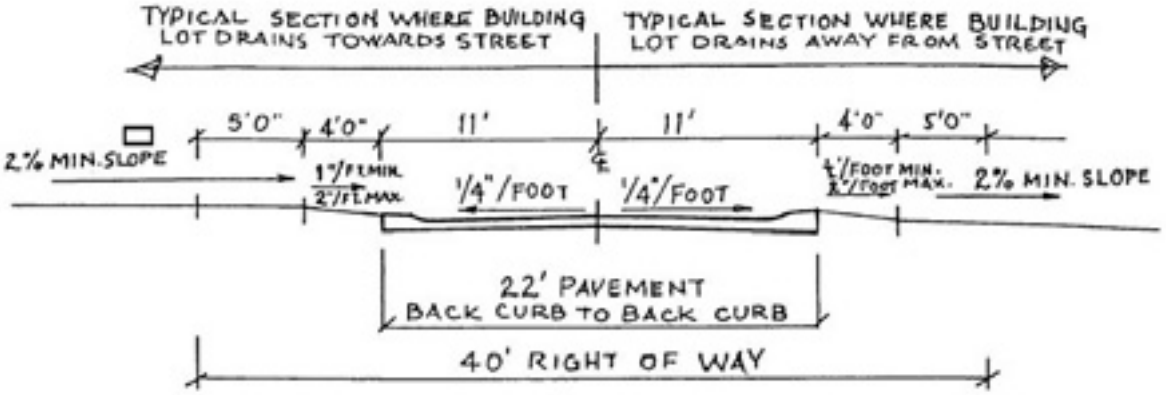
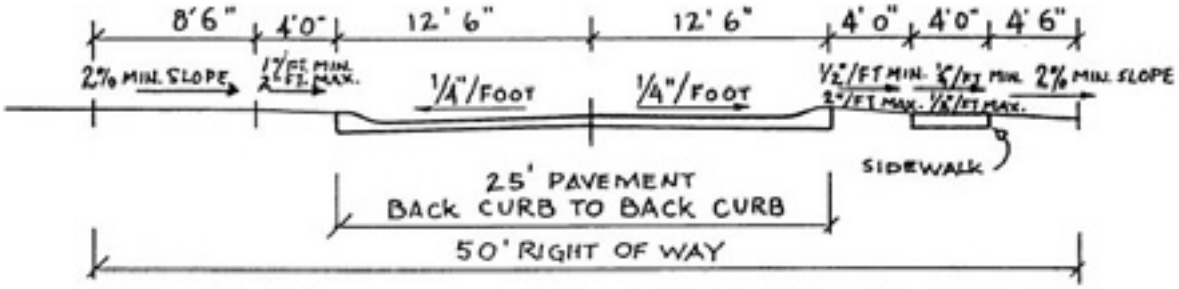
APPENDIX "C"

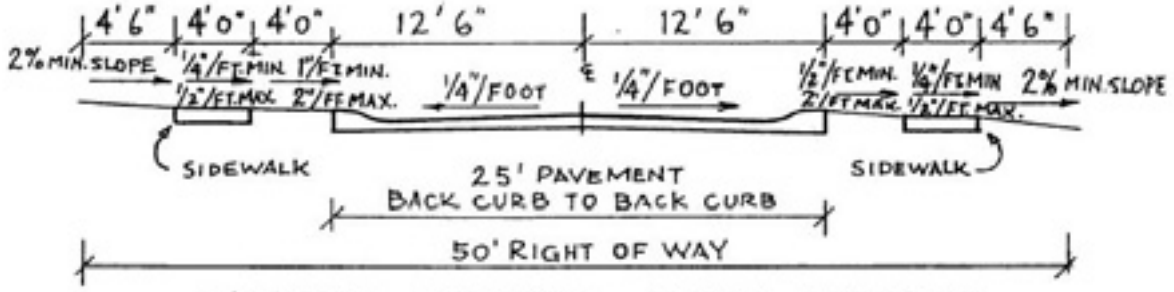
STANDARD CONSTRUCTION REQUIREMENTS AND DETAILS FOR STREETS, SIDEWALKS, DRIVEWAYS, EROSION CONTROL, AND STORM DRAINAGE SYSTEMS



TYPICAL SECTION - COURTS - DEADEND

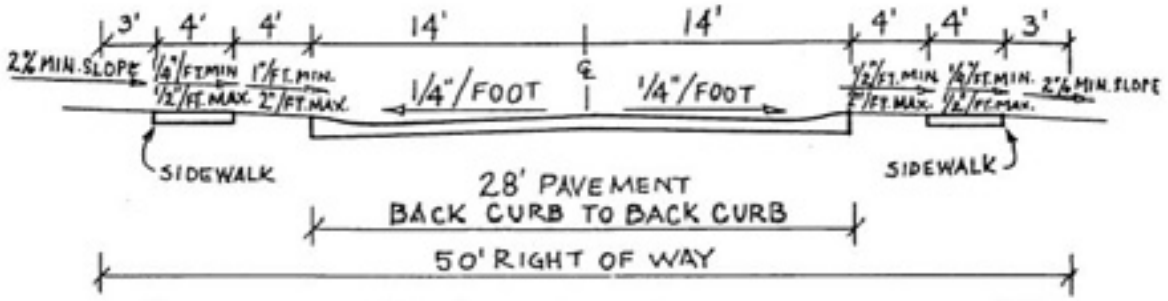


TYPICAL SECTION - CUL-DE-SACS - DEADEND

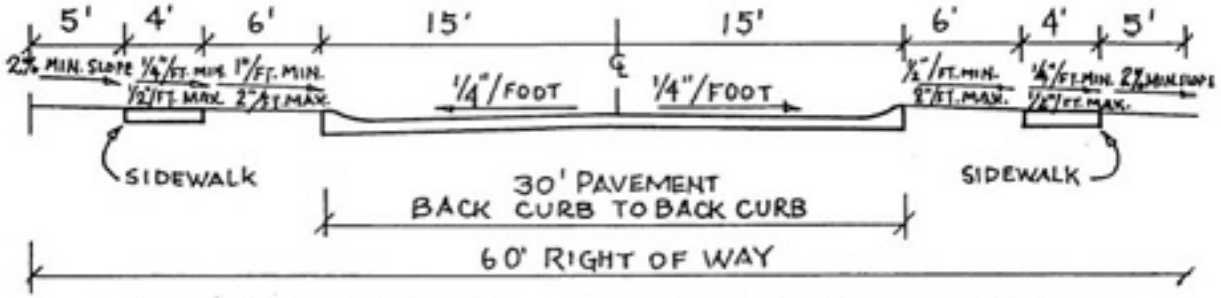


TYPICAL SECTION - LOCAL STREETS

NOTE: SLOPES OUTSIDE OF STREET PAVEMENT ARE MINIMUM STANDARD EXCEPT FOR AREAS IN TRANSITION FROM UPWARD TO DOWNWARD SLOPES ALONG SAME SIDE OF STREETS.

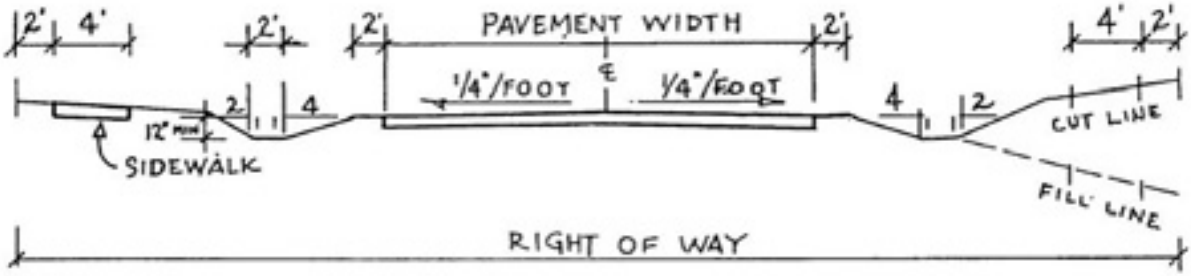


TYPICAL SECTION - SUBCOLLECTOR STREETS



TYPICAL SECTION - COLLECTOR STREETS

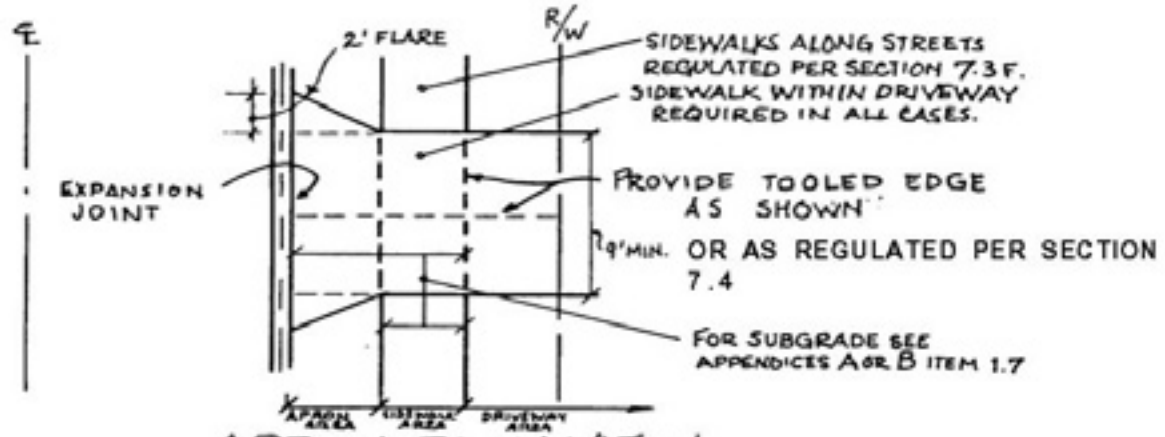
NOTE: SLOPES OUTSIDE OF STREET PAVEMENTS ARE MINIMUM STANDARD EXCEPT FOR AREAS IN TRANSITION FROM UPWARD TO DOWNWARD SLOPES SAME SIDE OF STREETS.



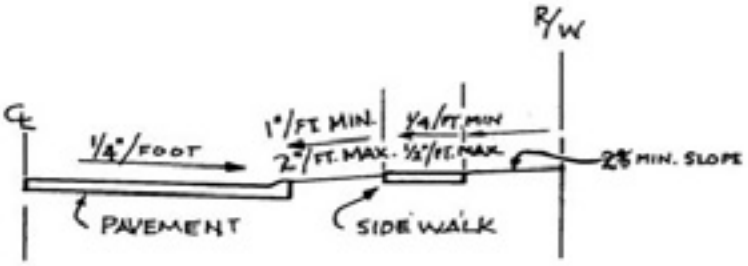
TYPICAL SHOULDER AND DITCH DETAIL

OPTION TO CURB AND GUTTER - ALL STREETS
FRONT YARD DEPTH - 50' MIN. LOT WIDTH - 100' MIN.

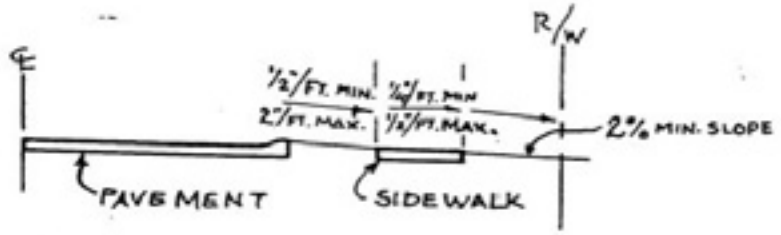
RESIDENTIAL DRIVEWAY APRON DETAILS



APRON PLAN VIEW



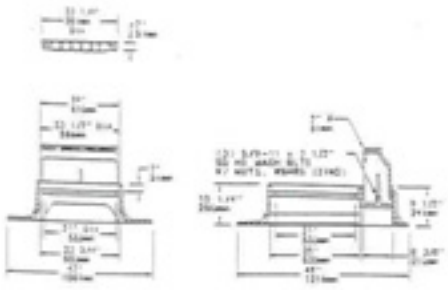
APRON GRADE WHERE LOTS DRAIN TO STREET



APRON GRADE WHERE LOTS DRAIN AWAY FROM STREET

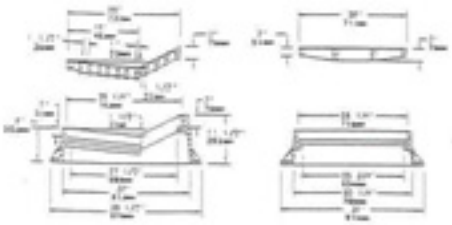
NOTE: SLOPES OUTSIDE OF STREET PAVEMENTS ARE MINIMUM STANDARD EXCEPT FOR AREAS IN TRANSITION FROM UPWARD TO DOWNWARD SLOPES ON SAME SIDE OF STREETS.

7380 Catch Basin Curb Inlet

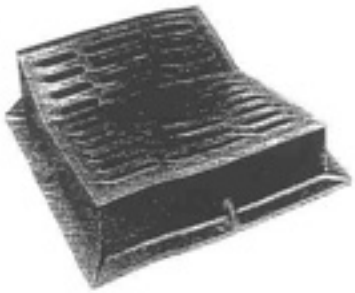


Heavy Duty
770 pounds (349kg) total weight
Approx. 160 sq. in.
of opening

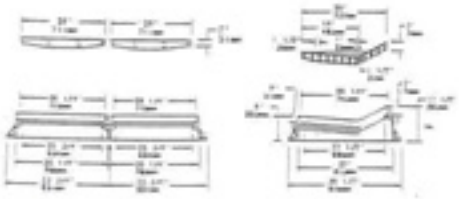
7390 Catch Basin Curb Inlet



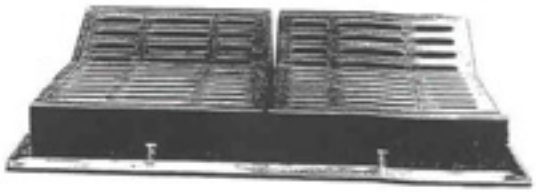
Heavy Duty
635 pounds (288kg)
total weight
Approx. 360 sq. in.
of opening



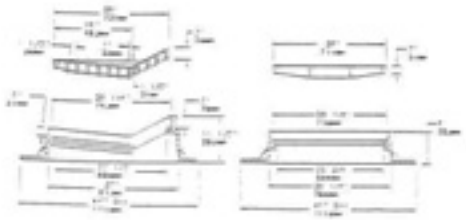
7391 Catch Basin Curb Inlet



Heavy Duty
1180 pounds (535kg) total weight
Approx. 720 sq. in. of opening
Multiple Curb Inlet

