

MAIN 3, COWSKIN INTERCEPTOR SEWER

to serve

SKYWAY INDUSTRIAL PARK, MID-CONTINENT INDUSTRIAL PARKS I & II, DUGAN INDUSTRIAL 2ND & 3RD ADDITIONS, AND UNPLATTED TRACTS

CITY OF WICHITA, KANSAS

Michael E. Lindebak, P.E. City Engineer

Project Number

468-83149

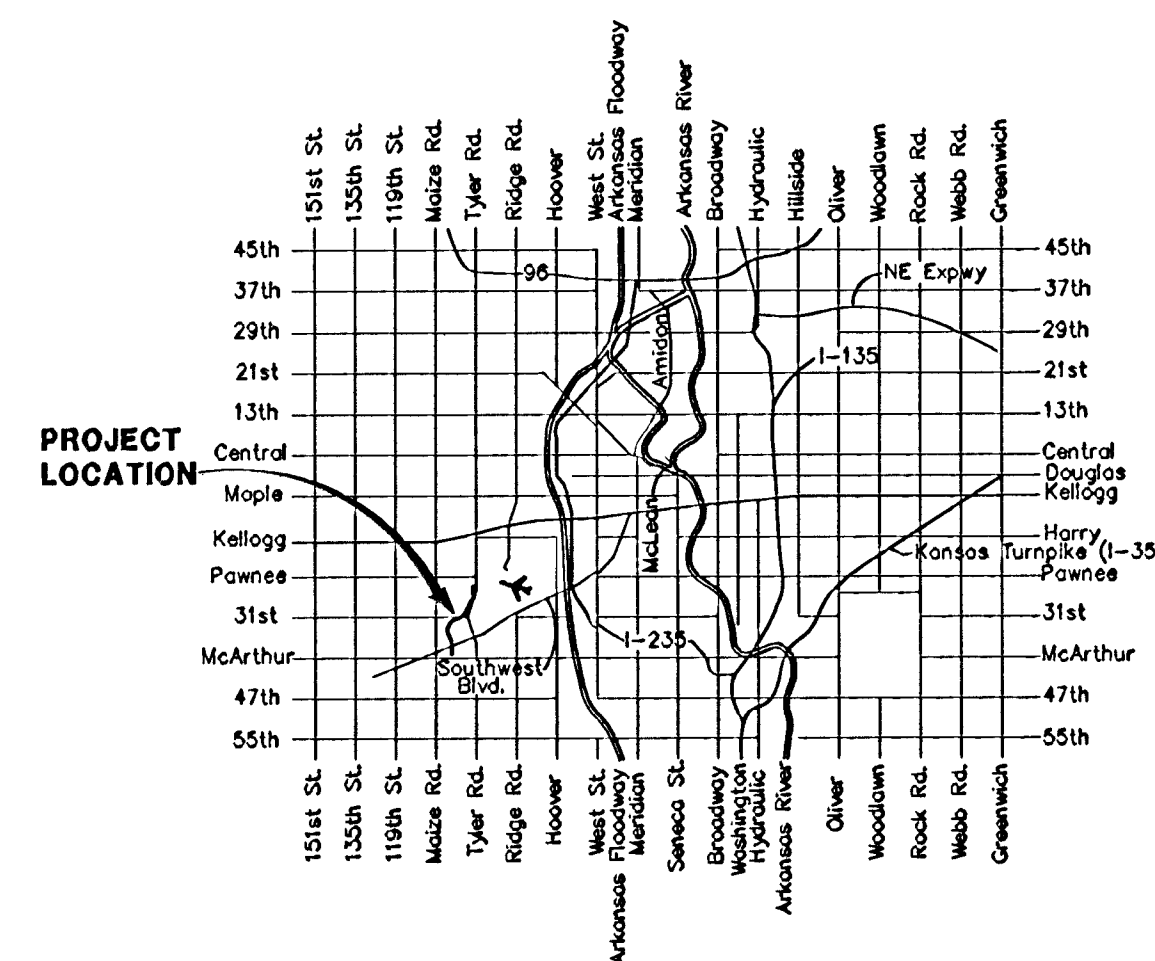
O.C.A. Number

743856

APRIL 2001

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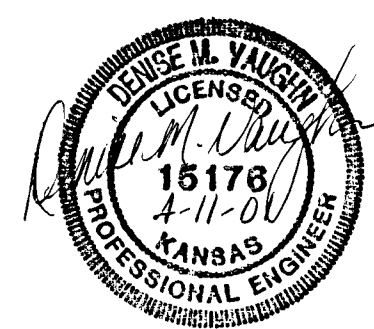
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Vicinity Map



Improvement District



AS BUILT
Booked
P-211- P-212
12/31/01
RDL

GENERAL NOTES:

1. Contractor will be required to provide notice to utility companies a minimum of twenty-four (24) hours prior to any excavation, as follows:

Kansas One-Call 687-2470

The Contractor must notify the following in case of an emergency:

Cox Communications 262-0661
 K.P.L. Gas Service Company 383-2650
 Kansas Gas & Electric Company 383-2600
 Peoples Gas Company 942-8350
 Southwestern Bell Telephone Company 1-800-344-7233
 City of Wichita Water Dept. 268-4908
 City of Wichita Traffic Engineering 269-4448

2. Underground utility service lines and overhead utility pole lines are to be adjusted as necessary by others prior to construction unless the plans specifically call for their adjustment by the Contractor or unless the plans specifically identify a utility to be adjusted by its owner during construction. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

3. 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.

4. The Contractor shall give all property owners and/or tenants of developed property abutting the construction of this project a minimum of ten (10) days advance notice prior to start of construction.

5. The Contractor shall be responsible for preserving property irons. The Contractor will 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.

6. The Contractor shall be responsible for maintaining continuous flow of sewage through construction. The Contractor's proposed method of maintaining sewage flow shall be approved by the Engineer. Cost of maintaining flow of sewage through construction will not be paid directly and shall be considered as subsidiary to other related work items.

7. The Contractor shall restore all ditches, swales, road shoulders and embankments to their original slope and grade. Where existing entrance pipes, drainage pipes, signs, fences, etc. conflict with the proposed work, they shall be removed and replaced or reset. This replacement, including seeding, fertilizer and mulching shall be considered subsidiary to the lump sum bid item "Site Clearing and Restoration."

8. The Contractor shall submit an application to the Kansas Department of Transportation (KDOT) for a "Highway Permit Agreement" for "Use of Right-of-Way". Copies of the KDOT approved permit shall be delivered to the engineer prior to beginning any work in K-42 Highway. Highway permit fees, if any, shall be borne by the Contractor. Permit forms for this project are available from the KDOT office listed below:

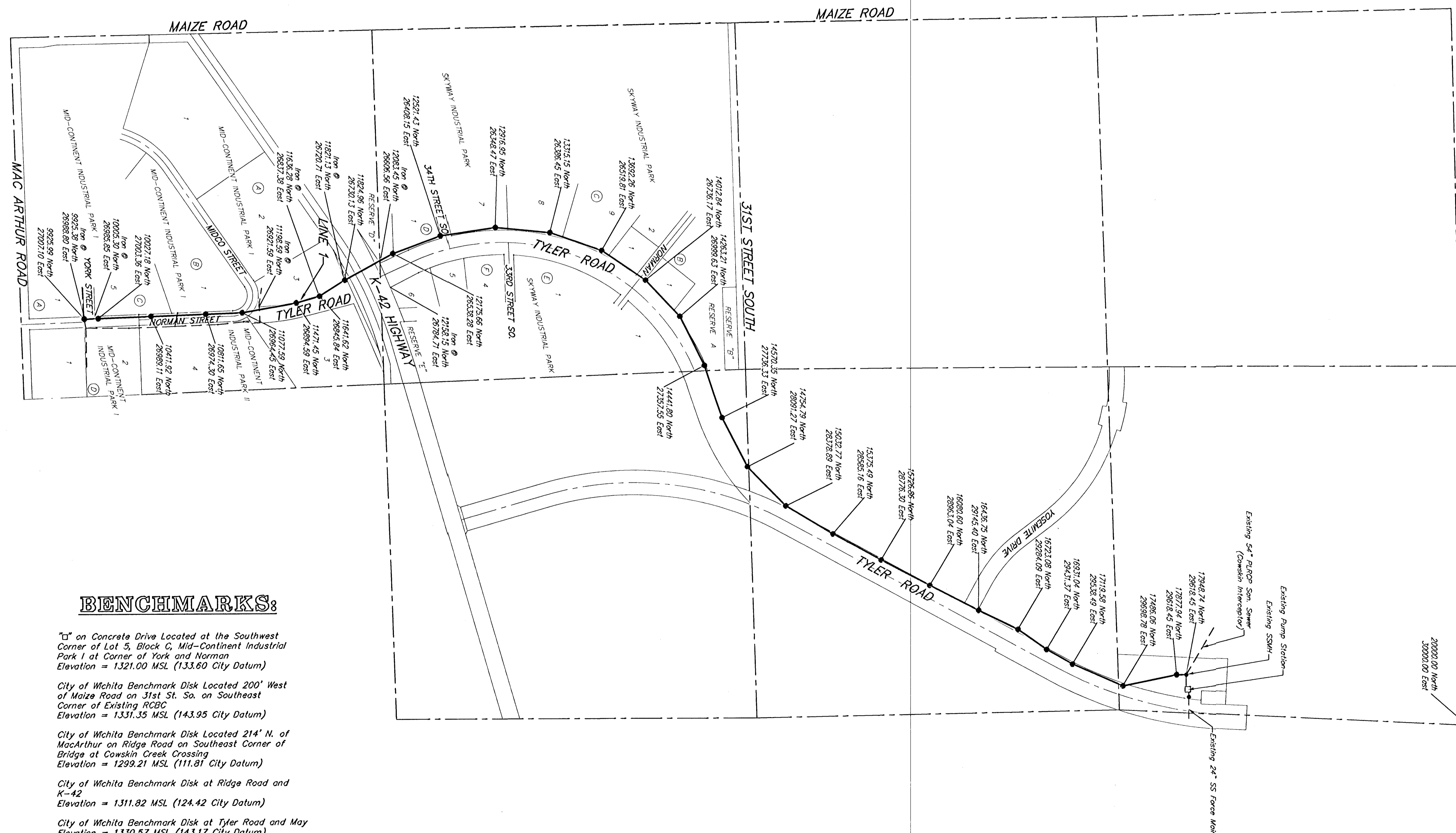
Kansas Department of Transportation
 3200 E. 45th North
 Wichita, KS 67220
 (316) 744-1271
 Mr. Bob Raymond
 Utility Coordinator

9. An application has been filed with DWR for the Cowskin Creek crossing. Construction in this area shall not begin until permit has been received. If Contractor opts to use directional drilling in lieu of open cutting, this permit will not be necessary.

10. Due to portion of project located on Wichita Airport Authority property, Contractor will need to provide certificate of insurance naming the Wichita Airport Authority as an additional insured.



Scale: 1" = 400'



BENCHMARKS:

"□" on Concrete Drive Located at the Southwest Corner of Lot 5, Block C, Mid-Continent Industrial Park I at Corner of York and Norman
 Elevation = 1321.00 MSL (133.60 City Datum)

City of Wichita Benchmark Disk Located 200' West of Maize Road on 31st St. So. on Southeast Corner of Existing RCBC
 Elevation = 1331.35 MSL (143.95 City Datum)

City of Wichita Benchmark Disk Located 214' N. of MacArthur on Ridge Road on Southeast Corner of Bridge at Cowskin Creek Crossing
 Elevation = 1299.21 MSL (111.81 City Datum)

City of Wichita Benchmark Disk at Ridge Road and K-42
 Elevation = 1311.82 MSL (124.42 City Datum)

City of Wichita Benchmark Disk at Tyler Road and May
 Elevation = 1330.57 MSL (143.17 City Datum)

MID-CONTINENT INDUSTRIAL PARK
KEY SHEET
 SANITARY SEWER IMPROVEMENTS

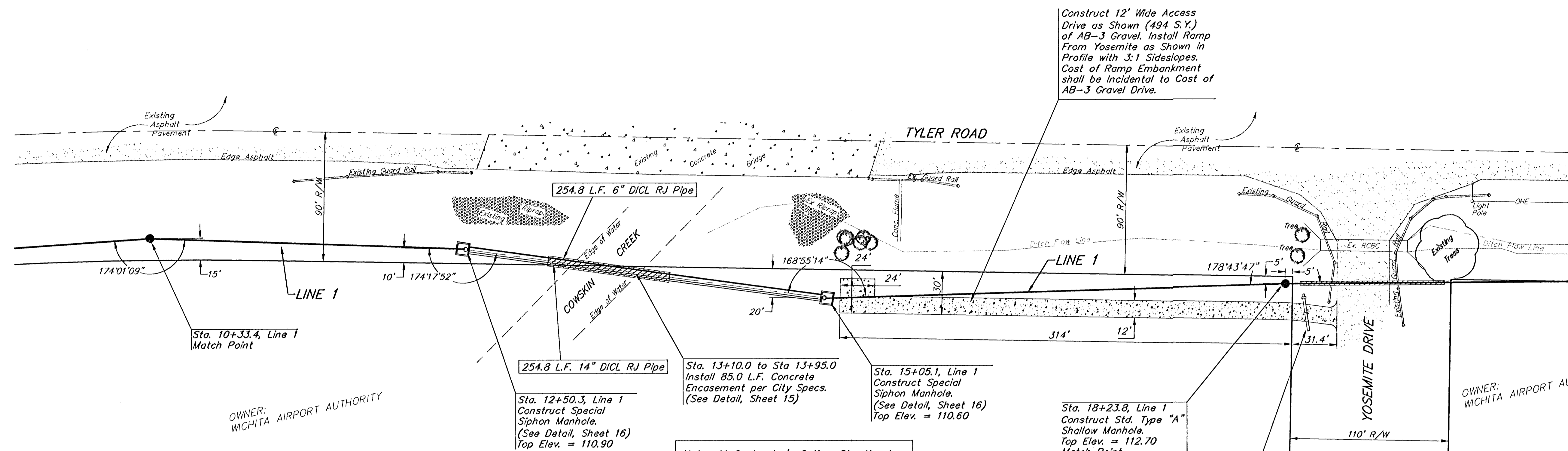
BAUGHMAN COMPANY P.A.
 ENGINEERING, SURVEYING, & PLANNING
 316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

DESIGN DMV	DRAWN JAK	APPROVED	DATE 3/01	SCALE 1" = 400'	SHEET 2 OF 20
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MID-CON-35 ISSUES 00-05-E714



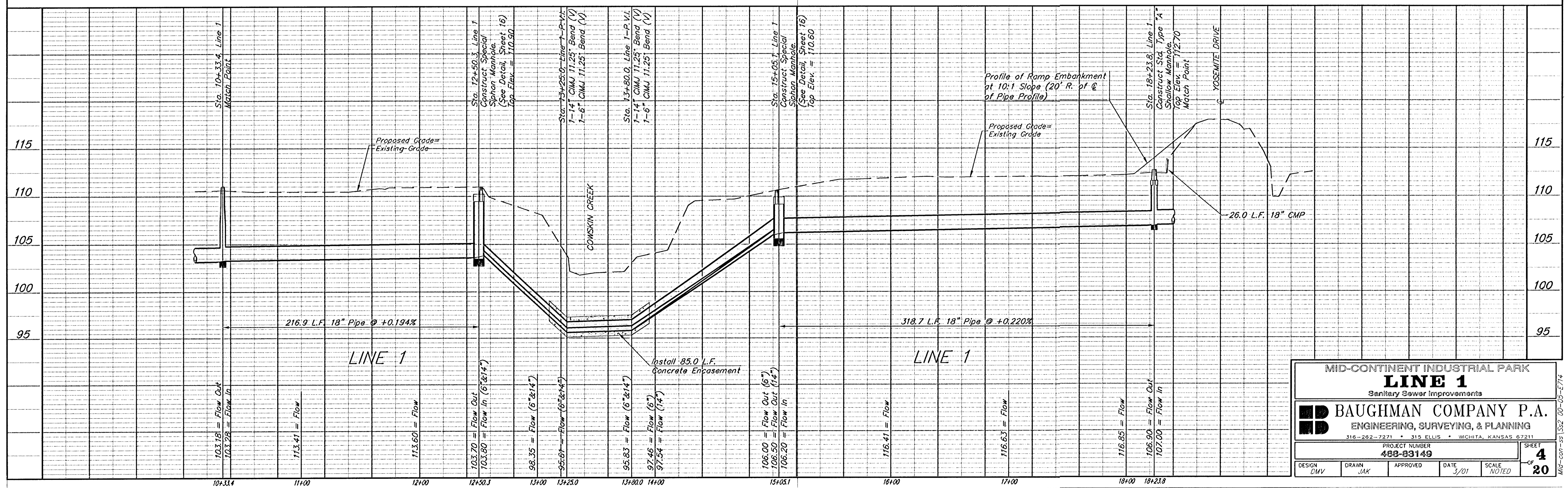
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 1" = 5' VERTICAL
 • = IRON



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 WICHITA AIRPORT AUTHORITY

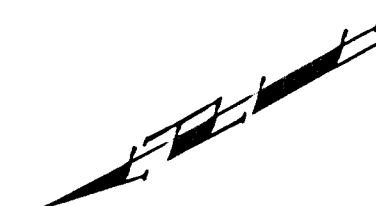
OWNER:
 WICHITA AIRPORT AUTHORITY

Note: At Contractor's Option, Directional Drilling may be Used in Lieu of Open Cut and Concrete Encasement at Cowskin Creek Crossing (Sta. 12+50.3 to Sta. 15+05.1)

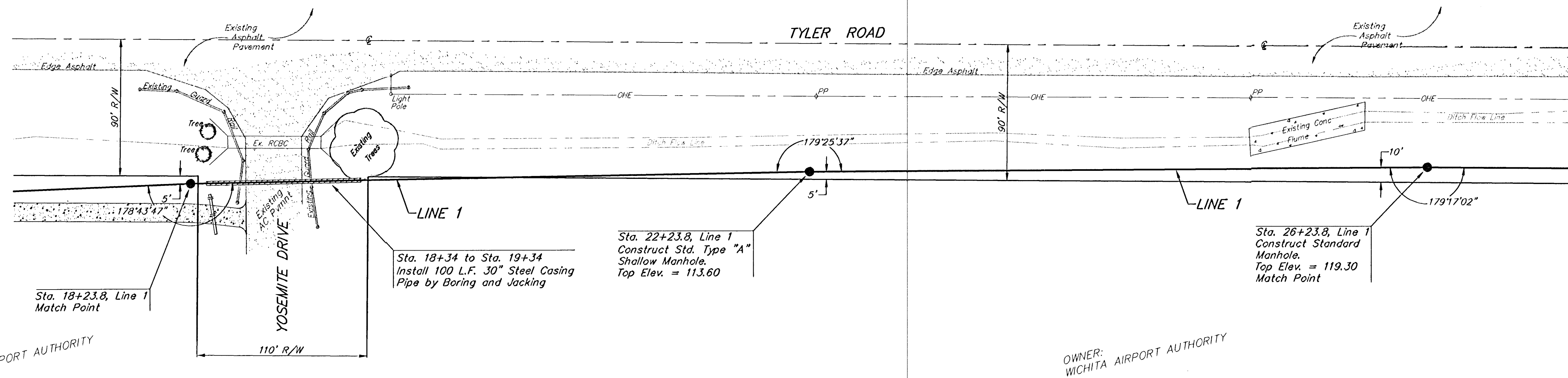


MID-CONTINENT INDUSTRIAL PARK				
LINE 1				
Sanitary Sewer Improvements				
BAUGHMAN COMPANY P.A.				
ENGINEERING, SURVEYING, & PLANNING				
316-262-7271 • 313 ELLIS • WICHITA, KANSAS 67211				
PROJECT NUMBER 488-83149				SHEET 4
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				OF 20

Mid-con-ss-1322 00-05-E714

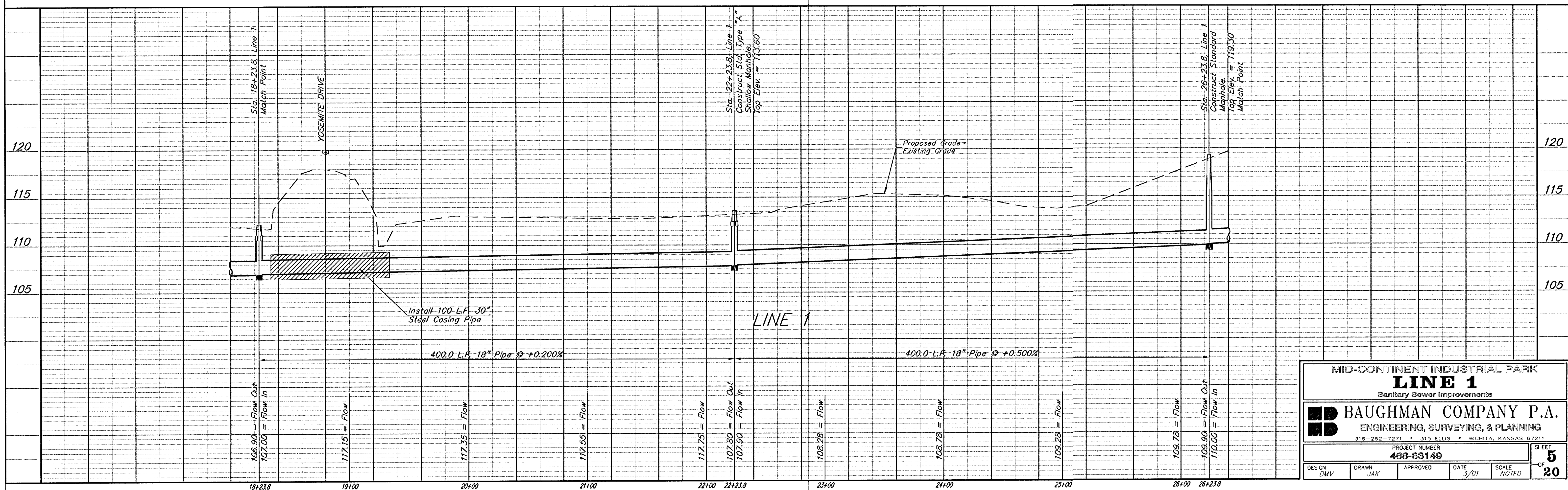


SCALE:
 1" = 40' HORIZONTAL
 1" = 5' VERTICAL
 • = IRON



OWNER:
 WICHITA AIRPORT AUTHORITY

OWNER:
 WICHITA AIRPORT AUTHORITY



MID-CONTINENT INDUSTRIAL PARK
LINE 1
 Sanitary Sewer Improvements

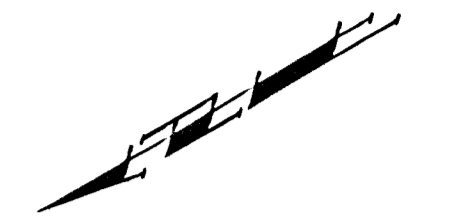
BAUGHMAN COMPANY P.A.
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 316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER
488-83149

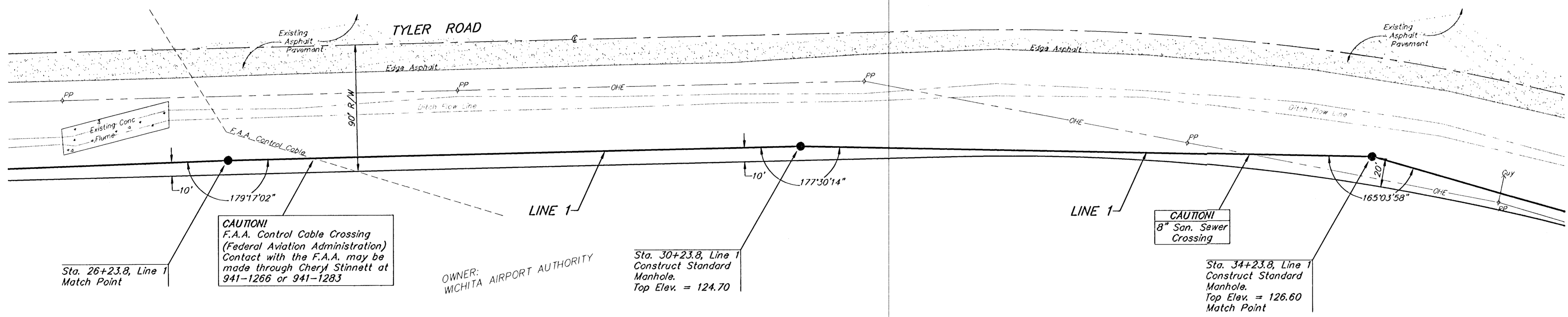
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SHEET
5
 OF
20

