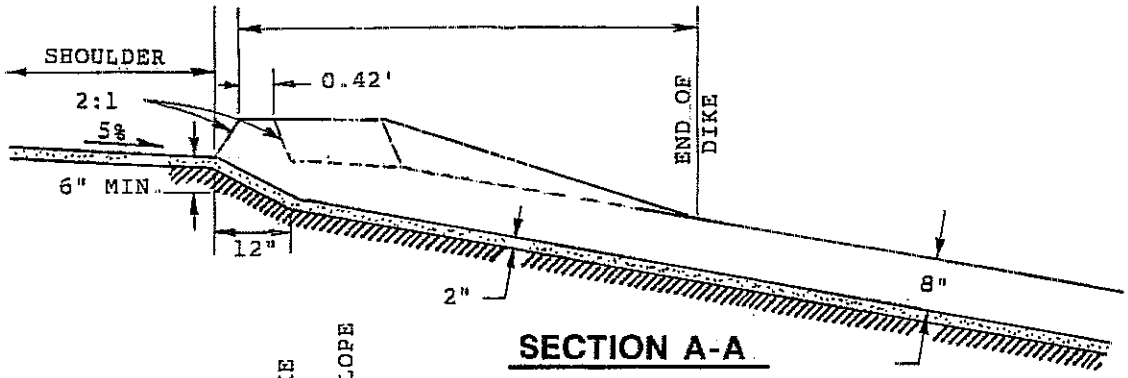
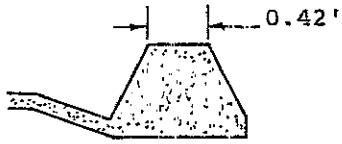
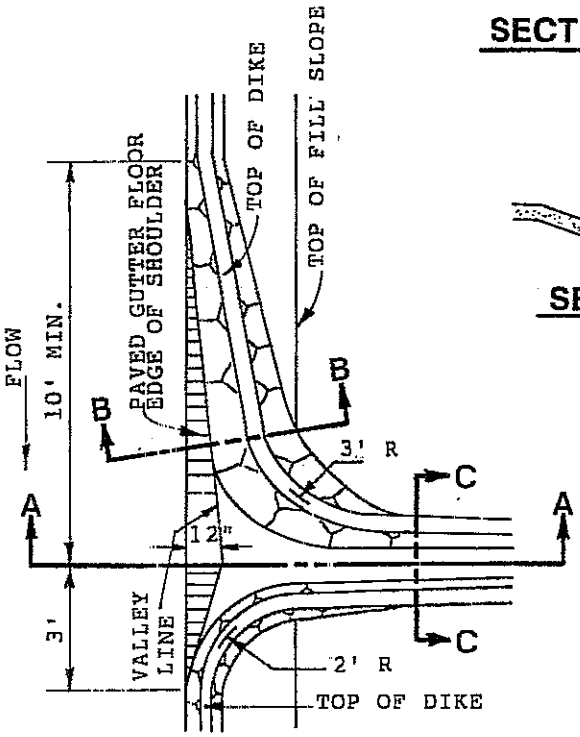
Drainage



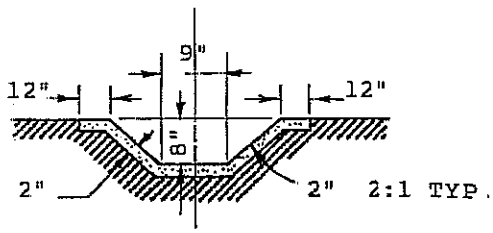
SECTION A-A



SECTION B-B



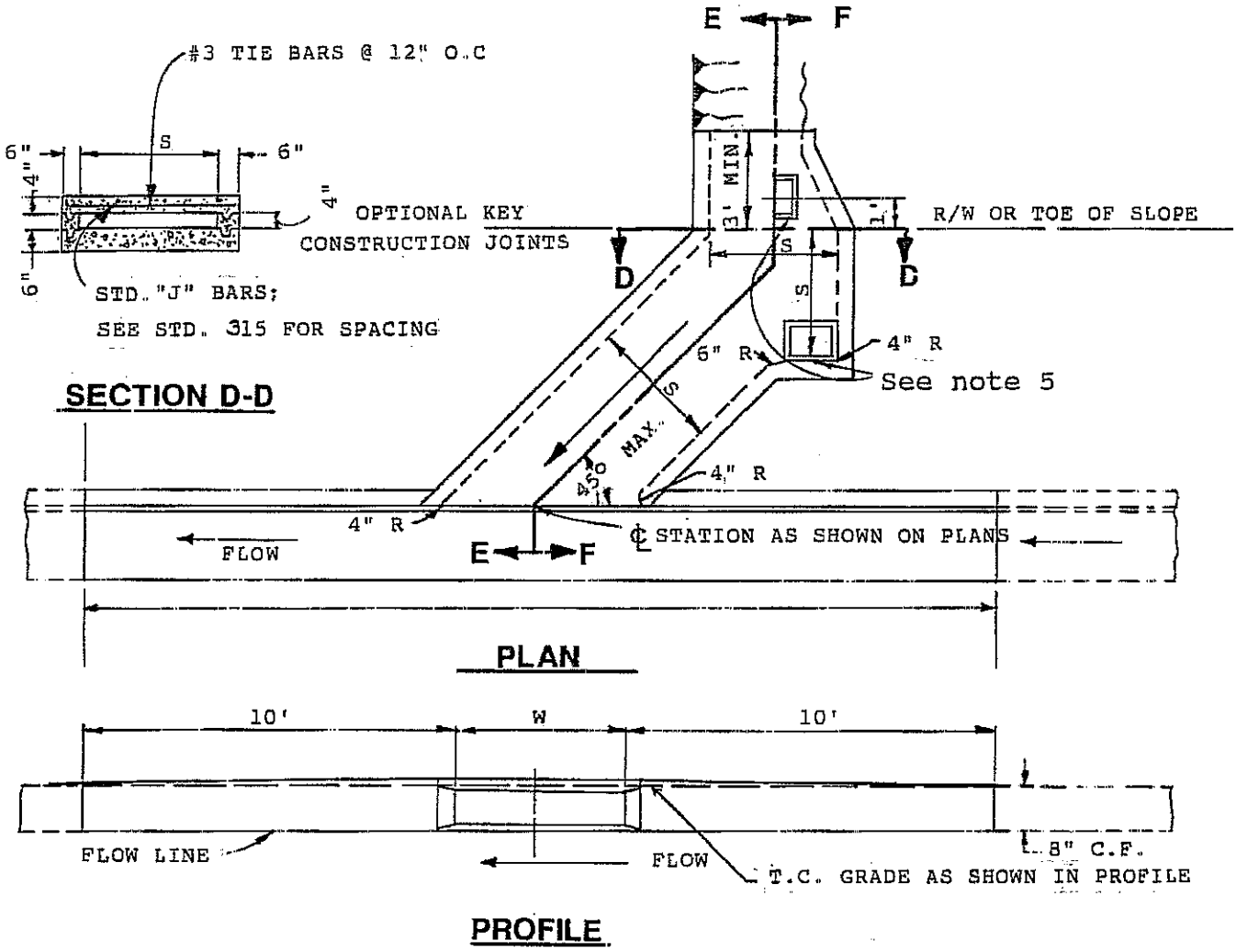
PLAN

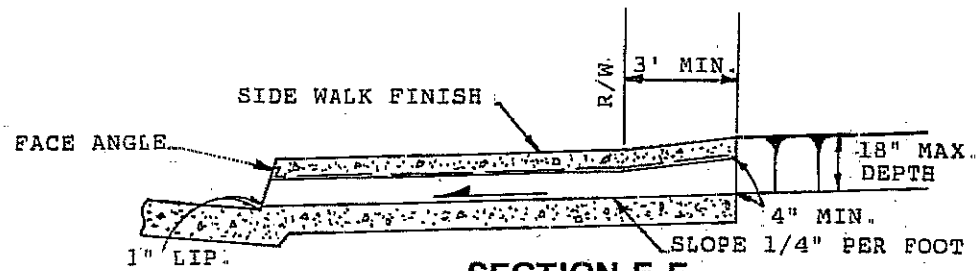


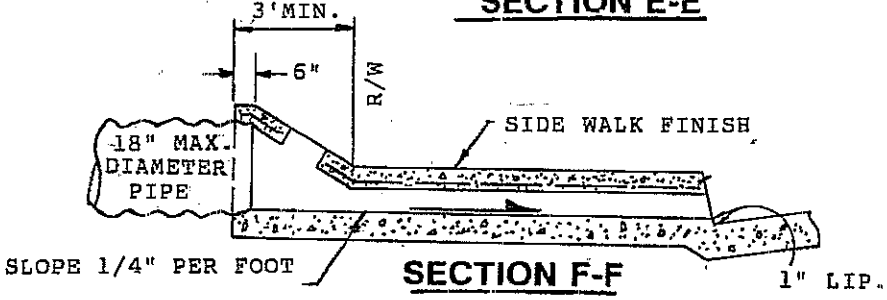
SECTION C-C

Section CC may also be semi-circular or vee provided the minimum depth is 8" and the minimum top width is 17".

APPROVED Kay Wellington 1-28-88 CITY ENGINEER	DATE	CITY OF CHINO PUBLIC WORKS DEPARTMENT	
DATE / REVISION	BY	STANDARD DRAWING	No.
		ASPHALT CONCRETE OVERSIDE DRAIN	300

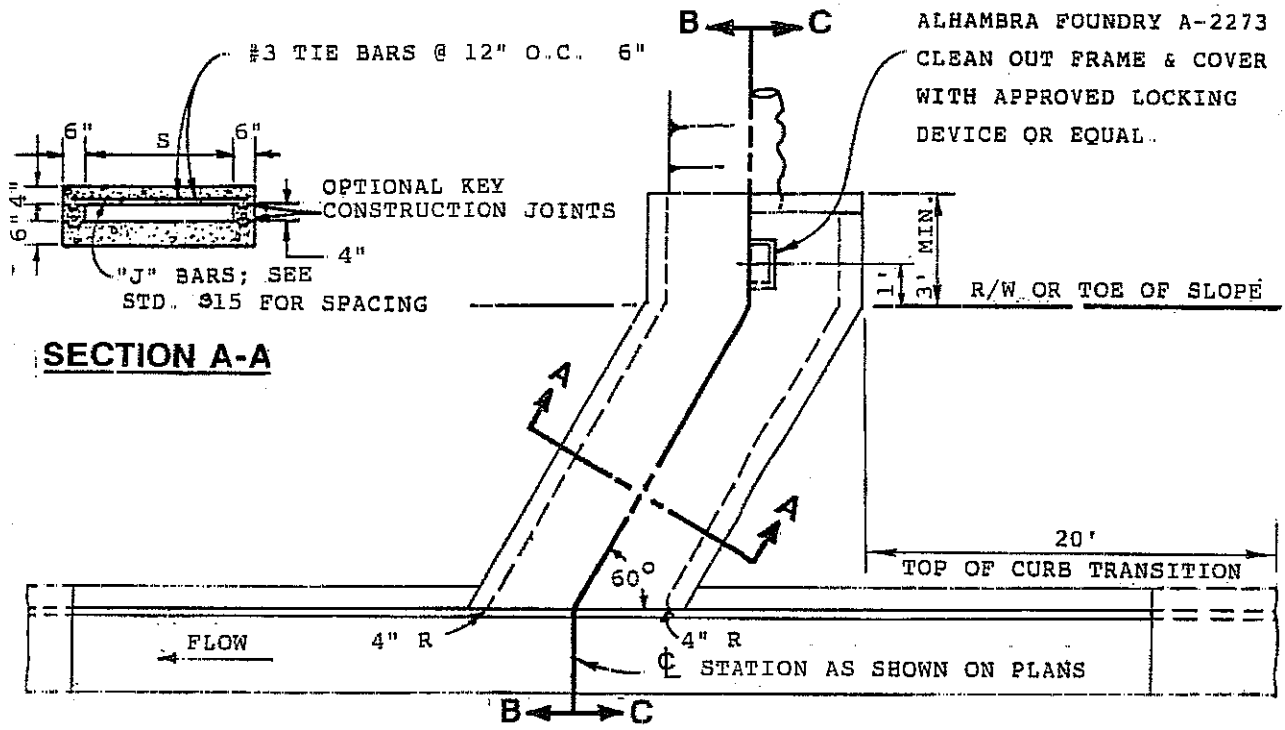


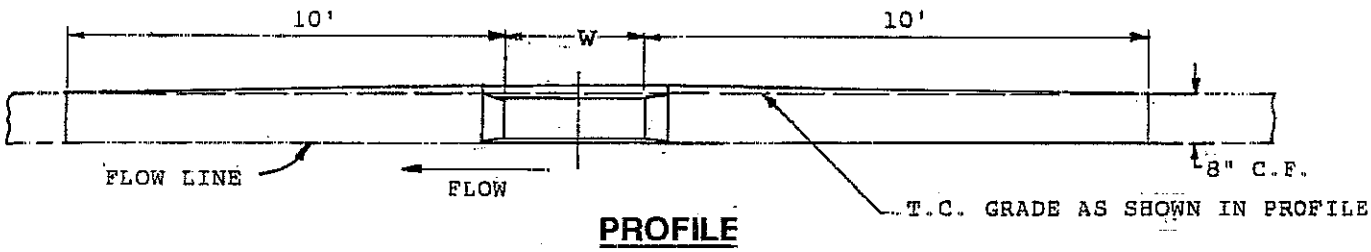




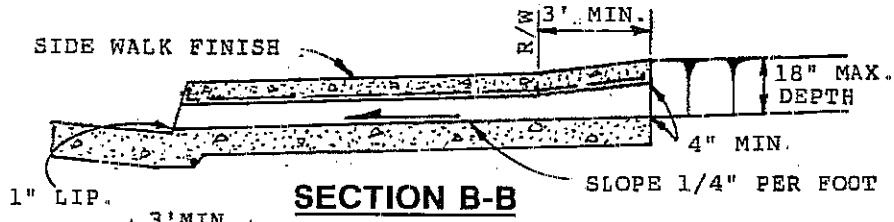
* See standard drawing 315 for details and notes.

