

**PRIVATE
STORM WATER SEWER PLANS FOR
BERKSHIRE III
APARTMENT COMPLEX
INDEX NO. 607861
USER CODE 378PPS**

CITY OF WICHITA, KANSAS
MICHAEL E. LINDEBAK, CITY ENGINEER

APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA

SANITARY SEWERS _____
STORM SEWERS VRH 2/16/93
DRIVEWAY APPROACHED _____
WATER MAINS _____
PAVING _____

NOTE TO CONTRACTOR

INSPECTION AND TESTING FOR THIS PROJECT IS TO BE PROVIDED BY A LICENSED CONSULTING ENGINEERING FIRM UNDER CONTRACT WITH THE OWNER/DEVELOPER. SAID INSPECTION TO BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD CONSTRUCTION ENGINEERING PRACTICES AND CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. NO WORK SHALL BE PERFORMED IN DEDICATED EASEMENTS OR THE PUBLIC RIGHT-OF-WAY BY THE CONTRACTOR WITHOUT SUCH INSPECTION NOR SHALL ANY WORK BE COMMENCED IN DEDICATED EASEMENTS OR PUBLIC RIGHT-OF-WAY WITHOUT WRITTEN AUTHORIZATION BY THE CITY ENGINEER.

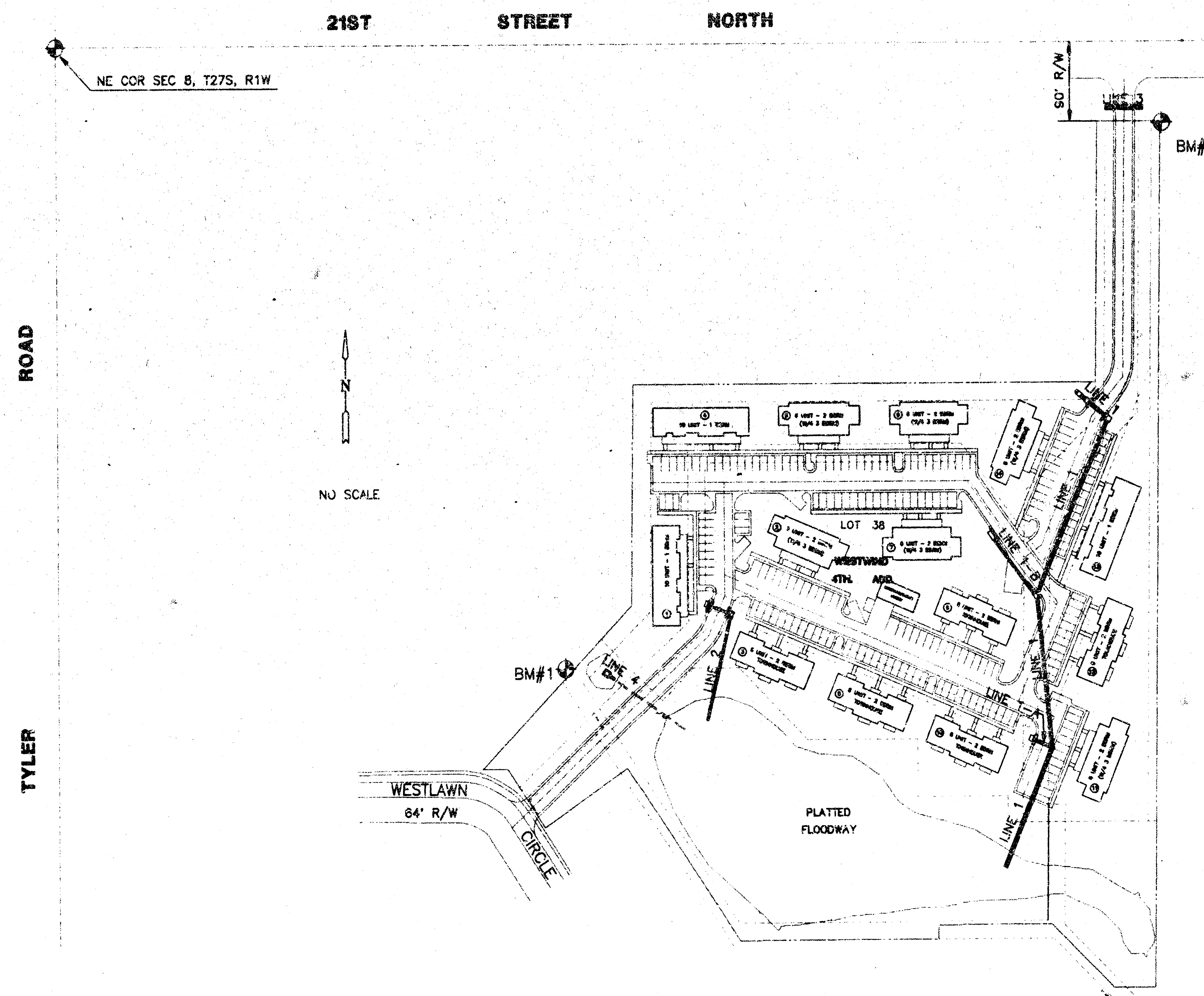
GENERAL NOTES

- THE TOPS OF INLETS AS NOTED ON THE PLANS MAY VARY SO AS TO MEET PROPOSED TOP OF CURB ELEVATIONS OR PAVEMENT ELEVATIONS. THE FIELD ENGINEER SHALL LOCATE INLETS WITH REFERENCE TO PROPOSED PAVING PLANS OF THE PERTINENT STREETS.
- ALL CONCRETE SHALL BE STANDARD PAVING MIX UNLESS OTHERWISE NOTED.
- 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 IN ACCORDANCE WITH STATE LAWS.
- TREES TO BE REMOVED ARE MARKED. ALL TREES WHICH IN THE OPINION OF THE FIELD ENGINEER CAN BE SAVED, SHALL BE SAVED.
- CONTRACTOR SHALL NOTIFY UTILITY COMPANIES OF CONSTRUCTION SCHEDULING.
- EXISTING UTILITIES AND THEIR LOCATIONS, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS COMPANIES AND IS EITHER FROM COMPANY UTILITY DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE PLAN LOCATIONS SHOWN ARE NOT GUARANTEED. ADDITIONAL EXISTING UTILITIES MAY ALSO BE ENCOUNTERED.
- CONTRACTOR WILL BE REQUIRED TO PROVIDE A MINIMUM ADVANCE NOTICE OF FORTY-EIGHT (48) HOURS TO UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION AS FOLLOWS:

KANSAS ONE-CALL 1-800-344-7233
OR 687-2470 (LOCAL WICHITA)

THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:

SOUTHWESTERN BELL TELEPHONE COMPANY 1-571-2115
CABLEVISION 262-0661
K&M (GAS DIST.) 832-0012
K&M (ELECTRIC) 264-1141
ARKLA GAS COMPANY 942-8350 OR 253-8161
CITY OF WICHITA, WATER & SEWER DEPARTMENT 268-4908
- RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF ON SITES TO BE PROVIDED BY THE CONTRACTOR. THESE SITES SHALL BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, WILL LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WOULD REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS WOULD REQUIRE ADDITIONAL ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.
- COST OF EXCAVATION, HAULING, AND DUMPING OF EXCESS EXCAVATION SHALL BE SUBSIDIARY TO THE PROJECT.
- CONTRACTOR SHALL FINAL GRADE EASEMENTS ACCORDING TO THE PROPOSED PROFILE INDICATED IN THESE PLANS.



INDEX TO DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LINE 1
3	LINE 1-A, 1-B LINE 2
4	LINE 3 & LINE 4
5	TYPE 1-A CURB INLET DETAIL (5' OPENING)
6	TYPE 1-A CURB INLET DETAIL (10' OPENING)
7	TYPE "P" MANHOLE DETAILS
8	REINF. CONCRETE AREA INLET DETAILS

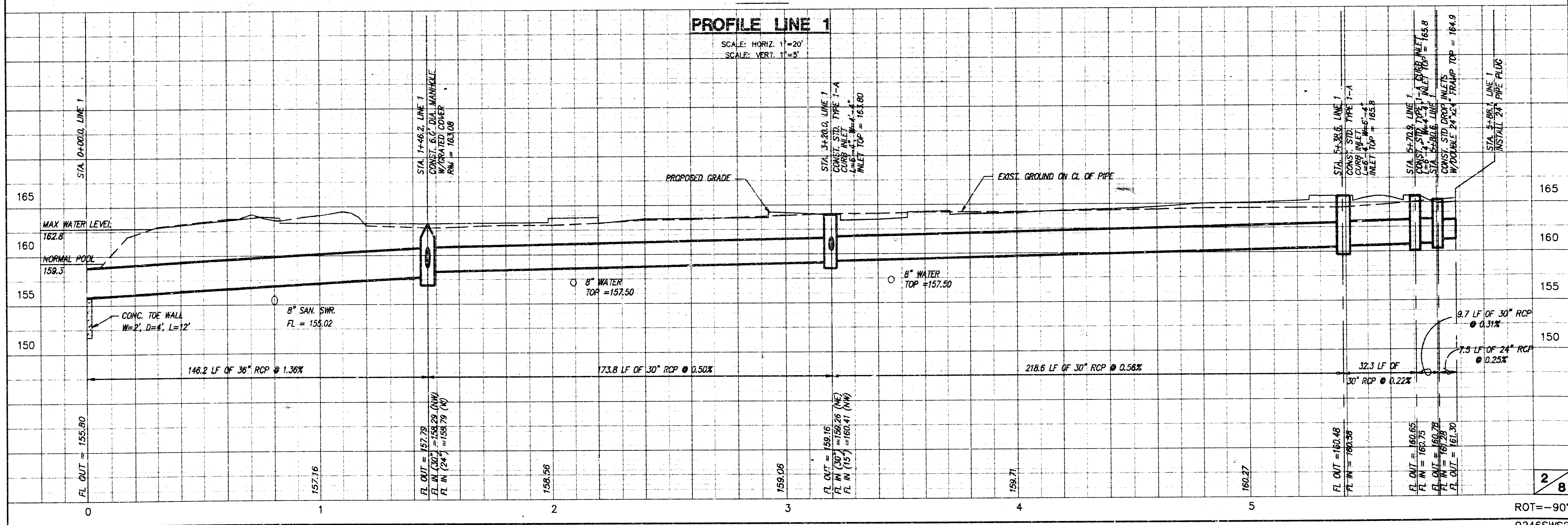
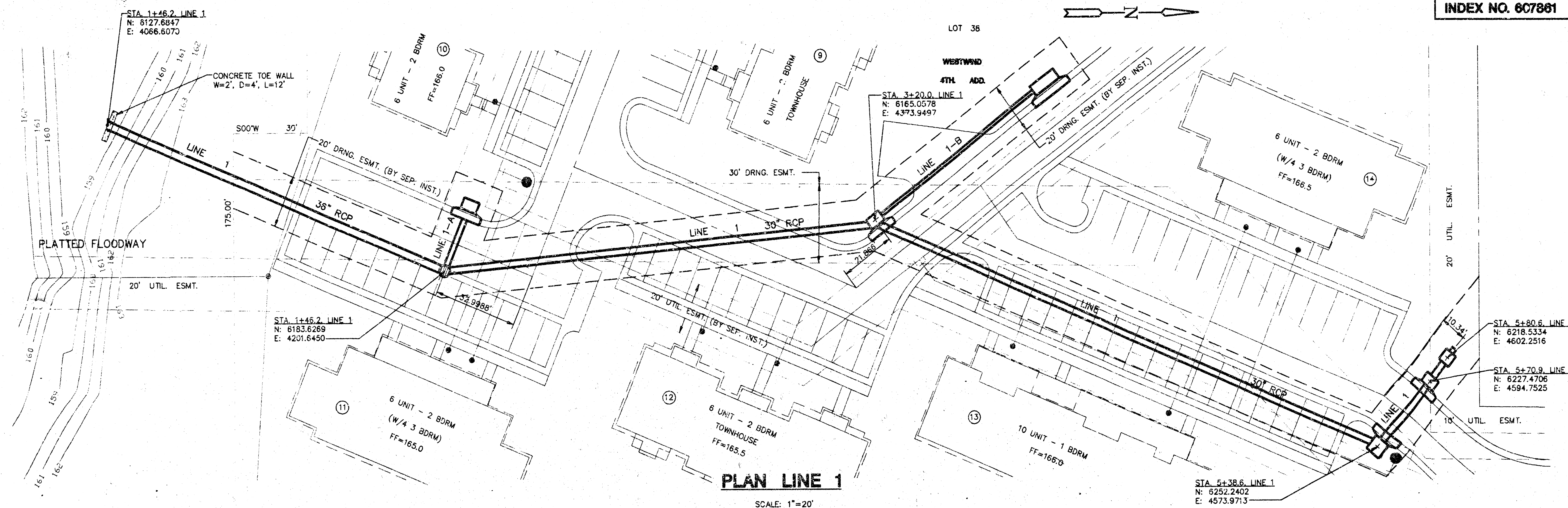
BENCHMARKS

- BM #1 PK NAIL SET IN S. EDGE OF MANHOLE 114' N. & 90' E. OF THE S.W. COR. OF LOT 38, WESTWIND 4TH ADDITION.
ELEV. = 168.15 CITY DATUM
- BM #2 RR SPIKE SET IN S. SIDE OF POWER POLE 60' S. OF CL 21ST ST. NO. AT THE N.E. COR. OF LOT 38, WESTWIND 4TH ADDITION.
ELEV. = 168.89 CITY DATUM