MID-coo-35 LS3 00-05-E714



SCALE:
 1" = 40' HORIZONTAL
 1" = 5' VERTICAL
 • = IRON



Sta. 26+23.8, Line 1
Match Point

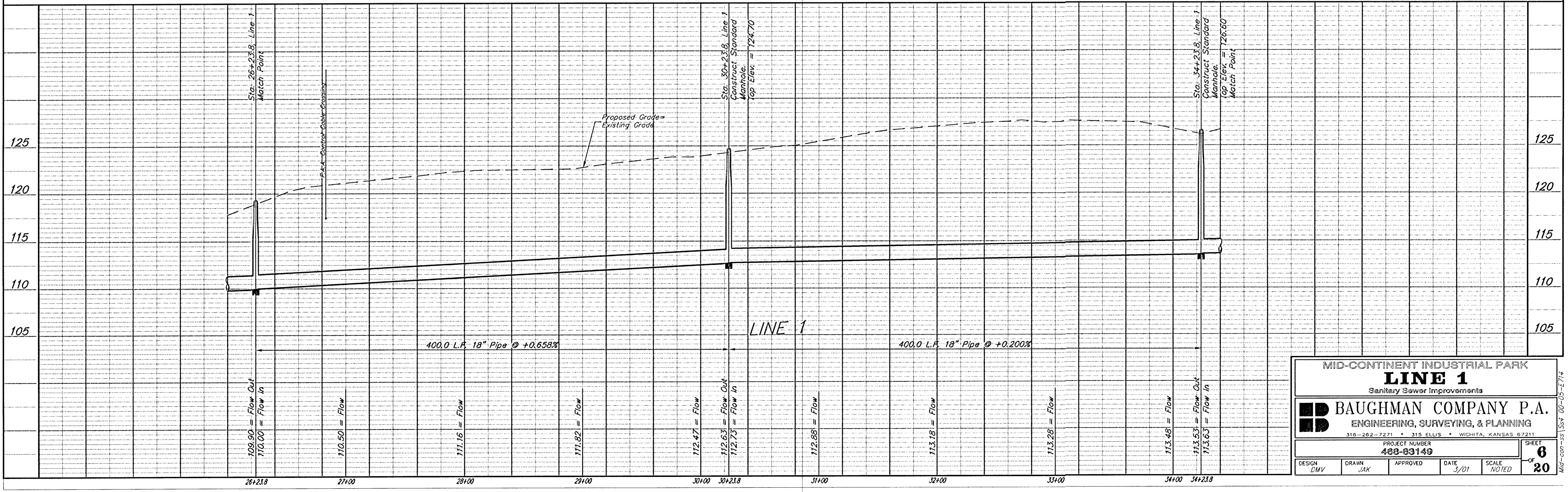
CAUTION!
 F.A.A. Control Cable Crossing
 (Federal Aviation Administration)
 Contact with the F.A.A. may be
 made through Cheryl Stinnett at
 941-1266 or 941-1283

OWNER:
 WICHITA AIRPORT AUTHORITY

Sta. 30+23.8, Line 1
 Construct Standard
 Manhole.
 Top Elev. = 124.70

CAUTION!
 8" San. Sewer
 Crossing

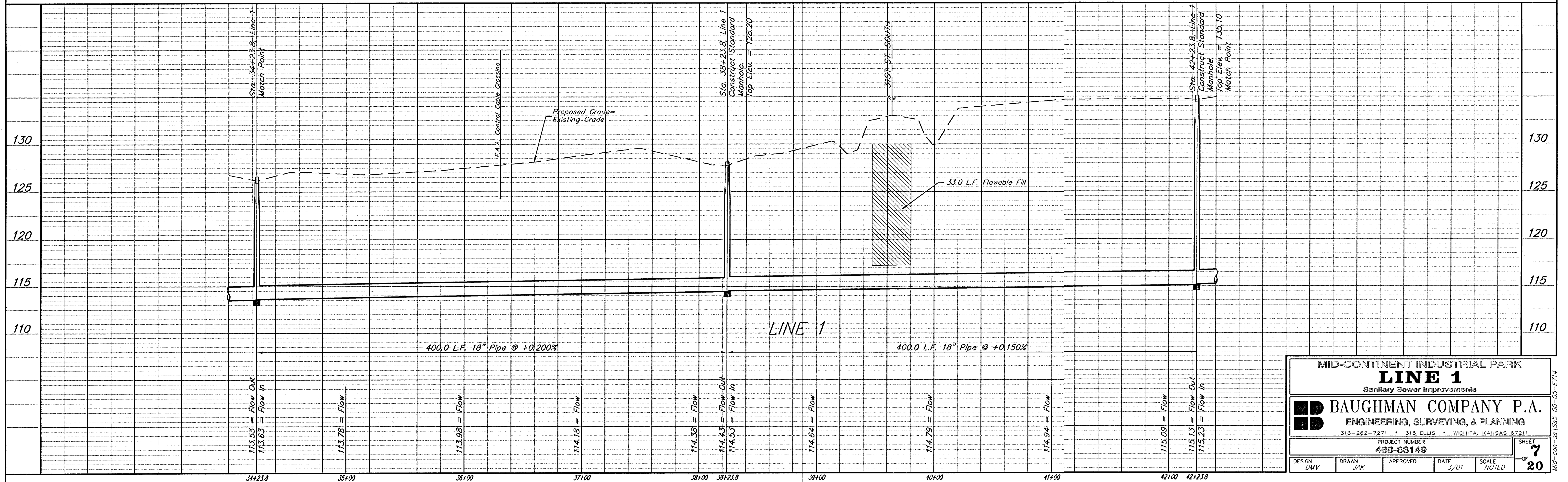
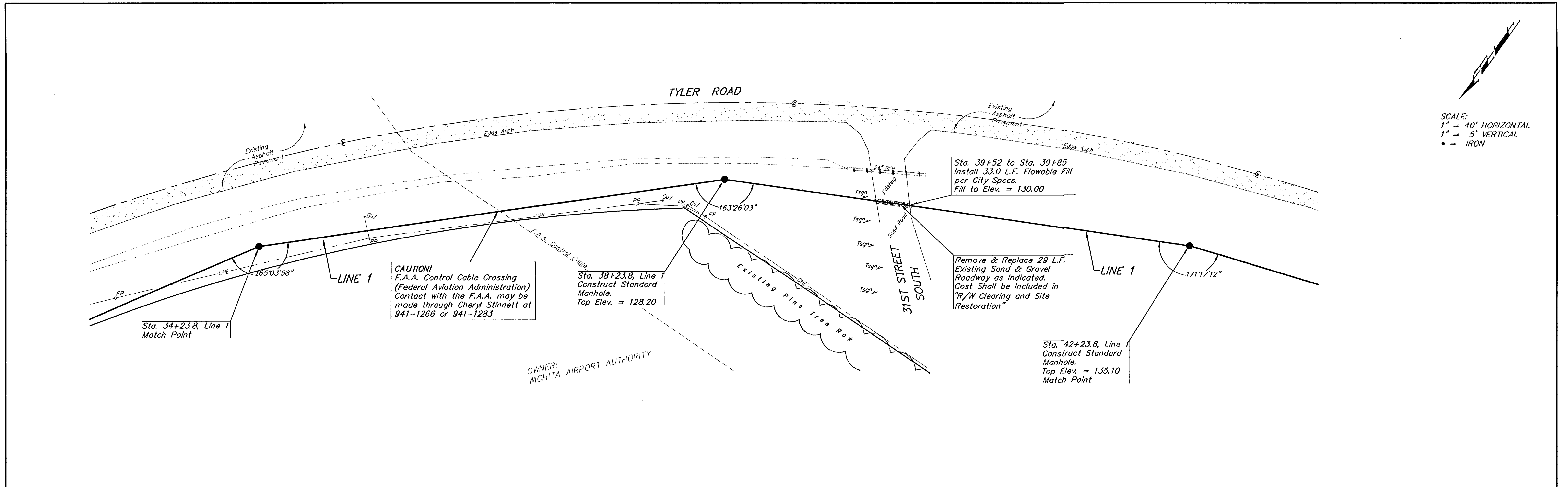
Sta. 34+23.8, Line 1
 Construct Standard
 Manhole.
 Top Elev. = 126.60
 Match Point



MID-CONTINENT INDUSTRIAL PARK				
LINE 1				
Sanitary Sewer Improvements				
BAUGHMAN COMPANY P.A.				
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316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211				
PROJECT NUMBER 488-83149				SHEET 6
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				OF 20

MID-coo-ss 1304 00-05-E74

SCALE:
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MID-CONTINENT INDUSTRIAL PARK
LINE 1
 Sanitary Sewer Improvements

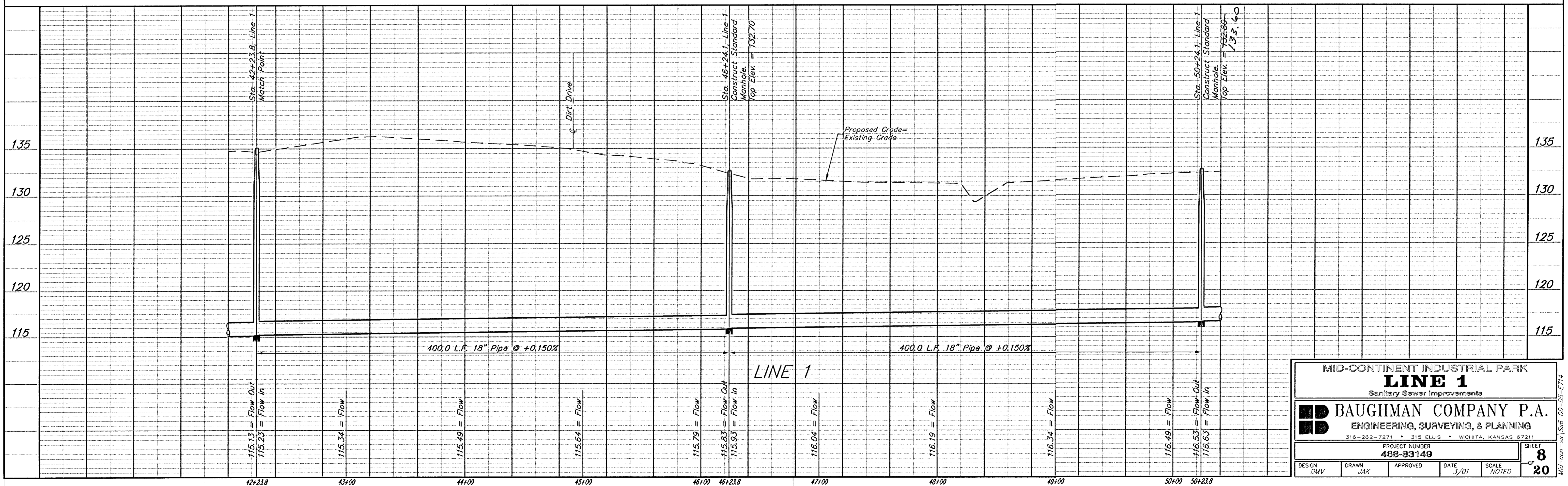
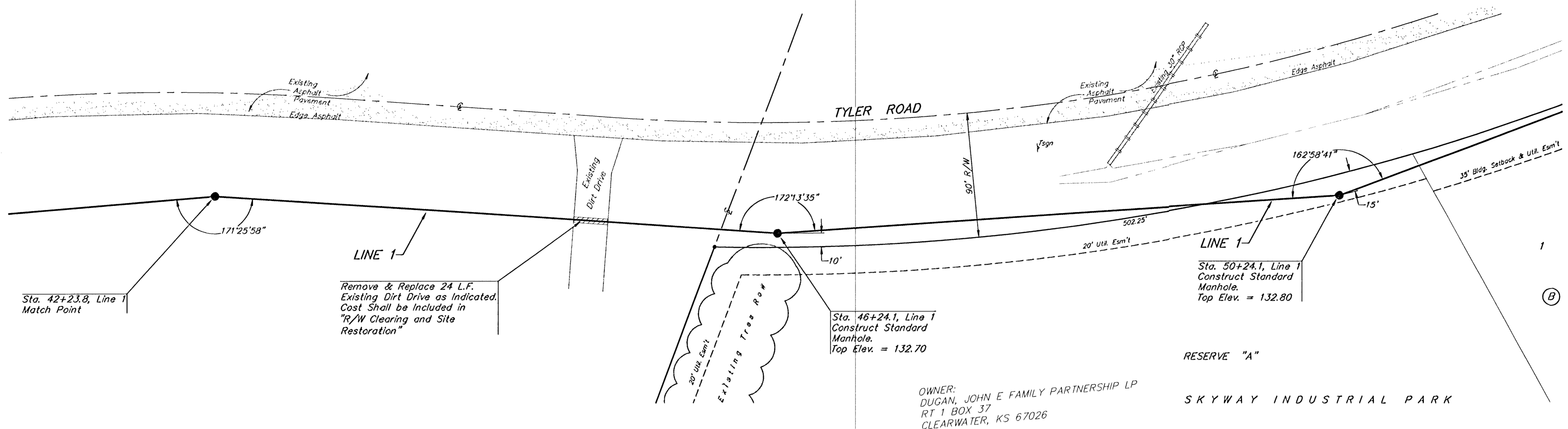
BAUGHMAN COMPANY P.A.
 ENGINEERING, SURVEYING, & PLANNING
 316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER
488-83149

DESIGN: DMV DRAWN: JAK APPROVED: DATE: 3/01 SCALE: NOTED SHEET: 7 OF 20

MID-CON-SS 1385 00-05-E714

SCALE:
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 1" = 5' VERTICAL
 • = IRON



MID-CONTINENT INDUSTRIAL PARK
LINE 1
 Sanitary Sewer Improvements

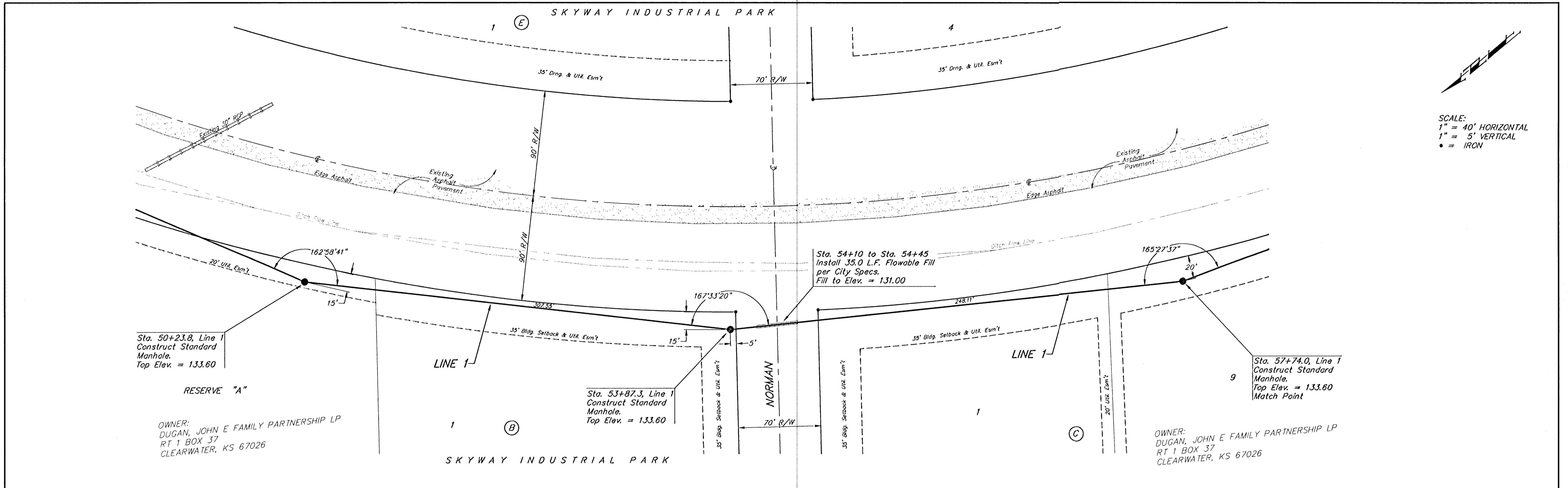
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PROJECT NUMBER
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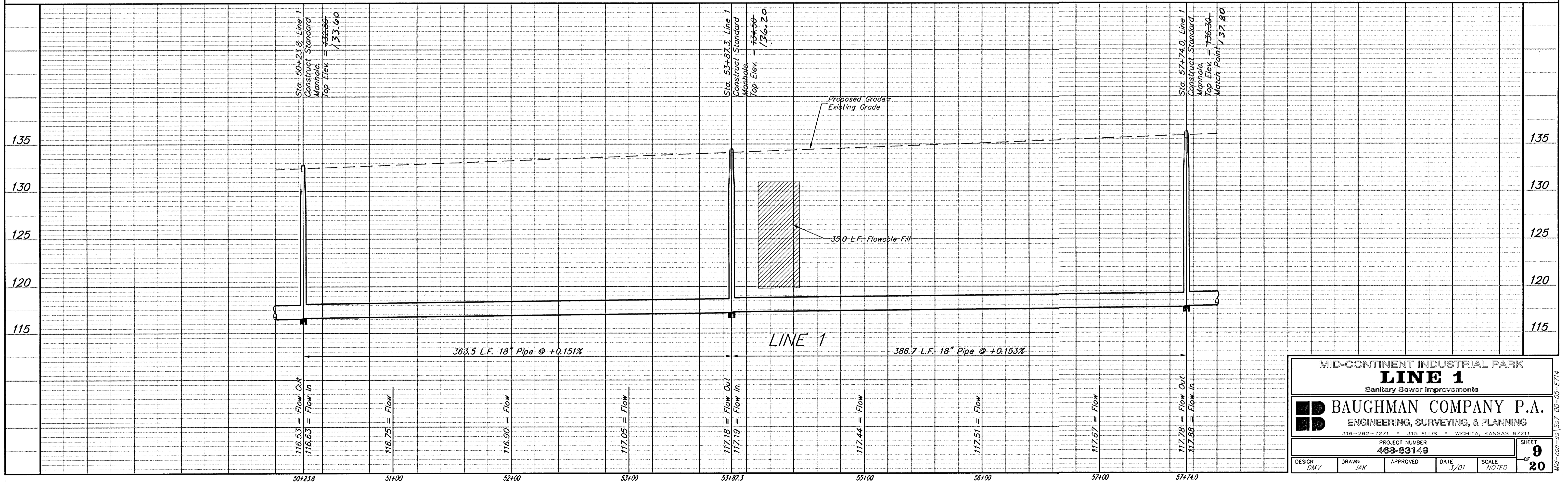
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SHEET **8** OF **20**

Mid-con-ss 156 00-05-E714



SCALE:
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1" = 5' VERTICAL
• = IRON



MID-CONTINENT INDUSTRIAL PARK
LINE 1
Sanitary Sewer Improvements

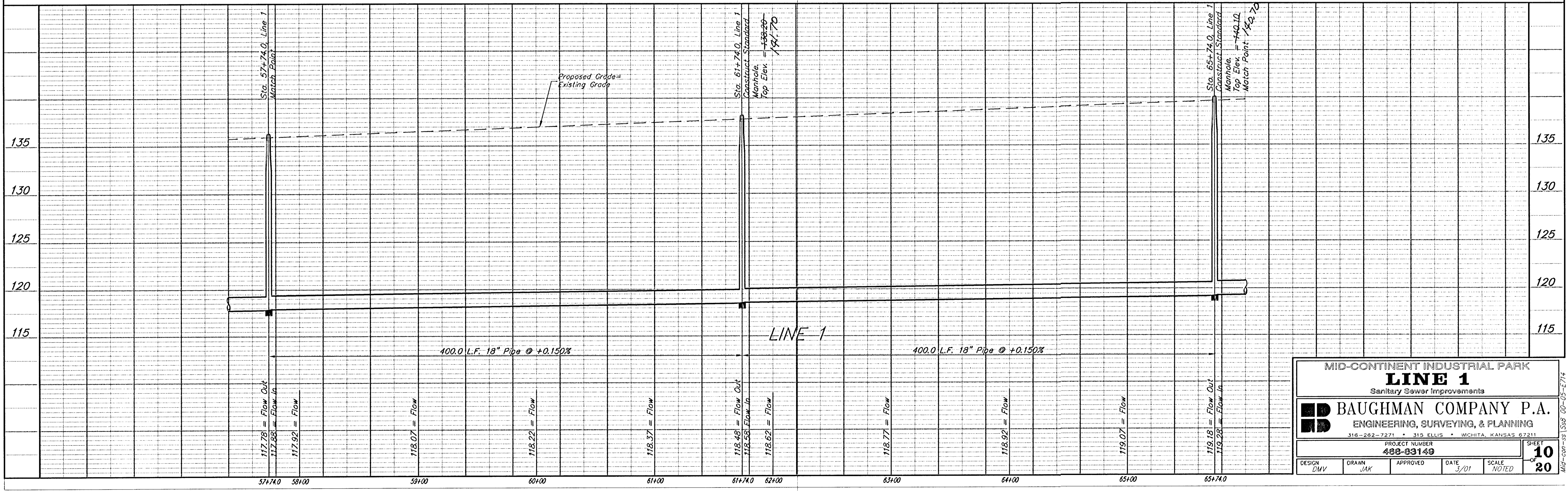
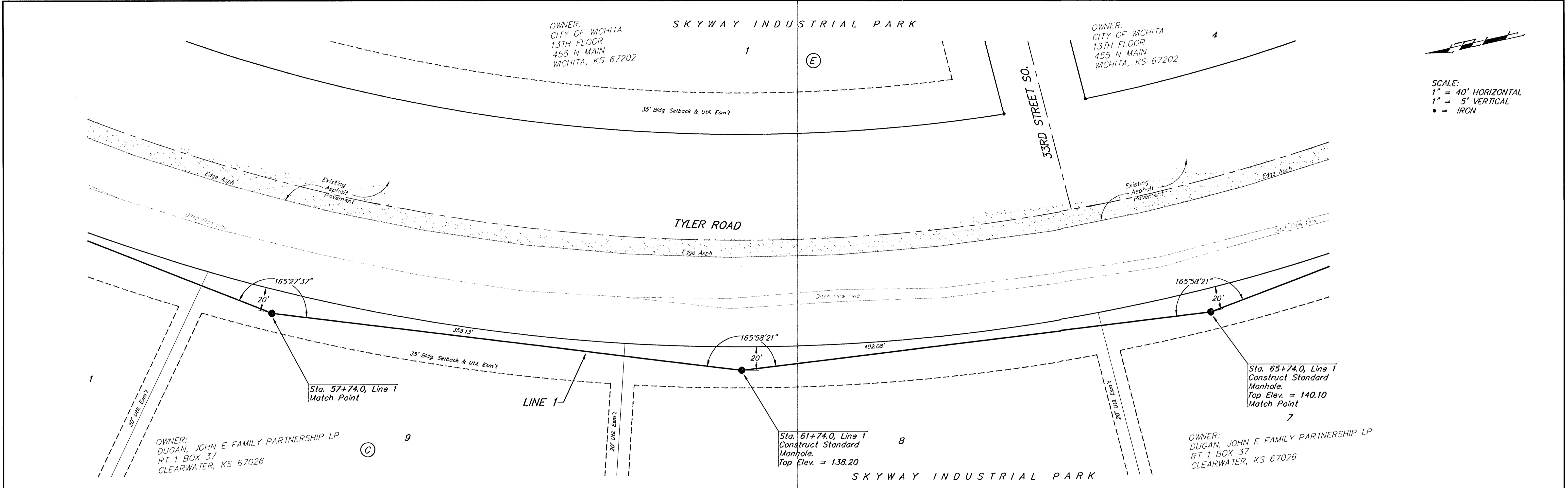
BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER
488-83149

