

LATERAL 373, SOUTHWEST INTERCEPTOR SEWER TO SERVE SOUTH LAKES PARK

PROJ. NO. 468-82649

INDEX NO. 622027

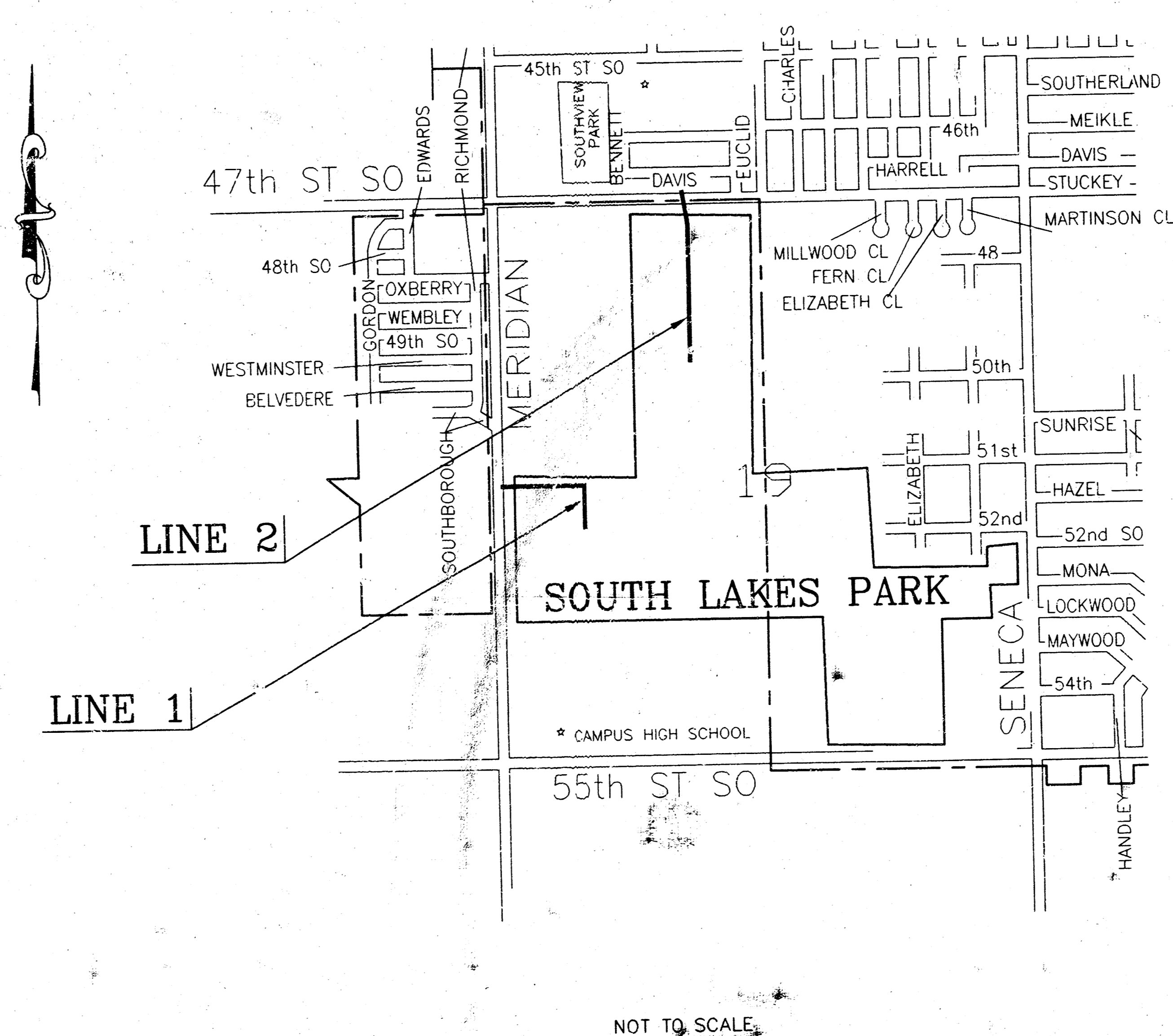
CITY OF WICHITA, KANSAS

M. E. LINDEBAK - CITY ENGINEER

GENERAL NOTES:

1. UTILITY SERVICE LINES, POLES, VALVE BOXES, METERS, AND ETCETERA 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 LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE TO NOTIFY AND TO MAKE ANY NECESSARY ARRANGEMENTS WITH UTILITY COMPANIES FOR ANY NEEDED ADJUSTMENTS OF UTILITY FACILITIES PRIOR TO START OF WORK.
3. 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 |
| SOUTHWESTERN BELL TELEPHONE COMPANY | 1-316-571-2611 |
| CABLEVISION | 262-4270 OR 263-2061 |
| KPL GAS SERVICE | 263-7511 |
| KANSAS GAS & ELECTRIC | 264-1141 |
| CITY OF WICHITA WATER DEPARTMENT | 268-4908 |
| CITY OF WICHITA SEWER DEPARTMENT | 268-4071 |
| ARKLA GAS COMPANY | 942-8350 OR 263-8161 |
| SUPERINTENDENT OF PARKS (RON HAYWORTH) | 337-9225 |
| PARK ARCHITECT (CARISA McMULLEN) | 268-4179 |
4. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES AND 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 FLOOD PLAIN 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. CORPUS 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. THE COST OF DISPOSING OF RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES, INCLUDING LOADING AND HAULING SHALL BE SUBSIDIARY TO THE OTHER BID ITEMS.
5. THERE ARE UNDERGROUND SPRINKLER SYSTEMS WITHIN THE LIMITS OF THIS PROJECT WHICH CONFLICT WITH THE NEW CONSTRUCTION. CONTRACTOR WILL BE REQUIRED TO REMOVE AND REPLACE THEM TO THEIR ORIGINAL WORKING CONDITION. 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.
7. TREES AND SHRUBS IN PUBLIC RIGHT-OF-WAY WHICH ARE IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR WITH THE ENGINEER'S APPROVAL. TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE SAVED AND PROTECTED FROM DAMAGE. THIS COST IS SUBSIDIARY TO OTHER BID ITEMS.
8. 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 OR A LICENSED PROFESSIONAL ENGINEER IN ACCORDANCE WITH STATE LAWS.
9. ANY FENCE REMOVED FOR CONSTRUCTION SHALL BE REPAIRED IN A CONDITION EQUAL TO, OR BETTER THAN ORIGINAL, AT NO ADDITIONAL COST TO THE OWNER. THIS COST SHALL BE CONSIDERED AS SUBSIDIARY TO OTHER BID ITEMS.
10. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY ADJUTING THE PROJECT LIMITS A MINIMUM OF TEN (10) DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.
11. 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.
12. ALL CONSTRUCTION AND MATERIALS, UNLESS OTHERWISE NOTED, TO COMPLY WITH CITY OF WICHITA SPECIFICATIONS AND STANDARDS.
13. THE CONTRACTOR SHALL GRADE ALL DISTURBED AREAS IN THE PROJECT AREA IN ACCORDANCE WITH THE EASEMENT GRADING PLAN, PREPARE FOR PLANTING, AND SEED WITH ANNUAL RYE GRASS @ 2#/1000 SF. (OR OTHER APPROVED TEMPORARY SEEDING).
14. A SAW CUT OF AT LEAST ONE-HALF THE DEPTH OF EXISTING SURFACE COURSES OR ONE-FOURTH THE DEPTH OF THE EXISTING TOTAL PAVEMENT THICKNESS SHALL BE PROVIDED WHERE PROPOSED ABUTS AN EXISTING SURFACE COURSE OR PAVEMENT REMOVAL. SAWED JOINT SHALL EXTEND TO THE EXISTING JOINT. SUCH SAW CUTS WILL NOT BE PERMITTED AND FOR SUCH INSTANCES THE LIMITS OF REMOVAL SHALL EXTEND TO THE EXISTING JOINT. SUCH SAW CUTS WILL NOT BE PAID FOR DIRECTLY AND THIS COST SHALL BE CONSIDERED AS SUBSIDIARY TO THE OTHER BID ITEMS.
15. THE GROUND ELEVATIONS MAY VARY FROM WHAT IS SHOWN ON THE PLANS DUE TO WORK DONE BY THE PARK DEPARTMENT AFTER THE PROJECT WAS SURVEYED. EXTRA WORK REQUIRED BECAUSE OF A CHANGE IN ELEVATION IS SUBSIDIARY TO THE OTHER BID ITEMS OF WORK.



INDEX OF SHEETS

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| SHEET 2 - 3 | - | LINE 1, PLAN/PROFILE |
| SHEET 4 - 5 | - | LINE 2, PLAN/PROFILE |
| SHEET 6 - 10 | - | DETAILS |

*Booked
N-270
9/8/27
per Plan*



NOT TO SCALE

SCALE:
 PLAN 1" = 40'
 PROFILE 1" = 40' HORIZ.
 1" = 5' VERT.

