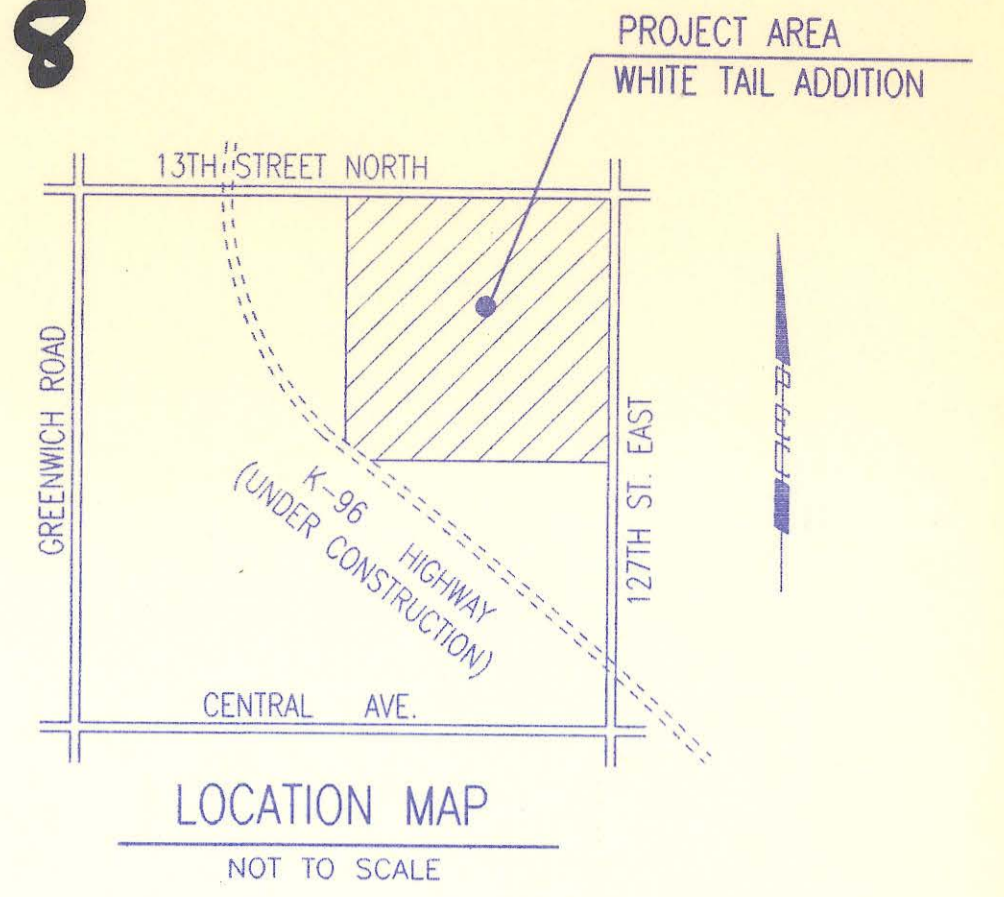


4MC-098

BUREAU OF PUBLIC SERVICES



INDEX OF SHEETS

| | |
|-----------------|----------------------------|
| SHEET NO. 1 | TITLE SHEET |
| SHEET NO. 2 | KEY MAP |
| SHEET NO. 3-5 | EASEMENT GRADING PLAN |
| SHEET NO. 6-8 | PLAT |
| SHEET NO. 9 | PRECAST MANHOLE DETAILS |
| SHEET NO. 10 | BACKFILL DETAILS |
| SHEET NO. 11 | SERVICE CONNECTION DETAILS |
| SHEET NO. 12-22 | PLAN/PROFILE |

CONSTRUCTION PLANS FOR SANITARY SEWER IMPROVEMENTS IN WHITE TAIL ADDITION

RECORD DRAWING
 PROJ. ENG. 1/16/95 DATE
 RES. ENG. DATE



TO SEDGWICK COUNTY, KANSAS
 PHASE 9, ~~X~~, AND 12

JANUARY 1995

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS

APPROVED:

 DAVID C. SPEARS, P.E.
 DIRECTOR OF PUBLIC SERVICES/COUNTY ENGINEER
 DATE: 1/20/95

APPROVED:

 CHAIRMAN, BOARD OF COUNTY COMMISSIONERS
 DATE: 1/23/95

FILED IN THE OFFICE OF
 THE SEDGWICK COUNTY CLERK

 COUNTY CLERK
 DATE: 1-25-95

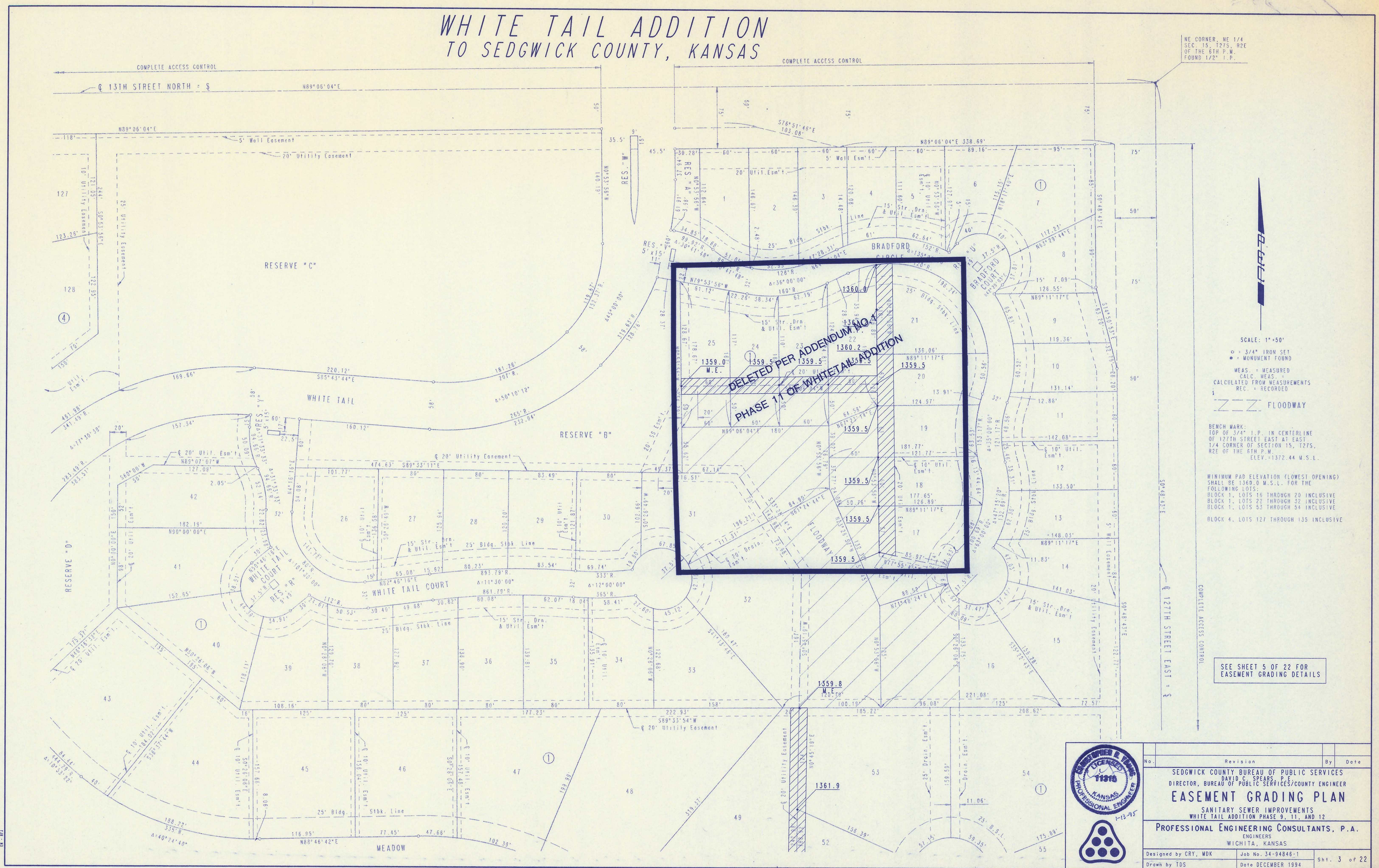
DSNR: RFJ OPER: BB SCALE: 1" = 1'
 C:\94846\001\TITLE 01-12-1995 13:58:32
 4MC-098

WHITE TAIL ADDITION TO SEDGWICK COUNTY, KANSAS

NE CORNER, NE 1/4
SEC. 15, T27S, R2E
OF THE 6TH P.M.
FOUND 1/2" I.P.

| PLAN | DATE | BY |
|------------|------|----|
| SURVEYED | | |
| ALIGNED | | |
| CHECKED | | |
| NO. OF WAY | | |

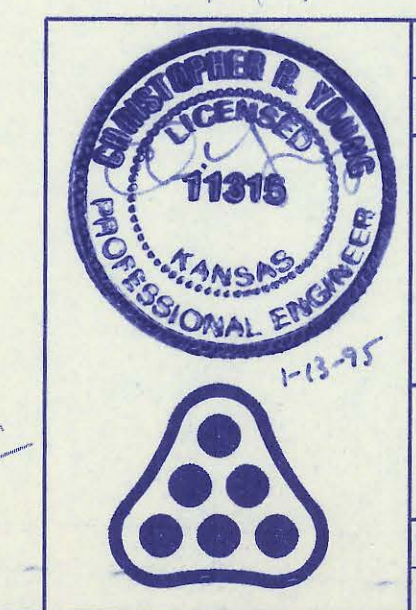
DRAWING NAME: 34-94846-1 ESM/GRD SH3
LOCATION: E4 #350
CENTER COORDINATES:
ROTATION ANGLE:
DATE LAST WORKED ON: JAN. 13, 1994
68-87



SCALE: 1"=50'
 ○ = 3/4" IRON SET
 ● = MONUMENT FOUND
 MEAS. = MEASURED
 CALC. MEAS. = CALCULATED FROM MEASUREMENTS
 REC. = RECORDED
 FLOODWAY
 BENCH MARK:
 TOP OF 3/4" I.P. IN CENTERLINE
 OF 127TH STREET EAST AT EAST
 1/4 CORNER OF SECTION 15, T27S,
 R2E OF THE 6TH P.M.
 ELEV. = 1372.44 M.S.L.

MINIMUM PAD ELEVATION (LOWEST OPENING)
 SHALL BE 1360.0 M.S.L. FOR THE
 FOLLOWING LOTS:
 BLOCK 1, LOTS 16 THROUGH 20 INCLUSIVE
 BLOCK 1, LOTS 22 THROUGH 32 INCLUSIVE
 BLOCK 4, LOTS 53 THROUGH 54 INCLUSIVE

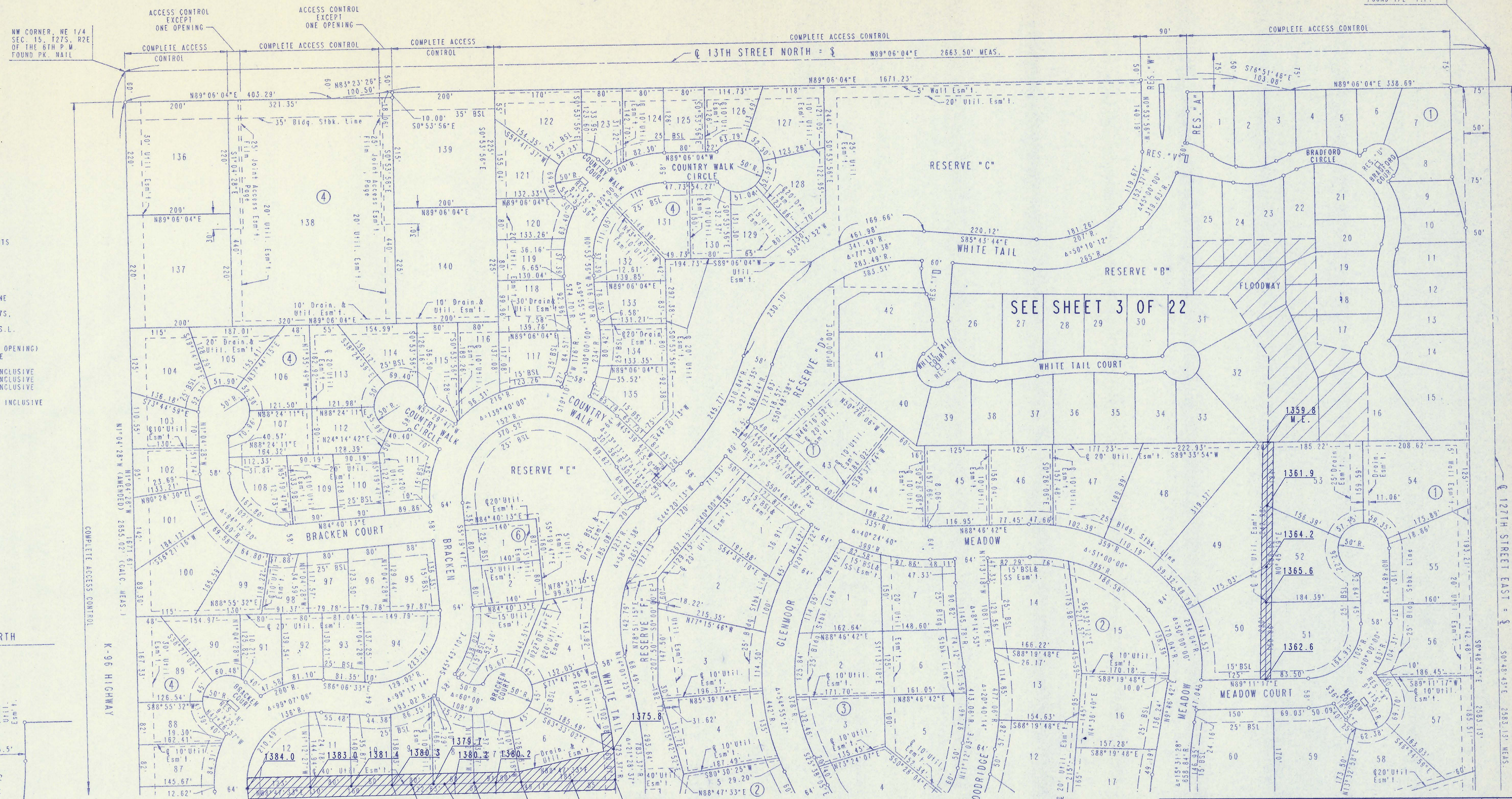
SEE SHEET 5 OF 22 FOR
EASEMENT GRADING DETAILS



| No. | Revision | By | Date |
|--|----------|--------------------|------|
| SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER EASEMENT GRADING PLAN SANITARY SEWER IMPROVEMENTS WHITE TAIL ADDITION PHASE 9, 11, AND 12 PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS | | | |
| Designed by CRY, MDK | | Job No. 34-94846-1 | |
| Drawn by TDS | | Date DECEMBER 1994 | |

WHITE TAIL ADDITION TO SEDGWICK COUNTY, KANSAS

NE CORNER, NE 1/4
SEC. 15, T27S, R2E
OF THE 6TH P.M.
FOUND 1/2" I.P.



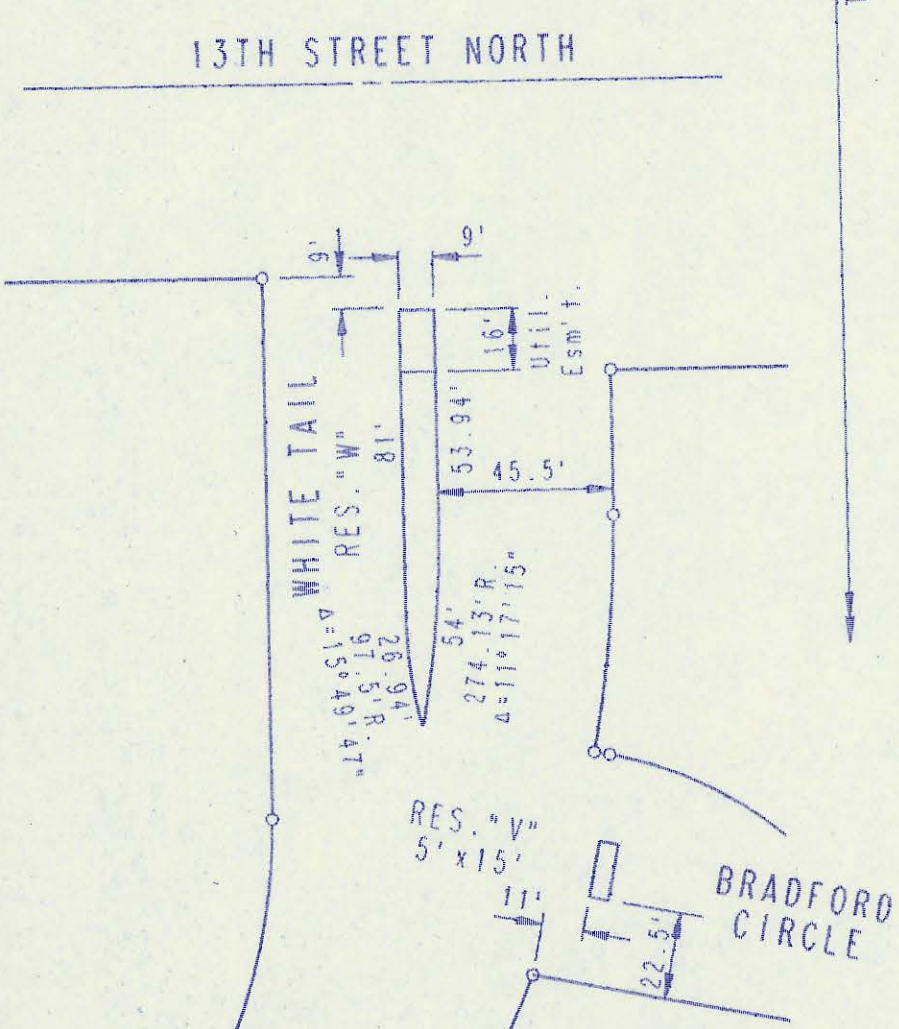
SCALE: 1"=100'

○ = 3/4" IRON SET
● = MONUMENT FOUND
MEAS. = MEASURED
CALC. MEAS. = CALCULATED FROM MEASUREMENTS
REC. = RECORDED

BSL = BUILDING SETBACK LINE
SS = SANITARY SEWER
BENCH MARK:
TOP OF 3/4" I.P. IN CENTERLINE
OF 127TH STREET EAST AT EAST
1/4 CORNER OF SECTION 15, T27S,
R2E OF THE 6TH P.M.
ELEV. = 1372.44 M.S.L.

MINIMUM PAD ELEVATION (LOWEST OPENING)
SHALL BE 1560.0 M.S.L. FOR THE
FOLLOWING LOTS:
BLOCK 1, LOTS 16 THROUGH 20 INCLUSIVE
BLOCK 1, LOTS 22 THROUGH 32 INCLUSIVE
BLOCK 1, LOTS 53 THROUGH 54 INCLUSIVE
BLOCK 4, LOTS 127 THROUGH 135 INCLUSIVE

| PLAN | DATE | BY |
|------------|------|----|
| SURVEYED | | |
| NOTED | | |
| ALIGNED | | |
| CHECKED | | |
| NO. | | |
| RT. OF WAY | | |
| CHECKED | | |



DRAWING NAME: 34-94846-1 ESUTGRD SHI
LOCATION: E4 4344
DRAWN BY: TDS
DATE LAST WORKED ON: JAN. 13, 1995

RECORD DRAWING
MDK PROJ. ENG. 3/6/96 DATE
RES. ENG. DATE



SEE SHEET 5 OF 22 FOR
EASEMENT GRADING DETAILS

| No. | Revision | By | Date |
|-----|----------|----|------|
| | | | |

SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E.
DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

EASEMENT GRADING PLAN

SANITARY SEWER IMPROVEMENTS
WHITE TAIL ADDITION PHASE 9, 11, AND 12

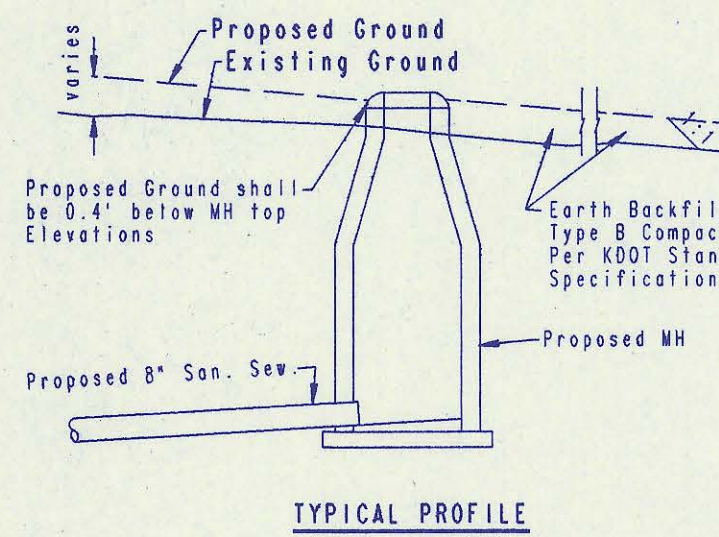
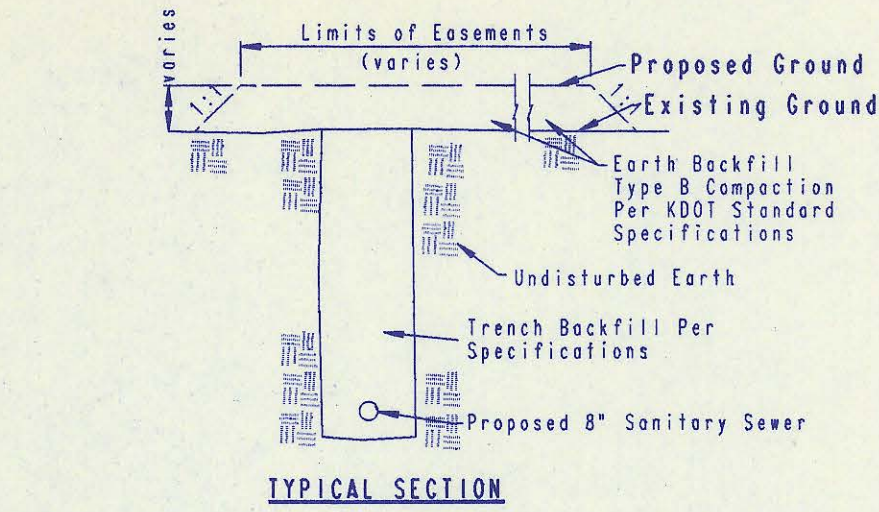
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

| | | |
|----------------------|--------------------|--------------|
| Designed by CRY, MDK | Job No. 34-94846-1 | Sht. 4 of 22 |
| Drawn by TDS | Date DECEMBER 1994 | |