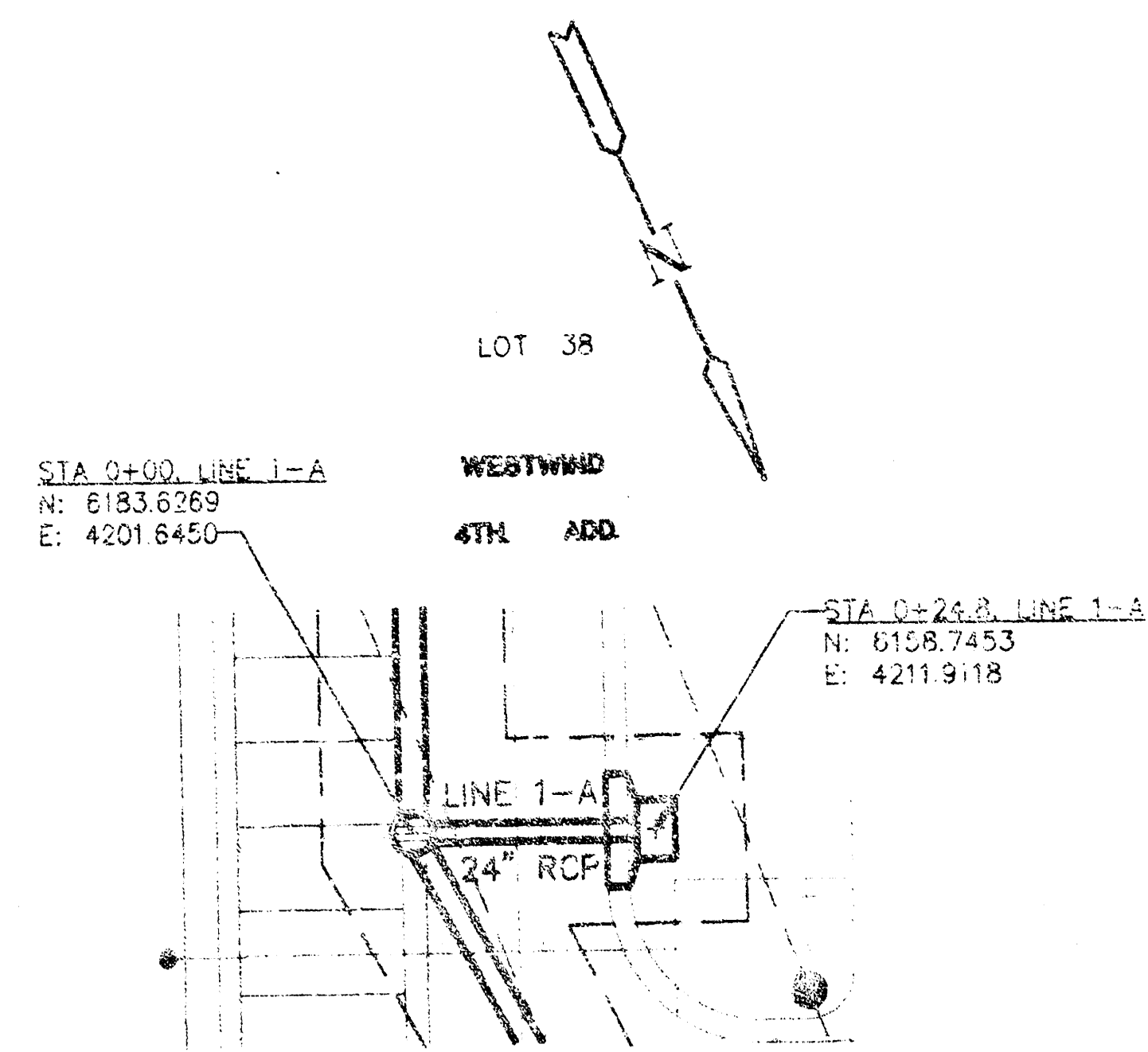
BERKSHIRE III	Design K.K.L.
	Drawn by K.K.L.
	Checked by K.H.B.
	Date 12/92
Job no. 9246SW51	
Sheet 1	
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MID-KANSAS ENGINEERING CONSULTANTS INC. 3500 NORTH ROCK ROAD BUILDING #800 WICHITA, KANSAS 67226	(316) 636-5566
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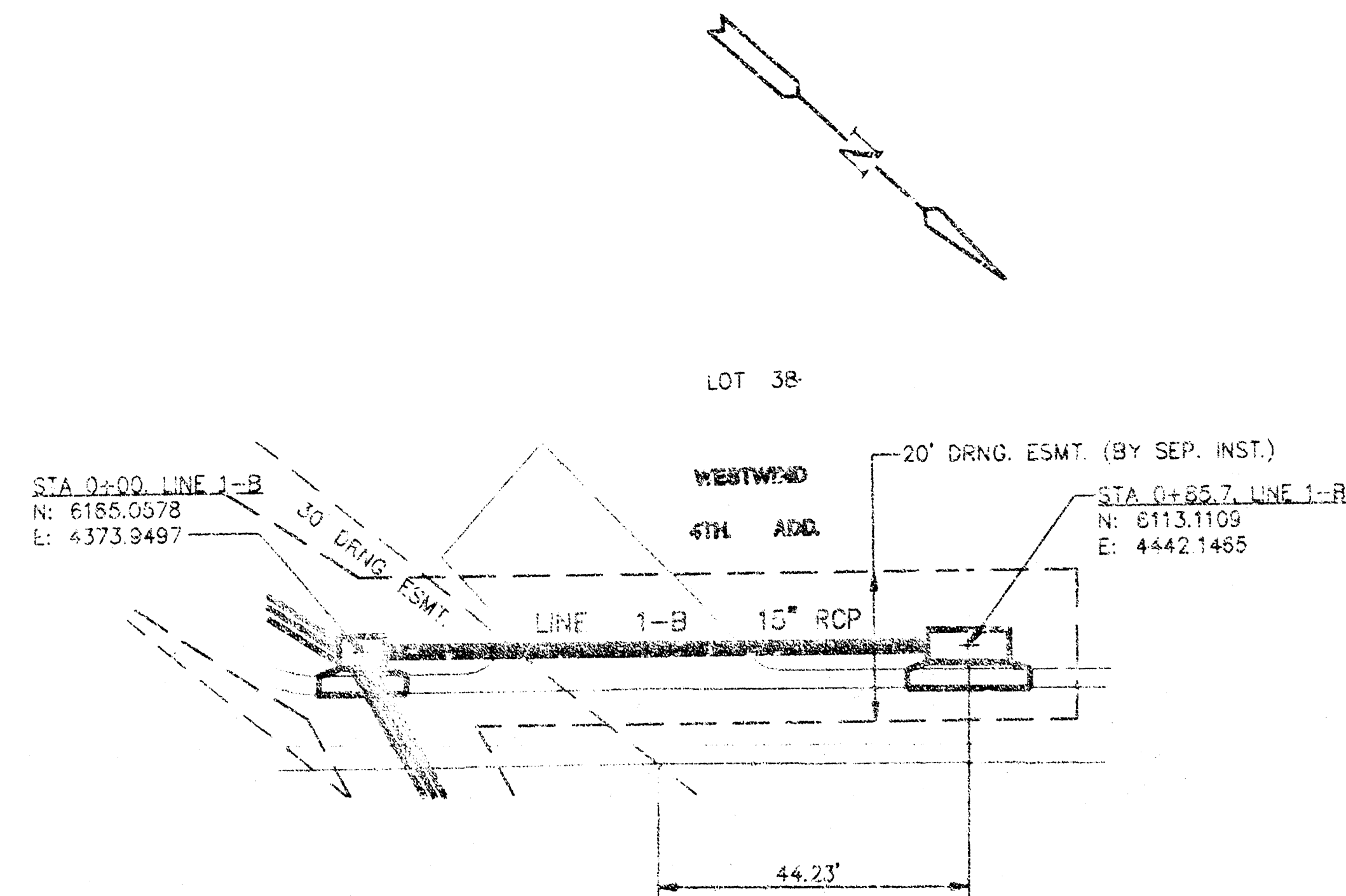
**BERKSHIRE APARTMENTS
PRIVATE STORM SEWER
INDEX NO. 607881**



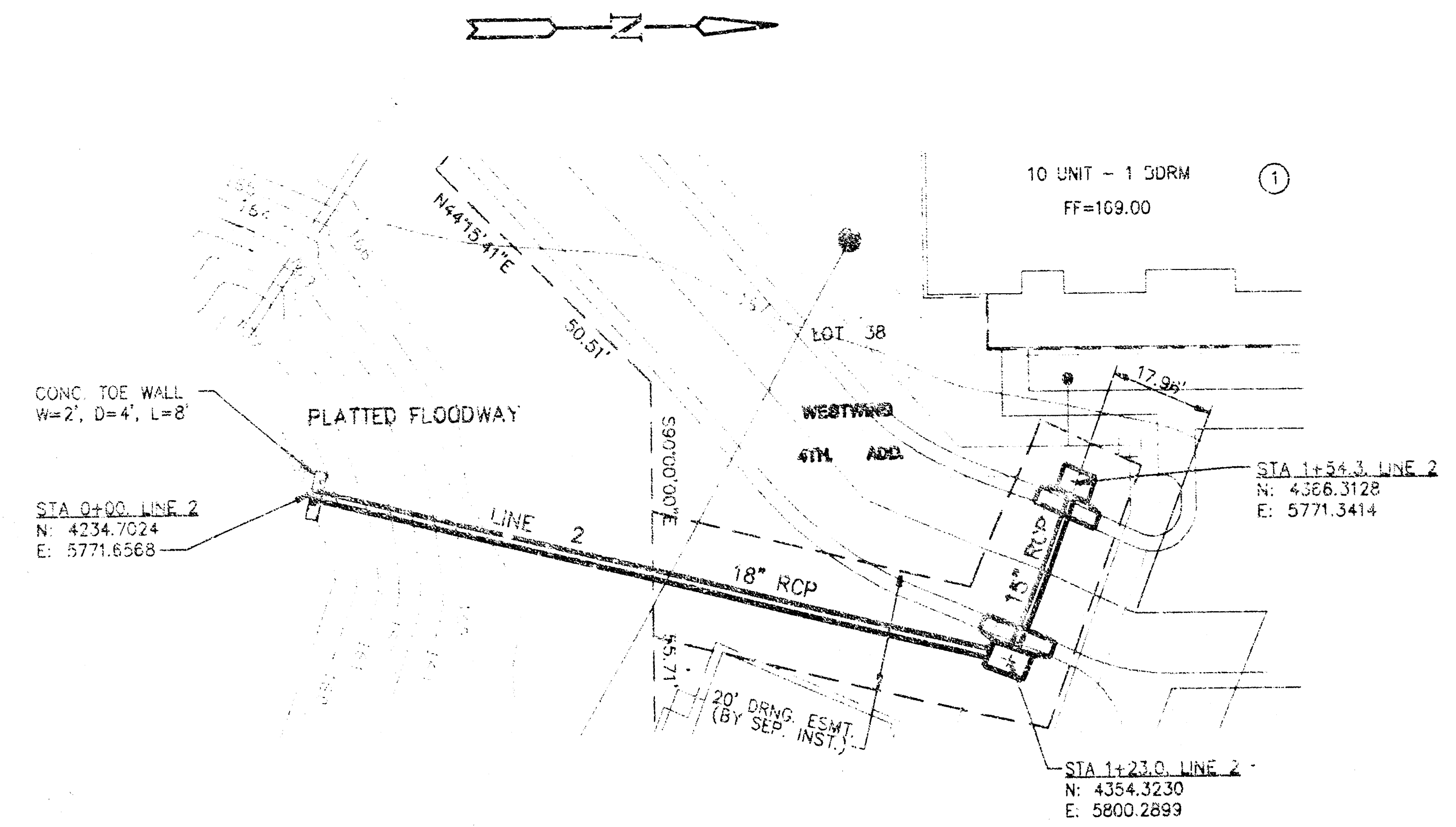
**BERKSHIRE III APARTMENTS
STORM WATER SEWER
INDEX NO. 607861**



PLAN LINE 1-A
SCALE: 1"=20'

