

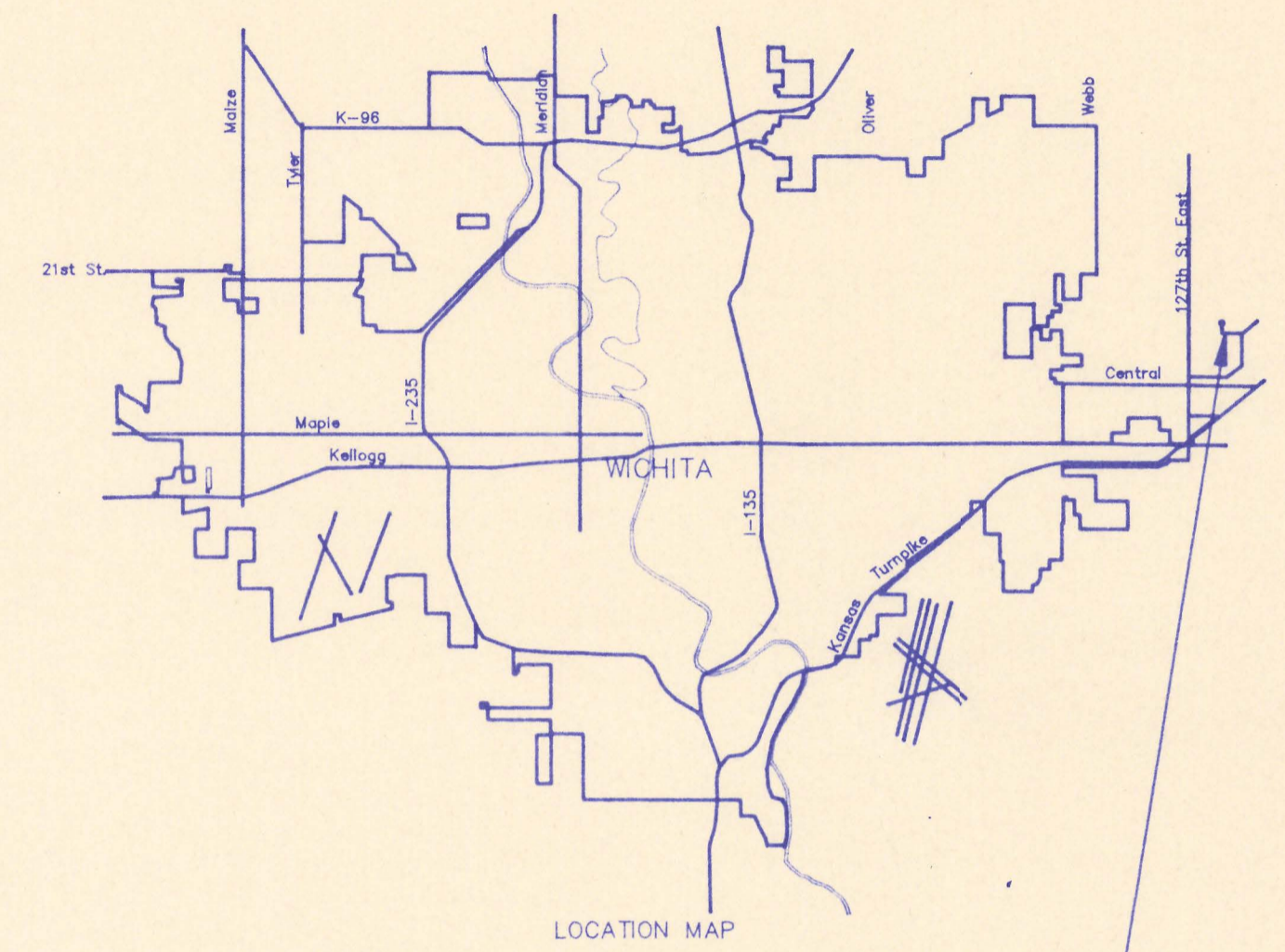
4MC-083

BUREAU OF PUBLIC SERVICES



INDEX OF SHEETS

- 1. TITLE SHEET
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- 4. PRECAST MANHOLE DETAILS
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PROJECT LOCATION

CONSTRUCTION PLANS FOR SANITARY SEWER IMPROVEMENTS IN OVERBROOK SECOND ADDITION *PHASE 1A* CRESTVIEW COUNTRY CLUB ESTATES SEDGWICK COUNTY, KANSAS AUGUST, 1995

PLANS PREPARED BY:	
CERTIFIED ENGINEERING DESIGN	
CEd	1990 E. FIRST, # 107 WICHITA, KANSAS 67214 (316) 262-8808
	SHEET 1 TOTAL 9

APPROVED:

David C. Spears

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

DATE: 8/16/95

APPROVED:

William B. ...

CHAIR, BOARD OF COUNTY COMMISSIONERS

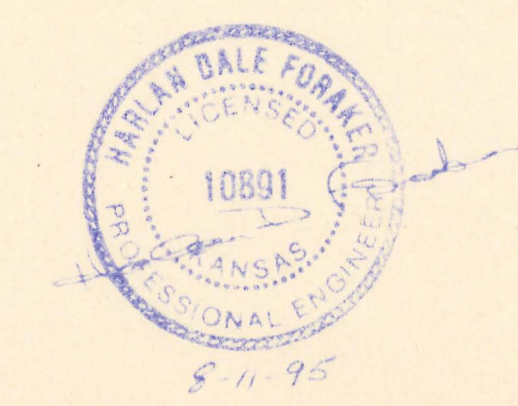
DATE: 8/17/95

FILED IN THE OFFICE OF
THE SEDGWICK COUNTY CLERK

Sharon ...

COUNTY CLERK

DATE: 8/24/95



UTILITY LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL PROVIDE A MINIMUM ADVANCE NOTICE OF FORTY-EIGHT (48) HOURS TO UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION.

KANSAS ONE-CALL 1-800-344-7233 (STATEWIDE)
687-2407 (WICHITA)

Benchmark #4:
"□" Cut on S.W. Cor. of East Inlet on the N.E. Corner of Sharon and Sandpiper Elev. = 1328.14

Benchmark #4A:
East Cap Bolt on Fire Hydrant at S.W. Corner Sharon and Sagebrush Elev. = 1334.46

Benchmark #4B:
"□" Cut @ North E.O.R. on N.W. Quadrant of Sharon and Sagebrush Elev. = 1331.55

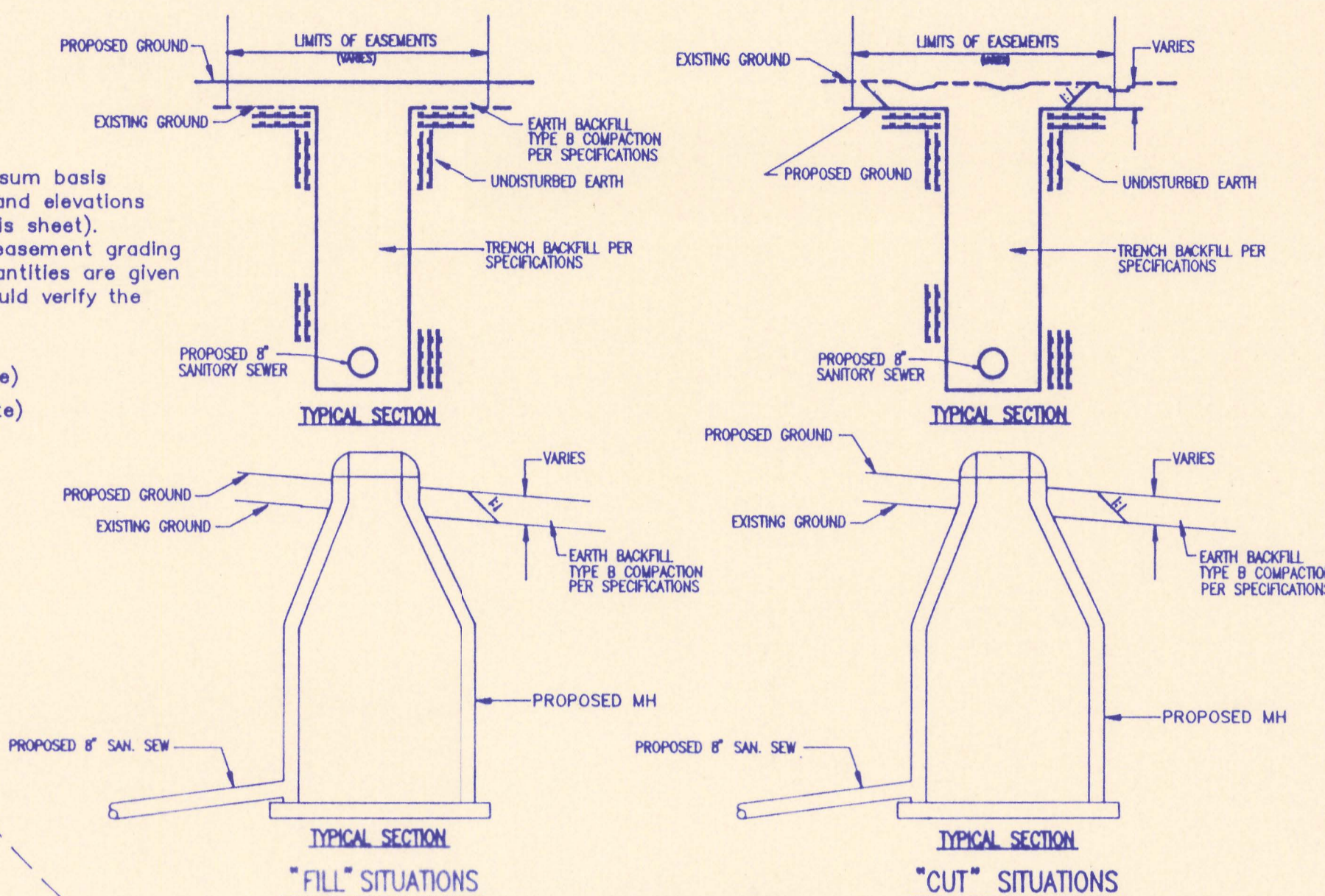
4MC-083

EASEMENT GRADING

- = Compacted Earth Backfill
- HP = HIGH POINT
- ME = 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 0 C.Y. (Approximate)
Fill 1,300 C.Y. (Approximate)



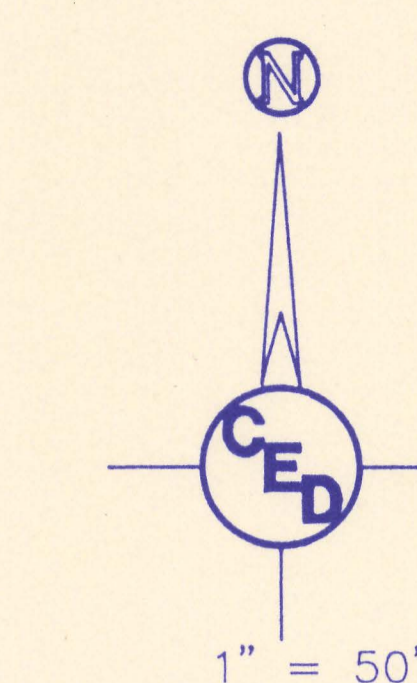
EASEMENT GRADING

GENERAL NOTES

1. ALL ELEVATIONS SHOWN ARE USGS DATUM.
2. CONTRACTOR WILL BE REQUIRED TO PROVIDE A MINIMUM ADVANCE NOTICE OF FORTY-EIGHT(48)HOURS TO UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION AS FOLLOWS:

KANSAS ONE CALL	687-2470
CABLEVISION	262-4270 OR 263-2061
KO&E-GAS	263-7611
KO&E-ELECTRIC	264-1141
ARKLA GAS COMPANY	942-8360 OR 263-8161
SOUTHWESTERN BELL TELEPHONE	1-877-2611
CITY OF WICHITA WATER DEPARTMENT	288-4906
SEDGWICK COUNTY SEWER MAINTENANCE	733-0202
3. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION AVAILABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE PLAN LOCATIONS ARE NOT GUARANTEED. ADDITIONAL EXISTING UTILITIES MAY ALSO BE ENCOUNTERED. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WHICH ARE ENCOUNTERED ON THIS PROJECT. 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.
4. 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 TESTING.
5. 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.
6. EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE WASTED WITHIN OVERBROOK 2ND ADDITION AT NO ADDITIONAL COST TO THE OWNER. EXCESS EXCAVATION SHALL BE WASTED AS DESIGNATED BY ERIC KAUFMAN, KAUFMAN CONSTRUCTION, INC., 268-3328. NO ACCEPTABLE EXCAVATION MATERIAL SHALL BE REMOVED FROM THE OVERBROOK 2ND ADDITION. COST OF EXCAVATION, HAULING AND DUMPING OF EXCESS EXCAVATION SHALL BE SUBSIDIARY TO OTHER ITEMS OF WORK.
7. 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.
8. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY DIRECTLY ADJACENT TO THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN(10) DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR WILL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS.
10. THE CONTRACTOR SHALL NOTIFY THE INSPECTOR FOR THE PROJECT 48 HOURS PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL NOT START WORK ON THE PROJECT UNTIL THE PROJECT INSPECTOR ASSIGNED TO THE PROJECT IS PRESENT ON THE SITE. ANY WORK DONE WITHOUT INSPECTION WILL BE REQUIRED TO BE UNCOVERED FOR INSPECTION.
11. THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, ENTRANCES AND BANK LINES TO THEIR ORIGINAL SLOPES AND GRADES EXCEPT AS SHOWN OTHERWISE.
12. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS.
13. CONTRACTOR SHALL PROVIDE MOUNDED EARTH AT MANHOLES AS SHOWN ON THE PLAN/PROFILE SHEETS. COSTS FOR MOUNDING SHALL BE CONSIDERED SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "SITE RESTORATION".
14. THE CONTRACTOR SHALL ONLY TRIM TREES AS REQUIRED TO CLEAR PROPOSED CONSTRUCTION. AT LOCATIONS WHERE TRIMMING IS REQUIRED THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE PROJECT INSPECTOR PRIOR TO COMMENCING TREE TRIMMING OR REMOVAL. COST FOR TREE TRIMMING SHALL BE PAID AS "SITE CLEARING AND RESTORATION".
15. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF ON SITES TO BE PROVIDED BY THE CONTRACTOR. THESE SITES SHALL BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE AND SITE LOCATION. LOCATIONS, THAT IN THE OPINION OF THE ENGINEER, WILL LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOODPLAIN WOULD REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS WOULD REQUIRE ADDITIONAL ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.
16. EASEMENTS AND RIGHT-OF-WAYS PROVIDED BY THE OWNER FOR THE PROJECT ARE SHOWN ON 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.
17. THE CONTRACTOR SHALL FERTILIZE AND RESEED THE YARD WITHIN THE UTILITY EASEMENT WHICH WILL BE DISTURBED ON LOT 4, BLOCK 1, OVERBROOK ADDITION, CRESTVIEW COUNTRY CLUB ESTATES ROAD AS A RESULT OF CONNECTING INTO THE EXISTING MANHOLE AT THIS LOCATION. RESTORATION OF DISTURBED AREAS SHALL INCLUDE, BUT NOT BE LIMITED TO, TOP SOIL PREPARATION, SEEDING AND/OR RESEEDING. ALL SEEDING/SODDING WORK SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO OTHER ITEMS OF WORK.
18. PROPERTIES WITHIN THE PROJECT LIMITS MAY HAVE UNDERGROUND SPRINKLER SYSTEMS IN THE UTILITY EASEMENTS 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 THE CONTRACT PAY ITEMS OF WORK.
19. ALL PROPOSED STUBS AND PLUGGED PIPES SHALL BE LOCATED WITH MAGNATEC AND 1" PVC PER DETAIL.
20. ALL TRENCH BACKFILL SHALL BE EITHER TYPE I OR II UNLESS OTHERWISE NOTED.
21. 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
1260 SOUTH SENECA
WICHITA, KS 67213
MR. JIM WEBER
(316) 383-7901
22. CONTRACTOR SHALL GRADE THE EASEMENT 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" (SEE EASEMENT GRADING PLAN, SHEET 3).
23. PRIOR TO LAYING THE NEW SEWER LINES THE CONTRACTOR SHALL EXPOSE AND VERIFY THE ELEVATION GRADE AND ALIGNMENT OF THE SANITARY SEWER MANHOLE AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES FROM THE PLAN.
24. MINIMUM ADJUSTMENT FOR MANHOLES ON THIS PROJECT SHALL BE 8", IN ACCORDANCE WITH THE PRECAST MANHOLE DETAIL SHEET.
25. THE CONTRACTOR MUST EXAMINE THE CONSTRUCTION SITE PRIOR TO BIDDING AND BE SATISFIED AS TO THE WORK SHOWN FOR COMPLETION. AFTER BIDS HAVE BEEN RECEIVED, THE CONTRACTOR SHALL NOT ASSERT THAT THERE WAS A MISUNDERSTANDING OF THE QUANTITIES OF WORK OR OF THE NATURE OF THE WORK TO BE COMPLETED.

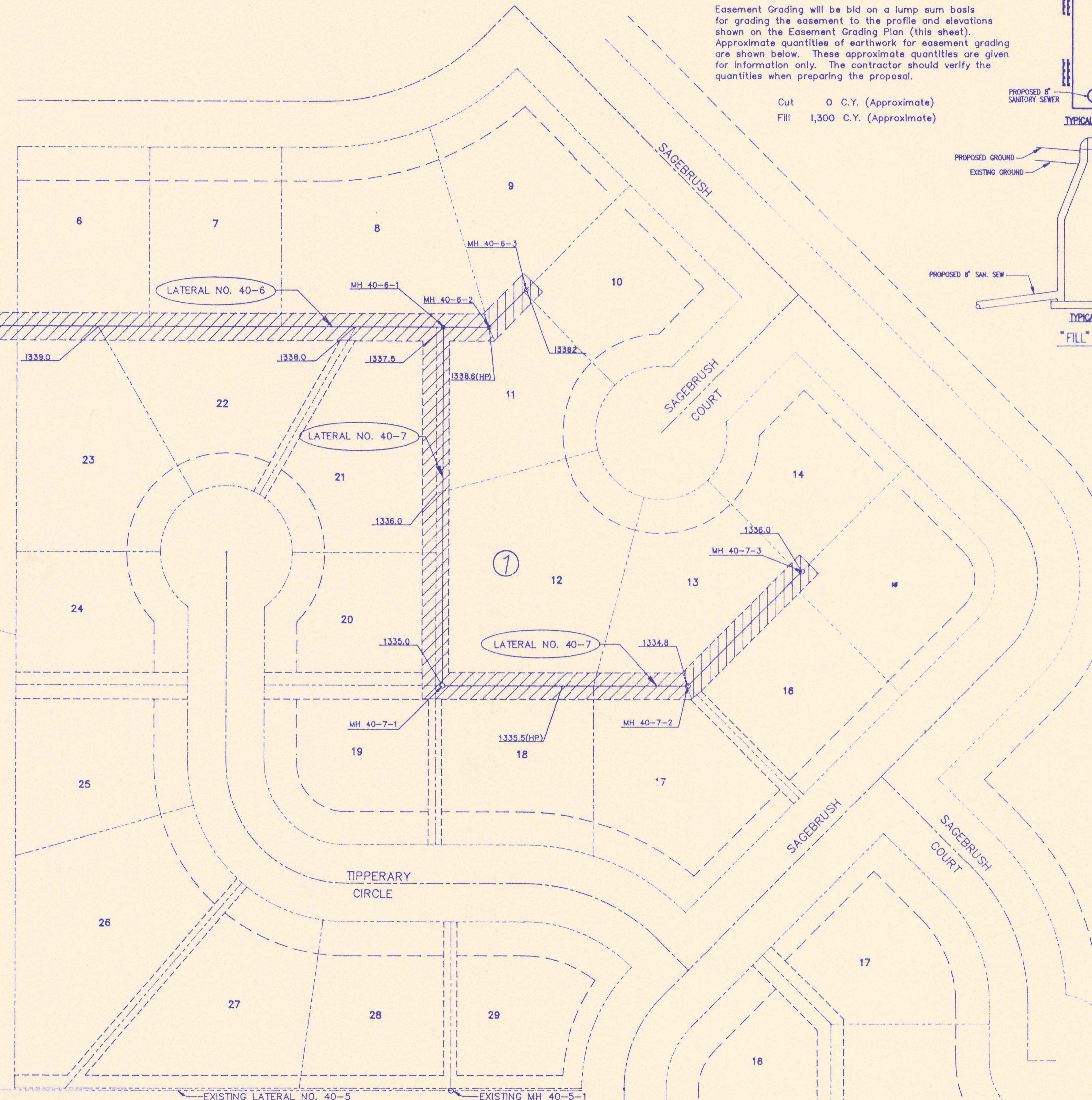


Existing Sanitary Sewer Manhole MH 25-2-10

OVERBROOK ADDITION CRESTVIEW COUNTRY CLUB ESTATES

EXISTING MH MH 25-2-9

EXISTING MH MH 25-2-8



- LEGEND
- EASEMENT GRADING
 - HP - HIGH POINT
 - ME - MATCH EXISTING

KEY MAP AND EASEMENT GRADING PLAN FOR A PORTION OF OVERBROOK SECOND ADDITION CRESTVIEW COUNTRY CLUB ESTATES SEDGWICK COUNTY, KANSAS