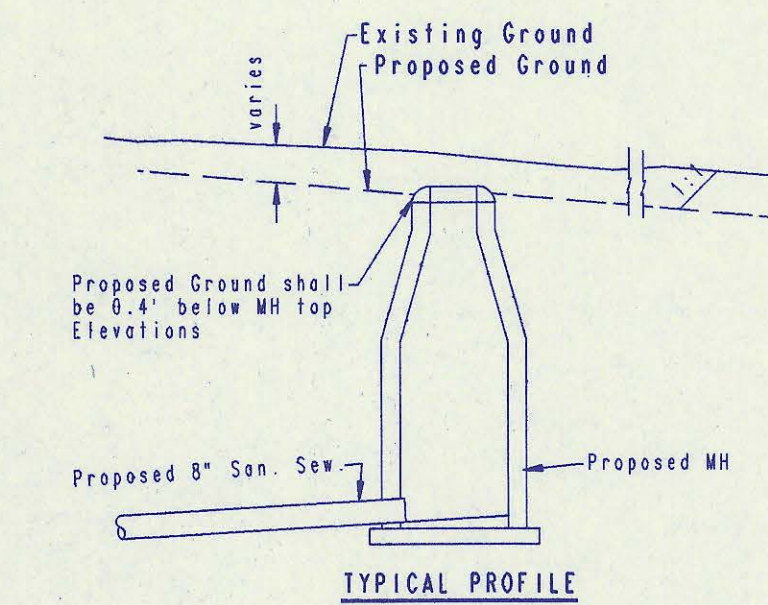
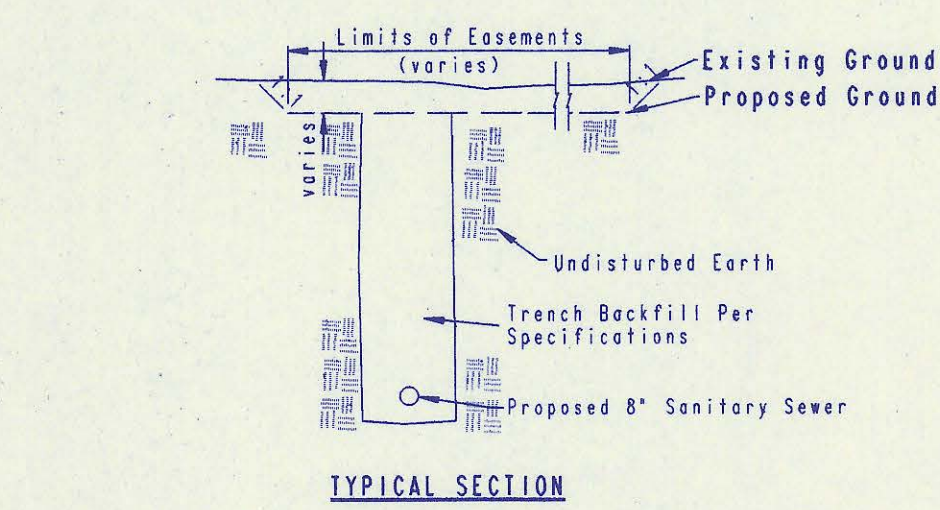
WHITE TAIL ADDITION TO SEDGWICK COUNTY, KANSAS

| PLAN | SURVEYED | BY | DATE |
|-----------|----------|----|------|
| NOTE BOOK | ALIGNED | | |
| CHECKED | | | |
| NO. | | | |
| RI. | | | |
| OF WAY | | | |
| CHECKED | | | |

SCALE: 1"=100'



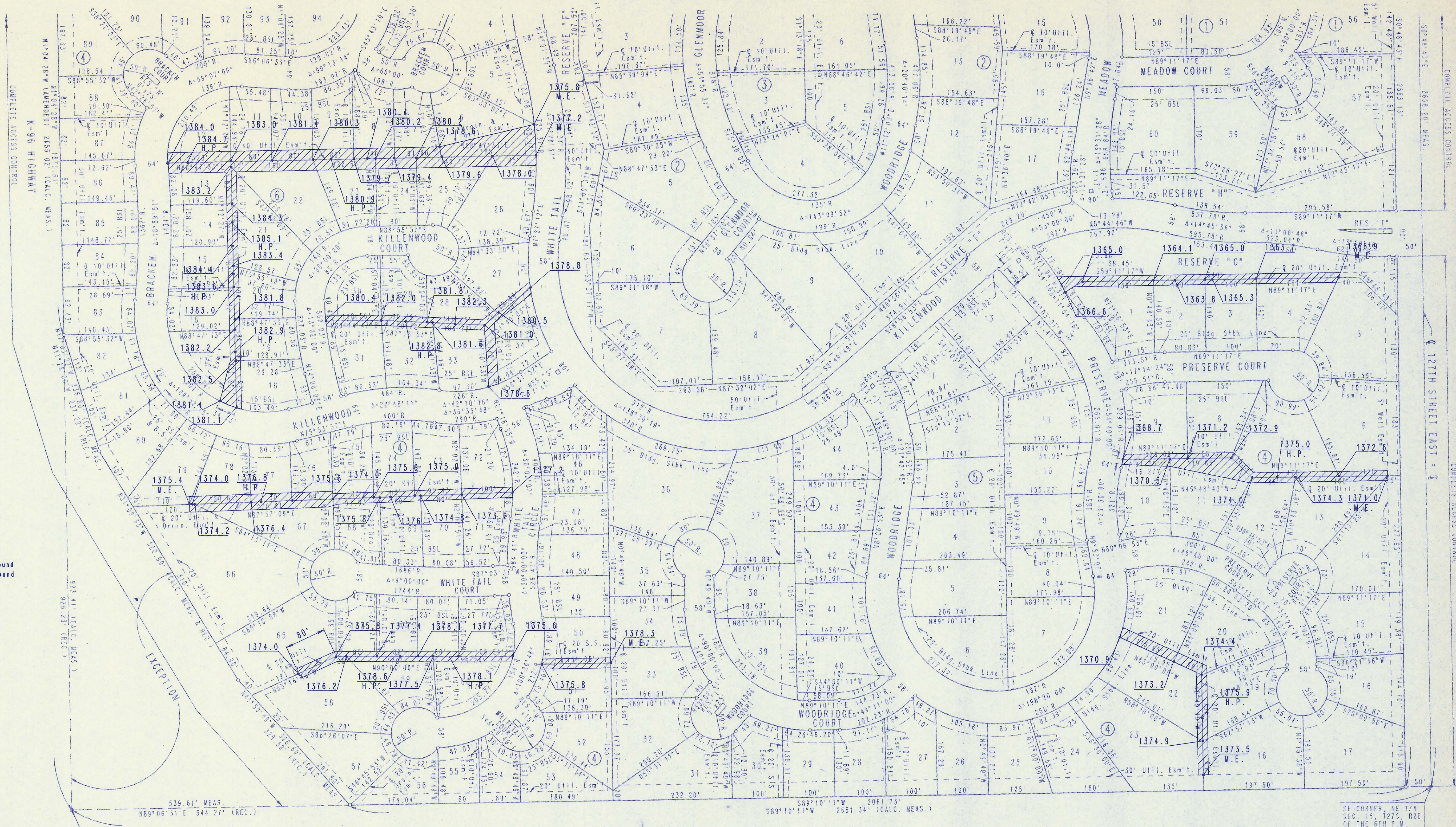
"FILL" SITUATIONS



"CUT" SITUATIONS

EASEMENT GRADING DETAILS

- = AREAS TO BE GRADED
- H.P. = HIGH POINT
- M.E. = MATCH EXISTING



DRAWING NAME: 34-94846-1 ESMTRD SHZ
LOCATION: EA #349
CENTER COORDINATES:
DATE LAST WORKED ON: JAN. 13, 1995

Easement Grading will be bid on a lump sum basis for grading the easement 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 1,800 C.Y. (Approximate)
Fill 7,300 C.Y. (Approximate)

RECORD DRAWING
MDR PROJ. ENG. 7/6/96 DATE
RES. ENG. DATE

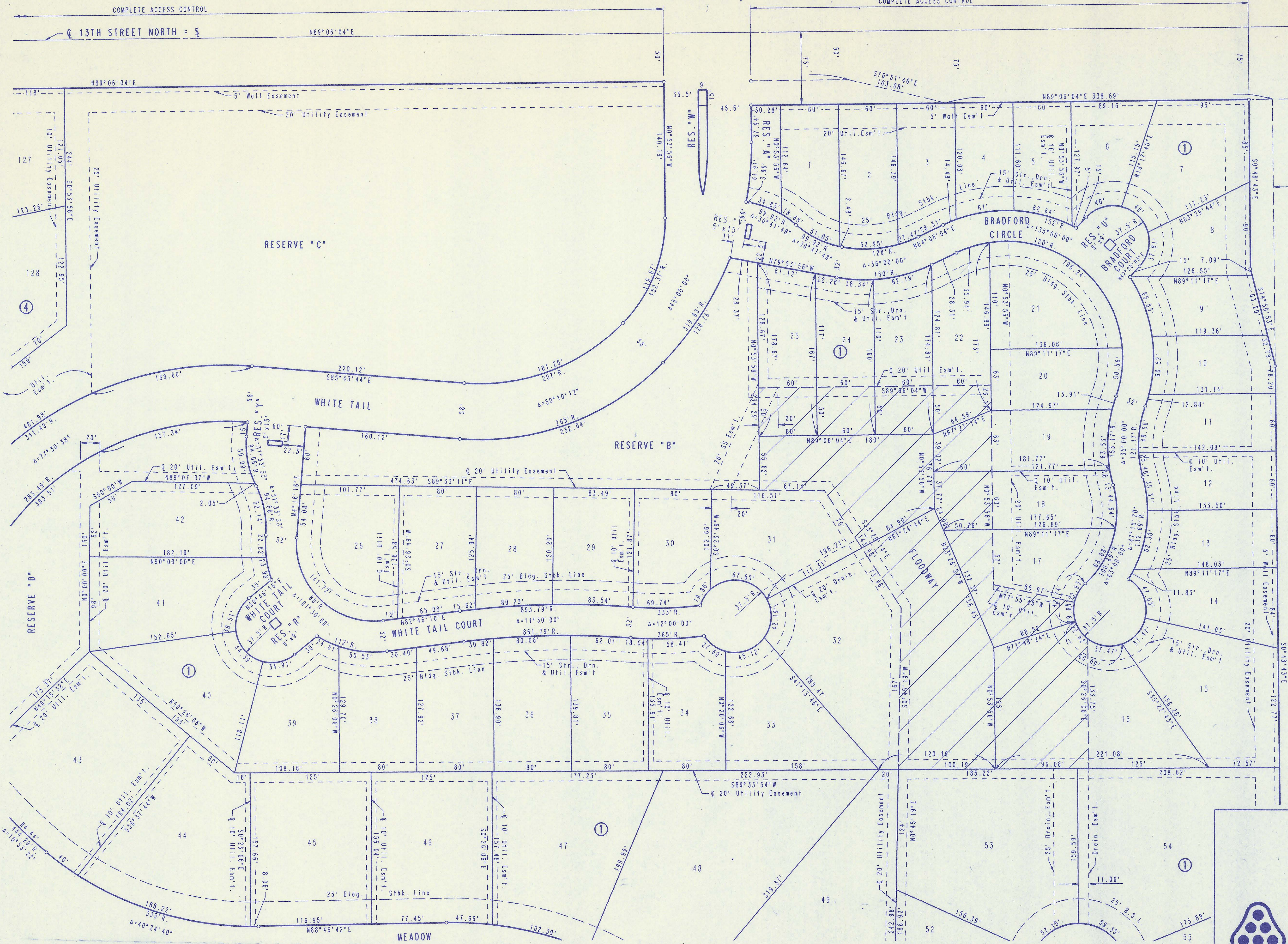


| No. | Revision | By | Date |
|---|----------|---------|---------------|
| SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER | | | |
| EASEMENT GRADING PLAN SANITARY SEWER IMPROVEMENTS WHITE TAIL ADDITION PHASE 9, 11, AND 12 | | | |
| PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS | | | |
| Designed by | CRY, MDK | Job No. | 34-94846-1 |
| Drawn by | TDS | Date | DECEMBER 1994 |

WHITE TAIL ADDITION TO SEDGWICK COUNTY, KANSAS

NE CORNER, NE 1/4
SEC. 15, T27S, R2E
OF THE 6TH P.M.
FOUND 1/2" I.P.

| | | |
|--------------------|----|------|
| PLAN SURVEYED | BY | DATE |
| NOTE BOOK PLOTTED | | |
| ALIGNMENT CHECKED | | |
| RT. OF WAY CHECKED | | |



SCALE: 1"=50'

○ = 3/4" IRON SET
● = MONUMENT FOUND

MEAS. = MEASURED
CALC. MEAS. = CALCULATED FROM MEASUREMENTS
REC. = RECORDED.

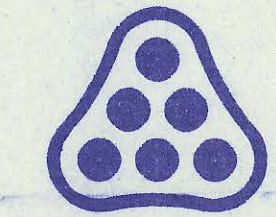
ZZZ FLOODWAY

BENCH MARK:
TOP OF 3/4" I.P. IN CENTERLINE
OF 127TH STREET EAST AT EAST
1/4 CORNER OF SECTION 15, T27S,
R2E OF THE 6TH P.M.
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BLOCK 1, LOTS 22 THROUGH 32 INCLUSIVE
BLOCK 1, LOTS 53 THROUGH 54 INCLUSIVE
BLOCK 4, LOTS 127 THROUGH 135 INCLUSIVE

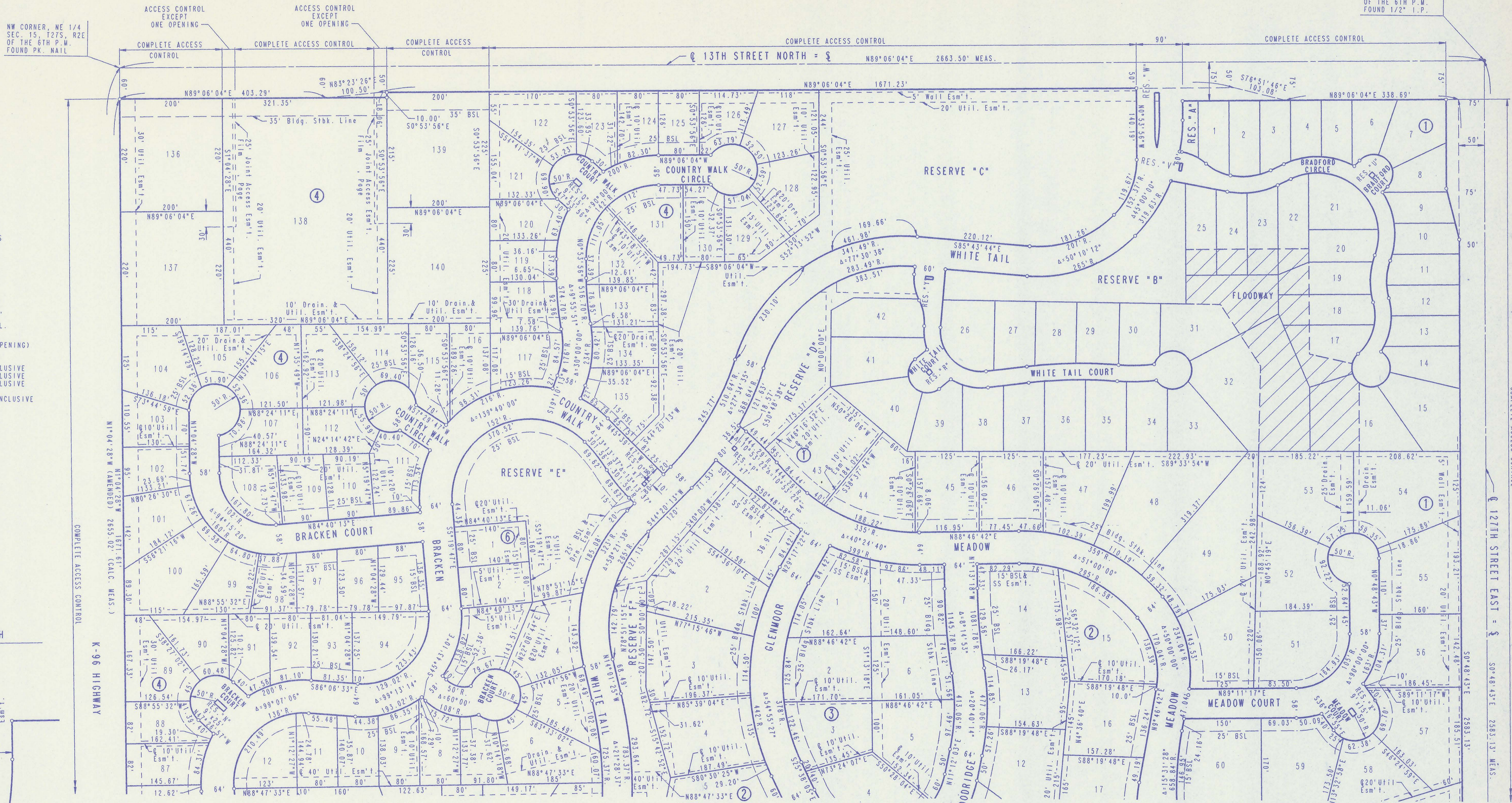
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CENTER COORDINATES:
ROTATION ANGLE:
DATE LAST WORKED ON: DEC. 10, 1994

| | | | |
|---|---------------------|--------------|------|
| No. | Revision | By | Date |
| | WHITE TAIL ADDITION | | |
| PLAT | | | |
| PROFESSIONAL ENGINEERING CONSULTANTS, P.A. | | | |
| ENGINEERS WICHITA, KANSAS | | | |
| Designed by | Job No. | Sht. 6 of 22 | |
| Drawn by DEP | Date DECEMBER 1994 | | |



WHITE TAIL ADDITION TO SEDGWICK COUNTY, KANSAS

NE CORNER, NE 1/4
SEC. 15, T27S, R2E
OF THE 6TH P.M.
FOUND 1/2" I.P.

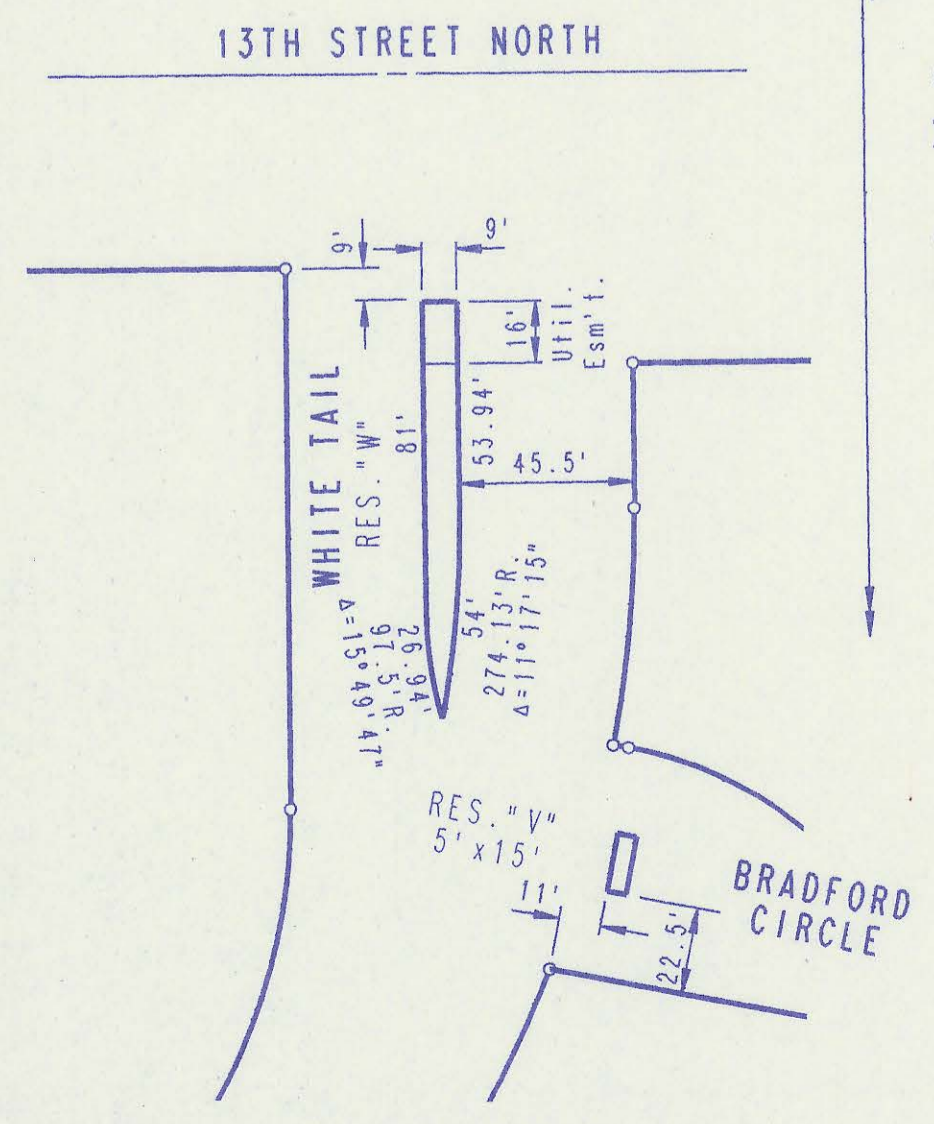


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| PLAN | SURVEYED | BY | DATE |
|-----------|------------|----|------|
| NOTE BOOK | ALIGNED | | |
| | CHECKED | | |
| | NO. OF WAY | | |
| | CHECKED | | |



DRAWING NAME: 34-94846-1 PLAT SH 1
 LOCATION: E4 4244
 CENTER COORDINATES:
 ROTATION ANGLE:
 DATE LAST WORKED ON: DEC. 10, 1994

| No. | Revision | By | Date |
|-----|---------------------|----|------|
| | WHITE TAIL ADDITION | | |

PLAT

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS

| | | |
|--------------|--------------------|--------------|
| Designed by | Job No. | Sht. 7 of 22 |
| Drawn by DEP | Date DECEMBER 1994 | |

