

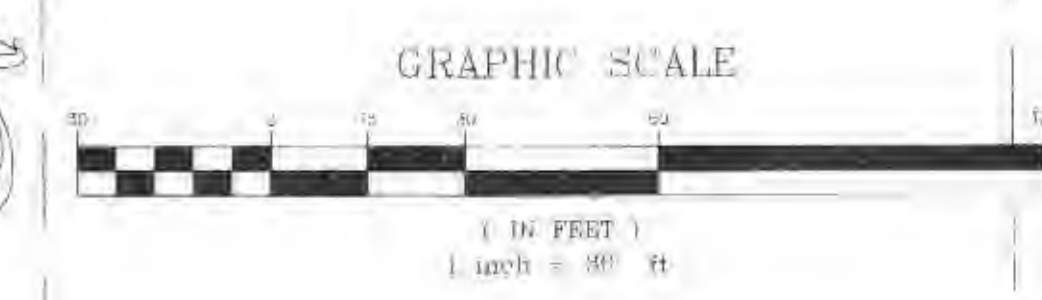




N/F  
THEELE, ROY R.  
& MADONNA J.  
(D.B. 1025/PG. 676)  
ZONED R-1C

N/F  
WOODS, T. PAULINE  
JIMMIE L. & RANDALL N.  
(D.B. 746/PG. 1332)  
ZONED R-1C

SCHMUCKER SUBDIVISION  
(P.B. 5/PG. 15)  
BLOCK 2  
ZONED C-3  
PROPOSED 30' WIDE  
LANDSCAPE BUFFER



OAKLEY (50' W) LANE  
26' WIDE CONCRETE PAVEMENT  
PUBLIC ROAD

N00°43'48"W 446.62'

S86°17'22"E 900.50'

HOMESHIRE CIRCLE (PRIVATE)  
(25' WIDE PAVEMENT)

HOMESHIRE COURT (PRIVATE)  
(26' WIDE PAVEMENT)

COMMON GROUND

STONECREST DEVELOPMENT 80  
P.B. 38 PGS. 315-316  
ZONED PD (CITY OF LAKE ST. LOUIS)

CITY OF LAKE ST. LOUIS  
BOOK 889 PAGE 1001  
ZONED PD (CITY OF LAKE ST. LOUIS)



ENG-2003-022A

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.

C:\pwworking\0100-1100-01\DWG\11404.dwg 11/10/03 10:00:00 AM





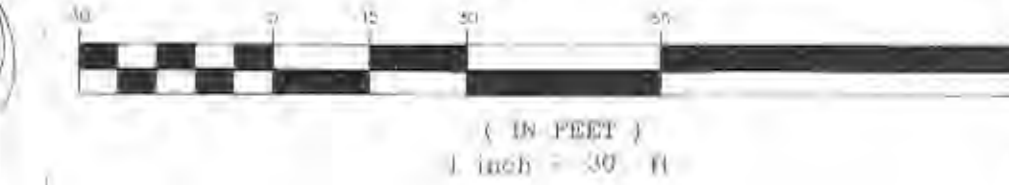


A/P  
THOLE, ROY R.  
& MADONNA J.  
(D.B. 1025/PG. 676)  
ZONED R-1C

N/P  
WOODS, T. PAULINE  
JIMMIE L. & RANDALL N.  
(D.B. 746/PG. 1332)  
ZONED R-1C

SCHMUCKER SUBDIVISION  
(P.B. 5/PG. 15)  
LOT 5  
BLOCK 2  
ZONED C-3

GRAPHIC SCALE



OAKLEY (50' W) LANE  
PUBLIC ROAD

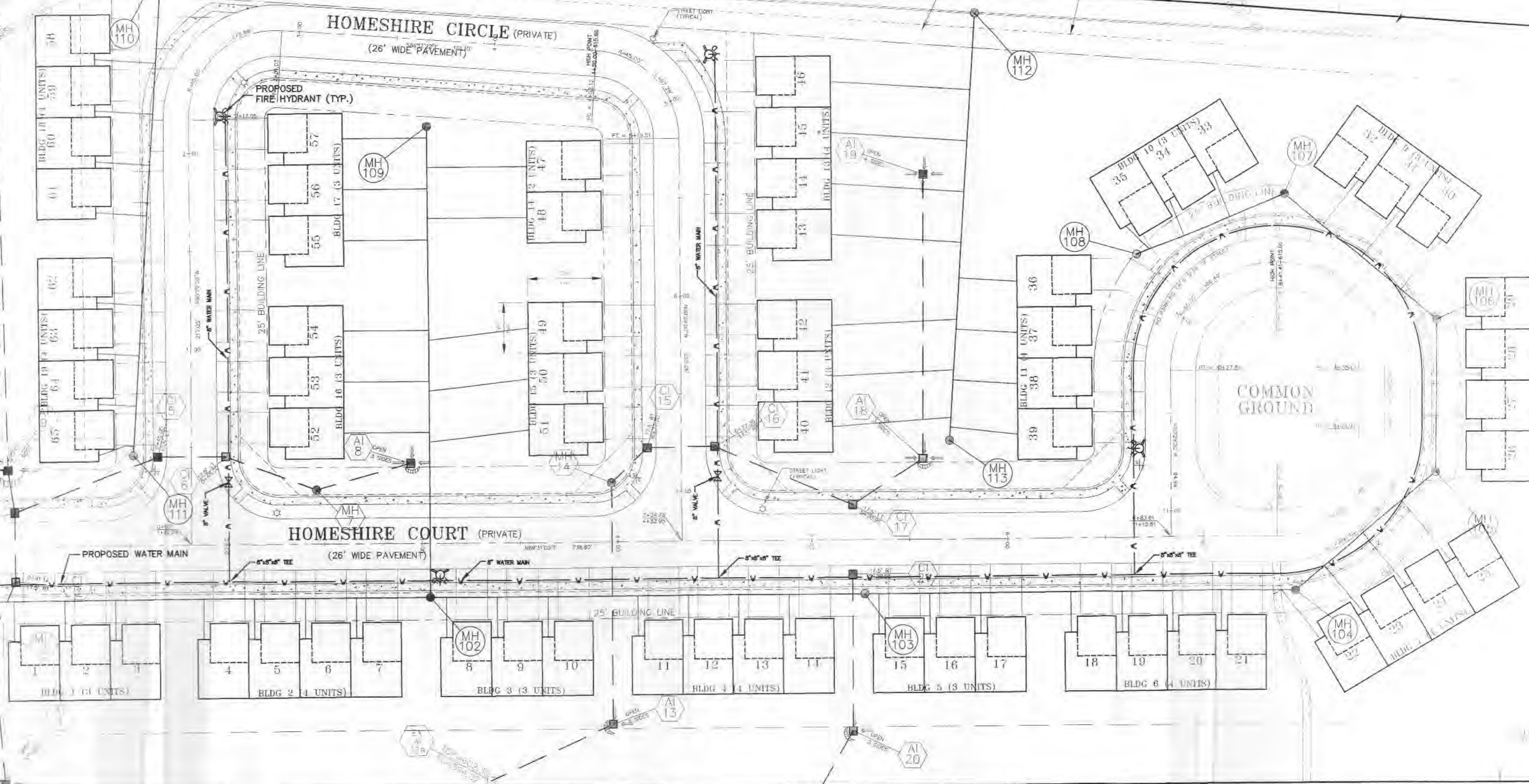
N00°43'48"W 446.62'

HOMESHIRE CIRCLE (PRIVATE)  
(26' WIDE PAVEMENT)

PROPOSED FIRE HYDRANT (TYP.)

HOMESHIRE COURT (PRIVATE)  
(26' WIDE PAVEMENT)

COMMON GROUND



S89°31'00"W 896.63'

STONECREST DEVELOPMENT  
P.B. 38 PGS. 315-316  
ZONED PD (CITY OF LAKE ST. LOUIS)

CITY OF LAKE ST. LOUIS  
BOOK 869 PAGE 1300  
ZONED PA (CITY OF LAKE ST. LOUIS)

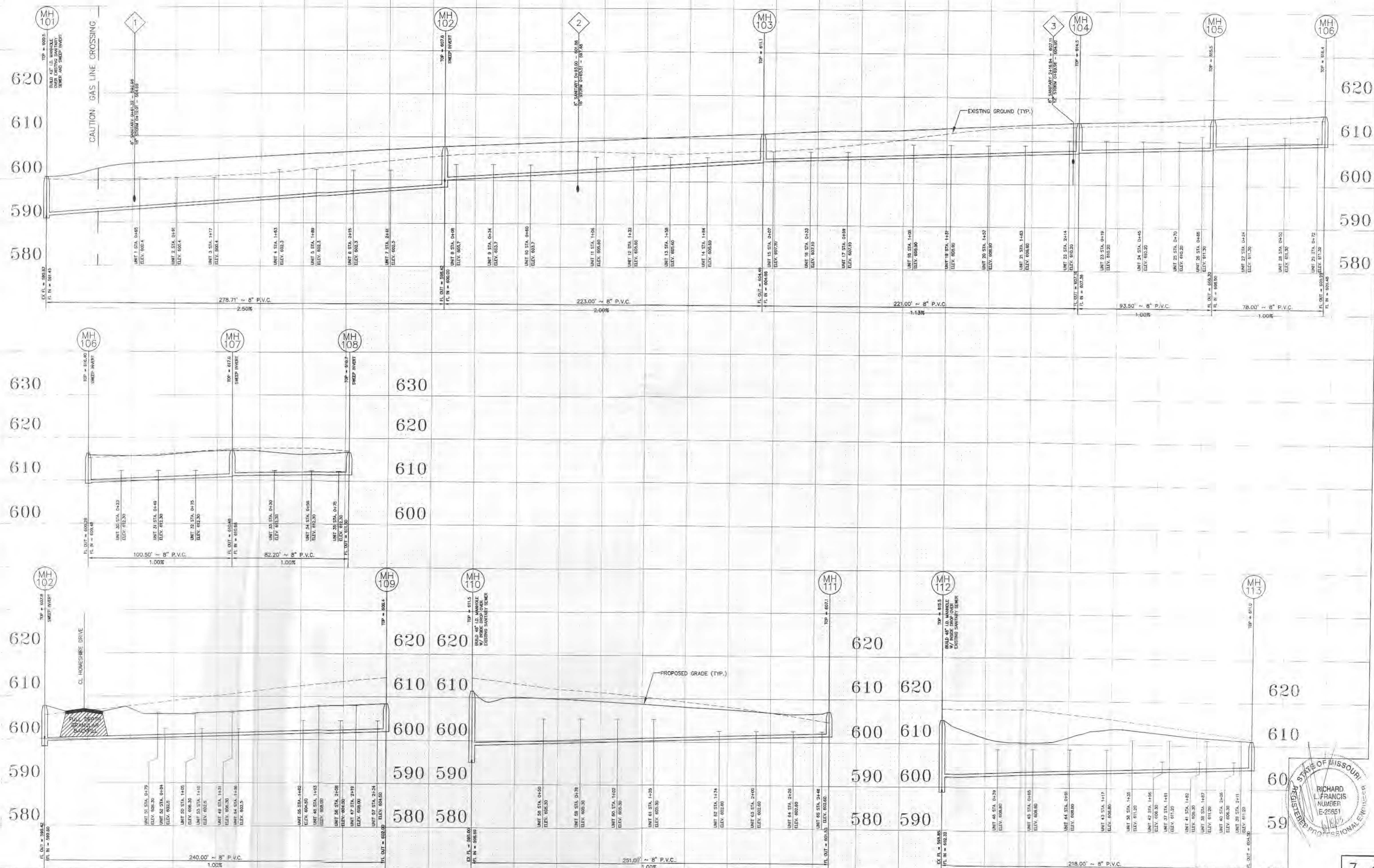
STATE OF MISSOURI  
REGISTERED PROFESSIONAL ENGINEER  
RICHARD L. FRANCIS  
NUMBER E-25661  
1/16/03

ENG-2003-022A

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.

SUNSHINE PROPERTIES II, L.L.C. 380.77'





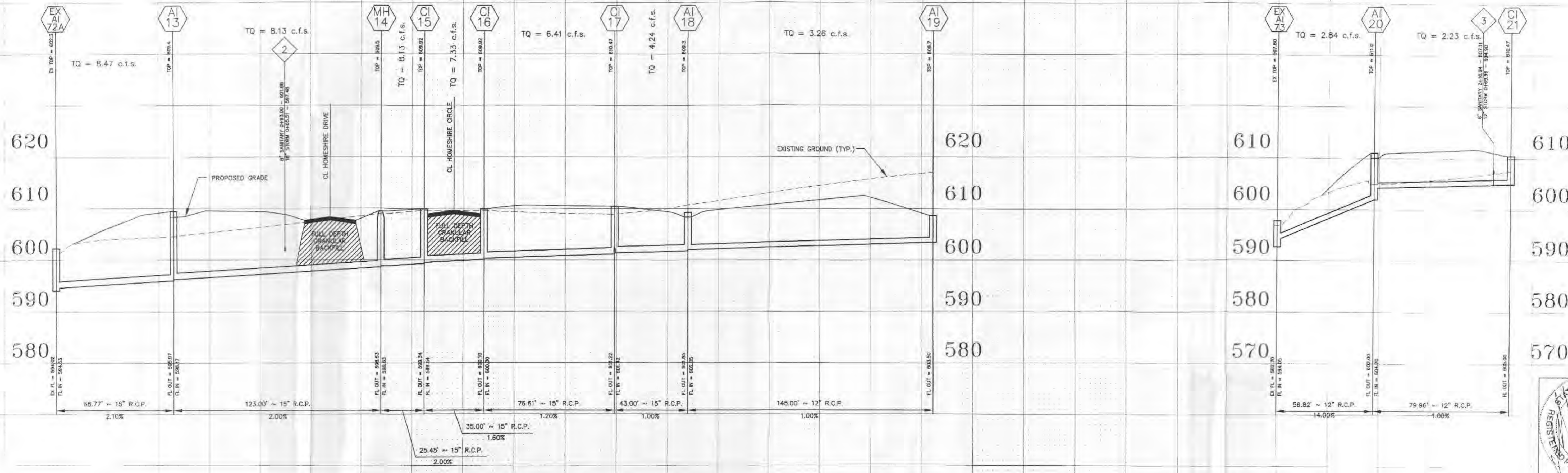
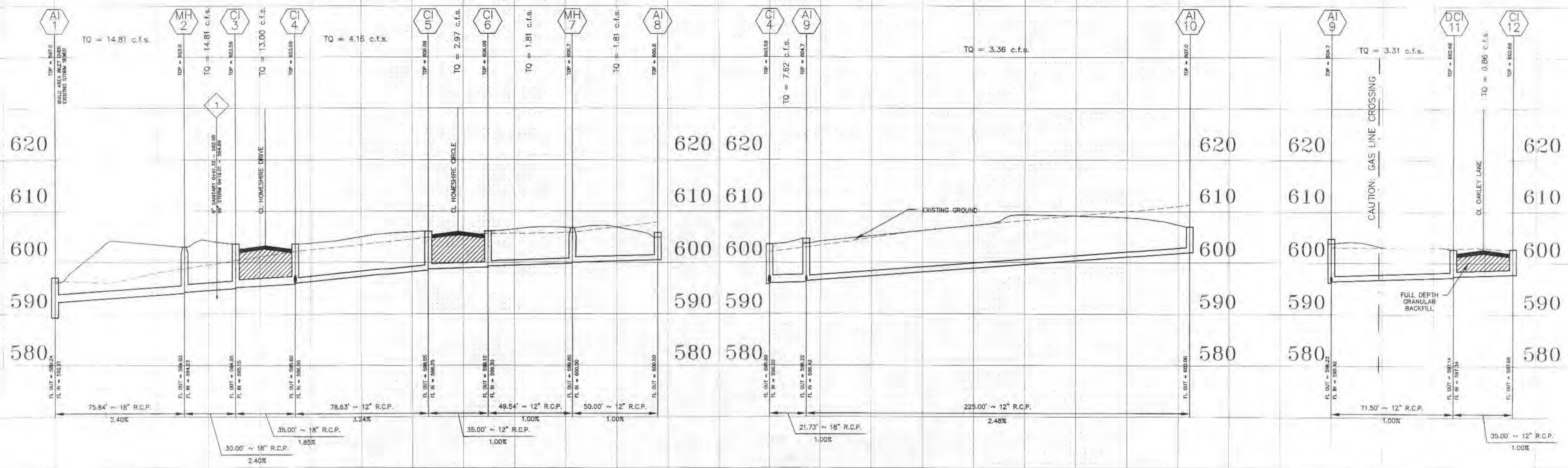
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ALL SANITARY SEWER LATERAL TAILSTAKE ELEVATIONS HAVE BEEN DESIGNED FOR NO BASEMENT POUR IN HOMES WITH THE TOP OF FOUNDATION ELEVATION BEING SET A MINIMUM OF 8" ABOVE GRADED PAD ELEVATION.

ENG-2003-022A







UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.

ENG-2003-022A

SCALE VERTICAL 1"=10'  
 HORIZONTAL 1"=30'





GRAPHIC SCALE

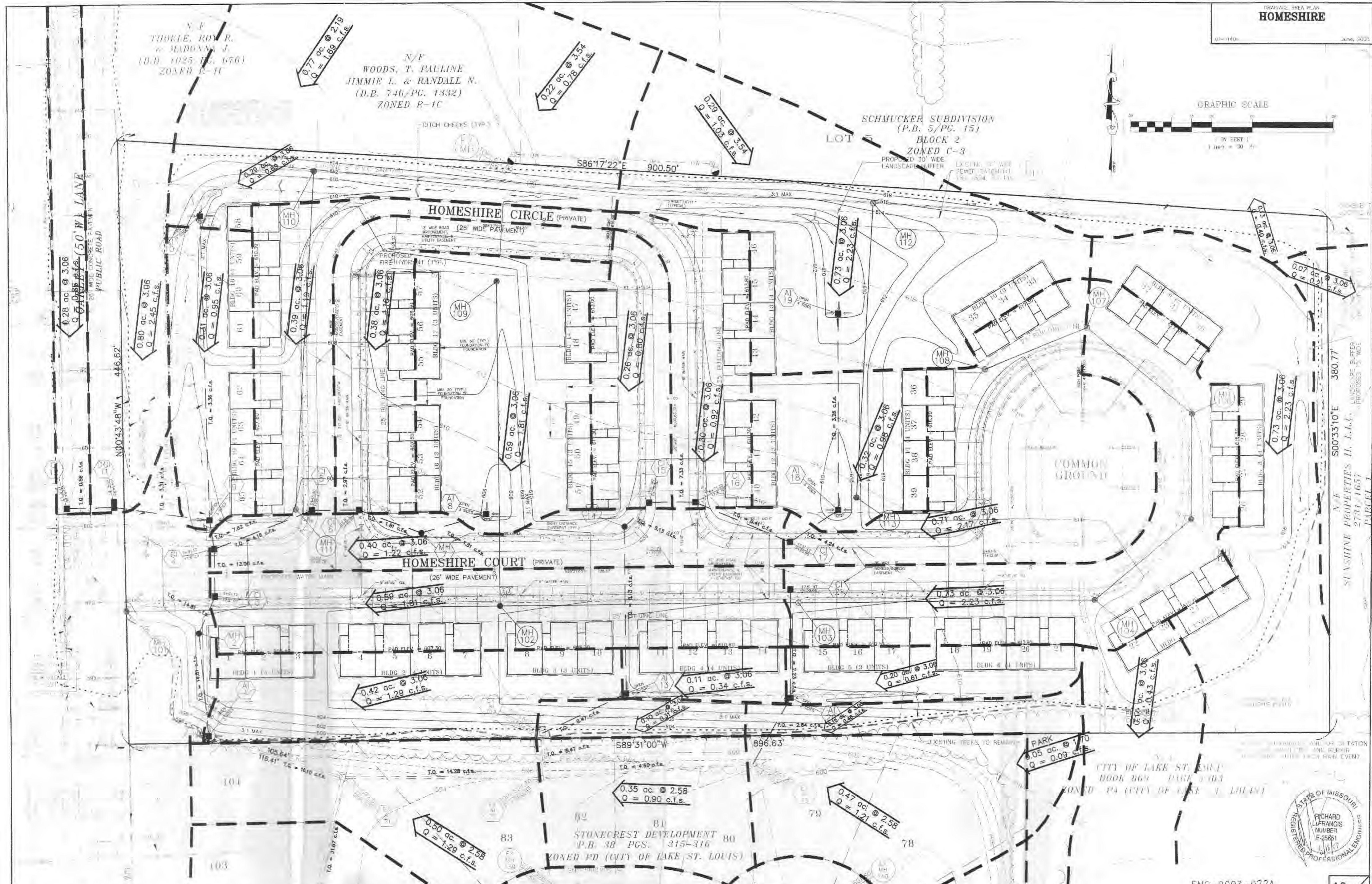


N/F  
THORLE, ROY P.  
& MADONNA J.  
(D.B. 1025 PG. 670)  
ZONED R-1C

N/F  
WOODS, T. PAULINE  
JIMMIE L. & RANDALL N.  
(D.B. 746/PG. 1332)  
ZONED R-1C

SCHMUCKER SUBDIVISION  
(P.B. 5/PG. 15)  
BLOCK 2  
ZONED C-3

N/F  
SUNSHINE PROPERTIES II, L.L.C.  
2781/1657  
PARCEL 1



CITY OF LAKE ST. LOUIS  
BOOK 869 PAGE 303  
ZONED PA (CITY OF LAKE ST. LOUIS)

STONECREST DEVELOPMENT  
P.B. 38 PGS. 315-316  
ZONED PD (CITY OF LAKE ST. LOUIS)

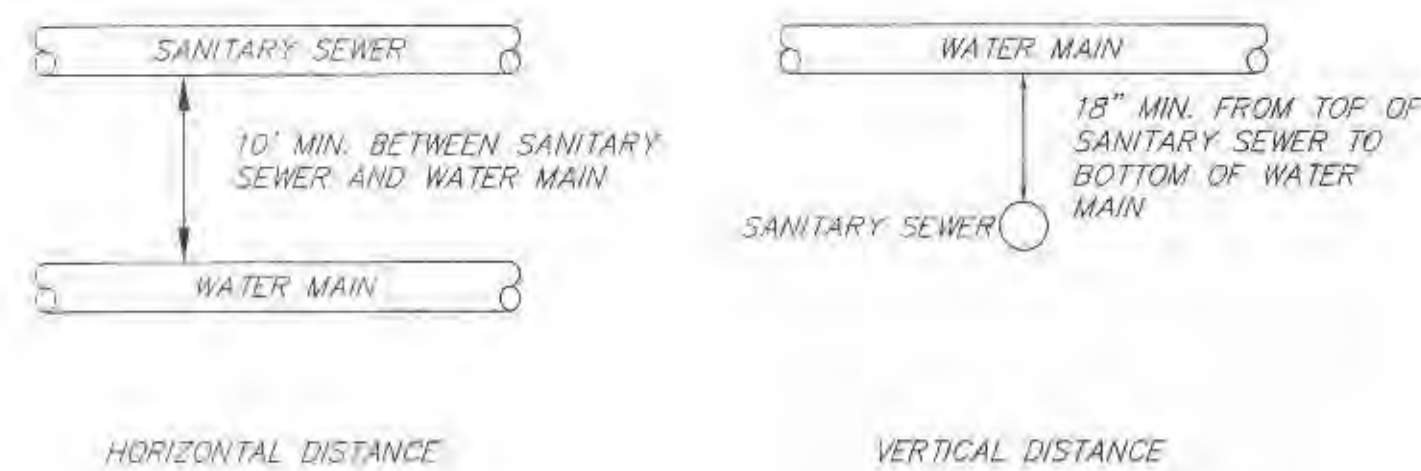
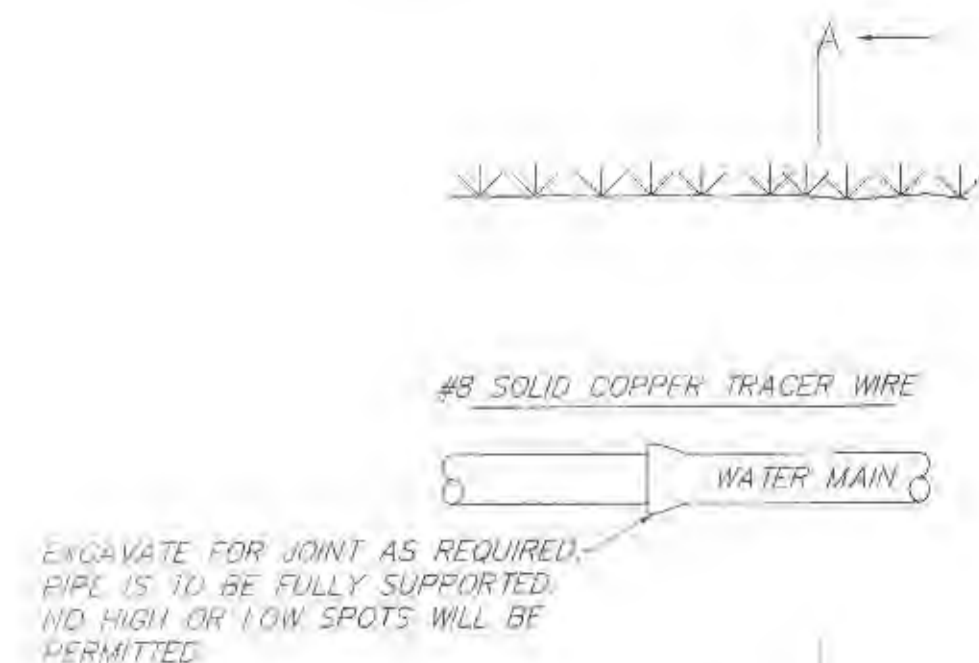


ENG-2003-022A

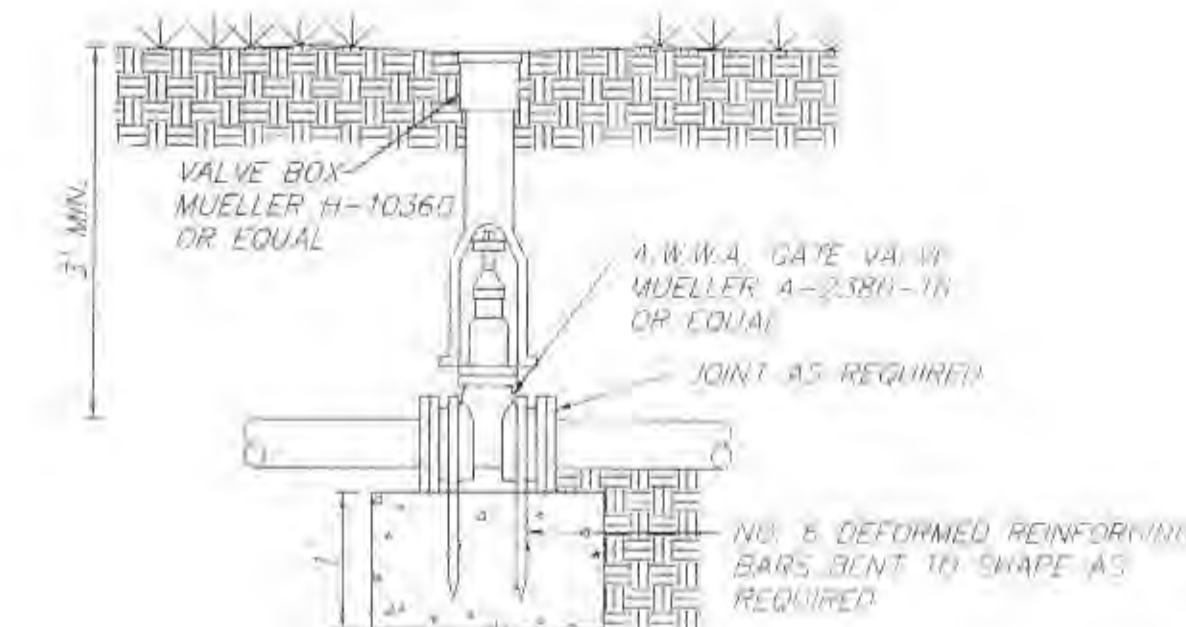
THIS SHEET FOR DRAINAGE PURPOSES ONLY. NOT TO BE USED FOR CONSTRUCTION.

UNDERGROUND UTILITIES HAVE BEEN LOCATED FROM AVAILABLE INFORMATION AND FIELD SURVEY. THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.

