CONSTRUCTION PLANS

SANITARY SEWER EXTENSIONS

FALCON FALLS ADDITION

TO

THE CITY OF WICHITA, KANSAS

LATERAL 4, MAIN 13, SS 23

NEIL D. CABLE, P.E. - CITY ENGINEER

PROJECT NO. 468-83574

OCA NO. 743976

GENERAL NOTES:

1. Existing utility lines and their location, as shown on the plans, represent the best information obtainable for design. The contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

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

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

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

4. The Contractor shall be responsible for preserving property irons. The Contractor will be required to re-establish any property irons which are damaged or destroyed by his construction operations. Such irons shall be re-established by a licensed land surveyor in accordance with state laws.

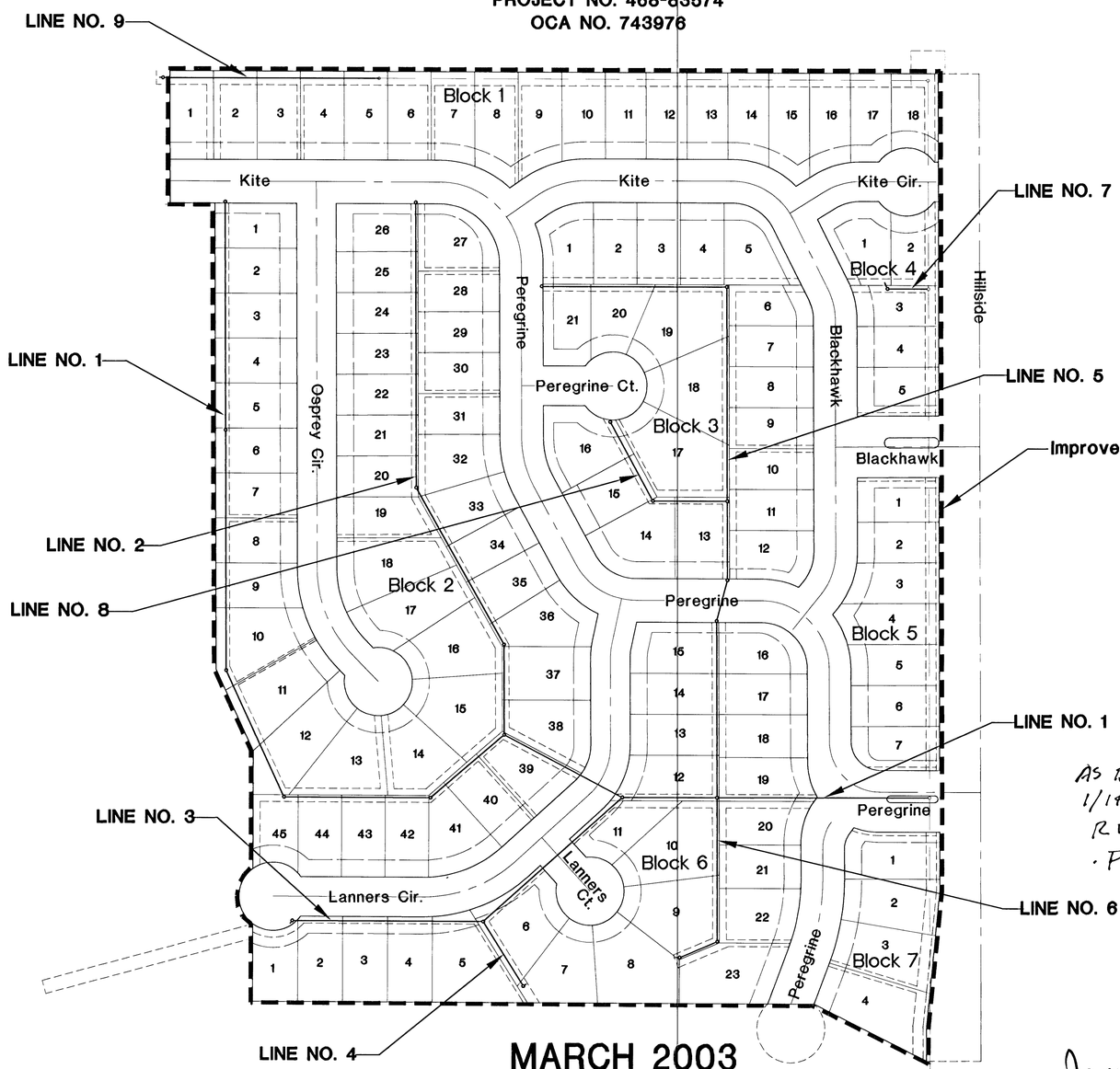
5. Trees and shrubs in public right-of-way which are in direct conflict with proposed new construction shall be removed by the Contractor with the Engineer's approval. Trees and shrubs which are not in direct conflict with the proposed new construction shall be saved and protected from damage.

6. Contractor shall vacuum test all manholes according to the City of Wichita standard specifications.

7. The tops of all Manholes to be set 0.4 feet above existing ground unless otherwise noted.

8. All areas disturbed by sewer construction, i.e. R/W, easements, and adjacent properties shall be restored with the same grass/ sod as per AR 78.

9. Contractor shall maintain all existing BMP(s) on project site during construction. Contractor shall repair or replace any existing BMP(s) that are damaged (Cost subsidiary to site restoration). If BMP(s) were damaged prior to contractor beginning work on project, notify construction inspector or engineer.



Scale 1" = 100'

INDEX

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BENCH MARKS

1. Brass Disk on E. end of N. Hbgd. of RCB under 53rd St. N. 50' E. of N 1/4 Cor. Elev. 1371.83

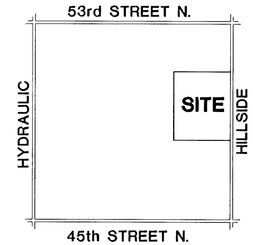
2. 1/2" Sq. spike in fence post 34' S. of SW Cor. of Heights HS property. Elev. 1368.26

3. " □" Cut on NE corner of W. wingwall conc. wash near NE cor. Lot 1, Blk 1, Falcon Falls Addition Elev. 1359.73

4. " □" Cut on SE corner of conc. step at pump station near SE corner Heights HS property. Elev. 1356.83

5. Brass Disk on top S. end of E. corral rail on Hillside Bridge, S. of E. 1/4 Cor. Sec. Elev. 1354.51

AS BUILT
1/14/04
RDC
.PDF



LOCATION MAP
No Scale

5/13/03 Revised MH & HOLE COORDINATES

MARCH 2003

PLANS PREPARED BY

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JAMES M. HUBERT 14698 5-14-03 LICENSED PROFESSIONAL ENGINEER KANSAS

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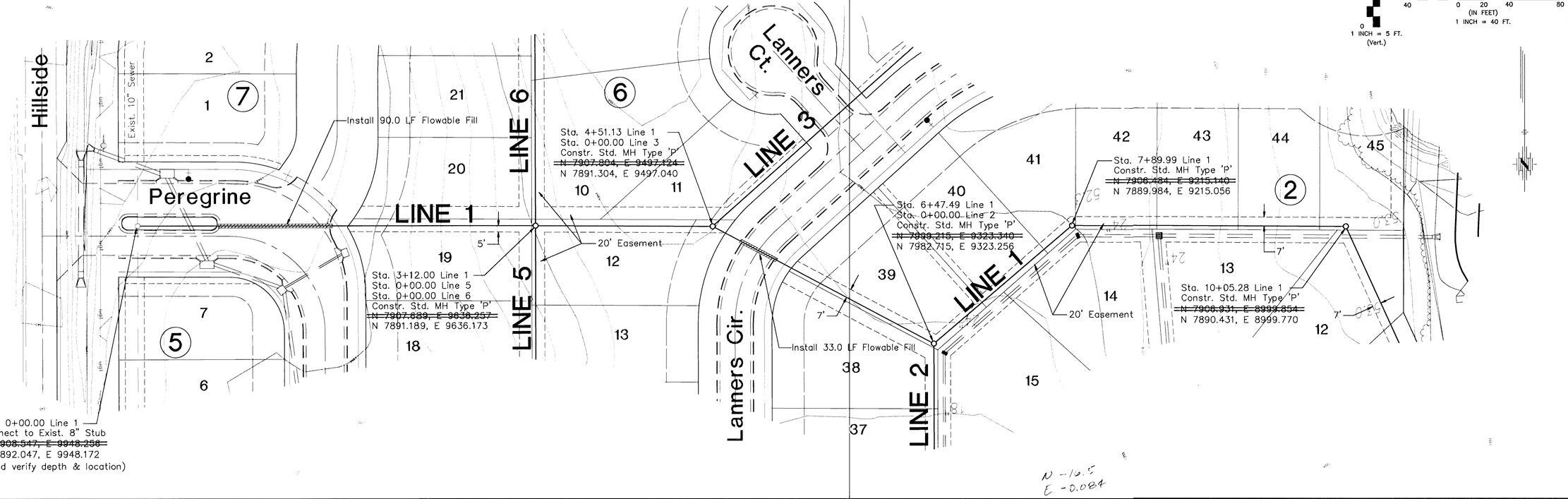

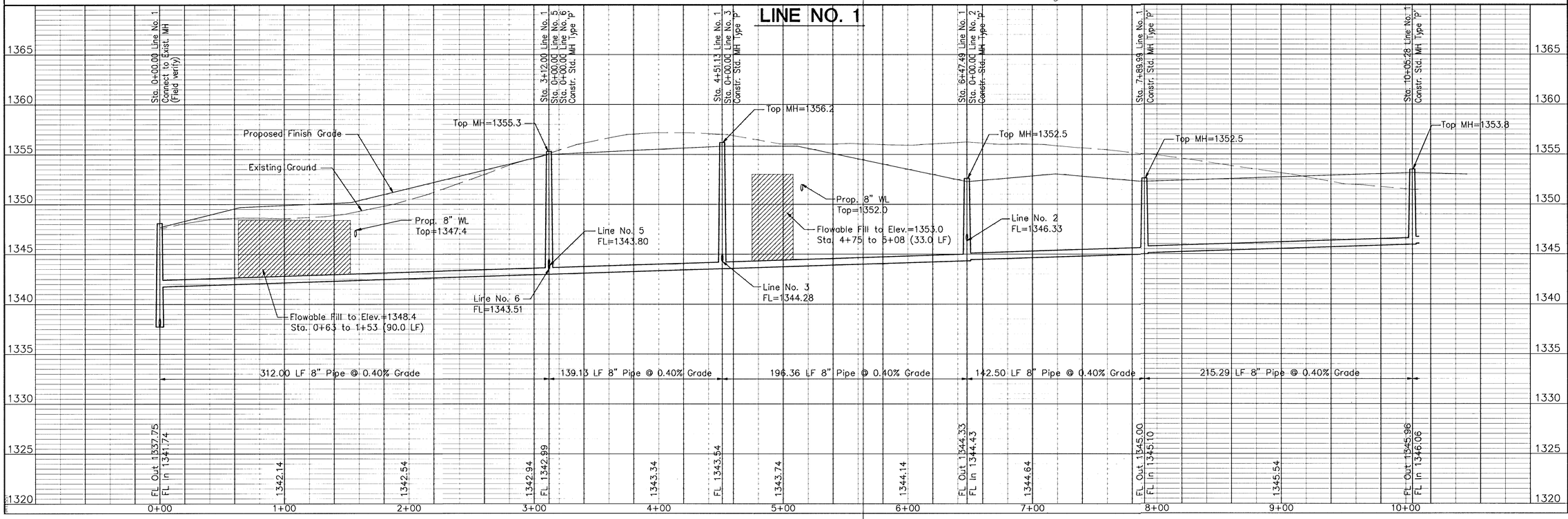

No.	Date	By	Approved	Revision
1	5/13/03	JU/BK	JHU	Revised Manhole Coordinates
2	7/31/03	JHU	JHU	Revised Profiles & Alignments
3				
4				

FALCON FALLS
SANITARY SEWER LINE NO. 1
CITY OF WICHITA, KANSAS
NEIL D. CABLE, P.E. - CITY ENGINEER
Proj# 468-83574 O.C.A.# 743976

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FINAL

Designed By: J. Ubert / B. Kulla
Drawn By: B. Kulla
Poe Job No.: 1748
Date: March 2003

