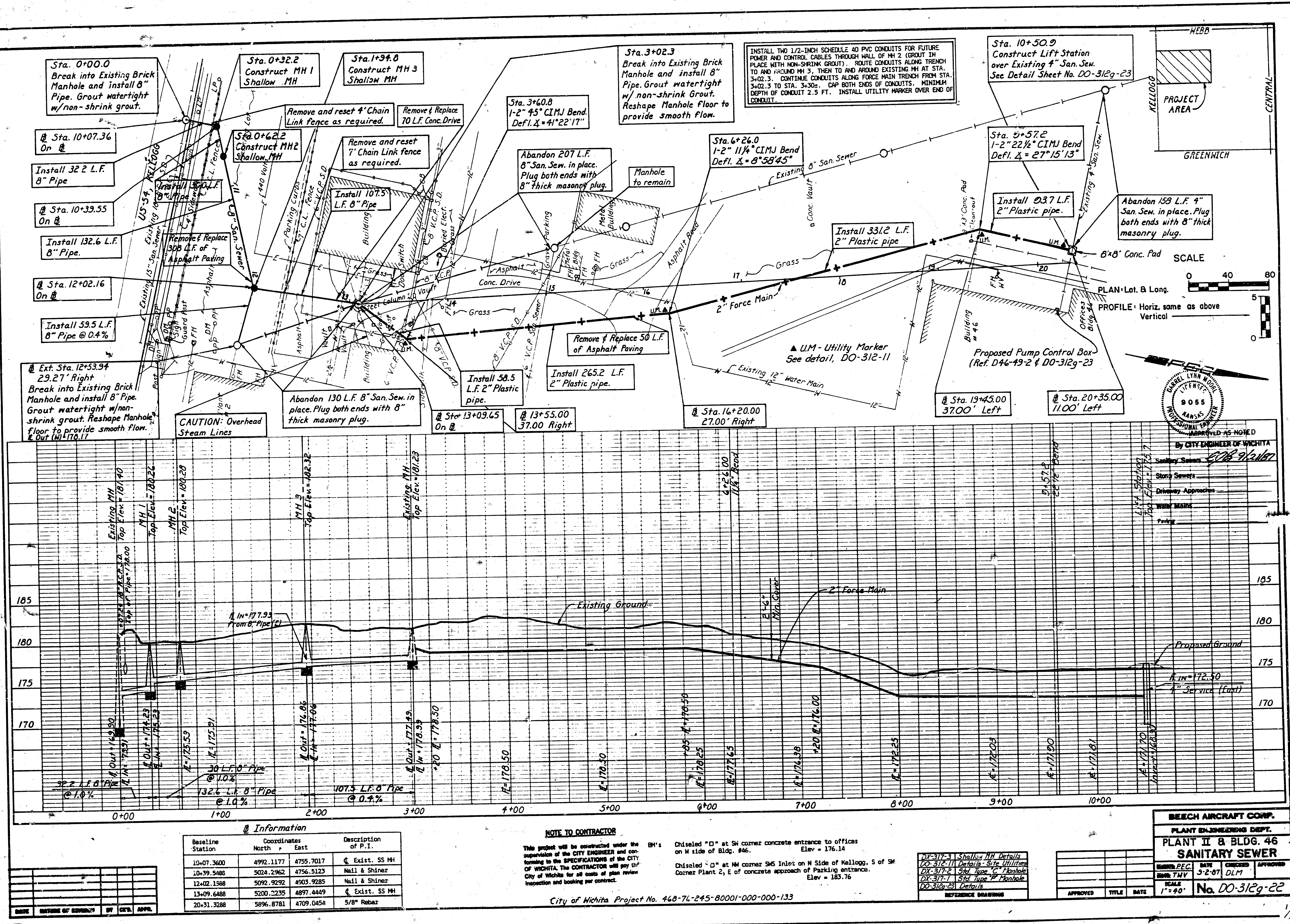
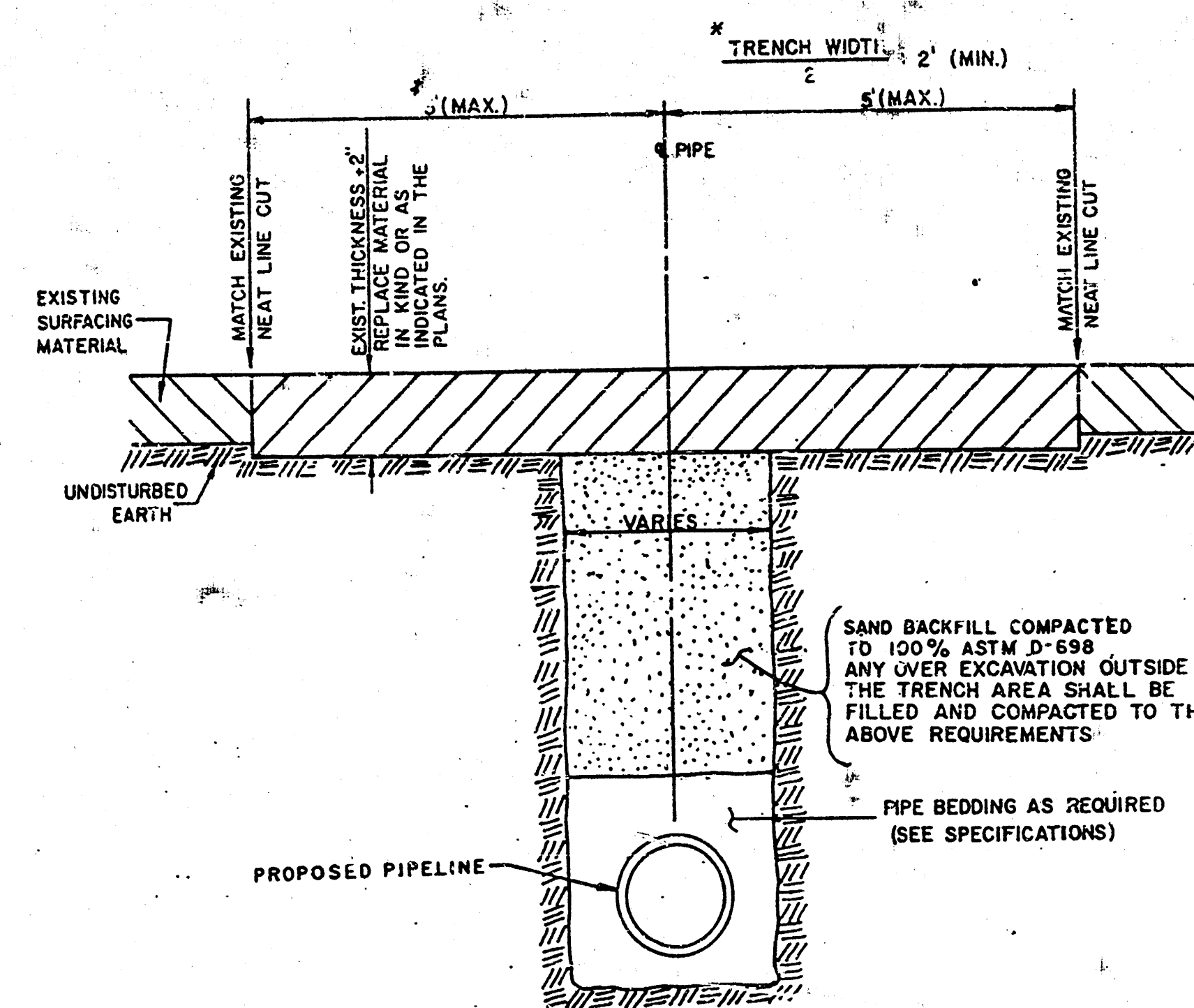
