete Curbs	200-3
G-45	Curb Sections Types G and H	
	Portland Cement Concrete Curbs	200-3
G-46	Curb Sections - Type B	
	Portland Cement Concrete Curbs	200-3
G-57	Curb Section - Type D Roll Curbs	

MISCELLANEOUS

M-4	Chain Link Fence	---
M-5	Chain Link Fence	---
M-23	Manhole Frame & Cover(except for markings)	
	Inlet Frame and Cover	120-1

DESIGN POLICY

P-24	Guide for Location of Pipes, Conduits and Underground Work in Streets	
	Utility Line Locations - General	308-1

SEWERAGE SYSTEMS

S-27	Concrete Anchor	---
------	-----------------	-----

TRAFFIC SAFETY AND CONTROL

T-9	Guard Post and Fence Assembly for Termin- ating Streets	
	Guard Fence Assembly for Terminating Streets	214

T-15 Metal Beam Guard Rail Installation

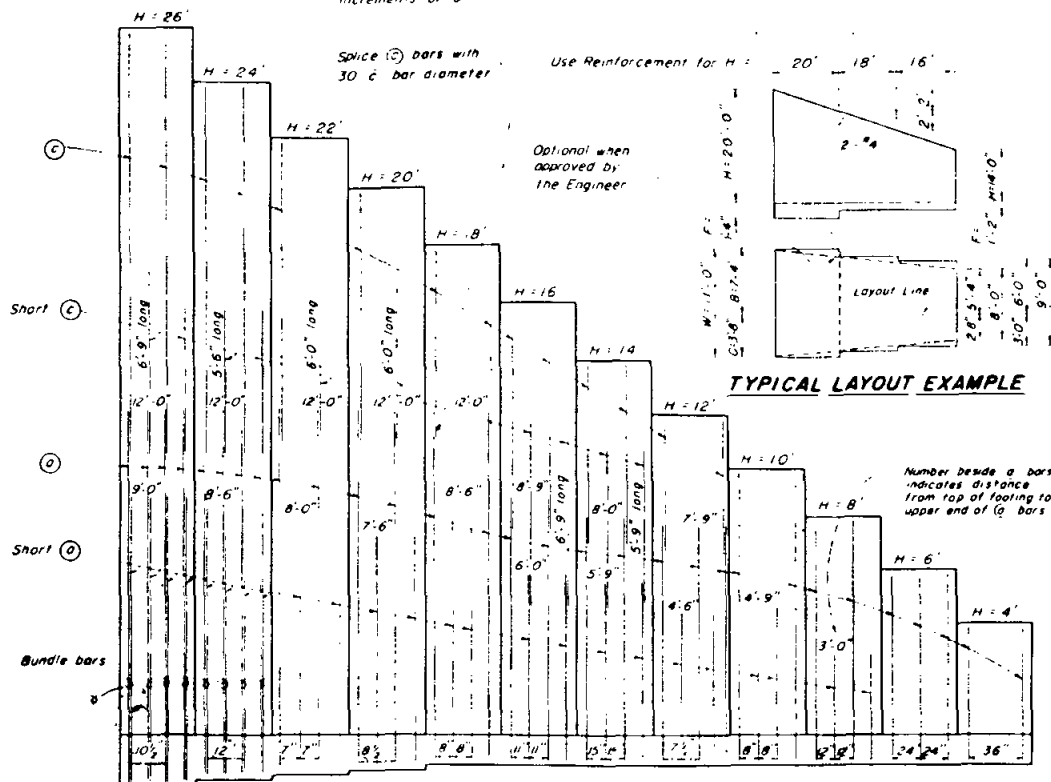
Metal Beam Guard Rail 217

T-16 Metal Beam Guard Rail Detail

Metal Beam Guard Rail 217

REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	

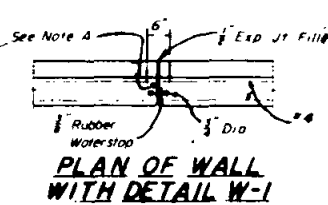
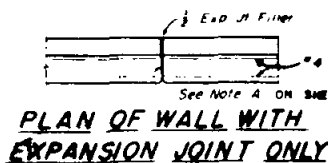
Note: Bar cut-offs may be varied in increments of 6"



ELEVATION

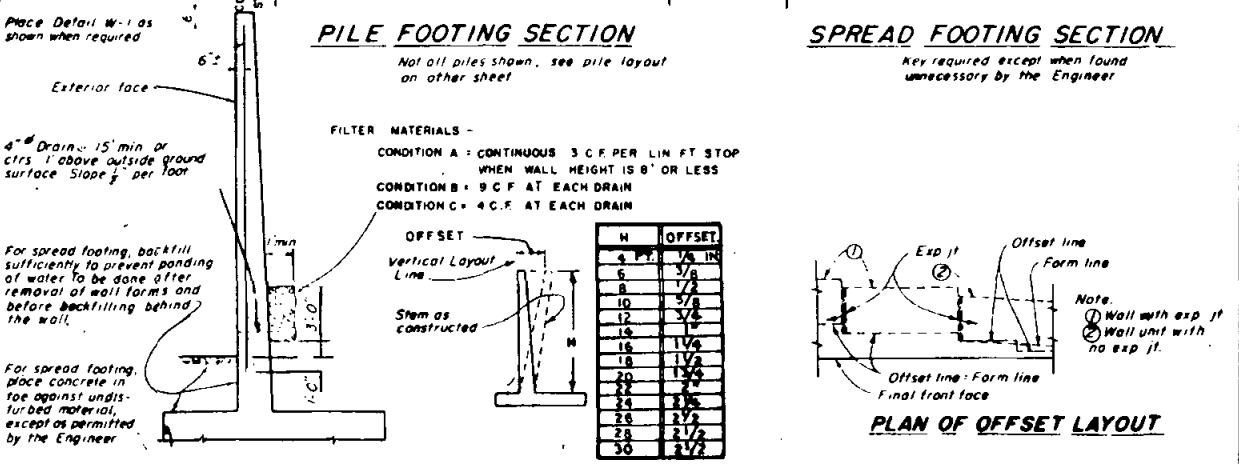
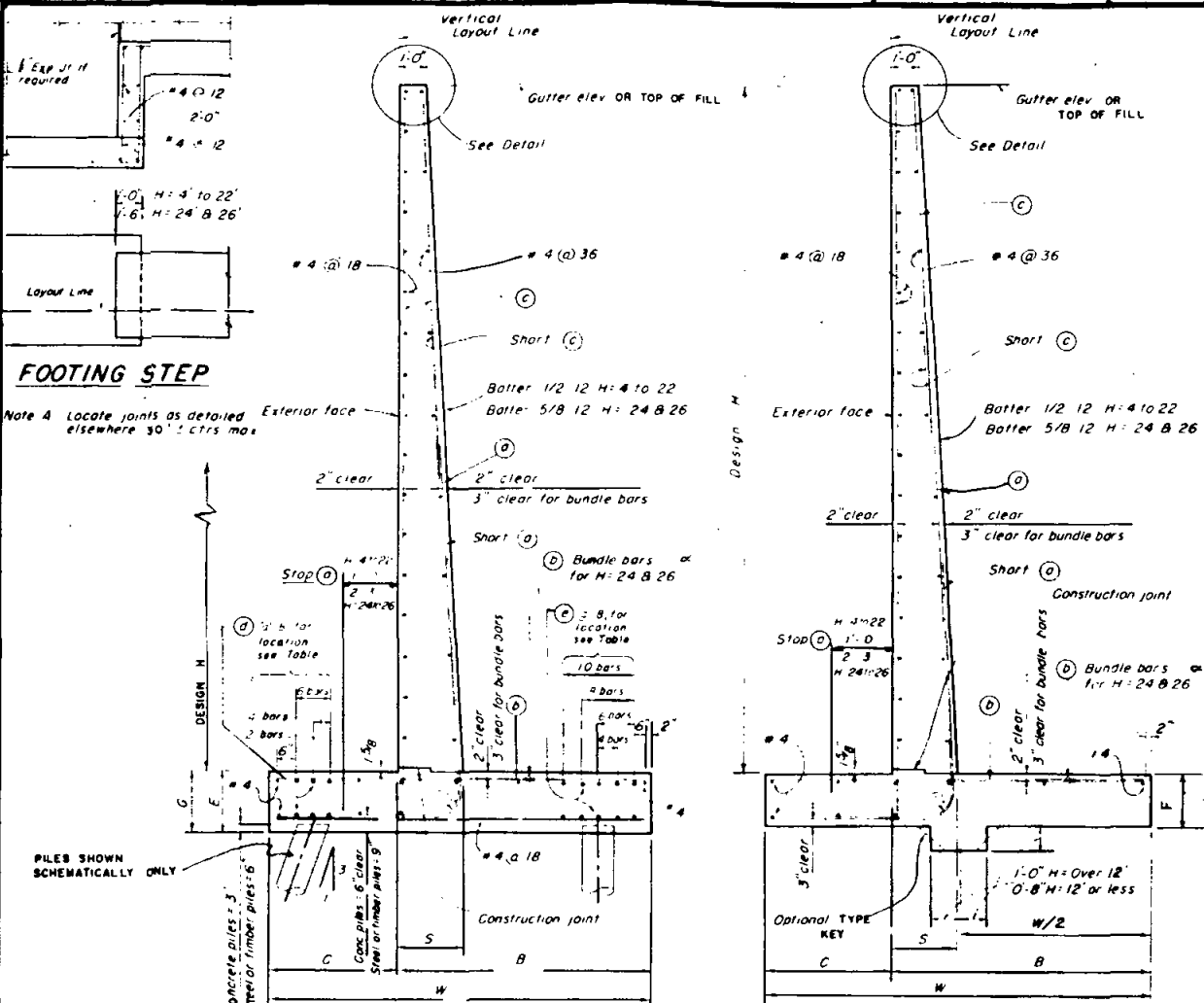
TABLE OF REINFORCING STEEL DIMENSIONS AND DATA

H	26	24	22	20	18	16	14	12	10	8	6	4
W	14.3	13.3	12.0	11.0	10.0	9.3	8.0	7.2	6.2	5.2	4.2	3.2
C	4.9	4.5	4.0	3.8	3.4	3.0	2.8	2.4	2.0	1.8	1.4	1.0
B	9.6	8.10	8.0	7.4	6.8	6.0	5.4	4.10	4.2	3.6	2.10	2.2
F Spread, Flg	1.10	1.8	1.6	1.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
E Concrete Pile	2.1	1.1	1.9	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
G Steel or Timber Pile	2.4	2.2	2.0	1.10	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
S	2.4	2.3	1.1	1.10	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2
bars	8-10	8-12	7-14	7-17	6-24	5-11	5-15	5-30	5-8	5-12	5-24	5-36
bars	11-10	11-12	11-7	11-8	10-8	10-11	10-15	6-7	5-8	4-12	5-24	5-36
bars	10-10	10-12	10-7	10-8	9-8	9-11	9-15	5-7	4-8	4-12	5-24	5-36
bars, number-size	2-#7	2-#7	4-#7	4-#7	4-#7	6-#7	6-#7	6-#7	6-#7	6-#7	6-#7	6-#7
bars, number-size	4-#7	4-#7	8-#7	8-#7	8-#7	10-#7	10-#7	10-#7	10-#7	6-#6	6-#6	6-#6
Tie Pressure P.S.F.	5040	4640	4480	4000	3590	3290	2980	2640	2270	1930	1570	1240
Spread Conc. GF/H	71.8	63.1	52.1	45.0	38.5	33.8	29.5	24.3	20.2	16.3	12.6	8.9
Footing Steel B/H	393	328	309	233	177	123	90	56	47	28	20	14
Conc. Conc. GF/H	73.4	64.4	53.1	45.8	39.0	34.1	29.5	25.2	20.8	16.7	12.8	8.8
pile flg Steel B/H	413	348	339	262	205	60	126	92	82	39	31	24



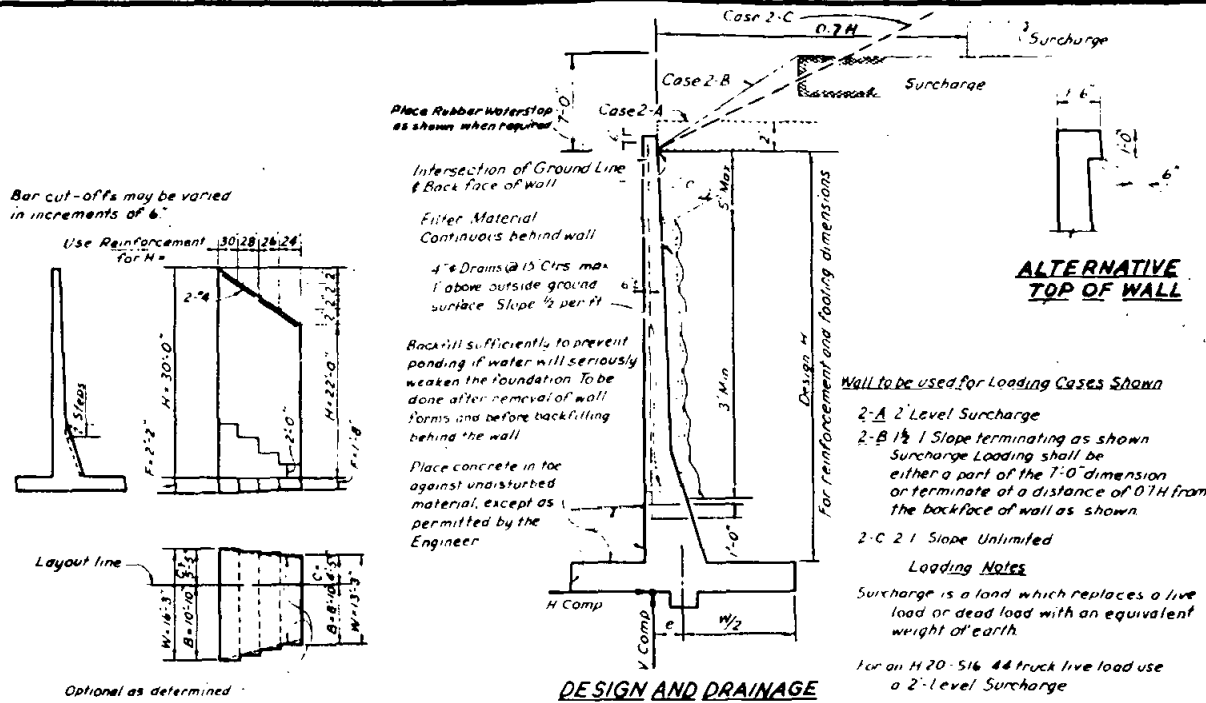
SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE NONE
	CANTILEVER RETAINING WALL		DRAWING NO.
	TYPE 1A ELEVATION		C-42
	SEE SHEET C-52 FOR GENERAL NOTES		
	SEE DWG. NO. C-43 FOR SECTIONS		

REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	

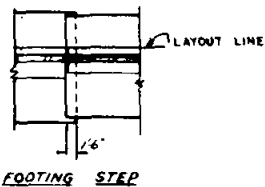
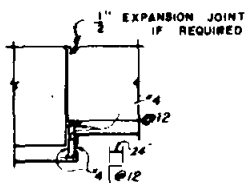


SPECIFICATION REFERENCE		COUNTY OF SAN DIEGO STANDARD DRAWING		SCALE NONE	
		CANTILEVER RETAINING WALL		DRAWING NO.	
		TYPE IA SECTIONS		C-43	
		SEE DWG. NO. C-42 FOR ELEVATION			
		SEE DWG. C-52 FOR GENERAL NOTES			

REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	

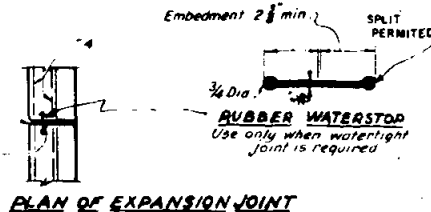


TYPICAL LAYOUT EXAMPLE



1/2" Chamfer on exposed face

Expansion joint fill with expansion joint filler. Joint to extend from top of footing to top of wall. Locate joints AT 30' Ctrs MAX OR AS SHOWN ON APPROVED PLANS.



SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE NONE
	CANTILEVER RETAINING WALL		DRAWING NO.
	TYPE 2 CONSTRUCTION DETAILS		C-45
	SEE DWG. NO. C-44 FOR ELEVATION B SECTION		
	SEE SHEET C-52 FOR GENERAL NOTES		

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		

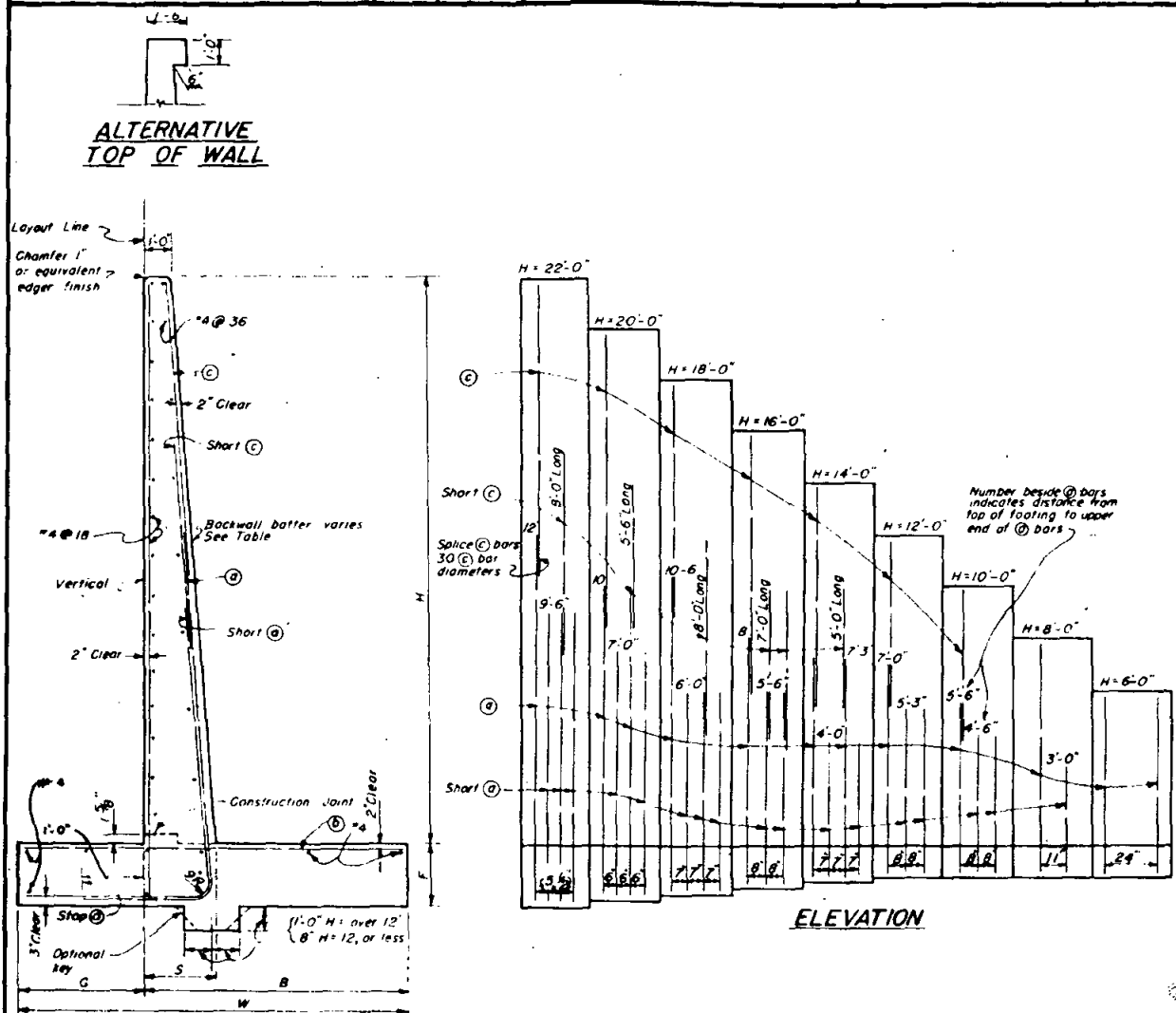


TABLE OF REINFORCING STEEL DIMENSIONS AND DATA									
H	22'	20'	18'	16'	14'	12'	10'	8'	6'
W	14'-10"	13'-0"	11'-4"	10'-1"	8'-10"	7'-7"	6'-4"	5'-1"	3'-10"
C	5'-9"	4'-8"	3'-10"	3'-5"	3'-0"	2'-7"	2'-2"	1'-9"	1'-4"
B	9'-2"	8'-4"	7'-6"	6'-8"	5'-10"	5'-0"	4'-2"	3'-4"	2'-6"
F	2'-4"	2'-1"	1'-10"	1'-7"	1'-4"	1'-2"	1'-2"	1'-2"	1'-2"
S	2'-7 1/4"	2'-3"	1'-11 1/4"	1'-8"	1'-7"	1'-6"	1'-5"	1'-4"	1'-3"
BW Batter	1/8" 12	3/4" 12	5/8" 12	1/2" 12	1/2" 12	1/2" 12	1/2" 12	1/2" 12	1/2" 12
C Bars	8 @ 11	8 @ 12	8 @ 14	6 @ 8	6 @ 14	5 @ 24	5 @ 24	5 @ 11	5 @ 24
D Bars	11 @ 5 1/2	11 @ 6	11 @ 7	11 @ 8	9 @ 7	8 @ 8	6 @ 8	5 @ 11	5 @ 24
E Bars	11 @ 5 1/2	11 @ 6	11 @ 7	11 @ 8	9 @ 7	8 @ 8	6 @ 8	5 @ 11	5 @ 24
Conc. C/Pt.	76.3	61.6	49.2	39.3	31.9	24.8	20.4	16.2	12.2
Steel lbs./ft.	4.54	3.49	2.71	2.11	1.39	94	54	32	21
Toe Press.	6980	6970	6590	5660	4970	4150	3570	2960	2350
H Comp. Bk.	37400	30600	24250	18900	14450	10470	7360	4970	2780
V Comp. lbs.	58780	48450	38390	29910	23030	16790	11900	7870	4670
e	1.84	1.87	1.79	1.55	1.33	1.10	.94	.77	.59
Coefficient of friction = 0.63									

SPECIFICATION REFERENCE

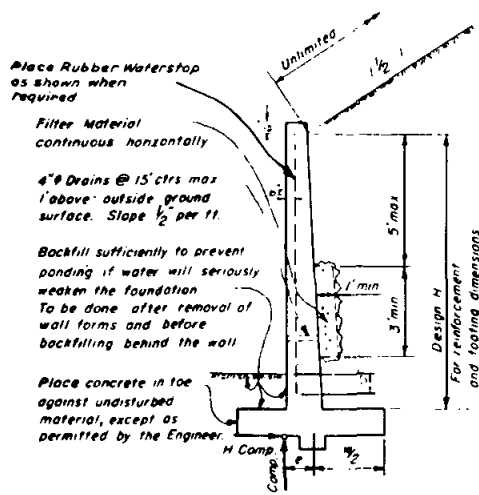
COUNTY OF SAN DIEGO STANDARD DRAWING
 CANTILEVER RETAINING WALL
 TYPE 3 ELEVATION & SECTION
 SEE DWG. NO. C-47 FOR CONSTRUCTION DETAILS
 SEE SHEET C-52 FOR GENERAL NOTES

SCALE NONE

DRAWING NO.

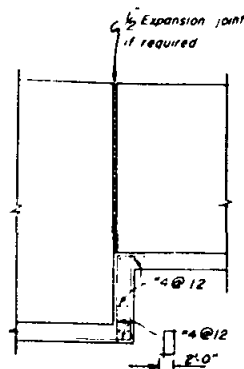
C-46

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H.M. Tany</i>	<i>10/1/72</i>

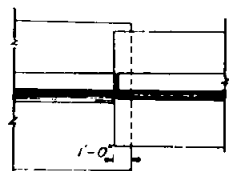


DESIGN AND DRAINAGE

Wall to be used for $\frac{1}{2}$ " Unlimited Sloping Surcharge

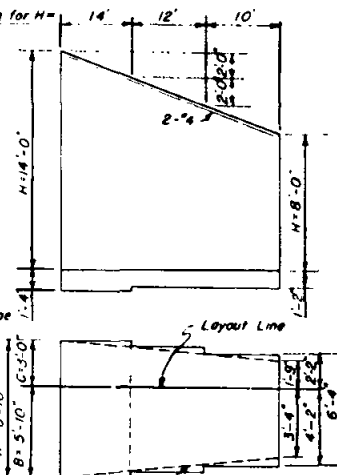


ELEVATION



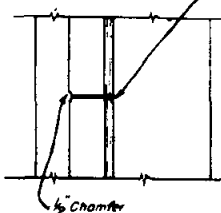
PLAN FOOTING STEPS

Note Bar cut-offs may be varied in increments of 6" Use Reinforcing for H =

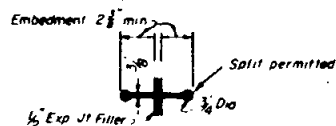


TYPICAL LAYOUT EXAMPLE

$\frac{1}{2}$ " Expansion joint, fill with premolded expansion joint filler. Joint to extend thru-out height of wall only. Locate joints at 30' ctrs. MAX. OR AS SHOWN ON APPROVED PLANS.



PLAN OF EXPANSION JOINT

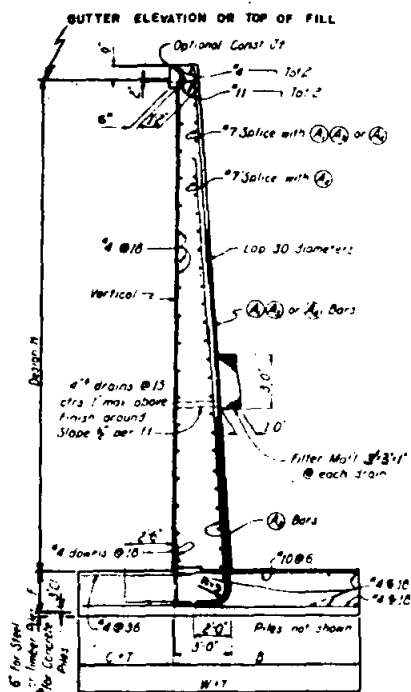


DETAIL W-1 RUBBER WATERSTOP

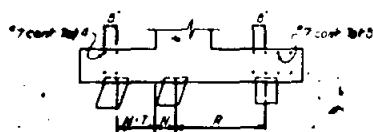
Use only when watertight joint is required

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO STANDARD DRAWING	SCALE NONE
	CANTILEVER RETAINING WALL	DRAWING NO.
	TYPE 3 CONSTRUCTION DETAILS	
	SEE DWG. NO. C-46 FOR ELEVATION & SECTIONS	
	SEE SHEET C-52 FOR GENERAL NOTES	
		C-47

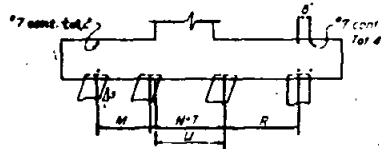
REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					H. M. Taylor	10/17/70



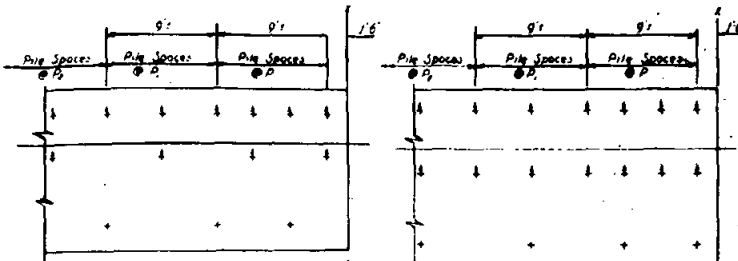
SECTION B-B



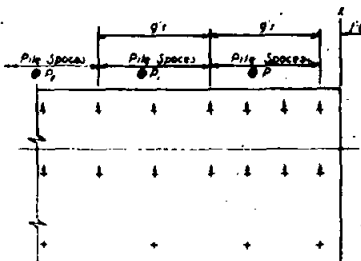
TYPICAL FOR PLANS A & B



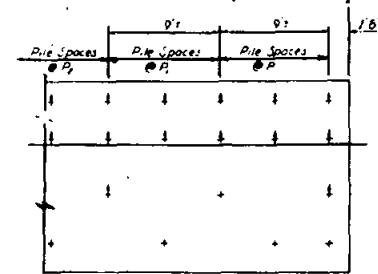
TYPICAL FOR PLAN C



PLAN A



PLAN B



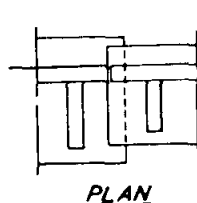
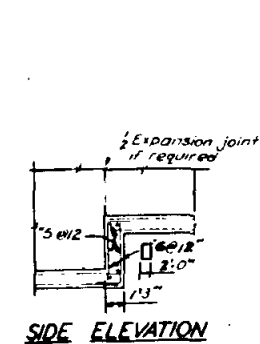
PLAN C

	20	22	24	26	28
H	20	22	24	26	28
W	10'-5"	12'-0"	13'-5"	14'-5"	15'-5"
D	7'-0"	8'-0"	9'-0"	9'-6"	10'-2"
C	3'-6"	4'-0"	4'-5"	4'-9"	5'-1"
F	1'-10"	2'-0"	2'-1"	2'-3"	2'-5"
M	2'-0"	2'-2"	3'-0"	3'-8"	4'-0"
U			3'-1"	4'-2"	4'-3"
N	1'-0"	1'-0"	3'-6"	3'-9"	3'-8"
R	4'-6"	4'-11"	3'-6"	3'-7"	3'-9"
Wall Batter	1/4" 12'	1/4" 12'	1/4" 12'	1/4" 12'	1/4" 12'
A ₁ Bars	1"-11 @ 12"	2"-11 @ 12" - bundle	2"-11 @ 12" - bundle	2"-11 @ 12" - bundle	2"-11 @ 12" - bundle
A ₂ Bars	1"-11 @ 12"	1"-11 @ 12"	1"-11 @ 12"	1"-11 @ 12"	1"-11 @ 12"
A ₃ Bars	1"-11 @ 12"	1"-11 @ 12"	1"-11 @ 12"	2"-11 @ 12" - bundle	2"-11 @ 12" - bundle
A ₄ Bars	1"-11 @ 12"	1"-11 @ 12"	1"-11 @ 12"	1"-11 @ 12"	2"-11 @ 12" - bundle
Pile Load End	64	90	64	90	64
P ₁ max	3'-0"	4'-9"	3'-0"	4'-3"	3'-0"
P ₂ max	3'-9"	3'-9"	3'-6"	4'-1"	4'-3"
P ₃ max	4'-3"	6'-0"	4'-2"	3'-7"	4'-10"
T	0	0	6"	0	6"
Plan	A	A	B	A	C

SHEETS C-48 AND C-49 ARE FOR DESIGN REFERENCE ONLY. ALL WING WALL DETAILS AND INTERPRETATIONS THEREOF SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE NONE
	WING WALL DETAILS FOR		DRAWING NO.
	CANTILEVER WALLS - SECTIONS		C-49
	SEE DWG. NO. C-48 FOR ELEVATION		
	SEE SHEET C-52 FOR GENERAL NOTES		

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	H. M. Taylor	1/10/77



FOOTING STEP

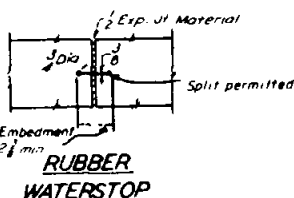
Place Rubber Waterstop as shown when required.

Filter Material Continuous horizontally between counterforts.

4" Drains @ 3'-0" c/c's. max. 1' above outside ground surface. Slope 1/2" per ft.

Backfill sufficiently to prevent ponding if water will seriously weaken the foundation. To be done after removal of wall forms and before backfilling behind the wall.

Place concrete in toe against undisturbed material.