WHITE TAIL ADDITION TO SEDGWICK COUNTY, KANSAS

| PLAN | DATE |
|---------|------|
| NOTED | |
| PLOTTED | |
| ALIGNED | |
| CHECKED | |
| BY | |

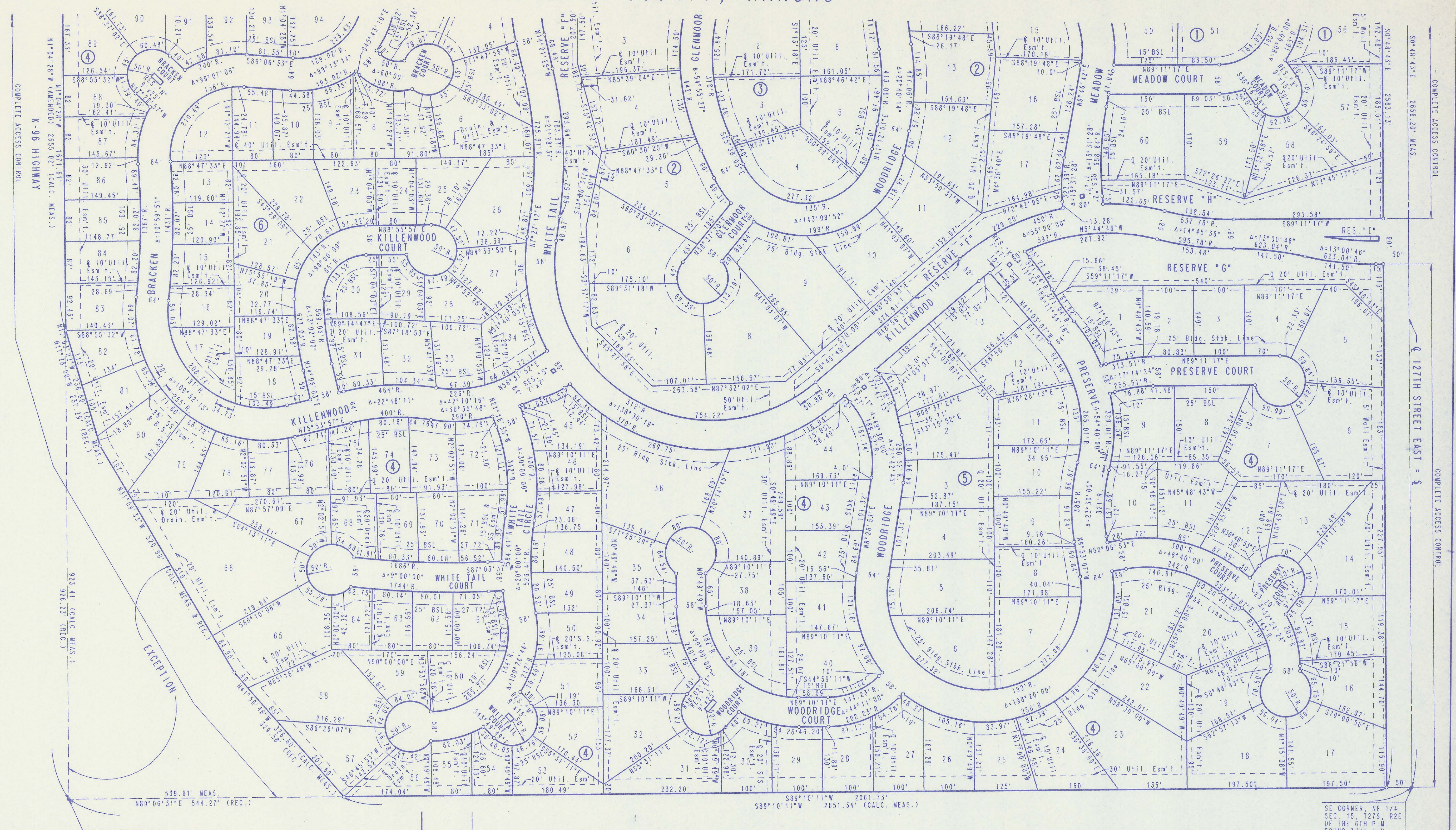
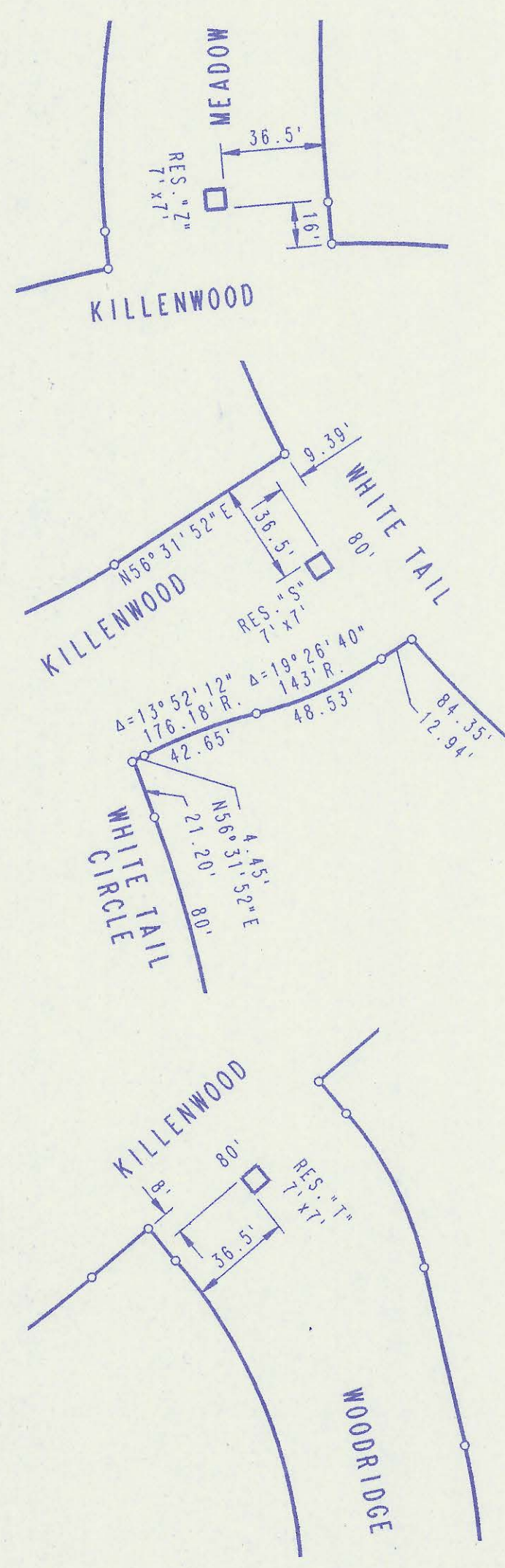
DRAWING NAME: 34-94846-1 PLAT SH 2
 CENTER COORDINATES:
 ROTATION ANGLE:
 DATE LAST WORKED ON: DEC. 10, 1994

SCALE: 1"=100'
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 ● = MONUMENT FOUND
 MEAS. = MEASURED
 CALC. MEAS. = CALCULATED FROM MEASUREMENTS
 REC. = RECORDED

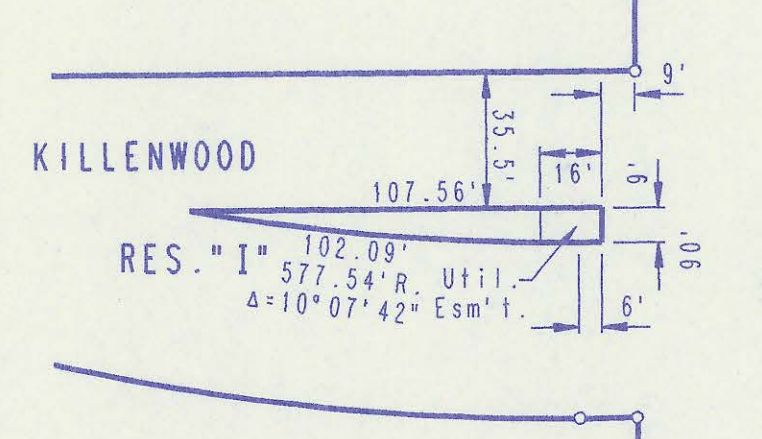
BSL = BUILDING SETBACK LINE
 SS = SANITARY SEWER

BENCH MARK:
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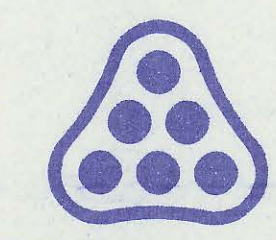


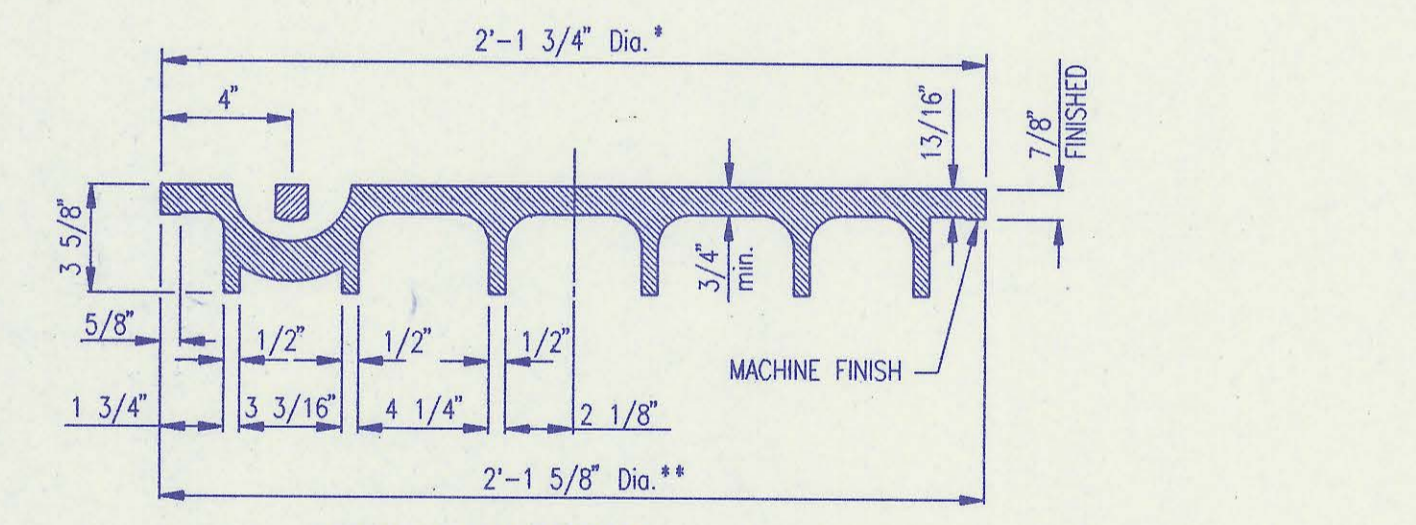
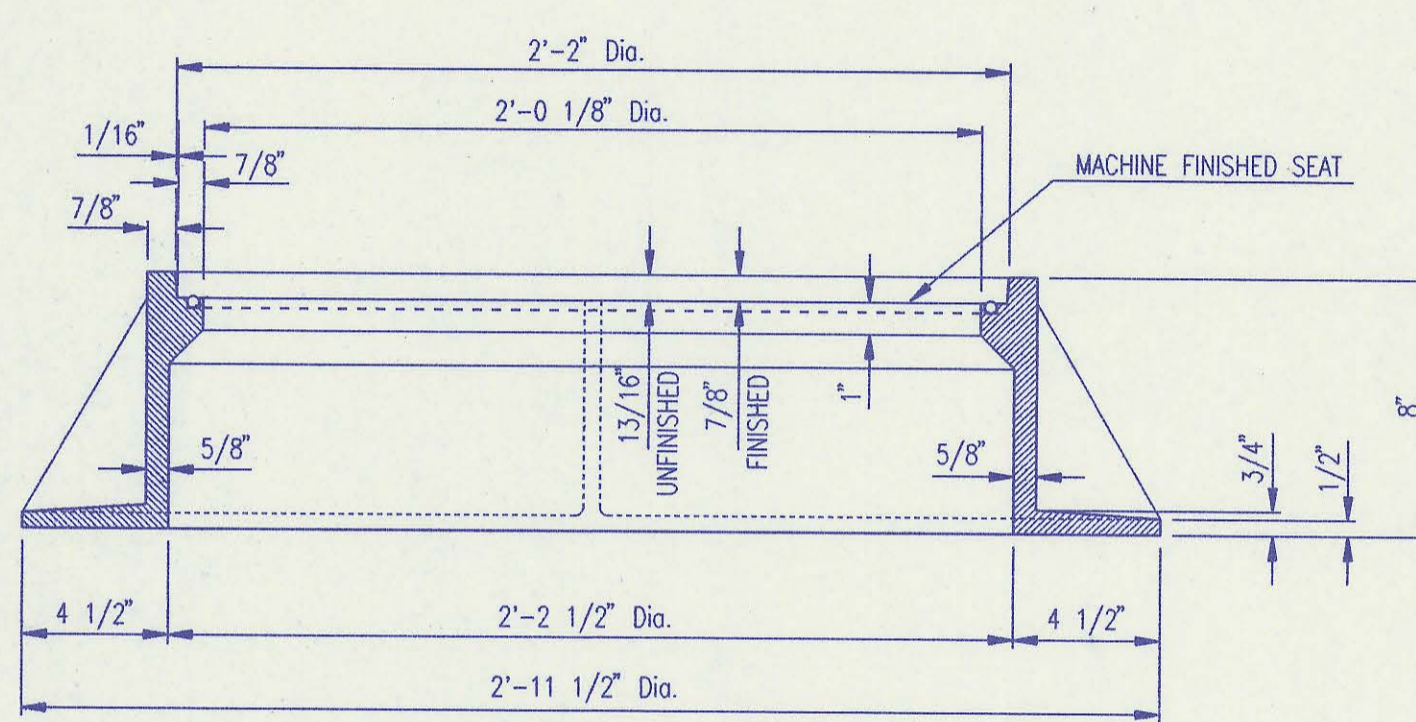
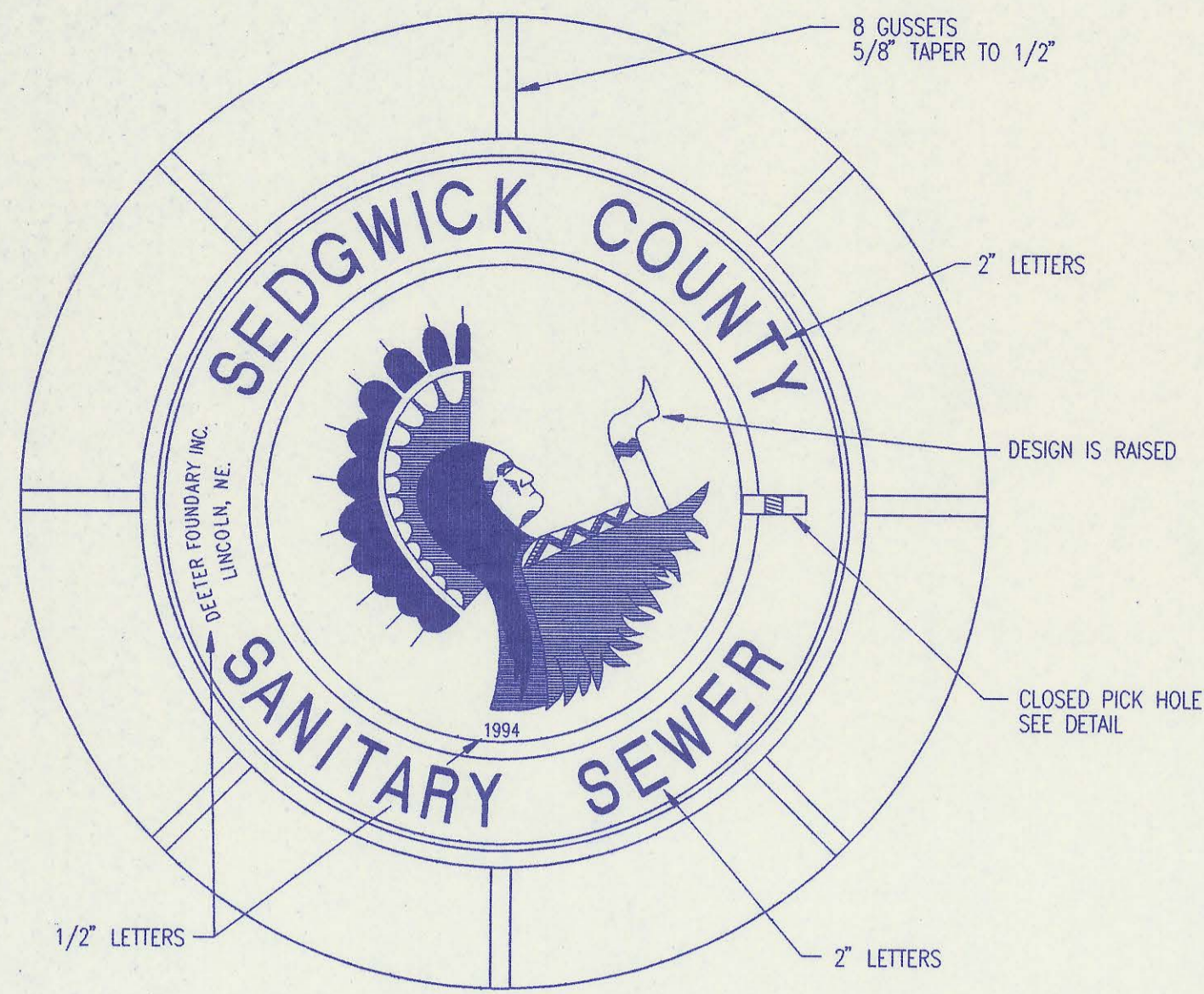
SW CORNER, NE 1/4
 SEC. 15, T27S, R2E
 OF THE 6TH P.M.
 FOUND 3/4" I.P.



SE CORNER, NE 1/4
 SEC. 15, T27S, R2E
 OF THE 6TH P.M.
 FOUND 3/4" I.P.

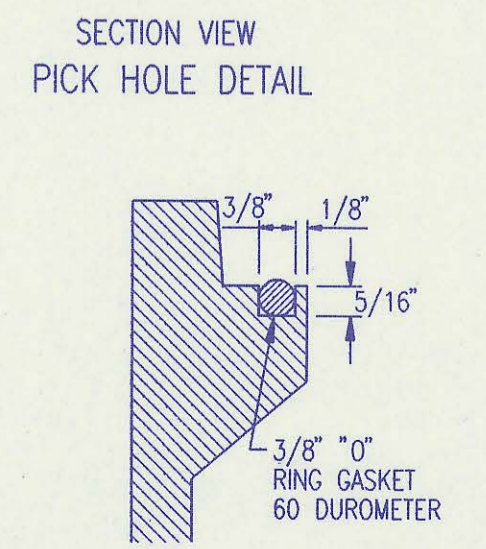
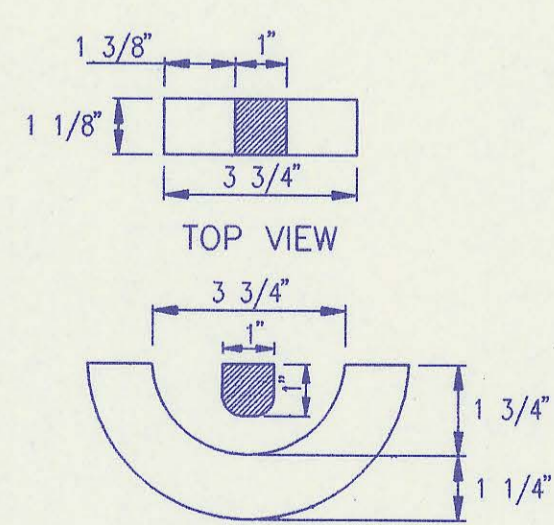
| No. | Revision | By | Date |
|--|----------|---------------|--------------|
| WHITE TAIL ADDITION | | | |
| PLAT | | | |
| PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS | | | |
| Designed by | Job No. | | |
| Drawn by DEP | Date | DECEMBER 1994 | Sht. 8 of 22 |



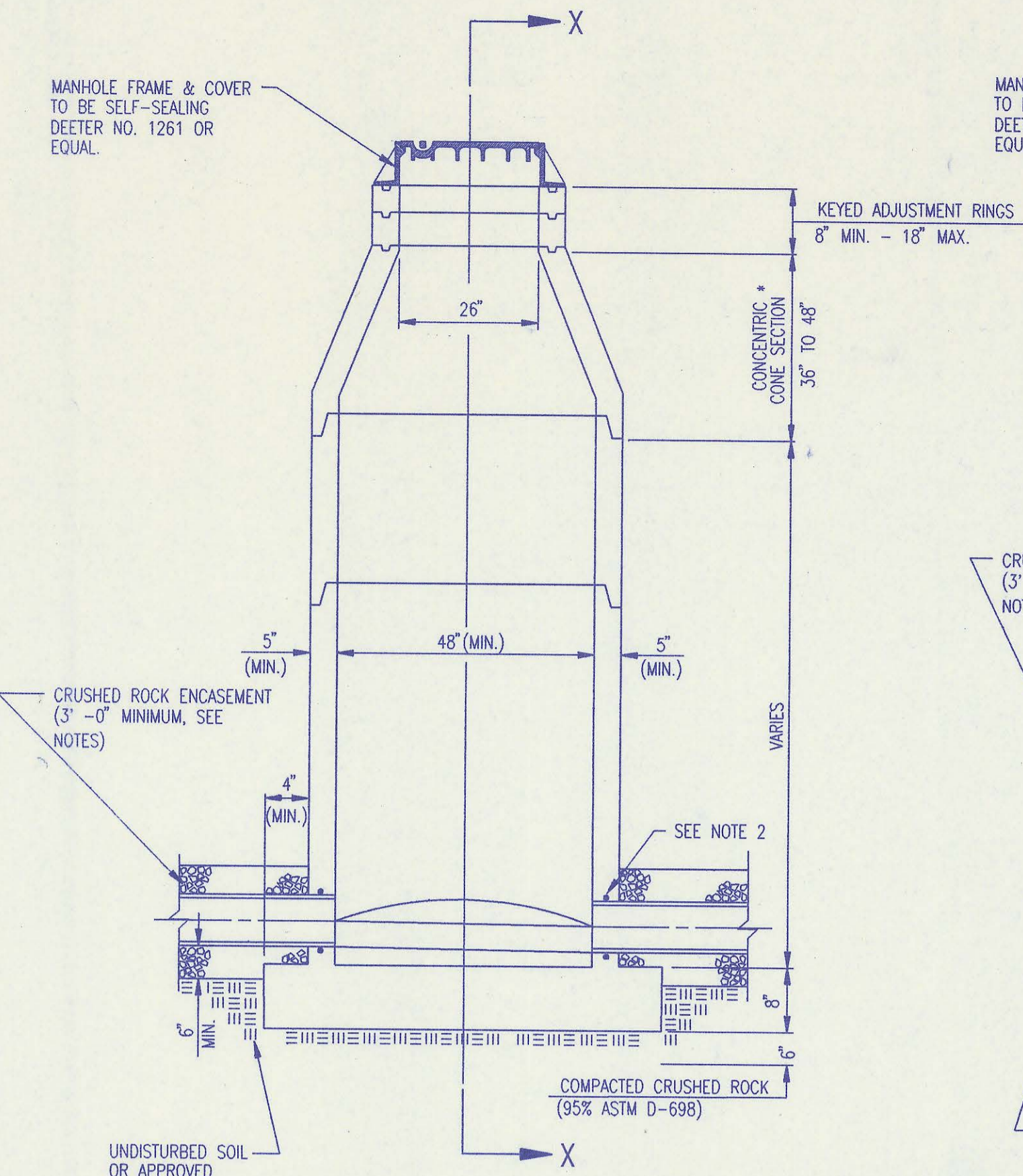


MANHOLE FRAME AND COVER
(TOTAL WEIGHT = 430 LBS.)

