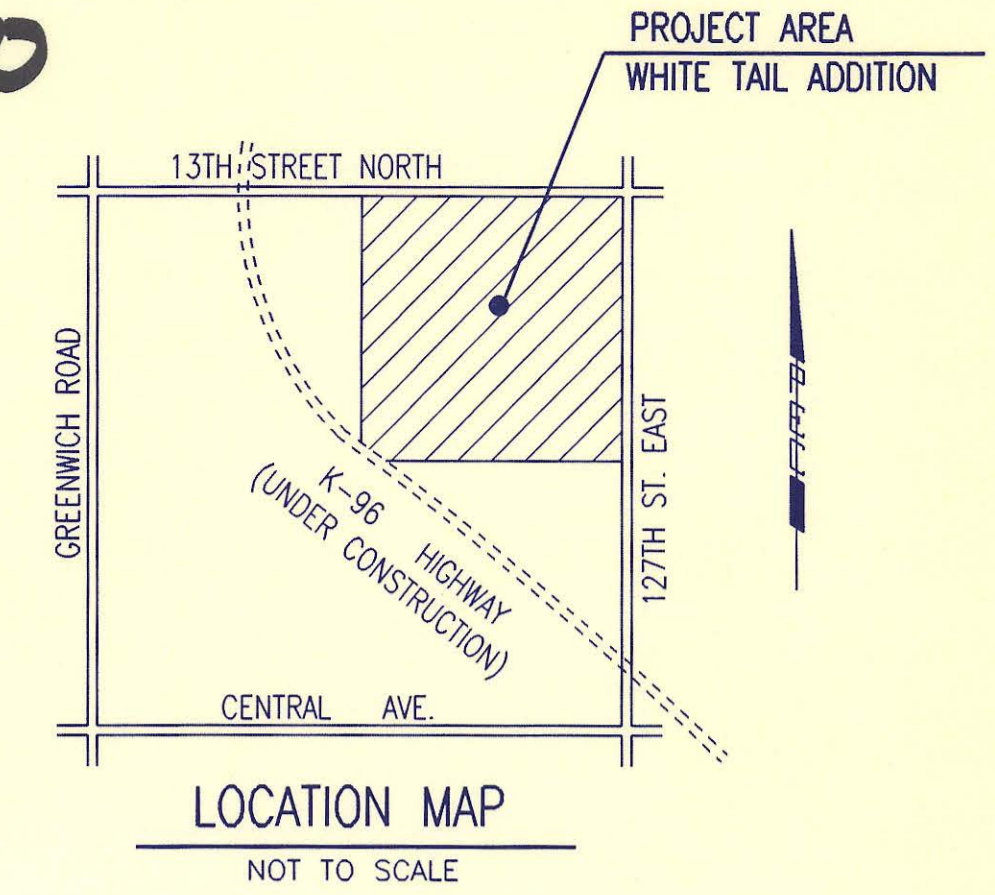


BUREAU OF PUBLIC SERVICES

4MC-100



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CONSTRUCTION PLANS FOR SANITARY SEWER IMPROVEMENTS

IN
WHITE TAIL ADDITION
TO SEDGWICK COUNTY, KANSAS
PHASE 11

DECEMBER 1995

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

RECORD DRAWING

MOJ PROJ. ENG. 5/9/96 DATE
RES. ENG. DATE

APPROVED:

David C. Spears
DAVID C. SPEARS, P.E.
DIRECTOR OF PUBLIC SERVICES/COUNTY ENGINEER
DATE: [Redacted]

APPROVED:

W. L. Sch... ..
CHAIRMAN, BOARD OF COUNTY COMMISSIONERS
DATE: 1/8/96

FILED IN THE OFFICE OF
THE SEDGWICK COUNTY CLERK
Suzanne K... ..
COUNTY CLERK
DATE: Jan. 12, 1996



4MC-100

BM#96-15

© 13TH STREET NORTH = §



GENERAL NOTES

- ALL ELEVATIONS SHOWN ARE USGS DATUM.
- AT LEAST 72 HOURS PRIOR TO BEGINNING ANY EXCAVATION (EXCLUDING WEEKENDS AND HOLIDAYS), THE CONTRACTOR SHALL CONTACT THE KANSAS ONE-CALL SYSTEM, A UTILITY LOCATION SERVICE, AT 687-2470 TO REQUEST THE FOLLOWING UTILITY COMPANIES TO LOCATE ANY EXISTING LINES WITHIN THE PROJECT AREA: MULTIMEDIA CABLE TV, WICHITA WATER, SOUTHWESTERN BELL TELEPHONE, K G & E GAS, AND K G & E ELECTRIC.
- THE BURIED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE LOCATIONS ONLY. IT SHOULD BE NOTED THAT OTHER BURIED LINES AND CABLES MAY EXIST WHICH ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING TRENCHING OPERATIONS TO AVOID DAMAGING THESE LINES. ANY LINES DAMAGED SHALL BE REPLACED OR REPAIRED IMMEDIATELY AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- AT LEAST 24 HOURS BEFORE CONNECTING NEW SEWER PIPE TO THE EXISTING SEWAGE SYSTEM, THE CONTRACTOR SHALL CONTACT THE SEDGWICK COUNTY EASTERN SEWER DISTRICT (733-0202). THE CONTRACTOR SHALL KEEP ANY CONSTRUCTION DEBRIS FROM ENTERING THE EXISTING SANITARY SEWER DURING CONSTRUCTION. TO PREVENT WATER OR DEBRIS FROM ENTERING THE EXISTING SEWER, A MECHANICAL PLUG SHALL BE INSTALLED AND MAINTAINED TO ISOLATE THE EXISTING SEWER FROM THE NEW CONSTRUCTION UNTIL THE NEW CONSTRUCTION IS CLEANED, TESTED, AND HAS BEEN ACCEPTED. THE WATER USED FOR CLEANING SHALL NOT BE ADDED TO THE FLOW OF THE EXISTING SEWER. THE CLEANING OR OTHERWISE ACCUMULATED WATER SHALL BE PUMPED OR OTHERWISE REMOVED PRIOR TO TELEVISION.
- ALL PIPE JOINTS SHALL BE LAID AND PUSHED 'FULL HOME', WITH THE BEVELED END OF THE SPIGOT MAKING FULL CONTACT WITH THE CHAMFERED AREA AT THE THROAT OF THE BELL OR SOCKET, WITH NO SEPARATION BETWEEN THEM. IF SEPARATION IS DETERMINED, THE PIPE SHALL BE EXCAVATED AND RE-LAID ACCORDING TO SPECIFICATIONS AT THE CONTRACTOR'S EXPENSE.
- APPROVED EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE STOCKPILED WITHIN THE WHITE TAIL ADDITION AT NO ADDITIONAL COST TO THE OWNER. STOCKPILE LOCATIONS SHALL BE AS DIRECTED BY MR. JACK RITCHE, RITCHE ASSOCIATES INC., AT (316) 684-7300 AND IN ACCORDANCE WITH GENERAL NOTE NO. 18. NO ACCEPTABLE EXCAVATED MATERIAL SHALL BE REMOVED FROM THE WHITE TAIL ADDITION.
- THE CONTRACTOR SHALL CONTAIN HIS OPERATIONS TO PERMIT TRAFFIC THROUGH AND ACROSS CONSTRUCTION AT EXISTING ROADWAYS AT ALL TIMES. THE CONTRACTOR SHALL ERECT WARNING SIGNS, FLASHING LIGHTS, AND BARRICADES IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES TO ENSURE SAFETY AS DIRECTED IN THE GENERAL CONDITIONS. THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR SHALL 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. PRIOR TO START OF CONSTRUCTION THE CONTRACTOR SHALL FLAG AND REFERENCE ALL PROPERTY CORNERS THAT MAY BE DISTURBED BY CONSTRUCTION OPERATIONS, AND VERIFY THESE IN THE FIELD IN THE PRESENCE OF THE ENGINEER AND THE CONTRACTOR'S SURVEYOR. AFTER CONSTRUCTION AND BEFORE THE FINAL INSPECTION, A LETTER SIGNED AND SEALED BY THE LICENSED LAND SURVEYOR CERTIFYING REPLACEMENT OF ALL DISTURBED PROPERTY CORNERS SHALL BE SUBMITTED TO THE ENGINEER.
- THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, AND BANKS TO THEIR ORIGINAL SLOPES AND GRADES. WHERE EXISTING ENTRANCE PIPE, DRAINAGE PIPE, SIGNS, FENCES, ETC., CONFLICT WITH THE PROPOSED WORK HEREIN, THEY SHALL BE REMOVED AND REPLACED OR RESET UNLESS OTHERWISE INDICATED ON THE PLANS. THE REPLACEMENT OF ALL THE AFORESAID ITEMS, INCLUDING SEEDING, FERTILIZER, AND MULCHING SHALL BE CONSIDERED SUBSIDIARY TO 'SITE CLEARING AND RESTORATION'.
- EASEMENTS AND RIGHTS-OF-WAY PROVIDED BY THE OWNER FOR THE PROJECT ARE SHOWN IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACQUISITION OF ANY ADDITIONAL TEMPORARY EASEMENTS OR RIGHTS-OF-WAY THAT HE DESIRES TO USE IN COMPLETING THE WORK.
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- ALL TRENCH BACKFILL SHALL BE EITHER TYPE I OR TYPE III UNLESS NOTED OTHERWISE.
- THE CONTRACTOR SHALL ALSO CONTACT THE FOLLOWING AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION TO ADVISE THEM OF THE INTENDED WORK AND OF HIS PROPOSED SCHEDULE:
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
1250 S. SENECA
WICHITA, KS 67213
MR. JIM WEBER
(316) 383-7901
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- THE CONTRACTOR SHALL AVOID REMOVAL OR TRIMMING OF ANY TREES WHERE POSSIBLE. WHERE THE CONTRACTOR BELIEVES THE REMOVAL OR TRIMMING IS UNAVOIDABLE, HE SHALL OBTAIN THE CONCURRENCE OF THE ENGINEER BEFORE PROCEEDING WITH SUCH WORK.
- RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED, TREE TRIMMINGS, AND EXCESS EXCAVATION WHICH IS TO BE WASTED, SHALL BE DISPOSED OF ON SITES PROVIDED BY THE CONTRACTOR. THESE SITES SHALL ALSO BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE, AND SITE LOCATION. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOODPLAIN WILL REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT AND A FLOODPLAIN DEVELOPMENT PERMIT FROM SEDGWICK COUNTY. ANY MATERIALS DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIALS BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS MAY REQUIRE ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED DISPOSAL LOCATION.
- EACH BIDDER SHALL VISIT THE SITE OF THE PROJECT BEFORE SUBMITTING THE PROPOSAL FOR THIS WORK SO THAT HE WILL BE FULLY INFORMED OF THE EXISTING FIELD CONDITIONS AND THE OBSTACLES WHICH MIGHT BE ENCOUNTERED. UPON AWARD OF THE CONTRACT, THE CONTRACTOR WILL NOT BE GRANTED ANY ADDITIONAL COMPENSATION WITH REGARDS TO TIME AND MONEY FOR CONDITIONS THAT MAY HAVE BEEN EVALUATED DURING AN INSPECTION OF THE SITE.
- THE CONTRACTOR SHALL SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WITH TEMPORARY RYE GRASS. RYE GRASS SEED SHALL BE PLANTED AT A MINIMUM RATE OF SIX (6) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET. THIS TEMPORARY SEEDING MAY BE OMITTED ONLY IF OTHER SEEDING IS REQUIRED IN ACCORDANCE WITH GENERAL NOTE NO. 9 ABOVE. TEMPORARY SEEDING OR PERMANENT SEEDING/SODDING SHALL BE APPLIED WITHIN 14 DAYS AFTER THE AREA HAS BEEN DISTURBED.
- THE CONTRACTOR SHALL GRADE THE SANITARY SEWER ALIGNMENT TO THE PROFILE AND ELEVATIONS SHOWN ON THE EASEMENT GRADING PLAN. ALL COSTS FOR EASEMENT GRADING SHALL BE SUBSIDIARY TO THE LUMP SUM PRICE BID FOR 'EASEMENT GRADING'.