DESIGN: DMV | DRAWN: JAK | APPROVED: [Signature] | DATE: 3/01 | SCALE: NOTED

SHEET **9** OF **20**

MID-cont-ss (S:7 00-05-E714



MID-CONTINENT INDUSTRIAL PARK
LINE 1
Sanitary Sewer Improvements

BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER
488-83149

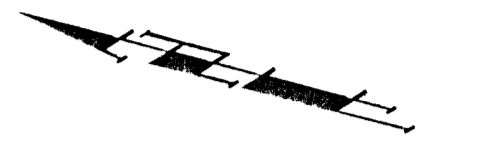
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SHEET OF 20

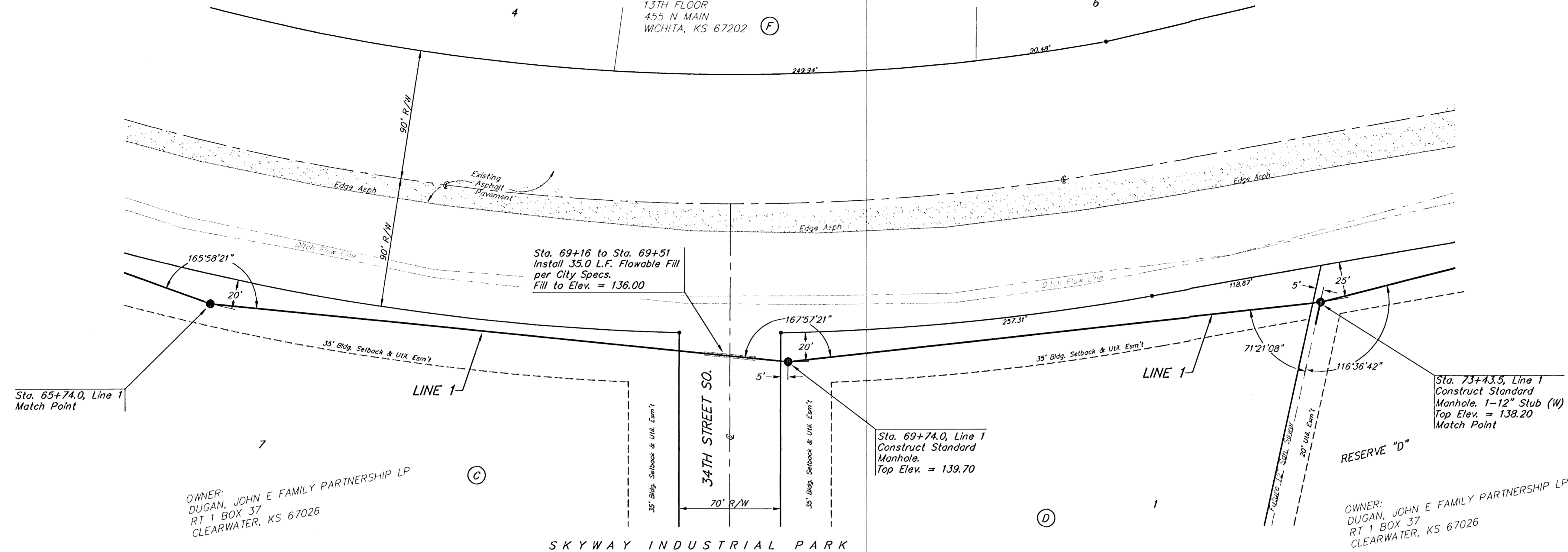
MID-coo-35 US38 00-05-E714

SKYWAY INDUSTRIAL PARK

OWNER:
CITY OF WICHITA
13TH FLOOR
455 N MAIN
WICHITA, KS 67202 (F)



SCALE:
1" = 40' HORIZONTAL
1" = 5' VERTICAL
• = IRON



Sta. 65+74.0, Line 1
Match Point

Sta. 69+16 to Sta. 69+51
Install 35.0 L.F. Flowable Fill
per City Specs.
Fill to Elev. = 136.00

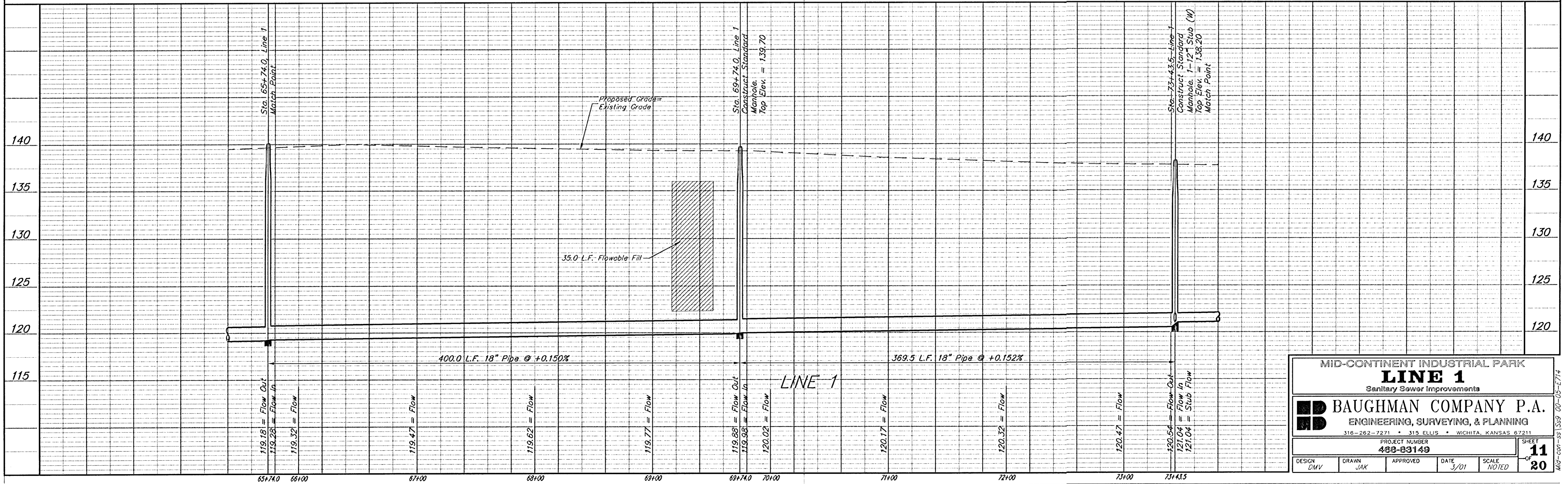
Sta. 69+74.0, Line 1
Construct Standard
Manhole.
Top Elev. = 139.70

Sta. 73+43.5, Line 1
Construct Standard
Manhole. 1-12" Stub (W)
Top Elev. = 138.20
Match Point

OWNER:
DUGAN, JOHN E FAMILY PARTNERSHIP LP
RT 1 BOX 37
CLEARWATER, KS 67026 (C)

OWNER:
DUGAN, JOHN E FAMILY PARTNERSHIP LP
RT 1 BOX 37
CLEARWATER, KS 67026 (D)

SKYWAY INDUSTRIAL PARK



119.18 = Flow Out
119.28 = Flow In
119.32 = Flow

119.47 = Flow

119.62 = Flow

119.77 = Flow

119.88 = Flow Out
119.98 = Flow In
120.02 = Flow

120.17 = Flow

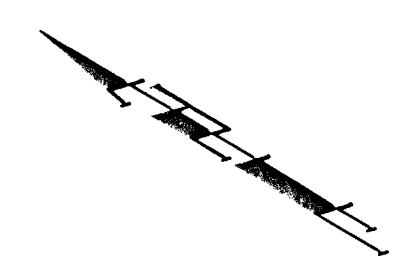
120.32 = Flow

120.47 = Flow

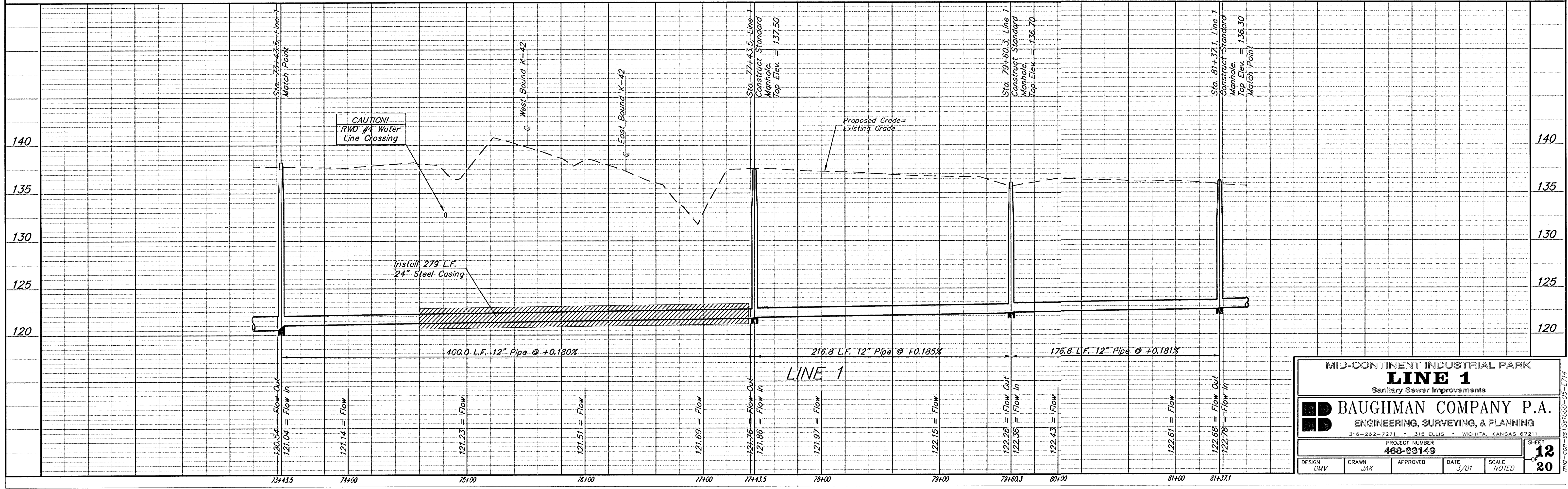
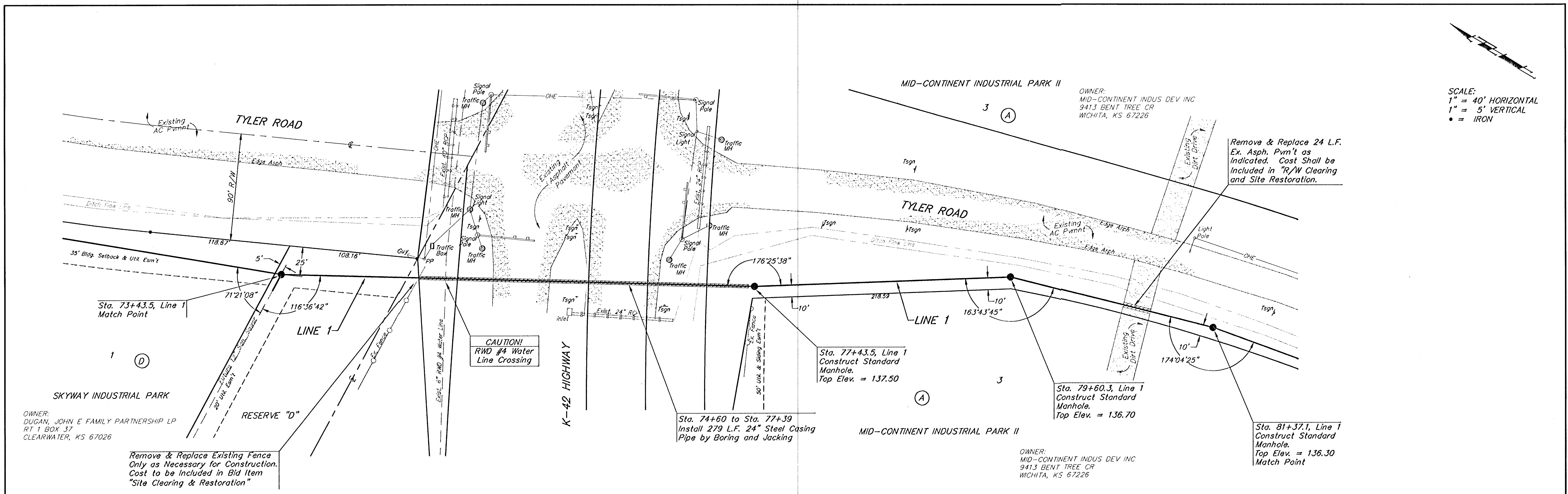
120.54 = Flow Out
121.04 = Flow In
121.04 = Stub Flow

MID-CONTINENT INDUSTRIAL PARK				
LINE 1				
Sanitary Sewer Improvements				
BAUGHMAN COMPANY P.A.				
ENGINEERING, SURVEYING, & PLANNING				
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211				
PROJECT NUMBER 488-89148				SHEET 11
DESIGN DMV	DRAWN JAK	APPROVED	DATE 3/01	SCALE NOTED
				OF 20

WIC-001-351589 00-05-E714



SCALE:
 1" = 40' HORIZONTAL
 1" = 5' VERTICAL
 • = IRON



MID-CONTINENT INDUSTRIAL PARK
LINE 1
 Sanitary Sewer Improvements

BAUGHMAN COMPANY P.A.
 ENGINEERING, SURVEYING, & PLANNING
 315-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER
488-83149

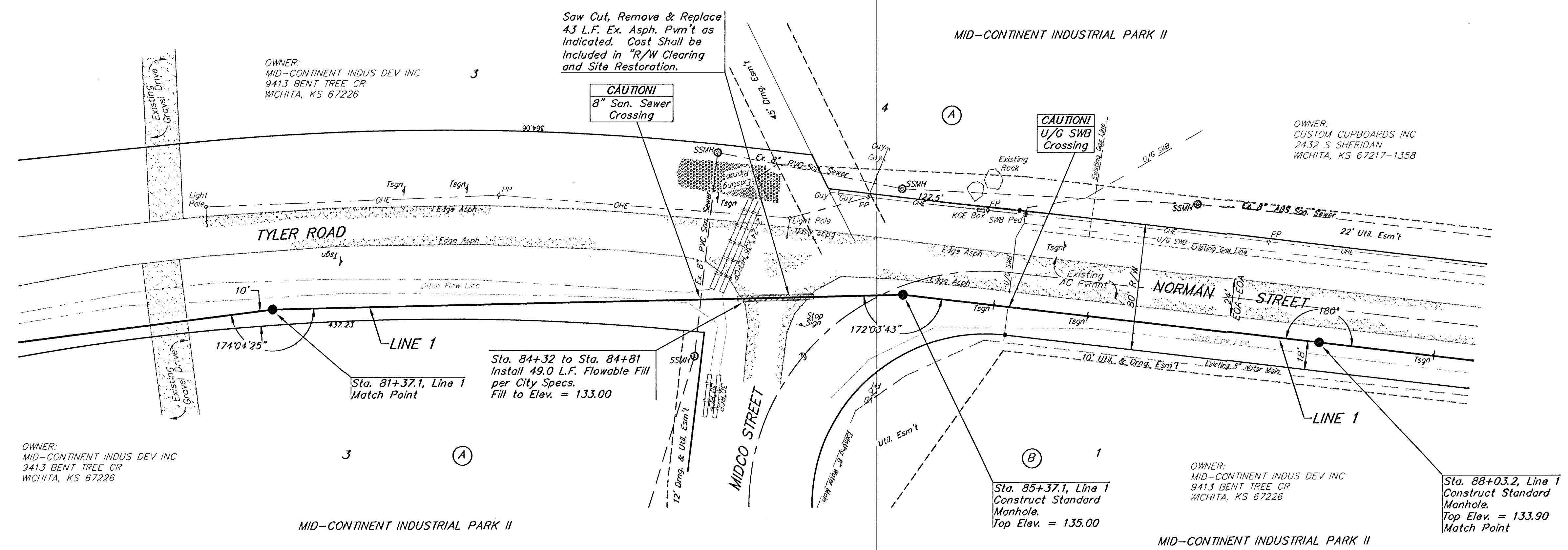
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SHEET **12** OF **20**

mid-con-35 SS1000-05-E714



SCALE:
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 1" = 5' VERTICAL
 • = IRON

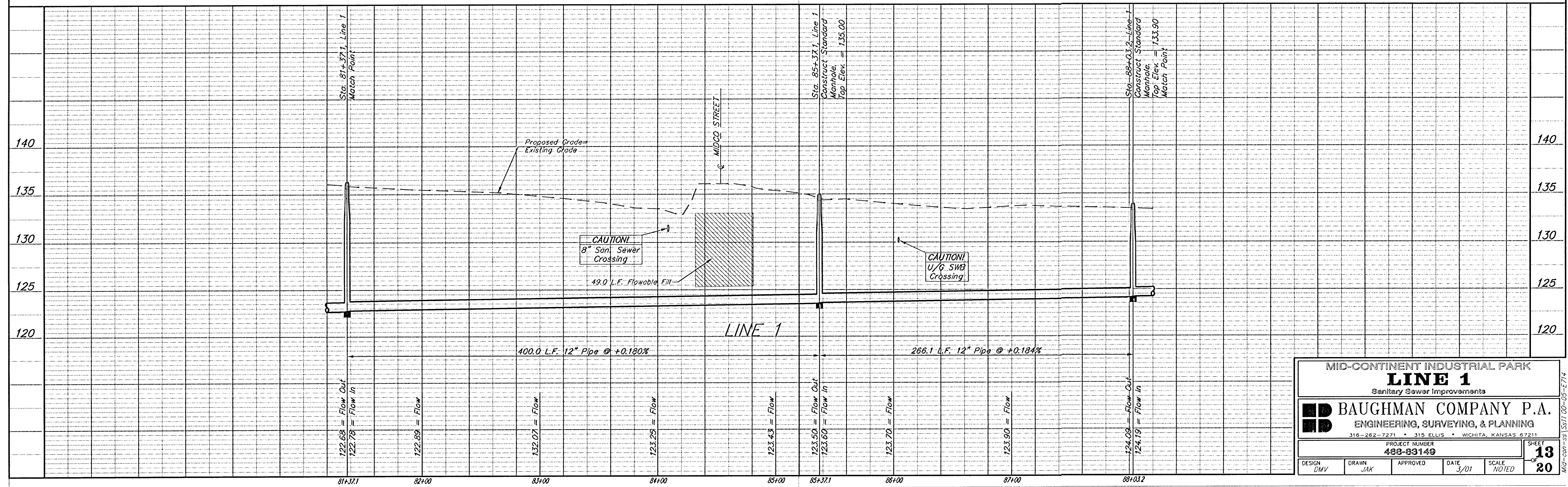


OWNER:
 MID-CONTINENT INDUS DEV INC
 9413 BENT TREE CR
 WICHITA, KS 67226

OWNER:
 CUSTOM CUPBOARDS INC
 2432 S SHERIDAN
 WICHITA, KS 67217-1358

MID-CONTINENT INDUSTRIAL PARK II

MID-CONTINENT INDUSTRIAL PARK II



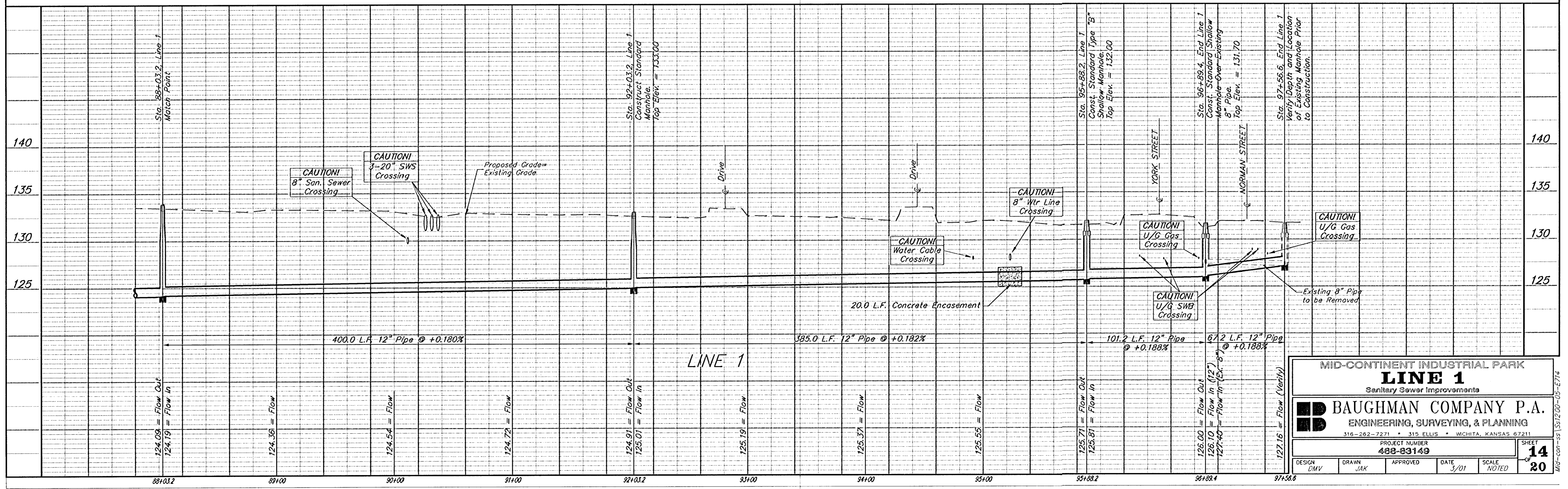
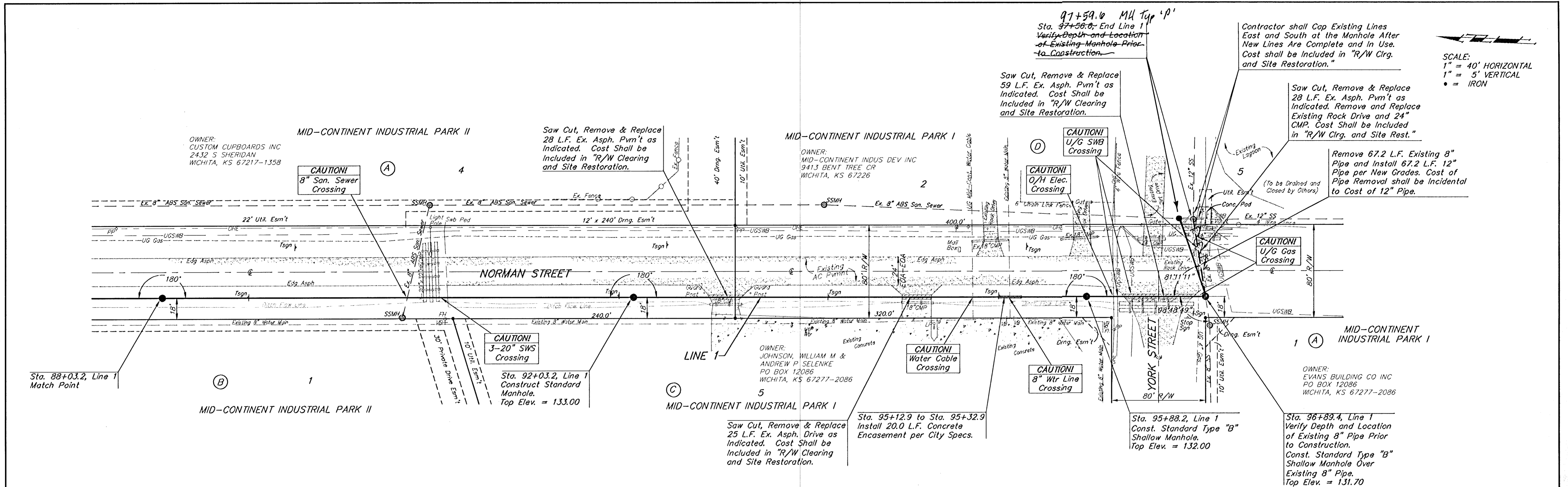
MID-CONTINENT INDUSTRIAL PARK
LINE 1
 Sanitary Sewer Improvements

