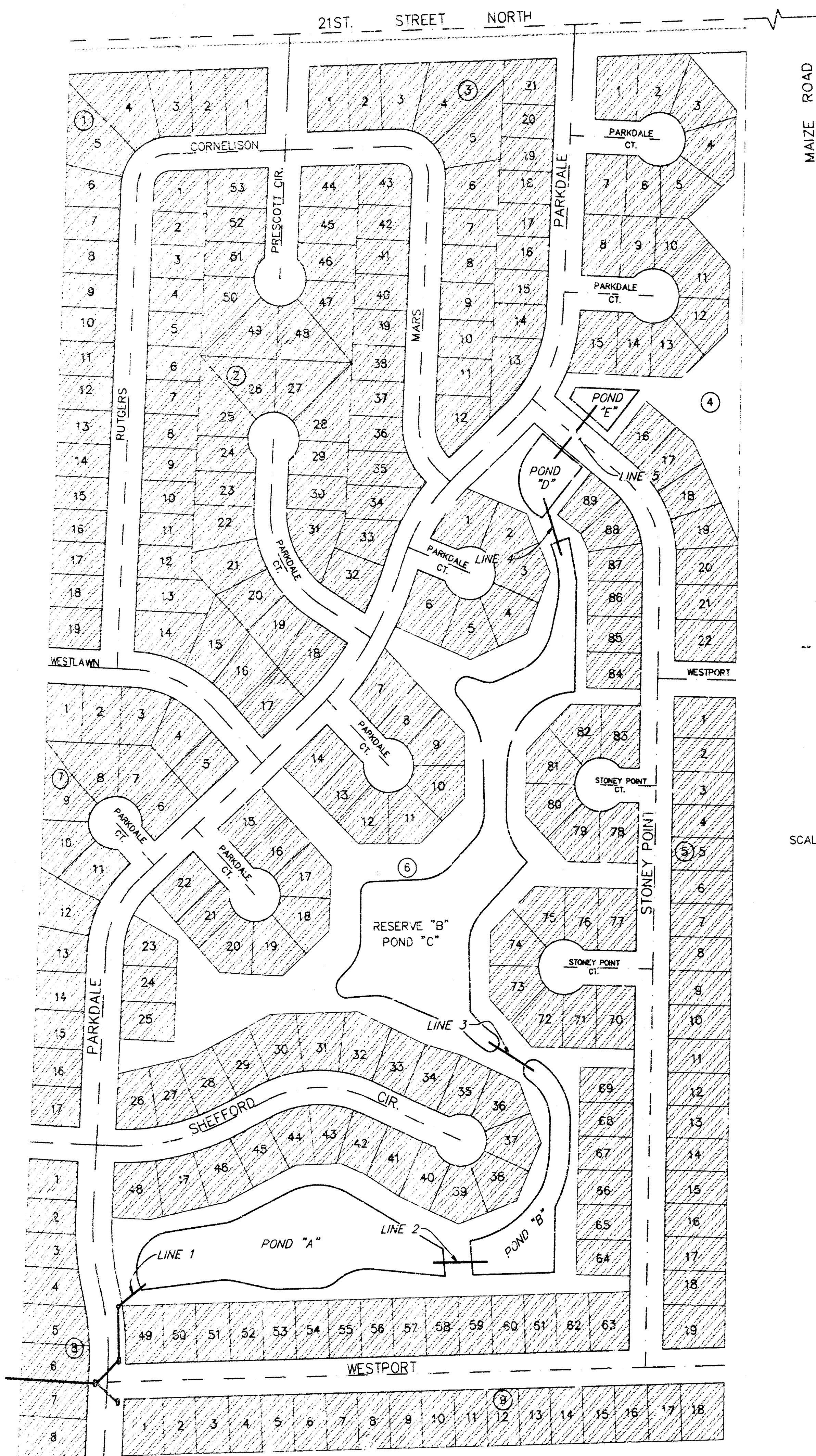




STORM WATER DRAIN #80

to Serve

TIMBER RIDGE ADDITION

Project No.

468-76-245-81964-000-000-001

INDEX CODE: 750208

CITY OF WICHITA, KANSAS

Michael E. Lindebak

City Engineer

General Notes

1. Trees and shrubs in public right-of-way which are in direct conflict with proposed new construction shall be removed by the Contractor with the Engineer's approval. Trees and shrubs which are not in direct conflict with proposed new construction shall be saved and protected from damage.
2. The Contractor shall be responsible for preserving property irons. The Contractor will be required to re-establish and properly irons which are damaged or destroyed by his construction operations. Such irons shall be re-established by a licensed land surveyor in accordance with state law.
3. Construction of this project must be coordinated with incidental drainage for Parkdale, project no. 472-76-245-81932-000-000-001.

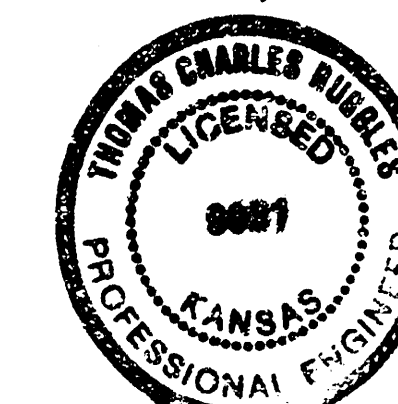
BEVEL MARKS:

- #1 R.R. Spike in IHP Parkdale and 21st, 46.5' North and 131.5' East of & Both; Elevation = 167.46 City Datum
- #2 R.R. Spike in IHP Prescott Cir. and 21st, 52.5' North and 150.0' East of & Both; Elevation = 167.73 City Datum
- #3 R.R. Spike in IHP 65.0' North of N. 1/4 Corner 7-27 1W; Elevation = 167.30 City Datum
- #4 "C" Cut Top Curb 14.5' South and 15' West S.W. Corner Lot 19, Blk. 1; Elevation = 163.80 City Datum
- #5 "C" Cut Top Curb 11.0' South and 1.5' West of S.W. Corner Lot 1, Blk. 2; Elevation = 158.23 City Datum

Index

- 1 Title & Improvement District
- 2 Pool A and Pool B Plan
- 3 Pool C Plan
- 4 Pond D & E Plan - Special Inlet Detail
- 5 Lines 1 and 1A (Plan/Profile)
- 6 Lines 2-5 (Plan/Profile)
- 7 Earthwork Volumes and Coordinate Tables
- 8-10 Inlet/Manhole Details

Booked
11-26-91
MCG



Improvement District

BAUGHMAN COMPANY P. A.
ENGINEERING & SURVEYING
316/262-7271 • 316 ELLIS • WICHITA, KANSAS 67202

May 1, 1991

SCALE:
1" = 40'-0"
RCH = •

TIMBER RIDGE ADDITION

Storm Sewer Line 3 (Sheet 6)
Install 73.2 L.F. 24" R.C.P.
USFL = 156.0 DSFL = 155.0
Outlet Top Elev. 161.12

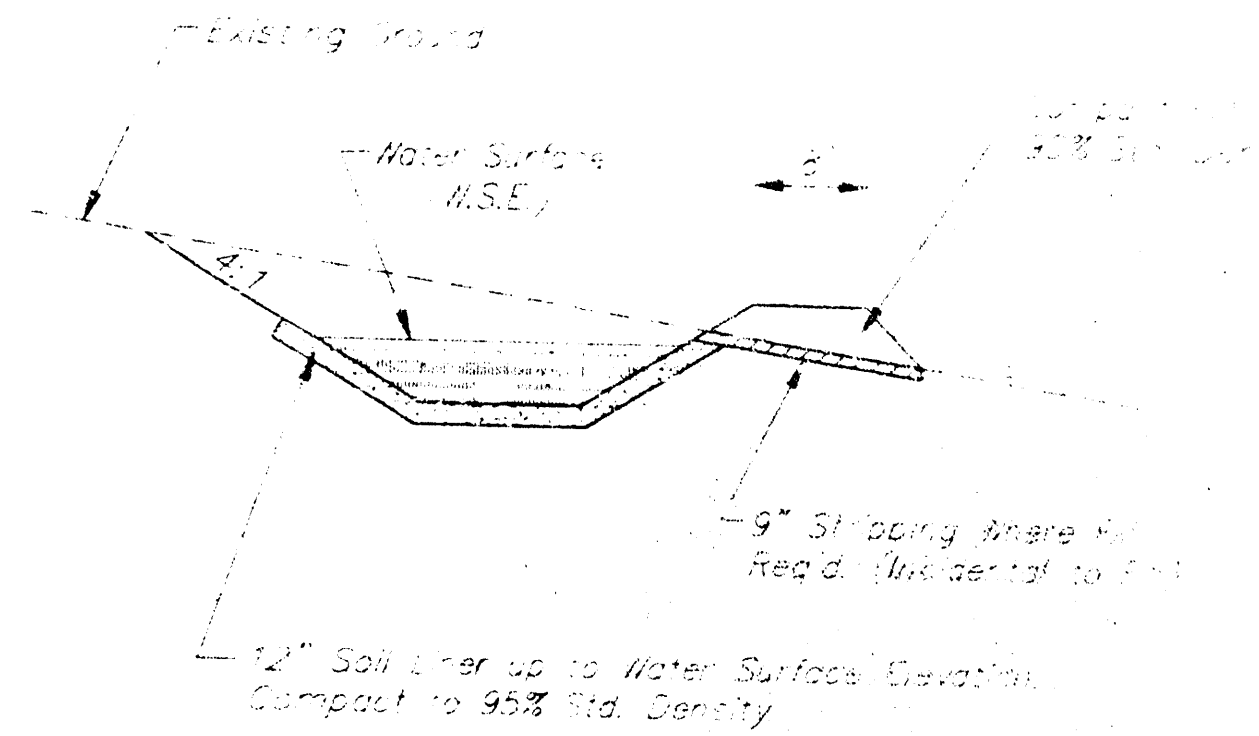
POND "C"
(Sheet 3)

Storm Drain Line 2 (Sheet 6)
Install 67.6 L.F. 24" R.C.P.
USFL = 153.0 DSFL = 153.0
Outlet Top Elev. 160.12

POND "A"
W.S.E. = 157.0
MAX. W.S.E. = 160.0
BOTTOM ELEV. = 152.0

POND "B"
W.S.E. = 159.0
MAX. W.S.E. = 162.6
BOTTOM ELEV. = 154.0

Fill as Shown
Compact to 90%
Std. Density



TYPICAL POND SECTION

Construction Notes:

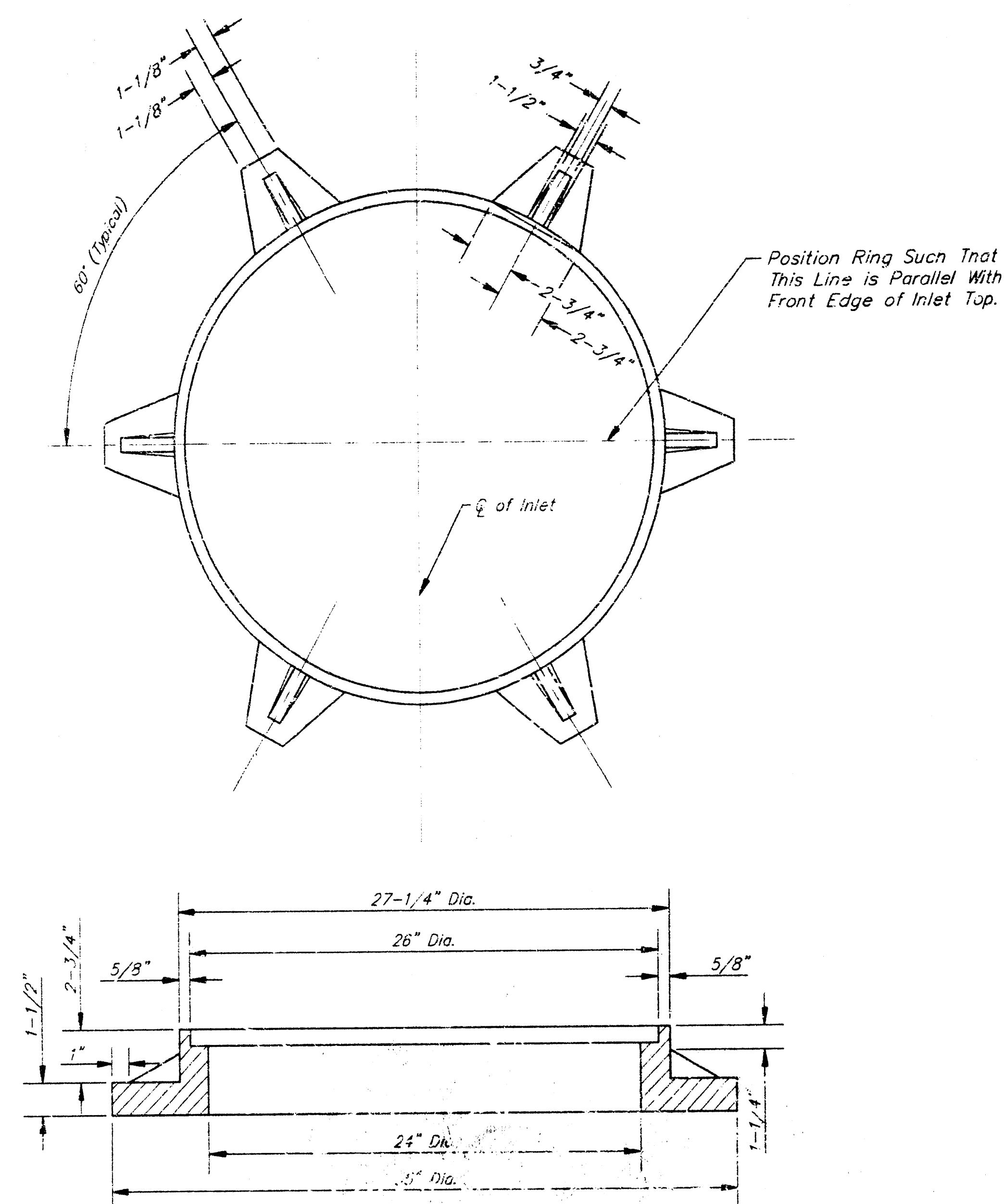
1. The upper 12" of the finished pond bottom and side slopes, below the water surface elevation (W.S.E.), shall be compacted to 95% Std. Density. Compaction shall be accomplished by removing 6" of material, compacting the underlying 6", then replacing and compacting the additional 6" lift. Removal & Re-compaction to be paid C.Y. Compacted Fill (95%).
2. Any granular or non-cohesive soils encountered below the W.S.E. shall be removed and replaced with suitable material compacted per note #1.
3. Refer to recommendations by Terracon Consultants, report dated 12-15-88 (job no. D1855100).
4. See Sheet 7 for earthwork volumes and staking coordinate information.
5. All disturbed areas within the Floodway, including slope down to W.S.E. are to be seeded, fertilized, and mulched, using Rebel II Fescue grass seed.
6. Coordinate values for points indicated "o" are listed in the Coordinate Tables on sheet 7.
7. A stake-out data file for electronic field data recorder (SDR 2) is available from Baughman Company, P.A. Contact Chris Bunn or Tom Ruggles at 262-7271 for this information.

BENCH MARKS:

- #1 R.R. Spike in ILP Parkdale and 21st, 46.5' North and 131.6' East of Q. Dully, Elevation = 167.46 City Datum
- #2 R.R. Spike in ILP Prescott Cir. and 21st, 32.5' North and 150.0' East of Q. Dully, Elevation = 162.23 City Datum
- #3 R.R. Spike in ILP 650' North of N. 1st Corner 2' 21" W. Elevation = 167.50 City Datum
- #4 "o" Cut Top Curb 14.5' South and 15' West S.W. Corner Lot 19, Blk. 1, Elevation = 163.55 City Datum
- #5 "o" Cut Top Curb 11.0' South and 15' West of S.W. Corner Lot 1, Blk. 9, Elevation = 162.23 City Datum

STORM WATER DRAIN #80 PLAN for PONDS "A" and "B"

BAUGHMAN COMPANY P.A. ENGINEERING & SURVEYING 116/262-7271 • 216 S.W. • WICHITA, KANSAS 67201	
PROJECT NUMBER 468-76-245-81964-000-000-001	
DESIGN TOR	DRAWN A. Long
CHECKED TOR	DATE Apr. 1991
SHEET 2 10	

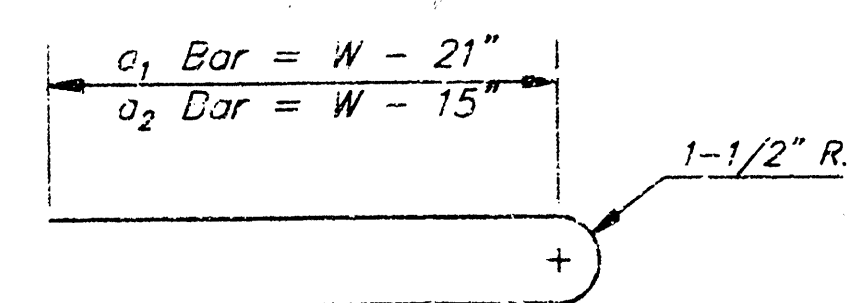


See City of Wichita Standard Manhole Frame and Cover Detail Sheet for Cover Details to Be Used With Inlet Frame.