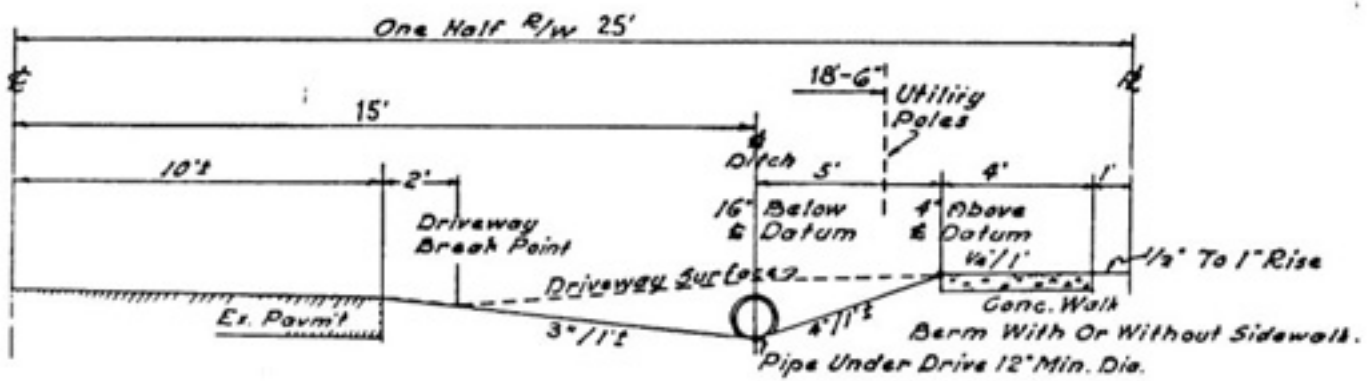


7395 Catch Basin Curb Inlet

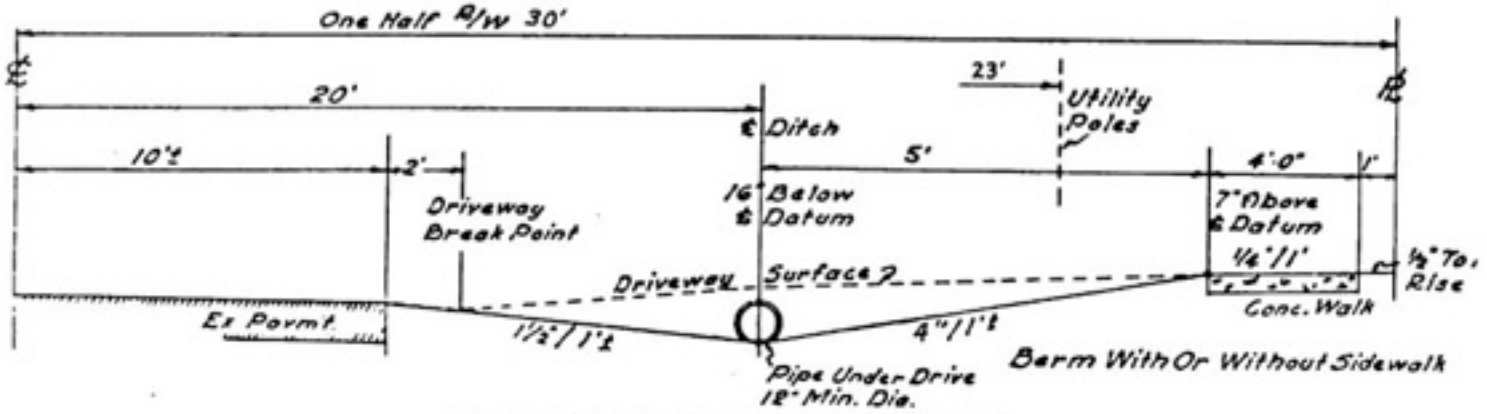


Heavy Duty
660 pounds (299kg) total weight
Approx. 360 sq. in.
of opening

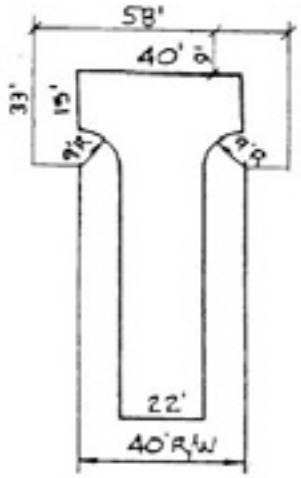
TYPICAL SECTION-SIDE DITCH DRAINAGE AT DRIVEWAY



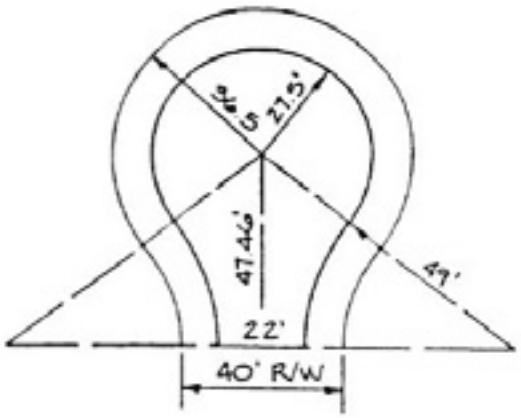
50 FOOT RIGHT OF WAYS



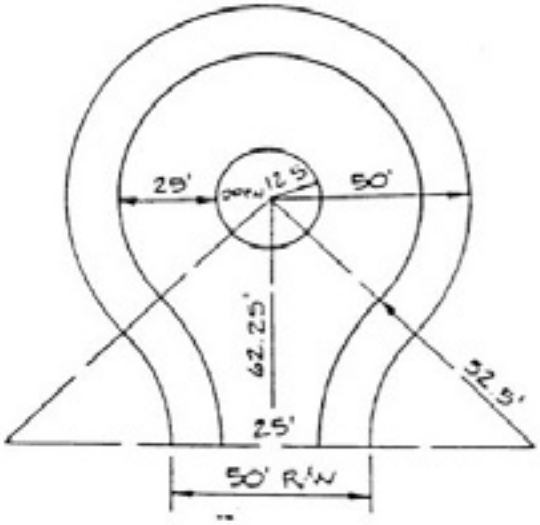
60 FOOT RIGHT OF WAYS



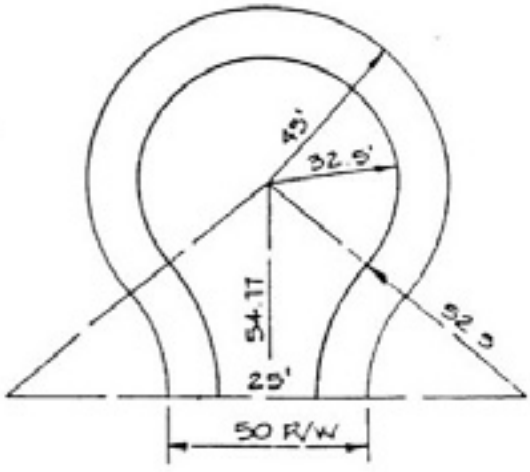
COURT
ALTERNATE T-TYPE



COURT

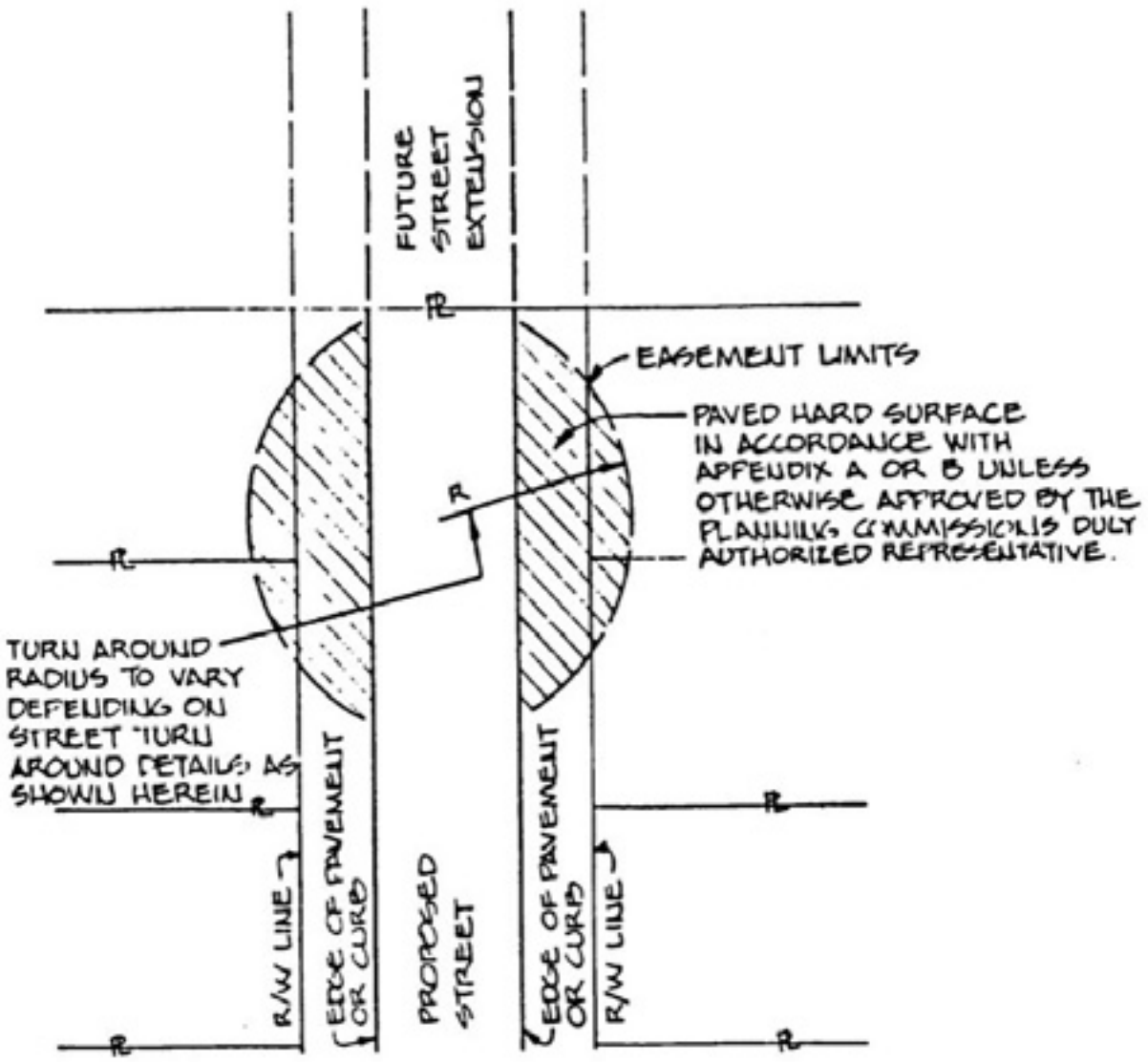


LOCAL



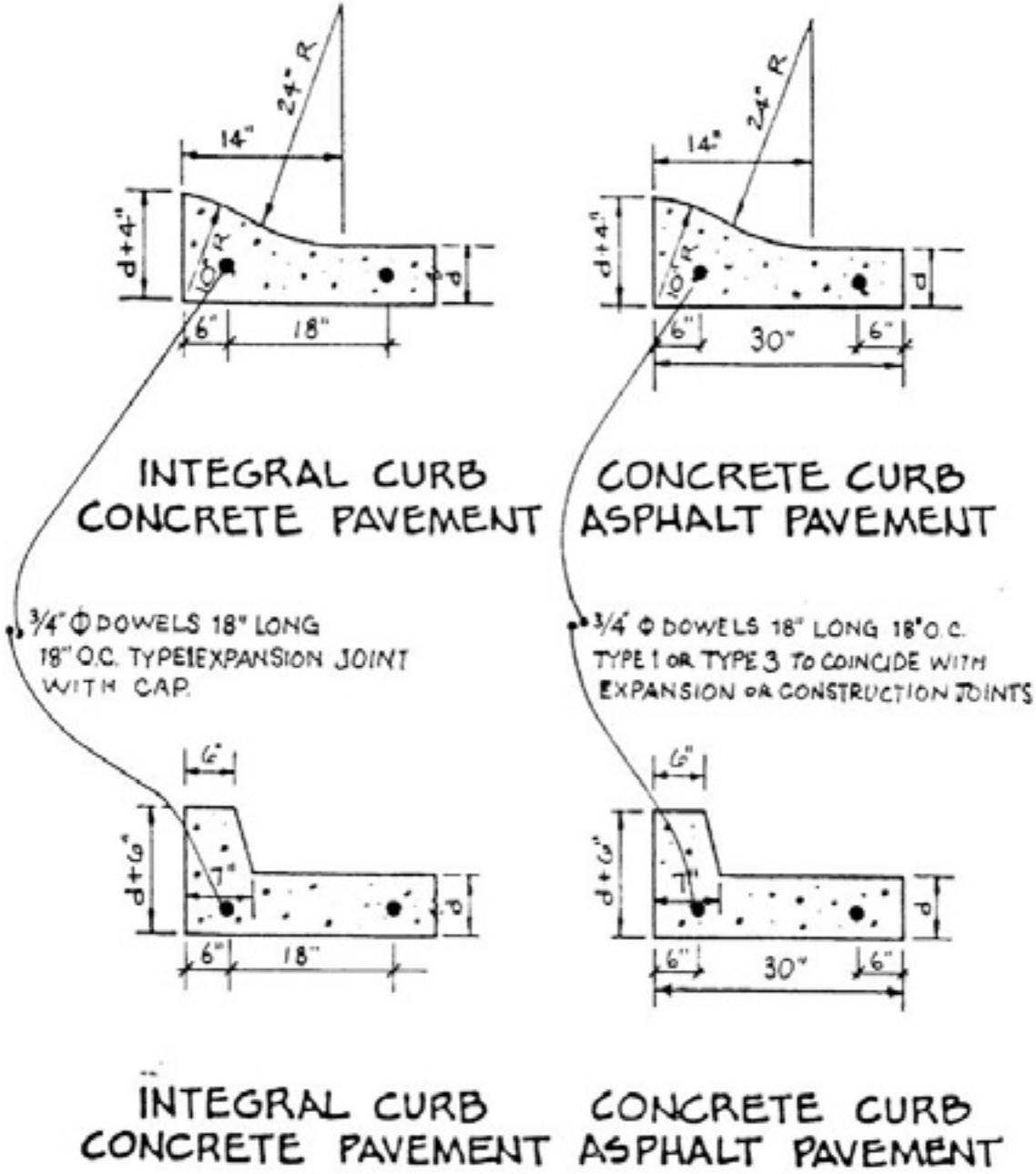
CUL-DE-SAC

TURN AROUND DETAILS
FOR DEADEND STREETS

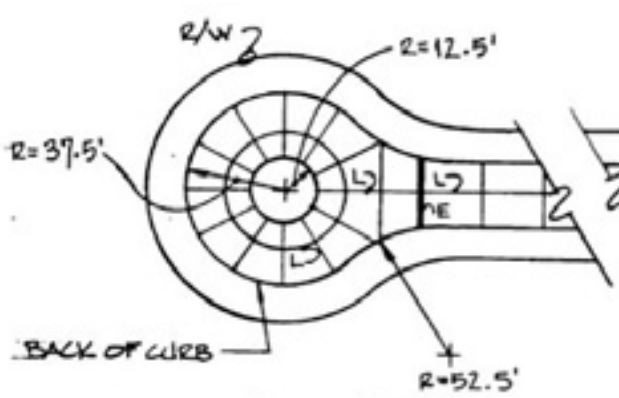


DETAIL OF TEMPORARY TURNAROUND
FOR FUTURE STREET EXTENSION

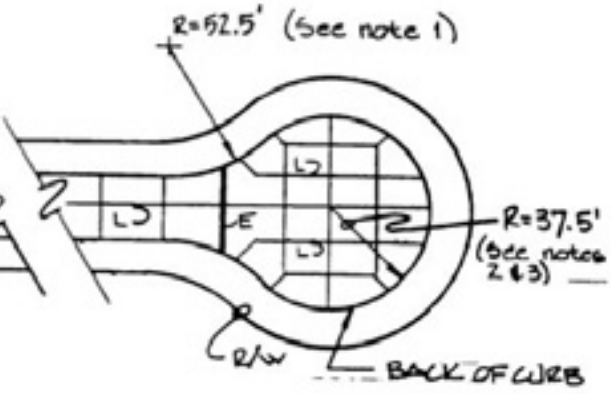
CURB AND GUTTER DETAILS



Note: Transverse expansion, contraction, and construction joints shall conform to these regulations

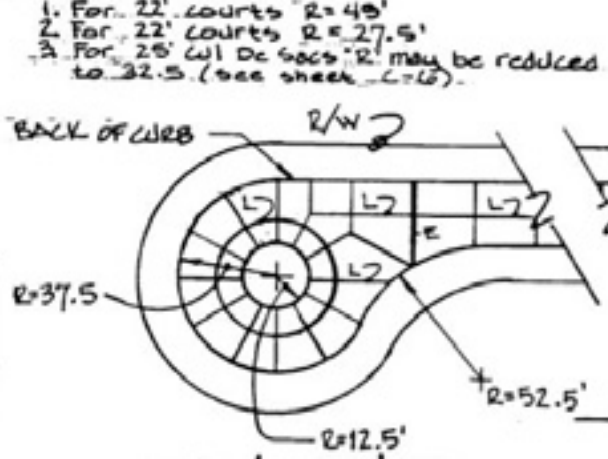


OPEN CENTER
CUL DE SAC

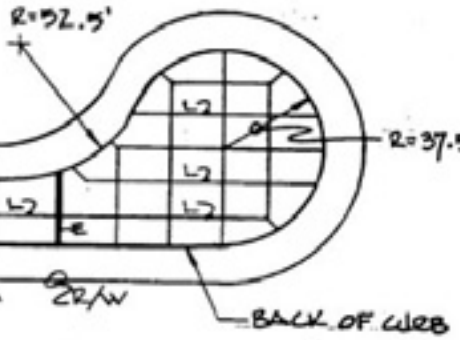


FULLY PAVED
CUL DE SAC

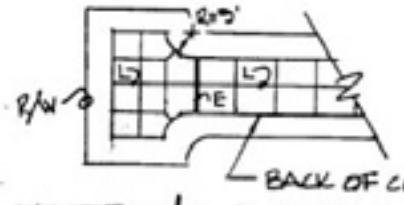
NOTES:
1. For 22' courts R=49'
2. For 22' courts R=27.5'
3. For 25' Cul De Sacs 'R' may be reduced to 32.5 (see sheet C-16).



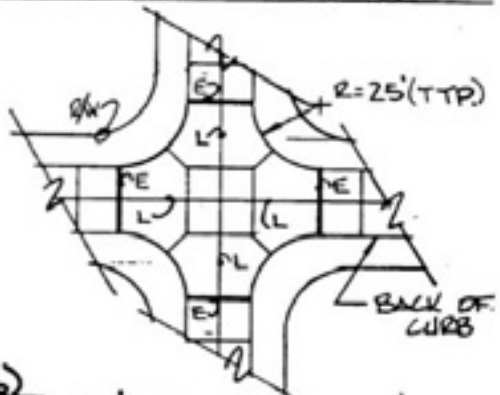
OPEN CENTER
OFFSET CUL DE SAC



FULLY PAVED
OFFSET CUL DE SAC



ALTERNATE T-TYPE (courts)

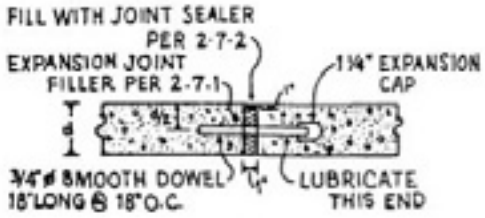


INTERSECTION

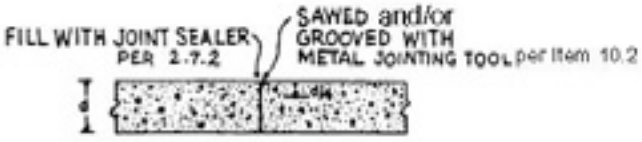
KEY:
E = Expansion Joint L = Longitudinal Joint
Unmarked joints are to be contraction joints

TYPICAL CONCRETE JOINTING PLAN

JOINT DETAILS

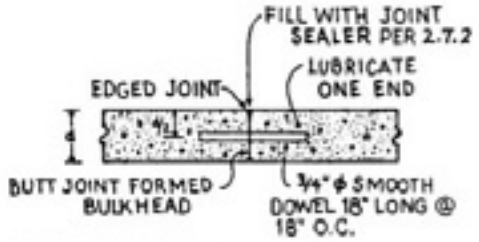


TYPE 1–Expansion Joint



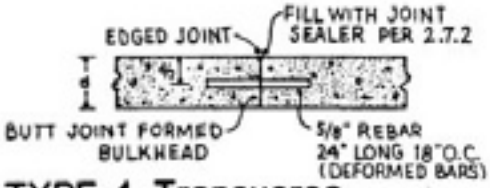
TYPE 2–Transverse Contraction Joint

(sawed or grooved joint)



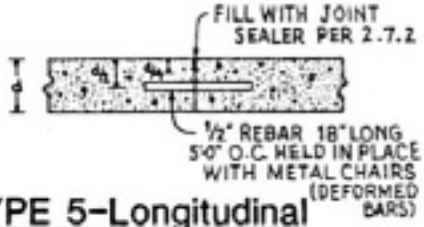
TYPE 3–Transverse Construction Joint

(planned–coincide with contraction joint)

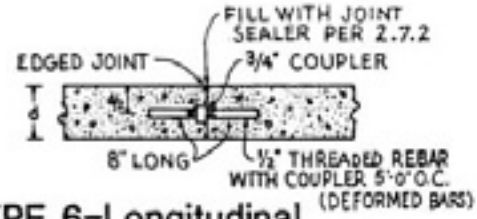


TYPE 4–Transverse Construction Joint

(emergency–not coincide with contraction joint)

