

# **CITY OF ALAMEDA**

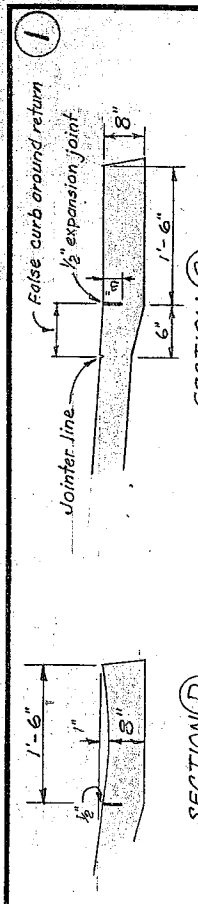
## **STANDARD PLANS**

**STANDARD PLANS - TABLE OF CONTENTS**

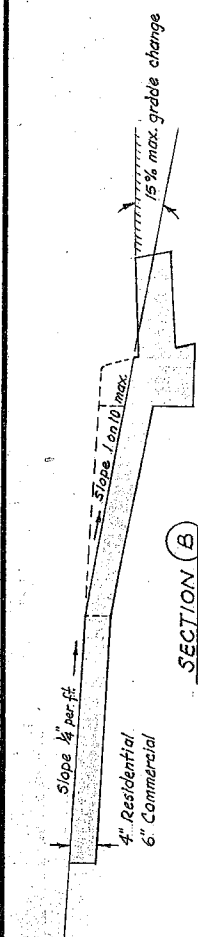
Page No.	Title / Subject	Drawing No.	Rev.
1	Standard Plan: Curb, Gutter, Sidewalk & Driveway.....	6297-24	3
2	Standard Plan: Curb, Gutter, Sidewalk & Driveway (in Subsidence Areas).....	6295B-24	3
3	Standard 4" House Lateral Two-Way Cleanout } (Supersede.....	8396-34	1
4	Standard 6" or 8" House Lateral Two-Way Cleanout } p. 32).....	8397-34	1
5	- DELETED -		
6	- DELETED -		
7	- DELETED -		
8	- DELETED -		
9	Standard Catch Basin: Type 1.....	6980-14	2
10	Standard Catch Basin: Type 2.....	6198-14	4
11	Standard Catch Basin: Type 3.....	6296-14	3
12	Standard Catch Basin: Type 4.....	6271-14	3
13	Standard Catch Basin: Type 6.....	6197-14	3
14	Standard Grate Catch Basin.....	6703B-14	2
15	Special Catch Basin: Type A.....	4651-12	1
16	Standard Handhole Frame & Cover - Circular.....	6194-12	0
17	Standard Handhole Frame & Cover - 18" Circular.....	6081-14	1
18	Standard Handhole Frame & Cover - Rectangular.....	4977-14	0
19	Standard Handhole for Storm Sewer.....	6196-14	0
20	Standard Storm Sewer Outfall Structure.....	3832-12	0
21	Standard Pre-Cast Concrete Manhole - Type A.....	2815-34	6
22	Standard Manholes, Types B & C, Shallow Depth.....	5432-34	2
23	- DELETED -		
24	Standard Manhole Cover.....	1115-34	3
25	- DELETED -		
26	Standard 45' Cleanout.....	4204-34	1
27	Excavation of Trenches for Pipe Sewers (including Encasement).....	3147B-32	2
28	Standard Section for Repaving Trenches.....	2930-22	4
29	Details of City Survey Monuments.....	3174-54	6
30	Details for Driveway Resurfacing.....	5857-22	0
31	Standard Street Cross Slopes.....	6127-24	0
32	- DELETED -		
33	Inside Drop Manhole Detail, for Pipes 4 to 12 Inches in Diameter.....	8214-32	1
34	Sidewalk Replacement at Major Tree Locations.....	8603-22	0

**STANDARD PLANS - TABLE OF CONTENTS**

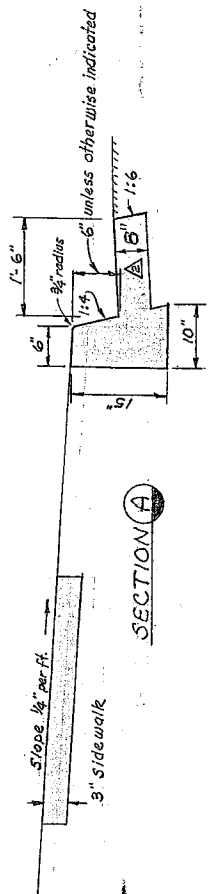
Page No.	Title / Subject	Drawing No.	Rev.
35	Location of Key for Curb & Driveway Placed Separately.....	5353-22	1
36	Standard Sidewalk Grinding Details.....	8639-42	0
37	Detail of Reinforcing Required in Sidewalk around Utility Boxes.....	6080-22	1
38	Special Driveway.....	6270-22	2
39	- D E L E T E D -	6366B-14	
40	Standard Catch Basin: Type 5.....	6366B-14	1
41	Standard Plan: 30" Culvert.....	2723-14	5
42	Standard Plan: 36" Culvert.....	2835-14	4
43	Standard Plan: 30" & 36" Culverts under RR Track.....	3066-14	2
44	Standard Plan: 36" Rectangular Culvert - Type A.....	4851-14	6
45	Standard Plan: 36" Rectangular Culverts - Types B & C.....	4858-14	3
46	Standard Drainage Channel.....	6060-14	0
47	Water Test Data - City Ordinance Number 2404.....	8277-32	0
48	- D E L E T E D -		
49	House Lateral Cleanouts.....	4213-34	0
50	- D E L E T E D -		
51	- D E L E T E D -		
52	Water Test Data - Amnesty Program.....	8358-32	0
53	Traffic Sign Specifications (2 Sheets).....	5700-404	5&6
54	Standard Street Name Sign Specifications (2 Sheets).....	7025B-404	1
55	Keyway Location for Two Phase Separate Placement of Gutter from Curb & Driveway.....	7191-22	0
56	Street Trees - Planting Details (Supersedes pp. 58 & 60 & DWG 7758A-74).....	9050.74	0
57	Tide & Datum Chart.....	2633-6/4	0
58	- D E L E T E D -		
59	Standard P.C.C. Doweled Curb.....	6507-22	0
60	- D E L E T E D -		
61	Standard Plan - Street Barricade.....	6669-42	1
62	Standard Large Radius Flush Return.....	6943-24	1+
63	- D E L E T E D -		
64	Wheelchair Ramp for 12' Radius Step Returns, Side Location.....	6996-24	3
65	- D E L E T E D -		
66	- D E L E T E D -		



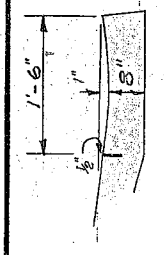
SECTION (A)  
(AT DRIVEWAY)



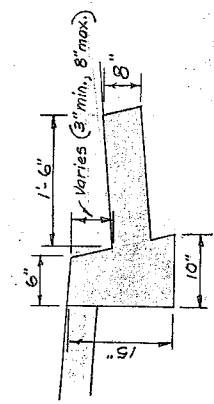
SECTION (B)  
(AT DRIVEWAY)



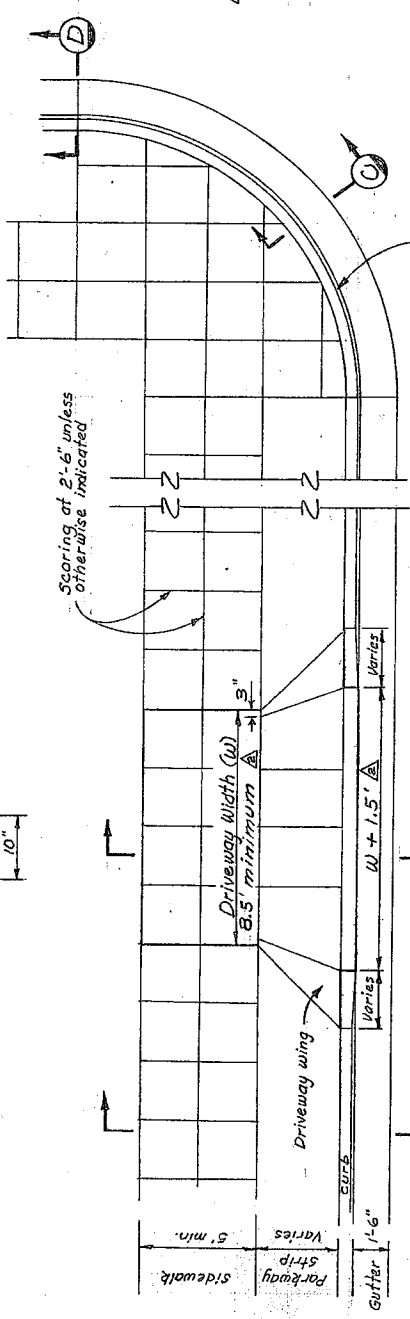
SECTION (C)  
AT FLUSH RETURN



SECTION (D)  
AT FLUSH RETURN



SECTIONS (C) & (D)  
AT STEP RETURN



Scoring at 2'-6" unless otherwise indicated

Driveway width (W)  
8.5' minimum

Driveway wing

Varies

Varies

Varies

Varies

Varies

Varies

Varies

Varies

Varies

Varies

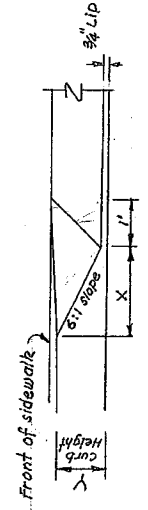
Varies

Varies

Varies

Varies

Varies



FRONT VIEW AT DRIVEWAY WING

Y	4"	5"	6"	8"
X	19 1/2"	25 1/2"	31 1/2"	43 1/2"

DRIVEWAY WING LENGTHS  
FOR VARIOUS CURB HEIGHTS

NOTES:

▲ Required mix design is 5 sack, 3/4" aggregate, 2500 psi with 1/2 lb. lamp black per cu. yd.

CURB AND GUTTER

1/2" Expansion joints at 15'.  
Jointer line at 5'.  
Finish as specified.  
Transition to existing wider gutter shall be 5' long.

SIDEWALK AND DRIVEWAY

1/2" expansion joints at 15'.  
Finish as specified.

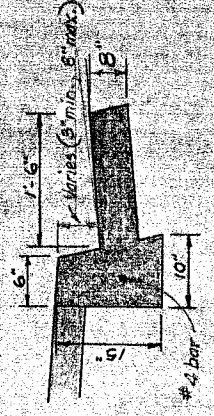
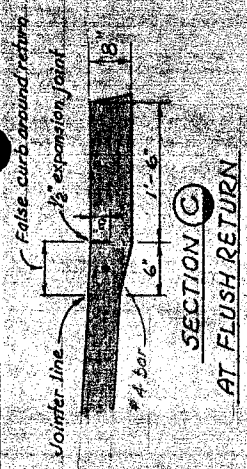
See dwg. 6270-22 where driveway slopes exceed limits shown.

SHEET 1	OF 1
APPROVED BY	M. J. [Signature]
	CITY ENGINEER
REG. C. E. NO.	70261
DATE	10-26-68
DWG. CASE	6297 24

CITY OF ALAMEDA  
CALIFORNIA  
ENGINEERING DEPARTMENT  
STANDARD PLAN  
CURB GUTTER  
SIDEWALK AND DRIVEWAY

NO.	REVISED	BY	APP.
▲	APR. 11, 1998	JF	
▲	JAN. 1974	Terry M	
▲	JAN. 1972	Terry M	
COMPILED LONG & WONG			
DRAWN H. J. WONG			
CHECKED J. PAU			
DATE	SCALE		
OCT. 1968	NONE		

2



SECTIONS C & D  
AT STEP RETURN

NOTES:

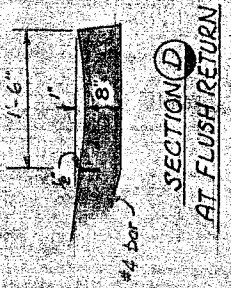
- Required mix design is 5 sack 3/4 aggregate 2500 psi with 1/2 lb. lampblack per cu yd.
- CURE AND GUTTER
  - 1/2 Expansion joints at 10'
  - Jointer line at 5'
  - Transition to existing wider gutter shall be 5' long.

SIDEWALK AND DRIVEWAY

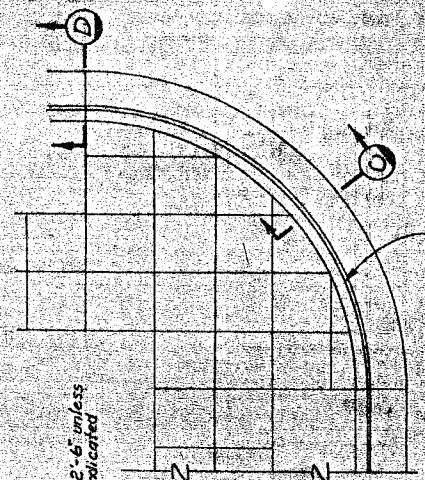
See Diag. 6270-22 where driving stops exceed limits shown.