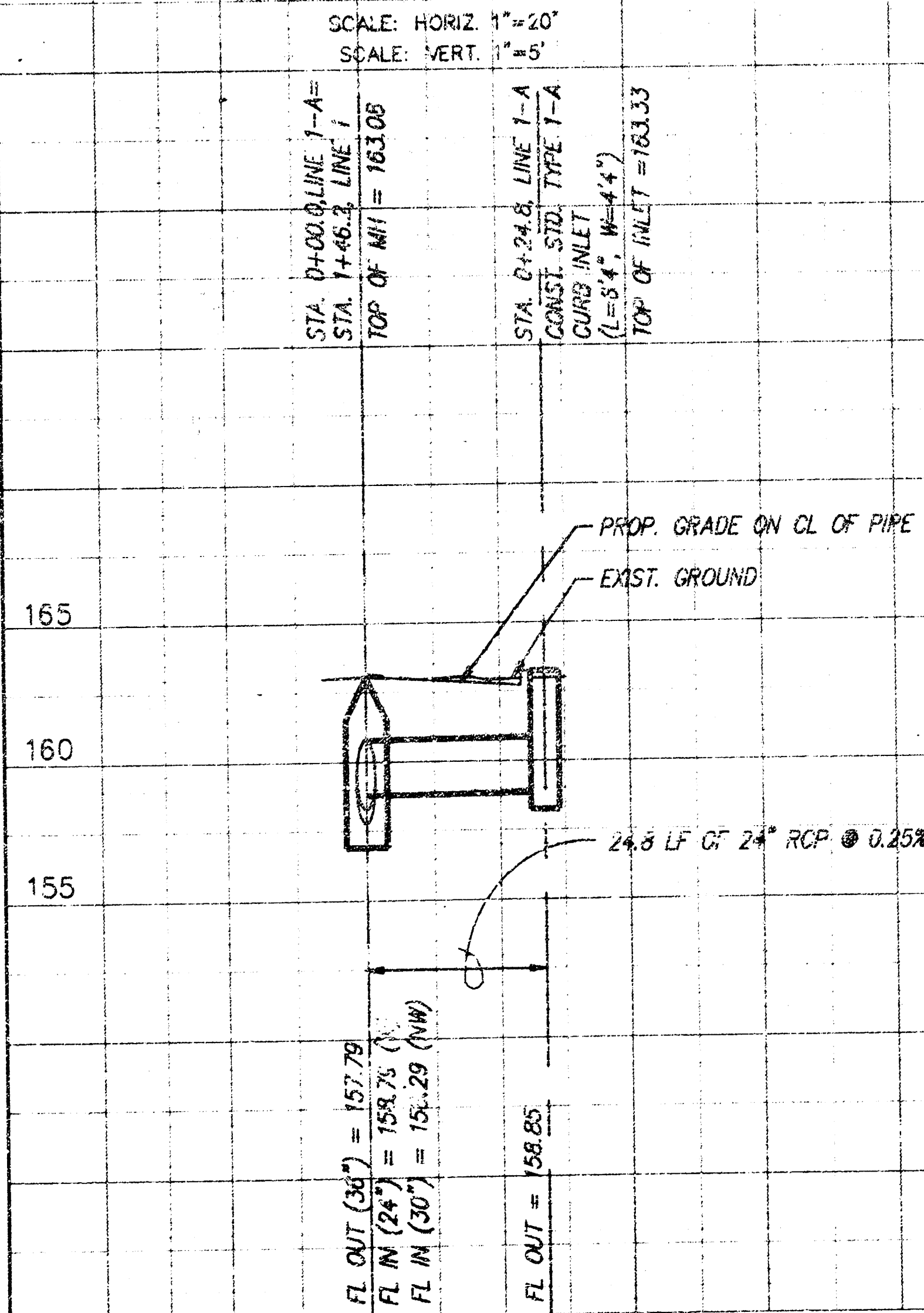


PLAN LINE 1-B
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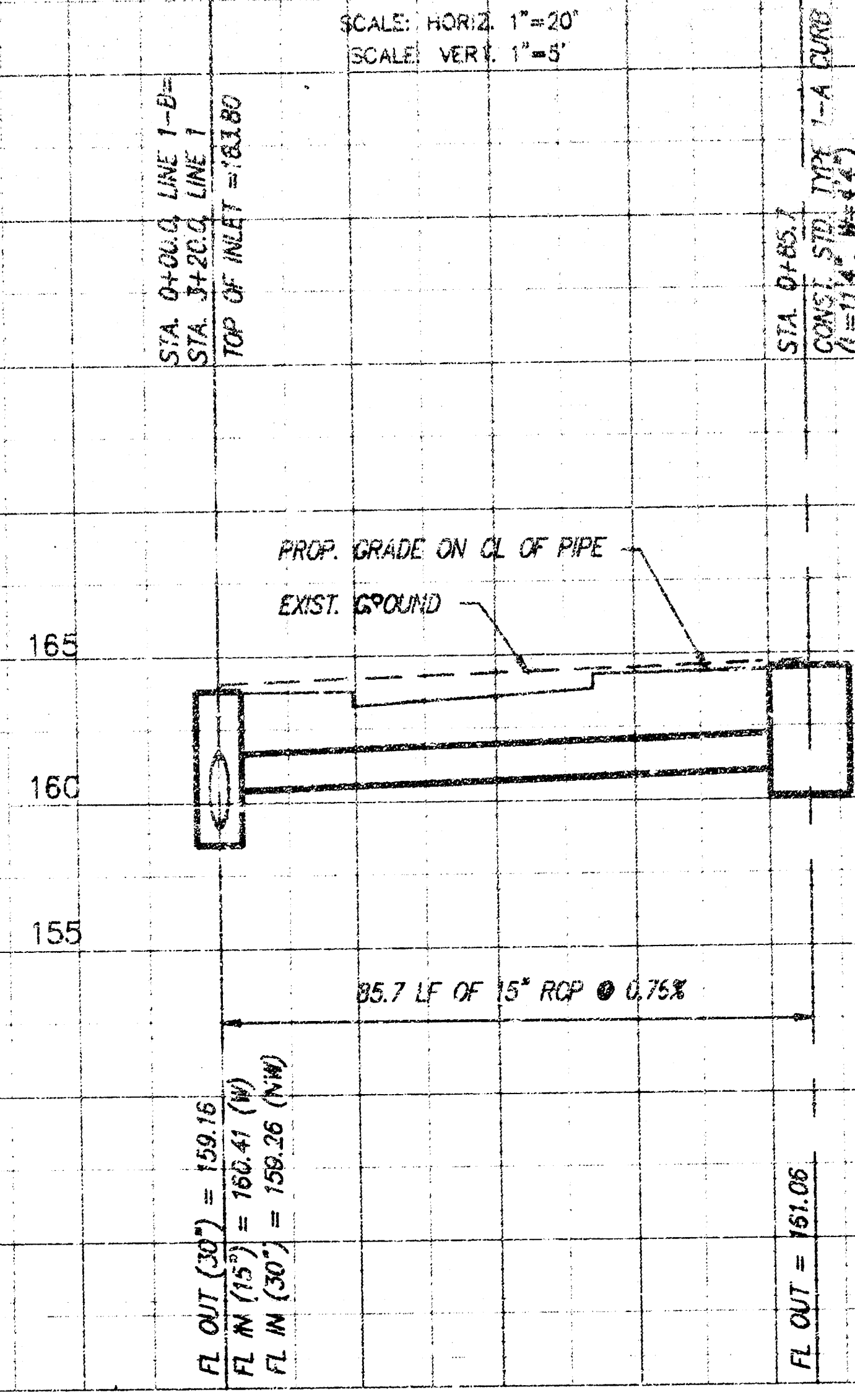


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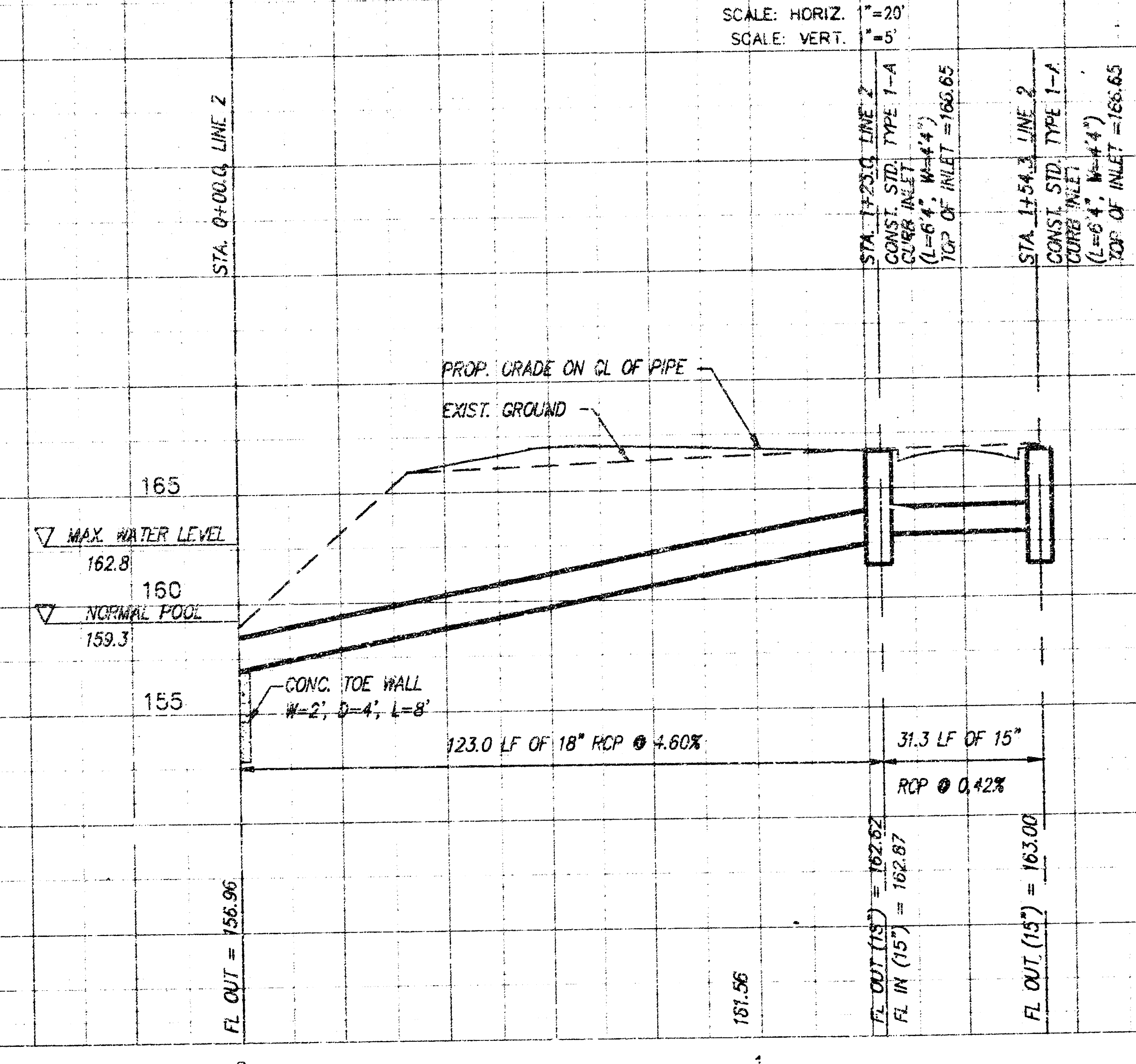
PROFILE LINE 1-A
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SCALE: VERT. 1"=5'

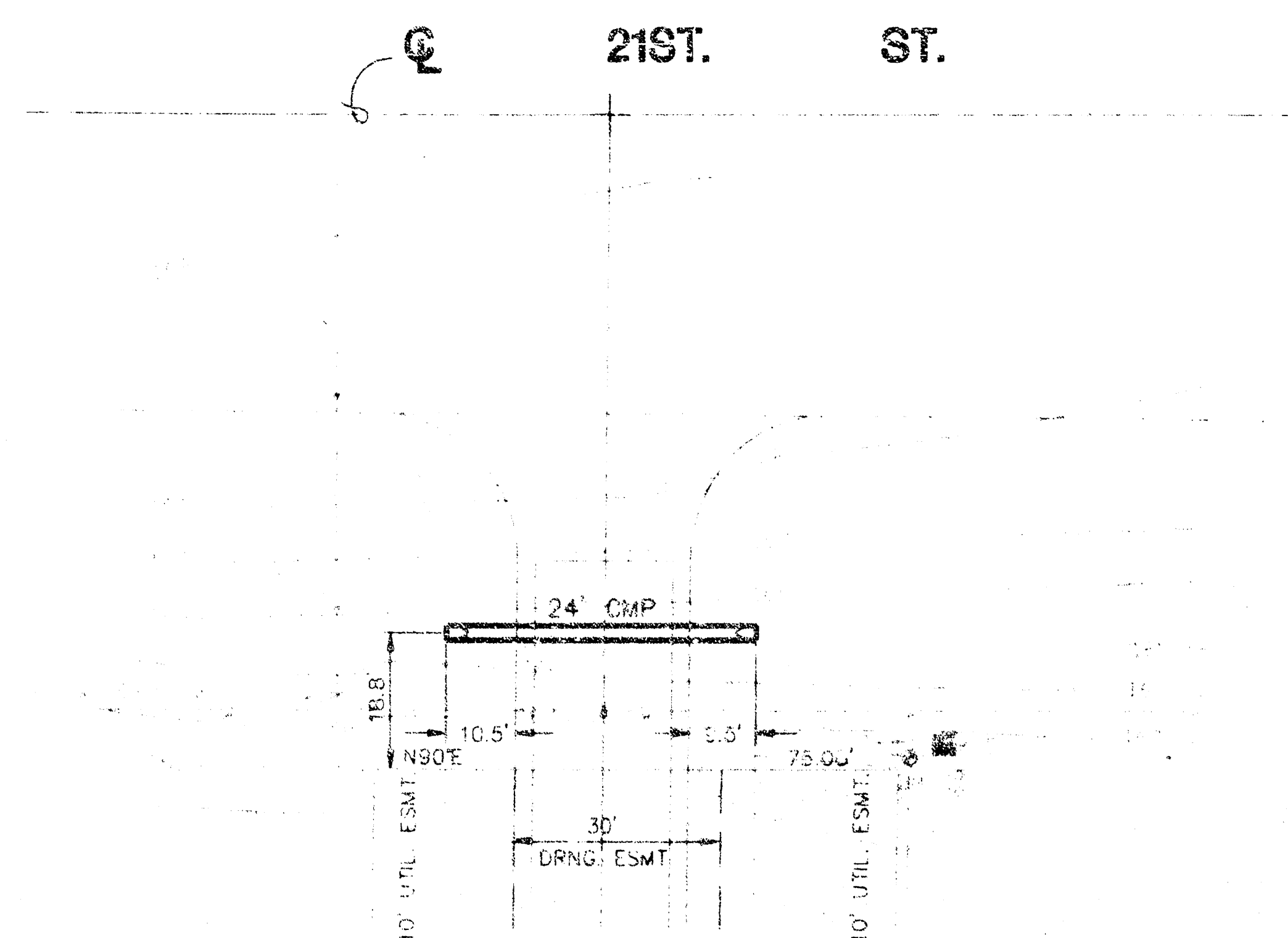


PROFILE LINE 1-B
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SCALE: VERT. 1"=5'



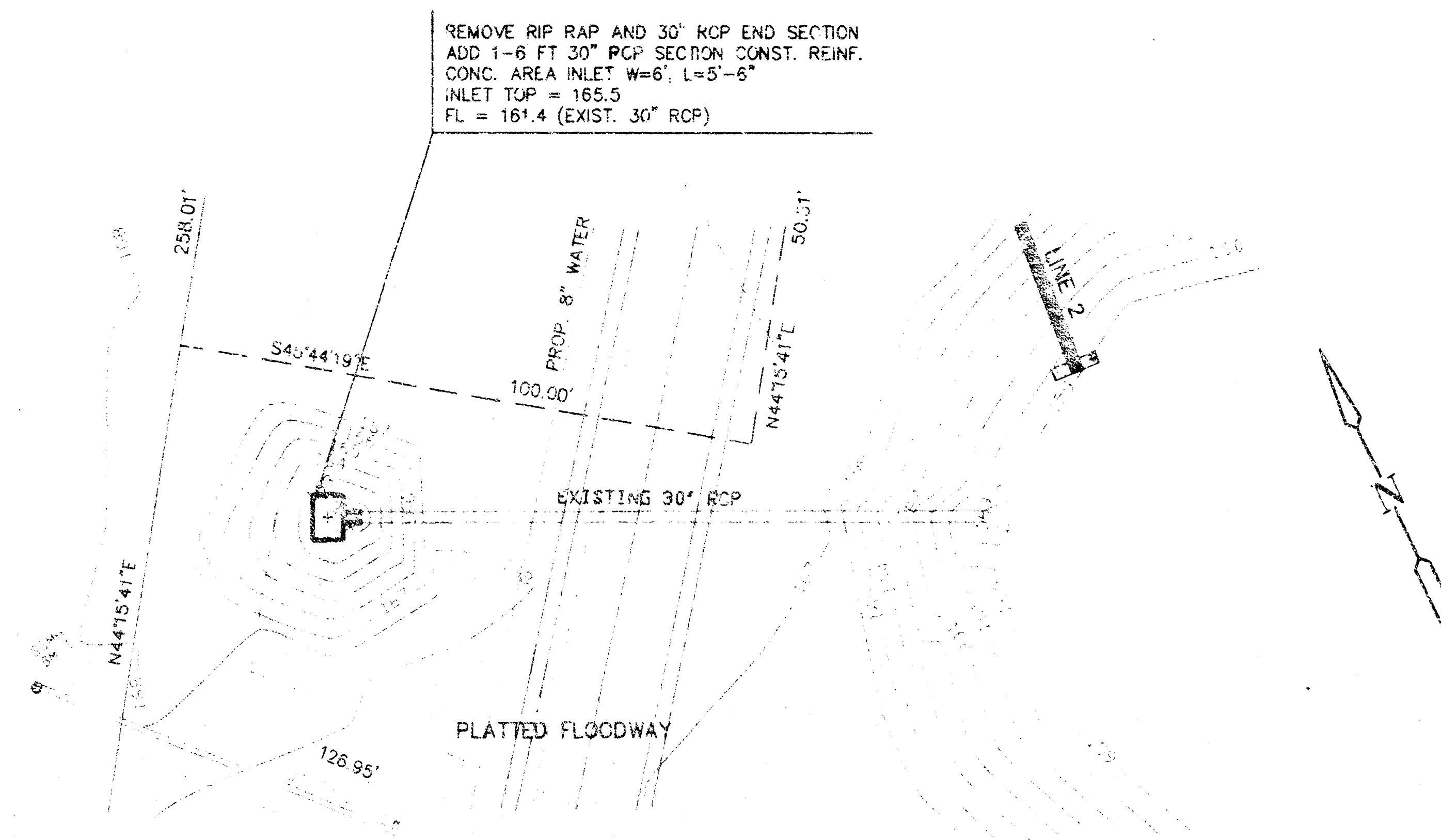
PROFILE LINE 2
SCALE: HORIZ. 1"=20'
SCALE: VERT. 1"=5'





PLAN LINE 3

SCALE: 1"=20'

