

STORM WATER DRAIN NO. 35

CITY OF WICHITA, KANSAS

LOCATION: WEBB RD. & CENTRAL AVE.

R.W. LINN, CITY ENGINEER

PROJECT NO. DBKD 577051

DATE: _____

GENERAL NOTES

1. CONTRACTOR TO PROVIDE TRAVELWAY OF 2-12' STRIPED PAVED LANES ON CENTRAL AV. FOR TWO-WAY TRAFFIC AT ALL TIMES. IF REQUIRED, CONTRACTOR MAY REMOVE CURB AND CUTTER 50' WEST AND 20' EAST OF RCB CENTERLINE AND INSTALL 4" ASPHALT MAT TO A LINE 5' BACK OF EXISTING CURB LINE. CONTRACTOR TO RESTORE ROADWAY AND PARKING TO ORIGINAL CONDITION AFTER CONSTRUCTION OF RCB. ALL COSTS TO BE INCLUDED IN LUMP SUM BID FOR "TRAFFIC LANE MAINTENANCE". IF DISTURBED, THE FIELD ENGINEER WILL RESTORE THE CITY STANDARD S.M. TO ITS ORIGINAL LOCATION AND ELEVATION.
2. THE TYPE 4 RIP-RAP SHALL BE 18" RIP-RAP ON 6" SAND AND GRAVEL BEDDING. THE ROCK FOR RIP-RAP AND GRAVEL PROTECTION SHALL BE HARD, DENSE, DURABLE AND SHALL BE REASONABLY WELL GRADED. THE SIZE RANGE OF ROCK USED SHALL HAVE A MAXIMUM SIZE OF 1/8 CUBIC YARD AND A MINIMUM SIZE OF 1/10 CUBIC FOOT. THE 6 INCH SAND AND GRAVEL BEDDING FOR RIP-RAP SHOULD BE A CONTINUOUS LAYER OF SAND AND GRAVEL OR SAND CRUSHED ROCK, REASONABLY WELL GRADED TO A MAXIMUM OF 1 1/2 INCHES IN SIZE.
3. LOCATE 8' x 4' RCB SO ITS CENTERLINE IS 10 FEET EAST OF GAS VENT AT STATION 0 + 47 AND IS MIDWAY BETWEEN GAS VENTS AT STATION 3 + 50 AND STATION 3 + 52. SUCH OPERATION OF LOCATING THE BOX SHALL BE PERFORMED IN THE PRESENCE OF FIELD ENGINEER ONLY AND AS PER HIS DIRECTION ONLY.
4. ALL TRENCHING AND EARTHWORK COSTS TO BE INCLUDED IN LUMP SUM BID FOR RCB.
5. COSTS FOR REMOVAL AND REPLACEMENT GUARD POSTS AS REQUIRED SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE PROJECT.
6. CONTACT WATER DEPARTMENT PRIOR TO CONSTRUCTION TO DETERMINE WHEN WATER LINES ARE TO BE RELOCATED.
7. CLASS A AE CONCRETE SHALL BE USED THROUGHOUT ON THE RCB STRUCTURE. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. SPECIFICATIONS. BEVEL ALL EXPOSED EDGES OF CONCRETE WITH 3/4" TRIANGULAR MOLDING.
8. THE QUANTITIES SHOWN IN THE "BILL OF MATERIALS" OR ITEMS WHICH ARE INCLUDED IN THE "LUMP SUM BID" OF THE R.C.B. ARE FOR "INFORMATION PURPOSES ONLY". THE CONTRACTOR MUST SATISFY HIMSELF AS TO THE "QUANTITIES", AND THE ENGINEER ASSUMES NO RESPONSIBILITIES FOR THEIR ACCURACY. THE CONTRACTOR WILL HAVE THE FULL RESPONSIBILITY FOR PROVIDING ALL MATERIALS ON THE DETAILED PLANS NECESSARY TO COMPLETE THE PROJECT.
9. THE REINFORCED CONCRETE BOX SHALL BE BID AS A "LUMP SUM BID" AND SHALL INCLUDE THE FOLLOWING ITEMS: CLASS A AE CONCRETE, REINFORCING STEEL, EXCAVATION AND COMPACTED FILL AROUND BOX.
10. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, AT THE DIRECTION OF THE FIELD ENGINEER, TO ENSURE THAT ALL TREES WITHIN THE PRIVATE PROPERTY AND IN THE VICINITY OF THE CONSTRUCTION AREA ARE SAVED AND NOT INJURED IN ANYWAY.

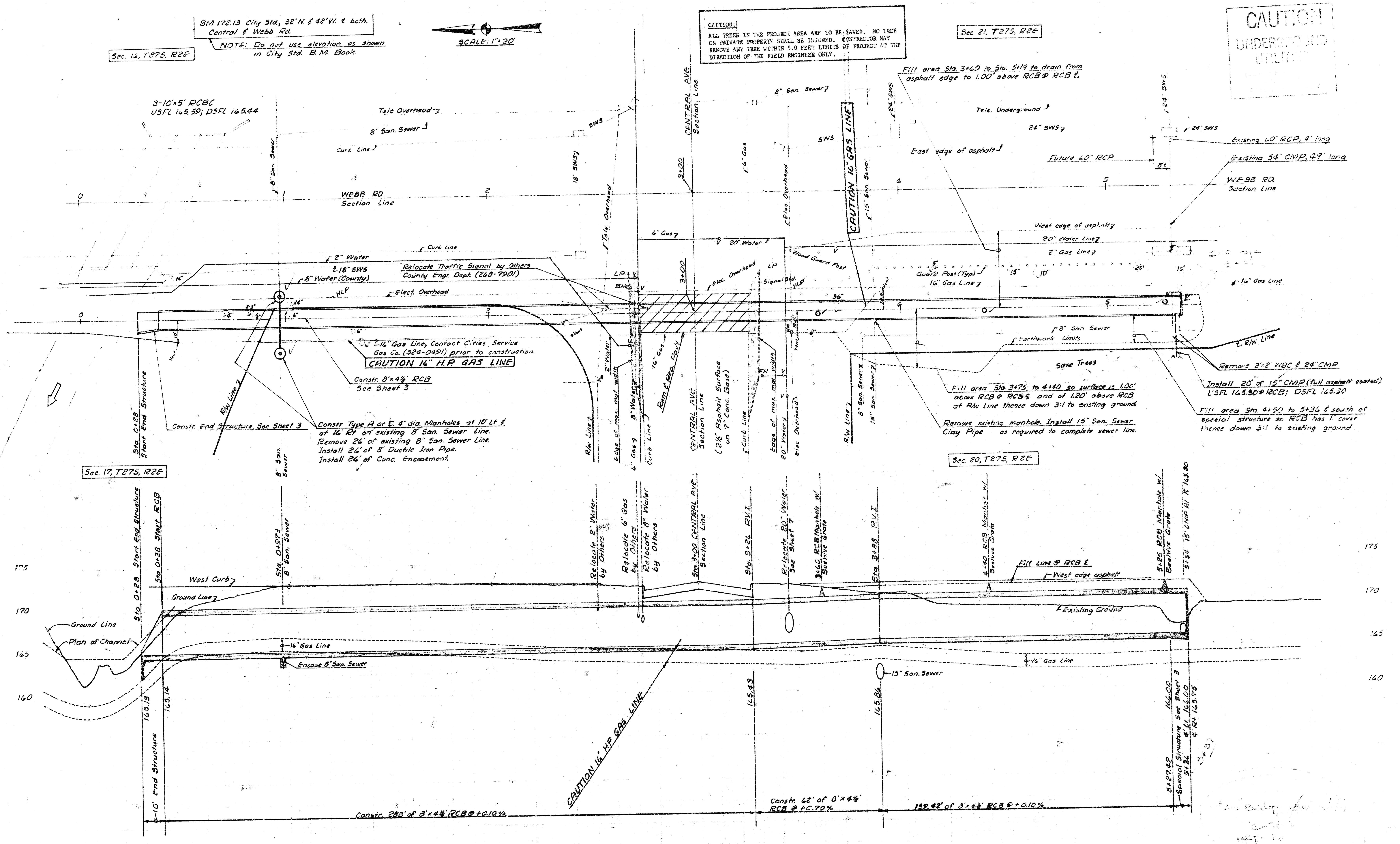
INDEX OF SHEETS	
1	COVER SHEET
2	PLAN-PROFILE
3,4	RCB DETAILS
5,6	SEWER APPURTENANCES
7	WATER LINE DETAILS

Rev 4-10-78

Project No. DBKD 577051 SWD#35
468 76 325 50591 000 000 001

Sheet 1 of 7

Flood Control Survey for Sta. 20+275.00 to 20+480.00
WSH



Sec. 16, T27S, R2E

BM 172.13 City Std., 32' N & 42' W. of both.
Central & Webb Rd.
NOTE: Do not use elevation as shown
in City Std. B.N. Book.

SCALE: 1"=30'

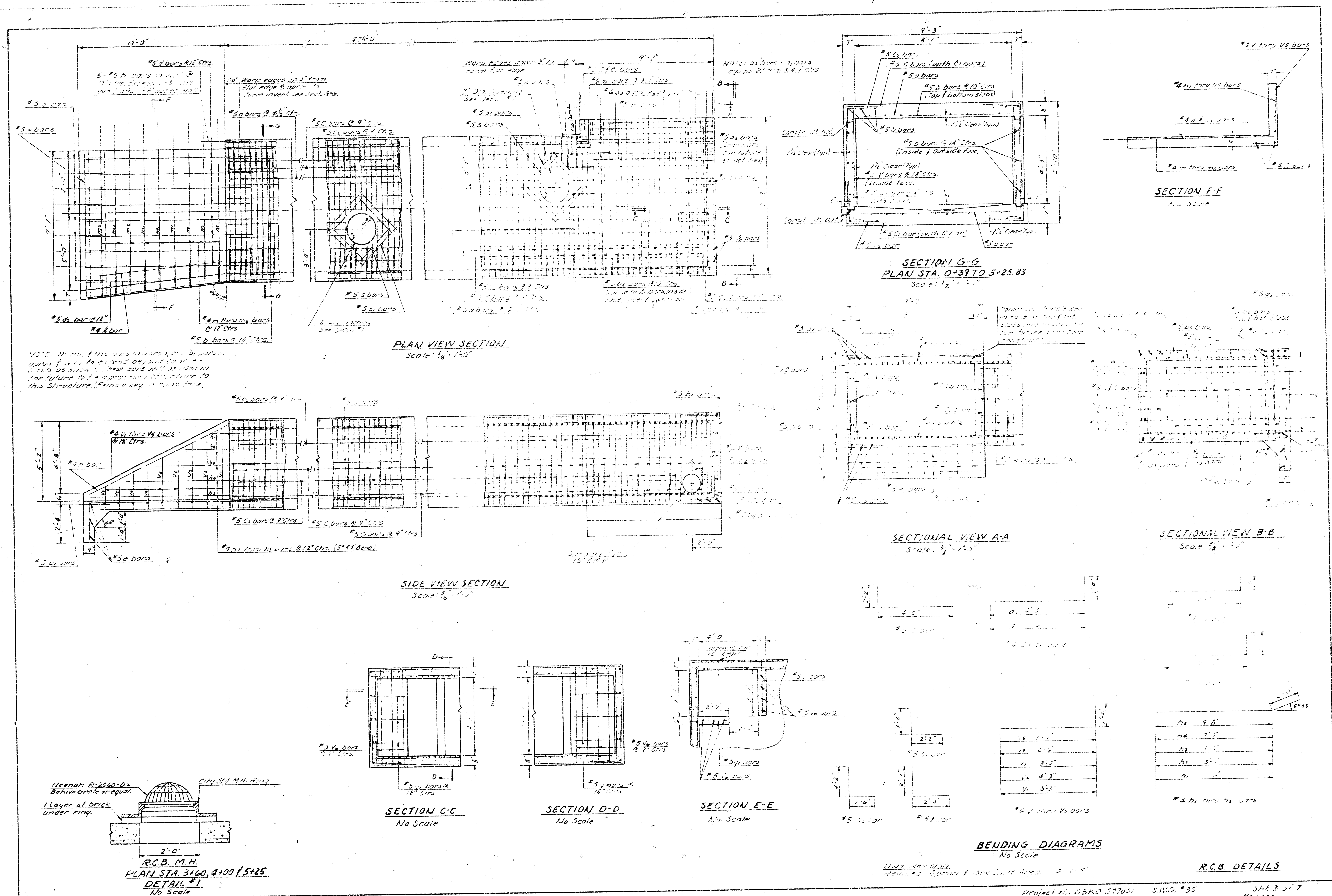
CAUTION:
ALL TREES IN THE PROJECT AREA ARE TO BE SAVED. NO TREE
ON PRIVATE PROPERTY SHALL BE INJURED. CONTRACTOR MAY
REMOVE ANY TREE WITHIN 5.0 FEET LIMITS OF PROJECT AT THE
DIRECTION OF THE FIELD ENGINEER ONLY.