DESIGN AND DRAINAGE

Wall to be used for 1/2 1' unlimited Sloping Surcharge

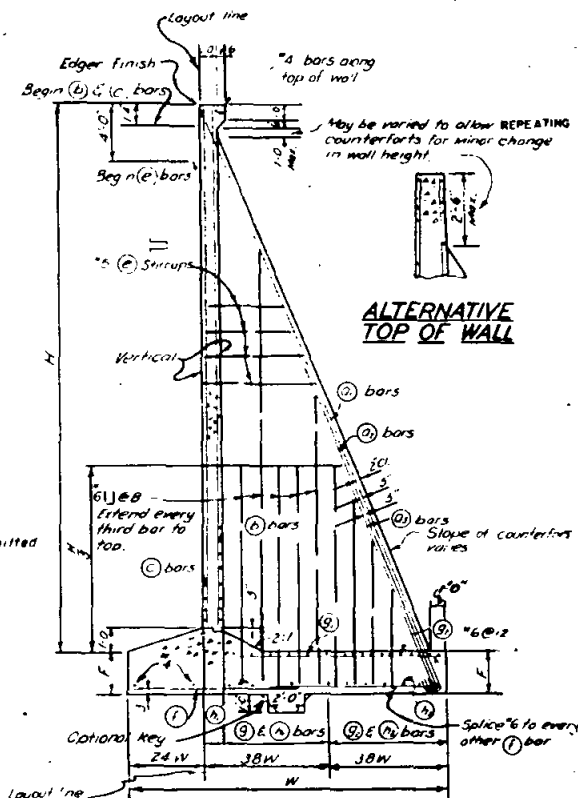


TABLE OF REINFORCING STEEL DIMENSIONS & DATA

W	30'	28'	26'	24'	22'	20'	18'
F	21'-0"	19'-6"	18'-3"	16'-10"	15'-6"	14'-1"	12'-10"
① bars edge counterfort	3'-11"	3'-11"	3'-11"	3'-11"	3'-11"	3'-11"	2'-11"
length	36'-4"	33'-10"	31'-9"	29'-0"	26'-10"	24'-3"	22'-2"
② bars edge counterfort	3'-11"	3'-11"	3'-11"	3'-11"	3'-11"	3'-11"	2'-11"
length	24'-6"	24'-0"	23'-0"	18'-0"	16'-0"	14'-0"	12'-0"
③ bars edge counterfort	3'-11"	2'-11"	2'-11"	2'-11"	2'-11"	2'-11"	2'-11"
length	18'-3"	17'-6"	16'-6"	16'-6"	16'-6"	16'-6"	16'-6"
④ bars back face wall	6"	6"	6"	6"	6"	6"	6"
⑤ bars front face wall	6"	6"	6"	6"	6"	6"	6"
⑥ stirrups counterfort	6"	6"	6"	6"	6"	6"	6"
⑦ bars toe	11'-3"	11'-3"	11'-3"	11'-3"	11'-3"	11'-3"	11'-3"
length	9'-3"	9'-0"	8'-9"	8'-0"	7'-8"	6'-8"	6'-2"
⑧ bars top of heel	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	5'-6"
⑨ bars top of heel	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	5'-6"
⑩ bars bottom of heel	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	5'-6"
⑪ bars bottom of heel	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	6'-6"	5'-6"
Concrete cubic ft per lin ft	122.2	106.4	97.3	83.6	73.1	66.8	56.1
Steel pounds per lin foot	33.2	49.3	43.3	36.9	33.1	26.3	21.6
Toe Pressure, pounds/ft	11,700	10,100	9,300	8,700	8,000	7,200	6,300
Horizontal Comp. Lbs.	71,000	63,200	57,800	48,300	41,000	33,700	27,100
Vertical Comp. Lbs.	128,000	110,000	103,000	87,000	76,000	68,000	58,000
eccentricity of resultant	3.00	2.60	2.40	2.20	2.00	1.85	1.70

QUANTITIES BASED ON 35'-0" WALL UNIT INCLUDING 4 COUNTERFORTS

SPECIFICATION REFERENCE

COUNTY OF SAN DIEGO

STANDARD DRAWING

COUNTERFORT RETAINING WALL

SEE DWG. NO. C-51

FOR SECTIONS & ELEVATION

SEE SHEET C-52

FOR GENERAL NOTES

SCALE NONE

DRAWING NO.

C-50

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	<i>H.M. Taylor</i>	<i>11/16/72</i>

GENERAL NOTES

DESIGN

A.A.S.H.O. LATEST REVISED EDITION,
FILED IN THE GOVERNMENT
REFERENCE LIBRARY NO. 625.7.

CONSTRUCTION

COUNTY OF SAN DIEGO STANDARD SPECIFICATIONS

DESIGN CONDITIONS

WALLS ARE TO BE USED FOR THE LOADING
CONDITIONS SHOWN FOR EACH TYPE WALL.

DESIGN H MAY BE EXCEEDED BY SIX INCHES
BEFORE GOING TO NEXT SIZE.

PASSIVE BEARING PRESSURE OF FOOTING
KEY SHALL NOT EXCEED ACTUAL TOE PRESSURE.

SPECIAL FOOTING DESIGN IS REQUIRED
WHERE FOUNDATION MATERIAL IS INCAPABLE
OF SUPPORTING TOE PRESSURE
LISTED IN TABLE.

DESIGN DATA

$F_c = 1200 \text{ psi}$: $F'_c = 3000 \text{ psi}$

$F_s = 20,000 \text{ psi}$: $n = 10$

Earth = 120 pcf and equivalent fluid
pressure = 36 psf per foot of height

WALLS SHOWN FOR $1\frac{1}{2}:1$ UNLIMITED
SLOPING SURCHARGE ARE DESIGNED IN
ACCORDANCE WITH RANKINE'S FORMULA
FOR UNLIMITED SLOPING SURCHARGE WITH
 $\phi = 33^\circ 42'$.

REINFORCEMENT

COUNTY OF SAN DIEGO STANDARD SPECIFICATIONS

INTERMEDIATE GRADE, HARD GRADE, OR
RAIL STEEL DEFORMATION SHALL CONFORM
TO ASTM 305.

BARS SHALL LAP 20 DIAMETERS, WHERE
SPliced, UNLESS OTHERWISE SHOWN ON
THE PLANS.

BENDS SHALL CONFORM TO THE MANUAL OF
STANDARD PRACTICE, A.C.I.

BACKING FOR HOOKS IS FOUR DIAMETERS.

REINFORCEMENT (Continued)

ALL BAR EMBEDMENTS ARE CLEAR DISTANCES
TO OUTSIDE OF BAR.

SPACING FOR PARALLEL BARS IS CENTER TO
CENTER OF BARS.

RUBBER WATERSTOP

RUBBER WATERSTOP, WHEN REQUIRED, SHALL
BE FURNISHED AND PLACED AS SPECIFIED
UNDER SECTION 27, PAR. (L) OF THE STATE
OF CALIFORNIA DEPARTMENT OF PUBLIC
WORKS DIVISION OF HIGHWAYS STANDARD
SPECIFICATIONS LATEST EDITION ON FILE
IN THE OFFICE OF THE CITY CLERK.

CONCRETE

ALL CONCRETE SHALL BE CLASS A P.C.C.
CONFORMING TO SECTIONS 6 AND 32 OF THE
COUNTY OF SAN DIEGO STANDARD SPECIFICATIONS

EXCAVATION AND BACKFILL

EXCAVATION AND BACKFILL SHALL CONFORM
TO SECTION 6 OF THE COUNTY OF SAN DIEGO
STANDARD SPECIFICATIONS

COMPACTION OF BACKFILL MATERIAL BY
JETTING OR PONDING WITH WATER WILL NOT
BE PERMITTED.

EACH LAYER OF BACKFILL SHALL BE
MOISTENED AS DIRECTED BY THE ENGINEER
AND THOROUGHLY TAMPED, ROLLED OR OTHERWISE
COMPACTED UNTIL THE RELATIVE COMPACTION
IS NOT LESS THAN 90 PERCENT.

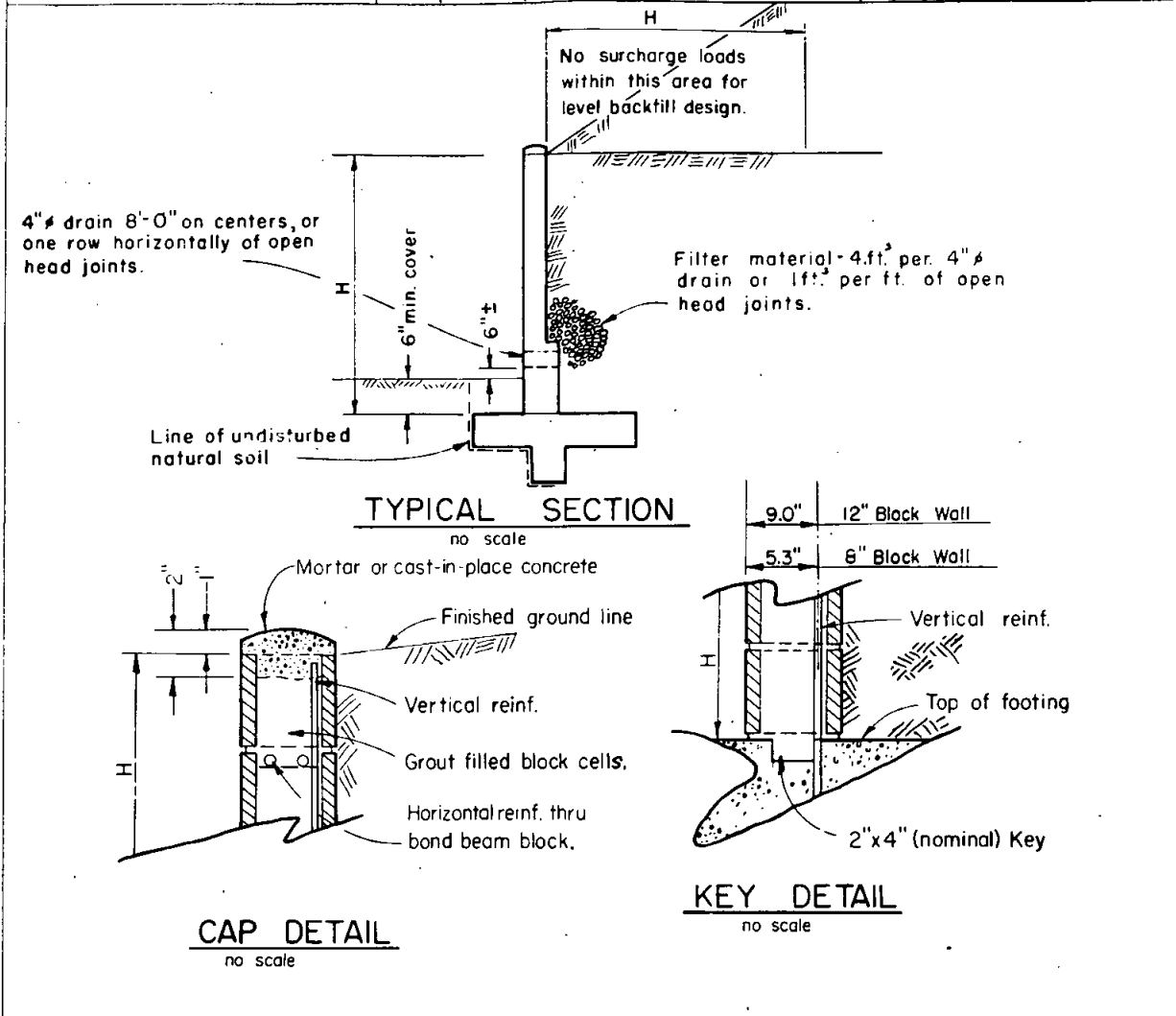
NO BACKFILL MATERIAL SHALL BE DEPOSITED
AGAINST CONCRETE RETAINING WALLS UNTIL
THE CONCRETE HAS DEVELOPED A STRENGTH
OF 2,500 POUNDS PER SQUARE INCH IN COMPRESSION
AS DETERMINED BY TEST CYLINDERS,
OR UNTIL 28 DAYS AFTER WALL HAS BEEN
PLACED. FILTER MATERIAL SHALL CONFORM
TO COUNTY OF SAN DIEGO STANDARD SPECIFICATIONS.

SPECIAL COVERAGE

WHERE WALLS ARE CONSTRUCTED ADJACENT TO
SALT WATER, THICKNESS OF CONCRETE SHALL
BE INCREASED TO PROVIDE THREE-INCH
COVERAGE BETWEEN STEEL AND EXPOSED SURFACES.

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE
	GENERAL NOTES FOR RETAINING WALLS		DRAWING NO.
	SEE DWG. C-42 thru. C-51		C-52

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Paulson</i>	<i>W. H. ...</i>

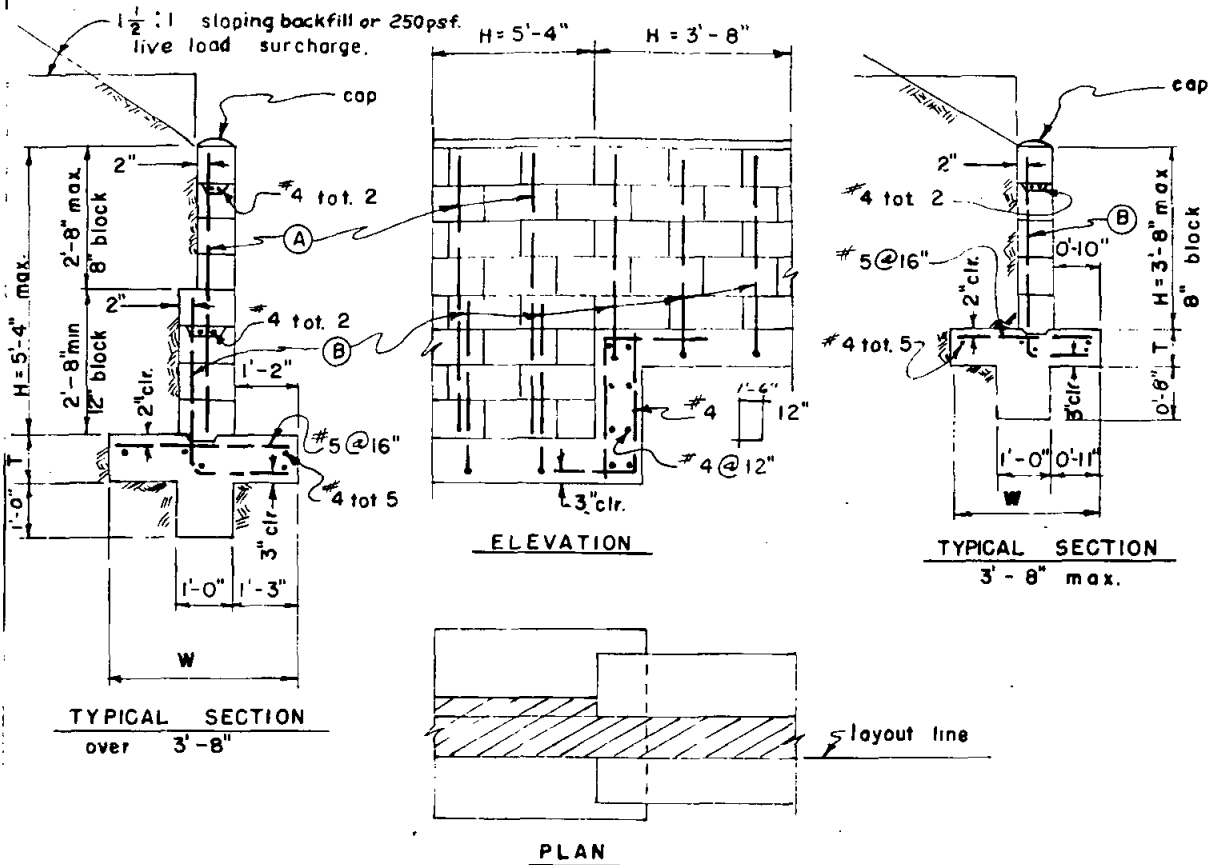


NOTE: All masonry retaining walls shall be constructed with cap, key and drainage details as shown hereon.

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE NO SCALE
	CANTILEVERED MASONRY RETAINING WALL		DRAWING NO.
	MISCELLANEOUS DETAILS		C-53

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	NONE
	CANTILEVERED MASONRY RETAINING WALL		SCALE
	TYPE CM-5		DRAWING NO.
	(LEVEL BACKFILL)		C-54

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	<i>11/15/77</i>



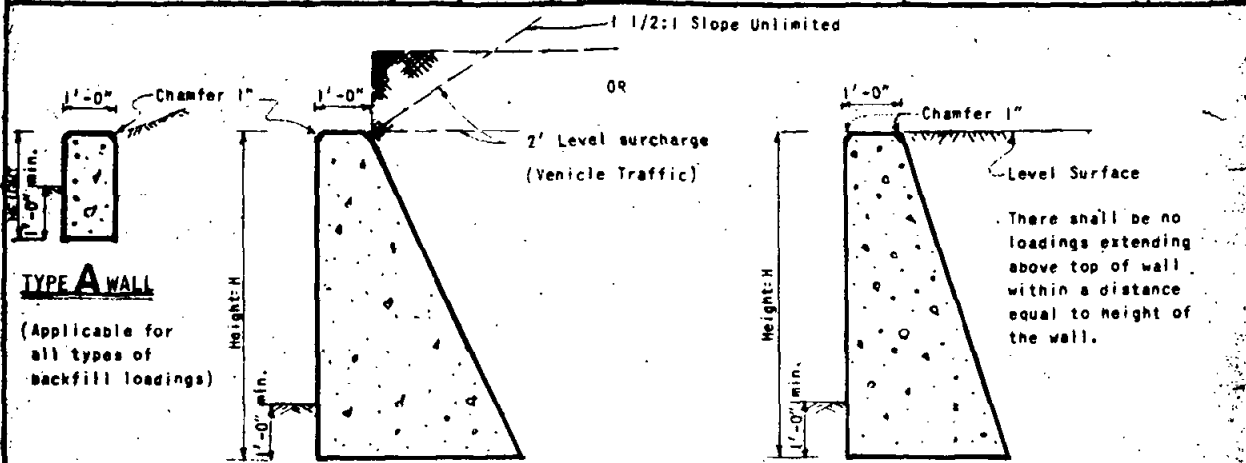
NOTE:

1. Refer to standard drawings C-53 and C-57 for additional notes and details.
2. Fill all cells with grout.

DIMENSIONS AND REINFORCING STEEL		
H max	5'-4"	3'-8"
T min	0'-10"	0'-8"
W min	3'-10"	2'-9"
(A) bars	#4 @ 16"	—
(B) bars	#6 @ 16"	#4 @ 16"
MAX. TOE PRESS. P.S.F.	2000	1400

COUNTY OF SAN DIEGO	STANDARD DRAWING	NONE
CANTILEVERED MASONRY RETAINING WALL		SCALE
TYPE CM-6		DRAWING NO.
(Live load surcharge or sloping backfill)		C-55

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	<i>10/1/72</i>



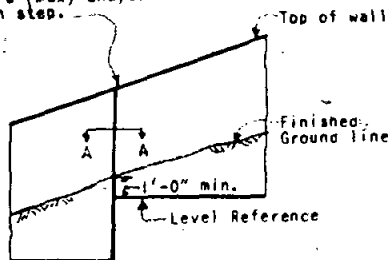
TYPE A WALL

(Applicable for all types of backfill loadings)

TYPE B WALL

TYPE C WALL

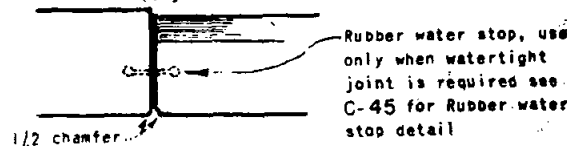
Expansion joint @ 30'-0"± centers (max) and/or @ each step.



TYPICAL ELEVATION

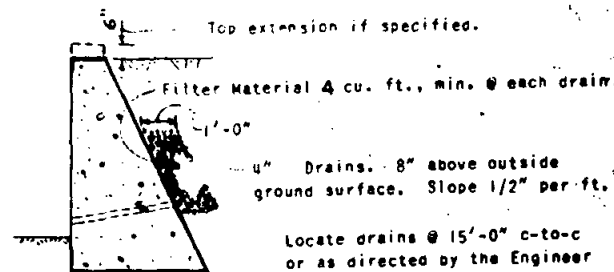
NOTE: Maximum toe pressure under wall footing = 1 1/2 tons. Special design required where footing material is incapable of supporting this pressure.

1/2" Expansion joint, fill with premolded expansion joint filler. Locate joints at 30'-0"± centers or as directed by the Engineer



SECTION A A.

WALL TYPE	HEIGHT	BASE	CONC. CF/FT
A	1'-6"	1'-0"	1.50
	2'-0"	1'-0"	2.00
B	3'-0"	2'-4"	4.99
	4'-0"	2'-10"	7.55
	5'-0"	3'-4"	10.82
	6'-0"	3'-10"	14.49
C	3'-0"	1'-6"	3.75
	4'-0"	2'-0"	6.00
	5'-0"	2'-6"	8.75
	6'-0"	3'-0"	12.00



TYPICAL DRAINAGE WHEN H > 4'-0"

NOTE: Type A wall height may be exceeded by 3 inches before changing to Type B or Type C.

SPECIFICATION REFERENCE

COUNTY OF SAN DIEGO STANDARD DRAWING GRAVITY RETAINING WALL

For General Notes see Drawing C-52
(Articles entitled "Design Conditions", "Reinforcement" and "Special Coverage" shall be voided.)

SCALE NO SCALE
DRAWING NO.

C-56

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	SUPV. ENGINEER	<i>H. M. Taylor</i>	<i>W. L. B. Jr.</i>

GENERAL NOTES

DESIGN

A.A.S.H.O. Latest Revised Edition.
Filed in the government reference library No.
625.7, and Uniform Building Code.

CONSTRUCTION

County of San Diego Standard Specifications

DESIGN CONDITIONS

Walls are to be used for the loading conditions shown for each type wall.

Design H shall not be exceeded.

Footings shall be required except as shown otherwise or when found unnecessary by the engineer.

Special footing design is required where foundation material is incapable of supporting toe pressure listed in table.

DESIGN DATA

REINFORCED CONCRETE:

$F_c = 1200$ psi $F_c = 3000$ psi

$F_s = 20,000$ psi $n = 10$

REINFORCED MASONRY:

$F_m = 600$ psi $F_m = 200$ psi

$F_s = 20,000$ psi $n = 50$

Earth = 120 pcf and equivalent fluid

pressure = 36 psf per foot of height

Walls shown for 1:1 unlimited sloping surcharge are designed in accordance with Rankine's formula for unlimited sloping surcharge with $\phi = 33^\circ 42'$

REINFORCEMENT

County of San Diego Standard Specifications

Intermediate grade, hard grade, or rail steel deformation shall conform to ASTM 305.

Bars shall lap 40 diameters, where spliced, unless otherwise shown on the plans.

Bends shall conform to the Manual of Standard practice, A.C.I.

Backing for hooks is four diameters.

All bar embedments are clear distances to outside of bar.

Spacing for parallel bars is center to center of bars.

CONCRETE

All concrete shall be class "A" P.C.C. conforming to sections 6 and 32 of the County of San Diego Standard Specifications

MASONRY

All reinforced masonry retaining wall shall be constructed of regular or light weight standard grade "A" units conforming to ASTM designation C-90-52 and manufactured in accordance with requirements of the Concrete Masonry Association Specifications. All masonry shall conform to the regulations of the Uniform Building Code.

MASONRY MORTAR

The mortar shall consist of one (1) part portland cement to three (3) parts graded mortar sand. Mortar shall be tempered with lime putty in an amount not exceeding twenty-five (25) per cent of the volume of the cement.

MASONRY MORTAR (con't.)

Mortar in horizontal joints shall fully cover all face shell and web members. Vertical joints shall be buttered to a depth greater than the thickness of the face shells of the block. Furrowing of mortar will not be permitted.

GROUT

The grout shall consist of one (1) part portland cement to three (3) parts clean sand for voids less than four inches. If desired, Grout to be used in voids of 4" or greater dimensions, may be mixed of one (1) part portland cement to two (2) parts clean sand to two (2) parts pea gravel. Per gravel shall be graded such that 100 per cent passes 3/8" sieve and not more than 5 per cent passes the No. 8 sieve. All cells shall be poured solid with grout.

EXCAVATION AND BACKFILL

Excavation and backfill shall conform to section 6 of the County of San Diego Standard Specifications

Compaction of backfill material by jetting or ponding with water will not be permitted.

Each layer of backfill shall be moistened as directed by the engineer and thoroughly tamped, rolled or otherwise compacted until the relative compaction is not less than 90 per cent.

No backfill material shall be deposited against masonry retaining walls until the grout has developed a strength of 2,000 pounds per square inch in compression as determined by test 2" cubes, or until the masonry retaining wall has cured for a minimum of 14 days.

OPTIONAL DESIGNS

The wall shown here is not necessarily the most economical solution. It is an acceptable solution for the conditions shown on the drawings. The individual may consult a licensed engineer for more economical solutions for a particular condition.

OPTIONAL MORTAR KEY

Embedment of the first course of block in a poured footing may be omitted by providing a mortar key. The key is formed by embedding a flat 2" X 4" flush with the top of the freshly poured footing. Remove the 2" X 4" after the concrete has started to harden.

OPTIONAL WALL DRAINS

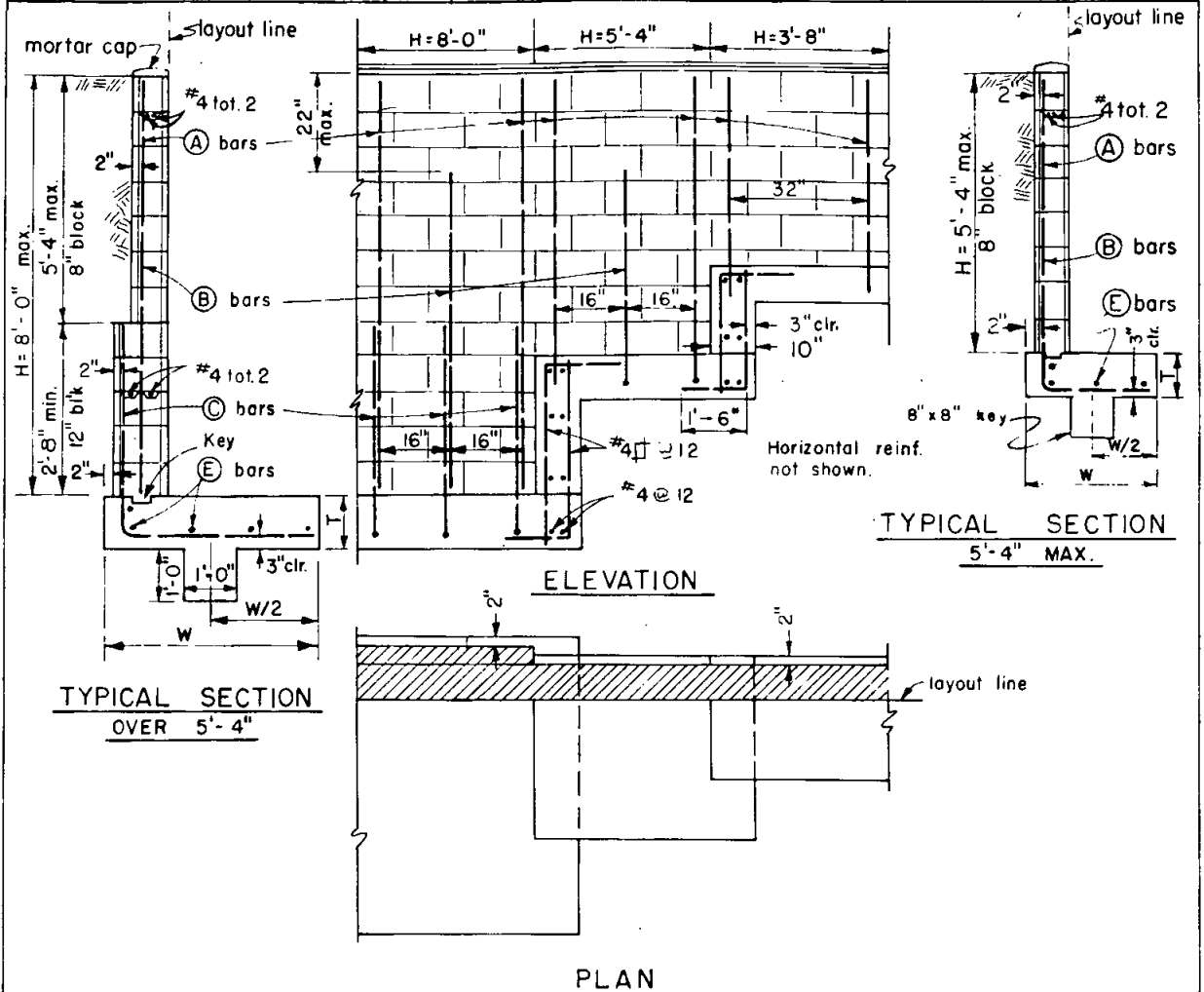
Where the steel spacing is greater than 24" center to center, wall drains may be formed by placing a block on its side. However, all cells below and above the said block shall be grouted solid.

FILTER MATERIAL

See County of San Diego Standard Specifications.