Sheet
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GRAPHIC SCALE
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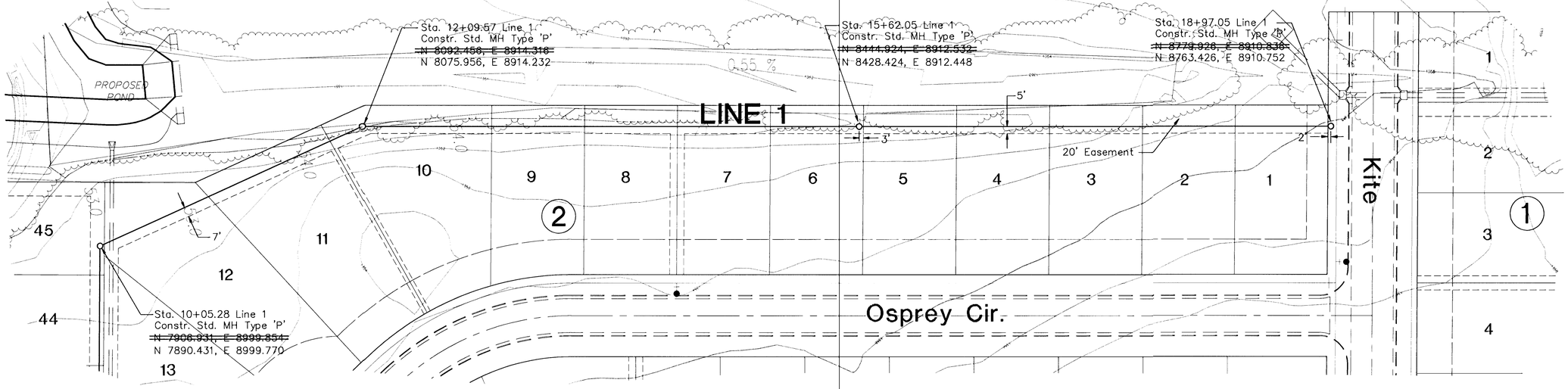
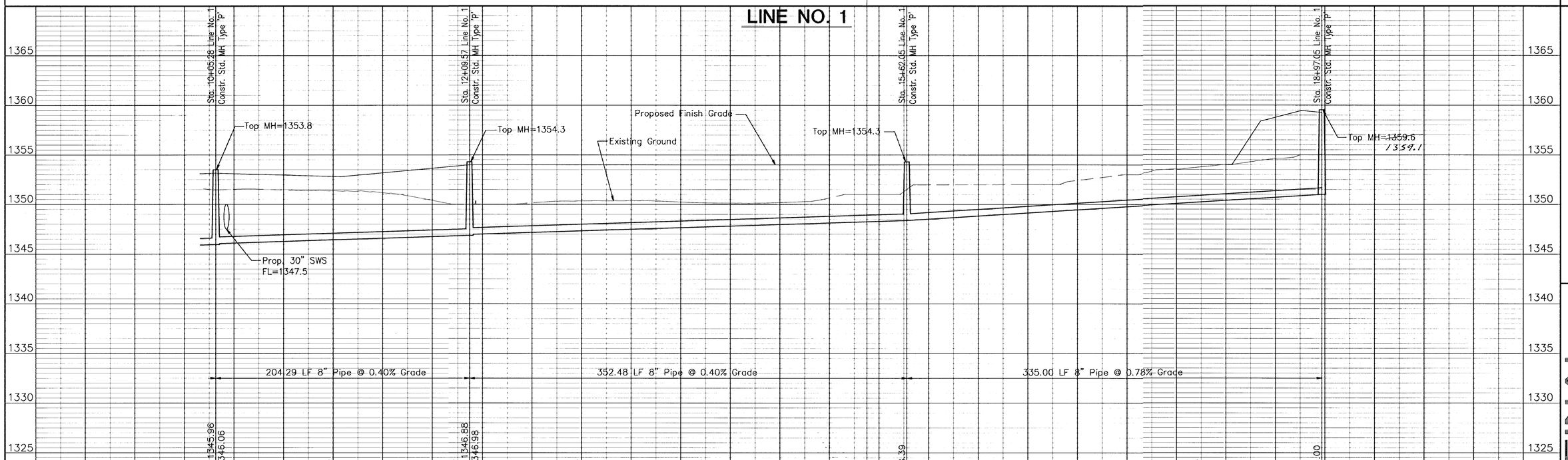
40 0 20 40 80 (IN FEET) 1 INCH = 40 FT.



LINE NO. 1



No.	Date	By	Revision
1	5/13/03	JU/BK	Revised Manhole Coordinates
2	5/21/03	JWJ	Revised Profiles & Alignments

FALCON FALLS
SANITARY SEWER LINE NO. 1
CITY OF WICHITA, KANSAS
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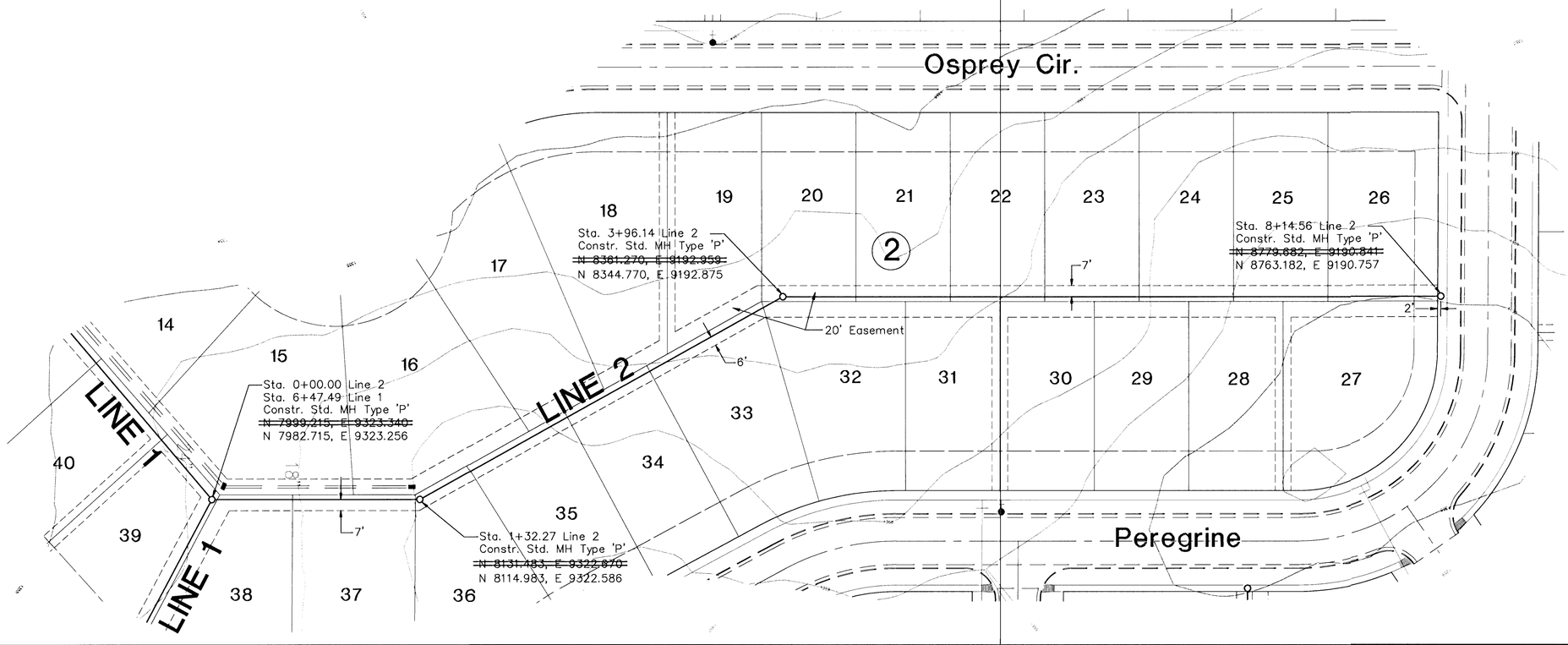

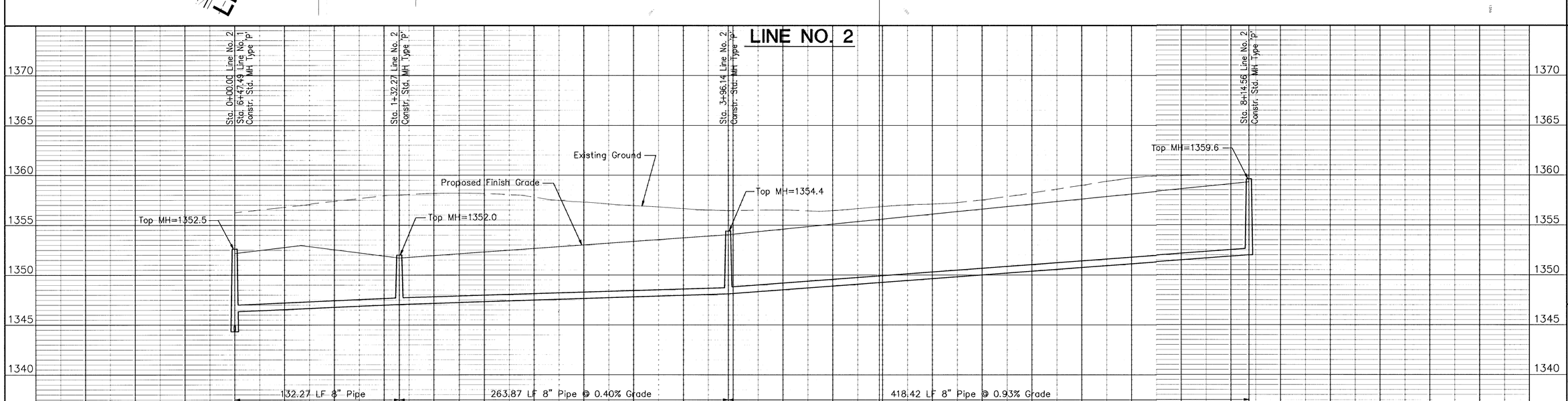

No.	Date	By	Approved	Revision
1	5/13/03	JU/BK	JMC	Revised Manhole Coordinates
2	7/31/03	JMC	JMC	Revised Profiles & Alignments

FALCON FALLS
SANITARY SEWER LINE NO. 2

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Sheet
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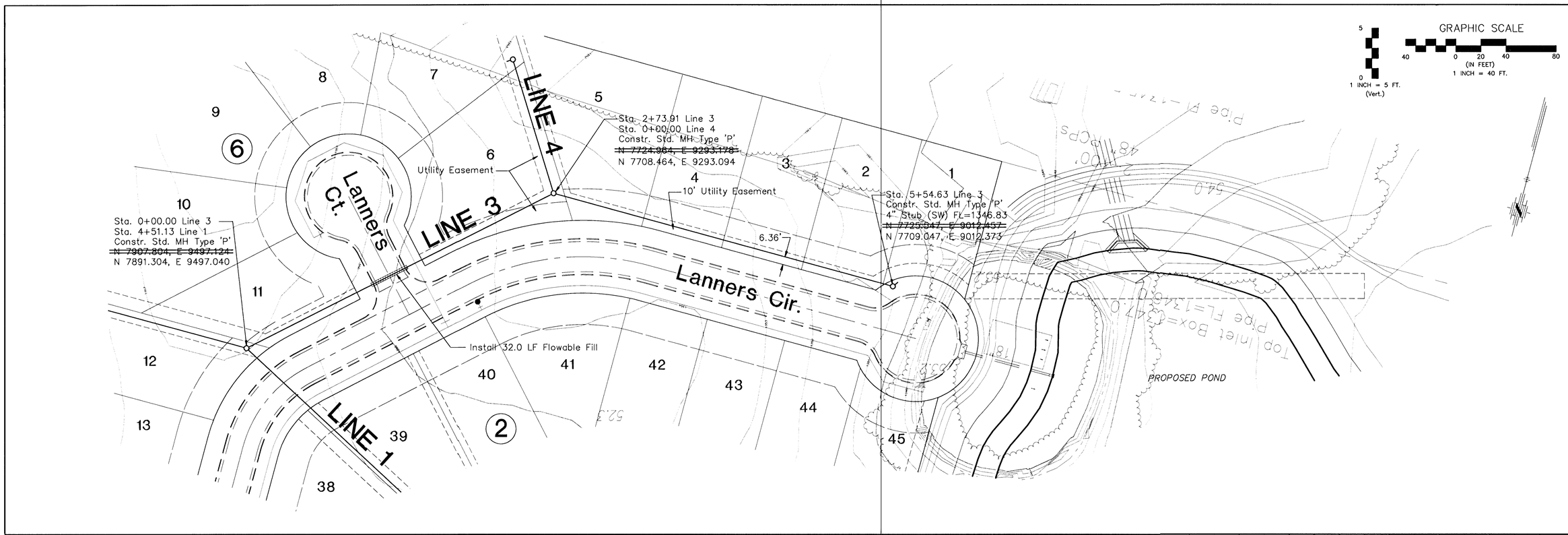