BAUGHMAN COMPANY P.A.
 ENGINEERING, SURVEYING, & PLANNING
 318-282-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER
488-83149

DESIGN: DMV DRAWN: JAK APPROVED: DATE: 3/01 SCALE: NOTED

SHEET
13
 OF
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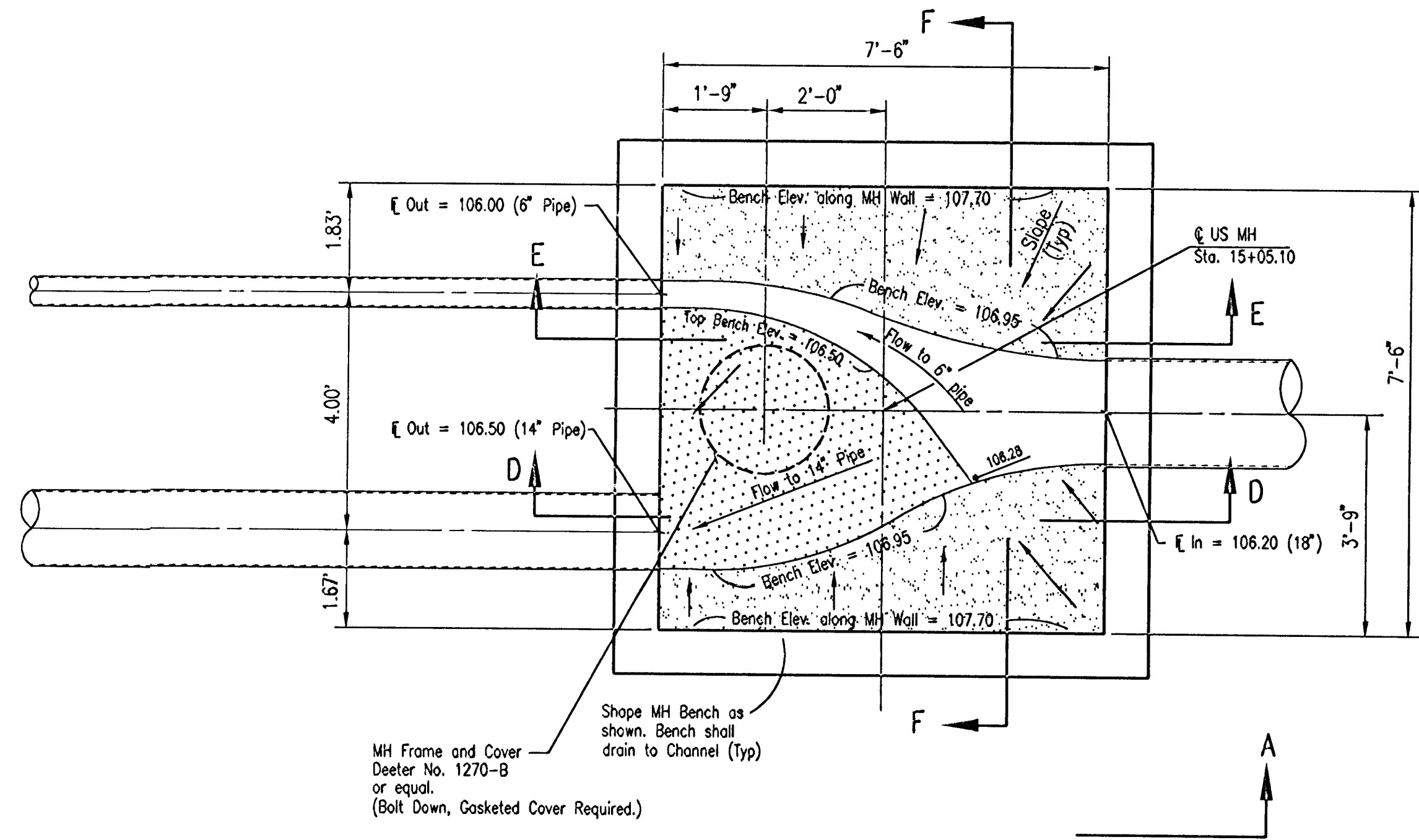
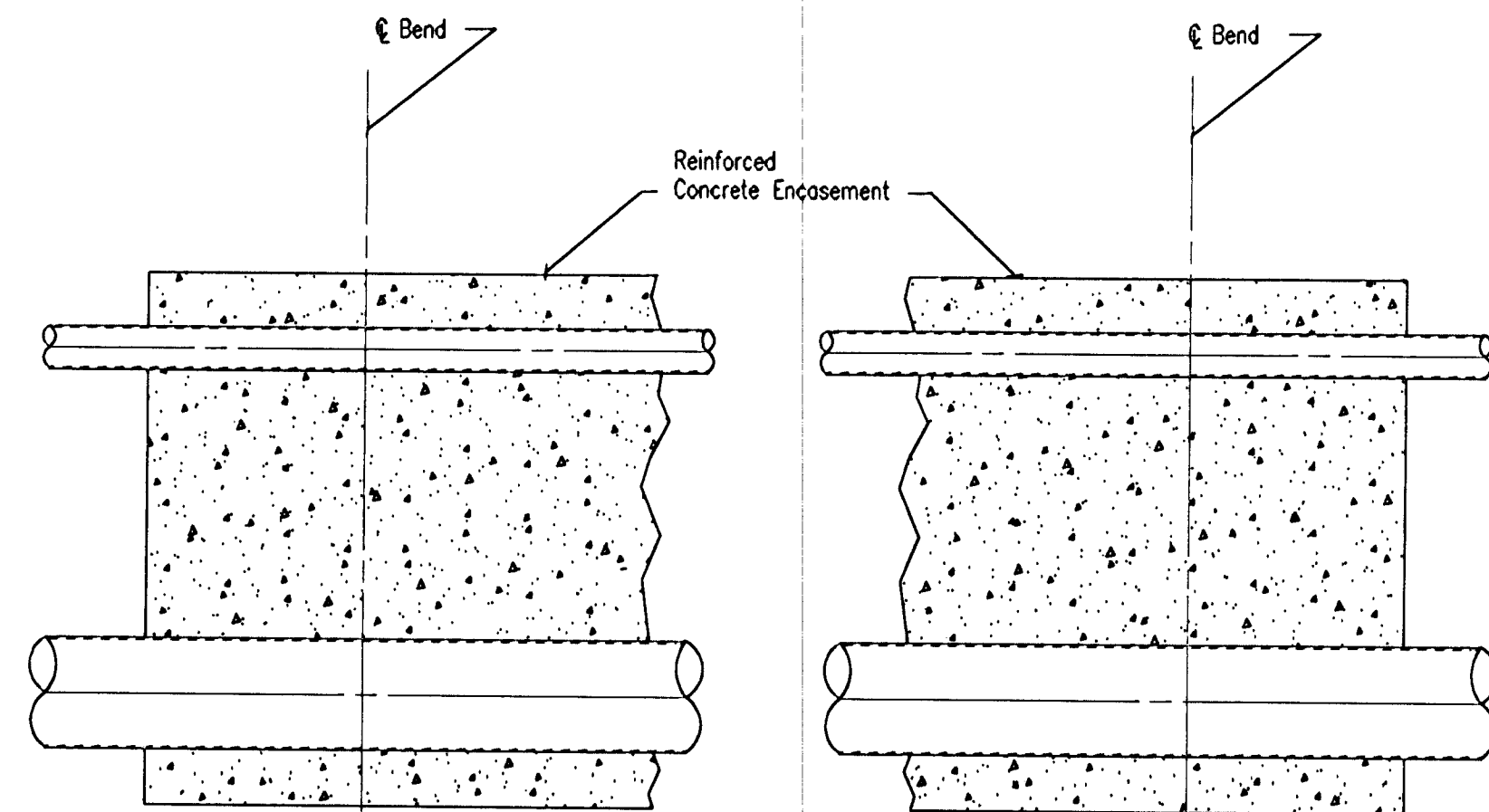
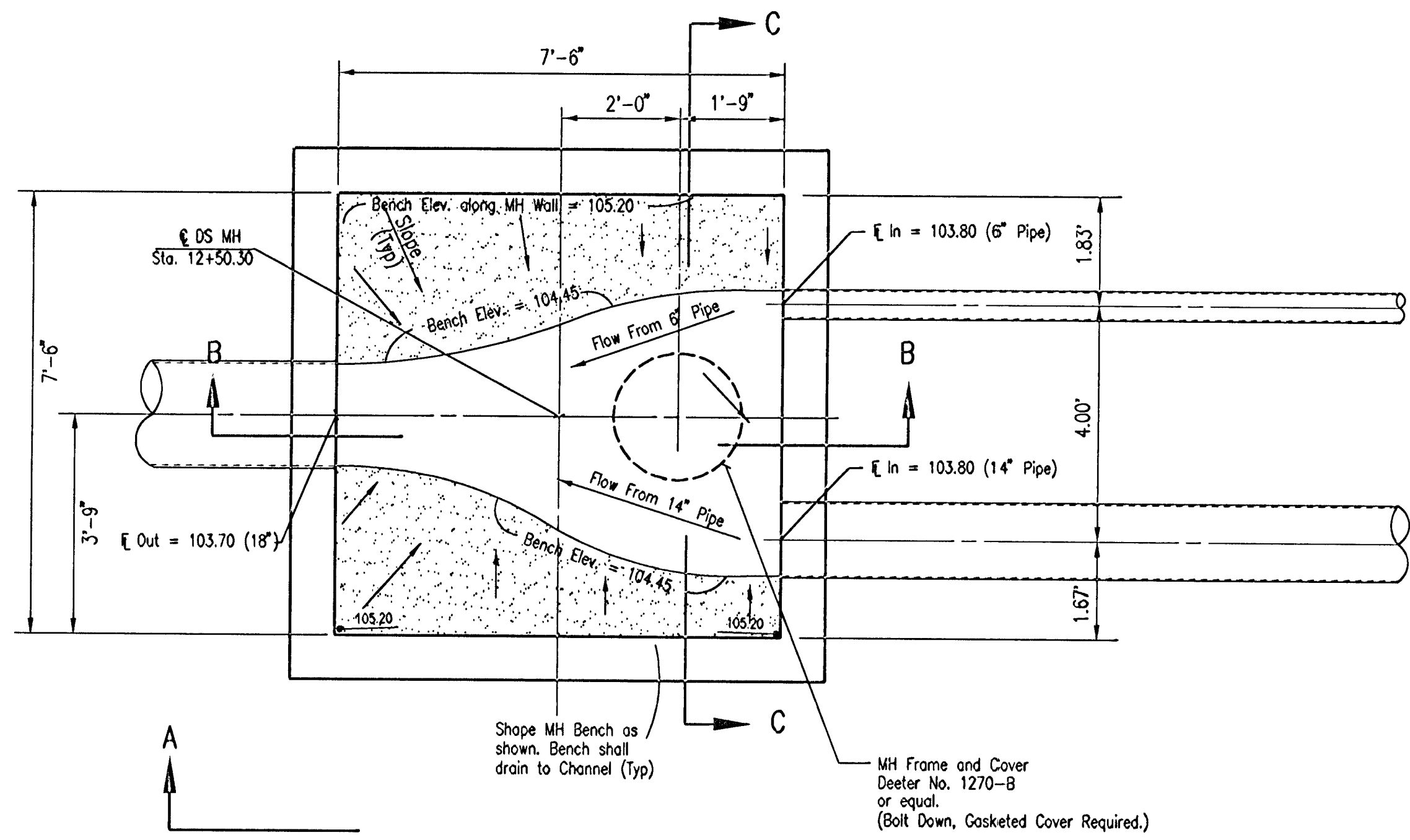


MID-CONTINENT INDUSTRIAL PARK
LINE 1
Sanitary Sewer Improvements

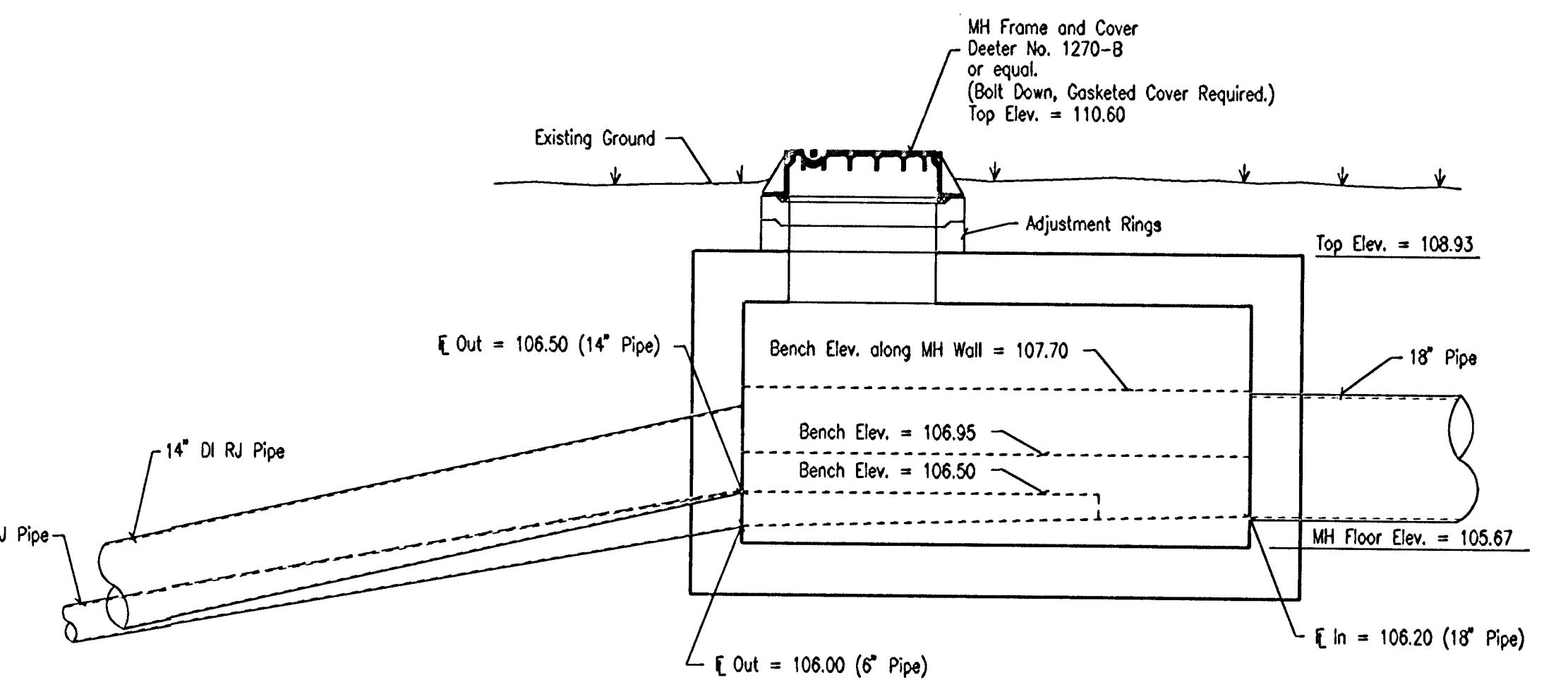
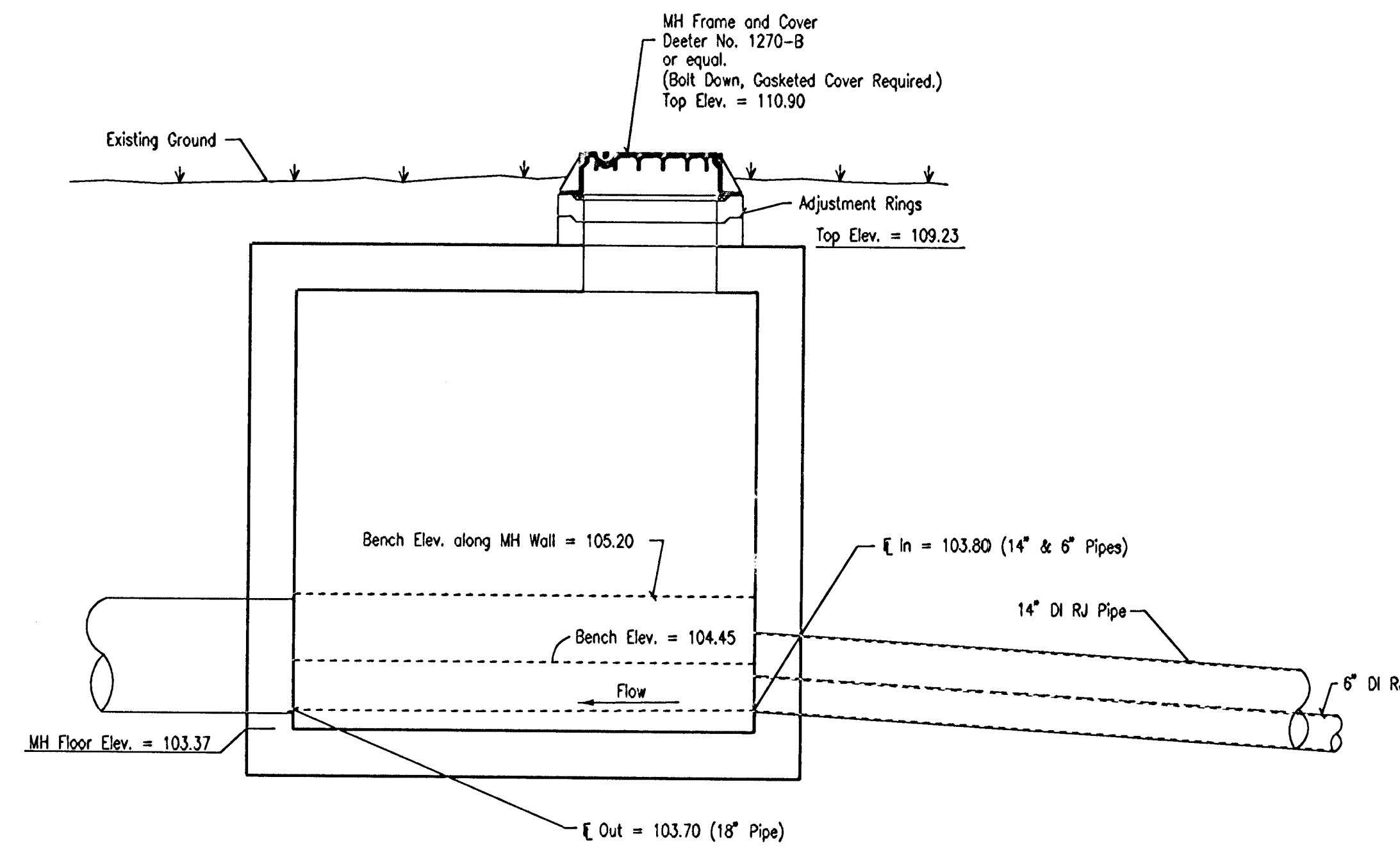
BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER 488-83149		SHEET 14	
DESIGN DMV	DRAWN JAK	APPROVED	DATE 3/01
SCALE NOTED		OF 20	

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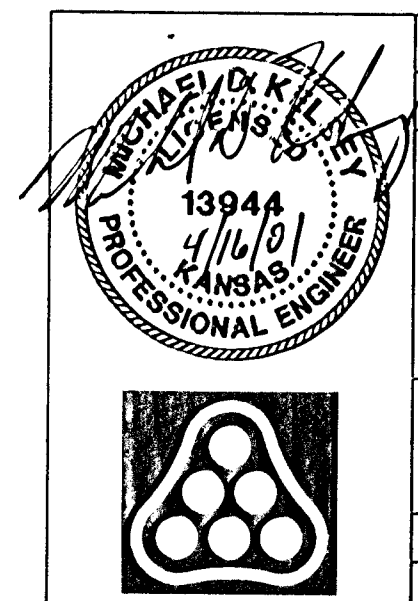
PLAN
No Scale



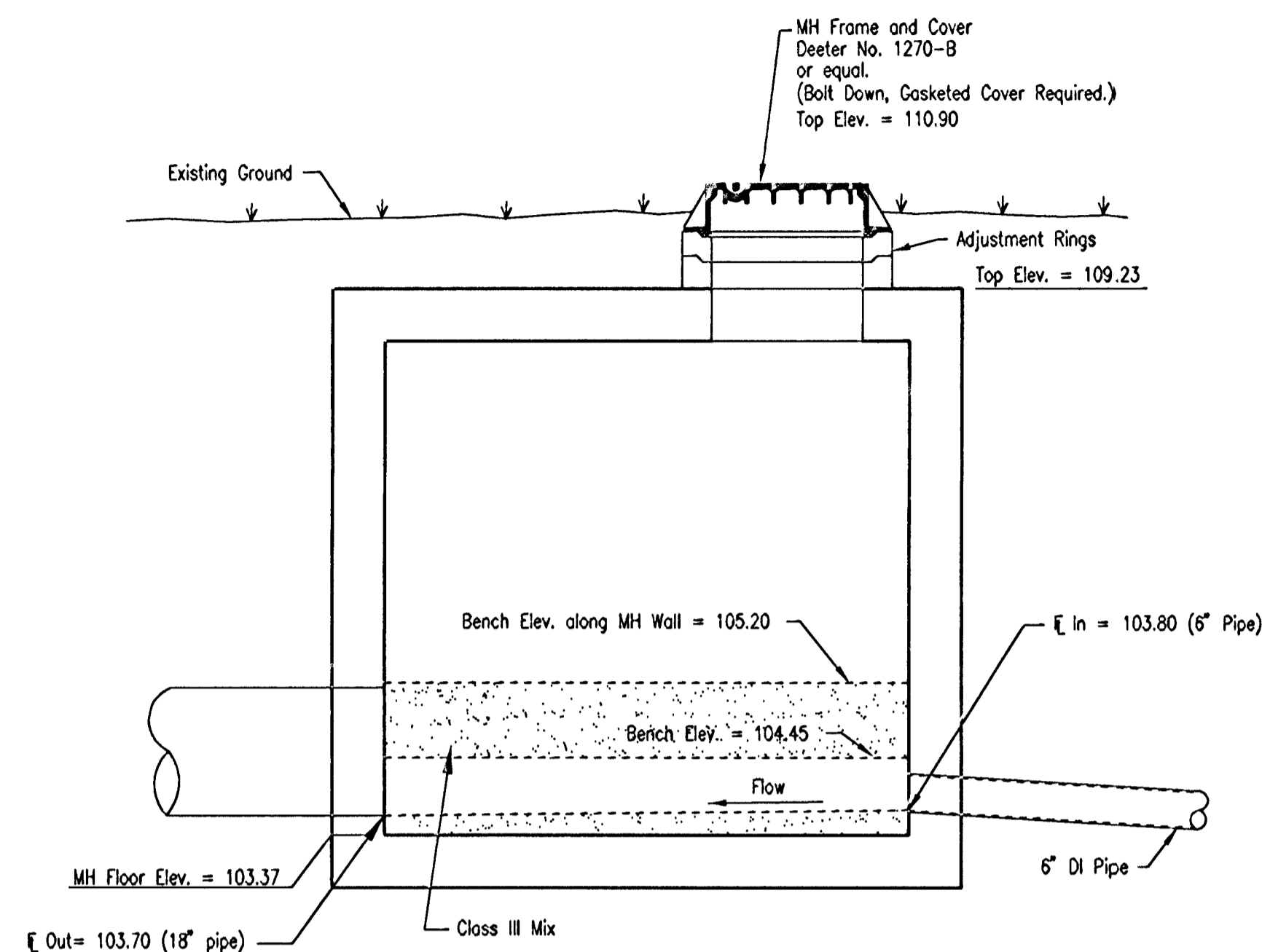
SECTION A - A

Inverted siphon vault construction shall adhere to requirements for pre cast manhole construction as indicated in plans and specifications. All pre cast manhole vault sections shall conform to the latest revisions of ASTM C-478 as modified by the specifications. Contractor shall submit proposed vault construction details and structural calculations to Engineer for review and approval prior to construction.