Sec. 21, T27S, R2E

CAUTION
UNDERGROUND
UTILITIES

Sec. 17, T27S, R2E

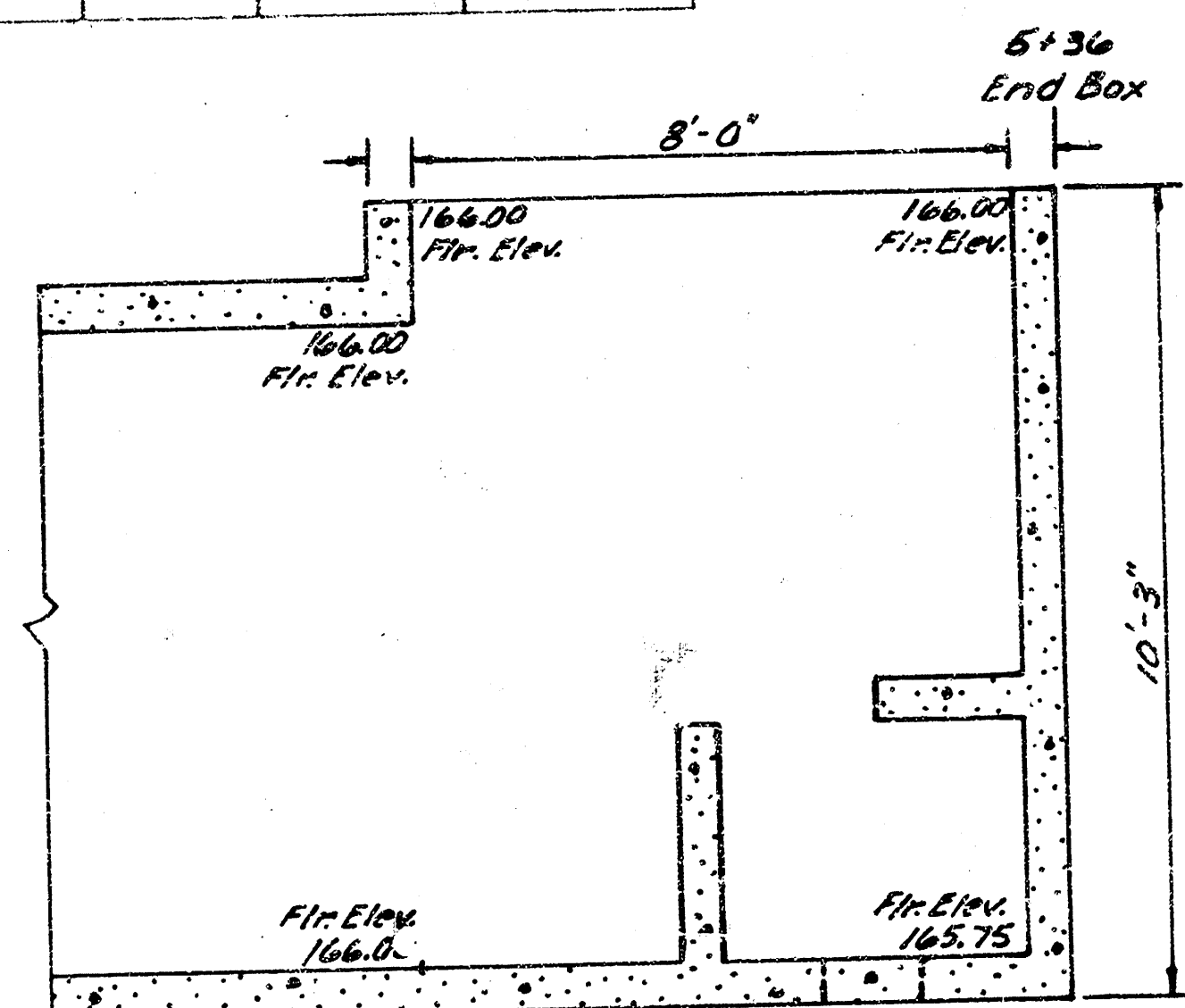
Sec. 20, T27S, R2E



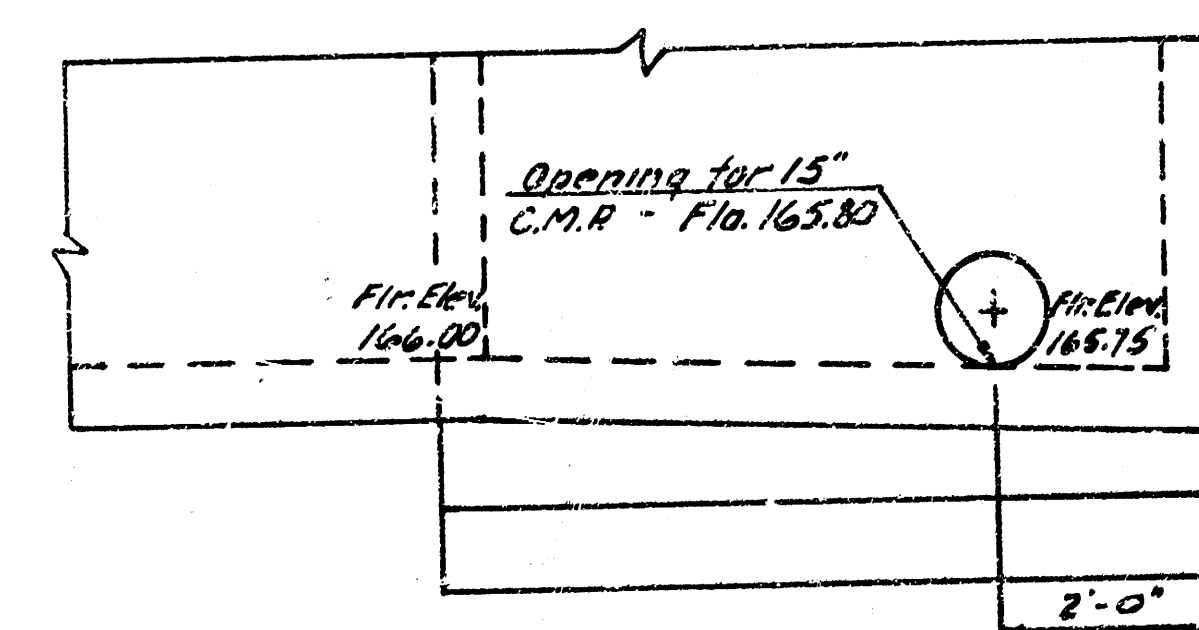
NOTE: The Bar Schedule and Bill of Materials on this sheet have been revised and show the steel and concrete requirements for the new R.C.B. design.

BAR SCHEDULE					
BAR	SIZE	LENGTH	NO.	SHAPE	WEIGHT
1	#5	7'-8"	2604	---	20831.51
2	#6	9'-0"	6	---	81.11
3	#5	10'-0"	28	---	292.04
4	#5	11'-10"	14	---	172.74
5	#5	10'-0"	542	---	23612.24
6	#5	3'-6"	14	---	48.62
7	#6	9'-11"	18	---	228.20
8	#6	9'-0"	12	---	162.22
9	#5	11'-10"	6	---	74.03
10	#5	8'-10"	6	---	50.36
11	#5	6'-8"	1328	---	2238.64
12	#5	8'-8"	1328	---	5997.50
13	#5	3'-8"	2648	---	10136.04
14	#5	2'-8"	666	---	1856.68
15	#4	13'-10"	8	---	73.91
16	#4	6'-7"	1	---	2.80
17	#5	9'-4"	3	---	29.19
18	#5	8'-10"	2	---	18.82
19	#5	8'-6"	8	---	36.13
20	#4	10'-6"	1	---	7.01
21	#4	3'-6"	1	---	2.34
22	#4	5'-0"	1	---	3.32
23	#4	7'-0"	1	---	4.68
24	#4	9'-0"	1	---	6.01
25	#4	11'-8"	1	---	7.80
26	#5	3'-10"	5	---	19.97
27	#4	8'-0"	2	---	11.69
28	#4	10'-6"	3	---	21.04
29	#4	10'-9"	3	---	21.54
30	#4	11'-0"	3	---	22.04
31	#5	3'-0"	12	---	37.55
32	#5	3'-9"	12	---	46.92
33	#5	2'-7"	4	---	10.76
34	#5	4'-8"	666	---	3243.76
35	#6	6'-9"	1	---	4.57
36	#4	5'-9"	2	---	7.63
37	#4	4'-10"	2	---	6.95
38	#4	4'-0"	2	---	5.34
39	#4	3'-0"	2	---	4.21
40	#5	5'-9"	9	---	53.78
41	#5	3'-3"	3	---	10.17
42	#5	2'-3"	3	---	7.04

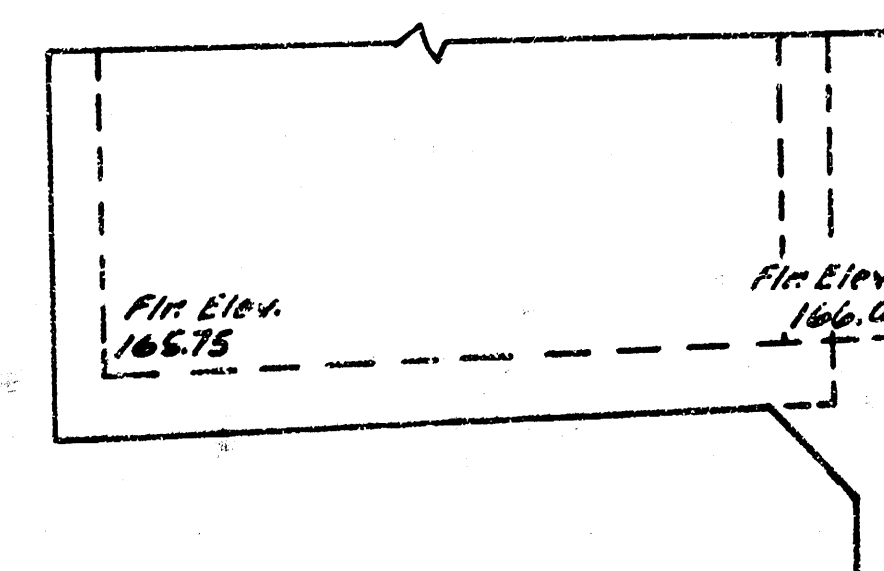
BILL OF MATERIALS		
ITEM	QUANTITY	UNIT
Class A RC Concrete	353.4	CU YD
Reinforcing Steel	75,548.0	LB



PLAN VIEW



SIDE VIEW



END VIEW

BOX INLET-FLOOR ELEVS.
No Scale

Eng. Revision
Revised Bar Schedule and Bill of Materials.
Added views of Box Inlet-Floor Elev. 4-10-78

R.T.B. DETAILS

Project No. 6815- STAGE 5-12-75
3/24/77
Revised

STANDARD MANHOLE
TYPE "A"

* DRAW = 6' ON 5' DIA. M.H.

