

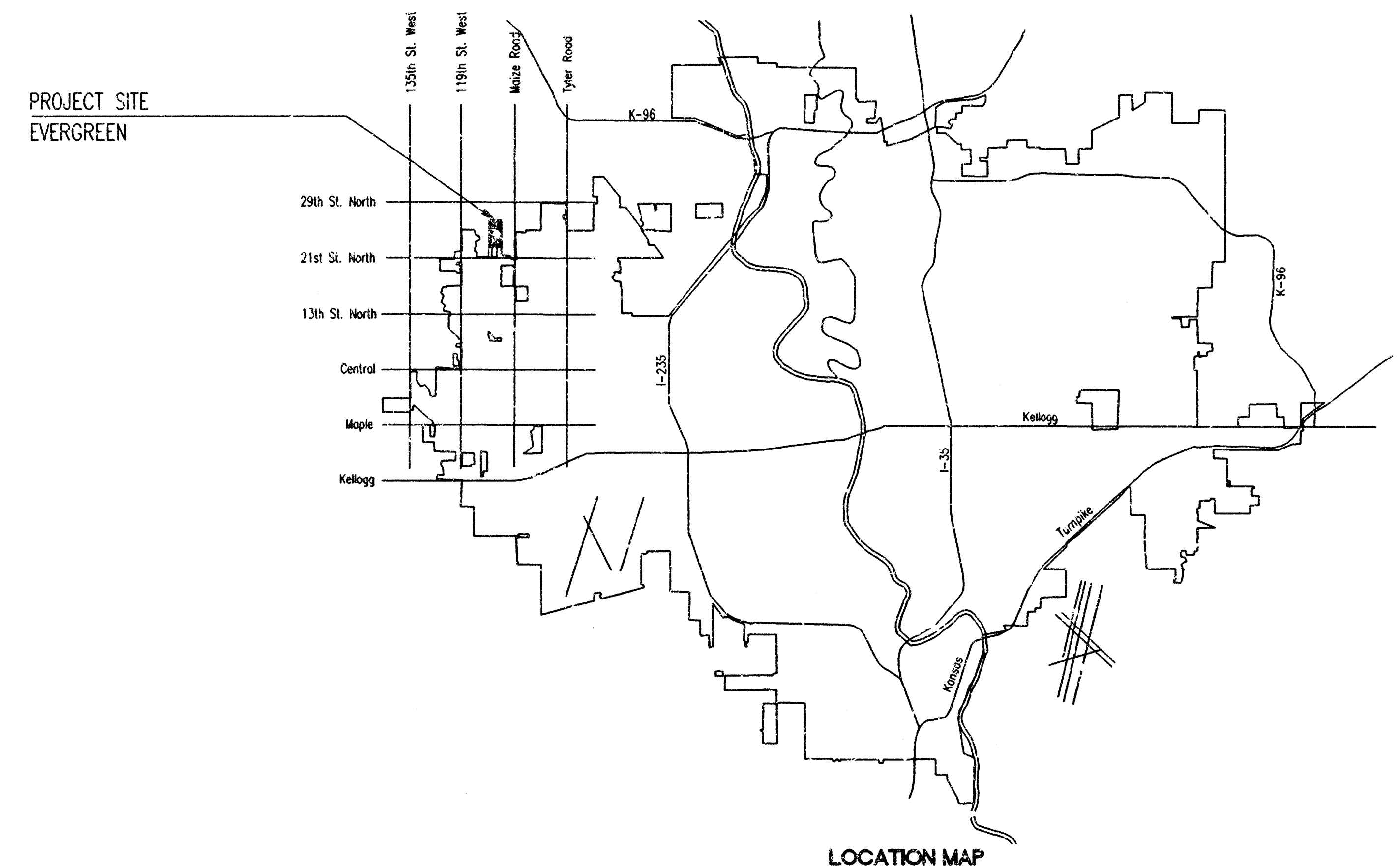
CONSTRUCTION PLANS FOR LIFT STATION AND FORCE MAIN TO SERVE EVERGREEN

AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS

IN

THE CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER



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INDEX CODE 743708

CITY OF WICHITA PROJECT NO. 468-76-245-82906-000-000-001

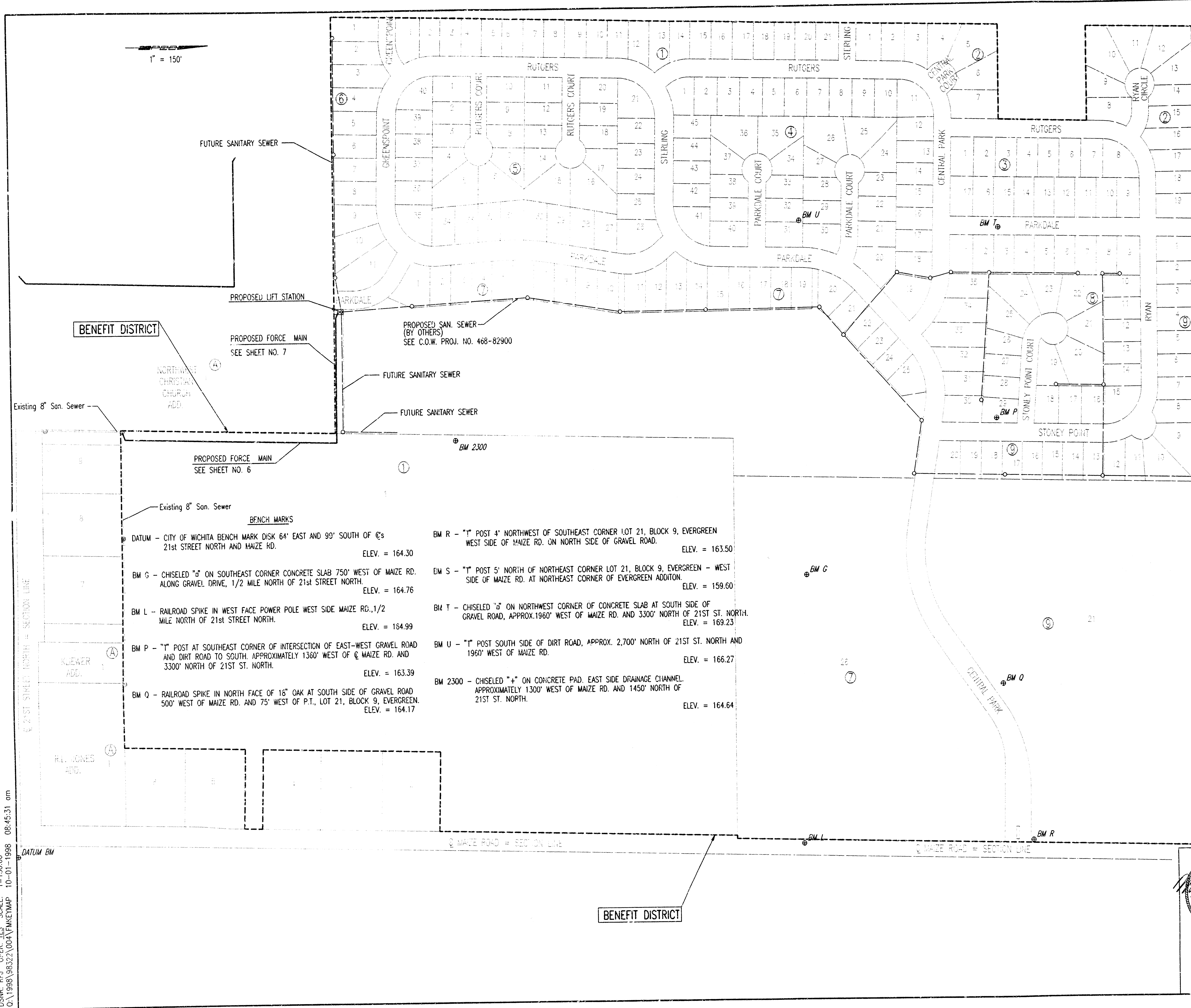
OCTOBER 1998

PLANS PREPARED BY
