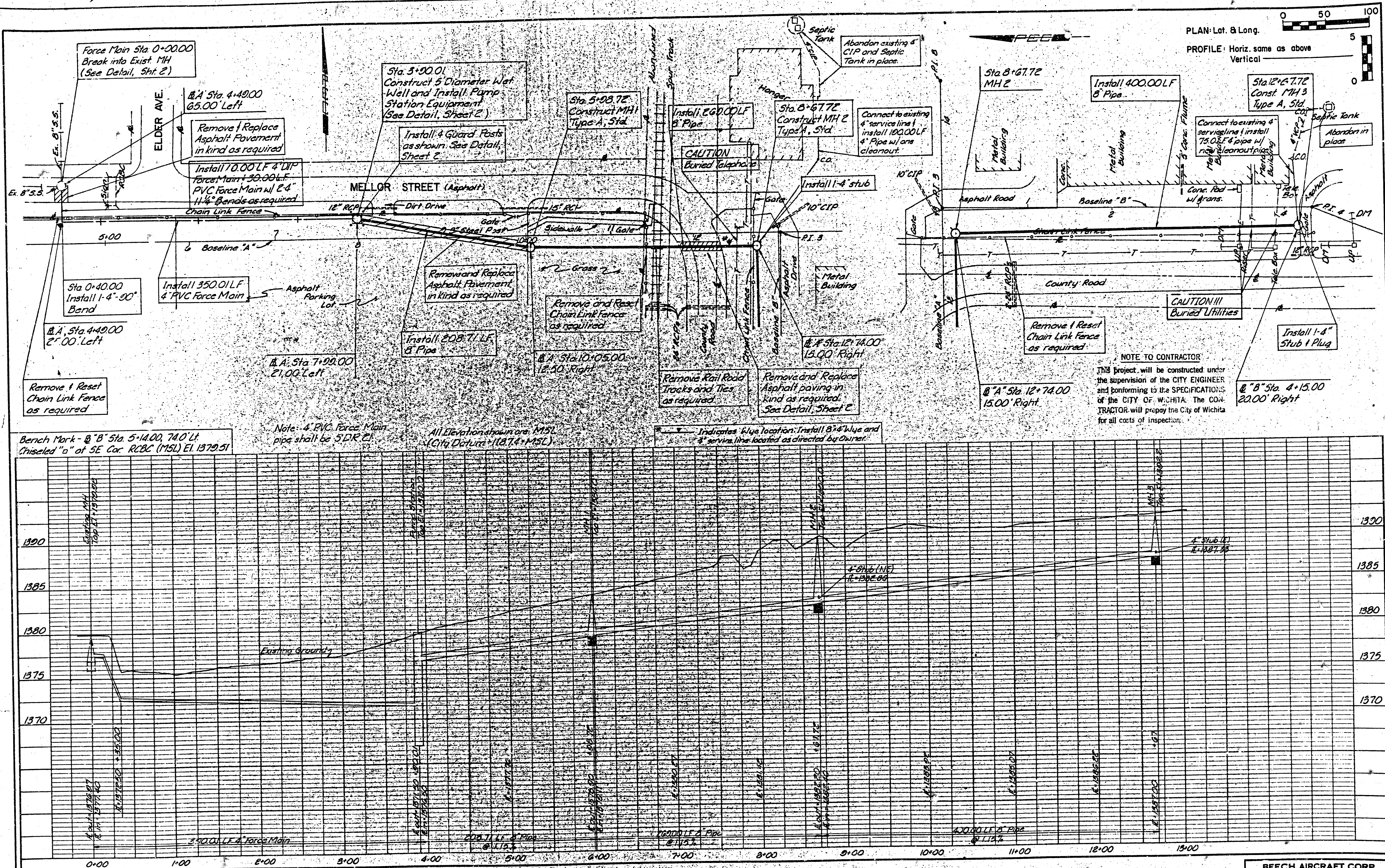


DO NOT TALK THIS MORNING WHEN PRINTS ARE TO BE BOUND



THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY FROM THE CONTRACTOR SHALL BE REQUIRED TO ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR OR A LICENSED PROFESSIONAL ENGINEER IN ACCORDANCE WITH THE

APPROVED AS NOTED
By CITY ENGINEER OF WICHITA
[Signature] 6/15/1915



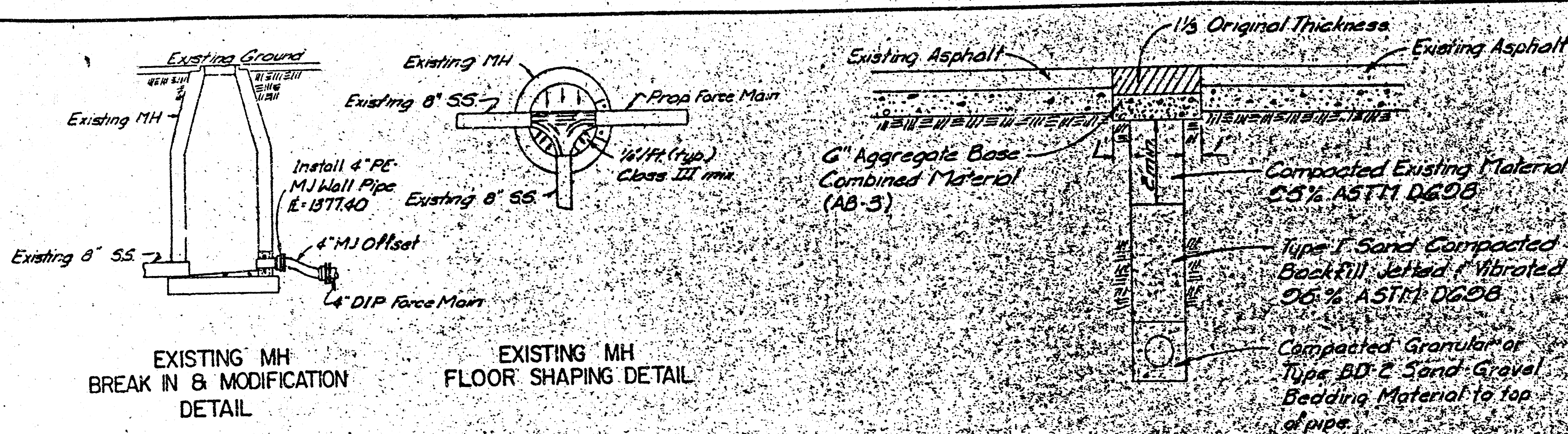
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

DATE	NATURE OF REVISION	BY	CKD.	APPR.

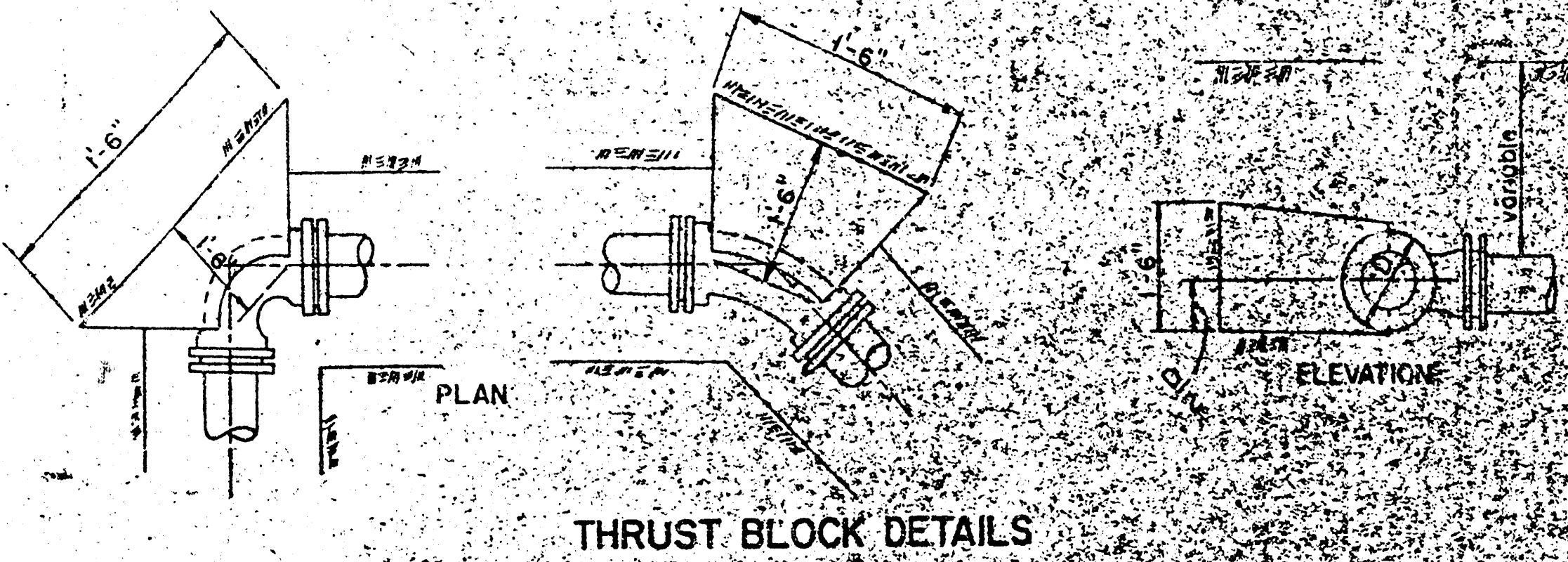
BEECH AIRCRAFT CORP.			
PLANT ENGINEERING DEPT.			
BEECH NORTH SANITARY SEWER AND PUMP STATION			
DESIGNED BY: DLM	DATE: 6/1983	CHECKED:	APPROVED:
DRAWN BY: TS			
SCALE:	No. PEC 34-82430-403		