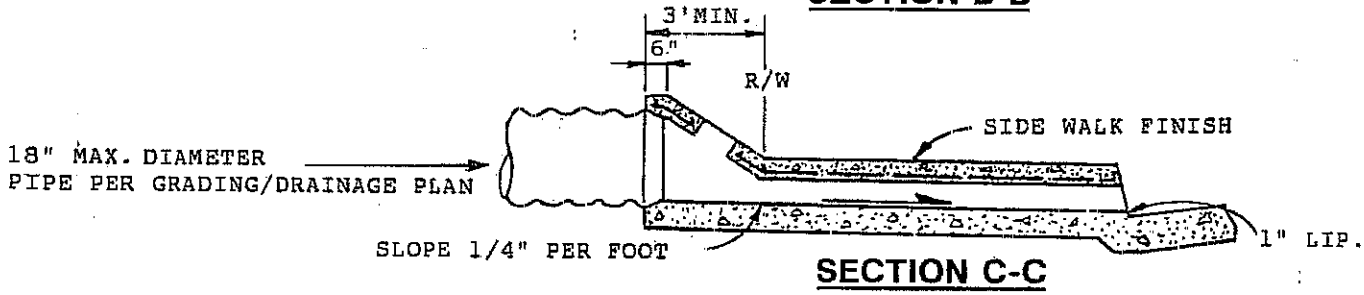
APPROVED Ray Wellington 1-28-99 CITY ENGINEER DATE			CITY OF CHINO PUBLIC WORKS DEPARTMENT	
DATE	REVISION	BY	STANDARD DRAWING	No.
			PARKWAY CULVERT TYPE "A"	305





* See standard drawing 315 for details and notes.





APPROVED Ken Wellington 1-28-99
CITY ENGINEER DATE

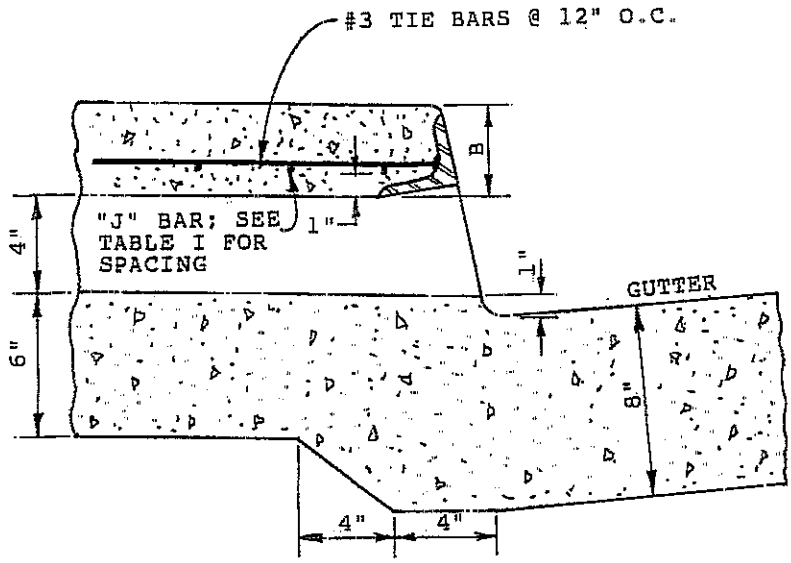
CITY OF CHINO
PUBLIC WORKS DEPARTMENT

DATE	REVISION	BY

STANDARD DRAWING No.

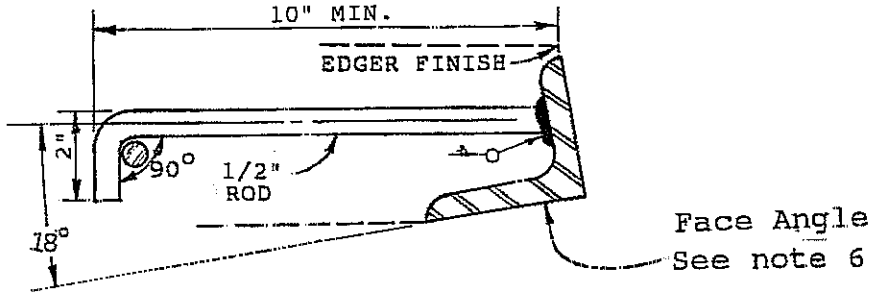
PARKWAY CULVERT TYPE "B"

310



SPAN S	B	SCHEDULE J-BARS SPACING C-C	SCHEDULE J-BARS LENGTH	ANCHOR
2'-0"	3"	7"	2'-9"	2
2'-6"	3"	7"	3'-3"	2
3'-0"	3"	7"	3'-9"	3
3'-6"	3"	6"	4'-3"	3
4'-0"	3"	5"	4'-9"	3
4'-6"	4"	6½"	5'-3"	3
5'-0"	4"	5"	5'-9"	3
5'-6"	4"	4"	6'-3"	3
6'-0"	4"	3½"	6'-9"	3

TABLE 1



NOTES:

1. Use type A parkway culvert when inlet velocities are 10' per second or greater. Use type B when less than 10' per second.
2. The floor shall have a steel trowel finish.
3. Exposed metal shall be galvanized after fabrication.
4. Span S, width W, the curb face and height of the opening are determined from hydraulic capacity requirements and dimensional limitations and shall be shown on the plans.
5. The clean-out frame and cover shall have an approved locking device. Alhambra Foundry A-2273 or equal.
6. For B=3", the face angle shall be $2\frac{1}{2}$" x 2" x $\frac{5}{16}$". For B=4", use $3\frac{1}{2}$" x 3" x $\frac{5}{16}$" angle.
7. Neilson studs may be used in place of J-bars.
8. Reinforcing steel shall clear 1" inside the concrete face.

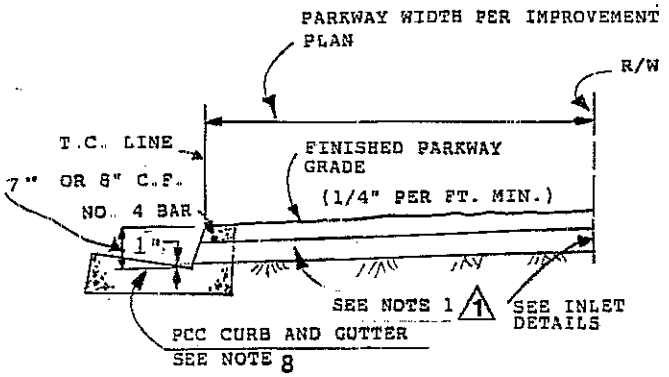
APPROVED [signature] 1-2007
CITY ENGINEER DATE

CITY OF CHINO
PUBLIC WORKS DEPARTMENT

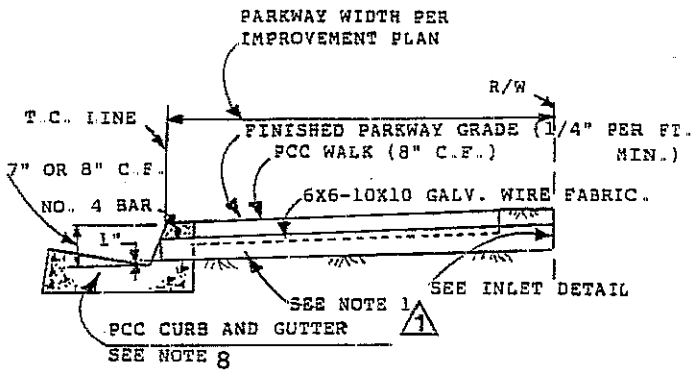
DATE	REVISION	BY

STANDARD DRAWING No.

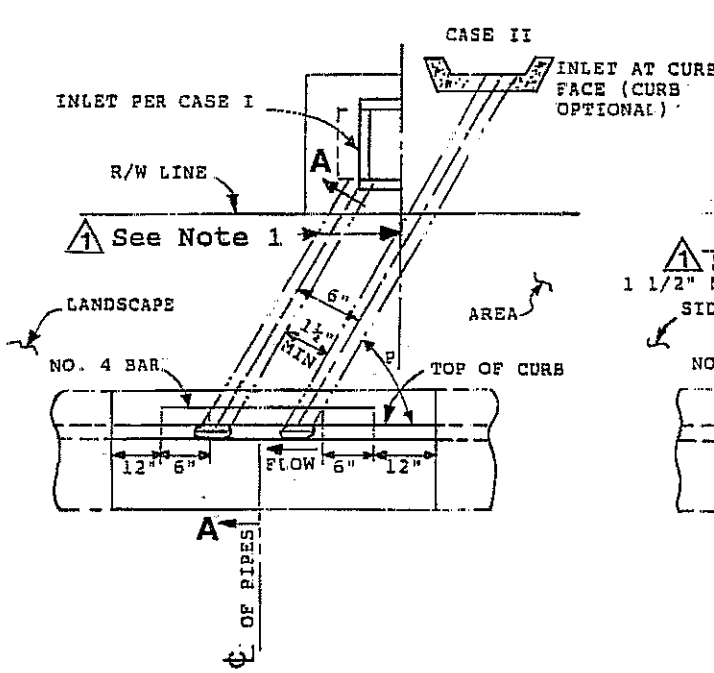
PARKWAY CULVERT TYPE "A" & "B" DETAILS & NOTES 315



SECTION A-A

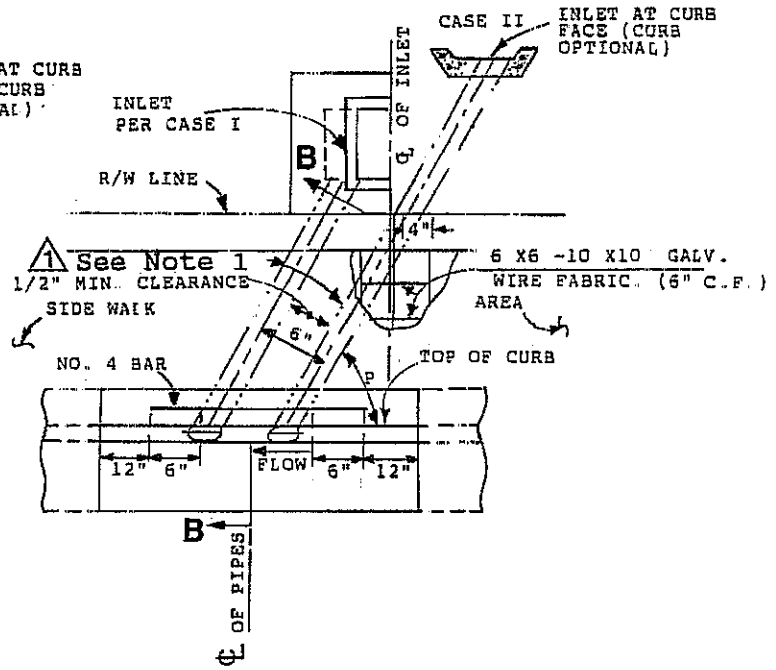


SECTION B-B



PARKWAY DRAIN PLAN

ALTERNATE 1 (NO SIDEWALK)



PARKWAY DRAIN PLAN

ALTERNATE 2 (SIDEWALK)

* See standard drawing 320 B for notes and inlet details.

APPROVED Ken Wellington 1-28-93
CITY ENGINEER DATE

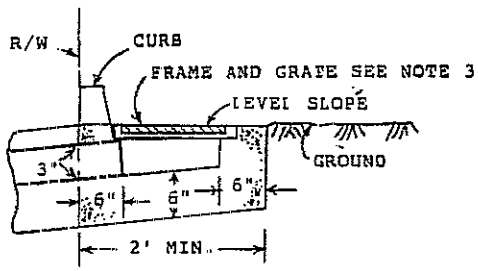
CITY OF CHINO
PUBLIC WORKS DEPARTMENT

DATE	REVISION	BY
7/15/93	REVISED NOTES 1	BAB

STANDARD DRAWING No.

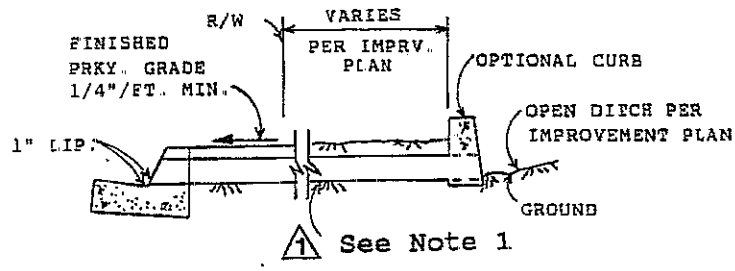
PARKWAY CULVERT TYPE "C"