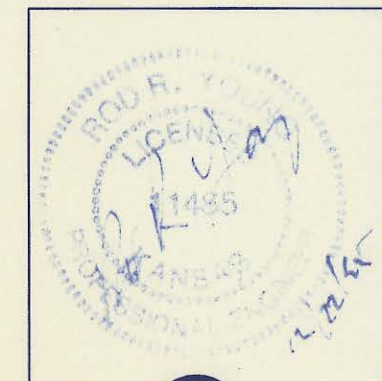
BENCH MARK LIST

- BM#96-15 (DATUM BM) - FOUND CHISELED "A" ON TOP NORTH CURB ALONG 13TH STREET NORTH ON EAST SIDE GRAVEL ACCESS ROAD ON WEST PROPERTY LINE OF LAKEVIEW CEMETERY. ELEV. = 1347.35
- BM#43-A (DATUM BM) - FOUND 40d SPIKE STEP IN EAST FACE HIGH VOLTAGE POLE ON WEST R/W 127TH STREET EAST ON 1ST POLE SOUTH OF CENTERLINE CRESTVIEW COUNTRY CLUB VILLAS ENTRANCE TO EAST. ELEV. = 1371.375
- BM#4 - SET CHISELED "L" ON CENTERLINE HEADWALL IN SOUTH-SOUTHWEST END OF ROB UNDER 13TH STREET NORTH AT 395'± WEST OF CENTERLINE 127TH STREET EAST. ELEV. = 1349.085
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SCALE: 1"=150'

PHASE 11
Lateral No. 15 Sta. 0+00.00 to Sta. 3+93.68 (MH's 15-1 and 15-2)
Lateral No. 16 Sta. 0+00.00 to Sta. 0+51.89 (MH 16-1)
BENEFIT DISTRICT
Lots 17 through 25, Block 1, White Tail Addition to Sedgwick County, Kansas. (9 lots)

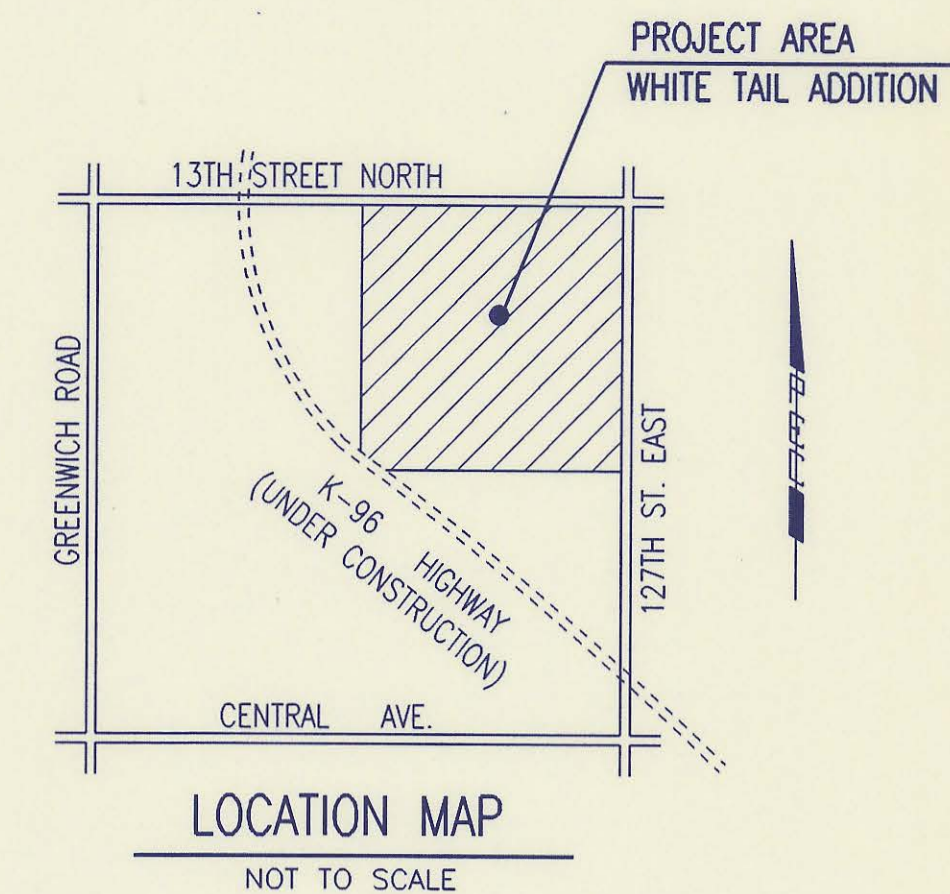
RECORD DRAWING
MDK PROJ. ENG. 5/7/96 DATE
RES. ENG. DATE



No.	Revision	By	Date
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER			
KEY MAP SANITARY SEWER IMPROVEMENTS WHITE TAIL ADDITION PHASE 11			
PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS			
Designed by	RRY, MDK	Job No.	34-94846-1
Drawn by	JLM, GM	Date	December 1995
			Sht. 2 of 7

DSNR: RFJ OPER. QLM SCALE: 1"=150.00
 © 1994\94846\001\PH1KEY.DWG 12-22-1995 7:56:34 am

BUREAU OF PUBLIC SERVICES



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CONSTRUCTION PLANS FOR SANITARY SEWER IMPROVEMENTS IN WHITE TAIL ADDITION

TO SEDGWICK COUNTY, KANSAS
PHASE 11

DECEMBER 1995

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

RECORD DRAWING

MOD. PROJ. ENG. 5/9/96 DATE
RES. ENG. DATE

APPROVED:

David C. Spears
DAVID C. SPEARS, P.E.
DIRECTOR OF PUBLIC SERVICES/COUNTY ENGINEER
DATE: [REDACTED]

APPROVED:

Walter L. Schuch
CHAIRMAN, BOARD OF COUNTY COMMISSIONERS
DATE: 1/8/96 [REDACTED]

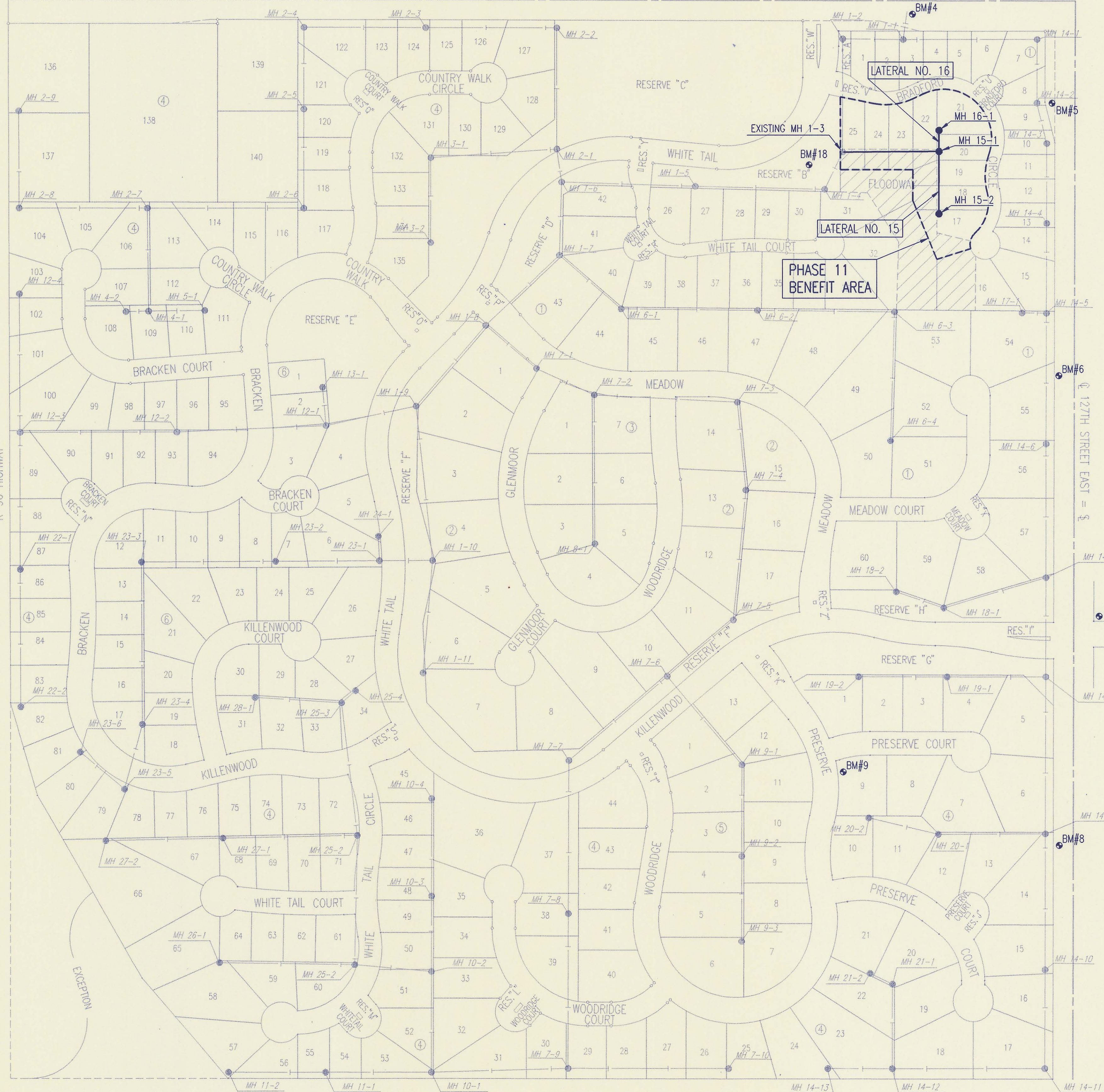
FILED IN THE OFFICE OF
THE SEDGWICK COUNTY CLERK

Jewell K. Brown
COUNTY CLERK
DATE: Jan. 12, 1996 [REDACTED]



BM#96-15

13TH STREET NORTH = S



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BENCH MARK LIST

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Lateral No. 15 Sta. 0+00.00 to Sta. 3+93.68 (MH's 15-1 and 15-2)
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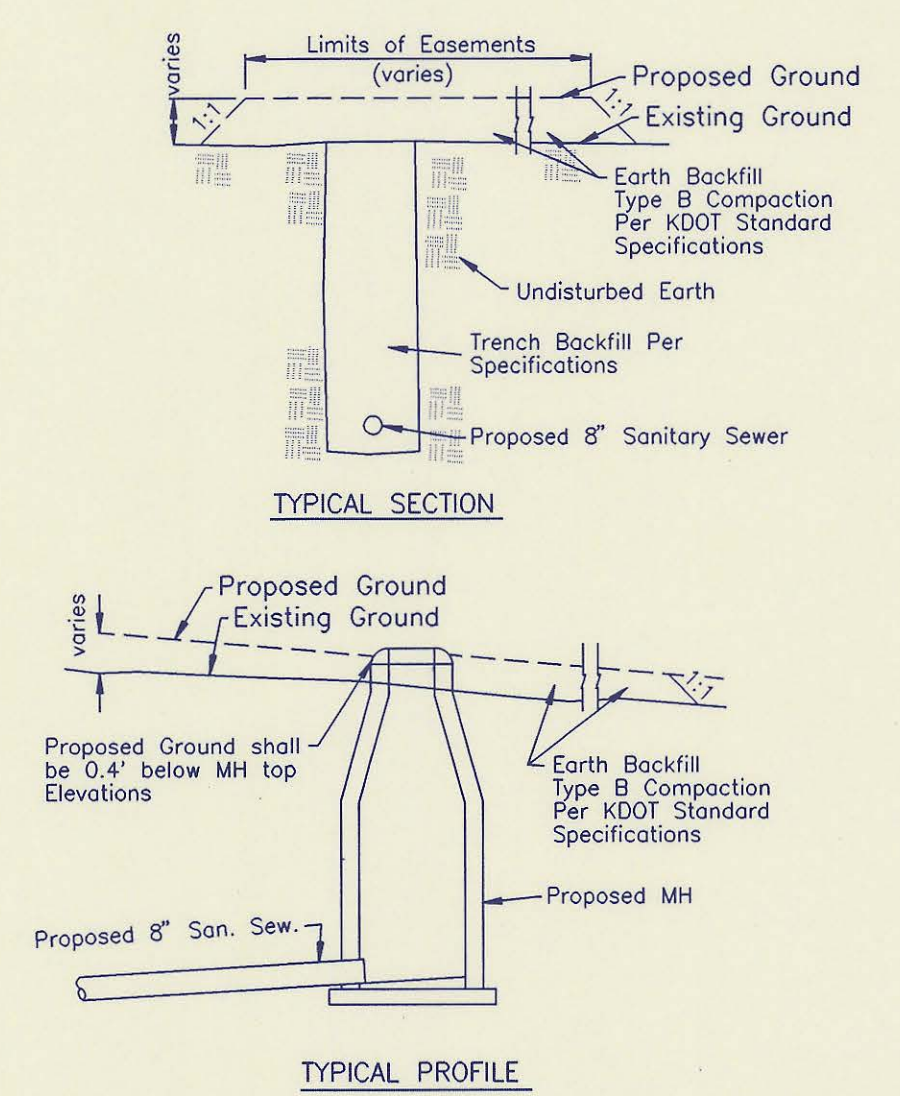
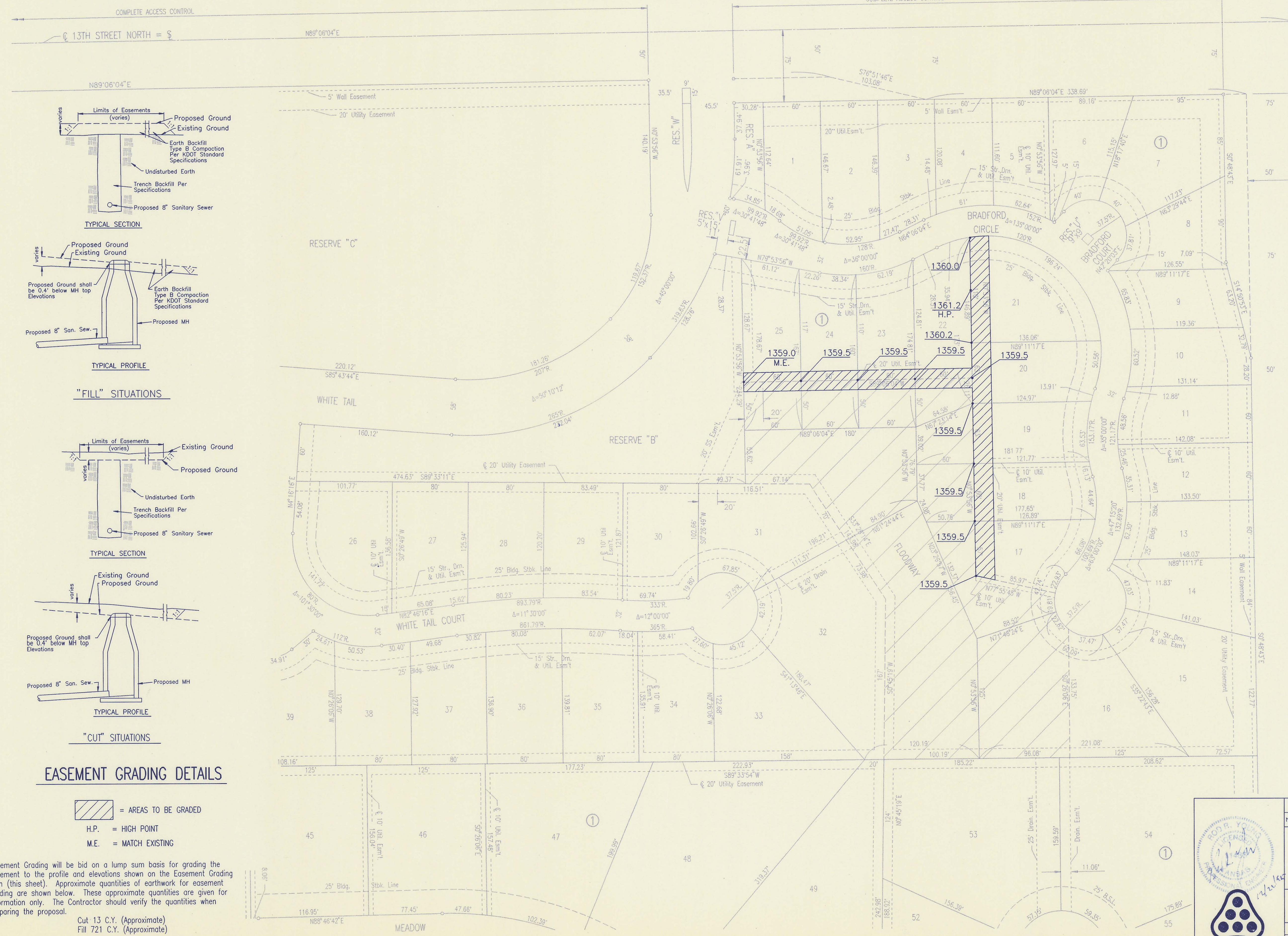


