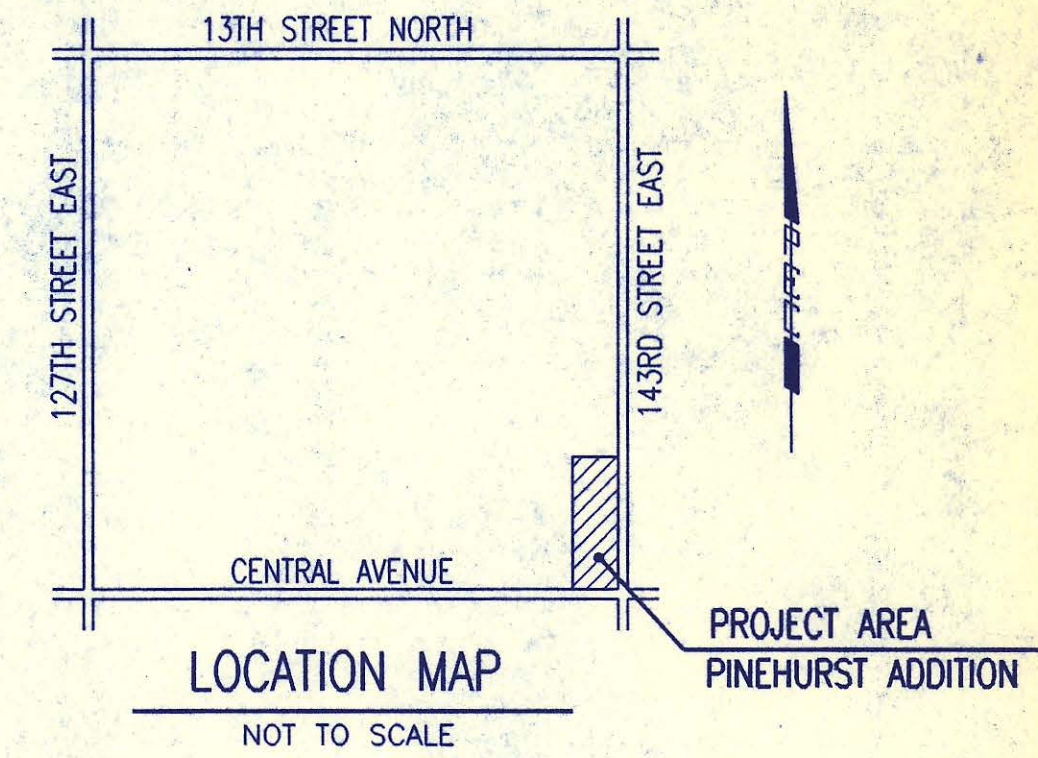


4 MC-103

# BUREAU OF PUBLIC SERVICES



### INDEX OF SHEETS

SHEET NO. 1	TITLE SHEET
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SHEET NO. 3	PLAT
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SHEET NO. 6	SEWER SERVICE DETAILS
SHEET NO. 7-9	PLAN PROFILE
SHEET NO. 10	EASEMENT GRADING PLAN

CONSTRUCTION PLANS FOR  
**SANITARY SEWER IMPROVEMENTS**  
 IN  
**PINEHURST ADDITION**  
 TO SEDGWICK COUNTY, KANSAS

### RECORD DRAWING

PROJECT ENG. MDK DATE 5/8/96  
 RES. ENG. \_\_\_\_\_ DATE \_\_\_\_\_

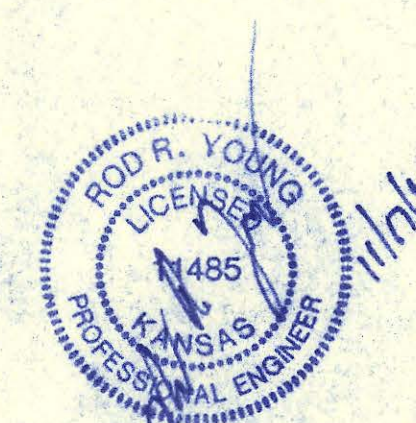
APPROVED:

*David C. Spears*  
 DAVID C. SPEARS, P.E.  
 DIRECTOR OF PUBLIC SERVICES/COUNTY ENGINEER  
 DATE: 11/20/95

APPROVED:

*Walter B. Schmitt*  
 CHAIRMAN, BOARD OF COUNTY COMMISSIONERS  
 DATE: 11/21/95

FILED IN THE OFFICE OF  
 THE SEDGWICK COUNTY CLERK  
*Susan J. Smith*  
 COUNTY CLERK  
 DATE: Nov. 21, 1995



## NOVEMBER 1995

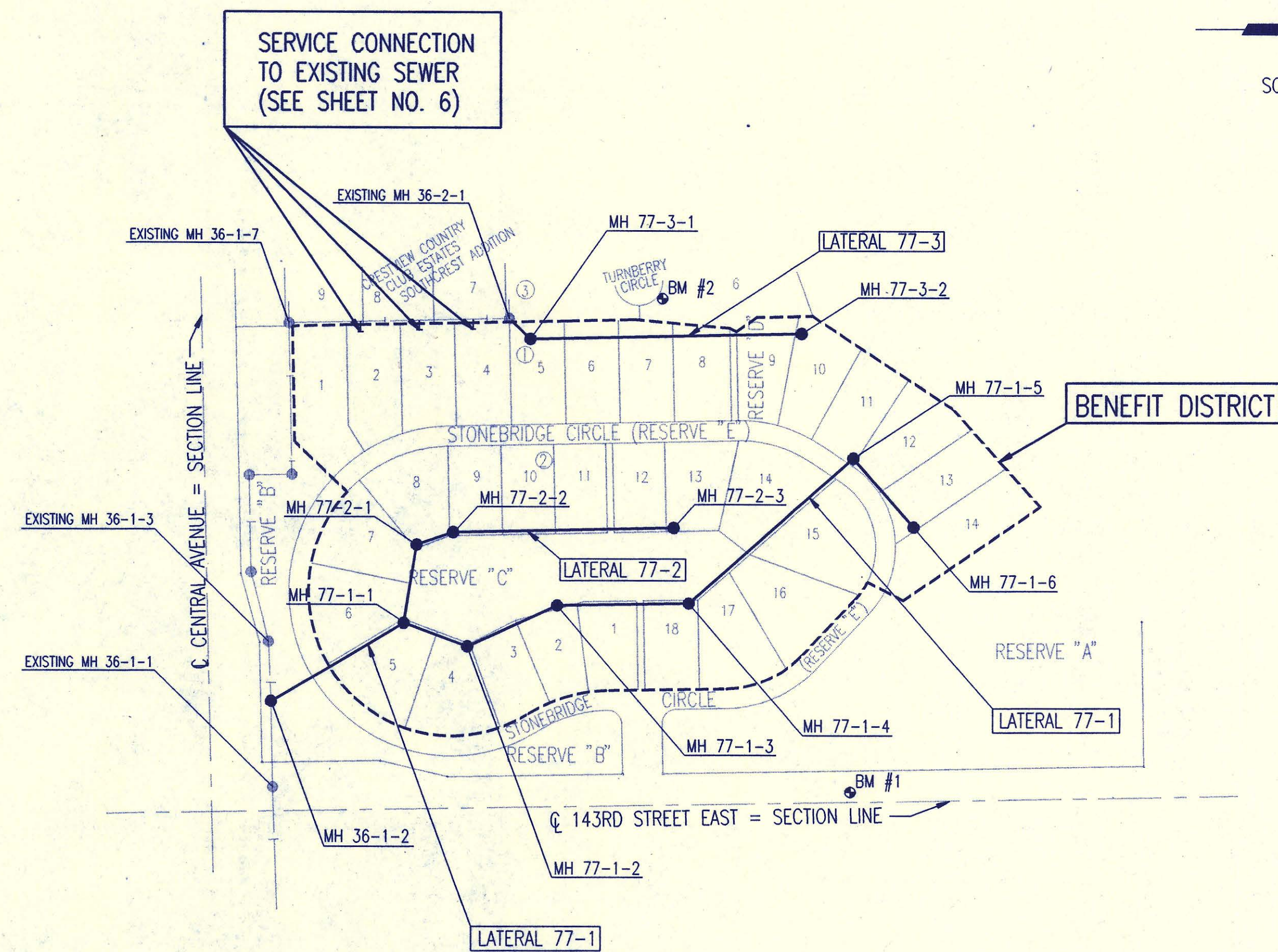
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.  
 ENGINEERS  
 WICHITA, KANSAS

4 MC-103

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 887-2470 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, TELEVIEWED, 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 TELEVIEWING.
- 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.
- EXCESS EXCAVATED MATERIAL AND OTHER DEBRIS SHALL BE WASTED ON SITES TO BE PROVIDED BY THE CONTRACTOR AS APPROVED BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
- 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 AFOREMENTIONED 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.
- POSITIVE DRAINAGE SHALL BE PROVIDED FOR ALL AREAS ON OR NEAR SPOIL AREAS. NATURAL DRAINAGE WAYS SHALL BE MAINTAINED.
- THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS.
- THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY ADJUTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF 10 DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION IN THE VICINITY OF THE AFFECTED PROPERTY.
- ALL TRENCH BACKFILL SHALL BE EITHER TYPE I OR TYPE III UNLESS NOTED OTHERWISE. TYPE I BACKFILL SHALL BE USED AT ALL EXISTING AND PROPOSED STREETS, SEE SHT. 5 OF 10.
- 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:  
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES  
1250 S. SENECA  
WICHITA, KS 67213  
MR. JIM WEBER  
(316) 383-7901
- 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.
- ALL GRASSED AREAS DISTURBED BY CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE REPLANTED WITH GRASS AND FERTILIZED IN ACCORDANCE WITH THE SPECIFICATIONS FOR SUCH WORK. ALL COSTS FOR SEEDING AND FERTILIZING SHALL BE CONSIDERED SUBSIDIARY TO "SITE CLEARING AND RESTORATION".
- PROPERTIES WITHIN THE PROJECT LIMITS MAY HAVE UNDERGROUND SPRINKLER SYSTEMS IN PUBLIC RIGHT-OF-WAY WHICH CONFLICT WITH NEW CONSTRUCTION. CONTRACTOR WILL BE REQUIRED TO REMOVE SUCH IMPROVEMENTS SHOULD THEY NOT BE REMOVED BY THEIR OWNER AT THE TIME OF CONSTRUCTION OF THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SALVAGE ALL SPRINKLER HEADS AND/OR VALVES AND GIVE SUCH MATERIAL TO THEIR OWNER. PORTIONS OF UNDERGROUND SPRINKLER SYSTEMS NOT IN CONFLICT WITH NEW CONSTRUCTION SHALL BE PROTECTED FROM DAMAGE AND SHALL REMAIN IN PLACE. ALL WORK IN CONNECTION WITH UNDERGROUND SPRINKLER SYSTEMS SHALL BE CONSIDERED AS SUBSIDIARY TO PRICE BID FOR PIPE IN PLACE.
- APPROVED EXCESS EXCAVATED MATERIAL FROM CONSTRUCTION ACTIVITIES SHALL BE WASTED AT A LOCATION APPROVED BY THE DEVELOPER AND IN ACCORDANCE WITH NOTE 17.
- THE CONTRACTOR SHALL NOT BURY MANHOLES THAT HAVE RIM ELEVATIONS WHICH ARE LOWER THAN EXISTING GROUND AT THE MANHOLE. THE GROUND AROUND SUCH MANHOLES AND ALONG THE SEWER ALIGNMENT SHALL BE BACKFILLED TO THE APPROXIMATE ELEVATION OF THE PROPOSED GROUND ELEVATION SHOWN ON THE PLAN/PROFILE SHEETS. THE CONTRACTOR SHALL PROVIDE DRAINAGE AWAY FROM THESE MANHOLES AND SEWER LINES BY CONSTRUCTION OF TEMPORARY DITCHES OR SLOPING THE GROUND AS REQUIRED. ALL COSTS FOR THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO THE INSTALLED BID PRICE FOR MANHOLES OR PIPE.
- 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".