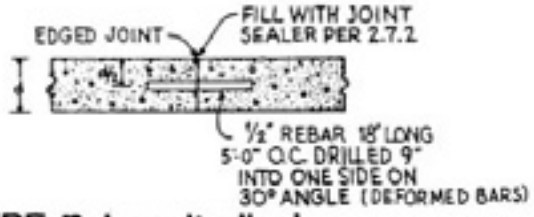


TYPE 5–Longitudinal Sawed Joint



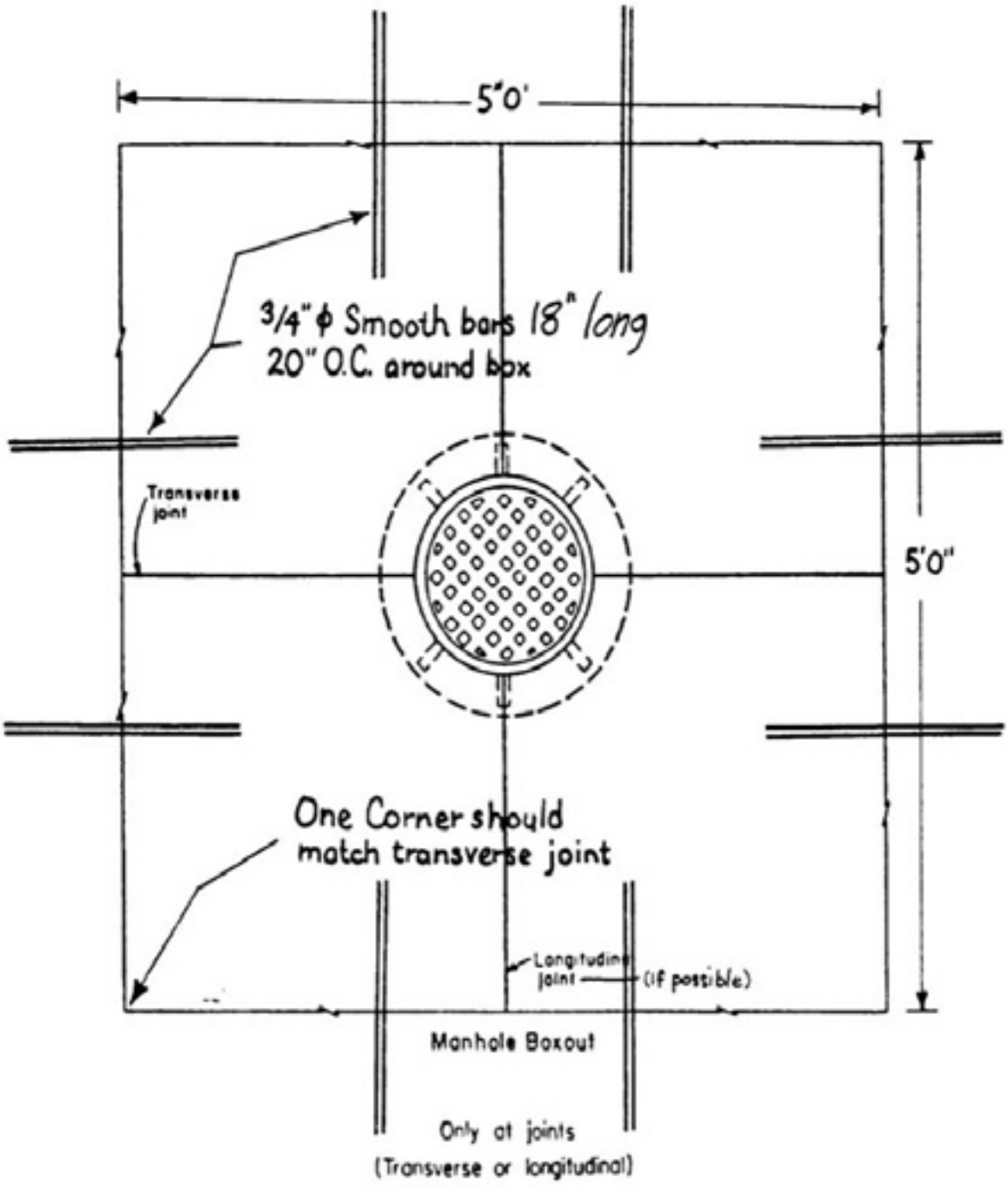
TYPE 6–Longitudinal Construction Joint

(threaded rebar)

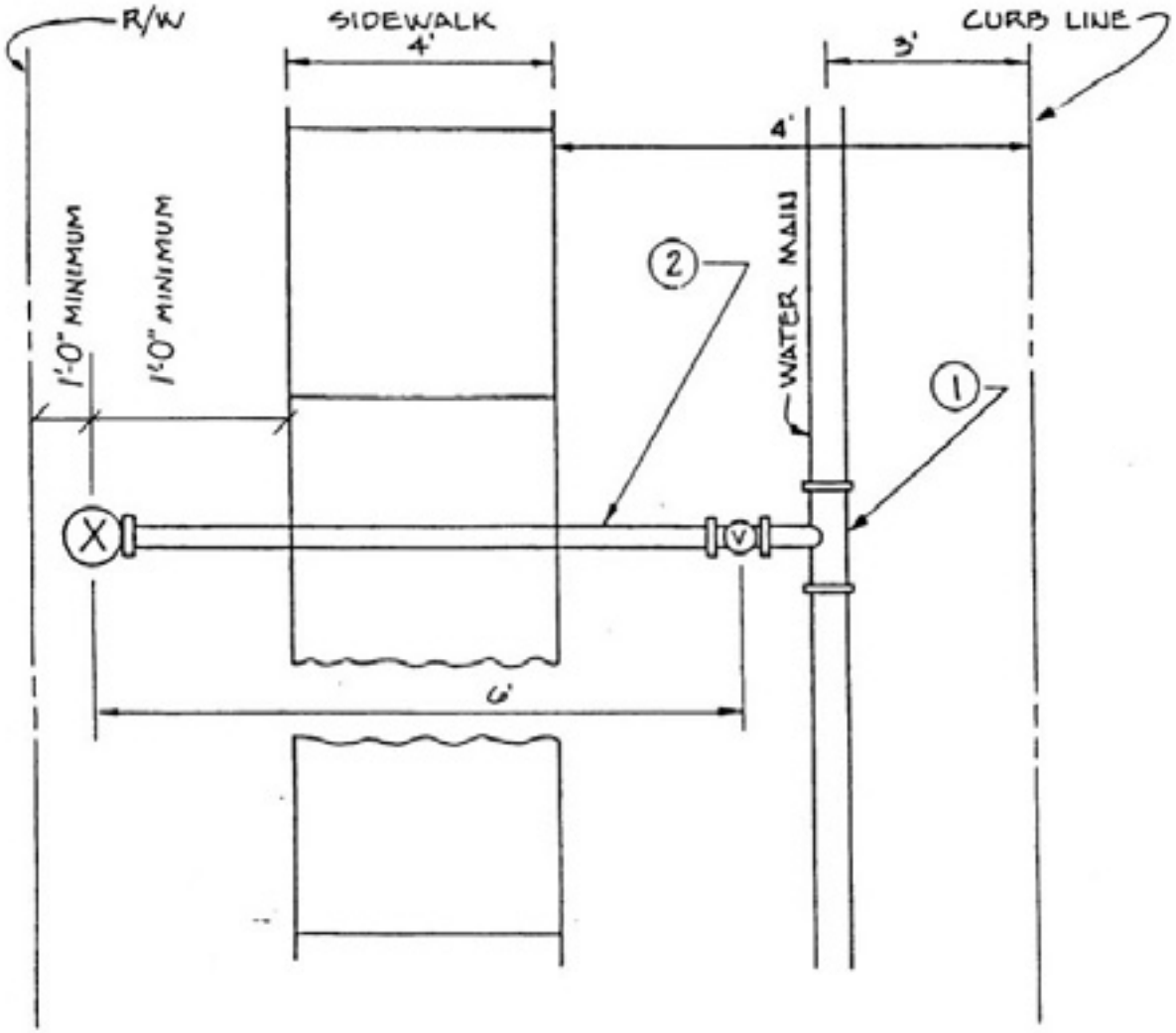


TYPE 7–Longitudinal Construction Joint Alt. (drilled) or per Item 10.4

MANHOLE DETAIL
IN CONCRETE PAVEMENT

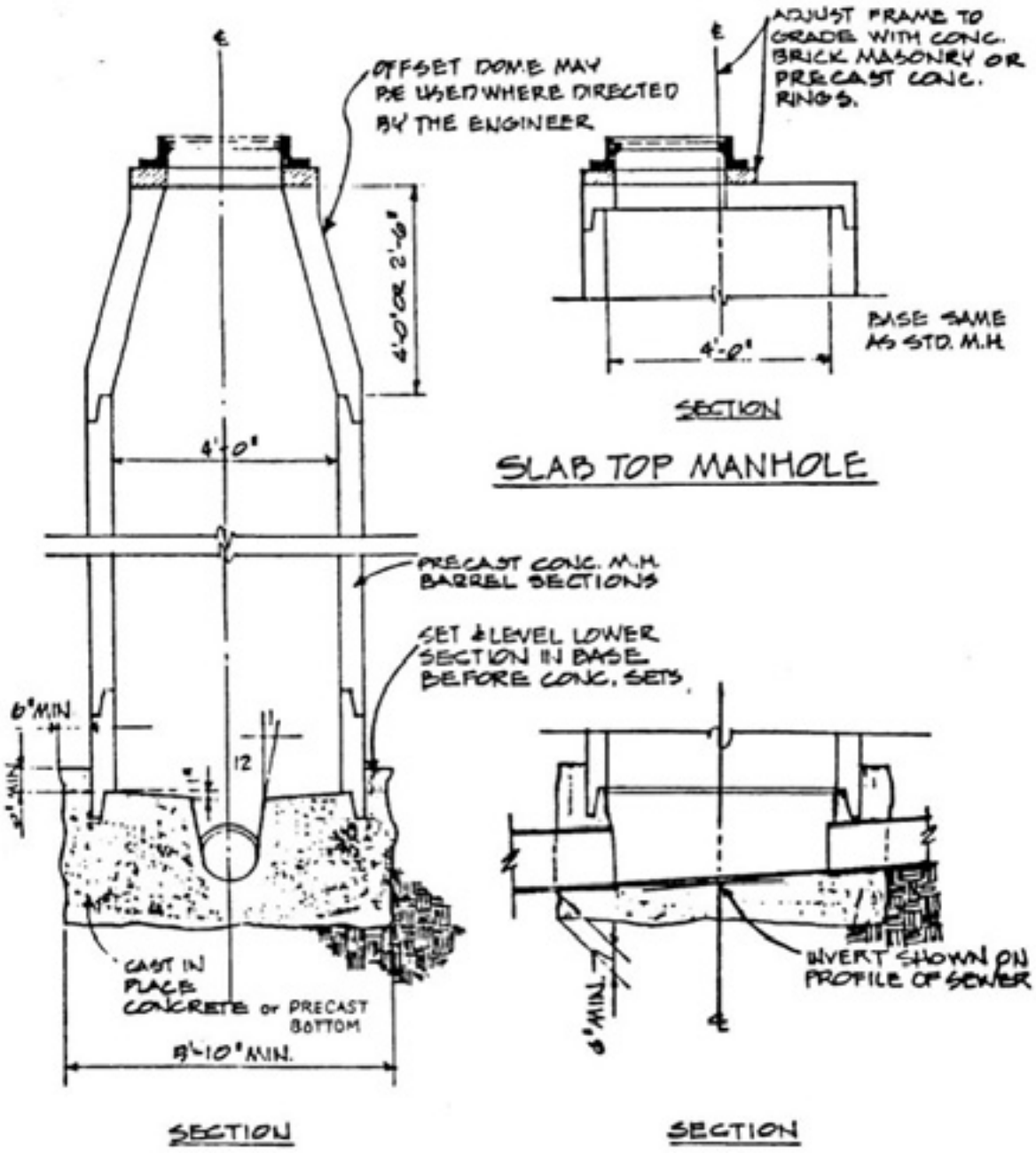


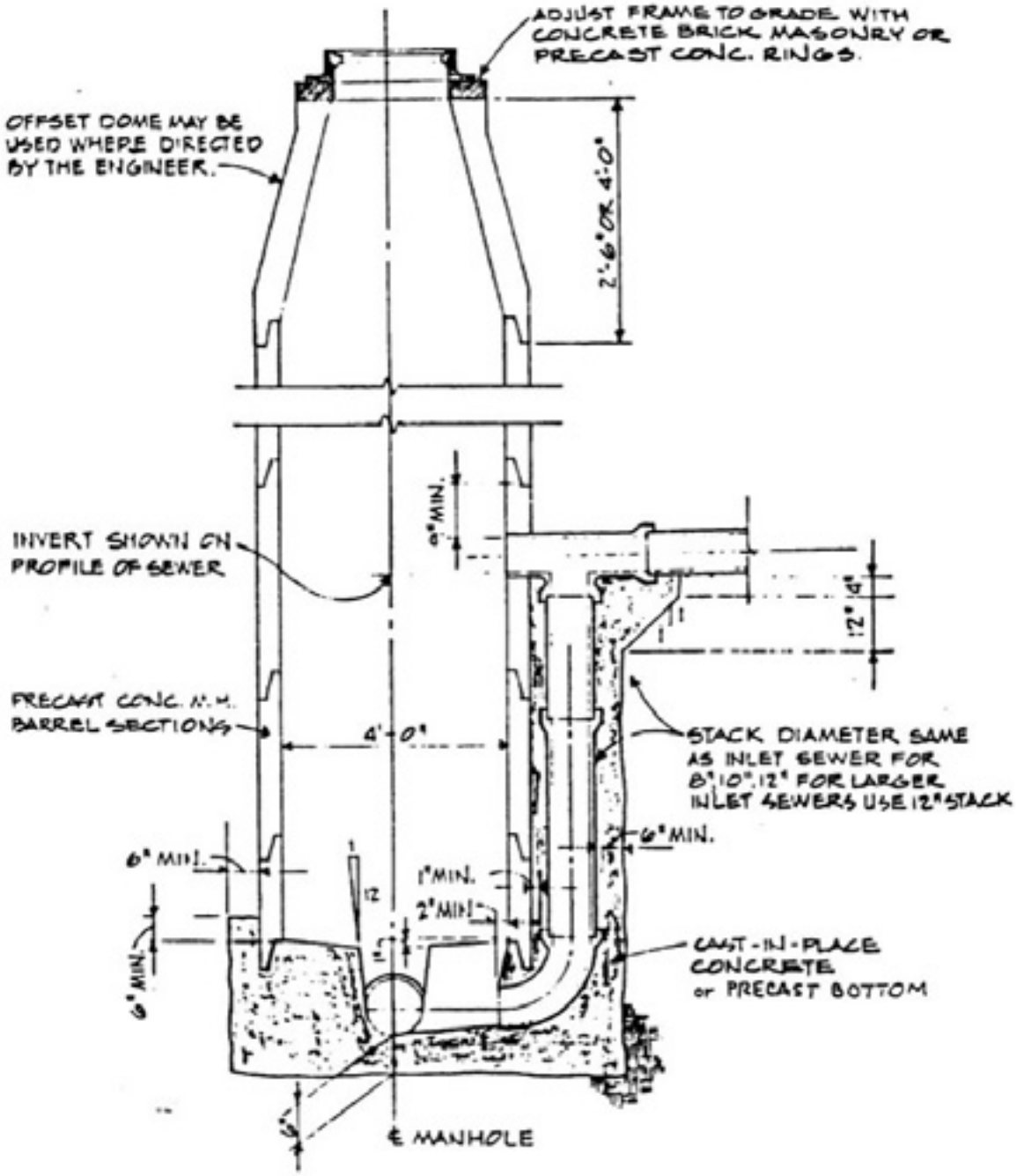
TYPICAL WATER MAIN AND FIRE HYDRANT ASSEMBLY LOCATION FOR ALL STREETS



(1) - ANCHORING TEE - CLOW PART NO. F-1217 OR APPROVED EQUAL

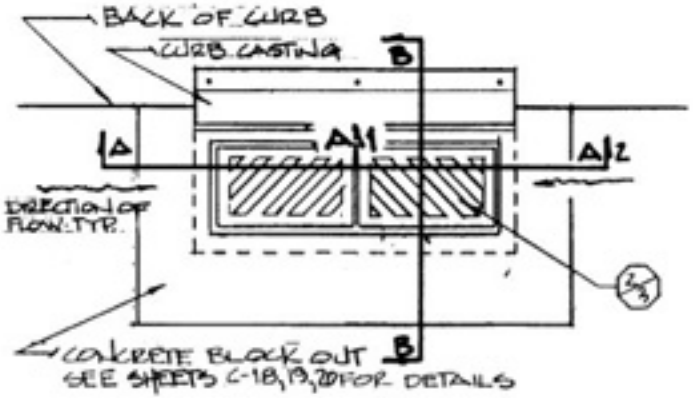
(2) - HYDRANT ADAPTER - WILL BE SOLID X SWIVEL CLOW PART NO. F-1211MS OR APPROVED EQUAL


℄
OFFSET DOME MAY BE USED WHERE DIRECTED BY THE ENGINEER
4'-0" OR 2'-6"
4'-0"
PRECAST CONC. M.H. BARREL SECTIONS
SET & LEVEL LOWER SECTION IN BASE BEFORE CONC. SETS
6" MIN.
12
CAST IN PLACE CONCRETE or PRECAST BOTTOM
5'-10" MIN.
SECTION
℄
ADJUST FRAME TO GRADE WITH CONC. BRICK MASONRY OR PRECAST CONC. RINGS.
BASE SAME AS STD. M.H.
4'-0"
SECTION
SLAB TOP MANHOLE
6" MIN.
INVERT SHOWN ON PROFILE OF SEWER
SECTION
STANDARD MANHOLE

