

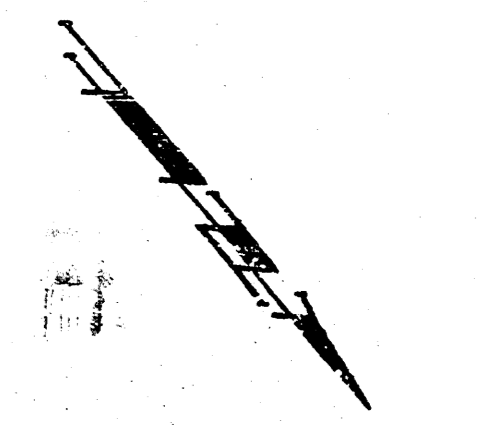
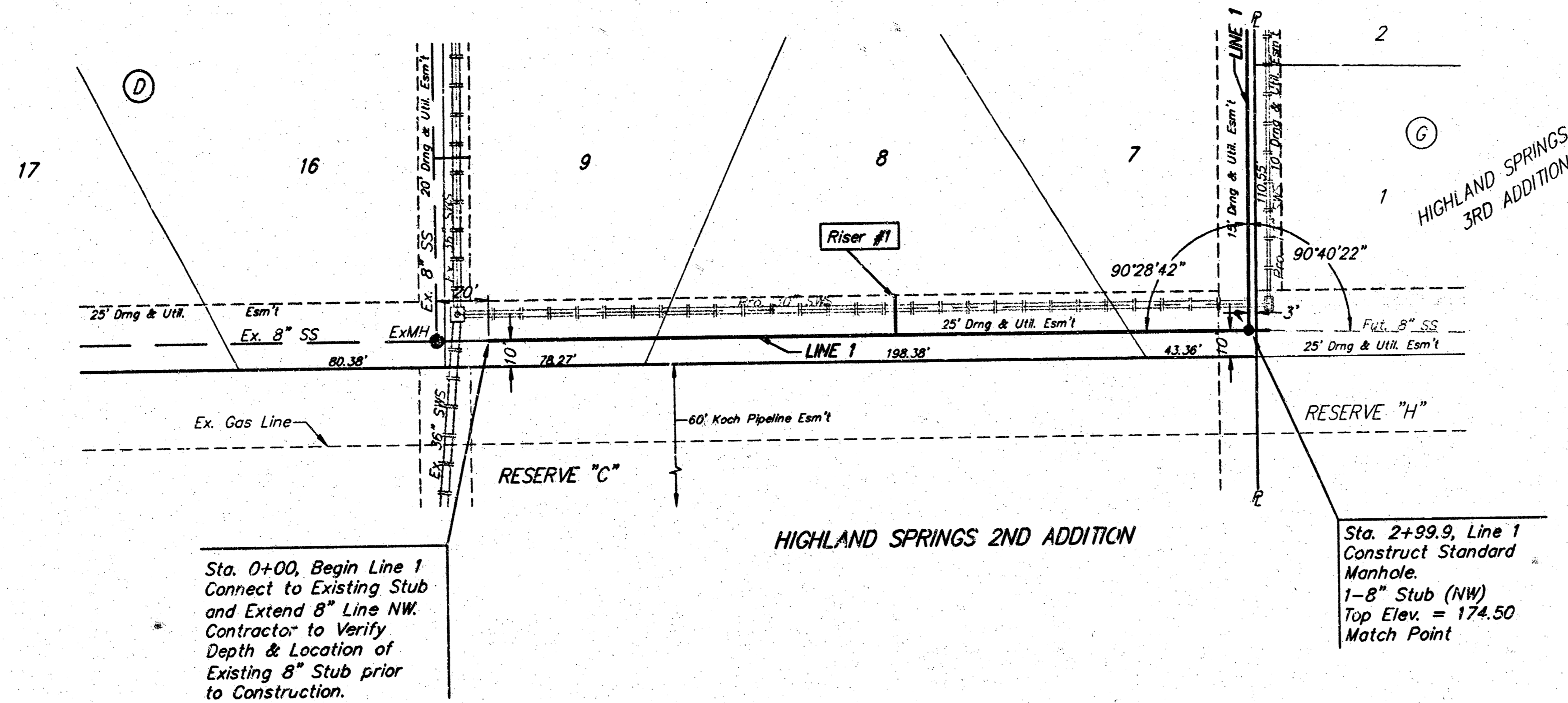


**BENCHMARKS:**  
 City of Wichita Benchmark  
 Disk 32.6' N and 24.5' E  
 of Intersection of 135th St. W.  
 and Central. 39.5' NE of Iron at  
 Section Corner.  
 Elev. = 159.50 (City Datum)

"□" Cut Rear Center of Inlet Top  
 Adjacent to SE Corner, Lot 19,  
 Block C, Highland Springs 2nd  
 Addition.  
 Elev. = 175.35 (City Datum)

"□" Cut Top of Curb Adjacent to  
 SE Corner, Lot 21, Block D,  
 Highland Springs 2nd Addition.  
 Elev. = 176.54 (City Datum)

HIGHLAND SPRINGS 2ND ADDITION

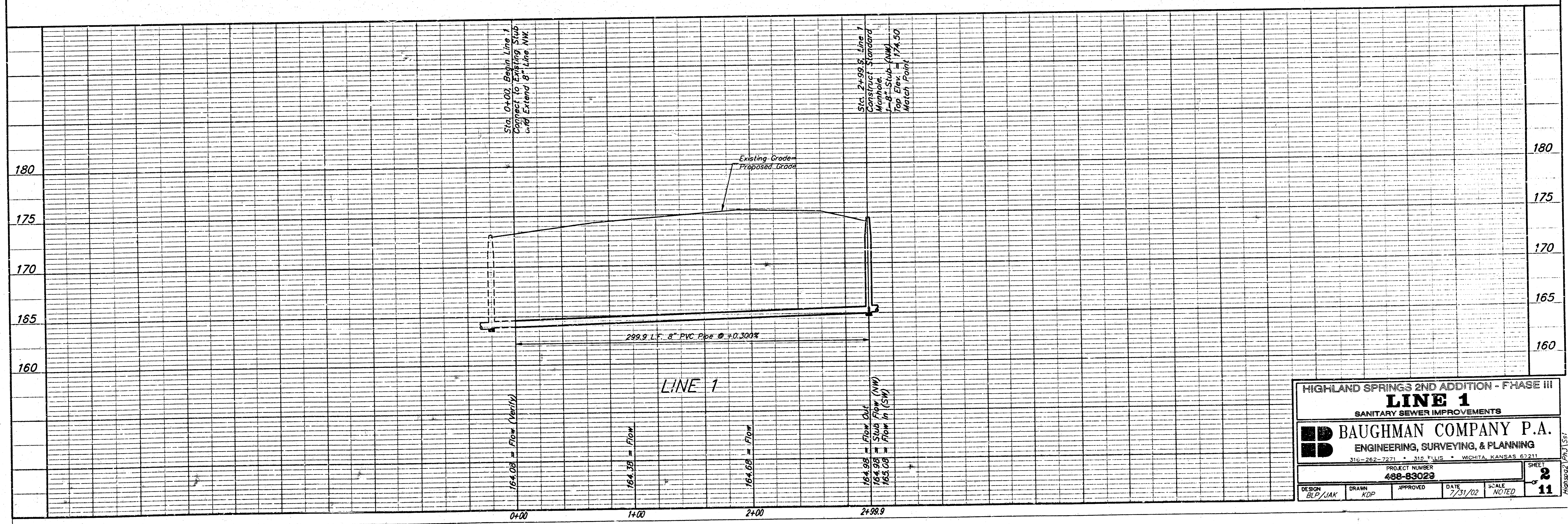


SCALE:  
 1" = 40' HORIZONTAL  
 1" = 5' VERTICAL  
 • = IRON

SEWER SERVICE TABLE

NUMBER	TYPE	LOCATION			STATION/ DIRECTION	FOR INFORMATION ONLY	
		LOT NO.	BLOCK NO.	LINE NO.		APPROXIMATE LENGTH 4" PIPE	
1	8" X 4" Tee Saddle	8	D	1	1+61/Lt.	6.5'	15'

NOTE: Vertical Riser Pipe shall be extended to 2' minimum above ground water elevation and 4' maximum below proposed ground elevation.



HIGHLAND SPRINGS 2ND ADDITION - PHASE III  
**LINE 1**  
 SANITARY SEWER IMPROVEMENTS

**BAUGHMAN COMPANY P.A.**  
 ENGINEERING, SURVEYING, & PLANNING  
 310-262-7271 • 315 F.L.S. • WICHITA, KANSAS 67211

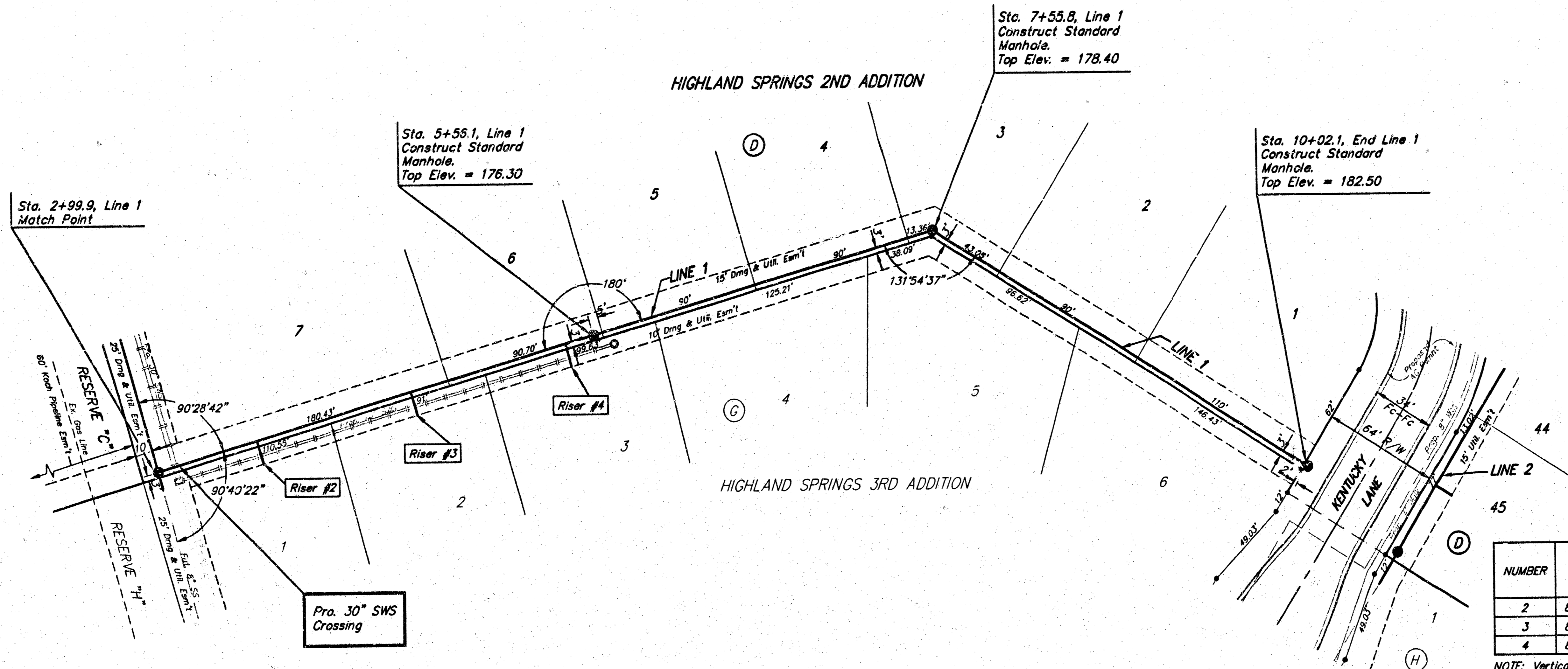
PROJECT NUMBER  
**488-83029**

DESIGN: BLP/LJAK    DRAWN: KDP    APPROVED: [Signature]    DATE: 7/31/02    SCALE: NOTED    SHEET: 2 OF 11

**BENCHMARKS:**  
 City of Wichita Benchmark  
 Disk 32.6" H and 24.5" E  
 of Intersection of 135th St. W.  
 and Central. 39.5' NE of Iron at  
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"□" Cut Rear Center of Inlet Top  
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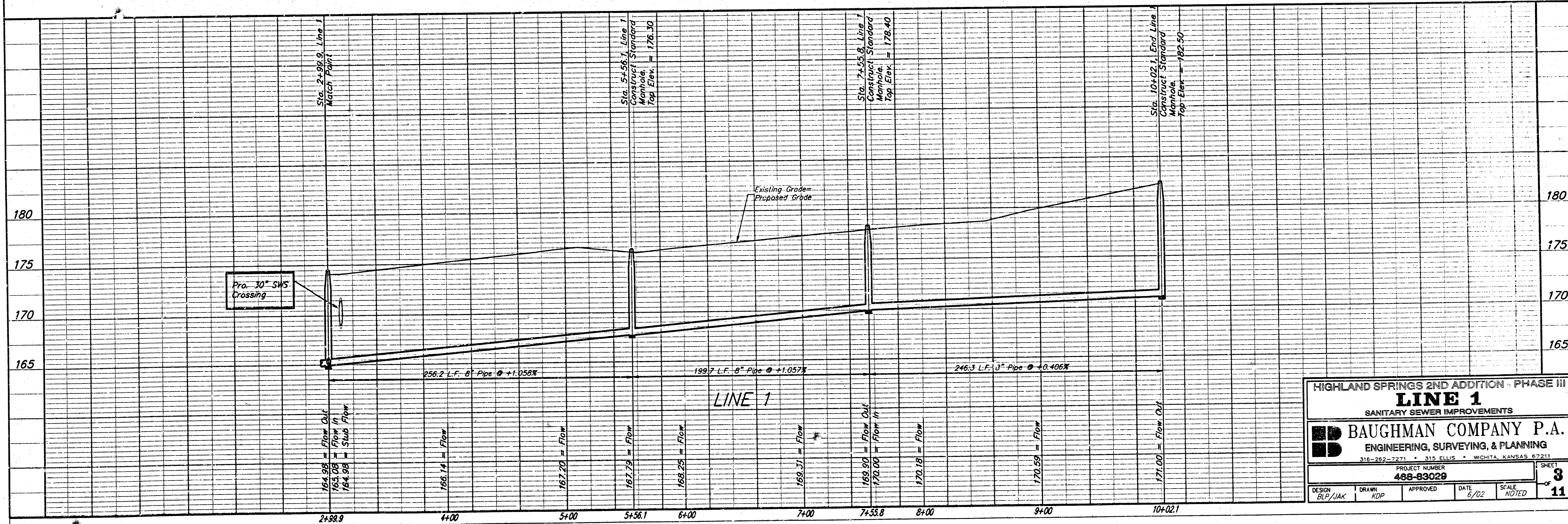


SCALE:  
 1" = 40' HORIZONTAL  
 1" = 5' VERTICAL  
 • = IRON

SEWER SERVICE TABLE

NUMBER	TYPE	LOCATION			FOR INFORMATION ONLY		
		LOT NO.	BLOCK NO.	LINE NO.	STATION DIRECTION	APPROXIMATE LENGTH 4" PIPE	
						VERTICAL	HORIZONTAL
2	8" X 4" Tee Saddle	1	G	1	3+58/Rt.	5.0'	13'
3	8" X 4" Tee Saddle	2	G	1	4+49/Rt.	5.0'	13'
4	8" X 4" Tee Saddle	3	G	1	5+40/Rt.	4.5'	13'

NOTE: Vertical Riser Pipe shall be extended to 2' minimum above ground water elevation and 4' maximum below proposed ground elevation.