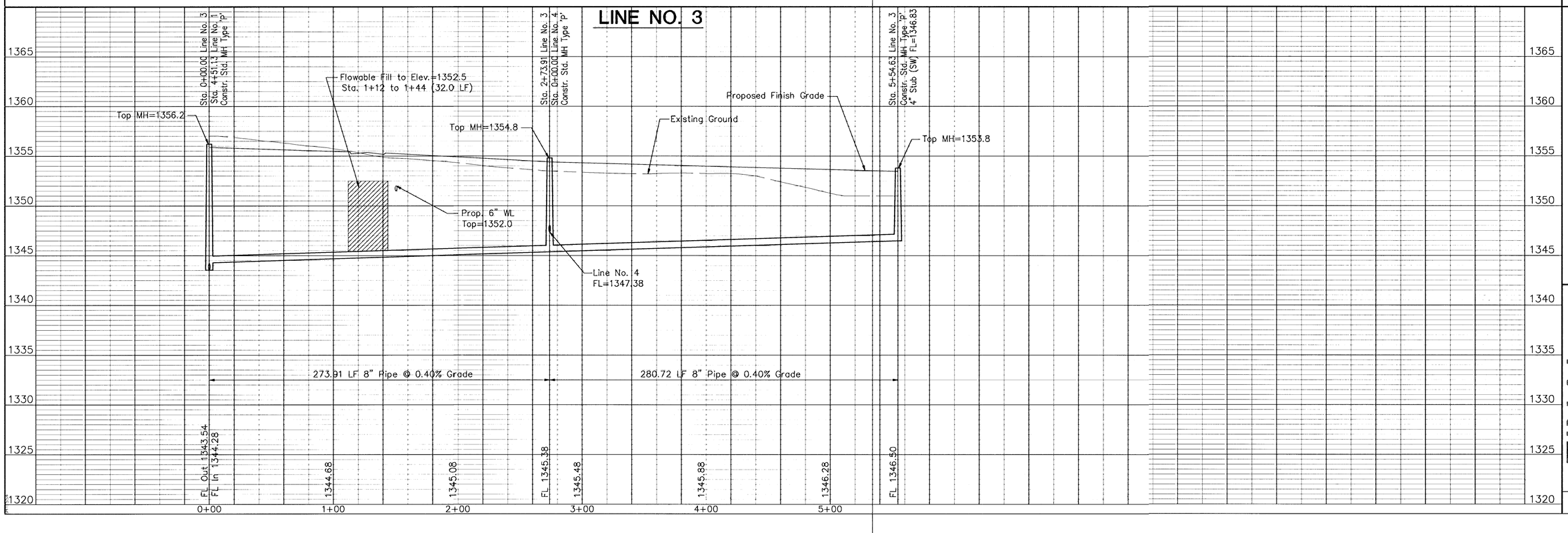

No.	Date	By	Approved	Revision
1	5/13/03	JU/BK		Revised Manhole Coordinates
2	3/31/03	JMU	JMU	Revised Profiles & Alignments

FALCON FALLS
SANITARY SEWER LINE NO. 3
CITY OF WICHITA, KANSAS
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Sheet 5 of 14

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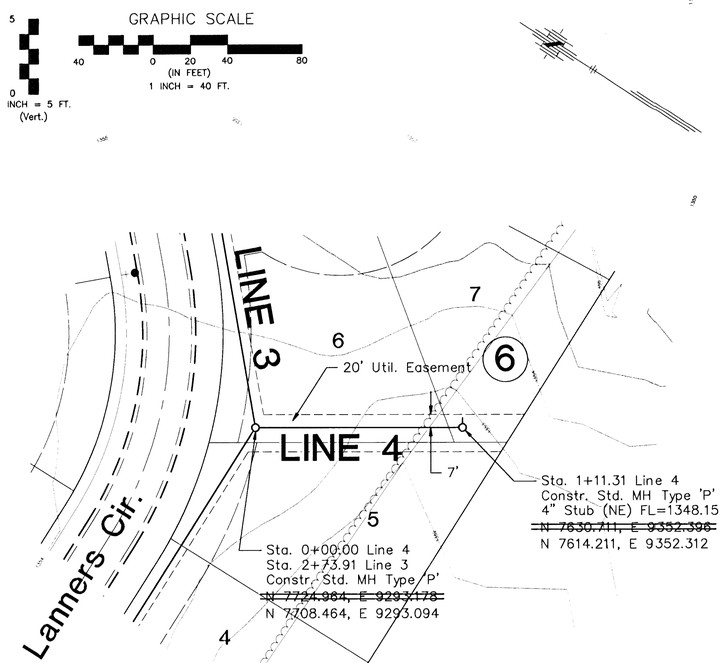

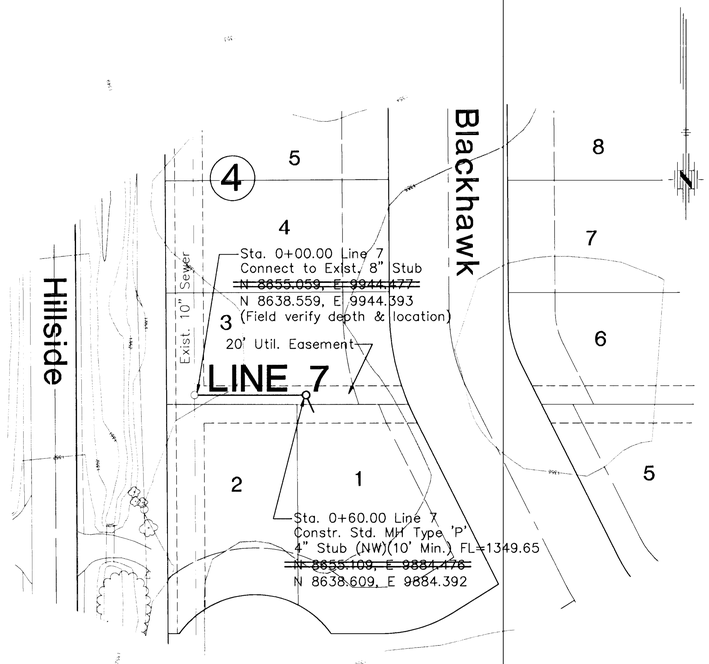

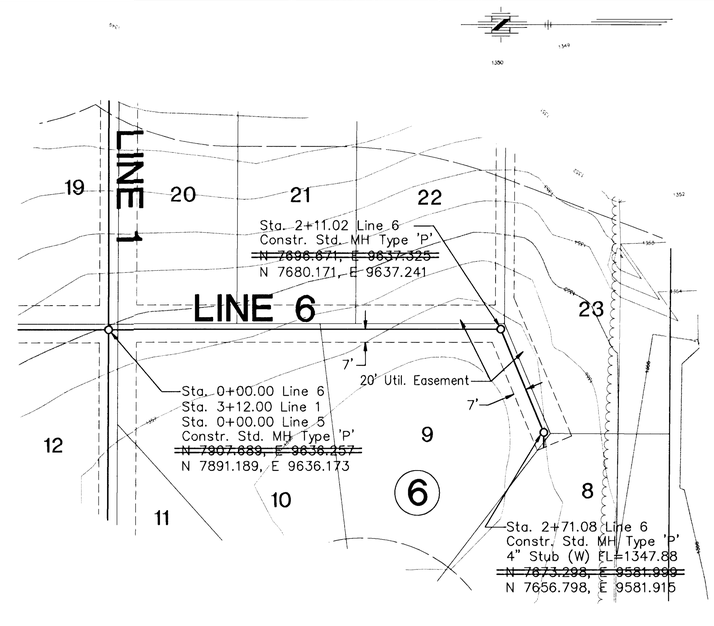

No.	Date	By	Approved	Revision
1	5/13/03	JU/BK	JWP	Revised Manhole Coordinates
2	7/16/03		JWP	Revised Profiles & Alignment
3				

FALCON FALLS
SANITARY SEWER LINE NO. 4, 6, & 7
CITY OF WICHITA, KANSAS
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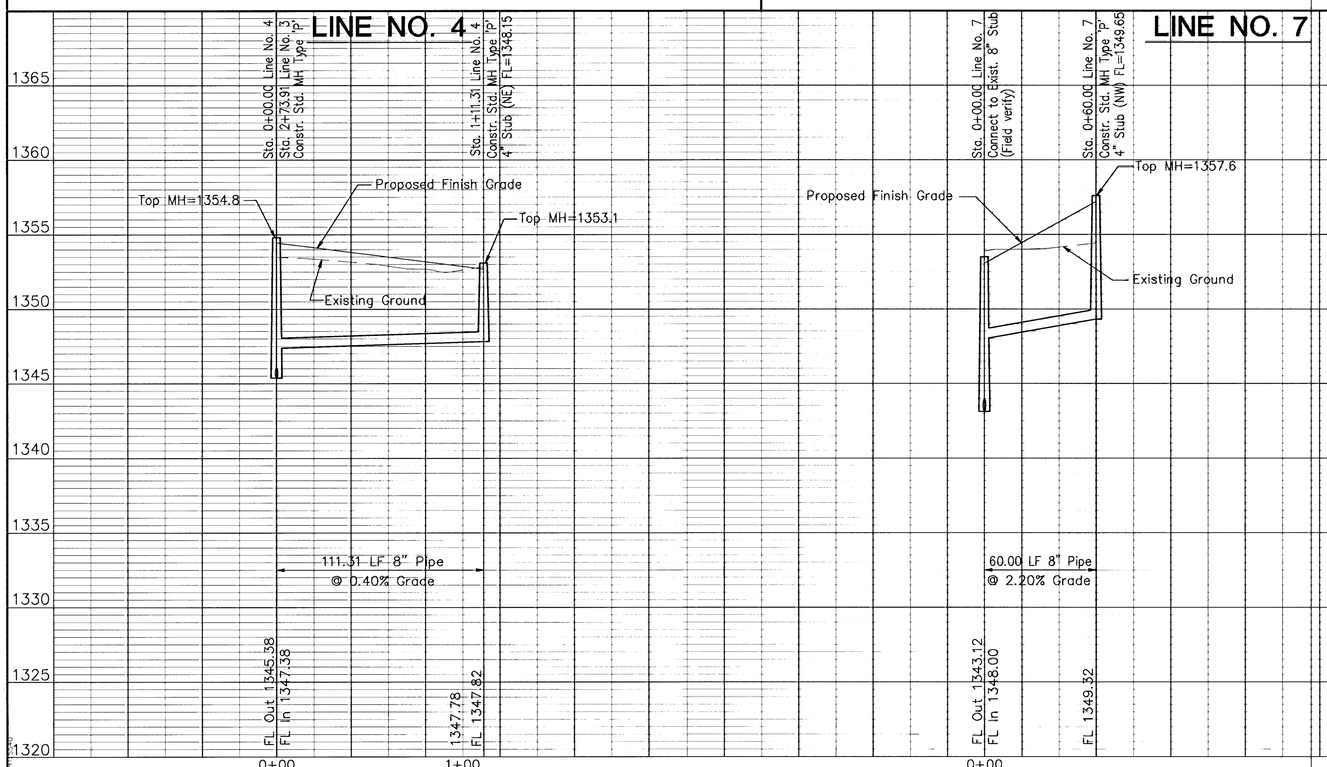