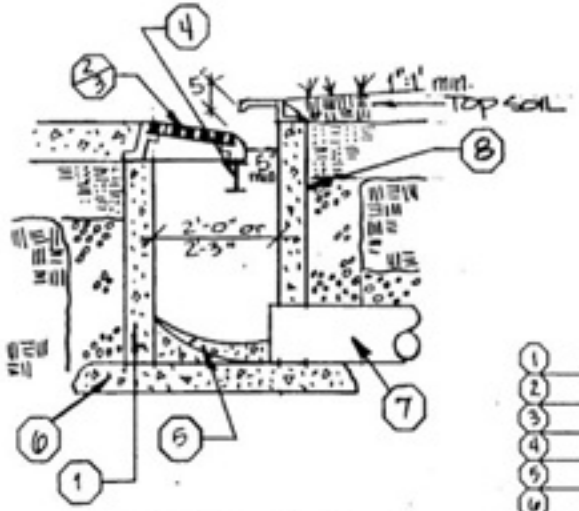


SECTION

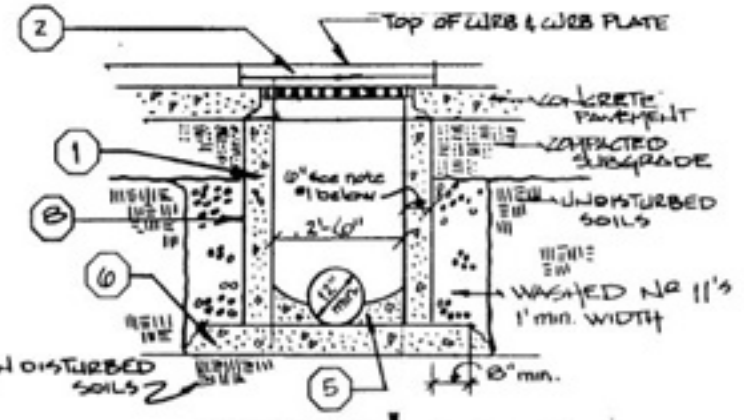
STANDARD DROP MANHOLE



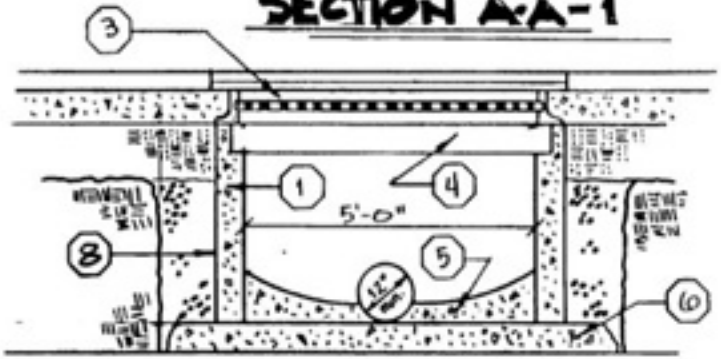
PLAN OF CATCH BASIN



SECTION B-B



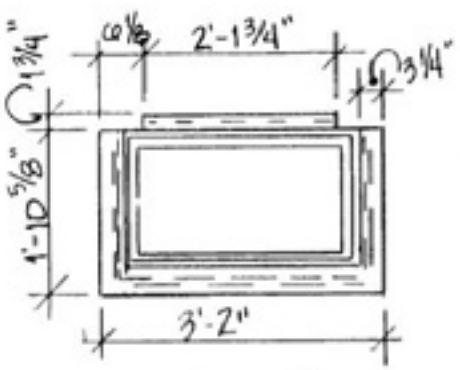
SECTION A-A-1



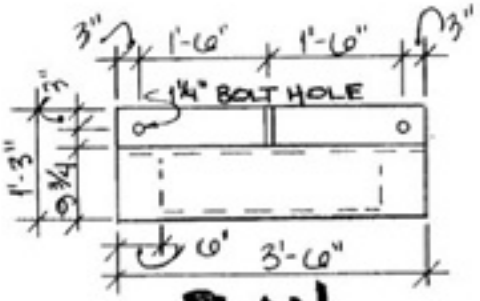
SECTION A-A-2

1. CONCRETE BRICK OR SLAB BLOCK MAY BE USED IN PLACE OF PRECAST OR CAST-IN-PLACE CONCRETE. SIDEWALLS SHALL BE 8" MINIMAL THICKNESS W/HORIZONTAL REINFORCEMENT AT EACH COURSE.
2. DOUBLE INLET: FRAME, GRATE AND CURB PLATE = NEENAH R-3281-B OR APPROVED EQUAL
3. DOUBLE INLET: FRAME, GRATE AND CURB PLATE = NEENAH R-3281-BZZ OR APPROVED EQUAL
4. STEEL BEAM (TYP.) WITH SEPARATE OR BOLTED INLETS)
5. 8" MIN. DEPTH 4000 psi AE CONCRETE WITH SCRIBED INVERT
6. 8" MIN. DEPTH 4000 psi AE CONCRETE EXTENDED MIN. 8" BEYOND EXTERIOR OF BOX
7. 12" MIN. DIA. PIPE (FOR ALL PIPE TYPES AND SIZES, SEE SECTION 7.0)
8. LIFT HOLES AND JOINTS SHALL NOT YIELD AN OPENING GREATER THAN THE SIZE OF AGGREGATE BACKFILL

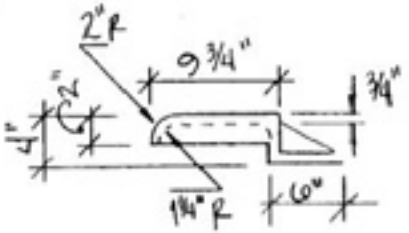
CATCH BASIN - DETAILS



PLAN

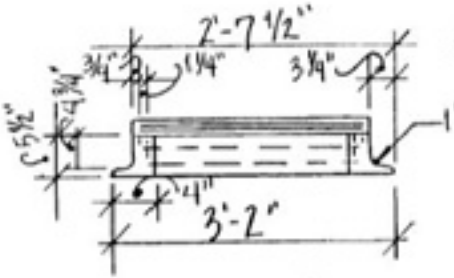


PLAN

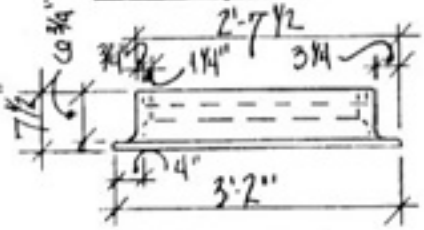


SIDE

CURB PLATE

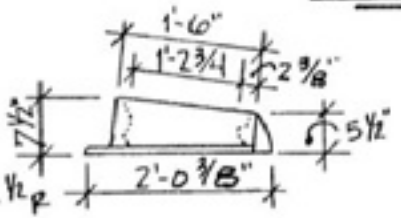


BACK VIEW



FRONT VIEW

FRAME



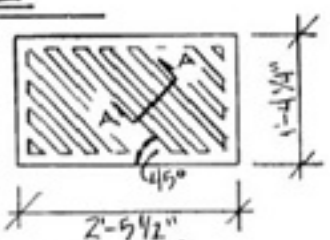
SIDE VIEW

FRAME

SECTION

A-A

=

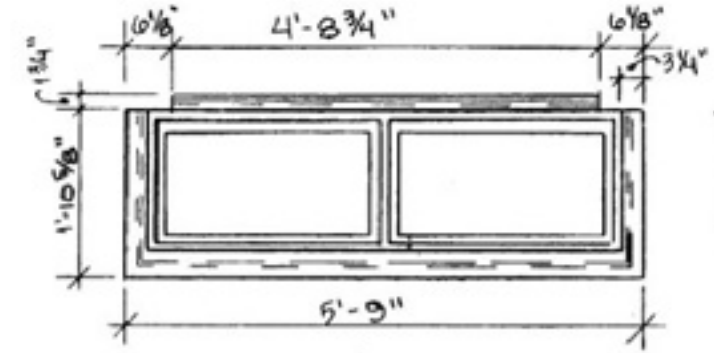


PLAN

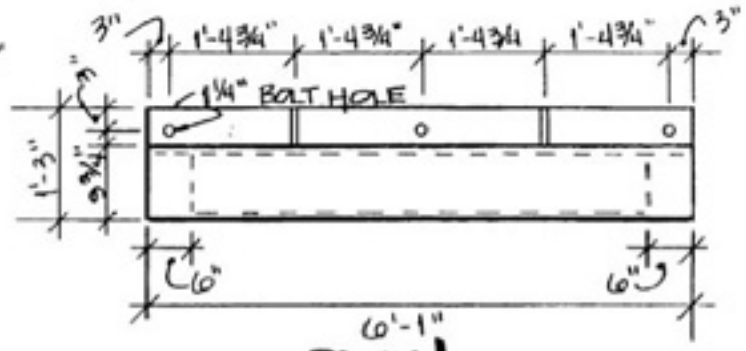
GRATE

- GRATE TYPE SHALL BE AS SHOWN IN THE PLAN VIEW AND SHALL BE PLACED SO THE DIAGONAL BARS DIRECT THE DRAINAGE FLOW TOWARD THE CURB (MUST SPECIFY DL or DR)
- CASTING DESIGNS SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN HEREON OR INCLUDED WITH IN SHEET C-17 . MINIMUM TOTAL WEIGHTS : SINGLE INLET (NEENAH R-3288-C) 690 POUNDS ; DOUBLE INLET (NEENAH R-3288-E2) 1325 lbs.
- BEARING AREAS OF FRAME AND GRATE SHALL BE SO FITTED AND FINISHED, WITHOUT PROJECTIONS, AS TO PROVIDE A FIRM AND EVEN SEAT FOR ALL PORTIONS OF THE GRATE IN THE FRAME WITHOUT ROCKING
- CURB PLATE SHALL BE SECURELY FASTENED WITH 3/4 INCH STAINLESS STEEL BOLTS

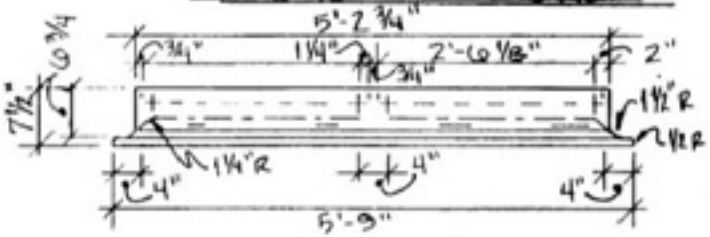
CB CASTINGS DETAILS - SINGLE



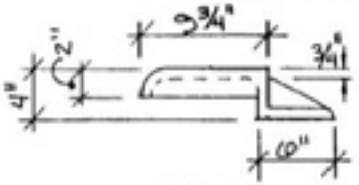
PLAN - DOUBLE



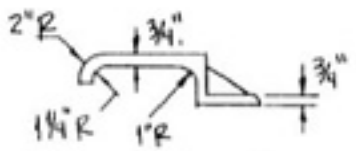
PLAN



FRAME (FRONT VIEW)

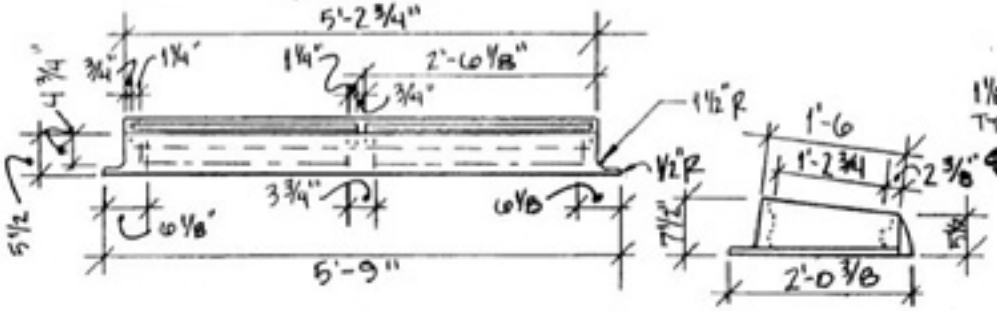


SIDE

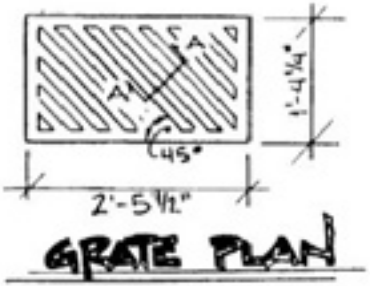


SECTION

CURB PLATE



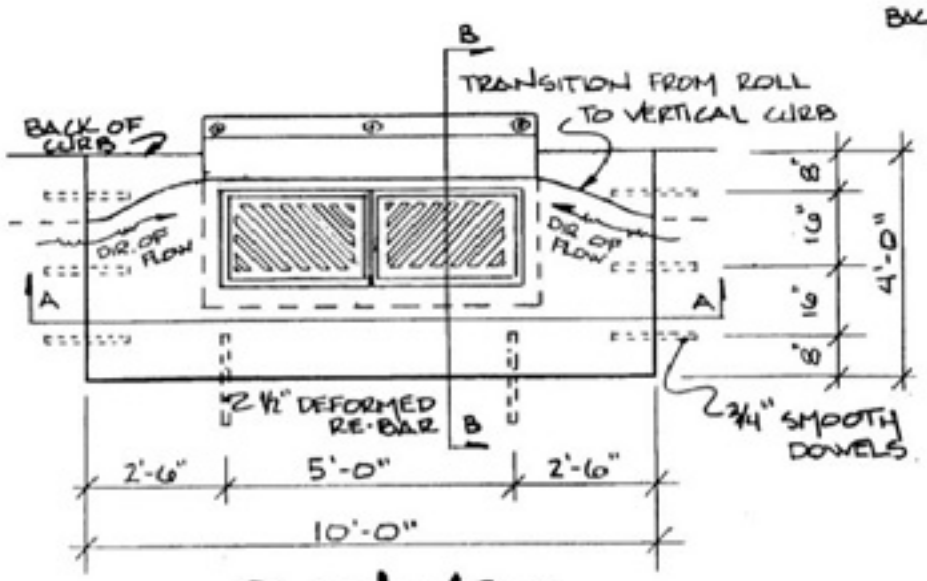
FRAME (BACK VIEW)



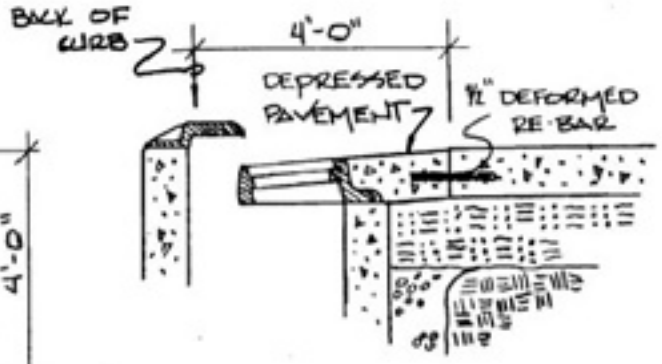
GRATE PLAN

NOTE: CASTINGS ILLUSTRATED ON THIS SHEET SHALL CONFORM TO THE SPECIFICATIONS SET FORTH ON SHEET C-16

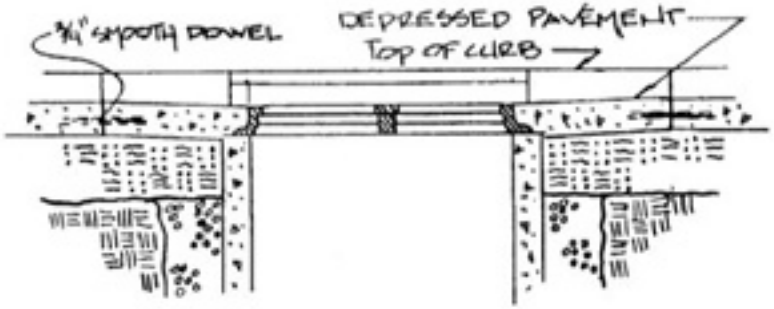
CB CASTINGS DETAILS - DOUBLE



PLAN VIEW



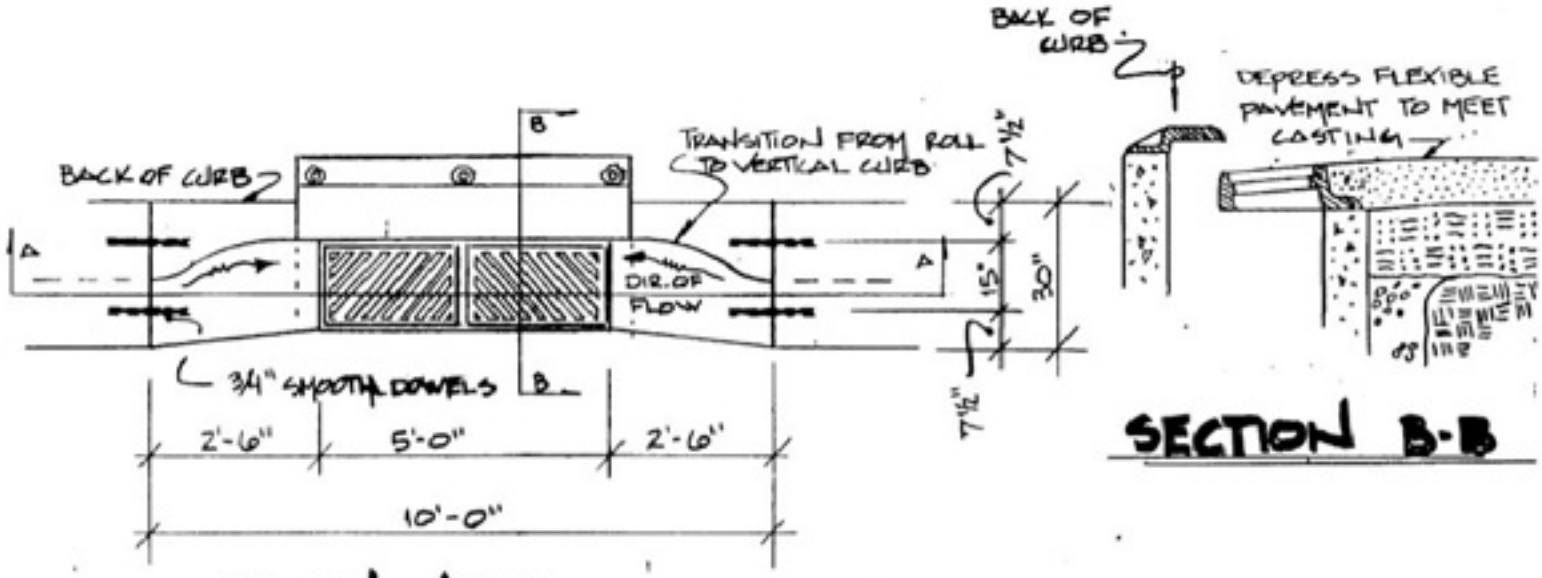
SECTION B-B



SECTION A-A

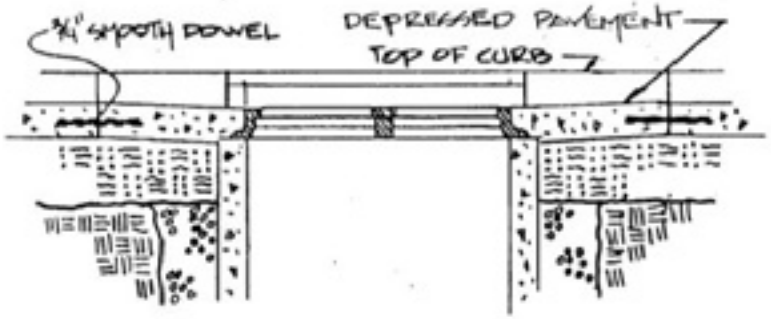
- BLOCKOUTS SHALL BE PAVED WITH 4000 psi AIR ENTRAINED PORTLAND CEMENT CONCRETE
- BLOCKOUTS FOR SINGLE INLET CATCH BASINS SHALL BEAR THE SAME DIMENSIONS AS THE DOUBLE INLET CATCH BASIN
- ¾ x 18" DOWELS ARE REQUIRED FOR CONCRETE PAVEMENT OR GUTTER BLOCKOUT - SEE SHEET C-10 FOR DOWEL DETAILS.
- TWO ½" x 18" PIECES OF DEFORMED RE-BAR ARE REQUIRED ALONG BUTT JOINT OF ISOLATION AREA
- PAVEMENT THICKNESS SHALL CONFORM TO THE RELATED STREET CLASSIFICATIONS PER SECTION 7 - TABLE 3 OF THESE REGULATIONS.