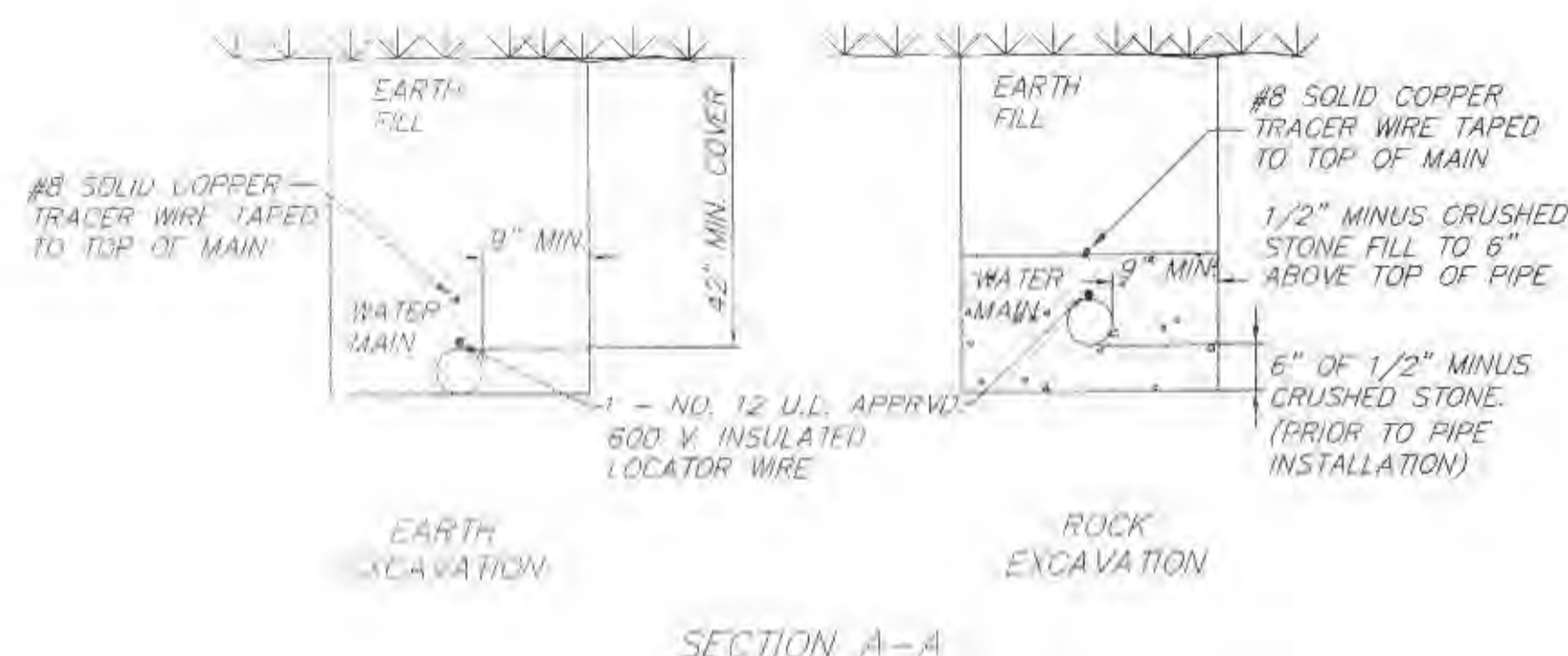




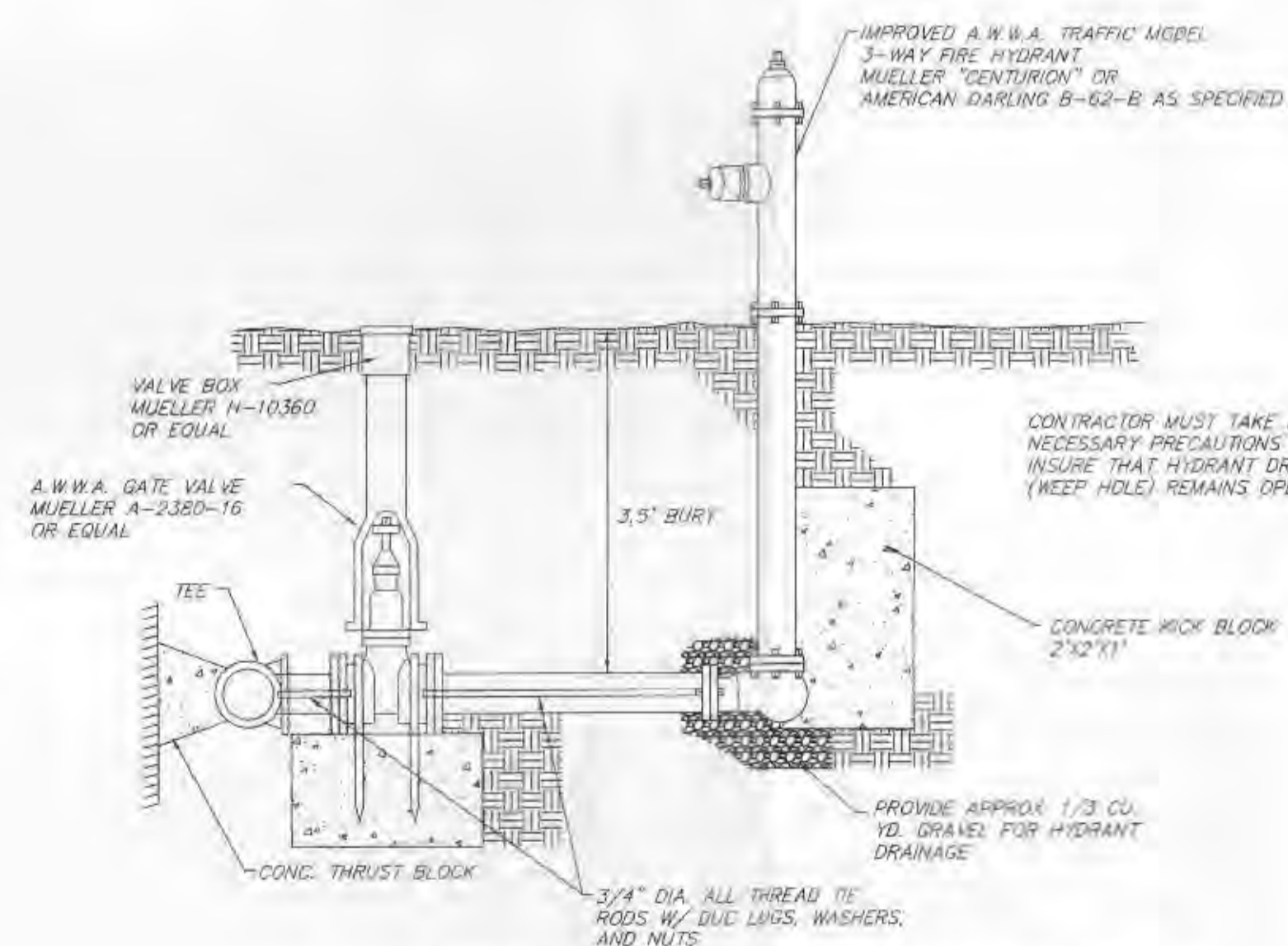
TYPICAL WATER AND SEWER SEPARATION  
NOT TO SCALE



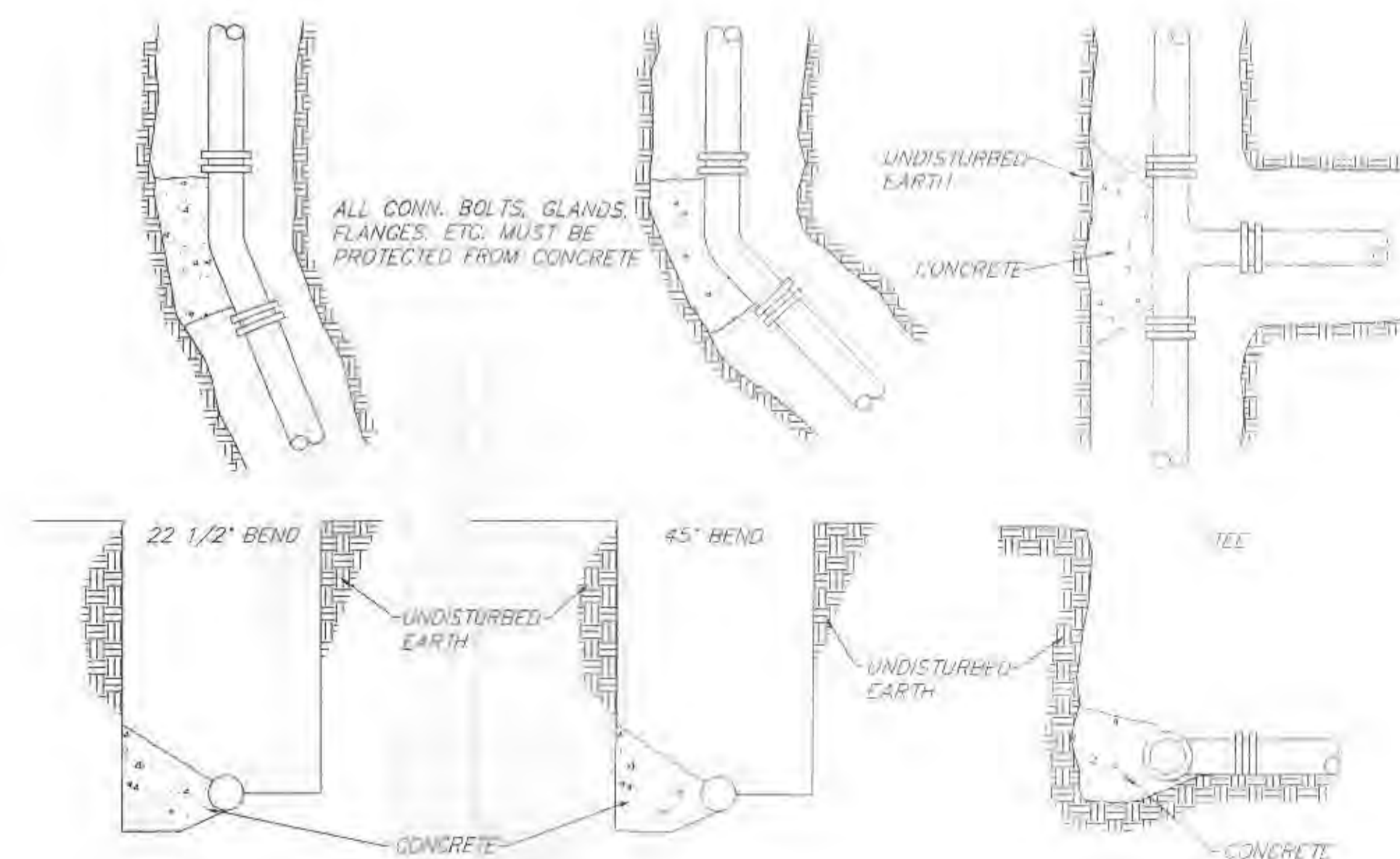
GATE VALVE W/THRUST BLOCK  
NOT TO SCALE



TYPICAL WATER MAIN INSTALLATION DETAILS  
NOT TO SCALE



FIRE HYDRANT INSTALLATION DETAIL  
NOT TO SCALE



TYPICAL THRUST BLOCK DETAILS  
NOT TO SCALE

MAIN SIZE (I.D.)	MIN. THRUST BLOCK BEARING DIMENSIONS TO BEAR AGAINST UNDISTURBED EARTH				
	45° BEND	22 1/2° BEND	TEE	VALVE	CROSS
2"	5' x 1'	.5' x 1'	.5' x 1'	.5' x 1'	.5' x 1'
4"	1' x 1'	1' x 1'	2' x 1'	2' x 1'	1' x 1'
6"	1.5' x 1'	1' x 1'	2' x 1'	2' x 1'	1' x 1'
8"	2' x 1'	1' x 1'	2' x 2.5'	2' x 2'	1' x 1.5'
10"	2' x 2.5'	1.5' x 2'	2' x 3.5'	2' x 3'	2' x 2'
12"	2' x 3.5'	1.5' x 2.5'	3' x 3.5'	3' x 3'	2' x 3'
16"	3' x 4'	2' x 3'	4' x 4.5'	3' x 4.5'	3' x 3.5'



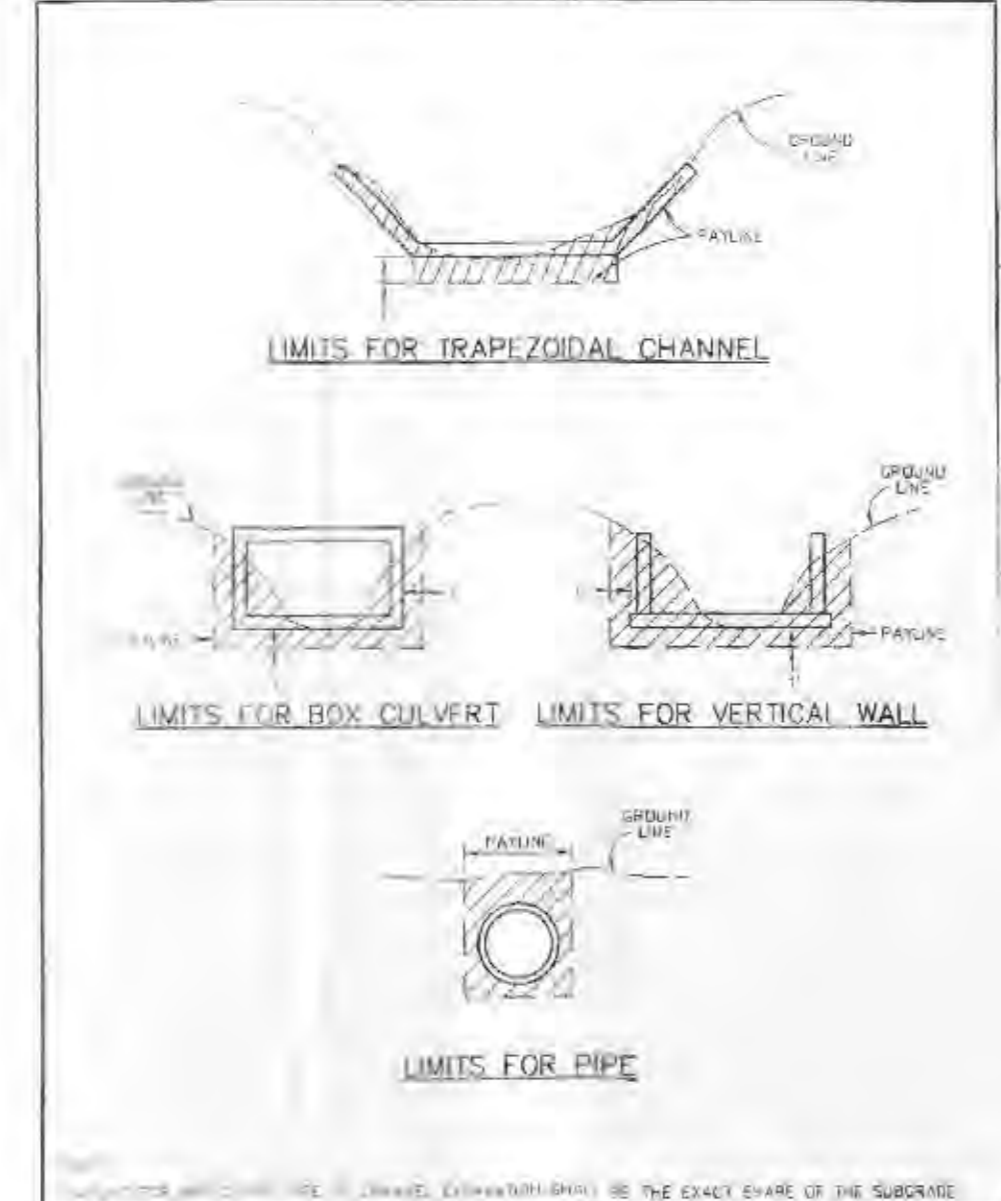


ROUND PIPE	HORIZONTAL ELLIPTICAL PIPE
18" DIA. (18" x 18")	18" DIA. (18" x 18")
24" DIA. (24" x 18")	24" DIA. (24" x 18")
30" DIA. (30" x 18")	30" DIA. (30" x 18")
36" DIA. (36" x 18")	36" DIA. (36" x 18")
42" DIA. (42" x 18")	42" DIA. (42" x 18")
48" DIA. (48" x 18")	48" DIA. (48" x 18")
54" DIA. (54" x 18")	54" DIA. (54" x 18")
60" DIA. (60" x 18")	60" DIA. (60" x 18")
66" DIA. (66" x 18")	66" DIA. (66" x 18")
72" DIA. (72" x 18")	72" DIA. (72" x 18")
78" DIA. (78" x 18")	78" DIA. (78" x 18")
84" DIA. (84" x 18")	84" DIA. (84" x 18")
90" DIA. (90" x 18")	90" DIA. (90" x 18")
96" DIA. (96" x 18")	96" DIA. (96" x 18")
102" DIA. (102" x 18")	102" DIA. (102" x 18")
108" DIA. (108" x 18")	108" DIA. (108" x 18")
114" DIA. (114" x 18")	114" DIA. (114" x 18")
120" DIA. (120" x 18")	120" DIA. (120" x 18")
126" DIA. (126" x 18")	126" DIA. (126" x 18")
132" DIA. (132" x 18")	132" DIA. (132" x 18")
138" DIA. (138" x 18")	138" DIA. (138" x 18")
144" DIA. (144" x 18")	144" DIA. (144" x 18")
150" DIA. (150" x 18")	150" DIA. (150" x 18")
156" DIA. (156" x 18")	156" DIA. (156" x 18")
162" DIA. (162" x 18")	162" DIA. (162" x 18")
168" DIA. (168" x 18")	168" DIA. (168" x 18")
174" DIA. (174" x 18")	174" DIA. (174" x 18")
180" DIA. (180" x 18")	180" DIA. (180" x 18")

TABLE 1  
PAYLINE WIDTHS OF TRENCH  
AND PAY-QUANTITIES  
OF CONCRETE

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

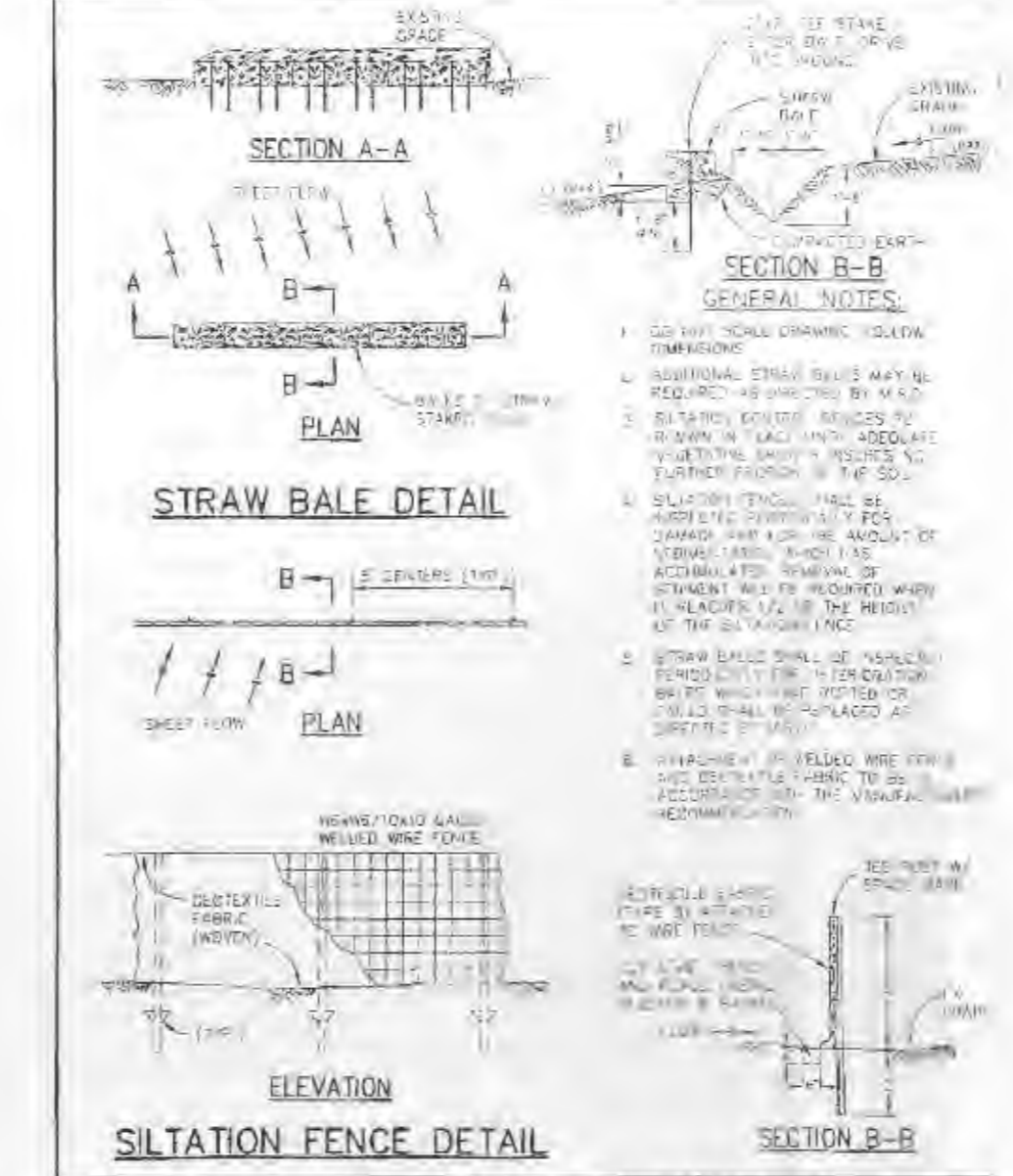
2000 SHEET 1



PAYLINE LIMITS  
FOR EXCAVATION

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

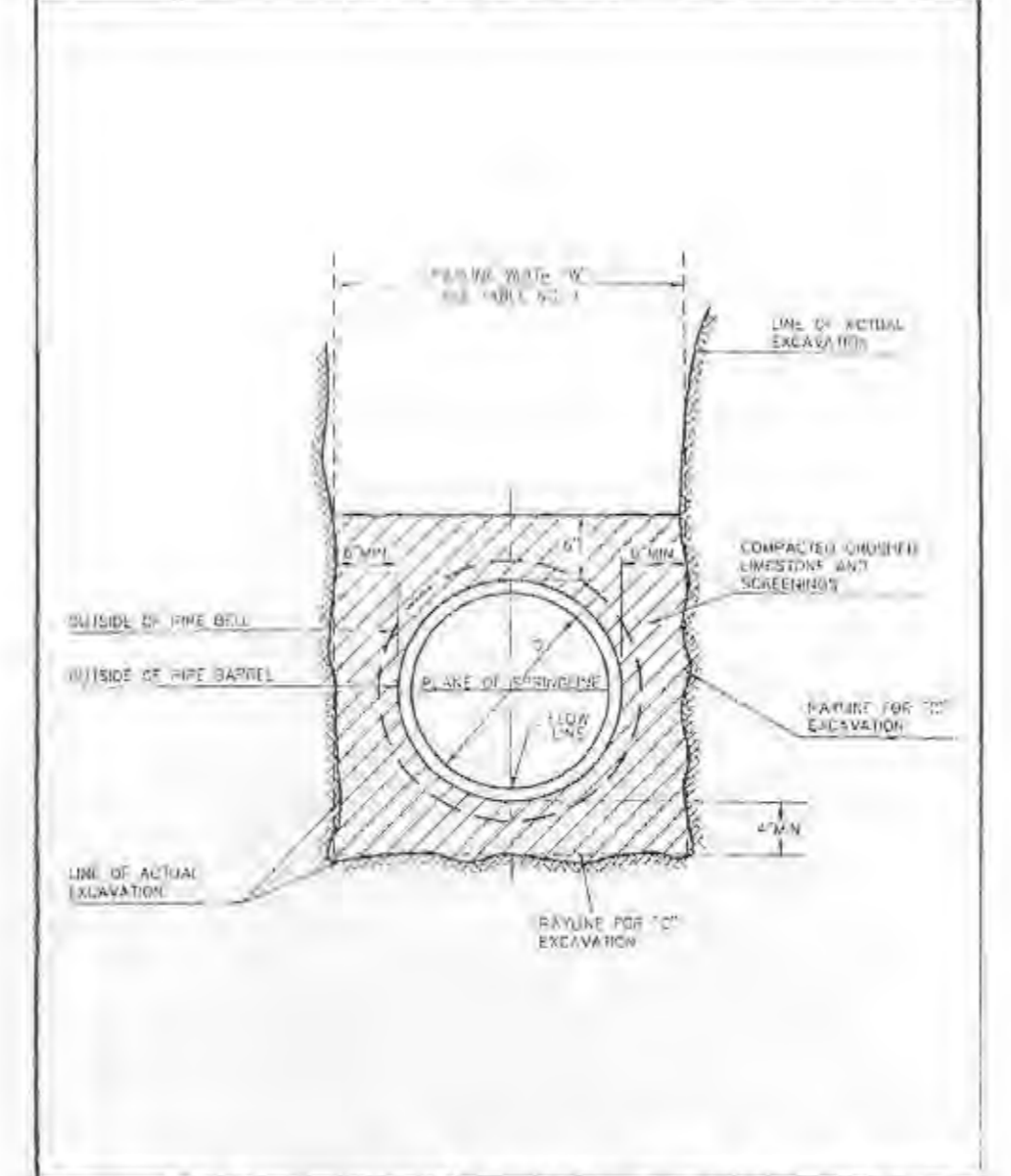
2000 SHEET 2



TYPICAL  
SILTATION CONTROL  
DEVICES

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

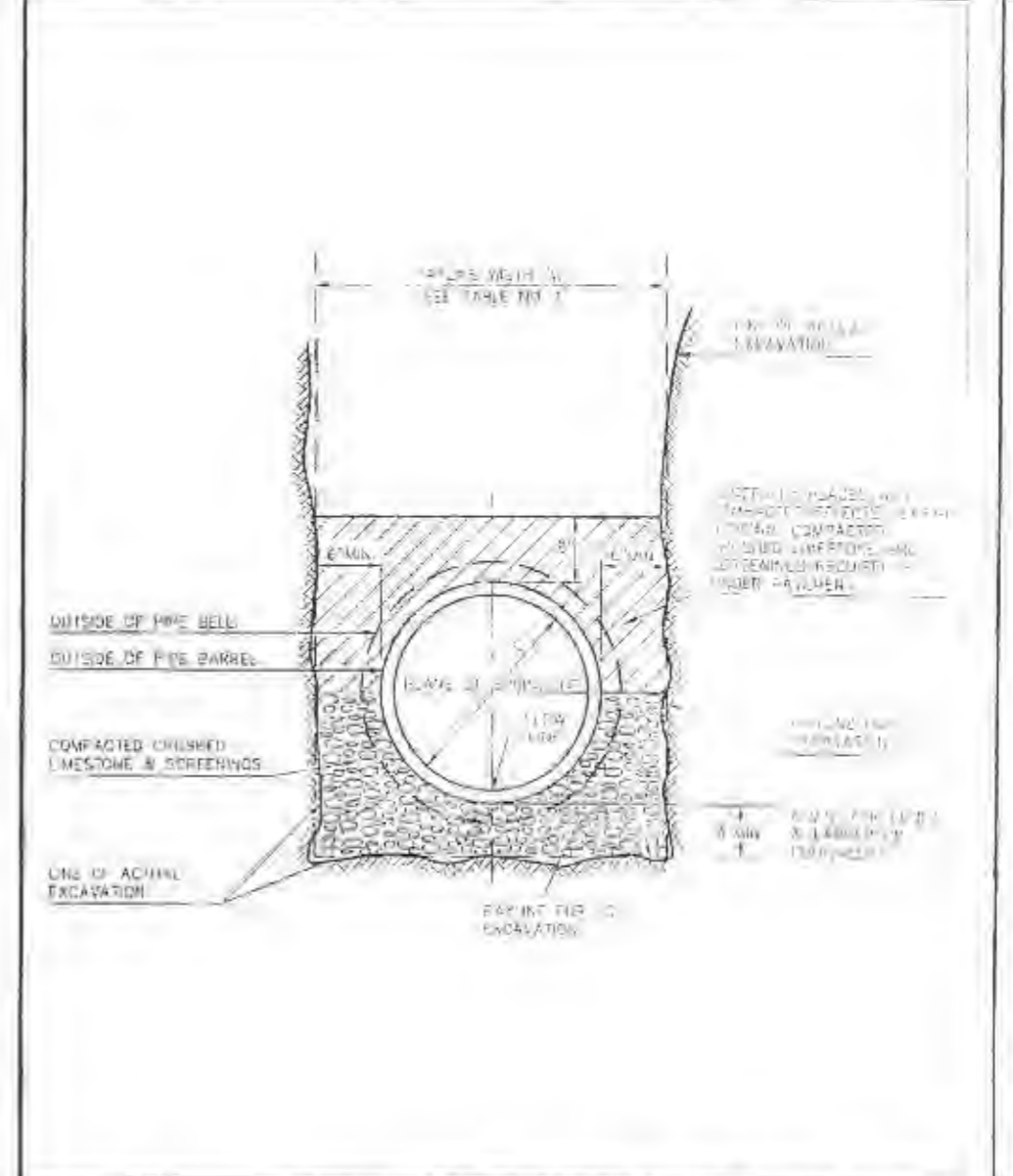
2000 SHEET 3



PIPE BEDDING CLASS "1c"  
(FOR ALL PIPE EXCEPT  
REINFORCED CONCRETE PIPE)

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

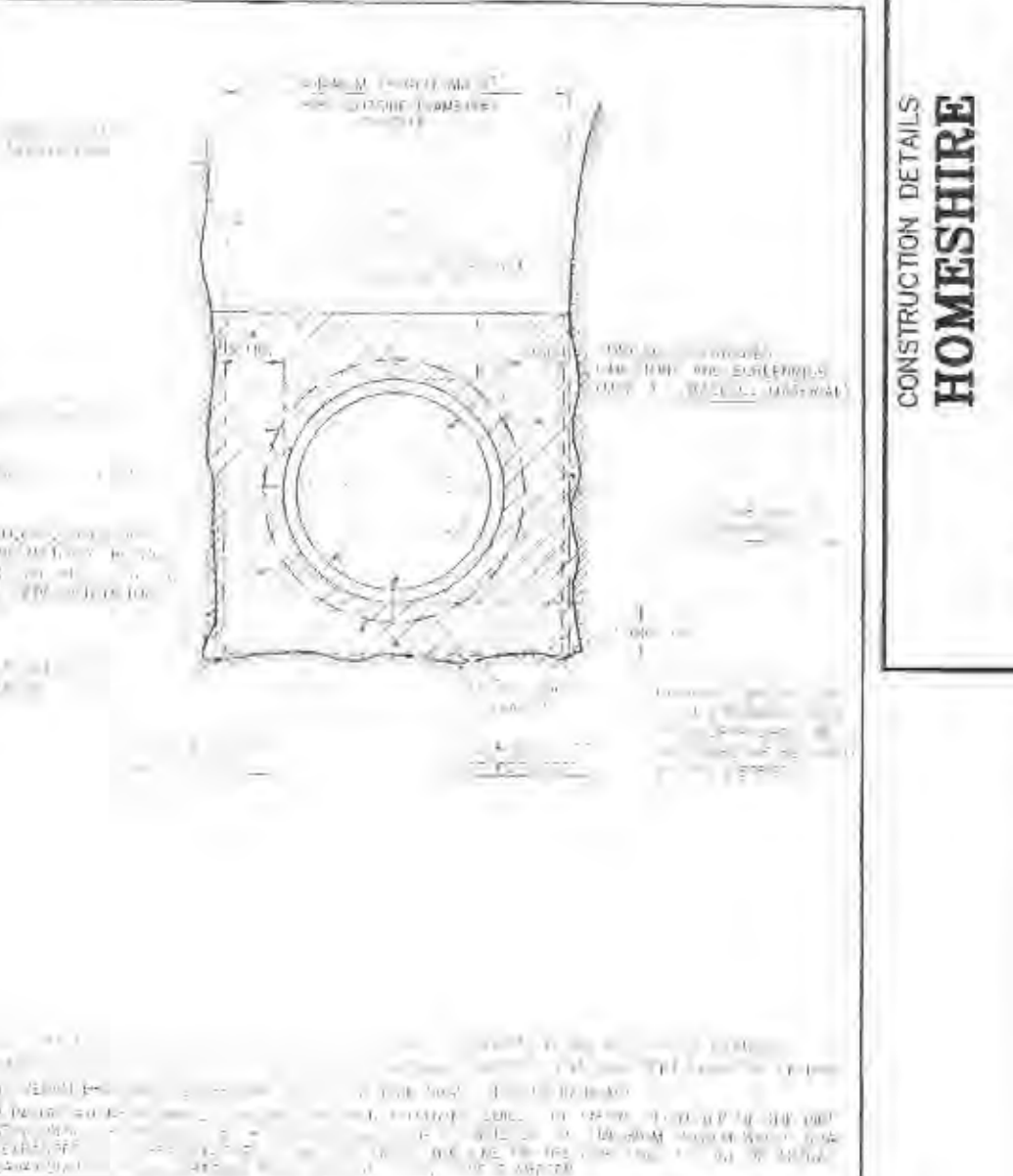
2000 SHEET 4



PIPE BEDDING CLASS "1c"  
(MODIFIED FOR REINFORCED  
CONCRETE PIPE)

