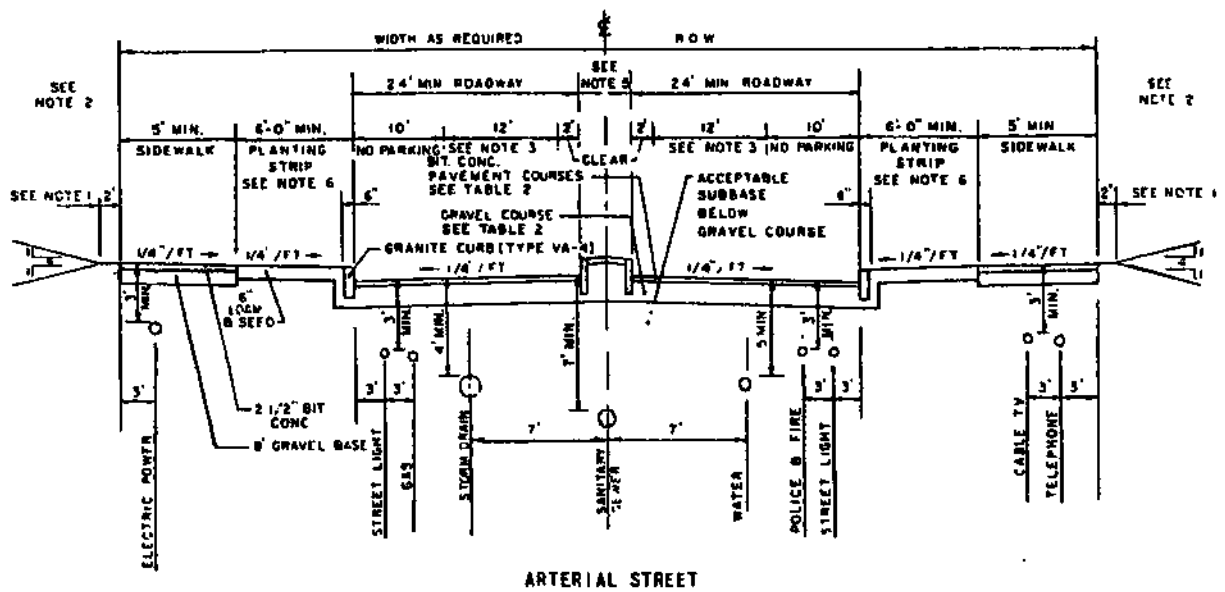


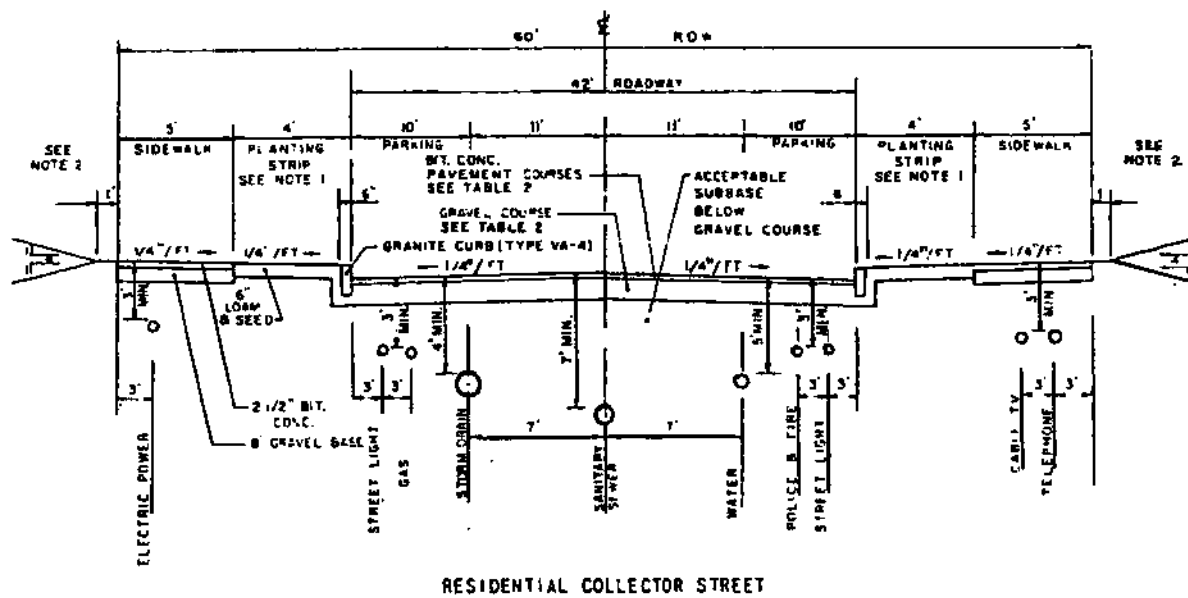
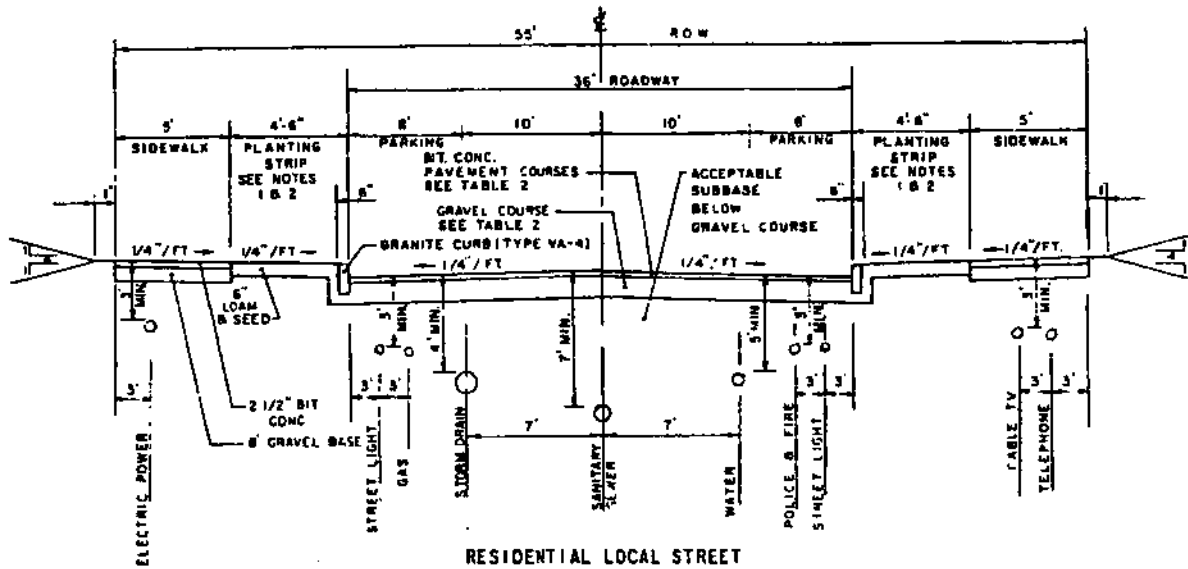
APPENDIX E

PLATES AND TABLES



- NOTES:
1. TYPICAL FIRE HYDRANT, STREET LIGHT STANDARD, AND SIGN LOCATION. HYDRANTS AND POSTS TO HAVE BREAKAWAY FLANGES.
 2. LOCATE STREET TREES NOT LESS THAN 5 FT. OR NOT MORE THAN 10 FT. OUTSIDE THE RIGHT OF WAY LINE.
 3. NUMBER OF LANES AS REQUIRED BY THE BOARD (12 FT. EACH LANE)
 4. THE CROSS SECTION OF EACH ARTERIAL STREET SHALL BE AS REQUIRED BY THE BOARD.
 5. THE BOARD MAY REQUIRE A PAVED TYPE MEDIAN (MIN WIDTH 4 FT.) OR A PLANTING STRIP TYPE MEDIAN (MIN WIDTH 10 FT.).
 6. THE BOARD MAY REQUIRE THAT ADDITIONAL SPACE BE PROVIDED FOR FUTURE ROADWAY WIDENING (MIN. WIDTH 12 FT. PER LANE PLUS 6 FT.)

TYPICAL SECTION
NO SCALE

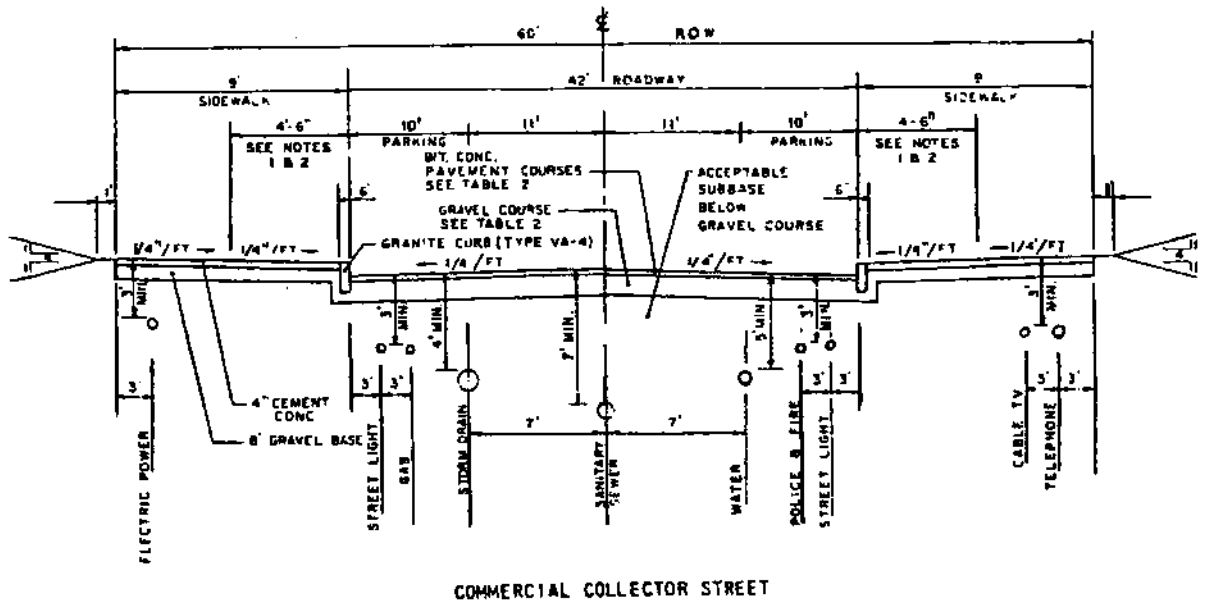
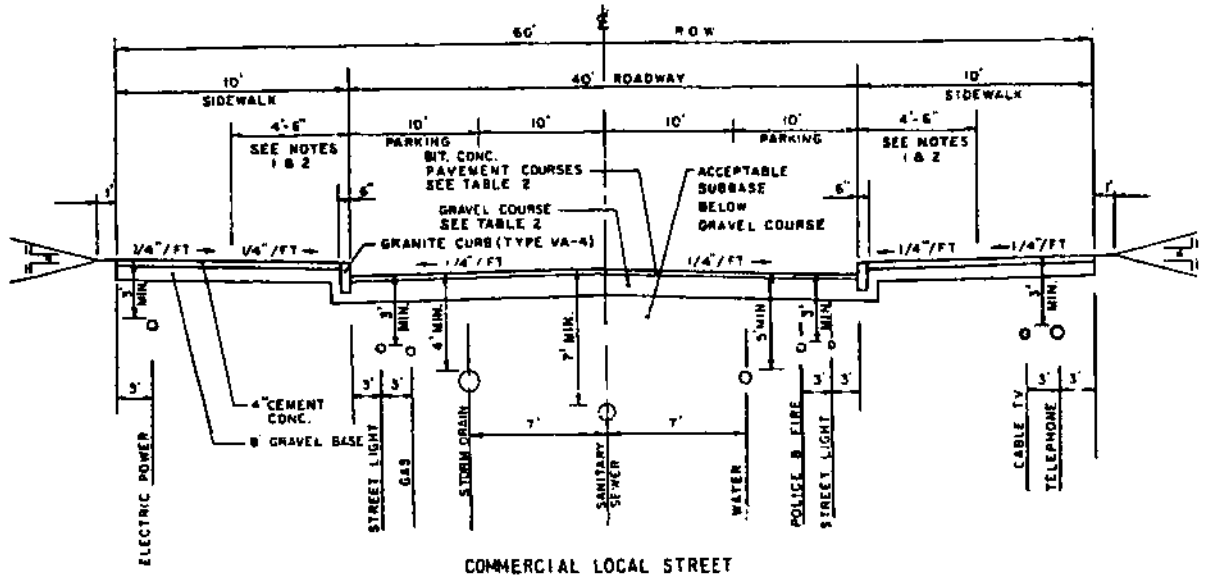


NOTES:

1. TYPICAL FIRE HYDRANT, STREET LIGHT STANDARD AND SIGN LOCATION. MINIMUM CLEARANCE 2'-0" TO FACE CURB.
2. LOCATE STREET TREES IN THE PLANTING STRIP ON LOCAL STREETS AND MORE THAN 5 FT BUT LESS THAN 10 FT, OUTSIDE THE RIGHT OF WAY LIMITS ON COLLECTOR STREETS.

TYPICAL SECTIONS

NO SCALE

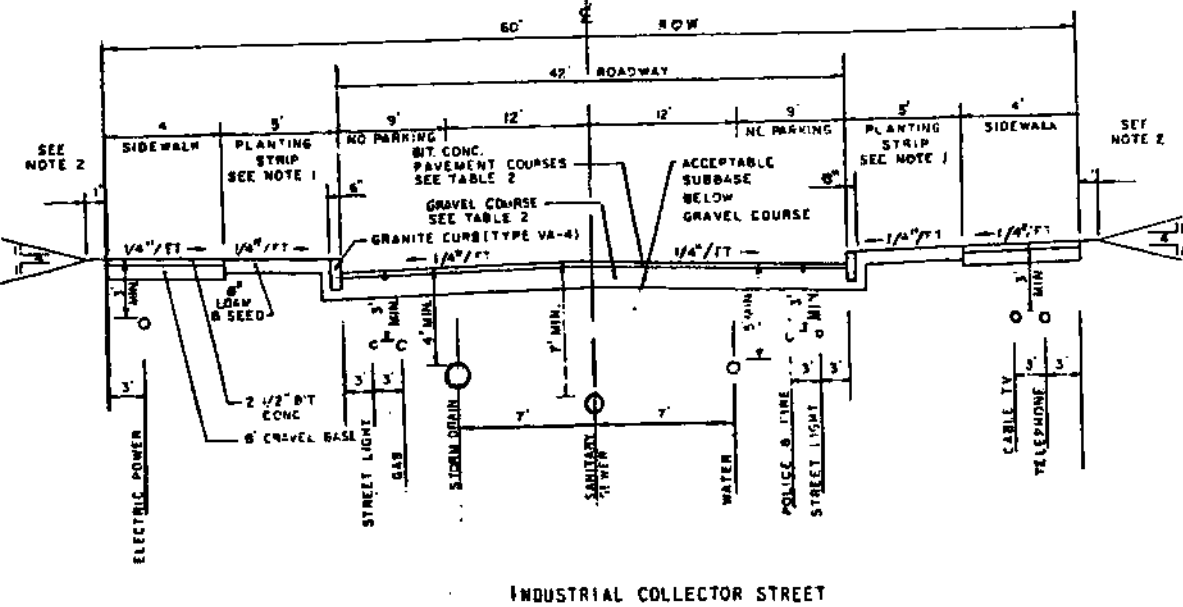
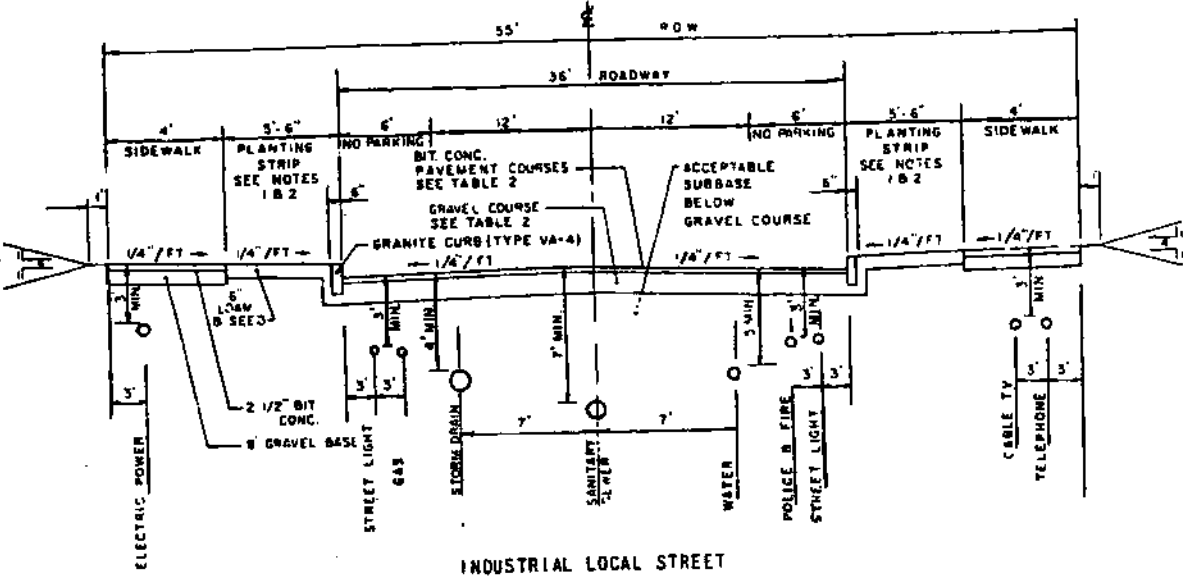


NOTE:

1. TYPICAL FIRE HYDRANT, STREET LIGHT STANDARD, AND SIGN LOCATION. MIN. CLEARANCE 2'-0" TO FACE OF CURB.
2. TYPICAL TREE PIT AND STREET TREE LOCATION.