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SANITARY SEWER IMPROVEMENTS WHITE TAIL ADDITION PHASE 11			
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.			
ENGINEERS WICHITA, KANSAS			
Designed by	RRY, MDK	Job No.	34-94846-1
Drawn by	JLM, GM	Date	December 1995
			Sht. 2 of 7

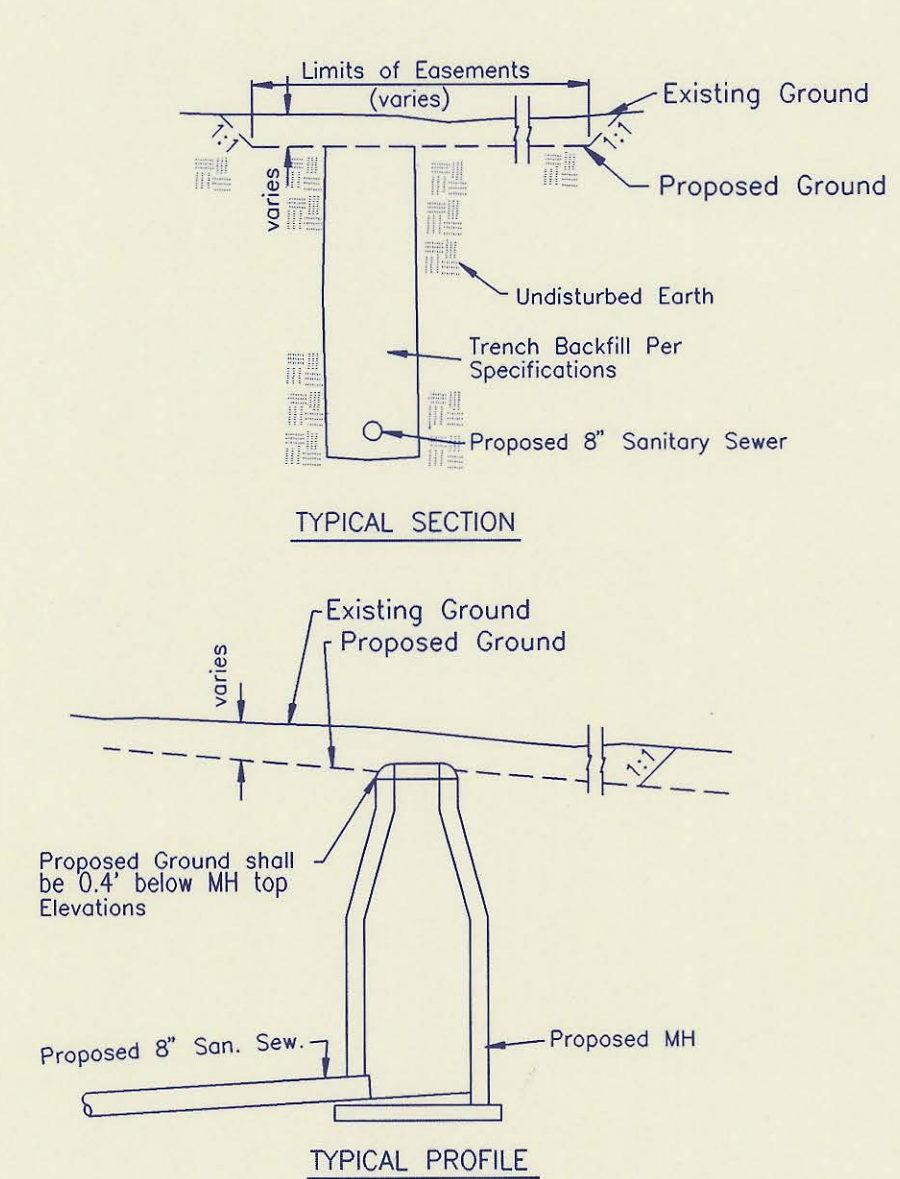
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WHITE TAIL ADDITION TO SEDGWICK COUNTY, KANSAS

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



"FILL" SITUATIONS



"CUT" SITUATIONS

EASEMENT GRADING DETAILS

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

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 13 C.Y. (Approximate)
Fill 721 C.Y. (Approximate)

SCALE: 1"=50'

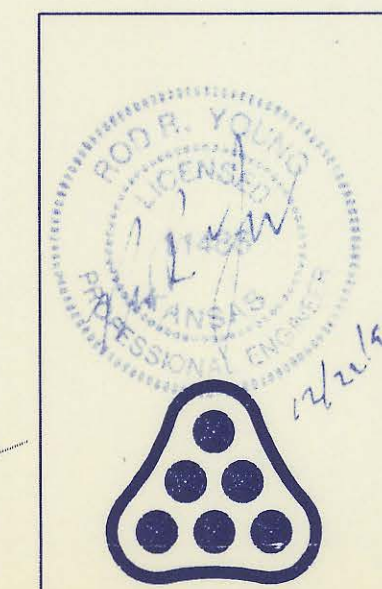
○ = 3/4" IRON SET
● = MONUMENT FOUND
MEAS. = MEASURED
CALC. MEAS. = CALCULATED FROM MEASUREMENTS
REC. = RECORDED

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 1, LOTS 53 THROUGH 54 INCLUSIVE
BLOCK 4, LOTS 127 THROUGH 135 INCLUSIVE

RECORD DRAWING
MDK PROJ. ENG. 5/9/96 DATE
RES. ENG. DATE

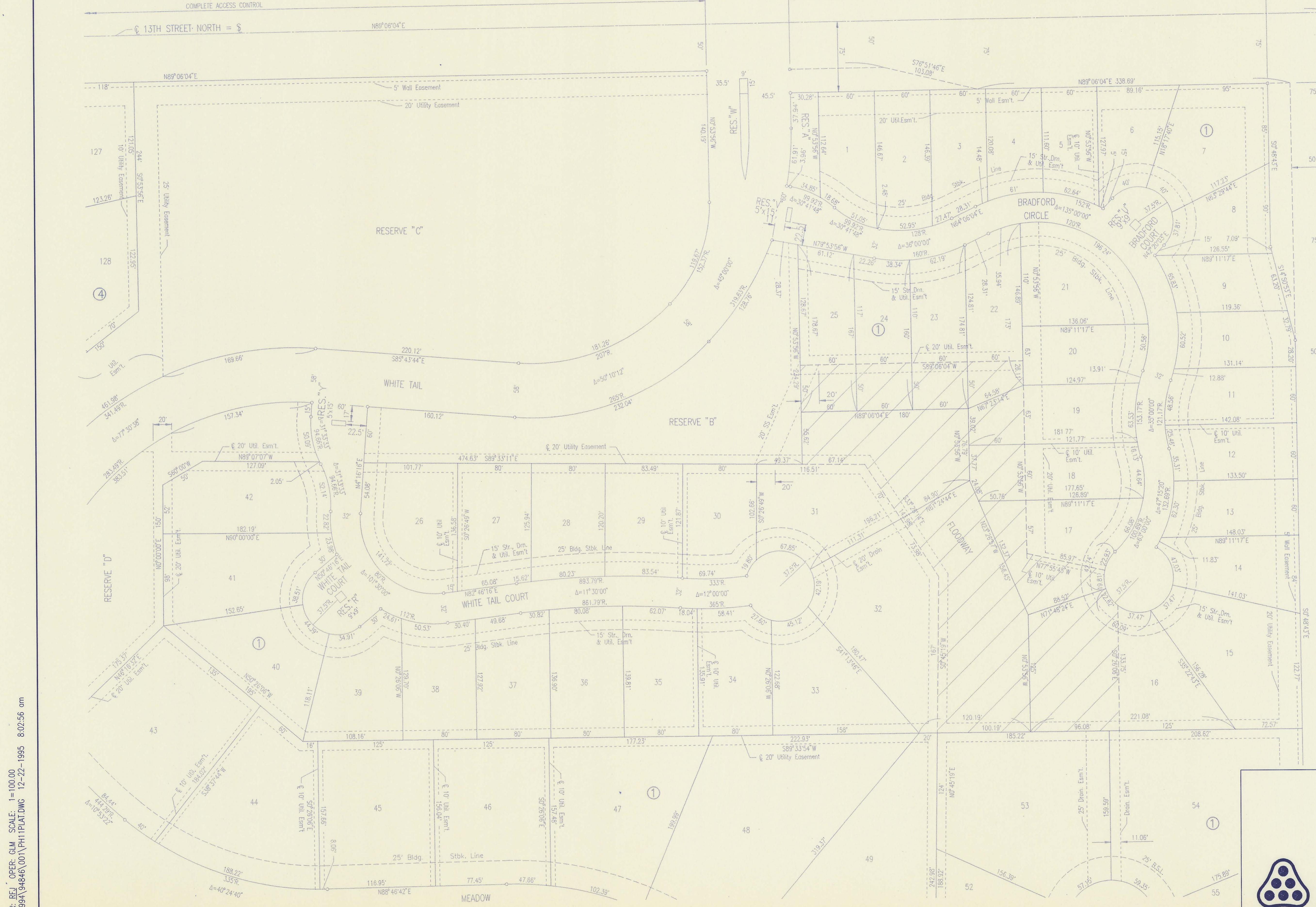


No.	Revision	By	Date
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER EASEMENT GRADING PLAN SANITARY SEWER IMPROVEMENTS WHITE TAIL ADDITION PHASE 11 PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS			
Designed by	RRY, MDK	Job No.	34-94846-1
Drawn by	TDS, GM	Date	December 1995
			Sht. 3 of 7

DSNR: REJ OPER: GLM SCALE: 1"=100.00
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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"=50'
 ○ = 3/4" IRON SET
 ● = MONUMENT FOUND
 MEAS. = MEASURED
 CALC. MEAS. = CALCULATED FROM MEASUREMENTS
 REC. = RECORDED

