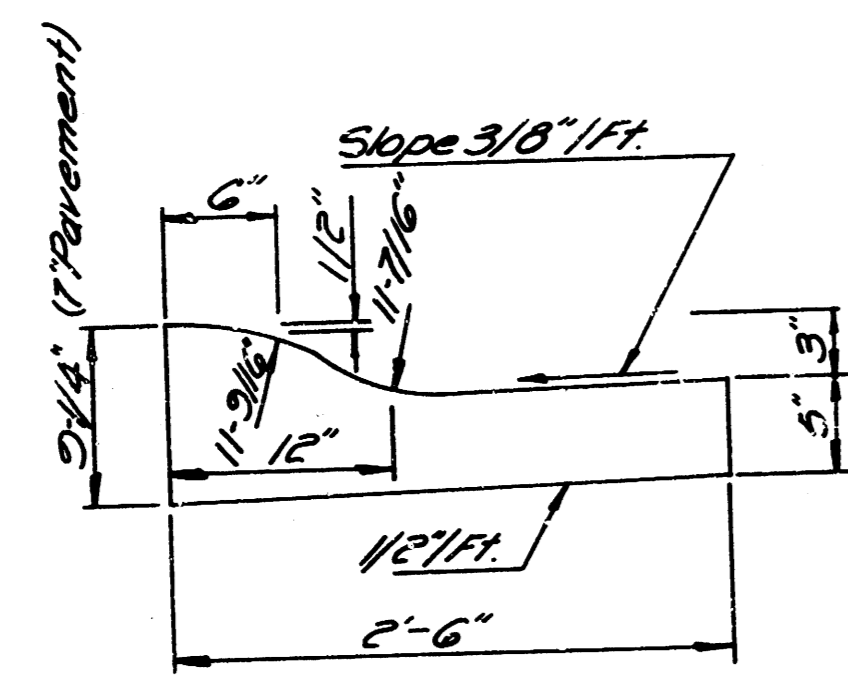
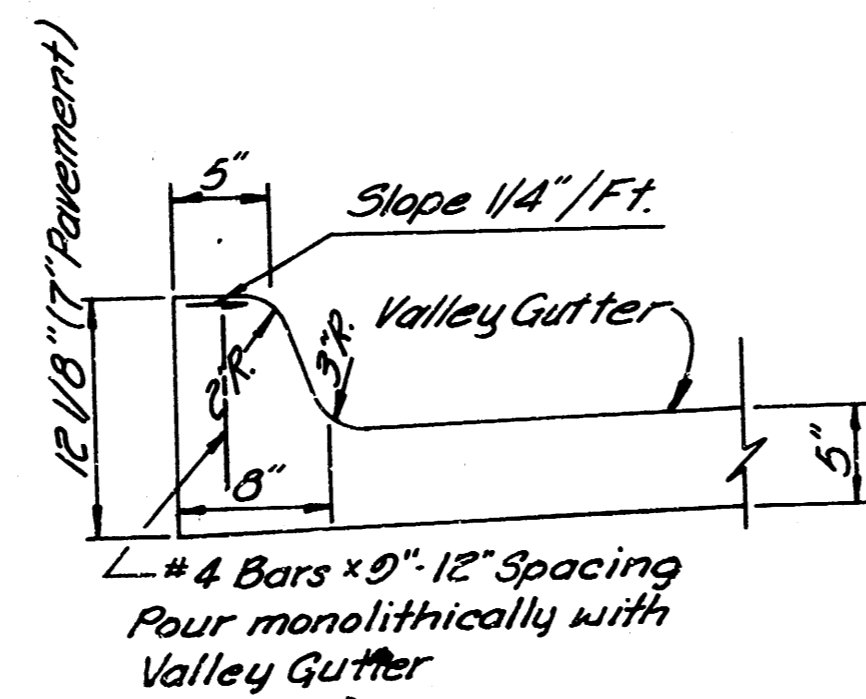


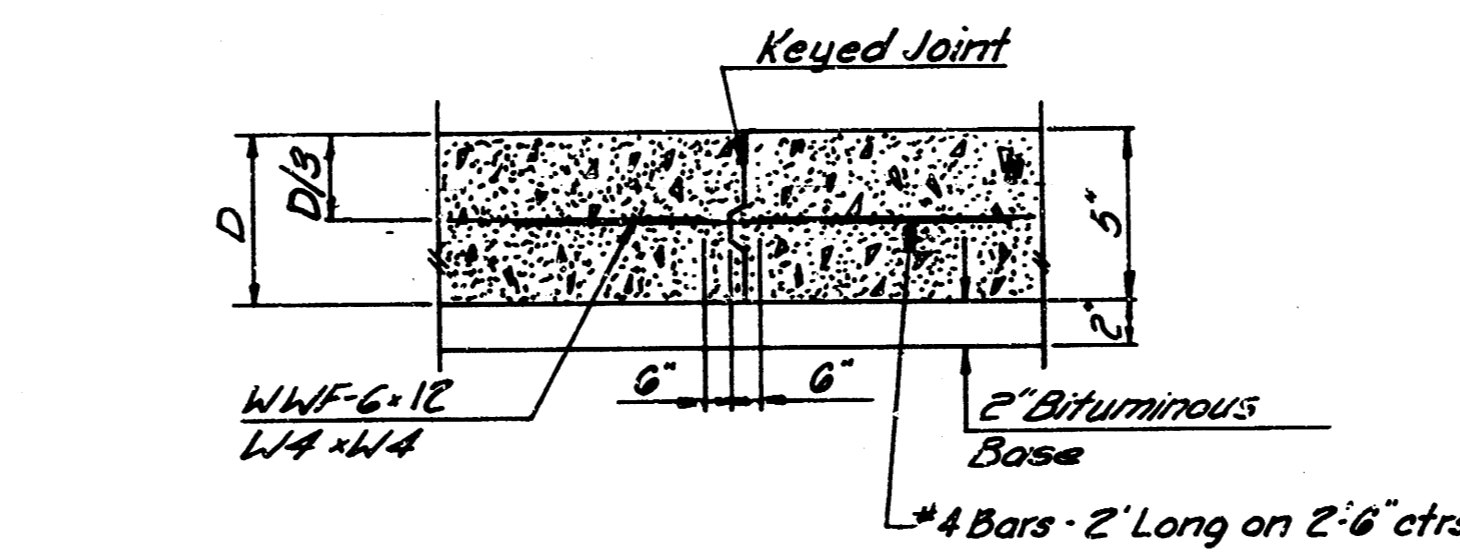
TYPICAL SECTION
21' ASPHALTIC CONCRETE PAVEMENT WITH BITUMINOUS BASE



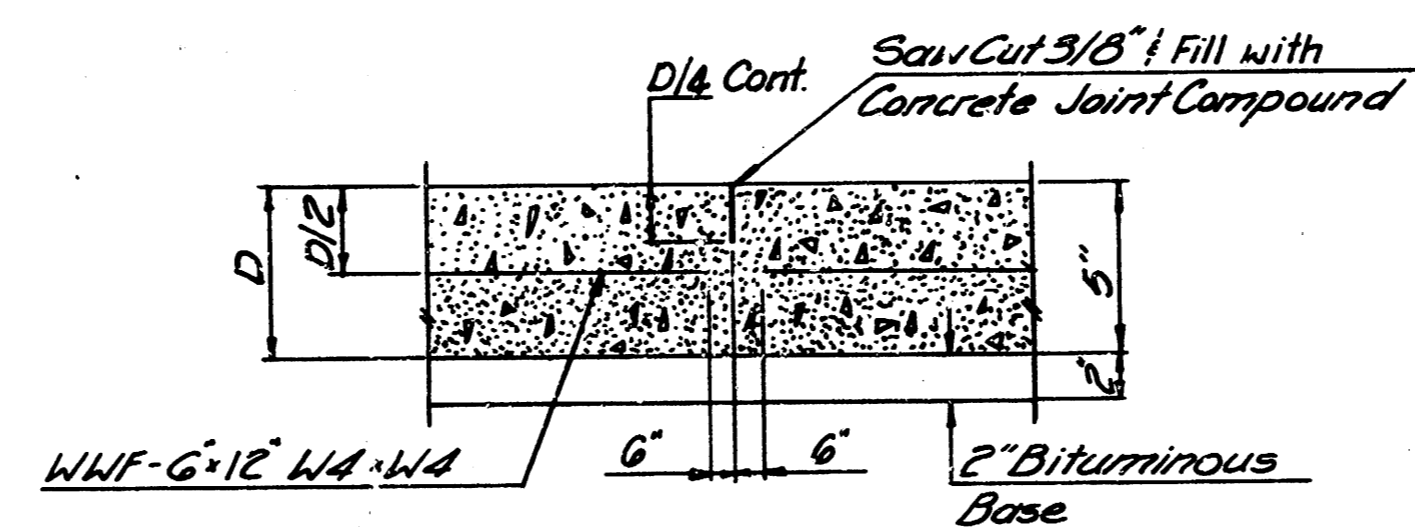
ROLL TYPE CURB & GUTTER DETAIL



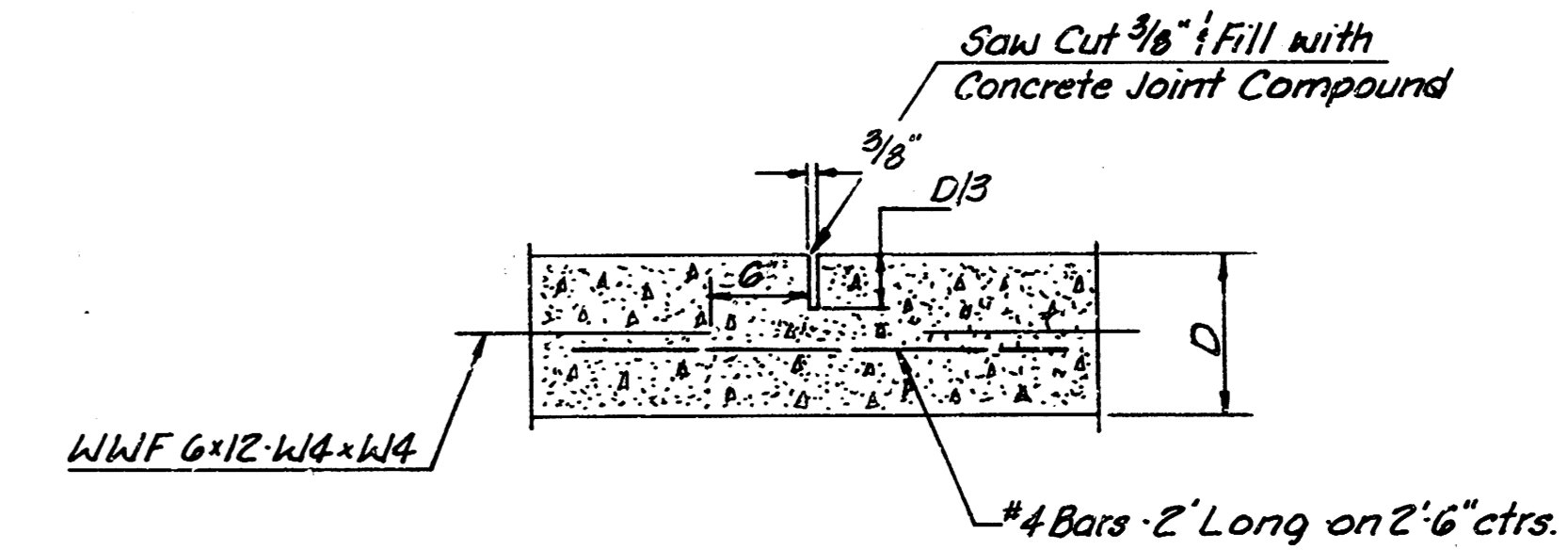
STANDARD MONOLITHIC CURB & GUTTER DETAIL



