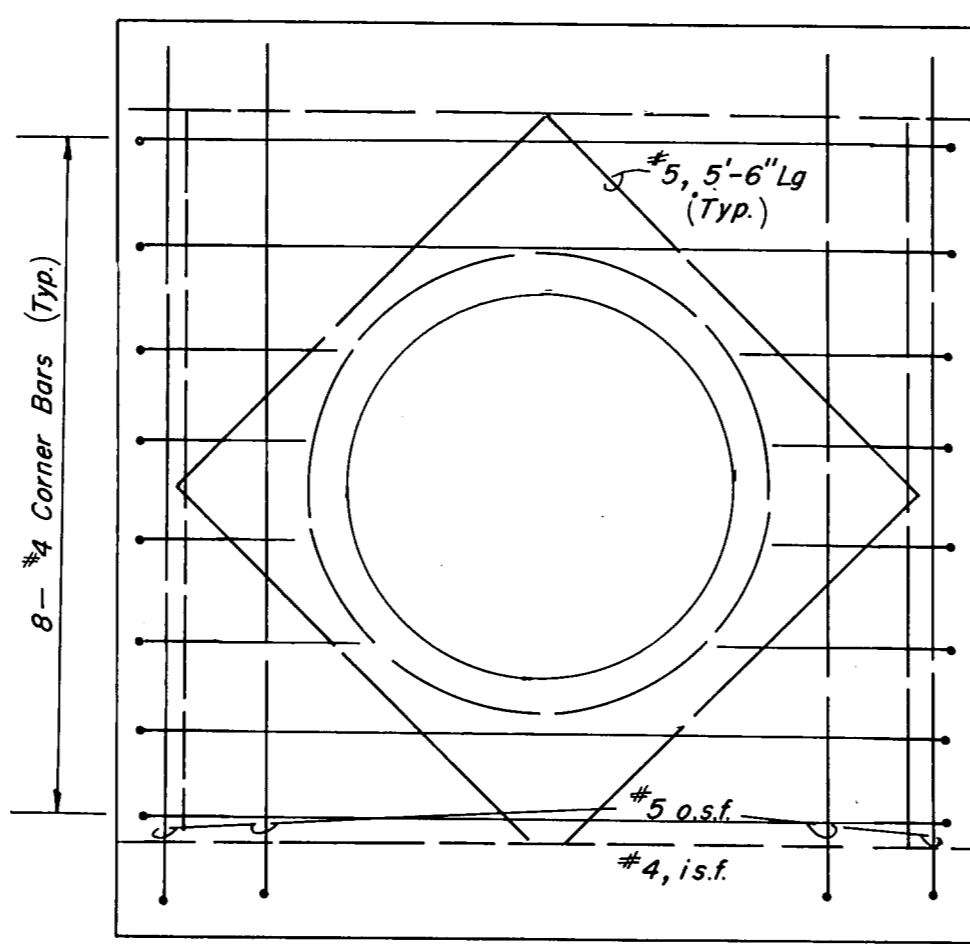
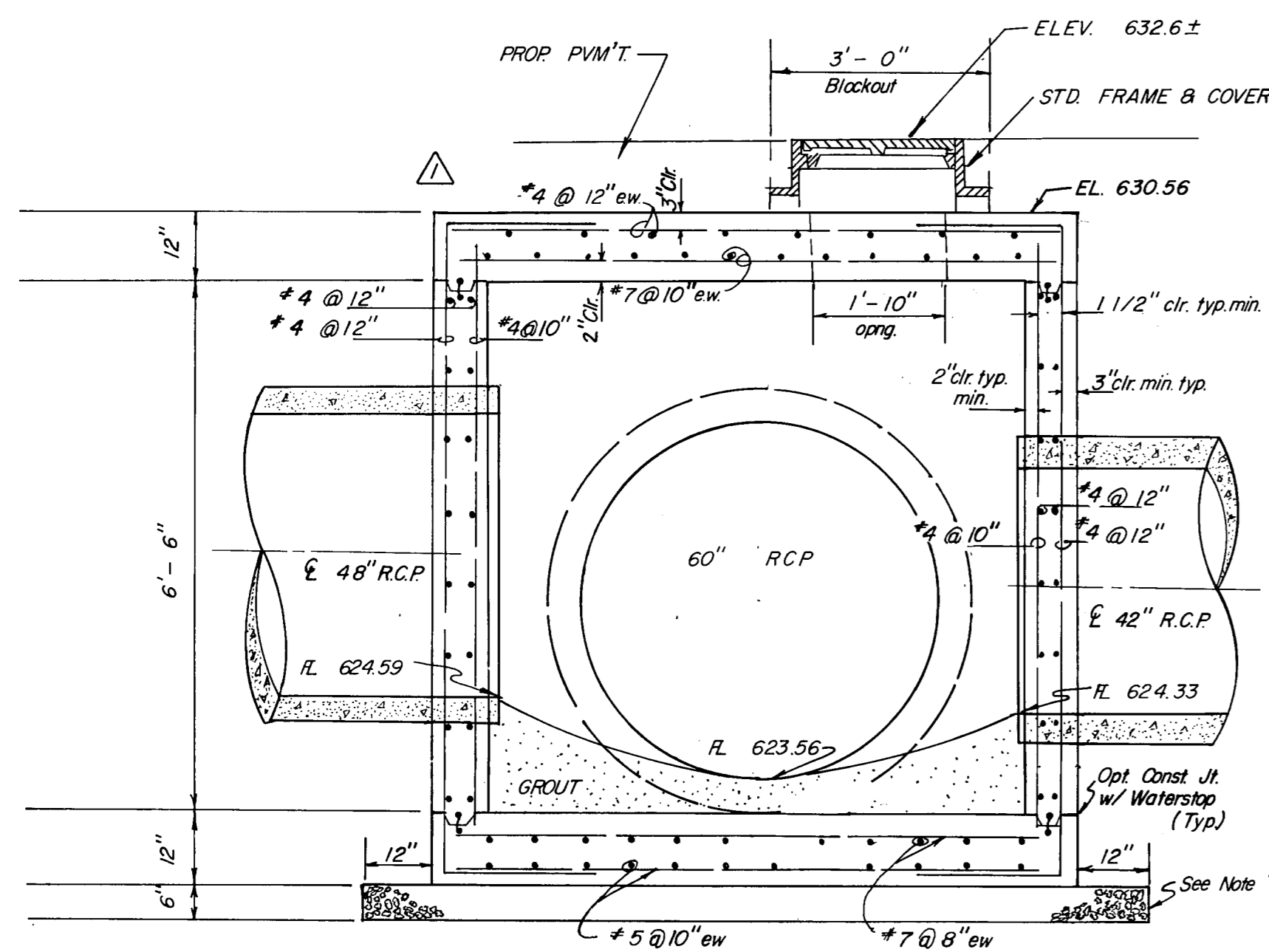


SECTION C-C



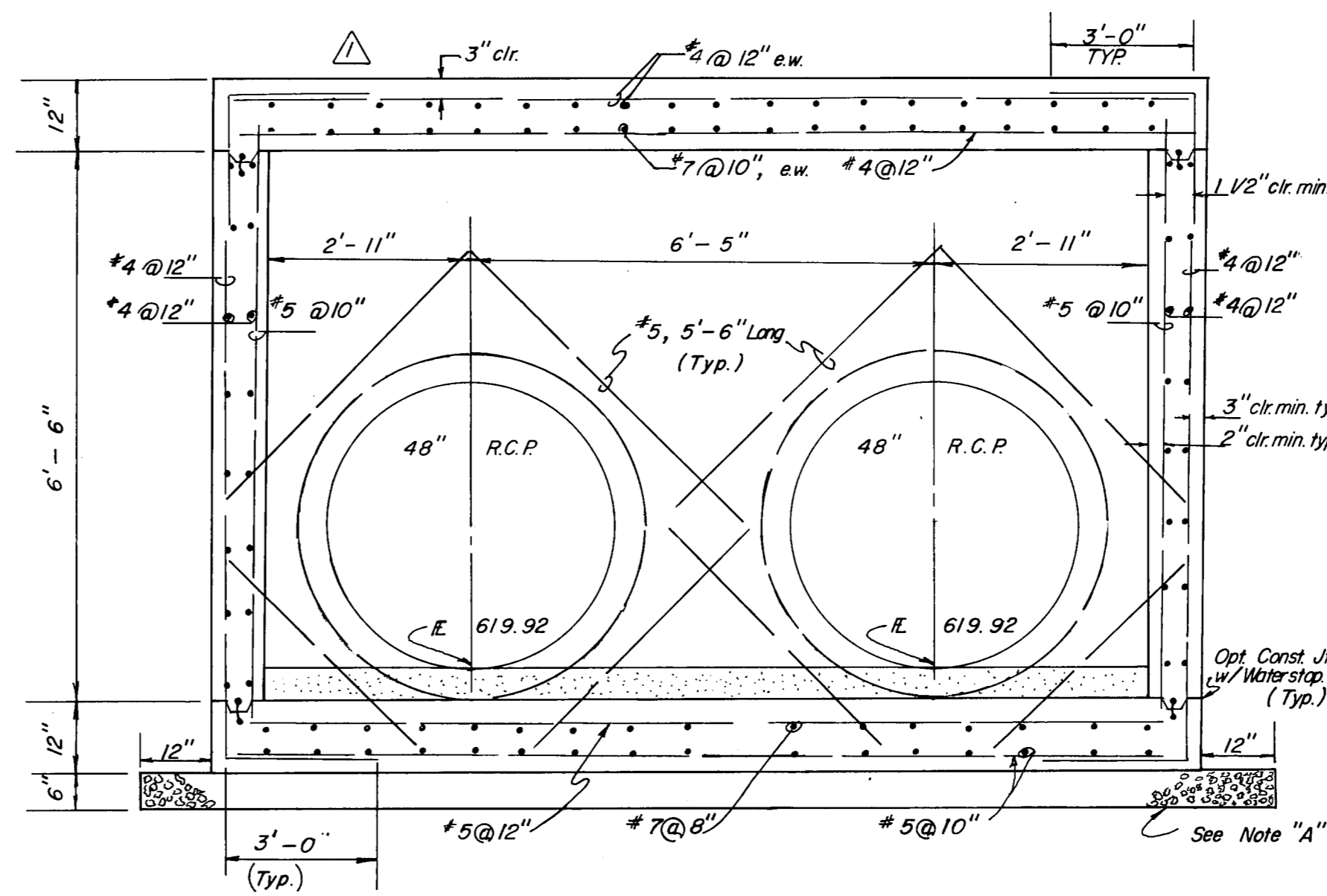
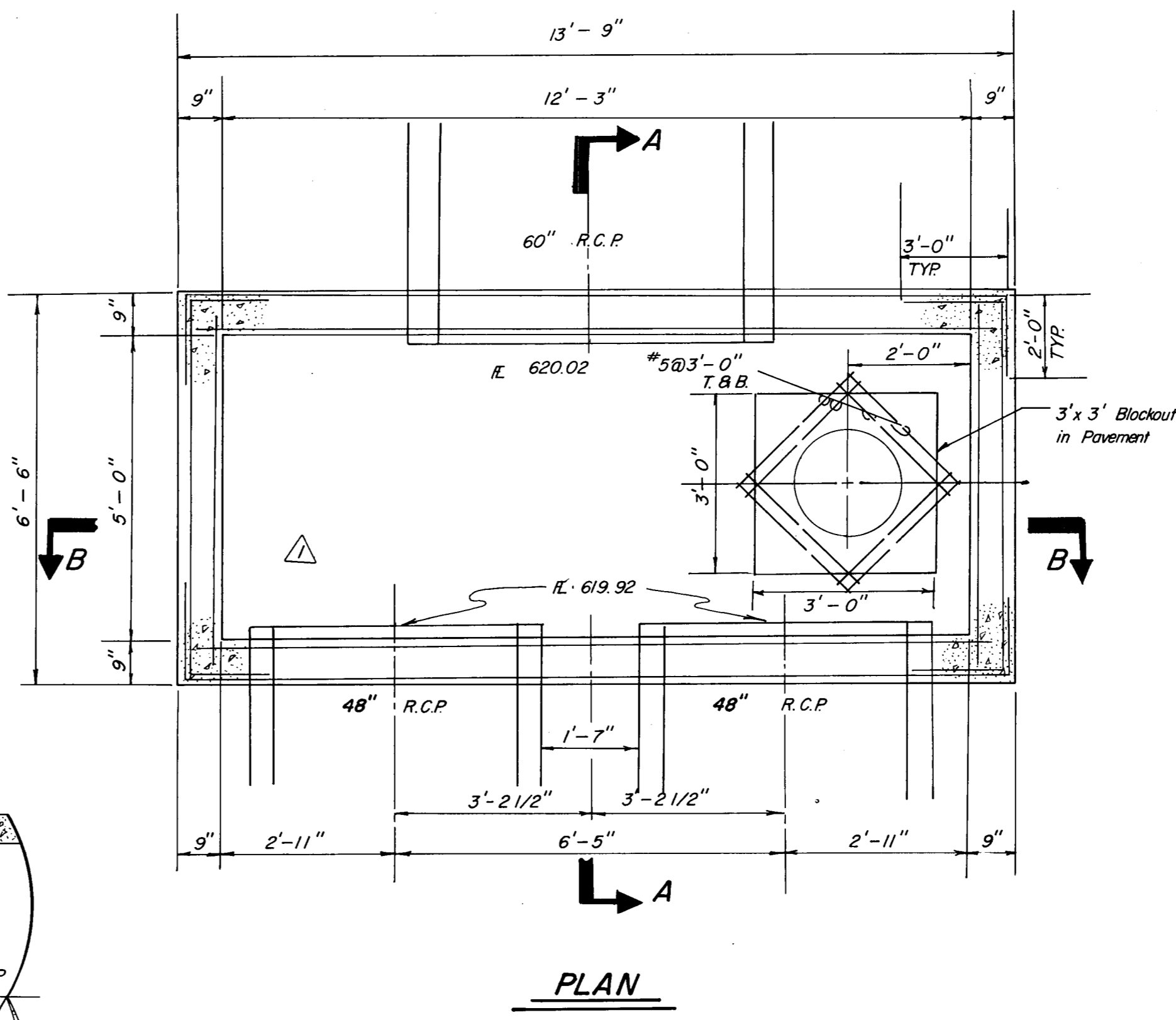
SECTION B-B



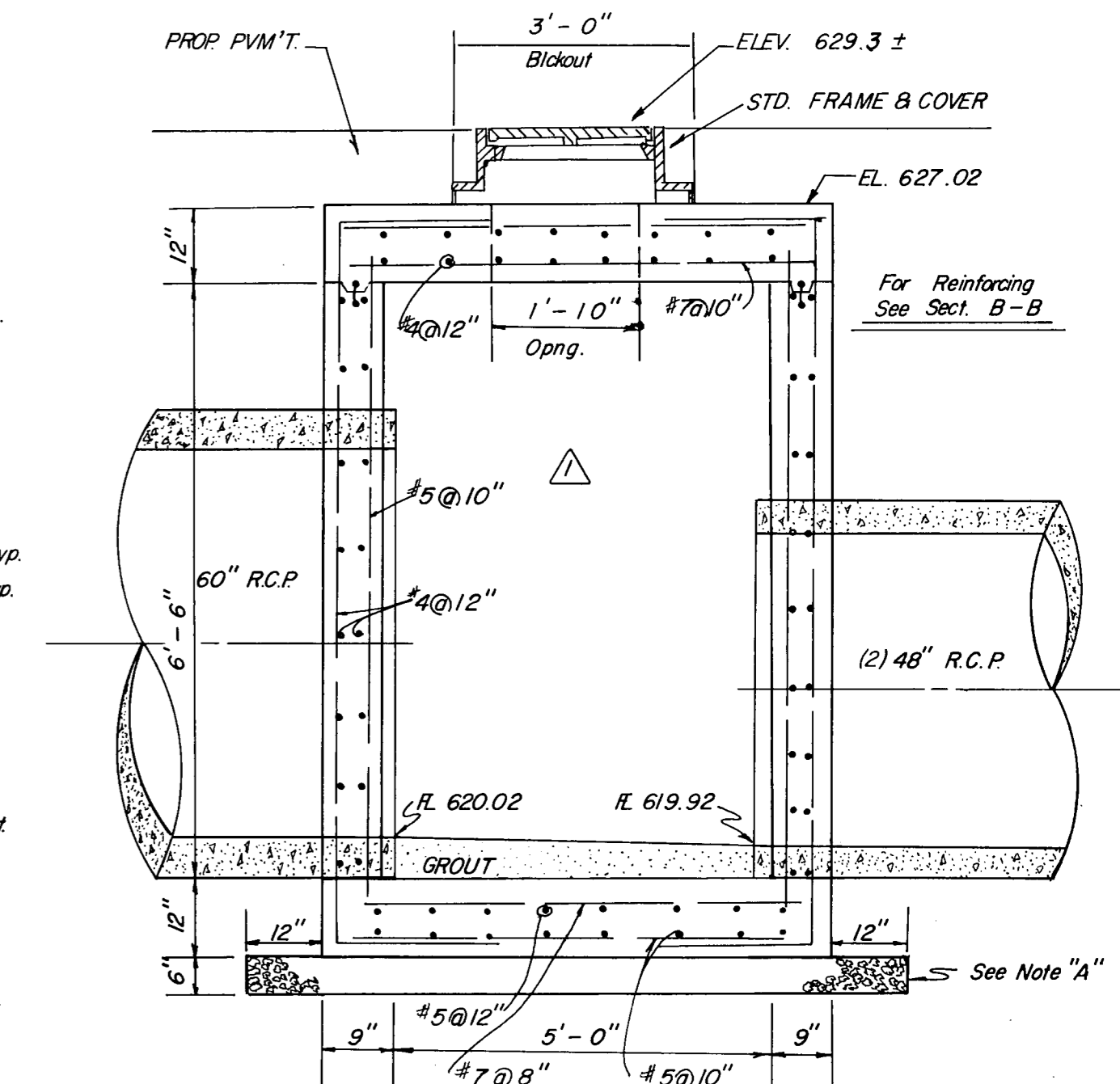
SECTION A-A

JUNCTION BOX NO. 1

PAY ITEM 475.1



SECTION B-B



SECTION A-A

JUNCTION BOX NO. 2

PAY ITEM 475.2

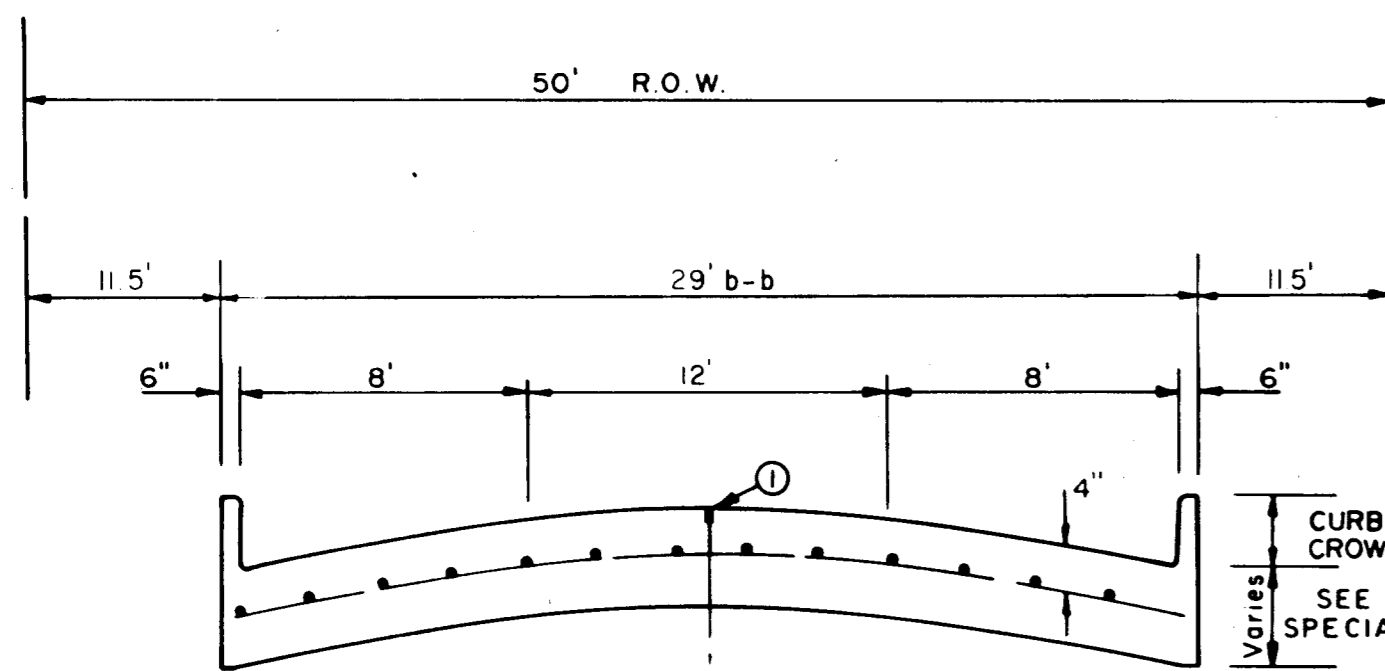
NOTE A:
Overexcavate & backfill with 6" thick bedding material (crushed stone) NOT a separate pay item.

GENERAL NOTES
(Typ. All Junction Boxes)

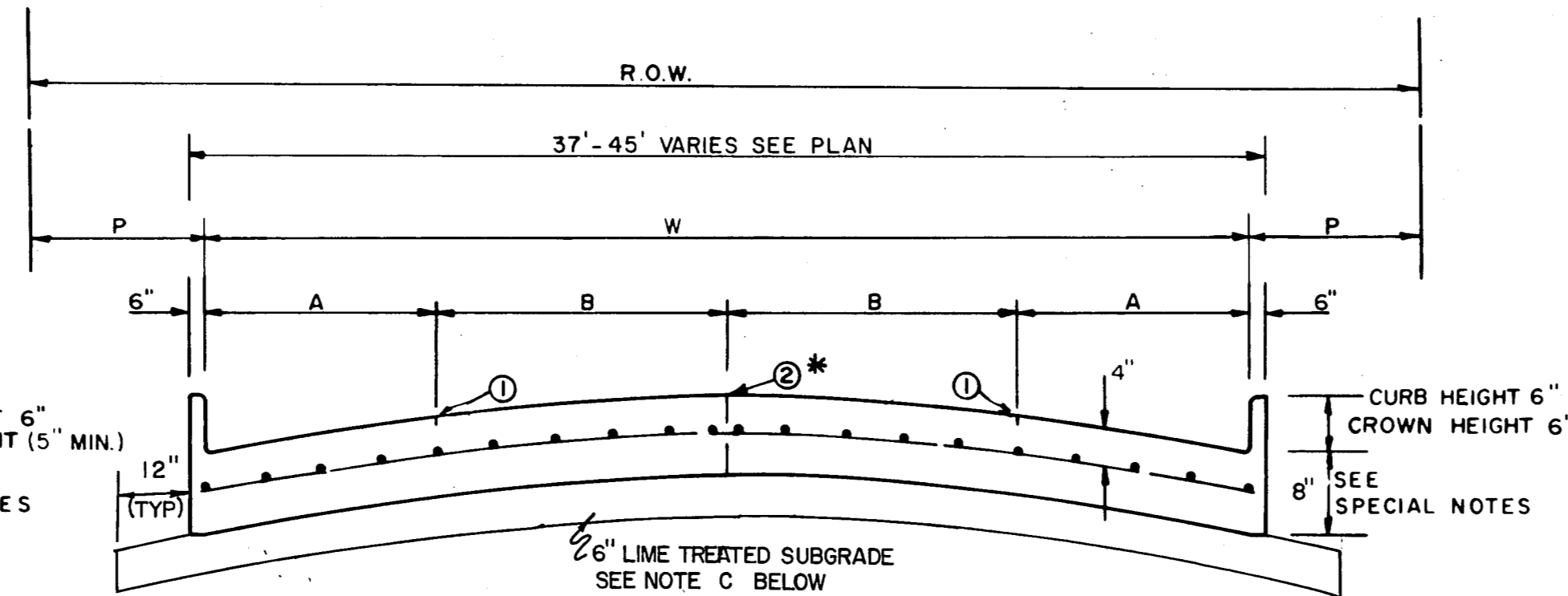
- All concrete shall be Class A, 3000 PSI concrete.
- Reinforcing shall conform to ASTM A615, grade 60.
- Provide all necessary reinforcing accessories to hold bars in proper position.
- All reinforcing shall be detailed in accordance with ACI Standard 315.
- Provide corner bars of the same size and number as horizontal bars at all corners, or bend bars as indicated on plan.
- Contractor shall submit shop drawings in accordance with ACI Standards, latest edition, (for approval prior to any construction being done) showing all information as to exact location, size, number; bending, splicing and placing schedules and lists of reinforcement. No work shall commence on structures until approval of shop drawings is received.
- All labor and materials for construction of junction boxes shall be included in the unit price bid for the structure. No additional compensation will be allowed.



REVISED REINFORCING STEEL	RLO	9-15-86
No. _____	By	Date
TOWN OF ADDISON DALLAS COUNTY, TEXAS		
KELLER SPRINGS/DOOLEY RD. IMPROVEMENTS		
DRAINAGE - JUNCTION BOX DETAILS		
GINN, INC. Consulting Engineers Dallas, Texas		
Designed - RLO	Drawn - RLO	Date - JUNE, 1986
Approved - HWG	Checked - JCK	Scale - NONE
		Job No. - 263
		Sheet 1a of 30



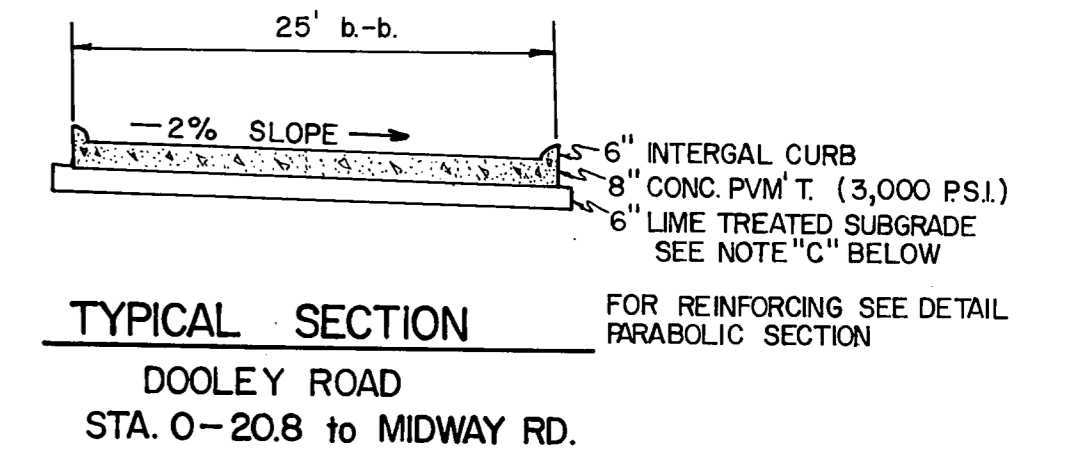
ONE MOVING LANE / TWO PARKING LANES
(LOCAL STREET)



STREET TYPE	STREET WIDTH (W)	A	B	R.O.W. WIDTH	P
COLLECTOR /	36' *	8'	10'	60'	11.5'
COLLECTOR /	40'	8' OR 10'	10' OR 12'	60'	9.5'
COLLECTOR /	44'	11'	11'	65'	10.0'

* FULL WIDTH PAVEMENT OF 36' WIDTH STREETS IS ALLOWED WHERE APPROVED BY THE TOWN OF ADDISON

FOR DOOLEY RD. STA. 12+00 - 15+00
SEE PLAN SHEET NO. 6
FOR KELLER SPRINGS STA. 0+37.54 - 4+00
SEE PLAN SHEET NO. 7

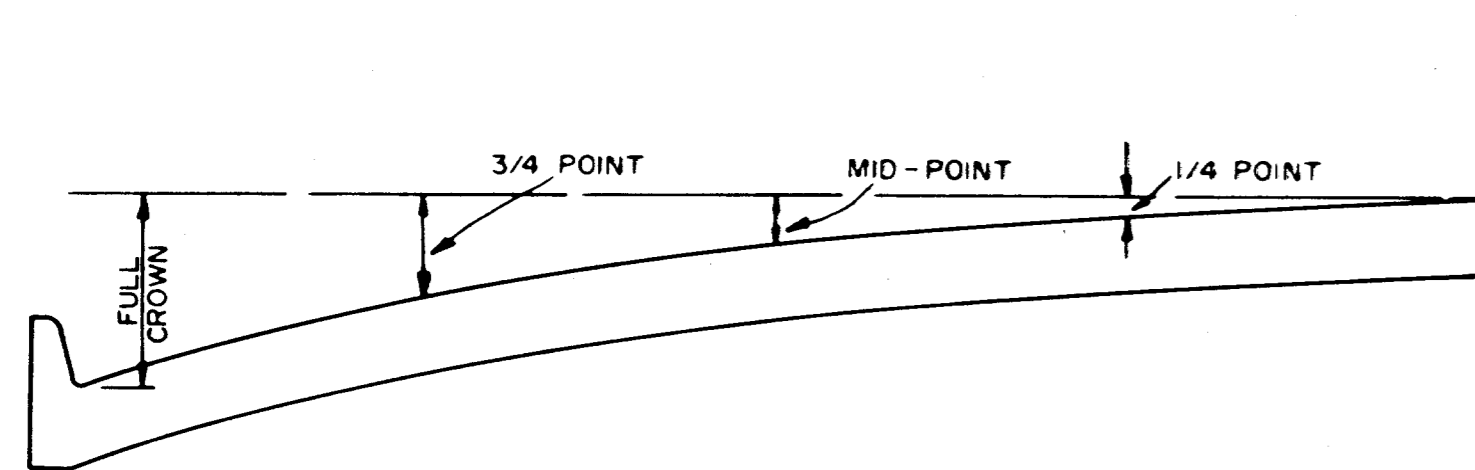


TYPICAL SECTION
FOR REINFORCING SEE DETAIL PARABOLIC SECTION
DOOLEY ROAD
STA. 0-20.8 to MIDWAY RD.