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE
	GENERAL NOTES FOR MASONRY RETAINING WALLS		DRAWING NO.
	SEE DWG. C-58 thru C-59		C-57

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	<i>mlb</i>



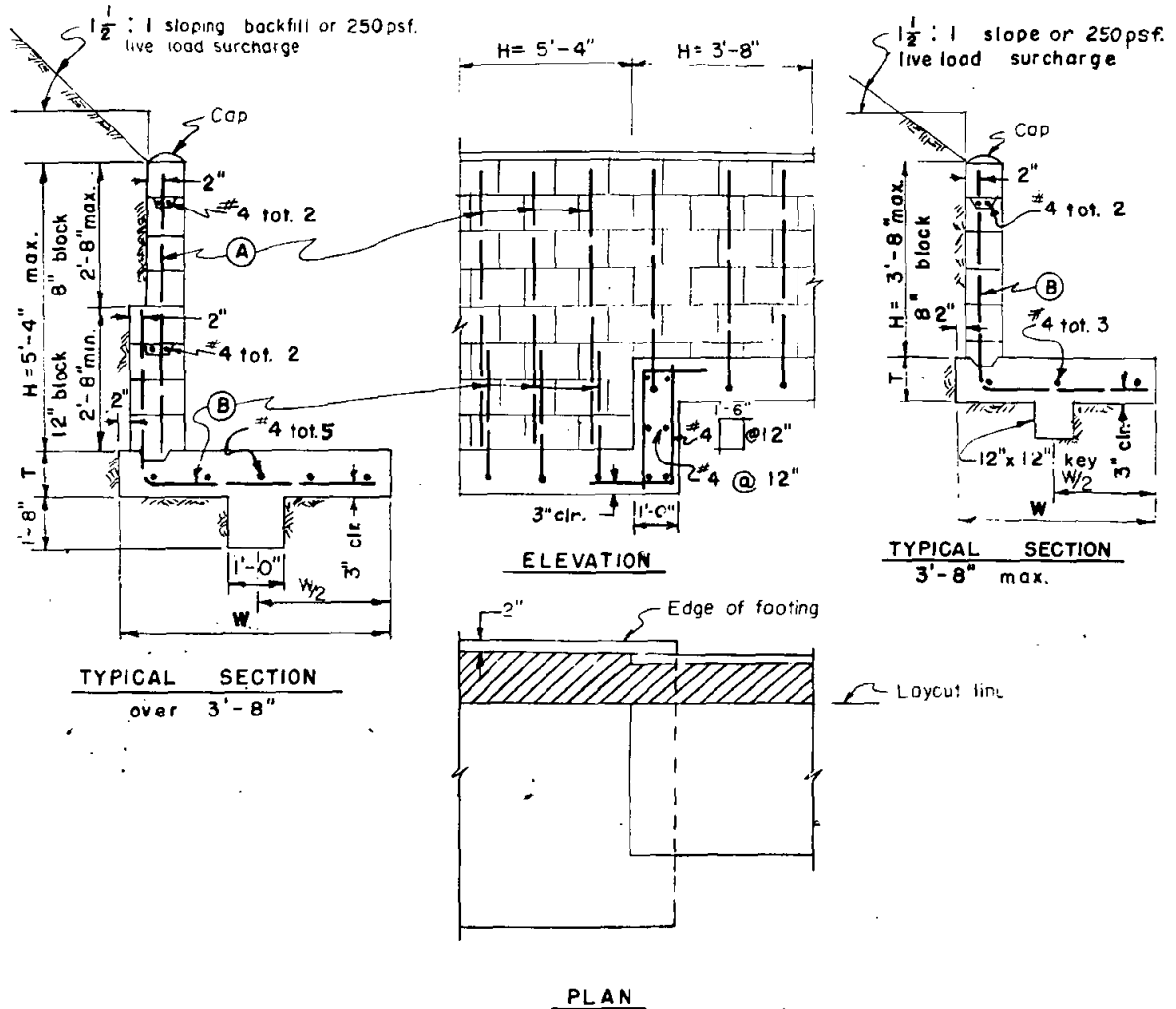
NOTES:

1. Refer to standard drawings C-53 and C-57 for additional notes and details.
2. Fill all block cells with grout.

DIMENSIONS AND REINFORCING STEEL			
H (max.)	3'-8"	5'-4"	8'-0"
T (min.)	0'-8"	0'-10"	1'-0"
W (min.)	2'-4"	3'-6"	5'-4"
(A) bars	#4 @ 32	#4 @ 32	#4 @ 32
(B) bars	—	#4 @ 32	#4 @ 32
(C) bars	—	—	#6 @ 16
(E) bars	#4 tot. 4	#4 tot. 5	#4 tot. 6
max. soil press. (psf)	500	600	800

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE NONE
	CANTILEVERED MASONRY RETAINING WALL		DRAWING NO.
	TYPE LM-I		C-58
	(LEVEL BACKFILL)		

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	<i>10/1/72</i>



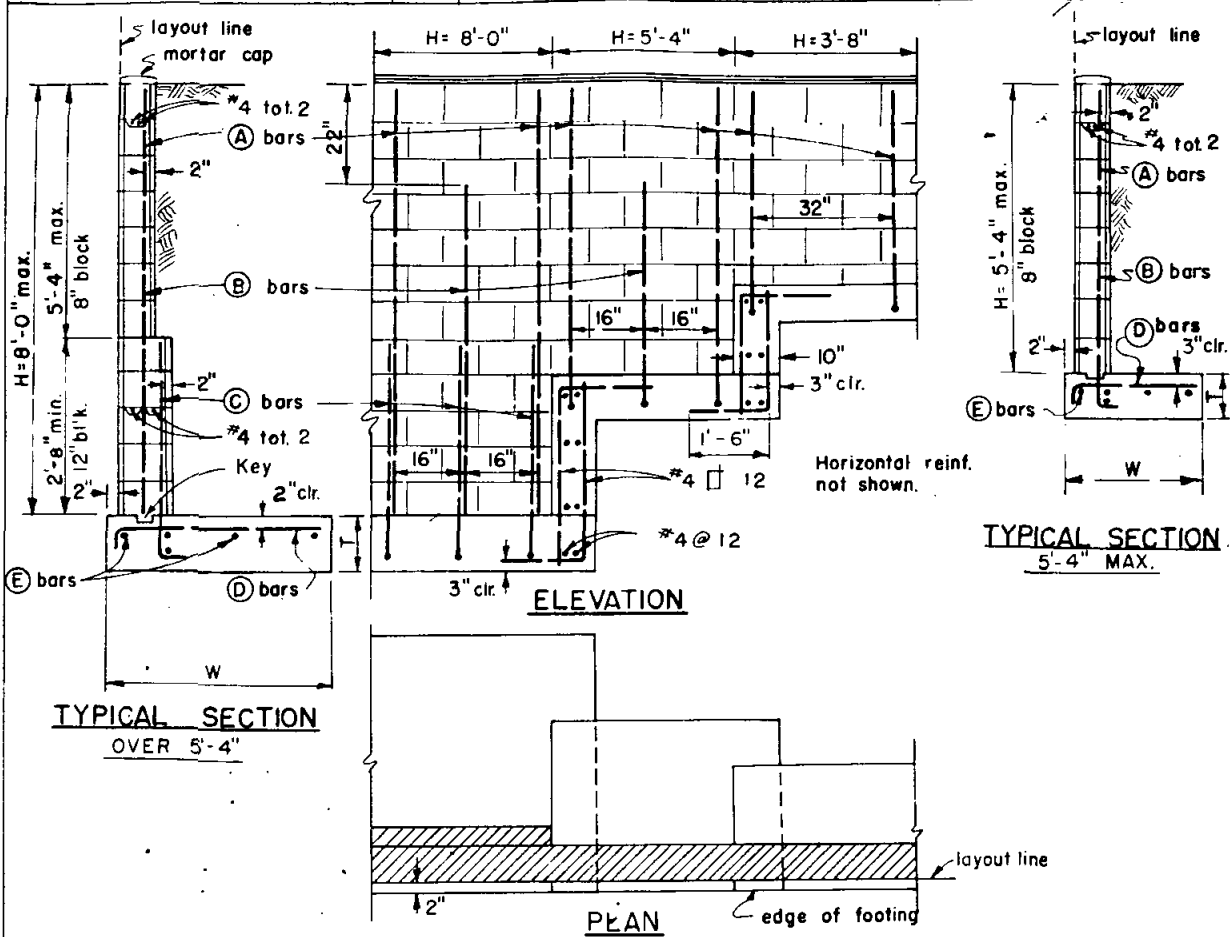
NOTE:

1. Refer to standard drawings C-53 and C-57 for additional notes and detail.
2. Fill all cells with gravel.

DIMENSIONS and REINFORCING STEEL		
H max.	5'-4"	3'-8"
T min.	0'-10"	0'-10"
W min.	5'-0"	3'-9"
(A) bars	#4 @ 16"	
(B) bars	#6 @ 16"	#4 @ 16"
MAX. TOE PRESS. PS.F.	700	550

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	NONE
	CANTILEVERED MASONRY RETAINING WALL		SCALE
	TYPE LM-2		DRAWING NO.
	(Liveloal surcharge or sloping backfill)		C-59

REVISIONS				APPROVALS			
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER			
					H. M. Taylor		



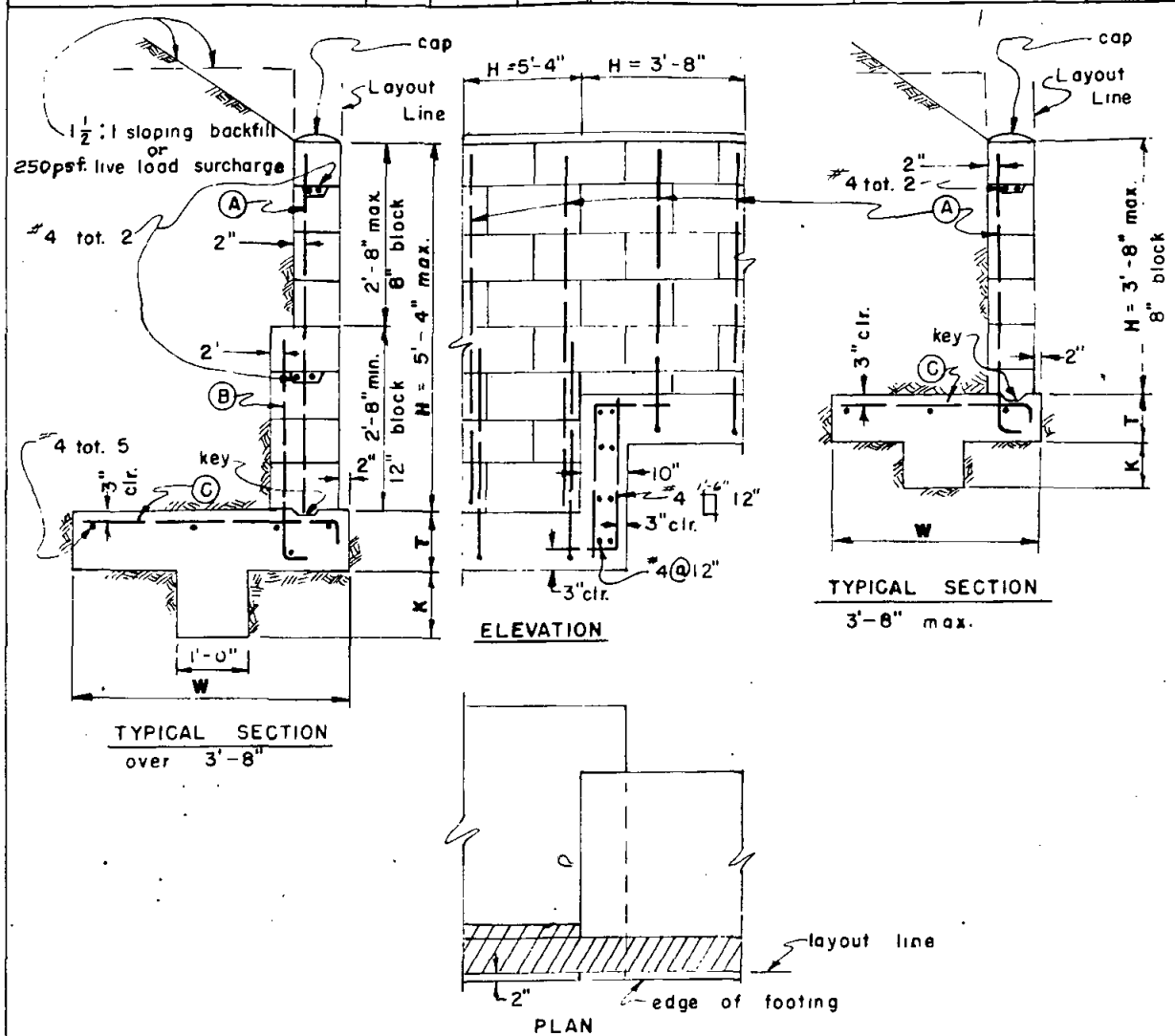
NOTES:

1. Refer to standard drawings C-53 and C-57 for additional notes and details.
2. Fill all blockcells with grout.

DIMENSIONS AND REINFORCING STEEL			
H max.	3'-8"	5'-4"	8'-0"
T min.	0'-8"	0'-10"	1'-0"
W min.	2'-4"	3'-2"	4'-9"
(A) bars	*4 @ 32	*4 @ 32	*4 @ 32
(B) bars	—	*4 @ 32	*4 @ 32
(C) bars	—	—	*6 @ 16
(D) bars	*4 @ 32	*4 @ 16	*6 @ 16
(E) bars	*4 tot. 4	*4 tot. 5	*4 tot. 6
max. soil press. (psf)	1100	1600	2200

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE NONE
	CANTILEVERED MASONRY RETAINING WALL		DRAWING NO.
	TYPE LM-3		C-60
	(LEVEL BACKFILL)		

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	<i>H. M. Taylor</i>	<i>What</i>



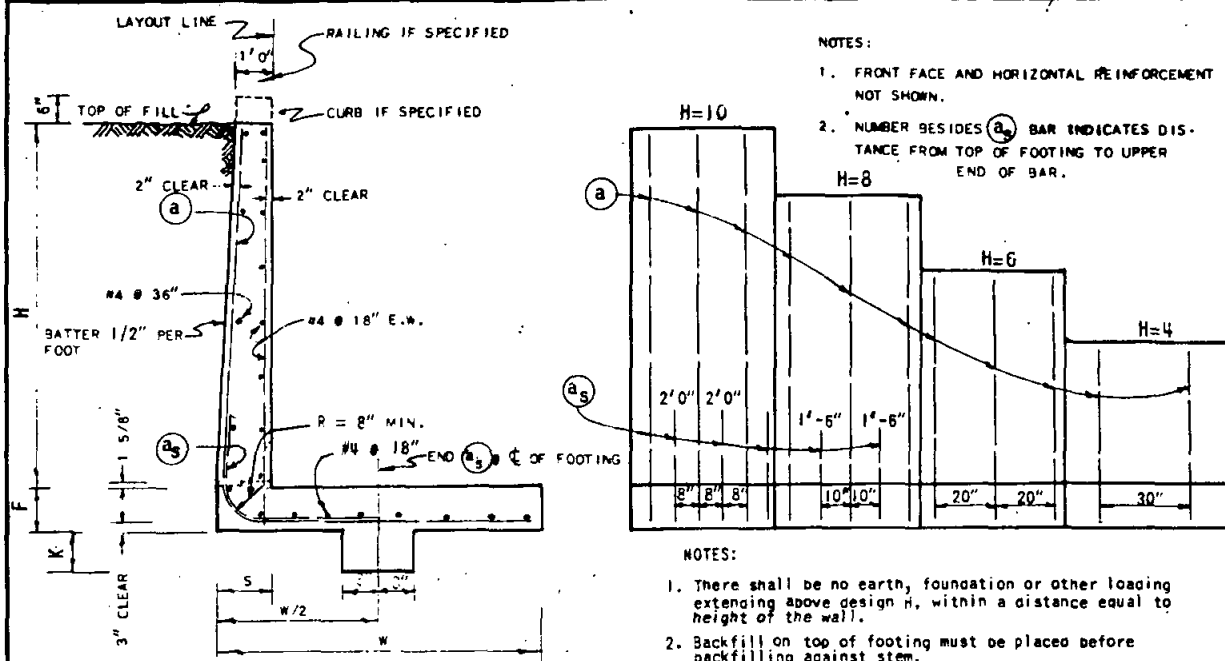
NOTE:

1. Refer to standard drawings C-53 and C-57 for additional notes and details.
2. Fill all cells with grout.

DIMENSIONS and REINFORCING STEEL				
H max	5' - 4"	3' - 8"		
T min	0' - 10"	0' - 8"		
W min	4' - 0"	3' - 0"		
(A) bars	#4 @ 16"	#4 @ 16"		
(B) bars	#6 @ 16"			
Surcharge	sloping	live load	sloping	live load
(C) bars	#6 @ 8"	#6 @ 16"	#6 @ 16"	#6 @ 16"
K min	1' - 0"	0' - 8"	1' - 0"	0' - 8"
Toe press.	2700 psf	1900 psf	1700 psf	1430 psf

COUNTY OF SAN DIEGO	STANDARD DRAWING	NONE
CANTILEVERED MASONRY RETAINING WALL	TYPE LM-4	SCALE
(Liveloading surcharge or sloping backfill)		DRAWING NO.
		C-61

REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	



TYPICAL SECTION

ELEVATION

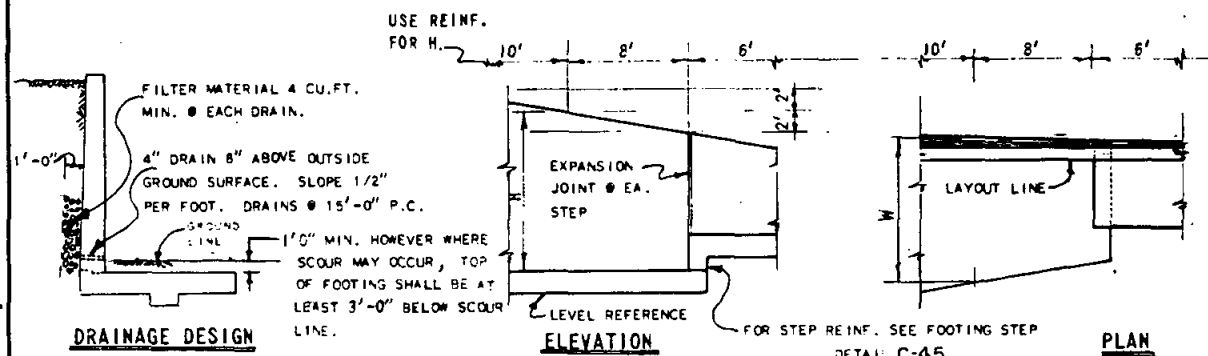
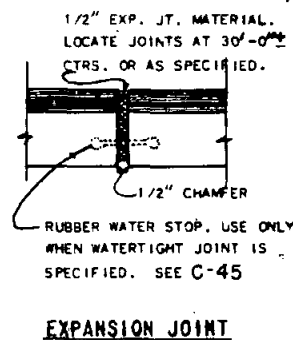
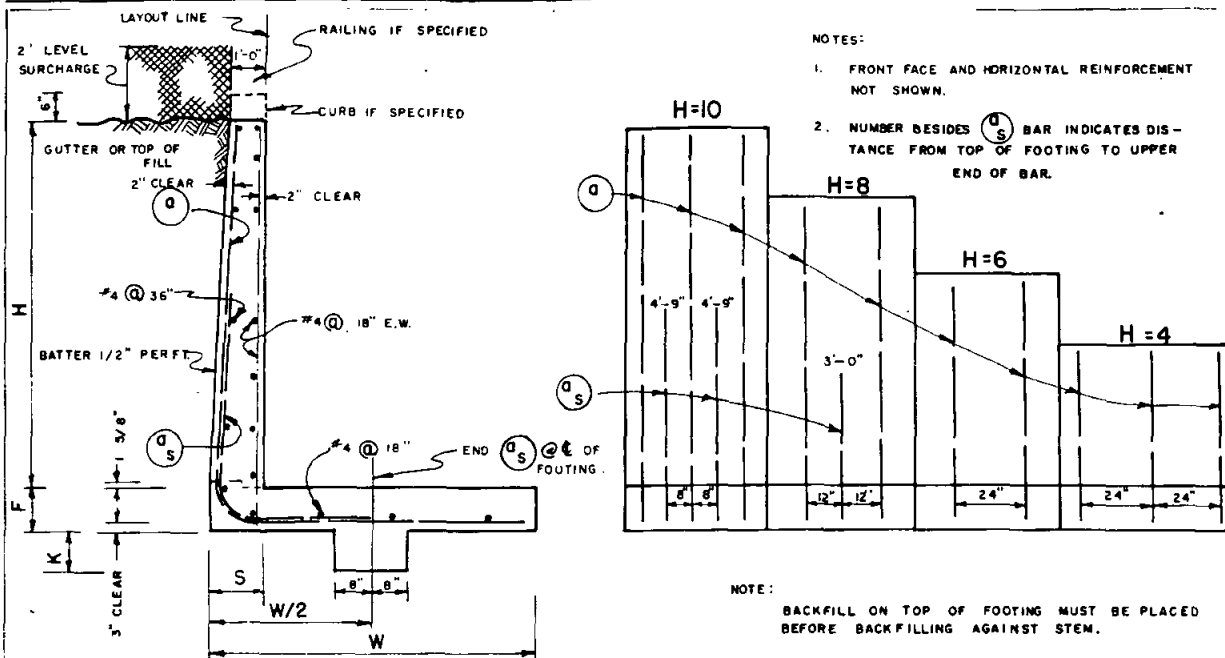


TABLE OF REINF. STEEL, DIMENSION AND DATA					
H	4'-0"	6'-0"	8'-0"	10'-0"	
W	3'-0"	3'-10"	4'-10"	6'-6"	
F	1'-2"	1'-3"	1'-4"	1'-5"	
S	1'-2"	1'-3"	1'-4"	1'-5"	
K		0'-8"	0'-8"	1'-0"	
(a) bars	#4 @ 30"	#4 @ 20"	#4 @ 20"	#5 @ 16"	
(a _s) bars (short)			#4 @ 20"	#5 @ 16"	
Toe pressure P.S.F.	660	1070	1200	1225	
Conc. CF/Ft.	7.8	12.4	16.7	23.3	
Steel lbs/ft.	10.3	14.9	21.71	36.5	



SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE
	CANTILEVER RETAINING WALL	TYPE "L-1"	no scale
	FOR GENERAL NOTES SEE DRAWING C-52		DRAWING NO. C-63

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	<i>H. W. Taylor</i>	<i>W. L. Taylor</i>



TYPICAL SECTION

ELEVATION

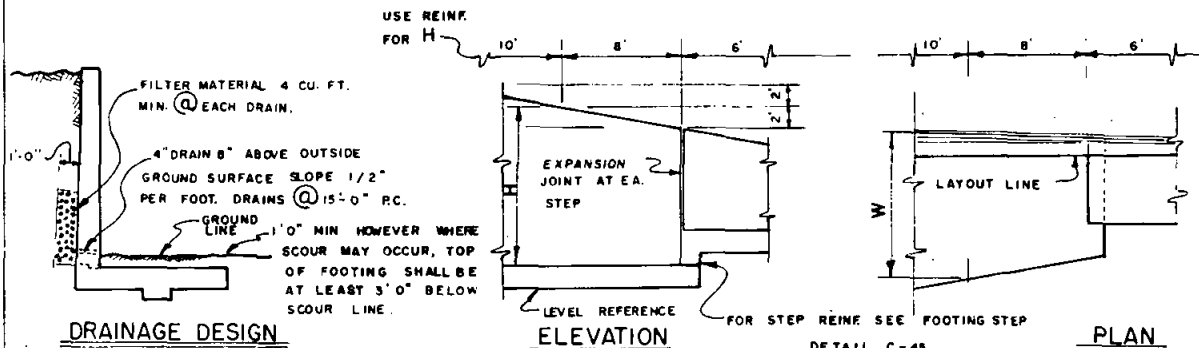
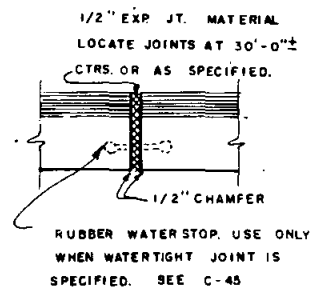


TABLE OF REINF. STEEL, DIMENSION AND DATA				
H	4'-0"	6'-0"	8'-0"	10'-0"
W	3'-9"	5'-3"	6'-9"	9'-0"
F	1'-2"	1'-3"	1'-4"	1'-5"
S	1'-2"	1'-3"	1'-4"	1'-5"
K	0'-8"	0'-8"	1'-0"	1'-3"
$\odot$ bars	#4 @ 24"	#5 @ 24"	#5 @ 24"	#5 @ 16"
$\odot_s$ bars (short)			#5 @ 24"	#5 @ 16"
Toe pressure P.S.F.	810	940	1000	1100
Conc. CF/Ft.	9.6	11.2	20.3	27.4
Steel lbs/ft.	13.9	17.3	25.3	42.0



SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	No Scale
	CANTILEVER RETAINING WALL		SCALE
	TYPE "L-2"		DRAWING NO.
	FOR GENERAL NOTES SEE DRAWING C-52		C-64

REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	
				<i>H. M. Taylor</i>	11/10/72

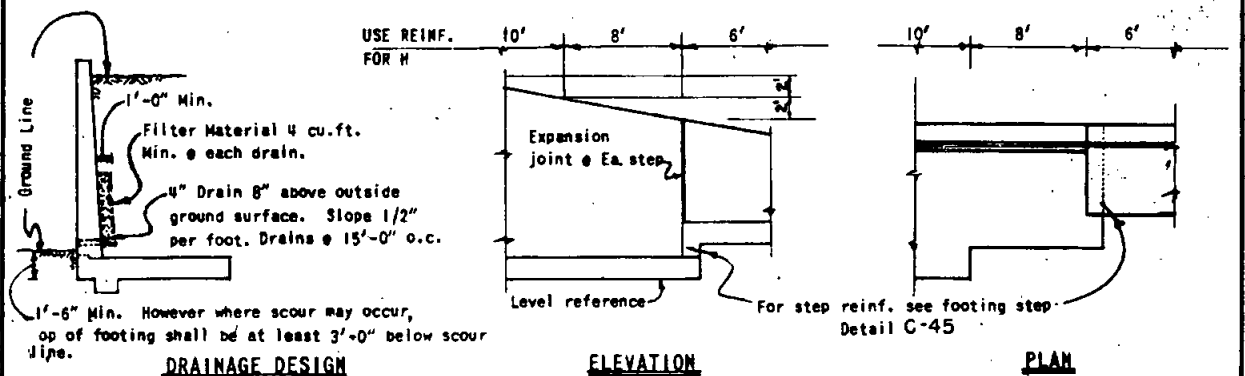
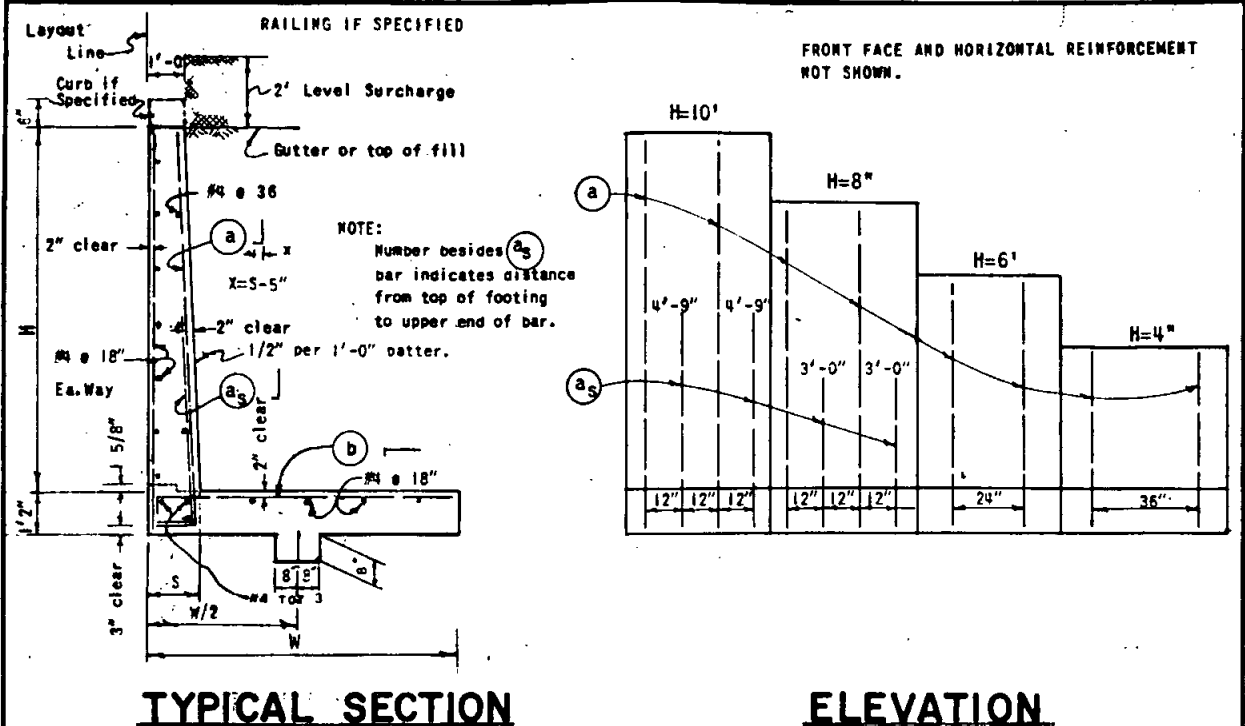
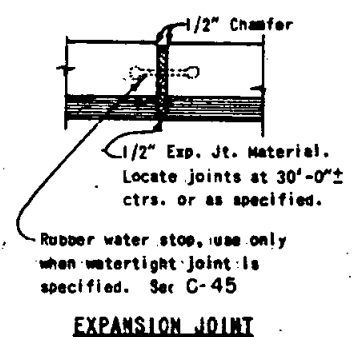
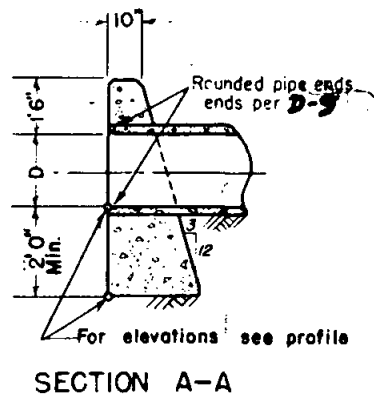
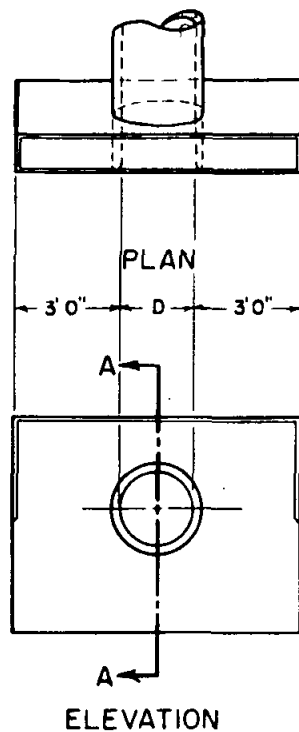


TABLE OF REINF. STEEL DIMENSIONS AND DATA				
H	4'	6'	8'	10'
W	3'-10"	5'-0"	6'-8"	8'-6"
S	1'-2"	1'-3"	1'-4"	1'-5"
a bars	#5 @ 36	#5 @ 24	#5 @ 24	#6 @ 24
a_s bars (short)			#5 @ 24	#6 @ 24
b bars	#5 @ 36	#5 @ 12	#6 @ 12"	#7 @ 12
Toe pressure P.S.F.	1490	2180	2520	2870
Conc. CF/ft.	9.7	13.5	18.0	22.9
Steel lbs/ft.	12.8	20.5	33.0	50.2



SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE NO SCALE
	CANTILEVER RETAINING WALL		DRAWING NO.
	TYPE "L-5"		C-67
	FOR GENERAL NOTES SEE DRAWING 52-EB		

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		



GENERAL NOTES

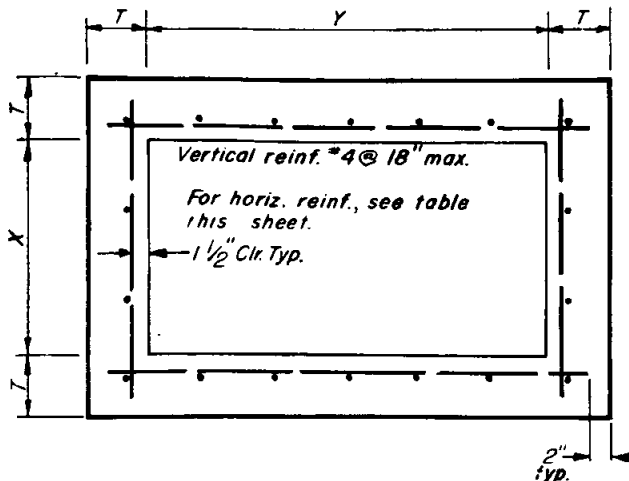
Concrete: All concrete to be Class A
 All exposed corners to be chamfered $\frac{3}{4}$ "
 Exposed surfaces to be finished.
 "D" = inside diameter of pipe.
 Min. denotes Minimum

Legend on plans:

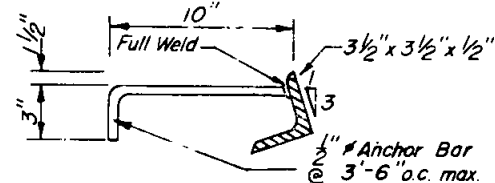
SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE 1" = 4'-0"
	GRAVITY TYPE HEADWALL		DRAWING NO.
			D-1

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	<i>W. Taylor</i>	<i>ulaltr</i>

BOX SECTION REINFORCEMENT			
MAX SPAN "X" or "Y"	DEPTH "V"	THICKNESS "T"	HORIZ. & FLR REIN.
3'-0" to 4'-0"	4'-0"	6"	*4 @ 18"
4'-1" to 5'-0"		6"	*4 @ 12"
5'-1" to 6'-0"		6"	*4 @ 12"
6'-1" to 7'-0"		6"	*4 @ 12"
7'-1" to 8'-0"		6"	*4 @ 8"
3'-0" to 4'-0"	4'-1"	6"	*4 @ 18"
4'-1" to 5'-0"		6"	*4 @ 12"
5'-1" to 6'-0"		6"	*4 @ 8"
6'-1" to 7'-0"		6"	*4 @ 6"
7'-1" to 8'-0"		6"	*4 @ 6"
3'-0" to 4'-0"	8'-0"	6"	*4 @ 15"
4'-1" to 5'-0"		8"	*4 @ 12"
5'-1" to 6'-0"		8"	*4 @ 8"
6'-1" to 7'-0"		8"	*4 @ 6"
7'-1" to 8'-0"		8"	*4 @ 6"
3'-0" to 4'-0"	8'-1"	6"	*4 @ 12"
4'-1" to 5'-0"		8"	*4 @ 12"
5'-1" to 6'-0"		8"	*4 @ 8"
6'-1" to 7'-0"		8"	*4 @ 6"
7'-1" to 8'-0"		8"	*4 @ 6"
3'-0" to 4'-0"	12'-0"	6"	*4 @ 12"
4'-1" to 5'-0"		8"	*4 @ 12"
5'-1" to 6'-0"		8"	*4 @ 8"
6'-1" to 7'-0"		8"	*4 @ 6"
7'-1" to 8'-0"		8"	*4 @ 6"
3'-0" to 4'-0"	16'-0"	6"	*4 @ 12"
4'-1" to 5'-0"		8"	*4 @ 12"
5'-1" to 6'-0"		8"	*4 @ 8"
6'-1" to 7'-0"		8"	*4 @ 6"
7'-1" to 8'-0"		8"	*4 @ 6"
3'-0" to 4'-0"	20'-0"	6"	*4 @ 12"
4'-1" to 5'-0"		8"	*4 @ 12"
5'-1" to 6'-0"		8"	*4 @ 8"
6'-1" to 7'-0"		8"	*4 @ 6"
7'-1" to 8'-0"		8"	*4 @ 6"
3'-0" to 4'-0"	24'-0"	6"	*4 @ 12"
4'-1" to 5'-0"		8"	*4 @ 12"
5'-1" to 6'-0"		8"	*4 @ 8"
6'-1" to 7'-0"		8"	*4 @ 6"
7'-1" to 8'-0"		8"	*4 @ 6"