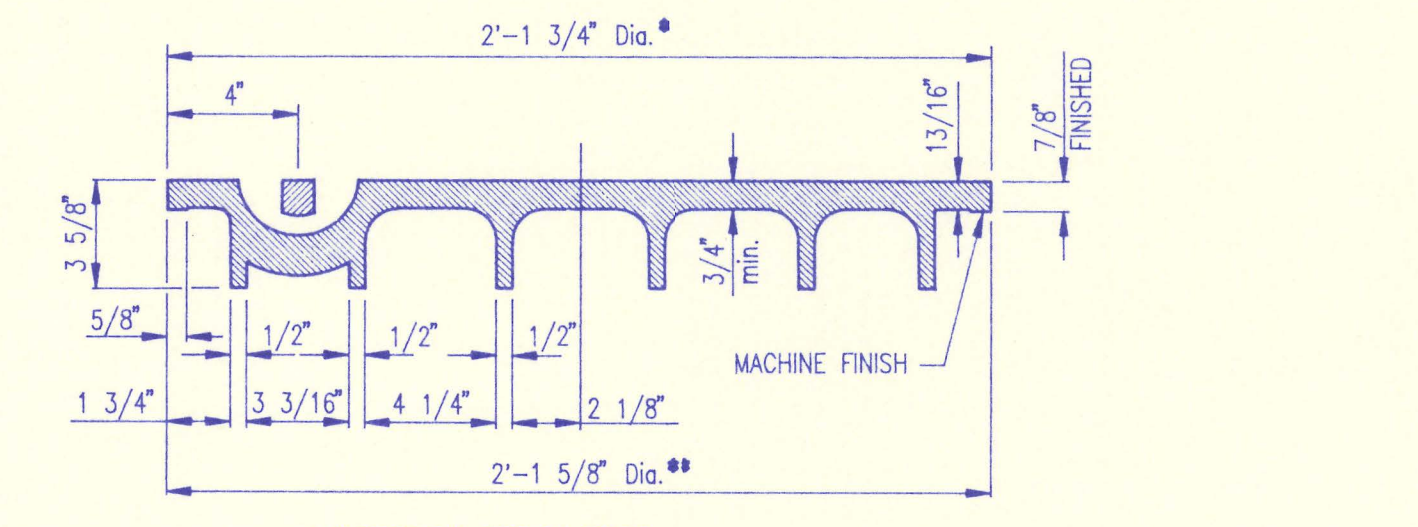
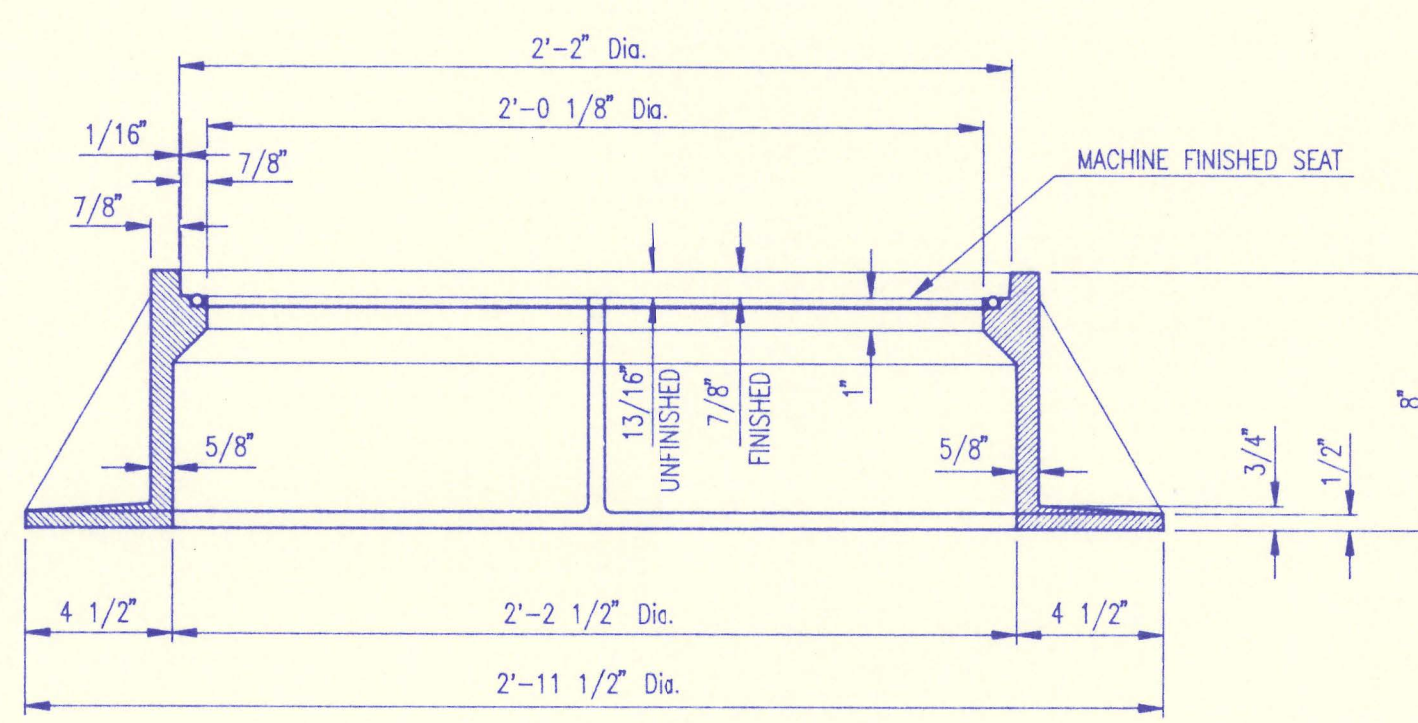
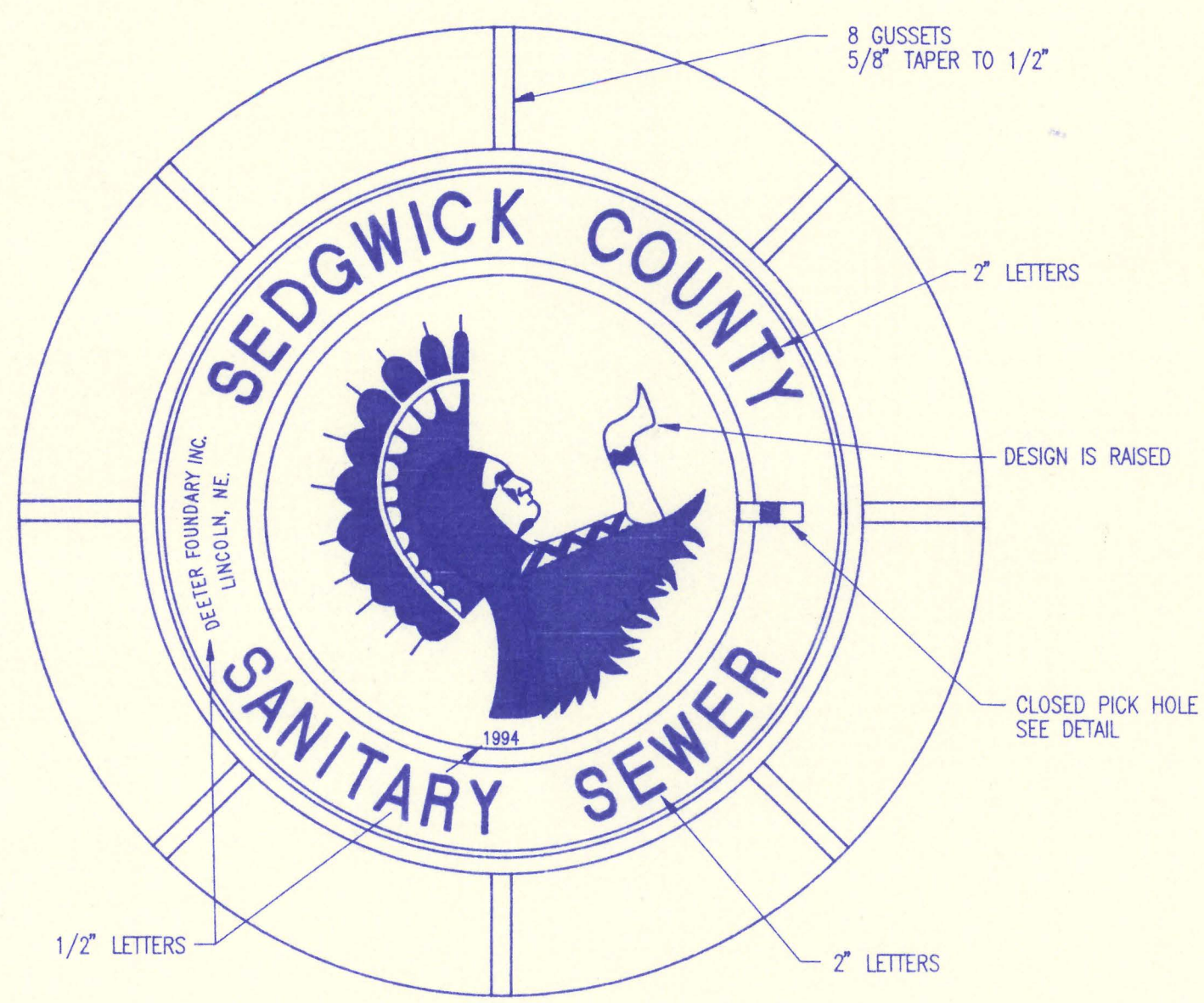
Benchmark #4: "□" Cut on S.W. Cor. of East Inlet on the N.E. Corner of Sharon and Sandpiper Elev. = 1328.14
 Benchmark #4A: East Cap Bolt on Fire Hydrant at S.W. Corner Sharon and Sagebrush Elev. = 1334.46
 Benchmark #4B: "□" Cut on North E.O.R. on N.W. Quadrant of Sharon and Sagebrush Elev. = 1331.55

A PORTION OF OVERBROOK 2ND ADDITION
KEY MAP
 SEDGWICK COUNTY, KANSAS

CERTIFIED ENGINEERING DESIGN

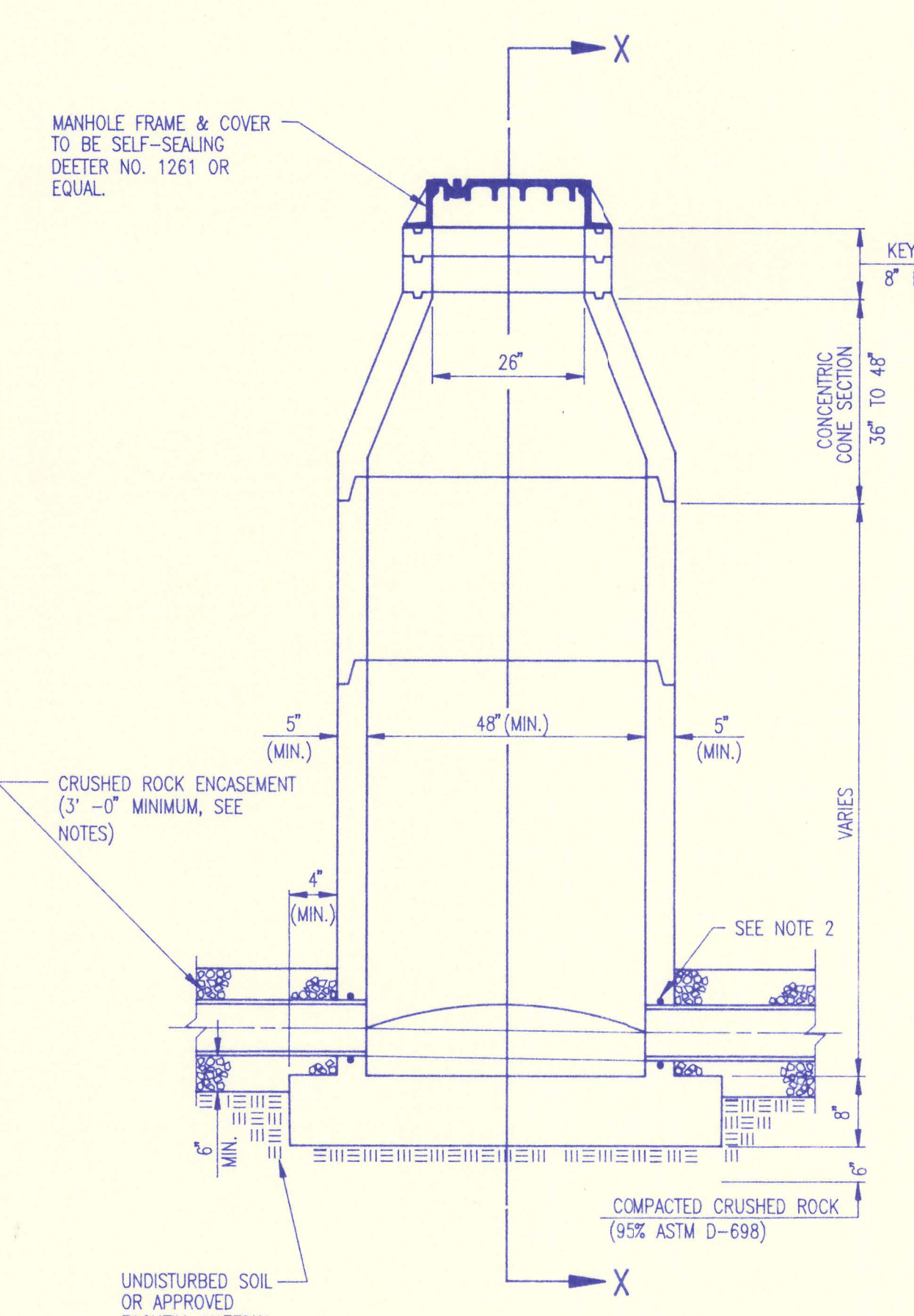
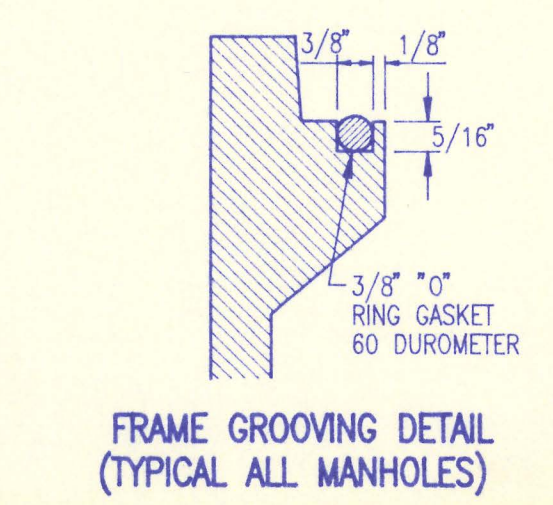
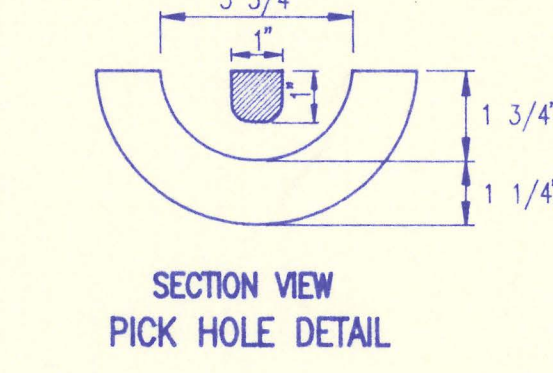
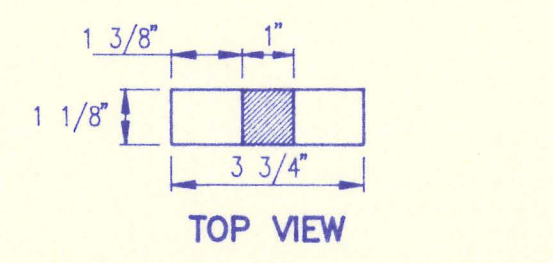
CEd 1330 E. FIRST, # 107
 WICHITA, KANSAS 67214
 (316) 262-8808

