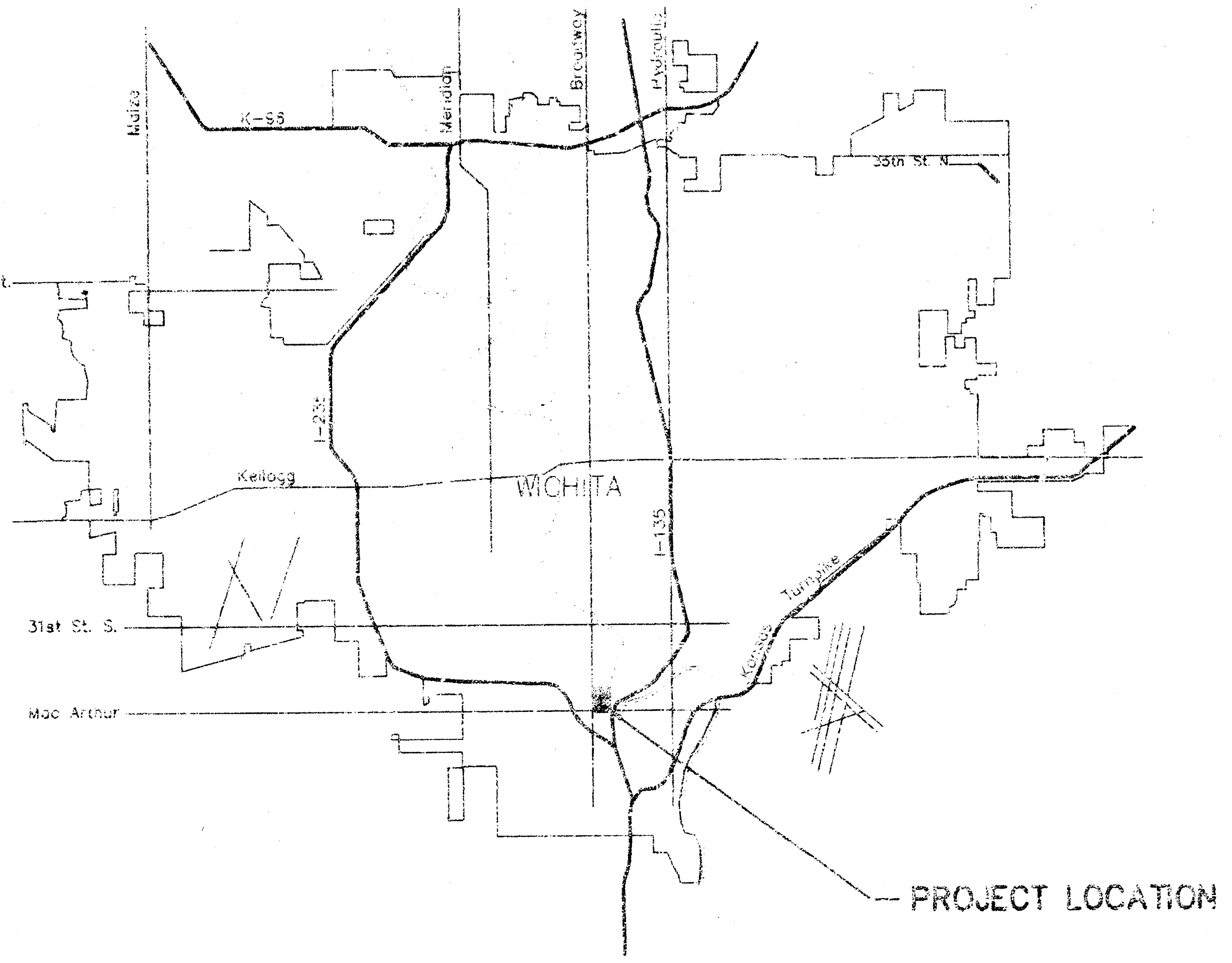
STORM WATER SEWER IMPROVEMENTS
FOR
BARNUM ADDITION
LOCATED IN THE
THE S.W.1/4, SEC. 9, T.28 S., R.1 E.,
SEDGWICK COUNTY, KANSAS

CITY OF WICHITA PRIV. PROJ. NO. 841 PPS(607861)
MIKE LINDEBAK, P.E., CITY ENGINEER
SEPTEMBER 1998



LOCATION MAP

PROJECT LOCATED IN THE
S.W.1/4, SEC. 9, T.28S., R.1E.
SEDGWICK COUNTY, KANSAS

INDEX OF SHEETS

1. Title Sheet
2. Site Plan & General Notes
3. Plan/Profile Sheet
4. Drop Inlet Detail
5. Standard Shallow MH Details

APPROVED AS NOTED
By CITY ENGINEER OF WICHITA

Sanitary Sewers ____
Storm Sewers VRH 9/28/98
Driveway Approaches ____
Water Mains ____
Paving ____

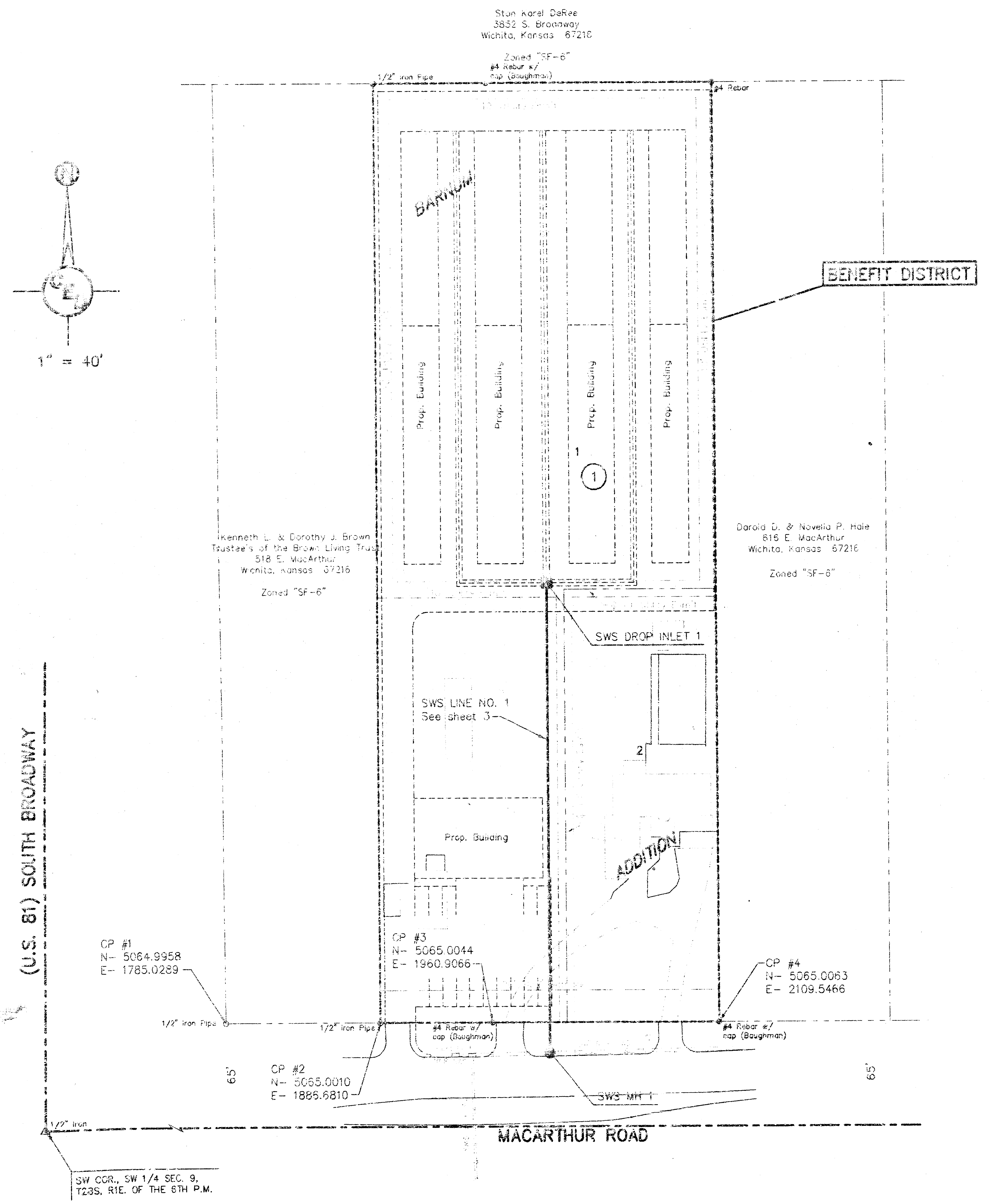
NOTE TO CONTRACTOR

INSPECTION AND TESTING FOR THIS PROJECT IS TO BE PROVIDED BY A LICENSED CONSULTING ENGINEERING FIRM UNDER CONTRACT WITH THE OWNER/DEVELOPER. SAID INSPECTION TO BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD CONSTRUCTION ENGINEERING PRACTICES AND CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. NO WORK SHALL BE PERFORMED IN DEDICATED EASEMENTS OR THE PUBLIC RIGHT-OF-WAY BY THE CONTRACTOR WITHOUT SUCH INSPECTION NOR SHALL ANY WORK BE COMMENCED IN DEDICATED EASEMENTS OR PUBLIC RIGHT-OF-WAY WITHOUT WRITTEN AUTHORIZATION BY THE CITY ENGINEER.