HIGHLAND SPRINGS 2ND ADDITION - PHASE III  
**LINE 1**  
 SANITARY SEWER IMPROVEMENTS

**BAUGHMAN COMPANY P.A.**  
 ENGINEERING, SURVEYING, & PLANNING  
 316-267-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER: 488-83029  
 SHEET: 3 OF 11

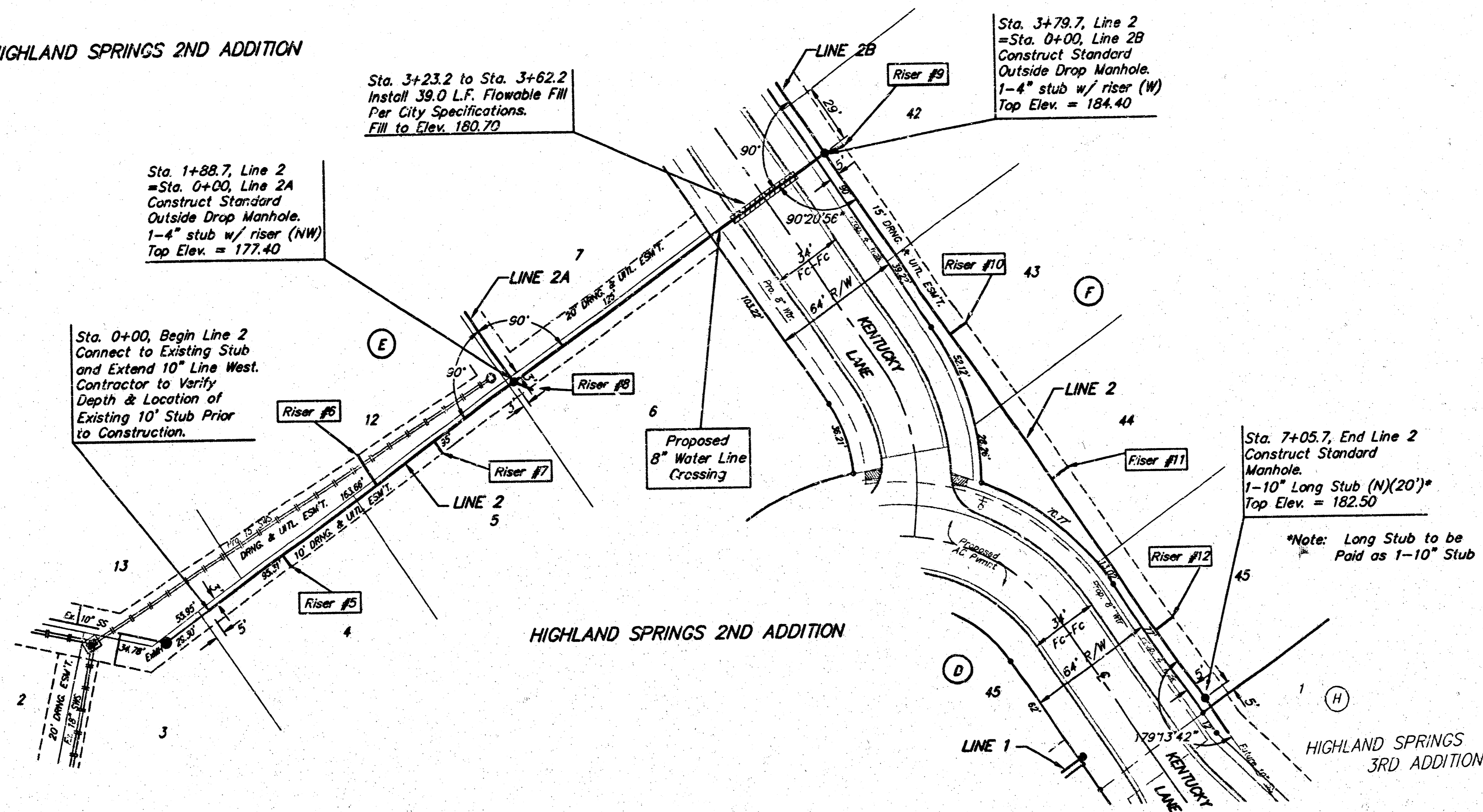
DESIGN: BLP/JAK  
 DRAWN: KDP  
 APPROVED: [Signature]  
 DATE: 6/02  
 SCALE: NOTED

**BENCHMARKS:**  
 City of Wichita Benchmark  
 Disk 32.6' N and 24.5' E  
 of Intersection of 135th St. W.  
 and Central 39.5' NE of Iron at  
 Section Corner.  
 Elev. = 159.50 (City Datum)

□ Cut Rear Center of Inlet Top  
 Adjacent to SE Corner, Lot 19,  
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 Elev. = 175.35 (City Datum)

□ Cut Top of Curb Adjacent to  
 SE Corner, Lot 21, Block D,  
 Highland Springs 2nd Addition.  
 Elev. = 176.54 (City Datum)

HIGHLAND SPRINGS 2ND ADDITION

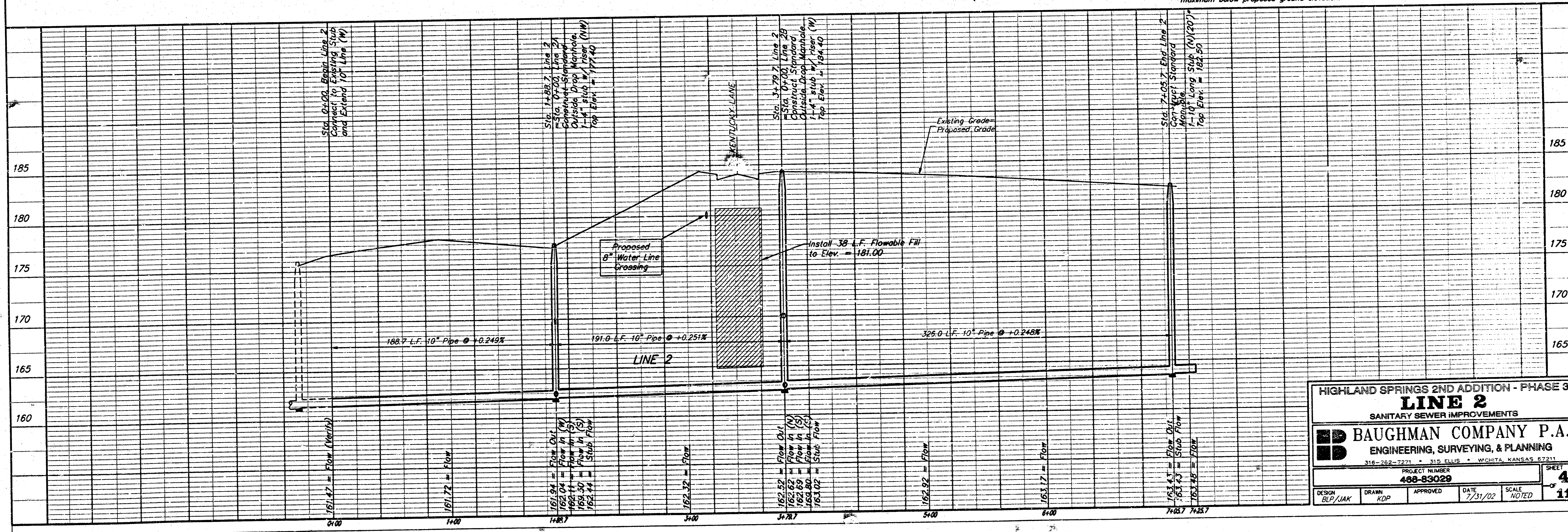


Scale:  
 1" = 40' Horizontal  
 1" = 5' Vertical  
 • = Iron

SEWER SERVICE TABLE

NUMBER	TYPE	LOCATION			FOR INFORMATION ONLY	
		LOT NO.	BLOCK NO.	LINE NO.	STATION/DIRECTION	APPROXIMATE LENGTH 4" PIPE
					VERTICAL	HORIZONTAL
5	8" X 4" Tee Saddle	4	E	2	0+46/LL	11.5' 7'
6	8" X 4" Tee Saddle	12	E	2	1+03/RL	12.0' 17'
7	8" X 4" Tee Saddle	5	E	2	1+39/RL	11.5' 7'
8	4" Stub	6	E	2	1+88.7/LL	11.0' 10'
9	4" Stub	42	F	2	3+79.7/Lt.	18.0' 10'
10	8" X 4" Tee Saddle	43	F	2	4+88/Lt.	17.0' 10'
11	8" X 4" Tee Saddle	44	F	2	5+74/Lt.	16.5' 10'
12	8" X 4" Tee Saddle	45	F	2	6+64/Lt.	15.5' 11'

NOTE: Vertical Riser Pipes shall be extended to 2' minimum above ground water elevation and 4' maximum below proposed ground elevation.



HIGHLAND SPRINGS 2ND ADDITION - PHASE 3  
**LINE 2**  
 SANITARY SEWER IMPROVEMENTS  
**BAUGHMAN COMPANY P.A.**  
 ENGINEERING, SURVEYING, & PLANNING  
 316-262-7271 • 310 ELLIS • WICHITA, KANSAS 67211  
 PROJECT NUMBER: 468-83029  
 SHEET: 4 OF 11  
 DESIGN: BLP/JAK DRAWN: KDP APPROVED: DATE: 7/31/02 SCALE: NOTED

**BENCHMARKS:**  
 City of Wichita Benchmark  
 Disk 32.6' N and 24.5' E  
 of Intersection of 1.35th St. W.  
 and Central 39.5' NE of Iron at  
 Section Corner.  
 Elev. = 139.50 (City Datum)

"□" Cut Rear Center of Inlet Top  
 Adjacent to SE Corner, Lot 19,  
 Block C, Highland Springs 2nd  
 Addition.  
 Elev. = 175.35 (City Datum)

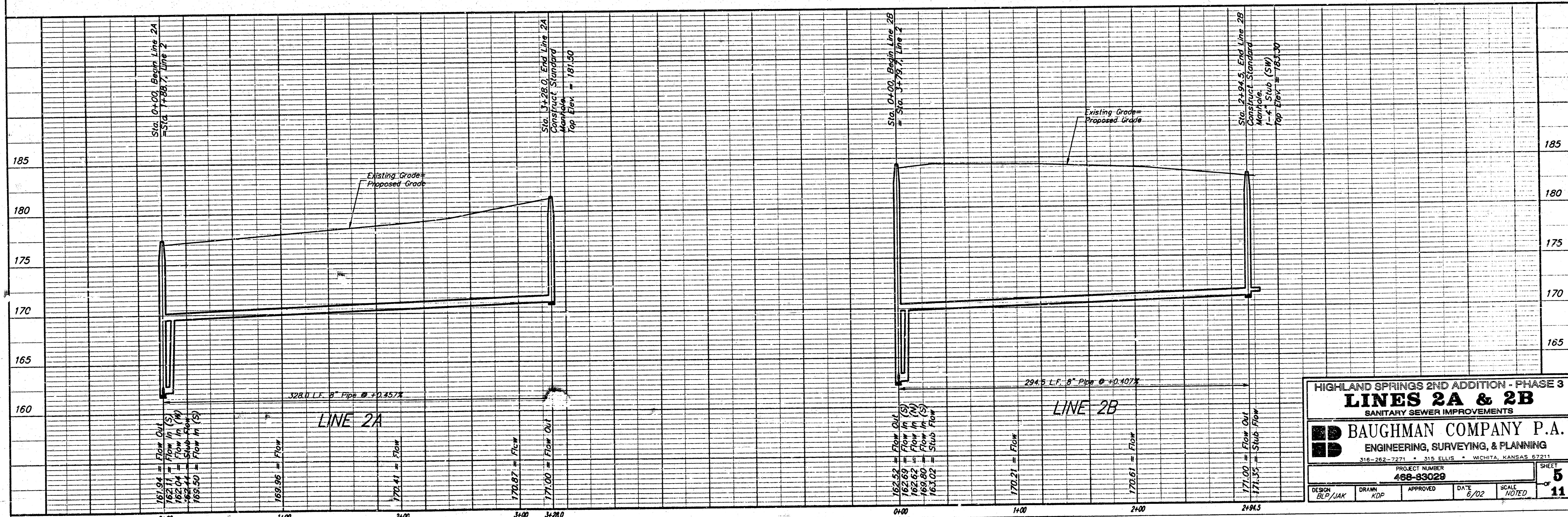
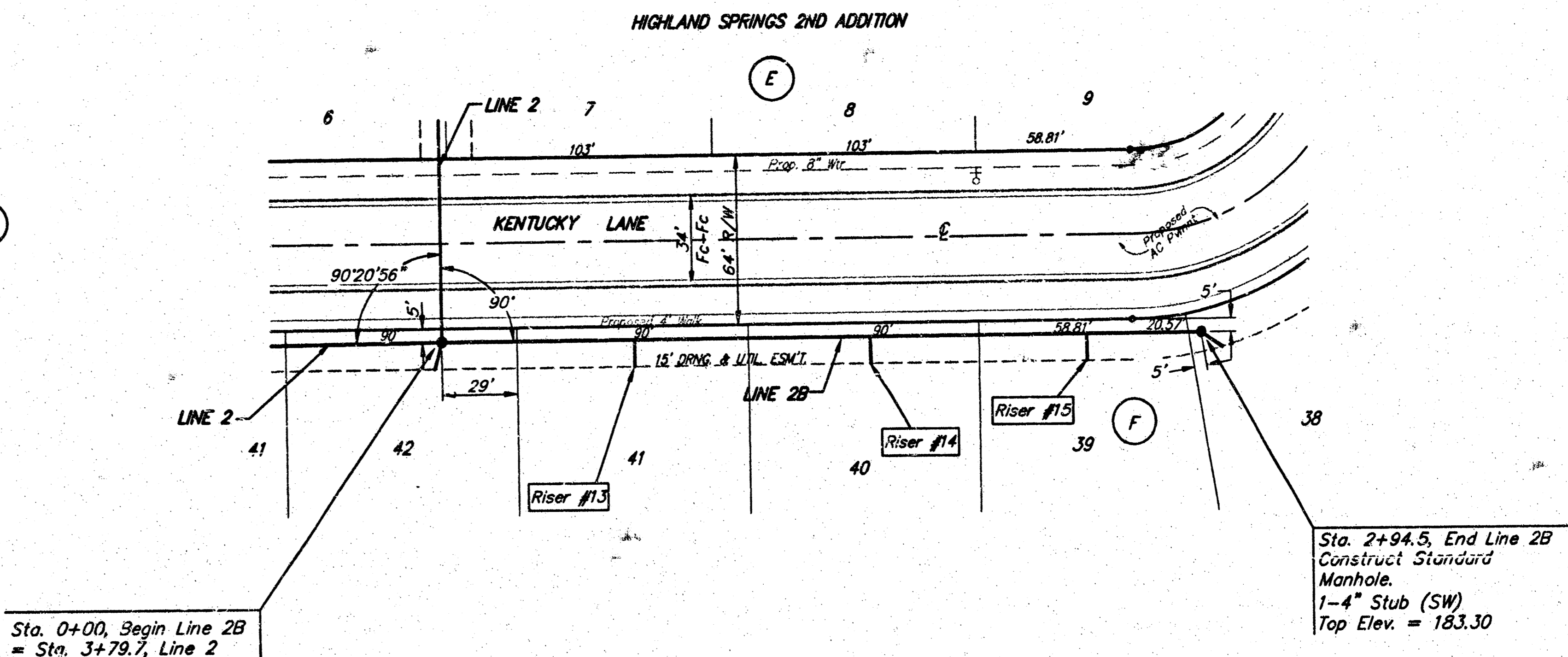
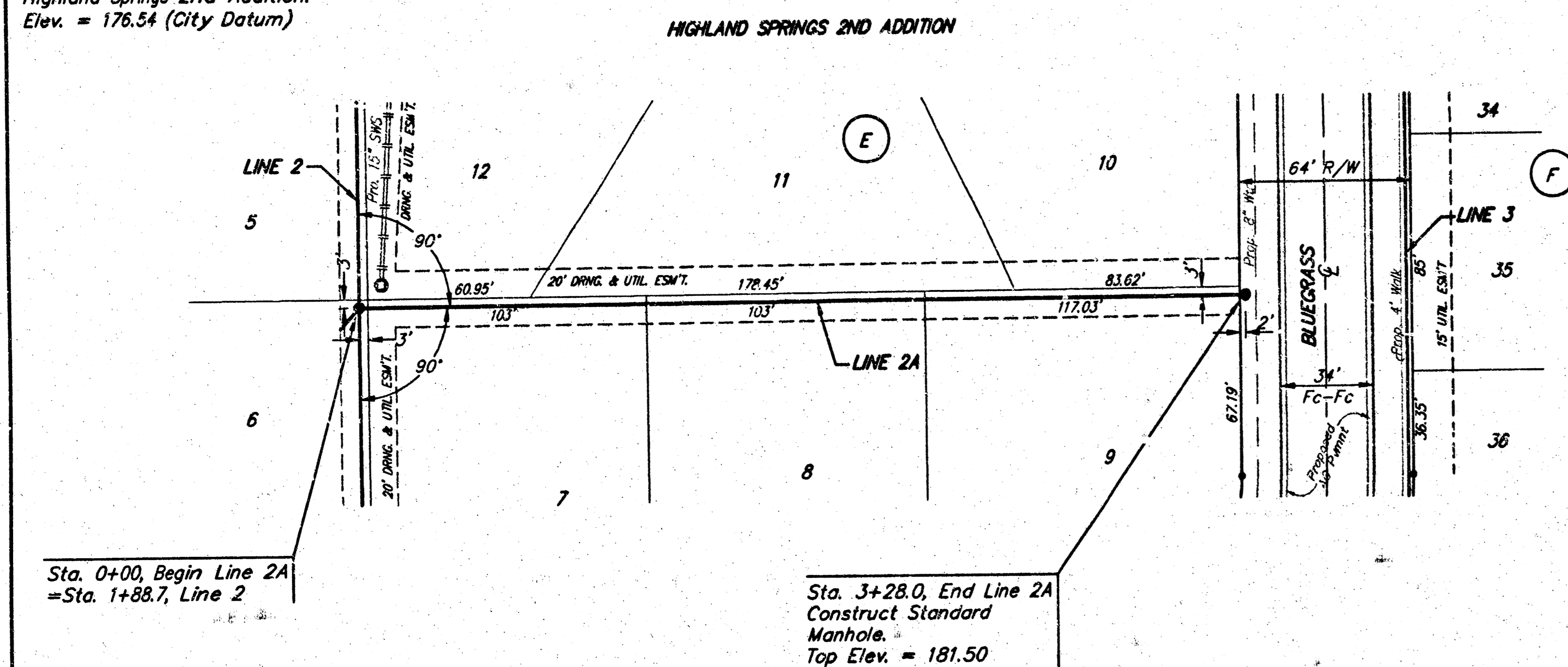
"□" Cut Top of Curb Adjacent to  
 SE Corner, Lot 21, Block D,  
 Highland Springs 2nd Addition.  
 Elev. = 176.54 (City Datum)