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

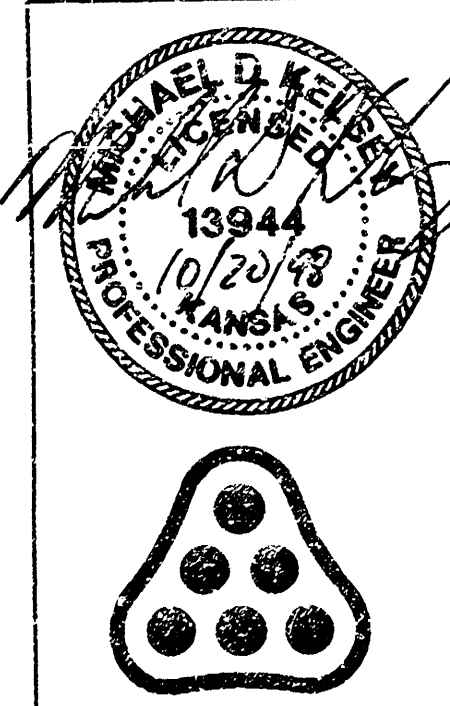
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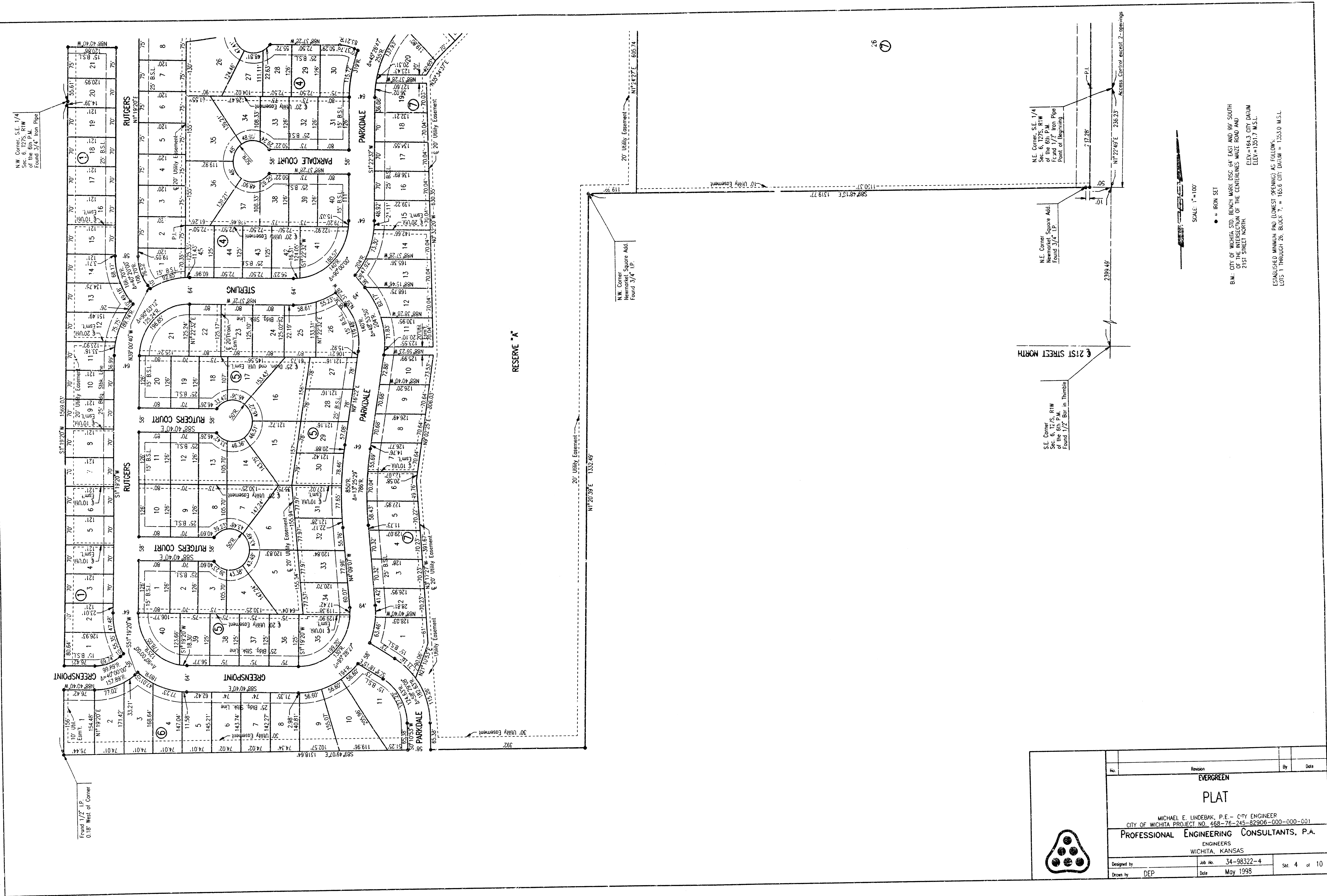
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Q:\1998\98322\004\KEYMAP

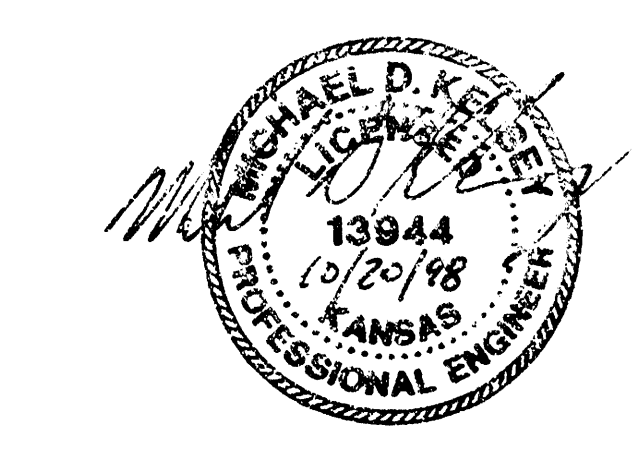
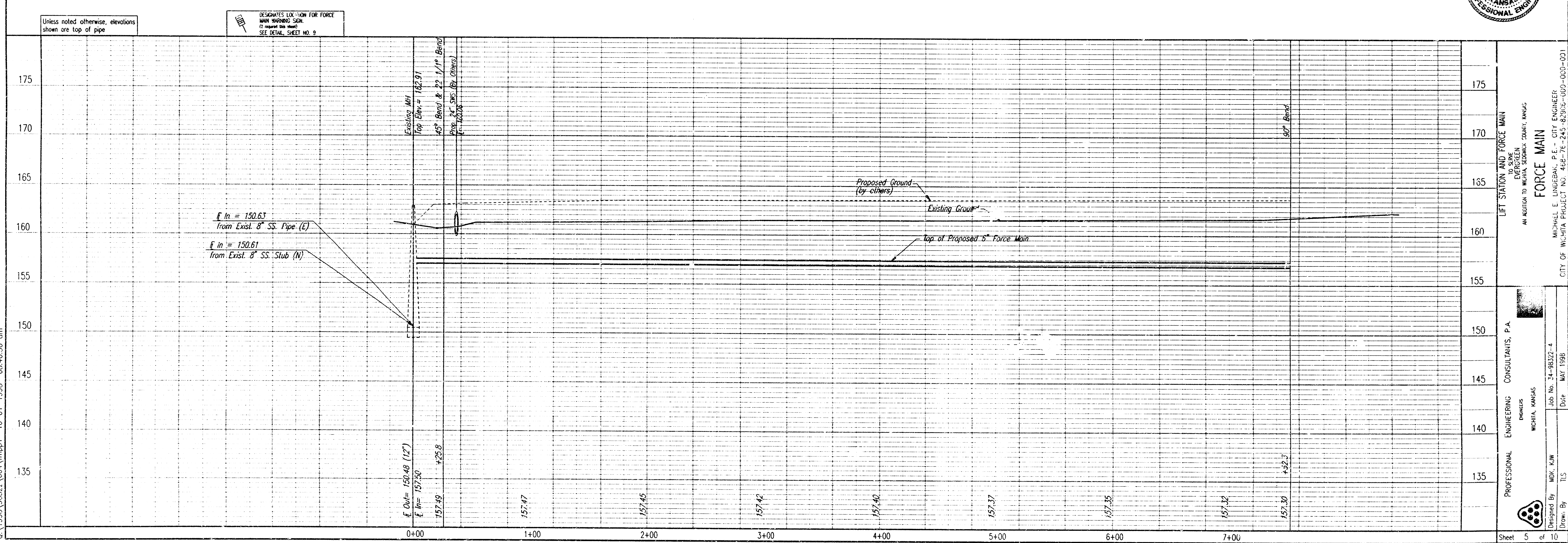
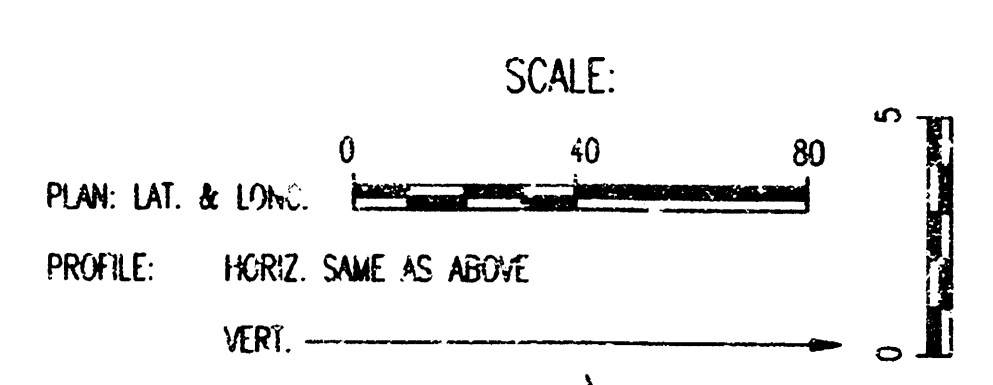
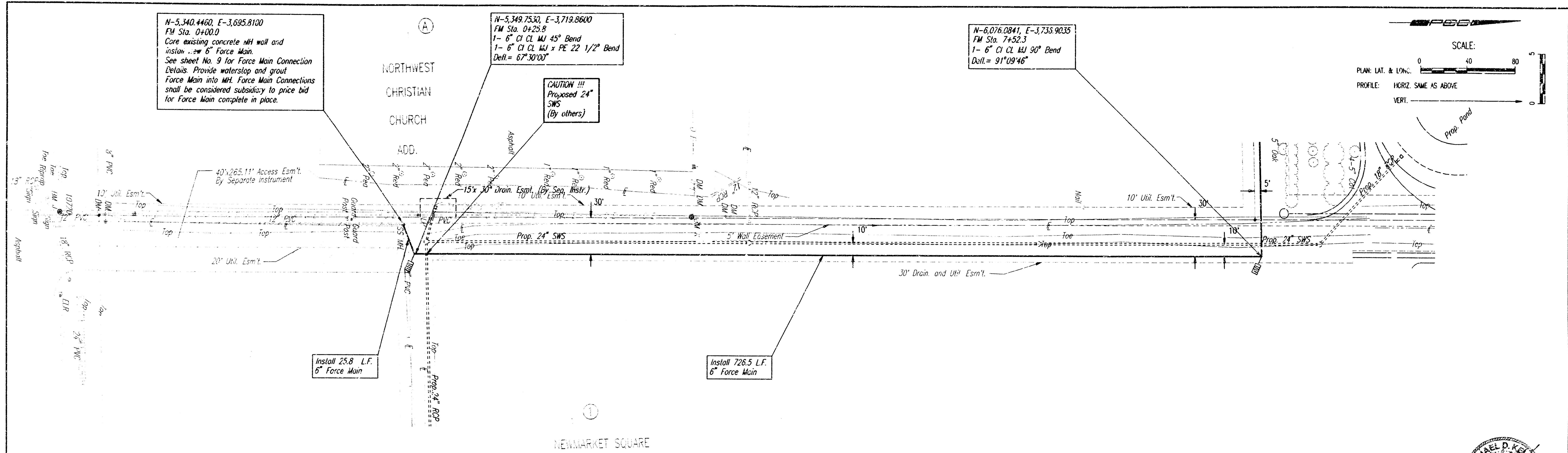