REINFORCED CONCRETE PAVEMENT

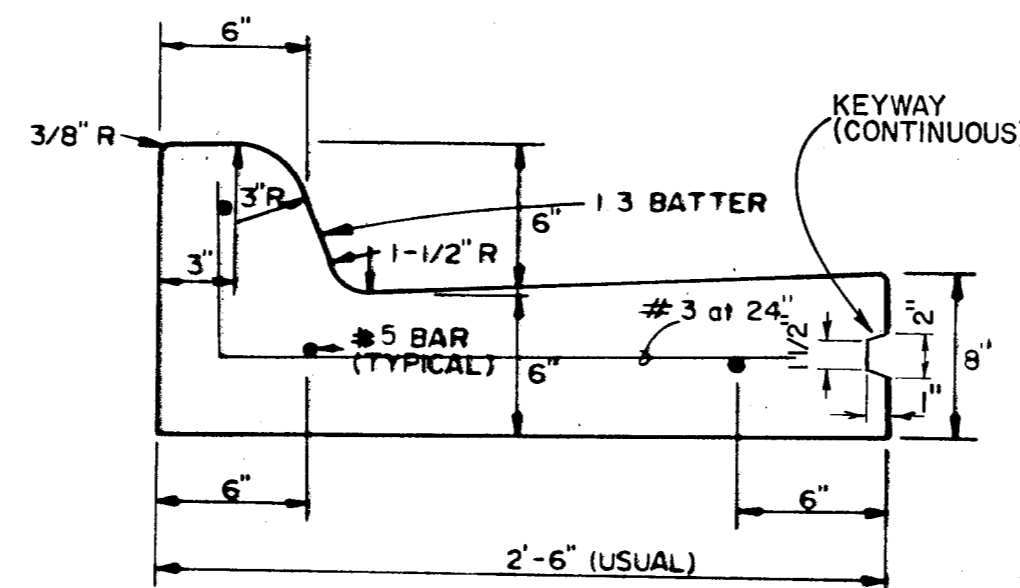
ALL REINFORCING BARS SHALL BE NO. 3 TRANSVERSE BARS TO BE SPACED ON 2'-0" CENTERS, LONGITUDINAL BARS TO BE SPACED ON 2'-0" EXCEPT WHERE NOTED

- ① SAWED LONGITUDINAL DUMMY JOINT
- ② CONSTRUCTION JOINT (FULL WIDTH PVMT. IS ALLOWED WHERE APPROVED BY ENGINEER)

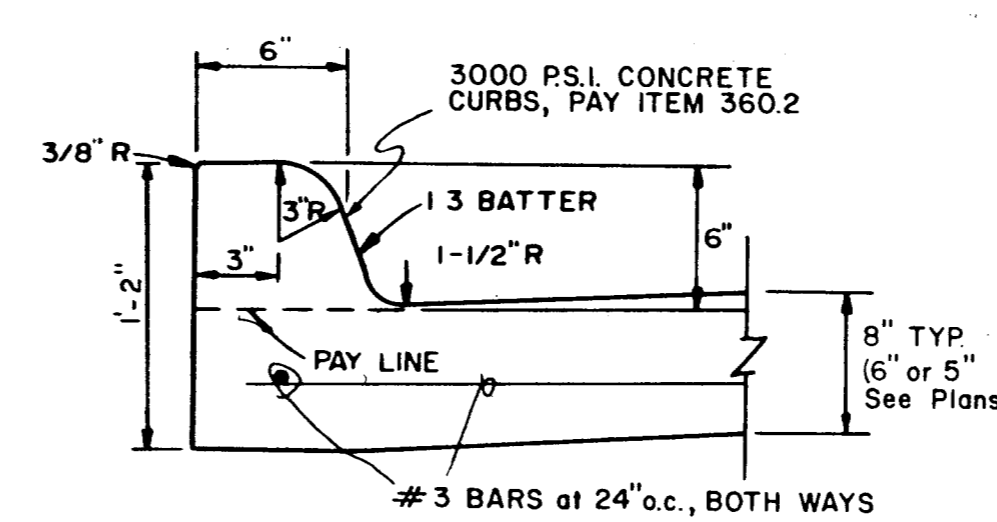


ROADWAY WIDTH (W)	TOTAL CROWN HEIGHT	3/4 POINT	MID-POINT	1/4 POINT
26'	6"	3 - 3/8"	1 - 1/2"	3/8"
36'	6"	3 - 3/8"	1 - 1/2"	3/8"
44'	6"	3 - 3/8"	1 - 1/2"	3/8"
48'	6"	3 - 3/8"	1 - 1/2"	3/8"

TABLE OF CROWN HEIGHTS AND ORDINATES FOR VARIOUS PARABOLIC SECTIONS



SEPARATE CURB-AND-GUTTER
PAY ITEM 360.3



INTEGRAL CURB
PAY ITEM 360.2

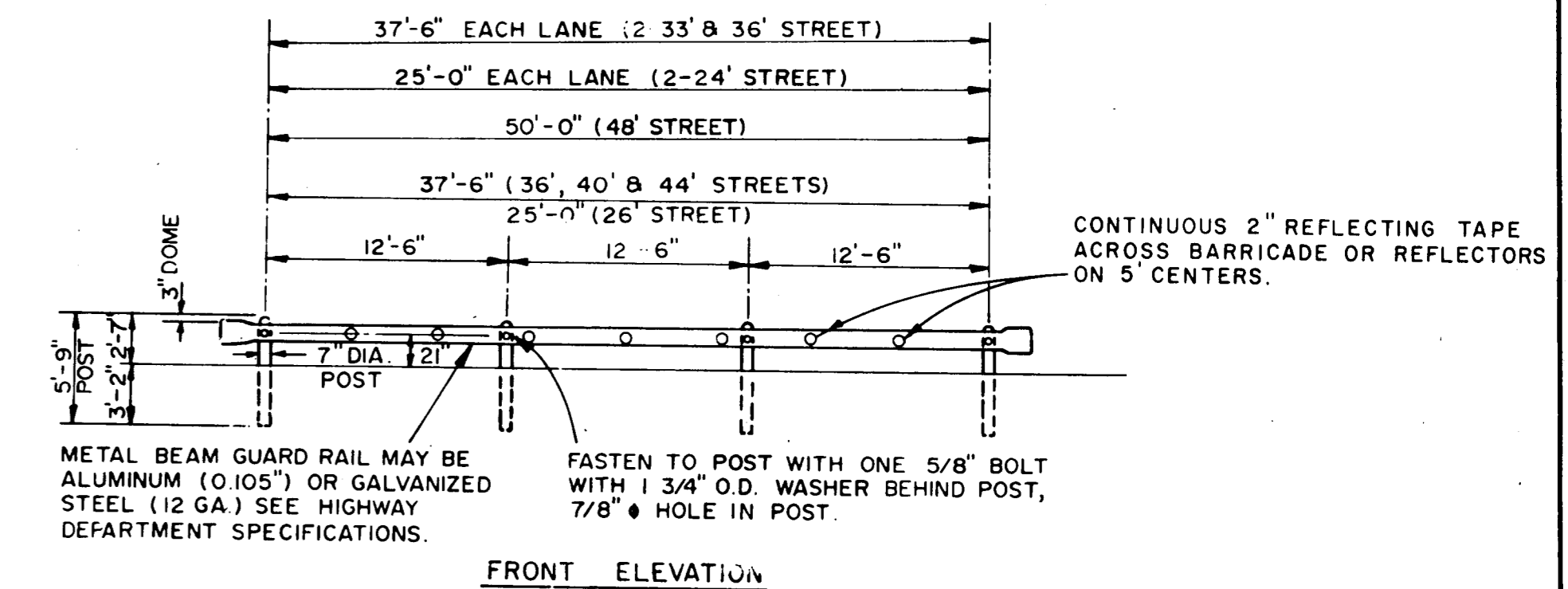
CURB AND CURB-AND-GUTTER

GENERAL NOTES

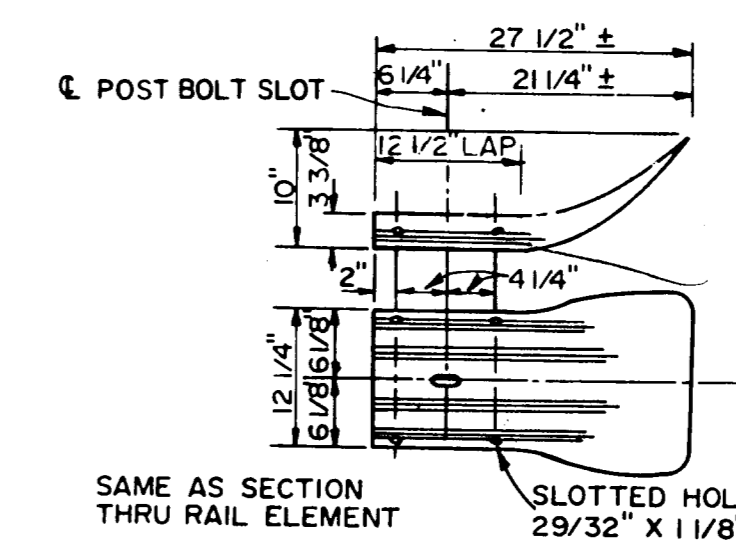
- A. GENERAL
USUAL PAVEMENT THICKNESS IS AS SHOWN IN SPECIAL NOTES. SUBGRADE DESIGN SHALL CONFORM TO THE TOWN OF ADDISON, DEPARTMENT OF ENGINEERING REQUIREMENTS, AND SHALL EXTEND 12" (MIN.) BEHIND CURB.
- B. REINFORCED CONCRETE PAVEMENT
 - 1. CONCRETE STRENGTH SHALL BE AS SHOWN IN SPECIAL NOTES.
 - 2. ALL CURBS SHALL BE INTEGRAL WITH PAVEMENT.
 - 3. DETAIL AND ARRANGEMENT OF PAVEMENT JOINTS, ALL TYPES, SHALL BE AS SHOWN ON SHEET SD-3
 - 4. BAR LAPS SHALL BE THIRTY DIAMETERS.
- C. SUBGRADE
SUBGRADE UNDER ALL PAVEMENT SHALL BE 6 INCHES THICK AND SHALL BE STABILIZED WITH 6 PERCENT BY WEIGHT OF HYDRATED LIME (27 LBS./S.Y.) AND COMPACTED TO A DENSITY NOT LESS THAN 95 PERCENT AS DETERMINED BY A.A.S.H.O. T-99 LABORATORY TESTS MAY BE SUBMITTED TO THE ENGINEERING DEPARTMENT FOR APPROVAL TO LOWER AMOUNT OF LIME REQUIRED.
- D. BAR CHAIRS OR AN APPROVED DEVICE SHALL BE FURNISHED.

SPECIAL NOTES

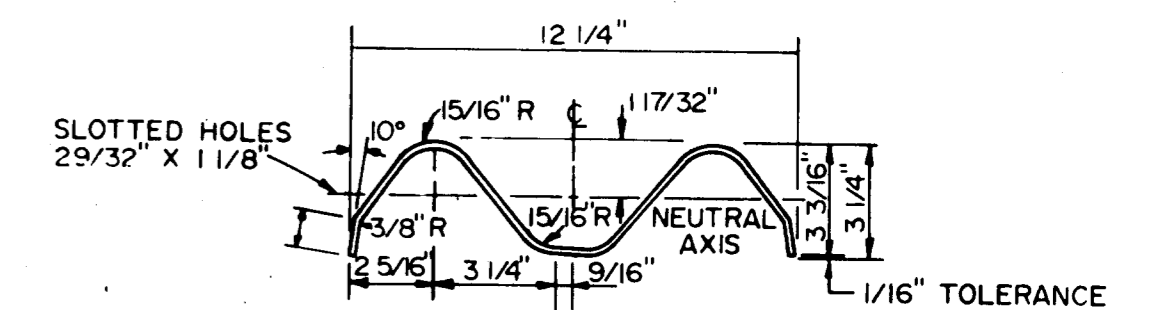
PAVEMENT THICKNESS AND STRENGTHS SHALL BE AS FOLLOWS;
TYPE (RETAIL THRU INDUSTRIAL)
8" - 3000 P.S.I.



FRONT ELEVATION

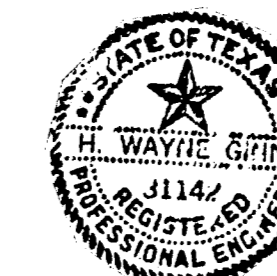


TERMINAL SECTION

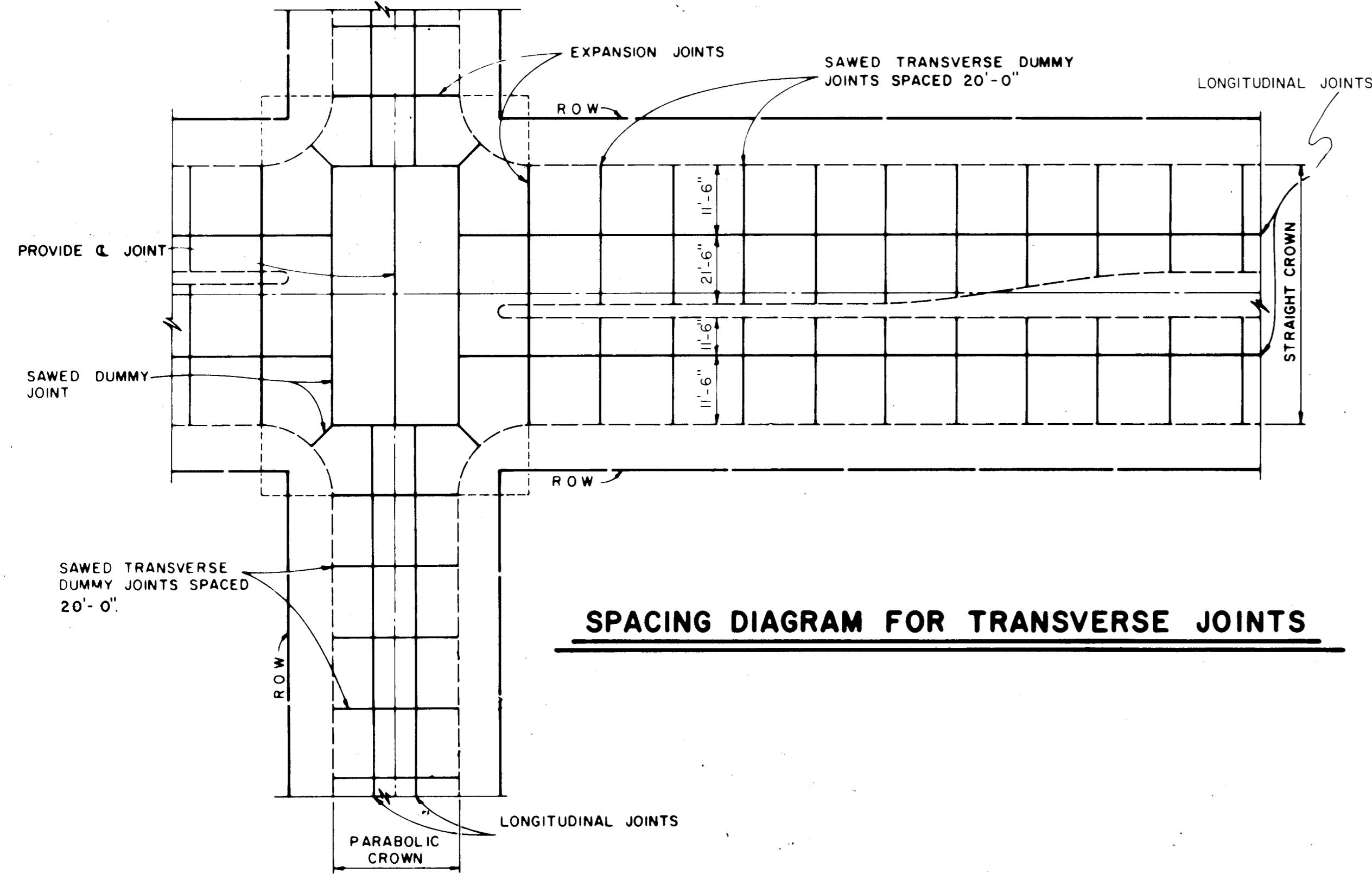


SECTION THRU RAIL ELEMENT

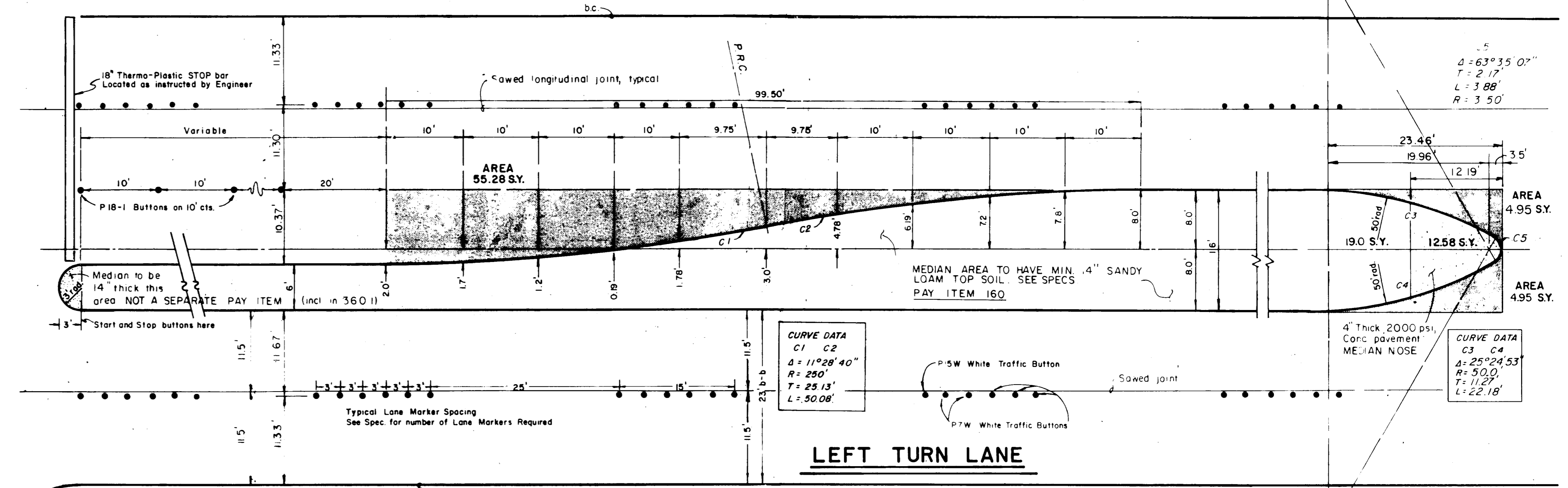
BARRICADE DETAIL
PAY ITEM 540.1



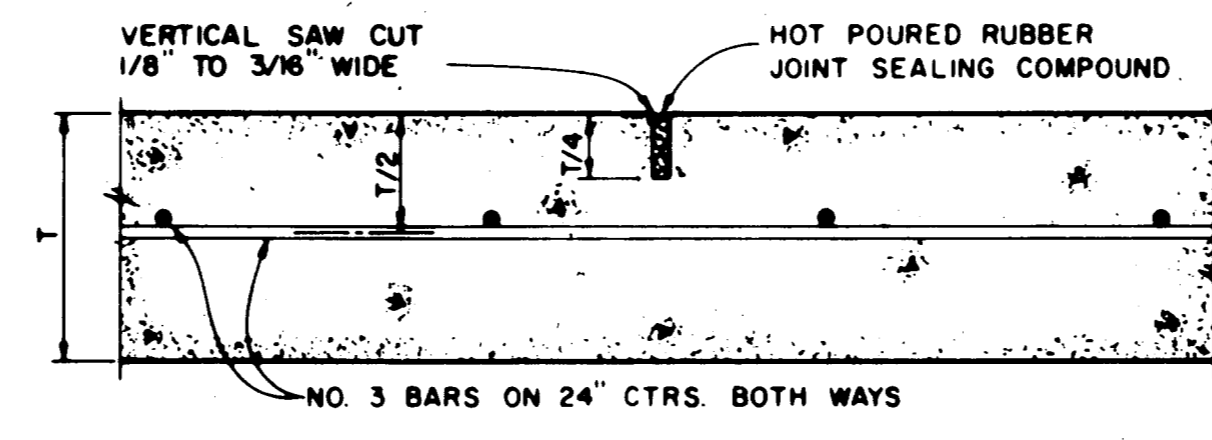
NO.	REVISION	BY	DATE
TOWN OF ADDISON, TEXAS DEPARTMENT OF ENGINEERING			
STANDARD CONSTRUCTION DETAILS PAVING			
PARABOLIC CROWN STREETS			
APPROVED		H. WAYNE GINN, P.E.	
DATE MARCH, 1984		SHEET	SD-2



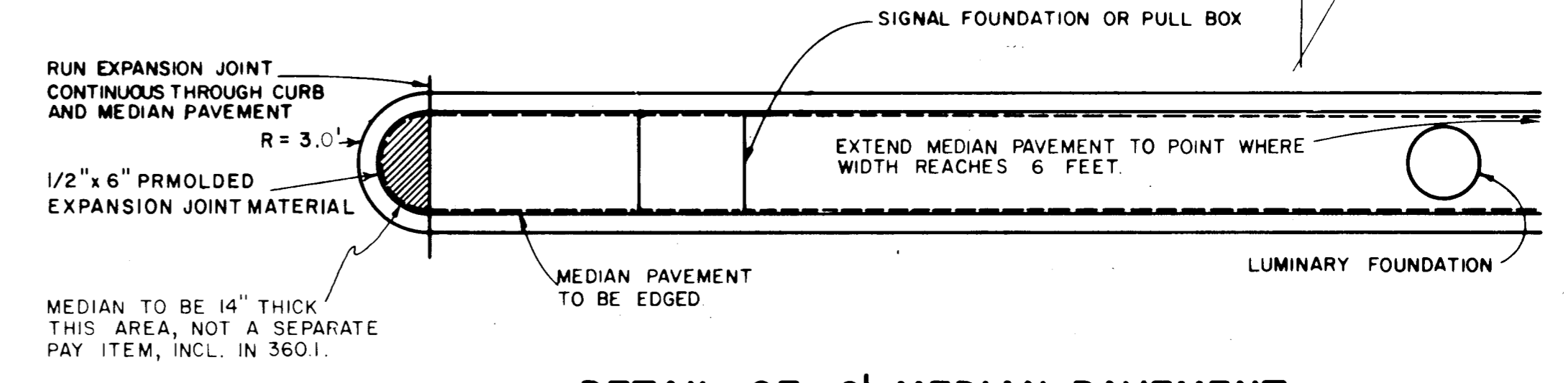
SPACING DIAGRAM FOR TRANSVERSE JOINTS



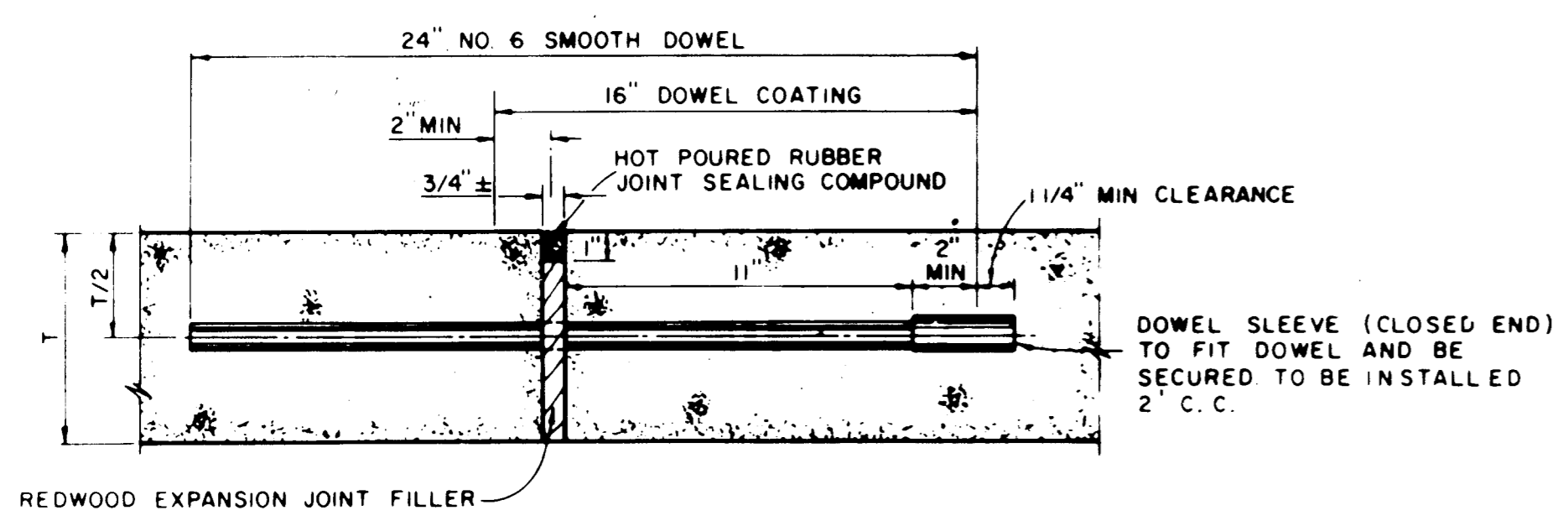
LEFT TURN LANE



SAWED DUMMY JOINT



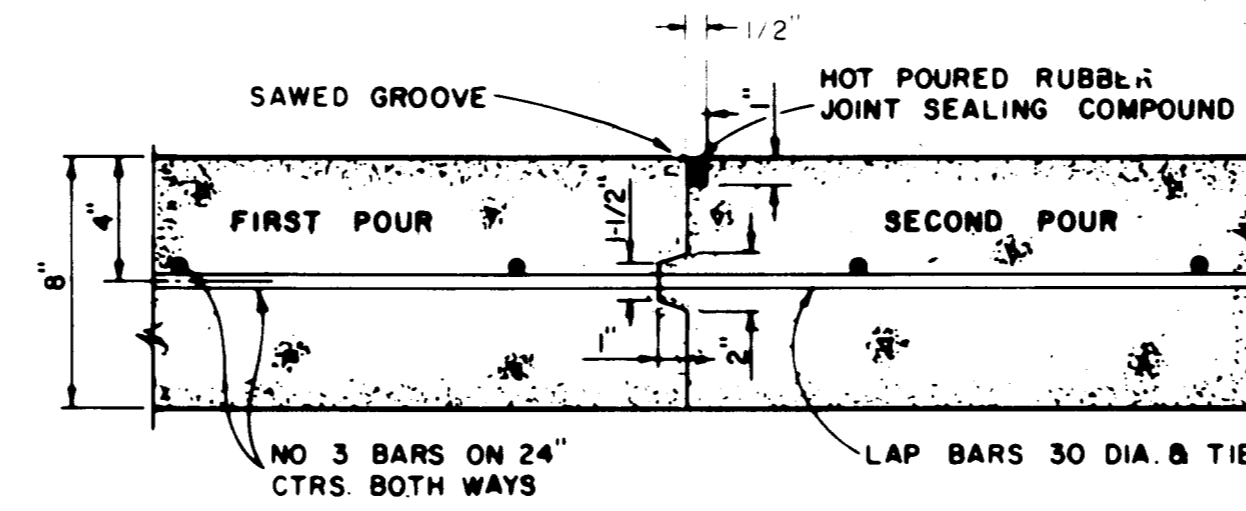
DETAIL OF 6' MEDIAN PAVEMENT



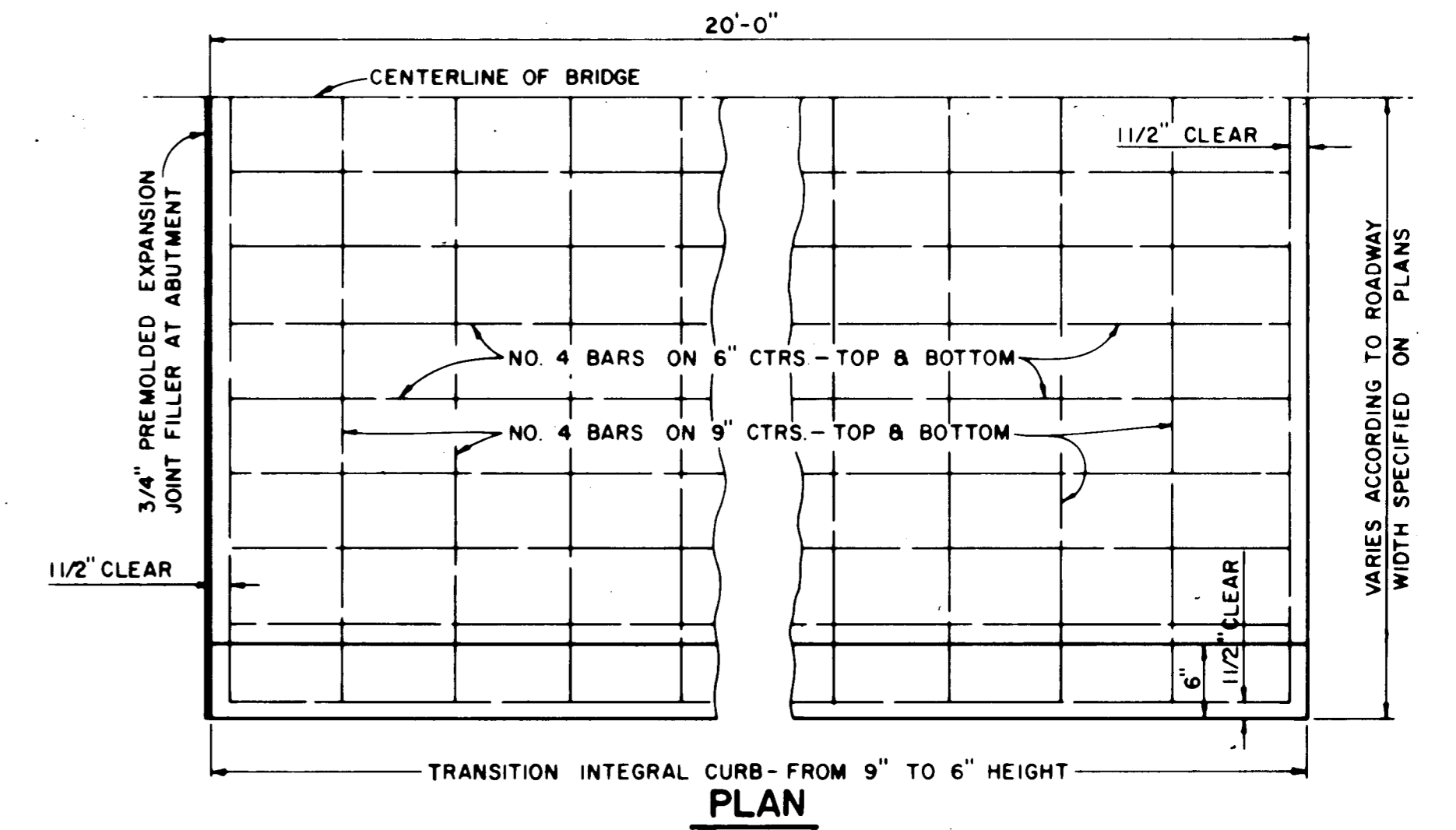
TRANSVERSE EXPANSION JOINT

(SPACED 600 FT MAXIMUM; LOCATE AT INTERSECTIONS)