Booked
E-2
3/14/03
RDL

9-18-98

COW PRIV. PROJ. NO. 841 PPS(607861)
CERTIFIED ENGINEERING DE
CED
428 NORTH OHIO
WICHITA, KANSAS 67214
(316) 262-8308


1" = 40'
Stan Karel DeRee
3852 S. Broadway
Wichita, Kansas 67216
Zoned "SF-6"
1/2" Iron Pipe
#4 Rebar w/ cap (Baughman)
#4 Rebar
BARNUM
BENEFIT DISTRICT
Prop. Building
Prop. Building
Prop. Building
Prop. Building
1
①
Kenneth L. & Dorothy J. Brown
Trustee's of the Brown Living Trust
518 E. MacArthur
Wichita, Kansas 67216
Zoned "SF-6"
Darold D. & Novella P. Hale
616 E. MacArthur
Wichita, Kansas 67216
Zoned "SF-6"
SWS DROP INLET 1
SWS LINE NO. 1
See sheet 3
2
Prop. Building
ADDITION
(U.S. 81) SOUTH BROADWAY
CP #1
N- 5064.9958
E- 1785.0289
CP #3
N- 5065.0044
E- 1960.9066
CP #4
N- 5065.0063
E- 2109.5466
1/2" Iron Pipe
1/2" Iron Pipe
#4 Rebar w/ cap (Baughman)
#4 Rebar w/ cap (Baughman)
65'
65'
CP #2
N- 5065.0010
E- 1886.6810
SWS MH 1
1/2" iron
MACARTHUR ROAD
SW COR., SW 1/4 SEC. 9, T28S, R1E. OF THE 6TH P.M.

BM- Top of Grader Blade 30' South and 1' West of the
Southeast Corner of the SW 1/4 Sec. 9, T28S, R1E.
Elev.= 89.52 (COW Datum)

GENERAL NOTES

1. ALL ELEVATIONS SHOWN ARE BASED ON CITY OF WICHITA DATUM(MEAN SEA LEVEL ELEV.- 1187.4 = CITY 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

THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:

CABLEVISION	262-4270 OR 263-2061
KG&E-GAS	263-7511
KG&E-ELECTRIC	264-1141
PEOPLES NATURAL GAS	942-8311
SOUTHWESTERN BELL TELEPHONE	1-571-2611
CITY OF WICHITA WATER DEPARTMENT	263-4908

THE CONTRACTOR SHALL NOTIFY PIPELINE COMPANIES AT LEAST 24 HOURS IN ADVANCE OF ANY WORK BEING PERFORMED ACROSS AND/OR ADJACENT TO PIPELINES.

3. THE CONTRACTOR SHALL NOT START WORK ON THE PROJECT UNTIL THE PROJECT INSPECTOR IS ASSIGNED TO THE PROJECT AND IS PRESENT ON THE SITE. ANY WORK DONE WITHOUT INSPECTION WILL BE REQUIRED TO BE UNCOVERED FOR INSPECTION.

4. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY DIRECTLY ABUTTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN(10) DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.

5. 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.

6. THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, ENTRANCES AND BANK LINES TO THEIR ORIGINAL SLOPES AND GRADES EXCEPT AS SHOWN OTHERWISE.

7. 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 AT LOCATIONS WHERE PROPOSED CONSTRUCTION ABUTS AN EXISTING SURFACE COURSE OR PAVEMENT FOR WHICH PARTIAL REMOVAL OF THAT SURFACE OR PAVEMENT IS REQUIRED, EXCEPT WHEN SUCH SAW CUTS ARE WITHIN THREE (3) FEET OF AN EXISTING JOINT, THE LIMITS OF REMOVAL SHALL BE EXTENDED TO THE EXISTING JOINT. SUCH SAW CUTS WILL NOT BE PAID FOR DIRECTLY AND THIS COST SHALL BE CONSIDERED AS SUBSIDIARY TO THE REMOVAL OF THE SURFACE OR PAVEMENT.

8. PAVEMENT REMOVAL AND/OR REPLACEMENT WILL BE MEASURED AND PAID FOR ON THE LINEAL FOOT BASIS AS MEASURED ALONG THE CENTERLINE OF THE WATER LINE REGARDLESS OF WIDTH, PAVEMENT TYPE AND/OR PAVEMENT THICKNESS. MINIMUM LIMITS OF SUCH PAVEMENT REMOVAL AND REPLACEMENT SHALL BE ONE FOOT BEYOND THE LIMITS OF THE EXCAVATION MADE FOR THE WATER LINE OR THE STRUCTURE, EXCEPT WHEN SUCH SAW CUTS ARE WITHIN THREE (3) FEET OF AN EXISTING JOINT THE LIMITS OF REMOVAL SHALL BE EXTENDED TO THE EXISTING JOINT. REMOVAL AND REPLACEMENT OF EXISTING PAVEMENT SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE CITY OF WICHITA STANDARD SPECIFICATIONS.

9. INTERURBAN TRAFFIC GENERATED OUTSIDE THE PROJECT AREA SHALL NOT BE CARRIED THROUGH CONSTRUCTION. LOCAL RESIDENTIAL TRAFFIC GENERATED WITHIN THE PROJECT AREA SHALL BE CARRIED THROUGH CONSTRUCTION AS FURTHER PROMULGATED BY PROJECT SPECIAL PROVISIONS.

10. 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 LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE 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 CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.

11. 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.

12. PROPERTIES WITHIN THE PROJECT LIMITS MAY HAVE UNDERGROUND SPRINKLER SYSTEMS IN THE PUBLIC RIGHT-OF-WAY 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.

13. 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 FOR THE WORK TO BE COMPLETED.

14. PRIOR TO LAYING THE NEW SEWER LINES THE CONTRACTOR SHALL EXPOSE AND VERIFY THE ELEVATION, GRADE AND ALIGNMENT OF THE EXISTING STORM WATER SEWER AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES FROM THE PLAN.

