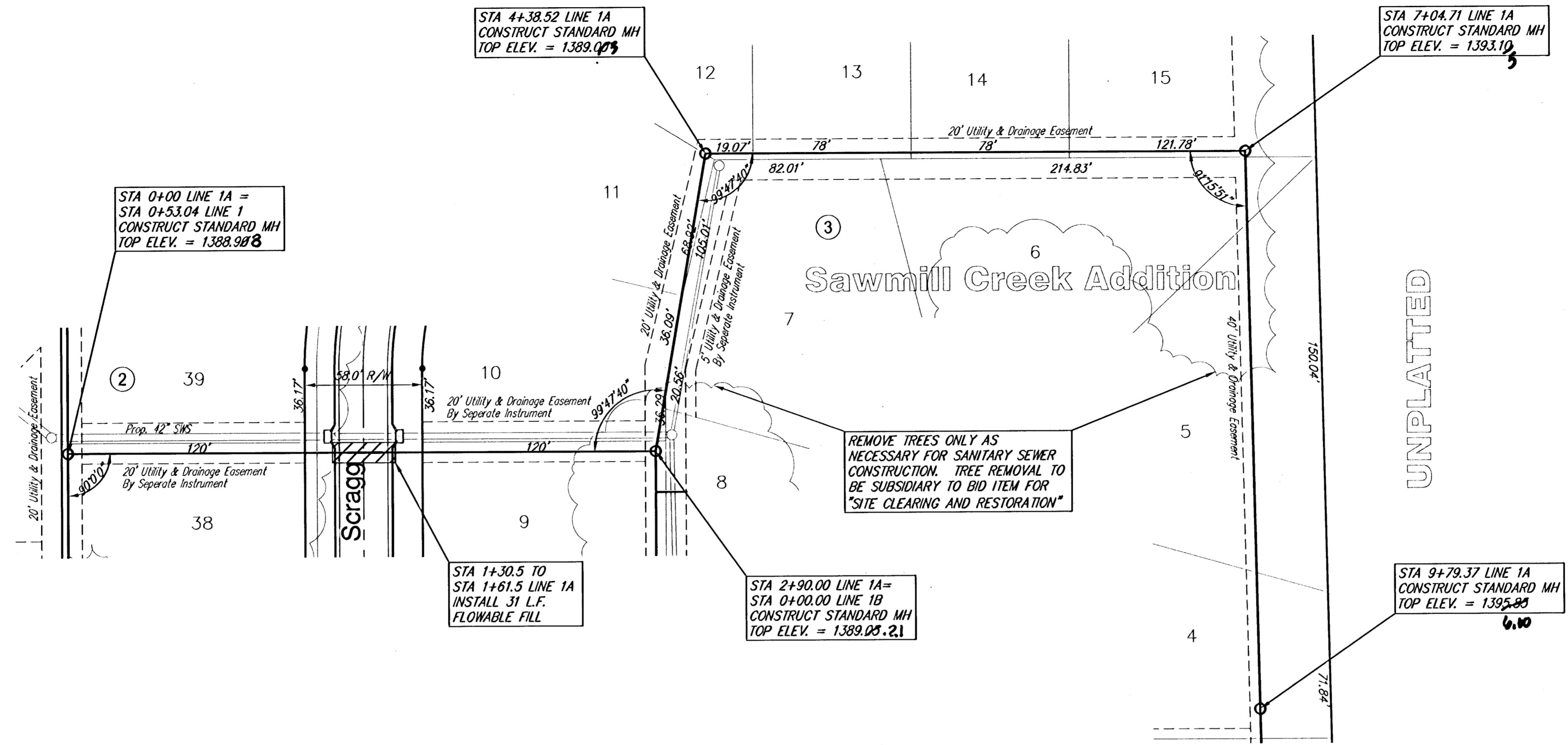


Ruggles & Bohm, P.A.
 Engineering, Surveying, Land Planning
 924 North Main (316) 264-8008
 Wichita, Kansas 67203 (316) 264-4621 fax
 www.rbkansas.com E-mail: info@rbkansas.com

PROJECT NUMBER: 468-83171
 PROJECT NAME: Sanitary Sewer [SS 01]
 DESIGN: AML
 DRAWING FILE: Sanitary Sewer [SS 01]
 UTILITY DATE: Jan. 11, 2005
 REVIEW: AML

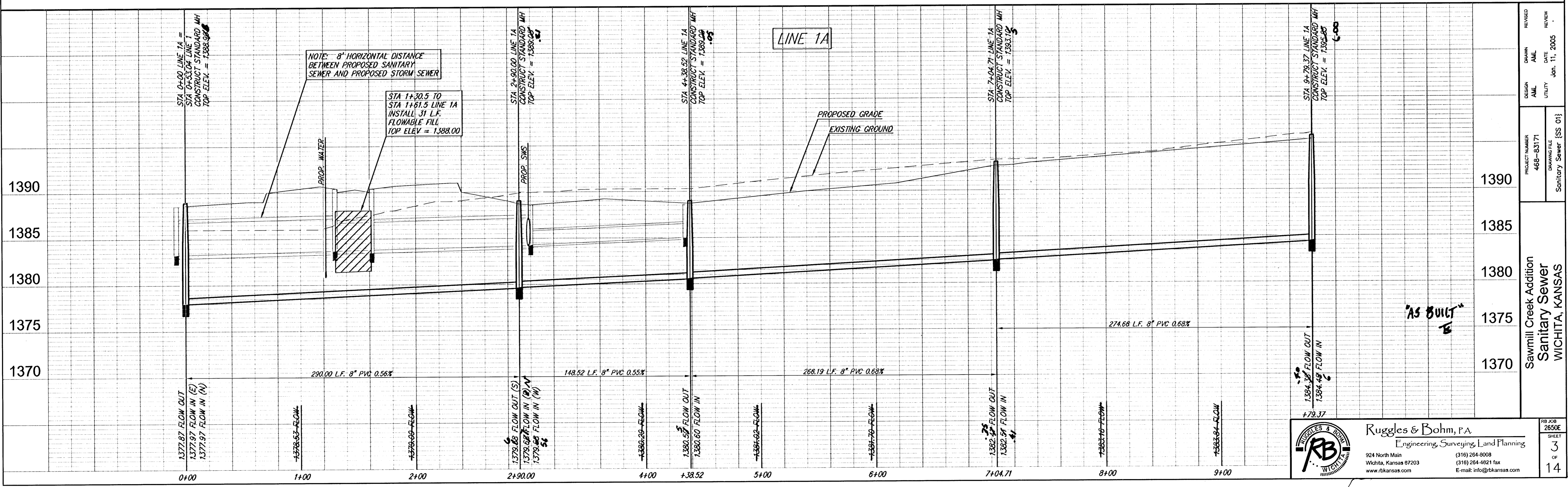
RB 2050E
 SHEET
 2
 OF
 14



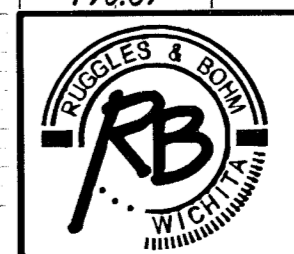
UNPLATTED



SCALE 1" = 40'
IRON = •

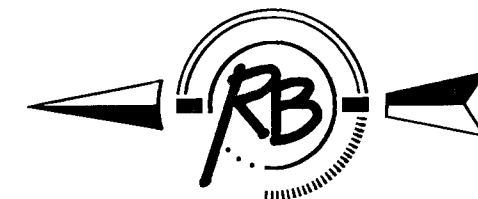
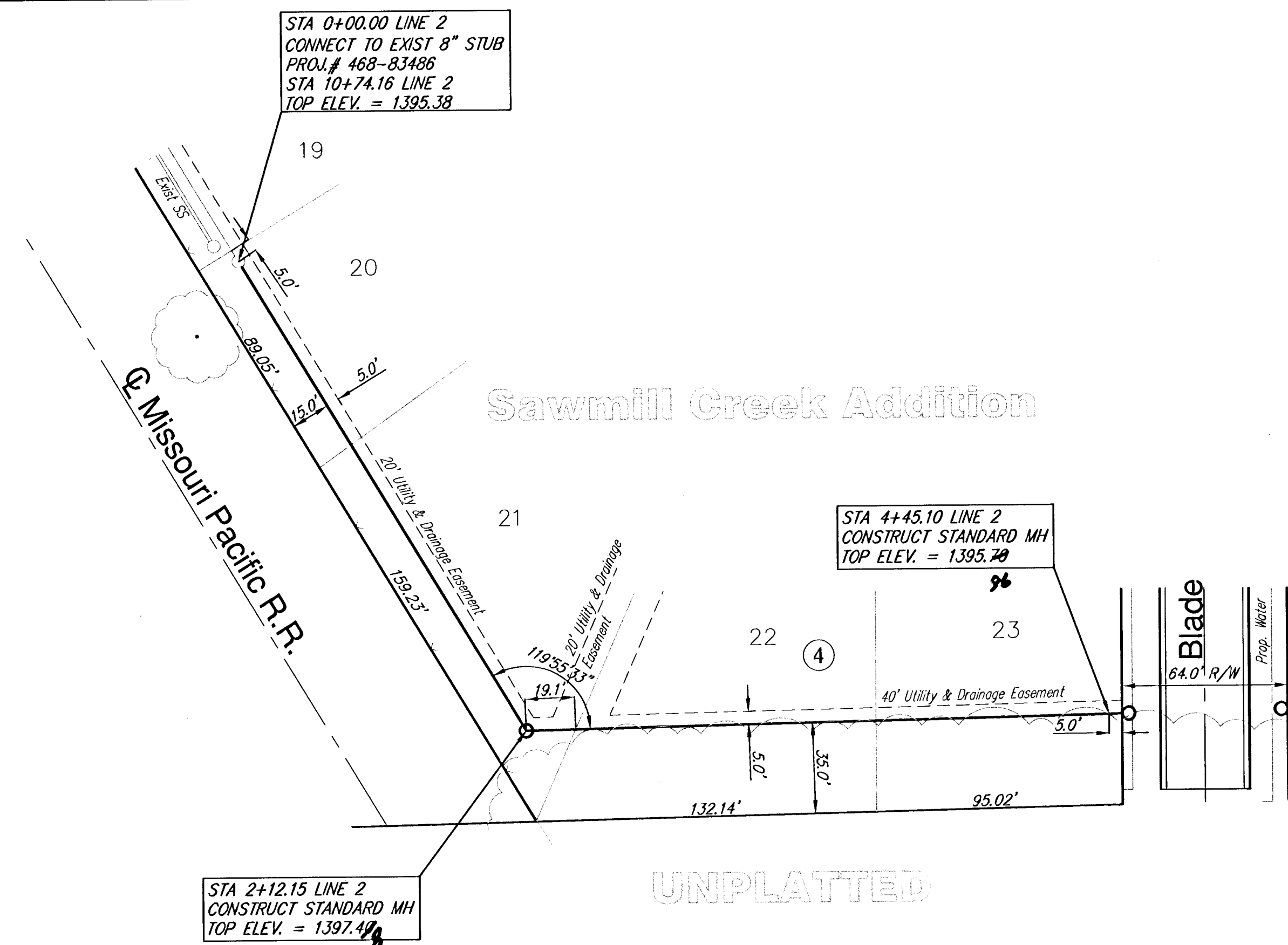
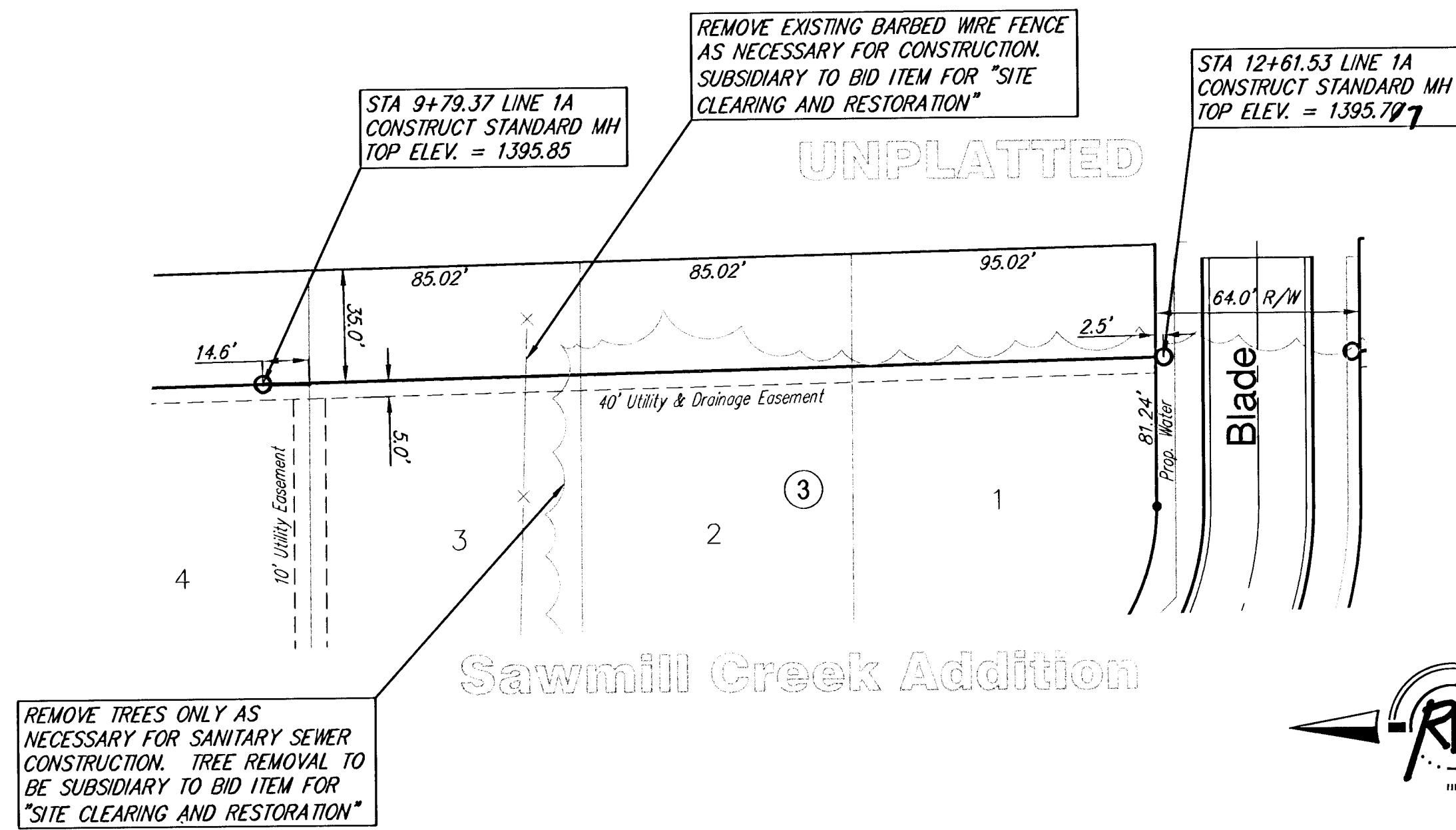


PROJECT NUMBER 468-83171	DESIGN AML	DRAWN AML	REVISION
DRAWING FILE Sanitary Sewer [SS 01]	UTILITY	DATE Jan. 11, 2005	REVIEW
Sawmill Creek Addition Sanitary Sewer WICHITA, KANSAS			
PROJECT NUMBER 468-83171	DESIGN AML	DRAWN AML	REVISION
DRAWING FILE Sanitary Sewer [SS 01]	UTILITY	DATE Jan. 11, 2005	REVIEW

