

LOCATION MAP

N.T.S.

GRADING NOTES

- A Geotechnical Engineer shall be employed by the owner and be on site during grading operations. All soils tests shall be verified by the Geotechnical Engineer concurrent with the grading and backfilling operations.
- The grading contractor shall perform a complete grading and compaction operation as shown on the plans, stated in these notes, or reasonably implied there from, all in accordance with the plans and notes as interpreted by the Geotechnical Engineer.
- The Contractor shall notify the Soils Engineer at least two days in advance of the start of the grading operation.
- All areas shall be allowed to drain. All low points shall be provided with temporary ditches.
- A sediment control plan that includes monitored and maintained sediment control basins and/or straw bales should be implemented as soon as possible. No graded area is to be allowed to remain bare over the winter without being seeded and mulched. Care should be exercised to prevent soil from damaging adjacent property and silting up existing downstream storm drainage system.
- Soft soil in the bottom and banks of any existing or former pond sites or tributaries should be removed, spread out and permitted to dry sufficiently to be used as fill. None of this material should be placed in proposed right-of-way locations or on storm sewer locations.
- Site preparation includes the clearance of all stumps, trees, bushes, shrubs, and weeds; the grubbing and removal of roots and other surface obstructions from the site; and the demolition and removal of any man-made structures. The unsuitable material shall be properly disposed of off-site. Topsoil and grass in the fill areas shall be thoroughly disced prior to the placement of any fill. The Soils Engineer shall approve the discing operation.
- Compaction equipment shall consist of tamping rollers, pneumatic-tired rollers, vibratory roller, or high speed impact type drum rollers acceptable to the Soils Engineer. The roller shall be designed so as to avoid the creation of a layered fill without proper blending of successive fill layers.
- The Soils Engineer shall observe and test the placement of the fill to verify that specifications are met. A series of fill density tests will be determined on each lift of fill. Interim reports showing fill quality will be made to the Owner at regular intervals.
- The Soils Engineer shall notify the Contractor of rejection of a lift of fill or portion thereof. The Contractor shall rework the rejected portion of fill and obtain notification from the Soils Engineer of its acceptance prior to the placement of additional fill.
- All areas to receive fill shall be scarified to a depth of not less than 6 inches and then compacted in accordance with the specifications given below. Natural slopes steeper than 1:1 vertical to 5 horizontal to receive fill shall have horizontal benches, cut into the slopes before the placement of any fill. The width and height to be determined by the Soils Engineer. The fill shall be loosely placed in horizontal layers not exceeding 8 inches in thickness and compacted in accordance with the specifications given below. The Soils Engineer shall be responsible for determining the acceptability of soils placed. Any unacceptable soils placed shall be removed at the Contractor's expense.
- The sequence of operation in the fill areas will be fill, compact, verify acceptable soil density, and repetition of the sequence. The acceptable moisture contents during the filling operation are those at which satisfactory dry densities can be obtained. The acceptable moisture contents during the filling operation in the remaining areas are from 2 to 8 percent above the optimum moisture control.
- The surface of the fill shall be finished so that it will not impound water. If at the end of a days work it would appear that there may be rain prior to the next working day, the surface shall be finished smooth. If the surface has been finished smooth for any reason, it shall be scarified before proceeding with the placement of succeeding lifts. Fill shall not be placed on frozen ground, nor shall filling operations continue when the temperature is such as to permit the layer under placement to freeze.

- Fill and backfill should be compacted to the criteria specified in the following table:

CATEGORY	MINIMUM PERCENT COMPACTION
Fill in building areas below footings	90%
Fill under slabs, walks, and pavement	90%
Fill other than building areas	88%
Natural subgrade	88%
Pavement subgrade	90%
Pavement base course	90%

Measured as a percent of the maximum dry density as determined by modified Proctor Test (ASTM-D-1557).

Moisture content must be within 2 percent below or 4 percent above optimum moisture content if fill is deeper than 10 feet.

NOTE: Trash and debris shall be disposed of in the detention basin area and other designated areas. All debris shall be buried a minimum of 3 feet below finished grade.

GENERAL NOTES

- 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.
- All manhole tops built without elevations furnished by the Engineer will be the responsibility of the sewer contractor.
- 8" P.V.C. sanitary sewer pipe shall meet the following standards. A.S.T.M.-D-3034 SDR-35, with wall thickness compression joint A.S.T.M.-D-3212. An appropriate rubber seal waterstop as approved by the sewer district shall be installed between P.V.C. pipe and masonry structures.
- All filled places, including trench backfills, under buildings, proposed storm and sanitary sewer lines and/or paved areas, shall be compacted to 90% maximum density as determined by the "Modified AASHTO T-180 Compaction Test," (A.S.T.M.-D-1557). All filled places within public roadways shall be compacted to 95% of maximum density as determined by the "Standard Proctor Test AASHTO T-99, Method C" (A.S.T.M.D.-698).
- All trench backfills under paved areas shall be granular backfill, and shall be compacted to 90% of the maximum density as determined by the "Modified AASHTO T-180 Compaction Test," (A.S.T.M.-D-1557). All other trench backfills may be earth material (free of large clods or stones). All trench backfills shall be water jetted.
- All sanitary house connections have been designed so that the minimum vertical distance from the low point of the basement to the flow line of a sanitary sewer at the corresponding house connection is not less than the diameter of the pipe plus the vertical distance of 2 1/2 feet.
- No area shall be cleared without the permission of the Project Engineer.
- All grades shall be within 0.2 feet of those shown on the grading plan.
- No slope shall be steeper than 3:1 or as called for in the soils report for the project. All slopes shall be sodded or seeded and mulched.
- All construction and materials used shall conform to current City of O'Fallon Standards.
- All P.V.C. sanitary sewer is to be SDR-35 or equal with clean 1/2" to 1" granular stone bedding uniformly graded. This bedding shall extend from 4" below the pipe to the springline of the pipe. Immediate backfill over pipe shall consist of same size "clean" or minus stone from springline of pipe to 6" above the top of pipe.
- All soils test shall be verified by a Soils Engineer concurrent with the grading and backfilling operations.
- Easements shall be provided for sanitary sewers, and all utilities on the Record Plat. See Record Plat for location and size of easements.
- Maintenance and upkeep of the common ground area shall be the responsibility of the developer and/or successors.
- A 25' building line shall be established along all Public Right-Of-Way.

PLANS FOR THE CONSTRUCTION OF SANITARY SEWERS, STORM SEWERS, GRADING, PAVING, AND WATER MAINS FOR

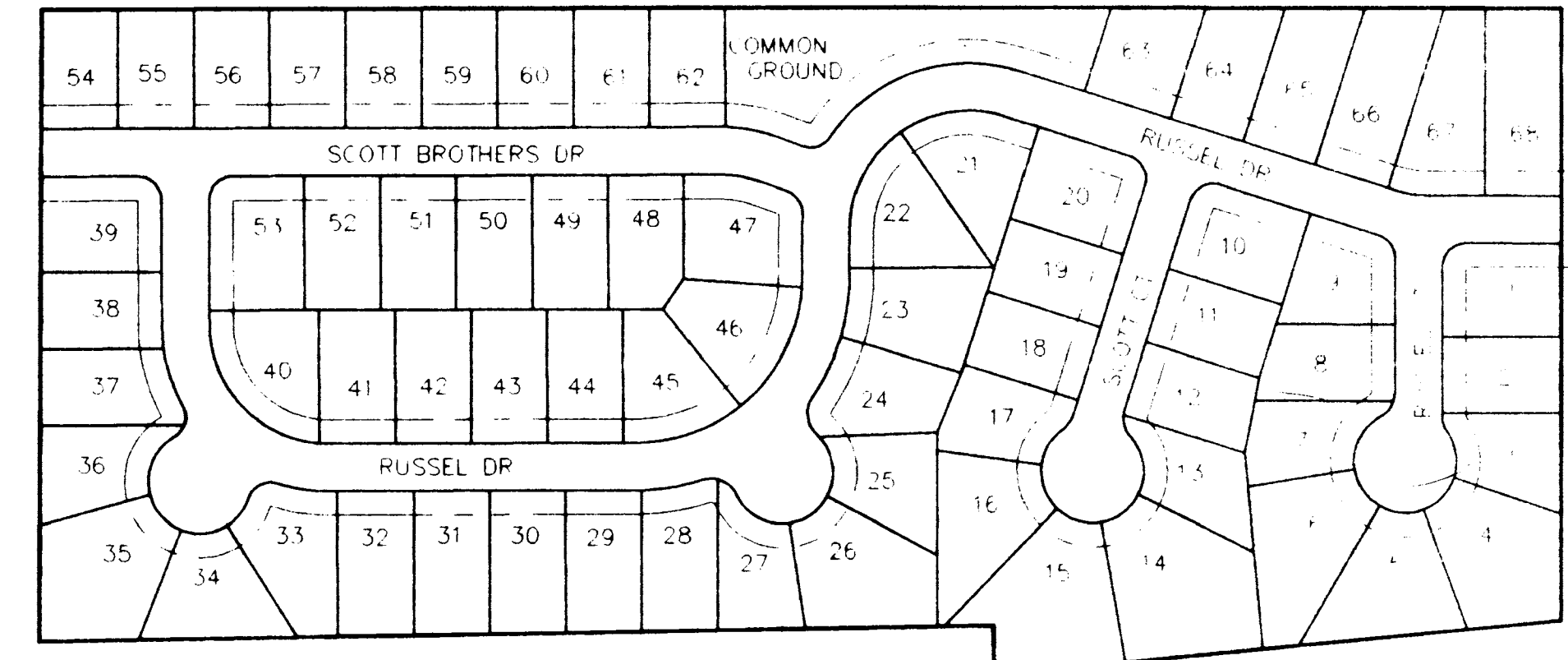
CIVIC PARK MANOR

A TRACT OF LAND IN THE SOUTHWEST QUARTER OF SECTION 20, T.47 N., R.3 E., ST. CHARLES COUNTY, MISSOURI

AS-BUILTS IN FILE ALSO

LEGEND

- 1. SANITARY MANHOLE
- 2. SANITARY FITTING
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KEY MAP

DEVELOPMENT NOTES

- Area of Tract: 24.20 Acres
- Existing Zoning: R-1
- Proposed Use: Single Family Homes
- Number of Lots Proposed: 68 Lots
- Area in Common Ground: 0.93 Acres
- Area in Right-of-Way: 4.61 Acres
- Area in Lots: 18.66 Acres
- Minimum Lots Area: 10,000 Square Feet
- Average Lot Area (not including common ground): 11,953 Square Feet
- Average Lot Area including Common Ground: 12,549 Square Feet
- The proposed height and lot setbacks are as follows:
Minimum Front Yard: 25 feet
Minimum Side Yard: 6 feet
Minimum Rear Yard: 25 feet
Minimum Lot Area: 10,000 square feet
Maximum Height of Building: 2 1/2 stories or 35 feet
- Current Owner of Property: Robert and Marilyn Scott ETAL
909 Highway Y
O'Fallon, MO 63366
- Owner Under Contract and Developer: Commonwealth Dev. Corp.
P.O. Box 176
St. Peters, MO 63376
314-928-4988
- Site is served by:
City of O'Fallon Sewers
Union Electric Company
St. Charles Gas Company
City of O'Fallon Water
CTE Telephone Company
Fort Zumwalt School District
O'Fallon Fire Protection District
- No Flood Plain exists on this tract per F.I.R.M. #29183 C0110 D.
- All streets will be constructed to City of O'Fallon standards. Streets will consist of 26 foot wide concrete pavement with integral rolled curb centered in a 50 foot right-of-way. Minimum radius shall be 150 feet.
- All cul-de-sacs and bubbles will have pavement radii of 42 feet with right-of-way radii of 54 feet. Street intersections shall have a minimum rounding radius of 25 feet with pavement radii of 37 feet.
- Minimum street grades shall be 1%.
- A 4 foot wide concrete sidewalk shall be constructed on one side of streets where indicated.
- All homes shall have a minimum of 2 off-street parking places with 2-car garages.
- All utilities must be located underground.
- The developer shall comply with current Tree Preservation Ordinance Number 1889 and provide landscaping as set forth in Article 23 of the City of O'Fallon Zoning Ordinances.
- U.S.G.S. BENCHMARK: Elevation = 501.91
Top headwall at north side of box culvert located at Southwest corner of "Sigmund Auto Service" site on West Second Street (Civic Park Drive)
- Upon final engineering design, any proposed streets in excess of 6% grade will have pavement lugs installed as directed by the City Engineer.

SHEET INDEX

- 1 OF 17 - COVER SHEET
- 2 OF 17 - FLAT PLAN
- 3 OF 17 - GRADING PLAN
- 4 OF 17 - WATER PLAN
- 5 OF 17 - STREET PROFILES
- 6 OF 17 - STREET PROFILES
- 7 OF 17 - SANITARY SEWER PROFILES
- 8 OF 17 - SANITARY SEWER PROFILES
- 9 OF 17 - STORM SEWER PROFILES
- 10 OF 17 - STORM SEWER PROFILES
- 11 OF 17 - DRAINAGE AREA MAP
- 12 OF 17 - CONSTRUCTION DETAILS
- 13 OF 17 - CONSTRUCTION DETAILS
- 14 OF 17 - CONSTRUCTION DETAILS
- 15 OF 17 - CONSTRUCTION DETAILS
- 16 OF 17 - CONSTRUCTION DETAILS
- 17 OF 17 - CONSTRUCTION DETAILS

APPROVED Contingent on DNR Permit
Collen Klamme
3/25/96

PREPARED FOR:
COMMONWEALTH DEV. CORP.
P.O. BOX 176
ST. PETERS, MO 63376
314-928-4988

REVISIONS
2-8-96 DEV. REQUEST
3-5-96 DEV. REQUEST
3-17-96 DEV. REQUEST

NO.	DATE	DESCRIPTION
1	3/25/96	AS-BUILTS IN FILE ALSO

ENGINEERING
PLANNING
SURVEYING
1052 South Cloverleaf Drive
St. Peters, MO 63376-6445
314-928-5552
FAX 928-1718

OCT 17, 1995
DATE
95-6277
PROJECT NUMBER
1 OF 17
SHEET NO.
6277CON.DWG
FILE NAME
b.b.
DRAWN CHECKED

10

11

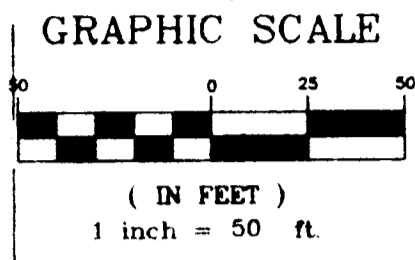
12

O'FALLON GARDENS
P.B. 5 PG. 8

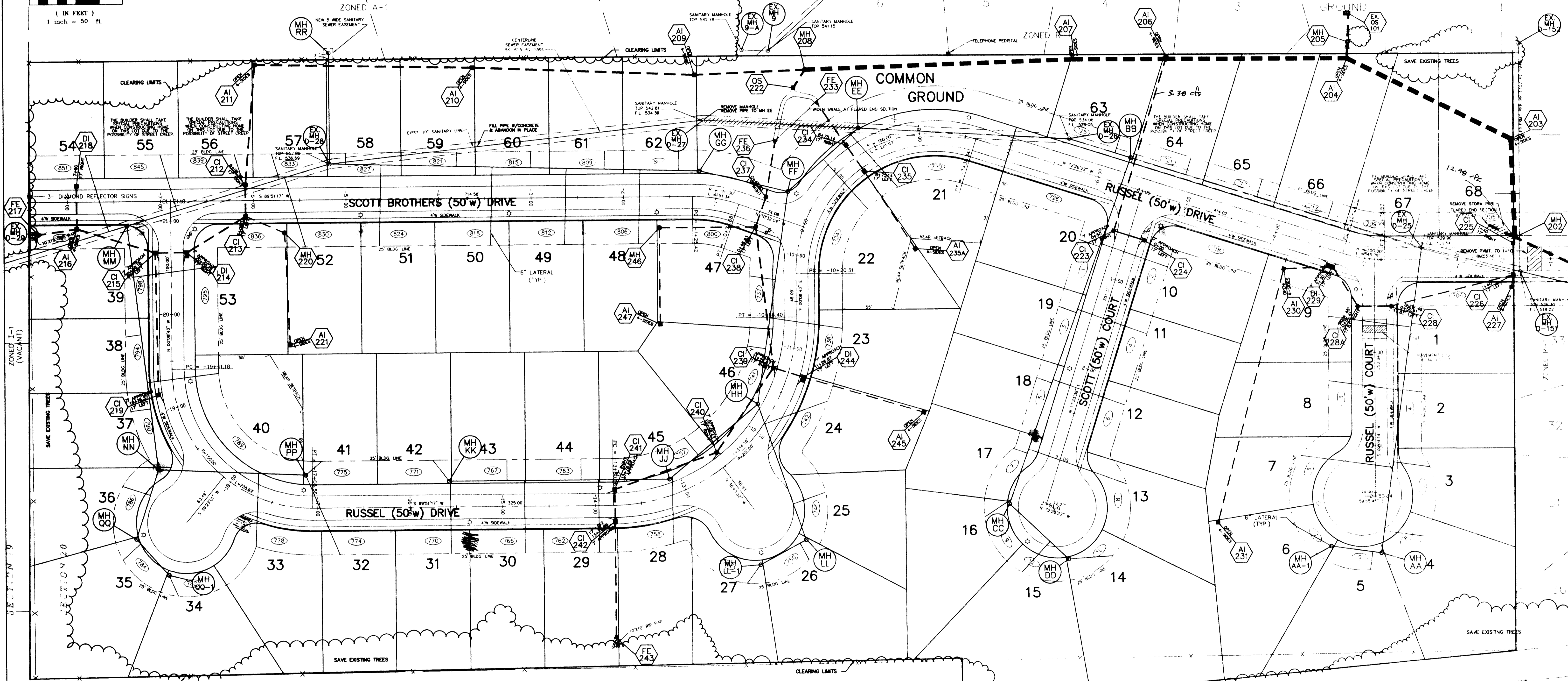
CORONATION ESTATES
P.B. 30 PG. 82

CORONATION ESTATES
P.B. 30 PG. 82

LORETTA DRIVE
(50' WIDE)



SECTION 10
SECTION 9
SECTION 8
SECTION 7
SECTION 6
SECTION 5
SECTION 4
SECTION 3
SECTION 2
SECTION 1



PRE FLOW = 55.90 cfs.
19.96 cfs.
43.81 cfs.

NORFOLK AND SOUTHERN RAILROAD

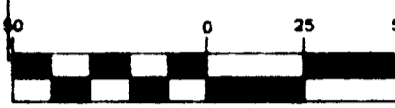
TREE PRESERVATION CALCULATIONS:
 AREA OF EXISTING TREE MASSES 6.56 AC. (100%)
 AREA OF PROPOSED CLEARING 5.18 AC. (79%)
 AREA OF TREES TO REMAIN 1.38 AC. (21%)
 SINCE MORE THAN 20% OF TREE MASSES HAVE BEEN SAVED
 REPLACEMENT OF EXISTING TREES WILL NOT BE REQUIRED.

LANDSCAPE REQUIREMENTS
 LENGTH OF STREET FRONTAGE 7046 LIN. FT.
 7046 ÷ 50 = 141 TREES REQUIRED

NUMBER OF TREES PROPOSED:
 2 TREES WILL BE PLANTED ON EACH LOT X 68 LOTS = 136 TREES
 CREDIT FOR TREES SAVED 1.38 AC. X 15 = 20 TREES
 TOTAL PROPOSED 156 TREES

PROPOSED REPLACEMENT TREES WILL BE HARDWOOD VARIETIES WITH
 2" MINIMUM DIAMETER AND A HEIGHT OF 8'. TREES TO BE PLANTED
 ON THE INDIVIDUAL LOTS WILL BE PLANTED AFTER HOME CONSTRUCTION
 AND YARD FINISH GRADING BY THE HOMEOWNER AS REQUIRED IN THE
 COVENANTS AND RESTRICTIONS FOR CIVIC PARK MANOR.

GRAPHIC SCALE



(IN FEET)
1 inch = 50 ft

O'FALLON GARDENS
P.B. 5 PG. 8

ZONED A-1

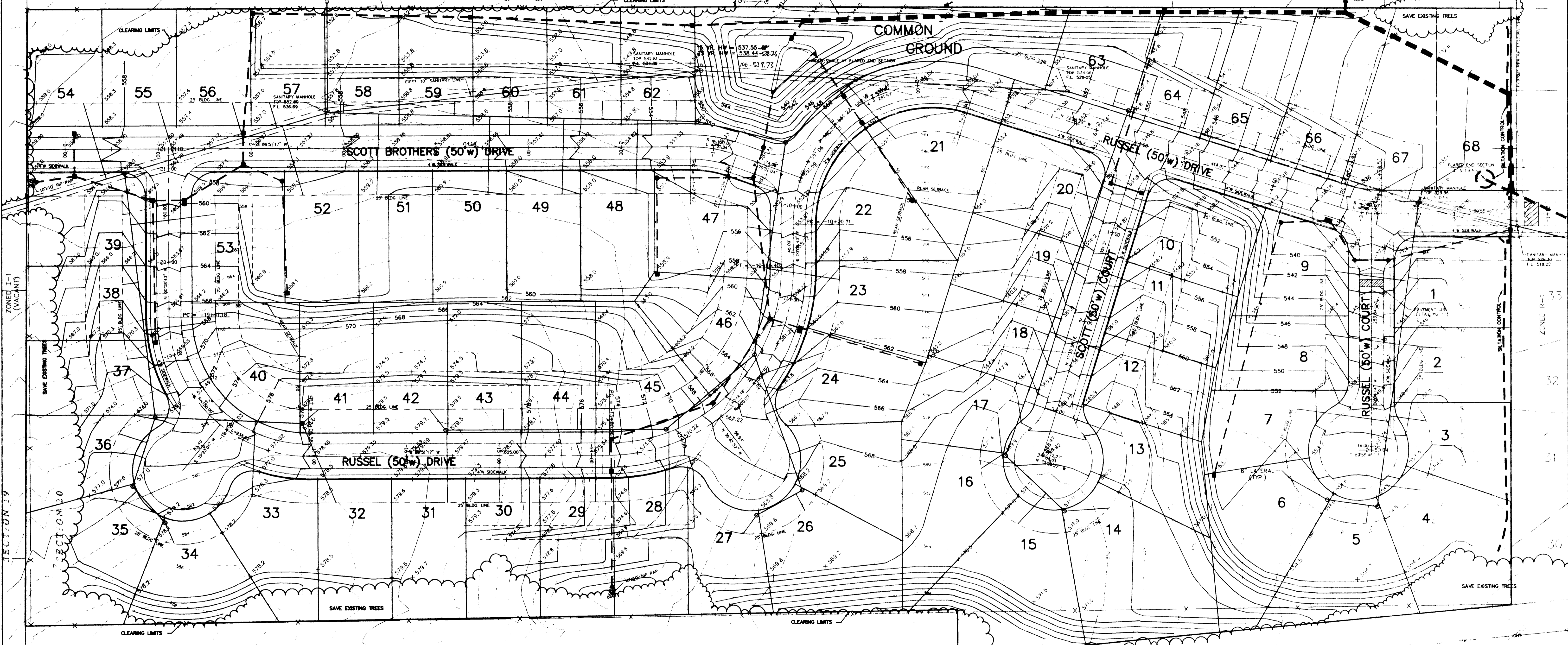
CORONATION ESTATES
P.B. 30 PG. 82

LORETTA DRIVE

CORONATION ESTATES
P.B. 30 PG. 82

DRIVE (50' WIDE)

COMMON GROUND



SECTION 19
SECTION 20
SECTION 21
SECTION 22
SECTION 23
SECTION 24
SECTION 25
SECTION 26
SECTION 27
SECTION 28
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SECTION 39

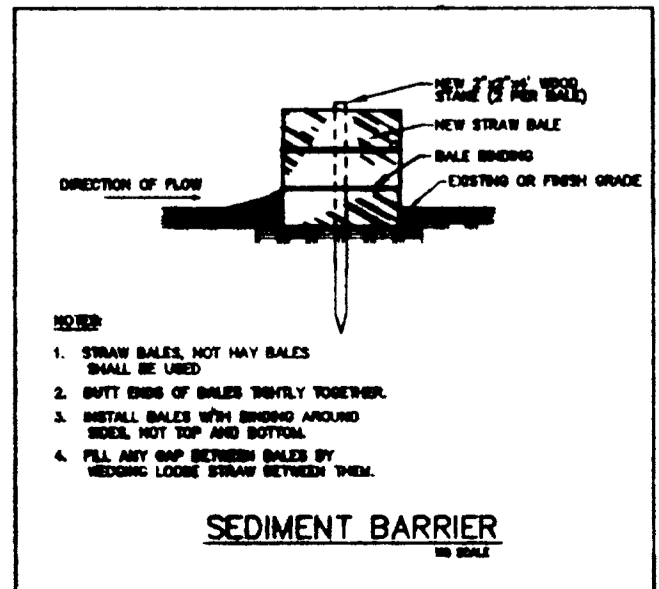
SECTION 30
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SECTION 39

ZONED I-1 (VACANT)

GRADING QUANTITY: 115,579 cu.yd.
(includes shrinkage)

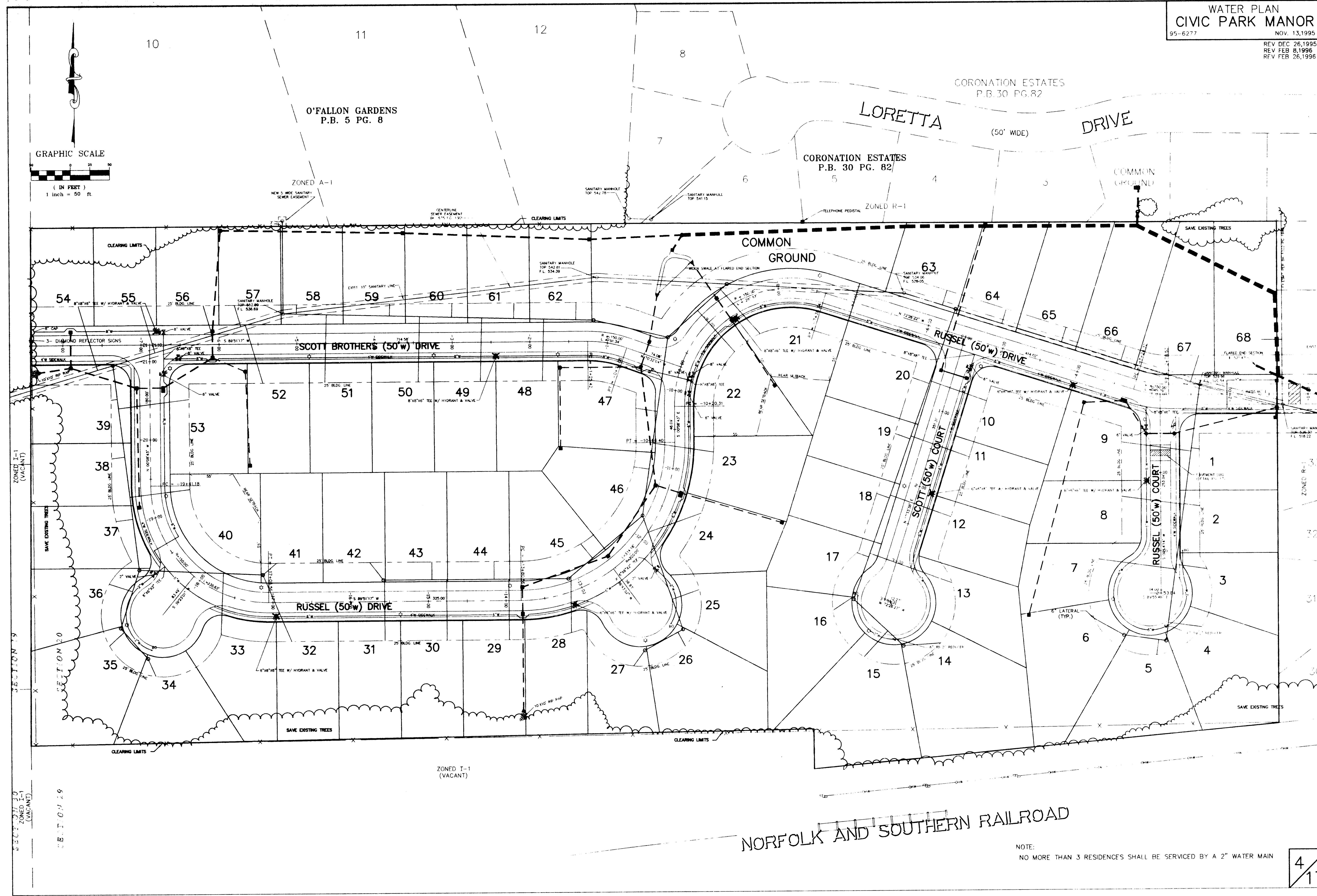
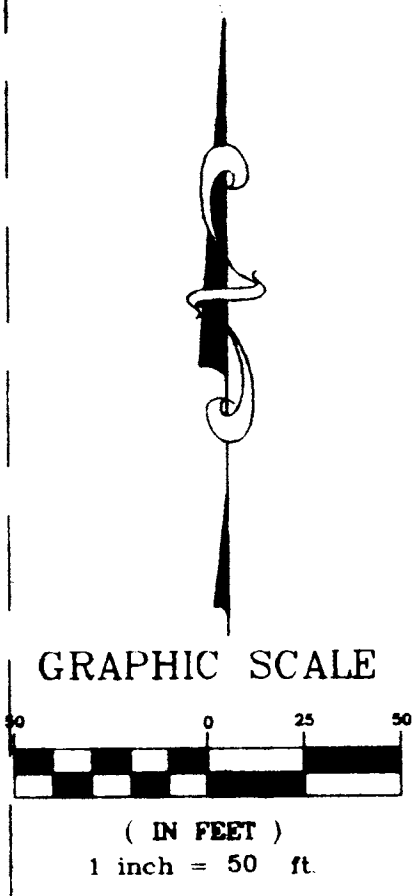
The above yardage is an approximation only.
 NOT FOR BIDDING PURPOSES. Contractor shall
 verify quantities prior to construction.
 It is the intention of the engineer for the earthwork
 to balance on-site. Engineer shall be notified if any
 difficulties arise in achieving the balance.