STA 11+33.3 CONST.
 STD. SHALLOW MH.
 INSTALL 8" STUBS N & E
 N 7328.110
 E 11131.295

MATCH LINE
 STA 11+00

PROPOSED WATER LINE

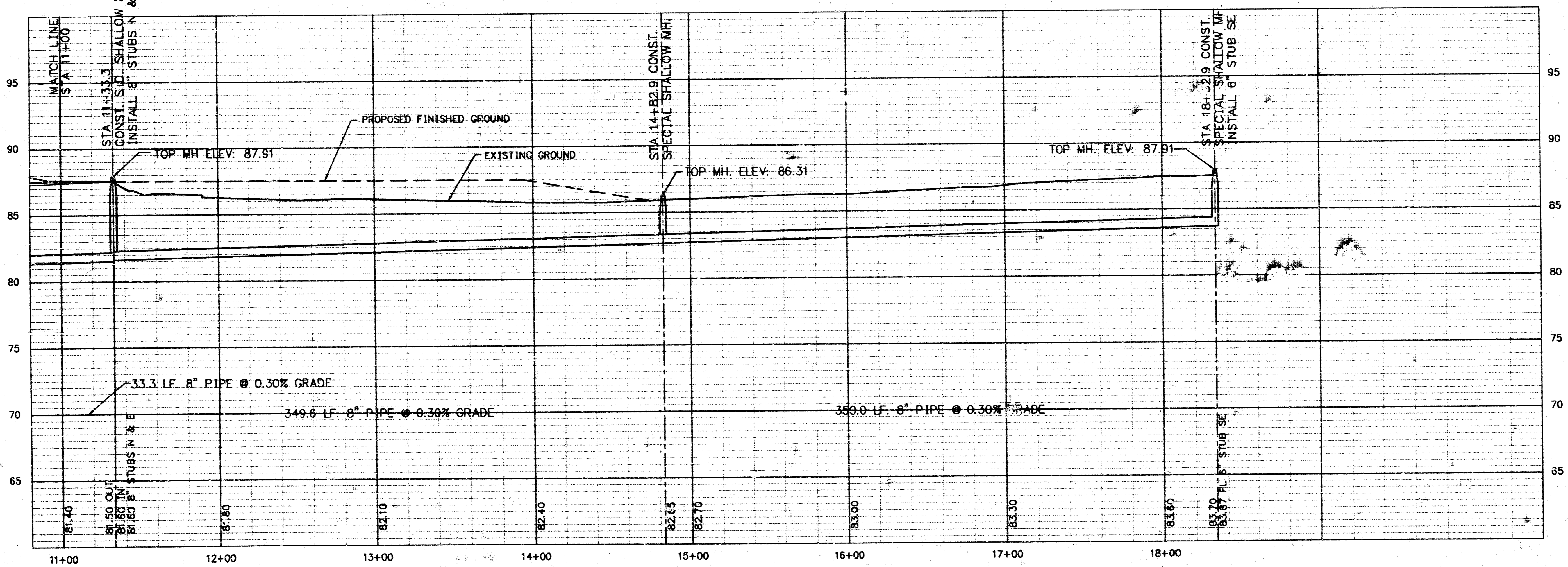
FUTURE ACCESS DRIVE AND SIDEWALK

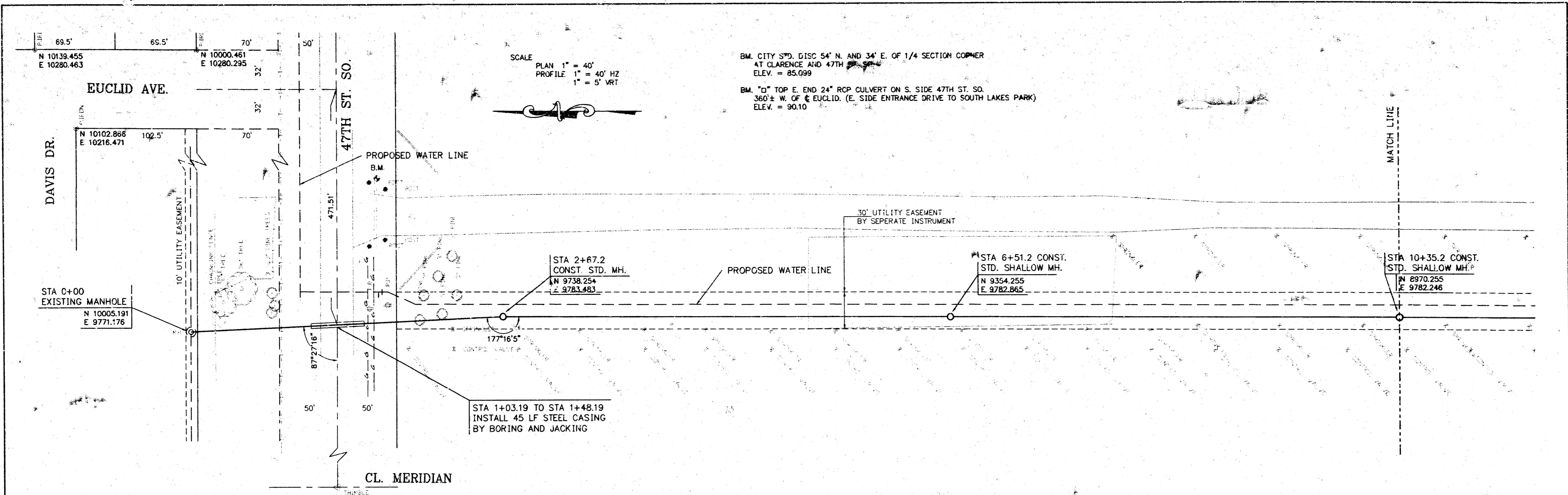
30' UTILITY EASEMENT
 BY SEPARATE INSTRUMENT

STA 14+83.0 CONST.
 SPECIAL SHALLOW MH.
 N 6978.162
 E 11131.294

STA 18+33.0 CONST.
 SPECIAL SHALLOW MH.
 INSTALL 6" STUB SE
 N 6628.162
 E 11131.293

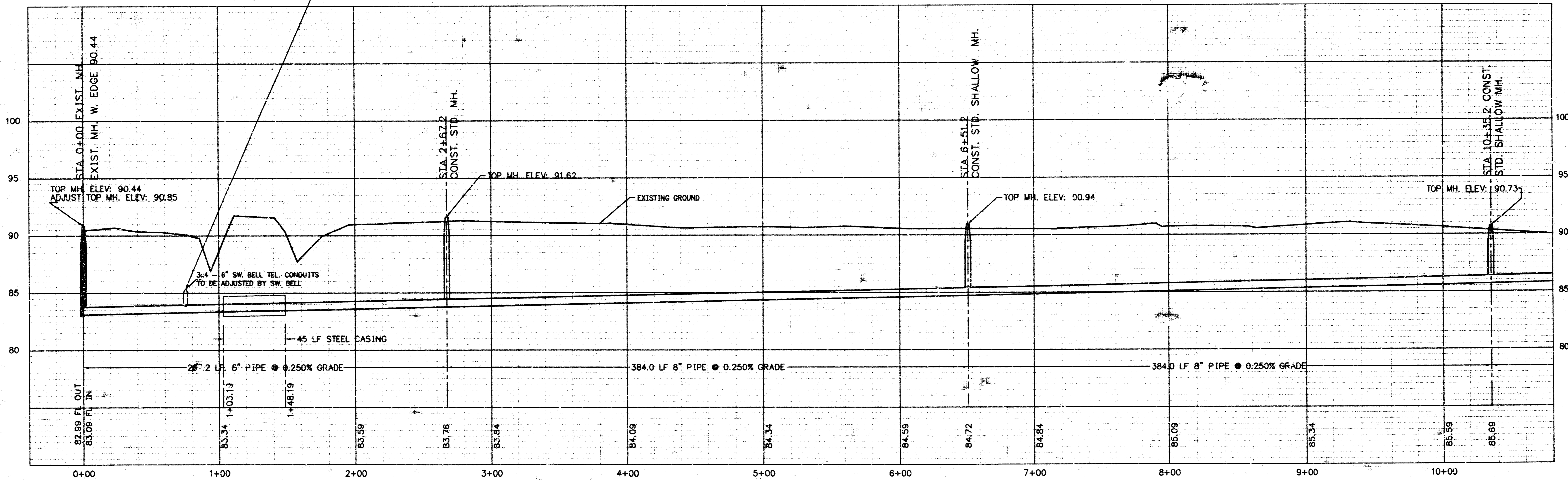
LINE 1



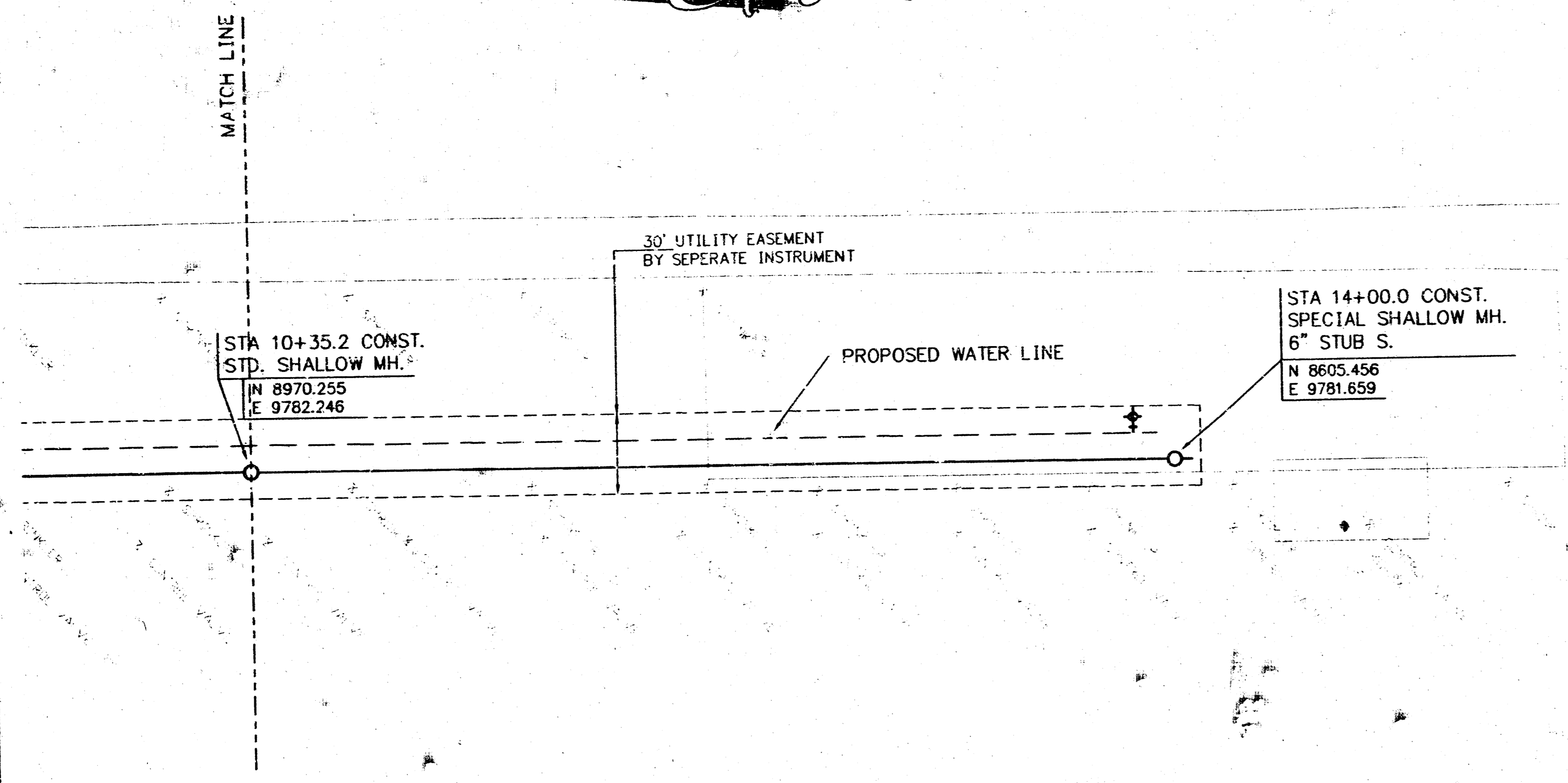


ONE WEEK PRIOR TO THE START OF THE CONSTRUCTION THE CONTRACTOR IS TO CONTACT MR. GREG SHARP WITH SOUTHWESTERN BELL TELEPHONE COMPANY AT 268-2245. SWB WILL ADJUST THEIR LINES DURING THE CONSTRUCTION.

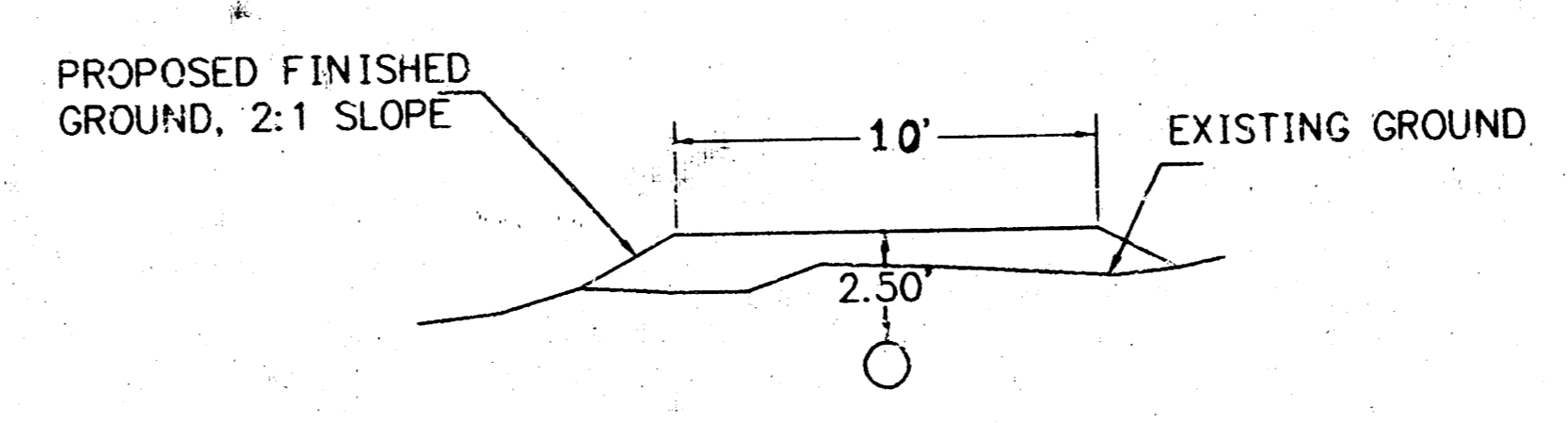
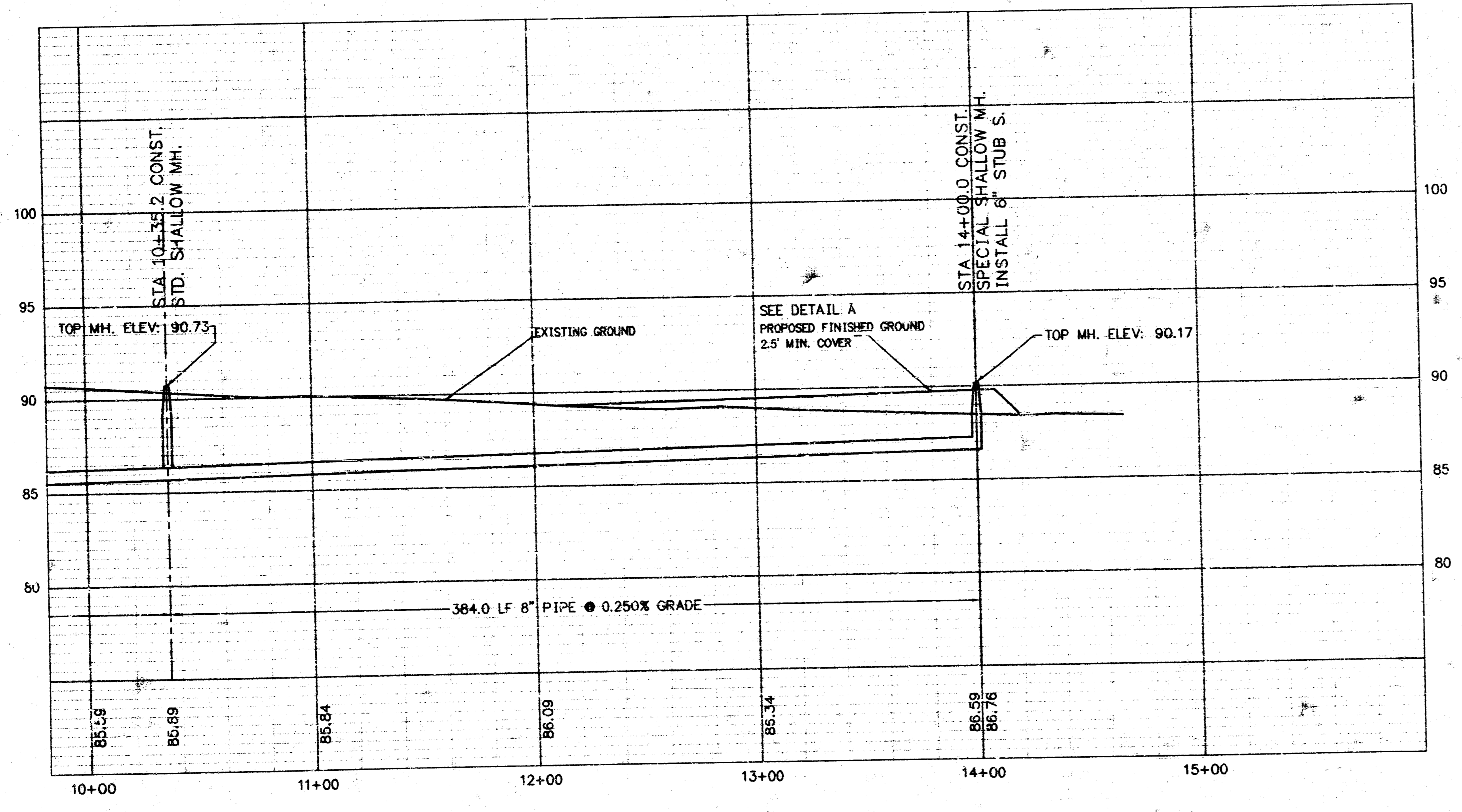
LINE 2