SEWER SERVICE TABLE

NUMBER	TYPE	LOCATION			FOR INFORMATION ONLY	
		LOT NO.	BLOCK NO.	LINE NO.	STATION/ DIRECTION	APPROXIMATE LENGTH 4" PIPE VERTICAL HORIZONTAL
13	8" X 4" Tee Saddle	41	F	2B	0+75/Rt.	10.5' 10'
14	8" X 4" Tee Saddle	40	F	2B	1+66/Rt.	9.5' 10'
15	8" X 4" Tee Saddle	39	F	2B	2+50/Rt.	8.5' 10'

NOTE: Vertical Riser Pipe shall be extended to 2' minimum above ground water elevation and 4' maximum below proposed ground elevation.

Scale:  
 1" = 40' Horizontal  
 1" = 5' Vertical  
 • = Iron



HIGHLAND SPRINGS 2ND ADDITION - PHASE 3  
**LINES 2A & 2B**  
 SANITARY SEWER IMPROVEMENTS

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

PROJECT NUMBER  
**488-83029**

DESIGN: BLP/JAK    DRAWN: KDP    APPROVED:    DATE: 6/02    SCALE: NOTED

SHEET  
 OF 11

**BENCHMARKS:**  
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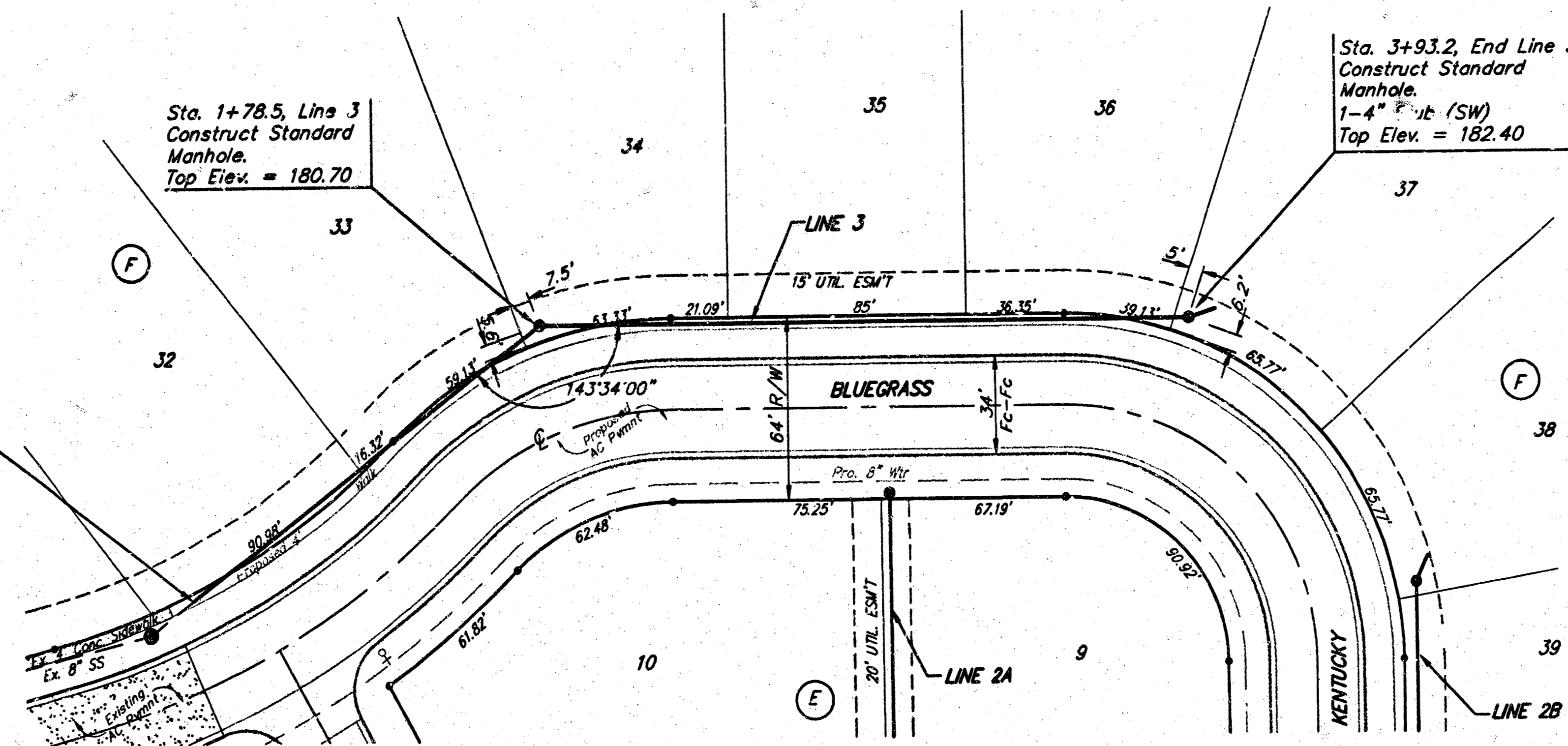
"□" Cut Top of Curb Adjacent to  
 SE Corner, Lot 21, Block D,  
 Highland Springs 2nd Addition.  
 Elev. = 176.54 (City Datum)

Sta. 0+00, Begin Line 3  
 Connect to Existing Stub  
 and Extend 8" Line SW.  
 Contractor to Verify Depth  
 & Location of Existing 8"  
 Stub prior to Construction.

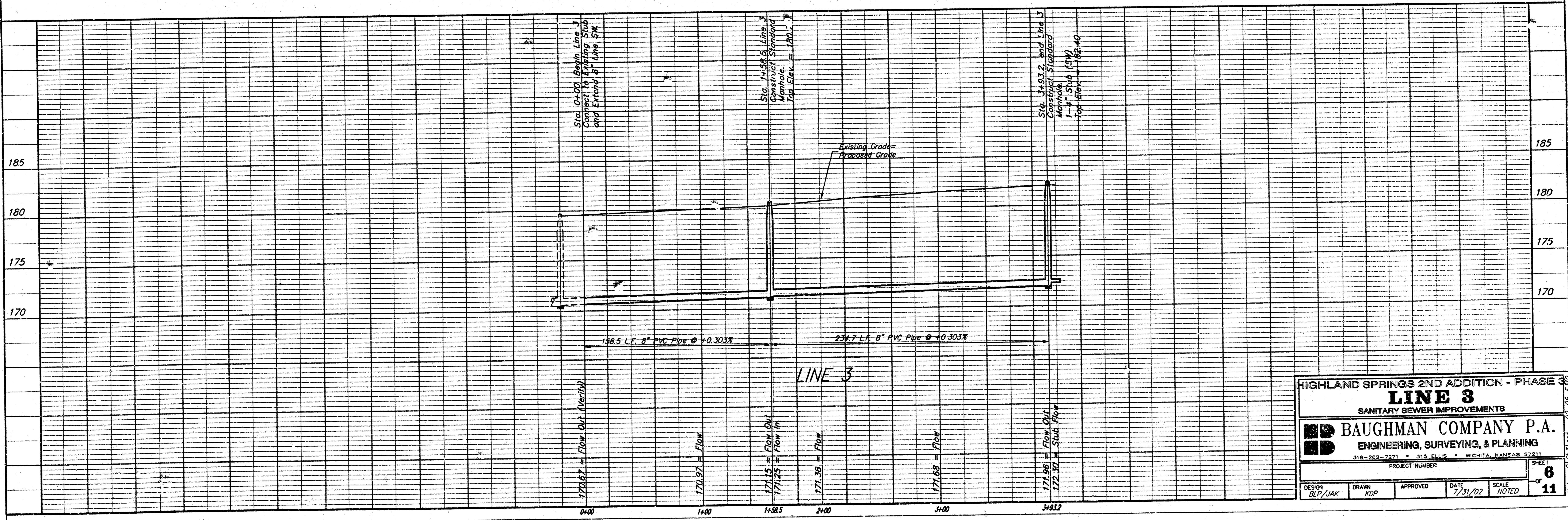
Sta. 1+78.5, Line 3  
 Construct Standard  
 Manhole.  
 Top Elev. = 180.70

Sta. 3+93.2, End Line 3  
 Construct Standard  
 Manhole.  
 1-4" x 12" (SW)  
 Top Elev. = 182.40

HIGHLAND SPRINGS 2ND ADDITION



Scale:  
 1" = 40' Horizontal  
 1" = 5' Vertical  
 • = Iron



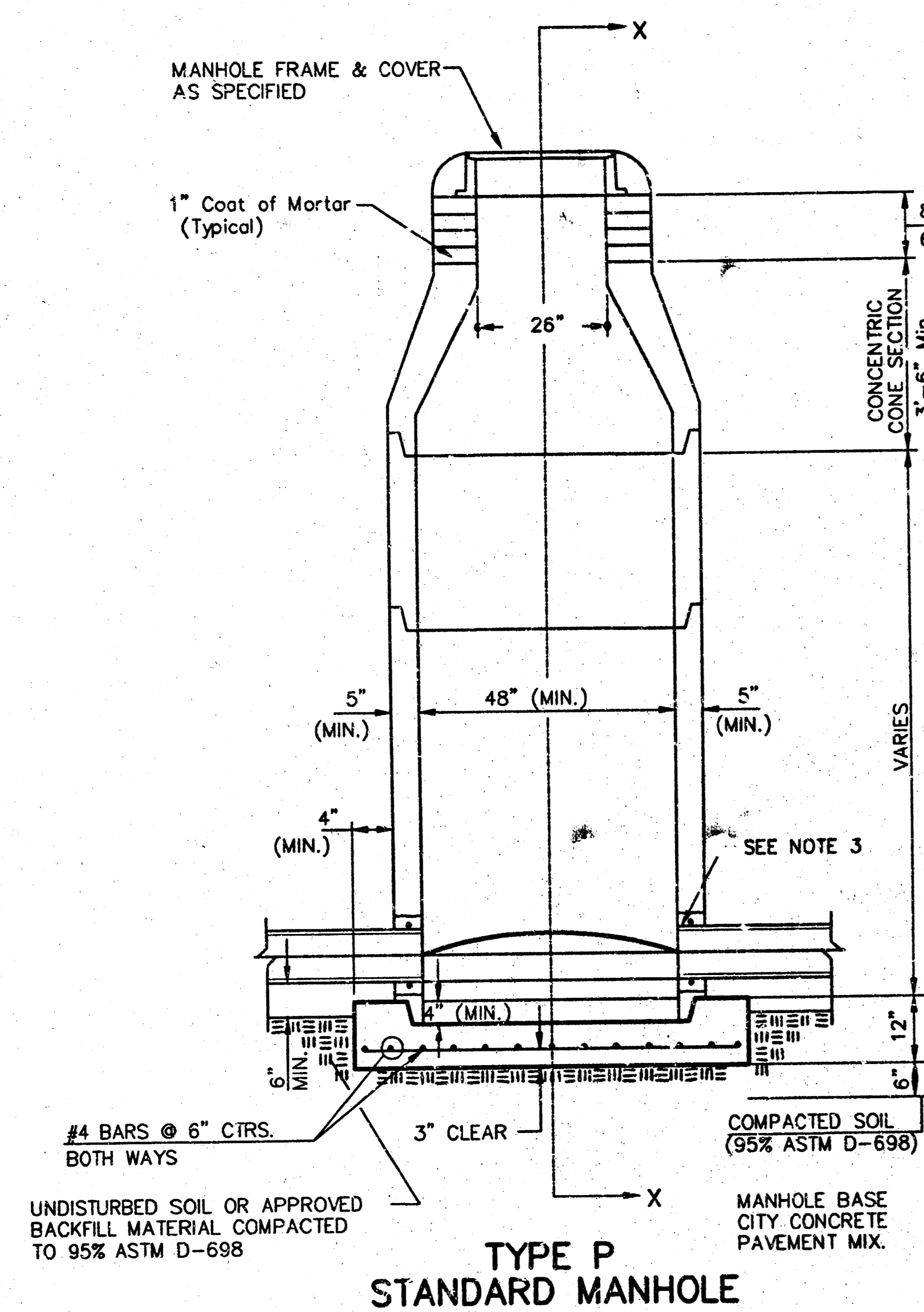
HIGHLAND SPRINGS 2ND ADDITION - PHASE 3  
**LINE 3**  
 SANITARY SEWER IMPROVEMENTS