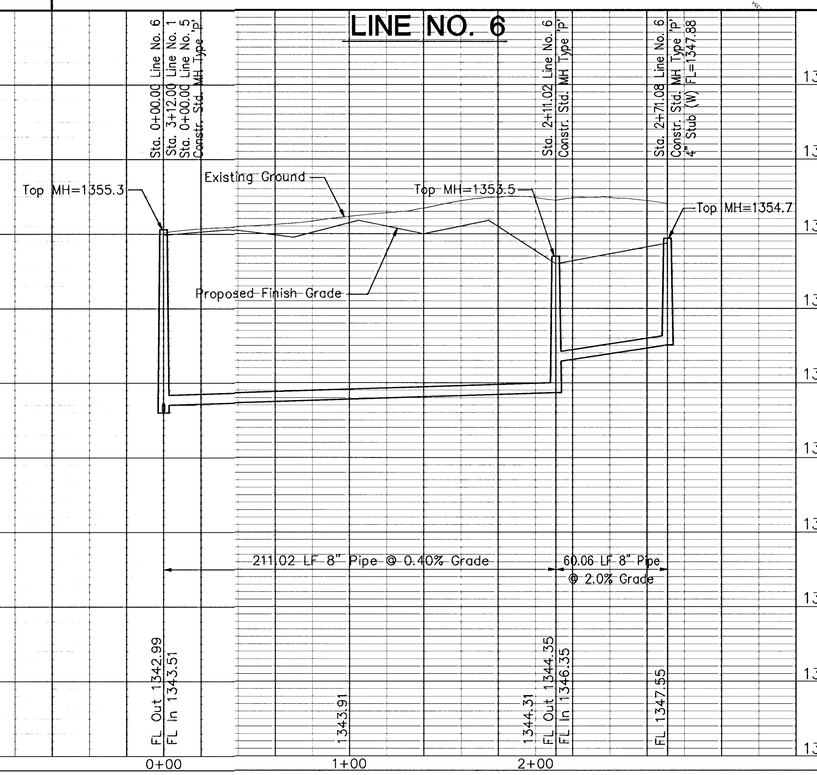

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GRAPHIC SCALE

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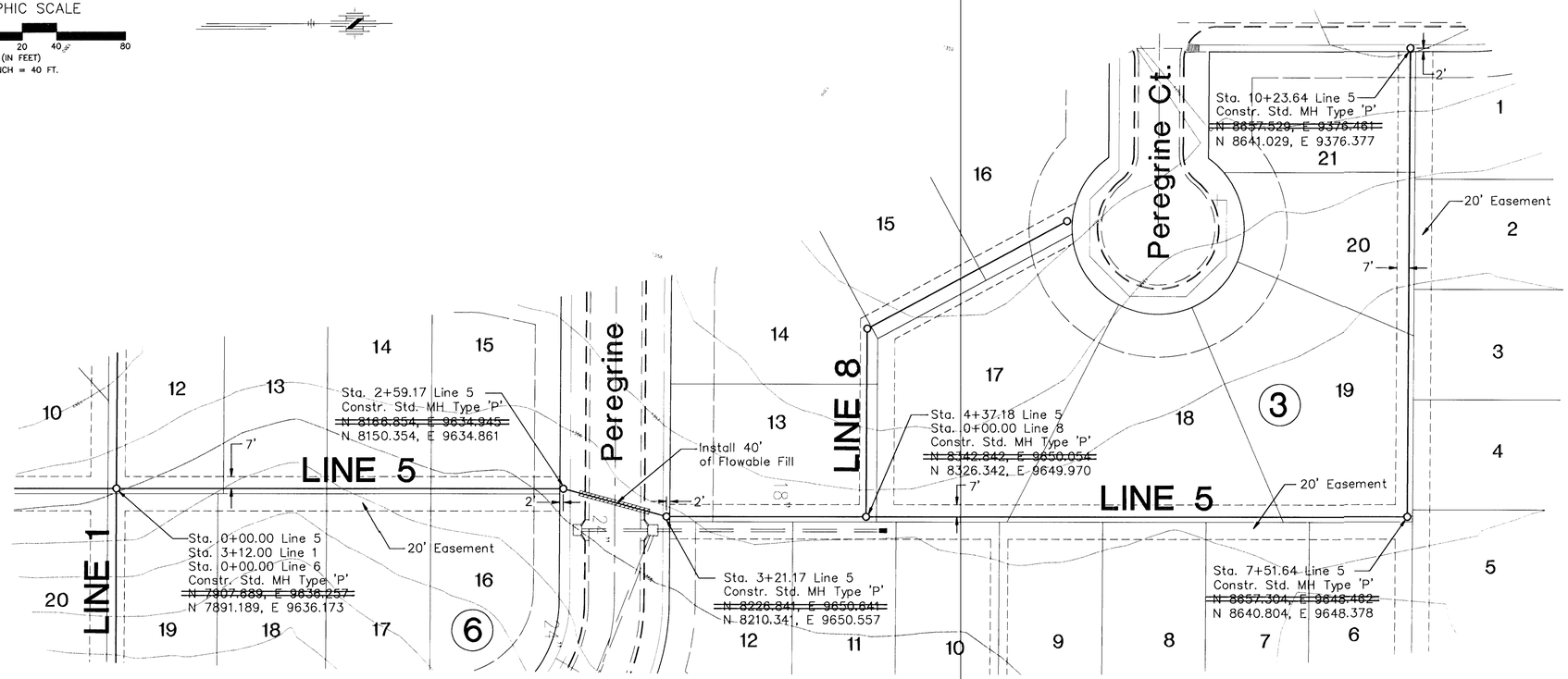
40 — 0 — 20 — 40 — 80 (IN FEET) — 1 INCH = 40 FT.



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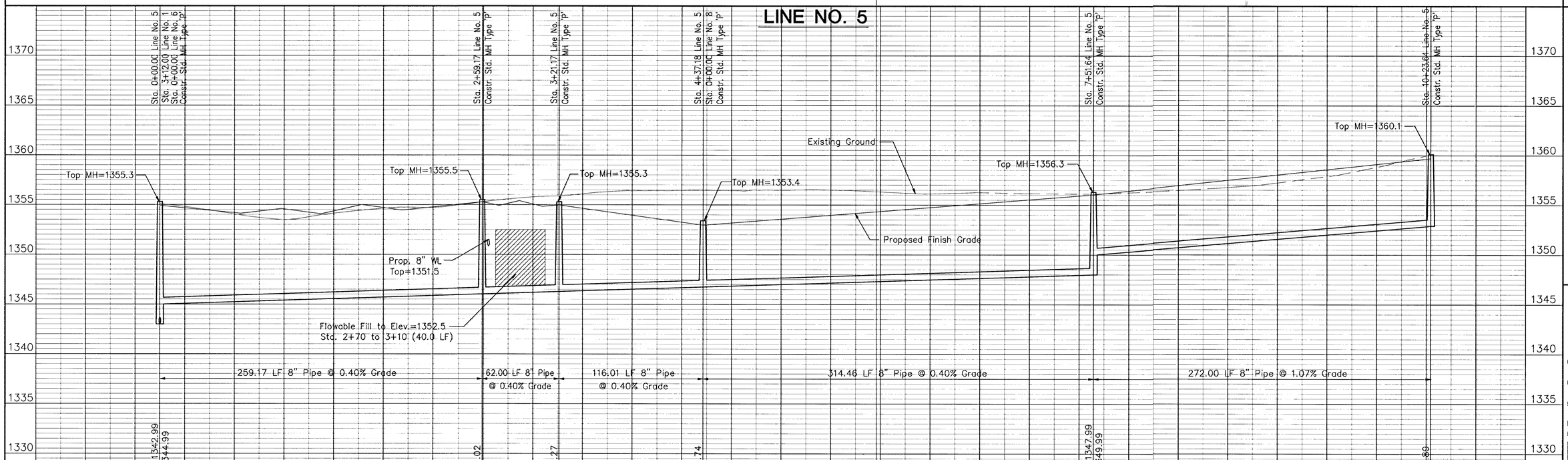

No.	Date	By	Approved	Revision
1	5/13/03	JU/BK	JMJ	Revised Manhole Coordinates
2	5/21/03	JU/BK	JMJ	Revised Profiles & Alignments

FALCON FALLS
SANITARY SEWER LINE NO. 5
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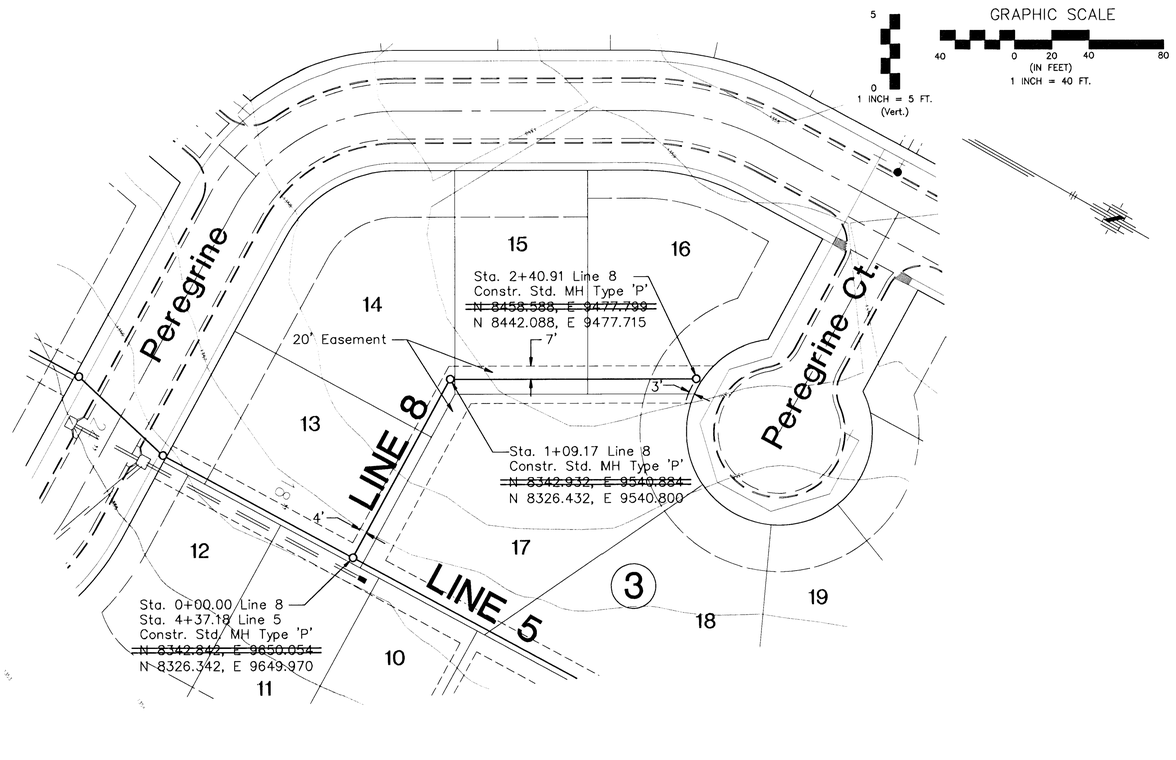

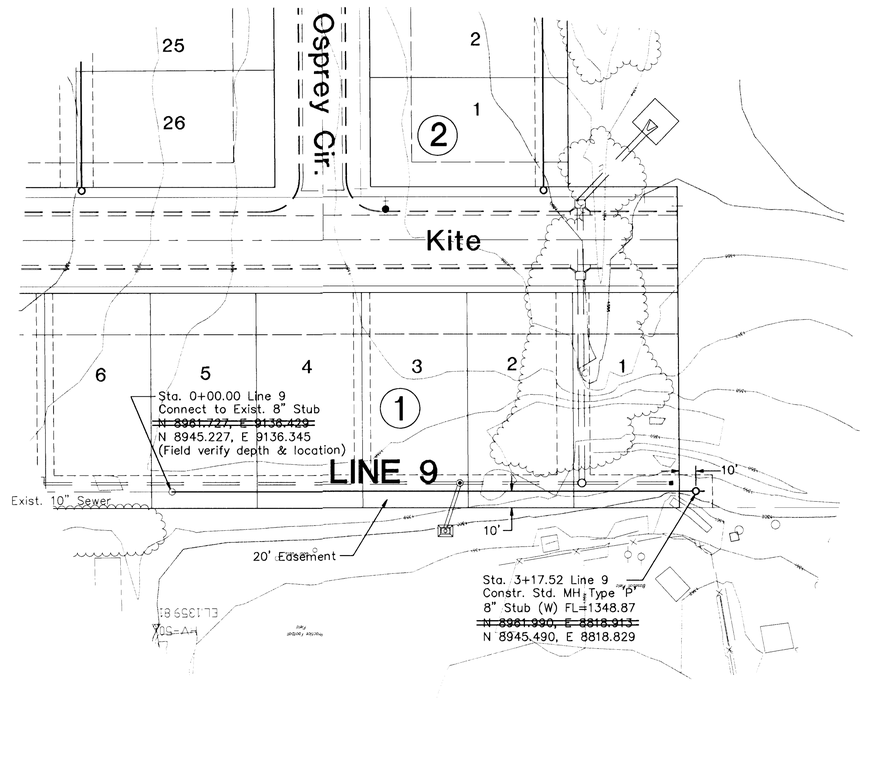

No.	Date	By	Approved	Revision
1	5/13/03	JU/BK	JMO	Revised Manhole Coordinates
2	8/18/03	JMO	JMO	Revised Profiles & Alignments
3				