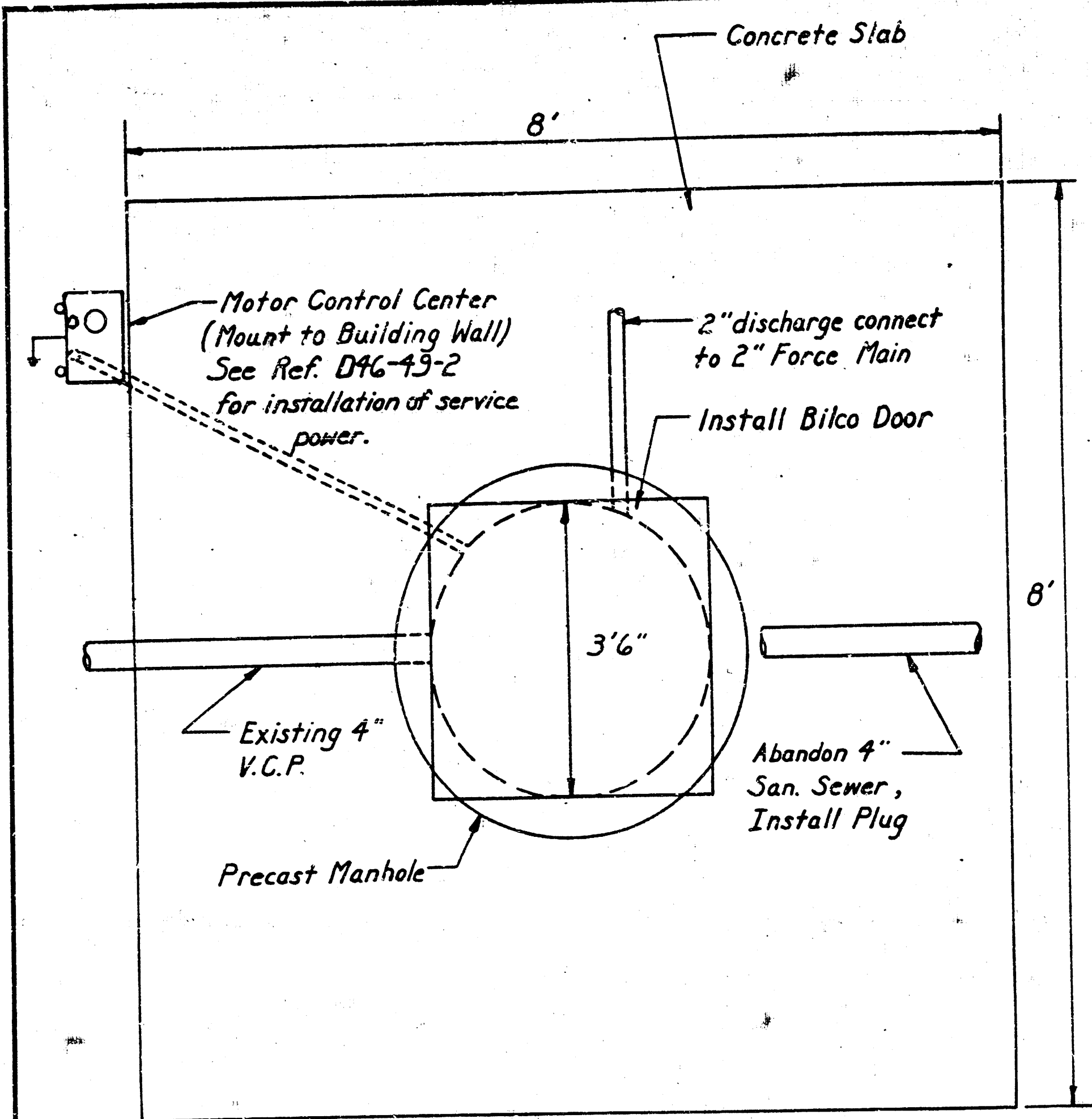