SCALE
 PLAN 1" = 40'
 PROFILE 1" = 5' VRT



LINE 2



THE COST OF EARTH WORK TO HAVE MINIMUM 2.5' COVER IS SUBSIDIARY TO THE OTHER BID ITEMS.

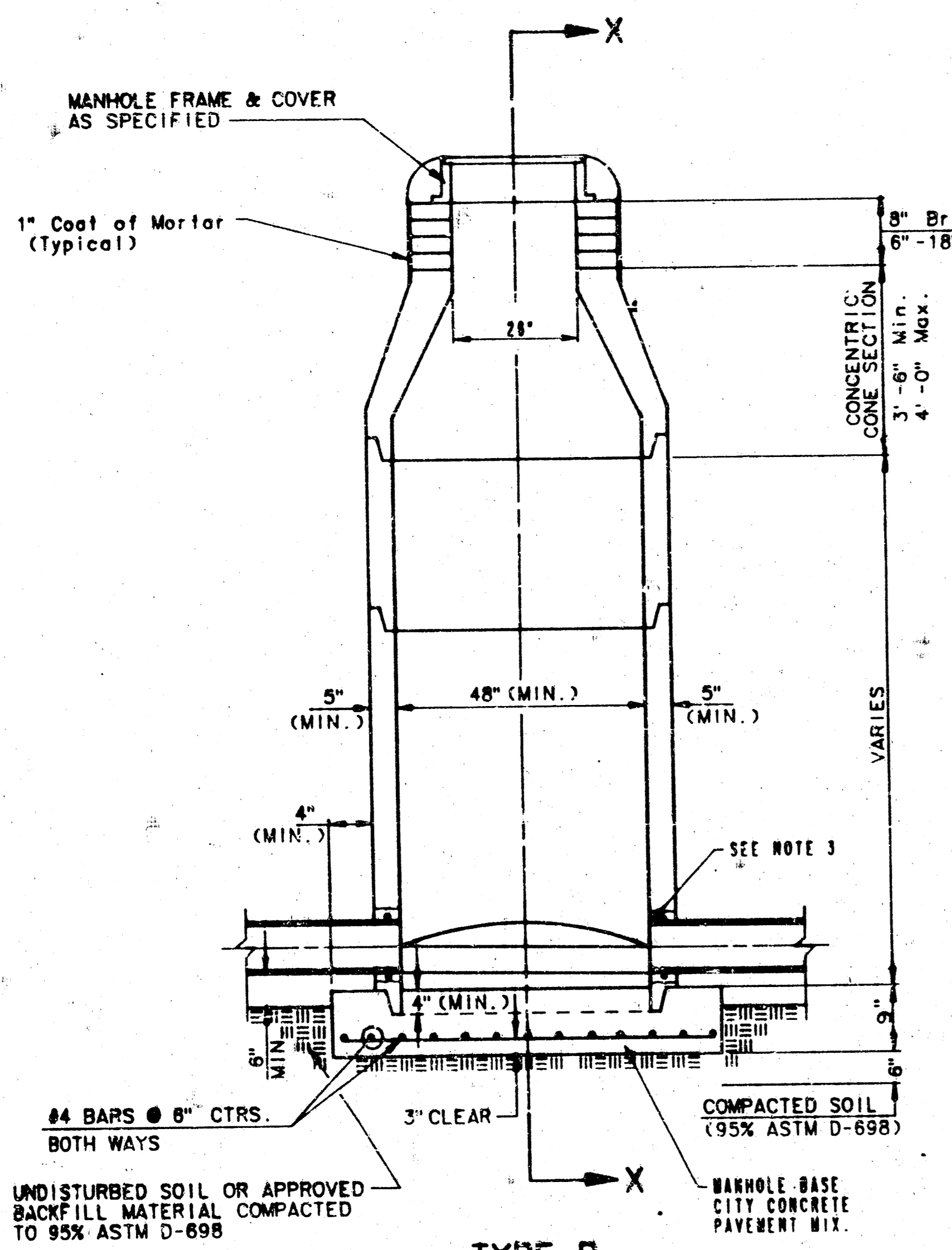
PROTECTIVE FILL DETAIL

SEWER APPURTENANCES DETAILS

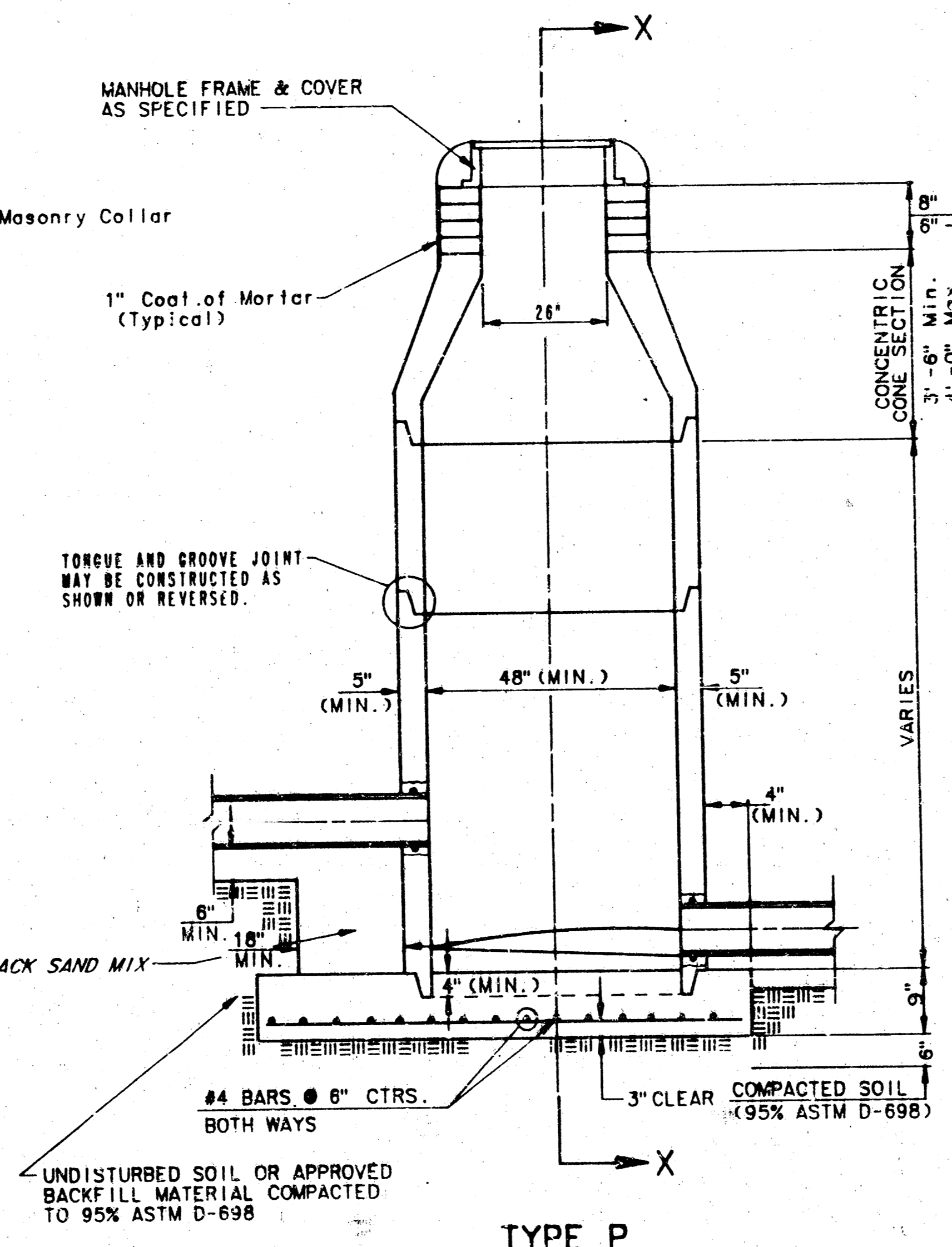
ADOPTED AS STANDARD DESIGN

BY

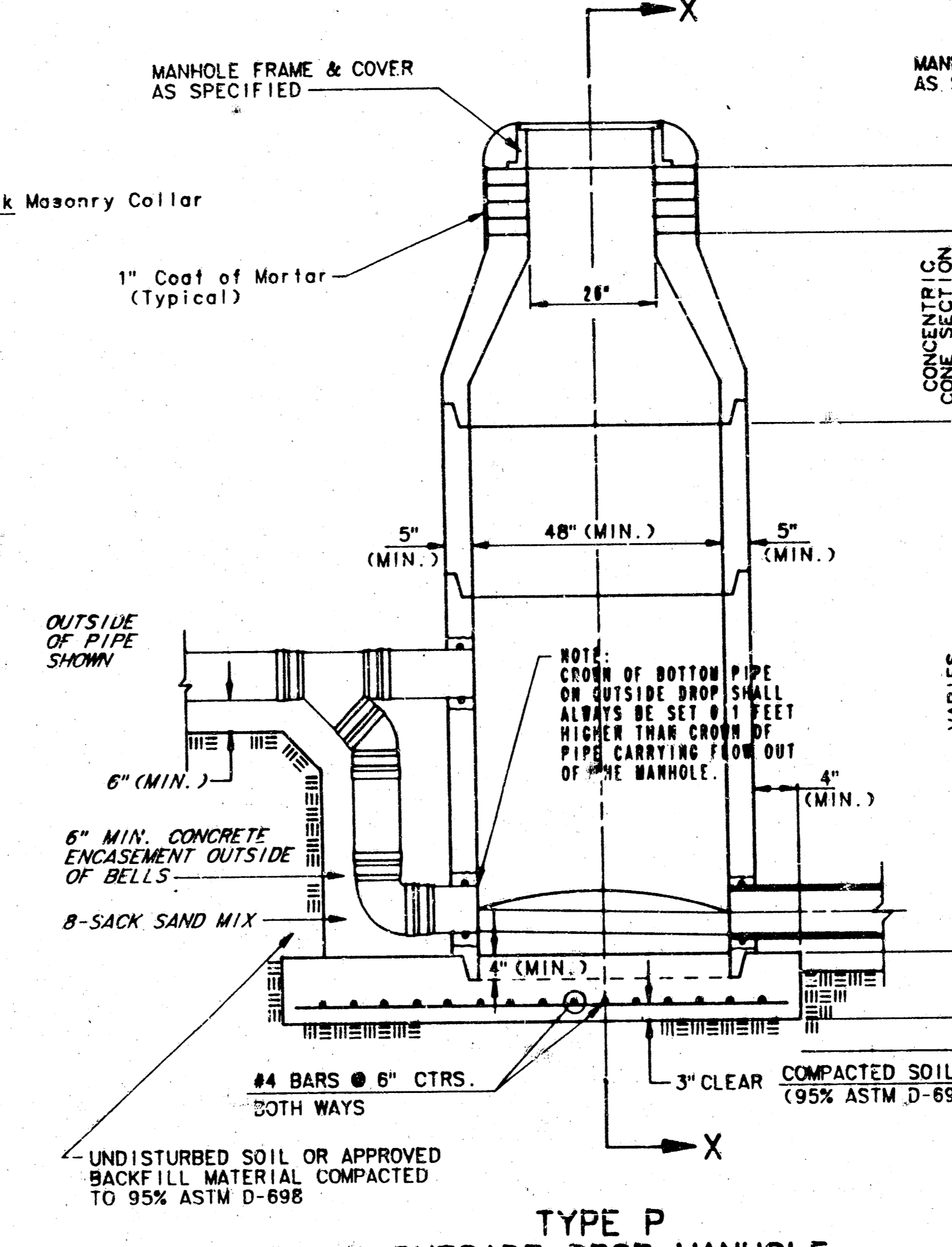
CITY OF WICHITA



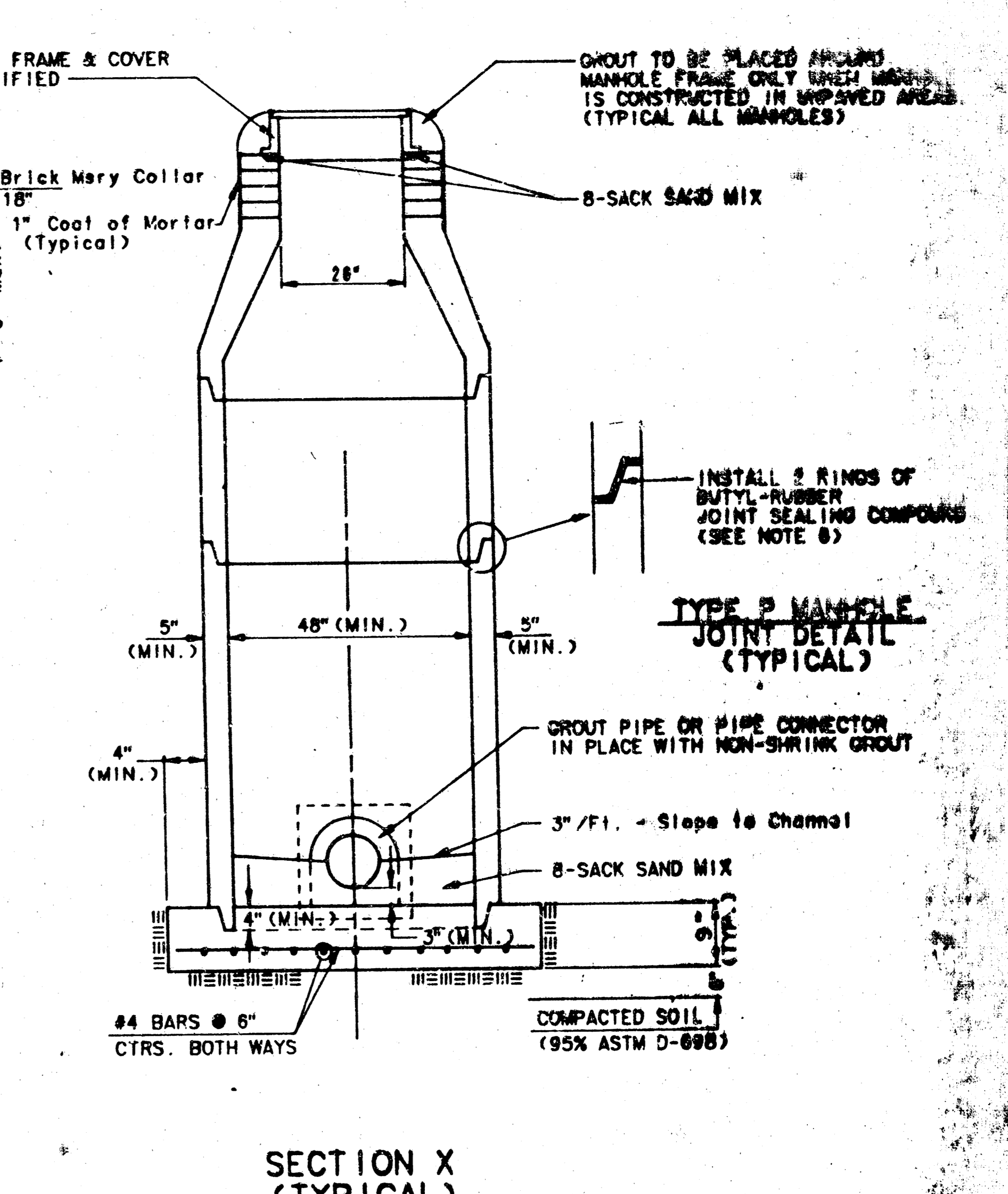
**TYPE P
STANDARD MANHOLE**



**TYPE P
INSIDE DROP MANHOLE**



**TYPE P
OUTSIDE DROP MANHOLE**

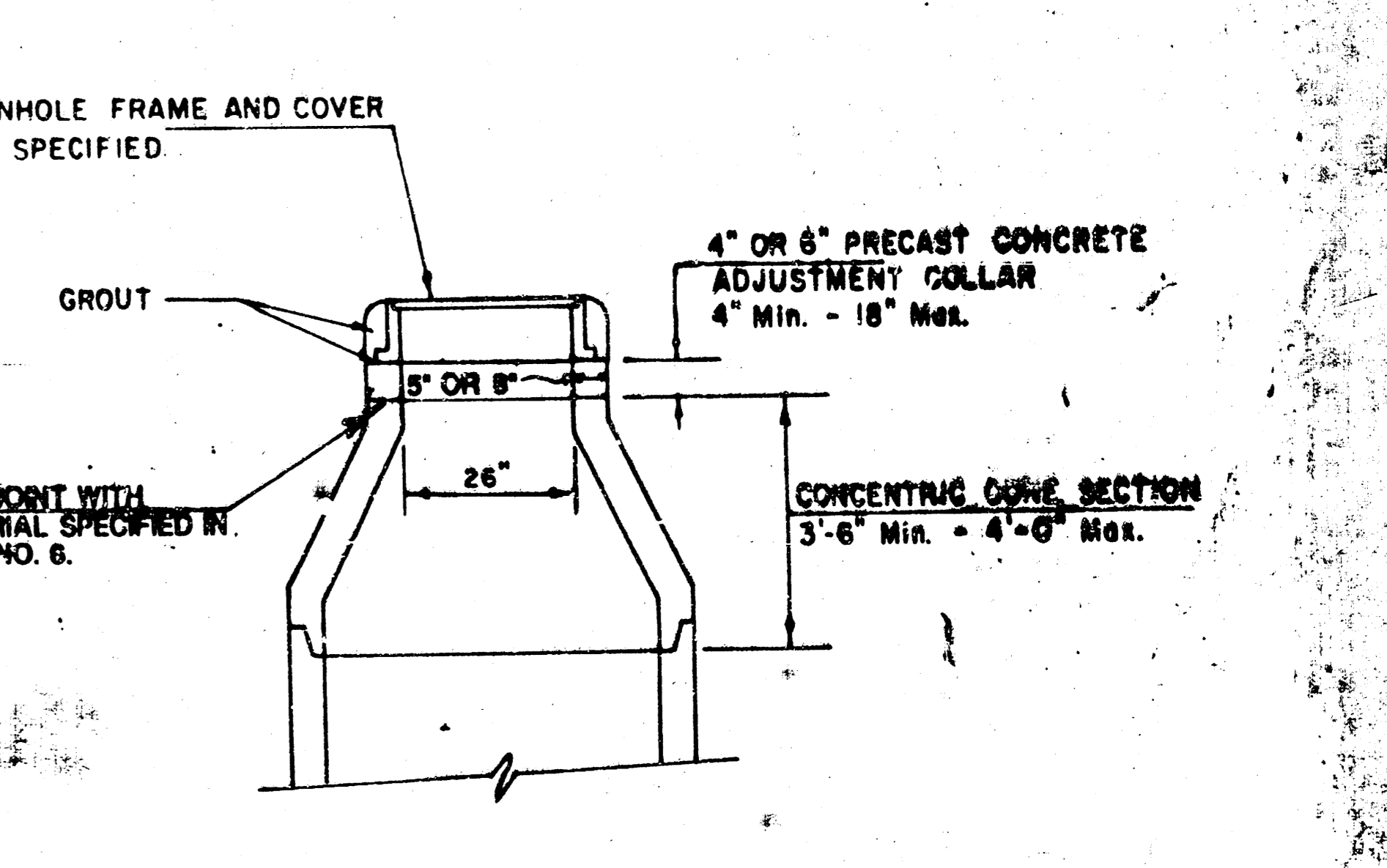


**SECTION X
(TYPICAL)**

- GENERAL NOTES**
- PRECAST MANHOLE NOTES**
1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
 2. NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
 3. 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.
 4. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TREMEC SERIES 88 MI-BUILD EPOXYLITE, DRY THICKNESS OF 8 MILS (MIN.).
 5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINUS COATING.
 6. JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
 7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
 8. 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.
 9. LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
 10. 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 ADULTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS. MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24\"/>

11. REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF #4 BARS PLACED ON 4\"/>

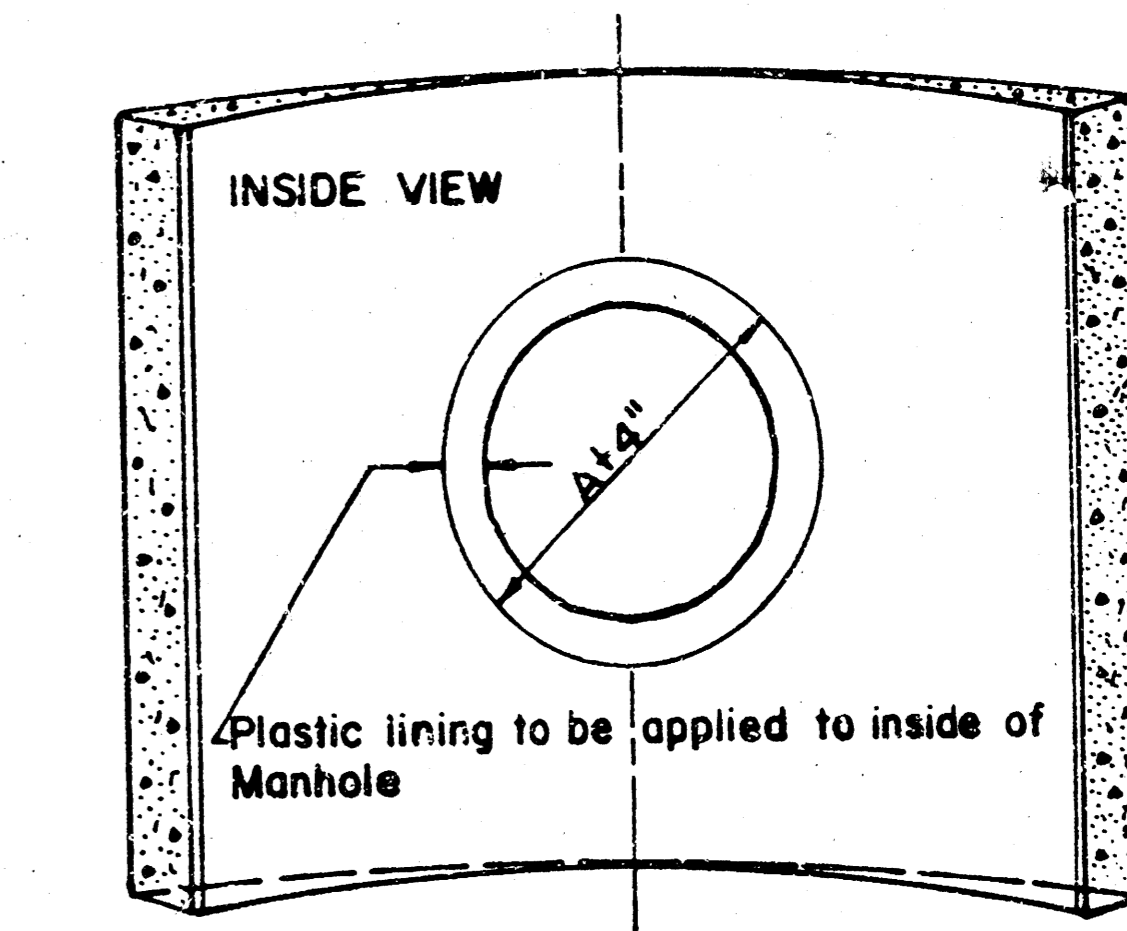
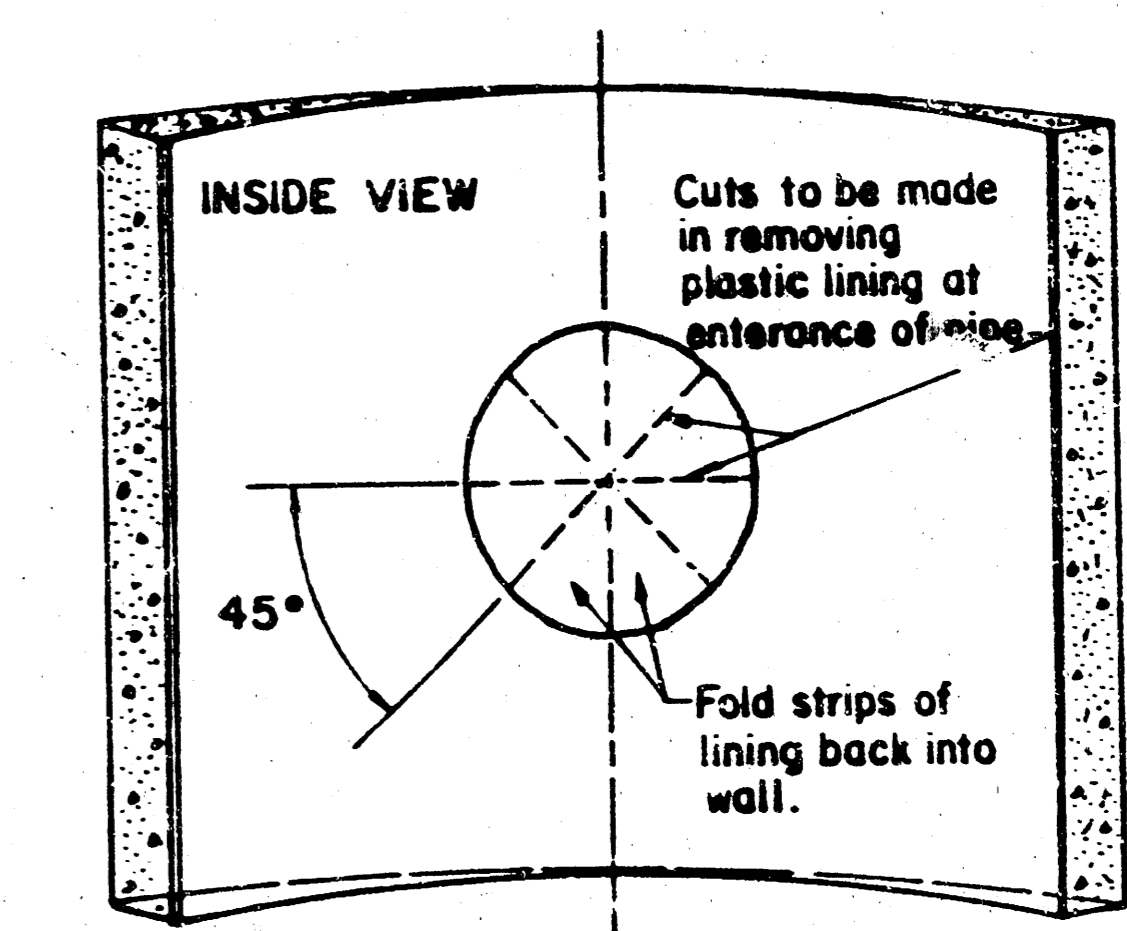
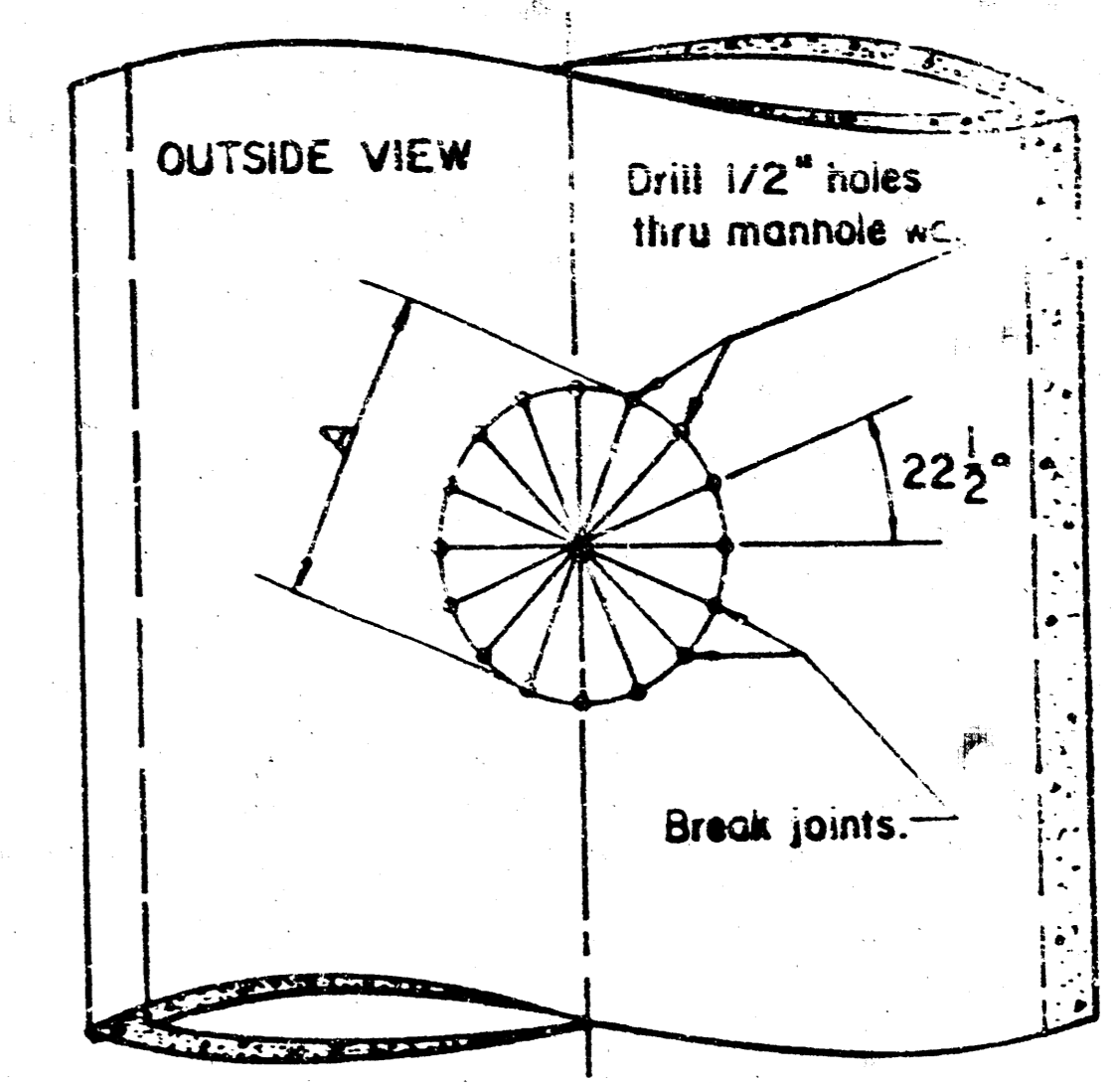
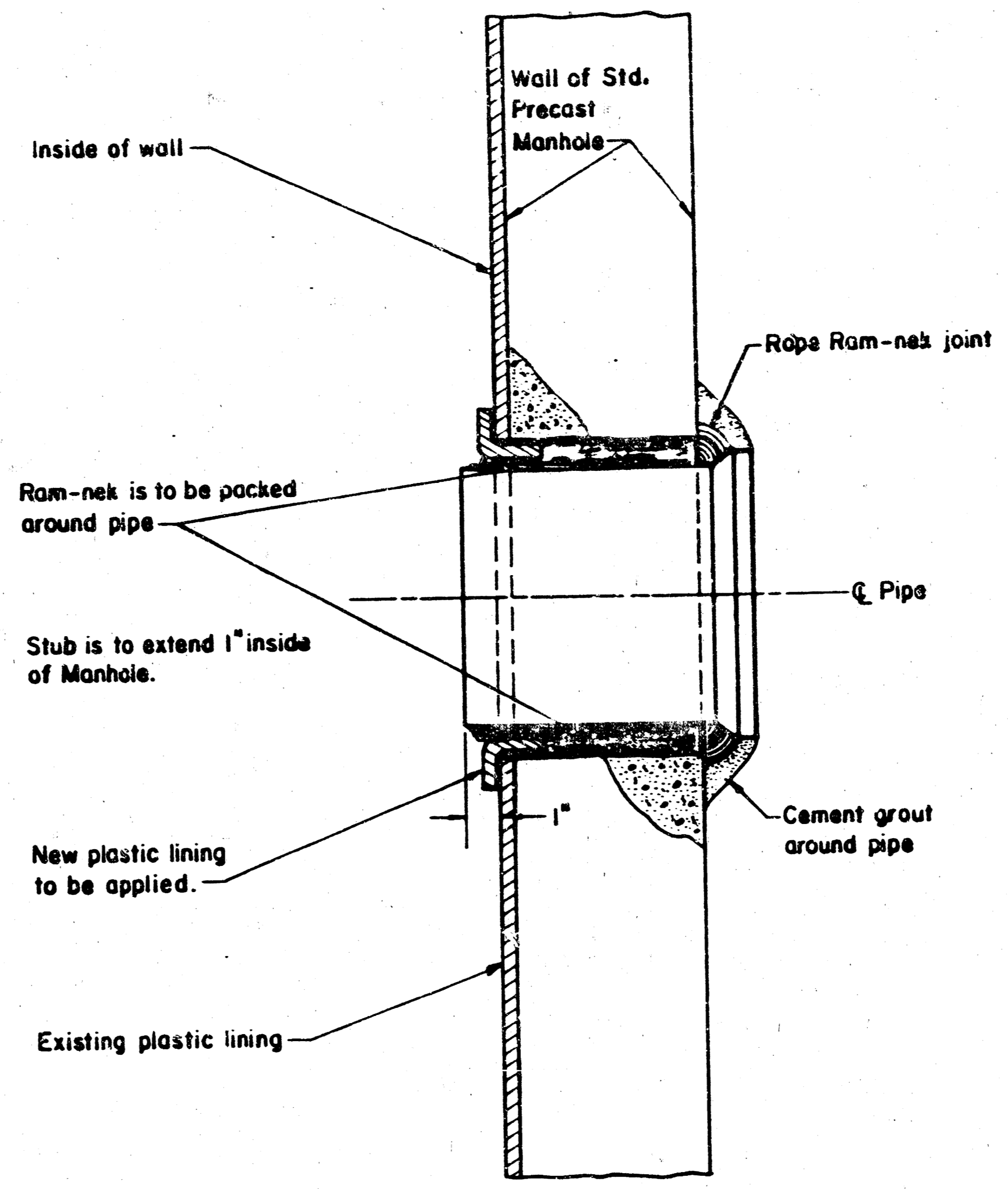
15. MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
16. THE VERTICAL FREE FALL DROP INSIDE MANHOLES SHALL NOT EXCEED 2'. THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
17. 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.
18. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 4\"/>