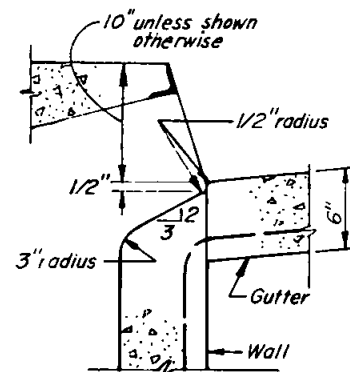
TYPICAL BOX SECTION



FACE ANGLE

NOTES

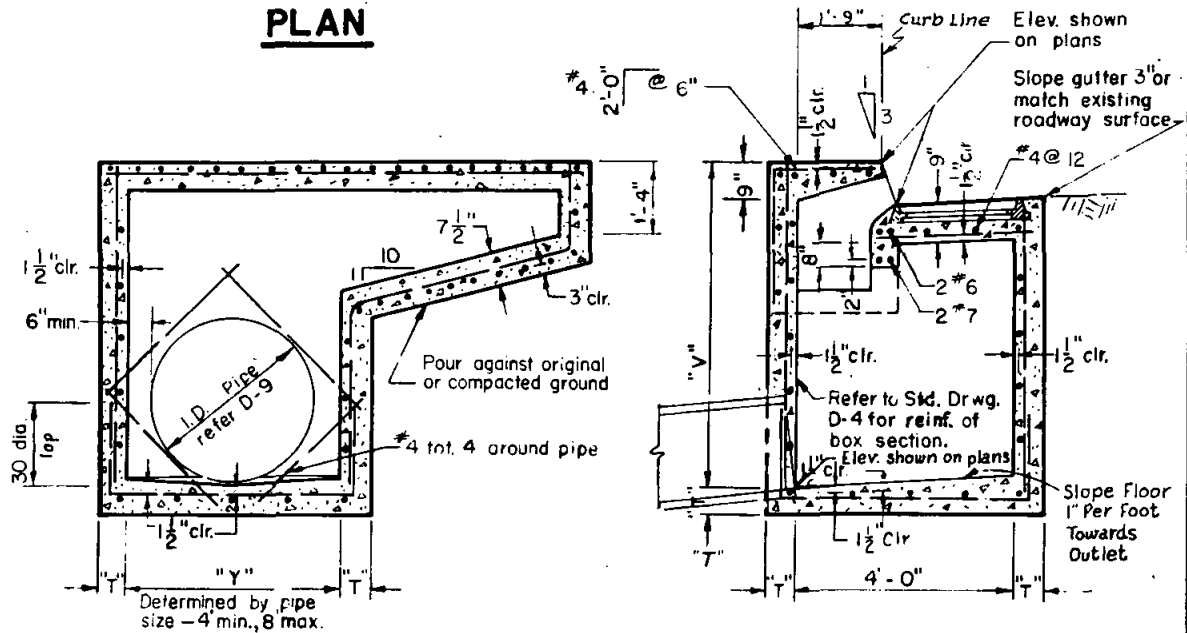
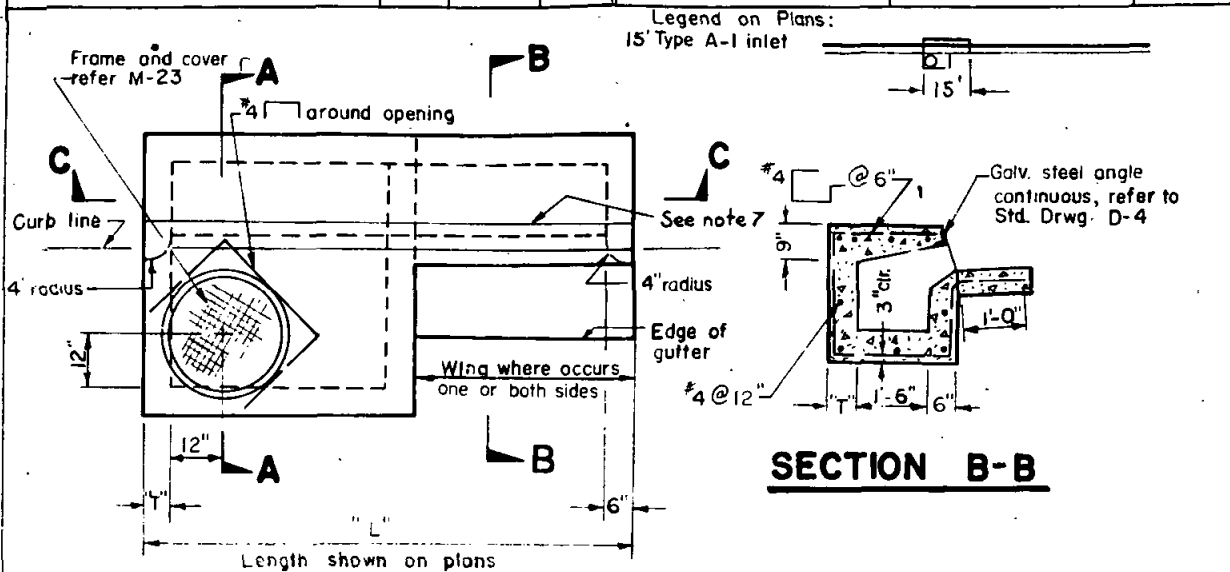
- Concrete shall be Class "A" with 1 1/2 inch maximum size aggregate.
- Unless otherwise specified reinforcing steel shall comply with this drawing.
- Reinforcing steel shall be intermediate grade deformed bars conforming to latest ASTM specifications.
- All bends shall be in accordance with the latest ACI code.
- Minimum splice length for reinforcing shall be 30 diameters.
- Floors shall have a wood trowel finish and except where used as junction boxes, shall have a minimum slope of 1 inch per foot towards the outlet.
- Face Angle shall be cast in a structure continuous for the full length "L".
- When structure depth "V" exceeds 5 feet, ladder rungs shall be cast into wall @ 15" intervals from 15" above floor to within 12" of top of structure. Where possible place rungs in wall without pipe opening, directly beneath access opening. See D-34 for details.
- Wall thickness and reinf. steel required may be decreased in accordance with table above as depth "V" to box section is decreased.
- Face angle and anchor to be hot-dipped galvanized after fabrication.
- Provide protective steel bar in throat opening when required - See D-37



CURB INLET THROAT OPENING

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE <i>None</i>
	INLETS AND CLEANOUTS		DRAWING NO.
	NOTES AND DETAILS		D-4

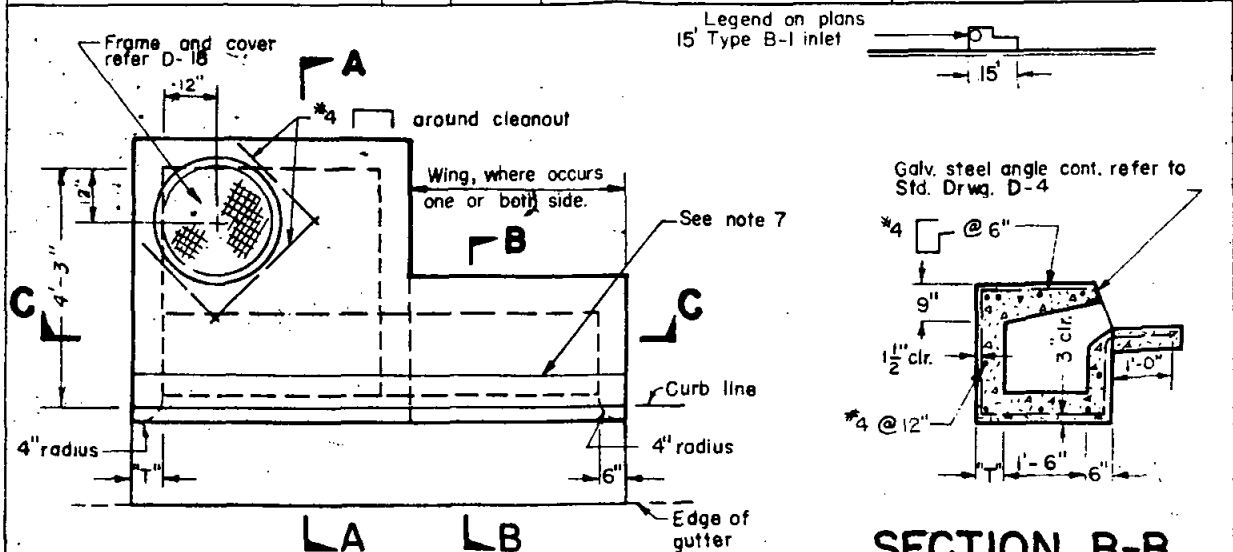
REVISIONS				APPROVALS			
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	<i>H. M. Taylor</i>		



1. Refer Standard Drawing D-4 for additional notes and details.
2. Designate type as follows: No wing A, One wing A-1, Two wings A-2.
3. Exposed edges of concrete shall be rounded with a radius of $\frac{1}{2}$ inch.
4. Surface of top slab shall be finished as specified for sidewalks in the Standard Specifications and shall drain towards streets at a slope of $\frac{1}{4}$ inch per foot.
5. Concrete gutter to match adjacent gutters.
6. Expansion joint material shall be placed at the ends of the Inlet where the curb is to adjoin.
7. Provide $\frac{1}{4}$ " tooled groove in top slab in line with back of adjacent curb.

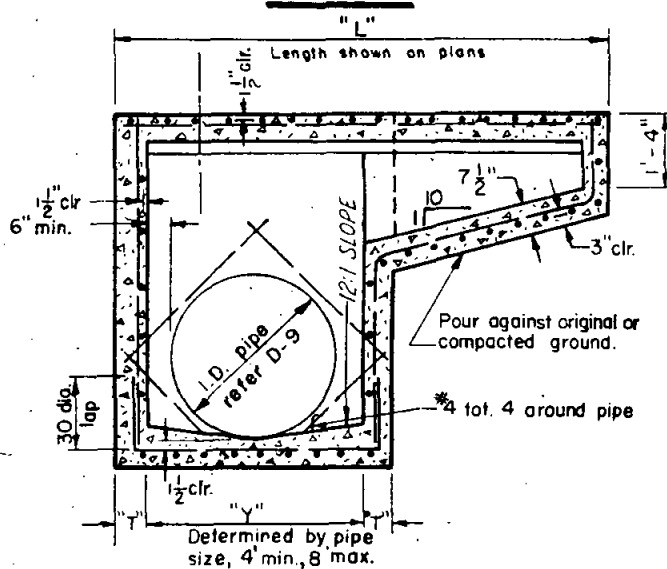
SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	No scale
	CURB INLET - TYPE A		SCALE
			DRAWING NO.
			D-5

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H.M. Taylor</i>	<i>W. Calver</i>

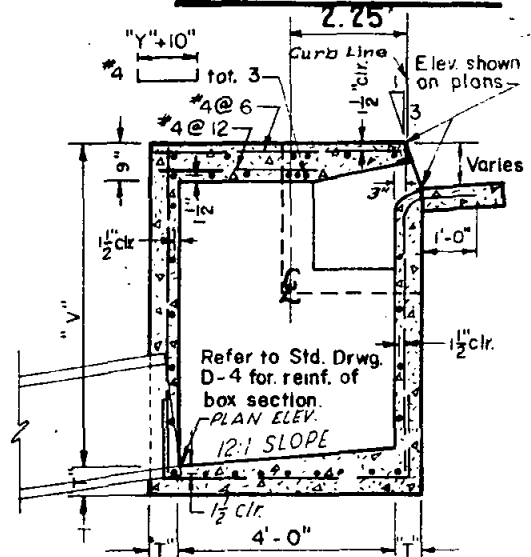


PLAN

SECTION B-B



SECTION C-C



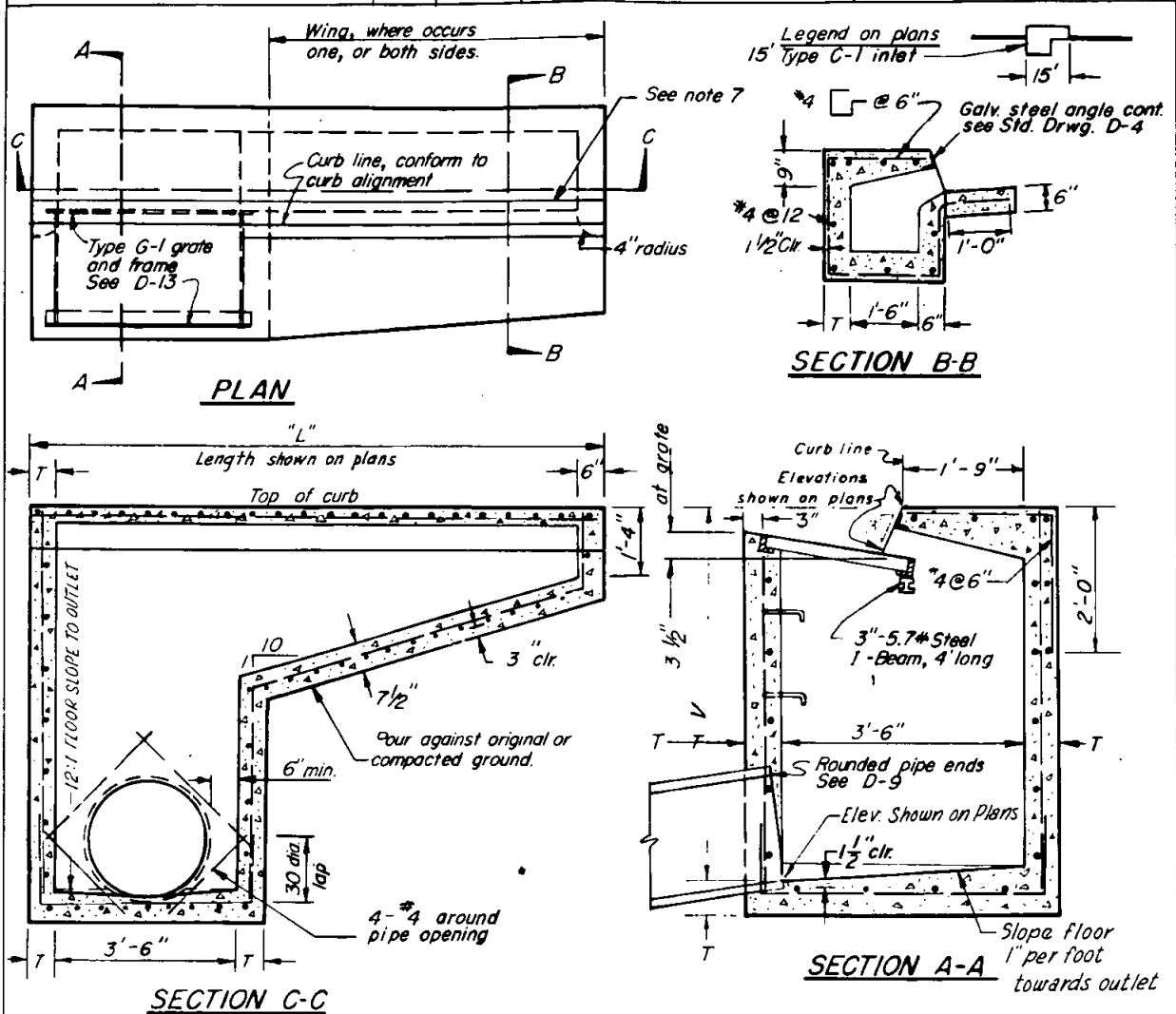
SECTION A-A

1. Refer Standard Drawing D-4 for additional notes and details.
2. Designate types as follows: No wing B, One wing B-1, Two wings B-2.
3. Exposed edges of concrete shall be rounded with a radius of $\frac{1}{2}$ inch.
4. Surface of top slab shall be finished as specified for sidewalks in the Standard Specifications and shall drain towards street at a slope of $\frac{1}{4}$ inch per foot.
5. Concrete gutter to match adjacent gutters.
6. Expansion joint material shall be placed at the ends of the inlet where the curb is to adjoin.
7. Provide $\frac{1}{4}$ inch tooled groove in top slab in line with back of adjacent curb.

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	No scale SCALE
			DRAWING NO.
			D-6

CURB INLET-TYPE B

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Fay</i>	<i>W. H. Fay</i>



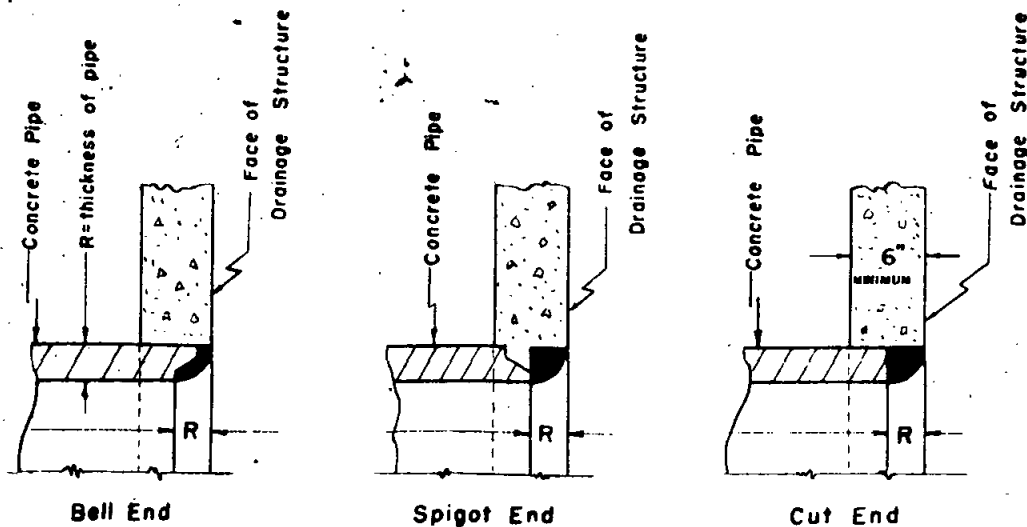
NOTES

1. Refer Standard Drawing D-4 for additional notes and details.
2. Designate types as follows: No wing C, one wing C-1, two wings C-2.
3. Exposed edges of concrete shall be rounded with a radius of 1/2 inch.
4. Surface of top slab shall be finished as specified for sidewalks in the Standard Specifications and shall drain towards street at a slope of 1/4 inch per foot.
5. Concrete gutter to match adjacent gutters.
6. Expansion joint material shall be placed at the ends of the inlet where the curb is to adjoin.
7. Provide 1/4" tooled groove in top slab in line with back of adjacent curb.

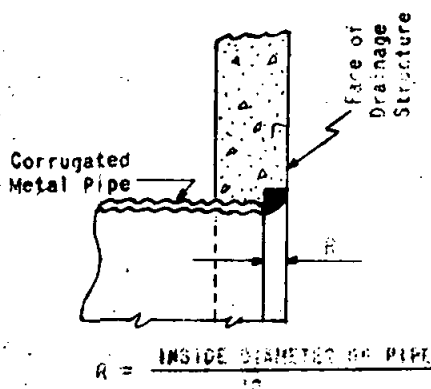
SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE None
			DRAWING NO.
			D-7

CURB INLET—TYPE C

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	<i>10/10/10</i>



The rounded areas may be built up of Cement Mortar or poured in place with the drainage structure.



SPECIFICATION REFERENCE

COUNTY OF SAN DIEGO

STANDARD DRAWING

ROUNDED PIPE ENDS IN DRAINAGE STRUCTURES

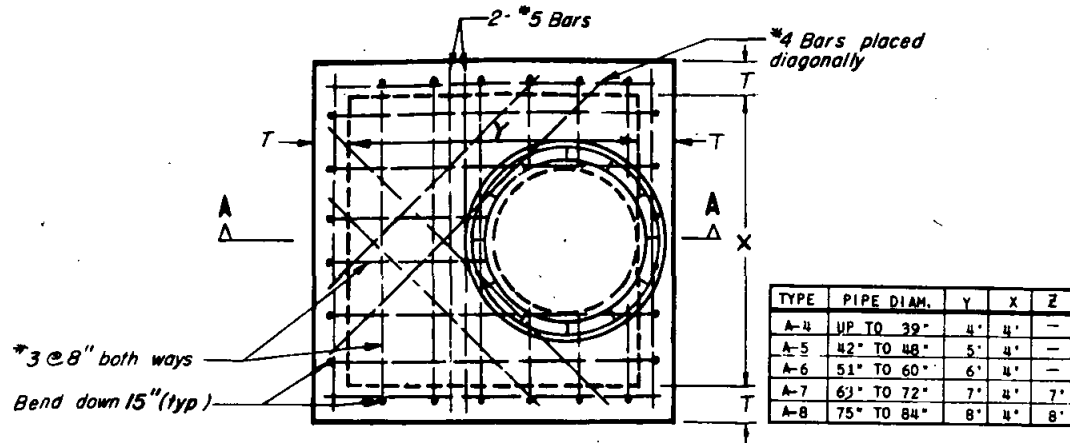
SCALE 1/2" = 1'-0"

DRAWING NO.

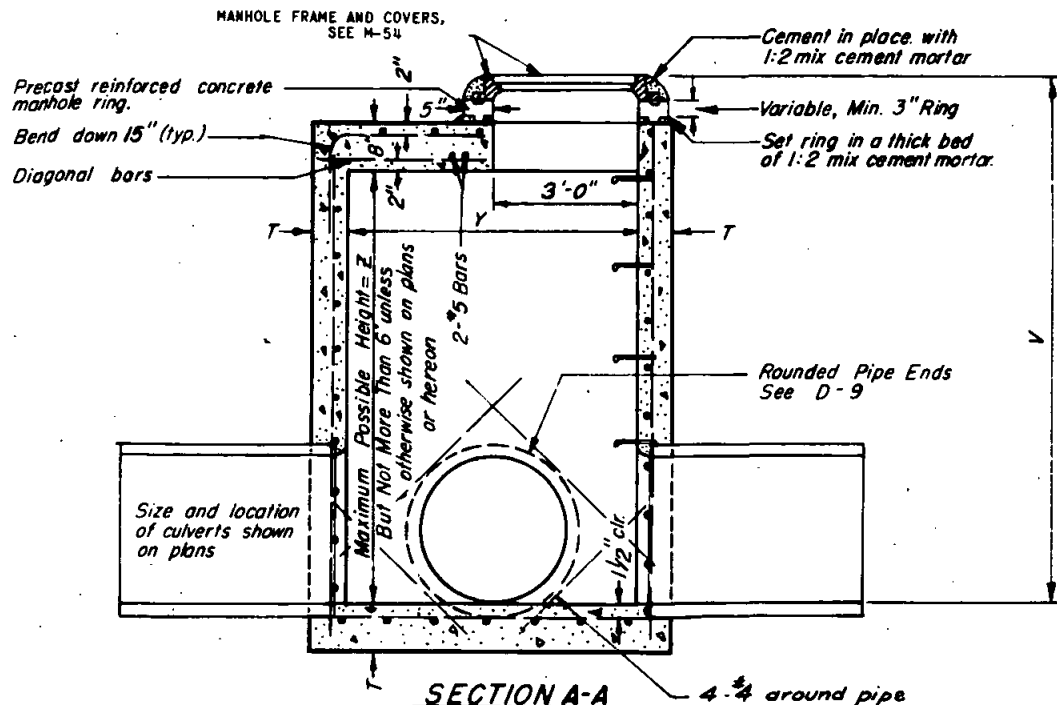
D-9

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. P. Taylor</i>	<i>W. L. Lee</i>

Legend on plans ☐



PLAN



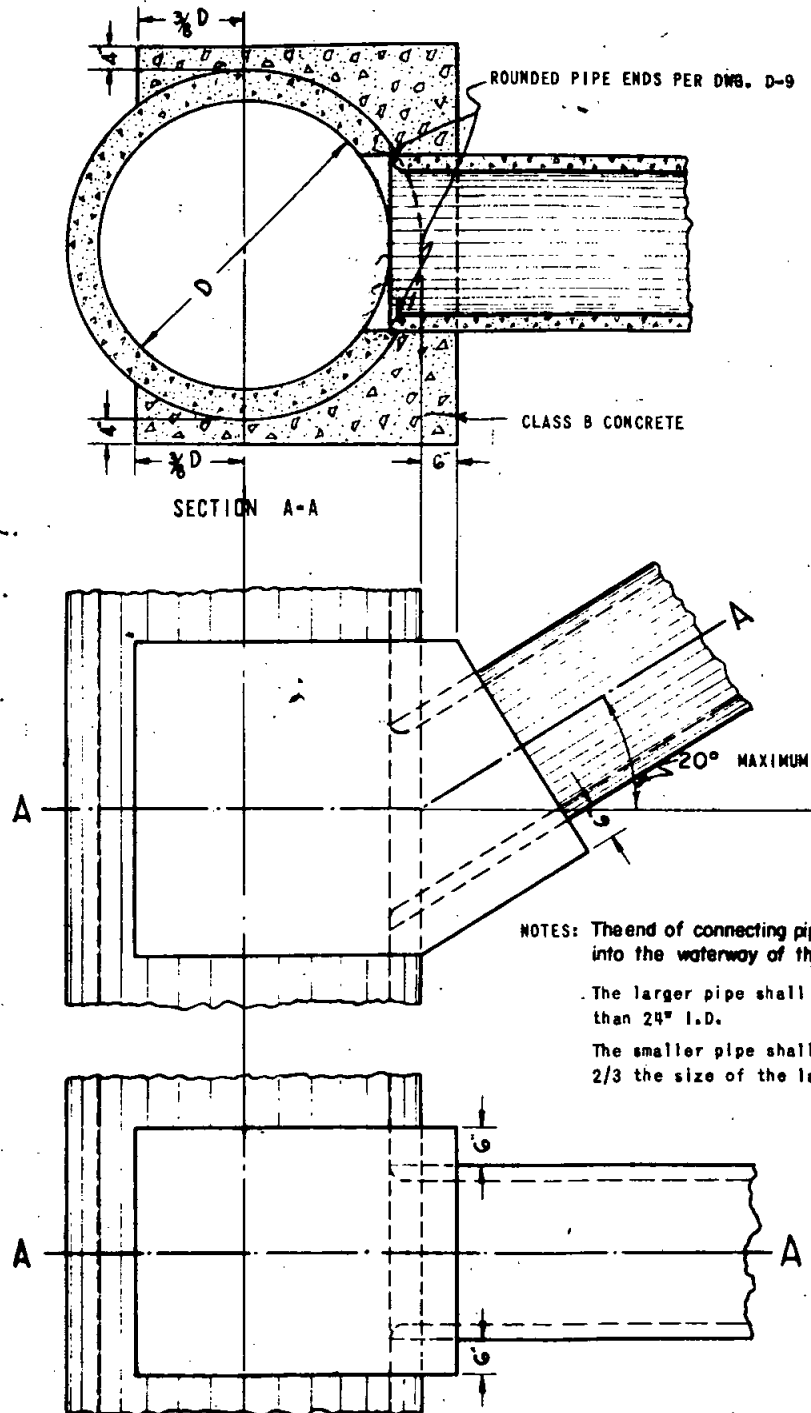
SECTION A-A

NOTES

1. Refer to standard drawing D-4 for additional notes and details.
2. In unpaved areas, except streets, raise cover to 6" min. above finish grade. In streets, raise cover to finish grade.