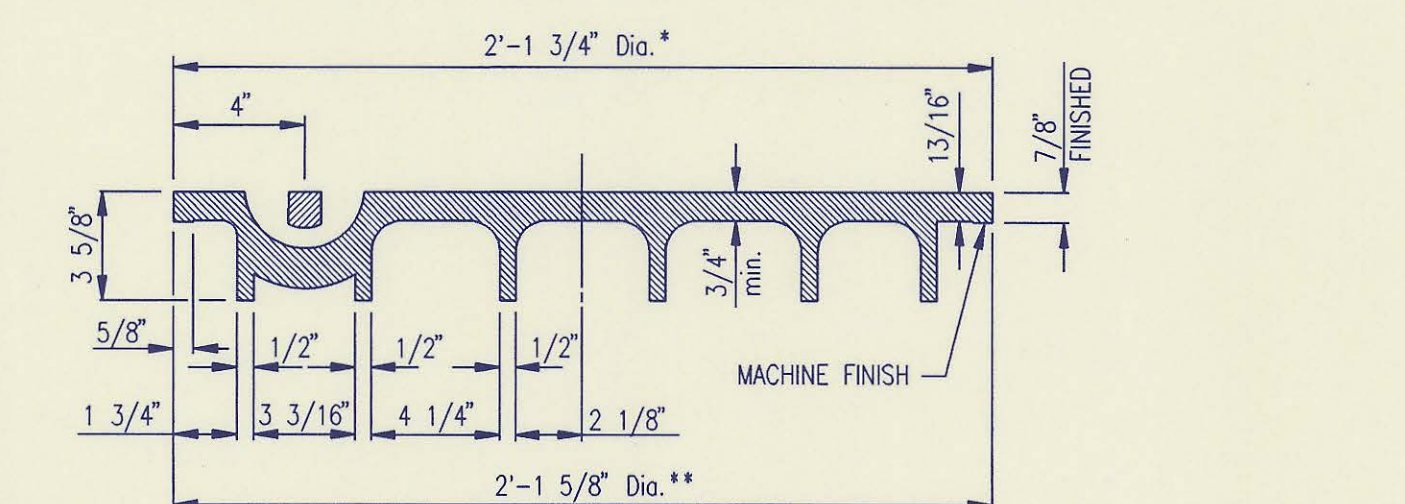
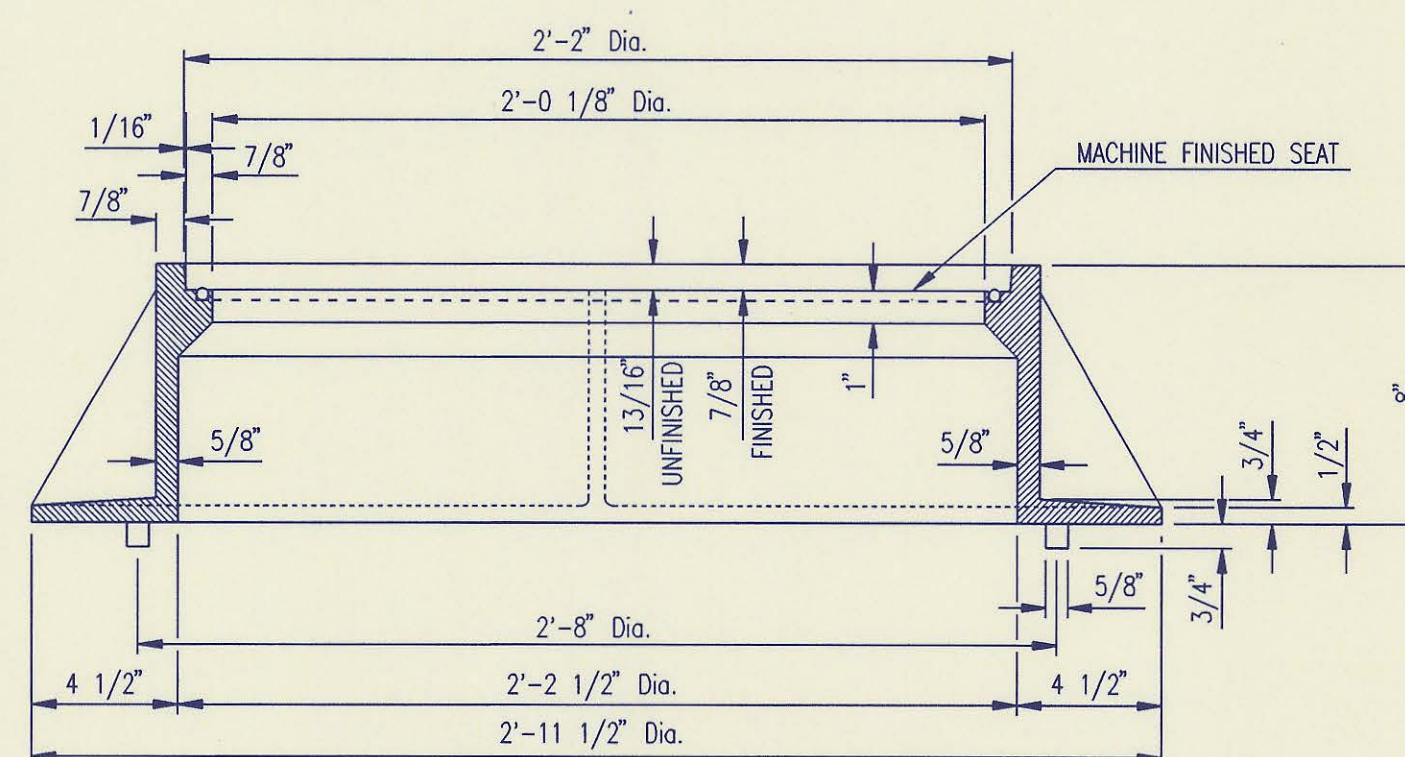
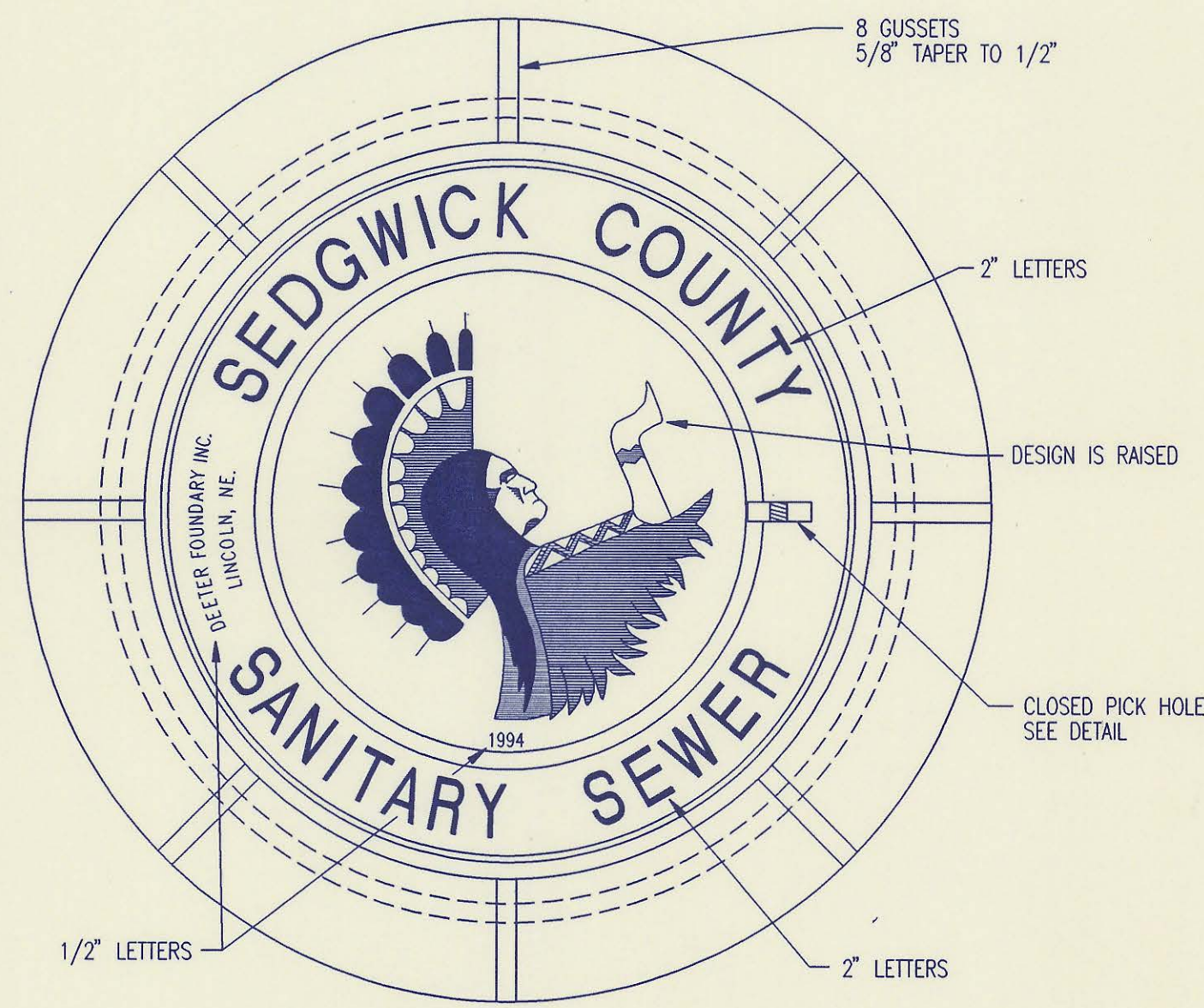
/// FLOODWAY
 BENCH MARK:
 TOP OF 3/4" I.P. IN CENTERLINE
 OF 127TH STREET EAST AT EAST
 1/4 CORNER OF SECTION 15, T27S,
 R2E OF THE 6TH P.M.
 ELEV.=1372.44 M.S.L.

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 1, LOTS 53 THROUGH 54 INCLUSIVE
 BLOCK 4, LOTS 127 THROUGH 135 INCLUSIVE

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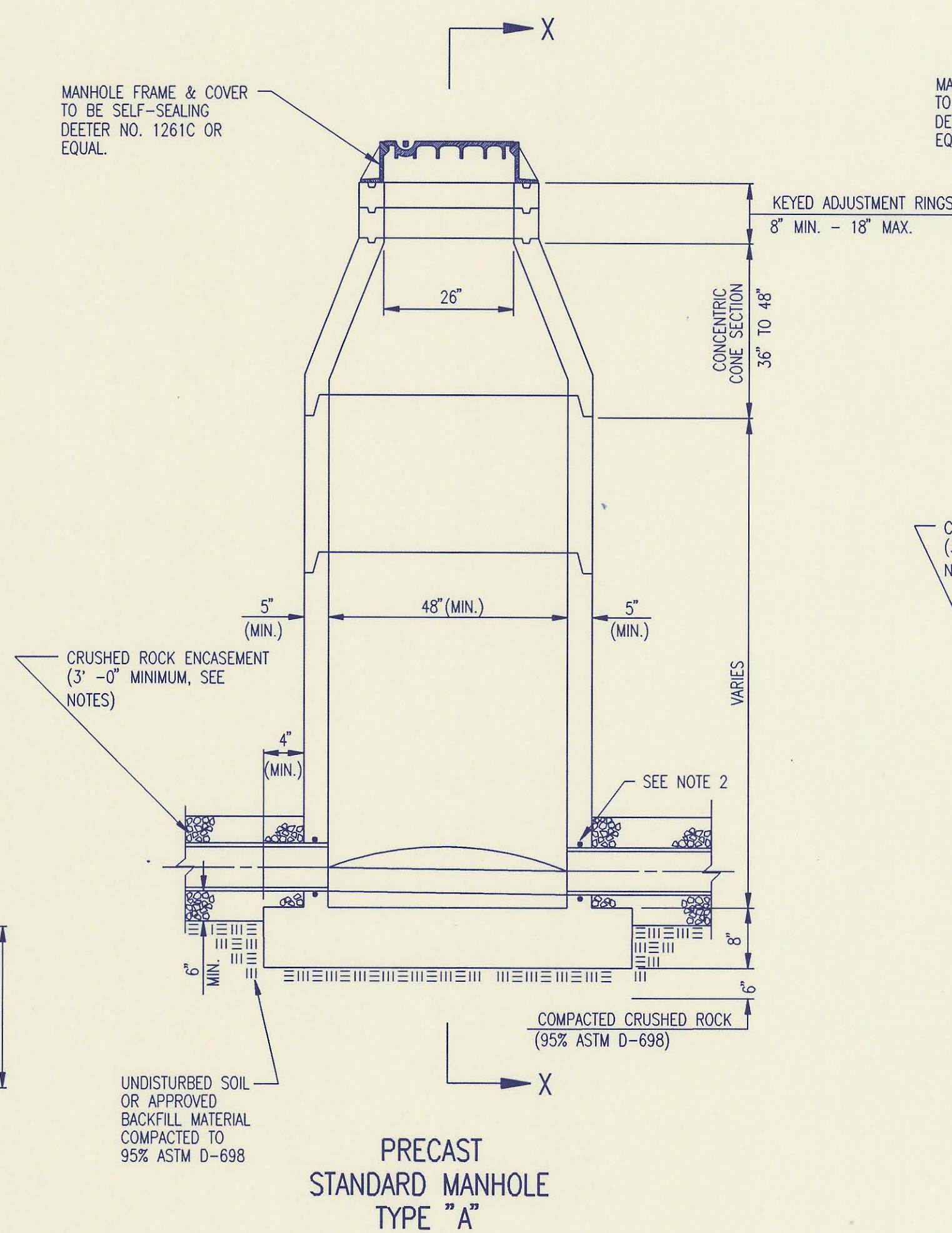
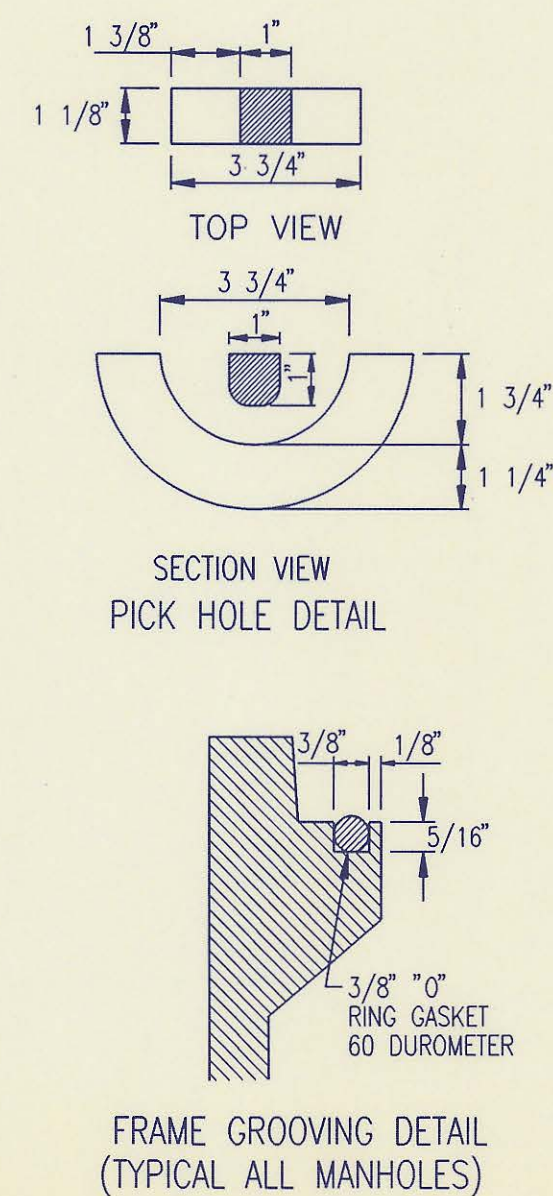
No.	Revision**	By	Date
	WHITE TAIL ADDITION		
PLAT			
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.			
ENGINEERS WICHITA, KANSAS			
Designed by	Job No.	Sht. 4 of 7	
Drawn by DEP	Date December 1994		