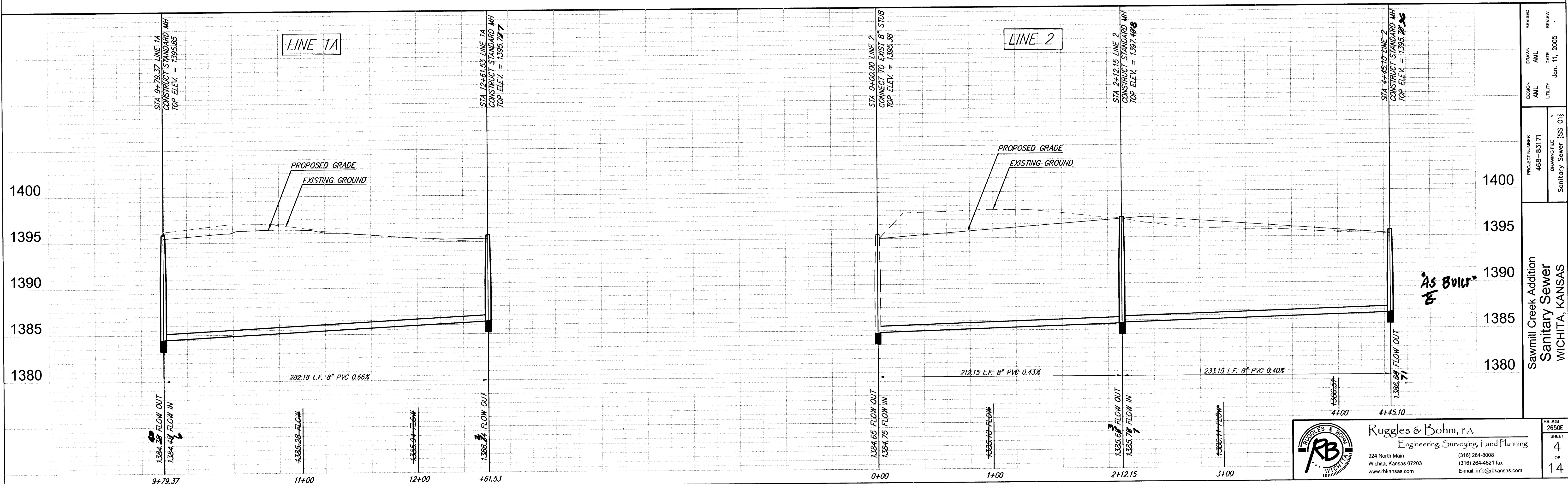


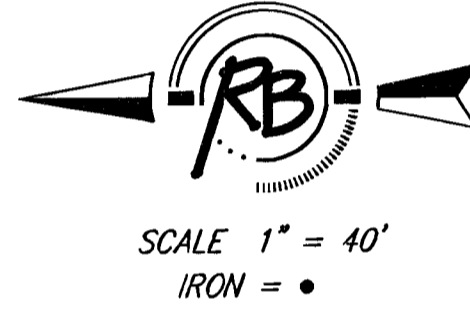
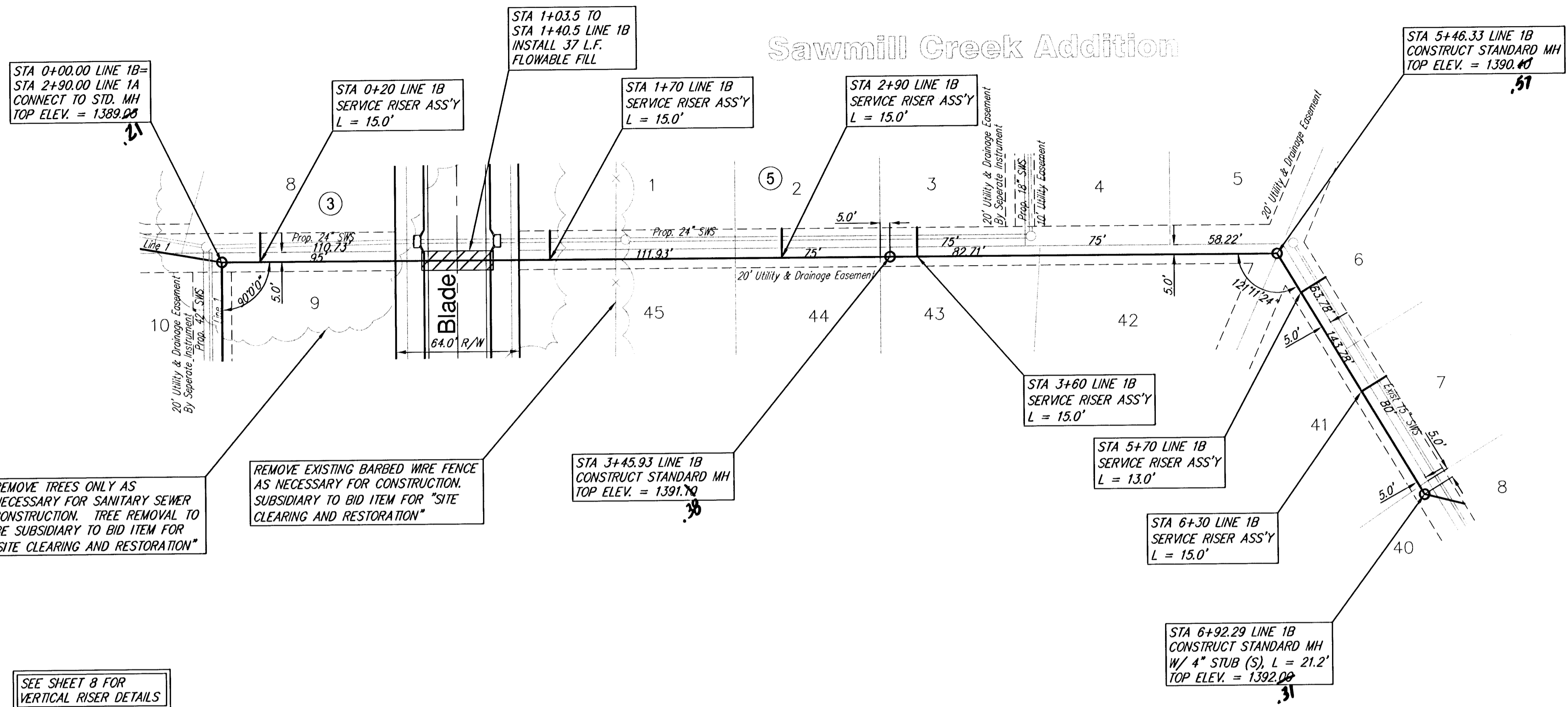
Ruggles & Bohm, P.A.
Engineering, Surveying, Land Planning
924 North Main
Wichita, Kansas 67203
www.rbkansas.com
(316) 264-8008
(316) 264-4821 fax
E-mail: info@rbkansas.com

RB JOB
2850E
SHEET
3
OF
14

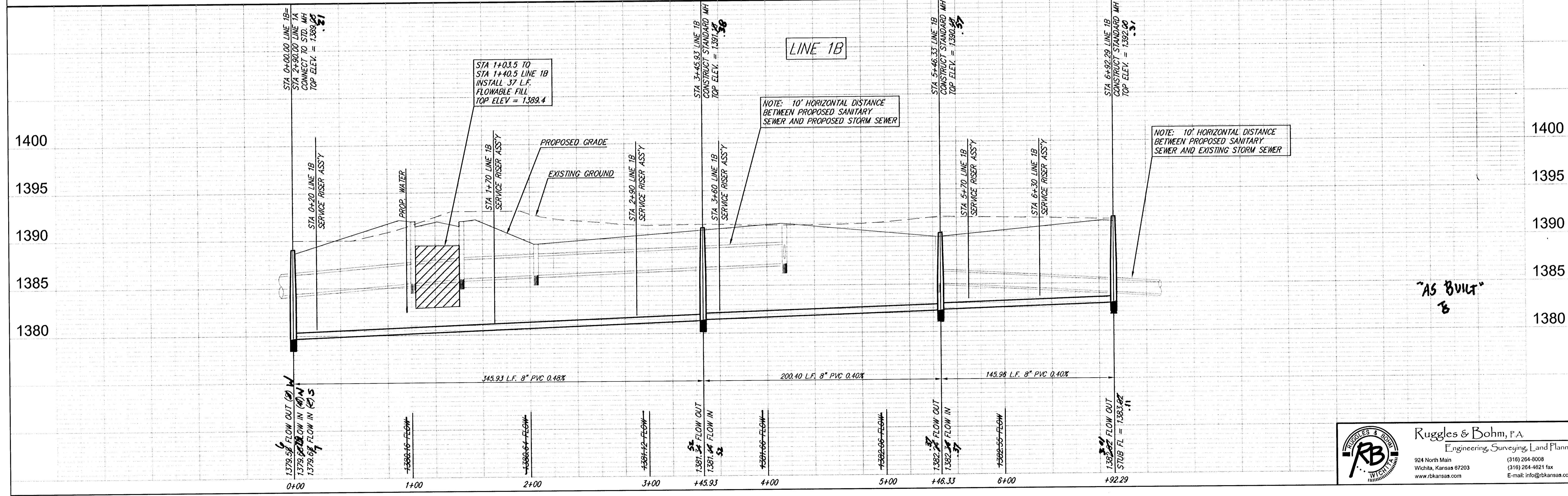


SCALE 1" = 40'
IRON = •





SEE SHEET 8 FOR VERTICAL RISER DETAILS



"AS BUILT"
B

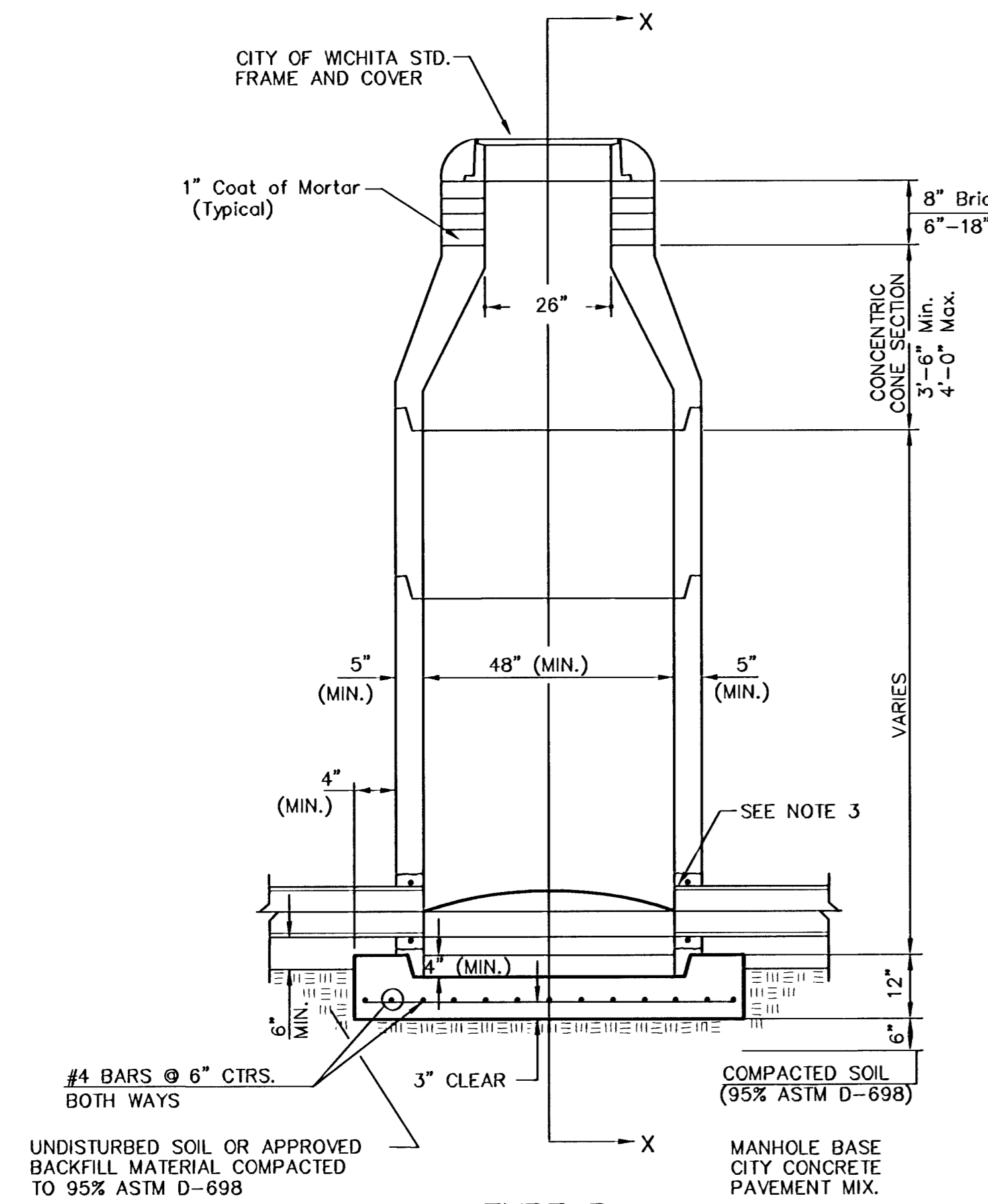
DESIGN	AML	UTILITY	DATE	REVIEW
PROJECT NUMBER	468-63171	DRAWING FILE	Sanitary Sewer [SS 01]	
Sawmill Creek Addition Sanitary Sewer WICHITA, KANSAS				
RB JOB	2650E	SHEET	5	14

Ruggles & Bohm, P.A.
Engineering, Surveying, Land Planning

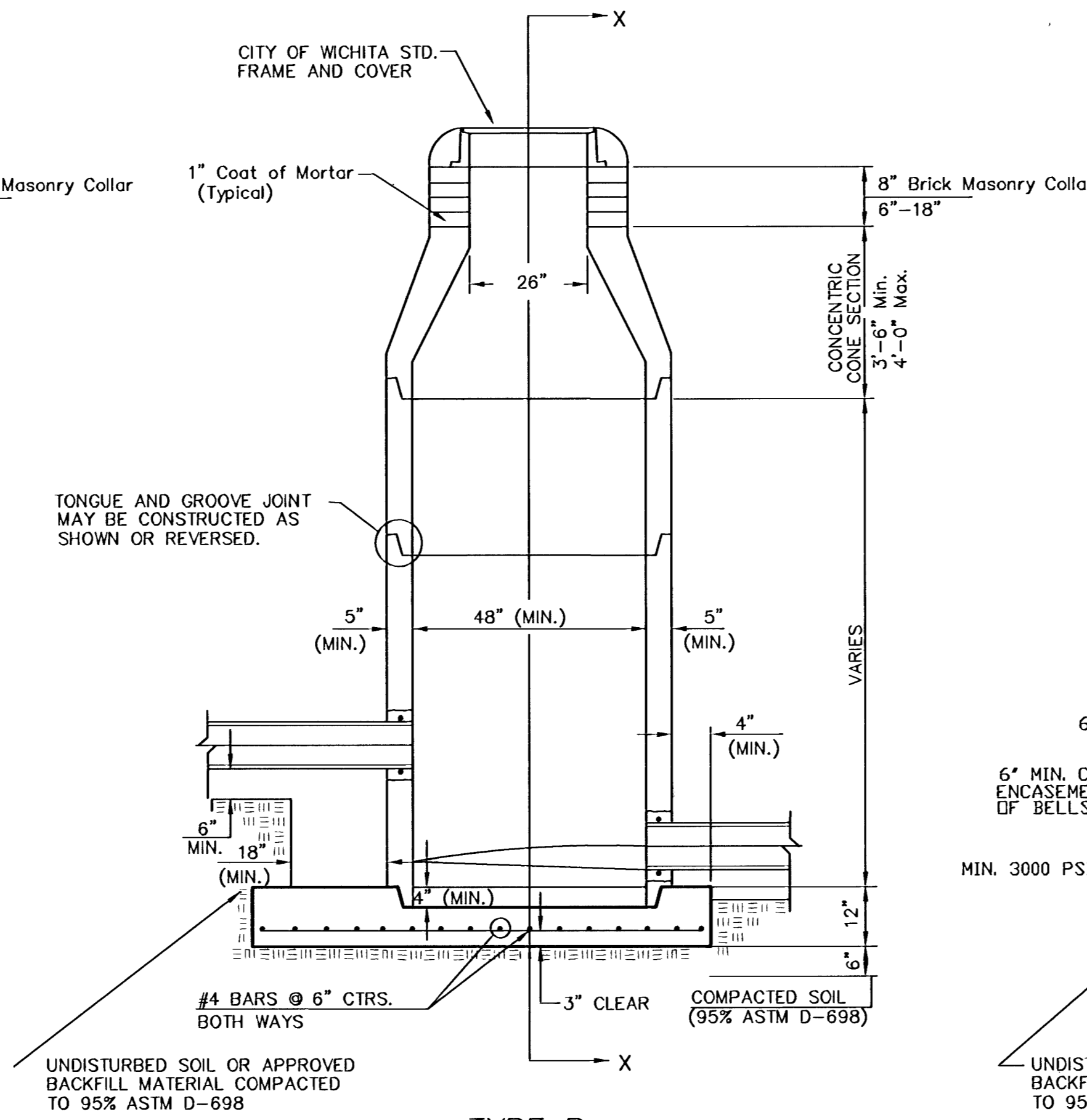
924 North Main
Wichita, Kansas 67203
www.rbkansas.com