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	
	STORM DRAIN CLEANOUT		SCALE 1/2" = 1'-0"
	TYPE A		DRAWING NO.
			D-11

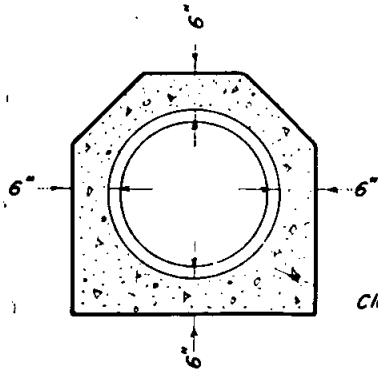
REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	<i>11/10/78</i>



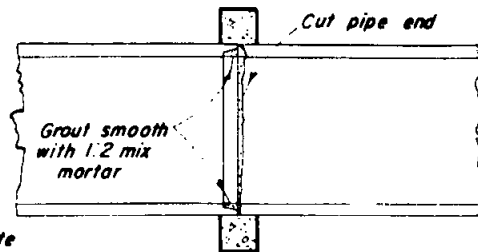
Legend on plans:

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE NONE
	CONCRETE LUG		DRAWING NO.
			D-12

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	<i>H. M. Taylor</i>	<i>ulcalza</i>

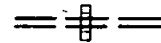


ELEVATION



SECTION

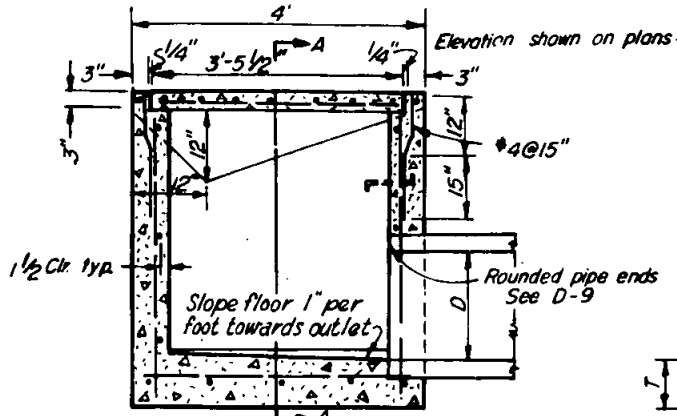
Legend on Plans



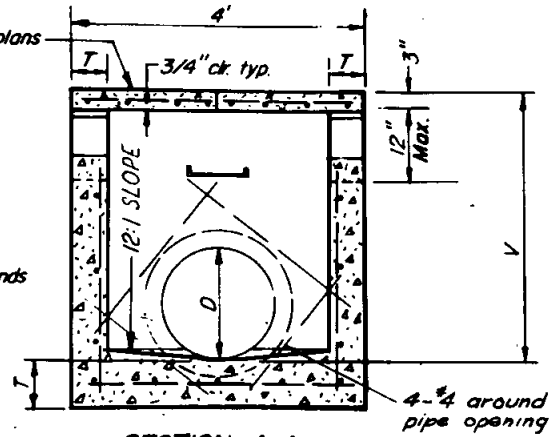
SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	0" = 1'-0"
	PIPE COLLAR		SCALE 3/4" = 1'-0"
			DRAWING NO.
			D-14

REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	

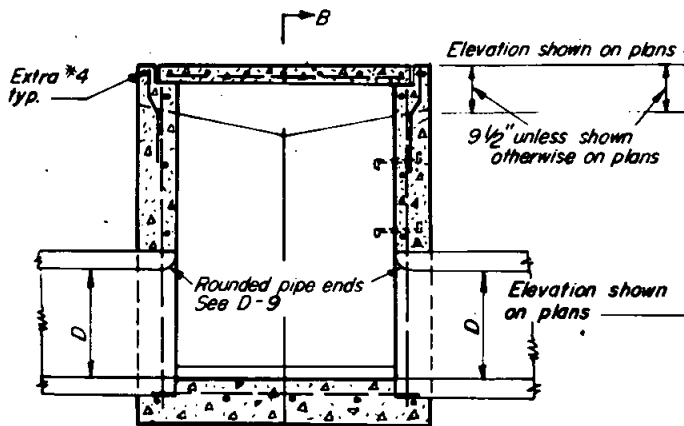
Legend on plans ==  ==



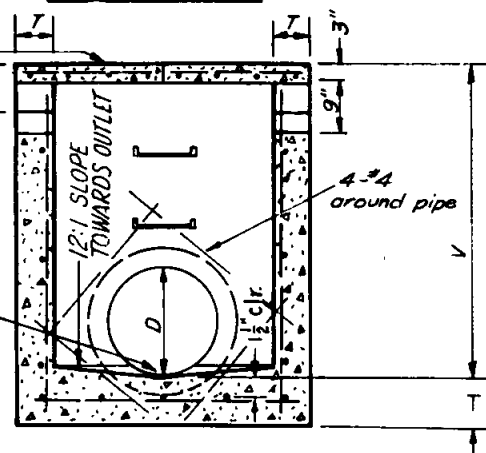
TYPE I DROP INLET



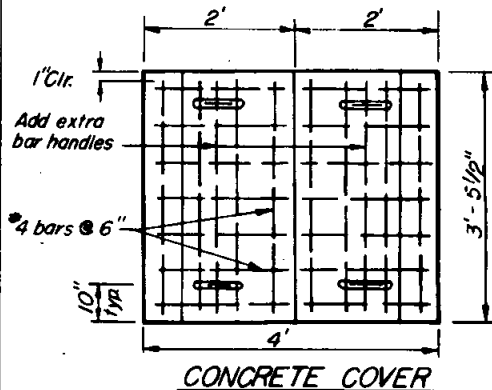
SECTION A A



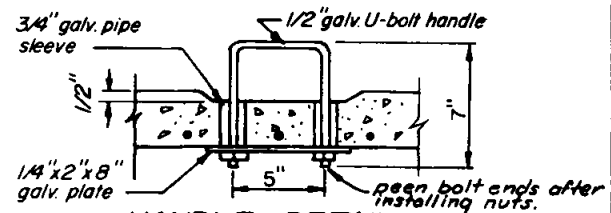
TYPE J DROP INLET



SECTION B-B



CONCRETE COVER



HANDLE DETAIL

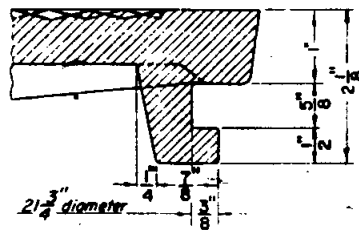
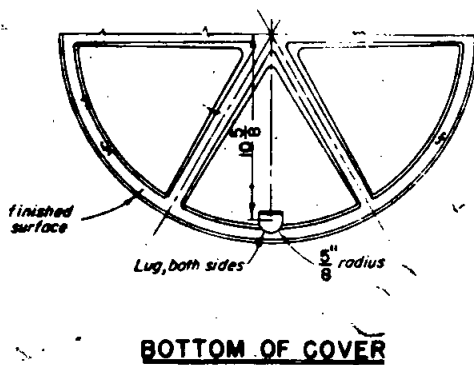
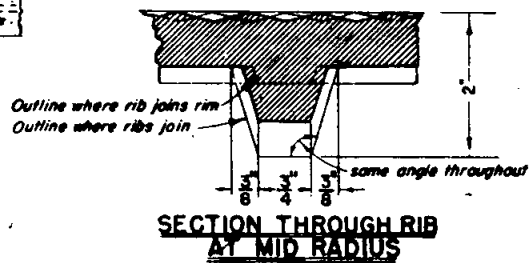
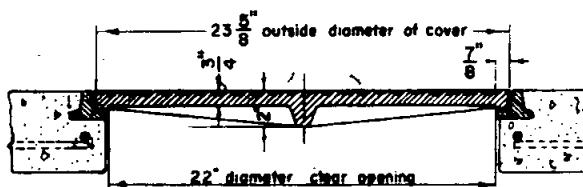
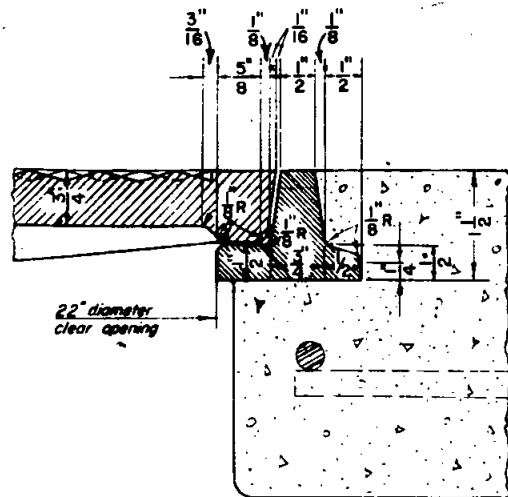
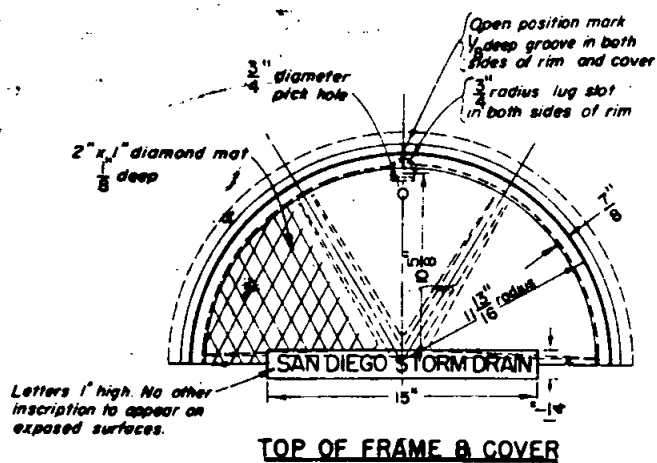
NOTES:

1. Refer to Standard Drawing D-4 for additional notes and details.
2. Type I and Type J drop inlets are the same with the exception of the openings.
3. All exposed edges on top of inlet to be rounded to 1/2 inch radius.
4. Openings on both sides unless shown otherwise on plans.

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	0 1 2 FT.
			SCALE 1/2" = 1'-0"
			DRAWING NO.
			D-15

TYPE I AND TYPE J INLETS

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	11/10/77

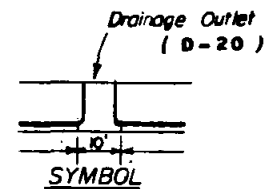
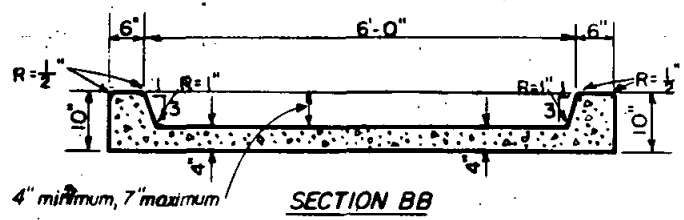
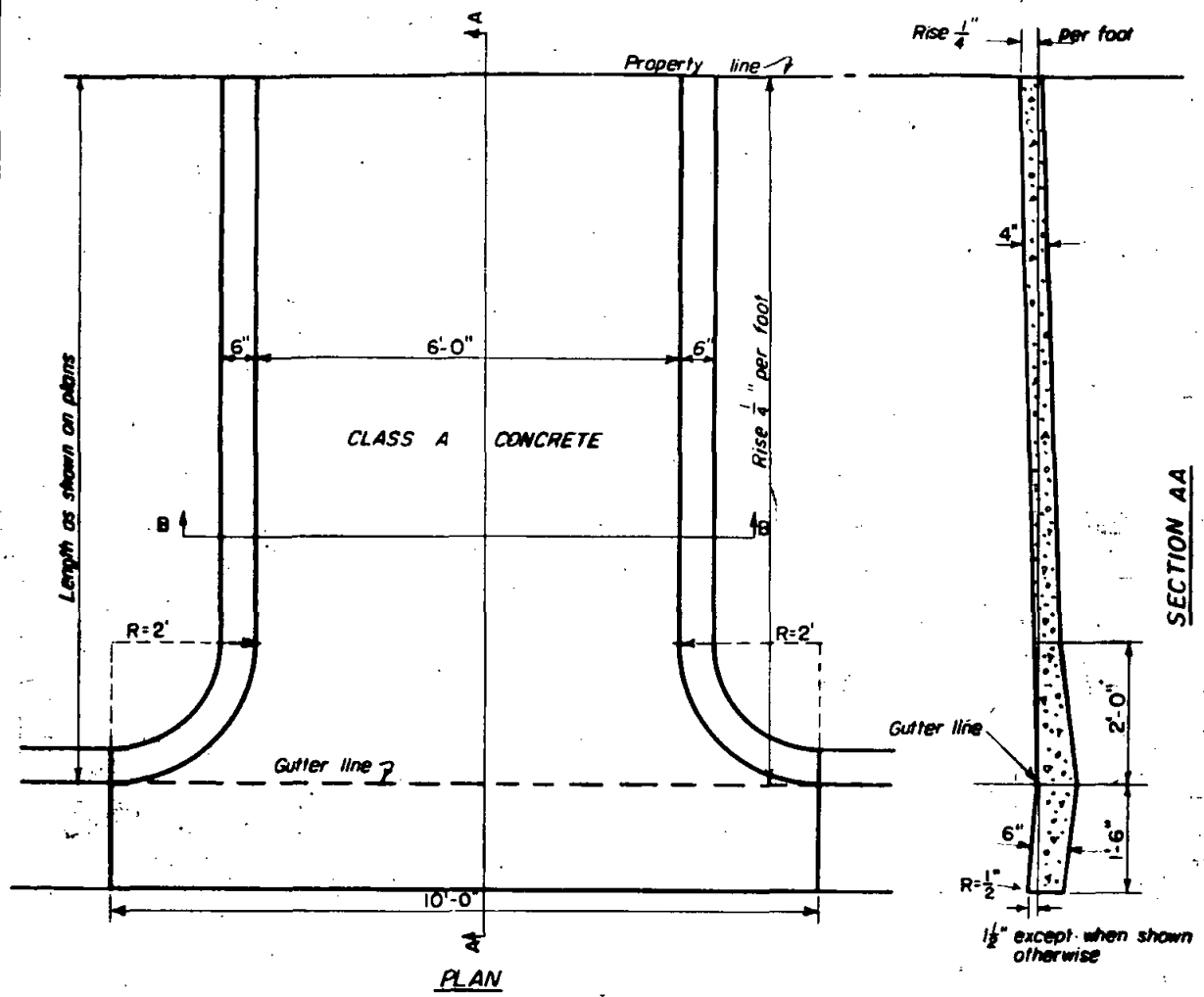


Notes: Frame and cover shall be cast iron.
Inlet frame and cover for use in sidewalk area only.

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE None
			DRAWING NO.

INLET FRAME AND COVER

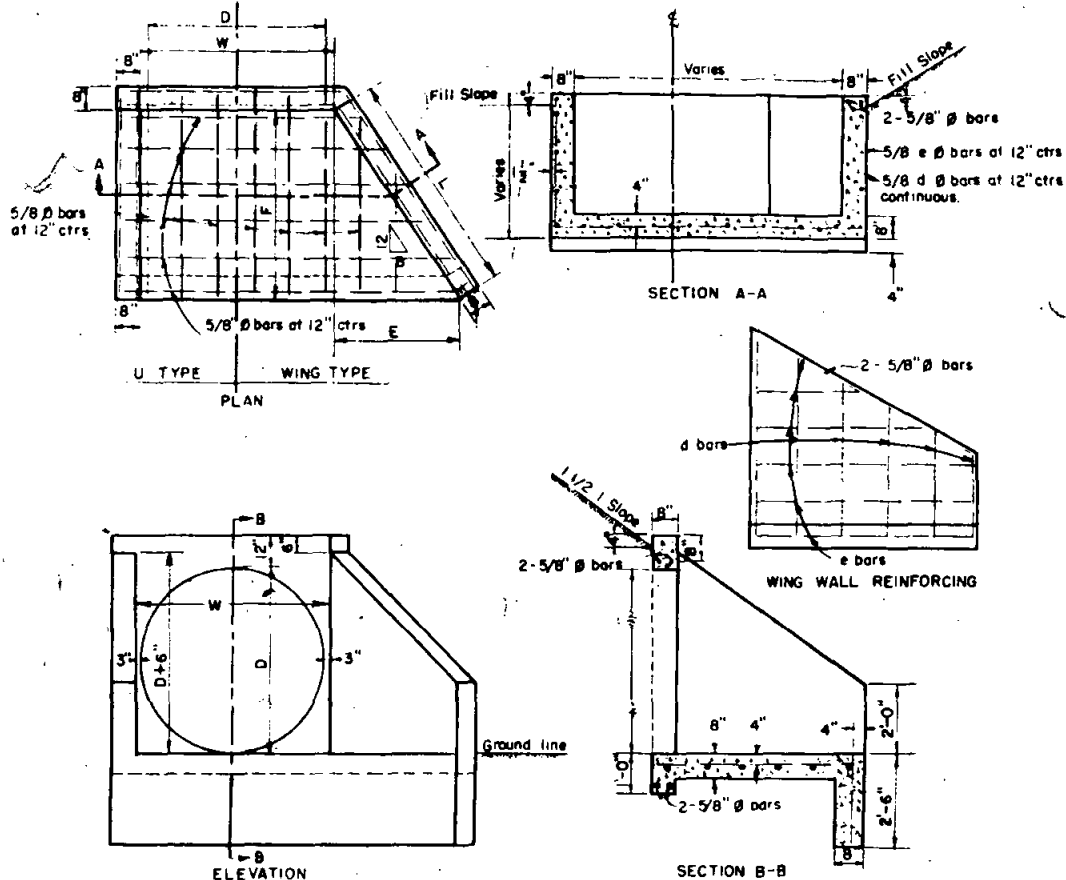
REVISIONS				APPROVALS	
DATE	DESCRIPTION	BY	APPROVED	COUNTY ENGINEER	



0 1 2 FT.

Specification Reference			
		COUNTY OF SAN DIEGO ENGINEERING DEPARTMENT	
		STANDARD DRAINAGE OUTLET (For Sidewalk Areas)	
		DRAWING NUMBER	
		D-20	

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	<i>W. M. Taylor</i>



WING & U TYPE HEADWALLS FOR 42" TO 84" PIPES (1 1/2:1 FILL SLOPES)

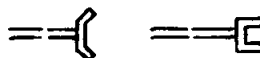
DIMENSIONS				SINGLE PIPE				DOUBLE PIPE			
PIPE	L	E	F	AREA OF WATERWAY SQ. FT.	W	U TYPE	WING TYPE	PIPE	L	E	F
42"	3'-7 1/4"	2'-0"	3'-0"	9.62	4'-0"	1.97	1.17	42"	19'-24"	9'-10"	2.69
48"	4'-6"	2'-6"	3'-9"	12.56	4'-6"	1.97	1.33	48"	25'-12"	11'-2"	3.43
54"	5'-4 7/8"	3'-0"	4'-6"	15.90	5'-0"	2.41	1.90	54"	31'-80"	12'-6"	4.24
60"	6'-3 3/4"	3'-6"	5'-3"	19.63	5'-6"	2.88	2.39	60"	39'-26"	13'-10"	5.13
66"	7'-2 1/2"	4'-0"	6'-0"	23.76	6'-0"	3.38	2.94	66"	47'-52"	15'-2"	6.08
72"	8'-13 1/8"	4'-6"	6'-9"	28.27	6'-6"	3.93	3.68	72"	56'-54"	16'-6"	7.11
78"	9'-0"	5'-0"	7'-6"	33.18	7'-0"	4.50	4.44	78"	67'-56"	17'-4"	8.20
84"	9'-0 3/4"	5'-6"	8'-3"	38.48	7'-6"	5.21	5.40	84"	76'-56"	18'-8"	9.50

NOTE: Dimensions E and L apply to Wing type only

GENERAL NOTES

Skewed Pipes. Dimension W to be increased to take care of increased width or length due to skew or multiple pipes. Tops of headwalls on grade culverts shall be placed parallel to profile grade when the grades are 3% or more. Quantities shown in tables are for 1 headwall.

LEGEND ON PLANS



Concrete: All concrete to be class A

All exposed corners to be chamfered 3/4"

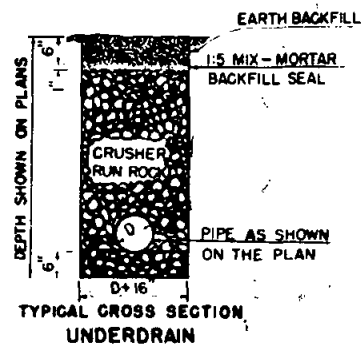
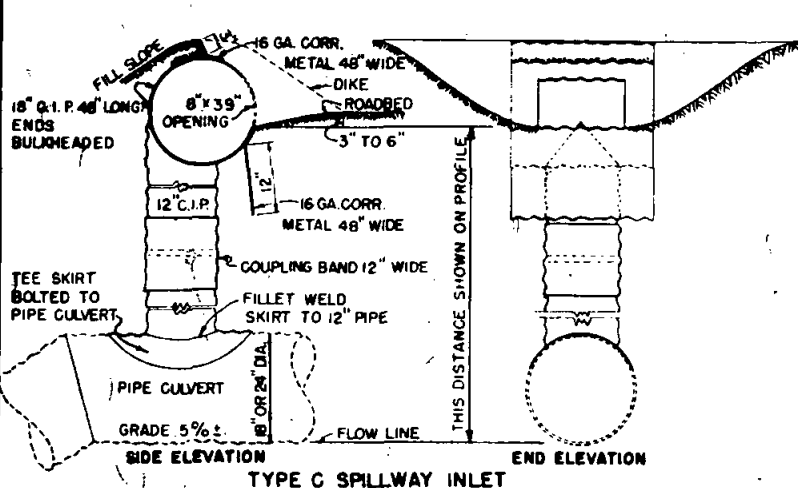
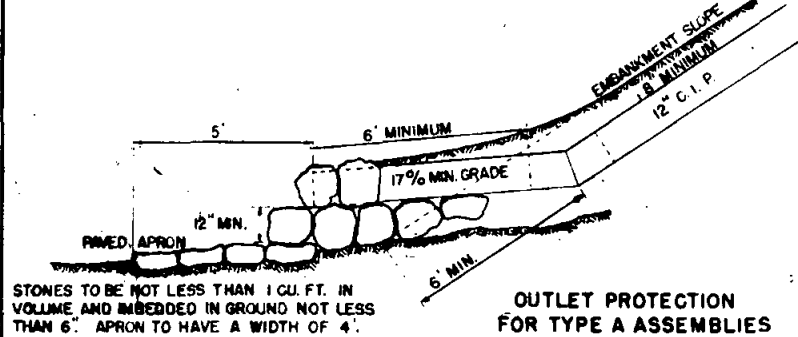
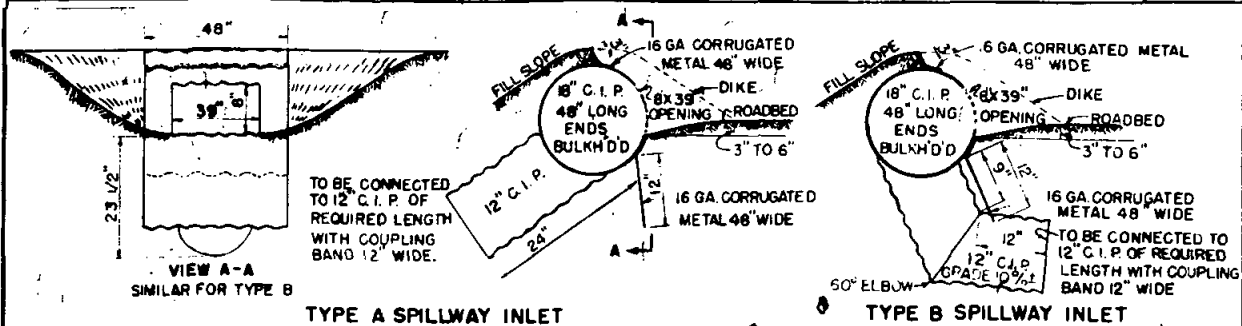
Exposed surfaces to have standard finish.

Reinforcing Steel: All reinforcing steel to be round deformed bars of structural grade

Multiple Pipes to be set with longitudinal center lines 1 2/3 diameters of pipe apart.

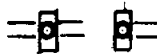
SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	NONE
	WING & U - TYPE HEADWALLS		SCALE
	FOR 42" TO 84" PIPES		DRAWING NO.
			D-24

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	<i>10/1/50</i>



C.I.P. MEANS CORRUGATED IRON PIPE.
 BULKH'D'D MEANS BULKHEADED.
 GA. MEANS GAGE.
 CORR. MEANS CORRUGATED.
 MIN. MEANS MINIMUM.
 DIA. MEANS DIAMETER.

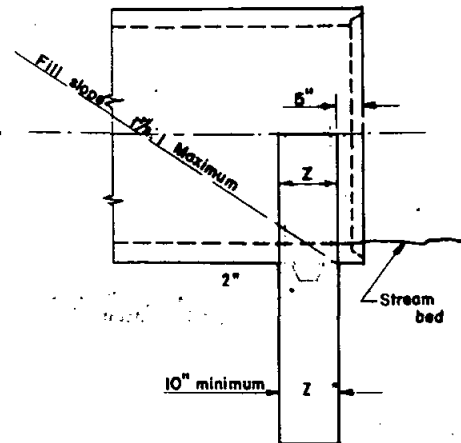
LEGEND ON PLANS



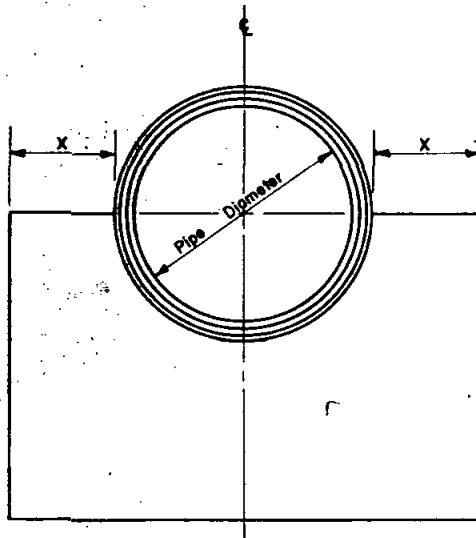
SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	NONE
	Type A, B & C Spillway Inlets and Underdrain		SCALE
			DRAWING NO.
			D-25

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	<i>H. M. Taylor</i>	11-10-78

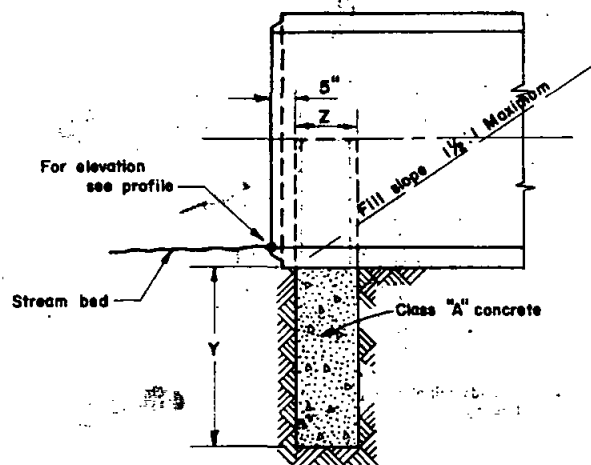
PIPE DIAMETER	X	Y	Z
12" to 24"	1'-0"	2'-0"	10"
24" to 36"	1'-6"	2'-6"	12"
36" to 48"	2'-0"	3'-0"	12"
48" to 60"	2'-6"	3'-0"	14"
60" & LARGER	3'-0"	3'-0"	16"



SIDE ELEVATION



FACE ELEVATION



CENTER LINE SECTION

GENERAL NOTES

A curtain wall shall be used in place of a headwall at culvert ends where extension of the culvert is considered imminent, or no fill slope is retained.

The dimension "Y" shall be increased if unstable material is encountered.

Keep the pipe-end clear of obstruction to permit easy placing of culvert extension.

Legend on plans:

SPECIFICATION REFERENCE

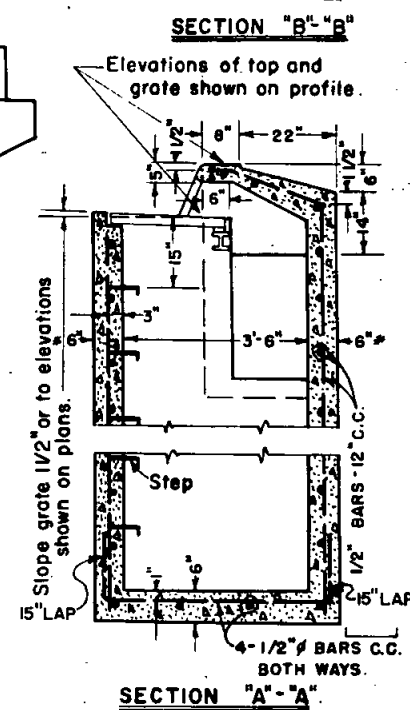
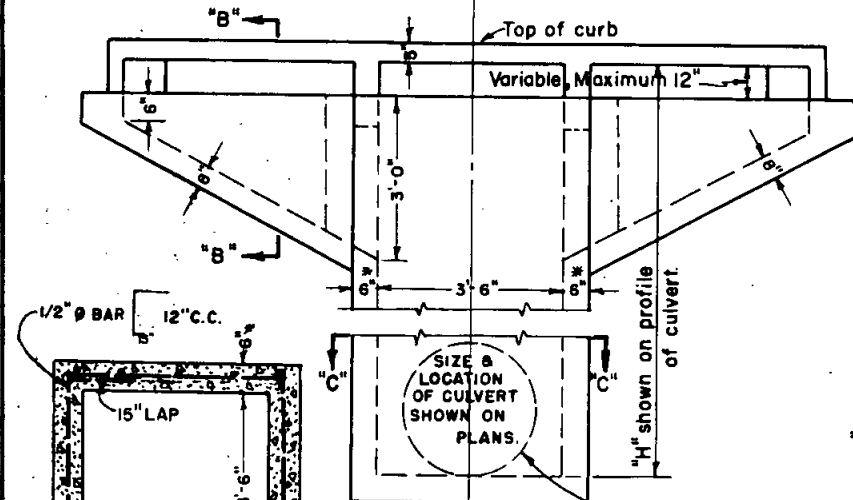
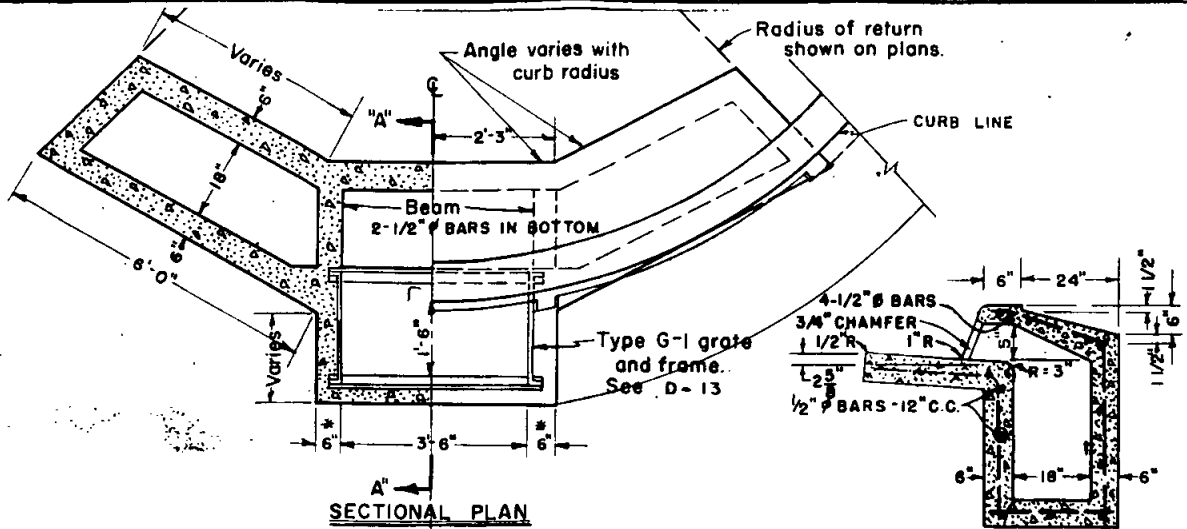
COUNTY OF SAN DIEGO

STANDARD DRAWING

CURTAIN WALL

0 1 2+3
SCALE 1/2" = 1'-0"
DRAWING NO.
D-28

REVISIONS				APPROVALS		
DESCRIPTION	EIV	APPROVED	DATE	COUNTY ENGINEER		
					<i>H.M. Taylor</i>	11-10-77



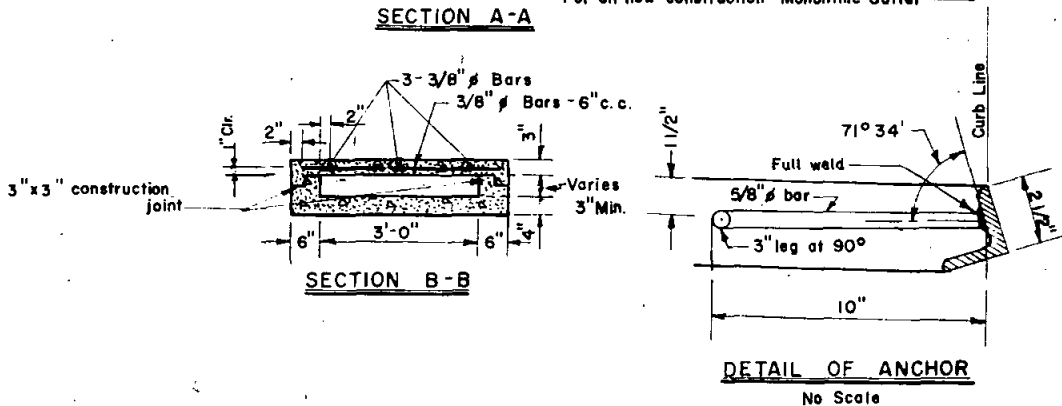
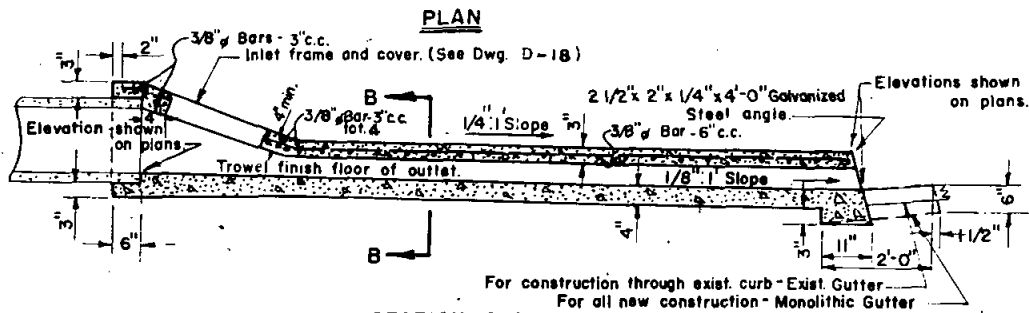
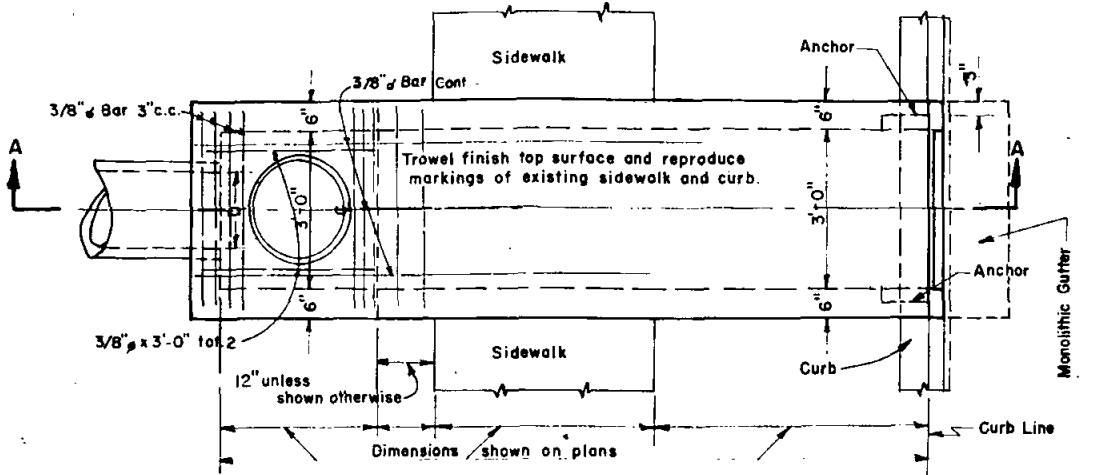
*NOTE: For sections extending deeper than 12'-0" below top of inlet, wall thickness shall be increased to 8". Special design required for "H" greater than 16'-0".

NOTE: All concrete shall be Class A.
All reinforcing shall be deformed bars.