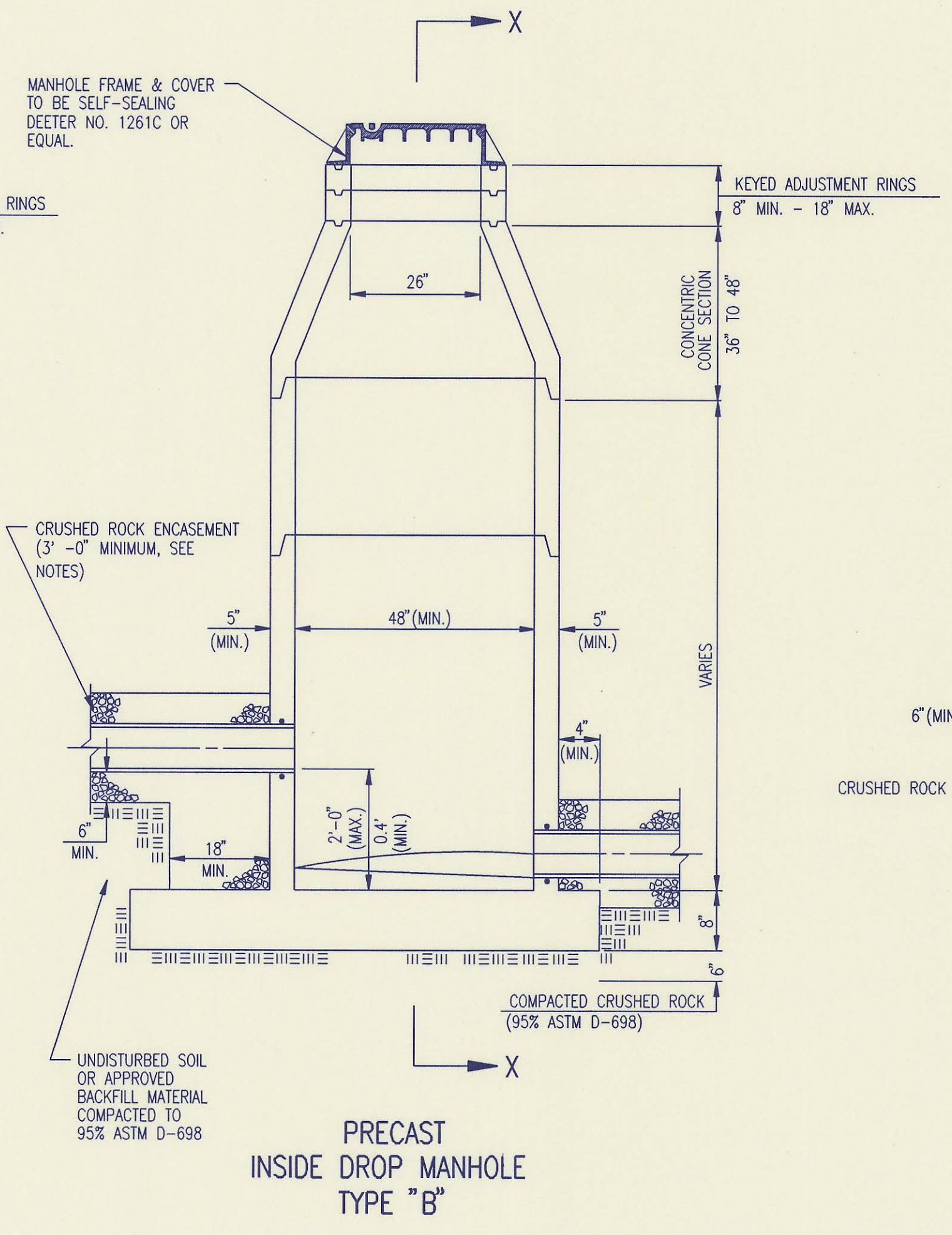


MANHOLE FRAME AND COVER
(TOTAL WEIGHT = 430 LBS.)

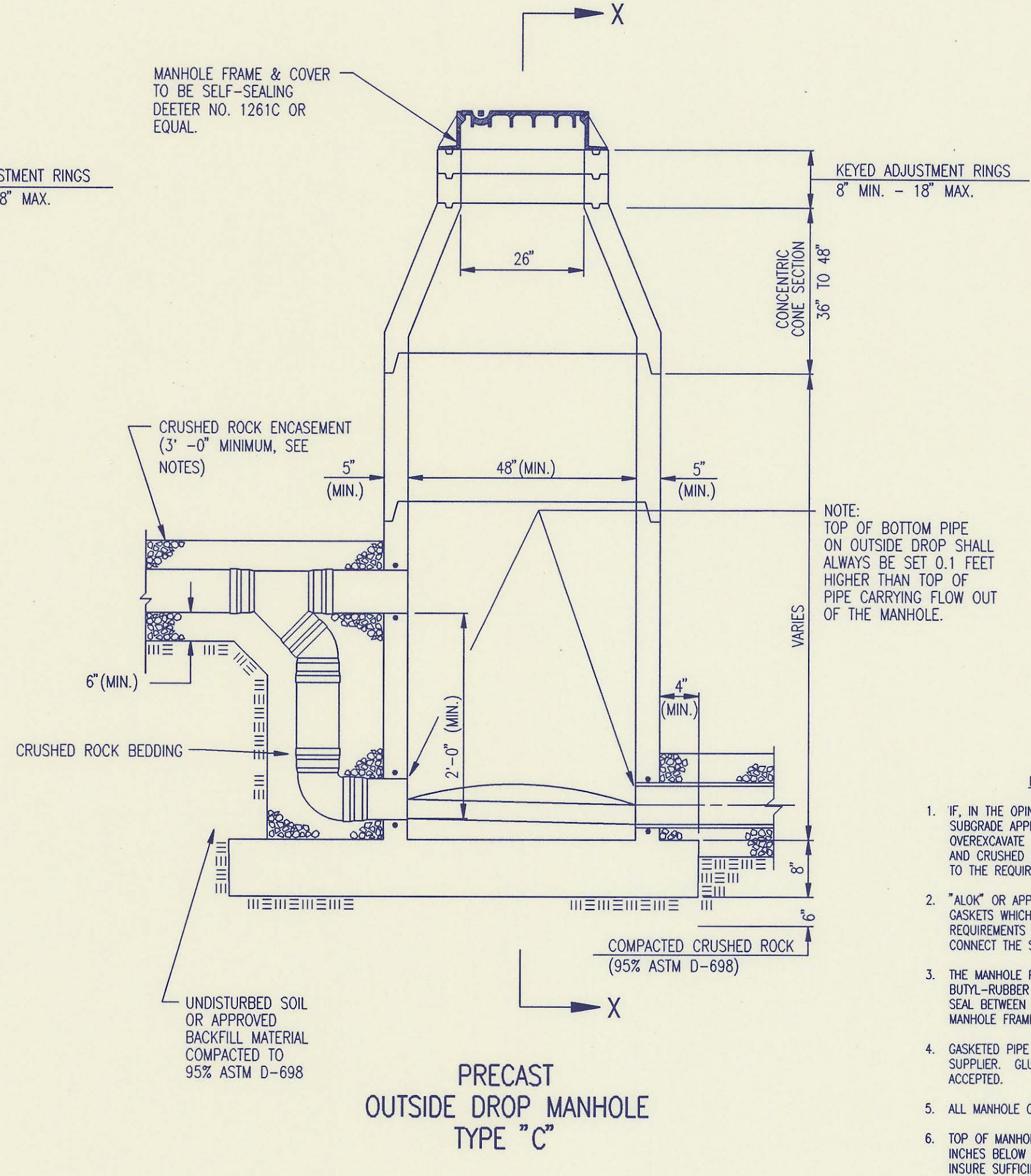
- MANHOLE FRAME AND COVER NOTES**
- CAST IRON MANHOLE FRAME AND COVER SHALL CONFORM TO ASTM A-48, CLASS 358, OR BETTER.
 - CASTINGS ARE TO BE MANUFACTURED TRUE TO PATTERN AND WITH SATISFACTORY FIT OF COMPONENT PARTS. CASTINGS SHALL BE FREE OF DEFECTS AND ALL BURRS SHALL BE GROUND SMOOTH. DIMENSIONS AS DETAILED 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 RATTLE OR ROCK UNDER TRAFFIC.
 - MANHOLE CASTINGS SHALL BE SELF-SEALING DEETER FOUNDRY INC. NO. 1261C 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 (PER DETAIL). THE "O" RING GASKET SHALL BE FACTORY INSTALLED IN THE MANHOLE FRAME WITH 100% SILICON SEALANT-DOW CORNING OR EQUAL.



PRECAST STANDARD MANHOLE TYPE "A"



PRECAST INSIDE DROP MANHOLE TYPE "B"

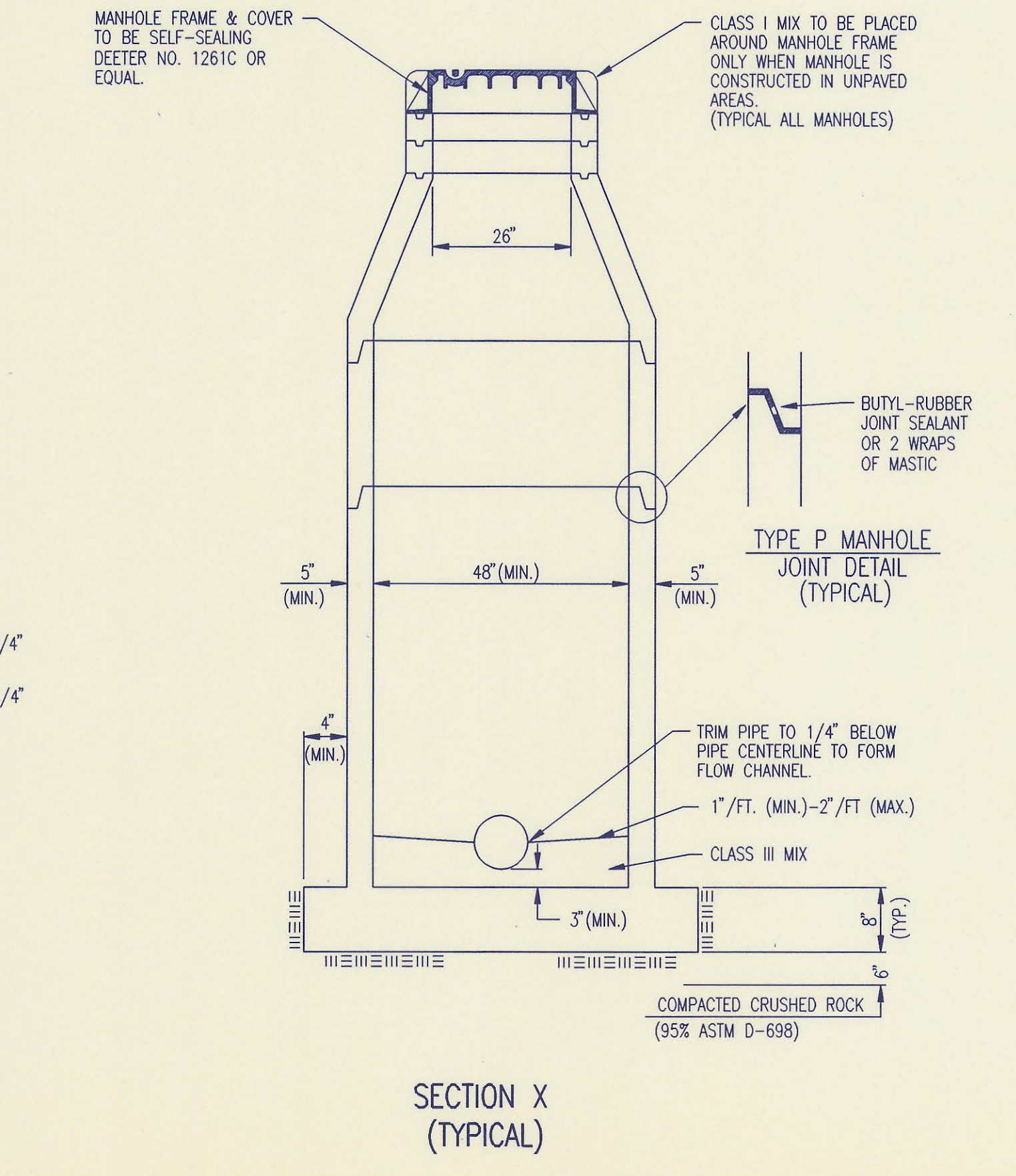


PRECAST OUTSIDE DROP MANHOLE TYPE "C"