CITY OF ALAMEDA  
CALIFORNIA  
ENGINEERING DEPARTMENT  
STANDARD PLAN  
CURB GUTTER  
SIDEWALK AND DRIVEWAY  
(IN SUBSIDENCE AREAS)

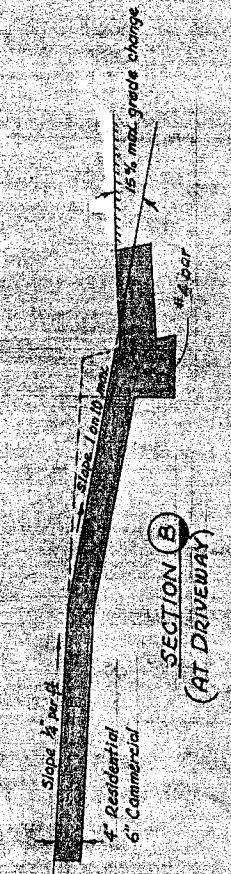
APPROVED BY: *M. J. Wong*  
DATE: 10-25-68  
JOB NO: 6295B  
SCALE: 1" = 1'-0"



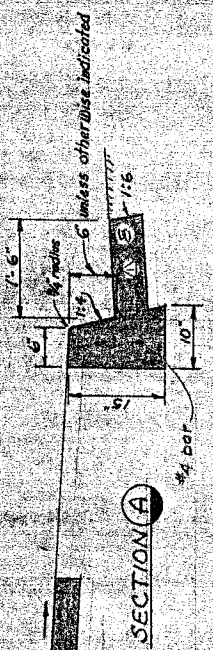
SECTION D  
AT FLUSH RETURN



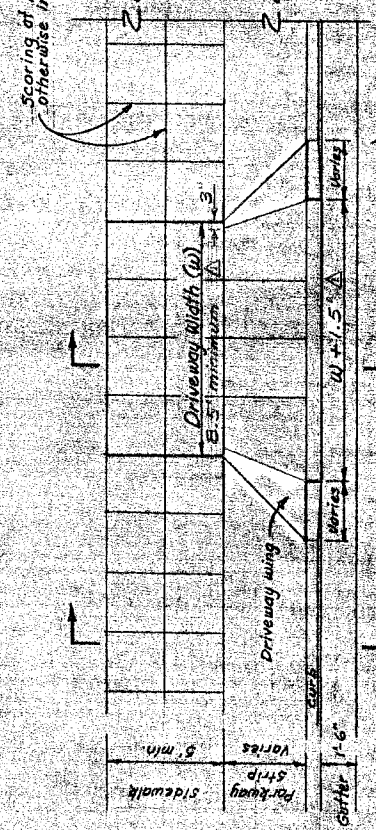
Step return or flush return per construction detail. Curb return radius (R) 18' unless otherwise indicated.



SECTION B  
(AT DRIVEWAY)



SECTION A



FRONT VIEW AT DRIVEWAY WING



FRONT VIEW AT DRIVEWAY WING

Y	4'	5'	6'	8'
X	19 1/2"	25 1/2"	31 1/2"	43 1/2"

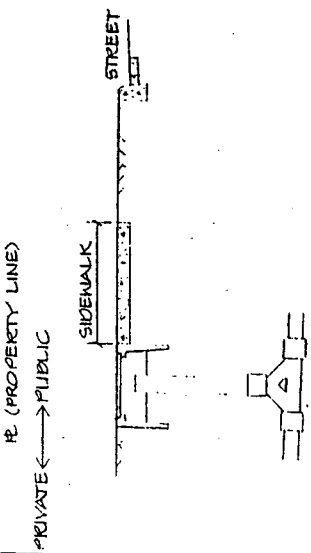
DRIVEWAY WING LENGTHS  
FOR VARIOUS CURB HEIGHTS

DATE	REVISION	BY	APP.
APR 11 1968	UF		
JAN 19 1974	WY	MJ	
COMPILED	LONG & WONG		
DRAWN	H. J. WONG		
CHECKED	H. J. WONG		
DATE	SCALE		
OCT. 1968	NONE		

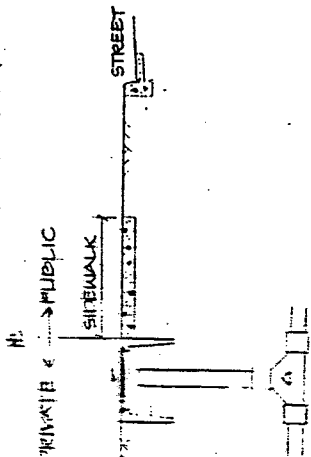
NOTES

- 1. IN LANDSCAPED AREAS, INSTALL BOX FLUSH WITH EXISTING GROUND.
- 2. IN CONCRETE AREAS OR DRIVEWAYS, INSTALL BOX FLUSH WITH ADJACENT SURFACE. RECONSTRUCT CONCRETE PER DIV. 8. 0285B-24.
- 3. IN DRIVEWAY AREAS, ANGLE BOX TO DRIVEWAY SLOPE. COVER & BOX SHALL BE TRAFFIC RATED.
- 4. "SEWER" SHALL APPEAR ON TOP OF LID. SEE DETAIL.
- 5. PRECISE LOCATIONS OF BOXES TO BE DETERMINED IN THE FIELD BY THE CITY INSPECTOR.

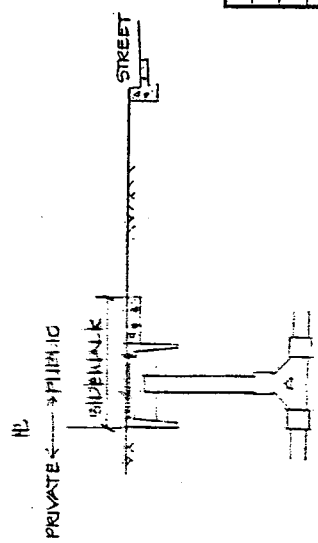
OPTION 1A - BEHIND SIDEWALK, IN PUBLIC RIGHT-OF-WAY



OPTION 1B - BEHIND SIDEWALK ON PRIVATE PROPERTY

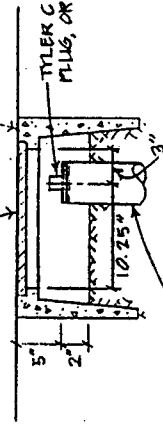


OPTION 2 - SIDEWALK OR DRIVEWAY



CLEANOUT LOCATIONS

INSTALL CHRISTY B3 METER BOX, OR EQUAL, FLUSH WITH EXISTING SURFACE. SEE LEFT FOR LOCATION. CHRISTY D10 LID, OR EQUAL, IN DRIVEWAYS USE CHRISTY D10 LID, OR EQUAL. SEE DETAIL.



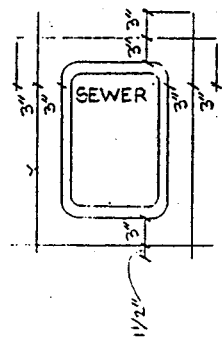
4" SANITARY SENSER PIPE CAST IRON (ANSI A21.6)

COMPRESSION SLEEVE COUPLER WITH PUSHING, AS REQUIRED (TYP)

4" KELLY B446 TWO-WAY COMBINATION CLEANOUT, OR EQUAL



# 4 REBAR (TYP)

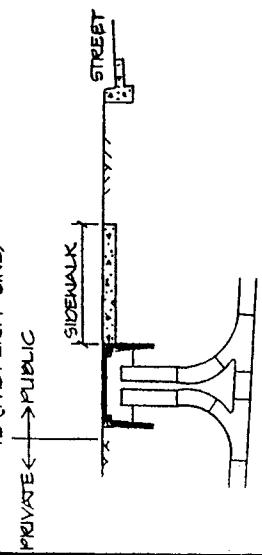


DESIGNED FORNER		BY APP.	
DRAWN KERPEL		JK MP	
CHECKED SANDERSON		DATE	
OCT. 1989		SCALE	
		NONE	
CITY OF ALAMEDA CALIFORNIA ENGINEERING DEPARTMENT			
STANDARD 4" HOUSE LATERAL TWO-WAY CLEANOUT			
APPROVED BY <i>[Signature]</i> CITY ENGINEER		DATE 19 Dec 1989	
SHEET 1 OF 1		DWG. CARE	
8396		34	

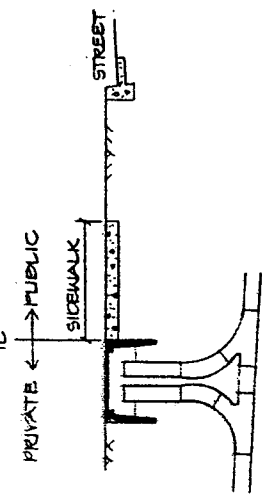
NOTES

1. IN LANDSCAPED AREAS, INSTALL BOX FLUSH WITH EXISTING GROUND.
2. IN CONCRETE AREAS OR DRIVEWAYS, INSTALL BOX FLUSH WITH ADJACENT SURFACE. RECONSTRUCT CONCRETE PER DWS. G295B-24.
3. IN DRIVEWAY AREAS, ANGLE BOX TO DRIVEWAY SLOPE. COVER/BOX SHALL BE TRAFFIC RATED.
4. "SEWER" SHALL APPEAR ON TOP OF LID. SEE DETAIL.
5. PRECISE LOCATIONS OF BOXES TO BE DETERMINED IN THE FIELD BY THE CITY INSPECTOR.

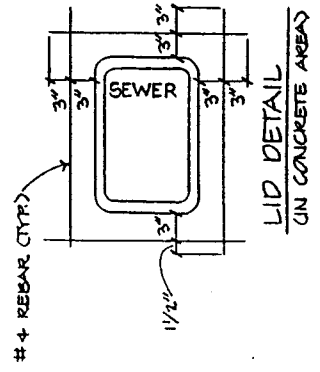
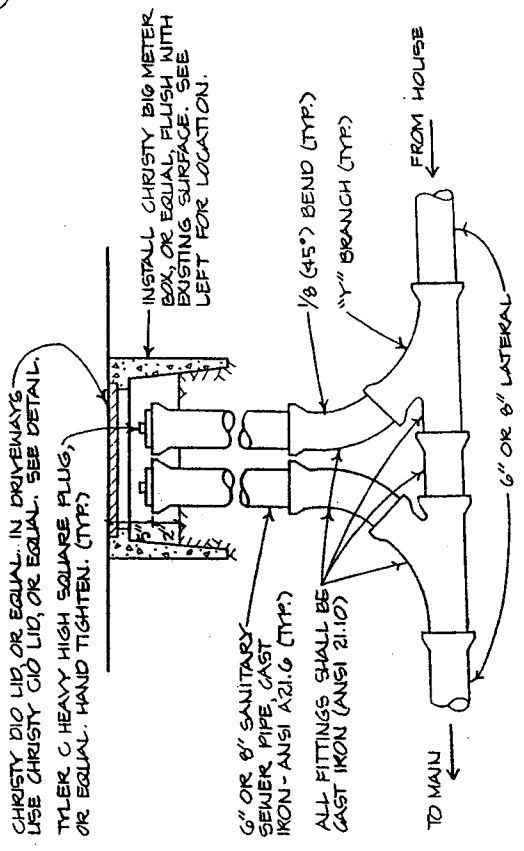
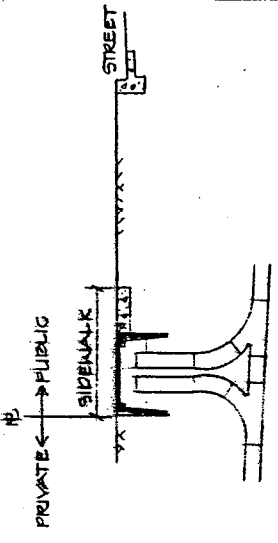
OPTION 1A - BEHIND SIDEWALK, IN PUBLIC RIGHT-OF-WAY  
 PRIVATE ← → PUBLIC



OPTION 1B - BEHIND SIDEWALK ON PRIVATE PROPERTY  
 PRIVATE ← → PUBLIC




OPTION 2 - SIDEWALK OR DRIVEWAY



NO.	REVISION	BY	APP.
1	2-13-97	JK	ME
DESIGNED FORNER			
DRAWN KERPPEL			
CHECKED SANDERSON			
DATE		SCALE	
OCT. 1989		NONE	