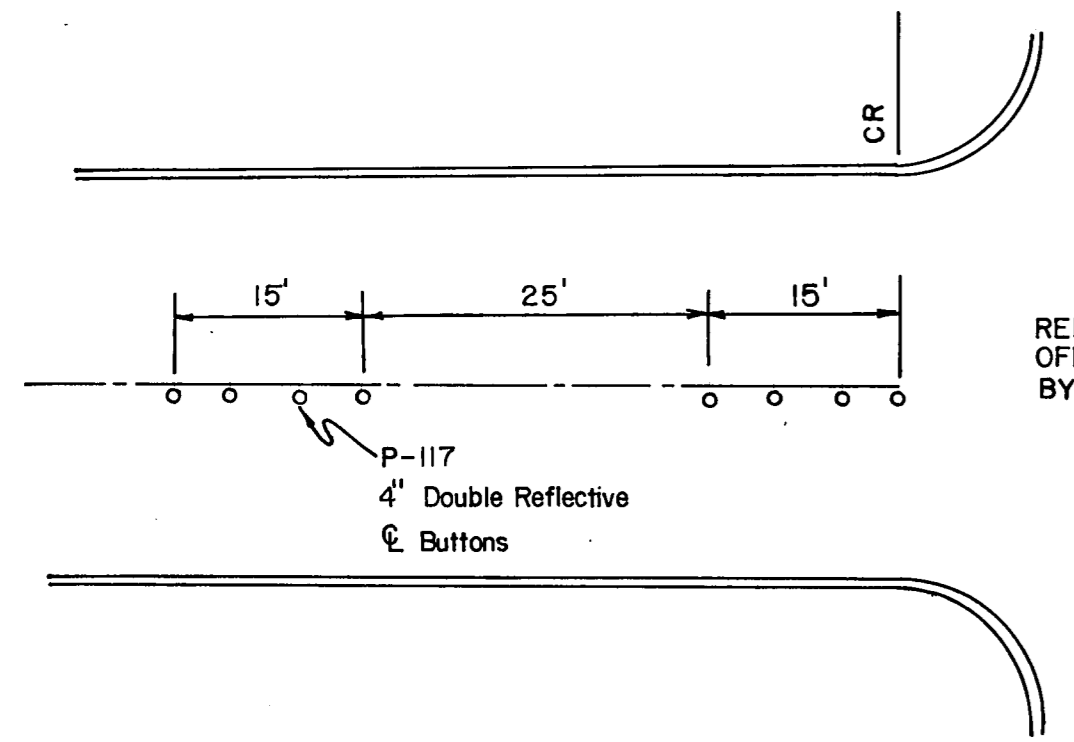
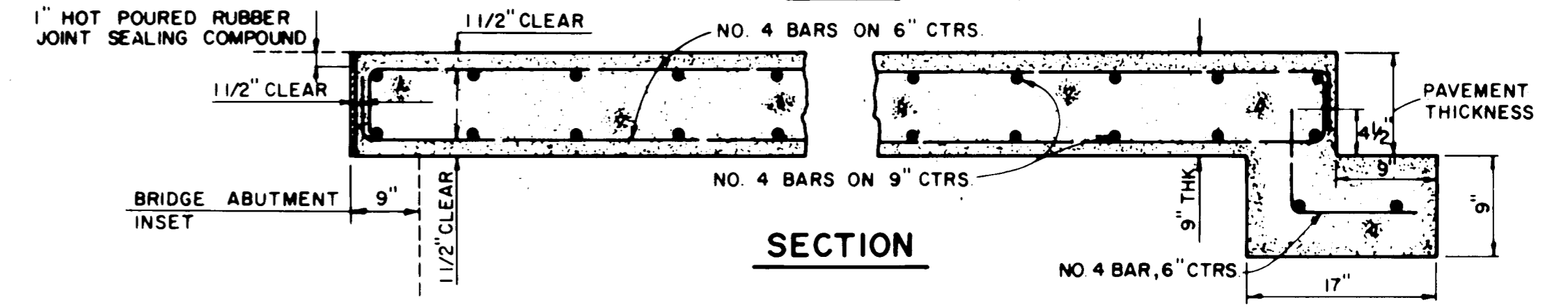
NOTE
DOWELS AND REINFORCING BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE



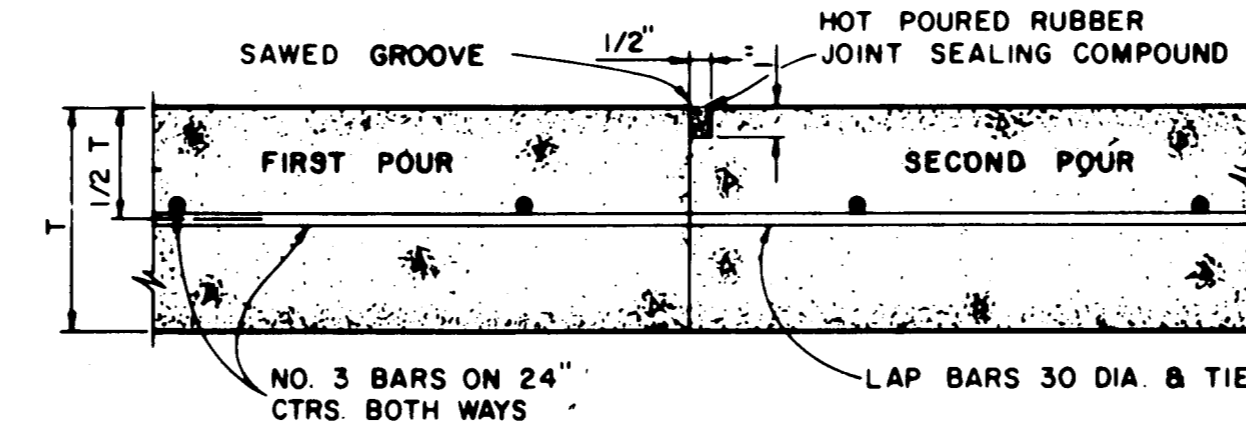
CONSTRUCTION JOINT FOR 8\"/>



BRIDGE APPROACH SLAB



STANDARD BUTTON LAYOUT



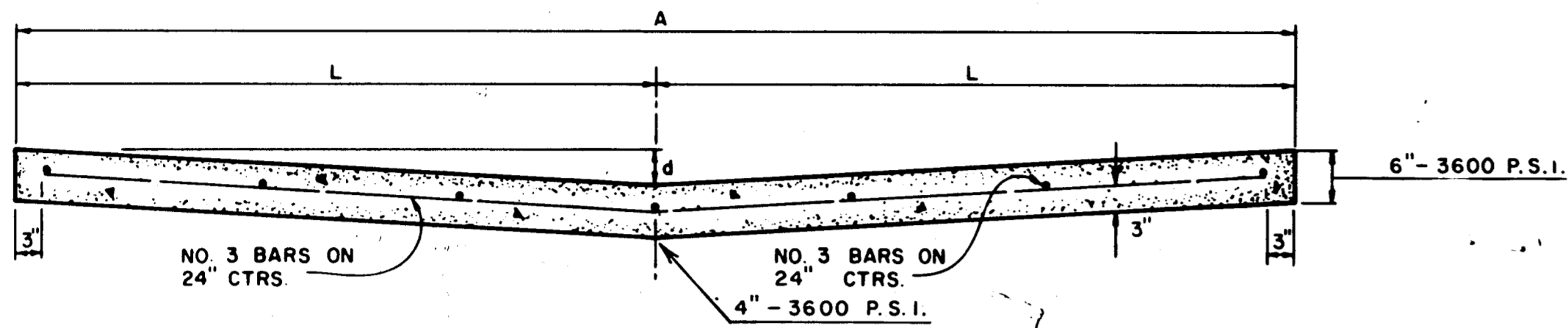
CONSTRUCTION JOINT FOR 5\"/>



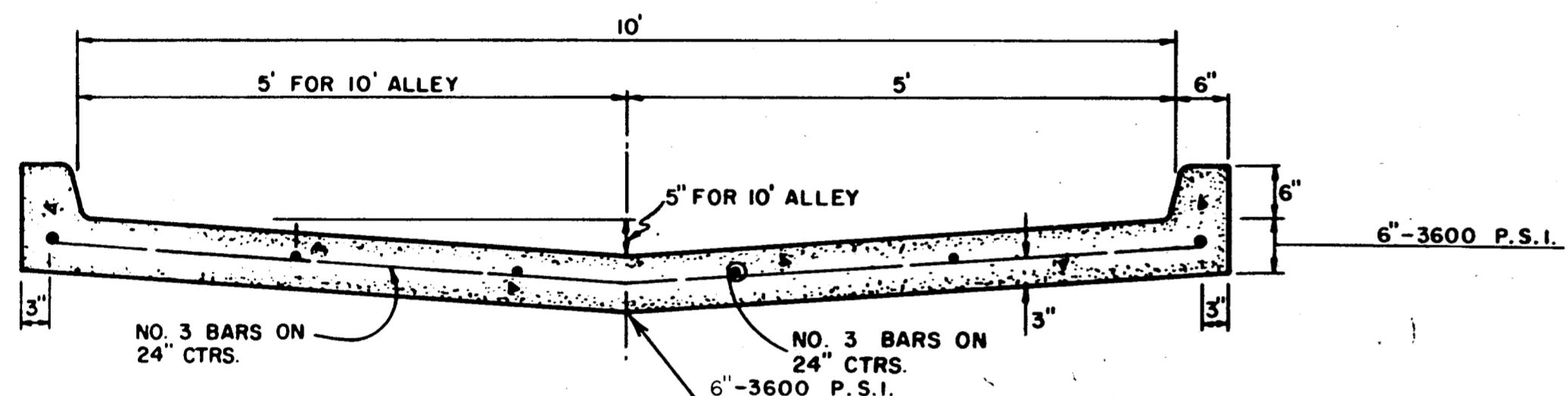
NO.	REVISION	BY	DATE
TOWN OF ADDISON, TEXAS DEPARTMENT OF ENGINEERING			
STANDARD CONSTRUCTION DETAILS PAVING			
PAVEMENT JOINTS			
APPROVED		H. WAYNE GINN, P.E.	
DATE MARCH, 1984		SHEET SD-3	

ALLEY WIDTH (A)	HALF SECTION WIDTH (L)	INVERT DEPTH (d)
10'	5'	5"
12'	6'	6"
16'	8'	6"
20'	10'	6"

ALLEY WIDTH	A	B	C	D	E	F
10'	10'	2'-6"	15'	1'-6"	12'	8.6'
12'	12'	1'-6"	15'	1'-6"	12'	8.5'
16'	16'	2'-0"	20'	2'-0"	16'	8.0'
20'	20'	0	20'	0	20'	10.0'

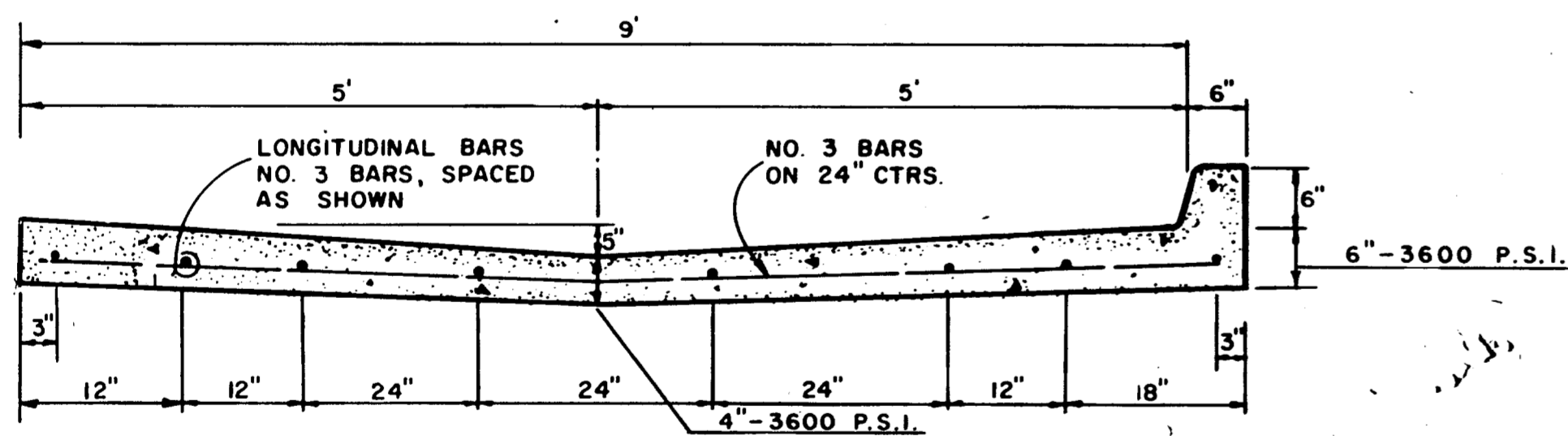


STANDARD 10', 12', 16', & 20' ALLEY SECTION



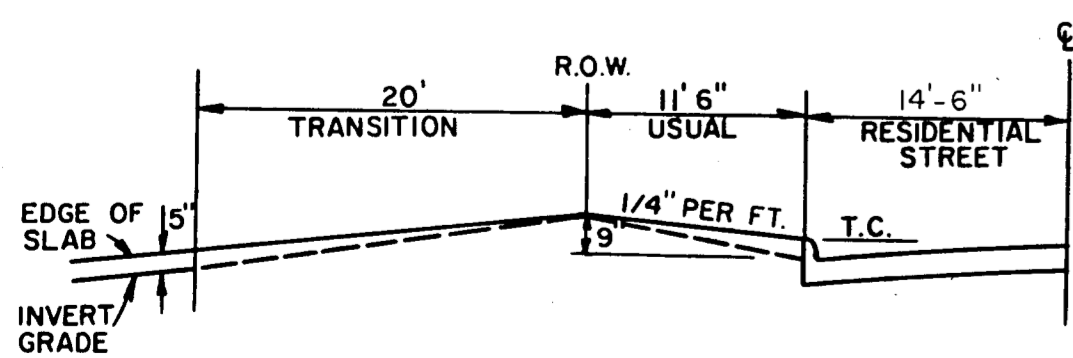
STANDARD ALLEY SECTION WITH CURBS

NOTE: CURBS NOT ALLOWED IN RESIDENTIAL AREAS EXCEPT AS APPROVED BY THE CITY.

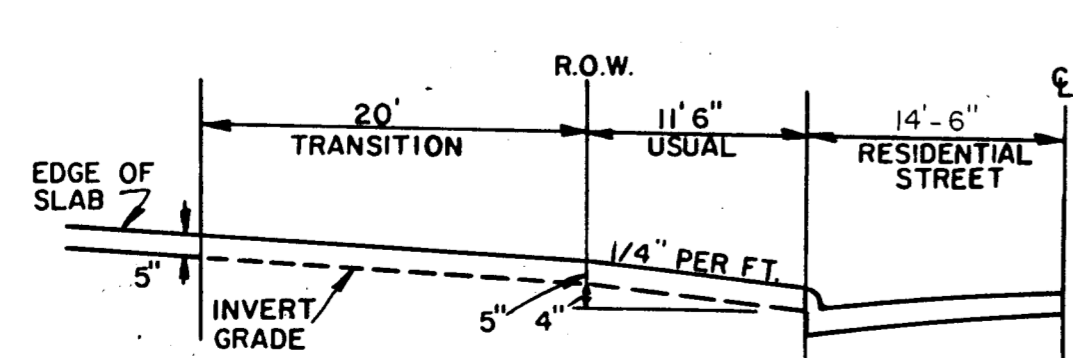


ALTERNATE 10' ALLEY SECTION / CURB

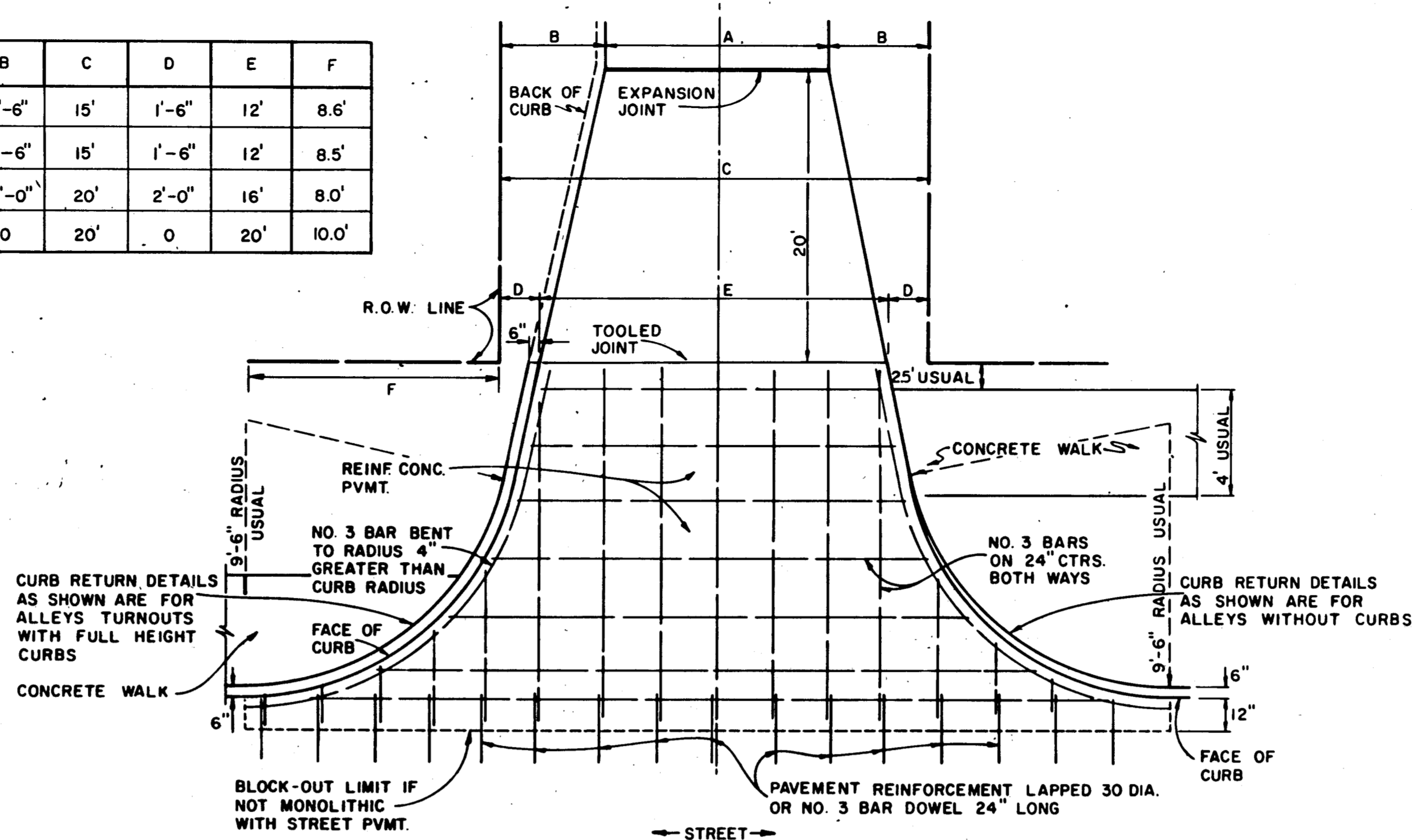
NOTE: CURBS NOT ALLOWED IN RESIDENTIAL AREAS EXCEPT AS APPROVED BY THE CITY.



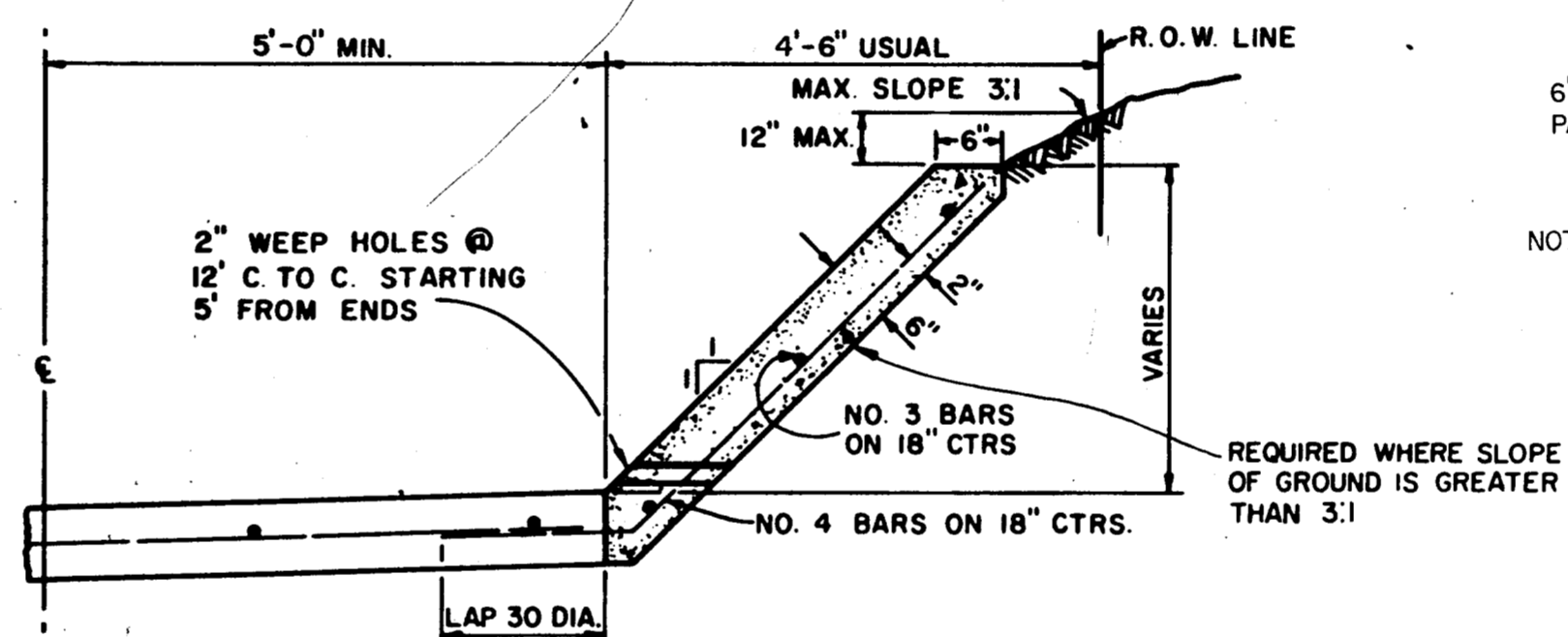
TYPE I ALLEY ENTRANCE



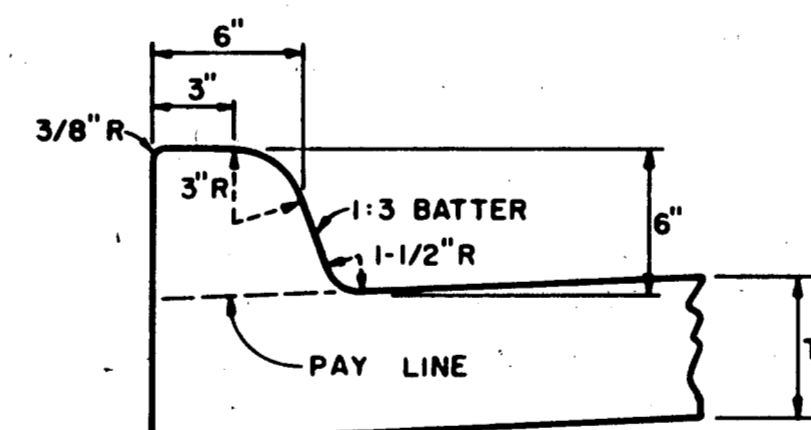
TYPE II ALLEY ENTRANCE



ALLEY RETURN DETAILS



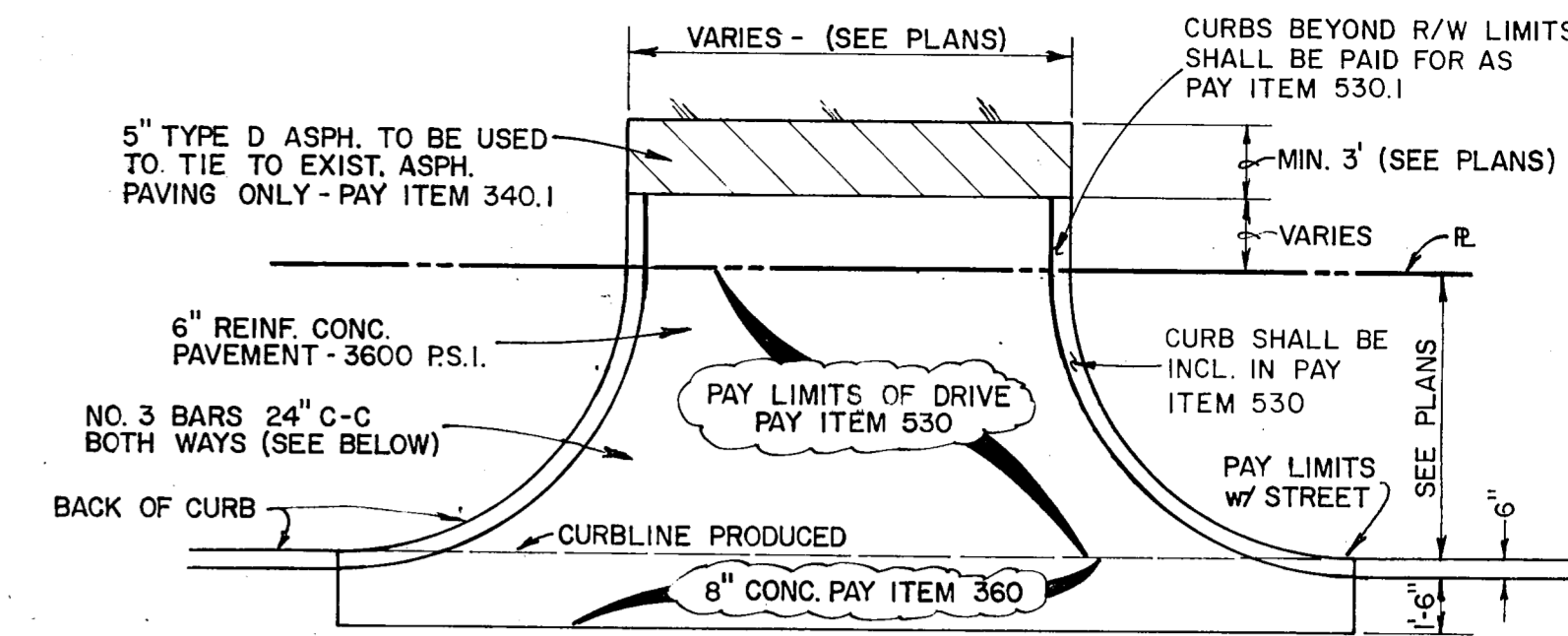
ALLEY SLOPE PROTECTION



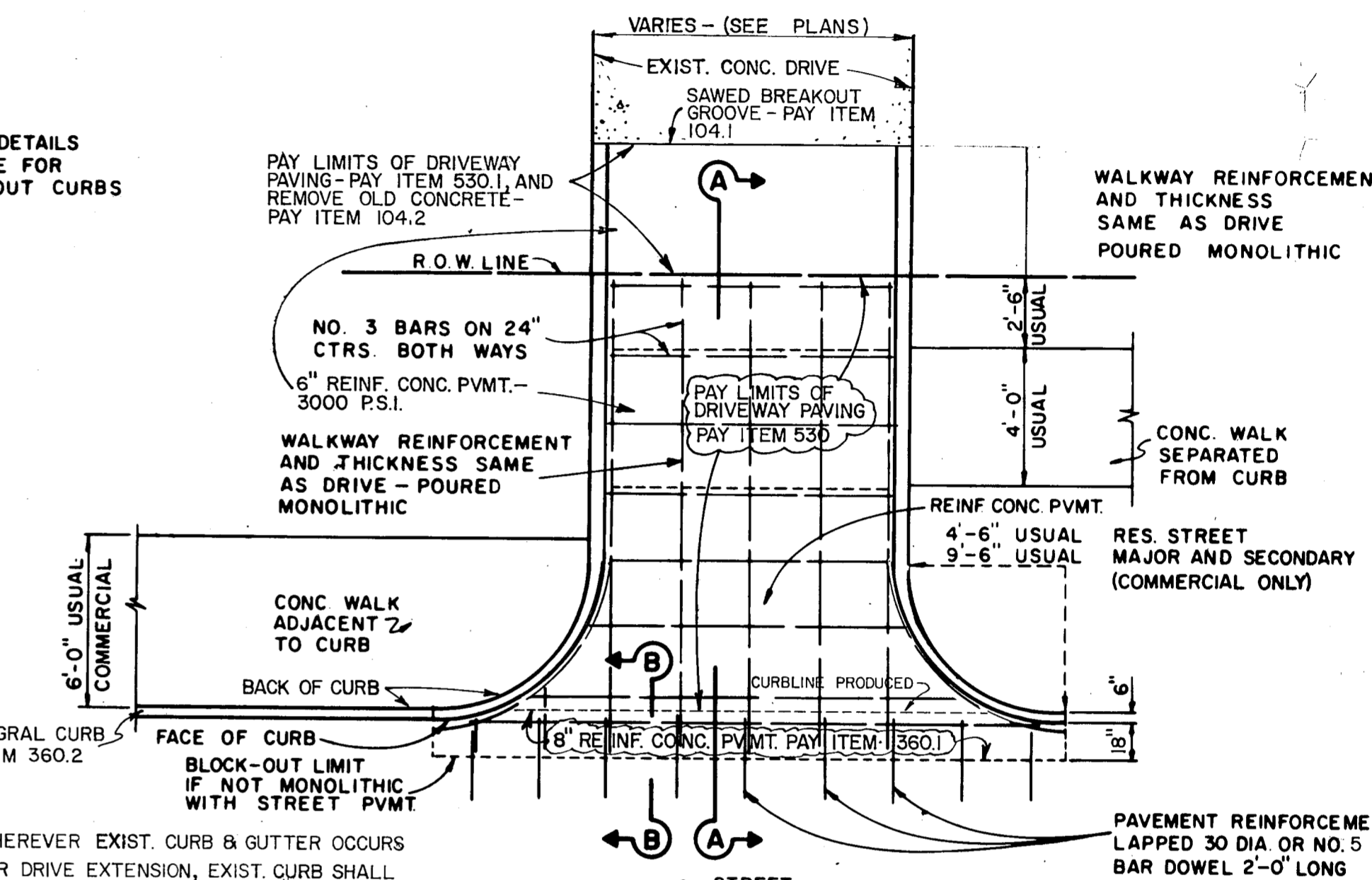
INTEGRAL CURB

GENERAL NOTES FOR ALLEYS AND DRIVEWAYS

1. CONCRETE FOR ALLEY RETURNS AND DRIVEWAYS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS IDENTICAL TO THAT SPECIFIED FOR THE STREET PAVEMENT BASE WHEN BUILT AS COMPONENTS OF A CONCRETE PAVING PROJECT. WHEN BUILT SEPARATELY, THE STRENGTH SHALL BE AS SPECIFIED ON THE CONSTRUCTION PLANS.
2. CONCRETE FOR ALLEY PAVEMENT SHALL BE OF THE STRENGTH SPECIFIED ON THE CONSTRUCTION PLANS. (3000 P.S.I. OR 3600 P.S.I. MINIMUM COMPRESSIVE)
3. SPACING AND CONSTRUCTION OF JOINTS SHALL CONFORM TO STREET PAVEMENT DETAILS.