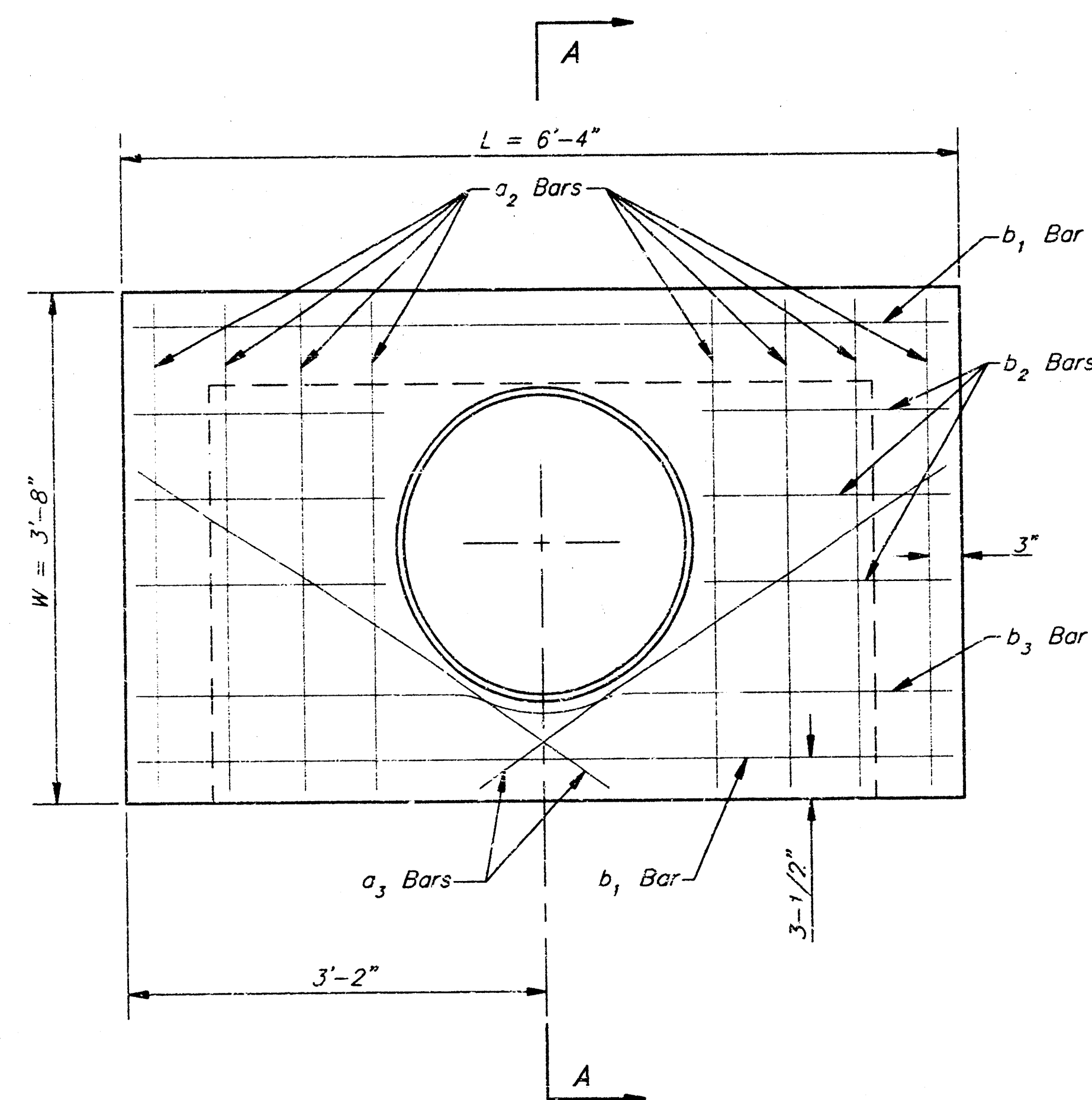
INLET RING

GENERAL NOTES:

1. 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 self cleaning between all inlet and/or outlet pipes.
2. The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall.
3. 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.



BENDING DIAGRAM



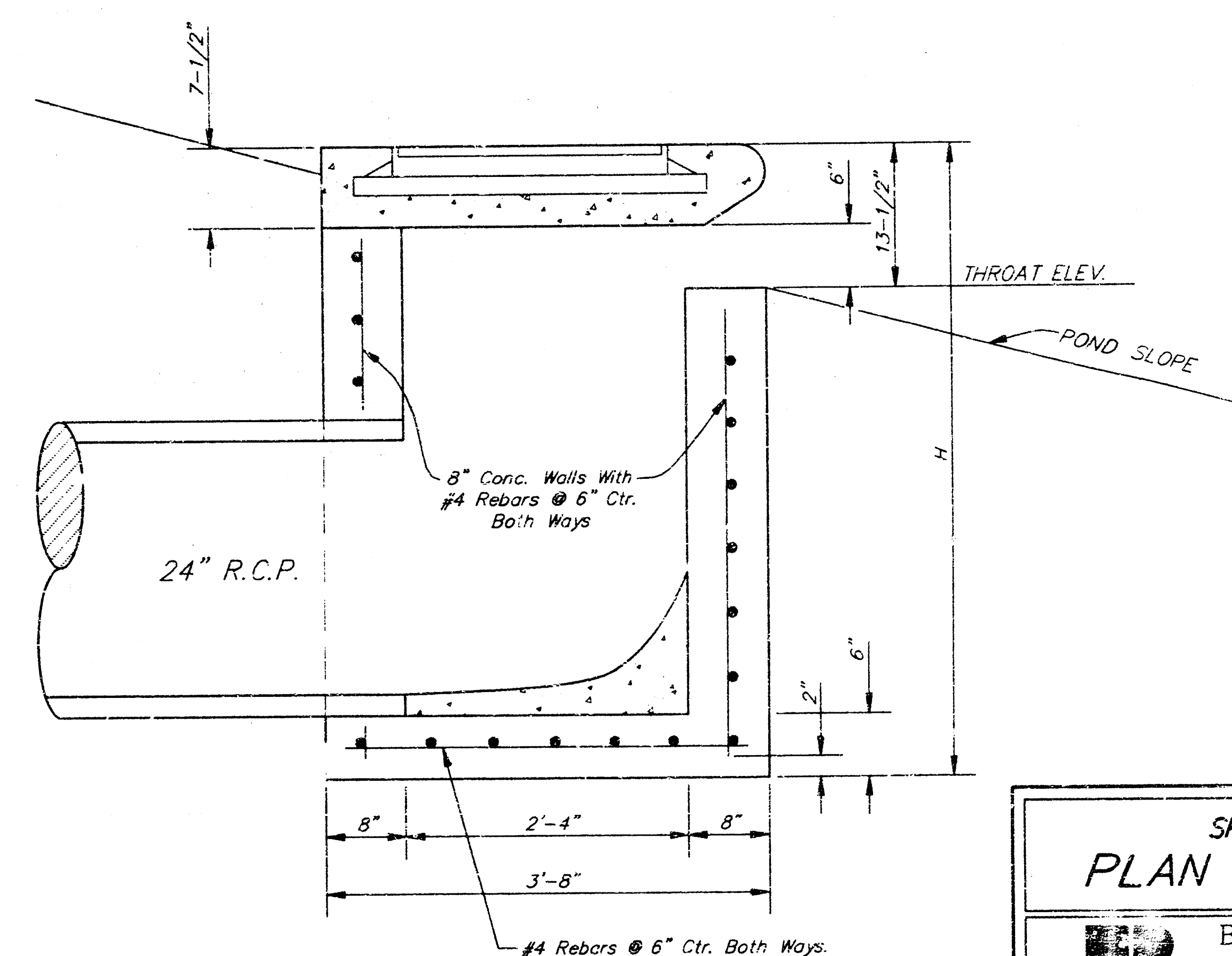
PLAN

NOTE: INLET TOP REINFORCING SHALL BE SPACED ON 6" MAXIMUM CENTERS

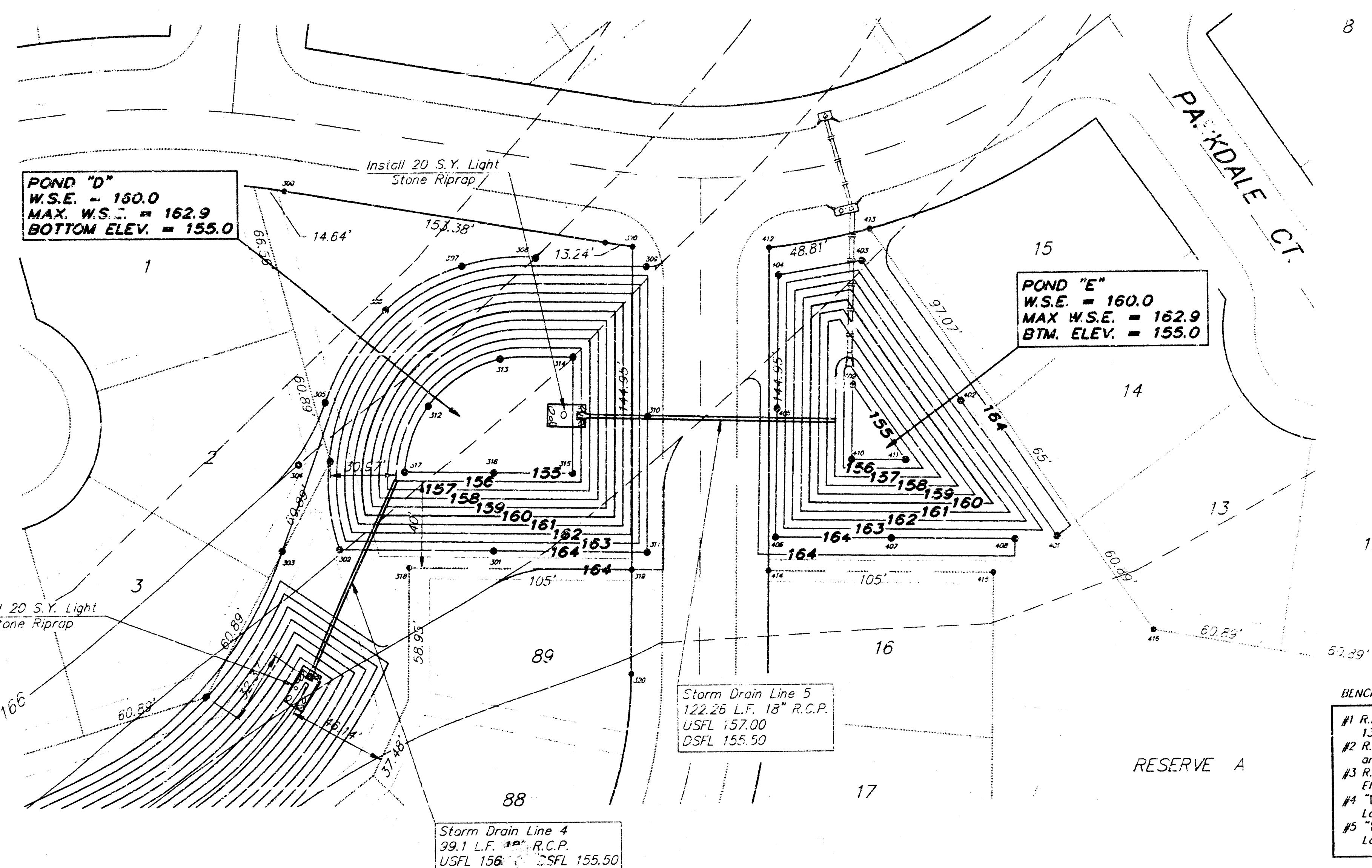
NOTE: b3 BAR TO BE FIELD BENT TO CLEAR INLET FRAME

STEEL SCHEDULE

BAR NUMBER	a ₂	a ₃	b ₁	b ₂	b ₃
SIZE	#4	#4	#4	#4	#4
W=3'-8"	6'-7"	4'-0"	6'-1"	1'-9"	6'-2"



SECTION A-A



BENCH MARKS:

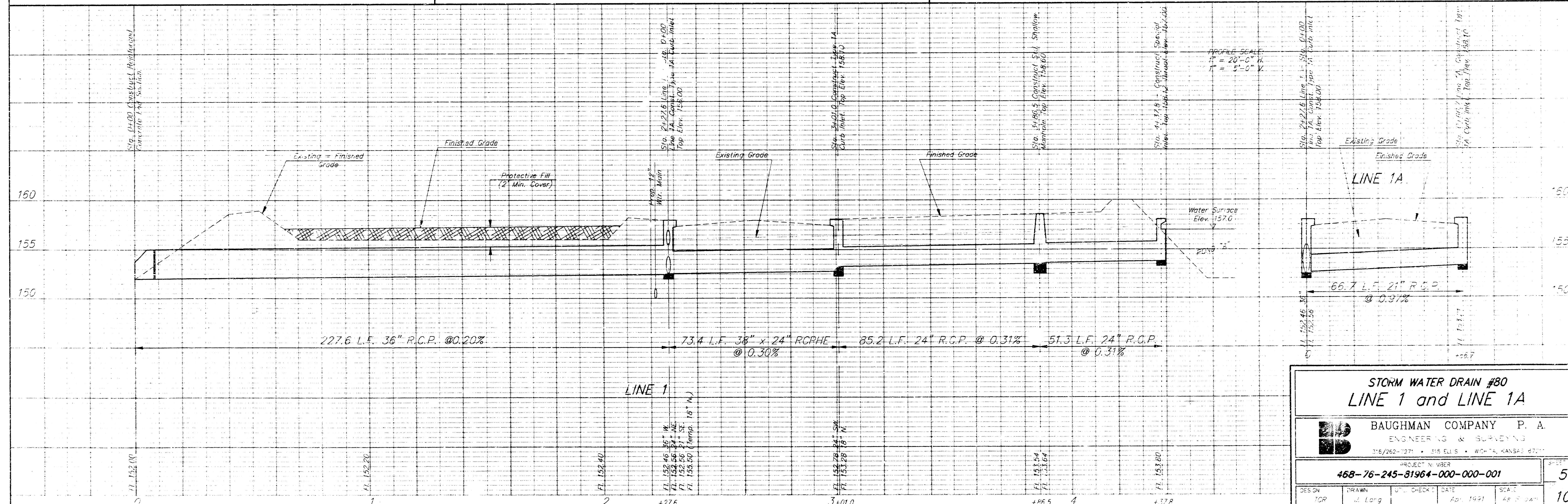
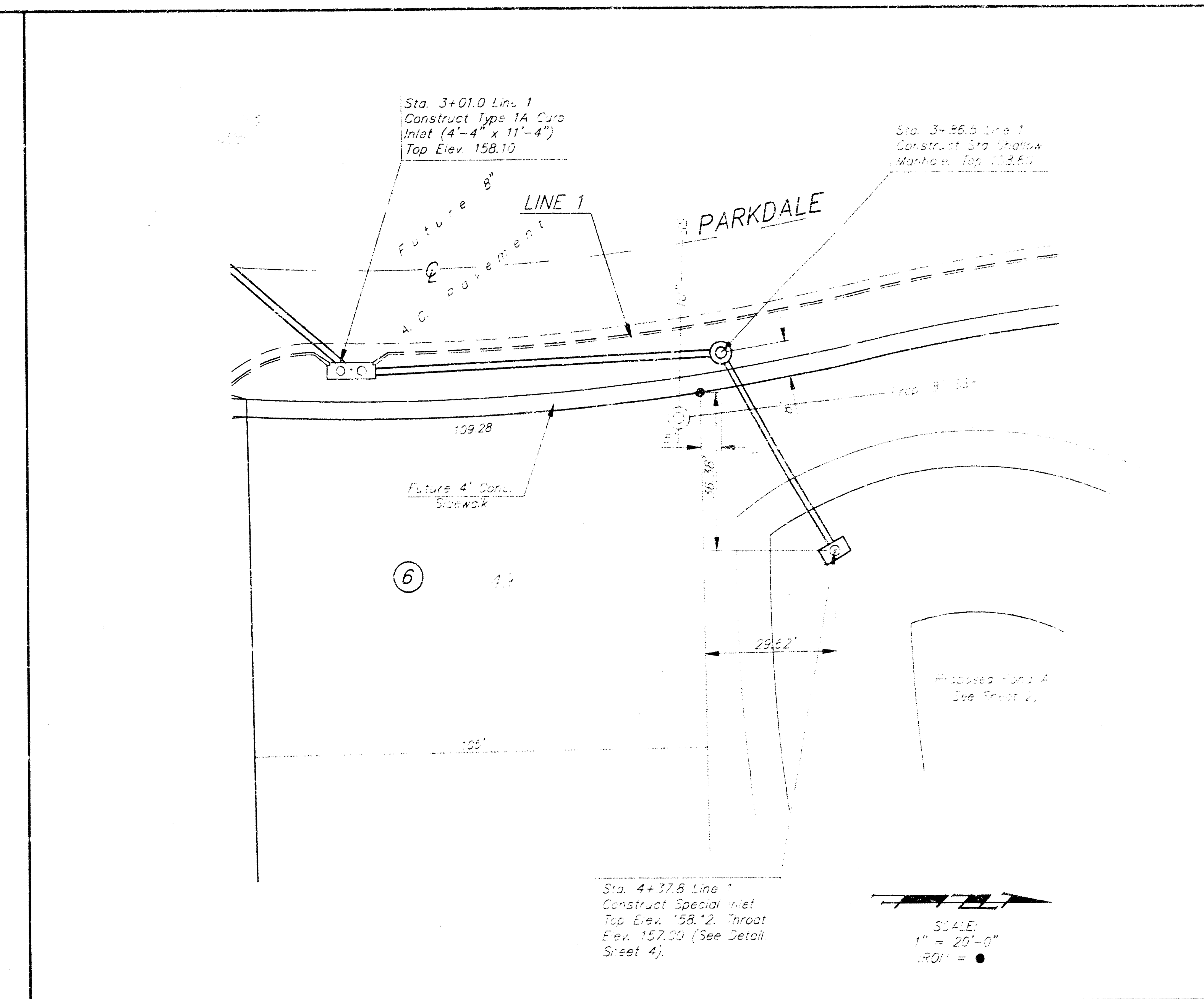
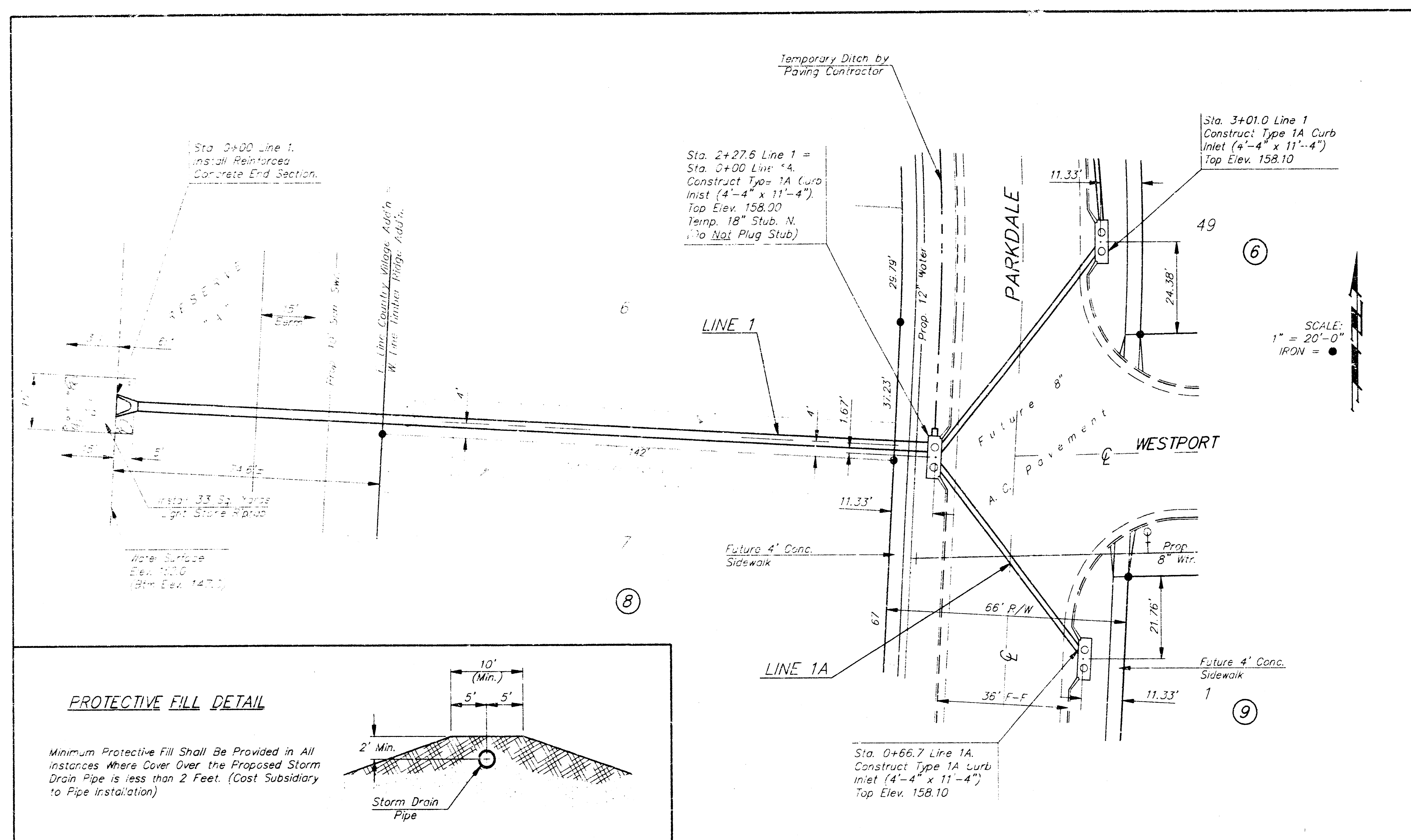
- #1 R.R. Spike in HLP Parkdale and 21st, 46.5' North and 131.6' East of G. Bathy Elevation = 164.46 City Datum
- #2 R.R. Spike in HLP Prescott Cir. and 21st, 52.5' North and 150.0' East of G. Bathy Elevation = 164.73 City Datum
- #3 R.R. Spike in HLP 65.0' North of N. 1, 4 Corner 1, 27' W. Elevation = 167.30 City Datum
- #4 "C" Cut Top Curb 14.5' South and 15' West S.W. Corner Lot 19, blk. 1, Elevation = 163.89 City Datum
- #5 "C" Cut Top Curb 11.0' South and 15' West of S.W. Corner Lot 1, blk. 9, Elevation = 158.23 City Datum

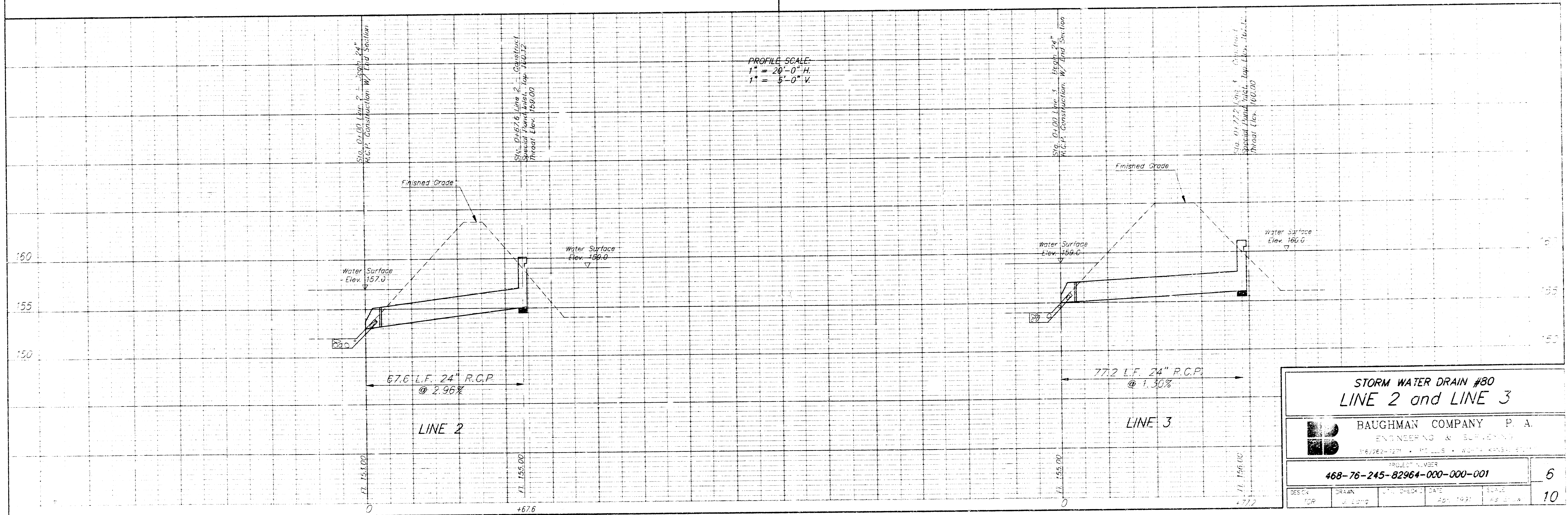
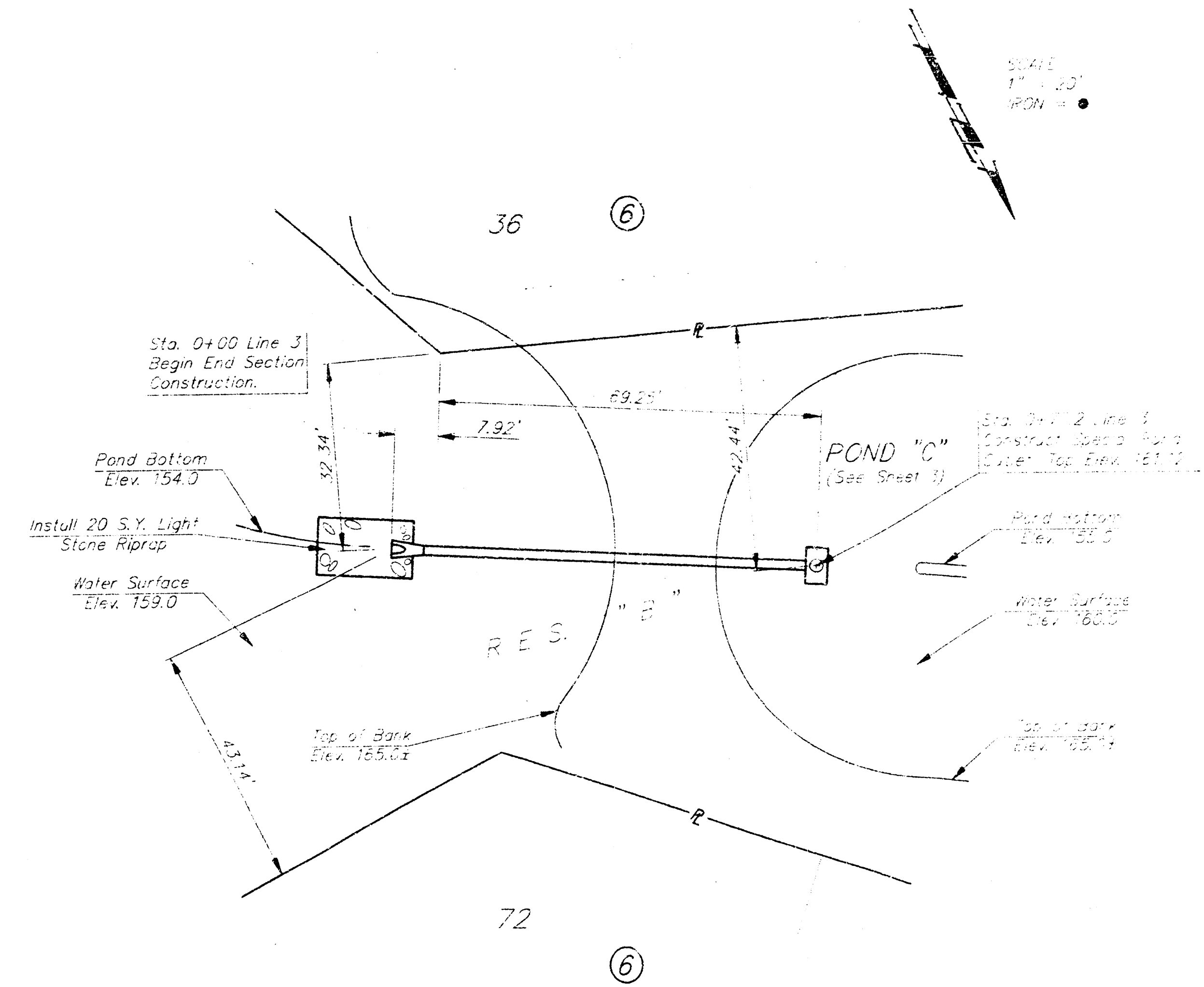
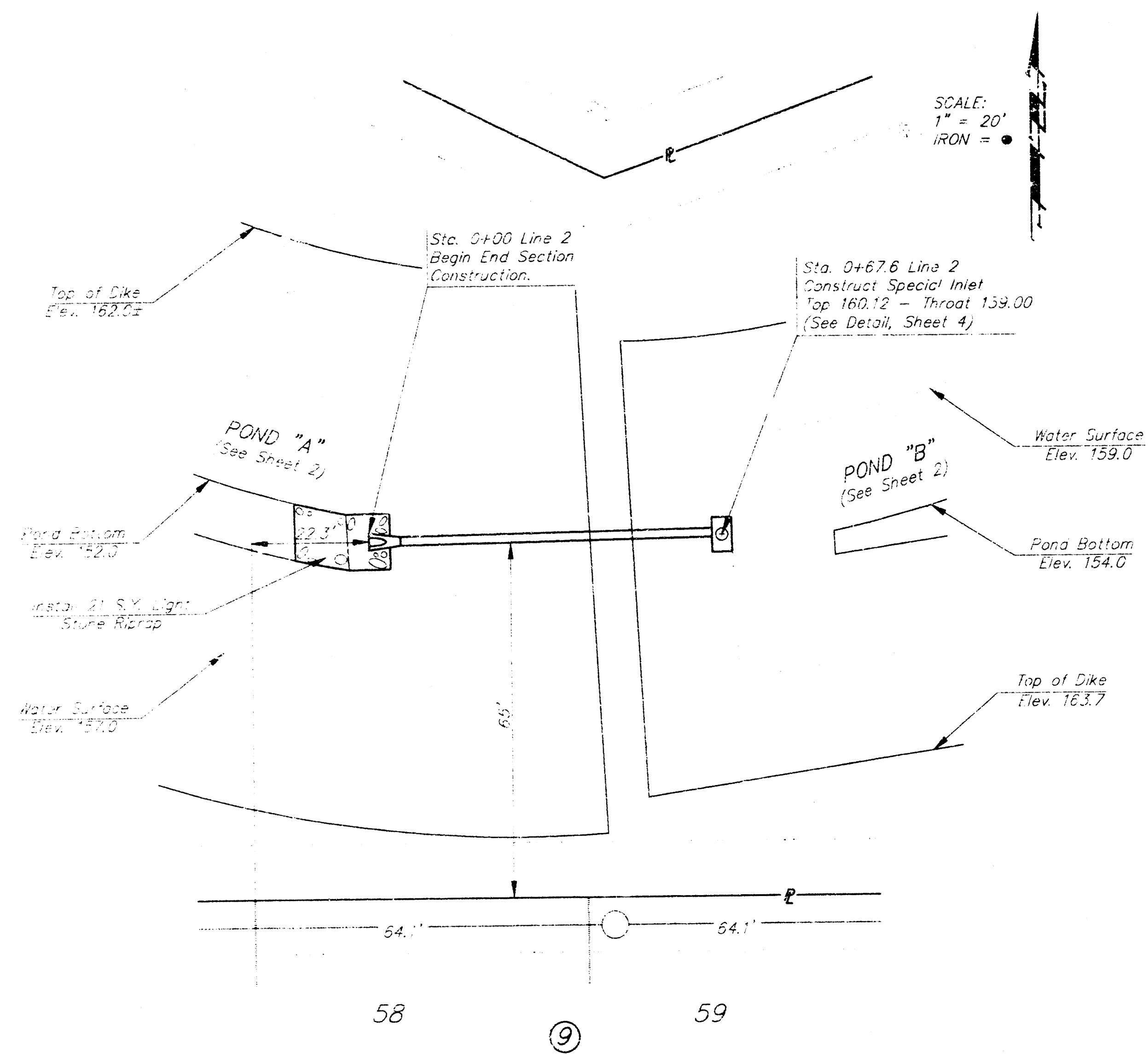
SPECIAL INLET DETAIL and PLAN for PONDS D and E

BAUGHMAN COMPANY P. A.
ENGINEERING & SURVEYING
315/282-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER
468-76-245-81964-000-000-001

DESIGN	DRAWN	UTL. CHECKED	DATE	SCALE	SHEET
TCR	CMB/JL		Apr. 1991	1" = 40'	10





POND "A" EARTHWORK VOLUMES

ELEV.	EXC. AREA	EXC. VOLUME	FILL AREA	FILL VOLUME
152.0	46,521	0	0	0
153.0	51,500	49,011	0	0
154.0	56,596	54,048	0	0
155.0	55,763	56,180	863	432
156.0	51,943	53,853	3,308	2,086
157.0	54,071	53,007	4,252	3,780
158.0	56,294	55,183	3,828	6,540
159.0	42,982	48,638	3,551	9,240
160.0	43,419	41,701	3,167	9,409
161.0	41,423	40,921	3,516	6,392
162.0	37,406	39,415	1,072	4,688
163.0	32,702	35,054	0	536
164.0	22,516	27,509	0	0
165.0	5,538	16,027	0	0
165.5	0	2,385	0	0

TOTAL EXC. = 574,032 C.F.
= 21,260 C.Y.