(316) 264-8008
(316) 264-4621 fax
E-mail: info@rbkansas.com

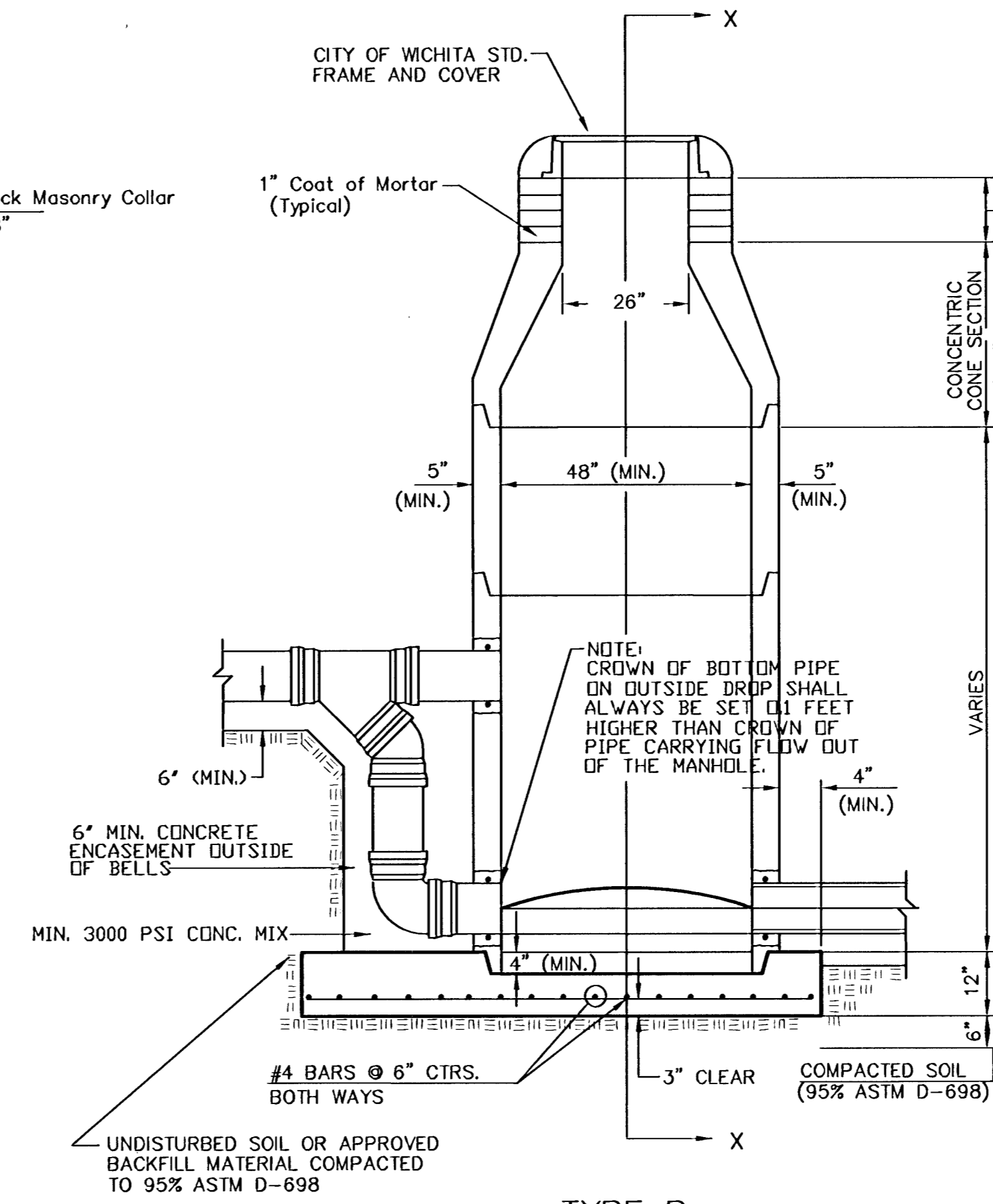
SEWER APPURTENANCES DETAILS



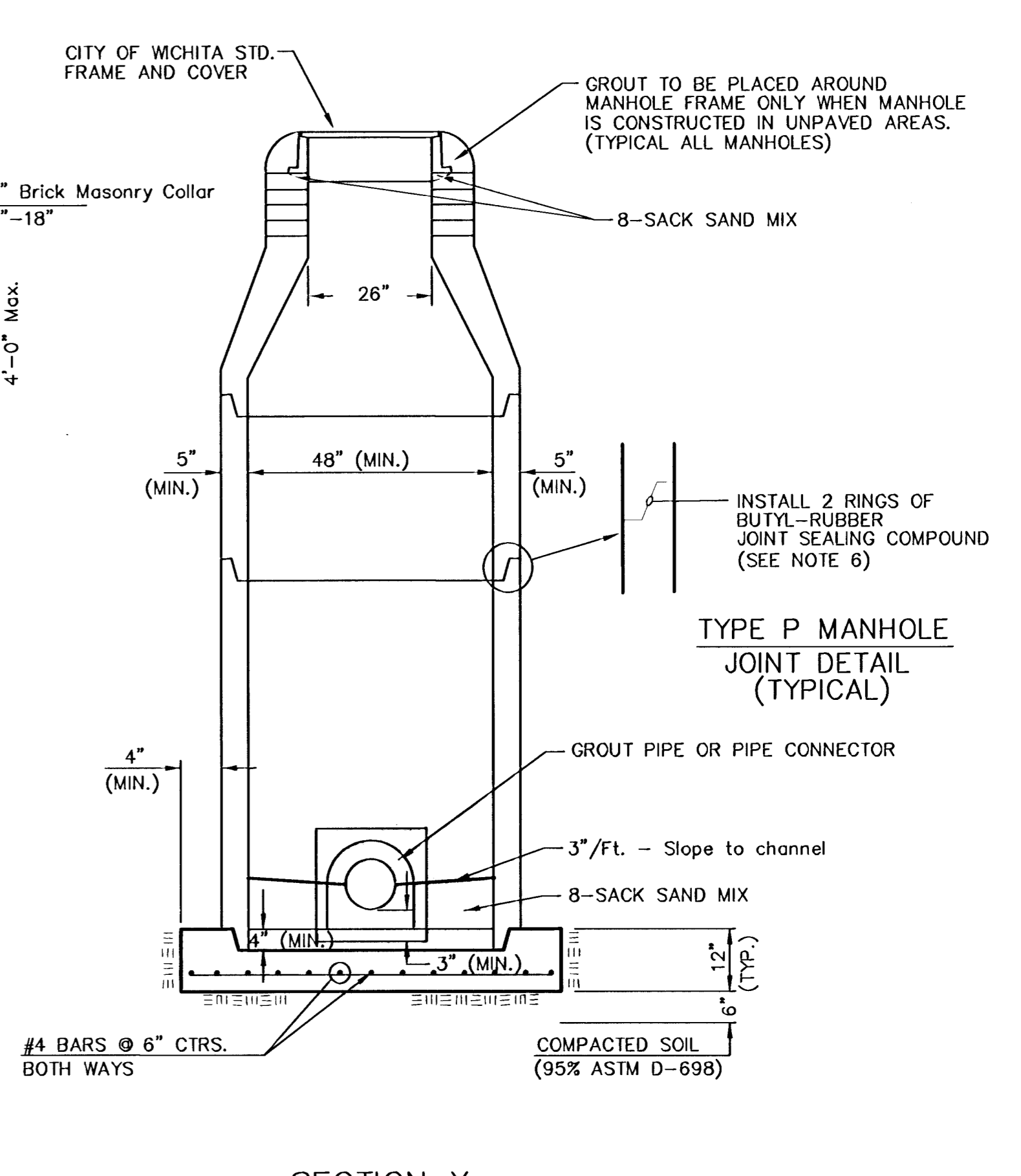
TYPE P STANDARD MANHOLE



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 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 NEMEC 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 8" 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 SEWADE 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.

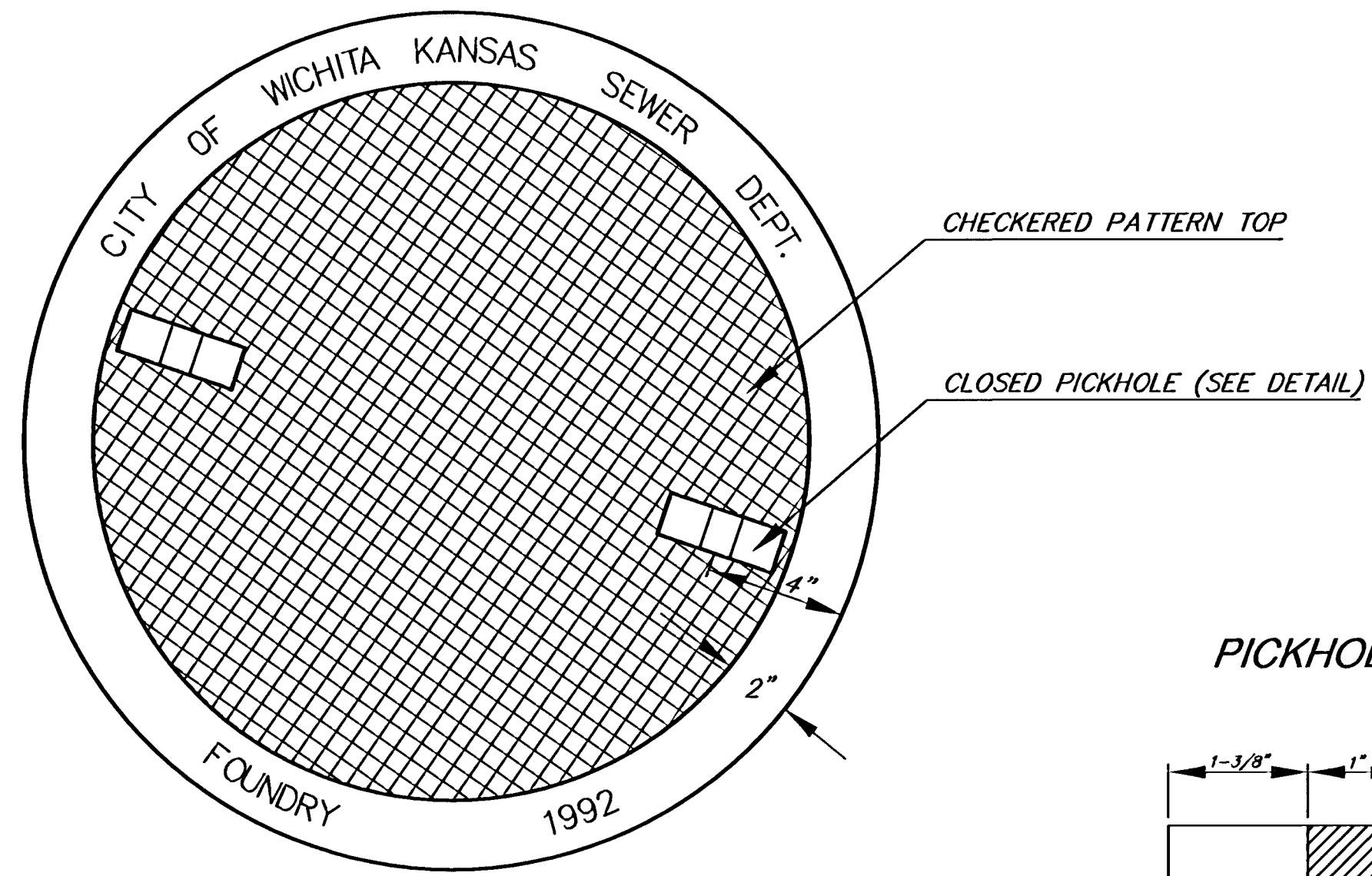
<p>THE CITY OF WICHITA</p> <p>CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 452 NORTH MAIN STREET WICHITA, KANSAS 67202 (316) 268-4501 (316) 268-4114 FAX</p>	<p>STANDARD TYPE 'P' MANHOLES</p>	
	<p>PROJECT NUMBER 468-83171</p>	<p>OCA # 744101</p>
<p>DATE MAR 96</p>	<p>SHEET 6 OF 14</p>	

MANHOLE FRAME AND COVER DETAIL

ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS

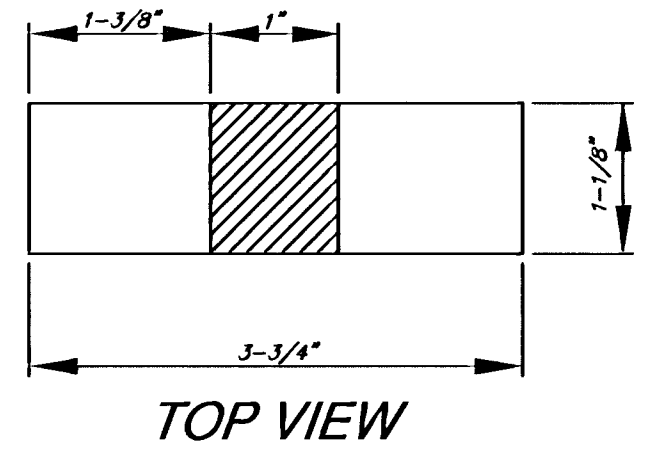
MANHOLE COVER

Weight = 180 Lbs.