**BAUGHMAN COMPANY P.A.**  
 ENGINEERING, SURVEYING, & PLANNING  
 318-262-7271 • 318 ELLIS • WICHITA, KANSAS 67211

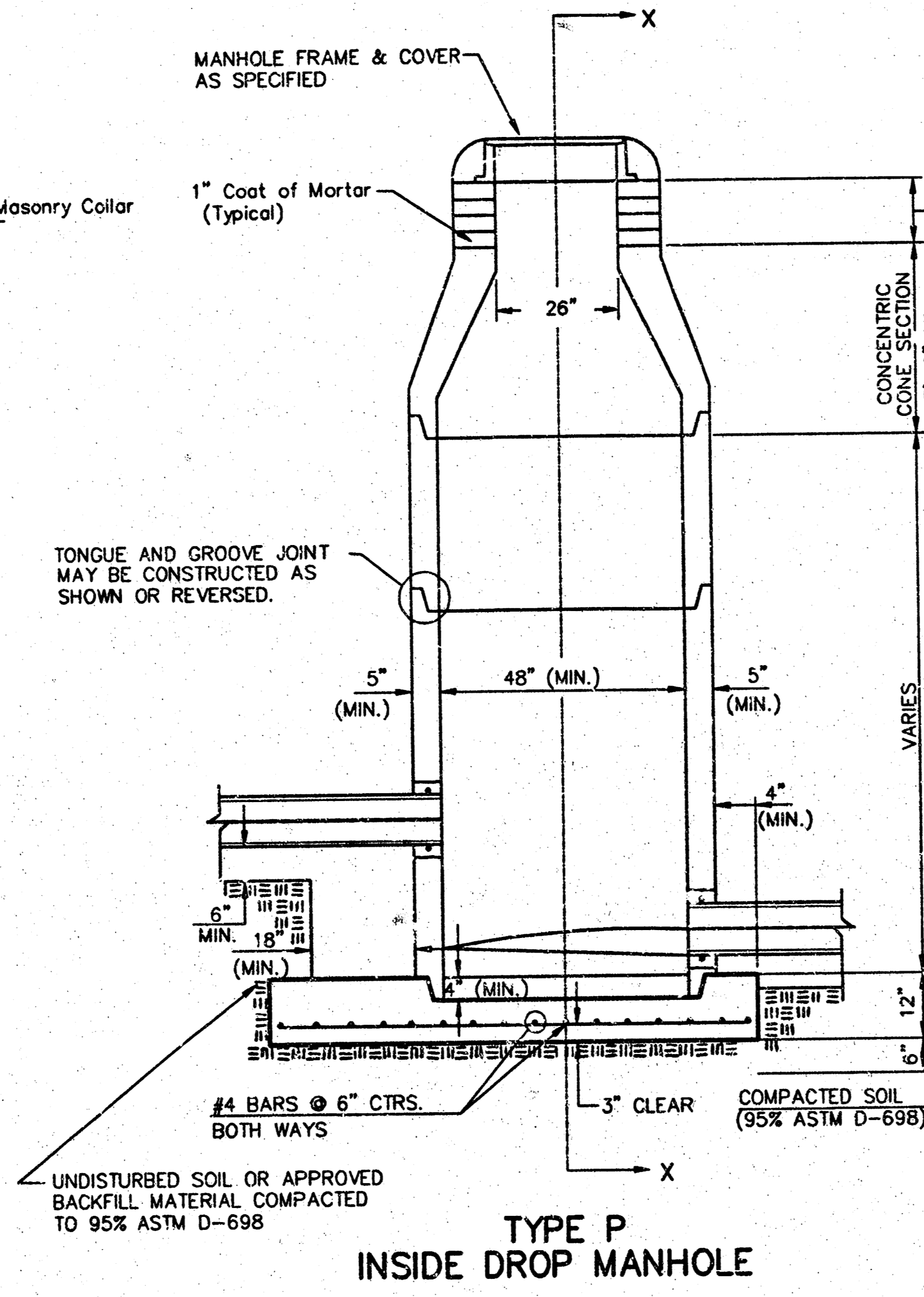
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DESIGN: BLP/JAK DRAWN: KDP APPROVED: \_\_\_\_\_ DATE: 7/31/02 SCALE: NOTED

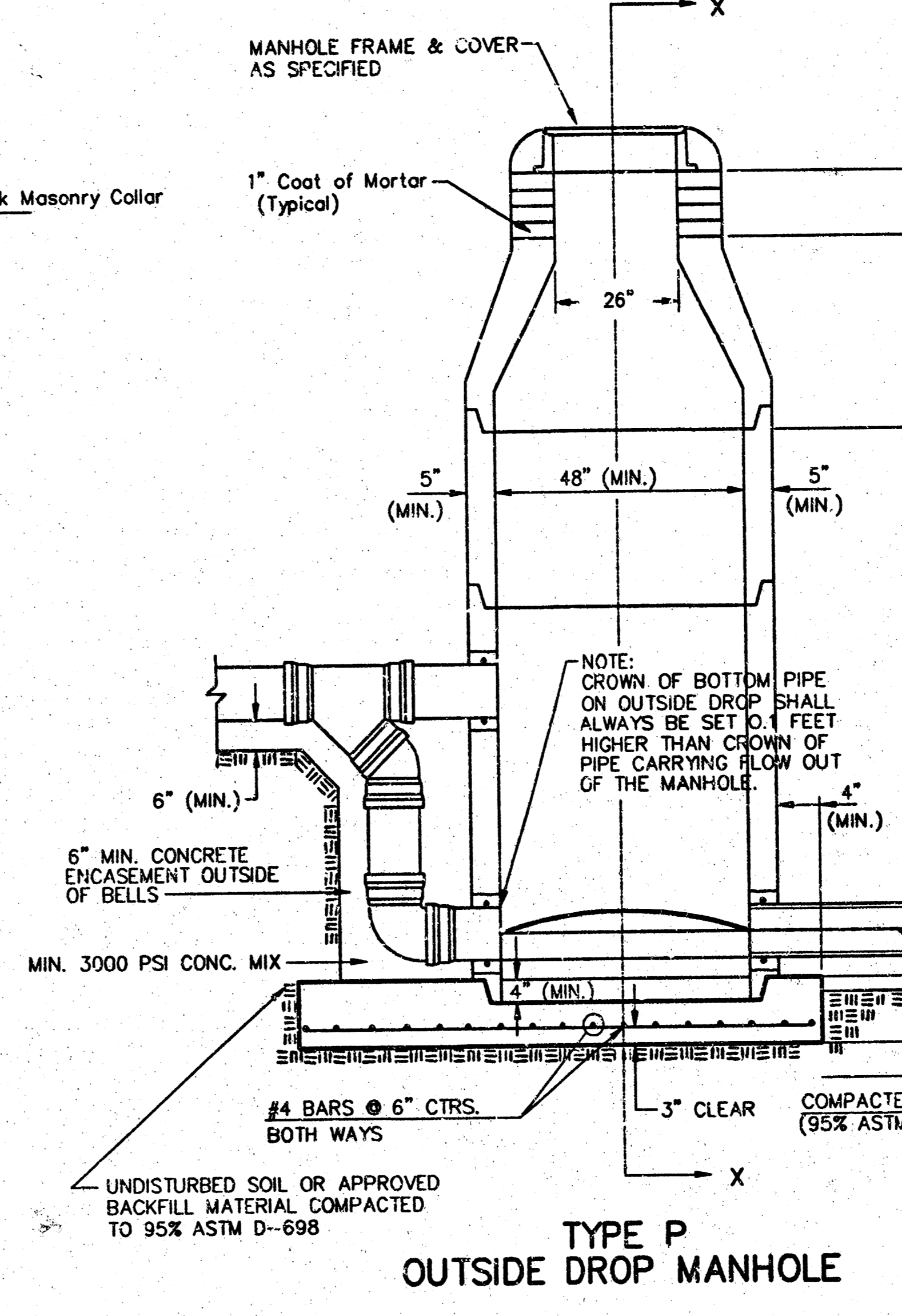
# SEWER APPURTENANCES DETAILS



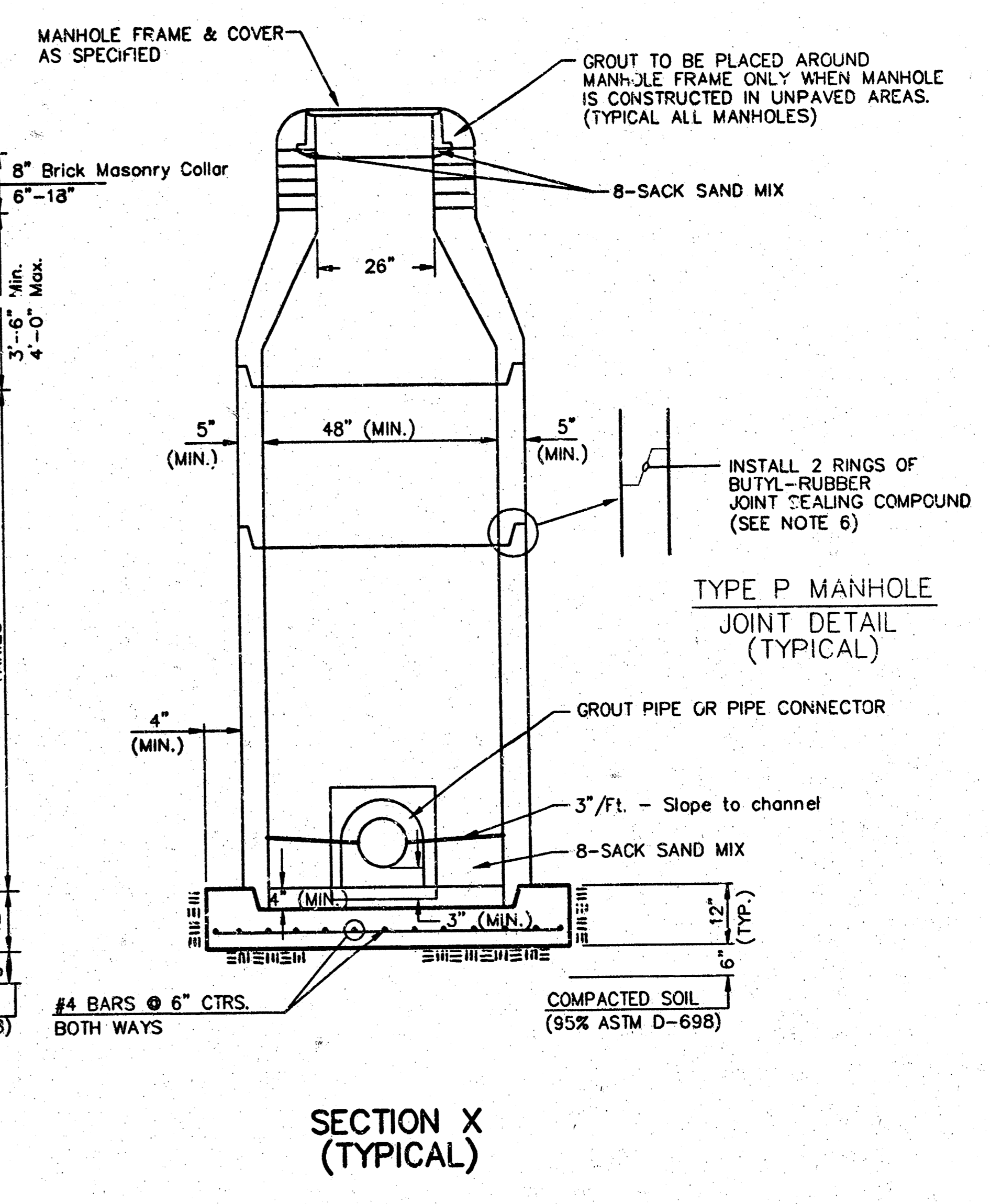
**TYPE P STANDARD MANHOLE**



**TYPE P INSIDE DROP MANHOLE**



**TYPE P OUTSIDE DROP MANHOLE**

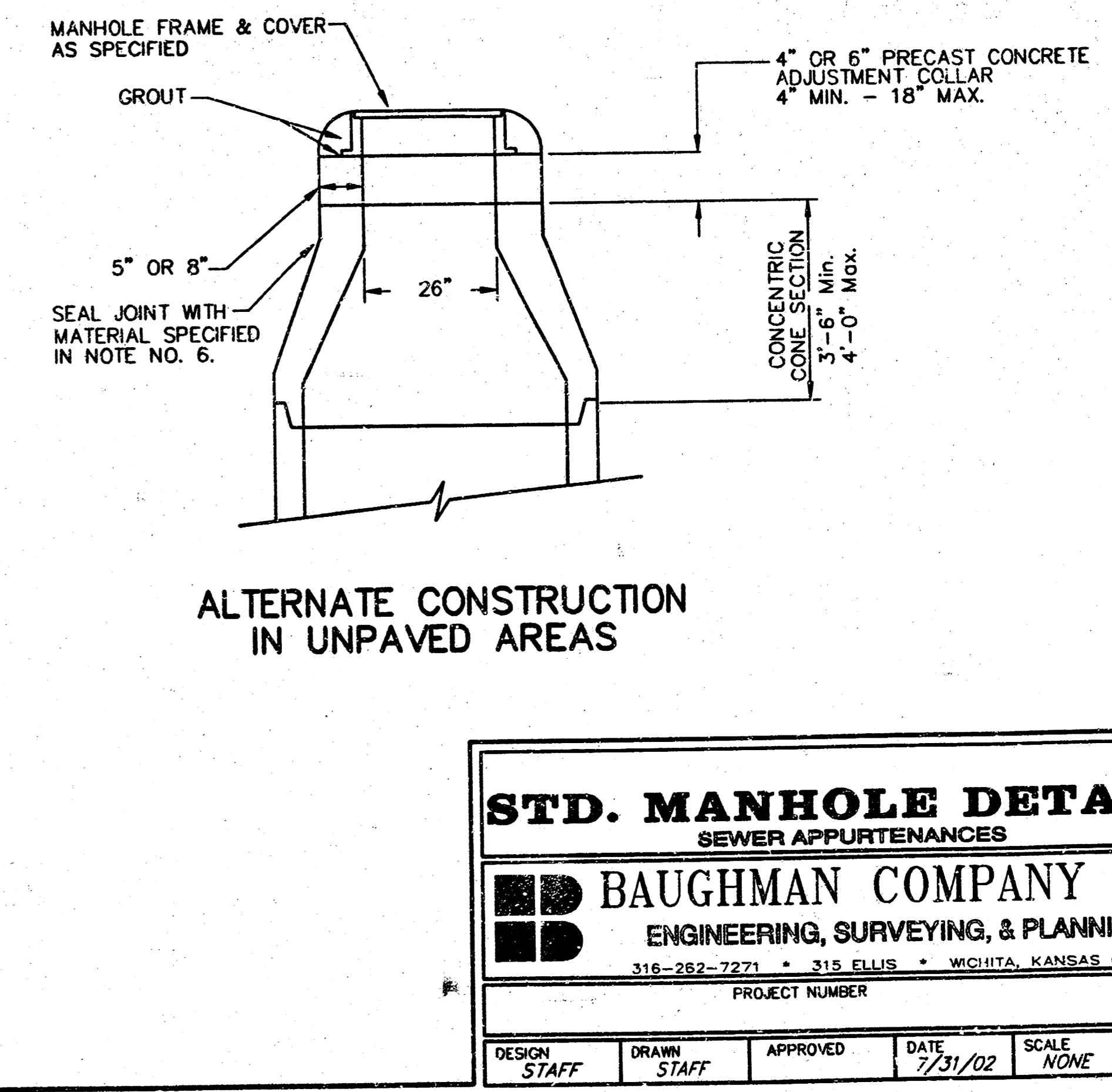


**SECTION X (TYPICAL)**

- 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 PIPE SHALL BE GROUDED 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 TNEDEC SERIES 66 HI-BUILD EPOXOLINE, DRY THICKNESS OF 8 MILS (MIN.)
  - EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILPARMA 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 GROUDED 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 GROUDED 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.

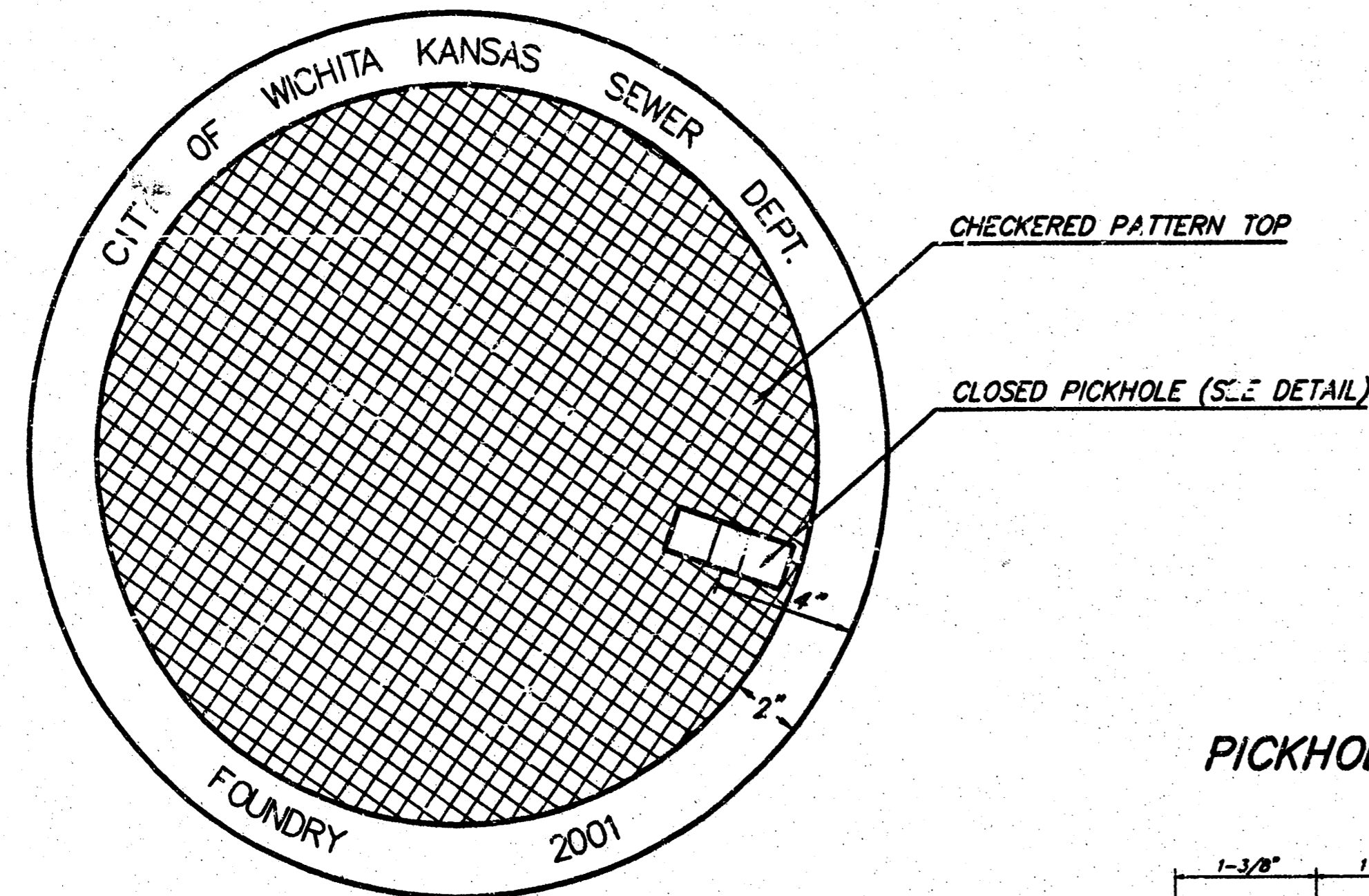
- MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD-DETAIL DRAWING.
- THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 2' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING 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.