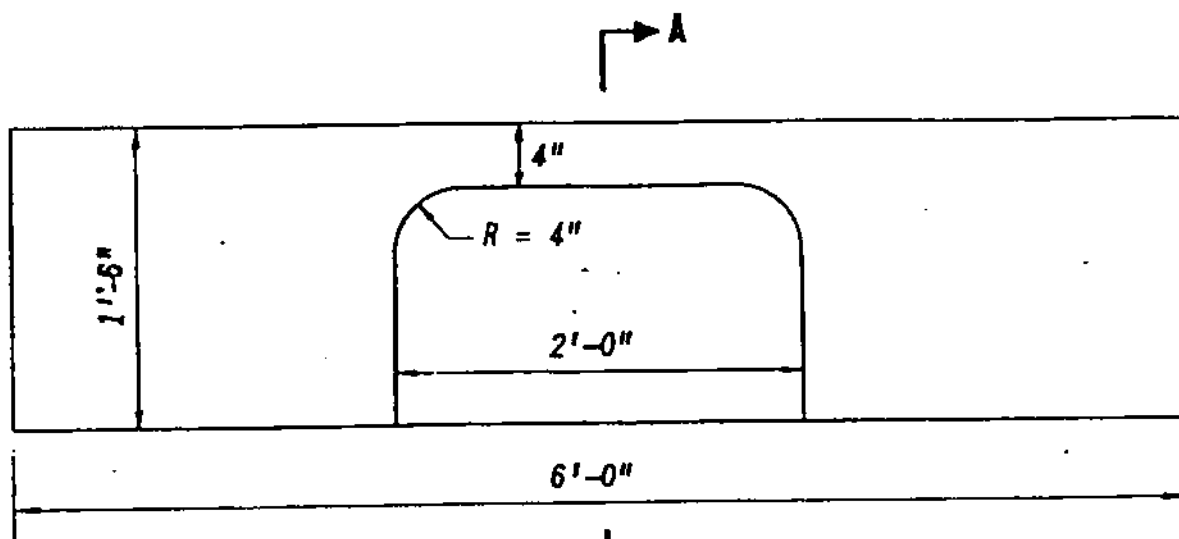
TYPICAL SECTIONS

88 SCALE

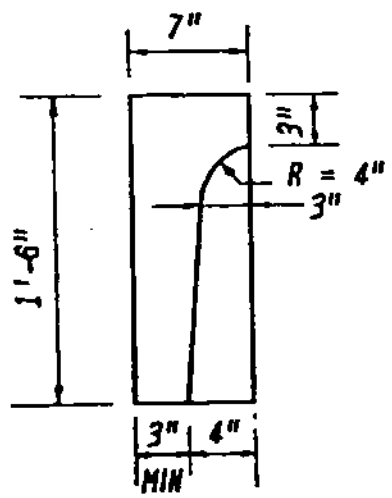


- NOTES:
- 1. TYPICAL FIRE HYDRANT, STREET LIGHT STANDARD, AND SIGN LOCATION. MINIMUM CLEARANCE 2'-0" TO FACE OF CURB.
 - 2. LOCATE STREET TREES IN THE PLANTING STRIP ON LOCAL STREETS AND MORE THAN 5 FT. BUT NOT LESS THAN 10 FEET OUTSIDE THE RIGHT OF WAY LIMITS ON COLLECTOR STREETS.

TYPICAL SECTIONS
NO SCALE

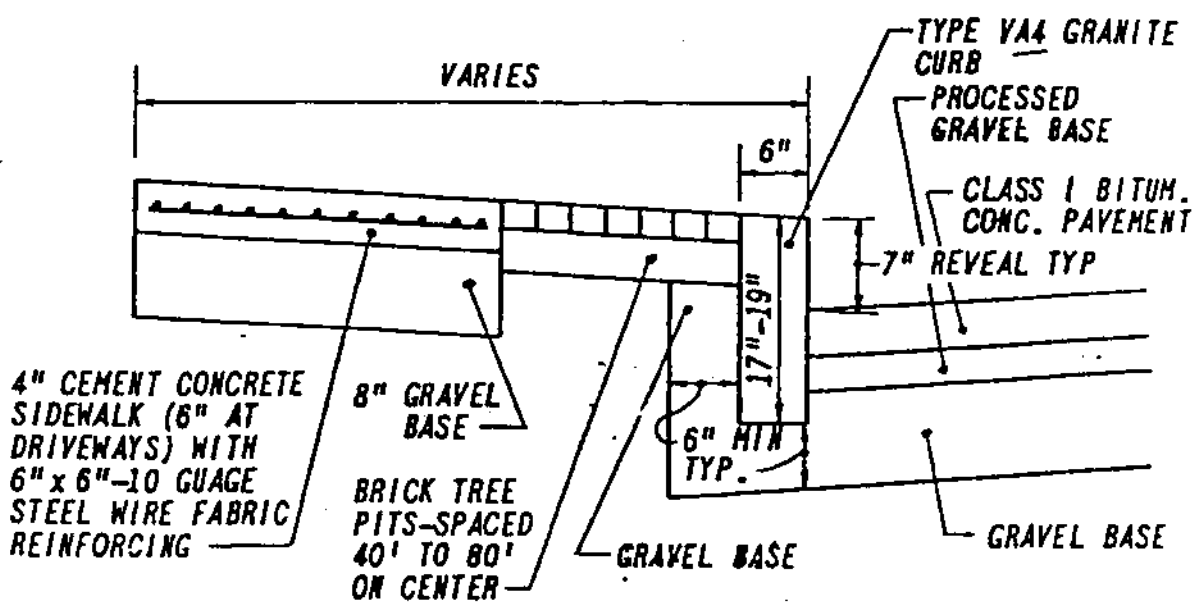


ELEVATION

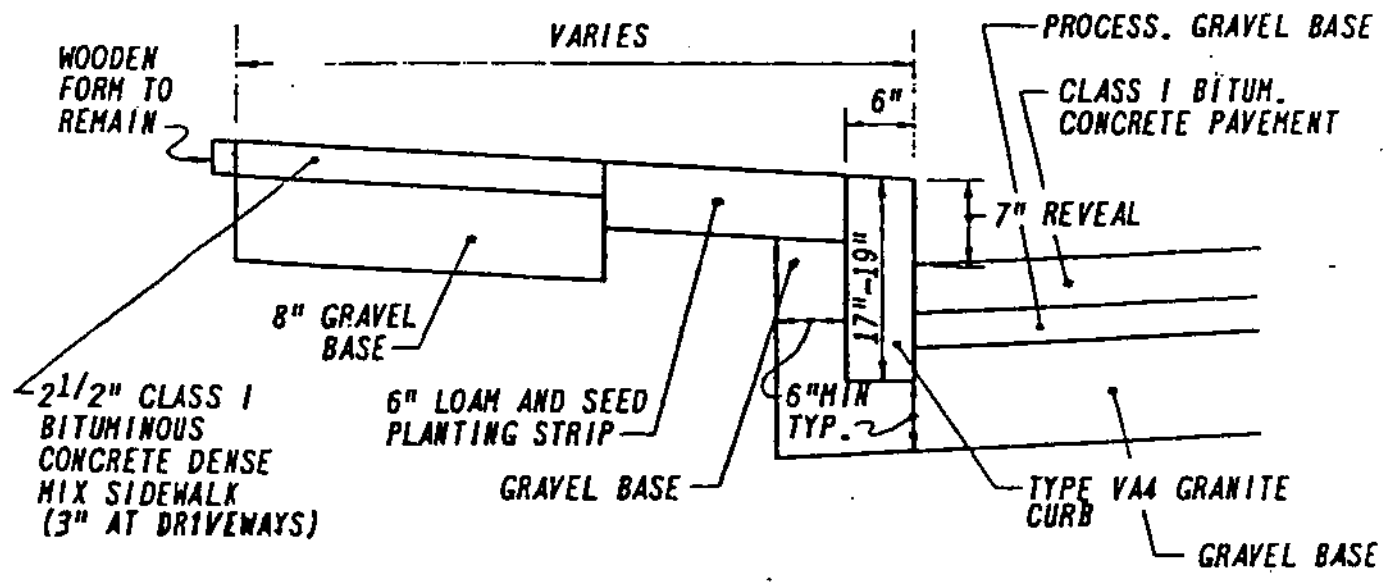


SECTION A-A

TYPICAL GRANITE CURB INLET

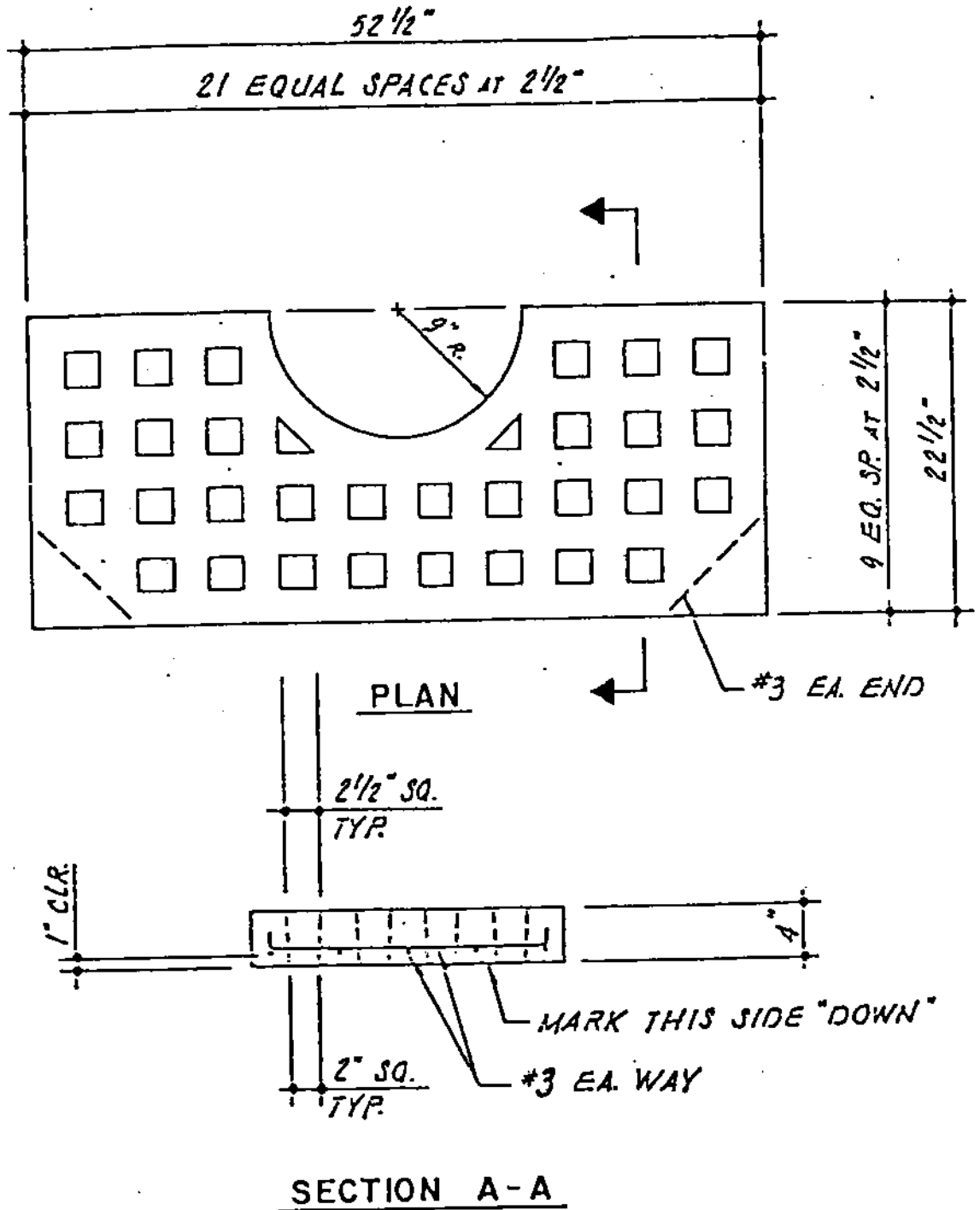


PORTLAND CEMENT CONCRETE SIDEWALK



BITUMINOUS CONCRETE SIDEWALK

TYPICAL SIDEWALK AND CURB DETAIL

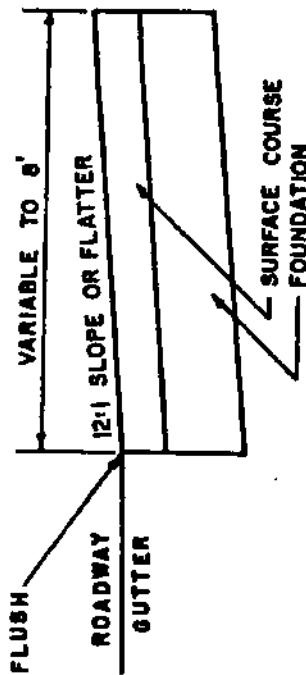
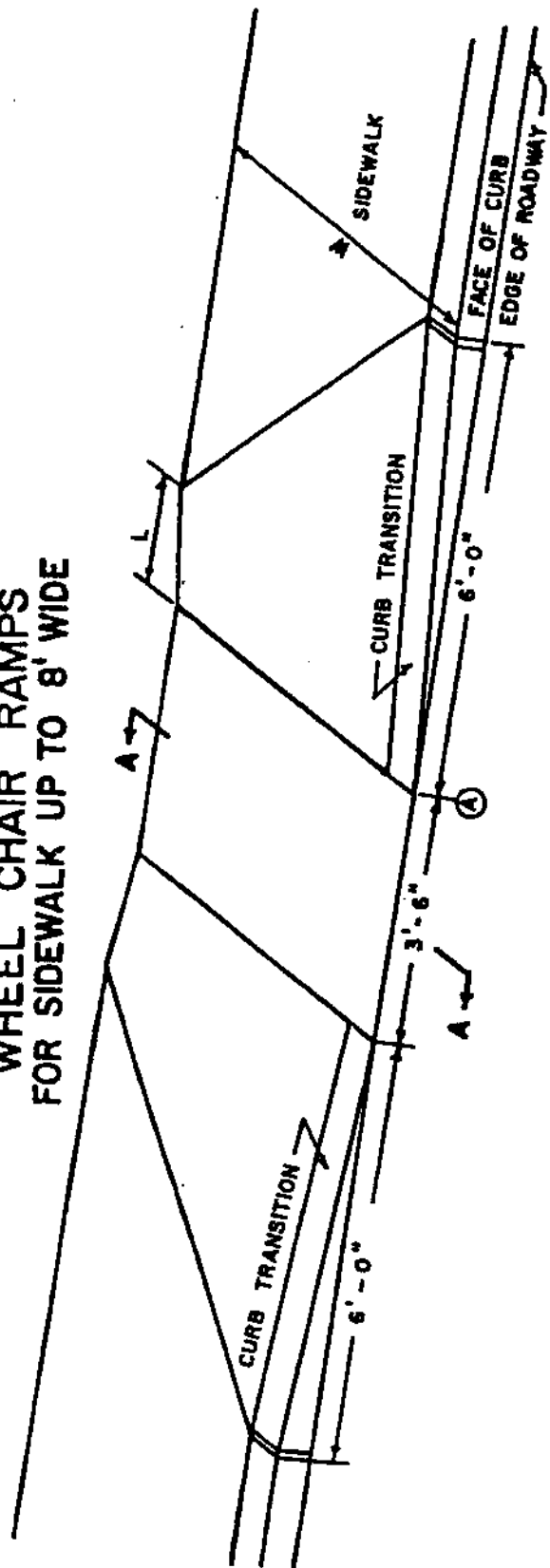