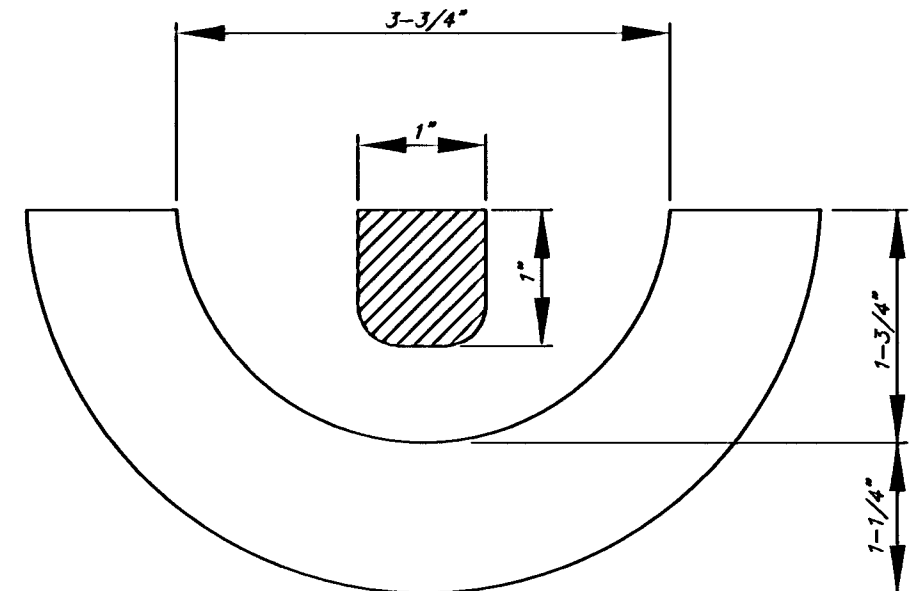


TOP VIEW

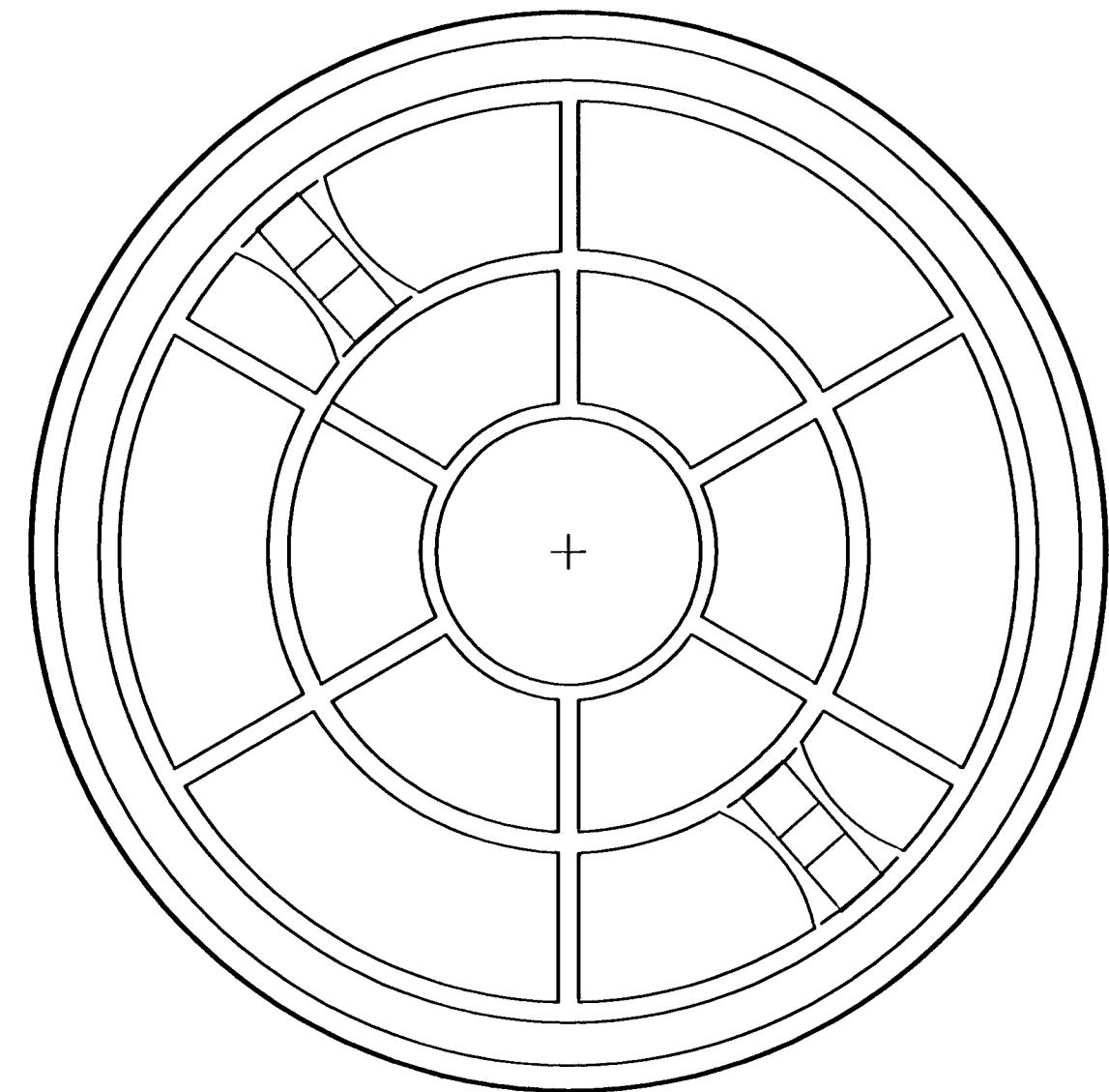
PICKHOLE DETAIL



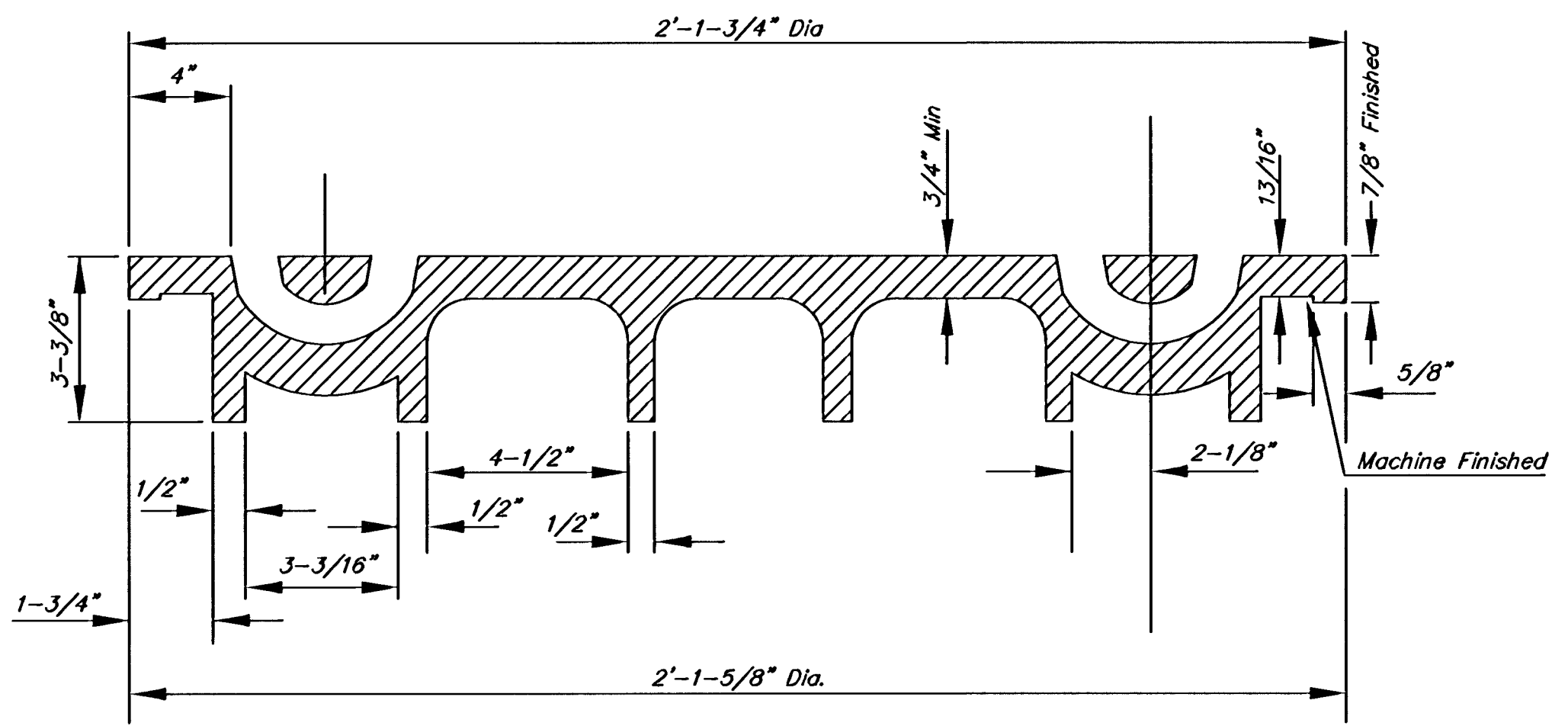
TOP VIEW



SECTION VIEW



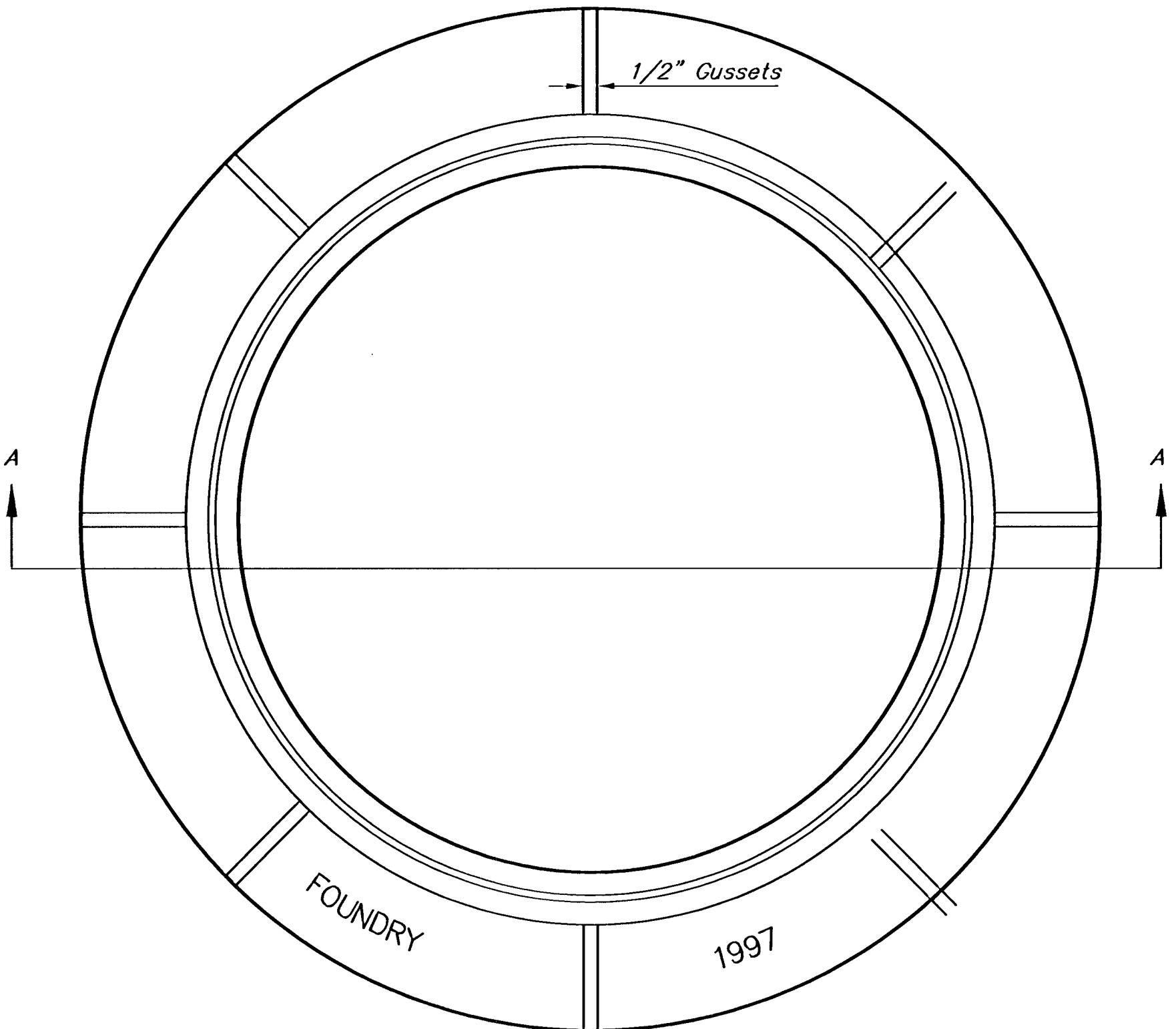
BOTTOM VIEW



SECTION VIEW

MANHOLE FRAME

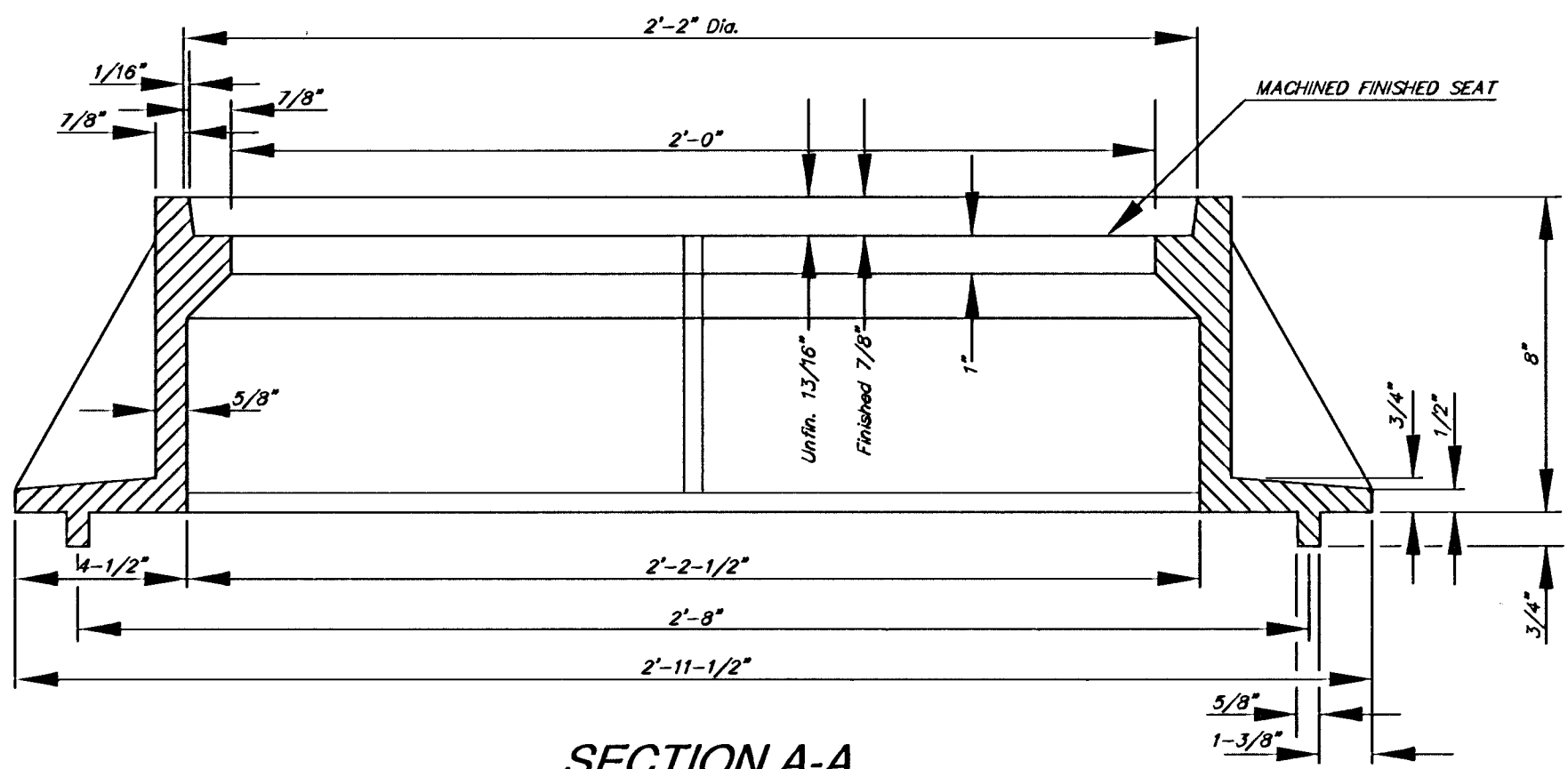
Weight = 240 Lbs.