RIGID PAVEMENT BLOCKOUT DETAIL



PLAN VIEW

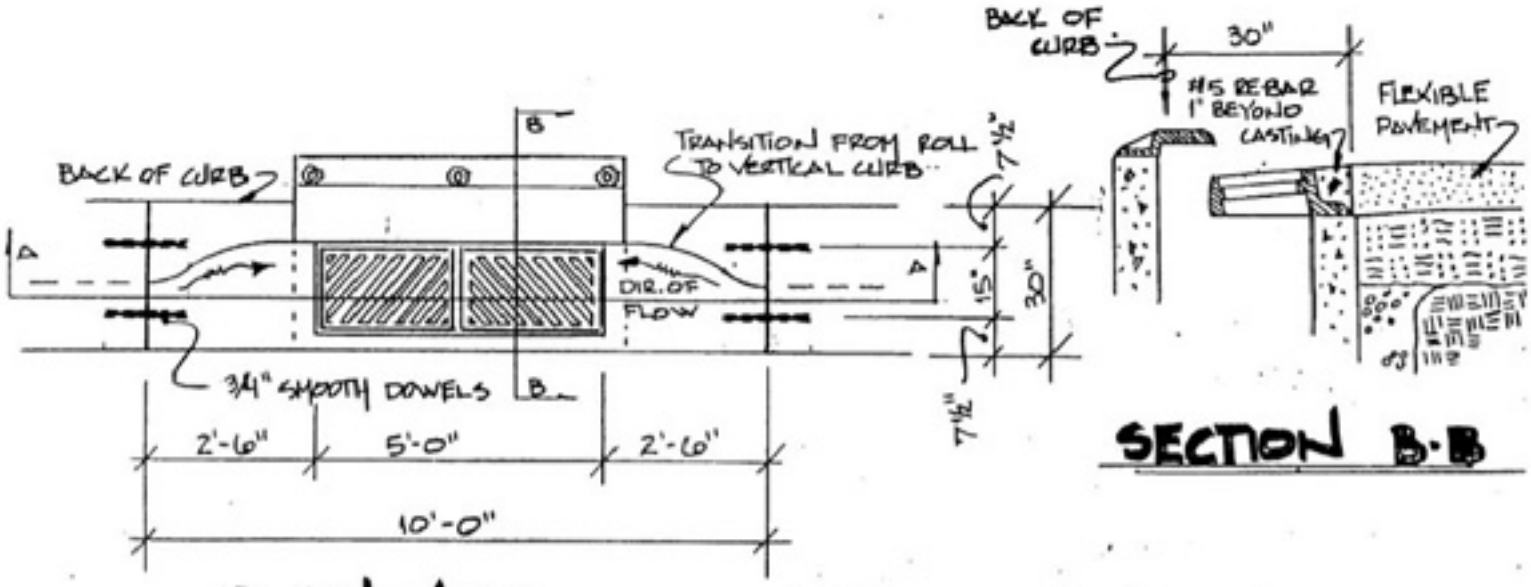
SECTION B-B



SECTION A-A

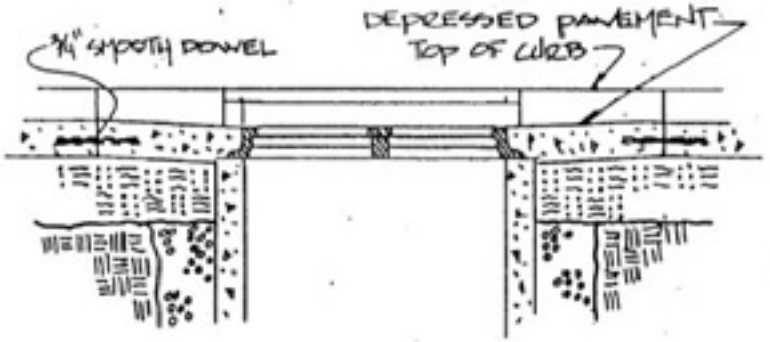
- BLOCKOUTS SHALL BE PAVED WITH 4000 psi AIR ENTRAINED PORTLAND CEMENT CONCRETE
- BLOCKOUTS FOR SINGLE INLET CATCH BASINS SHALL BEAR THE SAME DIMENSIONS AS THE DOUBLE INLET CATCH BASIN
- 3/4 x 18" DOWELS ARE REQUIRED FOR CONCRETE PAVEMENT OR GUTTER BLOCKOUT - SEE SHEET C-10 FOR DOWEL DETAILS.
- PAVEMENT THICKNESS SHALL CONFORM TO THE RELATED STREET CLASSIFICATIONS PER SECTION 7 TABLE 3 OF THESE REGULATIONS

ALTERNATIVE - A
FLEXIBLE PAVEMENT BLOCKOUT DETAIL



SECTION B-B

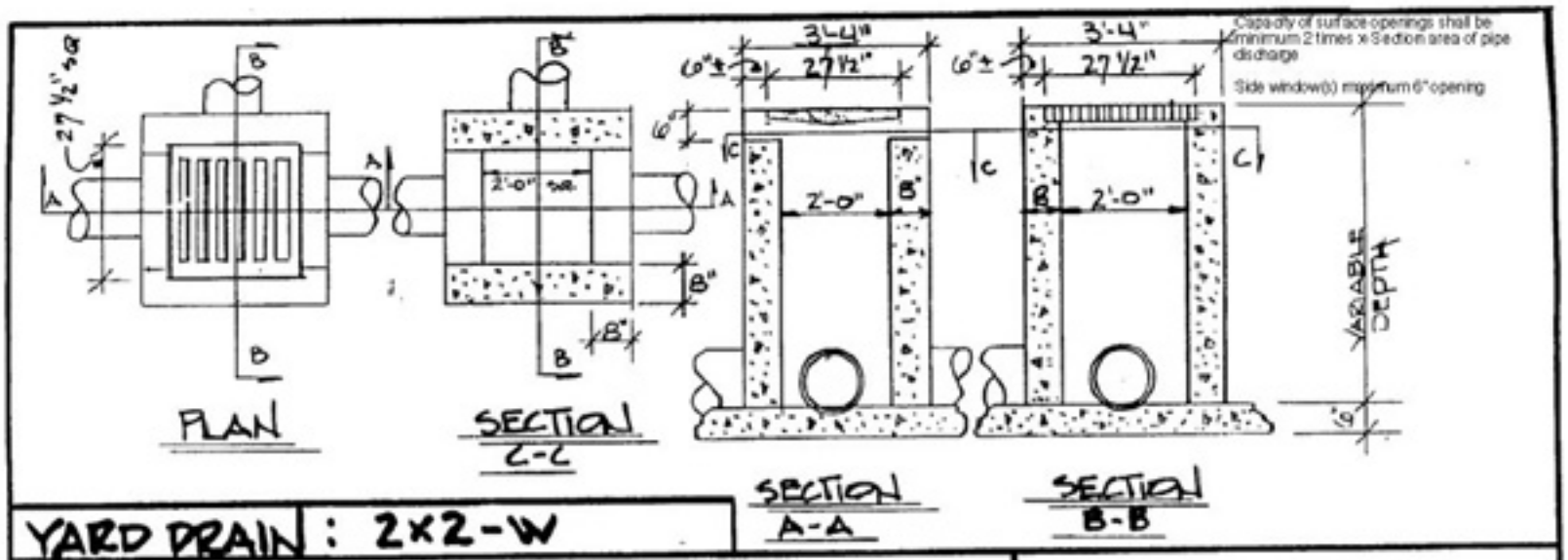
PLAN VIEW



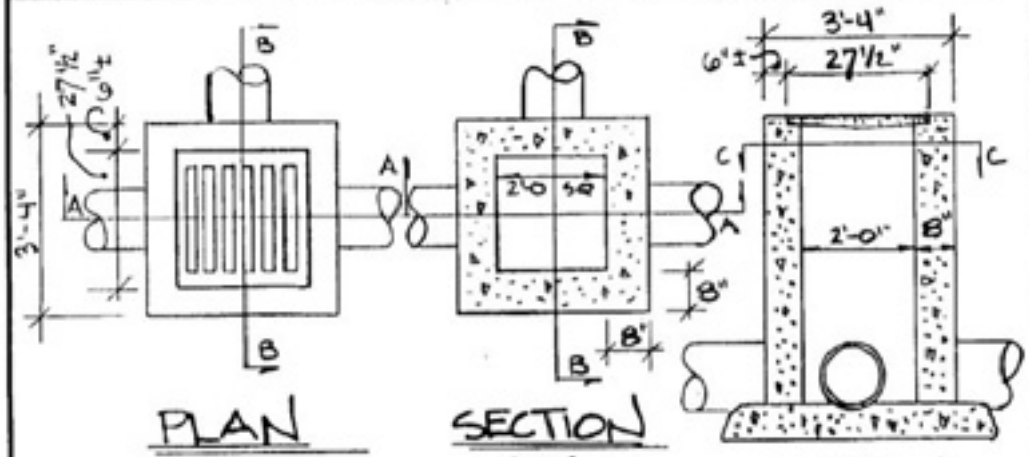
- BLOCKOUTS SHALL BE PAVED WITH 4000 psi AIR ENTRAINED PORTLAND CEMENT CONCRETE
- BLOCKOUTS FOR SINGLE INLET CATCH BASINS SHALL BEAR THE SAME DIMENSIONS AS THE DOUBLE INLET CATCH BASIN
- ¾ x 18" DOWELS ARE REQUIRED FOR CONCRETE PAVEMENT OR GUTTER BLOCKOUT - SEE SHEET C-10 FOR DOWEL DETAILS.
- PAVEMENT THICKNESS SHALL CONFORM TO THE RELATED STREET CLASSIFICATIONS PER SECTION 7 - TABLE 3 OF THESE REGULATIONS.

SECTION A-A

ALTERNATIVE - B
FLEXIBLE PAVEMENT BLOCKOUT DETAIL



YARD DRAIN : 2x2-W



NOTE: SECTION B-B SAME AS ABOVE

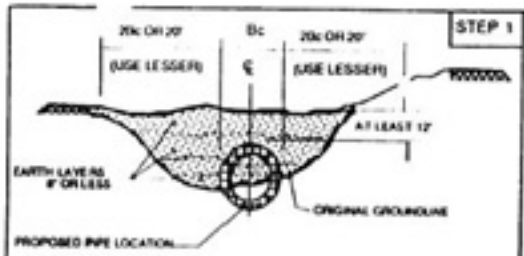
- GRATE AND FRAME SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS SHOWN HERE ON (NEENAH R-4871 & R-4859-C OR APPROVED EQUAL)
- 2x2-W SIDE INLETS TO BE PLACED 4-6 INCHES BELOW NORMAL ELEVATION OF DITCH FLOW LINE RETURNING TO NORMAL 10 FEET EACH SIDE OF YARD DRAIN
- 2x2-W MAY HAVE SIDE INLET ON UPSTREAM SIDE ONLY WHERE DITCH HAS A CONTINUOUS DOWN GRADE PAST THE YARD DRAIN
- 2x2-S GRATE ELEVATION SHALL BE PLACED 4-6 INCHES BELOW NORMAL DITCH FLOW LINE RETURNING 10 FEET EACH SIDE OF YARD DRAIN
- NOTES 1, 5, 6, 7 and 8 OF CATCH BASIN DETAILS (SHEET C-15) SHALL APPLY TO DETAILS SHOWN HEREON

Maximum Dimension of any surface Inlet/Window opening shall be such that a sphere with a diameter of 6 inches cannot pass through any opening

YARD DRAIN: 2x2-S

YARD DRAIN - DETAILS

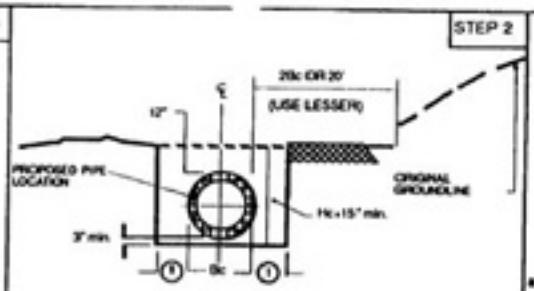
STEP 1



a. IF THE ORIGINAL GROUNDLINE IS AT LEAST 12" ABOVE TOP OF PROPOSED PIPE FOR WIDTH OF 2Bc OR 20' (WHICHEVER IS LESS) ON EACH SIDE OF THE PIPE, GO DIRECTLY TO "STEP 2".

b. IF ORIGINAL GROUNDLINE IS NOT AT LEAST 12" ABOVE TOP OF PROPOSED PIPE, COMPACT EMBANKMENT IN LAYERS 8" OR LESS TO ELEVATION AND WIDTH SHOWN. ▨ MEET DENSITY REQUIREMENTS FOR PROPOSED EMBANKMENT

STEP 2

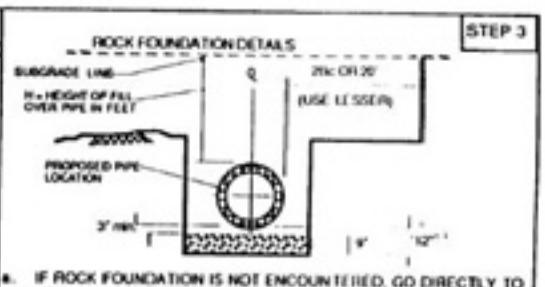


a. EXCAVATE TO WITHIN 12" ABOVE TOP OF PROPOSED PIPE A WIDTH OF 2 Bc OR 20' (USE LESSER) ON EACH SIDE OF PIPE.

b. EXCAVATE TRENCH TO WIDTH AND DEPTH SHOWN.

① AT LEAST 12"

STEP 3



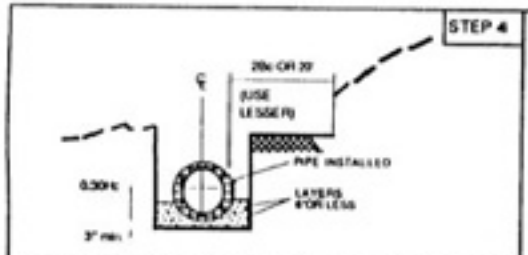
a. IF ROCK FOUNDATION IS NOT ENCOUNTERED, GO DIRECTLY TO "STEP 4"

b. IF ROCK FOUNDATION IS ENCOUNTERED, EXCAVATE TRENCH ADDITIONAL DEPTH ▨ TO A LEAST 9" FOR A TOTAL OF 12" FOR ALL PIPE DIAMETERS.

c. BACKFILL ADDITIONAL EXCAVATION AREA WITH EARTH CUSHION OF FIRMLY COMPACTED FINE SOILS, SAND OR NO. 10 COURSE AGGREGATE IN LAYERS 6" OR LESS.

▨ MEET DENSITY REQUIREMENTS FOR PROPOSED EMBANKMENT

STEP 4

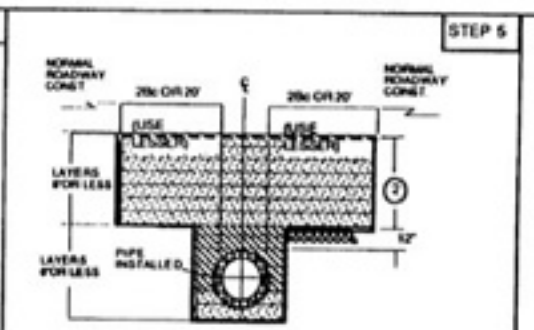


a. COMPACT SAND OR NO. 10 COURSE AGGREGATE IN TRENCH IN LAYERS 6" OR LESS TO WIDTH AND ELEVATION SHOWN. ▨ MEET DENSITY REQUIREMENTS FOR PROPOSED EMBANKMENT

b. EXCAVATE GROOVE IN THE COMPACTED SAND OR AGGREGATE TO CONFORM TO THE OUTSIDE OF THE PIPE. AFTER EXCAVATION OF THE GROOVE, APPROXIMATELY 3" OF SAND SHOULD REMAIN BELOW THE OUTSIDE INVERT OF THE PIPE. THE CRADLE SHALL BE GAGED FOR SHAPE AND SLOPE BY STRIKING OR DRAWING A TEMPLATE THROUGH THE GROOVE IMMEDIATELY BEFORE PLACING EACH SECTION OF PIPE.

c. INSTALL PIPE AT CORRECT ALIGNMENT AND ELEVATION. RECOMPACT ANY LOOSE SAND DISTURBED DURING INSTALLATION.

