LATERAL 319, FOUR MILE CREEK SEWER
SANITARY SEWER EXTENSION
LOTS 1-7, BLOCK 1; LOTS 1-20 BLOCK 2; LOTS 1-5, 49-61 BLOCK 3; LOT 1 BLOCK 4
BRENTWOOD SOUTH ADDITION
LOTS 25-30 BLOCK 4 BRENTWOOD VILLAGE ADDITION
LOT 2 MAPLE SHADE ADDITION
PROJECT NO. 468-83353
OCA # 743909

GENERAL NOTES

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

Kansas One-Call	687-2470

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

Cox Communications	262-0661
Kansas Gas Service	383-8600
K.G.E. Electric	383-8600
Peoples Natural Gas Company	1-800-303-0357
Southwestern Bell Telephone Company	1-800-286-8313
City of Wichita Water Department	262-6000
City of Wichita Sewer Maintenance	262-6009
Williams Pipeline - Terry Blanding	529-6622

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. Location information has been obtained from the various utility companies and is either from company record drawings or company-provided field locations. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

A saw cut of at least one-half the depth of existing surface courses or one-fourth the depth of existing total pavement thickness shall be provided at locations where proposed construction abuts an existing surface course or pavement for which partial removal of that surface or pavement is required, except when such saw cuts are within three (3) feet of an existing joint the limits of removal shall be extended to the existing joint. Such saw cuts will not be paid for directly and this cost shall be considered as subsidiary to the removal of the surface or pavement.

Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted shall be disposed of on sites to be provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations that, in the opinion of the Engineer, will leave an unsightly appearance will not be approved.

All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board of Agriculture permit. Any material dumped in waters of the United States or wetlands is subject to U.S. Corps permitting regulations. Any material buried or stockpiled beyond approved of Engineers construction limits would require additional archeological investigations unless buried in a previously approved borrow location.

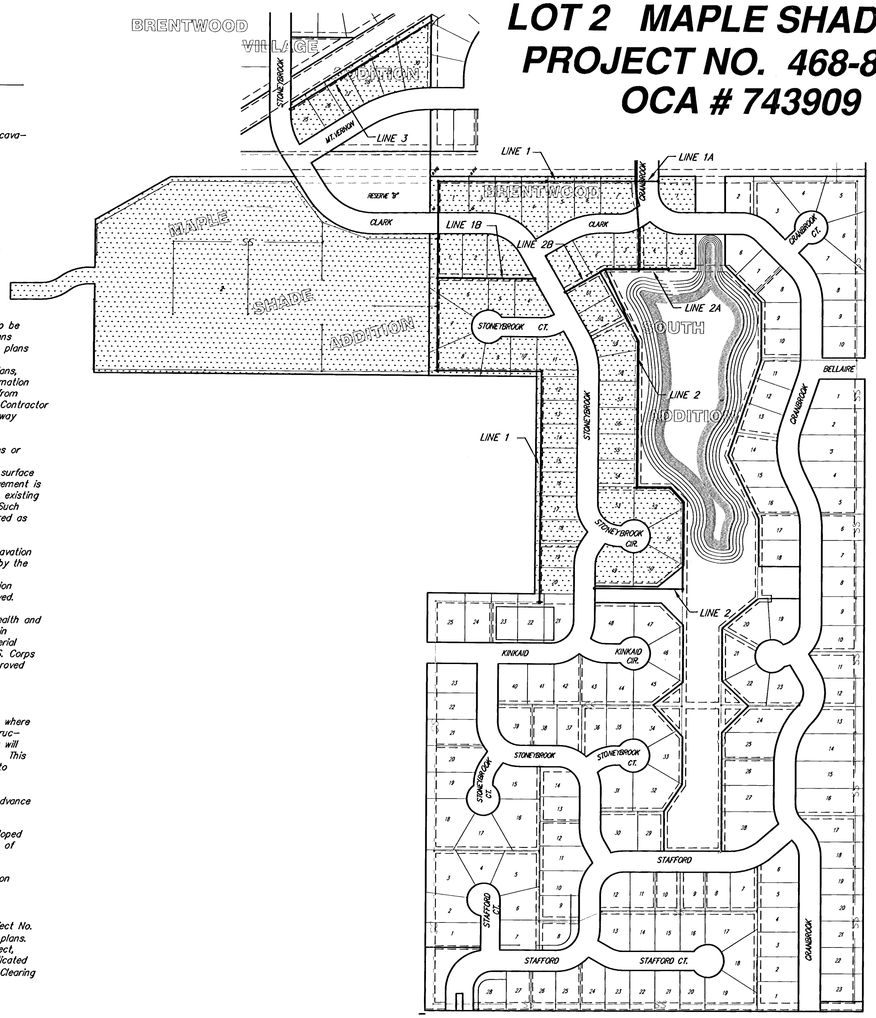
The Engineer shall take field ties to all quarter section corners. The Contractor shall set a City survey monument in the required location where such quarter section corners fall within the limits of pavement construction. Survey monuments will be furnished by the City. The Engineer will accurately located and install the iron at the quarter section corner. This work will not be paid for directly, but shall be considered subsidiary to the other pay items of work in the contract.

The Contractor shall notify pipeline companies at least 24 hours in advance of any work being performed across and/or adjacent to pipelines.

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

The Contractor shall seed , fertilize and mulch all disturbed areas upon completion of construction. Incidental to the bid item for "Site Clearing and Restoration".

The Contractor shall coordinate construction of this project with Project No. 468-83355 (Site Grading) to insure Proposed Grade is as shown on plans. If Sewer Line is constructed prior to completion of Site Grading Project, Easements will be need to be filled or cut to Proposed Grade as indicated on plans. All dirt work shall be incidental to the bid item for "Site Clearing & Restoration".



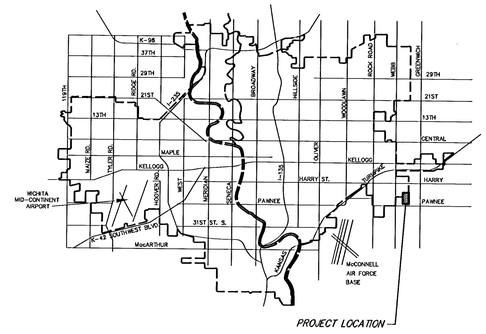
Scale: 1" = 200'