DESIGNED: HDF	SCALE: NOTED	SHEET 2
DRAWN: HDF	DATE: 8-95	TOTAL 9
CHECKED: HDF	CEd FILE: OVBK-KEY.DWG	

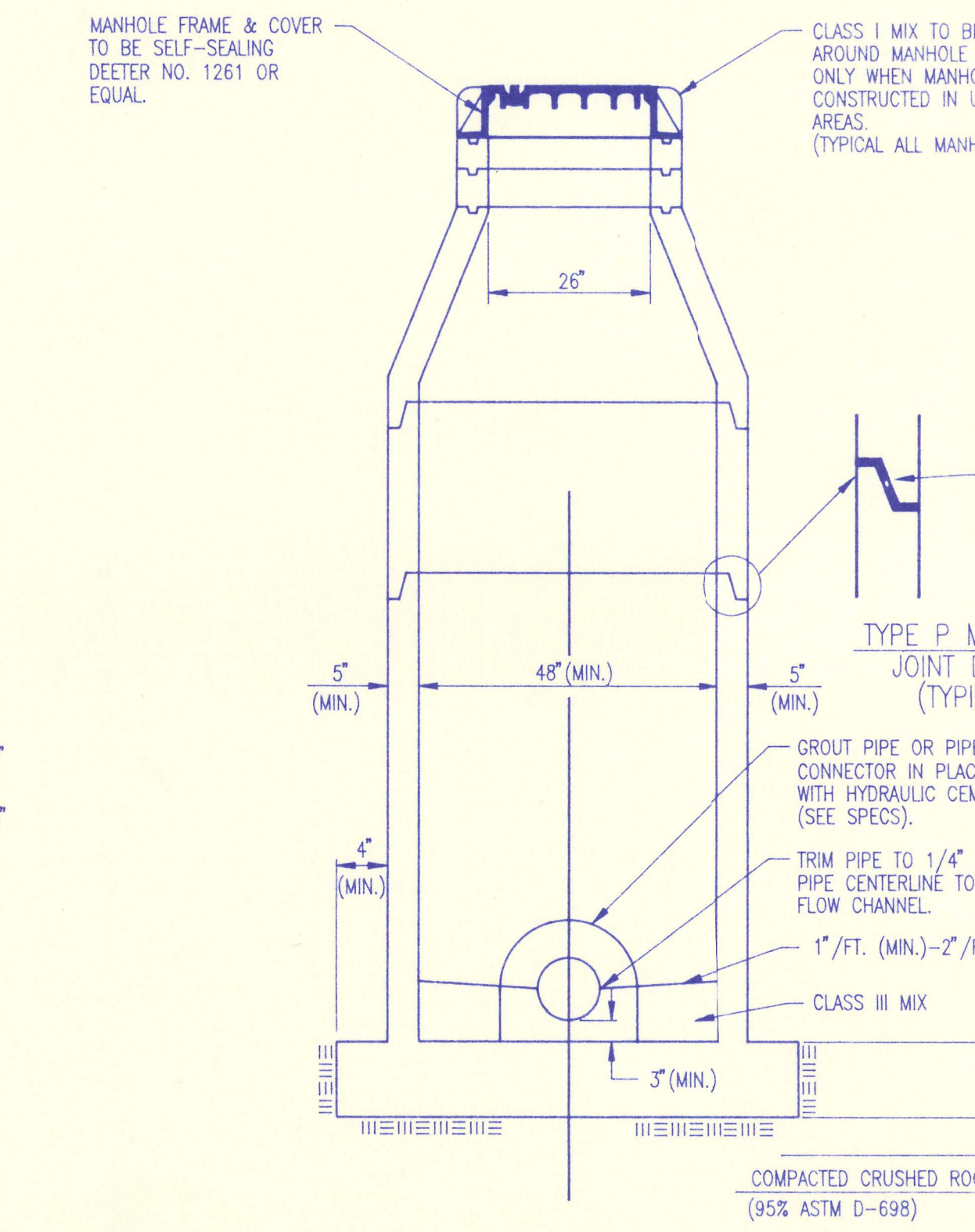


MANHOLE FRAME AND COVER
(TOTAL WEIGHT = 430 LBS.)

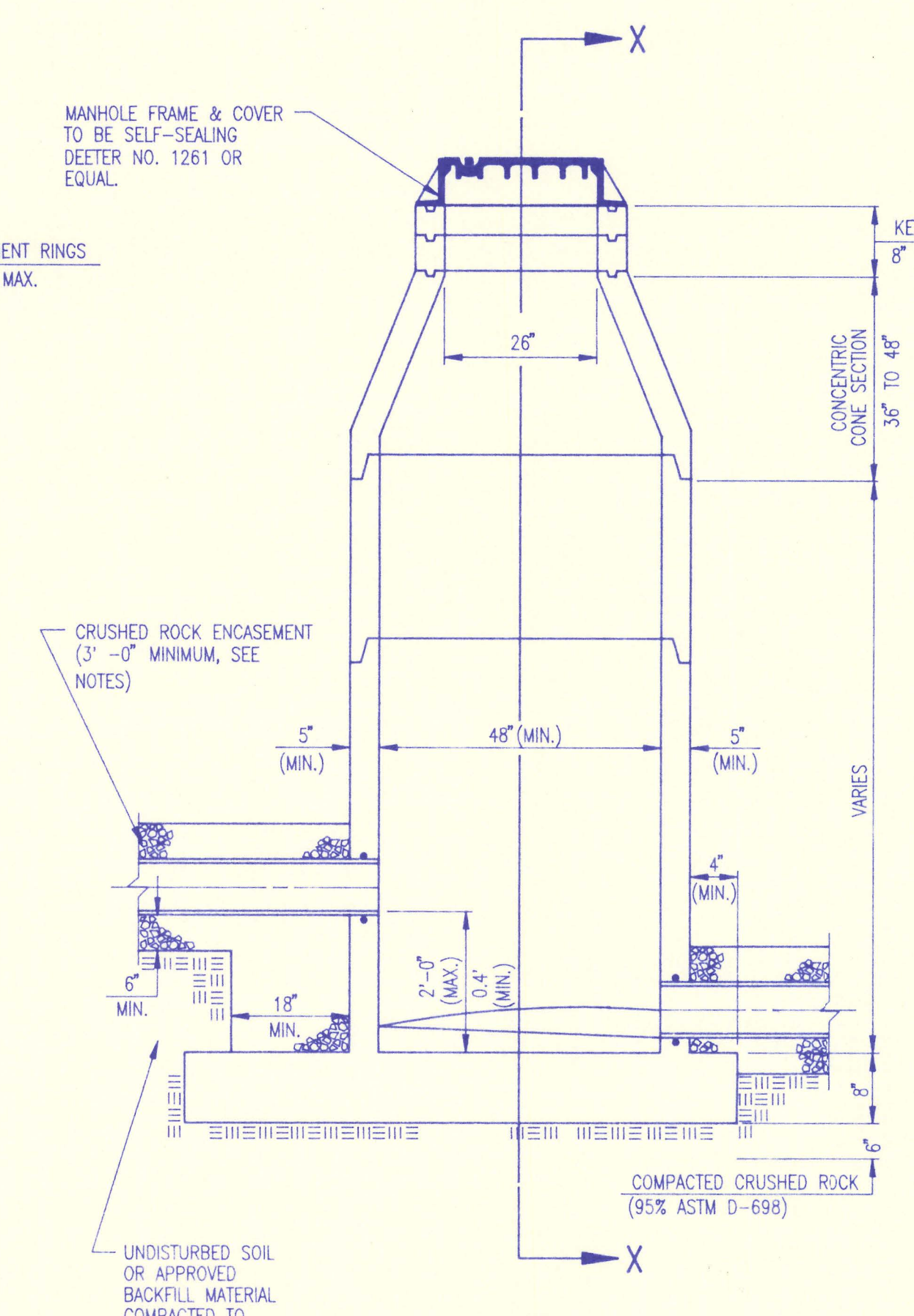
- MANHOLE FRAME AND COVER NOTES**
- CAST IRON MANHOLE FRAME AND COVER SHALL CONFORM TO ASTM A-48, CLASS 35B, OR BETTER.
 - CASTINGS ARE TO BE MANUFACTURED TRUE TO PATTERN AND WITH SATISFACTORY FIT OF COMPONENT PARTS. CASTINGS SHALL BE FREE OF DEFECTS AND ALL BURRS SHALL BE GRIND SMOOTH. DIMENSIONS AS 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. 1261 OR APPROVED EQUAL, UNLESS OTHERWISE SPECIFIED IN THE SPECIAL CONDITIONS. (MINIMUM WT. = 430 LBS.) ALL MANHOLE CASTINGS SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICES BID FOR THE VARIOUS MANHOLE TYPES.
 - THE MANUFACTURER SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO MANUFACTURE. THE ENGINEER SHALL RETAIN THE RIGHT TO REJECT CASTINGS NOT CONFORMING TO THE SPECIFICATIONS OR THE APPROVED SHOP DRAWINGS.
 - THE MANHOLE FRAME SHALL BE FURNISHED WITH AN APPROVED CONTINUOUS "O" RING GASKET GROOVED INTO THE BEARING SURFACE OF THE MANHOLE FRAME (PER DETAIL). THE "O" RING GASKET SHALL BE FACTORY INSTALLED IN THE MANHOLE FRAME WITH 100% SILICON SEALANT-DOWN CORNING OR EQUAL.



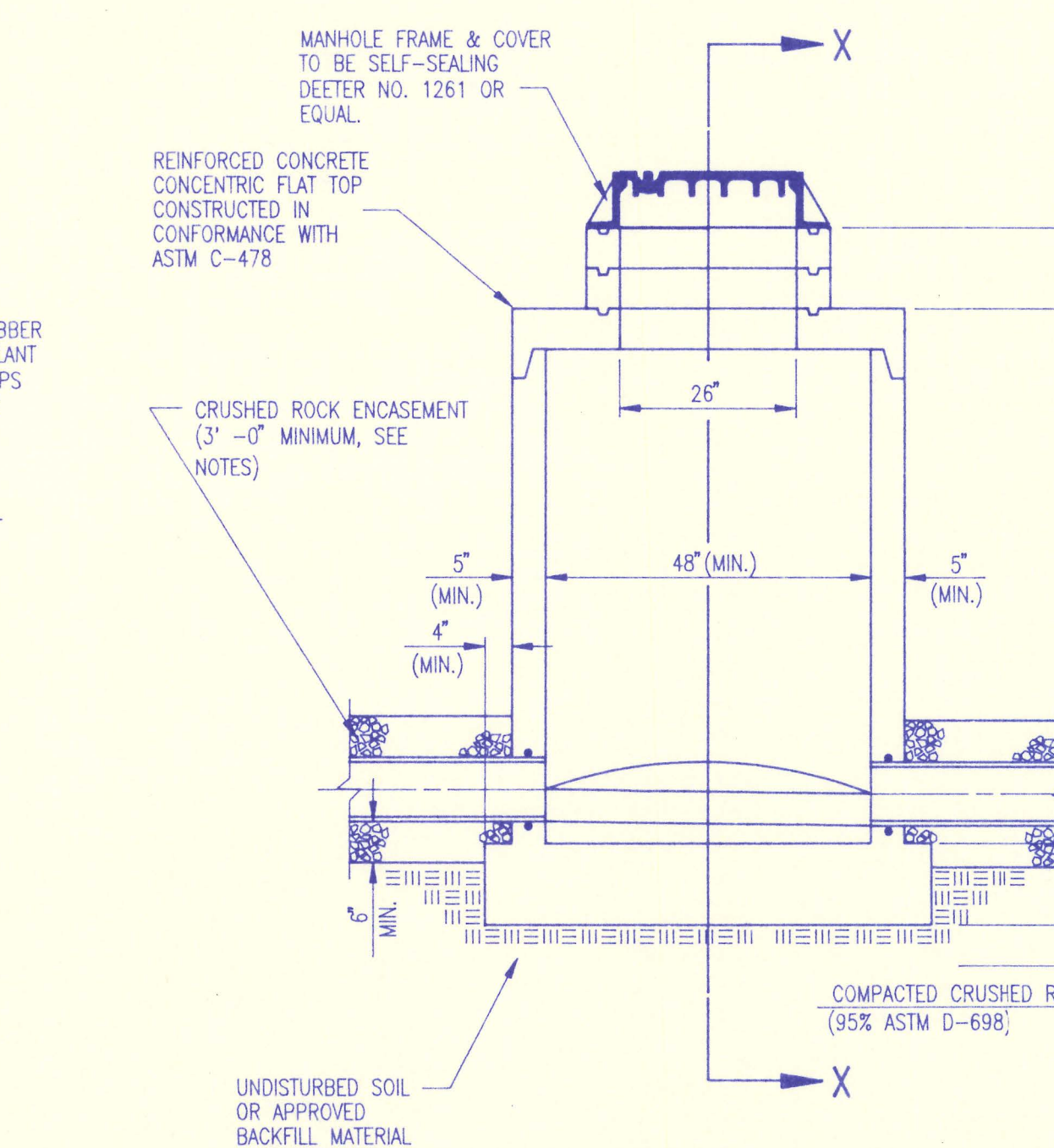
PRECAST STANDARD MANHOLE TYPE "A"