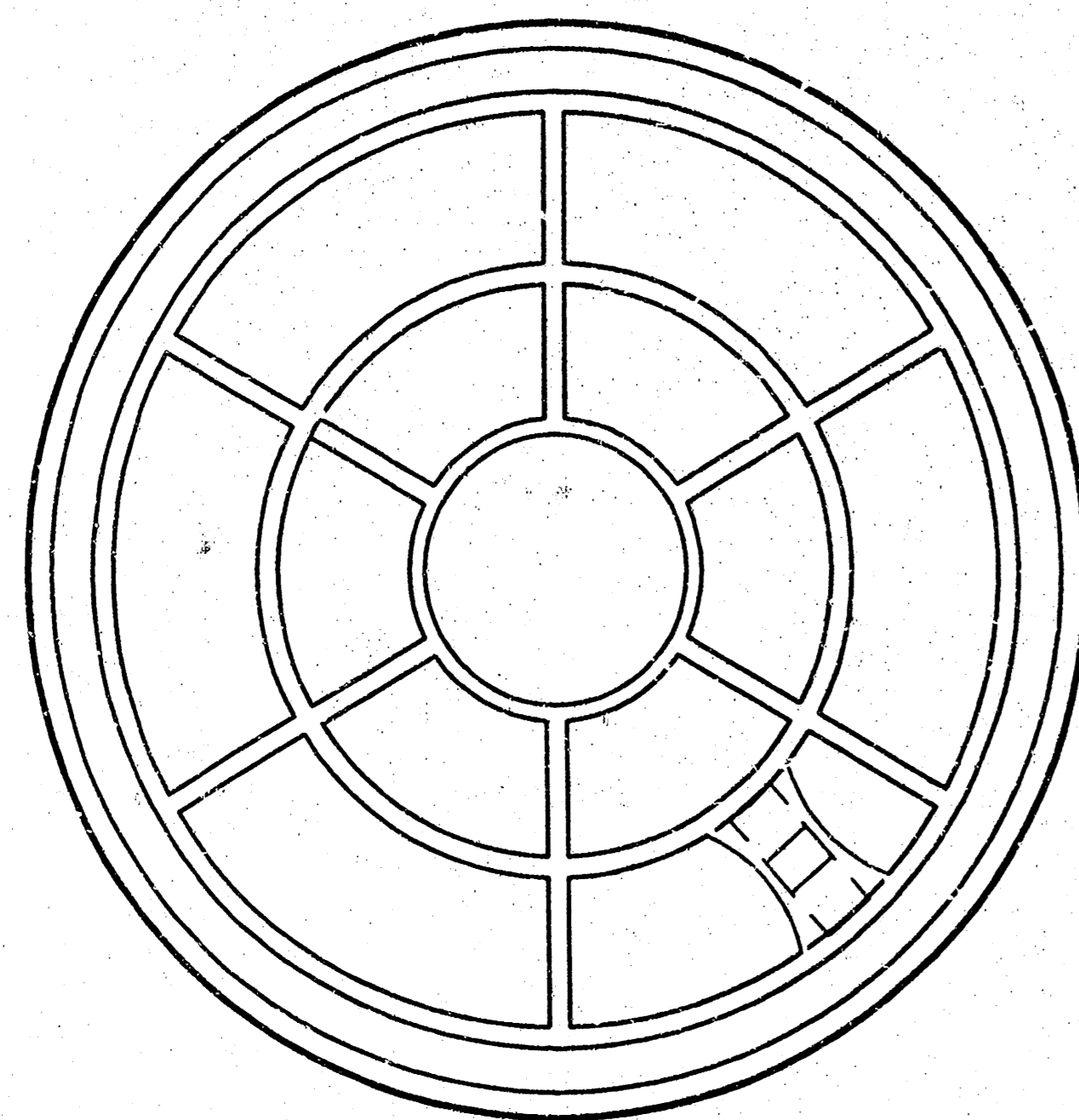
**ALTERNATE CONSTRUCTION IN UNPAVED AREAS**

<b>STD. MANHOLE DETAILS</b>			
SEWER APPURTENANCES			
<b>BAUGHMAN COMPANY P.A.</b>			
ENGINEERING, SURVEYING, & PLANNING			
318-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211			
PROJECT NUMBER		SHEET	
		7	
DESIGN	DRAWN	APPROVED	DATE
STAFF	STAFF	STAFF	7/31/02
SCALE		SCALE	
NONE		NONE	

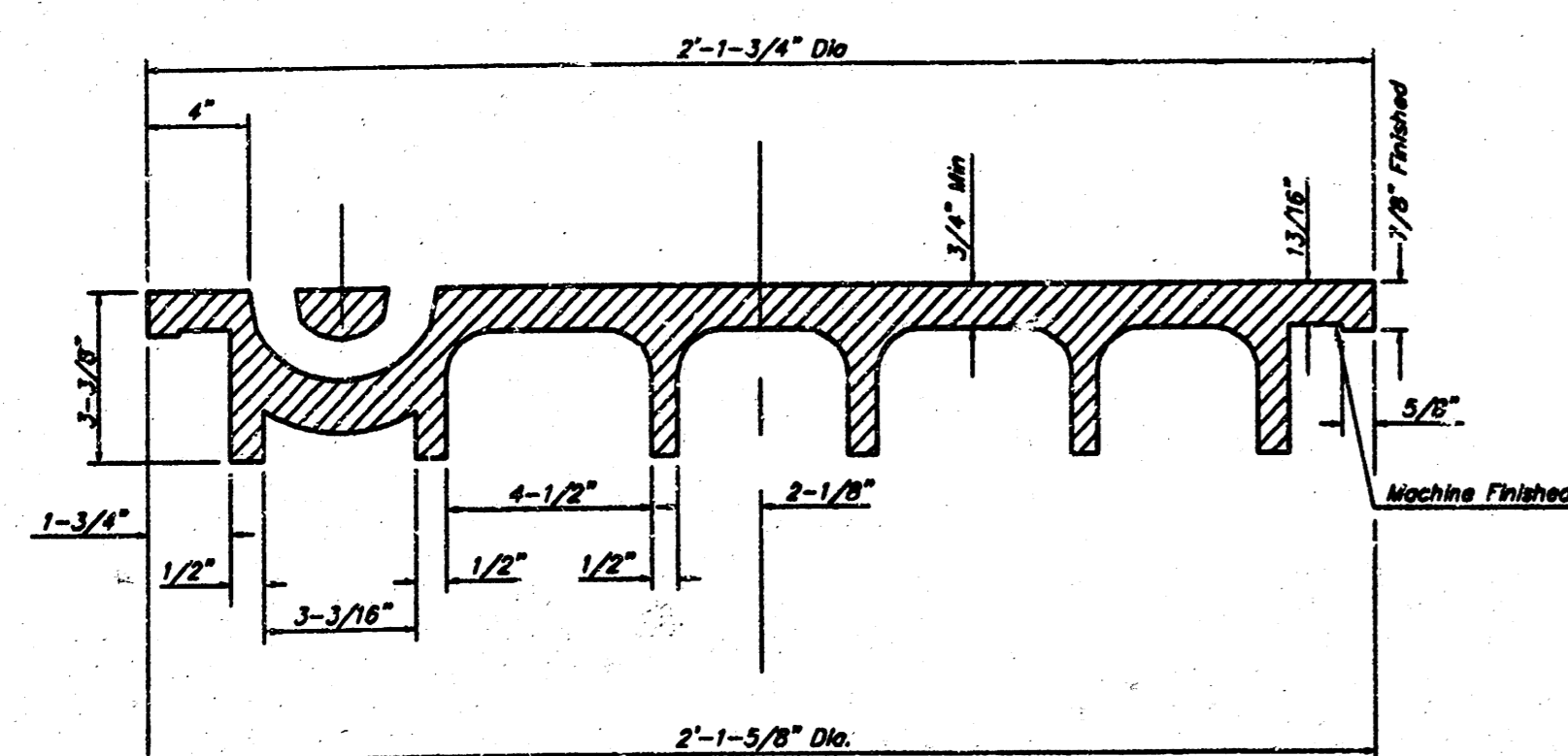
MANHOLE COVER  
Weight = 180 Lbs.



TOP VIEW



BOTTOM VIEW

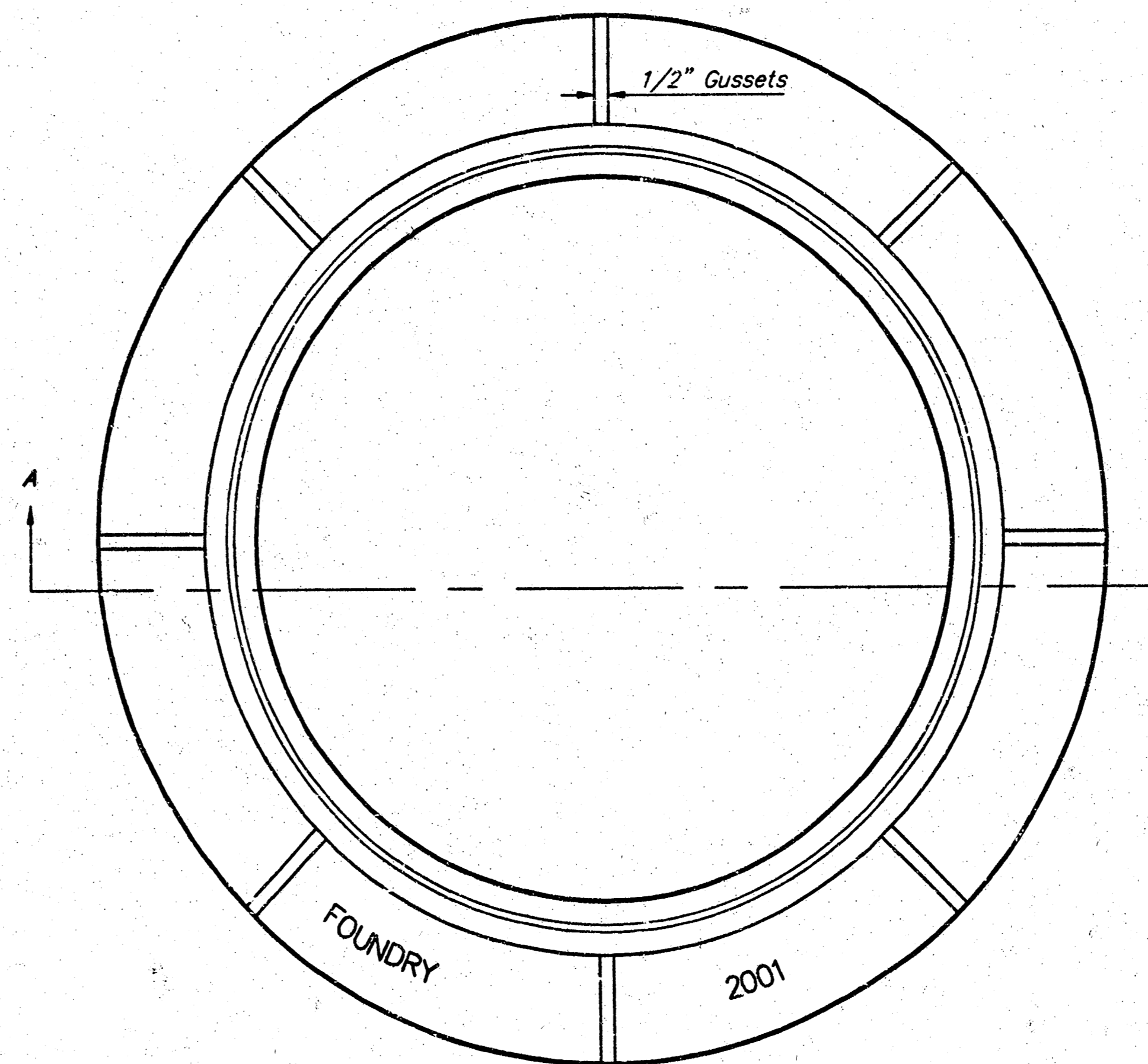


SECTION VIEW

## MANHOLE FRAME AND COVER DETAIL

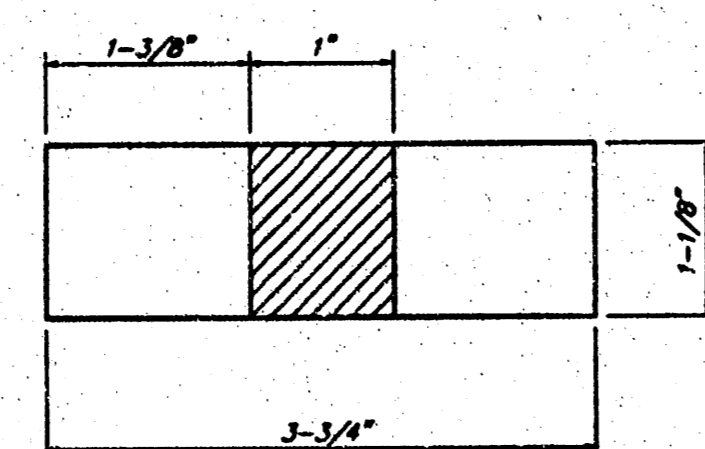
ADOPTED AS STANDARD DESIGN BY  
CITY OF WICHITA, KANSAS

MANHOLE FRAME  
Weight = 145 Lbs.