BENCH MARKS

BENCH MARK #1: USGS BRASS PLUG 28' S. & 5.30' W. OF CENTERLINE INTERSECTION OF CAPRI & PAWNEE
ELEV.=1388.25 NGVD

BENCH MARK #2: CITY OF WICHITA STD. DISC 20.8' W & 54.5' S. OF CENTERLINE INTERSECTION DALTON & PAWNEE
ELEV.=1379.60

INDEX OF SHEETS



VICINITY MAP

KENNETH W. LEE
LICENSED
15373
2-20-02
KANSAS
PROFESSIONAL ENGINEER

Per plan
9/6/02
RDL

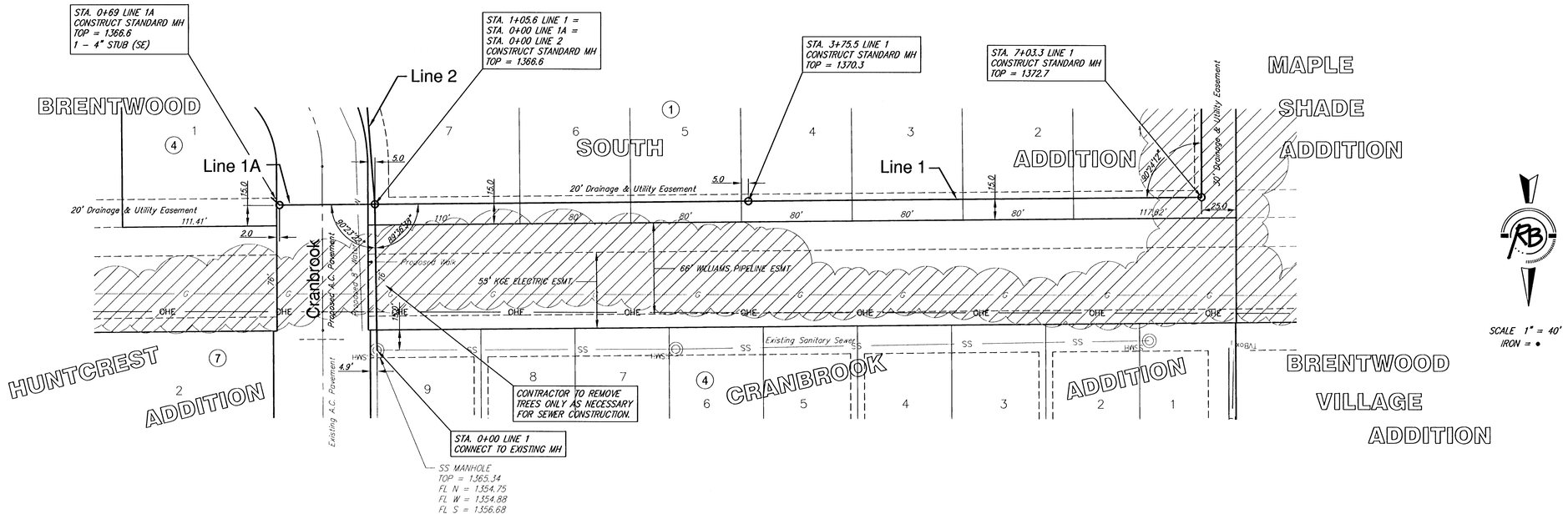
IMPROVEMENT DISTRICT

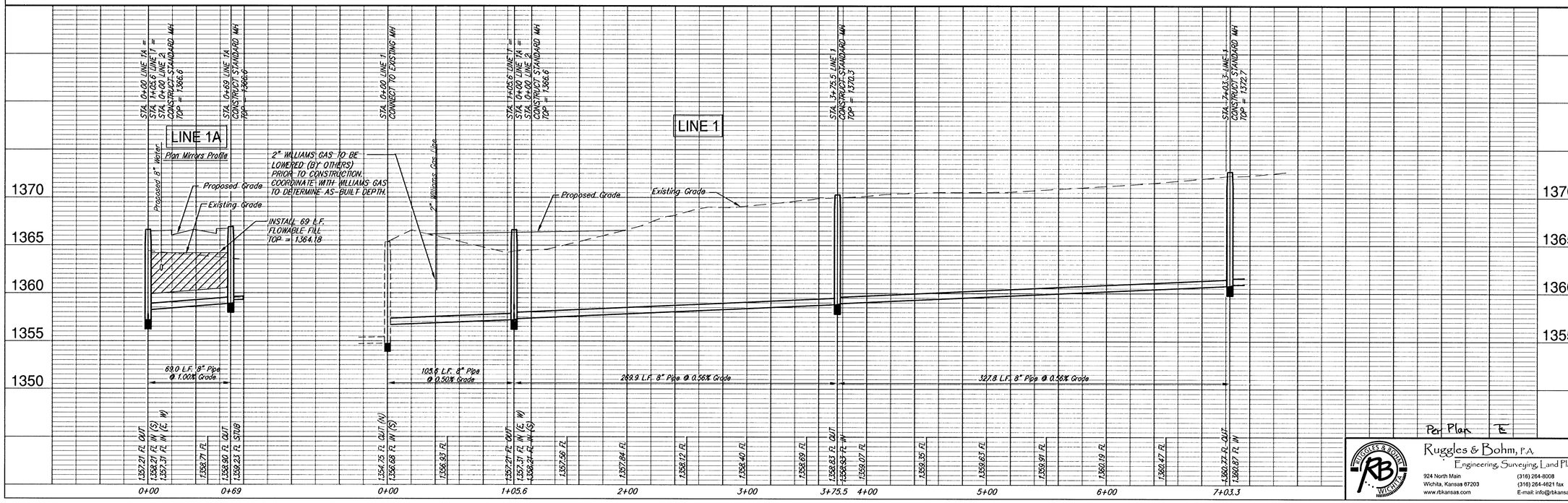
CITY OF WICHITA, KANSAS
MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER

"AS BUILTS" 8-14-02 E

1992E

Ruggles & Bohm, P.A.
Engineering, Surveying, Land Planning
924 North Main - (316) 264-8008
Wichita, Kansas 67203 (316) [illegible] fax
www.rbkansas.com [illegible]@rbkansas.com





Per Plan

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E-mail: info@rbkansas.com

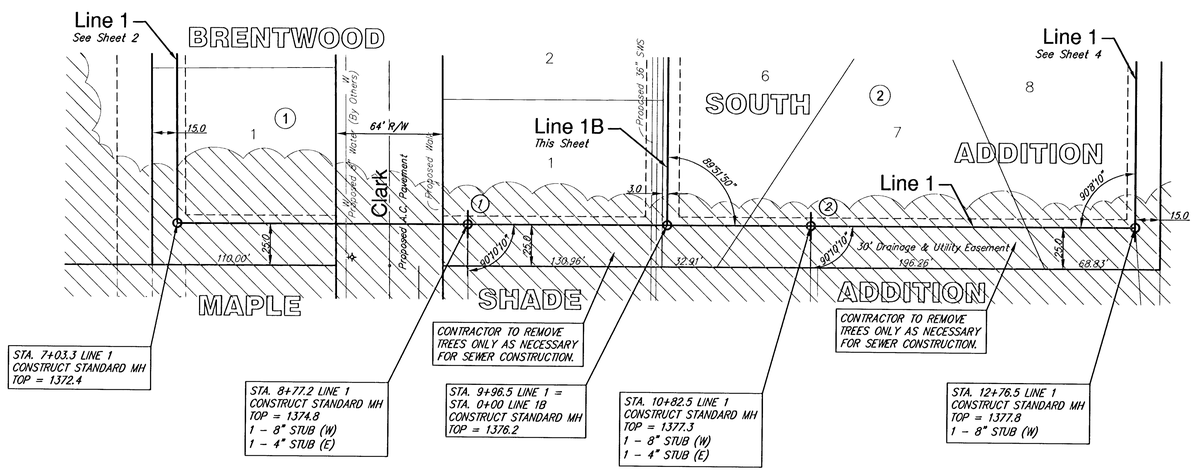
SRB JOB 1992E
SHEET 2 OF 13

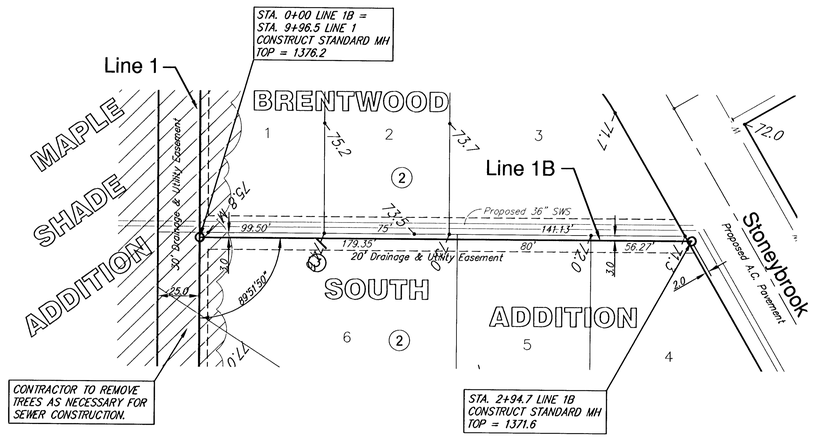
DESIGN KWL
DRAWN RA
DATE Feb. 19, 2002
UTILITY
REVISED
REVIEW

PROJECT NUMBER 468-83353
DRAWING FILE Sanitary Sewer (Line 1)

Brentwood South Addition
Line 1 and 1A
WICHITA, KANSAS

SCALE 1" = 40'
IRON = ●





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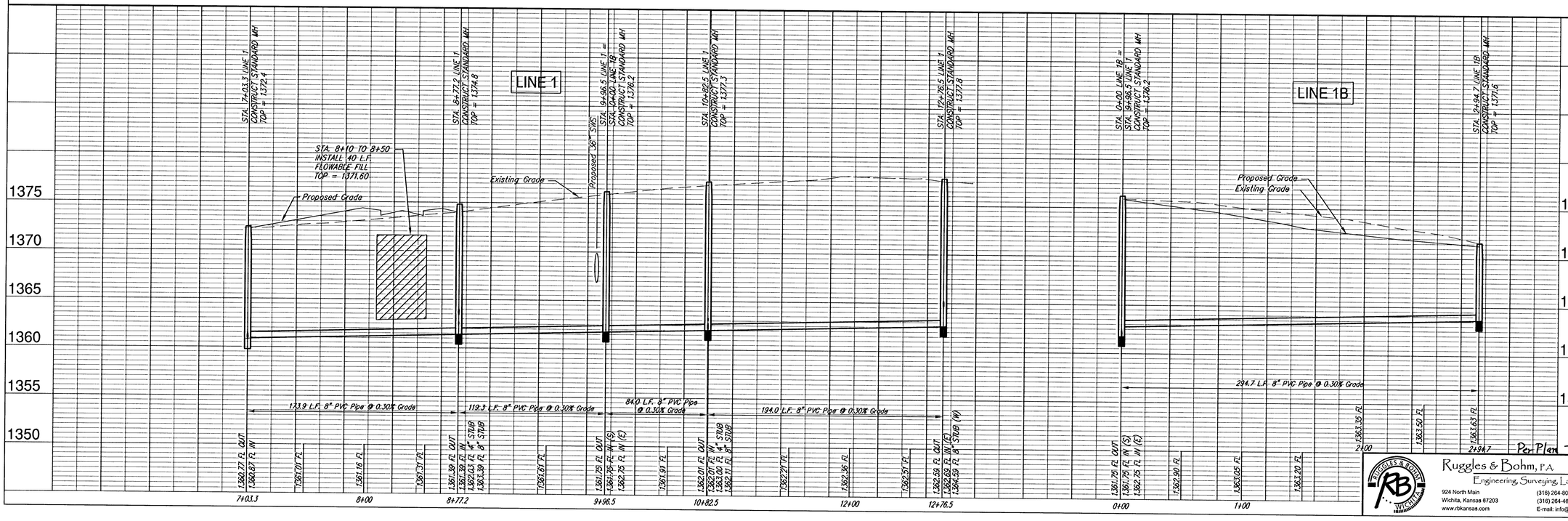
IRON = ●



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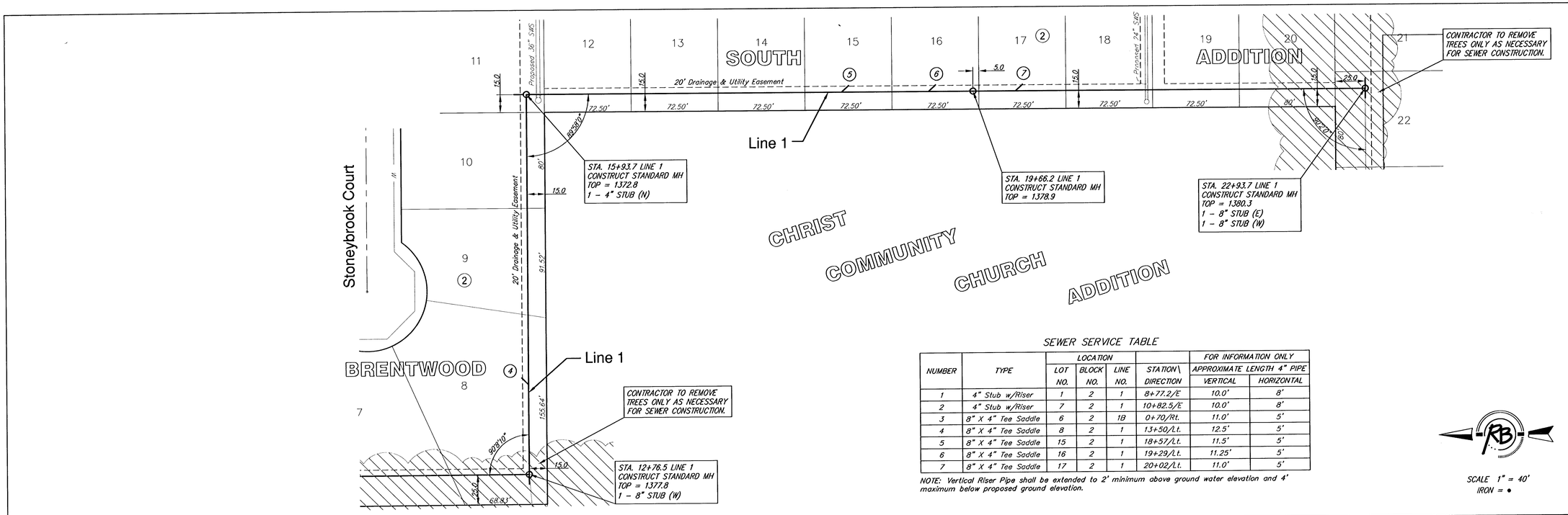
REVISED	
DRAWN	RA
DESIGN	KML
DATE	Feb. 19, 2002
REVIEW	
UTILITY	
PROJECT NUMBER	468-83353
DRAWING FILE	Sanitary Sewer (Line 1 and 2)