SCALE: 1"=150'



BENCH MARKS

BM #1 - CHISELED "I" ON TOP OF SOUTH END OF WEST GUARD RAIL OF RCB ON 143rd ST. EAST, APPROXIMATELY 940' NORTH OF CENTRAL  
ELEV. = 1317.03 MSL

BM #2 - CHISELED "I" ON TOP OF CURB AT SOUTHEAST CORNER OF CONCRETE DRIVEWAY TO HOUSE NO. 563 AT EAST END OF CUL-DE-SAC (TURNBERRY CIRCLE)  
ELEV. = 1330.37 MSL

**RECORD DRAWING**  
MDK PROJ. ENG. 5/8/96 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			
<b>SANITARY SEWER KEY MAP</b> SANITARY SEWER IMPROVEMENTS PINEHURST ADDITION			
<b>PROFESSIONAL ENGINEERING CONSULTANTS, P.A.</b> ENGINEERS WICHITA, KANSAS			
Designed by	MDK, RRY	Job No.	34-95727
Drawn by	TLS, JDS	Date	November 1995
			Sht. 2 of 10

# PINEHURST ADDITION TO SEDGWICK COUNTY, KANSAS

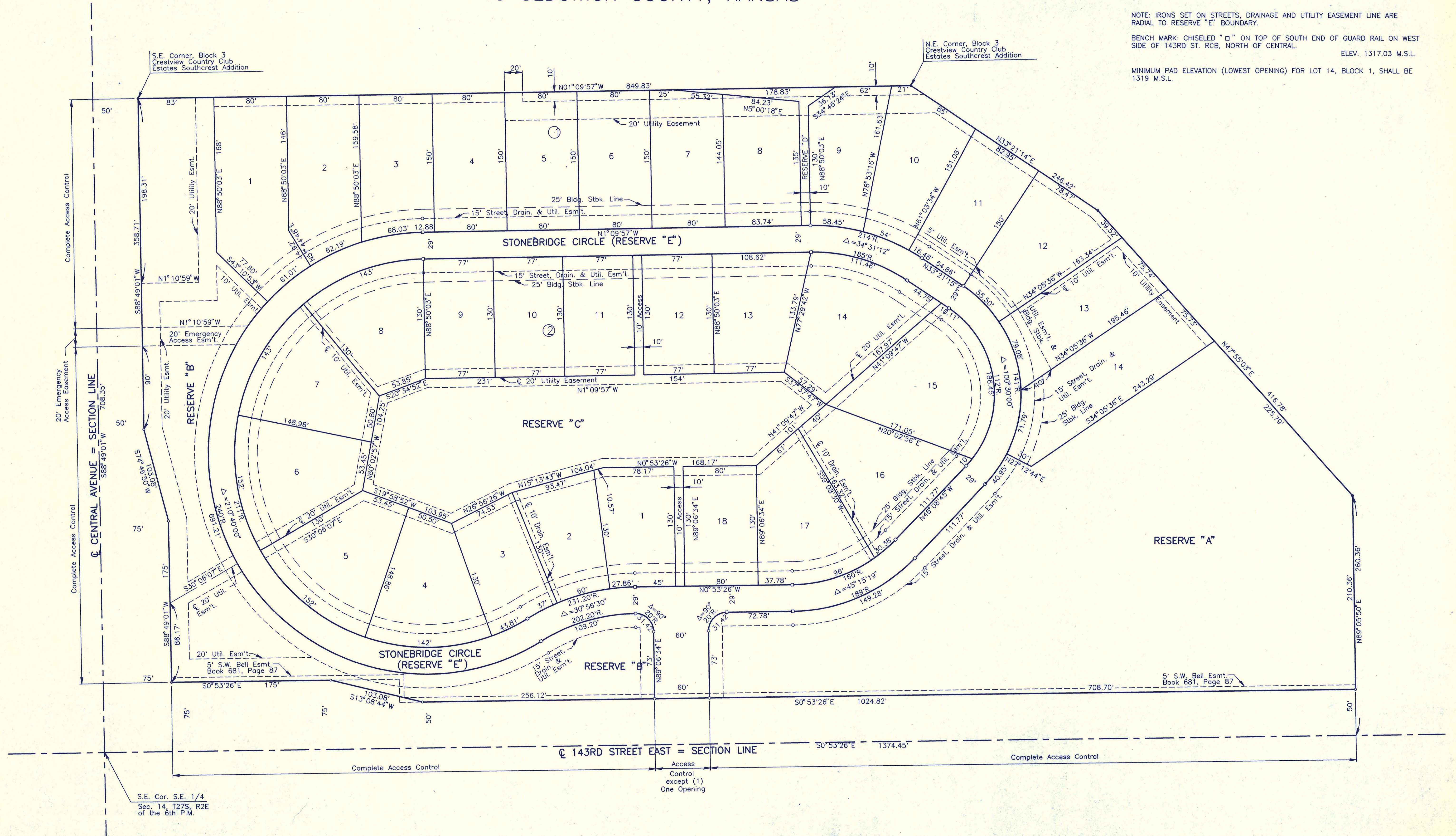
SCALE: 1"=50'

- = IRON FOUND
- = NOT SET
- = 3/4" IRON SET

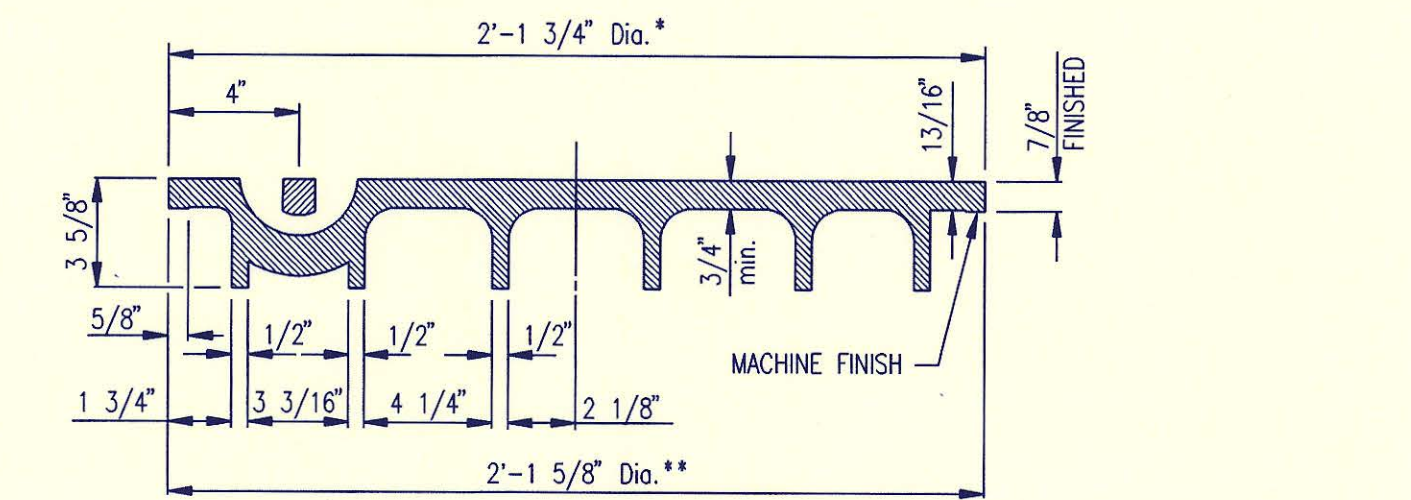
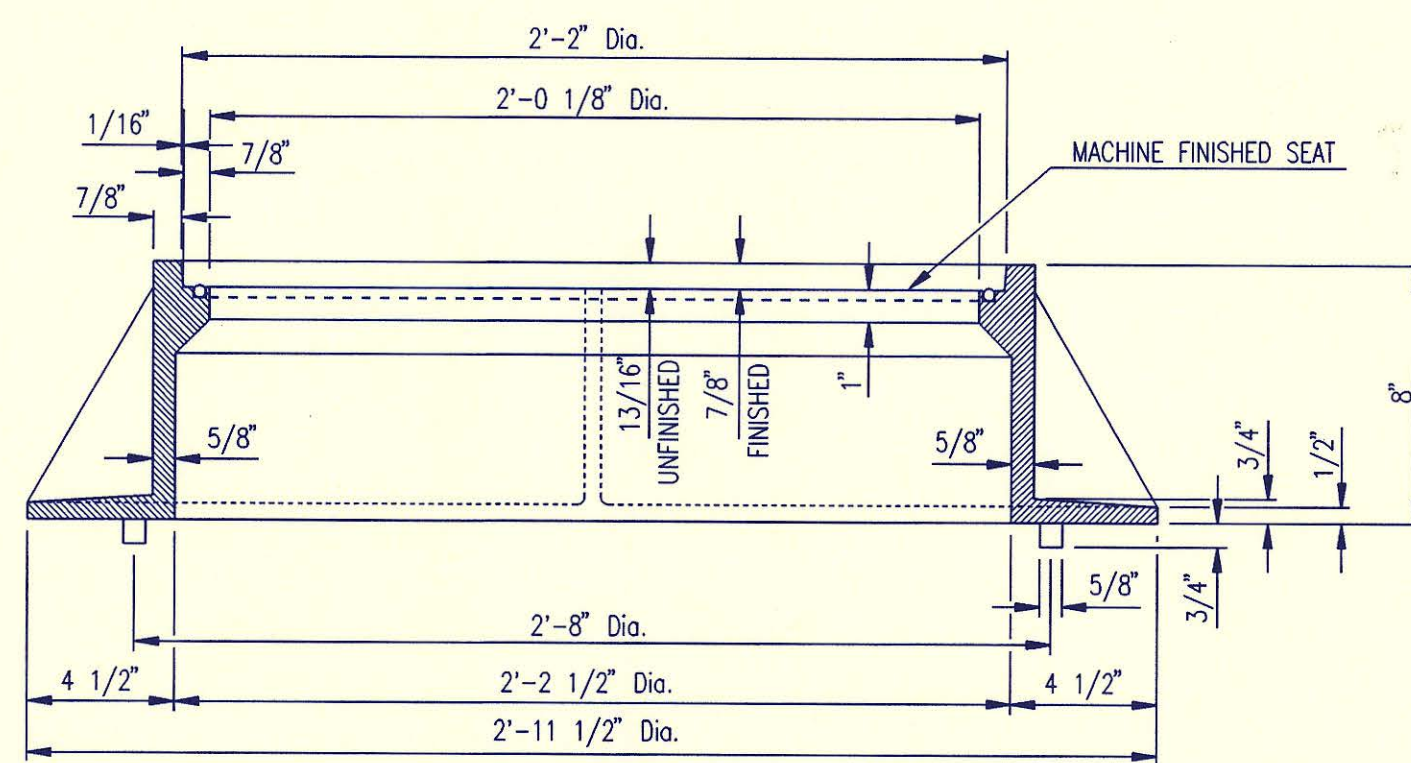
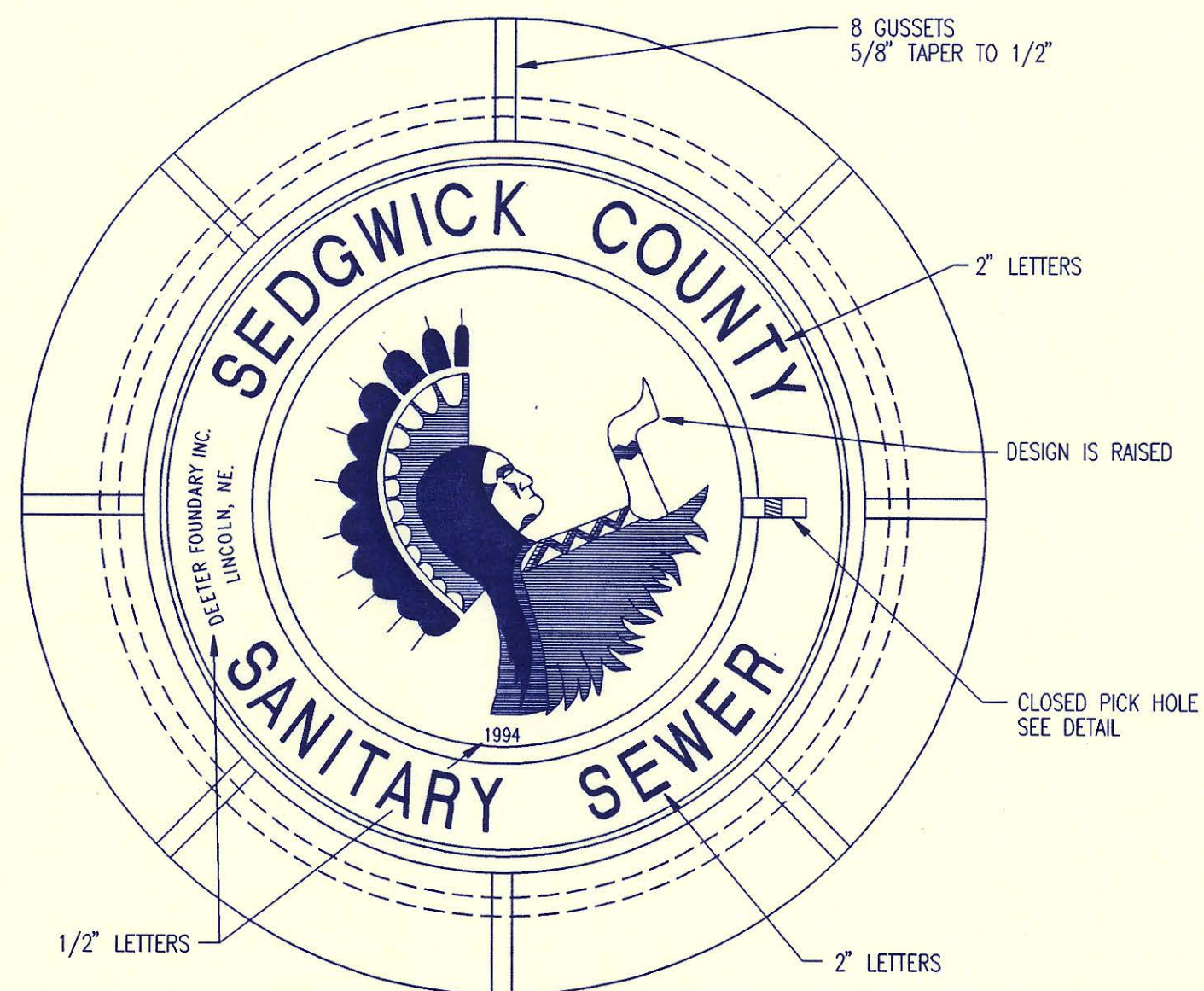
NOTE: IRONS SET ON STREETS, DRAINAGE AND UTILITY EASEMENT LINE ARE RADIAL TO RESERVE "E" BOUNDARY.

BENCH MARK: CHISELED "□" ON TOP OF SOUTH END OF GUARD RAIL ON WEST SIDE OF 143RD ST. RCB, NORTH OF CENTRAL. ELEV. 1317.03 M.S.L.

MINIMUM PAD ELEVATION (LOWEST OPENING) FOR LOT 14, BLOCK 1, SHALL BE 1319 M.S.L.