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

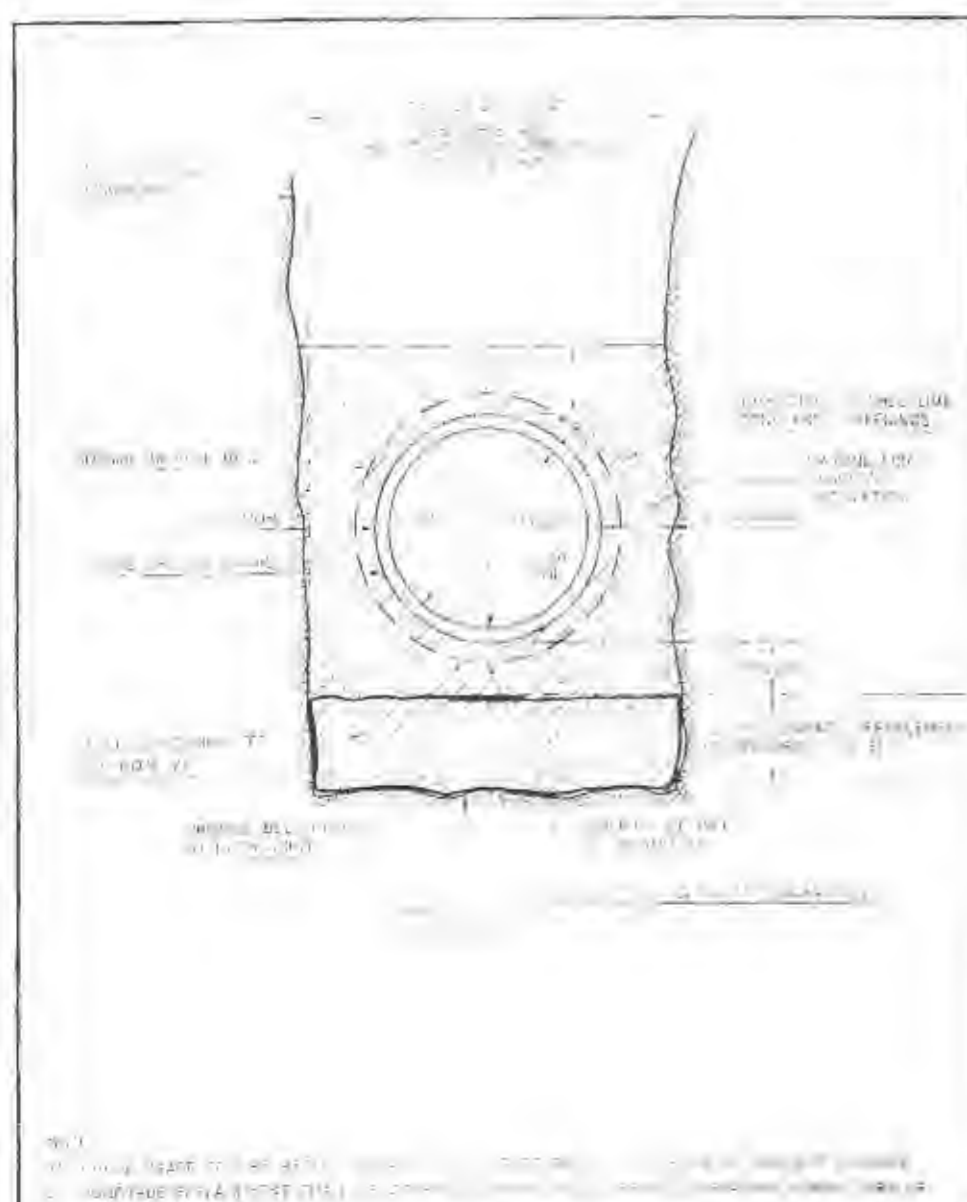
2000 SHEET 5



PIPE BEDDING FOR  
FLEXIBLE PIPE  
18" - 48" DIAMETER

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

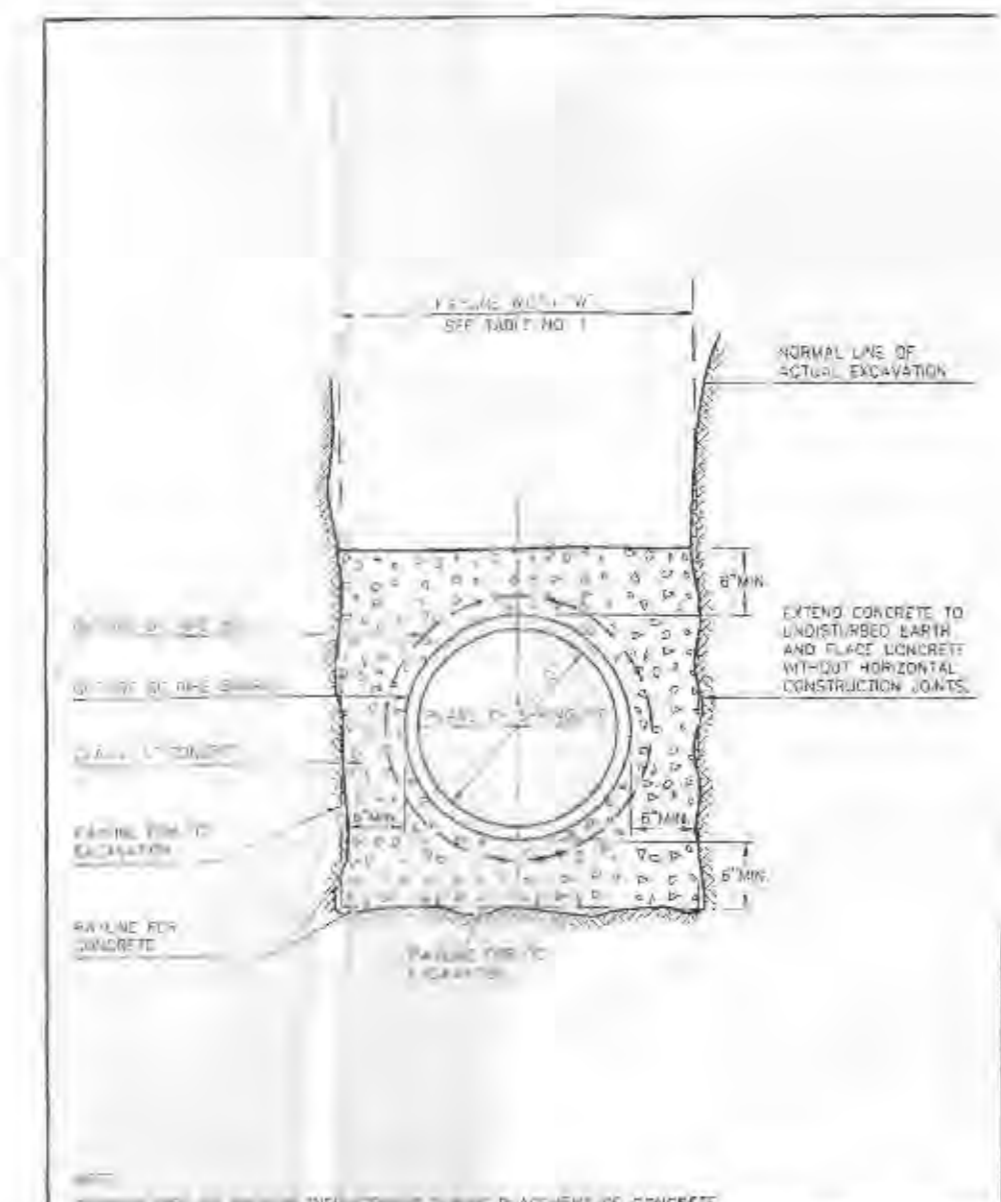
2000 SHEET 6



SPECIAL PIPE BEDDING DETAIL  
FOR  
SUBGRADE REPLACEMENT  
12" DEPTH OR MORE

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

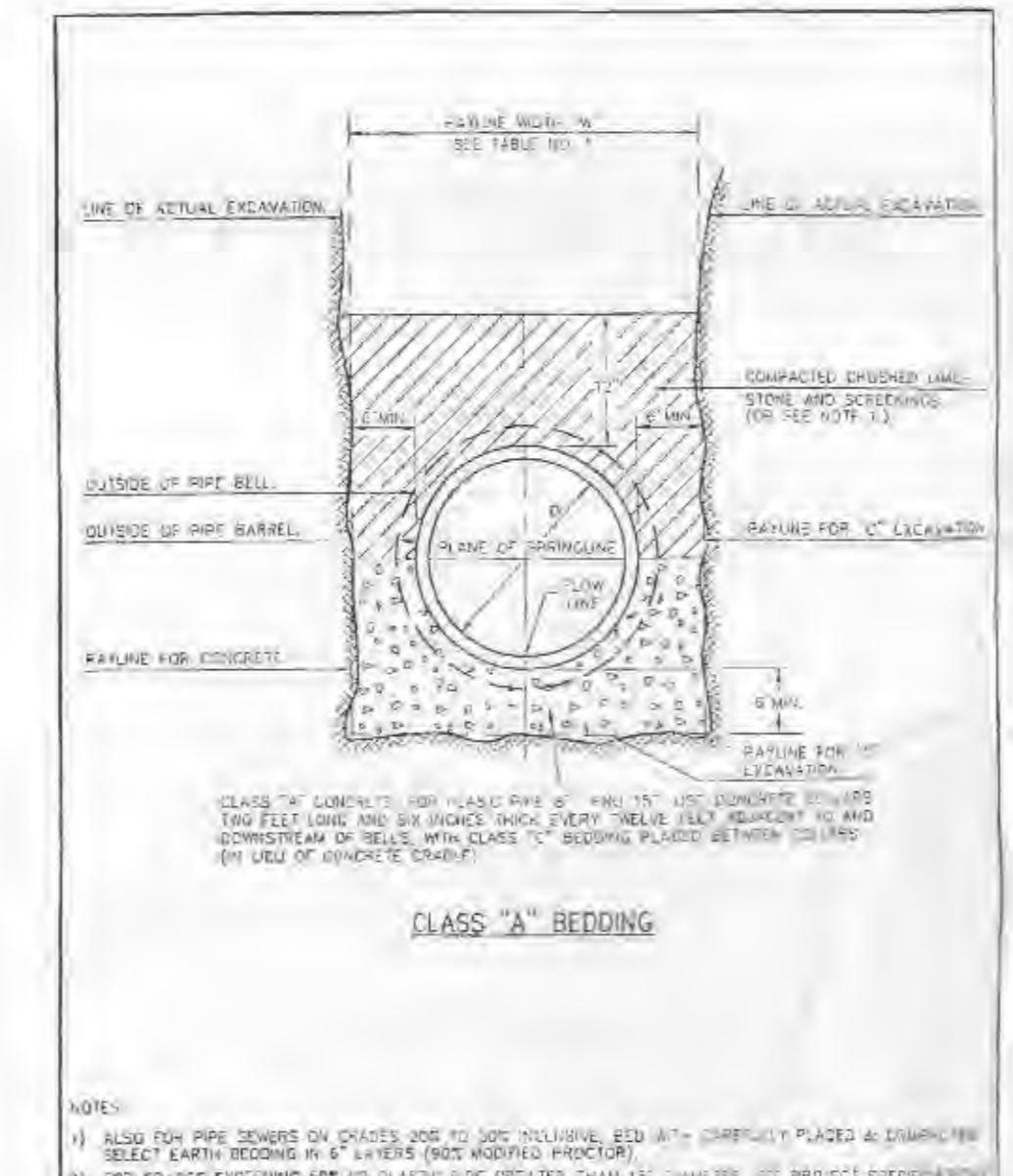
2000 SHEET 7



CONCRETE ENCASEMENT

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

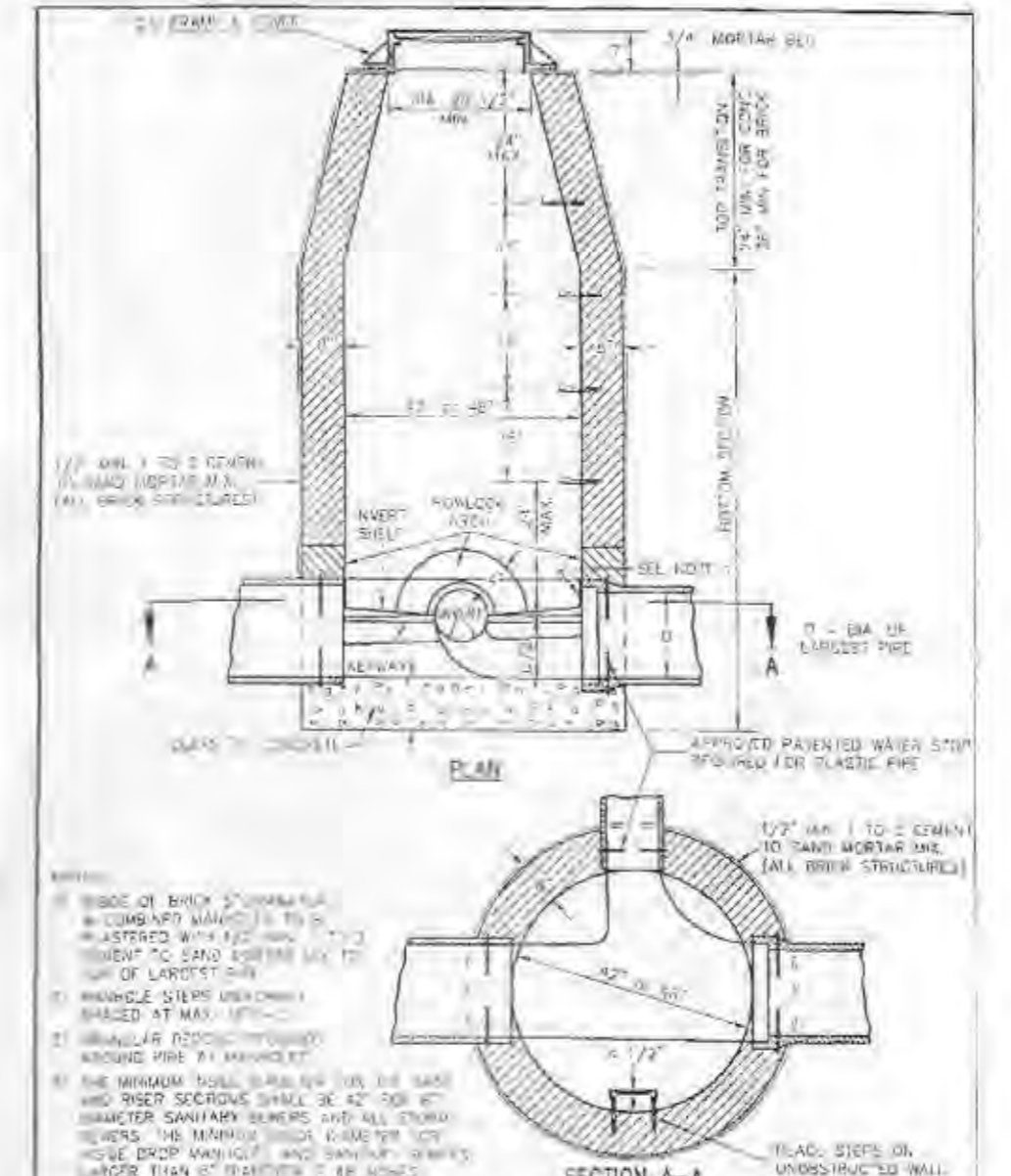
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CONCRETE GRADE

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

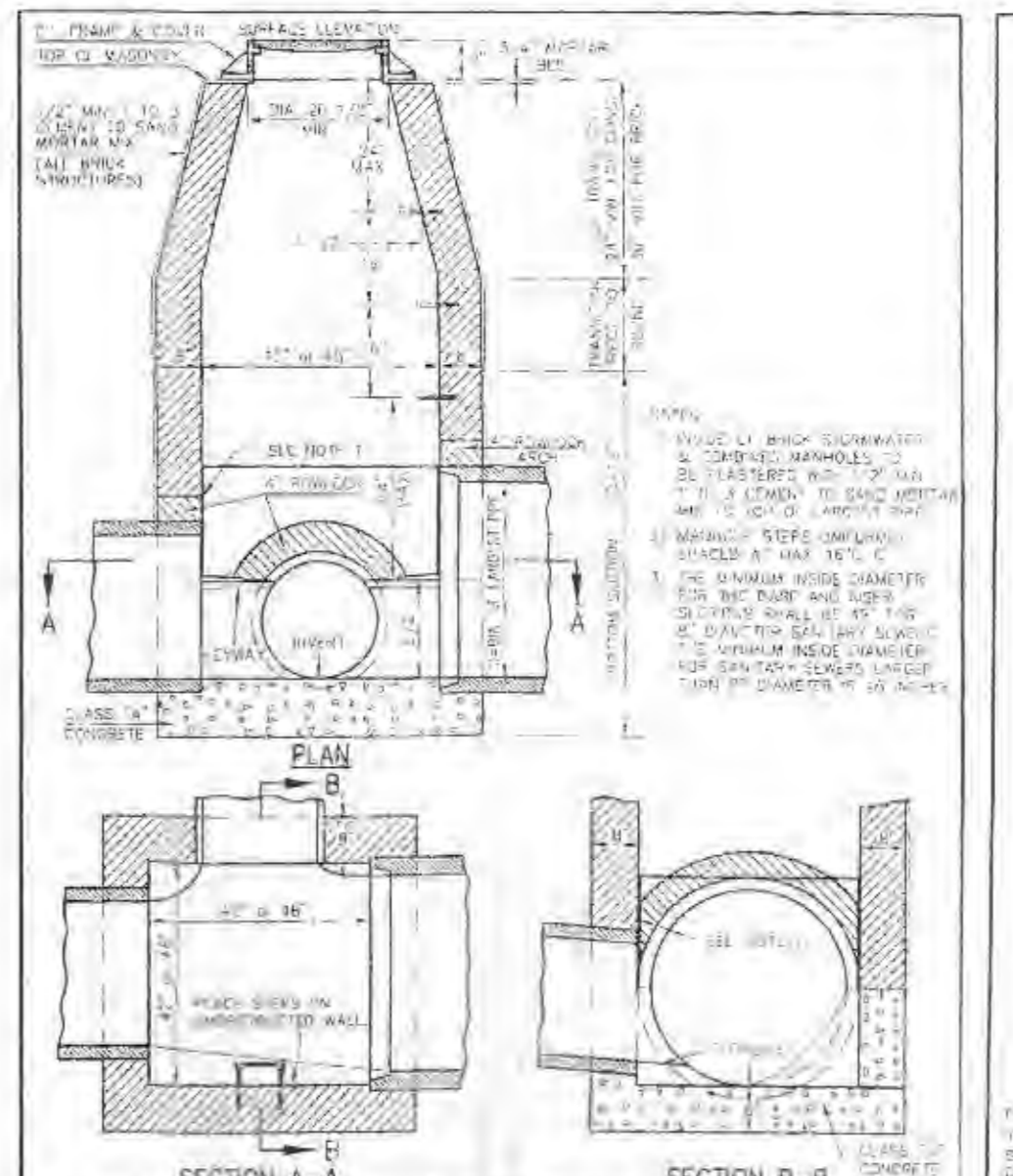
2000 SHEET 9



LINE MANHOLE  
PIPE SEWERS 8" - 24" DIA.

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

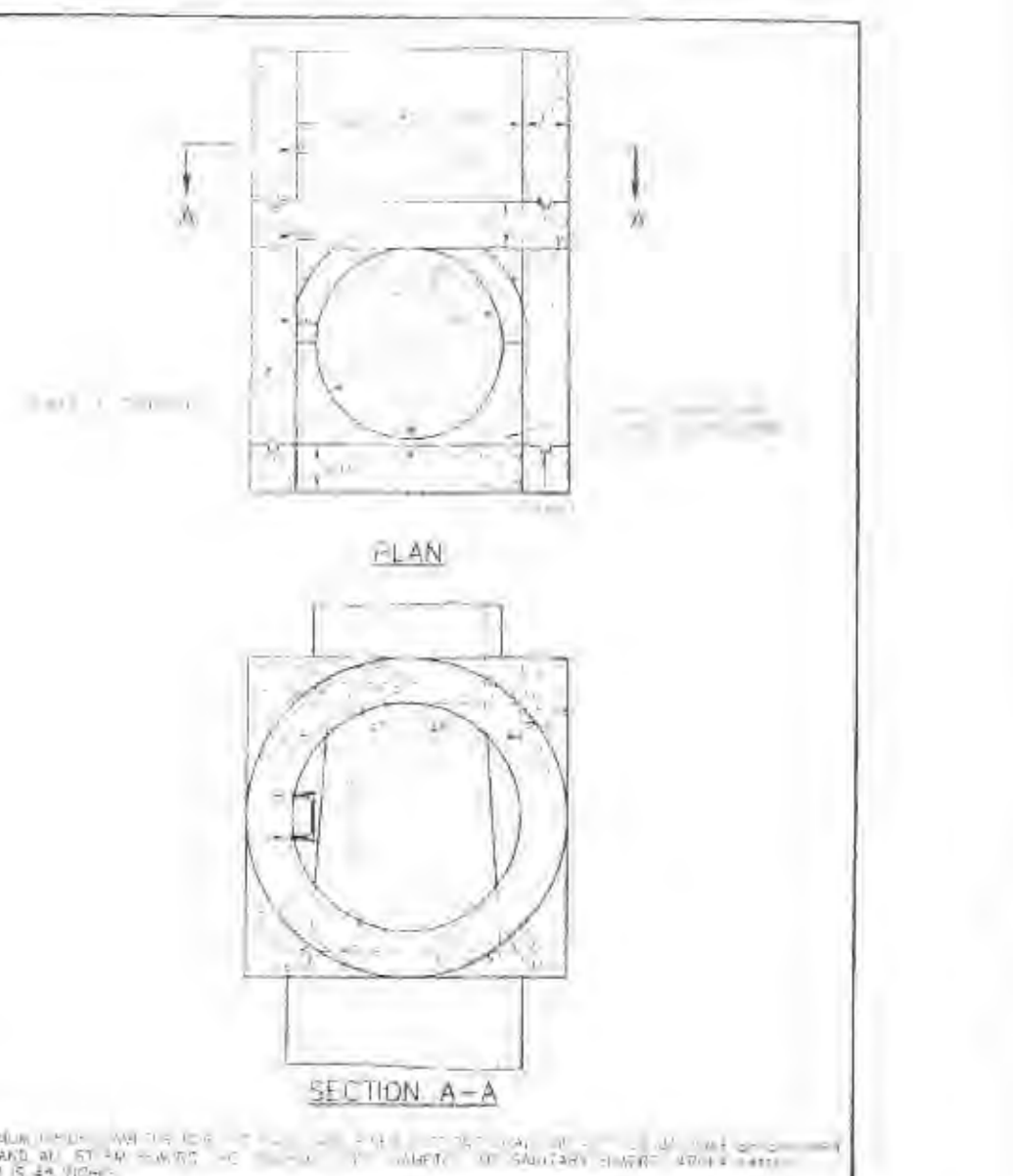
2000 SHEET 10



TYPICAL LINE MANHOLE  
ON PIPE SEWER 27" THRU  
42" IN DIAMETER

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

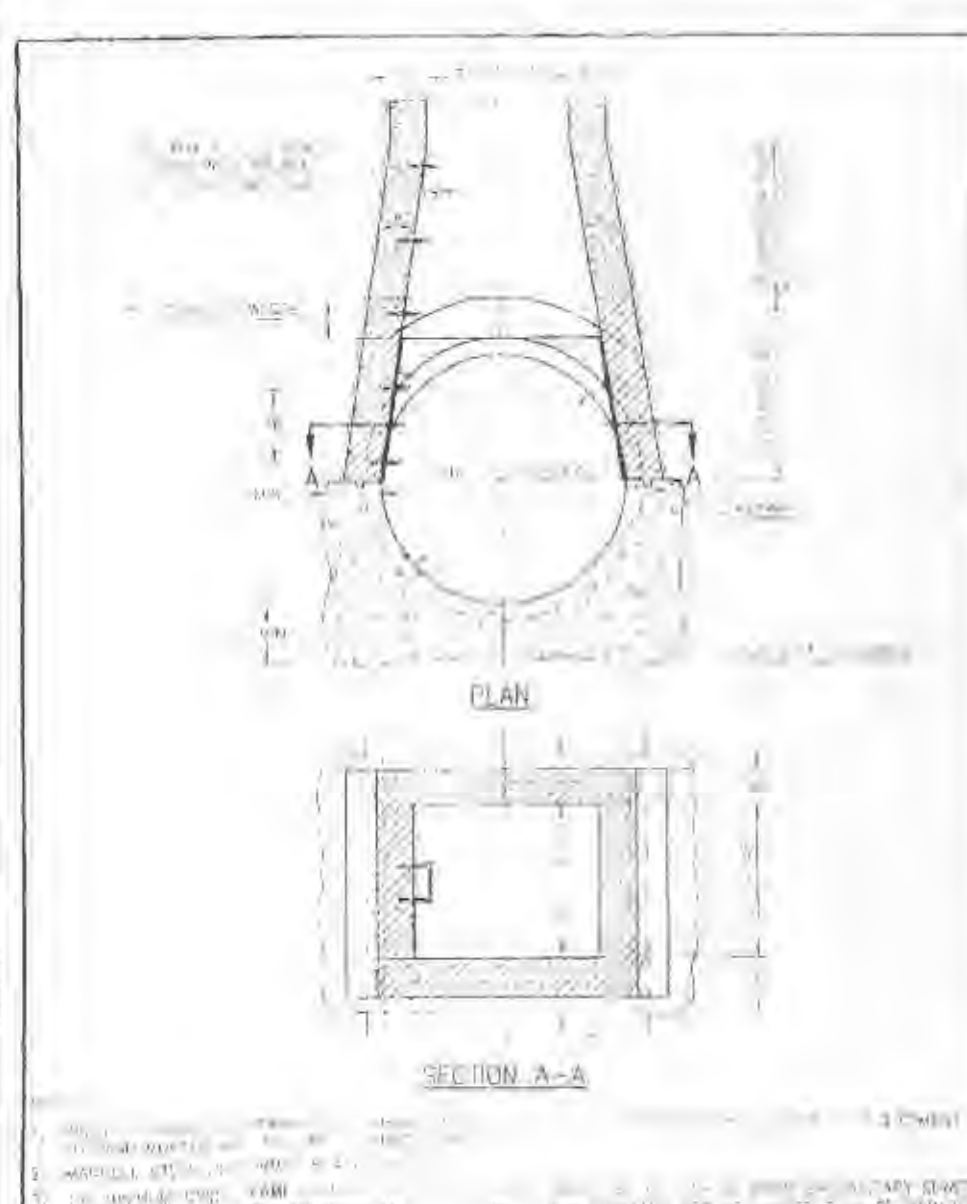
2000 SHEET 11



MANHOLE ON PIPE SEWER  
27" THRU 42" (ALTERNATE)