Brentwood South Addition
Line 1 and 1B
WICHITA, KANSAS

SRB JOB 1992E
SHEET 3 OF 13

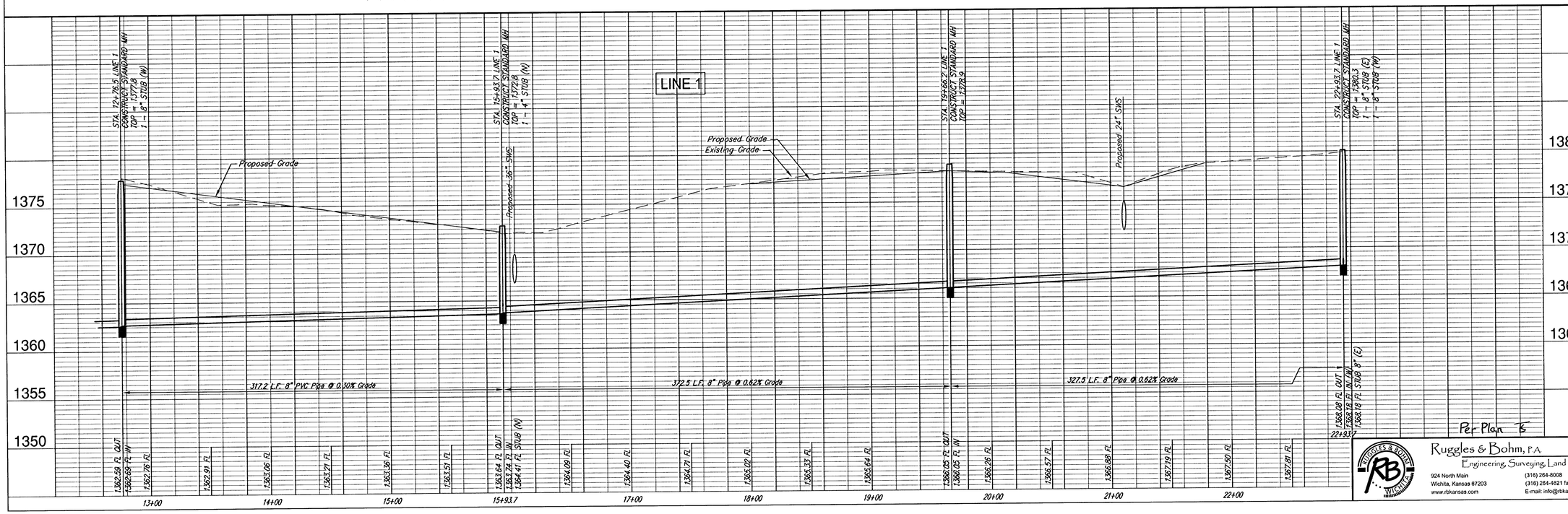


SEWER SERVICE TABLE

NUMBER	TYPE	LOCATION			STATION\ DIRECTION	FOR INFORMATION ONLY	
		LOT NO.	BLOCK NO.	LINE NO.		APPROXIMATE LENGTH 4" PIPE	
						VERTICAL	HORIZONTAL
1	4" Stub w/Riser	1	2	1	8+77.2/E	10.0'	8'
2	4" Stub w/Riser	7	2	1	10+82.5/E	10.0'	8'
3	8" X 4" Tee Saddle	6	2	1B	0+70/Rt.	11.0'	5'
4	8" X 4" Tee Saddle	8	2	1	13+50/Lt.	12.5'	5'
5	8" X 4" Tee Saddle	15	2	1	18+57/Lt.	11.5'	5'
6	8" X 4" Tee Saddle	16	2	1	19+29/Lt.	11.25'	5'
7	8" X 4" Tee Saddle	17	2	1	20+02/Lt.	11.0'	5'

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

SCALE 1" = 40'
IRON = ●



Per Plan B

DESIGN KWL
DRAWN RA
DATE Feb. 19, 2002
REVISED
REVIEW

PROJECT NUMBER 468-83353
DRAWING FILE Sanitary Sewer (Line 1 alt 3)

Brentwood South Addition
Line 1
WICHITA, KANSAS

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(316) 264-4621 fax
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SRB JOB 1992E
SHEET 4 OF 13

NOTE :
ALL EASEMENTS ADJACENT TO POND SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE TO POND.

SCALE 1" = 40'
IRON = ●

STA. 0+00 LINE 2 = STA. 1+05.6 LINE 1 = STA. 0+00 LINE 1A CONSTRUCT STANDARD MH TOP = 1366.6

STA. 1+49.6 LINE 2 CONSTRUCT STANDARD MH TOP = 1370.4

STA. 2+68.5 LINE 2 = STA. 0+00 LINE 2A CONSTRUCT STANDARD MH TOP = 1367.9

STA. 3+70.9 LINE 2 = STA. 0+00 LINE 2B CONSTRUCT STANDARD MH TOP = 1368.1

STA. 6+10 LINE 2 CONSTRUCT STANDARD MH TOP = 1367.9

STA. 8+16.3 LINE 2 CONSTRUCT STANDARD MH TOP = 1367.9

STA. 10+54.3 LINE 2 CONSTRUCT STANDARD MH TOP = 1370.8 1 – 4" STUB (W)

STA. 11+56 LINE 2 CONSTRUCT STANDARD MH TOP = 1368.5

RESERVE 'C'

Proposed Pond

Line 1A
See Sheet 2

Line 1

Line 2

Line 2A
See Sheet 6

Line 2B

Cranbrook

Proposed A.C. Pavement

Clark

Prop. A.C. Pavement

Proposed Walk

58' R/W

Proposed 8" Water (By Others)

20' Drainage & Utility Easement

Utility Easement (By Separate Instrument)

Proposed 48" Storm Sewer

Proposed 8" Water (By Others)

Stoneybrook

Proposed A.C. Pavement

BRENTWOOD

SOUTH

ADDITION

1 2 3 4 6 7 50 51 52 53 54 55 56 57 58 59 60 61

9°47'40" 175°59'20" 90°00'00" 85°57'20" 154°52'58" 90°21'

15.0 5.0 3.0 80' 26.39' 79.54' 82.44' 29.13' 17.3 42.13' 110'

LINE 2

Proposed 8" Water

Proposed Grade

Existing Grade

INSTALL 37 L.F. FLOWABLE FILL TOP = 1366.60

Proposed 48" SWS

STA. 5+35 TO 5+55 INSTALL 20 L.F. FLOWABLE FILL MIN. 1.0' ABOVE PIPE

1370 1365 1360 1355 1350

149.6 L.F. 8" PVC Pipe @ 0.30% Grade

118.9 L.F. 8" PVC Pipe @ 0.30% Grade

102.4 L.F. 8" PVC Pipe @ 0.30% Grade

239.1 L.F. 8" PVC Pipe @ 0.30% Grade

208.3 L.F. 8" PVC Pipe @ 0.30% Grade

238.0 L.F. 8" PVC Pipe @ 0.30% Grade

101.7 L.F. 8" PVC Pipe @ 0.30% Grade

1357.21 FL OUT
1357.21 FL IN (S)
1356.98 FL IN (E, W)
1357.46 FL
1357.61 FL
1357.76 FL OUT
1357.76 FL IN
1357.91 FL
1358.12 FL OUT
1358.22 FL IN (W)
1358.42 FL IN (E)
1358.39 FL
1358.53 FL OUT
1358.63 FL IN
1358.84 FL IN (SW)
1358.86 FL
1359.01 FL
1359.16 FL
1359.34 FL OUT
1359.34 FL IN
1359.67 FL
1359.76 FL
1359.96 FL OUT
1359.96 FL IN
1360.21 FL
1360.36 FL
1360.51 FL
1360.67 FL OUT
1360.77 FL IN
1361.50 FL STUB
1360.91 FL
1361.08 FL OUT
1361.18 FL IN

0+00 1+00 1+49.6 2+00 2+68.5 3+25 3+70.9 5+00 6+10 7+00 8+16.3 9+00 10+00 10+54.3 11+00 11+56

Per Plan

DESIGN KWL DRAWN RA CHECKED REVIEW
DATE Feb. 19, 2002
UTILITY
PROJECT NUMBER 468-83353
DRAWING FILE Sanitary Sewer (Line 2)