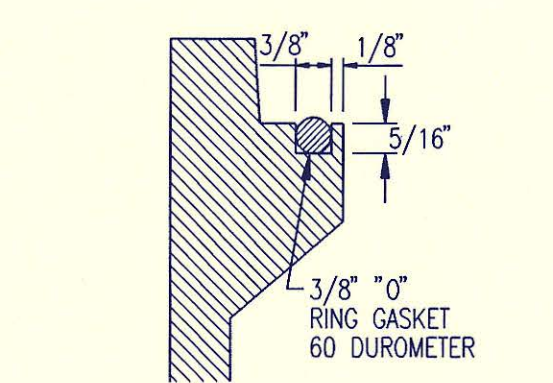
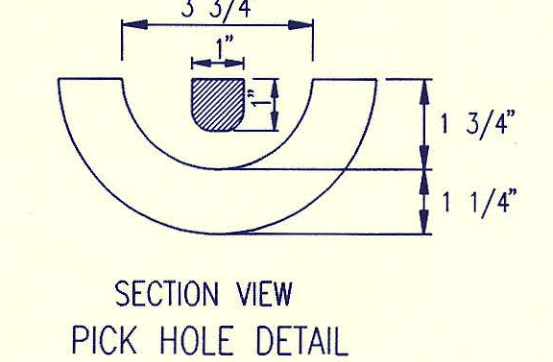
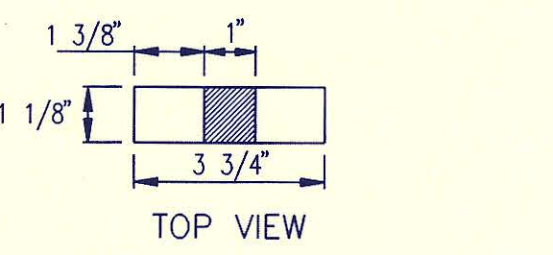
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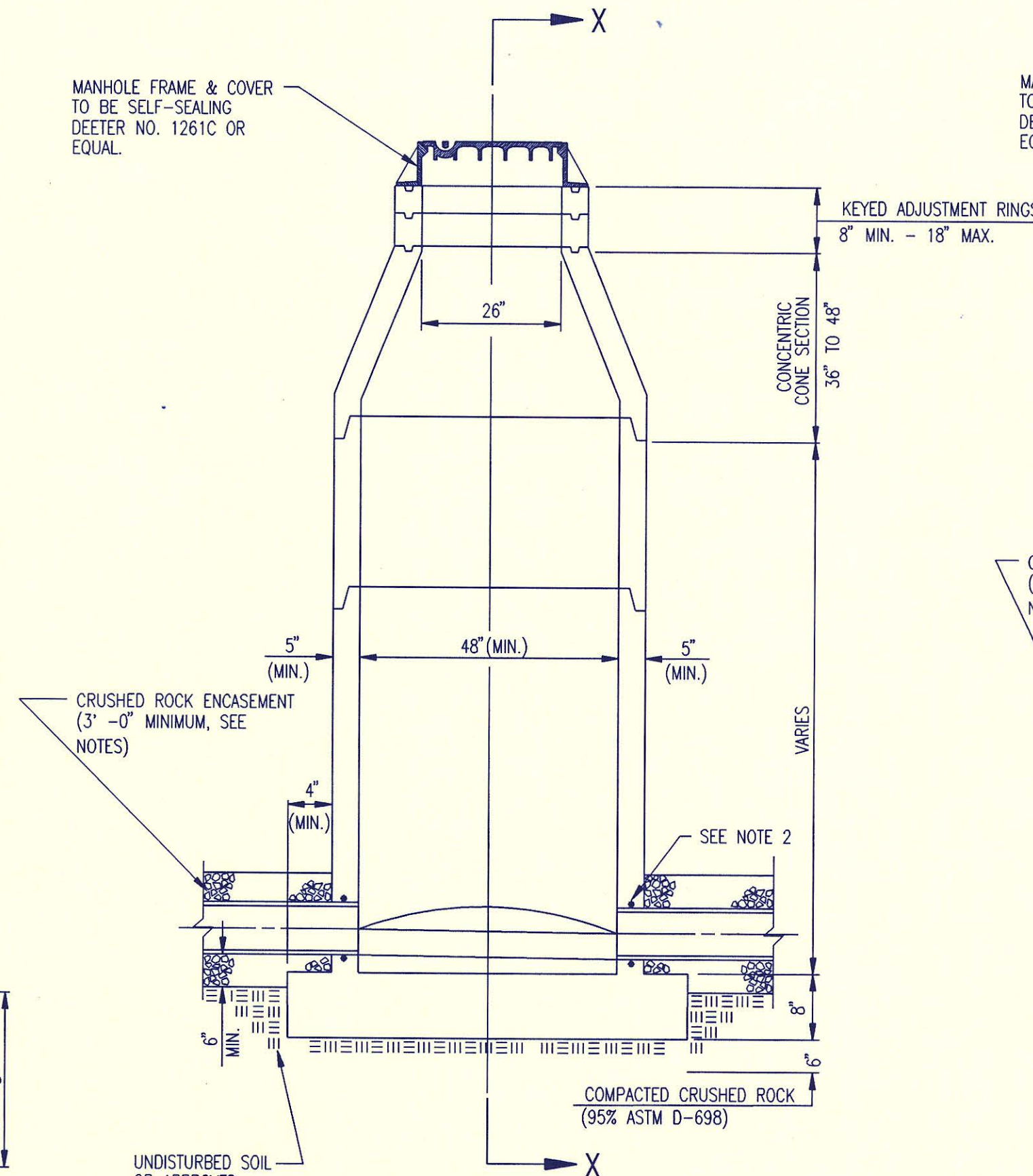
**MANHOLE FRAME AND COVER**  
(TOTAL WEIGHT = 430 LBS.)

**MANHOLE FRAME AND COVER NOTES**

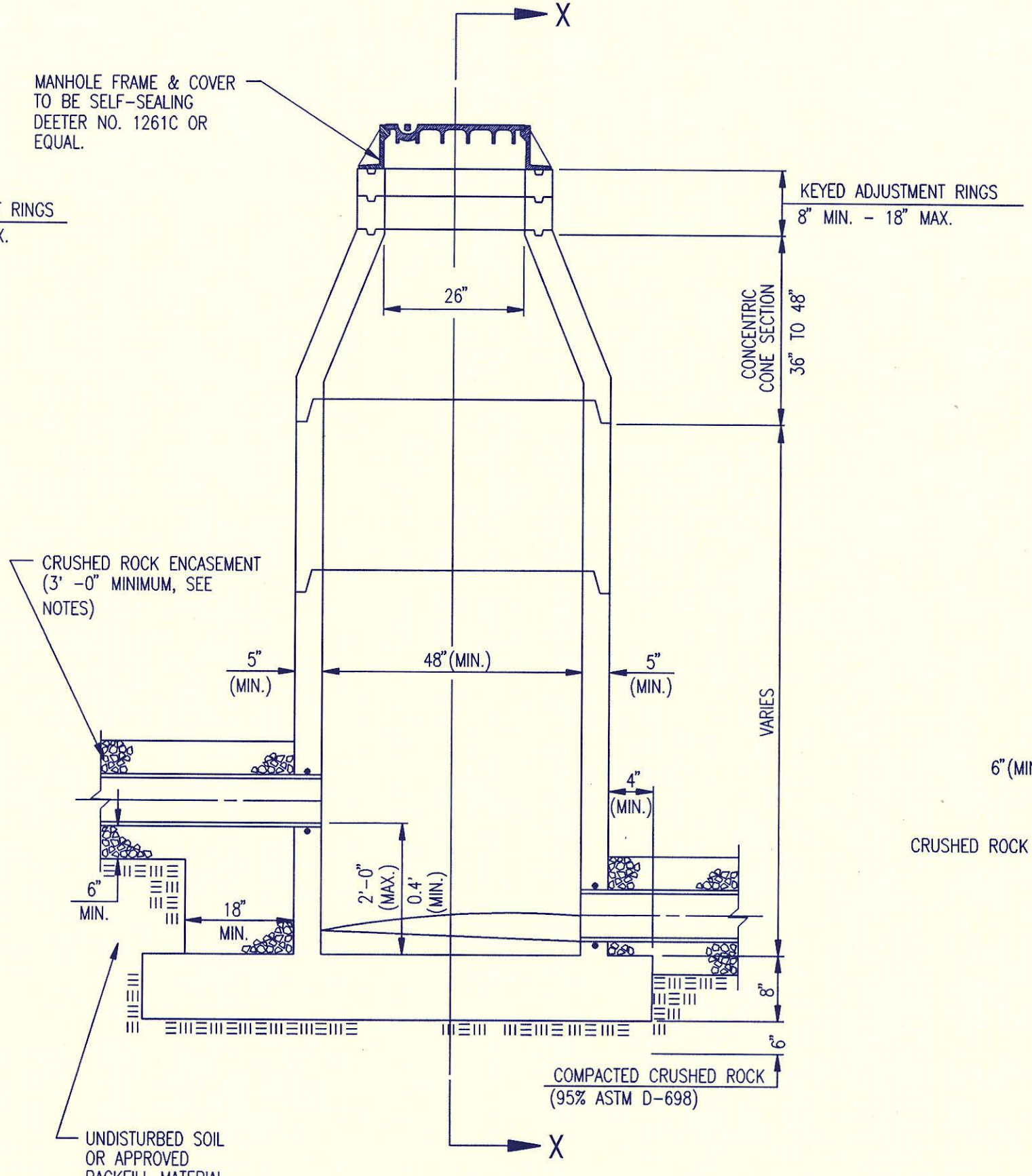
- CAST IRON MANHOLE FRAME AND COVER SHALL CONFORM TO ASTM A-48, CLASS 350, OR BETTER.
- CASTINGS ARE TO BE MANUFACTURED TRUE TO PATTERN AND WITH SATISFACTORY FIT OF COMPONENT PARTS. CASTINGS SHALL BE FREE OF DEFECTS AND ALL BURRS SHALL BE GROUND SMOOTH. DIMENSIONS AS DETAILED ON PLAN SHALL NOT DEVIATE 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.



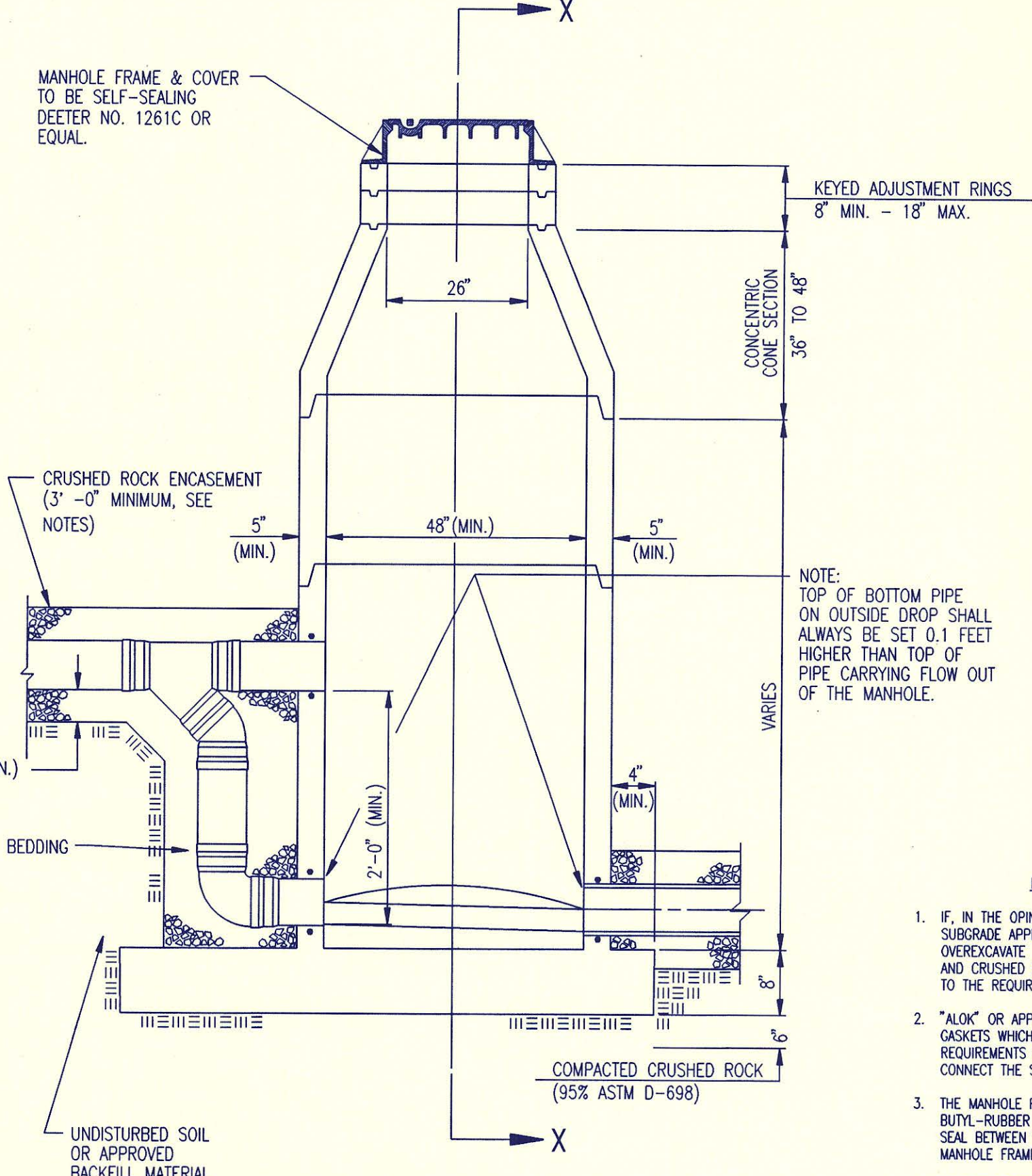
FRAME GROOVING DETAIL (TYPICAL ALL MANHOLES)



PRECAST STANDARD MANHOLE TYPE "A"



PRECAST INSIDE DROP MANHOLE TYPE "B"