- GENERAL NOTES
1. ALL CONSTRUCTION AND MATERIALS TO COMPLY WITH CITY OF WICHITA SPECIFICATIONS AND STANDARDS AS WELL AS ANY SPECIAL PROVISIONS MADE TO THE SPECIFICATIONS AND/OR STANDARDS.
 2. ALL ELEVATIONS SHOWN ARE BASED ON CITY OF WICHITA DATUM.
 3. THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.
 4. AT LEAST 72 HOURS PRIOR TO BEGINNING EXCAVATION (EXCLUDING WEEKENDS AND HOLIDAYS), THE CONTRACTOR SHALL CONTACT THE KANSAS ONE-CALL SYSTEM, A UTILITY LOCATION SERVICE, AT (316) 687-2470 TO REQUEST THE LOCAL UTILITY COMPANIES MARK ANY EXISTING LINES WITHIN THE PROJECT AREA.
 5. UNDERGROUND UTILITY SERVICE LINES AND OVERHEAD UTILITY POLE LINES ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR OR UNLESS THE PLANS SPECIFICALLY IDENTIFY A UTILITY TO BE ADJUSTED BY ITS OWNER DURING CONSTRUCTION. EXISTING UTILITIES AND THEIR LOCATIONS, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR THE DESIGN. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.
 6. 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. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "SITE RESTORATION".
 7. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS.
 8. MANHOLES SHALL BE TYPE "P" MANHOLES. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS.
 9. ALL LAWN/TURF AREAS DISTURBED BY CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE RESTORED WITH THE SAME GRASS/SOD AS EXISTING. RESTORATION OF DISTURBED AREAS SHALL INCLUDE, BUT NOT BE LIMITED TO, TOP SOIL PREPARATION, SEEDING, MULCH, AND/OR RESEEDING. ALL SEEDING/SODDING WORK SHALL BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD SPECIFICATIONS AND THE CITY OF WICHITA ADMINISTRATIVE REGULATION NO. 4078 WHICH GOVERNS CLEANUP AND RESTORATION OR REPLACEMENT FOLLOWING CONSTRUCTION. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "SITE RESTORATION".
 10. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED, TREE TRIMMINGS, AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DEPOSITED ON SITES PROVIDED BY THE CONTRACTOR. THESE SITES SHALL ALSO 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 DEPOSITED OF IN A FLOOD PLAIN WILL 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 MAY REQUIRE ARCHEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED DISPOSAL.
 11. THE CONTRACTOR SHALL AVOID REMOVAL OR TRIMMING OF ANY TREES OR SHRUBS WHERE POSSIBLE. WHERE THE CONTRACTOR BELIEVES THE REMOVAL OR TRIMMING IS UNAVOIDABLE, HE SHALL COORDINATE SUCH WORK WITH THE ENGINEER. COSTS FOR TREE/SHRUB REMOVAL AND TRIMMING REGARDLESS OF SIZE SHALL BE CONSIDERED SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "SITE CLEARING".
 12. THE CONTRACTOR SHALL PREVENT ANY CONSTRUCTION DEBRIS FROM ENTERING THE EXISTING SANITARY SEWER DURING CONSTRUCTION.
 13. THE CONTRACTOR SHALL GIVE ALL ADJACENT OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY ADJUTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN (10) DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.
 14. ALL APPROVED EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE STOCKPILED WITHIN EVERGREEN AT NO ADDITIONAL COST TO THE OWNER. STOCKPILE LOCATIONS SHALL BE AS DIRECTED BY MR. LARRY CHAMBERS, AT (316) 263-3201 AND IN ACCORDANCE WITH GENERAL NOTE NO. 10 ABOVE.
 15. CONTRACTOR IS REQUIRED TO MAINTAIN CONTINUOUS FLOW OF SEWAGE IN EXISTING MAINS AT ALL TIMES.
 16. THE CONTRACTOR SHALL SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WITH TEMPORARY RYE GRASS. RYE GRASS SEED SHALL BE PLANTED AT A MINIMUM RATE OF SIX (6) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET. THIS TEMPORARY SEEDING MAY BE OMITTED ONLY IF OTHER SEEDING IS REQUIRED IN ACCORDANCE WITH GENERAL NOTE NO. 9 ABOVE. TEMPORARY SEEDING OR PERMANENT SEEDING/SODDING SHALL BE APPLIED WITHIN 14 DAYS AFTER THE AREA HAS BEEN DISTURBED.



No.	Revision	Date
LIFT STATION AND FORCE MAIN TO SERVE EVERGREEN AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS		
KEY MAP AND GENERAL NOTES		
MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER CITY OF WICHITA PROJECT NO. 468-76-245-82306-000-000-001		
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.		
ENGINEERS WICHITA, KANSAS		
Designed by	MDK, KJW	Job No. 34-98322-4
Drawn by	RFJ	Date August 1998
		Sheet 2 of 10





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ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

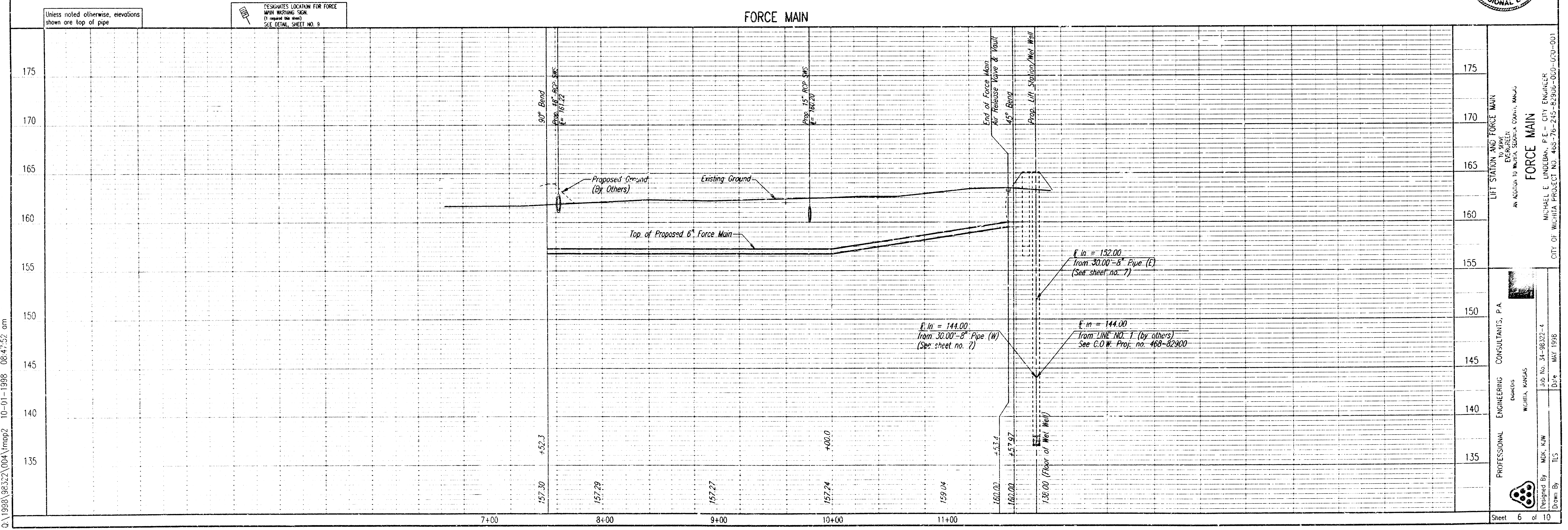
FORCE MAIN
LIFT STATION AND FORCE MAIN
AN ADDITION TO WICHITA SEWERAGE SYSTEM, KANSAS
MICHAEL D. KEST, P.E.
CITY ENGINEER
CITY OF WICHITA PROJECT NO. 166-7E-245-82000-000-001