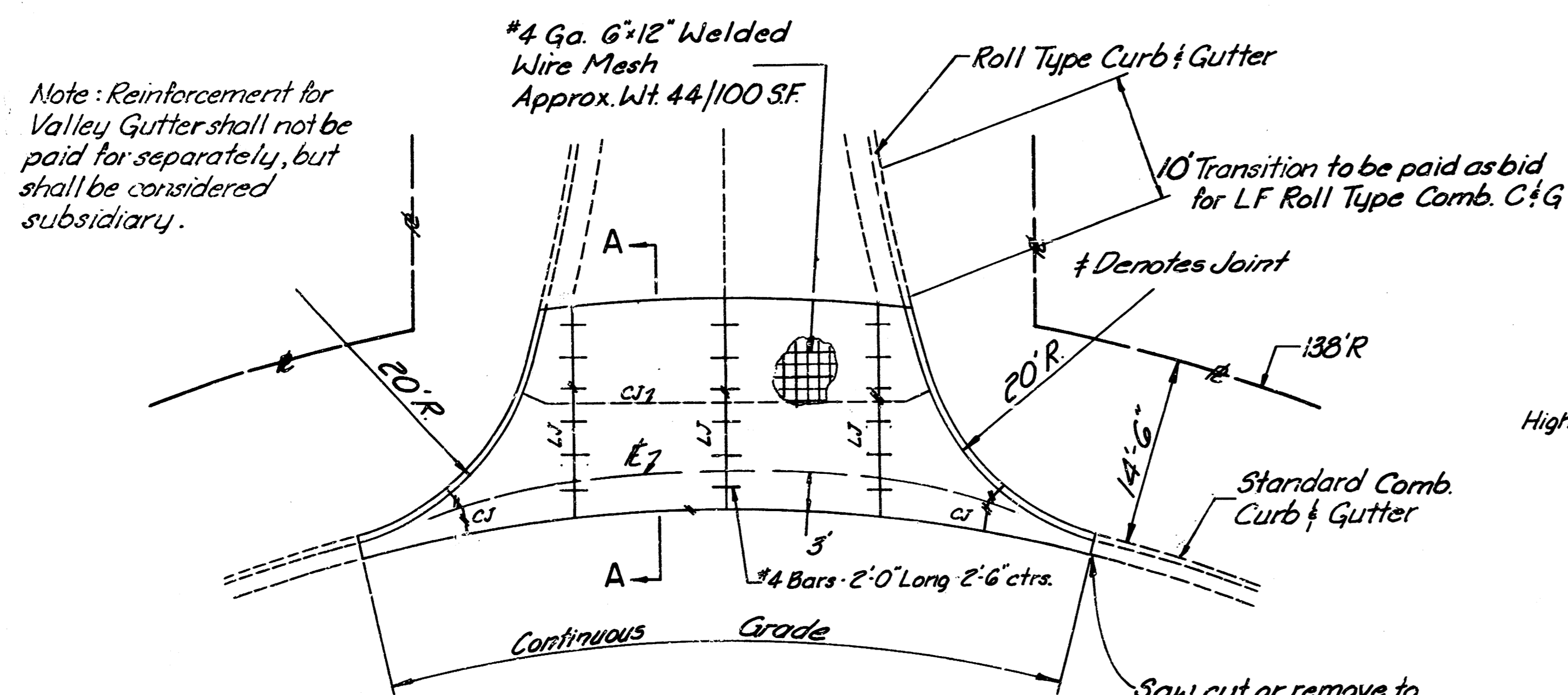
LONGITUDINAL CONSTRUCTION JOINT



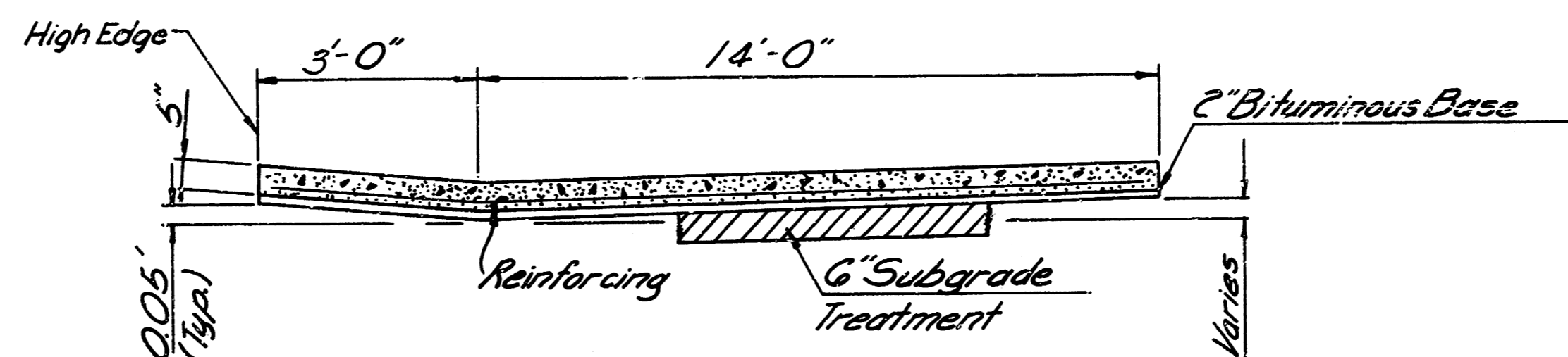
SAWED CONTRACTION JOINT



SAWED LONGITUDINAL JOINT



VALLEY GUTTER DETAIL
5" Concrete w/ 2" Bituminous Base



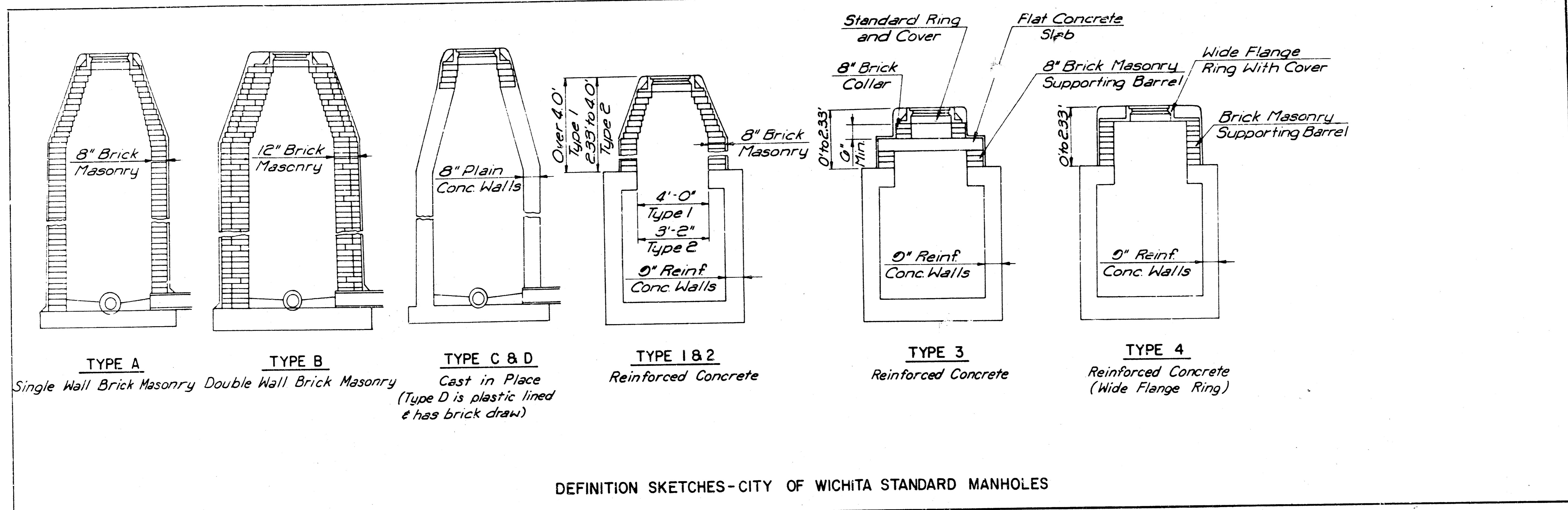
SECTION A-A

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS TO COMPLY WITH CITY OF WICHITA SPECIFICATIONS AND STANDARDS.
2. ALL ELEVATIONS SHOWN ARE CITY OF WICHITA DATUM (USGS-1187.4 = CITY DATUM).
3. CONTRACTOR SHALL COORDINATE ALL WORK WITH SANITARY AND WATER CONTRACTORS.
4. AT LEAST 24 HOURS PRIOR TO BEGINNING EXCAVATION (EXCLUDING WEEKENDS AND HOLIDAYS) THE CONTRACTOR SHALL CONTACT THE UTILITY LOCATION SERVICE "KAN-DIG-IT" AT (316) 267-2889 TO REQUEST THE FOLLOWING UTILITY COMPANIES TO LOCATE ANY EXISTING LINES WITHIN THE PROJECT AREA: GAS SERVICE COMPANY, K.G. & E., SOUTHWESTERN BELL TELEPHONE COMPANY, THE WICHITA WATER DEPARTMENT, AIR CAPITAL CABLEVISION, AND ARKLA GAS COMPANY.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR SHALL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR OR A LICENSED PROFESSIONAL ENGINEER IN ACCORDANCE WITH STATE LAWS. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO THE OTHER ITEMS OF WORK.
6. THE TOPS OF INLETS AND MANHOLES AS NOTED ON THE PLANS MAY VARY SO TO MEET PROPOSED TOP-OF-CURB ELEVATIONS OR PAVEMENT ELEVATIONS. THE FIELD ENGINEER SHALL LOCATE INLETS AND MANHOLES WITH REFERENCE TO PROPOSED PAVING PLANS OF THE PERTINENT STREETS.
7. ALL CONCRETE SHALL BE STANDARD PAVING MIX CONCRETE UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL AVOID UNCOVERING EXISTING WATERLINES UNLESS ABSOLUTELY NECESSARY. UNCOVERING SHALL BE DONE ONLY IN THE PRESENCE OF A WATER DEPARTMENT ENGINEER.
9. EXCESS TRENCH MATERIAL SHALL BE WASTED AS DIRECTED BY THE CITY ENGINEER. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.
10. POND SHAPING AT HEADWALL SHALL BE PERFORMED AS DIRECTED BY THE ENGINEER AND SHALL BE SUBSIDIARY TO THE PROJECT.
11. THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, ENTRANCES AND BANK LINES TO THEIR ORIGINAL SLOPES AND GRADES EXCEPT WHERE INDICATED OTHERWISE IN THE PLANS.
12. A TACK COAT OF EMULSIFIED ASPHALT (SS-1H) SHALL BE APPLIED AT AN APPROXIMATE RATE 0.05 GALLONS PER SQUARE YARD BETWEEN LIFTS OF ASPHALTIC MATERIALS WHEN ORDERED BY THE ENGINEER. TACK COAT WILL NOT BE PAID FOR DIRECTLY AND SHALL BE CONSIDERED AS SUBSIDIARY TO PRICE BID FOR ASPHALTIC PAVEMENT.
13. BITUMINOUS BASE AND ASPHALTIC CONCRETE WEARING SURFACE SHALL BE PLACED WITH A LAYDOWN MACHINE HAVING AUTOMATIC CONTROLS FOR CROWN AND GRADE. CONSTRUCTION JOINTS IN EACH LIFT SHALL BE STAGGERED A MINIMUM DISTANCE OF ONE FOOT WITH JOINTS IN PRECEDING LIFTS AND SUCH THAT A JOINT WILL BE CONSTRUCTED ON THE PAVEMENT CENTERLINE IN THE TOP LIFT.
14. THE A.C. PAVEMENT BETWEEN CURB AND GUTTER SHALL BE PAID AS SQUARE YARDS 7" A.C. PAVEMENT (5" BITUMINOUS BASE). THE BITUMINOUS BASE UNDER THE COMBINED CURB AND GUTTER SHALL BE PAID AS SQUARE YARDS 2-1/2" BITUMINOUS BASE.
15. CONTRACTION JOINTS MAY BE CONSTRUCTED IN INTEGRAL CURB BY SAWING WITH AN APPROVED CONCRETE SAW. THE SAW SHALL EXTEND THROUGH THE CURB TO THE PAVEMENT. SAWED CONTRACTION JOINTS SHALL HAVE A MAXIMUM SPACING OF 10'.

	No.	Revision	By	Date
	CITY OF WICHITA, KANSAS BRIARWOOD ESTATES 3RD ADDITION TYPICAL SECTION & VALLEY GUTTER DETAILS M.E. LINDEBAK, P.E. - CITY ENGINEER C. of W. Proj. No. 472-76-245-81366-000-000-001 PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS			
	Designed by	KLR, MDS	Job No.	34-84012-1120
	Drawn by	SM	Date	April, 1984
			Sht.	2 of 8

FHWA REGION NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS		19		



GENERAL NOTES:

MANHOLES DESIGNATED FOR ADJUSTMENT SHALL BE RAISED OR LOWERED AS NECESSARY SUCH THAT THE CASTING WILL CONFORM TO THE REQUIRED ELEVATION. TOPS OF STORM OR SANITARY SEWER MANHOLES LOCATED IN PAVED AREAS SHALL BE SET FLUSH WITH THE PAVEMENT. TOPS OF SANITARY SEWER MANHOLES LOCATED IN GRASSY AREAS SHALL BE SET FOUR TENTHS OF ONE FOOT (0.40') HIGHER THAN THE FINISHED GRADE. TOPS OF STORM SEWER MANHOLES LOCATED IN GRASSY AREAS SHALL BE SET FLUSH WITH THE FINISHED GRADE. TOPS OF STORM OR SANITARY SEWER MANHOLES LOCATED IN UNPAVED TRAVEL WAYS SHALL BE SET SIX INCHES (6") BELOW FINISHED GRADE.

THE NEW TOP ELEVATION SPECIFIED ON THE PLANS WAS ESTABLISHED FROM THE BEST INFORMATION AVAILABLE AT THE TIME THE PLANS WERE PREPARED. THE ACTUAL TOP ELEVATION SHALL BE VERIFIED OR ESTABLISHED, IN THE FIELD, BY THE ENGINEER AT THE TIME THE ADJUSTMENT IS BEING MADE. NO ADJUSTMENT IN BID PRICE SHALL BE MADE FOR A CHANGE IN TOP ELEVATION DEEMED NECESSARY BY THE ENGINEER.

THE ADJUSTMENT OF ALL MANHOLES WHICH ARE TO BE LOWERED OR RAISED TWELVE INCHES (12") OR LESS SHALL BE ACCOMPLISHED BY REMOVING THE EXISTING RING AND COVER AND REMOVING OR ADDING THE APPROPRIATE COURSE(S) OF BRICK AND REPLACEMENT OF THE RING AND COVER. ALL WORK SHALL BE IN ACCORDANCE WITH NOTES BELOW.

ALL UPWARD OR DOWNWARD ADJUSTMENTS IN EXCESS OF TWELVE INCHES (12") SHALL BE IN ACCORDANCE WITH DETAILS AND NOTES SHOWN ON THIS SHEET.

ALL CASTINGS (RINGS AND COVERS) SHALL BE CAREFULLY REMOVED, CLEANED AND REINSTALLED IN THE ADJUSTMENT. WHEN THE PLANS CALL FOR NEW OR DIFFERENT CASTINGS, THE EXISTING CASTINGS SHALL BE CAREFULLY REMOVED, CLEANED AND STOCKPILED ON THE RIGHT-OF-WAY FOR REMOVAL BY THE OWNER.

WHEN THE PLANS CALL FOR NEW CASTINGS, THEY SHALL CONFORM TO THE SHAPE AND DIMENSIONS AS SHOWN ON THE PLANS. CASTINGS SHALL BE MADE OF GOOD QUALITY GRAY IRON, FREE FROM CRACKS, HOLES, SWELLS AND COLD SHOTS. CASTINGS SHALL CONFORM TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. MANHOLE CASTINGS SHALL BE COATED WITH A HOT ASPHALTUM VARNISH COATING APPLIED AT THE FOUNDRY. SEPARATE PAYMENT WILL NOT BE MADE FOR NEW CASTINGS REQUIRED AS PART OF MANHOLE ADJUSTMENTS. THEIR COST SHALL BE CONSIDERED A PART OF THE UNIT PRICE BID PER EACH FOR "ADJUSTMENT OF MANHOLES."

NEW BRICK USED IN THE ADJUSTMENT OF MANHOLES SHALL CONFORM TO THE REQUIREMENTS SPECIFIED FOR GRADE MS IN A.S.T.M. C 32-73 OR GRADE SW IN A.S.T.M. C 62-69. BRICK SHALL HAVE NOMINAL DIMENSIONS WHICH WILL PERMIT THE ADJUSTED PORTION TO MATCH THE DIMENSIONS OF THE WALLS OF THE STRUCTURE BEING ADJUSTED. UNDAUNTED EXISTING BRICK, SALVAGED AS PART OF EXISTING MANHOLE ADJUSTMENT(S), FOR THIS PROJECT, MAY BE REUSED IN COMPLETING ADJUSTMENT(S) IF THOROUGHLY CLEANED OF EXISTING MORTAR AND IF APPROVED AS TO SUITABILITY BY THE ENGINEER.

ALL BRICK SHALL BE LAID WITH SHOVE JOINTS. PORTLAND CEMENT MORTAR, AS SPECIFIED BELOW, SHALL BE USED IN LAYING THE BRICK. THE ENTIRE OUTSIDE SURFACE OF THE MANHOLES, ADJUSTED WITH BRICK, SHALL BE PLASTERED WITH A MINIMUM OF ONE INCH (1") OF THE CEMENT MORTAR. ALL CONTACT SURFACES BETWEEN BRICK MASONRY, FLAT CONCRETE SLABS (IF REQUIRED), AND CAST IRON RINGS SHALL BE SEALED WITH A LAYER OF THE CEMENT MORTAR. BACKFILL OF ADJUSTED SECTIONS SHALL NOT BE ACCOMPLISHED UNTIL THE MORTAR HAS CURED FOR TWENTY-FOUR (24) HOURS.