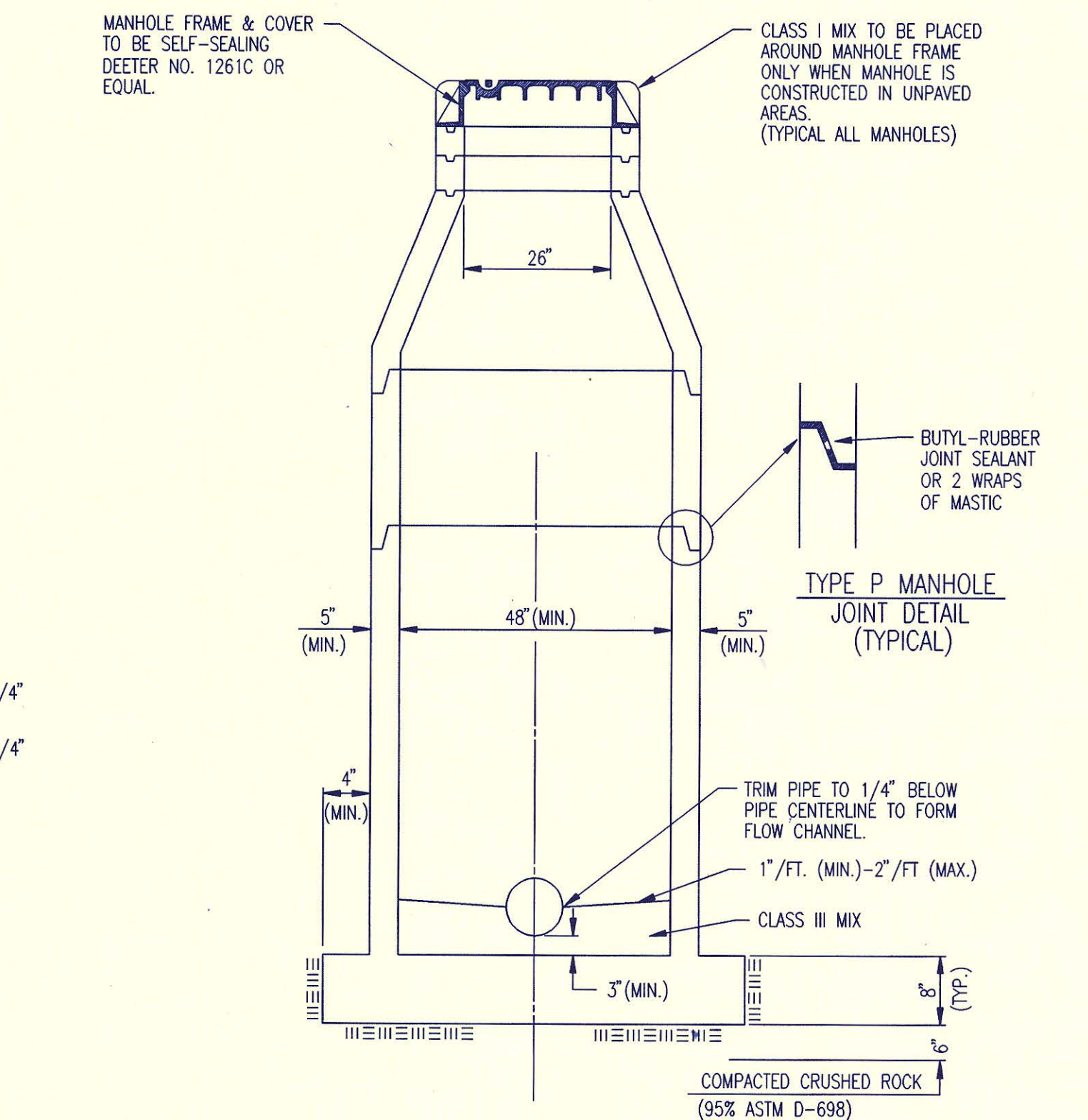


PRECAST OUTSIDE DROP MANHOLE TYPE "C"

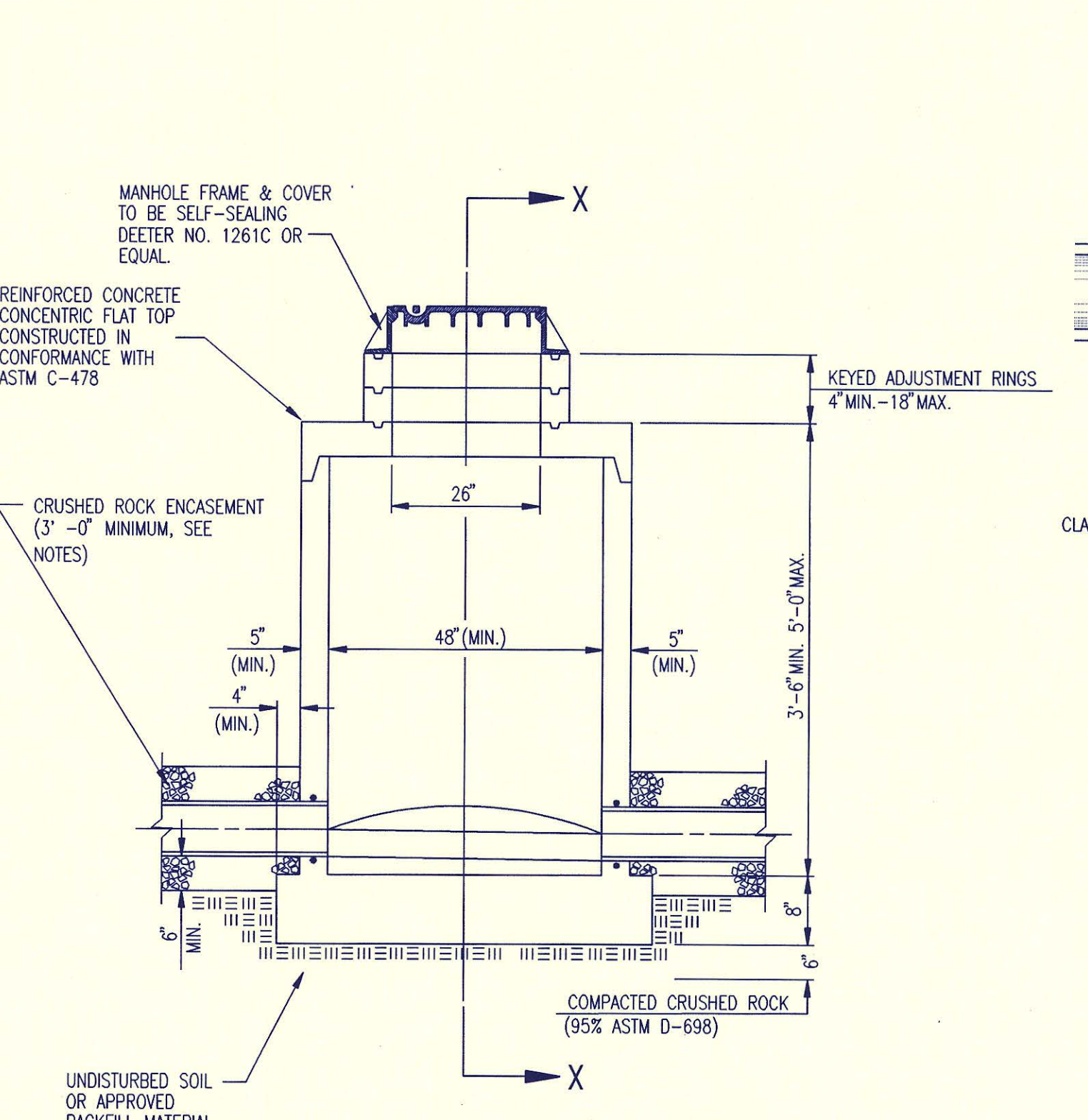
NOTE: TOP OF BOTTOM PIPE ON OUTSIDE DROP SHALL ALWAYS BE SET 0.1 FEET HIGHER THAN TOP OF PIPE CARRYING FLOW OUT OF THE MANHOLE.

**PRECAST MANHOLE NOTES**

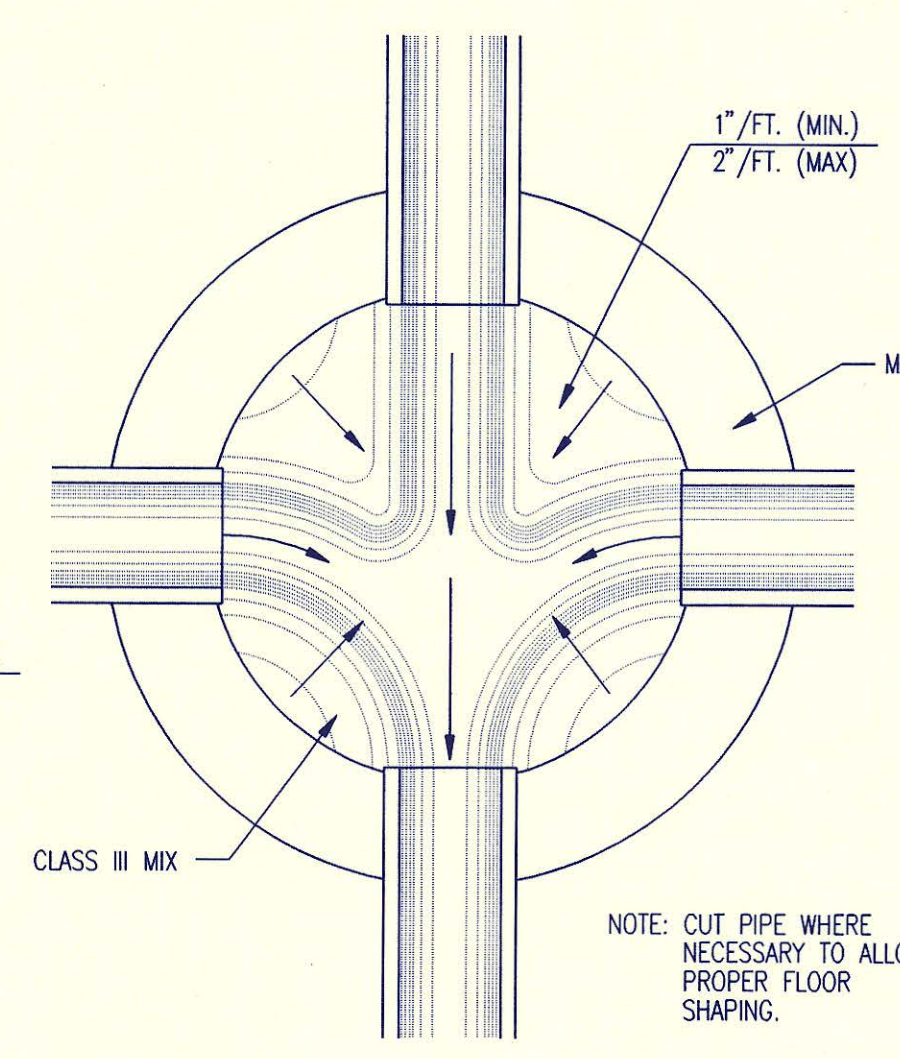
- IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL OVEREXCAVATE TO A SUITABLE SUBGRADE CONDITION AND CRUSHED ROCK SHALL BE PLACED AND COMPACTED TO THE REQUIRED GRADE.
- "A-LOK" OR APPROVED EQUAL FLEXIBLE WATER-STOP GASKETS WHICH MEET OR EXCEED THE TEST REQUIREMENTS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

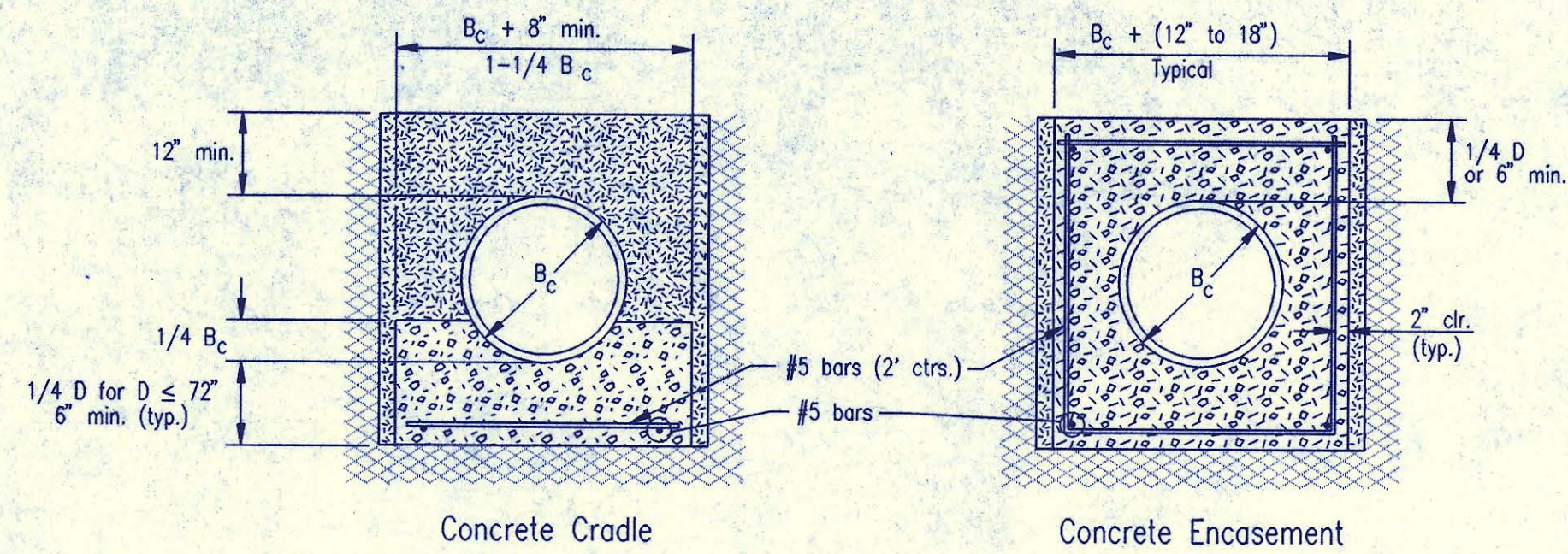
No.	Revision	By	Date
6	Add mastic callout at joint	RJ	1/19/95
5	Change concrete encasement to crushed rock encasement	RJ	3/9/94
4	Precast Bases, Precast Manhole Notes, Manhole Frame and Cover Notes, Keyed Adjustment Rings, and Class I mix at concrete encasement and field cap.	RJ	8/27/93
3	All Manholes 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