CITY OF ALAMEDA  
 CALIFORNIA  
 ENGINEERING DEPARTMENT

**STANDARD**  
**6" or 8" HOUSE LATERAL**  
**TWO-WAY CLEANOUT**

APPROVED:  CITY ENGINEER

DATE: 19 Dec 1989

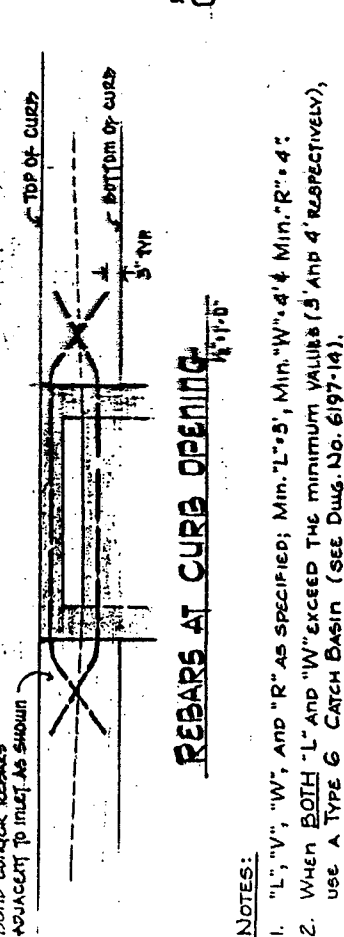
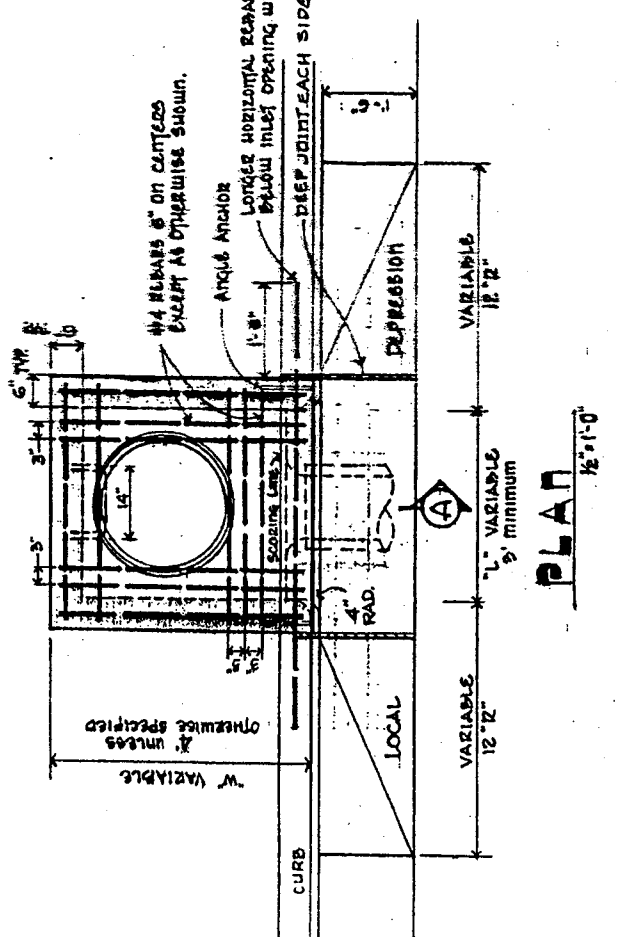
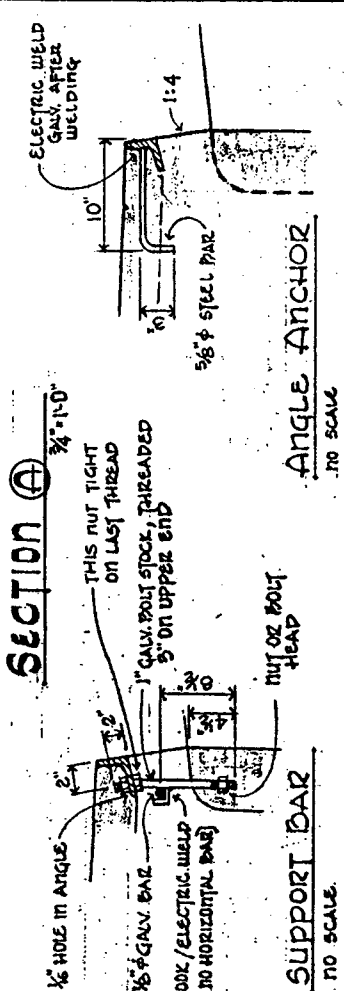
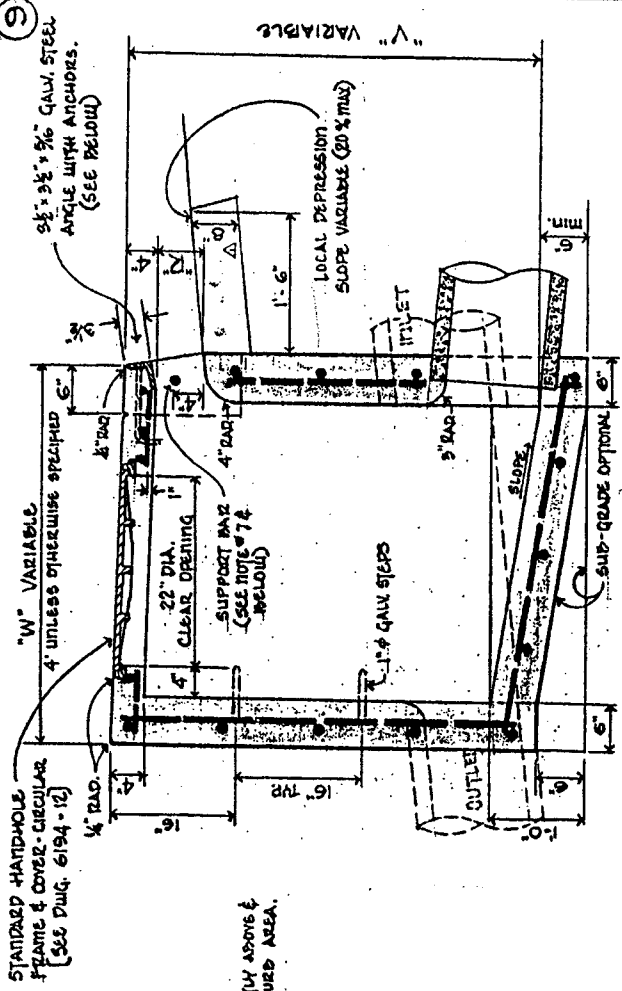
SHEET: 1 OF 1

DWS. 8397

CARE 34

CLEANOUT LOCATIONS

9

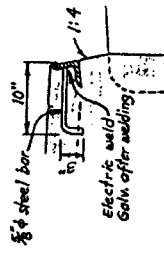
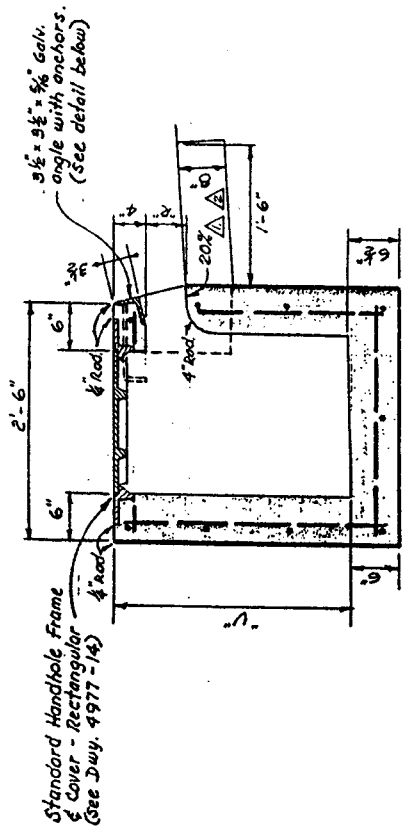
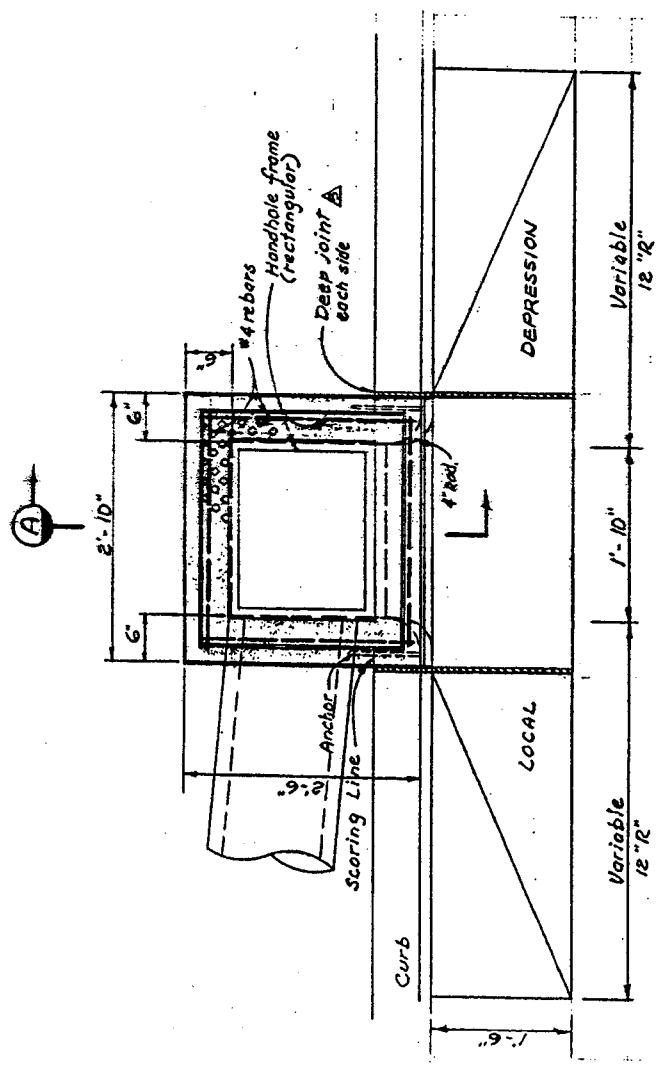


NOTES:

1. "L", "V", "W", and "R" AS SPECIFIED; MIN. "L" = 5", MIN. "W" = 4" & MIN. "R" = 4".
2. WHEN BOTH "L" AND "W" EXCEED THE MINIMUM VALUES (5" AND 4" RESPECTIVELY), USE A TYPE 6 CATCH BASIN (SEE DWG. NO. 6197-14).
3. INLET AND OUTLET LOCATIONS AS SPECIFIED.
4. CONCRETE SHALL BE CLASS "A".
5. REINFORCING: #4 BARS, 12" C-C EXCEPT AS SHOWN OTHERWISE.
6. ALL SPLICES IN REINFORCING SHALL HAVE 10" MIN. LAP (INCLUDING AT CORNERS).
7. HORIZONTAL PROTECTION BAR SHALL BE USED WHEN CURBRACE IS 10 INCHES OR MORE.
8. WHEN "L" EXCEEDS 3 1/2", VERTICAL SUPPORT BARS SHALL BE USED AT 42" MAX. SPACING.
9. PIPE TO BE PLACED THROUGH CATCH BASIN WHENEVER POSSIBLE.
10. STEPS TO BE USED WHEN "V" IS GREATER THAN 3'-0".
11. EXPOSED SURFACES TO CONFORM TO ADJOINING CURB & WALK IN GRADE AND FINISH.

CITY OF ALAMEDA CALIFORNIA ENGINEERING DEPARTMENT		APPROVED BY <i>M. J. Gamm</i> CITY ENGINEER	SHEET 1 OF 1
STANDARD CATCH BASIN TYPE 1		REG. C. E. NO. 7061	DATE 12-10-73
DRAWN: WONG / TEROUZY CHECKED: T. D. EDWARDS		DWG. NO. 6980	CASE NO. 14
DATE: JAN 1974		SCALE: AS NOTED	





STEEL ANGLE ANCHOR  
NO SCALE

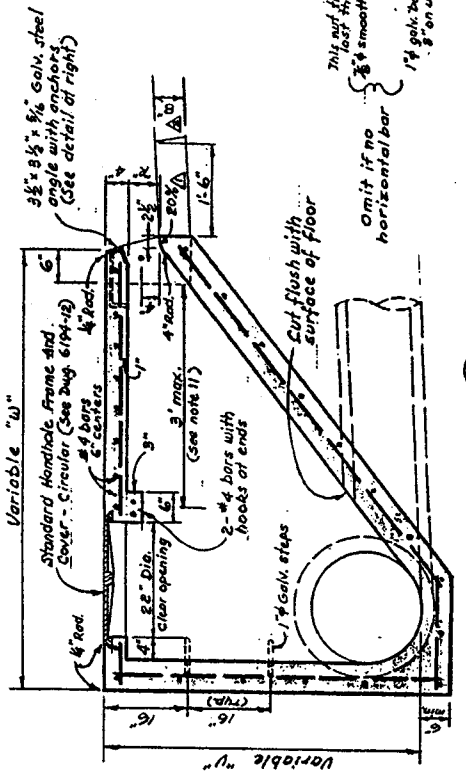
Standard Handhole Frame & Cover - Rectangular (See Dwy. 4977-14)  
5/8" x 9/16" x 5/8" Galv. angle with anchors. (See detail below)

- NOTES:
1. "R" and "V" as specified; Min. "R" = 4' & Max. "V" = 2'-6".
  2. Inlet and outlet locations as specified.
  3. Concrete shall be Class "A".
  4. Reinforcing: #4 bars, 12" c.c except as shown otherwise.
  5. All splices in reinforcing shall have 10" min. lap (including at corners).
  6. Pipe to be placed through Catch Basin whenever possible.
  7. Exposed surfaces to conform to adjoining curb & walk in grade and finish.
- △ Local depression cross-slope variable (20% max.).