STANDARD MANHOLE
TYPE "B"

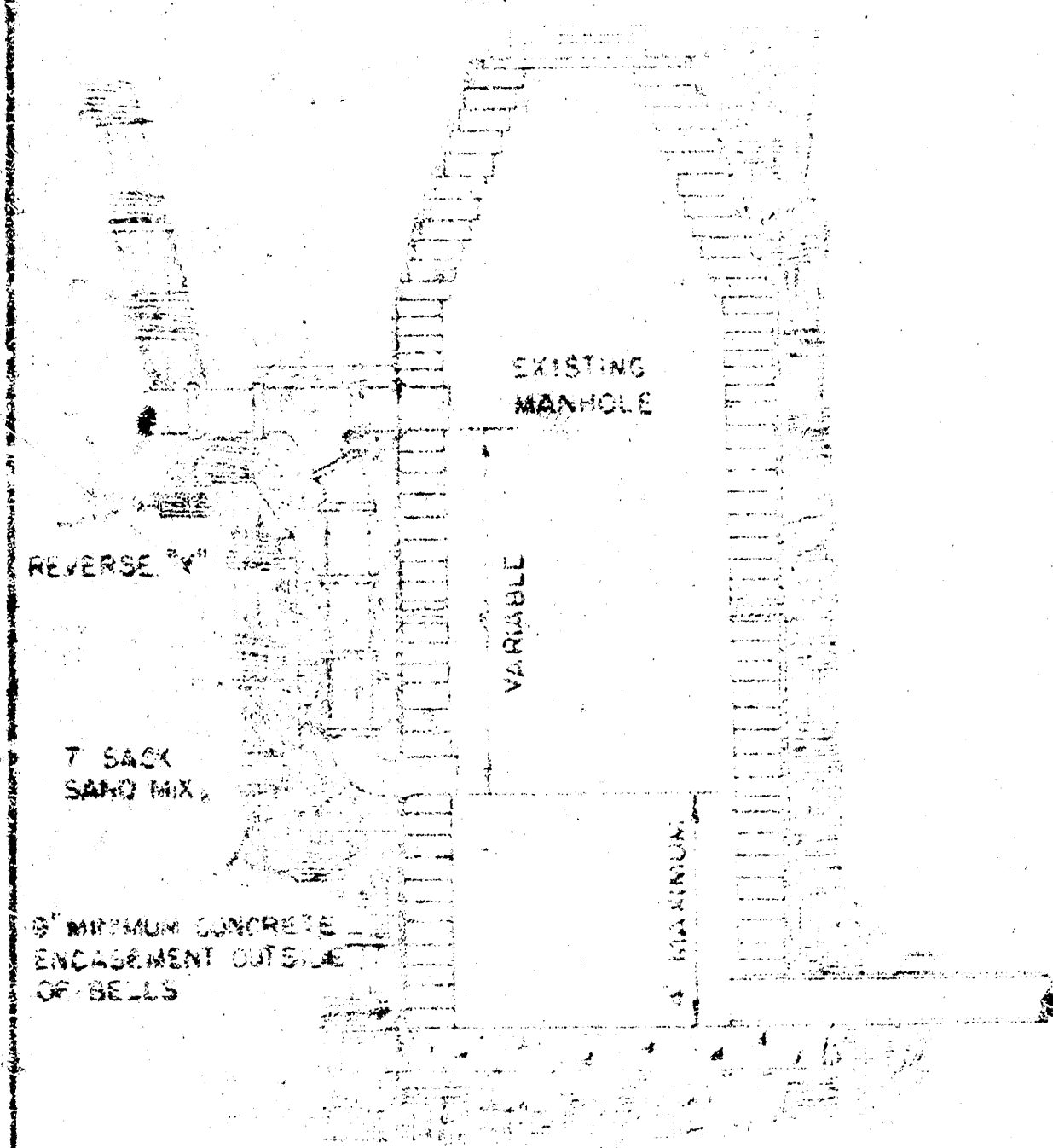
DROP MANHOLE
TYPE "A"

DROP MANHOLE
TYPE "B"

OUTSIDE DROP MANHOLE
TYPE "A"

OUTSIDE DROP MANHOLE
TYPE "B"

NOTE: REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES 8" ABOVE THE BOTTOM. REINFORCING STEEL SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE COST OF REINFORCING STEEL IS TO BE INCLUDED IN THE PRICE BID FOR THE MANHOLE.

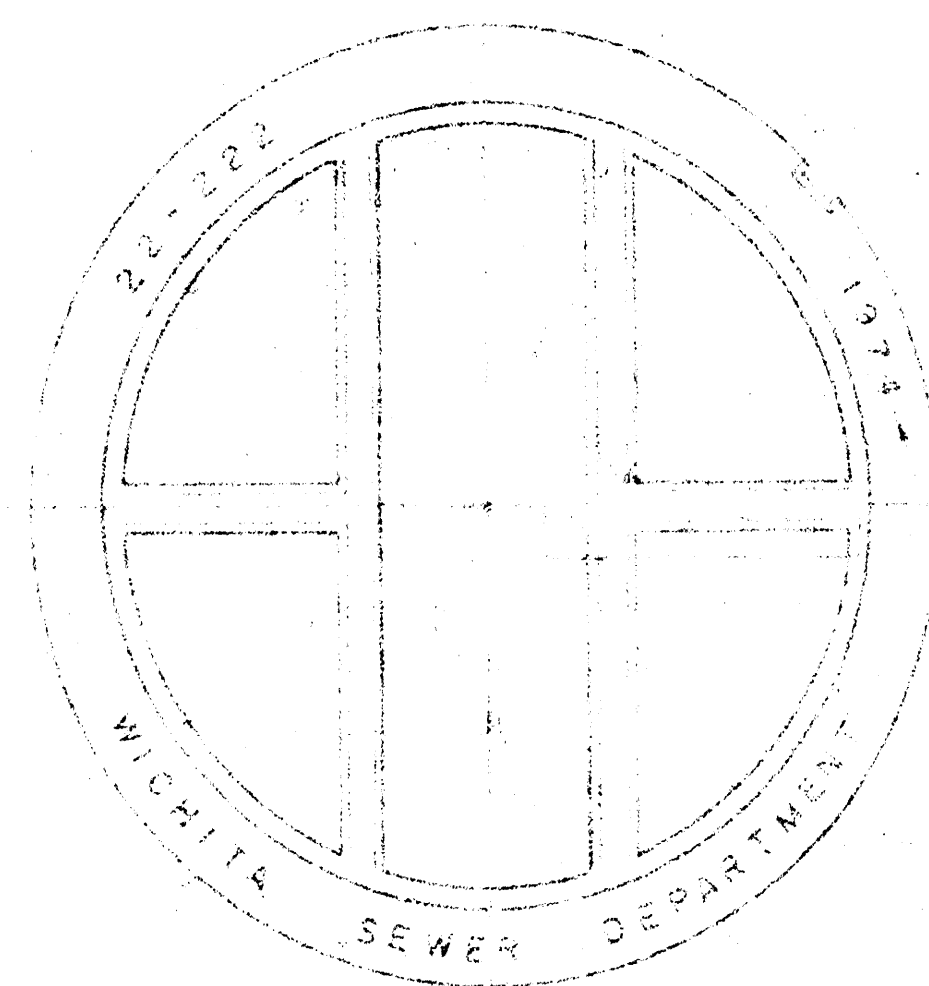


DETAIL OF DROP STACK

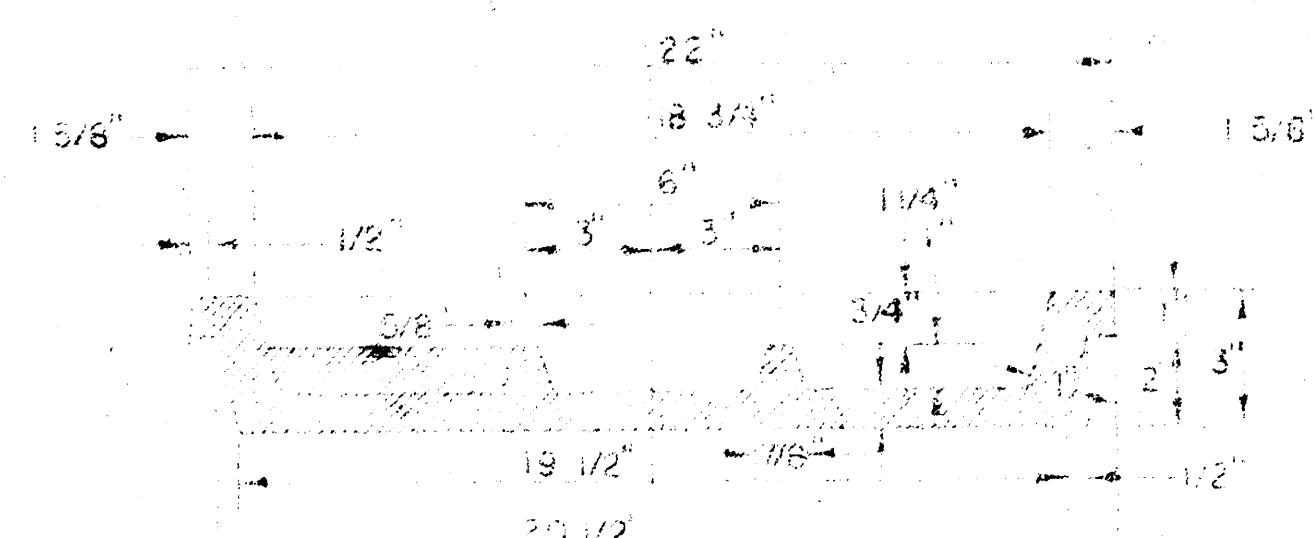
FOR EXISTING MANHOLES IN GROUND WATER

GENERAL NOTES

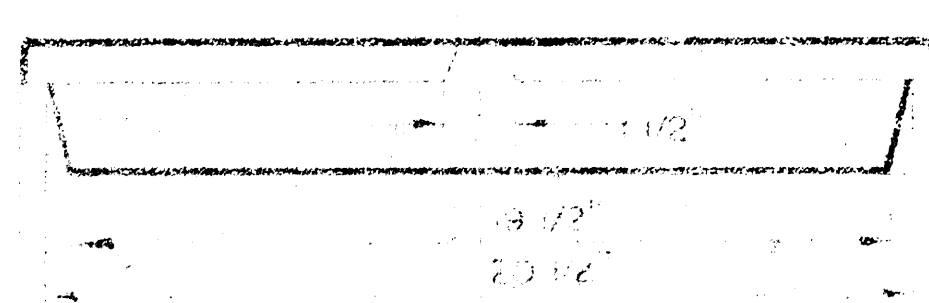
- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD.
- STANDARD MANHOLES TYPE "A" OR TYPE "B" AND STANDARD DROP MANHOLES TYPE "A" OR TYPE "B" SHALL BE 50" AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE 60" AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE. MANHOLES WITH PIPE SIZES LARGER THAN 36" SHALL BE 5' DIAMETER.
- THE FLOORS OF ALL MANHOLES SHALL BE CHAMFERED TO INCREASE HYDRAULIC EFFICIENCY. 8 SACK SAND MIX CONCRETE.
- PILES INSTALLED WITHIN THE MANHOLE EXCAVATION SHALL BE GRADED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. COST OF CRADLE WITHIN MANHOLE EXCAVATION SHALL BE INCLUDED IN THE PRICE BID FOR THE MANHOLE.