MORTAR USED IN ADJUSTMENT OF MANHOLES SHALL CONTAIN EIGHT (8) SACKS OF PORTLAND CEMENT PER CUBIC YARD, FINE AGGREGATE, AND SUFFICIENT WATER TO PRODUCE A WORKABLE AND PLASTIC MIX OF SUCH CONSISTENCY AS TO PERFORM PROPERLY THE FUNCTION OF MASONRY CONSTRUCTION.

CEMENT USED FOR MORTAR SHALL BE TYPE I COMPLYING WITH THE REQUIREMENTS OF THE LATEST REVISION OF A.S.T.M. DESIGNATION C-150.

FINE AGGREGATE USED FOR MORTAR SHALL MEET THE REQUIREMENTS FOR TYPE FA-A, DIVISION 1102, OF THE "STANDARD SPECIFICATIONS FOR STATE ROAD AND BRIDGE CONSTRUCTION," KANSAS DEPARTMENT OF TRANSPORTATION, 1980 EDITION.

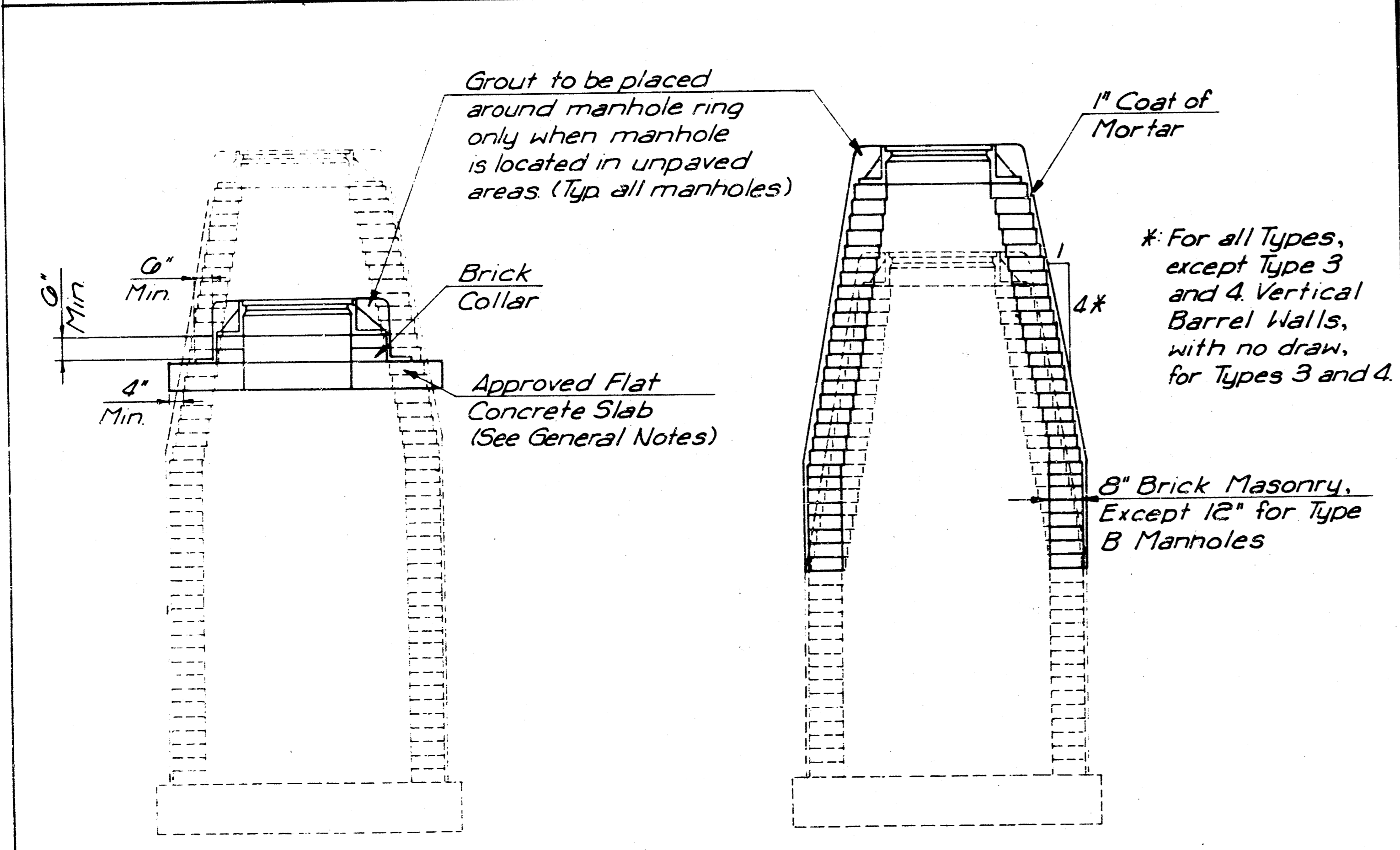
WATER USED FOR MORTAR SHALL MEET THE REQUIREMENTS OF DIVISION 2401, OF THE MENTIONED STANDARD SPECIFICATIONS.

AN APPROVED TYPE OF FLAT CONCRETE SLAB, CONFORMING TO THE REQUIREMENTS OF A.S.T.M. C-478, SHALL BE USED TO SUPPORT THE MANHOLE RING AND COVER WHERE IT IS NECESSARY TO LOWER MANHOLES MORE THAN TWELVE INCHES (12"). ALL SURFACES OF THE FLAT CONCRETE SLAB, FOR SANITARY SEWER MANHOLES, WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE PROTECTED BY A PLASTIC LINING. A MINIMUM SIX INCH (6") BRICK COLLAR CONFORMING TO THE SAME TYPE OF CONSTRUCTION AS SPECIFIED ABOVE SHALL BE INSTALLED BETWEEN THE MANHOLE RING AND THE FLAT CONCRETE SLAB TO FACILITATE MINOR ADJUSTMENTS IN ELEVATION.

PLASTIC LINING REQUIRED FOR FLAT CONCRETE SLABS, TO BE PLACED IN CONNECTION WITH THE ADJUSTMENT OF SANITARY SEWER MANHOLES, MAY BE AMER-PLATE T-LOCK LINER PLATE, B.F. GOODRICH LOK-RIB KORSEAL, OR AN APPROVED EQUAL. THE PLASTIC LINING MANUFACTURER'S RECOMMENDATIONS FOR INSTALLING, SEALING JOINTS, TESTING AND INSPECTION OF THE LINING SHALL BE CONSIDERED AS INCORPORATED IN AND FORMING A PART OF THESE SPECIFICATIONS. THREE (3) COPIES OF THE PLASTIC LINING MANUFACTURER'S RECOMMENDATIONS FOR LINING INSTALLATION SHALL BE FURNISHED TO THE ENGINEER FOR APPROVAL PRIOR TO THE FABRICATION OF ANY FLAT SLABS REQUIRING PLASTIC LINING.

"ADJUSTMENT OF MANHOLES" SHALL BE MEASURED AS A UNIT FOR THE ADJUSTMENT OF A SINGLE STRUCTURE AND NO MEASUREMENT OF THE SEPARATE ITEMS SUCH AS EXCAVATION, BRICK, FLAT CONCRETE SLABS, CAST IRON OR BACKFILL WILL BE MADE. THE AMOUNT OF COMPLETED AND ACCEPTED WORK, MEASURED AS PROVIDED ABOVE, SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER UNIT FOR "ADJUSTMENT OF MANHOLES." SAID PRICE BID SHALL BE FULL PAYMENT FOR FURNISHING ALL MATERIALS (INCLUDING NEW CASTINGS WHEN CALLED FOR ON THE PLANS), FOR ALL EXCAVATION, BACKFILLING, AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

DEFINITION SKETCHES-CITY OF WICHITA STANDARD MANHOLES



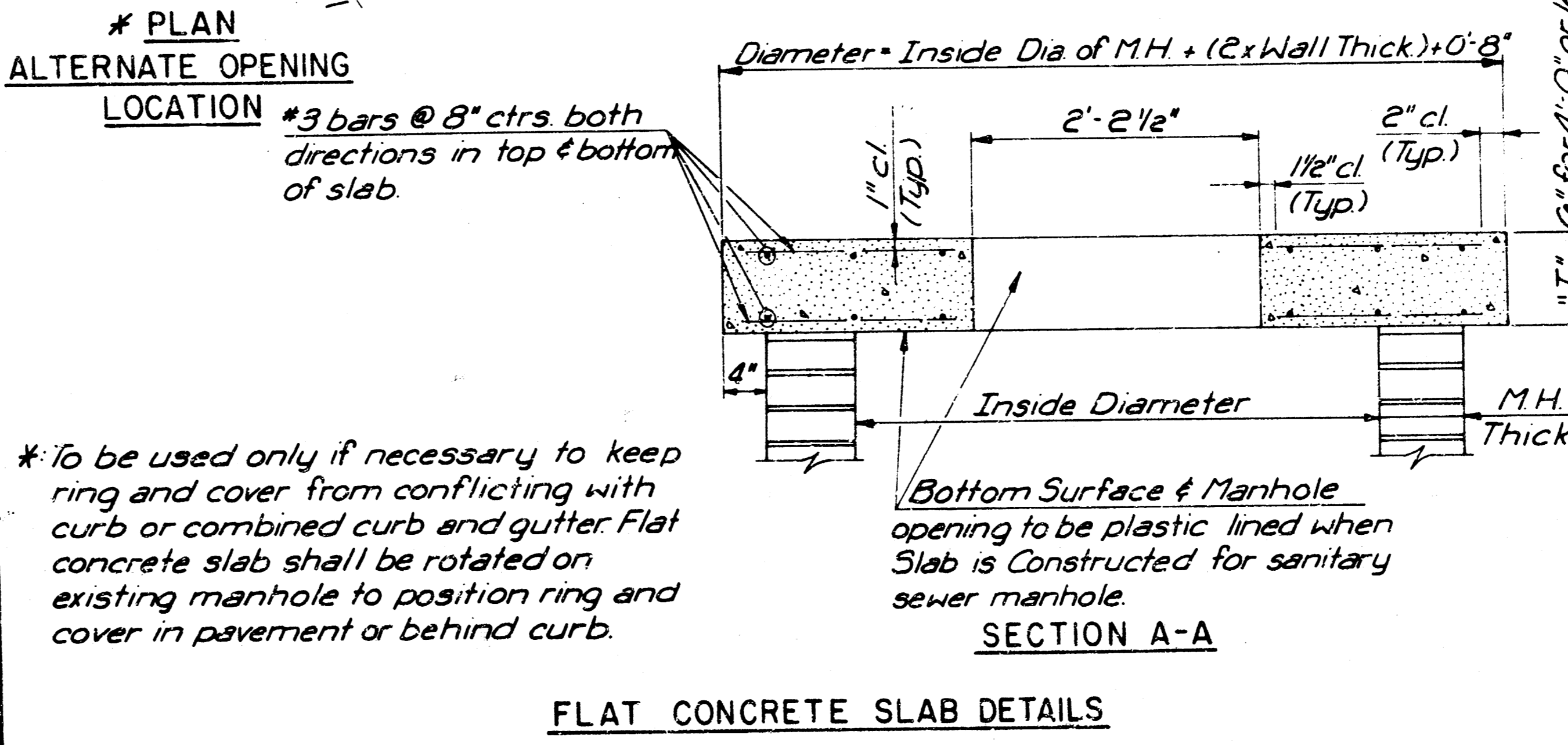
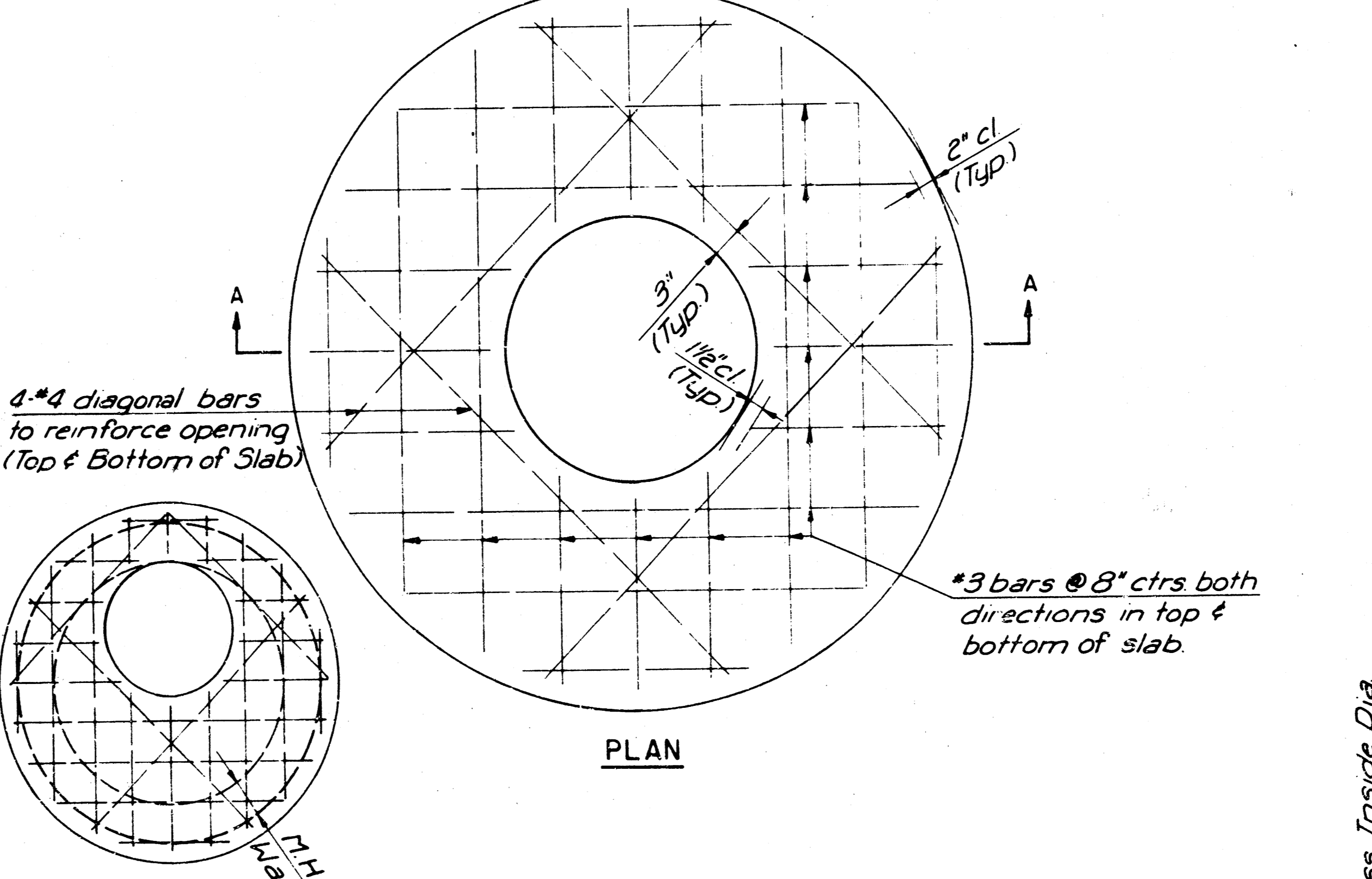
DOWNWARD ADJUSTMENT (GREATER THAN 12")
All Types

THE APPROPRIATE PORTIONS OF THE DRAW AND BARREL OF TYPE A, B, C, D, 1 AND 2 MANHOLES SHALL BE REMOVED. A FLAT CONCRETE SLAB SHALL BE PLACED AND THE RING AND COVER RESET. ALL WORK AND MATERIALS SHALL CONFORM TO THE DETAILS SHOWN AND THE GENERAL NOTES.