Sheet 1 of 4

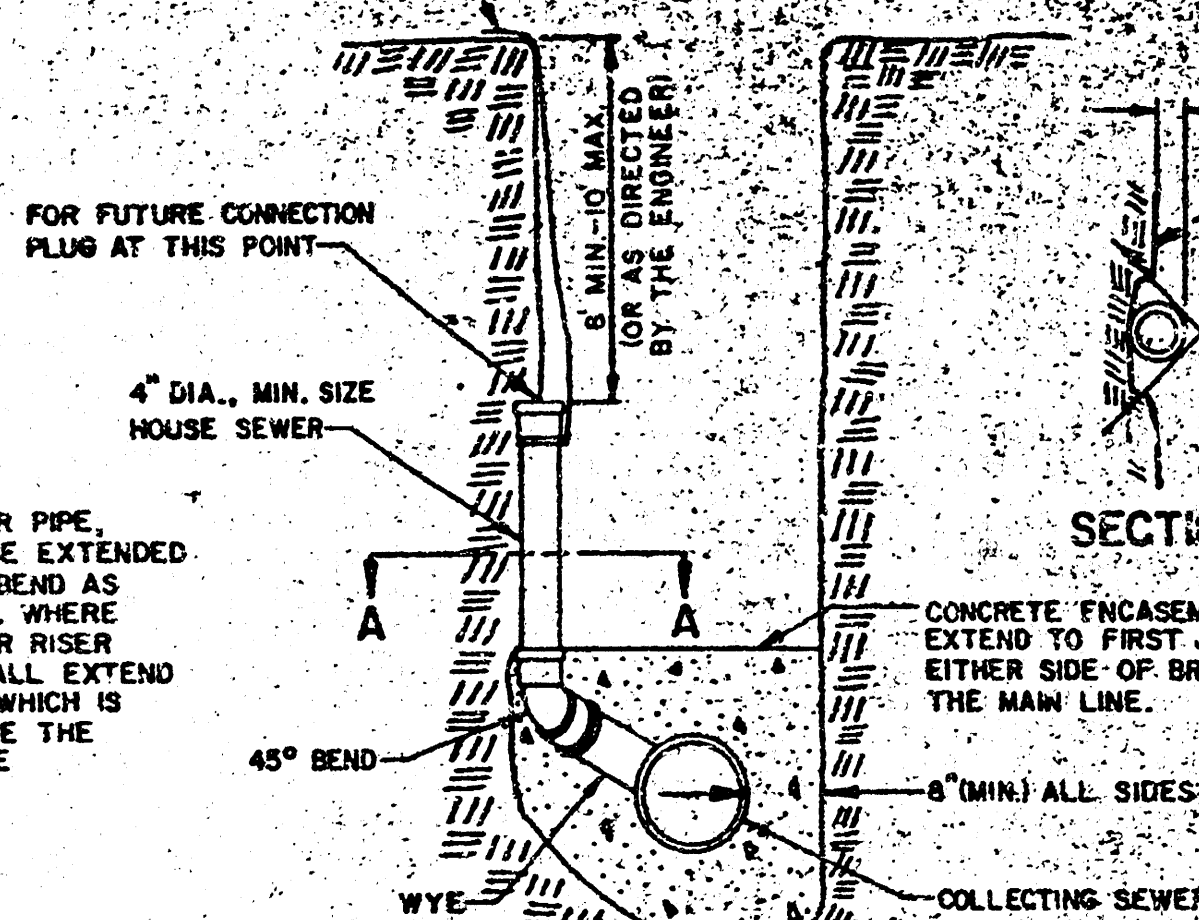
DO NOT TRIM THIS BORDER WHEN PRINTS ARE TO BE BOUND



NOTE: Breakout Existing MH wall as necessary; install pipe, and re-grout watertight with nonshrink grout.

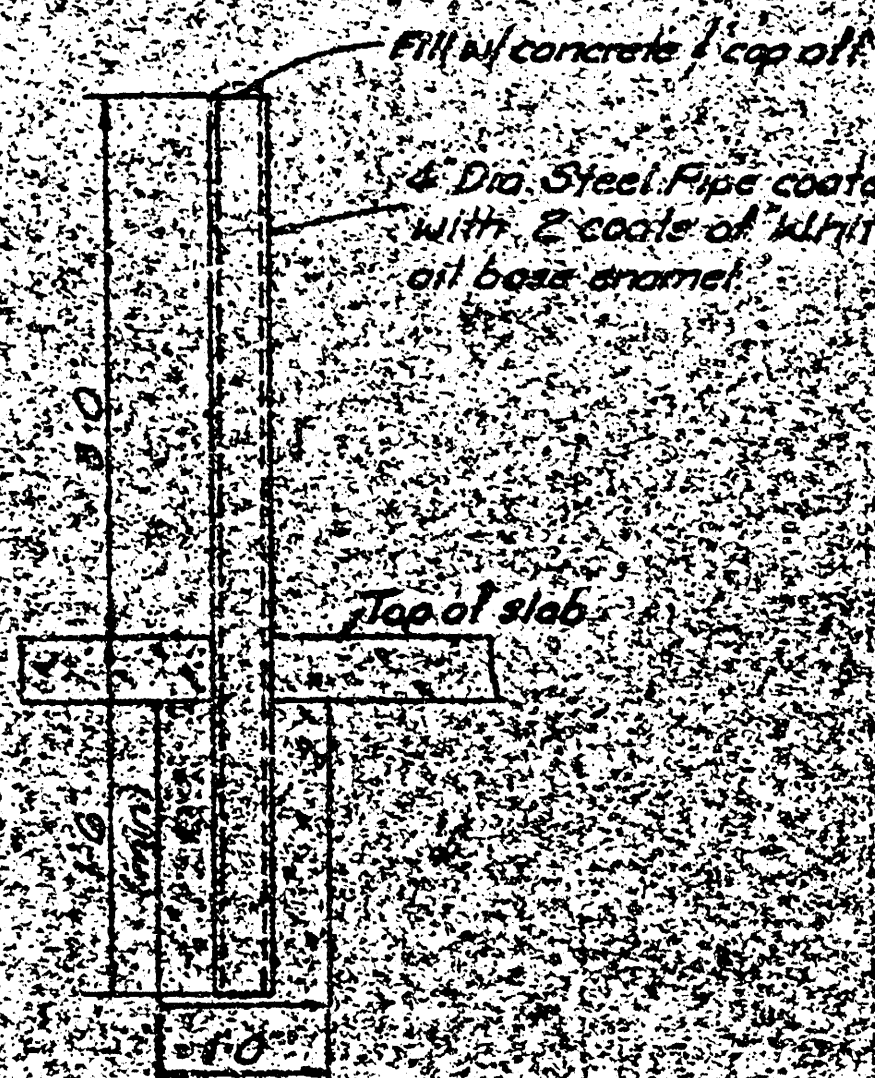


LOCATION OF ENDS OF RISER PIPE SHALL BE MARKED BY FASTENING GREEN PLASTIC TAPE TO THE END OF PIPE AND BROUGHT TO THE GROUND SURFACE SO THAT COLORED TAPE IS VISIBLE WHEN PROJECT IS COMPLETED.

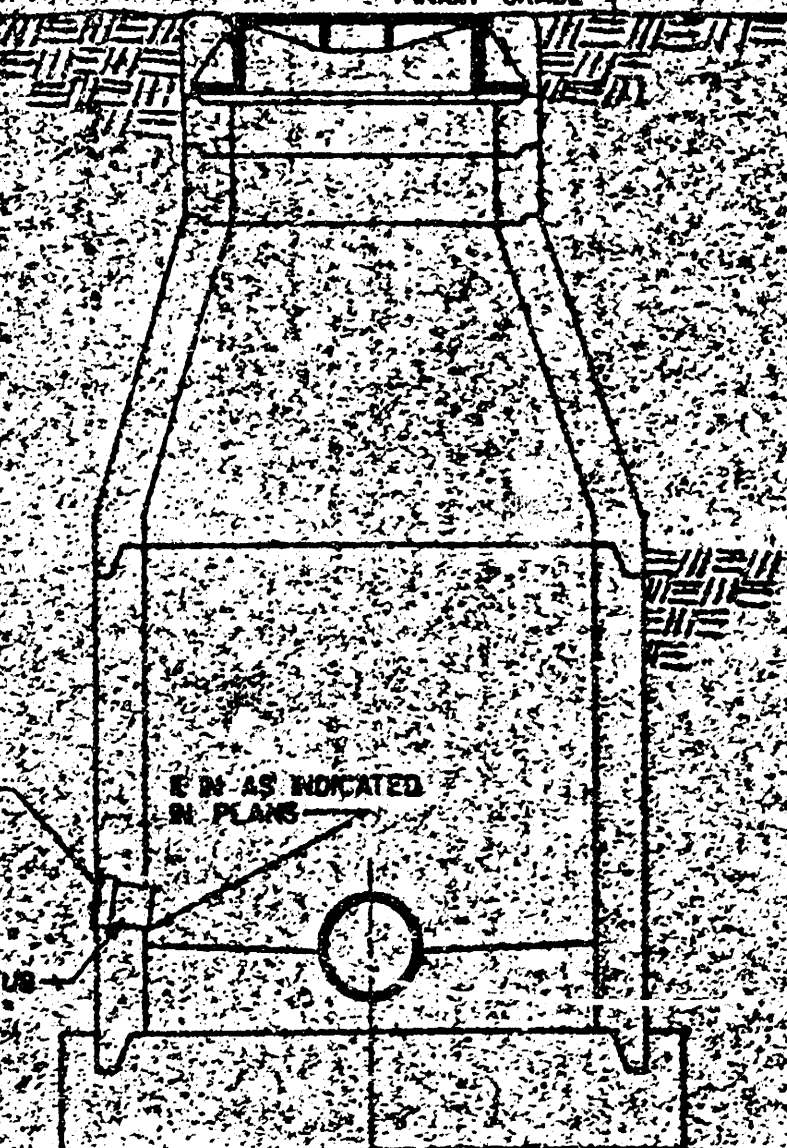


WYE AND RISER DETAIL (TYPICAL)