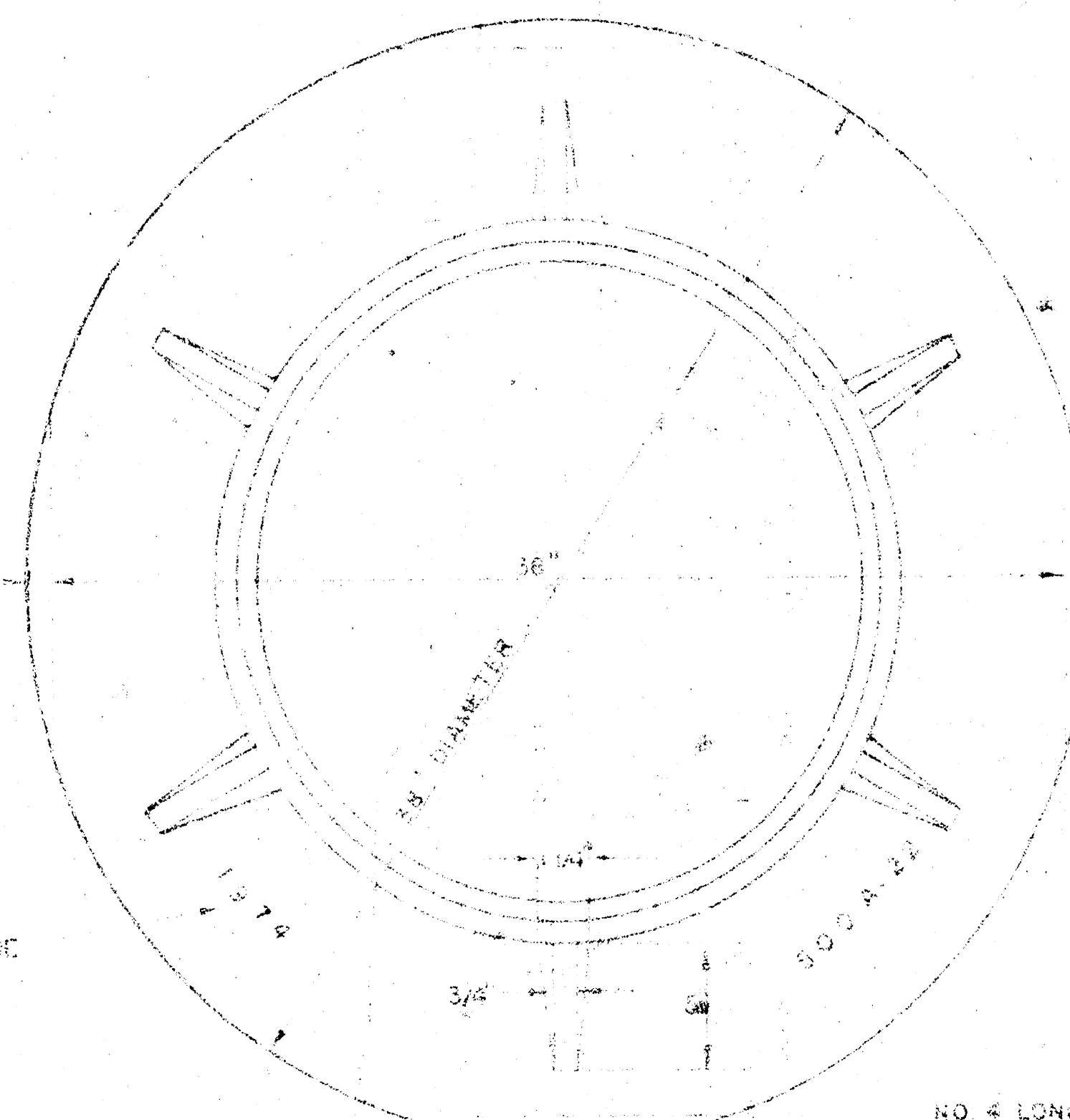
TOP VIEW
MANHOLE COVER
WEIGHT 40 LBS



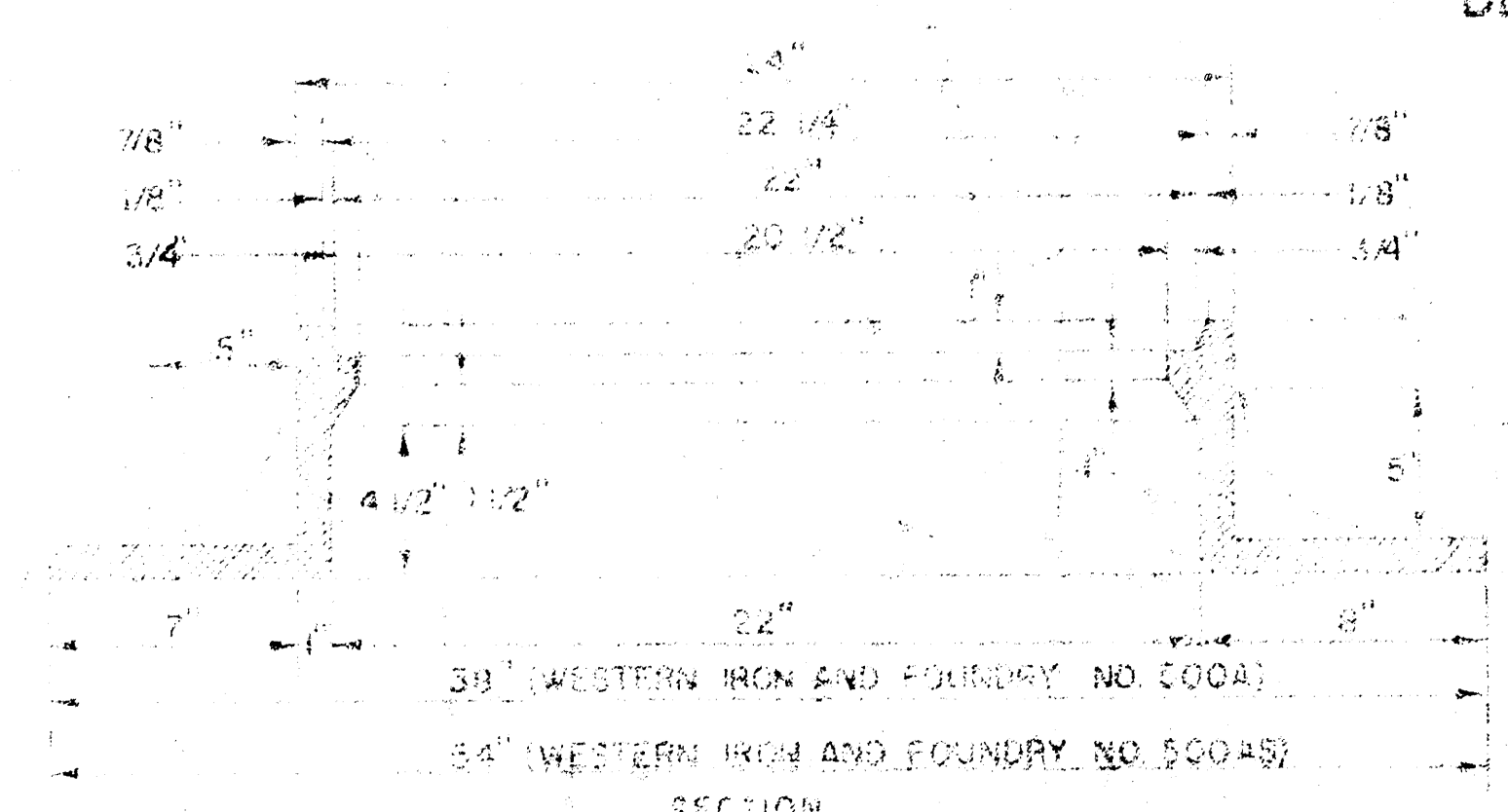
SECTION A-A
MANHOLE COVER



SIDE VIEW
MANHOLE COVER



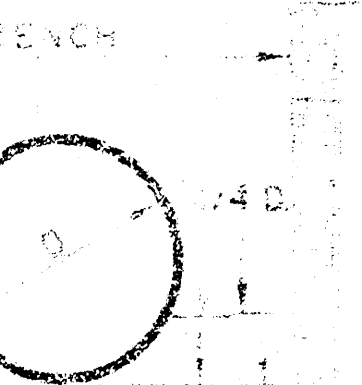
TOP VIEW
MANHOLE RING
WEIGHT 325 LBS. RING NO. 1500A
WEIGHT 600 LBS. RING NO. 500AS



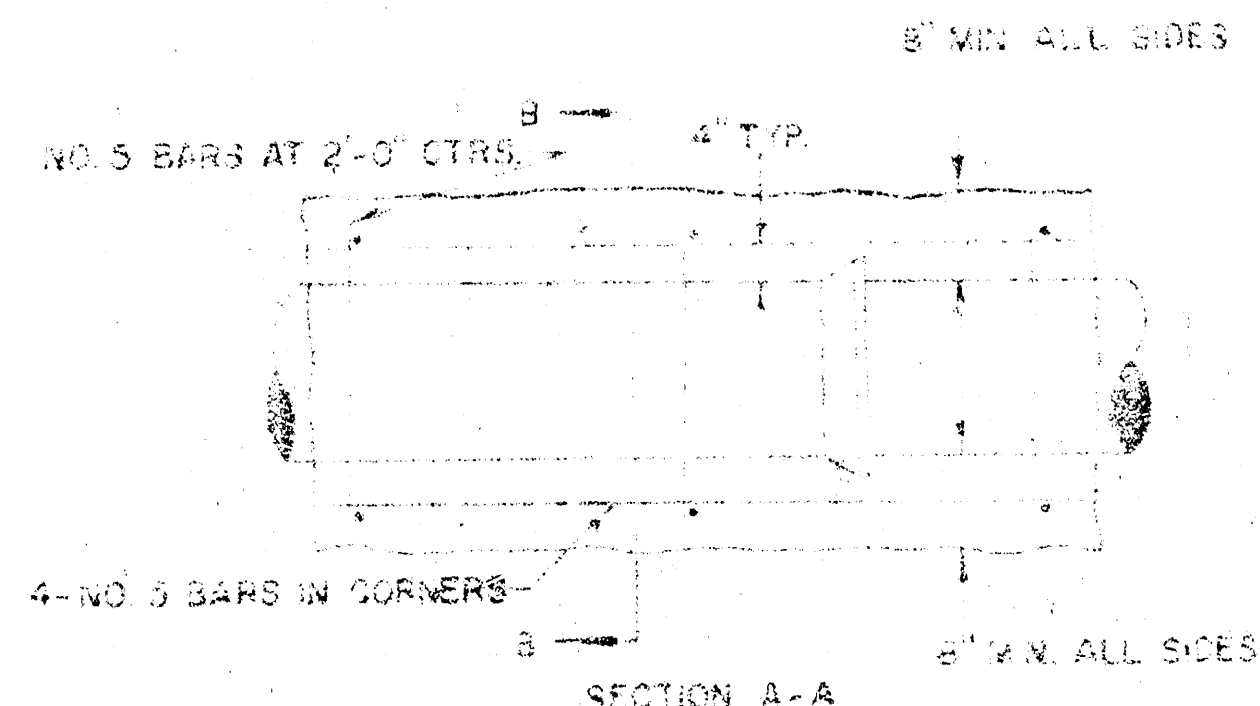
MANHOLE RING

OUTSIDE CIRCUMFERENCE OF COVER AND THE INNER FACE AND SEAT OF RING TO BE MACHINE FIT.