NO.	REVISED	BY	APP.
△	11-8-82	ALY TDE	
△	1-21-74	AMC	
△	1-21-69	REL NY	
COMPILED H. WONG			
DRAWN H. WONG			
CHECKED J. PAU			
DATE: 1968			
SCALE: As Noted			

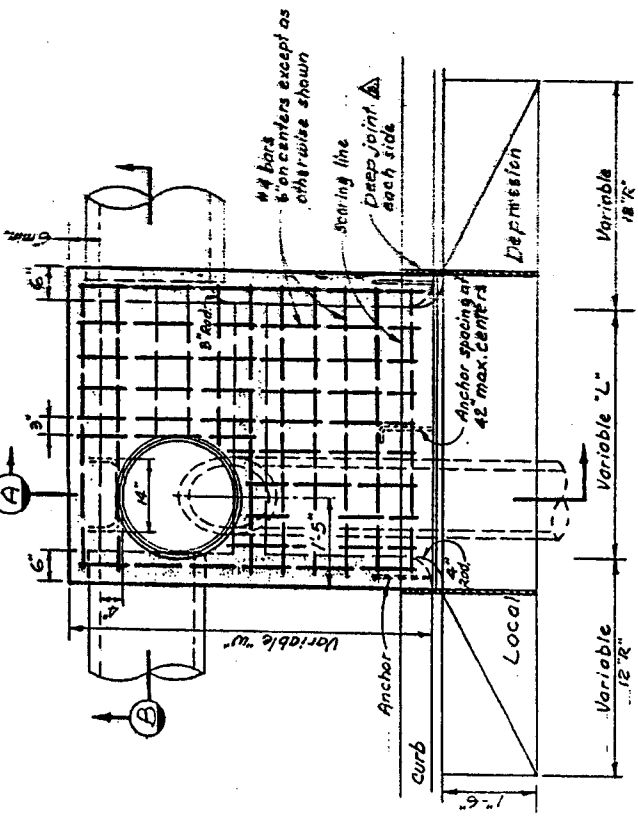
CITY OF ALAMEDA CALIFORNIA		SHEET 1 OF 1
ENGINEERING DEPARTMENT		APPROVED BY M. J. [Signature] CITY ENGINEER
STANDARD		REG. C. E. NO. 7061
CATCH BASIN		DATE 10-27-68
TYPE 3		DWG. NO. 6296
		CARE 14



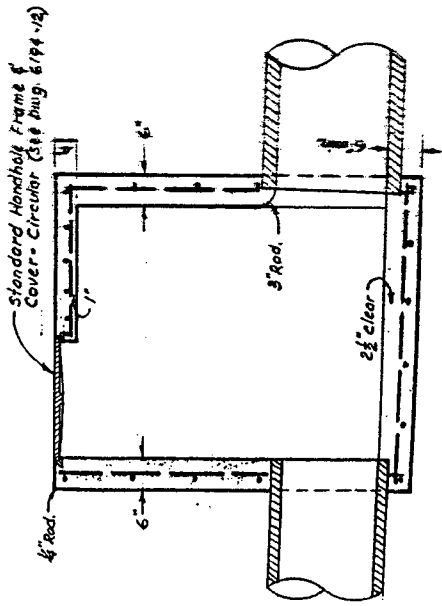
**SECTION A**  
Scale 1/4" = 1'-0"

**NOTES:**

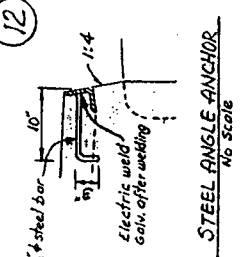
1. "L", "U", "W" and "R" as specified; Min. "L" = 3', Min. "W" = 4' & Min. "R" = 4'.
2. Inlet and outlet locations as specified.
3. Concrete shall be Class "A".
4. Reinforcing: #4 bars, 12" c-c except as shown otherwise.
5. All splices in reinforcing shall have 10" min. lap (including of corners).
6. Horizontal projection bar shall be used when curb face is 10" or more.
7. When "L" exceeds 24', vertical support bars shall be used at +2" max. spacing.
8. Pipe to be placed through Catch Basin when even possible.
9. Steps to be used when "U" is greater than 3'-6".
10. Exposed surfaces to conform to adjoining curb & walk in grade and finish.
11. When "W" exceeds 6'-5", provide additional beams equally spaced between back of curb line and Handhole opening (3' max. center to center).
12. Local depression cross-slope variable (20% max.).



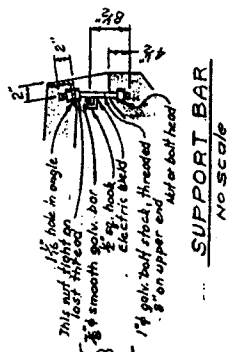
**PLAN**  
Scale 1/4" = 1'-0"



**SECTION B**  
Scale 1/4" = 1'-0"



**STEEL ANGLE ANCHOR**  
No Scale



**SUPPORT BAR**  
No Scale

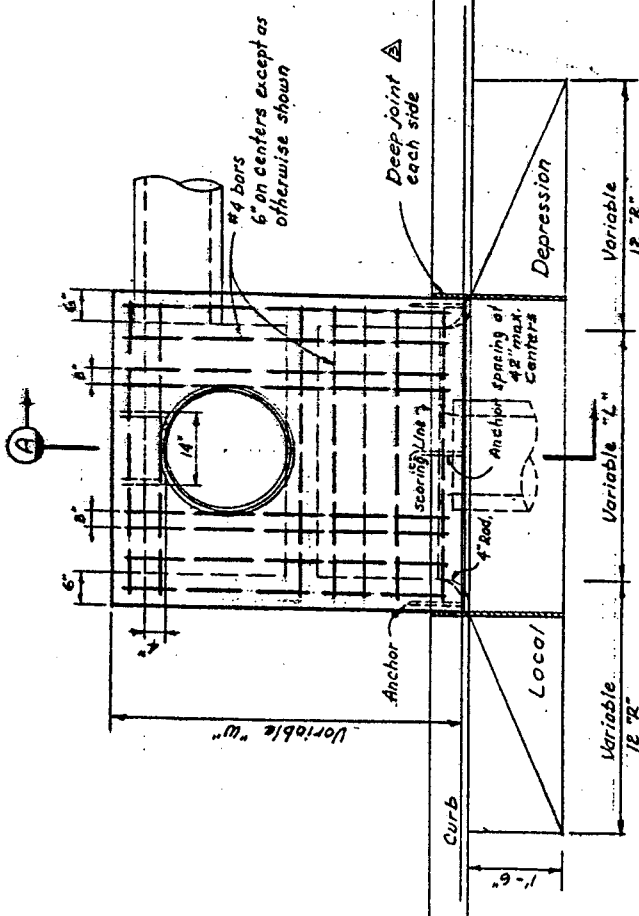
NO.	REVISED BY	DATE	SCALE
1	H. J. WONG	1-21-74	AMC
2	H. J. WONG	1-21-69	REL PH
COMPILED H. J. WONG			
DRAWN H. J. WONG			
CHECKED J. PAU			
DATE			
OCT. 1968 As Noted			

CITY OF ALAMEDA	SHEET 1 OF 1
CALIFORNIA	APPROVED BY
ENGINEERING DEPARTMENT	M. J. G. [Signature]
STANDARD	CITY ENGINEER
CATCH BASIN	REG. C. E. NO. 70261
TYPE 4	DATE 10-25-68
	DWG. CASE
	6271
	14

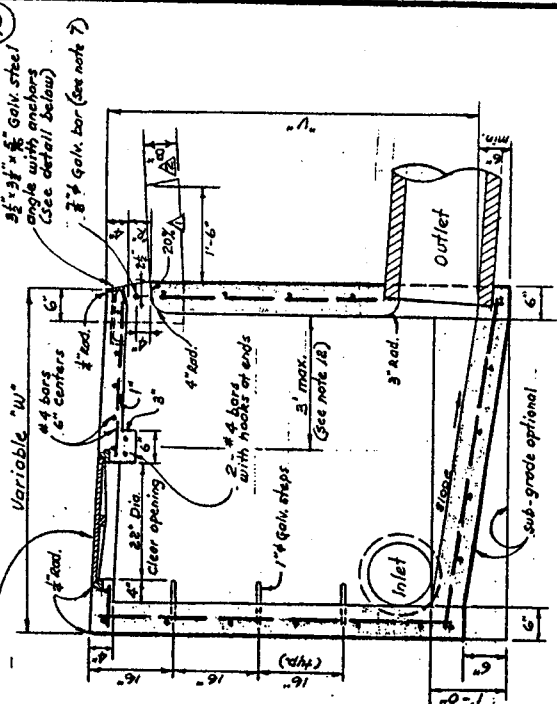
13

Standard Handhole Frame and Cover - Circular (See Aug. 6194-12)

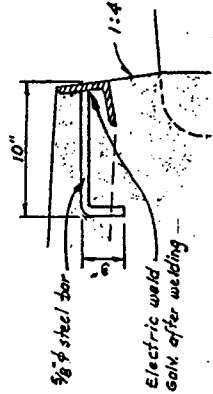


**PLAN**  
Scale 1/8" = 1'-0"

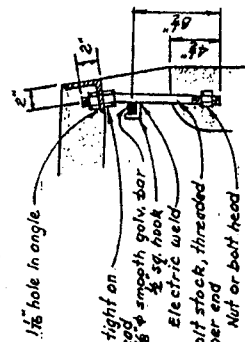
- NOTES:**
1. "L", "V", "W" and "R" as specified; Min. "L" = 3'; Min. "W" = 4' & Min. "R" = 4'.
  2. THIS STRUCTURE SHALL BE USED WHEN BOTH "L" AND "W" EXCEED THE MINIMUM VALUES. (3' AND 4' RESPECTIVELY).
  3. Inlet and outlet locations as specified.
  4. Concrete shall be Class "A".
  5. Reinforcing: #4 bars, 12" C-C except as shown otherwise.
  6. All splices in reinforcing bar shall have 10" min. lap (including at corners).
  7. Horizontal protection bar shall be used when curb face is 10" or more.
  8. When "L" exceeds 3 1/2', vertical support bars shall be used at 42" max. spacing.
  9. Steps to be used when "V" is greater than 3'-6".
  10. Exposed surfaces to conform to adjoining curb & walk in grade and finish.
  11. Where "W" exceeds 6'-3", provide additional beams equally spaced between front wall and Handhole opening (3" max. center to center).
  12. Local depression cross-slope variable (20% max.).



**SECTION A**  
Scale 1/8" = 1'-0"



**STEEL ANGLE ANCHOR**  
No Scale



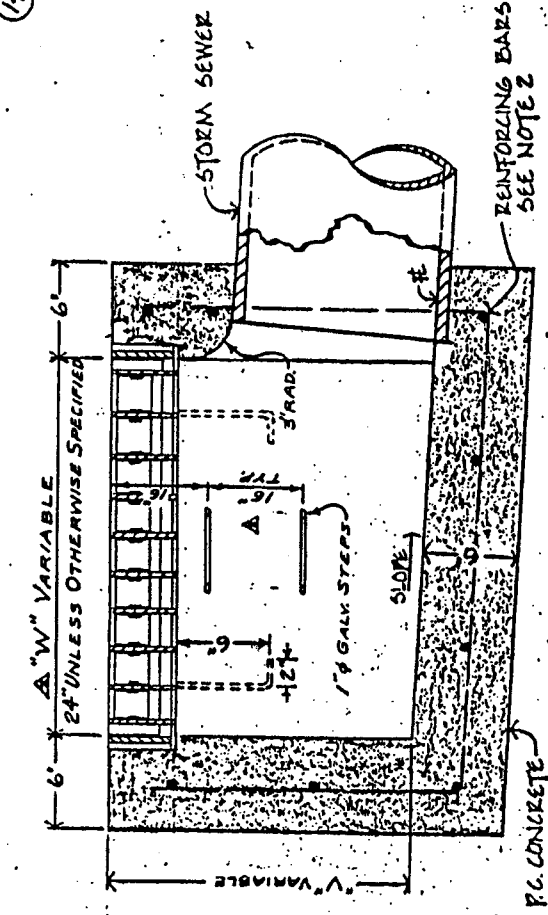
**SUPPORT BAR**  
No Scale

11-8-82	ALA TDE
1-21-74	AM
1-21-69	REL M
NO.	REVISED BY
COMPILED	H. J. WONG
DRAWN	H. V. WONG
CHECKED	R. H. LOANS
DATE	SCALE
OCT. 1968	As Noted