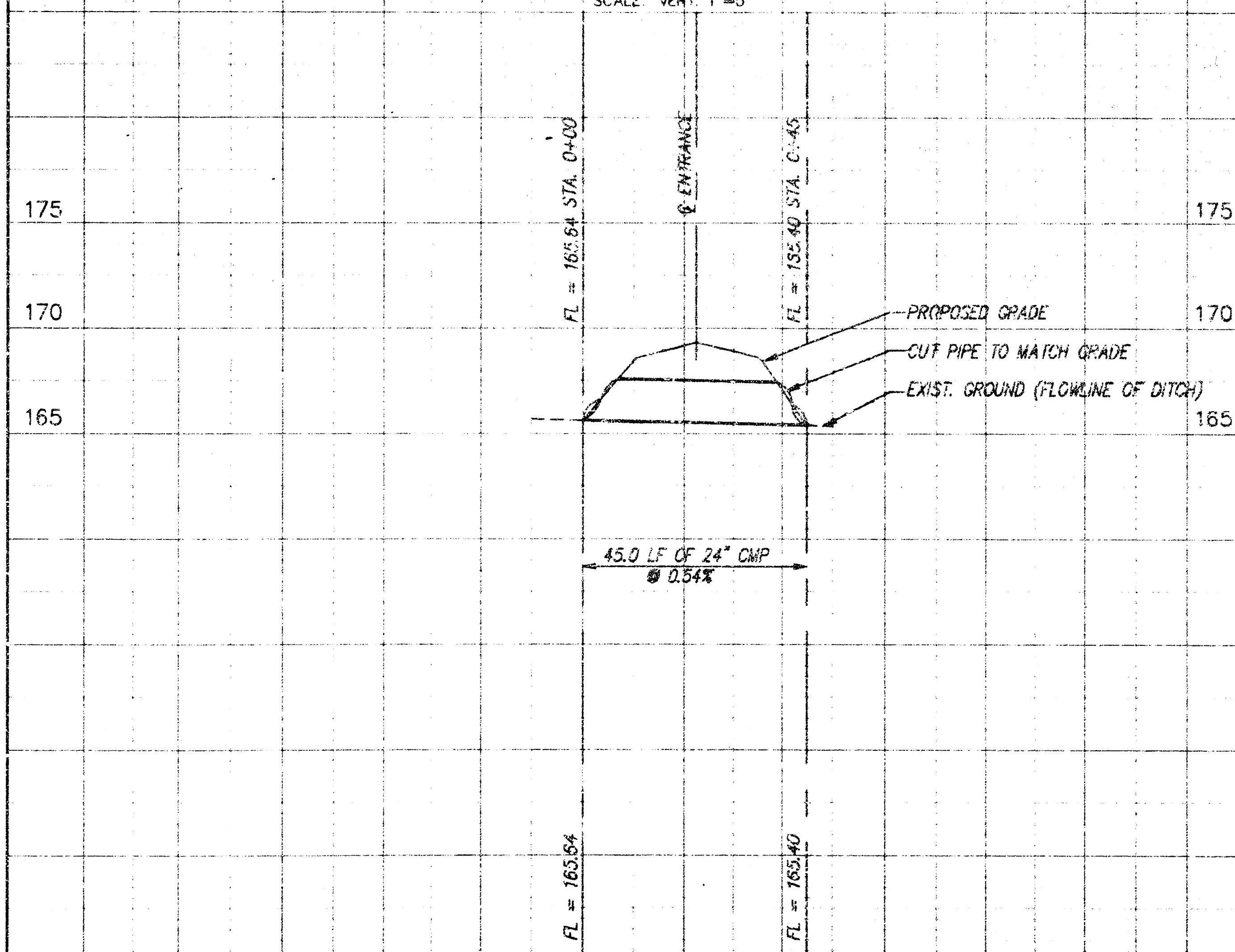


PLAN LINE 4

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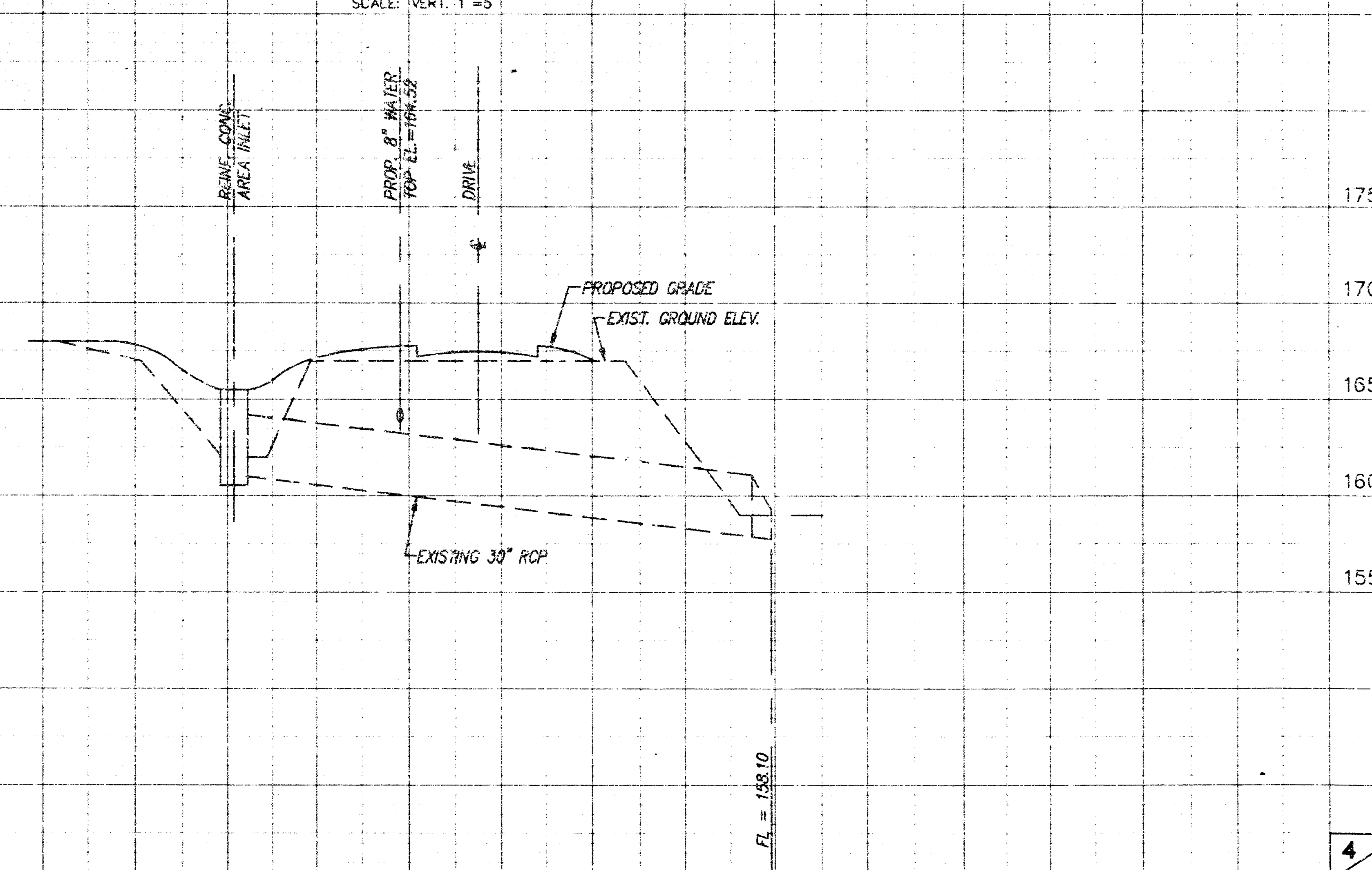
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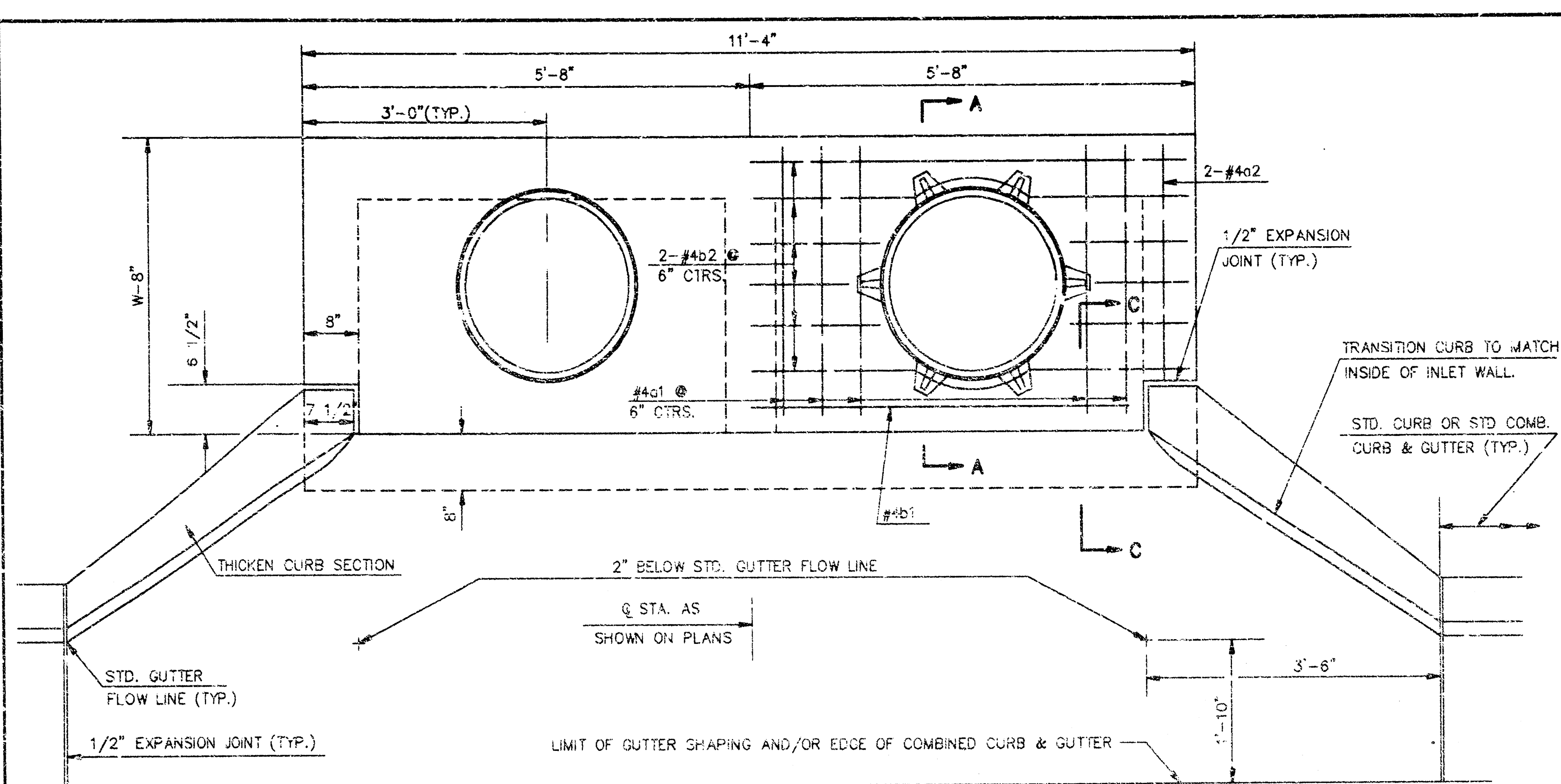
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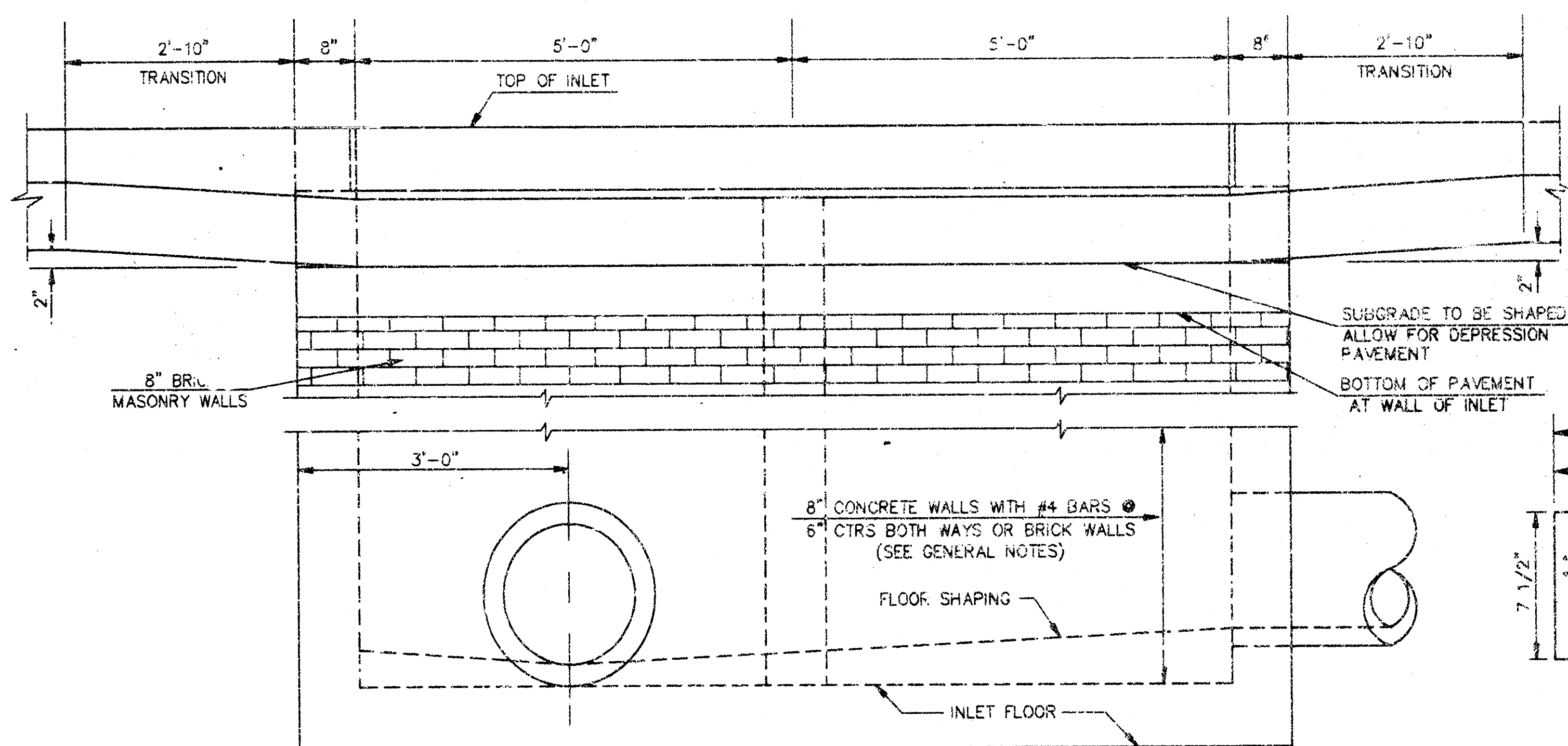
PROFILE LINE 4