COURSES OF BRICK BARREL SUPPORTING THE WIDE FLANGE RING FOR TYPE 4 MANHOLES AND FLAT CONCRETE SLAB FOR TYPE 3 MANHOLES SHALL BE REMOVED AS NECESSARY PRIOR TO RESETTING THE WIDE FLANGE RING OR FLAT CONCRETE SLAB AND RING. ALL WORK AND MATERIALS SHALL CONFORM TO THE DETAILS SHOWN AND THE GENERAL NOTES.

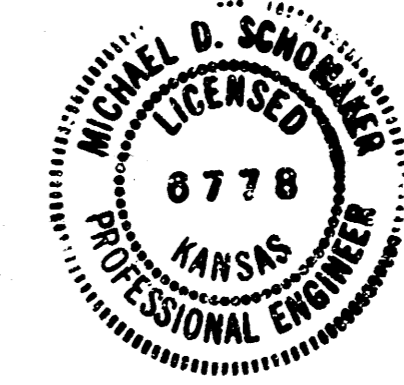
UPWARD ADJUSTMENT (GREATER THAN 12")
All Types

THE ENTIRE DRAW OF TYPES A, B, C, D, 1 AND 2 MANHOLES SHALL BE REMOVED, THE MANHOLE BARREL RAISED THE APPROPRIATE AMOUNT, A NEW DRAW CONSTRUCTED, AND THE RING AND COVER RESET. THE UPPER PORTION OF TYPE 3 MANHOLES SHALL BE REMOVED TO THE BOTTOM OF THE FLAT CONCRETE SLAB. THE BRICK MASONRY BARREL SUPPORTING THE SLAB SHALL BE RAISED THE APPROPRIATE AMOUNT, AND THE SLAB AND RING AND COVER RESET. THE WIDE FLANGE RING AND COVER OF TYPE 4 MANHOLES SHALL BE REMOVED, THE BRICK MASONRY BARREL SUPPORTING THE RING SHALL BE RAISED THE APPROPRIATE AMOUNT AND THE RING AND COVER RESET. ALL WORK REQUIRED FOR A GREATER THAN TWELVE INCH (12") UPWARD ADJUSTMENT OF ANY MANHOLE SHALL BE ACCOMPLISHED WITH BRICK MASONRY IN ACCORDANCE WITH THE DETAILS SHOWN AND THE GENERAL NOTES.



* To be used only if necessary to keep ring and cover from conflicting with curb or combined curb and gutter. Flat concrete slab shall be rotated on existing manhole to position ring and cover in pavement or behind curb.

"T" 10" for 4'-0" or less Inside Dia. 8" for Greater than 4'-0" Inside Dia.



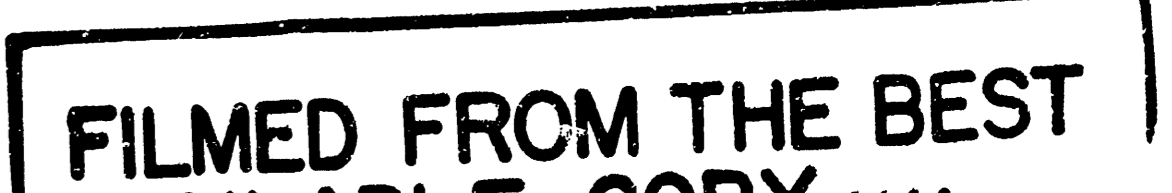
CITY OF WICHITA, KANSAS
BRIARWOOD ESTATES 3RD ADDITION

MANHOLE ADJUSTMENT DETAILS

M. E. LINDBAK, P.E. - CITY ENGINEER
C. of W. Proj. No. 472-76-245-81366-000-000

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by _____ Checked by _____
Drawn by _____ Date _____ Job No. 37



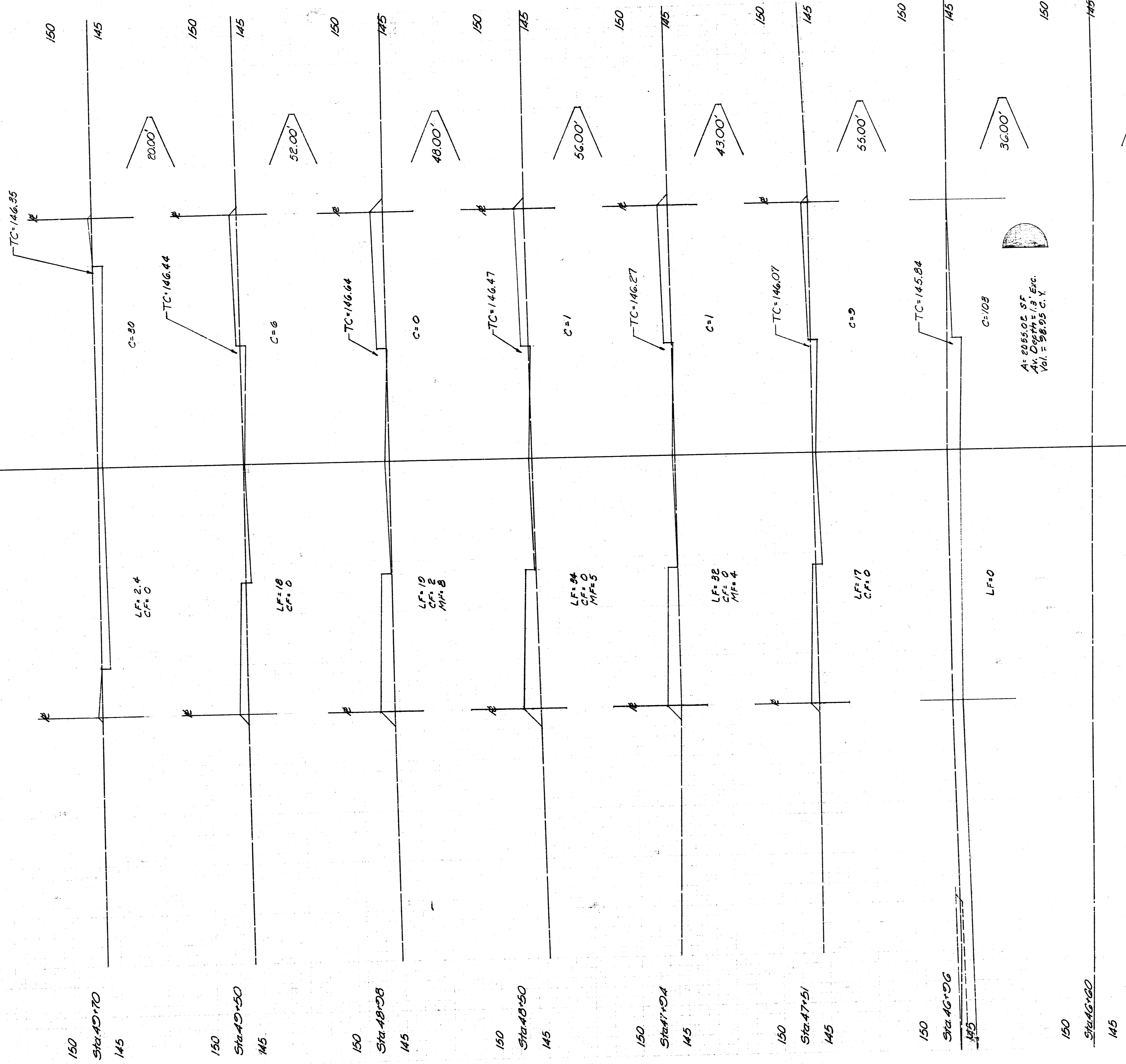
60 55 50 45 40 35 30 25 20 15 10 5 4 5 10 15 20 25 30 35 40 45

Excavation 544 C.Y.
+10% 544
578.40 C.Y.

Compacted Fill 278 C.Y.
+10% 28
306 C.Y.

Manipulated Fill 89 C.Y.
+10% 2.0
51.9 C.Y.

Loose Fill 120 C.Y.
+10% 12.0
132.0 C.Y.



Covington Circle
Sta. 46+46 to Sta. 49+70
Proj. No. 472-76-245-81266-200-000-001

A=2055.02 SF
Av. Depth = 1.3' Exc.
Vol. = 58.95 C.Y.

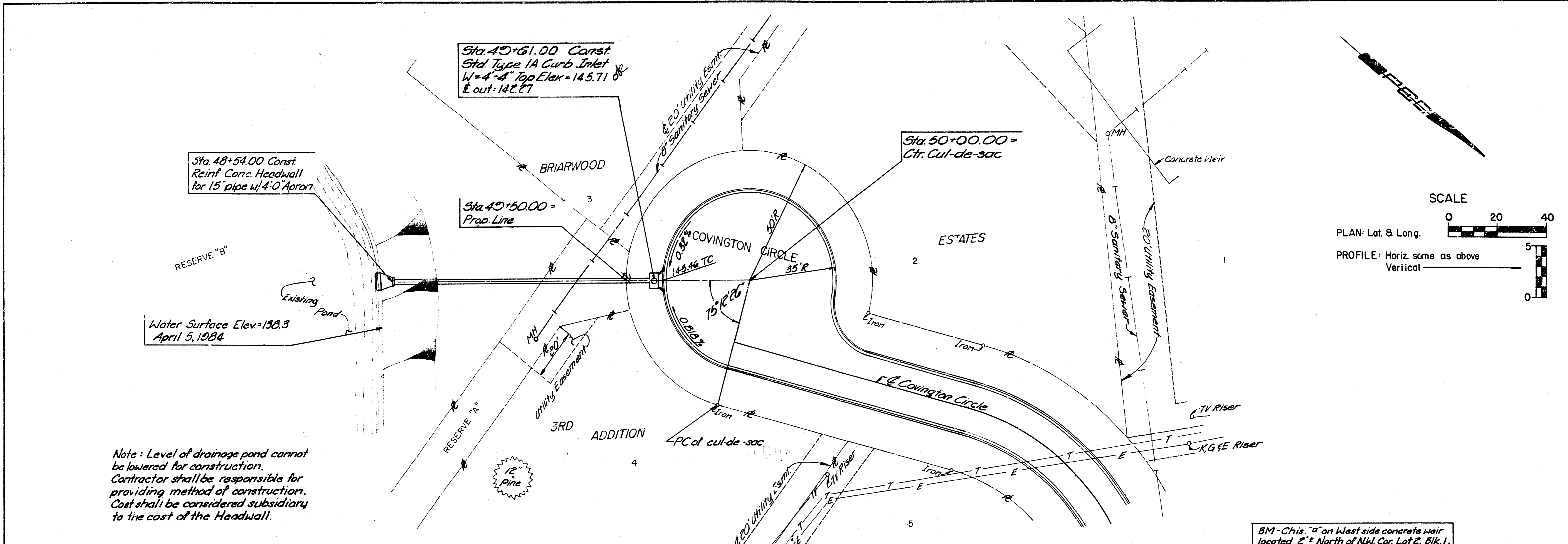
A=1871.97 SF
Av. Depth = 1.4' Exc.
Vol. = 94.29 C.Y.