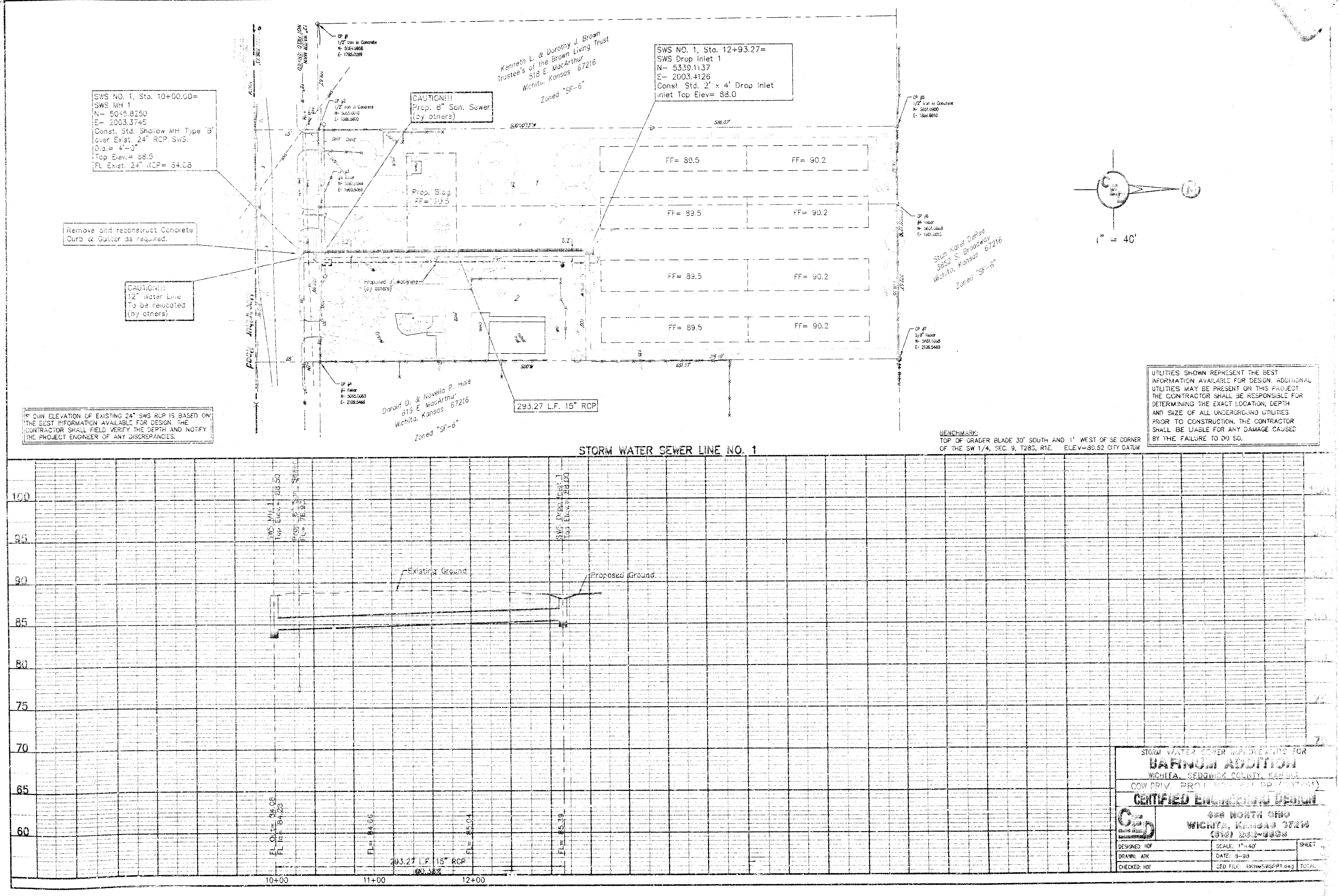
STORM WATER SEWER SITE PLAN FOR
BARNUM ADDITION
WICHITA, KANSAS

COW PRIV. PROJ. NO.: 841 PPS(6078

CERTIFIED ENGINEERING DESI

CED
455 NORTH OHIO
WICHITA, KANSAS 67214
(316) 262-0208

DESIGNED: HDF	SCALE: 1"=40'	SHE
DRAWN: JLM	DATE: 8-98	
CHECKED: HDF	CED FILE: BRNSWSSP.dwg	TOTA


CP #1
1/2" Iron in Concrete
N- 5064.9956
E- 1785.0289
12" WATER MAIN NOT FIELD VERIFIED
CP #2
1/2" Iron in Concrete
N- 5065.0010
E- 1886.6810
CP #3
#4 Rebar
N- 5065.0044
E- 1960.9068
CP #4
#4 Rebar
N- 5065.0063
E- 2109.5466
CP #5
1/2" Iron in Concrete
N- 5651.0900
E- 1886.6810
CP #6
#4 Rebar
N- 5651.0868
E- 1961.0015
CP #7
5/8" Rebar
N- 5651.1058
E- 2109.5469
Kenneth L. & Dorothy J. Brown
Trustee's of the Brown Living Trust
518 E. MacArthur
Wichita, Kansas 67216
Zoned "SF-6"
Stan Karel DeRee
3852 S. Broadway
Wichita, Kansas 67216
Zoned "SF-6"
Darold D. & Novella P. Hale
615 E MacArthur
Wichita, Kansas 67216
Zoned "SF-6"
S00°00'13"W
586.07'
DIRT DRIVE
Prop. Bldg.
FF= 90.5
FF= 89.5
FF= 90.2
FF= 89.5
FF= 90.2
FF= 89.5
FF= 90.2
FF= 89.5
FF= 90.2
1
2
Proposed waterline
(by others)
65'
#4 Rebar
S00'W
1" = 40'
N
STORM WATER SEWER LINE NO. 1
100
95
90
85
80
75
70
65
60
SWS MH 1
Top Elev.= 88.50
Prop. 8" San. Sewer
FL= 76.93
SWS Drop Inlet 1
Top Elev.= 88.00
Existing Ground
Proposed Ground
FL Out= 84.08
FL In= 84.28
FL= 84.66
FL= 85.04
FL= 85.39
293.27 L.F. 15" RCP
@0.38%
10+00
11+00
12+00

SWS NO. 1, Sta. 10+00.00=
SWS MH 1
N- 5045.8250
E- 2003.3745
Const. Std. Shallow MH Type 'B'
over Exist. 24" RCP SWS.
Dia.= 4'-0"
Top Elev.= 88.5
FL Exist. 24" RCP= 84.08

CAUTION!!!
Prop. 8" San. Sewer
(by others)

SWS NO. 1, Sta. 12+93.27=
SWS Drop Inlet 1
N- 5339.1137
E- 2003.4126
Const. Std. 2' x 4' Drop Inlet
Inlet Top Elev= 88.0

Remove and reconstruct Concrete
Curb & Gutter as required.

CAUTION!!!
12" Water Line
To be relocated
(by others)

293.27 L.F. 15" RCP

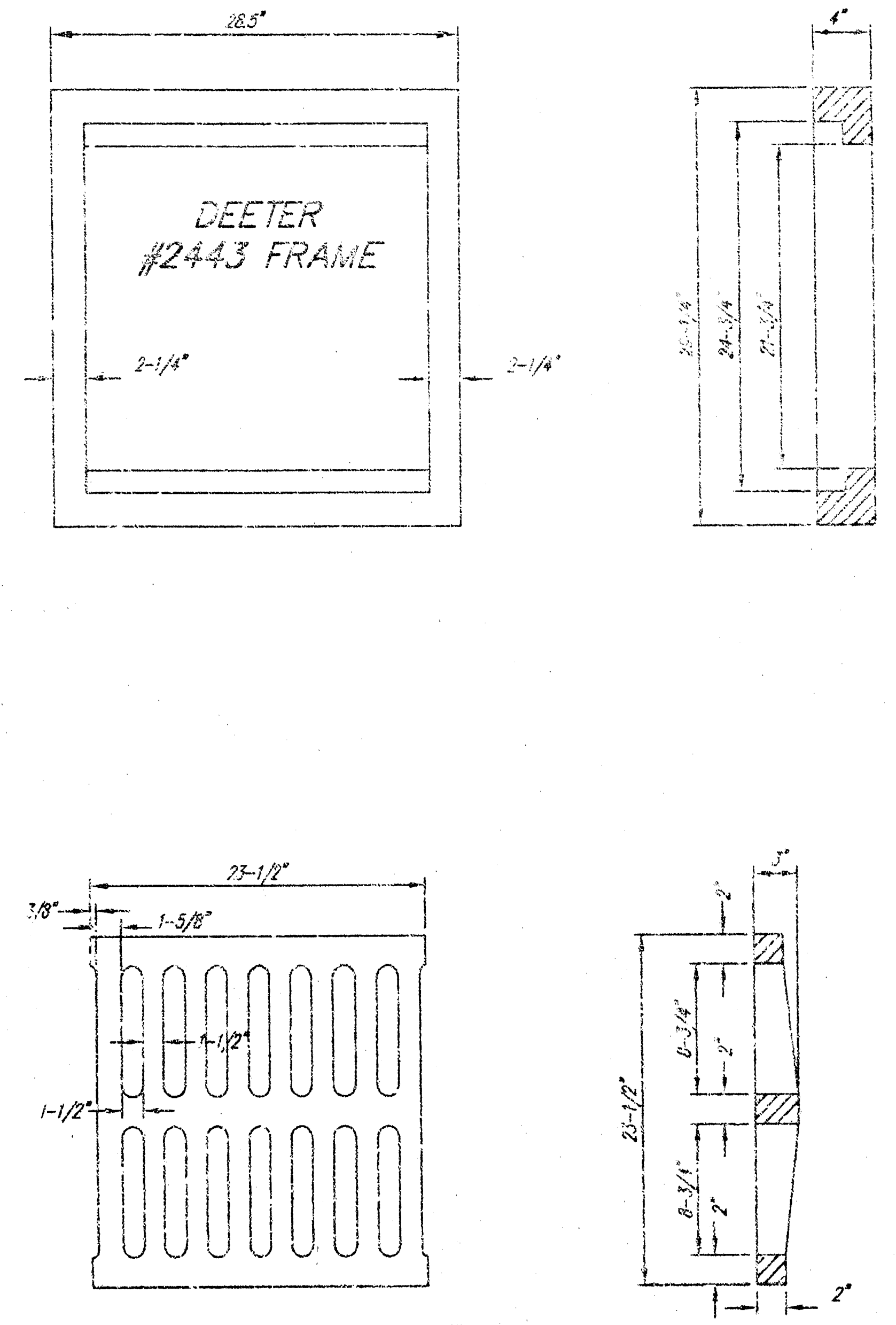
SHOWN ELEVATION OF EXISTING 24" SWS RCP IS BASED ON THE BEST INFORMATION AVAILABLE FOR DESIGN. THE CONTRACTOR SHALL FIELD VERIFY THE DEPTH AND NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES.

BENCHMARK:
TOP OF GRADER BLADE 30' SOUTH AND 1' WEST OF SE CORNER OF THE SW 1/4, SEC. 9, T28S, R1E. ELEV=89.52 CITY DATUM

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.