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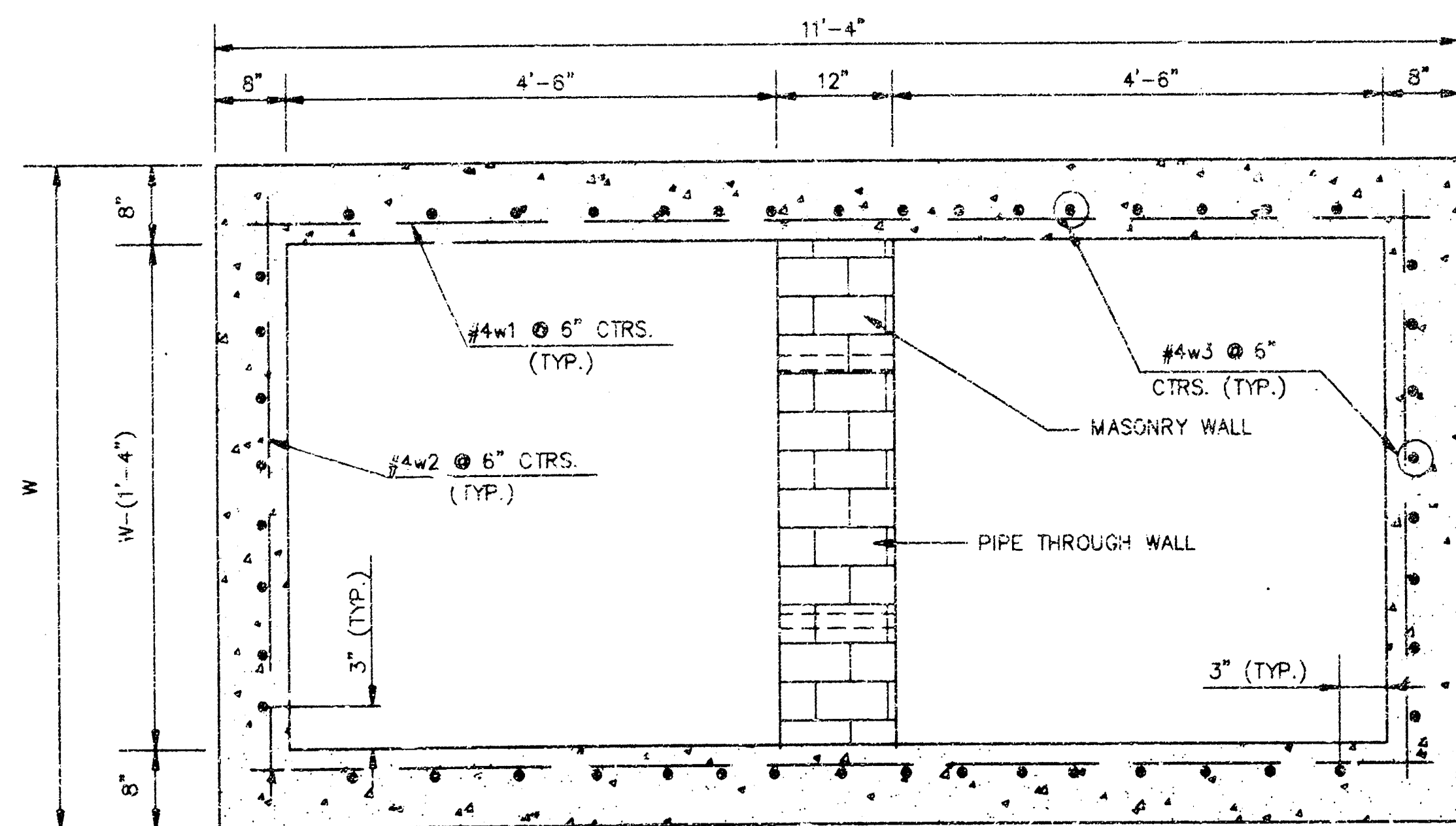




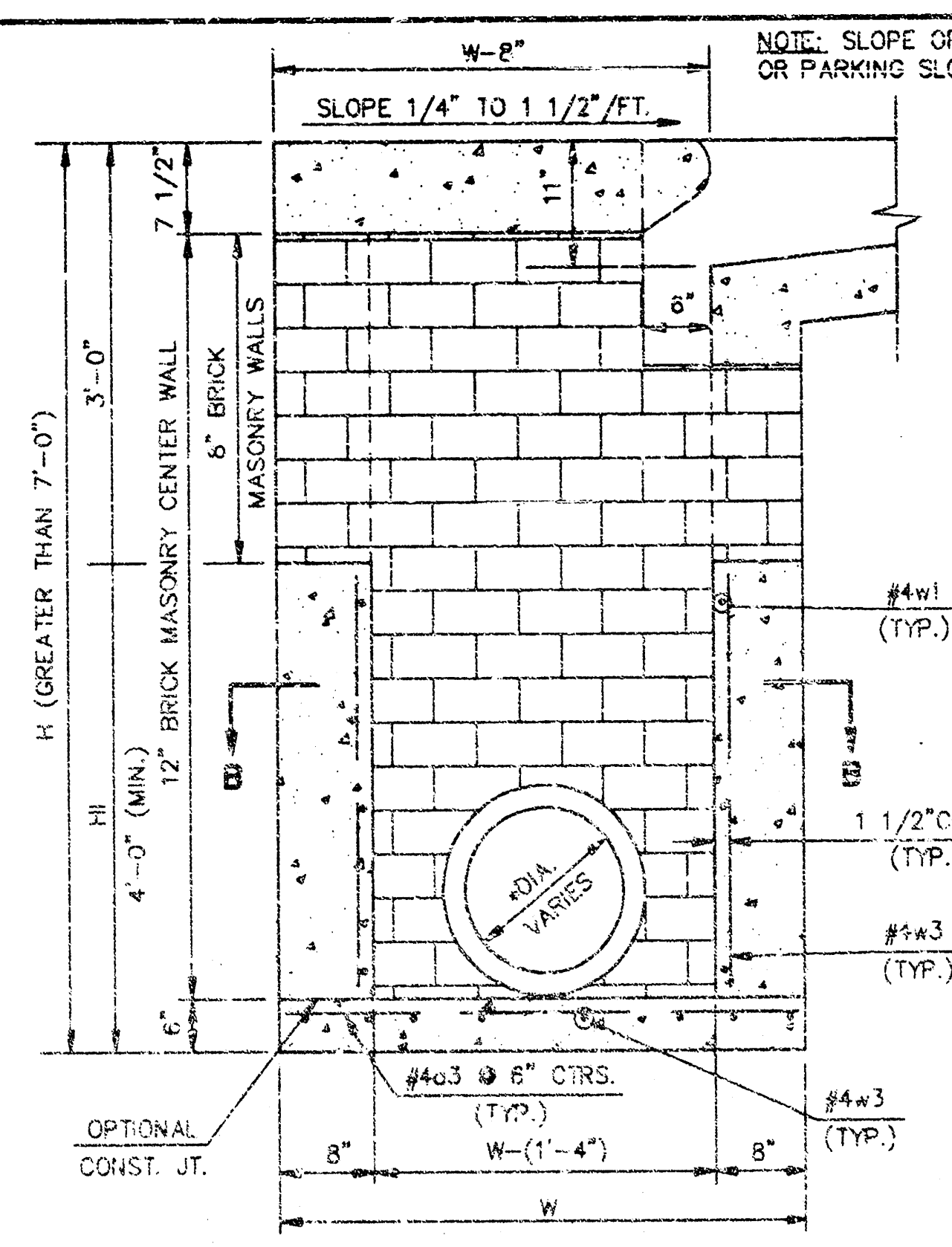
SLAB REINFORCING NOT SHOWN
SHOWING SLAB REINFORCING
PLAN



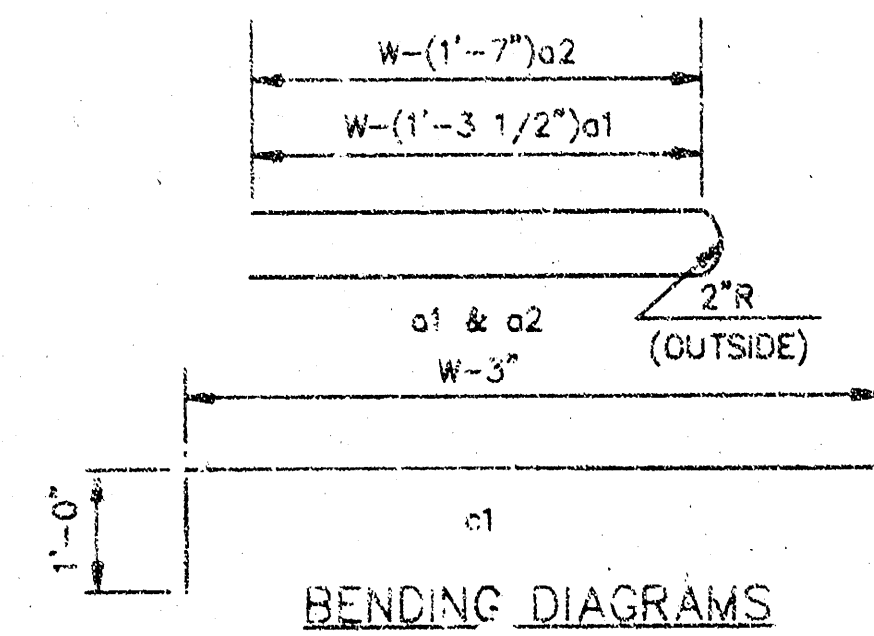
ELEVATION



SECTION B-B



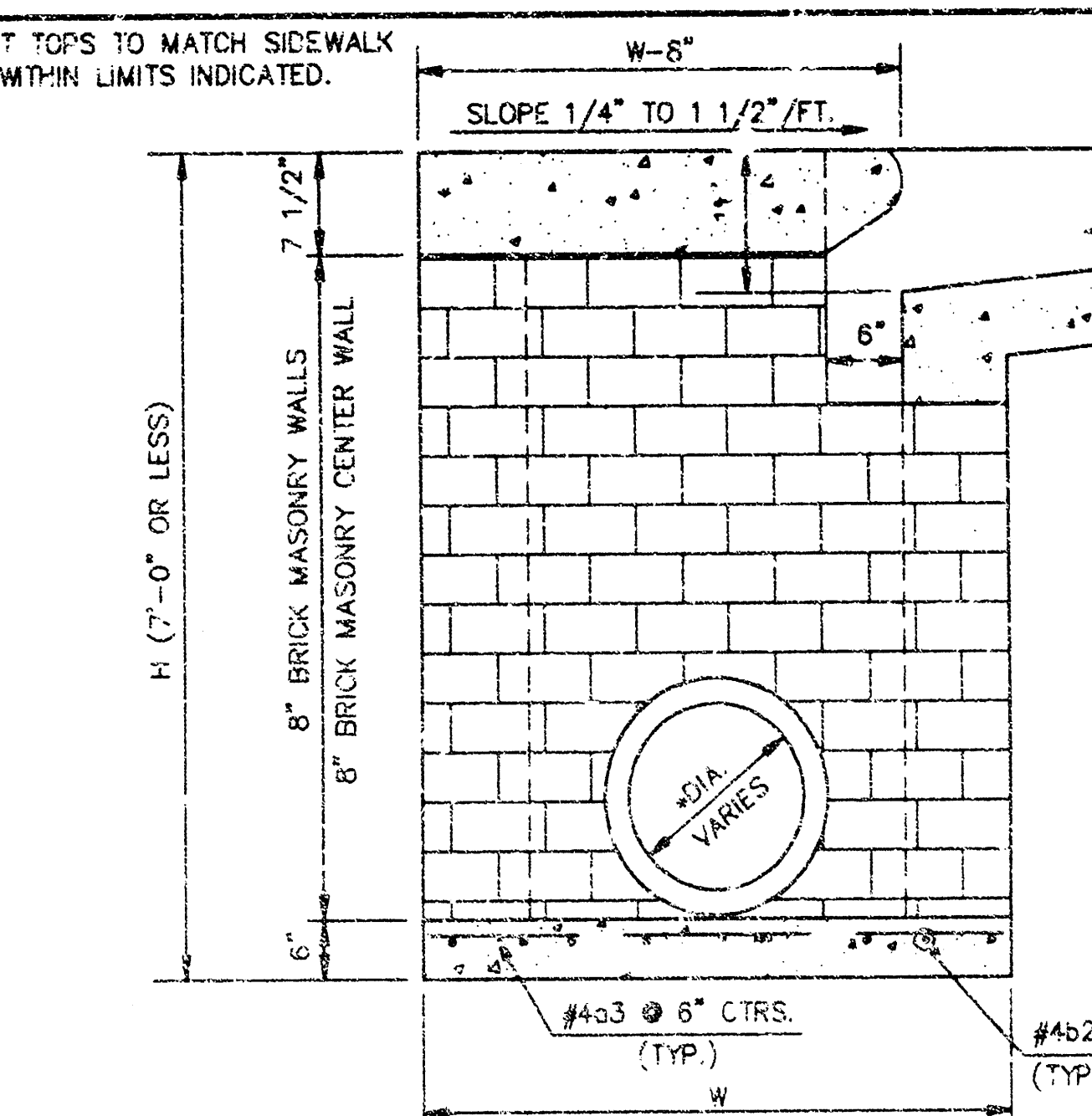
TYPICAL INLET SECTION AT CENTER WALL
(REINFORCED CONCRETE WALLS)



SECTION A-A

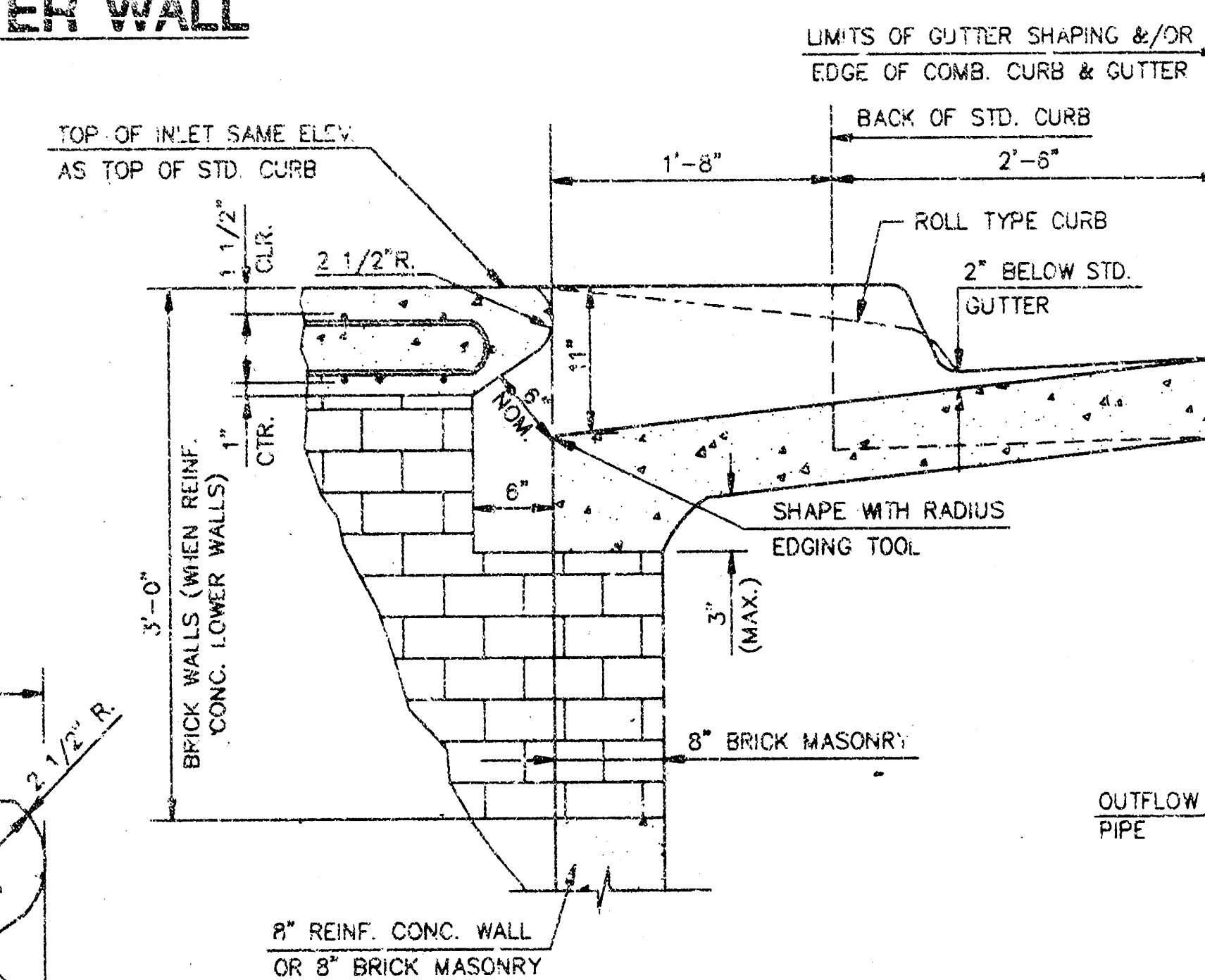
SLAB AND FLOOR REINFORCING														
W=4'-4"			W=5'-4"			W=6'-4"			W=7'-4"			W=8'-4"		
MARK	SIZE	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	
a1	#4	13	6'-7 1/4"	13	8'-7 1/4"	13	10'-7 1/4"	13	12'-7 1/4"	13	14'-7 1/4"			
a2	#4	2	6'-0"	2	8'-0"	2	10'-0"	2	12'-0"	2	14'-0"			
a3	#4	20	4'-1"	20	5'-1"	20	6'-1"	20	7'-1"	20	8'-1"			
b1	#4	1	9'-8"	1	9'-8"	1	9'-8"	1	9'-8"	1	9'-8"			
a2	#4	18	11'-1"	24	11'-1"	30	11'-1"	36	11'-1"	42	11'-1"			
WALL REINFORCING														
W=4'-4"			W=5'-4"			W=6'-4"			W=7'-4"			W=8'-4"		
MARK	SIZE	NO.	LENGTH	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	②	③	②	③	②	③	②	③	②	③			

* FIELD BOND OR CUT REINFORCING AS REQUIRED FOR CLEARANCE
① 4(HI-6") + 4", (HI-6") ROUNDED DOWN TO NEAREST 0.5"
② 40 + 4(W-16")
③ HI + (9")



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.