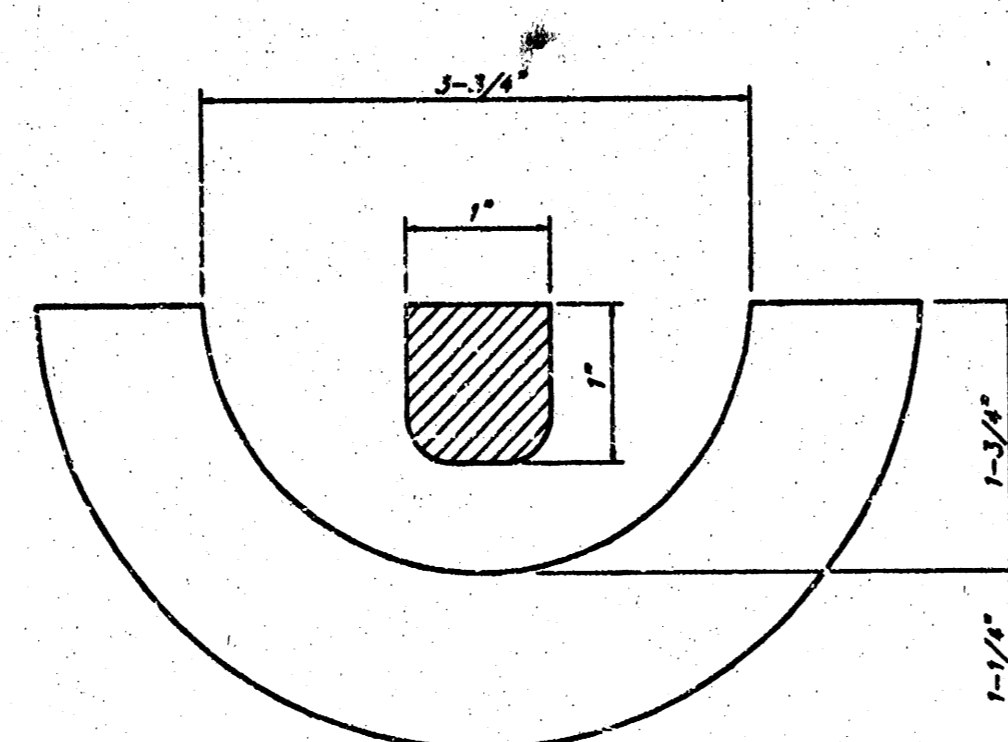


TOP VIEW

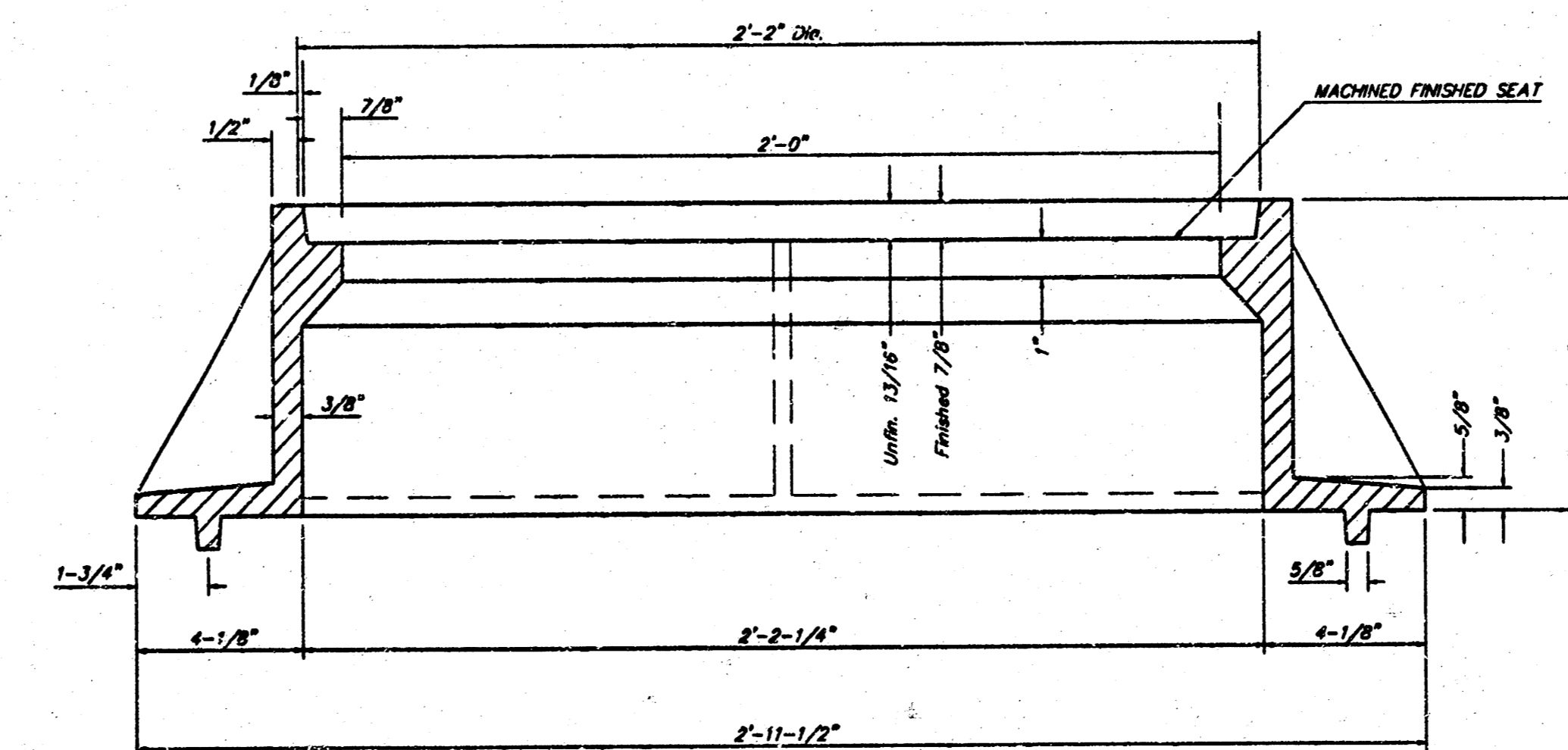
PICKHOLE DETAIL



TOP VIEW



SECTION 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.

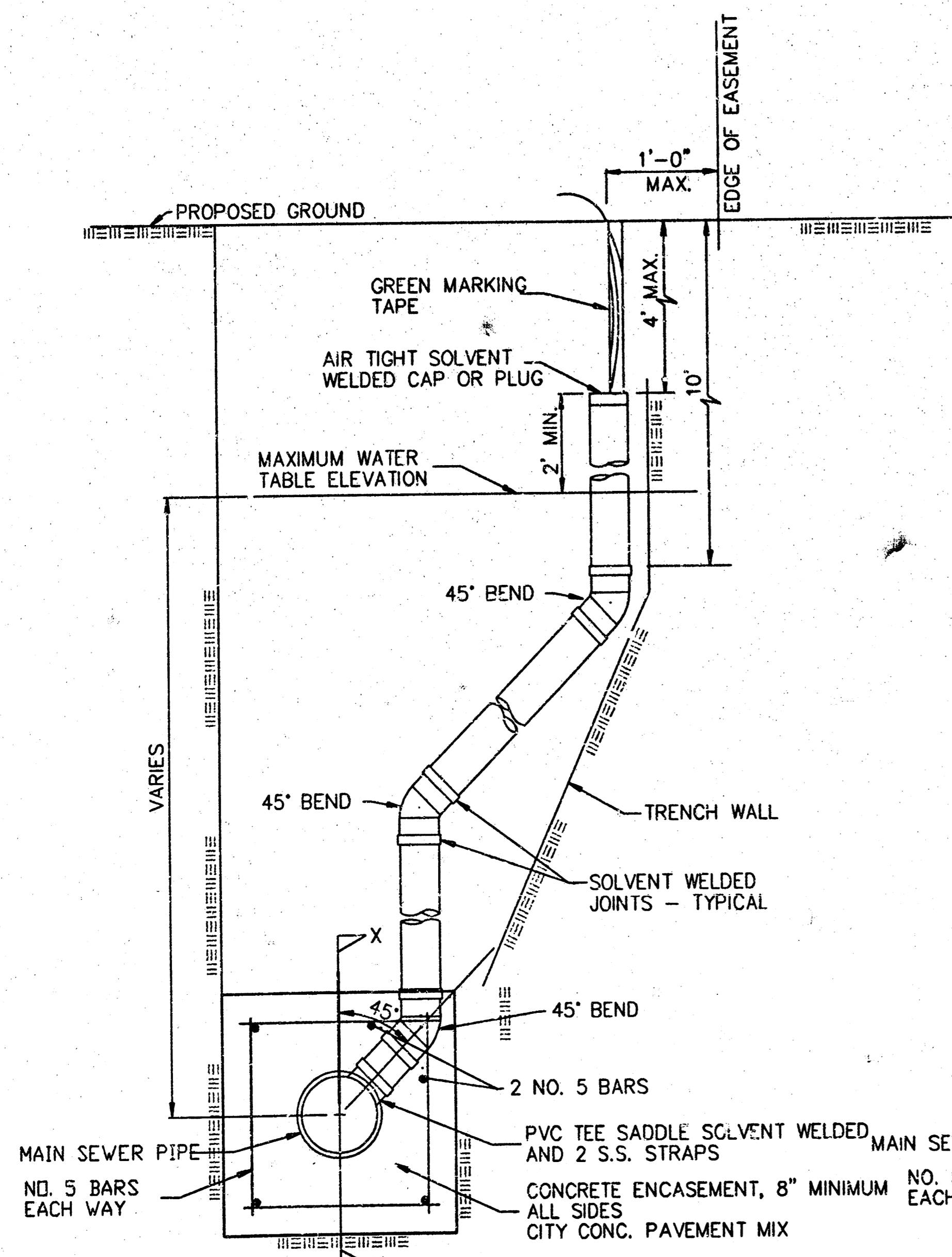
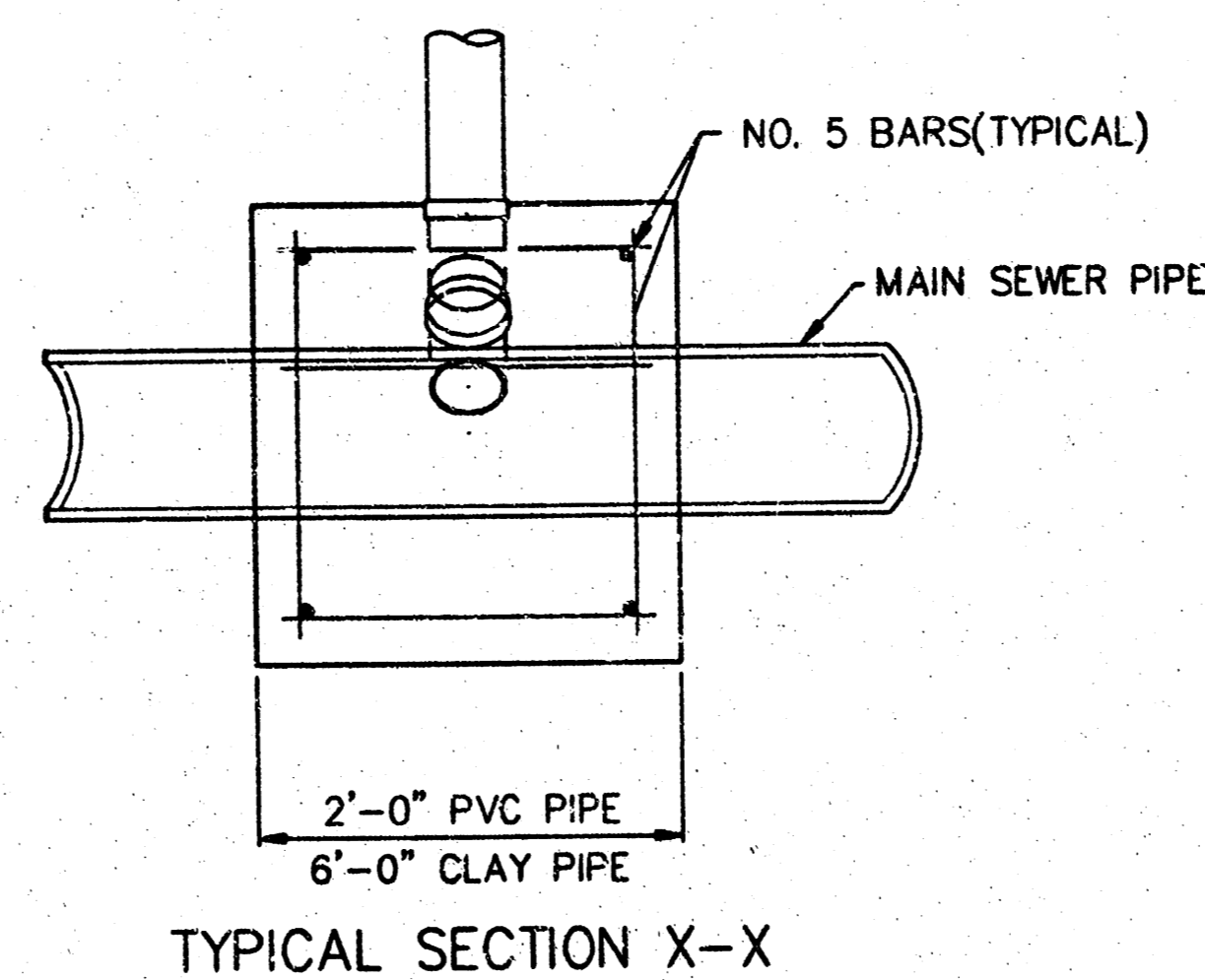
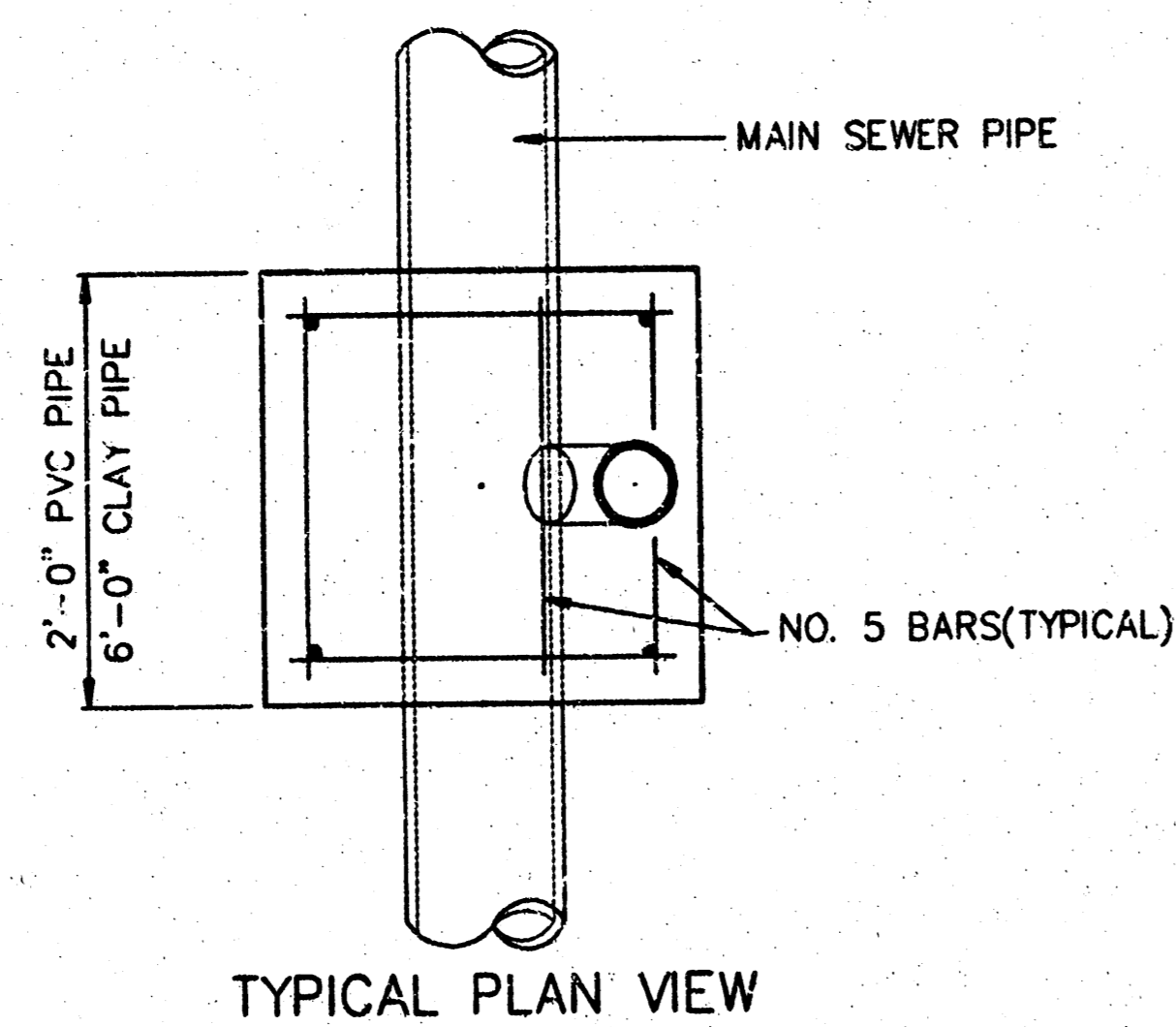
MANHOLE FRAME AND COVER DETAIL  
ADOPTED AS STANDARD DESIGN BY  
CITY OF WICHITA, KANSAS