STORM WATER SEWER IMPROVEMENTS FOR
BARNUM ADDITION
WICHITA, SEDGWICK COUNTY, KANSAS
COW PRIV. PROJ. NO. [illegible]
CERTIFIED ENGINEERING DESIGN
498 NORTH OHIO
WICHITA, KANSAS 67214
(316) 262-8808

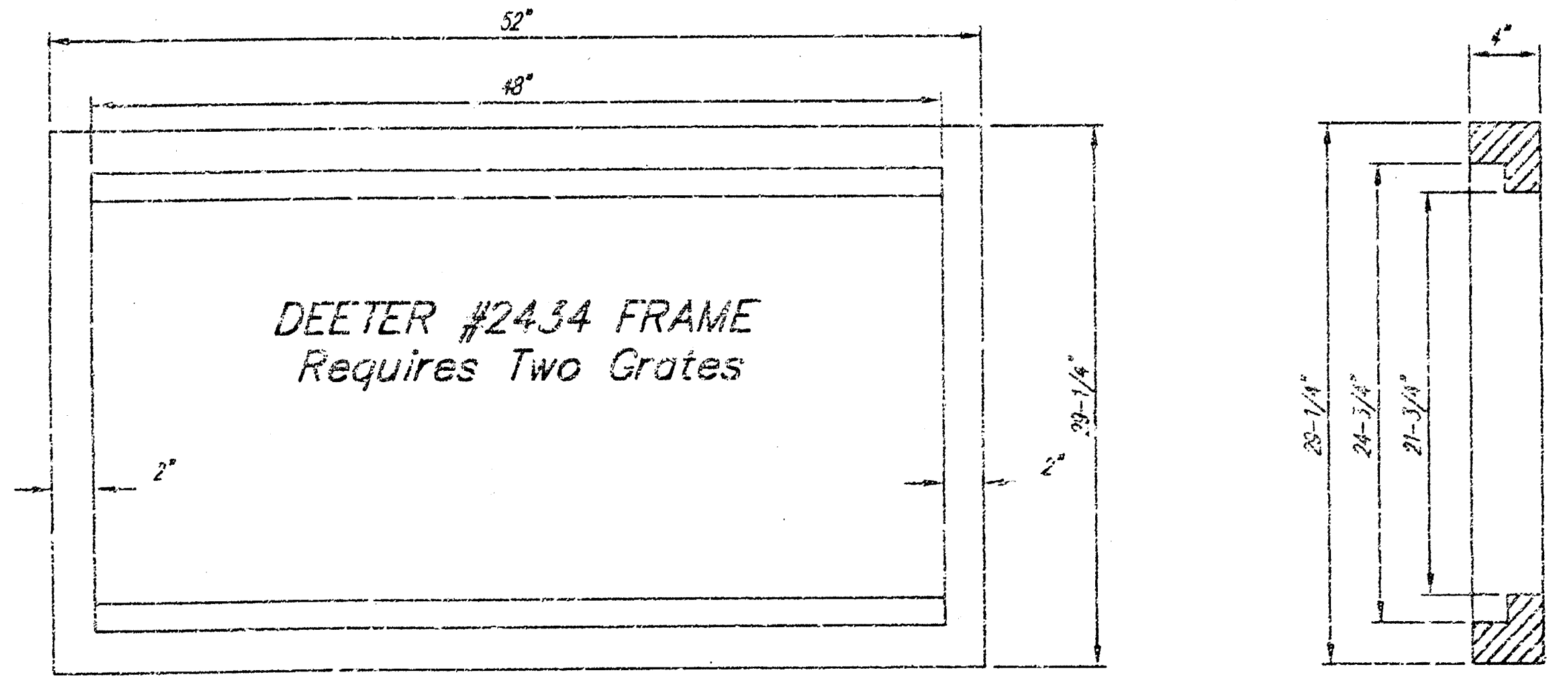
DESIGNED: HDF	SCALE: 1"=40'	SHEET
DRAWN: ARK	DATE: 8-98	
CHECKED: HDF	CED FILE: BRNWSWSPP1.dwg	TOTAL


28.5"
4"
DEETER
#2443 FRAME
2-1/4"
2-1/4"
29-1/4"
24-3/4"
21-3/4"
23-1/2"
3/8"
1-5/8"
1-1/2"
1-1/2"
3"
2"
8-3/4"
2"
23-1/2"
8-3/4"
2"
2"