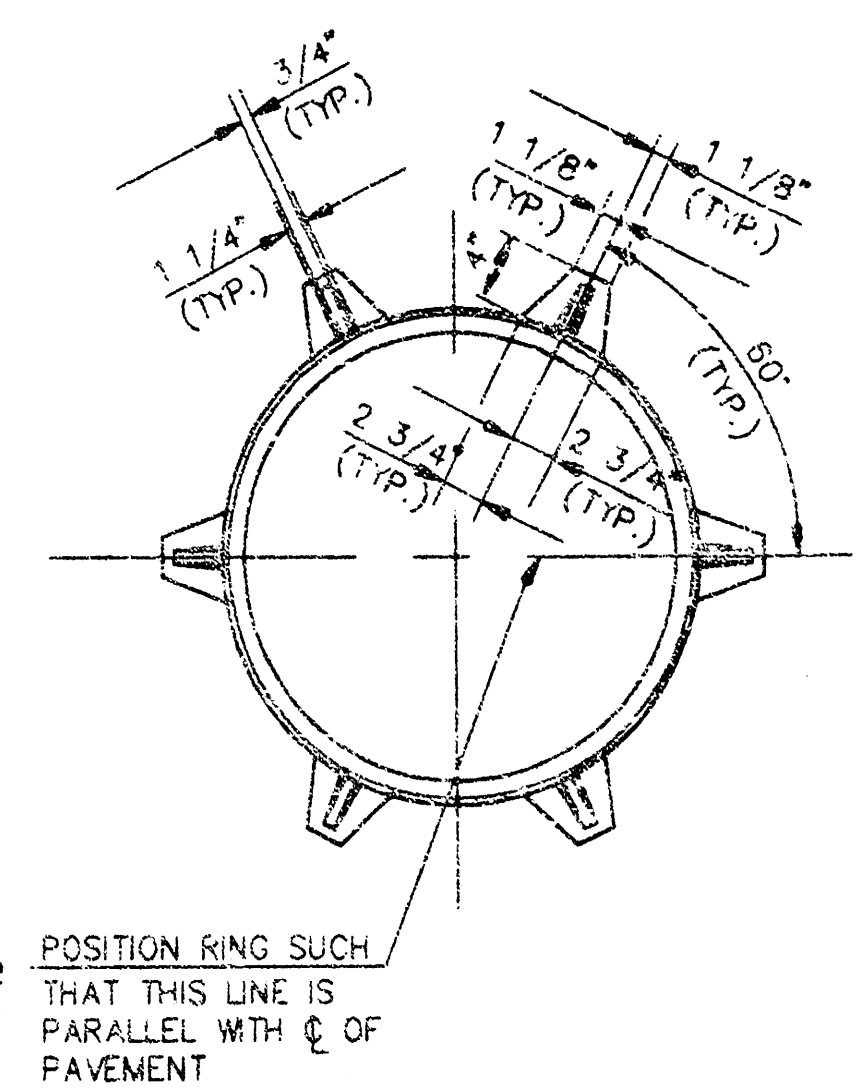


SECTION C-C

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 A 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 6" 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.

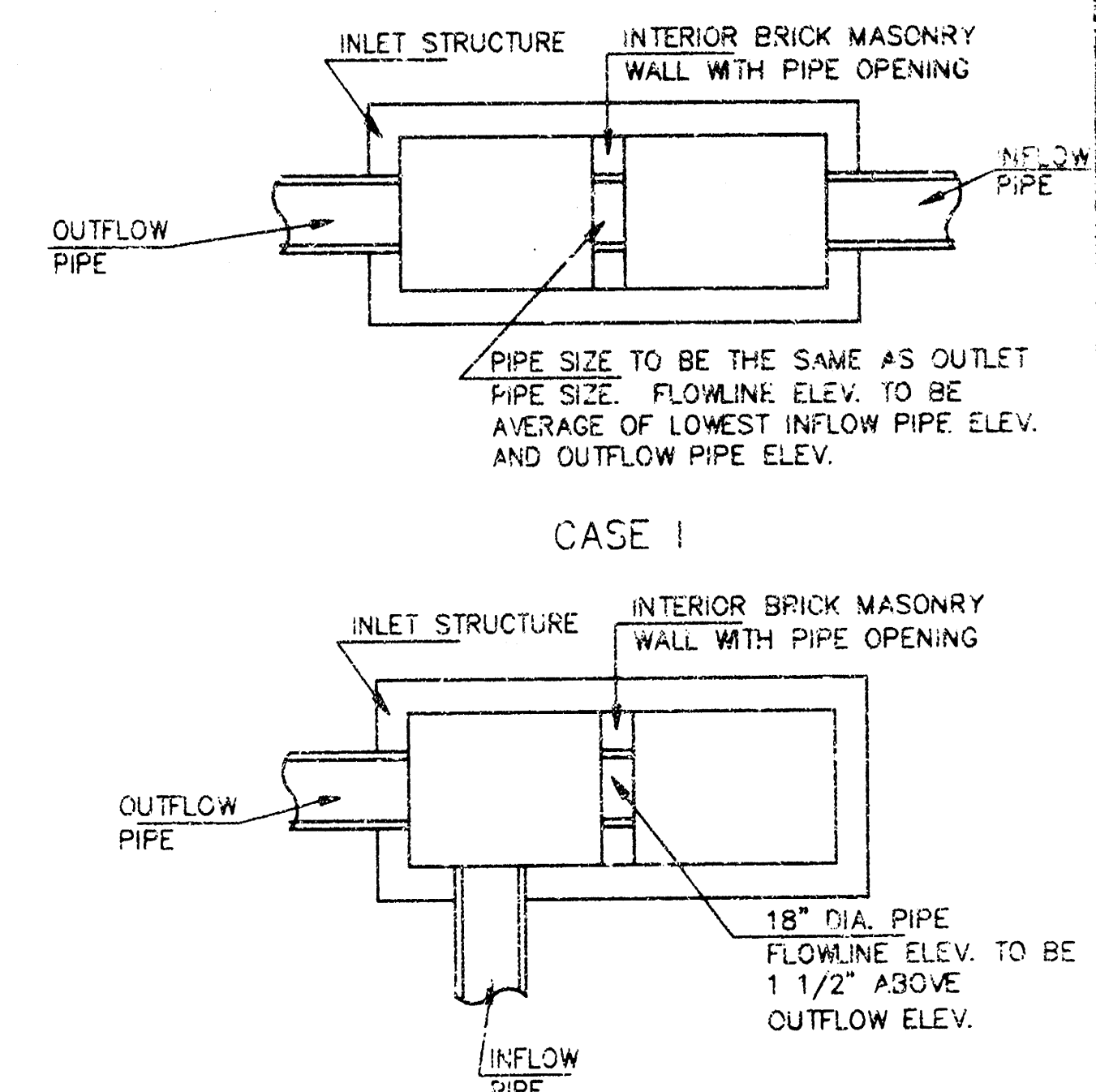
STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4'-4"	3'-8"x11'-4"x7 1/2"	21" & SMALLER	0.83±
5'-4"	4'-8"x11'-4"x7 1/2"	24" & 30"	1.09±
6'-4"	5'-8"x11'-4"x7 1/2"	36" & 42"	1.35±
7'-4"	6'-8"x11'-4"x7 1/2"	48" & 54"	1.61±
8'-4"	7'-8"x11'-4"x7 1/2"	60" & 66"	1.87±



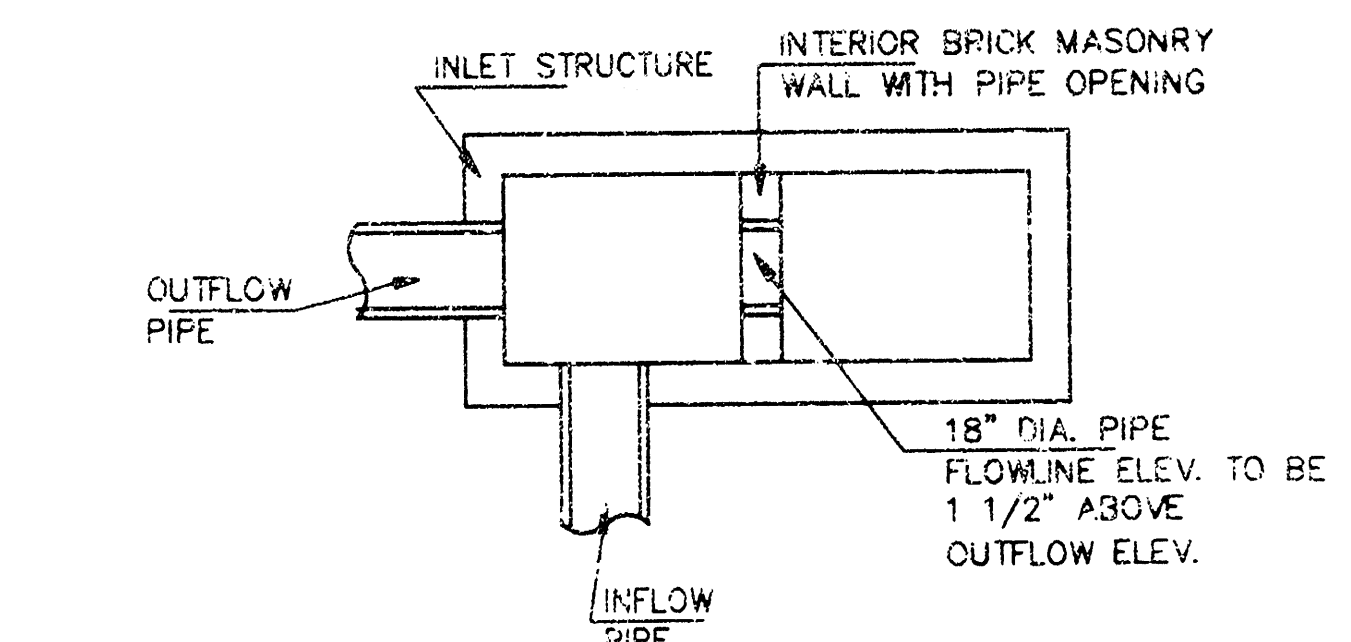
CAST IRON INLET RING

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 SHEET; FOR THOSE CASES NOT SHOWN HERE.

REVISED: 12-5-88 C.O.W.

STANDARD TYPE 1A CURB INLET
INLET OPENING=6"x10'-0"