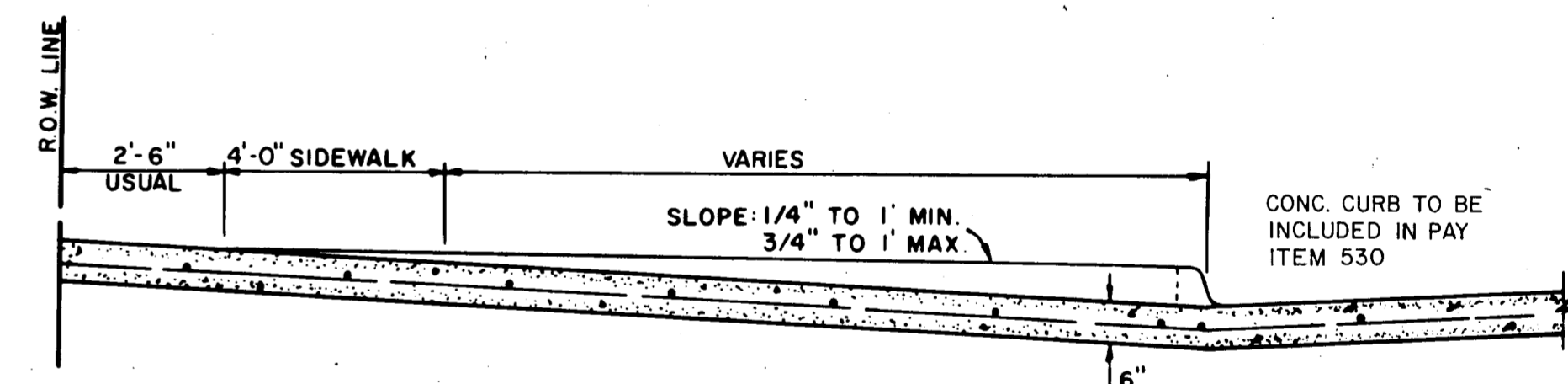


DRIVEWAY PAVING DETAIL

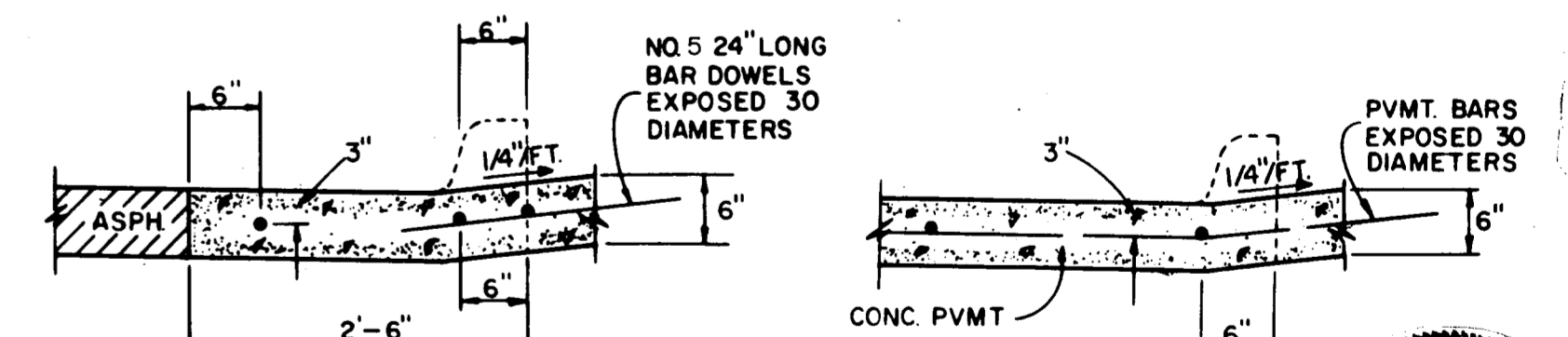


DRIVEWAY RETURN TO STREET

NOTE: WHEREVER EXIST. CURB & GUTTER OCCURS FOR DRIVE EXTENSION, EXIST. CURB SHALL NOT BE REMOVED BEYOND CURB RETURN UNLESS DIRECTED BY ENGINEER.

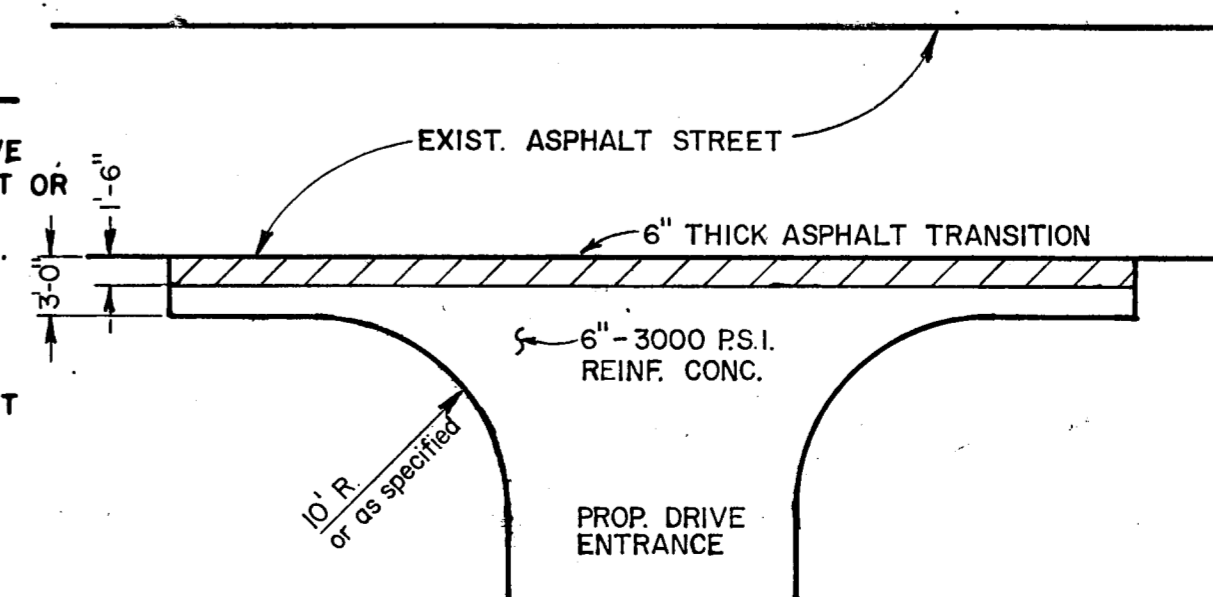


SECTION A-A



SECTION B-B

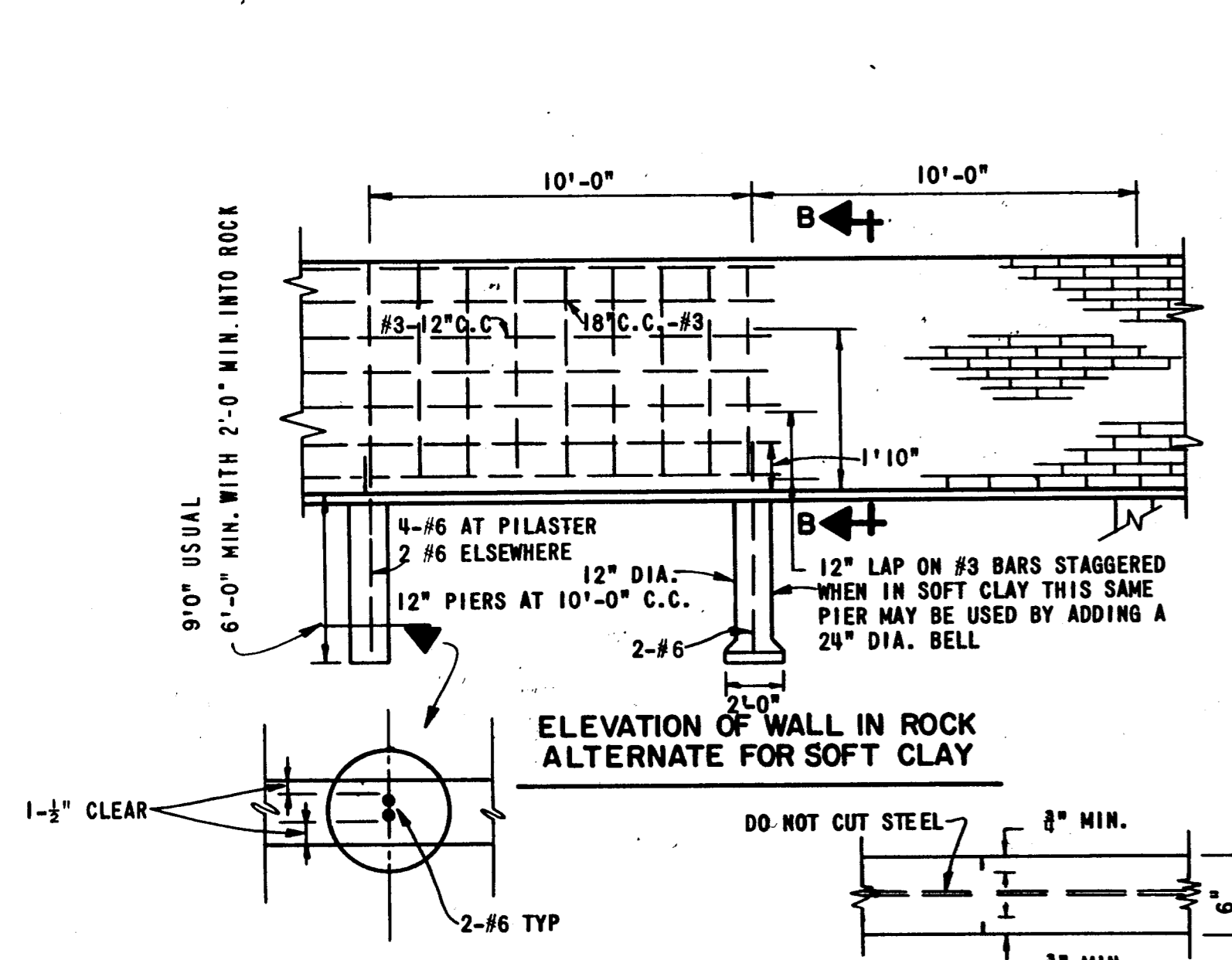
DRIVEWAY RETURN DETAILS



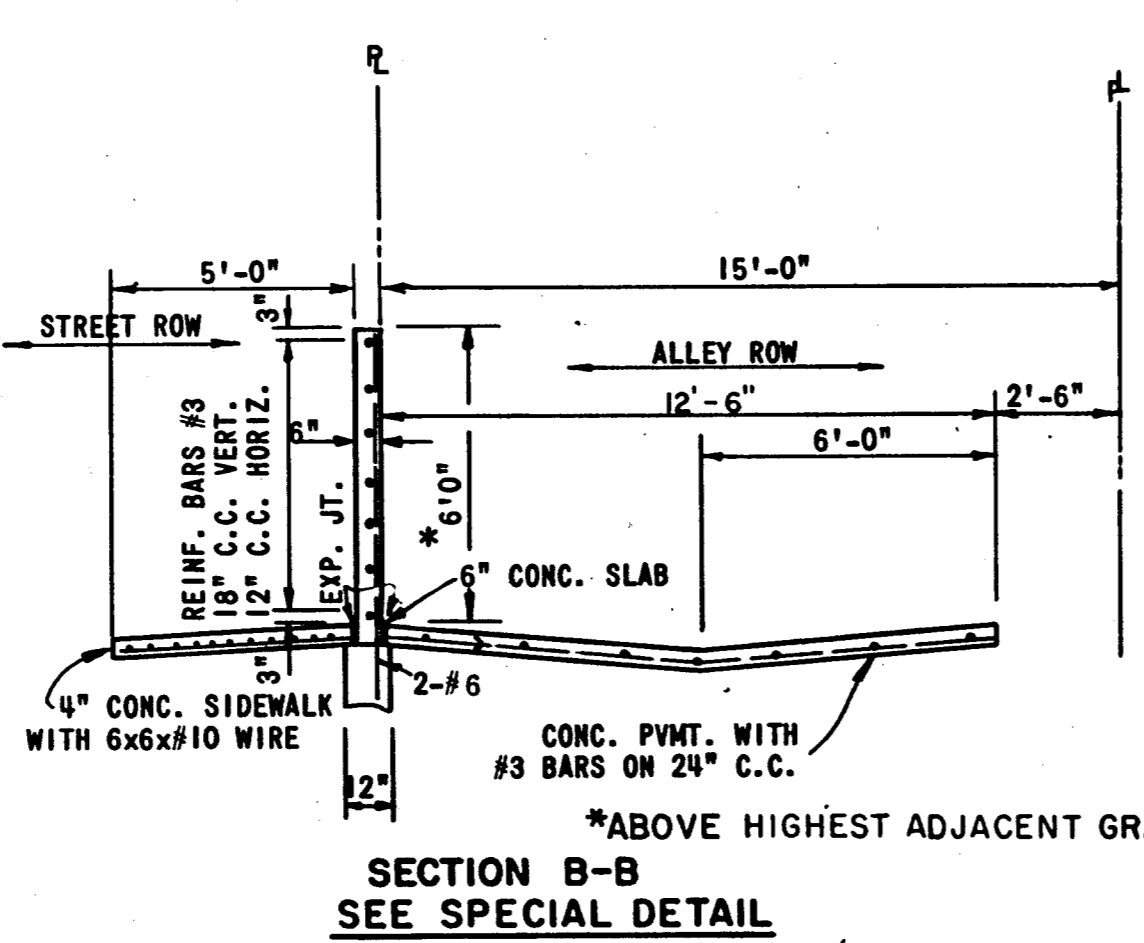
TYPICAL DRIVE CONNECTION TO EXISTING ASPHALT STREET

NO.	REVISION	BY	DATE
TOWN OF ADDISON, TEXAS DEPARTMENT OF ENGINEERING			
STANDARD CONSTRUCTION DETAILS PAVING			
ALLEY AND DRIVEWAY RETURNS			
APPROVED _____ H. WAYNE GINN, P.E.			
DATE: MARCH, 1984		SHEET SD-4	

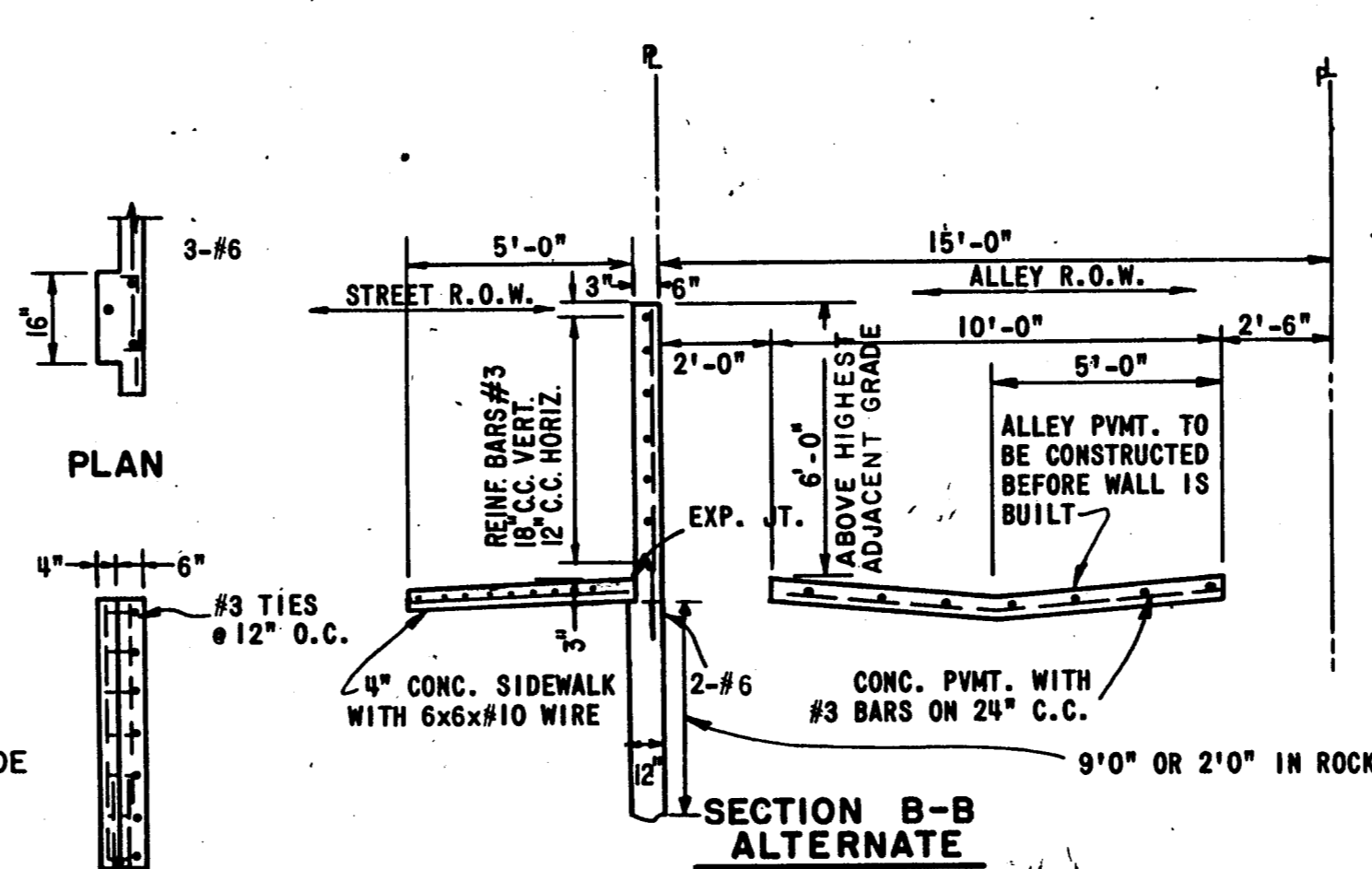




ELEVATION OF WALL IN ROCK ALTERNATE FOR SOFT CLAY



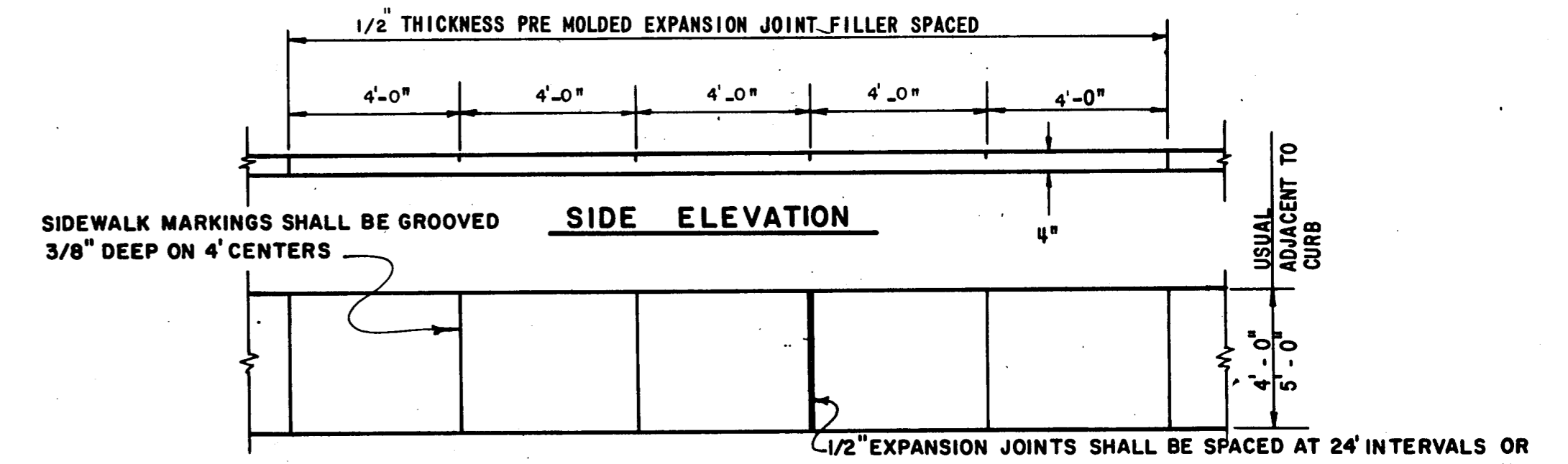
SECTION B-B SEE SPECIAL DETAIL



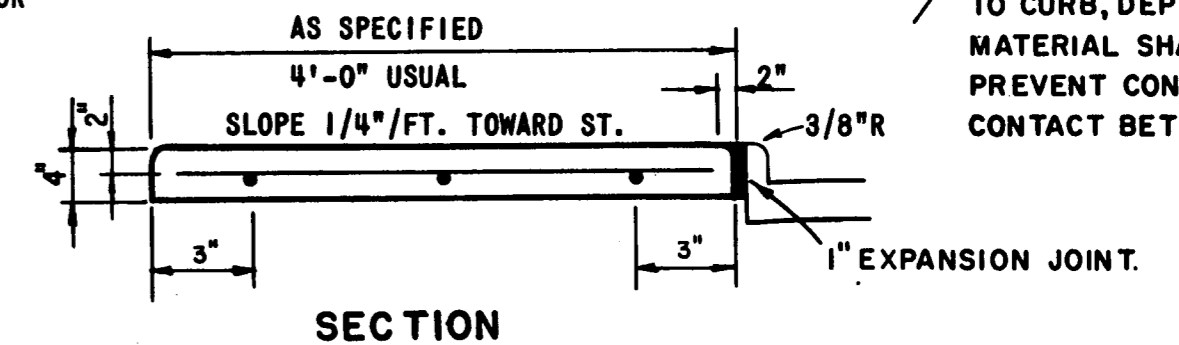
SECTION B-B ALTERNATE

PILASTERS EVERY 40'-0" ELEVATION

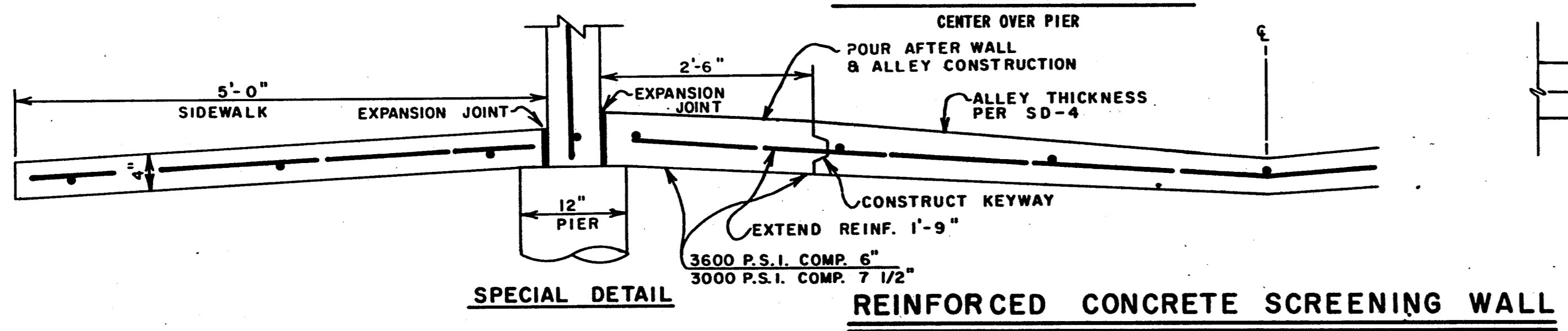
NOTE:
PIERS REQUIRE
(1) BLOCK-OUT OF ALLEY PAVING
(2) POUR BEFORE ALLEY PAVING
OR (3) SAW OUT AFTER ALLEY PAVING
UNLESS CONSTRUCTED PER SECTION B-B



CONCRETE SIDEWALK



SECTION

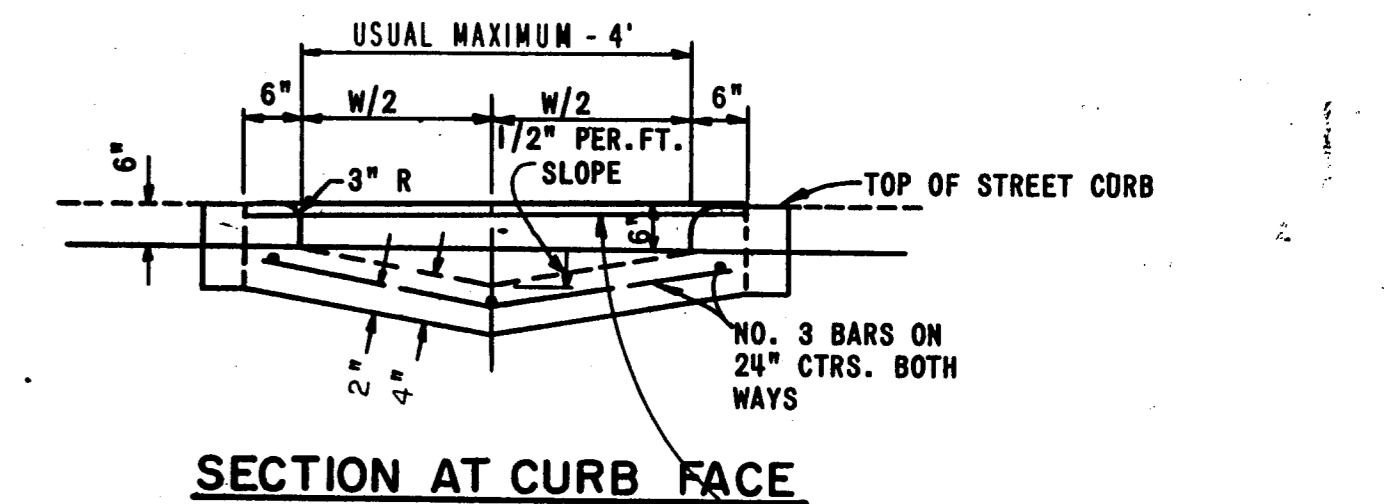


REINFORCED CONCRETE SCREENING WALL

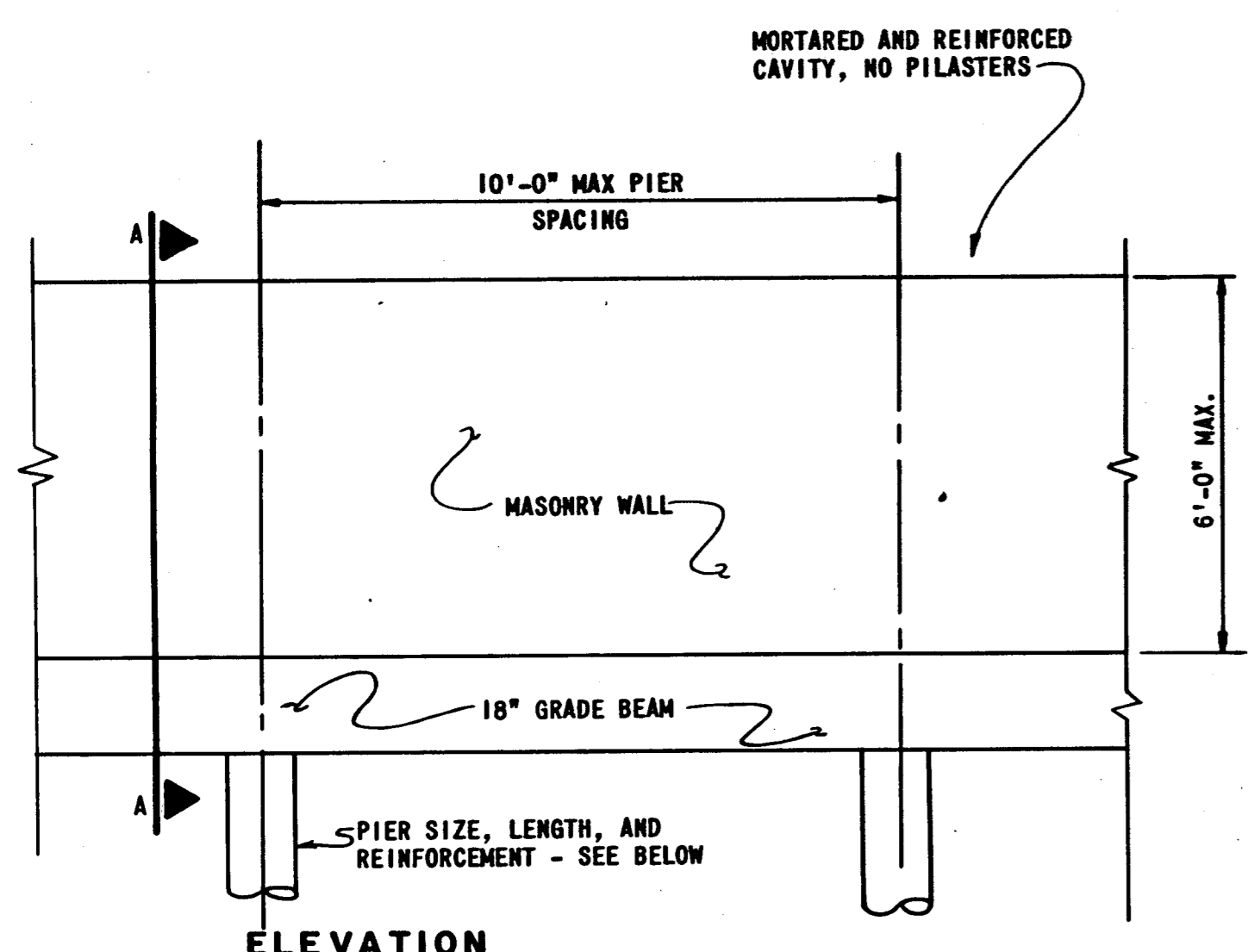
STEEL PLATE FLUME COVER

SPAN FEET	PLATE THICKNESS INCHES
4	1/2
6	5/8
8	3/4
10	7/8

BASED ON 100 P.S.I. LIVE LOAD AND MAX. DEAD & LIVE LOAD DEFLECTION OF L/240
BOLT PLATE DOWN WITH BRASS BOLTS. SURFACE SHALL BE A NON-SKID MATERIAL.



SECTION AT CURB FACE

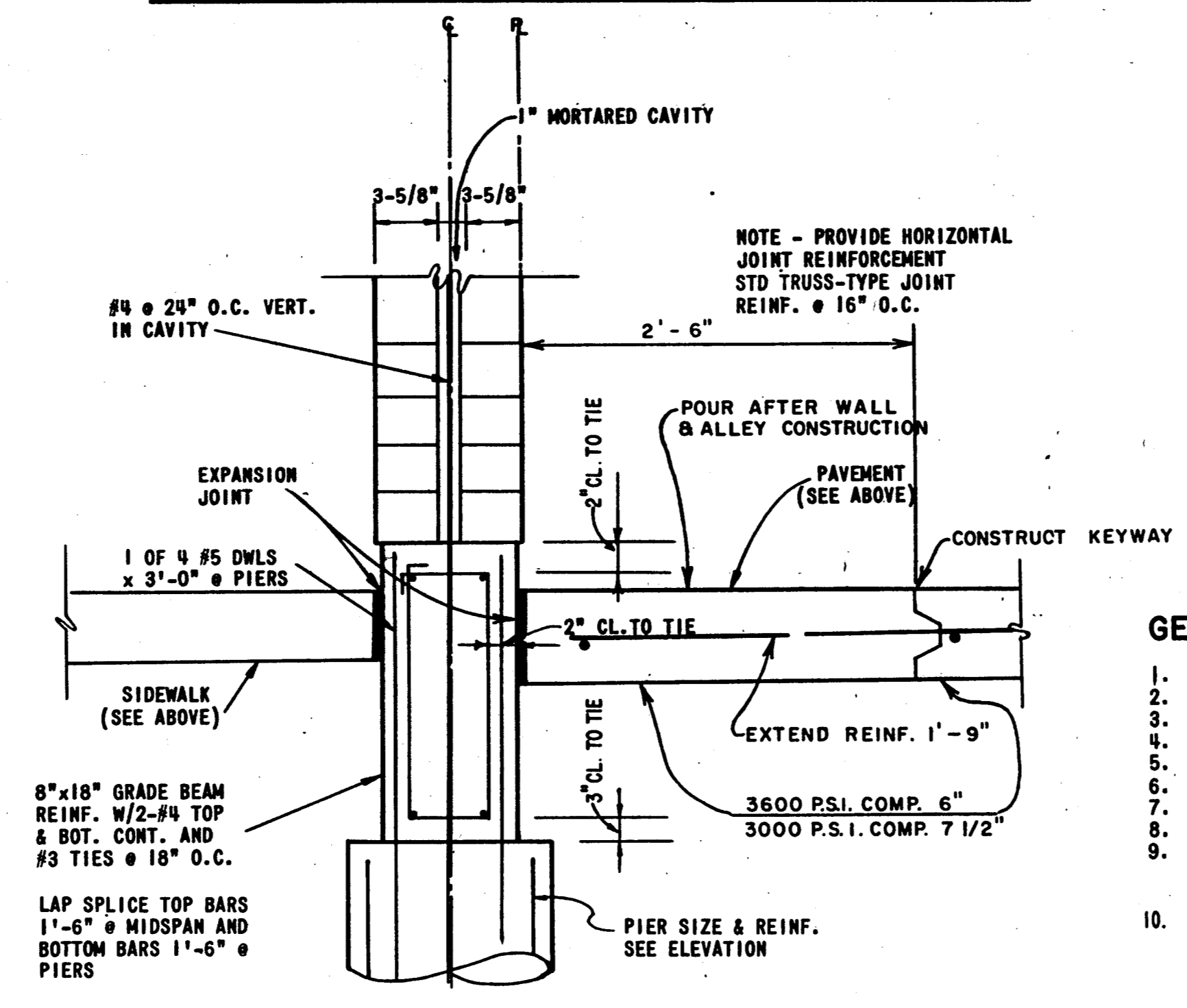


ELEVATION

DRILLED PIERS - 12" REINF. W/ 4-#4 VERT. & #4 TIES @ 24" O.C. MINIMUM LENGTH OF PIER IS 6'-0". *PIER BOTTOM MAY BE EITHER OF THE TWO ALTERNATES:

- 12" # STRAIGHT SHAFT EMBEDDED MINIMUM 2'-0" INTO LIMESTONE. RESULTING BEARING STRESS IS 8.0 KIPS PER SQUARE FOOT.
- 12" # SHAFT W/ 24" # BELL IN CLAY. RESULTING BEARING STRESS IS 2.0 KIPS PER SQUARE FOOT.