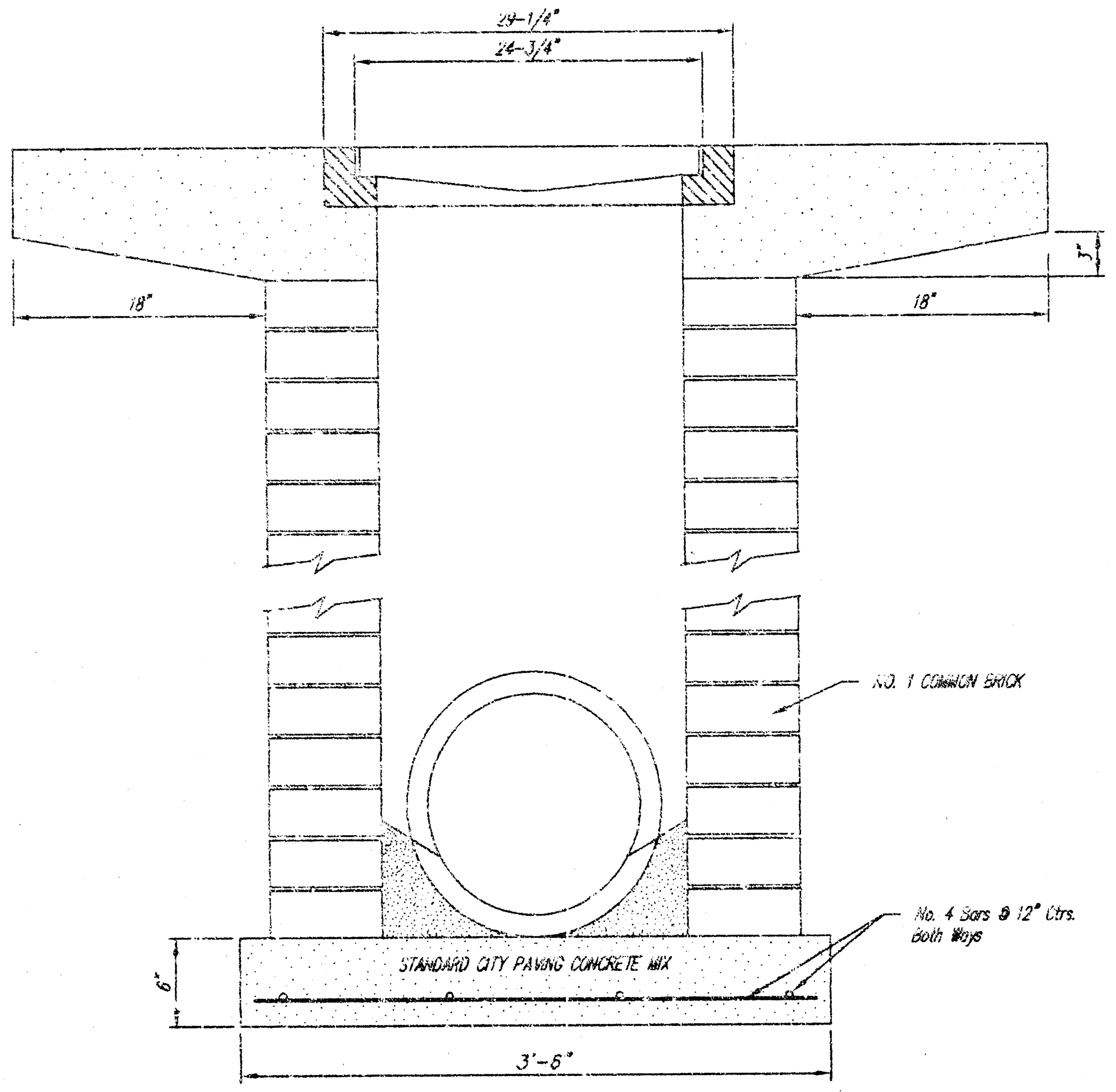
DEETER #2433 GRATE

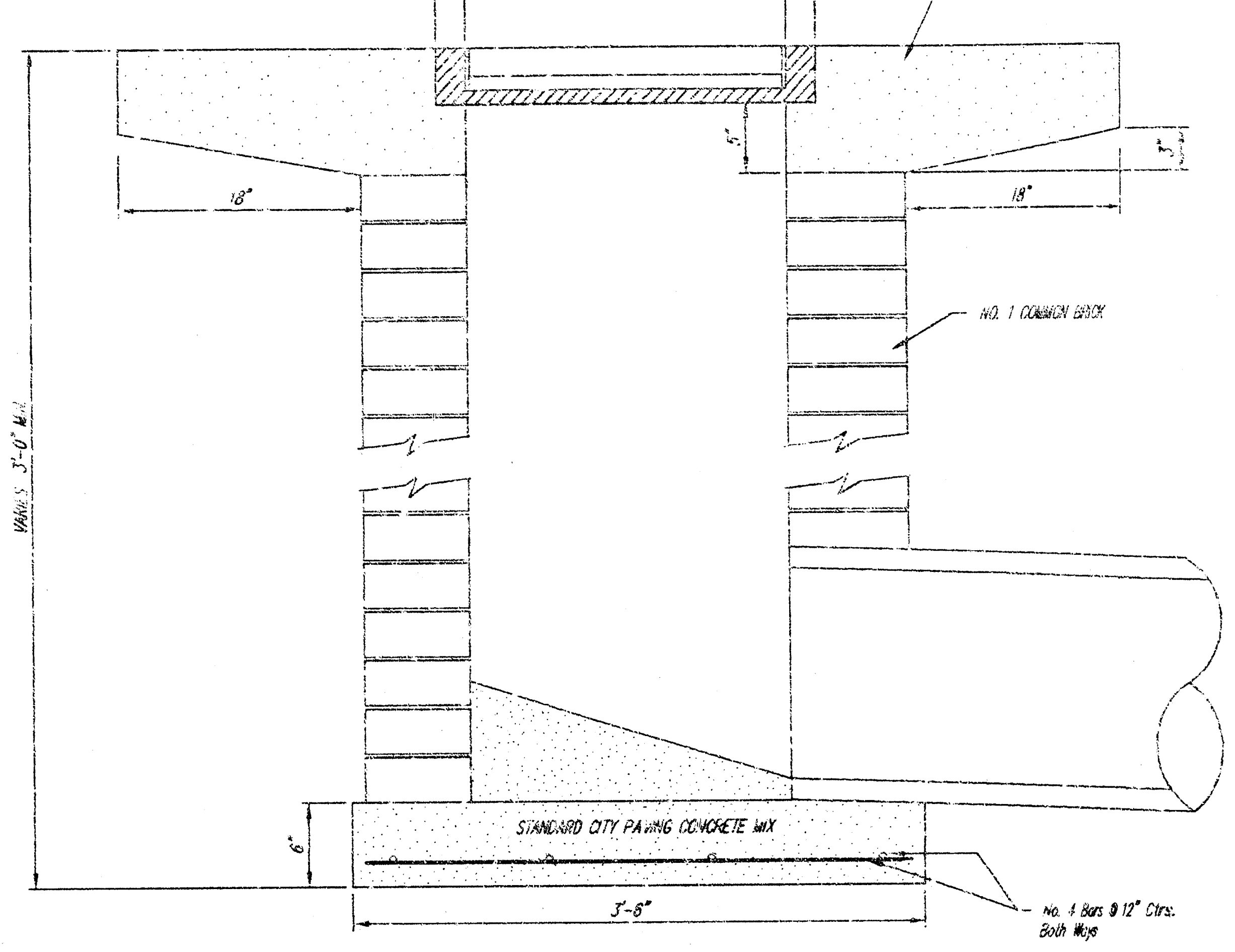
24" x 24" Frame and Grate Detail

NOTE: Grates shall be imprinted on the top surface with "CITY OF WICHITA" using letters at least 1" in height. Other marking methods may be approved by the engineer.

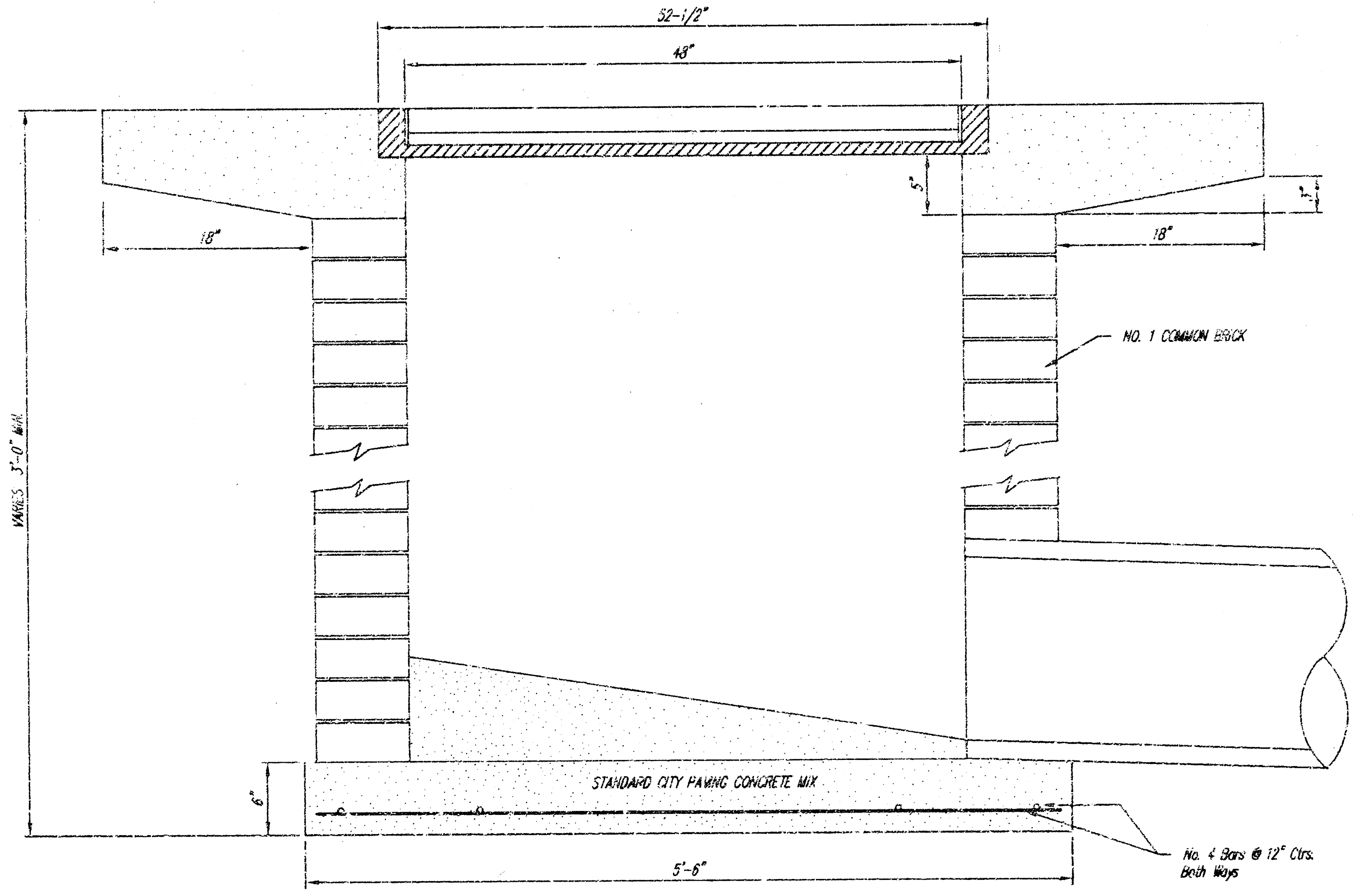

52"
48"
DEETER #2434 FRAME
Requires Two Grates
2"
2"
29-1/4"
4"
29-1/4"
24-3/4"
21-3/4"

Double 24" x 24" Frame Detail


29-1/4"
24-3/4"
3"
18"
18"
NO. 1 COMMON BRICK
No. 4 Bars @ 12" Ctrs.
Both Ways
STANDARD CITY PAVING CONCRETE MIX
6"
3'-6"


28-1/2"
24"
5"
3"
18"
18"
NO. 1 COMMON BRICK
VARIES 3'-0" MIN.
STANDARD CITY PAVING CONCRETE MIX
6"
3'-6"
No. 4 Bars @ 12" Ctrs.
Both Ways

Note: Concrete apron shall be constructed around the inlet when inlet is located in an unpaved area. Where the inlet is adjacent to pavement, the pavement thickness shall be tapered to the inlet in 18 inches as indicated on the detail.


52-1/2"
48"
5"
3"
18"
18"
NO. 1 COMMON BRICK
VARIES 3'-0" MIN.
STANDARD CITY PAVING CONCRETE MIX
6"
5'-6"
No. 4 Bars @ 12" Ctrs.
Both Ways