TOTAL FILL = 43,103 C.F.
= 1,596 C.Y.

POND "B" EARTHWORK VOLUMES

ELEV.	EXC. AREA	EXC. VOLUME	FILL AREA	FILL VOLUME
154.0	7,188	0	0	0
155.0	11,106	9,147	0	0
156.0	15,140	13,123	0	0
157.0	19,292	17,216	0	0
158.0	23,361	21,427	0	0
159.0	27,948	25,755	0	0
160.0	32,454	30,201	0	0
161.0	37,077	34,768	0	0
162.0	41,819	39,448	0	0
163.0	42,309	42,064	0	0
164.0	19,951	31,130	0	0
165.0	3,027	11,489	0	0
165.5	0	908	0	0

TOTAL EXC. = 276,674 C.F.
= 10,247 C.Y.

TOTAL FILL = 0 C.F.
= 0 C.Y.

POND "C" EARTHWORK VOLUMES

ELEV.	EXC. AREA	EXC. VOLUME	FILL AREA	FILL VOLUME
155.0	55,769	0	0	0
156.0	64,713	60,241	0	0
157.0	74,867	69,790	0	0
158.0	85,149	80,008	0	0
159.0	95,562	90,356	0	0
160.0	106,104	100,833	0	0
161.0	115,779	111,442	0	0
162.0	127,587	122,183	0	0
163.0	136,952	132,270	0	0
164.0	136,136	136,544	0	0
165.0	127,072	131,604	0	0
166.0	115,532	121,302	0	0
167.0	85,310	100,421	0	0
168.0	16,495	50,903	0	0
169.0	0	8,248	0	0

TOTAL EXC. = 1,316,145 C.F.
= 48,746 C.Y.

TOTAL FILL = 0 C.F.
= 0 C.Y.

POND "D" EARTHWORK VOLUMES

ELEV.	EXC. AREA	EXC. VOLUME	FILL AREA	FILL VOLUME
155.0	3,437	0	0	0
156.0	4,449	3,943	0	0
157.0	5,583	5,016	0	0
158.0	6,837	6,210	0	0
159.0	8,210	7,524	0	0
160.0	9,702	8,956	0	0
161.0	11,313	10,508	0	0
162.0	13,042	12,178	0	0
163.0	14,888	13,965	0	0
164.0	15,983	15,436	343	422
165.0	10,283	13,133	0	0
166.0	2,638	6,460	0	0
167.0	0	1,320	0	0

TOTAL EXC. = 104,649 C.F.
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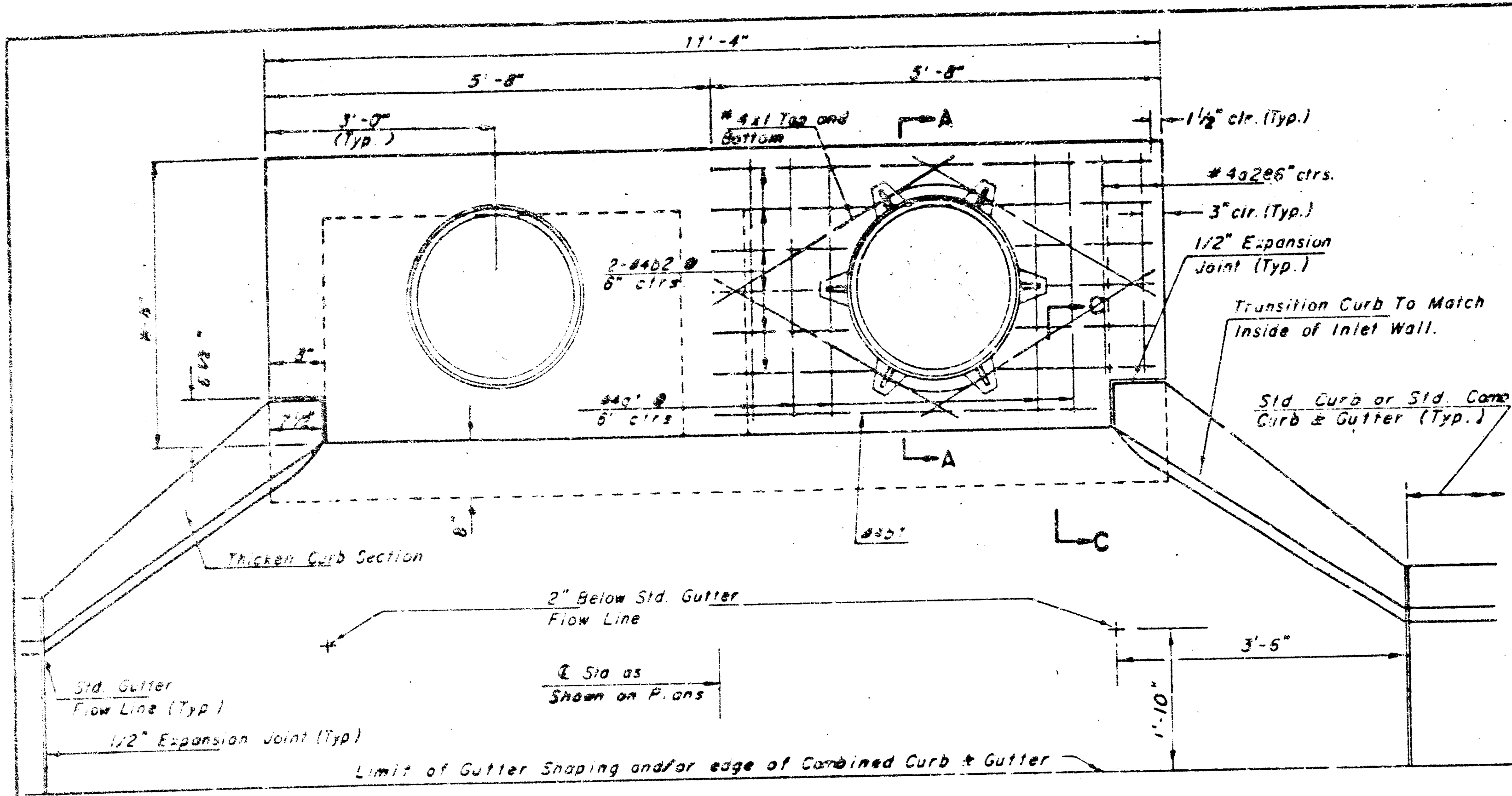
TOTAL FILL = 422 C.F.
= 15 C.Y.

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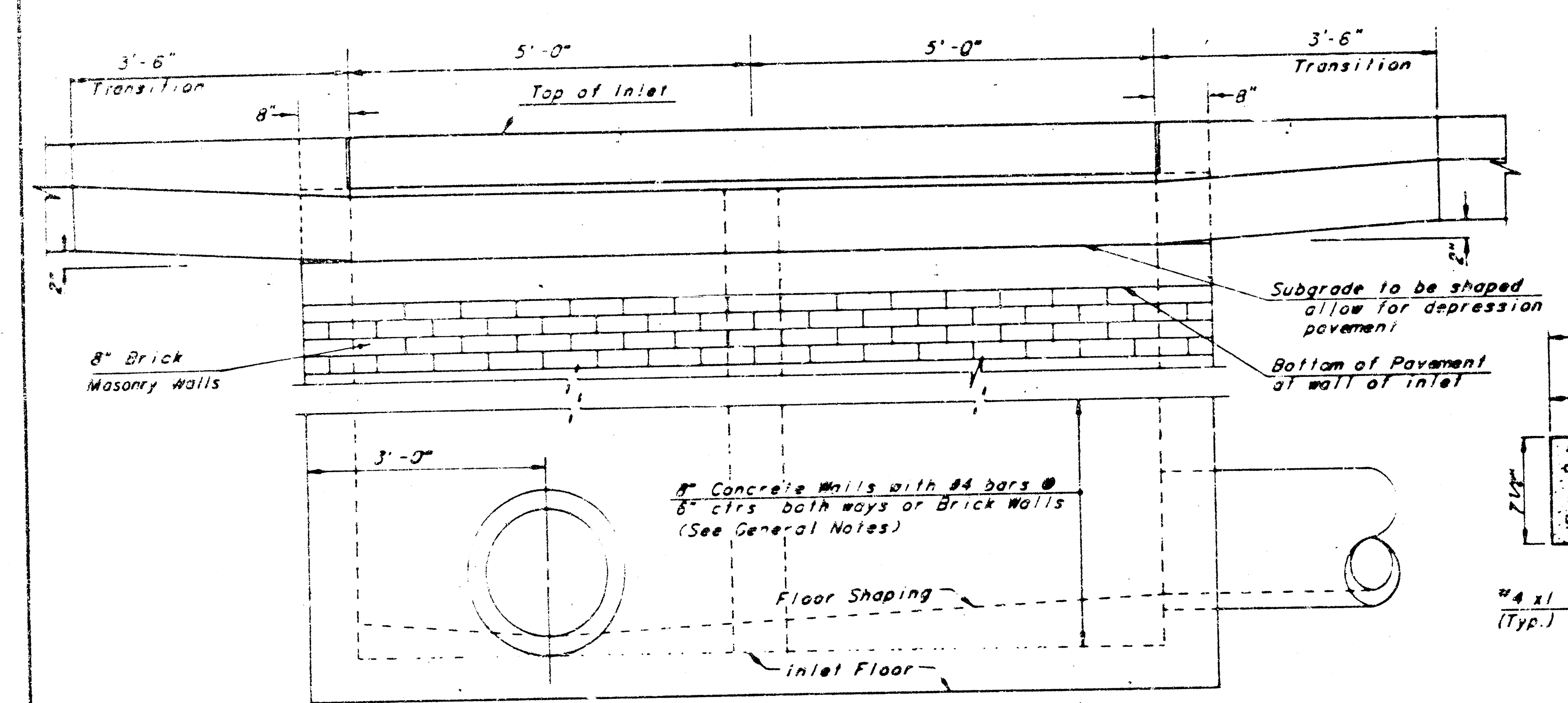
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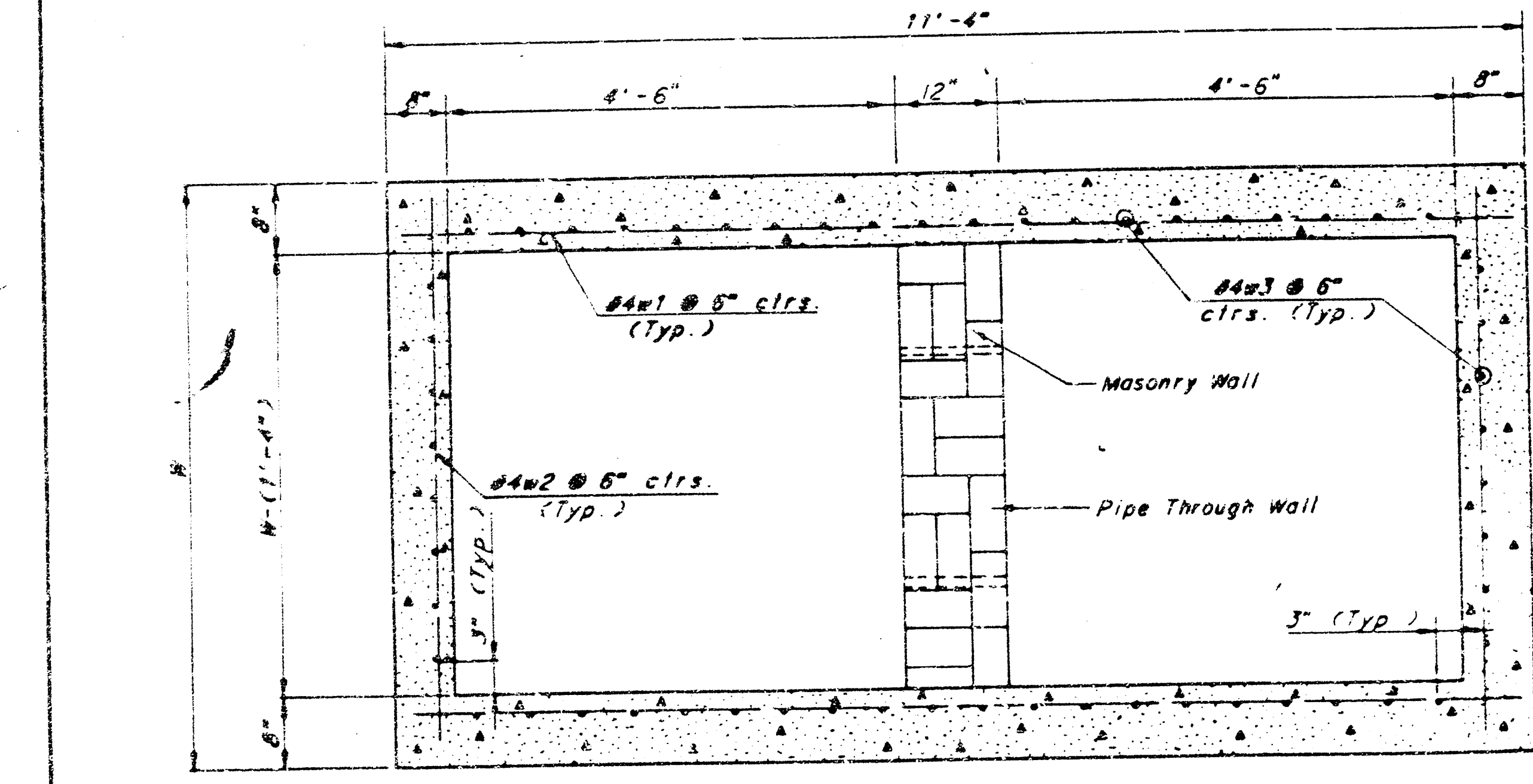
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PT. 275 N	18701.419	E	20869.544
PT. 276 N	18706.083	E	20832.410
PT. 277 N	18651.766	E	20857.700
PT. 278 N	18671.584	E	20821.601
PT. 279 N	18609.564	E	20856.677
PT. 280 N	18567.244	E	20855.555
PT. 281 N	18567.966	E	20819.777
PT. 282 N	18414.077	E	20868.111
PT. 283 N	18473.698	E	20905.006
PT. 284 N	18471.998	E	20853.465
PT. 285 N	18449.554	E	20881.977
PT. 286 N	18419.014	E	20857.758
PT. 287 N	18430.425	E	20814.355
PT. 288 N	18777.663	E	20825.511
PT. 289 N	18390.102	E	20774.077
PT. 290 N	18351.637	E	20780.635
PT. 291 N	18356.992	E	20754.477
PT. 292 N	18318.654	E	20789.665
PT. 293 N	18261.854	E	20746.121
PT. 294 N	18264.526	E	20746.877
PT. 295 N	18241.510	E	20790.583
PT. 296 N	18213.475	E	20798.911
PT. 297 N	18551.206	E	20714.386
PT. 298 N	18205.825	E	20805.165
PT. 299 N	18242.743	E	20191.341



