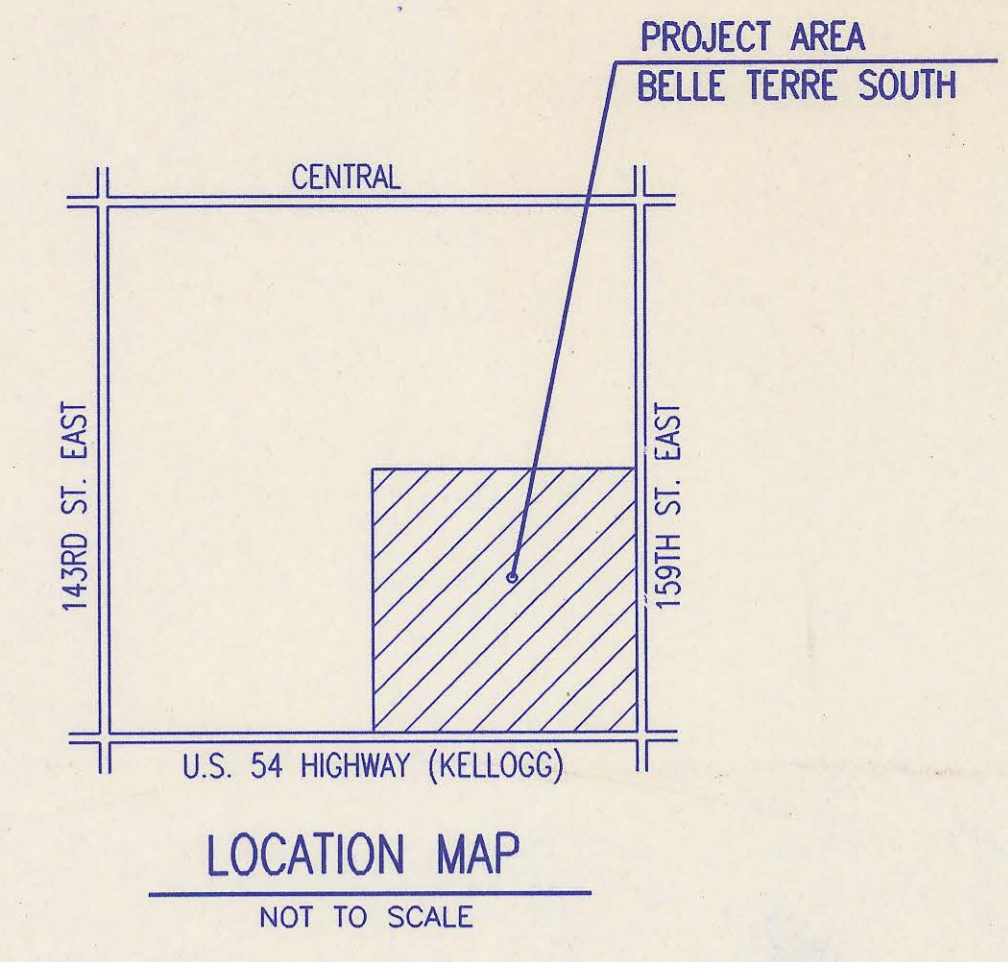


4MC-071

BUREAU OF PUBLIC SERVICES



INDEX OF SHEETS

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SHEET NO. 6	BACKFILL DETAILS
SHEET NO. 7	SEWER SERVICE DETAILS
SHEET NO. 8-13	PLAN PROFILE

CONSTRUCTION PLANS FOR

SANITARY SEWER IMPROVEMENTS

IN

BELLE TERRE SOUTH

(PHASE 1)

TO SEDGWICK COUNTY, KANSAS

SEPTEMBER 1997

RECORD DRAWING

APPROVED:

David C. Spears
 DAVID C. SPEARS, P.E.
 DIRECTOR OF PUBLIC SERVICES/COUNTY ENGINEER
 DATE: 9/15/97

APPROVED:

Thomas Smith
 CHAIR, BOARD OF COUNTY COMMISSIONERS
 DATE:



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

FILED IN THE OFFICE OF
 THE SEDGWICK COUNTY CLERK

James White
 COUNTY CLERK
 DATE: 9/15/97

DSNR: MDK OPER: REJ SCALE: 1=1.00
Q:\1997\97601\001\SS\TITLE 09-11-1997 4:17:29 pm

4MC-071

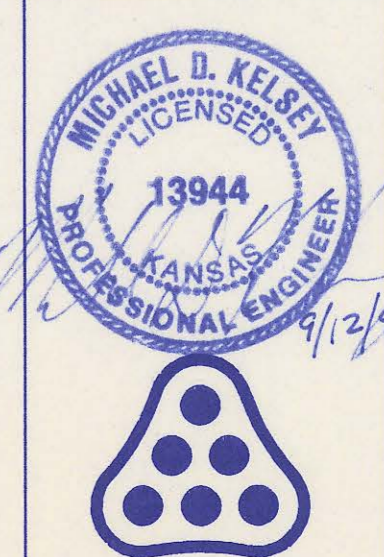
THE PAVING AND STORM SEWER CONTRACTOR FOR BELLE TERRE SOUTH, PHASE 1 (SEDCWICK COUNTY PROJECT) WILL PERFORM ROUGH GRADING OF ALL RIGHT-OF-WAYS AND EASEMENTS WITHIN BELLE TERRE SOUTH, PHASE 1 PRIOR TO CONSTRUCTION OF THE SANITARY SEWER. THE ROUGH GRADING OF THE RIGHT OF WAYS AND THE EASEMENTS WILL INCLUDE ESTABLISHING GRADES WITHIN 0.5' FROM THE PROPOSED GROUND ELEVATIONS AS SHOWN IN THE PLANS. THE PAVING AND STORM SEWER CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE FINAL GRADING OF THE EASEMENTS TO THE GRADES AS SHOWN ON THE EASEMENT GRADING PLAN AFTER THE SANITARY SEWER IS COMPLETE. THE CONTRACTOR SHALL COORDINATE SANITARY SEWER CONSTRUCTION OPERATIONS WITH THE PAVING AND STORM SEWER CONTRACTOR FOR THIS PROJECT.

- 1. ALL ELEVATIONS SHOWN ARE USGS DATUM.
2. AT LEAST 72 HOURS PRIOR TO BEGINNING ANY EXCAVATION (EXCLUDING WEEKENDS AND HOLIDAYS), THE CONTRACTOR SHALL CONTACT THE KANSAS ONE-CALL SYSTEM...
3. THE BURIED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE LOCATIONS ONLY...
4. AT LEAST 24 HOURS BEFORE CONNECTING NEW SEWER PIPE TO THE EXISTING SEWAGE SYSTEM...
5. ALL PIPE JOINTS SHALL BE LAID AND PUSHED 'FULL HOME'...
6. THE CONTRACTOR SHALL CONTAIN HIS OPERATIONS TO PERMIT TRAFFIC THROUGH AND ACROSS CONSTRUCTION AT EXISTING ROADWAYS AT ALL TIMES...
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS...
8. THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, AND BANKS TO THEIR ORIGINAL SLOPES AND GRADES...
9. EASEMENTS AND RIGHTS-OF-WAY PROVIDED BY THE OWNER FOR THE PROJECT ARE SHOWN IN THE PLANS...
10. POSITIVE DRAINAGE SHALL BE PROVIDED FOR ALL AREAS ON OR NEAR SPOIL AREAS...
11. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS...
12. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY ABUTTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF 10 DAYS ADVANCE NOTICE...
13. ALL TRENCH BACKFILL SHALL BE EITHER TYPE I OR TYPE III UNLESS NOTED OTHERWISE...
14. THE CONTRACTOR SHALL CONTACT THE FOLLOWING AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION TO ADVISE THEM OF THE INTENDED WORK AND OF HIS PROPOSED SCHEDULE:

BENCH MARK LIST

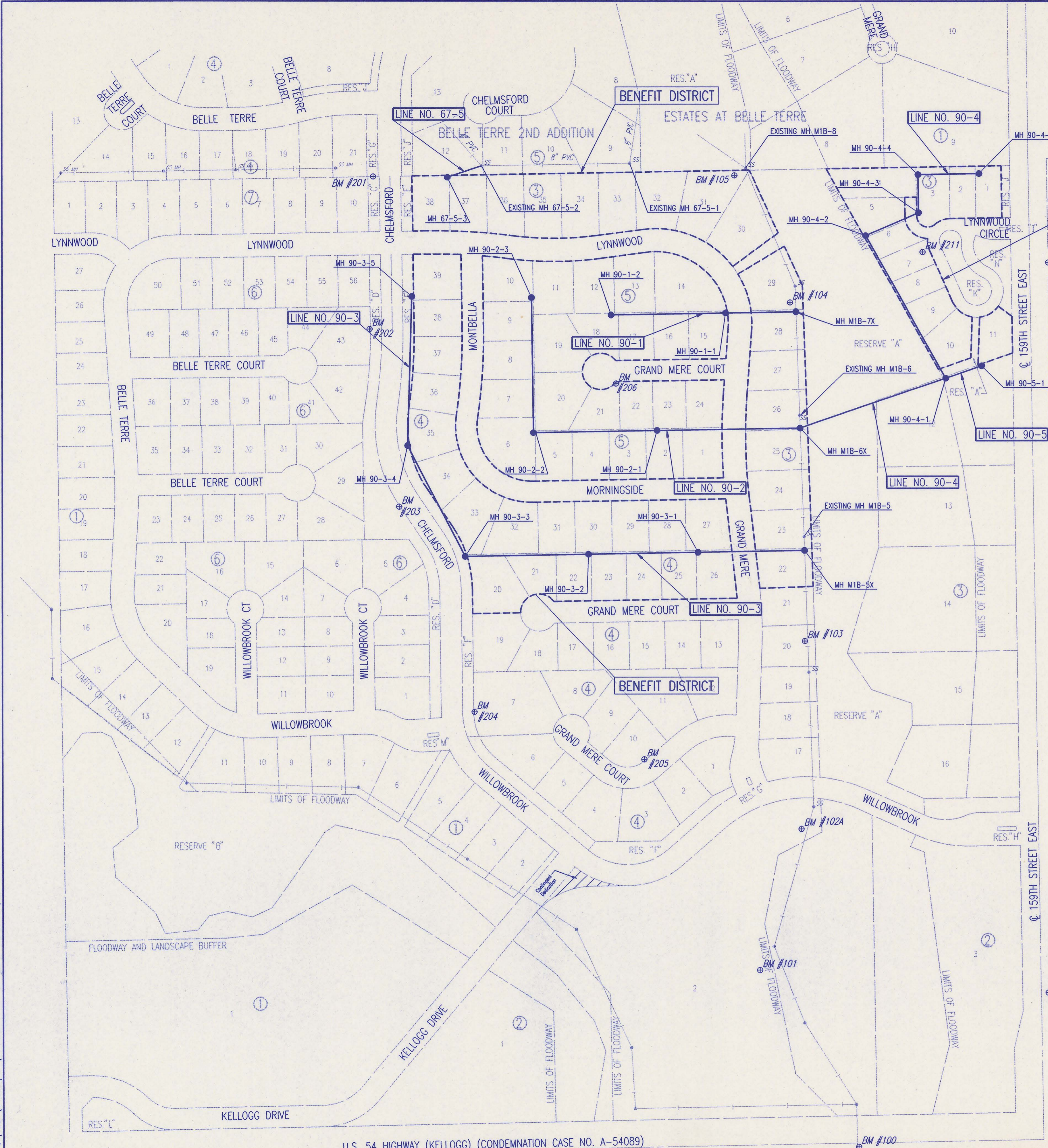
Table with 3 columns: DATUM, BM #, and Description. Includes entries for BM 100 through BM 211 with detailed location and elevation information.

RECORD DRAWING



Revision table and project information block including Sedgwick County Bureau of Public Services, Key Map, and Professional Engineering Consultants, P.A. details.

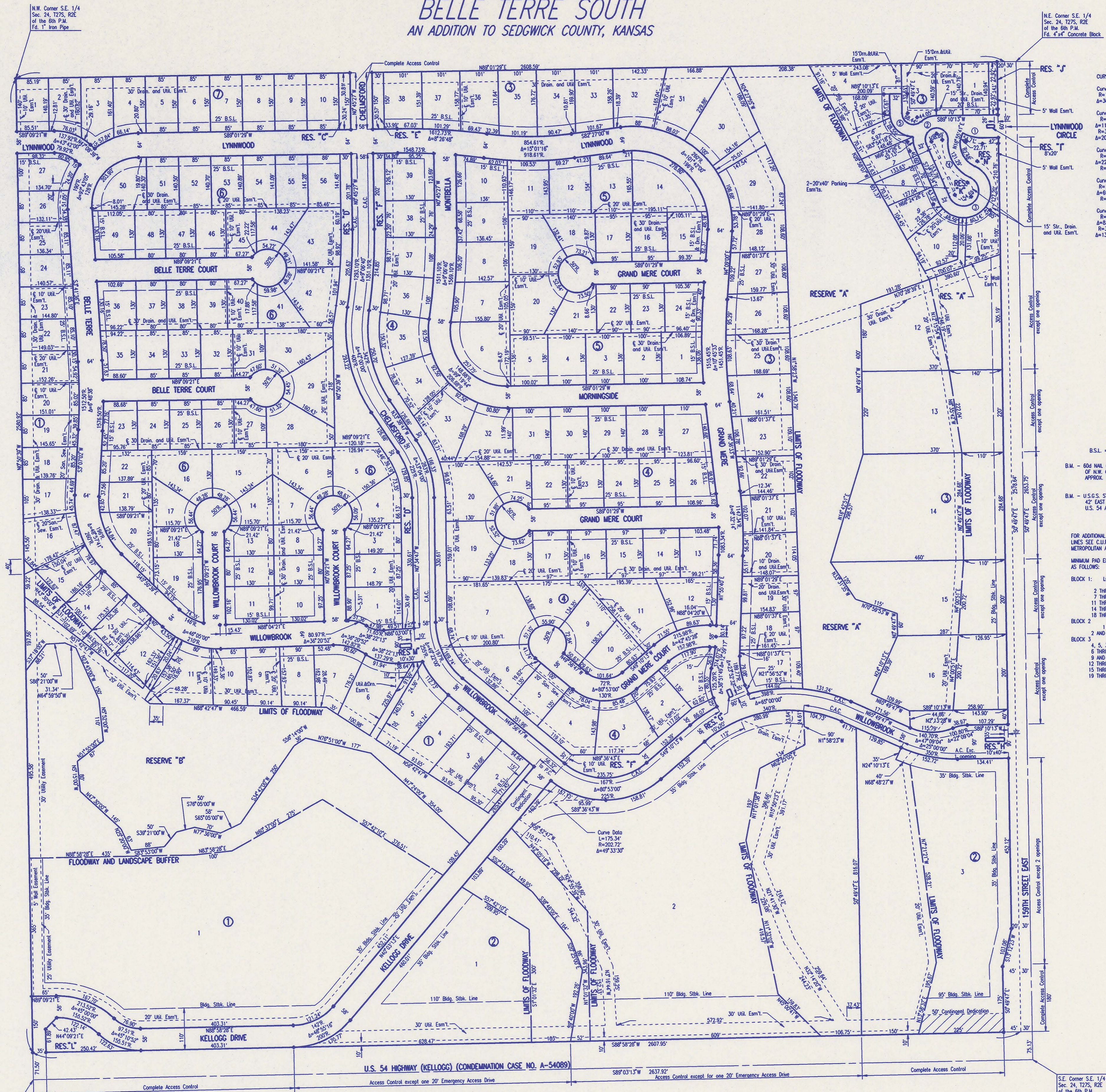
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U.S. 54 HIGHWAY (KELLOGG) (CONDEMNATION CASE NO. A-54089)

BELLE TERRE SOUTH

AN ADDITION TO SEDGWICK COUNTY, KANSAS



N.E. Corner S.E. 1/4
Sec. 24, T25, R2E
of the 6th P.M.
Ft. 4" Concrete Block

CURVE DATA
Curve No. 1
R=104.50'
A=30°00'00"
Curve No. 2
R=62.00'
A=112°54'45"
R=30.00'
A=207°38'15"
Curve No. 3
R=72.00'
A=221°31'28"
R=40.00'
Curve No. 4
R=100.00'
A=67°29'43"
R=68.00'
Curve No. 5
R=57.0431'
R=30.0000'
A=130°42'20"

SCALE: 1"=150'

• = IRON SET
B.S.L. = BUILDING SETBACK LINE
B.M. = 60' NAIL ON TOP OF ORANGE POST 15' NORTH
OF N.W. CORNER WEST BOUND U.S. 54 BRIDGE.
APPROX. 500' WEST OF 159TH STREET EAST.
ELEV.=1301.61 M.S.L.
B.M. = U.S.G.S. STANDARD TABLE 75' NORTH AND
42' EAST OF S.E. CORNER SEC. 24, AT
U.S. 54 AND 159TH STREET EAST.
ELEV.=1301.83 M.S.L.

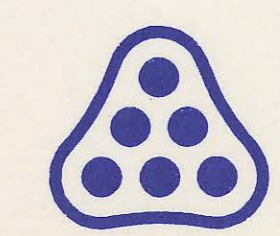
FOR ADDITIONAL INFORMATION AND SETBACK
LINES SEE C.U.P. DP-226 ON FILE WITH THE
METROPOLITAN AREA PLANNING DEPARTMENT.
MINIMUM ROAD ELEVATIONS (LOWEST OPENINGS)
AS FOLLOWS:
BLOCK 1: LOTS
2 THROUGH 6
7 THROUGH 10
11 THROUGH 13
14 THROUGH 17
18 THROUGH 21
BLOCK 2
1
2 AND 3
BLOCK 3
4, 5, 30 AND 31
6 THROUGH 8 AND 28, 29
9 AND 10, 26, 27
12 THROUGH 14
15 THROUGH 18
19 THROUGH 25
ELEVATION
1302.2 M.S.L.
1301.5 M.S.L.
1302.5 M.S.L.
1303.2 M.S.L.
1303.5 M.S.L.
1304.2 M.S.L.
1300.0 M.S.L.
1304.3 M.S.L.
1307.0 M.S.L.
1306.0 M.S.L.
1306.5 M.S.L.
1305.5 M.S.L.
1306.5 M.S.L.
1305.5 M.S.L.