STEP 5

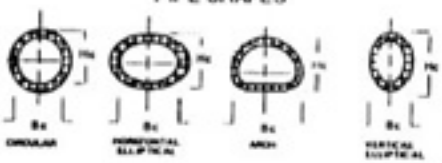


② 48" REQUIRED IF FILL HEIGHT PERMITS

a. COMPACT, SAND OR NO. 10 COURSE AGGREGATE IN LAYERS 6" OR LESS TO A POINT 12" ABOVE TOP OF THE PIPE. ▨ MEET DENSITY REQUIREMENTS FOR PROPOSED EMBANKMENT COMPACT SELECTED FINE SOIL TO ELEVATION ② ABOVE TOP OF PIPE ▨ MEET DENSITY REQUIREMENTS FOR ADJACENT EMBANKMENTS.

b. PROCEED WITH NORMAL ROADWAY CONSTRUCTION

PIPE SHAPES



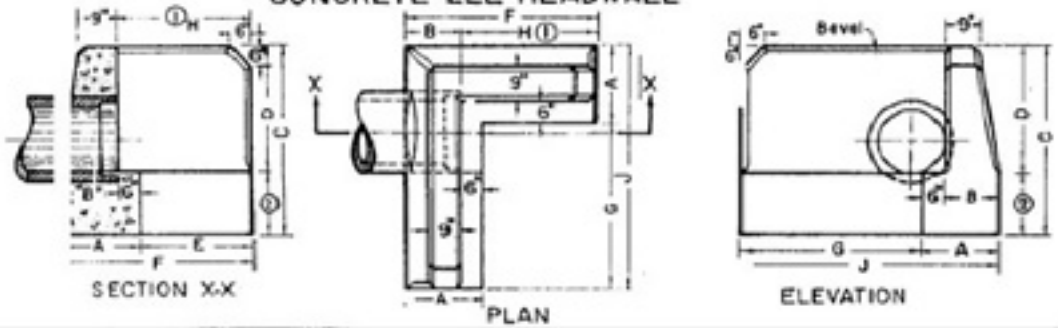
PIPE BEDDING/TRENCHING FOR CULVERTS, SEWERS, STORM DRAINS AND THEIR COMBINATION

STANDARD SPECS AND CONST. DETAILS	APPENDIX C - 22	NOVEMBER 1994

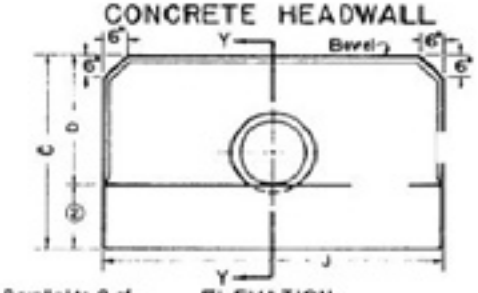
ENSIONS AND QUANTITIES

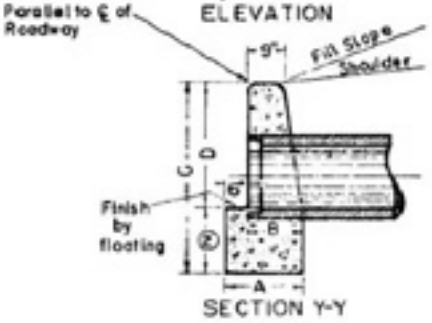
HEADWALL TYPE	DIAMETER OF PIPE	HEADWALL DIMENSIONS A	B	C	D	E	F	G	H ①	J	CUBIC YARDS CONCRETE FOR ONE HEADWALL ② EARTH	ROCK
STANDARD	12"	1'-8"	1'-2"	4'-0"	2'-6"	—	—	—	—	6'-0"	1.05	0.87
	15"	1'-8½"	1'-2½"	4'-3"	2'-9"	—	—	—	—	6'-9"	1.25	1.03
	18"	1'-9"	1'-3"	4'-6"	3'-0"	—	—	—	—	7'-6"	1.48	1.23
	21"	1'-9½"	1'-3½"	4'-9"	3'-3"	—	—	—	—	8'-3"	1.73	1.46
	24"	1'-10"	1'-4"	5'-0"	3'-6"	—	—	—	—	9'-0"	1.99	1.69
	27"	1'-10½"	1'-4½"	5'-3"	3'-9"	—	—	—	—	9'-9"	2.27	1.93
RAISED	12"	1'-8"	1'-2"	4'-6"	3'-0"	—	—	—	—	7'-6"	1.45	1.23
	15"	1'-8½"	1'-2½"	4'-9"	3'-3"	—	—	—	—	8'-3"	1.69	1.43
	18"	1'-9"	1'-3"	5'-0"	3'-6"	—	—	—	—	9'-0"	1.96	1.67
	21"	1'-9½"	1'-3½"	5'-3"	3'-9"	—	—	—	—	9'-9"	2.25	1.93
	24"	1'-10"	1'-4"	5'-6"	4'-0"	—	—	—	—	10'-6"	2.54	2.19
	27"	1'-10½"	1'-4½"	5'-9"	4'-3"	—	—	—	—	11'-3"	2.88	2.49
STANDARD ELL	12"	1'-8"	1'-2"	4'-0"	2'-6"	2'-0"	3'-8"	3'-0"	2'-6"	4'-8"	1.19	0.99
	15"	1'-8½"	1'-2½"	4'-3"	2'-9"	2'-3"	3'-11½"	3'-6"	2'-9"	5'-2½"	1.42	1.19
	18"	1'-9"	1'-3"	4'-6"	3'-0"	2'-6"	4'-3"	4'-0"	3'-0"	5'-9"	1.67	1.41
	21"	1'-9½"	1'-3½"	4'-9"	3'-3"	2'-9"	4'-6½"	4'-6"	3'-3"	6'-3½"	1.93	1.63
	24"	1'-10"	1'-4"	5'-0"	3'-6"	3'-0"	4'-10"	5'-0"	3'-6"	6'-10"	2.22	1.89
	27"	1'-10½"	1'-4½"	5'-3"	3'-9"	3'-3"	5'-1½"	5'-6"	3'-9"	7'-4½"	2.52	2.15
RAISED ELL	12"	1'-8"	1'-2"	4'-6"	3'-0"	2'-9"	4'-5"	3'-9"	3'-3"	5'-5"	1.62	1.37
	15"	1'-8½"	1'-2½"	4'-9"	3'-3"	3'-0"	4'-8½"	4'-3"	3'-6"	5'-11½"	1.88	1.59
	18"	1'-9"	1'-3"	5'-0"	3'-6"	3'-3"	5'-0"	4'-9"	3'-9"	6'-6"	2.16	1.85
	21"	1'-9½"	1'-3½"	5'-3"	3'-9"	3'-6"	5'-3½"	5'-3"	4'-0"	7'-0½"	2.47	2.12
	24"	1'-10"	1'-4"	5'-6"	4'-0"	3'-9"	5'-7"	5'-9"	4'-3"	7'-7"	2.79	2.41
	27"	1'-10½"	1'-4½"	5'-9"	4'-3"	4'-0"	5'-10½"	6'-3"	4'-6"	8'-1½"	3.14	2.72

CONCRETE ELL HEADWALL



CONCRETE HEADWALL





NOTES

Circular Pipe includes slightly elliptical concrete pipe with circular reinforcement.

Volume displaced by barrel of pipe has been computed using inside dimension of pipe.

① The dimension and/or the angle of intersection between the walls may be varied on construction.

② Volume based on values of 18" for earth, 12" for rock.

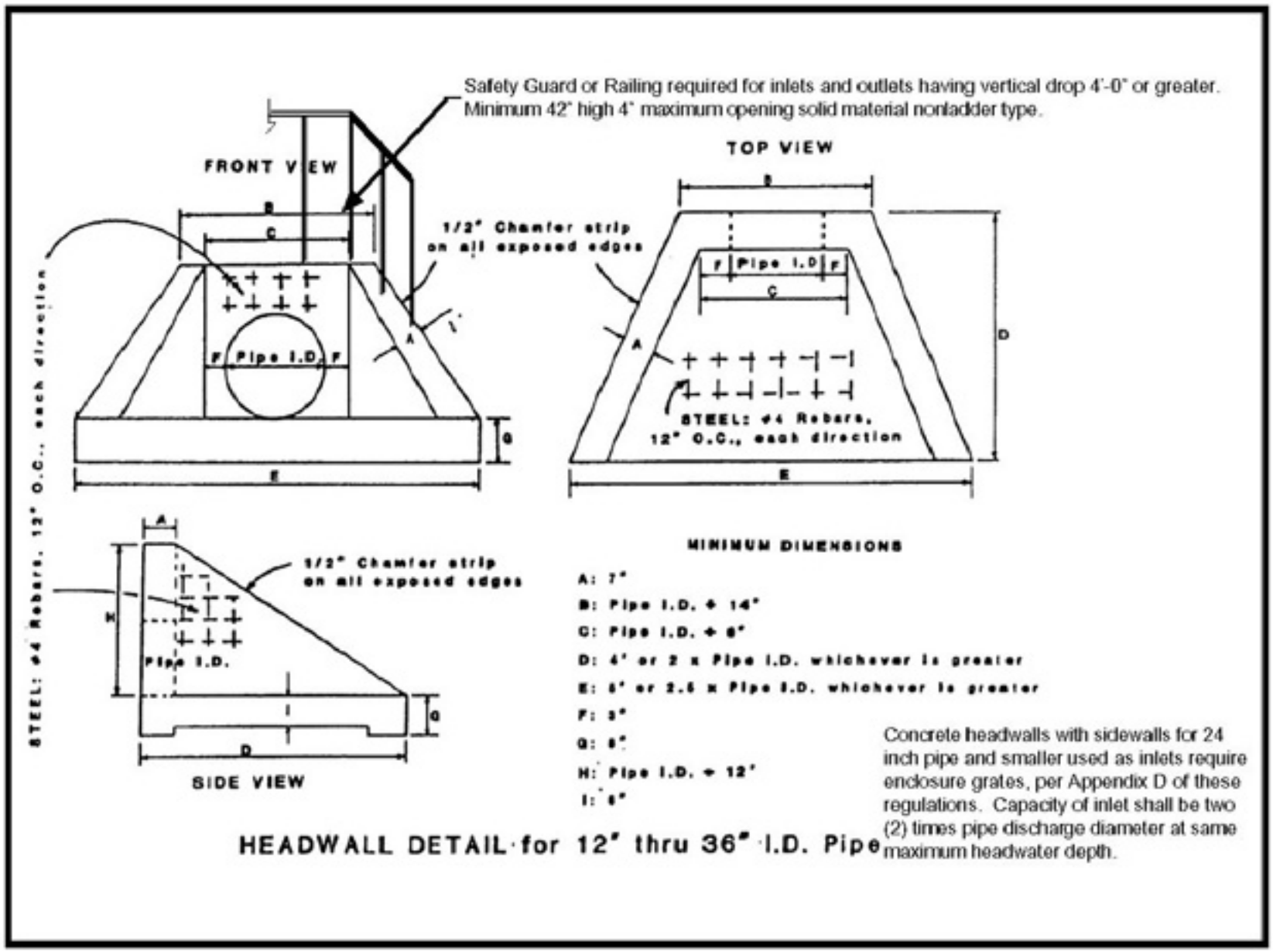
Straight face Headwalls for 24 inch pipe and smaller used as inlets are prohibited.

Safety Guards or Railings may be required.

KENTUCKY
BUREAU OF HIGHWAYS

CONCRETE HEADWALLS
FOR
12"–27"
CIRCULAR PIPE CULVERTS

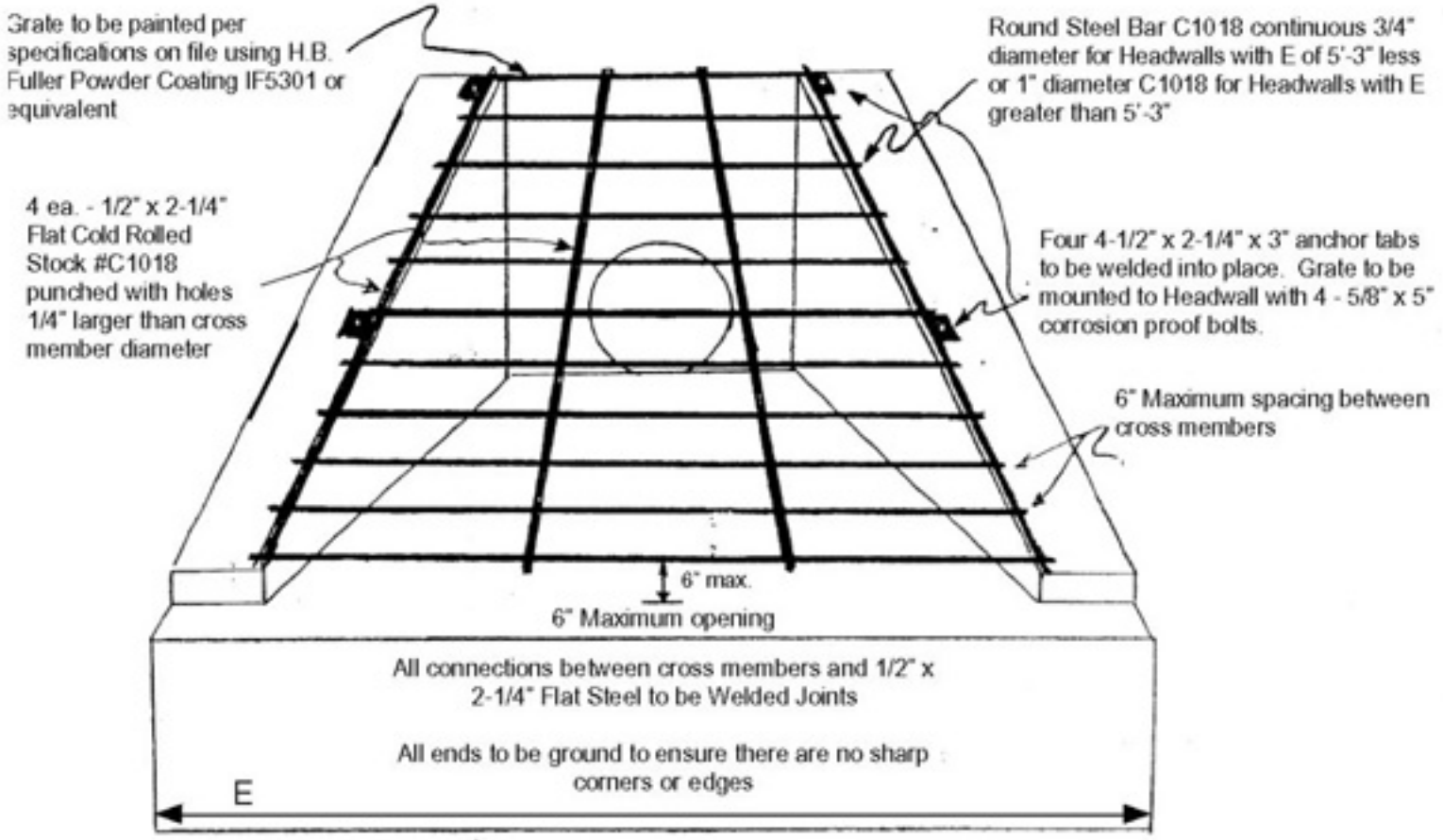
STANDARD DRAWING No. RDH-005

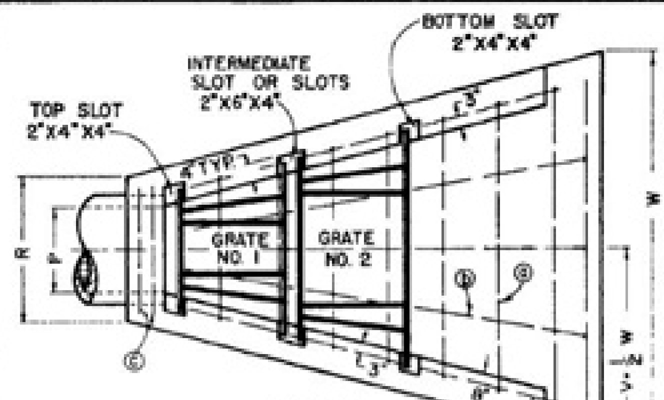


HEADWALL DETAIL for 12" thru 36" I.D. Pipe

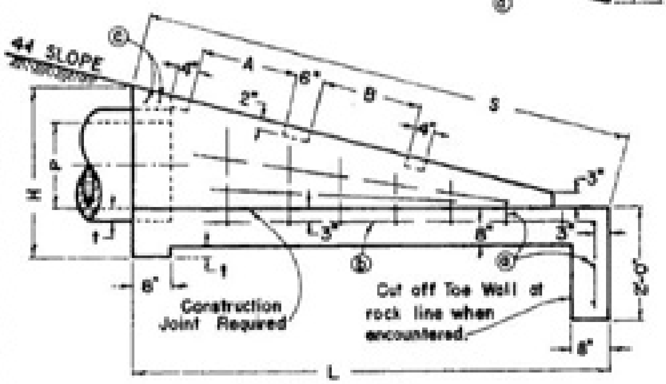
Concrete headwalls with sidewalls for 24 inch pipe and smaller used as inlets require enclosure grates, per Appendix D of these regulations. Capacity of inlet shall be two (2) times pipe discharge diameter at same maximum headwater depth.

ENCLOSURE GRATE FOR INLET HEADWALL
24" DIAMETER PIPE OR LESS

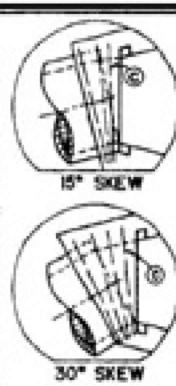




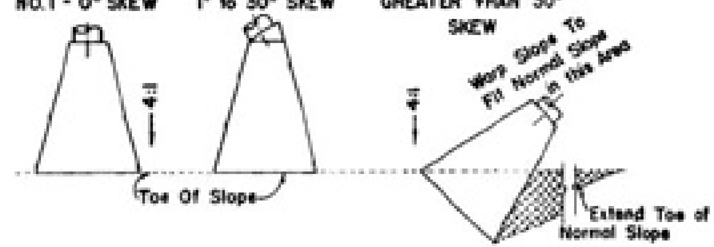
·PLAN·

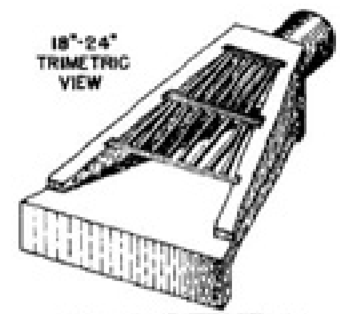


·ELEVATION·



PLAN VIEW OF STRUCTURE LOCATIONS





·NOTES·

The bid item shall be :
"(*) S and F Box Inlet-Outlet"
*Size of Pipe

The minimum requirement for reinforcing steel shall be grade 40. Field bending will be permitted.

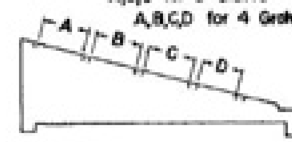
① One additional c bar will be required for each 15° skew.