FALCON FALLS

SANITARY SEWER LINE NO. 8 & 9

CITY OF WICHITA, KANSAS

NEIL D. CABLE, P.E. - CITY ENGINEER

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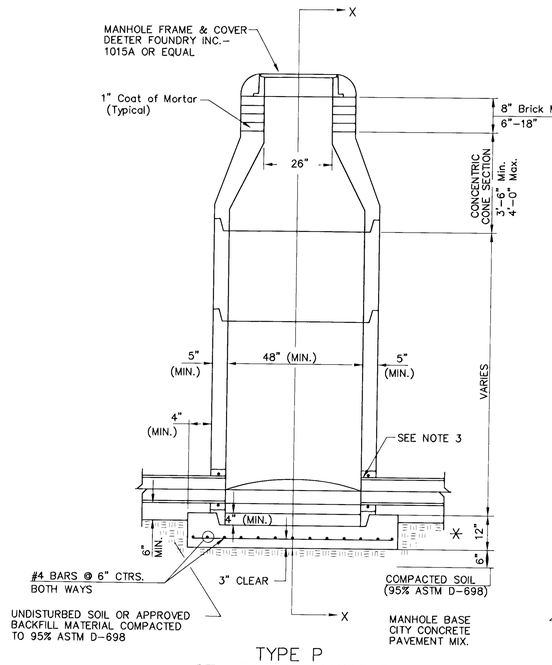
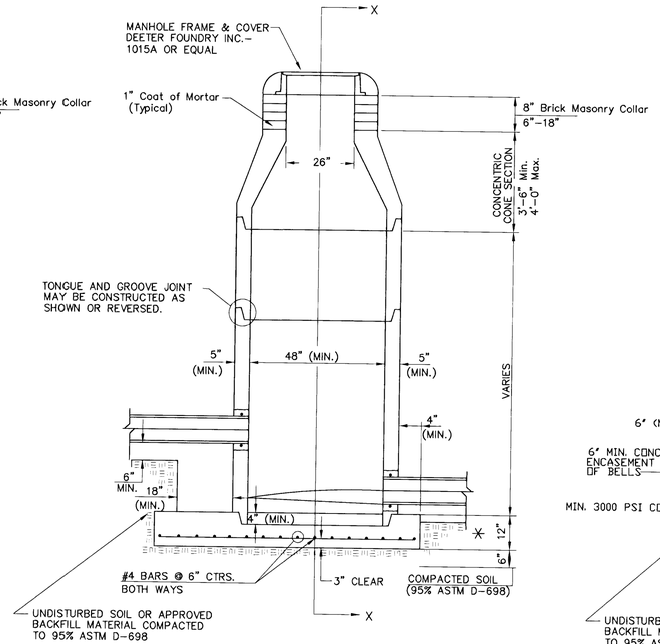
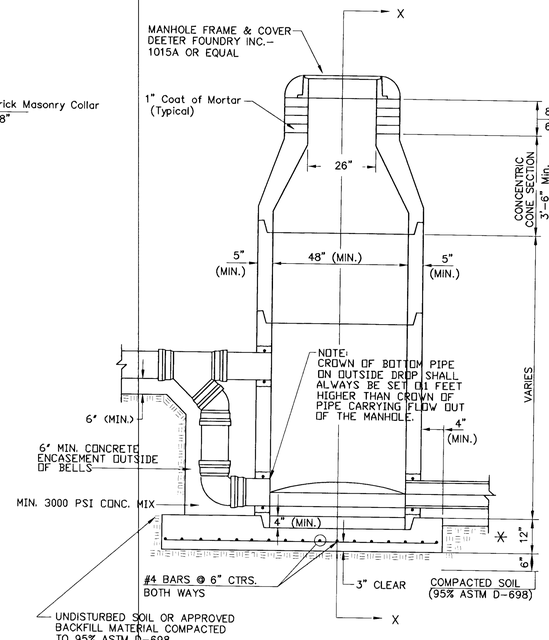
SEWER APPURTENANCES DETAILS



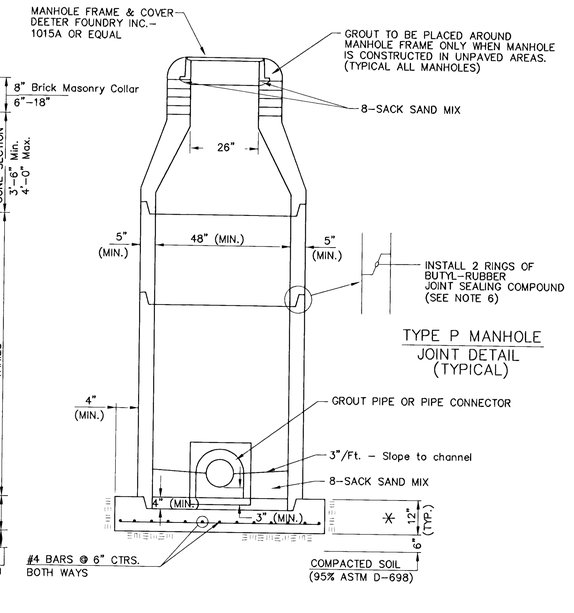
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



SECTION X
(TYPICAL)

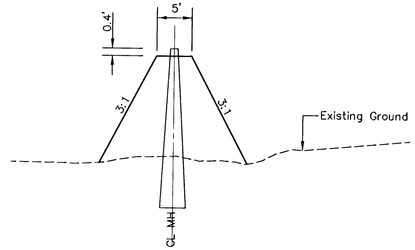
TYPE P MANHOLE
JOINT DETAIL
(TYPICAL)

GENERAL NOTES

PRECAST MANHOLE NOTES

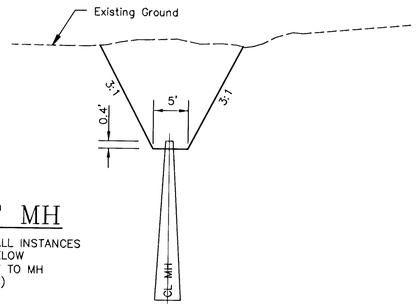
1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
2. NON–SHRINK GROUT SHALL BE NON–METALLIC TYPE.
3. APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.B.S. COMPOSITE PIPE 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.

* 19. ALL MANHOLE BASE CONSTRUCTION THAT OCCURS IN THE FIELD MUST HAVE A MINIMUM OF EIGHT INCHES OF CONCRETE BELOW THE MANHOLE WALL AND THE WALL SECTION SHOULD EXTEND FOUR INCHES INTO THE BASE RESULTING IN A MINIMUM TOTAL BASE THICKNESS OF 12 INCHES. MONOLITHIC BASE SECTIONS CONSTRUCTED IN THE FACTORY AND CURED AS PER ASTM C478 MUST HAVE A MINIMUM EIGHT INCH THICK CONCRETE BASE. BASE SECTIONS CONSTRUCTED IN THE FACTORY UTILIZING A PREVIOUSLY MANUFACTURED MANHOLE WALL SECTION, AS OUTLINED IN THE ABOVE PARAGRAPH, MUST HAVE A MINIMUM BASE THICKNESS OF EIGHT INCHES WITH THE WALL SECTION EXTENDING FOUR INCHES INTO THE BASE AND BE MANUFACTURED IN COMPLIANCE WITH ASTM C478.



PROTECTIVE FILL AT MH

MINIMUM PROTECTIVE FILL SHALL BE PROVIDED IN ALL INSTANCES WHERE MH TOP IS GREATER THAN 0.4' ABOVE EXISTING GROUND. (COST SUBSIDIARY TO MH INSTALLATION)
(TYPICAL ALL SHEETS)



EXCAVATION AT MH

EXCAVATION SHALL BE PROVIDED IN ALL INSTANCES WHERE MH TOP IS LESS THAN 0.4' BELOW EXISTING GROUND. (COST SUBSIDIARY TO MH INSTALLATION). (TYPICAL ALL SHEETS)

No.	Date	By	Approved	Revision

FALCON FALLS
TYPE "P" MANHOLE DETAILS
CITY OF WICHITA, KANSAS
NEIL D. CABLE, P.E. – CITY ENGINEER
Proj# 468–83574 O.C.A.# 743976

POE & ASSOCIATES OF KANSAS, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ■ Wichita, KS 67208–4242
Phone 316/685–4114 ■ FAX 316/685–4444

FINAL

Designed By: J. Ubert / B. Kulla
Drawn By: B. Kulla
Poe Job No.: 1748
Date: March 2003

Sheet
9 of 14

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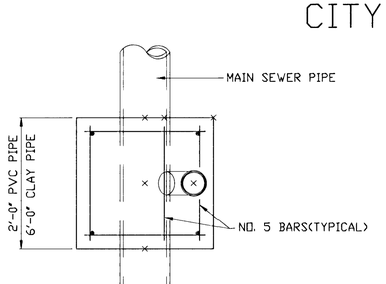
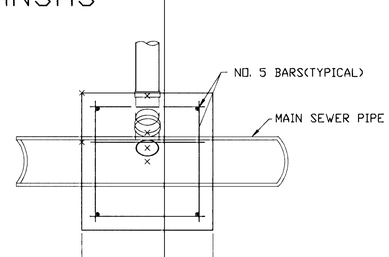
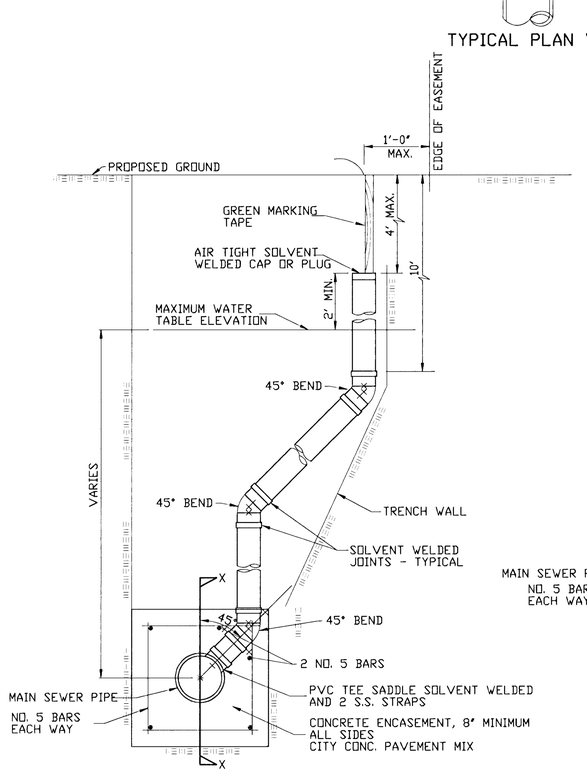
VERTICAL RISER DETAILS
ADOPTED AS STANDARD DESIGN
BY
CITY OF WICHITA, KANSAS
OCTOBER 1992



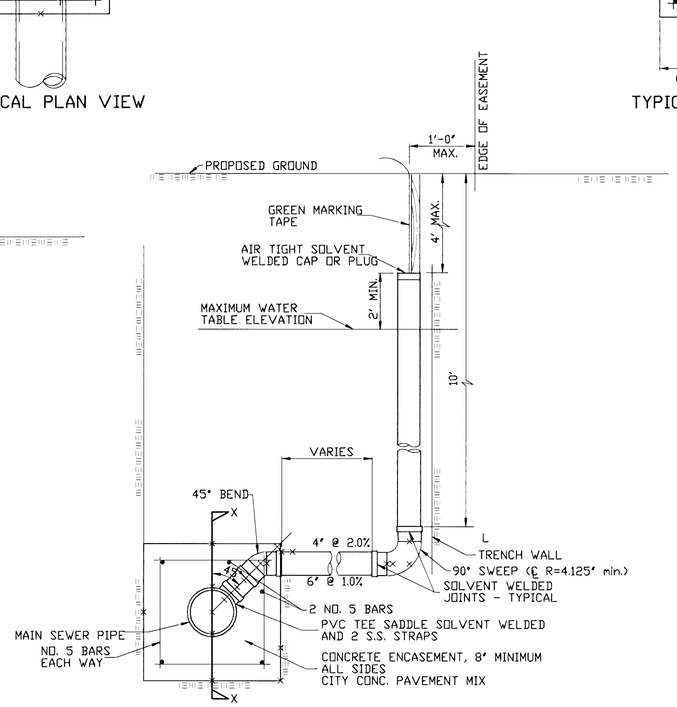
TYPICAL PLAN VIEW



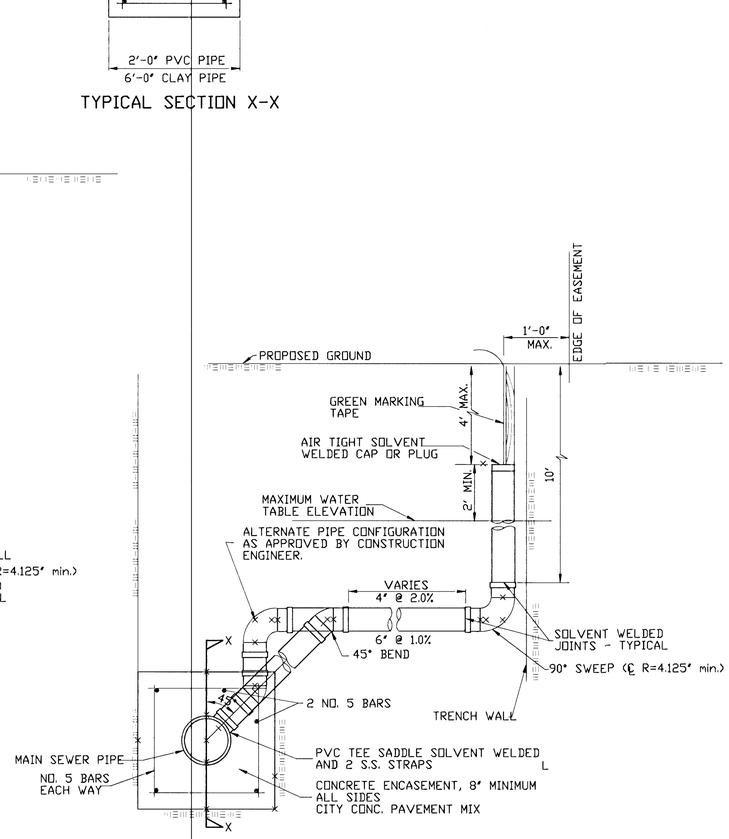
TYPICAL SECTION X-X



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 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'.