**ALTERNATE CONSTRUCTION
IN UNPAVED AREAS**

468-82649
Sheet 6 of 10
REVISED NOV. 1983
NOTE NO. 18 REVISED JAN. 1984
Revised 3-21-84
Revised 8-10-88
Revised 1-10-88

10 1 51



A = OUTSIDE DIAMETER OF PIPE ± 2"

DRAWN: Oct. 1978

**DETAIL OF PIPE CONNECTION
TO PLASTIC LINED CONCRETE MANHOLE
CITY OF WICHITA, KANSAS**

PROJECT NUMBER: 468-82649
DATE: _____ *Sheet 7 of 10*

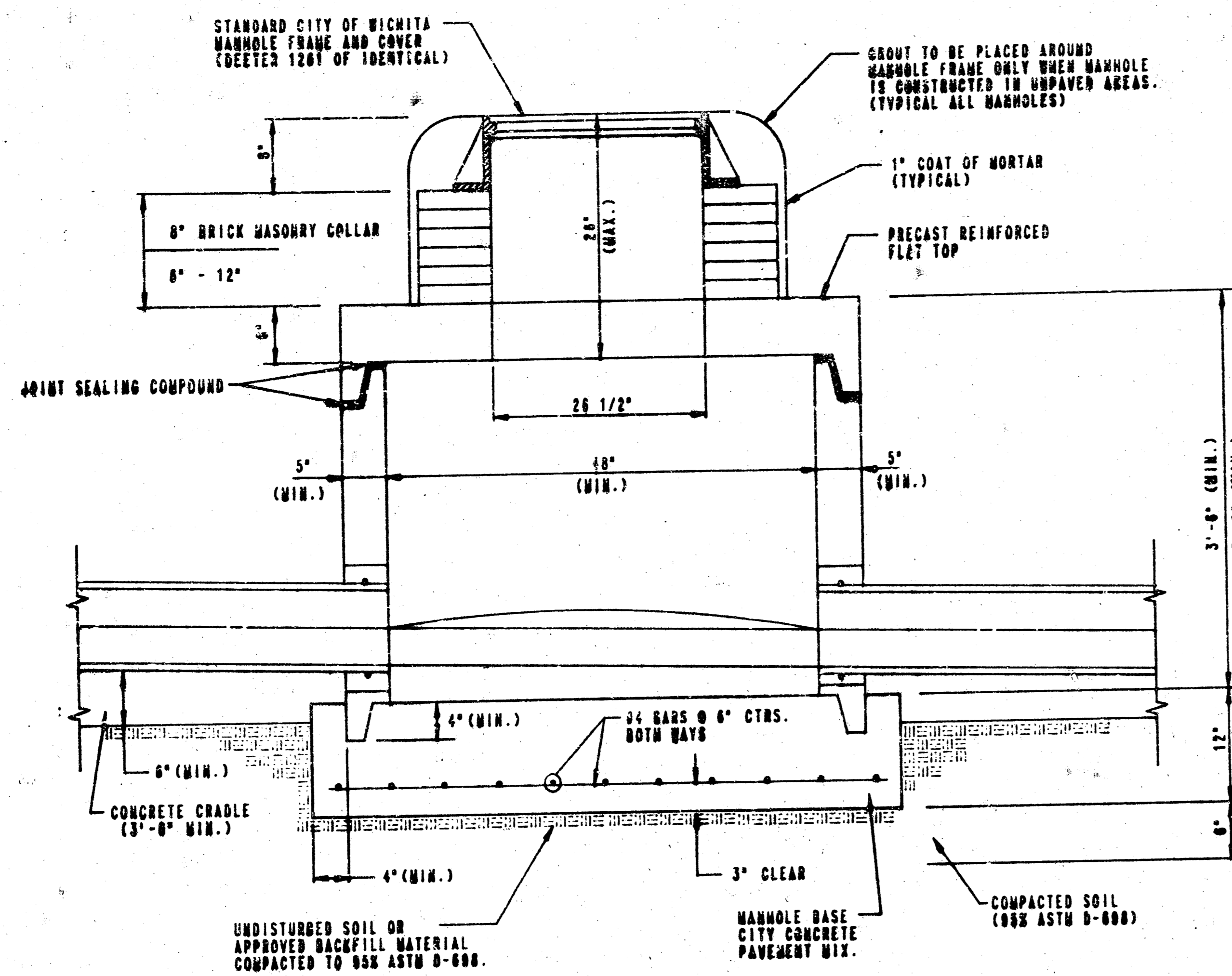
8/21/78

SEWER APPURTENANCES DETAILS

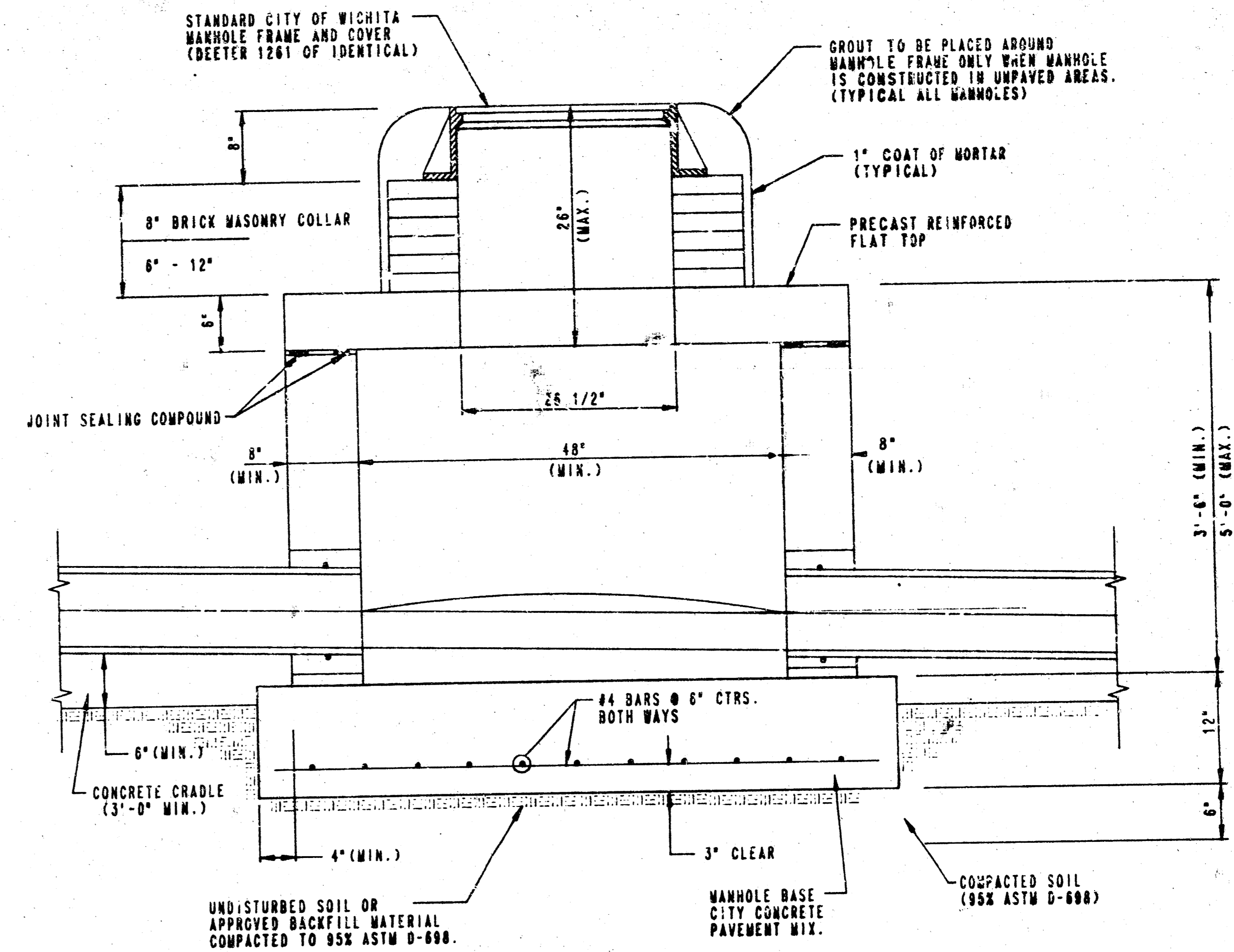
ADOPTED AS STANDARD DESIGN

BY

CITY OF WICHITA



**TYPE P
SHALLOW MANHOLE
(PRECAST)**



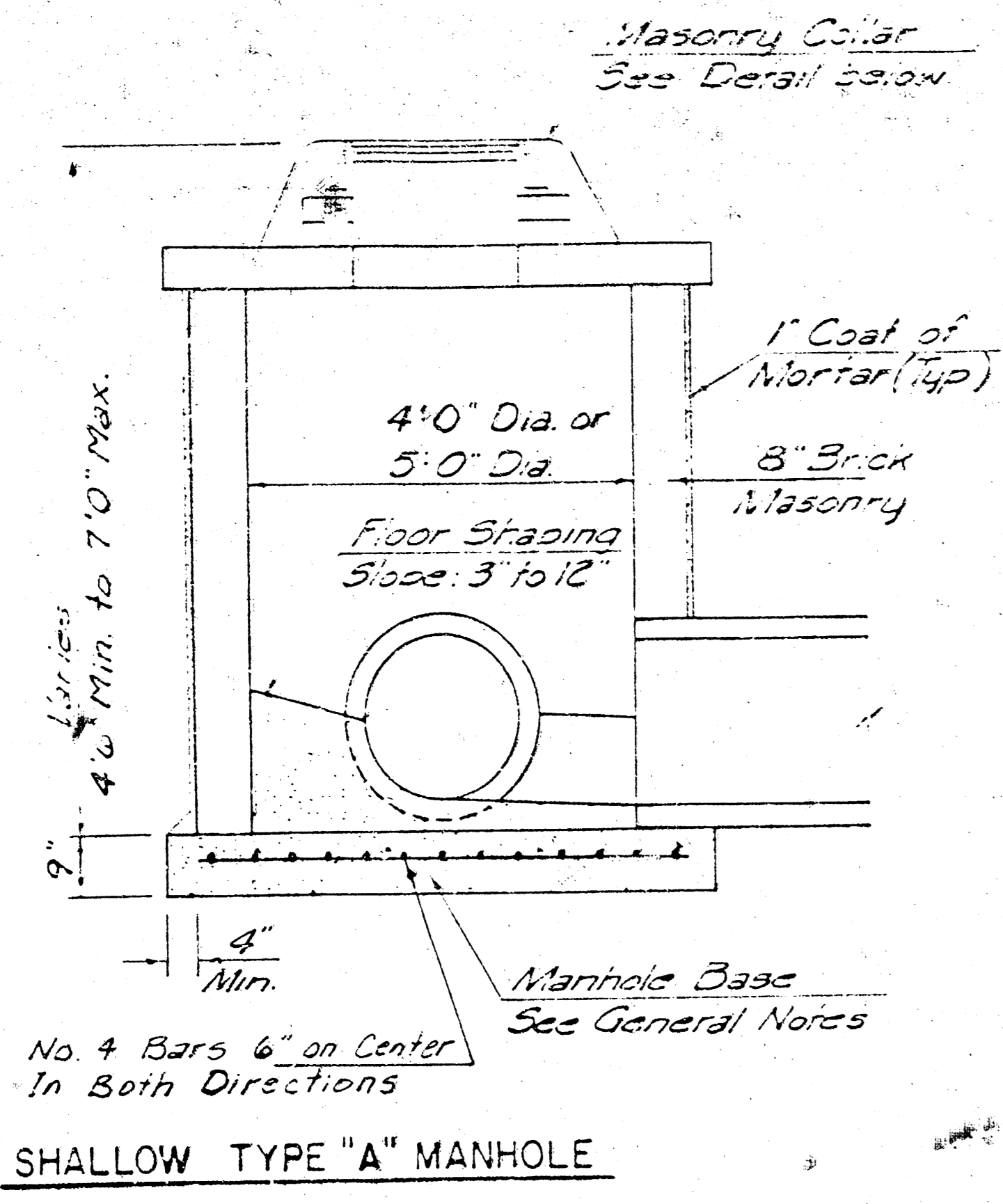
**TYPE C
SHALLOW MANHOLE
(CAST-IN-PLACE)**

- PRECAST MANHOLE NOTES**
1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
 2. 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.
 3. NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
 4. 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.
 5. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TRENEK SERIES 80 MI-BUILD EPOXYLINE, 80Y THICKNESS OF 8 MILS (MIN.).
 6. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT WOBILARNA 833 BITUMINOUS COATING.
 7. JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
 8. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
 9. 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.
 10. LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.