* SEE GENERAL NOTE NO. 9

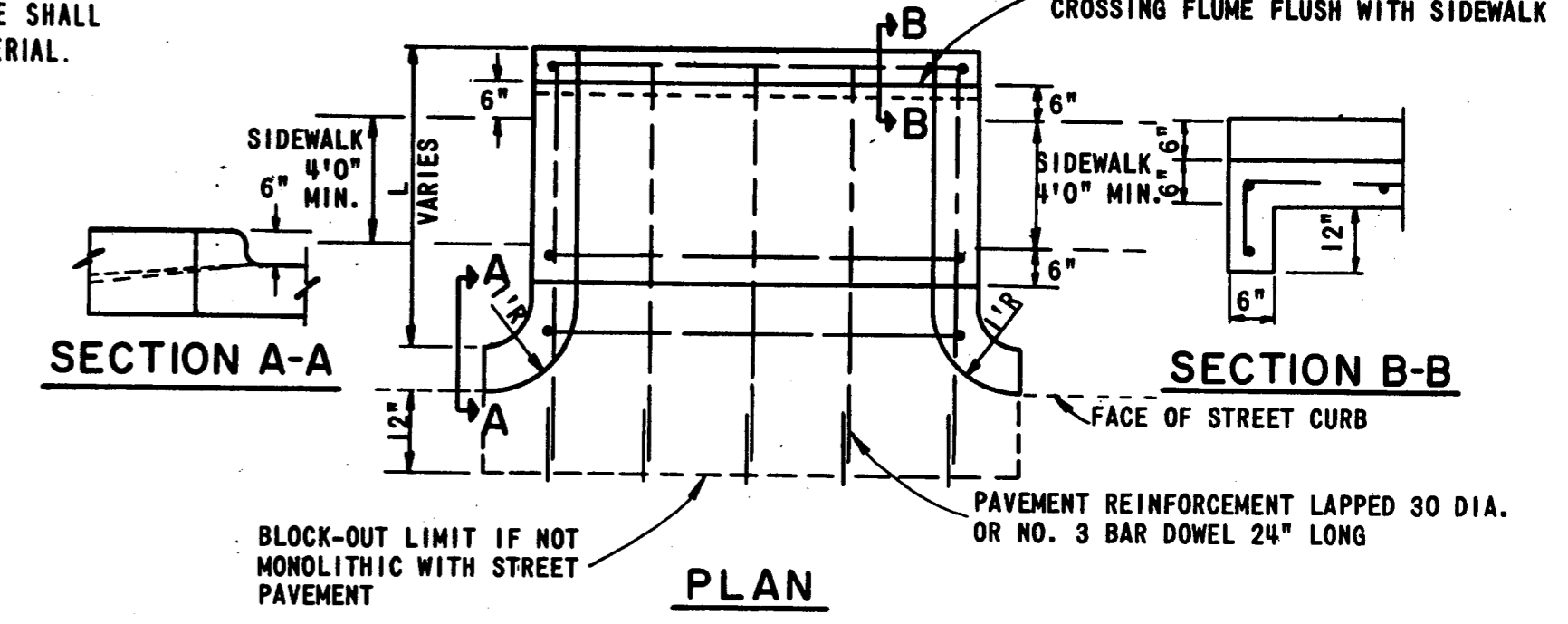


SECTION A-A

SCALE: 1/2" = 1'-0"

GENERAL NOTE:

1. CONCRETE - NORMAL WEIGHT, 3000 PSI. @ 28 DAYS
2. REINFORCEMENT - ASTM A 615 - GR. 60
3. MASONRY - COMPRESSIVE STRENGTH OF 2000 PSI, f_m = 900 PSI
4. WIND LOAD - 20 PSF
5. PIER BEARING STRESSES - SEE BRICK SCREENING WALL NOTES
6. MORTAR - TYPE S, 1800 PSI
7. PROVIDE CONTROL JOINTS @ 50 FT
8. PROVIDE EXPANSION JOINTS @ 200 FT ON CENTER MAXIMUM
9. WHERE THERE IS NO ALLEY PAVEMENT, PROVIDE MIN. 9 FT. LENGTH OF PIERS. THIS APPLIES TO BOTH THE REINFORCED CONCRETE SCREENING WALL AND THE BRICK SCREENING WALL
10. ALL EXPOSED CONCRETE SHALL HAVE FINISHED SURFACE.



SECTION A-A

SECTION B-B

PLAN

FLUME

PAY ITEM 432.1

NO.	REVISION	BY	DATE

TOWN OF ADDISON, TEXAS
DEPARTMENT OF ENGINEERING

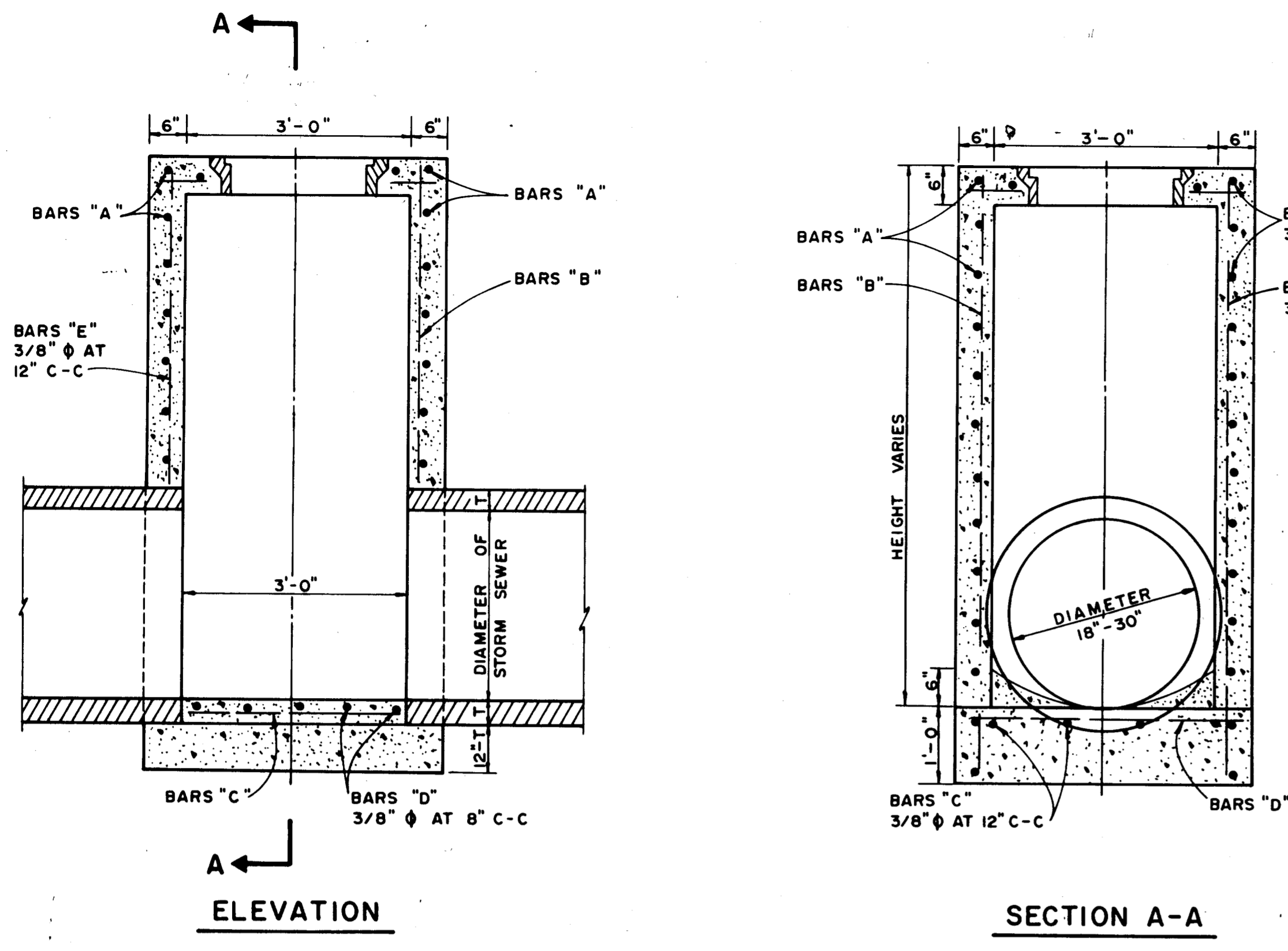
STANDARD CONSTRUCTION DETAILS
PAVING

SCREENING WALL - SIDEWALK

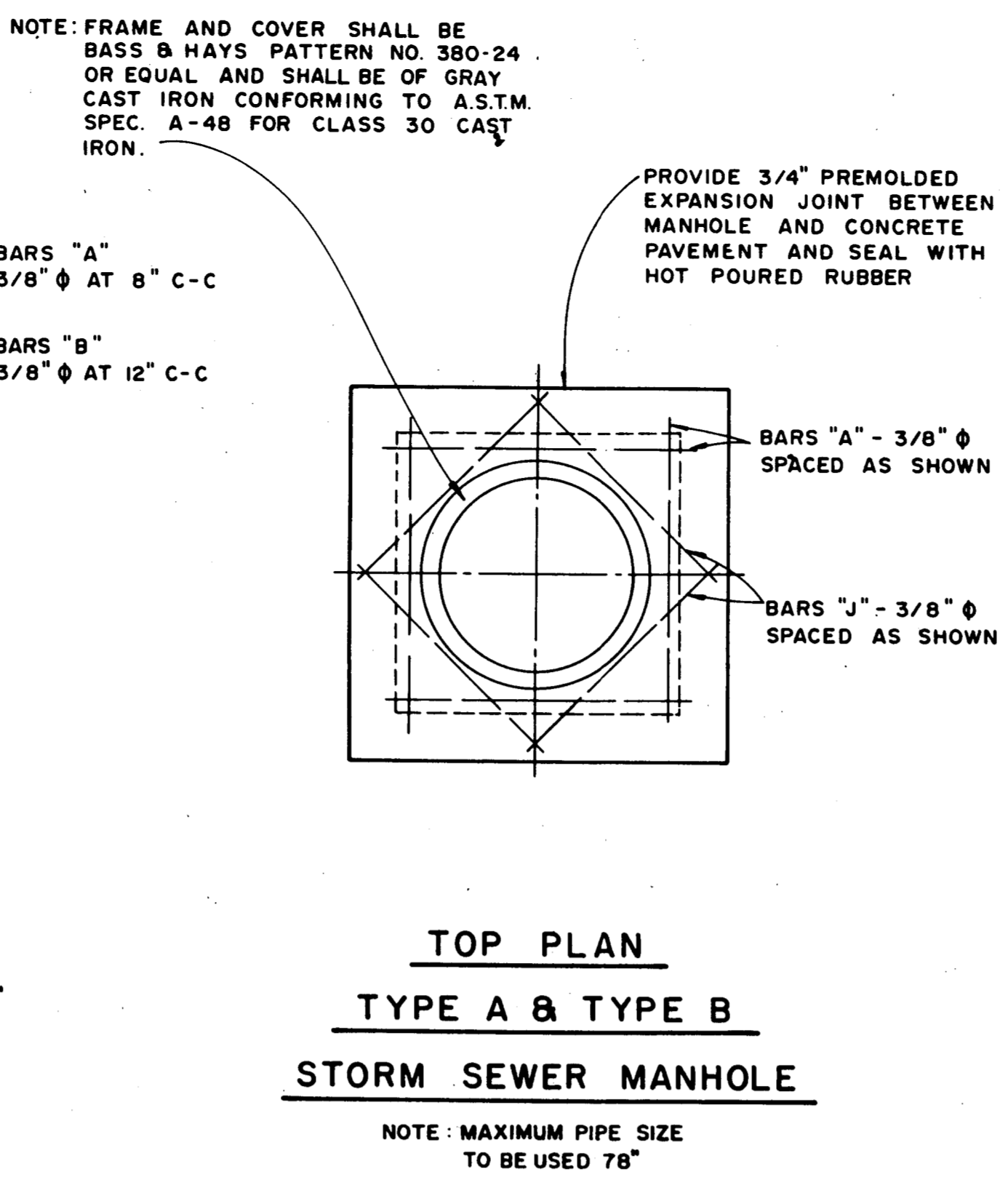
APPROVED: H. WAYNE GINN, PE
DATE: MARCH, 1984

SHEET SD-7

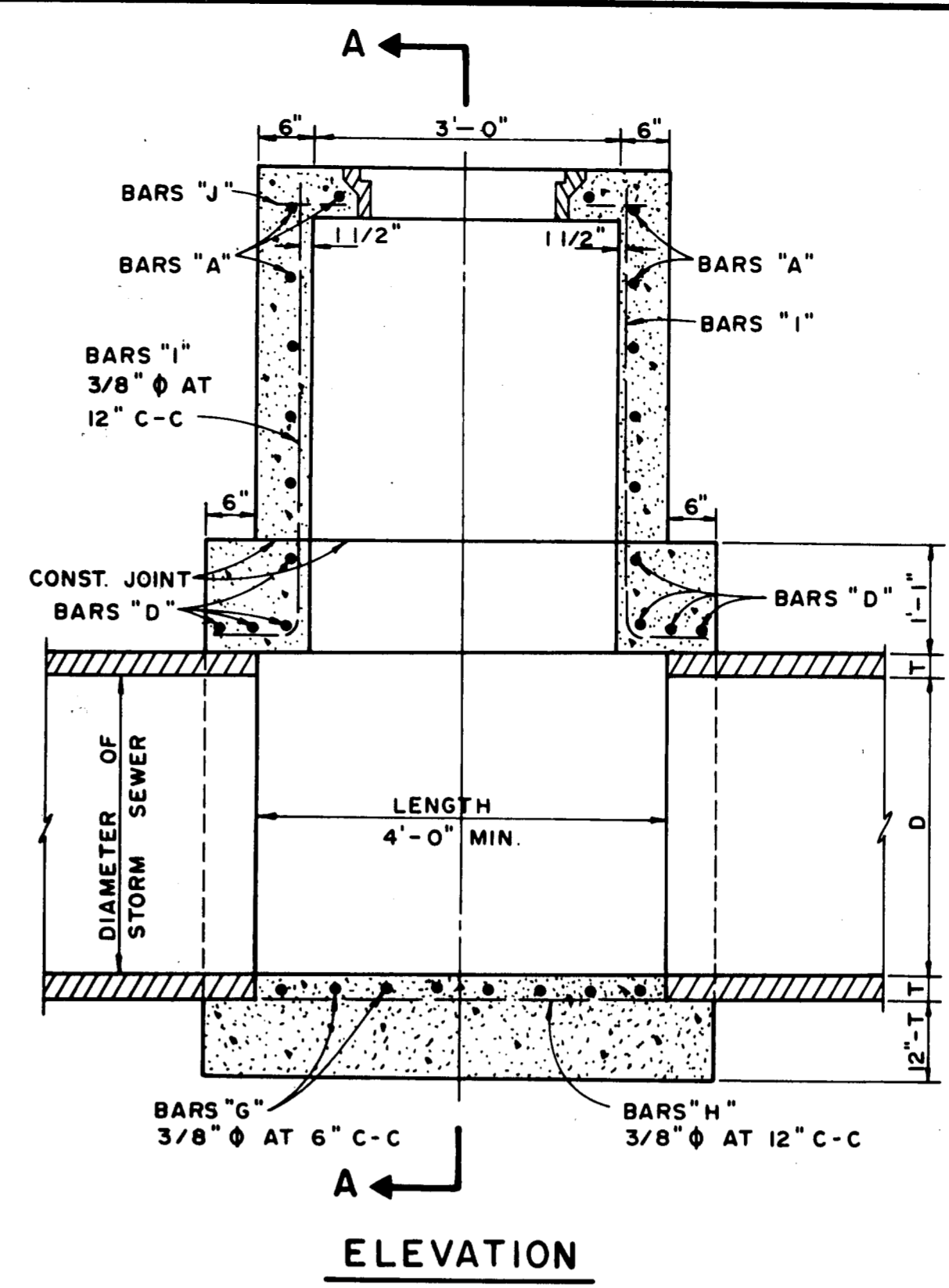




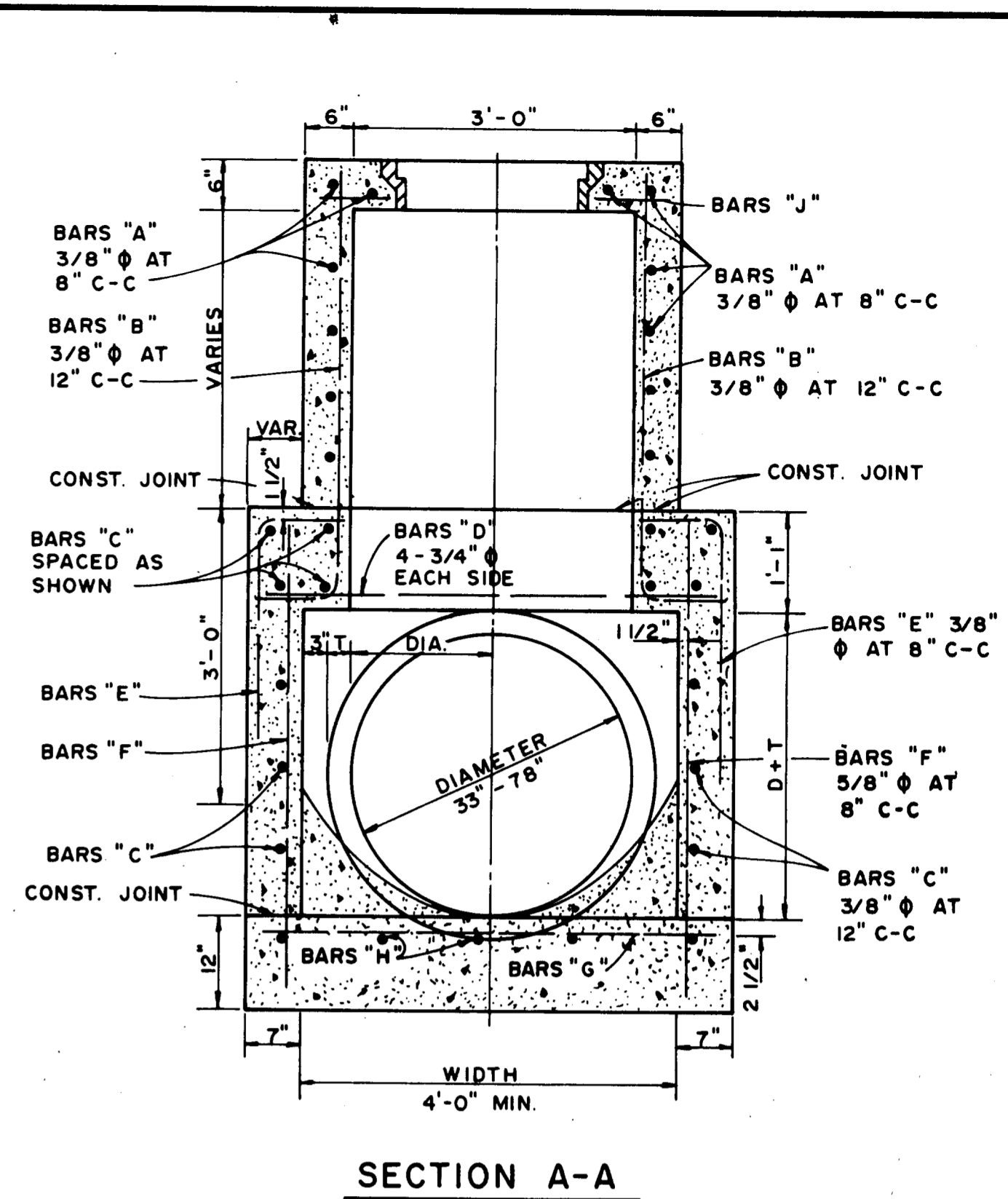
TYPE A STORM SEWER MANHOLE
(FOR PIPE 18" TO 30" IN DIAMETER)



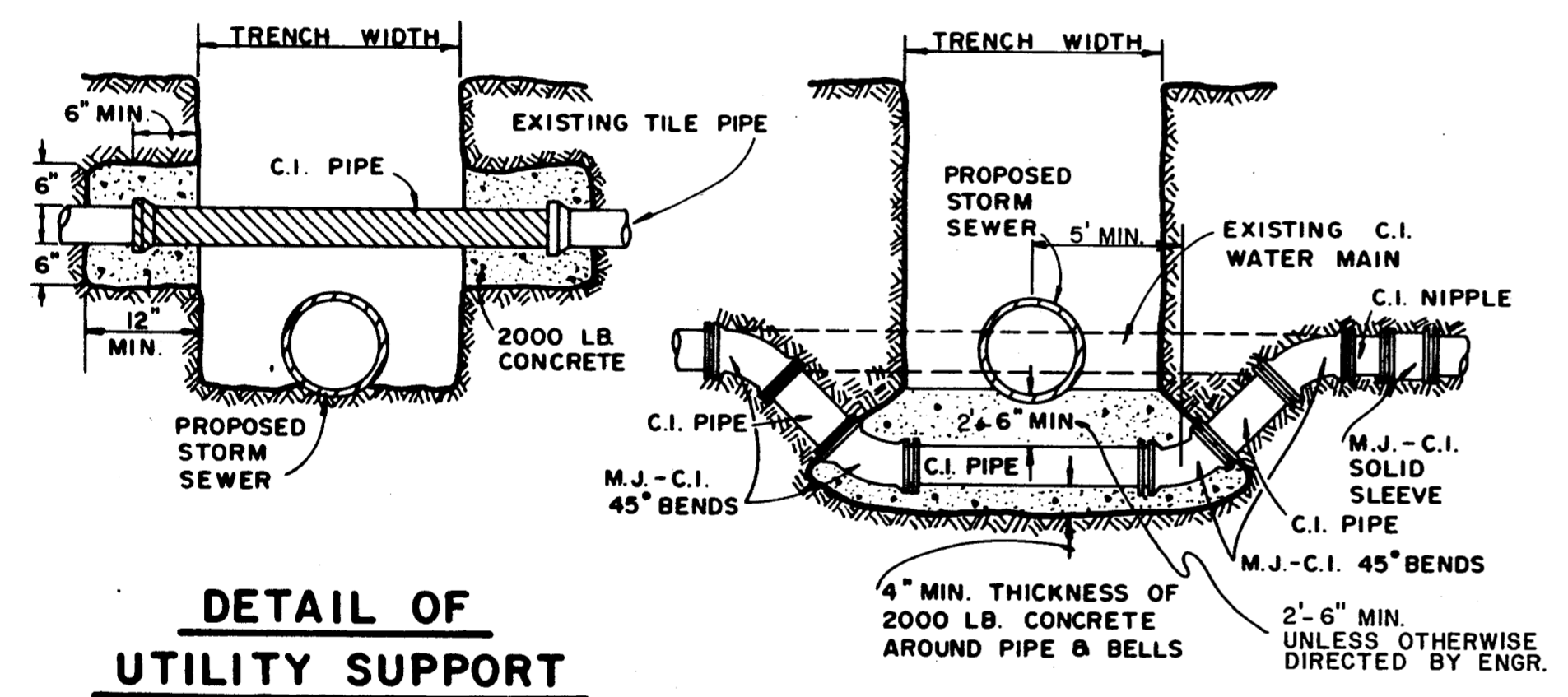
TOP PLAN
TYPE A & TYPE B
STORM SEWER MANHOLE
NOTE: MAXIMUM PIPE SIZE TO BE USED 78"



TYPE B STORM SEWER MANHOLE
(FOR PIPE 33" TO 78" IN DIAMETER)

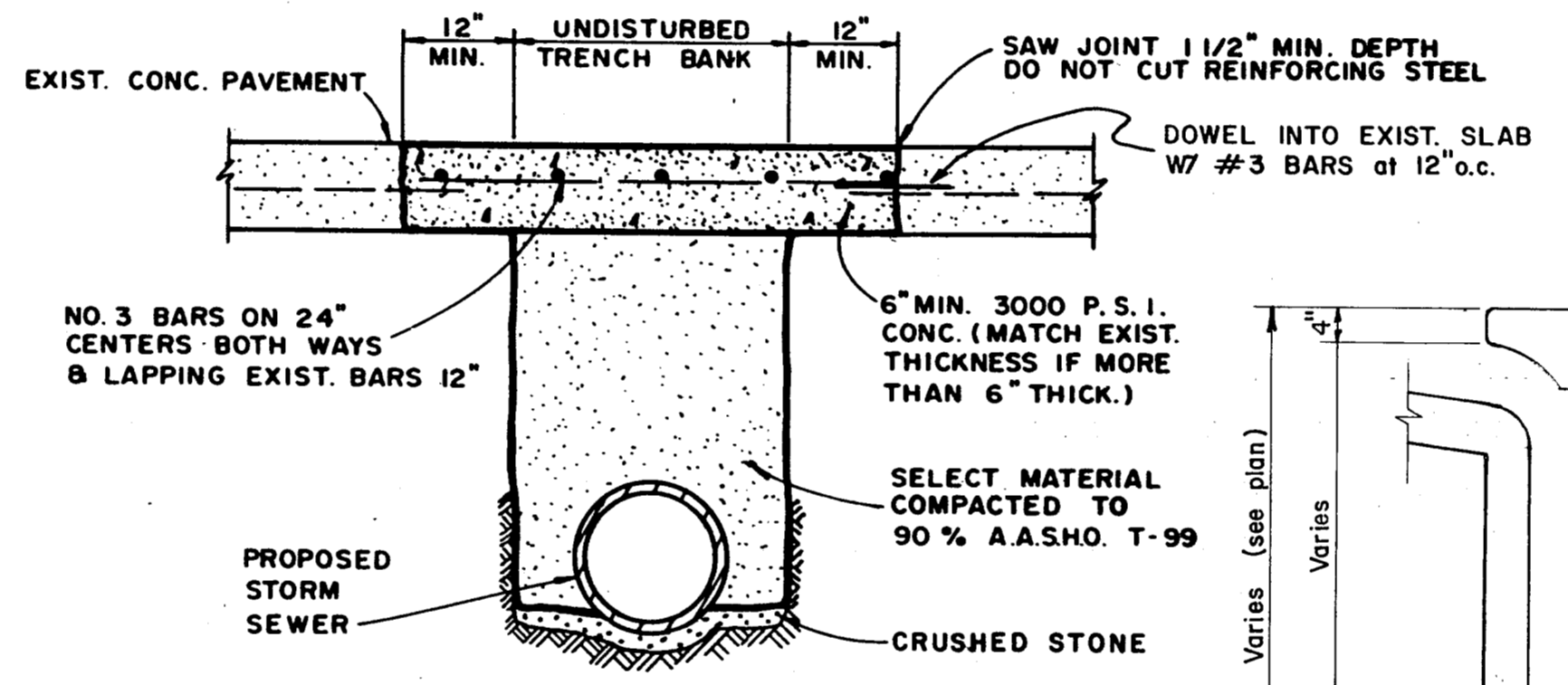


SECTION A-A

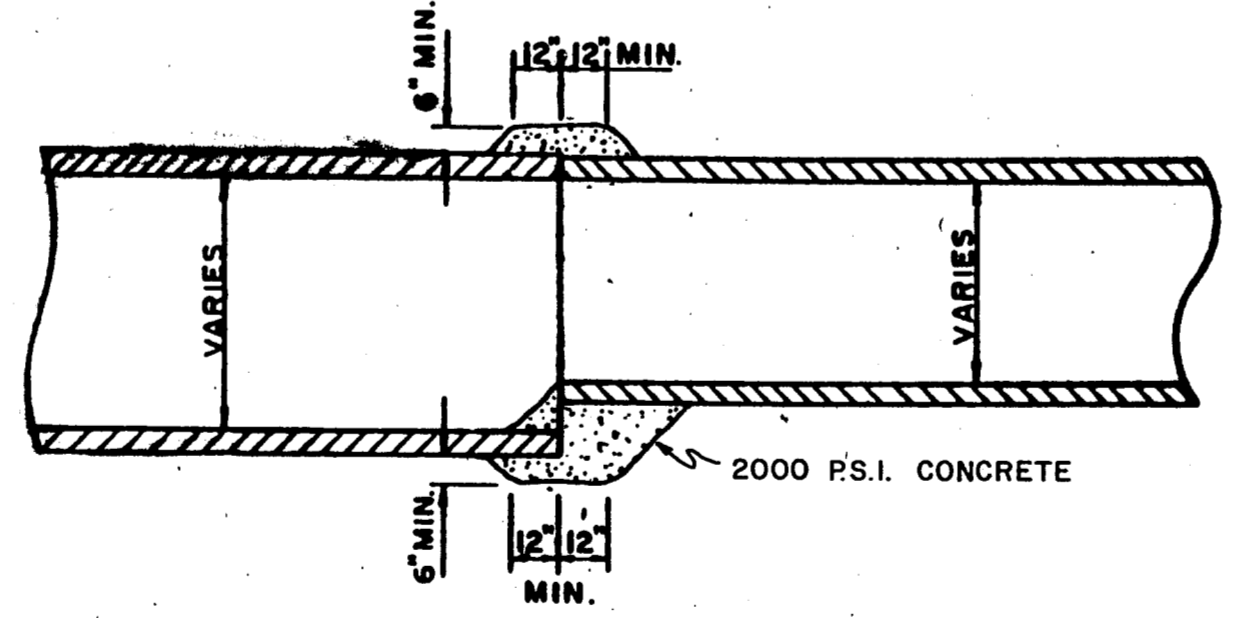


DETAIL OF UTILITY SUPPORT

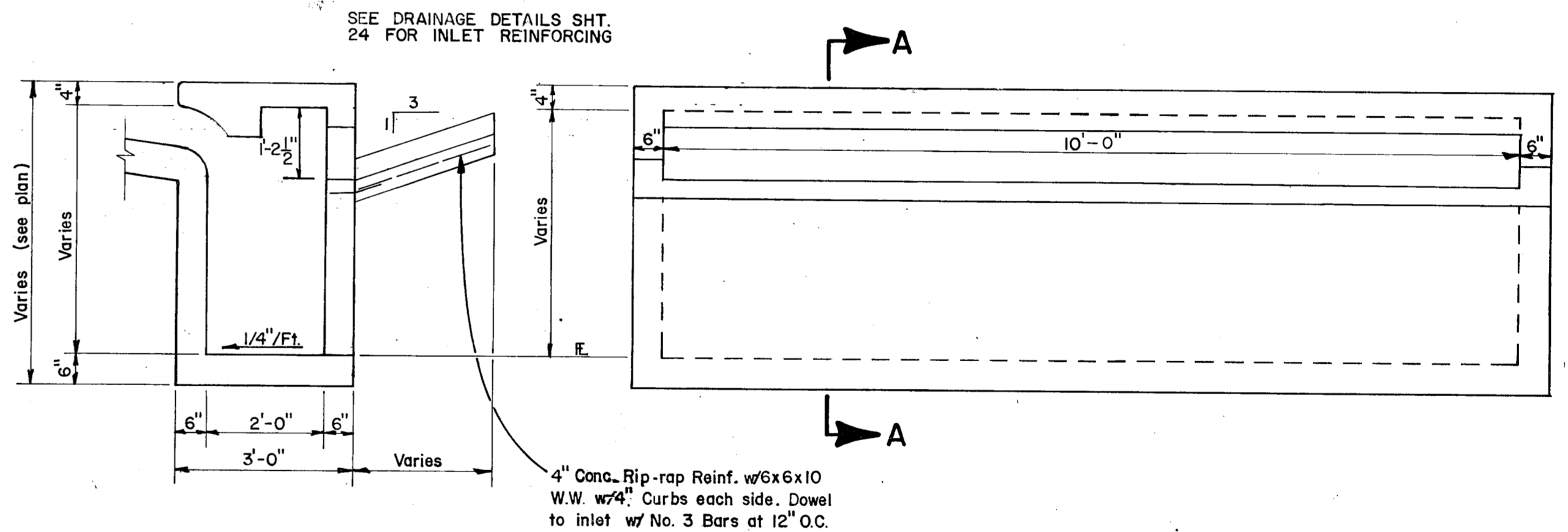
DETAIL FOR WATER MAIN LOWERING
PAY ITEM 479.7