NOTE:
 The Grading Contractor shall provide temporary silting basins
 as needed or as directed by the City of O'Fallon during the
 grading process and shall maintain them until sufficient ground
 cover has been established.



- NOTES:
1. STRAW BALES NOT HAY BALES
 2. SHALL BE USED
 3. BUTT ENDS OF BALES SHOULD TOUCH
 4. METAL BALES WITH BRUSH AROUND
 5. SHALL NOT BE USED
 6. ALL HAY OR STRAW BALES BY
 7. BEING LOCKED STRAP BETWEEN THEM.

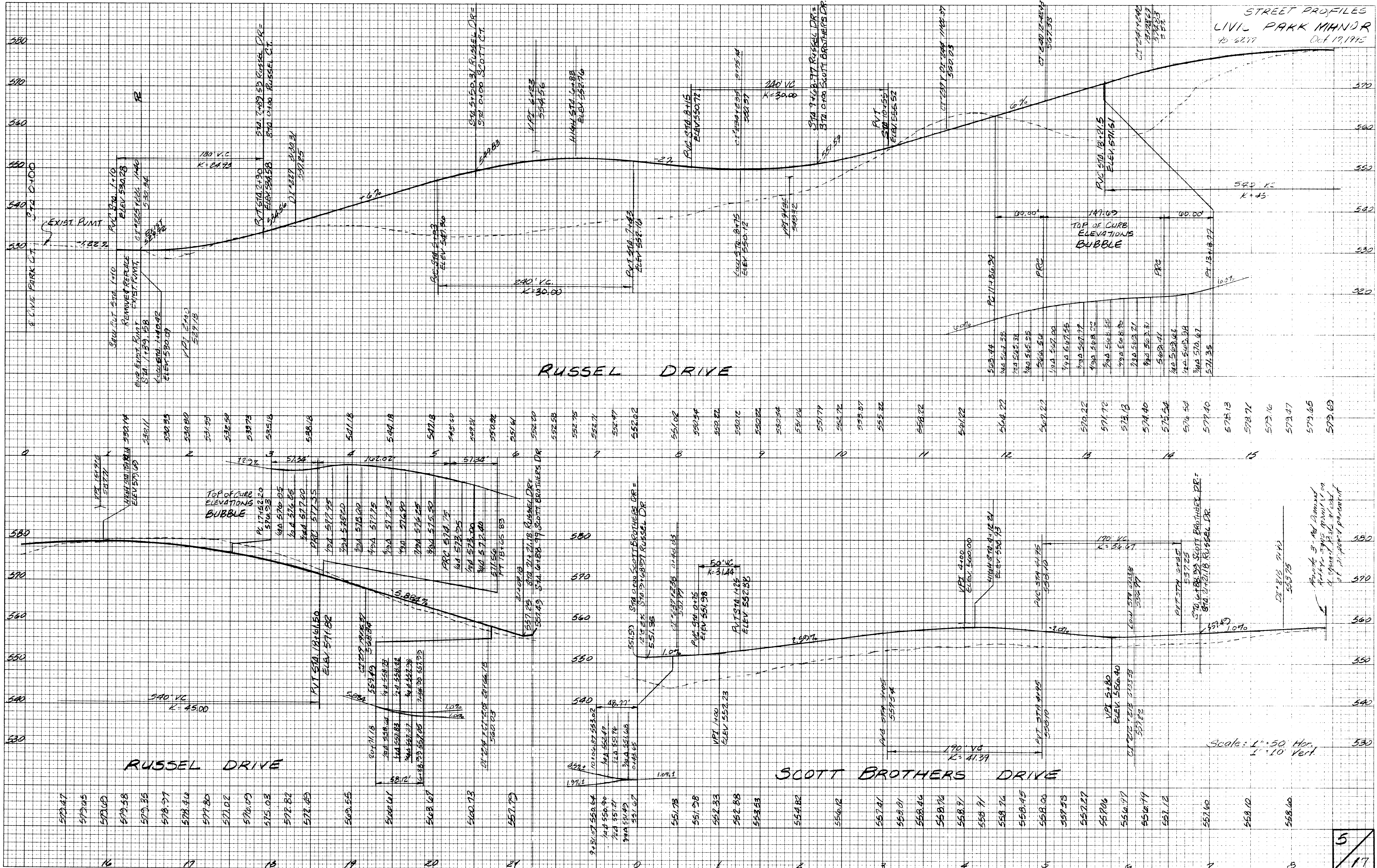
NORFOLK AND SOUTHERN RAILROAD



NOTE:
NO MORE THAN 3 RESIDENCES SHALL BE SERVICED BY A 2" WATER MAIN

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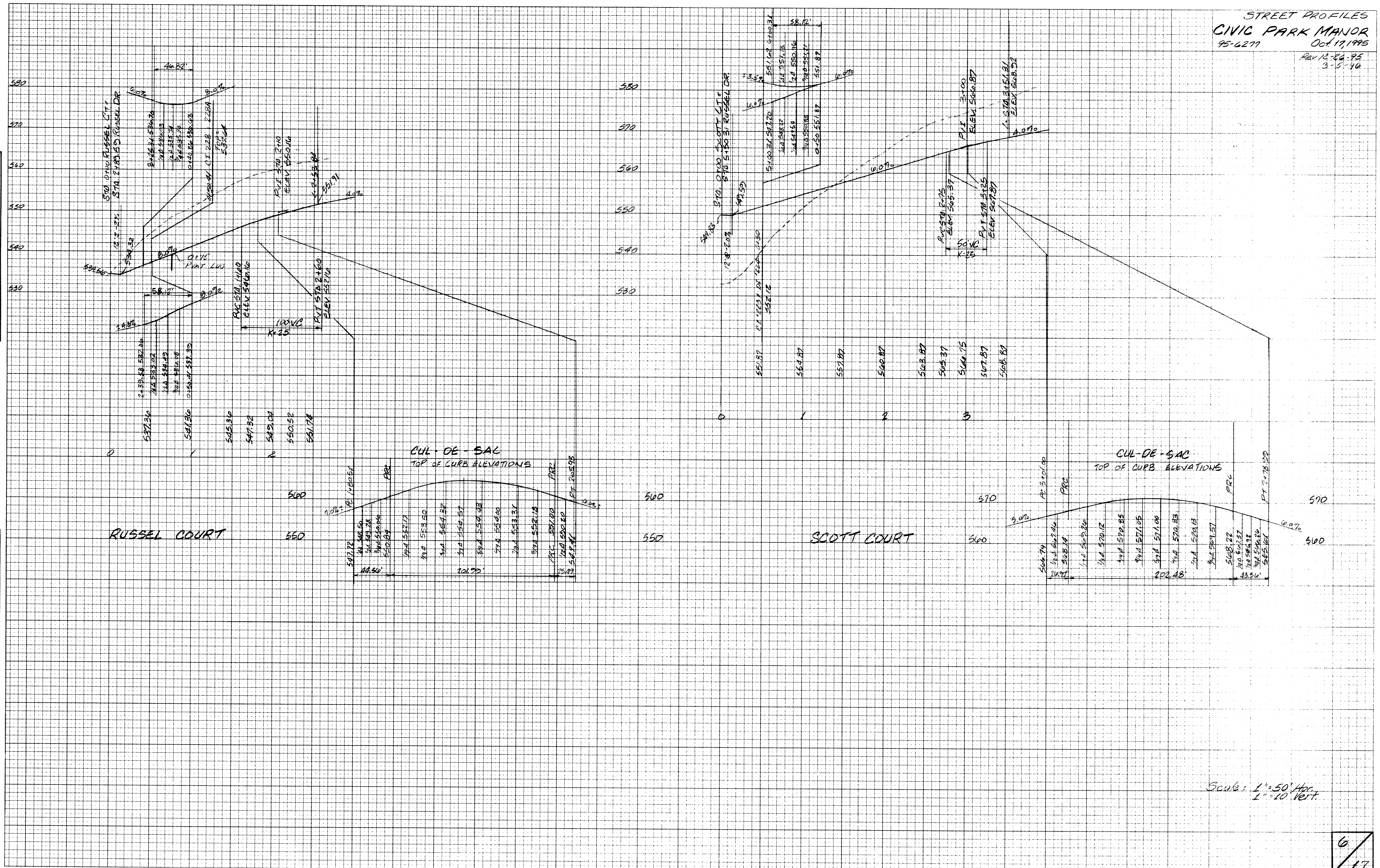
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5/17

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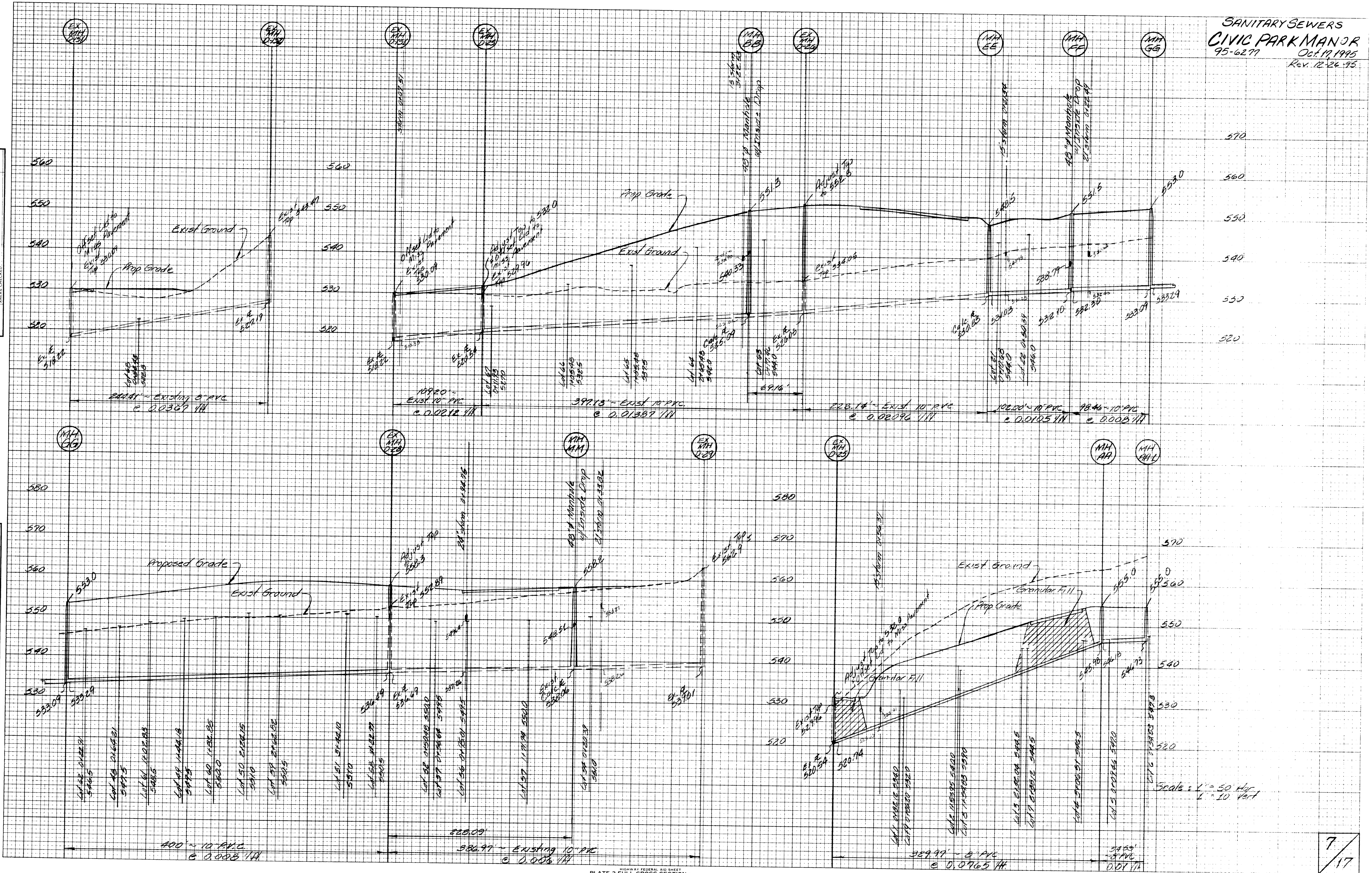


Scale: 1" = 50' Hor.
 1" = 10' Vert.

SANITARY SEWERS
CIVIC PARK MANOR
 95-6277
 Oct. 17, 1995
 Rev. 12-24-95

BY: _____ DATE: _____
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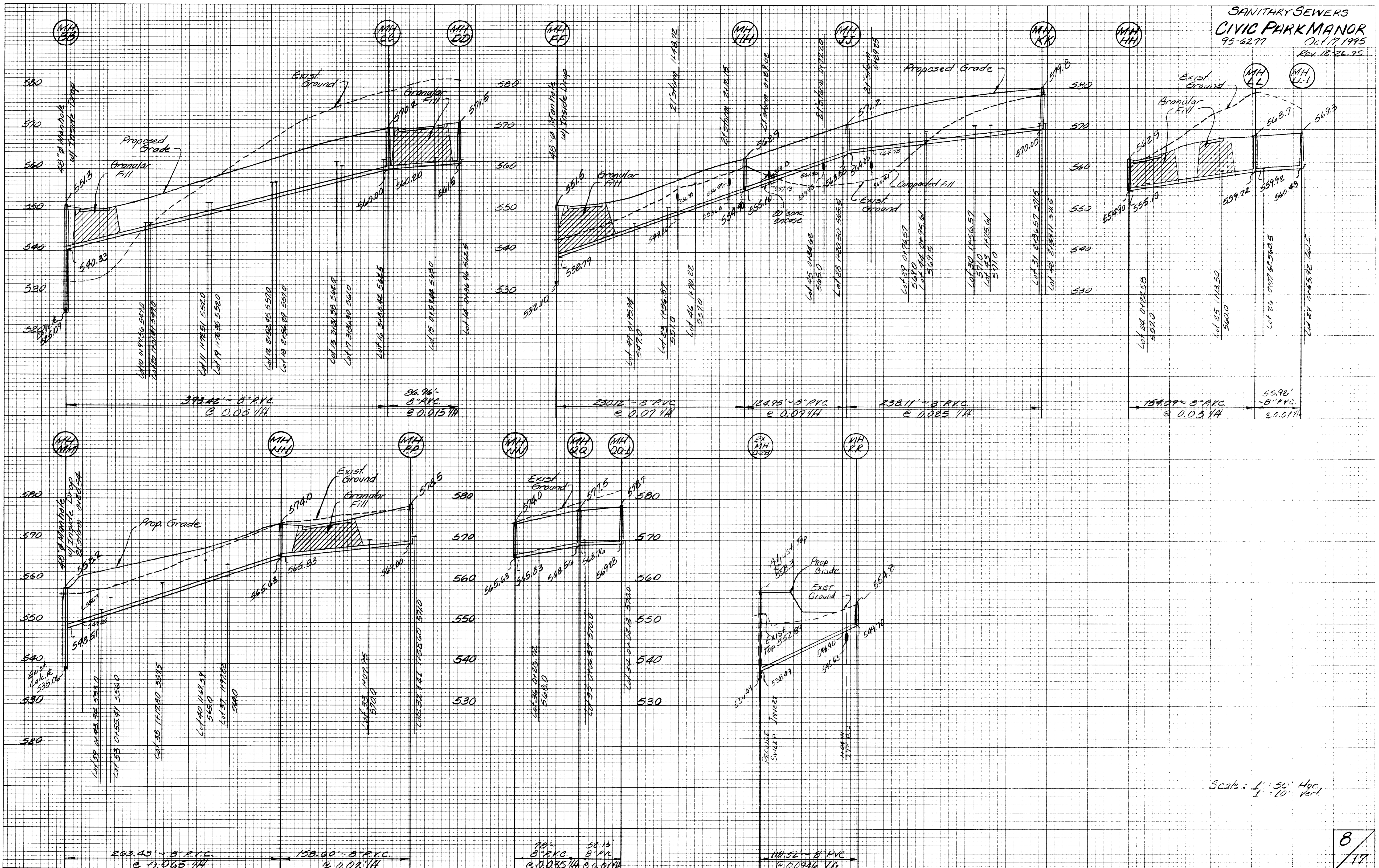
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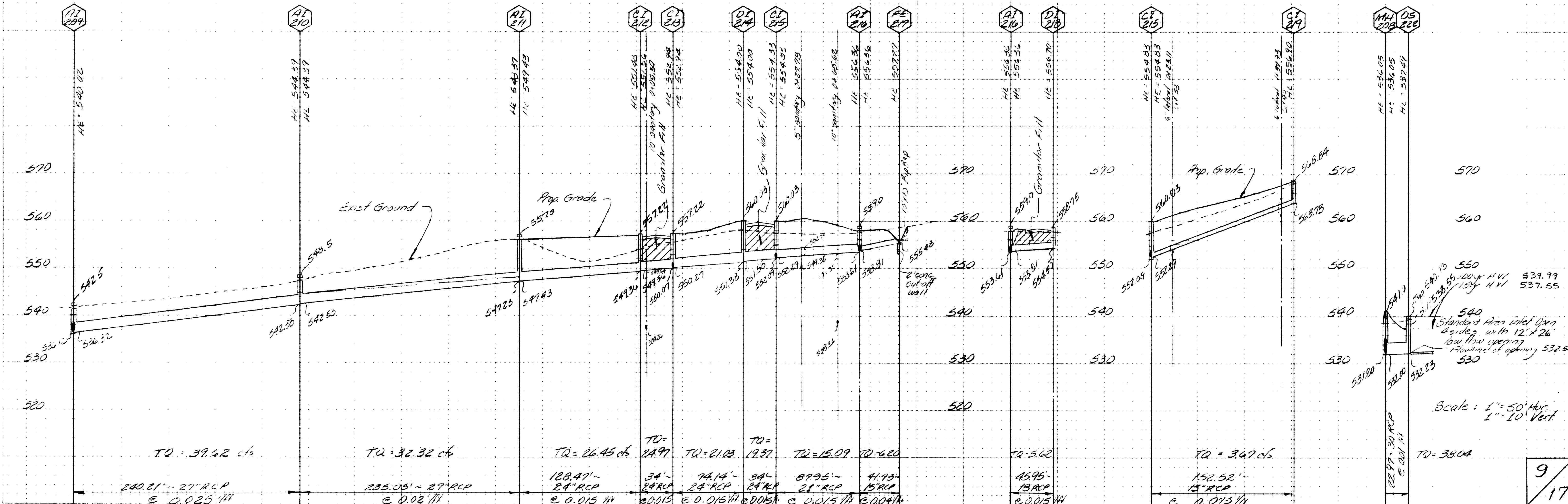
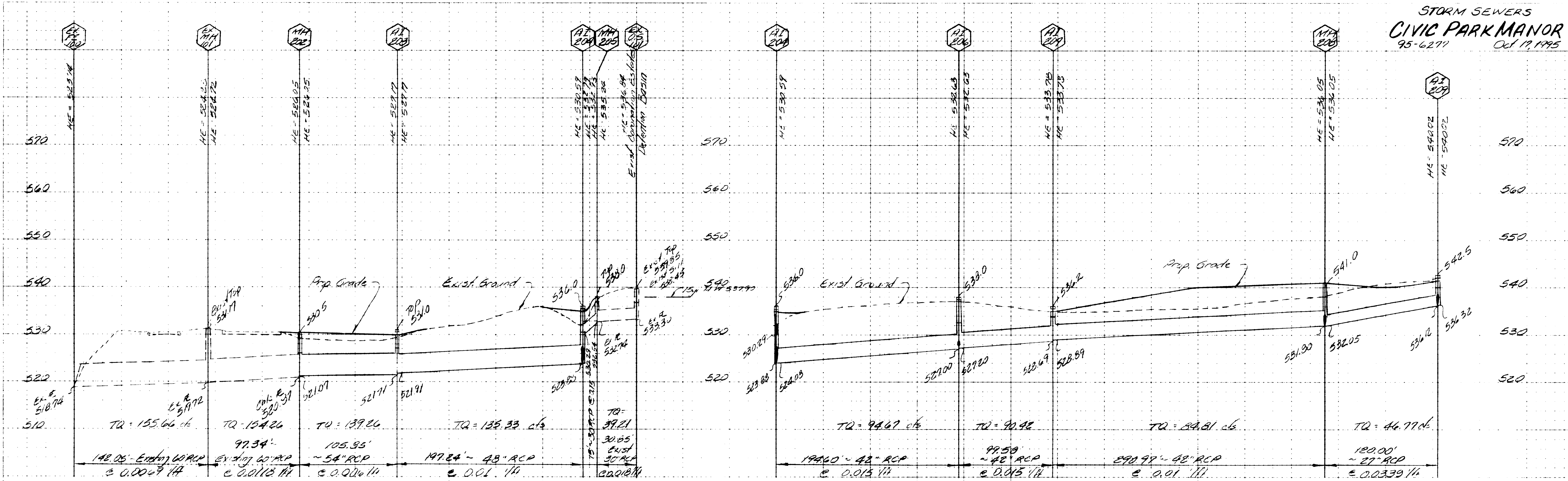
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FINAL SURVEY