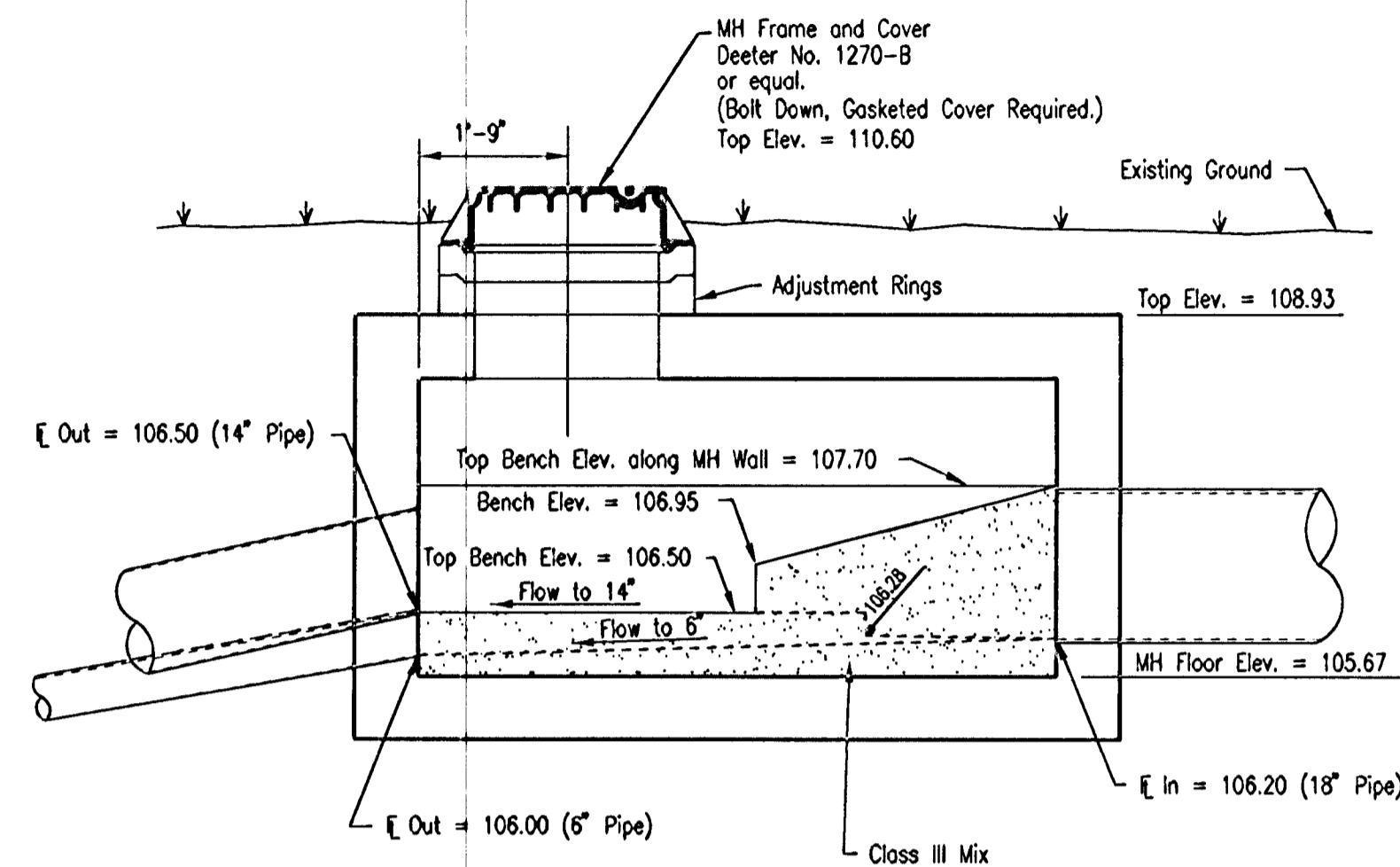
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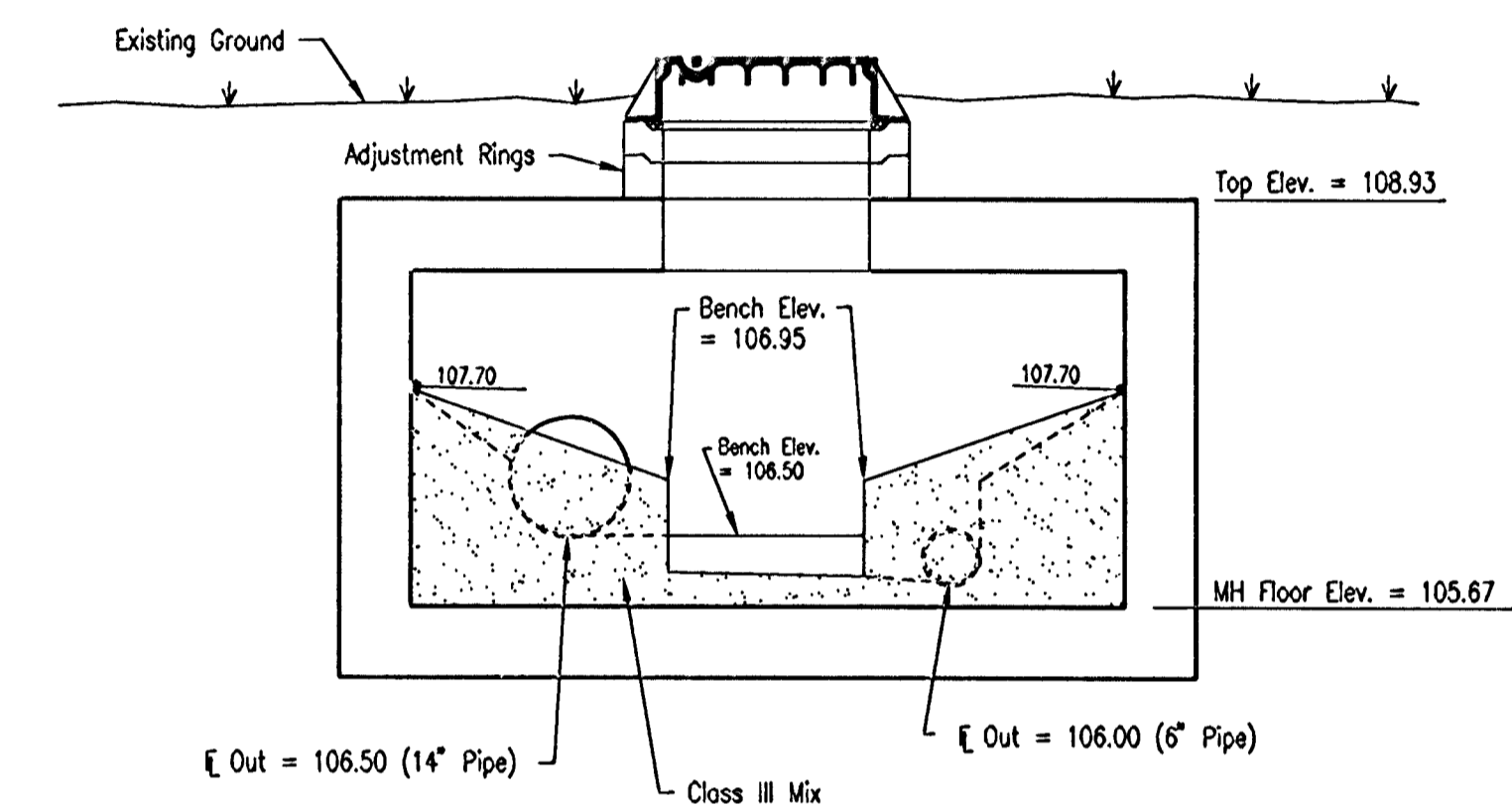
No.	Revision	By	Date
SANITARY SEWER IMPROVEMENTS			
INVERTED SIPHON PLAN			
MID-CONTINENT IND. PARK CITY OF WICHITA PROJECT NO. 468-83149			
Professional Engineering Consultants, P.A. 303 S. TOPEKA • WICHITA, KANSAS 67202 316-262-2691 • FAX 316-262-3003			
Designed by	MDK	Job No.	34-00598-1028
Drawn by	JCA, CSL	Date	March 2001
			SH. 15 of 20



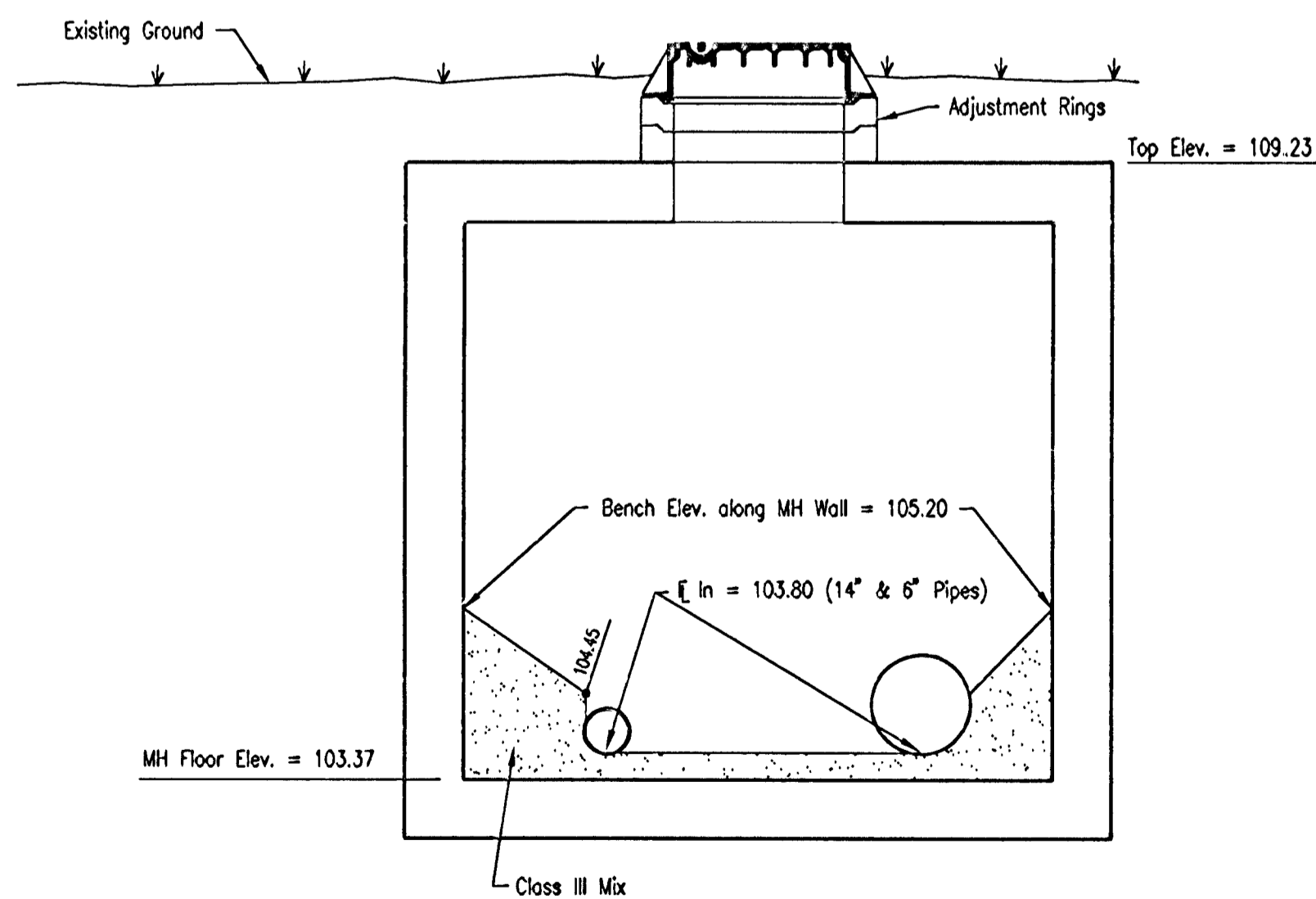
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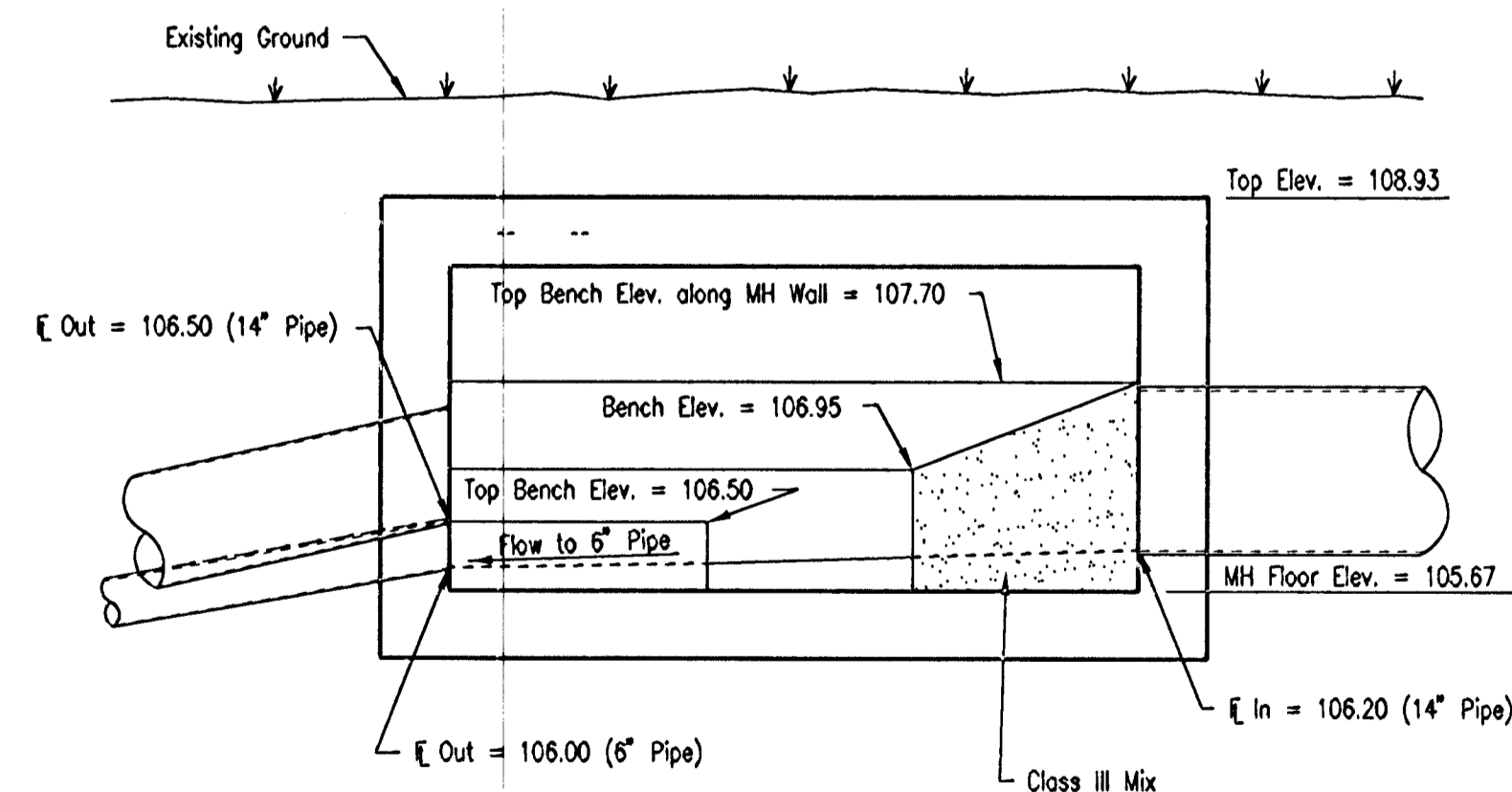
SECTION D - D



SECTION F - F



SECTION C - C



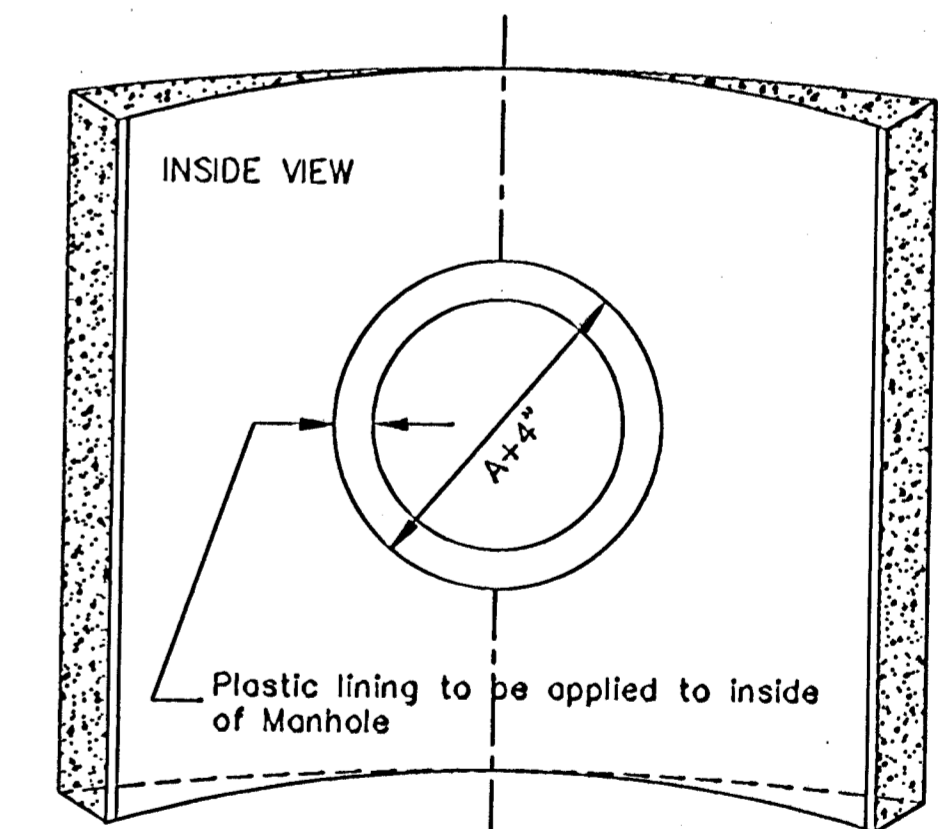
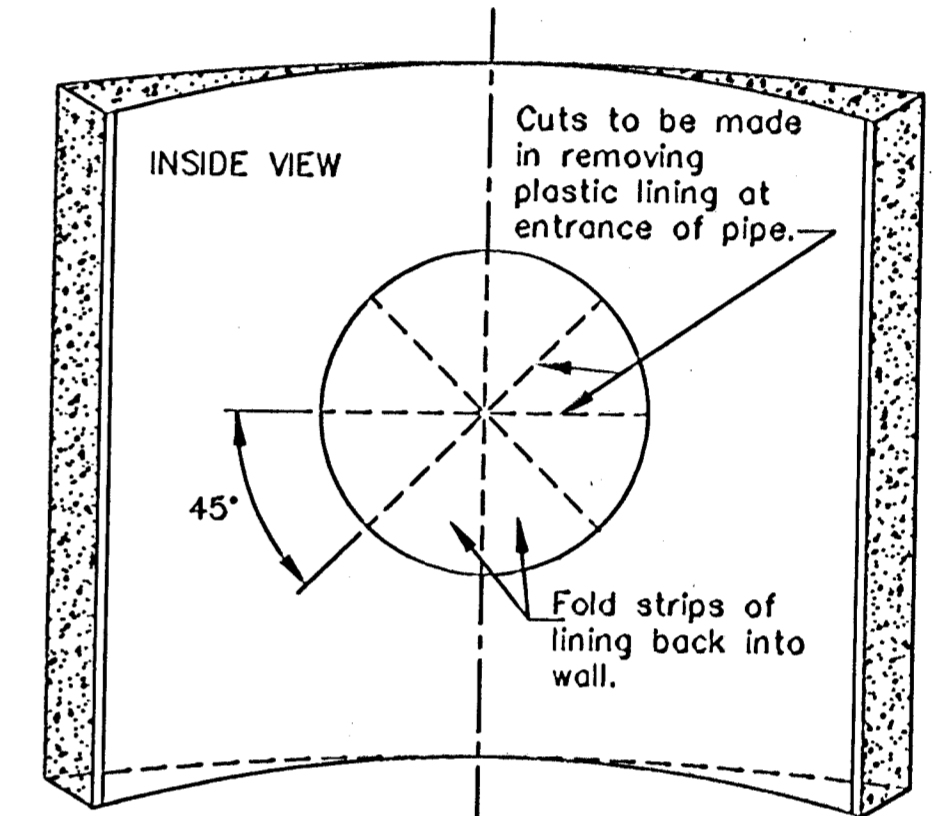
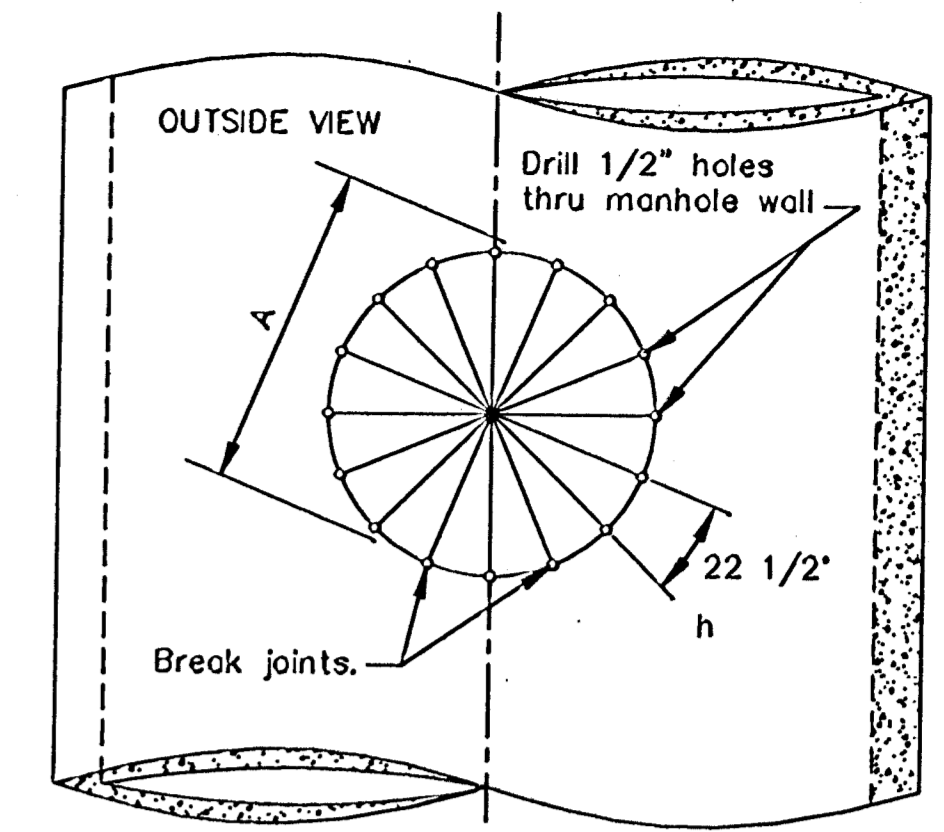
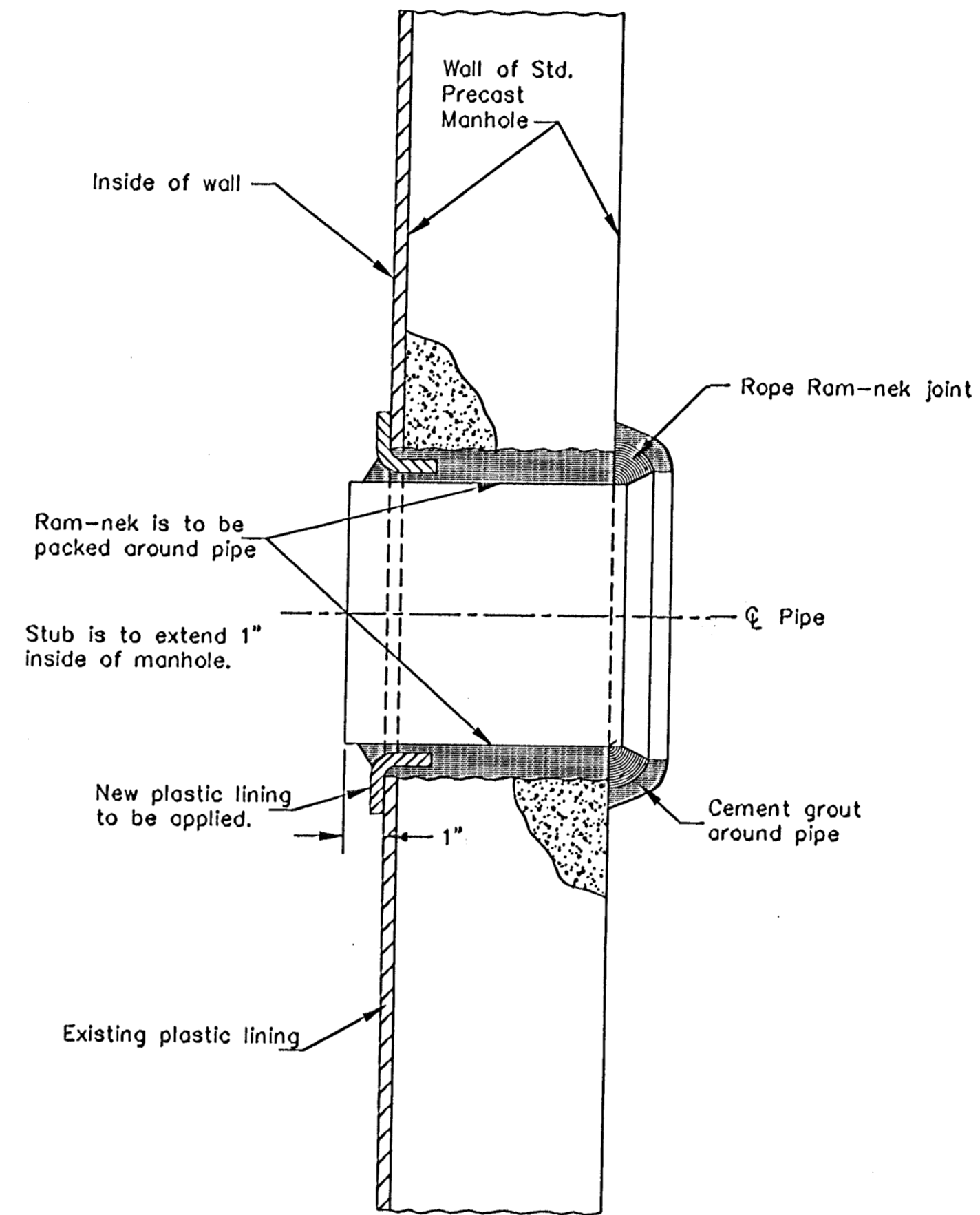
SECTION E - E