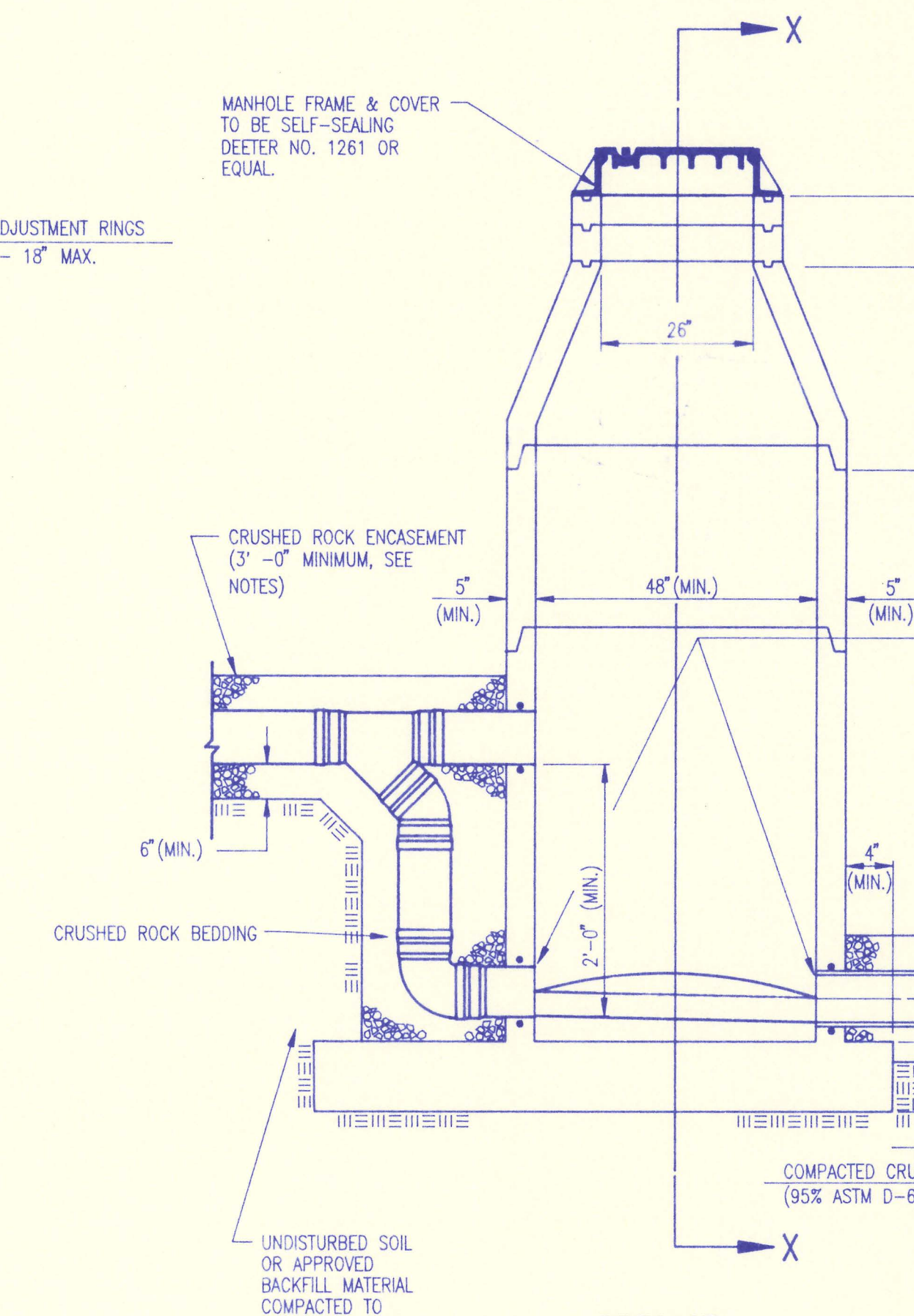
SECTION X (TYPICAL)



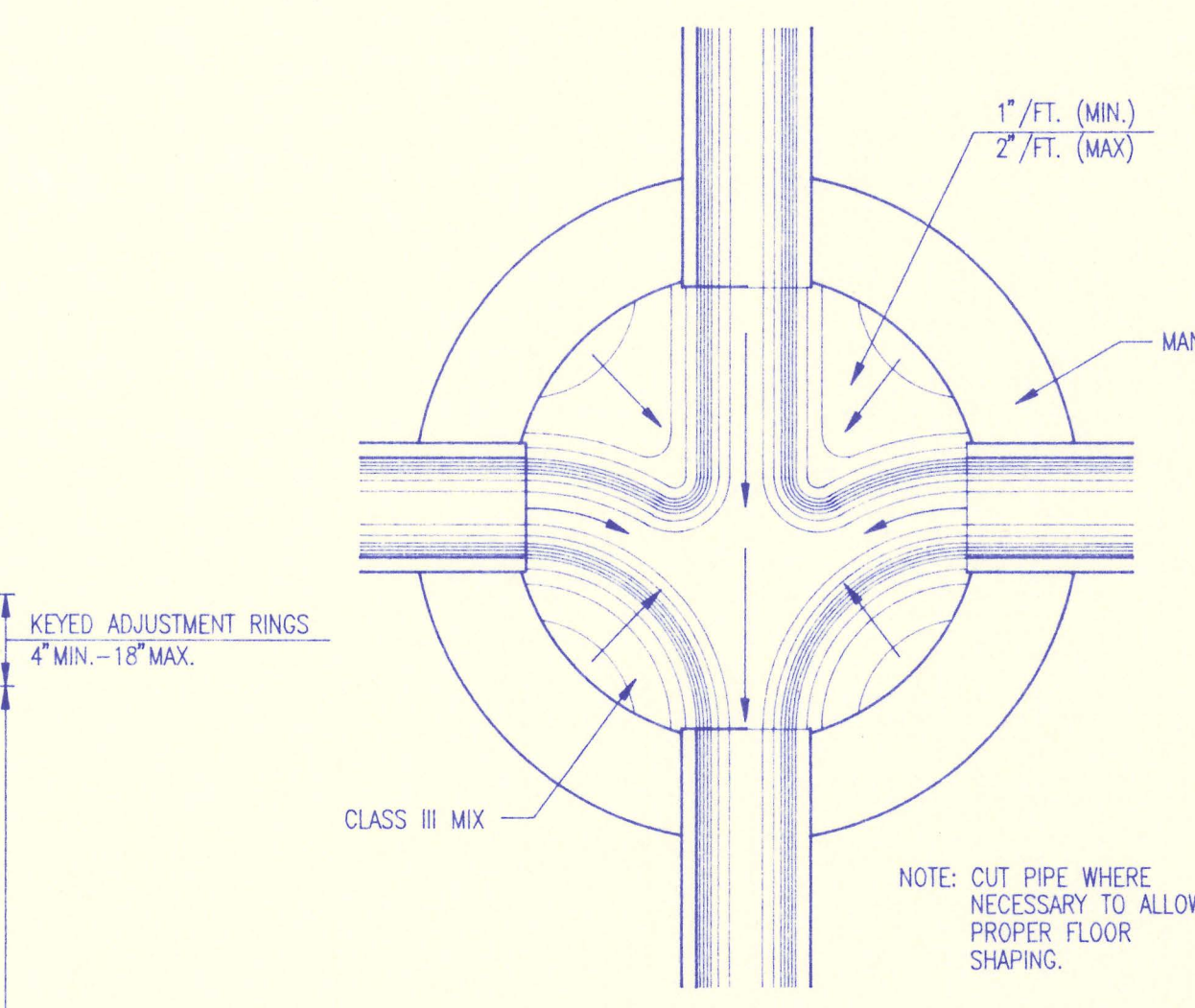
PRECAST INSIDE DROP MANHOLE TYPE "B"



PRECAST SHALLOW MANHOLE TYPE "D"



PRECAST OUTSIDE DROP MANHOLE TYPE "C"



TYPICAL MANHOLE FLOOR SHAPING

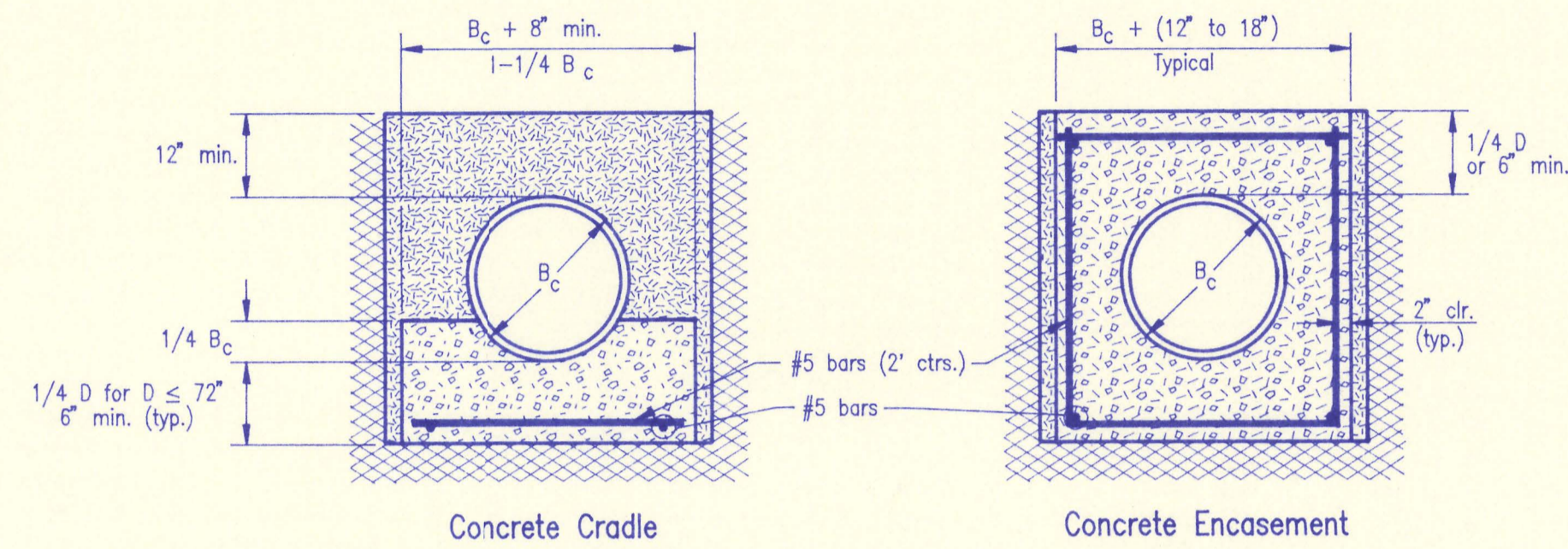
- NOTE:** TOP OF BOTTOM PIPE ON OUTSIDE DROP SHALL ALWAYS BE SET 0.1 FEET HIGHER THAN TOP OF PIPE CARRYING FLOW OUT OF THE MANHOLE.

PRECAST MANHOLE NOTES

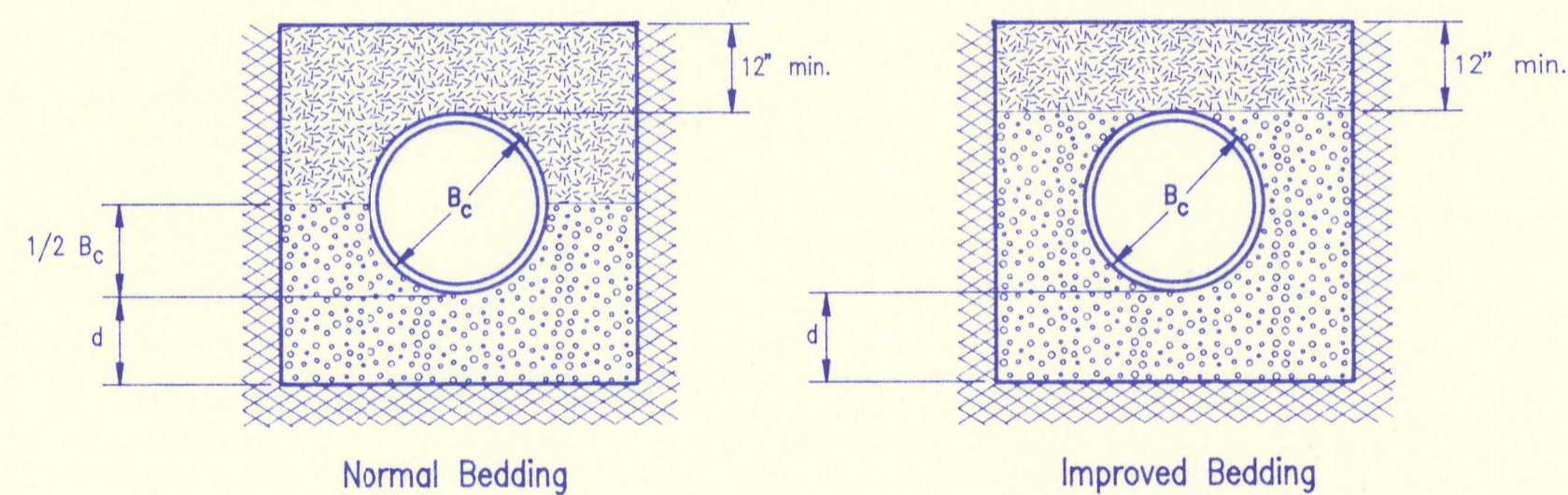
- IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSTABLE, THE CONTRACTOR WILL OVERGRADE TO A SUITABLE SUBGRADE CONDITION AND CRUSHED ROCK SHALL BE PLACED AND COMPACTED TO THE REQUIRED GRADE.
- "ALOK" OR APPROVED EQUAL FLEXIBLE WATER-STOP GASKETS WHICH MEET OR EXCEED THE TEST REQUIREMENTS 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. GLUED OR CEMENTED CAPS WILL NOT BE ACCEPTED.
- ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
- TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
- MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5" INSIDE DIAMETER (MIN.).
- INSIDE DIAMETER OF FIVE-FOOT DIAMETER PRECAST MANHOLES SHALL REMAIN CONSTANT TO THE LOCATION OF THE 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 STUDS ARE SHOWN ON THE PLANS, THE STUD SHALL EXTEND AT LEAST 5 FEET FROM THE INSIDE WALL OF THE MANHOLE.
4" STUDS SHALL BE SET AT 2.0% GRADE.
6" STUDS SHALL BE SET AT 1.0% GRADE.
- 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.
- 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.