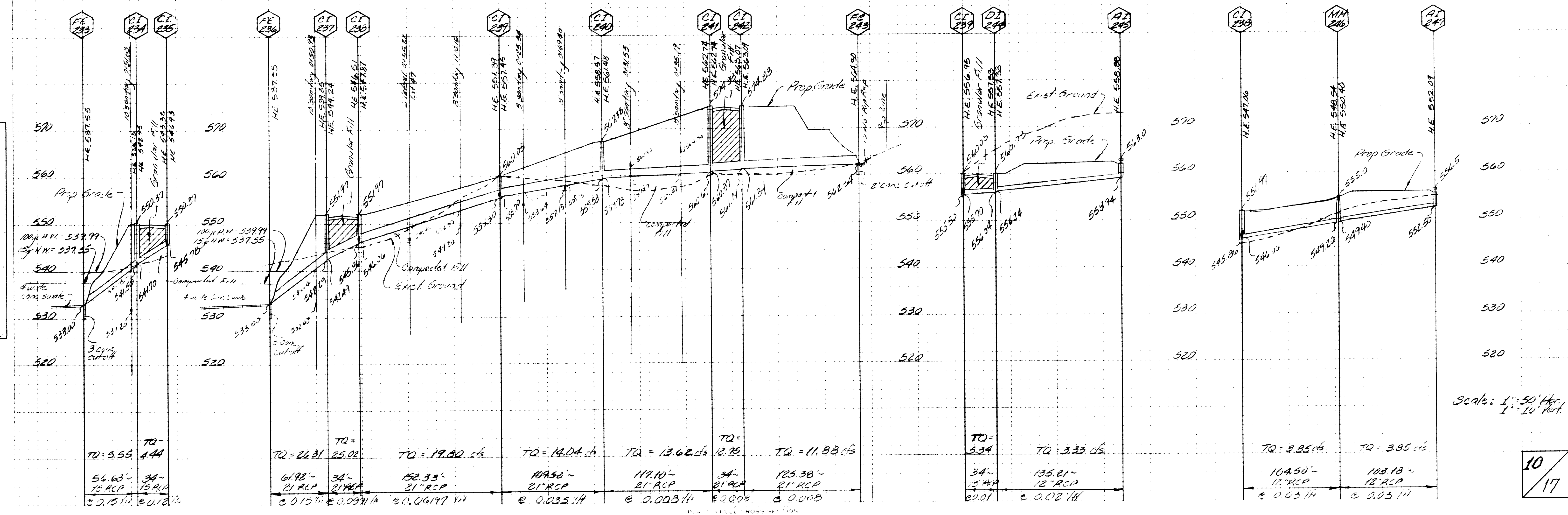
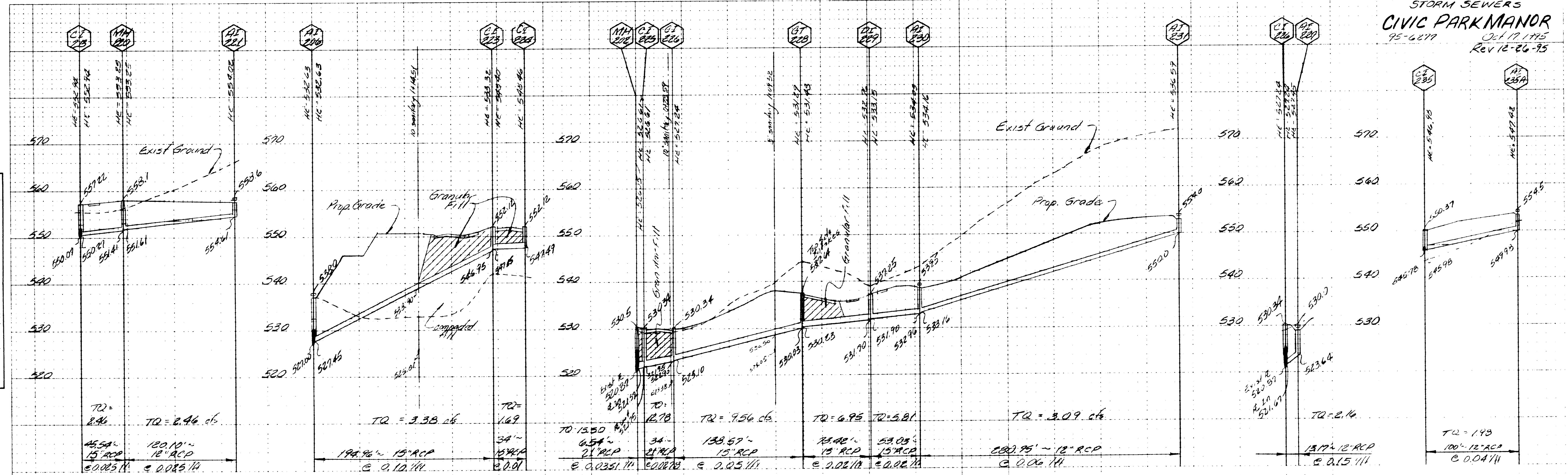
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FINAL SURVEY

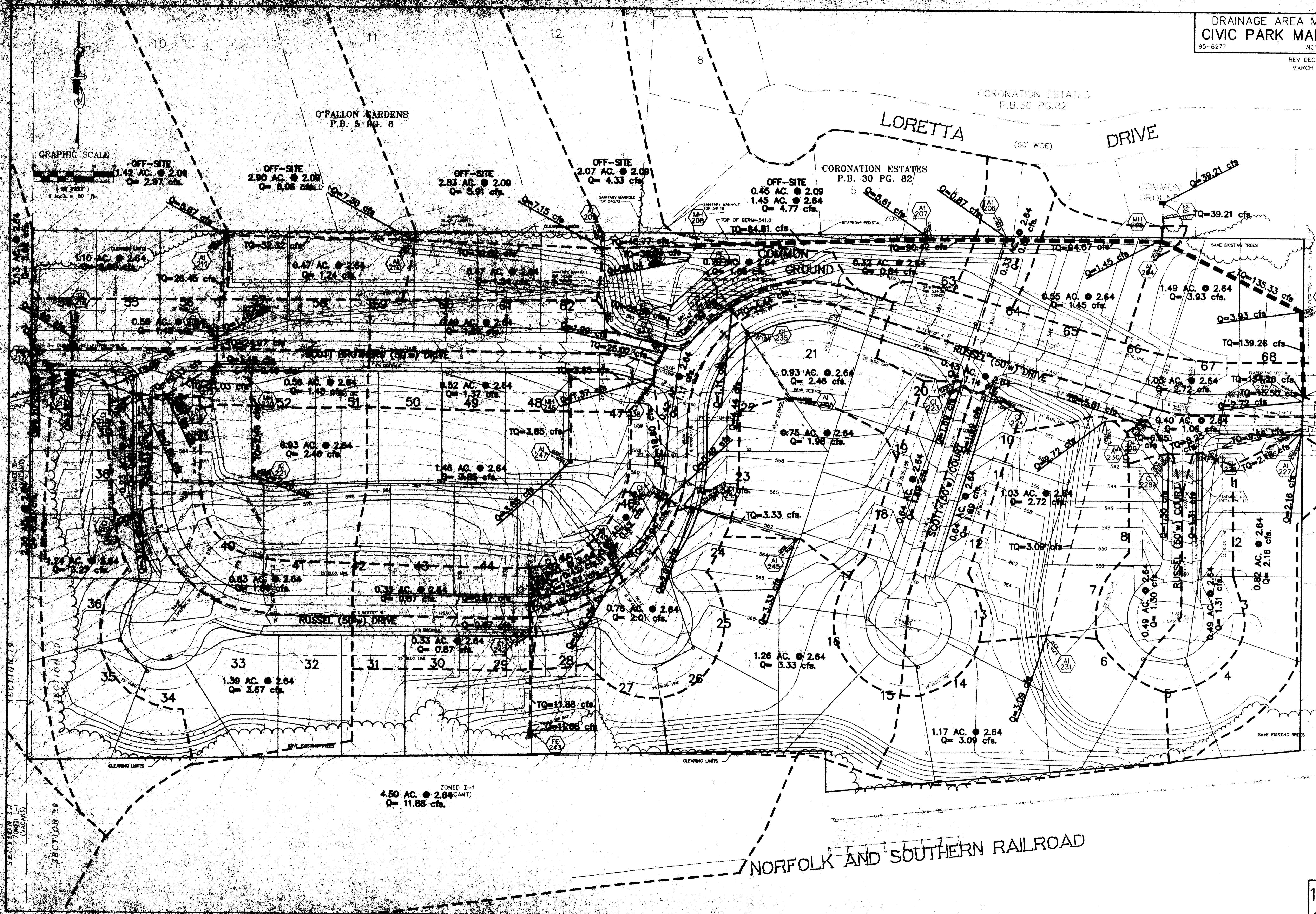
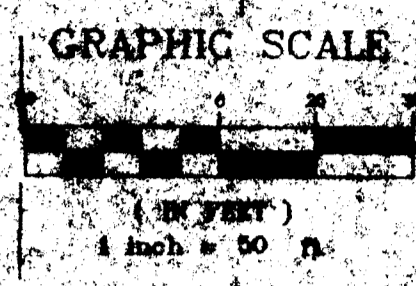
ORIGINAL SURVEY



Scale: 1" = 50' Hor.
 1" = 10' Vert.

DRAINAGE AREA MAP
CIVIC PARK MANOR

95-6277 NOV. 13, 1995
REV. DEC. 25, 1995
MARCH 5, 1996



SECTION 29
SECTION 30
ZONED I-1
(VACANT)

ROUND PIPE				HORIZONTAL ELLIPTICAL PIPE			
INSIDE DIAMETER OF PIPE (INCHES)	PAYLINE WIDTH OF TRENCH (INCHES)	PAYLINE WIDTH OF TRENCH (FEET)	PAY-VOLUMES CU. FT. PER FT. CONCRETE ENCASUREMENT	INSIDE DIMENSIONS OF PIPE (INCHES)	PAYLINE WIDTH OF TRENCH (INCHES)	PAYLINE WIDTH OF TRENCH (FEET)	PAY-VOLUMES CU. FT. PER FT. CONCRETE ENCASUREMENT
4	30	2.50	3.28				
6	30	2.50	3.59				
8	30	2.50	3.87				
10	30	2.50	4.09				
12	30	2.50	4.25				
15	36	3.00	5.55				
18	36	3.00	5.77	14 x 23	41	3.42	5.94
21	39	3.25	6.61				
24	42	3.50	7.59	19 x 30	49	4.08	7.68
27	45	3.75	8.18	22 x 34	53	4.43	8.51
30	49	4.08	9.30	24 x 38	58	4.83	9.70
33	53	4.42	10.53	27 x 42	62	5.17	10.71
36	56	4.67	11.43	29 x 45	66	5.50	11.72
39	59	4.92	12.40	32 x 49	71	5.82	13.14
42	63	5.25	13.58	34 x 53	75	6.23	14.05
48	70	5.83	15.87	38 x 60	83	6.92	16.18
54	77	6.42	18.13	43 x 68	92	7.67	18.61
60	84	7.00	20.73	48 x 76	101	8.42	21.58
66	91	7.58	23.45	53 x 83	109	9.08	24.35
72	98	8.17	26.37	58 x 91	118	9.83	27.45
78	105	8.75	29.39	63 x 98	128	10.50	30.50
84	112	9.33	32.57	68 x 106	135	11.25	33.91
90	119	9.92	35.90	72 x 113	143	11.92	36.99
96	126	10.50	39.37	77 x 121	152	12.67	40.69
102	133	11.08	42.99	82 x 128	160	13.33	44.45
108	140	11.67	46.75	87 x 136	168	14.00	47.79
114	147	12.25	50.66	92 x 143	176	14.67	51.70
120	154	12.83	54.72	97 x 151	185	15.42	56.01
126	161	13.42	58.92				
132	168	14.00	63.27	106 x 166	202	16.83	64.48
144	182	15.17	72.40	116 x 180	218	18.17	73.59

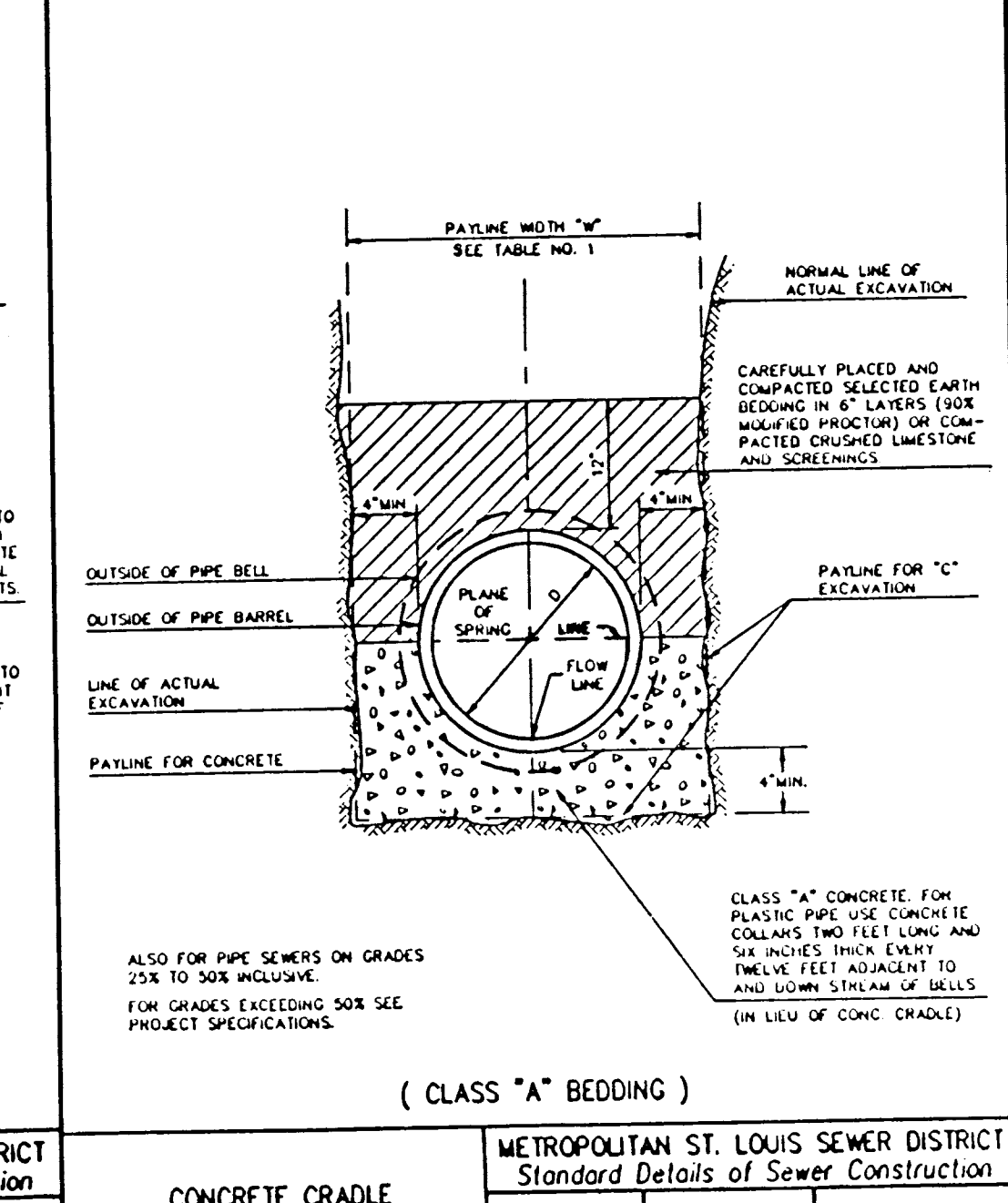
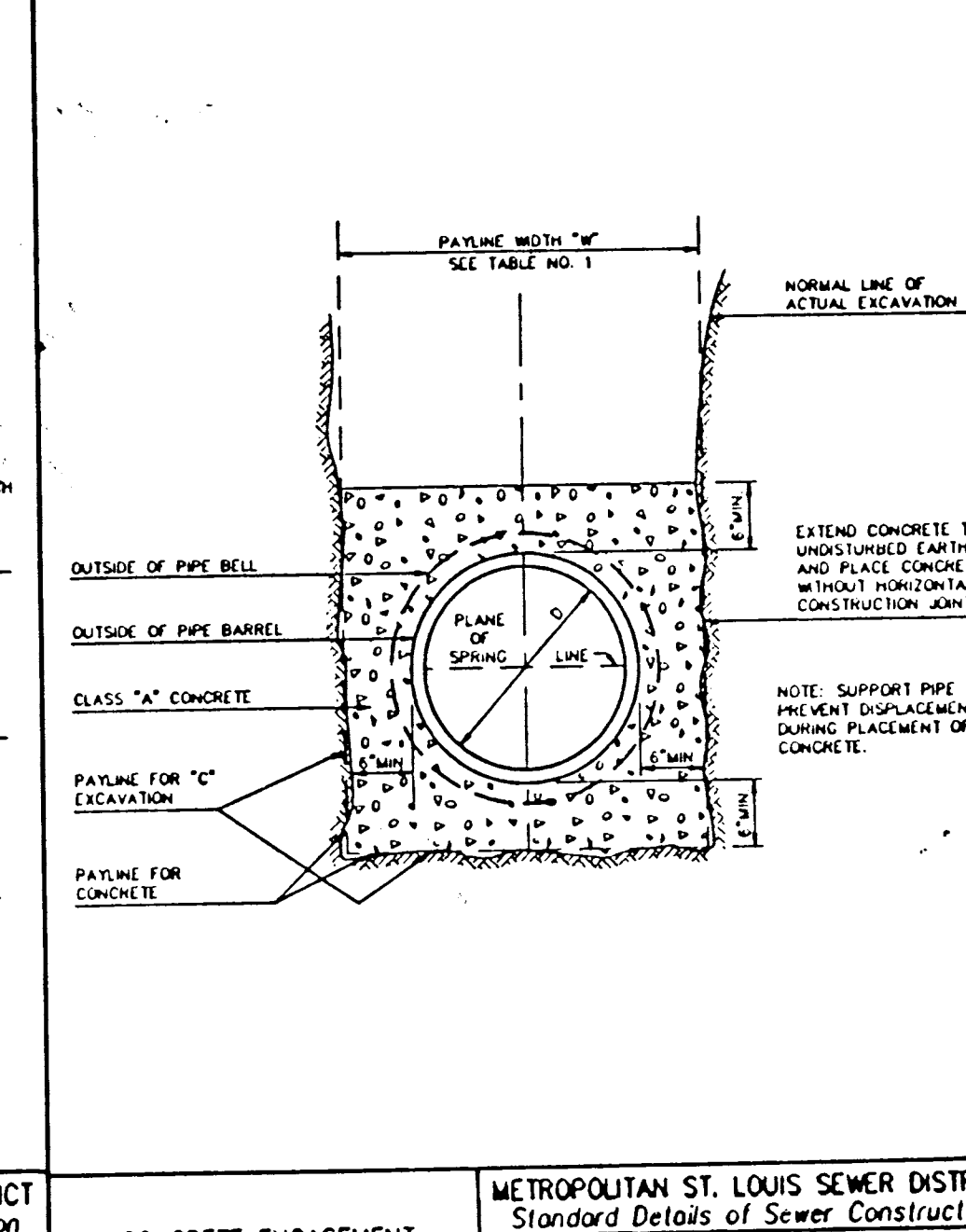
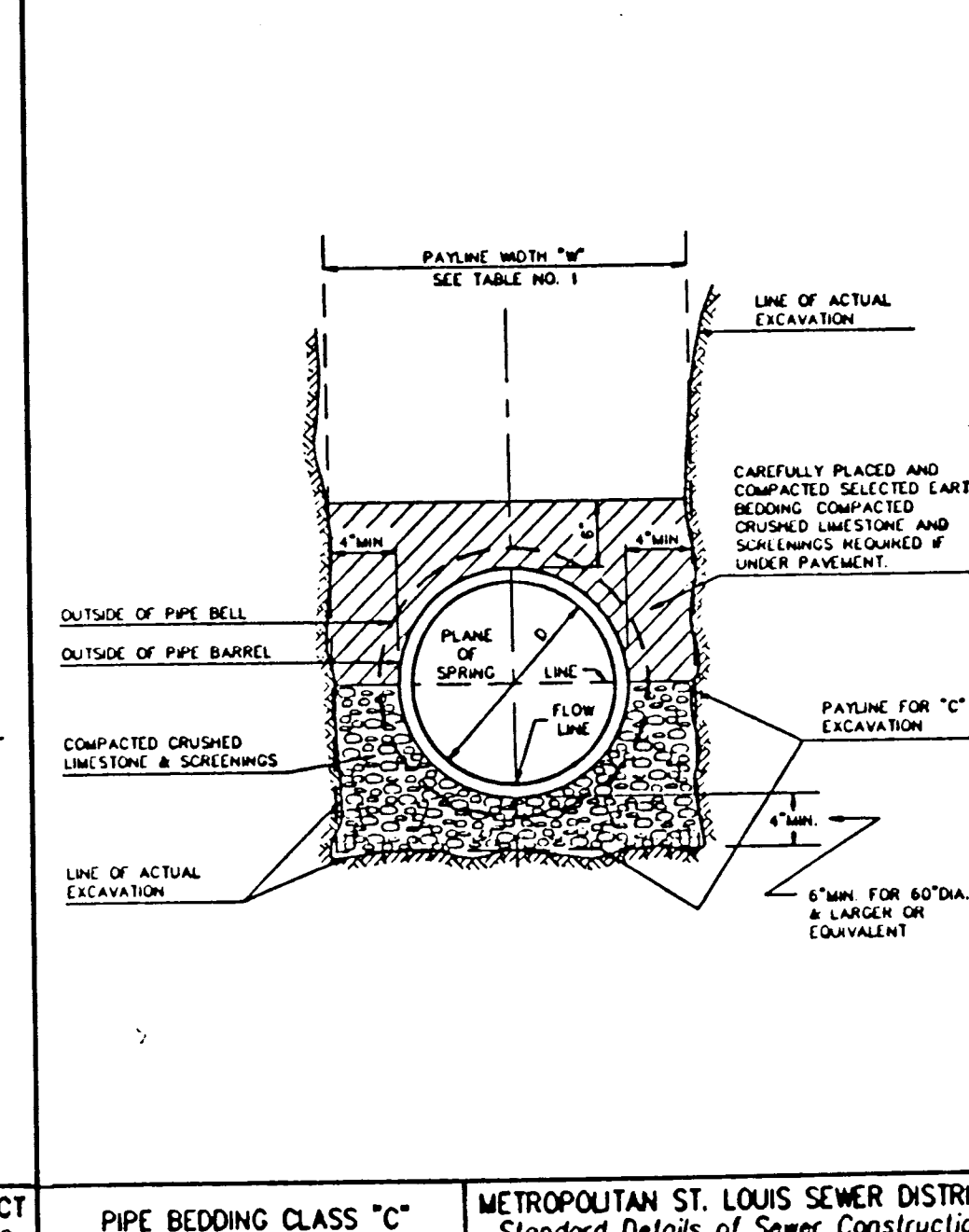
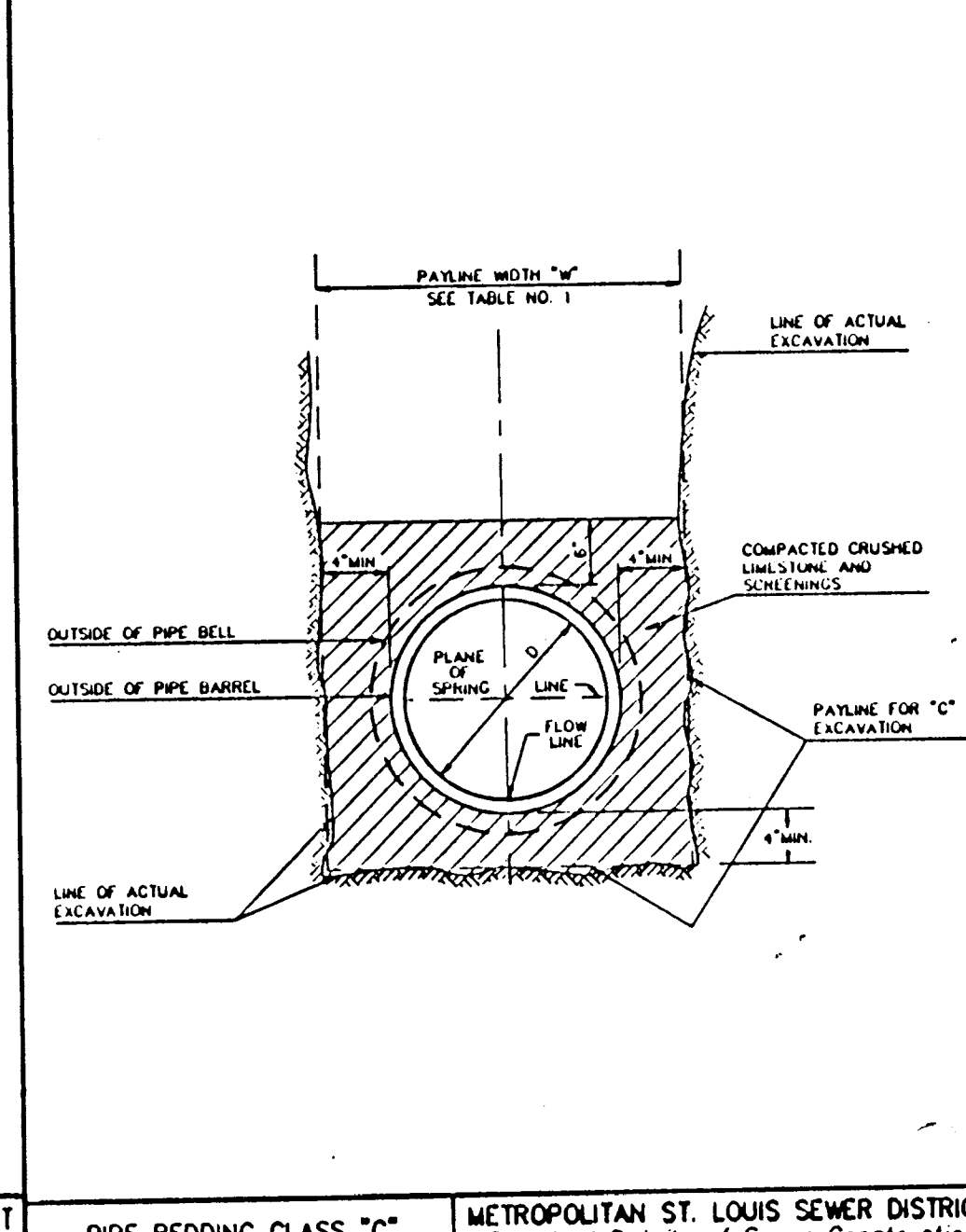
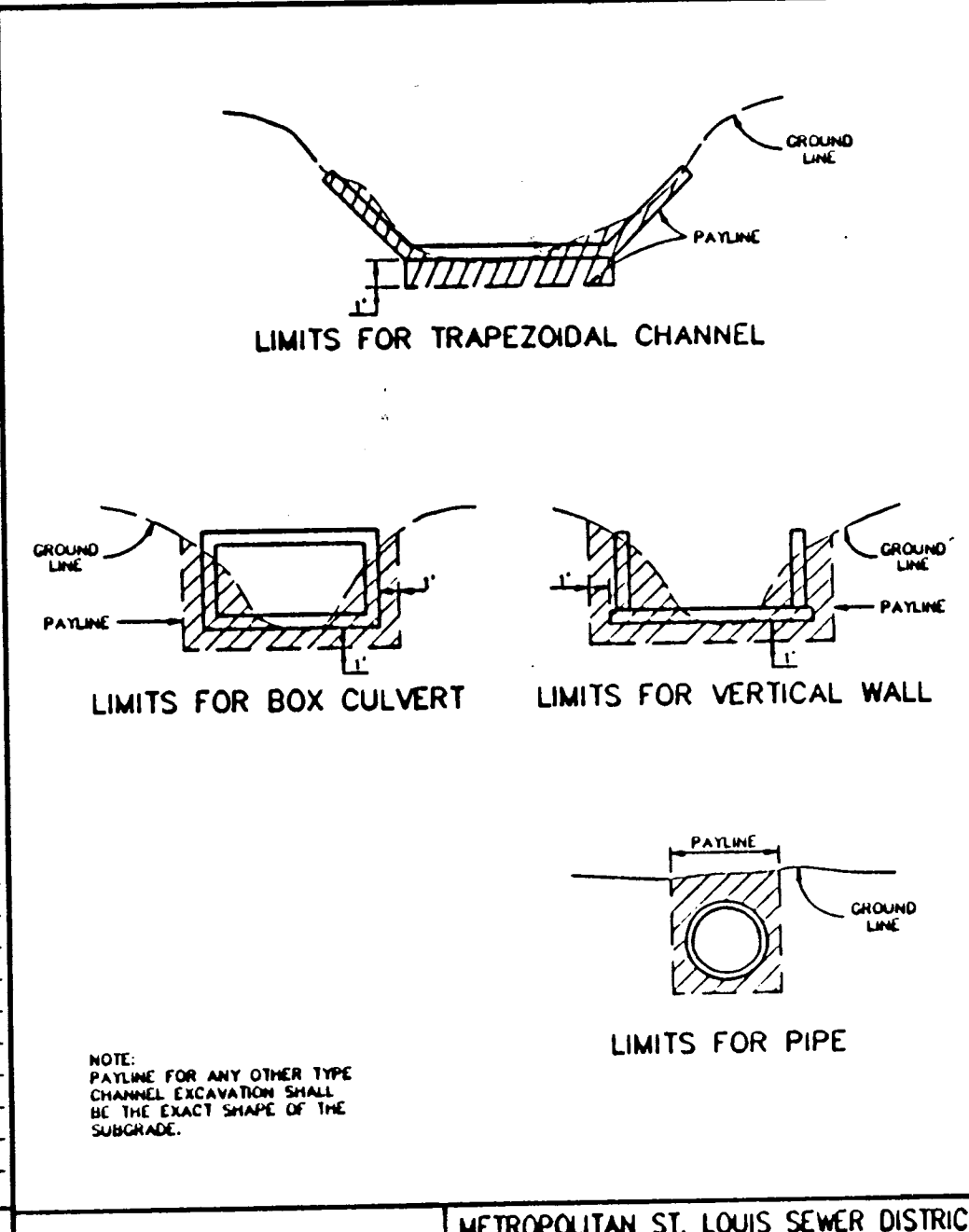