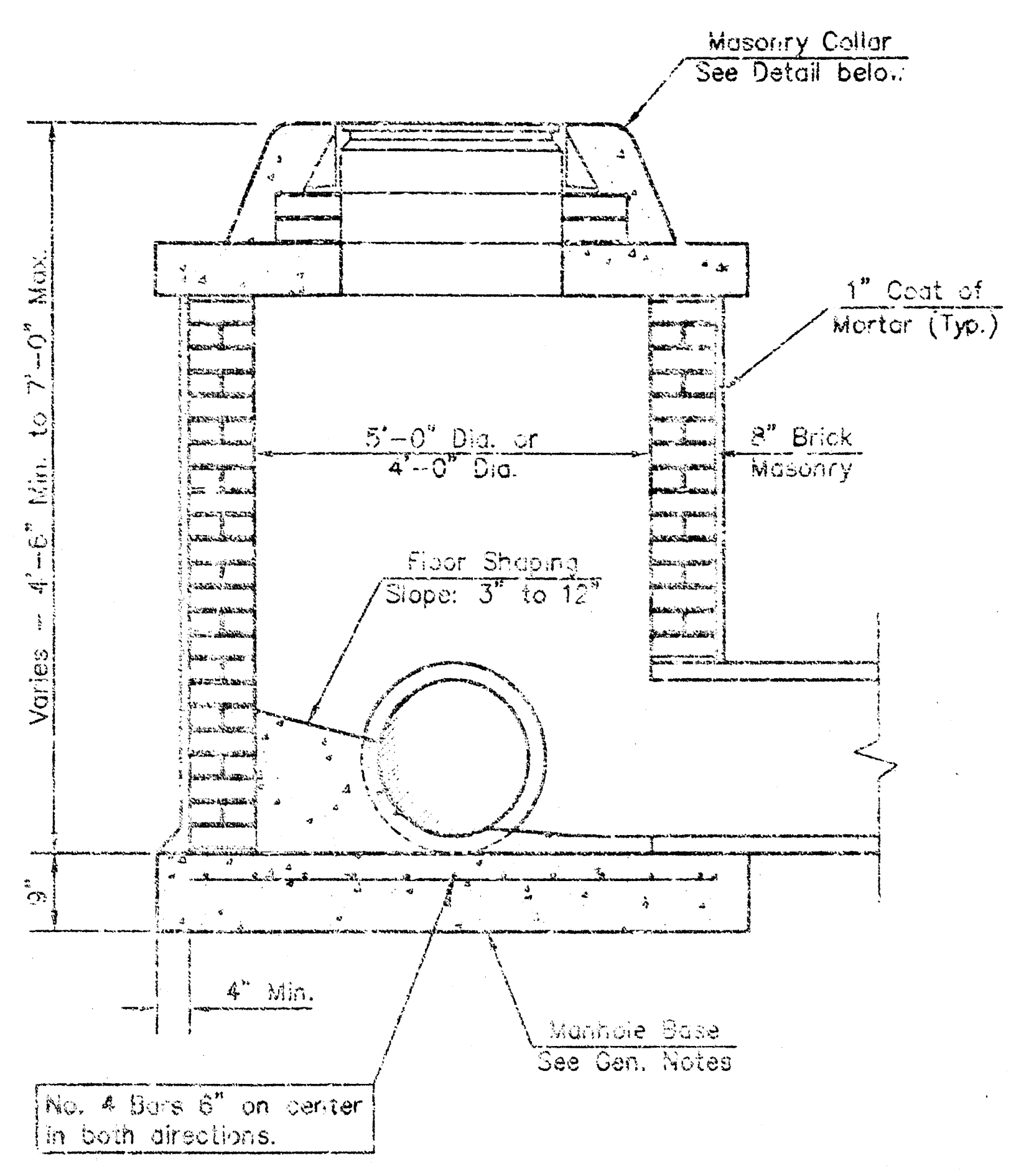
STORM WATER SEWER IMPROVEMENTS
DROP INLET DETAIL
WICHITA, KANSAS

COW PRIV. PROJ. NO.: 841 PPS(30

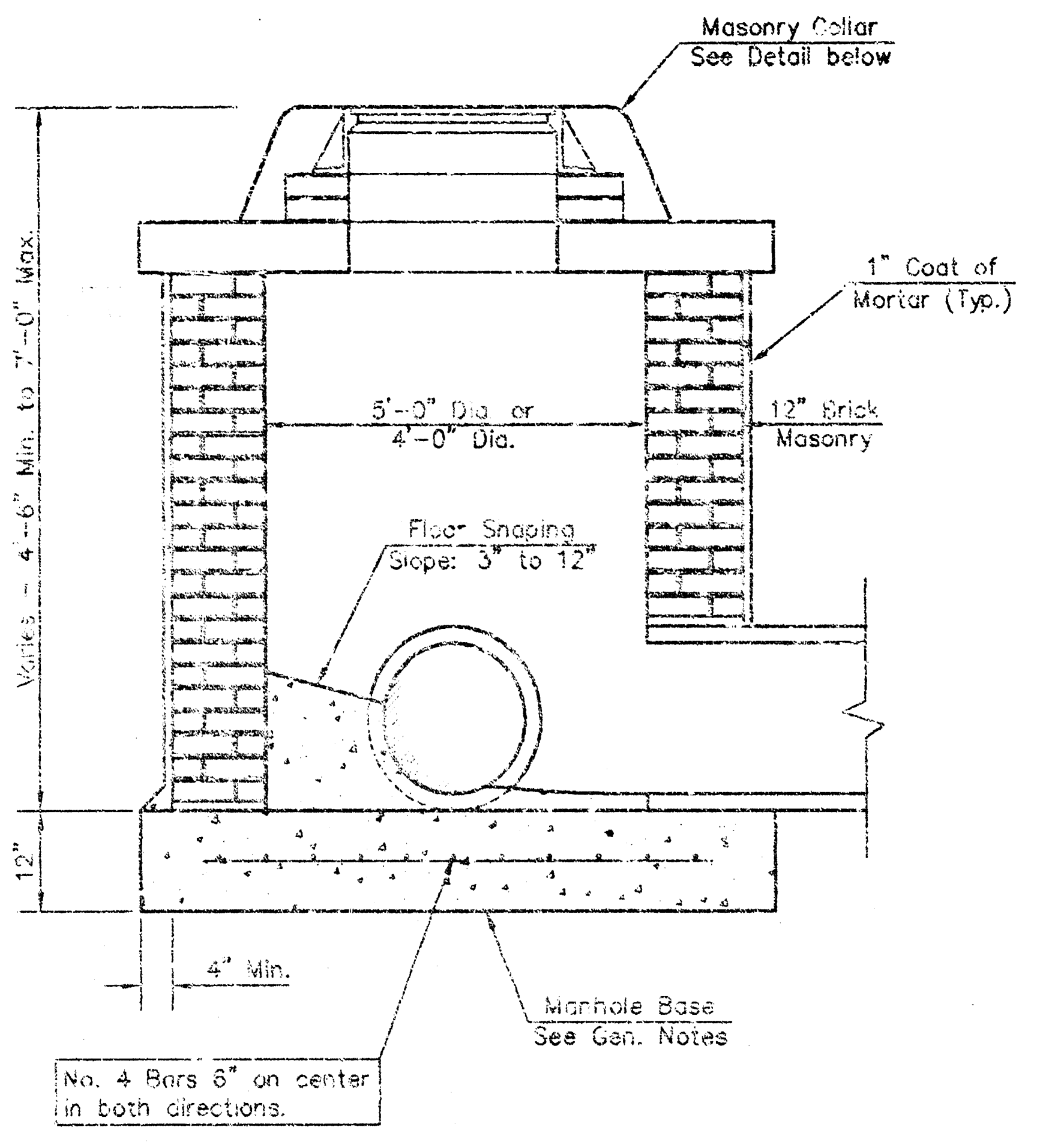
CERTIFIED ENGINEERING DES

438 NORTH OHIO
WICHITA, KANSAS 672
(316) 262-3808

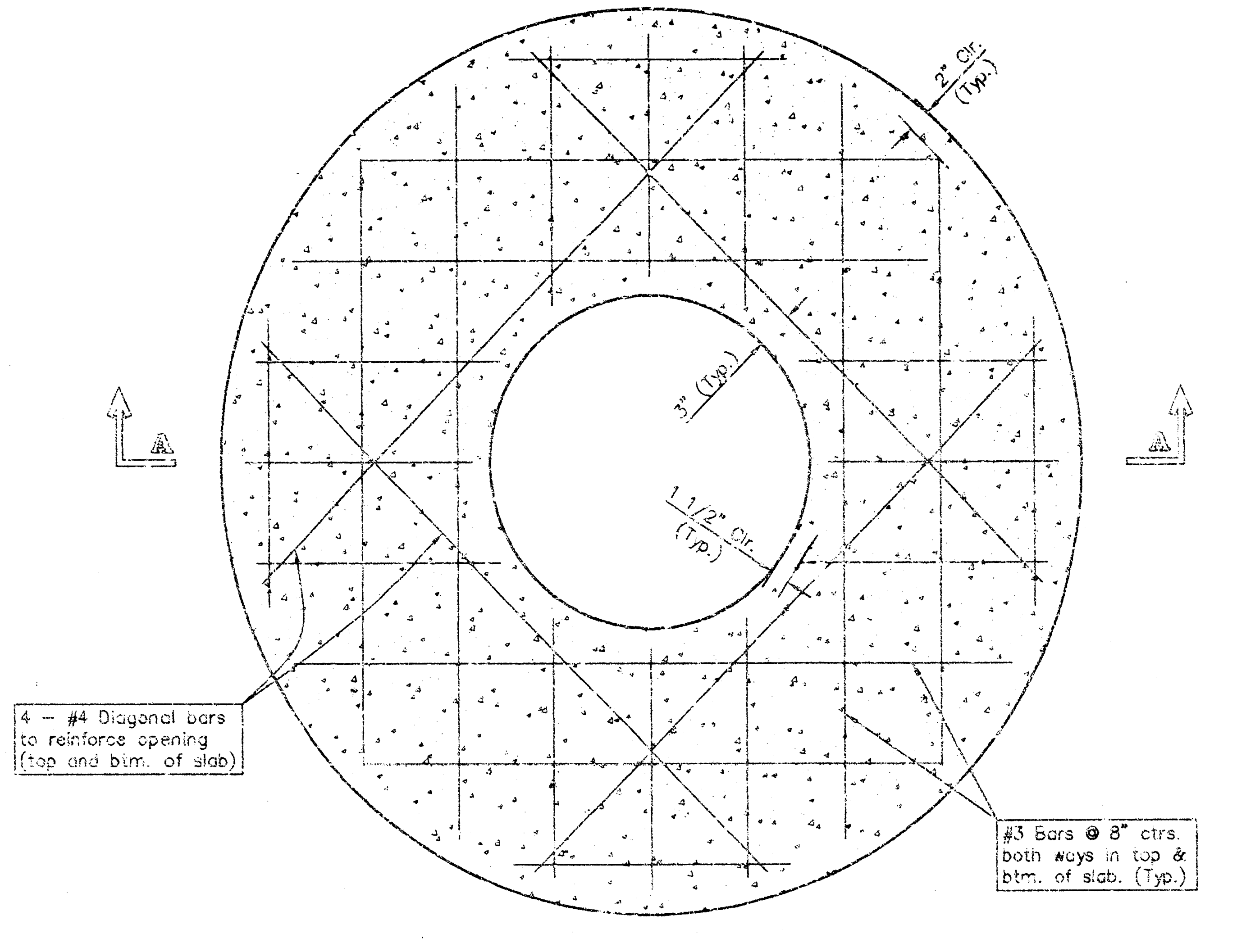
DESIGNED: HDF	SCALE: NTS
DRAWN: HDF	DATE: 6-98
CHECKED: HDF	CAD FILE: DROPINLT.dwg


Masonry Collar
See Detail below
1" Coat of Mortar (Typ.)
5'-0" Dia. or 4'-0" Dia.
8" Brick Masonry
Floor Shaping Slope: 3" to 12"
Varies – 4'-6" Min. to 7'-0" Max.
3"
4" Min.
Manhole Base
See Gen. Notes
No. 4 Bars 6" on center in both directions.