No.	Date	By	Approved	Revision

FALCON FALLS
VERTICAL RISER DETAIL

CITY OF WICHITA, KANSAS
NEIL D. CABLE, P.E. - CITY ENGINEER
Proj# 468-83574 O.C.A.# 743976

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Phone 316/685-4114 ■ FAX 316/685-4444

FINAL

Designed By: J. Ubert / B. Kulla
Drawn By: B. Kulla
Poe Job No.: 1748
Date: March 2003

Sheet 10 of 14

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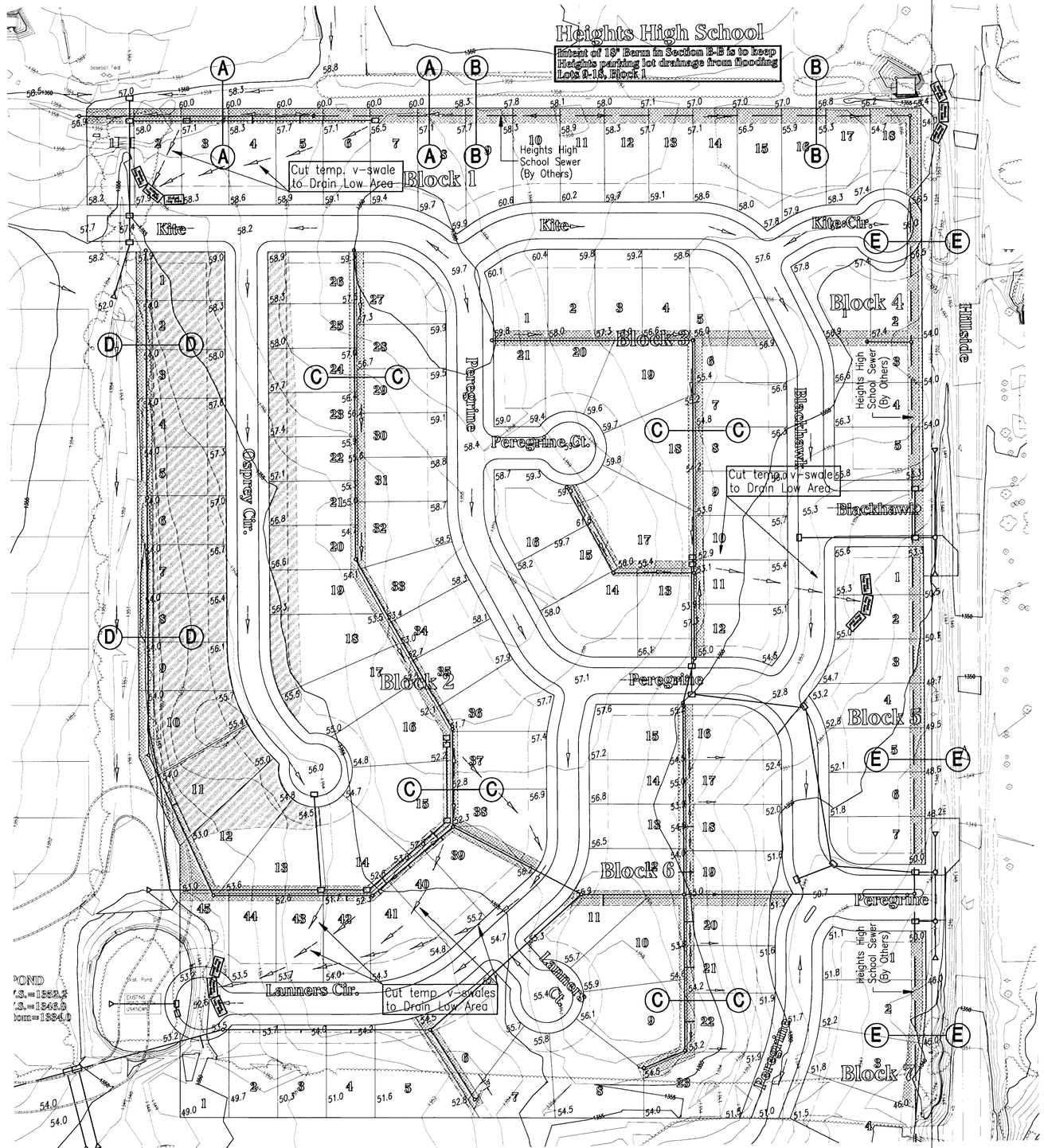

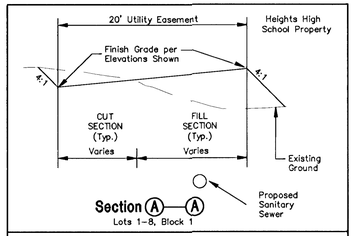

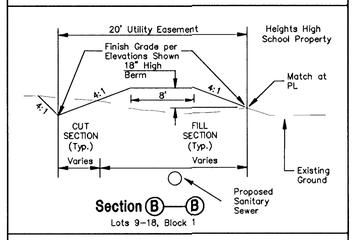

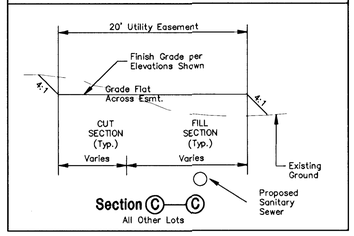

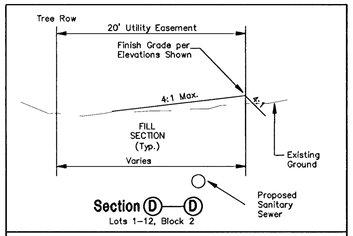

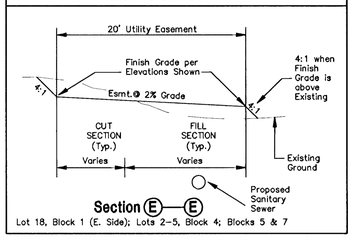

EASEMENT GRADING

(Typical Sections A to E)

NOTE: Easements are to be graded flat, except where noted by differing elevations at edge of easements.

LEGEND

20.9 = Proposed Elevation at Lot Corner

= Direction of Flow

= Easement Grading

= Waste area (To Elevations Shown)

Staked Hay Bale = Staked Hay Bale Sediment Barrier (See Detail Sheet 17)

EARTHWORK SUMMARY

(For Information Only)

	Cut (C.Y.)	Fill (C.Y.)
Line No. 1	1,177	818
Line No. 2	3,338	0
Line No. 3	79	412
Line No. 4	0	49
Line No. 5	14	55
Line No. 6	784	1
Line No. 7	5	362
Line No. 8	842	5
Line No. 9	480	128
	6,719	1,830

(Raw quantities – no shrinkage used)

N

GRAPHIC SCALE

80 0 40 80 160

(IN FEET)

1 INCH = 80 FT.

NOTES:

1. Contractor shall grade easements & reserves according to elevations shown. (Cost subsidiary to easement grading.)
2. Contractor shall waste earthwork in shaded areas. (Cost subsidiary to easement grading.)
3. Contractor shall seed all disturbed areas with temporary Rye grass at a rate of 200 lbs per acre. Total area = 5.5 acres. (Paid as Temporary Seeding.)
4. Storm sewers shown on this plan represent approximate locations of pipe and inlets. It is intended to show the general character of the drainage scheme only.

SPECIAL NOTE:

1. Easement grading must be done as shown – even in the easements labeled Heights High School Sewer. Otherwise underground utilities will be placed in these platted easements to serve this phase and the easements will NOT be to grade.

No.	Date	By	Approved	Revision

FALCON FALLS

EASEMENT GRADING PLAN

CITY OF WICHITA, KANSAS

NEIL D. CABLE, P.E. - CITY ENGINEER

POE & ASSOCIATES OF KANSAS, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ■ Wichita, KS 67208-4242
Phone 316/685-4114 ■ FAX 316/685-4444

FINAL

Designed By: J. Ubert / B. Kulla
Drawn By: B. Kulla
Poe Job No.: 1748
Date: March 2003

Sheet 11 of 14

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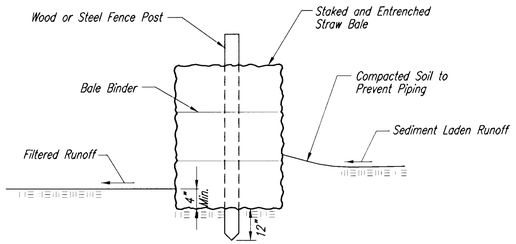


STRAW BALE BARRIERS

Material Specification:

Bale slope barriers may be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture.
The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.

Placement:

A slope barrier should be used at the toe of a slope when a ditch does not exist. The slope barrier should be placed on nearly level ground 5' to 10' away from the toe of a slope. The barrier is placed away from the toe of the slope to provide adequate storage for settling out sediment.
When practicable, bale slope barriers should be placed along contours to avoid a concentration of flow.
Bale slope barriers can also be placed along right-of-way fence lines to keep sediment from crossing onto adjacent property. When placed in this manner, the slope barrier will not likely follow contours.

Proper installation method:

Excavate a trench the length of the planned slope barrier that is 4" deep and a bale's width wide. Make sure that the trench is excavated along a single contour. When practicable, slope barriers should be placed along contours to avoid a concentration of flow. Place the soil on the upslope side of the trench for later use.
Place the bales in the trench, making sure that they are butted tightly. Two stakes should be driven through each bale along the centerline of the ditch check, approximately 6" to 8" in from the bale ends. Stakes should be driven at least 12" into the ground.
Once all the bales have been installed and anchored, place the excavated soil against the upslope side of the check and compact it. The compacted soil should be no more than 3" to 4" deep.

List of common placement/installation mistakes to avoid:

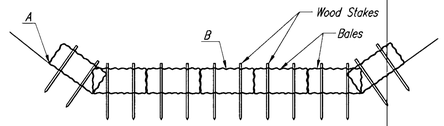
When practicable, do not place bale slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. Concentrated flow over a slope barrier creates a scour hole on the downslope side of the barrier. The scour hole eventually undermines the bales and the barrier fails.
Do not place bale slope barriers in areas with shallow soils underlain by rock. If the barrier is not anchored sufficiently, it will wash out.
Bale slope barriers must be dug into the ground. Bales at ground level do not work because they allow water to flow under the barrier.

Inspection and Maintenance:

Bale slope barriers 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:

Are there any points along the slope barrier where water is concentrating?
Does water flow under the slope barrier?
Does water flow through spaces between abutting bales?
Are any bales dislodged?
Are bales decomposing due to age and/or water damage?
Does sediment need to be removed from behind the slope barrier?

NOTE: Point A must be higher than Point B so that water flows over the bales and not around them.



STRAW BALE DITCH CHECKS

Material Specification:

Bale ditch checks may be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture.
The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
Optional: The downstream scour apron should be constructed of a double-netted straw erosion-control blanket at least 6' wide.
Optional: The metal landscape staples used to anchor the erosion-control blanket should be at least 8" long.

Placement:

Bale ditch checks should be placed perpendicular to the flowline of the ditch.
The ditch check should extend far enough so that the ground level at the ends of the check is higher than the top of the lowest center bale. 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.
Bales 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 grade (%)	Check Spacing (feet)
0.5	200
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 4" deep and a bale's width 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-it will be used later.
Optional: On the downstream side of the trench, roll out a length of erosion-control blanket (scour apron) equal to the length of the trench. Place the upstream edge of the erosion-control blanket along the bottom upstream edge of the trench. The erosion control blanket should be anchored in the trench with one row of 8" landscape staples placed on 18" centers. The remainder of the erosion-control blanket (the portion that is not lying in the trench) will serve as the downstream scour apron. This section of the blanket should be anchored to the ground with 8" landscape staples placed around the perimeter of the blanket on 18" centers. The remainder of the blanket should be anchored using two evenly spaced rows of 8" landscape staples on 18" centers placed perpendicular to the flowline of the ditch.
Place the bales in the trench, making sure that they are butted tightly. Two stakes should be driven through each bale along the centerline of the ditch check, approximately 6" to 8" in from the bale ends. Stakes should be driven at least 12" into the ground.
Once all the bales have been installed and anchored, place the excavated soil against the upstream side of the check and compact it. The compacted soil should be no more than 3" to 4" deep and extend upstream no more than 24".