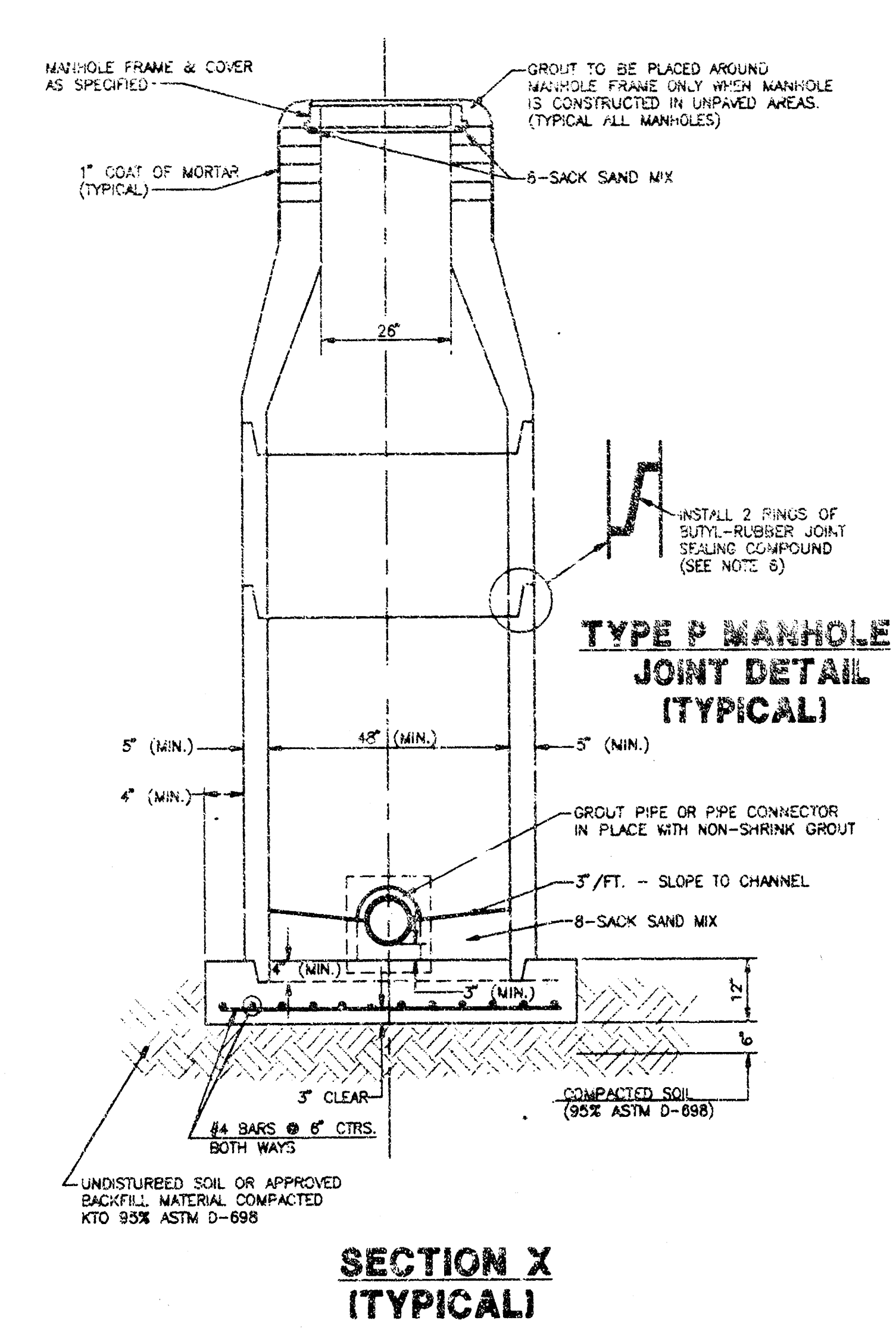
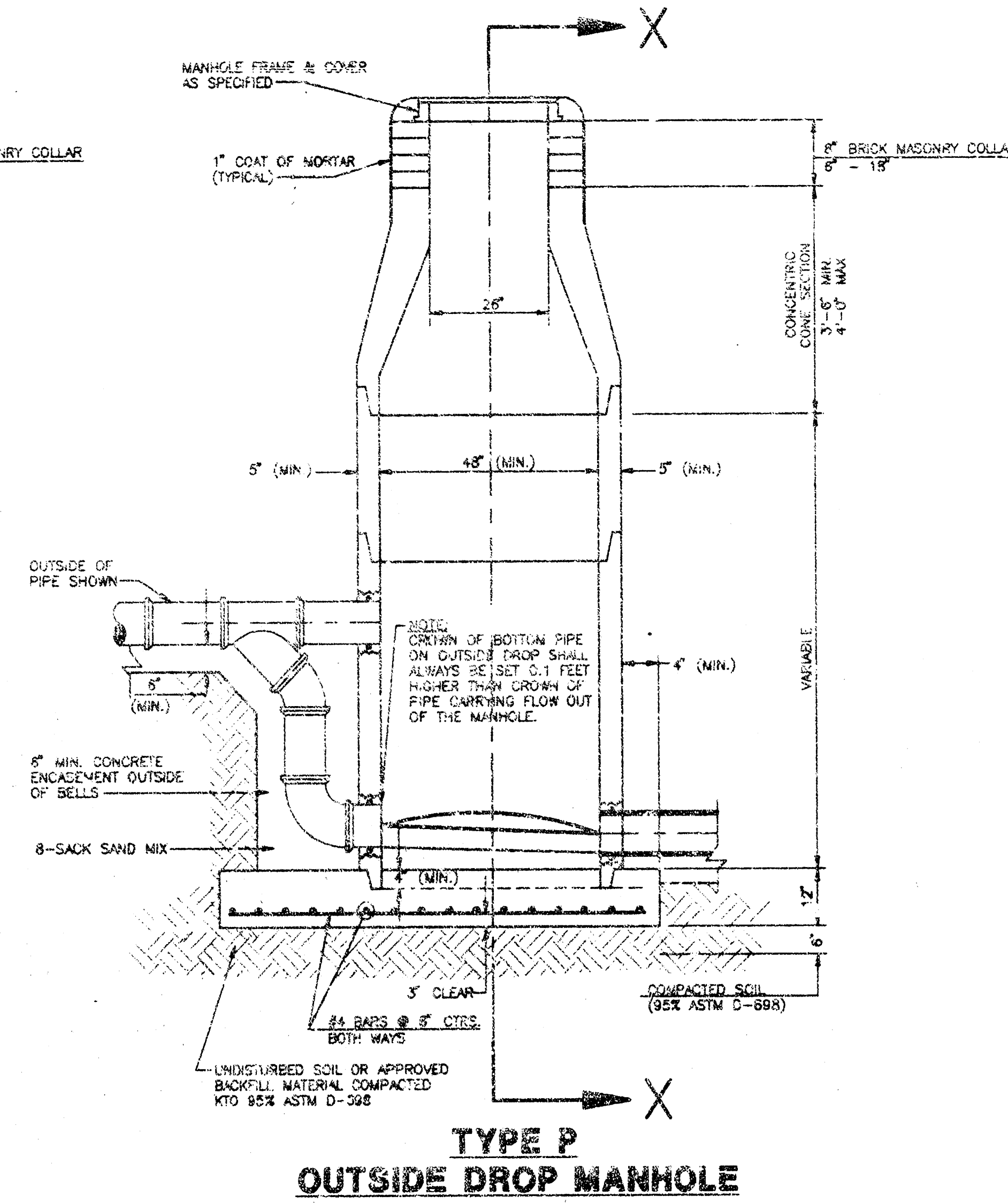
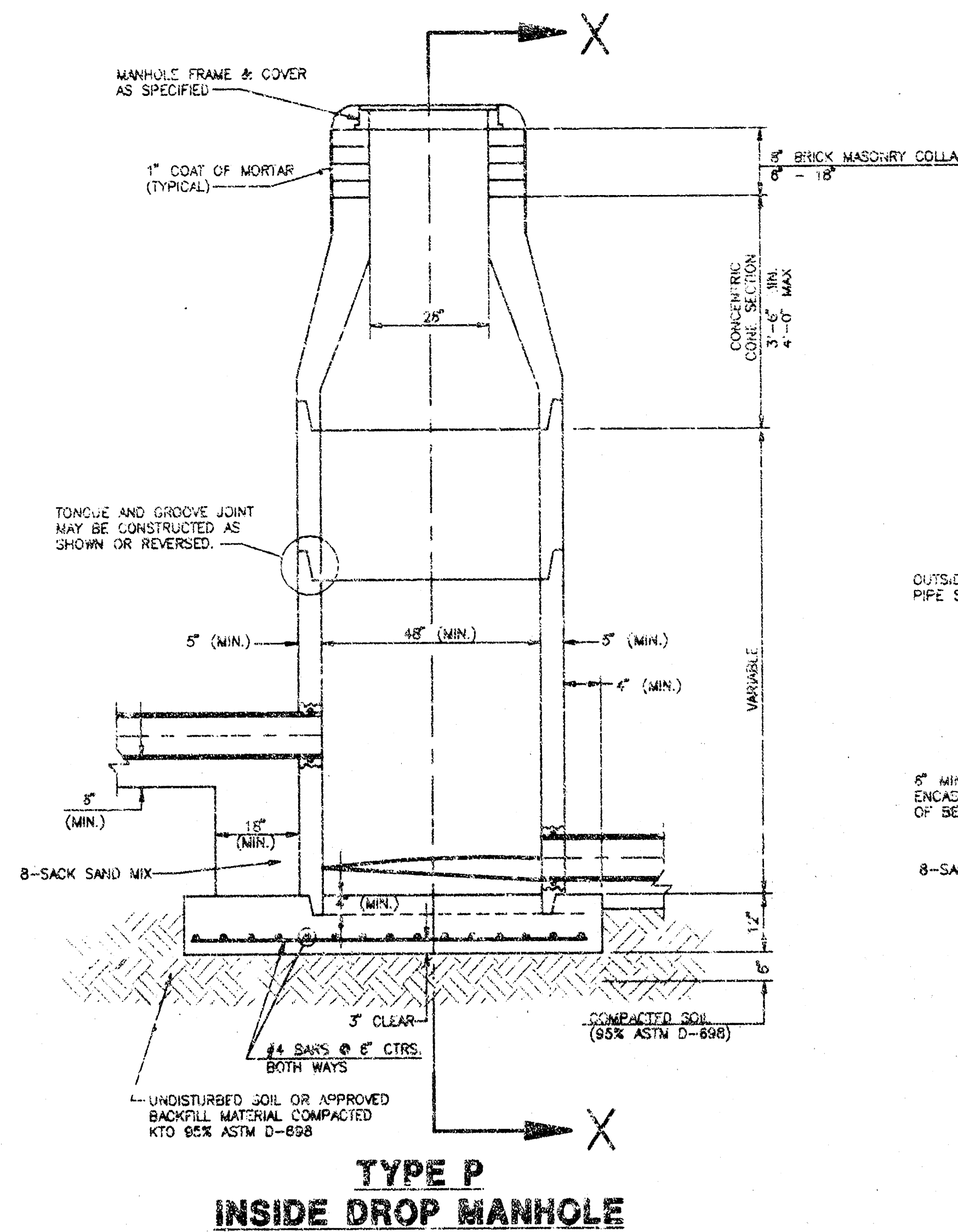
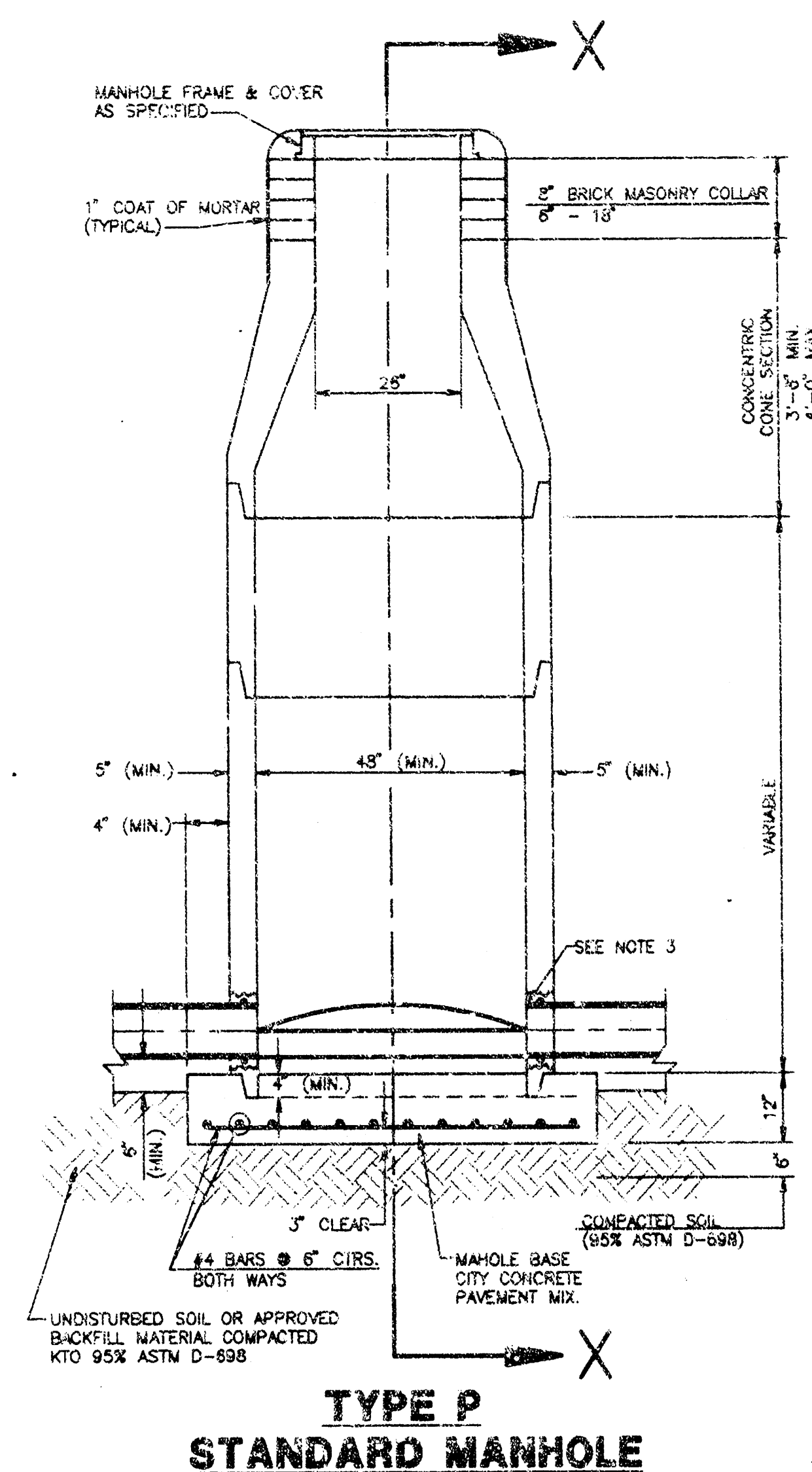
NOV. 1984

CITY OF WICHITA, KANSAS

Design	HER	Checked by	Checked by	8
Drawn by	ERS	Date	Date	Job No.

SEWER APPURTENANCES DETAILS

ADOPTED AS STANDARD DESIGN
BY
CITY OF WICHITA

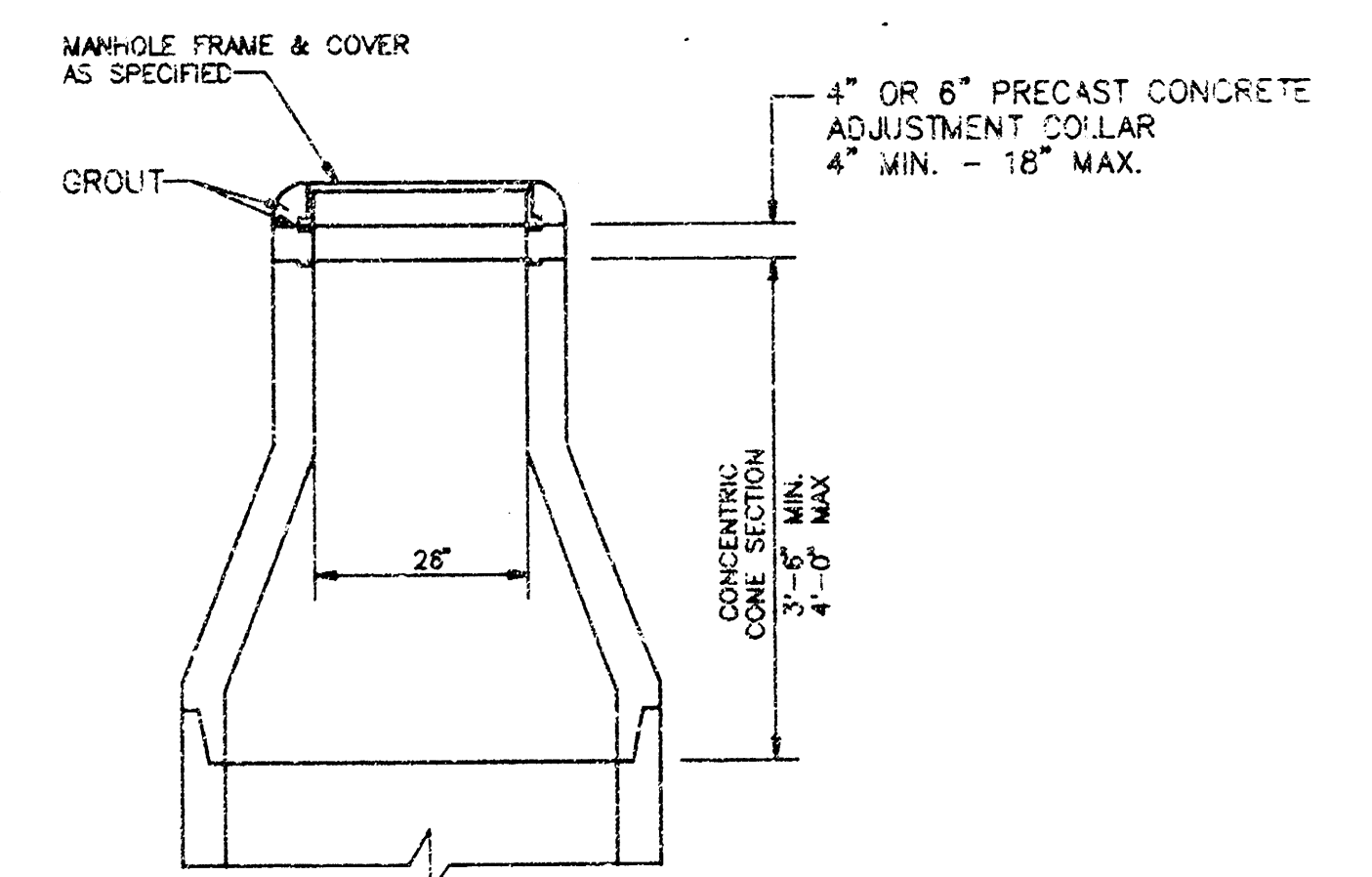


GENERAL NOTES

PRECAST MANHOLE NOTES

- ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
- NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
- APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.B.S. 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 AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
- ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TNEC SERIES 66 HI-BUILD EPOXOLINE, DRY THICKNESS OF 8 MILS (MIN.)
- EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINUS COATING.
- JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
- PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
- TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
- LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
- 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 ENTERING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON 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.
- 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 3" 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.
- 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 FLOW 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.
- 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 NEAT LINES FOR 7-1/2" FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
- 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.
- 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.
- 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.
- 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.
- 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 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR.