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

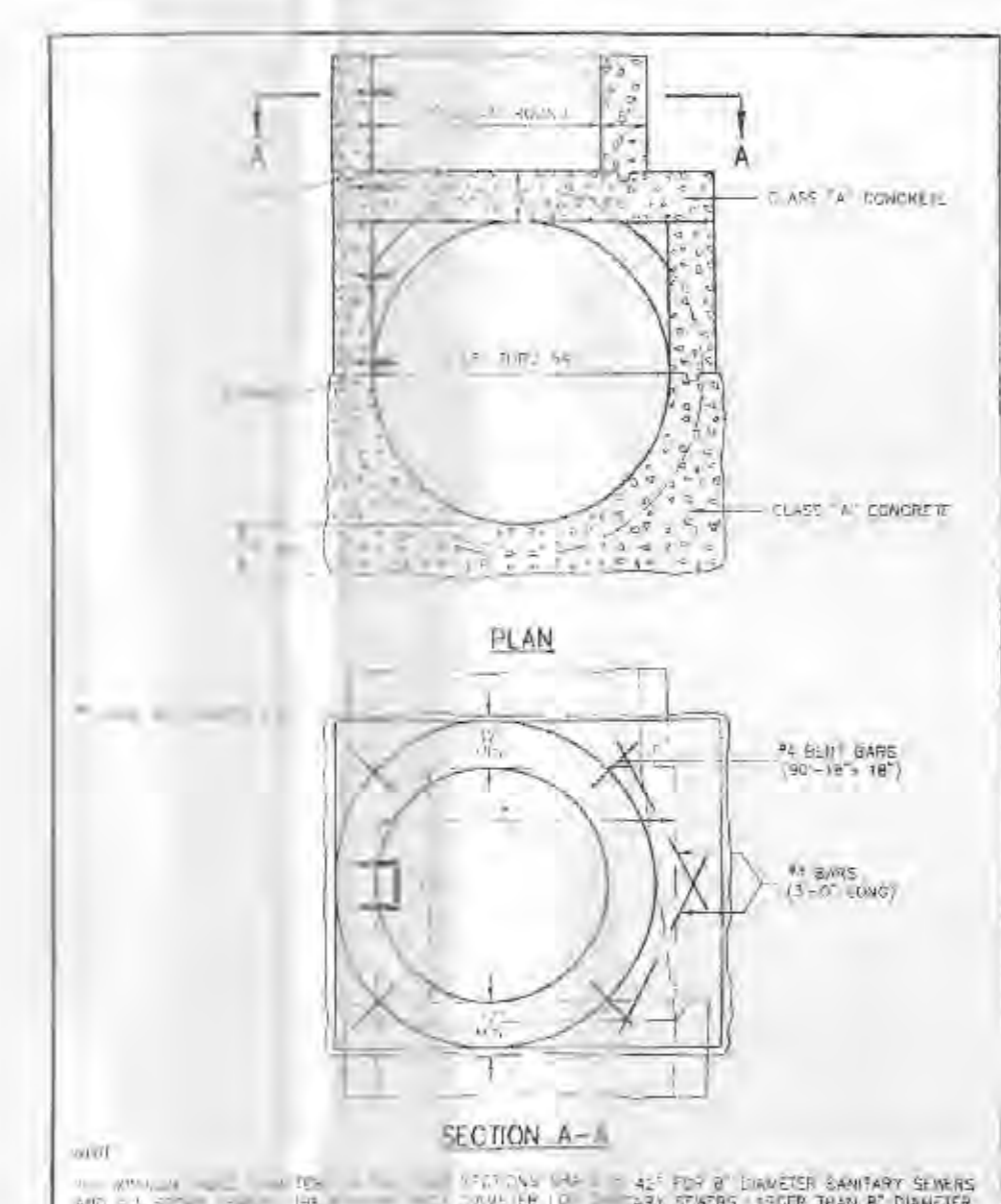
2000 SHEET 12



MANHOLE ON CONCRETE PIPE  
SEWERS 48" THRU 54" DIAMETER

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

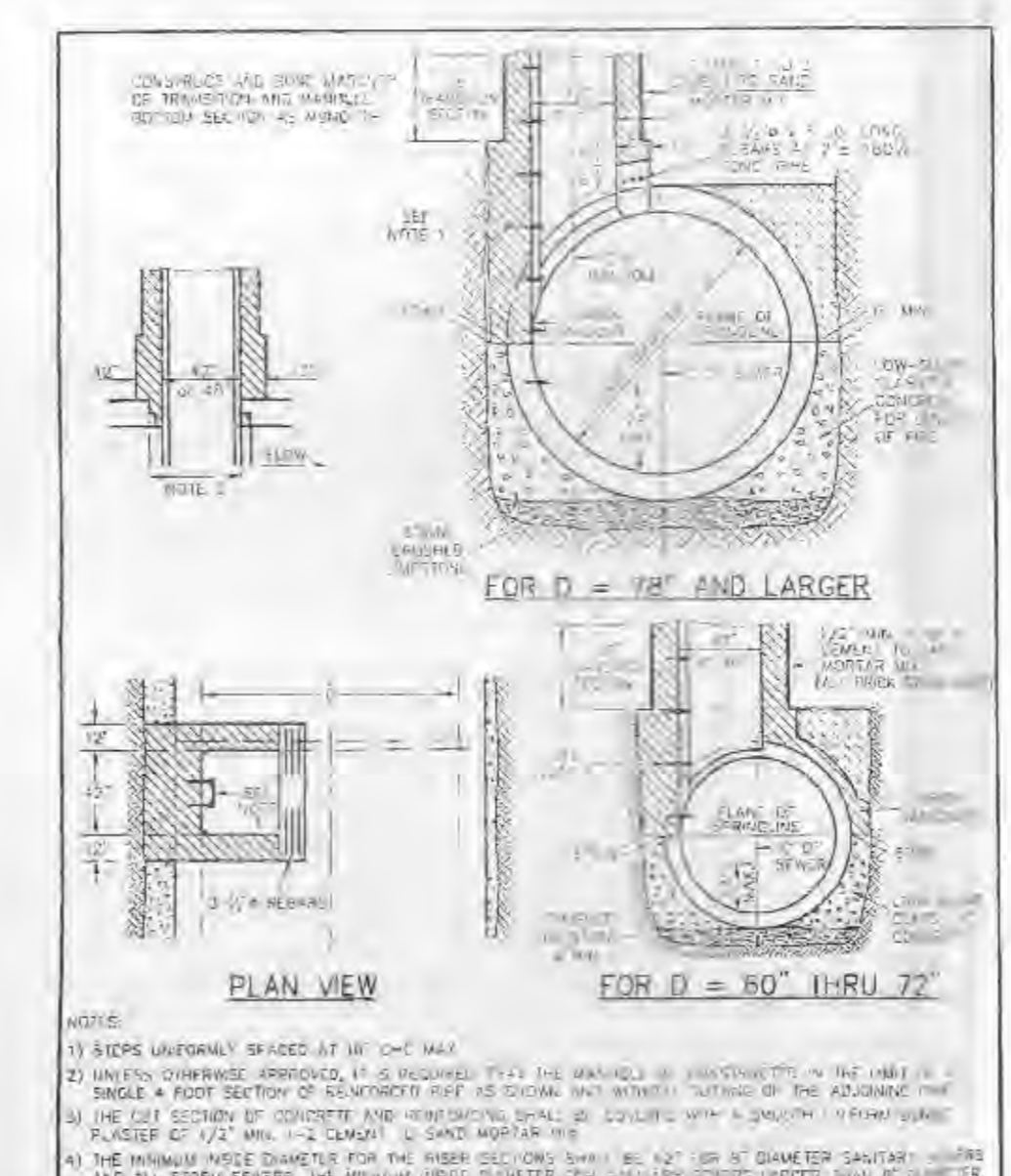
2000 SHEET 13



MANHOLE ON CONC. PIPE  
48" THRU 54" (ALTERNATE)

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

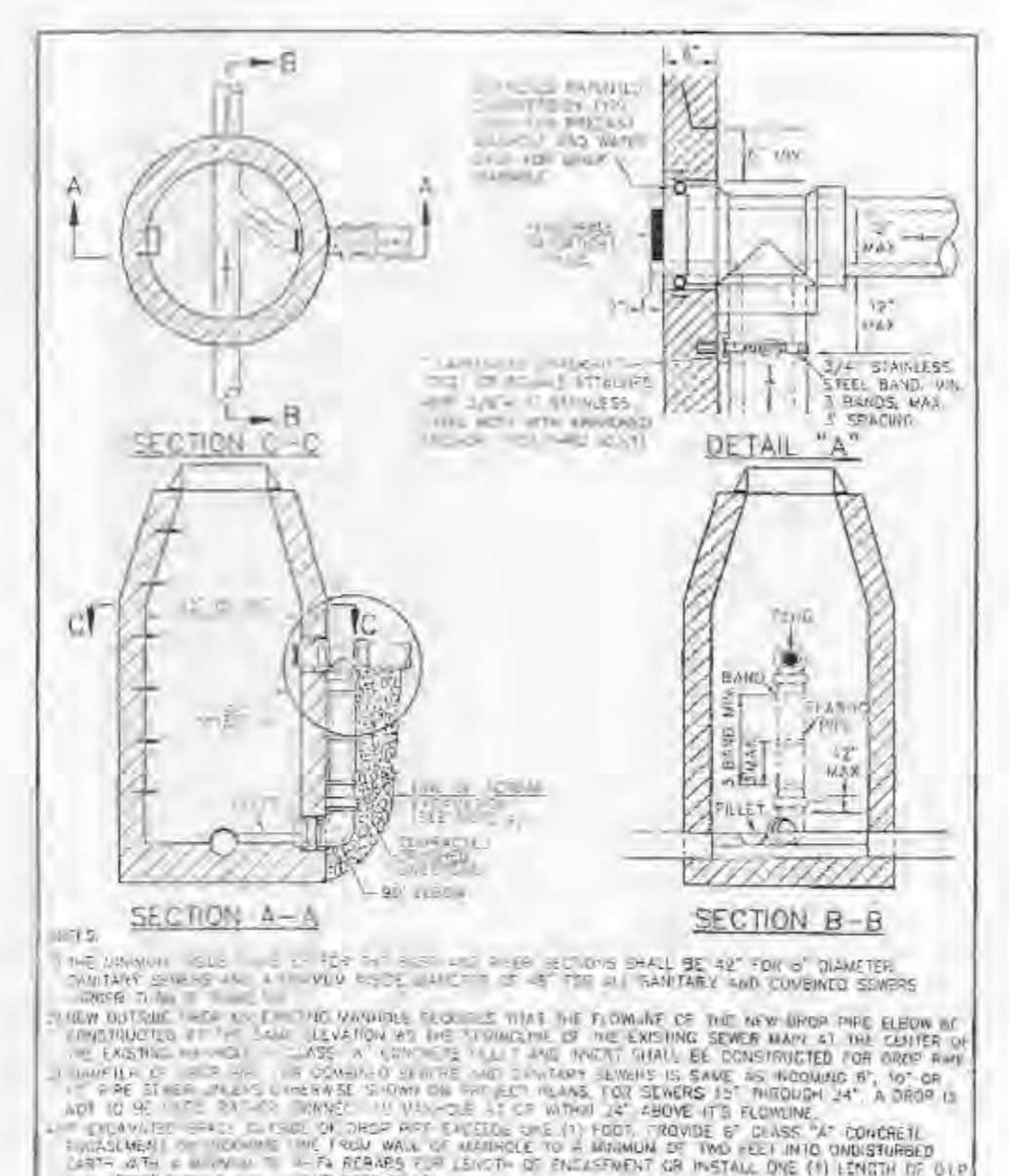
2000 SHEET 14



TYPICAL MANHOLE BASE  
REINFORCED CONCRETE PIPE  
SEWERS 60" AND LARGER  
IN DIAMETER

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

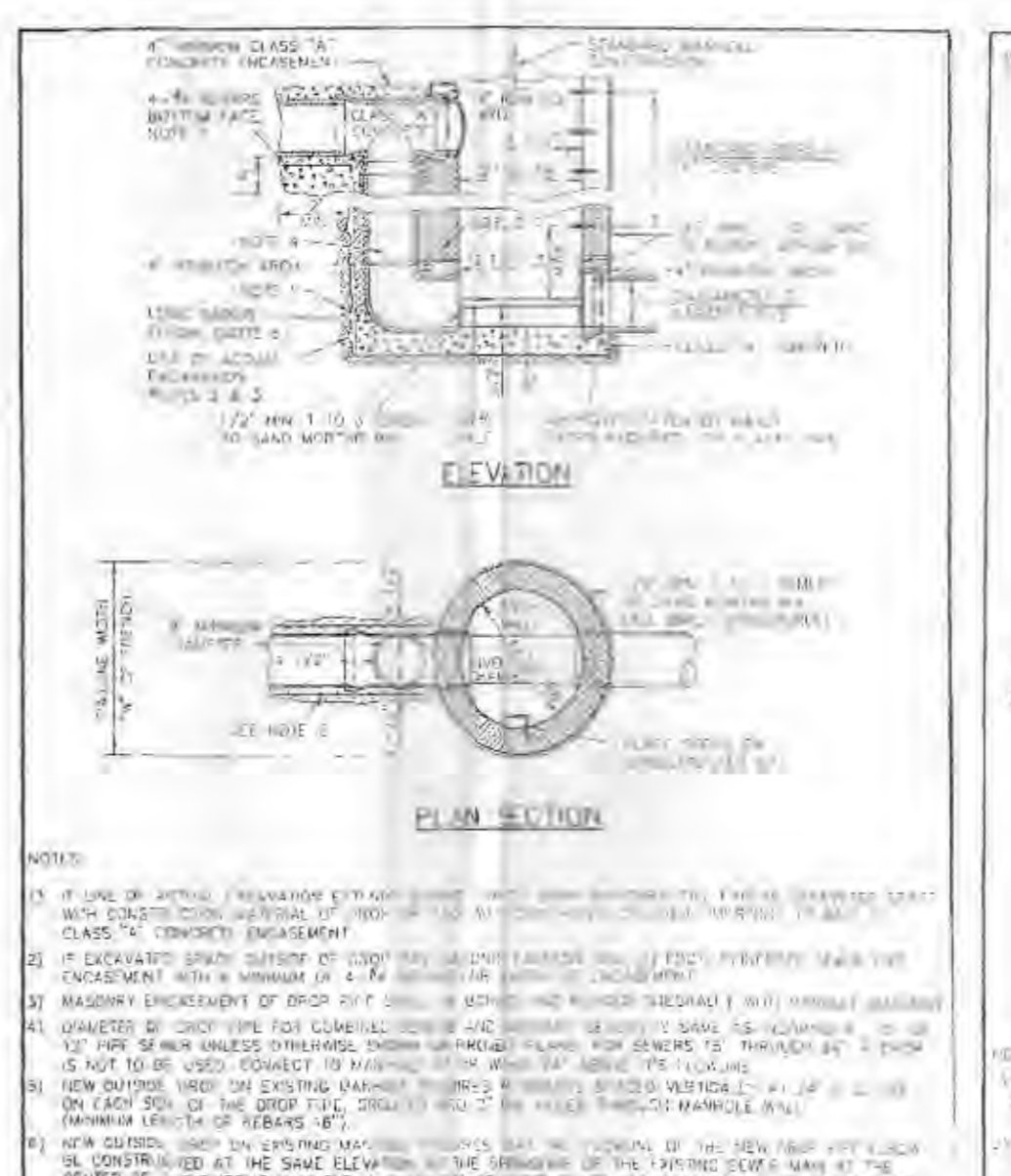
2000 SHEET 15



OUTSIDE FOULWATER  
DROP MANHOLE

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

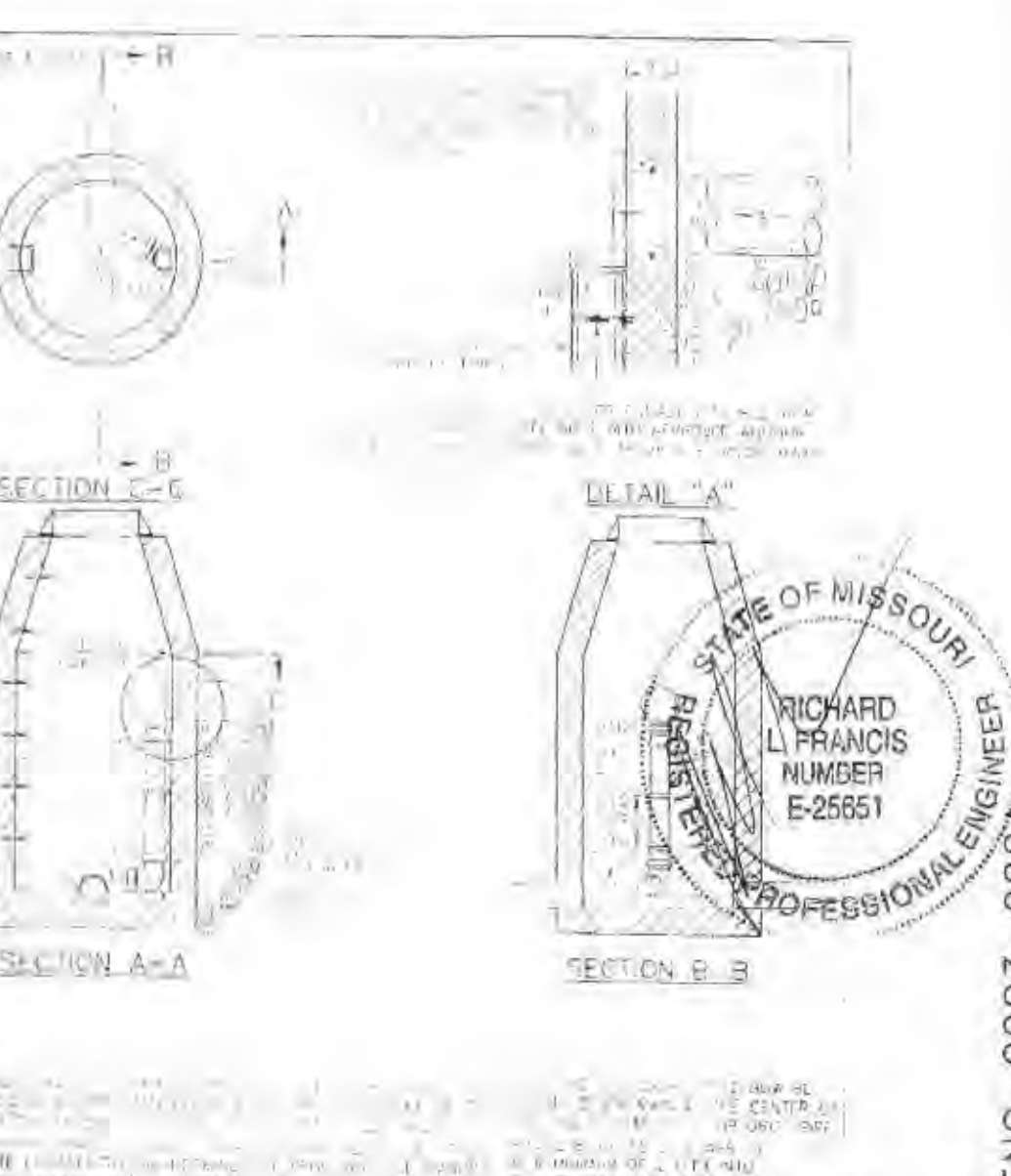
2000 SHEET 16



OUTSIDE FOULWATER  
DROP MANHOLE  
(ALTERNATE)

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

2000 SHEET 17

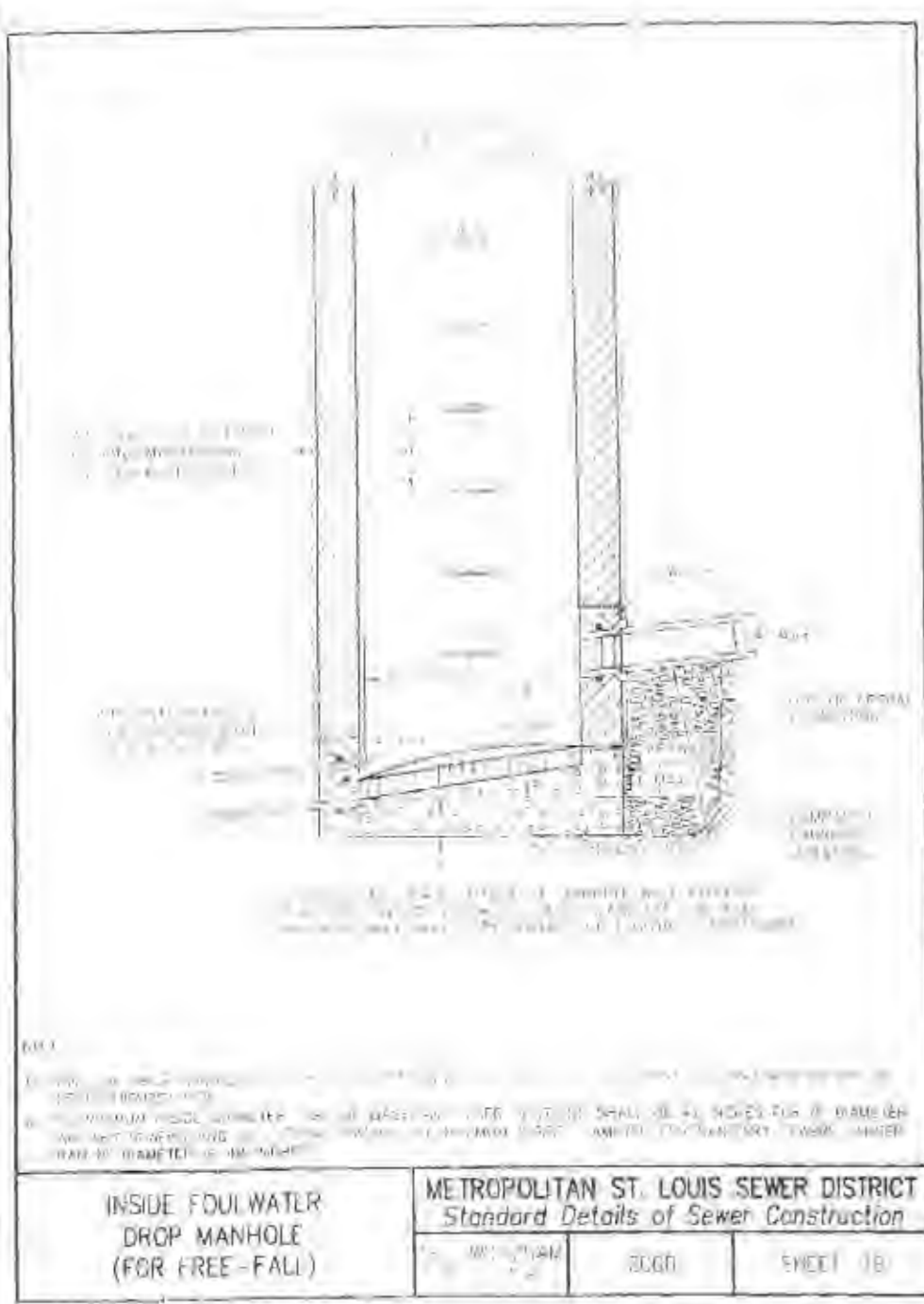


NEW INSIDE DROP ON  
EXISTING MANHOLE FOR  
SEWERS 8 INCH TO 12 INCH

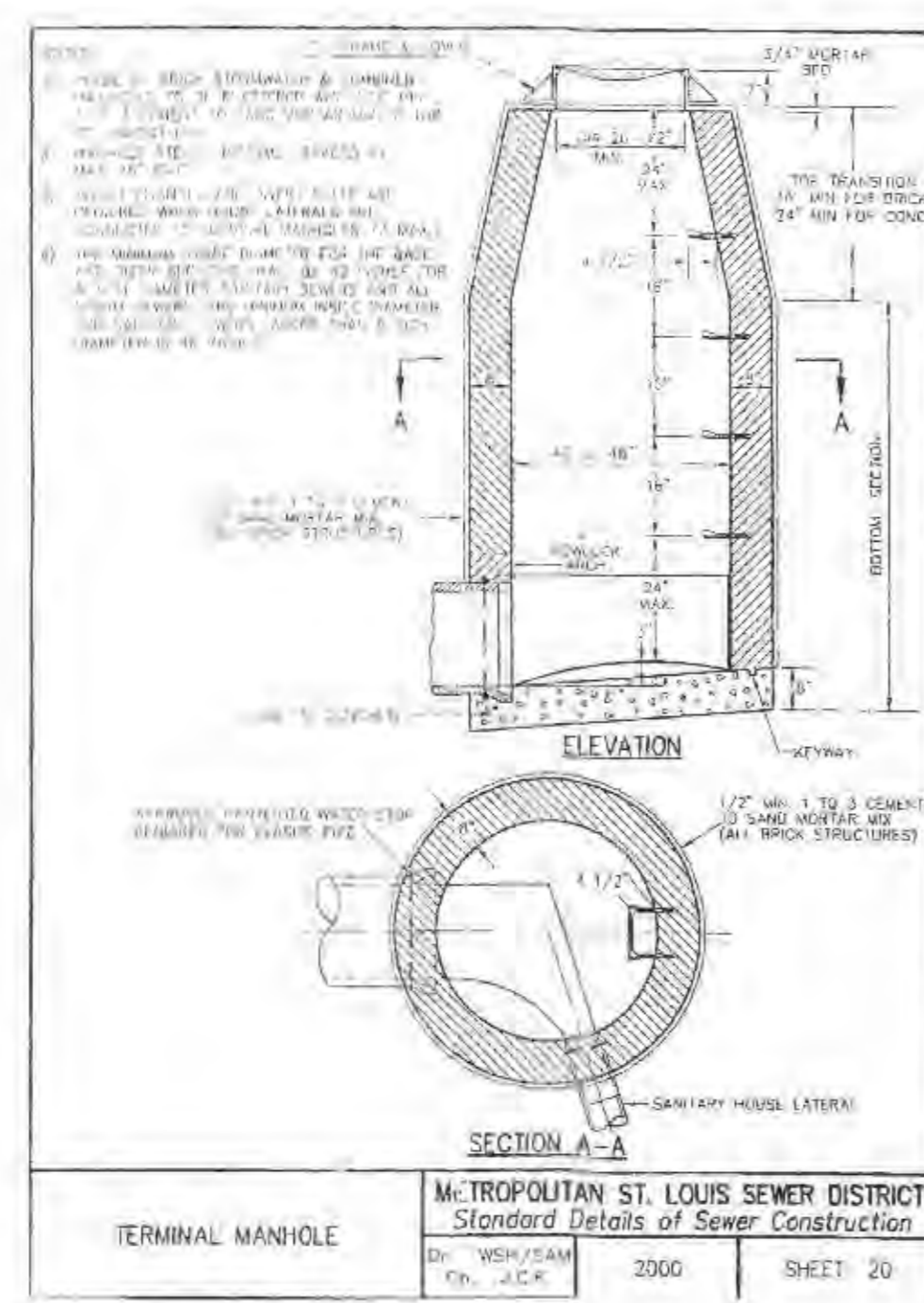
METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction

2000 SHEET 18

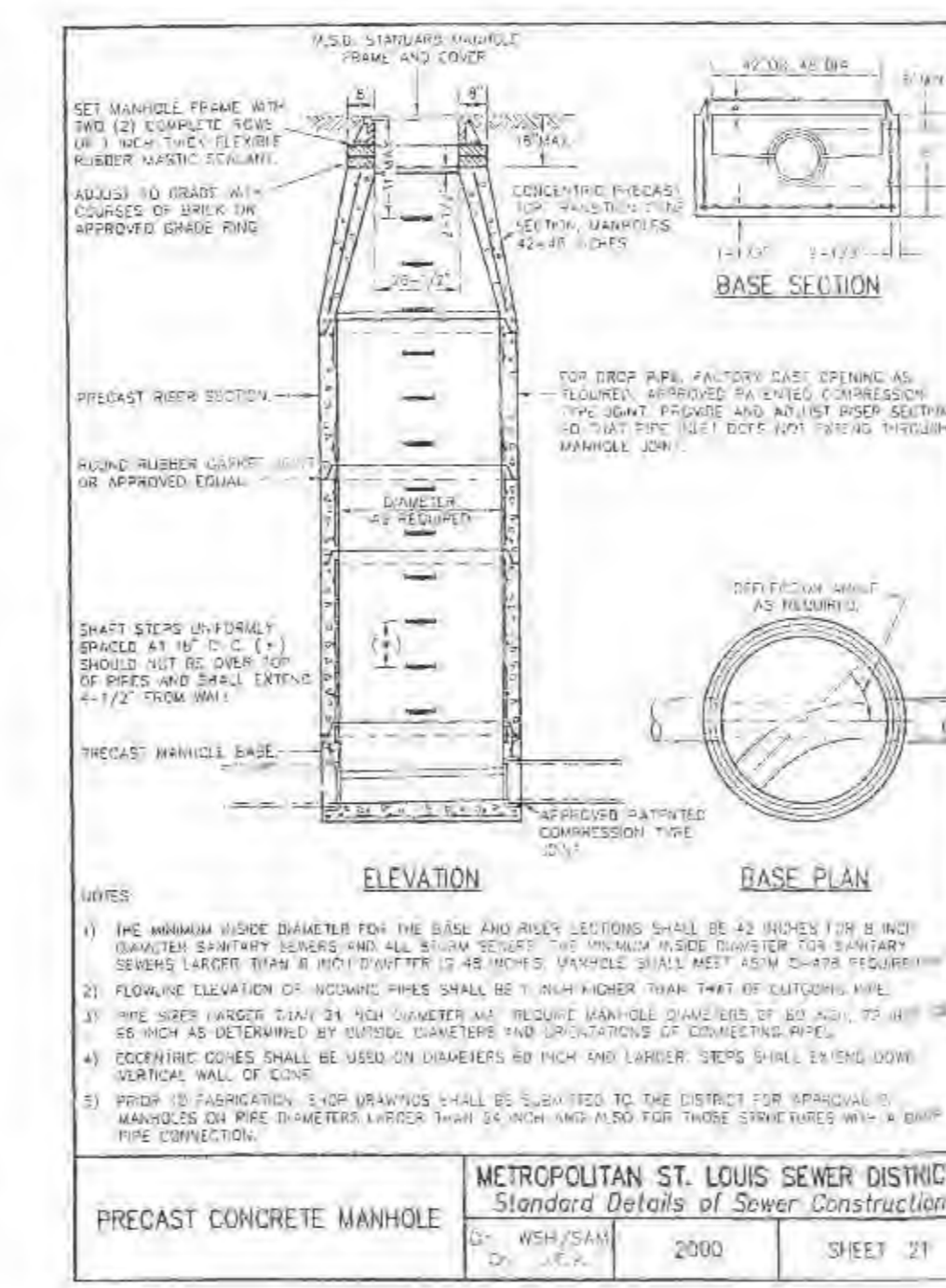




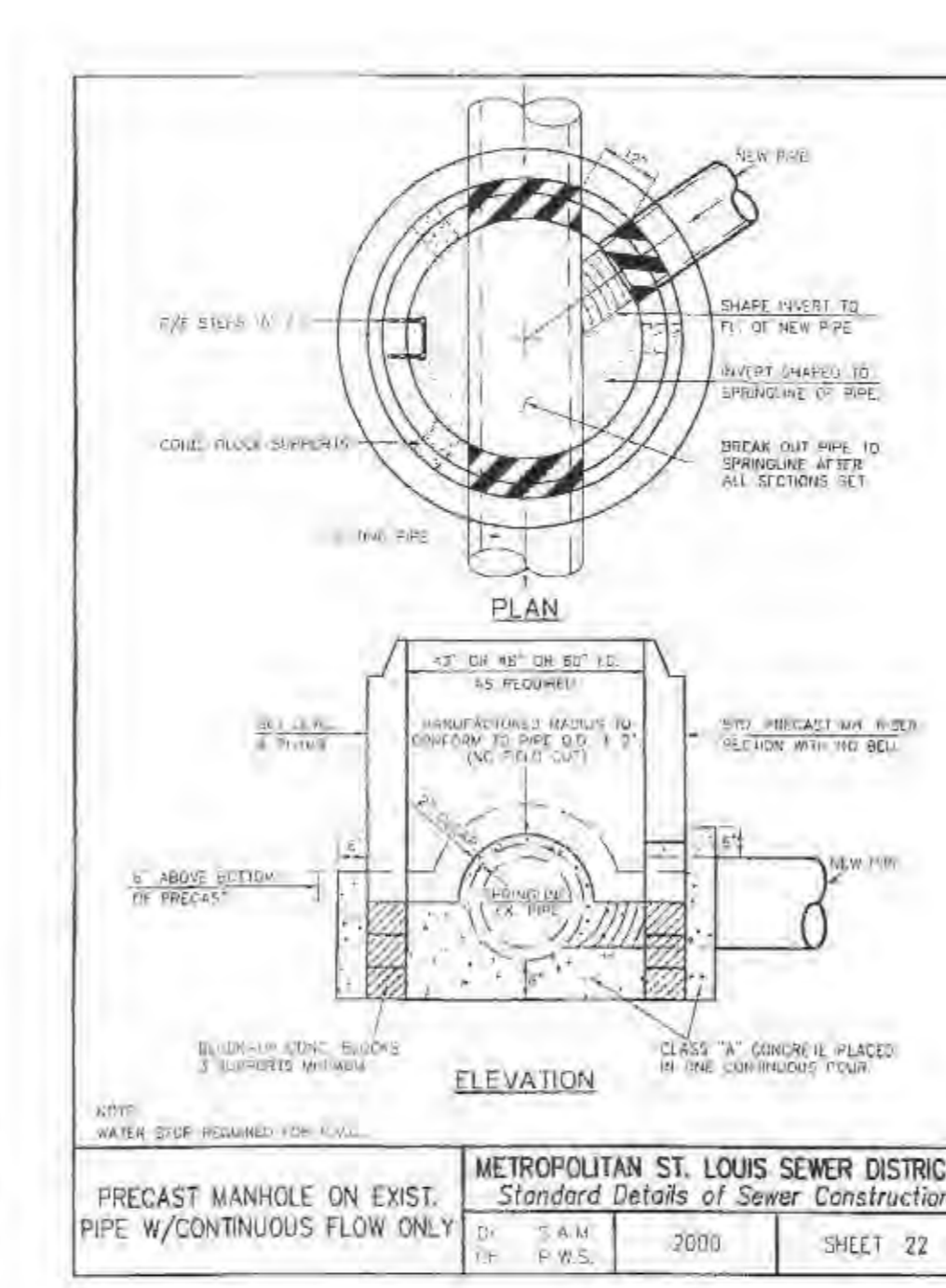
**INSIDE FOULWATER DROP MANHOLE (FOR FREE-FALL)**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 18