Sht. 5 of 8 5/8

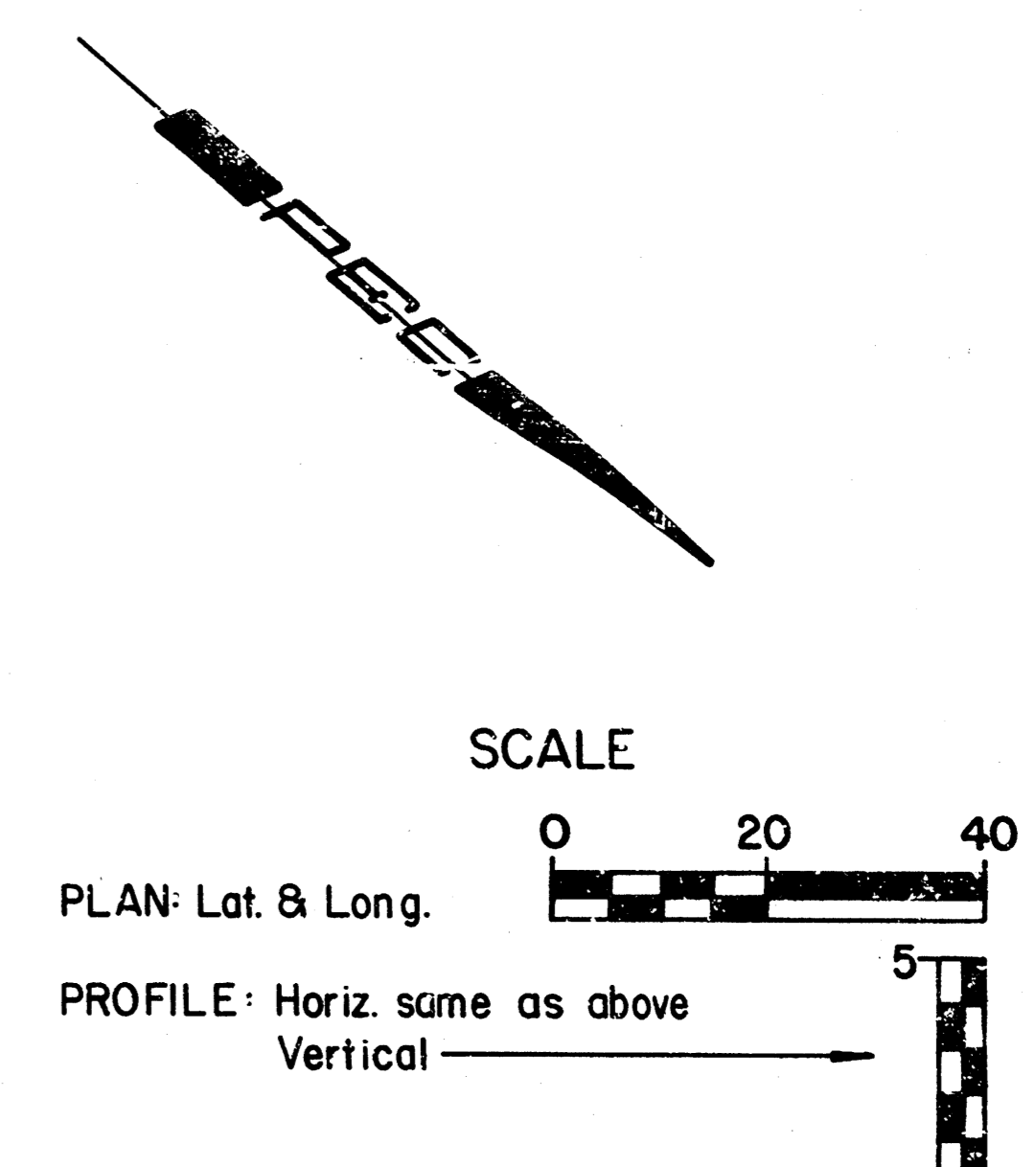
FILMED FROM THE BEST AVAILABLE COPY

PLAN SURVEYED BY DATE
 NOTE BOOK NO. ALIGNMENT CHECKED BY RT. OF WAY CHECKED BY

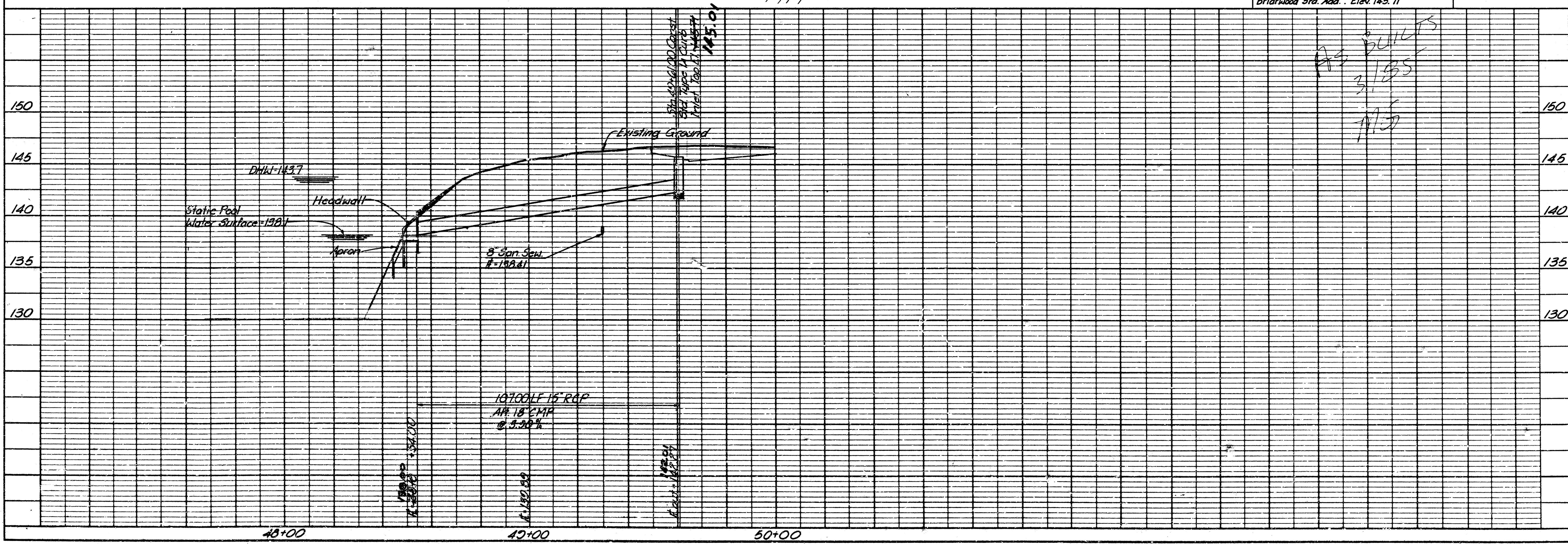
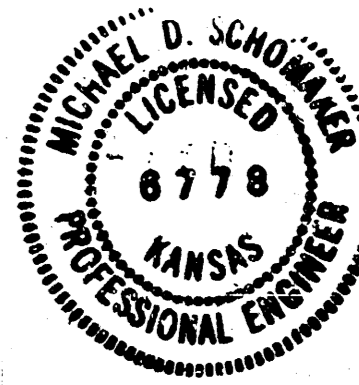
PROFILE SURVEYED BY DATE
 NOTE BOOK NO. GRADES CHECKED BY STRUCTURE POINTS CHECKED BY



Note: Level of drainage pond cannot be lowered for construction. Contractor shall be responsible for providing method of construction. Cost shall be considered subsidiary to the cost of the Headwall.

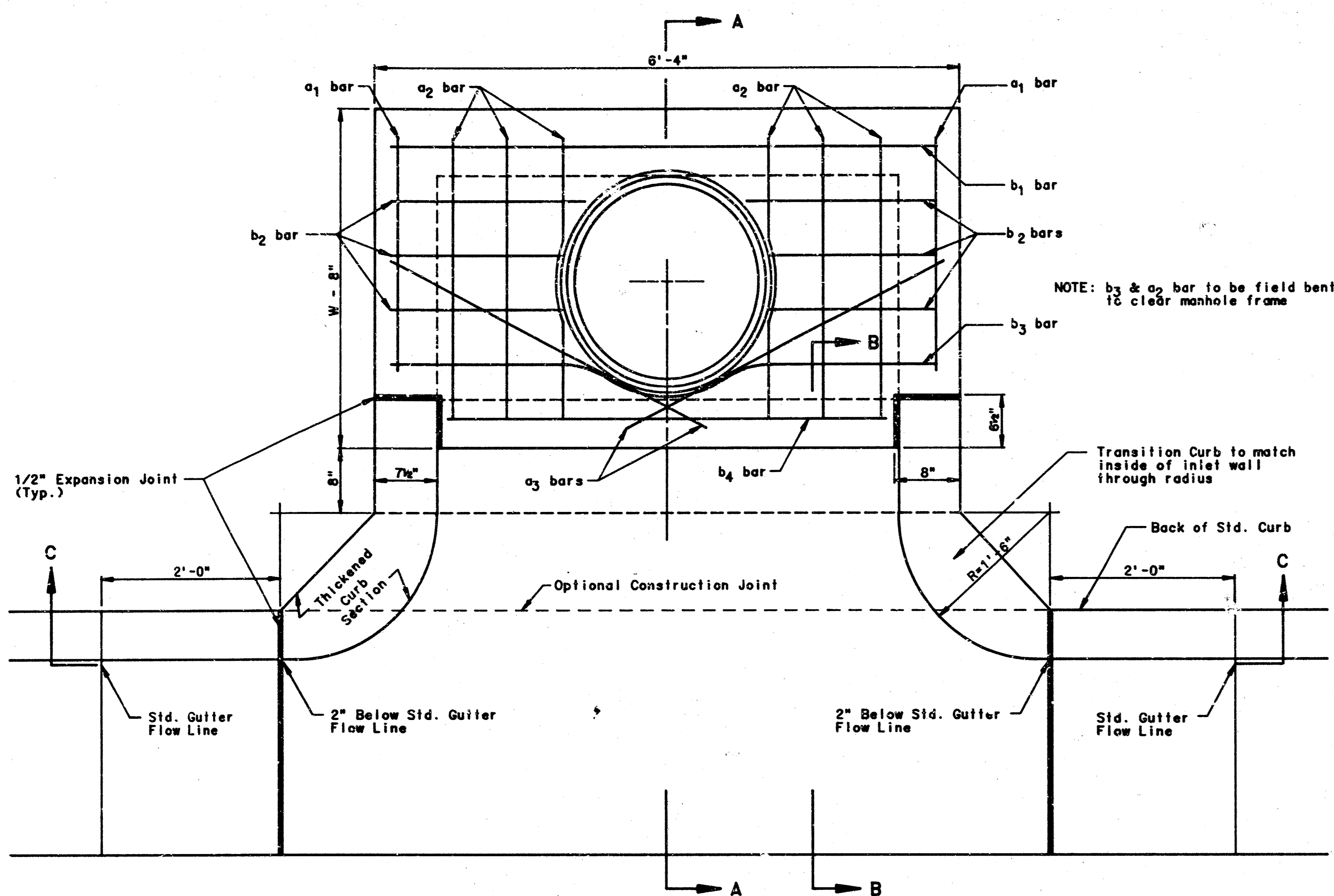


BM - Chis. "a" on West side concrete weir located 2' North of NW Cor. Lot 2, Blk. 1, Briarwood 3rd. Add. Elev. 145.71

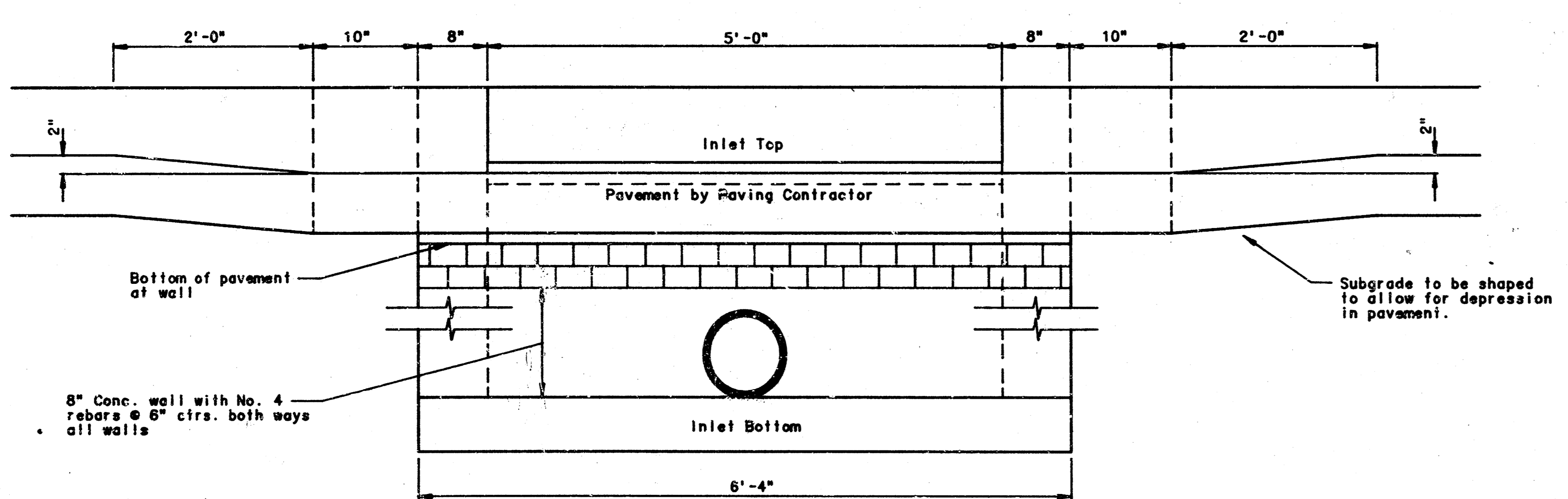


AS 2016/5
 3/85
 115

STORM DRAIN IMPROVEMENTS
 CITY OF WICHITA, KANSAS
 BRIARWOOD ESTATES 3RD ADDITION
 PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 WICHITA, KANSAS
 Job No. 31-8402-1120
 Drawn by: S.M.
 Date: 4/27/84



PLAN

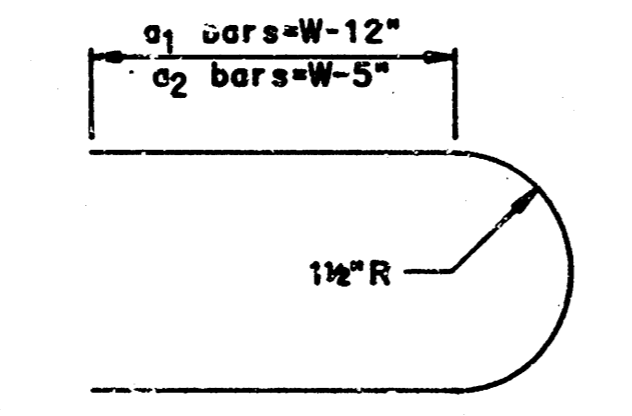


SECTION C-C

STEEL SCHEDULE

BAR	a ₁	a ₂	a ₃	b ₁					b ₂	b ₃	b ₄	WT. LBS.
				4	5	6	7	8				
NUMBER	4	4	2	1	3	5	7	9	6	1	1	
SIZE #	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#6	
W	4'-4"	5'-3"	6'-11"	4'-0"	6'-1"	--	--	--	1'-9"	6'-2"	4'-8"	69s
H	5'-4"	7'-9"	8'-11"	5'-0"	--	6'-1"	--	--	1'-9"	6'-2"	4'-8"	83s
W	6'-4"	9'-9"	10'-11"	6'-0"	--	6'-1"	--	--	1'-9"	6'-2"	4'-8"	110s
H	7'-4"	11'-9"	12'-11"	7'-0"	--	--	6'-1"	--	1'-9"	6'-2"	4'-8"	130s
W	8'-4"	13'-9"	14'-11"	8'-0"	--	--	6'-1"	1'-9"	6'-2"	4'-8"	150s	

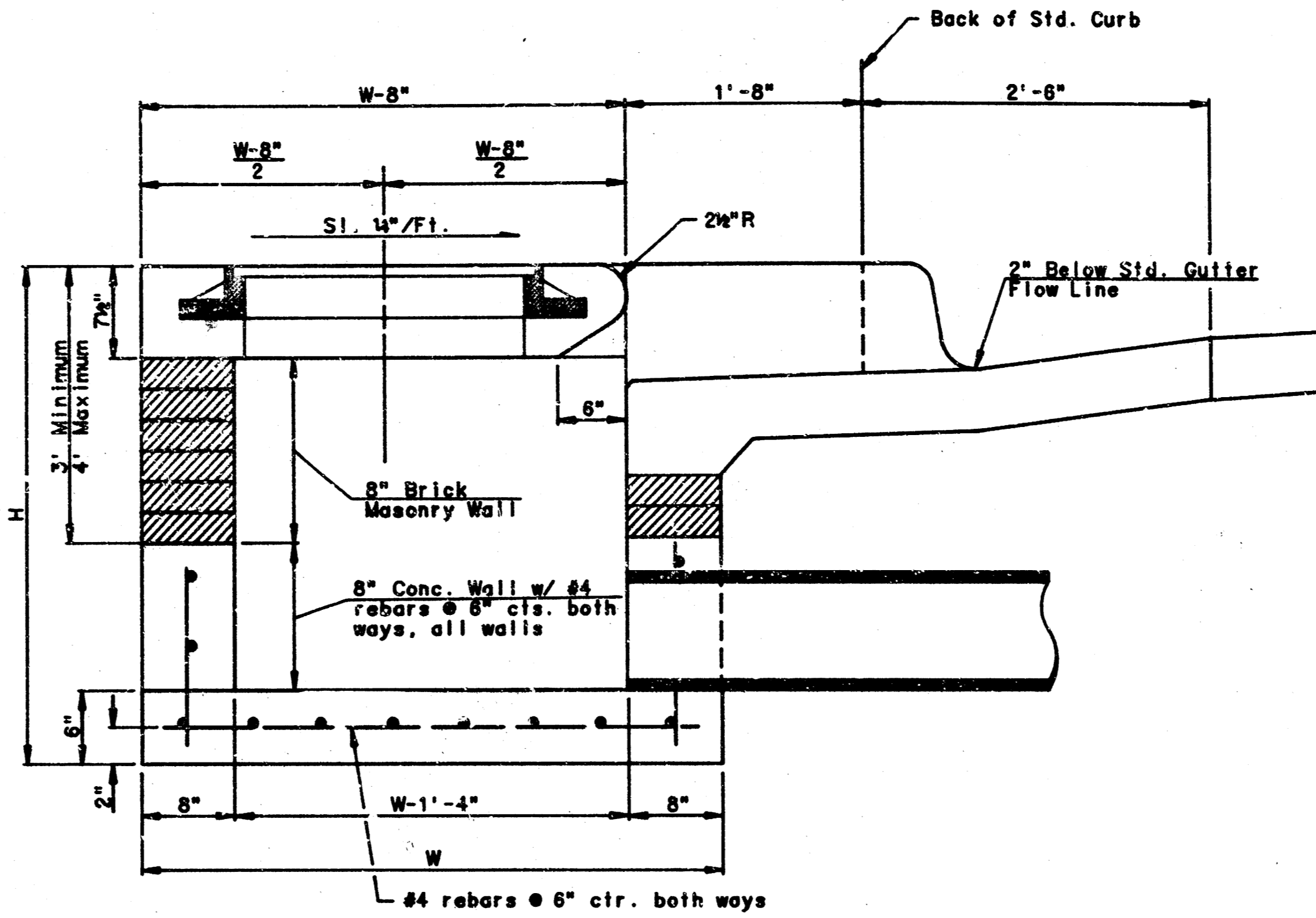
NOTE: a₃ bars to be placed approx. 2" below top of inlet cover.