Legend on plans:

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	6 1 2 FT. 3/8" = 1'-0"
	TYPE G CURB INLET		SCALE
			DRAWING NO. D-34

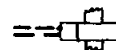
REVISIONS				APPROVALS		
DESCRIPTION	EIV	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. W. Taylor</i>	11-10-72



NOTES:

- All concrete shall be Class A.
- Cut sidewalk and curb in accordance with drawing- G-33
- D = inside diameter of pipe.
- Section to be sloped laterally with top conforming to the grades of the existing sidewalk and curb.
- The use of this type structure is restricted to locations having had the advance approval of the County Engineer.

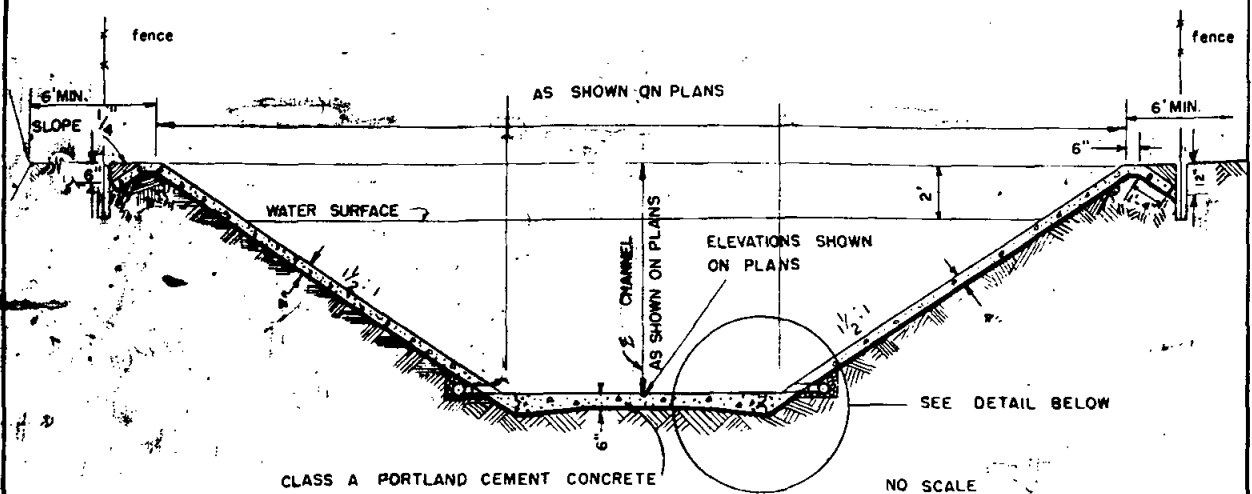
Legend on plans.



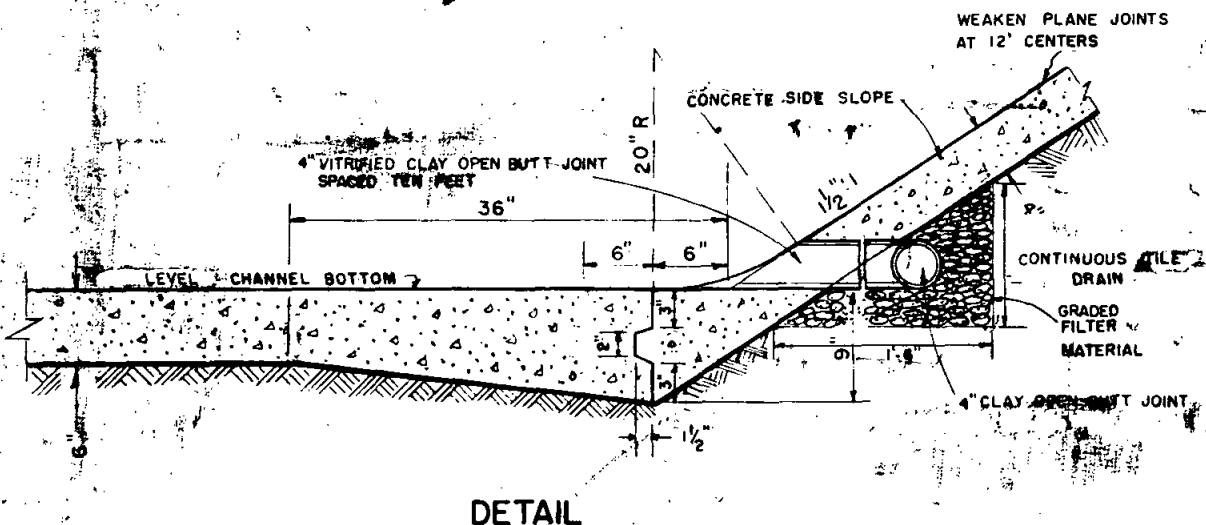
SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE
			0 1 2 FT. 3/8" = 1'-0"
			DRAWING NO.
			D-35

CURB OUTLET

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	11-10-72



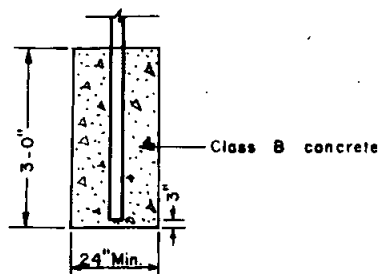
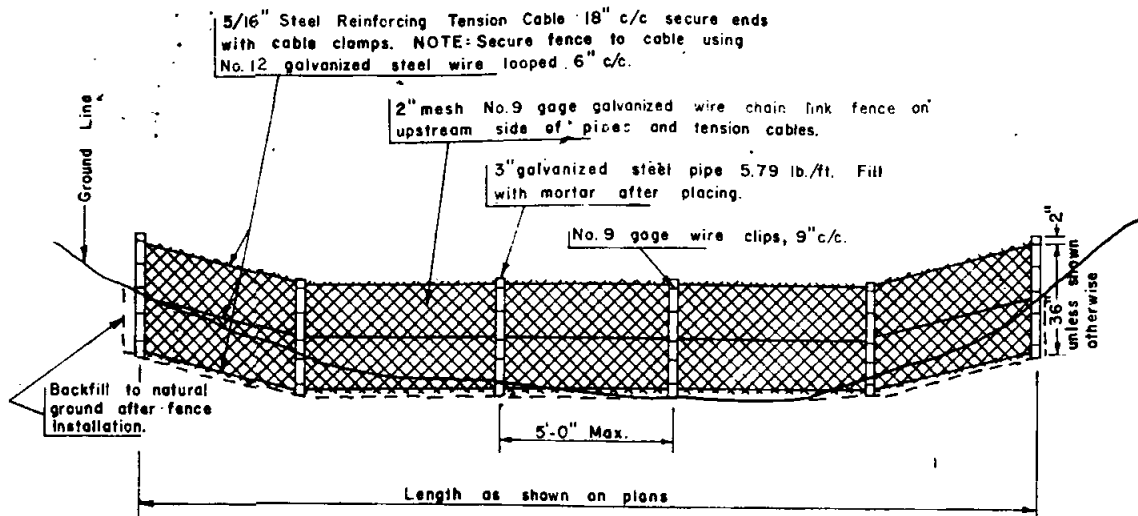
TYPICAL CROSS SECTION OF DRAINAGE CHANNEL



LEGEND ON PLANS

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	AS SHOWN SCALE
	DRAINAGE	CHANNEL	DRAWING NO.
			D-40

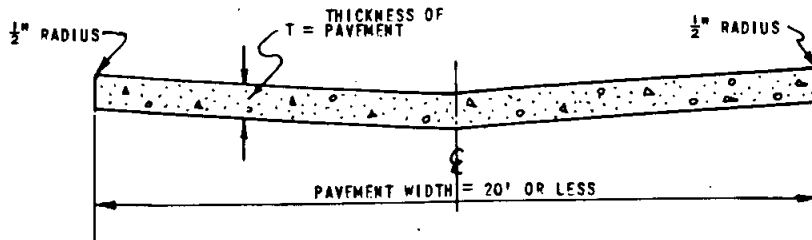
REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	



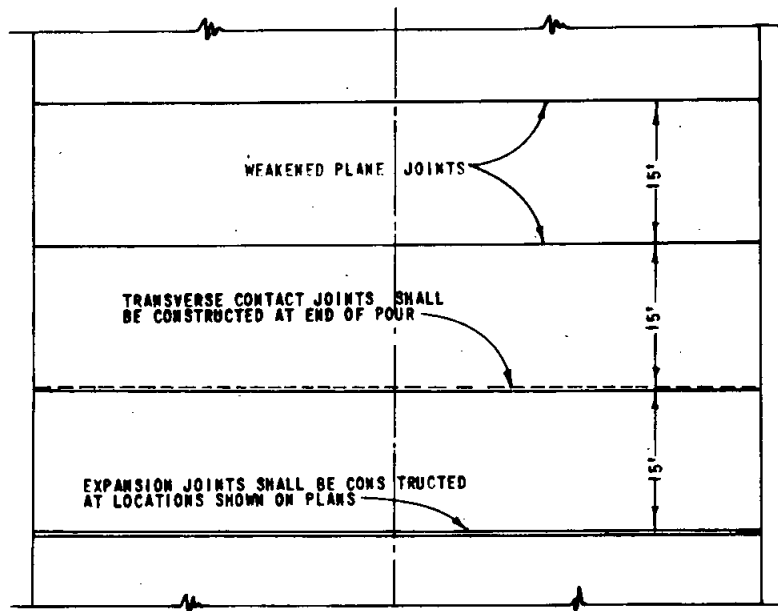
Detail of Footing

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE NONE
	TRASH FENCE		DRAWING NO
			D-61

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	11-10-79



TYPICAL SECTION

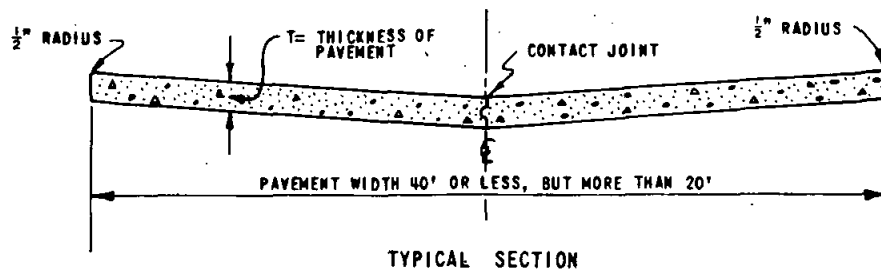


TYPICAL PLAN

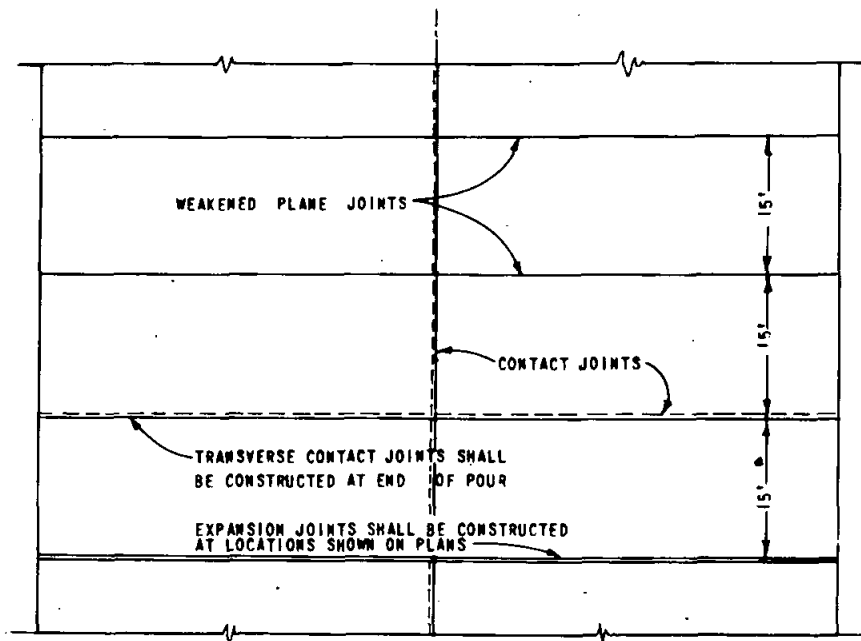
NOTE: ALL CONCRETE SHALL BE CLASS A.
SEE STD. DWG. G-42 FOR JOINT DETAILS
ADJUST 15' INTERVAL BETWEEN TRANSVERSE JOINTS TO
MATCH ADJACENT EXISTING IMPROVEMENTS.

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE NONE
	CONCRETE PAVEMENT-ALLEY SECTION		DRAWING NO.
	20' width, or less		G-II

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	11-10-78



TYPICAL SECTION

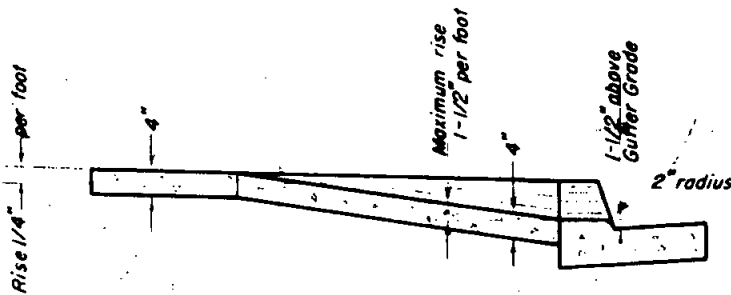
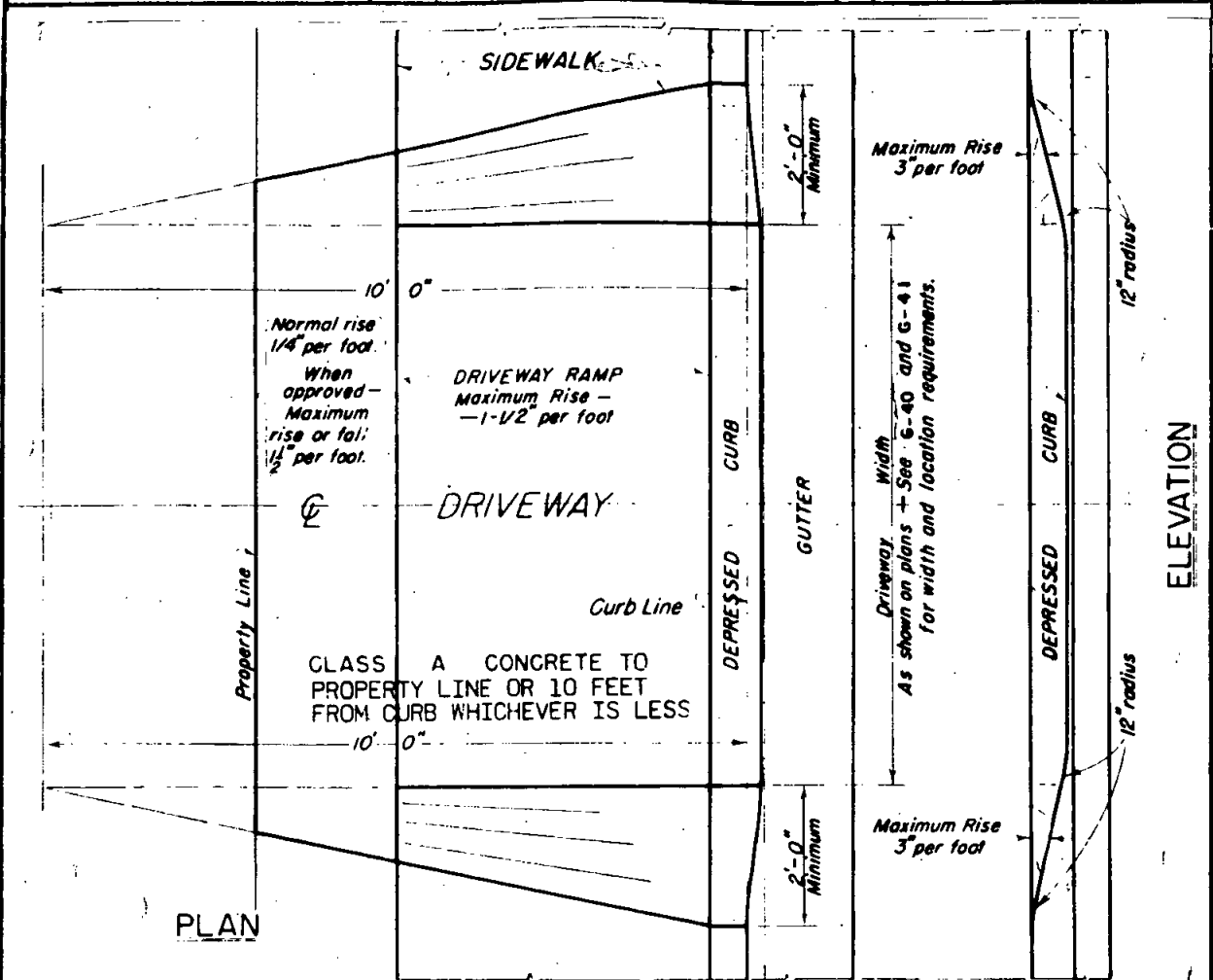


TYPICAL PLAN

NOTE: ALL CONCRETE SHALL BE CLASS A.
 SEE STD. DWG. G-42 FOR JOINT DETAILS
 ADJUST 15' INTERVAL BETWEEN TRANSVERSE JOINTS
 TO MATCH ADJACENT EXISTING IMPROVEMENTS.

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE NONE
	CONCRETE PAVEMENT - ALLEY SECTION		DRAWING NO.
	Pavement Width 40' or less, but more than 20'		G-12

REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	



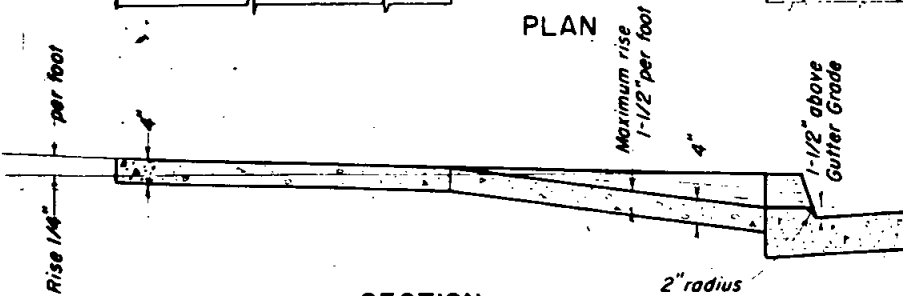
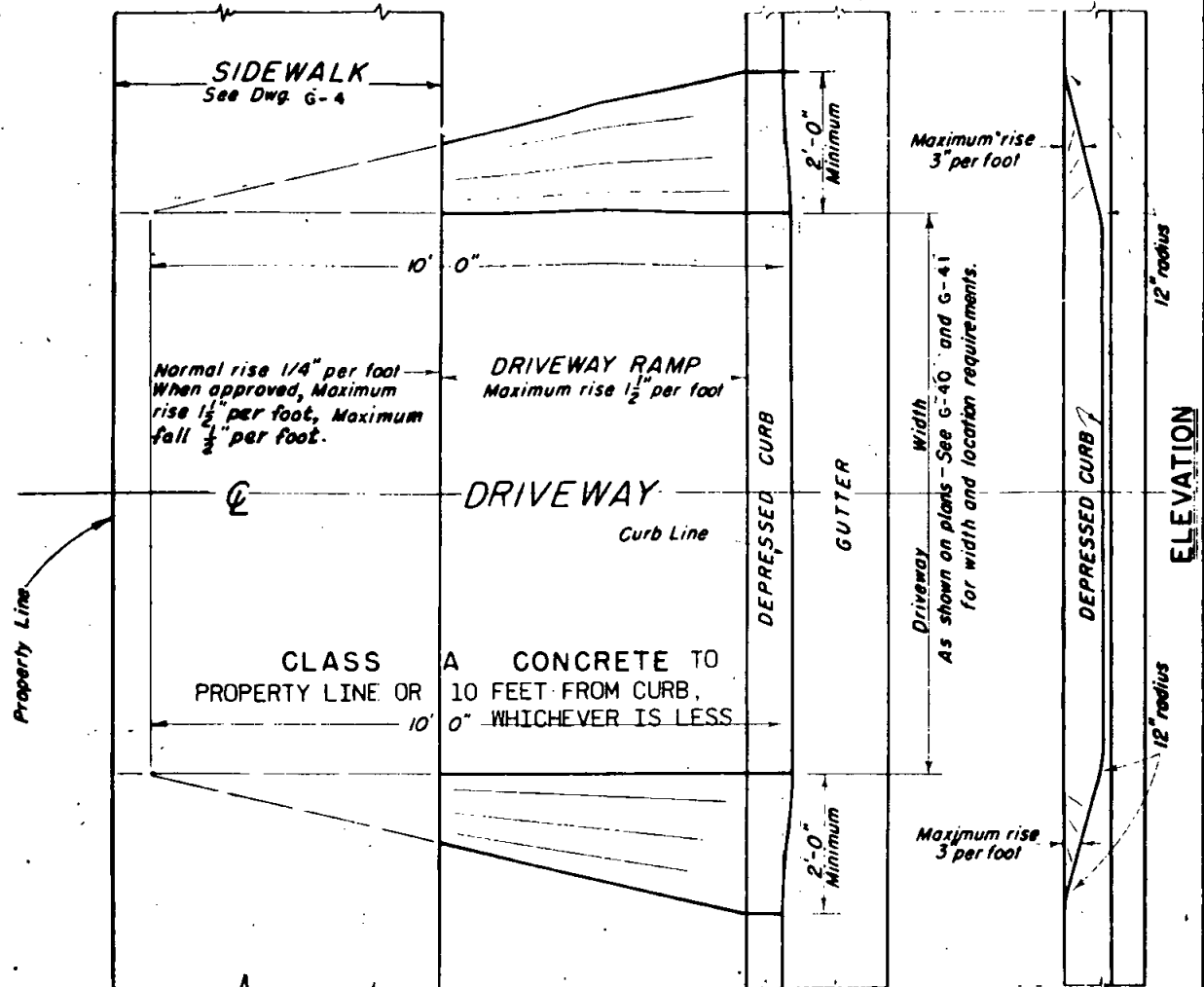
SECTION

LEGEND ON PLANS

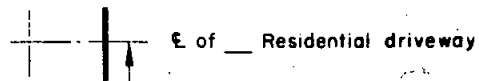
E of Residential driveway

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	1/2" = 1'-0"
	RESIDENTIAL DRIVEWAY		SCALE
	Curb and sidewalk contiguous		DRAWING NO.
			G-22

REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	



LEGEND ON PLANS



SPECIFICATION REFERENCE

COUNTY OF SAN DIEGO

STANDARD DRAWING

RESIDENTIAL DRIVEWAY
Curb and sidewalk separated

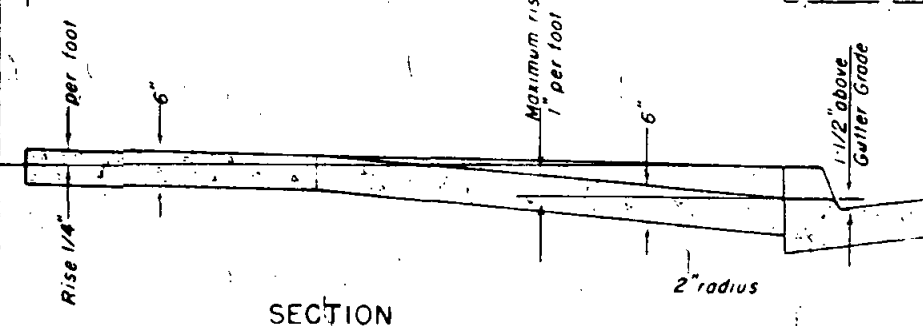
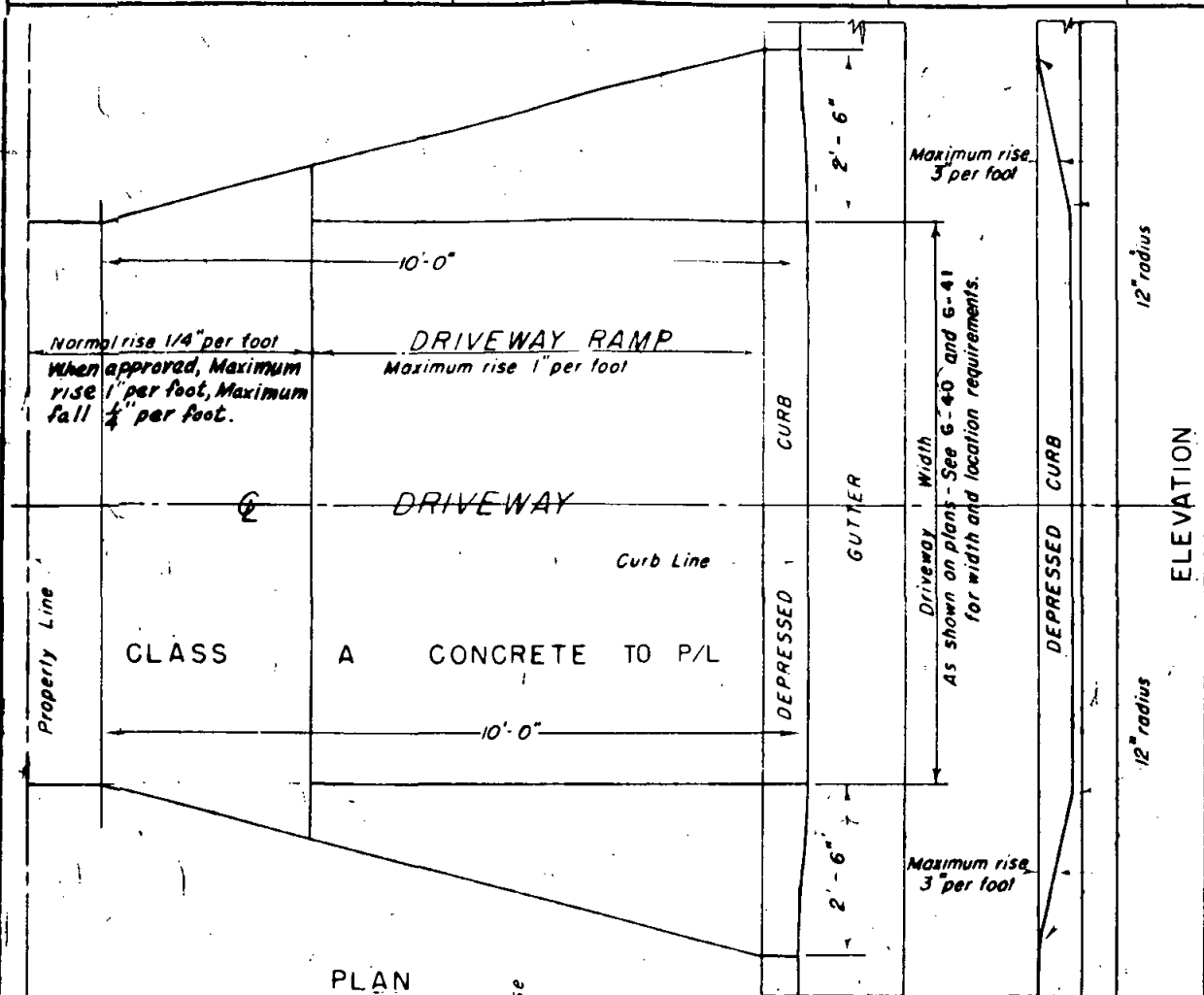
1/2" = 1'-0"

SCALE

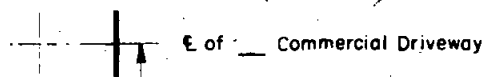
DRAWING NO.

G-23

REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	

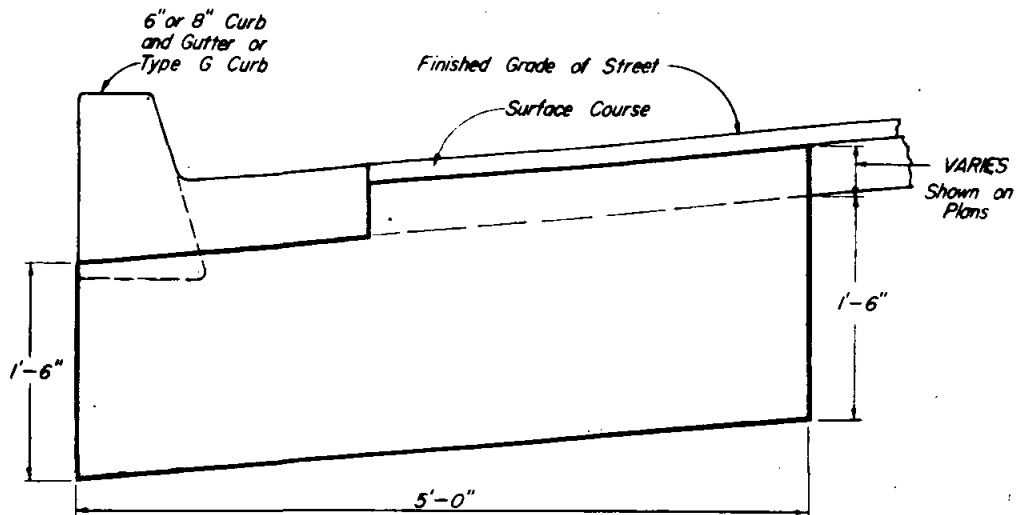


LEGEND ON PLANS

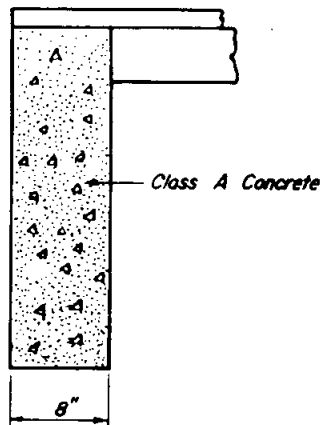


SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	1/2" = 1'-0"
	COMMERCIAL DRIVEWAY		SCALE
			DRAWING NO.
			G-24

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	11-10-72



ELEVATION

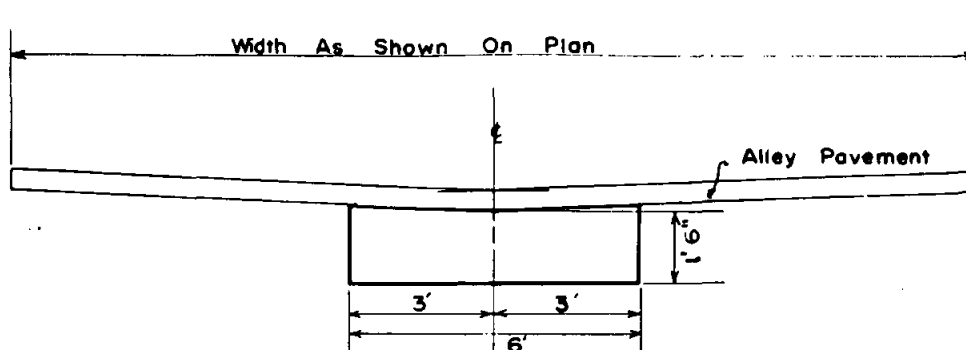


SECTION

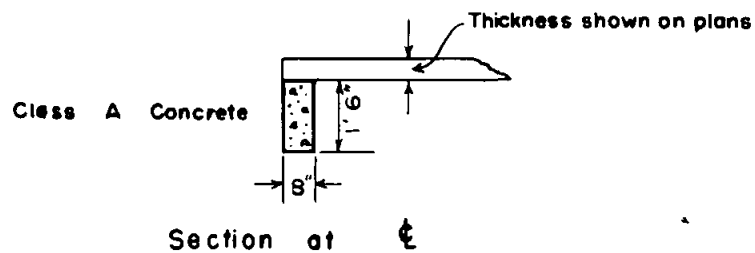
Legend on plan

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE 1"=1'-0"
	CUTOFF WALL AT END OF PAVEMENT		DRAWING NO.
			G-27

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	11-10-72



ELEVATION



Legend on plan



SPECIFICATION REFERENCE

COUNTY OF SAN DIEGO

STANDARD DRAWING

CUTOFF WALL AT END OF ALLEY PAVEMENT

1" = 3'

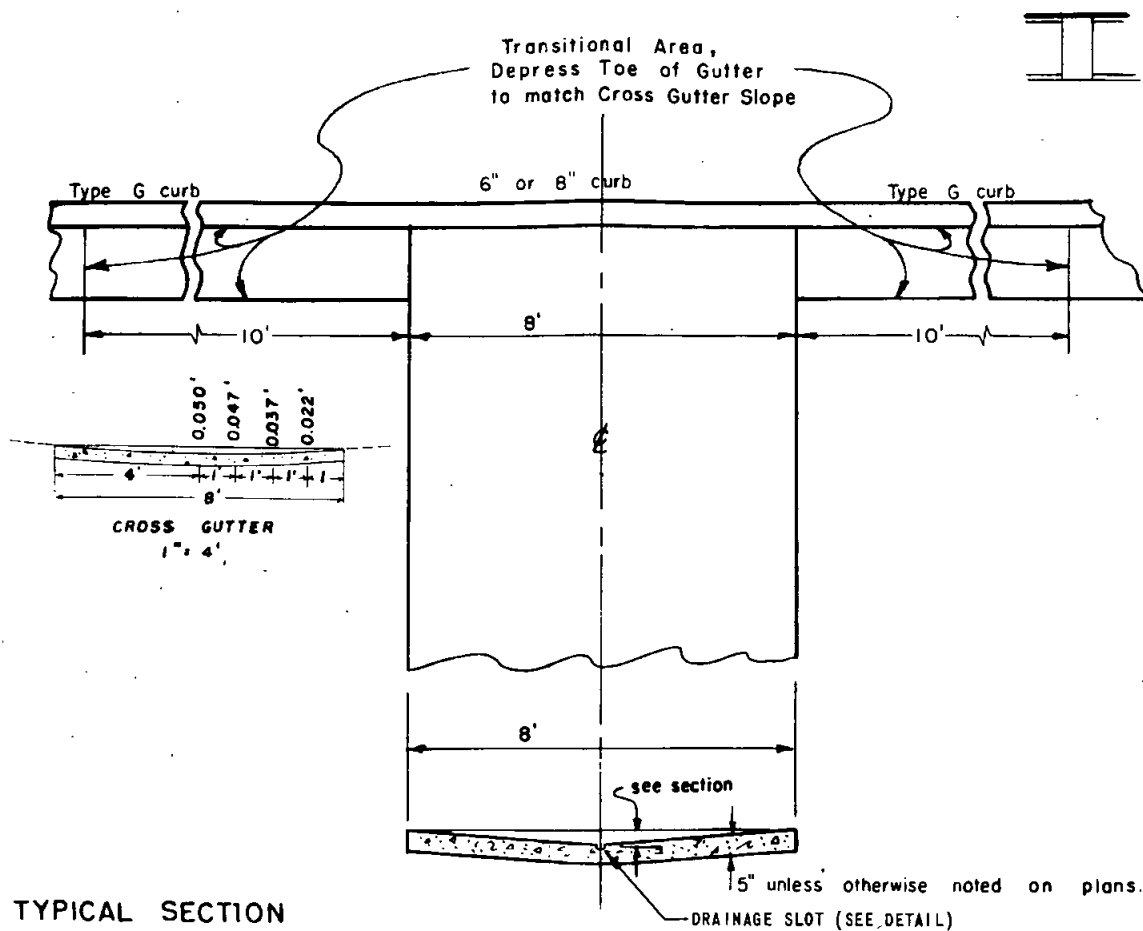
SCALE

DRAWING NO.