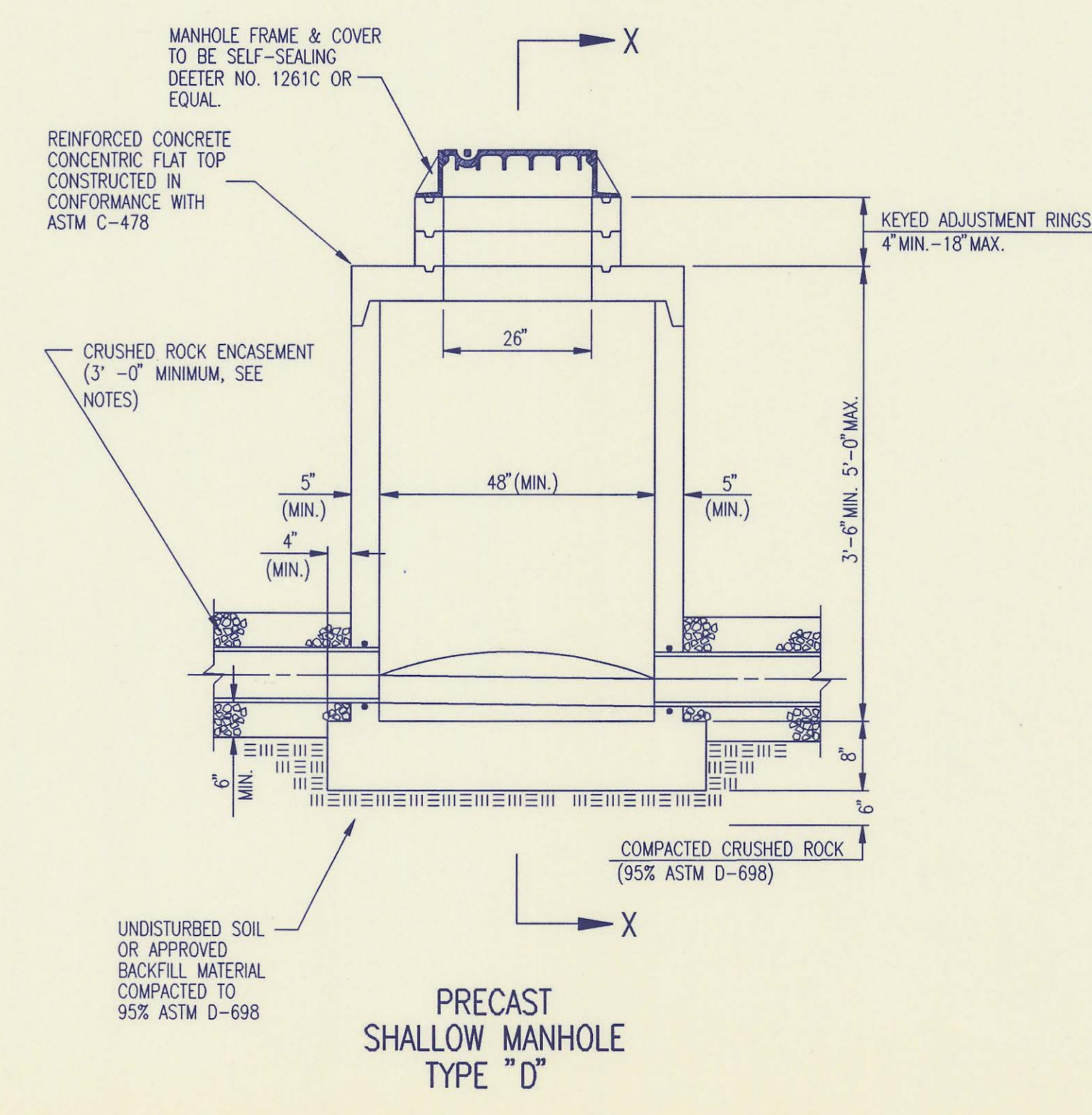
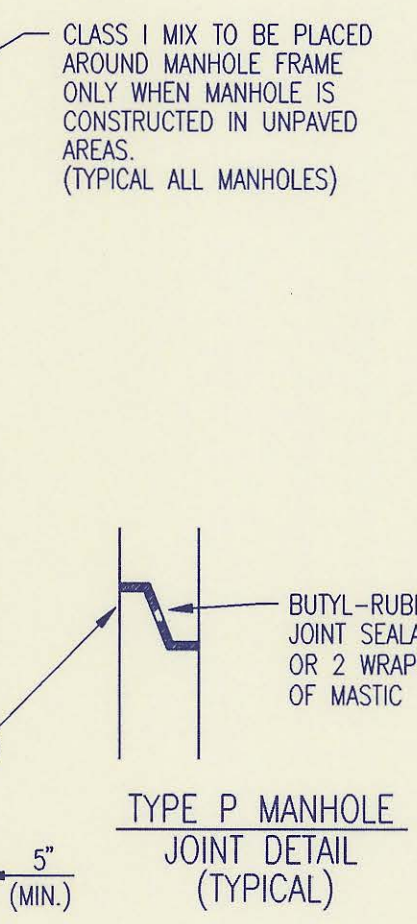
NOTE: TOP OF BOTTOM PIPE ON OUTSIDE DROP SHALL ALWAYS BE SET 0.1 FEET HIGHER THAN TOP OF PIPE CARRYING FLOW OUT OF THE MANHOLE.

PRECAST MANHOLE NOTES

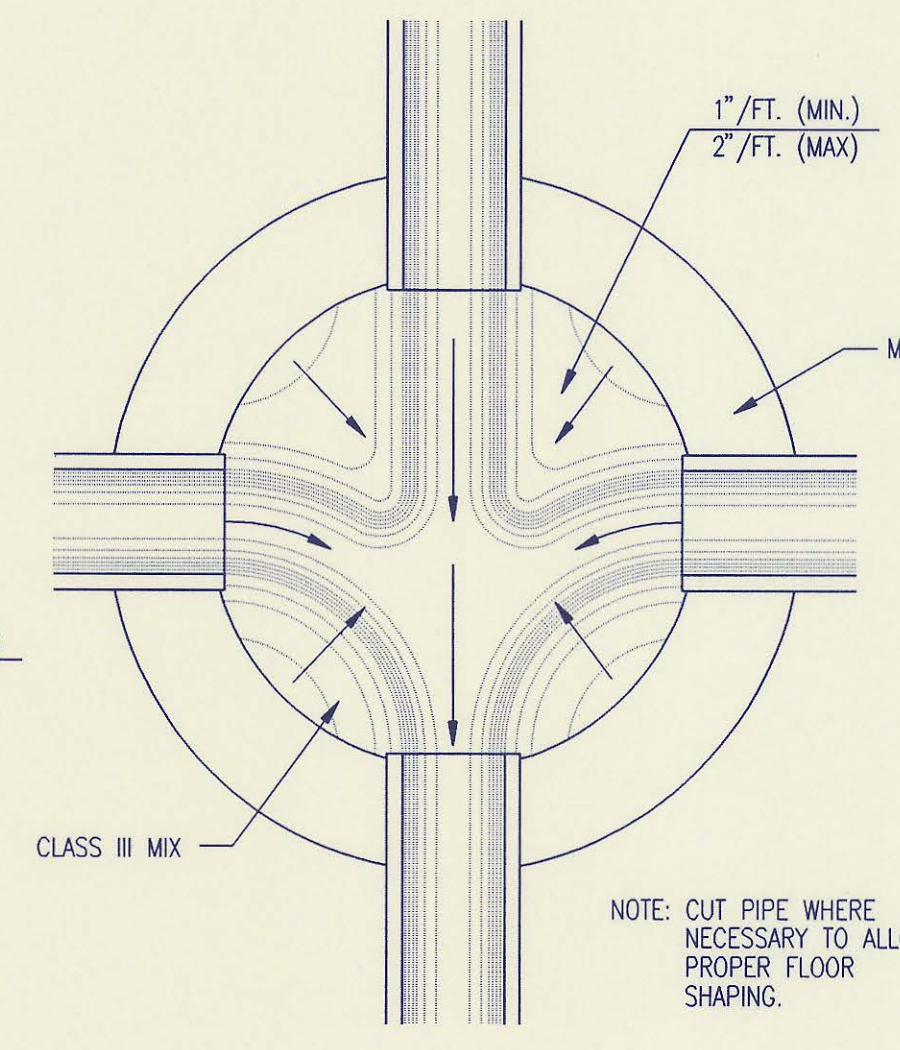
- IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL OVEREXCAVATE TO A SUITABLE SUBGRADE CONDITION AND CRUSHED ROCK SHALL BE PLACED AND COMPACTED TO THE REQUIRED GRADE.
- "ALOK" OR APPROVED EQUAL FLEXIBLE WATER-STOP GASKETS WHICH MEET OR EXCEED THE TEST REQUIREMENTS 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 OR MASTIC 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. GULLED 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 REDUCING 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 C478 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 RECESSES SHALL BE GROUDED 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 DISTURBED 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.



SECTION X (TYPICAL)



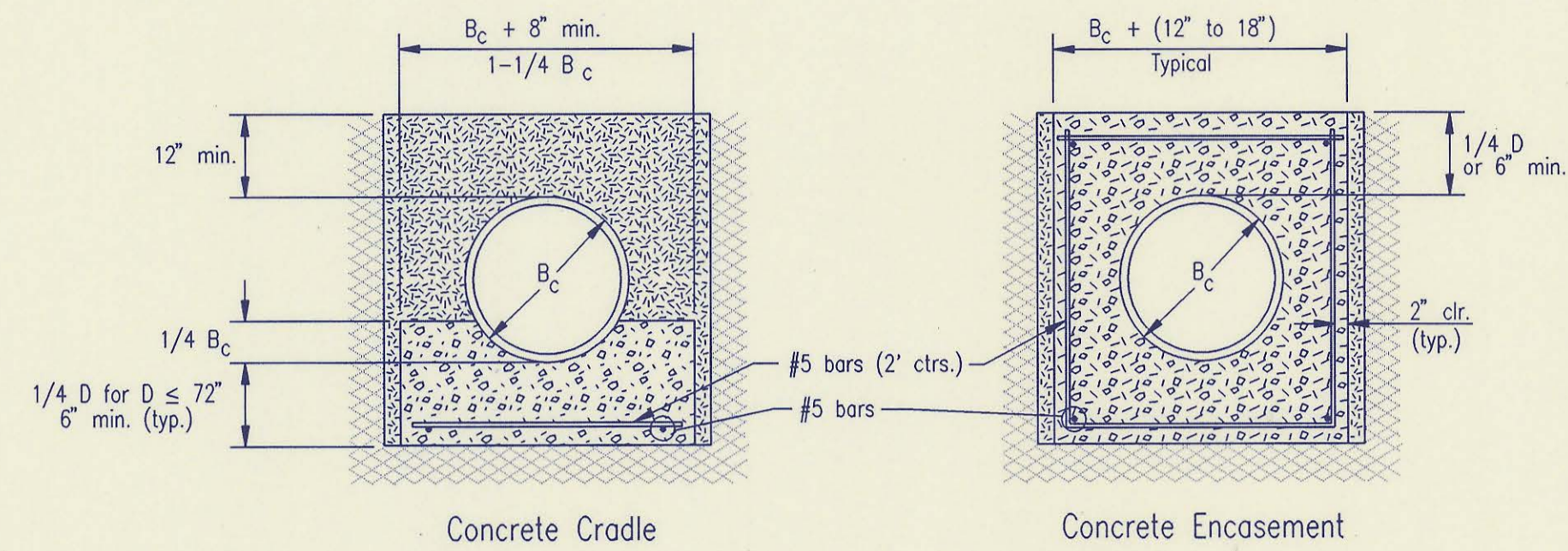
PRECAST SHALLOW MANHOLE TYPE "D"