TABLE 1 PAYLINE WIDTHS OF TRENCH AND PAY-QUANTITIES OF CONCRETE

Dr. B.E.B. Ch. J.C.K. 1992 SHEET 1

PAYLINE LIMITS FOR EXCAVATION

Dr. W.S.H. Ch. J.C.K. 1992 SHEET 2

PIPE BEDDING CLASS "C" (FOR ALL PIPE EXCEPT REINFORCED CONCRETE PIPE)

Dr. W.S.H. Ch. J.C.K. 1992 SHEET 3

PIPE BEDDING CLASS "C" (MODIFIED FOR REINFORCED CONCRETE PIPE)

Dr. W.S.H. Ch. J.C.K. 1992 SHEET 4

CONCRETE ENCASUREMENT

Dr. W.S.H. Ch. J.C.K. 1992 SHEET 5

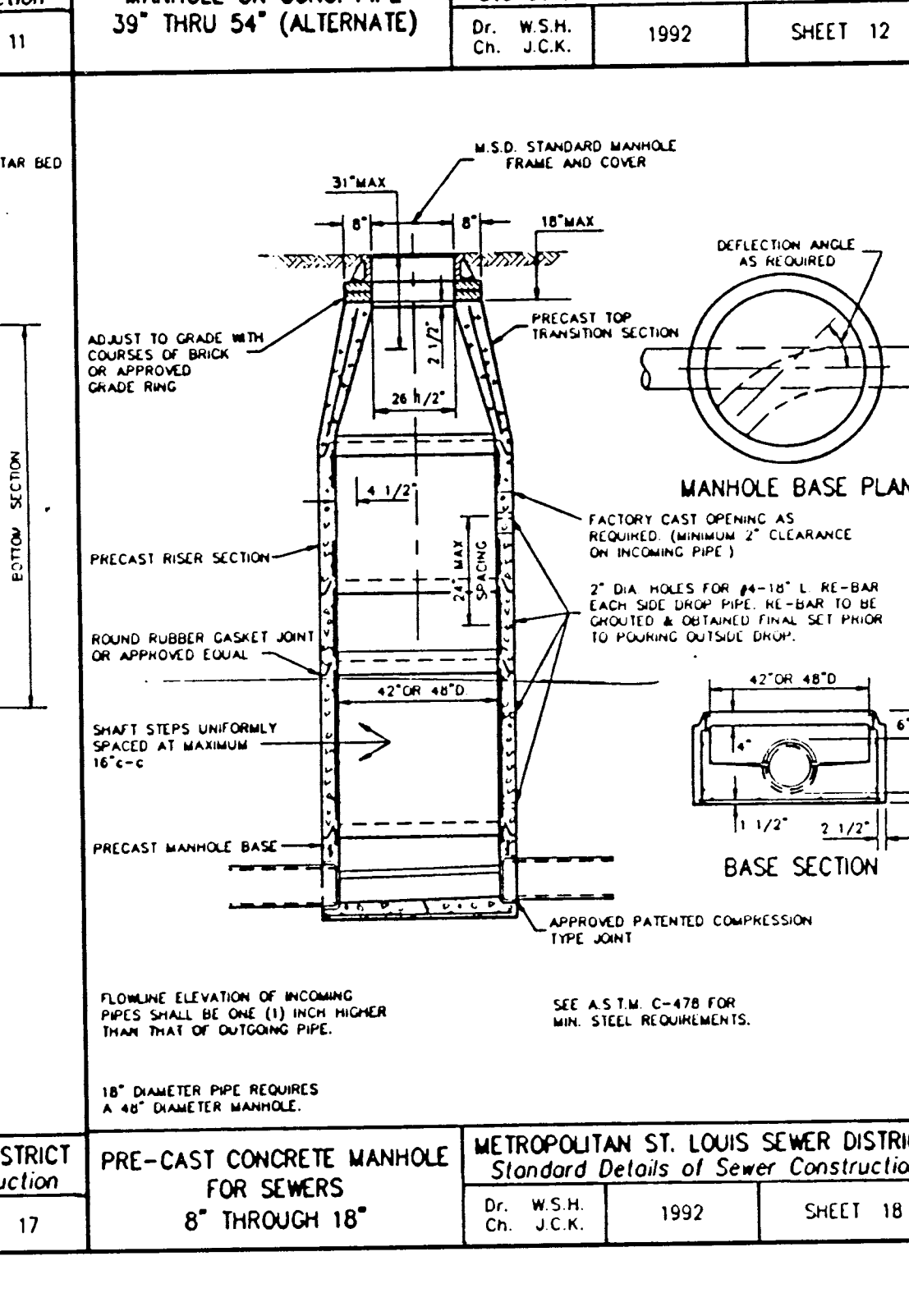
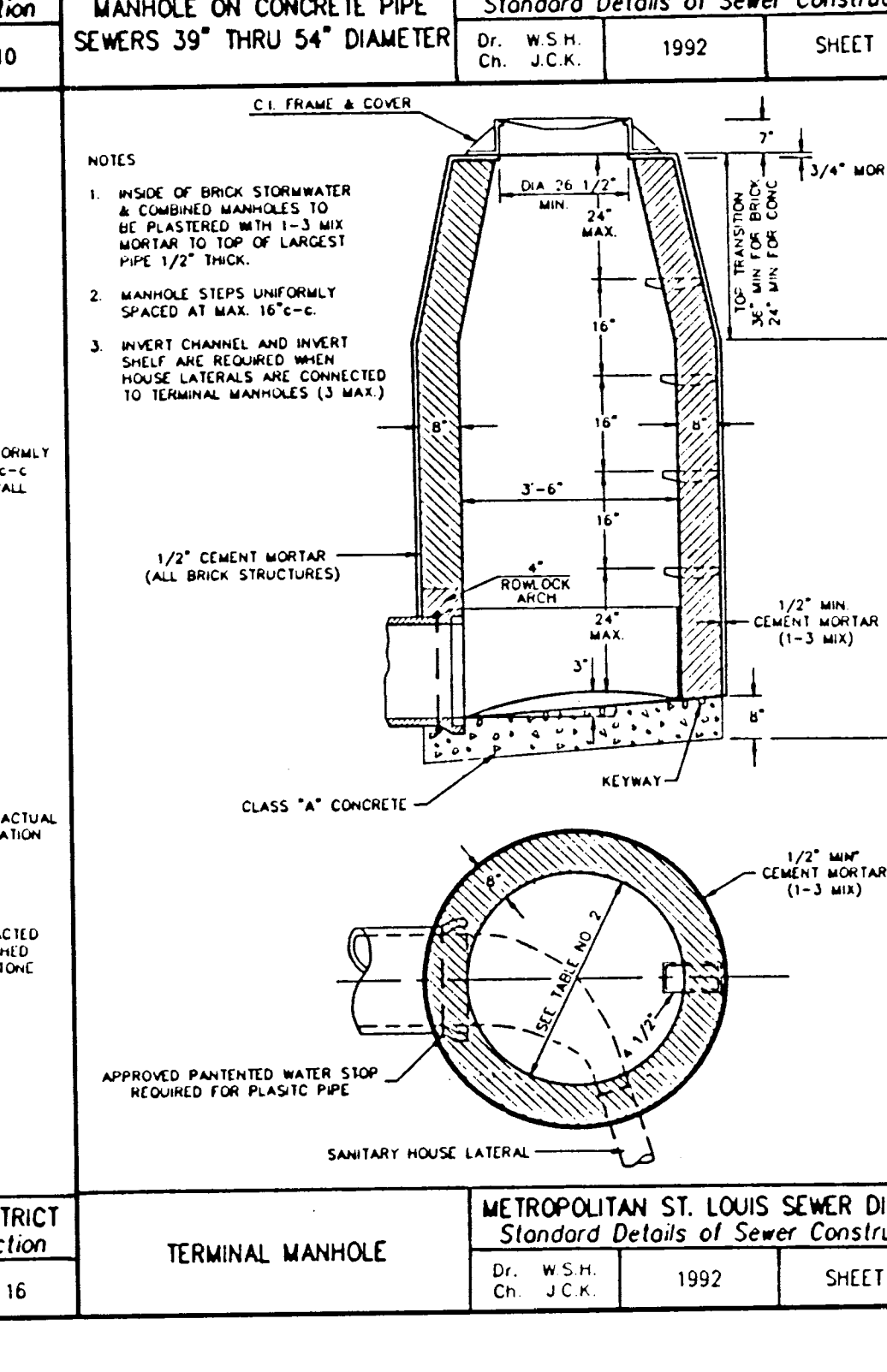
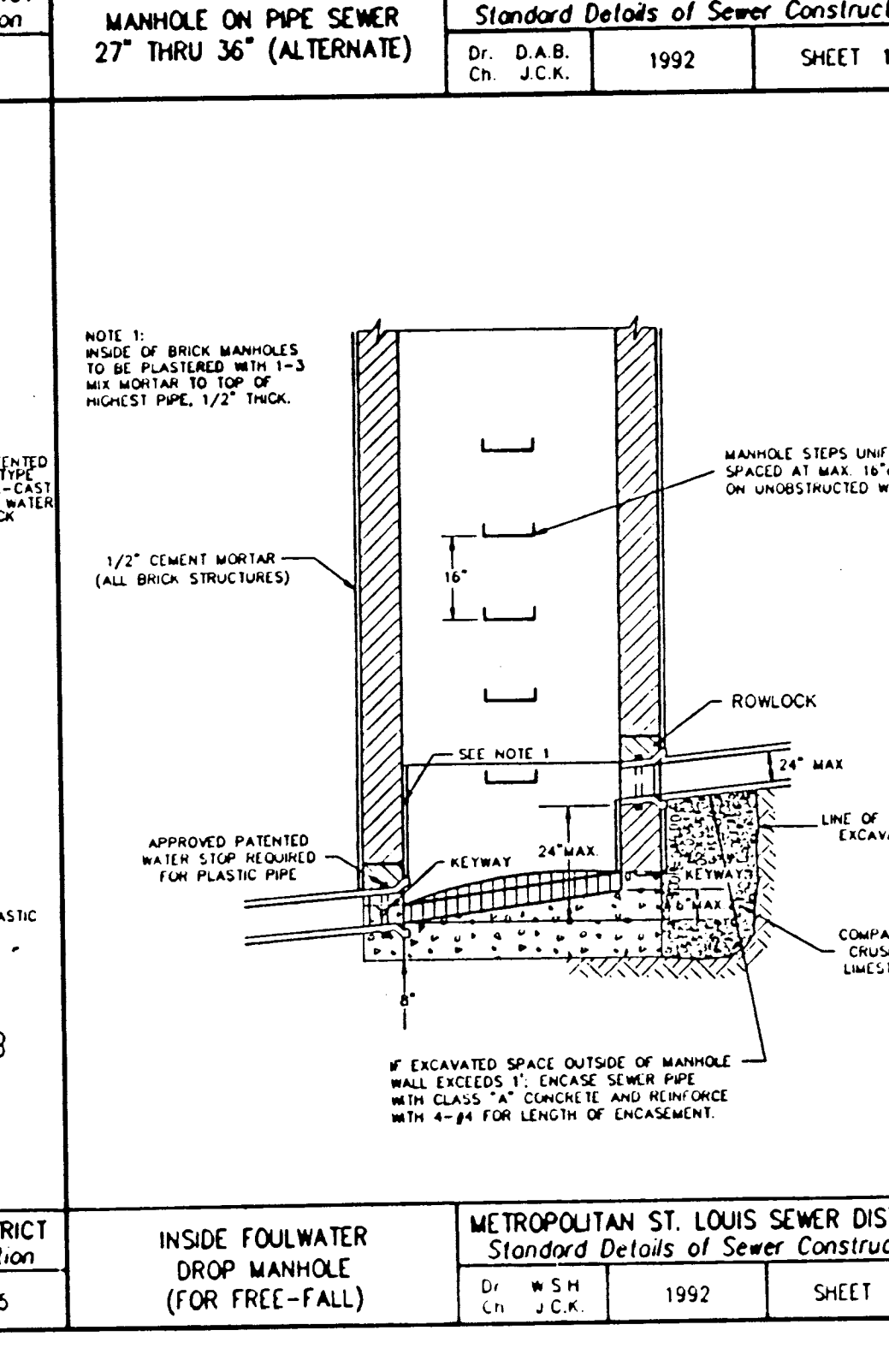
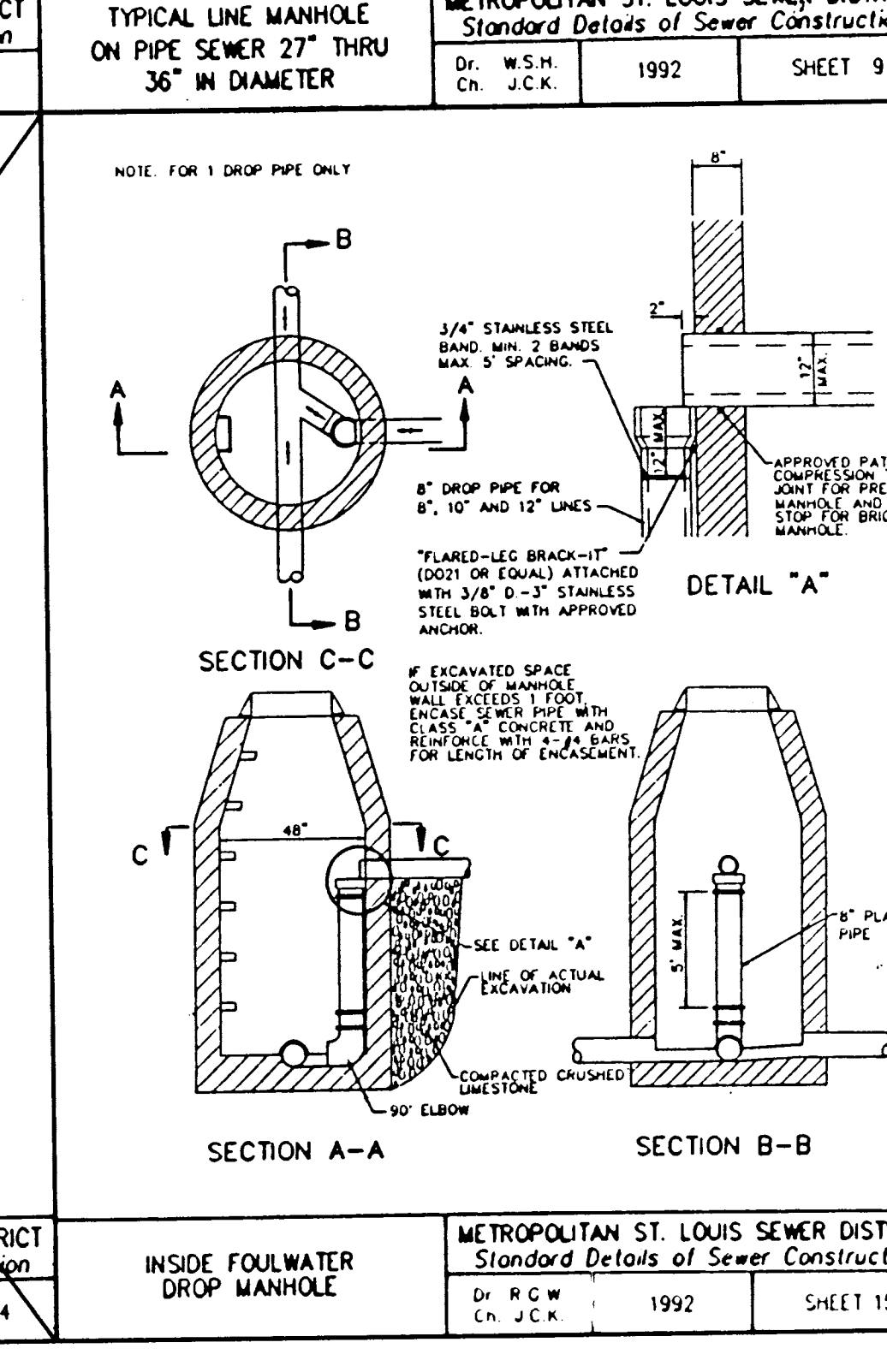
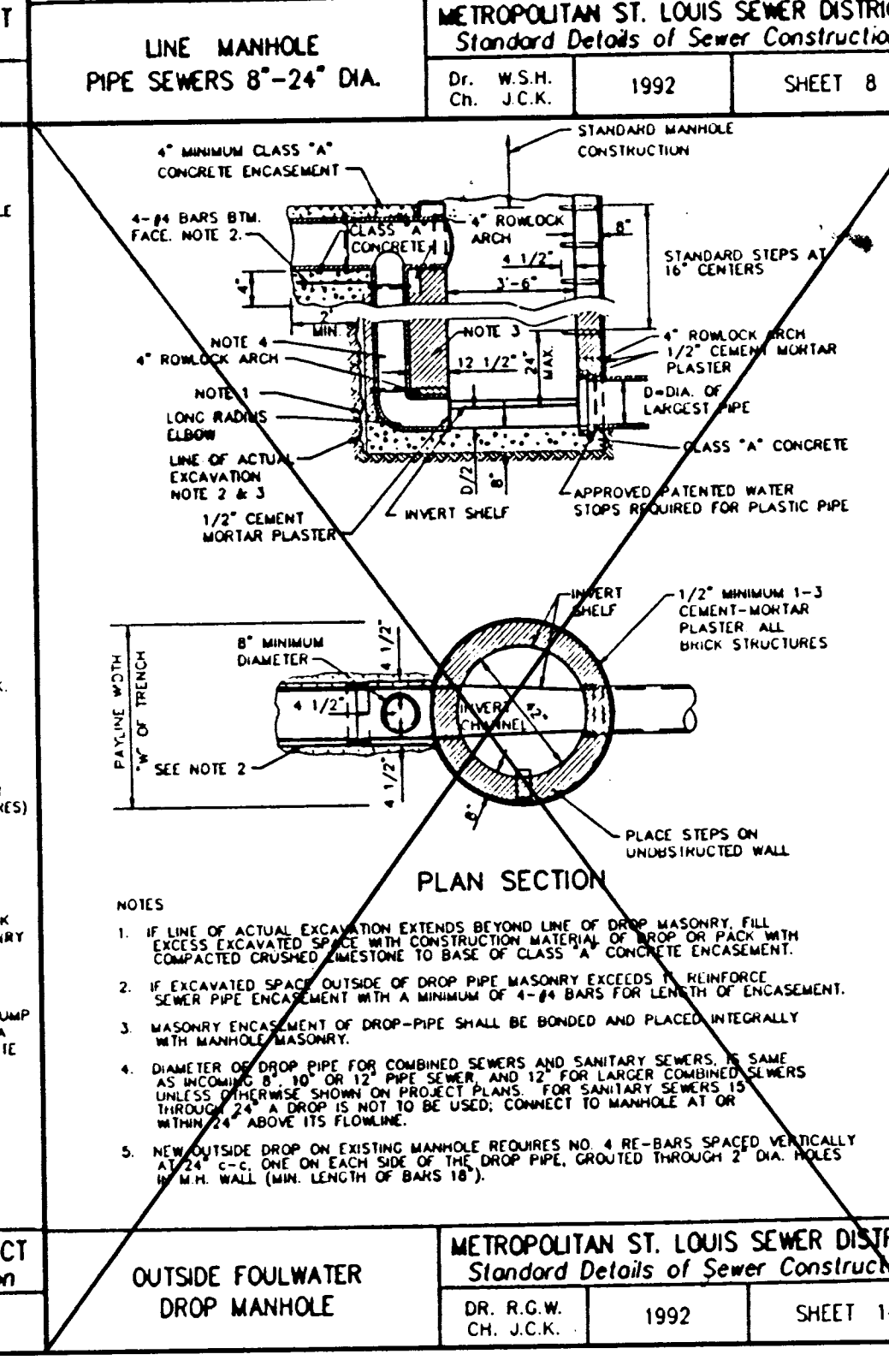
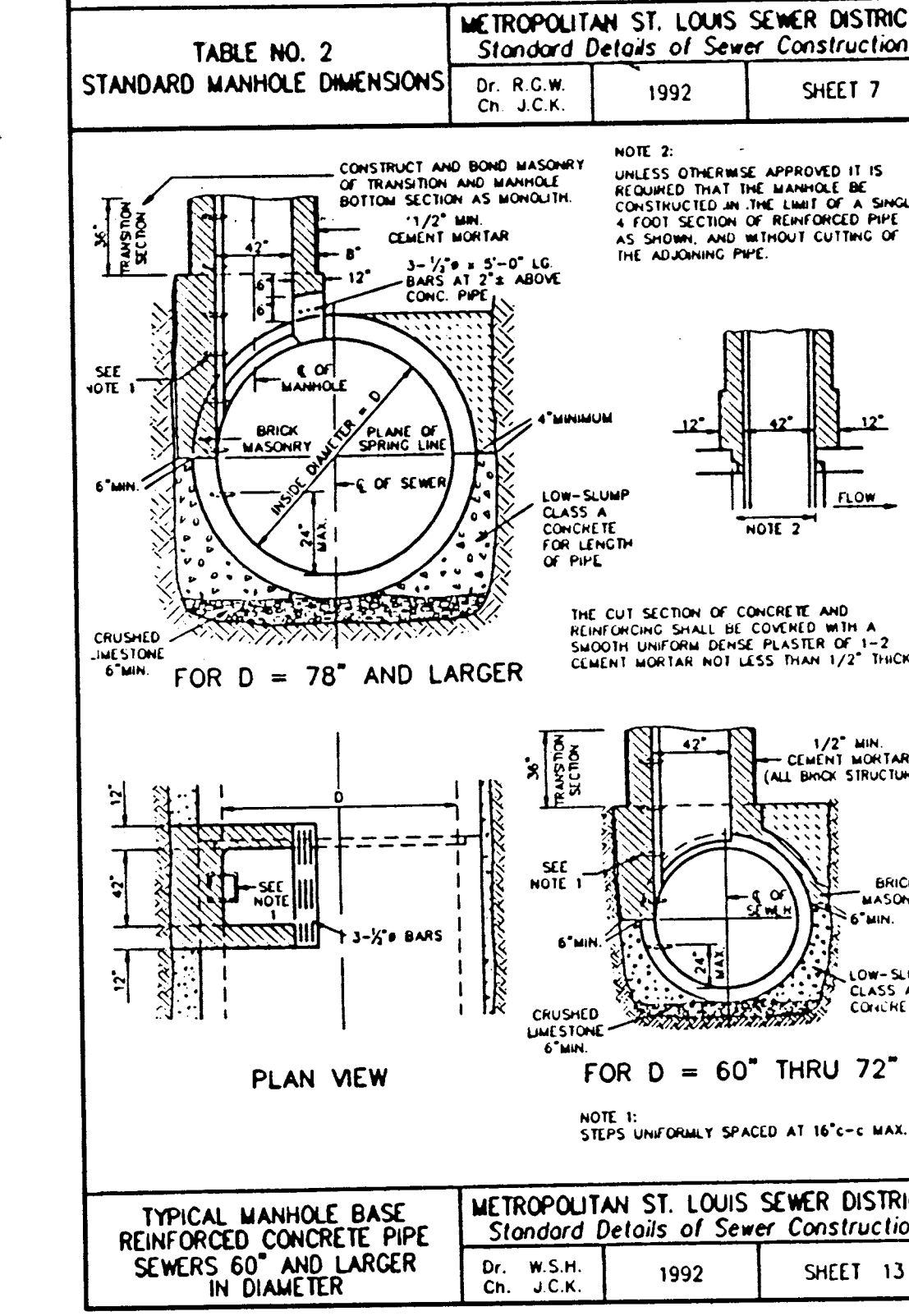
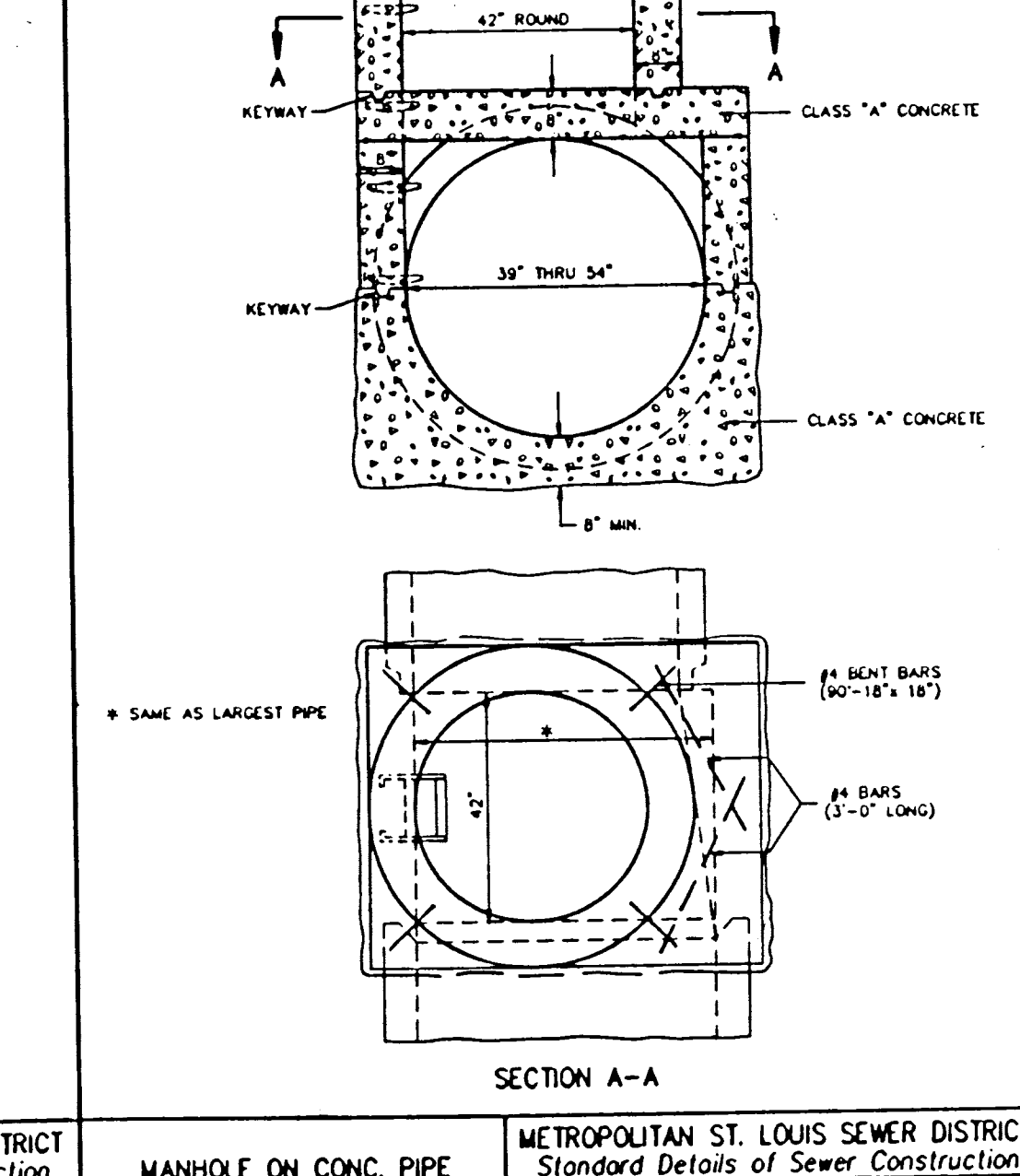
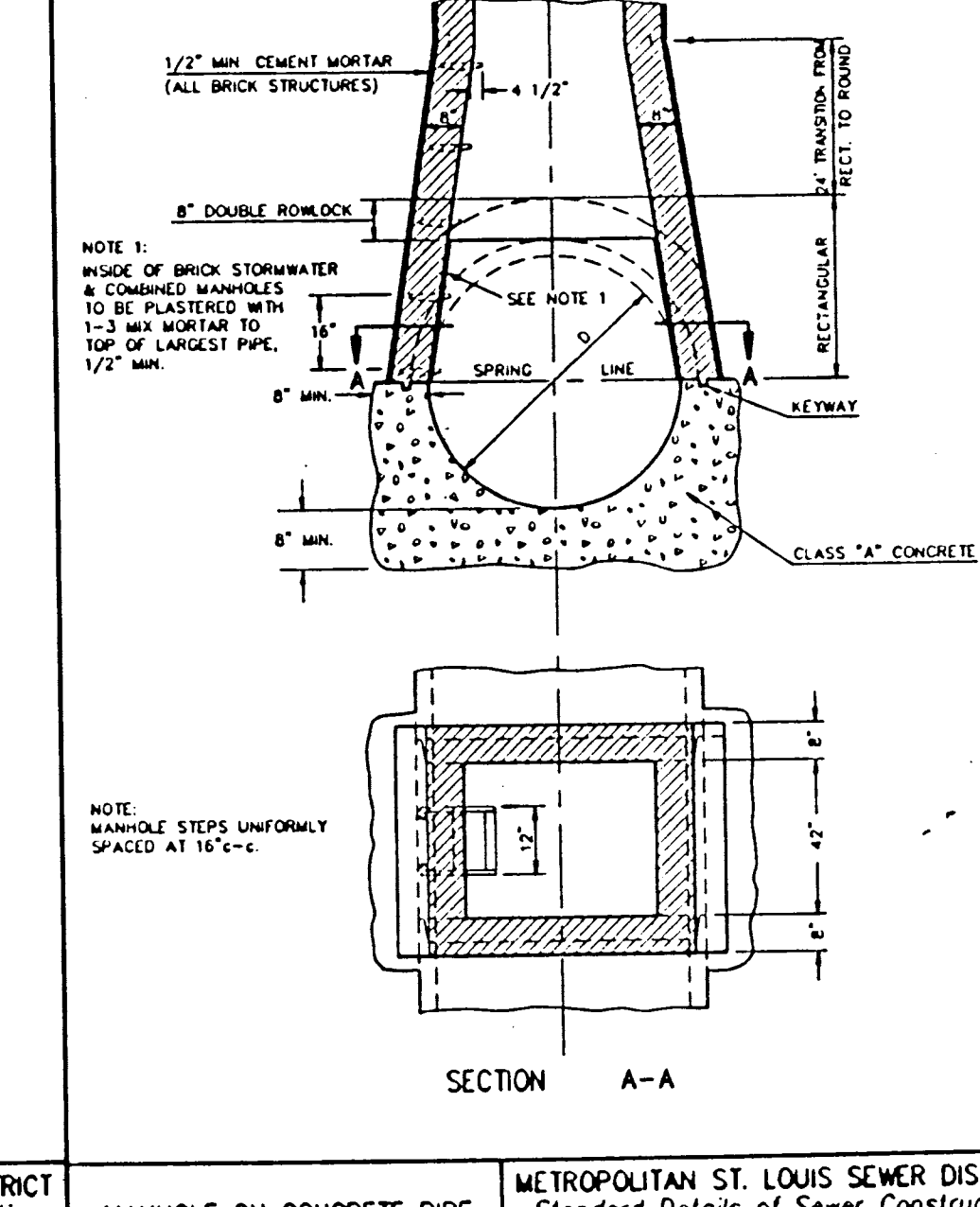
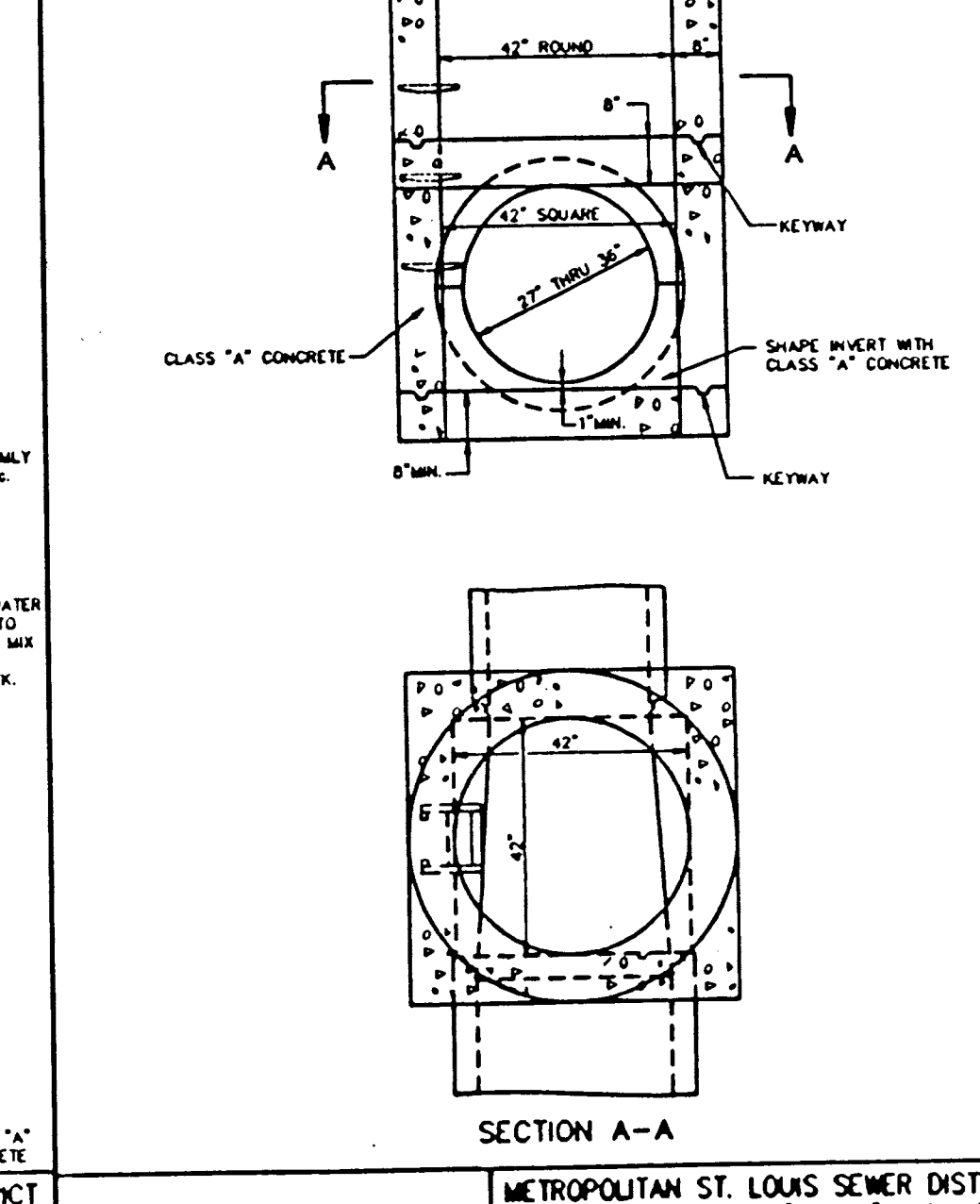
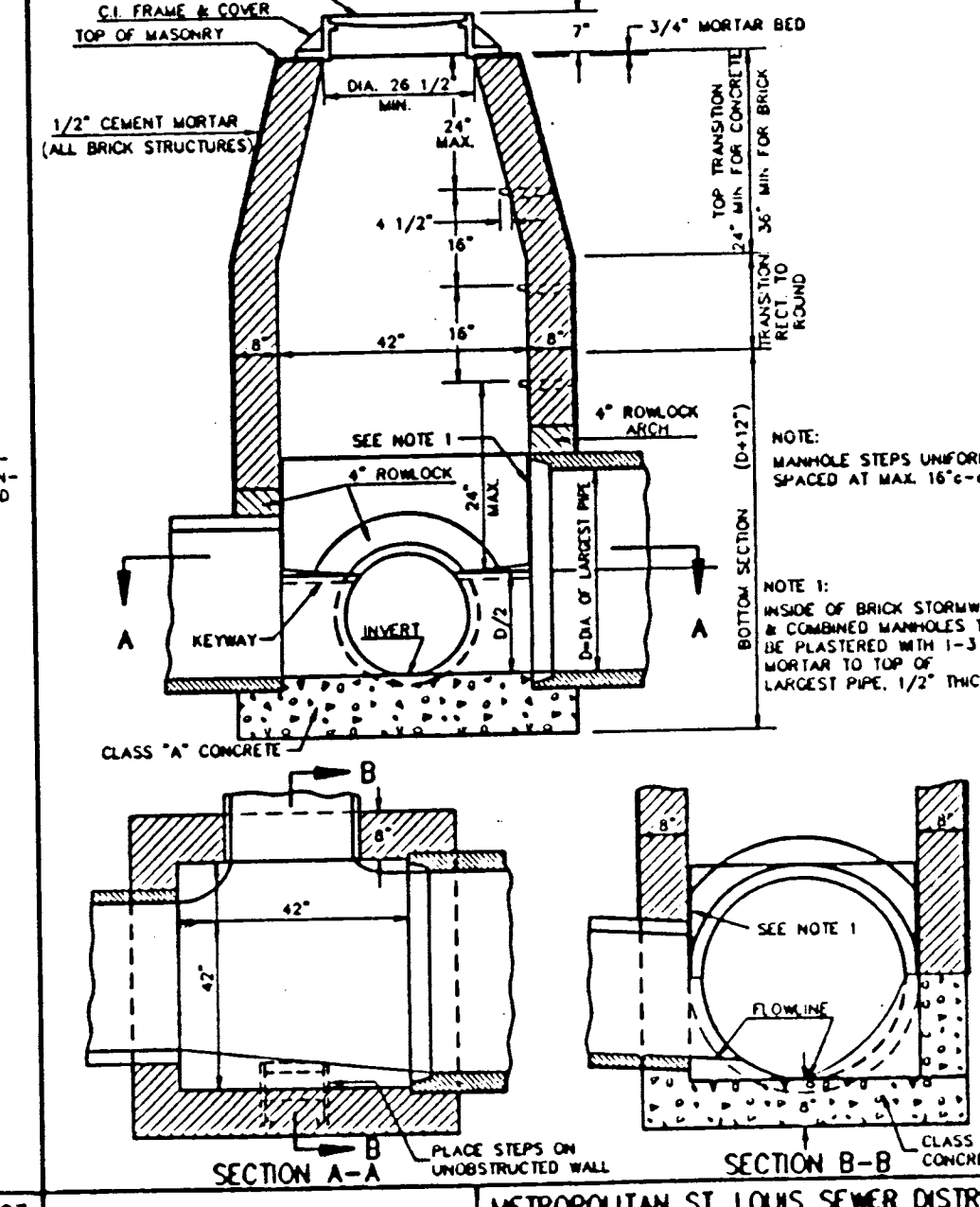
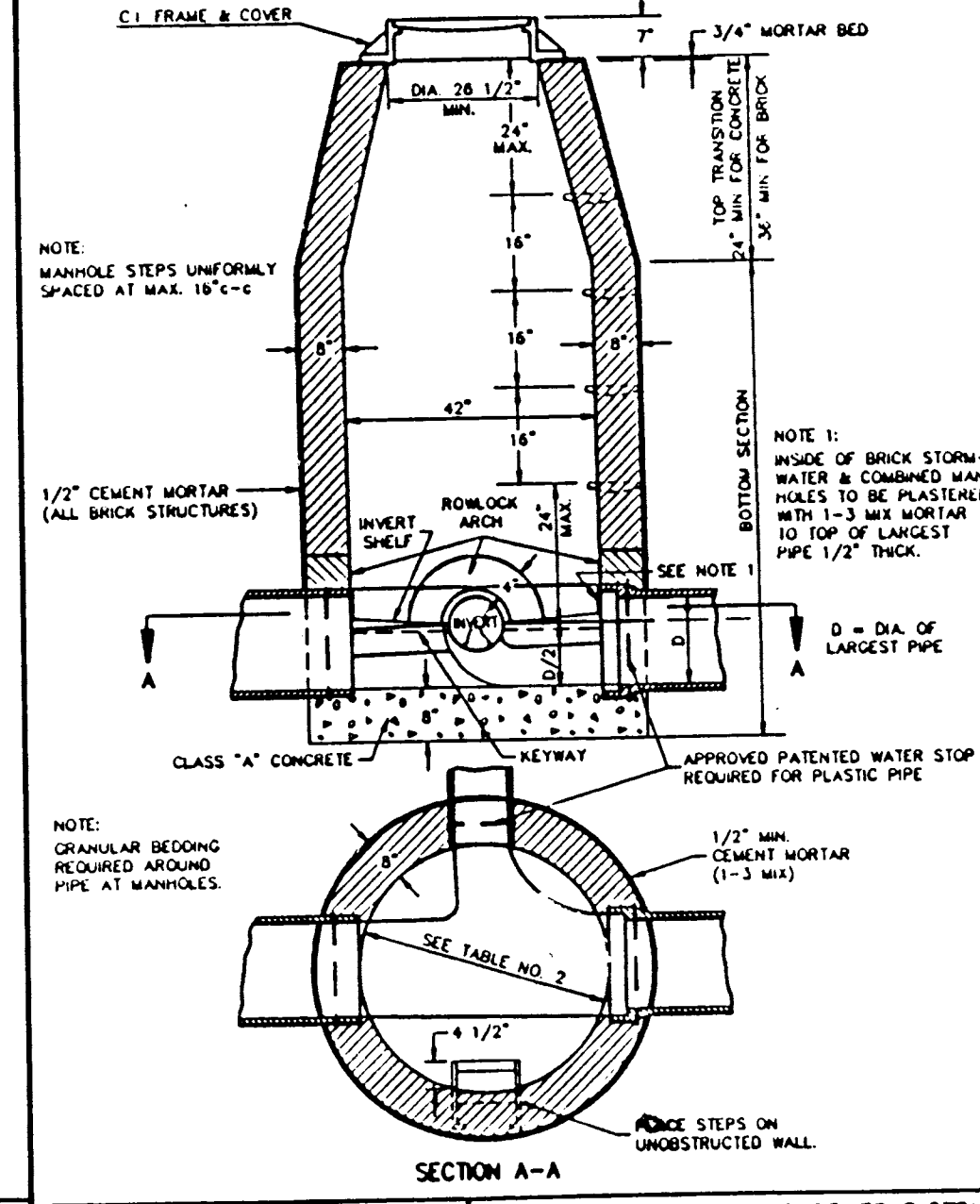
CONCRETE CRADLE