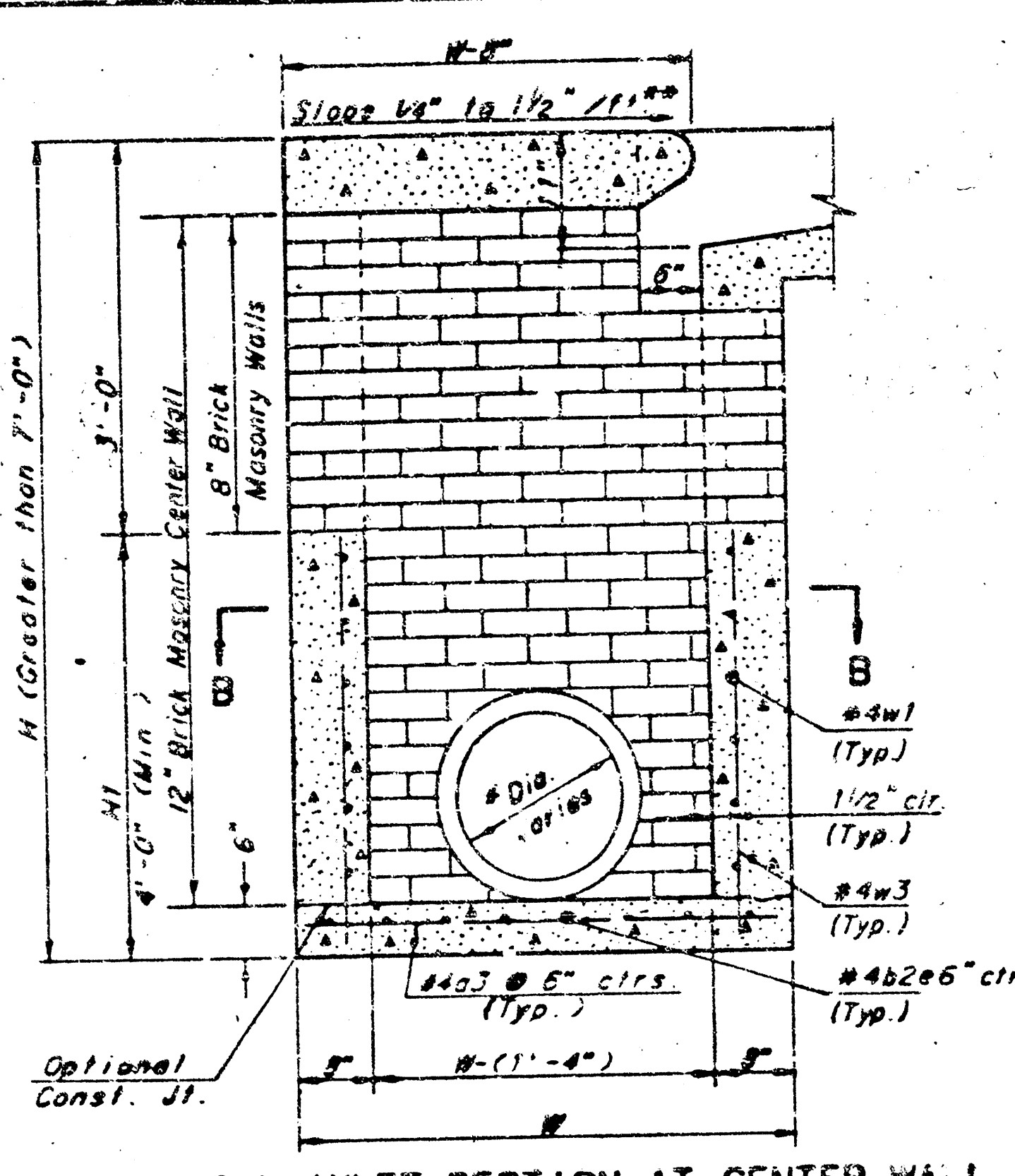
PLAN



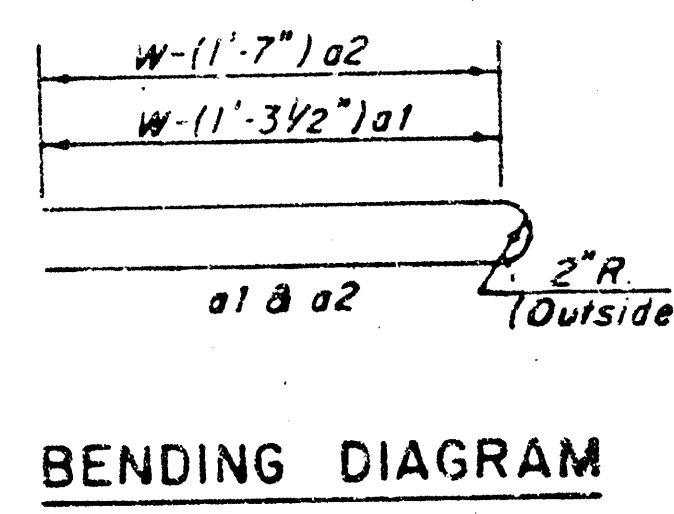
ELEVATION



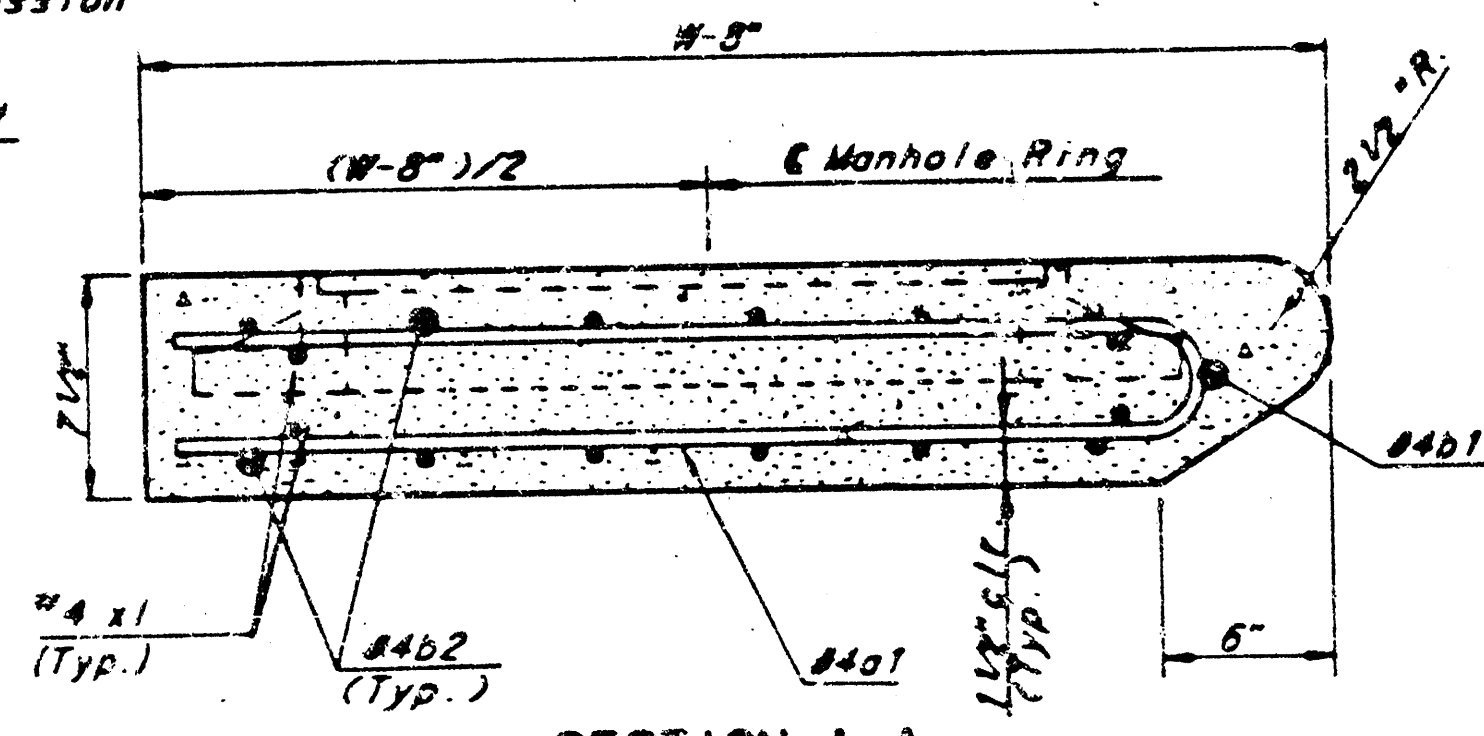
SECTION B-B



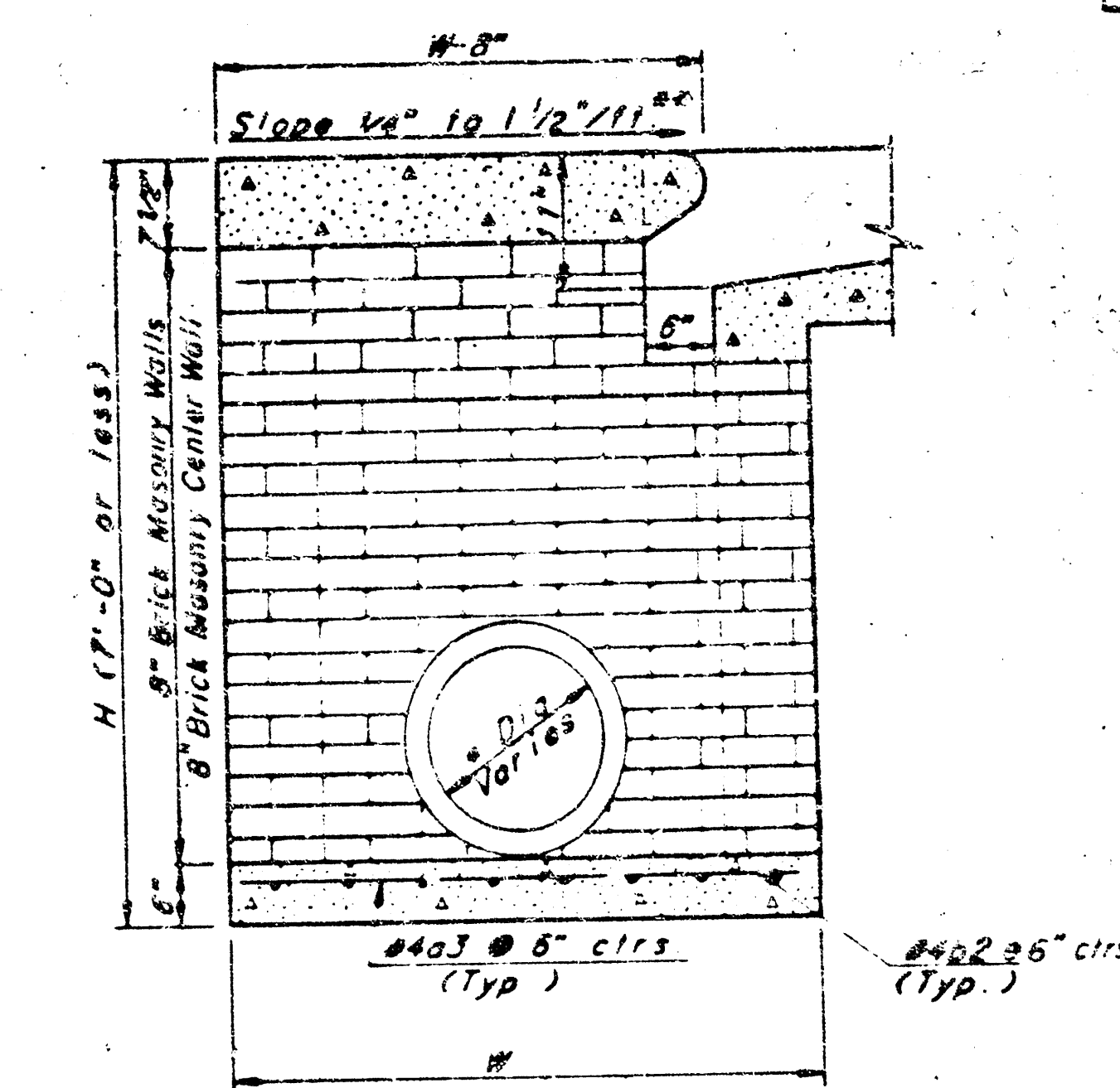
TYPICAL INLET SECTION AT CENTER WALL
(REINFORCED CONCRETE WALLS)



BENDING DIAGRAM

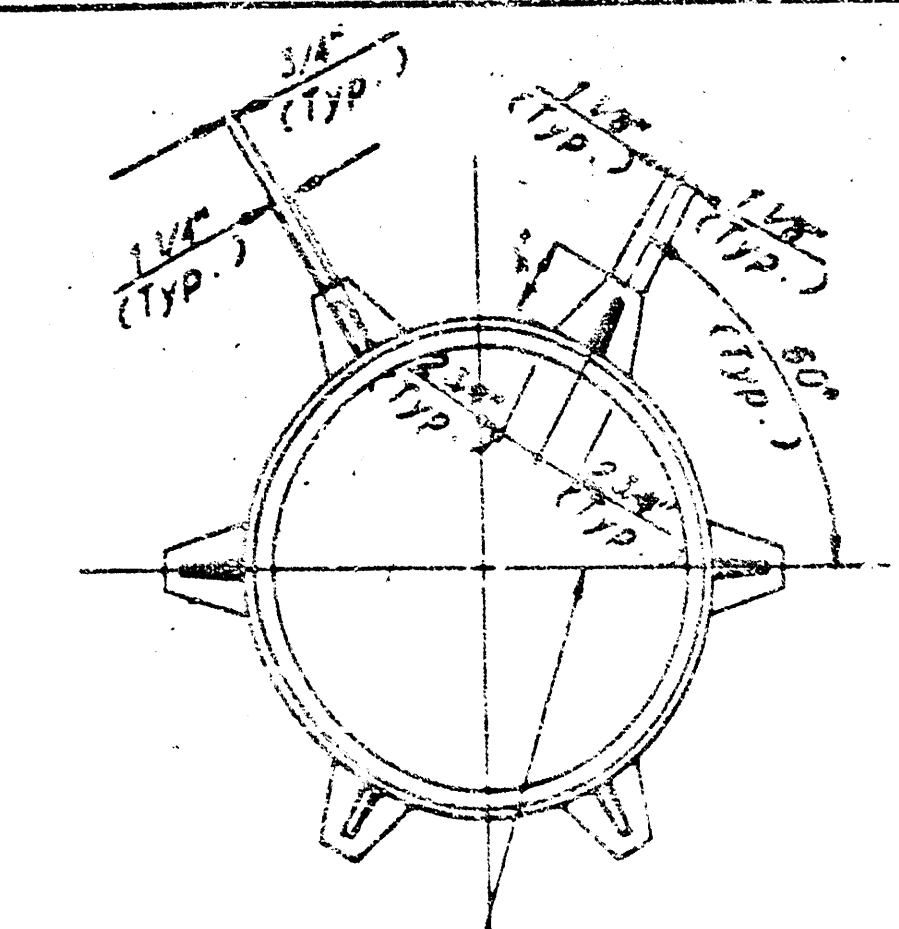


SECTION A-A

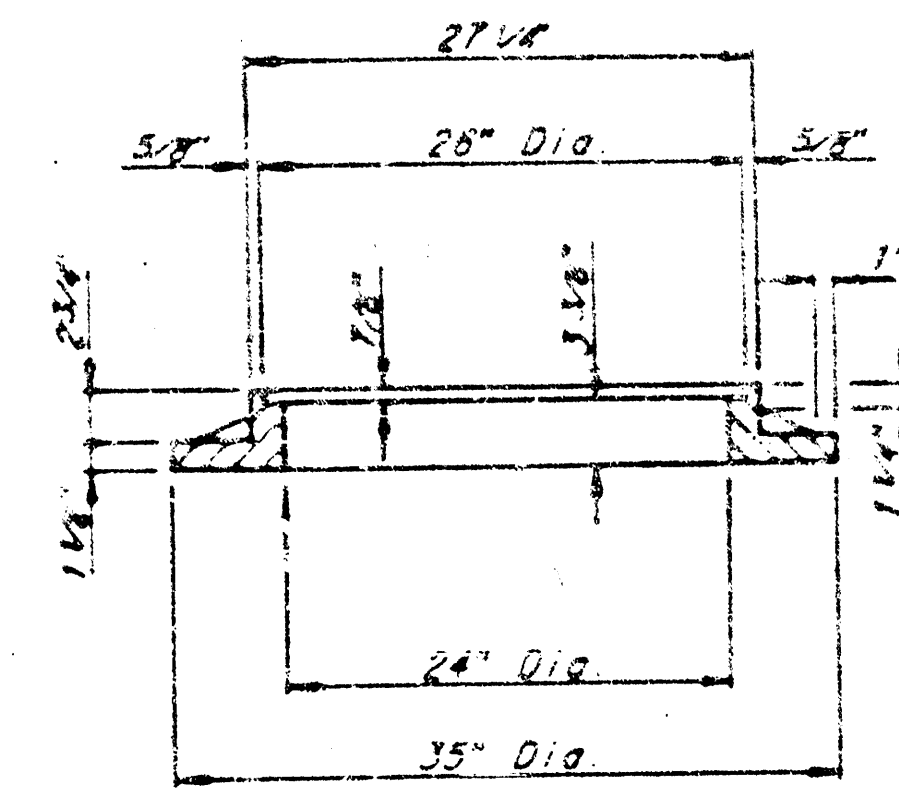


TYPICAL INLET SECTION AT CENTER WALL
(MASONRY WALLS)

* A center wall opening shall be provided by means of a section of reinforced concrete pipe. See Case I and Case II below.