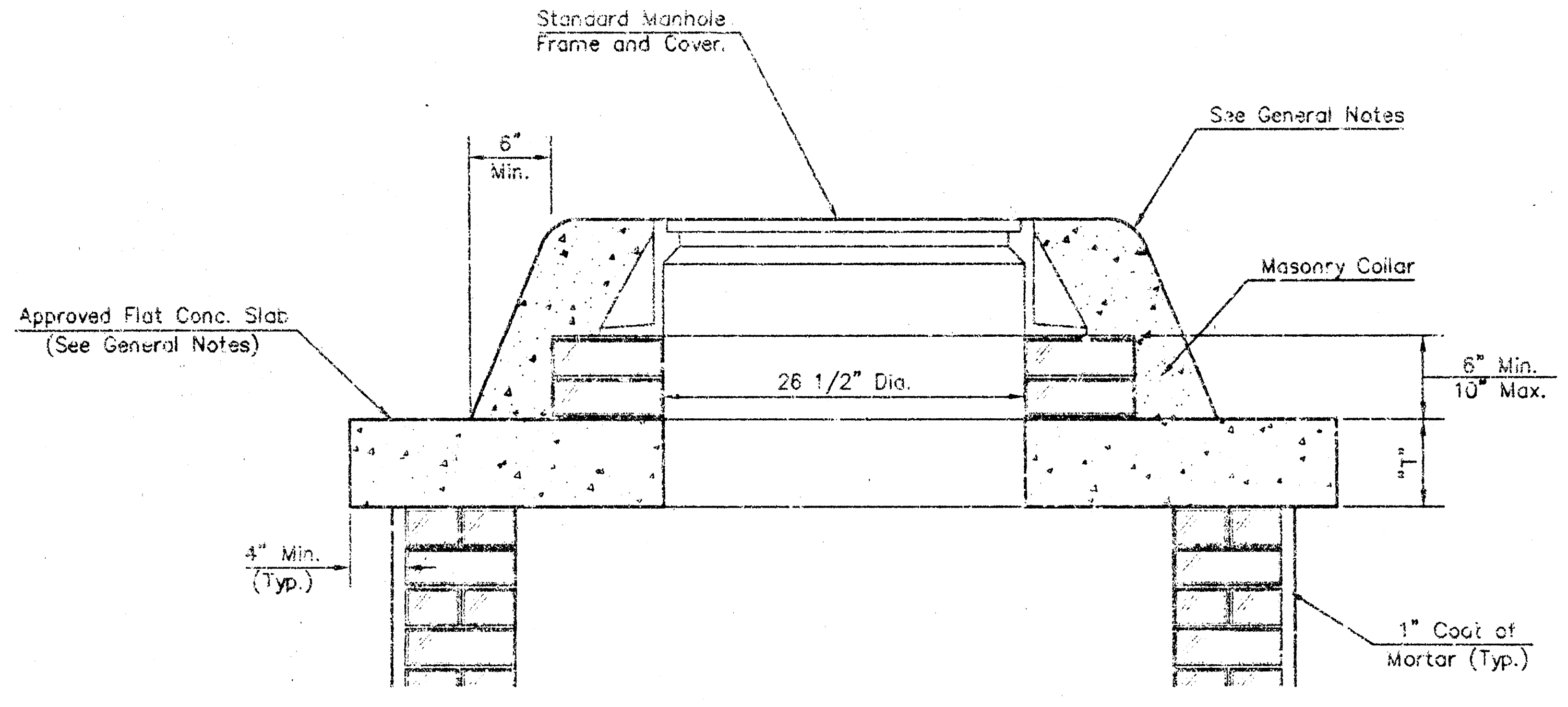
SHALLOW TYPE "A" MANHOLE


Masonry Collar
See Detail below
1" Coat of Mortar (Typ.)
5'-0" Dia. or 4'-0" Dia.
12" Brick Masonry
Floor Shaping Slope: 3" to 12"
Varies – 4'-6" Min. to 7'-0" Max.
12"
4" Min.
Manhole Base
See Gen. Notes
No. 4 Bars 6" on center in both directions.

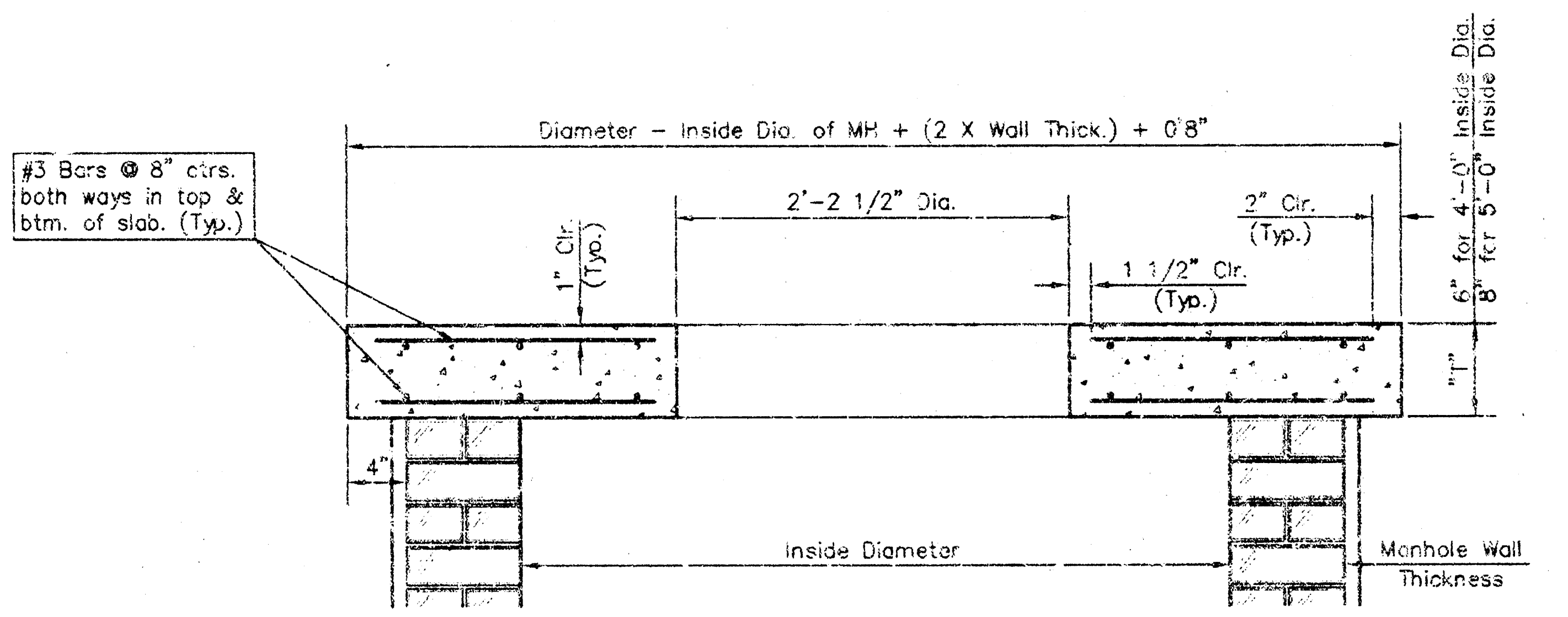
SHALLOW TYPE "B" MANHOLE


2" Clr. (Typ.)
3" (Typ.)
1 1/2" Clr. (Typ.)
A
A
4 – #4 Diagonal bars to reinforce opening (top and btm. of slab)
#3 Bars @ 8" ctrs. both ways in top & btm. of slab. (Typ.)

PLAN


Standard Manhole Frame and Cover.
See General Notes
6" Min.
Masonry Collar
Approved Flat Conc. Slab (See General Notes)
26 1/2" Dia.
6" Min. 10" Max.
"T"
4" Min. (Typ.)
1" Coat of Mortar (Typ.)