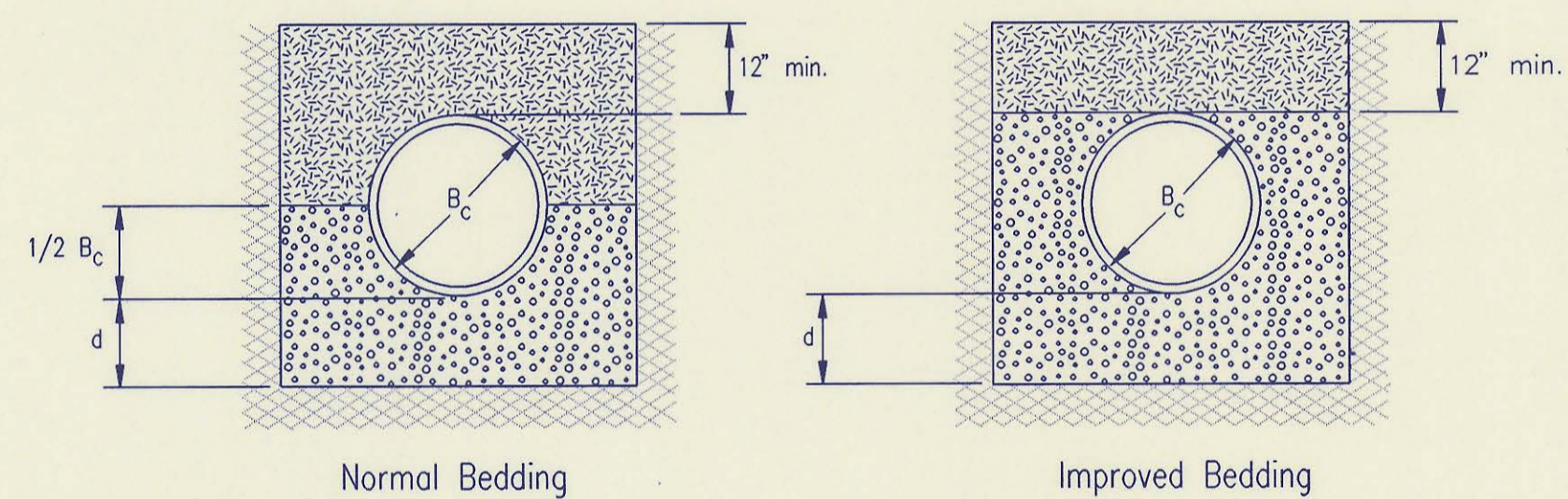
TYPICAL MANHOLE FLOOR SHAPING

No.	Revision	By	Date
6	Add mastic callout at joint	RJ	1/19/95
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

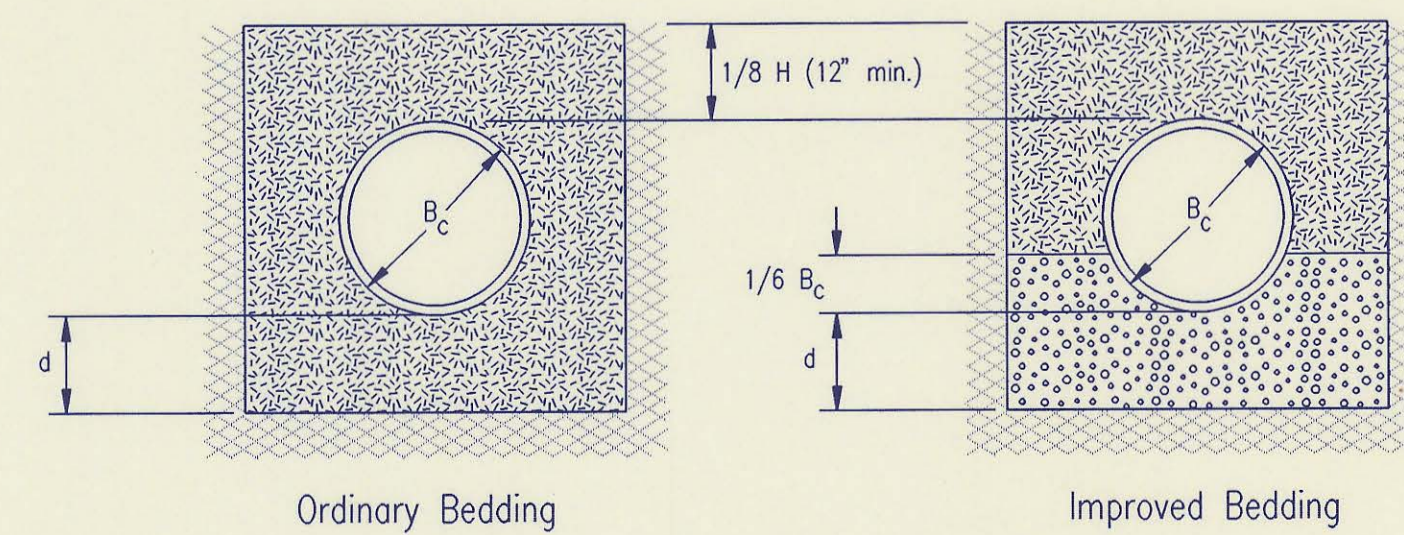
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CLASS A



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.

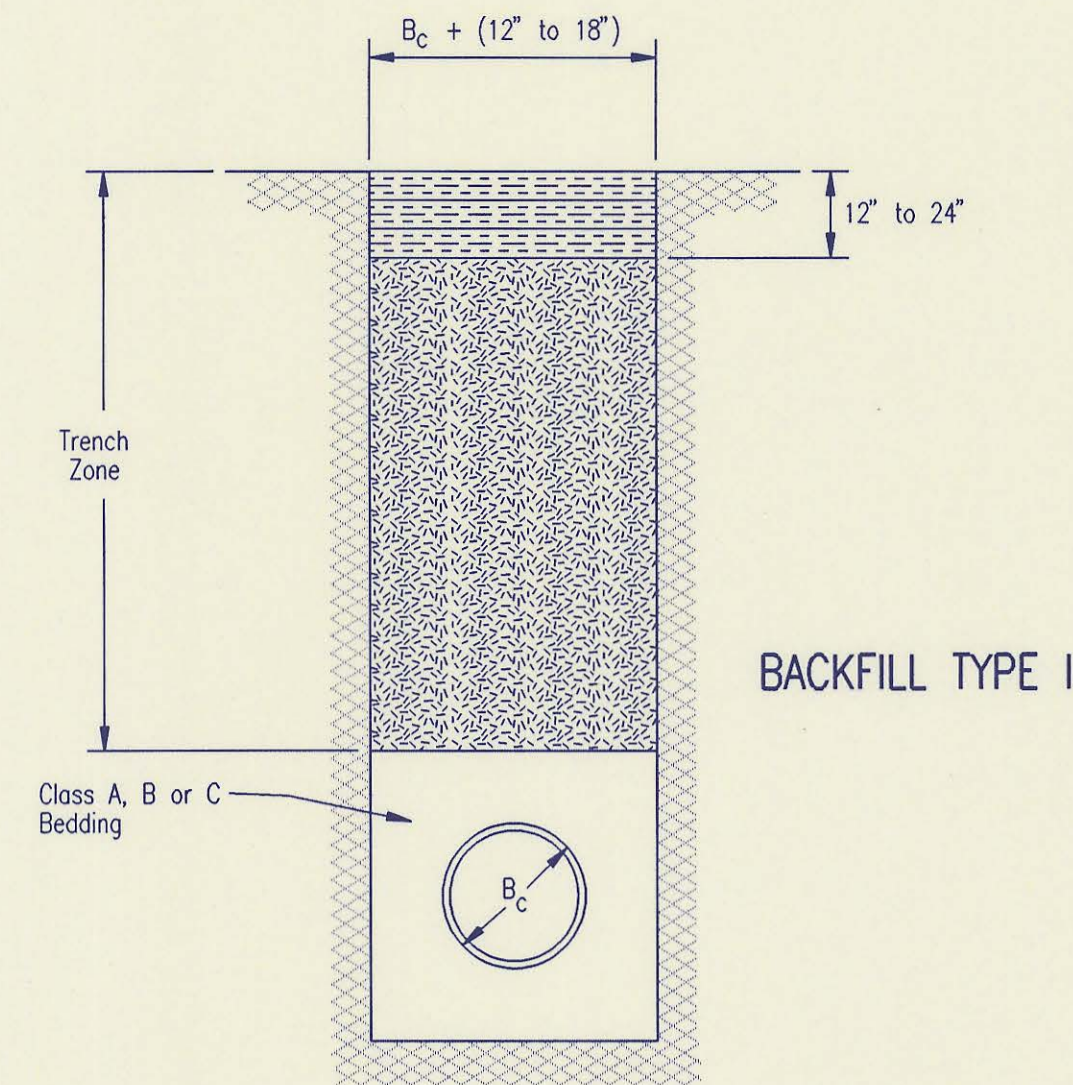
Class A "Concrete Cradle" and/or Class A "Concrete Encasement" is not required unless specified on the plans. However, where unexpected trench conditions exist or improper trenching is performed Class A Bedding may be required as determined by the Engineer.

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).



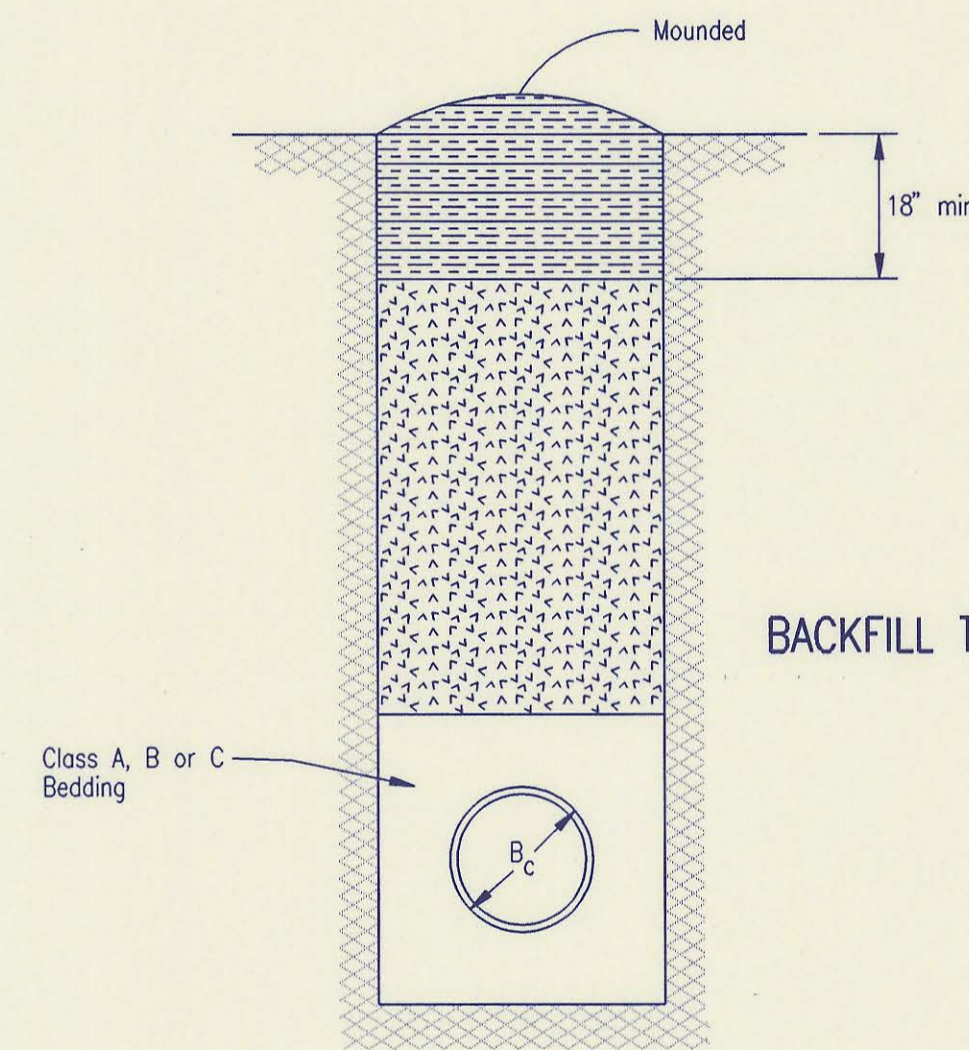
BACKFILL TYPE I

- 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.



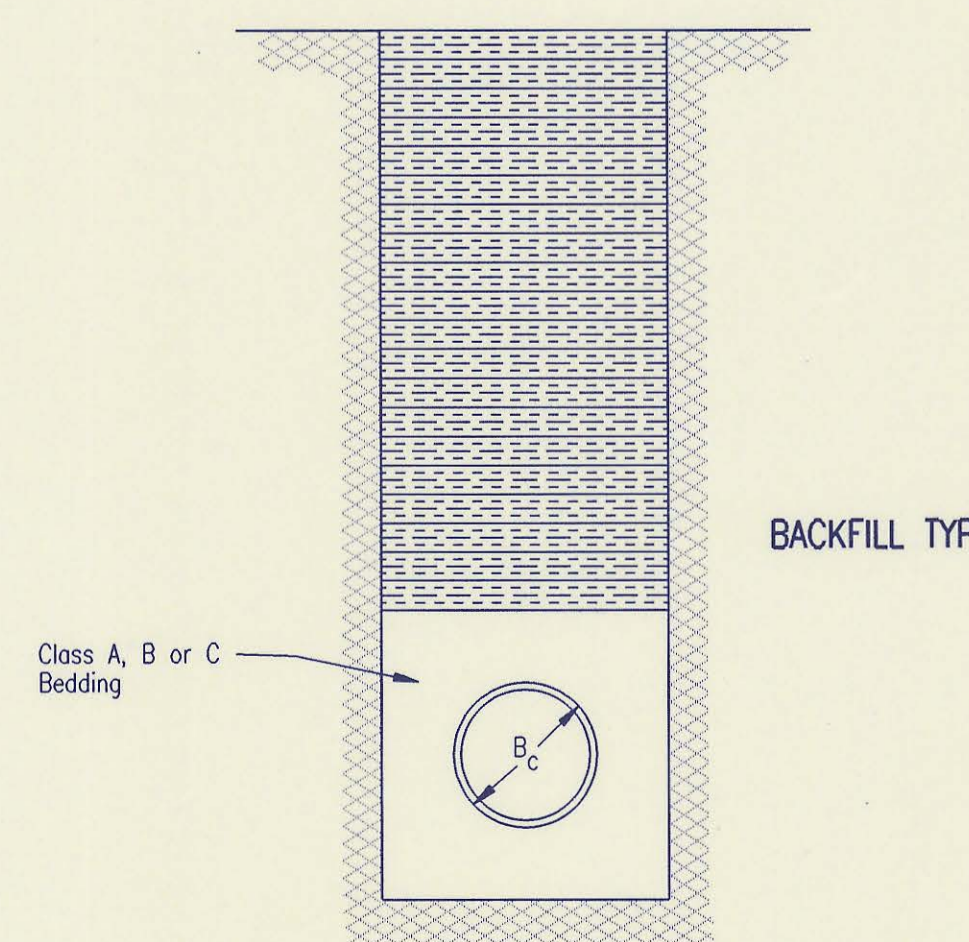
BACKFILL TYPE II

Backfill: Backfill material and compaction requirements shall conform to either Type I, Type II or Type III as specified in the plans. One years 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

SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES

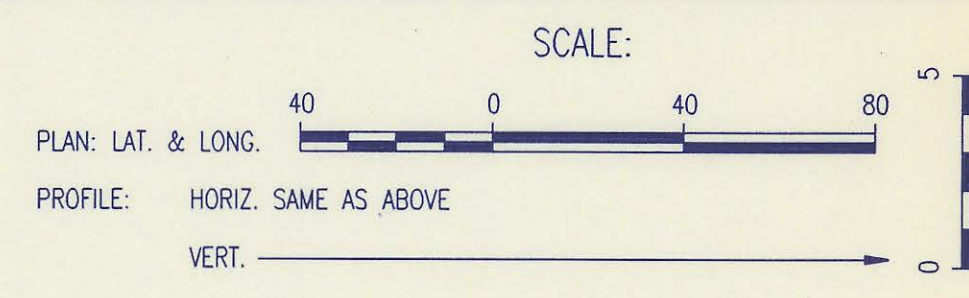
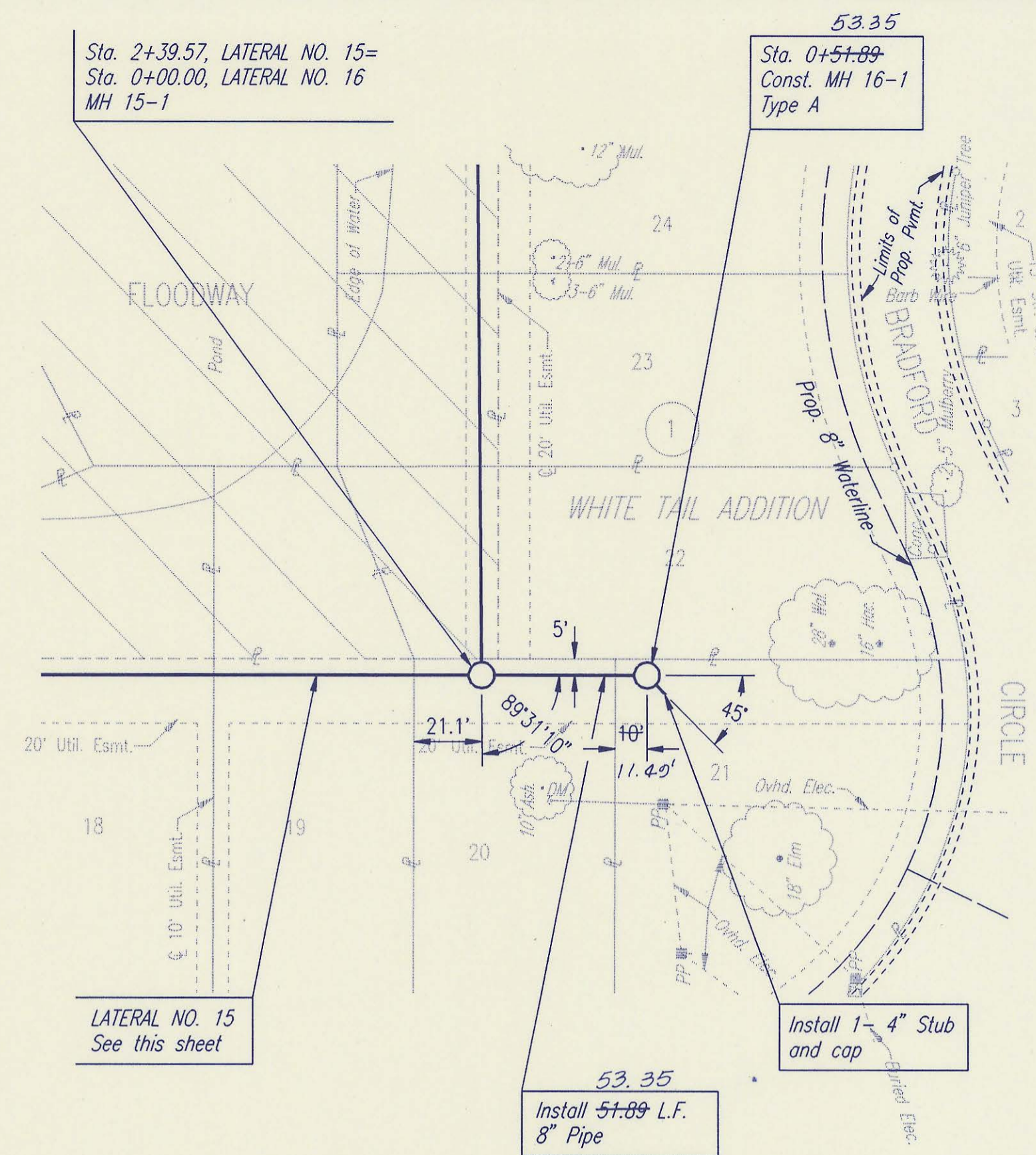
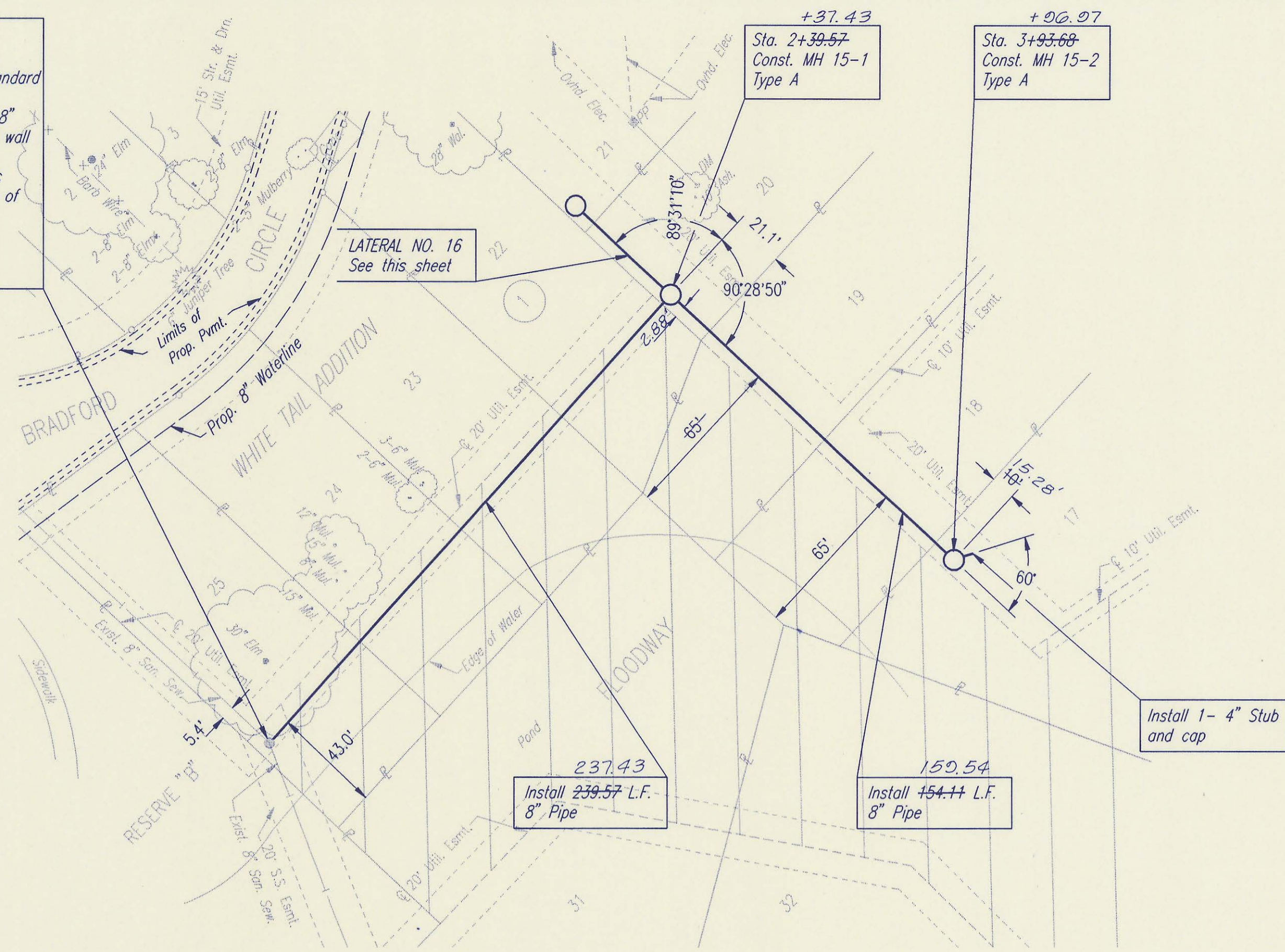
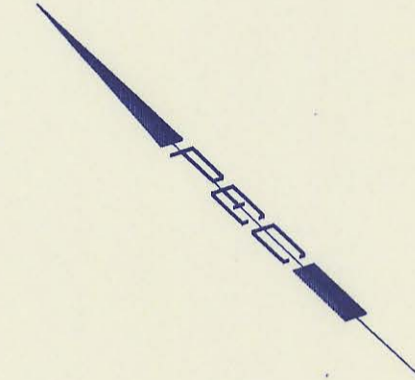
DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

PLAN	CHECKED	CHECKED
BY		DATE

PROFILE	CHECKED	CHECKED
BY		DATE

DSNR: RFJ OPER_GLM SCALE: 1"=40.00
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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.



SANITARY SEWER PIPE SLOPES AND DEFLECTION ANGLES AT MANHOLES HAVE NOT BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS.

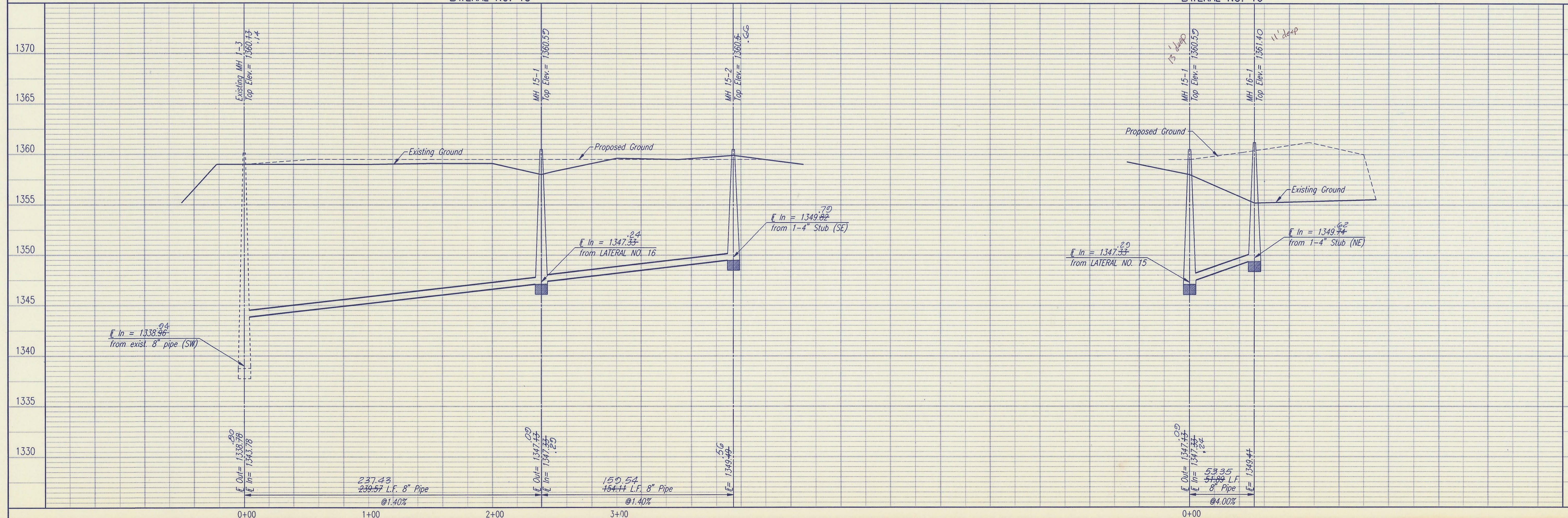
ALL PIPE INSTALLED IS PVC PIPE.

RECORD DRAWING
 MOK. PROJ. ENG. 5/9/96 DATE
 RES. ENG. DATE



LATERAL NO. 15

LATERAL NO. 16



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

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

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

Designed By RRY, MDK
 Drawn By JLM, BB

Job No. 34-94846-1
 Date December 1995

Sheet 7 of 7