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

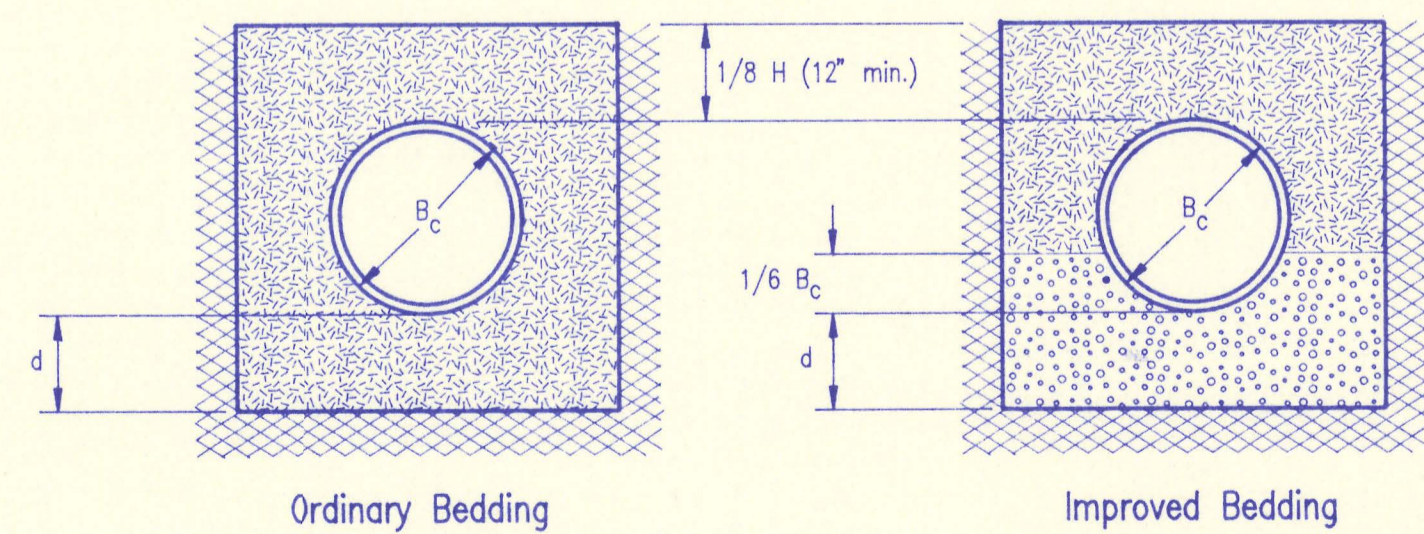
PRECAST MANHOLE DETAILS



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 1950 Kansas Standard Specifications for State Road and Bridge Construction.

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

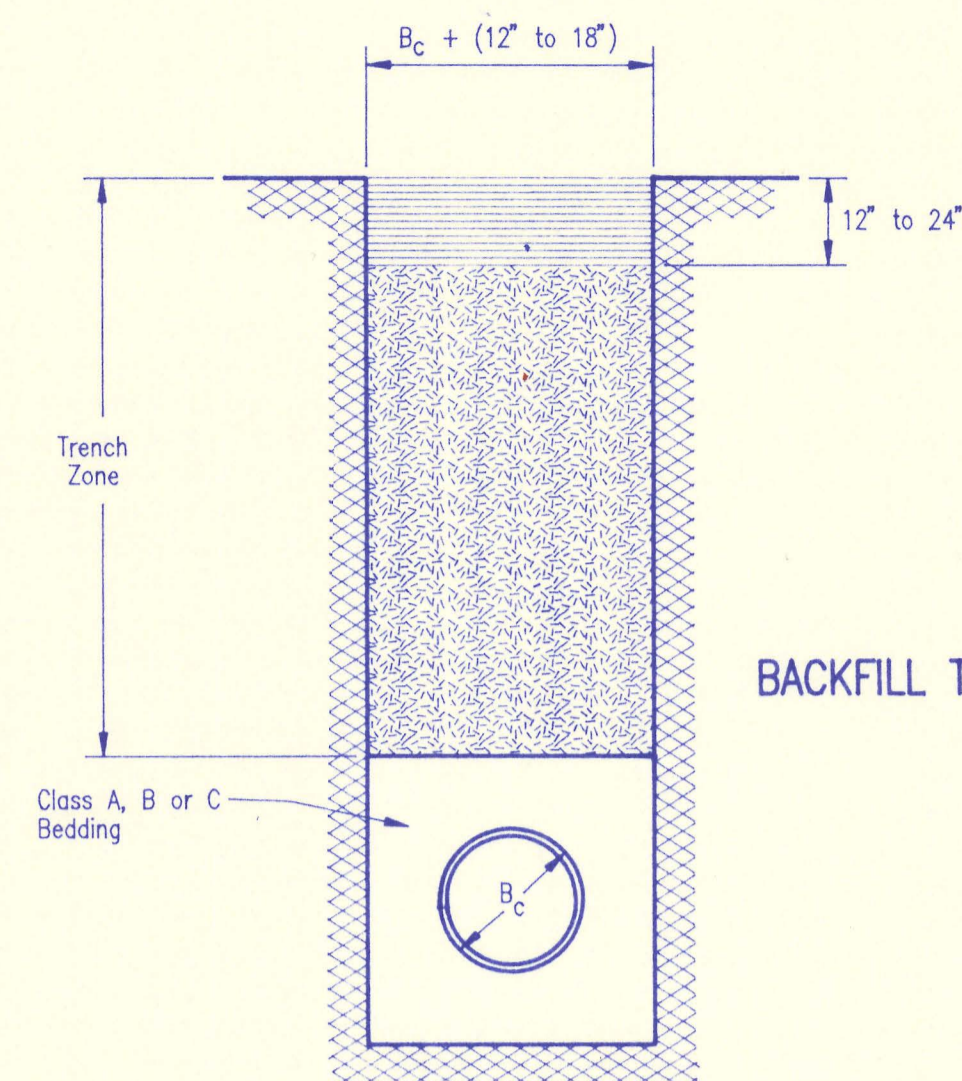
Class A "Concrete Cradle" and/or Class A "Concrete Encasement" is not required unless specified on the plans. However, where unexpected trench conditions exist or improper trenching is performed Class A Bedding may be required as determined by the Engineer.

Class B Bedding shall be used for all flexible pipe.

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

Class C Bedding shall be used for all rigid pipe.