Job No. 14-98322-4
Date MAY 1998

Designed By MDK, K.W.
Drawn By ILS

Sheet 5 of 10

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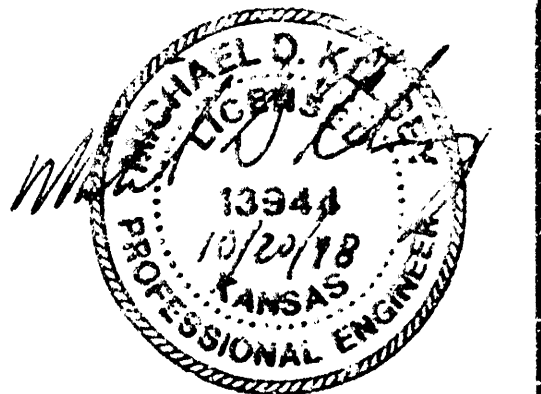
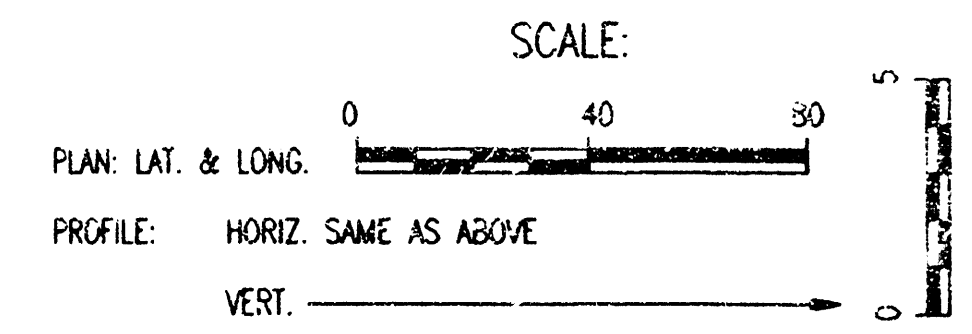
NE MARKET SQUARE

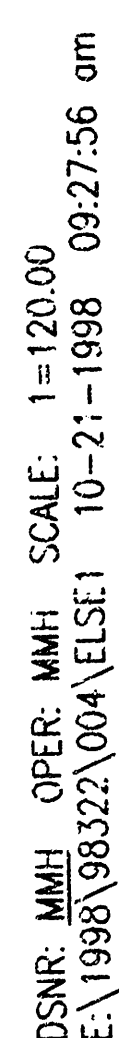
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FM Sta. 7+52.3
90° Bend

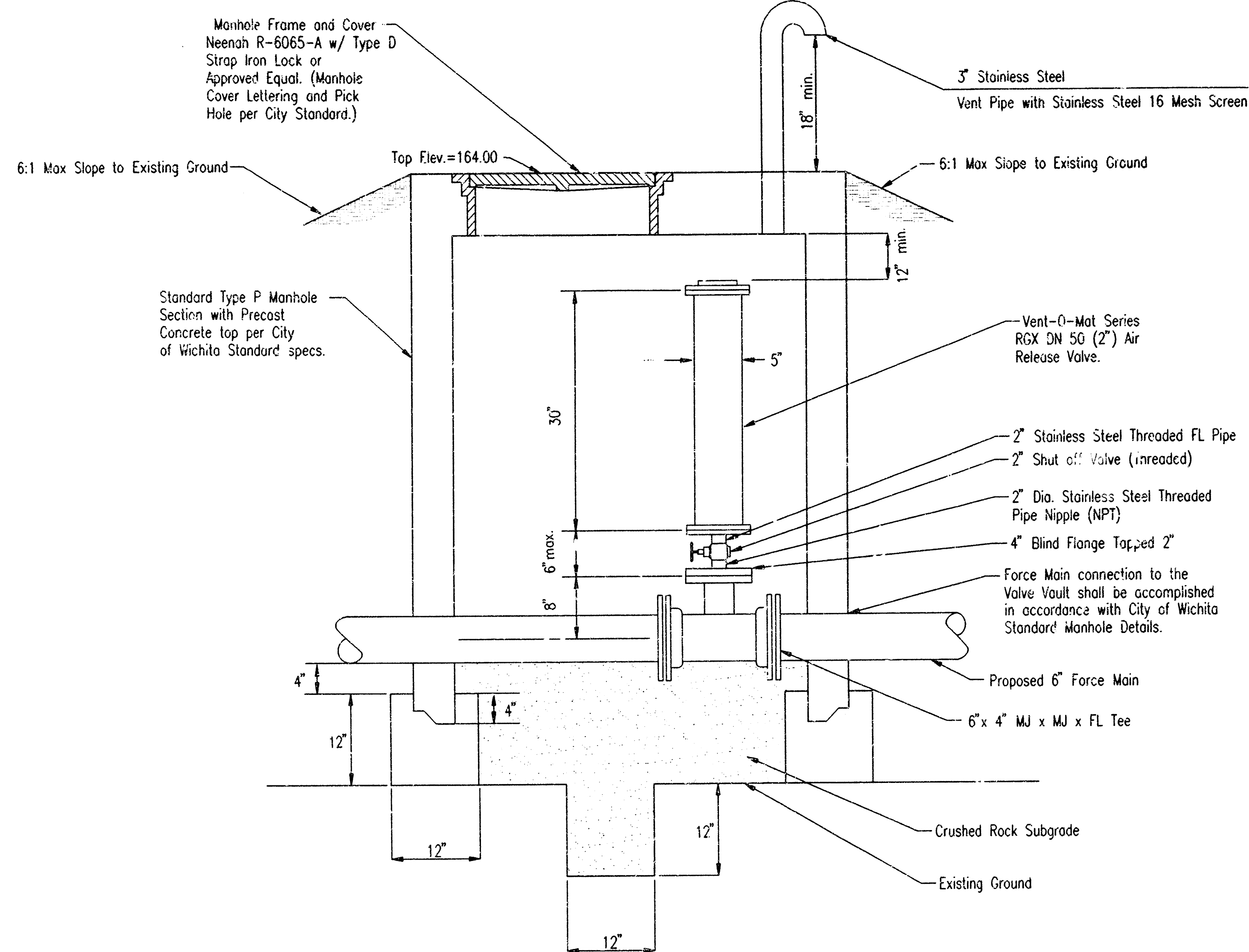
NORTHWEST
CHRISTIAN
CHURCH

N-6,077.3538, E-3,335.7979
FM Sta. 11+53.4
End of Force Main
See Lift Station Details,
sheet no. 7 for continuation.
1-Air Release Valve & Vault
See details, sheet no. 9.

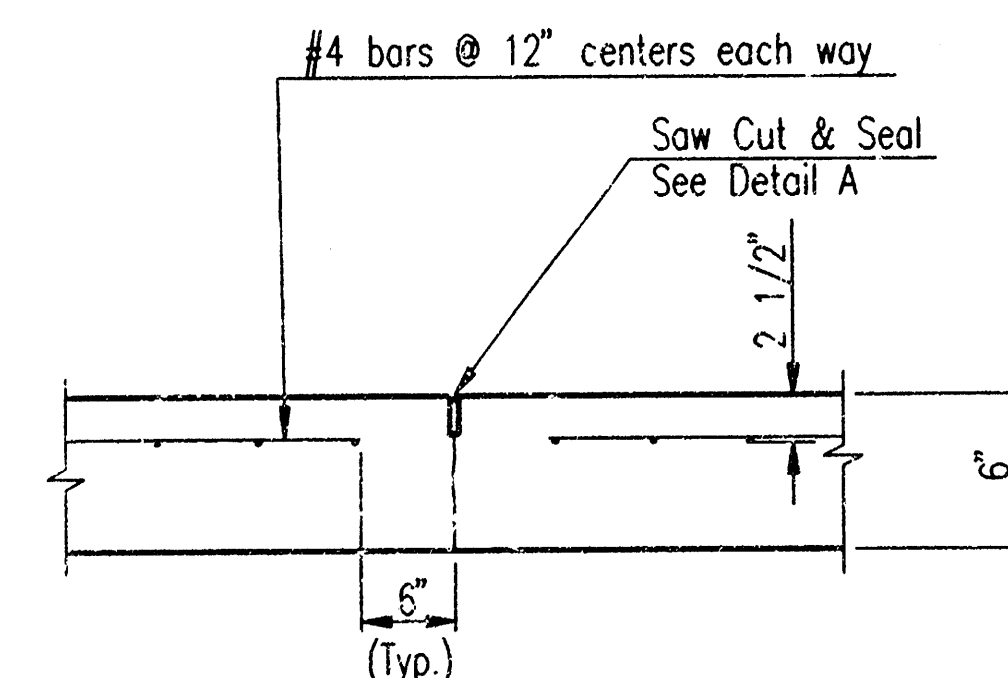
Construct Lift Station
See details, sheet no. 7.