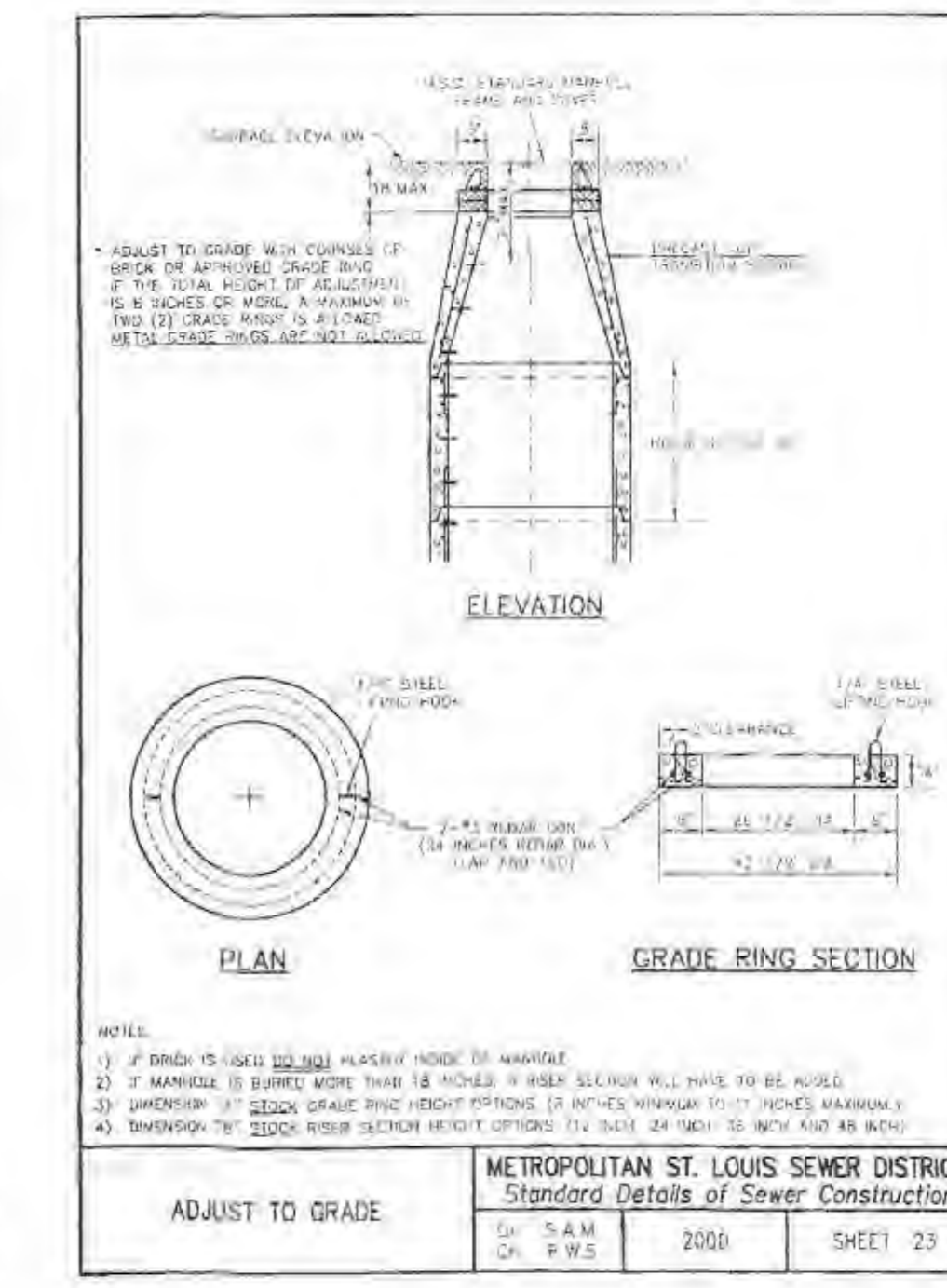
**TERMINAL MANHOLE**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 20



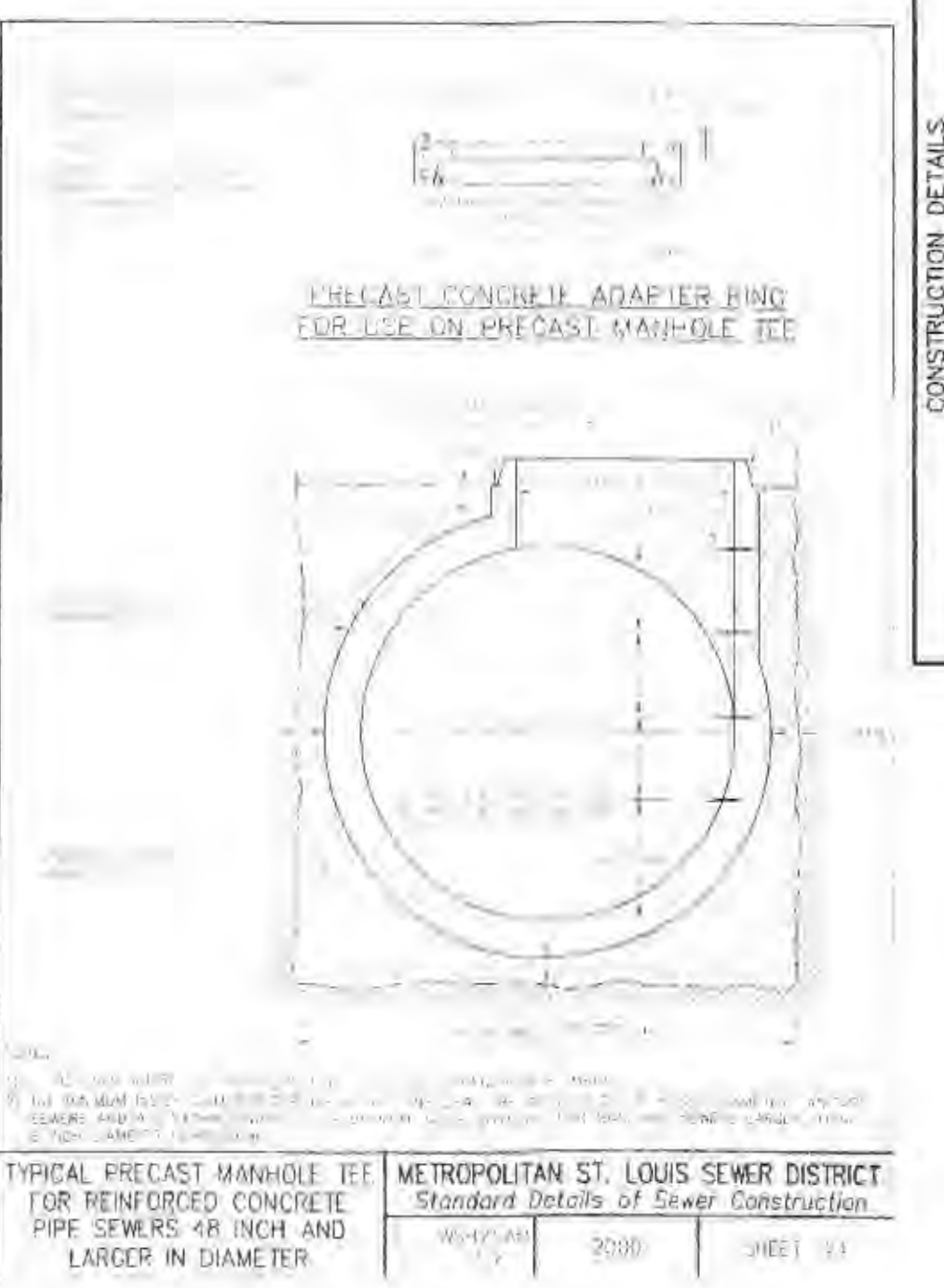
**PRECAST CONCRETE MANHOLE**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 21



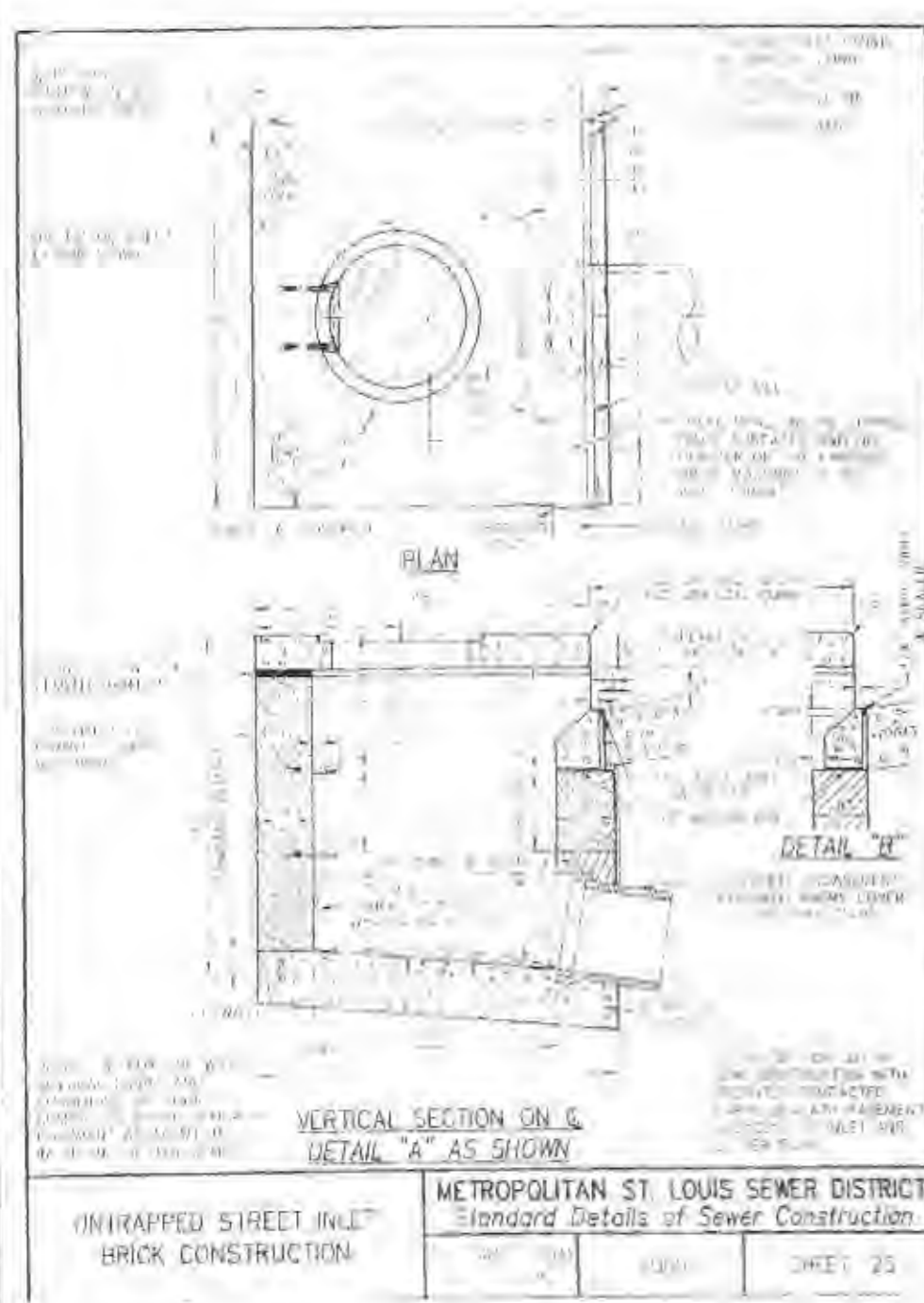
**PRECAST MANHOLE ON EXIST. PIPE W/CONTINUOUS FLOW ONLY**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 22



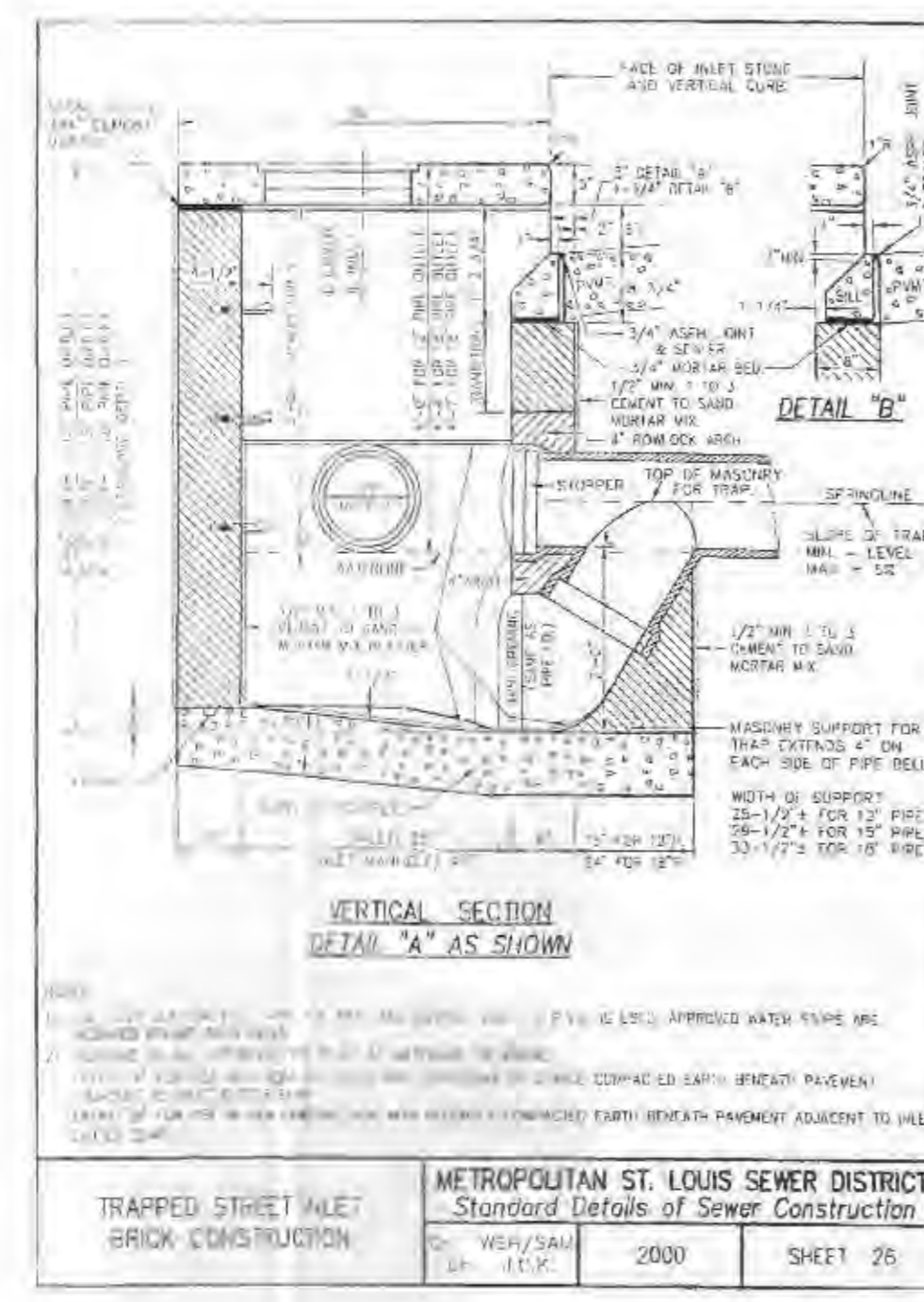
**ADJUST TO GRADE**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 23



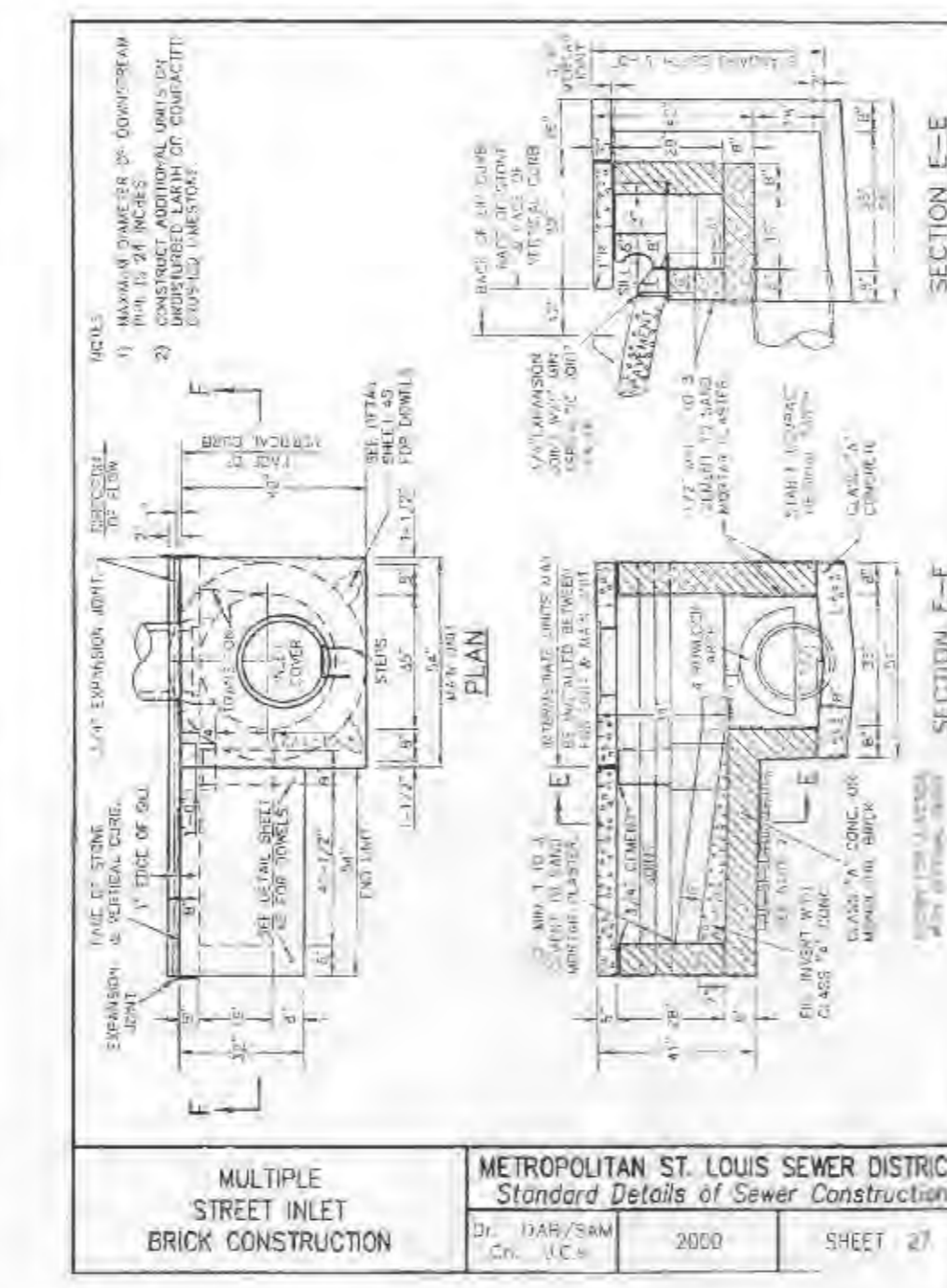
**TYPICAL PRECAST MANHOLE TEE FOR REINFORCED CONCRETE PIPE SEWERS 48 INCH AND LARGER IN DIAMETER**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 24



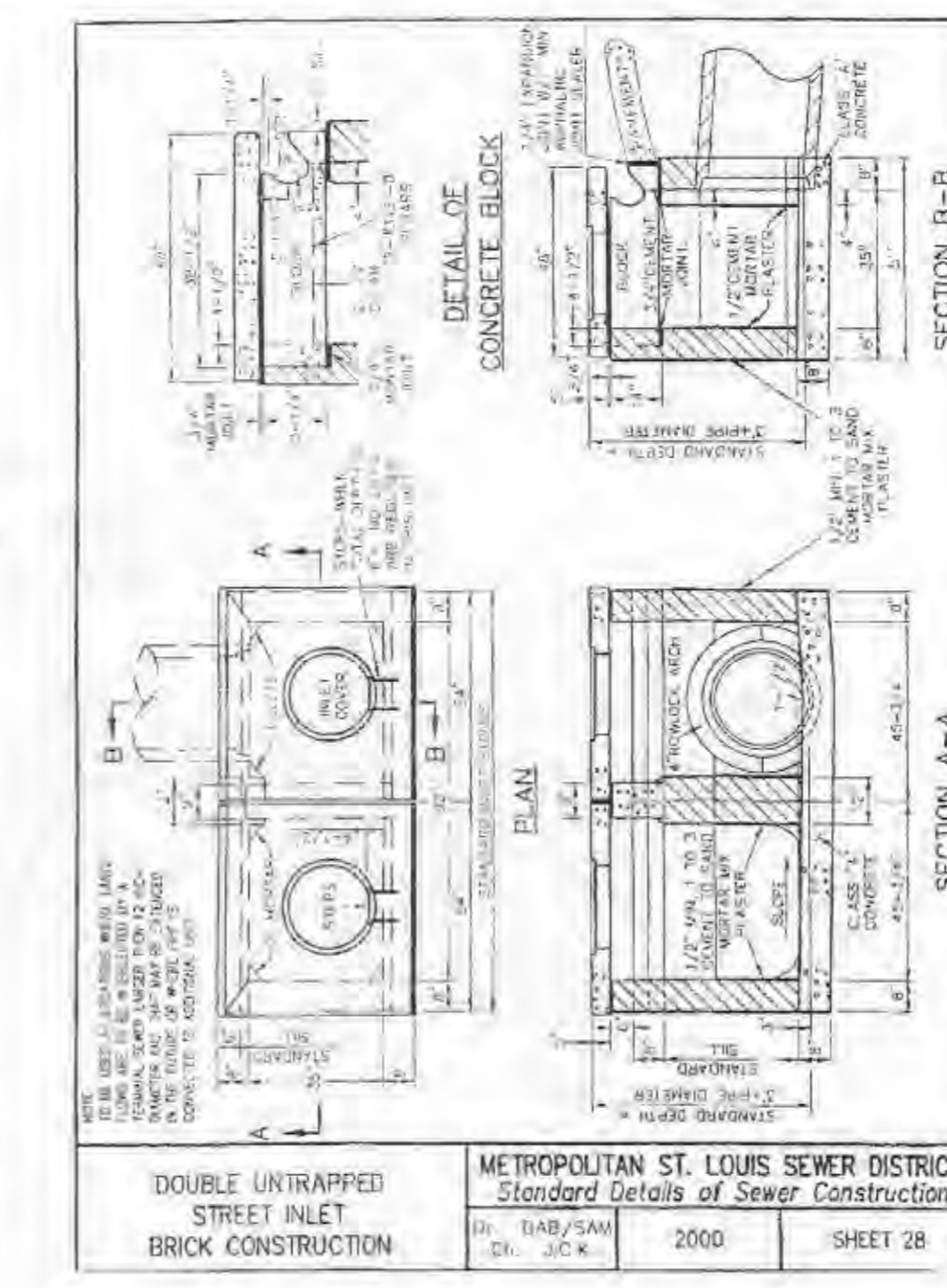
**UNTRAPPED STREET INLET BRICK CONSTRUCTION**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 25



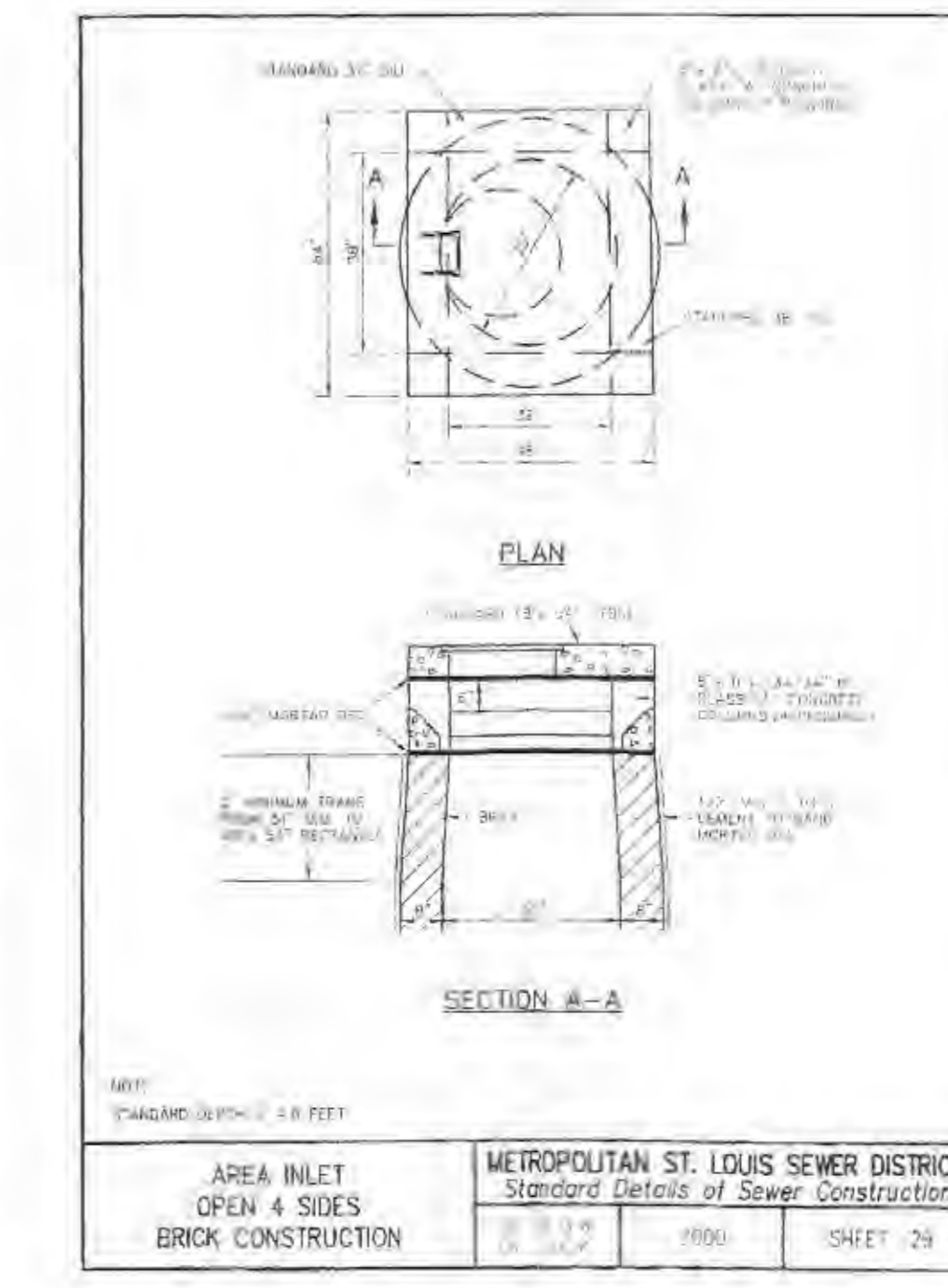
**TRAPPED STREET INLET BRICK CONSTRUCTION**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 26