See Current Edition of RDB-106.

Capacity inlet shall be 2 times pipe discharge diameter at same maximum headwater depth

DETAIL SHOWING LOCATION OF SLOTS FOR GRATES

A,B for 2 Grates
A,B,C for 3 Grates
A,B,C,D for 4 Grates



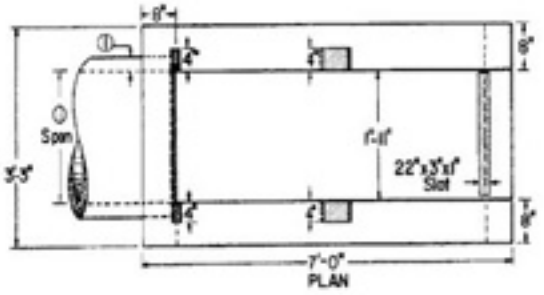
DIMENSIONS											NO. OF GRATES REQ'D	
P	H	L	S	R	V	W	A	B	C	D	2'	3'
18"	3'-0"	8'-6"	8'-9½"	2'-6½"	3'-5"	6'-10"	1'-9"	1'-9"	—	—	2	–
24"	3'-7"	10'-6"	11'-0"	3'-0½"	4'-2½"	8'-5"	2'-9"	2'-9"	—	—	–	2
30"	4'-2"	12'-10"	13'-2¼"	3'-6½"	5'-0"	10'-0"	2'-9"	2'-9"	1'-9"	—	1	2
36"	4'-9"	15'-0"	15'-5½"	4'-0½"	5'-9½"	11'-7"	2'-9"	2'-9"	1'-9"	1'-9"	2	2

NO. 4 REINFORCEMENT BARS NUMBER - LENGTH AND WEIGHT				CLASS A CONC.
ⓐ	ⓑ	① ⓒ	LBS.	CU.YD.
14 at 6'-0"	3 at 8'-6"	2 at 2'-3"	76	1.7
16 at 7'-6"	3 at 10'-6"	2 at 2'-9"	105	2.5
18 at 9'-0"	3 at 12'-9"	2 at 3'-3"	137	3.6
20 at 10'-6"	3 at 15'-0"	2 at 3'-9"	177	4.8

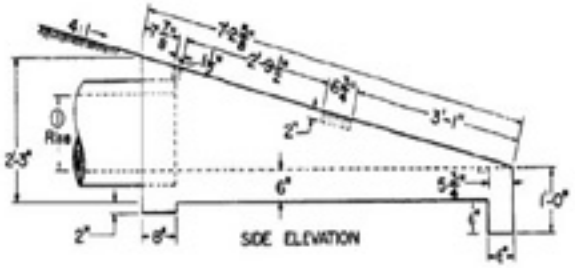
KENTUCKY
DEPARTMENT OF HIGHWAYS

SLOPED AND FLARED
BOX INLET - OUTLET
18" - 24" - 30" - 36"
ALL SKEWS

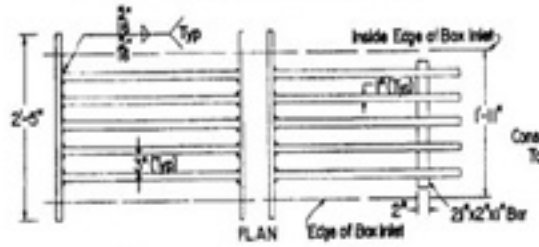
STANDARD DRAWING No. RDB-105-01



① Variable



DETAIL OF STRUCTURAL STEEL GRATING



- NOTES -

The unit price bid for each structure shall include all concrete, structural steel grating, excavation, labor and incidentals, necessary for its construction as detailed on this sheet.

Size and location of pipe shall be as shown on the plans. Payment for all pipe within the limits of a structure shall be included in the unit price bid for the structure.

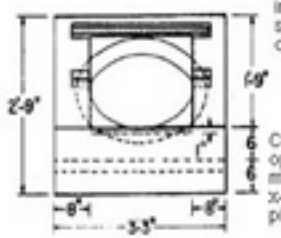
Structural Steel Grating shall have the following properties:

Minimum Yield Strength - 36,000 psi
Minimum Tensile Strength - 58,000 psi
Minimum Elongation - 21 % in 2"

Structural Steel Grating is to be fabricated from 2"x1/4" structural steel bars and 3/16" fillet welds.

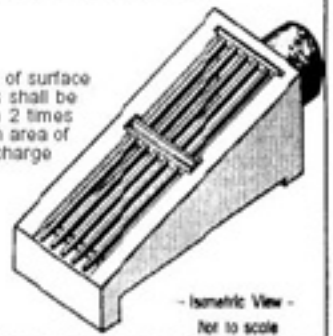
Sloped Box Inlet or Outlet Type I is intended to be used with the following pipe sizes:

BCCSPA Pipe Arch - (15" Equiv. Round)
BCCSPA Pipe Arch - (18" Equiv. Round)
RC Elliptical Pipe - (18" Equiv. Round)



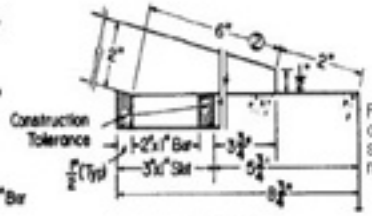
Maximum dimension of any surface inlet/grate opening shall be such that a sphere with a diameter of 6 inches cannot pass through any opening

Capacity of surface openings shall be minimum 2 times x-Section area of pipe discharge



- Isometric View -
Not to scale

Fitted grates shall be attached via cable or chain cast into concrete with sufficient slack for removal and maintenance

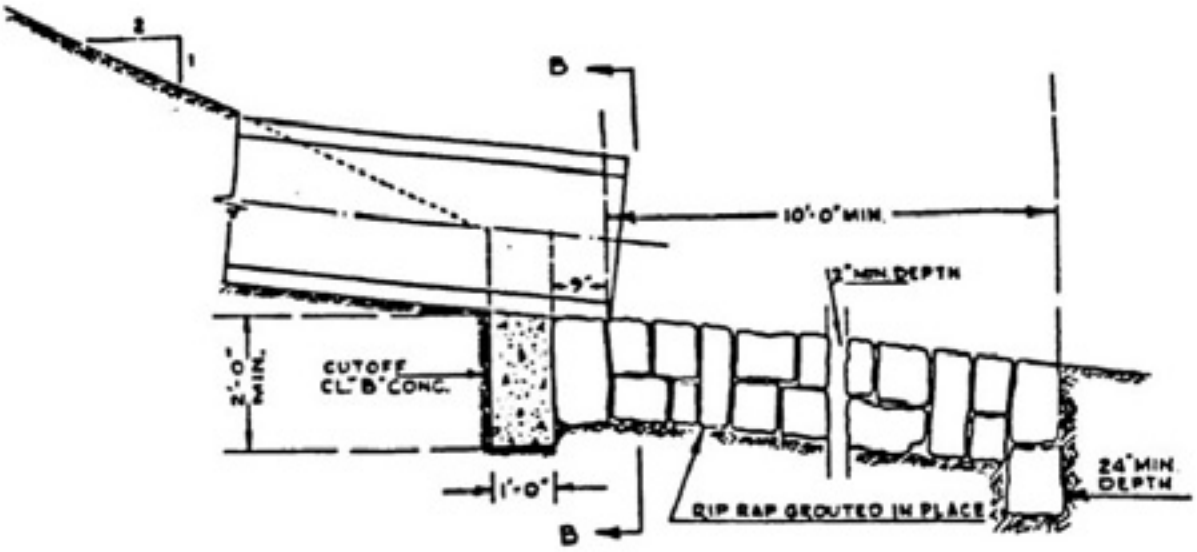


APPROXIMATE QUANTITIES		
Class "A" Concrete		80 Cu.Yds.
Structural Steel	Grating No.1	130 Lbs.
	Grating No.2	120 Lbs.
	Total	250 Lbs.

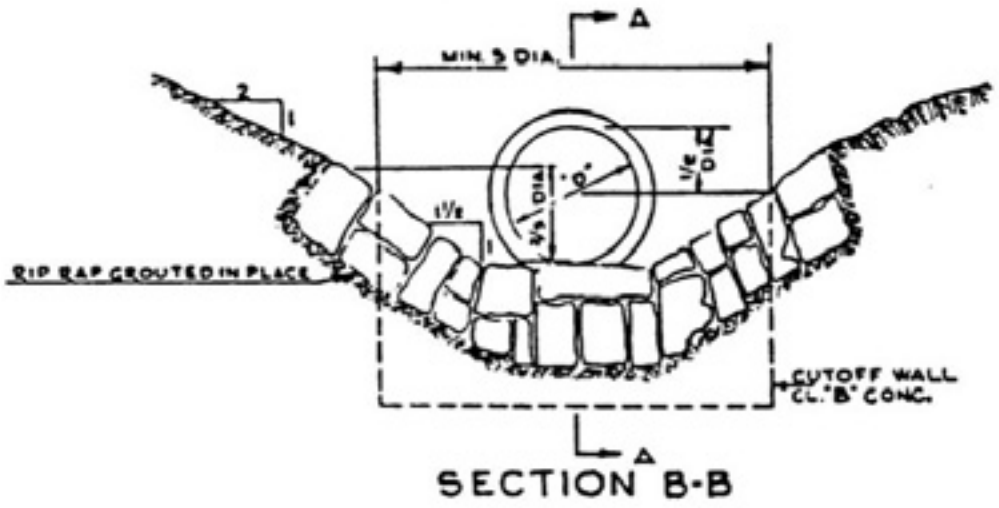
KENTUCKY BUREAU OF HIGHWAYS

SLOPED BOX INLET OR OUTLET TYPE I

STANDARD DRAWING No. RDB 10-02



SECTION A-A

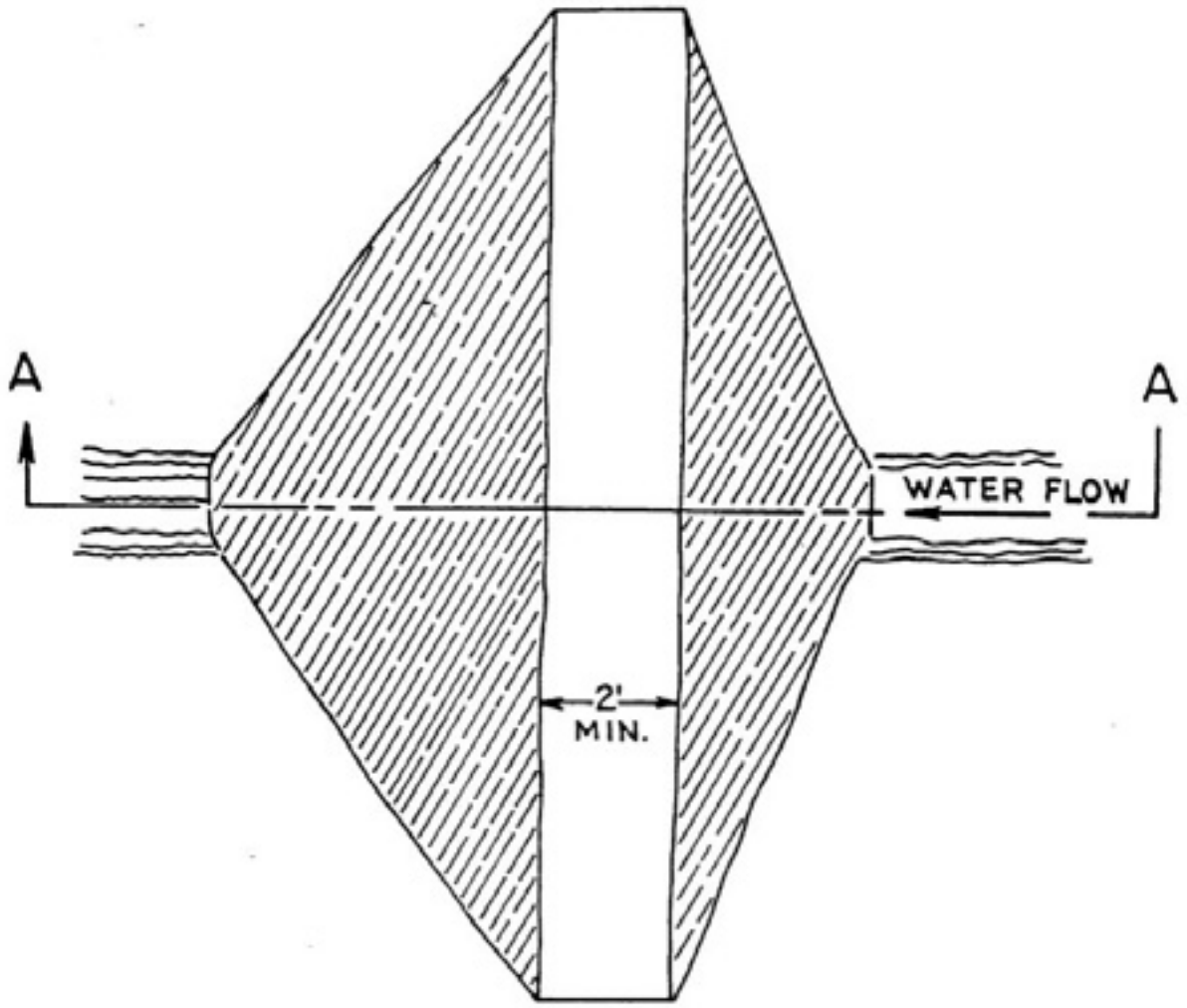


SECTION B-B

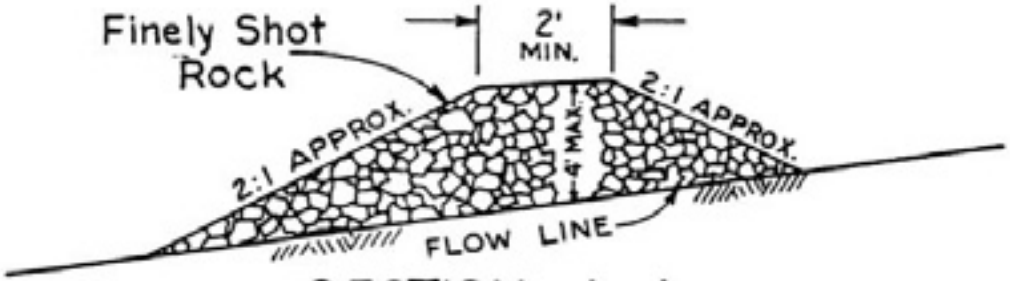
TO BE USED WHERE RIP RAP APRON IS CALLED FOR ON PLANS AND NO DETAIL IS PROVIDED.

RIP RAP APRON AND CUTOFF WALL

SILT CHECK

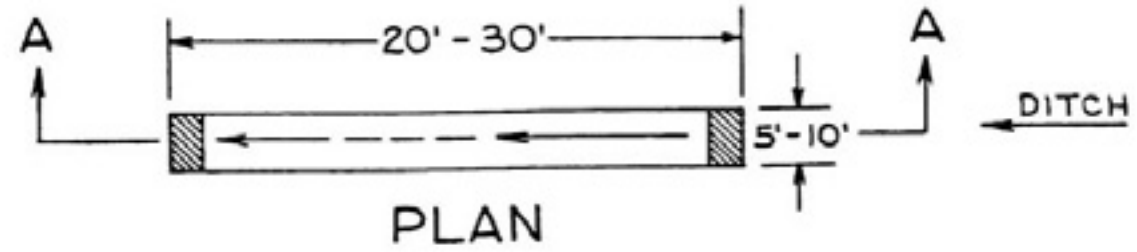


PLAN



SECTION A-A

SILT TRAP TYPE A

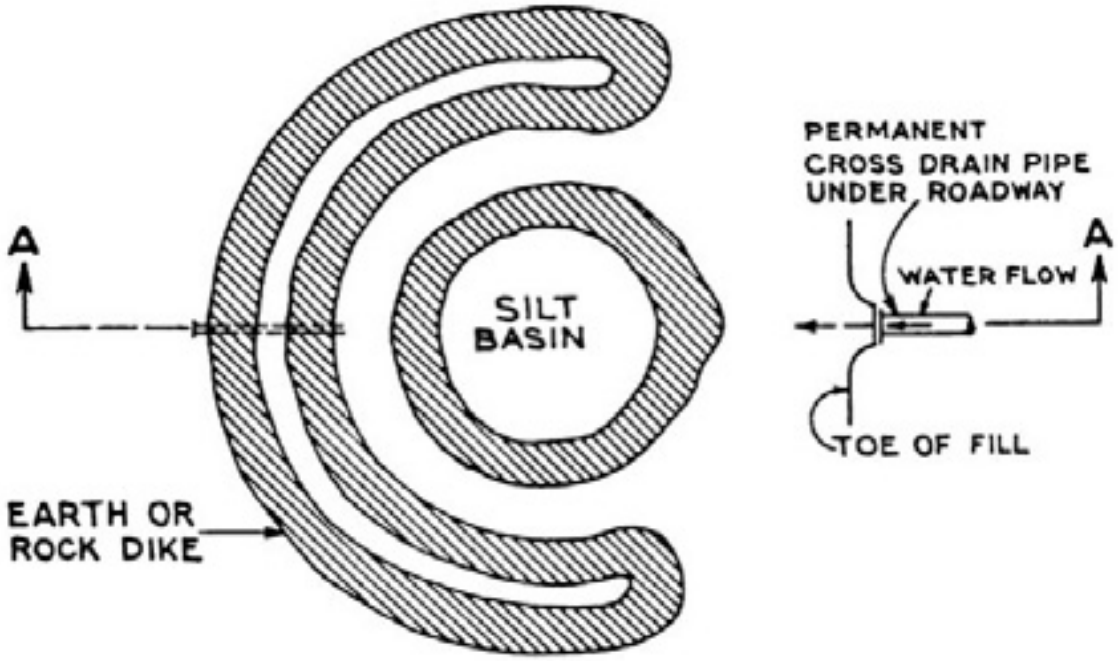


PLAN

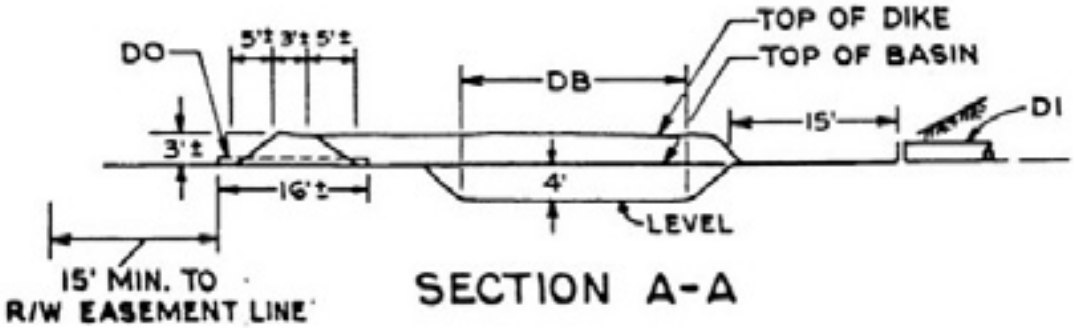
SECTION A-A

NOTE: SILT TRAP TO BE CLEANED WHEN IT IS APPROXIMATELY 50% FILLED WITH SEDIMENT. SILT TRAPS TO BE PLACED IN SURFACE DRAIN DITCHES AND SIDE DITCHES JUST BEFORE THE WATER (RUNOFF) LEAVES THE RIGHT OF WAY, ENTERS A WATER COURSE, AND AT THE END OF CUT SECTIONS, AND IMMEDIATELY PRECEDING DITCH INLETS. LOCATION OF TRAP AND SIZE (OTHER THAN AS SHOWN) TO BE AS DIRECTED BY THE ENGINEER WHO SHALL REVISE SIDE IF AND AS MAY BE REQUIRED. DIMENSIONS ARE APPROXIMATE.