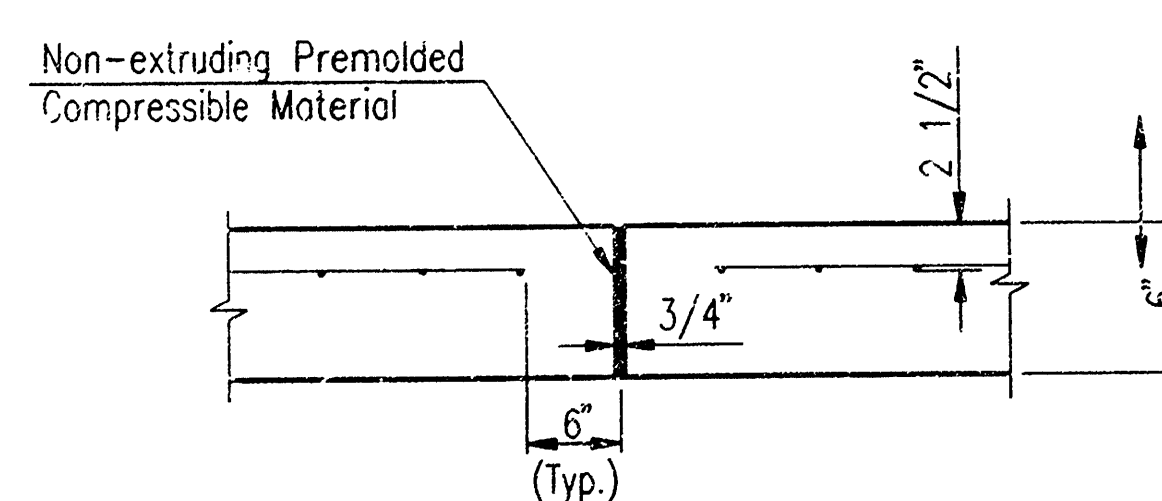




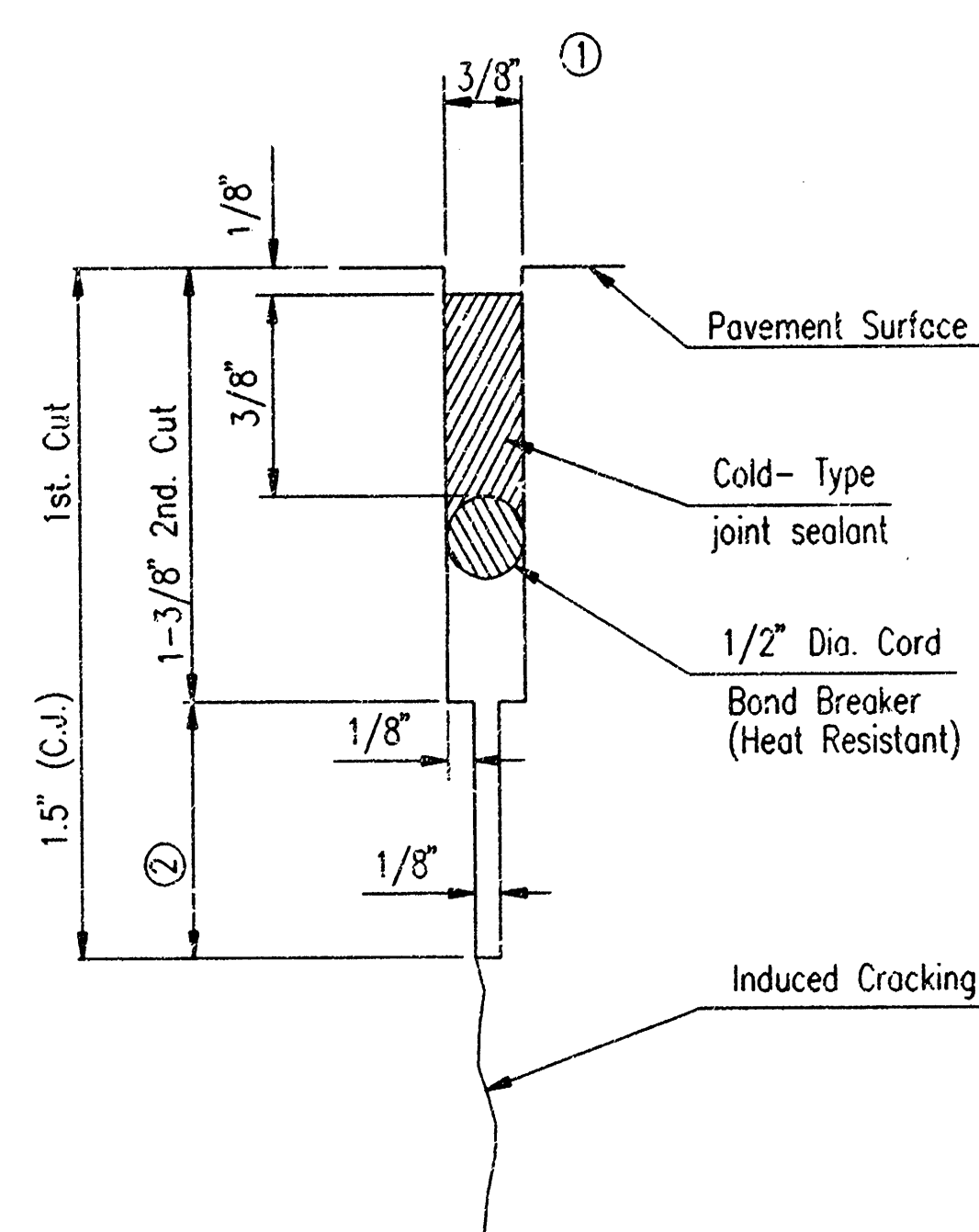
AIR RELEASE VALVE AND VAULT



CONTRACTION JOINT DETAIL
REINFORCED PAVEMENT
(C.J.)

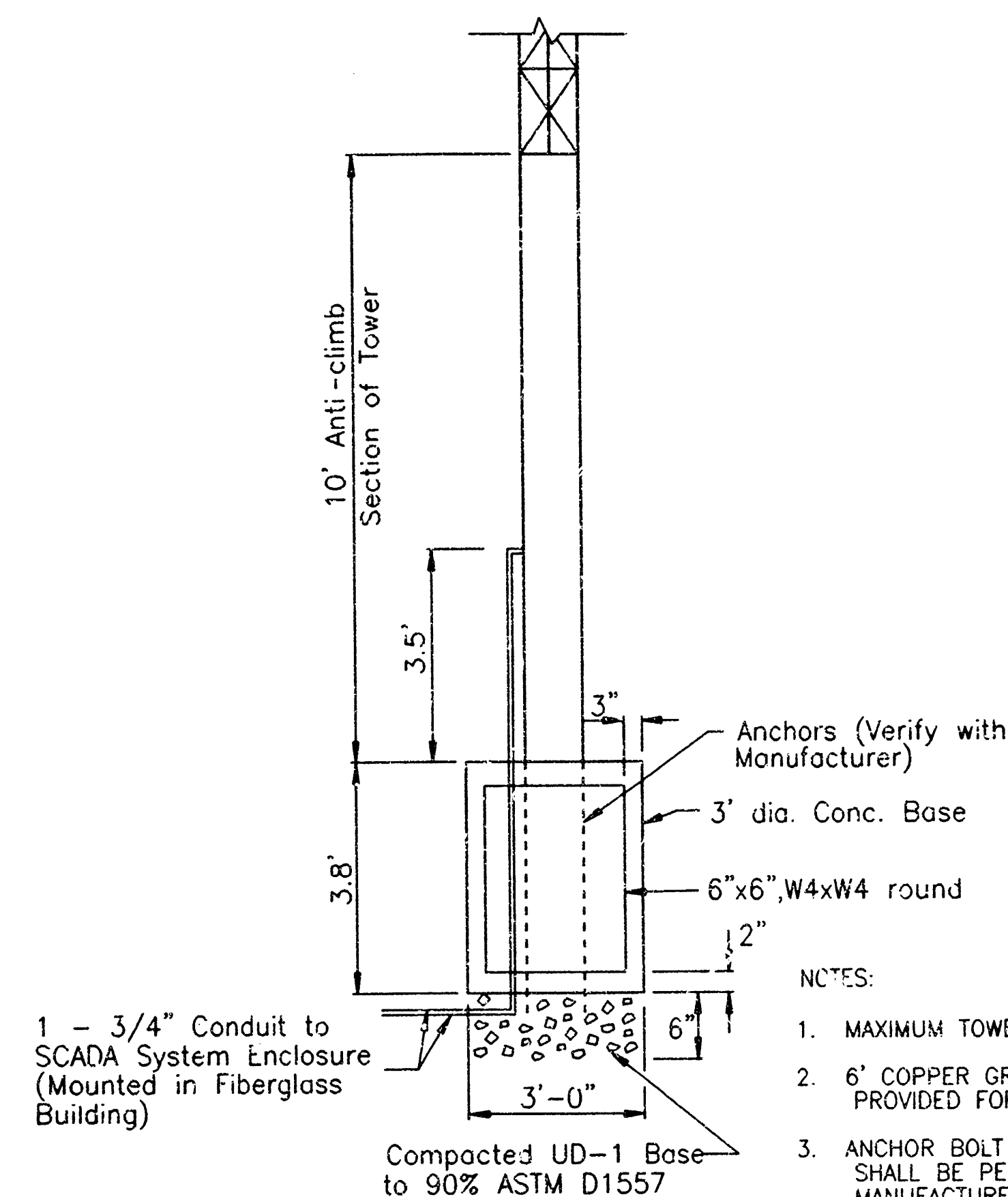


EXPANSION JOINT DETAIL
(E.J.)