DSNR: MDK OPER: DAW SCALE: 1=2.00
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No Scale

	No.	Revision	By	Date
	SANITARY SEWER IMPROVEMENTS			
	INVERTED SIPHON SECTIONS			
	MID-CONTINENT IND. PARK CITY OF WICHITA PROJECT NO. 468-83149 Professional Engineering Consultants, P.A. 303 S. TOPEKA • WICHITA, KANSAS 67202 316-262-2691 • FAX 316-262-3003			
Designed by	MDK	Job No.	34-00598-1028	SH. 16 of 20
Drawn by	JGA, CSL	Date	March 2001	

DSNR: C:\M_OPER\DAW SCALE: 1=1.00
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A = OUTSIDE DIAMETER OF PIPE + 2"

THE CITY OF WICHITA

 CITY ENGINEER'S OFFICE
 CITY HALL - SEVENTH FLOOR
 455 NORTH MAIN STREET
 WICHITA, KANSAS 67202
 (316) 268-4501
 (316) 268-4114 FAX

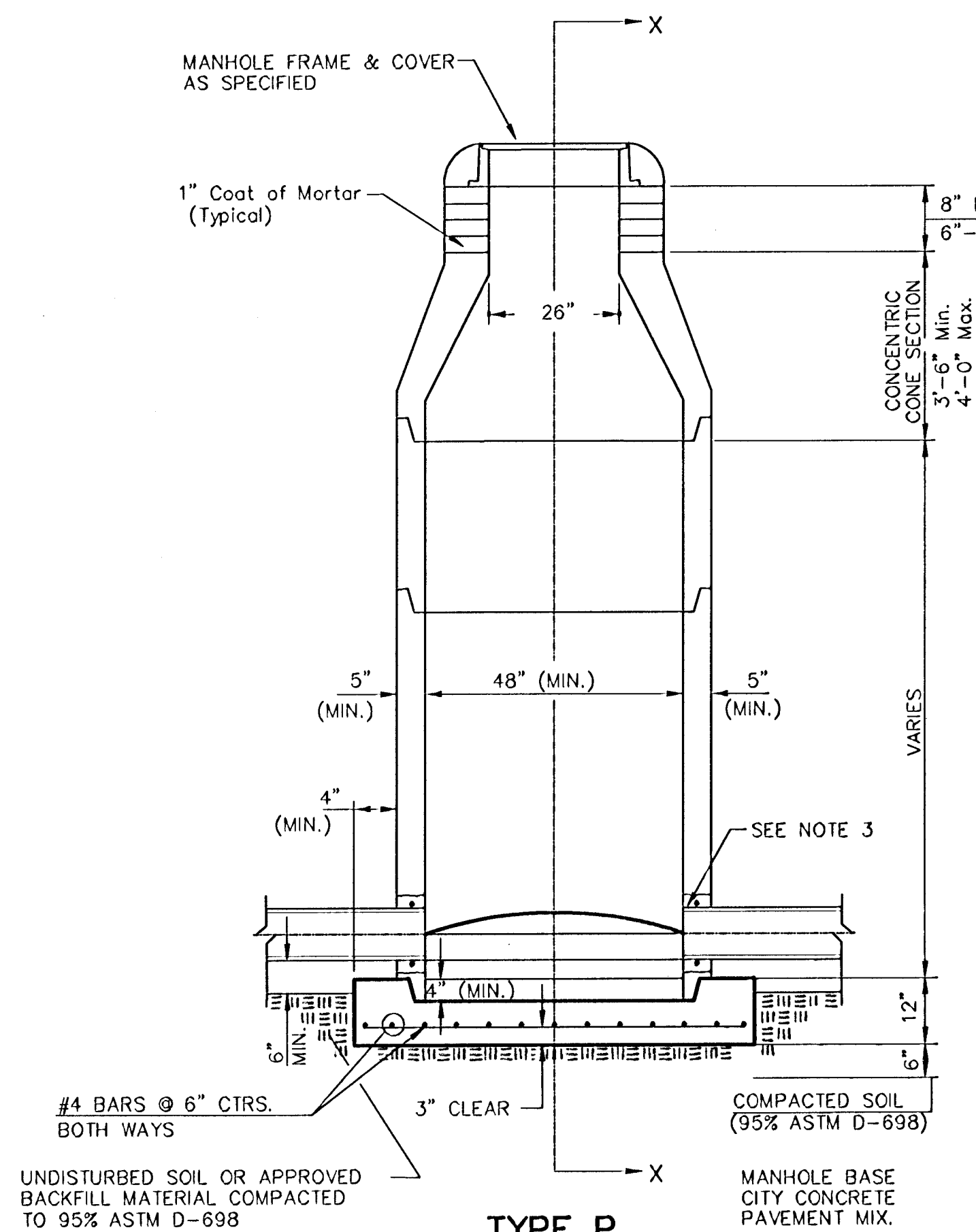
PIPE CONNECTION
 PLASTIC LINED
 CONCRETE MANHOLE

M. E. LINDEBAK P.E. - CITY ENGINEER

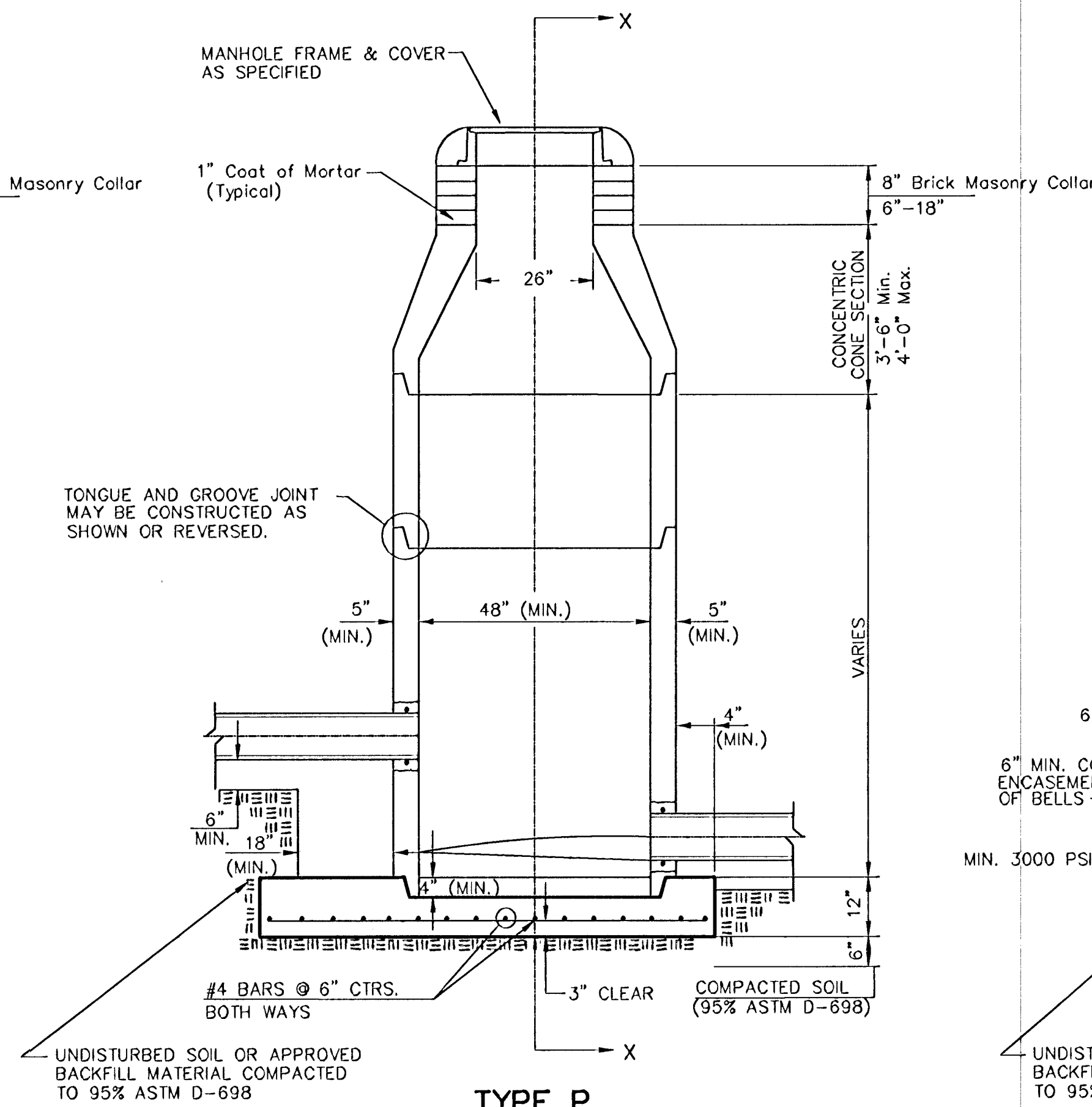
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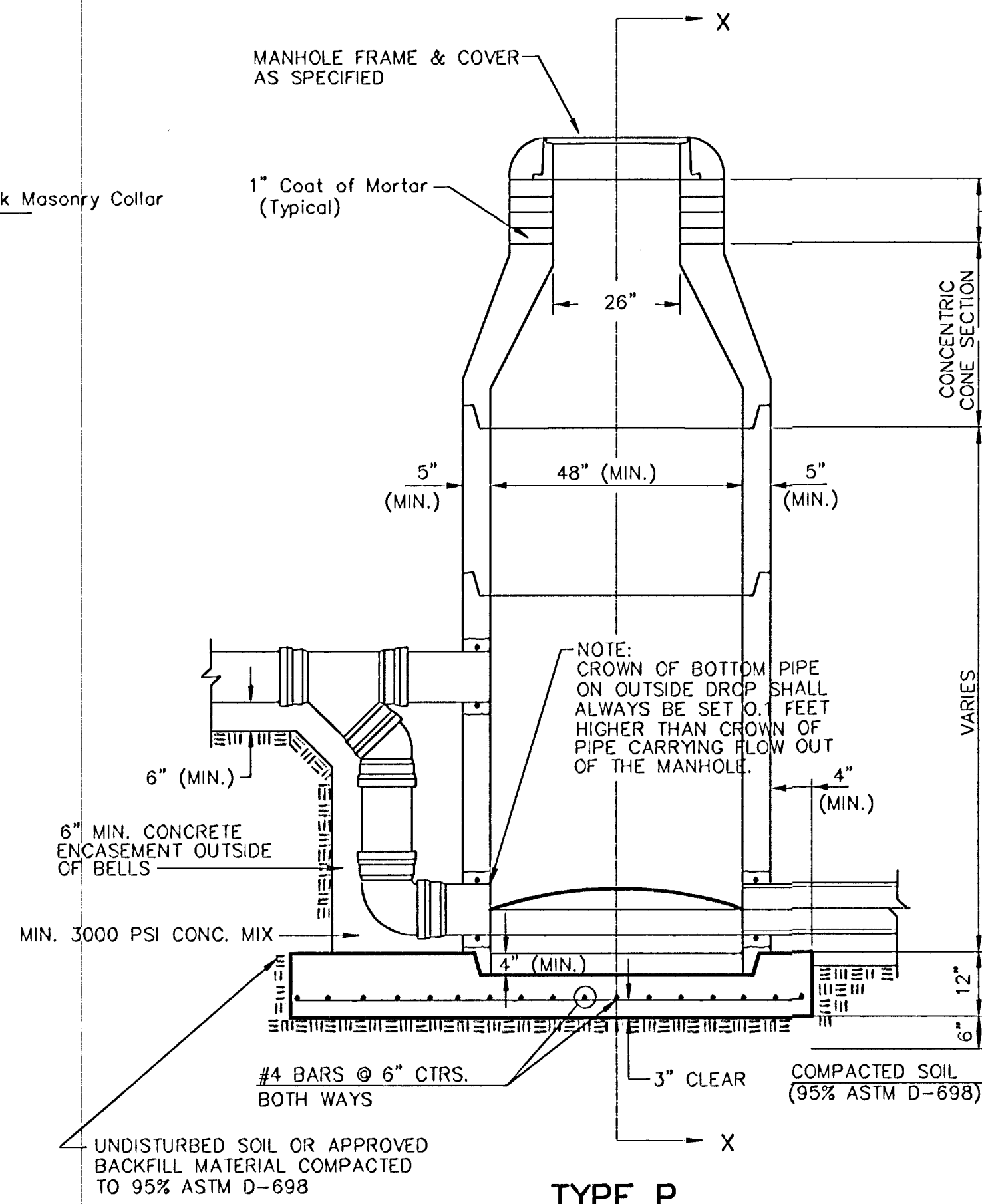
SEWER APPURTENANCES DETAILS



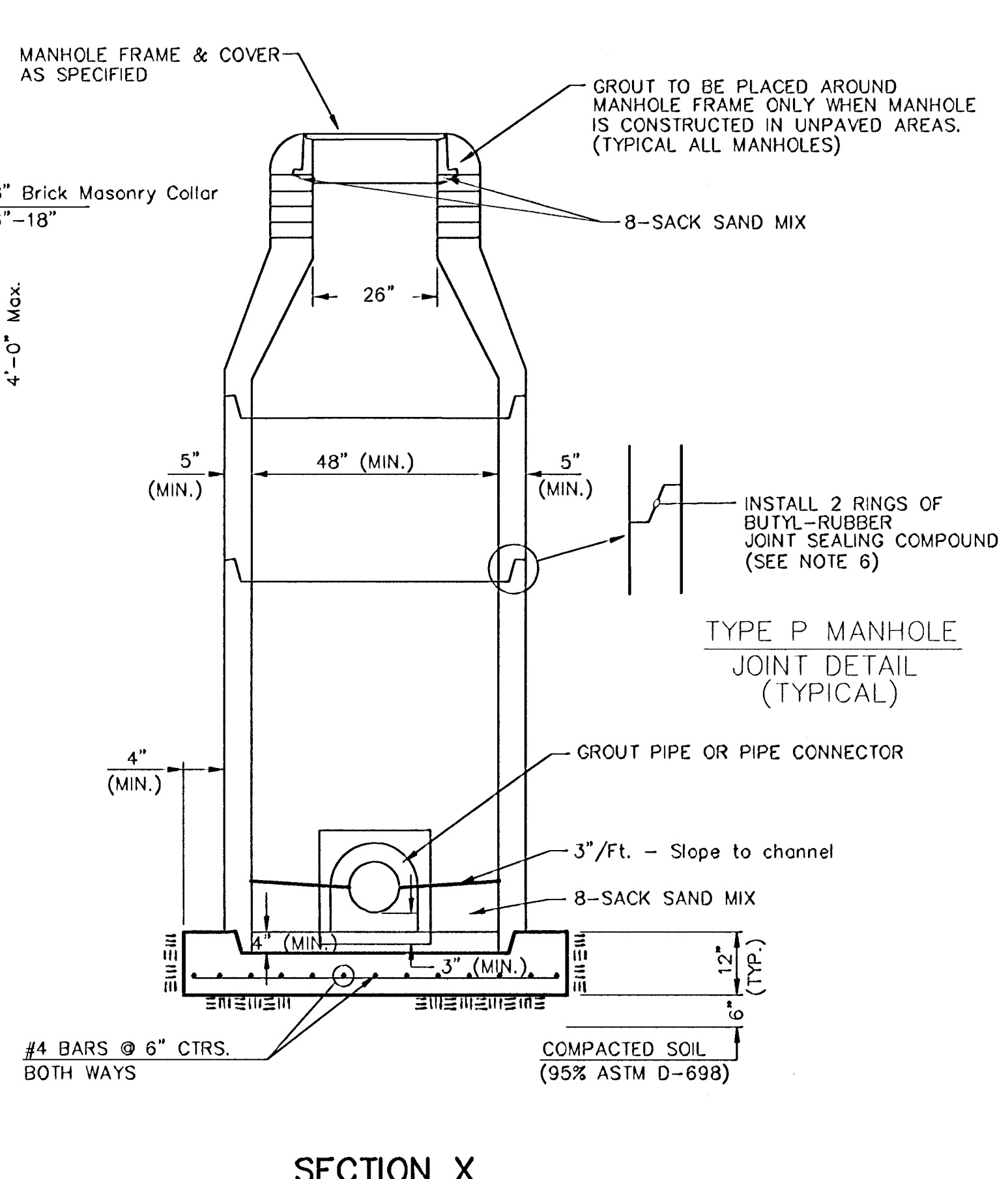
TYPE P STANDARD MANHOLE



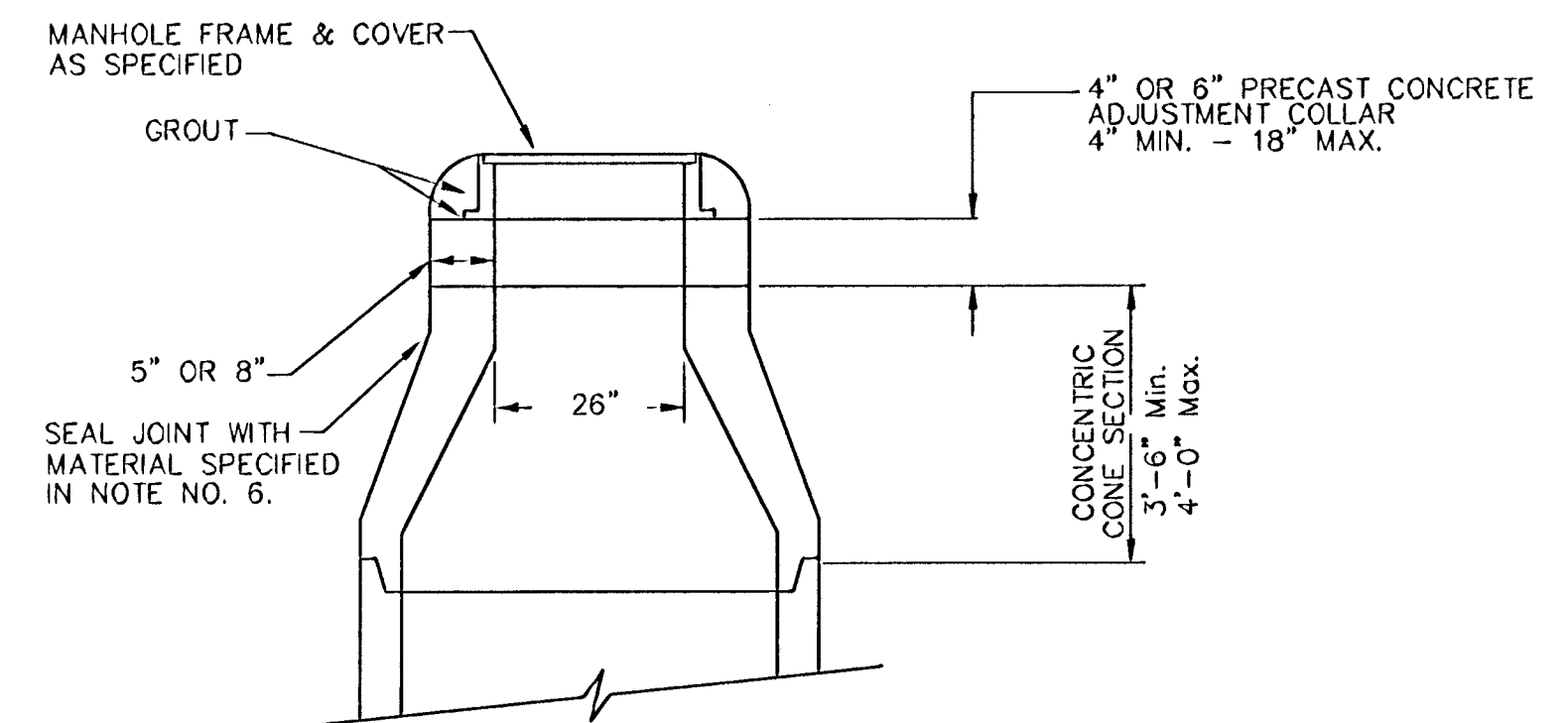
TYPE P INSIDE DROP MANHOLE



TYPE P OUTSIDE DROP MANHOLE



SECTION X (TYPICAL)



ALTERNATE CONSTRUCTION IN UNPAVED AREAS

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 ENCASEMENT 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 BITUMINOUS 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 ENTRAINING 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 NON-SHRINK 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 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.
- 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 2' 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. THE USE OF PRE-CAST CONCRETE SPACERS FOR MANHOLE TOP ADJUSTMENT IS ALSO ALLOWED.