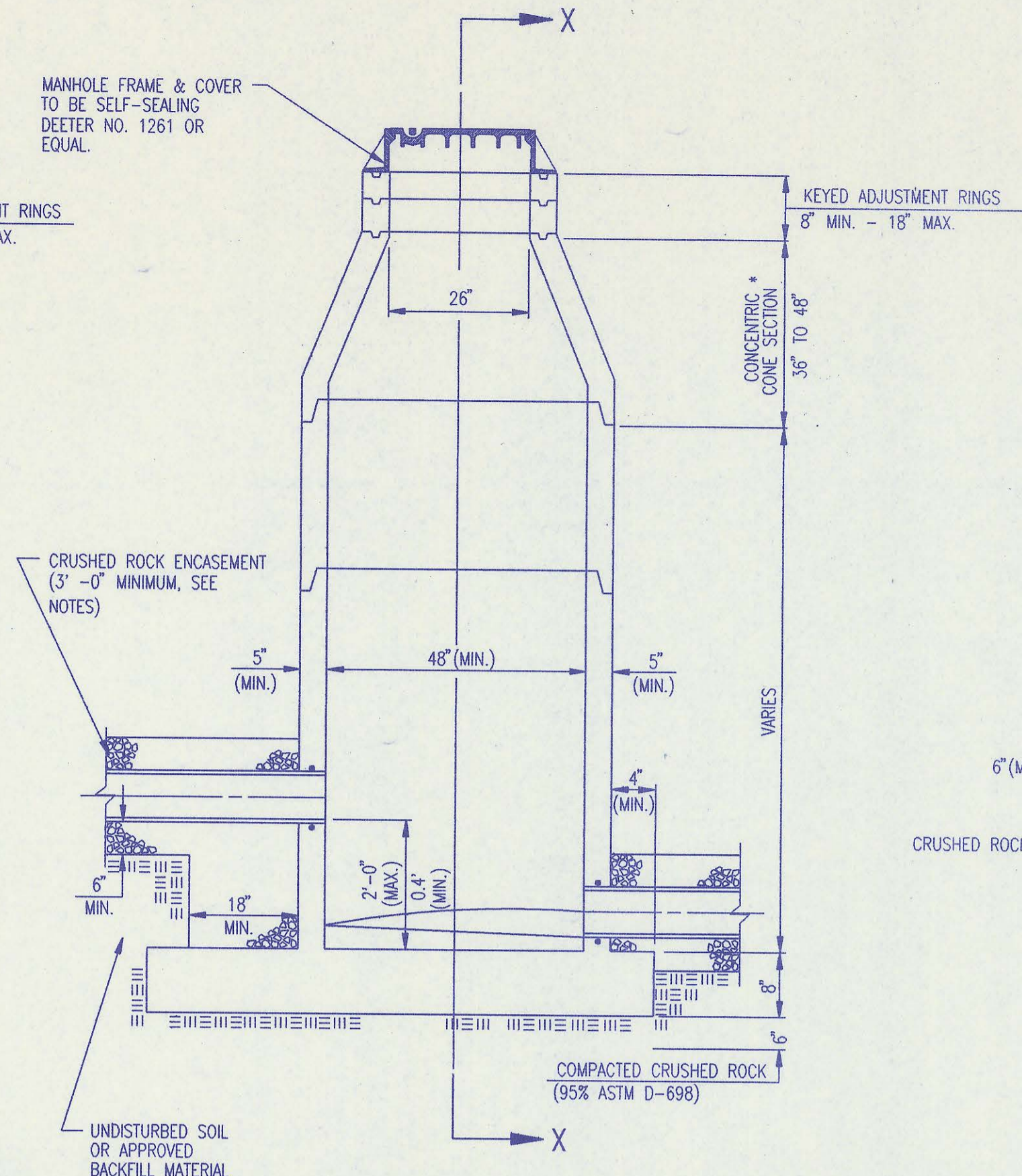
- MANHOLE FRAME AND COVER NOTES**
- CAST IRON MANHOLE FRAME AND COVER SHALL CONFORM TO ASTM A-48, CLASS 350, OR BETTER.
 - CASTINGS ARE TO BE MANUFACTURED TRUE TO PATTERN AND WITH SATISFACTORY FIT OF COMPONENT PARTS. CASTINGS SHALL BE FREE OF DEFECTS AND ALL BURRS SHALL BE GROUND SMOOTH. DIMENSIONS AS DETAIL ON PLAN SHALL NOT DEVIATE BY $\pm 1/16$ " PER FOOT.
 - NO OTHER LETTERING OR MARKINGS OTHER THAN THOSE DETAILED ON PLAN WILL BE PERMITTED ON CASTINGS.
 - CASTINGS MUST BE DOMESTICALLY MANUFACTURED IN THE UNITED STATES OF AMERICA.
 - THE FRAMES AND COVERS SHALL BE FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACES, SO FITTING PARTS WILL NOT BATTLE OR ROCK UNDER TRAFFIC.
 - MANHOLE CASTINGS SHALL BE SELF-SEALING DEETER FOUNDRY INC. NO. 1261 OR APPROVED EQUAL, UNLESS OTHERWISE SPECIFIED IN THE SPECIAL CONDITIONS. (MINIMUM WT. = 430 LBS.) ALL MANHOLE CASTINGS SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICES BID FOR THE VARIOUS MANHOLE TYPES.
 - THE MANUFACTURER SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO MANUFACTURE. THE ENGINEER SHALL RETAIN THE RIGHT TO REJECT CASTINGS NOT CONFORMING TO THE SPECIFICATIONS OR THE APPROVED SHOP DRAWINGS.
 - THE MANHOLE FRAME SHALL BE FURNISHED WITH AN APPROVED CONTINUOUS "O" RING GASKET GROOVED INTO THE BEARING SURFACE OF THE MANHOLE FRAME (SEE DETAIL). THE "O" RING GASKET SHALL BE FACTORY INSTALLED IN THE MANHOLE FRAME WITH 100% SILICON SEALANT-DOW CORNING OR EQUAL.



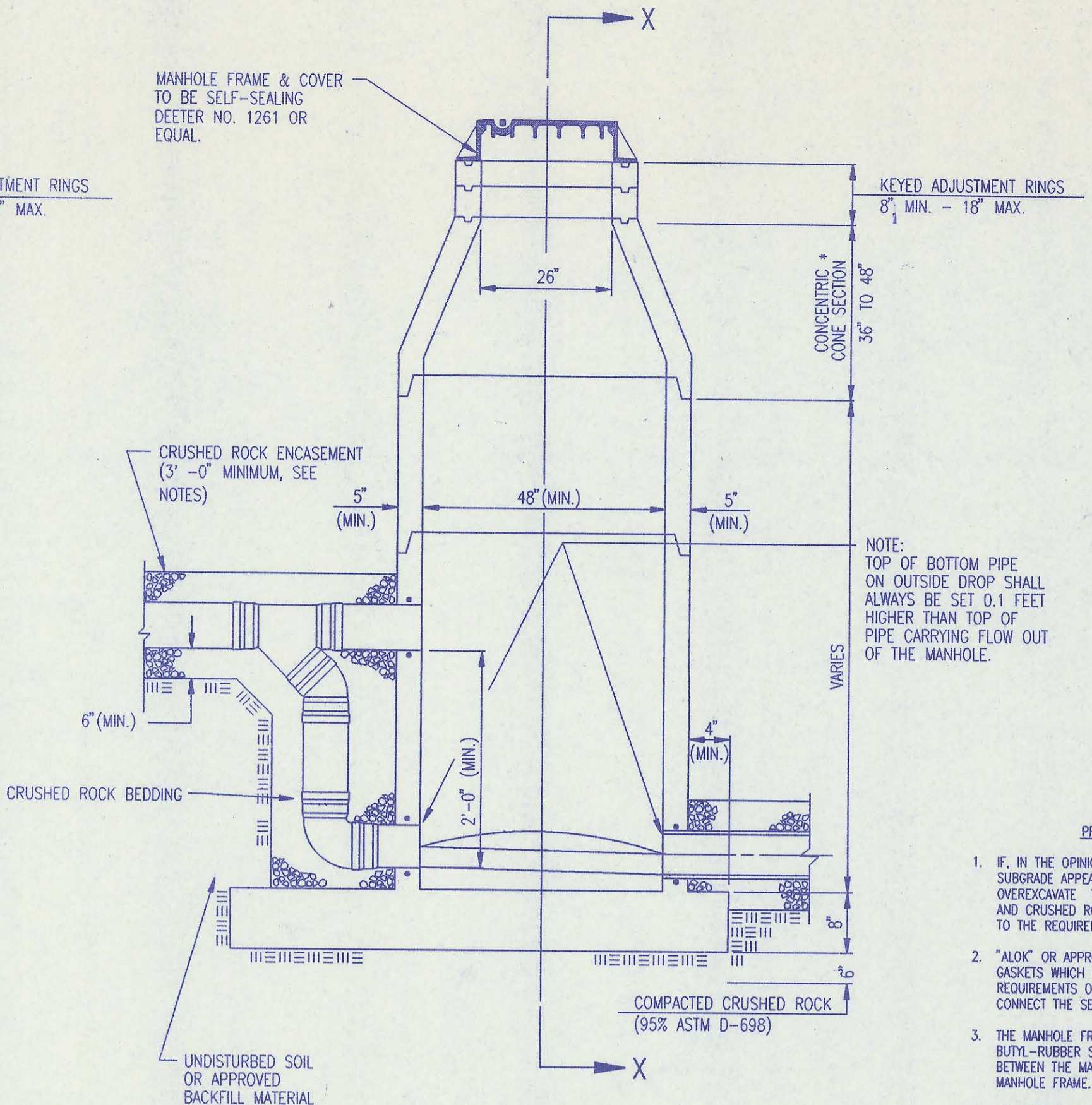
FRAME GROOVING DETAIL
(TYPICAL ALL MANHOLES)



PRECAST STANDARD MANHOLE TYPE "A"



PRECAST INSIDE DROP MANHOLE TYPE "B"



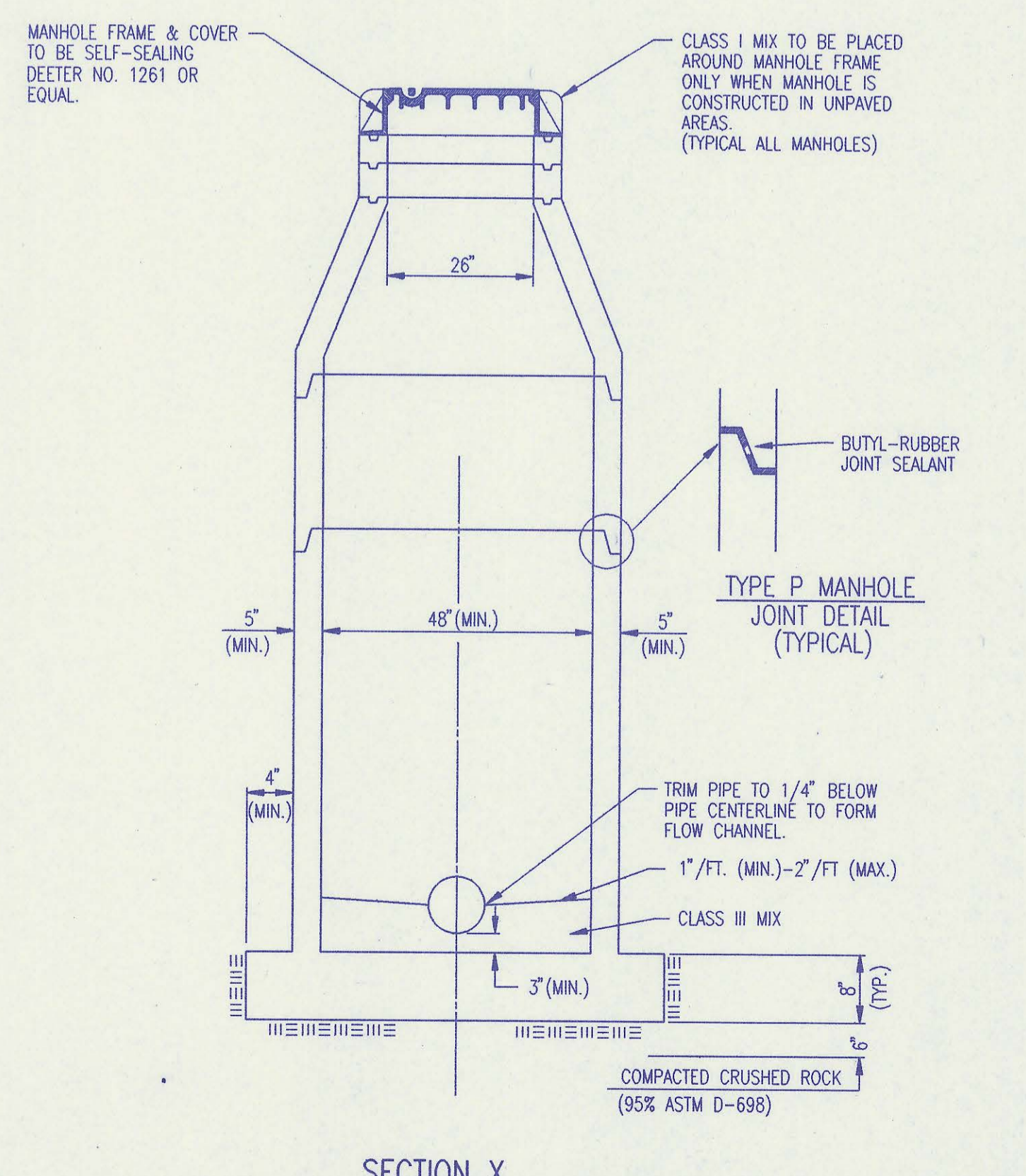
PRECAST OUTSIDE DROP MANHOLE TYPE "C"

NOTE:
TOP OF BOTTOM PIPE ON OUTSIDE DROP SHALL ALWAYS BE SET 0.1 FEET HIGHER THAN TOP OF PIPE CARRYING FLOW OUT OF THE MANHOLE.

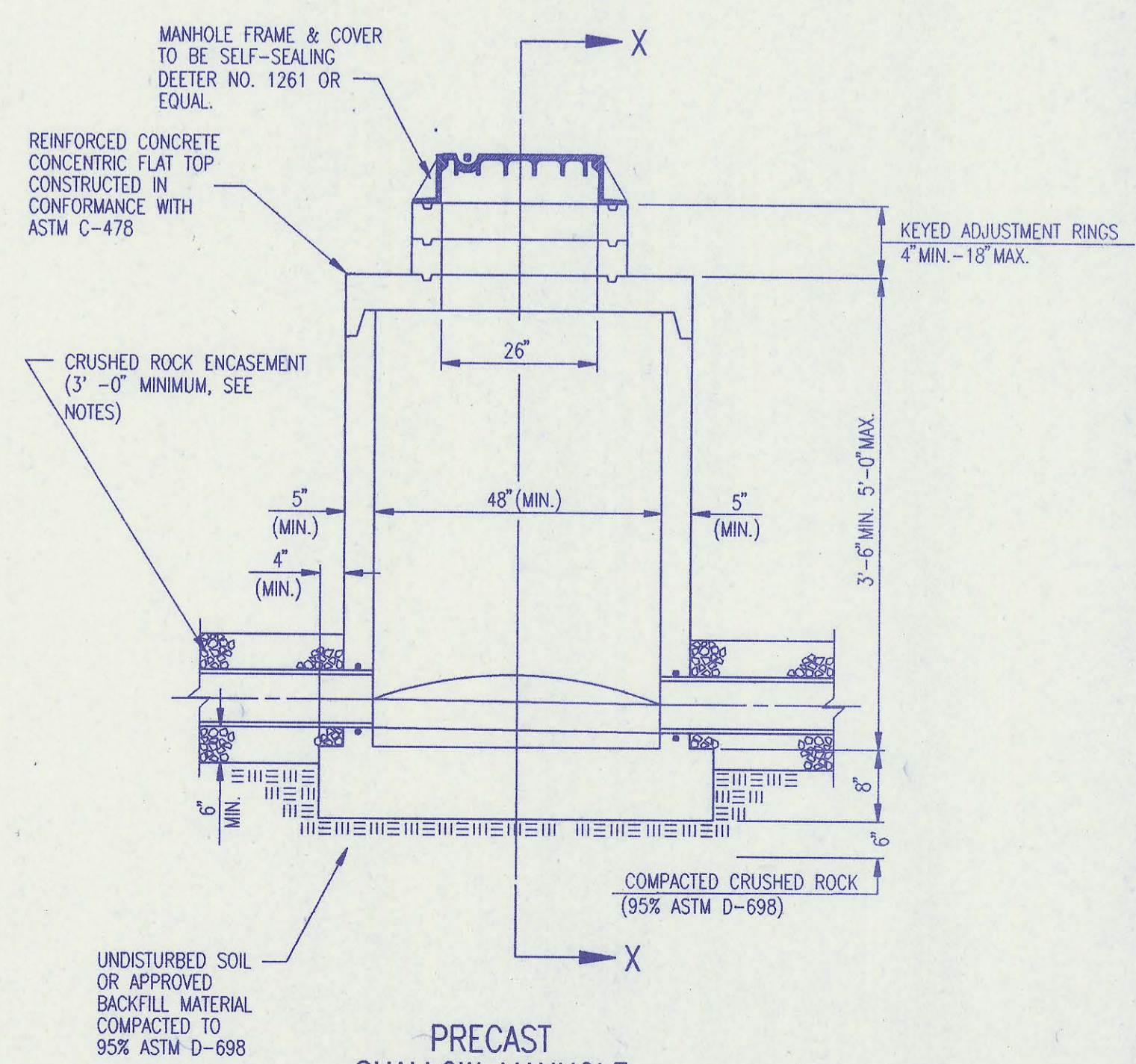
PRECAST MANHOLE NOTES

- IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL OVEREXCAVATE TO A SUITABLE SUBGRADE CONDITION AND CRUSHED ROCK SHALL BE PLACED AND COMPACTED TO THE REQUIRED GRADE.
- "A-LOK" OR APPROVED EQUAL FLEXIBLE WATER-STOP GASKETS WHICH MEET OR EXCEED THE TEST REQUIREMENTS OF ASTM C-923 SHALL BE INSTALLED TO CONNECT THE SEWER TO THE MANHOLE WALL.
- THE MANHOLE FRAME SHALL BE SEATED ON AN APPROVED BUTYL-RUBBER SEALANT TO PROVIDE WATER-TIGHT SEAL BETWEEN THE MANHOLE ADJUSTMENT RING AND THE MANHOLE FRAME.
- GASKETED PIPE CAPS SHALL BE PROVIDED BY THE PIPE SUPPLIER. GLUED OR CEMENTED CAPS WILL NOT BE ACCEPTED.
- ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
- 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.
- MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5" INSIDE DIAMETER (MIN.).
- INSIDE DIAMETER OF FIVE-FOOT DIAMETER PRECAST MANHOLES SHALL REMAIN CONSTANT TO THE LOCATION OF THE REINFORCING FLAT TOP WHICH CONNECTS THE FOUR-FOOT DIAMETER CONE SECTION TO THE FIVE-FOOT DIAMETER MANHOLE BARREL.
- MANHOLES SHALL BE SUPPLIED WITH PRECAST BASE SECTIONS UNLESS OTHERWISE APPROVED. ALL PRECAST CONCRETE MANHOLE SECTIONS AND BASES SHALL CONFORM TO THE LATEST REVISION OF ASTM C-478 AS MODIFIED BY THE SPECIFICATIONS.
- WHERE MANHOLE STUBS ARE SHOWN ON THE PLANS, THE STUB SHALL EXTEND AT LEAST 5 FEET FROM THE INSIDE WALL OF THE MANHOLE.
4" STUBS SHALL BE SET AT 2.0% GRADE.
6" STUBS SHALL BE SET AT 1.0% GRADE.
- MANHOLE SECTIONS SHALL BE SUPPLIED WITH RECESSED LIFTING EYES. LIFTING EYE PROCESSES SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.
- WHERE A-LOK GASKETS ARE REQUIRED, THE CONTRACTOR SHALL UTILIZE A CRUSHED ROCK BEDDING MATERIAL. THE ROCK BEDDING MATERIAL SHALL EXTEND TO 3 FEET FROM THE MANHOLE WALL AND SHALL BE COMPACTED IN PLACE FROM THE BOTTOM OF THE UNDISTURBED AREA TO 1 FOOT ABOVE THE TOP OF PIPE. THE CRUSHED ROCK WHICH IS PLACED BELOW THE PIPE BEDDING ZONE SHALL BE COMPACTED TO 95% ASTM D-698(MIN.).
- WHERE MANHOLES ARE TO BE BUILT OVER EXISTING SANITARY SEWER LINES, SEWER PIPES SHALL BE SUPPORTED WITH CLASS I CONCRETE ENCASEMENT A MINIMUM OF 3 FEET OUTSIDE THE MANHOLE WALL.
- CRUSHED ROCK SHALL MEET THE REQUIREMENTS FOR GRANULAR BEDDING MATERIAL, AS OUTLINED IN THE SPECIFICATIONS.

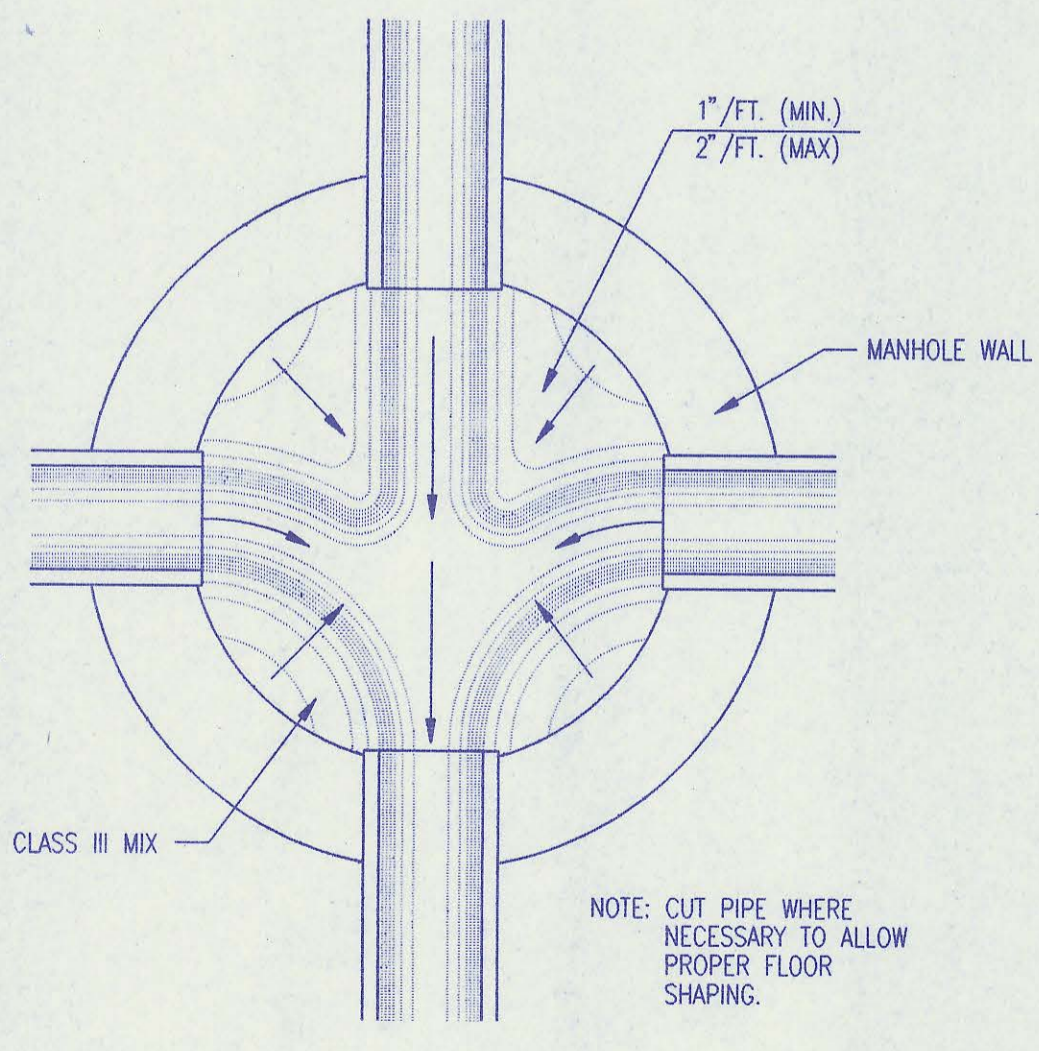
* ECCENTRIC CONE SECTION SHALL BE USED WHERE INDICATED ON THE PLANS.