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

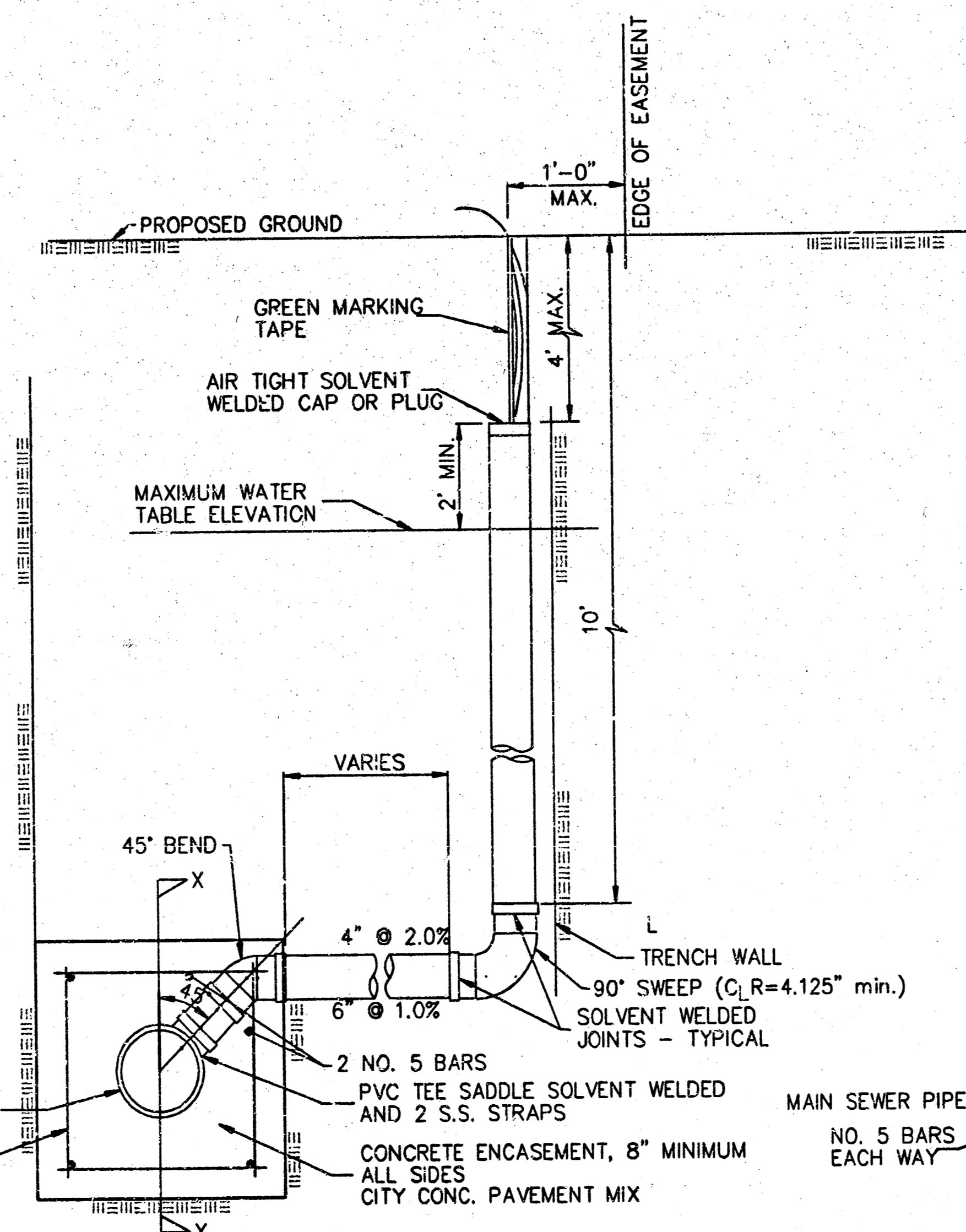
PROJECT NUMBER					SHEET	
					8	
DESIGN	DRAWN	APPROVED	DATE	SCALE	OF	
STAFF	STAFF		7/31/02	NONE	11	

HighSpaq Pty. Ltd. Woking

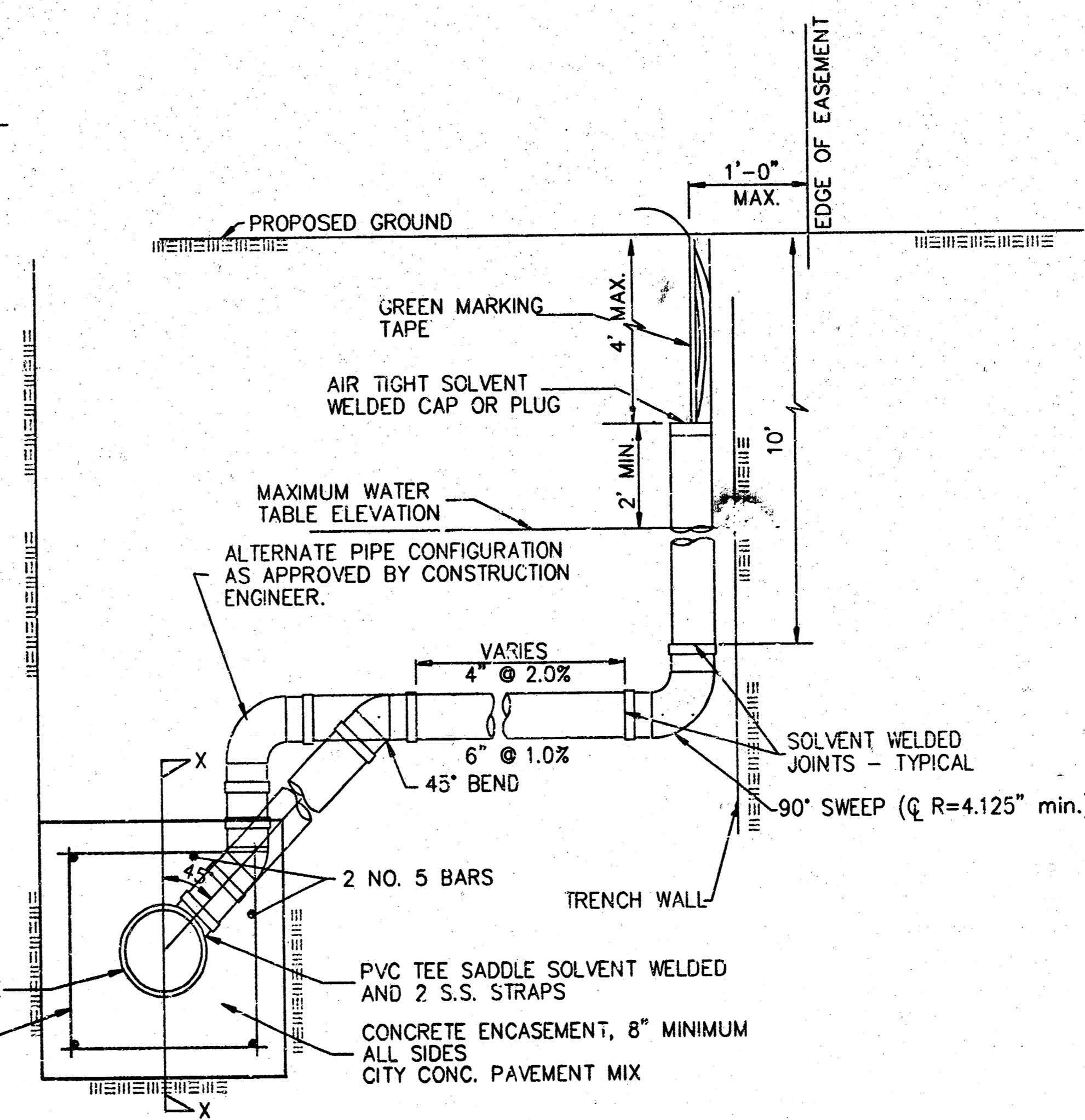
# VERTICAL RISER DETAILS ADOPTED AS STANDARD DESIGN BY CITY OF WICHITA, KANSAS OCTOBER 1992



METHOD "A"



METHOD "B"



METHOD "C"

NOTE: RISER PIPE REQUIREMENTS AT MANHOLE STUBS SHALL BE SIMILAR TO THOSE SHOWN ABOVE.

**GENERAL NOTES**

1. **RISERS.** Risers shall be installed to serve all lots or tracts where the sanitary sewer main is below the water table. Risers shall also be installed to serve all lots and tracts where the sanitary sewer main depth is greater than 12 feet below the proposed ground elevation. Installation of risers because of field conditions shall be as approved by the Construction Engineer. The location of the risers to serve developed property shall be approved by the property owner and the Construction Engineer.
2. **PIPE STUBS.** Pipe stubs shall be installed in manholes where locations of manholes will provide satisfactory service connection as determined by the Construction Engineer. The vertical distance between the flowline of the manhole pipe stub and the flowline of the sanitary sewer main out of the manhole shall not exceed 2 feet. Risers shall be utilized at manhole pipe stubs as indicated in Note 1. Manhole pipe stubs shall be set such that the top of the stub is not lower than the top of the sanitary sewer main.
3. **SIZING.** Pipe stubs and risers shall be sized according to the plans and riser table where risers are indicated by the plans. Where risers or pipe stubs are required because of field conditions, the risers and stubs shall be six-inch diameter for commercial or industrial properties and 4" or 6" diameter for residential properties, based on lot size and sanitary sewer main depth. Sizing of risers and stubs shall be approved by the Construction Engineer prior to installation.
4. **RISER OR STUB MATERIAL.** Risers and stubs shall be constructed of Schedule 40 PVC Pipe, meeting the requirements of the latest revision of A.S.T.M. All pipe joints shall be solvent welded.
5. **REINFORCED CONCRETE ENCASEMENT.** Riser connections to clay pipe sanitary sewers shall be reinforced concrete encased both ways from the riser centerline. The reinforced concrete encasement shall extend three feet from the riser centerline or stop at the first sanitary sewer pipe joint within three feet of the riser centerline. Riser connections to PVC Sanitary Sewer mains shall be reinforced concrete encased one foot each way from the riser centerline. The concrete encasement shall be reinforced using reinforcing steel as shown in the appropriate drawings. The concrete shall conform to the City Standard Specifications for concrete pavement.
6. **BEDDING.** Bedding around the sanitary sewer riser shall be compacted Pipe Bedding Type 1 or 2. The bedding shall be placed and compacted from the depth of the sanitary sewer main to the top of the sanitary sewer riser pipe. Compacted Pipe Bedding Type 1 or 2 shall be required for all risers whether constructed in vertical wall or sloped wall trenches. Bedding material and construction practices shall be approved by the Construction Engineer prior to installation.
7. **SUPPORT OF RISERS.** Sanitary sewer riser pipe shall be supported during trench backfill. The riser pipe shall be held in a vertical position at all times until trench backfill and compaction has been completed. Contractor's methods for supporting and backfilling the riser pipe shall be approved by the Construction Engineer.
8. **PLUGGING.** The ends of the riser pipes and manhole stubs shall be plugged using an airtight solvent welded cap or plug. Cap or plug fittings shall be approved by the Construction Engineer prior to installation. Caps or plugs which do not provide an airtight seal will not be accepted.
9. **TOP OF THE RISER PIPE.** The top elevation of the sanitary sewer riser pipe shall be built per plan elevations, unless otherwise directed by the Construction Engineer. Where riser elevations are not shown on the plans, the top of the riser pipe shall be set at an elevation four feet below the proposed ground surface. If ground water is encountered, the top of the riser pipe shall be set at an elevation two feet (min.) above the maximum water table elevation, regardless of the riser elevation shown on the plans.
10. **MARKING.** Locations of the ends of the sanitary sewer riser pipe shall be marked by fastening green colored plastic tape to the end of the riser. The tape shall be supported by a length of wooden 2 x 4, extending from the top of the riser pipe to the proposed ground surface. The green tape shall be visible and extend one foot above the proposed ground surface. The green tape shall be 4 mil Polyethylene film with a minimum width of three inches, specifically manufactured for the purpose of identification of underground sewers.
11. **LOCATION MEASURES.** The project inspector shall record and document the location of all risers constructed as measured from the nearest manhole, indicating the direction from the manhole, the direction and distance from the main, riser size, and elevation of the top of the riser.
12. **RISER LOCATION.** The riser shall be located per plan if shown. If not shown on the plan, the riser shall be located at the center of the lot, within one foot of the property side of the easement for the lot being served. All riser locations shall be approved by the Construction Engineer prior to installation.
13. **PAYMENT.** "Sanitary sewer risers" shall be paid for at the contract unit price per each, which price shall be full compensation for all pipe, fittings, marking tape, length of wooden 2 x 4, reinforced concrete encasement, support during backfill, backfill, labor, site restoration, and any other items necessary to complete the work.  
"Manhole stubs" shall be paid for at the contract unit price per each, which shall be full compensation for all labor, material, and incidentals necessary to complete the work including all pipe, fittings, reinforced concrete encasement, and all other items as required and listed for "Sanitary Sewer Risers".