MASONRY COLLAR DETAIL

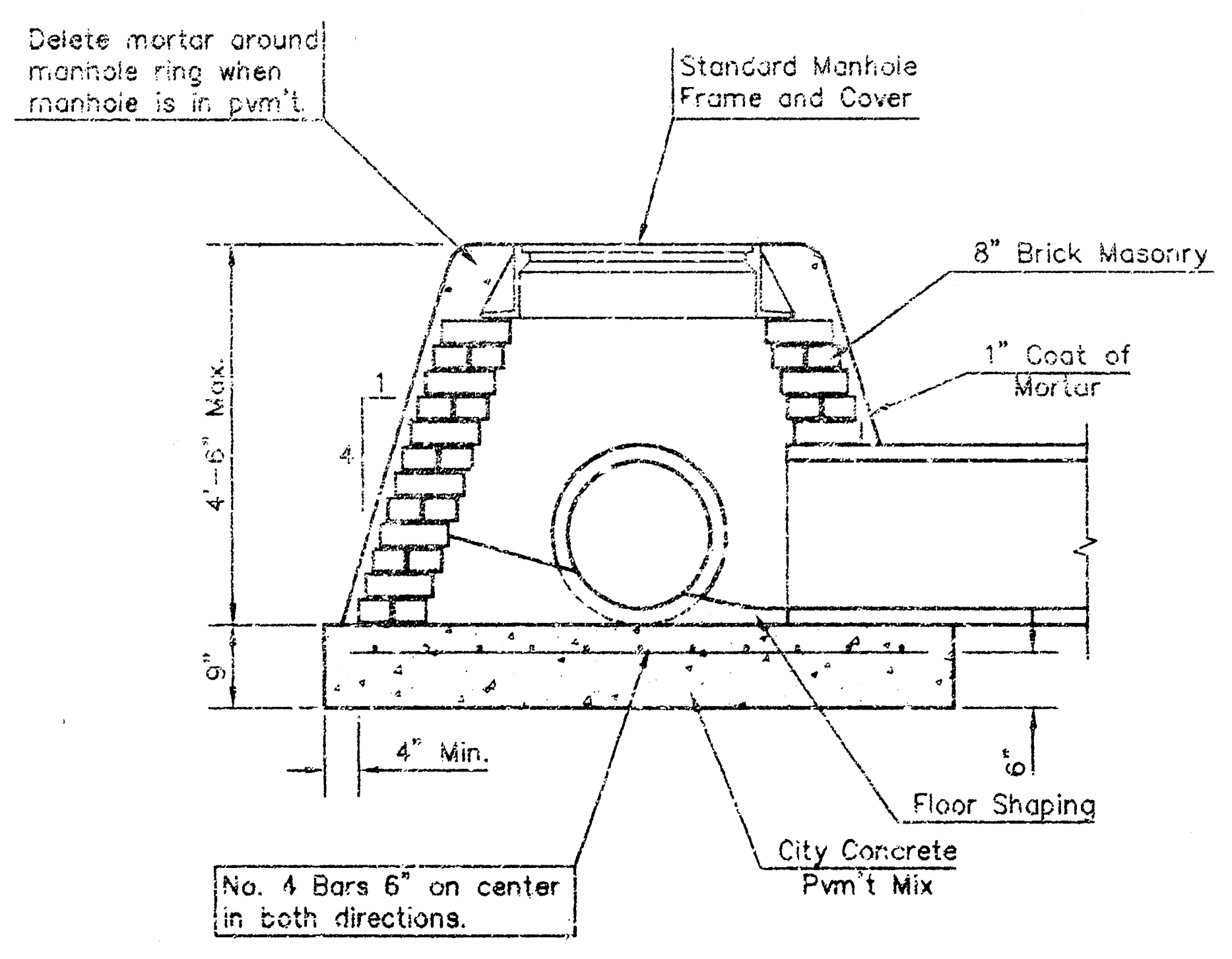

#3 Bars @ 8" ctrs. both ways in top & btm. of slab. (Typ.)
Diameter – Inside Dia. of MH + (2 X Wall Thick.) + 0'8"
2'-2 1/2" Dia.
2" Clr. (Typ.)
1 1/2" Clr. (Typ.)
1" Clr. (Typ.)
6" for 4'-0" Inside Dia.
8" for 5'-0" Inside Dia.
"T"
4"
Inside Diameter
Manhole Wall Thickness

SECTION A–A

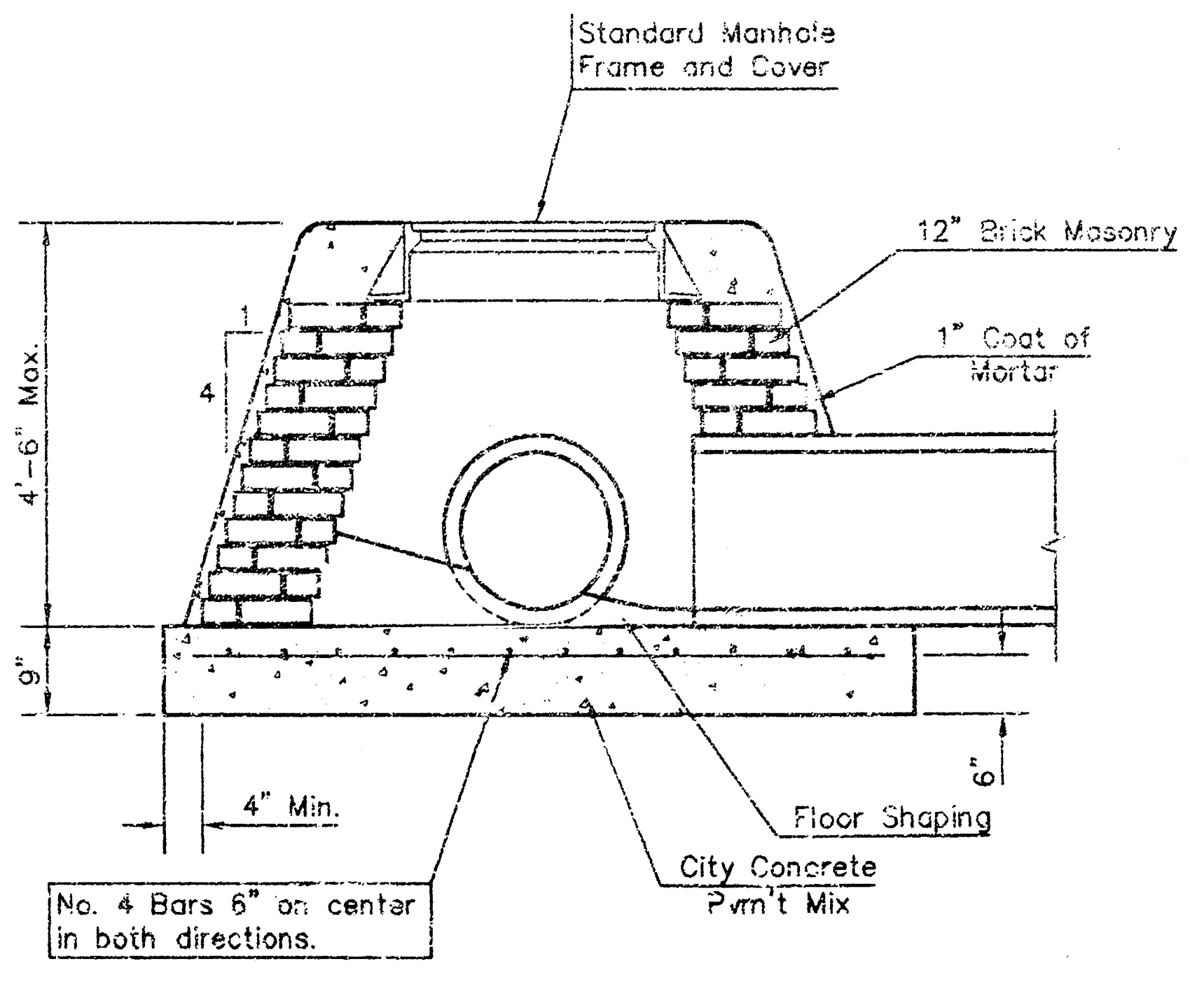
FLAT CONCRETE SLAB DETAILS

GENERAL NOTES

1. 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 on 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. The crowns of inflowing pipes shall never be set lower than the crown of the outflowing pipe.
7. 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.
8. All brick used in manhole construction shall meet Grade SW of ASTM C652 or C62-87.


Delete mortar around manhole ring when manhole is in pvm't.
Standard Manhole Frame and Cover
8" Brick Masonry
1" Coat of Mortar
1
4
4'-6" Max.
9"
4" Min.
6"
Floor Shaping
City Concrete Pvm't Mix
No. 4 Bars 6" on center in both directions.

SPECIAL SHALLOW TYPE "A" MANHOLE


Standard Manhole Frame and Cover
12" Brick Masonry
1" Coat of Mortar
1
4
4'-6" Max.
9"
4" Min.
6"
Floor Shaping
City Concrete Pvm't Mix
No. 4 Bars 6" on center in both directions.

SPECIAL SHALLOW TYPE "B" MANHOLE

STANDARD/SPECIAL
SHALLOW MANHOLES
TYPE 'A' & 'B'