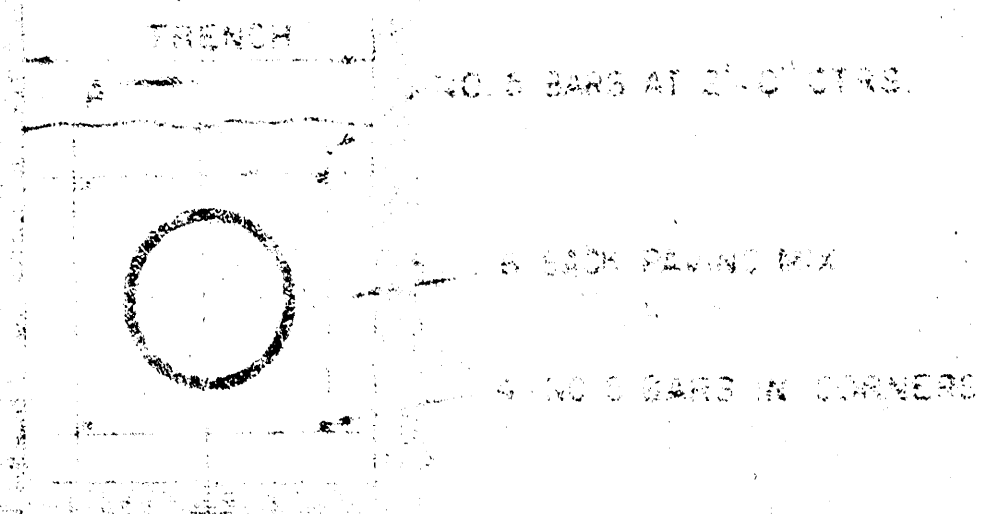
THIS PORTION OF FLANGE MAY BE OMITTED



DETAIL OF CONCRETE CRADLE



SECTION A-A
REINFORCED CONCRETE ENCASUREMENT

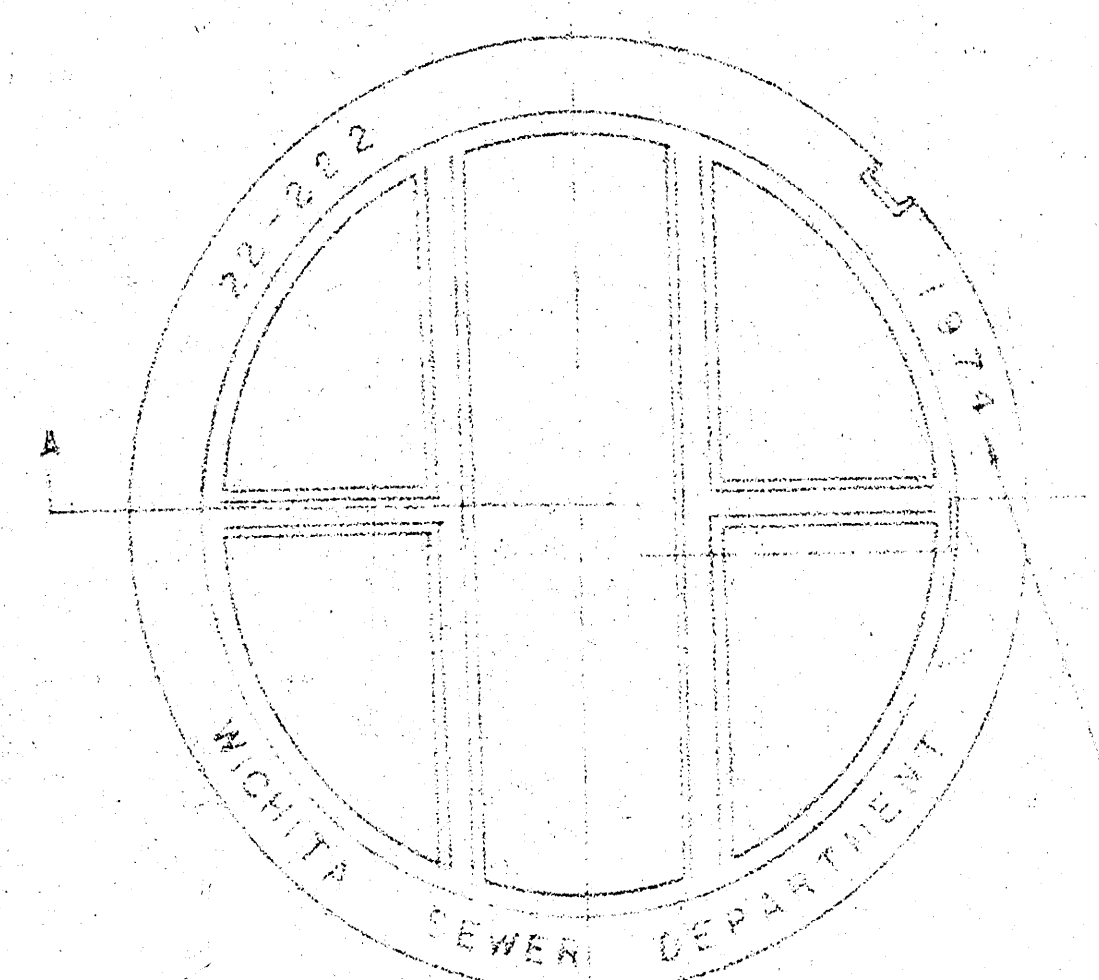
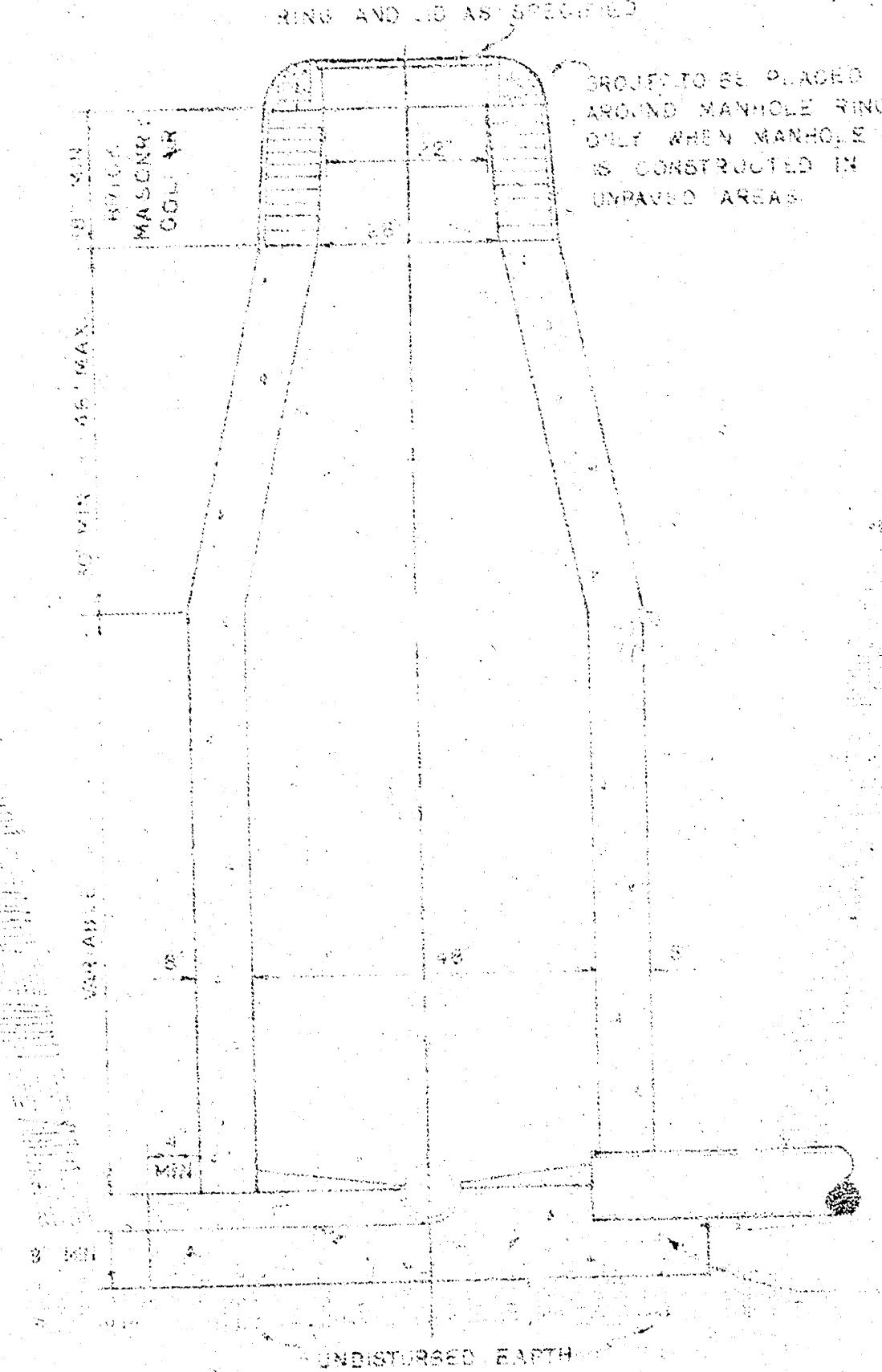