PRECAST CONCRETE TREE WELL
NOT TO SCALE

NOTE:

1. CONCRETE SHALL BE AT 5,000 PSI IN 10 DAYS.
2. TWO PIECES REQUIRED TO MAKE ONE TREE WELL COVER.
3. 1/4" WASHED PEASTONE FILLER TO TOP OF GRATE.

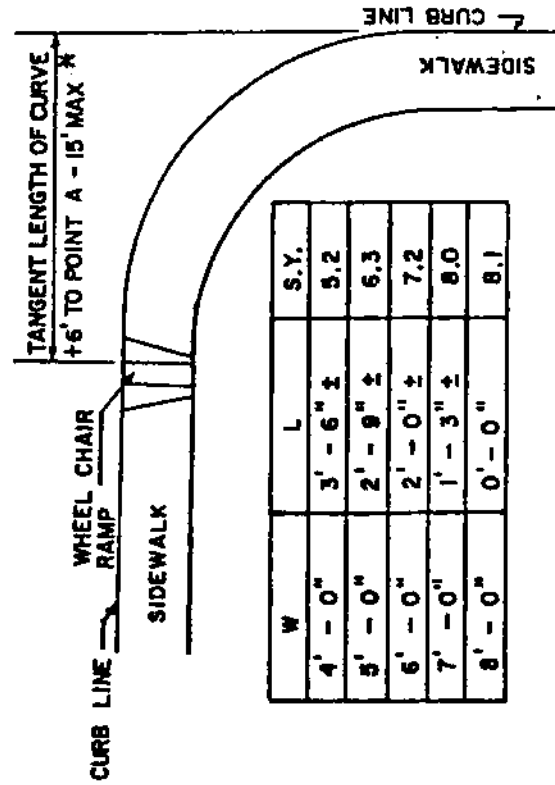
WHEEL CHAIR RAMP FOR SIDEWALK UP TO 8' WIDE



SECTION A-A

NOTES:

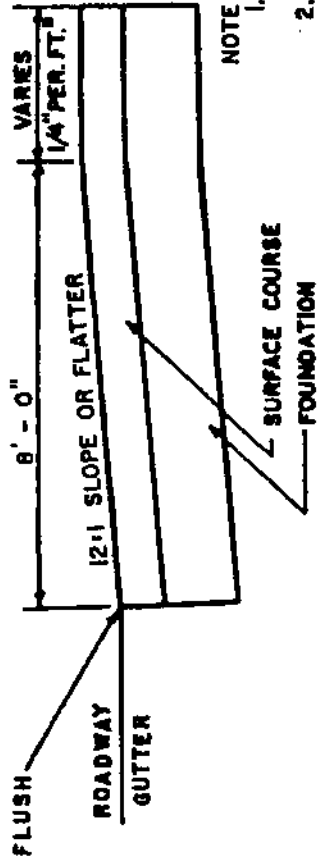
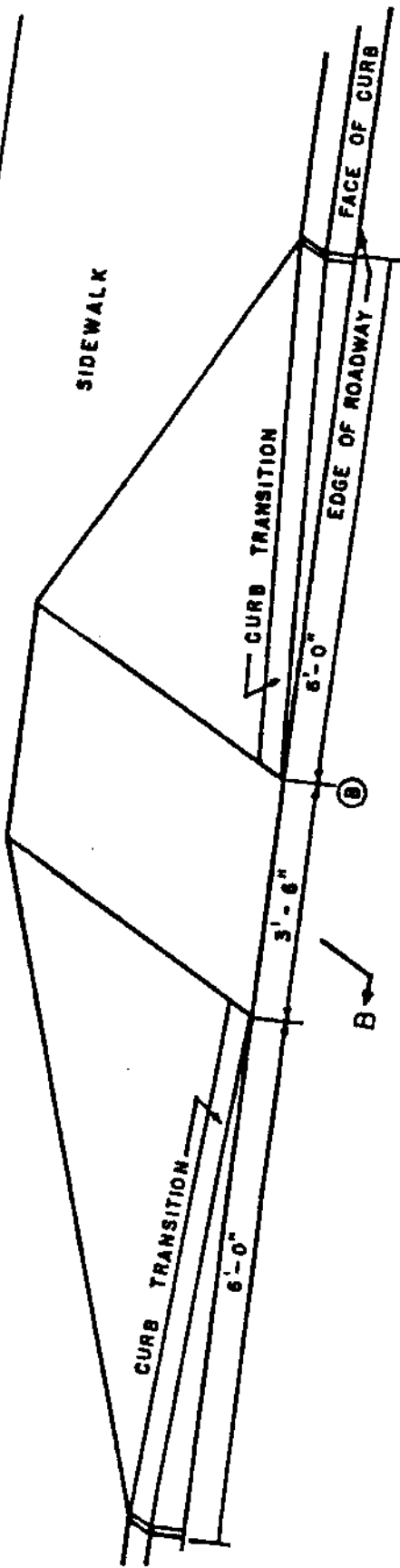
1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2. RAMP CROSS SECTION TO BE SAME AS ADJACENT SIDEWALK; I.E. DEPTH OF SURFACE AND FOUNDATION.
3. PORTLAND CEMENT CONCRETE RAMP ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
4. IN NO CASE ARE THE RAMP TO BE PLACED BEHIND THE STOP LINE.
5. SIDEWALKS THAT CROSS DRIVEWAYS SHALL BE RAMPED TO MEET THE GRADE OF DRIVEWAY.
- X. THESE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE.



W	L	S.Y.
4'-0"	3'-6" ±	5.2
5'-0"	2'-9" ±	6.3
6'-0"	2'-0" ±	7.2
7'-0"	1'-3" ±	8.0
8'-0"	0'-0"	8.1

WHEEL CHAIR RAMP FOR SIDEWALK OVER 8' WIDE

B

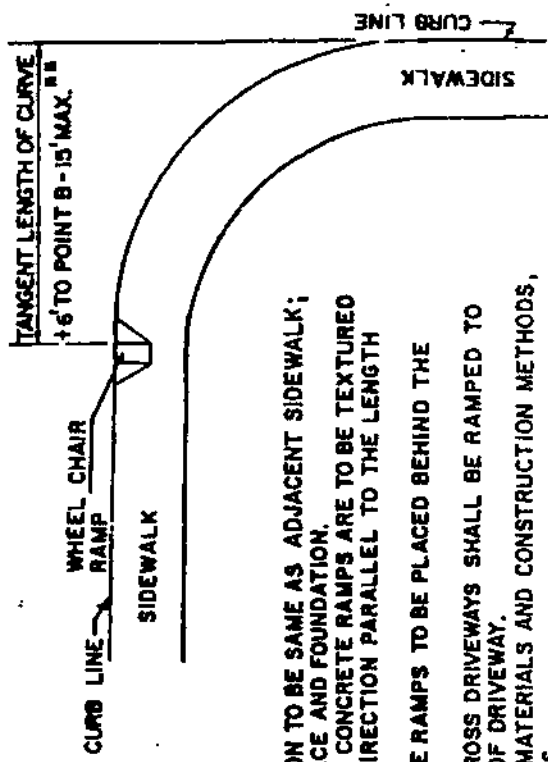


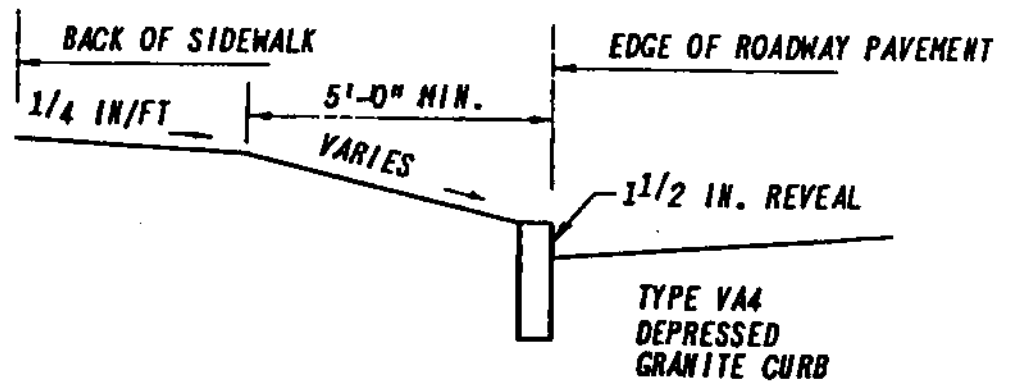
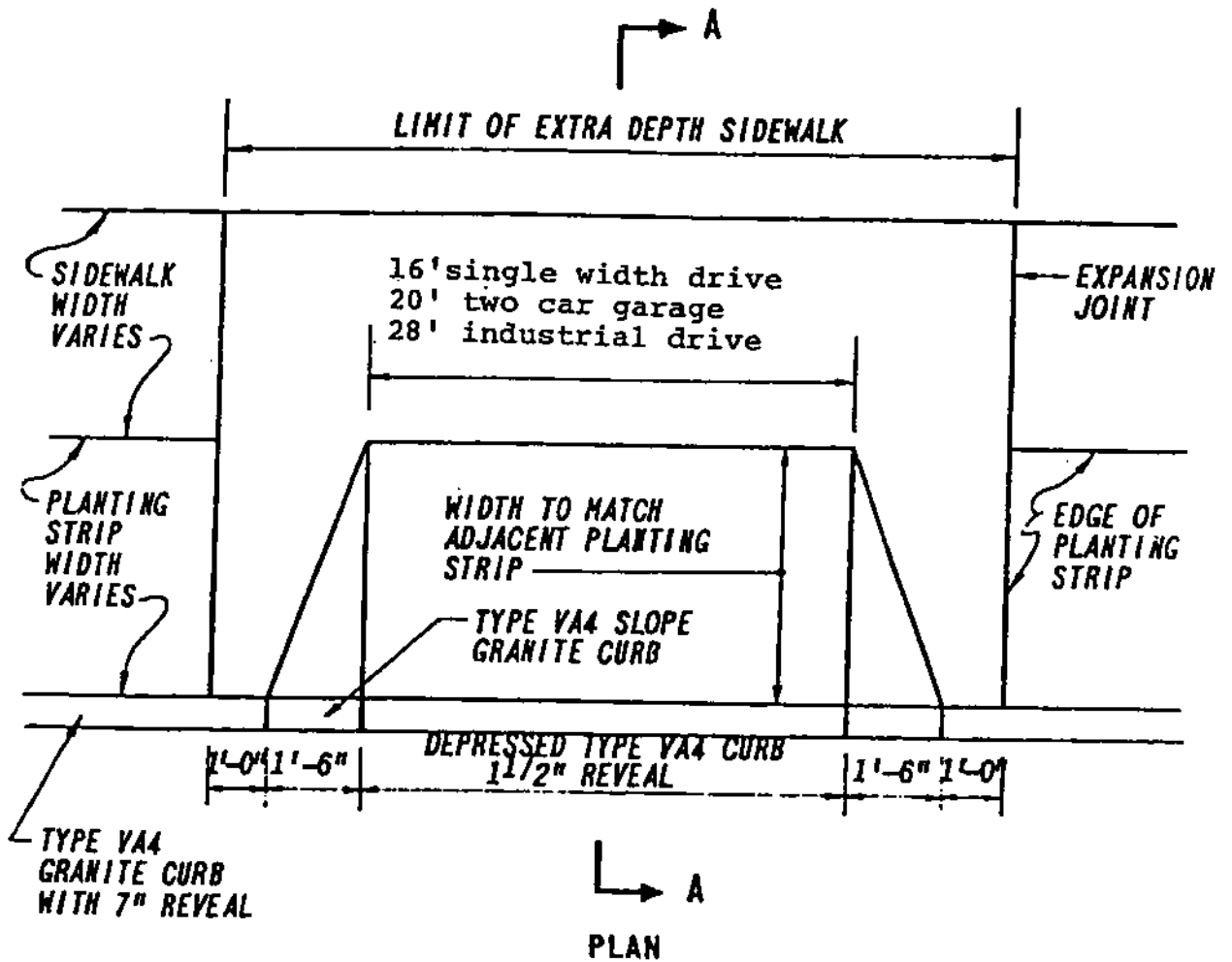
NOTE:

1. RAMP CROSS SECTION TO BE SAME AS ADJACENT SIDEWALK;
I.E. DEPTH OF SURFACE AND FOUNDATION.
2. PORTLAND CEMENT CONCRETE RAMP ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
3. IN NO CASE ARE THE RAMP TO BE PLACED BEHIND THE STOP LINE.
4. SIDEWALKS THAT CROSS DRIVEWAYS SHALL BE RAMPED TO MEET THE GRADE OF DRIVEWAY.
5. FOR DESCRIPTION, MATERIALS AND CONSTRUCTION METHODS, SEE SPECIFICATIONS.