**PRECAST MANHOLE DETAILS**

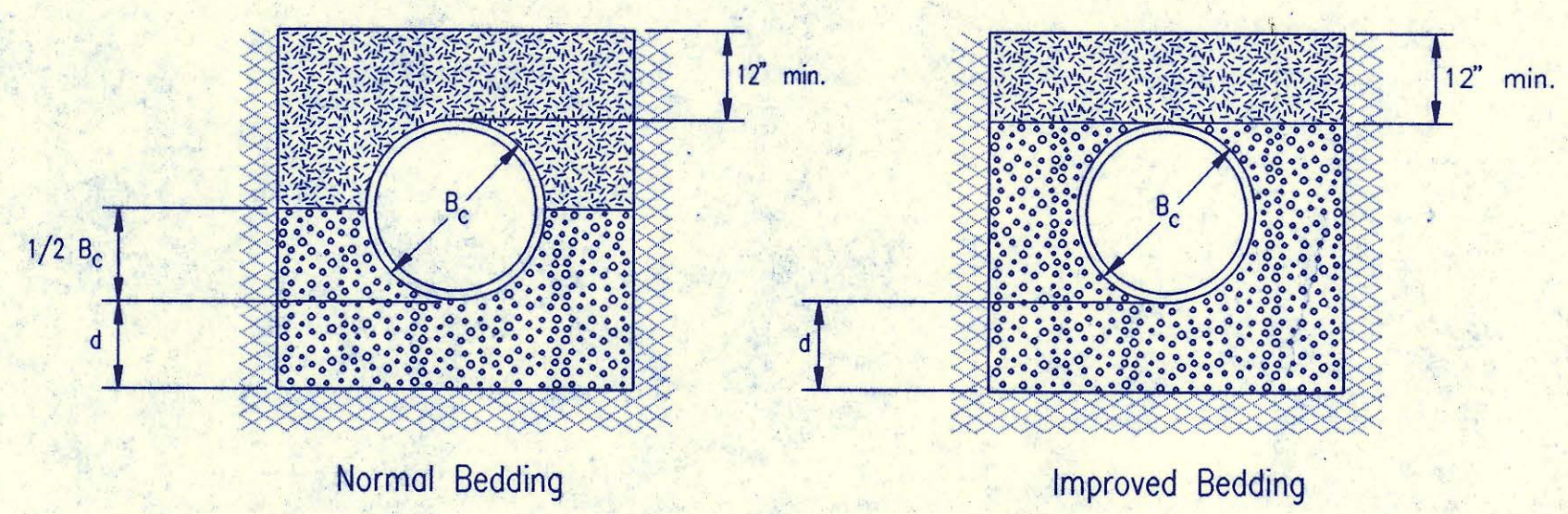
ADOPTED AS STANDARD DESIGN SEPTEMBER, 1989  
BY  
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES  
DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

DSMR: GJM OPER: JLM SCALE: 1"=1'-00"  
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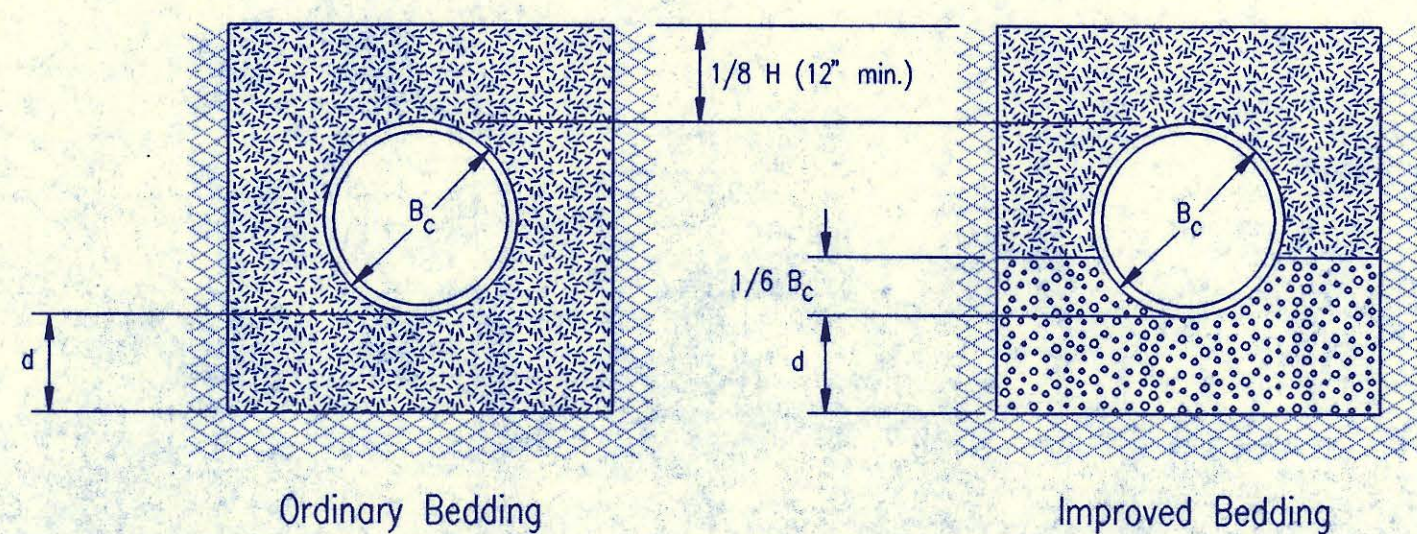
DATE	
BY	
CHECKED	
CHECKED	
PLAN	



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
- [Symbol] = Granular Bedding Material or Sand-Gravel Bedding
- [Symbol] = Compacted Embedment
- [Symbol] = 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.

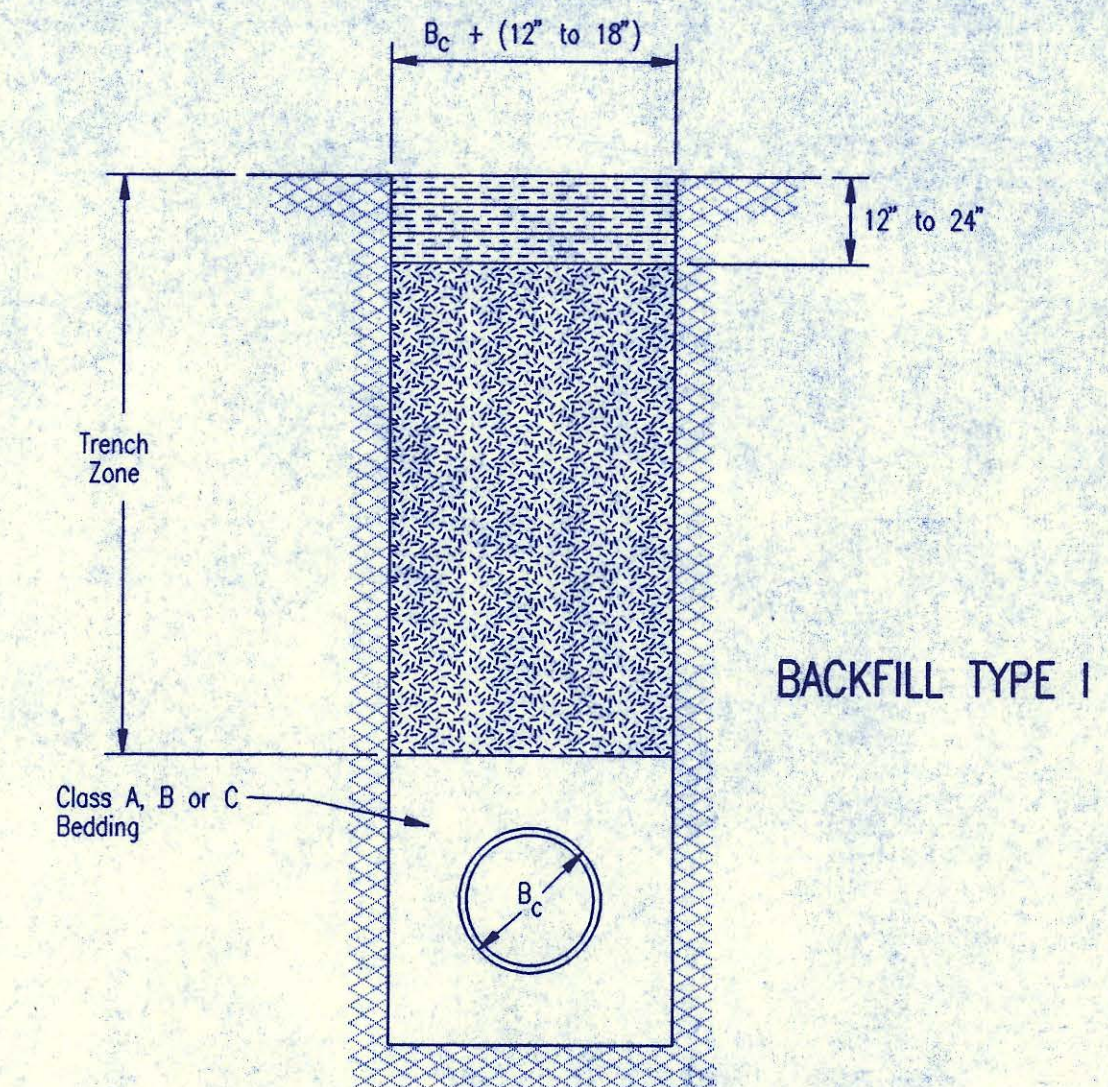
Class A "Concrete Cradle" and/or Class A "Concrete Encasement" is not required unless specified on the plans. However, where unexpected trench conditions exist or improper trenching is performed Class A Bedding may be required as determined by the Engineer.

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).



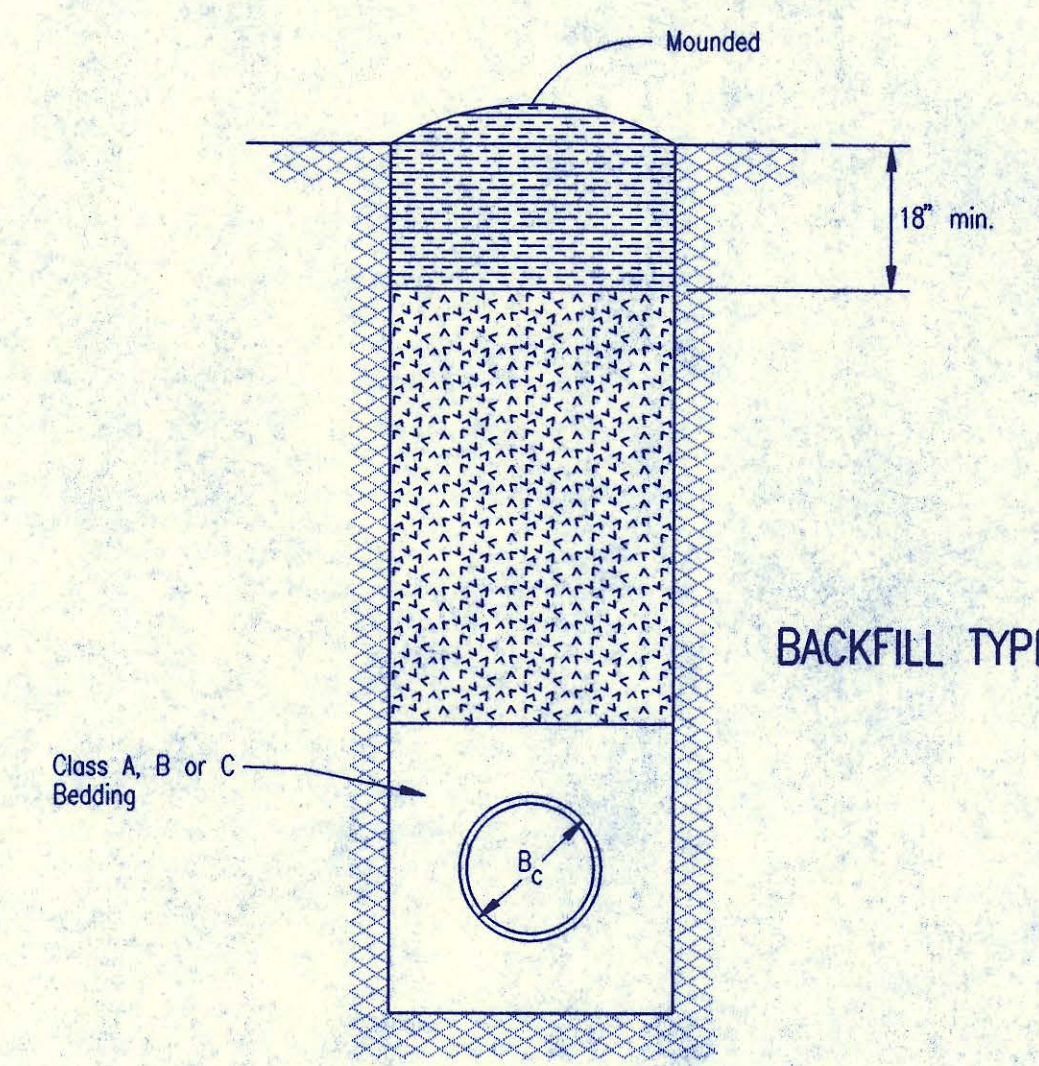
BACKFILL TYPE I

- $B_c$  = Outside Pipe Diameter
- [Symbol] = Compacted Granular Backfill
- [Symbol] = Uncompacted Earth Backfill
- [Symbol] = 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 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.