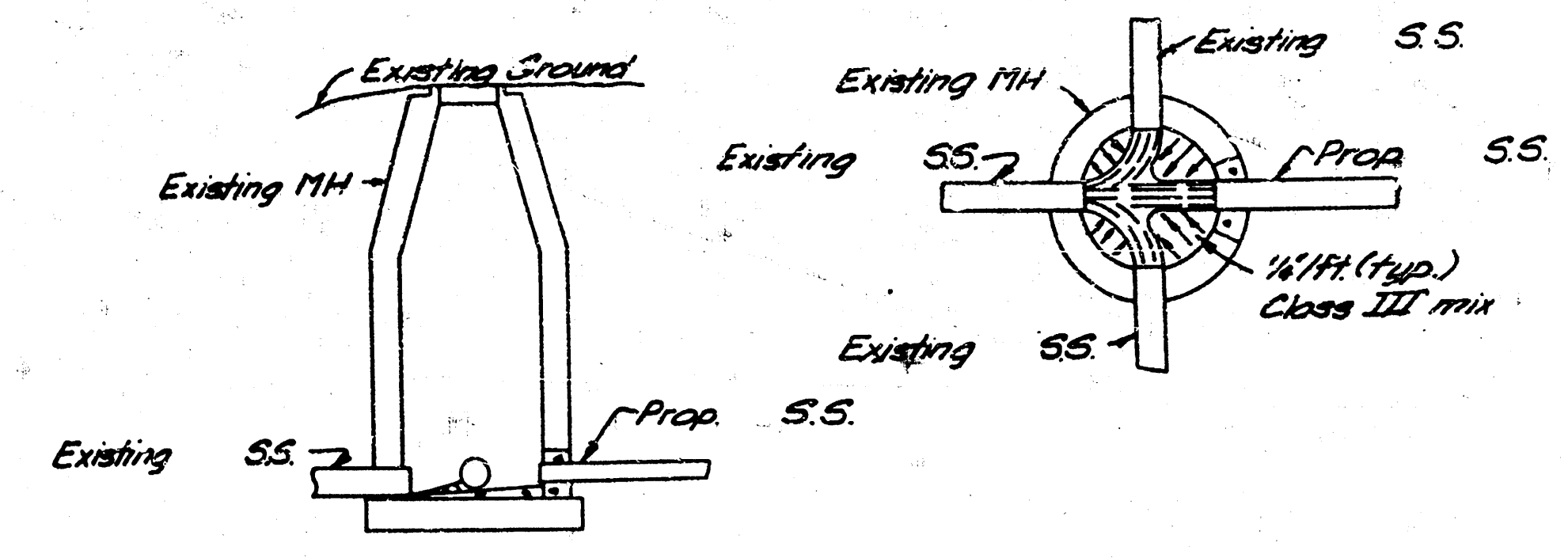
DO NOT TEAR THIS BORDER WHEN PARTS ARE TO BE BOUND



DO NOT TRIM THIS BORDER WITH PRINTS ARE TO BE BOUND



ASPHALT PAVEMENT
REMOVAL AND REPLACEMENT



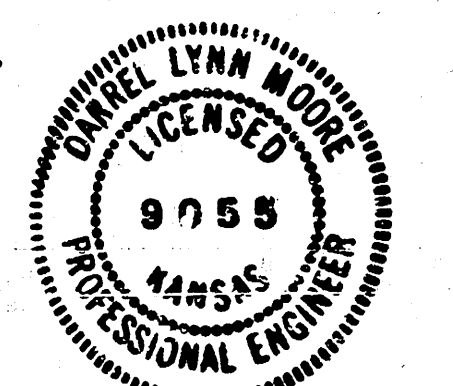
NOTE: Breakout Existing MH wall as necessary, install pipe, and regrout watertight with nonshrink grout