SECTION B - B

N. SLOPE TO BE SAME AS ADJACENT SIDEWALK.
X N. THESE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE.



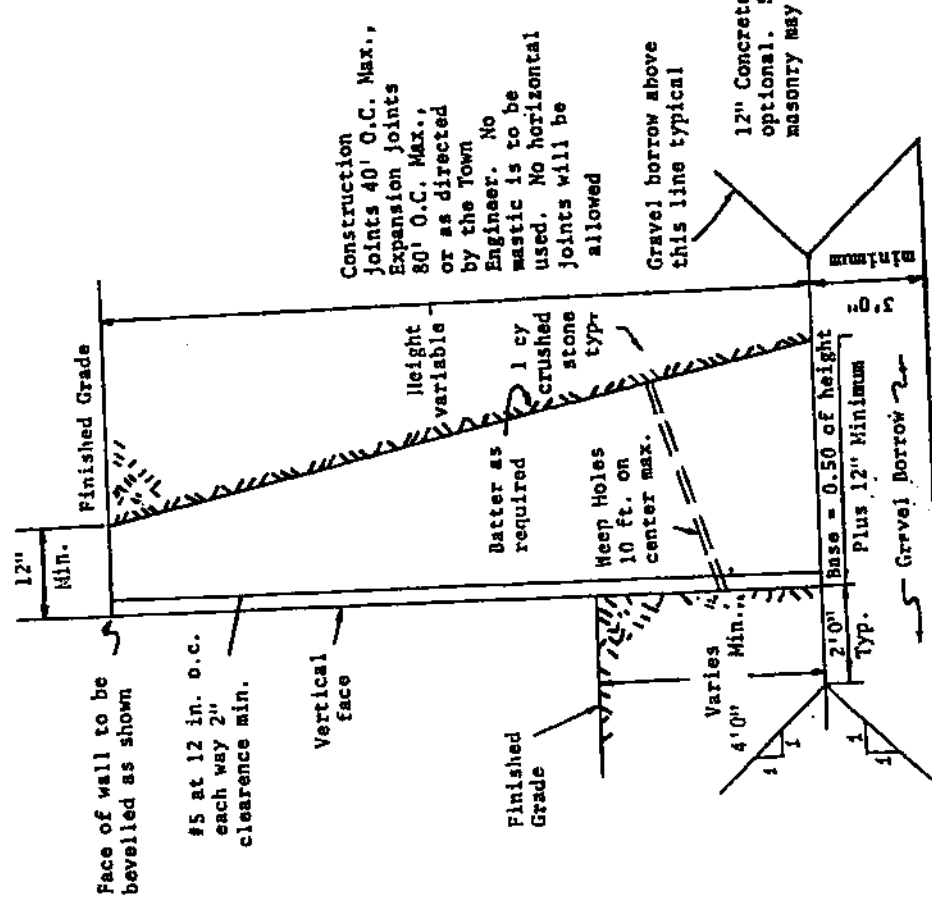
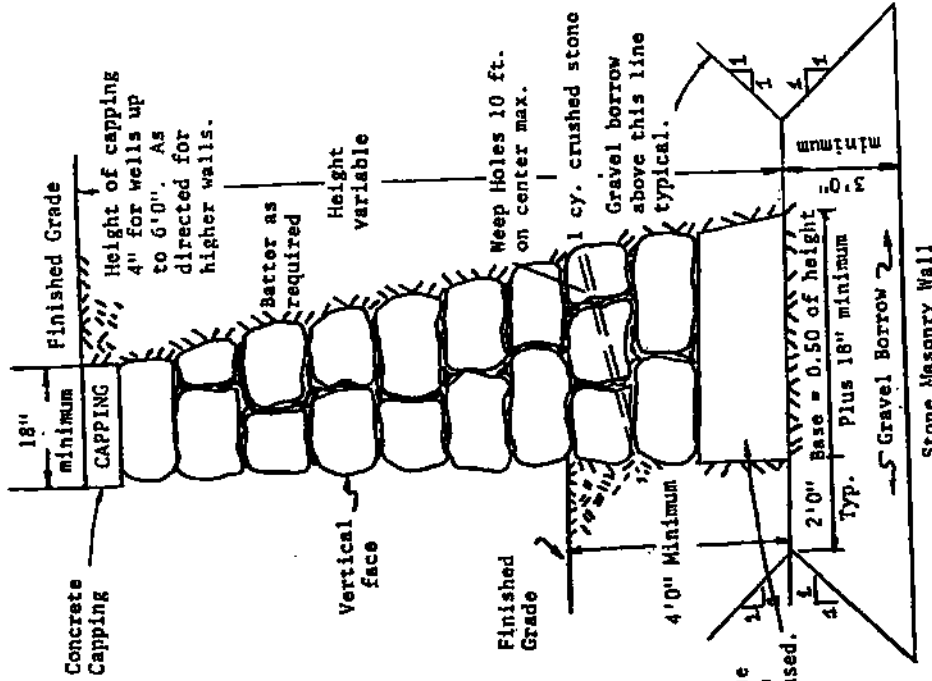


SECTION A-A

TYPICAL DRIVEWAY

NO SCALE

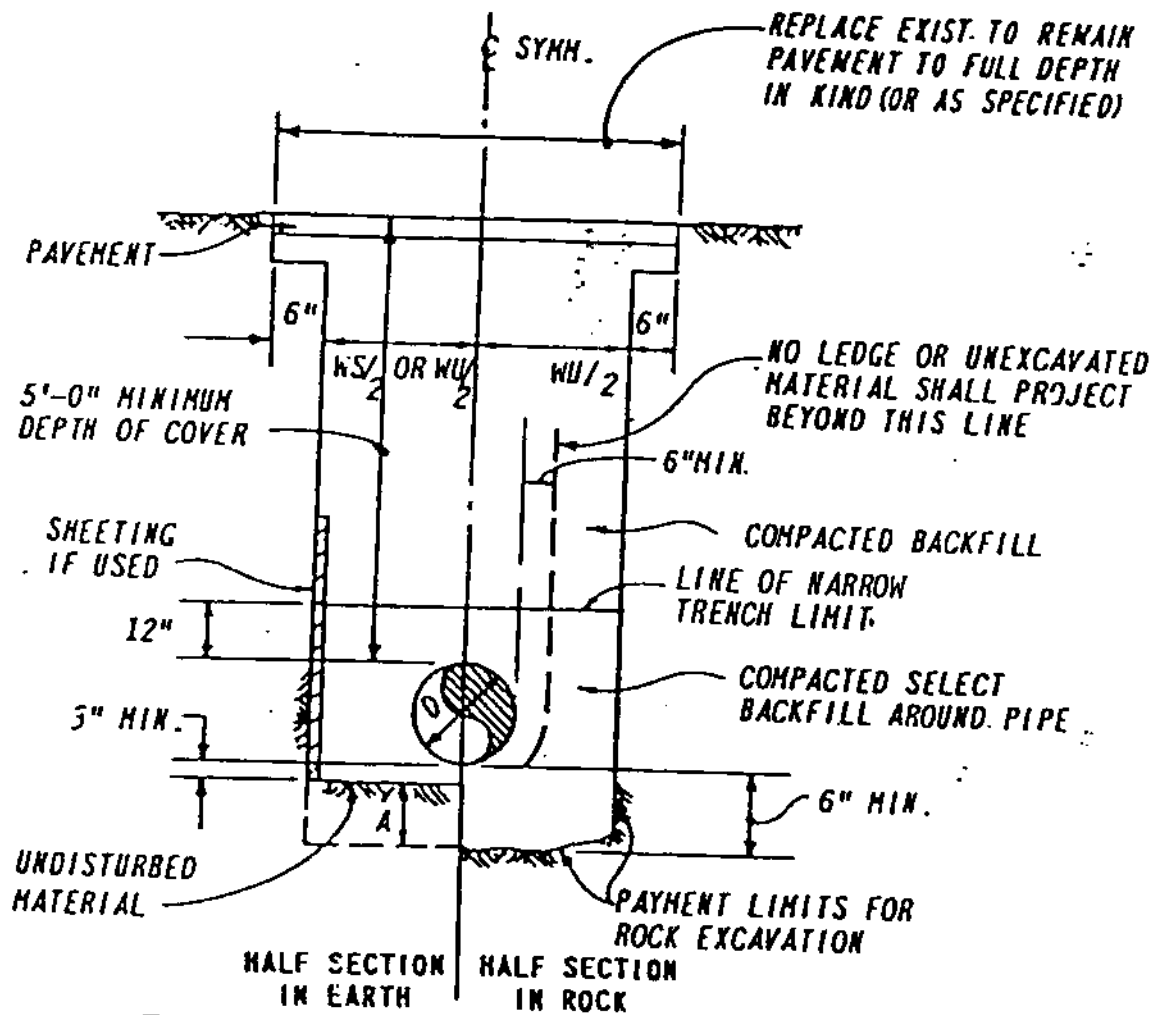
All stones to be laid in 1-3 cement mortar. Dry walls will not be allowed. Lime mortar will not be used.



Construction joints 40' O.C. Max., Expansion joints 80' O.C. Max., or as directed by the Town Engineer. No mastic is to be used. No horizontal joints will be allowed

12" Concrete base optional. Stone masonry may be used.

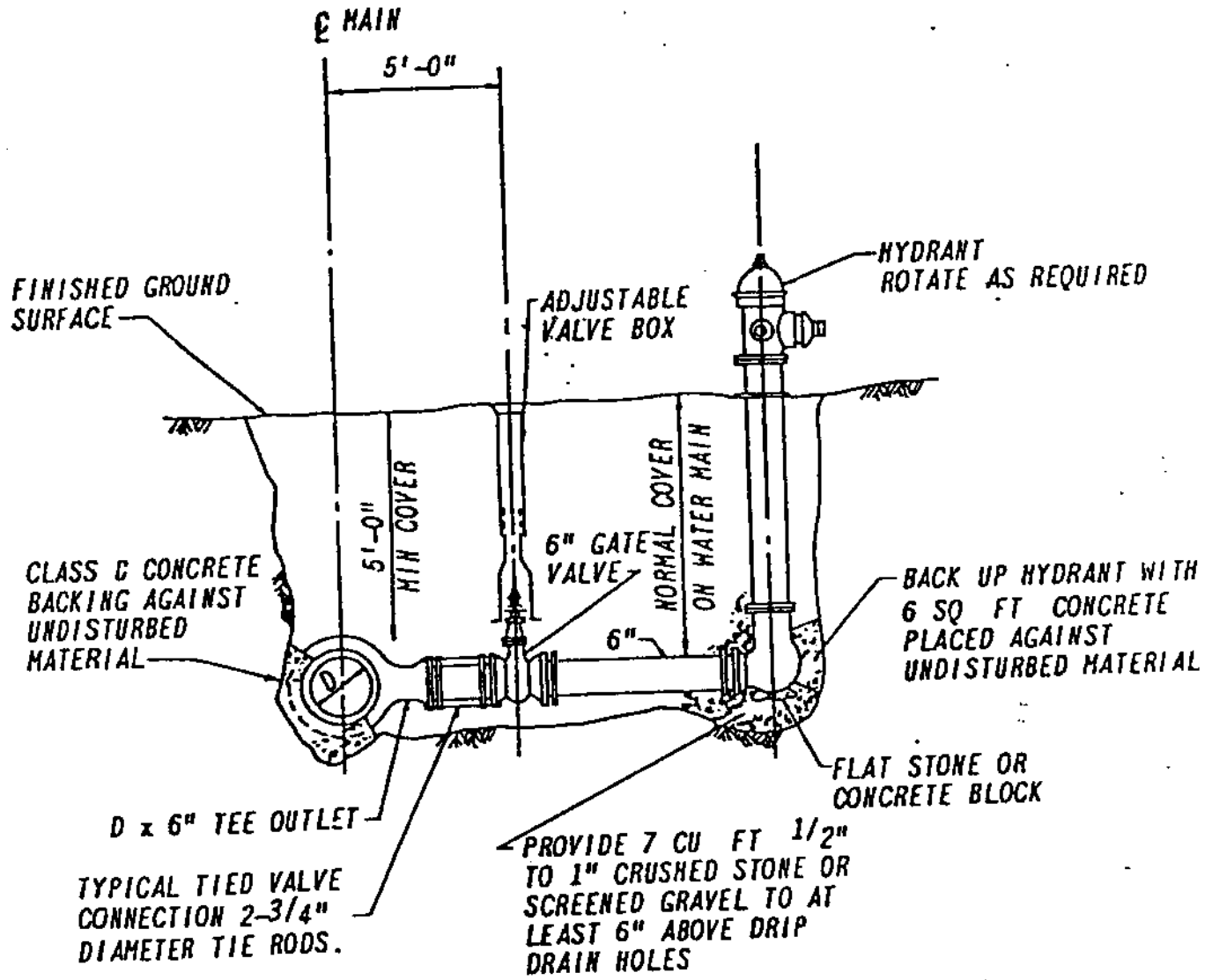
TYPICAL GRAVITY RETAINING WALLS
No Scale



TYPICAL TRENCH DETAIL

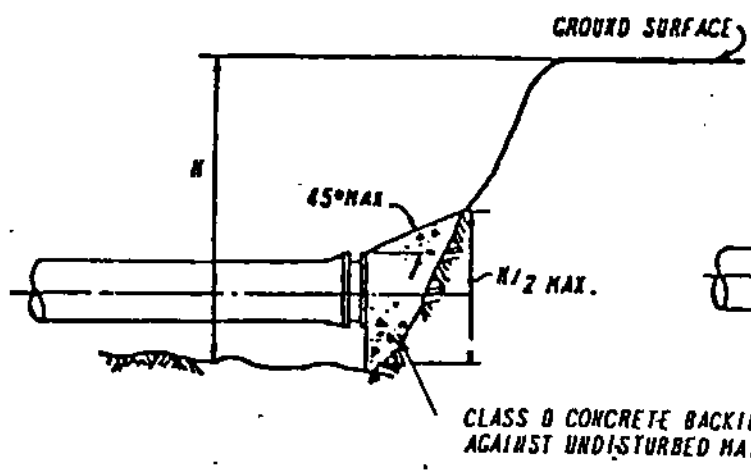
NO SCALE

FOR SHEETED TRENCH $W_S = 4/3D + 32"$ OR $50"$ WHICHEVER IS GREATER
 FOR UNSHEETED TRENCH $W_U = 4/3D + 18"$ OR $36"$ WHICHEVER IS GREATER
 A = ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE.
 REFILL WITH BEDDING MATERIAL