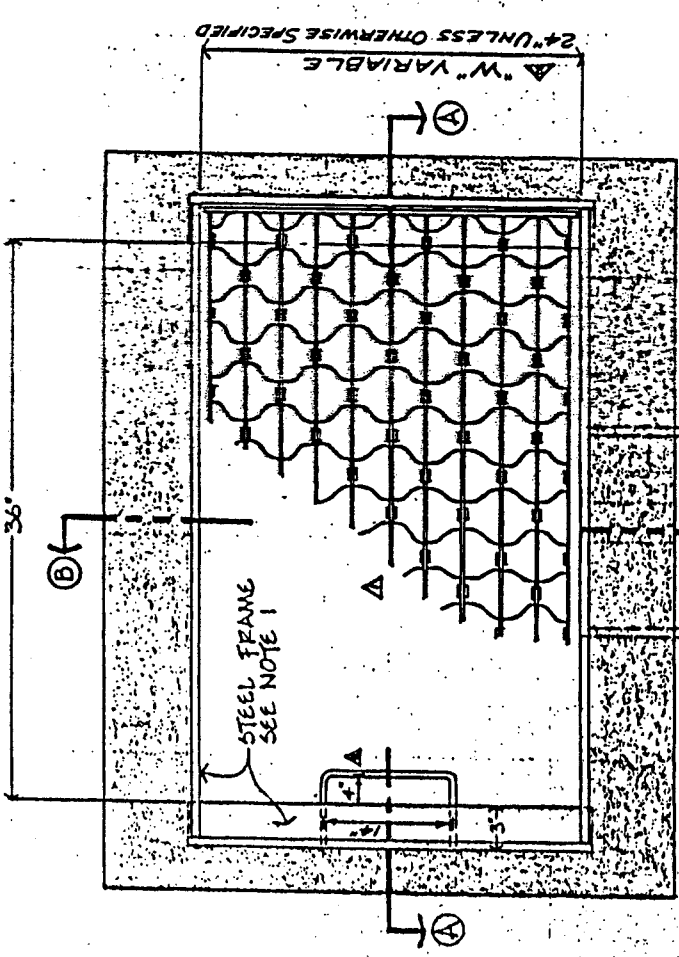
CITY OF ALAMEDA  
CALIFORNIA  
ENGINEERING DEPARTMENT  
**STANDARD**  
**CATCH BASIN**  
**TYPE 6**

APPROVED BY  
*M. J. ...*  
CITY ENGINEER  
REG. C. E. NO. 2051  
DATE 10-28-68  
DWG. 6197  
CASE 14

14



SECTION B-B



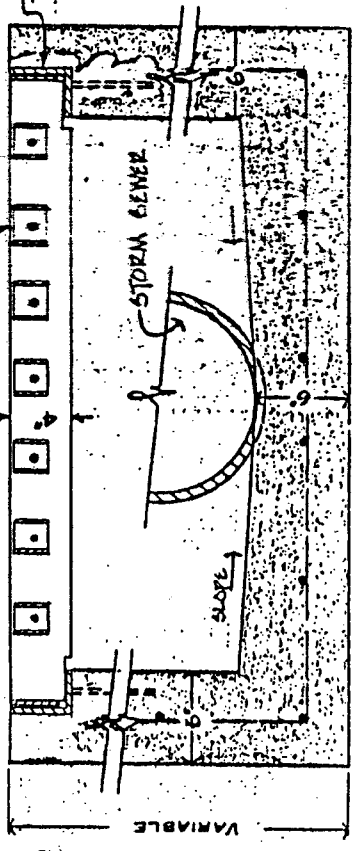
PLAN

NOTES:

1. FOR 24"W FRAME AND GATE SHALL BE GALVANIZED STEEL PHOENIX IRON WORKS P-6302 OR APPROVED EQUAL. WHERE "V" IS GREATER THEN 6', "W" SHALL BE 36" WITH FRAME & GRATE FROM DONICO METAL PRODUCTS, D10A (36"x36" Clear opening) OR APPROVED EQUAL.
2. REINFORCING BARS SHALL BE #4 BARS AT 9" O.C.
3. SLOPE BOTTOM EACH WAY 0.10' MINIMUM TO THE OUTFALL OR AS OTHERWISE SPECIFIED.
4. STEPS TO BE USED WHEN "V" IS GREATER THAN 3'-6". STEP SPACING AT 16" CENTERS.

STEEL FRAME SEE NOTE 1

GRATE SEE NOTE 1



SECTION A-A

APPROVED BY	<i>M. J. ...</i>	CITY ENGINEER
RES. C. E. NO. 7051	DATE	4-11-72
DIV.	6703B	CARE
SCALE	1/2" = 1'	
CHECKED	R. PRIMA	
DEAN	A. BOYCE	
CHECKED	T. P. EDWARDS	
DATE	APR. 1972	

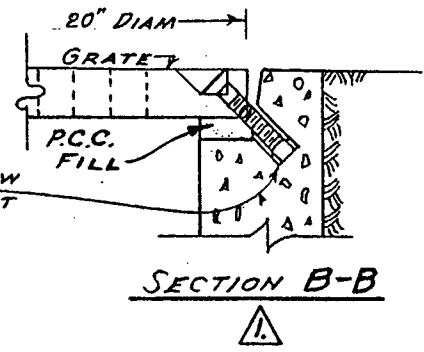
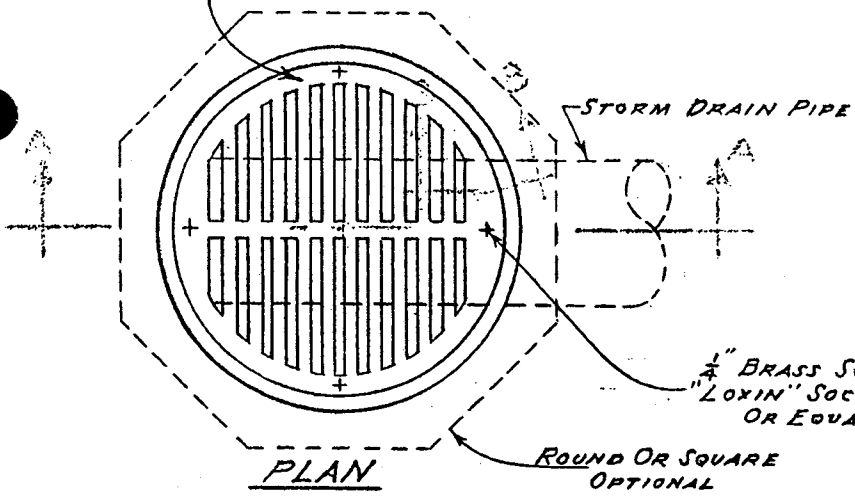
CITY OF ALAMEDA  
CALIFORNIA  
ENGINEERING DEPARTMENT

STANDARD

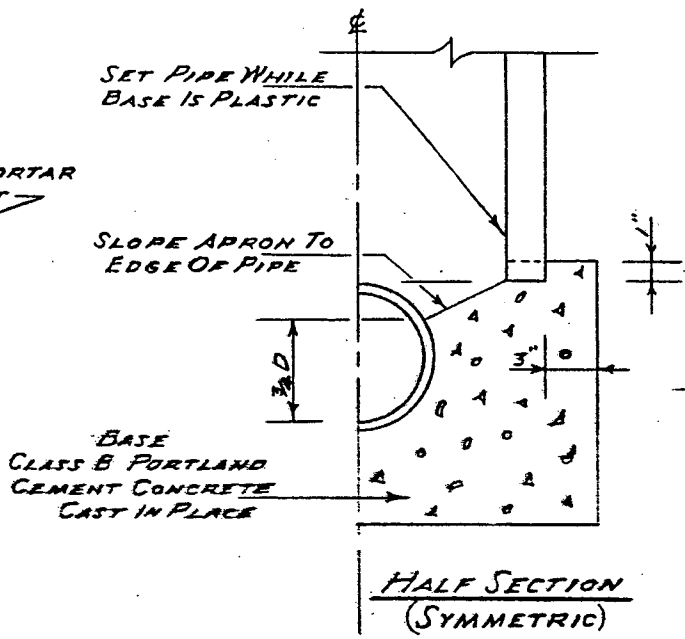
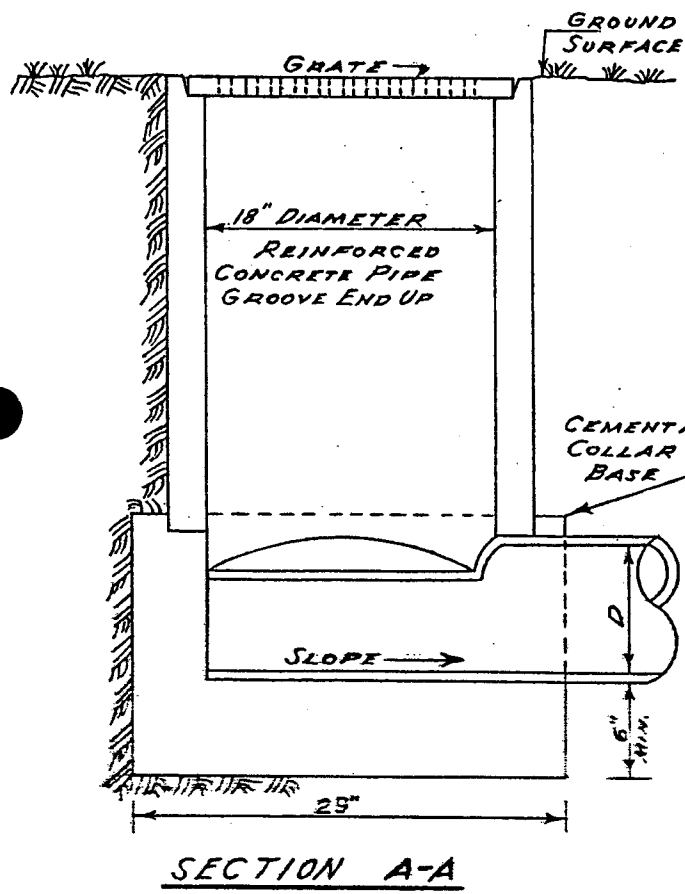
GRATE CATCH BASIN

SHEET 1 OF 1

EMPIRE FOUNDRY  
20" ROUND GRATE OR EQUAL



1/4" BRASS SCREW  
"LOXIN" SOCKET  
OR EQUAL



CITY OF ALAMEDA  
CALIFORNIA  
ENGINEERING DEPARTMENT

SPECIAL CATCH BASIN  
TYPE (A)

SHEET 1 OF 1

APPROVED BY  
*M. J. Hanna*

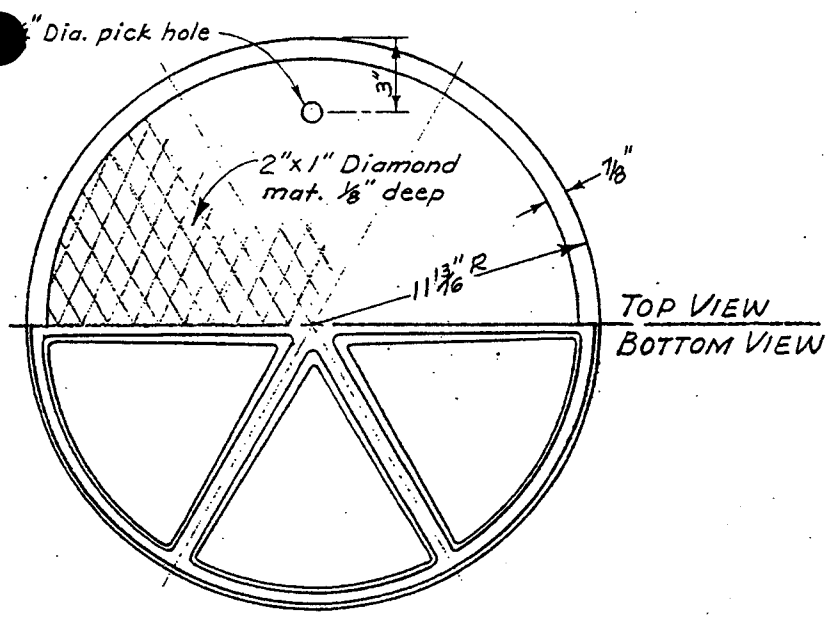
CITY ENGINEER  
REG. C. E. NO. 7061

DATE 1-31-58

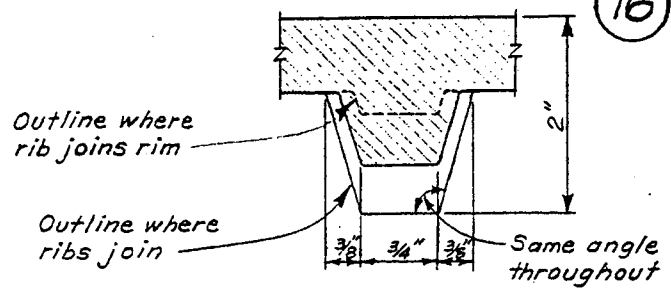
DWG. 4651

CASE 12

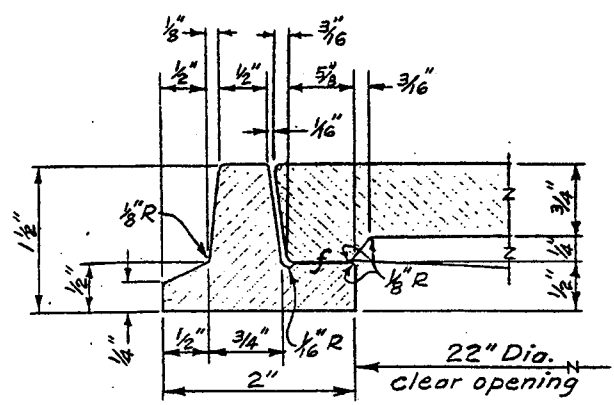
NO.	REVISED	BY	APVD.
1.	Nov. 1960	REL	
DRAWN <i>W. TERRY</i>			
CHECKED <i>R. REED</i>			
DATE		SCALE	
JAN. 1958		NONE	