Curve Data
L=175.34'
R=202.72'
A=49°33'30"

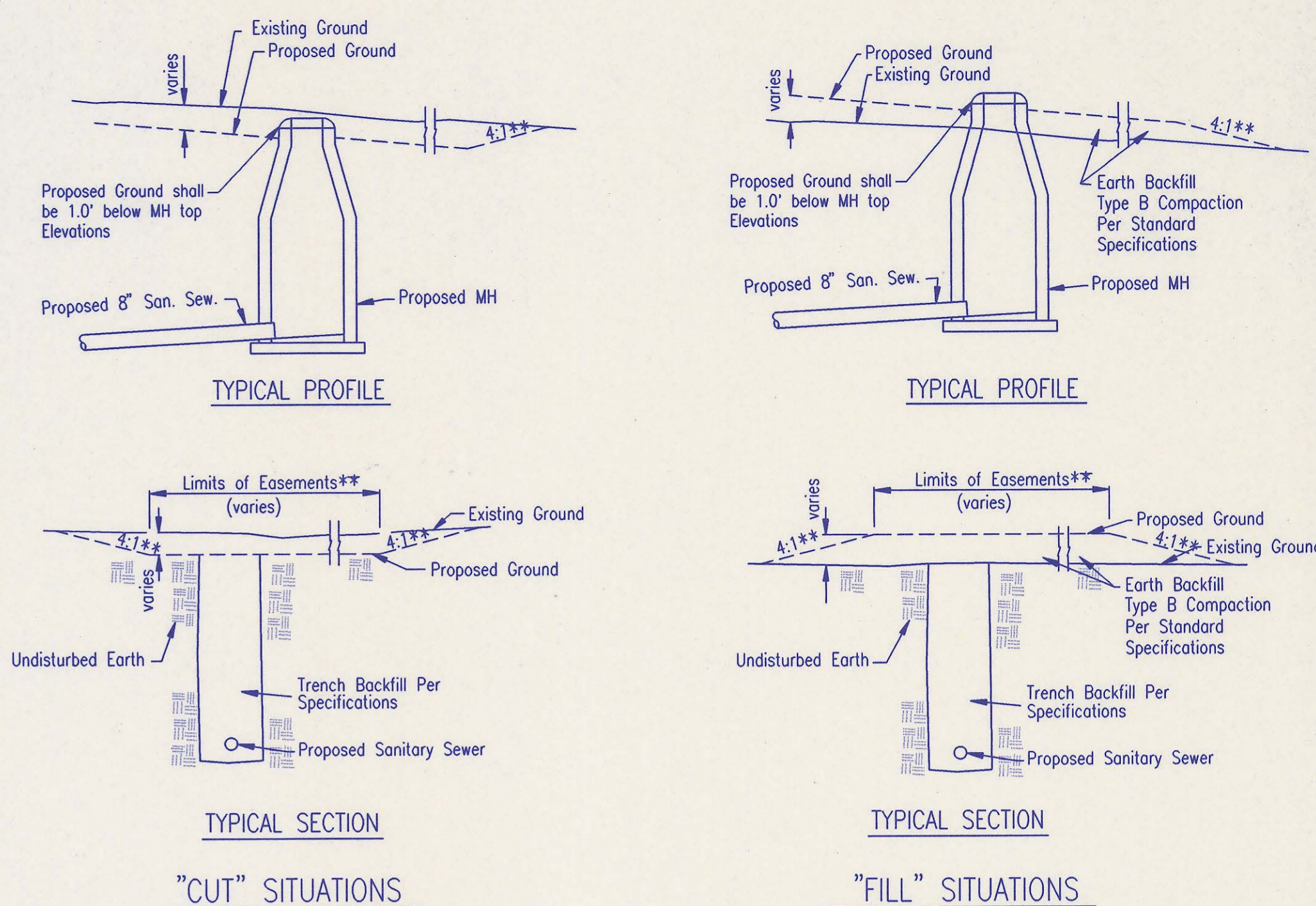
S.E. Corner S.E. 1/4
Sec. 24, T25, R2E
of the 6th P.M.
Ft. 5/8" Rebar in Thumb

DSMR: ILS OPER: TRB SCALE: 1"=150.00
Q:\1997\97601\001\SSPLAT_09-12-1997 4:49:28 pm

No.	Revision	By	Date
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER PLAT SANITARY SEWER IMPROVEMENTS BELLE TERRE SOUTH (PHASE 1) PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS			
Designed by	MDK	Job No.	34-97601-1
Drawn by	DMM	Date	May 1997
			Sh. 3 of 13



BELLE TERRE SOUTH
AN ADDITION TO SEDGWICK COUNTY, KANSAS



EASEMENT GRADING DETAILS

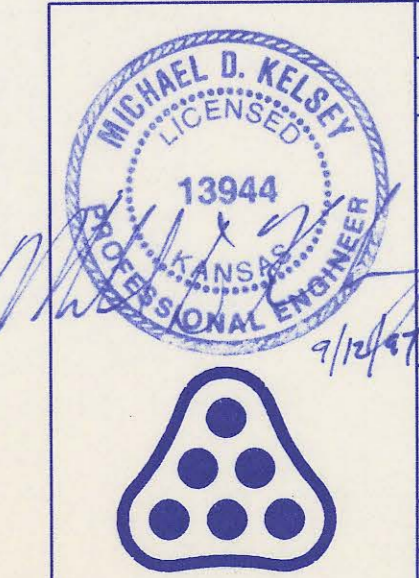
- = AREAS TO BE GRADED
- H.P. = HIGH POINT
- M.E. = MATCH EXISTING

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

THIS SHEET FOR INFORMATION ONLY

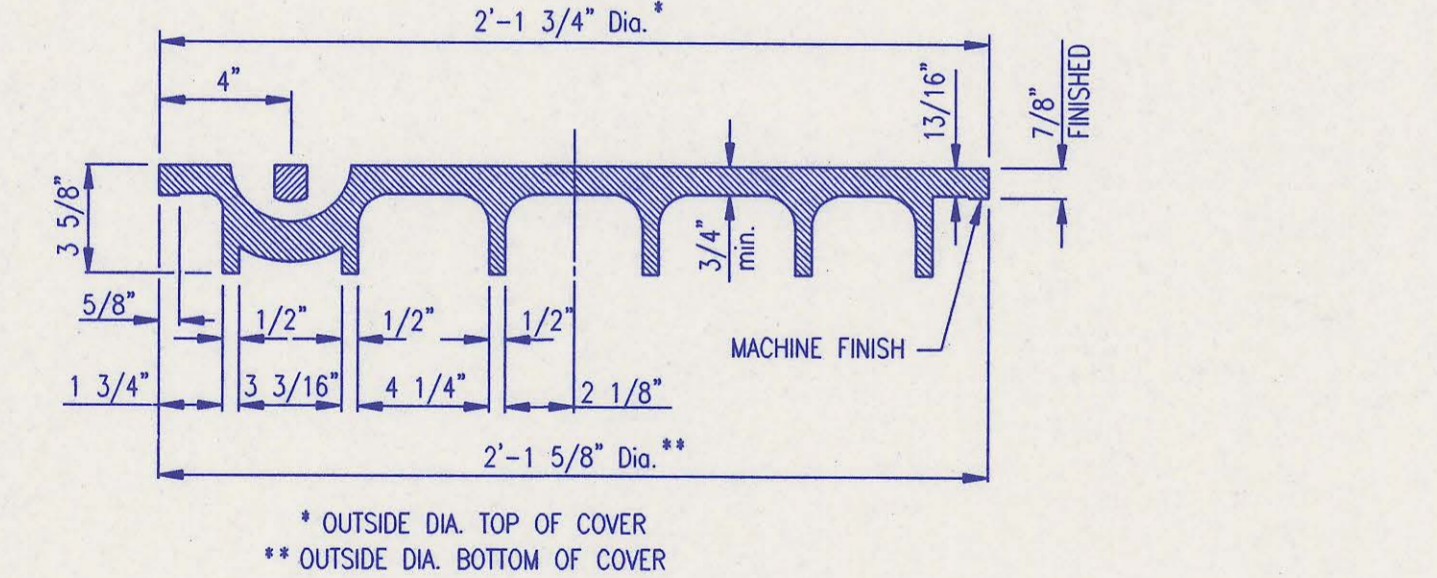
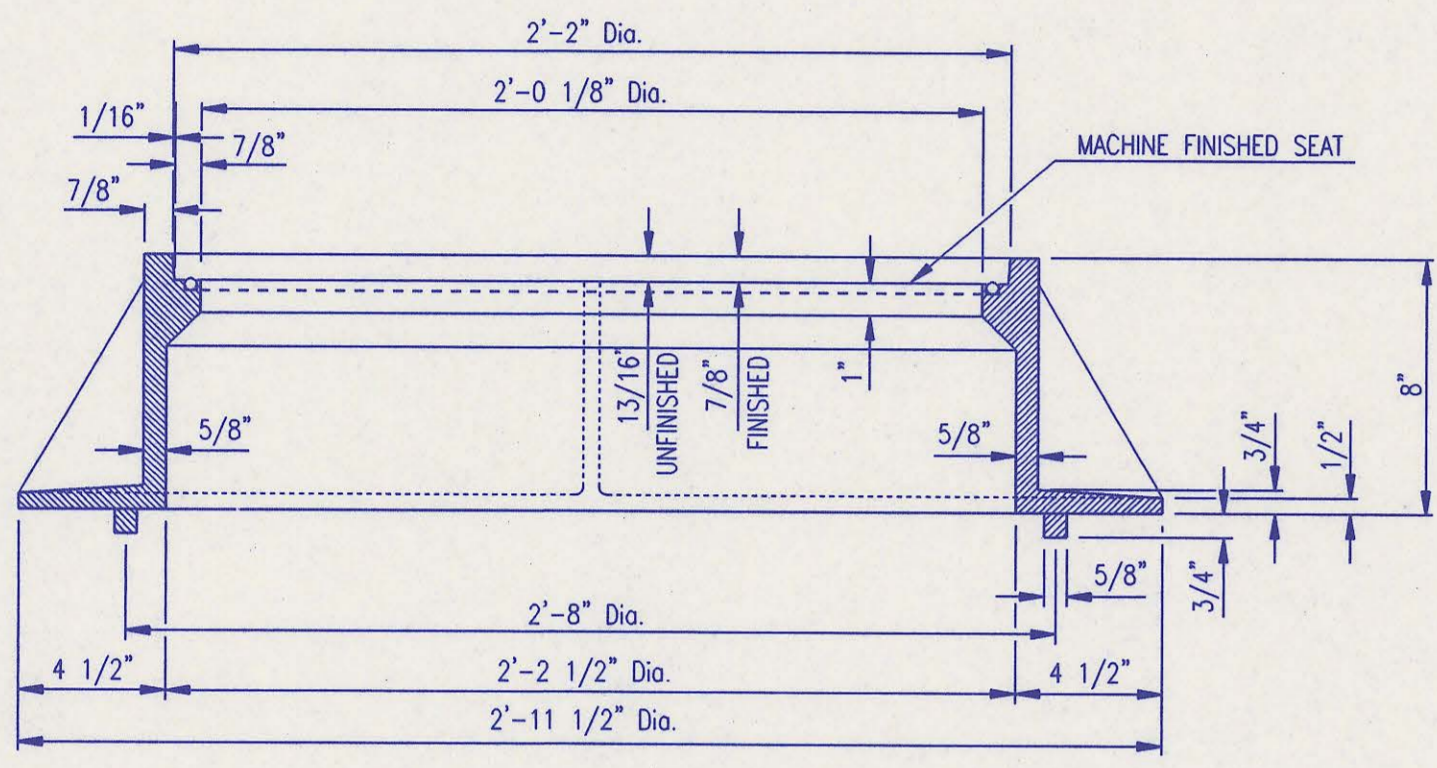
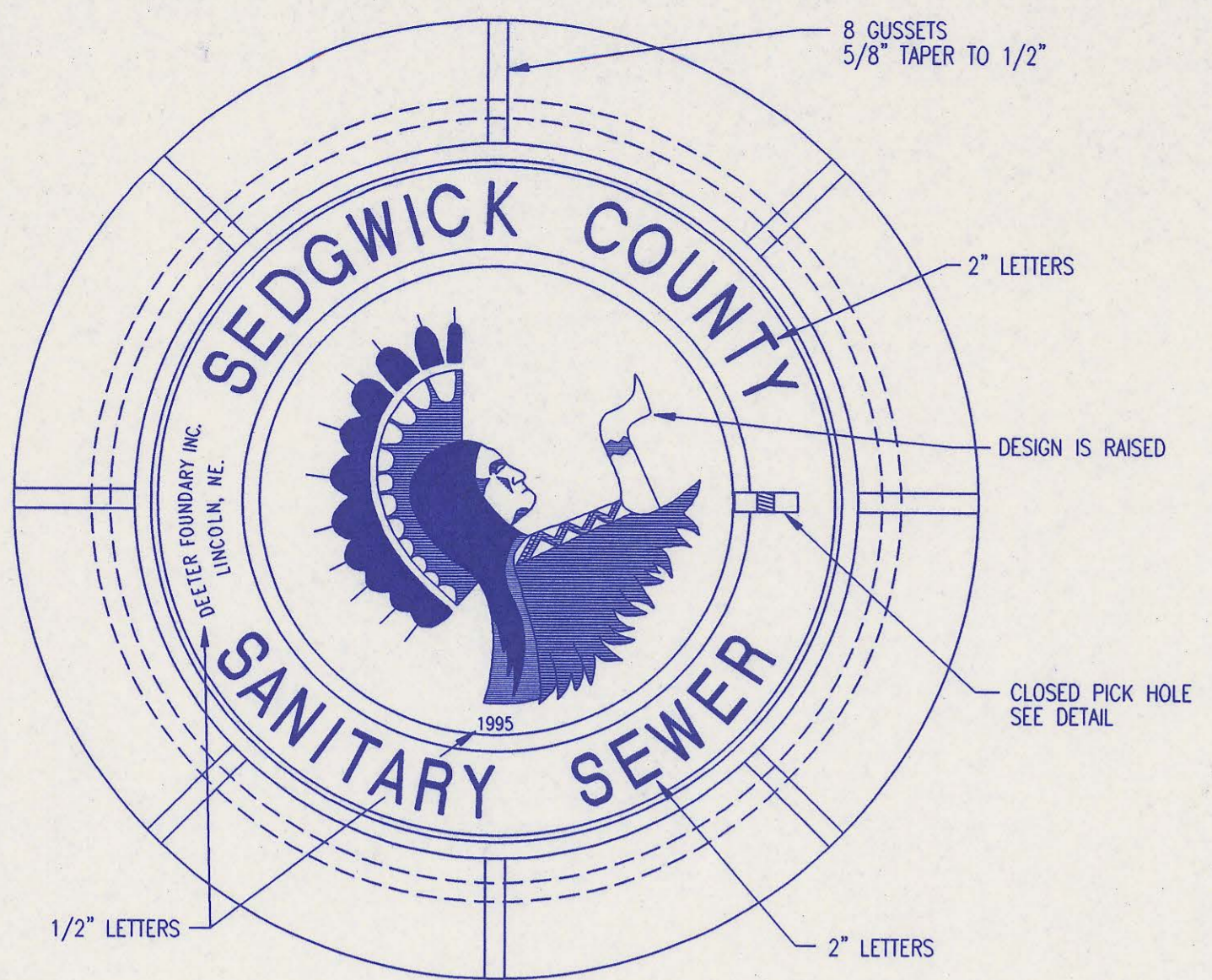
THE PAVING AND STORM SEWER CONTRACTOR FOR BELLE TERRE SOUTH, PHASE 1 (SEDGWICK COUNTY PROJECT) WILL PERFORM ROUGH GRADING OF ALL RIGHT-OF-WAYS AND EASEMENTS WITHIN BELLE TERRE SOUTH, PHASE 1 PRIOR TO CONSTRUCTION OF THE SANITARY SEWER. THE ROUGH GRADING OF THE RIGHT OF WAYS AND THE EASEMENTS WILL INCLUDE ESTABLISHING GRADES WITHIN 0.5' FROM THE PROPOSED GROUND ELEVATIONS AS SHOWN IN THE PLANS. THE PAVING AND STORM SEWER CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE FINAL GRADING OF THE EASEMENTS TO THE GRADES AS SHOWN ON THE EASEMENT GRADING PLAN AFTER THE SANITARY SEWER IS COMPLETE. THE CONTRACTOR SHALL COORDINATE SANITARY SEWER CONSTRUCTION OPERATIONS WITH THE PAVING AND STORM SEWER CONTRACTOR FOR THIS PROJECT.