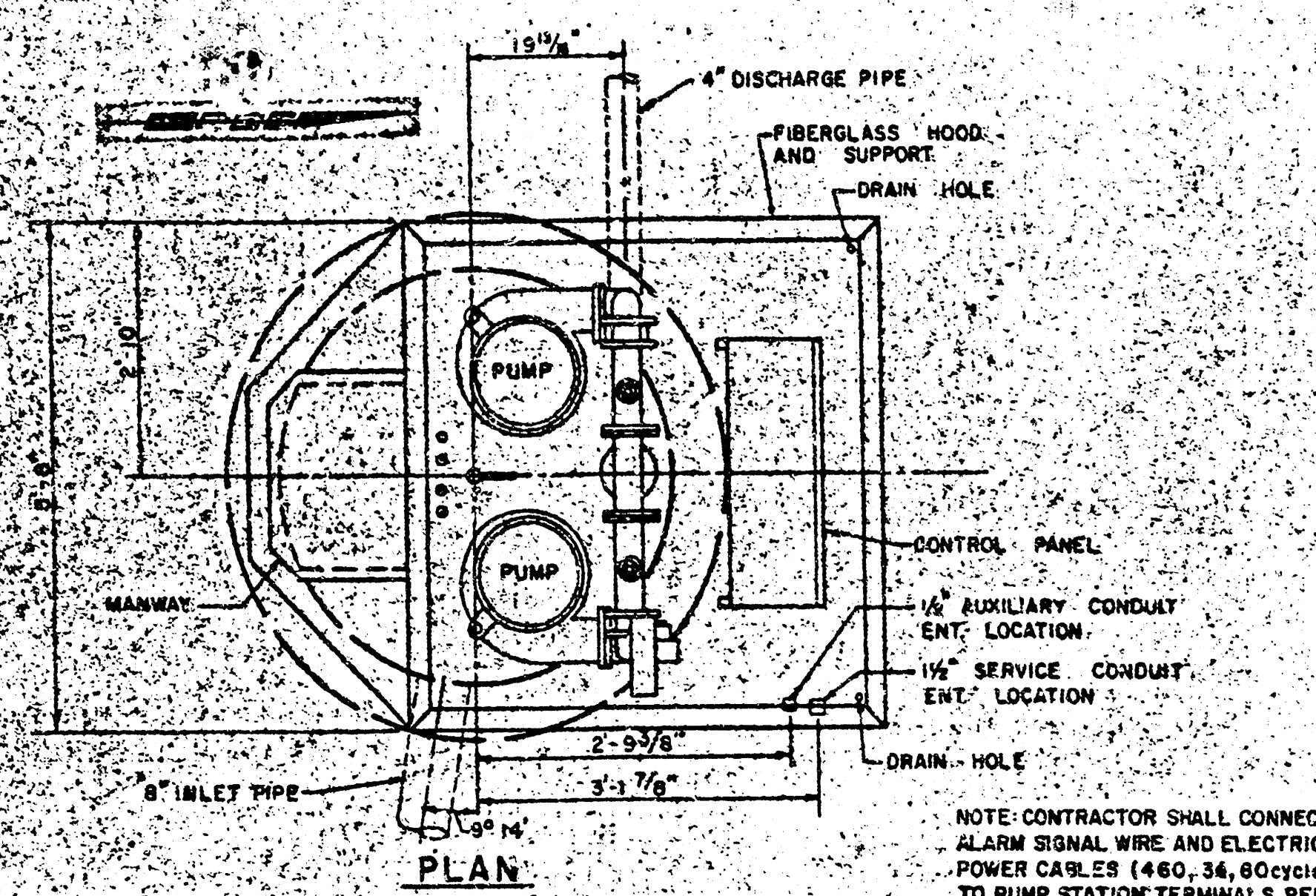
OPEN-CUT ROAD CROSSING REPAIR (FOR ASPHALTIC ROADS)