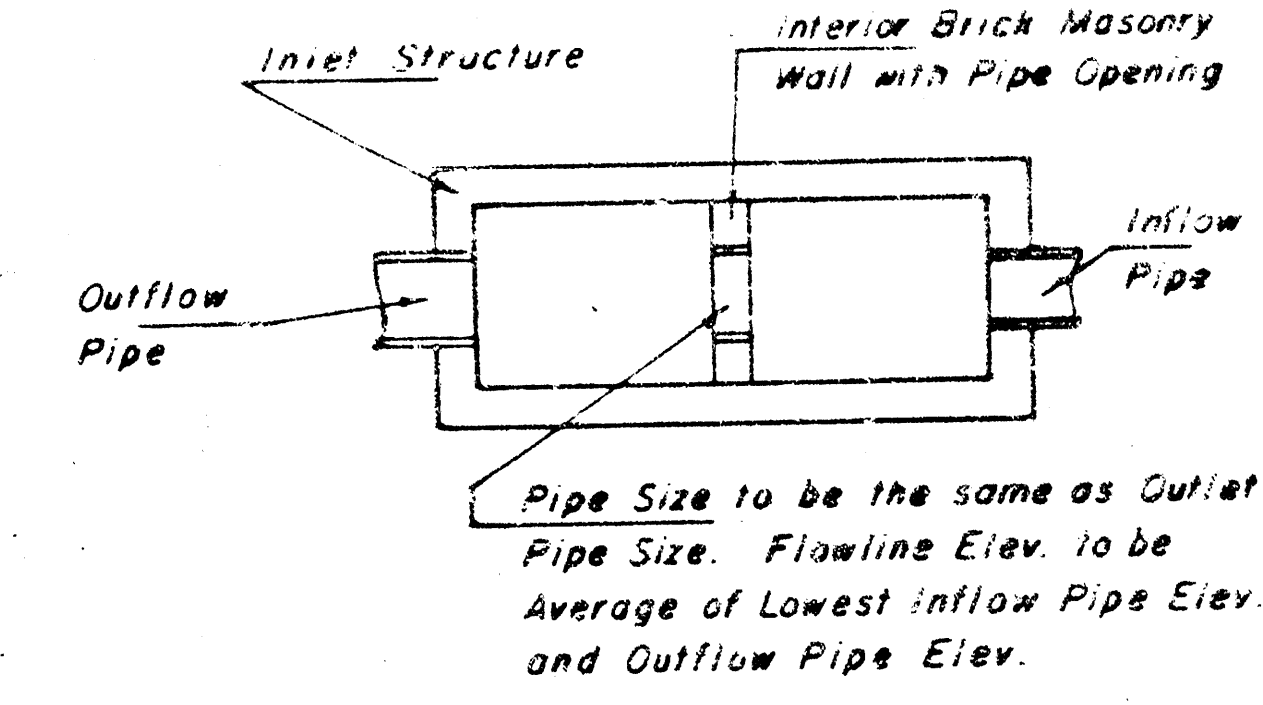


Position Ring such that this line is parallel with & of pavement

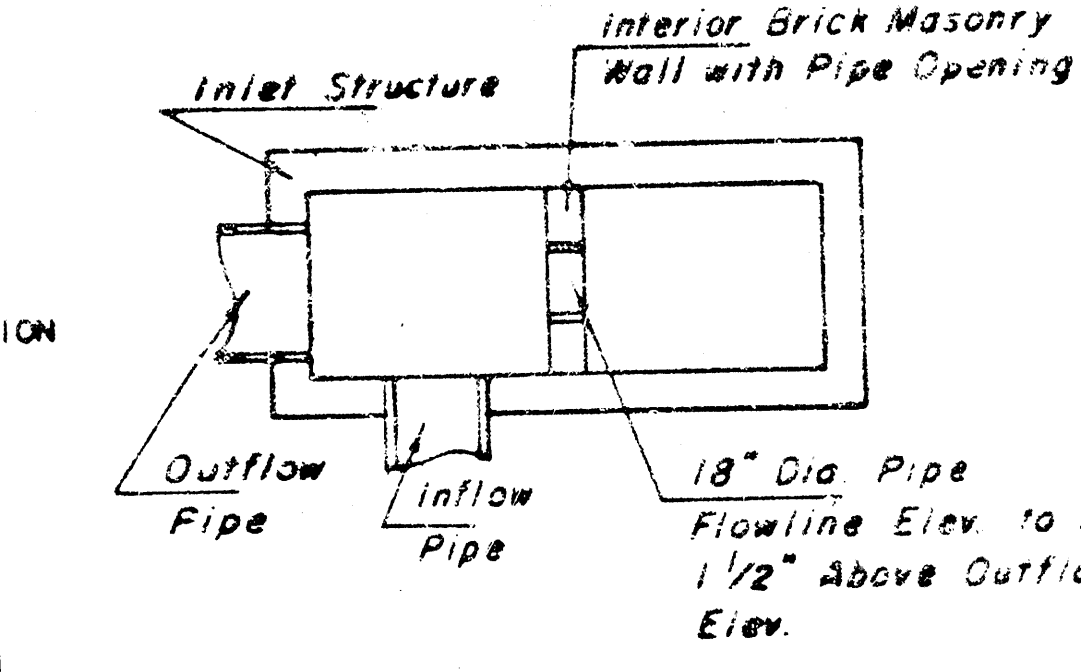


CAST IRON INLET RING
WT. - 180 lbs.

See City of Wichita Standard Manhole Frame and Cover Detail Sheet for Cover Details to be used with Inlet Frame.



CASE I



CASE II

NOTE: Center Wall Pipe Size shall be as Specified in Inlet Construction Note on the Plan/Profile Sheets for those Cases not shown here.

GENERAL NOTES

- THE CONTRACTOR SHALL BE REQUIRED TO CONSTRUCT 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP ON THIS INLET WHEN W=6'-4" OR LESS AND H=7'-0" OR LESS. WHEN W IS GREATER THAN 6'-4" AND H IS LESS THAN 7'-0" THE OUTSIDE INLET WALLS BELOW THE BRICK STACK SHALL BE REINFORCED CONCRETE CONSTRUCTION AND THE CENTER WALL SHALL BE OF MASONRY CONSTRUCTION AS SHOWN FOR THE MASONRY WALL OPTION.
- 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 BARS IN INLET TOP TO BE FIELD BENT OR CUT TO CLEAR MANHOLE RING.
- THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.

SLAB AND FLOOR REINFORCING											
MARK	SIZE	W=4'-4"		W=5'-4"		W=6'-4"		W=7'-4"		W=8'-4"	
		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
a1	#4	13	6'-7"	13	8'-7"	13	10'-7"	13	12'-7"	13	14'-7"
a2	#4	4	8'-0"	4	8'-0"	4	10'-0"	4	12'-0"	4	14'-0"
a3	#4	23	4'-1"	23	5'-1"	23	6'-1"	23	7'-1"	23	8'-1"
b1	#4	1	9'-9"	1	9'-9"	1	9'-9"	1	9'-9"	1	9'-9"
b2	#4	23	11'-1"	29	11'-1"	35	11'-1"	41	11'-1"	47	11'-1"
x1	#4	16	3'-10"	16	4'-2"	16	4'-6"	16	4'-10"	16	5'-2"
WALL REINFORCING											

WALL REINFORCING											
MARK	SIZE	W=4'-4"		W=5'-4"		W=6'-4"		W=7'-4"		W=8'-4"	
		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
w1	#4	①	11'-1"	①	11'-1"	①	11'-1"	①	11'-1"	①	11'-1"
w2	#4	①	4'-1"	①	5'-1"	①	6'-1"	①	7'-1"	①	8'-1"
w3	#4	52	②	56	②	60	②	64	②	68	②

* Field bend or cut Reinforcing as required for clearance
① 4(HI-12") (HI-12") Rounded down to nearest 0.5'
② HI-3"

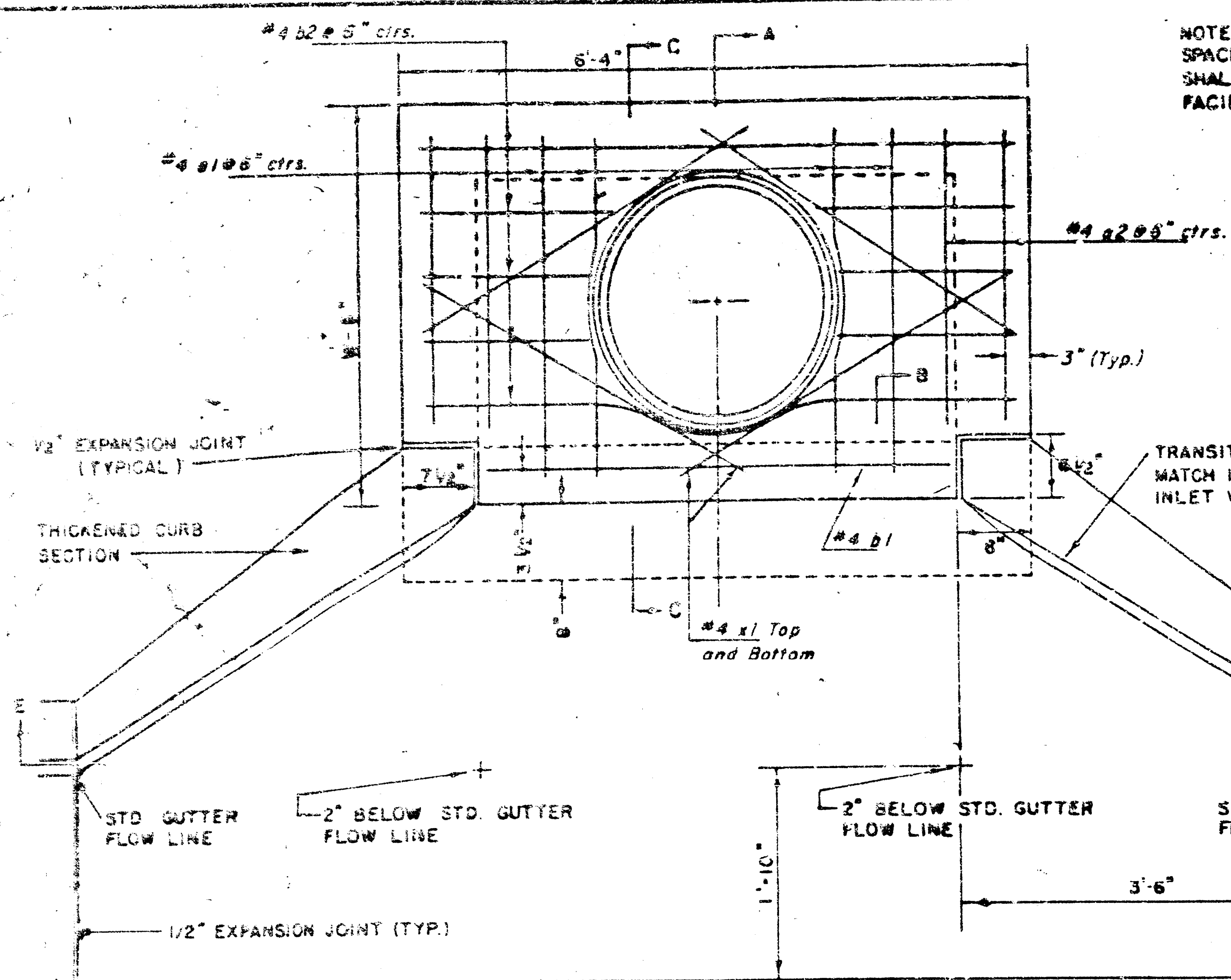
STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	SIDE OR INTERIOR WALL PIPE SIZE	CU. YD. CONC.
4'-4"	3'-8" x 11'-4" x 7 1/2"	21" & SMALLER	0.83 ±
5'-4"	4'-8" x 11'-4" x 7 1/2"	24" & 30"	1.09 ±
6'-4"	5'-8" x 11'-4" x 7 1/2"	36" & 42"	1.35 ±
7'-4"	6'-8" x 11'-4" x 7 1/2"	48" & 54"	1.61 ±
8'-4"	7'-8" x 11'-4" x 7 1/2"	60" & 66"	1.87 ±

STANDARD TYPE 1A
CURB INLET
INLET OPENING = 8" x 10' - 0"

PROJECT NUMBER
#81964
WICHITA, KANSAS

8
10

Designed by: BER, KJS, AMB
Checked by: LUCP
Date: Nov. 1984
Job No.

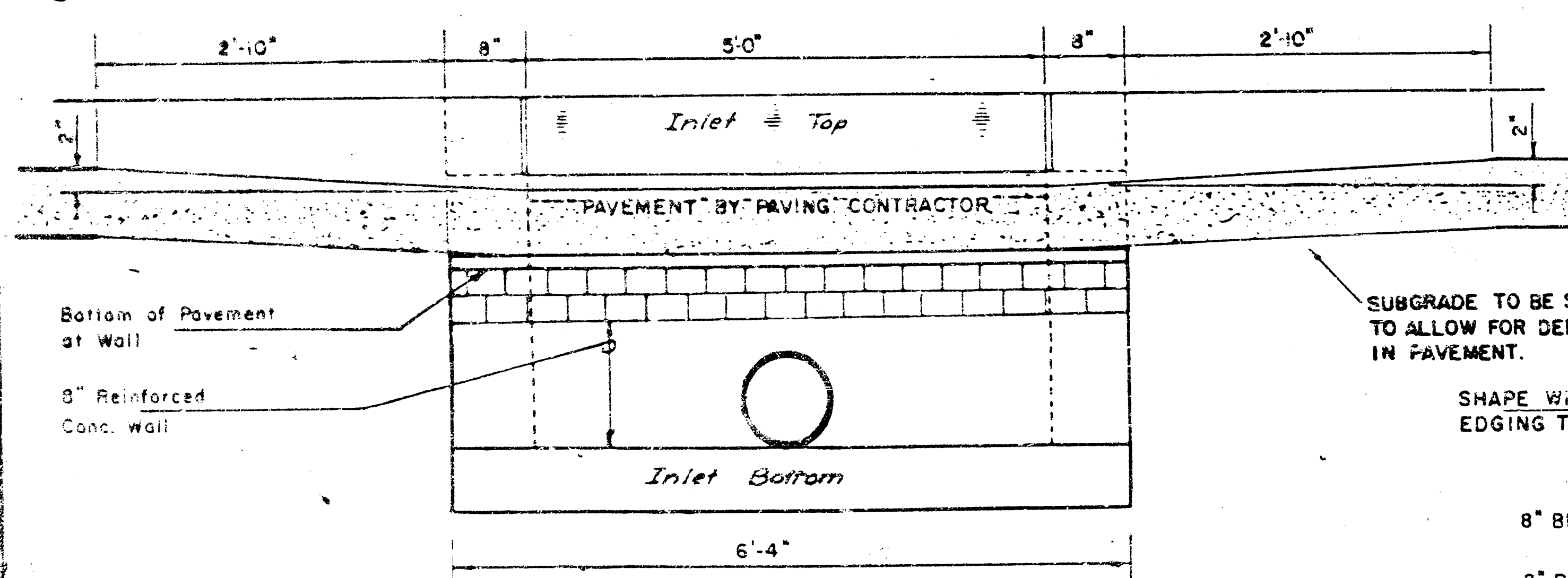


PLAN

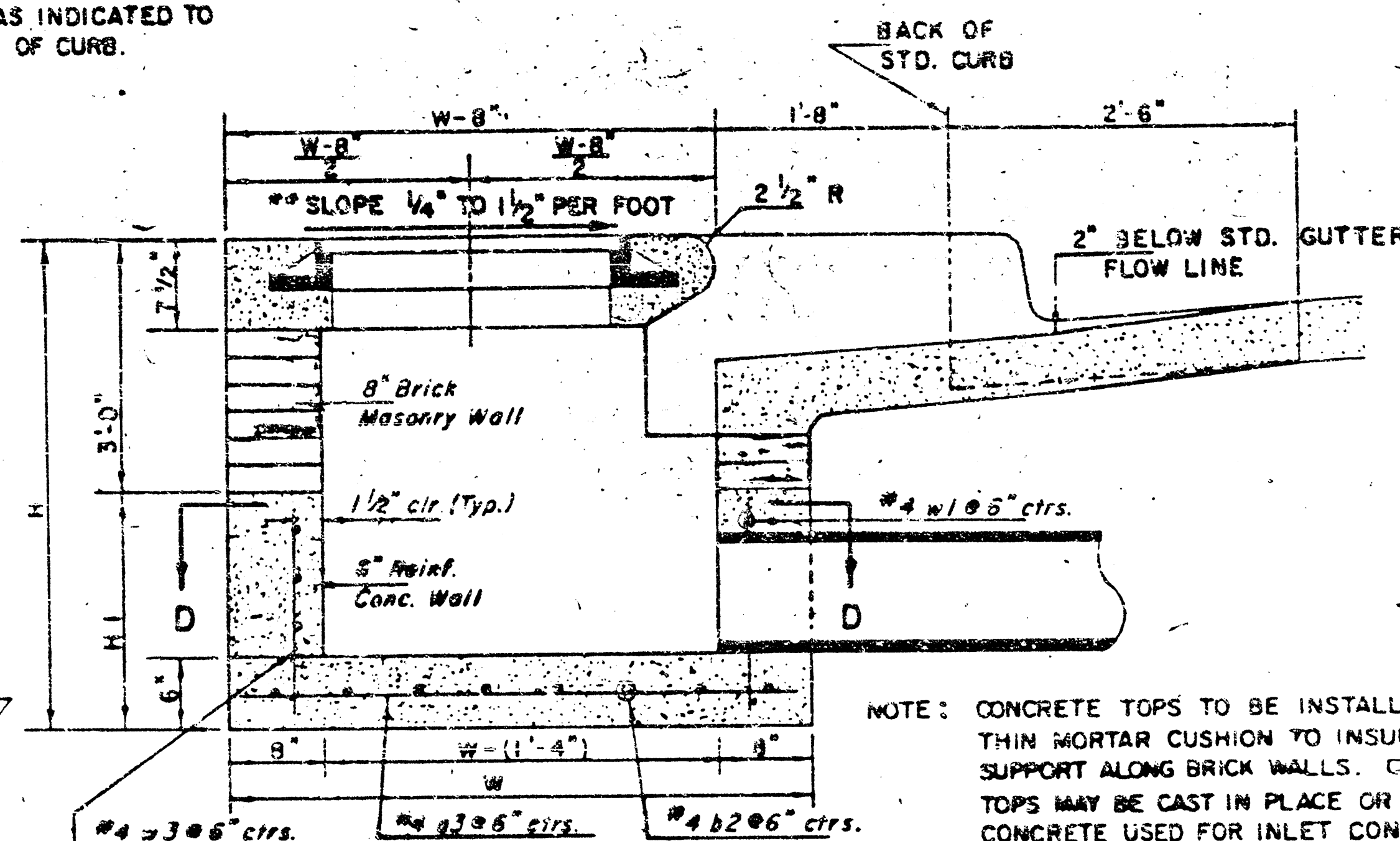
PRECAST SLAB AND FLOOR REINFORCING									
WALL	SIZE	NO.	Length	W=4'-4"	W=5'-4"	W=6'-4"	W=7'-4"	W=8'-4"	
1a1	#4	5	6'-7"	6	8'-7"	6	10'-7"	6	14'-7"
2a2	#4	4	6'-0"	4	8'-0"	4	10'-0"	4	14'-0"
3a3	#4	13	4'-1"	13	5'-1"	13	6'-1"	13	8'-1"
4a4	#4	7	4'-9"	7	4'-9"	7	4'-9"	7	4'-9"
1b2	#4	23	6'-1"	23	6'-1"	35	6'-1"	41	6'-1"
2b2	#4	8	3'-10"	8	4'-2"	8	4'-6"	8	5'-2"