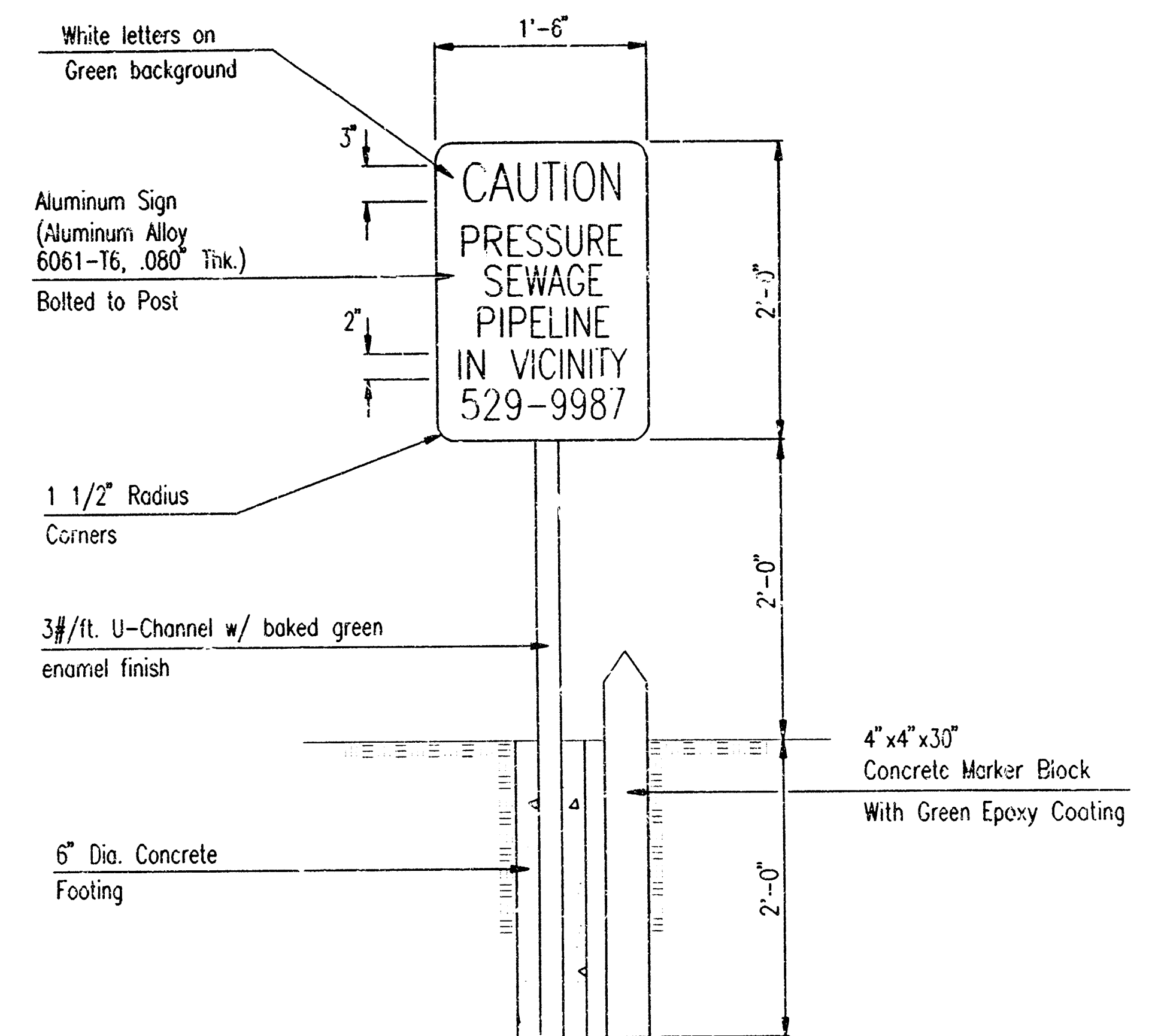


DETAIL A

- ① TO BE ACCOMPLISHED IN 2 CUTS FOR LONGITUDINAL JOINTS & CONTRACTION JOINTS. INITIAL CUT TO BE 1/8" WIDE.
- ② ELIMINATE BOTTOM OF CUT WHEN METAL KEYWAY IS USED AS PART OF LONGITUDINAL OR TRANSVERSE CONSTRUCTION JOINT.

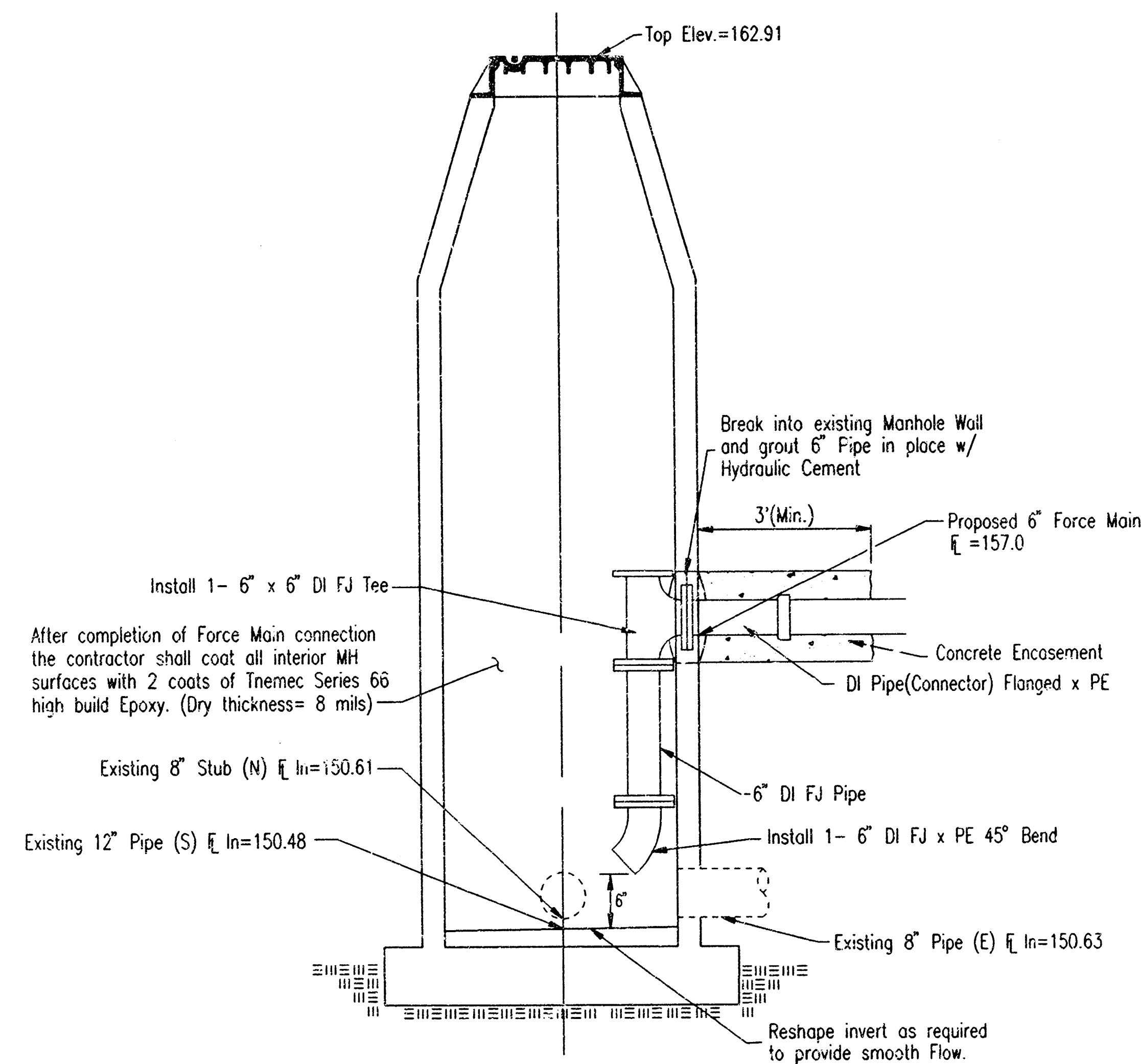
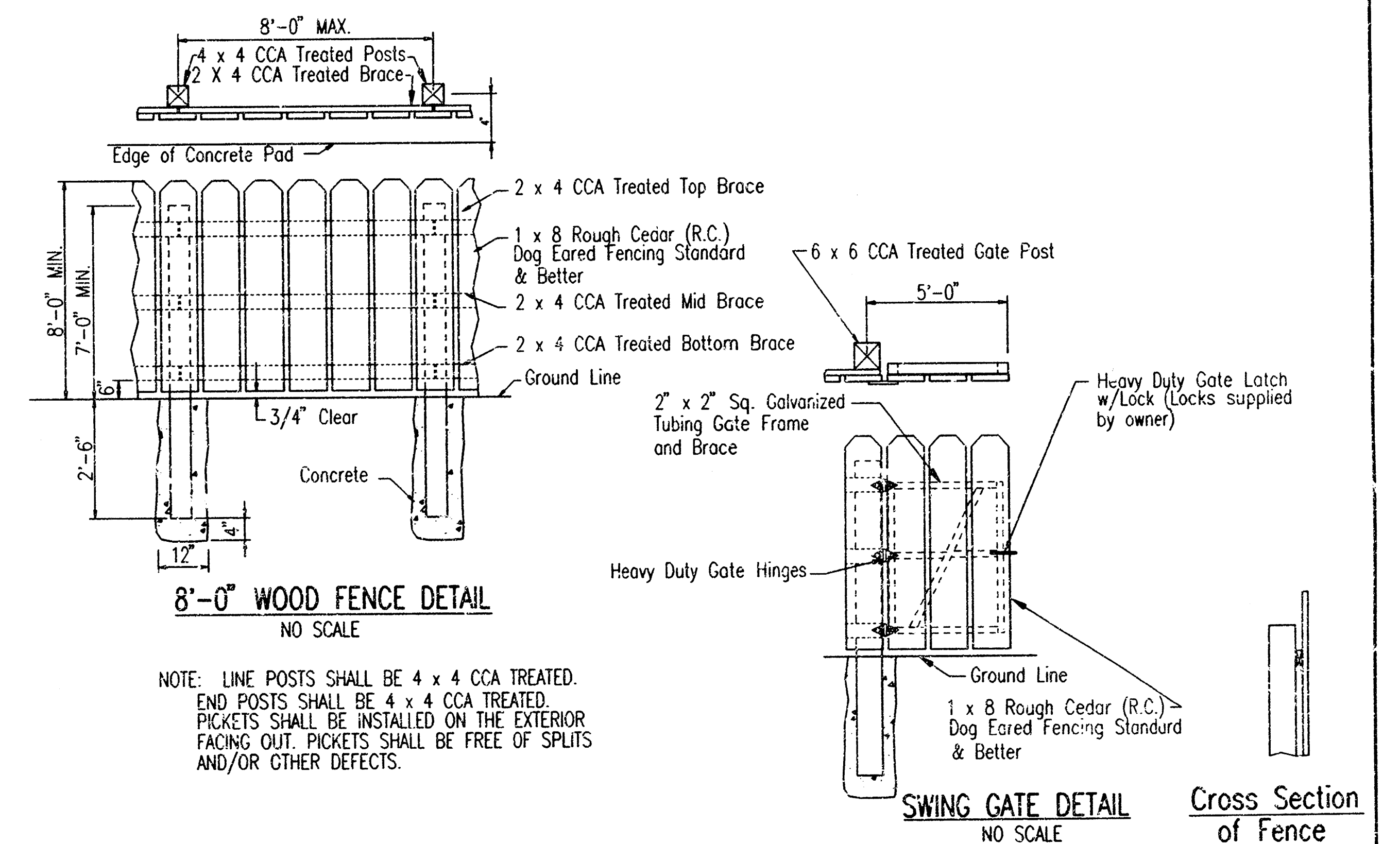