SECTION B-B

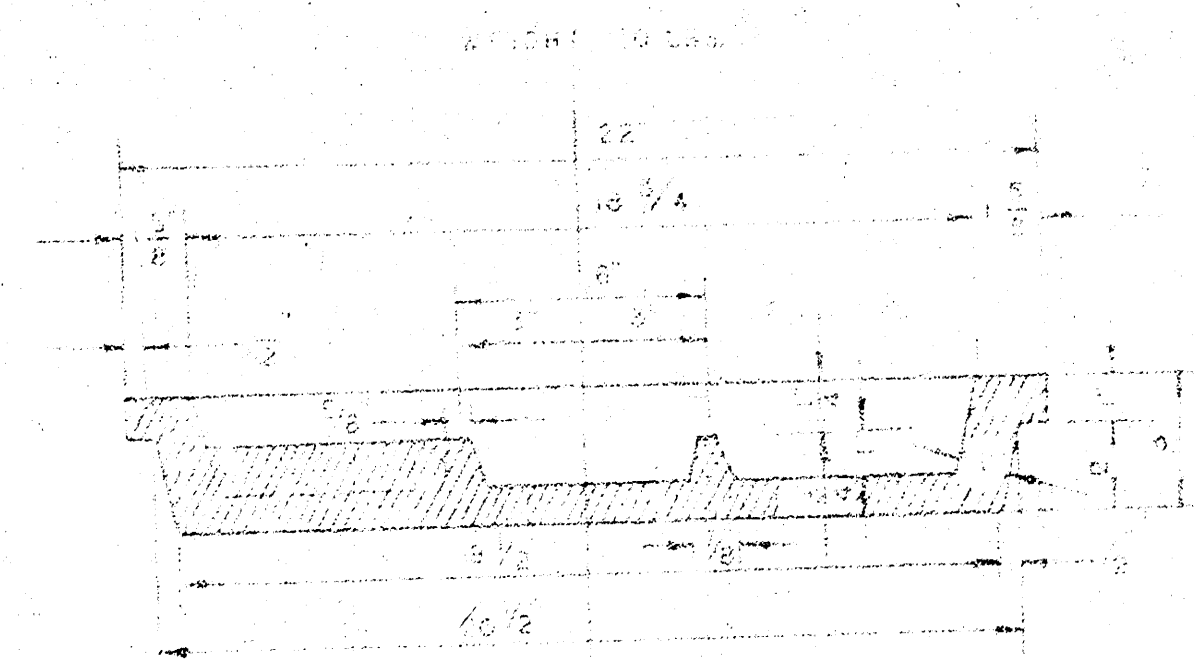
ORDINARY BEDDING METHOD
STORM SEWER PIPE

REVISED 4-13-77
DETAILS OF
SEWER APPURTENANCES
ADOPTED AS STANDARD DESIGN
BY
ENGINEERING DIVISION
CITY OF WICHITA, KANSAS
R. W. LING CITY ENGINEER
1974

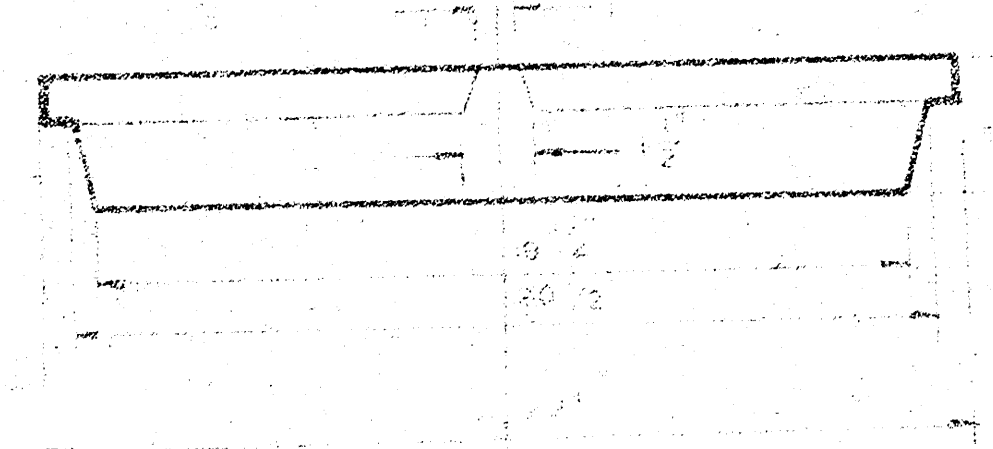
STANDARD MANHOLE, TYPE "C"



MANHOLE COVER

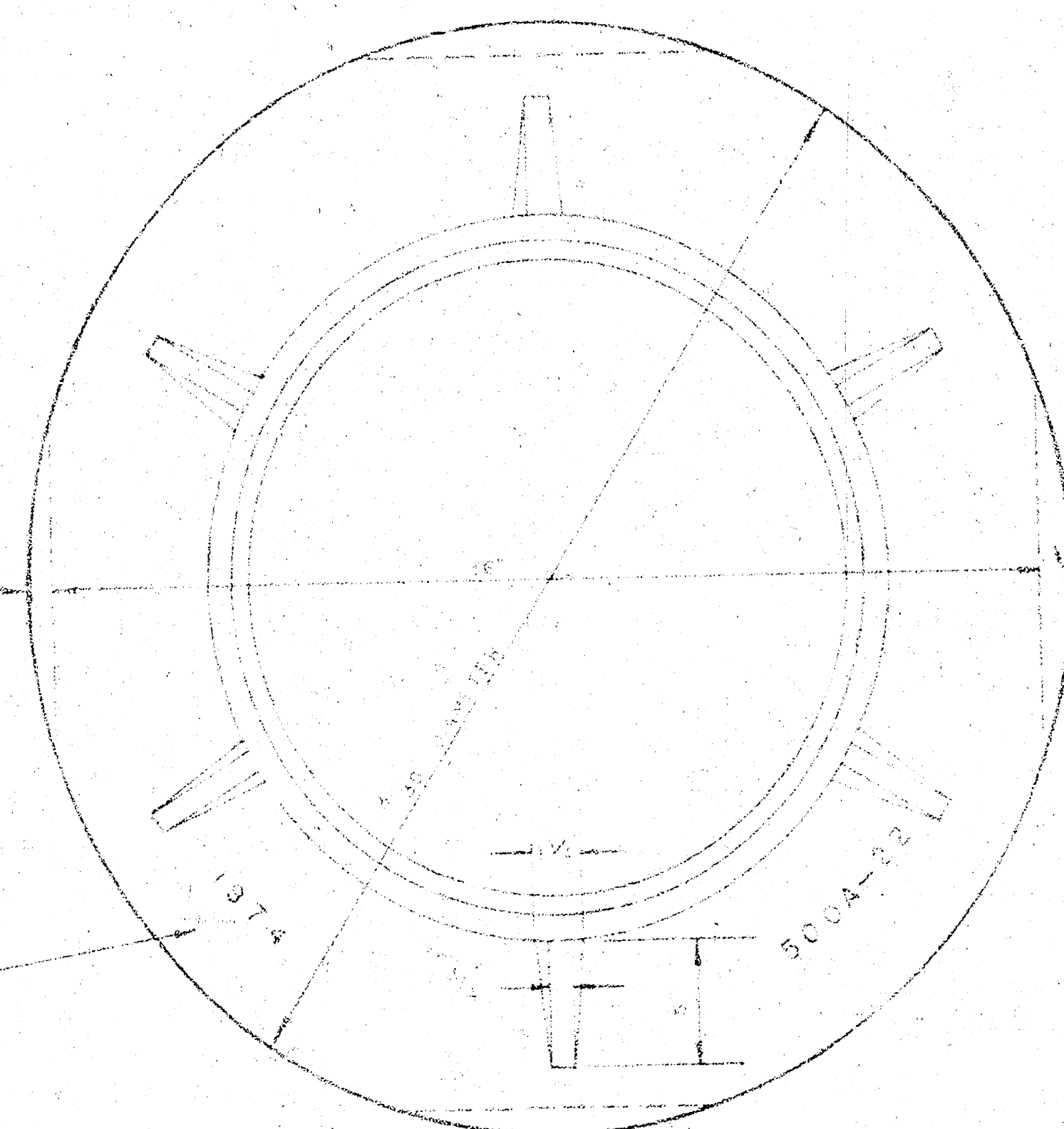
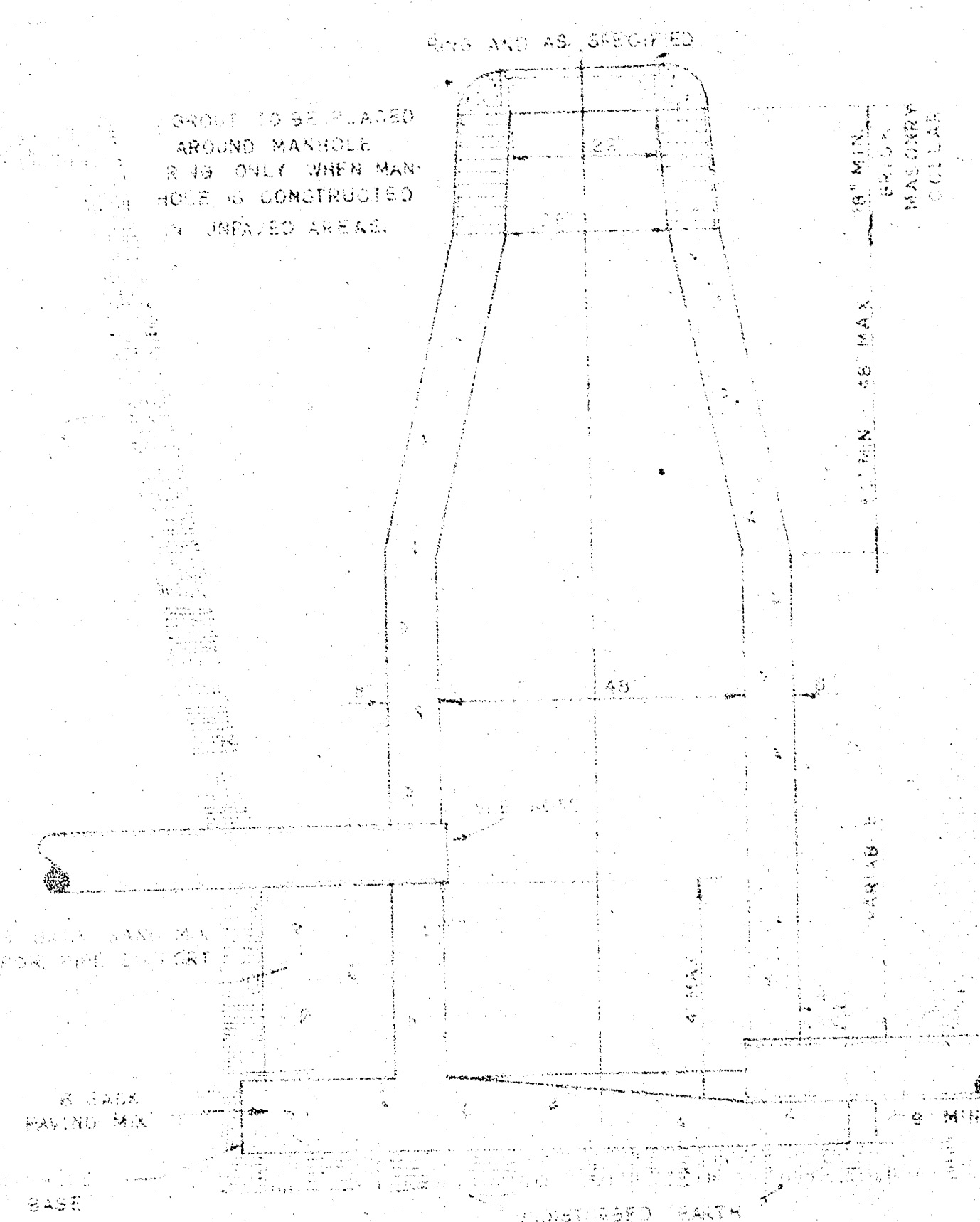