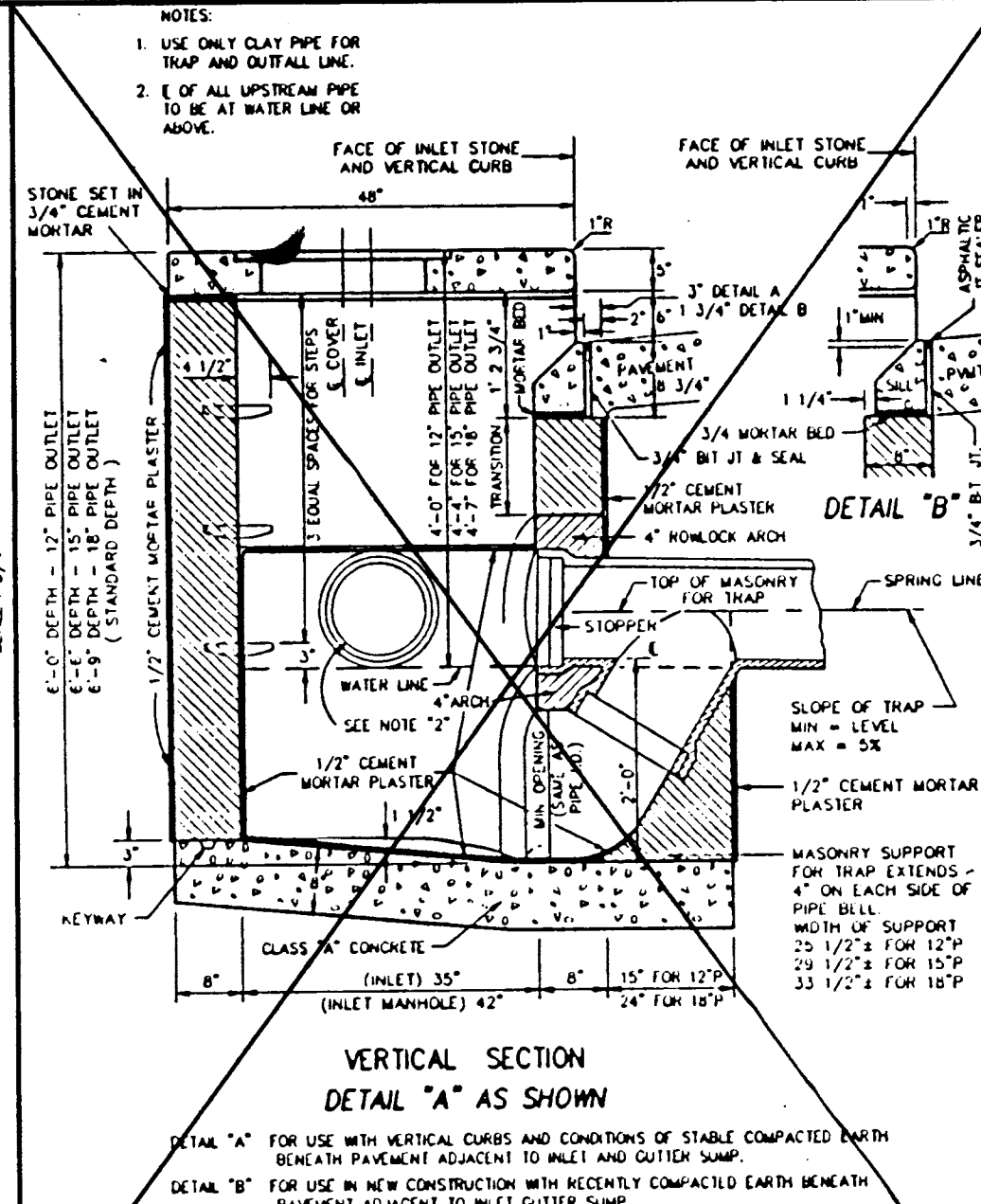
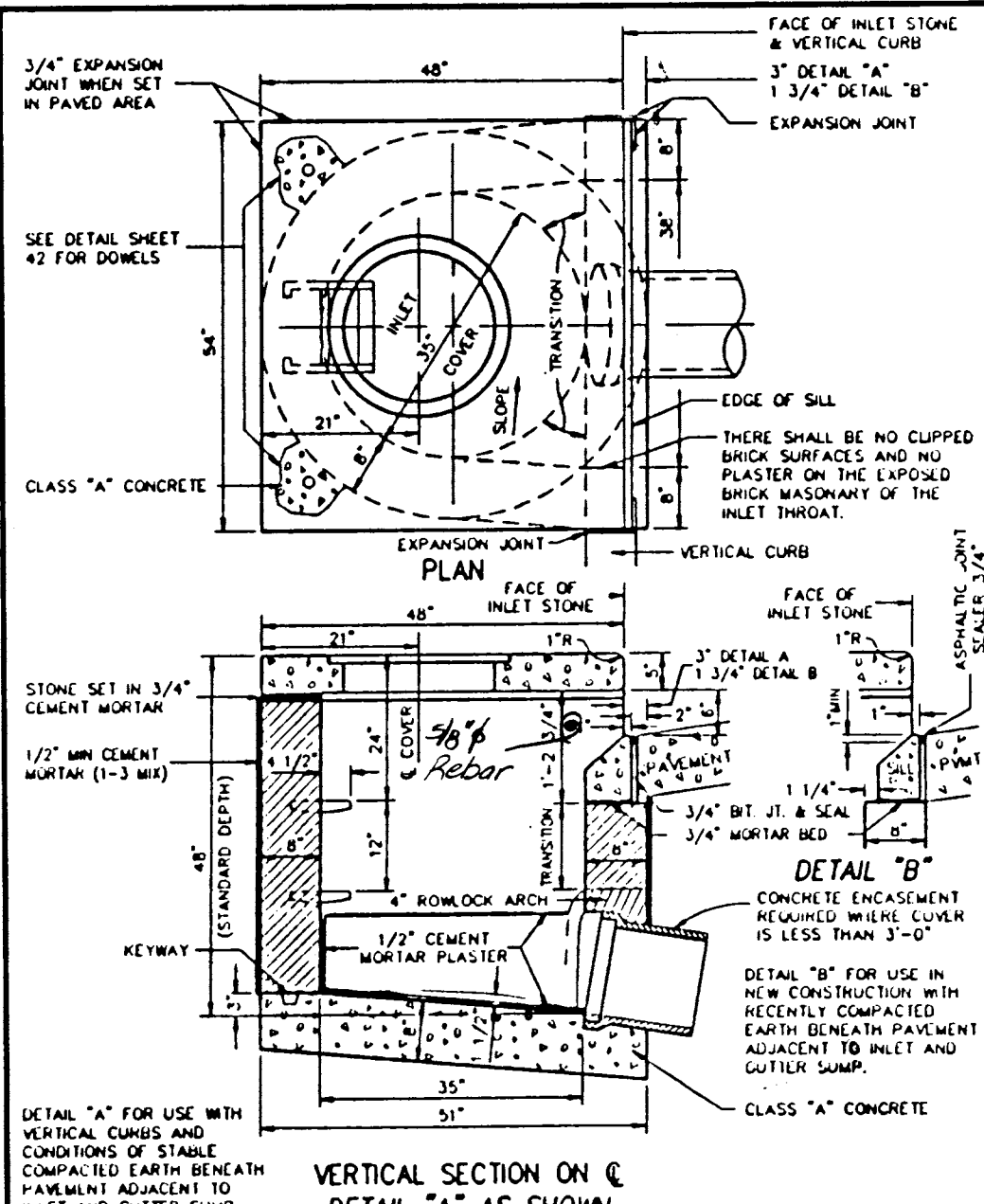
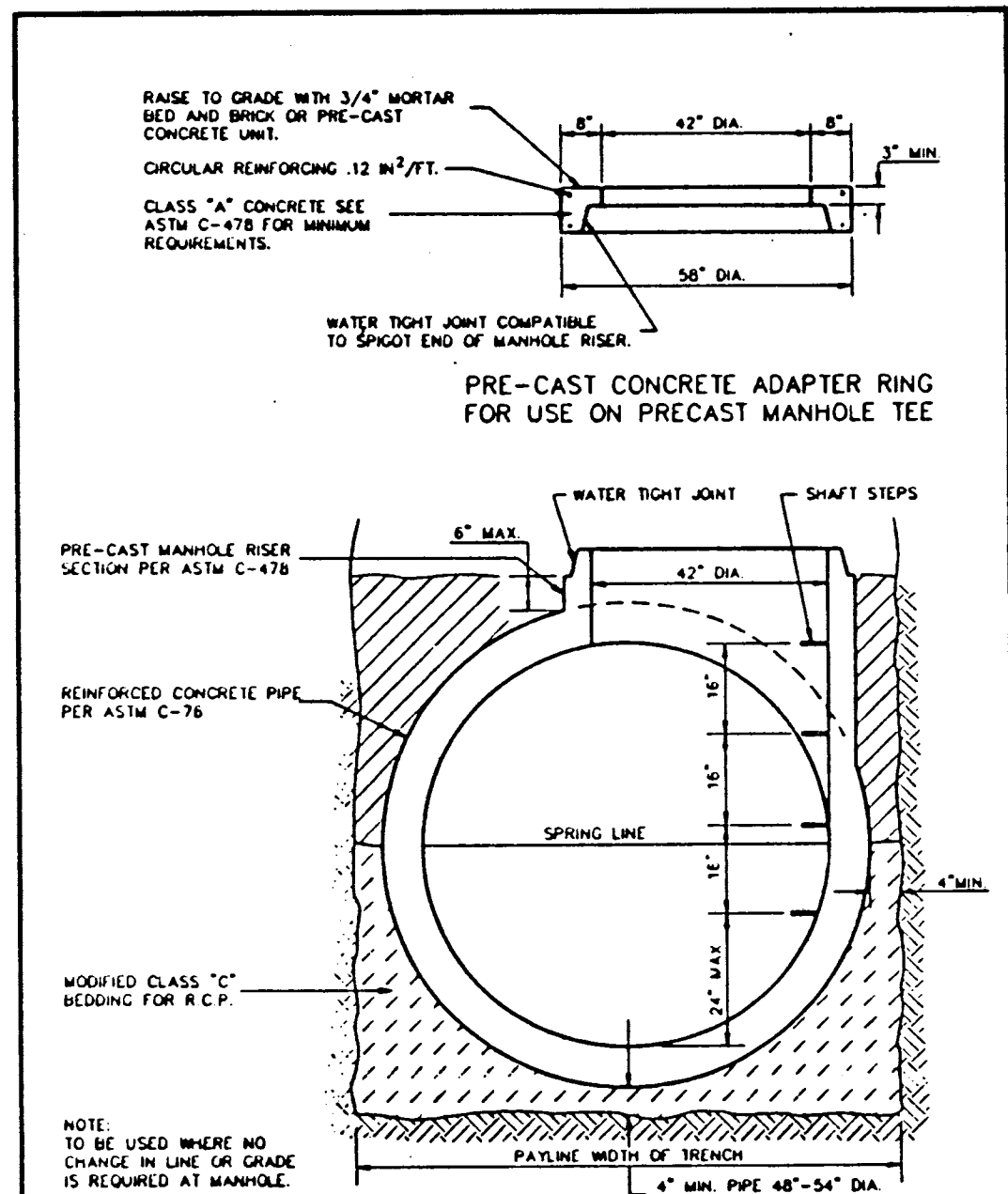
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 6