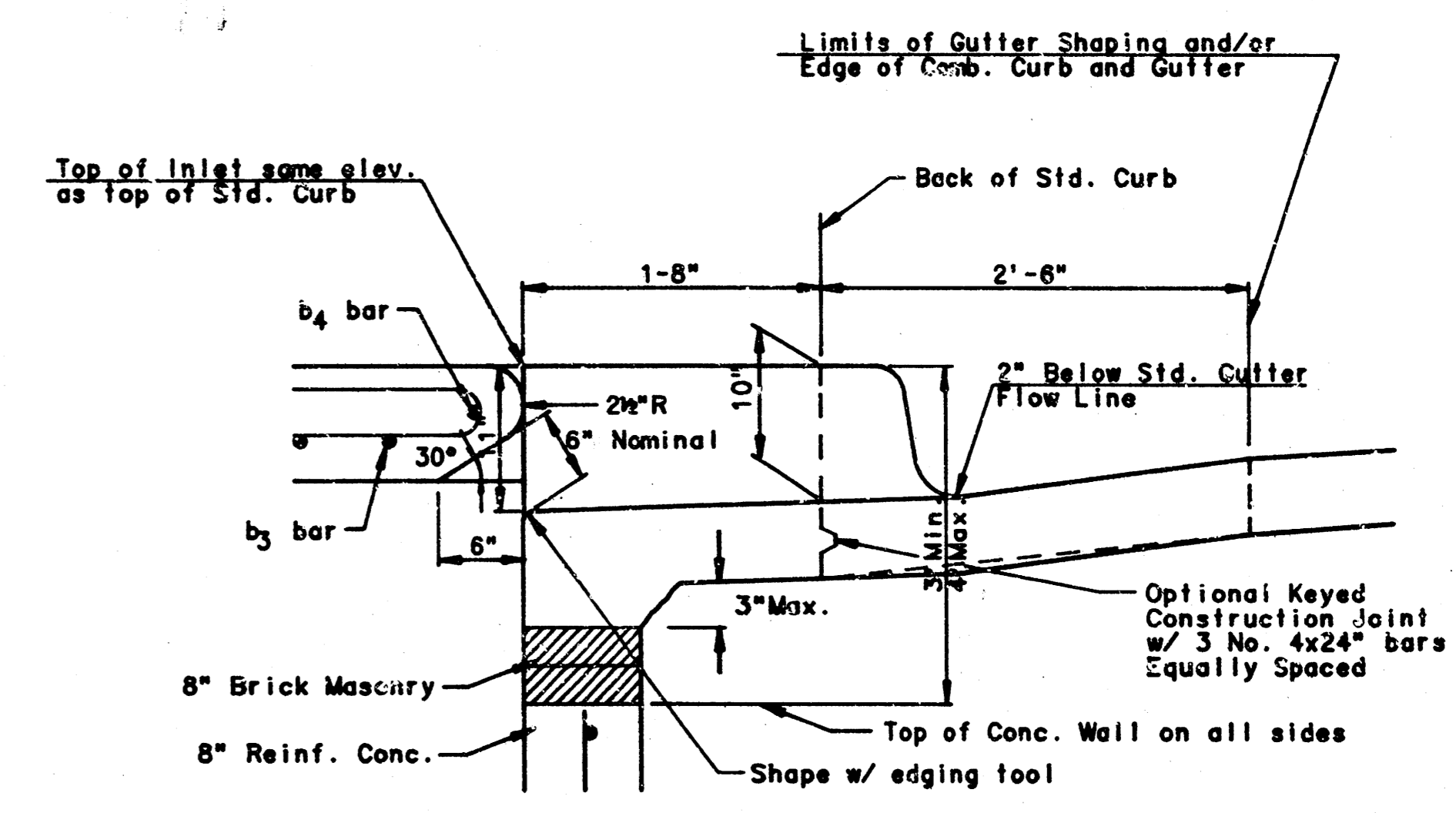
BENDING DIAGM

STANDARD CURB INLET PRECAST TOPS

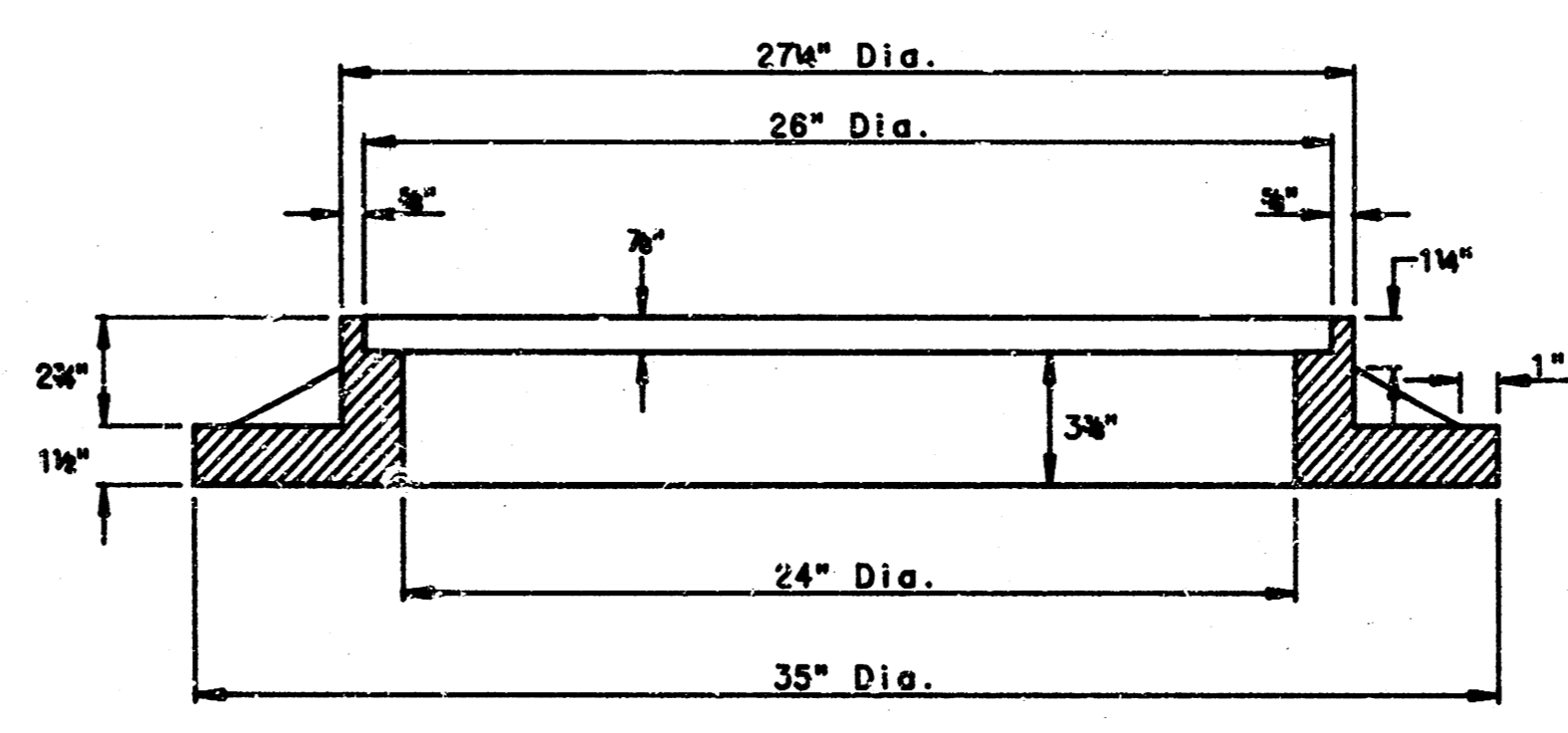
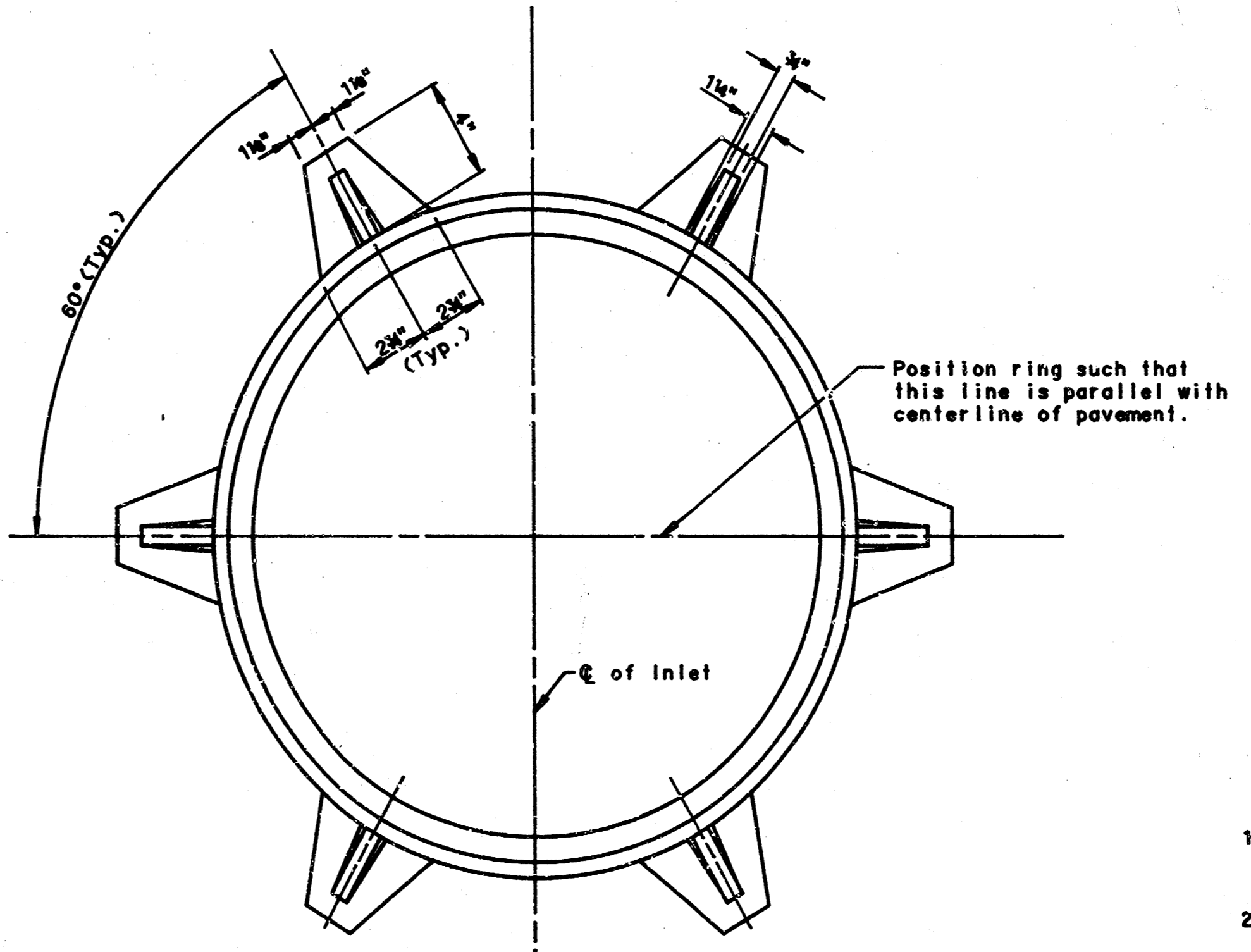
W	PRECAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4'-4"	3'-8"x8'-4"x7 1/2"	21" & Smaller	0.38s
5'-4"	4'-8"x8'-4"x7 1/2"	24" & 30"	0.51s
6'-4"	5'-8"x8'-4"x7 1/2"	36" & 42"	0.64s
7'-4"	6'-8"x8'-4"x7 1/2"	48" & 54"	0.77s
8'-4"	7'-8"x8'-4"x7 1/2"	60" & 66"	0.90s