RECORD DRAWING



No.	Revision	By	Date
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES DAVID C. SPANIS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER EASEMENT GRADING PLAN SANITARY SEWER IMPROVEMENTS BELLE TERRE SOUTH (PHASE 1)			
PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS			
Designed by	MDK	Job No.	34-97601-1
Drawn by	DMM	Date	May 1997
			Sh. 4 of 13

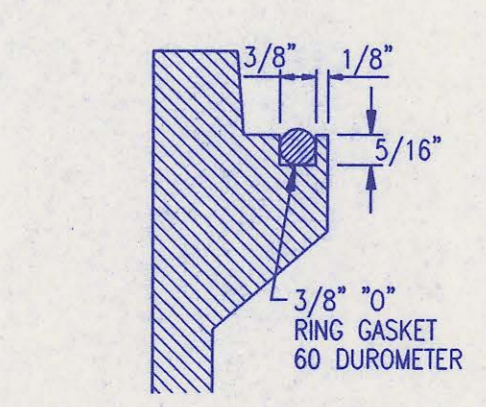
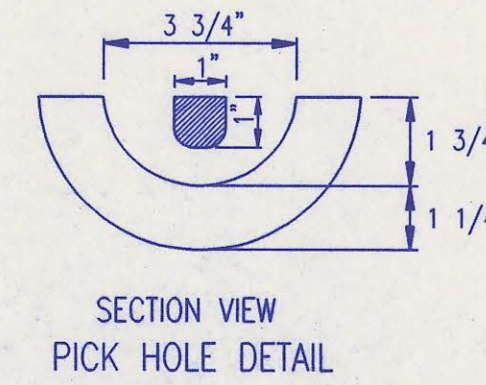
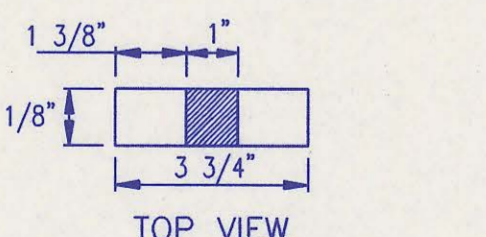
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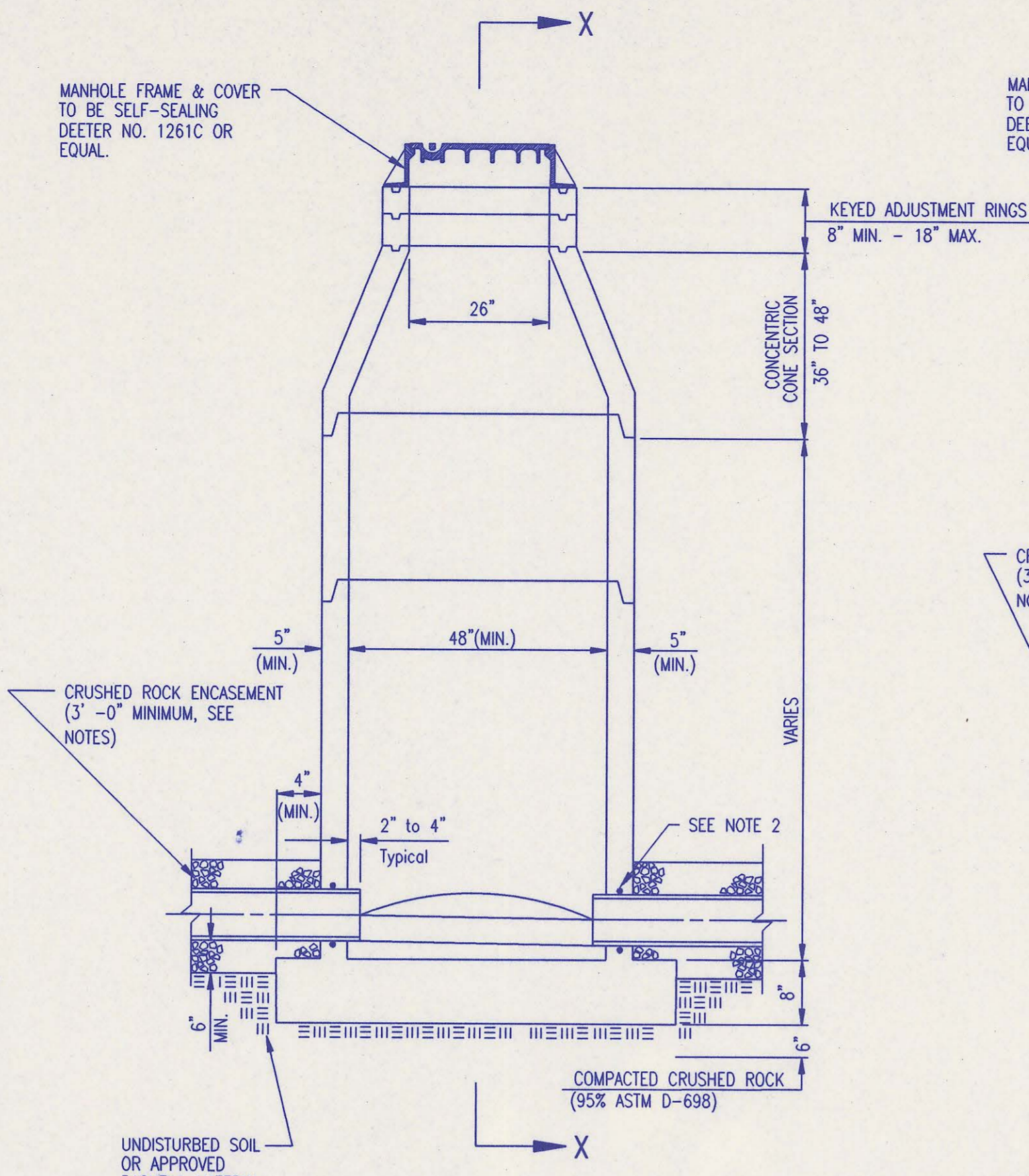
MANHOLE FRAME AND COVER
(TOTAL WEIGHT = 430 LBS.)

MANHOLE FRAME AND COVER NOTES

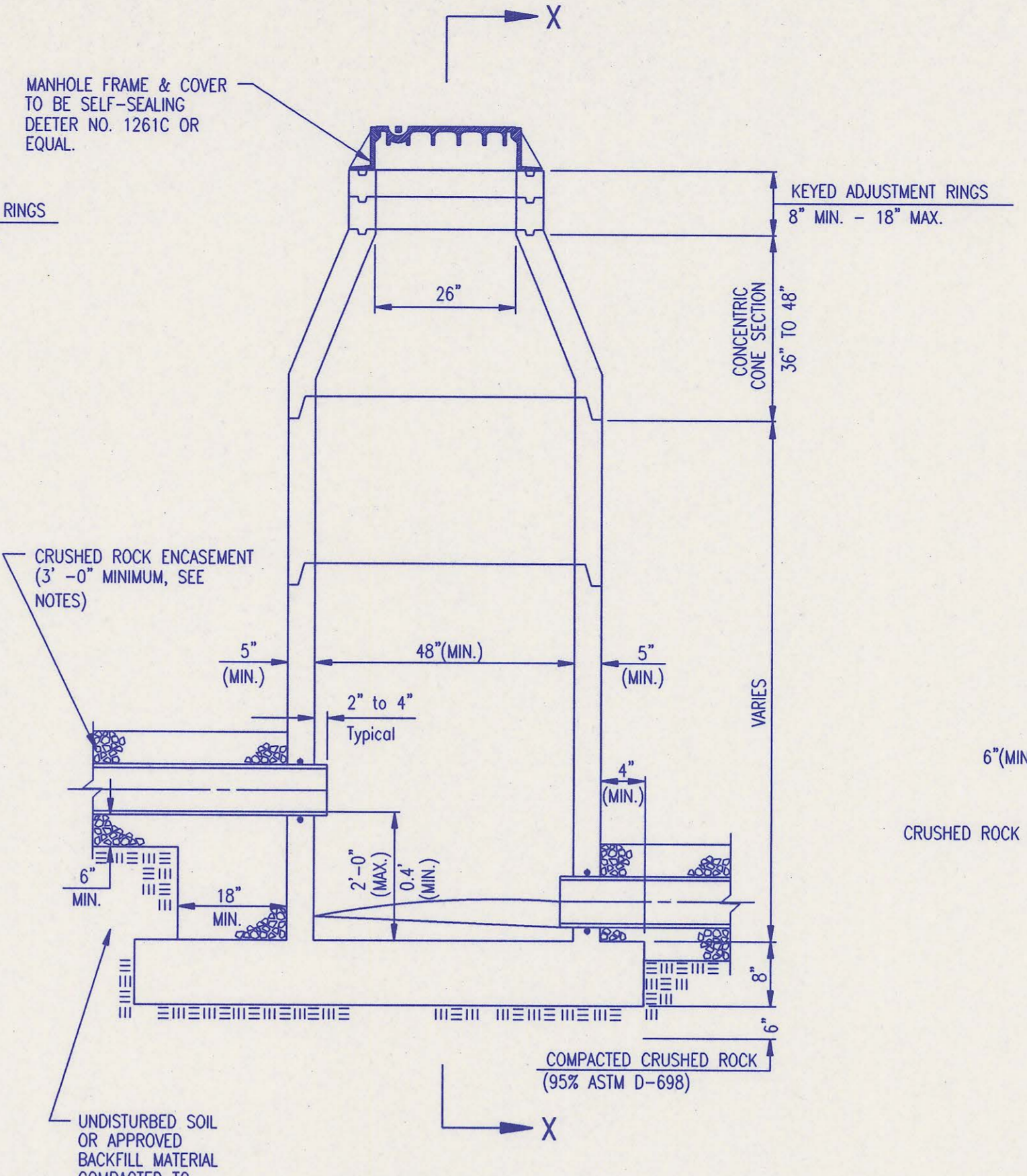
1. CAST IRON MANHOLE FRAME AND COVER SHALL CONFORM TO ASTM A-48, CLASS 35B, OR BETTER.
2. CASTINGS ARE TO BE MANUFACTURED TRUE TO PATTERN AND WITH SATISFACTORY FIT OF COMPONENT PARTS. CASTINGS SHALL BE FREE OF DEFECTS AND ALL BURRS SHALL BE GROUND SMOOTH. DIMENSIONS AS DETAILED ON PLAN SHALL NOT DEVIATE BY ± 1/16" PER FOOT.
3. NO OTHER LETTERING OR MARKINGS OTHER THAN THOSE DETAILED ON PLAN WILL BE PERMITTED ON CASTINGS.
4. CASTINGS MUST BE DOMESTICALLY MANUFACTURED IN THE UNITED STATES OF AMERICA.
5. THE FRAMES AND COVERS SHALL BE FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACES SO FITTING PARTS WILL NOT RATTLE OR ROCK UNDER TRAFFIC.
6. 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.
7. 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.
8. 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.



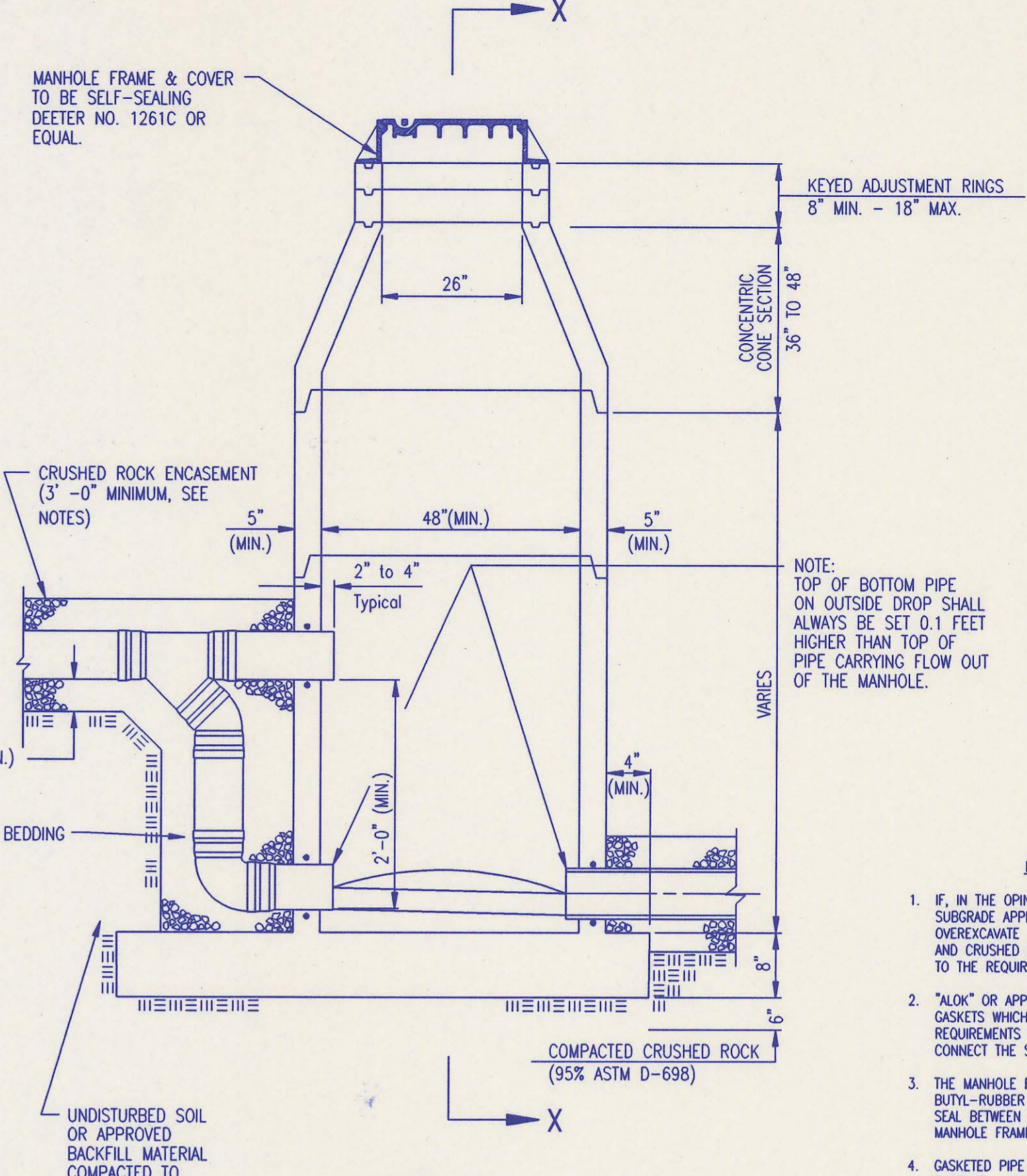
FRAME GROOVING DETAIL (TYPICAL ALL MANHOLES)



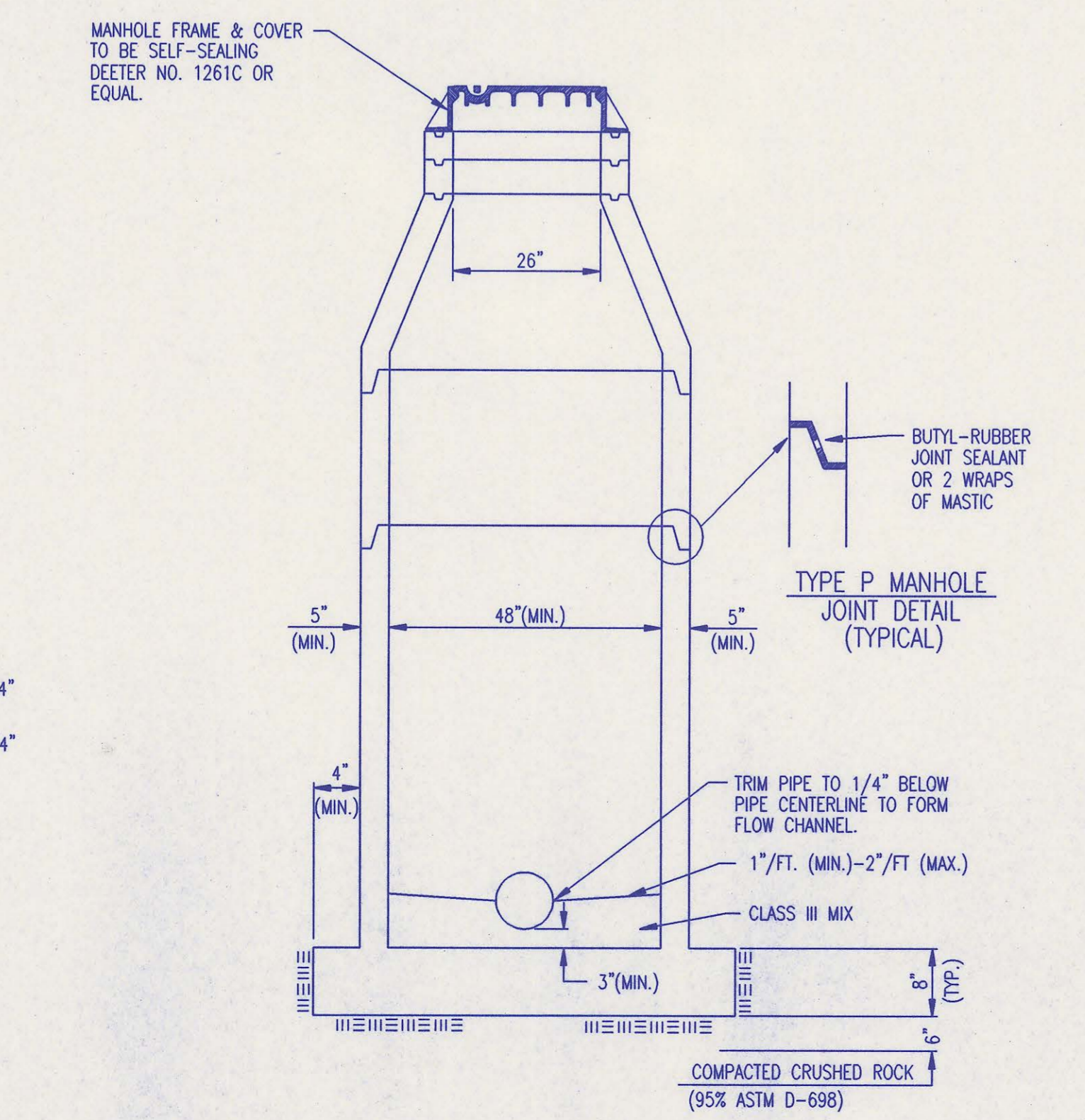
PRECAST STANDARD MANHOLE TYPE "A"