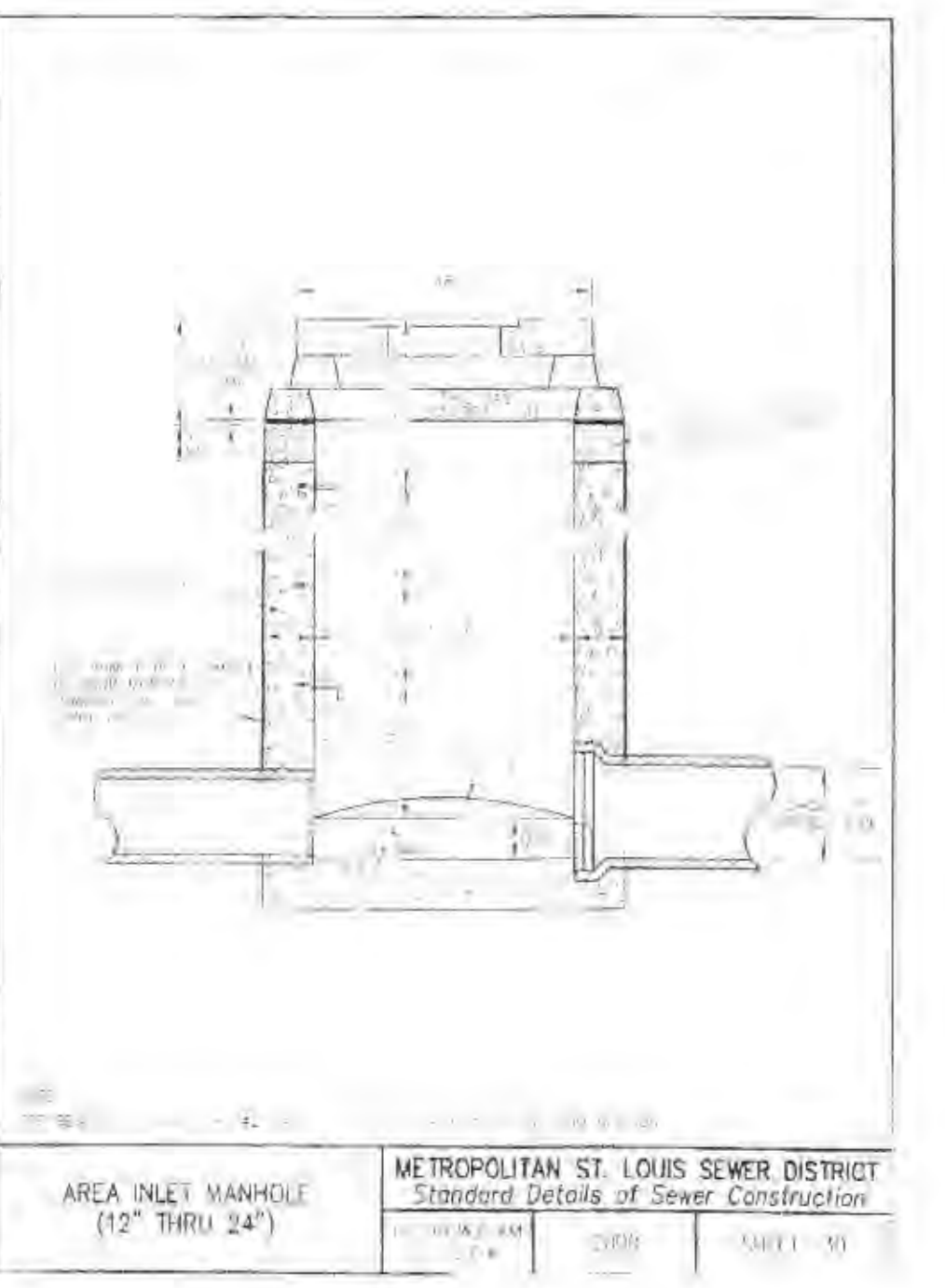
**MULTIPLE STREET INLET BRICK CONSTRUCTION**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 27



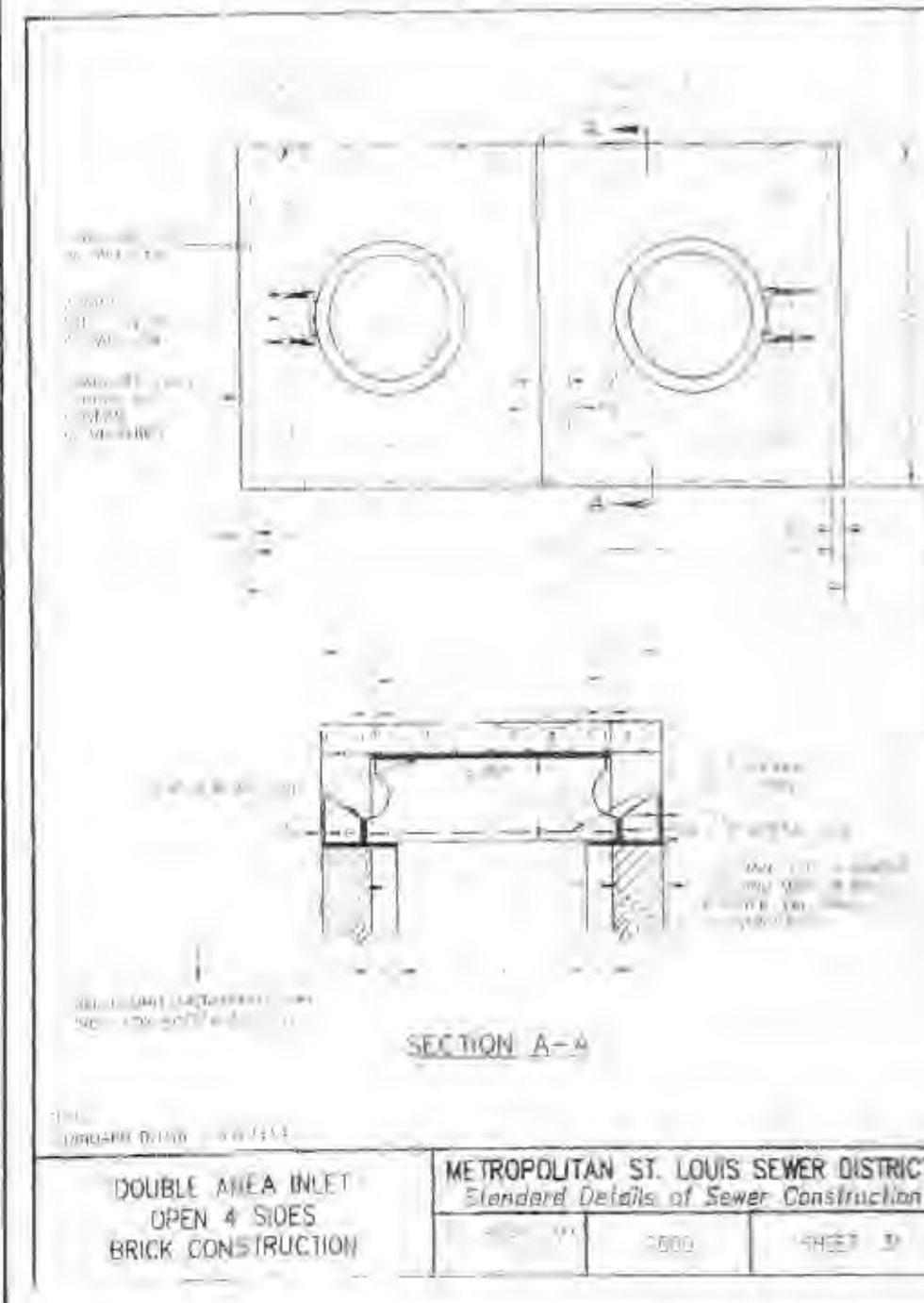
**DOUBLE UNTRAPPED STREET INLET BRICK CONSTRUCTION**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 28



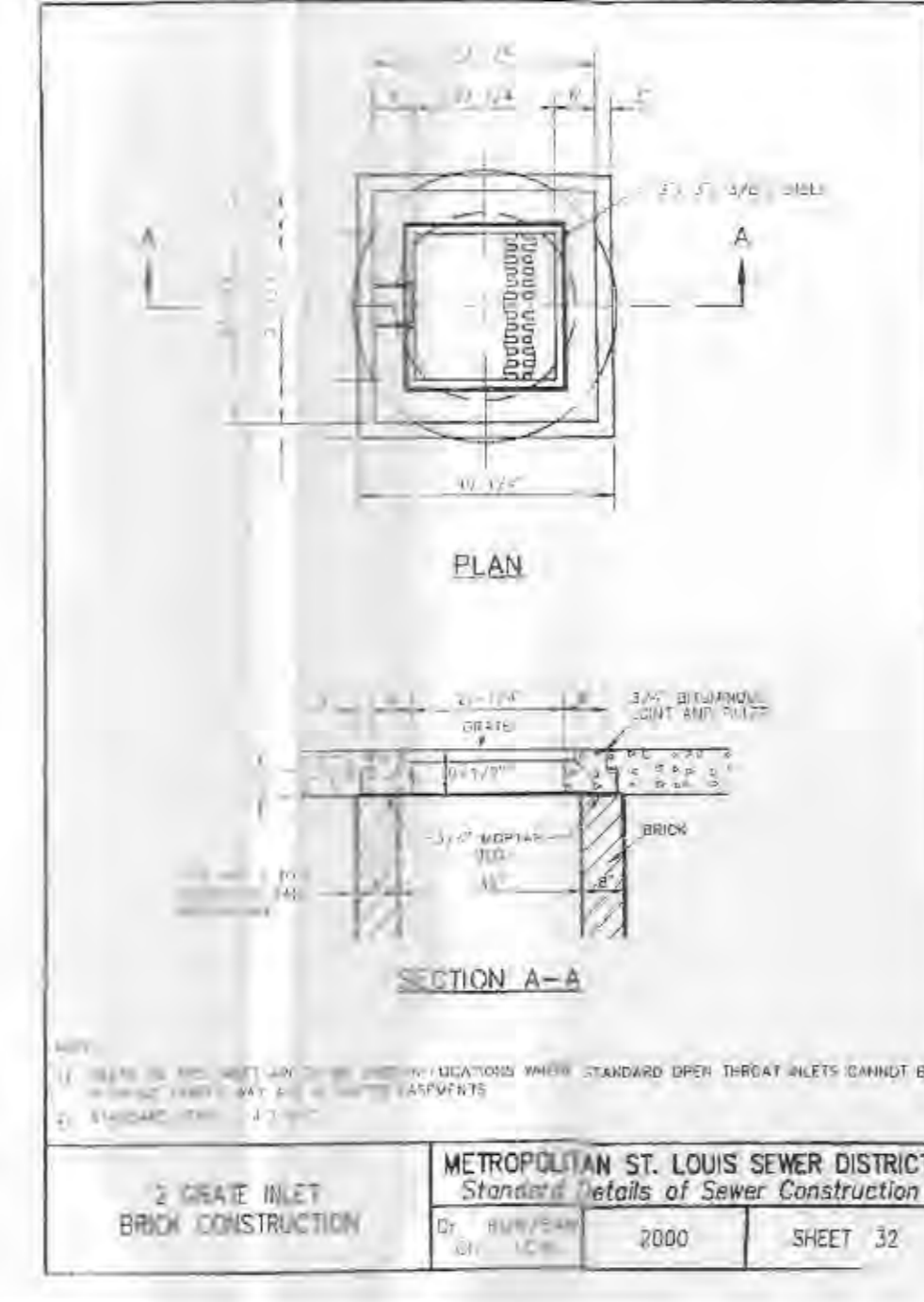
**AREA INLET OPEN 4 SIDES BRICK CONSTRUCTION**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 29



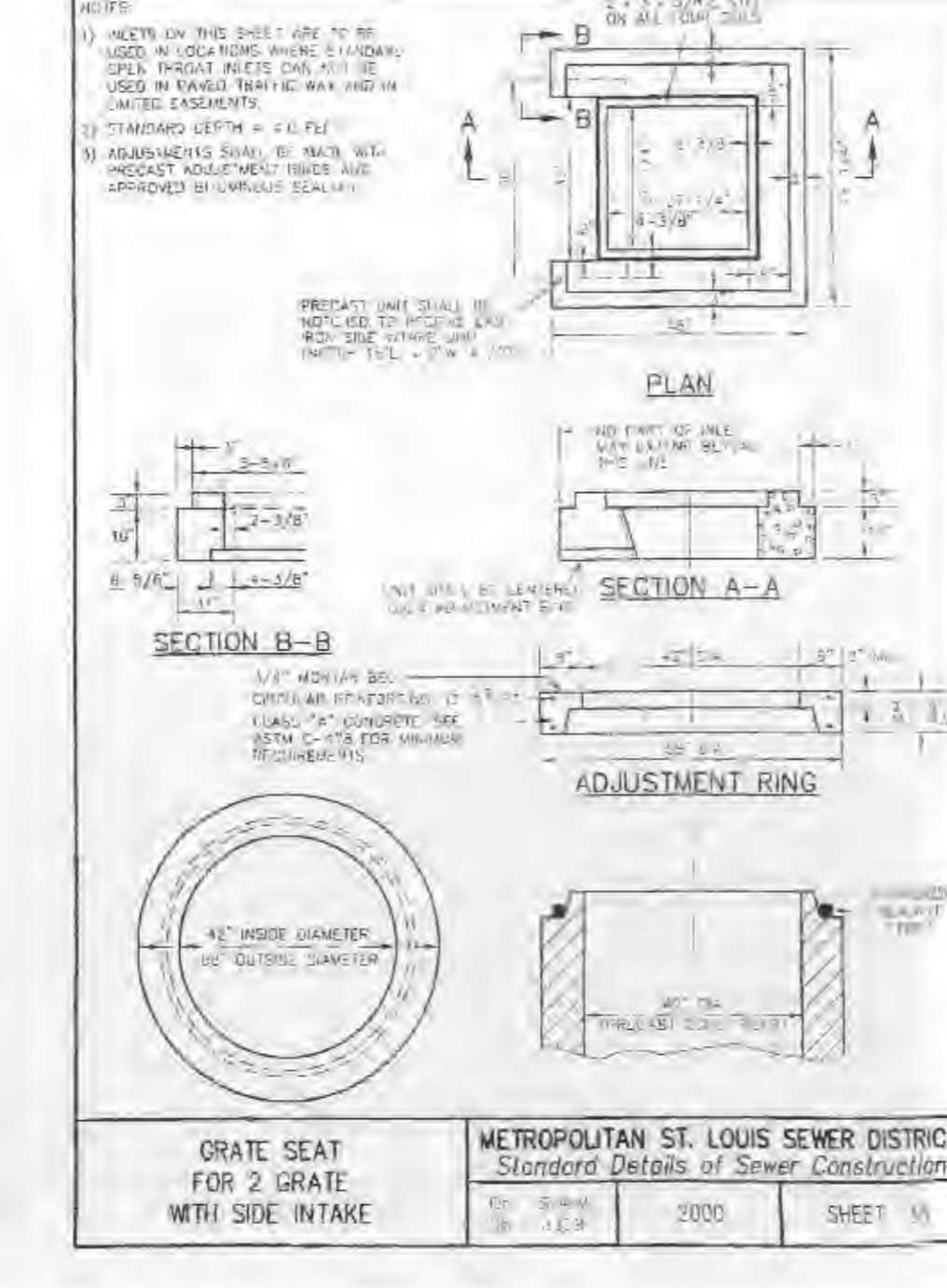
**AREA INLET MANHOLE (12" THRU 24")**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 30



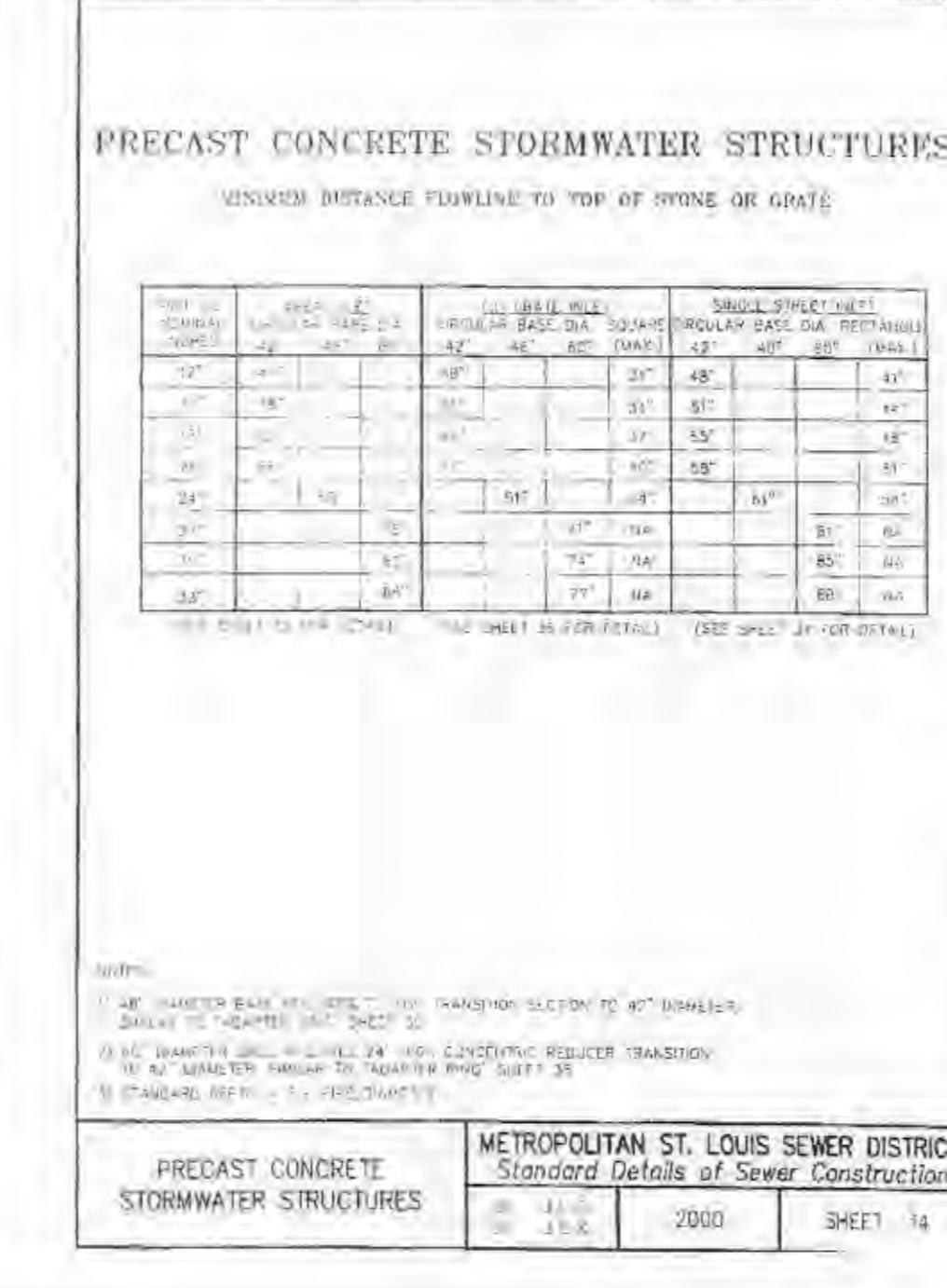
**DOUBLE AREA INLET OPEN 4 SIDES BRICK CONSTRUCTION**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 31



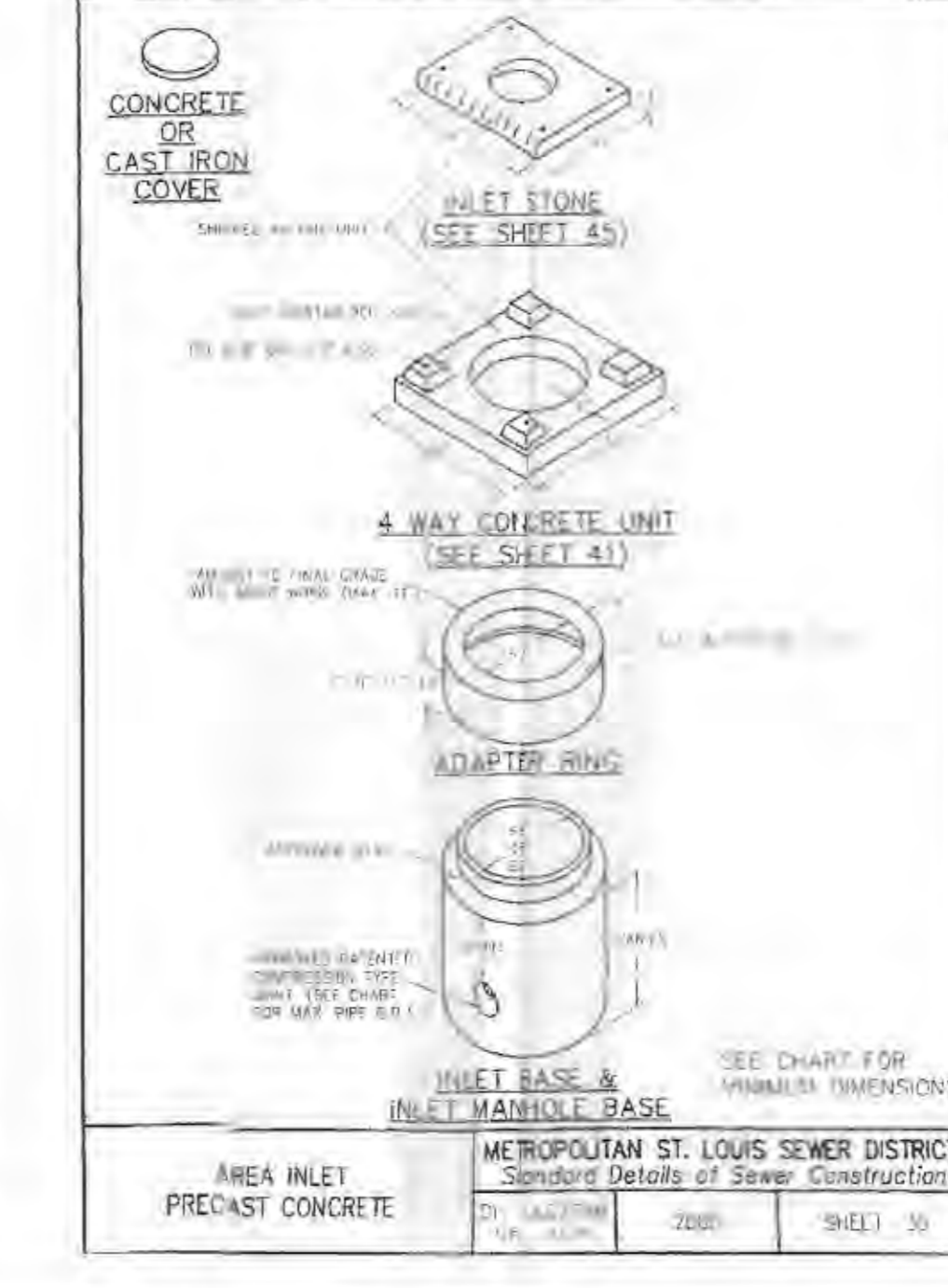
**2 GRATE INLET BRICK CONSTRUCTION**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 32



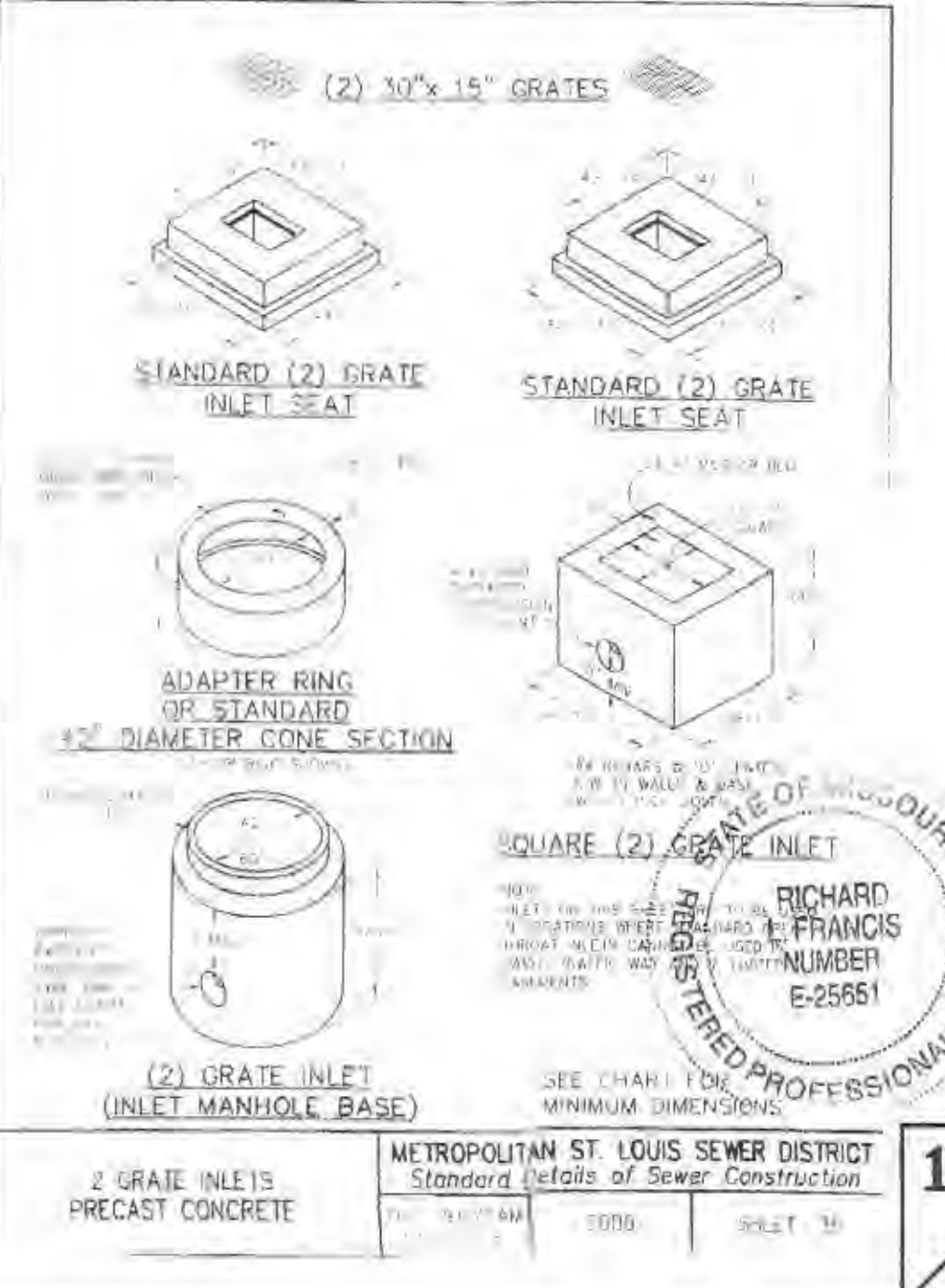
**GRATE SEAT FOR 2 GRATE WITH SIDE INTAKE**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 33



**PRECAST CONCRETE STORMWATER STRUCTURES**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 34



**AREA INLET PRECAST CONCRETE**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 35



**2 GRATE INLETS PRECAST CONCRETE**  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 DR. WSH/SAM  
 CH. J.C.K.  
 2000 SHEET 36



**CONCRETE OR CAST IRON COVER**  
**CONCRETE OR CAST IRON COVER**

**INLET STONE (SEE SHEET 45)**  
**INLET STONE**

**SINGLE CURB INLET (SEE SHEET 40)**  
**ADAPTER RING**

**SHALLOW SINGLE CURB INLET**  
**INLET SILL 6" x 8" x 3'-2"**

**INLET BASE & INLET MANHOLE BASE**

SEE CHART FOR MINIMUM DIMENSIONS

SINGLE STREET INLETS PRECAST CONCRETE	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 37
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**DOUBLE UNTRAPPED STREET INLET**

PLAN  
 SECTION A-A

NOTES:  
 1) THIS UNIT SHALL BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.

DOUBLE UNTRAPPED STREET INLET PRECAST CONCRETE	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 38
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**TRAPPED STREET INLET BASE**

PLAN  
 SECTION A-A

NOTES:  
 1) THIS UNIT SHALL BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 2) STANDARD DEPTH = 8.0 FEET.  
 3) 3000 # PSI CONCRETE REQUIRED.

TRAPPED STREET INLET BASE PRECAST CONCRETE	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 39
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**PRECAST CONCRETE UNIT FOR SINGLE STREET INLET**

PLAN  
 ELEVATION  
 SECTION A-A

NOTES:  
 1) SET STANDARD INLET UNIT WITH 3/4" MORTAR BED AND COVER WITH 5/8" DIA. 1" LONG RING AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.  
 3) THIS UNIT IS TO BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 4) 3000 # PSI CONCRETE IS REQUIRED.

PRECAST CONCRETE UNIT FOR SINGLE STREET INLET	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 40
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**PRECAST CONCRETE UNIT FOR 4 WAY AREA INLET**

PLAN  
 SECTION A-A

NOTES:  
 1) SET STANDARD INLET STONE TO 42" FINISH GRADE WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.  
 3) THIS UNIT IS TO BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 4) 3000 # PSI CONCRETE IS REQUIRED.

PRECAST CONCRETE UNIT FOR 4 WAY AREA INLET	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 41
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**CONCRETE DOUBLE STREET INLET WITH PRECAST CONCRETE UNIT "A"**

ELEVATION  
 SECTION A-A  
 SECTION B-B

NOTES:  
 1) SET STANDARD INLET STONE TO 42" FINISH GRADE WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.

CONCRETE DOUBLE STREET INLET WITH PRECAST CONCRETE UNIT "A"	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 42
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**PRECAST CONCRETE UNIT "A" FOR STREET DOUBLE INLET**

PLAN  
 ELEVATION  
 SECTION A-A

NOTES:  
 1) SET STANDARD INLET STONE TO 42" FINISH GRADE WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.  
 3) THIS UNIT IS TO BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 4) 3000 # PSI CONCRETE IS REQUIRED.