MANHOLE COVER

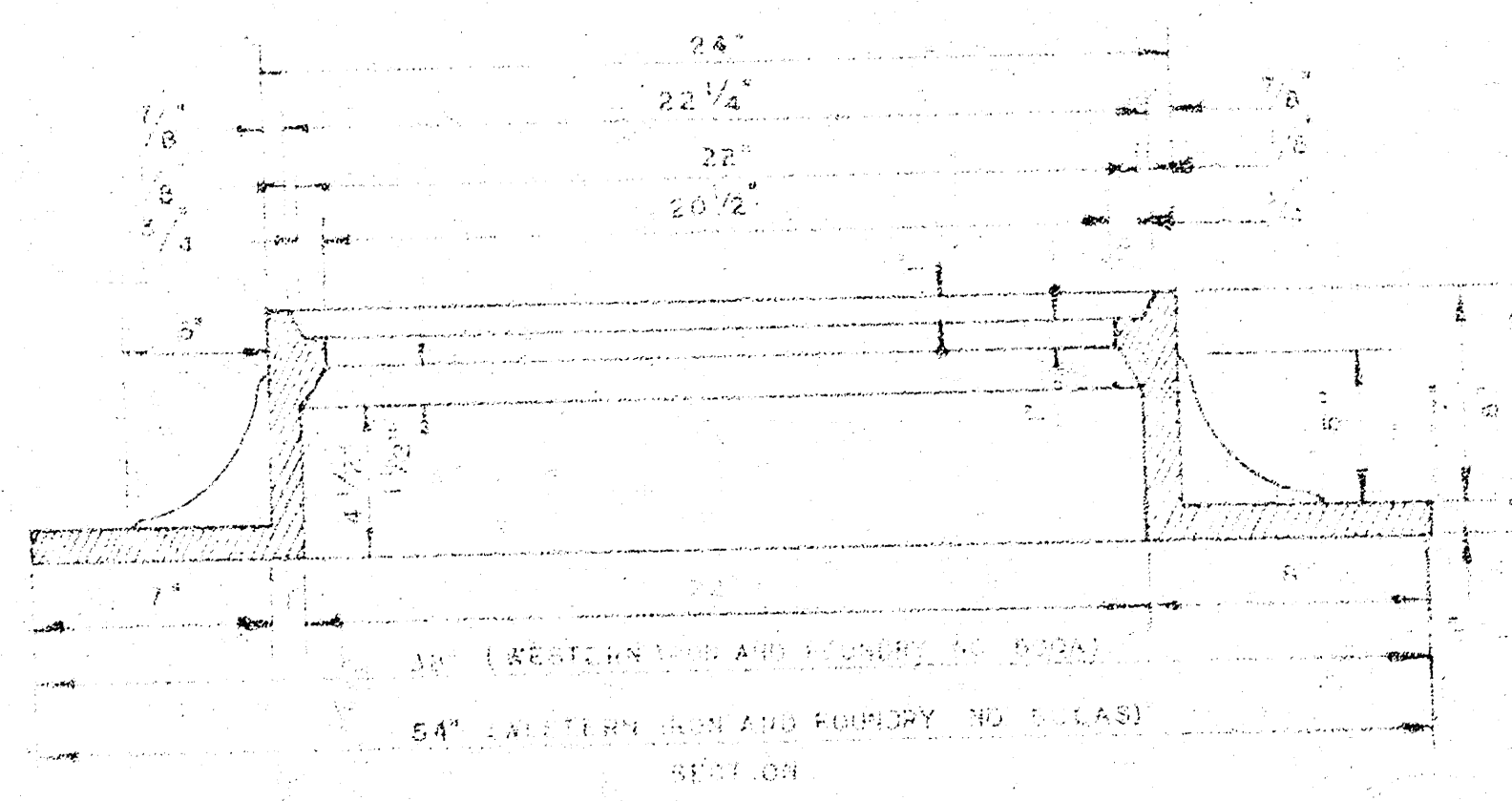


MANHOLE COVER

DROP MANHOLE, TYPE "C"

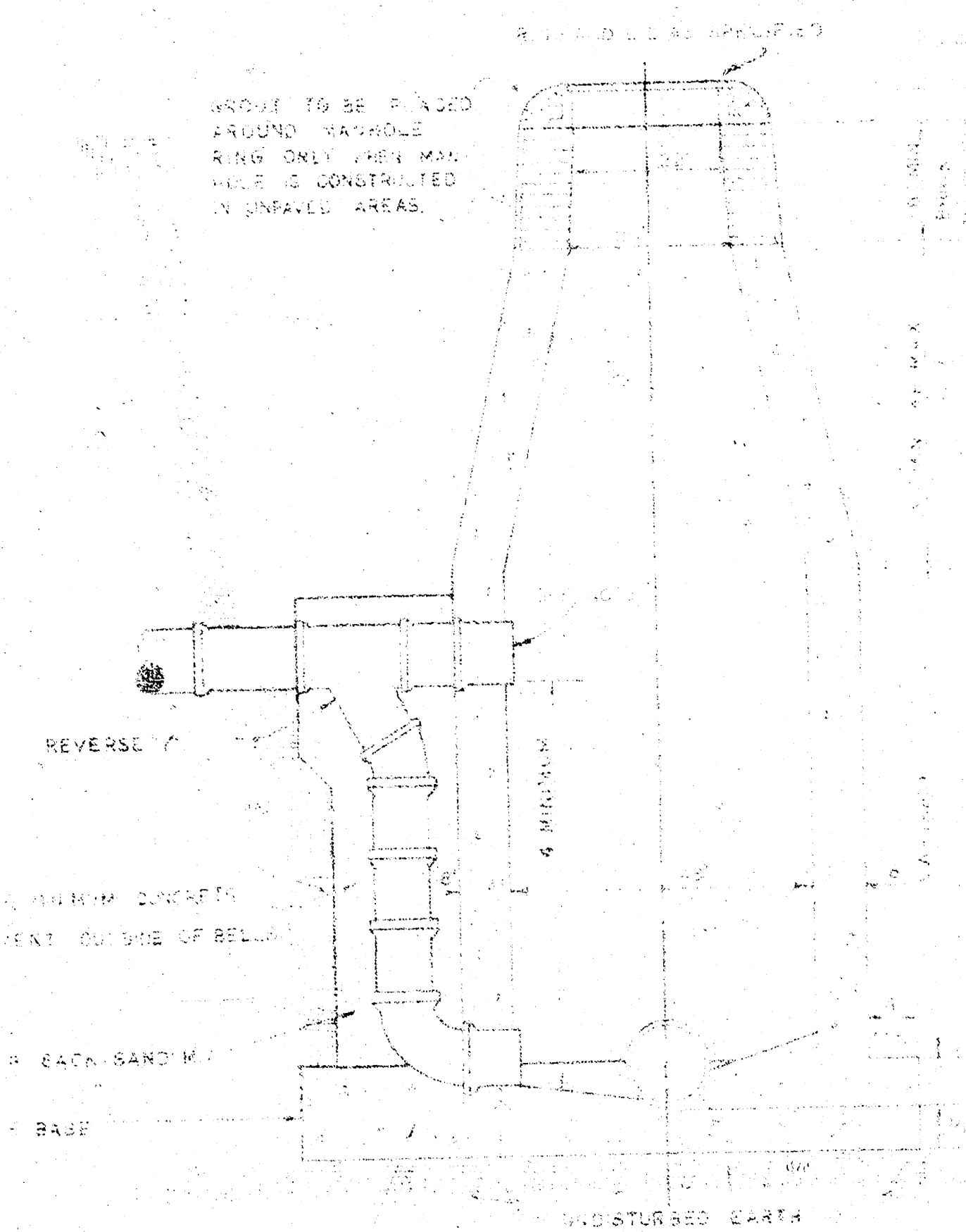


MANHOLE RING

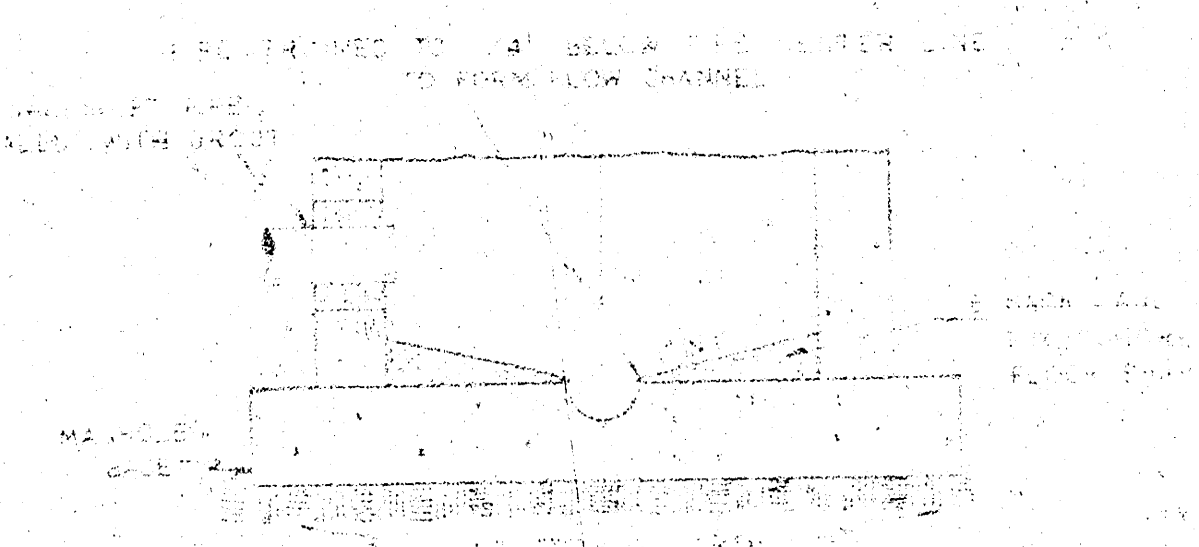


MANHOLE RING

OUTSIDE DROP MANHOLE, TYPE "C"



NOTE: REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES 6" ABOVE THE BOTTOM. REINFORCING STEEL SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE COST OF REINFORCING STEEL IS TO BE INCLUDED IN THE PRICE BID FOR THE MANHOLE.



SECTIONAL ELEVATION-INVERT

NOTE: OPENING FOR INLET PIPE CUT IN MANHOLE WALL AND PIPE GROUTED IN PLACE WITH NON-SHRINKING GROUT. EXTERIOR OF COMPLETED CONNECTION TO BE SEALED WITH APPROVED COATING.

GENERAL NOTES

WORKMAN USED IN MANHOLE CONSTRUCTION SHALL CONTAIN 5 BAGS OF CEMENT PER CUBIC YARD.

STANDARD MANHOLES TYPE "C" AND STANDARD DROP MANHOLES TYPE "C" SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED.

ALL TYPE DROP MANHOLES TYPE "C" SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 48" UNLESS INDICATED OTHERWISE. MANHOLES WITH PIPE SIZES LARGER THAN 24" SHALL BE 60" DIAMETER.