320 A



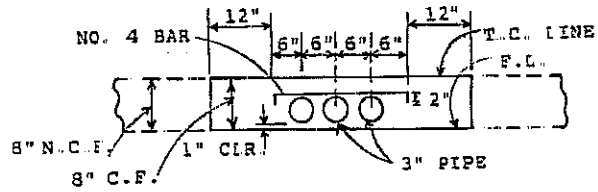
CASE I INLET

DROP INLET CATCH BASIN SECTION

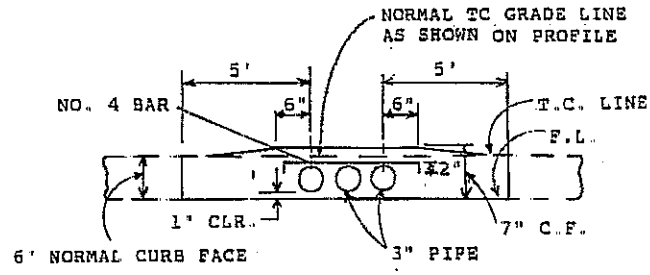


CASE II INLET

OPEN DITCH



CURB PROFILE

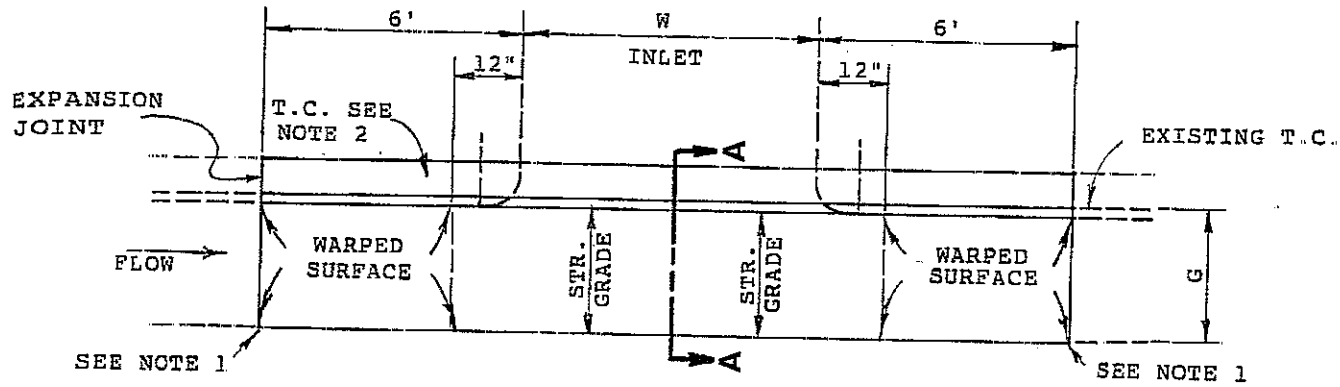


CURB PROFILE

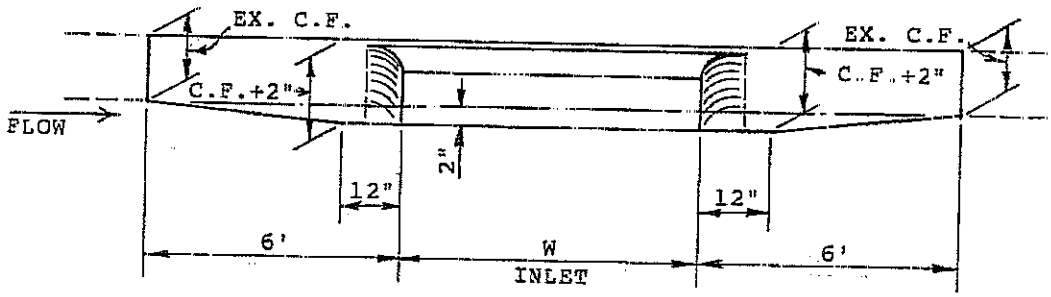
NOTES:

1. Up to 3 pipes, may be used to provide the required flow cross-section. Pipe shall be 3" or 4" in diameter ductile or cast iron per AWWA C151 (ANSI A21.51). In residential designs where only a single, 3" pipe is required, schedule 80 PVC may be used where approved by City Engineer. 1
2. The pipe at the outlet in the curb face shall be epoxied to provide a smooth, watertight joint.
3. Frame and grate shall be 14" X 24" cast iron, Alhambra Foundry A-2422 or pre-approved equal.
4. The inlet case, dimensions and elevations at the curb and gutter shall be specified on the improvement plan.
5. 1 Curb coring shall require approval of the City Engineer.
6. Angle P shall be a maximum of 45°, or unless approved by the City Engineer.
7. Sidewalk shall be removed between score lines.
8. Type, dimensions and elevations of P.C.C. curb and gutter per the engineering plans.

APPROVED Ray Wellington 1-28-99 CITY ENGINEER		DATE	CITY OF CHINO PUBLIC WORKS DEPARTMENT	
DATE	REVISION	BY	STANDARD DRAWING	No.
7/15/93	REVISED NOTES 1	RFB	PARKWAY CULVERT TYPE "C" DETAILS AND NOTES	320 B



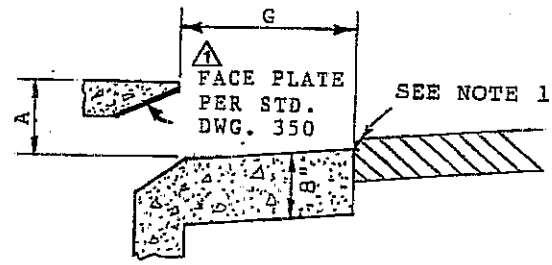
PLAN



ELEVATION

NOTES:

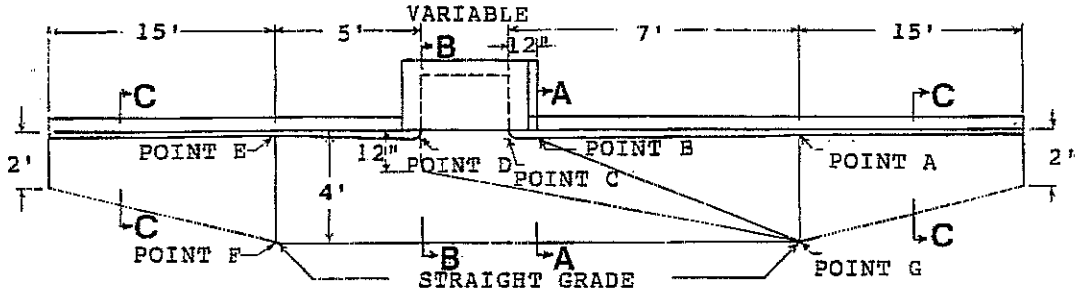
1. Elevation at outer edge shall conform to finish street surface.
2. Where no curb exists, curb shall be constructed between ends of local depression.
3. G = Width of existing gutter.
4. Concrete shall have compressive strength of class 560-C-3250 at 28 days.



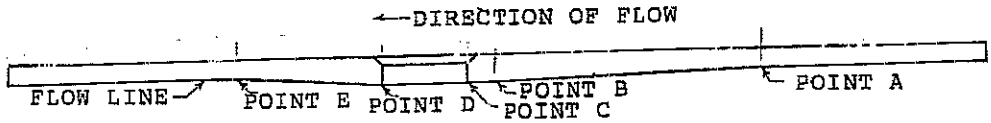
SECTION A-A

A=C.F.+2"

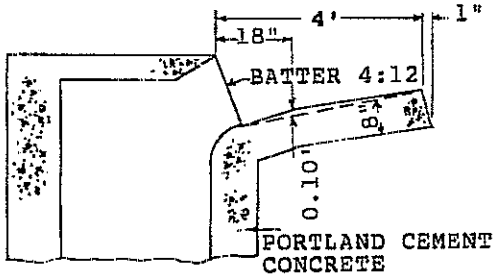
APPROVED Kay U. Wellington 1-28-99 CITY ENGINEER	DATE	CITY OF CHINO PUBLIC WORKS DEPARTMENT	
DATE	REVISION	BY	STANDARD DRAWING	No.
9/14/93	1 STD. DWG. #	RFB	LOCAL DEPRESSION TYPE "A"	325



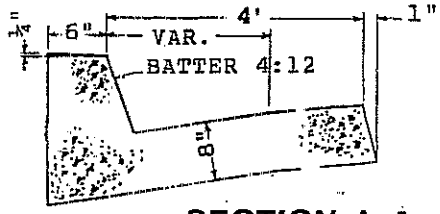
PLAN



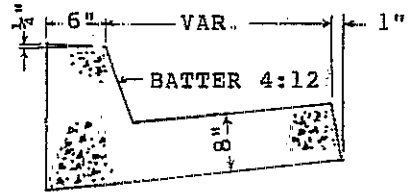
PROFILE



SECTION B-B



SECTION A-A



SECTION C-C

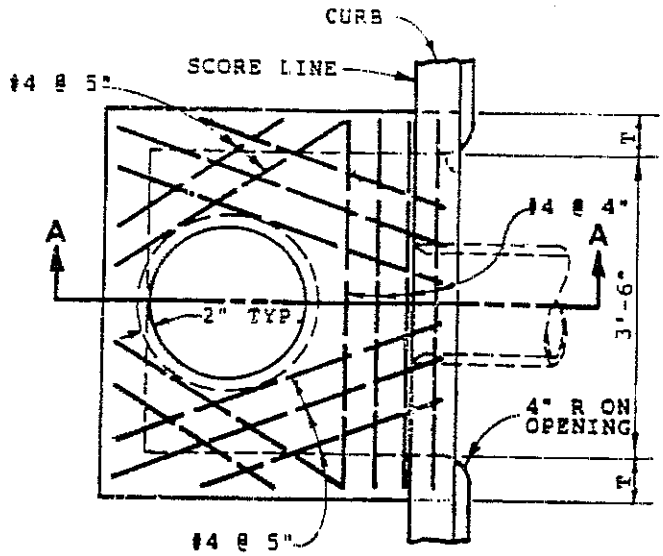
NOTES:

1. Concrete shall be class 560-C3250 PCC.
2. A minimum of 6" crushed aggregate base is required.
3. Control elevations shall be shown on the plans. Elevation stakes, set along valleys and ridge lines shall remain in place until just before final finishing.
4. Top-of-curb distances at designated points shall be as follows:

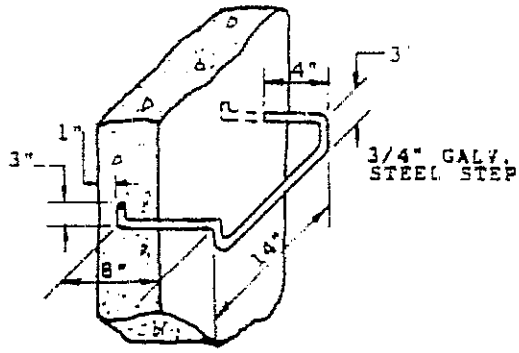
   8" at A and E
   12" at B, C and D
   5⅝" at F and G

5. Maximum slope from line to edge of gutter shall be 1¾" per foot.

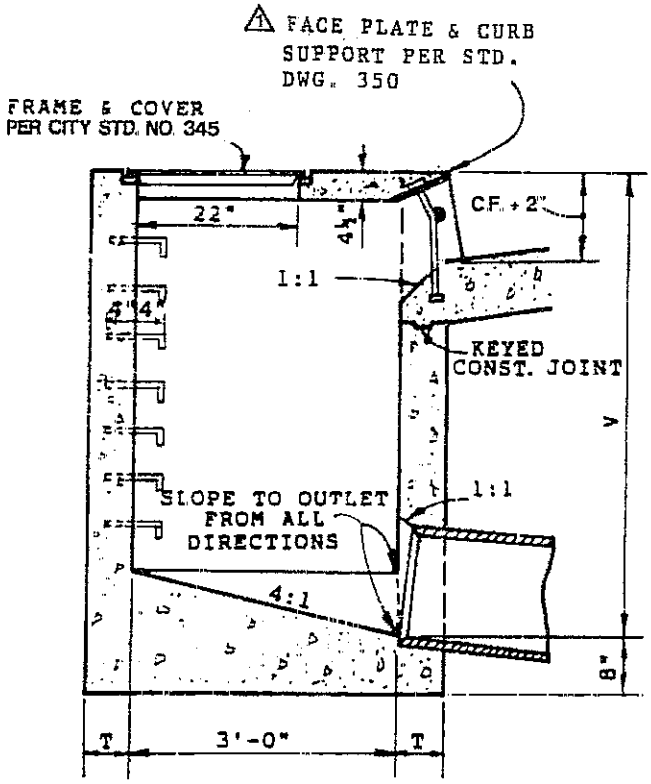
APPROVED Ken Wellington 1-28-89 CITY ENGINEER DATE			CITY OF CHINO PUBLIC WORKS DEPARTMENT	
DATE	REVISION	BY	STANDARD DRAWING	No.
			LOCAL DEPRESSION TYPE "B"	330



PLAN



STEP DETAIL



SECTION A-A

⚠2 NOTES:

1. Curb opening shall conform to adjacent curb alignment.
2. Reinforcing steel for walls and floor shall be #4 bars @ 18" both ways, place 1½" clear to inside of catch basin per L.A.C.F.C.D. Std. 2-D172.
3. Steps: None required where "V" is 4'-0" or less. Install one step 12" above floor when "V" is more than 4'-0" and less than 5'-0" where "V" is more than 5' – 0", steps shall be evenly spaced at 12" intervals from 12" above the floor to within 12" of the top of the box. Place steps in wall without pipe opening. An approved cast-in-place polypropylene step may be used in place of a galvanized steel step.
4. Pipe(s) can be placed in any wall.
5. Catch basin floors shall be sloped from all directions toward outlet pipe and shall have a wood trowel finish.
6. Dimensions:
   V = 4'-0" unless otherwise shown.
   T = 6" for V = 8'-0" or less.
   T = 8" for V = 8'-1" to 20'-0".
7. Curb face at catch basin opening: existing C.F. + 2" unless otherwise specified.
8. Concrete: FC' = 3250 PSI at 28 days.

APPROVED [signature] 1-28-97
CITY ENGINEER DATE

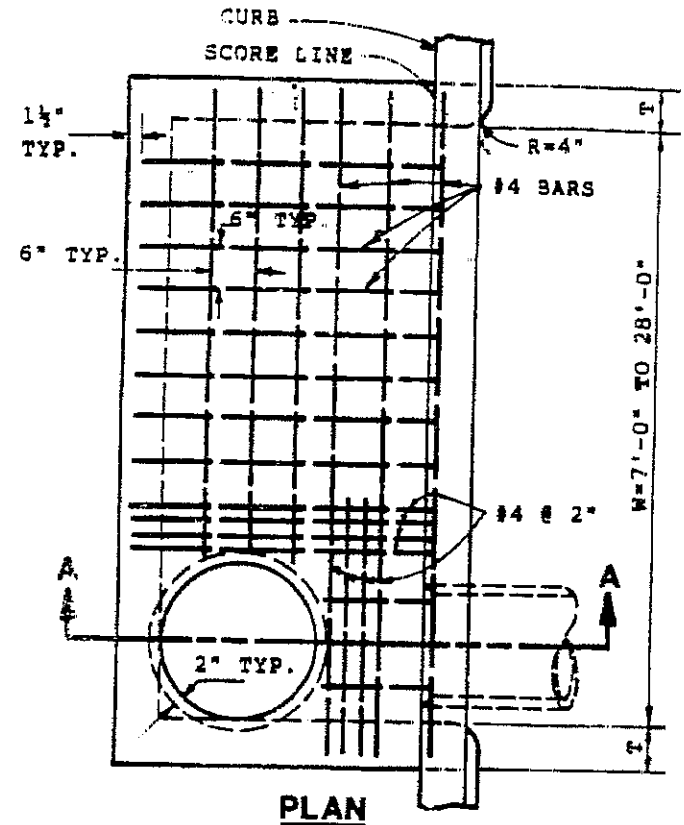
CITY OF CHINO
PUBLIC WORKS DEPARTMENT

DATE	REVISION	APP'D	BY
9/14/93	⚠1 STD. DWG #		RFB
1/13/03	⚠2 REVISED & CORRECTED NOTES	[signature]	G.E.D.