Brentwood South Addition
Line 2
WICHITA, KANSAS

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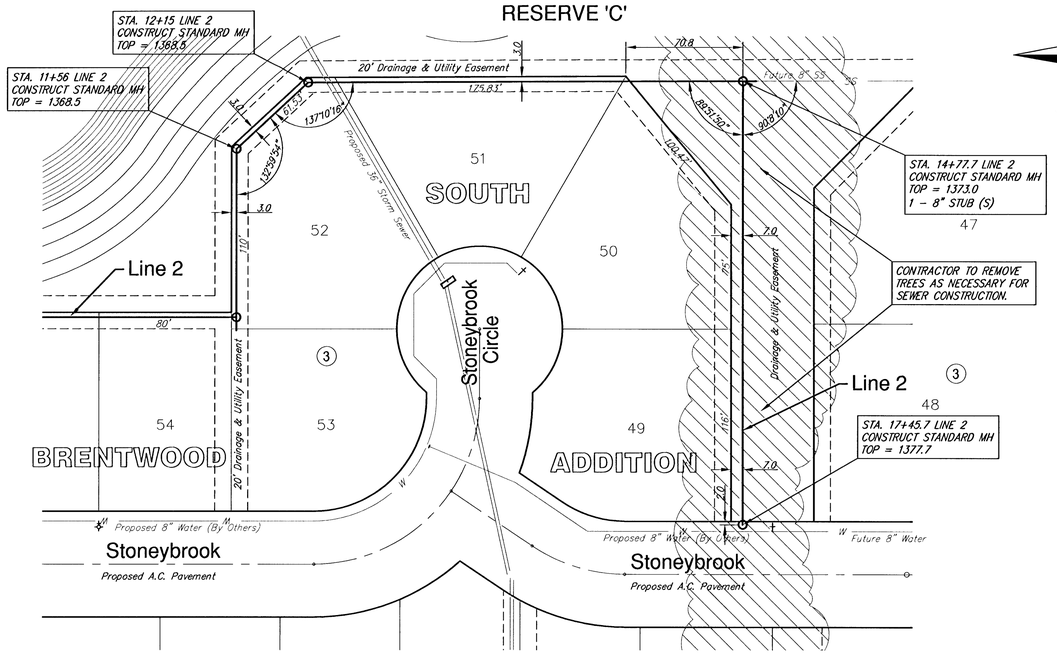
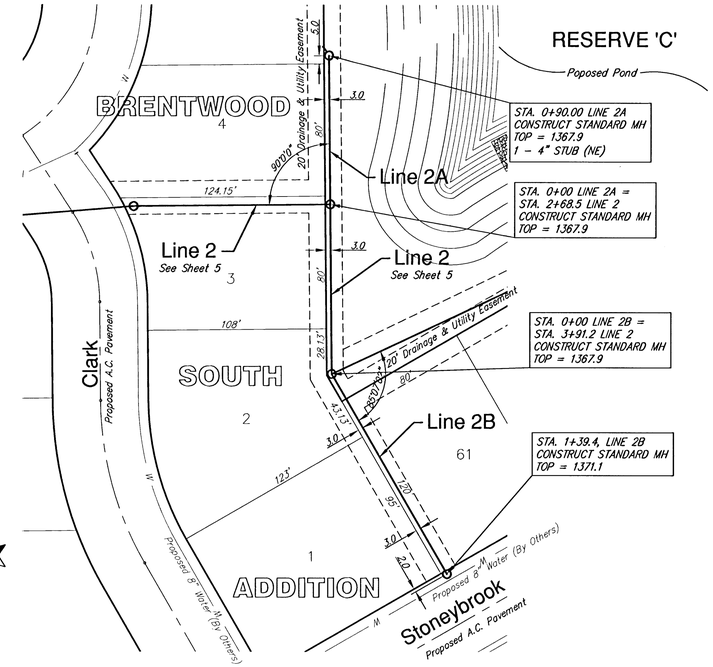
SRB JOB 1992E
SHEET 5 of 13



SCALE 1" = 40'
IRON = ●



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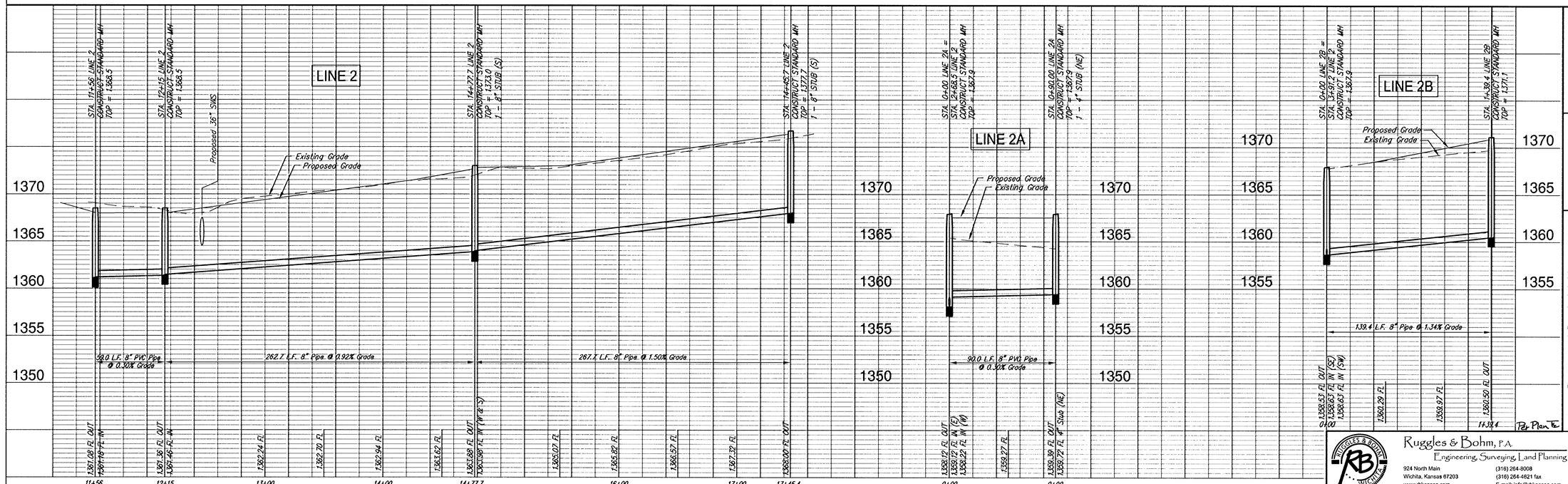

DESIGN	KWL
DRAWN	RA
DATE	Feb. 19, 2002
UTILITY	
REVISED	
REVIEW	
PROJECT NUMBER	468-83353
DRAWING FILE	Sanitary Sewer (Line 2 alt 2)

Brentwood South Addition
Line 2, 2A and 2B
WICHITA, KANSAS

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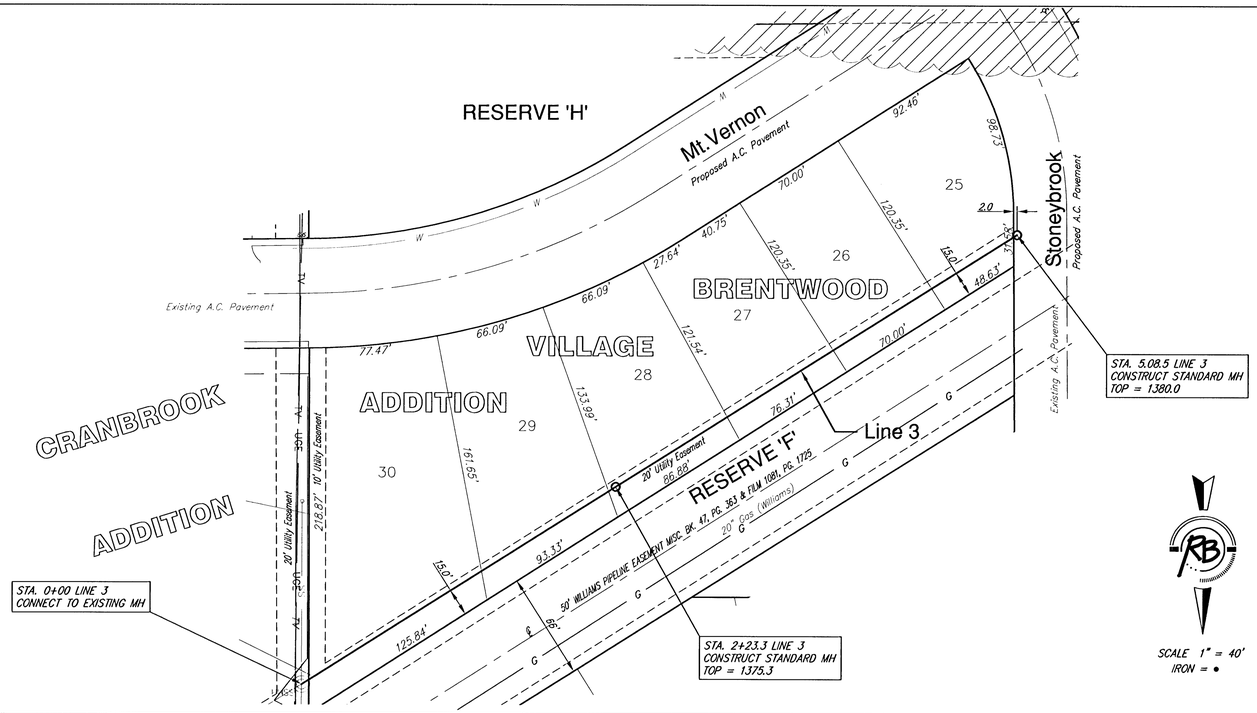
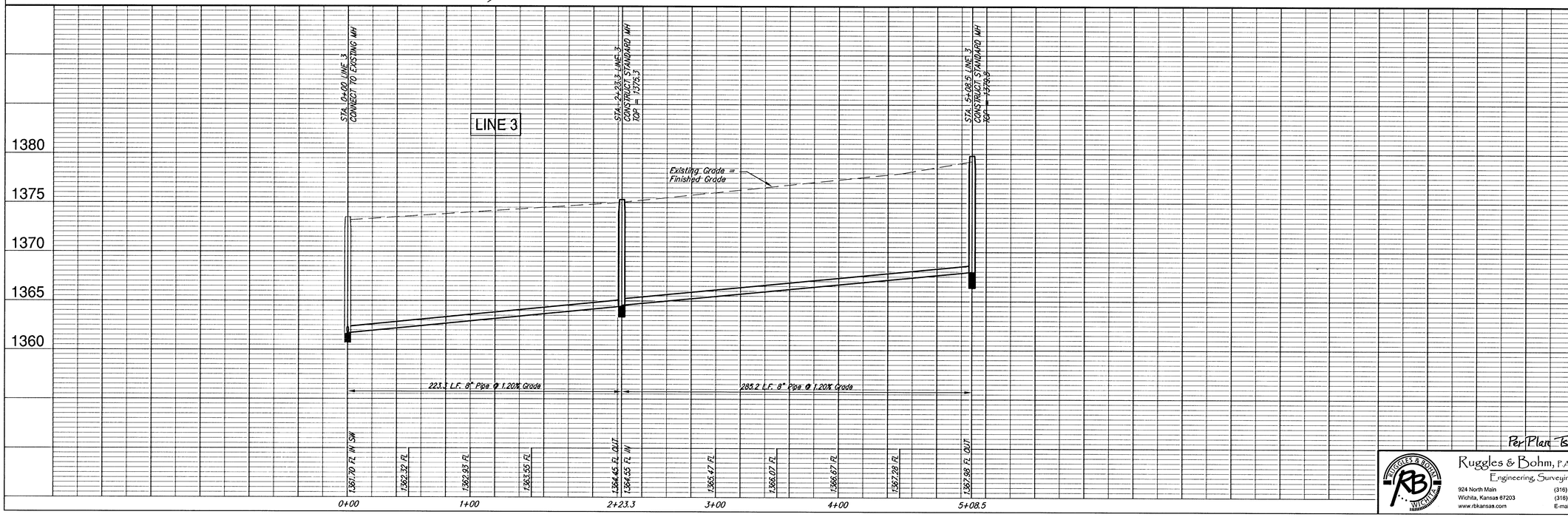
E-mail: info@rbkansas.com