WALL REINFORCING									
WALL	SIZE	NO.	Length	W=4'-4"	W=5'-4"	W=6'-4"	W=7'-4"	W=8'-4"	
1a1	#4	1	6'-1"	1	6'-1"	1	6'-1"	1	6'-1"
2a2	#4	1	6'-1"	1	5'-1"	1	7'-1"	1	8'-1"
3a3	#4	32	2	36	2	40	2	48	2

- * Field and cut reinforcing as required for clearance.
 ① 4(HI-12'), (HI-12') Round down to nearest 0.5'
 ② HI-3"



NOTE: INLET TOP REINFORCING SHALL BE SPACED ON 6" MAX. CENTERS. INLET LIDS SHALL BE NOTCHED OUT AS INDICATED TO FACILITATE CONSTRUCTION OF CURB.



NOTE: 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 WITH AIR ENTRAINMENT.

NOTE: CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP OR THIS INLET WHEN W = 6'-4" AND H = 7'-0" OR LESS.

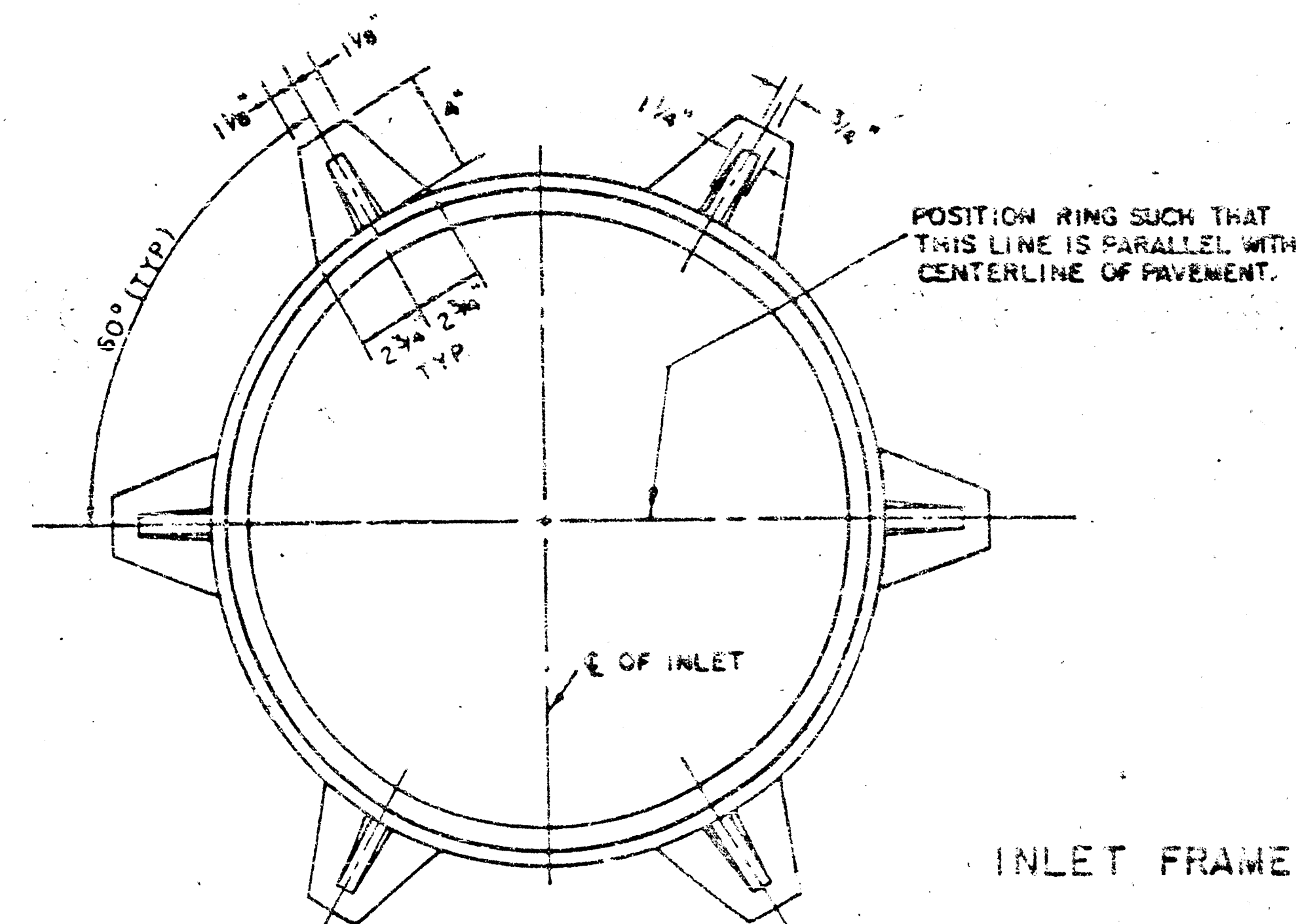
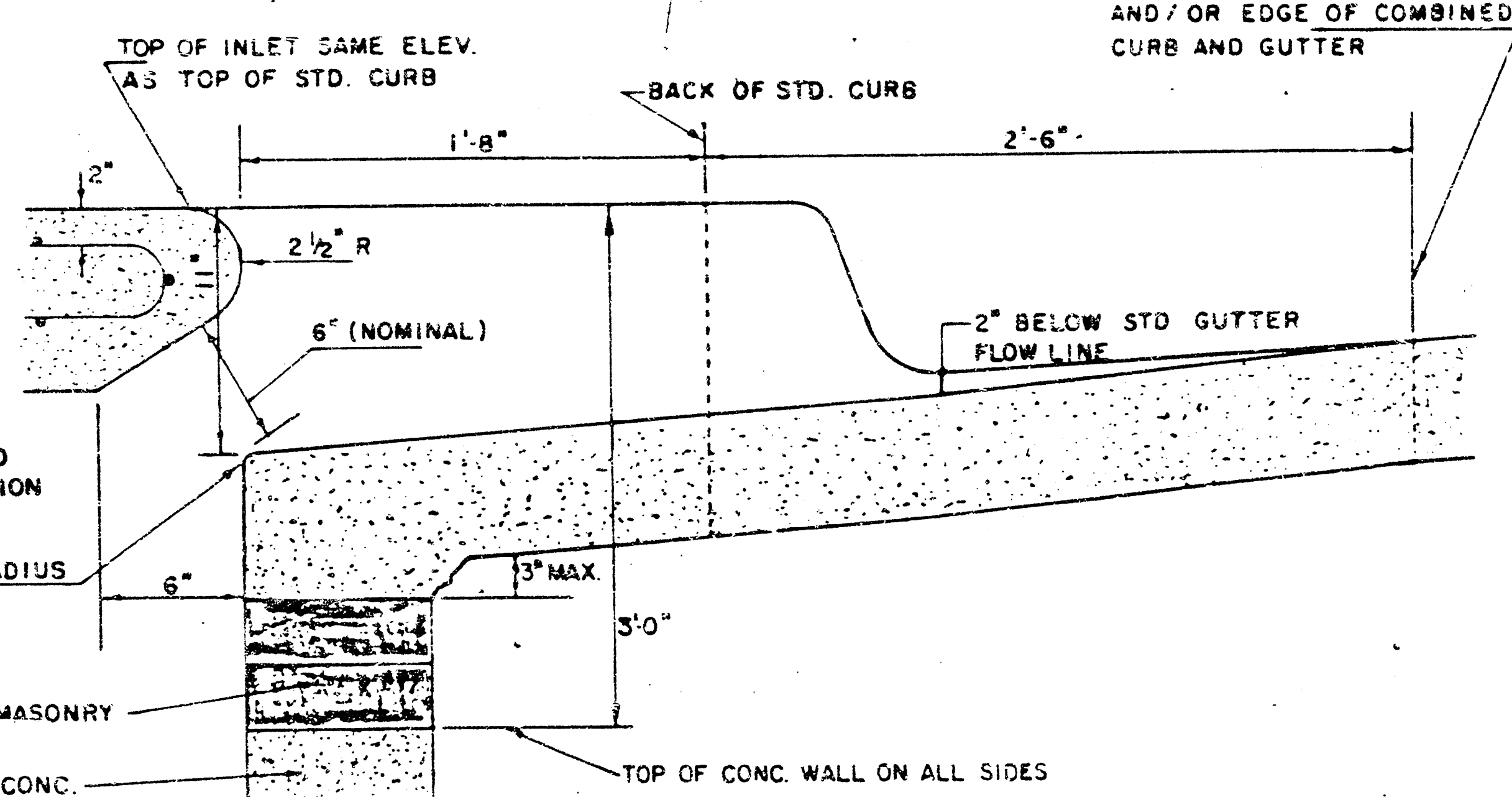
ADDITIONAL CURB AND GUTTER CONSTRUCTION NECESSARY TO CONNECT SET-BACK INLET TO PAVEMENT WILL BE PAID FOR AT THE UNIT PRICE BID FOR EACH INLET HOOKUP.

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.

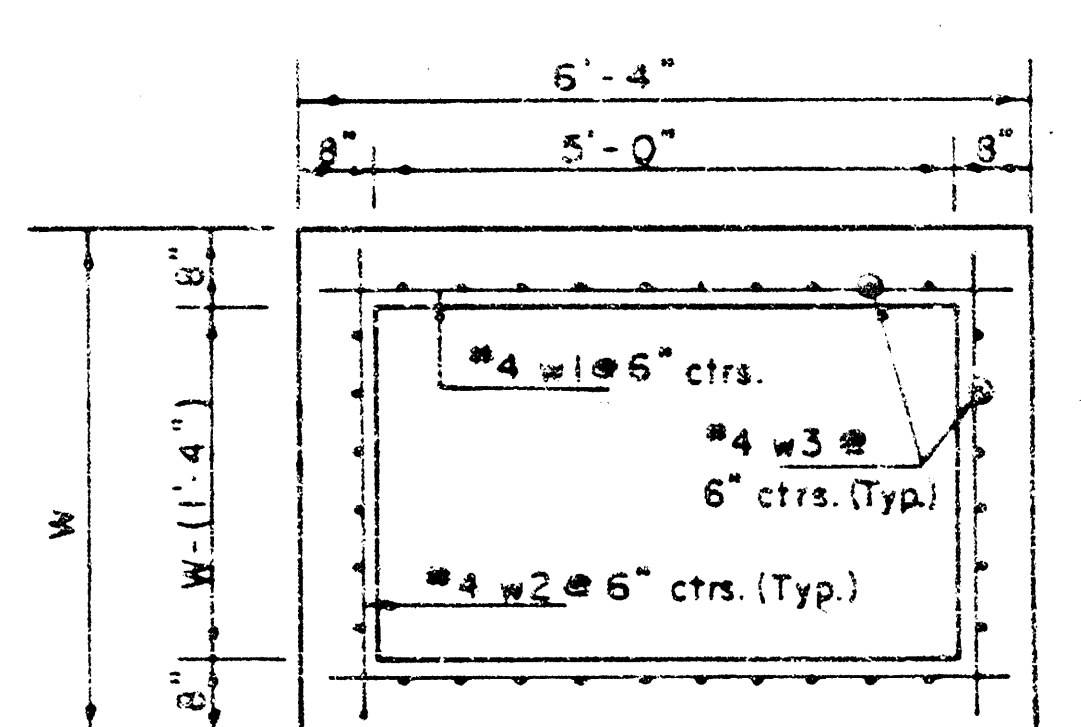
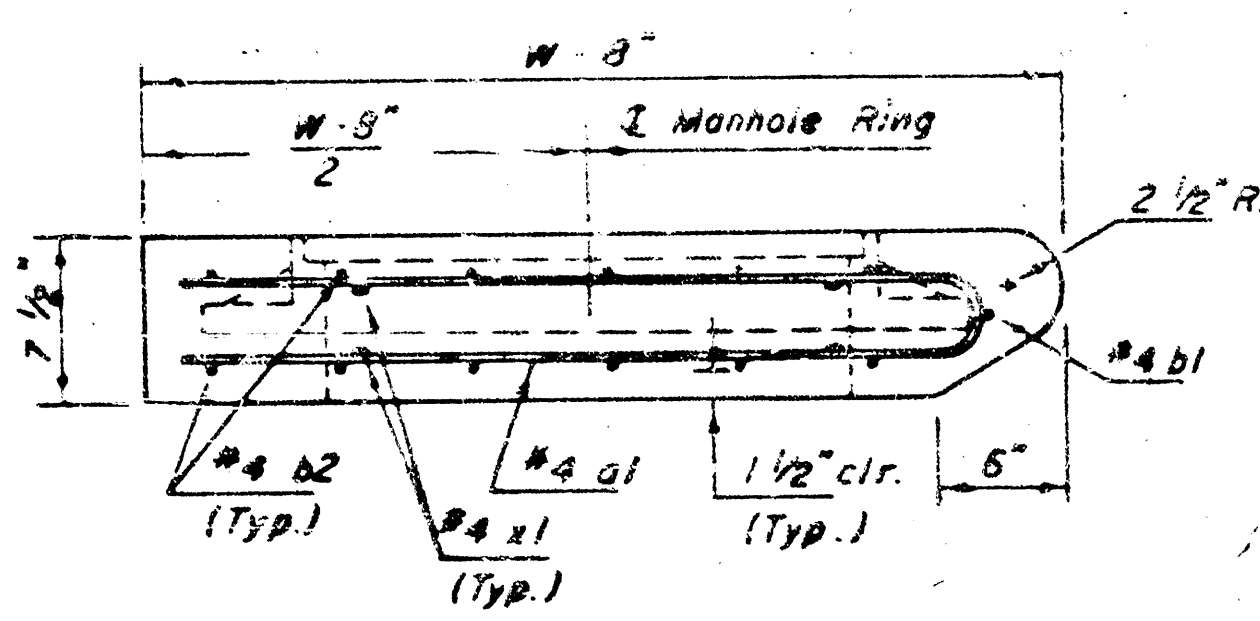
THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.