SECTION X (TYPICAL)



PRECAST SHALLOW MANHOLE TYPE "D"



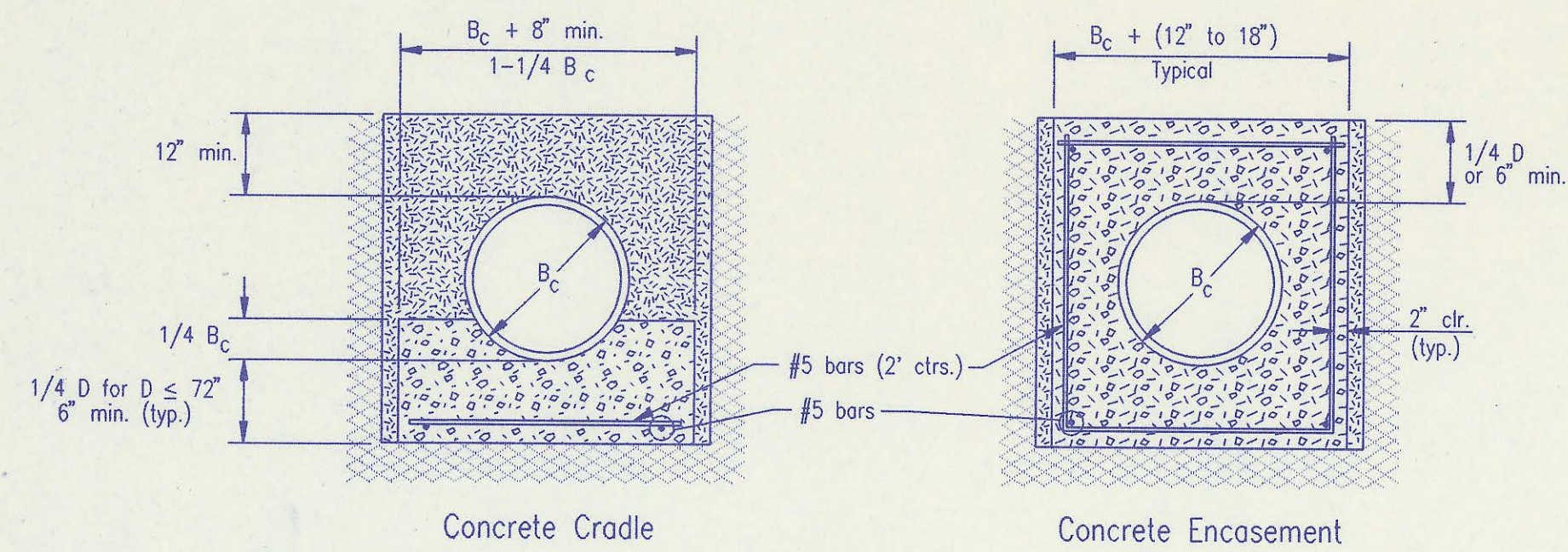
TYPICAL MANHOLE FLOOR SHAPING

| No. | Revision | By | Date |
|-----|--|----|---------|
| 5 | Change concrete encasement to crushed rock encasement | RJ | 3/9/94 |
| 4 | Precast Bases, Precast Manhole Notes, Manhole Frame and Cover Notes, Keyed Adjustment Rings, and Class I mix at concrete encasement and field cap. | RJ | 8/27/93 |
| 3 | All Manholes self-sealing/MH Cover | RJ | 1/25/93 |
| 2 | Modified pipe connection note | RJ | 6/01/92 |
| 1 | Manhole Frame and Cover Note 1 | RJ | 7/16/91 |

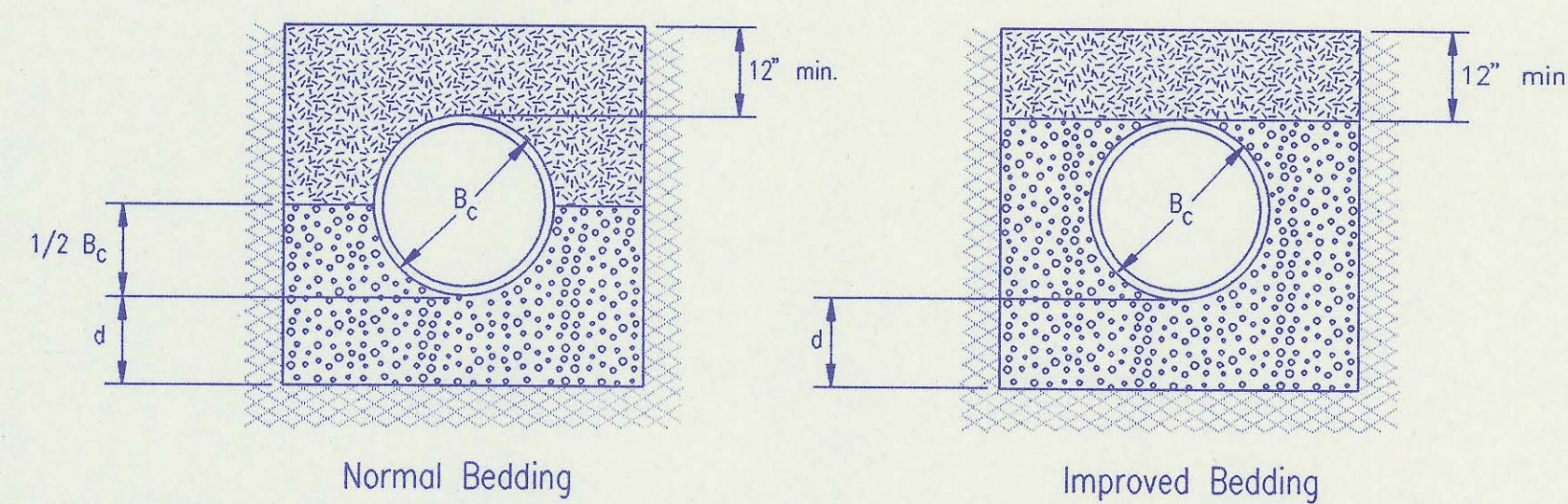
PRECAST MANHOLE DETAILS
ADOPTED AS STANDARD DESIGN SEPTEMBER, 1989
BY
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
DAVID C. SPEARS, P.E., DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

DATE
BY
CHECKED
PLAN

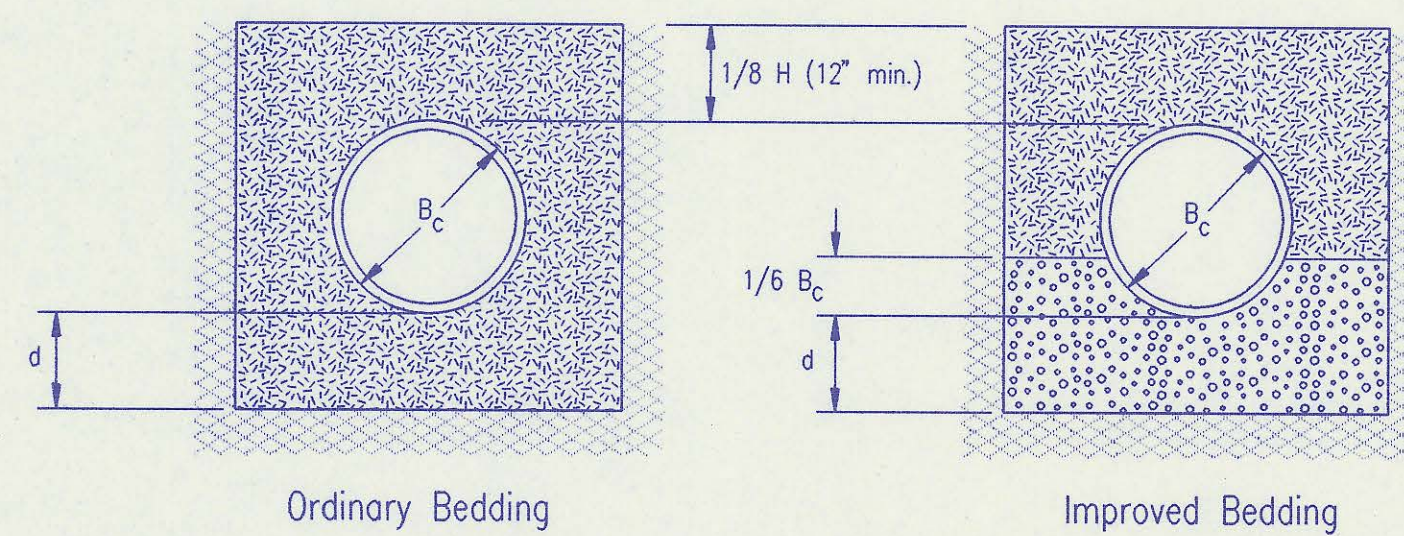
DSNR: RFJ OPER: BB SCALE: 1 = 1
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CLASS A



CLASS B



CLASS C

PIPE ZONE BACKFILLING

- B_c = Outside Pipe Diameter
- H = Backfill from Top of Pipe to Existing Ground
- D = Inside Pipe Diameter
- d = Depth of Bedding Material Below Pipe

- = Granular Bedding Material or Sand-Gravel Bedding
- = Compacted Embedment
- = Concrete

| Depth of Bedding Material Below Pipe | | |
|--------------------------------------|-------------|-------------|
| D | d(min) Soil | d(min) Rock |
| 27" & smaller | 4" | 6" |
| 30" to 60" | 5" | 9" |
| 66" & larger | 6" | 12" |

Granular Bedding Material shall be an approved material consisting of durable crushed rock conforming with the requirements of the latest revision of ASTM C-33 Size No. 67 (3/4" to No. 4); to be placed in not more than 6" layers and compacted by slicing with a shovel or vibrating. Soundness, abrasion, and absorption limits shall be as required for coarse aggregates in Section 03010-Concrete Work in the specifications.

Sand-Gravel Bedding Material - sand-gravel mix meeting Type UD-1 of the 1990 Kansas Standard Specifications for State Road and Bridge Construction.

Compacted Embedment shall be an approved sand material free from debris, organic material, and stones with 100% passing the 3/4" sieve to be placed in uniform layers not more than 6" thick and compacted to 95 percent maximum density as determined by ASTM D698. Granular Bedding Material may be substituted for all or part of Compacted Embedment Materials.

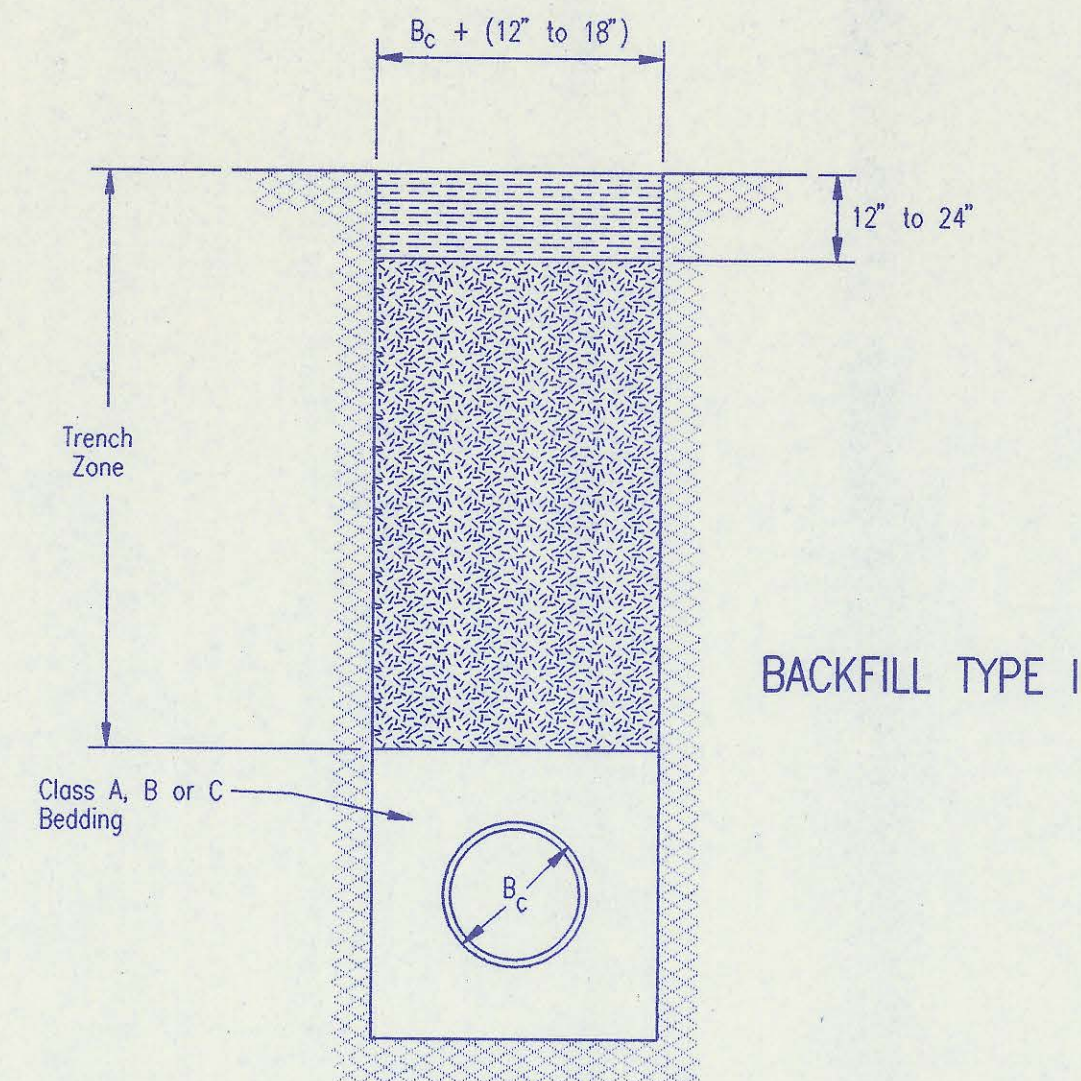
Class A "Concrete Cradle" and/or Class A "Concrete Encasement" is not required unless specified on the plans. However, where unexpected trench conditions exist or improper trenching is performed Class A Bedding may be required as determined by the Engineer.

Class B Bedding shall be used for all flexible pipe.

- a. Class B Normal Bedding shall be used for PVC Pipe unless wet conditions are encountered.
- b. Class B Improved Bedding shall be used for other flexible pipe, and for PVC pipe in wet conditions.

Class C Bedding shall be used for all rigid pipe.

- a. Class C Ordinary Bedding shall be used for all rigid pipe unless wet conditions are encountered.
- b. Class C Improved Bedding shall be used for wet conditions existing in the trench, as directed by the Engineer, at no additional cost to the Owner. The dimensions shall be equal to that required for "rock" excavation (see specifications).



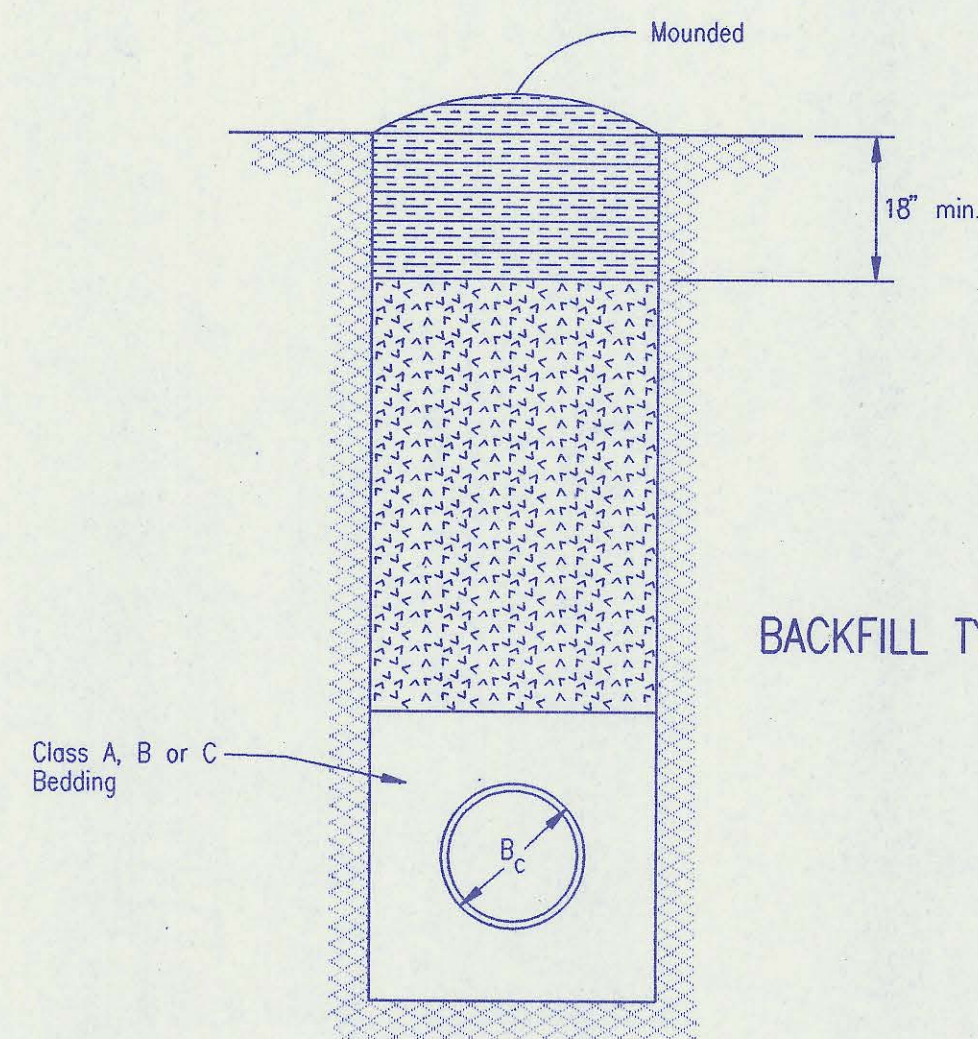
BACKFILL TYPE I

- B_c = Outside Pipe Diameter
- = Compacted Granular Backfill
- = Uncompacted Earth Backfill
- = Compacted Earth Backfill

Compacted Granular Backfill material shall be an approved sand material free from debris, organic material and stones with 100% passing the 3/4" sieve and not more than 15% passing a No. 200 sieve; to be jetted and mechanically vibrated into place and compacted to 95% density as determined by ASTM D698.

Uncompacted Earth Backfill material may be natural soil free from large clods or stones, brush, roots more than 2 inches in diameter, debris, and junk. Flooding with water shall be provided as directed by the Engineer.

Compacted Earth Backfill shall consist of material existing prior to trenching or selected material as directed by the Engineer, and shall be compacted to 90% density as determined by ASTM D698.



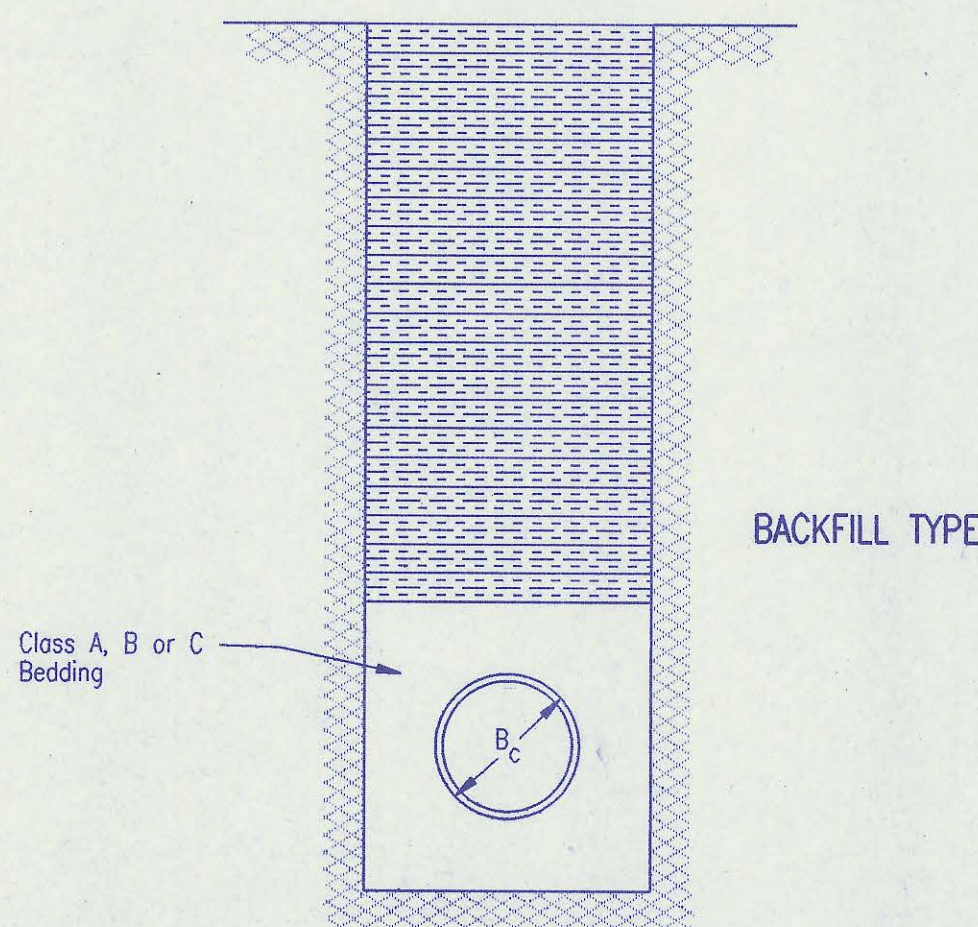
BACKFILL TYPE II

Backfill: Backfill material and compaction requirements shall conform to either Type I, Type II or Type III as specified in the plans. One year maintenance will be required on all backfill.

Backfilling Through Rock: Backfilling through rock shall be performed as specified in the paragraph Backfill above, except that the Pipe Zone is increased to provide eighteen (18) inches of cover over the pipe. When approved by the Engineer the remainder of the backfill may be excavated rock provided the excavated rock has been broken up so that earth and rock will thoroughly mix and not result in voids around the larger pieces of rock. Any excess rock remaining after the trench has been backfilled shall be removed or wasted as directed by the Engineer.

Backfilling Under Pavement: Backfilling under existing or proposed pavement shall be performed as Backfill Type I to a level of two (2) feet from the bottom of the pavement. The remainder of the trench shall be backfilled with selected material, sufficiently damp to be properly compacted in layers not exceeding six (6) inches in depth, compaction shall be performed with mechanical tampers and continued until a relative density of 100 percent of standard density, in conformance with ASTM D698 is attained.

Backfilling Under Gravel Streets: Where the trench crosses or is in existing gravel surfaced streets, the backfill shall be compacted as provided in the paragraph "Backfilling Under Pavement".