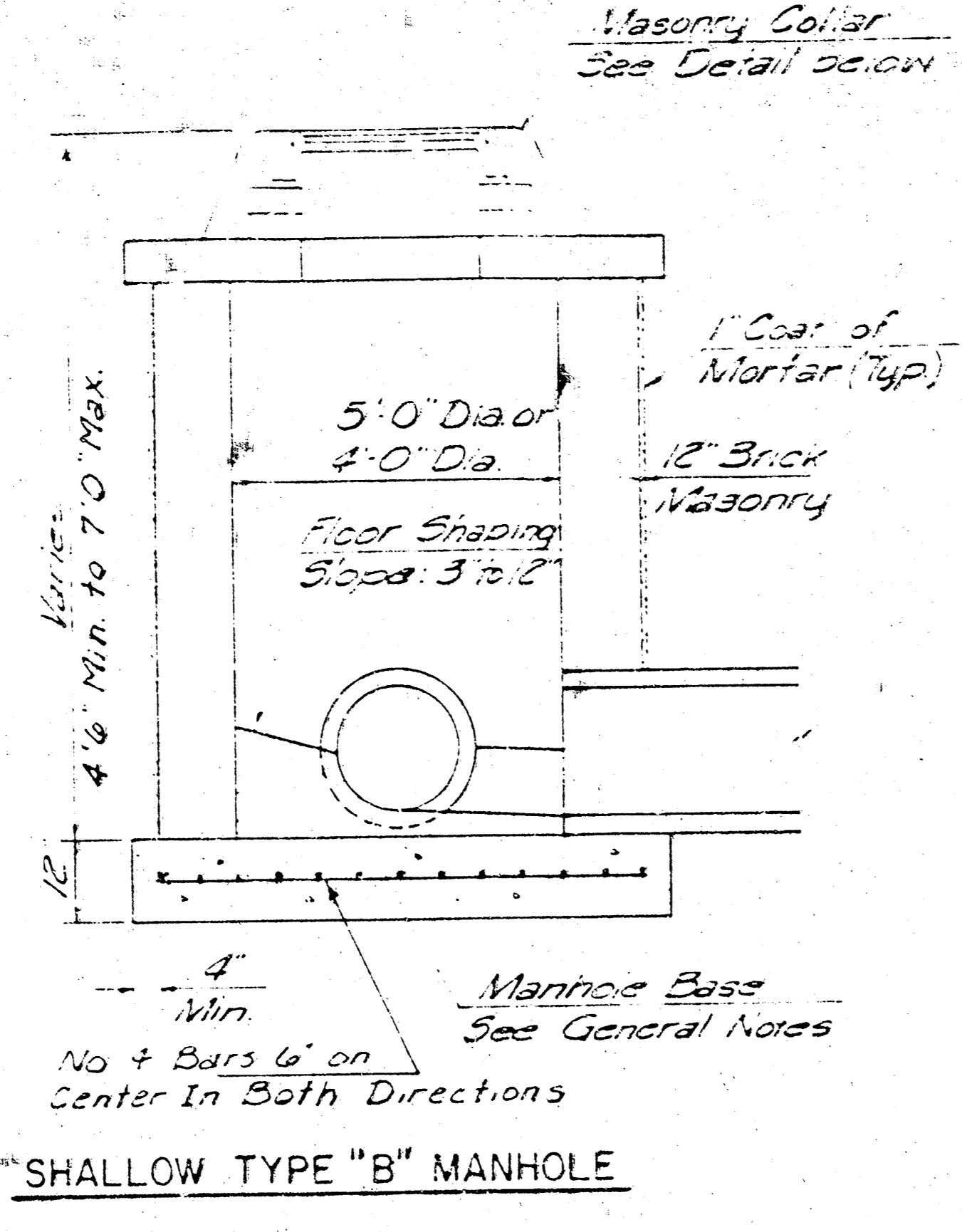
11. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR CONTAINING 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.
12. 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.
13. 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 MEET 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.
14. 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.
15. THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
16. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE PRECAST REINFORCED FLAT TOP. THE COLLAR WILL HAVE 6" BARS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR.
17. 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**
1. 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.
 2. NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
 3. 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.
 4. JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
 5. 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.
 6. 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 CONTAINING 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 4" OR SMALLER. THE MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
 7. 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.

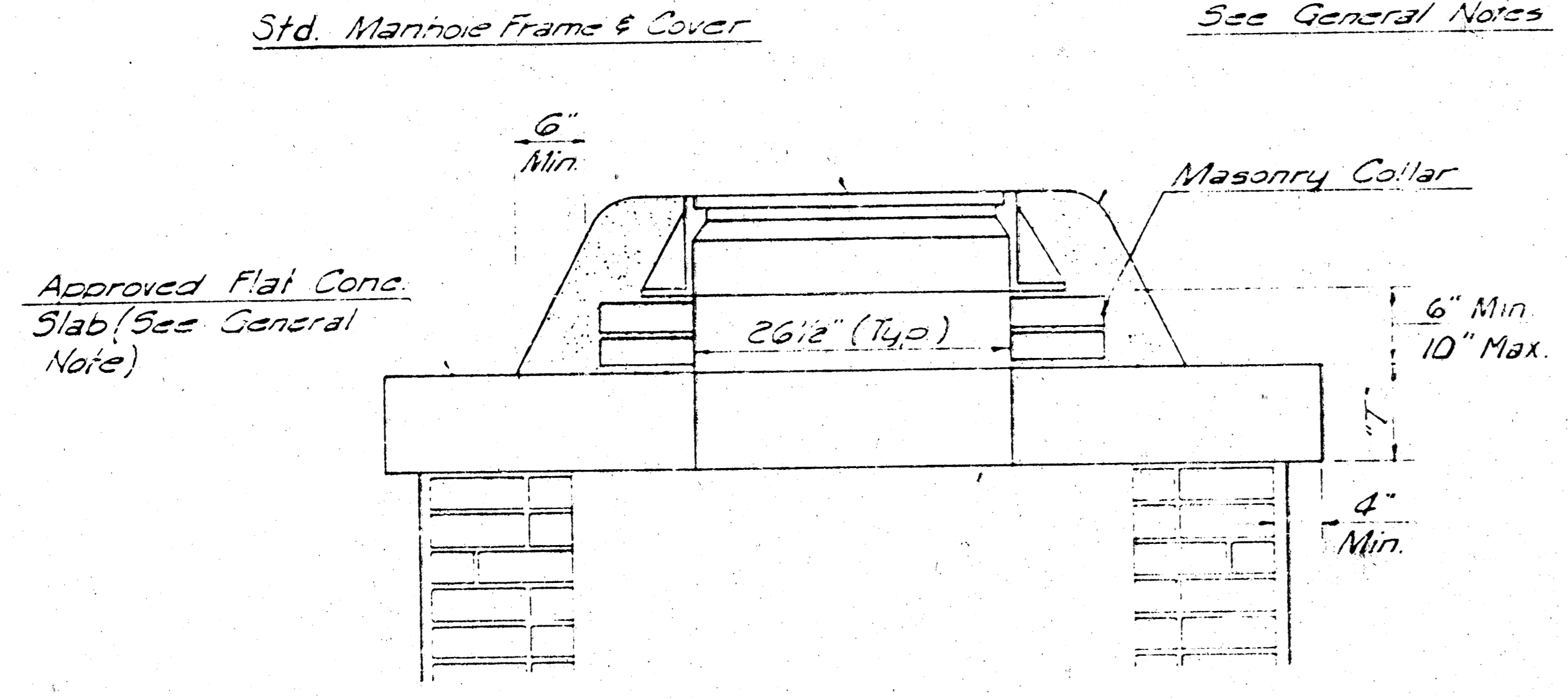
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11. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE PRECAST REINFORCED FLAT TOP. THE COLLAR WILL HAVE 6" BARS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR.
12. 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.