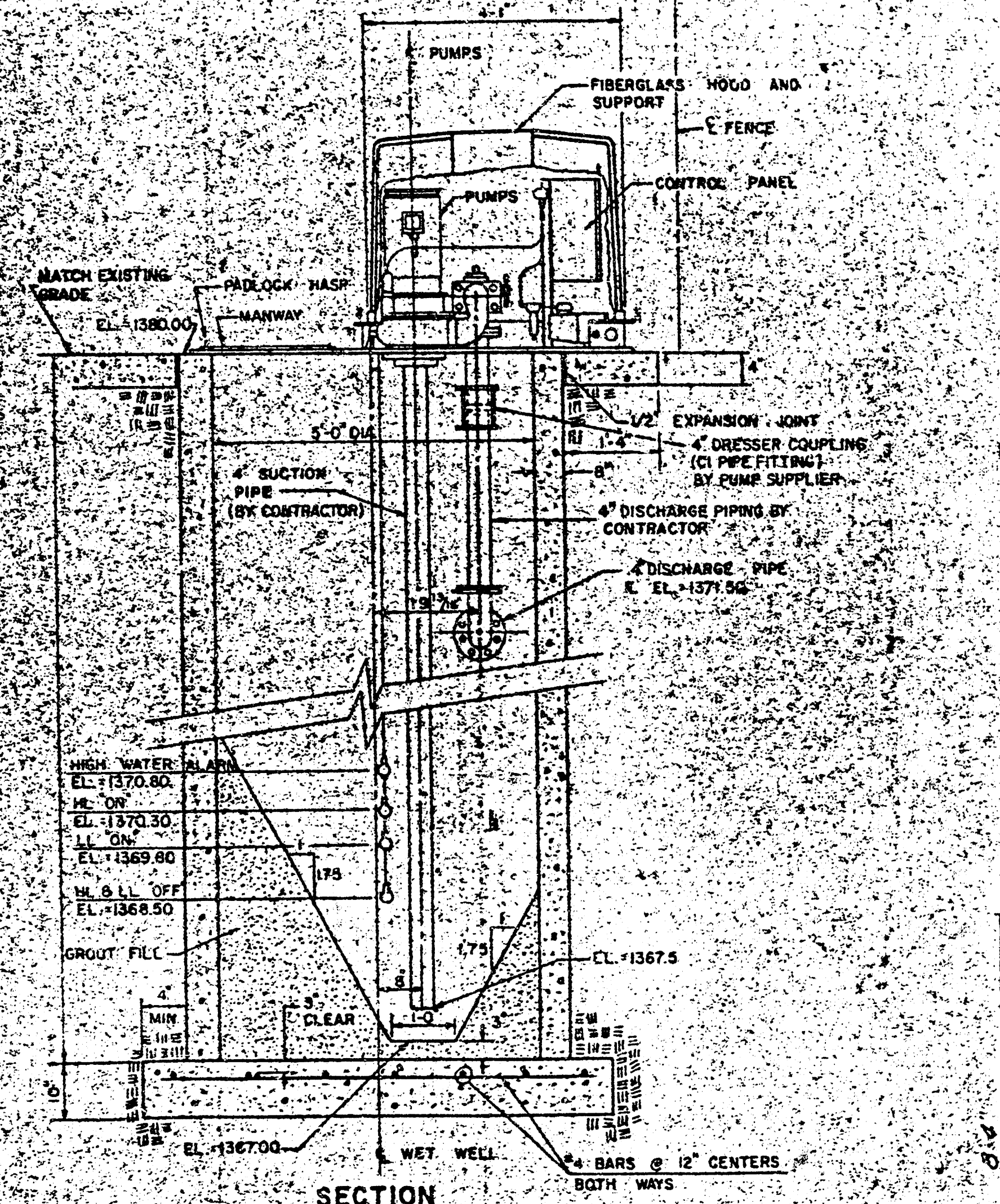
GUARD POST DETAIL



SERVICE STUB DETAIL



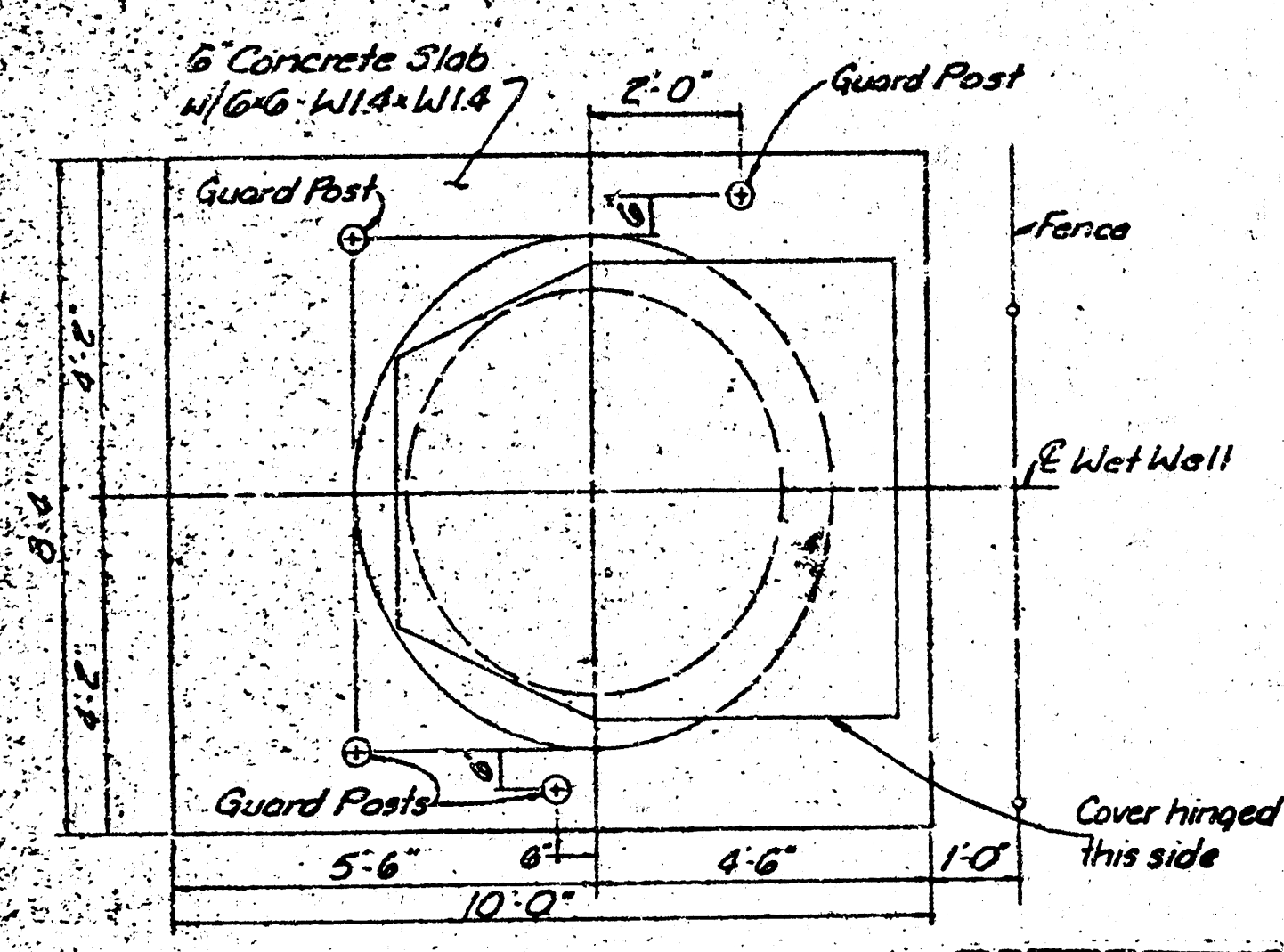
NOTE: CONTRACTOR SHALL CONNECT ALARM SIGNAL WIRE AND ELECTRIC POWER CABLES (480, 34, 60 cycles) TO PUMP STATION TERMINALS PER MANUFACTURER'S INSTRUCTIONS.



SECTION

LIFT STATION

NOTE: PIPING WITHIN THE LIFT STATION MANHOLE NOT PROVIDED BY THE PUMP SUPPLIER SHALL BE PROVIDED BY THE CONTRACTOR.



LIFT STATION SLAB DETAIL

GENERAL NOTES

1. THE CONTRACTOR SHALL CONTAIN HIS OPERATIONS TO MINIMIZE DISRUPTION OF TRAFFIC ALONG HELLOR ST. AND OTHER PUBLIC ROADS ON THE PROJECT SITE AT ALL TIMES. THE CONTRACTOR SHALL ERECT WARNING SIGNS, FLASHING LIGHTS, AND BARRICADES TO ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) 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.
4. ALL FENCE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AND REPLACED TO EXISTING CONDITION.
5. ALL EXCESS EXCAVATION AND DEBRIS, INCLUDING RAILROAD RAILS AND TIES, SHALL BE REMOVED FROM THE JOB SITE BY THE CONTRACTOR AND DISPOSED OF AS DIRECTED BY THE OWNER.
6. EXISTING BACKFILL SHALL COMPLY WITH CITY OF WICHITA STANDARD SPECIFICATIONS AND SHALL BE FLOWED TO 100% OF ASTM D698.
7. AT LEAST 24 HOURS PRIOR TO BEGINNING EXCAVATION (INCLUDING WEEKENDS AND HOLIDAYS), THE CONTRACTOR SHALL CONTACT THE UTILITY LOCATION SERVICE "811" AT (316) 267-2899 TO REQUEST THE FOLLOWING UTILITY COMPANIES TO LOCATE ANY EXISTING LINES WITHIN THE PROJECT AREA: GAS SERVICE COMPANY, SGA, SOUTHWESTERN BELL TELEPHONE COMPANY, THE WICHITA WATER DEPARTMENT, AND KIM CAPITAL CABLEVISION. THE CONTRACTOR SHALL ALSO CALL THE UTILITY COMPANIES LISTED BELOW AT LEAST 48 HOURS PRIOR TO BEGINNING EXCAVATION (INCLUDING WEEKENDS AND HOLIDAYS) TO REQUEST LOCATIONS OF EXISTING UTILITIES WITHIN THE PROJECT AREA:

FIRE MARSHAL
BEECH AIRCRAFT CORP.
681-7728 L. A. FLUSCHKE
681-8208 DISPATCHER
8. 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. IF LINES DAMAGED SHALL BE REPAIRED OR REPAIRED IMMEDIATELY AS DETERMINED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
9. AT LEAST 24 HOURS PRIOR TO BEGINNING WORK (INCLUDING WEEKENDS AND HOLIDAYS), THE CONTRACTOR SHALL CONTACT THE SEDGWICK COUNTY DEPARTMENT OF PUBLIC WORKS (268-2901, MR. PAUL OTTAVIO) SO THAT THE DEPARTMENT AND SEDGWICK COUNTY EMERGENCY SERVICES CAN BE NOTIFIED OF THE CONSTRUCTION WORK.
10. INSPECTION SHALL BE BY BEECH AIRCRAFT CORPORATION AND/OR PROFESSIONAL ENGINEERING CONSULTANTS.
11. 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.
12. CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI. 6.5 BAGS CEMENT/C.Y., 5.5 GALL. WATER/BAG. CONCRETE SHALL BE AIR ENTRAINED (5 TO 8%). AGGREGATE SHALL MEET SOUNDNESS TEST WITH A TOTAL LOSS NOT GREATER THAN 12% BY WEIGHT WHEN TESTED IN ACCORDANCE WITH ASTM C672. PERCENTAGE OF WEAR BY A 14 ABRASION TEST, ASTM C137 SHALL BE LESS THAN 40%. COARSE AGGREGATE TO THE COARSE 45-75% RETAINED ON 3/8\"/>
13. ALL MANHOLES SHALL BE BRICK.
14. ALL FORCE MAIN PIPING SHALL BE 4\"/>
15. PUMP STATION EQUIPMENT TO THE LIMITS SHOWN WILL BE PROVIDED BY THE OWNER. THE CONTRACTOR SHALL INSTALL AND TEST THE EQUIPMENT, INCLUDING PIPING AND ELECTRICAL CONNECTIONS, IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
16. FINAL TELEVISION INSPECTION AND AIR TESTING OF THE GRAVITY SEWER WILL BE PERFORMED BY THE CITY OF WICHITA AND PAID FOR BY THE CONTRACTOR.
17. THE CONTRACTOR SHALL PROVIDE PROOF OF ADEQUATE INSURANCE AND BONDING AS REQUIRED BY SEDGWICK COUNTY PUBLIC WORKS FOR USE OF PUBLIC ROAD RIGHT-OF-WAY.

BEECH AIRCRAFT CORP.

PLANT ENGINEERING DEPT.

BEECH NORTH SANITARY SEWER

AND PUMP STATION

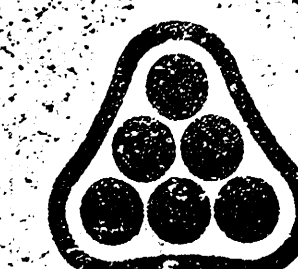
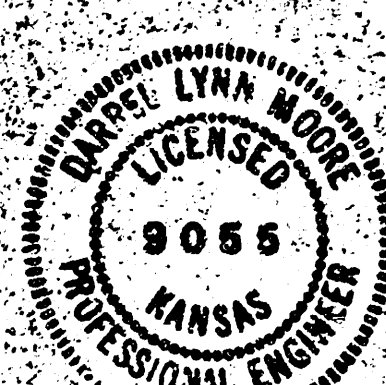
ENGINEER: DLM DATE: 6/10/85 CHECKED: APPROVED:

DRAWN: TS SCALE: No. REC 34-02330-405

SHEET 2 OF 4

Sheet 2 of 4

City of Wichita Project No. 468-76 £45-80000-000-000-008



PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

ENGINEERS
WICHITA, KANSAS

REFERENCE DRAWINGS

APPROVED TITLE DATE

APPROVED TITLE DATE

APPROVED TITLE DATE

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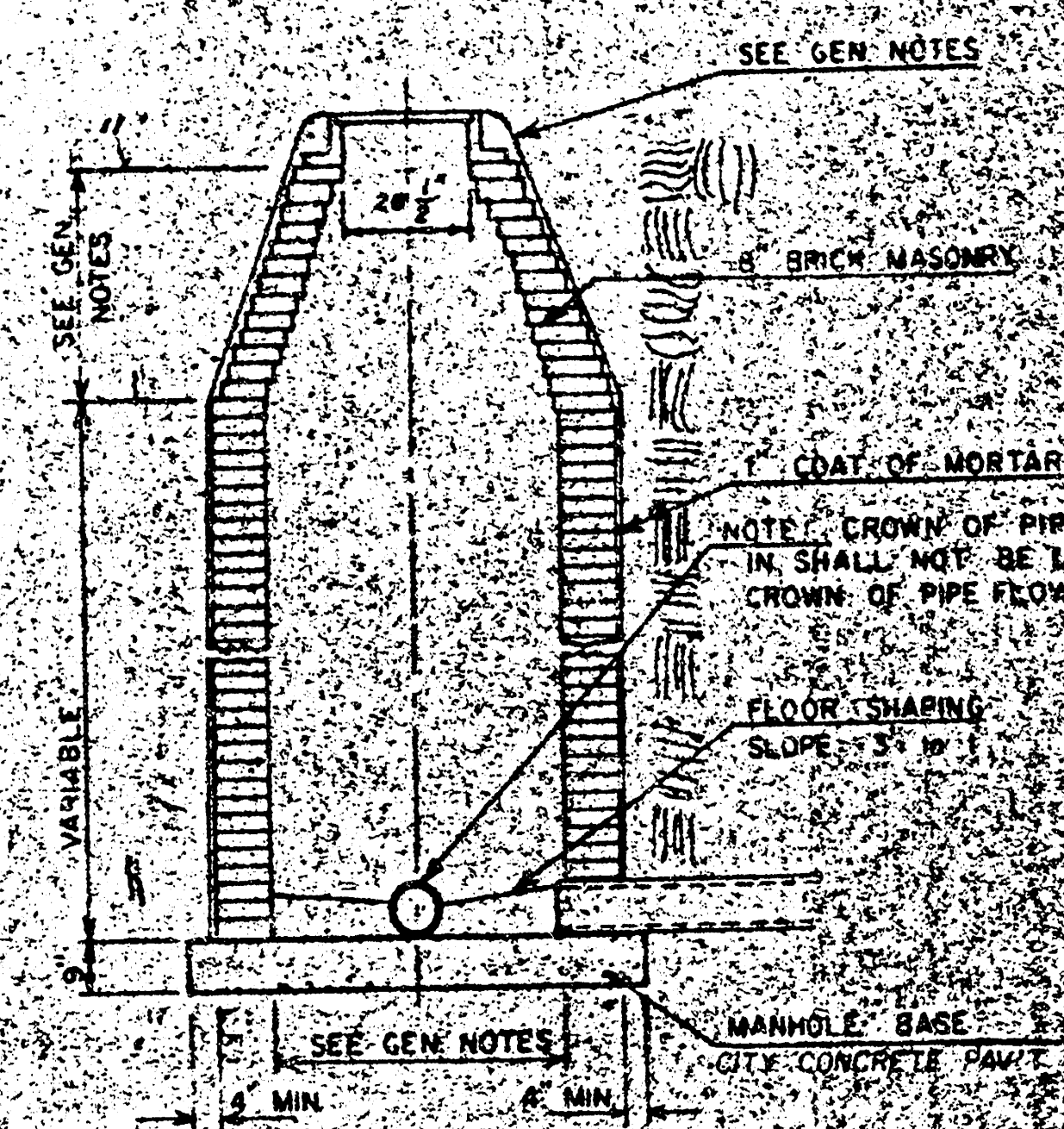
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SEWER APPURTENANCES DETAILS