SECTION A-A



SECTION B-B



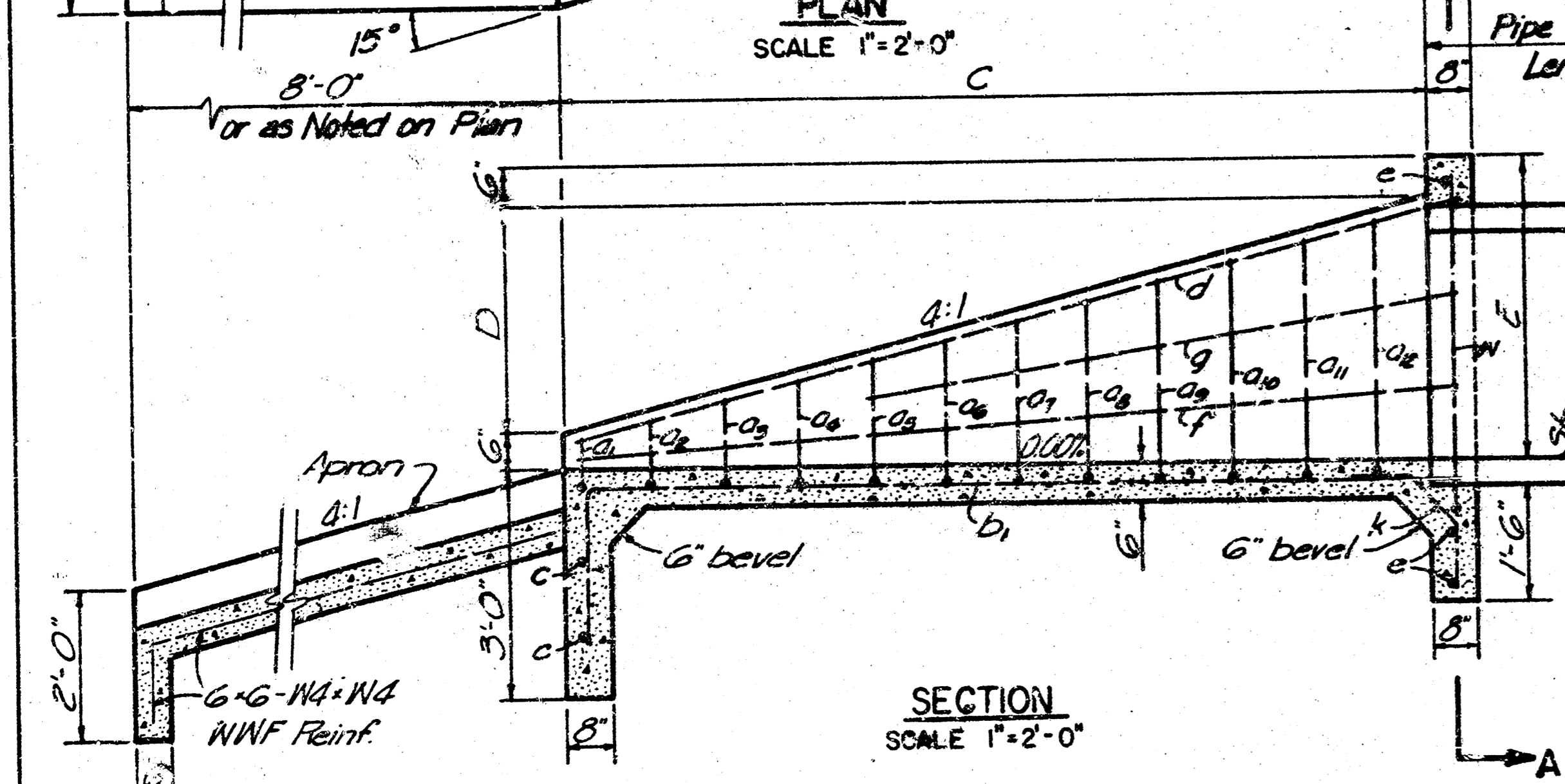
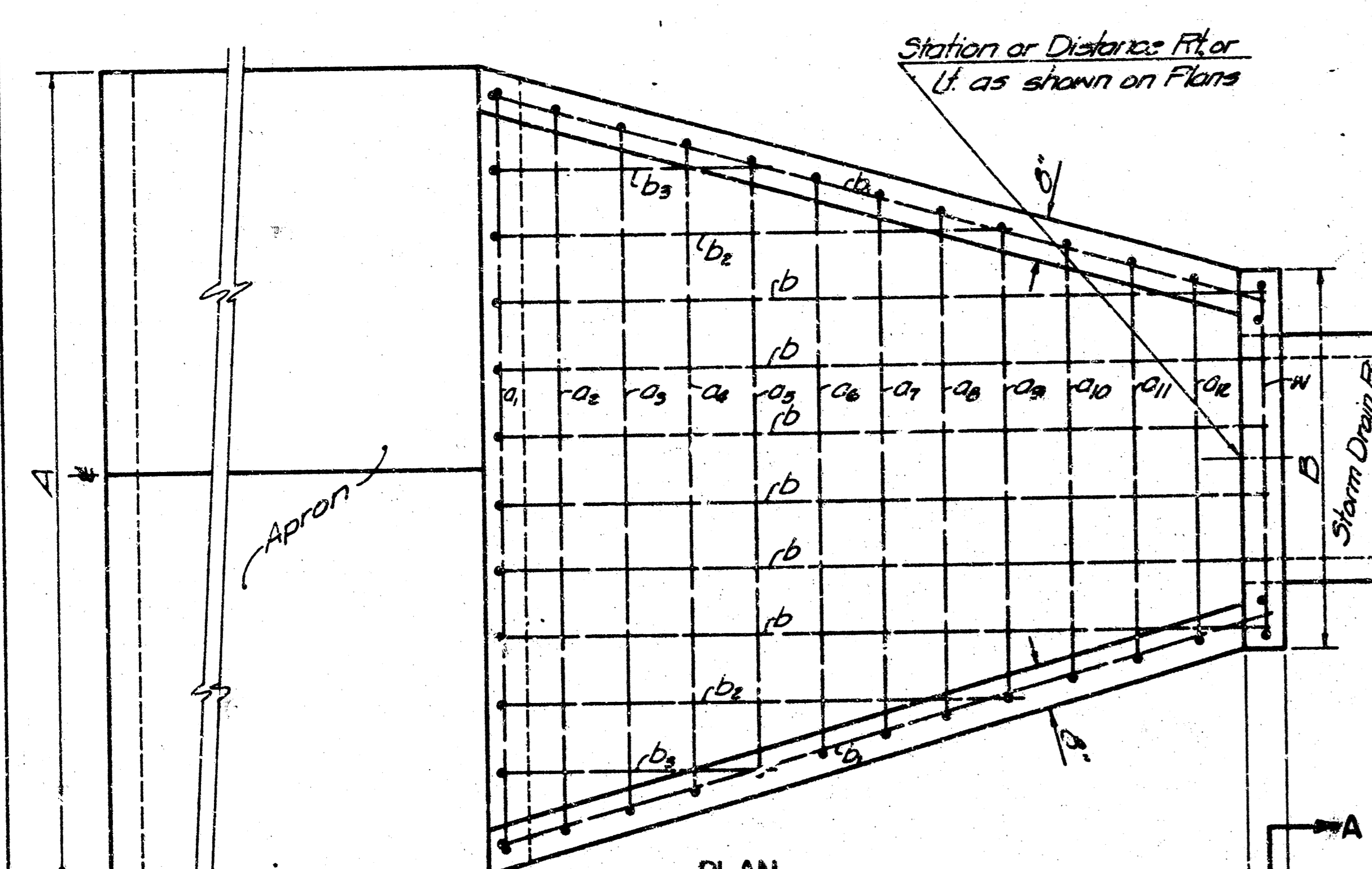
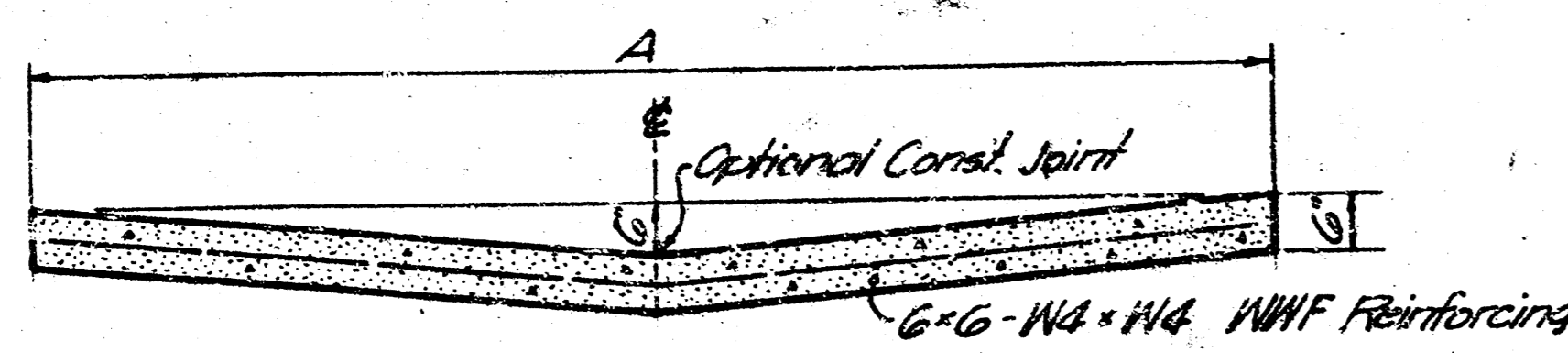
MANHOLE FRAME
(WEIGHT = 180 LBS.)

See Sheet No. for cover details to be used with inlet frame.

GENERAL NOTES

- The contractor shall have the option of constructing 8" brick masonry walls between the concrete inlet base and top on this inlet when W = 4'-4" and H = 8'-0" or less.
- Additional curb and gutter construction necessary to connect setback inlet to pavement will be paid for at the unit price bid for each inlet hookup.
- Inlet invert shall be shaped with 8 sack sand mix concrete to create flow channels and to increase hydraulic efficiency such that the inlet will be self cleaning between all inlet and/or outlet pipes.
- Concrete tops to be installed on thin mortar cushion to insure full support along brick walls. Concrete tops may be cast in place or precast. Concrete used for inlet construction shall be concrete pavement mix.
- Inlet top reinforcing shall be spaced on 8" max. centers. Inlet lids shall be notched out as indicated to facilitate construction of curb.

CITY OF WICHITA, KANSAS
STD TYPE 1A CURB INLET
 INLET OPENING = 6" x 5'-0"
 PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS
 Designed by City of Wichita Checked by 1/8
 Drawn by Yoda Date Mar. 1984 Job No.

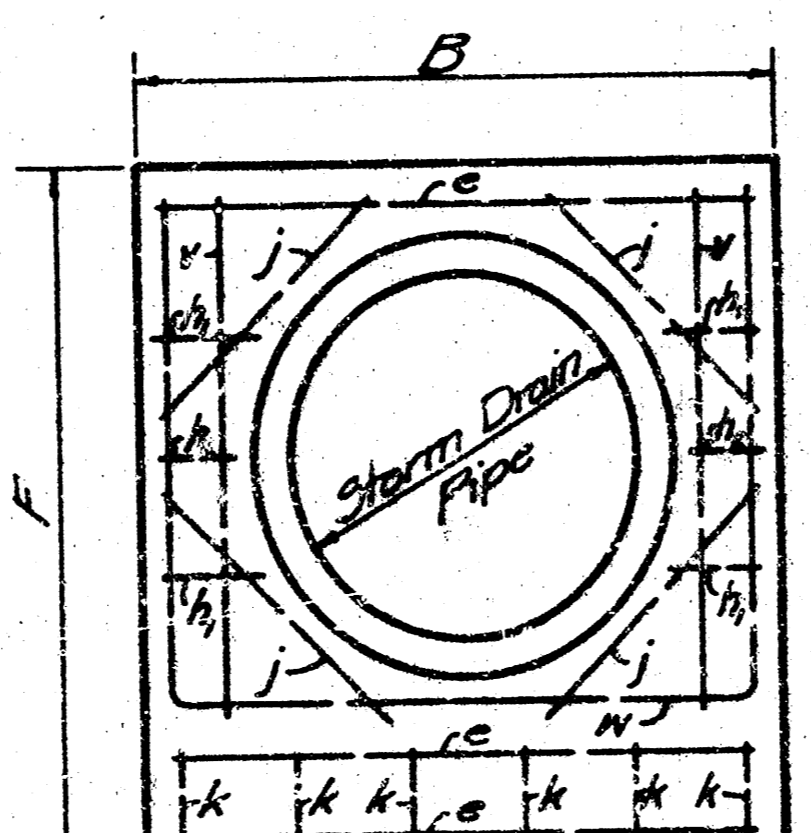


PIPING ALTERNATIVES

RCP N.O.D.B.	M.P.H.E. N.O.D.B.	C.M.P. N.O.D.B.	C.M.P. N.O.D.B.
15"	15"	15"	17" x 13"
18"	23" x 15"	18"	23" x 20"
24"	30" x 15"	24"	35" x 24"
30"	30" x 24"	30"	42" x 29"
36"	45" x 29"	36"	42" x 29"
42"	53" x 34"	42"	40" x 33"
48"	60" x 38"	48"	57" x 38"
54"	60" x 43"	54"	64" x 43"
60"	70" x 48"	60"	71" x 47"

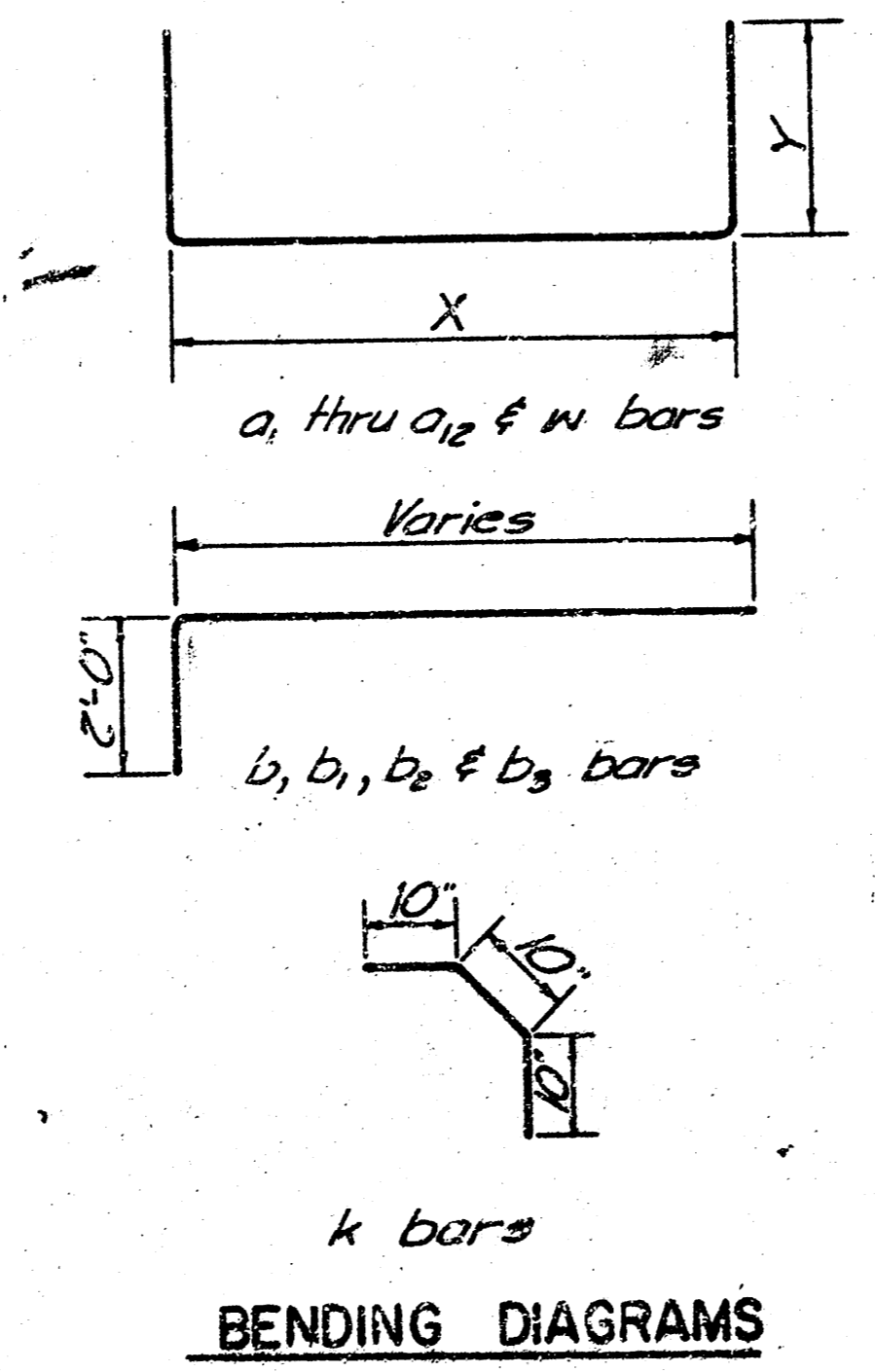
*Fully Paved except 15" & 18" which are equivalent C.M.P. which shall be Helicolly Corrugated.