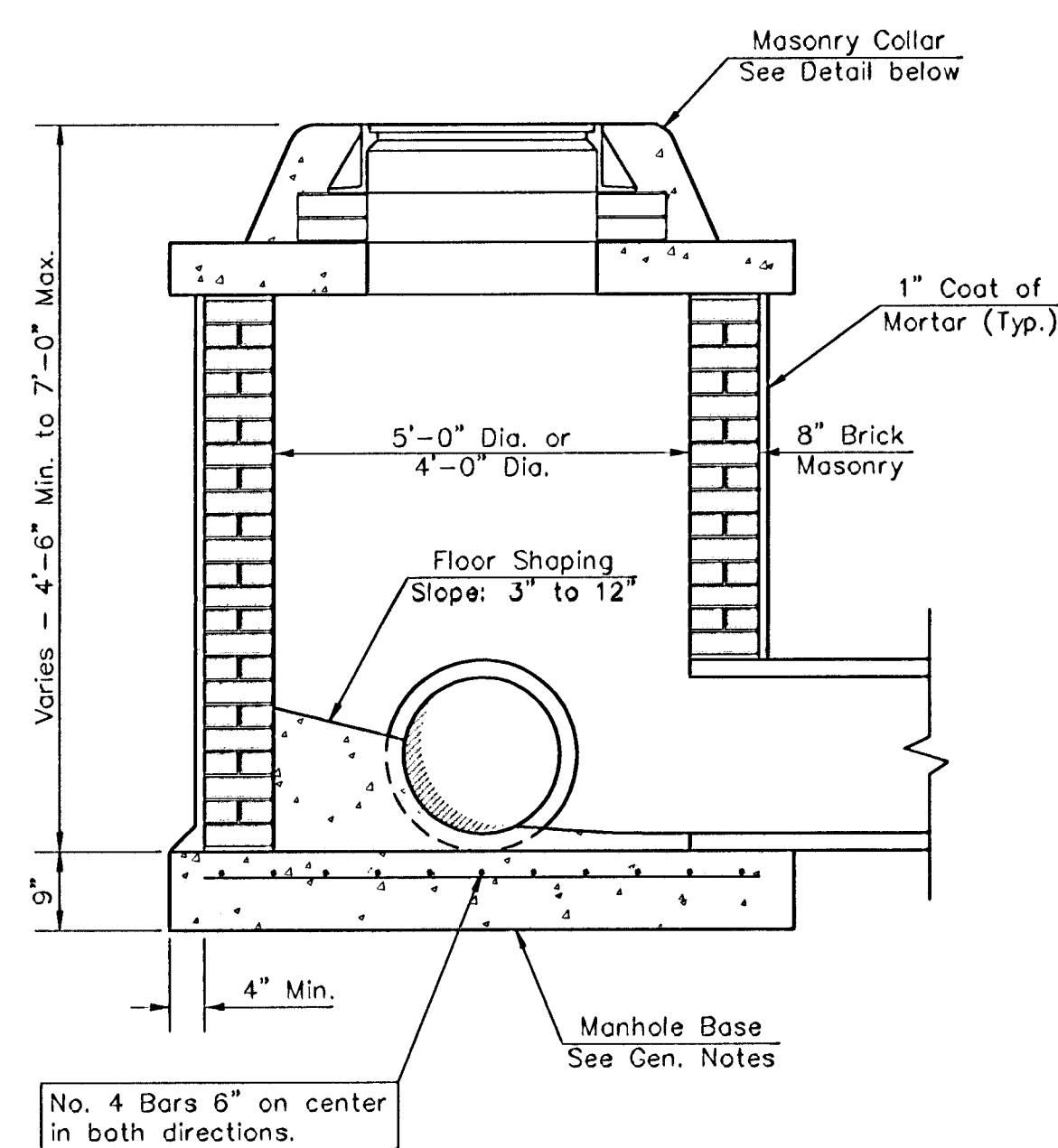
CITY OF WICHITA
STD. MANHOLE DETAILS
SEWER APPURTENANCES

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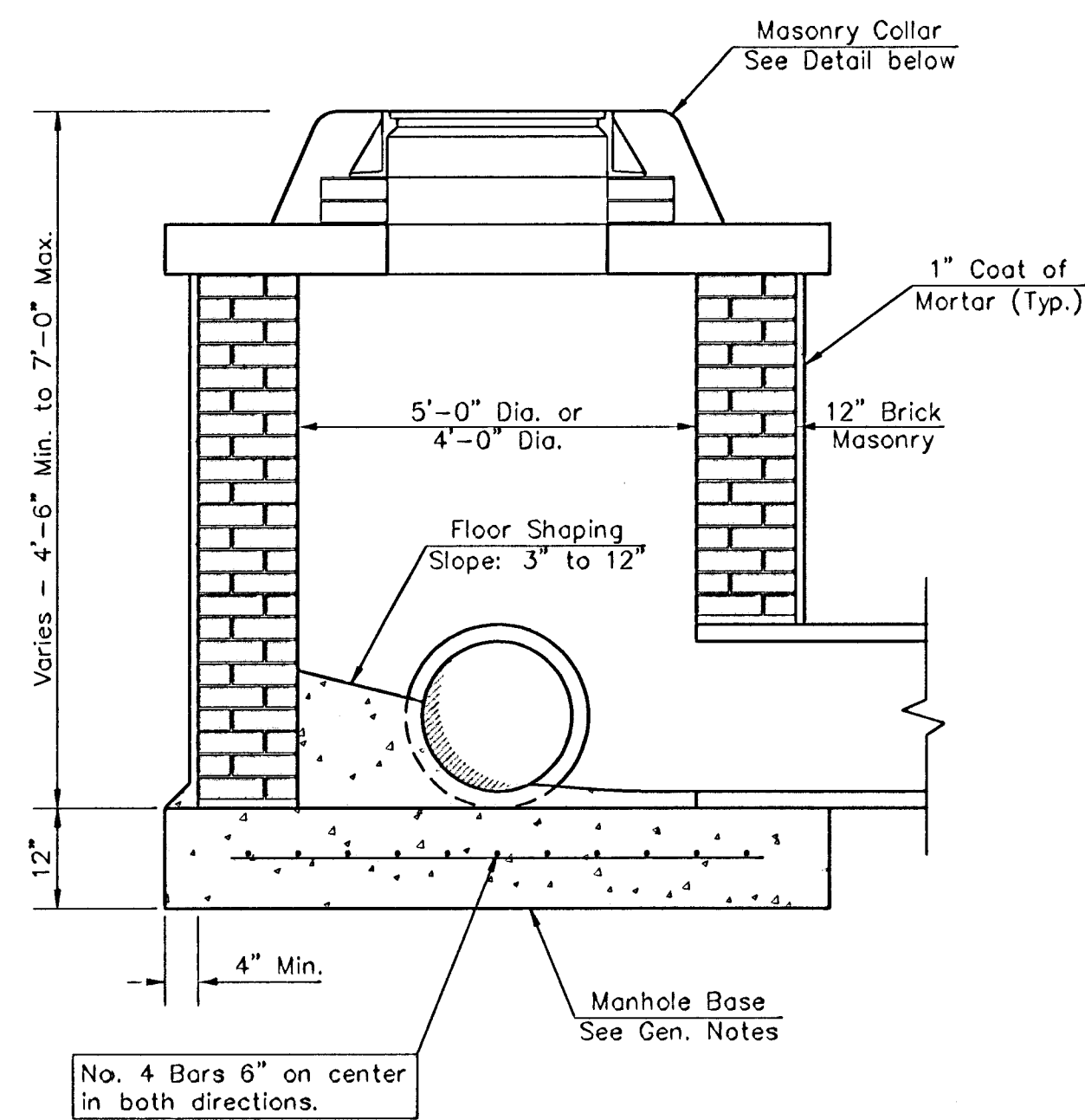
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488-83149

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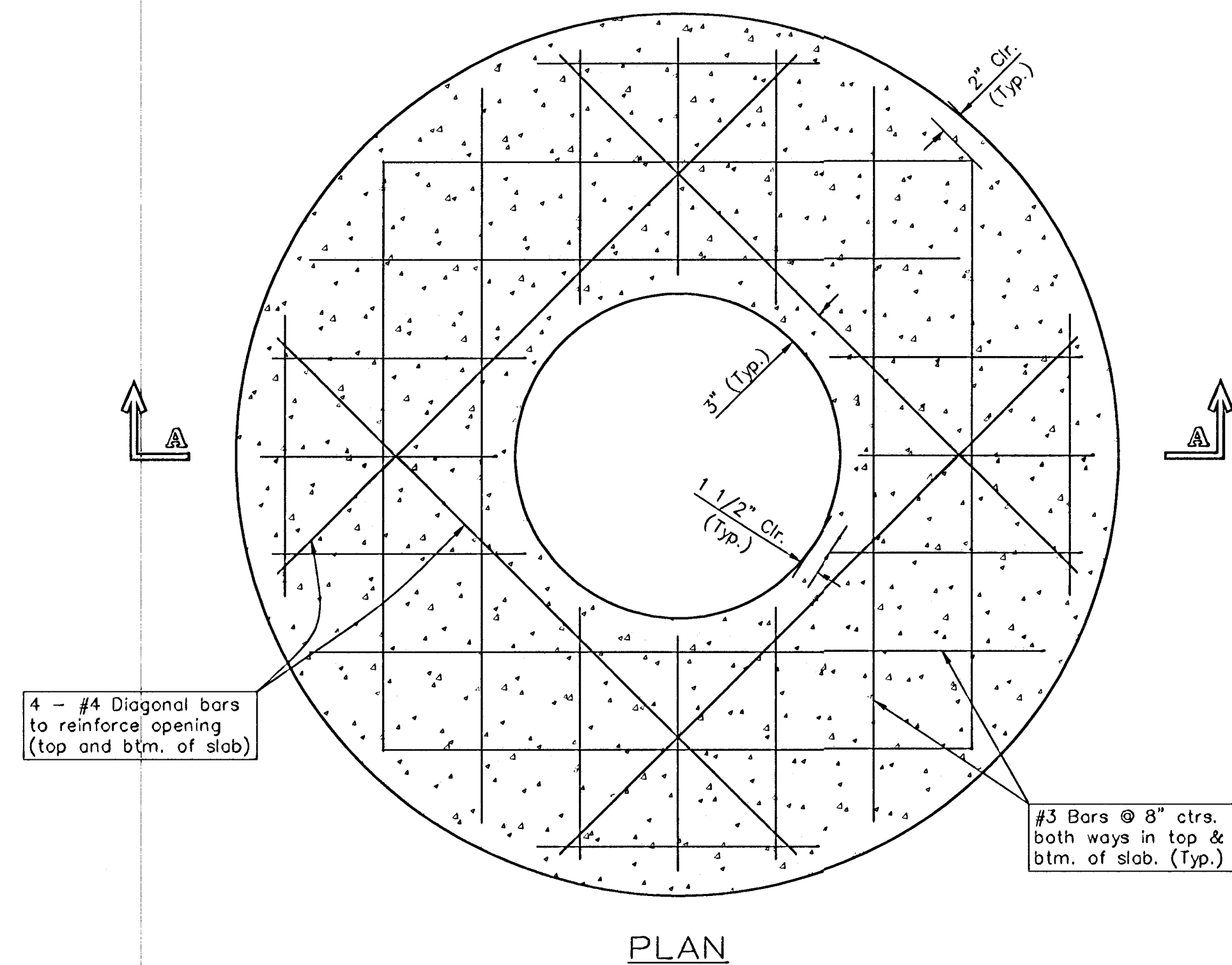
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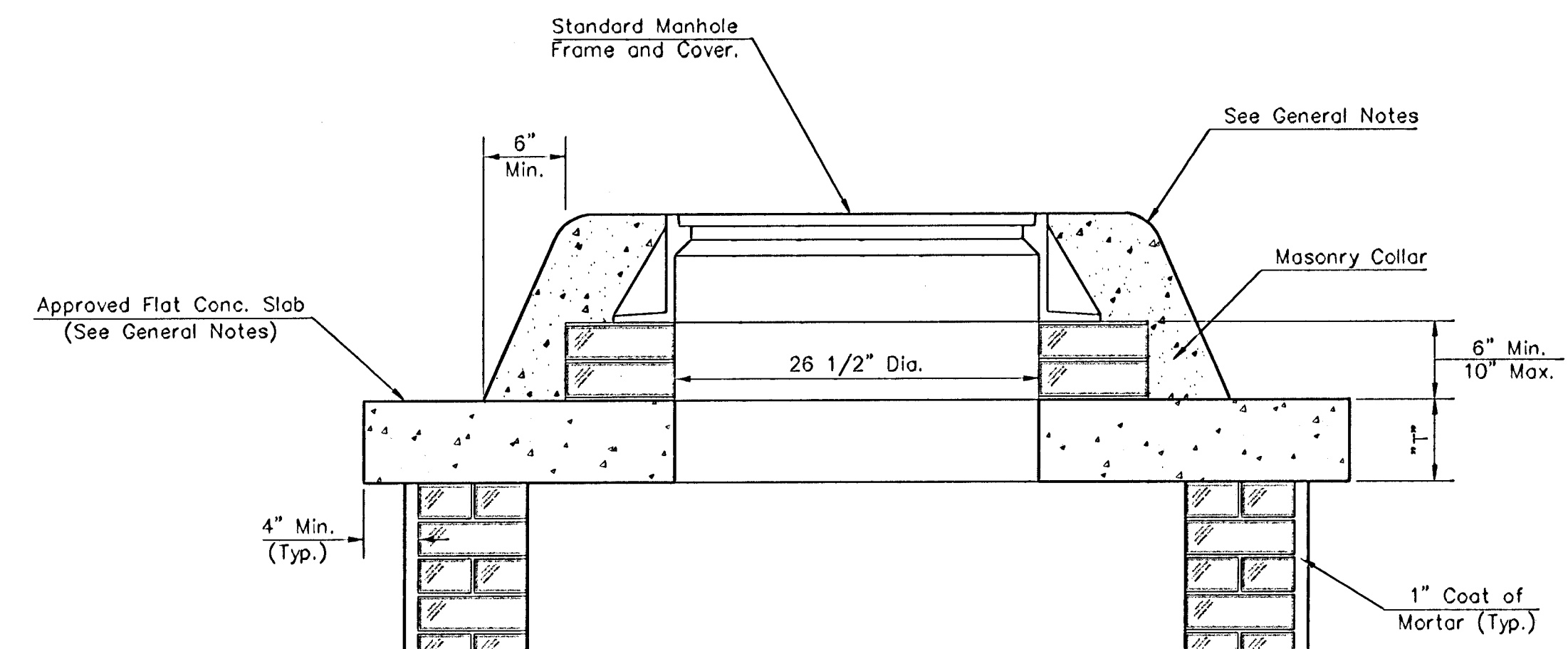
SHALLOW TYPE "A" MANHOLE



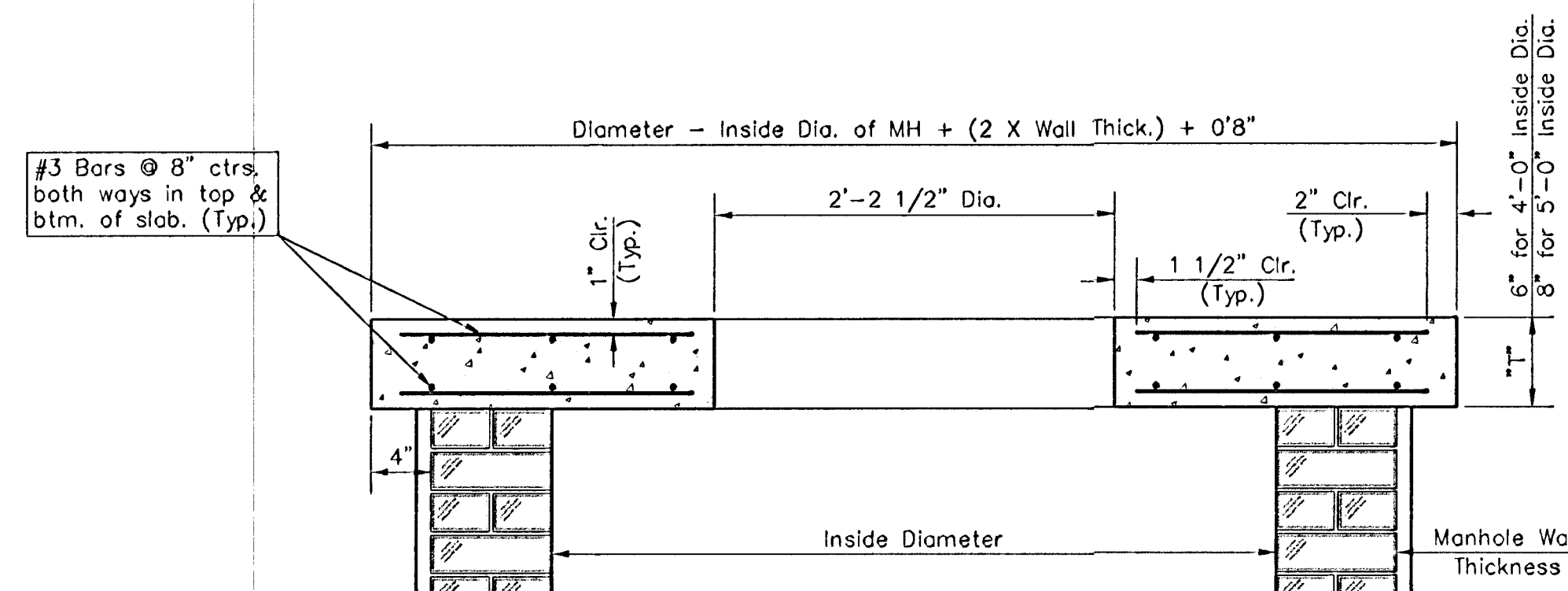
SHALLOW TYPE "B" MANHOLE



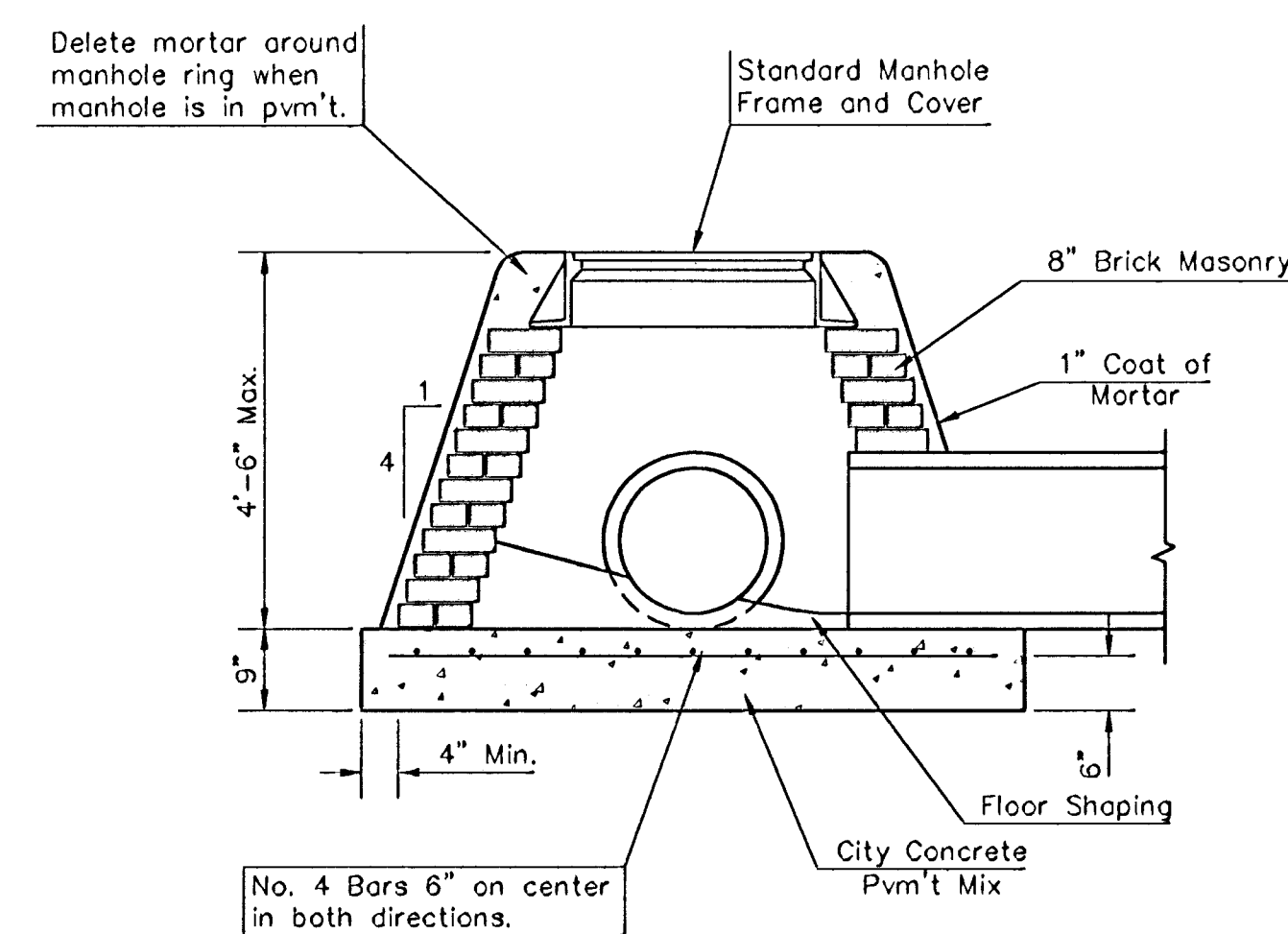
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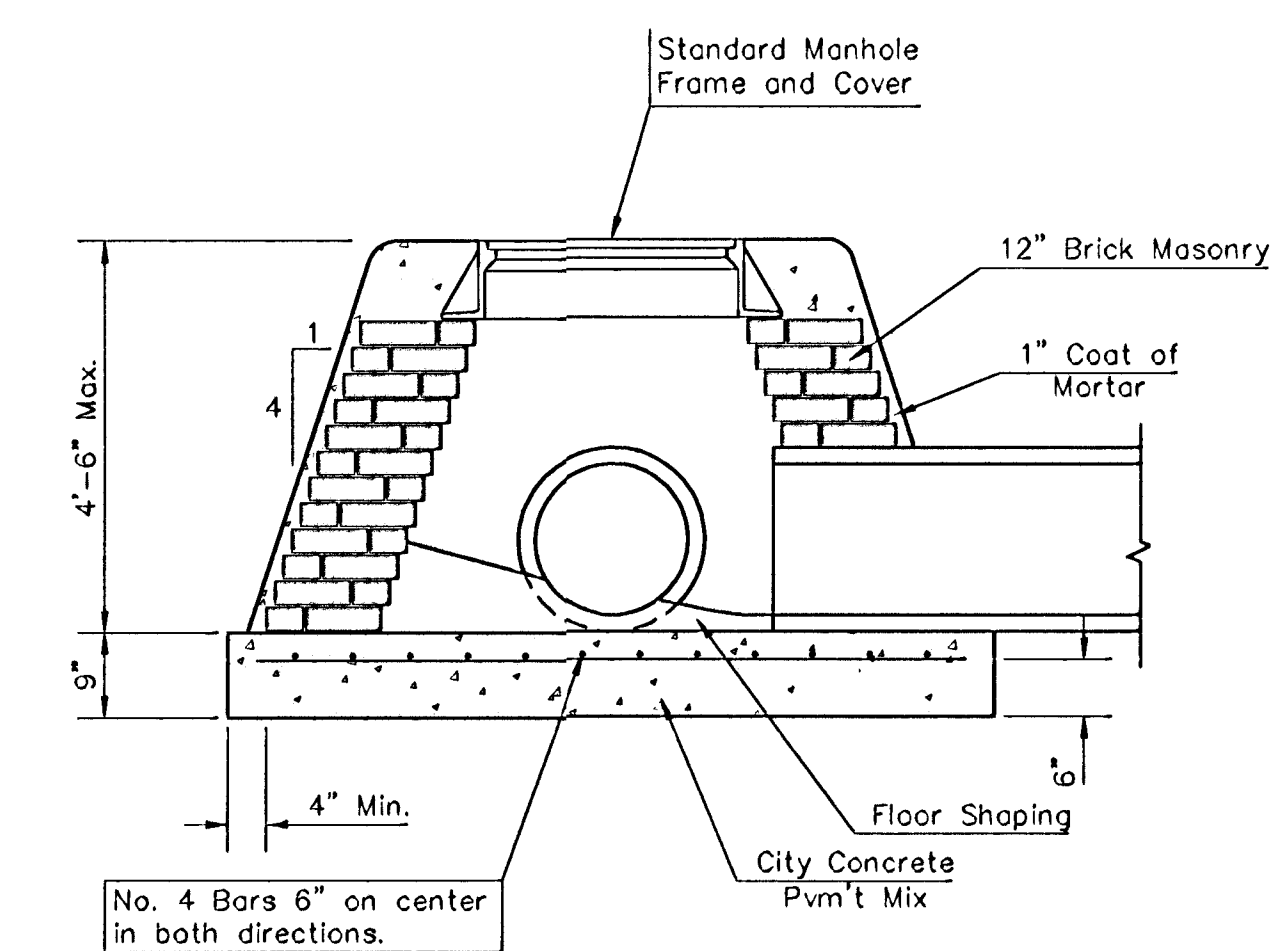
MASONRY COLLAR DETAIL



SECTION A-A
FLAT CONCRETE SLAB DETAILS



SPECIAL SHALLOW TYPE "A" MANHOLE



SPECIAL SHALLOW TYPE "B" MANHOLE

GENERAL NOTES

- 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 cement mix without air entraining admixture. Mortar shall be placed around the manhole ring as shown on the drawings when manholes are constructed in unpaved areas. Type "A" shallow manholes can be used on sewers when the manhole is not located within public street pavement. 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 6" 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.
- 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. 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 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.
- 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 drawings.
- The crowns of inflowing pipes shall never be set lower than the crown of the outflowing pipe.
- Standard shallow manholes type "A" and "B" shall be paid for at the unit price bid per each for the type and diameter indicated. Standard special shallow manholes type "A" and "B" shall be paid for at the unit price bid per each for the type indicated. All standard shallow manhole diameters will be 4' unless indicated otherwise.
- All brick used in manhole construction shall meet Grade SW of ASTM C652 or C62-87.