SHB JOB 1992E
SHEET 6 OF 13





Per Plan

Brentwood South Addition
Line 3
WICHITA, KANSAS

PROJECT NUMBER 468-83353
DRAWING FILE Sanitary Sewer (Line 3)
DESIGN KWL
DRAWN RA
CHECK
REVIEW
DATE Feb. 19, 2002
REVISED

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SRB JOB 1992E
SHEET 7 OF 13

LINE 1

2300 L.F. X 22' X 0.25' = 12,650 C.F. / 27 = 468.5 C.Y. CUT

2300 L.F. X 22' X 0.25' = 12,650 C.F. / 27 = 468.5 C.Y. FILL

LINE 1A

76 L.F. X 22' X 0.25' = 418 C.F. / 27 = 15.5 C.Y. CUT

76 L.F. X 22' X 0.25' = 418 C.F. / 27 = 15.5 C.Y. FILL

LINE 1B

295 L.F. X 22' X 0.25' = 1,622.5 C.F. / 27 = 60.0 C.Y. CUT

295 L.F. X 22' X 0.25' = 1,622.5 C.F. / 27 = 60.0 C.Y. FILL

LINE 2

1450 L.F. X 22' X 0.25' = 7,975 C.F. / 27 = 295.4 C.Y. CUT

1450 L.F. X 22' X 0.25' = 7,975 C.F. / 27 = 295.4 C.Y. FILL

LINE 2A

90 L.F. X 22' X 0.25' = 495 C.F. / 27 = 18.4 C.Y. CUT

90 L.F. X 22' X 0.25' = 495 C.F. / 27 = 18.4 C.Y. FILL

LINE 2A

140 L.F. X 22' X 0.25' = 770 C.F. / 27 = 28.5 C.Y. CUT

140 L.F. X 22' X 0.25' = 770 C.F. / 27 = 28.5 C.Y. FILL

Additional Easements

300 L.F. X 22' X 0.25' = 1,650 C.F. / 27 = 61.1 C.Y. CUT

300 L.F. X 22' X 0.25' = 1,650 C.F. / 27 = 61.1 C.Y. FILL

NOTES :

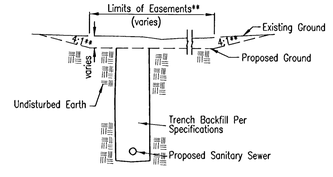
Proposed Grade as shown on profiles indicates grade as designated on Site Grading Plan and shall be completed (By Other Project) prior to time of Sanitary Sewer construction.

Sewer Contractor to grade easements to provide positive drainage as necessary.

Easement Grading will be bid on a lump sum basis for grading the easements to the profile and elevations shown on the Easement Grading Plan (this sheet). Approximate quantities of earthwork for easement grading are shown below. These approximate quantities are given for information only. The Contractor should verify the quantities when preparing the proposal.

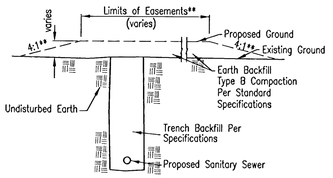
Cut 947.4 C.Y. (Approximate)

Fill 947.4 C.Y. (Approximate)



TYPICAL SECTION

"CUT" SITUATIONS



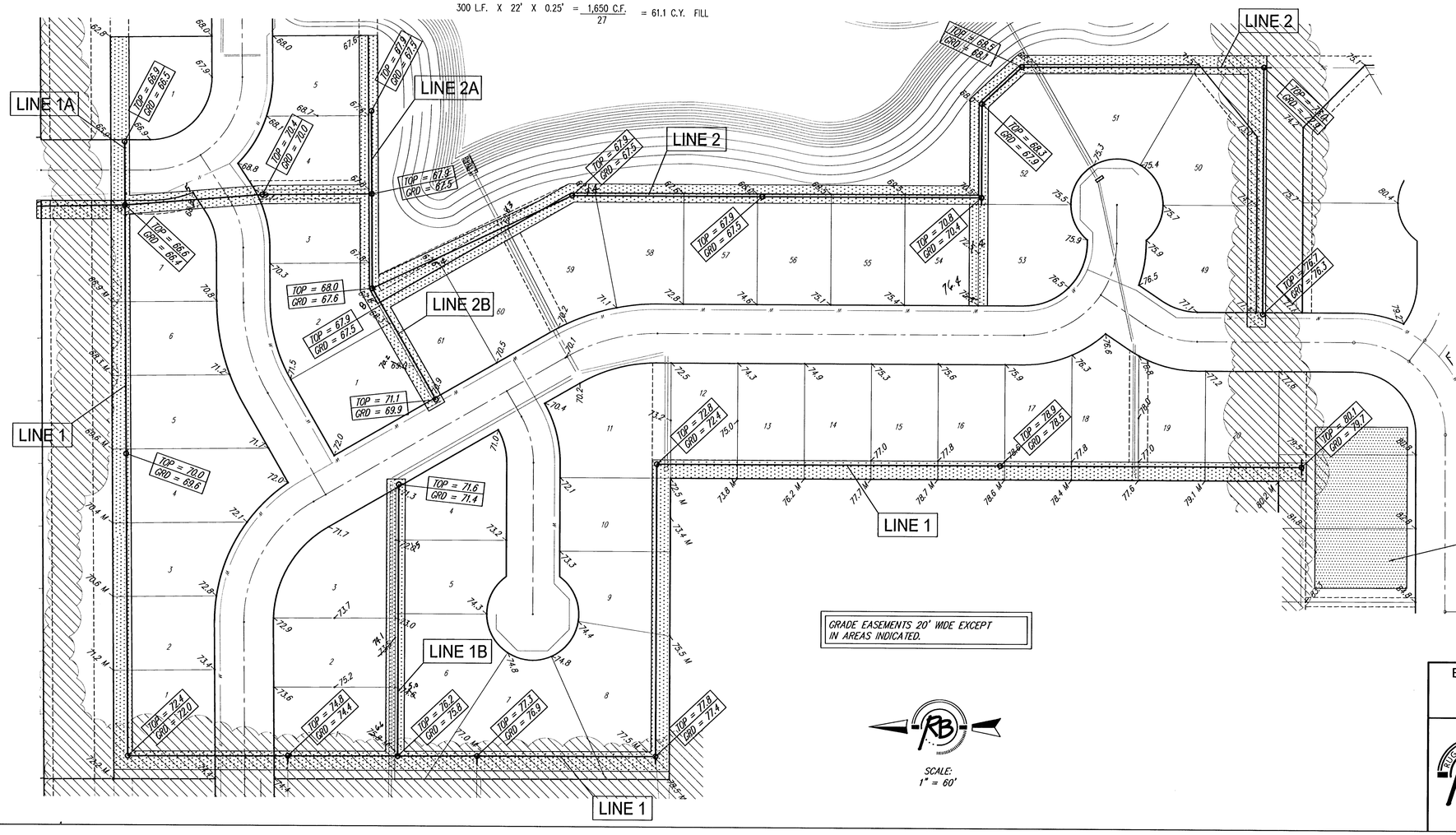
TYPICAL SECTION

"FILL" SITUATIONS

**Graded widths and slopes may vary as approved by the Engineer to minimize conflict with existing trees.

EASEMENT GRADING DETAILS

= AREAS TO BE GRADED



GRADE EASEMENTS 20' WIDE EXCEPT IN AREAS INDICATED.

SCALE: 1" = 60'

"AS BUILT" 8-22-02 By Ruggles & Bohm

Brentwood South Addition, Sanitary Sewer Improvements

EASEMENT GRADING PLAN

WICHITA, KANSAS

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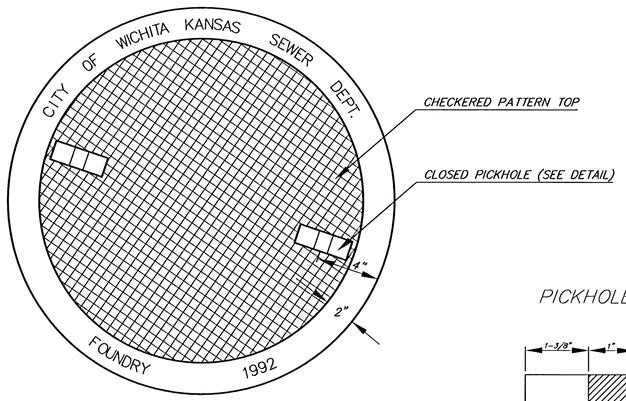
(316) 264-8008
(316) 264-4621 fax
E-mail: info@rbkansas.com

DESIGN	KWL
DRAWN	RA
REVIEW	
UTILITY	
DATE	Feb. 19, 2002
DRAWING FILE	Sanitary Sewer [Esmt Grading]
PROJECT NUMBER	468-83353
SRB JOB	1862E
SHEET	8 OF 13

MANHOLE FRAME AND COVER DETAIL

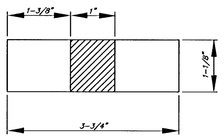
ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS

MANHOLE COVER
Weight = 180 Lbs.