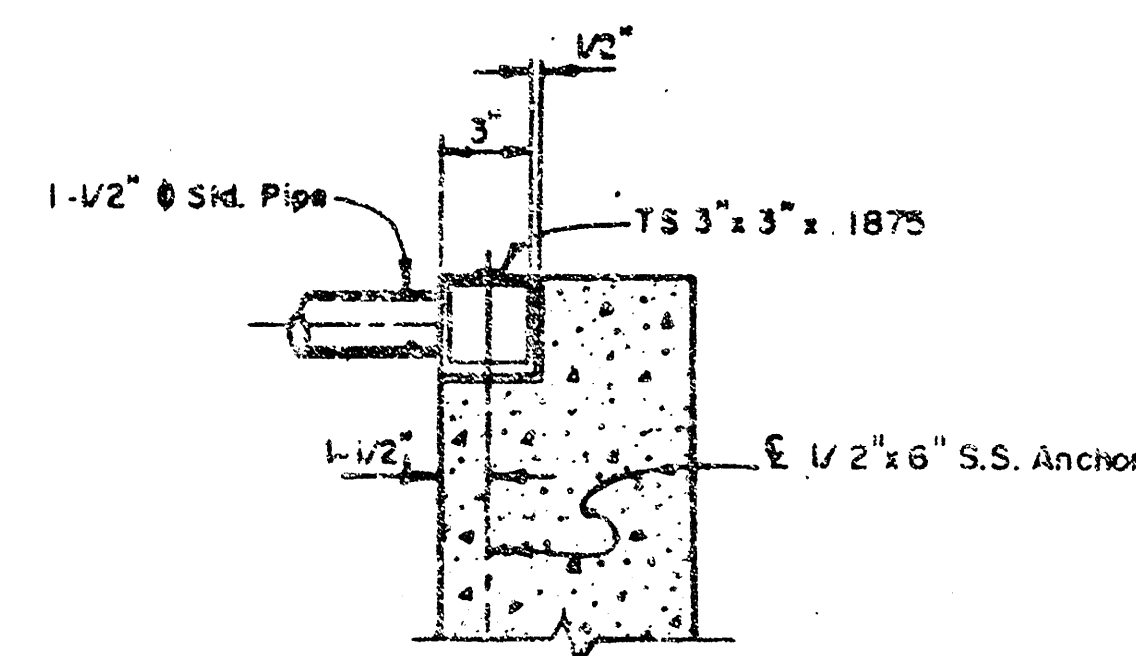
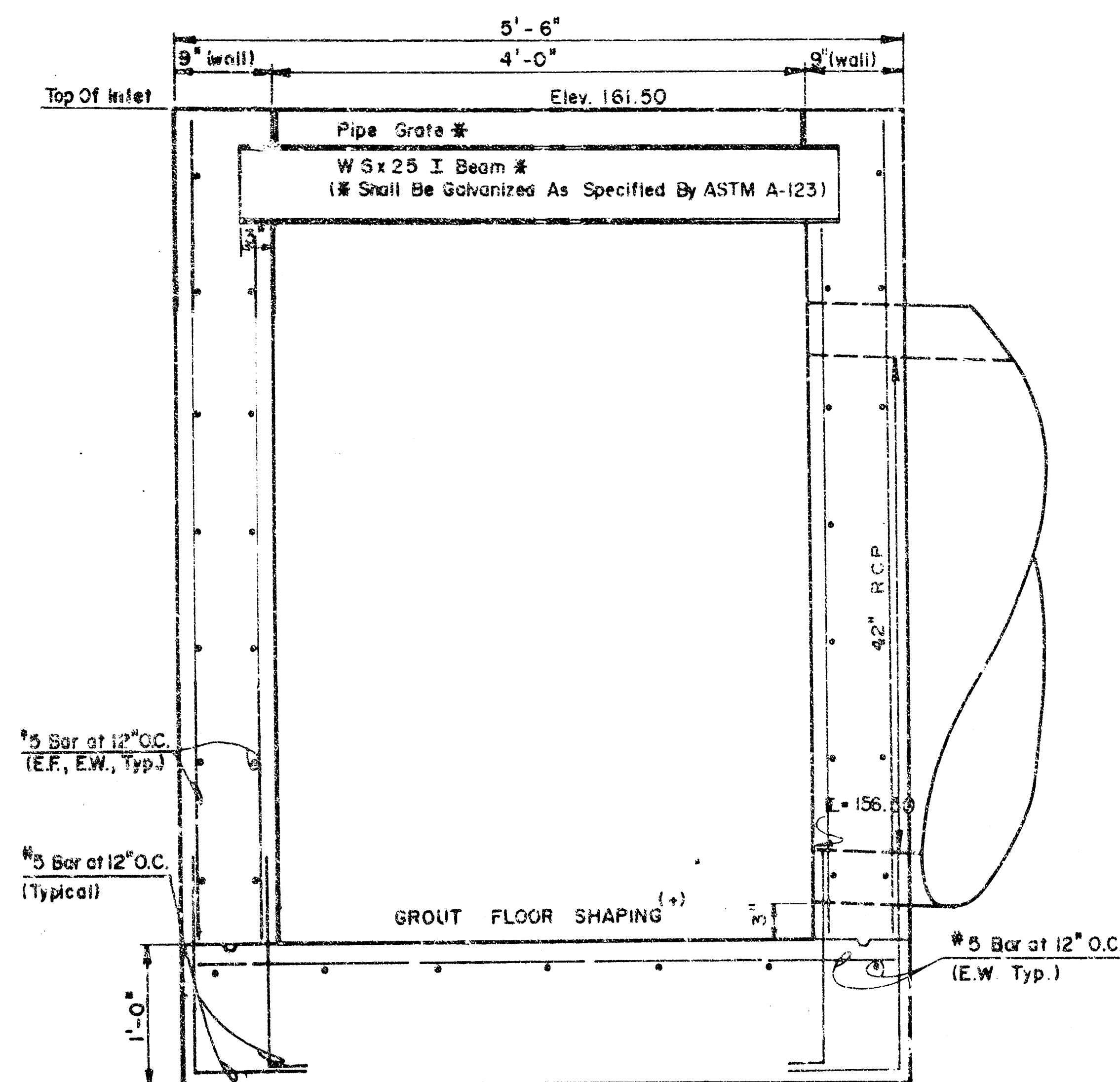
SECTION X (TYPICAL)



	BERKSHIRE III		Design GJA
	MANHOLE DETAILS		Drawn by AN
			Checked by GJA
			Date 1/93
			Job no. 3246SW57
MID-KANSAS ENGINEERING CONSULTANTS INC. 3500 NORTH ROCK ROAD BUILDING #800 WICHITA, KANSAS 67226			Sheet 7 of 8

(316) 636-5566

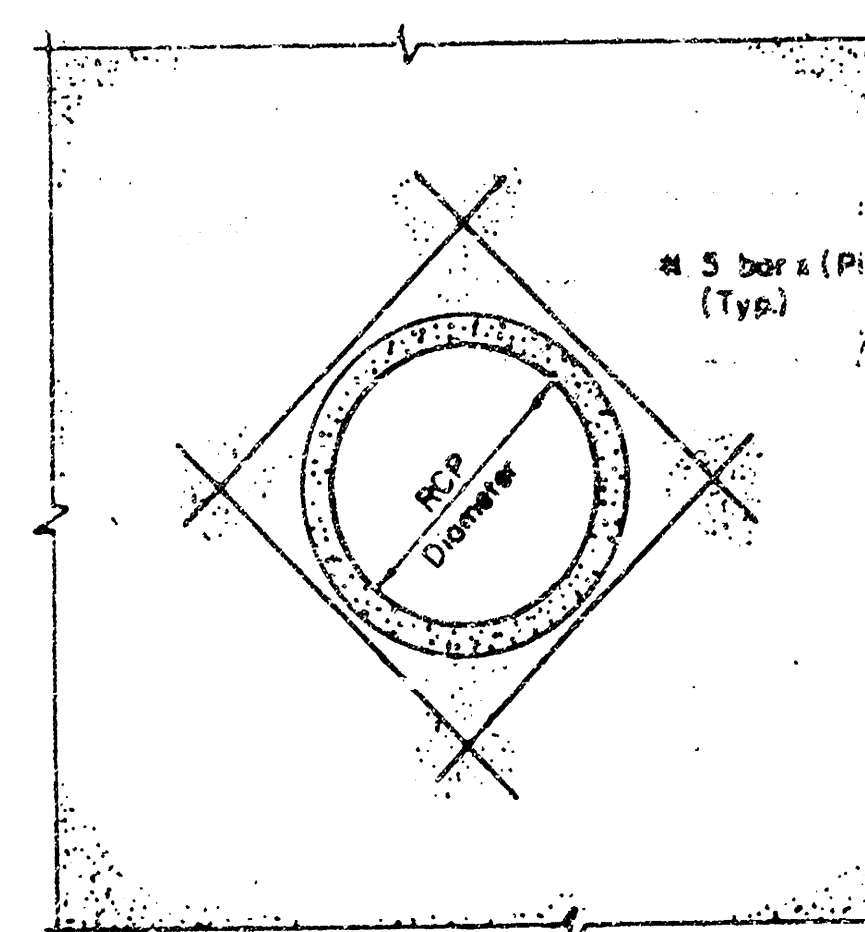
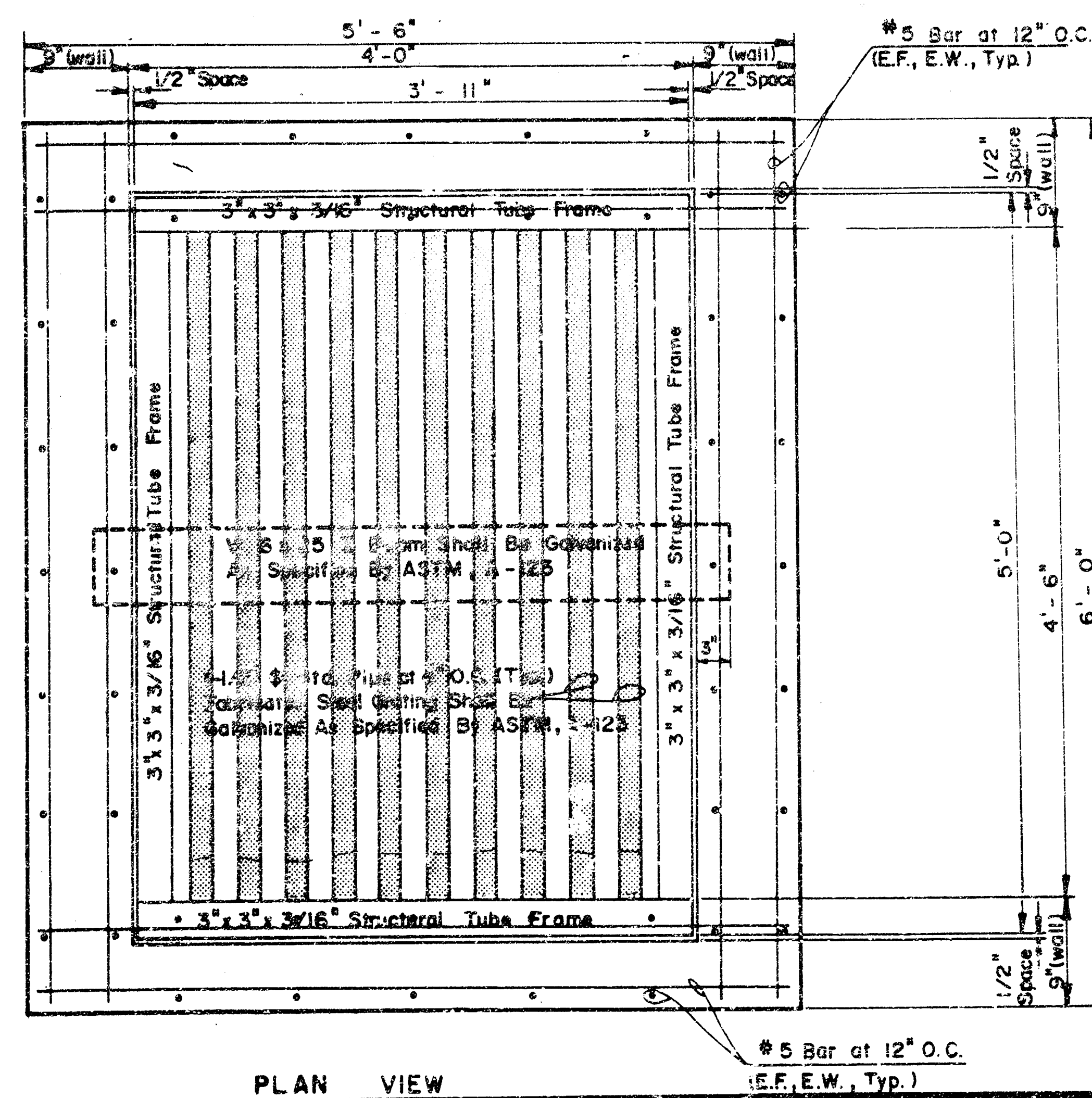
29872



NOTE:
Fabricated Steel Grating Shall
Be Galvanized As Specified By ASTM A123
DETAIL "A"

REINFORCED CONCRETE AREA INLET

ELEVATION VIEW — LOOKING NORTH



TYPICAL REINFORCING AT PIPE
NOTE: Cut reinforcing as required to clear RCP

	BERKSHIRE III		Design
	AREA INLET		Drawn by
	DETAILS		Checked by
			Date
MID-KANSAS ENGINEERING CONSULTANTS PA 3500 NORTH ROCK ROAD BUILDING #800 WICHITA, KANSAS 67226		636-5566	Sheet 8 of 8

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