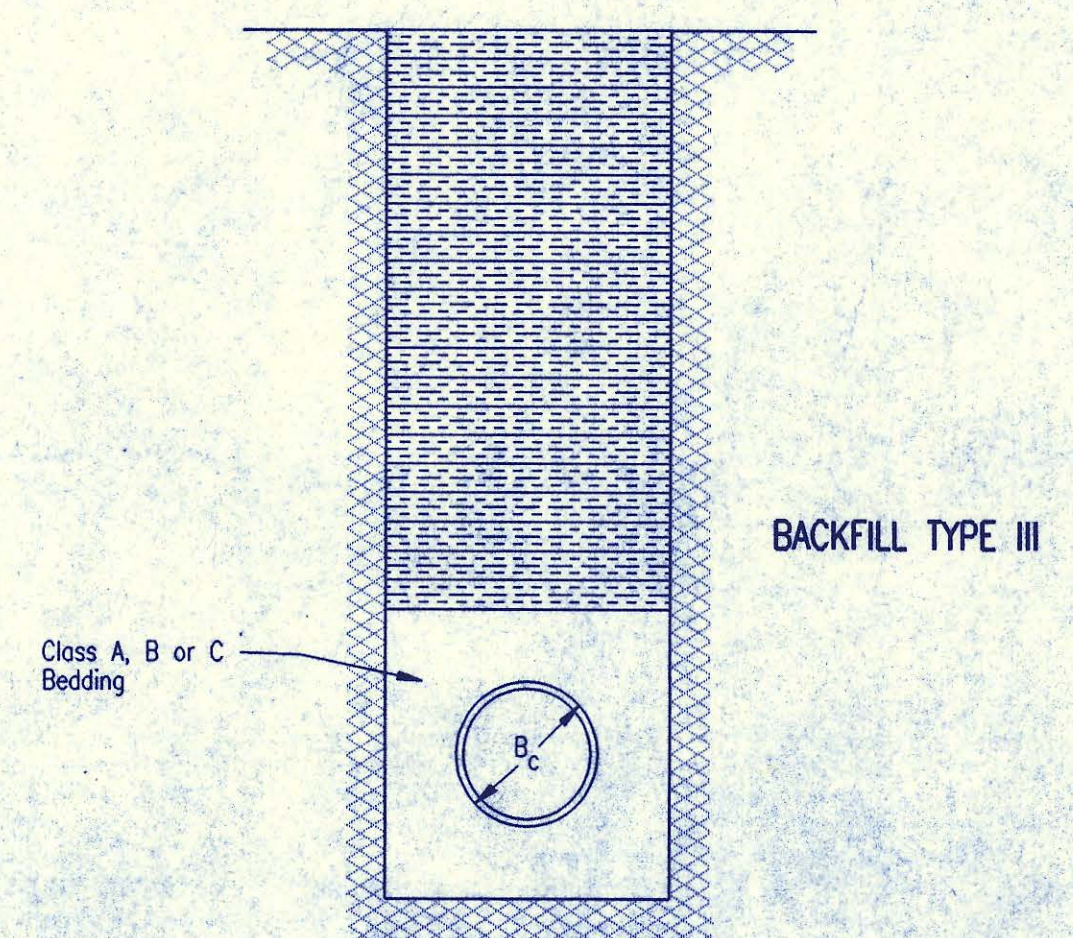
BACKFILL TYPE II

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

DSNR: GLM OPER: JDS SCALE: 1=1.00  
 Q:\1995\5727\BKFDLS.DWG 11-16-1995 3:01:02 pm

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

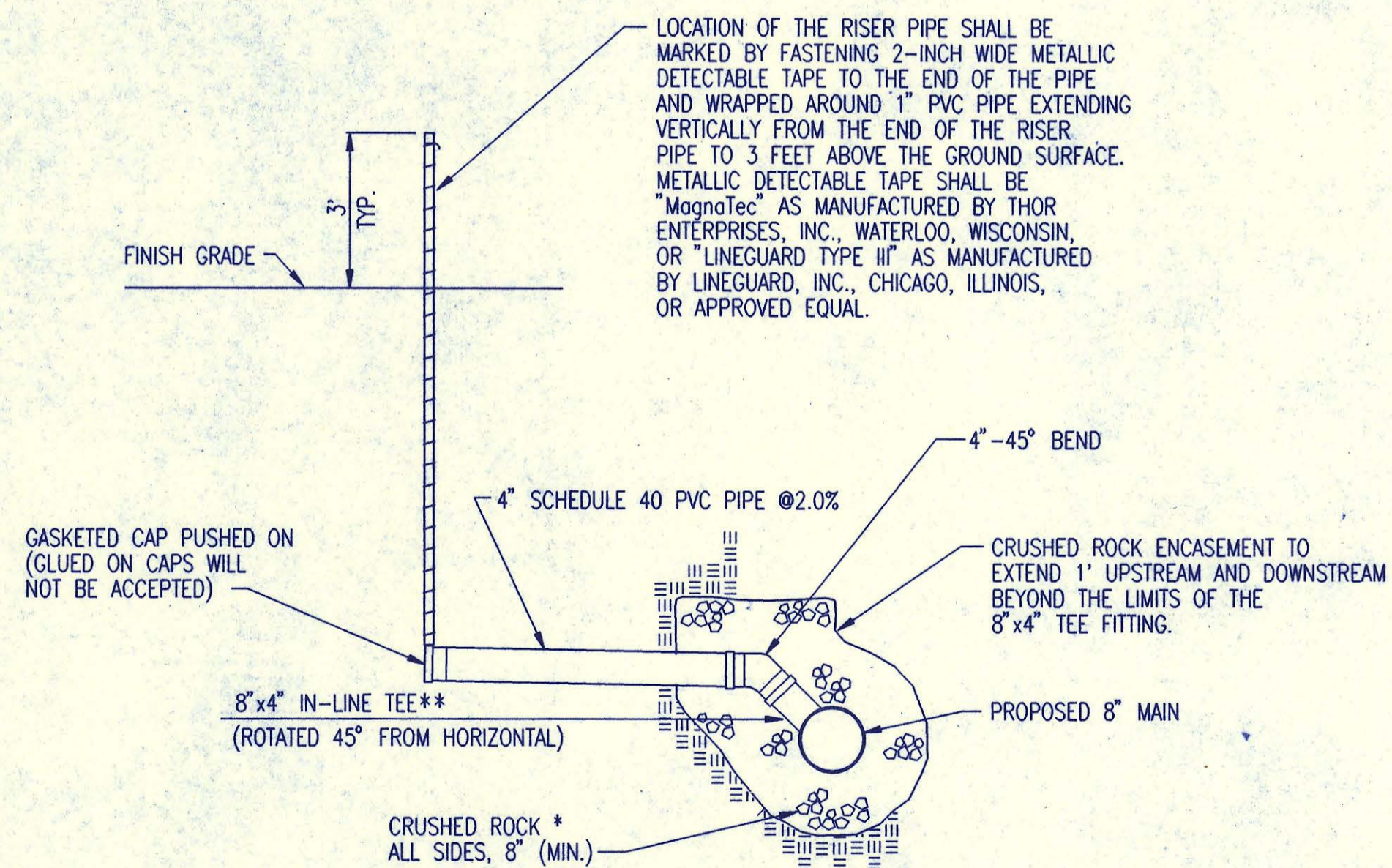
BACKFILL DETAILS

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

SEWER SERVICE TABLE										
NO.	LOCATION					FOR INFORMATION ONLY APPROXIMATE LENGTH 4" PIPE	RECORD INFORMATION (TO BE COMPLETED BY PROJECT INSPECTOR)		NO.	
	TYPE	LOT NO.	BLOCK NO.	LATERAL NO.	STATION/DIRECTION		DISTANCE FROM NEAREST MANHOLE UPSTREAM	DISTANCE FROM NEAREST MANHOLE DOWNSTREAM		
1	TEE SERVICE CONNECTION	2	1	43-3	See sht. 9	33' @2.0%	*	*	1	
2	TEE SERVICE CONNECTION	3	1	43-3	See sht. 9	32' @2.0%	*	*	2	
3	TEE SERVICE CONNECTION	4	1	43-3	See sht. 9	30' @2.0%	*	*	3	
4									4	
5									5	
6									6	
7									7	
8									8	
9									9	
10									10	
11									11	
12									12	
13									13	
14									14	
15									15	
16									16	
17									17	
18									18	
19									19	
20									20	
21									21	

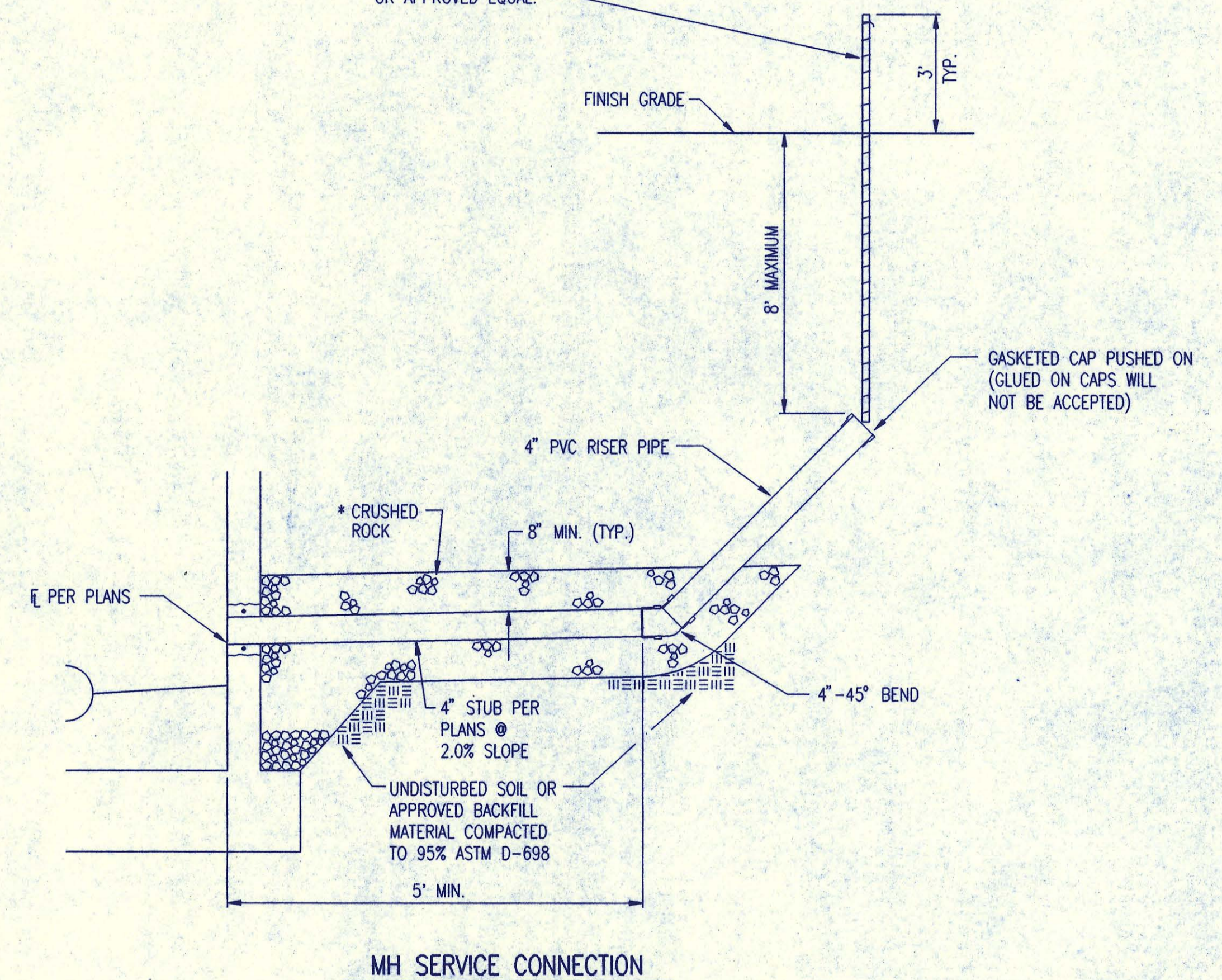
\* SEE PLAN SHEET #9

LOCATION OF THE RISER PIPE SHALL BE MARKED BY FASTENING 2-INCH WIDE METALLIC DETECTABLE TAPE TO THE END OF THE PIPE AND WRAPPED AROUND 1" PVC PIPE EXTENDING VERTICALLY FROM THE END OF THE RISER PIPE TO 3 FEET ABOVE THE GROUND SURFACE. METALLIC DETECTABLE TAPE SHALL BE "MagnaTec" AS MANUFACTURED BY THOR ENTERPRISES, INC., WATERLOO, WISCONSIN, OR "LINEGUARD TYPE III" AS MANUFACTURED BY LINEGUARD, INC., CHICAGO, ILLINOIS, OR APPROVED EQUAL.



**TEE SERVICE CONNECTION**

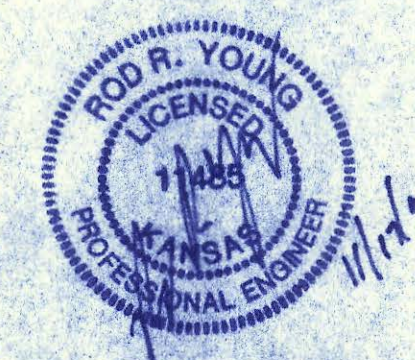
\*\* AN APPROVED GASKETED SADDLE TEE SHALL BE USED FOR SEWER SERVICE NO. 1, 2, & 3. GASKETED SADDLE TEE SHALL BE SECURELY FASTENED TO THE EXISTING MAIN WITH STAINLESS STEEL BAND CLAMPS. CONNECTION MUST BE APPROVED BY THE PROJECT INSPECTOR PRIOR TO PLACEMENT OF THE CRUSHED ROCK FILL. (THE GASKETED SADDLE TEES WILL BE PROVIDED BY SEDGWICK COUNTY).



**MH SERVICE CONNECTION**

\* 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.