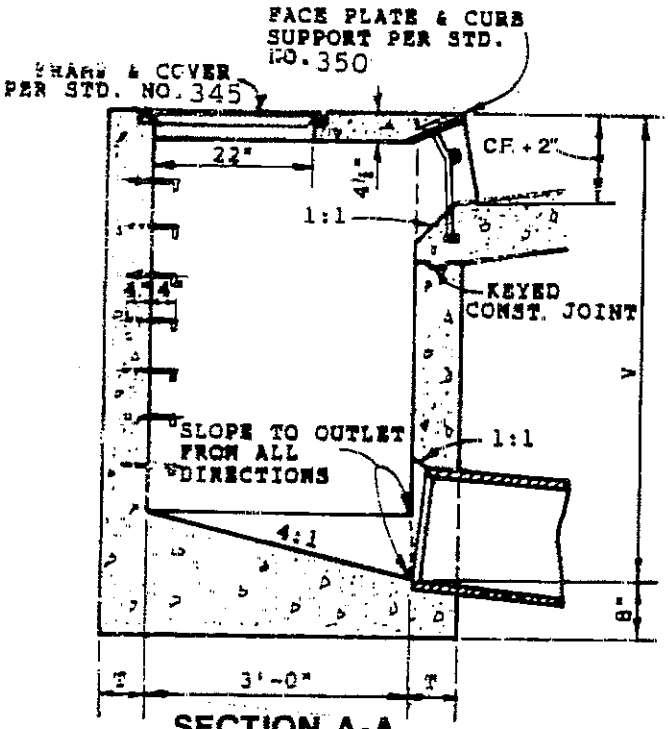
STANDARD DRAWING

CATCH BASIN I

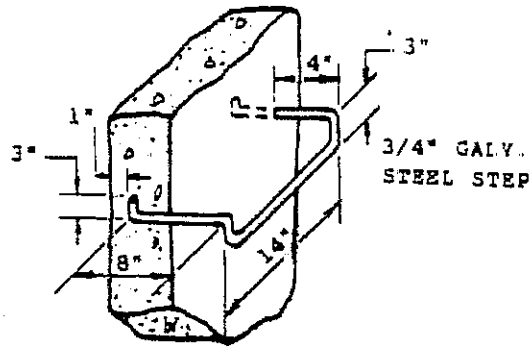
No. 335



PLAN



SECTION A-A



STEP DETAIL

⚠ NOTES:

1. Curb opening shall conform to adjacent curb alignment.
2. Reinforcing steel for walls and floor shall be #4 bars @ 18" both ways, place 1½" clear to inside of catch basin per L.A.C.F.C.D. Std. 2-D172.
3. Steps: None required where "V" is 4'-0" or less. Install one step 12" above floor when "V" is more than 4'-0" and less than 5' –0" where "V" is more than 5' – 0", steps shall be evenly spaced at 12" intervals from 12" above the floor to within 12" of the top of the box. Place steps in wall without pipe opening. An approved cast-in-place polypropylene step may be used in place of a galvanized steel step.
4. Pipe(s) can be placed in any wall.
5. Catch basin floors shall be sloped from all directions toward outlet pipe and shall have a wood trowel finish.
6. Dimensions:
   V = 4' -0" unless otherwise shown.
   T = 6" for V = 8'-0" or less.
   T = 8" for V = 8'-1" to 20'-0".
7. Curb face at catch basin opening: existing C.F. + 2" unless otherwise specified.
8. Concrete: FC' = 3250 PSI at 28 days.

APPROVED Kenneth Robertson 1-28-03
CITY ENGINEER DATE

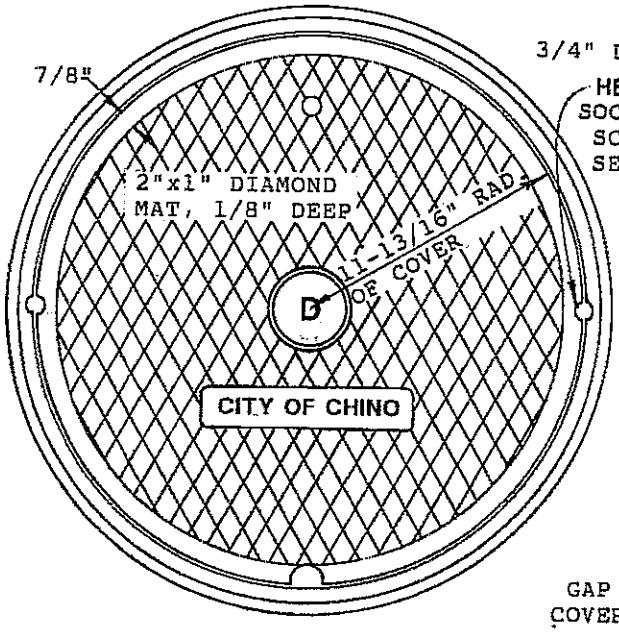
CITY OF CHINO
PUBLIC WORKS DEPARTMENT

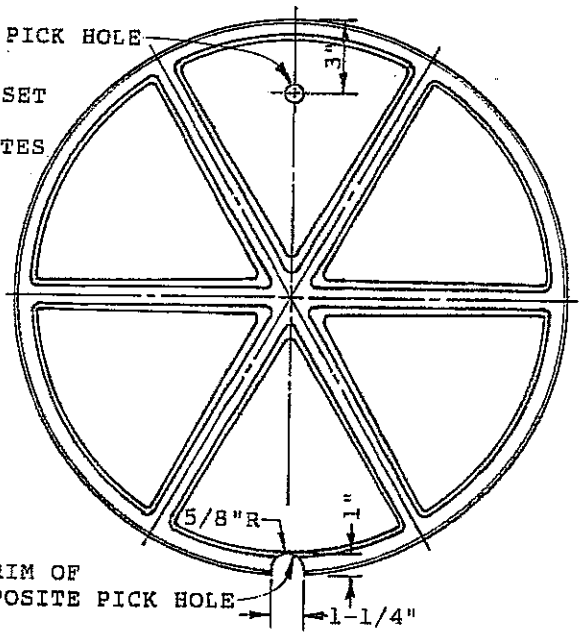
DATE	REVISION	APP'D	BY
1/15/03	⚠ Revised & Corrected Notes	[illegible]	G.E.D.

STANDARD DRAWING

CATCH BASIN II

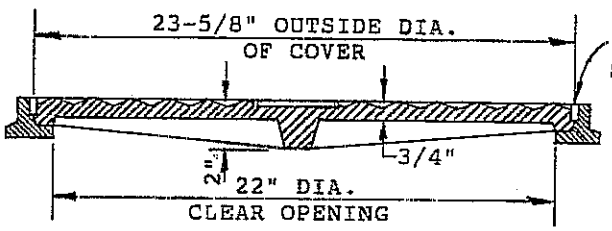
No. 340



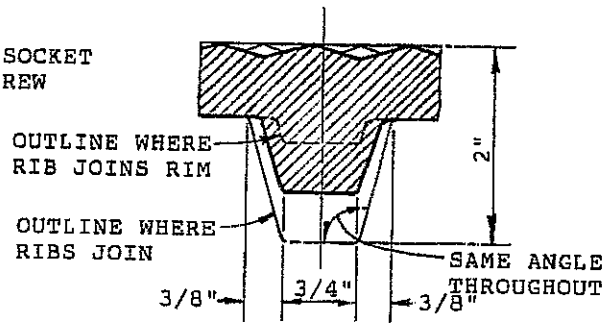


TOP OF MANHOLE FRAME & COVER

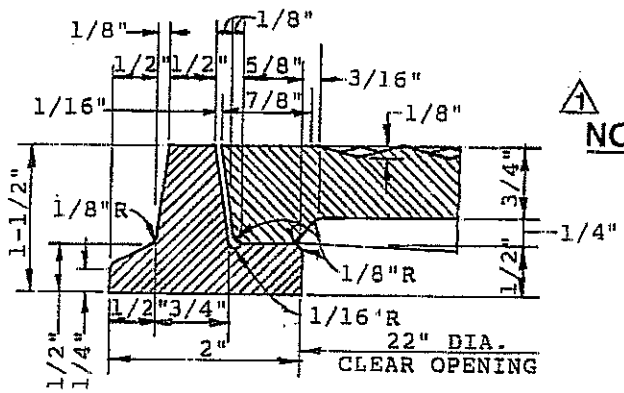
BOTTOM OF MANHOLE COVER



CROSS SECTION THRU FRAME & COVER



CROSS SECTION THRU RIB AT MID RADIUS



CROSS SECTION THRU RIM

APPROX. WEIGHT FRAME 30 lbs. COVER 85 lbs.

NOTES:

1. Manhole frame and cover shall be Alhambra Foundry No. A-1530 or approved equal.
2. Material shall conform to A.S.T.M. A48M Class 35B
3. Covers shall be cast with the letter "D" for storm drain and "CITY OF CHINO" as shown on this standard.
4. Two 3/4" x 3/4" hex socket set screws shall be installed 90° to the pick hole in holes drilled and tapped 1" in depth as shown on this standard.
5. All parts of the frame and cover, except machined surfaces, shall be coated with asphaltum paint
6. Catch basin manhole frame and cover shall be manufactured and installed per "Standard Plans and Standard Specifications for Public Works Construction." (latest edition)

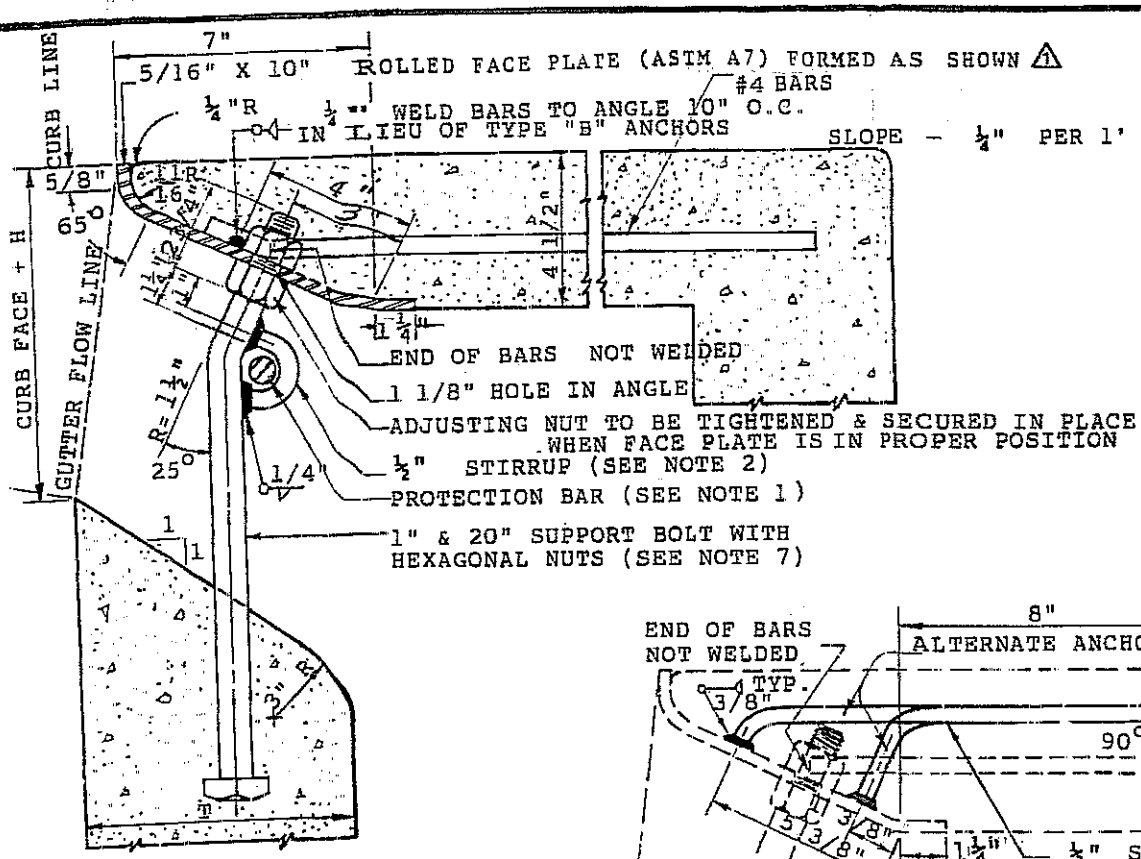
APPROVED _____ CITY ENGINEER DATE 1-23-01

CITY OF CHINO
PUBLIC WORKS DEPARTMENT

DATE	REVISION	APP'D	BY
10/3/00	1 TITLE WAS "STORM DRAIN MANHOLE" ~ P.N. WAS A-1170 ~ REVISED NOTES ~ ADDED NOTE #6		G.E.D.

STANDARD DRAWING No.