SCADA SYSTEM DETAIL



FORCE MAIN WARNING SIGN DETAIL

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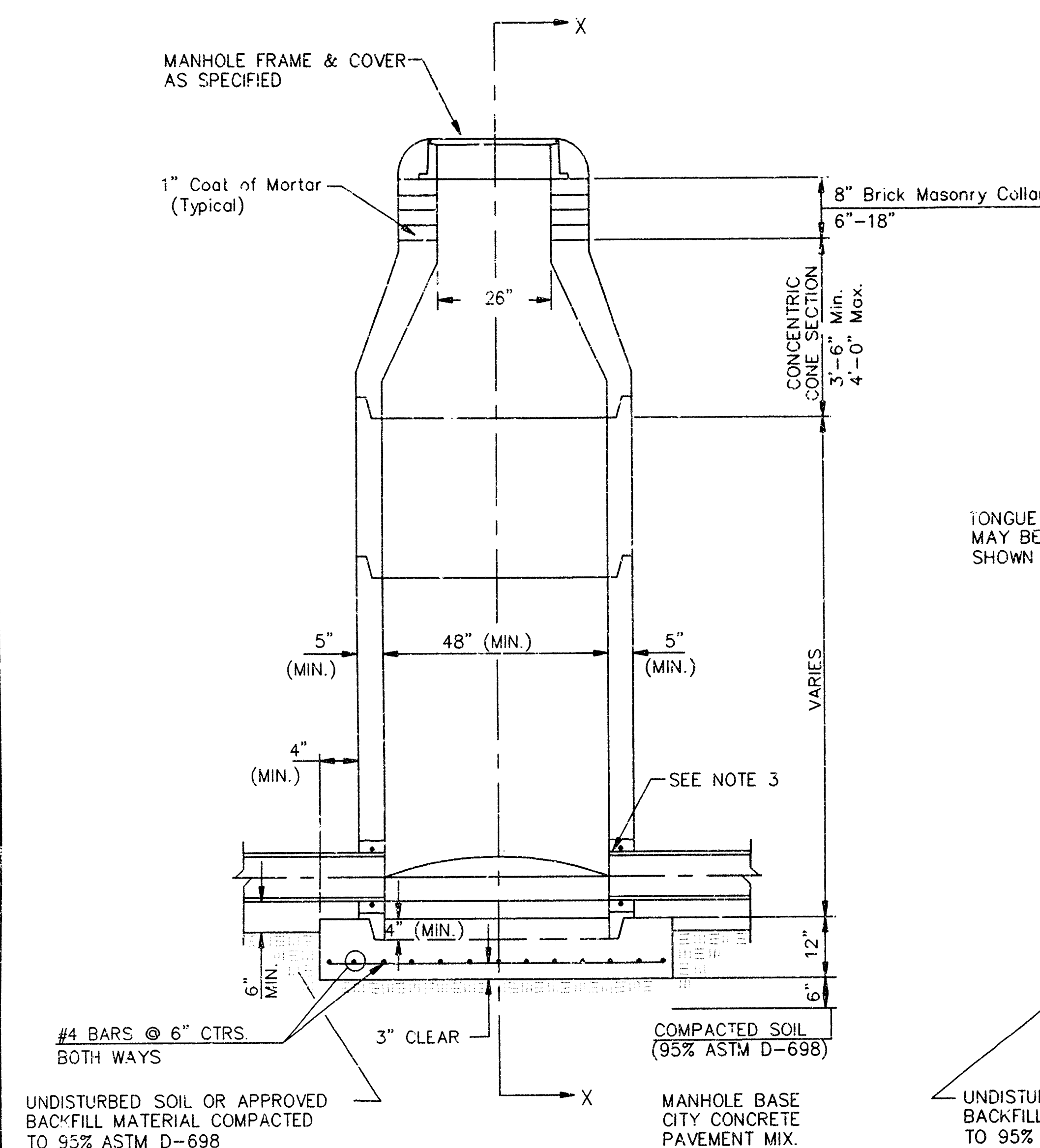


FORCE MAIN CONNECTION DETAIL
STA. 0+00.00

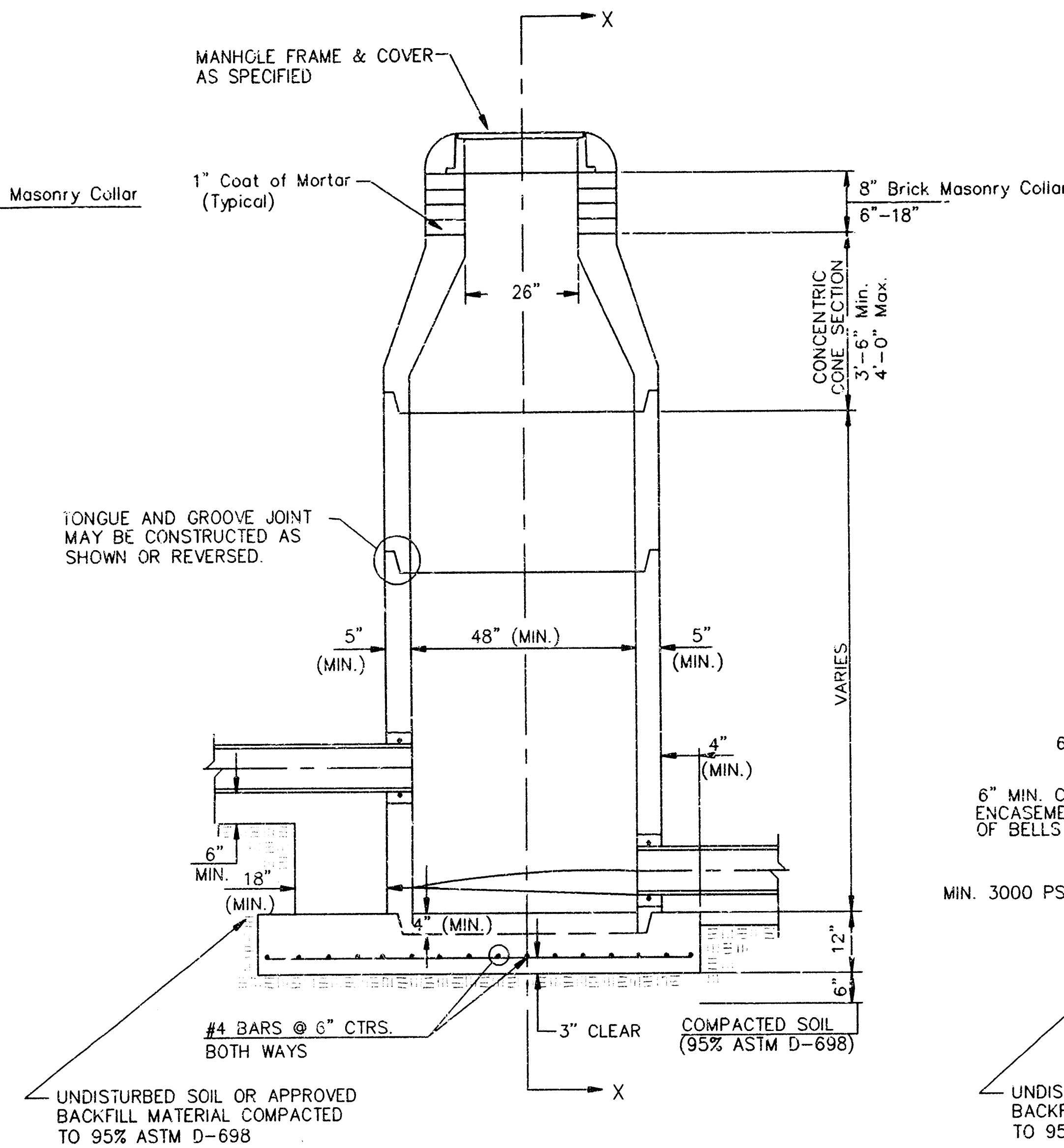
ALL INTERIOR FITTINGS SHALL BE FLANGED OR
RESTRAINED JOINT. COST SUBSIDIARY TO 6" FORCE MAIN.
NOTE: All D.I. Pipe shall be coated
according to the specifications.