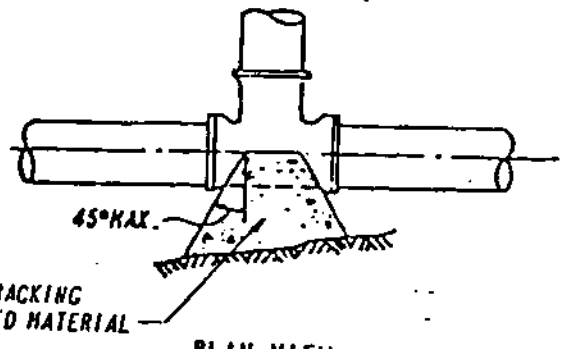


SECTION
TYPICAL HYDRANT ASSEMBLY DETAIL

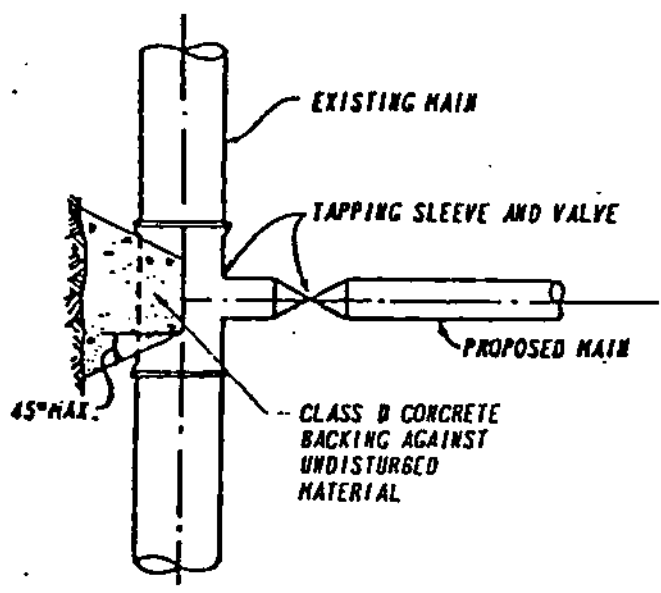
NO SCALE



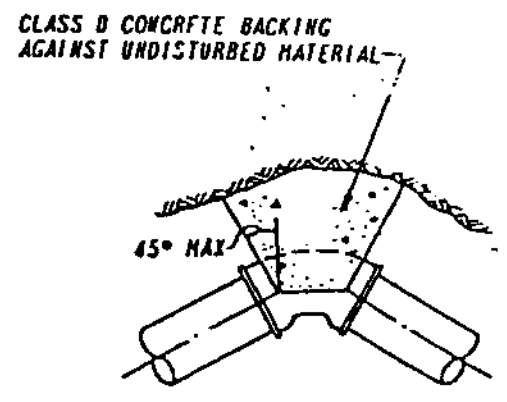
ELEVATION
TYPICAL PLUG
NOT TO SCALE



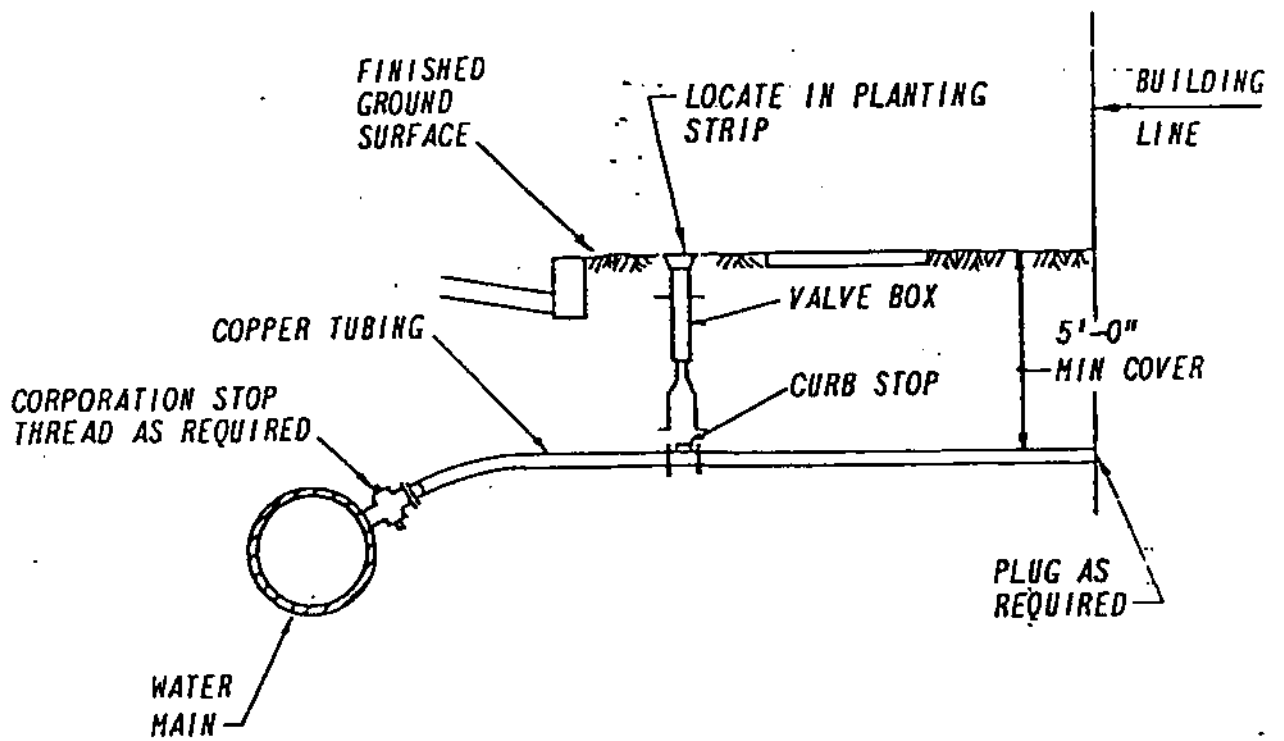
PLAN VIEW
TYPICAL TEE
NOT TO SCALE



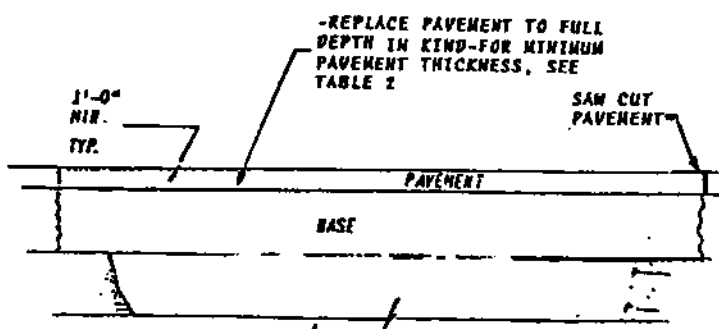
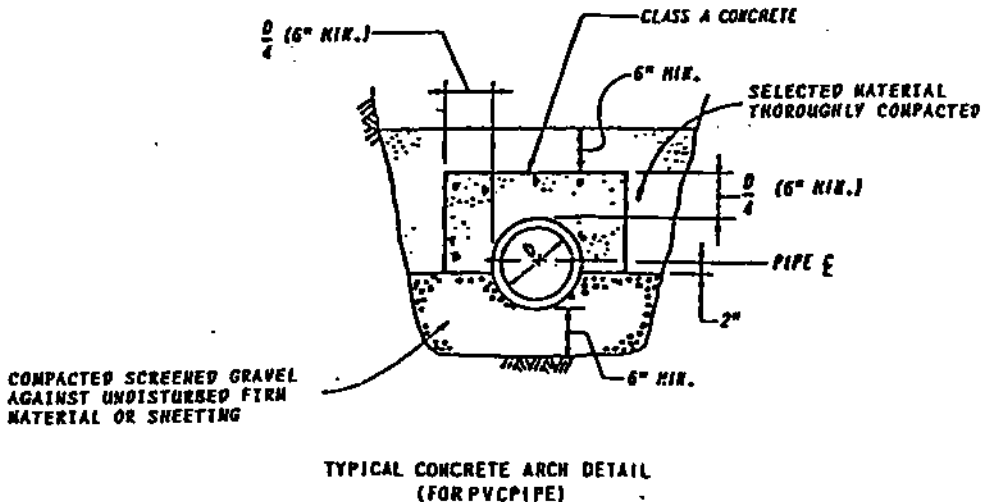
PLAN VIEW
TYPICAL TAPPED CONNECTION
NOT TO SCALE



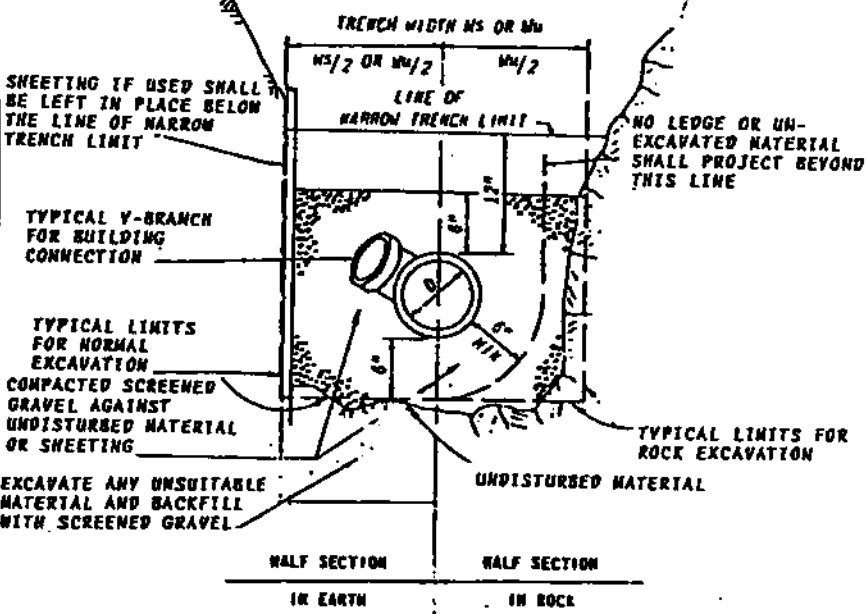
PLAN VIEW
TYPICAL BEND
NOT TO SCALE



TYPICAL WATER SERVICE CONNECTION
NO SCALE



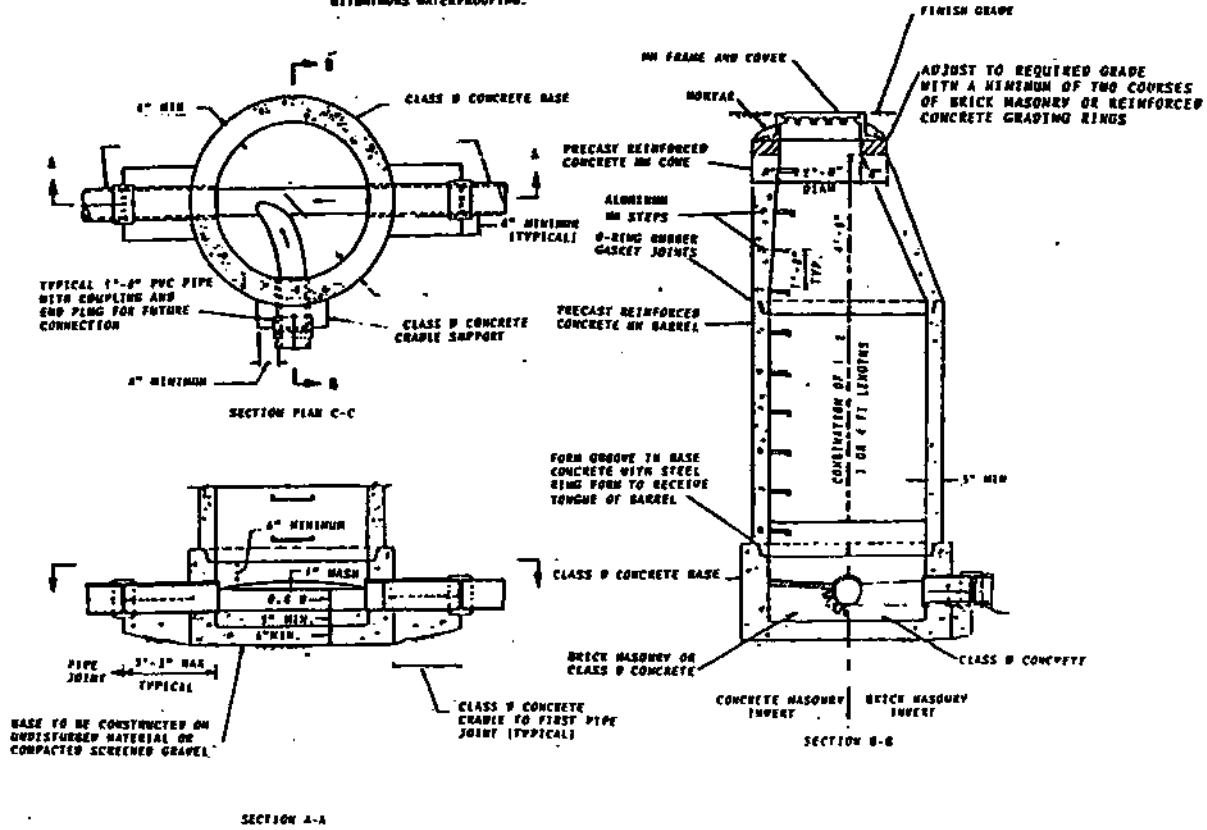
DIAMETER OF PIPE D	TRENCH WIDTH W _s OR W _n	
	W _n UNSHEETED	W _s SHEETED
12" AND SMALLER	3'-0"	4'-2"
15"	3'-2"	4'-4"
18"	3'-6"	4'-8"
21"	3'-10"	5'-0"
24"	4'-2"	5'-4"
27"	4'-6"	5'-8"
30"	4'-10"	6'-0"
36"	5'-6"	6'-8"
42"	6'-2"	7'-4"
48"	6'-10"	8'-0"



- NOTES:**
1. SEWER TRENCHES MAY BE EXCAVATED WIDER THAN TRENCH WIDTH W_s ABOVE THE "LINE OF NARROW TRENCH LIMIT"
 2. ALL UNEXCAVATED ROCK WITHIN 3'-0" HORIZONTALLY OF THE ENDS OF BUILDING CONNECTIONS, BRANCHES, AND STUBS, AND DOWN TO A HORIZONTAL PLANE 6" BELOW THE BOTTOMS OF SUCH CONNECTIONS, BRANCHES, AND STUBS, SHALL BE SHATTERED.

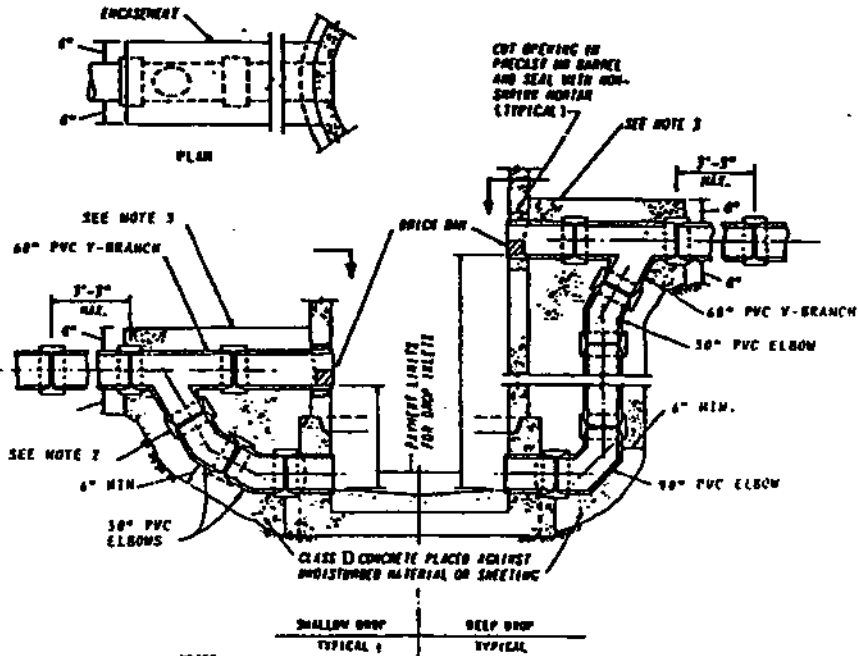
ALL EXTERIOR SURFACES OF MANHOLE GRADE ADJUSTMENT COUSES SHALL BE COATED WITH 1/2" TO 3/4" MASONRY CEMENT PLASTER.

ALL EXTERIOR SURFACES OF MANHOLES SHALL BE GIVEN TWO COATS OF BITUMINOUS WATERPROOFING.