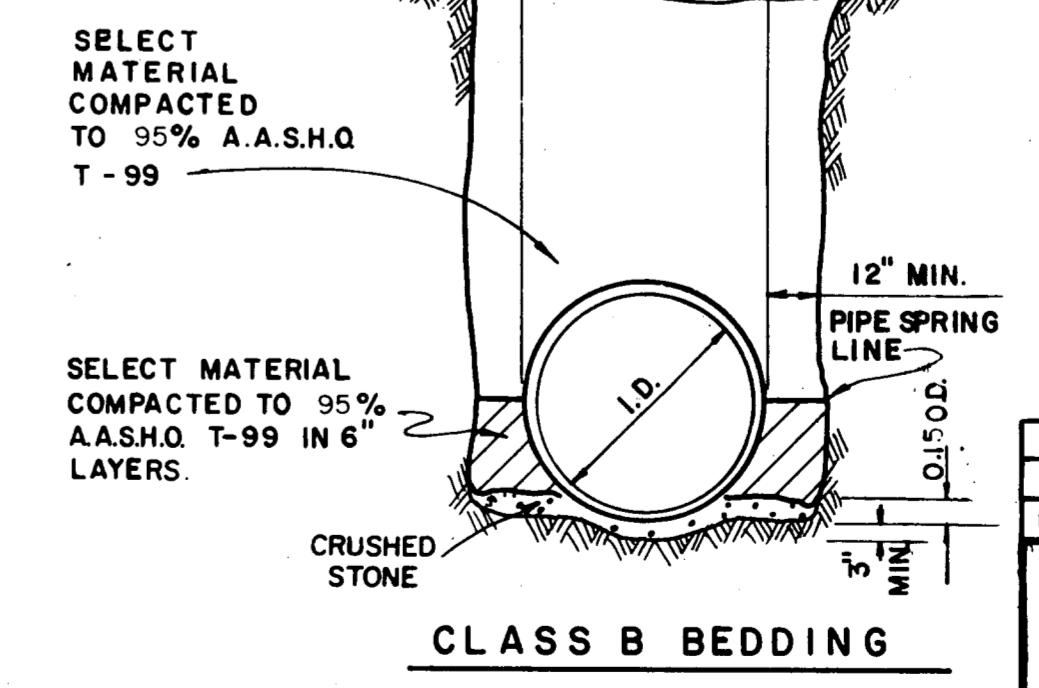
CONCRETE STREET OR DRIVEWAY REPAIR



DETAIL OF CONCRETE COLLAR FOR PIPE CONNECTIONS



SECTION A-A
MODIFIED CURB INLET WITH FLUME
PAY ITEM 470.21

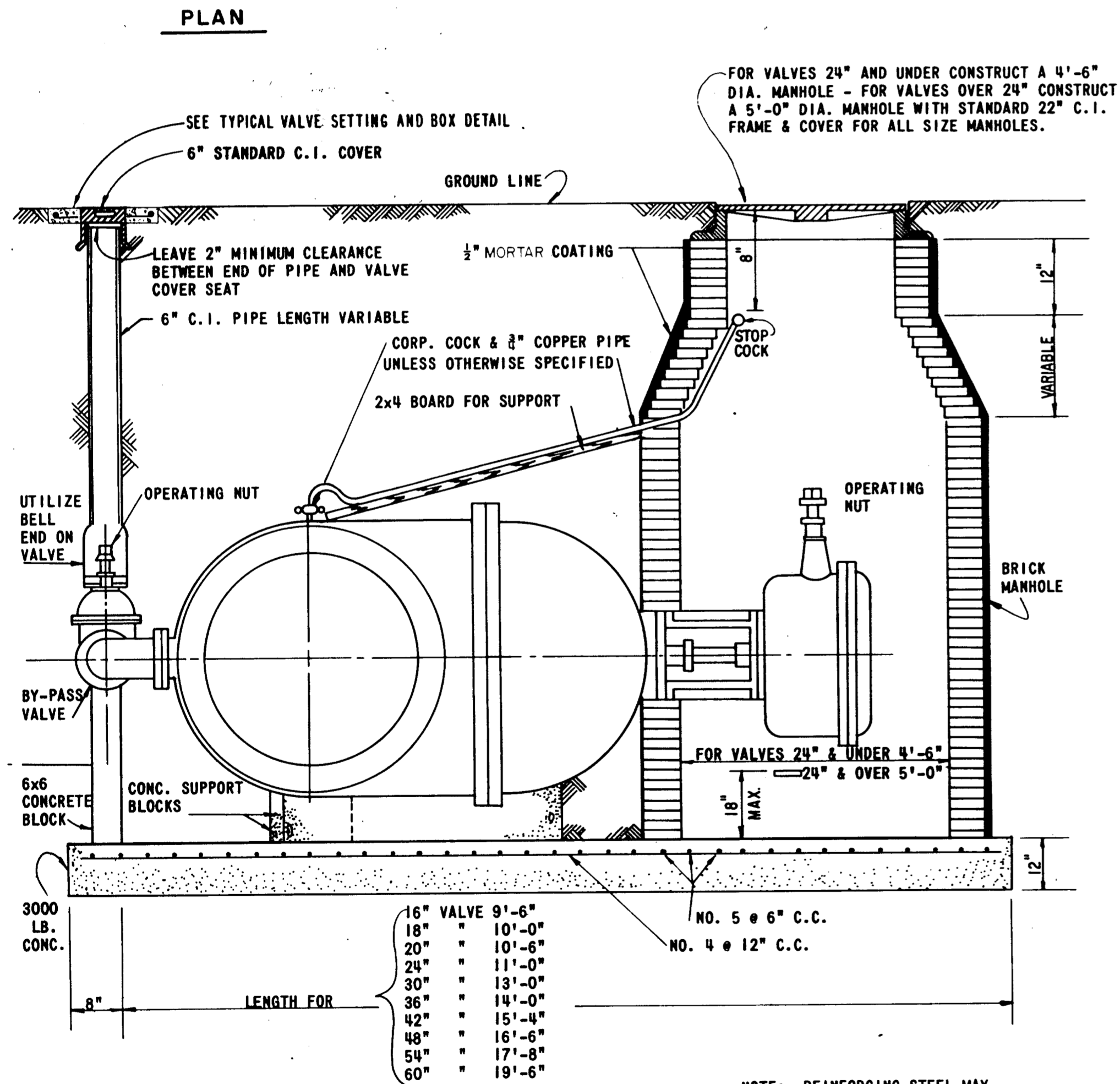
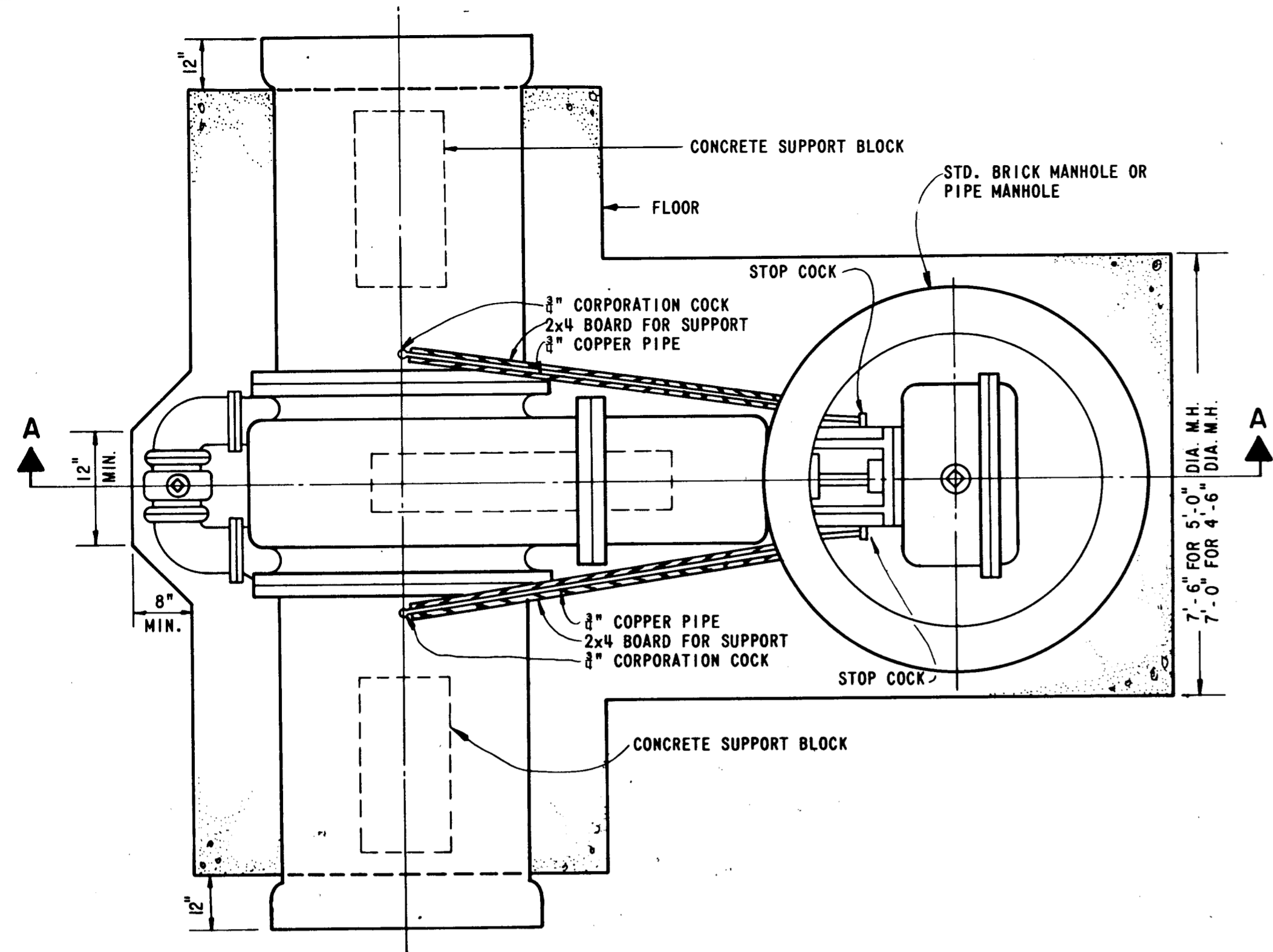


STORM SEWER PIPE BEDDING DETAIL

NOTE: IF ROCK ENCOUNTERED IN TRENCH BOTTOM, OVEREXCAVATE TRENCH A MINIMUM 8" AND BED PIPE IN GRAVEL OR CRUSHED STONE. IF JETTED SAND IS USED IN BACKFILL ABOVE SPRING LINE OF CORRUGATED METAL PIPE THE SAND SHALL BE COMPLETELY DRAINED AND TESTED FOR 90% DENSITY PRIOR TO ANY BACKFILL OVER PIPE.

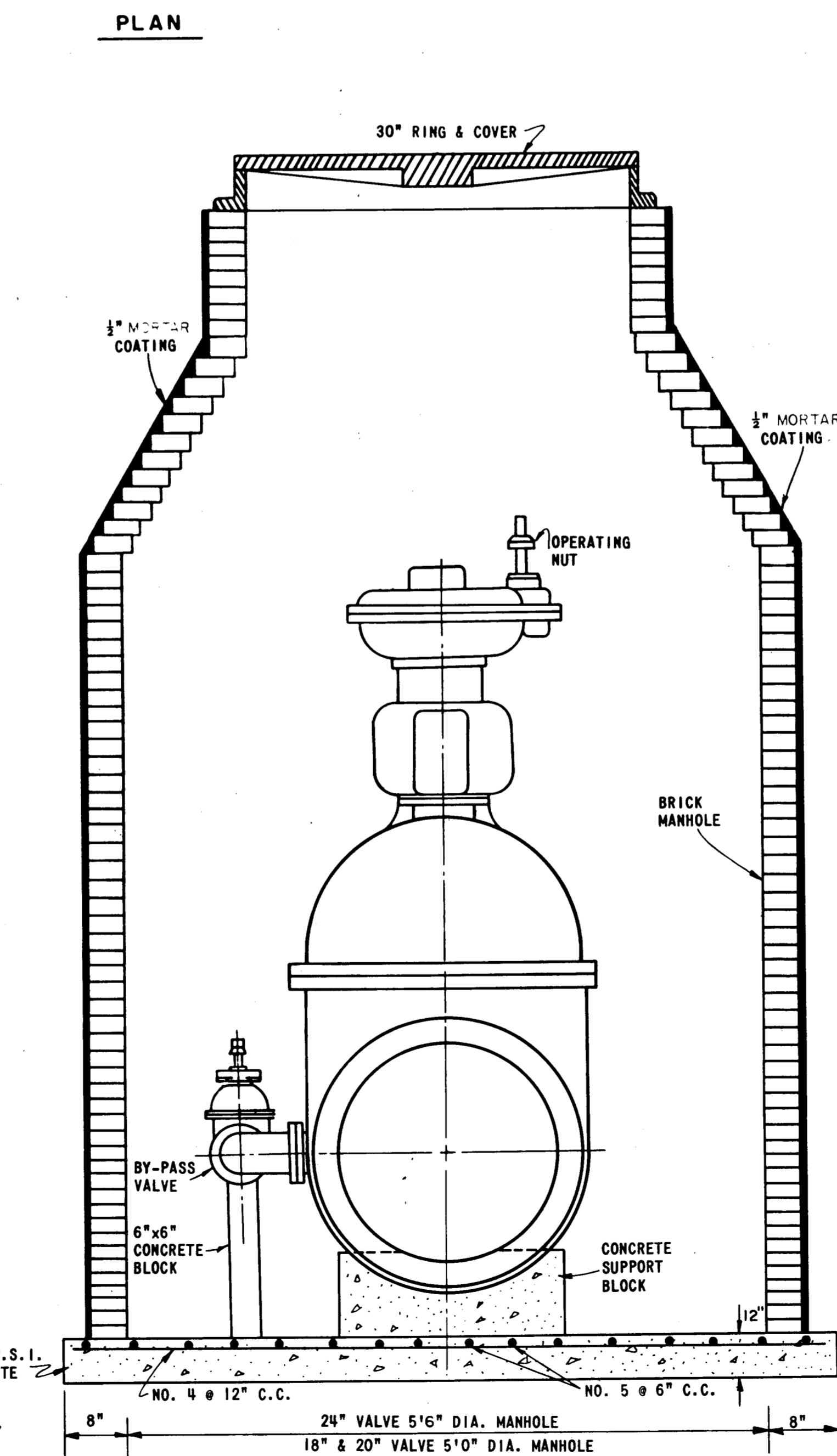
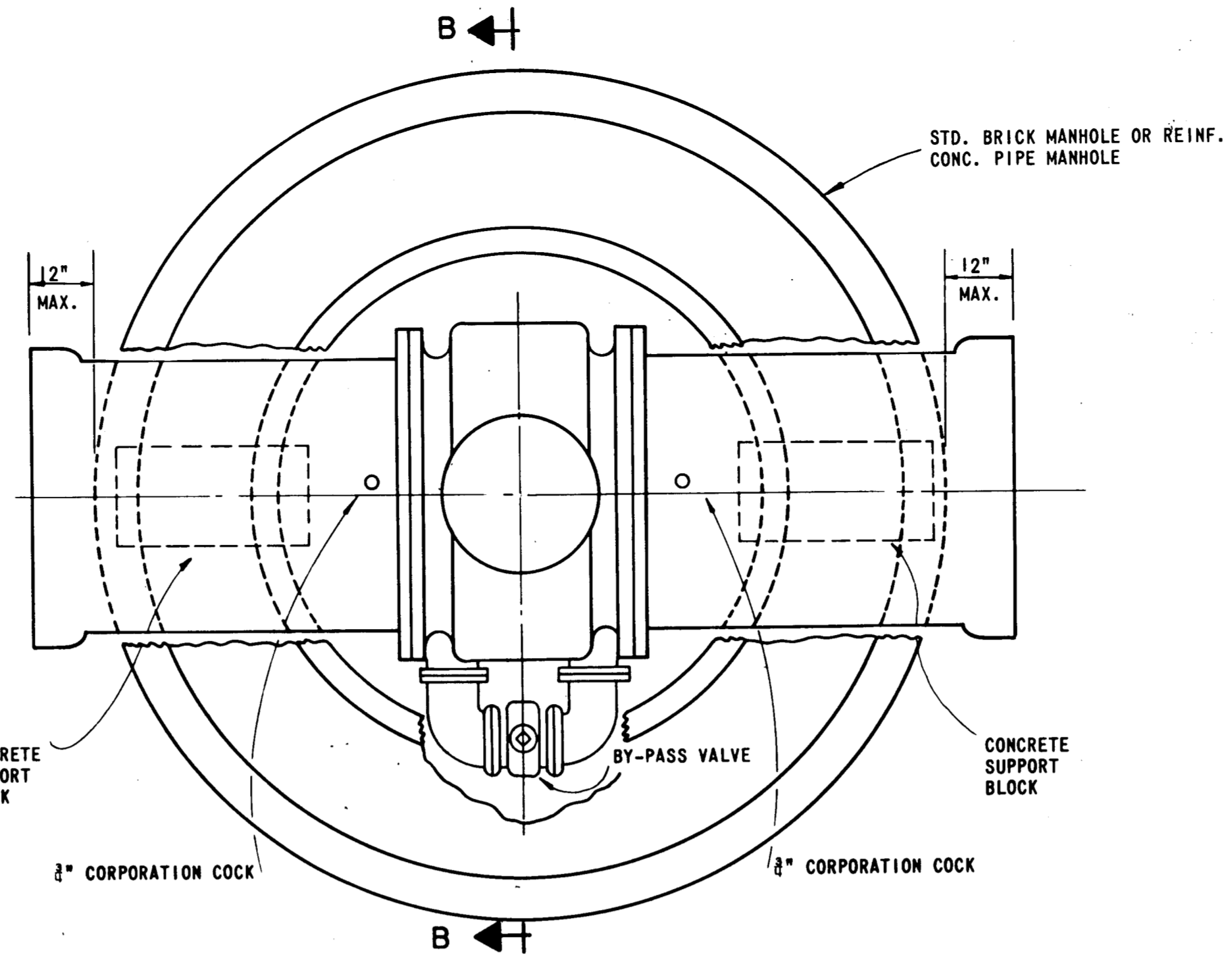


NO.	REVISION	BY	DATE
TOWN OF ADDISON, TEXAS DEPARTMENT OF ENGINEERING			
STANDARD CONSTRUCTION DETAILS STORM DRAINAGE			
MANHOLES			
APPROVED		H. WAYNE GINN, P.E.	
DATE MARCH, 1984		SHEET SD-8	

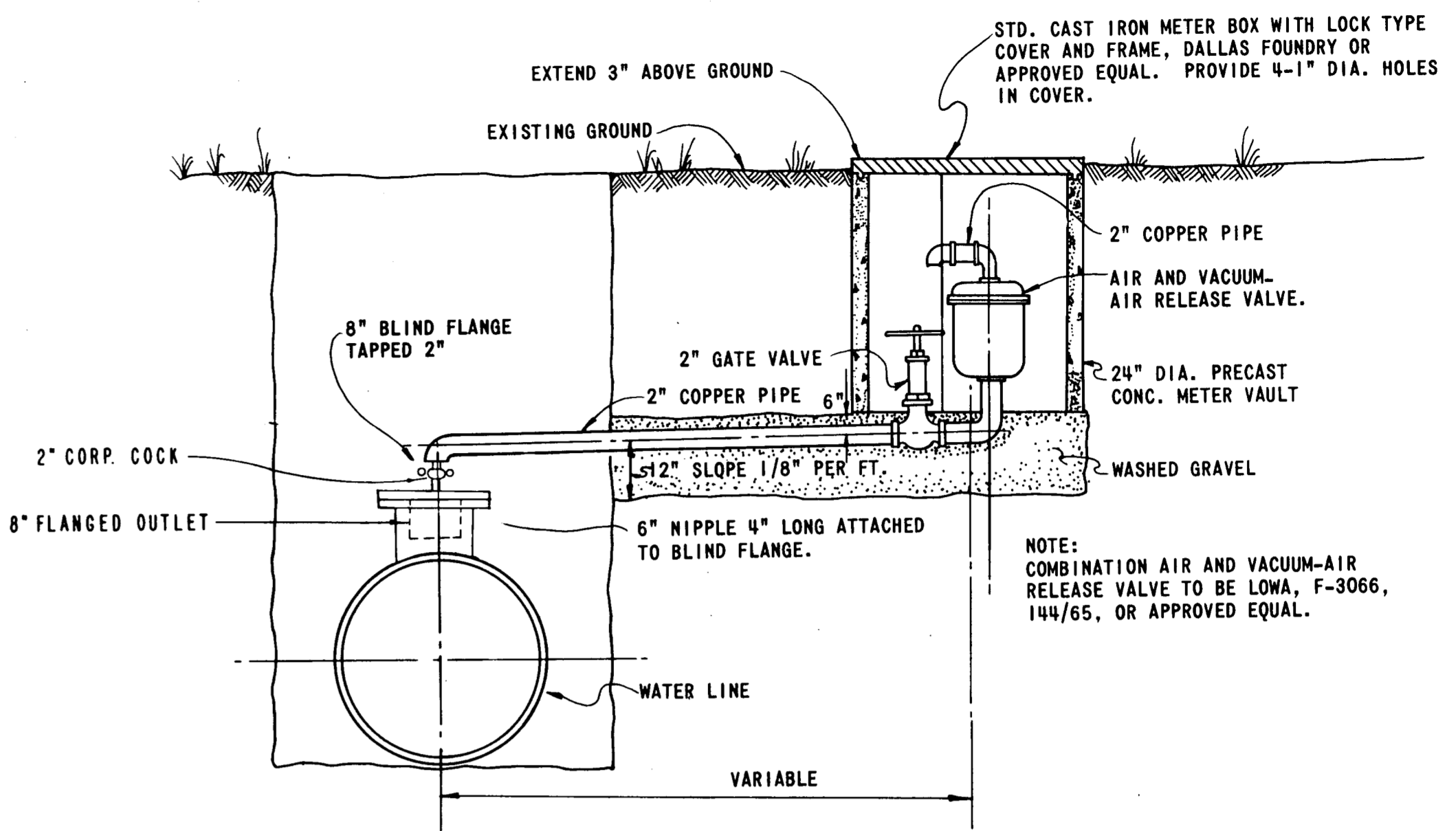


SECTION A-A
HORIZONTAL VALVE INSTALLATION

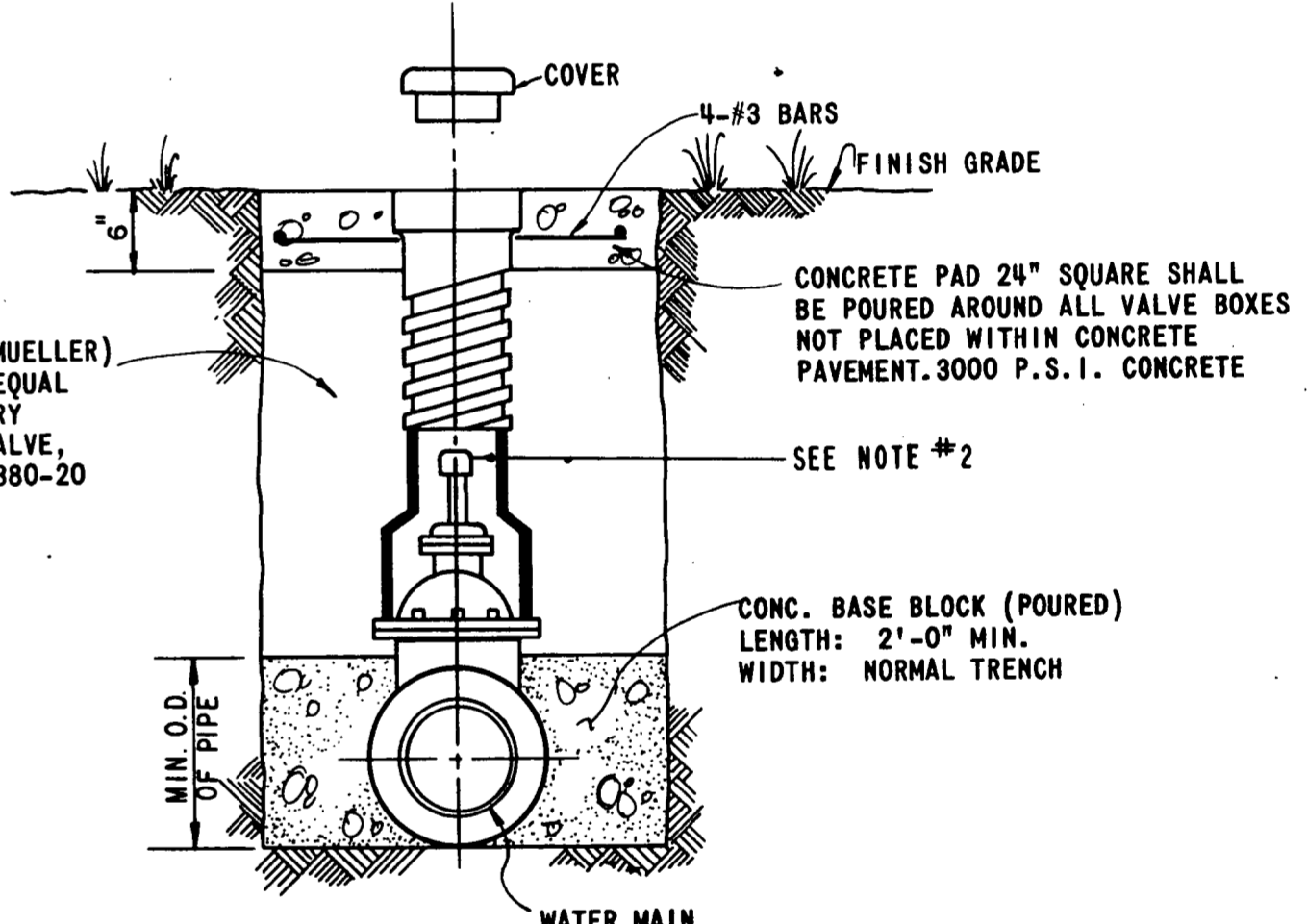
VALVE SHALL BE MUELLER A-2480-29-07 FOR REINF. CONC. CYLINDER PIPE AND A-2480-20-07 FOR DUCTILE IRON PIPE OR APPROVED EQUAL.



SECTION B-B
VERTICAL VALVE INSTALLATION

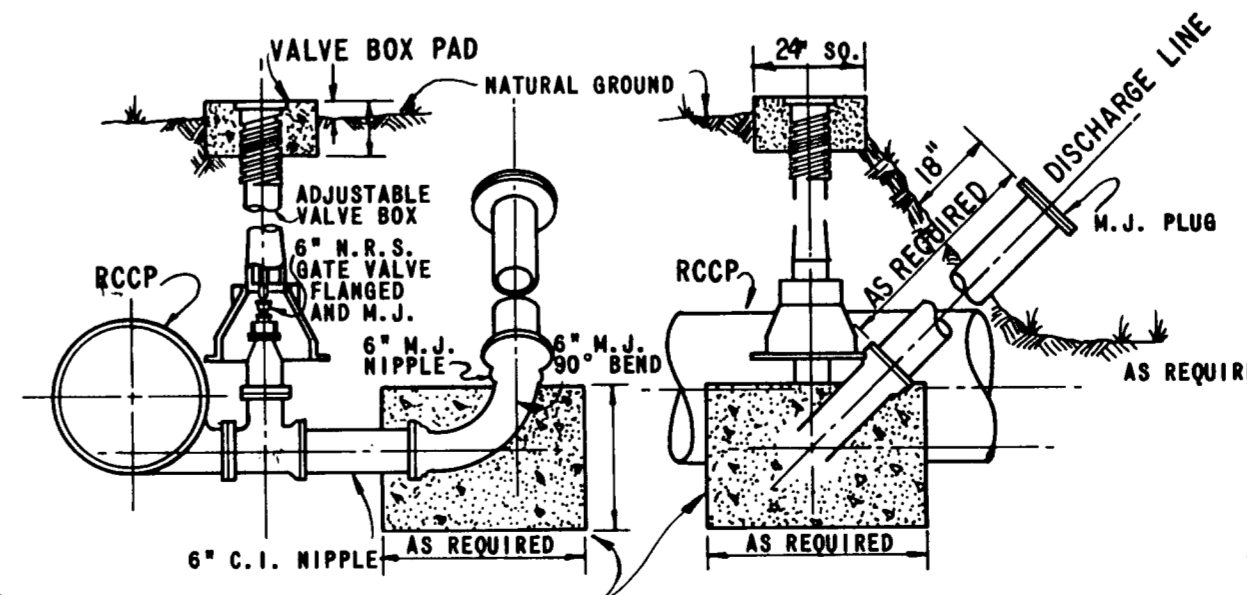


TYPICAL AIR AND VACUUM-AIR RELEASE VALVE INSTALLATION



- NOTE:**
- 4"-12" R.S. GATE VALVES SHALL BE IN ACCORDANCE WITH AWWA STANDARD C-509-80 OR LATEST THEREOF. ALL VALVES SHALL BE MUELLER A-2370 OR APPROVED EQUAL.
 - A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE THATS OPERATING NUT IS LOCATED IN EXCESS OF 4 FEET BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO INSURE THAT ITS TOP IS WITHIN 4" OF VALVE BOX LID.