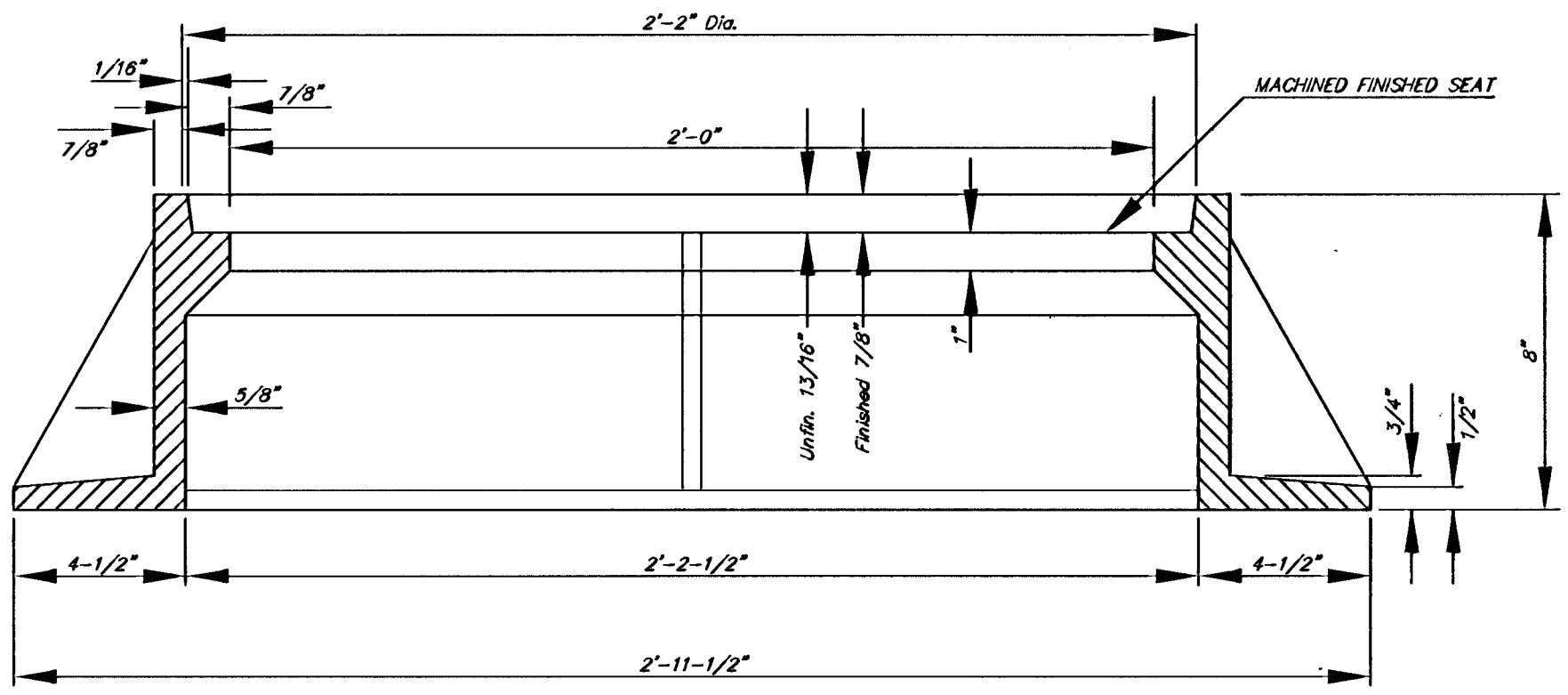
TOP VIEW

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 WEIGH A MINIMUM OF 180 POUNDS ON THE SOLID COVER AND 240 POUNDS ON THE MANHOLE RING. THIS IS A TOTAL OF 420 POUNDS ON A RING AND COVER SET. CASTINGS WEIGHING LESS THAN THE MINIMUM SPECIFICATIONS WILL NOT BE ACCEPTED.
- 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 THAT THESE SEATING 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 SURFACE BLOCKOUT AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.



SECTION A-A
MUD RING



SECTION A-A

<p>THE CITY OF WICHITA</p> <p>CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202 (316) 268-4501 (316) 268-4114 FAX</p>	MANHOLE FRAME AND COVER	
	PROJECT NUMBER 468-83171	DCR # 744101
DATE MAR 96	SHEET 7 OF 14	

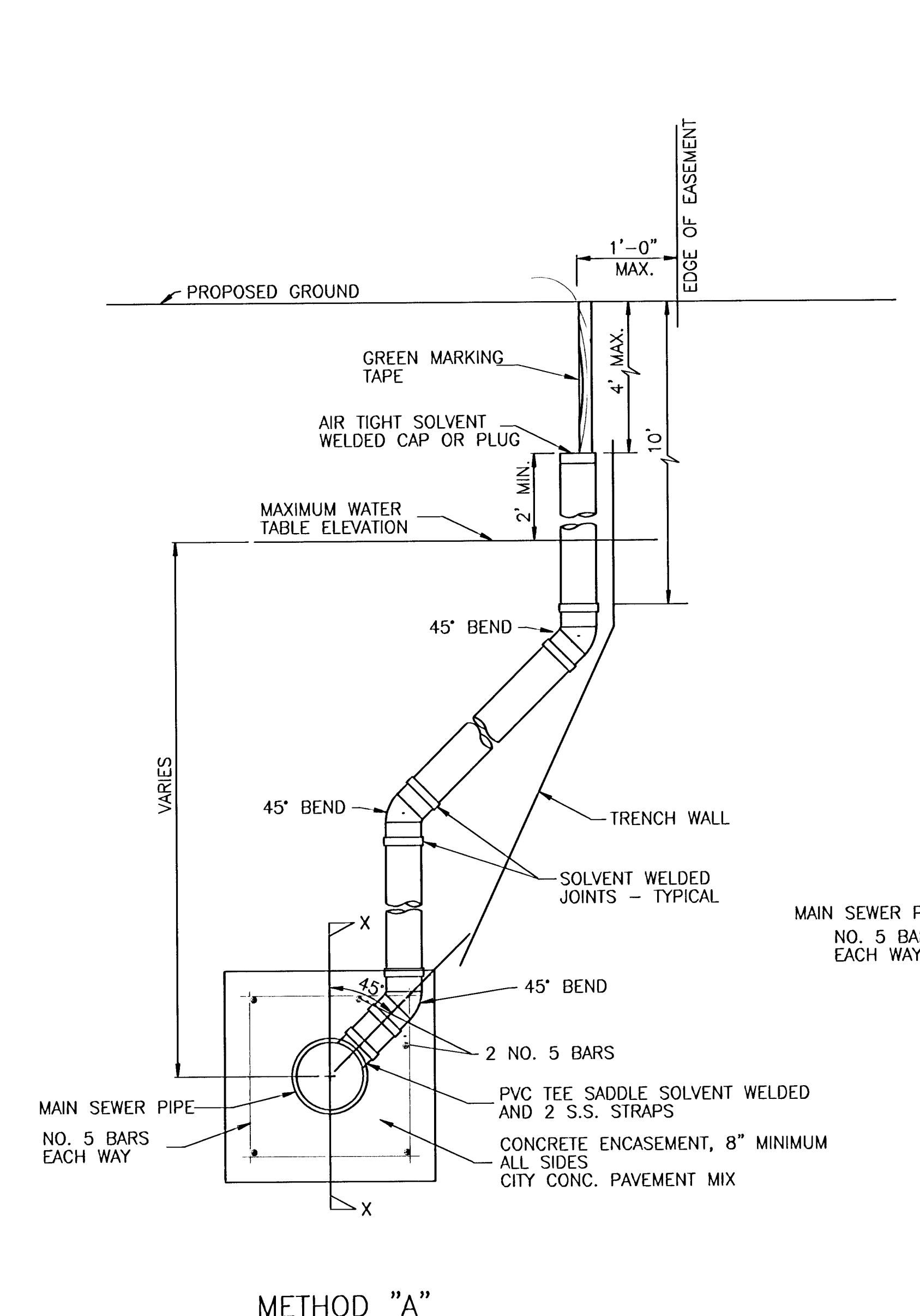
VERTICAL RISER DETAILS

ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS
OCTOBER 1992

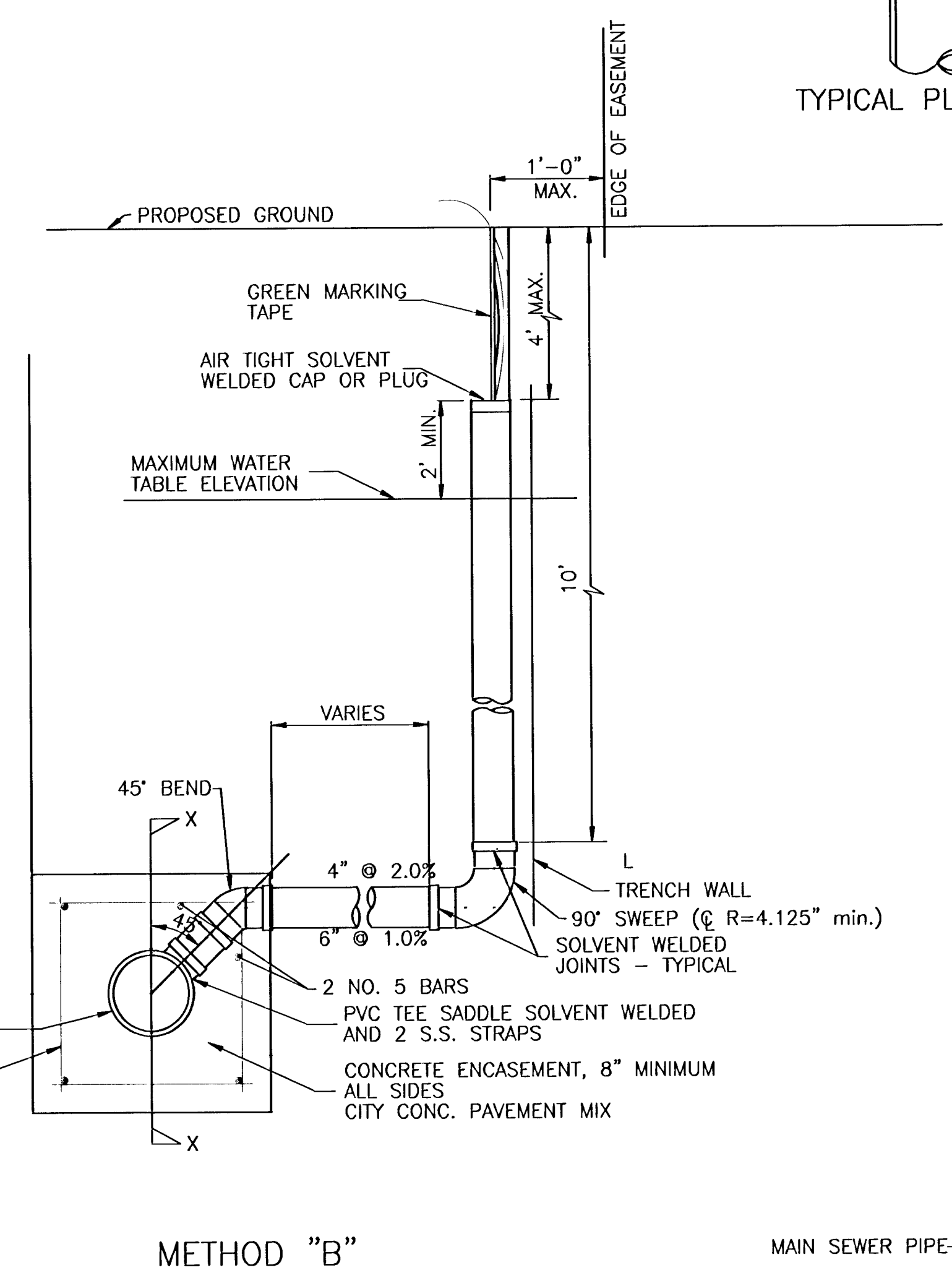
SEWER SERVICE TABLE

NUMBER	TYPE	LOCATION				FOR INFORMATION ONLY	
		LOT NO.	BLOCK NO.	LINE NO.	STATION \ DIRECTION	APPROXIMATE LENGTH 4" PIPE VERTICAL	HORIZONTAL
1	8" X 4" Tee Saddle	38	5	1	11+97, Lt	5.5'	13.0'
2	8" X 4" Tee Saddle	30	5	1	13+18, Rt	5.5'	15.0'
3	8" X 4" Tee Saddle	29	5	1	13+87, Rt	6.5'	15.0'
4	8" X 4" Tee Saddle	28	5	1	14+73, Lt	7.5'	15.0'
5	8" X 4" Tee Saddle	7	4	1	1+02, Rt	8.0'	13.0'
6	8" X 4" Tee Saddle	6	4	1	2+62, Rt	8.0'	13.0'

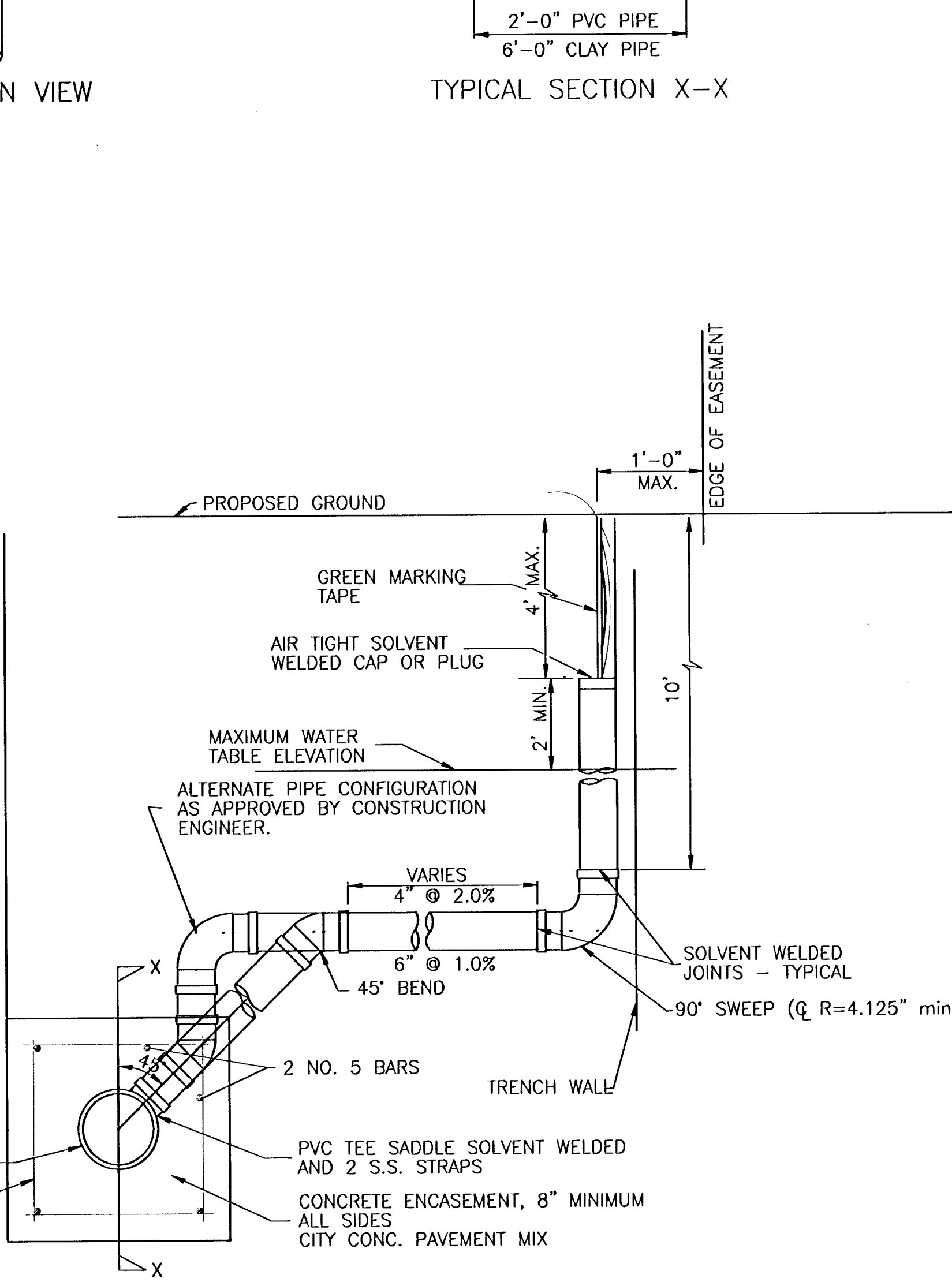
NOTE: Vertical Riser Pipe shall be extended to 2' minimum above ground water elevation and 4' maximum below proposed ground elevation.