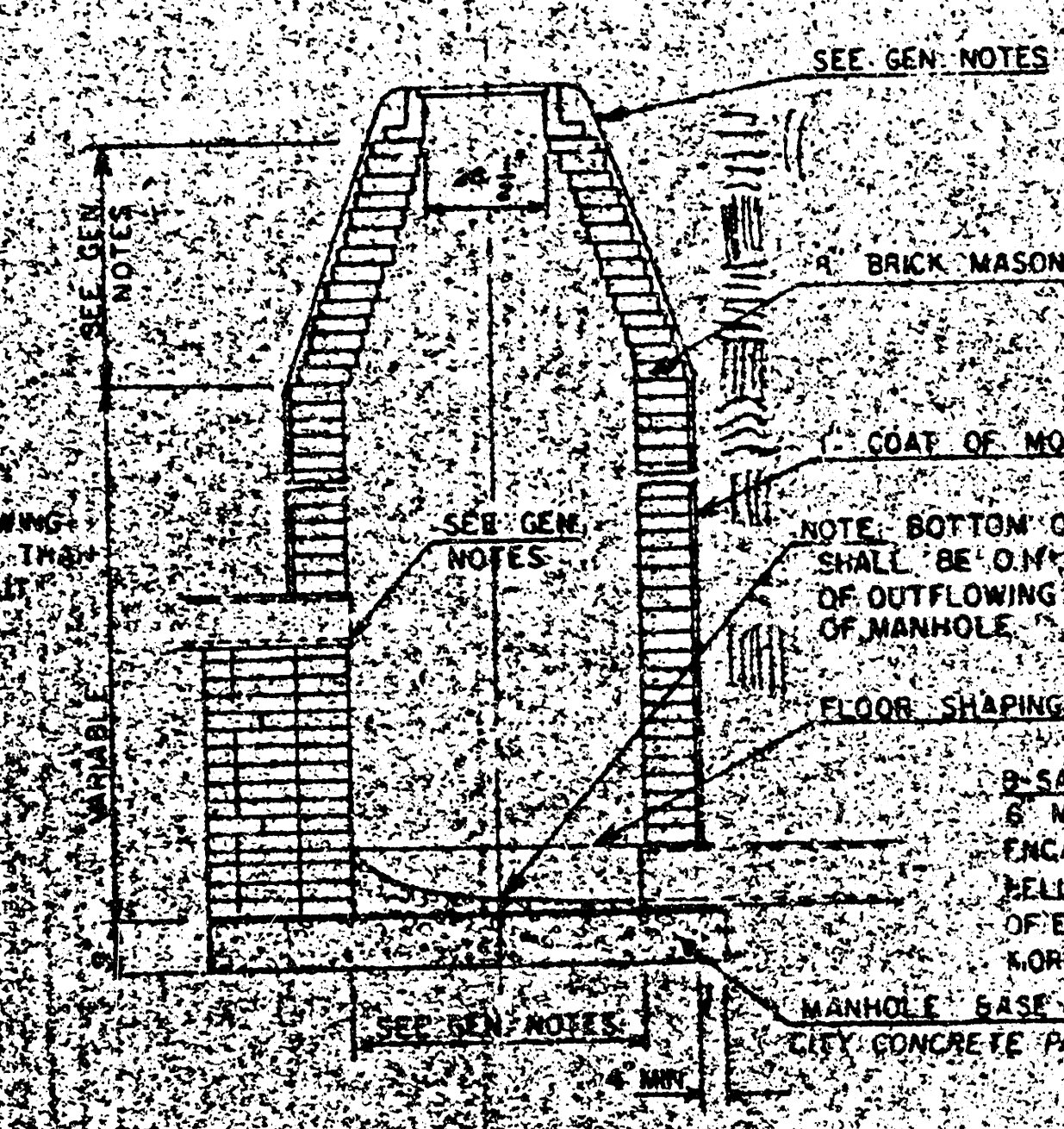
ADOPTED AS STANDARD DESIGN
BY

CITY OF WICHITA, KANSAS

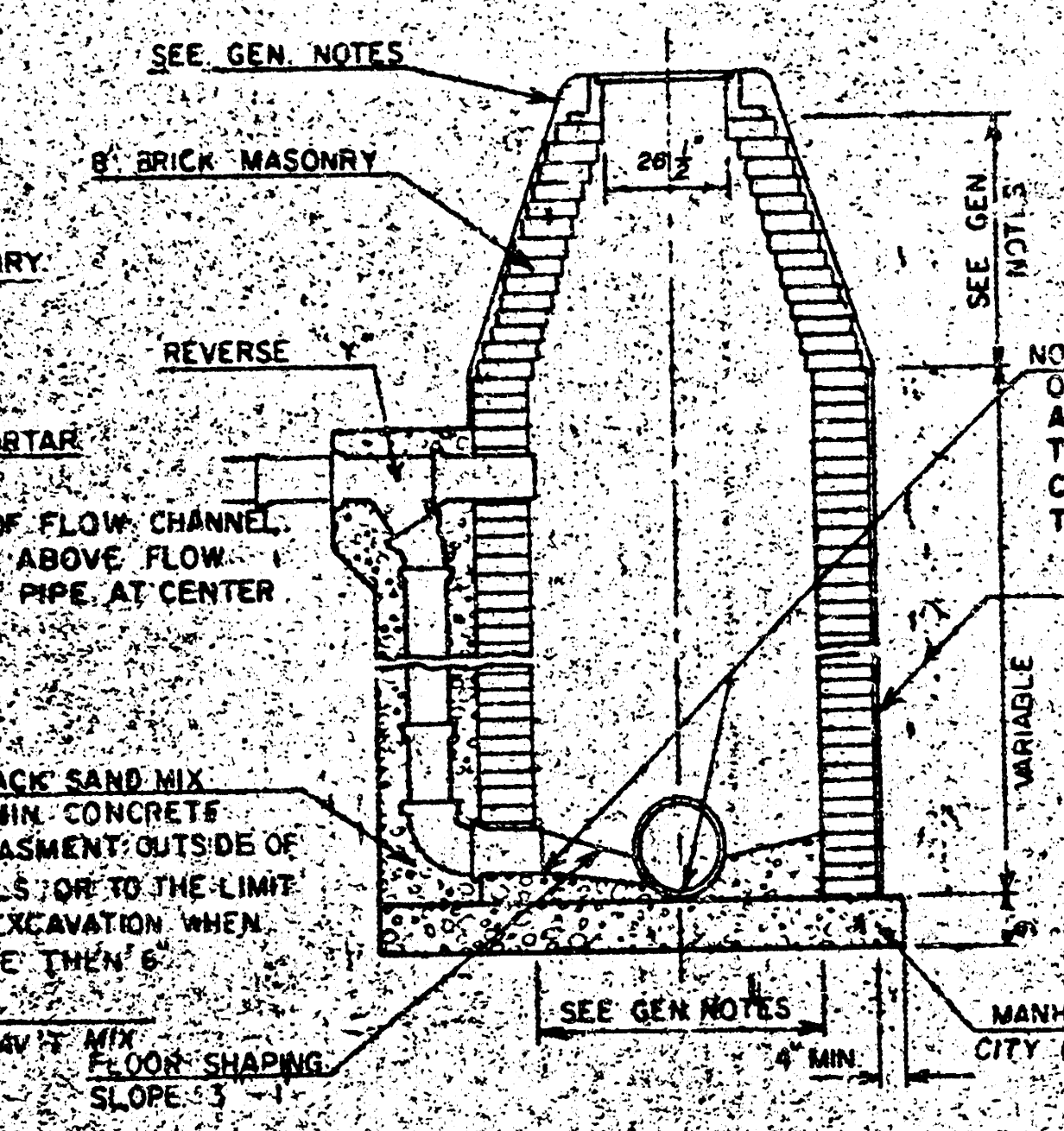
TYPE "A" MANHOLE



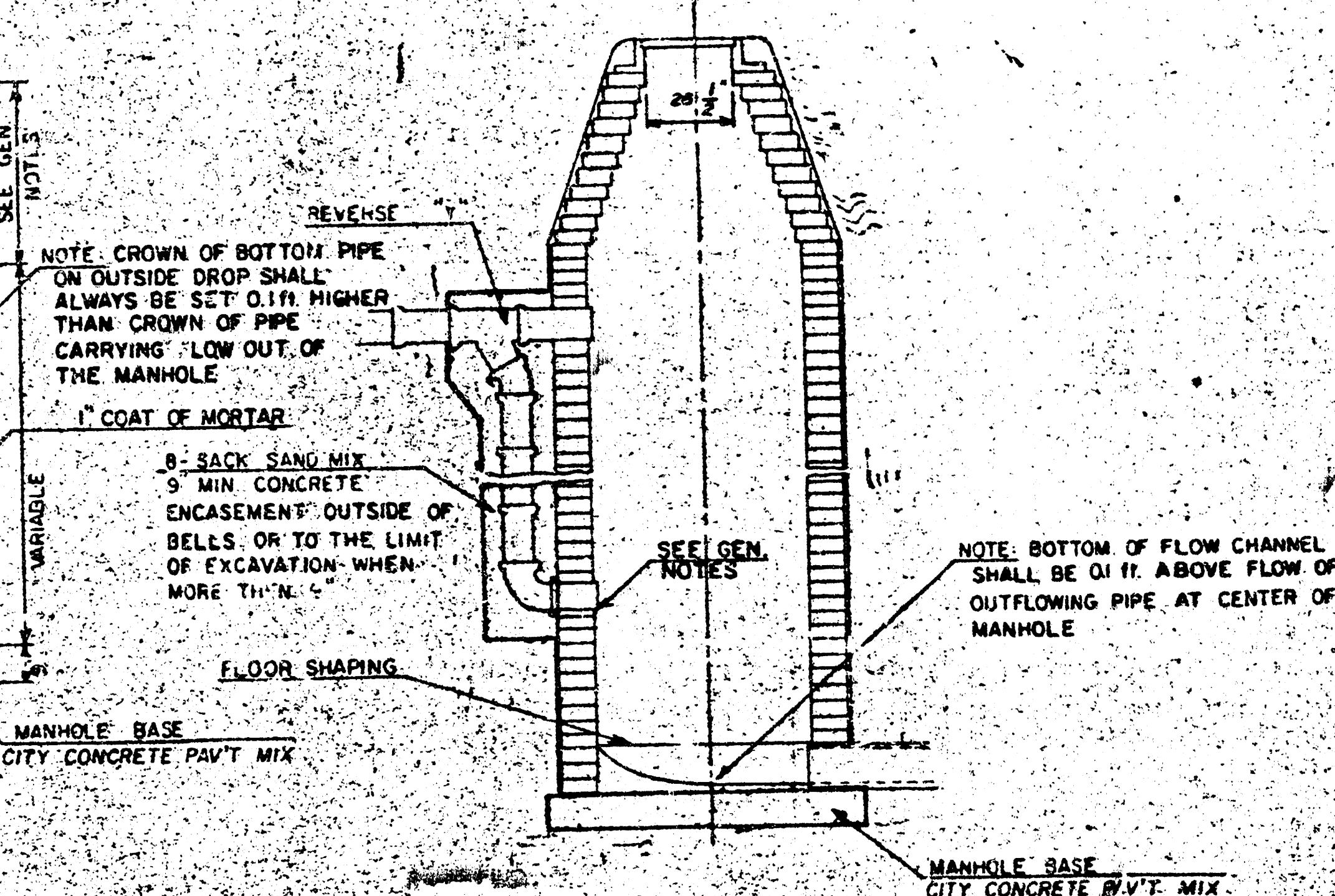
TYPE "A" INSIDE DROP MANHOLE



TYPE "A" OUTSIDE DROP MANHOLE



DETAIL OF OUTSIDE DROP
CONSTRUCTED ON EXISTING MANHOLE



- GENERAL NOTES**
- 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 CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITH ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RINGS AS SHOWN ON THE DRAWINGS. WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS, TYPE "A" MANHOLES CAN BE USED IN SEWER DIPS TO 48" IN DEPTH WHEN THE MANHOLE IS COVERED WITH A RAILROAD STREET PAVEMENT. 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". THE HEIGHT OF THE CORBELS ON 4" DIAMETER MANHOLES SHALL BE 4". MANHOLES HAVING A DIAMETER OF 5" SHALL HAVE CORBELS 6" IN HEIGHT. COMPLETED MANHOLE SHALL BE WEATHER-PROOF 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 6" 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.
 - 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 EXTENSION 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 NOTIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THE VERTICAL DROP FROM THE LOWER PIPE OR SUCH OUTSIDE DROP CONNECTIONS SHALL NOT EXCEED: 4' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES SIZED LARGER THAN 12". EXCEPT THE CROWN OF THE LOWER PIPE SHALL NEVER BE SET BELOW THE CROWN OF ANY LARGER OUTFLOWING PIPE. THIS WORK, INCLUDING NOTIFICATION OF MANHOLE FLOOR SHALL BE PAID FOR AS 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 8:1 HORIZONTAL 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 REVEAL 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 DRAWING.
 - THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 4' 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 TYPE "A" AND STANDARD INSIDE DROP MANHOLES TYPE "A" SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES TYPE "A" SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.

BEECH AIRCRAFT CORP.			
PLANT ENGINEERING DEPT.			
BEECH NORTH SANITARY SEWER AND PUMP STATION			
DESIGNED BY DATE 6/19/89	CHECKED DATE 6/19/89	APPROVED DATE 6/19/89	SCALE No. REC 34 82430-403

MANHOLE FRAME AND COVER DETAIL

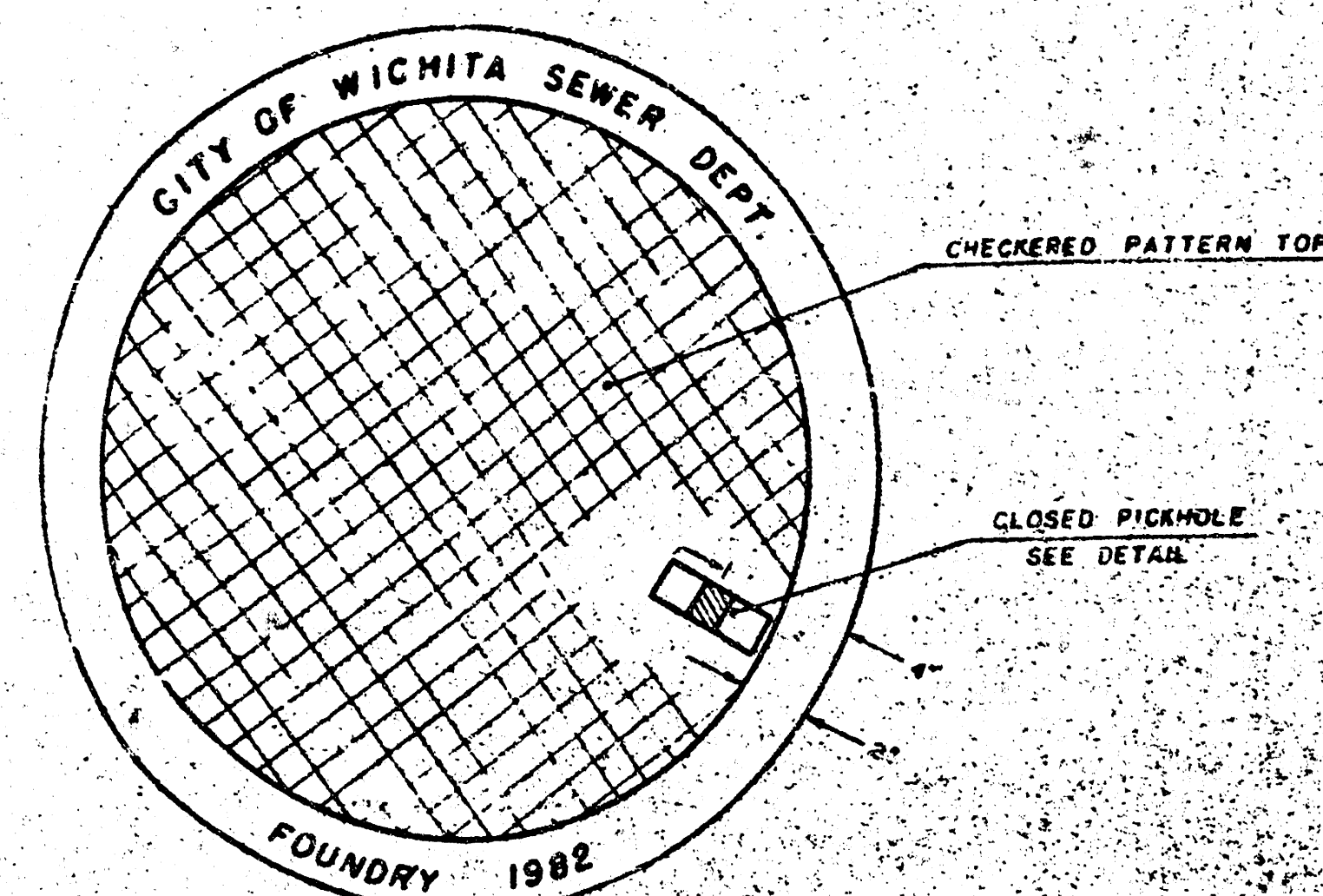
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BY