BACKFILL TYPE III

TRENCH ZONE BACKFILLING

| | | | |
|-----|---|----|---------|
| 2 | Revised compaction designation-Backfilling under pavement | RJ | 9/28/94 |
| 1 | Revised compaction designation | RJ | 3/9/94 |
| No. | Revision | By | Date |

BACKFILL DETAILS

ADOPTED AS STANDARD DESIGN SEPTEMBER, 1989

BY

SEGDWICK COUNTY BUREAU OF PUBLIC SERVICES

DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

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| PLAN | CHECKED | DATE |
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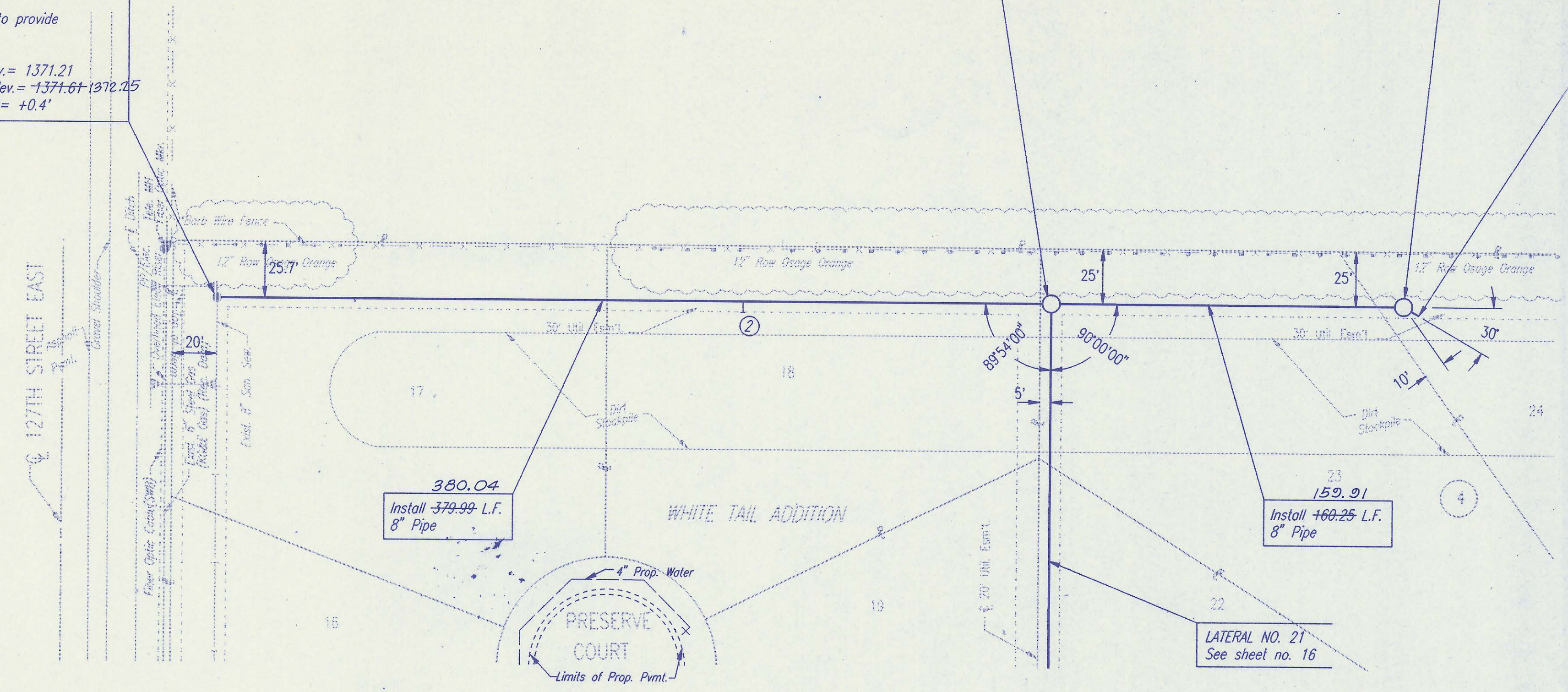
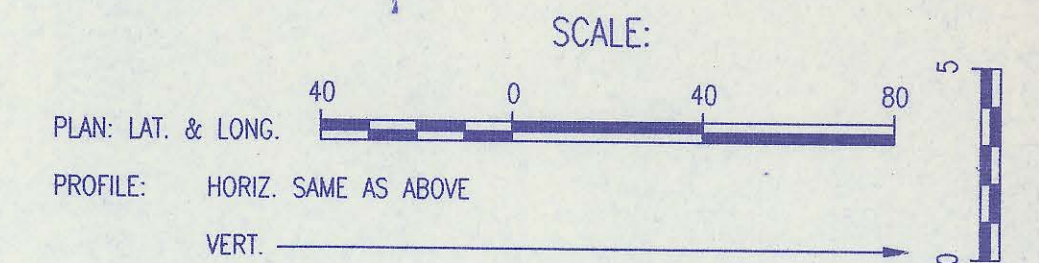
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DSNR: RTJ OPER: BB SCALE: 1 = 40
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Sta. 28+75.26 ✓
 Existing concrete MH 14-11
 Core MH wall and install new 8" pipe. Seal new 8" pipe to MH wall with an approved water-stop gasket and quick-set hydraulic cement. Construct a minimum of 3" concrete encasement from manhole wall.
 Reshape invert to provide smooth flow.
 Adjust MH Top
 Existing Top Elev. = 1371.21
 Proposed Top Elev. = 1371.61 + 1372.25
 Total Adjustment = +0.4'

.30
 Sta. 32+55.25
 Const. MH 14-12
 Type A

.21
 Sta. 34+15.59
 Const. MH 14-13
 Type A



Install 1- 4" Stub and cap

380.04
 Install 379.99 L.F. 8" Pipe

23
 159.91
 Install +60.25 L.F. 8" Pipe

LATERAL NO. 21
 See sheet no. 16

ALL PIPE INSTALLED IS PVC PIPE.

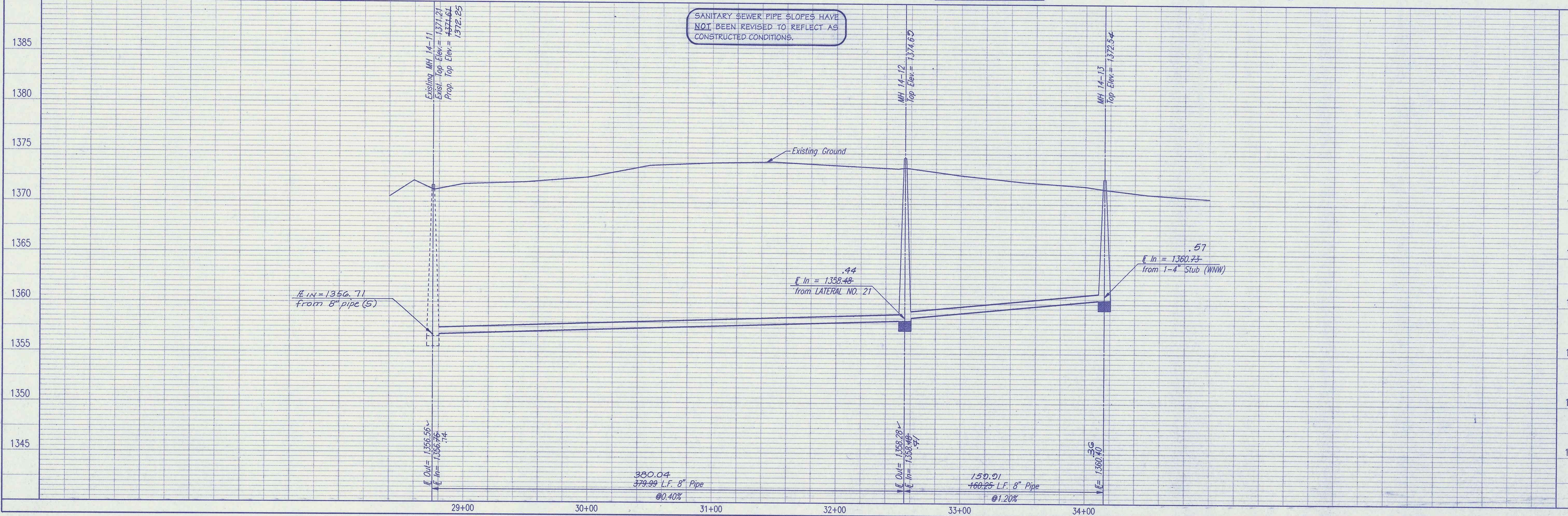
① ②
 DENOTES SEWER SERVICE. SEE SHEET NO. 11 FOR SEWER SERVICE SCHEDULE AND DETAILS.

RECORD DRAWING
 MDK PROJ. ENG. 3/6/96 DATE
 REG. ENG. DATE



LATERAL NO. 14

SANITARY SEWER PIPE SLOPES HAVE NOT BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS.



In = 1356.71
 From 8" pipe (S)

Existing MH 14-11
 Exst. Top Elev. = 1371.21
 Prop. Top Elev. = 1371.61 + 1372.25

MH 14-12
 Top Elev. = 1374.62

MH 14-13
 Top Elev. = 1372.54

380.04
 379.99 L.F. 8" Pipe
 @ 0.40%

In = 1358.28
 In = 1358.45
 In = 1358.45

159.91
 +60.25 L.F. 8" Pipe
 @ 1.20%

In = 1360.73
 from 1-4" Stub (WAW)

Sheet 13 of 22

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS

Designed By: CRT, MDK
 Drawn By: JLM, BB

Job No. 34-94846-1
 Date December 1994

SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
 DIRECTOR BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

LATERAL NO. 14
 SANITARY SEWER IMPROVEMENTS
 WHITE TAIL ADDITION PHASE 9, 11, AND 12

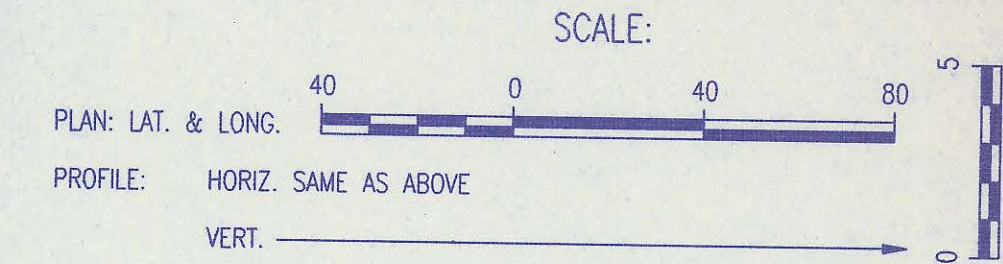
Sta. 0+00.00
 Existing concrete MH 1-3
 Construct outside drop per standard
 MH details.
 Core MH wall and install new 8"
 pipe. Seal new 8" pipe to MH wall
 with an approved water-stop
 gasket and quick-set hydraulic
 cement. Construct a minimum of
 3' concrete encasement from
 manhole wall.
 Reshape invert to provide
 smooth flow.

Sta. 2+39.57
 Const. MH 15-1
 Type A

Sta. 3+93.68
 Const. MH 15
 Type A

Sta. 2+39.57, LATERAL NO. 15=
 Sta. 0+00.00, LATERAL NO. 16
 MH 15-1

Sta. 0+51.89
 Const. MH 16-
 Type A

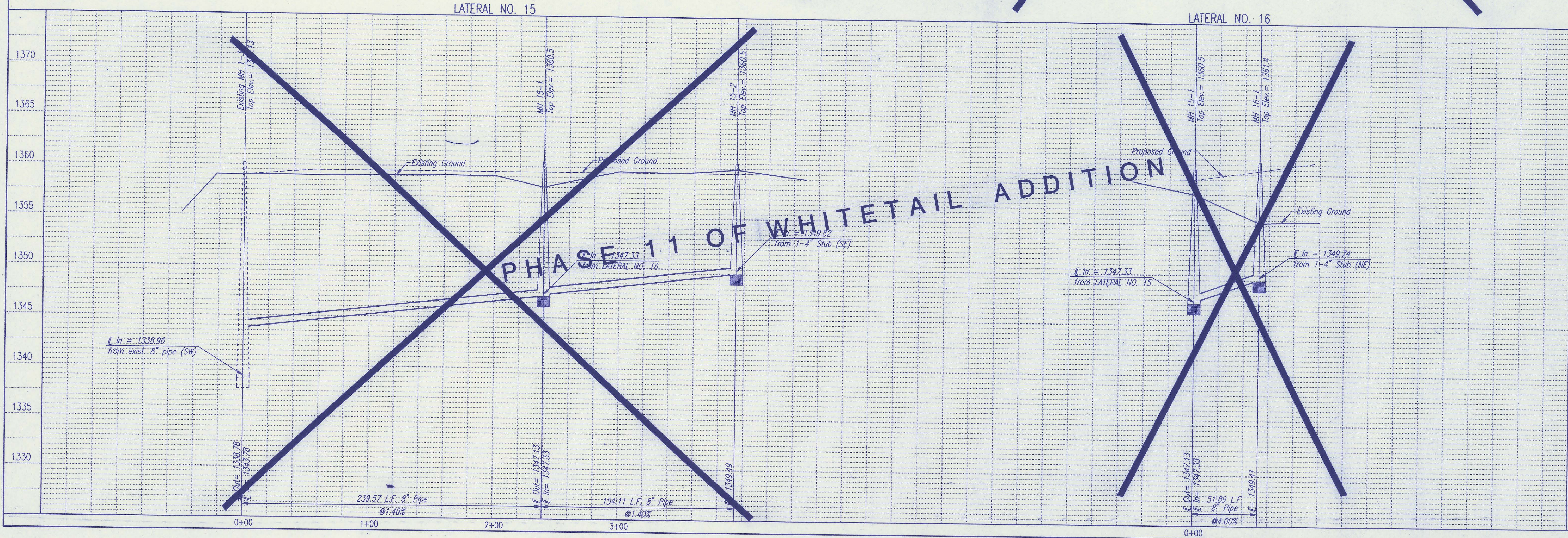


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DSNR: RFJ OPER: BB SCALE: 1" = 40'
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SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
 DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

LATERAL NO. 15 AND 16
 SANITARY SEWER IMPROVEMENTS
 WHITE TAIL ADDITION PHASE 9, 11, AND 12

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS

Designed By: CRJ, MOK
 Drawn By: JLM, BB

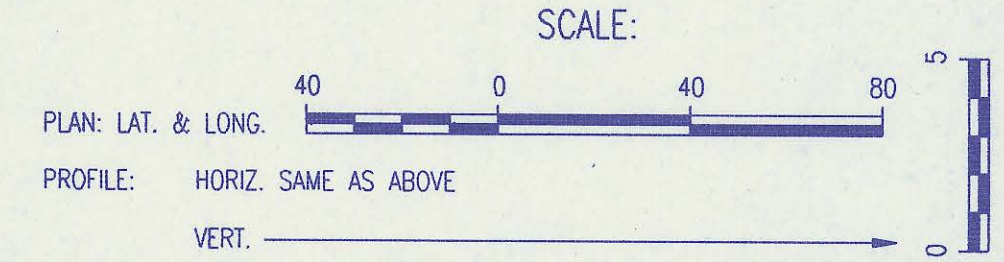
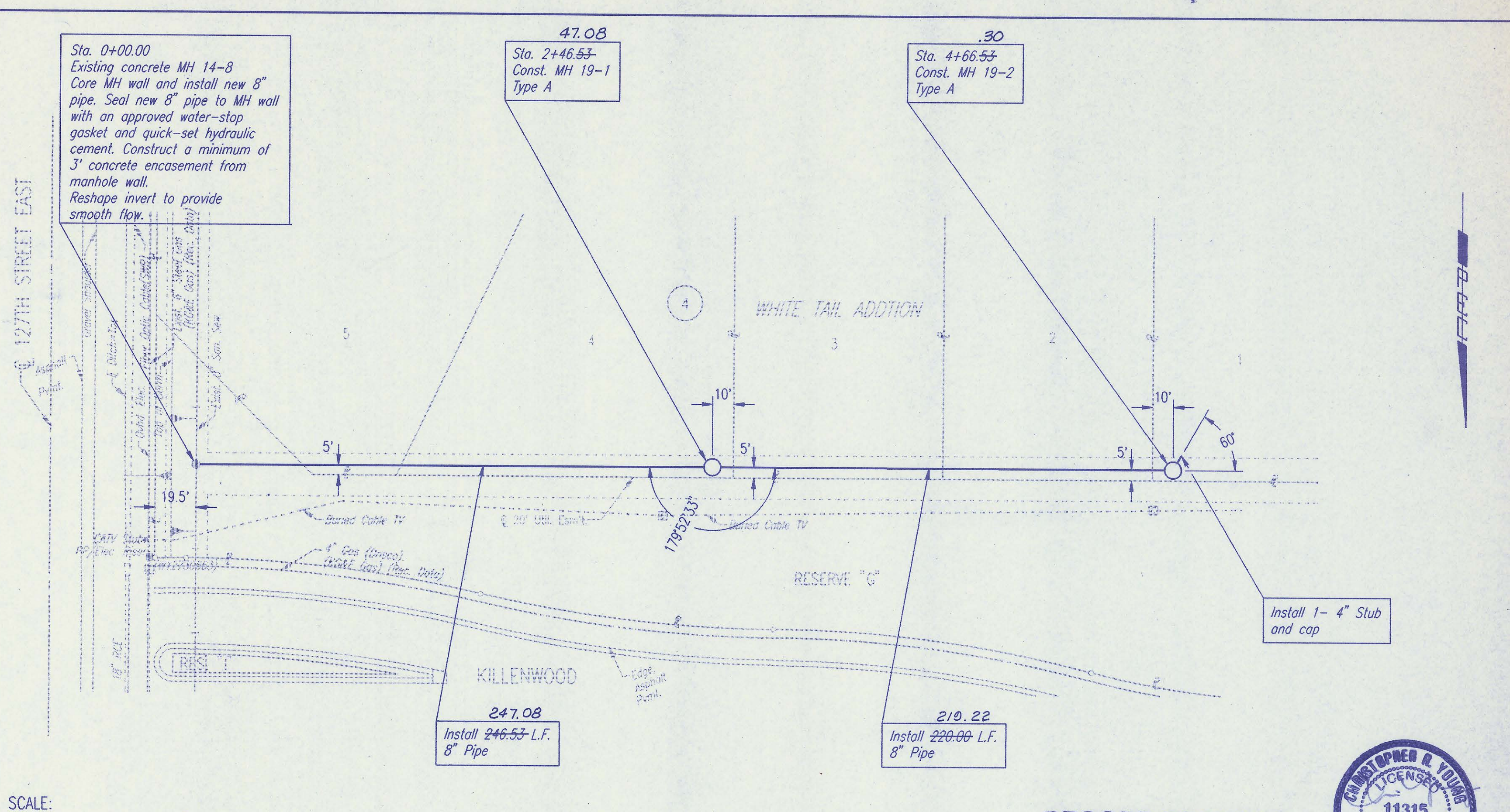
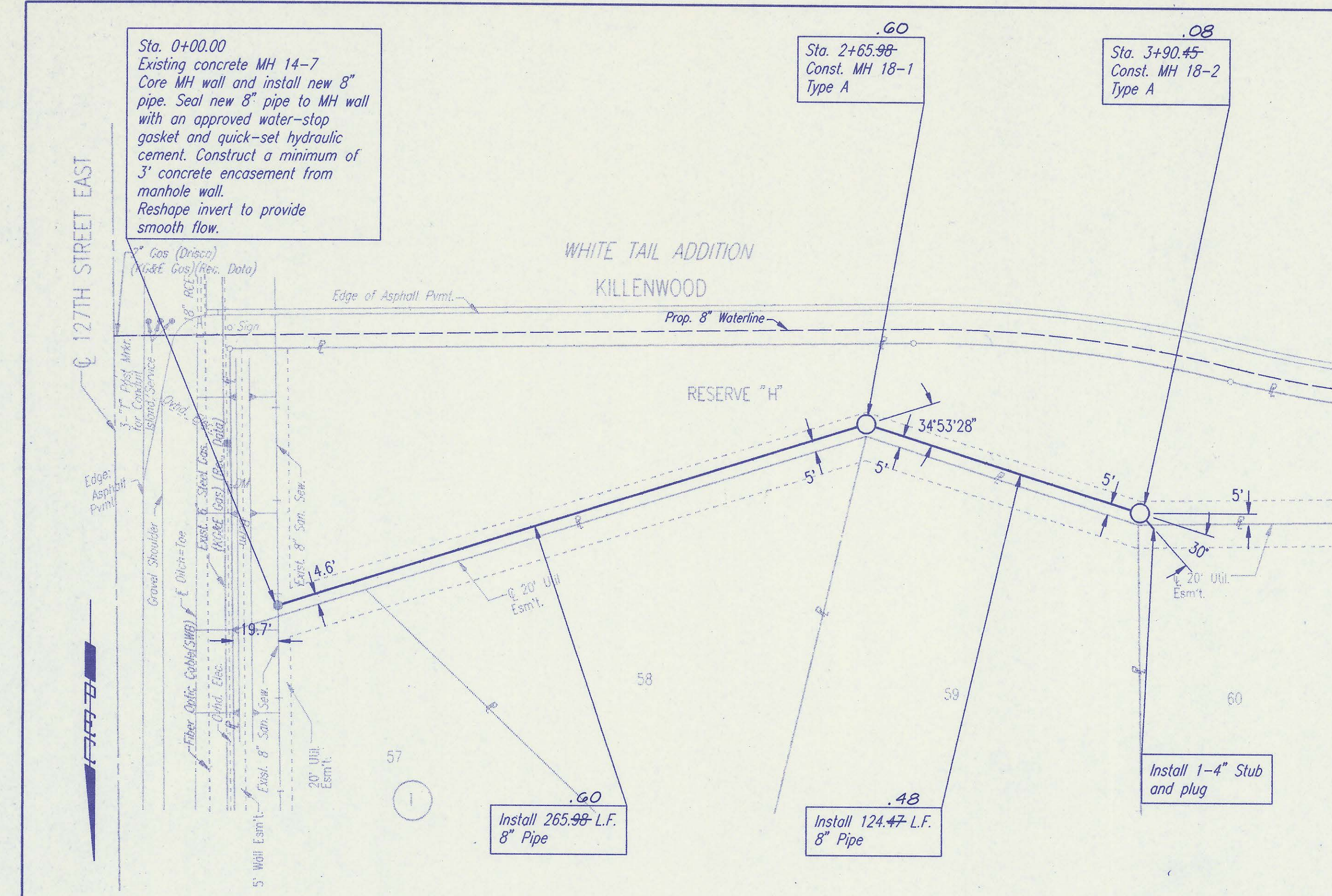
Job No. 34-94846-1
 Date December 1994

Sheet 14 of 22

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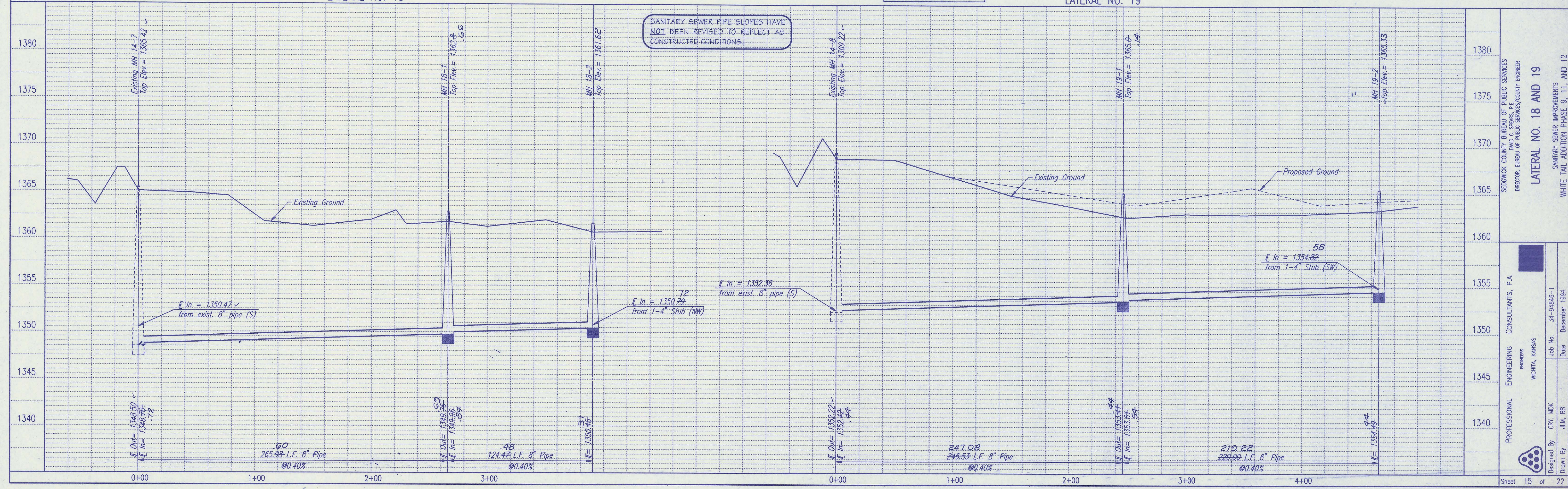
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ALL PIPE INSTALLED IS PVC PIPE.