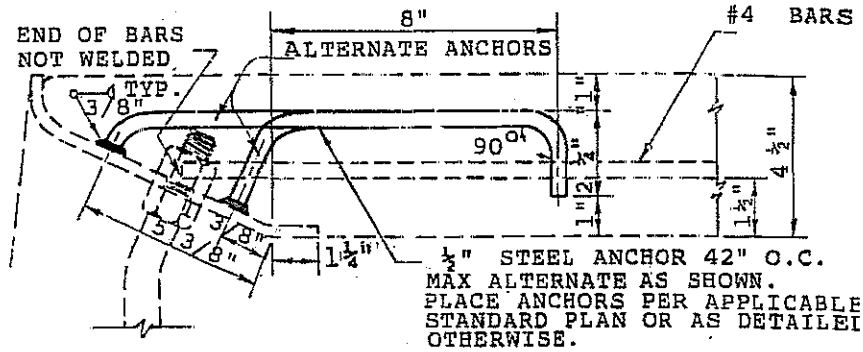
1 **CATCH BASIN MANHOLE FRAME & COVER** 345



SECTION OF BASIN INLET

WITH

TYPE "A" FACE PLATE ANCHORAGE



TYPE "B" FACE PLATE ANCHORS

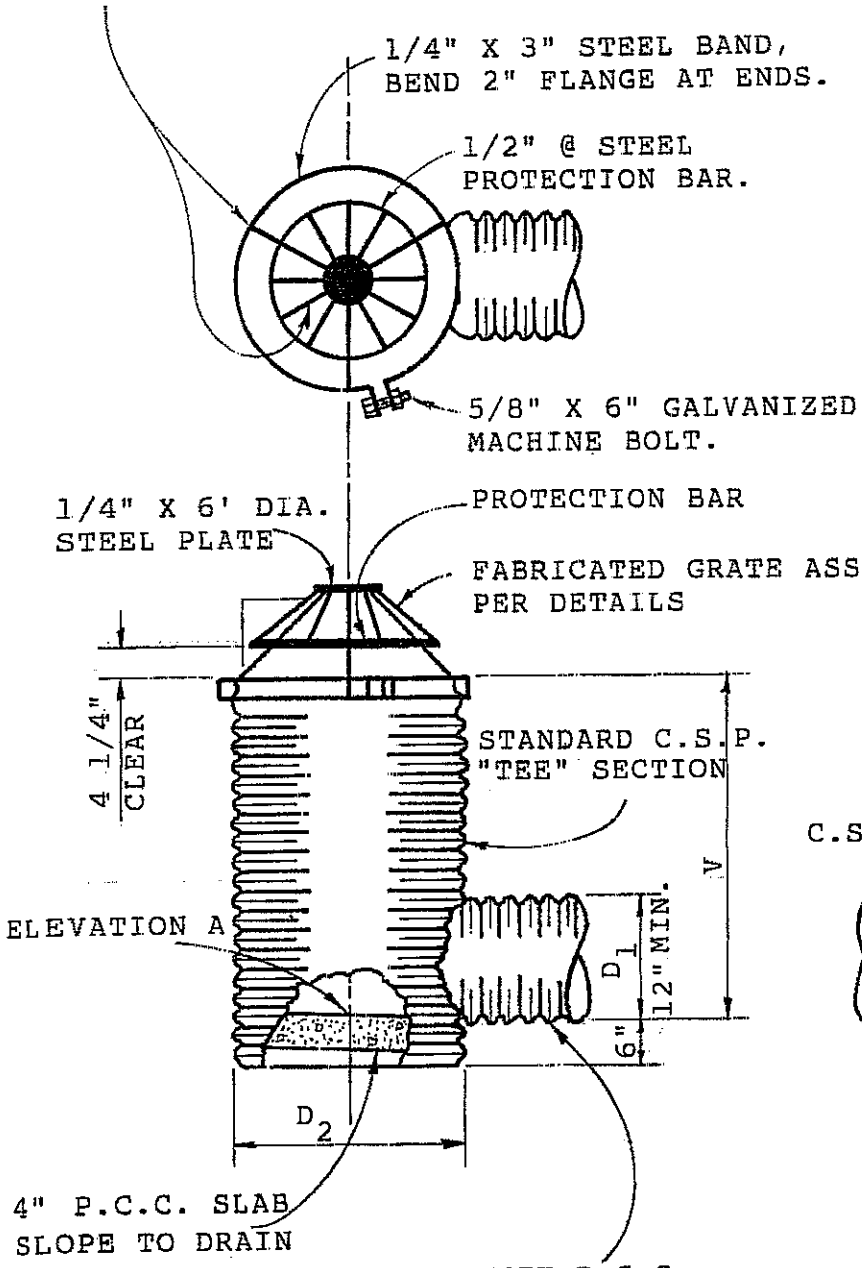
NOTES:

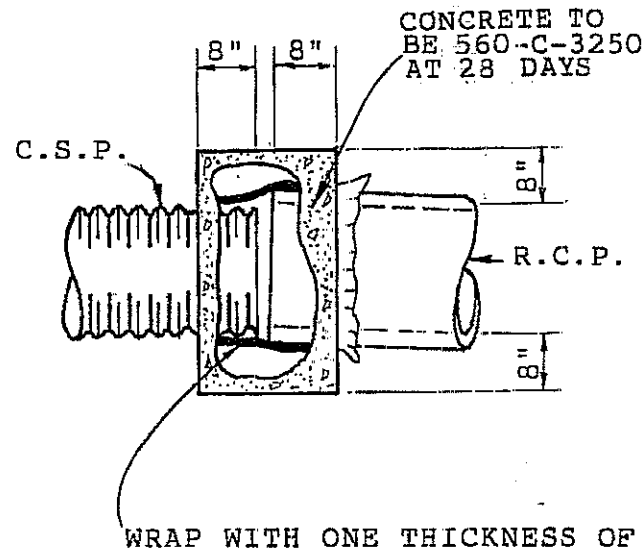
1. When curb face exceeds 9 1/4" a plain round steel protection bar 1" in dia. shall be installed. Bar shall be embedded 5" at each end.
2. A stirrup shall be welded to each bolt when a protection bar is required.
3. T = 8" min. when lenth of opening exceeds 7'0".
4. All exposed metal parts shall be galvanized.
5. When required by length of opening, face plate may be delivered in sections and butt welded in place. All galvanizing damaged by welding shall be painted with zinc dust primer or equal.
6. Type "A" or type "B" anchorage may be used at contractor's option.
7. Support bolts shall be installed when length of opening exceeds 7'-0" and shall be spaced at not more than 7'-0" on center and not less than 5'-0" on center.
8. When protection bar is required and length of openings 7'-0" or less, said bar shall be located 5" behind curb face and 4" above gutter flow line.

APPROVED Ray Wellington 1-28-97 CITY ENGINEER		DATE	CITY OF CHINO PUBLIC WORKS DEPARTMENT	
DATE	REVISION	BY	STANDARD DRAWING	No.
9/14/93	⚠ "FACE" ADDED	RFB	**STANDARD CATCH BASIN INLET**	350

NOTES:

1. V, D_1, D_2 and elevation "A" shall be shown on the construction plans.
2. Grate assembly shall be fabricated to fit C.S.P. of size "D_2".
3. Grate assembly shall be galvanized after fabrication.
4. R.C.P. shall be sized to fit future catch basin design.
5. Grate assembly shall be fabricated to fit the outside diameter of standard junction structure shaft if indicated on construction plans.





COLLAR DETAIL

APPROVED Ray Wellington 1-28-99
CITY ENGINEER DATE

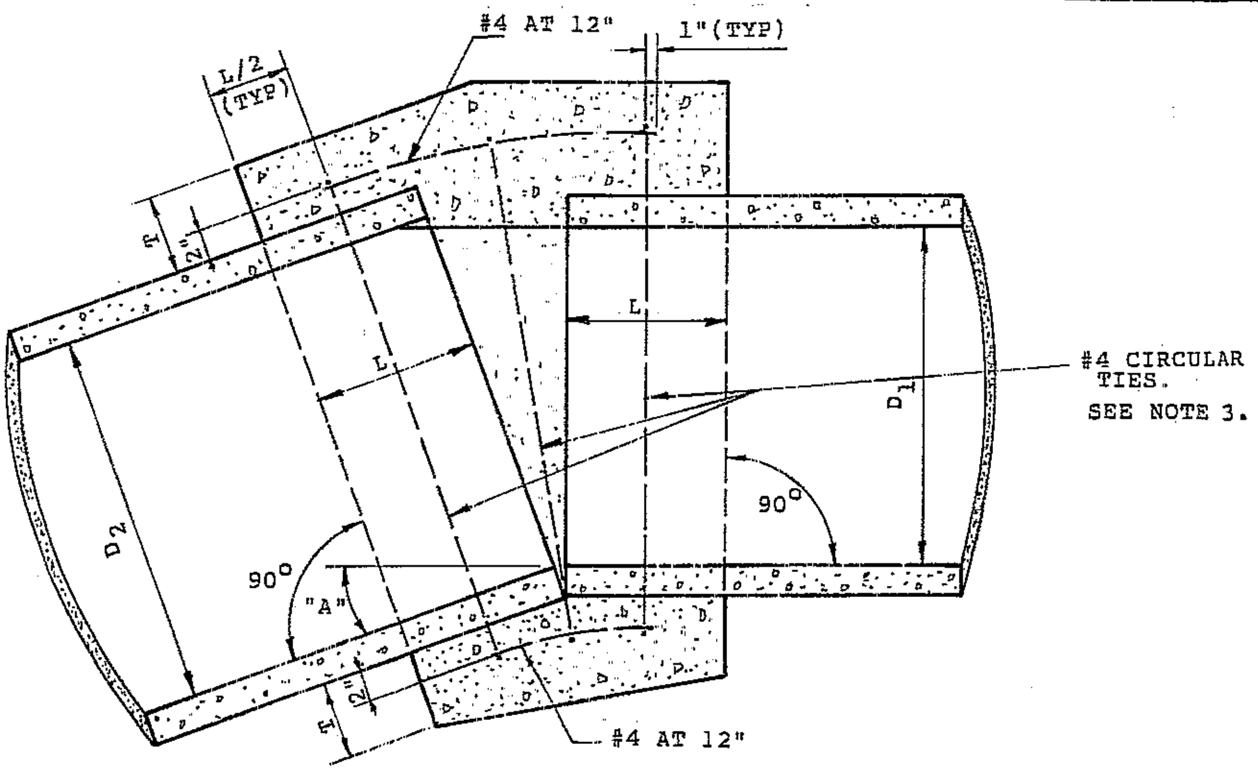
CITY OF CHINO
PUBLIC WORKS DEPARTMENT

DATE	REVISION	BY

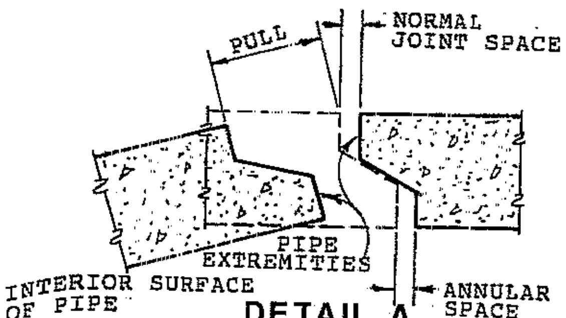
STANDARD DRAWING No.

TEMPORARY C.S.P. DROP INLET

355

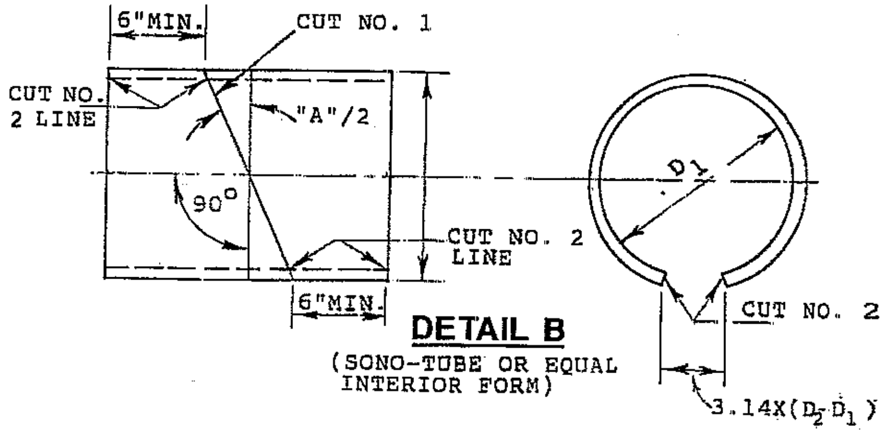


PLAN



DETAIL A

TYPICAL JOINT FOR R.C.P.



DETAIL B

(SONO-TUBE OR EQUAL INTERIOR FORM)

* See Standard Drawing #360 B for notes.

APPROVED [signature] 1-28-8?
CITY ENGINEER DATE

DATE	REVISION	BY

CITY OF CHINO
PUBLIC WORKS DEPARTMENT

STANDARD DRAWING	No.
REINFORCED CONCRETE COLLAR	360 A

NOTES:

1. A concrete collar is required whenever D1 is not equal to D2 or the permitted deflection at a pipe joint is exceeded; that is, when angle "A" is greater than the permitted deflection angle. (see table).
2. Concrete collars shall not be constructed on mainline storm drains unless shown on the plans or ordered by the engineer.
3. Reinforcing shall be used where the pipe dia. is greater than 21" and on all pipes where the pull between the extremities (see detail A) is 2 1/2" or longer.
4. Circular ties:

PIPE DIAMETER	SPACE BETWEEN PIPE EXTREMITIES	NO. OF CIRCULAR TIES
21" OR LESS	2 1/2"	3
24" TO 30"	2 1/2" OR LESS	3
33" TO 57"	2 1/2" OR LESS	4
60" TO 66"	2 1/2" OR LESS	5

   Where the space between the pipe extremities exceeds 2 1/2", the number of circular ties shall be increased to maintain a max. spacing of 5" center to center. Circular ties shall have a dia. of 5" greater than the outside dia. of the larger pipe.
5. For pipe larger than 66" in dia. a special collar detail shall be delineated on the project plans.
6. Where the pipe is 21" or less in dia. an interior form of unsealed sons-tube, or equal (see detail B), shall be used to provide a smooth interior joint. The paper form may be left in place. When the pipe is 24" or larger a removable interior form shall be used or the interior joint shall be completely filled with mortar and neatly pointed.
7. Where the plans of different diameters are joined with a concrete collar, "L" used shall be that for the larger pipe and the external dia. of the collar shall be equal to the outside dia. of the larger pipe plus 2T for the larger pipe. A concrete collar shall not be constructed connecting a larger dia. pipe upstream to a smaller dia. pipe downstream, unless shown on the improvement plans or ordered by the engineer.
8. The value for angle "A" shall be shown on the improvement plans.
9. Where the slope of the upstream pipe is greater than the slope of the downstream pipe,, join soffits. Where the slope of the upstream pipe is less than the slope of the downstream pipe, join inverts.
10. Beveled pipe may be used in lieu of a concrete collar if approved by the engineer.
11. Concrete: FC' = 3250 psi at 28 days.