- GENERAL NOTES
1. THE CONTRACTOR SHALL CONTAIN HIS OPERATIONS TO PERMIT TRAFFIC THROUGH THE TWO WEST-BOUND THROUGH LINES OF U.S. 54 (KELLOGG) AT ALL TIMES. THE CONTRACTOR SHALL ERECT WARNING SIGNS, FLASHING LIGHTS, AND BARRICADES TO ENSURE SAFETY.
 2. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION WITH BEECH AIRCRAFT CORPORATION, PLANT ENGINEERING DEPARTMENT.
 3. ALL CONSTRUCTION AND MATERIALS TO COMPLY WITH CITY OF WICHITA SPECIFICATIONS AND STANDARDS AND BEECH STANDARD CONSTRUCTION SPECIFICATIONS.
 4. ANY FENCE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AND REPLACED TO EXISTING CONDITION.
 5. ALL EXCESS EXCAVATION AND DEBRIS SHALL BE REMOVED FROM THE JOB SITE BY THE CONTRACTOR AND DISPOSED OF BY THE CONTRACTOR.
 6. SAND BACKFILL SHALL COMPLY WITH CITY OF WICHITA STANDARD SPECIFICATIONS AND BEECH STANDARD CONSTRUCTION SPECIFICATIONS AND SHALL BE FLUSHED TO 100% OF ASTM D698.
 7. ALL BACKFILL FOR MANHOLES SHALL BE EQUIVALENT TO THAT SPECIFIED FOR THE ADJACENT SEWER LINES UNLESS OTHERWISE NOTED AND SHALL BE CONSIDERED SUBSIDIARY TO THE PRICE BID FOR MANHOLES.
 8. CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, 6.5 BAGS CEMENT/10Y, 3.5 GAL. WATER/BAG. CONCRETE SHALL BE AIR ENTRAINED (4% TO 6%). AGGREGATE SHALL MEET SOUNDNESS TEST WITH A TOTAL LOSS NOT GREATER THAN 18% BY WEIGHT WHEN TESTED IN ACCORDANCE WITH ASTM C88. PERCENTAGE OF NEAR BY A LA ABRASSION TEST, ASTM C131 SHALL BE LESS THAN 40%. COURSE AGGREGATE TO FINE (COARSE 45-80% RETAINED ON 3/8; FINE 40-75% RETAINED ON NO. 30 SIEVE) SHALL BE SUCH THAT NOT MORE THAN 70% OR LESS THAN 40% WILL PASS THE #4 SIEVE, SLUMP 1 TO 3 INCHES.
 9. THE CONTRACTOR SHALL ARRANGE FOR THE CITY OF WICHITA TO DO AIR TESTING AND TELEVISION INSPECTION OF THE COMPLETED SEWER LINE. TESTING AND INSPECTION SHALL BE PAID FOR BY THE CONTRACTOR IN ACCORDANCE WITH CITY OF WICHITA SPECIFICATIONS.
 10. AT LEAST 24 HOURS PRIOR TO BEGINNING EXCAVATION (EXCLUDING WEEKENDS AND HOLIDAYS) THE CONTRACTOR SHALL CONTACT THE UTILITY LOCATION SERVICE "WANA-DIG-IT" AT (316) 267-2889 TO REQUEST THE FOLLOWING UTILITY COMPANIES TO LOCATE ANY EXISTING LINES WITHIN THE KELLOGG RIGHT-OF-WAY: GAS SERVICE CO., K.G. & E., SOUTHWESTERN BELL, TELEPHONE CO., THE WICHITA WATER DEPT., AIR CAPITAL CABLEVISION, AND ARKLA GAS CO.

THE CONTRACTOR SHALL ALSO CALL THE OFFICES LISTED BELOW AT LEAST 48 HOURS PRIOR TO BEGINNING EXCAVATION (EXCLUDING WEEKENDS AND HOLIDAYS) TO REQUEST LOCATIONS OF EXISTING UTILITIES AND TO COORDINATE UTILITY LOCATION WITHIN THE PROJECT AREA:

BEECH PLANT PROTECTION DISPATCHER 681-7486 BEECH PLANT ENGINEERING 681-7486

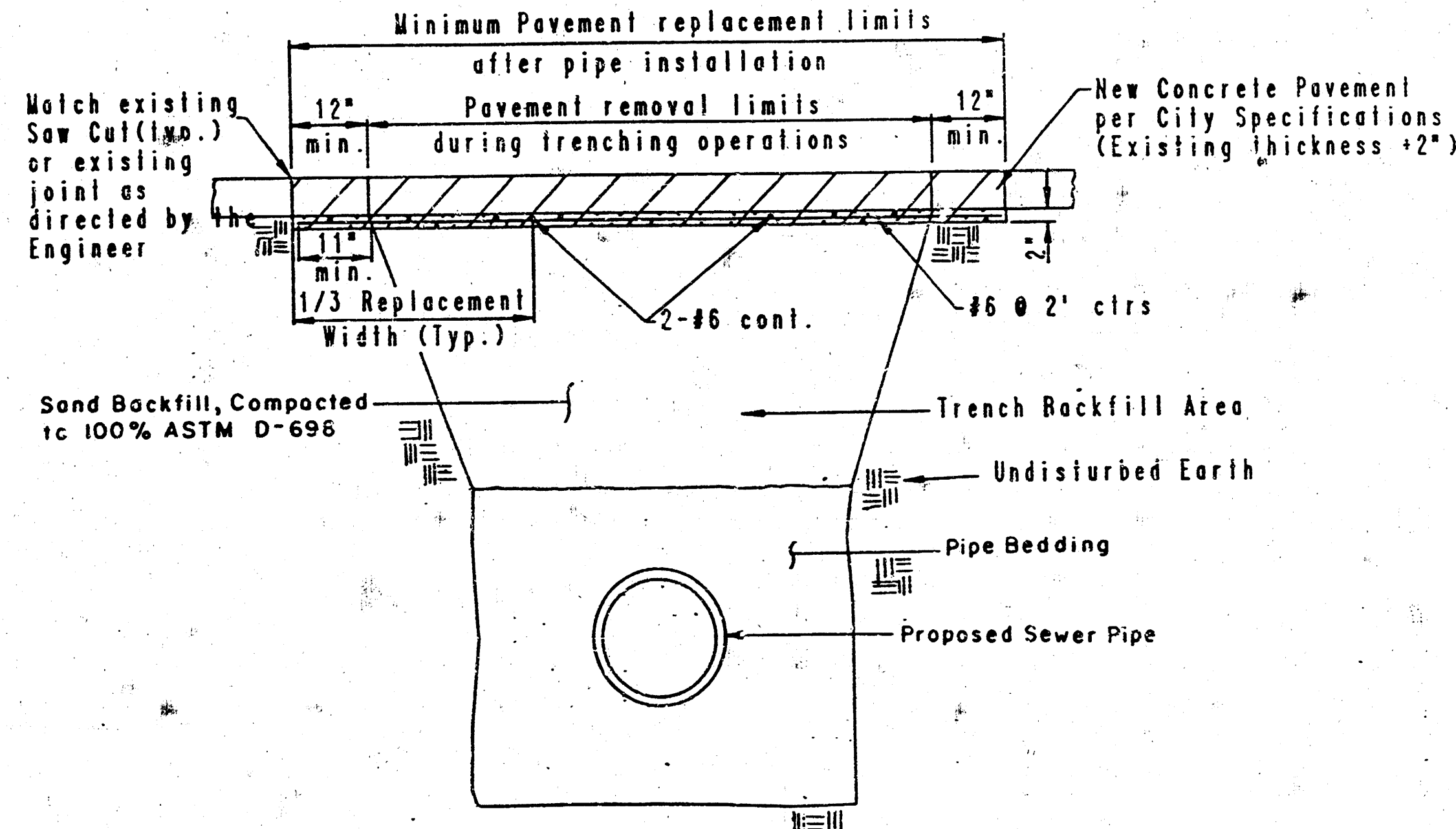
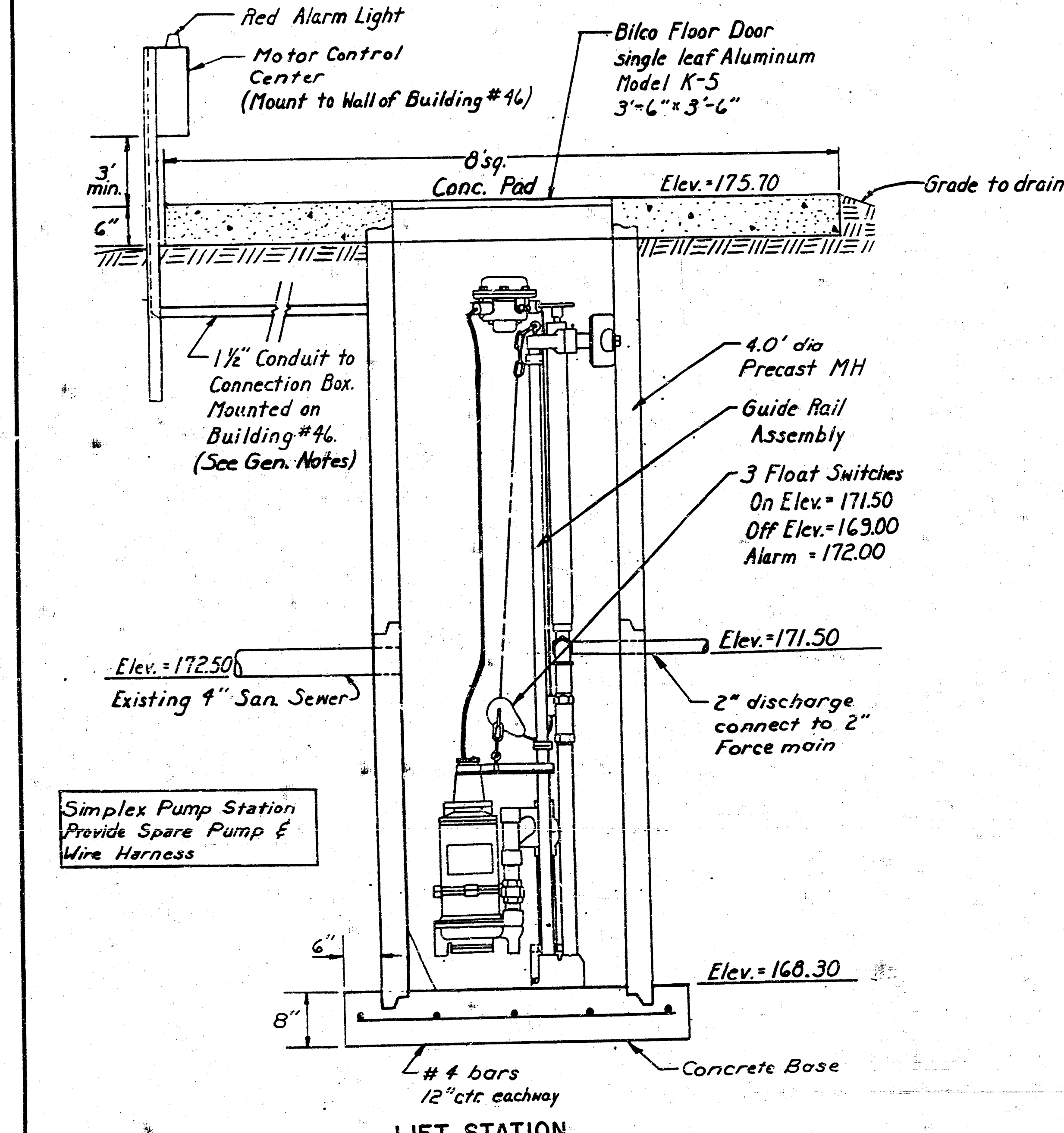
11. THE BURIED UTILITIES AS LOCATED ON THE PLANS ARE APPROXIMATE LOCATIONS ONLY. IT SHOULD BE NOTED THAT OTHER BURIED PIPELINES AND CABLES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING TRENCHING OPERATIONS TO AVOID DAMAGING ALL LINES. ANY LINES DAMAGED SHALL BE REPAIRED OR REPLACED IMMEDIATELY AS DETERMINED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
12. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF THE EXISTING 4" SANITARY SEWER AT THE PROPOSED LIFT STATION. ANY DISCREPANCY BETWEEN ACTUAL AND PLAN LOCATIONS SHALL BE REPORTED TO THE ENGINEER SO THAT ANY NECESSARY FIELD CHANGES MAY BE MADE.
13. THE CONTRACTOR SHALL MAINTAIN CONTINUOUS FLOW THROUGH THE EXISTING 12" SANITARY SEWER DURING CONSTRUCTION PRIOR TO BEGINNING CONSTRUCTION OF THE PROPOSED MANHOLES. THE CONTRACTOR SHALL SUBMIT A WRITTEN CONSTRUCTION SEQUENCE TO THE ENGINEER FOR APPROVAL.