G-28

REVISIONS				APPROVALS		
DESCRIPTION	EY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	11-10-78

Legend as shown on the plans.



TYPICAL SECTION

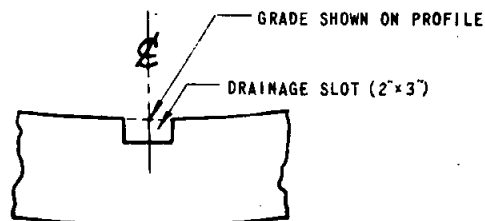
NOTES:

Cross gutters shall be constructed in accordance with Section 8 of the specifications except joint and finishing shall conform to Sections 7-06 and 7-07 of the specifications.

Cross gutter to be constructed where the drainage is carried across street and on a grade of at least 0.5%.

Drainage slot shall be constructed only where shown on plans. Slot shall be formed with 2"x3" (S4S).

All concrete shall be Class A.

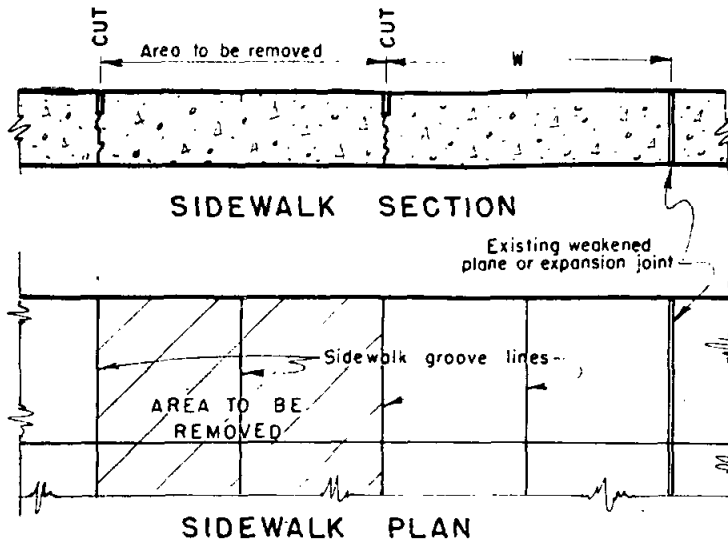


DRAINAGE SLOT DETAIL

(No Scale)

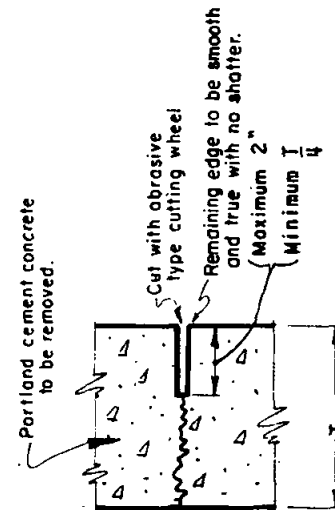
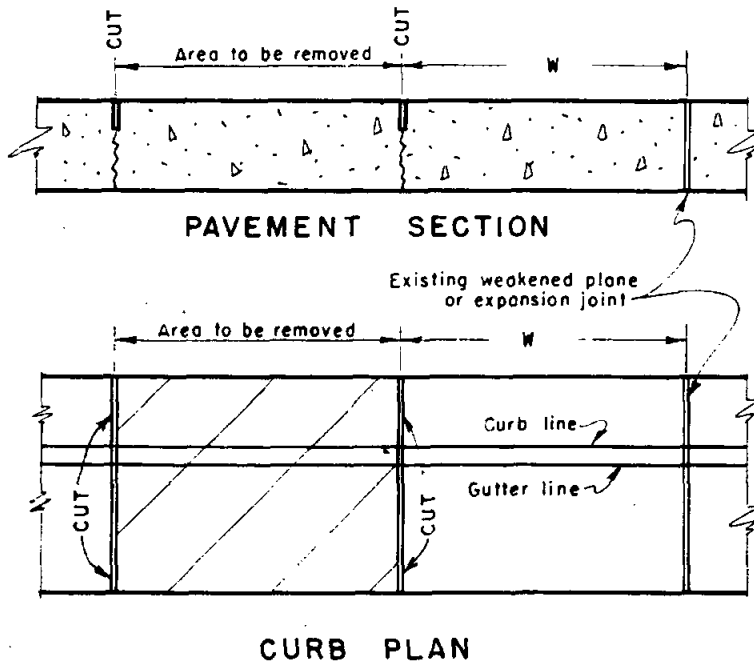
SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE 1" = 3'
	CROSS GUTTER		DRAWING NO.
	TYPE A		G-32

REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	



NOTES

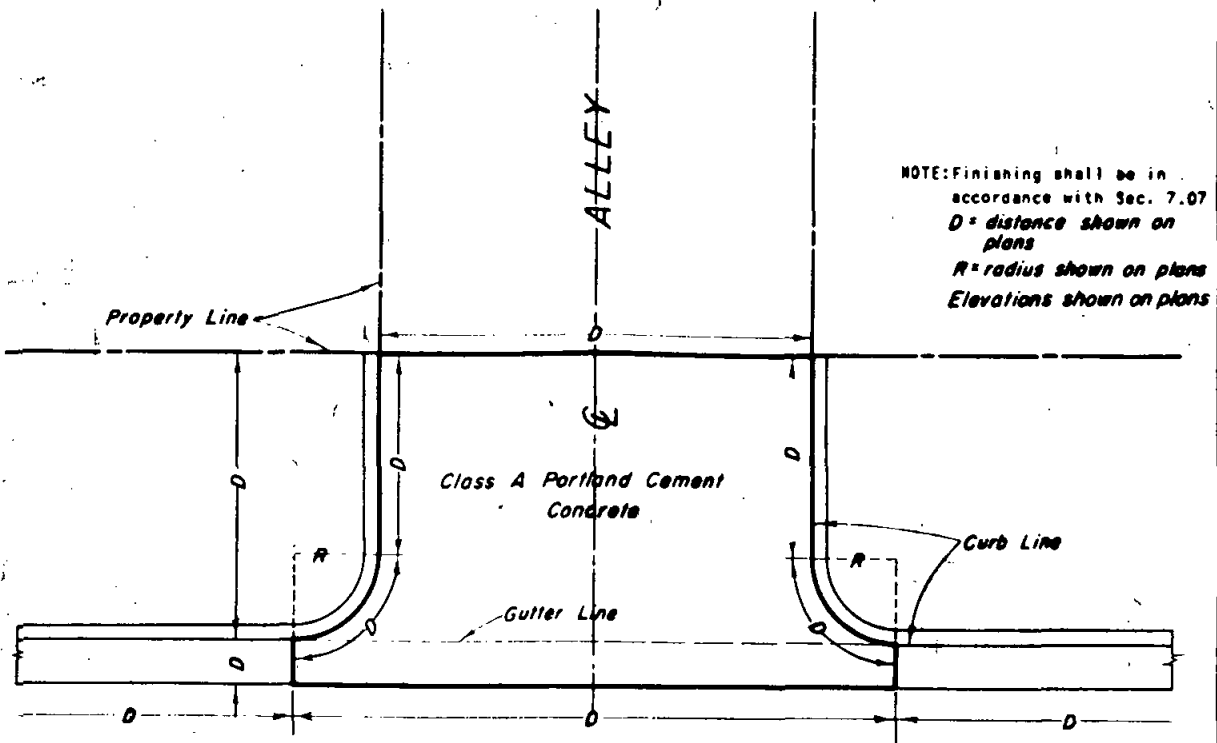
1. Remove entire curb and gutter section to construct driveway or to replace with new curb.
2. Remove entire depressed curb and gutter section of abandoned driveways and replace with approved standard curb when other driveways are constructed to serve same property.
3. Remove existing 4" sidewalk and replace with 6" P.C.C. at locations of driveways constructed in commercial zones.
4. Remove and replace paved area adjacent to weakened plane or expansion joint when "W" is equal to or less than two feet.



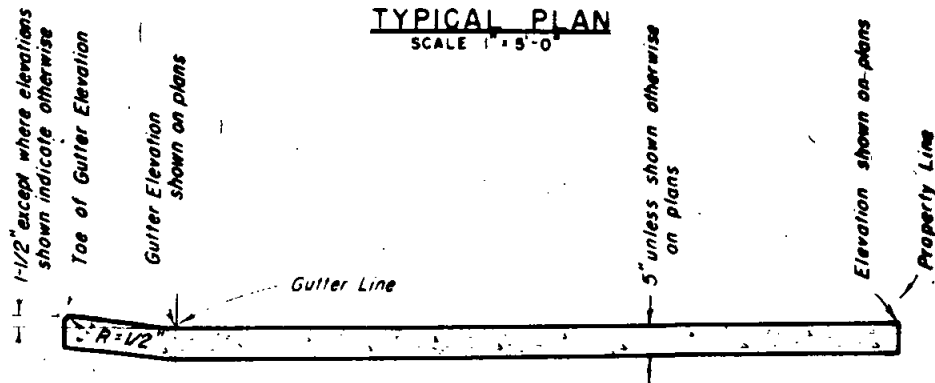
SECTION Showing Cut

SPECIFICATION REFERENCE.	COUNTY OF SAN DIEGO	STANDARD DRAWING	
	PORTLAND CEMENT CONCRETE CURB		SCALE: NONE
	GUTTER, SIDEWALK AND PAVEMENT		DRAWING NO.
	REMOVAL AND REPLACEMENT.		G-33

REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	



TYPICAL PLAN
SCALE 1" = 5'-0"



SECTION
SCALE 1" = 5'-0"

Legend on Plans:



SPECIFICATION REFERENCE

COUNTY OF SAN DIEGO

STANDARD DRAWING

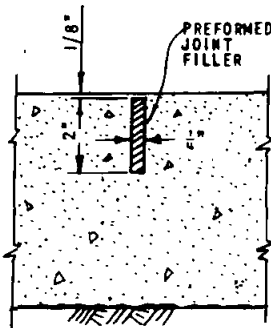
ALLEY APRON

SCALE

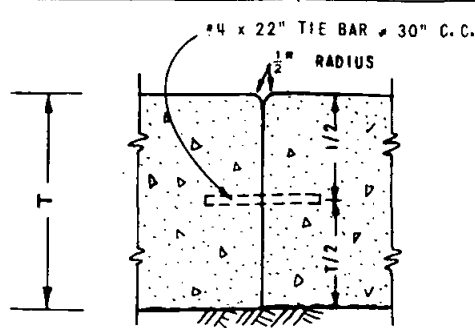
DRAWING NO.

B-39

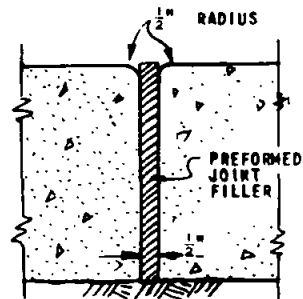
REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	



WEAKENED PLANE JOINT

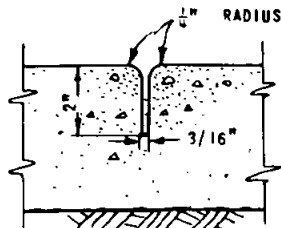


CONTACT JOINT

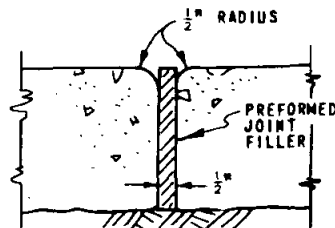


EXPANSION JOINT

PAVEMENT

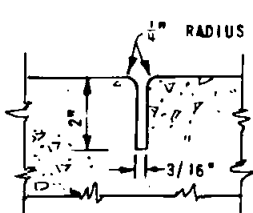


WEAKENED PLANE JOINT



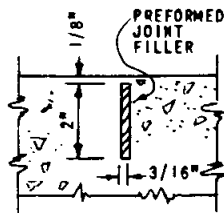
EXPANSION JOINT

SIDEWALK



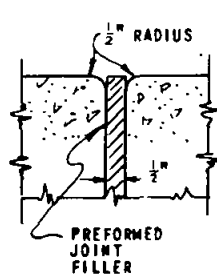
TOP AND CURB FACE

WEAKENED PLANE JOINT



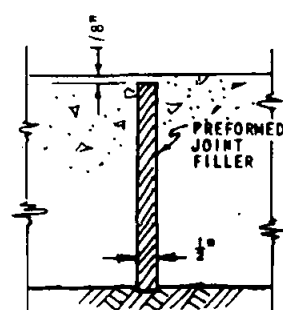
GUTTER SECTION

CURB



TOP AND CURB FACE

EXPANSION JOINT



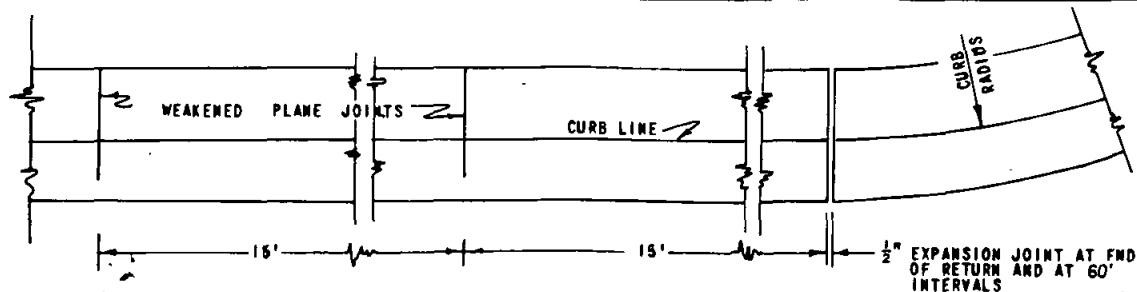
GUTTER SECTION

NOTE: PLACE EXPANSION JOINT FILLER MATERIAL IN TIGHT CONTACT WITH FORMS AND BASE.

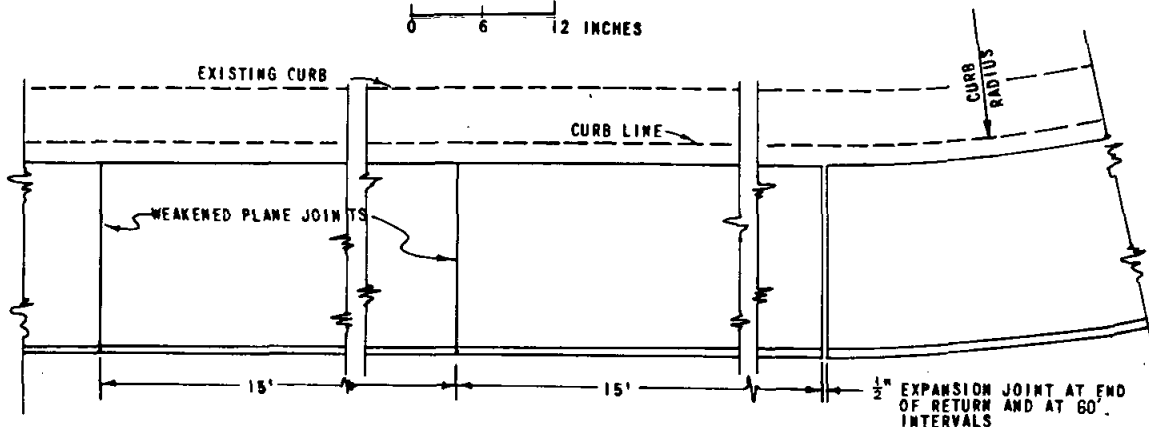
WEAKENED PLANE JOINTS MAY BE SAW CUT.
SEE STANDARD SPECIFICATIONS

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	 0 2 4 SCALE - INCHES
	PORTLAND CEMENT CONCRETE JOINTS		
	FOR PAVEMENT, SIDEWALK, CURB		DRAWING NO. G-42
	AND CROSS GUTTER		

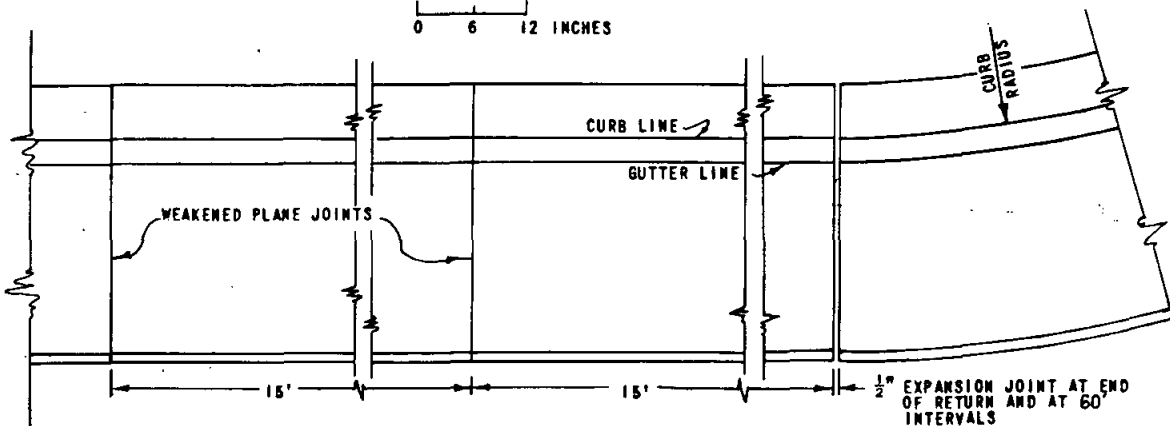
REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	11-10-72



CURB
SCALE
0 6 12 INCHES



GUTTER
SCALE
0 6 12 INCHES

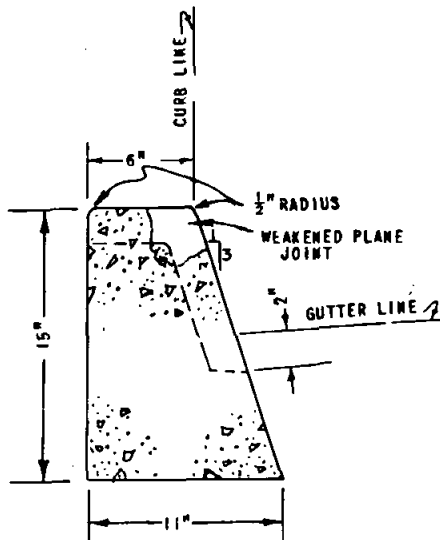


COMBINED CURB & GUTTER
SCALE 0 6 12 INCHES

NOTE: ALL CONCRETE SHALL BE CLASS A.
ADJUST 15' INTERVAL BETWEEN TRANSVERSE JOINTS TO MATCH ADJACENT EXISTING IMPROVEMENTS.
SEE STD. DWG. G-42 FOR JOINT DETAILS.
SEE PROJECT PLANS FOR CURB TYPES.
SEE PROJECT PLANS FOR STREET WIDTH DIMENSIONS.
STREET AND SIDEWALK AREA WIDTHS ARE TO CURB LINE. ISLAND WIDTHS ARE TO GUTTER LINE.

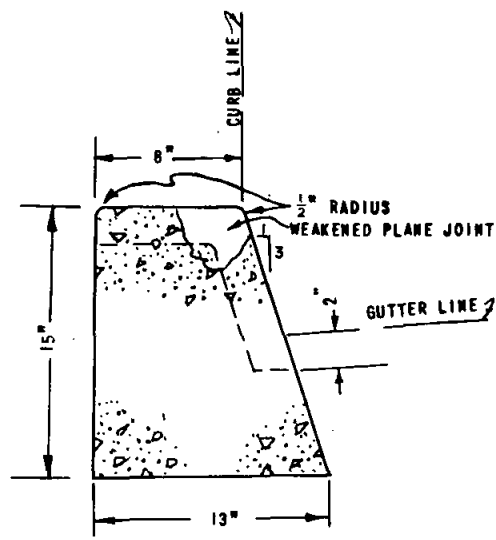
SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE AS SHOWN
	CURBS AND GUTTERS		DRAWING NO.
	TYPICAL PLANS		G-43

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	11-10-77



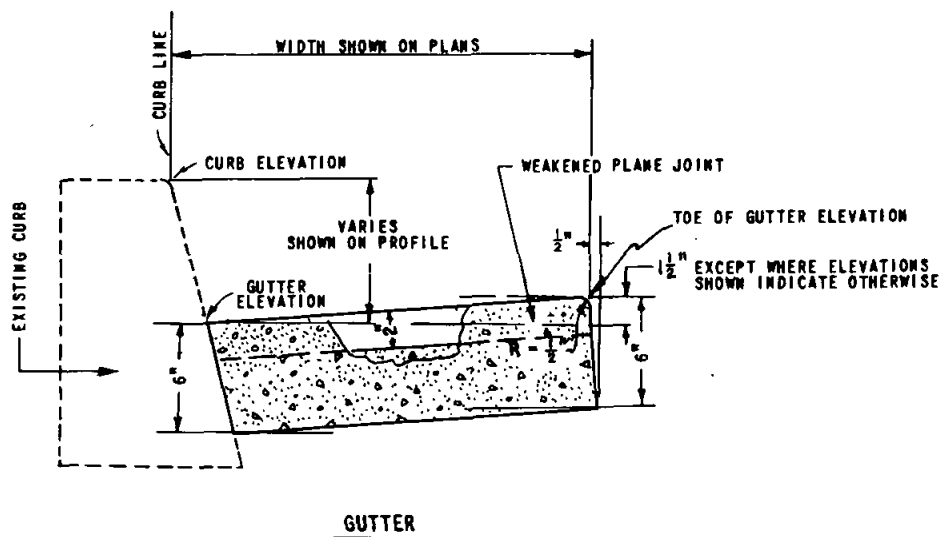
6" CURB

AREA = 0.89 SQ. FT.



8" CURB

AREA = 1.09 SQ. FT.



GUTTER

NOTE: ALL CONCRETE SHALL BE CLASS A.
SEE DWG. G-42 FOR JOINT DETAILS.
SEE DWG. G-43 FOR TYPICAL PLANS.

SPECIFICATION REFERENCE

COUNTY OF SAN DIEGO

STANDARD DRAWING

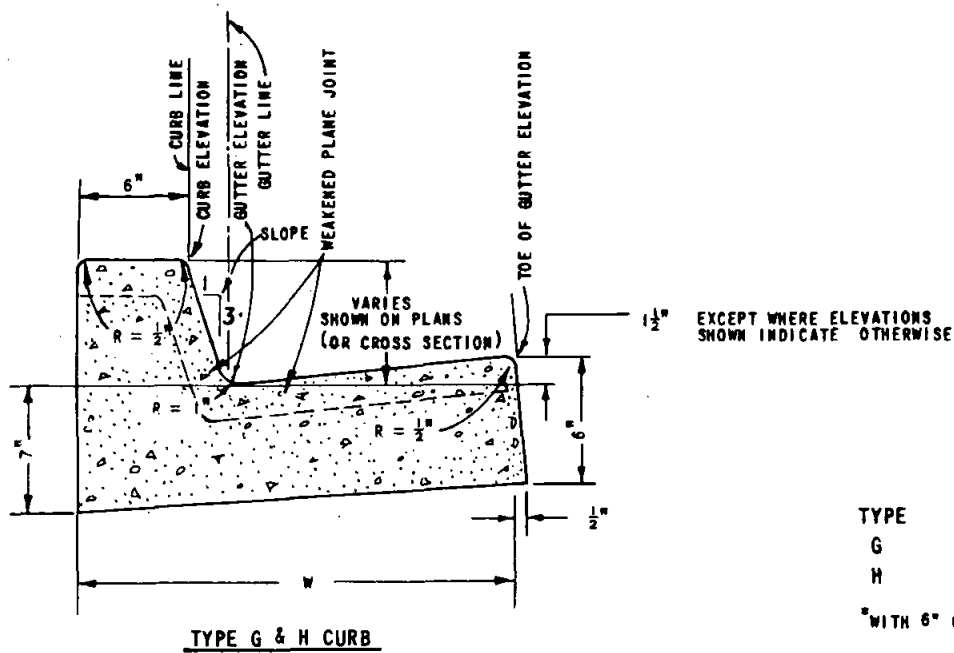
6" & 8" CURB SECTIONS & GUTTER SECTION

SCALE - INCHES
0 3 6

DRAWING NO.

G-44

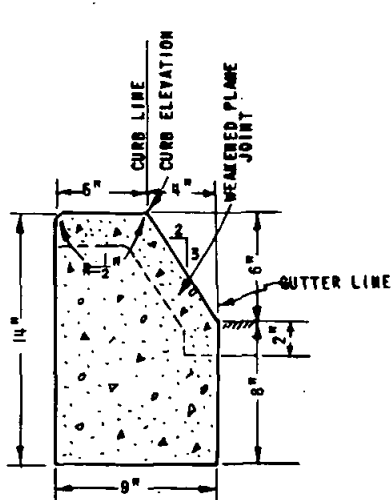
REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	11-10-78



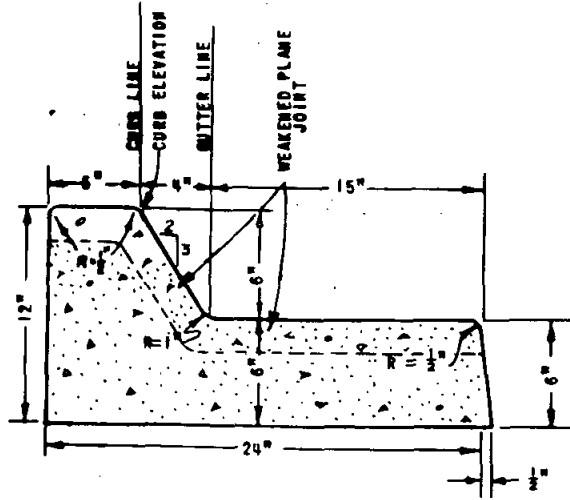
NOTE: ALL CONCRETE SHALL BE CLASS A.
SEE DWG. G-42 FOR JOINT DETAILS
SEE DWG. G-43 FOR TYPICAL PLANS

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	0 3 6 SCALE - INCHES
	CURB SECTIONS		DRAWING NO.
	TYPES G & H		G-45

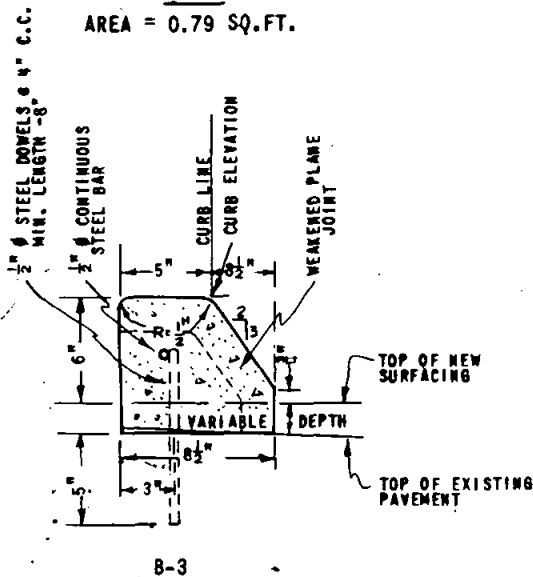
REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	11-10-72



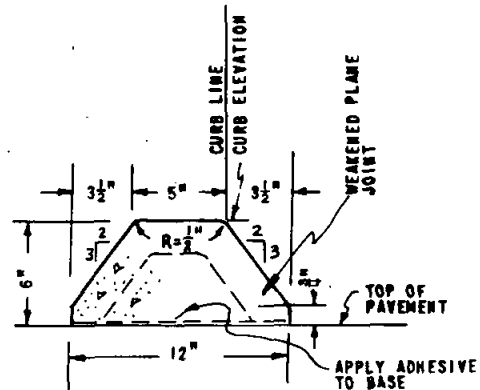
B-1
AREA = 0.79 SQ. FT.



B-2
AREA = 1.29 SQ. FT.