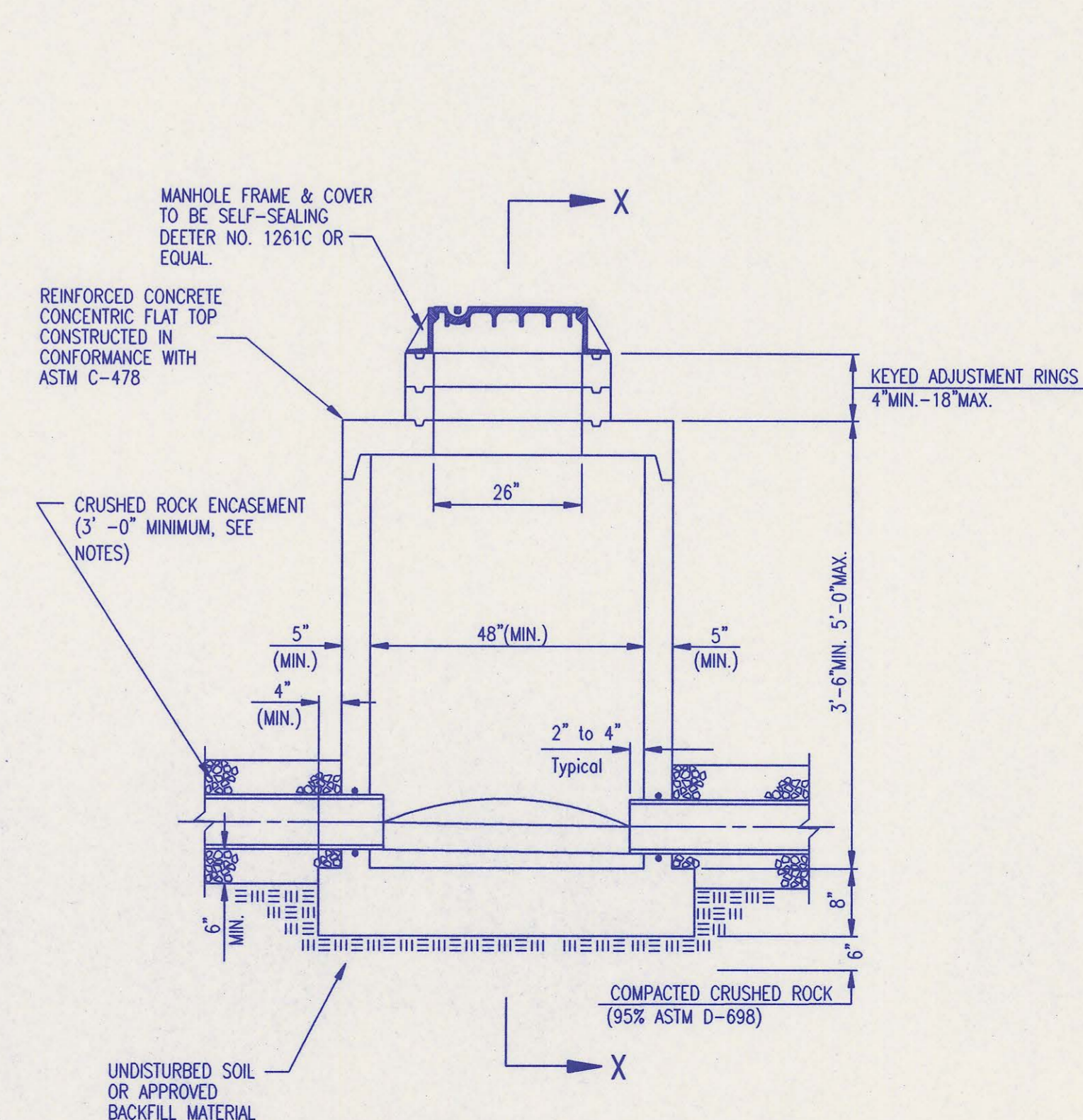
PRECAST INSIDE DROP MANHOLE TYPE "B"



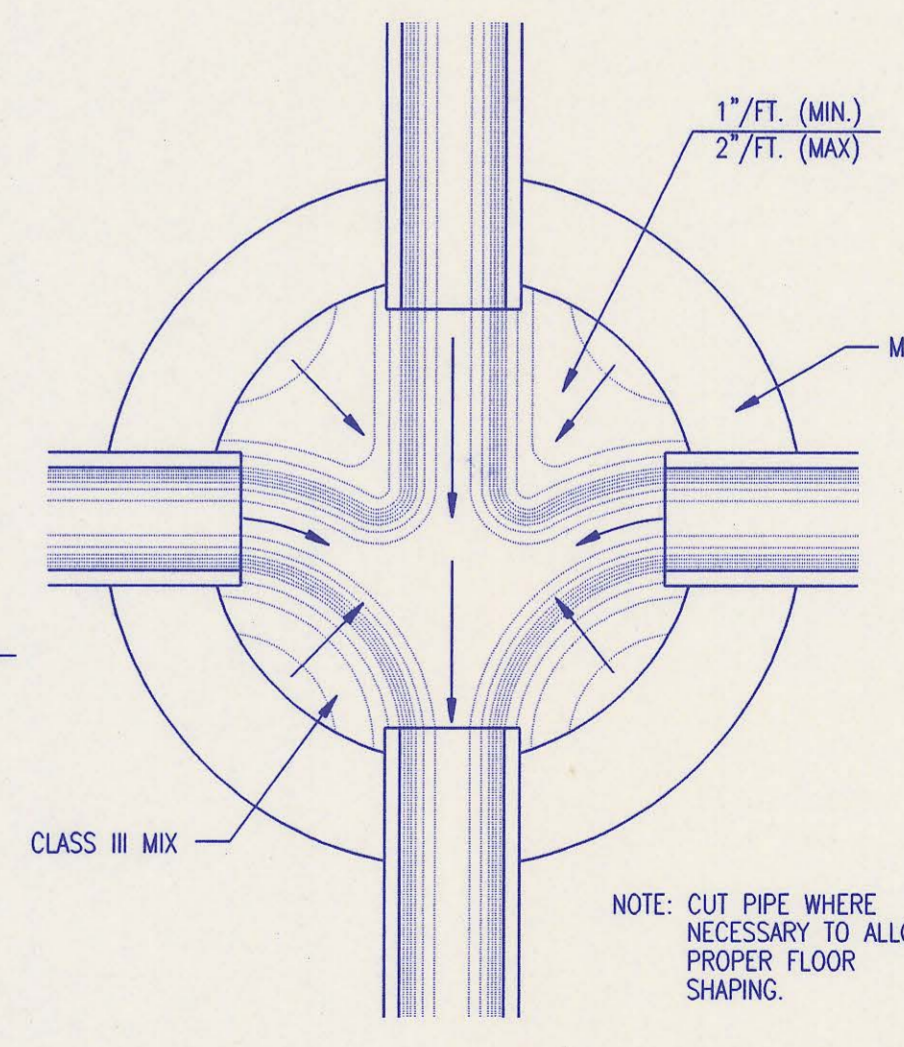
PRECAST OUTSIDE DROP MANHOLE TYPE "C"



SECTION X (TYPICAL)



PRECAST SHALLOW MANHOLE TYPE "D"



TYPICAL MANHOLE FLOOR SHAPING

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

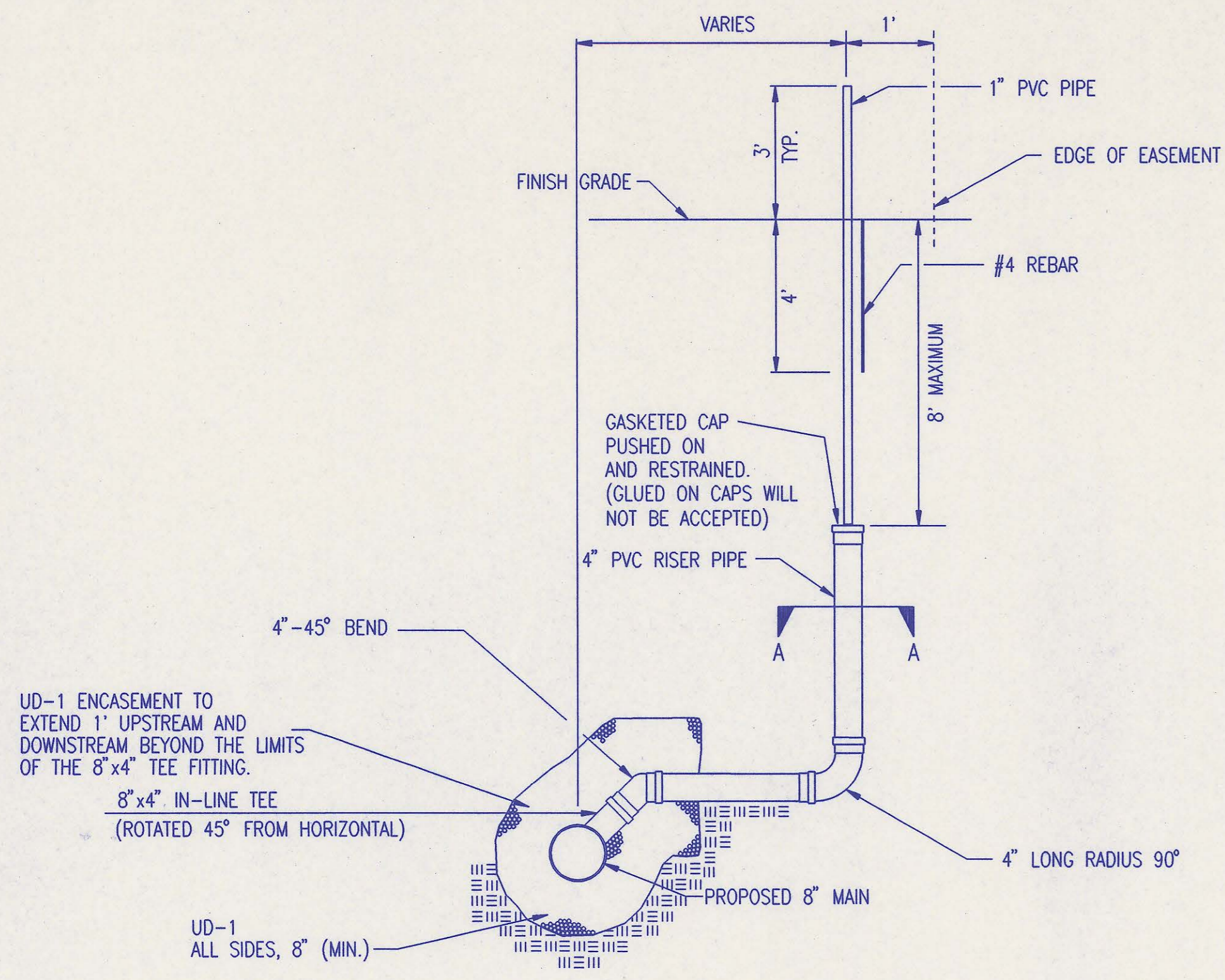
1. IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL OVEREXCAVATE TO A SUITABLE SUBGRADE CONDITION AND CRUSHED ROCK SHALL BE PLACED AND COMPACTED TO THE REQUIRED GRADE.
2. "A-LOK" OR APPROVED EQUAL FLEXIBLE WATER-STOP GASKETS WHICH MEET OR EXCEED THE TEST REQUIREMENTS OF ASTM C-923 SHALL BE INSTALLED TO CONNECT THE SEWER TO THE MANHOLE WALL.
3. 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.
4. GASKETED PIPE CAPS SHALL BE PROVIDED BY THE PIPE SUPPLIER. GULCH OR CEMENTED CAPS WILL NOT BE ACCEPTED.
5. ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
6. 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 SHARPED INVERT.
7. MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5' INSIDE DIAMETER (MIN.).
8. 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.
9. 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. ALL MANHOLES WITH PRECAST BASES SHALL INCLUDE A-LOK GASKETS FOR ALL PIPE PENETRATIONS INTO THE MANHOLES.
10. 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.
11. MANHOLE SECTIONS SHALL BE SUPPLIED WITH RECESSED LIFTING EYES. LIFTING EYE RECESSES 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.
12. 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.).
13. WHERE MANHOLES ARE TO BE BUILT OVER EXISTING SANITARY SEWER LINES, SEWER PIPES SHALL BE SUPPORTED WITH CLASS III CONCRETE ENCASEMENT A MINIMUM OF 3 FEET OUTSIDE THE MANHOLE WALL.
14. CRUSHED ROCK SHALL MEET THE REQUIREMENTS FOR GRANULAR BEDDING MATERIAL, AS OUTLINED IN THE SPECIFICATIONS.

3	Added requirement for pipe extension into MH / Delete field cap	MDK	JULY 1997
2	Revised casting to Deeter Foundry Inc., No. 1261C	MK	12/20/95
1	Add mastic callout at joint	RJ	1/19/95
No.	Revision	By	Date

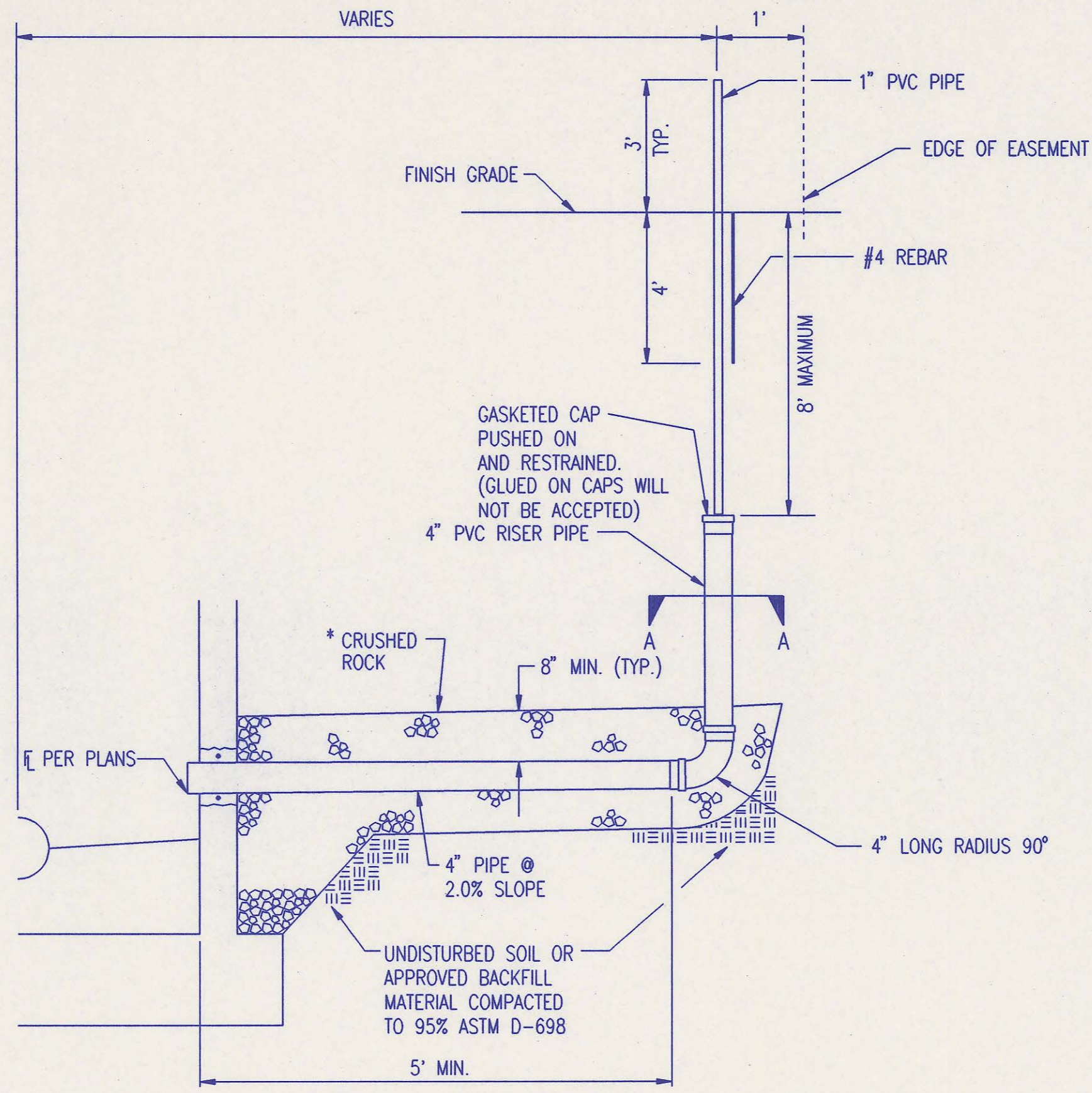
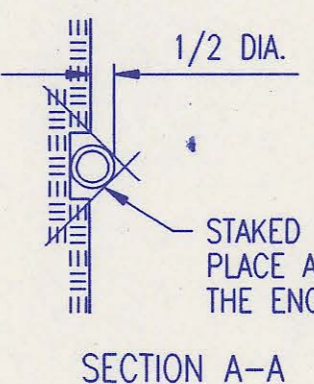
PRECAST MANHOLE DETAILS