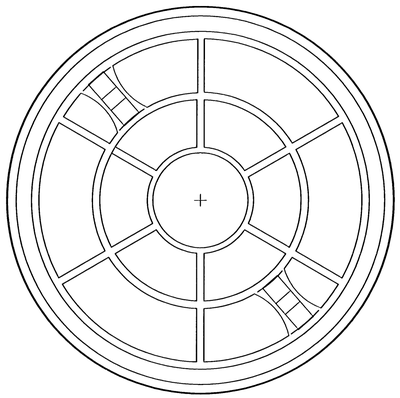


TOP VIEW

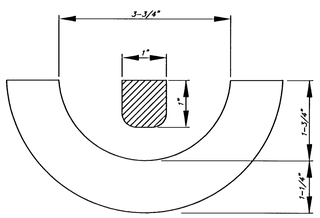
PICKHOLE DETAIL



TOP VIEW

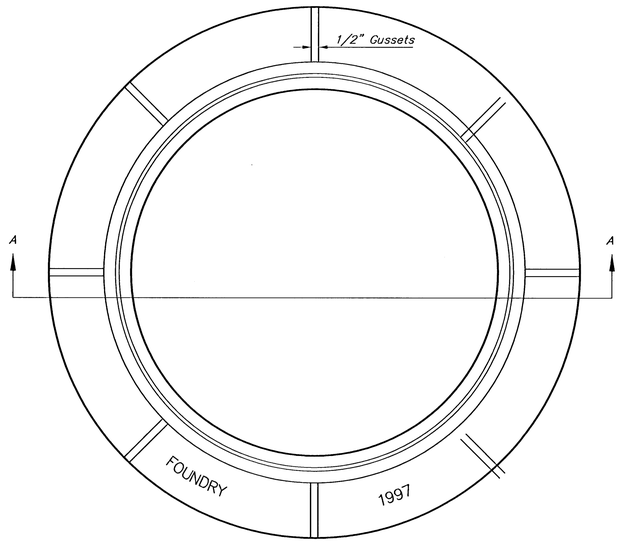


BOTTOM VIEW

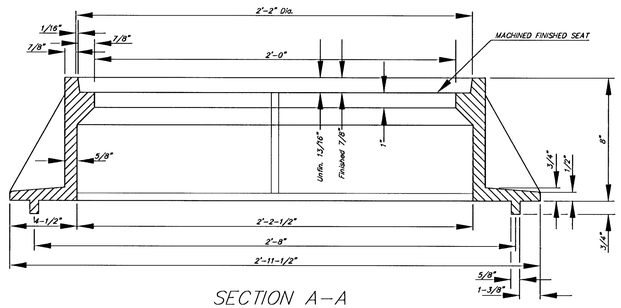


SECTION VIEW

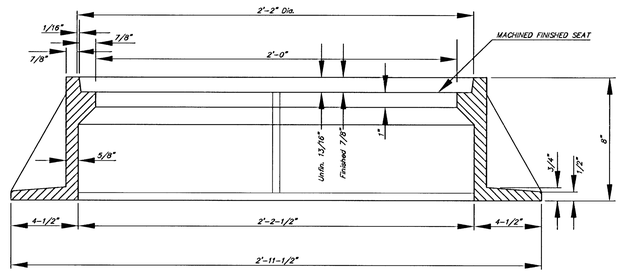
MANHOLE FRAME
Weight = 240 Lbs.



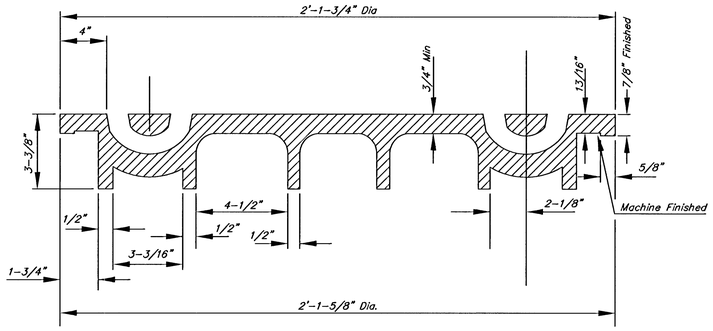
TOP VIEW



SECTION A-A
MUD RING



SECTION A-A



SECTION VIEW

GENERAL NOTES

1. 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.

2. 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.

3. MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDARY 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.

4. 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.

5. 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.

THE CITY OF WICHITA

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
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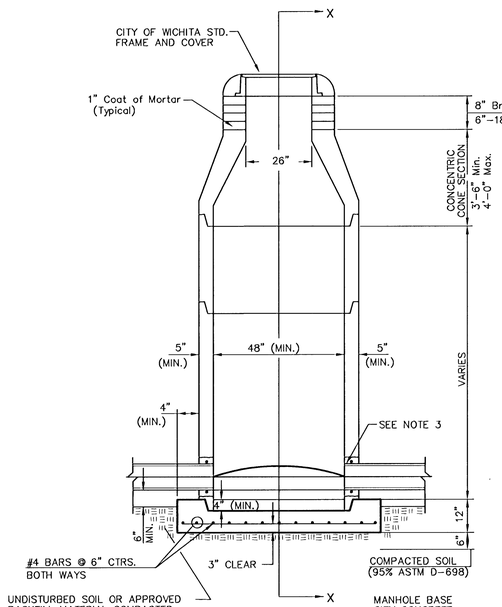
MANHOLE FRAME AND COVER

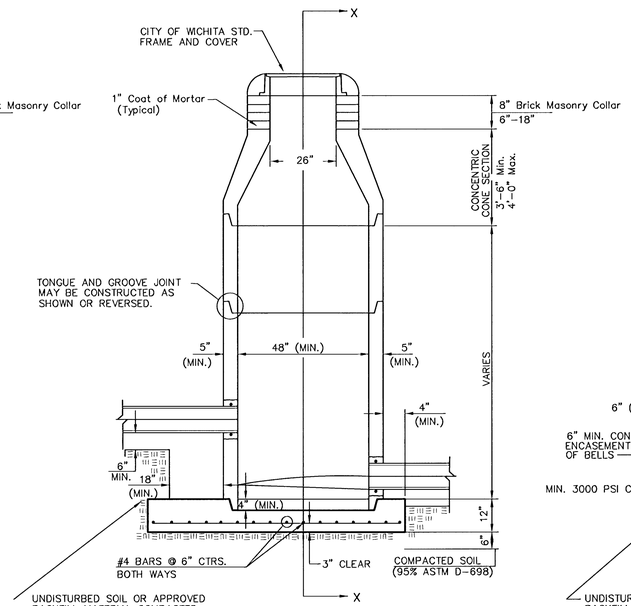
M. E. LINDEBAK P.E. - CITY ENGINEER

PROJECT NUMBER	OCA #
468-83353	
DATE MAR 96	SHEET 9 OF 13

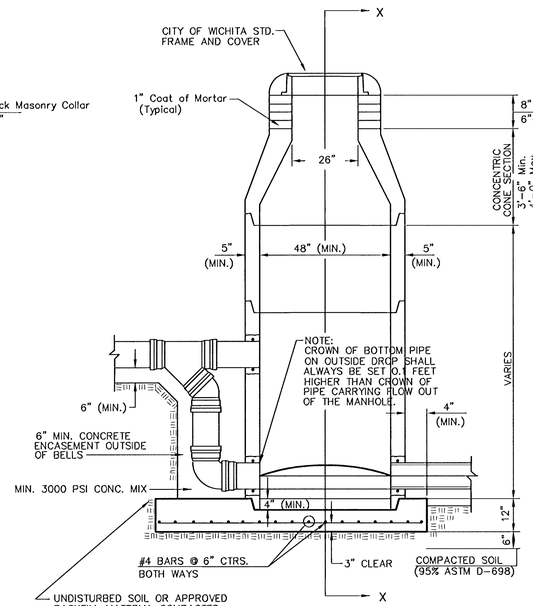
SEWER APPURTENANCES DETAILS



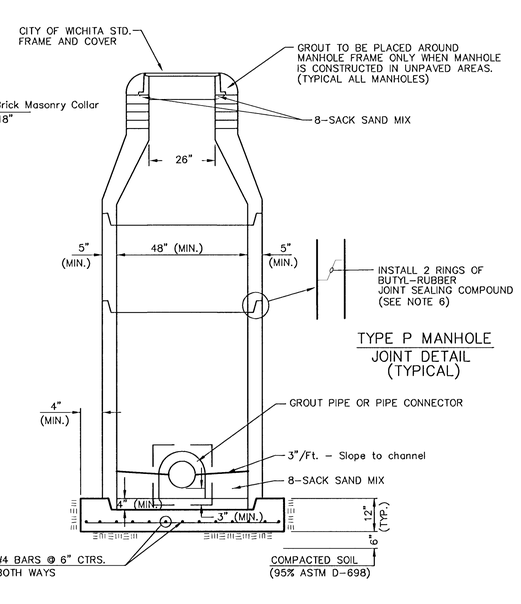
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



SECTION X
(TYPICAL)

GENERAL NOTES

PRECAST MANHOLE NOTES

1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
2. NON–SHRINK GROUT SHALL BE NON–METALLIC TYPE.
3. APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.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.
4. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TNEMEC SERIES 66 HI–BUILD EPOXOLINE, DRY THICKNESS OF 8 MILS (MIN.)
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
6. JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
8. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
9. LIFTING HOLES SHALL BE FILLED WITH NON–SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
10. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE 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.
11. REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 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.
12. OPENINGS SHALL BE CUT INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NONSHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW 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.
13. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO 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.
14. PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MAHOLE. THE CRADLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRADLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
15. MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
16. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 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.
17. STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
18. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 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.