**RECORD DRAWING**

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

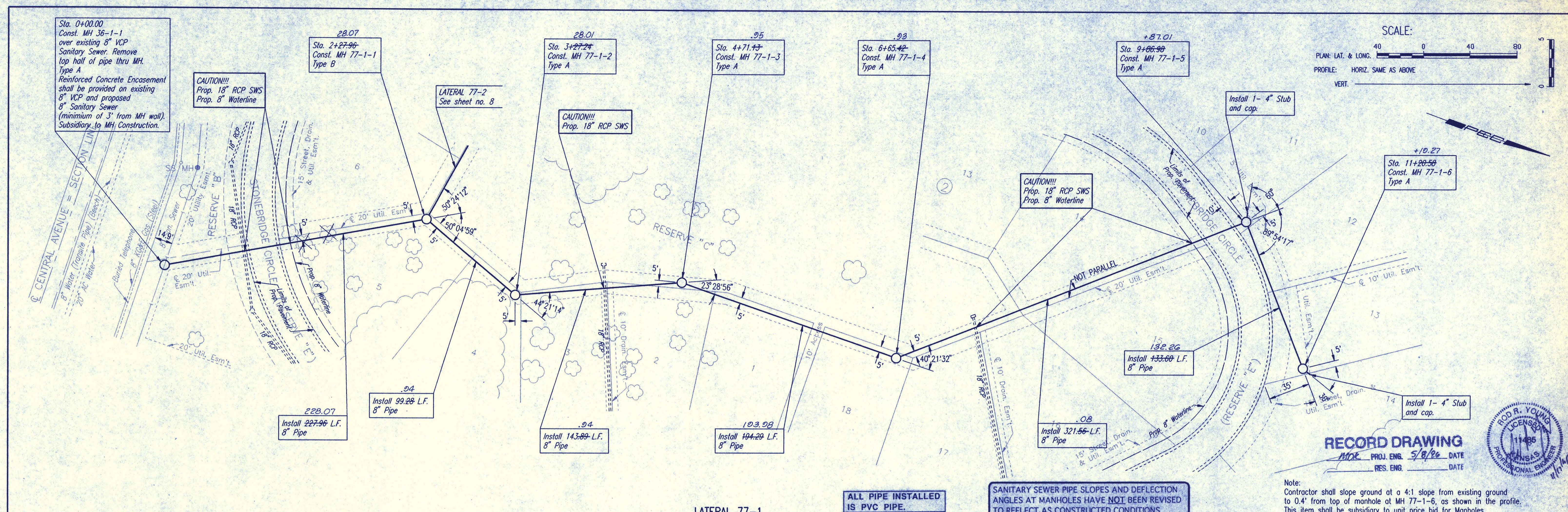
**SERVICE CONNECTION DETAILS**

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

PLAN	CHECKED	DATE
	CHECKED	

PROFILE	CHECKED	DATE
	CHECKED	

DSNR: RJU OPER: JDS SCALE: 1"=40.00  
 Q:\985195727\PI.DWG 11-16-1995 3:06:19 pm



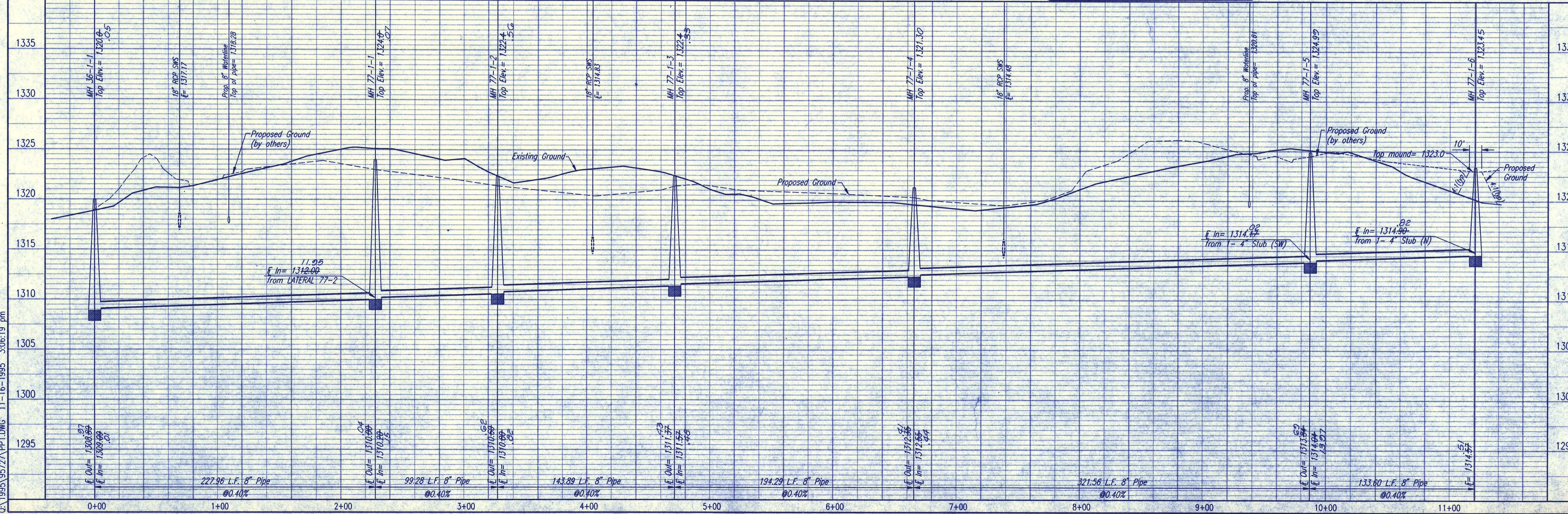
**RECORD DRAWING**  
 DATE 5/8/96  
 PROJ. ENG. DATE  
 RES. ENG. DATE



Note:  
 Contractor shall slope ground at a 4:1 slope from existing ground to 0.4' from top of manhole at MH 77-1-6, as shown in the profile. This item shall be subsidiary to unit price bid for Manholes.

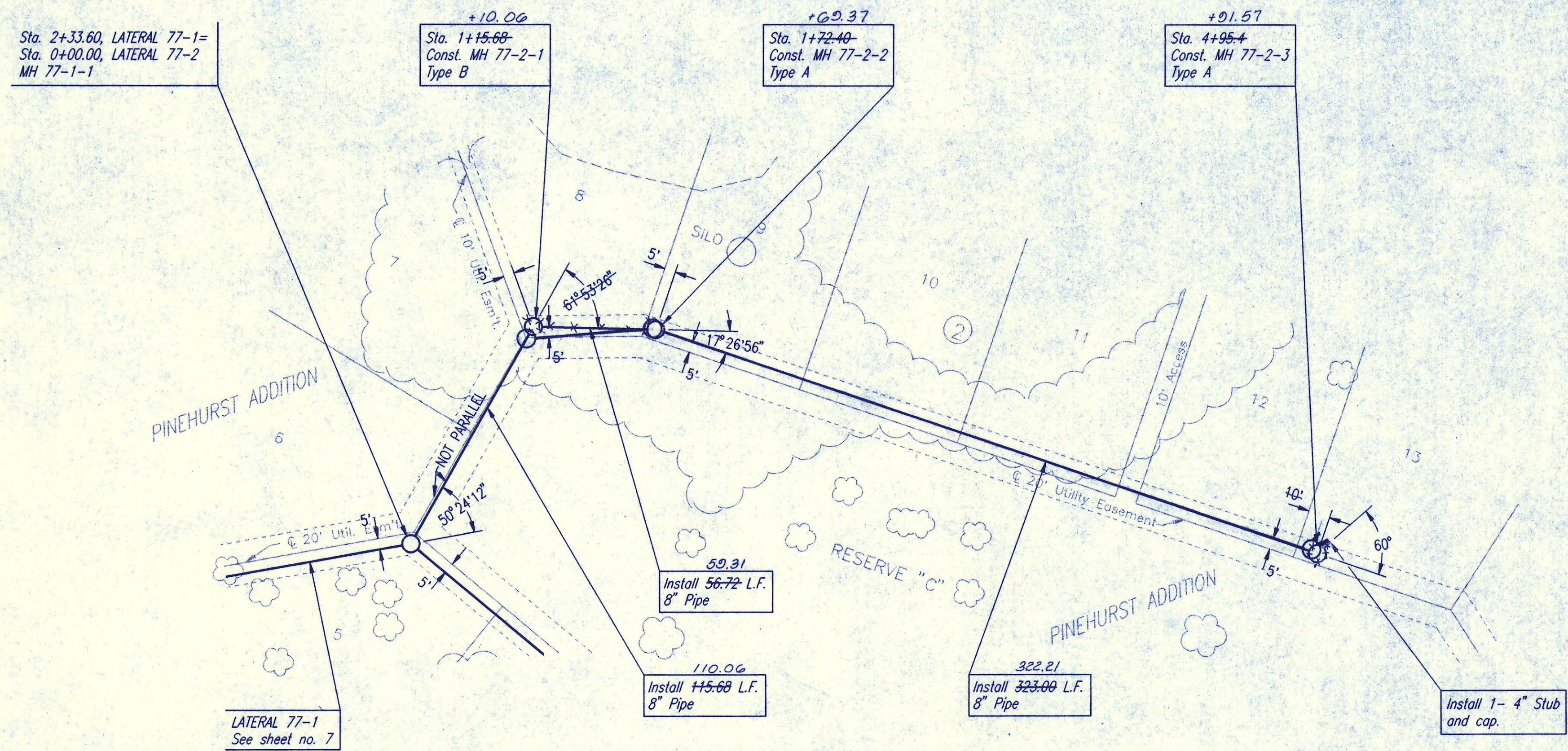
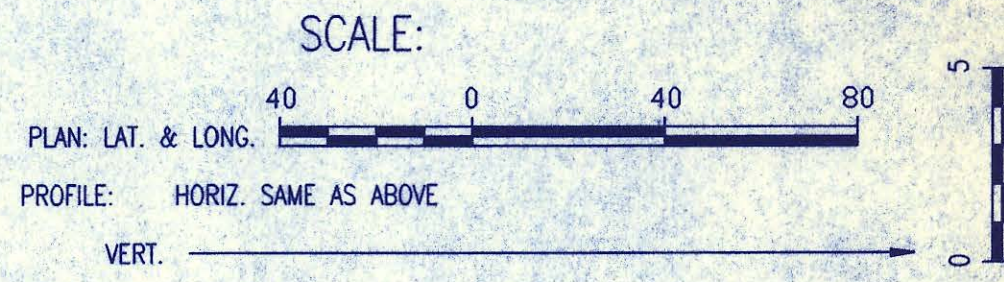
**ALL PIPE INSTALLED IS PVC PIPE.**  
**SANITARY SEWER PIPE SLOPES AND DEFLECTION ANGLES AT MANHOLES HAVE NOT BEEN REVISED TO REFLECT AS CONSTRUCTED CONDITIONS.**

LATERAL 77-1

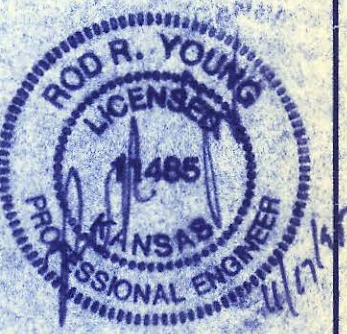


SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES  
 DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER  
**LATERAL 77-1**  
 SANITARY SEWER IMPROVEMENTS  
 PINEHURST ADDITION

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.  
 ENGINEERS  
 WICHITA, KANSAS  
 Job No. 34-95727 Date October 1995  
 Drawn By JLM



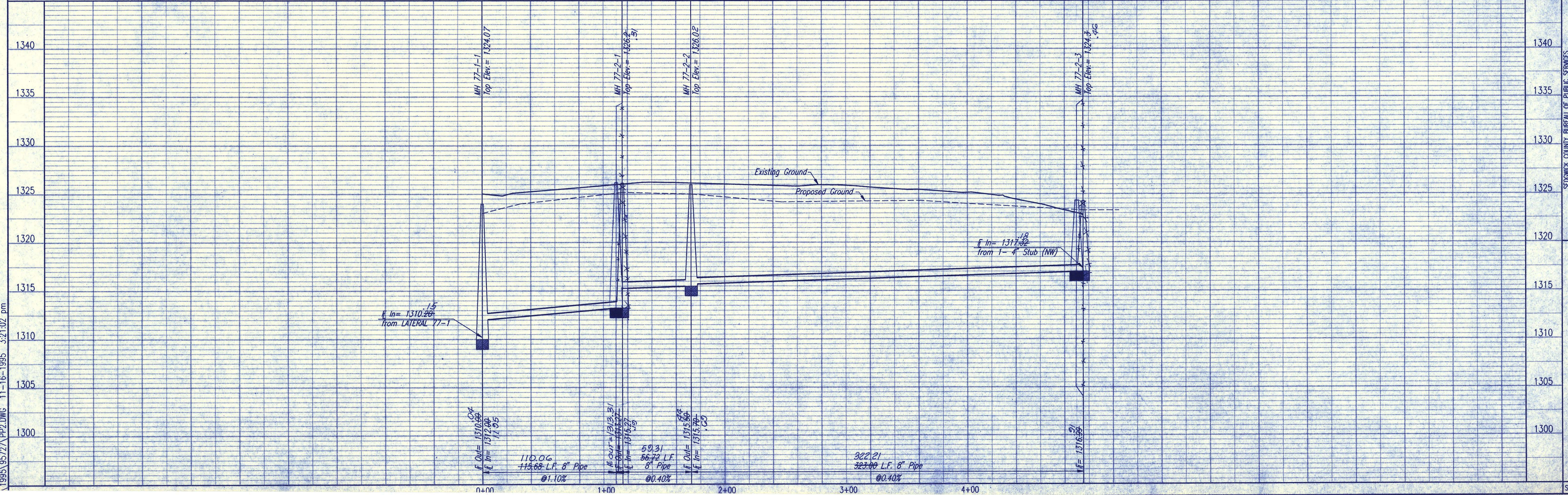
**RECORD DRAWING**  
 MDK PROJ. ENG. 5/2/96 DATE  
 RES. ENG. DATE



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

ALL PIPE INSTALLED IS PVC PIPE.