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

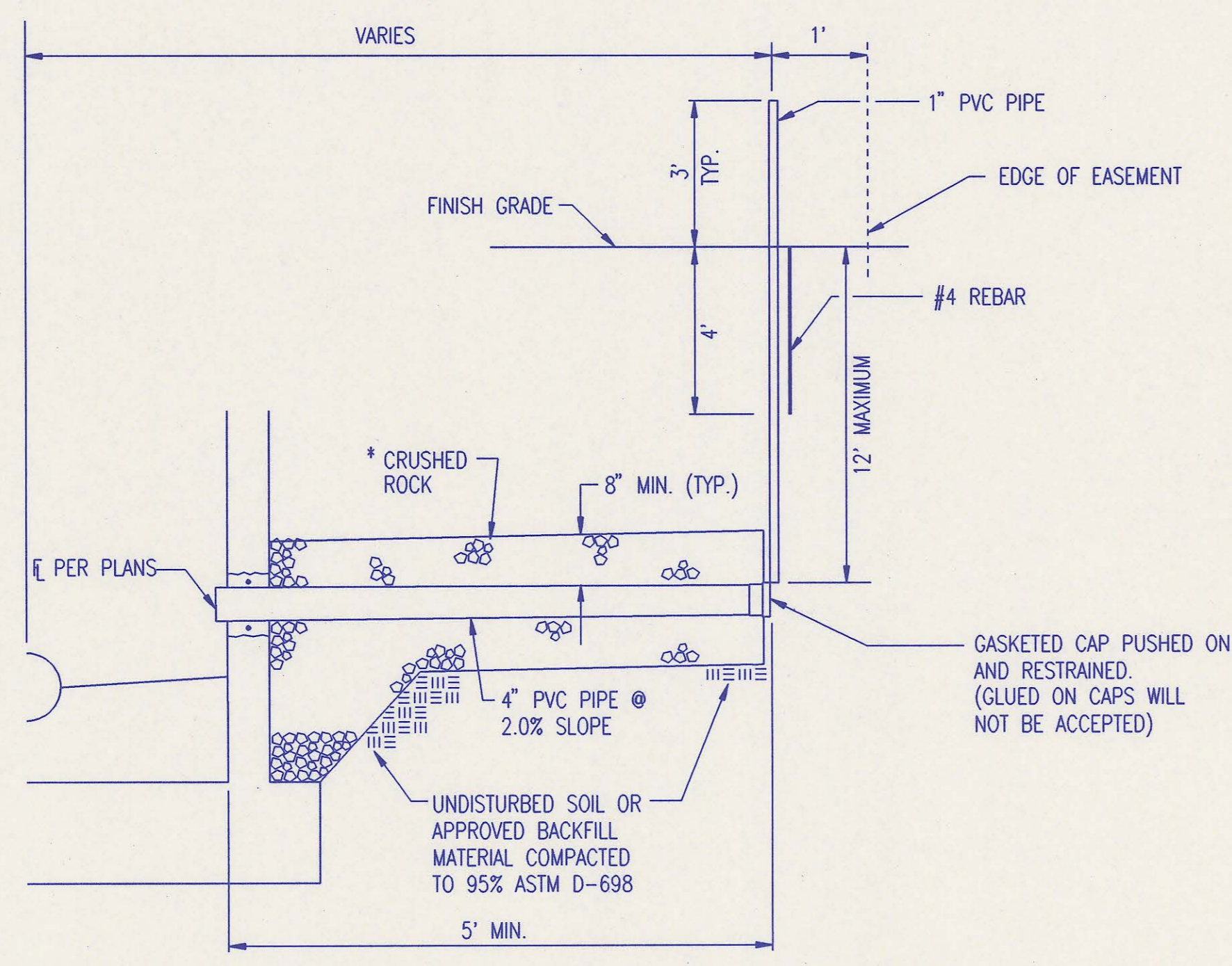
DSNR: MDK OPER. IRB SCALE: 1=1.00 Q:\1997\97601\001\SSPREMH 09-12-1997 4:50:51 pm



TEE SERVICE CONNECTION



MH SERVICE CONNECTION



4" STUB

* CRUSHED ROCK SHALL MEET THE REQUIREMENTS FOR GRANULAR BEDDING MATERIAL, AS OUTLINED IN THE SPECIFICATIONS.

SERVICE CONNECTIONS ARE TO BE INSTALLED WHERE PROPOSED SEWER MAIN IS 12' OR MORE BELOW PROPOSED GROUND OR AS SHOWN IN THE PLANS.

SEWER SERVICE TABLE									
NO.	TYPE	LOCATION				APPROXIMATE LENGTH 4" PIPE	RECORD INFORMATION (TO BE COMPLETED BY PROJECT INSPECTOR)		NO.
		LOT NO.	BLOCK NO.	LATERAL NO.	STATION/DIRECTION		DISTANCE FROM NEAREST MANHOLE UPSTREAM	DISTANCE FROM NEAREST MANHOLE DOWNSTREAM	
1	TEE SERVICE CONNECTION	29	3	90-1	0+25/RT	14'	162'	29'	1
2	TEE SERVICE CONNECTION	28	3	90-1	0+30/LT	4'	148'	42'	2
3	TEE SERVICE CONNECTION	15	5	90-1	2+15/LT	9'	283'	28'	3
4	TEE SERVICE CONNECTION	14	5	90-1	2+50/RT	19'	256'	55'	4
5	TEE SERVICE CONNECTION	16	5	90-1	3+10/LT	9'	191'	120'	5
6	TEE SERVICE CONNECTION	13	5	90-1	4+10/RT	19'	89'	222'	6
7	TEE SERVICE CONNECTION	17	5	90-1	4+20/LT	4'	75'	236'	7
8	MH SERVICE CONNECTION	18	5	90-1	5+01.73/SW	17'	0'	311'	8
9	MH SERVICE CONNECTION	12	5	90-1	5+01.73/NW	5'	0'	311'	9
* 10	WYE TEE SERVICE CONNECTION	26	3	90-2	0+40/RT	9'	340'	40'	10
* 11	WYE TEE SERVICE CONNECTION	25	3	90-2	0+45/LT	20'	344'	55'	11
* 12	WYE TEE SERVICE CONNECTION	1	5	90-2	2+40/LT	10'	151'	237'	12
* 13	WYE TEE SERVICE CONNECTION	24	5	90-2	2+45/RT	18'	138'	251'	13
14	TEE SERVICE CONNECTION	23	5	90-2	3+25/RT	14'	61'	327'	14
15	TEE SERVICE CONNECTION	2	5	90-2	3+35/LT	4'	48'	341'	15
16	TEE SERVICE CONNECTION	23	3	90-3	0+40/RT	19'	248'	41'	16
17	TEE SERVICE CONNECTION	22	3	90-3	0+45/LT	9'	193'	54'	17
18	TEE SERVICE CONNECTION	26	4	90-3	2+30/LT	9'	54'	235'	18
19	TEE SERVICE CONNECTION	27	4	90-3	2+35/RT	19'	40'	249'	19
20	TEE SERVICE CONNECTION	25	4	90-3	3+30/LT	9'	253'	42'	20
21	TEE SERVICE CONNECTION	28	4	90-3	3+35/RT	19'	239'	56'	21
22	TEE SERVICE CONNECTION	24	4	90-3	4+15/LT	9'	162'	133'	22
23	TEE SERVICE CONNECTION	29	4	90-3	4+55/RT	19'	123'	172'	23
24	TEE SERVICE CONNECTION	23	4	90-3	5+05/LT	9'	85'	210'	24
25	TEE SERVICE CONNECTION	30	4	90-3	5+55/RT	19'	33'	262'	25
26	TEE SERVICE CONNECTION	22	4	90-3	6+10/LT	9'	307'	29'	26
* 27	WYE TEE SERVICE CONNECTION	10	3	90-4	4+70/RT	14'	390'	57'	27
* 28	WYE TEE SERVICE CONNECTION	9	3	90-4	5+65/RT	14'	299'	148'	28
* 29	WYE TEE SERVICE CONNECTION	3	3	90-4	10+50/RT	9'	75'	29'	29
* 30	WYE TEE SERVICE CONNECTION	4	3	90-4	10+70/LT	51'	45'	56'	30
* 31	WYE TEE SERVICE CONNECTION	2	3	90-4	12+20/LT	4'	72'	93'	31
32	MH SERVICE CONNECTION	1	3	90-4	12+88.42/SE	5'	0'	164'	32
33	4" STUB	38	3	67-5	6+77.92/SW	28'	0'	100'	33
34	4" STUB	10	5	90-2	10+91.51/NW	5'	0'	368'	34
35	4" STUB	11	5	90-2	10+91.51/NE	15'	0'	368'	35
36	4" STUB	39	4	90-3	16+66.61/NE	33'	0'	406'	36
37	4" STUB	11	3	90-5	1+02.95/N	22'	0'	103'	37

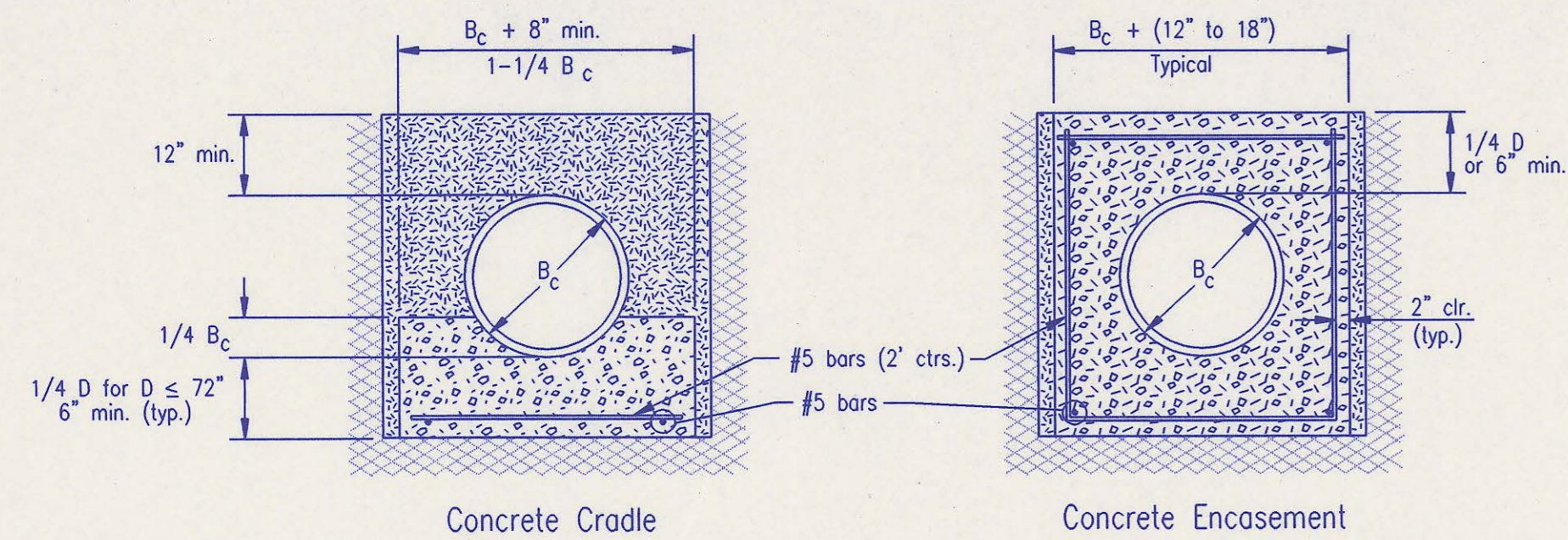
* "WYE" Used in place of "TEE"

THE CONTRACTOR SHALL ADJUST THE LOCATIONS OF THE TEE SERVICE CONNECTIONS SO THAT A MINIMUM OF ONE FULL UN-CUT JOINT OF PIPE SEPARATES IN-LINE TEES (TYPICALLY 13').

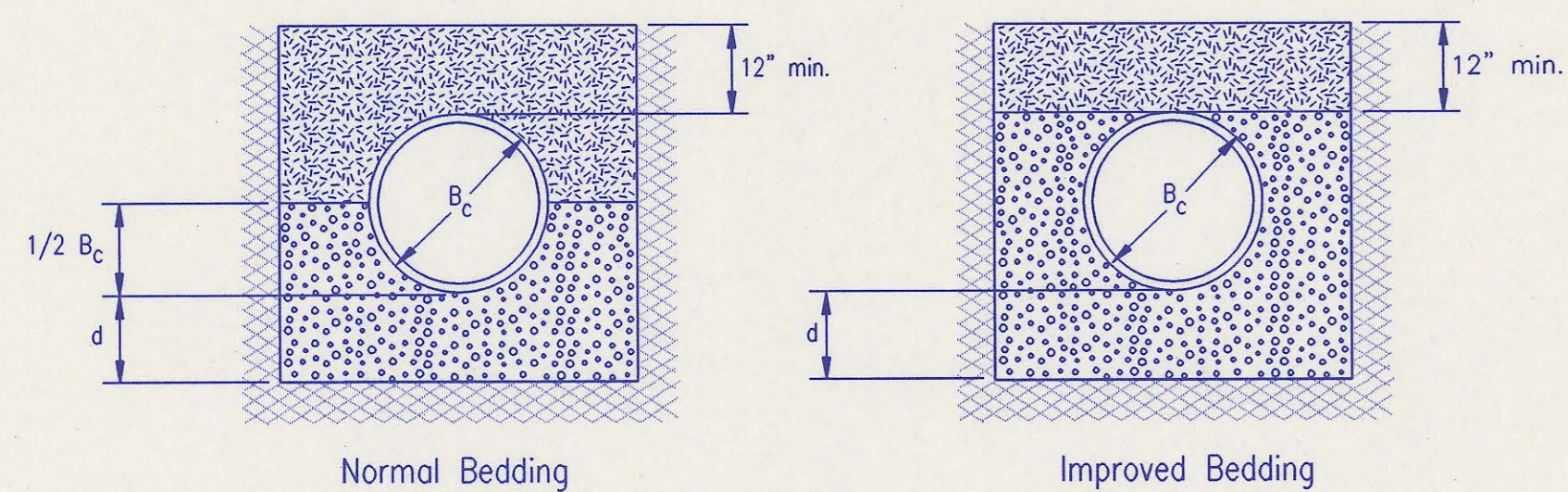
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RECORD DRAWING

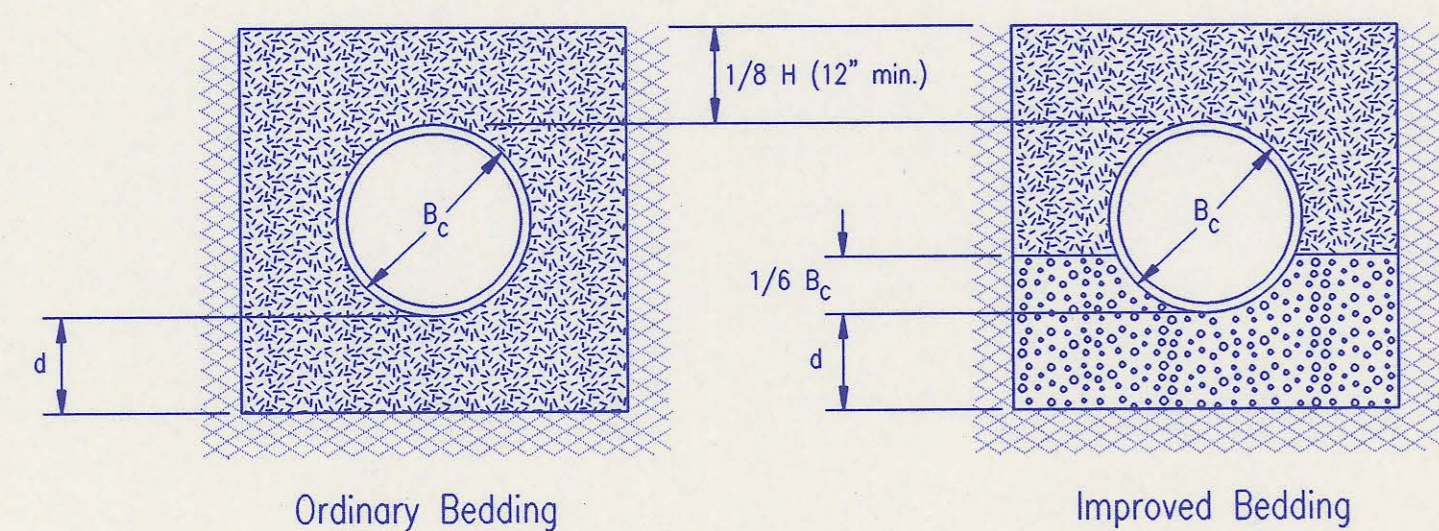
1	Extended services to easement limits, changed Crushed Rock to UD-1 at tee service connection, added 4" Stub Service Connection.	MDK	July 1997
No.	Revision	By	Date
SERVICE CONNECTION DETAILS ADOPTED AS STANDARD DESIGN SEPTEMBER, 1989 BY SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER			



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.

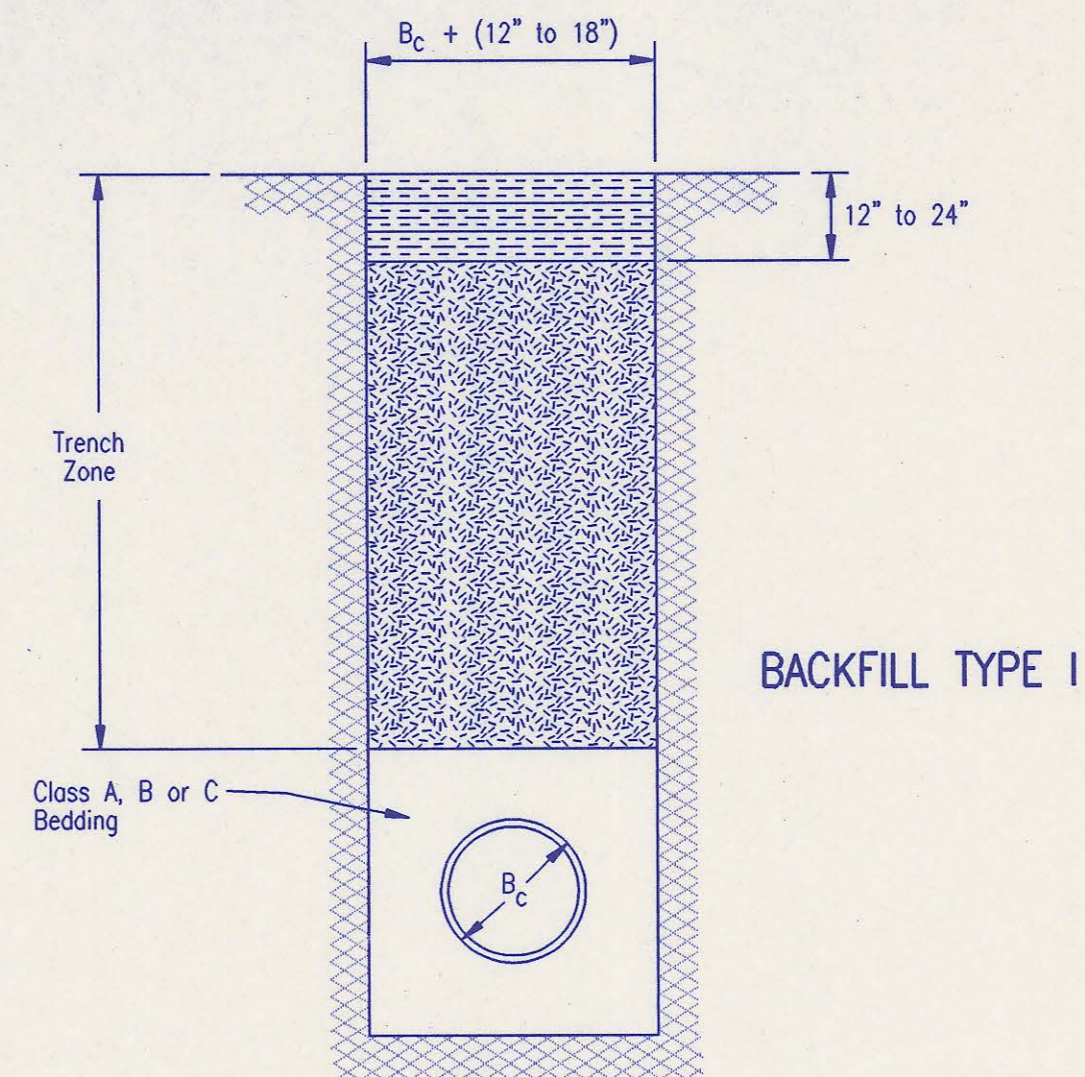
Class A "Concrete Cradle" and/or Class A "Concrete Encasement" is not required unless specified on the plans. However, where unexpected trench conditions exist or improper trenching is performed Class A Bedding may be required as determined by the Engineer.