14. ALL GRAVITY SANITARY SEWER LINES SHALL BE VITRIFIED CLAY PIPE (VCP).
15. FORCE MAIN PIPE SHALL BE EITHER PVC PRESSURE PIPE, SDR 26, OR POLYETHYLENE (PE) PIPE WITH WALL THICKNESS OF AT LEAST 0.09 INCHES (SDR 26). FORCE MAIN SHALL BE INSTALLED WITH FITTINGS AND THRUST BLOCKING AS SHOWN IN THE PLANS OR BY ORIGINALLY REFLECTING THE PIPE AT THE APPROXIMATE LOCATIONS OF THE BEADS AS INDICATED ON THE PLAN ALIGNMENT. THE RADIUS OF CURVATURE FOR PIPE LAID WITHOUT FITTINGS SHALL BE AT LEAST 3 FEET.
16. CONTRACTOR SHALL PROVIDE AND INSTALL CONTROL CABLES, POWER AND GROUND WIRING AS REQUIRED FOR PUMP STATION EQUIPMENT.
17. CONDUIT TO BE BURIED SHALL BE U.L. APPROVED SCHEDULE 40 PVC. PROVIDE STEEL ELBS AND JOISTS WHERE CONDUIT IS TO RUN ABOVE GROUND. ALL PVC CONDUIT SHALL BE PROVIDED WITH SEPARATE GROUND CONTACTOR SIZED PER N.E.C. INSTALL UNDERGROUND CONDUIT AT 2.5 FEET MINIMUM DEPTH.
18. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION STAKING, BASELINE CONTROL, AND BENCH MARK DESCRIPTIONS ARE PROVIDED ON THE PLANS FOR THE CONTRACTOR'S USE.