RECORD DRAWING
 MDK PROJ. ENG. 7/6/96 DATE
 RES. ENG. _____ DATE



SEDWICK COUNTY BUREAU OF PUBLIC SERVICES
 DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS

Job No. 34-94846-1
 Date December 1994

Designed By CRY, MDK
 Drawn By JLM, BB

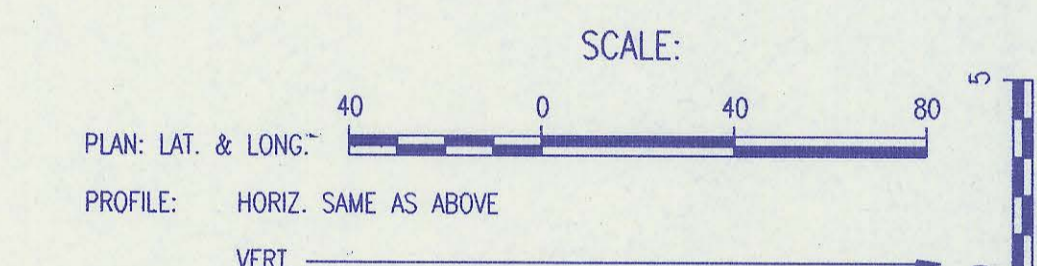
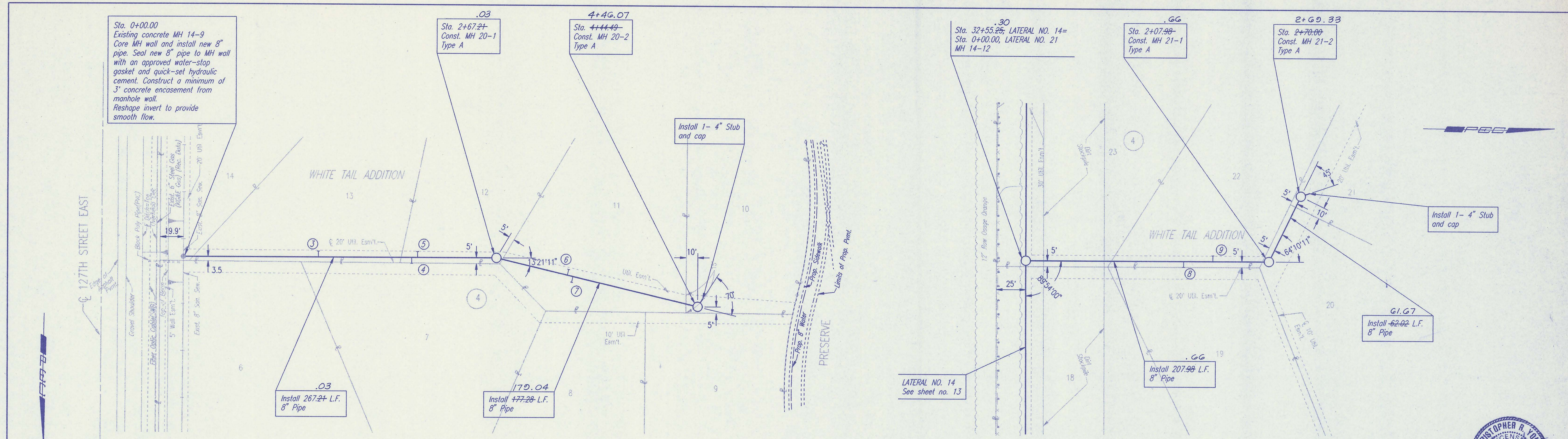
Sheet 15 of 22

LATERAL NO. 18 AND 19
 SANITARY SEWER IMPROVEMENTS
 WHITE TAIL ADDITION PHASE 9, 11, AND 12

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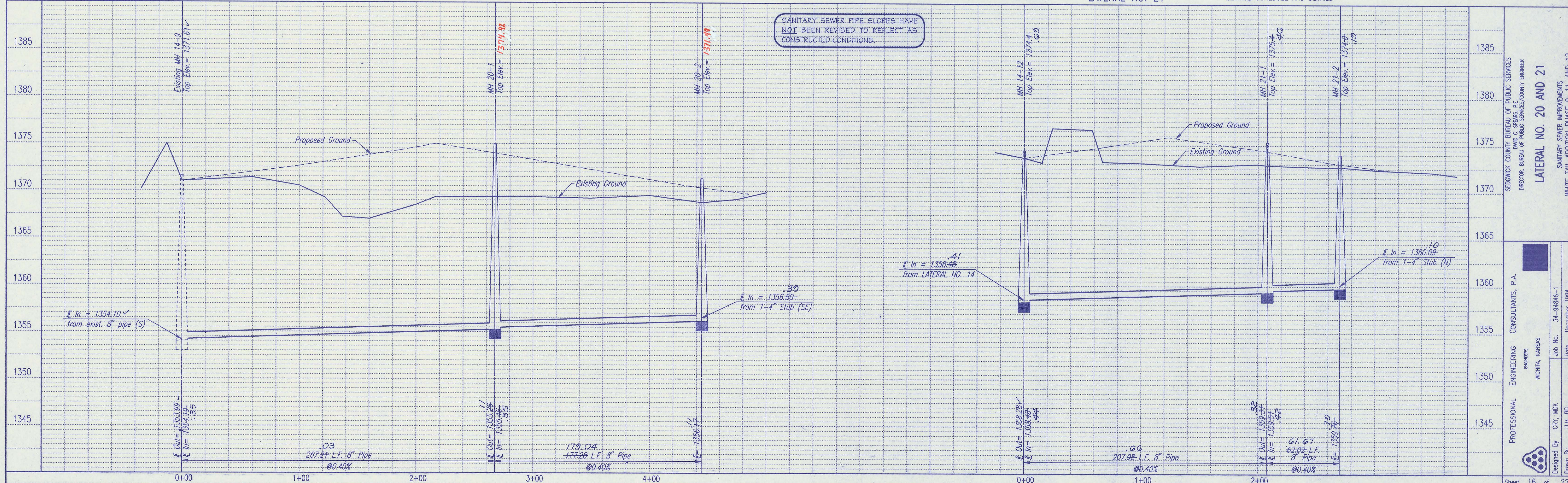
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RECORD DRAWING
 MDK PROJ. NO. 34-94846-1 DATE 12/1/94
 DENOTES SEWER SERVICE. SEE SHEET NO. 11 FOR SEWER SERVICE SCHEDULE AND DETAILS.



SEDMICK COUNTY BUREAU OF PUBLIC SERVICES
 DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

LATERAL NO. 20 AND 21
 SANITARY SEWER IMPROVEMENTS
 WHITE TAIL ADDITION PHASE 9, 11, AND 12

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS

Job No. 34-94846-1
 Date December 1994

Designed By CRY, MDK
 Drawn By JLM, BB

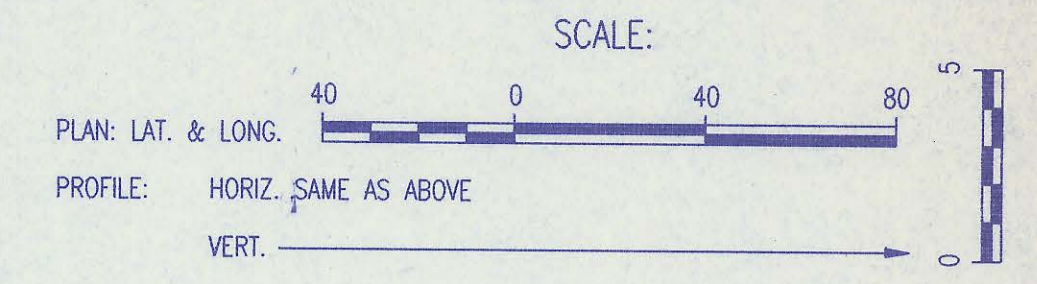
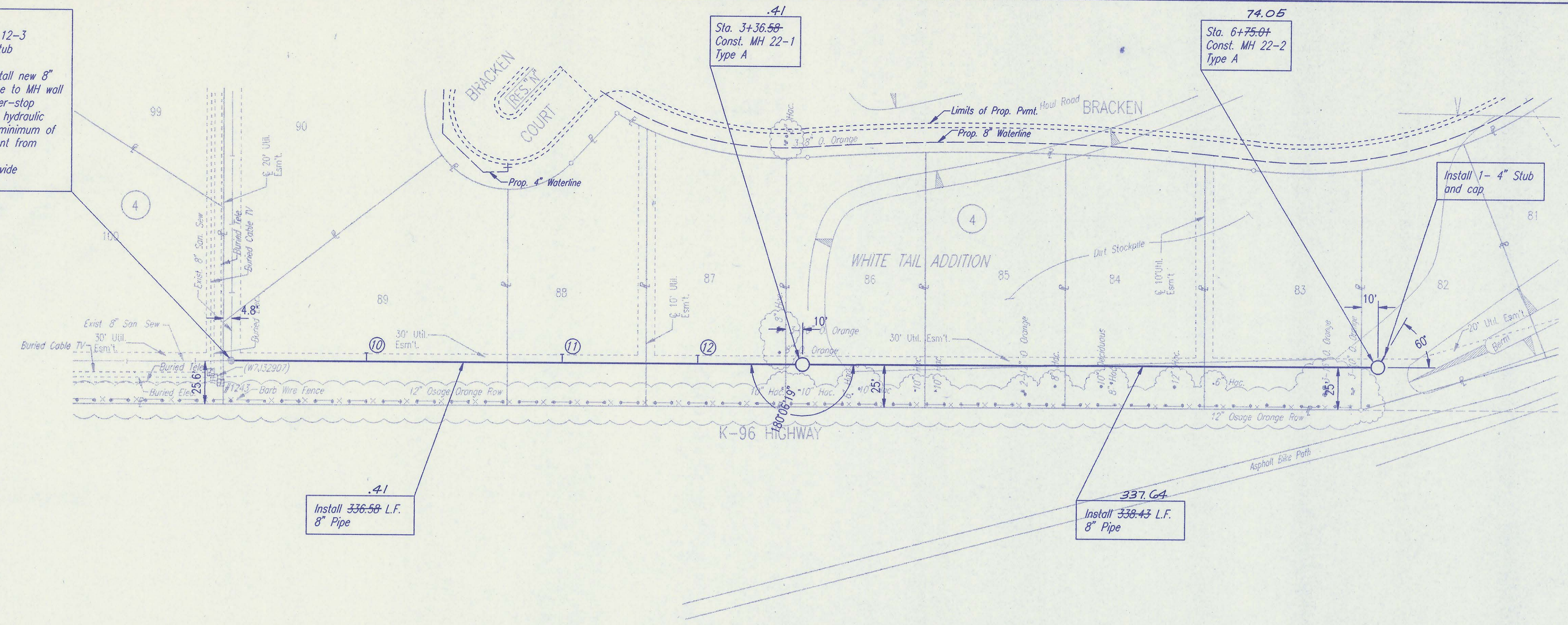
Sheet 16 of 22

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DSNR: RFJ OPER: BB SCALE: 1 = 40
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Sta. 0+00.00
 Existing concrete MH 12-3
 Remove existing 4" stub
 and riser pipe.
 Core MH wall and install new 8"
 pipe. Seal new 8" pipe to MH wall
 with an approved water-stop
 gasket and quick-set hydraulic
 cement. Construct a minimum of
 3' concrete encasement from
 manhole wall.
 Reshape invert to provide
 smooth flow.

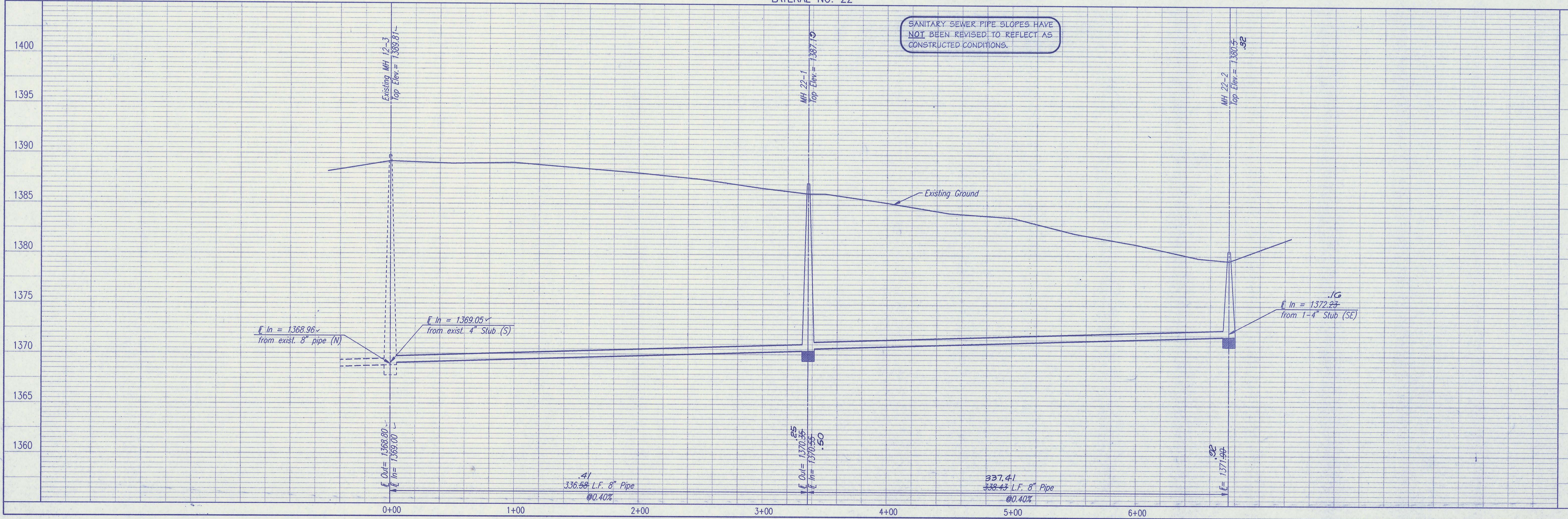


LATERAL NO. 22

ALL PIPE INSTALLED
 IS PVC PIPE.

①
 ②
 DENOTES SEWER SERVICE.
 SEE SHEET NO. 11 FOR SEWER
 SERVICE SCHEDULE AND DETAILS

SANITARY SEWER PIPE SLOPES HAVE
 NOT BEEN REVISED TO REFLECT AS
 CONSTRUCTED CONDITIONS.



RECORD DRAWING
 MDK PROJ. ENG. 3/4/96 DATE
 RES. ENG. _____ DATE



SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
 DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

LATERAL NO. 22
 SANITARY SEWER IMPROVEMENTS
 WHITE TAIL ADDITION PHASE 9, 11, AND 12

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 EXPONERS
 WICHITA, KANSAS

Designed By: CRT, MDK
 Drawn By: JLM, BB

Job No. 34-94846-1
 Date December 1994

Sheet 17 of 22

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 BY
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 BY
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DSNR: REF. OPER: BB SCALE: 1 = 40
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Sta. 1+32.22 ✓
 Existing concrete MH 23-1
 Core MH wall and install new 8" pipe. Seal new 8" pipe to MH wall with an approved water-stop gasket and quick-set hydraulic cement. Construct a minimum of 3' concrete encasement from manhole wall.
 Reshape invert to provide smooth flow.

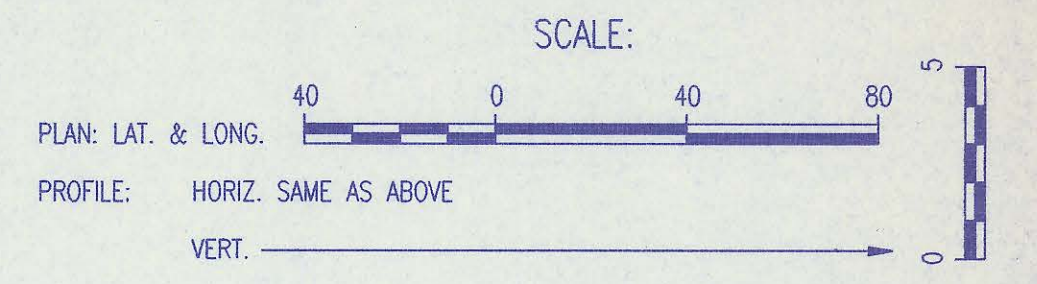
Sta. 3+92.70
 Const. MH 23-2
 Type A

Sta. 7+27.70 ✓
 Const. MH 23-3
 Type A

LATERAL NO. 24
 See sheet no. 19

Install 260.48 L.F.
 8" Pipe

Install 335.00 L.F.
 8" Pipe



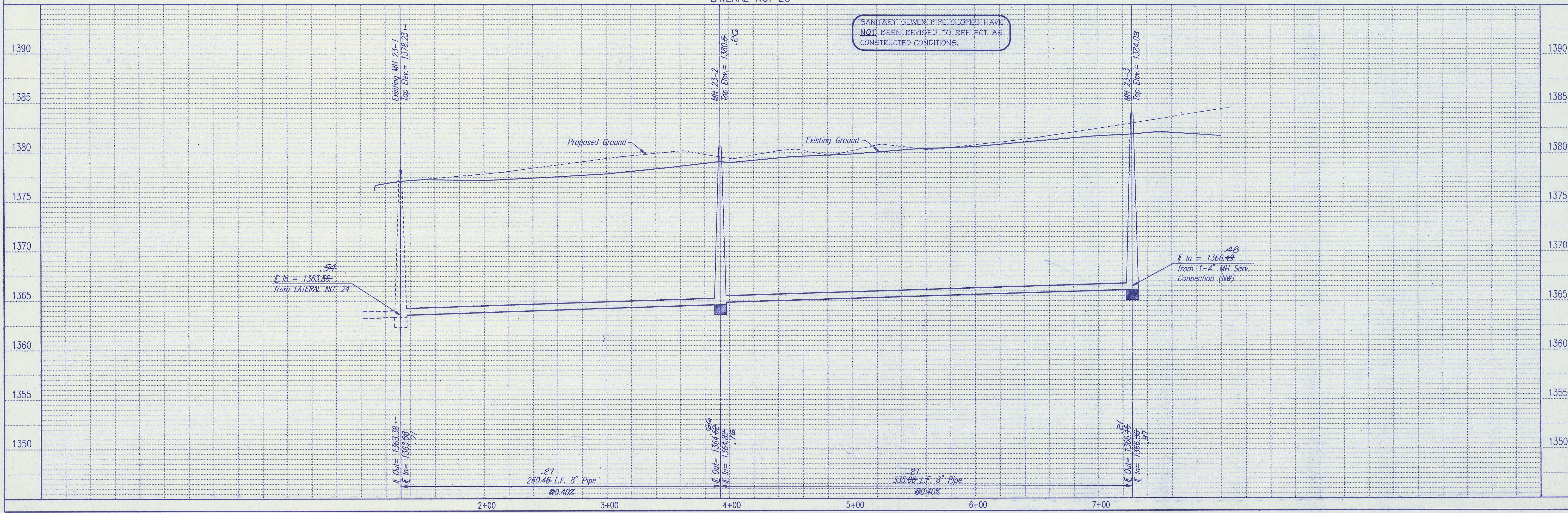
RECORD DRAWING
 MKC PROJ. ENG. 3/6/96 DATE
 MKC PROJ. ENG. DATE

ALL PIPE INSTALLED IS PVC PIPE.

①
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 DENOTES SEWER SERVICE. SEE SHEET NO. 11 FOR SEWER SERVICE SCHEDULE AND DETAILS

LATERAL NO. 23

SANITARY SEWER PIPE SLOPES HAVE NOT BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS.



SEDWICK COUNTY BUREAU OF PUBLIC SERVICES
 DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

LATERAL NO. 23
 SANITARY SEWER IMPROVEMENTS
 WHITE TAIL ADDITION PHASE 9, 11, AND 12

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS

Designed By: CRJ, MKC
 Drawn By: JLM, BB

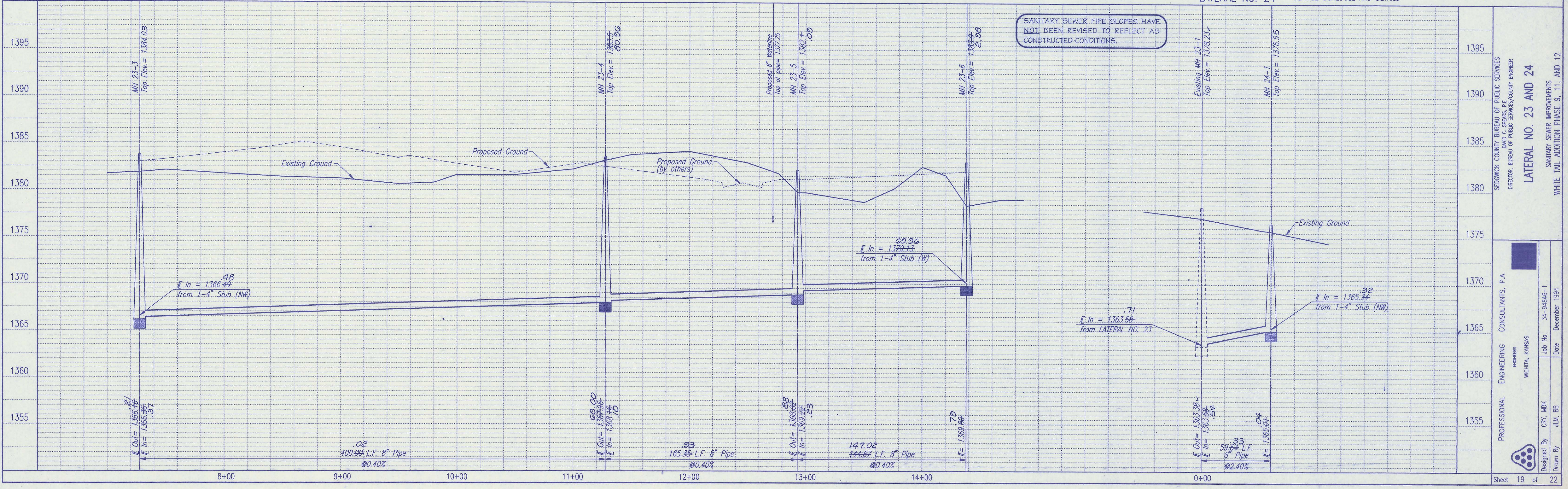
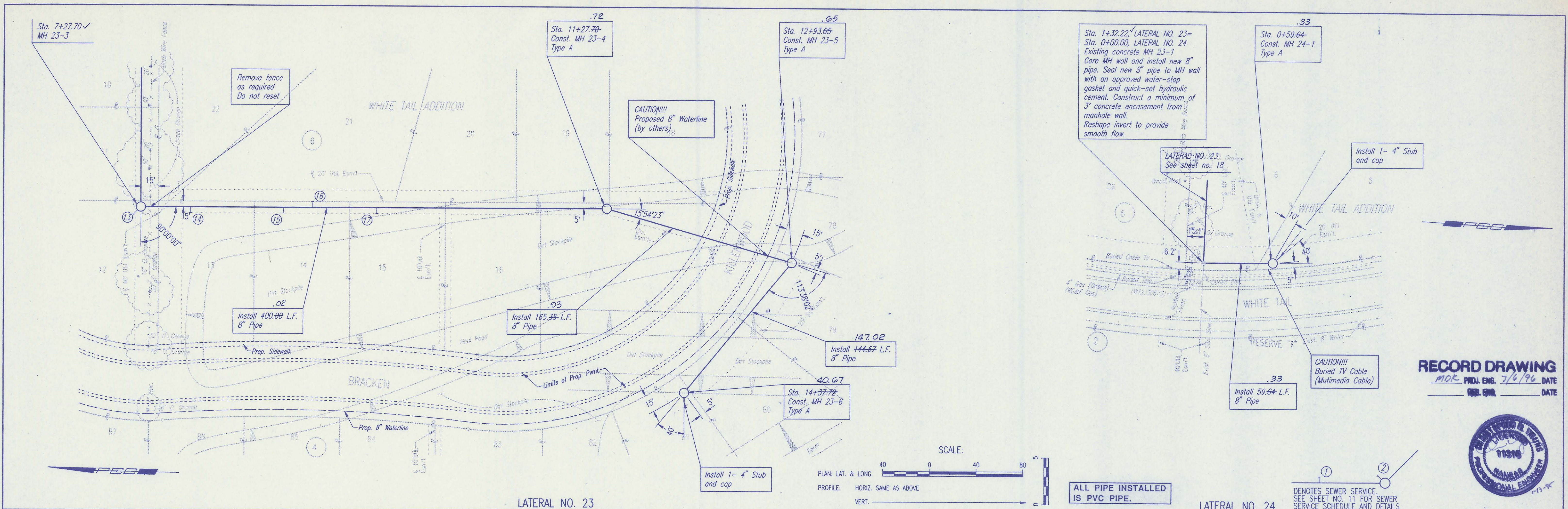
Job No. 34-94846-1
 Date: December, 1994