**NOTE: Slope of Inlet Tops to match Sidewalk or Parking Slopes within Limits Indicated.

W	PRE-CAST TOP SIZE	PIPE SIZE	W TO CONC.
4' 4"	35" x 6' 4" x 7' 1/2"	21" B SMALLER	0.38 ±
5' 4"	48" x 6' 4" x 7' 1/2"	24" B 30"	0.51 ±
6' 4"	58" x 6' 4" x 7' 1/2"	36" B 42"	0.64 ±
7' 4"	68" x 6' 4" x 7' 1/2"	48" B 54"	0.77 ±
8' 4"	78" x 6' 4" x 7' 1/2"	60" B 66"	0.90 ±

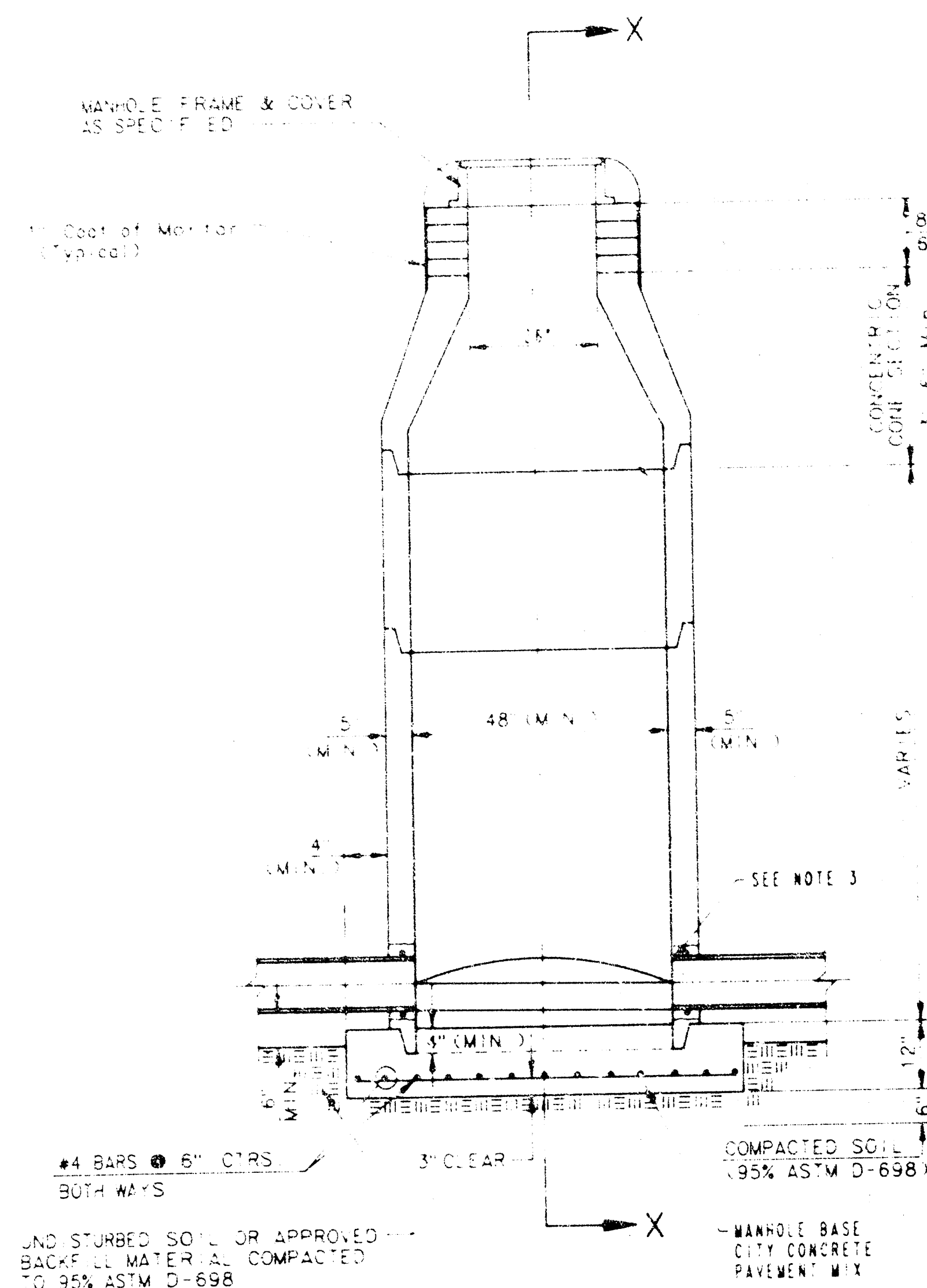


SEE CITY OF WICHITA STANDARD MANHOLE FRAME AND COVER DETAIL SHEET FOR COVER DETAILS TO BE USED WITH INLET FRAME.

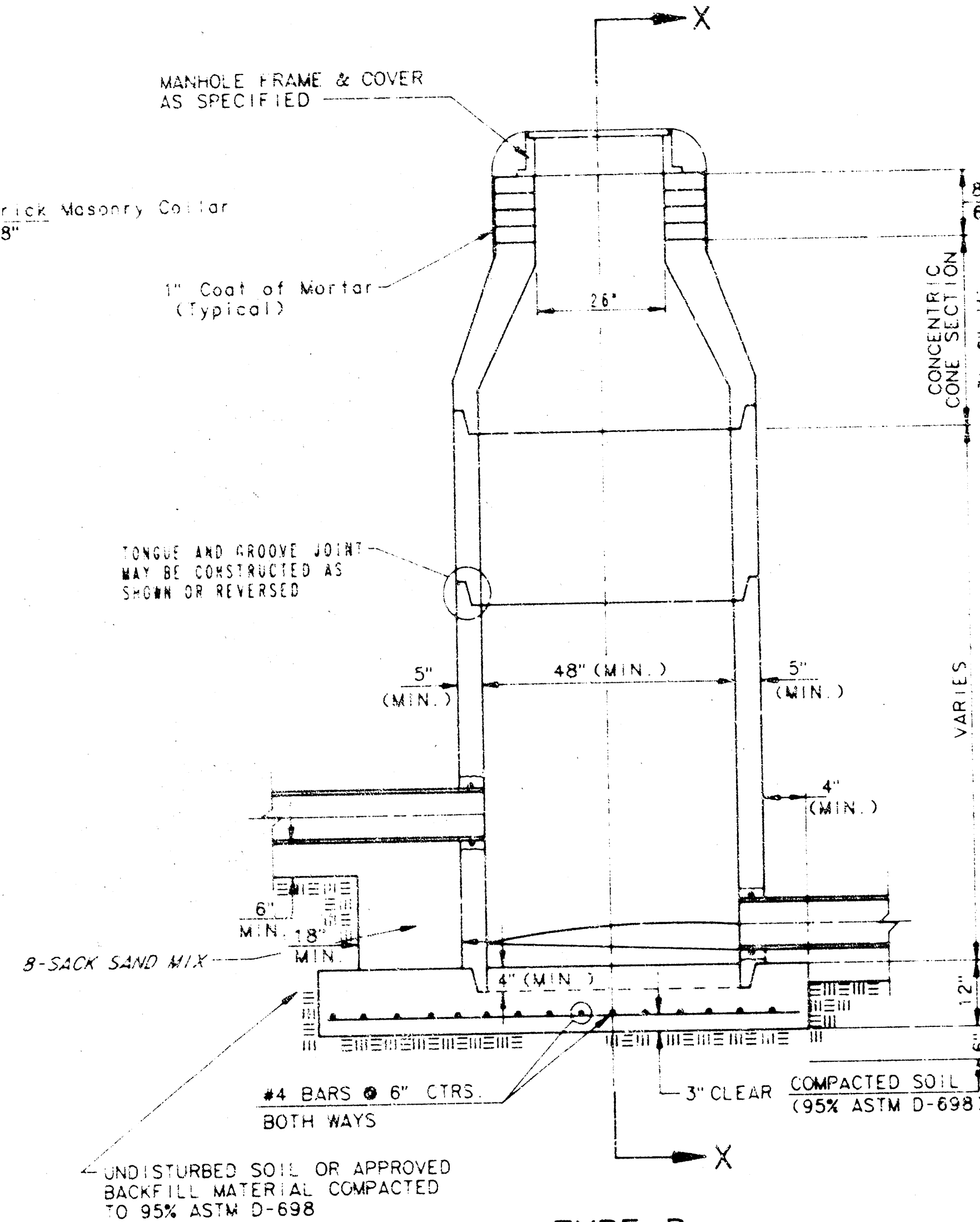


DETAIL STANDARD TYPE 1A CURB INLET
 CITY OF WICHITA, KANSAS
 INLET OPENING = 6" x 5' 0"
 PROJECT NUMBER
 #81964
 JUNE 1984

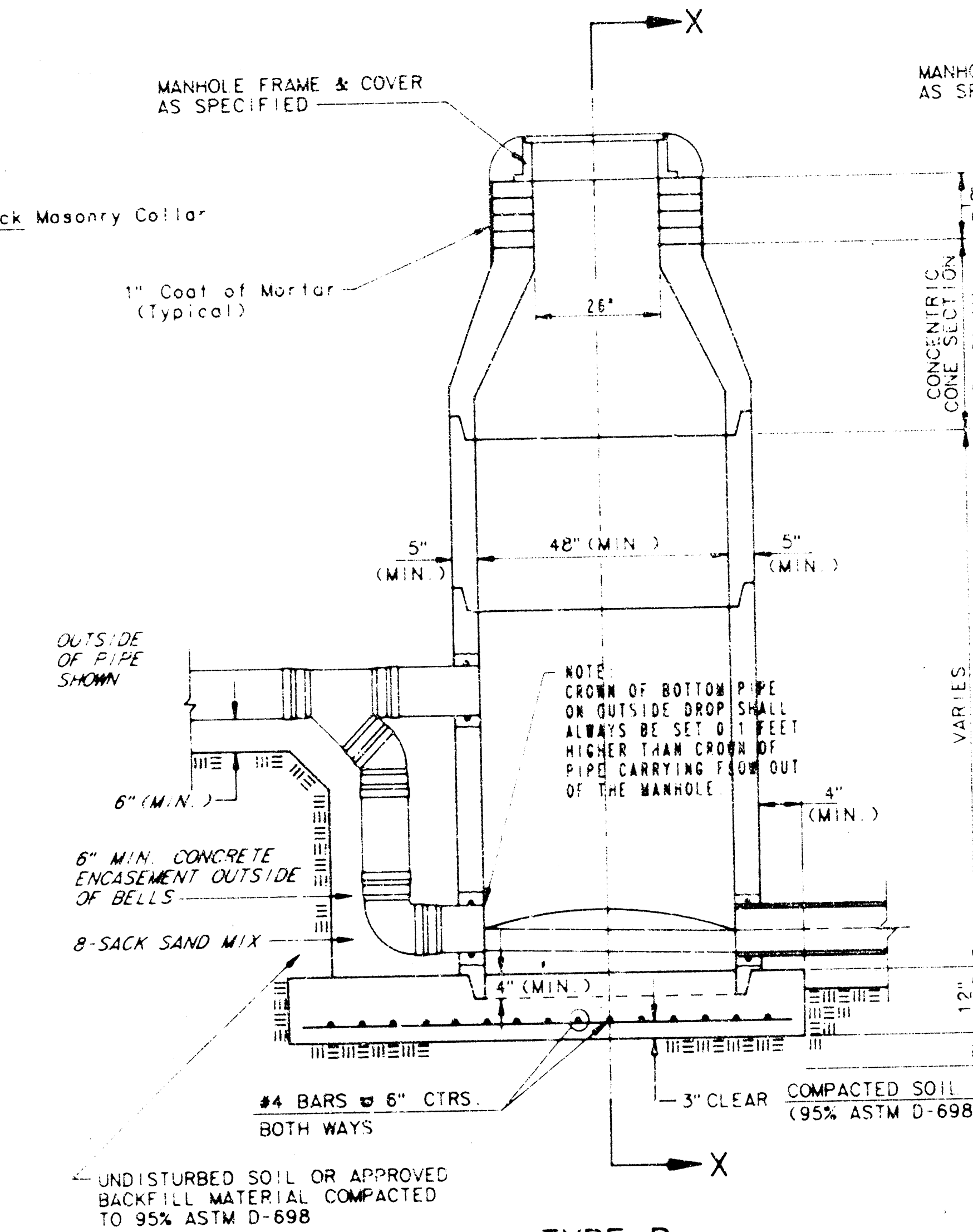
SEWER APPURTENANCES DETAILS ADOPTED AS STANDARD DESIGN BY CITY OF WICHITA



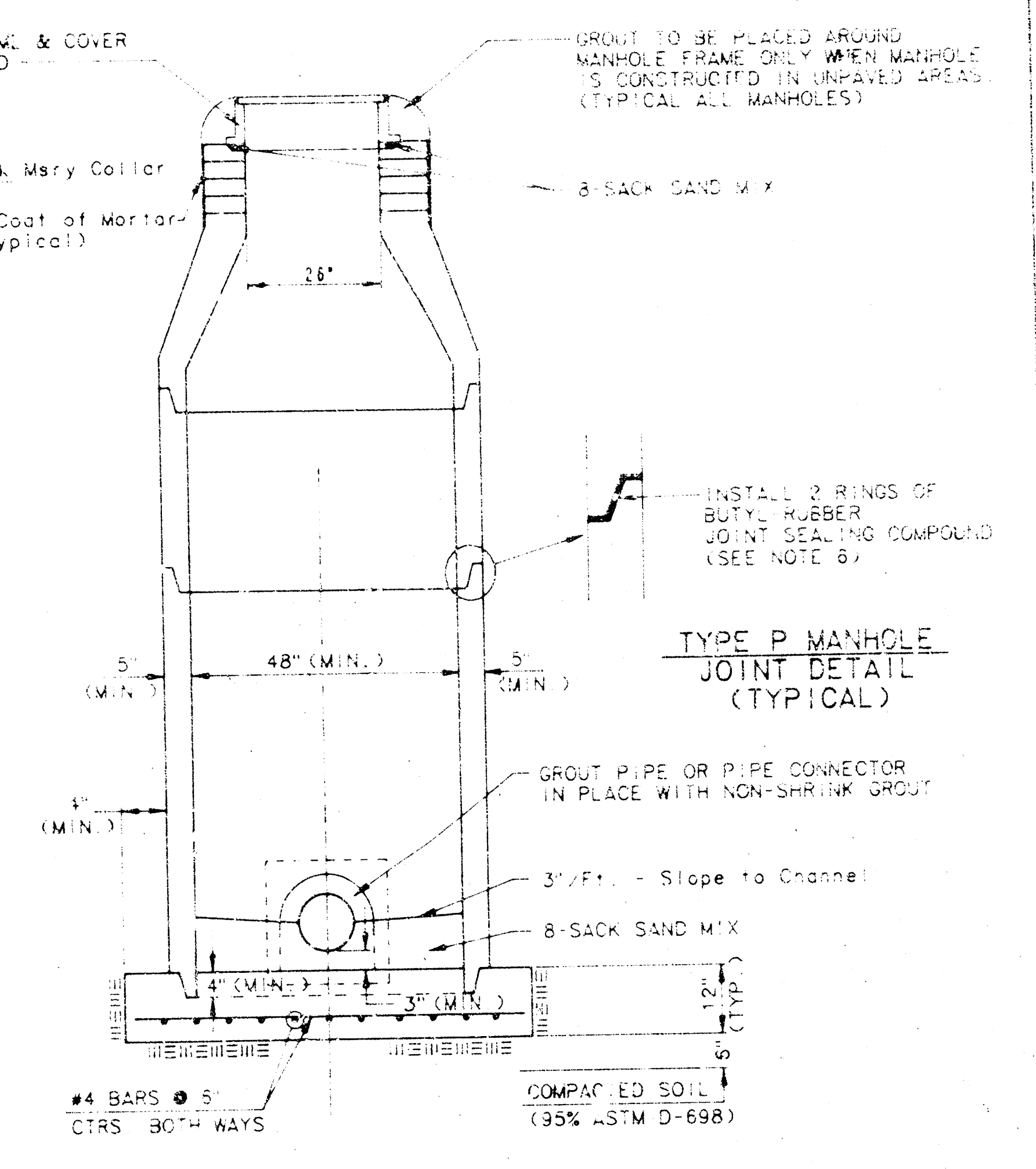
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



SECTION X
(TYPICAL)

GENERAL NOTES

1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF A.S.T.M. C-900 AS NOTED BY THE SPECIFICATIONS.
2. NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
3. APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A P.V.C. COMPOSITE PIPE OR P.V.C. PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT. THE SEWER PIPE SHALL BE SUPPORTED WITH CONCRETE ENCASUREMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL TO THE FIRST JOINT FOR P.V.C. SUCH THAT THE JOINT REMAINS FLEXIBLE.
4. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS OF NEWCO 500 OR 600 IN BUILD-UP, OR EQUIV. (THICKNESS OF 8 MILS MIN.)
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT OF NEWCO 500 OR 600 IN BUILD-UP, OR EQUIV.
6. JOINT SEALING COMPOUND SHALL BE BUTYL RUBBER OR APPROVED EQUIV.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
8. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW TOP OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
9. ALL HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
10. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE BASE AS SHOWN IN THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 5'. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.

11. REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 1" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
12. OPENINGS SHALL BE CUT INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NONSHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOOR CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.
13. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF-CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO REVEAL LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
14. PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE CRADLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRADLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.

15. MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
16. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 4' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES LARGER THAN 12". THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
17. STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
18. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 8" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR.

PROJECT NUMBER
#81964

10
10

Revised: June 12, 1986