TABLE NO. 2 STANDARD MANHOLE DIMENSIONS

SECTION OF MANHOLE	TOP TRANSITION	UPPER	26 1/2" DIA.	DIMENSION
TOP TRANSITION	UPPER	26 1/2" DIA.		
	LOWER	42" DIA.		
BOTTOM SECTION	8" THRU 24" DIA. PIPE	42" DIA.		
	27" THRU 36" DIA. PIPE	42" SQUARE		

Dr. R.W. Ch. J.C.K. 1992 SHEET 7

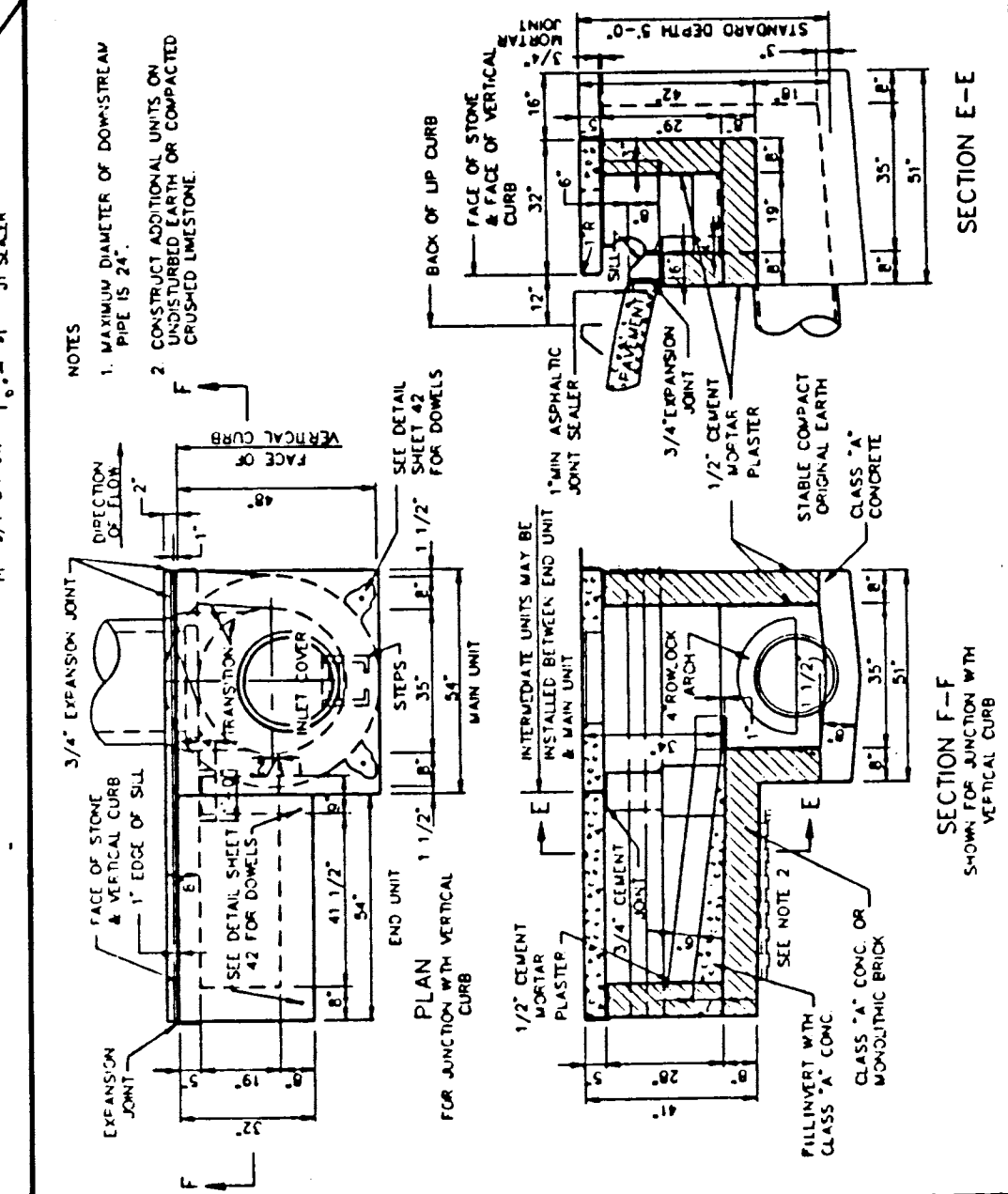




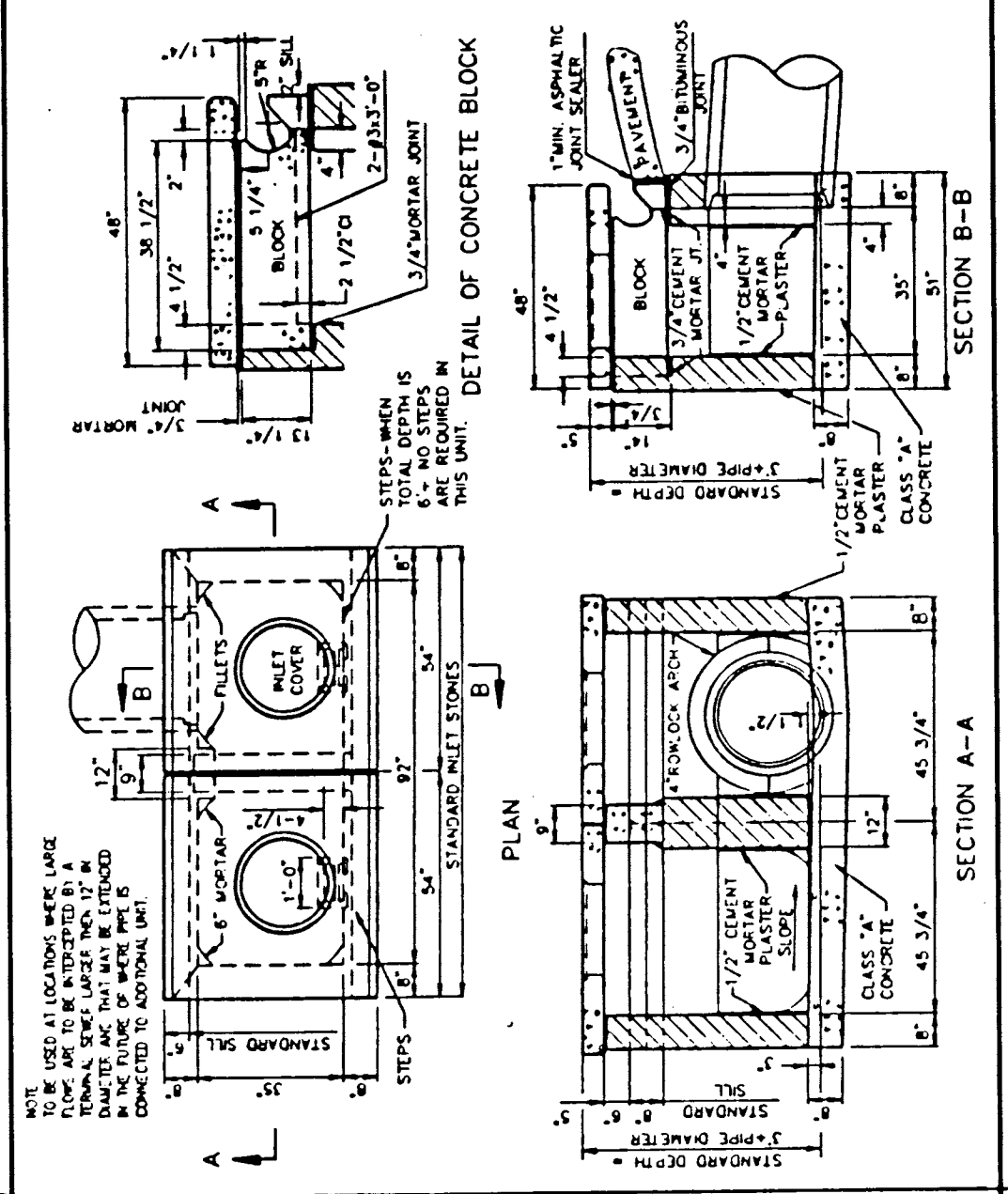
TYPICAL PRE-CAST MH. TEE FOR REINFORCED CONCRETE PIPE SEWERS 48\"/>

METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction

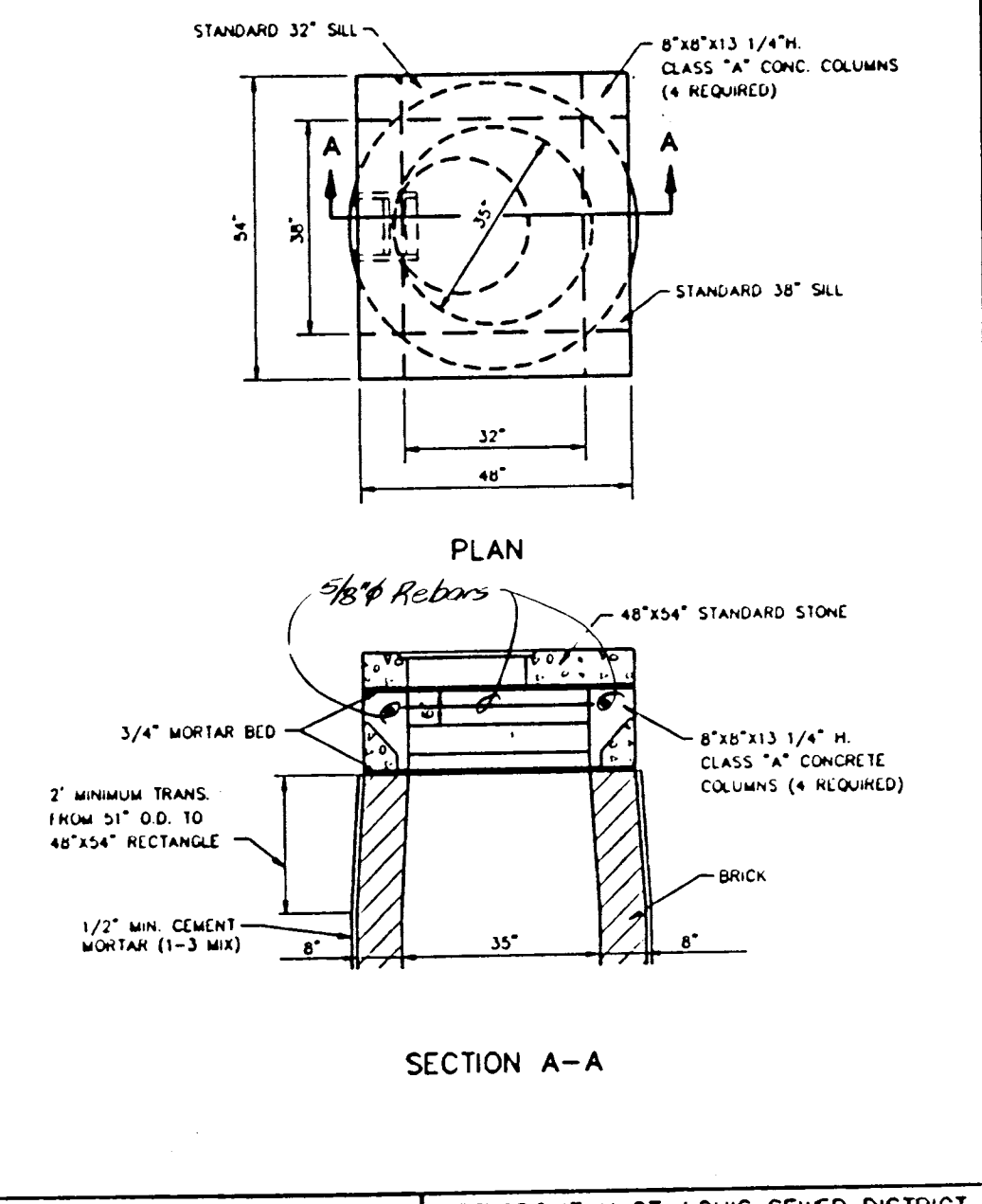
METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



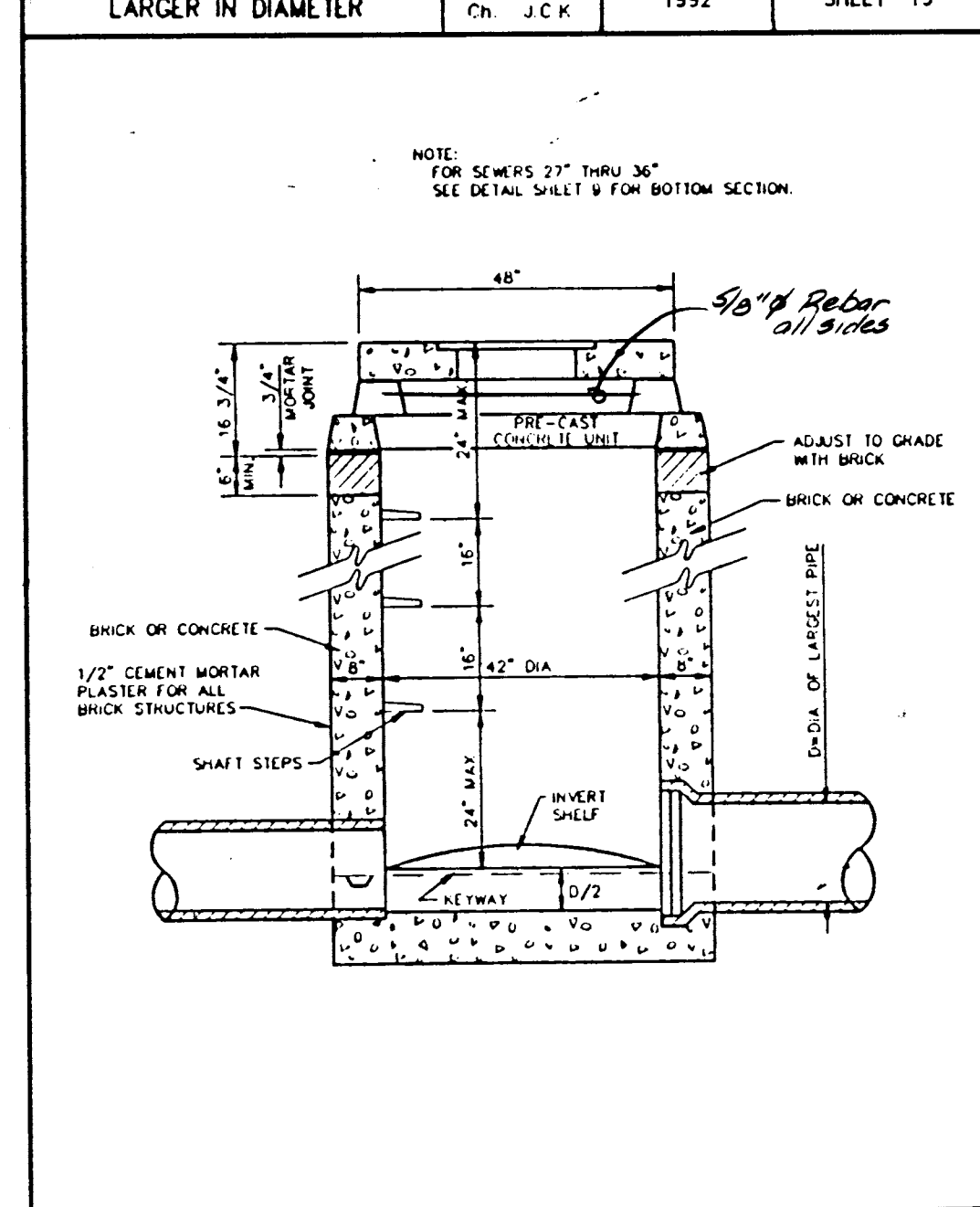
METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



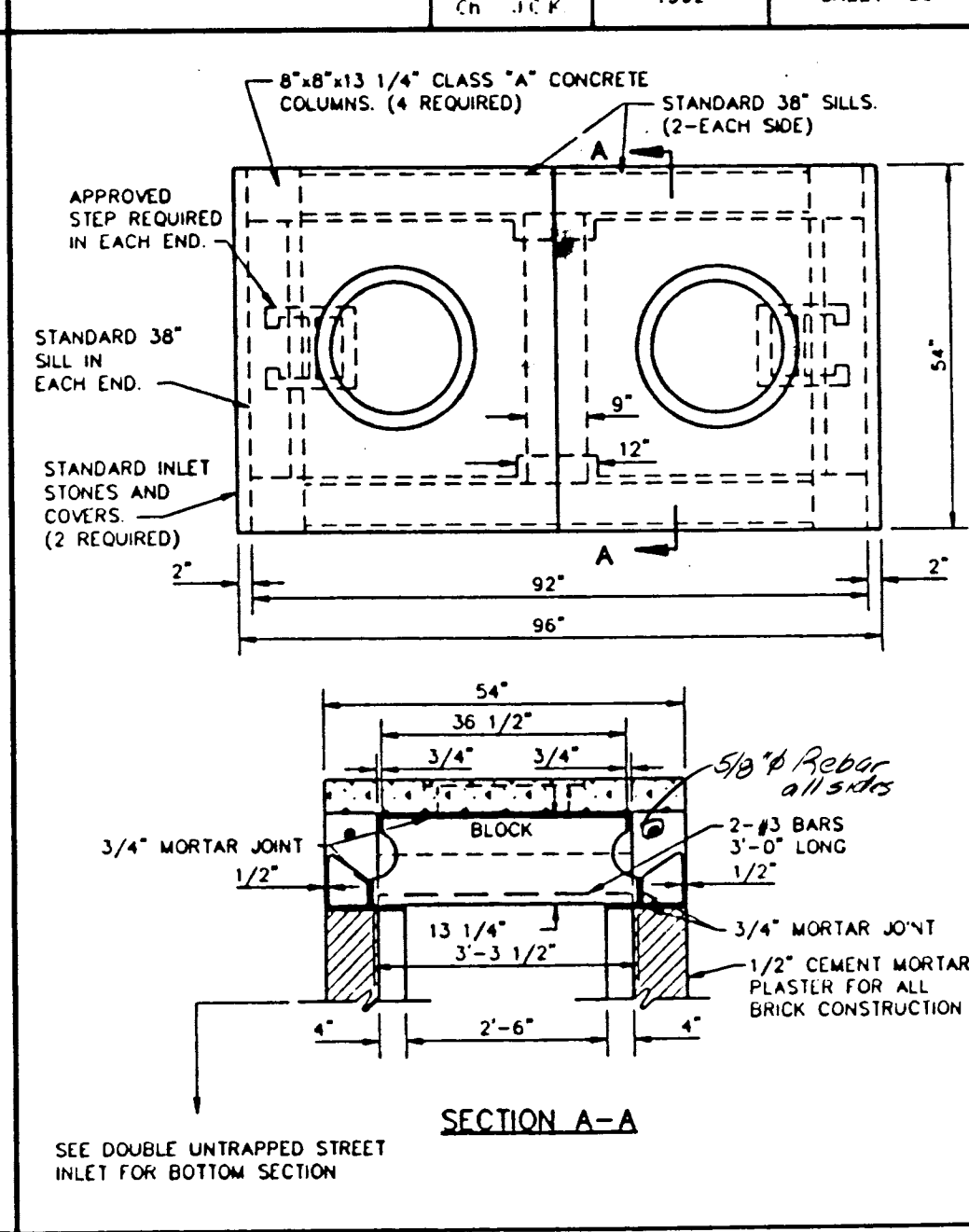
METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



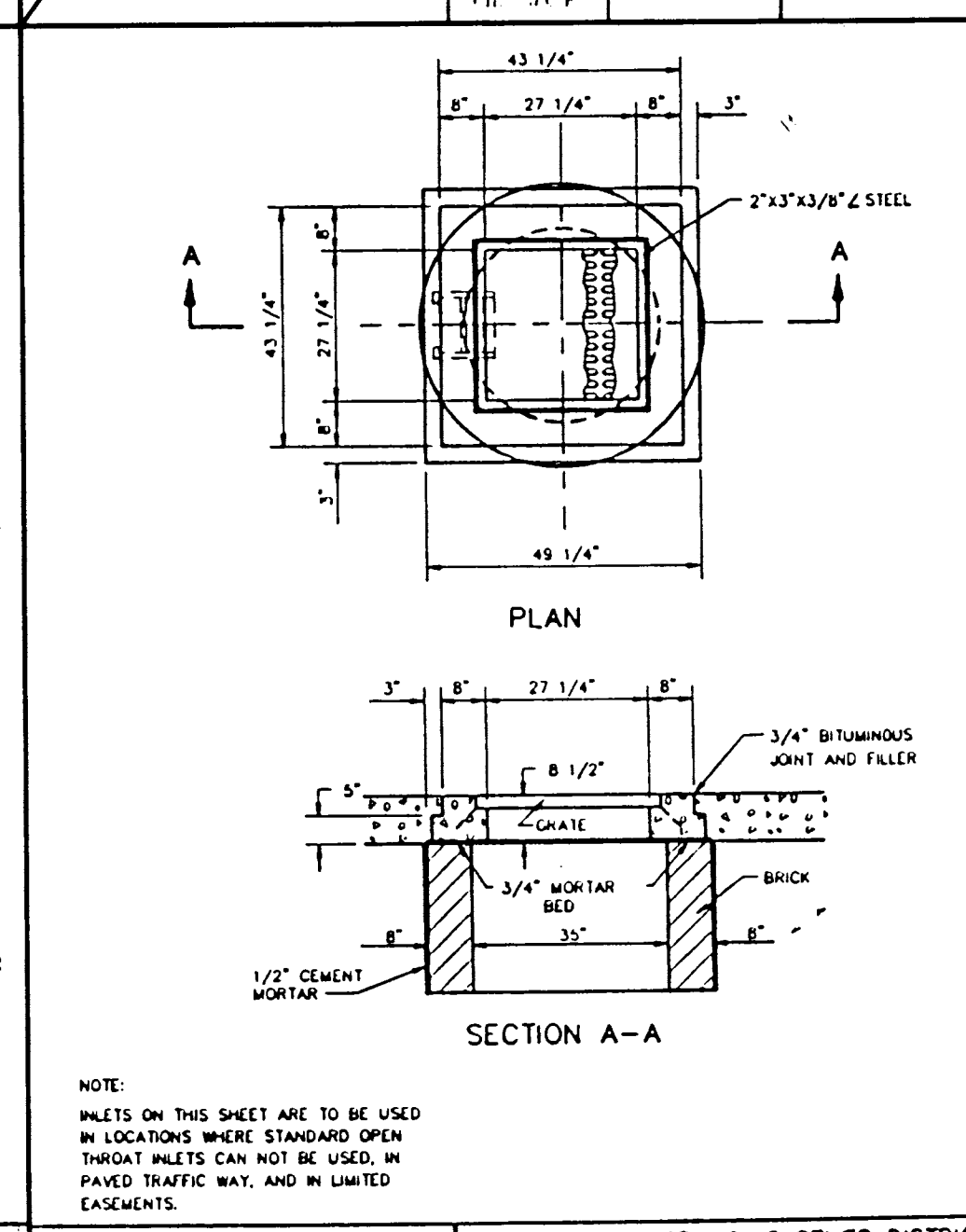
METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