Class B Bedding shall be used for all flexible pipe.

- Class B Normal Bedding shall be used for PVC Pipe unless wet conditions are encountered.
- 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.

- Class C Ordinary Bedding shall be used for all rigid pipe unless wet conditions are encountered.
- 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

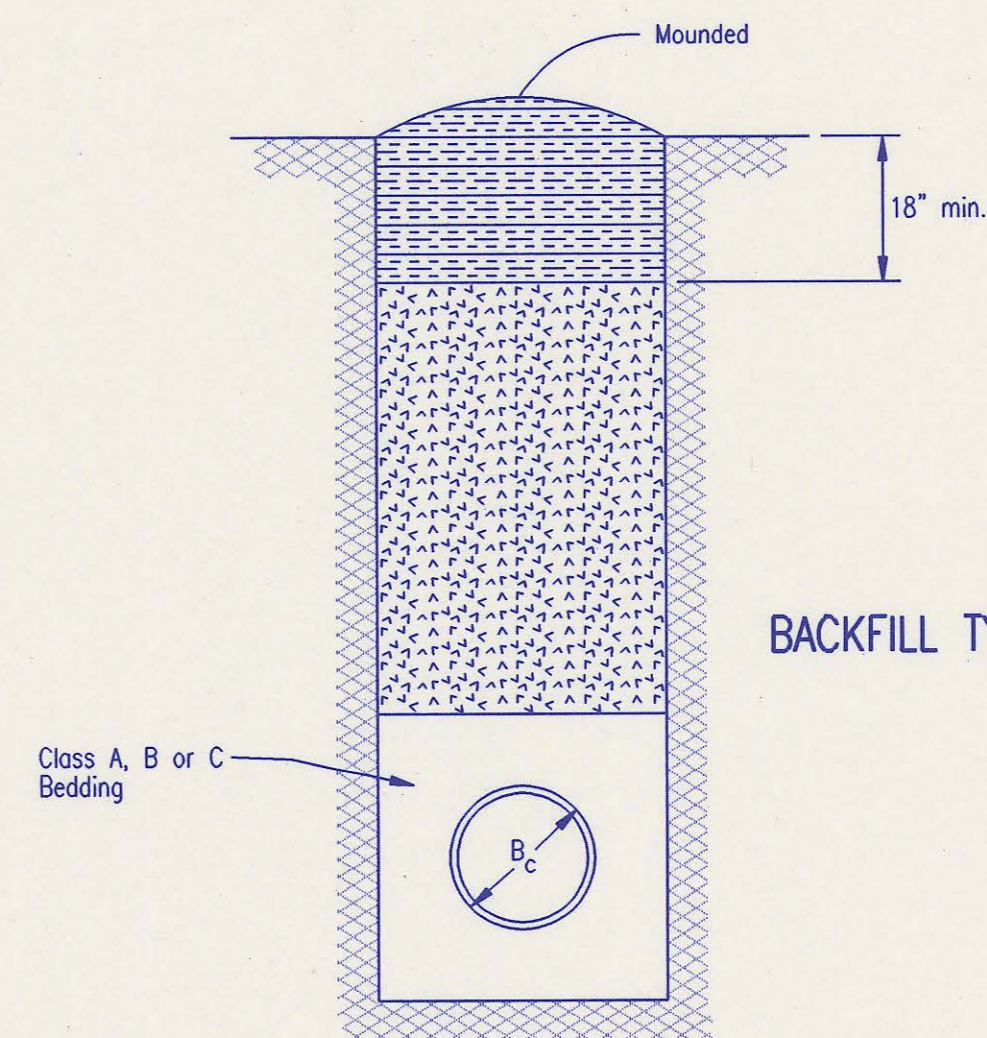
= Uncompacted Earth Backfill

= 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.



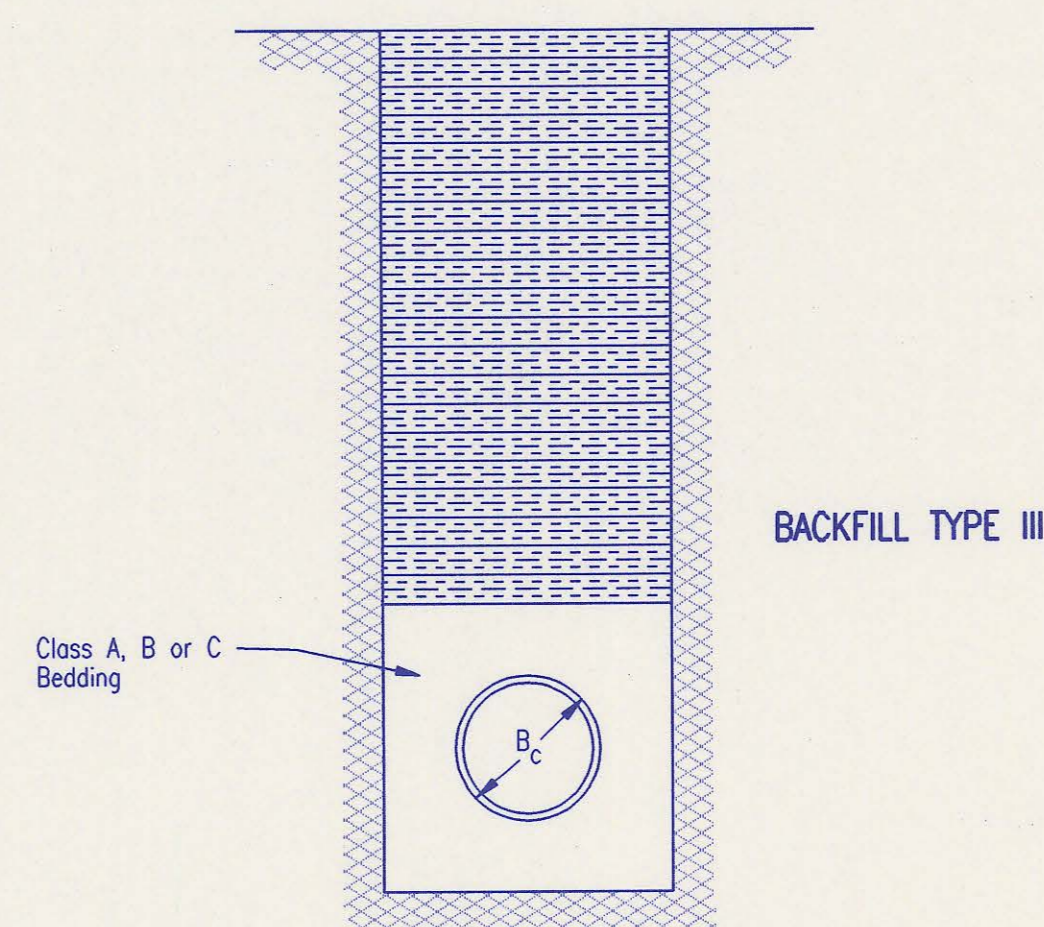
BACKFILL TYPE II

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".



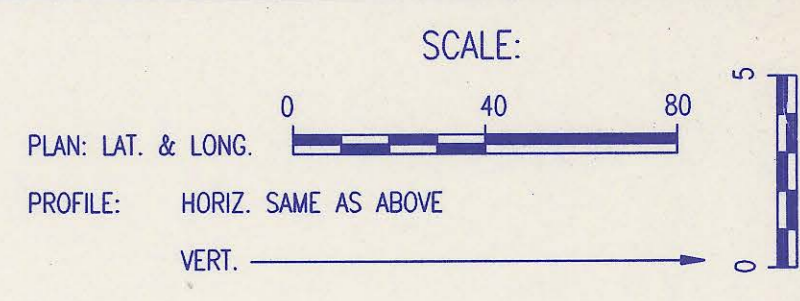
BACKFILL TYPE III

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



Sta. 5+80.10
Existing MH 67-5-2
Core concrete MH wall and install new 8" pipe to MH with an approved waterstop gasket and quick-set hydraulic cement. Construct a minimum of 3' reinforced concrete encasement from MH wall. Reshape invert to provide smooth flow. This work shall be considered subsidiary to the price bid for pipe in place.

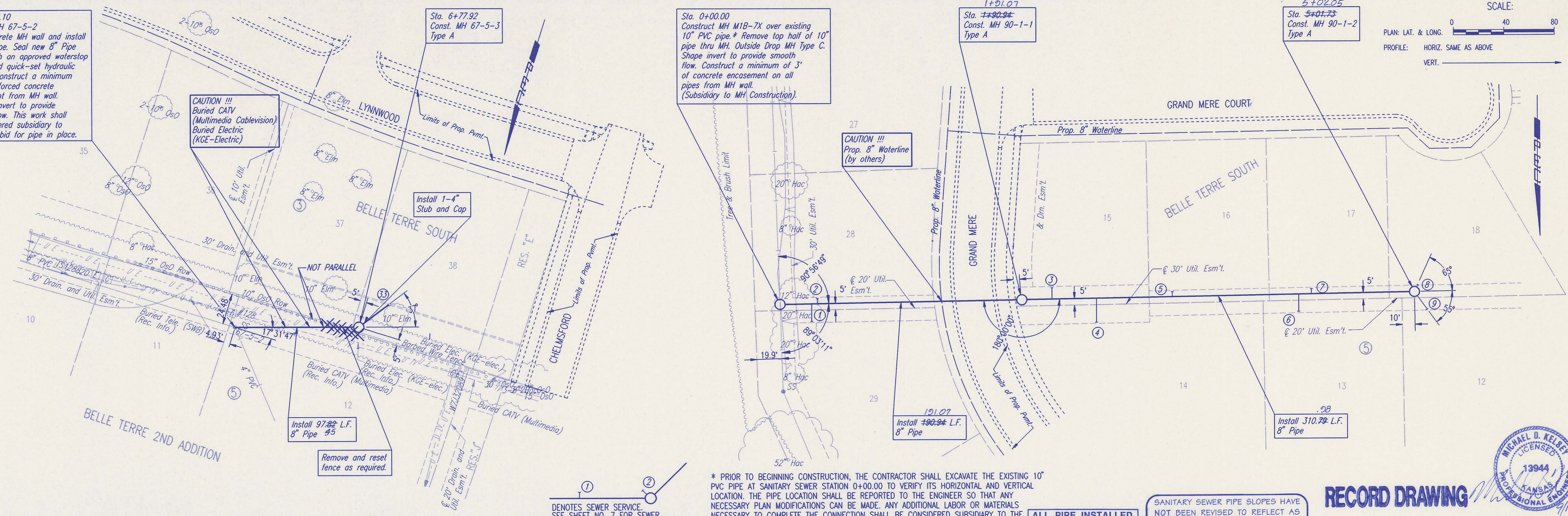
CAUTION !!!
Buried CATV (Multimedia Cablevision)
Buried Electric (KGE-Electric)

Sta. 6+77.92
Const. MH 67-5-3
Type A

Sta. 0+00.00
Construct MH M1B-7X over existing 10" PVC pipe. * Remove top half of 10" pipe thru MH. Outside Drop MH Type C. Shape invert to provide smooth flow. Construct a minimum of 3' of concrete encasement on all pipes from MH wall. (Subsidiary to MH Construction).

1+91.07
Sta. 1+90.94
Const. MH 90-1-1
Type A

5+02.05
Sta. 5+01.73
Const. MH 90-1-2
Type A



① ②
DENOTES SEWER SERVICE. SEE SHEET NO. 7 FOR SEWER SERVICE SCHEDULE AND DETAILS

* PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE THE EXISTING 10" PVC PIPE AT SANITARY SEWER STATION 0+00.00 TO VERIFY ITS HORIZONTAL AND VERTICAL LOCATION. THE PIPE LOCATION SHALL BE REPORTED TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

ALL PIPE INSTALLED IS PVC PIPE.

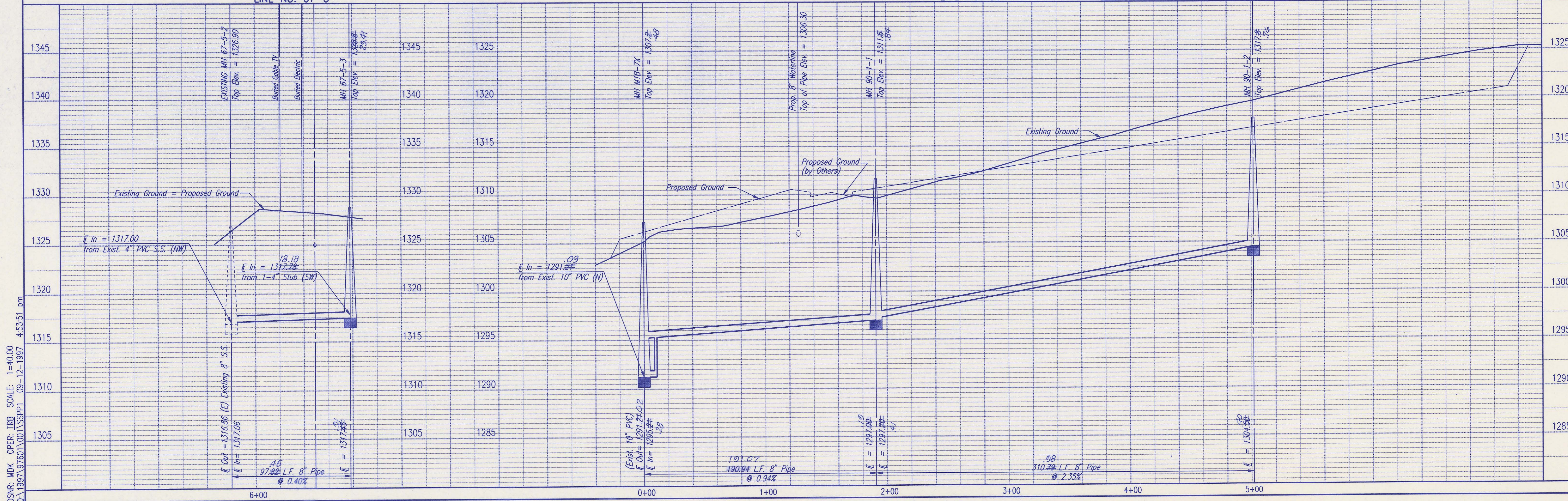
SANITARY SEWER PIPE SLOPES HAVE NOT BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS.

RECORD DRAWING



LINE NO. 67-5

LINE NO. 90-1



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

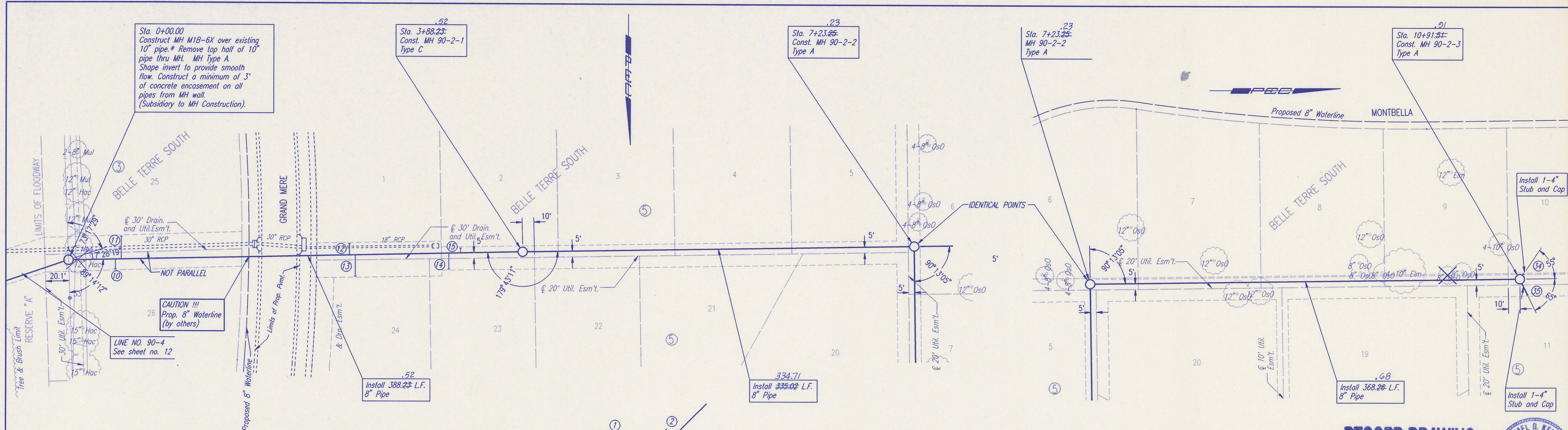
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Job No. 34-97601-1
Date May 1997

Designed By MDK
Drawn By BB, TJS

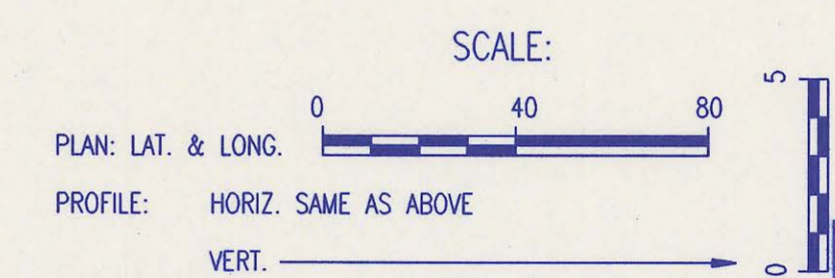
Sheet 8 of 13

LINE NO. 67-5 AND 90-1
SANITARY SEWER MAIN
BELLE TERRE SOUTH (PHASE 1)



* PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE THE EXISTING 10" PVC PIPE AT SANITARY SEWER STATION 0+00.00 TO VERIFY ITS HORIZONTAL AND VERTICAL LOCATION. THE PIPE LOCATION SHALL BE REPORTED TO THE ENGINEER SO THAT ANY NECESSARY PLAN MODIFICATIONS CAN BE MADE. ANY ADDITIONAL LABOR OR MATERIALS NECESSARY TO COMPLETE THE CONNECTION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT.