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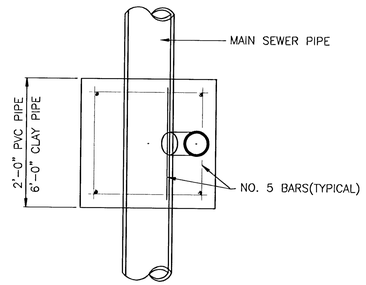
STANDARD TYPE 'P' MANHOLES

M. E. LINDEBAK P.E. – CITY ENGINEER

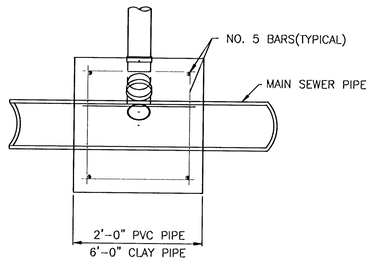
PROJECT NUMBER	OCA #
468-83353	
DATE MAR 96	SHEET 10 OF 13

VERTICAL RISER DETAILS

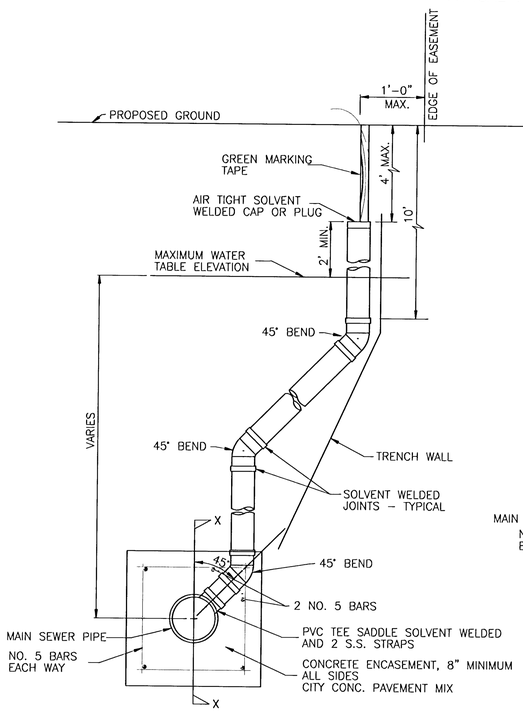
ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS
OCTOBER 1992



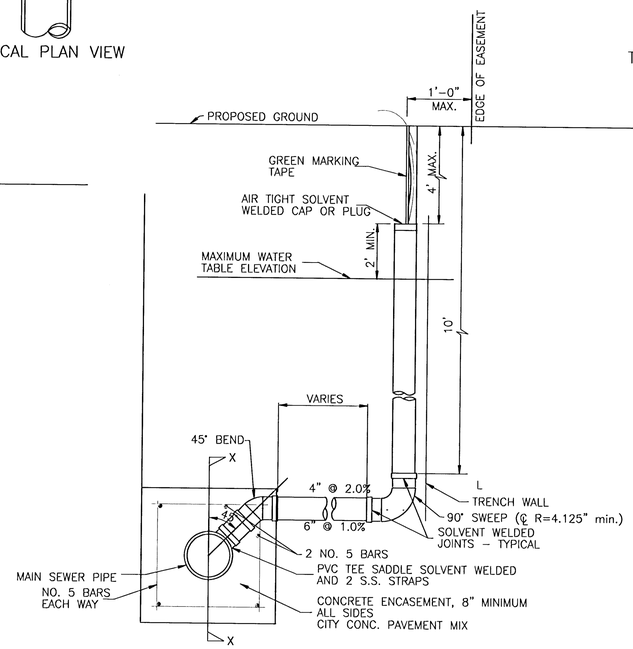
TYPICAL PLAN VIEW



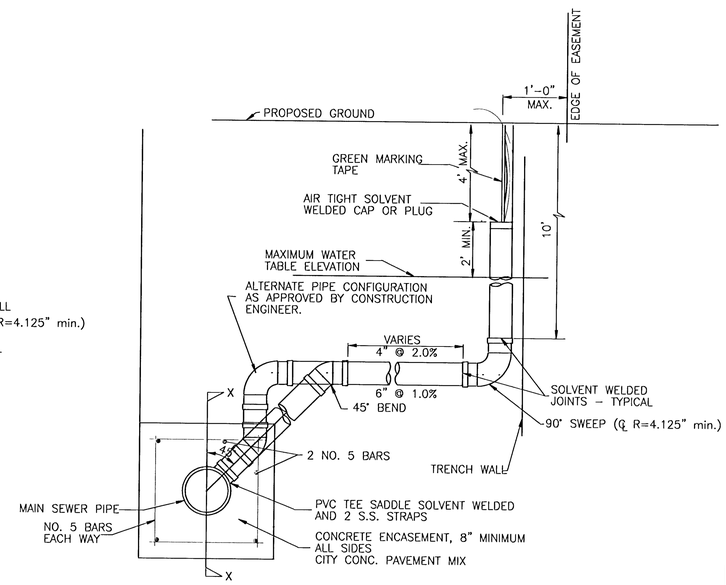
TYPICAL SECTION X–X



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 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.

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 drawing. 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 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.

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".

THE CITY OF WICHITA

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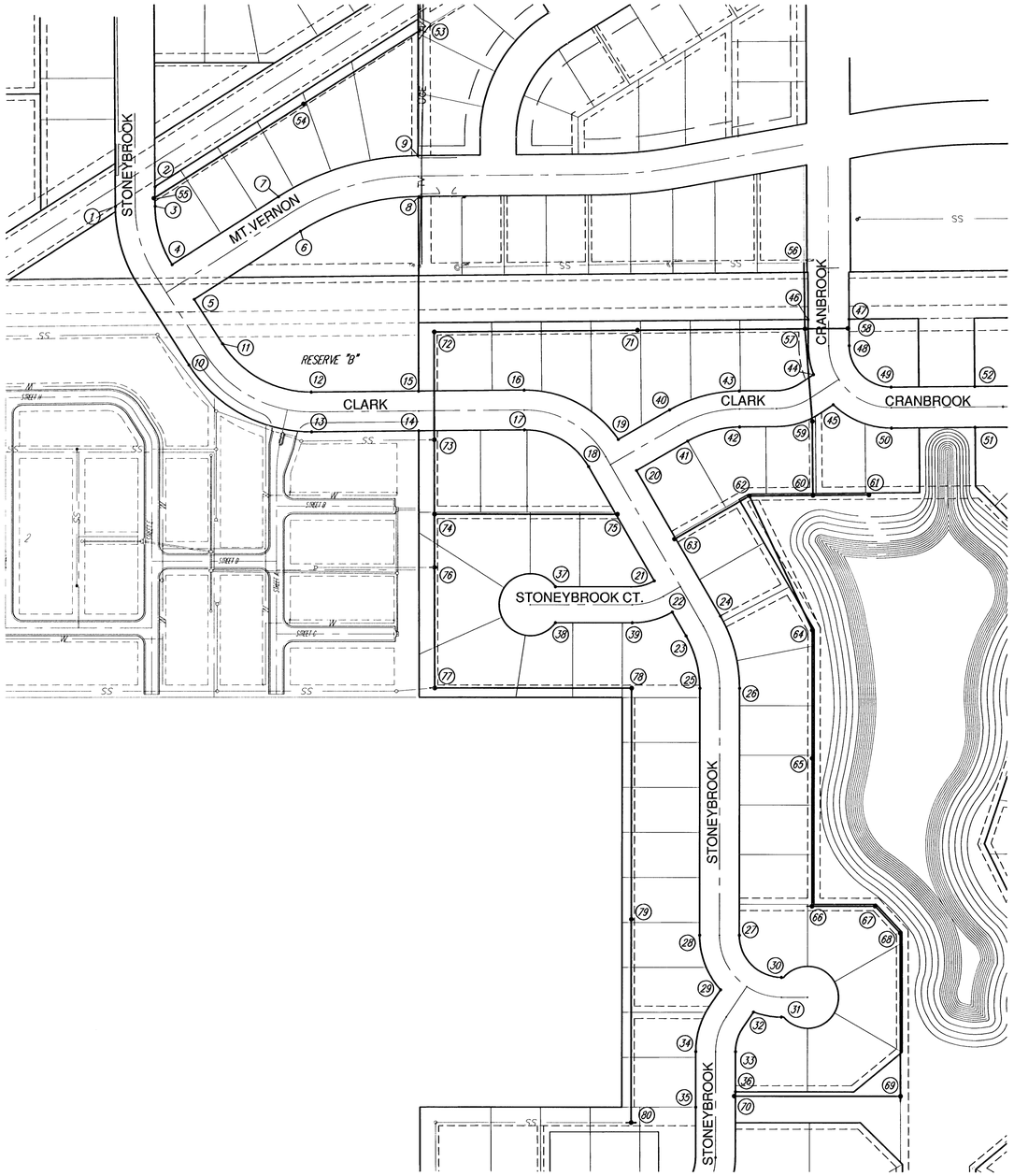
VERTICAL RISER DETAIL