TYPICAL VALVE SETTING AND BOX



BLOW OFF VALVE DETAIL

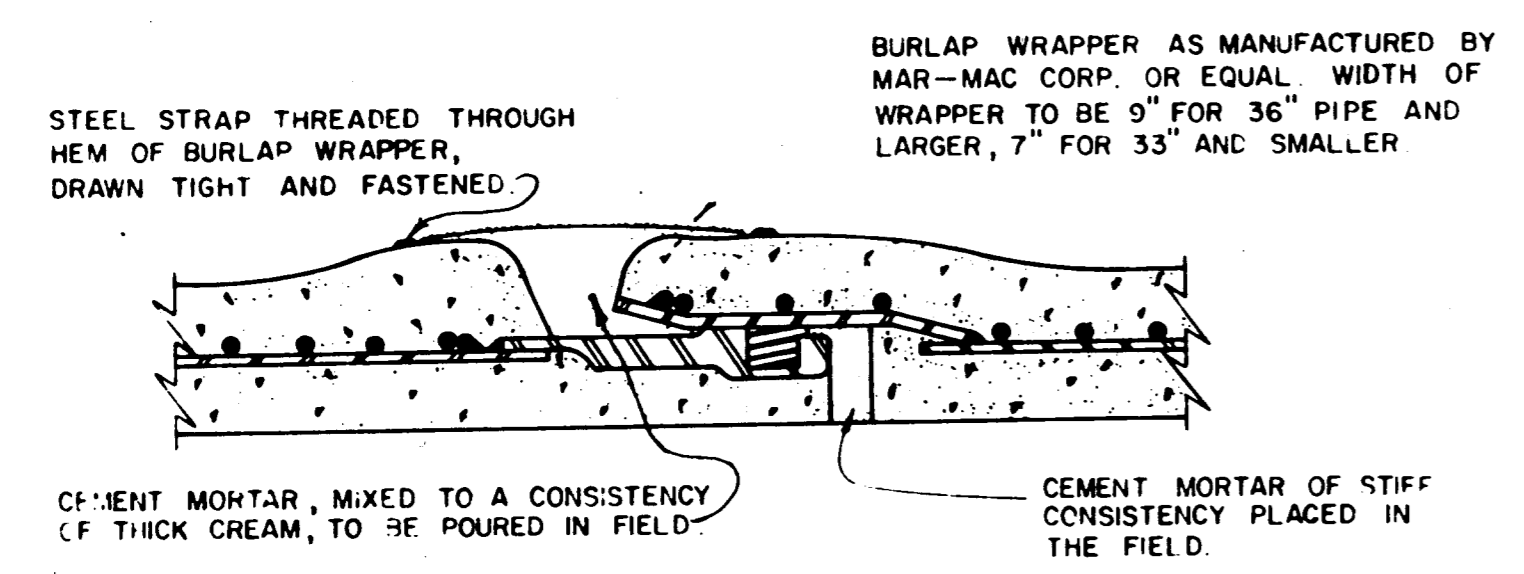
NO.	REVISION	BY	DATE
TOWN OF ADDISON, TEXAS DEPARTMENT OF ENGINEERING			
STANDARD CONSTRUCTION DETAILS WATER			
VALVES			
APPROVED		H. WAYNE GINN, P.E.	
DATE MARCH, 1984		SHEET SD-15	



DIMENSION FOR 3", 4", & 6" M.V.

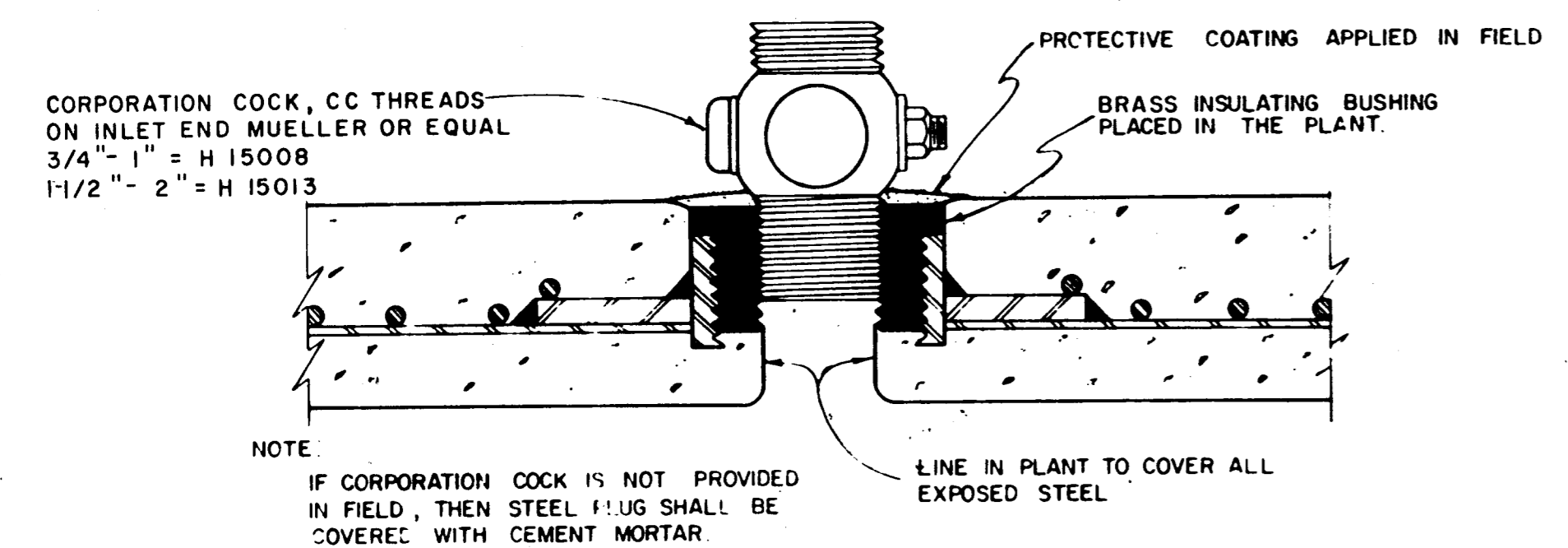
DIMENSION	3"	4"	6"
V	6"	9"	10.5"
W	15"	20"	18"
X	20"	23"	27"
Y	9"	9"	12"
Z	6'-1"	7'	7'-5"

NOTE: PROVIDE 1" MINIMUM THICKNESS CONCRETE OR CEMENT MORTAR COATING IN THE FIELD FOR THE PROTECTION OF ALL EXPOSED STEEL SUCH AS FLANGES, CAULKED JOINTS, THREADED OUTLETS, CLOSURES, ETC. THE CEMENT MORTAR USED SHALL CONSIST OF ONE PART PORTLAND CEMENT TO TWO AND ONE-HALF PARTS OF FINE, SHARP (PLASTER) SAND. WHERE SHOWN, COATING IS TO BE REINFORCED WITH WIRE MESH.

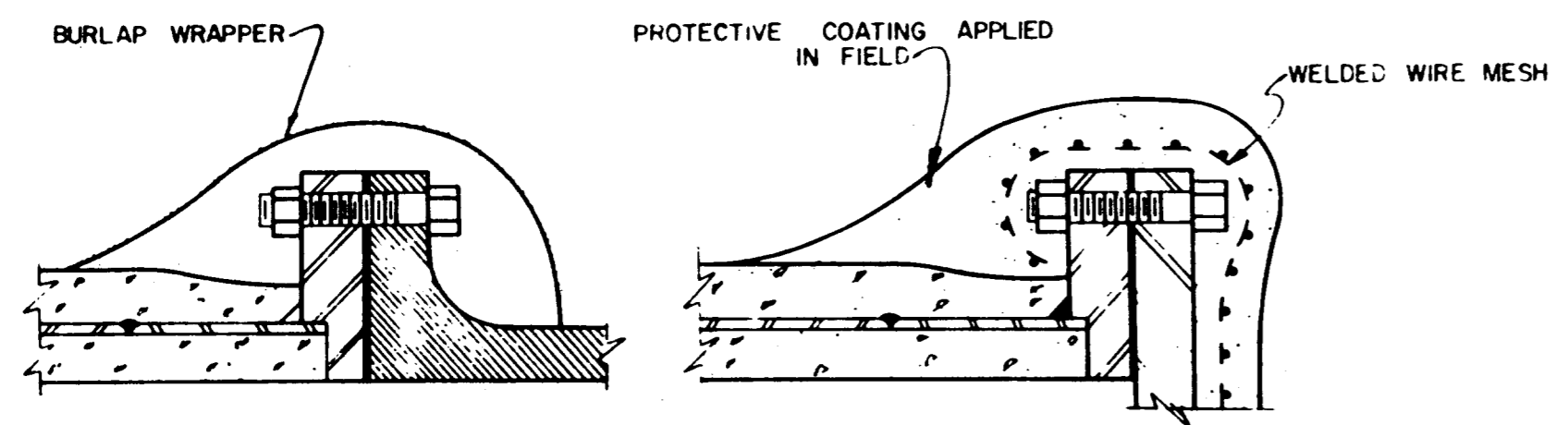


STANDARD RUBBER GASKET JOINT

NOTE: ALL CLOSURE SECTIONS SHALL BE FABRICATED WITH HAND HOLES TO ALLOW WIPING INSIDE OF JOINTS AFTER CLOSURE IS IN PLACE.



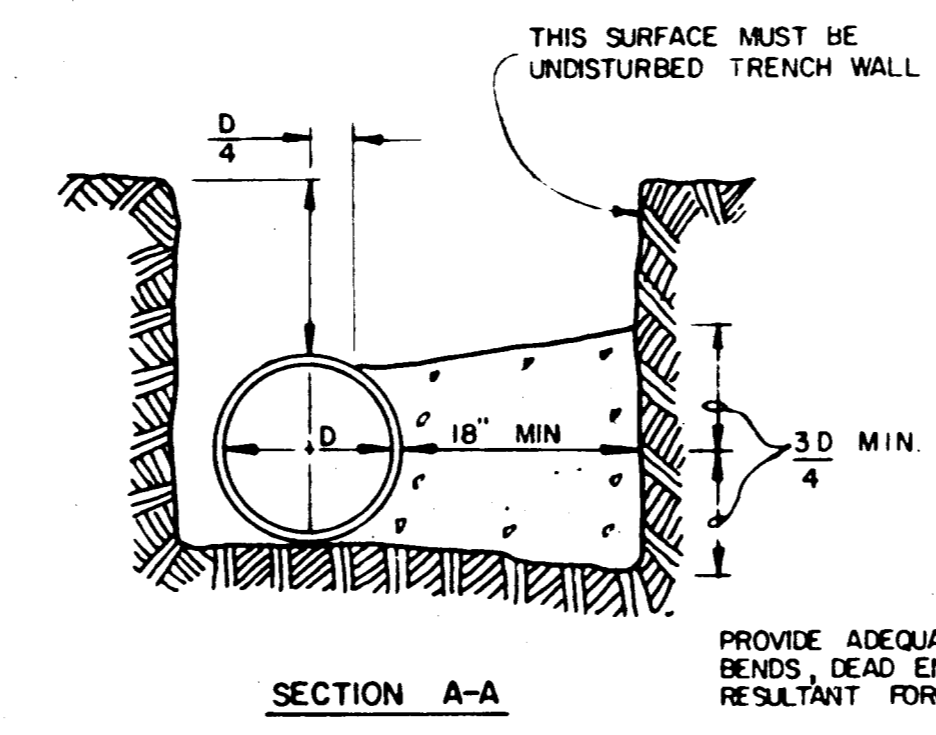
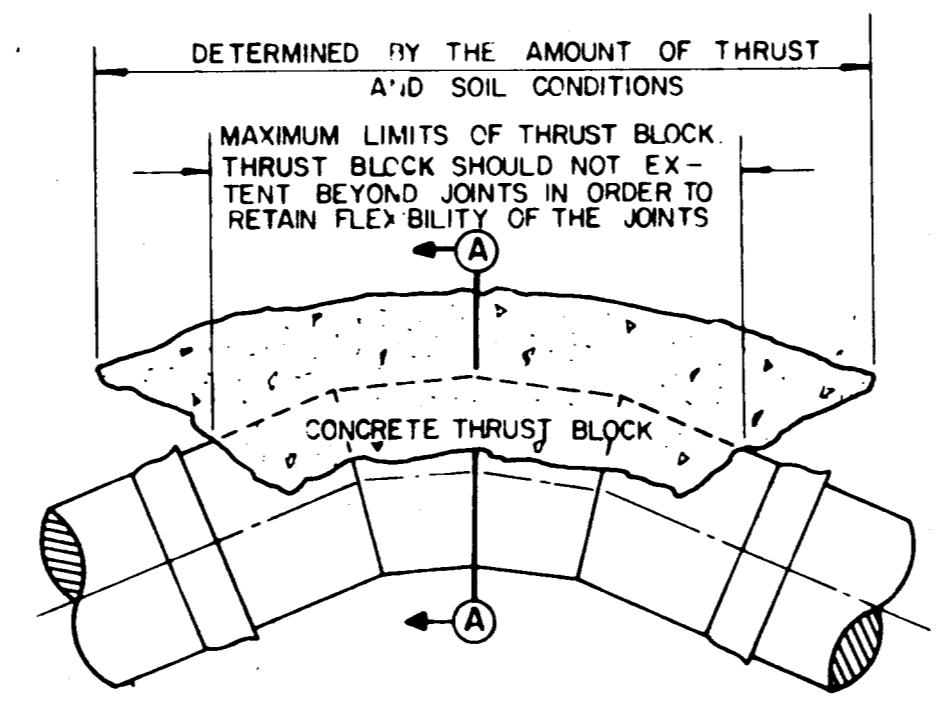
THREADED CONNECTION



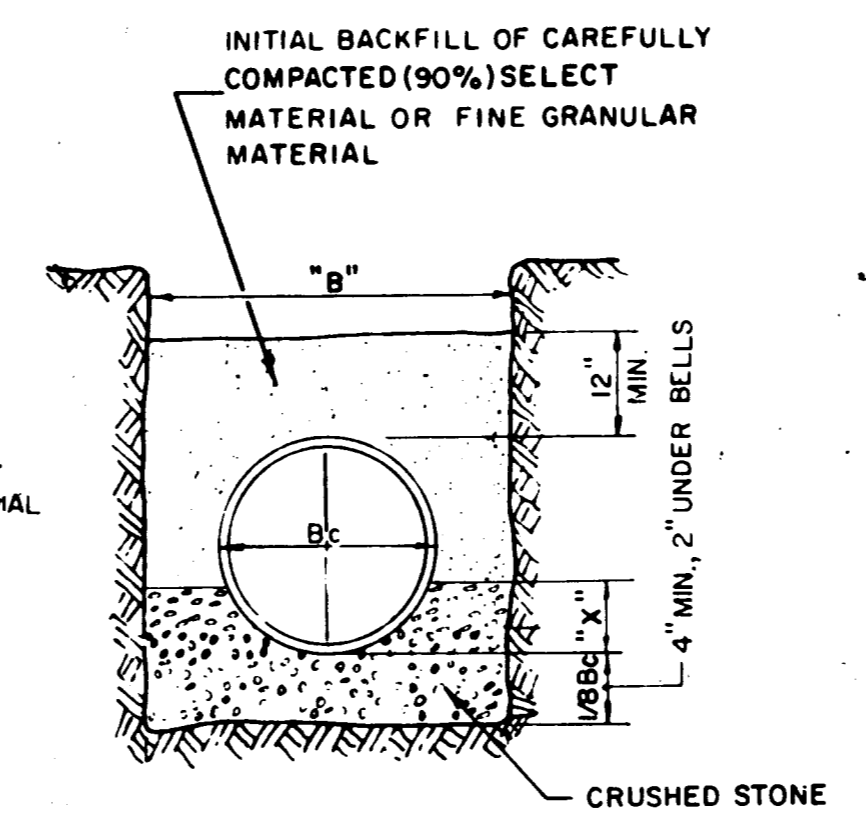
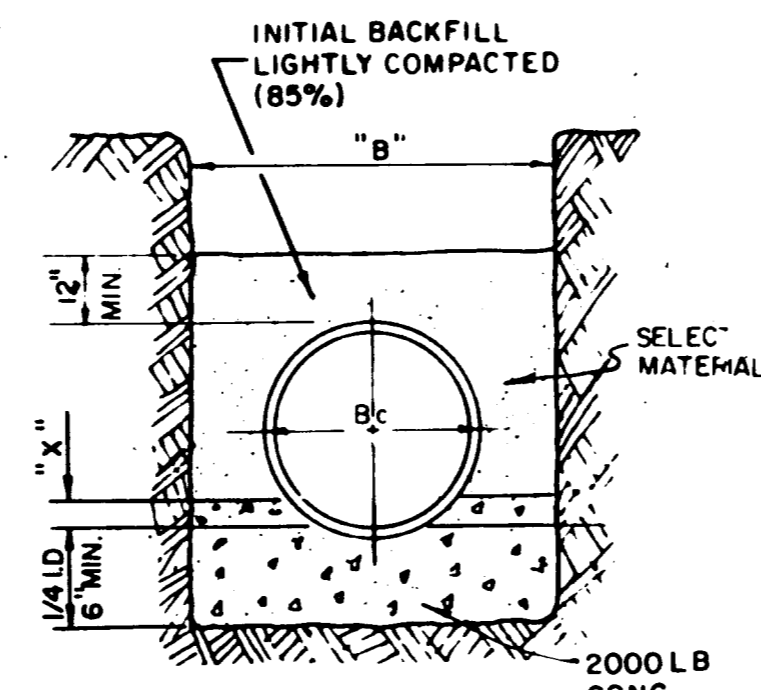
FLANGED CONNECTIONS

REINFORCED CONCRETE CYLINDER PIPE DETAILS

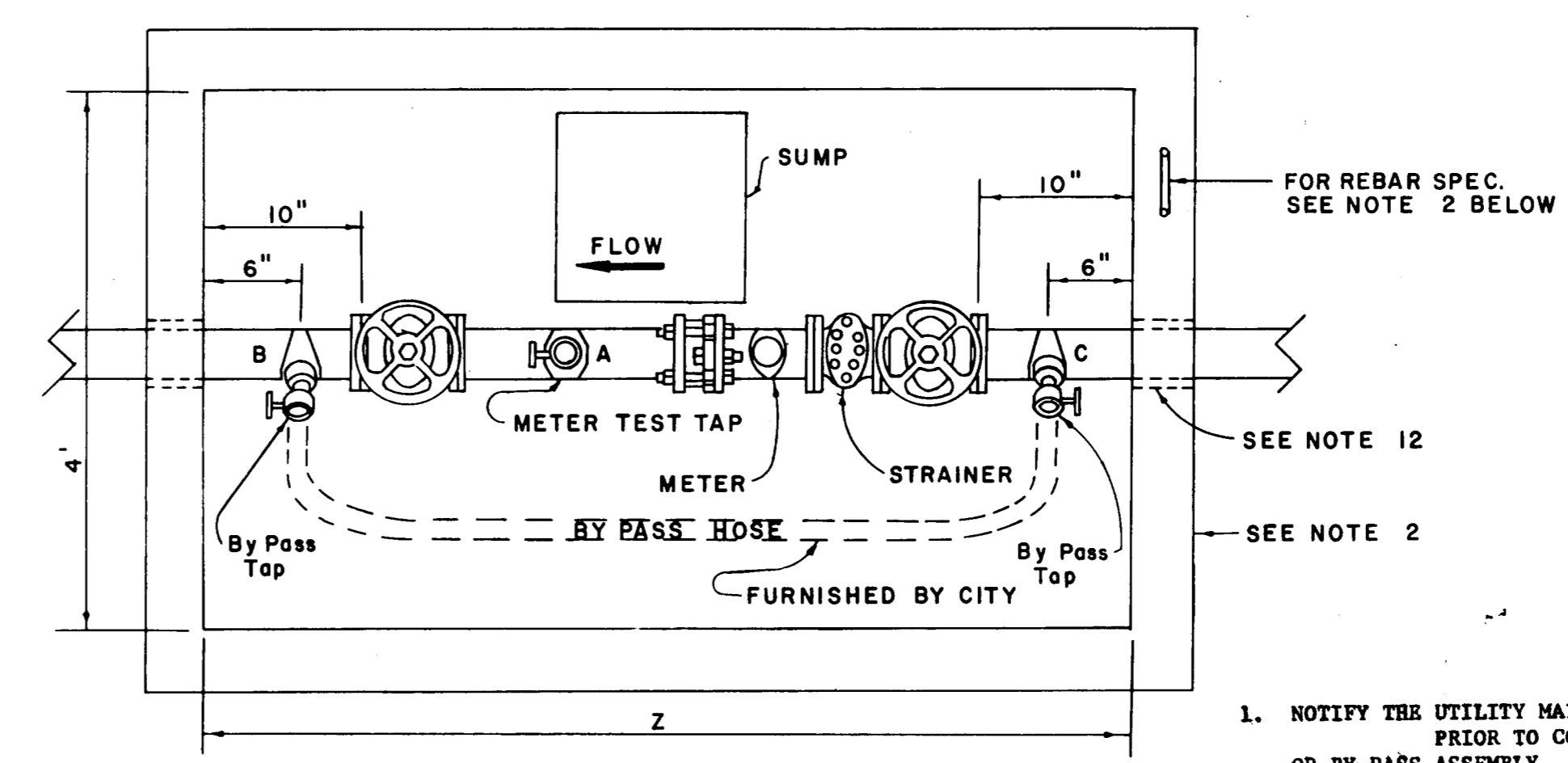
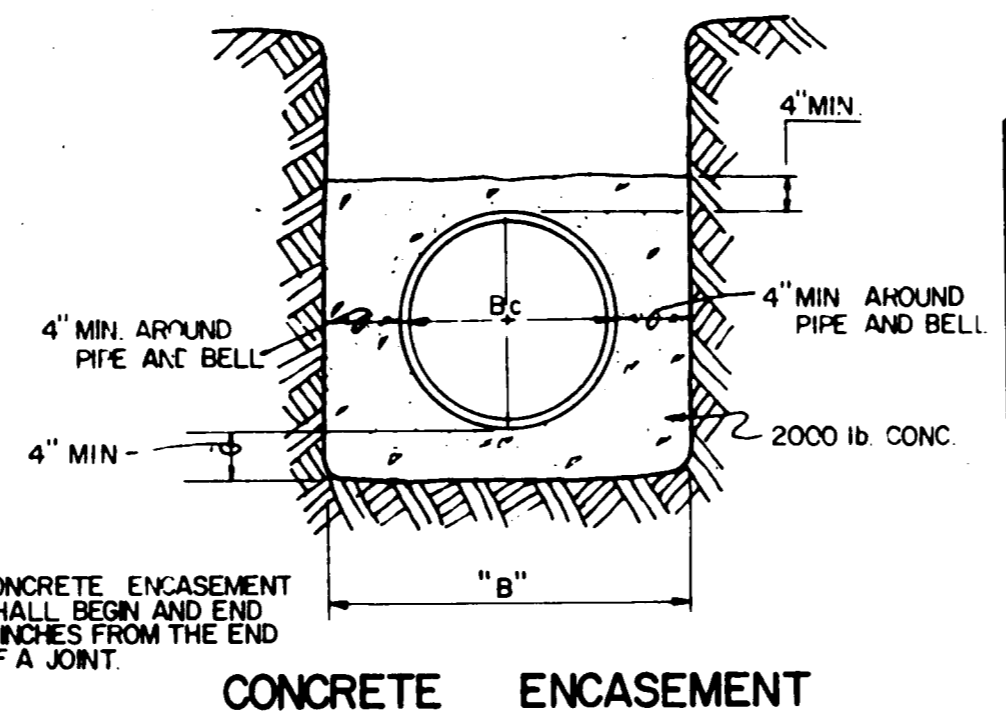
NOTE: ANY SURFACE RECEIVING A CEMENT MORTAR COATING SHALL BE THOROUGHLY CLEAN AND WETTED WITH WATER JUST PRIOR TO PLACING THE CEMENT MORTAR COATING. AFTER PLACEMENT, CARE SHALL BE TAKEN TO PREVENT CEMENT MORTAR COATING FROM DRYING OUT TOO RAPIDLY BY COVERING WITH DAMP EARTH OR BURLAP. CEMENT MORTAR COATING SHALL NOT BE APPLIED DURING FREEZING WEATHER.



THRUST BLOCK DETAIL

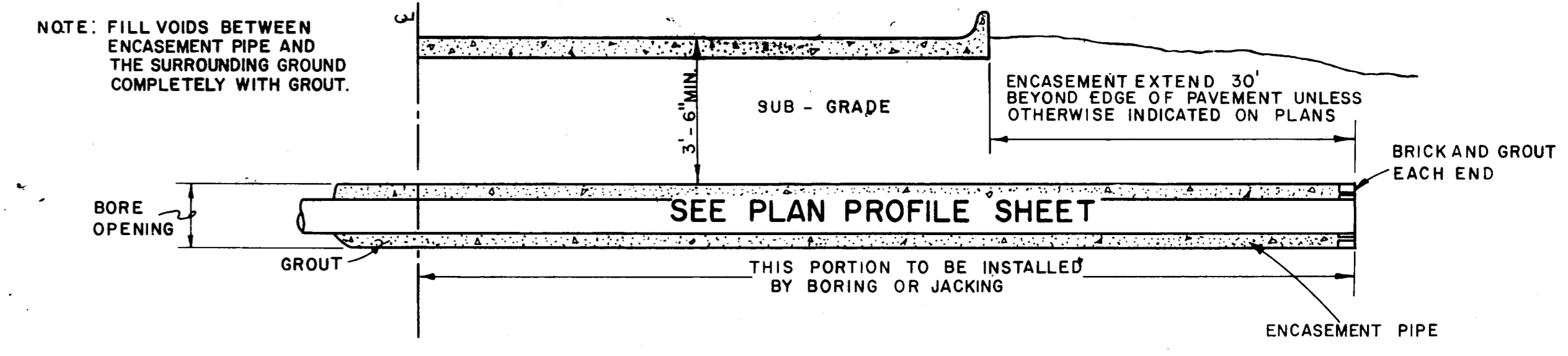


EMBEDMENT DETAILS



METER VAULT & BY-PASS SPECIFICATIONS

- NOTIFY THE UTILITY MAINTENANCE DEPARTMENT PRIOR TO CONSTRUCTION OF VAULT OR BY-PASS ASSEMBLY.
- THE METER VAULT CAN BE EITHER POURED IN PLACE OR PREFABRICATED. CONCRETE SHALL BE 6" THICK AND BE 3000 PSI REINFORCED WITH #4 STEEL BARS ON 12" CENTERS EACH WAY IF THE VAULT IS POURED IN PLACE. PREFABRICATED VAULTS SHALL BE 4" THICK AND BE 4500 PSI CONCRETE #4 STEEL BARS ON 8" CENTERS. THESE ARE MINIMUM SPECIFICATIONS.
- THE VAULT WILL NOT BE PUT IN ANY DRIVE OR PARKING AREA AND MUST BE LOCATED IN A UTILITY EASEMENT.
- A DRAWING WITH THE EXACT MEASUREMENTS OF THE METER VAULT AND BY-PASS WILL BE GIVEN TO THE CONTRACTOR FOR A 3", 4" and 6" METER.
- THE VAULT LID SHALL BE A BILCO LID, TYPE Q-4 SINGLE LEAF DESIGN, ANGLE FRAME IS 1/2" STEEL WITH STRAP ANCHORS BOLTED TO THE EXTERIOR. THE LEAF IS 1/2" STEEL DIAMOND PATTERN PLATE, PIVOTING ON TORSION BARS FOR EASY OPERATION. THE MINIMUM LIVE LOAD CAPACITY IS 150 LBS. PER SQUARE FOOT. THE SIZE OF THE LID IS 3'x3'.
- THE LID SHALL BE PAINTED WITH 43-38 TNEBEC DIFFUSED ALUMINUM PAINT OR APPROVED EQUAL.
- CONTRACTOR SHALL MAKE 3 TAPS INSIDE THE VAULTS. TAP A MUST BE AT LEAST TWO PIPE DIAMETERS DOWNSTREAM OF METER AND MUST BE 2". TAPS B & C MUST BE MADE AT APPROXIMATELY 45° ANGLE ON EACH END OF THE PIPING BEFORE IT INTERSECTS THE WALL. CONTRACTOR SHALL FURNISH MUELLER NO. N-10499 FOR 3"x2", MUELLER NO. N-10501 FOR 4"x2", AND MUELLER NO. N-10505 FOR 6"x2", OR APPROVED EQUAL SERVICE SADDLES, BRASS HIPPLES AND NO. 7500 OHIO BRASS OR APPROVED EQUAL GATE VALVES.
- THE STRAINER, METER, AND FLEXIBLE COUPLING WILL BE PROVIDED AND INSTALLED BY THE TOWN OF ADDISON AT THE CONTRACTORS EXPENSE.
- THE STRAINER, METER AND FLEXIBLE COUPLING WILL NOT BE SET UNTIL THE METER VAULT AND TAPS ARE ACCEPTED BY THE TOWN OF ADDISON. UTILITY MAINTENANCE DEPARTMENT.
- THE GATE VALVES ARE REQUIRED TO BE MUELLER A-2370-6 FLANGED RESILIENT SEAT GATE VALVES.
- THE BOTTOM OF THE METER VAULT MUST BE 6" THICK CONCRETE WITH #4 REBAR ON 12" CENTERS AND HAVE A 4" FILL SAND CUSHION UNDERNEATH. A SUMP 4" DEEP AND 12" IN DIAMETER SHALL BE INSTALLED TO ONE SIDE OF THE CENTER OF THE BOTTOM SLAB. IF PRECAST VAULT IS USED WHERE THE SIDES JOIN THE BOTTOM, A LAYER RAM-SEK SHALL BE USED TO SEAL THE JOINT.
- CONTRACTOR SHALL HAVE A CHOICE OF EITHER HAVING A LINK SEAL WALL SLEEVE MODEL WS-8-12-5-6 FOR A 4" PIPE, WS-1036-8-6 OR WS-12-37-8-6" FOR 8" PIPE CAST IN THE VAULT OR HAVE THE VAULT WALL CORED BEFORE INSTALLATION OF VAULT AND PIPING. IN EITHER CASE, A LINK SEAL MODEL NO. LS-100-C MUST BE USED TO SEAL THE ANNULAR SPACE BETWEEN THE PIPE AND WALL OPENING. BREAKING OF THE WALL WITH A JACKHAMMER IS NOT PERMITTED.
- UNDER EACH VALVE WILL BE A CONCRETE SUPPORT.
- DEPTH OF VAULT SHALL BE A MINIMUM OF 4 1/2 FEET.