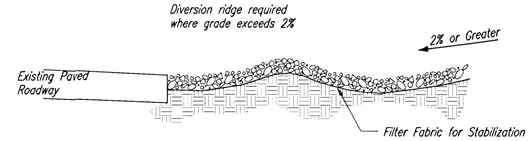
List of common placement/installation mistakes to avoid:

Do not place a bale ditch check directly in front of a culvert outlet. It will not stand up to the concentrated flow.
Do not place bale 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 check is higher than the top of the lowest center bale.
Do not place bale ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out.
Bale ditch checks must be dug into the ground. Bales at ground level do not work because they allow water to flow under the check.

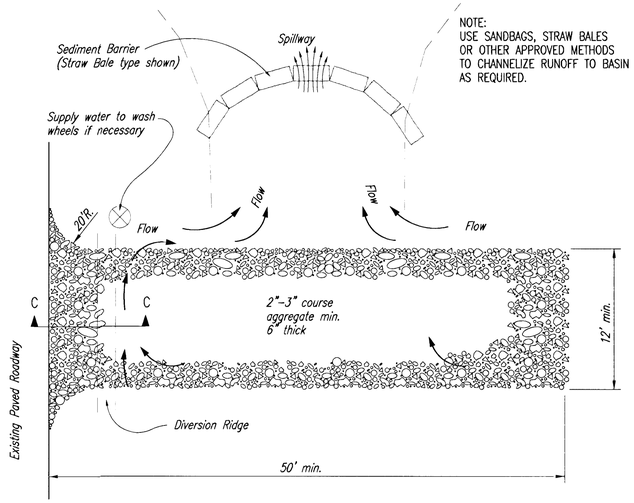
Inspection and Maintenance:

Bale 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 water flow through spaces between abutting bales?
Are any bales and/or scour aprons (optional) dislodged?
Are bales decomposing due to age and/or water damage?
Does sediment need to be removed from behind the ditch check?



SECTION C-C



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 STABLIZED 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.

No.	Date	By	Approved	Revision

FALCON FALLS
SANITARY SEWER IMPROVEMENTS
SOIL EROSION BMP DETAILS
CITY OF WICHITA, KANSAS
NEIL D. CABLE, P.E. - CITY ENGINEER
Proj.# 468-83574 O.C.A.# 743976

POE & ASSOCIATES OF KANSAS, INC.
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FINAL

Designed By: J. Ubert / B. Kulla
Drawn By: B. Kulla
Poe Job No.: 1748
Date: March 2003

Sheet 12 of 14

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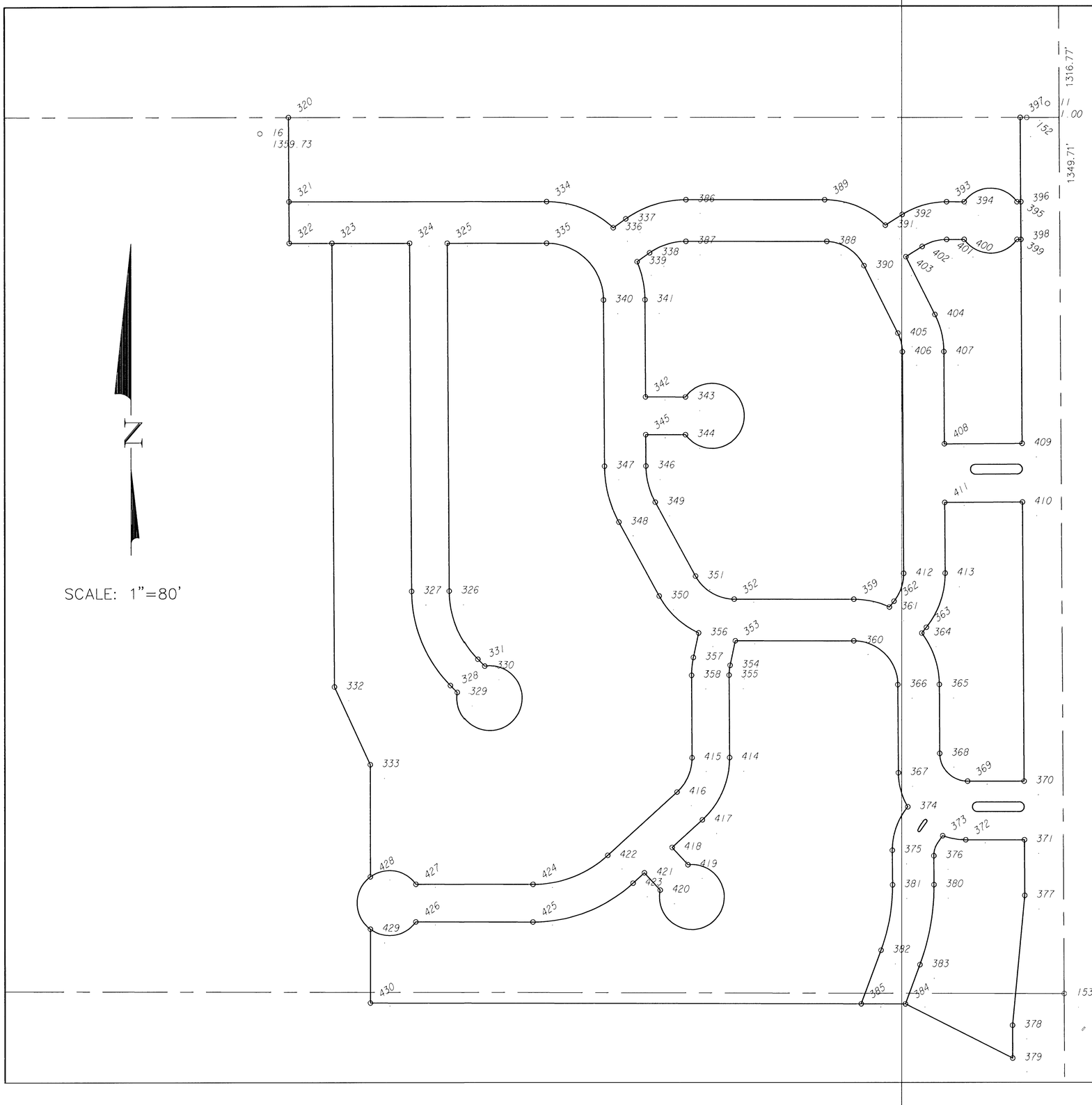


POINT	EASTING	NORTHING
152	9967.962	8954.540
153	10024.795	7604.803
157	7378.750	8956.681
320	8828.947	8955.482
321	8829.605	8825.481
322	8829.929	8761.481
323	8895.930	8761.426
324	9015.932	8761.327
325	9073.933	8761.279
326	9076.648	8225.015
327	9018.649	8224.722
328	9078.376	8079.495
329	9088.864	8068.792
330	9130.288	8109.388
331	9119.800	8120.090
332	8899.393	8077.459
333	8954.585	7957.751
334	9226.507	8825.153
335	9226.454	8761.153
336	9329.414	8784.904
337	9348.824	8798.582
338	9385.689	8746.266
339	9366.279	8732.588
340	9314.380	8673.598
341	9378.379	8673.922
342	9379.138	8524.043
343	9440.879	8523.992
344	9440.831	8465.992
345	9379.432	8466.043
346	9379.676	8417.736
347	9315.677	8417.412
348	9337.898	8331.182
349	9394.083	8361.829
350	9400.046	8217.244
351	9456.231	8247.890
352	9515.872	8212.452
353	9517.474	8148.451
354	9509.412	8110.586
355	9507.856	8095.442
356	9460.748	8160.540
357	9452.683	8122.664
358	9449.857	8095.148
359	9700.494	8212.300
360	9700.441	8148.300
361	9755.453	8200.264
362	9762.596	8209.184
363	9812.553	8169.180
364	9805.410	8160.260
365	9832.383	8080.968
366	9768.384	8080.644
367	9769.071	7944.959

POINT	EASTING	NORTHING
368	9832.921	7974.768
369	9875.920	7931.986
370	9963.139	7931.986
371	9963.597	7841.486
372	9873.069	7841.486
373	9837.376	7847.803
374	9783.593	7892.476
375	9759.676	7825.411
376	9823.719	7816.995
377	9964.031	7755.808
378	9944.973	7555.841
379	9945.180	7505.261
380	9823.944	7772.499
381	9759.945	7772.175
382	9742.159	7671.526
383	9802.172	7649.288
384	9779.761	7588.812
385	9711.561	7588.953
386	9441.697	8827.975
387	9441.644	8763.975
388	9659.273	8763.795
389	9655.967	8827.798
390	9716.611	8726.343
391	9749.633	8788.697
392	9775.670	8804.992
393	9844.210	8824.640
394	9871.384	8824.620
395	9952.835	8824.552
396	9958.791	8824.547
397	9957.962	8954.548
398	9958.743	8766.547
399	9952.797	8766.552
400	9871.325	8766.620
401	9844.165	8766.642
402	9806.440	8755.827
403	9781.324	8740.109
404	9826.041	8651.168
405	9768.862	8622.420
406	9775.788	8593.551
407	9839.787	8593.875
408	9840.506	8451.871
409	9960.504	8452.478
410	9960.962	8361.979
411	9840.964	8361.372
412	9777.516	8252.033
413	9841.516	8252.357
414	9508.500	7968.367
415	9450.500	7968.074
416	9427.333	7915.244
417	9466.407	7872.381
418	9419.737	7829.837
419	9444.076	7803.138
420	9401.213	7764.064
421	9376.874	7790.763
422	9320.258	7817.634
423	9359.332	7774.771
424	9204.702	7773.006
425	9204.582	7715.006
426	9024.756	7715.379
427	9024.876	7773.379
428	8954.585	7784.833
429	8954.585	7704.094
430	8954.585	7590.525

No.	Date	By	Approved	Revision
1				
2				
3				
4				

FALCON FALLS
COORDINATE POINT LIST

CITY OF WICHITA, KANSAS
NEIL D. CABLE, P.E. - CITY ENGINEER
Proj.# 468-83574 O.C.A.# 743976

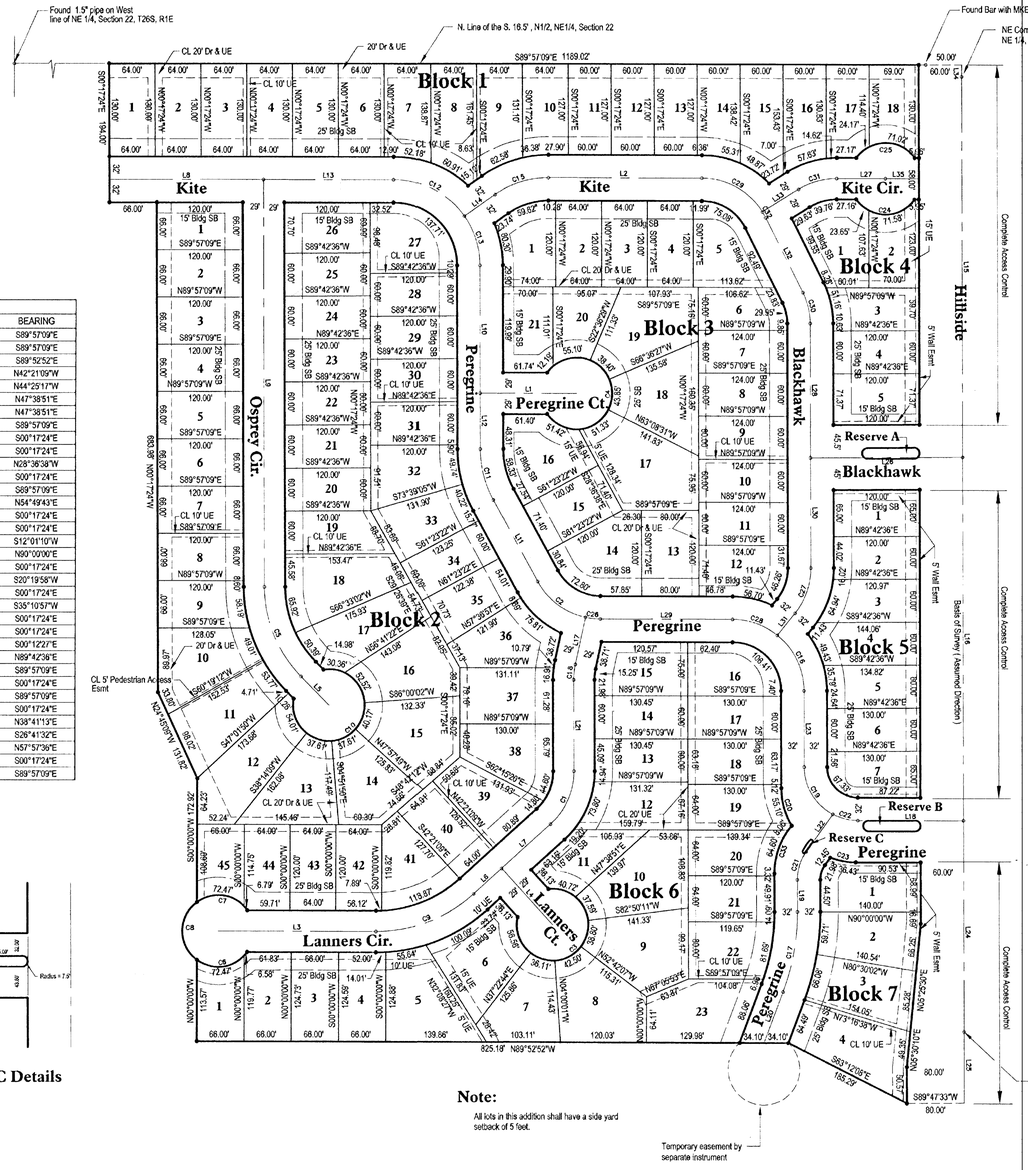
POE & ASSOCIATES OF KANSAS, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ■ Wichita, KS 67208-4242
Phone 316/685-4114 ■ FAX 316/685-4444