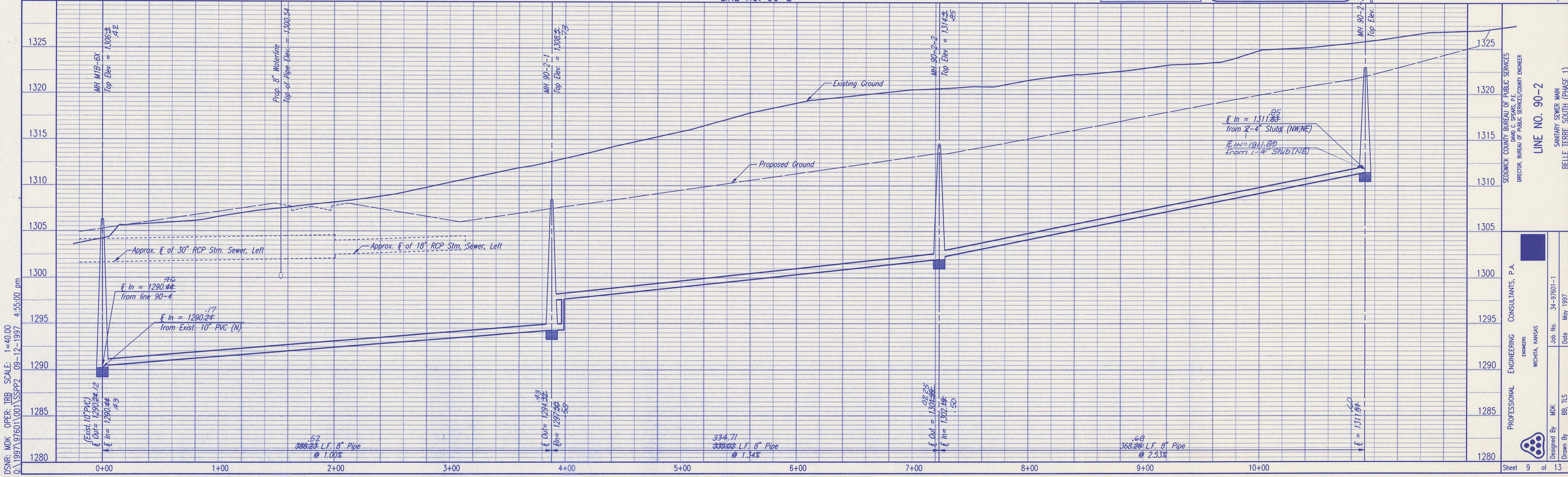
DENOTES SEWER SERVICE. SEE SHEET NO. 10 FOR SEWER SERVICE SCHEDULE AND DETAILS



ALL PIPE INSTALLED IS PVC PIPE.
 SANITARY SEWER PIPE SLOPES HAVE NOT BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS.

RECORD DRAWING
 MICHAEL D. KELSEY
 LICENSED PROFESSIONAL ENGINEER
 13944
 KANSAS

LINE NO. 90-2



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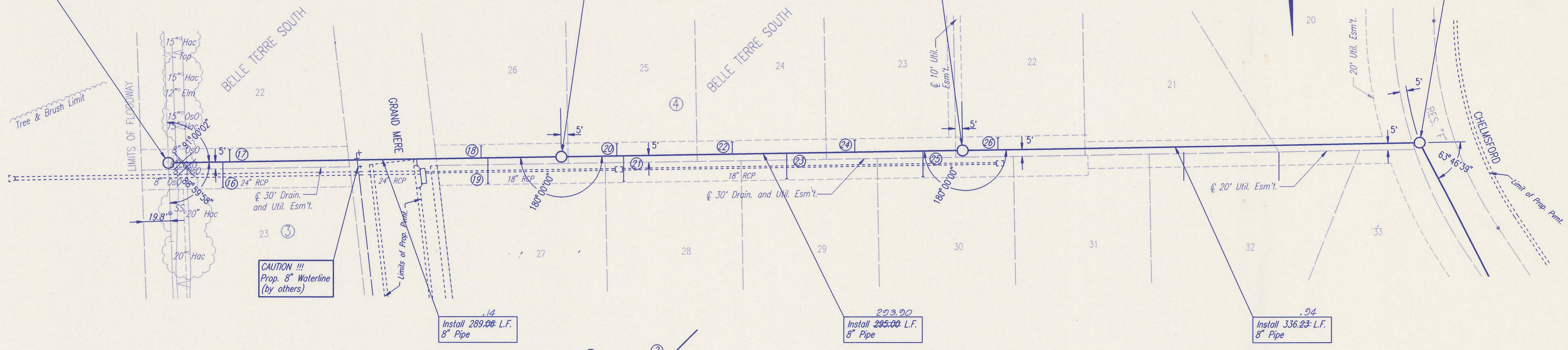
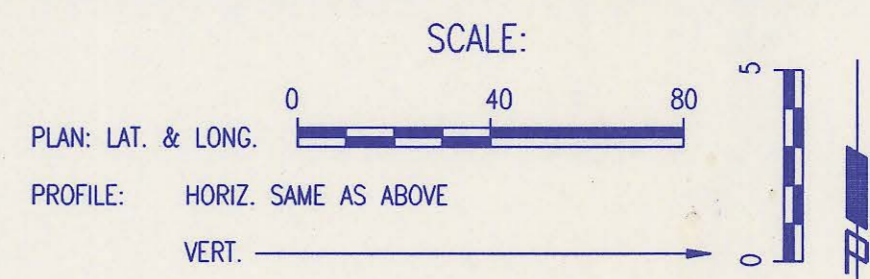
SEDMONCK COUNTY BUREAU OF PUBLIC SERVICES
 DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER
 LINE NO. 90-2
 SANITARY SEWER MAIN
 BELLE TERRE SOUTH (PHASE 1)
 PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 WICHITA, KANSAS
 Job No. 34-97801-1
 Date May 1997
 Designed By MDK
 Drawn By BB, TJS
 Sheet 9 of 13

Sta. 0+00.00
Construct MH M1B-5X over existing 10" pipe. Remove top half of 10" pipe thru MH. Inside Drop MH Type B. Shape invert to provide smooth flow. Construct a minimum of 3' of concrete encasement on all pipes from MH wall. (Subsidiary to MH Construction).

Sta. 2+89.06
Const. MH 90-3-1 Type A

Sta. 5+84.06
Const. MH 90-3-2 Type A

Sta. 9+20.29
Const. MH 90-3-3 Type A



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① DENOTES SEWER SERVICE. SEE SHEET NO. 7 FOR SEWER SERVICE SCHEDULE AND DETAILS

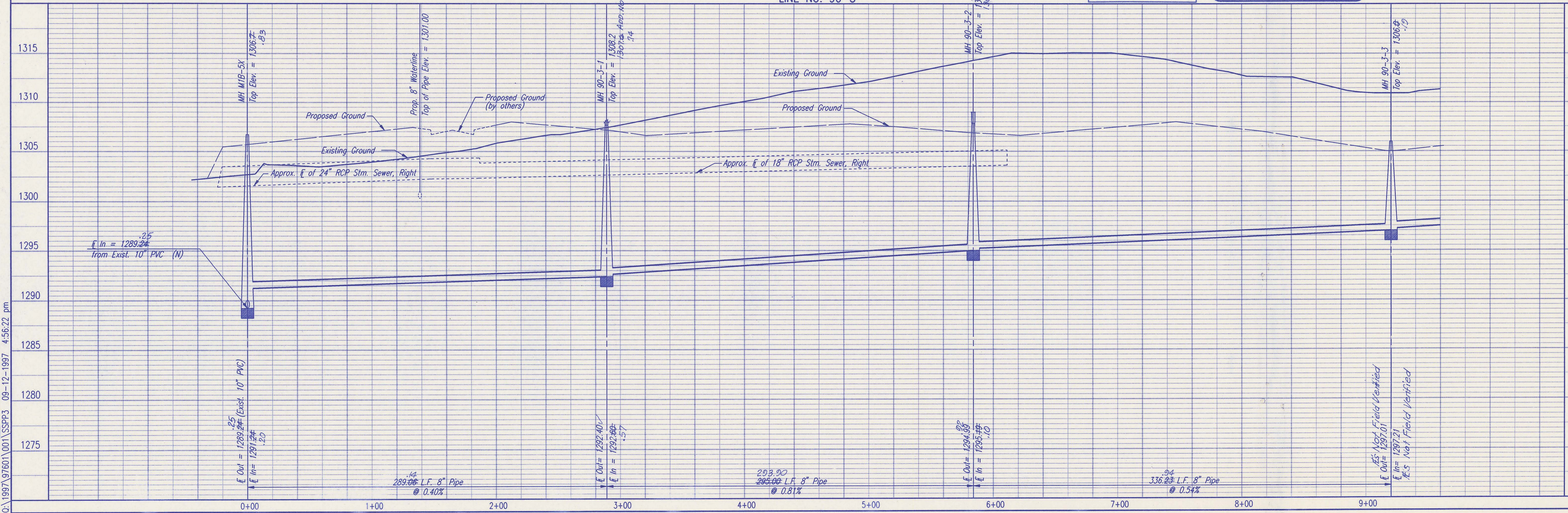
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SANITARY SEWER PIPE SLOPES HAVE NOT BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS.

RECORD DRAWING



LINE NO. 90-3



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

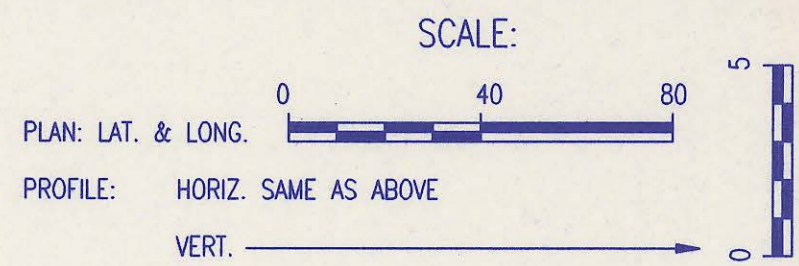
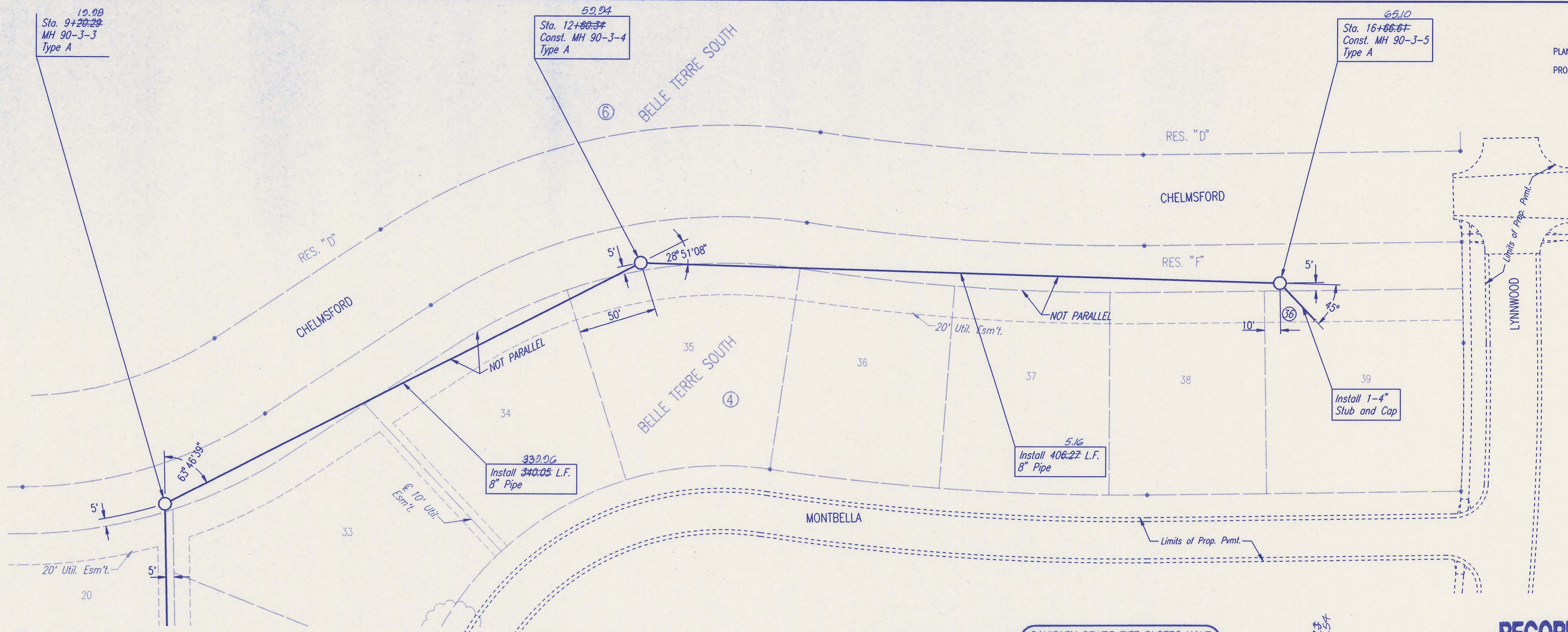
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

LINE NO. 90-3
SANITARY SEWER MAIN
BELLE TERRE SOUTH (PHASE 1)

Designed By: MDK
Drawn By: BB, TJS

Job No.: 34-97601-1
Date: May 1997

Sheet 10 of 13



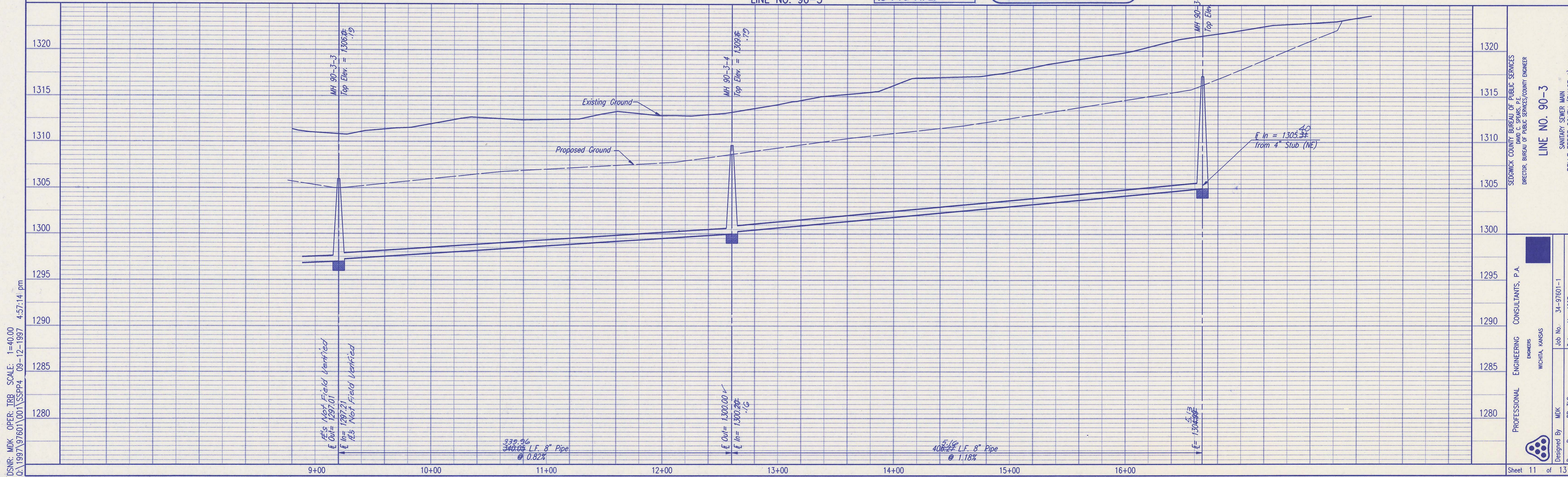
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 DENOTES SEWER SERVICE. SEE SHEET NO. 10 FOR SEWER SERVICE SCHEDULE AND DETAILS



RECORD DRAWING

ALL PIPE INSTALLED IS PVC PIPE.
 SANITARY SEWER PIPE SLOPES HAVE NOT BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS.