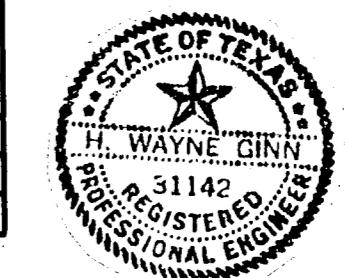


HALF-SECTION TYPICAL HIGHWAY CROSSING

NOTE: ENCASEMENT PIPE MAY BE ELIMINATED FOR CITY STREETS.

TABLE OF QUANTITIES OF MATERIALS IN CUBIC YARDS PER 100 LINEAR FEET

INSIDE DIAMETER OF PIPE	APPROX. OUTSIDE DIAMETER OF PIPE	"X" IS A MINIMUM DEPTH	"B" TRENCH WIDTH FOR COMPUTATION OF QUANTITIES	CONCRETE		CRUSHED STONE FOR CL" EMBEDMENT
				FOR EMBEDMENT	FOR ENCASEMENT	
REINFORCED CONCRETE CYLINDER PIPE						
14"	17.25"	2.53"	34"	6.91	16.07	5.16
16"	19.38"	2.84"	36"	7.50	17.76	5.64
18"	21.78"	3.19"	38"	8.11	19.52	6.16
24"	27.75"	4.06"	44"	9.97	24.90	9.28



NO.	REVISION	BY	DATE
TOWN OF ADDISON, TEXAS DEPARTMENT OF ENGINEERING			
STANDARD CONSTRUCTION DETAILS WATER			
WATER PIPE DETAILS			
APPROVED		H. WAYNE GINN, P.E.	
DATE MARCH, 1984		SHEET	SD-17

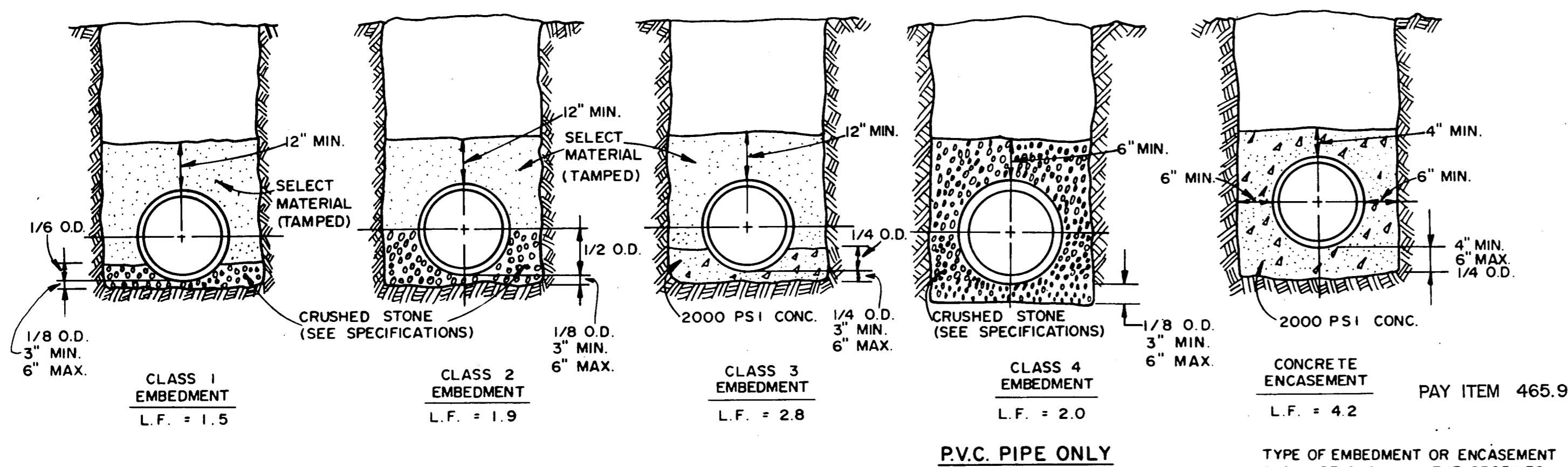
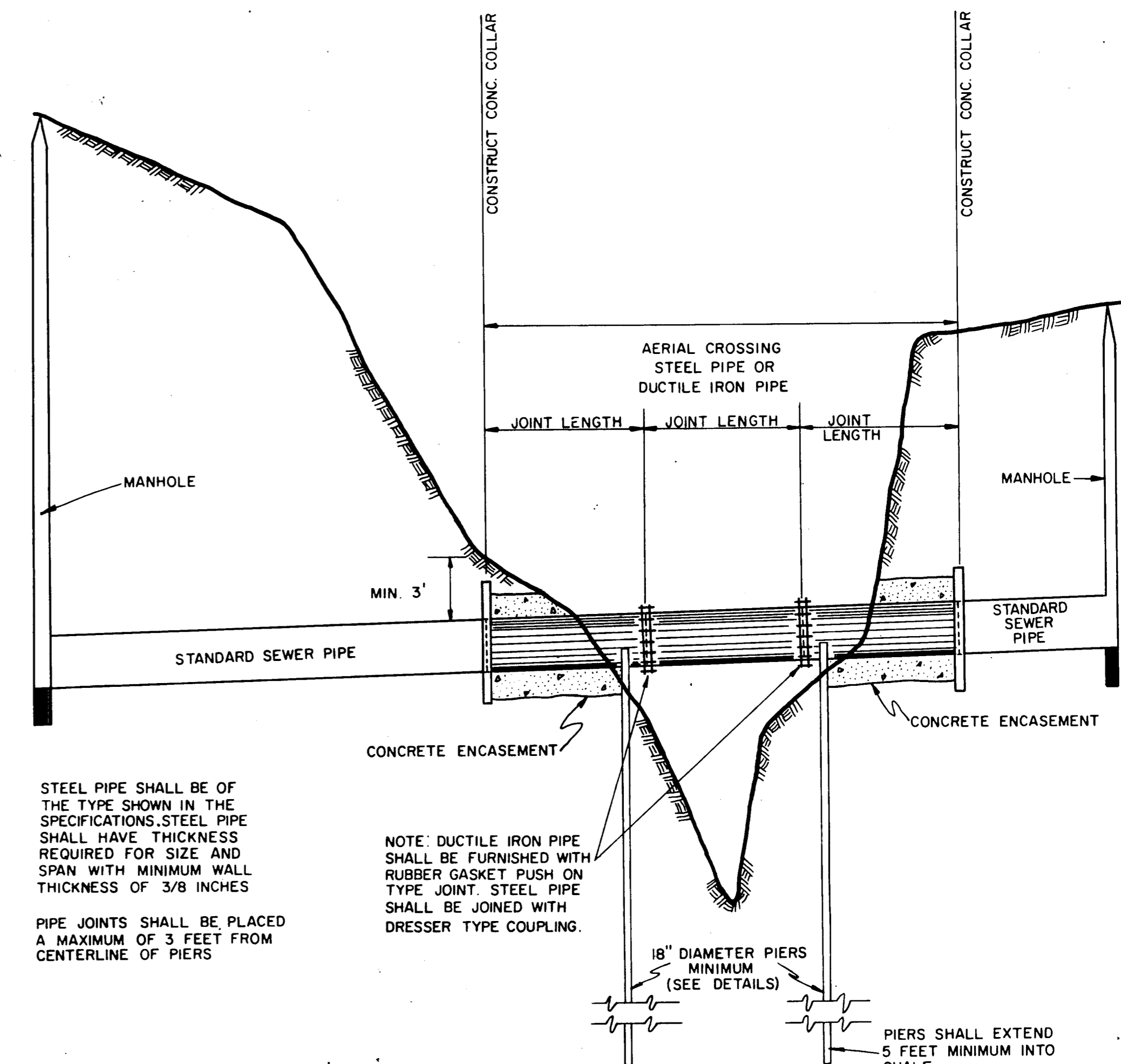


TABLE OF QUANTITIES OF 2000 PSI CONCRETE, GRAVEL OR CRUSHED STONE IN CUBIC YARDS PER 100 LINEAR FEET FOR EACH CLASS EMBEDMENT

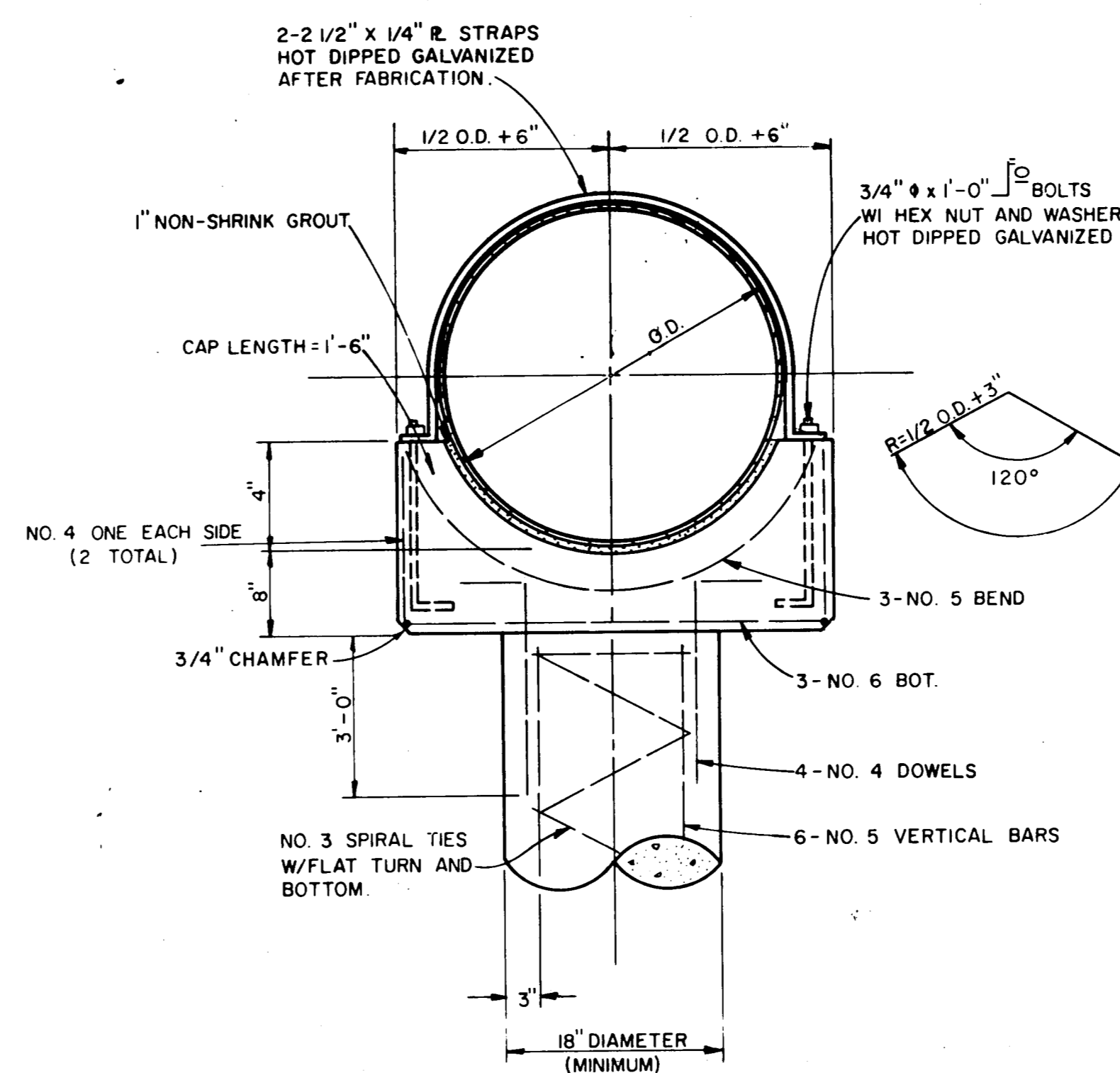
SIZE OF PIPE IN INCHES I.D.	O.D. OF PIPE IN INCHES	TRENCH WIDTH IN INCHES	TRENCH WIDTH IN FEET	CLASS 1 EMBEDMENT CRUSHED STONE	CLASS 2 EMBEDMENT CRUSHED STONE	CLASS 3 EMBEDMENT CONCRETE	CONCRETE ENCASEMENT
12	16.00	32	2.67	4.1	6.5	4.8	15.8
15	19.50	36	3.00	4.8	7.8	6.4	19.2
18	23.00	39	3.25	5.7	9.2	8.2	21.2
21	26.50	43	3.58	6.9	11.0	10.2	24.9
24	30.00	46	3.83	8.3	13.1	12.4	28.7
27	33.50	51	4.25	10.3	16.1	14.4	32.8
30	37.00	57	4.75	12.7	20.1	17.0	34.8
33	40.50	62	5.17	15.1	23.8	19.3	39.2
36	44.00	67	5.58	18.0	28.6	22.1	43.8

SIZE OF PIPE IN INCHES	O.D. OF PIPE IN INCHES	TRENCH WIDTH IN INCHES	TRENCH WIDTH IN FEET	CLASS 4 EMBEDMENT CRUSHED STONE	CONCRETE ENCASEMENT
6	6.28	24	2.00	8.0	11.7
8	8.16	24	2.00	8.7	12.4
10	10.20	26	2.18	10.2	14.2
12	12.24	26	2.35	11.7	15.9
15	15.30	31	2.61	14.0	18.8

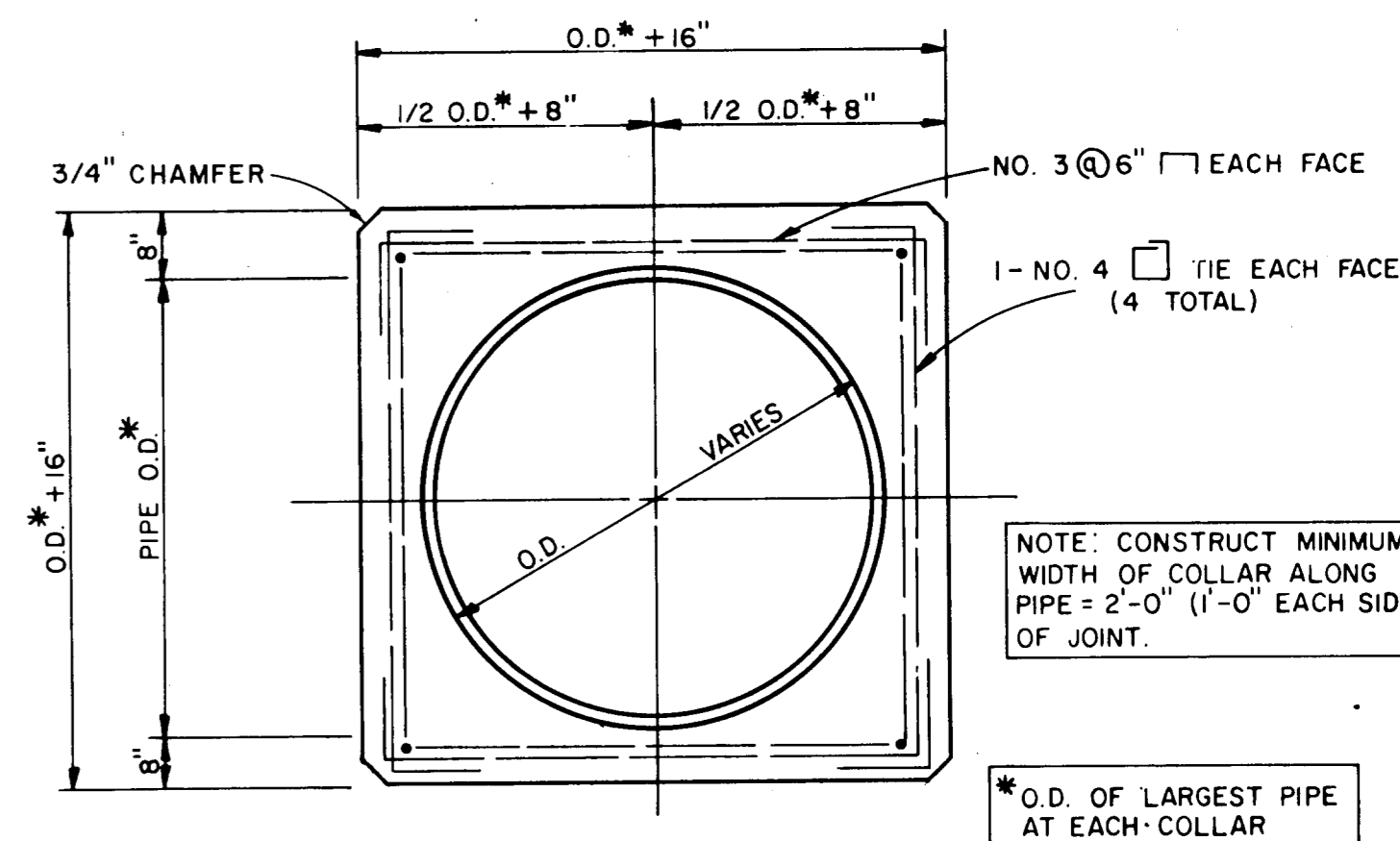
SIZE OF PIPE IN INCHES I.D.	O.D. OF PIPE IN INCHES	TRENCH WIDTH IN INCHES	TRENCH WIDTH IN FEET	CLASS 1 EMBEDMENT CRUSHED STONE	CLASS 2 EMBEDMENT CRUSHED STONE	CLASS 3 EMBEDMENT CONCRETE	CONCRETE ENCASEMENT
8	9.75	26	2.17	2.9	4.3	3.3	10.9
10	12.00	28	2.33	3.3	5.0	3.7	12.5
12	14.25	30	2.50	3.7	5.8	4.3	14.2
15	17.00	36	3.00	4.8	7.8	7.0	17.5
18	21.45	39	3.25	5.6	9.1	8.9	21.0
21	25.00	43	3.58	6.7	11.0	11.1	23.0
24	28.50	46	3.83	8.0	12.9	12.3	26.8
27	32.10	51	4.25	10.0	15.9	14.3	30.8
30	35.60	57	4.75	12.4	19.8	16.8	34.9
33	38.95	61	5.08	14.5	22.9	18.7	37.0
36	42.25	66	5.50	17.0	26.8	21.1	41.5



AERIAL CROSSING DETAIL



AERIAL CROSSING PIER CAP DETAIL
N.T.S.



AERIAL CROSSING CONCRETE COLLAR DETAIL
N.T.S.

NO.	REVISION	BY	DATE
TOWN OF ADDISON, TEXAS DEPARTMENT OF ENGINEERING			
STANDARD CONSTRUCTION DETAILS SANITARY SEWER			
EMBEDMENT-AERIAL CROSSING			
APPROVED		H. WAYNE GINN, P.E.	
DATE MARCH, 1984		SHEET	SD-20

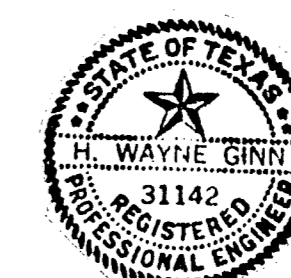


TABLE OF DIMENSIONS AND QUANTITIES FOR TWO TYPE A HEADWALLS

NO. OF PIPES	DIAM. OF PIPES	TABLE OF DIMENSIONS												TOTAL QUANTITIES							
		REINFORCING STEEL FOR TWO HEADWALLS												LBS.	C.Y.						
		BARS A1-A2			BARS E			BARS F1			BARS F2										
1	12"	12"	9"	1'-9"	2'-6"	7'-0"	6'-8"	10'	8'	2'-6"	8'	6'-8"	28'	12'	2'-11"	23'	12'	3'-8"	29'	98	1.48
2	"	"	"	"	"	"	8'-6"	13'	"	"	"	8'-6"	35'	14'	"	27'	14'	3'-4"	34'	117	1.81
3	"	"	"	"	"	"	10'-8"	16'	"	"	"	10'-4"	43'	16'	"	31'	16'	3'-9"	39'	137	2.15
4	"	"	"	"	"	"	12'-6"	18'	"	"	"	12'-2"	51'	18'	"	35'	18'	4'-4"	44'	156	2.48
1	15"	12"	9"	1'-9"	2'-9"	9'-6"	7'-11"	12'	8'	3'-0"	9'	7'-11"	33'	12'	3'-2"	35'	12'	3'-11"	31'	110	1.82
2	"	1'-0"	"	"	"	10'-6"	10'-2"	15'	"	"	"	10'-2"	42'	14'	"	30'	14'	3'-7"	37'	133	2.24
3	"	"	"	"	"	12'-9"	12'-5"	19'	"	"	"	12'-5"	52'	16'	"	34'	16'	4'-2"	42'	156	2.66
4	"	"	"	"	"	15'-0"	14'-8"	22'	"	"	"	14'-8"	61'	18'	"	38'	18'	4'-7"	47'	177	3.09
1	18"	12"	9"	1'-9"	3'-0"	9'-6"	9'-2"	14'	8'	3'-6"	11'	9'-2"	38'	20'	4'-2"	46'	20'	4'-2"	56'	165	2.19
2	"	1'-2"	"	"	"	12'-2"	11'-10"	18'	"	"	"	11'-10"	49'	22'	"	50'	22'	4'-6"	61'	189	2.70
3	"	"	"	"	"	14'-10"	14'-6"	22'	"	"	"	14'-6"	60'	24'	"	55'	24'	5'-2"	67'	215	3.21
4	"	"	"	"	"	17'-6"	17'-2"	26'	"	"	"	17'-2"	72'	26'	"	59'	26'	5'-7"	72'	240	3.73
1	24"	12"	9"	2'-0"	3'-6"	12'-0"	11'-8"	18'	8'	4'-6"	14'	11'-8"	49'	24'	3'-11"	63'	24'	4'-11"	79'	223	3.17
2	"	1'-5"	"	"	"	15'-1"	15'-1"	23'	"	"	"	15'-1"	63'	26'	"	68'	26'	5'-2"	85'	253	3.89
3	"	"	"	"	"	18'-10"	18'-6"	28'	"	"	"	18'-6"	77'	28'	"	73'	28'	5'-7"	92'	284	4.62
4	"	"	"	"	"	22'-3"	21'-11"	33'	"	"	"	21'-11"	91'	30'	"	79'	30'	6'-2"	99'	316	5.35
1	30"	12"	9"	2'-3"	4'-0"	14'-6"	14'-2"	21'	16'	5'-6"	33'	14'-2"	59'	28'	4'-5"	83'	28'	5'-8"	96'	302	4.31
2	"	1'-8"	"	"	"	18'-8"	18'-4"	28'	"	"	"	18'-4"	76'	32'	"	94'	32'	6'-3"	121'	352	5.28
3	"	"	"	"	"	22'-10"	22'-6"	34'	"	"	"	22'-6"	94'	36'	"	108'	36'	6'-8"	136'	403	6.26
4	"	"	"	"	"	27'-0"	26'-8"	40'	"	"	"	26'-8"	111'	40'	"	118'	40'	7'-3"	152'	454	7.24
1	36"	12"	12"	2'-6"	4'-6"	17'-0"	16'-8"	25'	16'	6'-6"	39'	16'-8"	70'	32'	5'-2"	111'	32'	6'-8"	143'	388	6.40
2	"	1'-11"	"	"	"	21'-11"	21'-7"	32'	"	"	"	21'-7"	90'	36'	"	124'	36'	7'-3"	160'	445	7.89
3	"	"	"	"	"	26'-10"	26'-6"	40'	"	"	"	26'-6"	111'	40'	"	138'	40'	7'-8"	178'	506	9.37
4	"	"	"	"	"	31'-9"	31'-5"	47'	"	"	"	31'-5"	131'	44'	"	152'	44'	8'-3"	196'	565	10.85
1	42"	12"	12"	2'-9"	5'-0"	19'-6"	19'-2"	29'	16'	7'-6"	45'	19'-2"	80'	36'	5'-8"	136'	36'	7'-5"	178'	468	8.10
2	"	2'-2"	"	"	"	25'-2"	24'-10"	37'	"	"	"	24'-10"	104'	40'	"	152'	40'	8'-0"	198'	536	9.96
3	"	"	"	"	"	30'-10"	30'-6"	46'	"	"	"	30'-6"	127'	44'	"	167'	44'	8'-5"	218'	603	11.80
4	"	"	"	"	"	36'-6"	36'-2"	54'	"	"	"	36'-2"	151'	48'	"	182'	48'	9'-0"	238'	670	13.68
1	48"	15"	12"	3'-0"	5'-9"	23'-0"	22'-8"	34'	24'	8'-9"	79'	22'-8"	95'	40'	6'-5"	268'	40'	8'-5"	351'	827	10.74
2	"	2'-5"	"	"	"	29'-5"	29'-1"	44'	"	"	"	29'-1"	121'	44'	"	295'	44'	9'-0"	386'	925	13.08
3	"	"	"	"	"	35'-10"	35'-6"	53'	"	"	"	35'-6"	148'	48'	"	321'	48'	9'-5"	422'	1023	15.43
4	"	"	"	"	"	42'-3"	41'-11"	63'	"	"	"	41'-11"	175'	52'	"	348'	52'	10'-0"	457'	1122	17.77
1	54"	15"	12"	3'-3"	6'-3"	25'-6"	25'-2"	38'	24'	9'-9"	88'	25'-2"	105'	45'	6'-11"	318'	45'	9'-2"	421'	970	12.87
2	"	2'-10"	"	"	"	32'-10"	32'-6"	49'	"	"	"	32'-6"	136'	50'	"	361'	50'	9'-7"	478'	1112	15.77
3	"	"	"	"	"	40'-2"	39'-10"	60'	"	"	"	39'-10"	166'	56'	"	404'	56'	10'-2"	536'	1254	18.66
4	"	"	"	"	"	47'-6"	47'-2"	71'	"	"	"	47'-2"	197'	62'	"	447'	62'	10'-7"	593'	1396	21.55
1	60"	15"	12"	3'-6"	6'-9"	28'-0"	27'-8"	42'	24'	10'-9"	97'	27'-8"	115'	48'	7'-5"	371'	48'	10'-11"	497'	1122	15.20
2	"	3'-0"	"	"	"	36'-0"	35'-8"	54'	"	"	"	35'-8"	149'	54'	"	418'	54'	11'-0"	559'	1277	18.55
3	"	"	"	"	"	44'-0"	43'-8"	66'	"	"	"	43'-8"	182'	60'	"	464'	60'	11'-5"	621'	1430	21.89
4	"	"	"	"	"	52'-0"	51'-8"	78'	"	"	"	51'-8"	216'	66'	"	511'	66'	12'-0"	683'	1585	25.24
1	66"	15"	12"	3'-9"	7'-3"	30'-6"	30'-2"	45'	32'	11'-9"	141'	30'-2"	126'	52'	7'-11"	430'	52'	10'-8"	579'	1321	17.72
2	"	3'-1"	"	"	"	39'-1"	38'-9"	58'	"	"	"	38'-9"	162'	58'	"	479'	58'	11'-3"	645'	1485	21.49
3	"	"	"	"	"	47'-8"	47'-4"	78'	"	"	"	47'-4"	198'	64'	"	529'	64'	11'-8"	712'	1651	25.27
4	"	"	"	"	"	56'-3"	55'-11"	84'	"	"	"	55'-11"	233'	70'	"	578'	70'	12'-3"	779'	1815	29.05
1	72"	15"	12"	4'-0"	7'-9"	33'-0"	32'-8"	49'	32'	12'-9"	153'	32'-8"	136'	56'	8'-5"	492'	56'	11'-5"	667'	1497	20.42
2	"	3'-2"	"	"	"	42'-2"	41'-10"	63'	"	"	"	41'-10"	175'	62'	"	544'	62'	12'-0"	738'	1673	24.66
3	"	"	"	"	"	51'-4"	51'-0"	77'	"	"	"	51'-0"	213'	68'	"	597'	68'	12'-5"	810'	1850	28.89
4	"	"	"	"	"	60'-6"	60'-2"	91'	"	"	"	60'-2"	251'	74'	"	650'	74'	13'-0"	881'	2025	33.12

TABLE OF DIMENSIONS AND QUANTITIES FOR TWO TYPE B HEADWALLS

NO. OF PIPES	DIAM. OF PIPES	TABLE OF DIMENSIONS												TOTAL QUANTITIES																							
		REINFORCING STEEL AND QUANTITIES FOR TWO HEADWALLS												LBS.	C.Y.																						
		BARS A1-Ax			BARS B			BARS B1-Bx			BARS C																										
1	12"	12"	10"	2'-4"	2'-0"	1'-0"	2'-4"	2'	2'-8"	4'	6'	2'-6"	6'	4'	5'	2'-0"	17'	8'	2'-2"	12'	2'-8"	4'	8'	5'	4'	2'-11"	8'	1'-8"	7'	68	52						
2	"	"	"	"	"	"	4'-2"	"	4'-6"	6'	8'	4'-6"	8'	8'	3'-10"	32'	12'	"	"	"	17'	4'-6"	7'	"	"	"	"	"	"	95	82						
3	"	"	"	"	"	"	6'-0"	"	6'-4"	8'	10'	6'-4"	10'	9'	5'-8"	47'	16'	"	"	"	23'	6'-4"	10'	"	"	"	"	"	"	122	111						
4	"	"	"	"	"	"	7'-10"	"	8'-2"	11'	12'	8'-2"	12'	11'	7'-6"	63'	20'	"	"	"	29'	8'-2"	12'	"	"	"	"	"	"	151	140						
1	15"	12"	10"	2'-7"	2'-3"	1'-6"	2'-7"	2'	3'-0"	8'	6'	3'-0"	7'	4'	1'-10"	3'	8'	11'	"	"	"	2'-3"	19'	8'	1'-3"	10'	8'	3'-0"	16'	2'-3"	9'	101	75				
2	"	1'-0"	"	"	"	"	4'-10"	"	5'-5"	14'	8'	5'-5"	14'	9'	4'-6"	38'	12'	"	"	"	19'	5'-10"	9'	"	"	"	"	"	"	138	116						
3	"	"	"	"	"	"	7'-8"	"	7'-6"	20'	10'	7'-6"	20'	11'	6'-9"	56'	16'	"	"	"	26'	8'-1"	12'	"	"	"	"	"	"	174	157						
4	"	"	"	"	"	"	9'-4"	"	9'-1"	26'	14'	9'-1"	26'	16'	9'-0"	75'	20'	"	"	"	32'	10'-4"	16'	"	"	"	"	"	"	214	198						
1	18"	12"	10"	2'-11"	2'-6"	2'-0"	2'-11"	2'	3'-10"	10'	6'	3'-6"	8'	4'	1'-10"	3'	8'	11'	4'	1'-0"	2'	2'-7"	22'	8'	2'-8"	14'	4'-5"	7'	1'-10"	15'	12'	3'-2"	25'	2'-11"	12'	129	100
2	"	1'-2"	"	"	"	"	5'-7"	"	6'-6"	17'	8'	6'-6"	17'	11'	5'-3"	44'	12'	"	"	"	21'	7'-1"	11'	"	"	"	"	"	"	"	172	155					
3	"	"	"	"	"	"	8'-3"	"	9'-2"	25'	12'	9'-2"	25'	16'	7'-11"	66'	16'	"	"	"	29'	9'-9"	15'	"	"	"	"	"	"	"	219	211					
4	"	"	"	"	"	"	10'-11"	"	11'-10"	32'	16'	11'-10"	32'	21'	10'-7"	88'	20'	"	"	"	36'	12'-5"	19'	"	"	"	"	"	"	"	264	265					
1	24"																																				