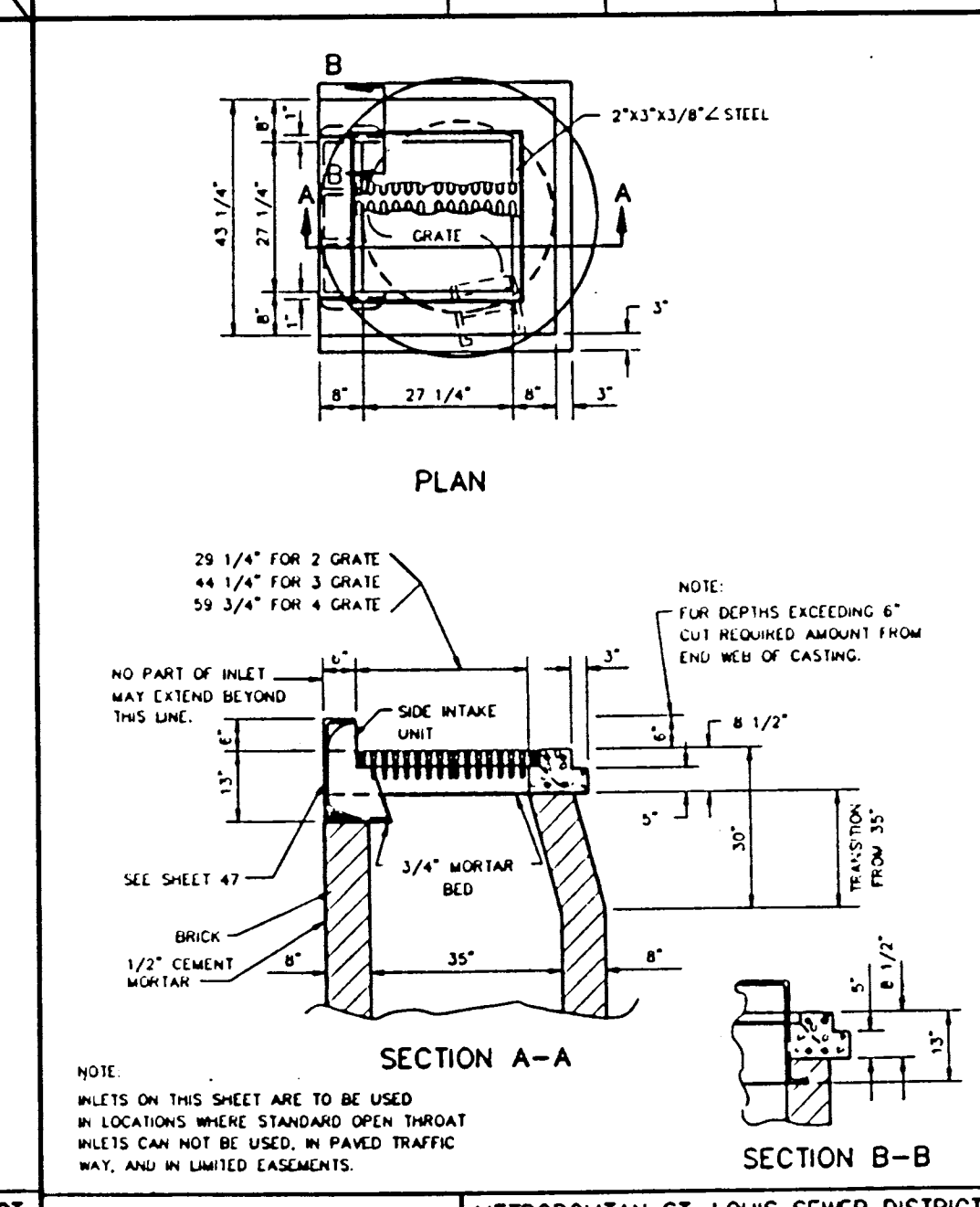
METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



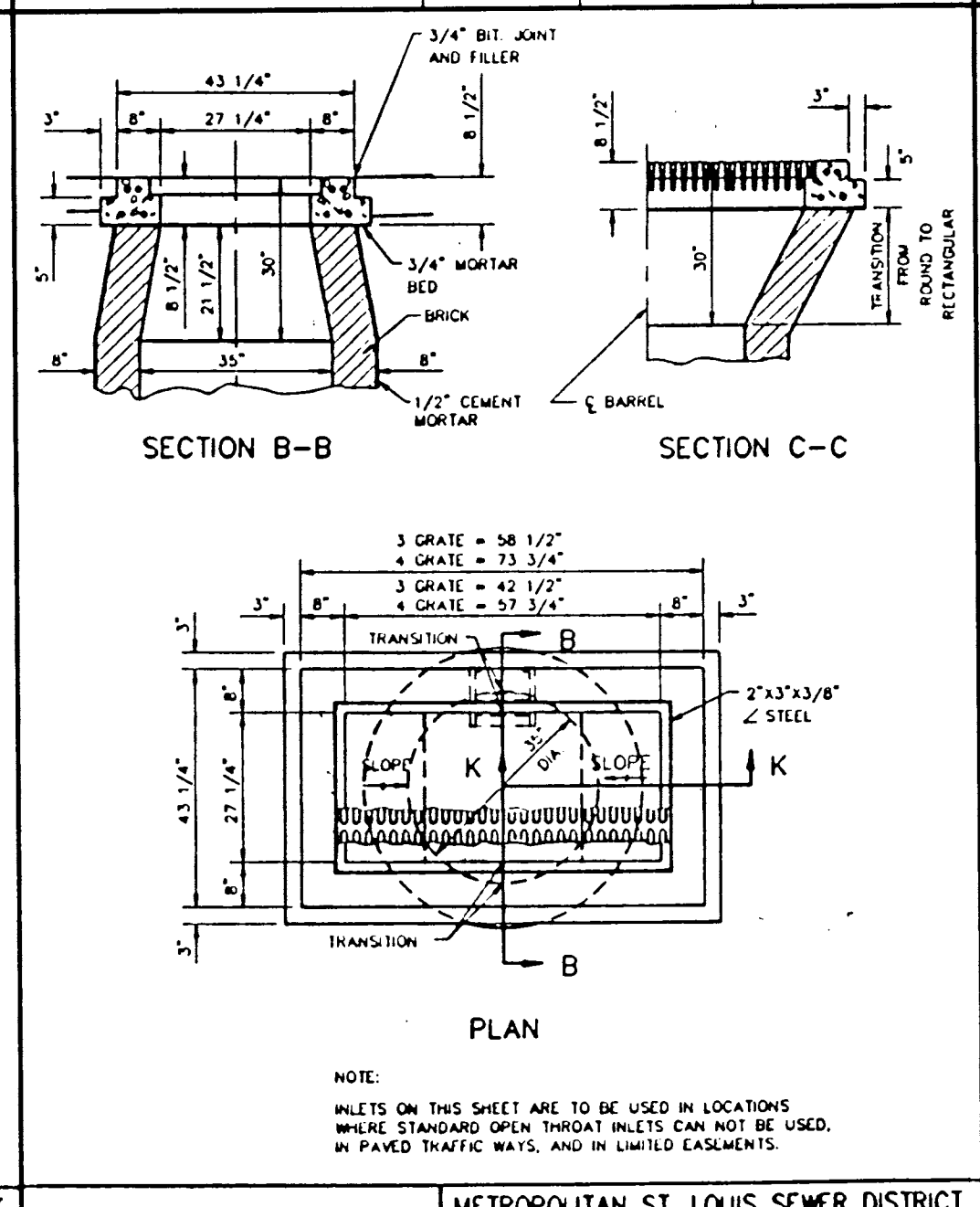
METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



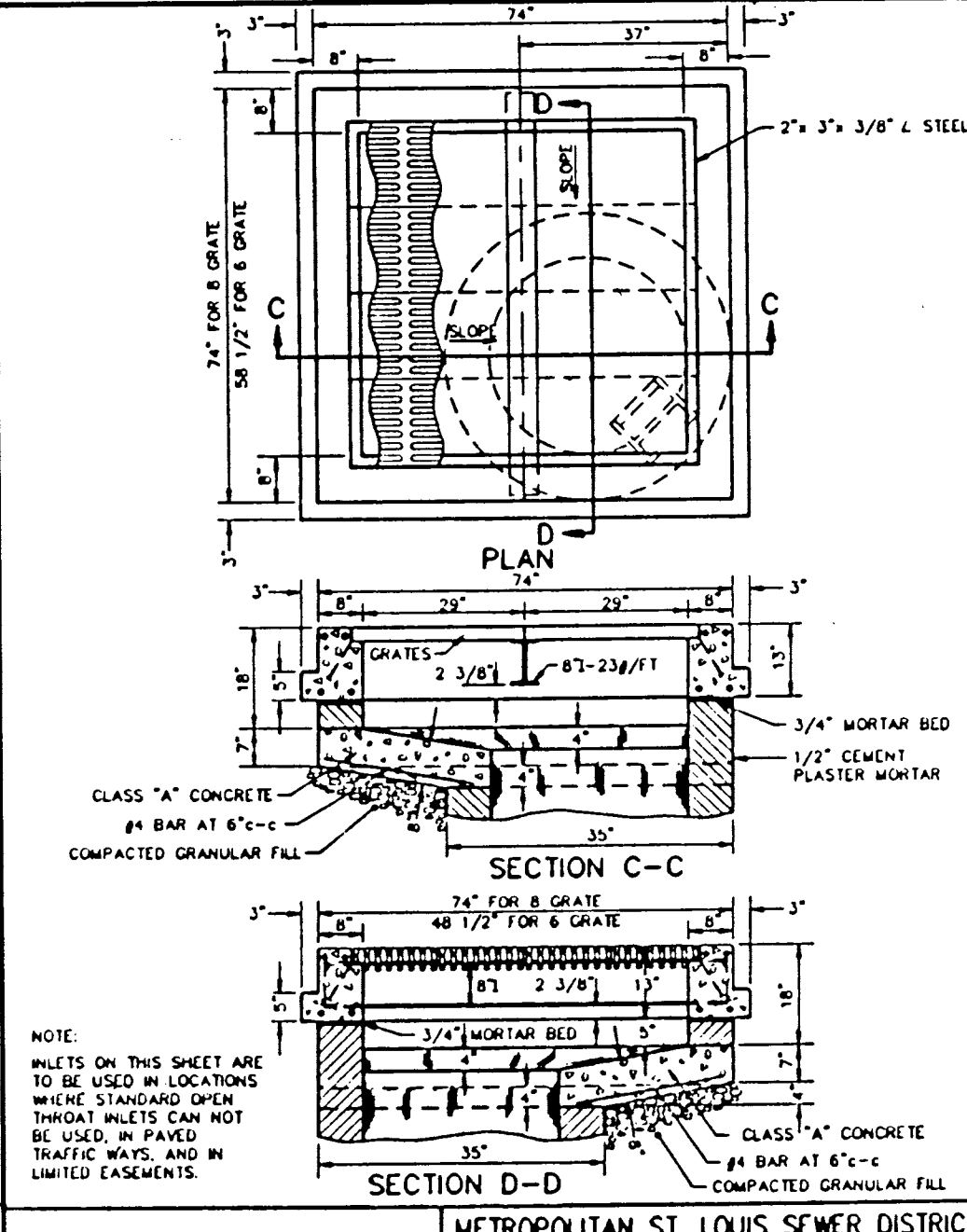
METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



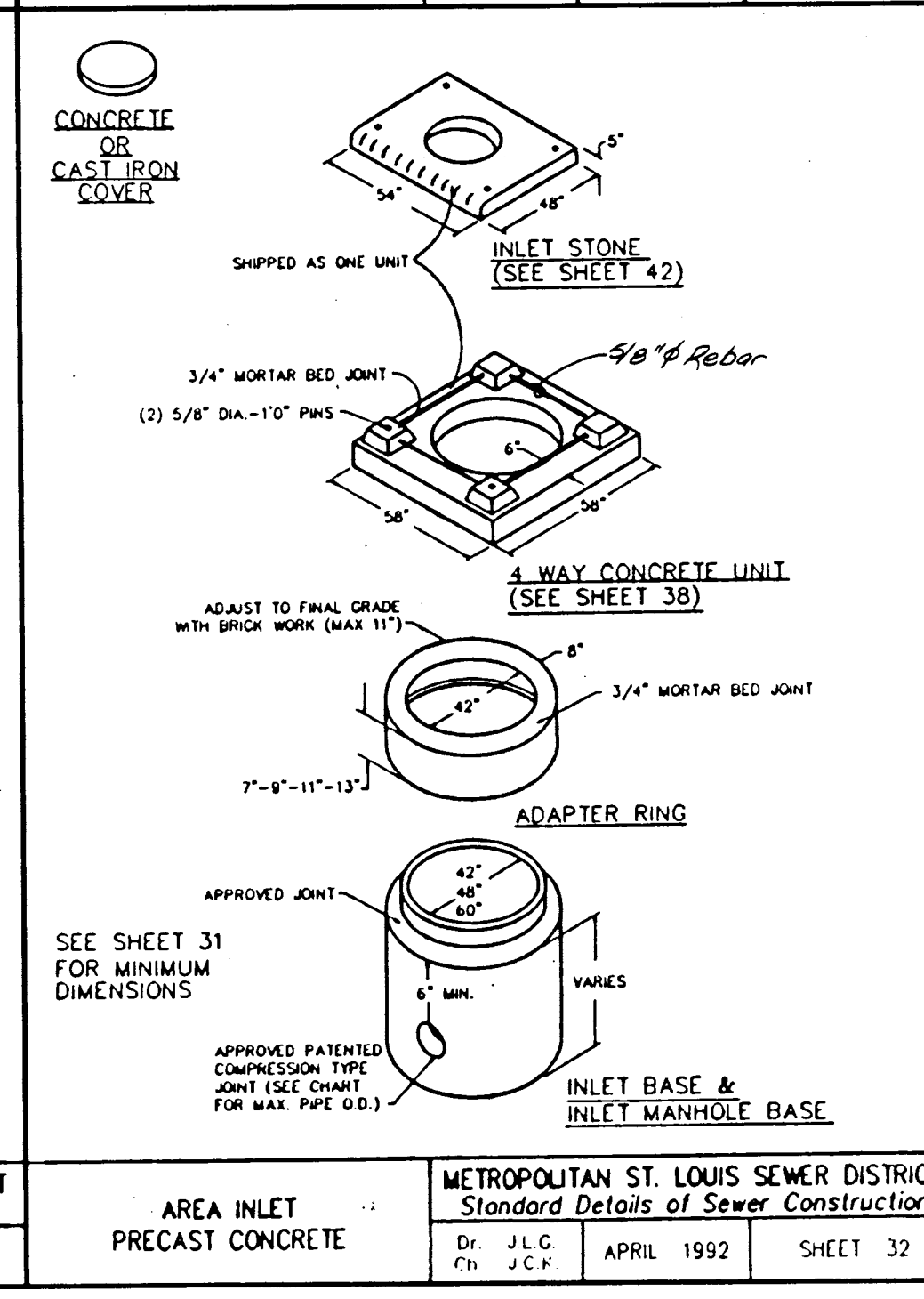
METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction

PRECAST CONCRETE STORMWATER STRUCTURES

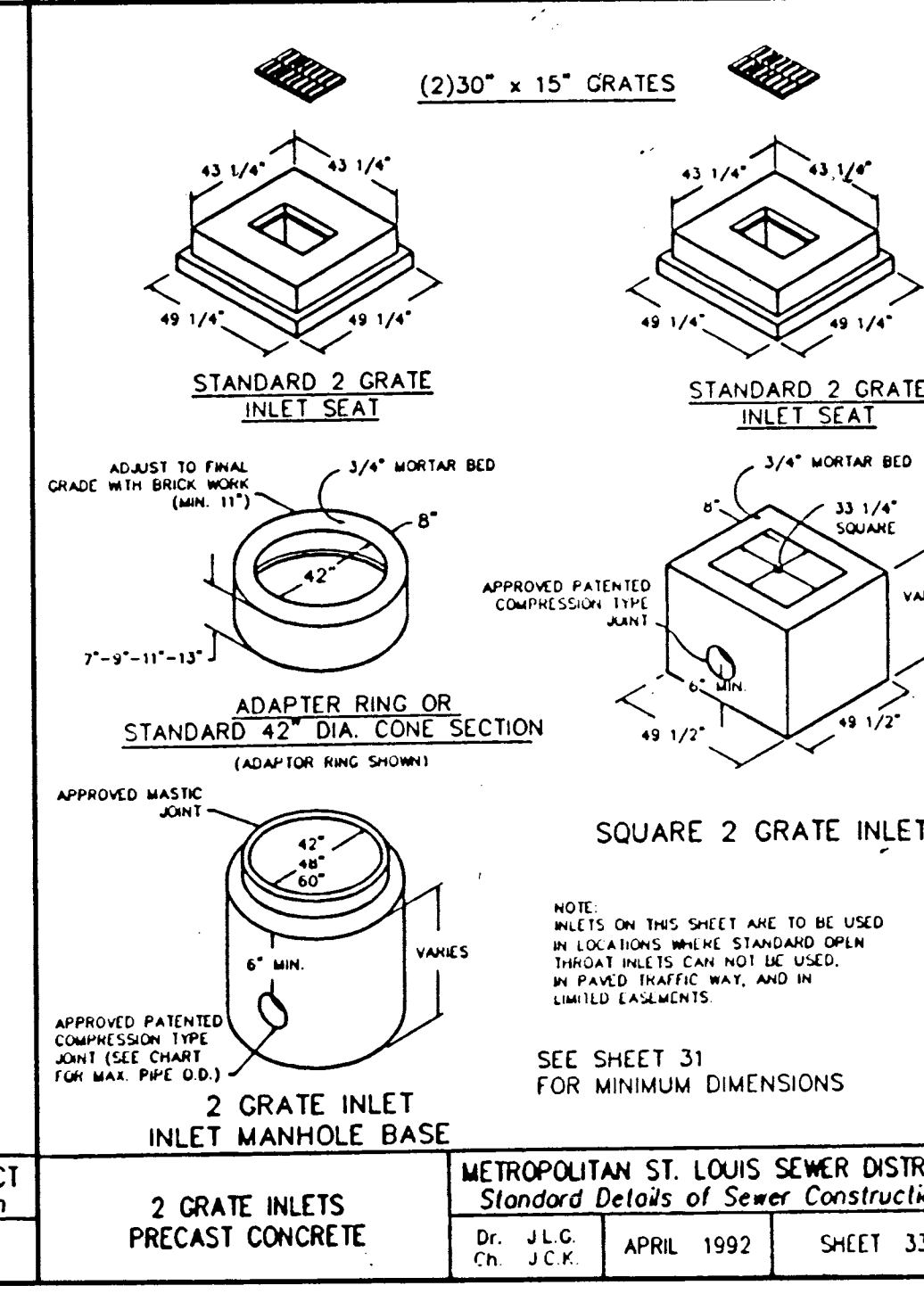
MINIMUM DISTANCE FLOWLINE TO TOP OF STONE OR GRATE

PIPE ØD NOMINAL INCHES	AREA INLET CIRCULAR BASE DIA.	2 GRATE INLET CIRCULAR BASE DIA.	SQUARE BASE DIA. RECTANGLE	SINGLE STREET INLET CIRCULAR BASE DIA.
12"	42"	36"	34"	41"
15"	48"	41"	34"	44"
18"	52"	44"	37"	48"
21"	55"	47"	40"	51"
24"	58"	51"	44"	54"
27"	78"	71"	NA	81"
30"	82"	74"	NA	85"
33"	85"	77"	NA	88"

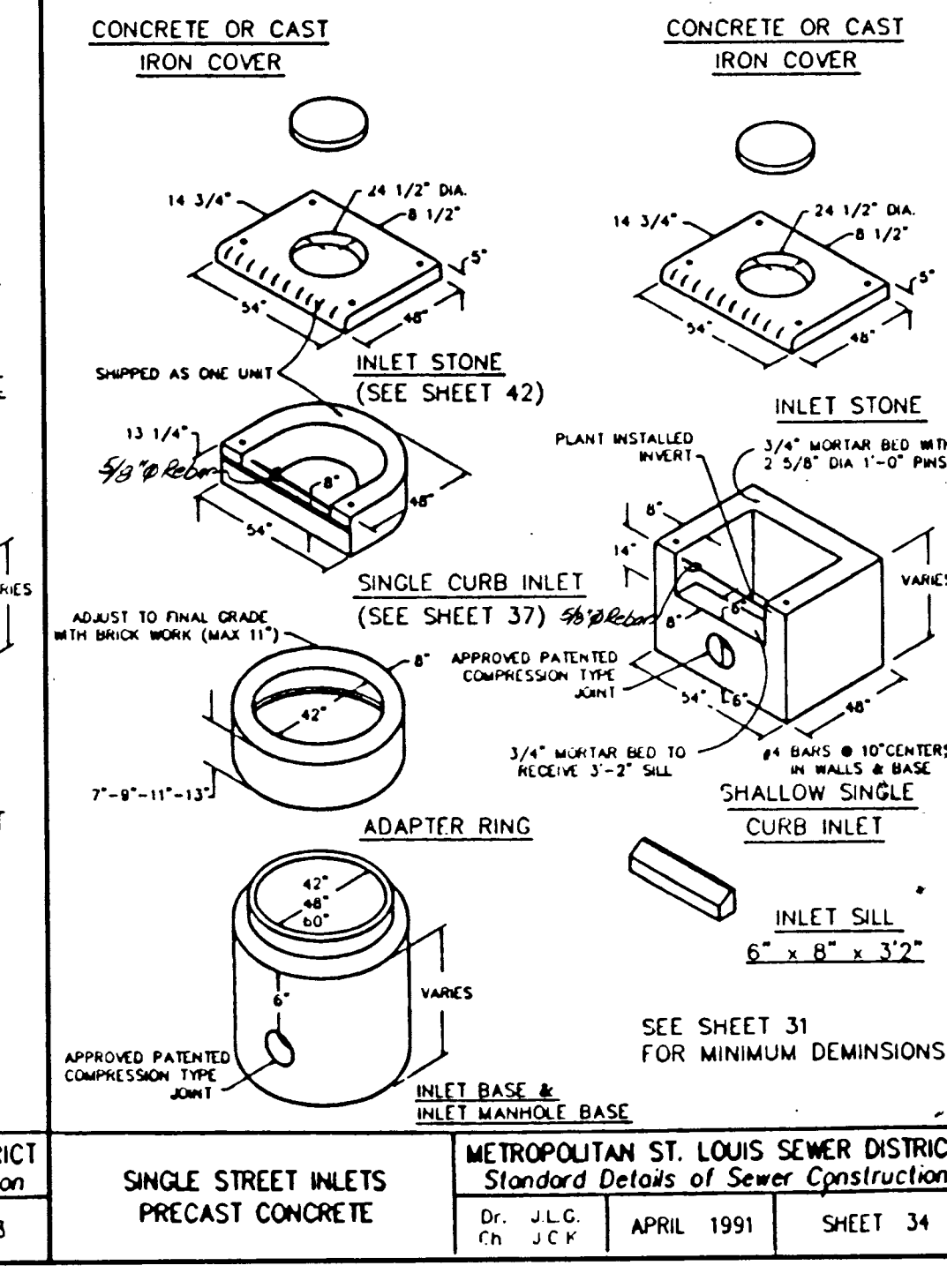
NOTE: 1. 48" DIA. BASE REQUIRES 7" HIGH TRANSITION SECTION TO 42" DIA. SIMILAR TO "ADAPTER RING" SHEET 32.
2. 60" DIA. BASE REQUIRES 24" HIGH CONCENTRIC REDUCER TRANSITION TO 42" DIA. SIMILAR TO "ADAPTER RING" SHEET 32.