LINE NO. 90-3



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

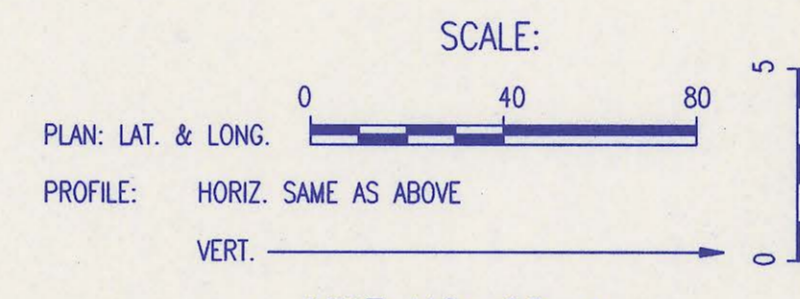
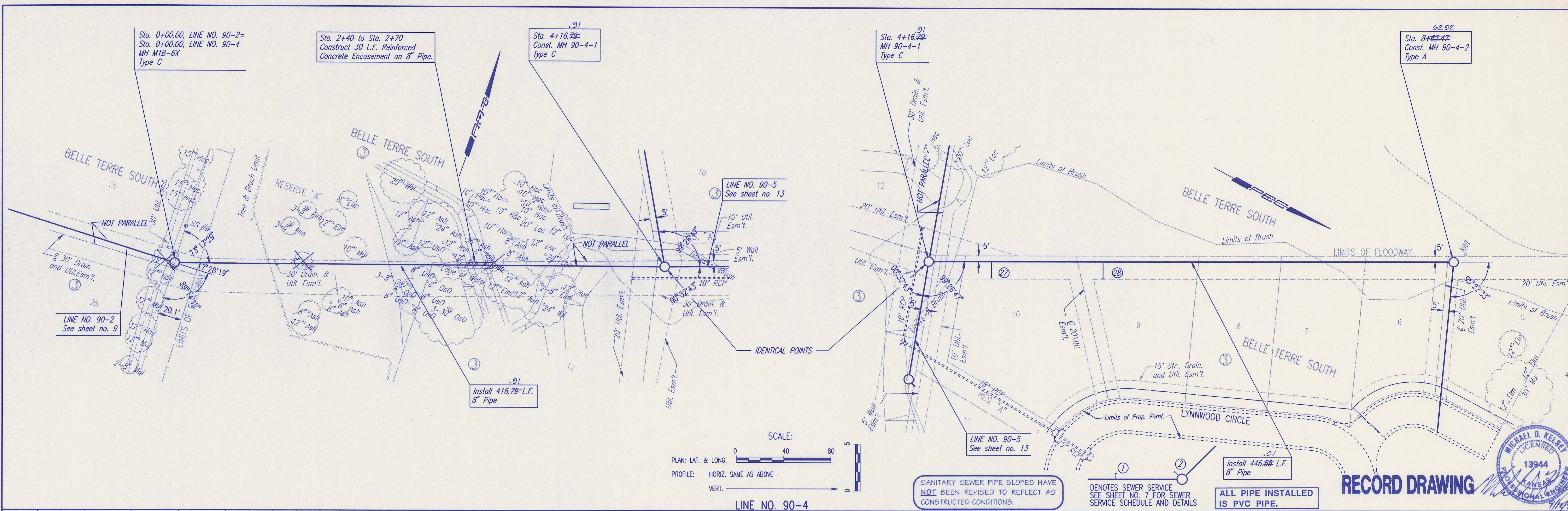
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS

Job No. 34-97601-1
 Date May 1997

Designed By: MDK
 Drawn By: BB, TJS

LINE NO. 90-3
 SANITARY SEWER MAIN
 BELLE TERRE SOUTH (PHASE 1)

Sheet 11 of 13

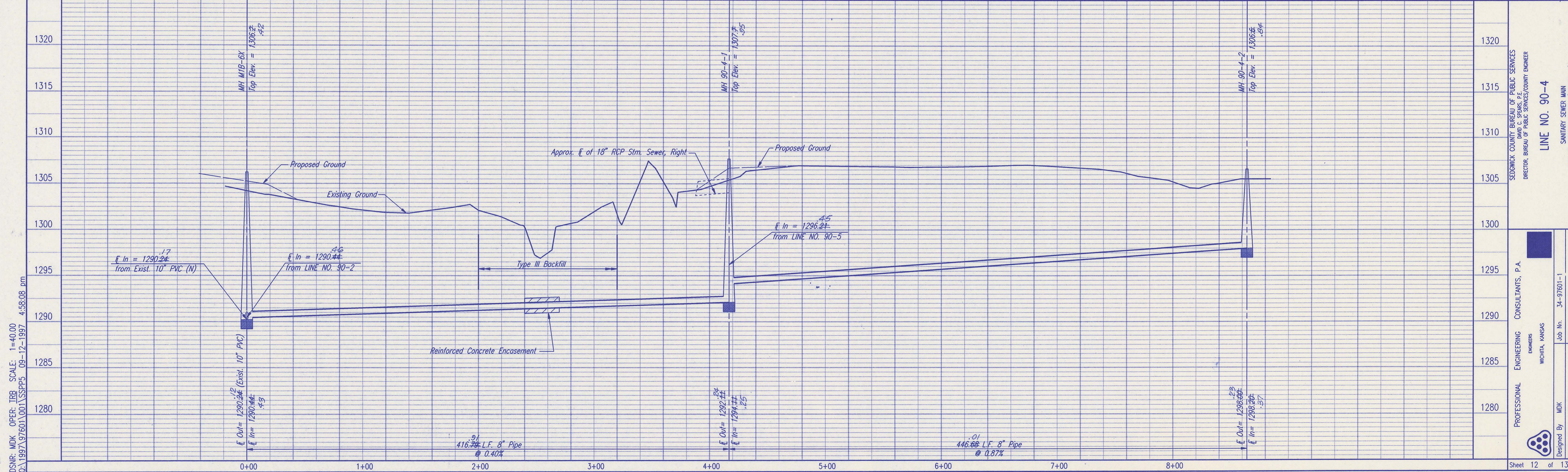


SANITARY SEWER PIPE SLOPES HAVE NOT BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS.

DENOTES SEWER SERVICE. SEE SHEET NO. 7 FOR SEWER SERVICE SCHEDULE AND DETAILS.

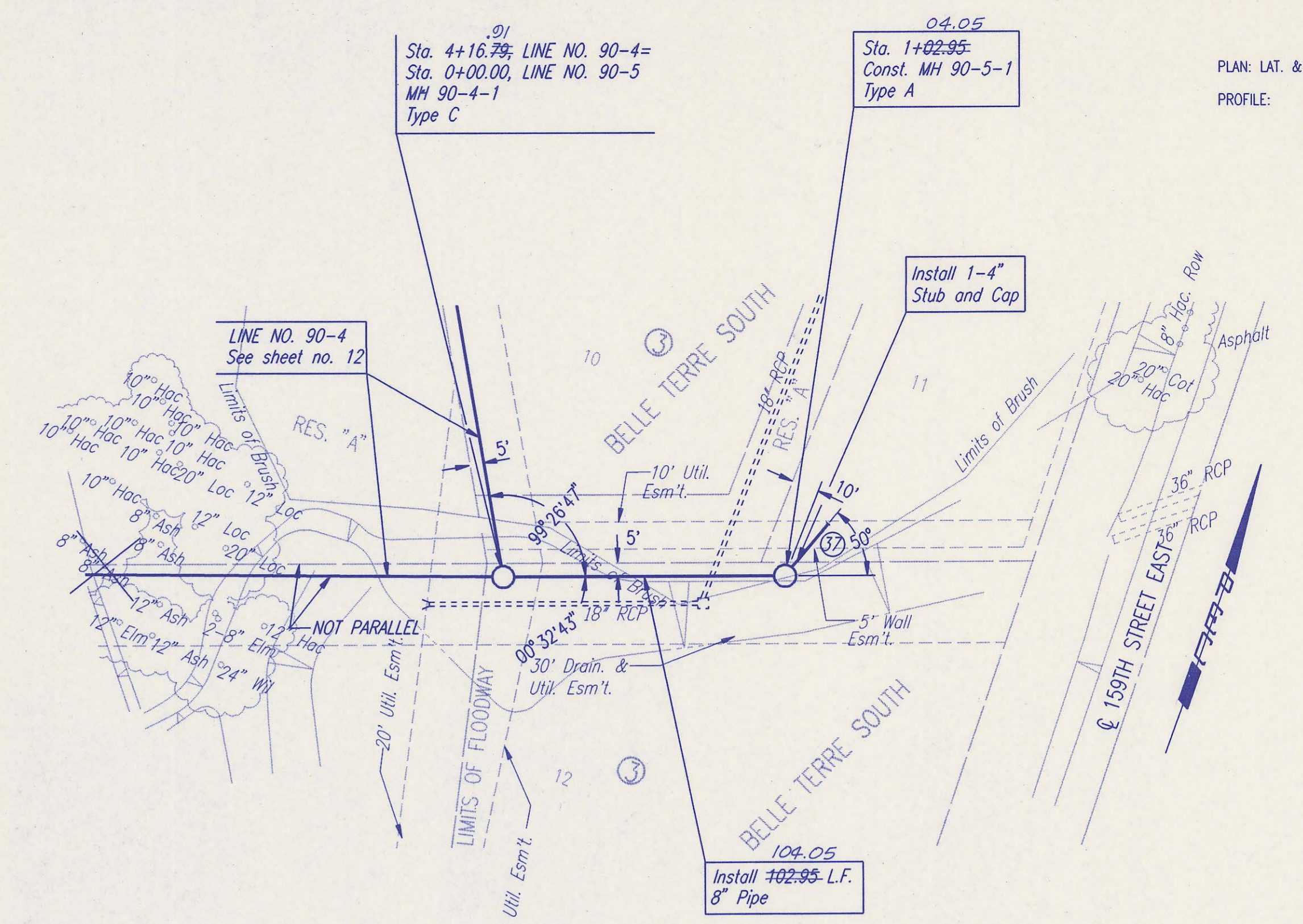
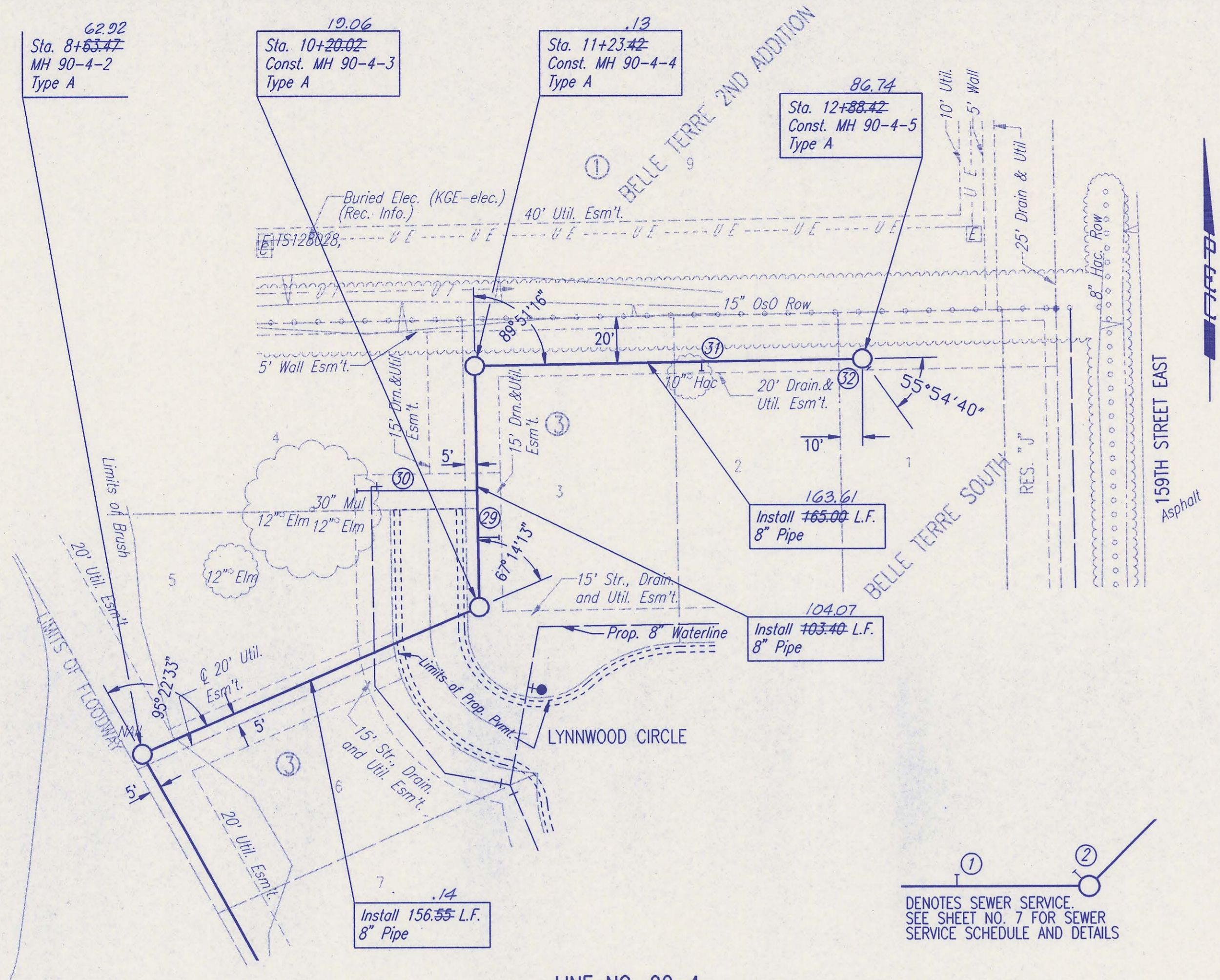
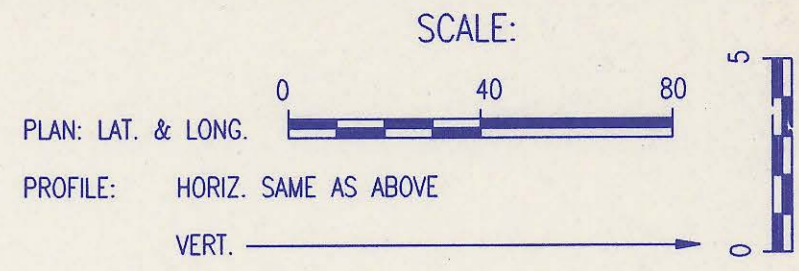
ALL PIPE INSTALLED IS PVC PIPE.

RECORD DRAWING



DSNR: MDK OPER: ITRB SCALE: 1=40.00
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SHEET 12 OF 13
 DESIGNED BY: MDK
 DRAWN BY: BB, TJS
 DATE: May 1997
 JOB NO.: 34-97601-1
 PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 WICHITA, KANSAS
 SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
 DIRECTOR: BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER
LINE NO. 90-4
 SANITARY SEWER MAIN
 BELLE TERRE SOUTH (PHASE 1)



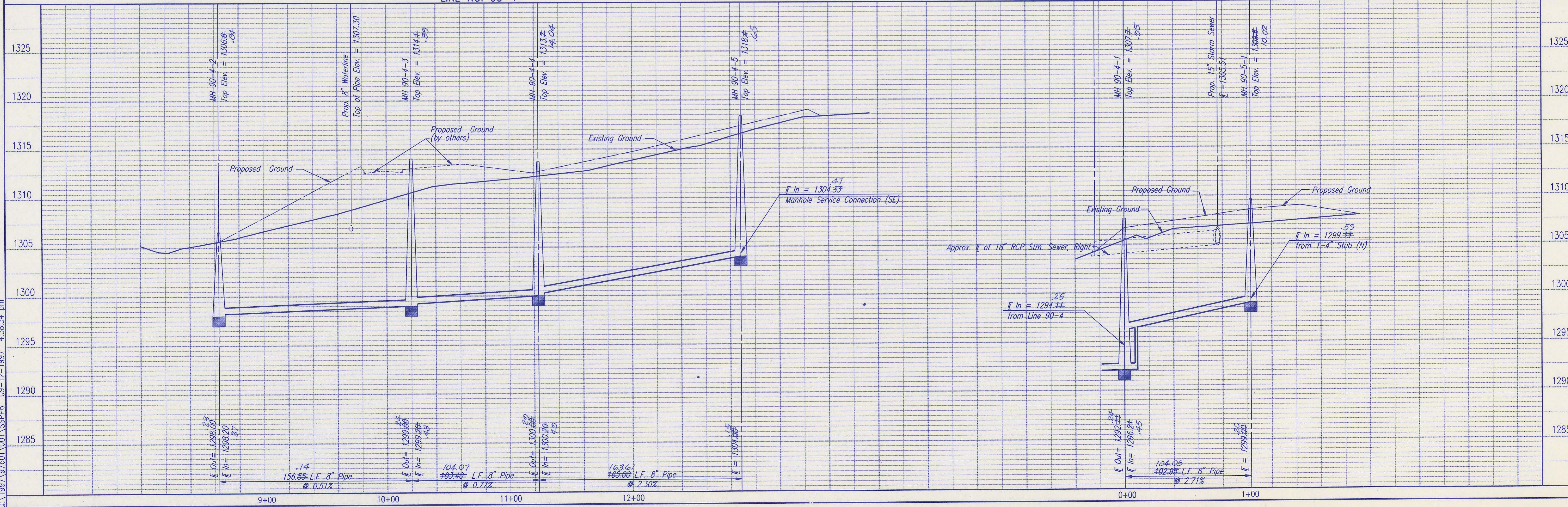
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DENOTES SEWER SERVICE
SEE SHEET NO. 7 FOR SEWER
SERVICE SCHEDULE AND DETAILS

ALL PIPE INSTALLED
IS PVC PIPE.

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

RECORD DRAWING



DSNR: MDK OPER: TRB SCALE: 1"=40.00
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SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES
 DIRECTOR: BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

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

Designed By: MDK
 Drawn By: BB, TLS

Job No: 34-97601-1
 Date: May 1997

LINE NO. 90-4 AND 90-5
 SANITARY SEWER MAIN
 BELLE TERRE SOUTH (PHASE 1)

Sheet 13 of 13