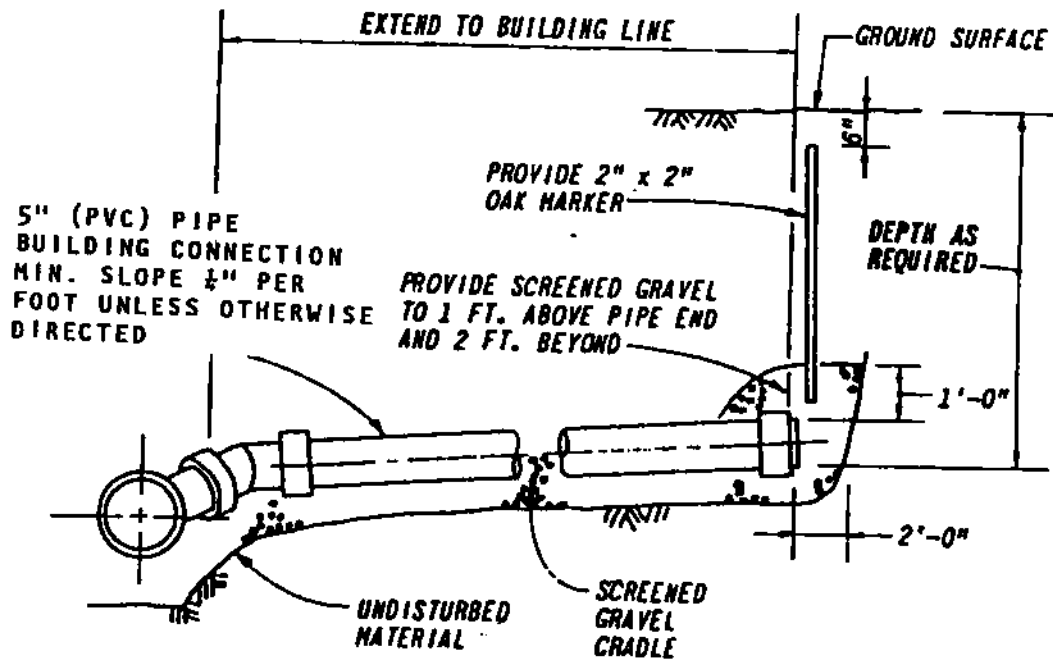
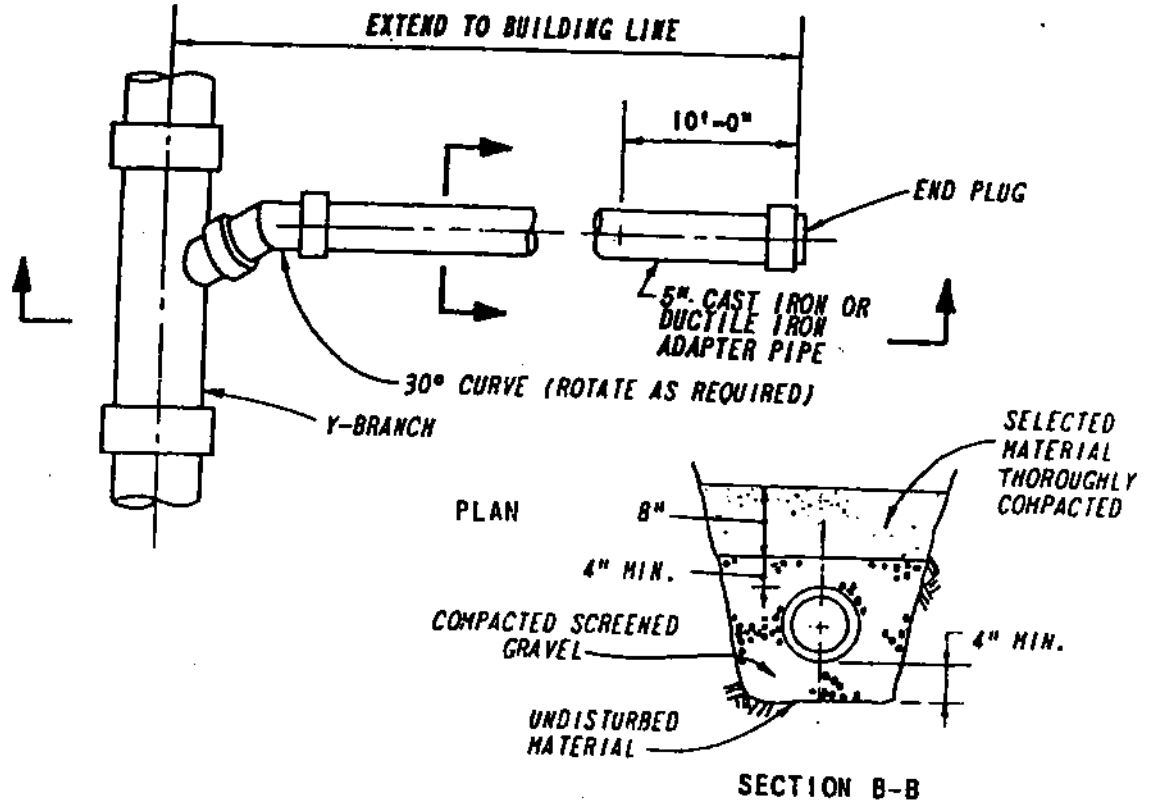
TYPICAL MANHOLE FOR PVC SEWERS
 24 IN. DIAMETER AND SMALLER

NO SCALE



NOTES:

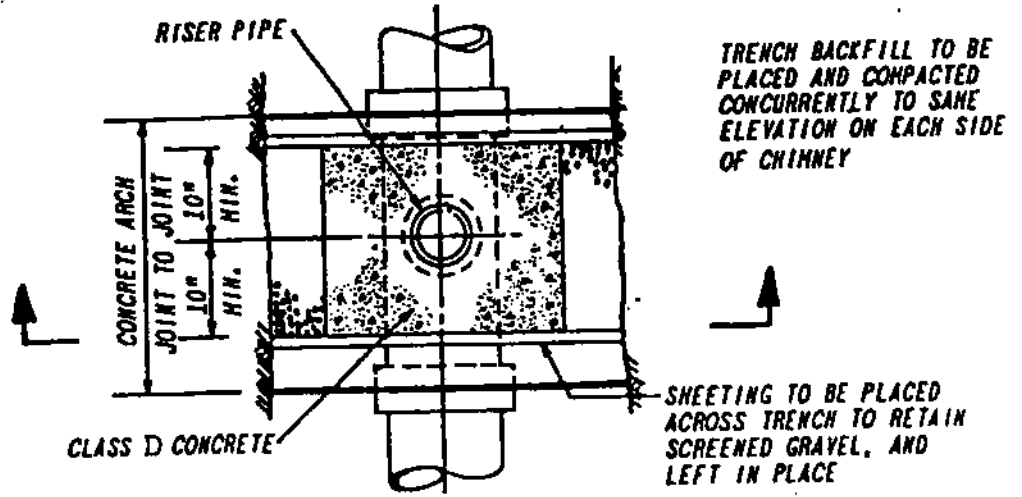
1. DROP PIPE TO BE SAME DIAMETER AS SEWER DISCHARGING INTO MANHOLE
2. DEEPER DROP MAY BE CONSTRUCTED WITH STRAIGHT PIPE BETWEEN Y-BRANCH AND ELBOW.
3. EXTEND ENCASEMENT TO FIRST JOINT BEYOND EXCAVATION FOR DROP CONNECTION.
4. DIMENSIONS AND CONSTRUCTION OF DROP MANHOLE TO BE SIMILAR TO TYPICAL MANHOLE EXCEPT AS SHOWN.



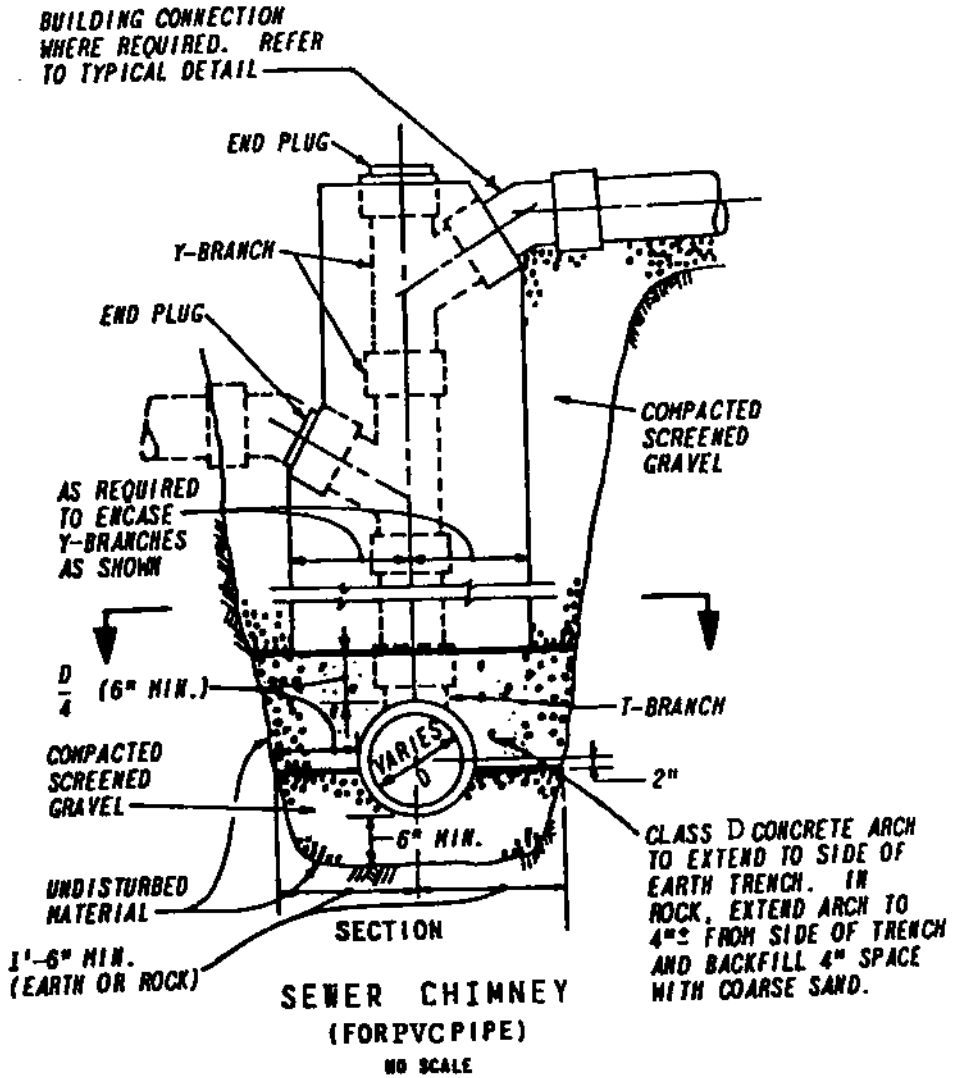
SECTION

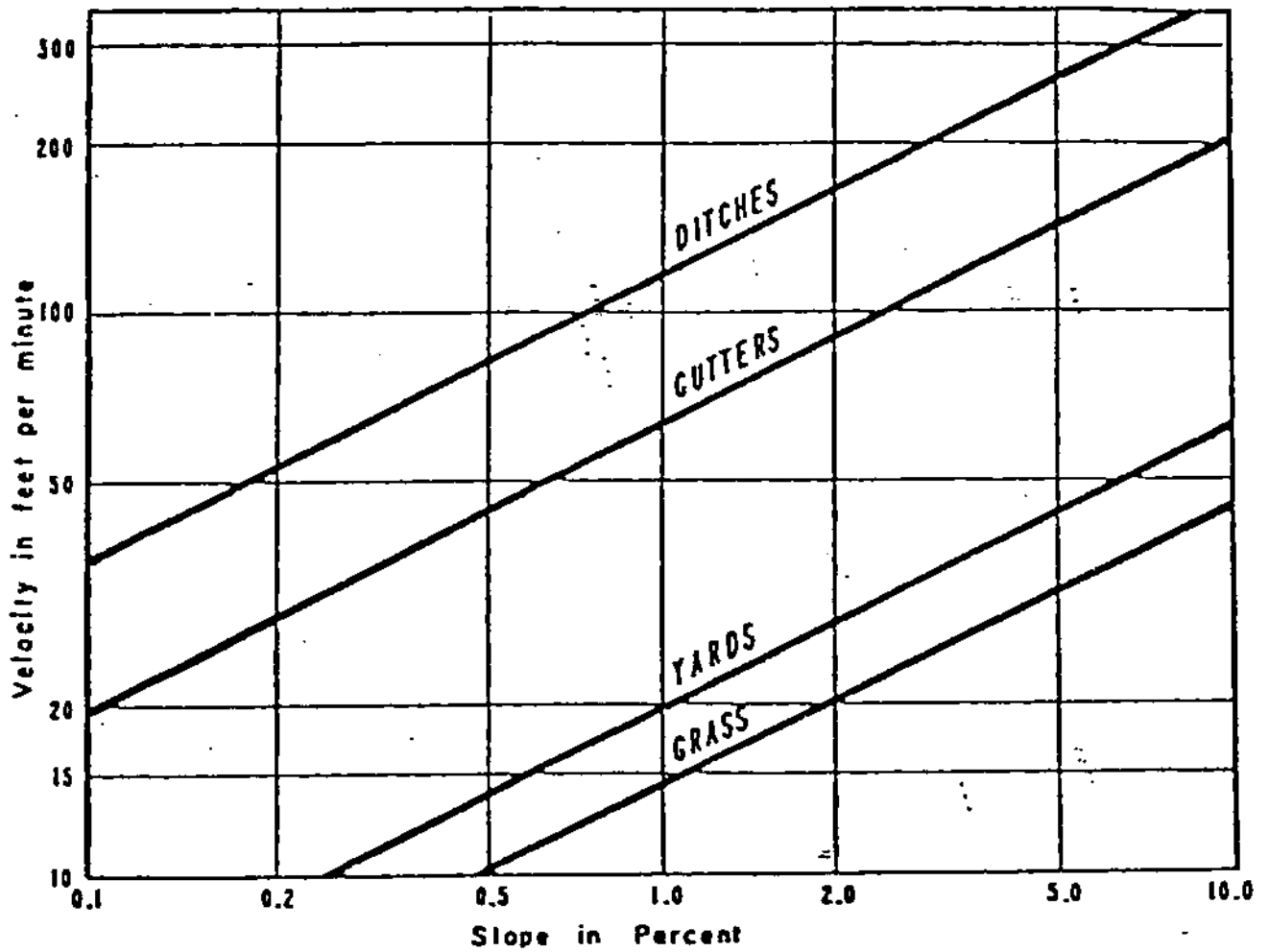
TYPICAL SANITARY SEWER BUILDING SERVICE CONNECTION

NO SCALE

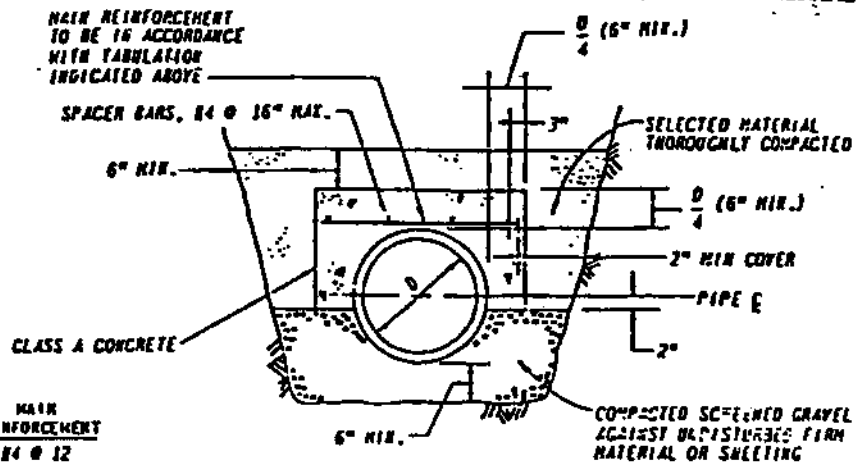


SECTIONAL PLAN



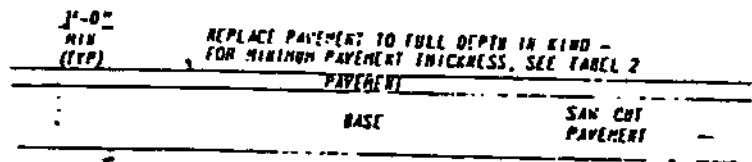


WATER VELOCITY ON VARIOUS TYPES OF SURFACES



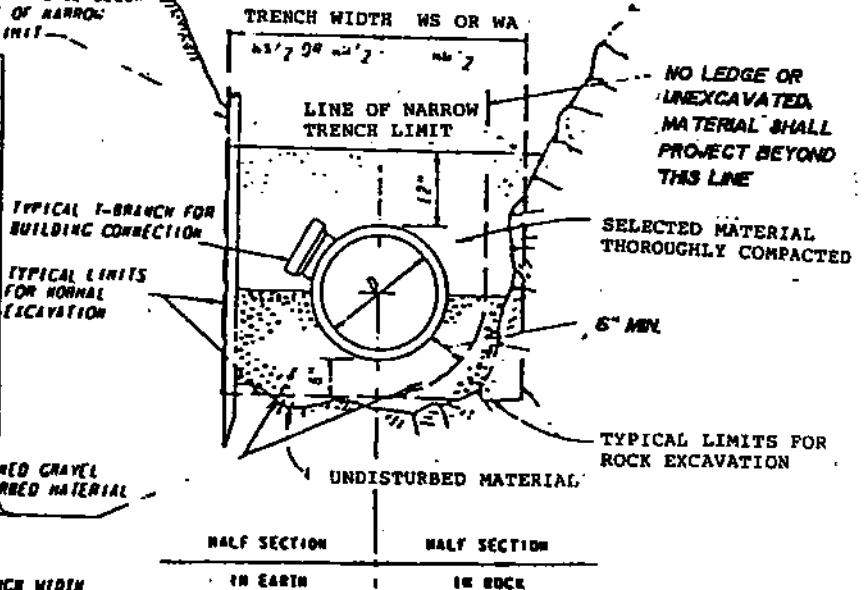
PIPE DIAM. D (IN.)	MAIN REINFORCEMENT
12	#4 @ 12
15, 18	#4 @ 8
21-48	#4 @ 6
54-72	#5 @ 6