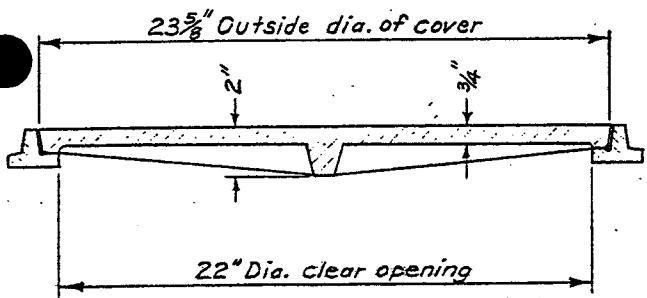
**COVER**  
Scale: 1 1/2" = 1'-0"



**CROSS SECTION THRU RIB AT MID RADIUS**  
No Scale



**CROSS SECTION THRU RIM**  
No Scale



**CROSS SECTION THRU FRAME AND COVER**  
Scale: 1 1/2" = 1'-0"

**NOTES:**

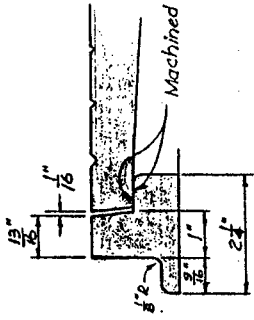
1. Frame and cover shall be gray cast iron conforming to the latest A.S.T.M. specifications.
2. Frame and cover shall be tested for accuracy of fit and shall be marked in sets before delivery.
3. After installation, frame and cover shall be thoroughly cleaned and painted with asphalt black paint, Teclac T, as manufactured by the Inter-Coastal Paint Corporation or an approved equal.
4. Cover shall not rattle after installation.

Approx. Wts.  
Cover: 100 #  
Frame: 30 #

REVISION	BY	APVD.
COMPILED	H. J. Wong	
DRAWN	A. Tang	
CHECKED	C. T. Coffey	
DATE	SCALE	
July, 1968	As Noted	

**CITY OF ALAMEDA**  
 CALIFORNIA  
 ENGINEERING DEPARTMENT  
**STANDARD HANDHOLE**  
**FRAME AND COVER**  
**CIRCULAR**

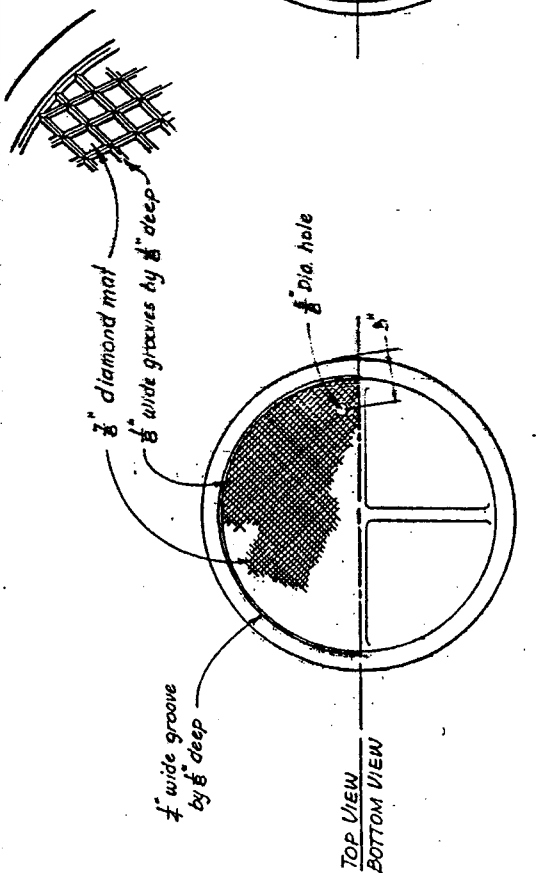
SHEET	1	OF	1
APPROVED BY	<i>M. J. Hanna</i>		
	CITY ENGINEER		
	REG. C. E. NO. 7061		
DATE	7-5-68		
DWG.	6194	CASE	12



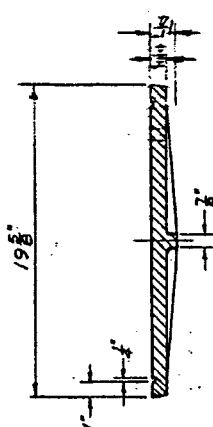
CROSS SECTION THRU RIM

NOTES:

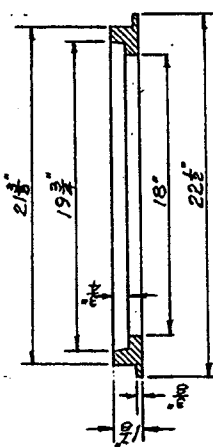
1. Frame and Cover shall be gray cast iron conforming to the latest A.S.T.M. specifications.
2. Frame and Cover shall be tested for accuracy of fit and shall be marked in sets before delivery.
3. After installation, frame and cover shall be thoroughly cleaned and painted with asphalt black paint, Teclac T, as manufactured by the Inter-Coastal Paint Corporation or an approved equal.
4. Cover shall not rattle after installation.



TOP VIEW  
BOTTOM VIEW



COVER



FRAME

NO.	REVISED	BY	DATE
1.	July 1968	H.W.	CH

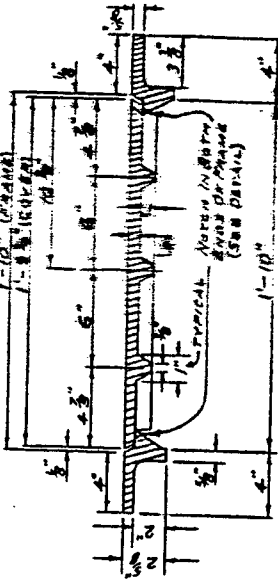
COMPILED	H.J. WONG
DRAWN	H.J. WONG
CHECKED	P.H. LONG
DATE	MAR. 1967
SCALE	NONE

Approx. Wt.  
Cover: 1.60 #  
Frame: 45 #

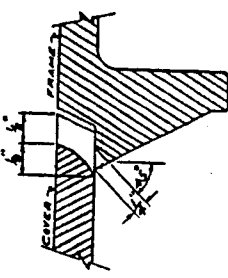
CITY OF ALAMEDA  
CALIFORNIA  
ENGINEERING DEPARTMENT

STANDARD HANDHOLE  
FRAME AND COVER  
18" CIRCULAR

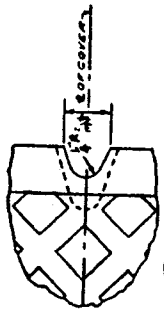
SHEET	1	OF	1
APPROVED BY	M. J. ...		
CITY ENGINEER			
RES. C. NO.	2061		
DATE	4-17-67		
DWG. NO.	6081		
CASE NO.	14		



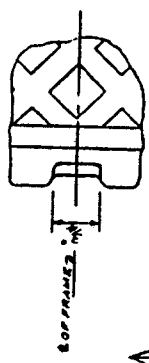
**SECTION A**  
SCALE 1/2" = 1'-0"



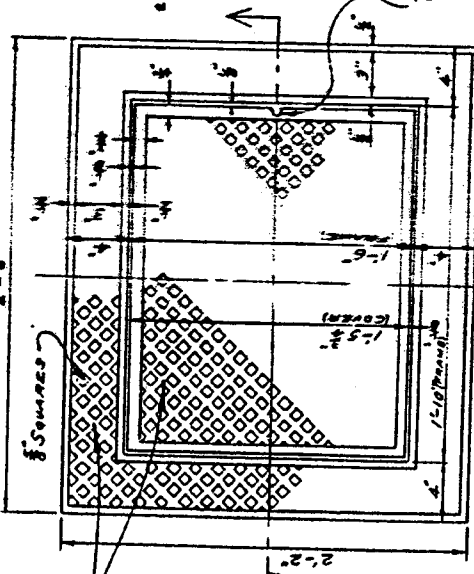
**SECTION DETAIL OF LIFTING POCKET NOTCHES**  
SCALE HALF SIZE



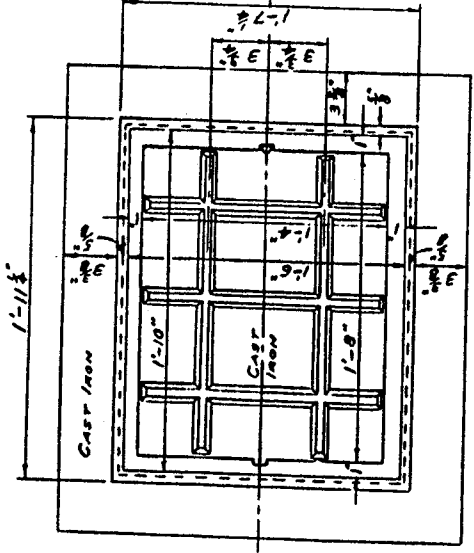
**PLAN DETAIL OF NOTCH IN COVER**  
SCALE HALF SIZE  
(NOTCH ON ONE END OF COVER)



**PLAN DETAIL OF NOTCH IN FRAME**  
SCALE HALF SIZE  
(NOTCH ON BOTH ENDS OF FRAME)



**TOP PLAN**  
SCALE 1/2" = 1'-0"



**BOTTOM VIEW**  
SCALE 1/2" = 1'-0"

- NOTE: 1. AFTER INSTALLATION, FRAME AND COVER SHALL BE THOROUGHLY CLEANED AND PAINTED WITH ASPHALT BLACK PAINT, TECLAC T, AS MANUFACTURED BY THE INTER-COSTAL PAINT CORPORATION OR AN APPROVED EQUAL.**
- 2. FRAMES AND COVERS SHALL BE MATCHED AND MACHINED AT THE FOUNDRY AND IDENTIFIED BY SYMBOLS, TO FACILITATE PAIRING ON JOBSITE.**
- 3. COVER SHALL NOT RATTLE AFTER INSTALLATION.**

**CITY OF ALAMEDA**  
CALIFORNIA  
ENGINEERING DEPARTMENT

**STANDARD HANDHOLE**  
**FRAME AND COVER**  
**RECTANGULAR**

SHEET 1 OF 1	APPROVED BY <i>M. J. Hanna</i> CITY ENGINEER	REV. C. E. NO. 2051
DATE 10-13-60	DATE 10-13-60	DATE 10-13-60
4977	14	

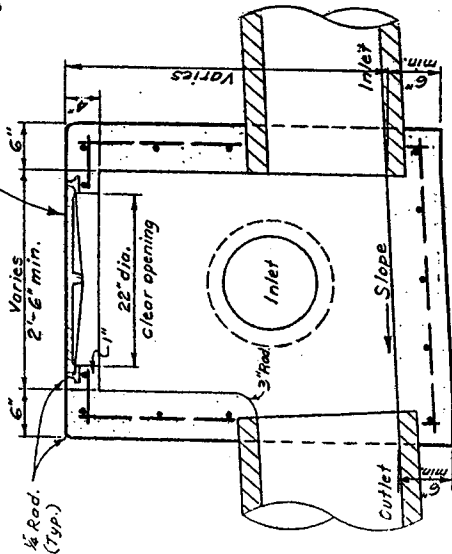
NO.	REVISED BY	DATE
COMPLETED		
DRAWN	M. TERRY	
CHECKED	M. SMITH	
DATE	OCT. 1960	
SCALE	AS SHOWN	
AND AT NOTED		

**NOTE: THIS HANDHOLE FRAME AND COVER SUPERSEDES THE HANDHOLE FRAME AND COVER SHOWN ON DRAWING 2836 CASE 28 AND IS IDENTICAL THERETO EXCEPT FOR ELIMINATING THE LIFTING HANDLES AND HANDLE POCKETS AND ADDING THE LIFTING POCKET NOTCHES.**

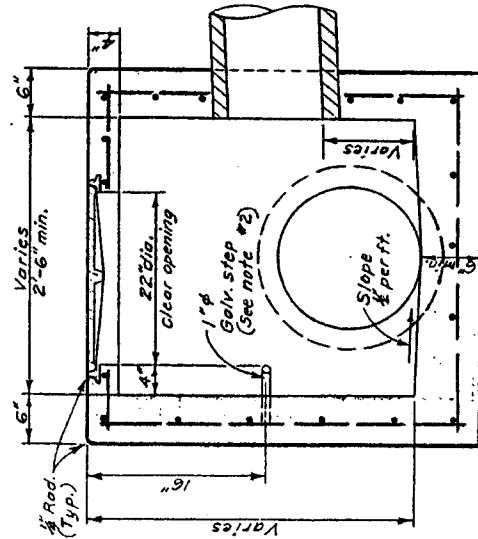
NOTES:

1. THIS STRUCTURE NOT FOR STREET AREA USE.
2. Steps shall be used when depth is greater than 3'-6". Vertical spacing at 16" centers.
3. Concrete shall be Class "A".
4. Exposed surfaces to conform to adjoining curb and walk in grade & finish.
5. Walls and floor shall be reinforced with #3 bars at 9" C-C. Roof shall be reinforced with #4 bars as shown. All splices in reinforcing shall have 10" min. lap (including at corners). Bars shall be placed 2 1/2" clear from inferior faces except as noted.
6. Inlet & outlet locations as specified.