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



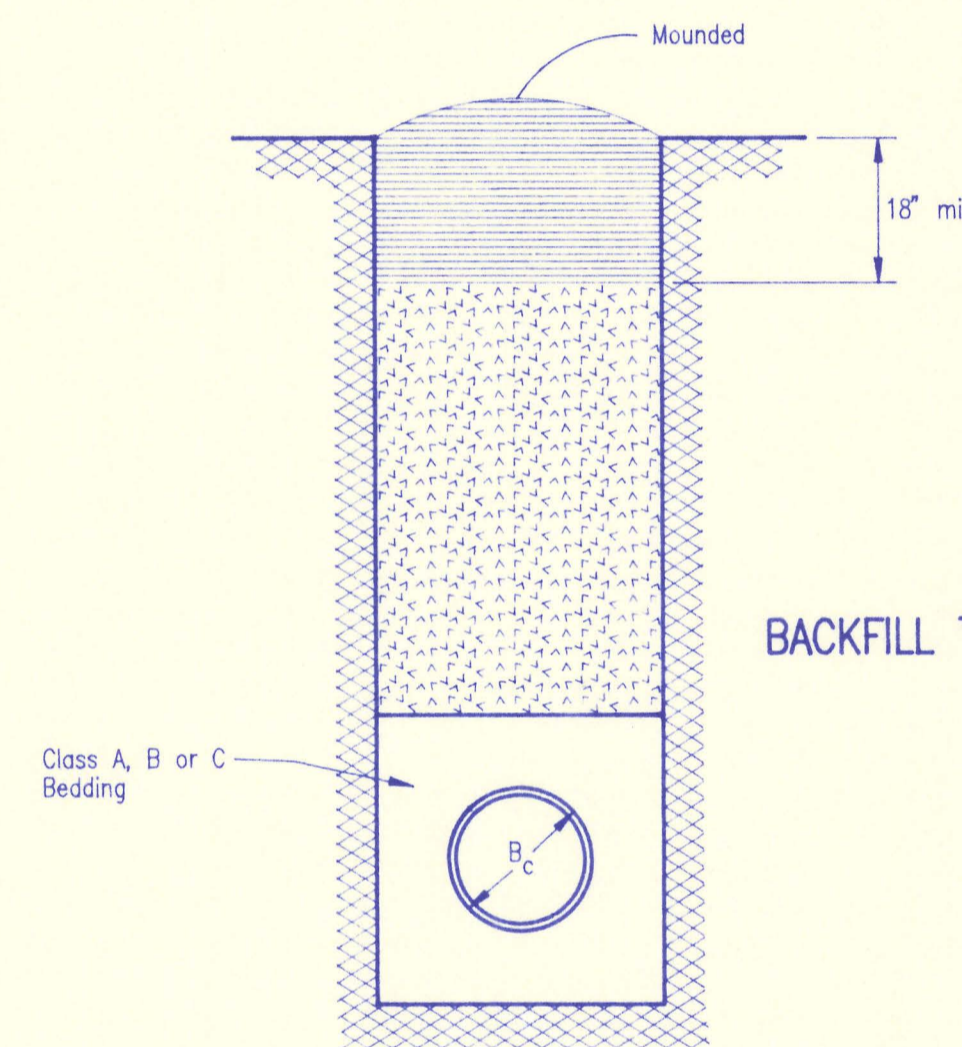
BACKFILL TYPE I

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

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

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

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



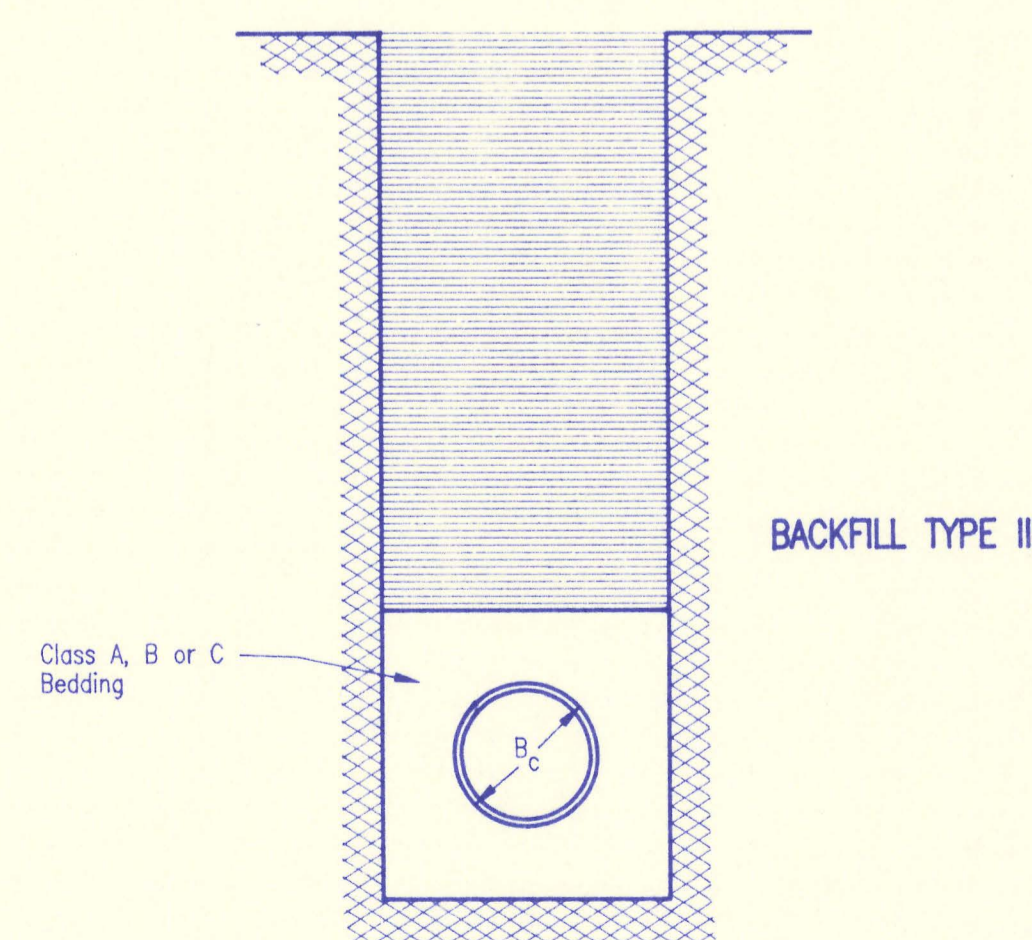
BACKFILL TYPE II

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

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

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

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



BACKFILL TYPE III

TRENCH ZONE BACKFILLING

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

BACKFILL DETAILS

ADOPTED AS STANDARD DESIGN SEPTEMBER, 1989

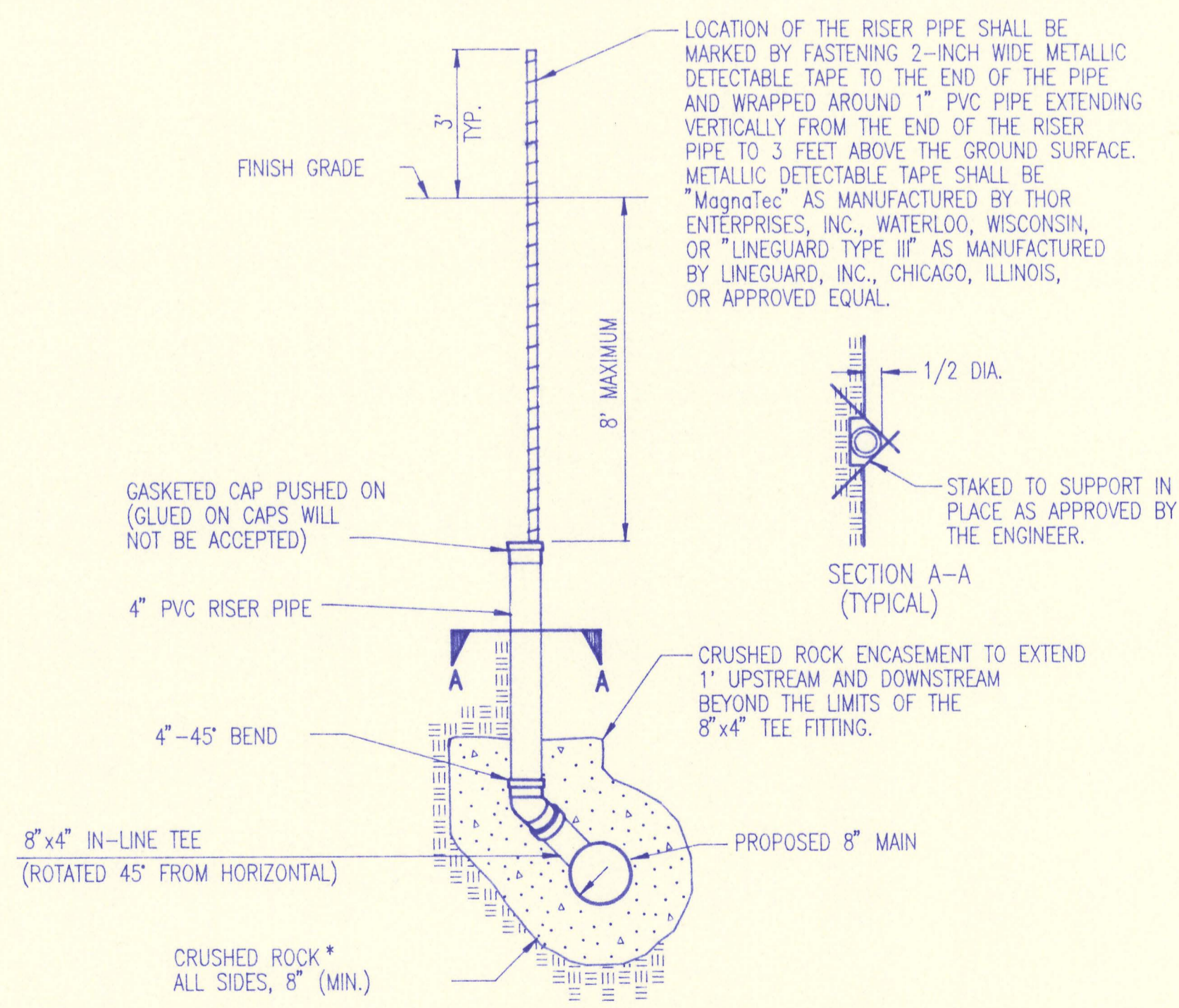
BY

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 (To be determined by measure.) APPROXIMATE DEPTH	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	MANHOLE SERVICE CONNECTION	10	1	1	4+49.39/RT(SE)				1
2	MANHOLE SERVICE CONNECTION	19	1	2	2+64.14/RT(SE)				2
3	MANHOLE SERVICE CONNECTION	14	1	2	5+81.01/LI(N)				3
4									4
5									5
6									6
7									7
8									8
9									9
10									10
11									11
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21									21

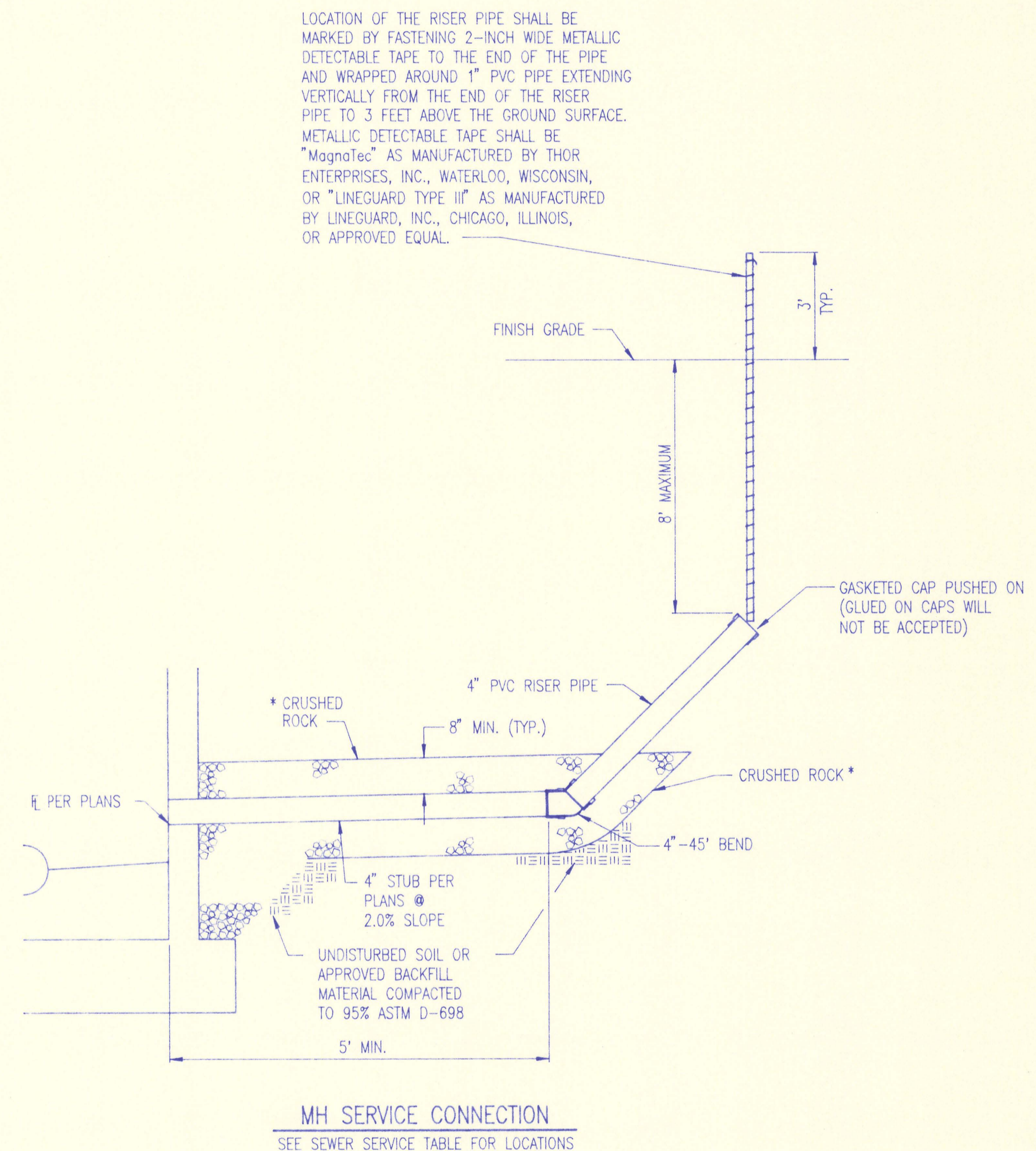
*ALL PIPE AND FITTINGS LESS THAN 8" DIAMETER, SHALL BE SCH. 40 - SOLID WALL (ASTM D 2665)



TEE SERVICE CONNECTION

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

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

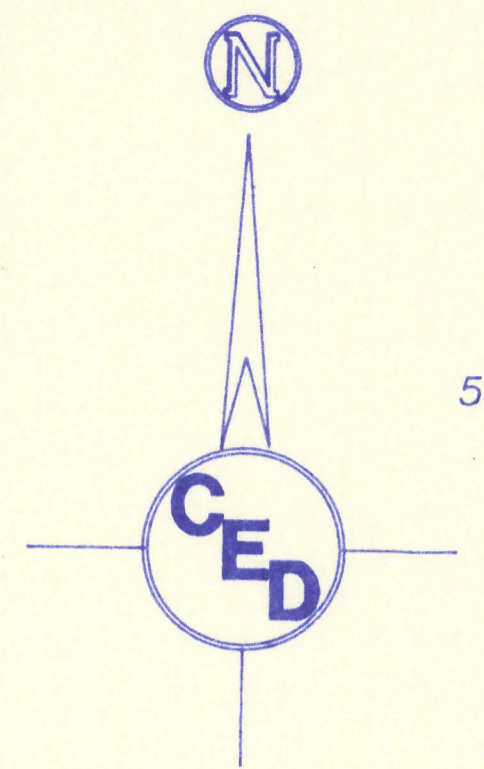


* CRUSHED ROCK SHALL MEET THE REQUIREMENTS FOR GRANULAR BEDDING MATERIAL, AS OUTLINED IN THE SPECIFICATIONS.

2	Revised compaction designation-Backfilling under pavement	RJ	9/28/94
1	Revised compaction designation	RJ	3/9/94
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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



1" = 20'

Sta. 0+00, Existing Conc. MH # 25-2-10
 Core existing manhole and install new 8" Pipe(E).
 Seal new 8" pipe to MH wall with Water-Stop
 Gasket and quick-set hydraulic cement.
 Construct inside drop on existing manhole
 Remove existing MH frame and cover.
 Fill all MH wall imperfections with quick-set
 hydraulic cement.
 Coat MH interior with Strong Seal MS 2-A per
 manufacturers recommendations.
 Install new self-sealing MH frame and cover.

Contractor shall verify existing FL(Out) and
 notify Engineer of any discrepancies prior to
 installation of new pipe

Existing Hedgerow to
 be remove as required
 to clear construction

Sta. 1+38.38
 Defl. Ang. =
 0°32'51" Rt.

Install 358.38 L.F.
 8" Pipe

20' Utility Easement

Sta. 3+58.38, Lat. No. 40-6
 Sta. 0+00.00, Lat. No. 40-7

Sta. 3+95.18, Lat. No. 40-6
 Construct MH 40-6-2, Type A MH

Sta. 4+49.39, Lat. No. 40-6
 Construct MH 40-6-3, Type A MH

Existing 8" San. Sewer

ELEC BOX

CAUTION!! Buried Electric
 Line, Contractor shall expose
 and work around cable

CAUTION!! Buried Telephone
 Cable, Contractor shall expose
 and work around cable

Contractor shall give the following
 property owner 48 hours notice
 prior to beginning construction.

Owner: Jay D. & Sandra L. Keener
 Address: 844 Sandpiper Court
 Wichita, KS 67230
 Telephone: (316)733-1263

UTILITIES SHOWN REPRESENT THE BEST
 INFORMATION AVAILABLE FOR DESIGN. ADDITIONAL
 UTILITIES MAY BE PRESENT ON THIS PROJECT.
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR
 DETERMINING THE EXACT LOCATION, DEPTH
 AND SIZE OF ALL UNDERGROUND UTILITIES
 PRIOR TO CONSTRUCTION. THE CONTRACTOR
 SHALL BE LIABLE FOR ANY DAMAGE CAUSED
 BY THE FAILURE TO DO SO.