BEECH AIRCRAFT CORP.			
PLANT ENGINEERING DEPT.			
PLANT II & BLDG 46 SANITARY SEWER			
MISCELLANEOUS DETAILS-			
GENERAL NOTES			
REVISION: PEC	DATE: 9-2-07	CHECKED: DLM	APPROVED:
MAINT: TWW	SCALE:	No. 00-312g-23	

00-312-11	Electrical Plan
00-312-12	Defn. of the Utilities
00-317-1	Std. Type "Manhole"
00-317-2	Std. Type "P Manhole"
00-312-25	Plant II (B-46) Sewer Plan

APPROVED	TITLE	DATE



CONCRETE PAVEMENT - Removal and Replacement
Match Concrete Joints Per City Specifications

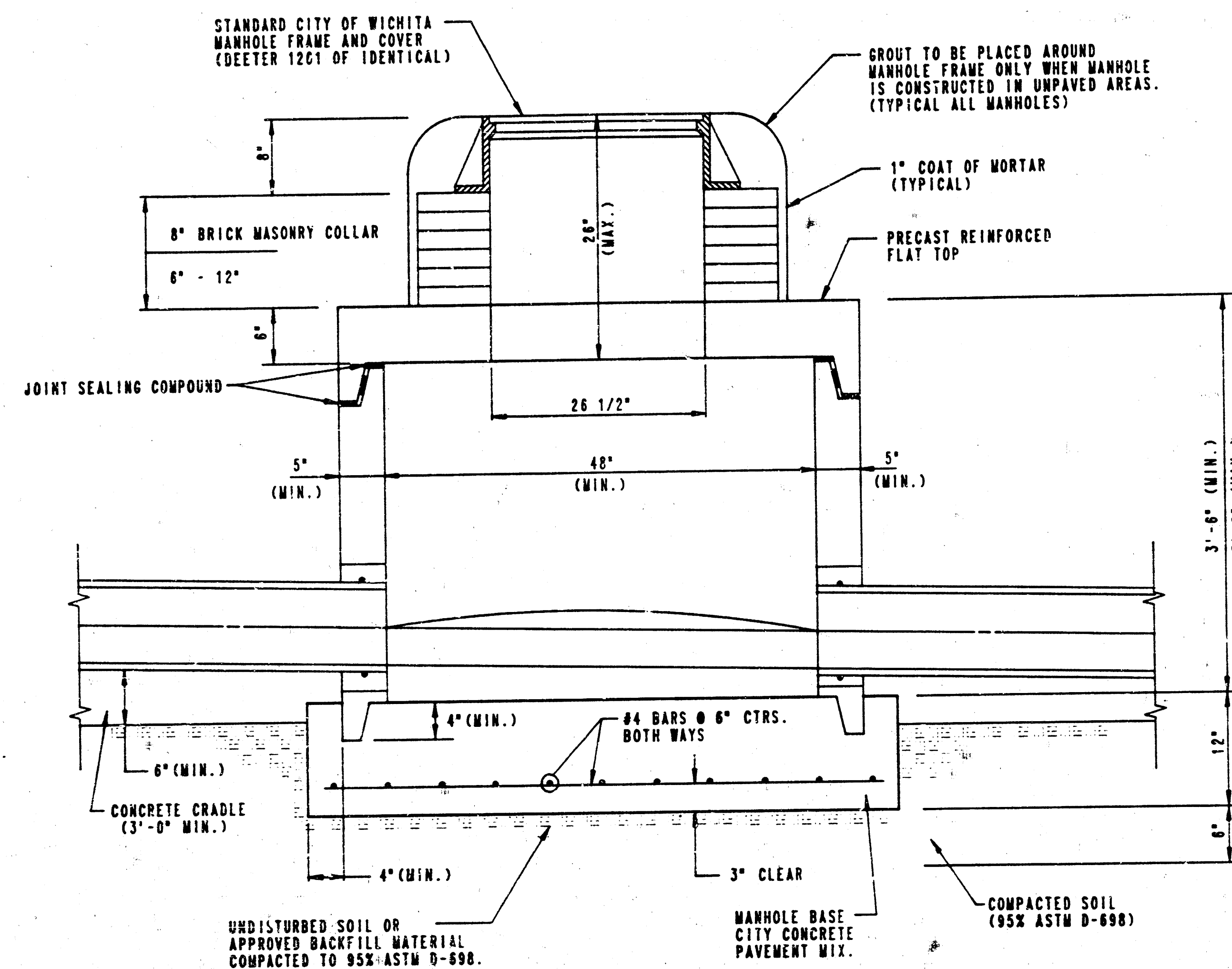
DATE	NATURE OF REVISION	BY	CHKD.	APPR.