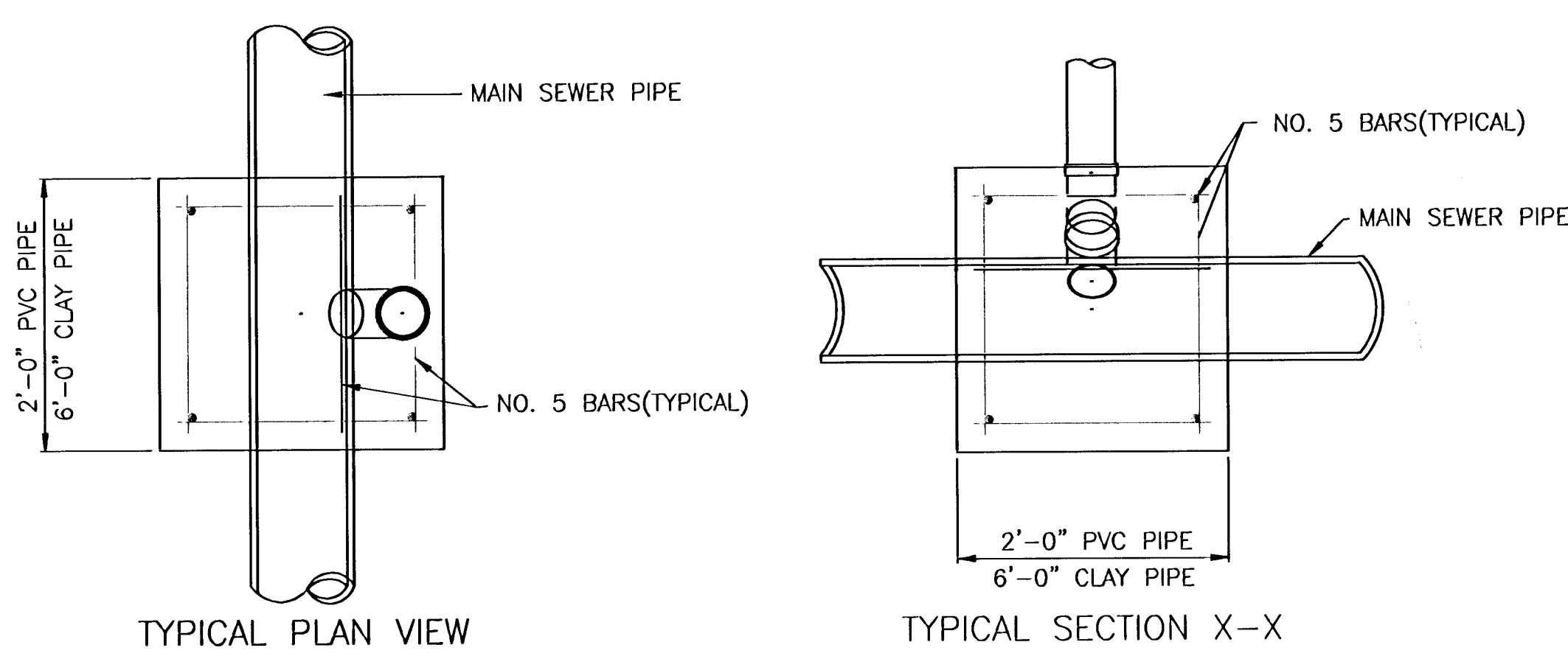
METHOD "A"



METHOD "B"



METHOD "C"



TYPICAL PLAN VIEW

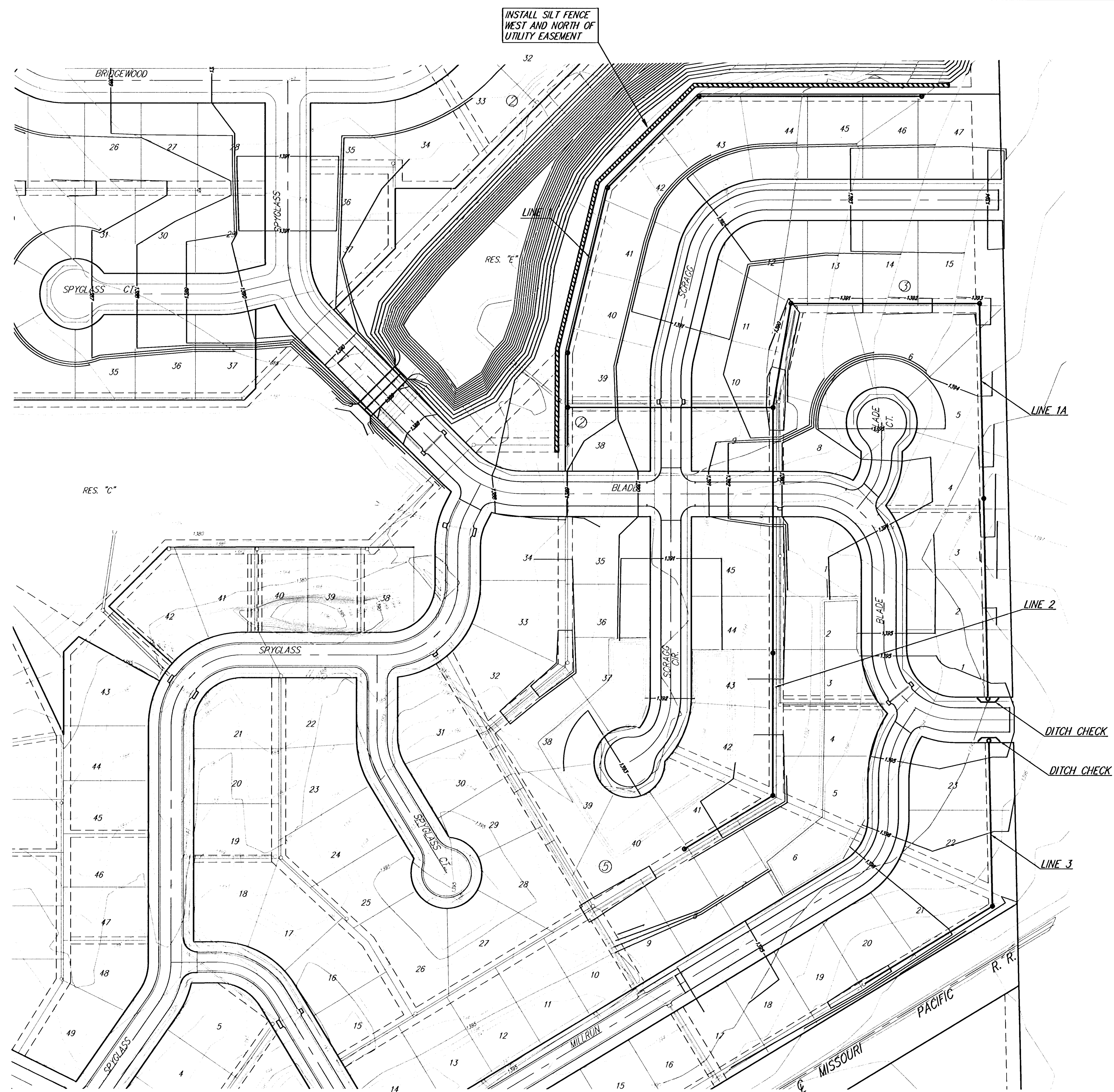
TYPICAL SECTION X-X

GENERAL NOTES

- 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 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.
- 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.
- 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.
- RISER OR STUB MATERIAL.** Risers and stubs shall be constructed of SDR 35 PVC Pipe or Schedule 40 PVC Pipe, meeting the requirements of the latest revision of A.S.T.M. . All pipe joints shall be solvent welded.
- 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 drawing. The concrete shall conform to the City Standard Specifications for concrete pavement.
- 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.
- 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.
- 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.
- 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 risers 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.
- 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.
- 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.
- 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.
- PAYMENT.** "Sanitary sewer risers" shall be paid for at the contract unit price per each, which price shall be full compensation for all labor, material, and incidentals necessary to complete the work, including all pipe, fittings, 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".

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


<p>THE CITY OF WICHITA</p> <p>CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202 (316) 268-4501 (316) 268-4114 FAX</p>	VERTICAL RISER DETAIL	
	PROJECT NUMBER	OCA #
	468-83171	744101
	DATE	SHEET
MAR 96	8 OF 14	

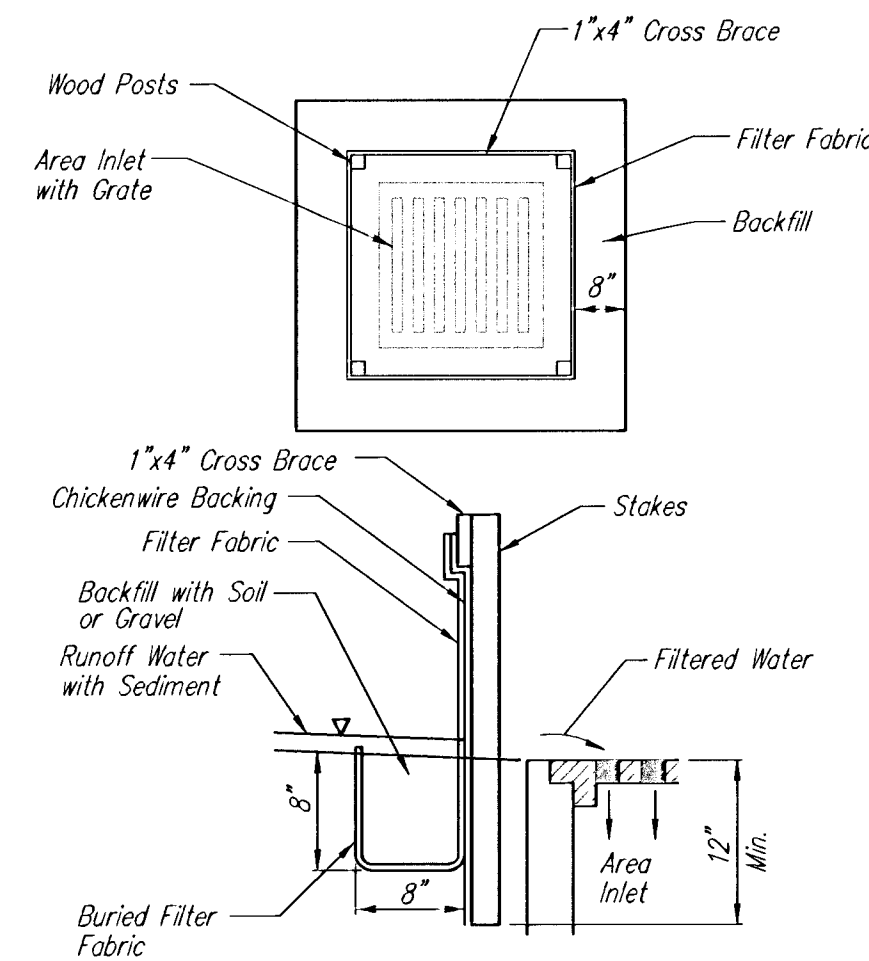


 SILT FENCE
 SILT FENCE DITCH CHECK
 EROSION CONTROL DETAILS SEE SHEET 10



SCALE 1" = 80'
IRON = •

Sawmill Creek Addition Erosion Control Map WICHITA, KANSAS			
	Ruggles & Bohm, P.A. Engineering, Surveying, Land Planning		DESIGN AML
	924 North Main Wichita, Kansas 67203 www.rbkansas.com		(316) 264-8008 (316) 264-4621 fax E-mail: info@rbkansas.com
DRAWING FILE Details [Erosion Control Map]		PROJECT NUMBER 468-83171	
		DATE Jan. 11, 2005	
			SHEET 9 OF 14



SILT FENCE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification. The wire or polymeric mesh backing used to help support the silt fence fabric should conform to the AASHTO M288 96 silt fence specification. The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4" long. The material used to frame the tops of the posts should be 2" by 4" boards. Silt fence fabric and support backing should be attached to the wooden posts and frame with staples, wire, zip ties, or nails.

Placement:

Place a silt fence drop inlet barrier in a location where it is unlikely to be overtopped. Water should flow through silt fence, not over it. Silt fence barriers for area inlets often fail when repeatedly overtopped. When used as a barrier for area inlets, silt fence fabric and posts must be supported at the top by a wooden frame. When a silt fence barrier for area inlets is located near an inlet that has steep approach slopes, the storage capacity behind the barrier is drastically reduced. Timely removal of sediment must occur for a barrier to operate properly in this location.

Proper installation method:

Excavate a trench around the perimeter of the area inlet that is at least 6" deep by 4" wide. Drive posts to a depth of at least 24" around the perimeter of the area inlet. The distance between posts should be 4' or less. If the distance between two adjacent corner posts is more than 4', add another post(s) between them. Connect the tops of all the posts with a wooden frame made of 2" by 4" boards. Use nails or screws for fastening. Attach the wire or polymeric-mesh backing to the outside of the post/frame structure with staples, wire, zip ties, or nails. Roll out a continuous length of silt fence fabric long enough to wrap around the perimeter of the area inlet. Add more length for overlapping the fabric joint. Place the edge of the fabric in the trench, starting at the outside edge of the trench. Line all three sides of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed. Attach the silt fence to the outside of the post/frame structure with staples, wire, zip ties, or nails. The joint should be overlapped to the next post.

Note: When a silt fence barrier for area inlet is placed in a shallow median ditch, make sure that the top of the barrier is not higher than the paved road. In this configuration, water may spread onto the roadway causing a hazardous condition.

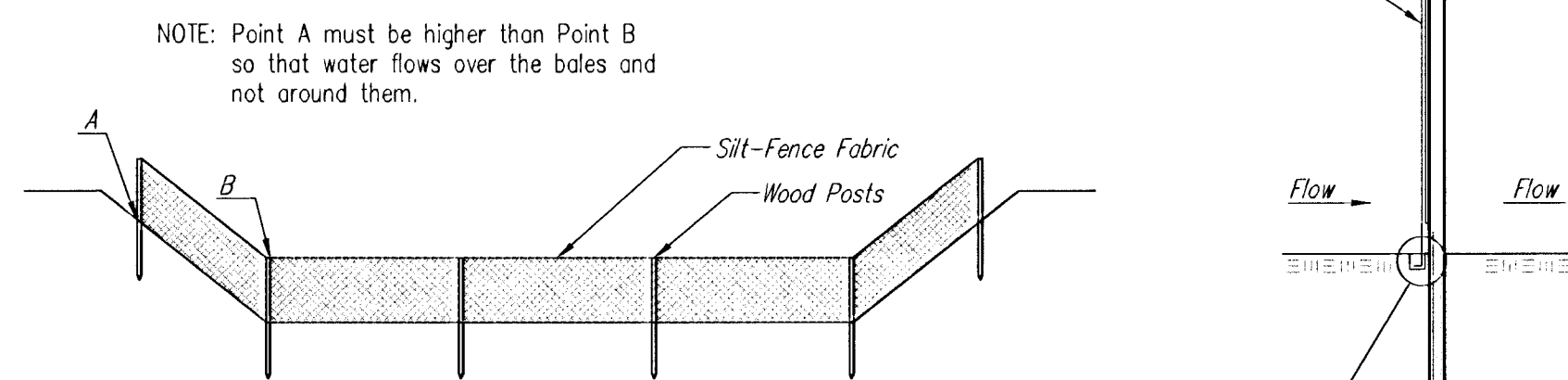
List of common placement/installation mistakes to avoid:

Water should flow through a silt fence barrier for area inlet—not over it. Place a silt fence barrier for area inlet in a location where it is unlikely to be overtopped. Silt fence barrier for area inlets often fail when repeatedly overtopped. Do not place posts on the outside of the silt fence barrier for area inlet. In this configuration, the force of the water is not resisted by the posts, but only by the staples (wire, zip-ties, nails, etc.). The silt fence will rip and fail. Do not install silt fence barrier for area inlets without framing the top of the posts. The corner posts around area inlets are stressed in two directions whereas a normal silt fence is only stressed in one direction. This added stress requires more support.