NOTE:
1. All Plans and Bid Items refer to Reinforced Concrete Pipe.
Corrugated Metal Pipe Fully Paved may be substituted for R.C.P. as shown in Schedule.
2. All pipe shall be of the same material unless otherwise noted.
3. The contractor must submit in writing at the pre-construction conference what pipe material he intends to use.



BAR LIST

Bar Shape	Headwall for 36" Pipe		Headwall for 30" Pipe		Headwall for 24" Pipe		Headwall for 18" Pipe		Headwall for 15" Pipe	
	X	Total	X	Total	X	Total	X	Total	X	Total
a1	11'-4"	12'-6"	9'-7"	10'-9"	8'-0"	9'-2"	6'-4"	7'-6"	5'-6"	6'-8"
a2	10'-9"	12'-5 1/2"	9'-1 1/2"	10'-3 1/2"	7'-3 1/2"	8'-5 1/2"	5'-9"	7'-1 1/2"	4'-11 1/2"	6'-7 1/2"
a3	10'-3"	11'-5"	8'-8"	10'-0"	6'-11"	7'-7"	5'-3"	6'-5"	4'-5"	5'-7"
a4	9'-8 1/2"	10'-11 1/2"	7'-11 1/2"	9'-4 1/2"	6'-4 1/2"	7'-1 1/2"	4'-8 1/2"	5'-11 1/2"	3'-10 1/2"	5'-0"
a5	9'-2"	10'-4"	7'-5"	8'-7"	5'-10"	7'-1"	4'-2"	5'-4"	3'-4"	4'-6"
a6	8'-7 1/2"	9'-10 1/2"	6'-10 1/2"	8'-1 1/2"	5'-11 1/2"	7'-10"	4'-7 1/2"	5'-11 1/2"	3'-11 1/2"	5'-0"
a7	8'-1"	9'-3"	6'-4"	7'-6"	4'-9"	6'-1"	3'-7"	4'-9"	2'-9"	4'-1"
a8	7'-6 1/2"	8'-9 1/2"	5'-9 1/2"	7'-2 1/2"	4'-11 1/2"	6'-4 1/2"	3'-11 1/2"	5'-0"	2'-9"	4'-1"
a9	7'-0"	8'-2"	5'-3"	6'-5"	4'-3"	5'-5"	3'-7"	4'-9"	2'-9"	4'-1"
a10	6'-5 1/2"	7'-8 1/2"	4'-8 1/2"	6'-1 1/2"	3'-11 1/2"	5'-0"	3'-11 1/2"	5'-0"	2'-9"	4'-1"
a11	5'-11"	7'-1 1/2"	4'-4"	5'-6"	3'-7"	4'-9"	3'-7"	4'-9"	2'-9"	4'-1"
a12	5'-4 1/2"	6'-7 1/2"	4'-7 1/2"	6'-0"	3'-5"	4'-7 1/2"	3'-5"	4'-7 1/2"	2'-9"	4'-1"
a13	5'-2"	6'-4"	4'-5"	5'-7"	3'-3"	4'-5"	3'-3"	4'-5"	2'-9"	4'-1"
b	6	14'-2"	5	12'-5"	4	10'-4"	3	8'-4"	2	7'-2"
b1	2	14'-7"	2	12'-5"	2	10'-4"	2	8'-4"	2	7'-2"
b2	2	10'-3"	2	8'-7"	2	6'-2"	2	4'-8"		
b3	2	10'-5"	2	8'-7"	2	6'-2"	2	4'-8"		
c	2	11'-6"	2	9'-10"	2	8'-3"	2	6'-7"	2	5'-3"
c1	2	11'-10"	2	10'-8"	2	8'-7"	2	6'-5"	2	5'-8"
c2	2	5'-9"	2	4'-8"	2	4'-1"	2	3'-6"	2	3'-3"
d	2	12'-7"	2	10'-6"	2	8'-6"	2	6'-4"		
e	2	8'-6"	2	7'-11"	2	6'-7"	2	5'-11"		
f	2	11'-1"	2	9'-9"	2	8'-11"	2	7'-2"		
g	2	8'-9"	2	7'-8"	2	6'-5"	2	5'-8"		
h	2	8'-6"	2	7'-5"	2	6'-2"	2	5'-6"		
i	2	8'-6"	2	7'-5"	2	6'-2"	2	5'-6"		
j	2	8'-6"	2	7'-5"	2	6'-2"	2	5'-6"		
k	2	4'-5"	2	3'-11"	2	3'-3"	2	2'-11"	2	2'-8"
v	2	4'-5"	2	3'-11"	2	3'-3"	2	2'-11"	2	2'-8"



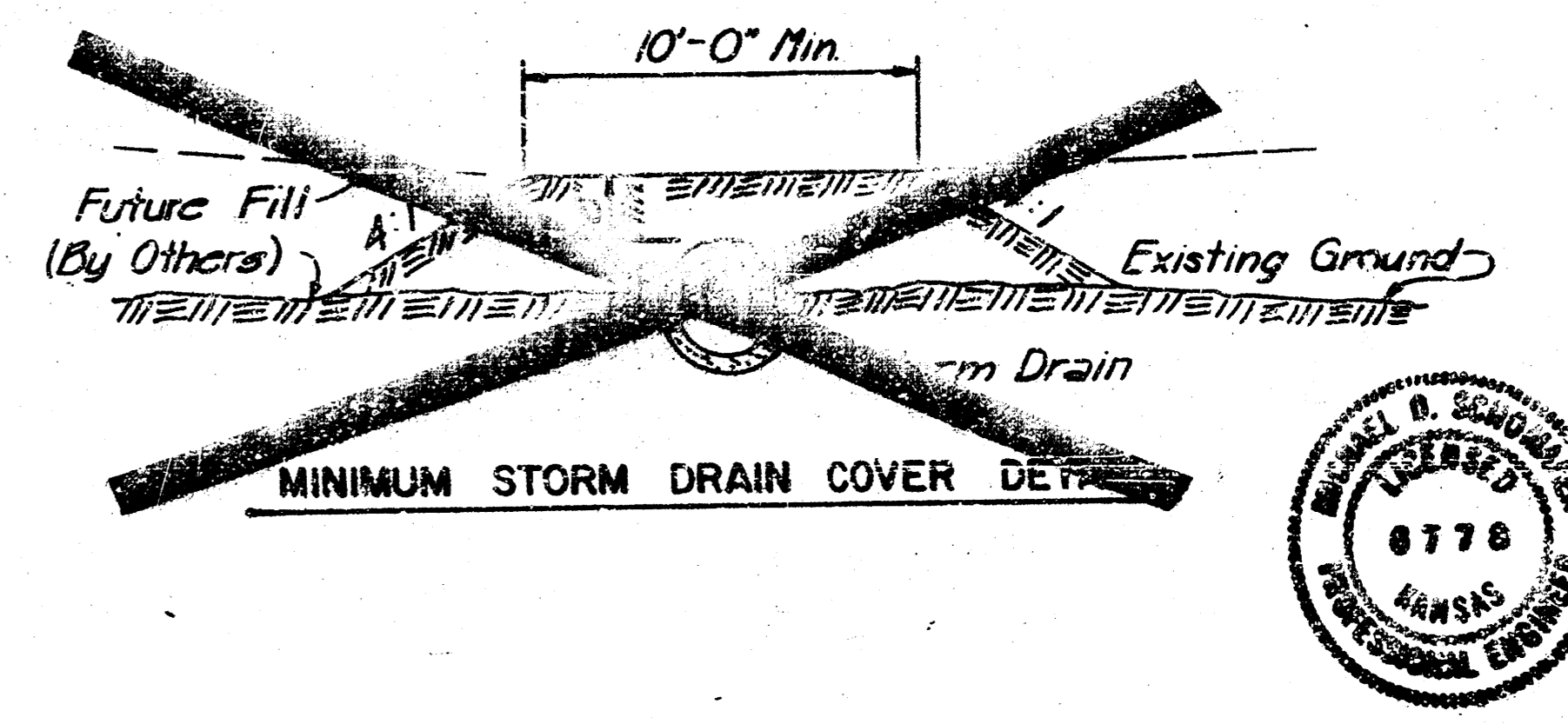
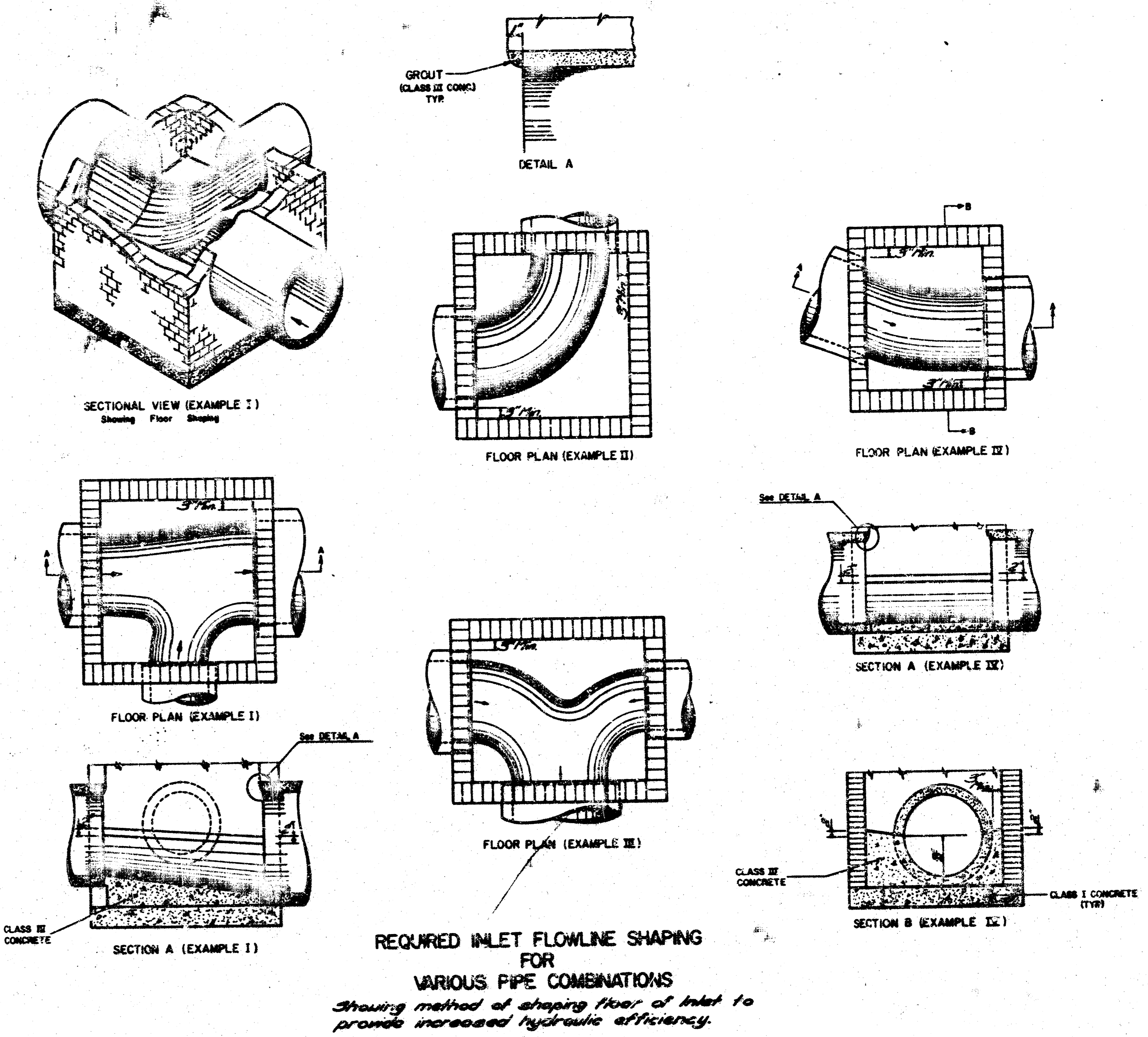
(FOR INFORMATION ONLY)

Headwall for Letter	36" Pipe Dimension	30" Pipe Dimension	24" Pipe Dimension	18" Pipe Dimension	15" Pipe Dimension
A	12'-1"	10'-5"	8'-10"	7'-2"	6'-4"
B	5'-8"	5'-1"	4'-6"	3'-11"	3'-8"
C	12'-0"	10'-0"	8'-0"	6'-0"	5'-0"
D	3'-0"	2'-6"	2'-0"	1'-6"	1'-3"
E	4'-0"	3'-6"	3'-0"	2'-6"	2'-3"
F	5'-10"	5'-3 1/2"	4'-9"	4'-2 1/2"	3'-11 1/4"
Class I Conc.	8.67CY	5.47CY	4.24CY	3.14CY	2.63CY
Reinf. Steel	380 Lbs	335 Lbs	215 Lbs	160 Lbs	125 Lbs

Note: Concrete & Reinf. Steel Quantities include quantities for 8' Apron. For Aprons greater than 8', the Contractor should allow for an additional quantity of concrete & reinforcing steel.

GENERAL NOTES

- All rebar shall be #4 bars and all concrete shall be Std. Paving Mix Concrete.
- Bevel all exposed edges with a 1/4" triangular molding.
- All headwalls require only one each of all a and w rebar.
- All rebar spacing is 12" ctr. to ctr. unless otherwise noted.
- Concrete quantities make no deduction for storm drain pipe through headwall.
- All headwalls shall be constructed with apron to length shown on plan if other than 8'.
- Welded wire fabric in apron shall be 6x12-W4-W4 weighing 44# per 100 square feet. Bend reinforcing into apron toe.



CITY OF WICHITA, KANS
BRIARWOOD ESTATES 3RD AL.

**INLET SHAPING & HEADWALL DETAILS
PIPING ALTERNATIVES**

M. E. LINDEBAK, RE - CITY ENGINEER
C. of W. Proj. No. 472-76-245-81366-000-001

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by **KLR, MDS**
Drawn by **CWR**

Job No. **34-5401P-1122**
Date **April 1, 1984**

Sheet **6 of 8**