M. E. LINDEBAK P.E. – CITY ENGINEER

PROJECT NUMBER	OCA #
468-83353	
DATE MAR 96	SHEET 11 OF 13



	North	East	Description
1	N 20340.8161	E 20177.2717	PC
2	N 20372.7674	E 20241.0867	Block Corner
3	N 20341.1888	E 20241.2706	PC
4	N 20247.7256	E 20268.8196	Block Corner
5	N 20191.8827	E 20304.4131	Block Corner
6	N 20301.2921	E 20475.6534	PC
7	N 20356.9479	E 20440.1791	PC
8	N 20356.9682	E 20666.4914	Block Corner
9	N 20423.1582	E 20665.0527	Block Corner
10	N 20085.7233	E 20296.1828	PC
11	N 20120.1227	E 20350.1521	PC
12	N 20042.4293	E 20493.5005	PT
13	N 19978.4325	E 20494.1401	PT
14	N 19980.1590	E 20666.8884	Block Corner
15	N 20044.1572	E 20666.4740	Block Corner
16	N 20045.8516	E 20836.2403	PC
17	N 19981.8548	E 20836.8799	PC
18	N 19922.8607	E 20940.2502	PT
19	N 19966.7154	E 20988.2088	Block Corner
20	N 19916.7555	E 21017.6758	Block Corner
21	N 19738.9065	E 21046.4562	Block Corner
22	N 19688.6771	E 21075.4562	Block Corner
23	N 19650.3541	E 21097.5819	PC
24	N 19682.3541	E 21153.0075	PC
25	N 19566.3541	E 21120.0897	PT
26	N 19566.3541	E 21184.0897	PT
27	N 19168.5590	E 21184.0897	PC
28	N 19168.5590	E 21120.0897	PC
29	N 19080.2741	E 21153.9582	Block Corner
30	N 19100.5590	E 21255.6709	Block Corner
31	N 19036.5590	E 21255.6709	Block Corner
32	N 19044.4915	E 21207.0205	Block Corner
33	N 18980.8101	E 21178.0897	PT
34	N 18980.8101	E 21114.0897	PT
35	N 18891.4543	E 21114.0897	Block Corner
36	N 18916.4915	E 21178.0897	Block Corner
37	N 19729.3223	E 20887.2049	Block Corner
38	N 19671.3223	E 20887.2387	Block Corner
39	N 19671.3944	E 21011.0312	PC
40	N 20014.4850	E 21070.9482	PC
41	N 19964.2555	E 21099.9482	PC
42	N 19987.1567	E 21183.7393	PT
43	N 20045.1538	E 21183.1596	PT
44	N 20071.5407	E 21302.5524	Block Corner
45	N 20023.0711	E 21334.4069	Block Corner
46	N 20160.4294	E 21293.7339	Block Corner
47	N 20161.0890	E 21359.7314	Block Corner
48	N 20118.2491	E 21359.9519	PC
49	N 20051.5972	E 21427.6206	PT
50	N 19985.6005	E 21428.2802	PT
51	N 19986.9458	E 21562.8919	Block Corner
52	N 20052.9426	E 21562.2323	Block Corner
53	N 20625.44	E 20669.25	Center of Manhole
54	N 20506.30	E 20480.44	Center of Manhole
55	N 20354.07	E 20239.20	Center of Manhole
56	N 20251.00	E 21287.04	Center of Manhole
57	N 20145.38	E 21288.81	Center of Manhole
58	N 20146.07	E 21357.81	Center of Manhole
59	N 19996.29	E 21300.76	Center of Manhole
60	N 19877.33	E 21301.95	Center of Manhole
61	N 19878.23	E 21391.95	Center of Manhole
62	N 19876.31	E 21199.62	Center of Manhole
63	N 19806.64	E 21078.94	Center of Manhole
64	N 19659.87	E 21301.09	Center of Manhole
65	N 19453.56	E 21301.09	Center of Manhole
66	N 19215.56	E 21301.09	Center of Manhole
67	N 19215.56	E 21402.79	Center of Manhole
68	N 19172.37	E 21443.05	Center of Manhole
69	N 18909.65	E 21443.83	Center of Manhole
70	N 18909.49	E 21176.09	Center of Manhole
71	N 20142.68	E 21018.90	Center of Manhole
72	N 20139.41	E 20691.19	Center of Manhole
73	N 19965.52	E 20691.71	Center of Manhole
74	N 19846.21	E 20692.06	Center of Manhole
75	N 19846.38	E 20986.72	Center of Manhole
76	N 19760.21	E 20692.31	Center of Manhole
77	N 19566.21	E 20692.89	Center of Manhole
78	N 19566.39	E 21010.09	Center of Manhole
79	N 19193.89	E 21010.09	Center of Manhole
80	N 18866.39	E 21010.09	Center of Manhole

Brentwood South Addition Street Improvements
KEY MAP
WICHITA, KANSAS

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

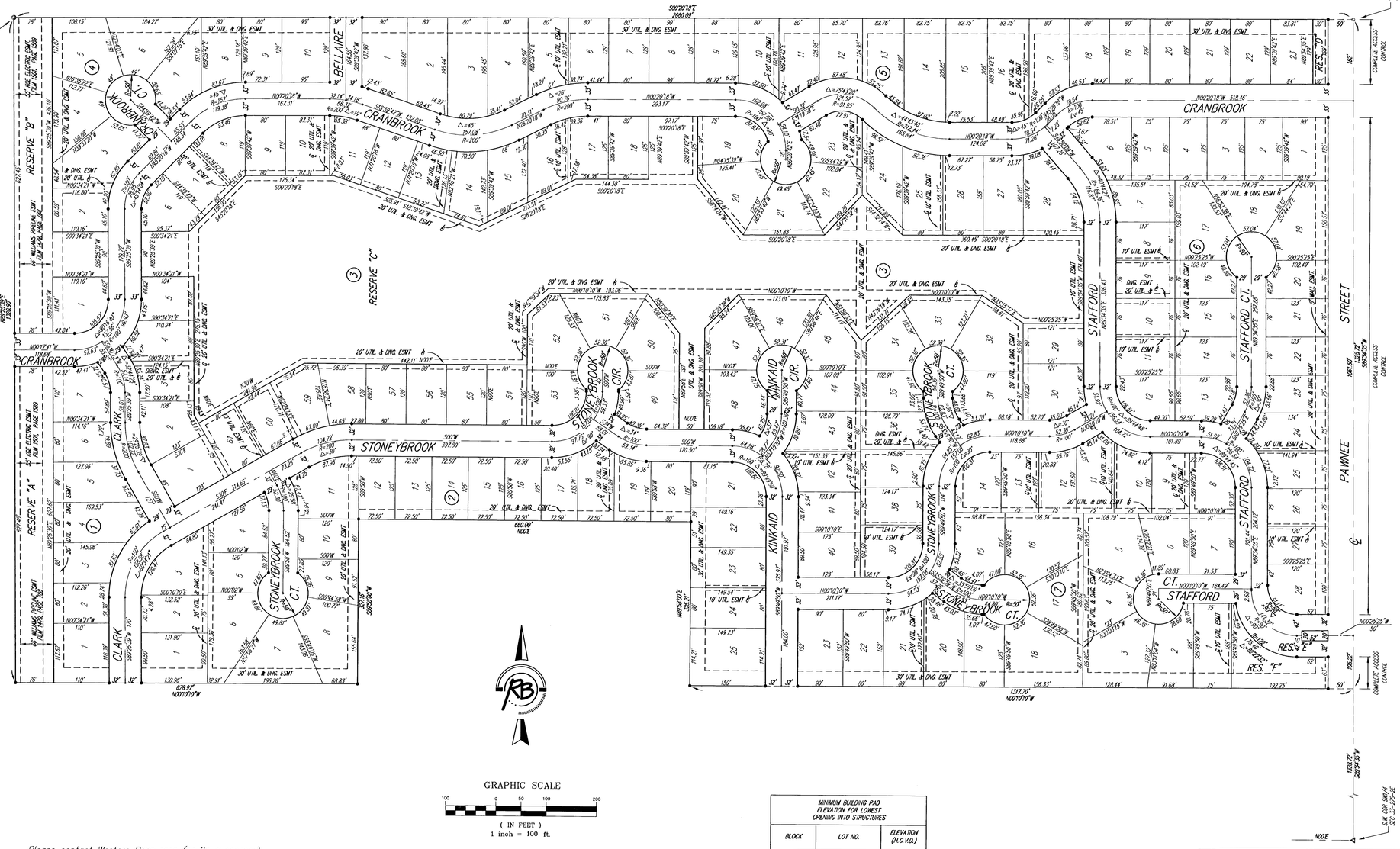
924 North Main
Wichita, Kansas 67203
www.rbkansas.com

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

DRAWING FILE: paving {key map}
PROJECT NUMBER: 468-83353
DESIGN: KWL
DRAWN: RA
REVIEW:
UTILITY:
DATE: Feb. 19, 2002
SRB JOB 1992E
SHEET 12 OF 13

BRENTWOOD SOUTH ADDITION

WICHITA, SEDGWICK COUNTY, KANSAS



GRAPHIC SCALE

100 0 50 100 200

(IN FEET)

1 inch = 100 ft.

△ = CITY OF WICHITA CONTROL THIMBLE (FOUND)

○ = 1/2" REBAR W/CARRIER CAP (FOUND)

⊙ = 5/8" REBAR (FOUND)

● = 1/2" REBAR W/5918 CAP (SET)

MINIMUM BUILDING PAD ELEVATION FOR LOWEST OPENING INTO STRUCTURES		
BLOCK	LOT NO.	ELEVATION (M.S.V.D.)
3	Lots 1–20, 47 Lots 50–61	1,369

BENCH MARK #1: USGS BRASS PLUG 28' S. & 5.50' W. OF CENTERLINE INTERSECTION OF CAPRI & PAWNEE
ELEV.=1,388.25 NGVD

BENCH MARK #2: CITY OF WICHITA STD. DISC 20.8' W & 54.5' S. OF CENTERLINE INTERSECTION DALTON & PAWNEE
ELEV.=1,378.60

Please contact Western Resources (or its successor) Electric Transmission Engineering Department (currently 785–575–8219) before conducting any proposed construction activities that could place people, equipment, or facilities within Western Resources' easement, shown on this plat, designated as Film 1501, Page 1589, dated December 29, 1994.

Brentwood South Addition
FINAL PLAT
WICHITA, KANSAS

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DESIGN	KWL
DRAWN	RA
REVIEW	
UTILITY	
DATE	Feb. 19, 2002
SHEET	13 OF 13
DRAWING FILE	Sanitary Sewer (Plat)
PROJECT NUMBER	468-83353
SHEET NO.	1992E

58-05-05-05