B-3



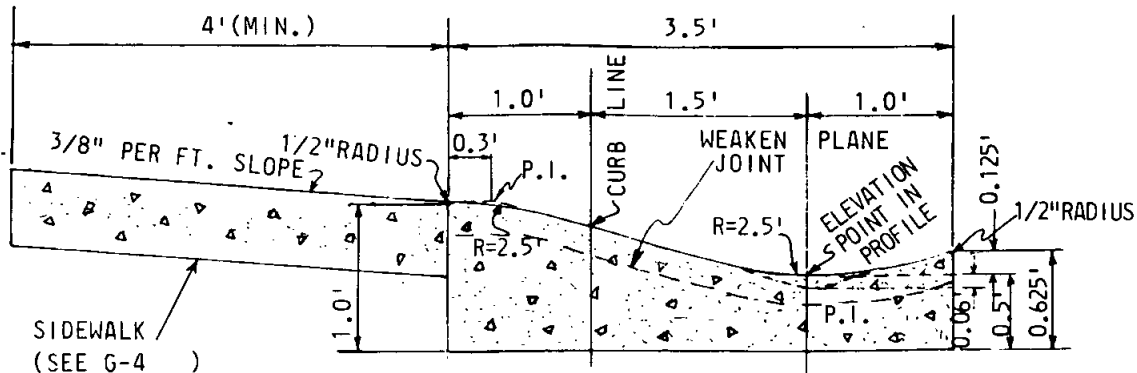
B-4
AREA = 0.35 SQ. FT.
(EXTRUDED TYPE)

NOTE: ALL CONCRETE SHALL BE CLASS A.
SEE DWG. G-42 FOR JOINT DETAILS
SEE DWG. G-43 FOR TYPICAL CURB PLANS

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE - INCHES
			0 3 6
			DRAWING NO.
			G-46

CURB SECTIONS - TYPE B

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. Taylor</i>	11-11-77



TYPICAL SECTION

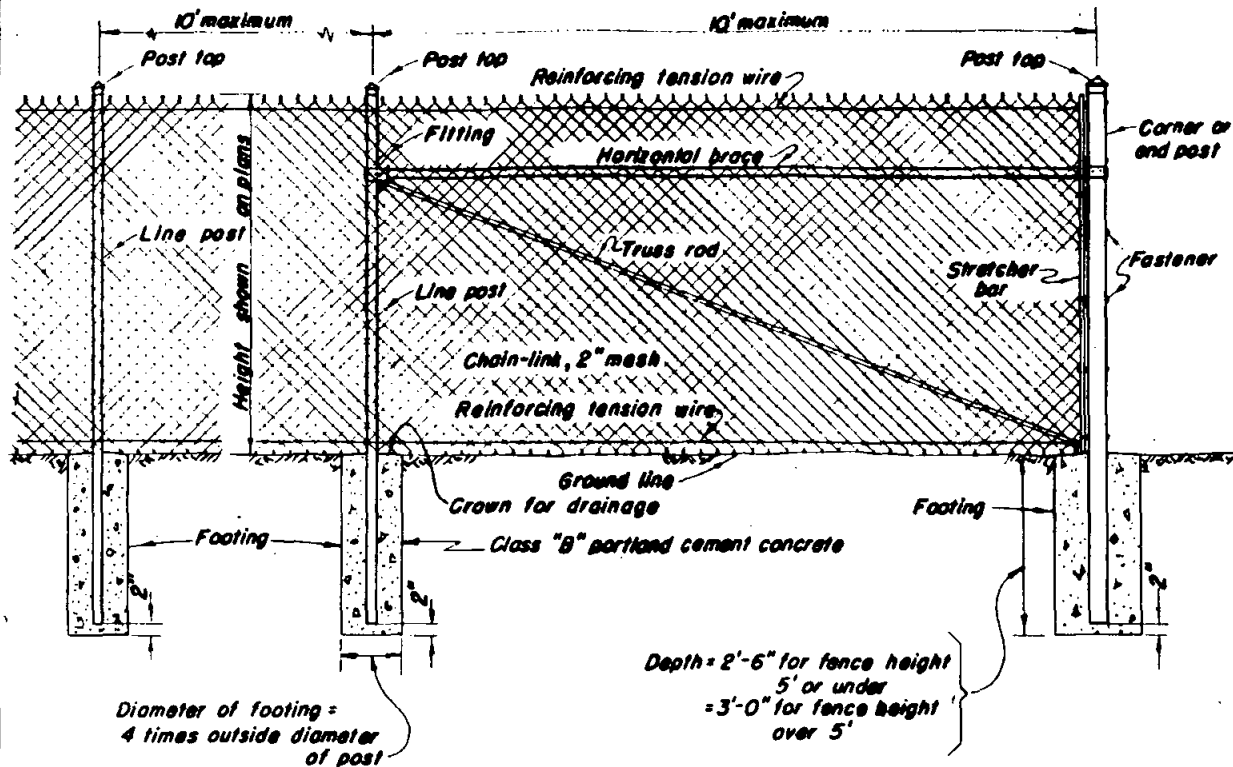
CURB AREA
2.33 ²FT.

NOTES:-

1. TRANSITION TO A TYPE "G" CURB WILL BE PROVIDED AT ALL CURB RETURNS, AT ALL DRAINAGE STRUCTURES AND AT ALL CUL-DE-SACS WITH DRAINAGE STRUCTURES.
2. ALL CONCRETE SHALL BE CLASS "A".
3. SEE DRAWING G-42 FOR JOINT DETAILS.
4. SEE DRAWING G-43 FOR TYPICAL PLANS.
5. ALL CONCRETE WATER METER BOX COVERS AND LIDS SHALL BE CAST IRON.

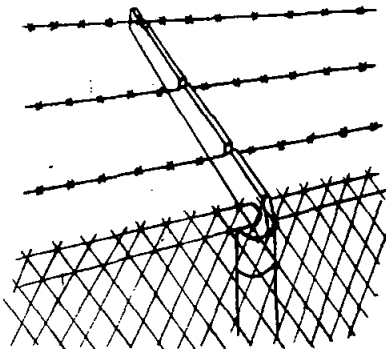
SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE NONE
		CURB SECTION	DRAWING NO.
		TYPE "D" ROLL CURBS	G-57

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		



ELEVATION

NOTE: All footings shall be class "B" portland cement concrete



EXTENSION ARM AND BARBED WIRE

No Scale

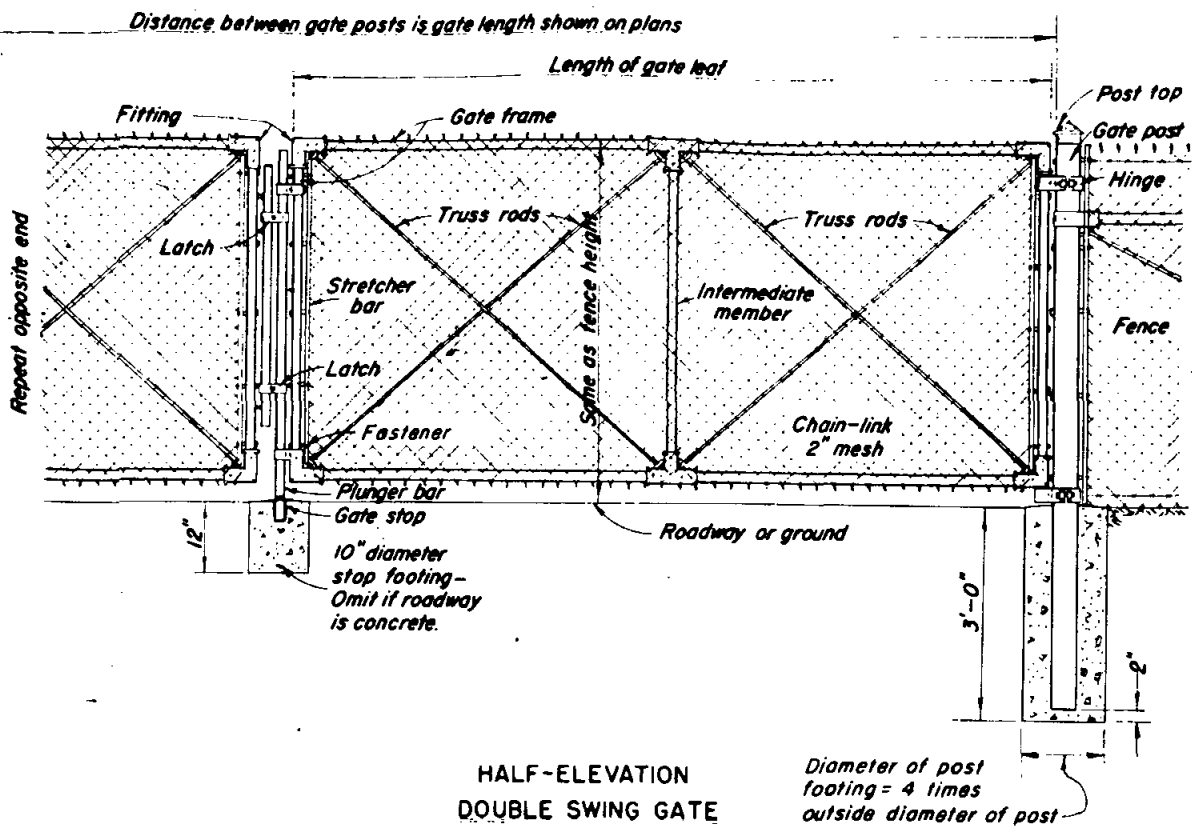
Legend on Plans -

NOTE: The following items shall be furnished and installed only when shown on the plans and/or called for in the special conditions:

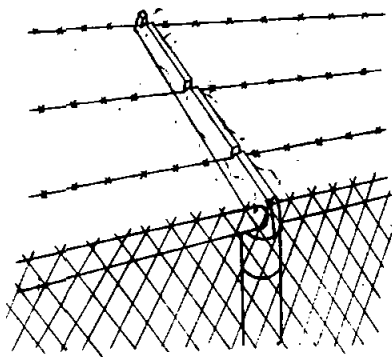
1. Barbed wire
2. Extension arm
3. Top horizontal rail

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE $\frac{1}{2}'' = 1'-0''$
	CHAIN LINK FENCE		DRAWING NO. M-4

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	11-10-74



NOTE: All footings shall be class "B" portland cement concrete.



EXTENSION ARM AND BARBED WIRE

No Scale

Legend on Plans - — o — x — o — x

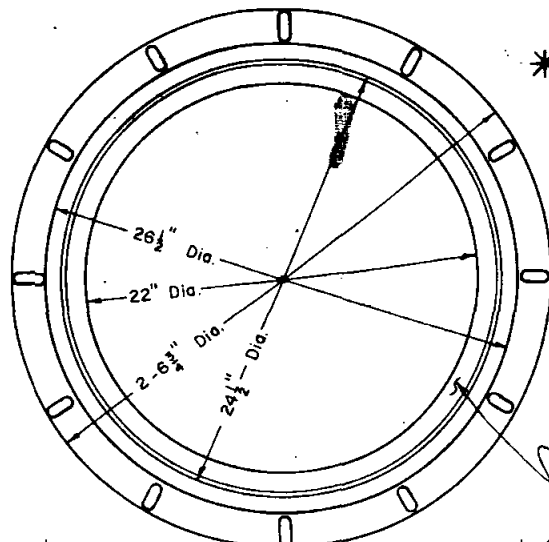
NOTE: The following items shall be furnished and installed only when shown on the plans and/or called for in the special conditions:

1. Barbed wire
2. Extension arm

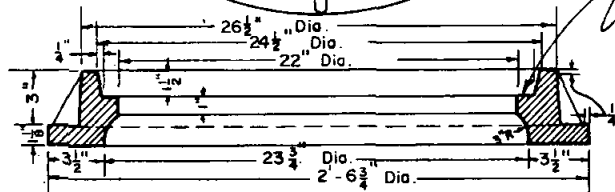
SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE
			DRAWING NO.
			M-5

CHAIN LINK GATE

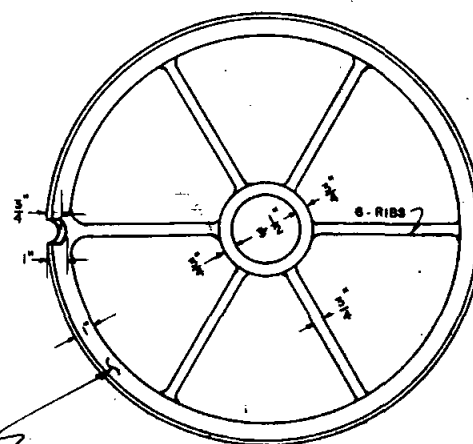
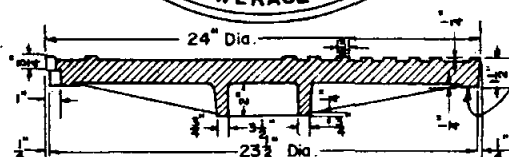
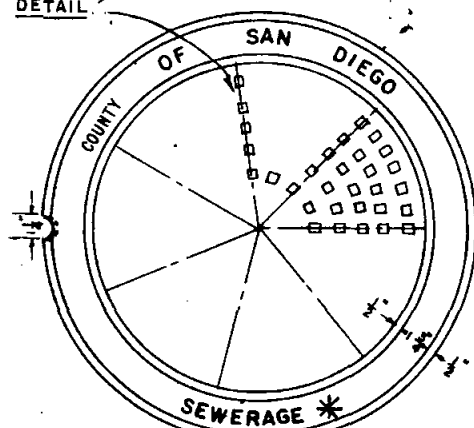
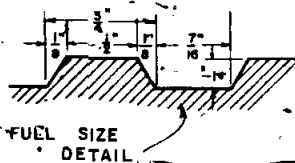
REVISIONS				APPROVALS		
DESCRIPTION	EIV	APPROVED	DATE	COUNTY ENGINEER	<i>H. M. Taylor</i>	11-10-72



FOR	MARK
Sewer Projects	Sewerage
Storm Drain Projects	Drain
Water Projects	Water
Electrical Projects	Electric



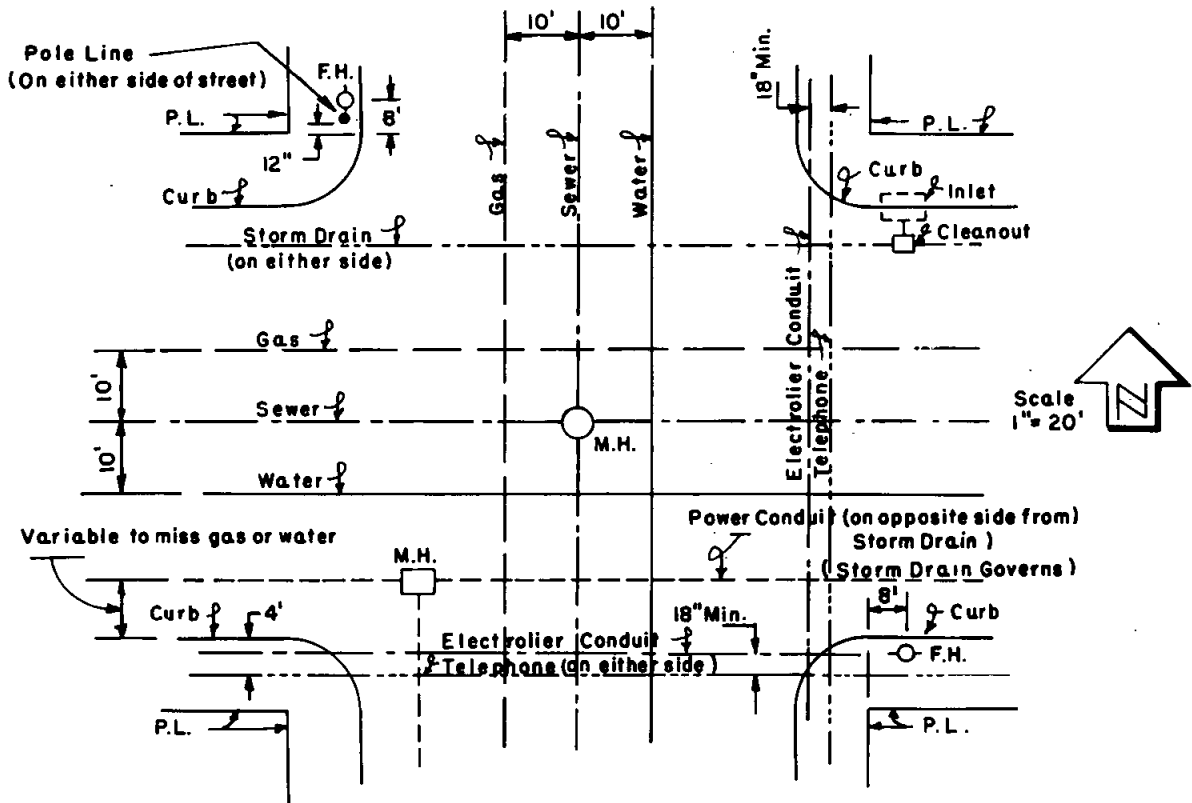
MANHOLE COVER FRAME
CAST IRON WT. 175 LB.



MANHOLE COVER
CAST IRON WT. 155 LB.

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE $\frac{1}{2}'' = 1'$
	MANHOLE FRAME & COVER		DRAWING NO.
			M-23

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		



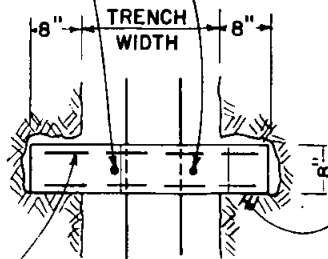
ROADWAY INTERSECTION PLAN

NOTE: This "STANDARD" is a guide only and deviations will be acceptable where conditions dictate. Dimensions shown are desirable but do not govern. The intention is to show the Relative Position of ALL UTILITIES

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE As shown
			DRAWING NO.
			P-24

REVISIONS				APPROVALS		
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER		
					<i>H. M. Taylor</i>	11-10-77

* 5 BAR EACH SIDE OF PIPE FOR
VERTICAL TIE TO HORIZONTAL
LADDER REINFORCEMENT.

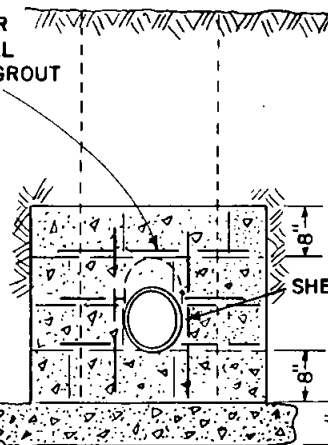


BLOCKS LAID TIGHT AS POSSIBLE
TO DOWNSTREAM PORTION OF
DAP INTO TRENCH WALL

PLAN

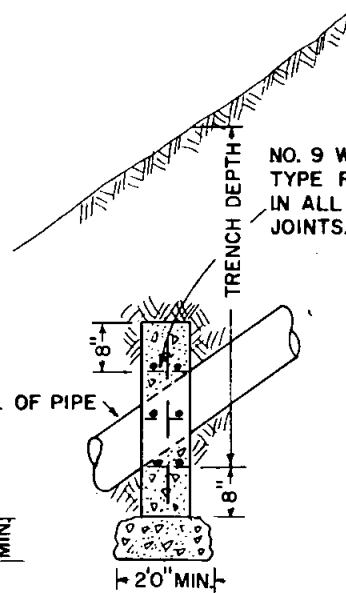
CLASS B CONCRETE
OR

8" x 8" x 16" CONCRETE
BLOCKS WITH NO. 9 LADDER
TYPE REINFORCEMENT, FILL
CORES OF BLOCKS WITH GROUT



CONCRETE
FOOTING

SECTION



NO. 9 WIRE LADDER
TYPE REINFORCEMENT
IN ALL HORIZONTAL
JOINTS.

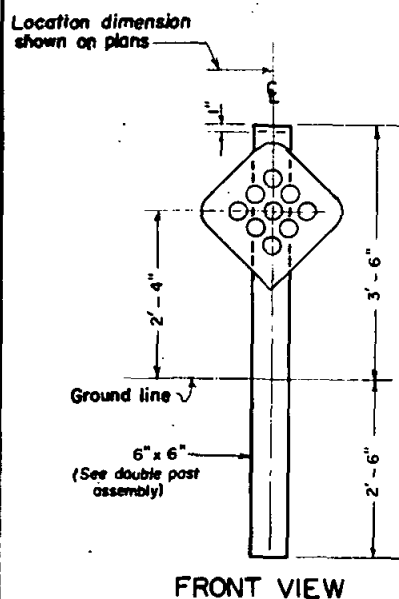
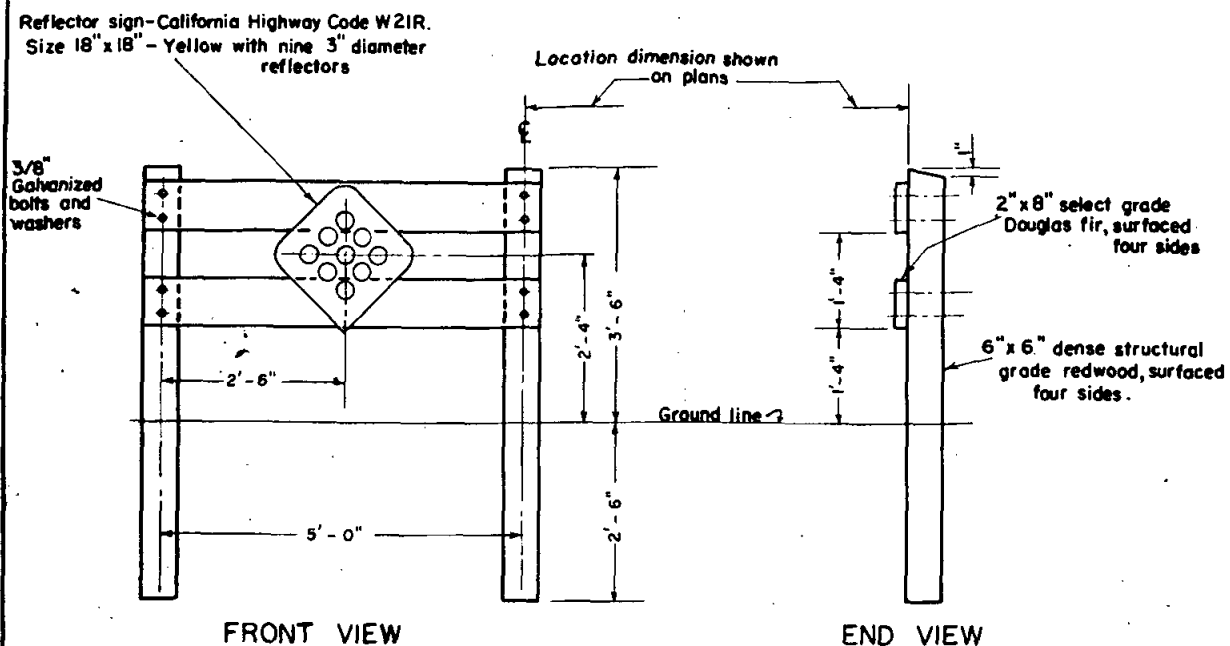
ELEVATION

DETAIL PLANS

LEGEND ON PLANS

SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE NONE
			DRAWING NO.
	CONCRETE ANCHOR		S-27

REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	
				<i>H. H. Taylor</i>	11-12-72



Type C (Double post without reflector sign)
Type CS (Double post with reflector sign)

NOTE: Install Type CS assembly with one (1) only code W21R sign in head-on position for each approaching lane of traffic.

Type D (Single post without reflector sign)
Type DS (Single post with reflector sign)

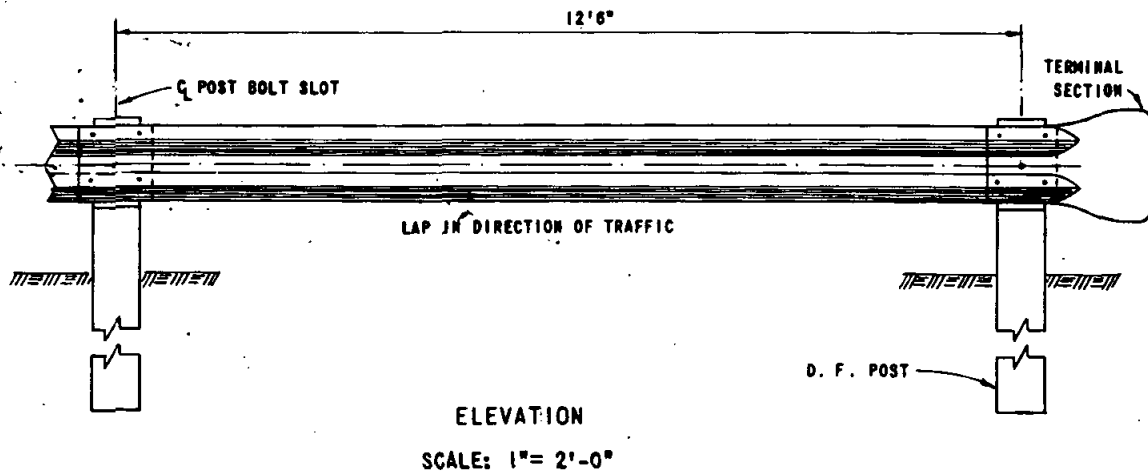
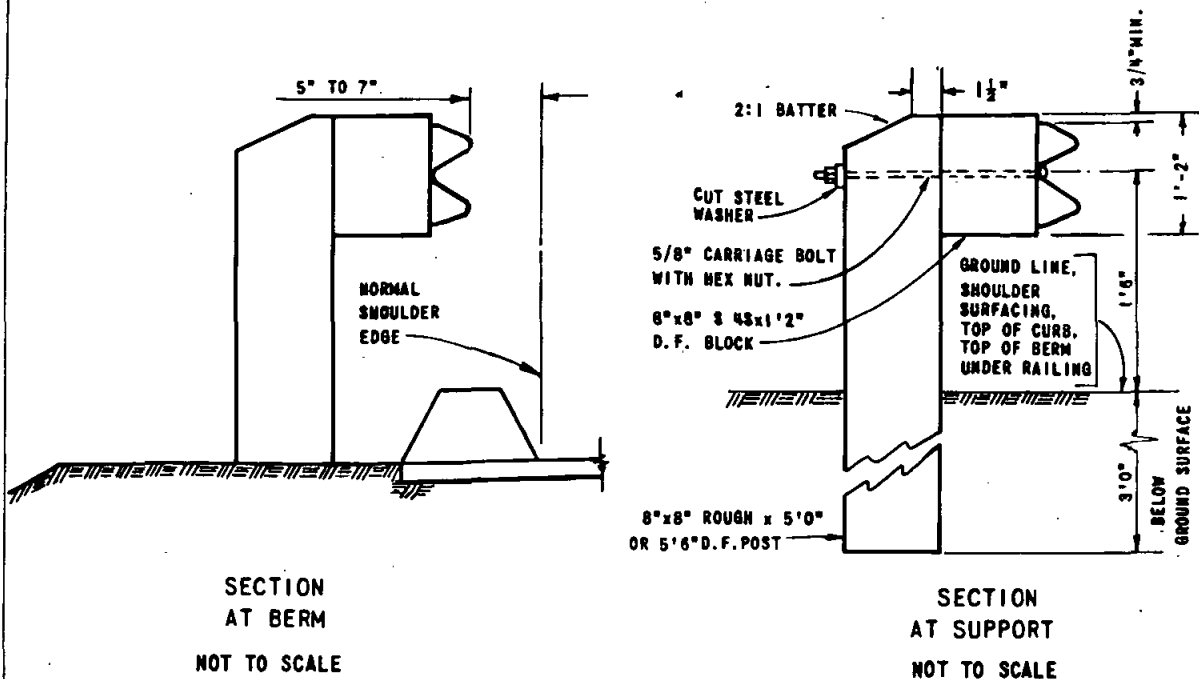
LEGEND ON PLANS



 Type CS Type DS

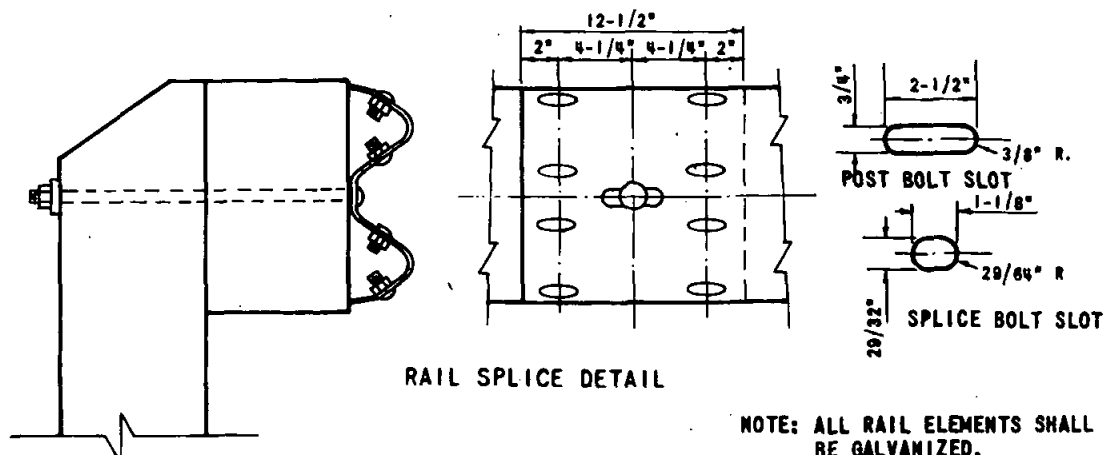
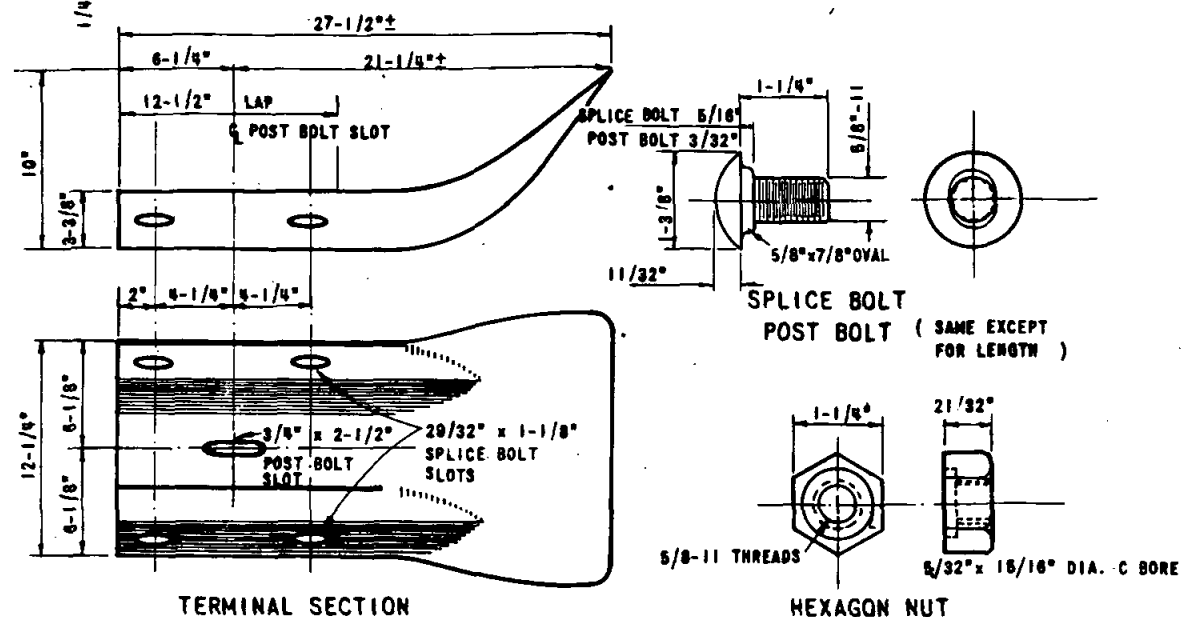
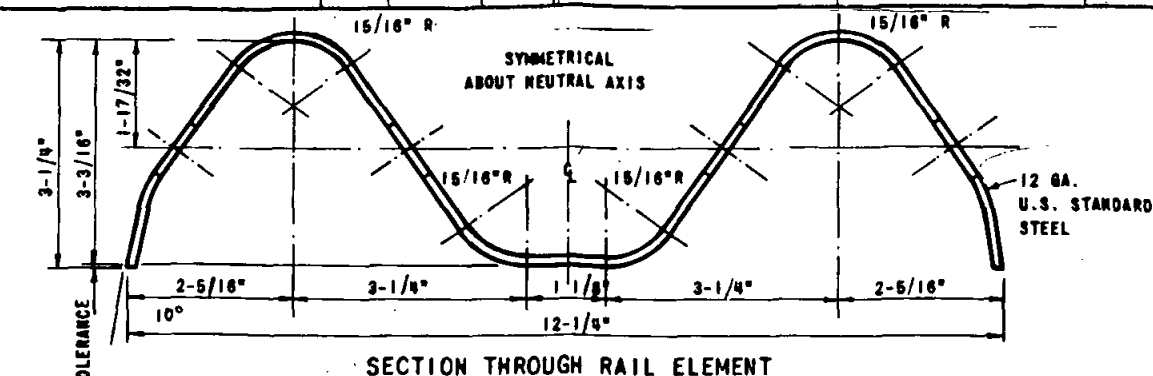
SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE 1/2" = 1'
	GUARD POST AND FENCE ASSEMBLY FOR TERMINATING STREETS		DRAWING NO.
			T-9

REVISIONS				APPROVALS	
DESCRIPTION	E.Y.	APPROVED	DATE	COUNTY ENGINEER	



SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE AS SHOWN
	METAL BEAM GUARD RAIL INSTALLATION		DRAWING NO.
			T-15

REVISIONS				APPROVALS	
DESCRIPTION	BY	APPROVED	DATE	COUNTY ENGINEER	



SPECIFICATION REFERENCE	COUNTY OF SAN DIEGO	STANDARD DRAWING	SCALE
			NO SCALE
			DRAWING NO.
			T-16