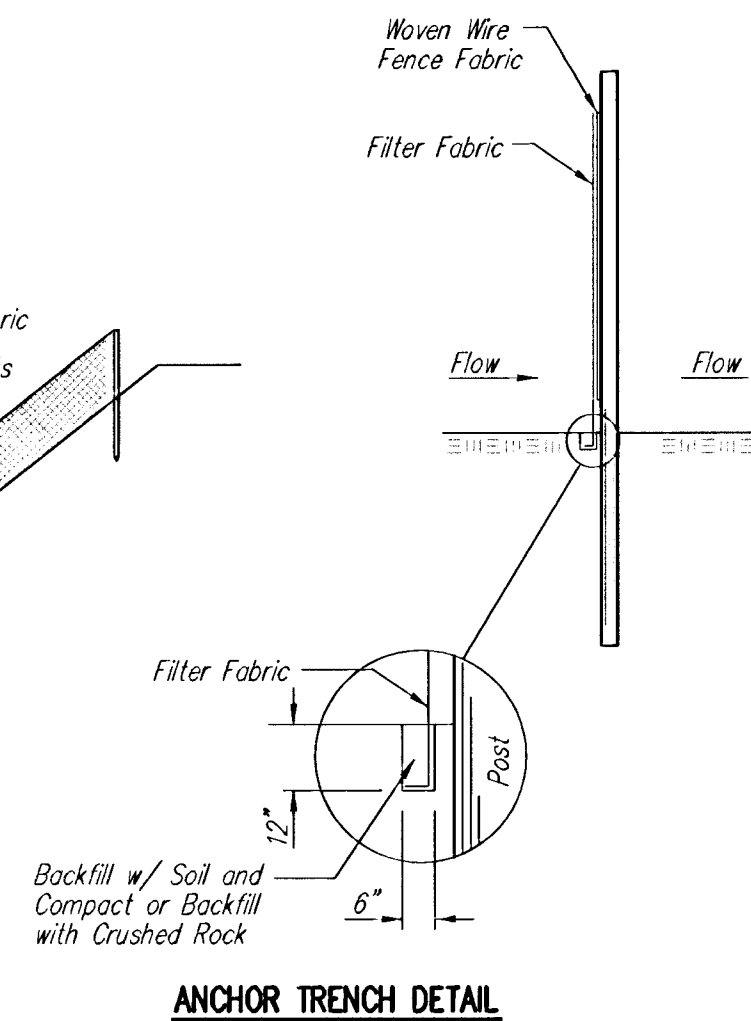
Inspection and Maintenance:

Silt fence barrier for area inlets should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

- Does water flow under the silt fence?
- Does the silt fence sag excessively?
- Has the silt fence torn or become detached from the posts?
- Does sediment need to be removed from behind the area inlet barrier?



ELEVATION
SILT FENCE DITCH CHECKS
(STREAM PROTECTION)



ANCHOR TRENCH DETAIL

Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification. The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4" long. Silt fence fabric should be attached to the wooden posts with staples, wire, zip ties, or nails.

Placement:

Place silt fence in ditches where it is unlikely that it will be overtopped. Water should flow through a silt fence ditch check, not over it. Silt fence ditch checks often fail when overtopped. Silt fence ditch checks should be placed perpendicular to the flowline of the ditch. The silt fence should extend far enough so that the ground level at the ends of the fence is higher than the top of the low point of the fence. This prevents water from flowing around the check. Checks should not be placed in ditches where high flows are expected. Rock checks should be used instead. Silt fence should be placed in ditches with slopes of 6% or less. For slopes steeper than 6%, rock checks should be used.

The following table provides check spacing for a given ditch grade:

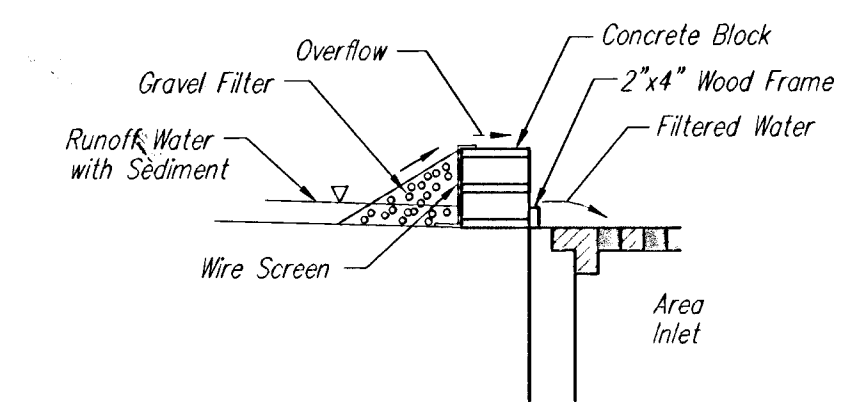
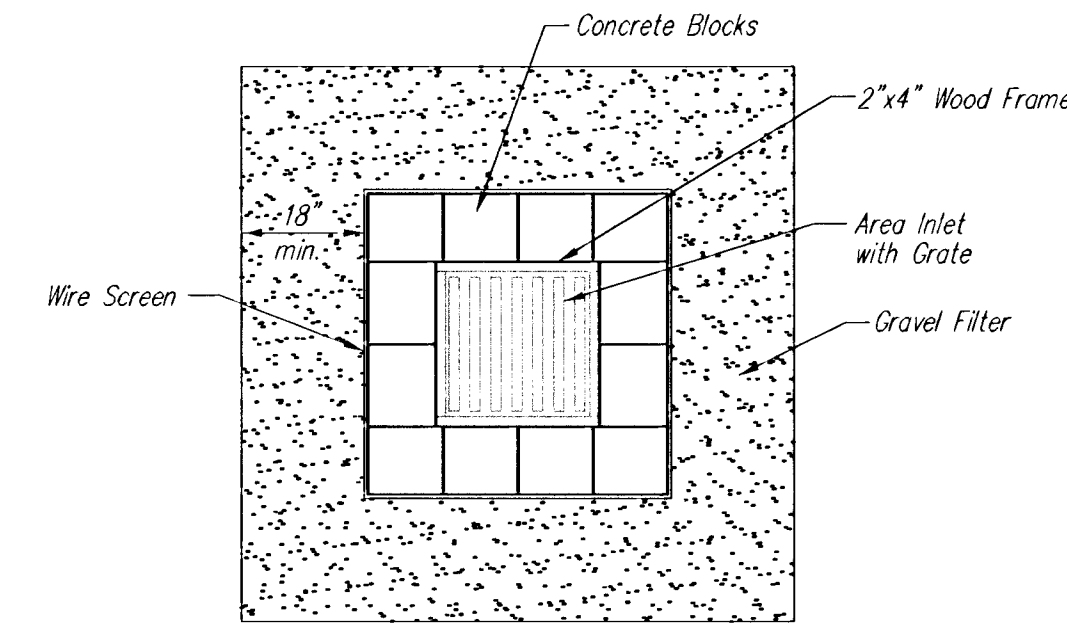
Ditch Check Ditch grade (%)	Spacing Check Spacing (feet)
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

Proper installation method:

Excavate a trench perpendicular to the ditch flowline that is at least 6" deep by 4" wide. Extend the trench in a straight line along the entire length of the proposed ditch check. Place the soil on the upstream side of the trench for later use. Roll out a continuous length of silt fence fabric on the downstream side of the trench. Place the edge of the fabric in the trench starting at the top upstream edge of the trench. Line all three sides of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed. Lay the exposed silt fence on the upstream side of the trench to clear an area for driving in the posts. Just downstream of the trench, drive posts into the ground to a depth of at least 24". Place posts no more than 4' apart. Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

List of common placement/installation mistakes to avoid:

Water should flow through a silt fence ditch check—not over it. Place silt fence in ditches where it is unlikely that it will be overtopped. Silt fence installations quickly deteriorate when water overtops them. Do not place silt fence posts on the upstream side of the silt fence fabric. In this configuration, the force of the water is not restricted by the posts, but only by the staples (wire, zip ties, nails, etc.). The silt fence will rip and fail. Do not place a silt fence ditch check directly in front of a culvert outlet. It will not stand up to the concentrated flow. Do not place silt fence ditch checks in ditches that will likely experience high flows. They will not stand up to concentrated flow. Follow prescribed ditch check spacing guidelines. If spacing guidelines are exceeded, erosion will occur between the ditch checks. Do not allow water to flow around the ditch check. Make sure that the ditch check is long enough so that the ground level at the ends of the fence is higher than the low point on the top of the fence. Do not place silt fence ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out.



CONCRETE BLOCK FILTER FOR AREA DRAIN
(INLET PROTECTION)

Gravel barriers provide little filtering of large inflow waters. However, when installed correctly and maintained, they can effectively treat low runoff flows.

Placement of gravel filters around area drains must be completed in a manner that will not cause local flooding.

Gravel filters can be used if the immediate and adjacent area to the area drain consists of soil or pavement.

Only gravel filters are to be installed on top of the pavement.

Instructions for Installing:

- STEP 1: Place concrete blocks around the grate. The blocks can be stacked one or two high and should be supported by a 2"x4" board.
- STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
- STEP 3: Place 1" to 1-1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
- STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary.

An alternative method is use of gravel bags that are supported to prevent collapsing.

Use of rock having diameters smaller than 1" may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All gravel filters installed around area drains should be inspected and repaired after each runoff event. Sediment should be removed when material is within 3" of the top of any block. Periodically, the gravel should be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets after every runoff event.

Inspection and Maintenance:

Silt fence ditch checks should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

- Does water flow around the ditch check?
- Does water flow under the ditch check?
- Does the silt fence sag excessively?
- Has the silt fence torn or become detached from the posts?
- Does sediment need to be removed from behind the ditch check?

DSNR: DEP. OPER. DEP. SCALE: 1"=1.00
 C:\STANDARD\Standards\Wichita\SEEMP_PEC_DTLS_03-28-2001_09:56:07.am

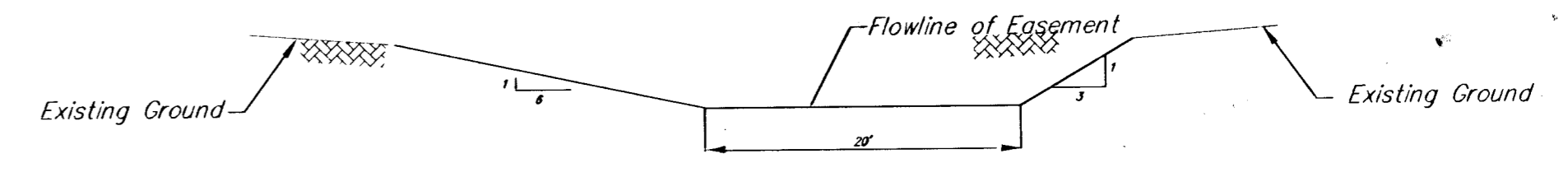
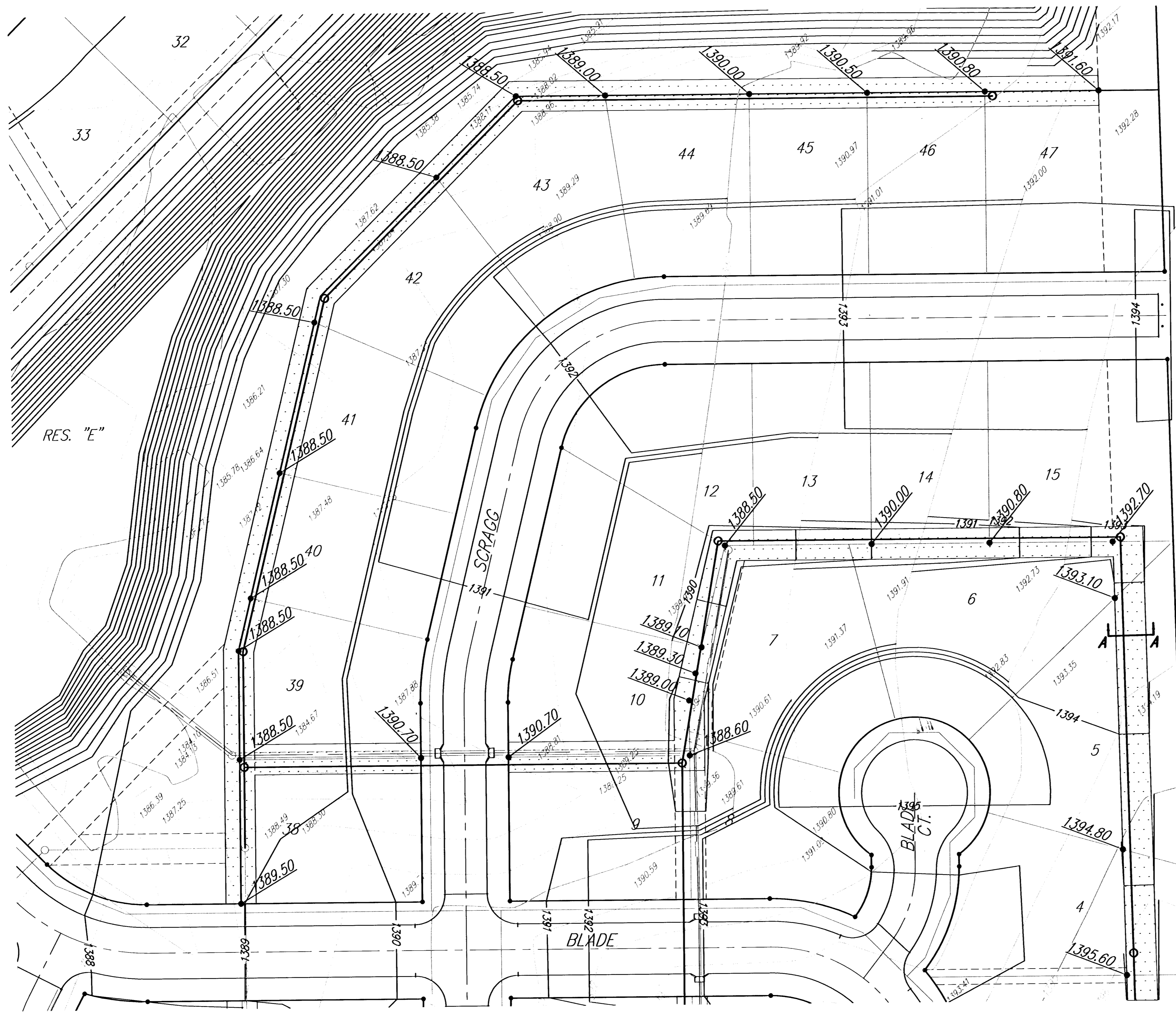