OVERBROOK 2ND ADDITION
 CRESTVIEW COUNTRY CLUB ESTATES

Overbrook Addition
 Crestview Country Club

Benchmark #4:
 "□" Cut on S.W. Cor. of East Inlet on the
 N.E. Corner of Sharon and Sandpiper
 Elev. = 1328.14

Benchmark #4A:
 East Cap Bolt on Fire Hydrant at
 S.W. Corner Sharon and Sagebrush
 Elev. = 1334.46

Benchmark #4B:
 "□" Cut @ North E.O.R. on N.W.
 Quadrant of Sharon and Sagebrush
 Elev. = 1331.55



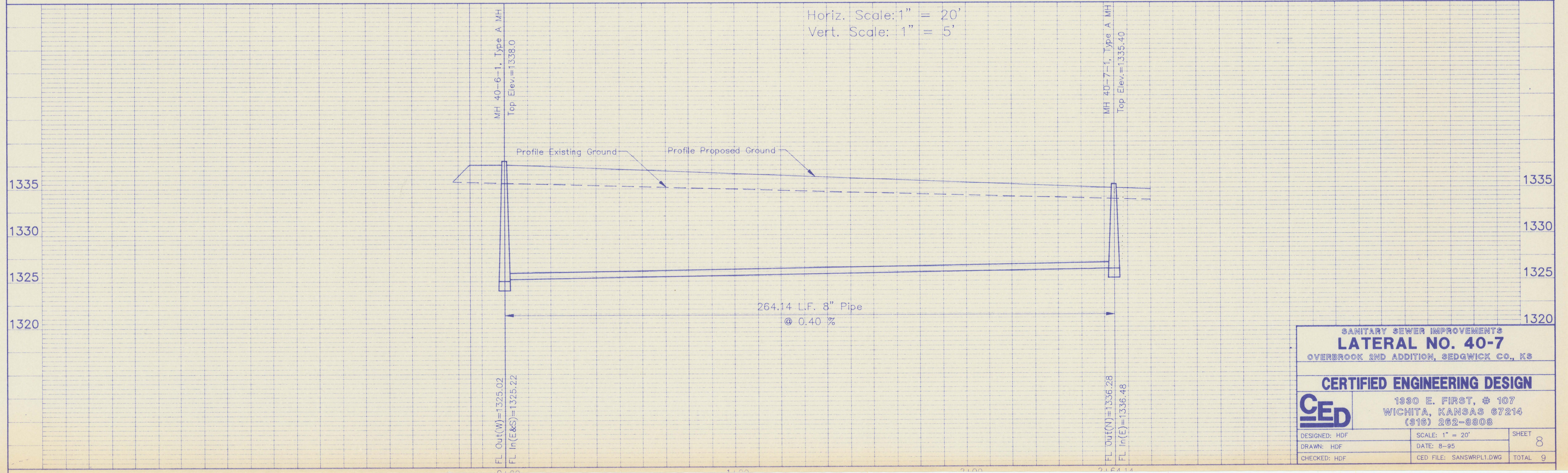
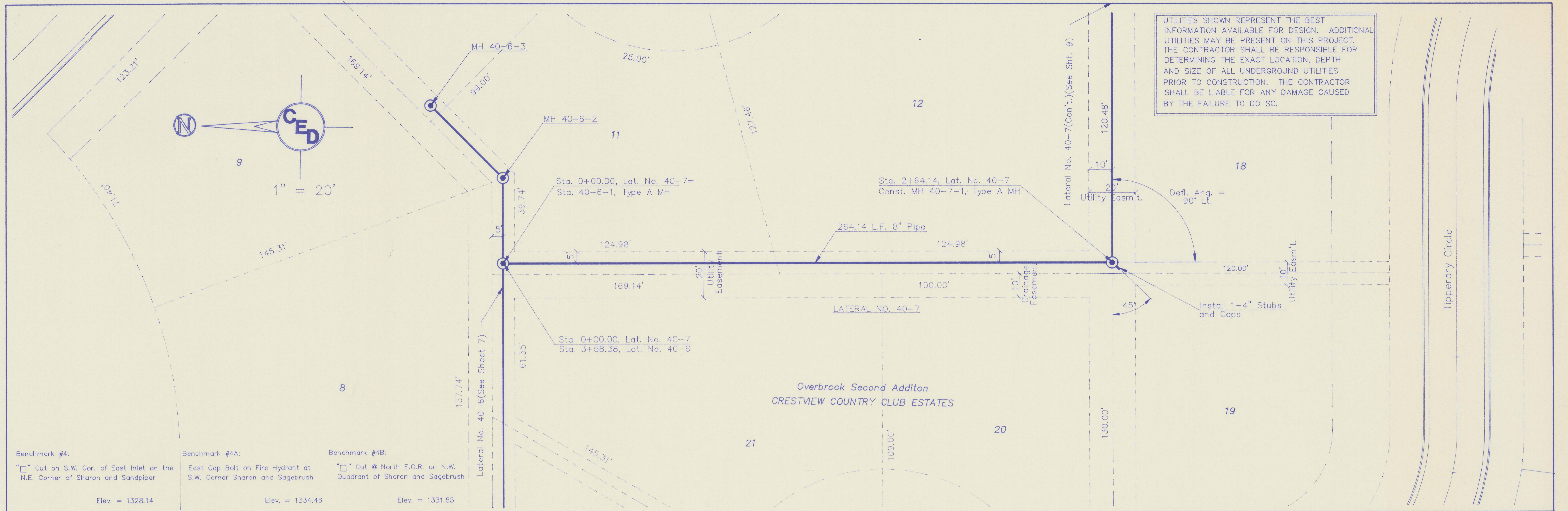
Horiz. Scale: 1" = 20'
 Vert. Scale: 1" = 5'

SANITARY SEWER IMPROVEMENTS
LATERAL NO. 40-6
 OVERBROOK 2ND ADDITION, SEDGWICK CO., KS

CERTIFIED ENGINEERING DESIGN

CED
 1880 E. FIRST, # 107
 WICHITA, KANSAS 67214
 (316) 262-8808

DESIGNED: HDF	SCALE: 1" = 20'	SHEET 7
DRAWN: HDF	DATE: 1" = 20'	TOTAL 9
CHECKED: HDF	CED FILE: SANSWRPL1.DWG	



SANITARY SEWER IMPROVEMENTS
LATERAL NO. 40-7
OVERBROOK 2ND ADDITION, SEDGWICK CO., KS

CERTIFIED ENGINEERING DESIGN

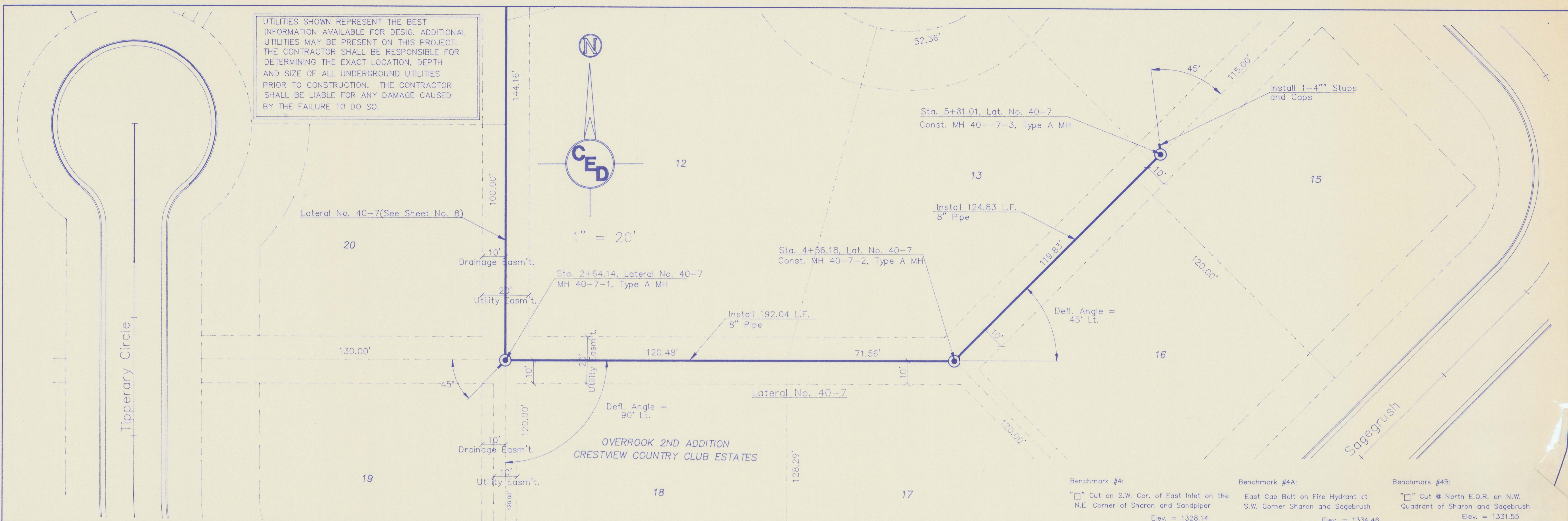
CEd
1330 E. FIRST, # 107
WICHITA, KANSAS 67214
(316) 262-8808

DESIGNED: HDF	SCALE: 1" = 20'	SHEET
DRAWN: HDF	DATE: 8-95	8
CHECKED: HDF	CD FILE: SANWRPL1.DWG	TOTAL 9

UTILITIES SHOWN REPRESENT THE BEST INFORMATION AVAILABLE FOR DESIG. ADDITIONAL UTILITIES MAY BE PRESENT ON THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, DEPTH AND SIZE OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE CAUSED BY THE FAILURE TO DO SO.

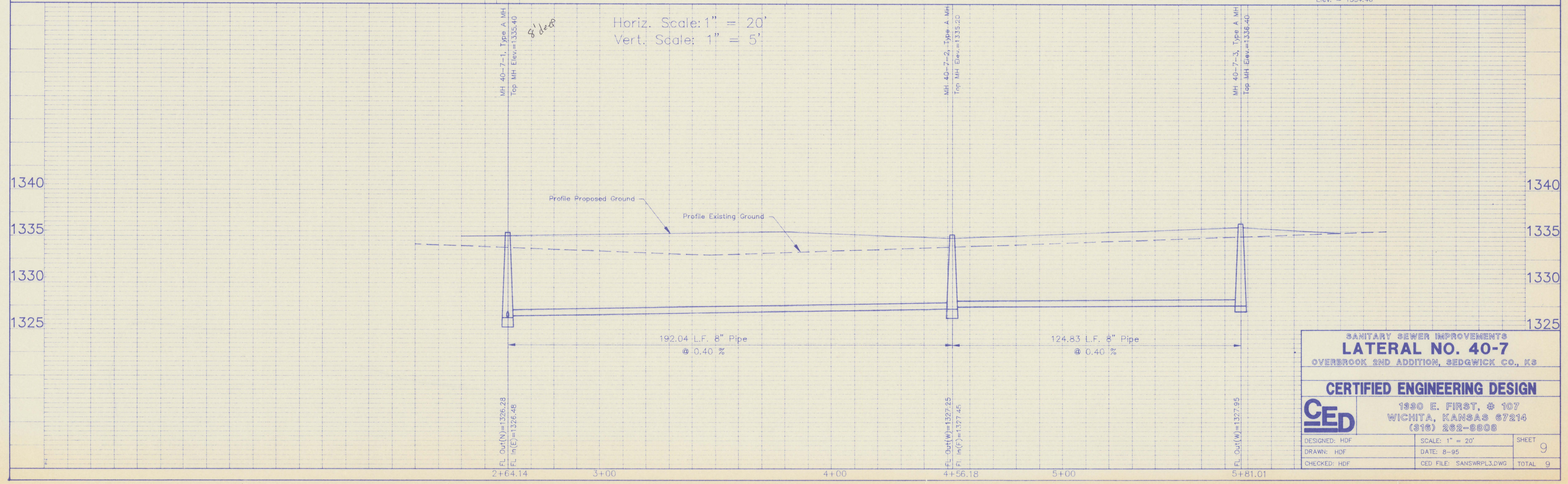


1" = 20'



Benchmark #4: "□" Cut on S.W. Cor. of East Inlet on the N.E. Corner of Sharon and Sandpiper Elev. = 1328.14
 Benchmark #4A: "□" East Cap Bolt on Fire Hydrant at S.W. Corner Sharon and Sagebrush Elev. = 1334.46
 Benchmark #4B: "□" Cut @ North E.O.R. on N.W. Quadrant of Sharon and Sagebrush Elev. = 1331.55

Horiz. Scale: 1" = 20'
 Vert. Scale: 1" = 5'



SANITARY SEWER IMPROVEMENTS
LATERAL NO. 40-7
 OVERBROOK 2ND ADDITION, SEDGWICK CO., KS

CERTIFIED ENGINEERING DESIGN

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 1330 E. FIRST, # 107
 WICHITA, KANSAS 67214
 (316) 262-8808

DESIGNED: HDF	SCALE: 1" = 20'	SHEET
DRAWN: HDF	DATE: 8-95	9
CHECKED: HDF	CED FILE: SAN5WRPL3.DWG	TOTAL 9