APPROVED Ray Wellington 1-28-88
CITY ENGINEER DATE

CITY OF CHINO
PUBLIC WORKS DEPARTMENT

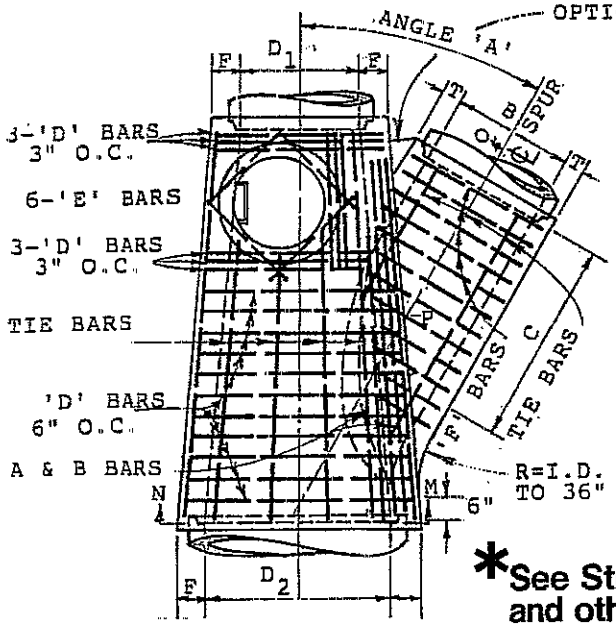
DATE	REVISION	BY

STANDARD DRAWING No.

REINFORCED CONCRETE COLLAR-NOTES

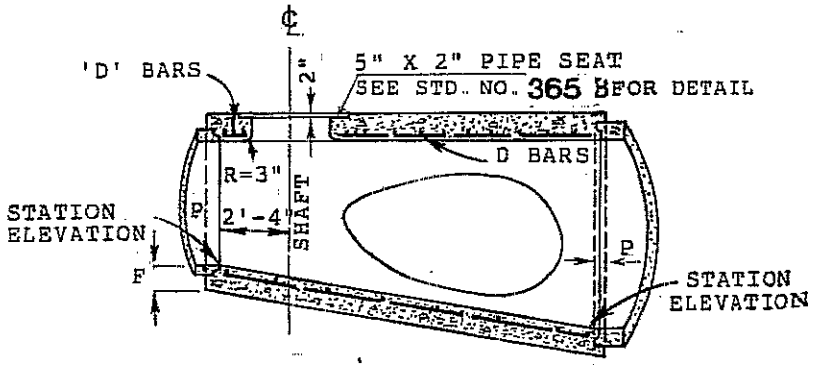
360B

3-#4 'J' BARS, 4'-8" LONG, 3" O.C.
CONTINUE ADDITIONAL BARS 6" O.C.
TO INSIDE EDGE OF MANHOLE.



PLAN

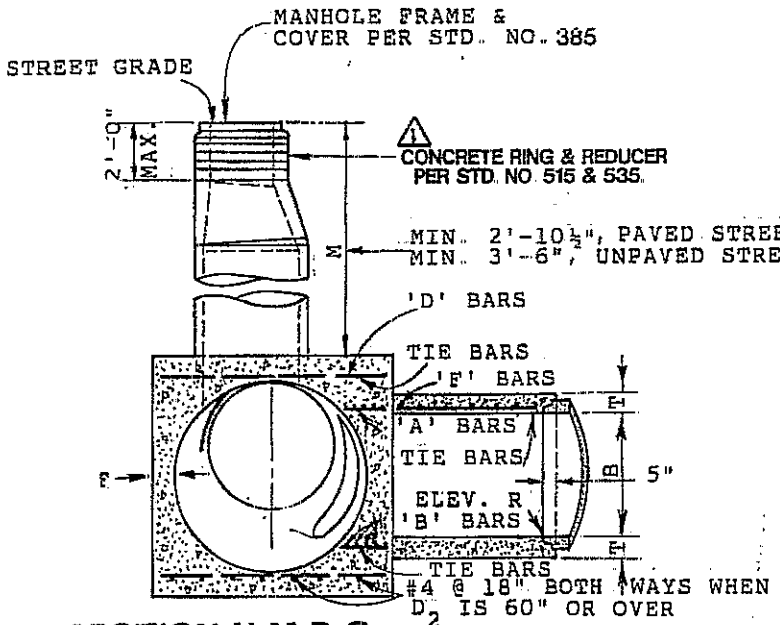
SHAFT NOT SHOWN



LONGITUDINAL SECTION

*See Std. 365 B for notes and other details.

TABLE OF VALUES FOR F AND T			
D2	F	B	T
36"	8"	24"	5 1/4"
39"	8"	27"	5 1/2"
42"	8"	30"	6"
46"	8"	33"	6 1/4"
48"	8"	36"	6 1/2"
51"	8 1/2"	39"	7"
54"	9"	42"	7 1/2"
57"	9 1/4"	45"	7 3/4"
60"	9 1/2"	48"	8"
63"	10"	51"	8 1/2"
66"	10 1/4"	54"	9"
69"	10 3/4"	57"	9 1/4"
72"	11"	60"	9 1/2"
78"	11 3/4"	63"	10"
84"	12 1/2"	66"	10 1/4"
90"	13 1/4"	69"	10 3/4"
96"	14"	72"	11"



SECTION N-M-P-O

TABLE OF BAR SIZES PROJECTED ON N-M-P-O		
D2 OR B	A&B BARS	D& F BARS
18"- 39"	#5 & 3"	#4 & 6"
42"- 84"	#6 & 3"	#5 & 6"
90"- 96"	#7 & 3"	#6 & 6"

NOTE:

Use Junction Structure No. I when O.D. of B is greater than 1/2 the I.D. of $(D_1+D_2)/2$ or B is greater than 24". B shall not exceed 3/4 of $(D_1+D_2)/2$.

APPROVED Ken Wellington 1-28-99
CITY ENGINEER DATE

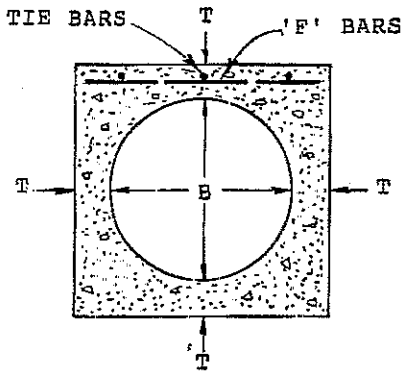
CITY OF CHINO
PUBLIC WORKS DEPARTMENT

DATE	REV	APP'D	BY
6/03	⚠ ADDED STD 515 TO NOTE	JOH	G.E.D.

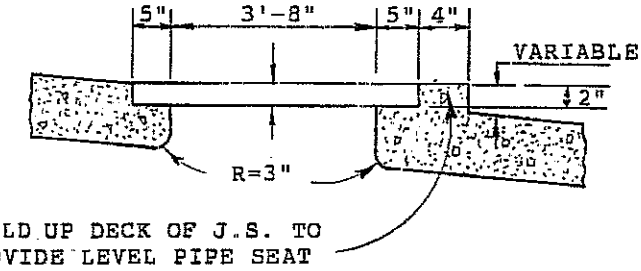
STANDARD DRAWING NO.

JUNCTION STRUCTURE I
INLET PIPES 24" OR LARGER

365 A



SECTION G-G



SHAFT SEAT DETAIL

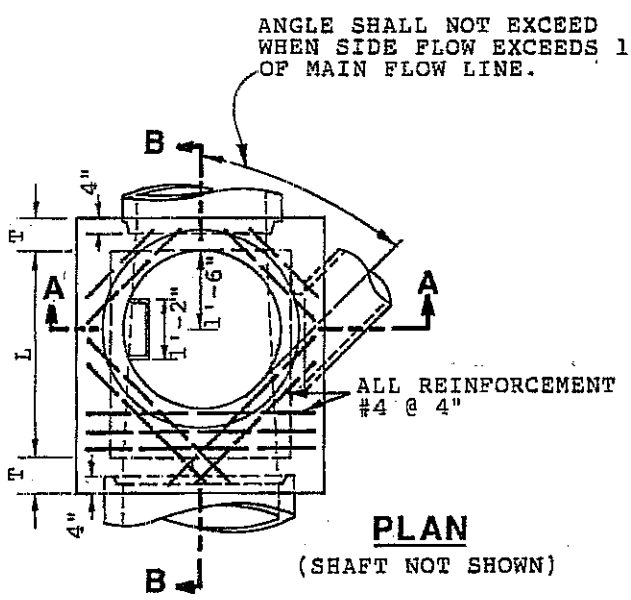
NOTES:

1. Values for "A", "B", "C", "D1", "D2", elevation "R" and elevation "S" are shown on plans.
2. If laterals enter both sides of junction structure, the access shaft shall be located on the side receiving the smaller lateral.
3. Center of manhole shaft shall be located over the ℄ of the storm drain when D1 is 48" or less, in this case place 4-"E" bars (#4) symmetrically around the shaft at 45° angles with the spur.
4. Length of junction structure may be increased at contractors options to meet pipe ends, but any change in location of the spur must be approved by the City engineer.
5. The station point, as shown on the plans, is defined as the intersection of the ℄ of the main line and the ℄ of the spur.
6. Use "M" of **Std. No. 370A & B** when the depth of the shaft from street grade to the top of the junction structure is less than 2'-10 1/2" for paved streets or 3'-6" for unpaved streets. Construct monolithic shaft as shown on detail "M". Construction of manhole shaft per detail "M" for any depth of manhole is optional. When D1 is 48" or less see note no. 3.
7. Reinforcing steel shall have 1 1/2" clear angle from face of concrete. Tie bars shall be #4 @ 18" max.
8. Embedment "P" shall be 5" for D2 to 96" or less and 8" for D2 over 96".
9. Step shall be 3/4" galvanized steel, and anchored not less than 6" in the walls of the structure. Step spacing shall be 1'-4" with the lowest step not more than 2' above the invert. Approved cast-in-place reinforced polypropylene steps may be used in place of galvanized steel steps.
10. Rings, reducer, and pipe for access shaft shall be seated in 1:2 mortar and neatly pointed or wiped inside the shaft.
11. Floor of junction structure, including spur, shall be constructed in one continuous operation, except that a construction joint at the spring line, with a longitudinal keyway is optional.
12. Body of junction structure, including spur, shall be constructed in one continuous operation, except that a construction joint at the spring line, with a longitudinal keyway is optional.
13. Elevation "S" applies at the ℄ of the mainline on the prolongation of the invert of the spur.
14. Concrete: FC' = 3250 PSI at 28 days.

APPROVED Ray Wellington 1-23-03
CITY ENGINEER DATE

CITY OF CHINO
PUBLIC WORKS DEPARTMENT

DATE	REV	APP'D	BY	STANDARD DRAWING	No.
1/16/03	⚠ CORRECTED NOTE	RW	GED.	JUNCTION STRUCTURE I DETAILS & NOTES	365 B



PLAN
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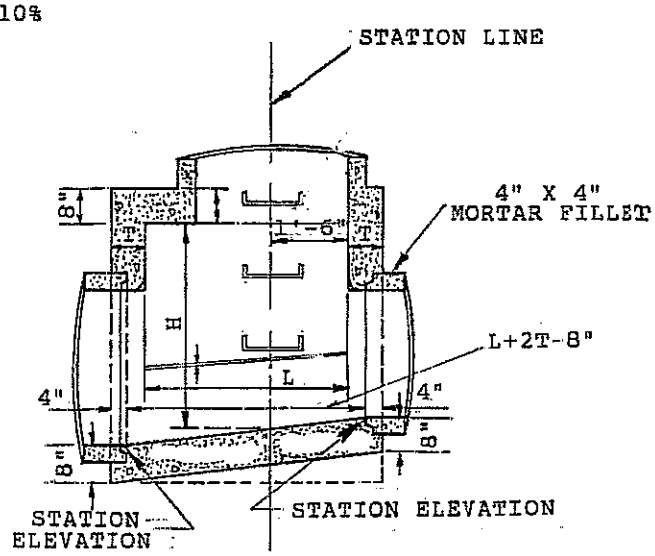
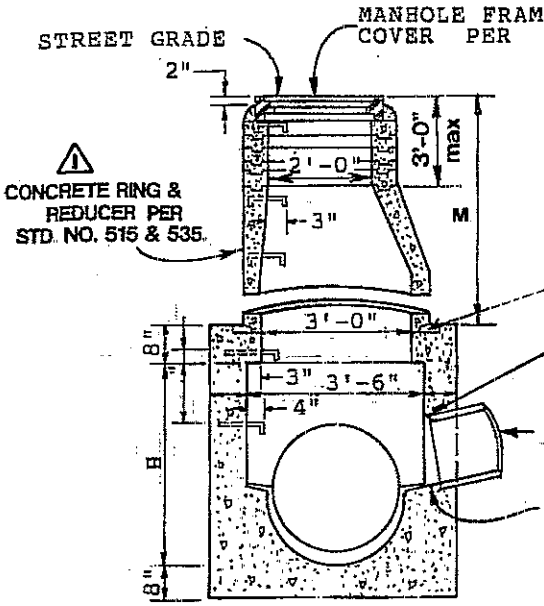


SECTION B-B



M = { MIN. 2'-10 1/2" FOR PAVED STREETS
MIN. 3'-6" FOR UNPAVED STREETS
SEE DETAIL 'H' & SEC. 'C-C' FOR
SHALLOW INSTALLATIONS.

5"X2" PIPE SEAT

ROUND EDGES OF INLETS

MAX. 24" DIA. SIDE INLET. USE J.S.
NO. [illegible] FOR SIDE INLET LARGER THAN
24". SEE STD. NO. 365.

INLET ELEVATIONS

SECTION A-A

MANHOLE SHAFT SHALL BE 4'-0" @ J.S.
WIDTH SHALL BE 4'-0" WHEN 'M' IS GREATER
THAN 20'. ALSO USE 6" THICK RINGS
PER STD. NO. 535

* See Std. 370 B for notes and other details.