**City of Wichita Standard  
Riser Details**

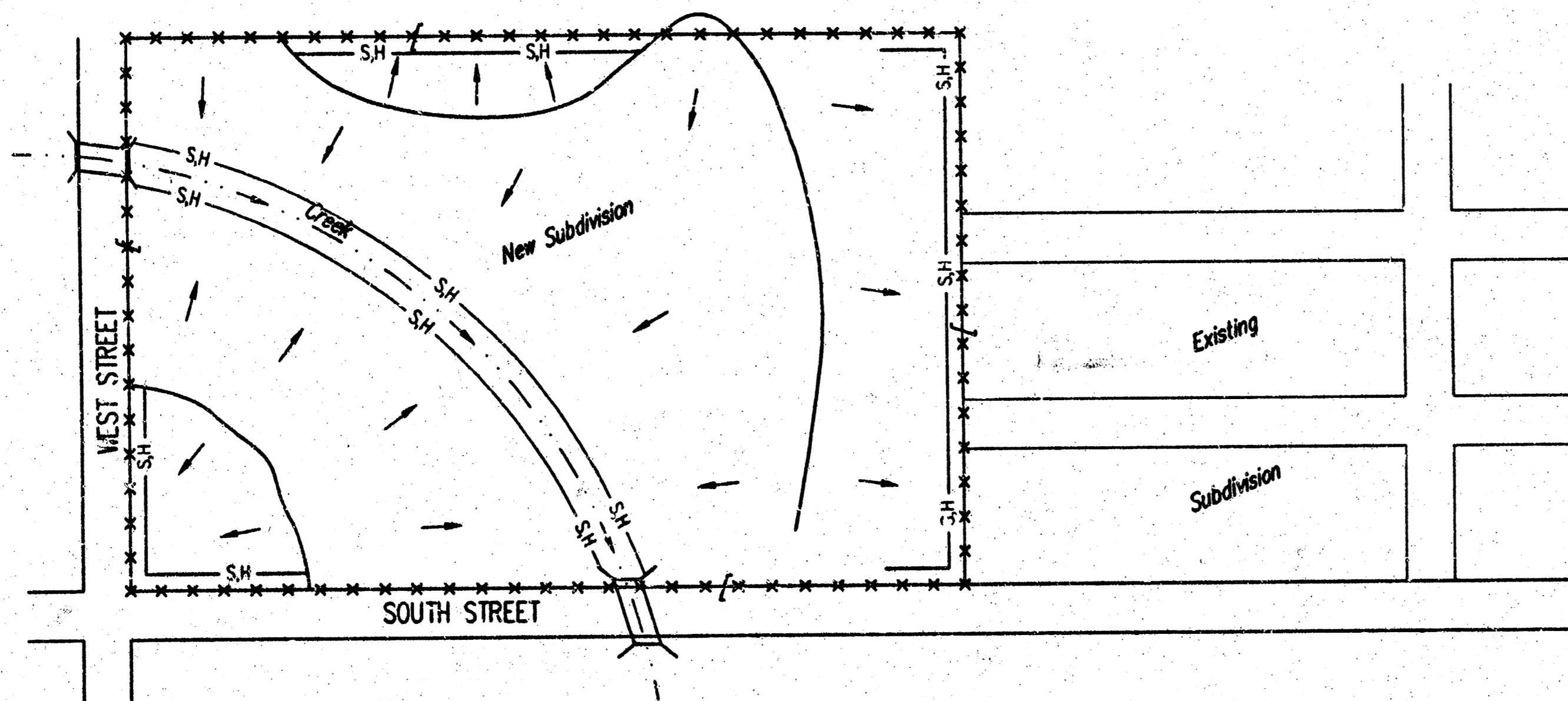
**BAUGHMAN COMPANY P.A.**  
ENGINEERING, SURVEYING, & PLANNING

316-262-7271 • 316 ELLIS • WICHITA, KANSAS 67211

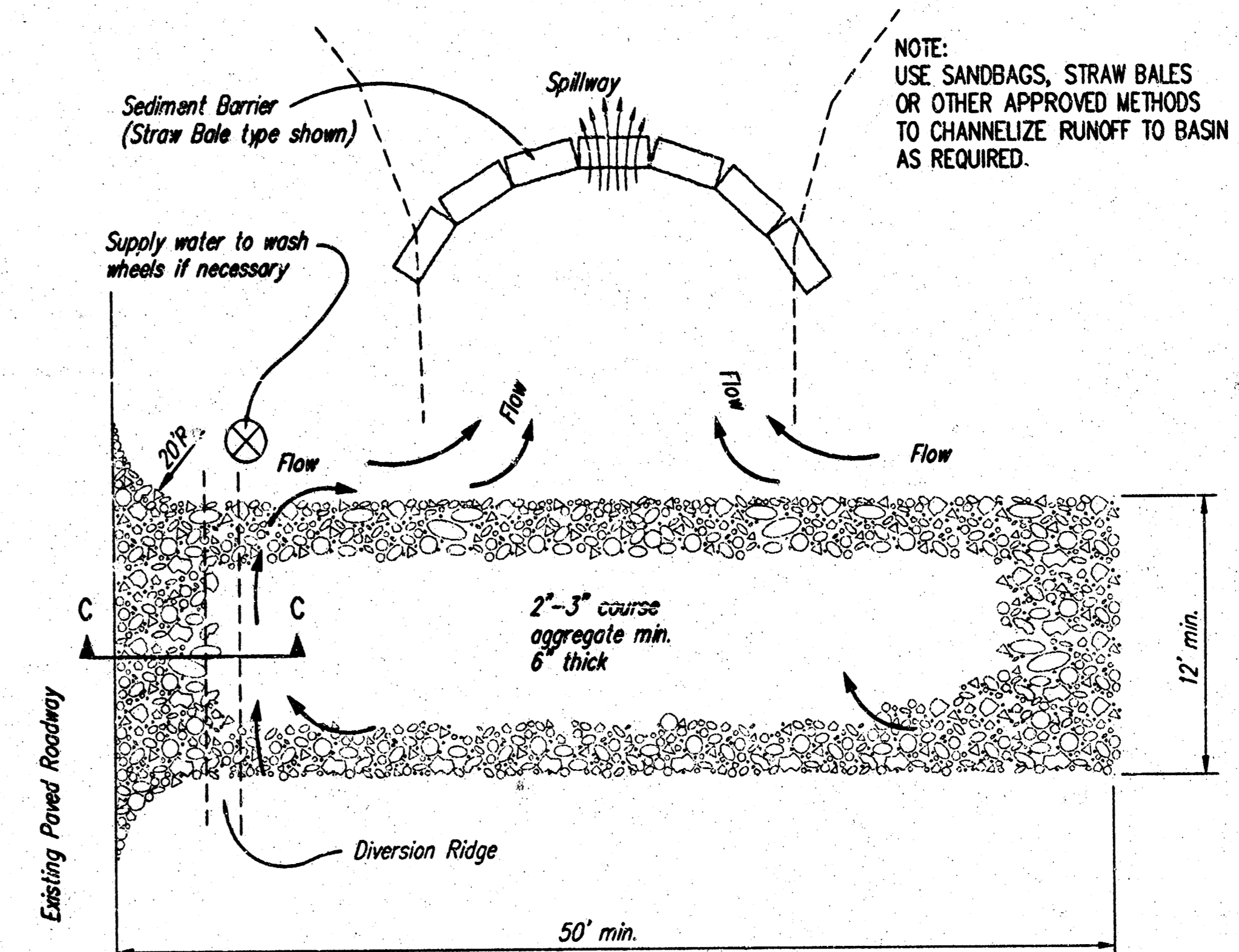
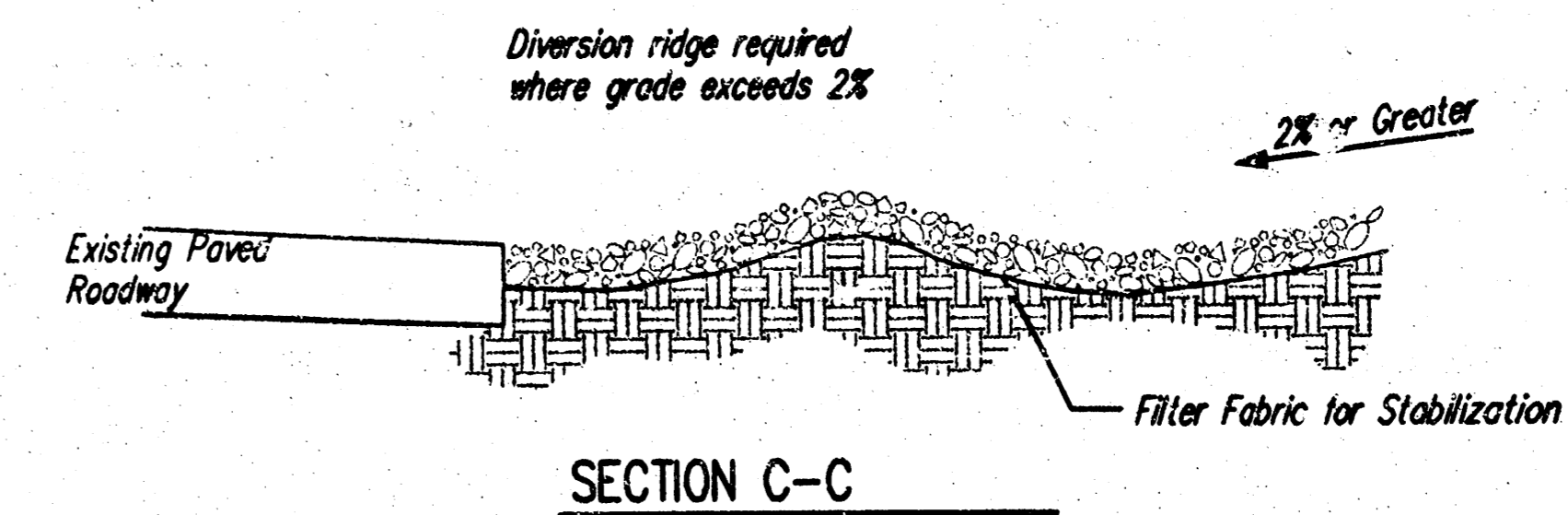
PROJECT NUMBER <b>488-83028</b>		SHEET <b>9</b>
DESIGN	DRAWN	APPROVED
DATE 7/31/02	SCALE NONE	11

**PHASE 1 - INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)**

- LEGEND**
- DRAINAGE FLOW PATH
  - RIDGE LINES
  - x POINT OF COMPLIANCE
  - SH- SILT FENCE OR HAY BALE BMP
  - - - DRAINAGEWAY FLOWLINE



1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
2. HAYBALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE BMP'S WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
3. SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR GUTTERLINES ON THE ADJACENT BOUNDARY STREETS, APPROPRIATE BMP'S WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
4. ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED AT THE END OF EACH WORK DAY.
5. CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL BMP'S AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDARY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE BMP'S AT THEIR WORK LOCATIONS, AS NEEDED.
6. UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
7. THE SUBDIVISION DEVELOPER (OWNER) SHALL INSTALL AND MAINTAIN THE ON-SITE BMP'S.



**STABILIZED CONSTRUCTION ENTRANCE**

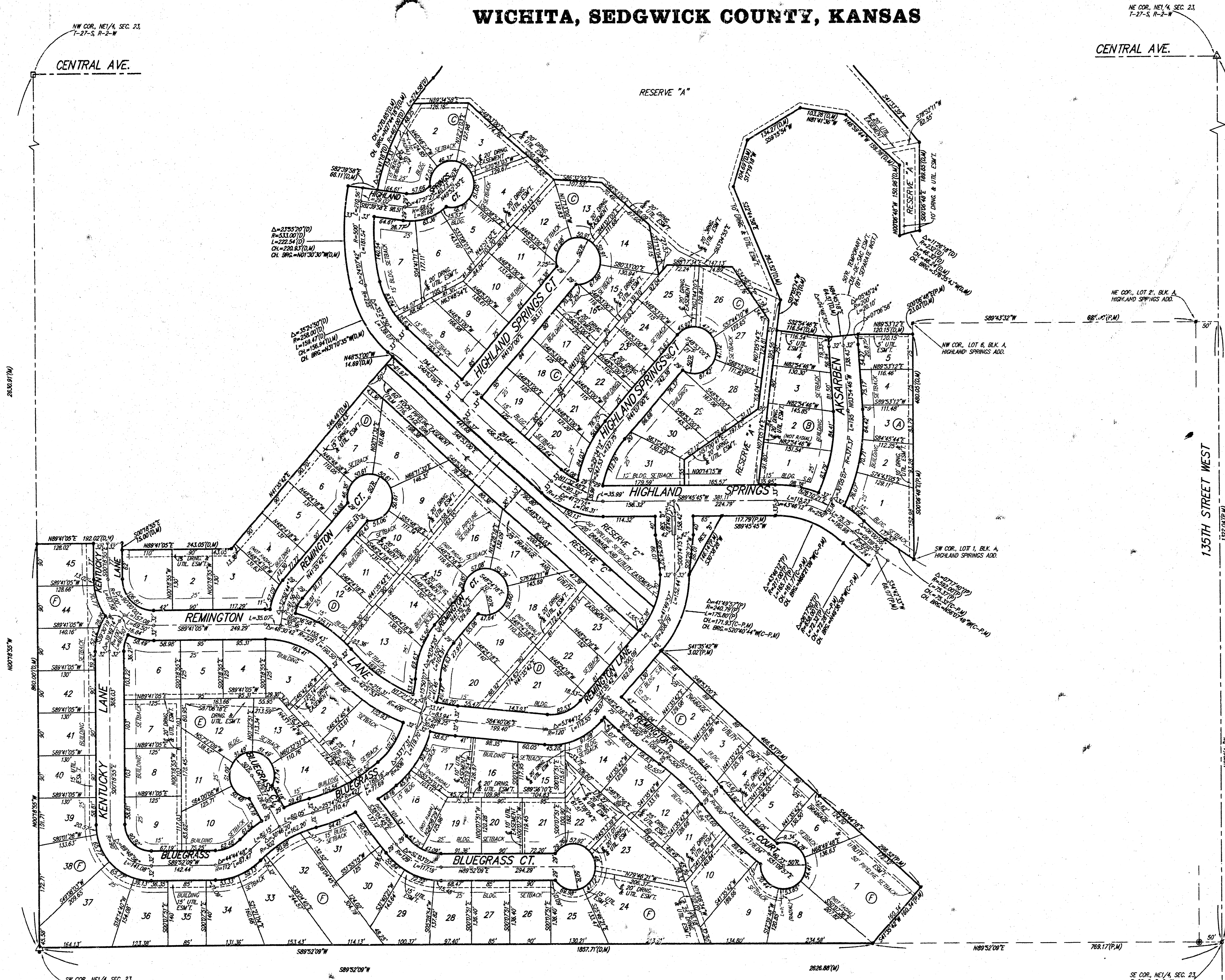
**NOTES:**

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

	<b>SOIL EROSION BMP DETAILS</b>	
	CHRISTOPHER M. CARRIER, P.E. STORM WATER ENGINEER	
	PROJECT NUMBER 468-83029	DCA NO. 743938
	DATE JULY 2002	SHEET 10 OF 11

# HIGHLAND SPRINGS 2ND ADDITION

## WICHITA, SEDGWICK COUNTY, KANSAS



NE COR. NE 1/4, SEC. 21  
T-27-S, R-2-W

NW COR. NE 1/4, SEC. 21  
T-27-S, R-2-W

CENTRAL AVE.

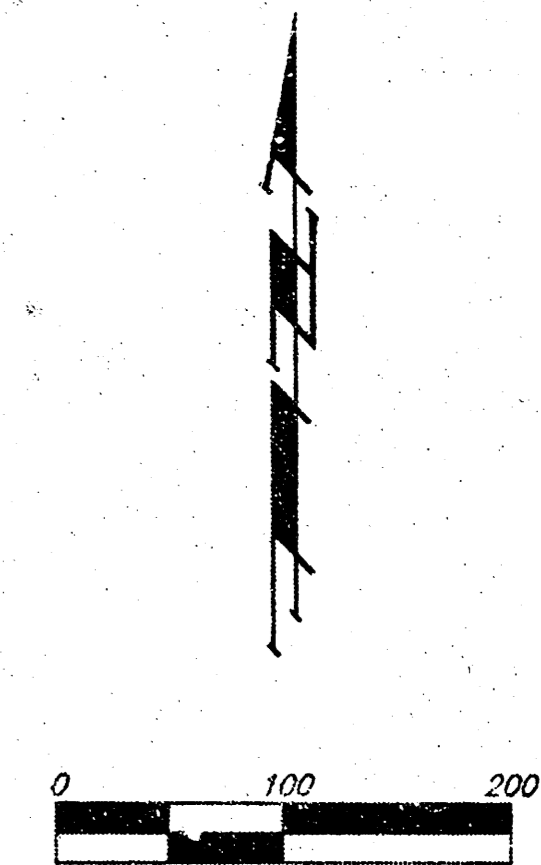
NE COR. LOT 2, BLK. A  
HIGHLAND SPRINGS ADD.

NW COR. LOT 6, BLK. A  
HIGHLAND SPRINGS ADD.

SW COR. LOT 1, BLK. A  
HIGHLAND SPRINGS ADD.

SW COR. NE 1/4, SEC. 21  
T-27-S, R-2-W

SE COR. NE 1/4, SEC. 21  
T-27-S, R-2-W



**LEGEND:**

- = #4 REBAR W/ "BAUGHMAN" CAP (FOUND)
- = #4 REBAR W/ "BAUGHMAN" CAP (SET)
- △ = STONE W/ #4 REBAR ON S. SIDE (FOUND)
- ▲ = 1/2" IRON OVER & STONE (FOUND)
- ⊖ = 3/4" IRON (FOUND)
- ⊙ = #4 REBAR W/ "T.L.S.L." CAP (FOUND)
- = STONE W/ #5 REBAR ON W. SIDE (FOUND)

- (M) = MEASURED
- (D) = DESCRIBED
- (P) = PLATTED
- (C-D) = CALCULATED PER PLATTED INFO.

MINIMUM BUILDING PAD ELEVATION FOR LOWEST OPENING TO STRUCTURES			
BLOCK	LOT(S)	ELEVATION (CITY DATUM)	ELEVATION (NGVD)
B	1,2,3,4	188.0	135.4
C	2,3,4,12,13,14,15,25,26,27,28,29,30,31	188.0	135.4
F	6,7,8	182.0	134.4

**BENCHMARK:**  
135TH ST. W. & CENTRAL  
CITY OF WICHITA BENCHMARK DISC - NE COR. INTERSECTION,  
32.6' N. & 24.5' E. OF C BOTH 39.5' NE OF IRON AT SEC. COR.  
ELEV = 158.50 CITY DA B.M.  
(1346.80 M.S.L.)

**NOTE:**  
A MASTER GRADING PLAN FOR DRAINAGE HAS BEEN DEVELOPED FOR THIS SUBDIVISION AND IS ON FILE WITH THE CITY OF WICHITA, KANSAS. ALL DRAINAGE EASEMENTS, RIGHTS-OF-WAY, OR RESERVES SHALL REMAIN AT ESTABLISHED GRADES OR AS MODIFIED WITH THE APPROVAL OF THE CITY ENGINEER OF THE CITY OF WICHITA, KANSAS. NO OBSTRUCTIONS WHICH IMPED THE FLOW OF THIS DRAINAGE SYSTEM SHALL BE ALLOWED.