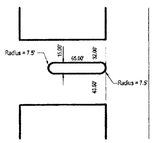
FINAL

Designed By: J. Ubert / B. Kulla
Drawn By: B. Kulla
Poe Job No.: 1748
Date: March 2003

Sheet
13 of 14

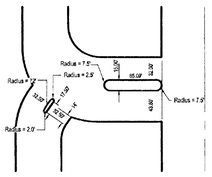
G:\APPS\DCA\PV748\stake-out.dwg Wed May 14 08:38:28 2003





Reserve A Details

LINE TABLE		
LINE	LENGTH	BEARING
L1	134.30	S89°57'09"E
L2	214.27	S89°57'09"E
L3	220.56	S89°52'52"E
L4	105.86	N42°21'09"W
L5	55.72	N44°25'17"W
L6	52.74	N47°38'51"E
L7	92.15	N47°38'51"E
L8	215.00	S89°57'09"E
L9	568.44	S00°17'24"E
L10	178.69	S00°17'24"E
L11	129.79	N28°38'38"W
L12	77.50	S00°17'24"E
L13	181.71	S89°57'09"E
L14	92.34	N54°49'43"E
L15	530.73	S00°17'24"E
L16	507.30	S00°17'24"E
L17	67.50	S12°01'10"W
L18	147.38	N90°00'00"E
L19	44.50	S00°17'24"E
L20	78.28	S20°19'58"W
L21	127.08	S00°17'24"E
L22	64.24	S35°10'57"W
L23	108.20	S00°17'24"E
L24	295.18	S00°17'24"E
L25	99.24	S00°12'27"E
L26	212.00	N89°42'36"E
L27	67.90	S89°57'09"E
L28	187.51	S00°17'24"E
L29	184.62	S89°57'09"E
L30	154.02	S00°17'24"E
L31	39.49	N38°41'13"E
L32	118.32	S26°41'32"E
L33	59.49	N57°57'36"E
L34	16.50	S00°17'24"E
L35	46.68	S89°57'09"E



Reserve B and C Details

Note:

All lots in this addition shall have a side yard setback of 5 feet.

SE Corner, NE1/4
Section 22, T26S, R1E
Found square bolt in pipe

FALCON FALLS ADDITION

to Wichita, Sedgwick County, Kansas

STATE OF KANSAS, COUNTY OF SEDGWICK: ss.

I, Kenny E. Hill, being a duly licensed Land Surveyor in said County and State, do hereby certify that the survey and platting of "FALCON FALLS ADDITION to Wichita, Kansas, was completed under my direct supervision, said plat being described as follows:

Beginning at the Southeast corner of the Northeast Quarter of Section 22, Township 26 South, Range 1 East of the 6th P.M., Sedgwick County, Kansas; thence S00°12'27"E for a distance of 99.24 feet; thence S89°47'33"W for a distance of 80.00 feet; thence N63°12'08"W for a distance of 185.29 feet; thence N89°52'52"W for a distance of 825.18 feet; thence N00°00'00"W for a distance of 113.57 feet; thence Northwesterly on a non-tangent circular curve lying West of a 80.74 foot chord bearing N00°00'00"E, having a radius of 50.00 feet and a central angle of 107°41'00" for an arc distance of 93.97 feet; thence N00°00'00"E for a distance of 172.92 feet; thence N24°45'09"W for a distance of 131.82 feet; thence N00°17'24"W for a distance of 683.98 feet; thence N89°57'09"W for a distance of 66.00 feet; thence N00°17'24"W for a distance of 194.00 feet; thence S89°57'09"E for a distance of 1189.02 feet; thence S00°17'24"E for a distance of 16.50 feet to the Northeast corner of the South Half of said Northeast Quarter; thence on an assumed bearing of S00°17'24"E for a distance of 1333.21 feet to the point of beginning, subject to road right-of-way.

The accompanying plat is a true and correct exhibit of property surveyed.

Dated this 26TH day of NOVEMBER 2002.

Poe and Associates of Kansas, Inc.

Kenny E. Hill, L.S. 984
Vice President

KENNY E. HILL — LICENSED — L.S. 984 — 11-26-02 — KANSAS LAND SURVEYOR

KNOW ALL MEN BY THESE PRESENTS:

That we, the undersigned, have caused the land described in the Surveyor's Certificate to be platted into lots, blocks, streets and reserves. The streets are hereby dedicated to and for the use of the public. Easements are hereby granted as indicated for the construction and maintenance of walls, drainage and utilities. Reserve A, B and C shall be reserved for, entry monuments, lighting, landscaping and utilities. All reserves are to be owned and maintained by a home owners association its successors and assigns. A drainage plan has been developed for the plat and all drainage easements, rights-of-way and reserves shall remain at established grades or modified with the approval of the applicable City or County Engineer, and remain unobstructed to allow for the conveyance of stormwater. All abutters rights of access to or from Hillside over and across the East line of Blocks 1, 4, 5 and 7 are hereby granted to the City of Wichita. Vacation of the temporary turnaround easement, located on the south line of this addition at the end of Peregrine, shall be effective upon the extension of the street to the south.

Heights, LLC

Jay W. Russell, Managing Member

STATE OF KANSAS, COUNTY OF SEDGWICK: ss.

This instrument was acknowledged before me on this 6TH day of Dec. 2002, by Jay W. Russell, Managing Member of Heights, LLC.

CAROL R. BARNES — Notary Public - State of Kansas — My Appt. Expires 4/25/2004

Notary Public
CAROL R. BARNES

My Appointment Expires: 4/25/2004

KNOW ALL MEN BY THESE PRESENTS: ss

That, the Chisholm Trail State Bank, holders of a mortgage on the property described in the Surveyor's Certificate, do hereby consent to the plat of Falcon Falls Addition.

Chisholm Trail State Bank

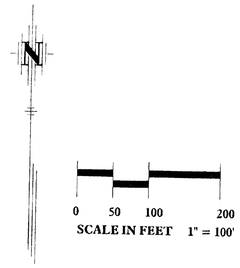
Elmer S. Peters, Jr., Executive Vice President

This instrument was acknowledged before me on this 5TH day of Dec. 2002, by Elmer S. Peters, Jr., Executive Vice President of Chisholm Trail State Bank.

MELISSA J. BLUML — Notary Public • State of Kansas — My Appt. Expires 9-15-04

Notary Public
MELISSA J. BLUML

My Appointment Expires



LEGEND

Utility Easement	20' UE
Drainage Easement	20' Dr E
Iron Set	
Building Setback	25' Bldg SB
Curve Label	c2
Line Label	L2
Center Line	CL

This plat of FALCON FALLS ADDITION to Wichita, Kansas has been submitted to and approved by this WICHITA-SEDGWICK COUNTY METROPOLITAN AREA PLANNING COMMISSION, Wichita, Kansas.

Dated this 2ND, day of December, 2002.

WICHITA SEDGWICK COUNTY METROPOLITAN AREA PLANNING COMMISSION

Bernard A. Hentzen, Chair

Dale Miller, Secretary

Reviewed in accordance with K.S.A. 58-2005 on this 3RD day of December, 2002.

TRENT L. ROSIL — LS-1246 — KANSAS

Trent L. Rosil, L.S. #1246
Deputy County Surveyor
Sedgwick County, Kansas

This plat approved and all dedications shown hereon accepted by the City Council of the City of Wichita, Kansas, this 10TH day of Jan. 2002 2003.

At the Direction of the City Council

Chris Cherches, City Manager

Pat Graves

Pat Graves, City Clerk

Entered on transfer record this 14TH day of JANUARY, 2003

Don Brace, County Clerk

This is to certify that this instrument was filed for record in the Register of Deeds Office at 8:30 A.M. P.M. on the 15TH day of January, 2003

2163435

Bill Meek, Register of Deeds

Linda Kizzire, Chief Deputy

CURVE TABLE						
CURVE	LENGTH	RADIUS	TANGENT	CHORD	BEARING	DELTA
C1	83.87	100.00	44.46	81.25	N23°40'44"E	47°58'16"
C2	86.17	100.00	45.96	83.53	S53°17'44"E	49°22'12"
C3	252.29	50.00	35.60	58.00	N47°38'51"E	289°05'59"
C4	252.29	50.00	35.60	58.00	N00°02'51"E	289°05'59"
C5	138.64	180.00	72.66	135.24	S22°21'20"E	44°07'52"
C6	79.05	50.00	50.52	71.07	N89°51'50"E	90°35'20"
C7	79.26	50.00	50.73	71.22	N89°44'42"W	90°49'36"
C8	93.97	50.00	68.42	80.74	S00°00'00"W	107°41'00"
C9	148.25	200.00	77.72	144.88	N68°53'00"E	42°29'17"
C10	252.29	50.00	35.60	58.00	N45°34'43"E	289°05'59"
C11	74.14	150.00	37.55	73.39	S14°27'01"E	28°19'14"
C12	114.73	120.00	62.18	110.41	N62°33'43"W	54°46'53"
C13	73.06	120.00	37.70	71.93	N17°43'50"W	34°52'53"
C15	79.29	129.00	40.94	78.05	S72°28'17"W	35°13'07"
C16	89.05	100.00	47.72	86.14	N25°48'06"W	51°01'23"
C17	114.28	317.50	57.77	113.66	N10°01'17"E	20°37'22"
C18	21.48	100.00	10.78	21.44	S05°51'53"W	12°18'34"
C19	81.18	75.00	45.08	77.28	S31°17'57"E	62°01'06"
C20	55.10	104.00	28.21	54.46	S15°28'02"E	30°21'16"
C21	41.79	67.50	21.59	41.13	S17°28'47"W	35°28'21"
C22	36.25	75.00	18.49	35.90	S76°09'15"E	27°41'30"
C23	36.43	104.00	18.41	36.25	S79°57'49"E	20°04'21"
C24	95.23	50.00	70.25	81.47	S89°57'09"E	109°07'11"
C25	95.19	50.00	70.20	81.45	N89°57'09"W	109°04'41"
C26	20.90	100.00	10.49	20.86	S83°58'09"E	11°58'19"
C27	68.03	100.00	35.39	66.72	N19°11'54"E	38°58'37"
C28	87.44	100.00	35.06	66.17	N70°37'58"W	38°38'22"
C29	101.08	100.00	55.33	98.83	N69°59'47"W	57°54'45"
C30	44.70	97.00	22.75	44.30	N13°29'28"W	26°24'08"
C31	58.00	100.00	28.76	55.27	S74°00'13"W	32°05'15"
C32	9.33	100.00	4.67	9.33	N29°21'58"W	05°20'53"
C33	72.66	104.50	37.87	71.20	N19°37'41"E	39°50'11"

POE and ASSOCIATES OF KANSAS, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ■ Wichita KS 67208 ■ 316/685-4114 ■ Fax 316/685-4444

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10-10-11-05