SOIL EROSION
BMP DETAILS

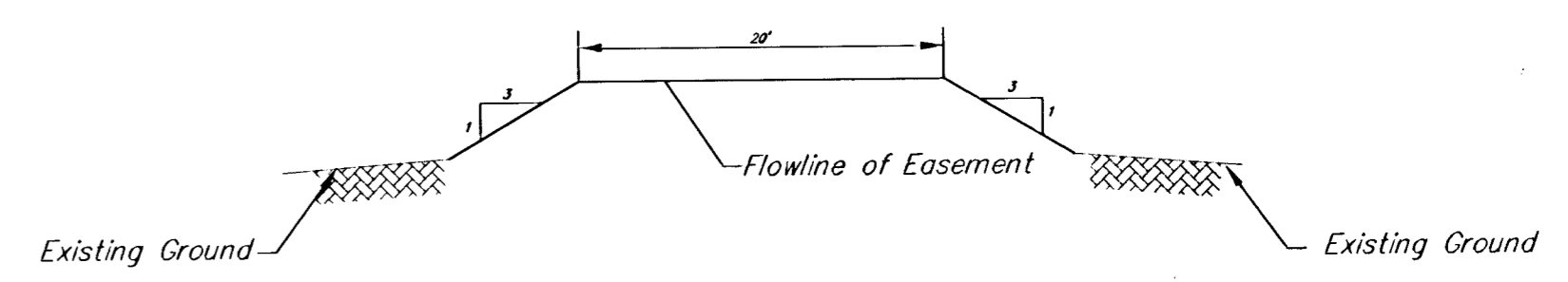
CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER: 468-83171 OCA NO.: 744101

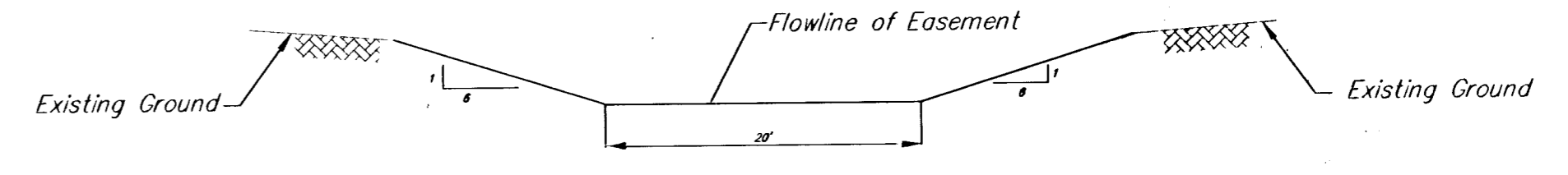
DATE: Oct. 29, 2002 SHEET 10 OF 14



SECTION A-A



EASEMENT GRADING FILL SECTION



EASEMENT GRADING CUT SECTION

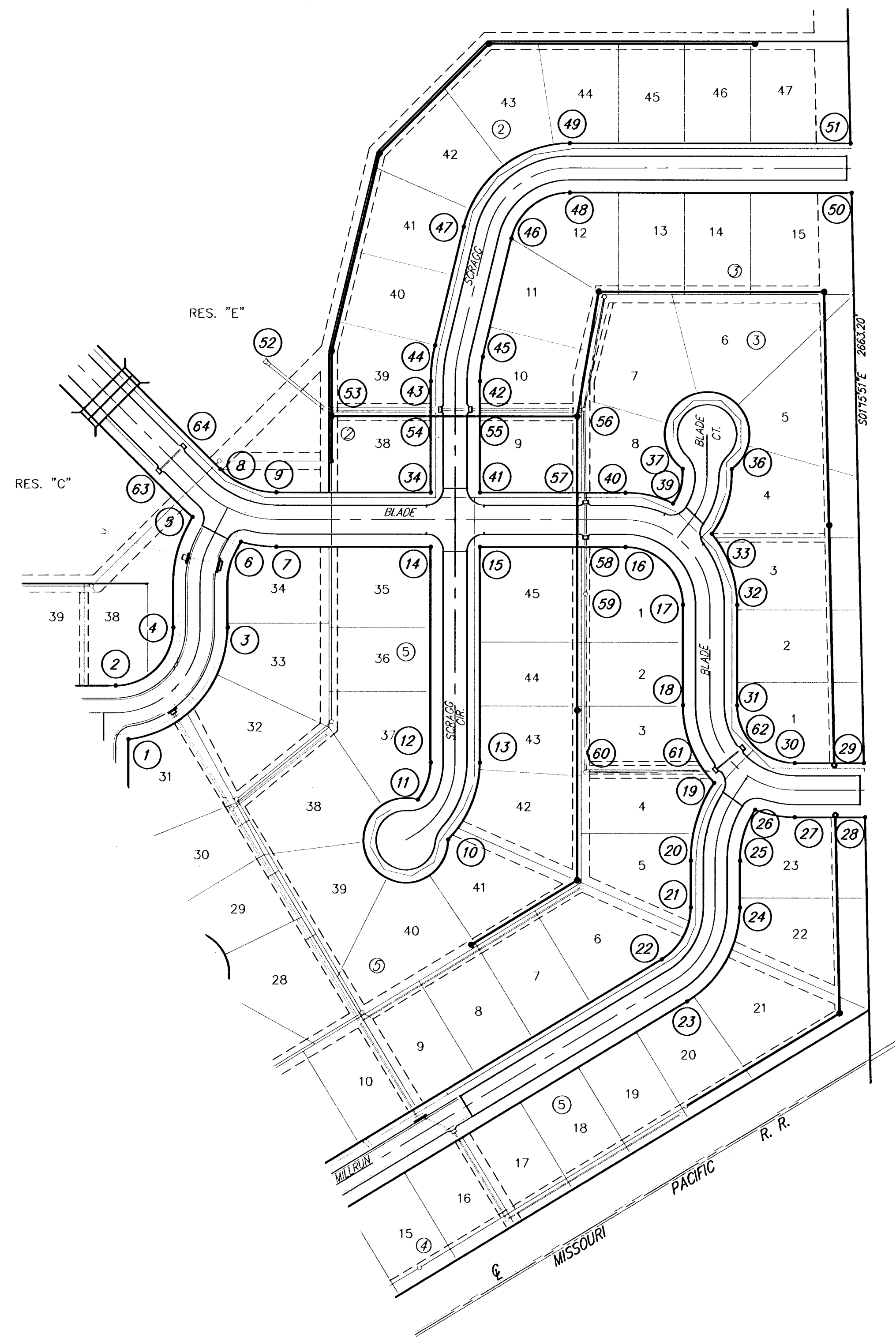


SCALE 1" = 40'
IRON = •

LINE	CUT	FILL
LINE 1	0	1096
LINE 1A	548	848
LINE 2	670	0
LINE 3	425	70
TOTALS	1643	2014

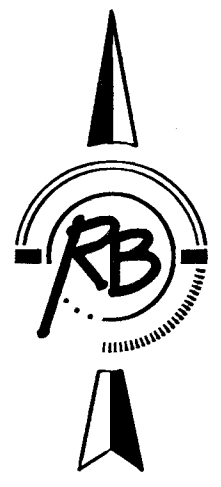
EASEMENT GRADING QUANTITIES (CU. YDS.)

<p>Sawmill Creek Addition Easement Grading WICHITA, KANSAS</p>		<p>DESIGN AML DRAWN AML REVIEW UTILITY</p>	<p>PROJECT NUMBER 468-83171</p>	<p>DATE Jan. 11, 2005</p>	<p>SHEET 12 OF 14</p>
<p>Ruggles & Bohm, P.A. Engineering, Surveying, Land Planning</p> <p>924 North Main Wichita, Kansas 67203 www.rbkansas.com</p>		<p>(316) 264-8008 (316) 264-4621 fax E-mail: info@rbkansas.com</p>	<p>DRAWING FILE Esmt grading [ESMT 02]</p>		



1	N 20026.6912	E 20688.5291	PC
2	N 20089.8298	E 20673.4739	PC
3	N 20157.8298	E 20805.4739	PT
4	N 20157.8298	E 20741.4739	PT
5	N 20287.8783	E 20764.1519	Block Corner
6	N 20258.6226	E 20821.0738	Block Corner
7	N 20252.9558	E 20862.8741	PC
8	N 20344.1949	E 20797.1137	PT
9	N 20316.9558	E 20862.8747	PC
10	N 19908.4747	E 21066.0704	PC
11	N 19955.5168	E 21030.3590	PC
12	N 19999.3101	E 21045.4739	PC
13	N 19999.3101	E 21103.4739	PC
14	N 20252.9558	E 21045.4739	Block Corner
15	N 20252.9558	E 21103.4739	Block Corner
16	N 20252.9558	E 21275.4739	PT
17	N 20184.9558	E 21343.4739	PC
18	N 20067.1330	E 21343.4739	PT
19	N 19975.6397	E 21380.3268	Block Corner
20	N 19883.9936	E 21352.8052	PC
21	N 19828.8279	E 21352.8052	PT
22	N 19768.0907	E 21318.5746	PC
23	N 19718.4744	E 21348.6116	PC
24	N 19828.8279	E 21410.8052	PT
25	N 19883.9936	E 21410.8052	PC
26	N 19943.6863	E 21428.7311	Block Corner
27	N 19935.1330	E 21475.4739	PC
28	N 19935.1330	E 21558.5818	Block Corner
29	N 19999.1330	E 21557.1693	Block Corner
30	N 19999.1330	E 21475.4739	PC
31	N 20067.1330	E 21407.4739	PT
32	N 20184.9558	E 21407.4739	PC
33	N 20268.6677	E 21377.5342	Block Corner
34	N 20316.9558	E 21045.4739	Block Corner
36	N 20345.1455	E 21401.0236	PC
37	N 20345.1455	E 21343.0236	PC
39	N 20304.3358	E 21331.7981	Block Corner
40	N 20316.9558	E 21275.4739	PT
41	N 20316.9558	E 21103.4739	Block Corner
42	N 20448.1285	E 21103.4739	PC
43	N 20448.1285	E 21045.4739	PC
44	N 20490.2069	E 21050.4900	PT
45	N 20476.5726	E 21106.8647	PT
46	N 20616.0007	E 21140.5857	PC
47	N 20629.6350	E 21084.2110	PC
48	N 20670.3104	E 21209.5961	PT
49	N 20728.3104	E 21209.5961	PT
50	N 20670.3104	E 21542.3571	Block Corner
51	N 20728.3104	E 21541.0771	Block Corner

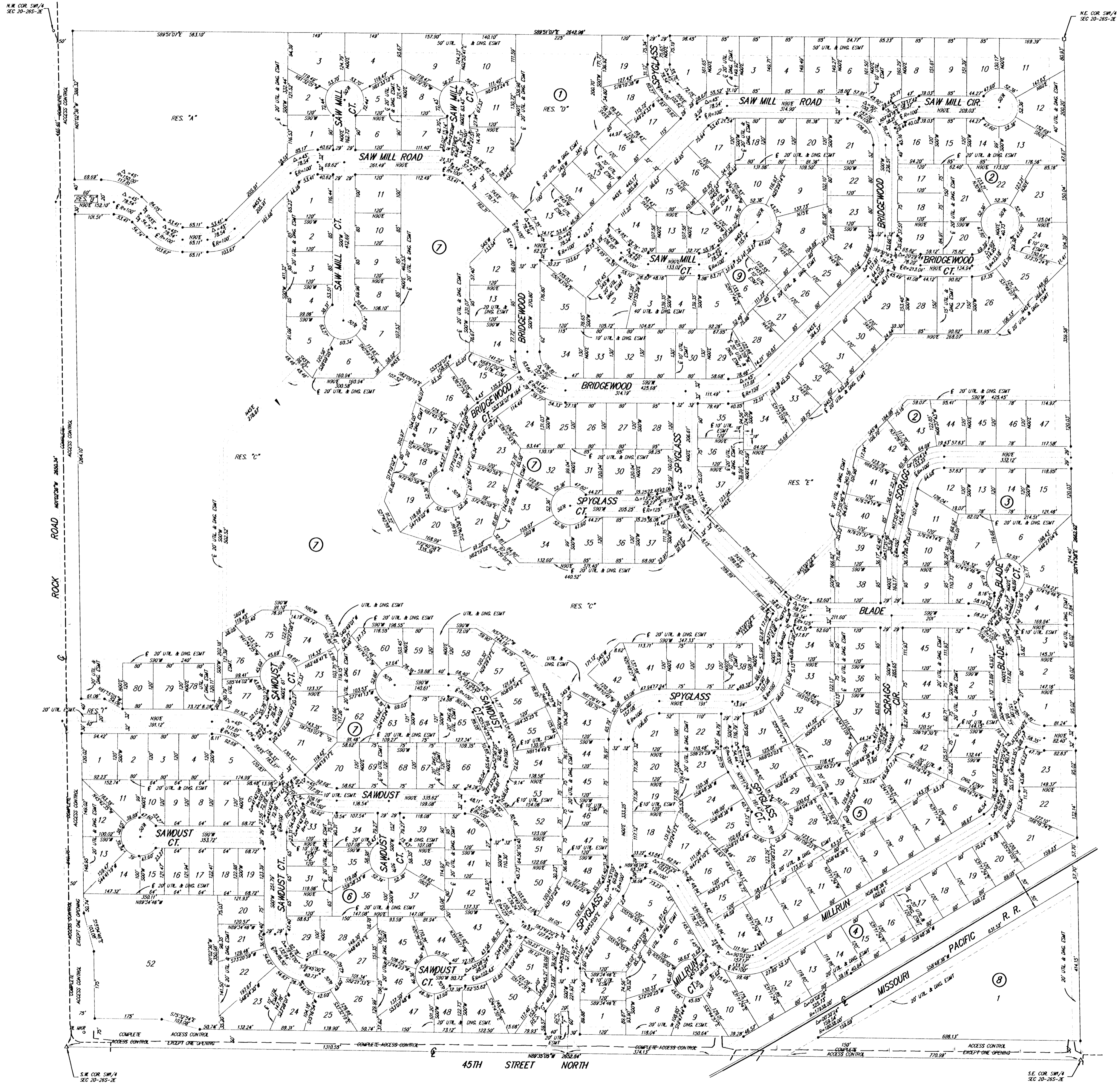
52	N 20472.2335	E 20848.8611	OUTLET
53	N 20414.9558	E 20920.4739	MH
54	N 20414.9558	E 21057.1339	INLET
55	N 20414.9558	E 21091.8139	INLET
56	N 20414.9558	E 21228.4739	MH
57	N 20305.2958	E 21228.4739	INLET
58	N 20264.6158	E 21228.4739	INLET
59	N 20197.7517	E 21228.4739	MH
60	N 19988.0244	E 21228.4739	MH
61	N 19991.0915	E 21362.1938	INLET
62	N 20016.8015	E 21413.7322	INLET
63	N 20342.4253	E 20724.8597	INLET
64	N 20371.1941	E 20753.6285	INLET

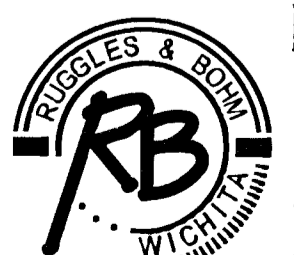


SCALE 1" = 100'
IRON = •

**SAWMILL CREEK ADDITION
KEY MAP
WICHITA, KANSAS**

 Ruggles & Bohm, P.A. Engineering, Surveying, Land Planning 924 North Main Wichita, Kansas 67203 www.rbkansas.com (316) 264-8008 (316) 264-4621 fax E-mail: info@rbkansas.com	DESIGN	AML	SHEET 13 OF 14
	DRAWN	AML	
	REVIEW		
	UTILITY		
DRAWING FILE	PROJECT NUMBER	DATE	
Details [Key Map]	468-83171	Jan. 11, 2005	



Sawmill Creek Addition PLAT WICHITA, KANSAS			
 Ruggles & Bohm, P.A. Engineering, Surveying, Land Planning		DESIGN AML DRAWN AML REVIEW UTILITY	
924 North Main Wichita, Kansas 67203 www.rbkansas.com		(316) 284-8008 (316) 284-4621 fax E-mail: info@rbkansas.com	
DRAWING FILE Details [PLAT]	PROJECT NUMBER 468-83171	DATE Jan. 11, 2005	SHEET 14 OF 14

10-03-01-01