SILT TRAP TYPE B



PLAN

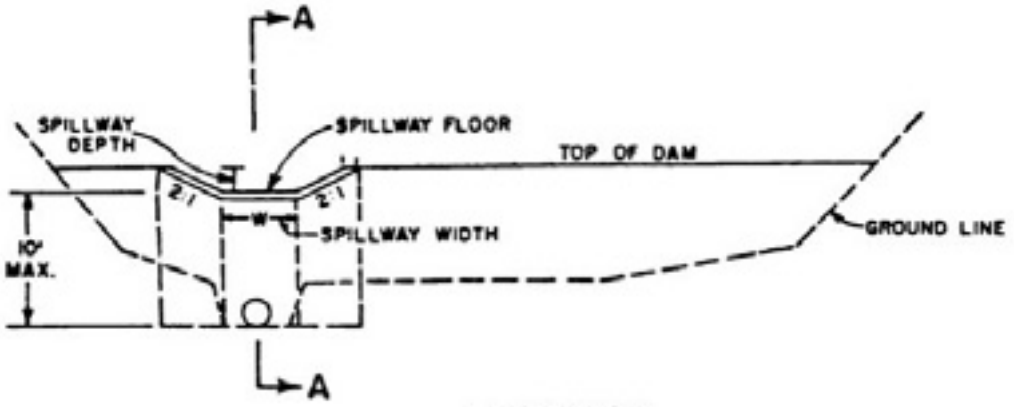


SECTION A-A

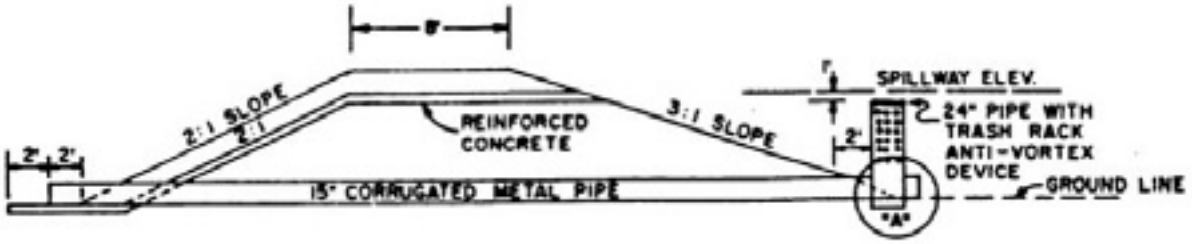
NOTE: ALL DIMENSIONS OF BASIN AND DIKE WILL NOT REQUIRE CONSTRUCTION TO NEAT LINES. THE PLAIN VIEW ABOVE INDICATES THE SILT BASIN IS ROUND, HOWEVER, IT IS DRAWIN IN THIS MANNER FOR ILLUSTRATION PURPOSES ONLY. THE BASIN MAY BE CONSTRUCTED AS LONG AS THE AREA AND DEPTH OF THE BASIN IS AT LEAST AS LARGE AS INDICATED. DIKES MAY BE CONSTRUCTED OF EARTH OR BROKEN ROCK. EARTH DIKE MUST BE CONSTRUCTED WITH A PIPE AS SHOWN, HOWEVER, BROKEN ROCK DIKES MAY NOT NEED A PIPE.

	DI	DB	DO
SDB	18"	15'	6"
SDB	24"	20'	8"

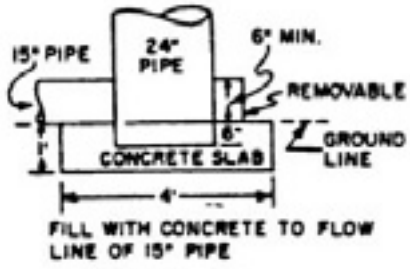
TYPICAL DETAILS FOR SEDIMENTATION BASIN



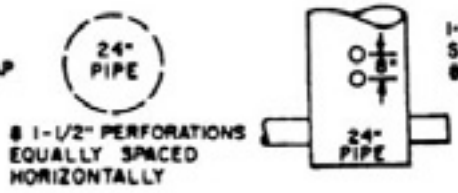
ELEVATION



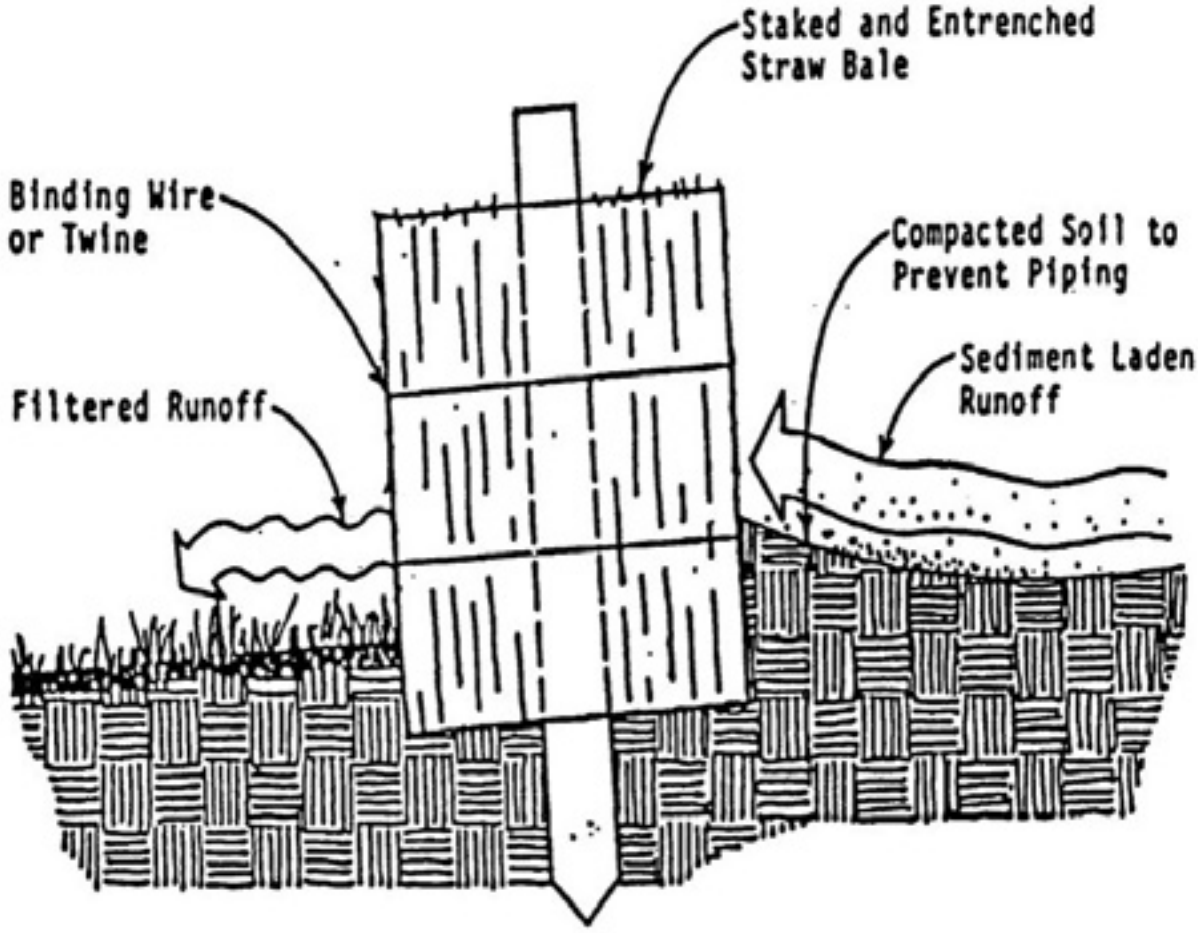
SECTION A–A

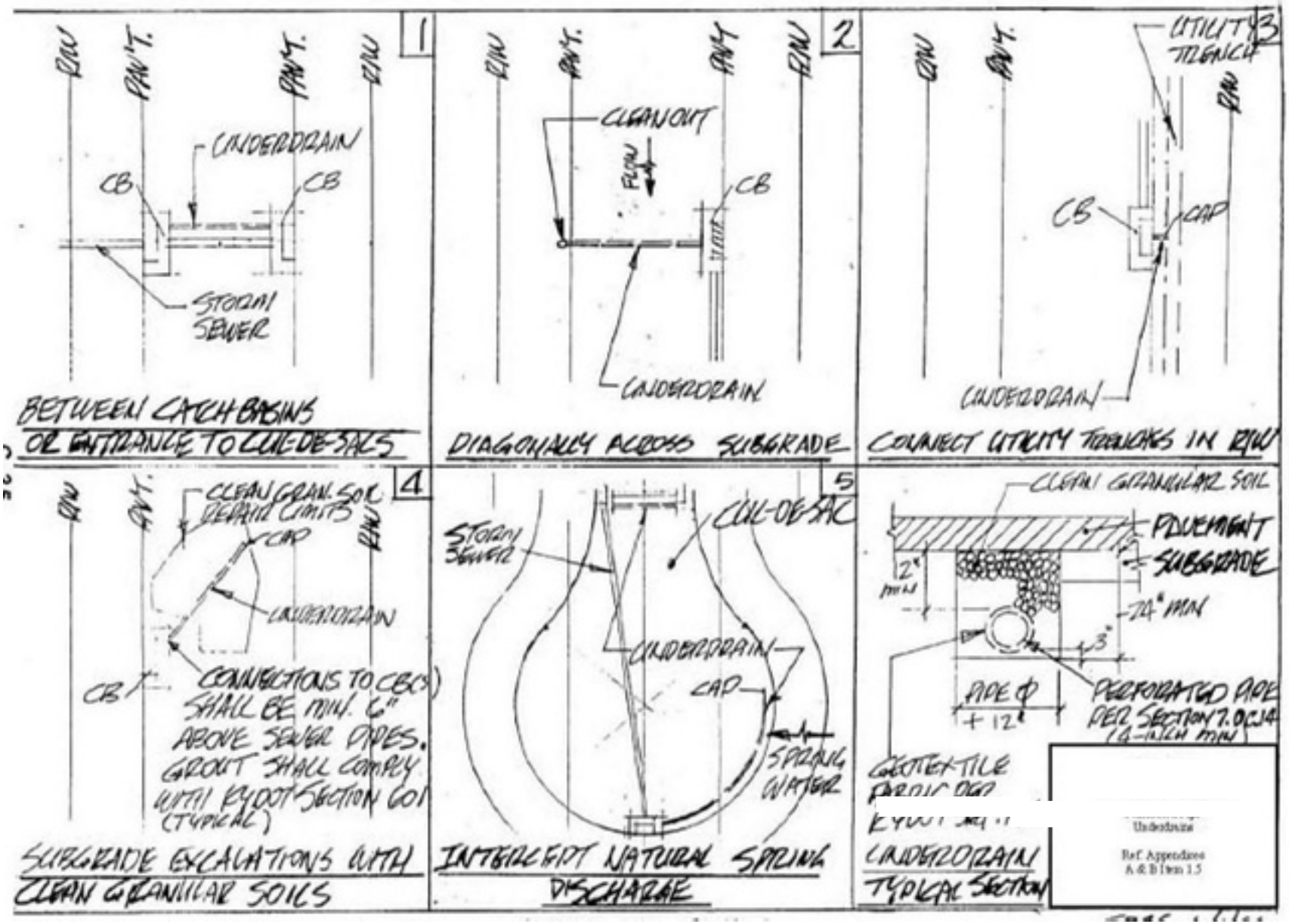


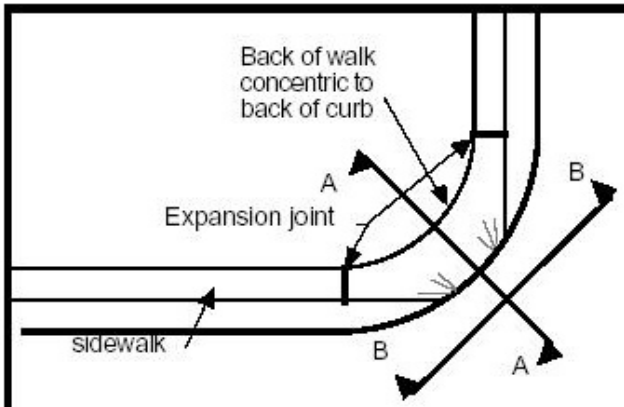
DETAIL "A"



DETAIL SHOWING LOCATION OF PERFORATIONS IN 24" PIPE


Staked and Entrenched
Straw Bale
Binding Wire
or Twine
Compacted Soil to
Prevent Piping
Sediment Laden
Runoff
Filtered Runoff

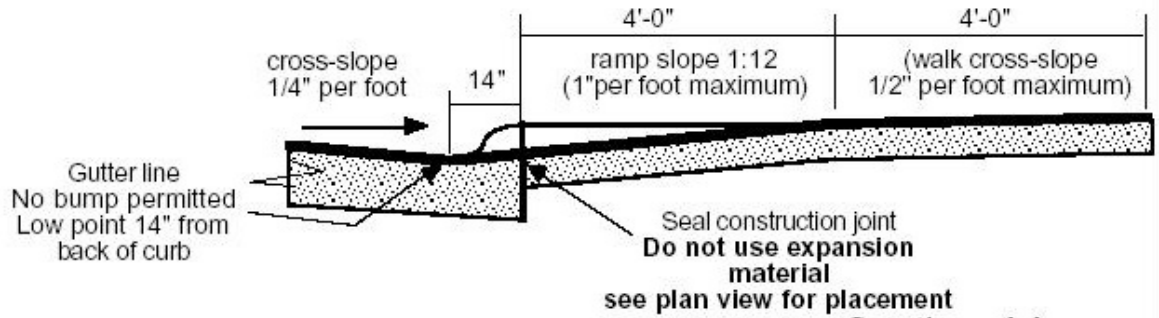

1
CALIFORNIA DRAIN
CB
CB
STORM SEWER
BETWEEN CATCH BASINS OR ENTRANCE TO CUL-DE-SACS
2
CLEAN OUT
FLOW
CB
CALIFORNIA DRAIN
DIAGONALLY ACROSS SUBGRADE
3
UTILITY TRENCH
CB
CAP
CALIFORNIA DRAIN
CONNECT UTILITY TRENCHES IN R/W
4
CLEAN GRAN. SOIL BEYOND LIMITS
CAP
CALIFORNIA DRAIN
CB
CONNECTIONS TO CB(S) SHALL BE MIN. 6" ABOVE SEWER PIPES. GROUT SHALL COMPLY WITH CALTRANS SECTION 60
(TYPICAL)
SUBGRADE EXCAVATIONS WITH CLEAN GRANULAR SOILS
5
CUL-DE-SAC
STORM SEWER
CALIFORNIA DRAIN
CAP
SPRING WATER
INTERCEPT NATURAL SPRING DISCHARGE
CLEAN GRANULAR SOIL
PAVEMENT
SUBGRADE
2" MIN
12" MIN
3"
PIPE Ø + 12"
PERFORATED PIPE PER SECTION 7.06.04 (6-INCH MIN)
GEOTEXTILE
CALIFORNIA DRAIN TYPICAL SECTION
Ref. Appendices A & B Item 13



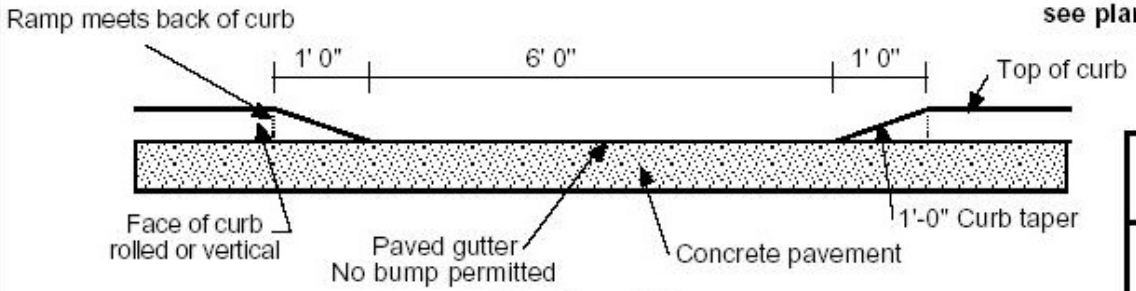
Plan - Sidewalk Ramp at Intersection

NOTES:

1. Sidewalk ramps shall be constructed of minimum 4000 psi air-entrained concrete. A broom finish or equal non-skid finish is required.
2. Normal gutter line shall be maintained through the area of the ramp for drainage.
3. Minimum thickness for ramps, shall be 4-inches, same as sidewalks.
4. No free draining granular fill permitted under ramps.
5. Handicap ramps shall meet the requirements of Americans with Disabilities Act of 1990.
6. Installation along state highways shall be constructed per state highway standards.
7. Wider walks required for other land uses. (see section 7.3 F)



Section AA



Section BB
detail at entrance ramp

Typical Installation for Sidewalk Ramps