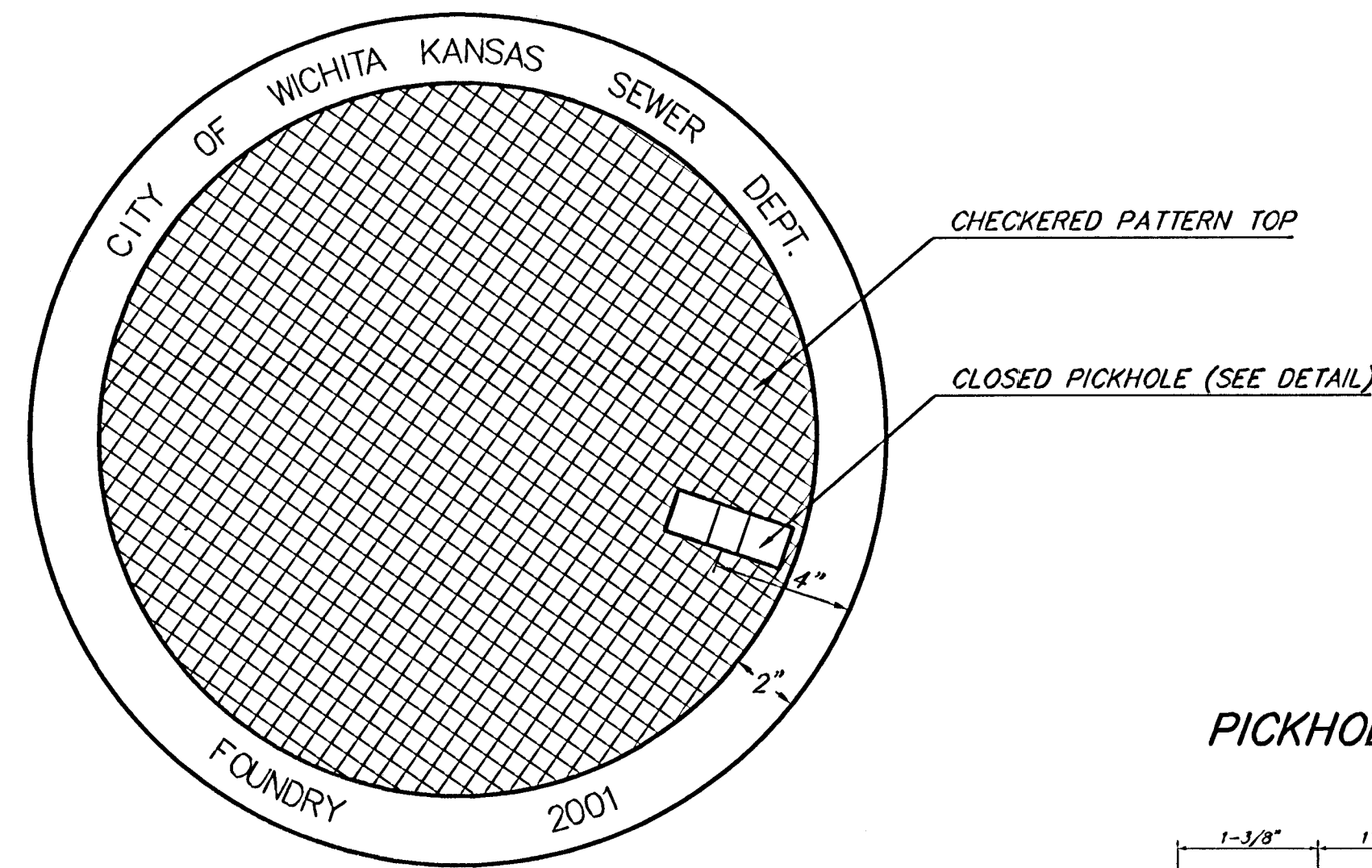
CITY OF WICHITA, KANSAS
Std. Manhole Detail
 TYPE "A" AND TYPE "B"

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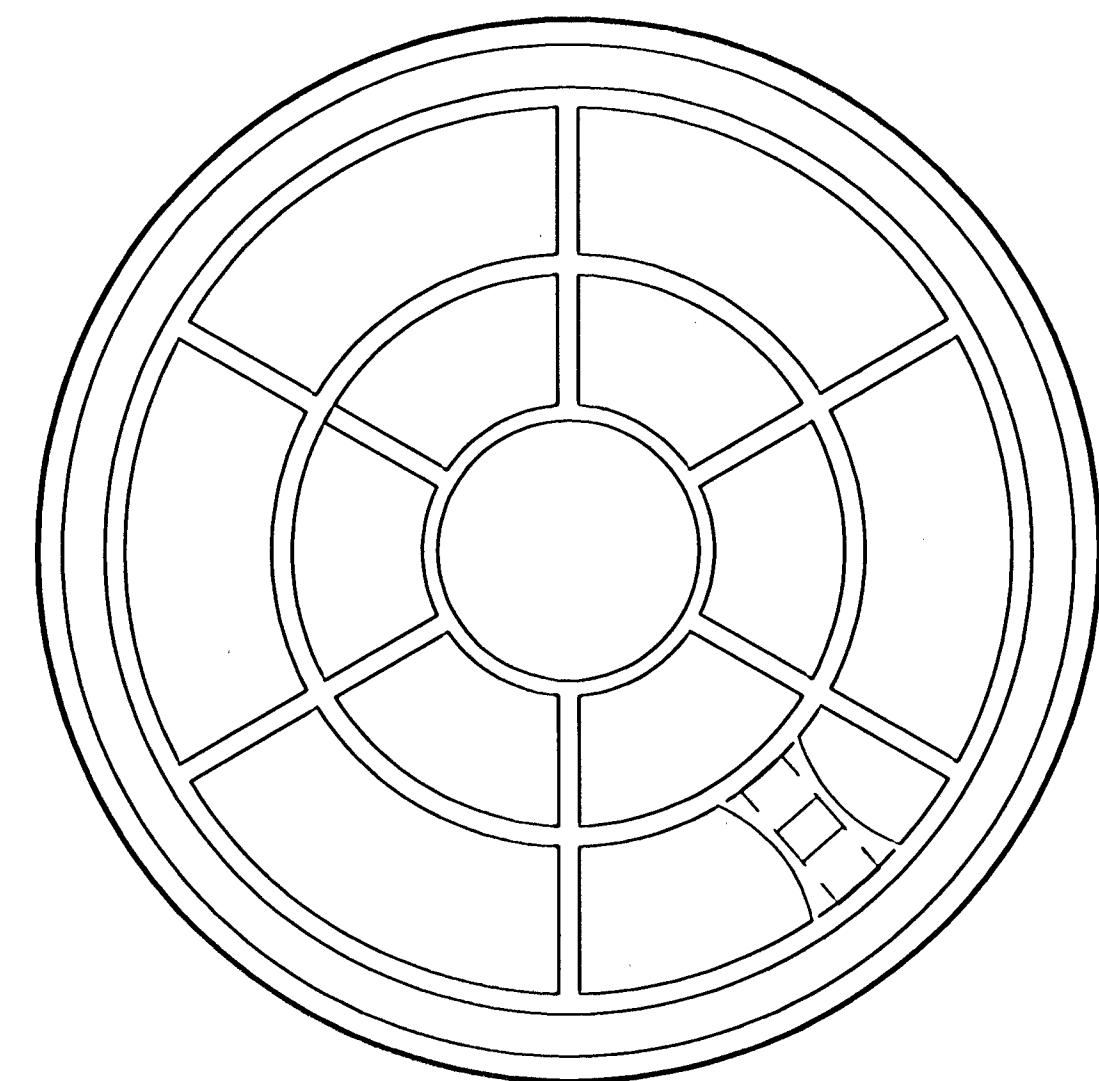
PROJECT NUMBER
488-83149

DESIGN: C.O.W. DRAWN: Staff APPROVED: DATE: SCALE: NONE SHEET: 19 OF 20

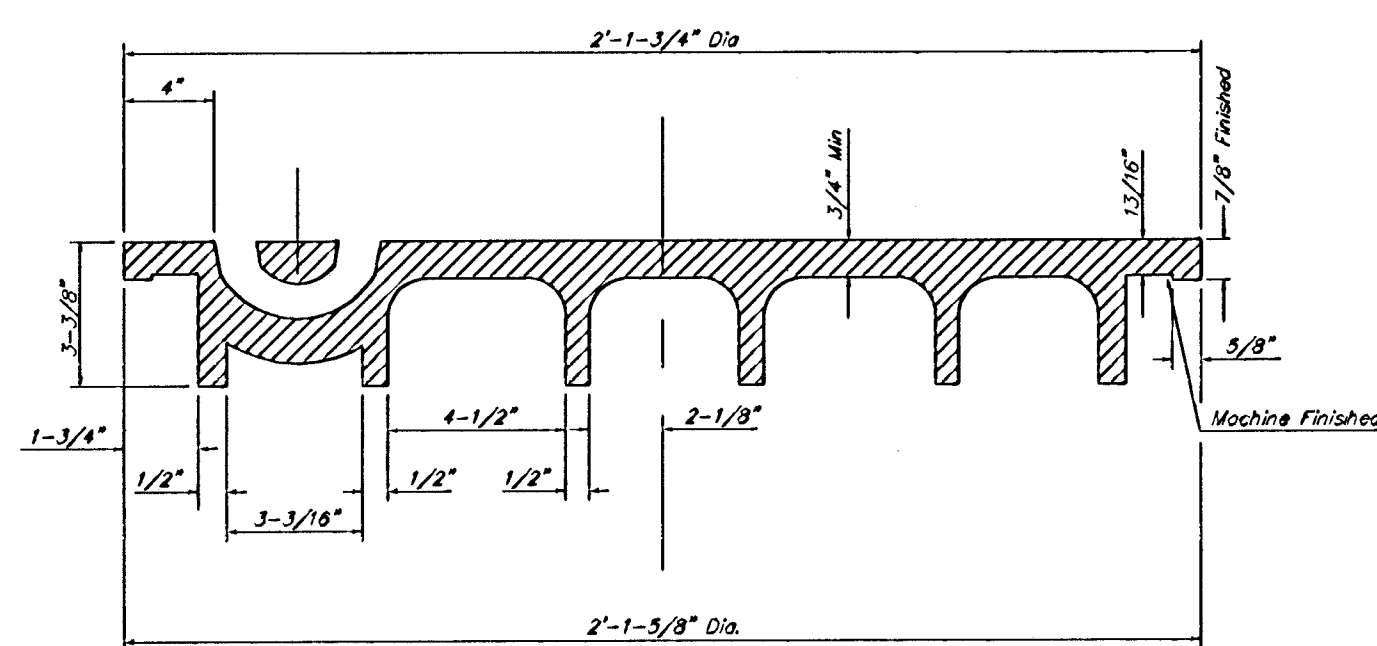
MANHOLE COVER
Weight = 180 Lbs.



TOP VIEW

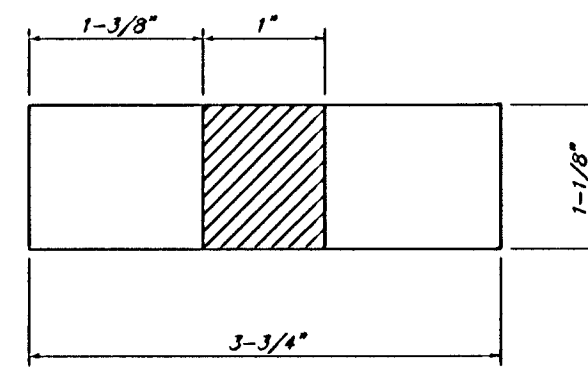


BOTTOM VIEW

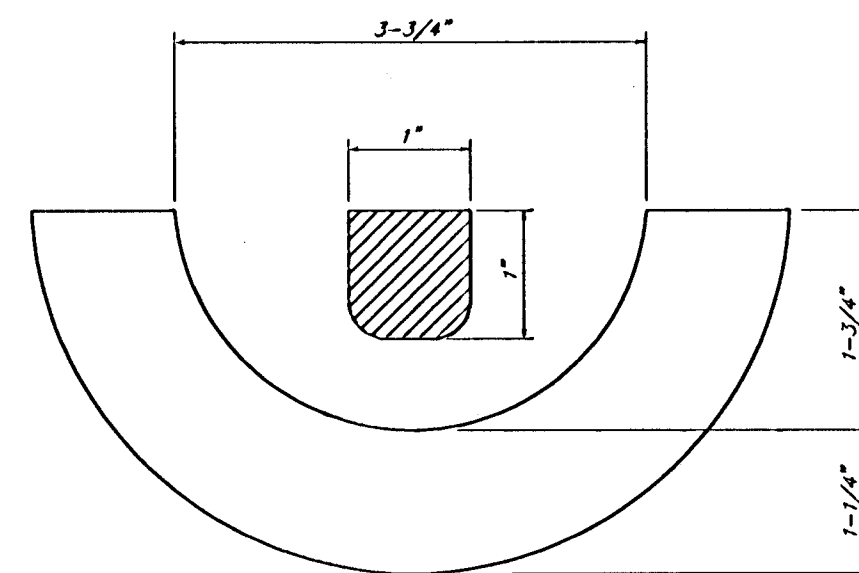


SECTION VIEW

PICKHOLE DETAIL



TOP VIEW

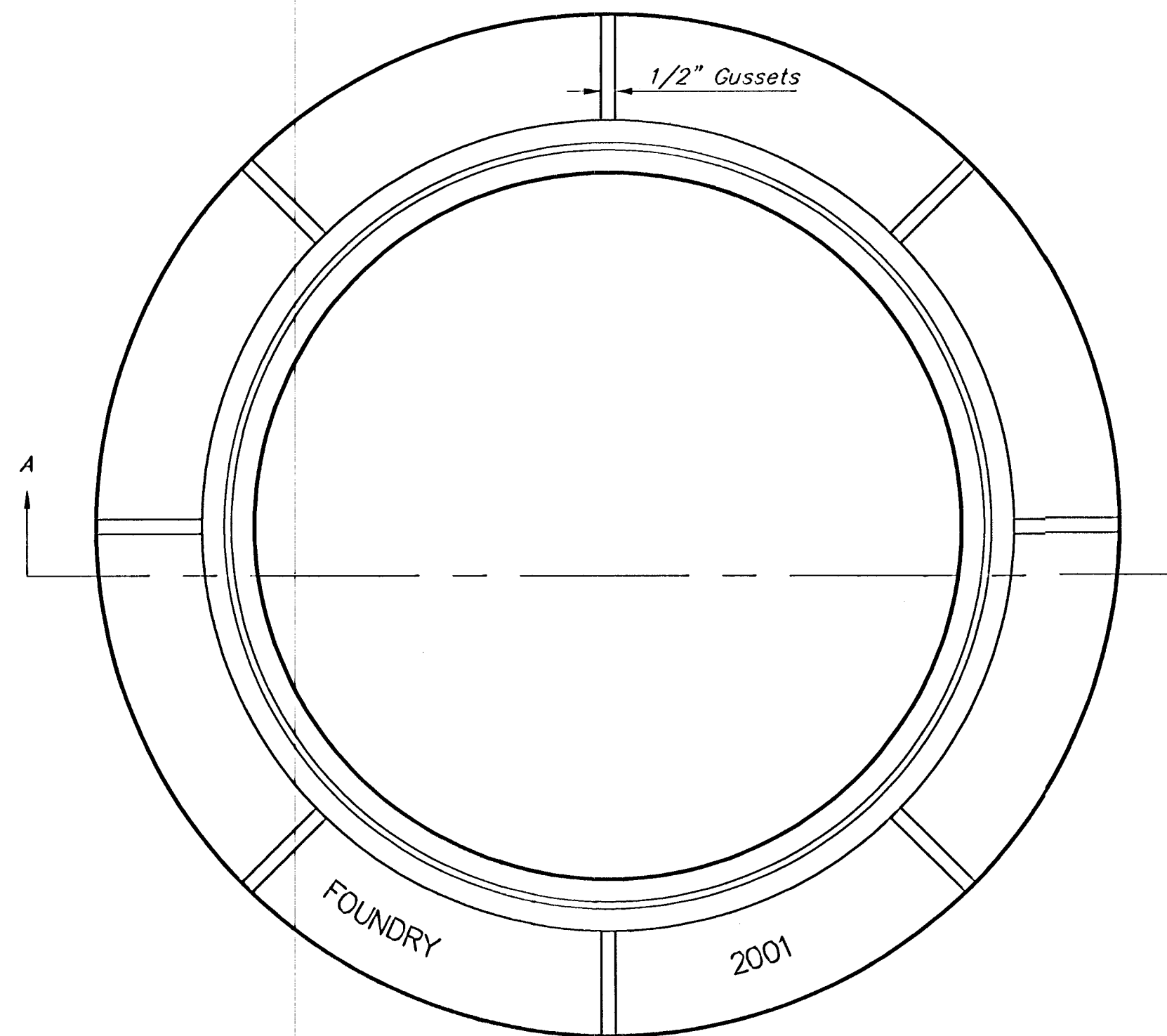


SECTION VIEW

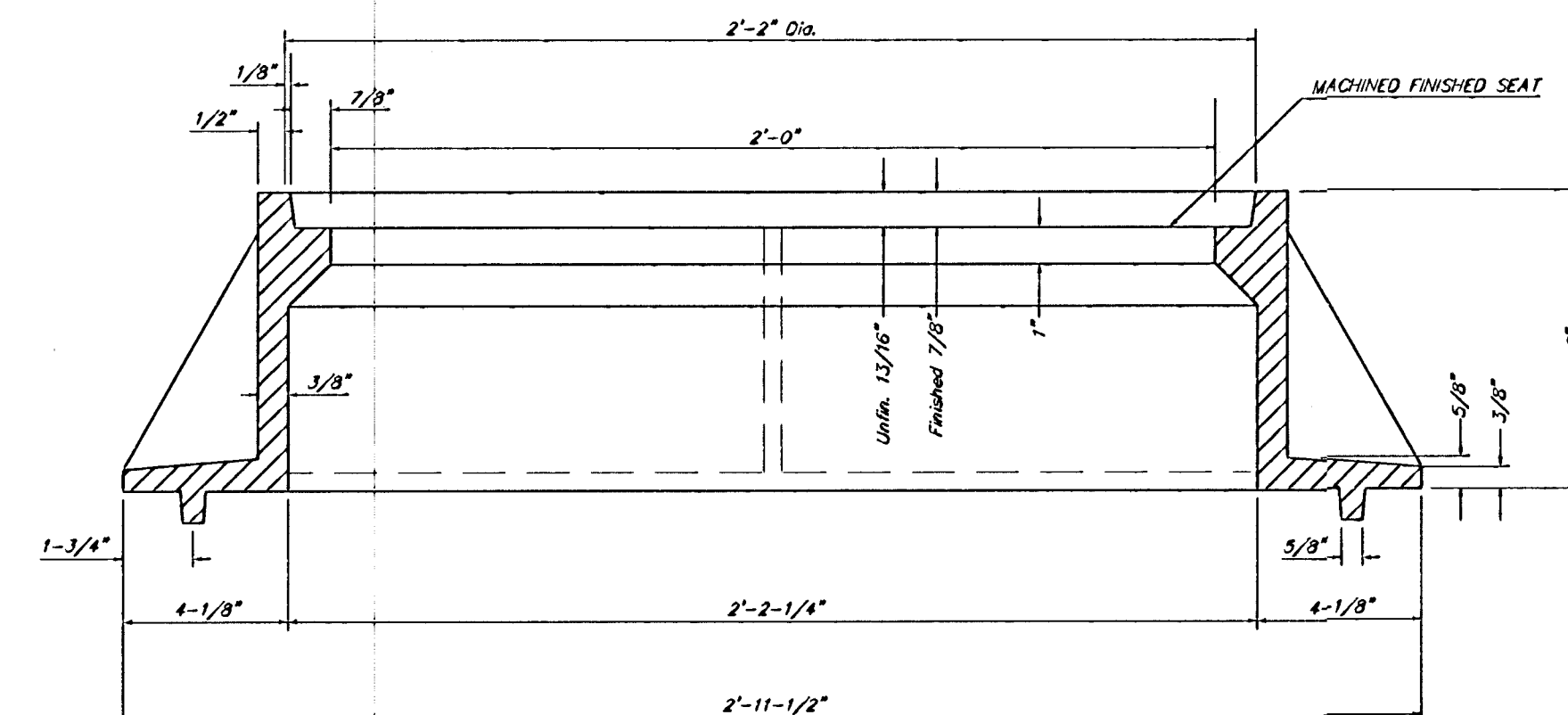
MANHOLE FRAME AND COVER DETAIL

ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS

MANHOLE FRAME
Weight = 145 Lbs.



TOP VIEW



SECTION A-A

GENERAL NOTES

MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.

MANHOLE CASTINGS SHALL BE COATED WITH AN ASPHALT PAINT RESULTING IN A SMOOTH, TOUGH AND TENACIOUS COATING WHICH IS NOT BRITTLE OR TACKY.

MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.

THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH AS THESE SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.

THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1 INCH IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SEWER DEPARTMENT". THE WORD DEPARTMENT MAY BE ABBREVIATED. THE TEXTURE OF THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN A CHECKERED PATTERN DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUT SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.

MANHOLE FRAME AND COVER DETAIL

ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS

BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

DESIGN STAFF	DRAWN STAFF	APPROVED	DATE	SCALE	SHEET
				NONE	20