PRECAST CONCRETE UNIT "A" FOR STREET DOUBLE INLET	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 43
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**PRECAST CONCRETE UNIT "B" FOR STREET DOUBLE INLET**

PLAN  
 ELEVATION  
 SECTION A-A

NOTES:  
 1) SET STANDARD INLET STONE TO 42" FINISH GRADE WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.  
 3) THIS UNIT IS TO BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 4) 3000 # PSI CONCRETE IS REQUIRED.

PRECAST CONCRETE UNIT "B" FOR STREET DOUBLE INLET	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 44
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**STANDARD - INLET STONES, BLOCKS & DESIGN DETAILS**

GRID DETAIL  
 AT-HOLE FOR DOWEL BAR ANCHOR  
 REINFORCED CONCRETE SILL FOR STANDARD STREET INLET & MULTIPLE INLET  
 MULTIPLE INLET STONE DOBEL

NOTES:  
 1) SET STANDARD INLET STONE TO 42" FINISH GRADE WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.  
 3) THIS UNIT IS TO BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 4) 3000 # PSI CONCRETE IS REQUIRED.

STANDARD - INLET STONES, BLOCKS & DESIGN DETAILS	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 45
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**HEAVY DUTY 8 INCH INLET STONE (ALTERNATE)**

PLAN  
 ELEVATION  
 SECTION A-A

NOTES:  
 1) SET STANDARD INLET STONE TO 42" FINISH GRADE WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.  
 3) THIS UNIT IS TO BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 4) 3000 # PSI CONCRETE IS REQUIRED.

HEAVY DUTY 8 INCH INLET STONE (ALTERNATE)	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 46
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**PRECAST CONCRETE INLET COVER**

GRID DETAIL  
 DETAIL "A"  
 SECTION A-A

NOTES:  
 1) PRECAST INLET COVER SHALL BE SET WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.  
 3) THIS UNIT IS TO BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 4) 3000 # PSI CONCRETE IS REQUIRED.

**STANDARD INLET STONE MUST BE SET TO RECEIVE COVER.**

PRECAST CONCRETE INLET COVER	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 47
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**DETAILS OF INLET FRAME AND GRATES**

GRATE INLET FRAME  
 DETAIL OF CONTINUOUS ANCHOR FOR ANGLE SEAT  
 PLAN  
 SECTION A-A  
 SECTION B-B

NOTES:  
 1) SET STANDARD INLET STONE TO 42" FINISH GRADE WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.

DETAILS OF INLET FRAME AND GRATES	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 48
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**DETAIL OF STEEL GRATE**

PLAN  
 SECTION A-A  
 ELEVATION

NOTES:  
 1) SET STANDARD INLET STONE TO 42" FINISH GRADE WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.  
 3) THIS UNIT IS TO BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 4) 3000 # PSI CONCRETE IS REQUIRED.

DETAIL OF STEEL GRATE	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 49
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**STEEL REQUIREMENTS FOR GRATE INLET SEAT**

PLAN  
 SECTION A-A

GRATE	SIZE	STRAIGHT BARS
3' x 4' GRATE	3'-4"	3'-4"
3' x 6' GRATE	3'-6"	3'-6"
4' x 9' GRATE	4'-9"	4'-9"
5' x 0' GRATE	5'-0"	5'-0"

NOTES:  
 1) SET STANDARD INLET STONE TO 42" FINISH GRADE WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.  
 3) THIS UNIT IS TO BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 4) 3000 # PSI CONCRETE IS REQUIRED.

STEEL REQUIREMENTS FOR GRATE INLET SEAT	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 50
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**CAST IRON SIDE INTAKE UNIT FOR GRATED INLETS 248 LBS.**

PLAN  
 ELEVATION  
 END VIEW  
 SECTION A-A

NOTES:  
 1) SET STANDARD INLET STONE TO 42" FINISH GRADE WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.  
 3) THIS UNIT IS TO BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 4) 3000 # PSI CONCRETE IS REQUIRED.

CAST IRON SIDE INTAKE UNIT FOR GRATED INLETS 248 LBS.	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 51
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**CAST IRON MANHOLE FRAME**

PLAN  
 ELEVATION  
 SECTION A-A (230 lbs.)

NOTES:  
 1) SET STANDARD INLET STONE TO 42" FINISH GRADE WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.  
 3) THIS UNIT IS TO BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 4) 3000 # PSI CONCRETE IS REQUIRED.

CAST IRON MANHOLE FRAME	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 52
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**CAST IRON COVERS, MANHOLES & INLETS**

85 LBS  
 STANDARD CAST IRON INLET COVER  
 TYPE "A" 120+ LBS  
 TYPE "B" 152 LBS  
 SECTION B-B CLOSED-TYPE COVER  
 SECTION C-C SLOTTED-TYPE COVER  
 STANDARD CAST IRON MANHOLE COVERS

NOTES:  
 1) SET STANDARD INLET STONE TO 42" FINISH GRADE WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.  
 3) THIS UNIT IS TO BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 4) 3000 # PSI CONCRETE IS REQUIRED.

CAST IRON COVERS, MANHOLES & INLETS	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 53
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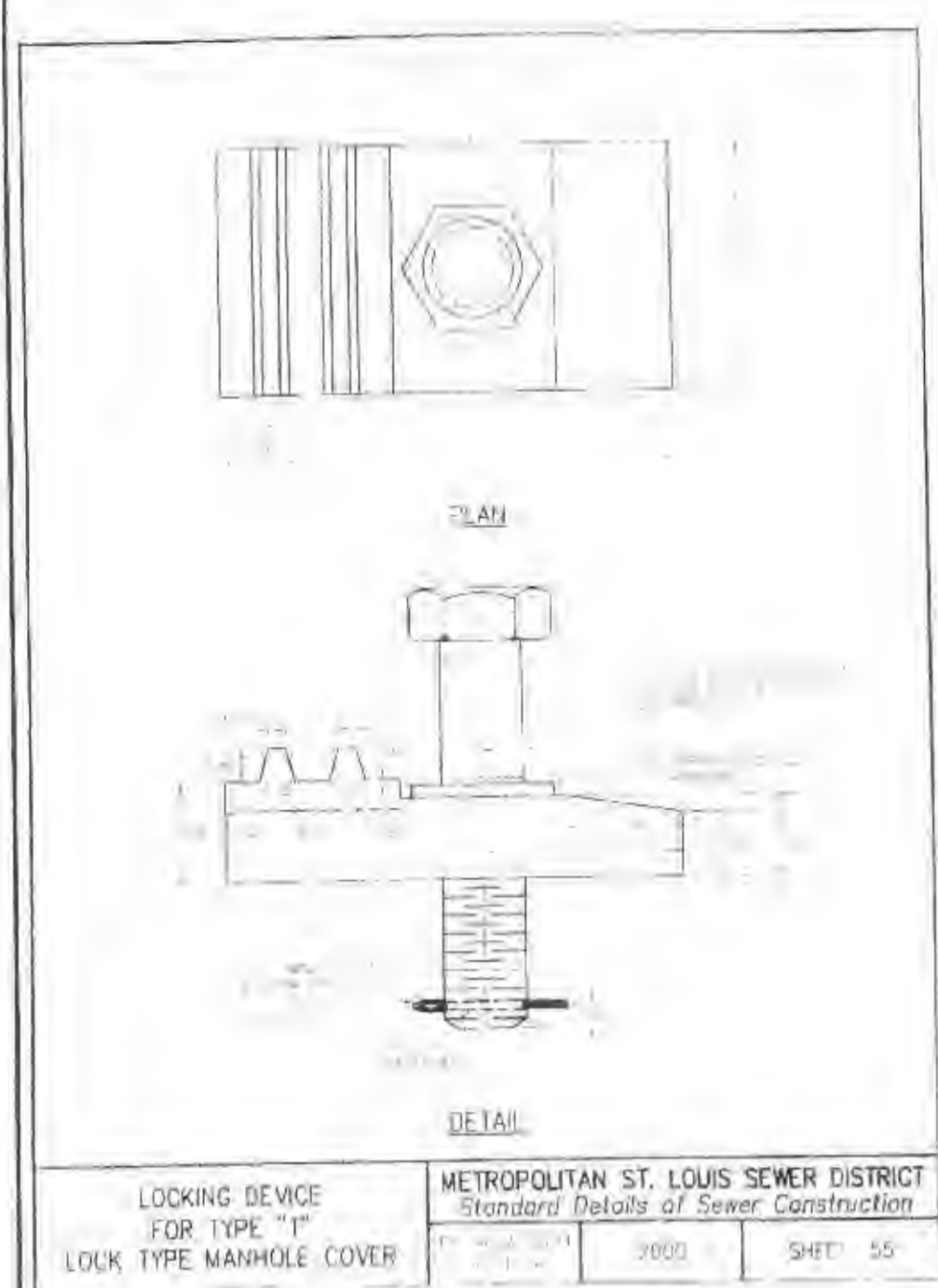
**CAST IRON MANHOLE COVERS (LOCK TYPE)**

TYPICAL EYE-THREE HOLES  
 TYPE "T"  
 TYPE "N"

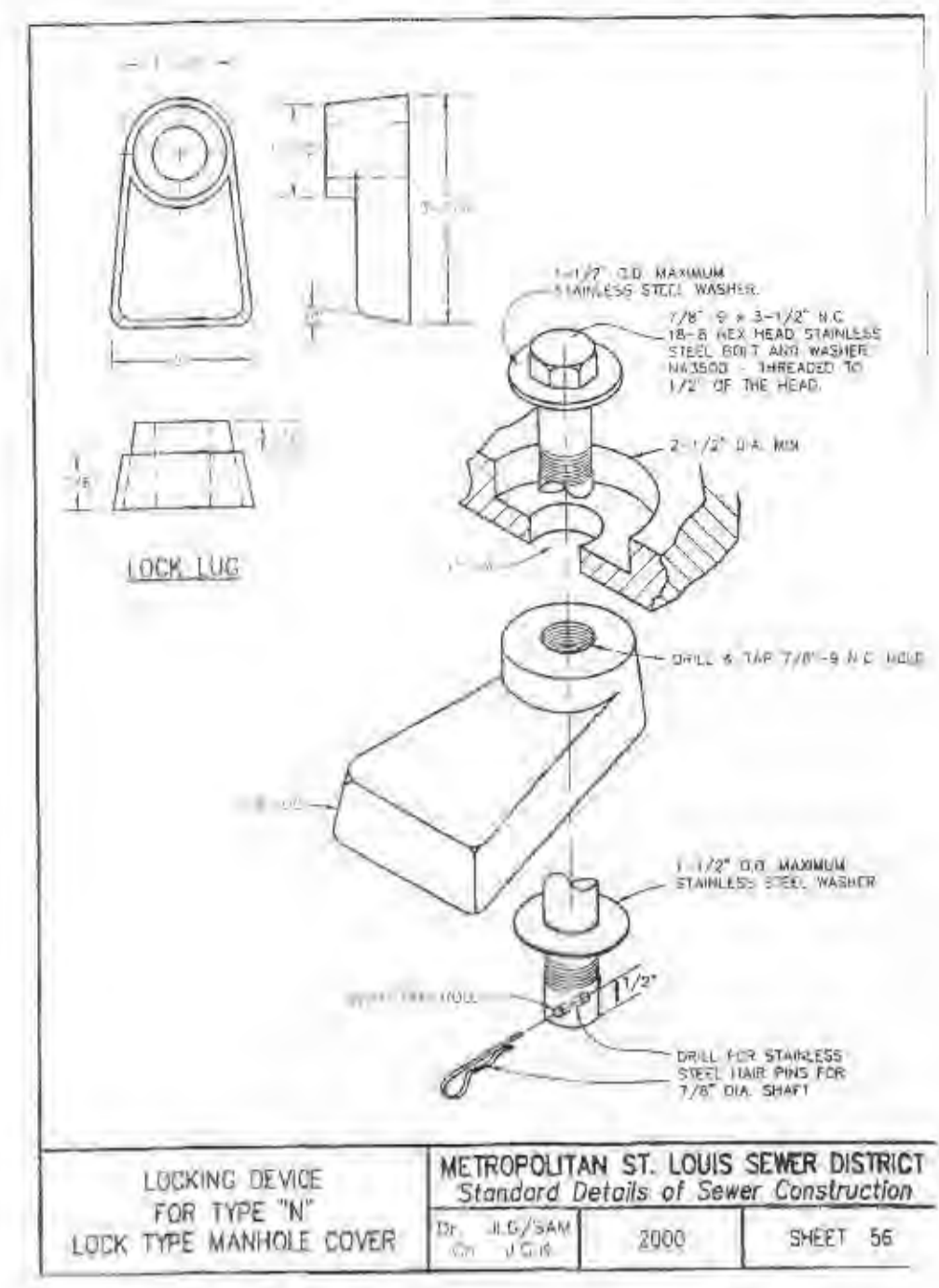
NOTES:  
 1) SET STANDARD INLET STONE TO 42" FINISH GRADE WITH 3/4" MORTAR BED AND GROUT.  
 2) RAISE TO FINISH GRADE WITH TOWERS OR BRICK AND SET THE UNIT TO BASE WITH 3/4" MORTAR BED.  
 3) THIS UNIT IS TO BE SET WITH 42 INCH TO FINISH GRADE FOR THE CURB AND 48 INCH TO FINISH GRADE FOR THE INLET.  
 4) 3000 # PSI CONCRETE IS REQUIRED.

CAST IRON MANHOLE COVERS (LOCK TYPE)	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction	2000	SHEET 54
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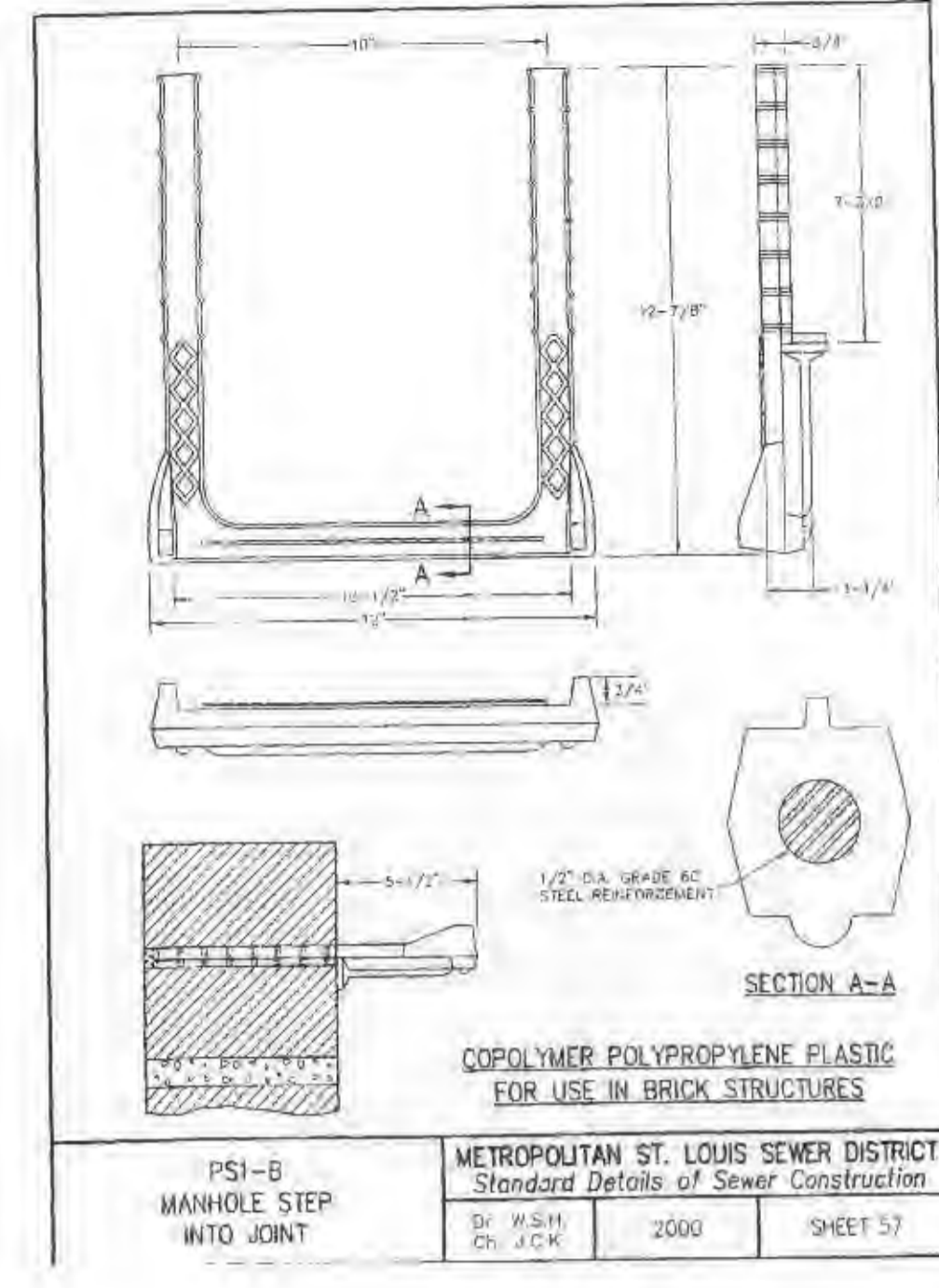




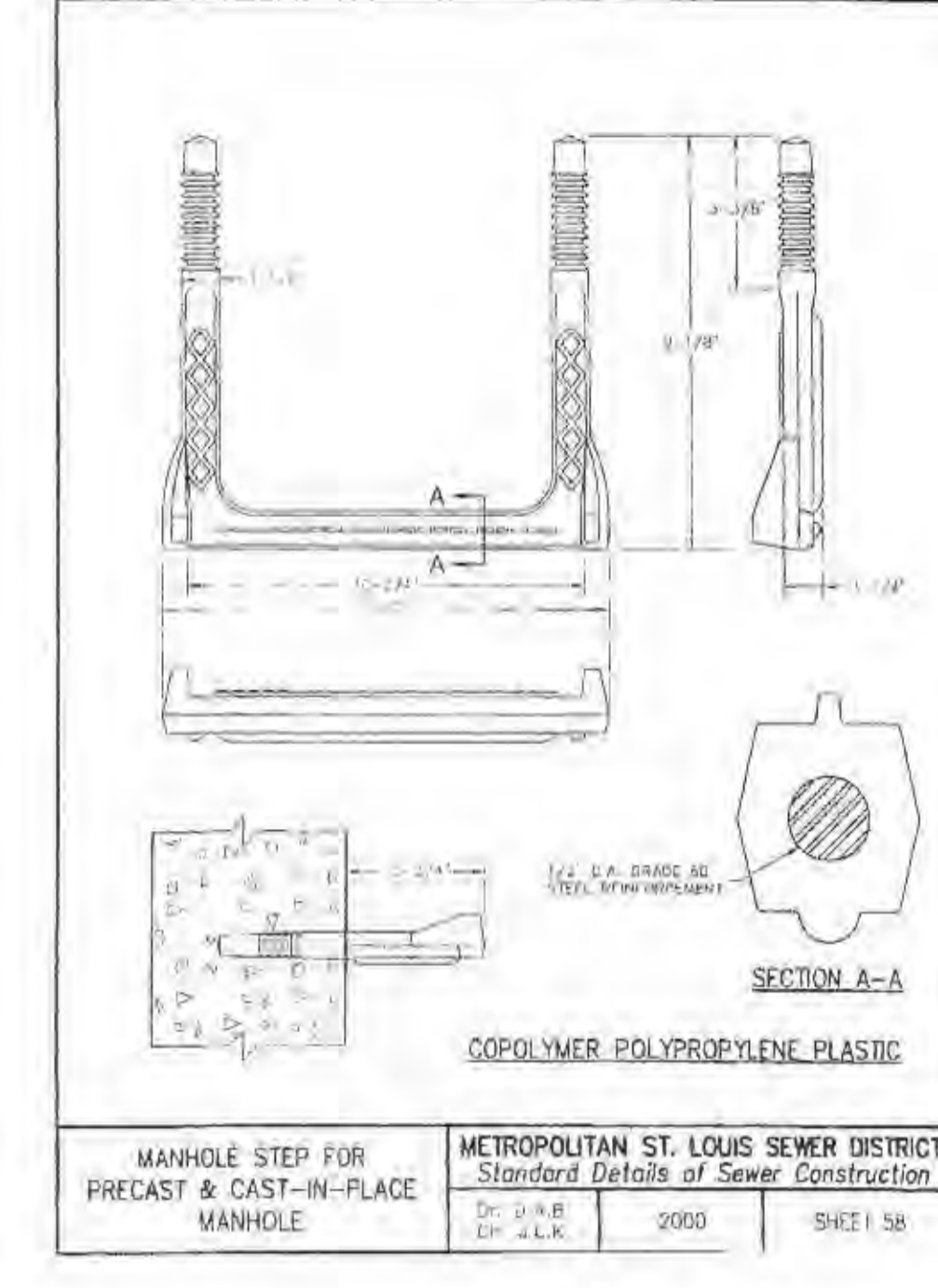
LOCKING DEVICE FOR TYPE "M" LOCK TYPE MANHOLE COVER  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 55



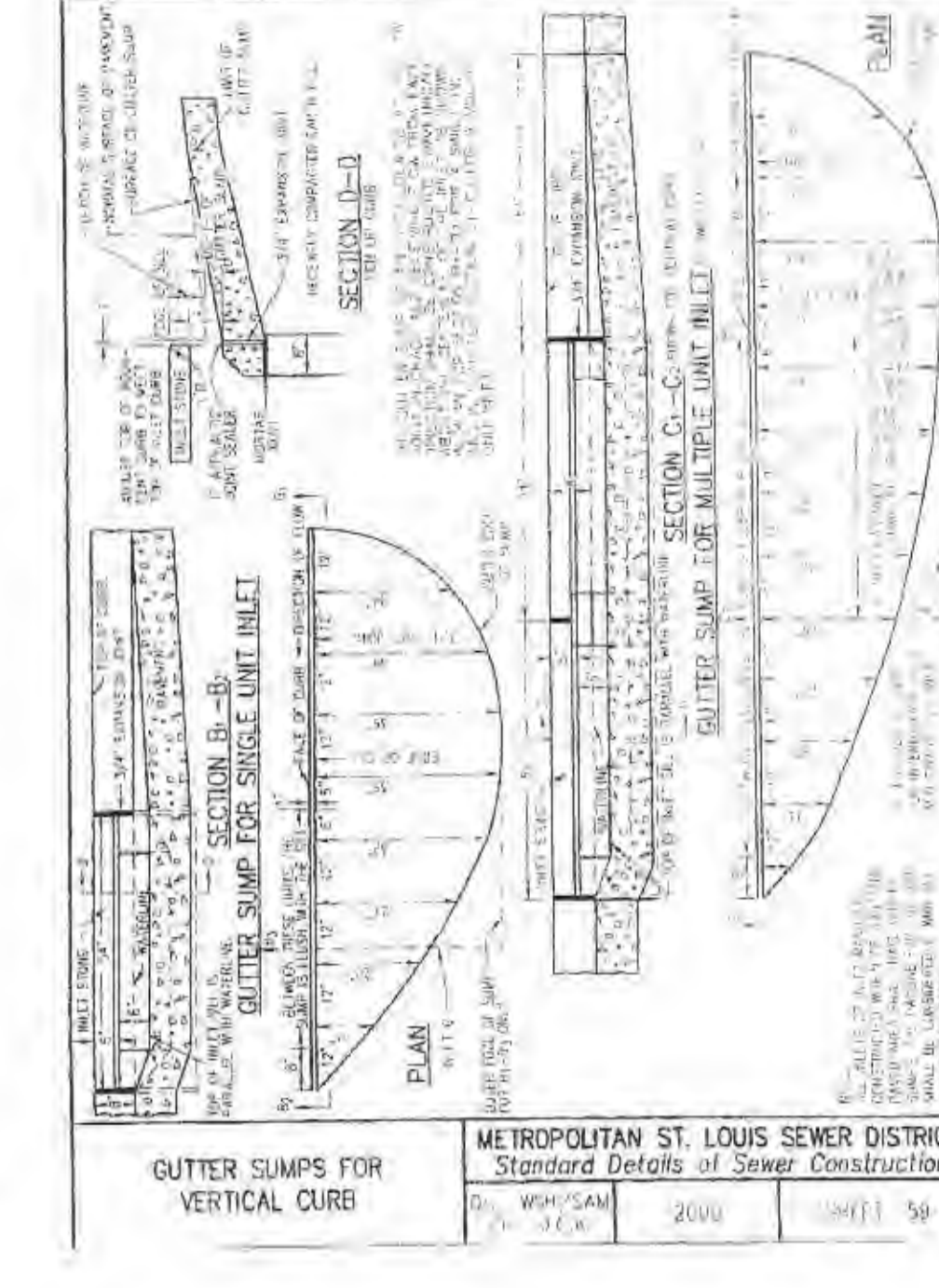
LOCKING DEVICE FOR TYPE "N" LOCK TYPE MANHOLE COVER  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 56



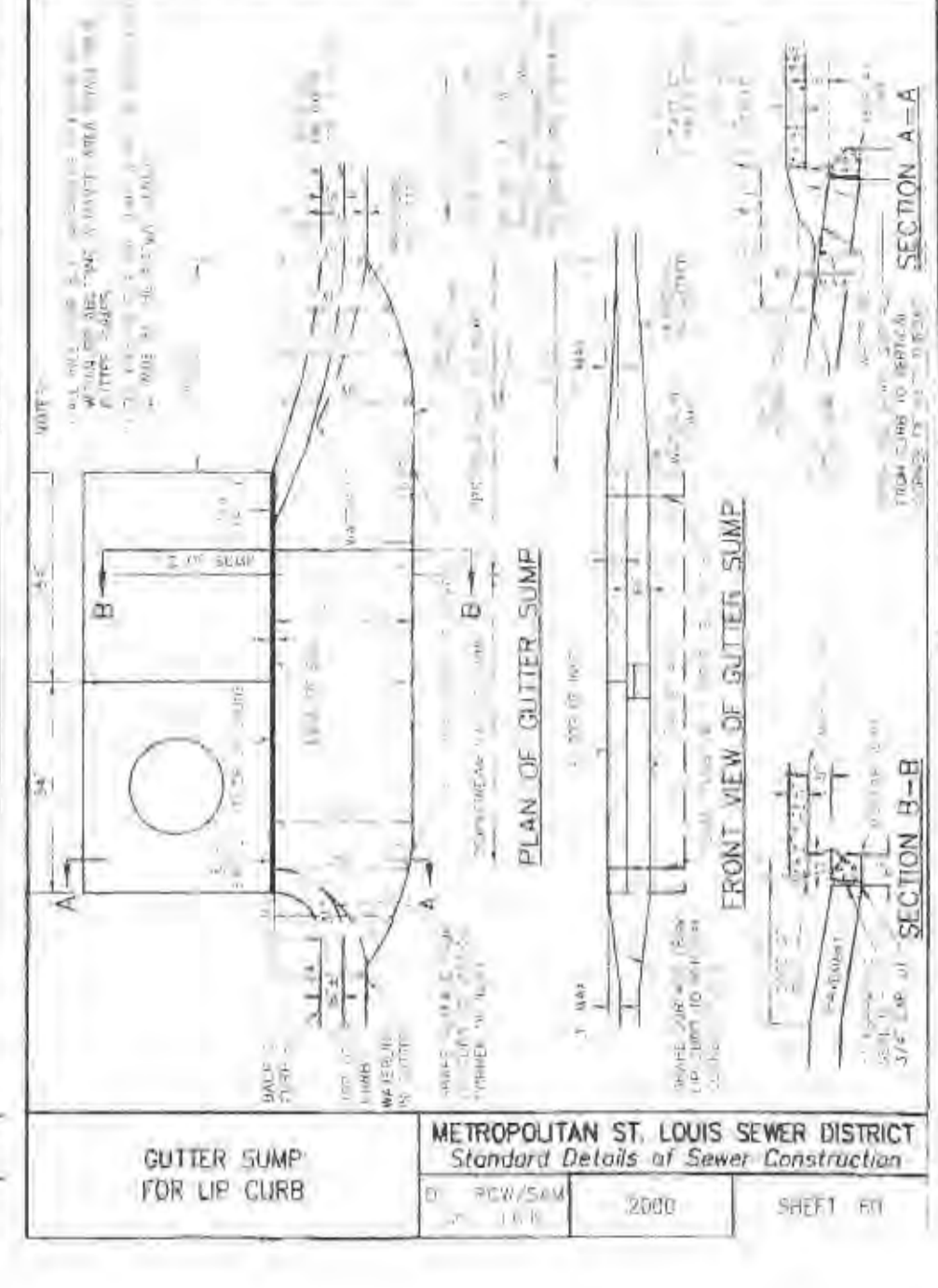
PSI-B MANHOLE STEP INTO JOINT  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: W.S.H. / CH: J.C.K. / 2000 / SHEET 57