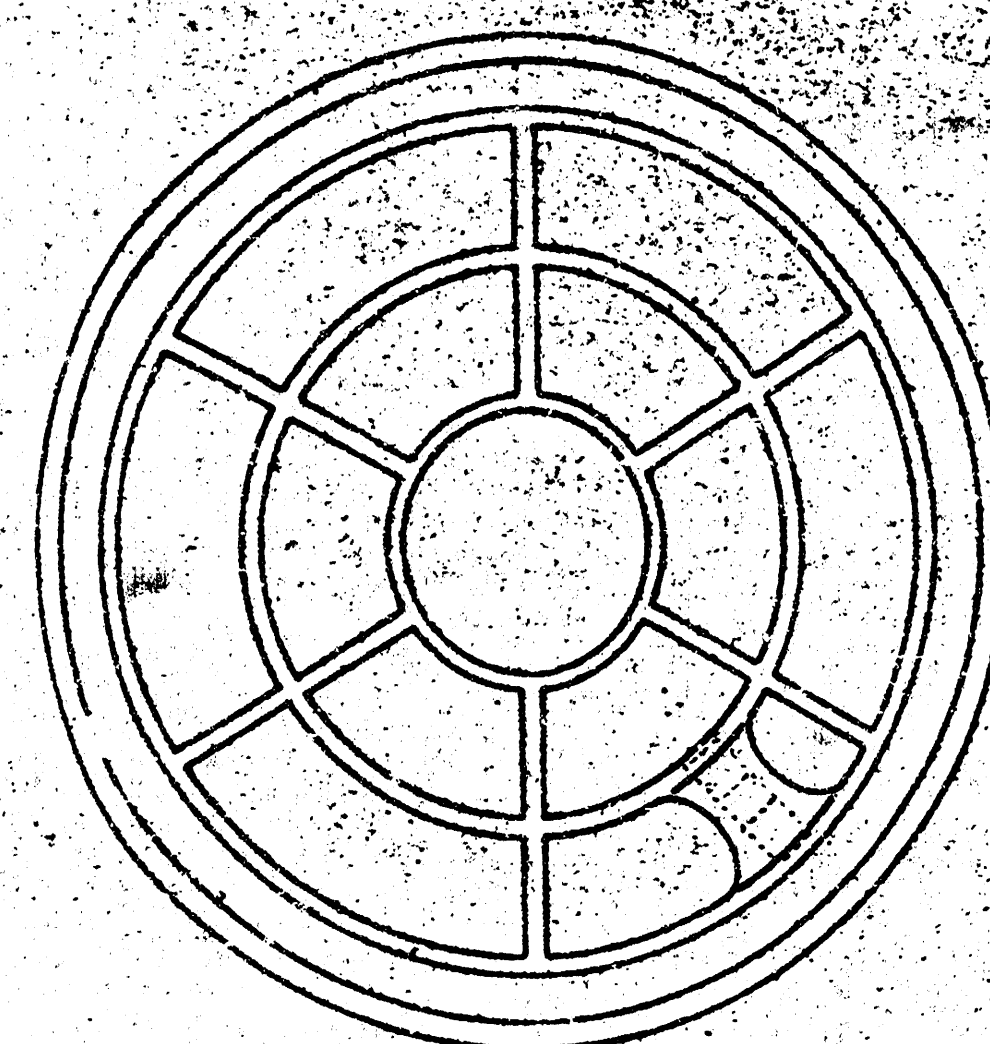
City of Wichita, Kansas

MANHOLE COVER

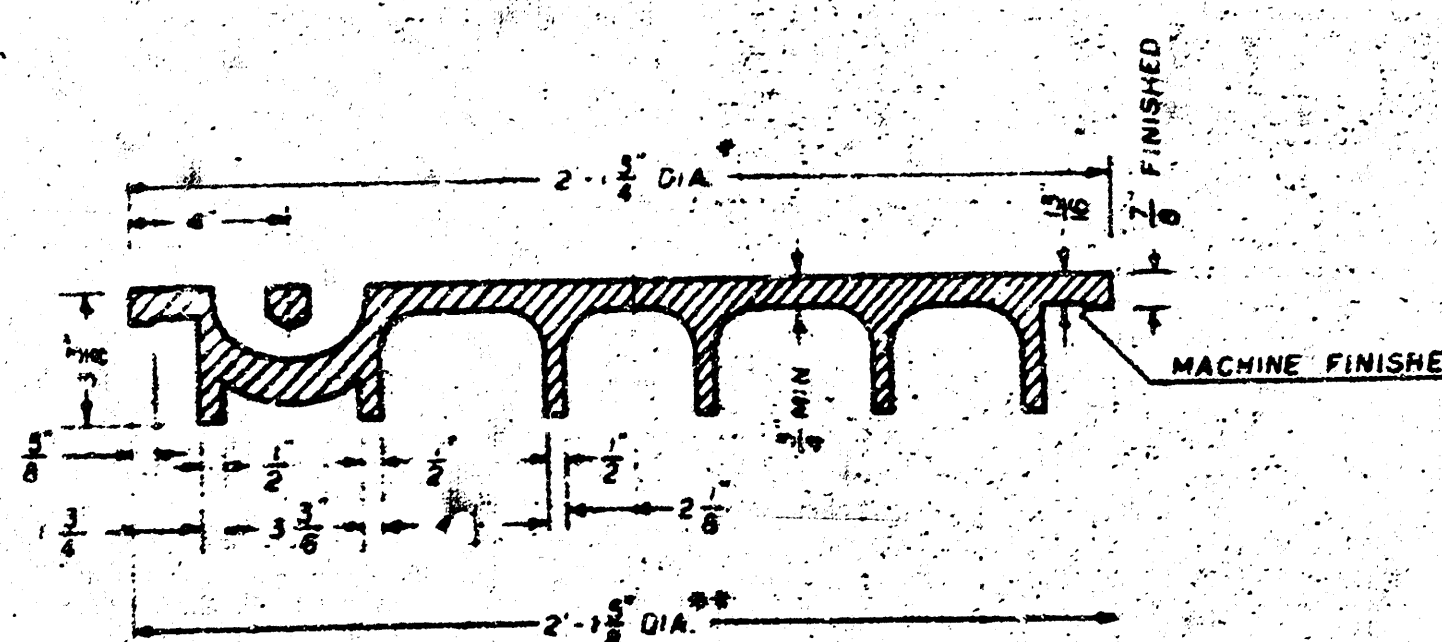
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TOP VIEW