LATERAL 77-2



NR:RFJ OPER:JDS SCALE: 1"=40.00  
 1995\9577\PP2.DWG 11-16-1995 3:21:02 pm

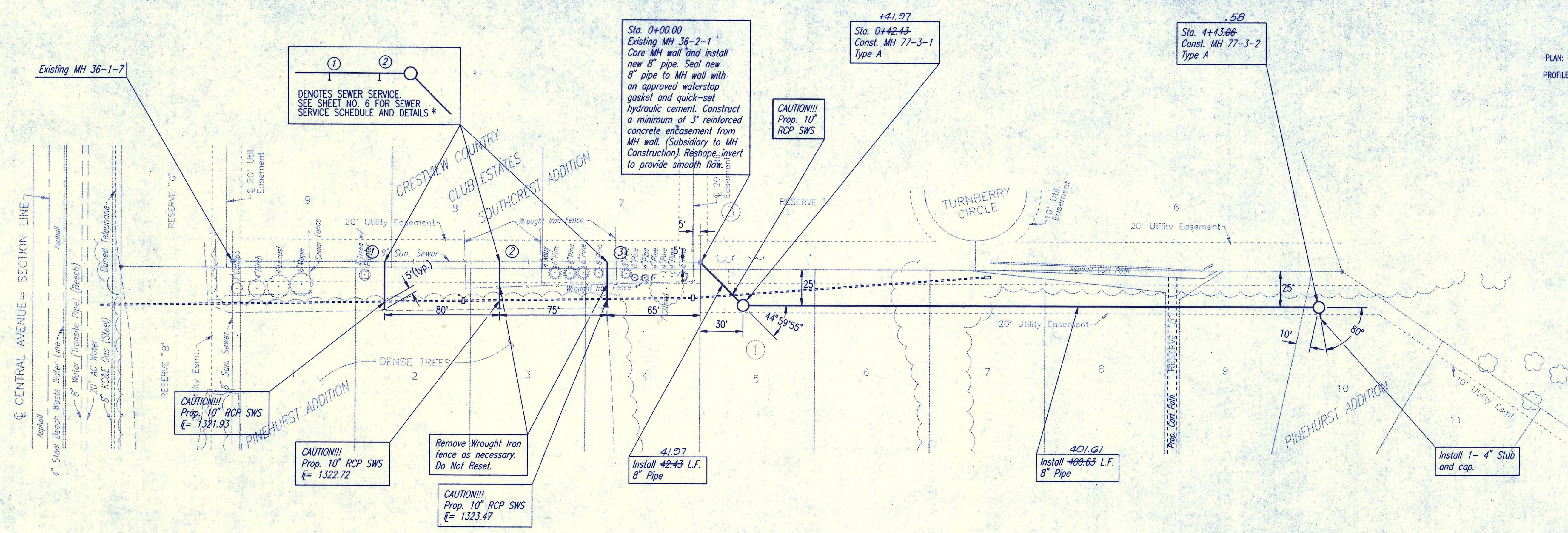
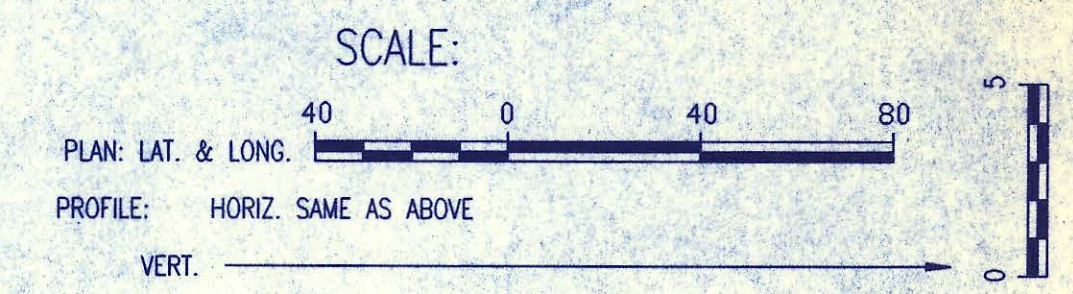
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES  
 DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER

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

Job No. 34-9577  
 Date October 1995

Designed By RRY, MDK  
 Drawn By JLM

Sheet 8 of 10

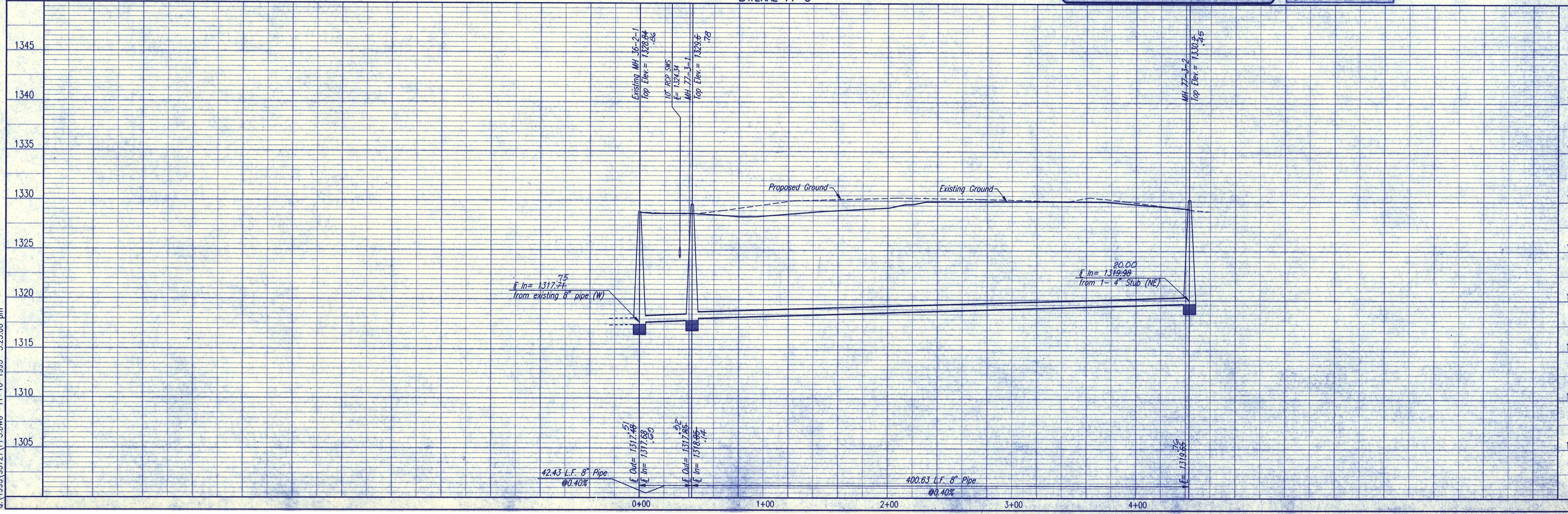


\* TEE SADDLES WILL BE PROVIDED BY SEDGWICK COUNTY

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

ALL PIPE INSTALLED IS PVC PIPE.

LATERAL 77-3



DSNR: RFL OPER: JDS SCALE: 1=40.00  
0:\1995\95727\PP3.DWG 11-16-1995 3:23:06 pm



RECORD DRAWING  
MOR PROJ. ENG. 5/8/94 DATE  
RES. ENG. DATE

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

LATERAL 77-3  
SANITARY SEWER IMPROVEMENTS  
PINEHURST ADDITION

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

Designed By: RRY, MDK  
Drawn By: JLM

Job No. 34-95727  
Date October 1995

Sheet 9 of 10

# PINEHURST ADDITION TO SEDGWICK COUNTY, KANSAS

SCALE: 1"=50'

- = IRON FOUND
- = NOT SET
- = 3/4" IRON SET

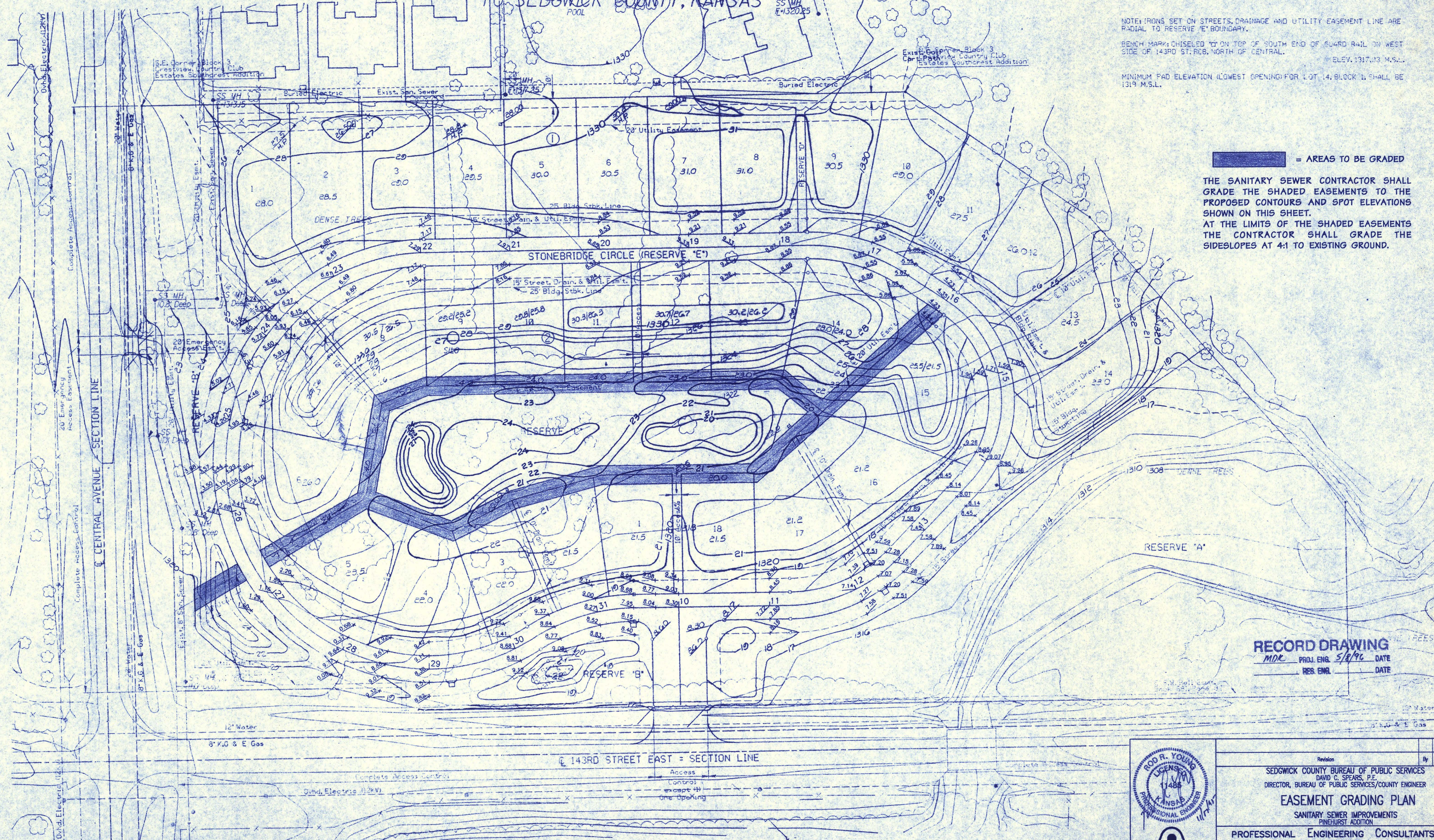
NOTE: IRONS SET ON STREETS, DRAINAGE AND UTILITY EASEMENT LINE ARE RADIAL TO RESERVE 'E' BOUNDARY.

BENCH MARK: CHISELED 'C' ON TOP OF SOUTH END OF GUARD RAIL ON WEST SIDE OF 143RD ST. R.C.B. NORTH OF CENTRAL. ELEV. 1317.03 M.S.L.

MINIMUM PAD ELEVATION (LOWEST OPENING) FOR LOT 14, BLOCK 1, SHALL BE 1319 M.S.L.

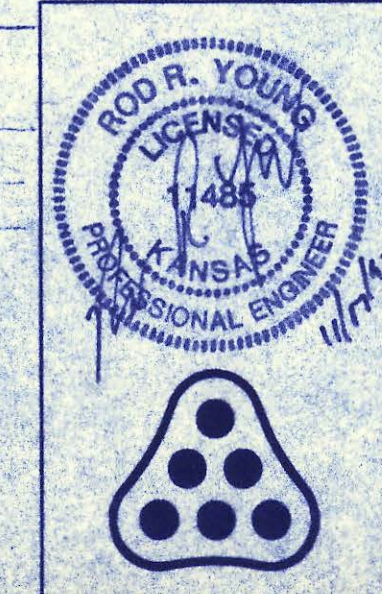
= AREAS TO BE GRADED

THE SANITARY SEWER CONTRACTOR SHALL GRADE THE SHADED EASEMENTS TO THE PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN ON THIS SHEET. AT THE LIMITS OF THE SHADED EASEMENTS THE CONTRACTOR SHALL GRADE THE SIDESLOPES AT 4:1 TO EXISTING GROUND.



**RECORD DRAWING**  
 MDK PROJ. ENG. 5/8/96 DATE  
 RES. ENGR. DATE

1994/04/26/11hd.dgn  
 Date: 10/23/95  
 Deliver to: dar\_crank



Revision		By	Date
SEDGWICK COUNTY BUREAU OF PUBLIC SERVICES DAVID C. SPEARS, P.E. DIRECTOR, BUREAU OF PUBLIC SERVICES/COUNTY ENGINEER			
<b>EASEMENT GRADING PLAN</b> SANITARY SEWER IMPROVEMENTS PINEHURST ADDITION			
<b>PROFESSIONAL ENGINEERING CONSULTANTS, P.A.</b> ENGINEERS WICHITA, KANSAS			
Designed by	MDK, RRY	Job No.	34-95727
Drawn by	TLS	Date	November 1995
			Std. 10 of 10