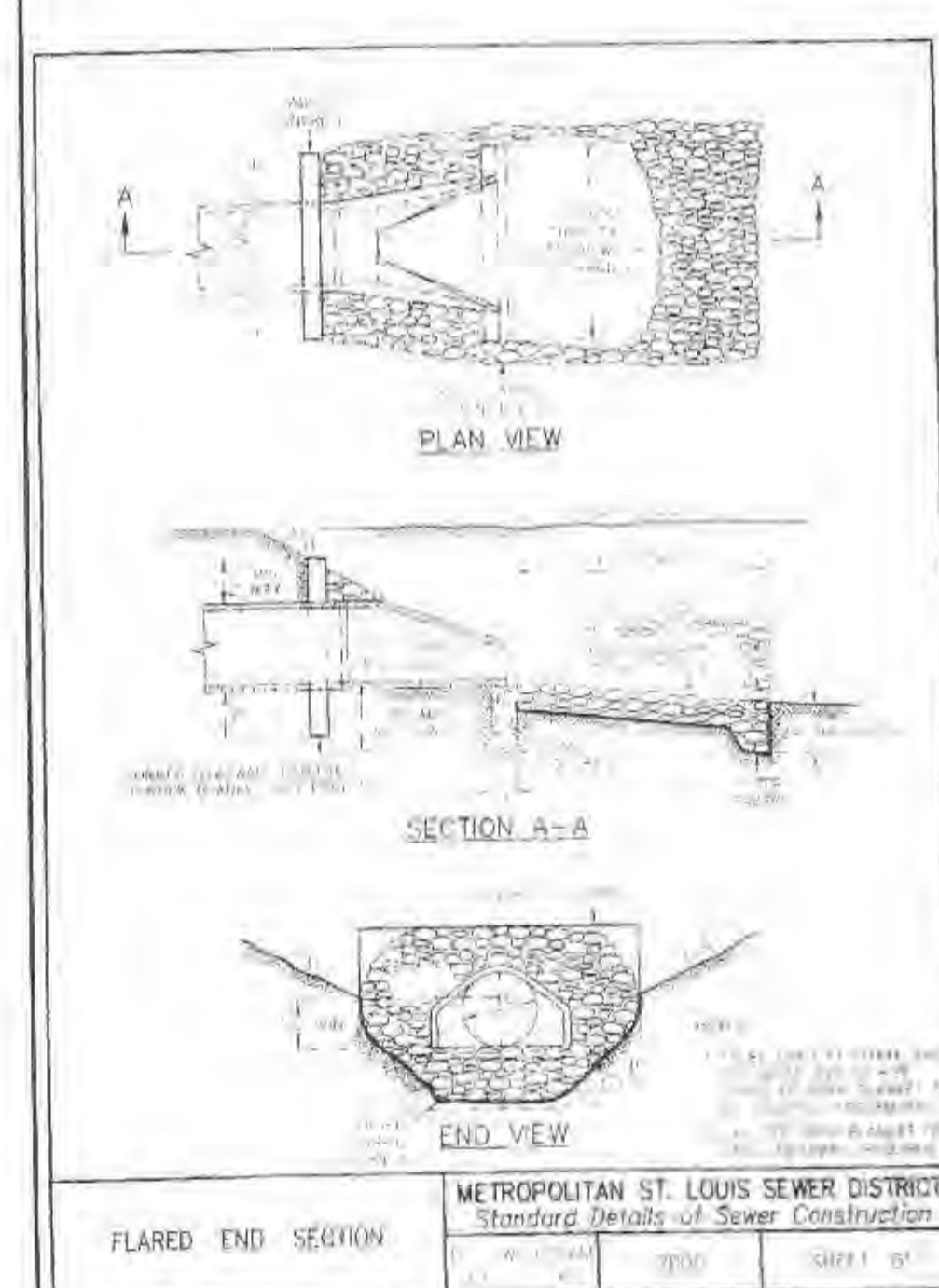
MANHOLE STEP FOR PRECAST & CAST-IN-PLACE MANHOLE  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: D.P.B. / CH: J.L.K. / 2000 / SHEET 58



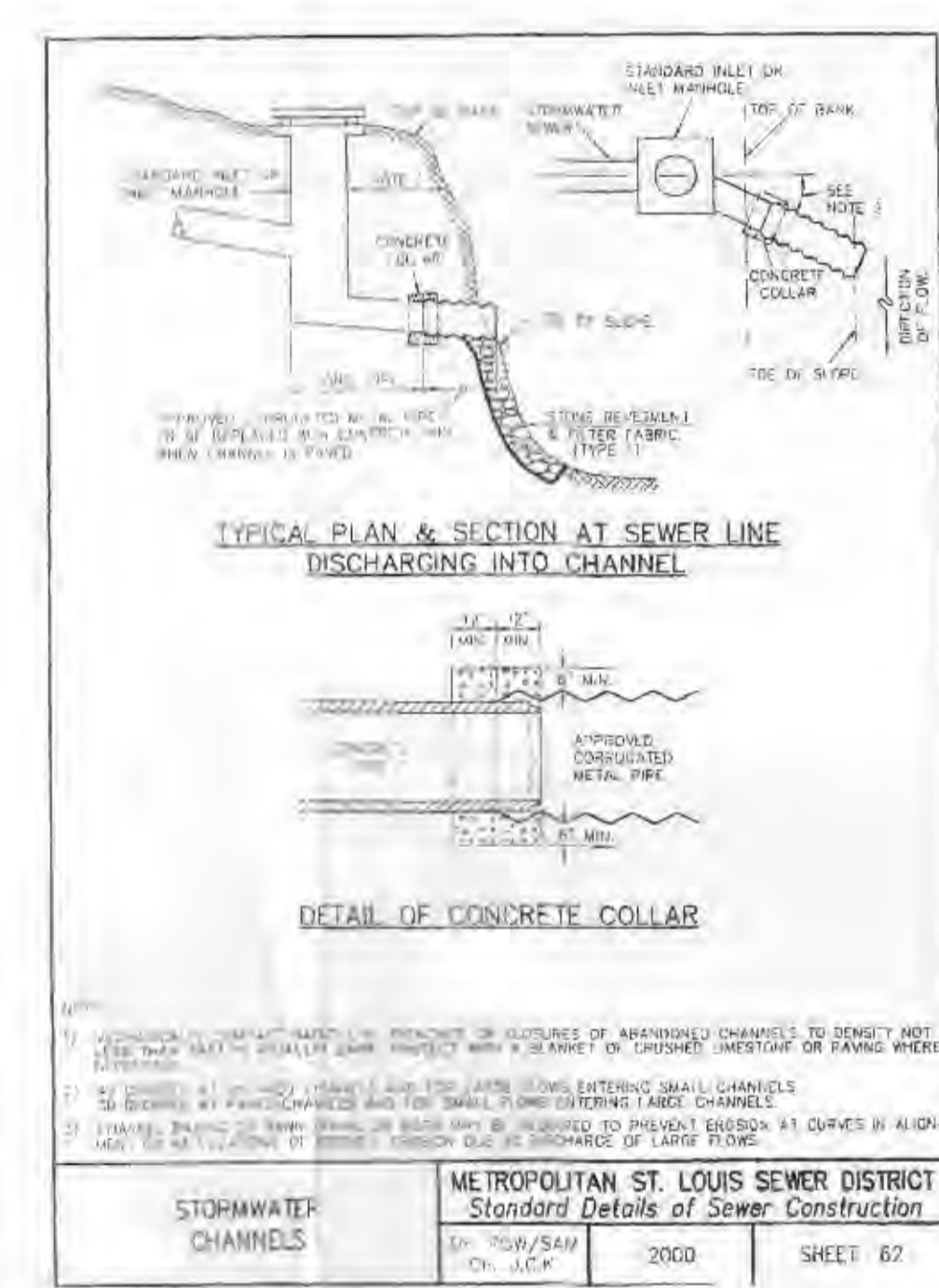
GUTTER SUMPS FOR VERTICAL CURB  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 59



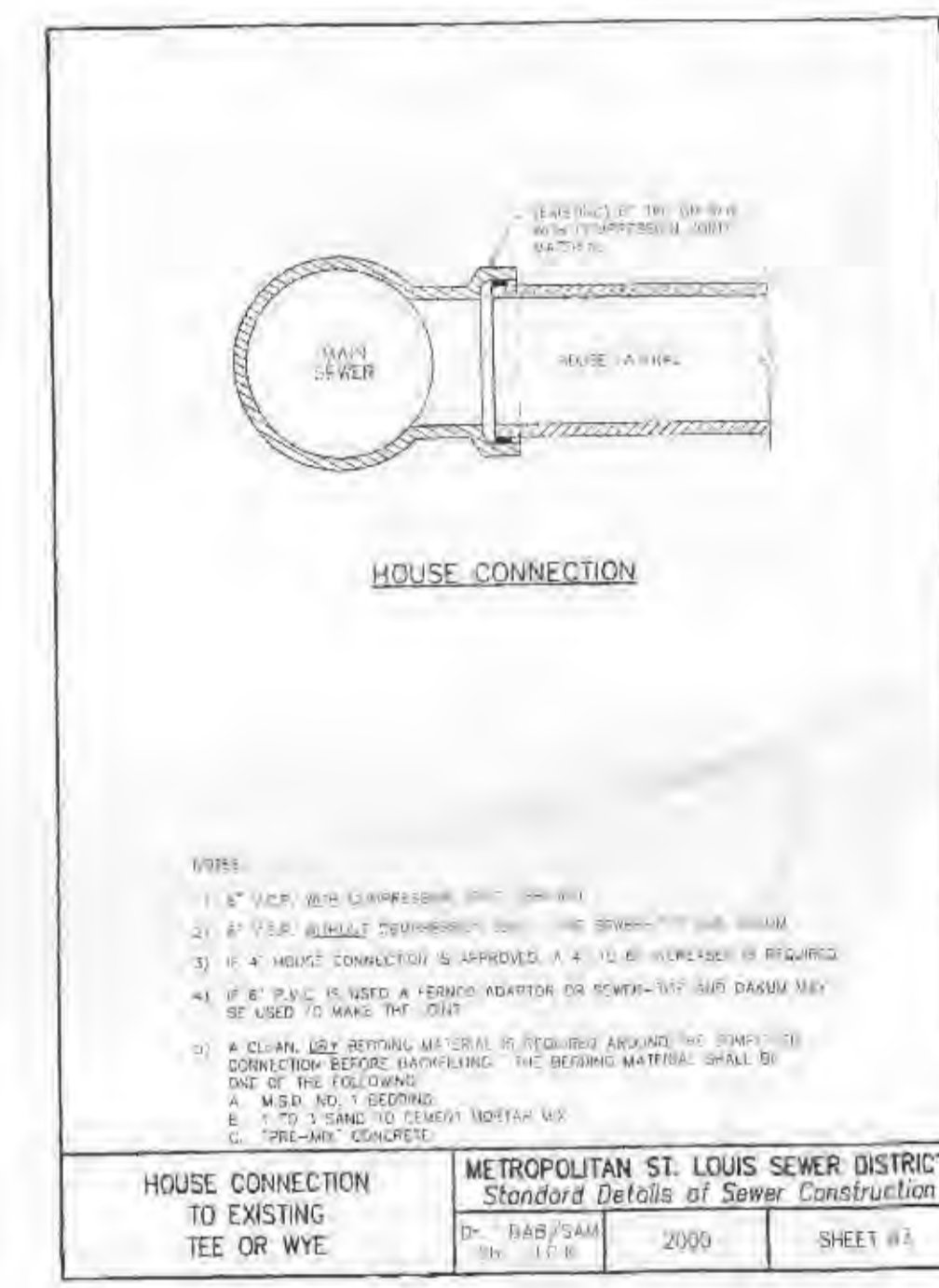
GUTTER SUMP FOR LIP CURB  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 60



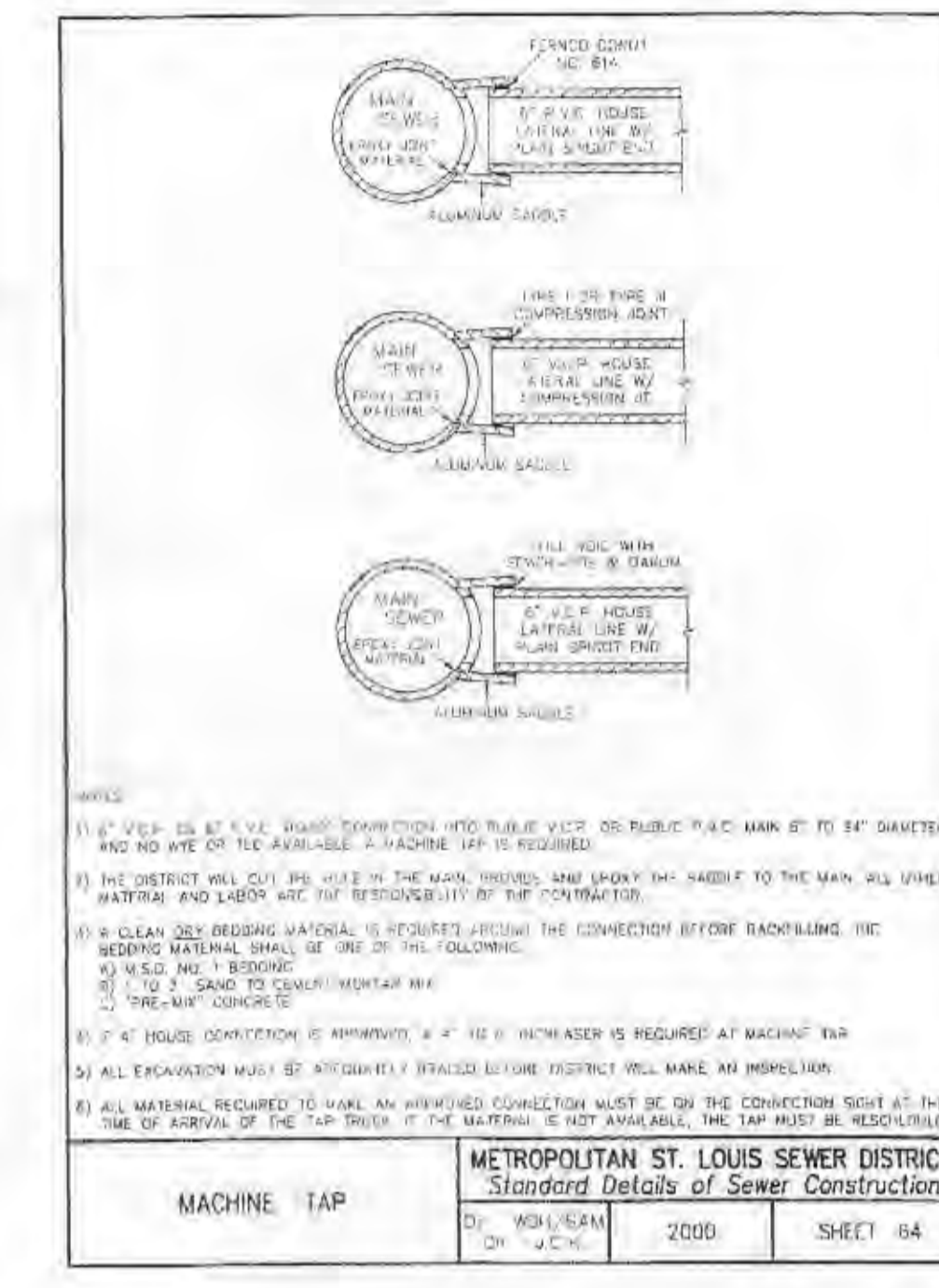
FLARED END SECTION  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 61



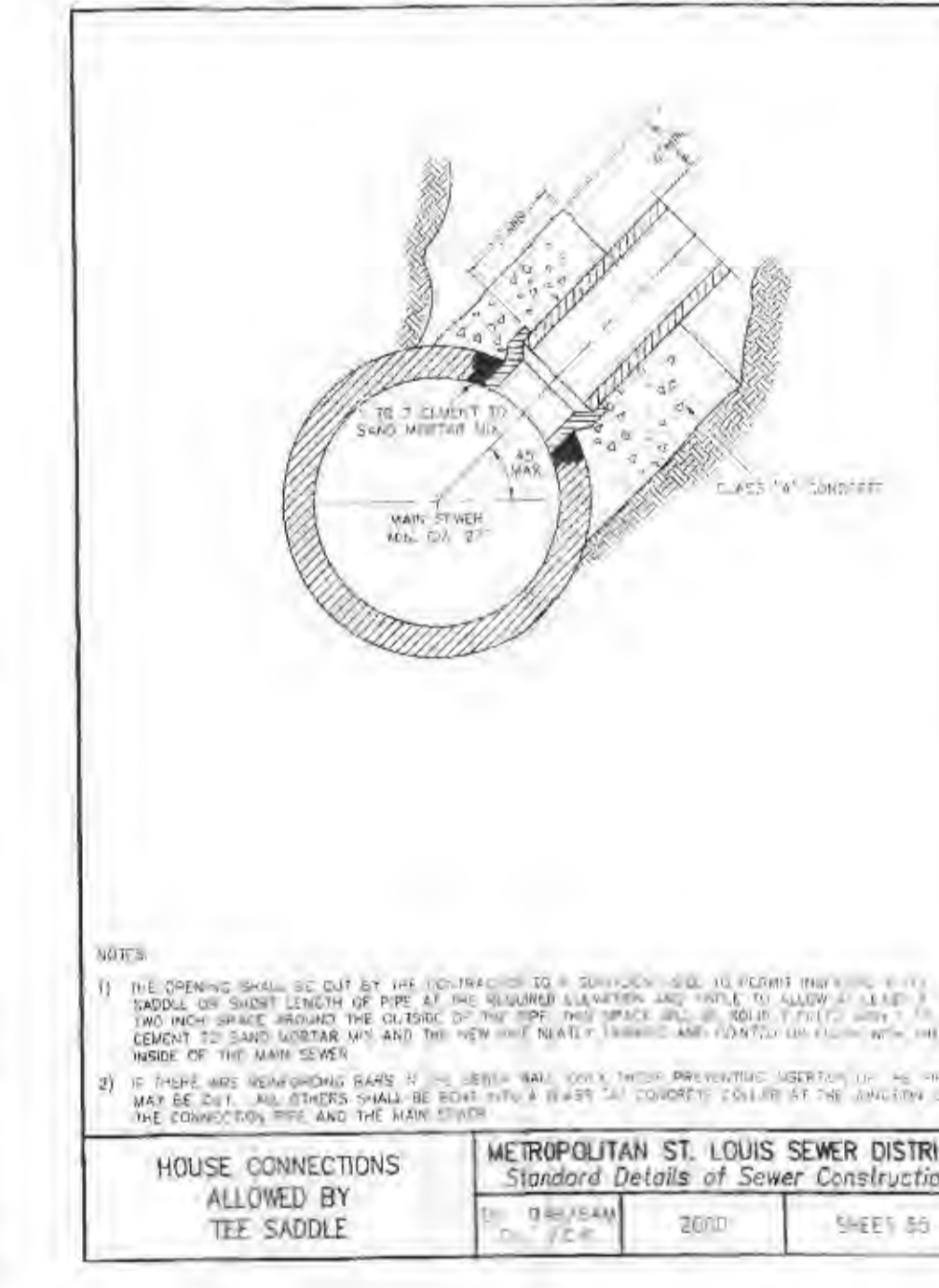
STORMWATER CHANNELS  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 62



HOUSE CONNECTION TO EXISTING TEE OR WYE  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 63



MACHINE TAP  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 64



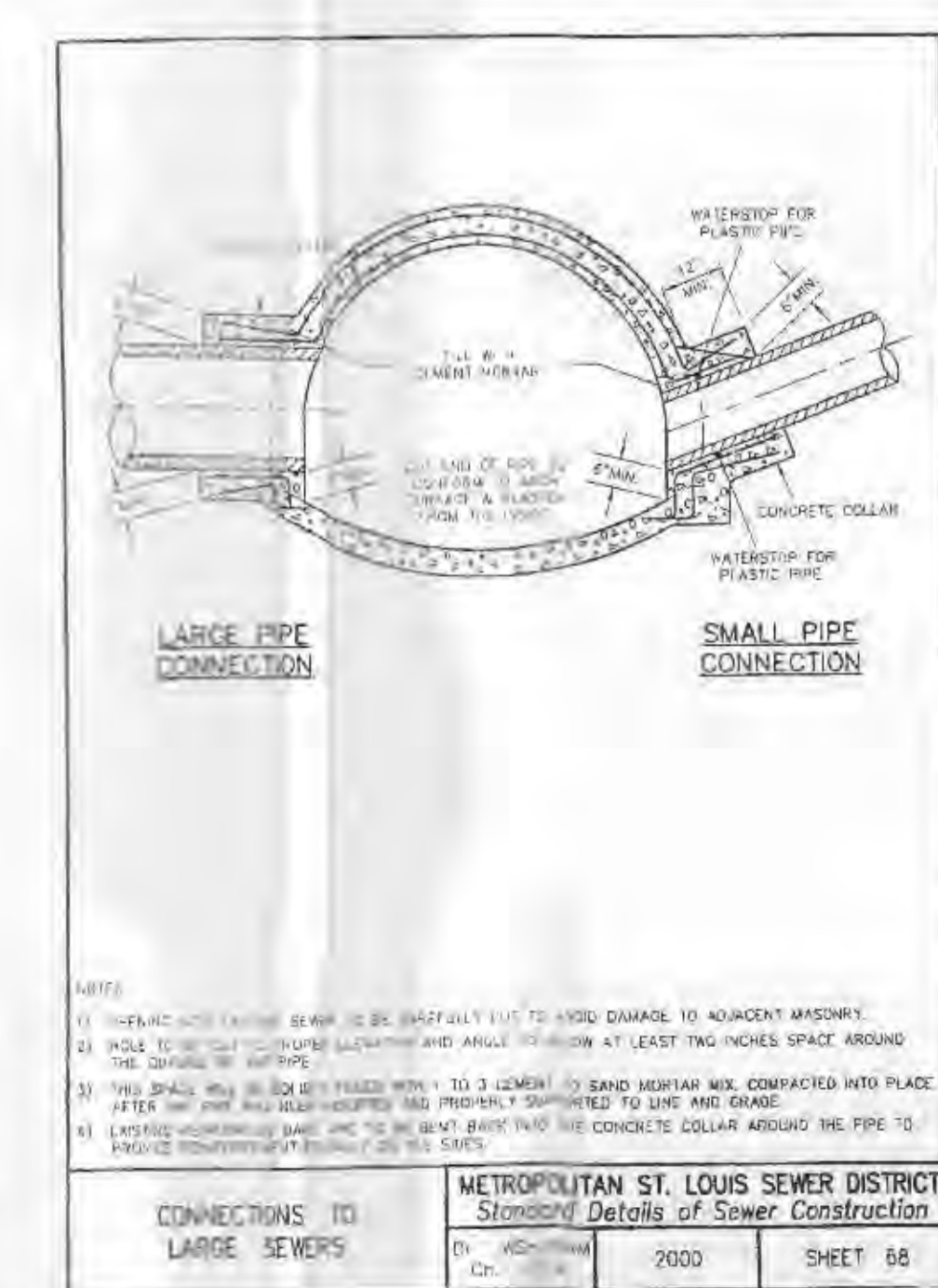
HOUSE CONNECTIONS ALLOWED BY TEE SADDLE  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 65



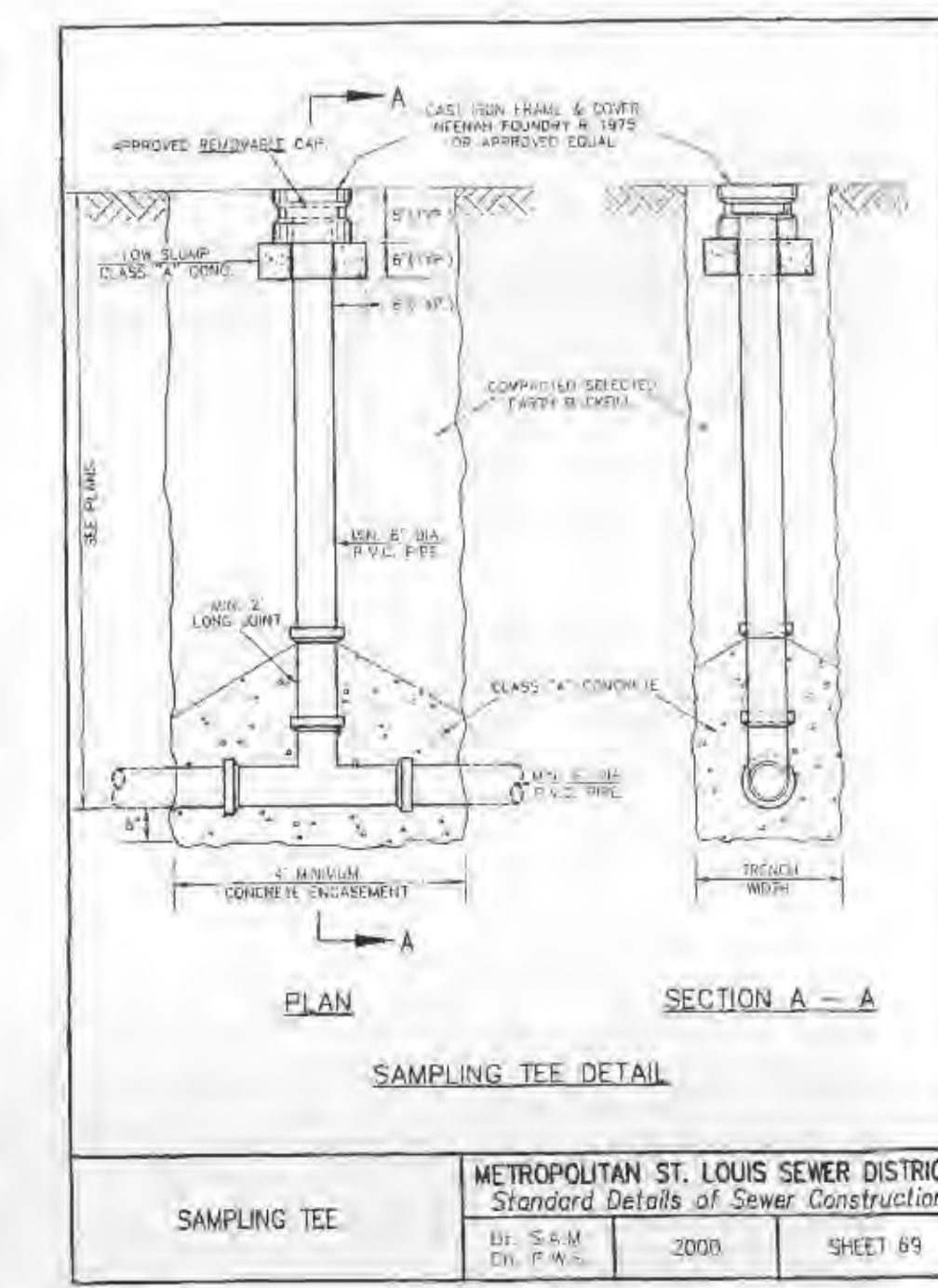
8" (& LARGER) CONNECTION TO PLATING MAIN  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 66



"ROLL-IN" (FOR EXISTING CLAY OR CONCRETE PIPE)  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 67



CONNECTIONS TO LARGE SEWERS  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 68

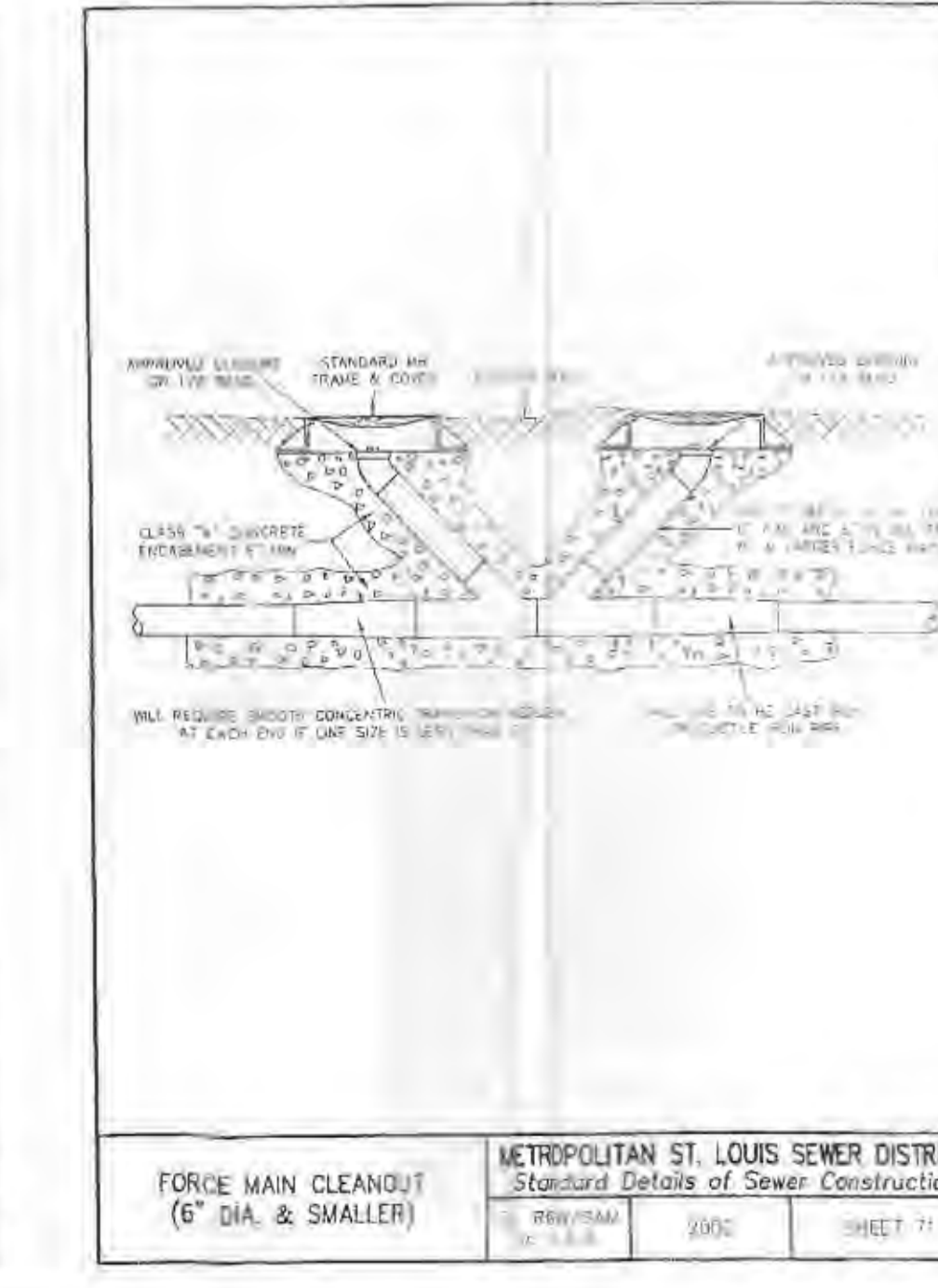


SAMPLING TEE  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 69

METROPOLITAN ST. LOUIS SEWER DISTRICT  
 project (and letter) name  
 project (and sheet) name  
 YOUR DOLLARS AT WORK FOR YOU  
 M.S.D.  
 FUNDED BY State of Missouri \* Municipality \*\*

MSO

SIGNS  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: W.S.H. / CH: J.C.K. / 2000 / SHEET 70



FORCE MAIN CLEANOUT (6" DIA. & SMALLER)  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 D: J.C.M. / CH: J.C.M. / 2000 / SHEET 71