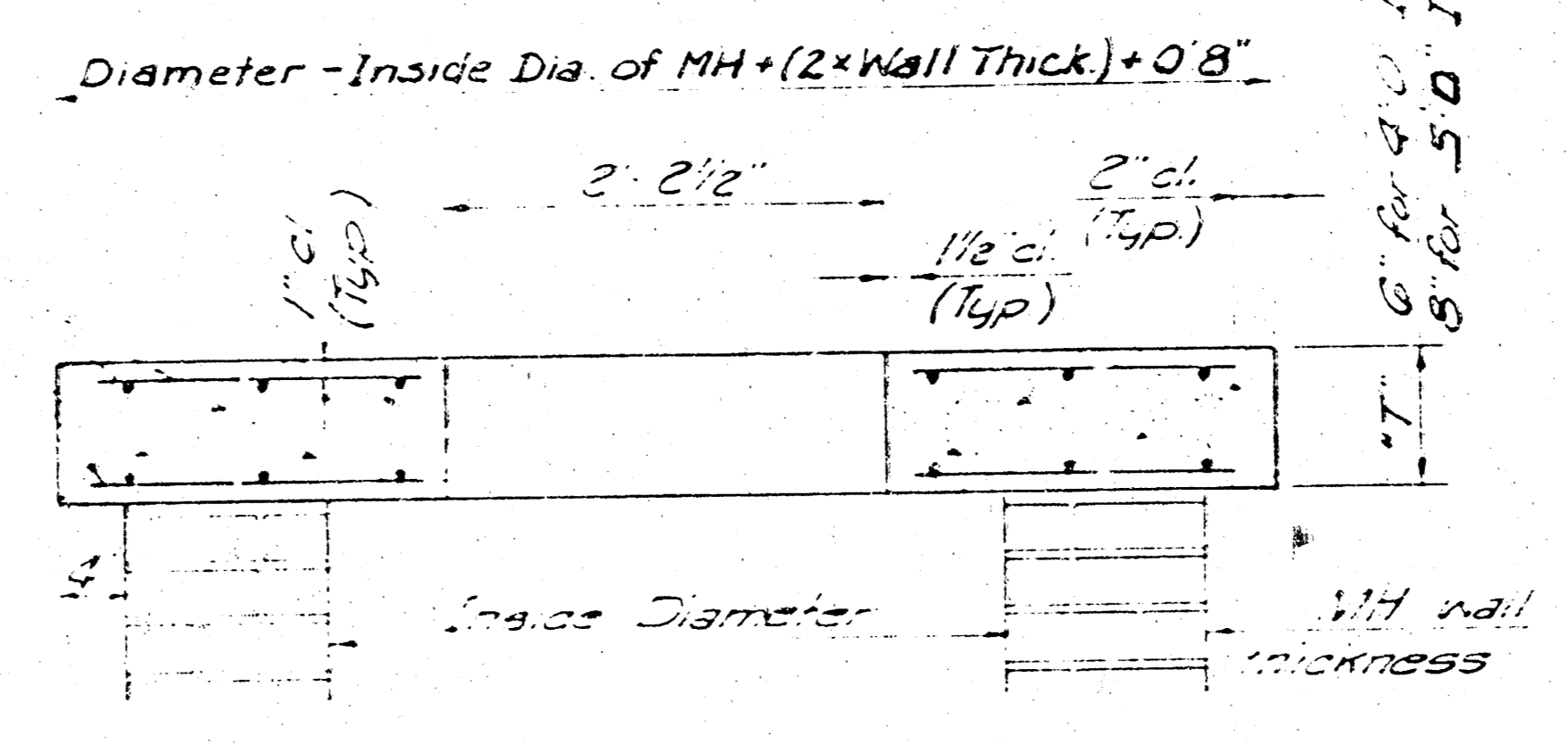
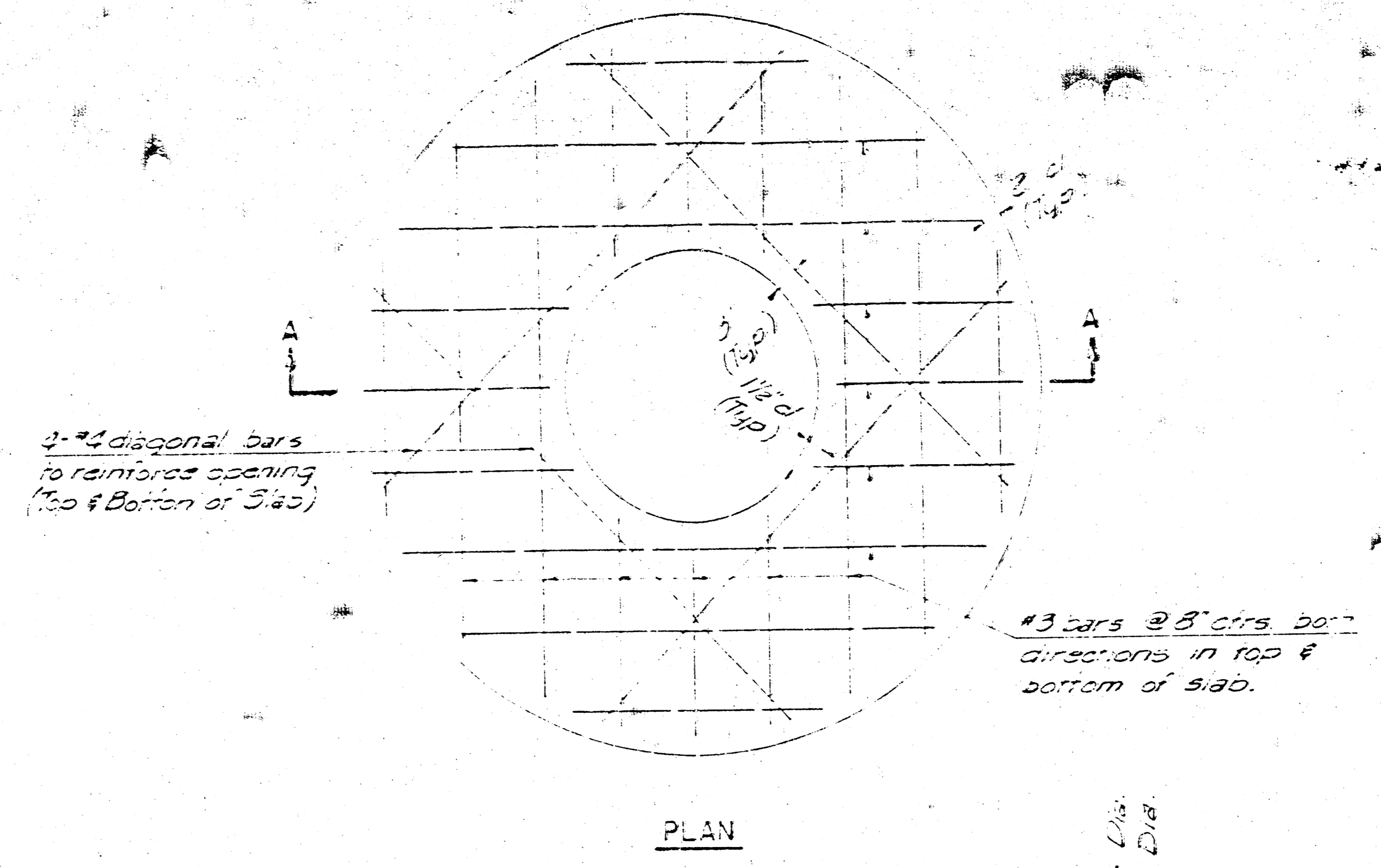
SHALLOW TYPE "A" MANHOLE



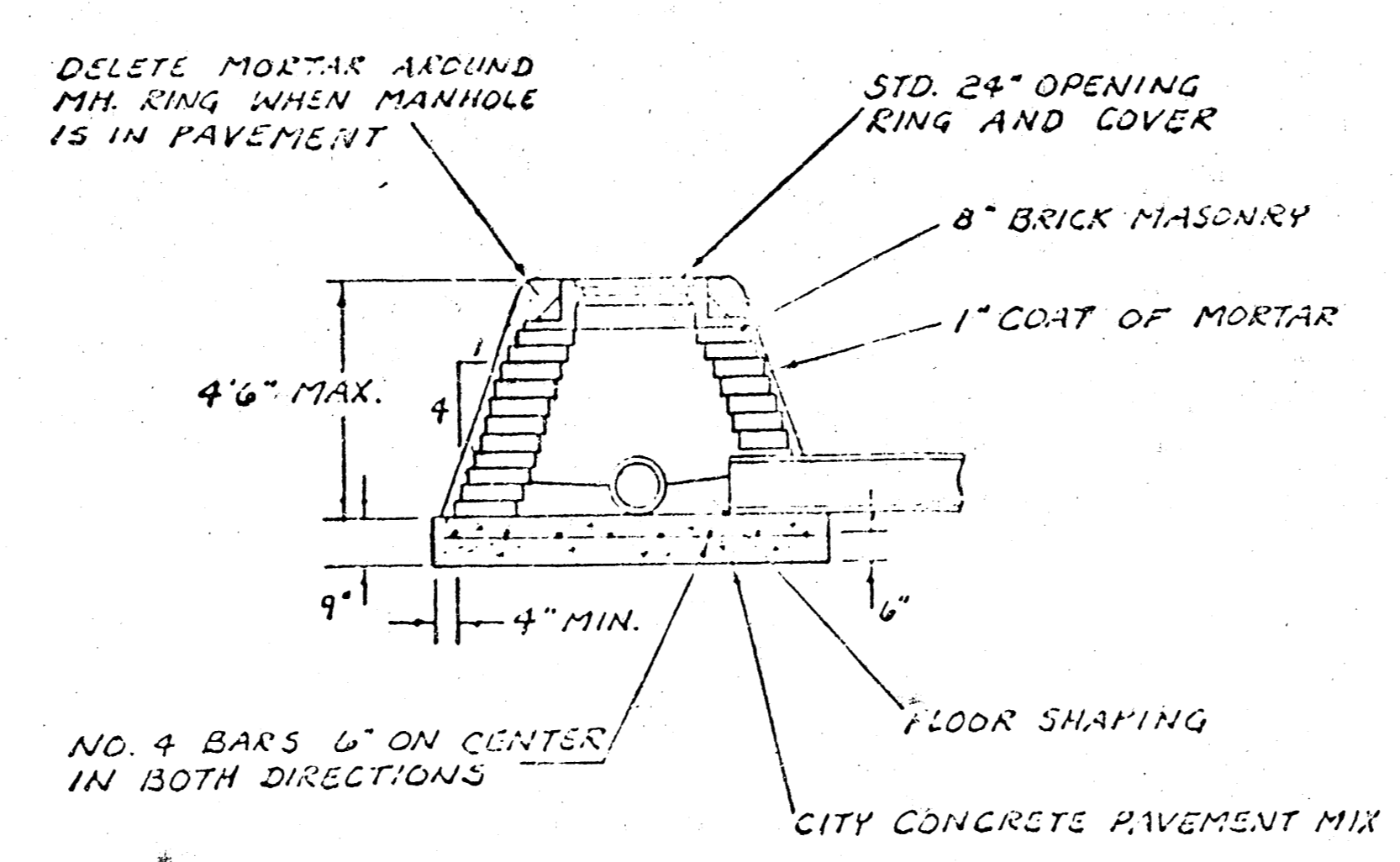
SHALLOW TYPE "B" MANHOLE



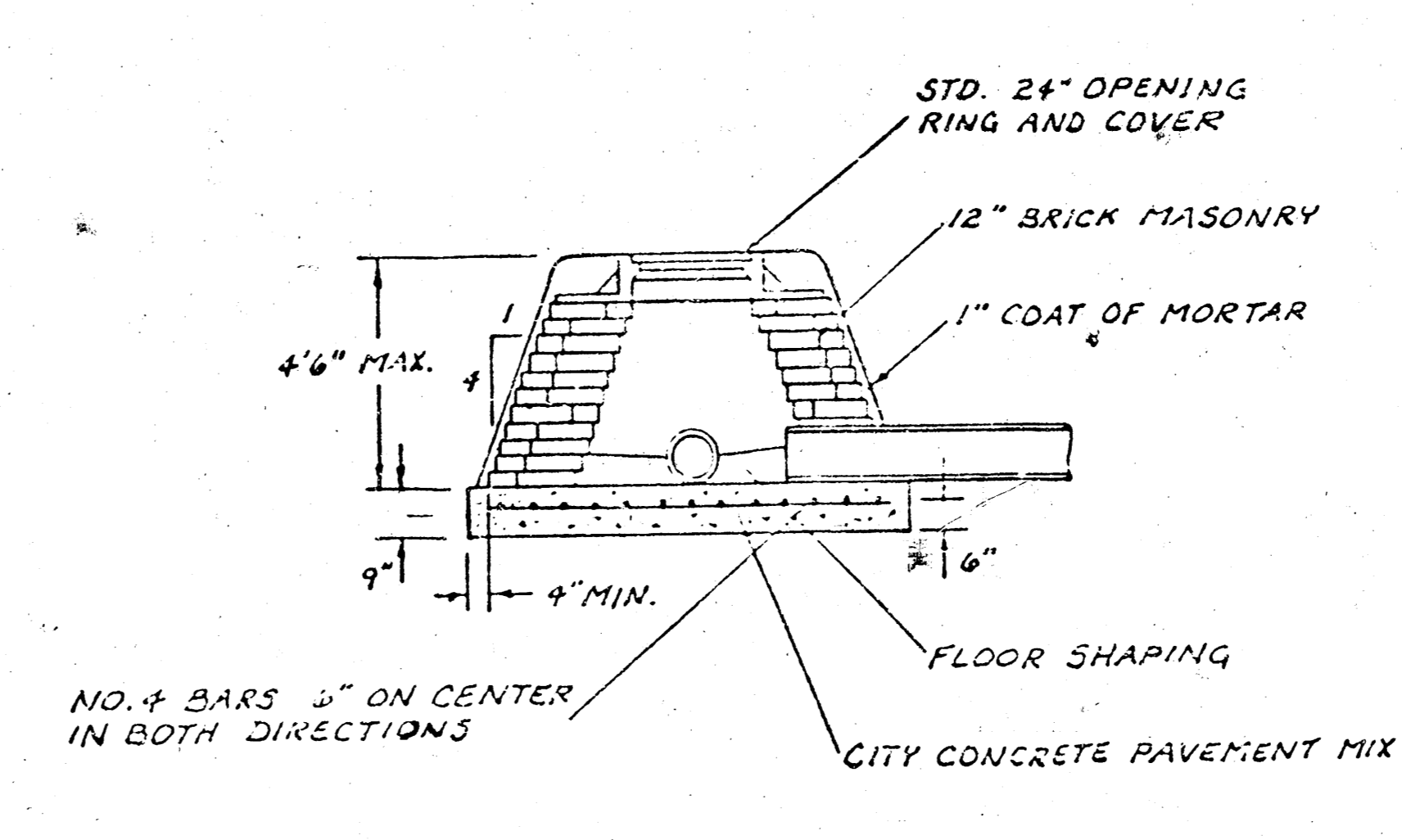
MASONRY COLLAR DETAIL



SECTION A-A
FLAT CONCRETE SLAB DETAILS



SPECIAL SHALLOW TYPE 'A' MANHOLE



SPECIAL SHALLOW TYPE 'B' 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 PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE CEMENT 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 "A" SHALLOW MANHOLES CAN BE USED OR SEWERS WHEN THE MANHOLE IS NOT LOCATED WITHIN PUBLIC 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". 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 6" 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.
 - 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 PROFILES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN ON THE DRAWINGS. MANHOLE FLOORS SHALL HAVE SLOPES OF 3" 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 CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
 - STANDARD SHALLOW MANHOLES TYPE "A" AND "B" SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH FOR THE TYPE AND DIAMETER INDICATED. STANDARD SPECIAL SHALLOW MANHOLES TYPE "A" AND "B" SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH FOR THE TYPE INDICATED. ALL STANDARD SHALLOW MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.