TYPICAL CONCRETE ARCH DETAIL
(FOR RC PIPE)



TRENCH WIDTH WS OR Wn		
DIAMETER OF PIPE D	Wn UNSHEETED	Ws SHEETED
12" AND SMALLER	3'-0"	4'-2"
15"	3'-2"	4'-4"
18"	3'-6"	4'-8"
21"	3'-10"	5'-0"
24"	4'-2"	5'-4"
27"	4'-6"	5'-8"
30"	4'-10"	6'-0"
36"	5'-6"	6'-8"
42"	6'-2"	7'-4"
48"	6'-10"	8'-0"

SHEETING IF USED SHALL BE LEFT IN PLACE BELOW THE LINE OF NARROW TRENCH LIMIT

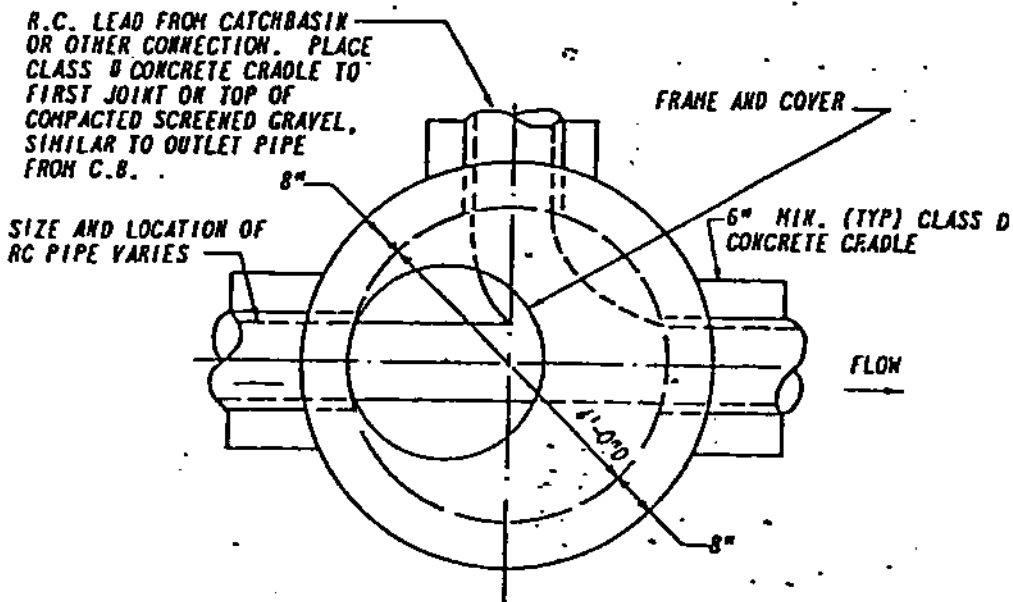


NOTES:

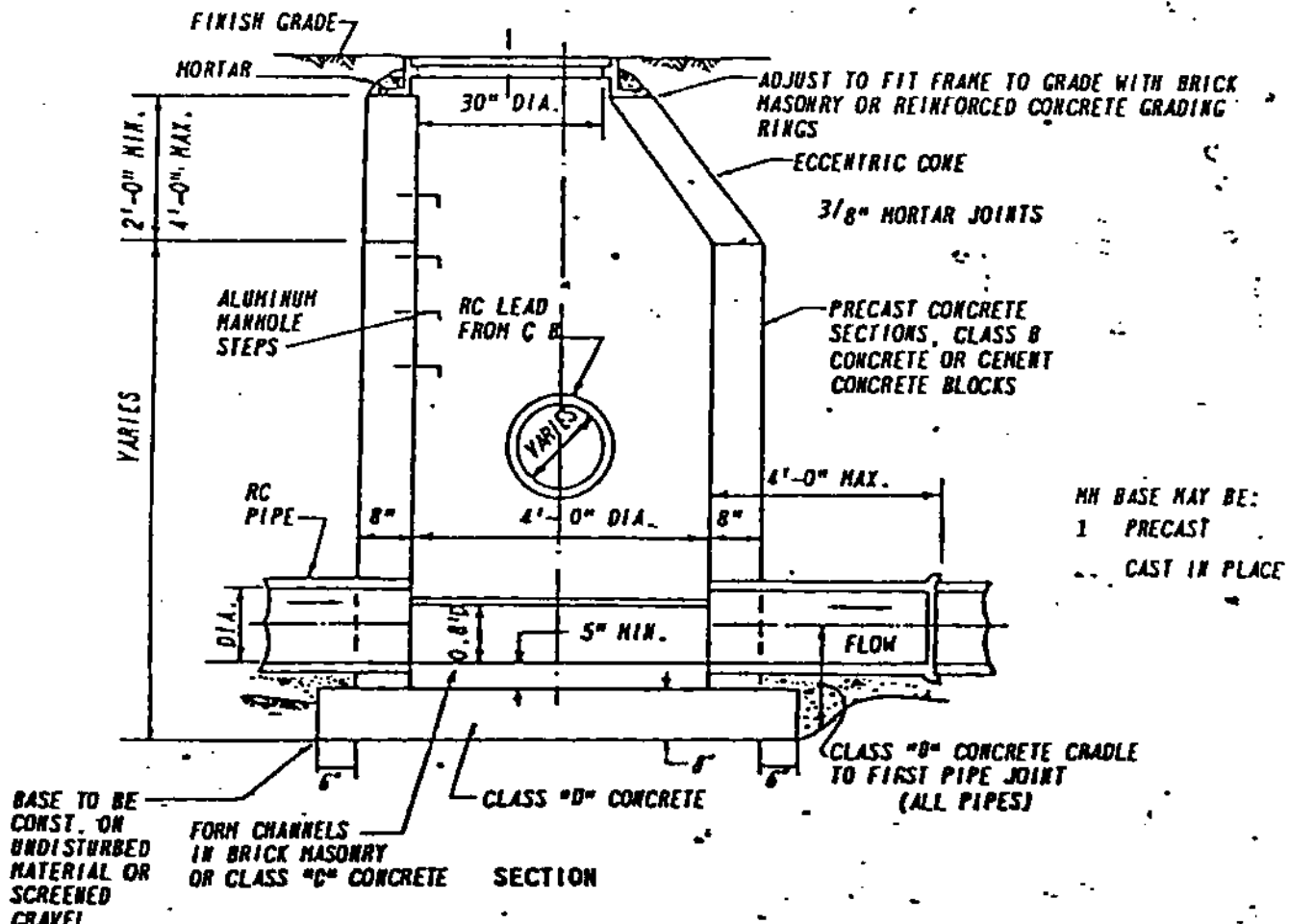
1. TRENCHES MAY BE EXCAVATED WIDER THAN TRENCH WIDTH Ws ABOVE THE "LINE OF NARROW TRENCH LIMIT"
2. ALL UNEXCAVATED ROCK WITHIN 3'-0" HORIZONTALLY OF THE ENDS OF BUILDING CONNECTIONS, BRANCHES, AND STUBS, AND DOWN TO A HORIZONTAL PLANE 6" BELOW THE BOTTOMS OF SUCH CONNECTIONS, BRANCHES, AND STUBS, SHALL BE SHATTERED

TYPICAL STORM
DRAIN TRENCH SECTIONS
(FOR RC PIPE)

NO SCALE



PLAN

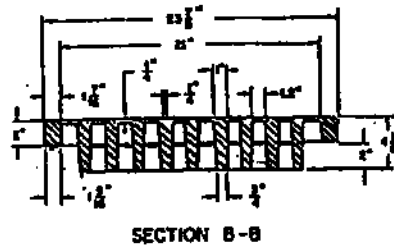
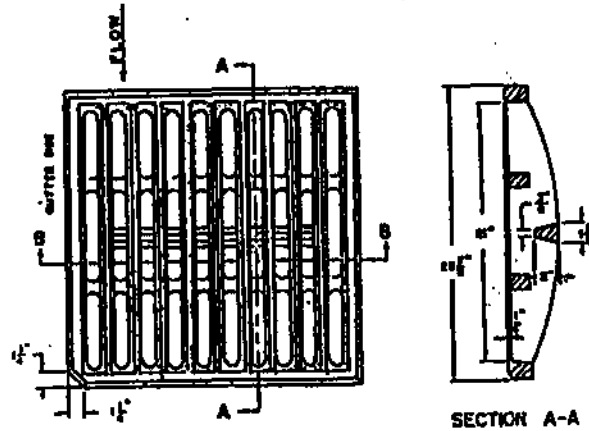
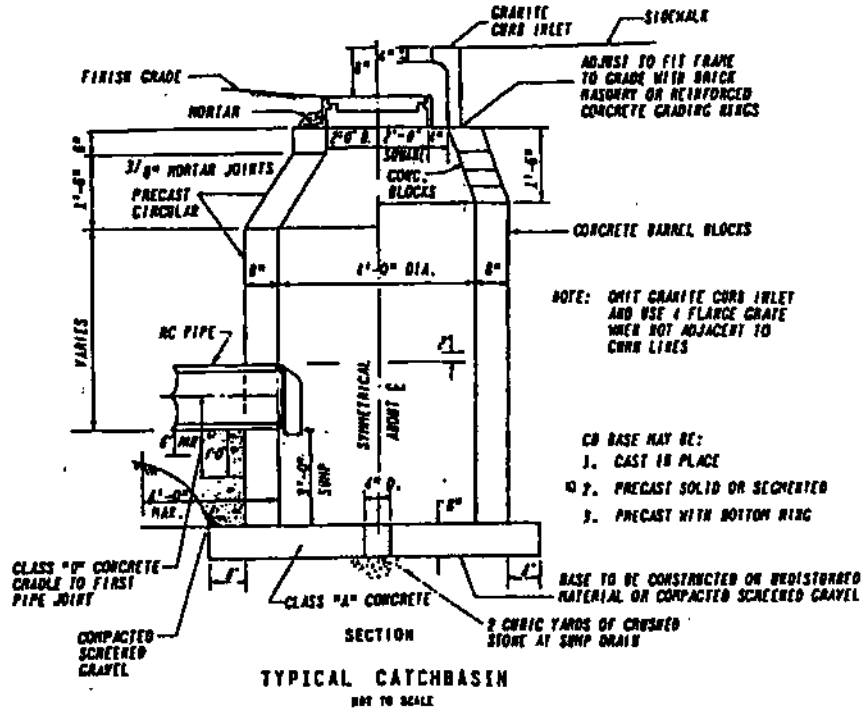


TYPICAL DRAIN MANHOLE

NO SCALE

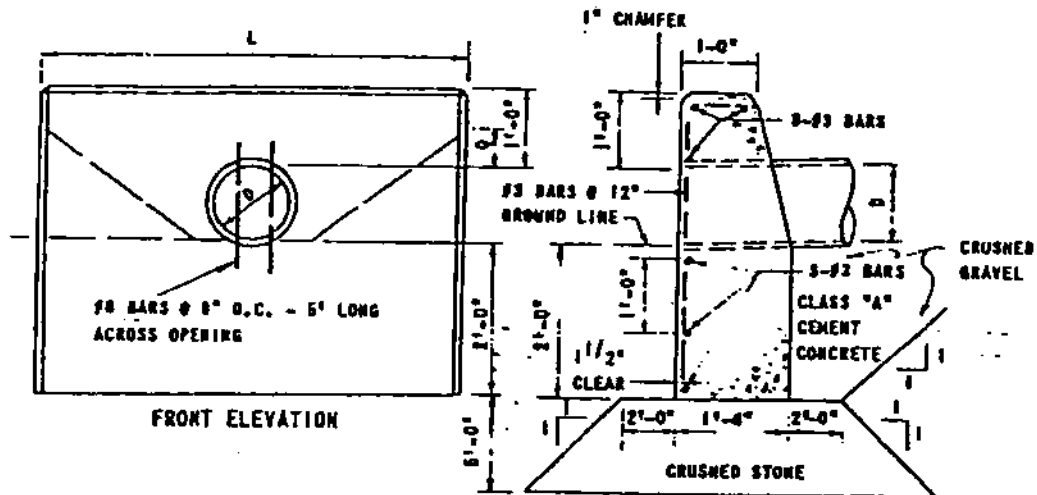
NOTE
MASS. STANDARD CATCH BASIN
HOOD SHALL BE INSTALLED
ON OUTLET PIPE

NOTE: OMIT GRANITE CURB INLET AND USE
A FLANGE GRATE WHEN NOT ADJACENT
TO CURB LINES.

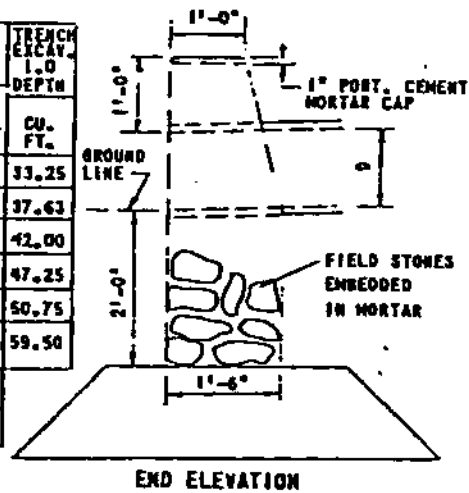


MATERIAL - CAST IRON
MINIMUM WEIGHT - 210 LBS.