APPROVED [signature] 1-28-03
CITY ENGINEER DATE

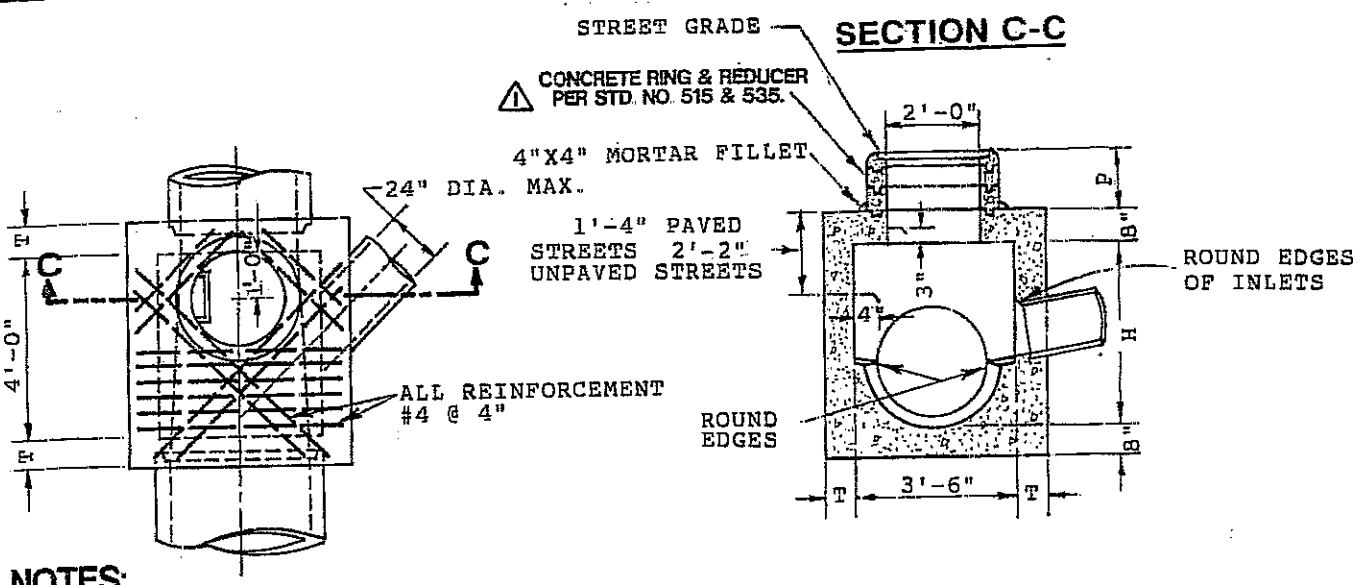
CITY OF CHINO
PUBLIC WORKS DEPARTMENT

DATE	REV	APP'D	BY
1/16/03	⚠ ADDED STD. 535 TO NOTE.	[illegible]	G.E.D.

STANDARD DRAWING No.

JUNCTION STRUCTURE II
39 IN. OR LESS

370 A



NOTES:

1. Height, H shall be not less than 4'-0". For shallow installations use the configuration of Section C-C.
2. The configuration shown in Section C-C may be substituted for Section A-A by increasing H until P is within tolerance. (See Note 5) This alternative shall require approval of the City Engineer.
3. Length, L shall be 4'-0" unless shown otherwise on the plans.
4. The value of M shall be a minimum of 2'-10 1/2" on paved streets or 3'-6" on unpaved streets. When M is greater than 20', use 6" thick rings per Standard Drawing No. 515.
5. Depth, P shall be 8 1/2" to 11" on paved streets or 15" to 16" on unpaved streets. A reduction to 6" is permitted only where larger values would require H to be less than 3'-6".
6. Thickness, T may vary as required to provide a level pipe seat but shall not be less than 8" for values of H to 8' or 10" for values of H over 8'.
7. Steps shall be per standard drawing 335.
8. Reinforcing steel shall have a 1 1/2" clearance behind the face of the concrete wall.
9. Rings, reducers and pipe in the access shaft shall be seated in 1:2 mortar and neatly jointed or smoothed inside the shaft.
10. The ledge shall be sloped 2" per foot and the floor shall be troweled smooth.
11. Corners shall be rounded to the curvature of a 3" radius.
12. Concrete shall be FC' = 3250 PSI at 28 days.

APPROVED Kay Wellington 1-28-03
CITY ENGINEER DATE

CITY OF CHINO
PUBLIC WORKS DEPARTMENT

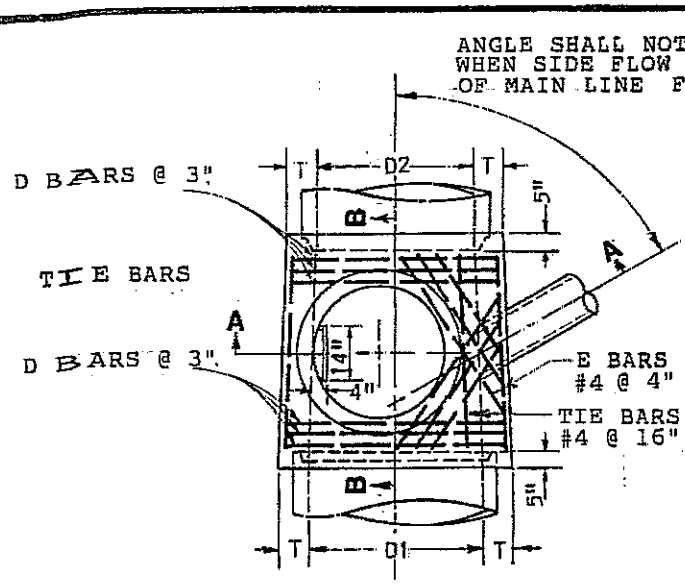
DATE	REV	APP'D	BY
1/16/03	⚠ ADDED STD. 535 TO NOTE	JH	G.E.D.

STANDARD DRAWING No.

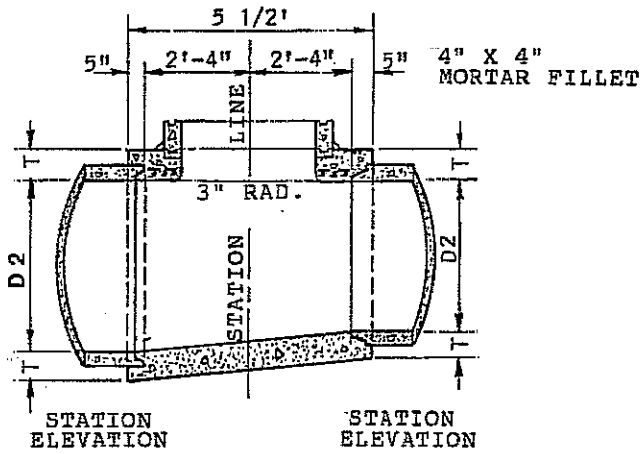
JUNCTION STRUCTURE II

DETAILS & NOTES

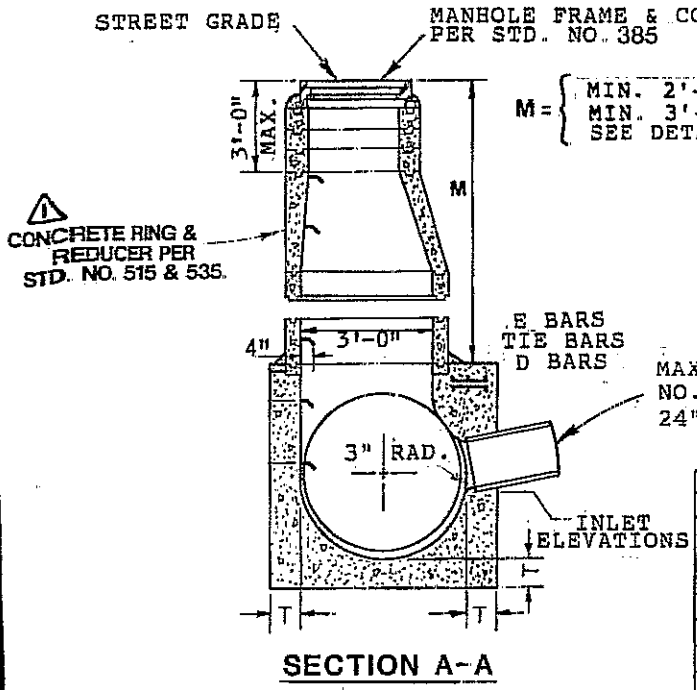
370 B



PLAN
(SHAFT NOT SHOWN)



SECTION B-B



SECTION A-A

TABLE OF VALUES FOR T	
D1	T
42"	7 1/2"
45"	7 1/4"
48"	8"
51"	8 1/2"
54"	9"
57"	9 1/4"
60"	9 1/2"
63"	10"
66"	10 1/4"
69"	10 3/4"
72"	11"
78"	11 1/4"
84"	12 1/2"
90"	13 1/4"
96"	14"

STEEL TABLE FOR JUNCTION STRUCTURE NO. III						
	D BARS			E BARS		
DIAM. D2	MIN NO. REQ'D	SIZE	LENGTH	MIN. NO. REQ'D.	SIZE	LENGTH
42"	6	#5	4'-6"	4	#4	3'-2"
45"	6	#5	4'-10"	4	#4	3'-5"
48"	6	#5	5'-1"	4	#4	3'-7"
51"	6	#5	5'-5"	4	#4	4'-9"
54"	6	#5	5'-9"	4	#4	5'-1"
57"	6	#5	6'-1"	6	#4	5'-6"
60"	6	#5	6'-4"	6	#4	5'-11"
63"	6	#5	6'-6"	6	#4	6'-3"
66"	6	#5	7'-0"	8	#4	6'-8"
69"	6	#5	7'-4"	8	#4	6'-8"
72"	6	#5	7'-7"	8	#4	6'-8"
78"	6	#5	8'-3"	8	#4	6'-8"
84"	6	#5	8'-10"	10	#4	6'-8"
90"	6	#6	9'-6"	10	#4	6'-8"
96"	6	#6	10'-1"	10	#4	6'-8"

* See Std. 375 B for notes and other details.

APPROVED Ken Willmington 1-28-09
CITY ENGINEER DATE

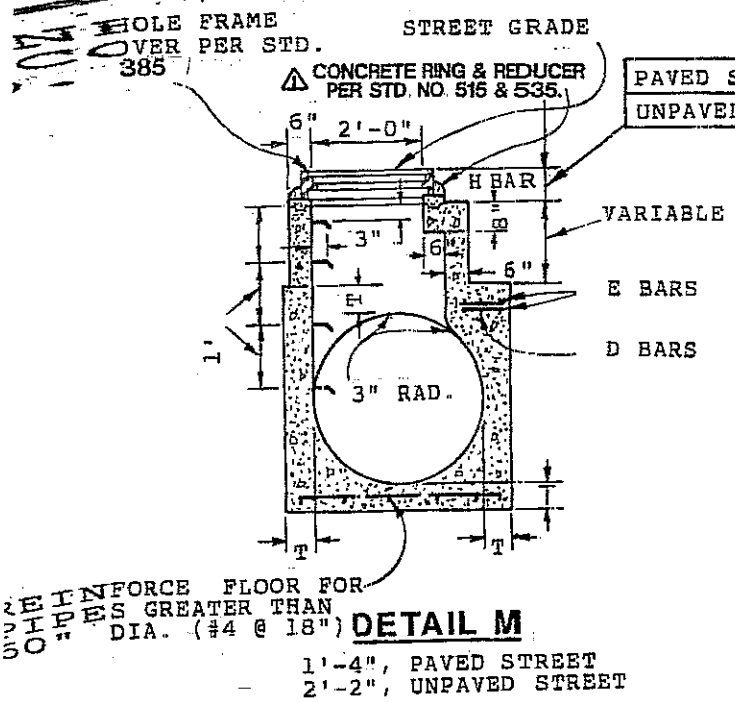
CITY OF CHINO
PUBLIC WORKS DEPARTMENT

DATE	REV	APP'D	BY
1/16/03	1 ADDED STD. 515 TO NOTE	JAH	G.E.D.

STANDARD DRAWING

JUNCTION STRUCTURE III
42 IN. OR LARGER

No. 375 A

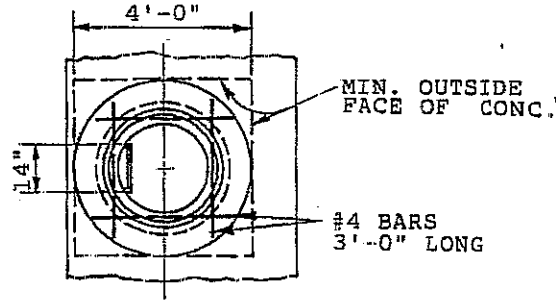


	MAX.	MIN.
PAVED STREET	11"	8 1/2
UNPAVED STREET	16"	15

REINFORCE FLOOR FOR HOLES GREATER THAN 30" DIA. (#4 @ 18")

DETAIL M

1'-4", PAVED STREET
2'-2", UNPAVED STREET



PLAN VIEW

MANHOLE FRAME AND COVER

NOTES:

1. Center manhole shaft shall be located over ℄ of storm drain when dia. d1 is 48" or less, in which case place "E" symmetrically around shaft at 45° with ℄.
2. Length "L" shall be 5'-6" unless other wise shown on plans, when "L" is specified on plans to be greater than 5'-6" continue "D" bars at 6" on center.
3. Lengths shown in steel table are for the longest bars. Where shorter bars are required, bend or cut bars as required.
4. Use detail "M" when depth of manhole from street grade to top of box as less shown on section "A-A" by constructing monolithic shaft as shown on detail. When D1 is less than 48" see note no. 1.
5. Thickness of deck shall vary when necessary to provide a level pipe seat, but shall not be less values for "T" shown on table.
6. Reinforcing steel shall have 1 1/2" clear angle from face of concrete.
7. Steps shall be 3/4" round galvanized steel and anchored not less than 6" in the walls of the structure. Spacing shall be 1'-0" O.C. The lowest step shall not be more than 2'-0" above the invert. Approved cast-in-place reinforced polypropylene steps may be used in place of galvanized steel steps.
8. Rings, reducer, and pipe for access shaft shall be seated in 1:2 mortar and neatly pointed or wiped inside the shaft.
9. Floor of manhole shall be steel-troweled to spring line.
10. Body of manhole shall be constructed in one continuous operation, except the contractor shall have the option of placing a construction joint with a longitudinal keyway at the spring line.
11. Concrete: FC; = 3250 PSI at 28 days.