Sheet 18 of 22

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RECORD DRAWING
 MOK. PUBL. ENG. 7/6/96 DATE
 FEB. 1996 DATE



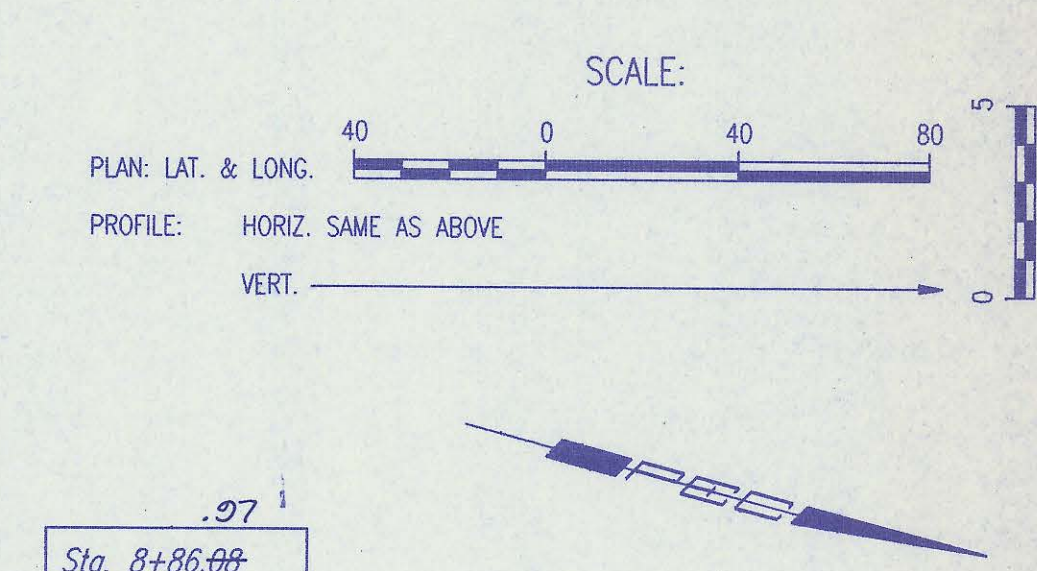
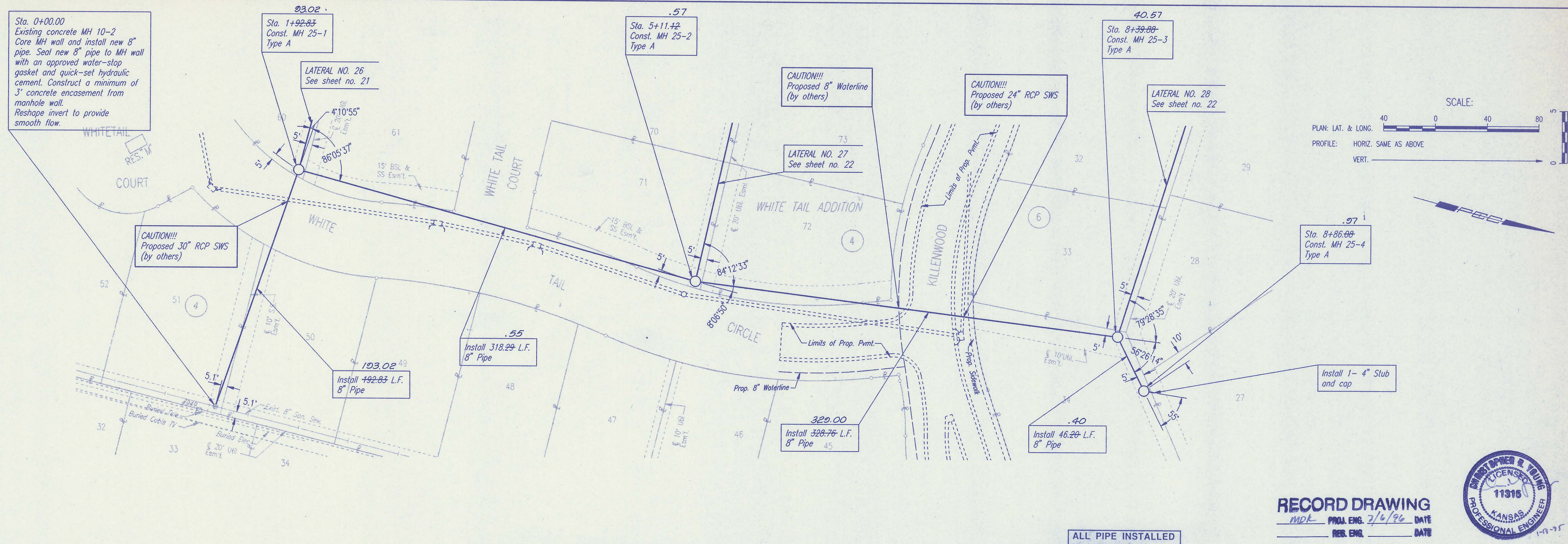
SEDIOWICK COUNTY BUREAU OF PUBLIC SERVICES
 DIRECTOR: BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER
LATERAL NO. 23 AND 24
 SANITARY SEWER IMPROVEMENTS
 WHITE TAIL ADDITION PHASE 9, 11, AND 12

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS
 Job No. 34-94846-1
 Date December 1994
 Designed By CRY, MDK
 Drawn By JLM, BB

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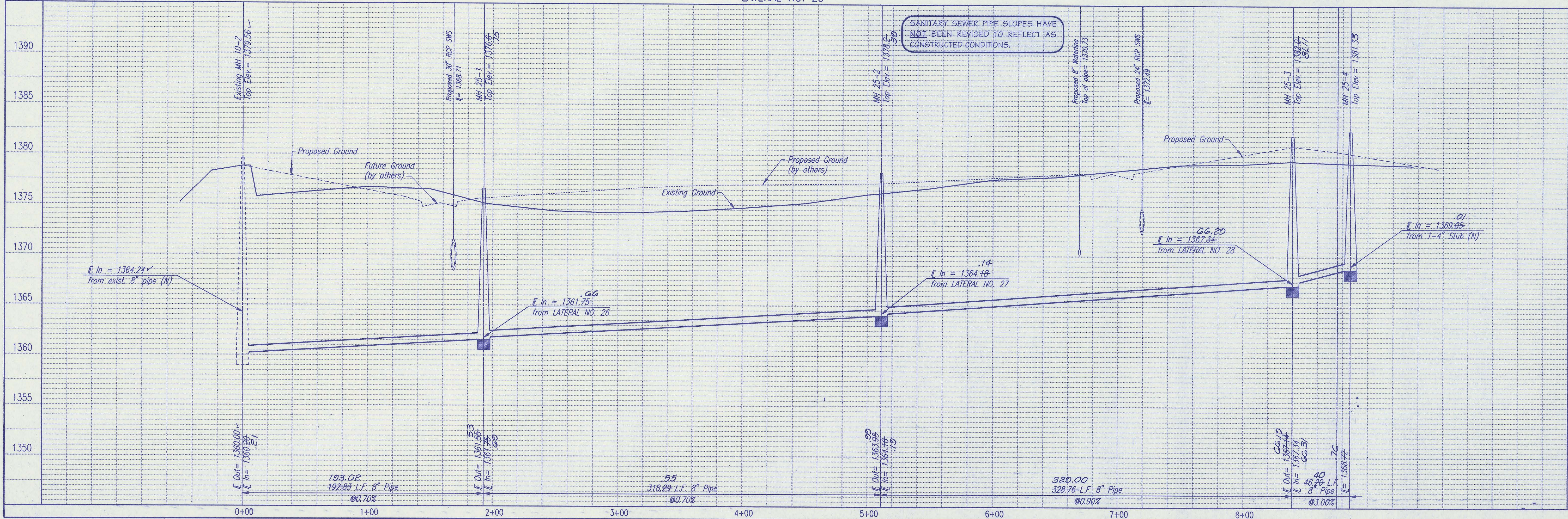
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LATERAL NO. 25

ALL PIPE INSTALLED IS PVC PIPE.

RECORD DRAWING
 MKK PROJ. ENG. 2/6/96 DATE
 REB. ENG. DATE



SEDMICK COUNTY BUREAU OF PUBLIC SERVICES
 DIRECTOR: BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

LATERAL NO. 25
 SANITARY SEWER IMPROVEMENTS
 WHITE TAIL ADDITION PHASE 9, 11, AND 12

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 WICHITA, KANSAS

Designed By: CRY, MKK
 Drawn By: JUM, BB

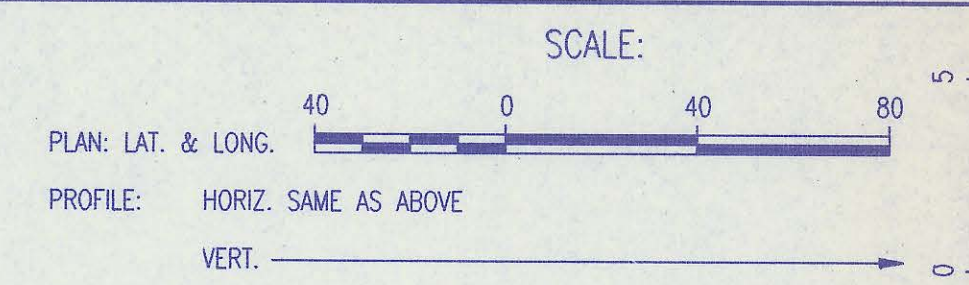
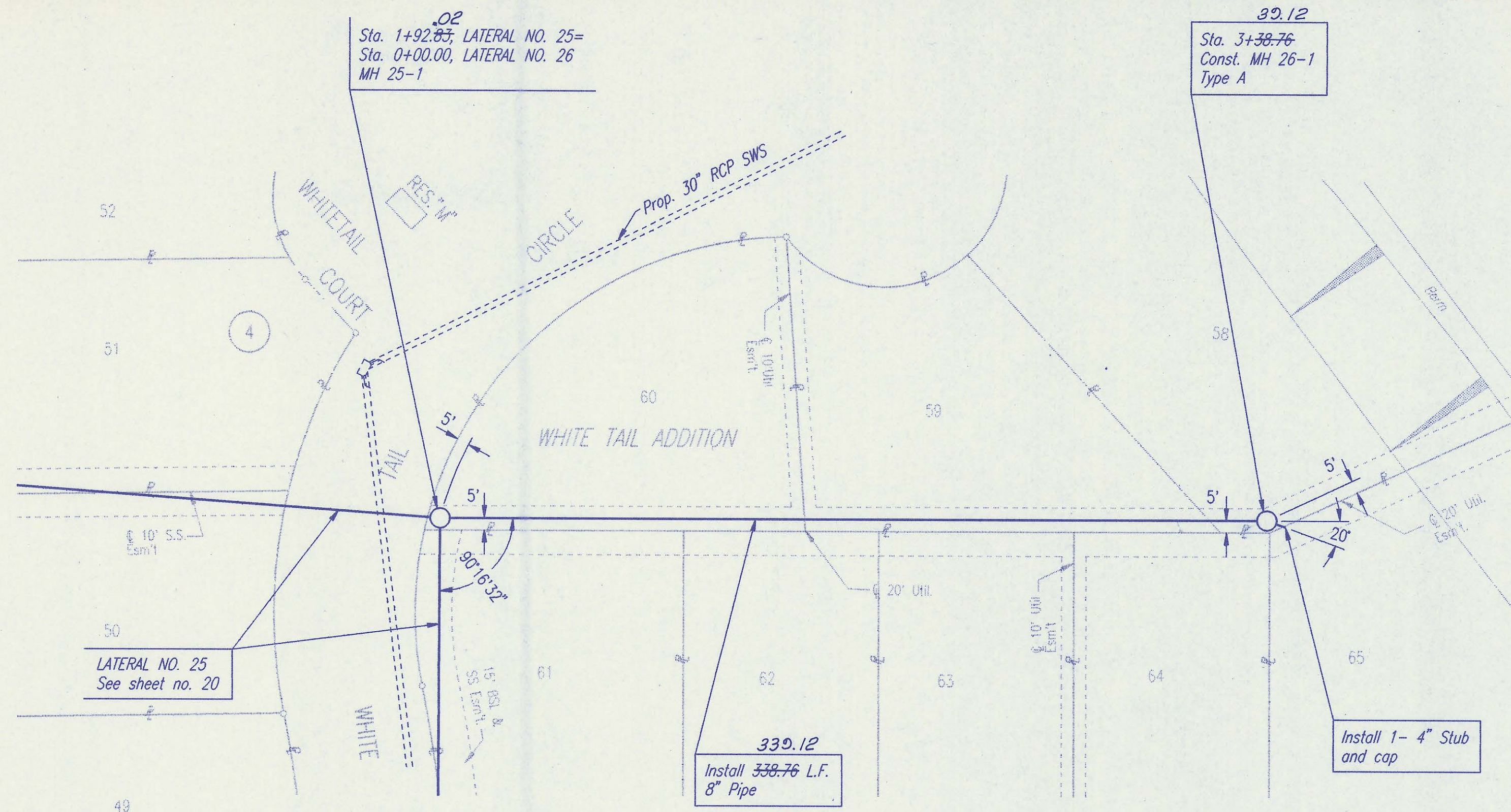
Job No. 34-94846-1
 Date: December 1994

Sheet 20 of 22

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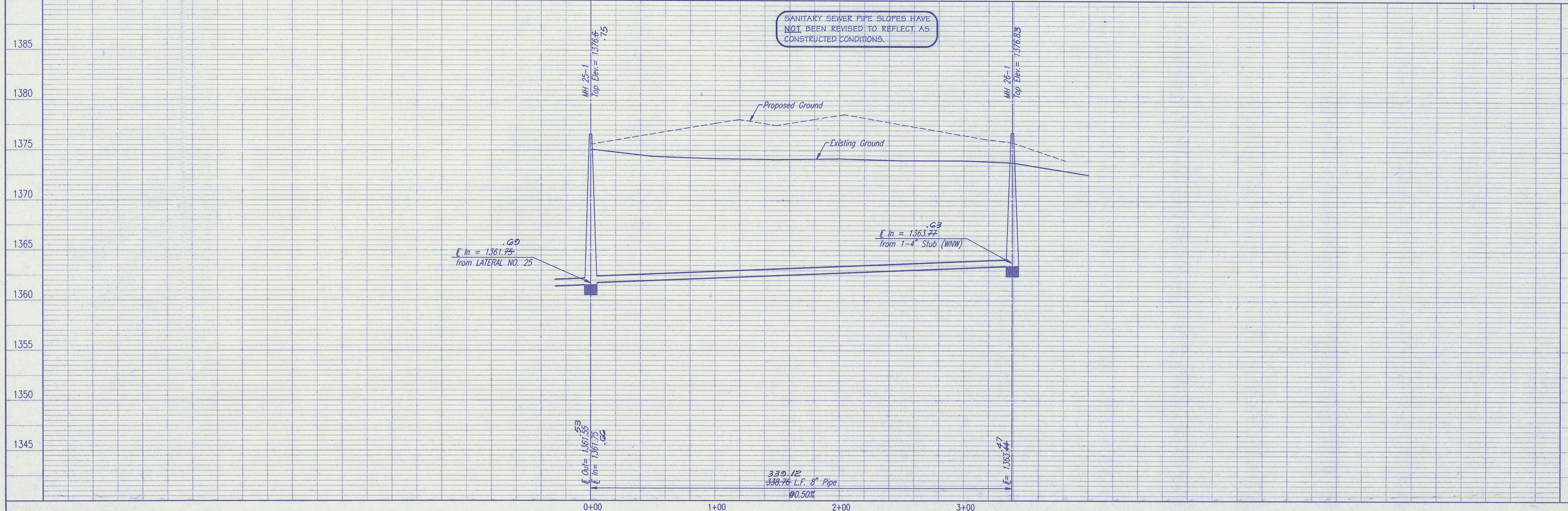
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LATERAL NO. 26

ALL PIPE INSTALLED IS PVC PIPE.

RECORD DRAWING
 MDK PROJ. ENG. 7/6/96 DATE
 REB. ENG. DATE



SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
 DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

LATERAL NO. 26
 SANITARY SEWER IMPROVEMENTS
 WHITE TAIL ADDITION PHASE 9, 11, AND 12

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS

Job No. 34-94846-1
 Date December 1994

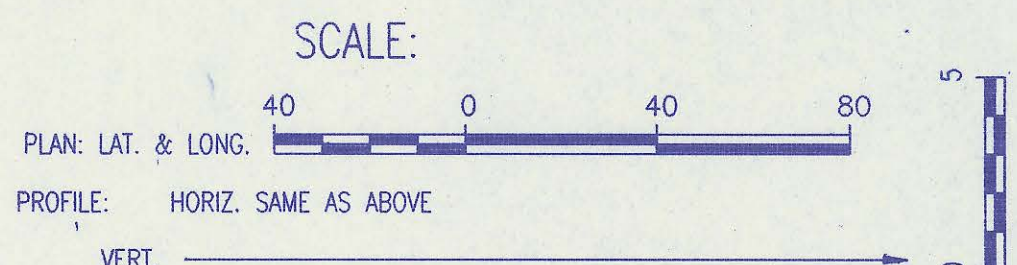
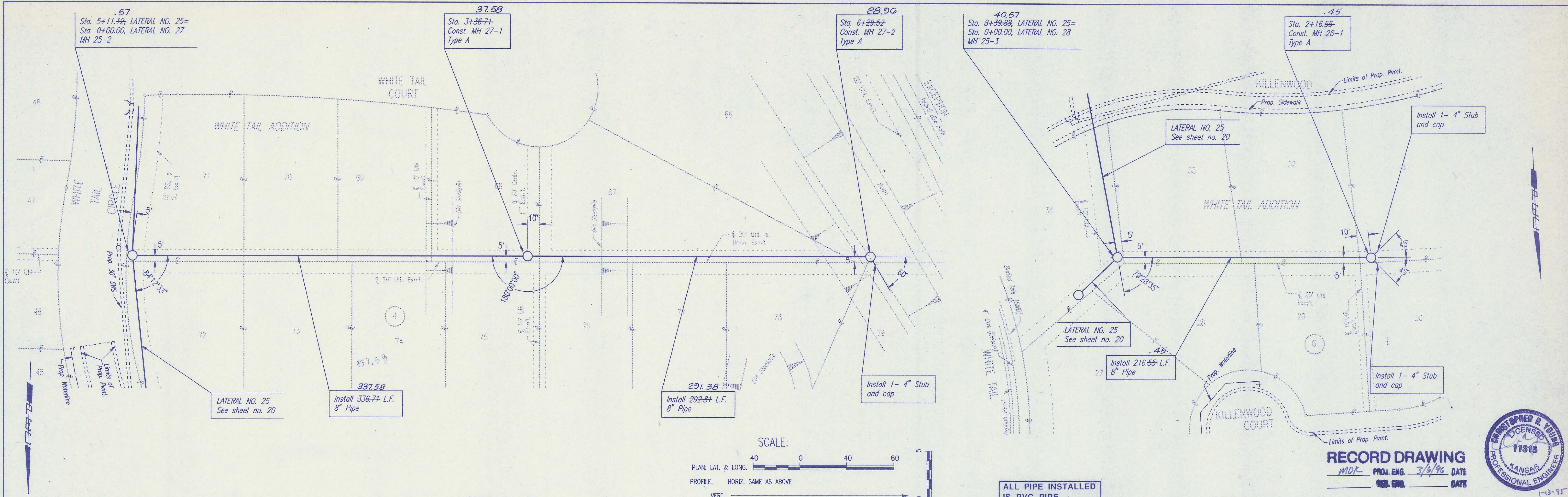
Designed By: CRV, MDK
 Drawn By: JLM, BB

Sheet 21 of 22

| | | |
|------|---------|---------|
| PLAN | CHECKED | CHECKED |
| BY | | |
| DATE | | |

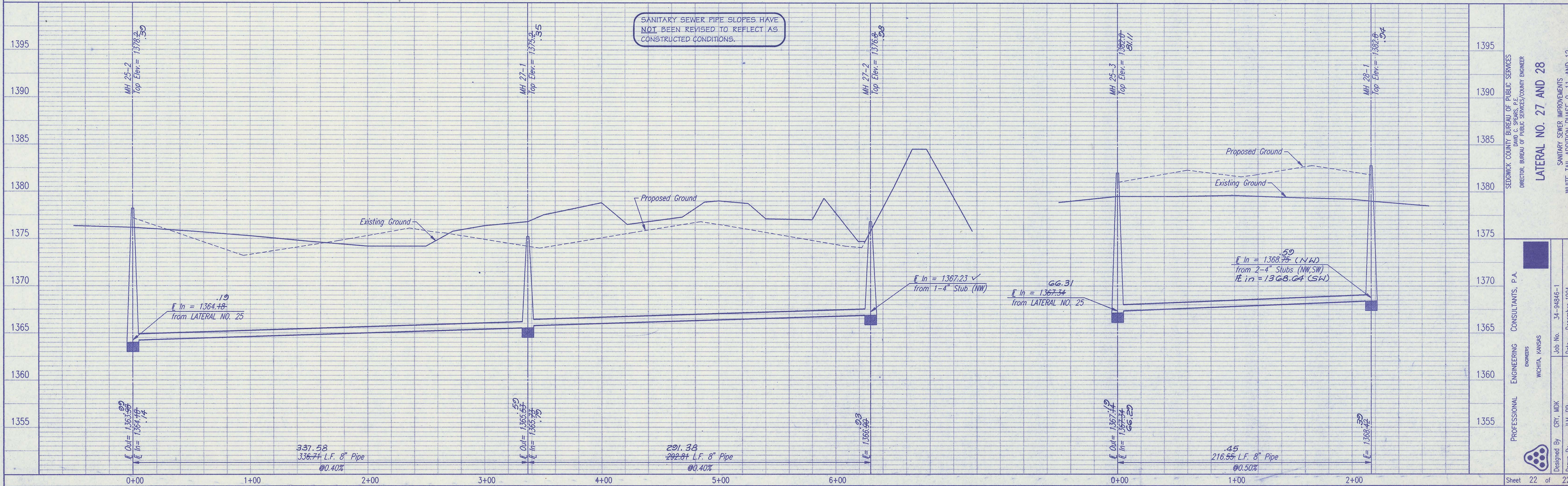
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| PROFILE | CHECKED | CHECKED |
| BY | | |
| DATE | | |

DSNR: PEJ OPER: BB SCALE: 1" = 40'
 C:\94846\001\PP1 01-12-1995 14:17:58



LATERAL NO. 27

LATERAL NO. 28



RECORD DRAWING
 MOD. PROJ. ENG. 3/6/96 DATE
 RES. ENG. DATE

SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
 DIRECTOR: BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

LATERAL NO. 27 AND 28

SANITARY SEWER IMPROVEMENTS
 WHITE TAIL ADDITION PHASE 9, 11, AND 12

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 CHAIRMAN: [Redacted]
 WICHITA, KANSAS

Job No. 34-94846-1
 Date December 1994

Designed By: CRY, MDK
 Drawn By: JLM, BB

Sheet 22 of 22