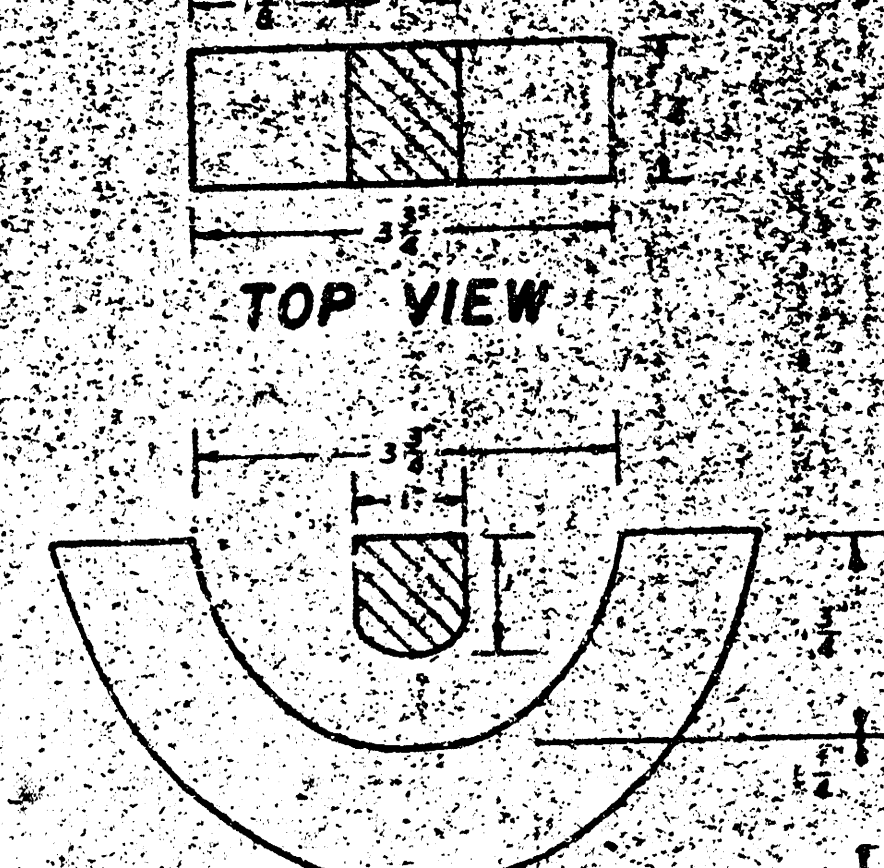
BOTTOM VIEW



SECTION VIEW

* OUTSIDE DIA. TOP OF COVER
** OUTSIDE DIA. BOTTOM OF COVER

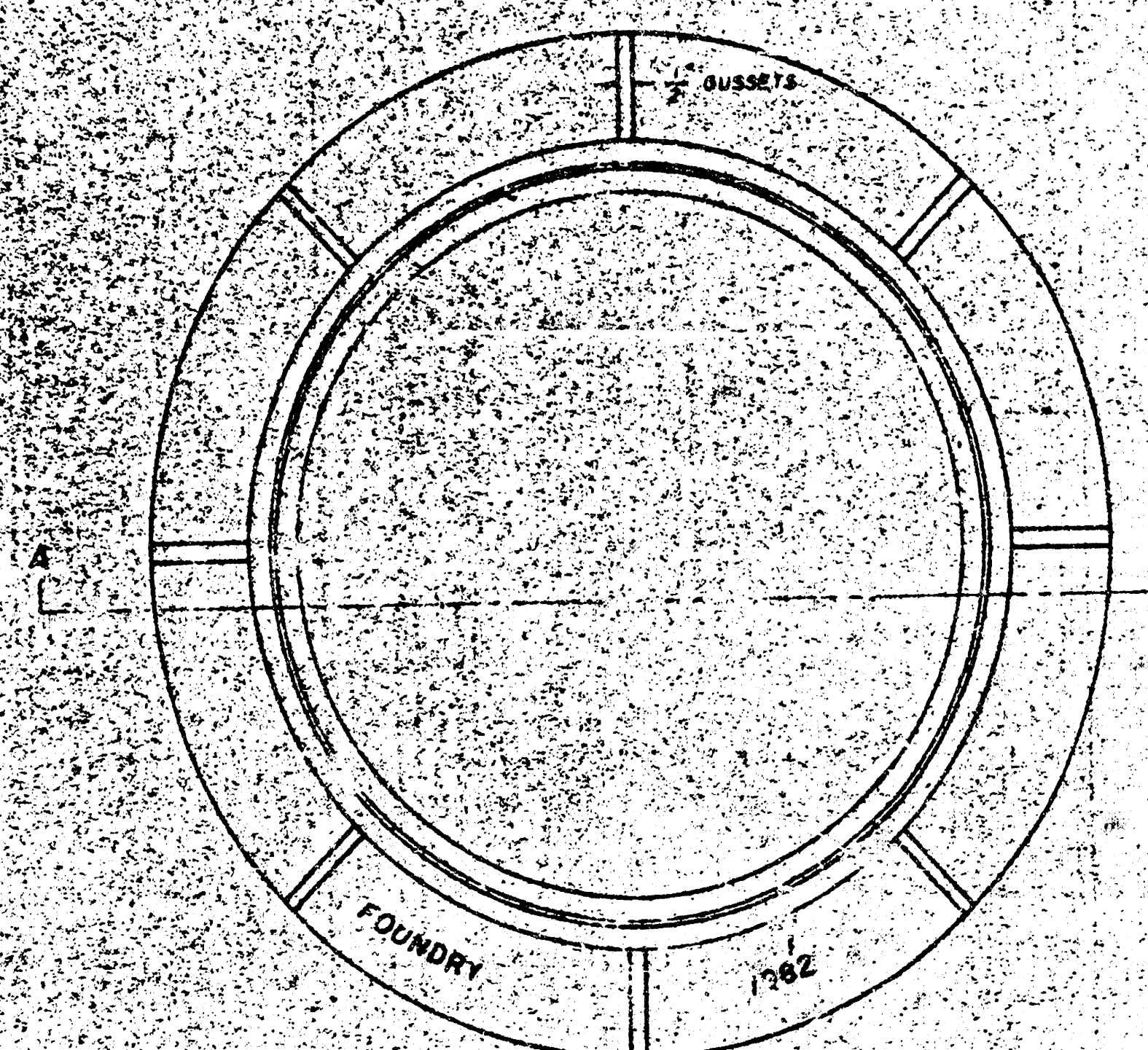
PICKHOLE DETAIL



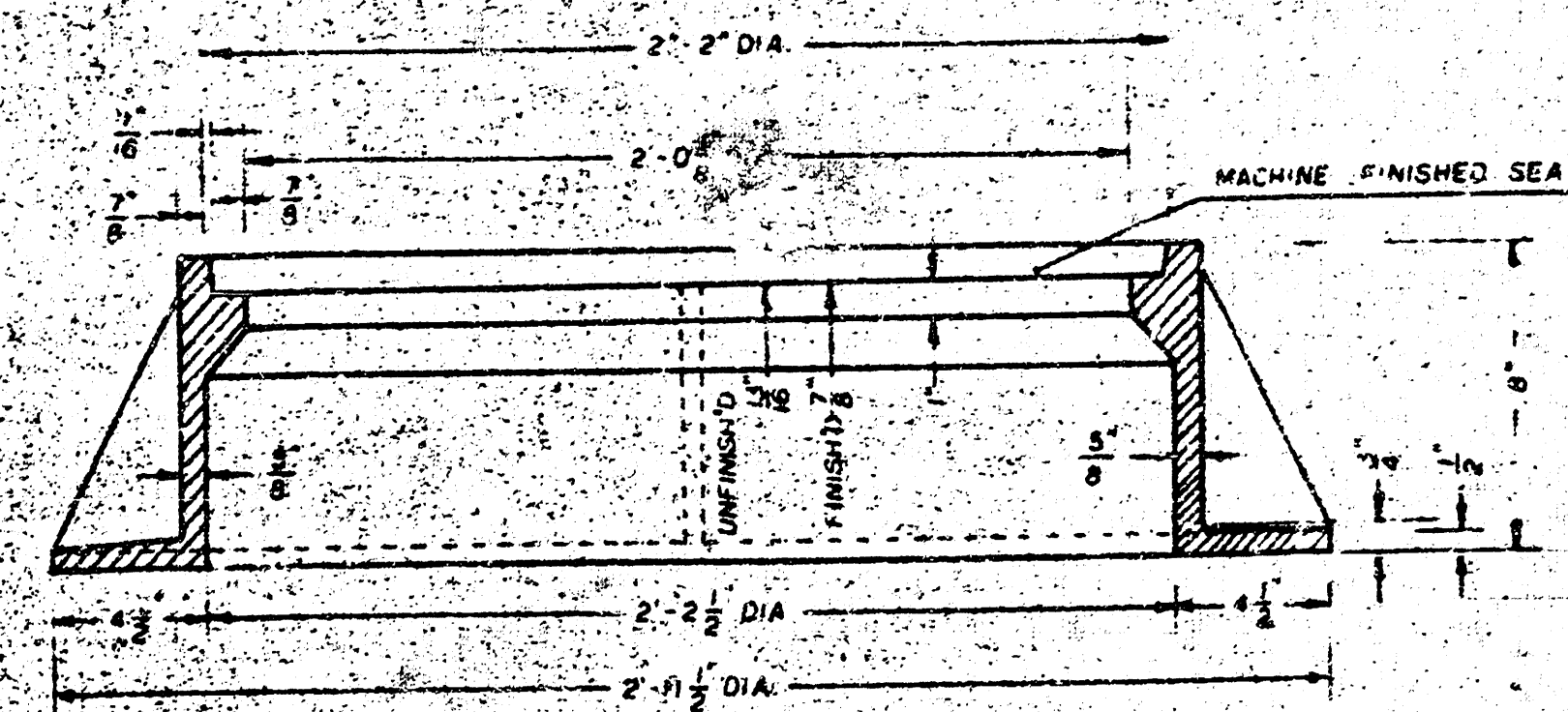
SECTION VIEW

MANHOLE FRAME

Weight: 240 Lbs.



TOP VIEW



SECTION A-A

GENERAL NOTES

- MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAIL DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.
- MANHOLE CASTINGS SHALL BE COATED WITH AN ASPHALT PAINT RESULTING IN A SMOOTH, TOUGH AND TENACIOUS COATING WHICH IS NOT BRITTLE OR TACKY.
- MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.
- THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH THAT THESE SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.
- THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1" IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SEWER DEPARTMENT". THE WORD DEPARTMENT MAY BE ABBREVIATED. THE TEXTURE OF THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN A CHECKERED PATTERN DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUT SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.

BEECH AIRCRAFT CORP.			
PLANT ENGINEERING DEPT.			
BEECH NORTH SANITARY SEWER AND PUMP STATION			
DESIGNED BY	DATE	CHECKED	APPROVED
DAVE T3	6/1/85		
SCALE	No. PEC 54-BE630-403		

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