APPROVED Ken Willington 1/28/03
CITY ENGINEER DATE

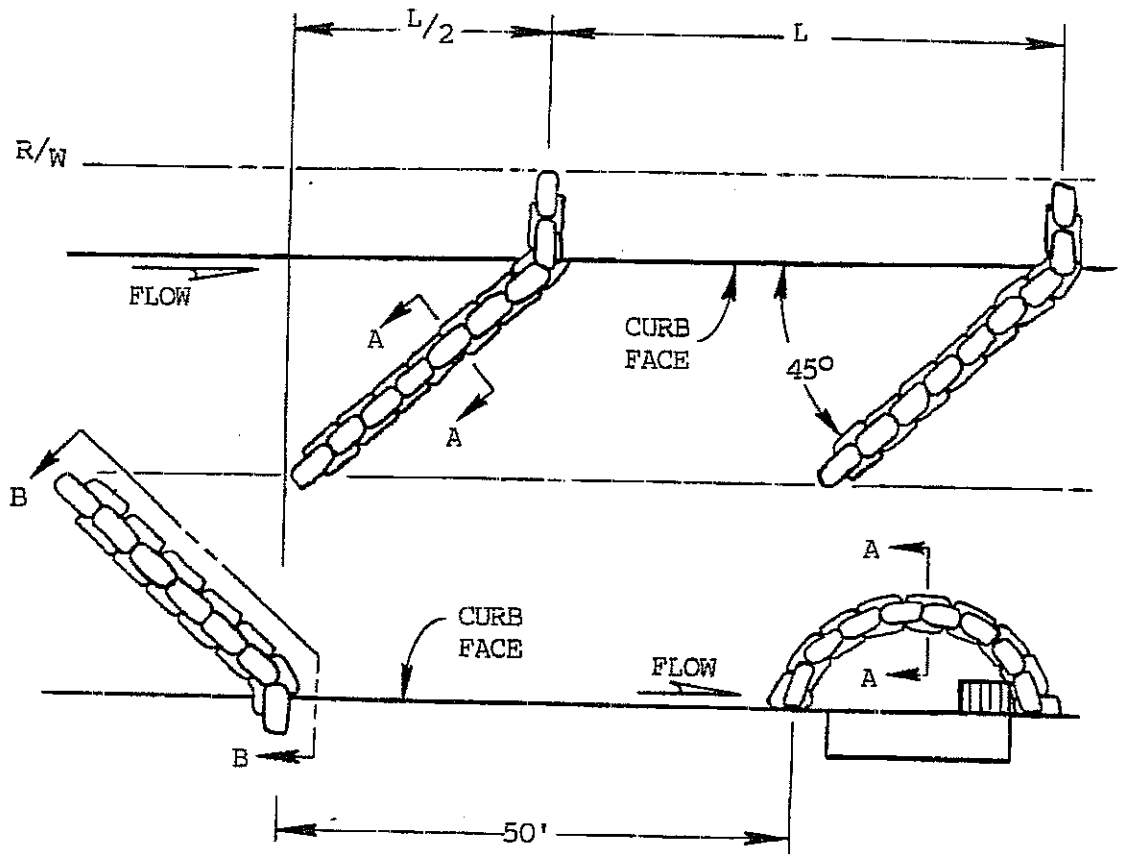
CITY OF CHINO
PUBLIC WORKS DEPARTMENT

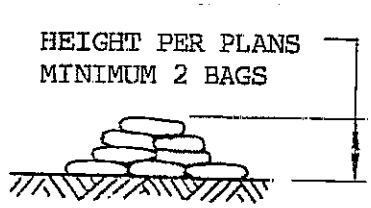
DATE	REV	APP'D	BY
1/16/03	⚠ ADDED STD. 535 TO NOTE	JAH	GED

STANDARD DRAWING No.

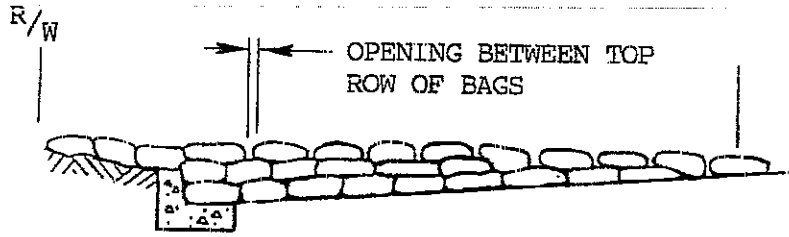
JUNCTION STRUCTURE III
DETAILS & NOTES

375 B





SECTION AA

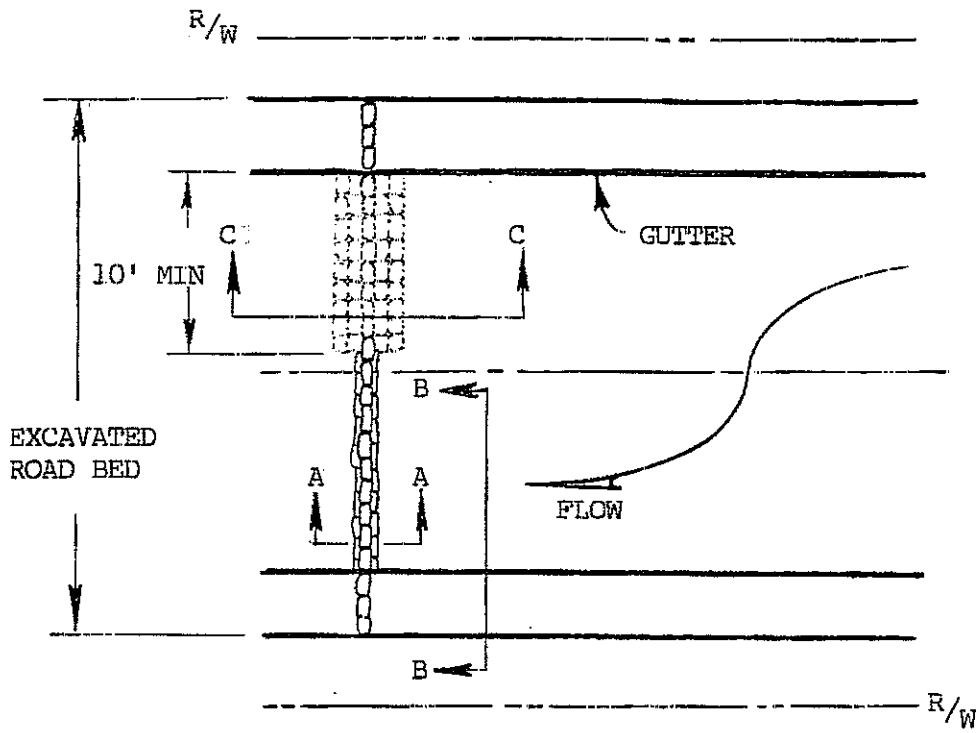


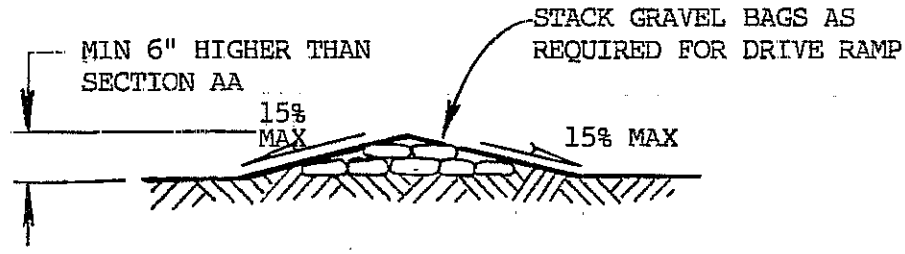
SECTION BB

* See standard drawing 380C for notes and a schedule for dimension L.

REFER TO GENERAL NOTES FOR TEMPORARY EROSION CONTROL.

APPROVED Robert F. Beardsley 7/15/93 CITY ENGINEER DATE			CITY OF CHINO PUBLIC WORKS DEPARTMENT	
DATE	REVISION	BY	STANDARD DRAWING	No.
			STREET DESILTING BASIN SANDBAGGING	380 A



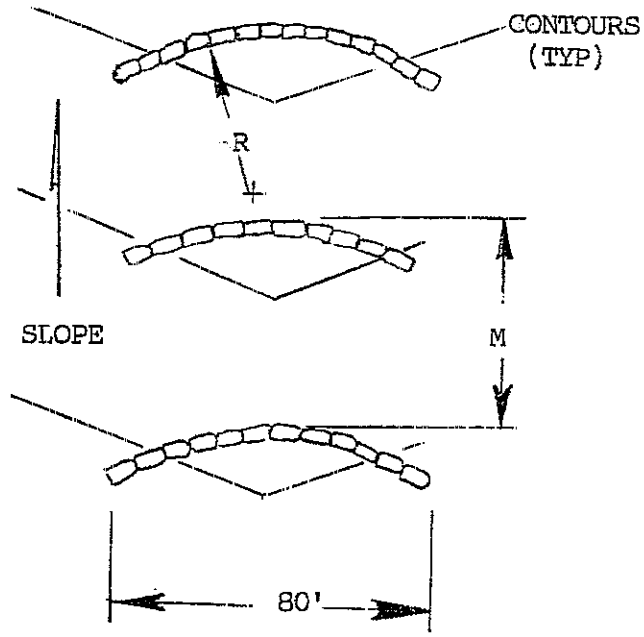


SECTION CC

* See standard drawing 380A for sections A-A and B-B and standard drawing 380C for notes.

REFER TO GENERAL NOTES FOR TEMPORARY EROSION CONTROL.

APPROVED Robert F. Bendsley 7/15/93 CITY ENGINEER DATE			CITY OF CHINO PUBLIC WORKS DEPARTMENT	
DATE	REVISION	BY	STANDARD DRAWING	No.
			SANDBAG RAMP GEOMETRY	380 B



1. Gravel bags are encouraged over the use of sand bags and may be required in problem areas.

2. Streets sandbagged per the layout in drawings 380A or 380B shall not be open to the public.

Grade	R	M	L
<4%	100'	200'	200'
4 to 9%	100'	200'	100'
>9%	80'	150'	50'

* REFER TO GENERAL NOTES FOR TEMPORARY EROSION CONTROL.

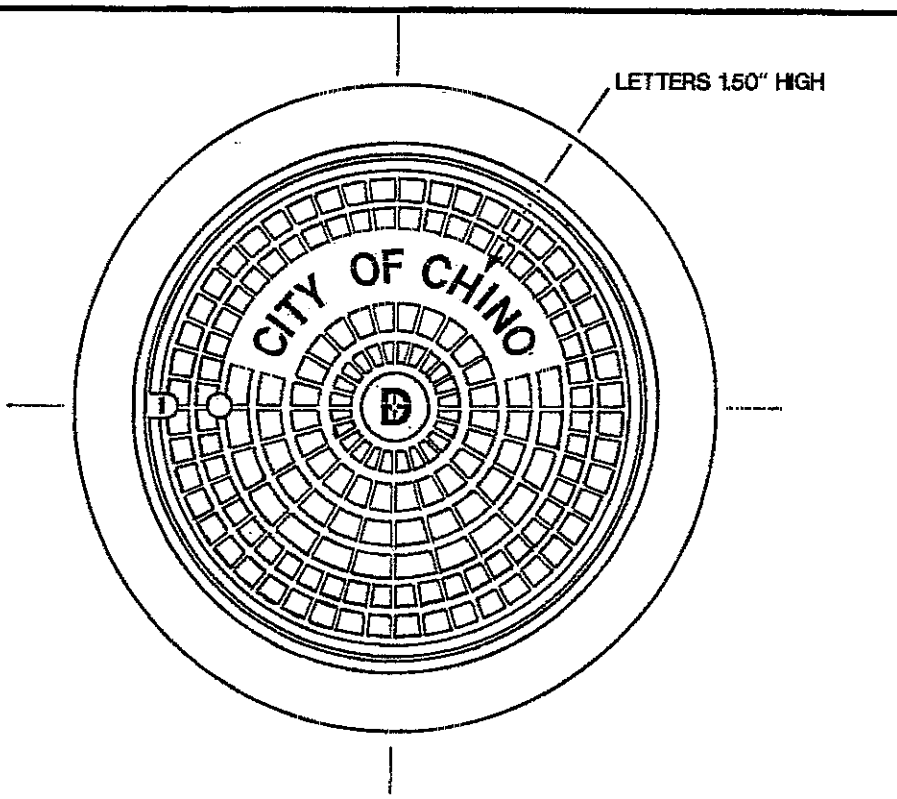
APPROVED Robert F. Beardsley 7/15/93
CITY ENGINEER DATE

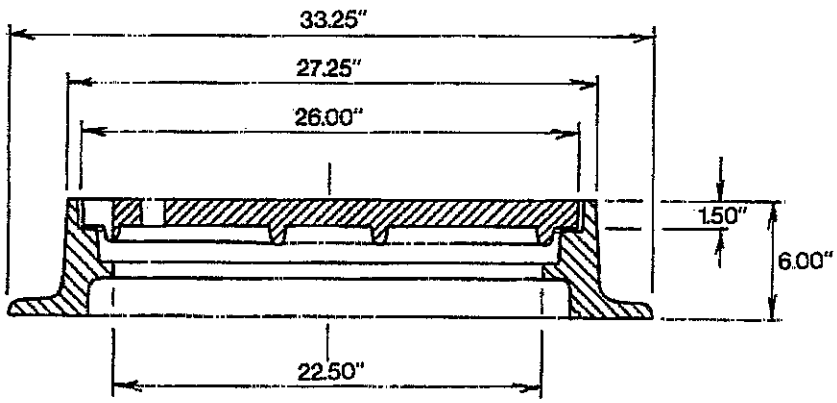
CITY OF CHINO
PUBLIC WORKS DEPARTMENT

DATE	REVISION	BY

STANDARD DRAWING: SWALE SANDBAG VELOCITY REDUCERS

No. 380 C





NOTES:

1. Manhole frame and cover shall be Alhambra Foundry No. A-1170 or approved equal.
2. Material shall conform to A.S.T.M. A-48, Class 35B.
3. Covers shall be cast with the letter "D" for storm drain and "CITY OF CHINO" as shown on this standard.
4. Storm drain manhole frame and cover shall be manufactured and installed per "Standard Plans & Standard Specifications for Public Works Construction" (latest edition).

APPROX. WEIGHT

FRAME 260 lbs.
COVER 175 lbs.

APPROVED James A. Hall 1/10/01
CITY ENGINEER DATE

CITY OF CHINO
PUBLIC WORKS DEPARTMENT

DATE	REVISION	APP'D	BY

STANDARD DRAWING	No.
STORM DRAIN MANHOLE FRAME AND COVER	385