	No. _____		Revision _____		By _____		Date _____	
	LIFT STATION AND FORCE MAIN TO SERVE EVERGREEN AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS MISCELLANEOUS DETAILS MICHAEL E. LINDEBAR, P.E. - CITY ENGINEER CITY OF WICHITA PROJECT NO. 488-76-245-82906-000-000-001 PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS							
	Designed by	MDK	Job No.	34-98322-4	Sht. 9 of 10			
	Drawn by	BB	Date	August 1998				

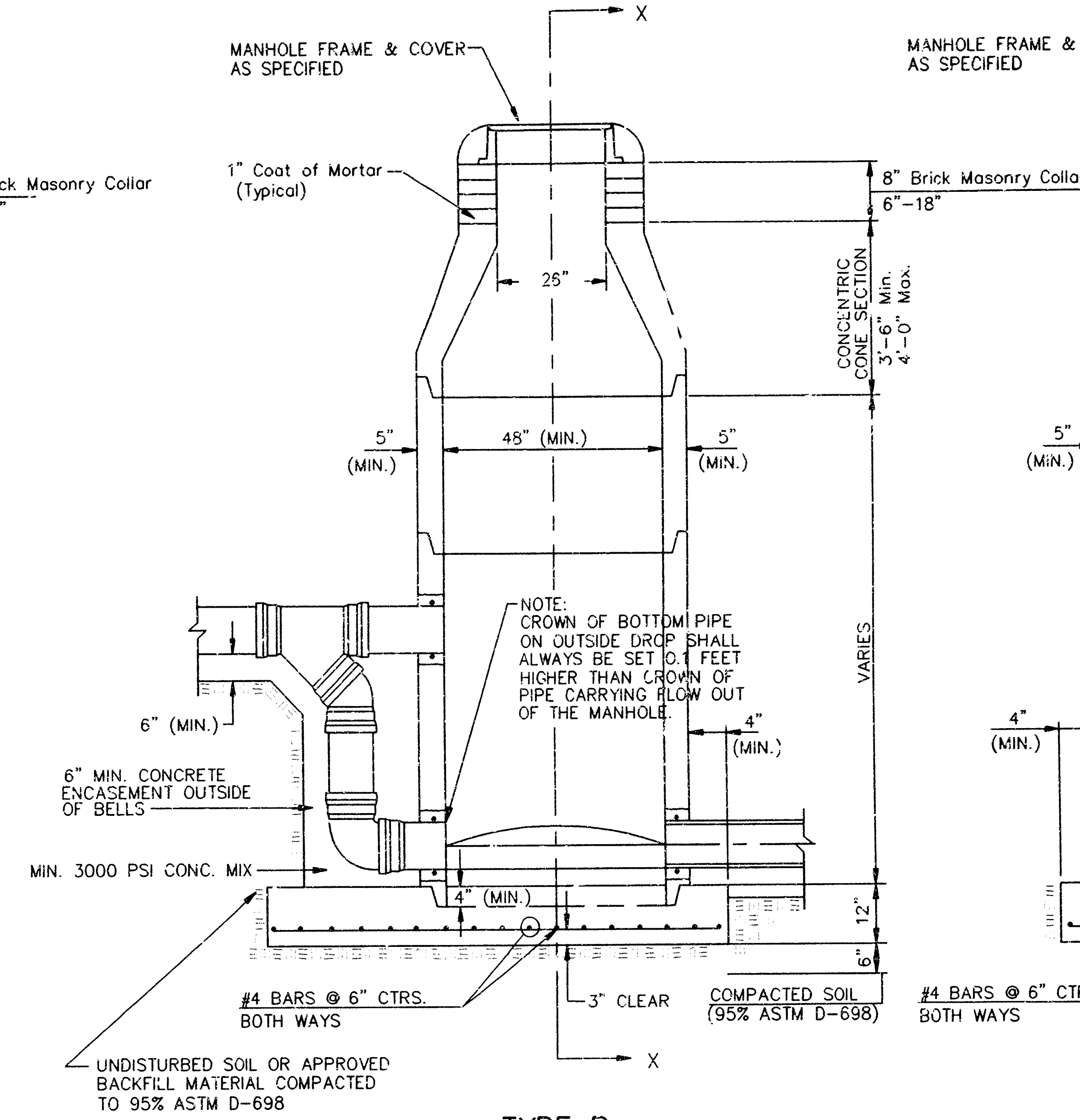
SEWER APPURTENANCES DETAILS



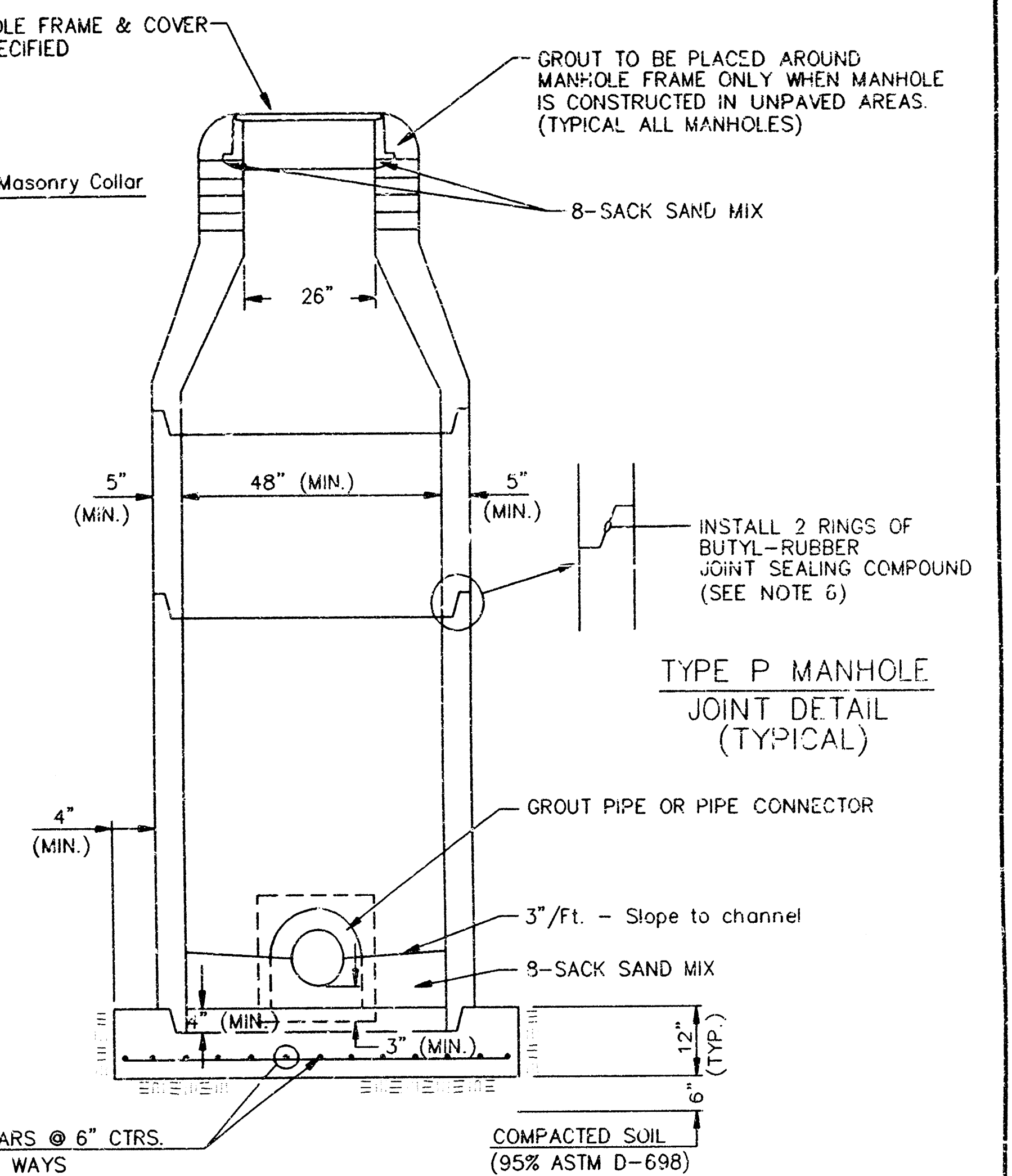
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



SECTION X
(TYPICAL)

GENERAL NOTES PRECAST MANHOLE NOTES

- ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
- NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
- APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.B.S. COMPOSITE PIPE OR P.V.C. PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT. THE SEWER PIPE SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
- ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TNEC SERIES 66 HI-BUILD EPOXOLINE, DRY THICKNESS OF 8 MILS (MIN.)
- EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
- JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
- PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
- 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.
- LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASIS SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 4". MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 5". COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.

- REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
- OPENINGS SHALL BE CUT INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NONSHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.
- THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF-CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO NEAT LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
- PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE CRADLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRADLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.

- MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWINGS.
- THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 2' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES LARGER THAN 12". THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
- STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
- A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR. THE USE OF PRE-CAST CONCRETE SPACERS FOR MANHOLE TOP ADJUSTMENT IS ALSO ALLOWED.

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THE CITY OF WICHITA CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 405 NORTH MAIN STREET WICHITA, KANSAS 67202 (316) 268-4501 (316) 268-4114 FAX	STANDARD TYPE 'P' MANHOLES	
	M. E. UNDEBAK P.E. - CITY ENGINEER	
	PROJECT NUMBER 468-82906	INDEX CODE 743708
	DATE MAR 96	SHEET 10 OF 10 18-10-01-10