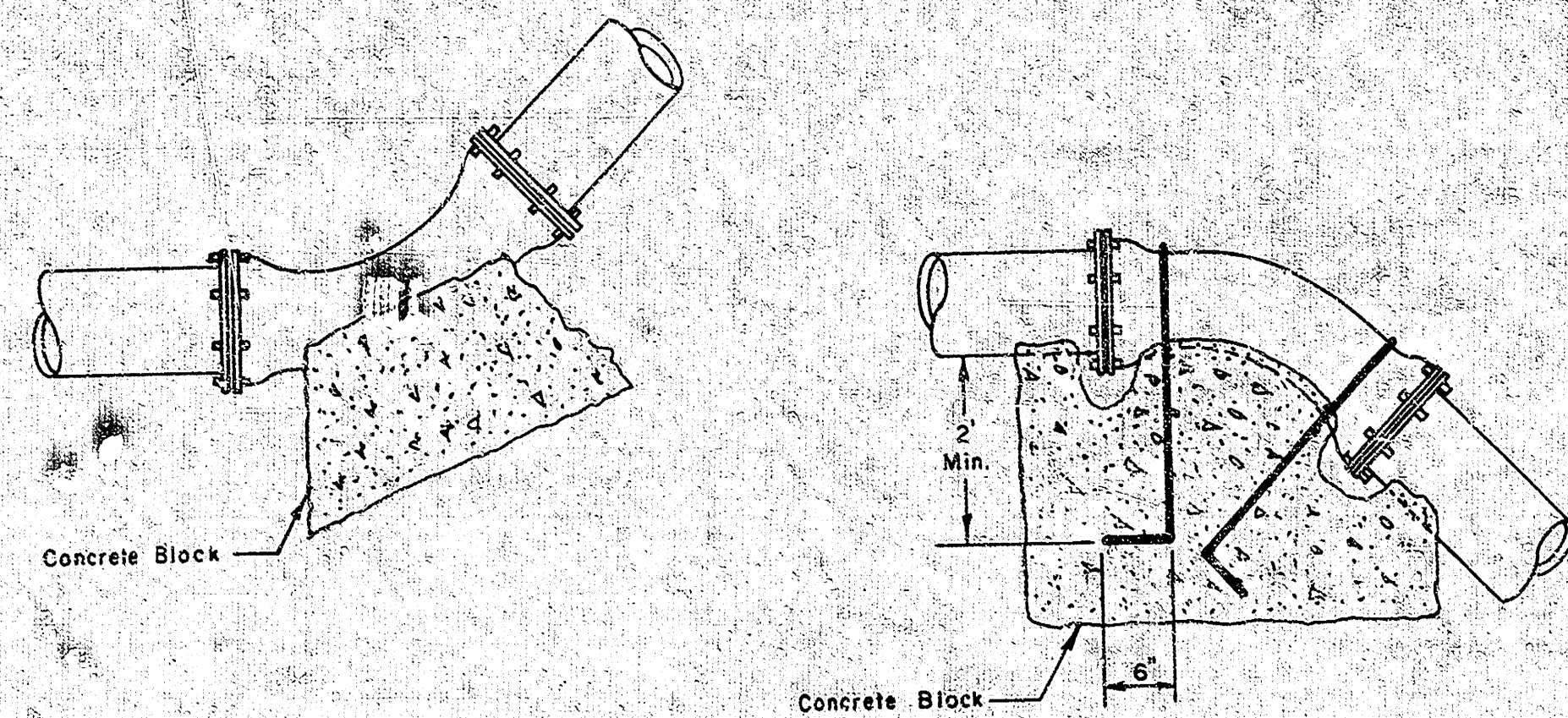
THE FLOORS OF ALL MANHOLES SHALL BE CHAMFERED TO INCREASE HYDRAULIC EFFICIENCY USING A SAND AND MIX CONCRETE.

CAST IN PLACE, CIRCULAR CONCRETE MANHOLES ARE TO BE CONSTRUCTED ONLY ON SEWERS NOT SUBJECT TO DETRIORATION OF CONCRETE DUE TO FORMATION OF HYDROGEN SULFIDE GAS AND IN LOCATIONS WHERE IT IS DEEMED THAT ANY ADJUSTMENT OF THE MANHOLE FOR ELEVATION WHICH MAY BE NECESSARY WILL NOT REQUIRE INDICATION OF THE CONCRETE BARREL.

PIPES INSTALLED WITHIN THE MANHOLE EXCAVATION SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. COST OF CRADLE WITHIN MANHOLE EXCAVATION SHALL BE INCLUDED IN THE PRICE BID FOR THE MANHOLE.

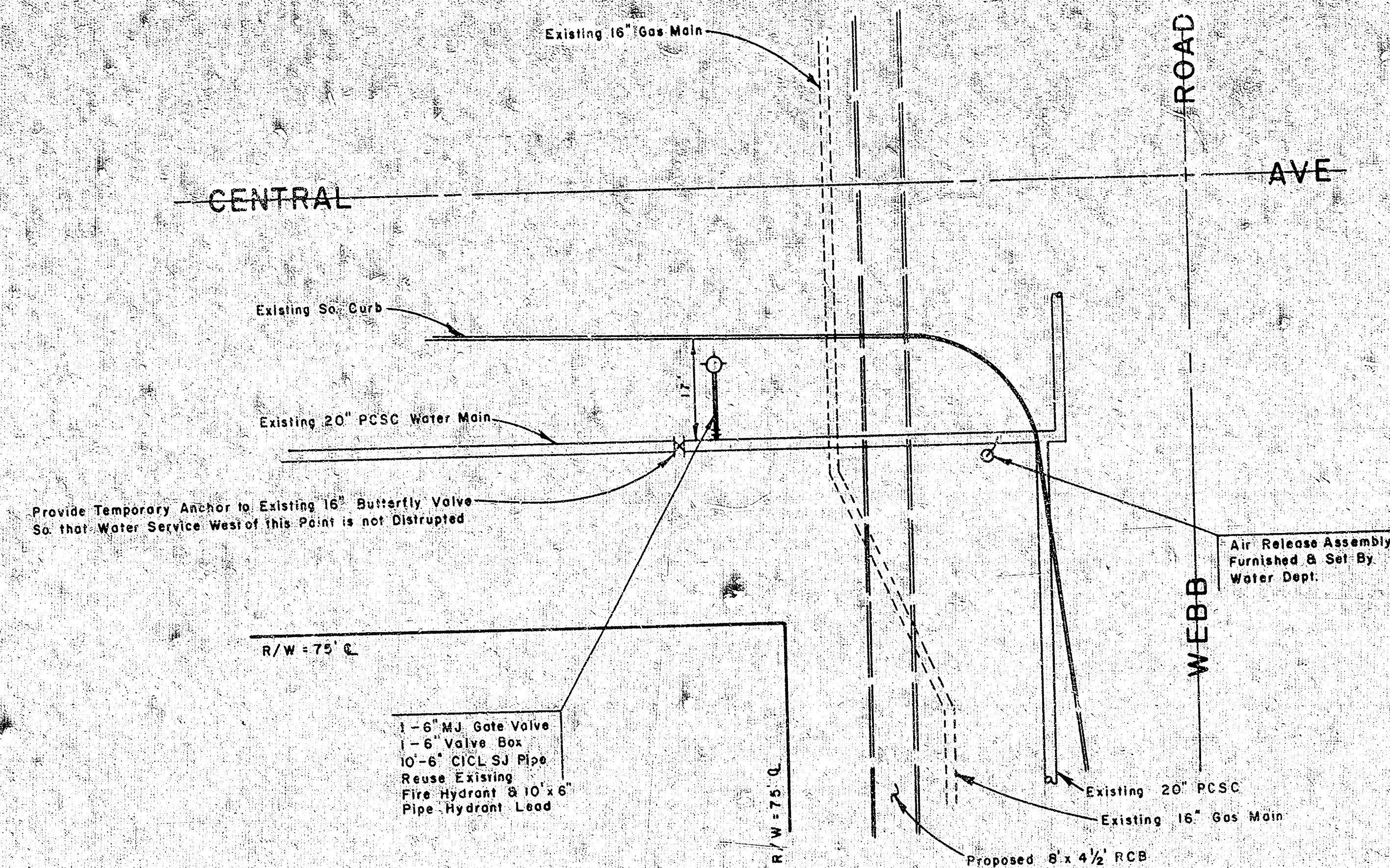
REVISED 4-13-37

DETAILS OF
SEWER APPURTENANCES
ADOPTED AS STANDARD DESIGN
BY
ENGINEERING DIVISION
CITY OF WICHITA, KANSAS
R. W. LINN CITY ENGINEER
1974



PIPE SIZE	THRUST AT FITTINGS IN TONS AT 150 PSI IN 2' P					
	PLUG	90°	45°	22 1/2°	11 1/4°	TEE
6"	2.8	3.95	2.15	1.09	.55	2.8
8"	4.9	6.95	3.75	1.90	.96	4.9
12"	11.4	16.1	8.75	4.45	2.25	11.4
16"	20.15	28.5	15.4	7.85	3.95	20.15
20"	31.15	44.0	23.85	12.15	6.1	31.15
24"	44.55	63.0	34.1	17.4	8.75	44.55

TYPICAL THRUST BLOCK

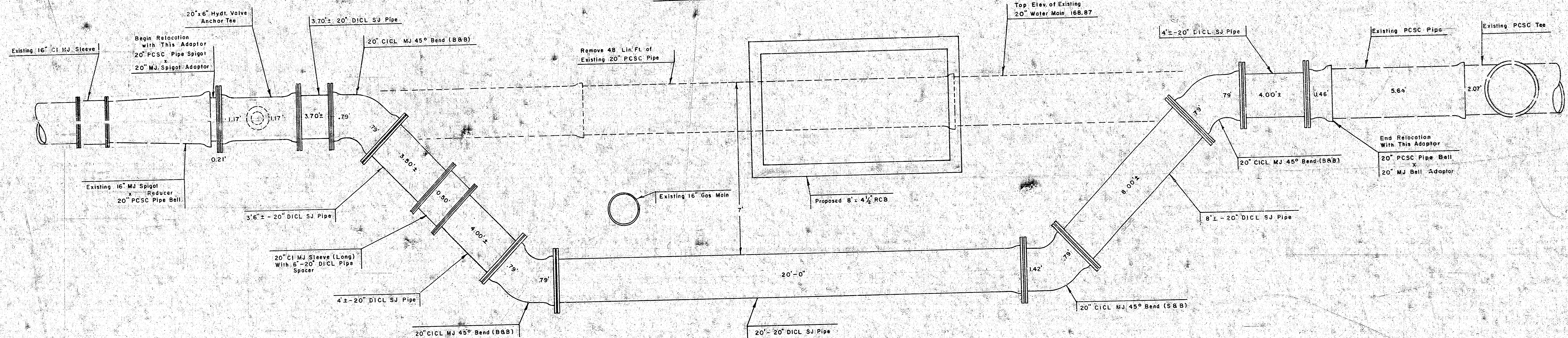


PLAN

Scale 1" = 20'

SPECIFICATIONS

1. All Materials and Labor required in the lowering or relocating of existing water Dept. facilities will be furnished and installed by the Contractor in accordance with Standard Specifications for Materials and Installation of Water Pipe on File in Water Department Engineering Office.
2. All Cast Iron or Ductile Iron pipe and fitting shall be securely wrapped with 8mil. thickness polyethylene film and sand encased with 6-inch minimum on all sides of the pipe.
3. Concrete reaction or thrust backing shall be applied of bends and offsets. The size and shape of concrete thrust backing shall be per details this sheet.
4. Ductile Iron Pipe shall be thickness Class 51 and will be cut to exact length or spacer rings cut from the same diameter pipe will be used to remove any slack in the new pipe and fitting.



ELEVATION

Scale 1" = 2'

SPECIAL NOTE:

It is imperative that the Contractor coordinate shutdown of 20" line with Water Dept. so that the curtailment of Service to Beech Aircraft Company can be minimized.

Special Note:

P.C.S.C. Pipe is abbreviation for Prestressed Concrete Steel Cylinder Pipe.

CITY OF WICHITA ENGINEERING DIVISION			
DRAWN	T.W.F.	SCALE	DATE
CHECKED			
APPROVED			
DATE	12-5-77		
TITLE: Lowering of 20" Water Main on South Side of Central Ave. West of Webb Road To Clear New Storm Sewer Box			Nb. 6ETW718301