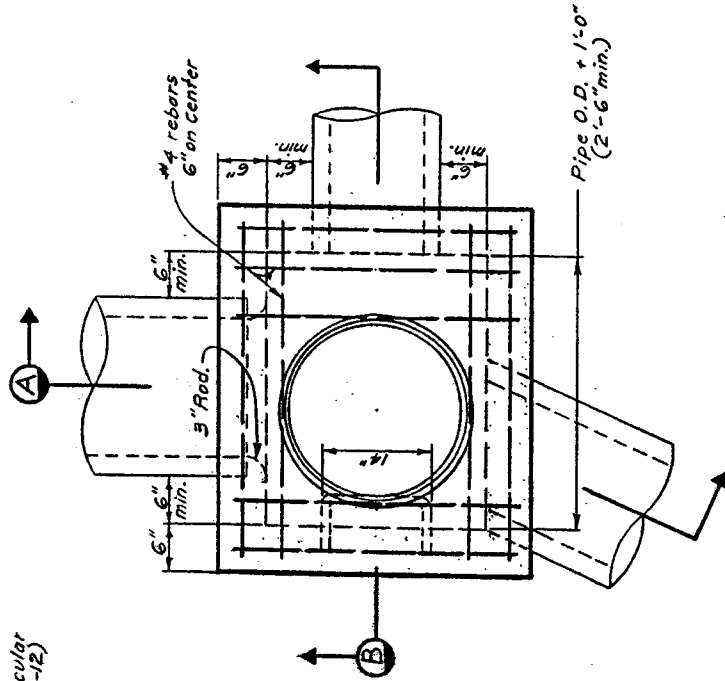
Standard Handhole Frame and Cover - Circular (See Dwg. No. 6194-12)



**SECTION A**  
Scale 3/4" = 1'-0"

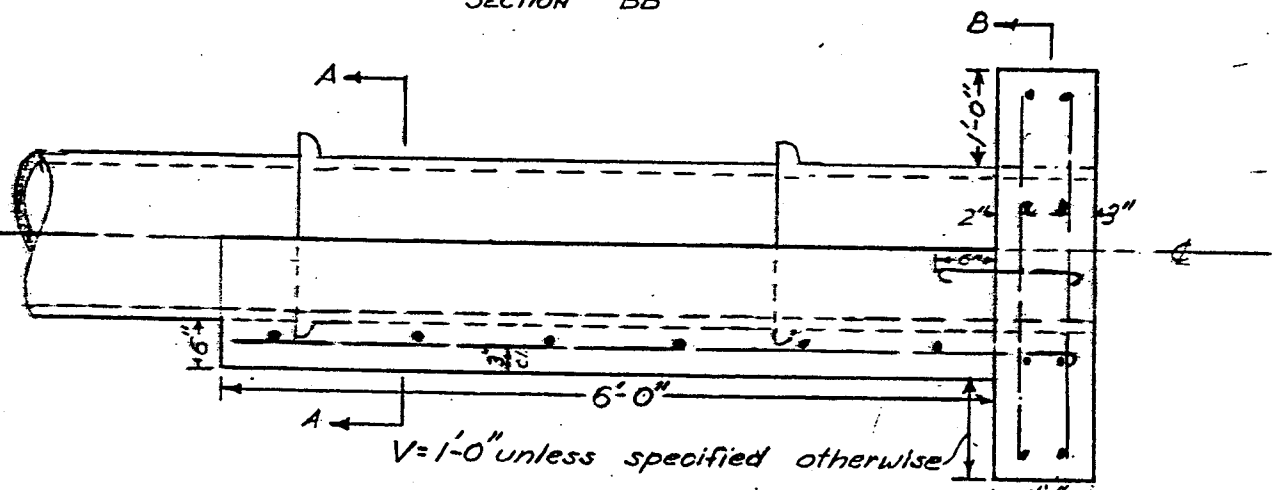
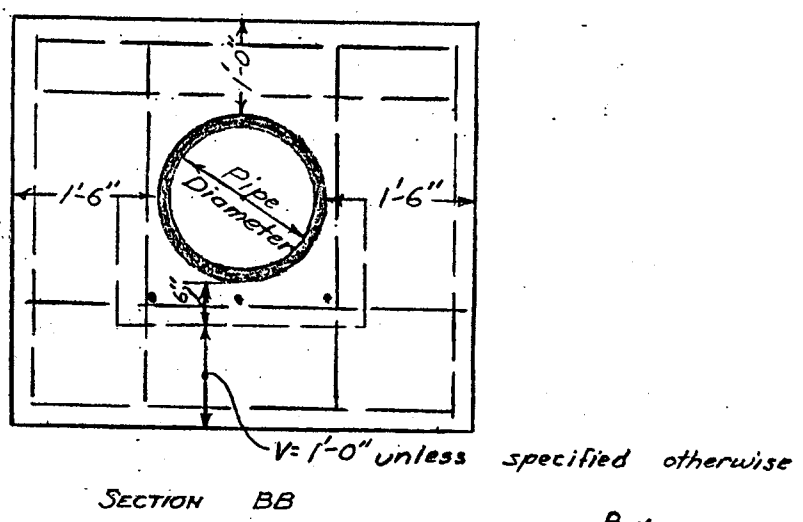
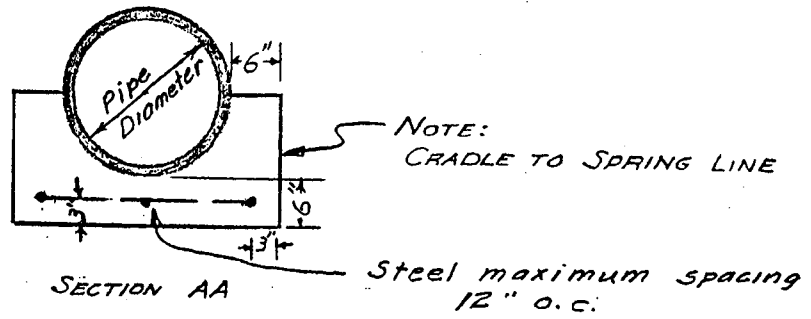


**SECTION B**  
Scale 3/4" = 1'-0"



**TOP VIEW**  
Scale 3/4" = 1'-0"

SHEET 1 OF 1		APPROVED BY <i>M. J. Yanna</i> CITY ENGINEER		REG. C. E. NO. 7061
CITY OF ALAMEDA CALIFORNIA ENGINEERING DEPARTMENT		DATE 7-5-68		CASE 6196
STANDARD		HANDHOLE FOR		14
STORM SEWER		DATE July 1968		SEALS As Noted
NO.	REVISED	BY	APP.	
	COMPILED	H. J. Wong		
	DRAWN	A. Tang		
	CHECKED	C. T. Coffey		



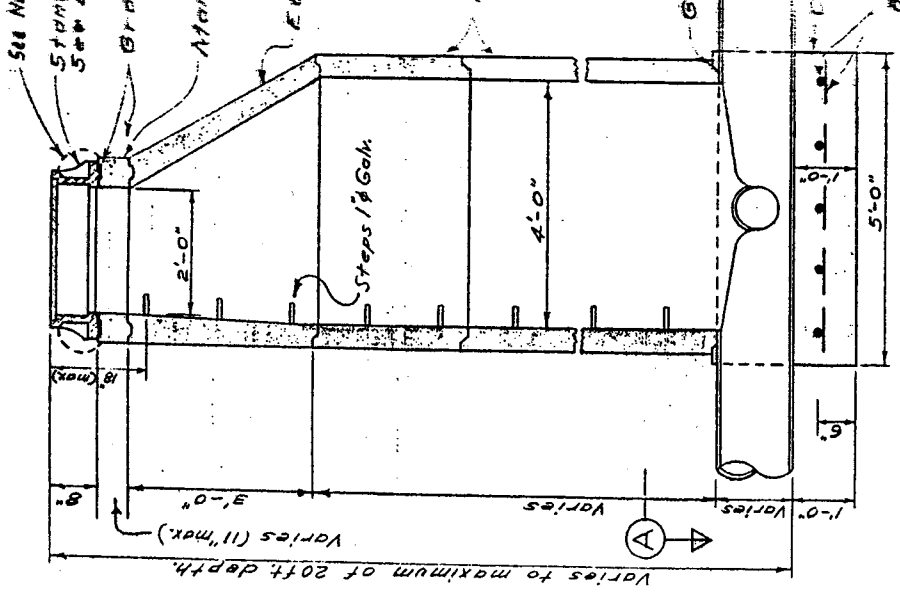
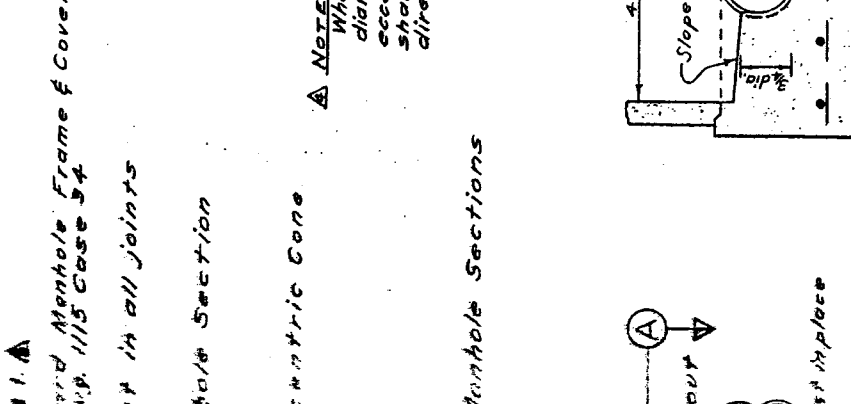
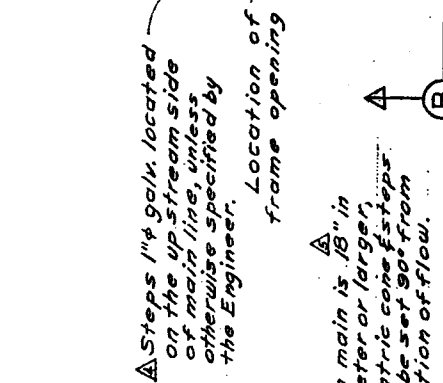
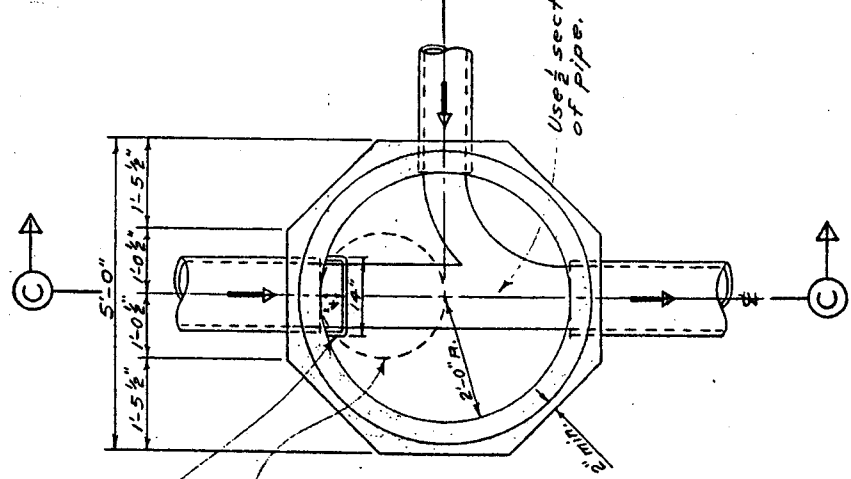
All Concrete to be Class B, Type II Cement.  
 All steel 2" clear unless noted otherwise.  
 Steel Reinforcement 1/2"  $\phi$  deformed bars 12" o.c. both ways.