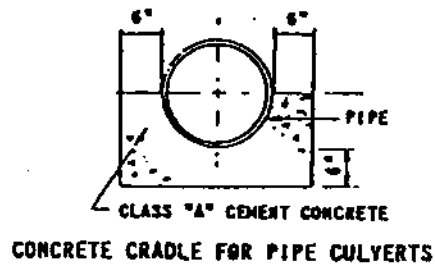
CATCHBASIN GRATE
MASS. TYPE A-1 (MODIFIED)
NO SCALE



TRENCH EXCAV. 1.0 DEPTH	PIPE DIAM.	1 1/2:1 SLOPE				2:1 SLOPE				TRENCH EXCAV. 1.0 DEPTH
		CU. FT.	D	L	CONC. OR FSN CU. YDS.	STEEL LBS.	L	CONC. OR FSN CU. YDS.	STEEL LBS.	
26.25	12"	5'-6"	1.06	21	7'-6"	1.49	29	33.25		
28.75	15"	6'-6"	1.34	24	8'-9"	1.82	32	37.63		
33.25	18"	7'-6"	1.61	30	10'-0"	2.18	39	42.00		
37.35	21"	8'-6"	1.95	34	11'-6"	2.62	43	47.25		
38.38	24"	9'-3"	2.16	35	12'-6"	2.97	50	50.75		
43.75	30"	10'-6"	2.63	44	15'-0"	3.86	62	59.50		
		4" FOR 1 1/2:1 SLOPE								
		6" FOR 2:1 SLOPE								

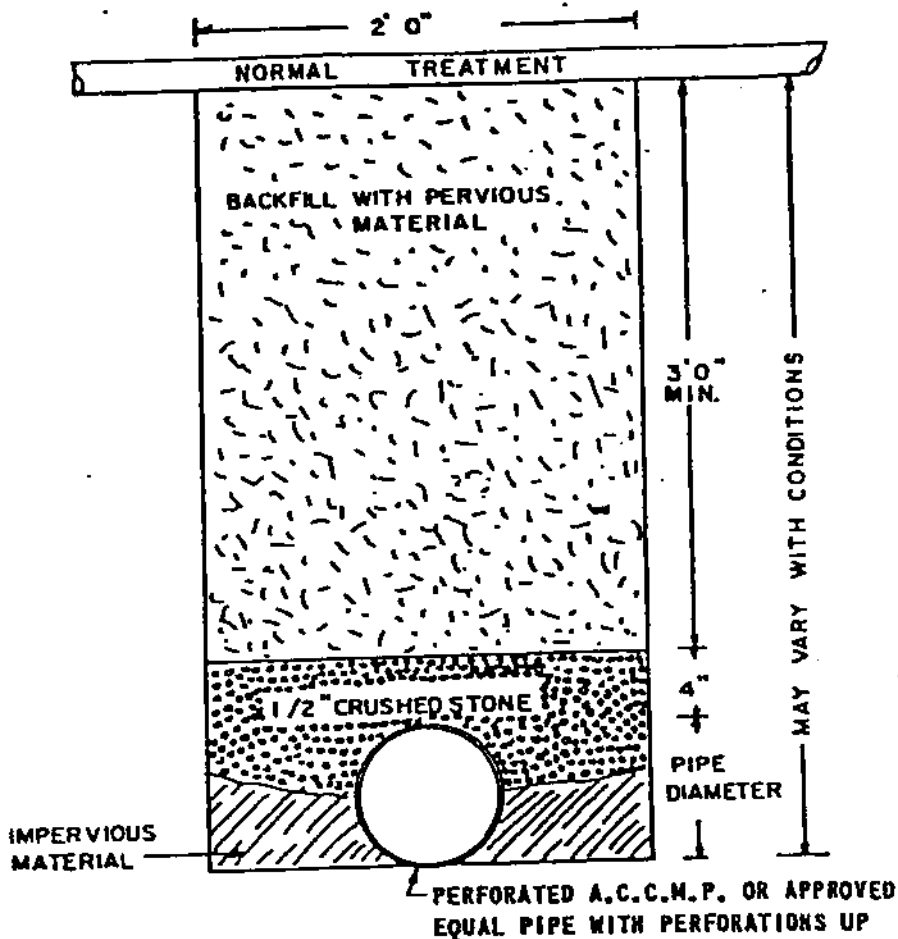


NOTE:
1. ALL DIMENSIONS AND QUANTITIES SHOWN ARE MINIMUM.



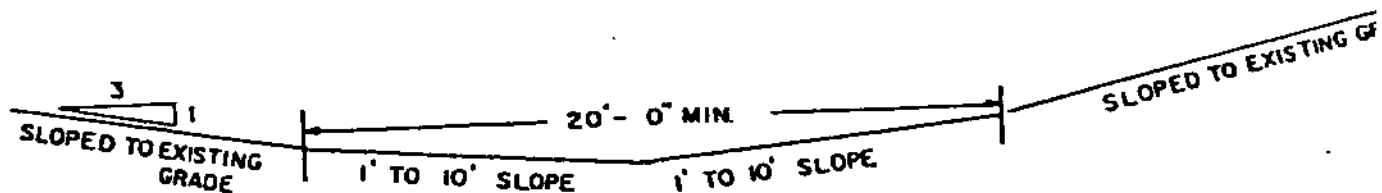
TYPICAL CONCRETE AND FIELD STONE MASONRY HEADWALLS FOR 12" TO 30" PIPE CULVERTS

NO SCALE



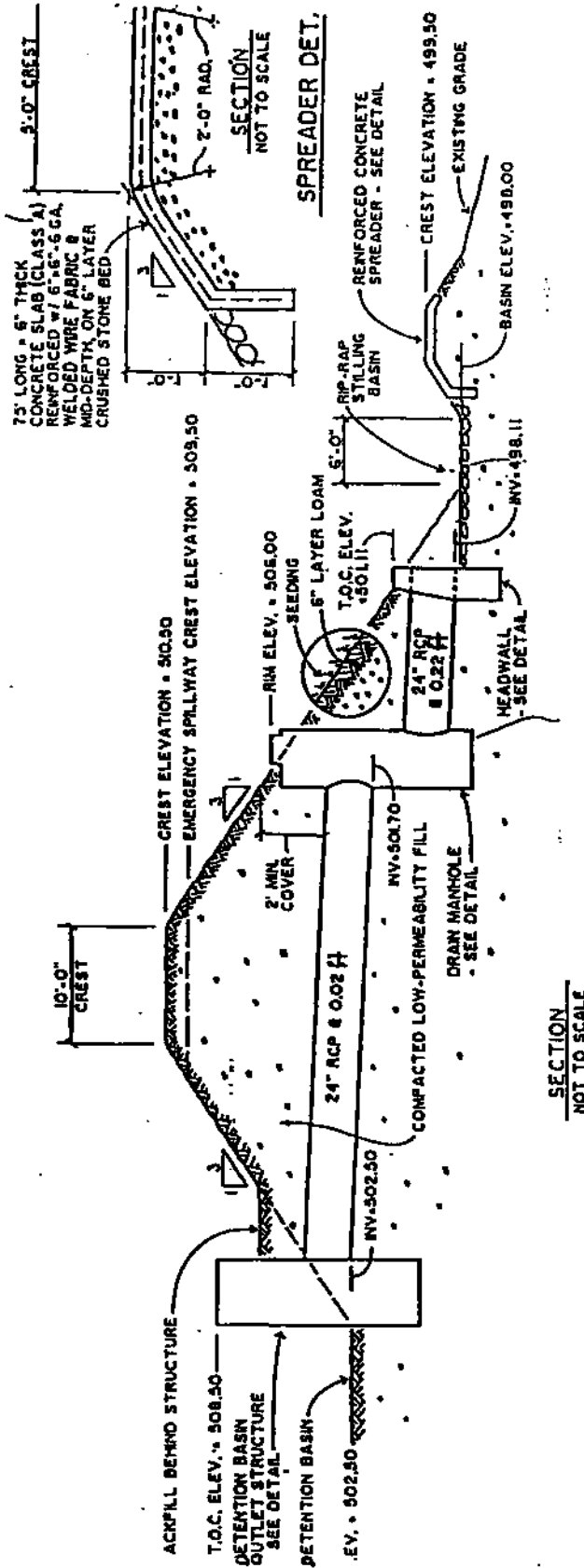
TYPICAL SUBDRAIN

NOTE: IN LEDGE CUTS OMIT IMPERVIOUS MATERIAL.
 USE 1/2" CRUSHED STONE FROM A LINE 6" BELOW THE PIPE TO A LINE 4" ABOVE THE PIPE.
 PERFORATIONS TO FACE DOWN.



TYPICAL DRAINAGE SWALE

DETENTION BASIN DETAIL IS NOT SITE SPECIFIC.
REFER TO SECTION 5.23.16 FOR DESIGN SPECIFICATIONS.



DETENTION BASIN DISCHARGE SYSTEM

NOTES

1. ALL WORK IS TO BE STAKED AND INSPECTED BY THE DESIGN ENGINEER.
2. AREAS UNDER THE EMBANKMENT AND ANY STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL.
3. NO PILES SHALL BE LAID ON ROCK. ALL ROCK SHALL BE OVEREXCAVATED TO A MINIMUM OF 18" BELOW THE PROPOSED INVERT AND BE REPLACED BY COMPACTED LOW PERMEABILITY FILL.
4. ALL STRUCTURES TO MEET A.S.T.M.D. C 478 LATEST REVISION.
5. COMPACTED LOW-PERMEABILITY FILL MATERIAL SHALL BE WELL GRADED SILTY GRAVELLY SAND WITH A MINIMUM OF 15% PASSING NO. 200 AND SHALL BE FREE OF STONES GREATER THAN 6" IN DIAMETER, ORGANIC MATTER, CONSTRUCTION DEBRIS, SNOW OR FROZEN SOIL. MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 8" IN THICKNESS, AND SHALL BE COMPACTED BY CONTINUOUS PASSES WITH HEAVY DOZERS, HAULING EQUIPMENT AND APPROPRIATE COMPACTORS. MINIMUM DEGREE OF COMPACTON SHALL BE 93% OF MAXIMUM DRY DENSITY AS SPECIFIED BY A.S.T.M. D1557 C.
6. 10 FT. WIDE EMERGENCY SPILLWAY TO BE R.P. RAPPED WITH 2:1 SIDE SLOPES.
7. THE EMBANKMENT SHALL BE CONSTRUCTED TO THE DESIGN ELEVATION PLUS 0.5 FT. TO ALLOW FOR SETTLEMENT.
8. A MINIMUM OF 2 FT. OF COMPACTED BACKFILL SHALL BE PLACED OVER THE CONDUIT BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.
9. S.C.S. APPROVED SEED MIX TO BE SPREAD AS SOON AS IS PRACTICAL TO MINIMIZE EROSION.

TABLE I
GEOMETRIC DESIGN STANDARDS

	<u>Local Street</u>			<u>Collector Street</u>			
	<u>Resid- ential</u>	<u>Commer- cial</u>	<u>Indust- rial</u>	<u>Resid- ential</u>	<u>Commer- cial</u>	<u>Indust- rial</u>	<u>Arterial Street</u>
Right-of-way width, ft.	55	60	55	60	60	60	As Required
Roadway Width, ft.	36	40	36	42	42	42	As Required
Minimum Design Speed Horizontal and Ver- tical, MPH	20	20	20	30	30	30	40
Minimum Stopping Site distance, ft.	150	150	150	200	200	200	300
Pavement Cross Slope, in. per ft.	1/4	1/4	1/4	1/4	1/4	1/4	1/4, 3/8 roadway over 24'
Minimum Centerline Radius Ft.	200	200	200	400	400	400	700
Vertical Alignment:							
a. Maximum centerline grade, percent	8	6	6	8	6	6	6
b. Minimum centerline grade, percent	1	1	1	1	1	1	1
c. K value for crest vertical curve	10	10	10	30	30	30	55
d. K value for sag vertical curve	15	15	15	35	35	35	55

	<u>Local Street</u>			<u>Collector Street</u>			
	<u>Resid- ential</u>	<u>Commer- cial</u>	<u>Indust- rial</u>	<u>Resid- ential</u>	<u>Comm- ercial</u>	<u>Indust- rial</u>	<u>Arterial Street</u>
Minimum Tangent Length between successive horizontal and vertical curves, ft.	100	100	100	150	150	150	200
Intersection Design:							
a. Minimum Centerline intersection angle deg. (1)	60	60	60	60	60	60	80
b. Minimum Centerline offset, ft.	150	150	150	200	200	200	300
c. Maximum Centerline grade within 150 ft., percent	8	6	6	6	4	4	4
d. Minimum lengths of both legs of a sight distance triangle measured along the adjacent roadway edges from their point of intersection within which obstructions over 3 ft. high, parking, and drive- way entrances shall be prohibited	100	100	100	150	150	150	200

1. When streets of different types intersect, the larger value shall pertain.

TABLE 2. MINIMUM PAVEMENT THICKNESS FOR ROADWAYS

	Gravel base course thickness (inches)	Processed gravel base course thickness (inches)	Class I bituminous concrete base course type I-1 thickness (inches)	Class I bituminous concrete binder course type I-1 thickness (inches)	Class I bituminous concrete top course type I-1 thickness (inches)	Total thick- ness of pavement (inches)
Arterial street						
Alternative A	14	6	3	2-1/2	1-1/2	26-1/2
Alternative B	12	-	5	2-1/2	1-1/2	20-1/2
Residential local street						
Alternative A	14	4	1-1/2	-	1-1/2	21
Alternative B	12	-	3-1/2	-	1-1/2	17
Residential collector street						
Alternative A	14	4	3	-	1-1/2	22-1/2
Alternative B	12	-	3	2-1/2	1-1/2	18
Commercial local street						
Alternative A	14	4	3	-	1-1/2	22-1/2
Alternative B	12	-	3-1/2	2-1/2	1-1/2	18-1/2
Commercial collector street						
Alternative A	14	4	4-1/2	-	1-1/2	24
Alternative B	12	-	5	2-1/2	1-1/2	20
Industrial local street						
Alternative A	14	4	3	-	1-1/2	22-1/2
Alternative B	12	-	3-1/2	2-1/2	1-1/2	18-1/2
Industrial collector street						
Alternative A	14	4	4-1/2	-	1-1/2	24
Alternative B	12	-	5	2-1/2	1-1/2	20

SPECIFICATIONS FOR CATIONIC MALTENES EMULSION

This material shall be composed of a petroleum resin-oil base uniformly emulsified with water and shall conform to the following physical and chemical requirements:

<u>SPECIFICATION DESIGNATION</u>	<u>TEST METHOD</u>	<u>REQUIREMENTS</u>
Viscosity, S.F., at 77°F, sec.	ASTM D244-60	15-40
Residue, % Min. (1)	ASTM D244-60 (Mod)	60-65
Miscibility Test (2)	ASTM D244-60 (Mod)	No Coagulation
Sieve Test, % Max (3)	ASTM D244-60 (Mod)	1.10
Particle Charge Test	ASTM D244-60	Positive
Tests on Residue from ASTM D244-60 (Mod);		
Viscosity, cs., 140°F	ASTM D445	100-200
Asphaltenes, % Max.	ASTM D2006-65-Z	0.75
Maltenes Dist. Ratio	ASTM D2006-65-Z	0.3-0.8
$\frac{PC + A_1^{(4)}}{A_2 + S}$		

- (1) ASTM D244 Modified Evaporation Test for per cent of residue is made by heating 50 gram sample to 300°F until foaming ceases, then cool immediately and calculate results.
- (2) Test procedure identical with ASTM D244-60 except that .02 Normal Calcium Chloride solution shall be used in place of distilled water.
- (3) Test procedure identical with ASTM D244 except that distilled water shall be used in place of 2% sodium oleate solution.
- (4) In the Maltenes Distribution Ratio Test by ASTM Method D2006-65-T:

PC = Polar Compounds	A = Acidaffins
A ₂ = Second Acidaffins	S ¹ = Saturates

The materials shall have a record of satisfactory service as an asphalt rejuvenating agent: such satisfactory service being based on the capability of the material to increase the ductility and penetration of the asphalt binder in the pavement surface.

TABLE 4

SPECIFICATION FOR APPROVED ASPHALT EMULSION

<u>PROPERTY</u>	<u>TEST METHOD</u>	<u>REQUIREMENTS</u>
Viscosity @ 77F (25°C), SFS	ASTM D-244-76	25-150
Pumping Stability	GB Method (1)	Pass
5-day Settlement Test, %	ASTM D-244-76	5.0 Max.
Cement Mixing Test, %	ASTM D-244-76	2.0 Max.
Sieve Test, %	ASTM D-244-76 (MOD) (2)	0.1 Max.
Particle Charge Test	ASTM D-244-76 (MOD)	Positive
Residue, %	ASTM D-244-76 (MOD) (3)	62 Min.
TEST ON RESIDUE FROM ASTM D-244-76 (MOD)		
Viscosity @ 140F (60°C), Centistokes	ASTM D-244-76	1000-4000