SEWER APPURTENANCES DETAILS

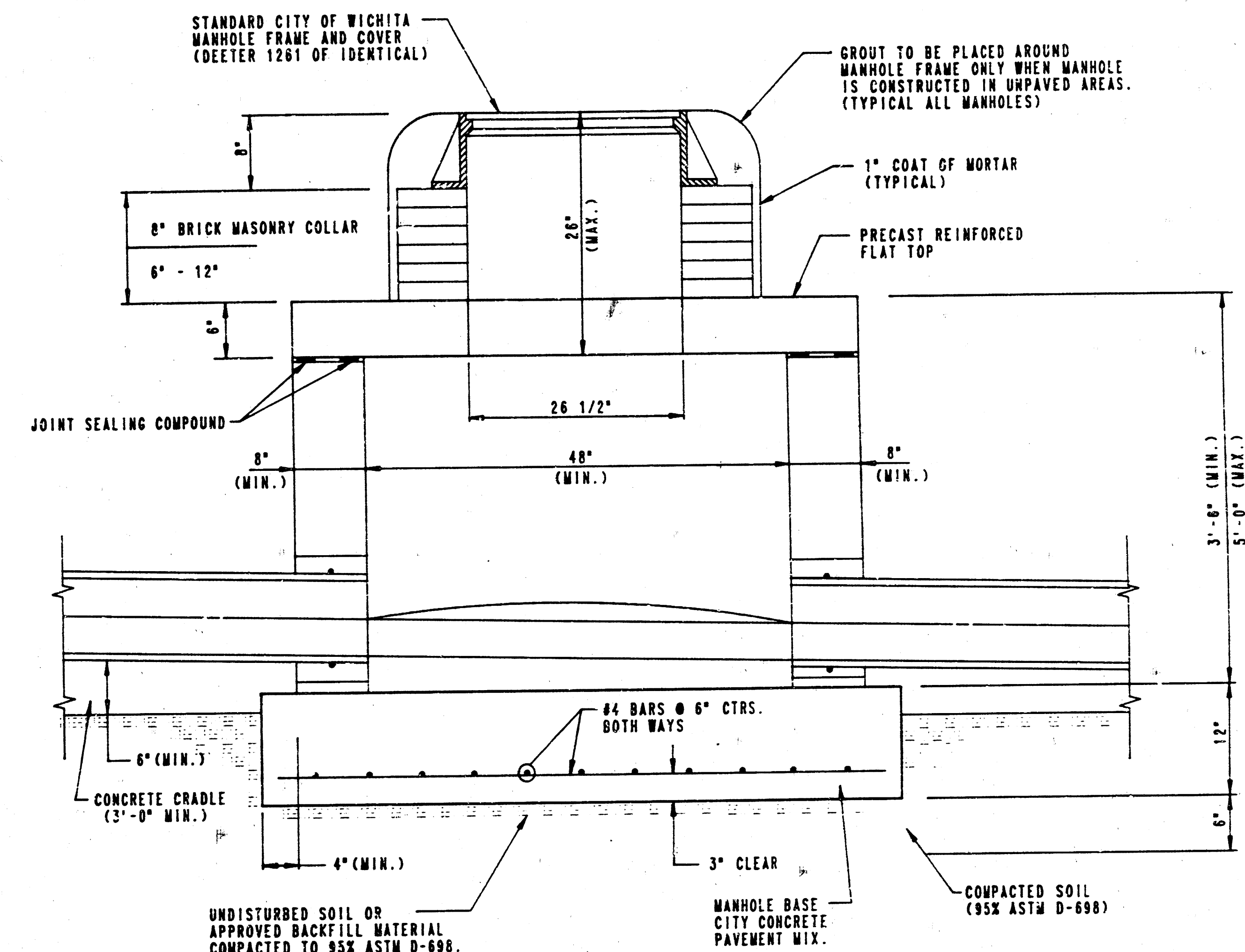
ADOPTED AS STANDARD DESIGN

BY

CITY OF WICHITA



TYPE P
SHALLOW MANHOLE
(PRECAST)



TYPE C
SHALLOW MANHOLE
(CAST-IN-PLACE)

PRECAST MANHOLE NOTES

- ALL PRECAST CONCRETE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF A.S.T.M. C-478 AS MODIFIED BY THE SPECIFICATIONS.
- APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN PLASTIC PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT.
- NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
- PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION (3' MIN.). WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE (3' MIN.). 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.
- ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TREMEC SERIES 66 HI-BUILD EPOXYLINE, 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 SHAPE 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 BASES 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:

HOLE.

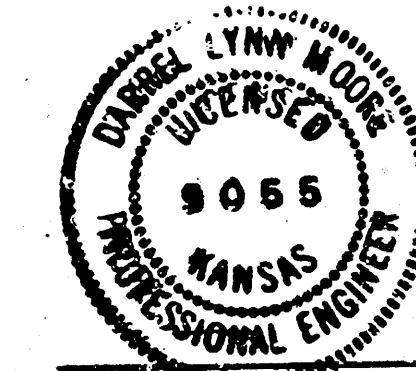
- THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF-CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS. 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.
- 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 DRAWING.
- THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
- A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE PRECAST REINFORCED FLAT TOP. 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.
- SHALLOW MANHOLES TYPE "P" SHALL BE BID AS SHALLOW MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.

CAST-IN-PLACE MANHOLE NOTES

- APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN PLASTIC PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT.
- NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
- PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION (3' MIN.). WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE (3' MIN.). 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.
- JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
- 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 SHAPE INVERT.
- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE WALLS AND BASES 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. TYPE "C" MANHOLES CAN BE CONSTRUCTED ONLY WHERE PIPE SIZES ARE 18" OR SMALLER. THE INSIDE DIAMETER OF TYPE "C" MANHOLES SHALL BE 4'. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
- REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASE. REINFORCING STEEL SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. REINFORCING STEEL SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. COST OF FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE 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. 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.
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- SHALLOW MANHOLES TYPE "C" SHALL BE BID AS SHALLOW MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.

DATE	NATURE OF REVISION	BY	CHK'D	APPR.



BEECH AIRCRAFT CORP.			
PLANT ENGINEERING DEPARTMENT			
SHALLOW SEWER MANHOLE DETAILS			
TYPE "P" & "C" 3/3			
DESIGNED	DATE	CHECKED	APPROVED
DRW	9-14-87	DLV	3/3
SCALE	No. DX-317-3		

REFERENCE DRAWING

APPROVED	TITLE	DATE