*M. J. Hanna*  
 Approved by Chief Design Engineer

NO.	REVISED	BY	APVD.
COPILED			
DRAWN FONDA			
CHECKED WOOLDRIDGE			
DATE	SCALE		
16 JUNE 1952	NONE		

CITY OF ALAMEDA  
 CALIFORNIA  
 ENGINEERING DEPARTMENT  
**STANDARD**  
**STORM SEWER**  
**OUTFALL STRUCTURE**

SHEET	1	OF	1
APPROVED BY	<i>B. H. Maynard</i>		
	B. H. MAYNARD		
	CITY ENGINEER		
	REG. C. E. NO. 1359		
DATE	8-5-52		
DWG.	3832	CASE	12



See Note 1. A  
Standard Manhole Frame & Cover.  
See Dwg. 1115 Case 34  
Grout in all joints  
Manhole Section  
Eccentric Cone  
Manhole Sections  
Steps 1/4 Gals.  
Grout  
Cast in place  
1/4" @ 12" with wires  
1'-0" Varies  
3'-0" Varies  
2'-0" Varies  
8" Varies (11" max.)  
18" (max.)

Steps 1/4 gal. located on the upstream side of main line, unless otherwise specified by the Engineer.  
Location of frame opening

NOTE: When main is 18" in diameter or larger, eccentric cone steps shall be set 90° from direction of flow.

SECTION A  
Scale 1/2" = 1'-0"

SECTION B  
Scale 1/2" = 1'-0"

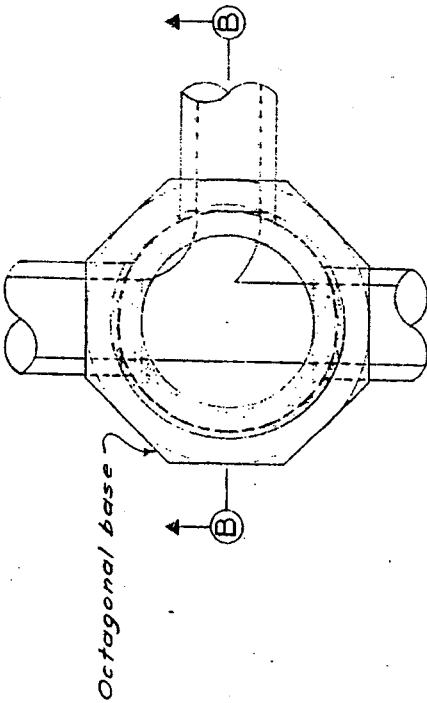
SECTION C  
Scale 1/2" = 1'-0"

NOTES  
1. A ring of mortar approximately 6" deep & extending past the outer edge of the ring shall be placed all around F on top of the bottom flange. The mortar shall be smoothly finished & have a slight slope to shed water away from the frame. (This condition applies in man pavement areas only). A standard street patch shall be used in paving areas.  
2. Steps shall be installed equally spaced at 18" centers minimum.  
3. External bands shall be applied.  
4. All joints shall be watertight.  
5. Use Type "A" Manhole for depth of cover on main sewer pipe over 36". See Dwg. 5432-34 for shallower depths.

SHEET	1	OF	1
APPROVED BY	M. J. Glanville CITY ENGINEER		
REG. C. E. NO.	7061		
DATE	1-16-64		
DWG. NO.	2815	CASE	34

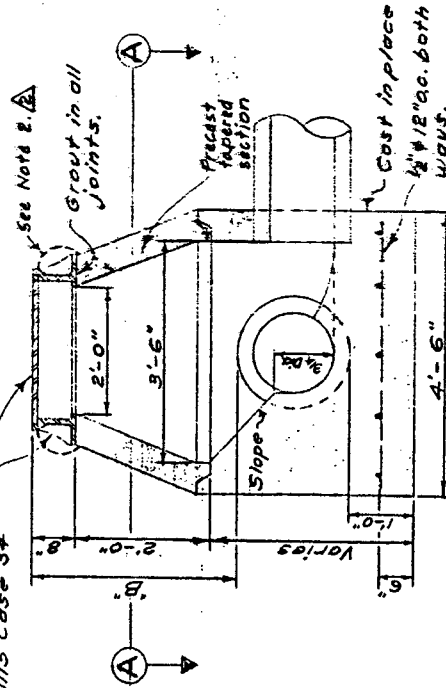
CITY OF ALAMEDA  
CALIFORNIA  
ENGINEERING DEPARTMENT  
STANDARD PRE-CAST  
CONCRETE MANHOLE  
TYPE "A"

NO.	DATE	BY	APP.
1	Jan. 1972	Terry MH	
2	Feb. 1970	Terry MH	
3	Feb. 1987	DFE	
4	May 1979	Railly MH	
COMPILED R.H. Long			
DRAWN W.T. Terry			
CHECKED R.H. Long			
DATE Jan. 1964			
SCALE 1/2" = 1'-0"			



SECTION A-A

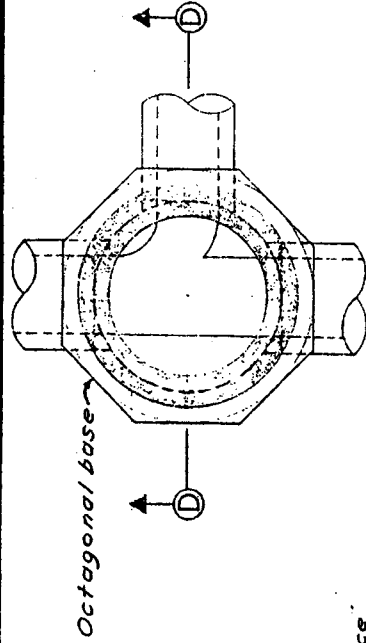
Sta. M.H. Frame & Cover  
See Dwg. 1115 Case 34



SECTION B-B

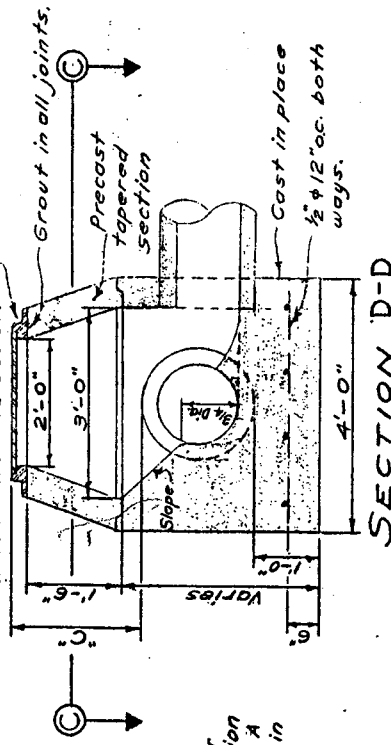
STANDARD MANHOLE  
TYPE B

This M.H. shall be used for values of "B" from 2'-6" to 3'-5".



SECTION C-C

Use a 3" frame (See Dwg. #857 Case 14) only when cover does not include a std. 8" M.H. Frame and Cover.



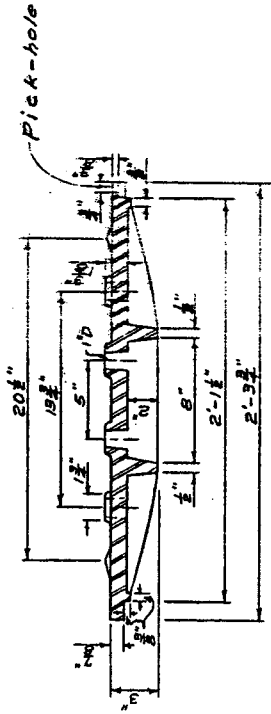
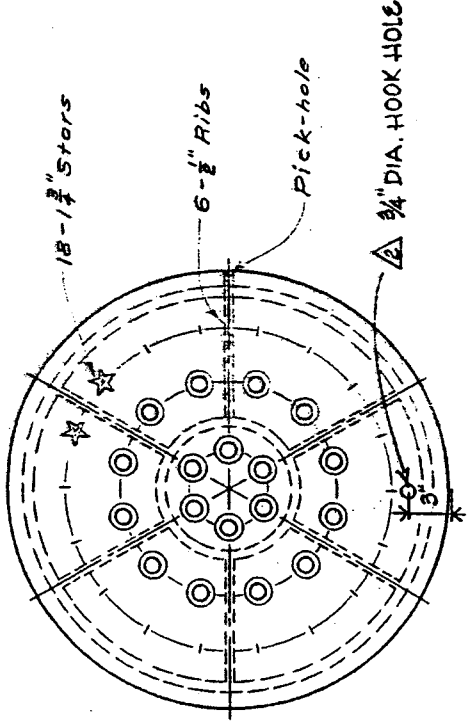
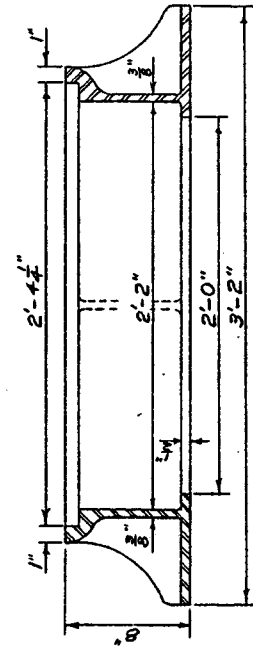
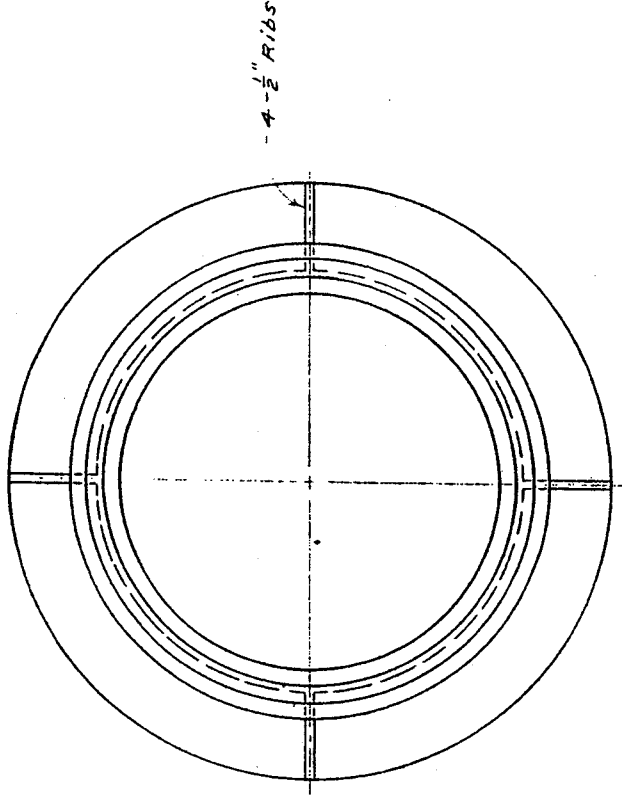
SECTION D-D

STANDARD MANHOLE  
TYPE C

This M.H. shall be used for values of "C" less than 2'-6".

- Notes:
1. Values "B" and "C" are depths from ground surface to top of main sewer pipe. Sewer laterals with cover less than that of main sewer may require the chipping out of a portion of the tapered section of the manhole to accommodate the pipe.
  2. A ring of mortar approximately  $\frac{1}{4}$ " deep will extend past the outer edge of the ring and on top of the bottom flange. The mortar shall be smoothly finished and have a slight slope to shed water away from the frame. (This condition applies in nonpaved areas only. A standard street patch shall be used in paved areas.)

CITY OF ALAMEDA CALIFORNIA ENGINEERING DEPARTMENT		SHEET 1 OF 1	
STANDARD MANHOLES TYPES "B" AND "C" SHALLOW DEPTH		APPROVED BY <i>M. J. Yanna</i> CITY ENGINEER	
NO. REVISED BY DATE		REG. C. E. NO. 7251	
COMPILED P.H. Long		DATE 12-4-63	
DRAWN W. Terry		D.W.G. 5432	
CHECKED P.H. Long		CASE 34	
DATE Nov. 1963		SCALE $\frac{1}{2} = 1'-0"$	



BODY CASTING

COVER

NOTE:

1. For sidewalks use solid flat top covers with concentric circle design as shown on Dwg. 4857 Case 14.
2. Cover and frame shall be machined to fit accurately so that cover shall not rock or rattle under the wheels of traffic.
3. **SOLID COVER WITHOUT HOLES (EXCEPT FOR PICK-HOOK HOLES) FOR SANITARY SYSTEM. FOR STORM SYSTEM, SOLID COVER OPTIONAL.**
4. AFTER ALL HORIZONTAL BEARING SURFACES HAVE BEEN MACHINED, CASTINGS SHALL BE DIPPED IN ASPHALT PAINT.

△ Re-drawn

△	1-16-69	MF	MF
△	10-3-79		
△	5-13-67	Terry	
NO.	REVISED	BY	APP.
COMPILED			
DRAWN W. Terry			
CHECKED R. R. Bullard			
DATE May 1967			
SCALE None			

CITY OF ALAMEDA  
CALIFORNIA  
ENGINEERING DEPARTMENT

STANDARD  
MANHOLE COVER

SHEET 1 OF 1	APPROVED BY <i>M. J. Hanna</i> CITY ENGINEER	REG. C. E. NO. 7961	CLASS
	DATE 5-24-67	DWG. NO. 1115	34