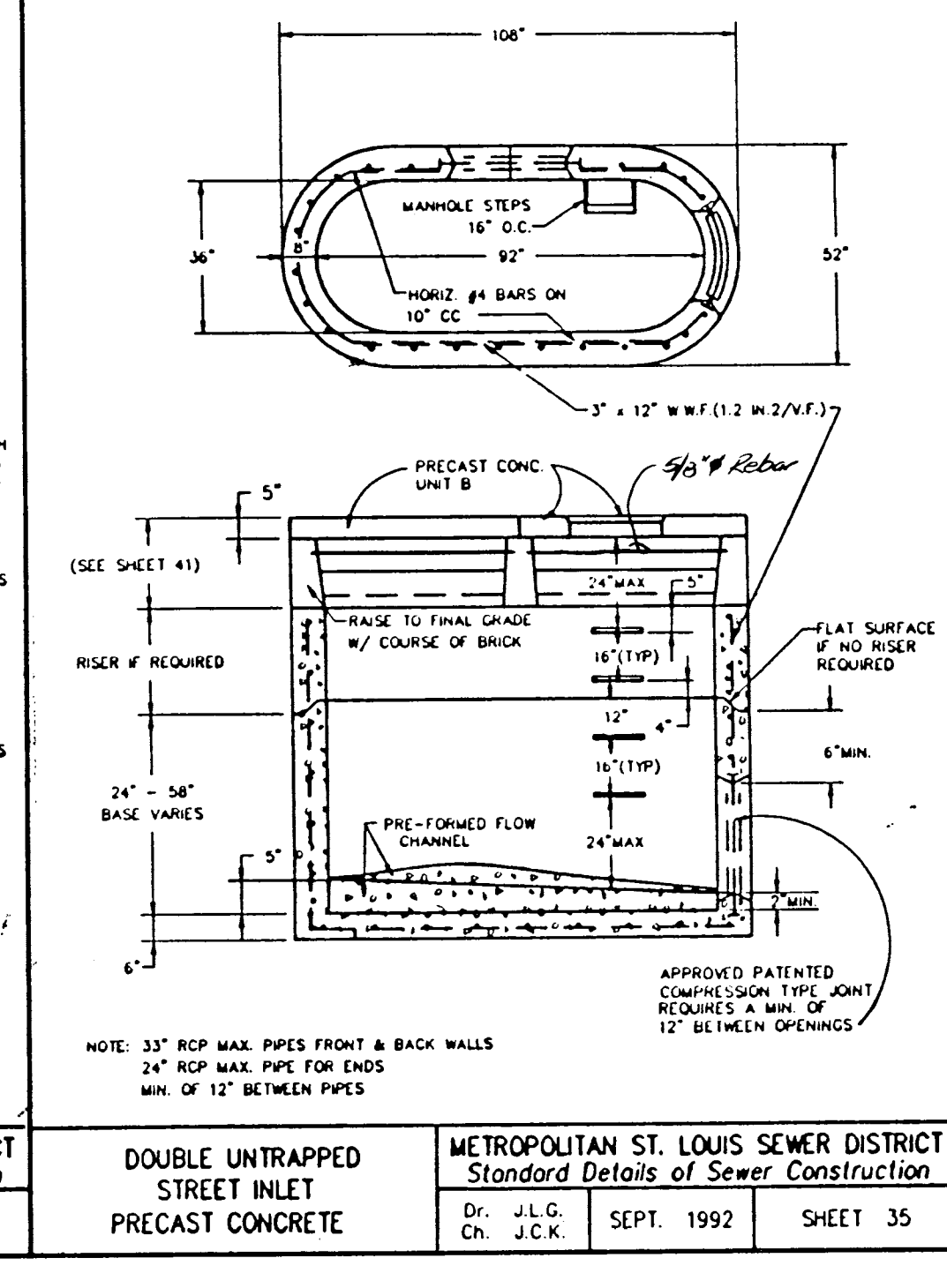
METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



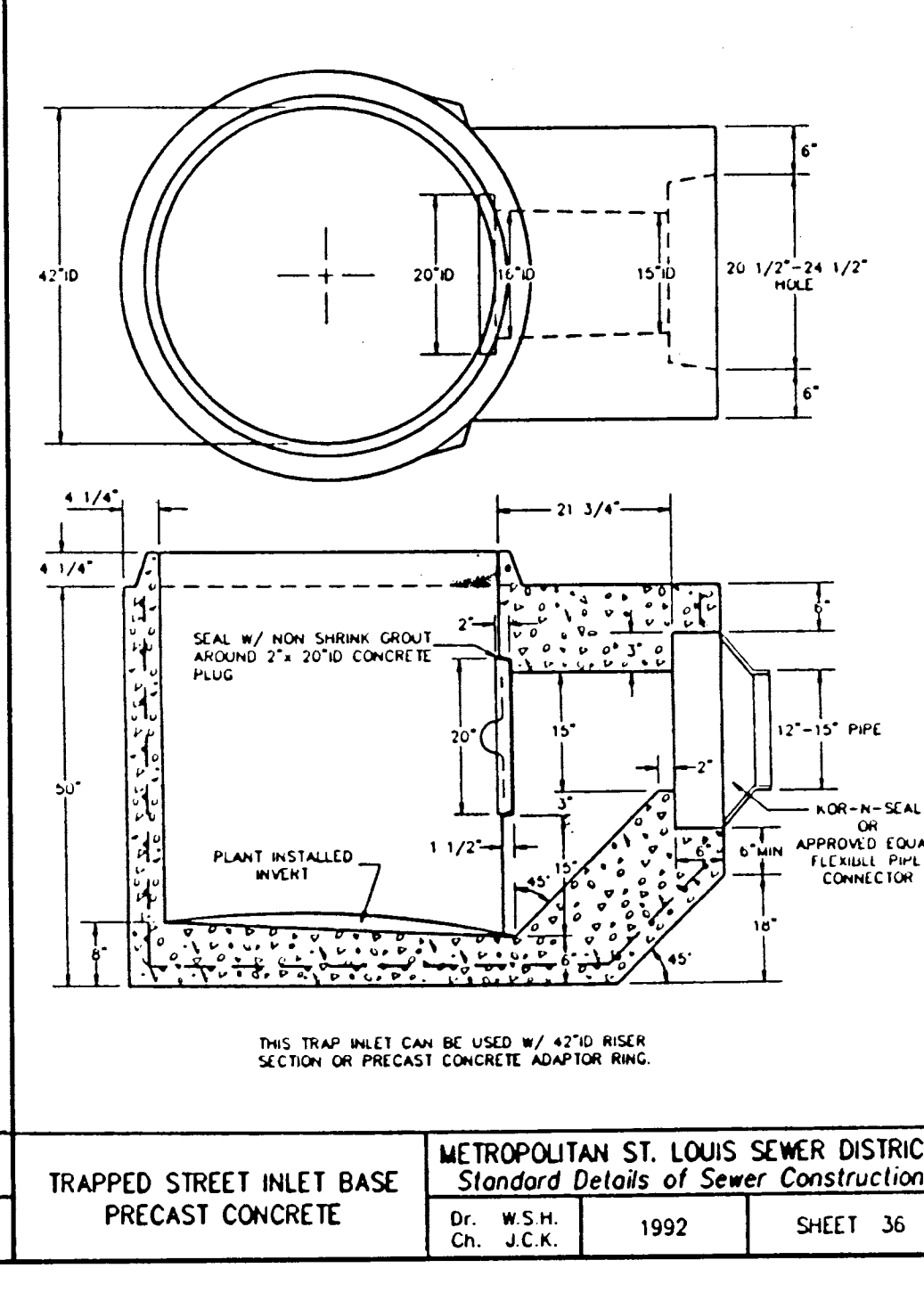
METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



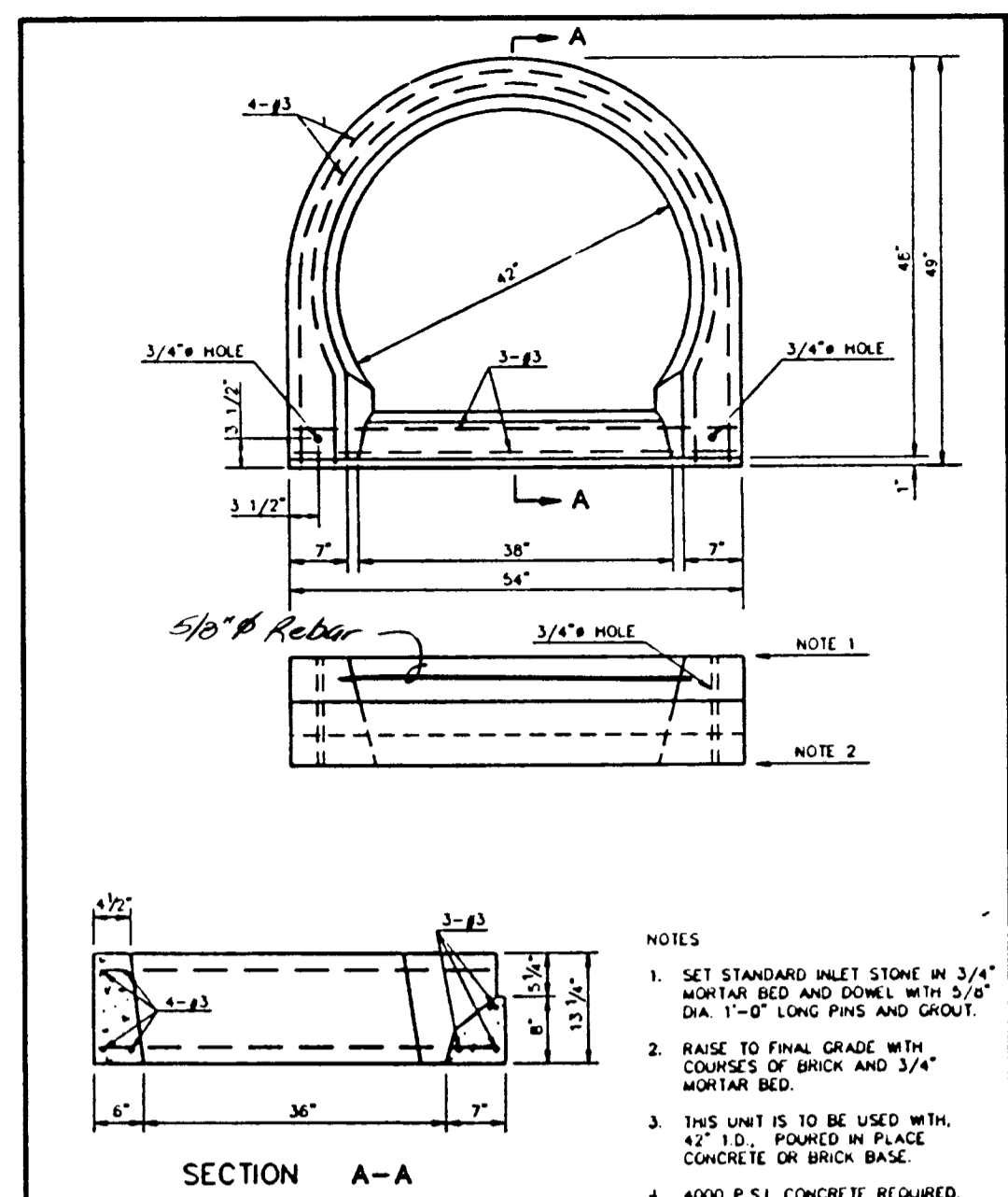
METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



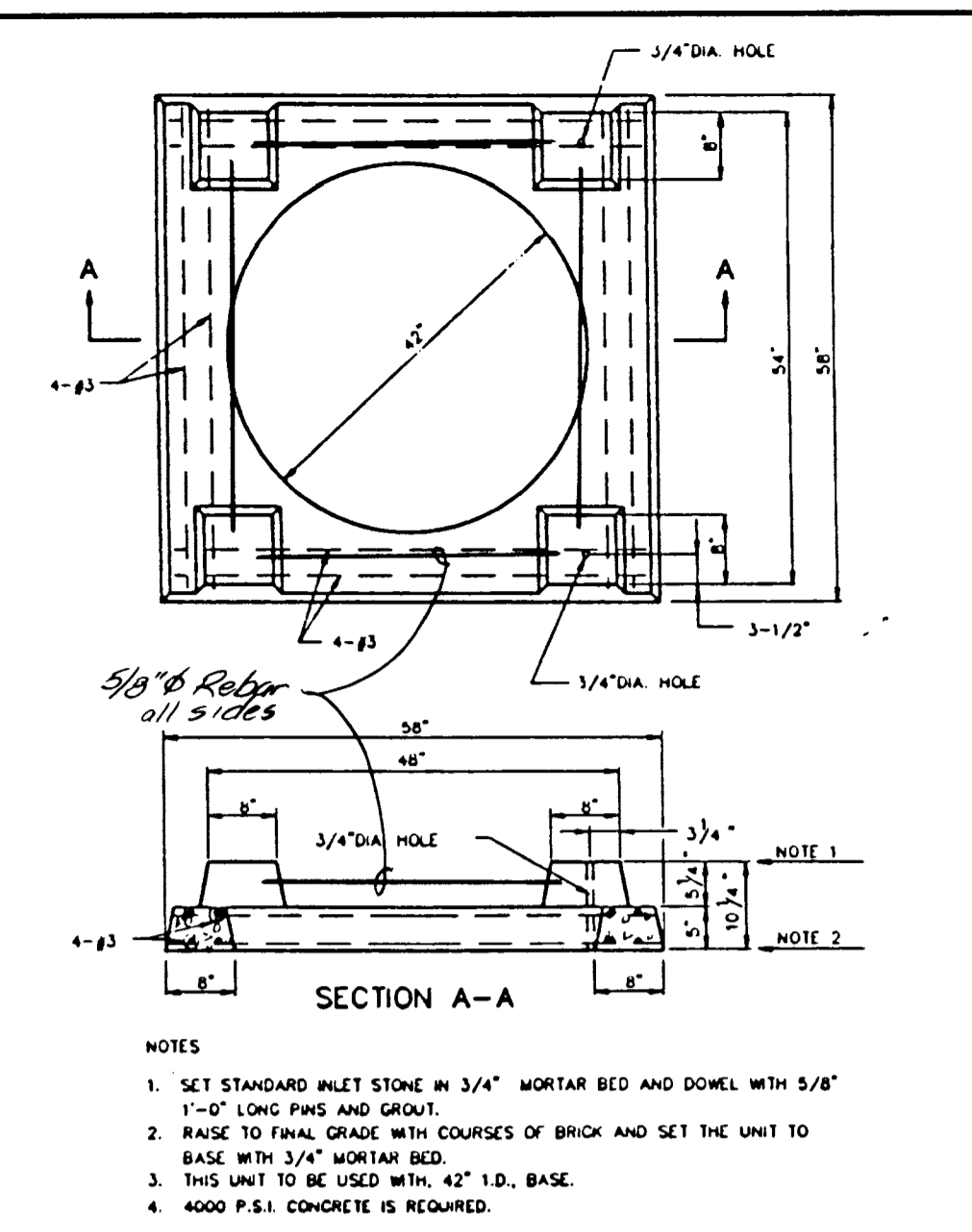
METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



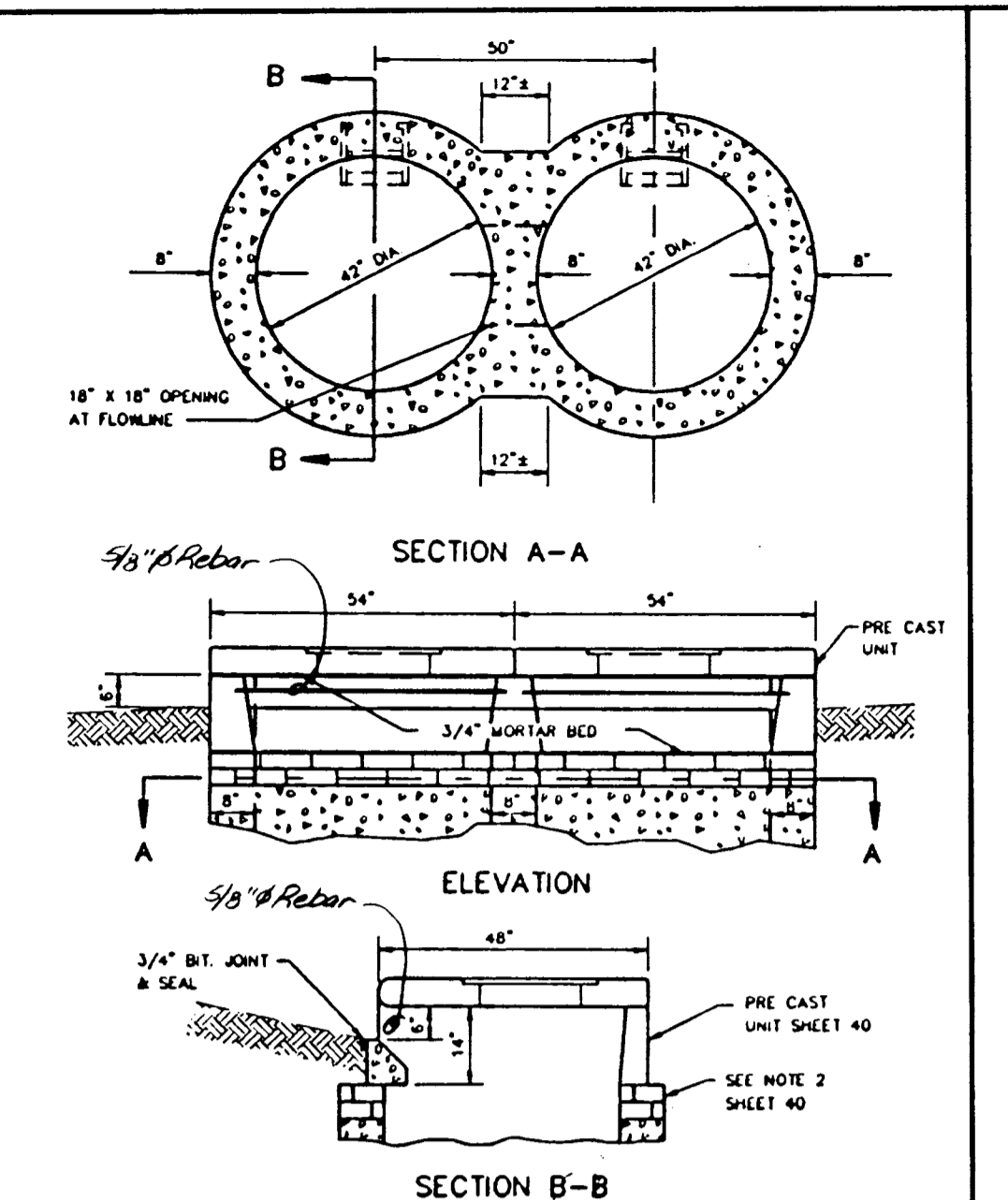
METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction



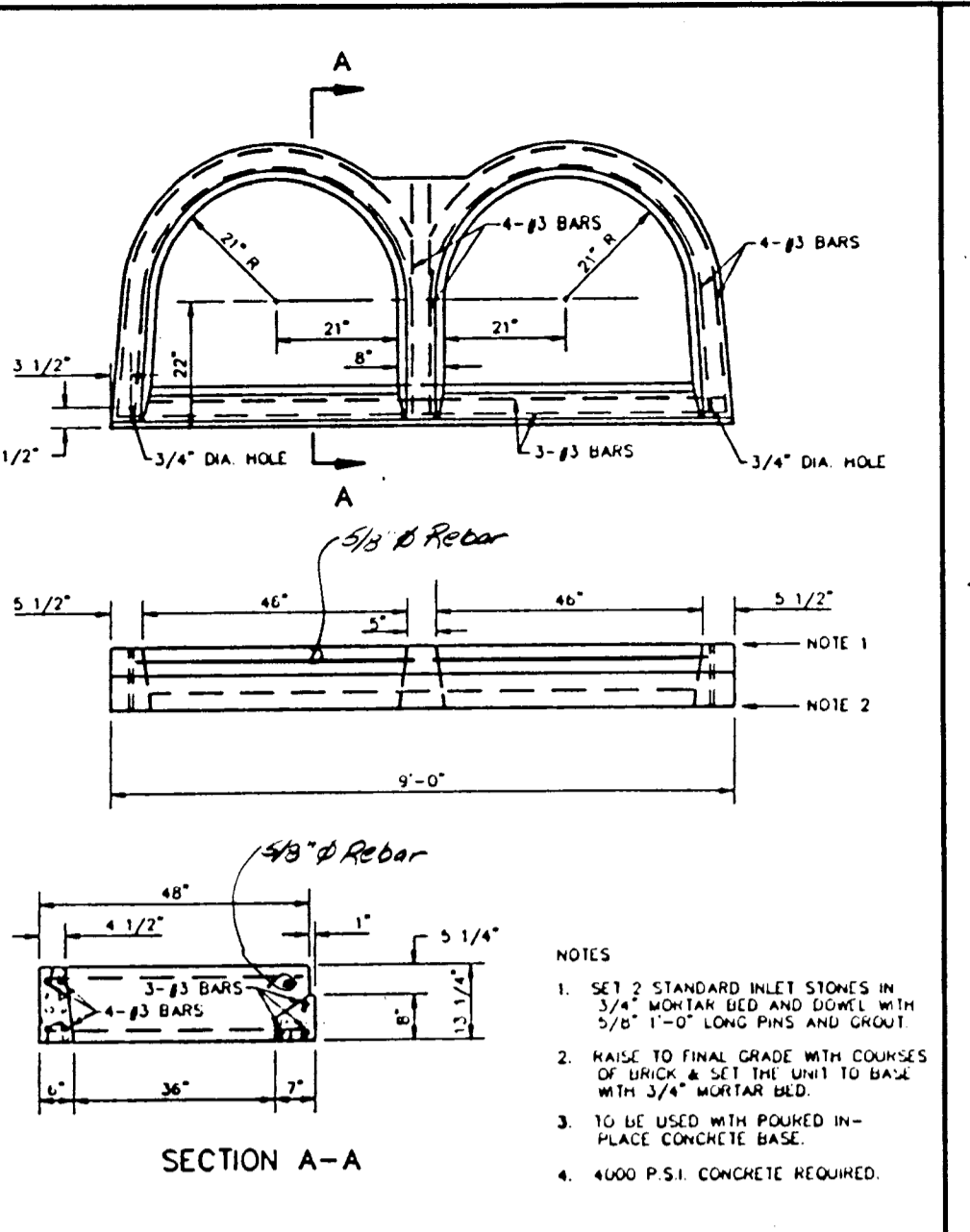
PRE-CAST CONCRETE UNIT FOR SINGLE STREET INLET
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. W.S.H. Ch. J.C.K. 1992 SHEET 37



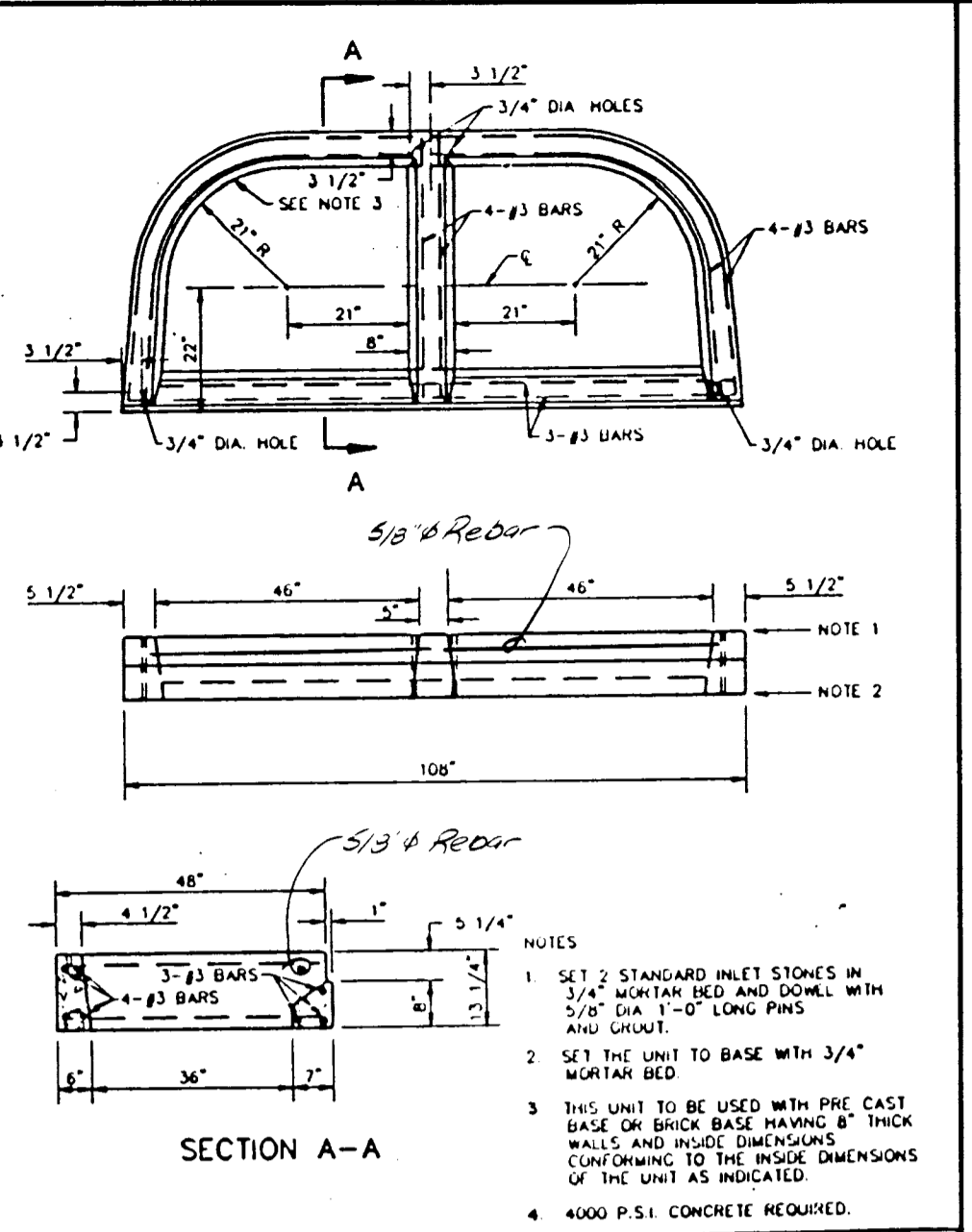
PRE-CAST CONCRETE UNIT FOR 4 WAY AREA INLET
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. D.A.B. Ch. J.C.K. 1992 SHEET 38



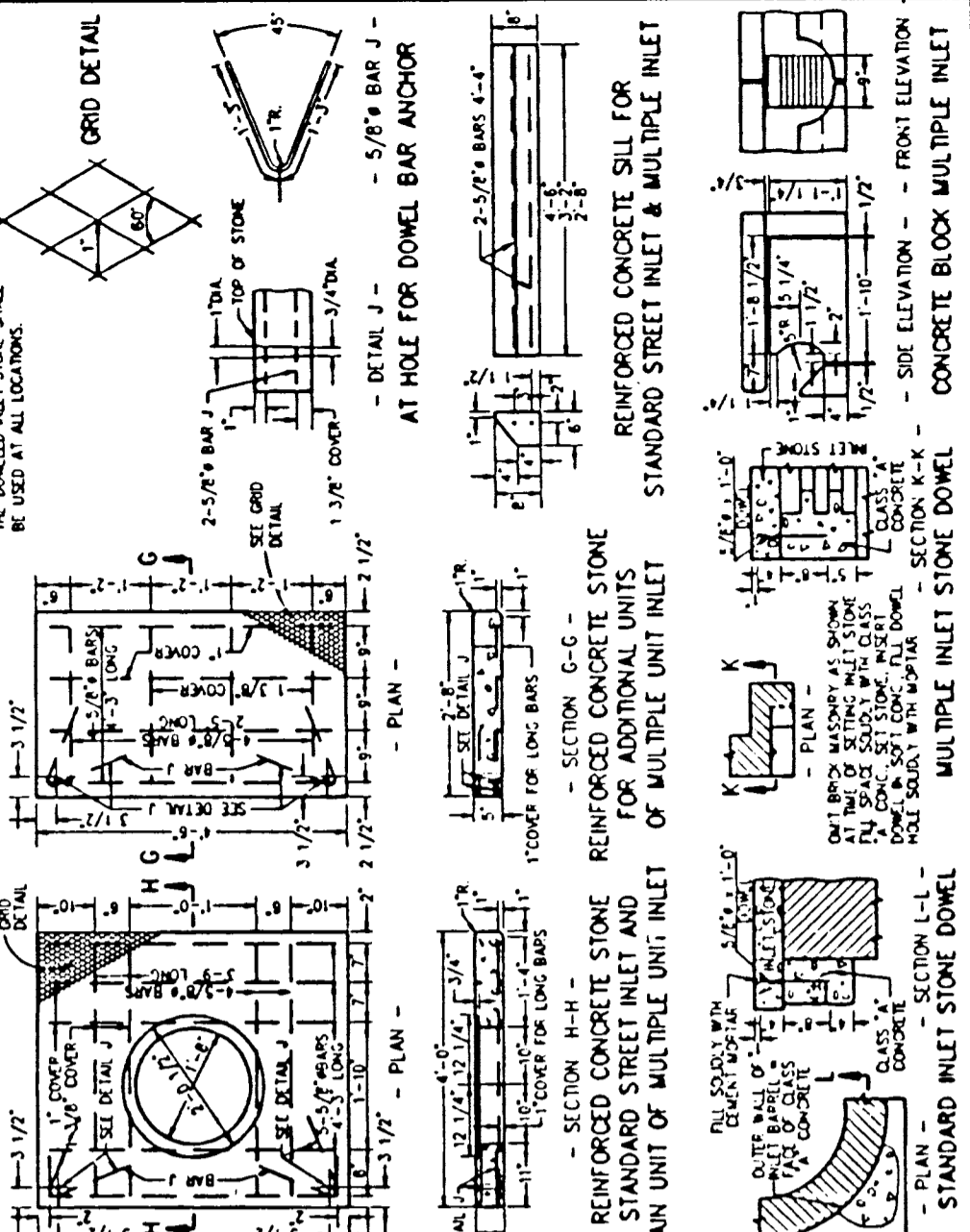
CONCRETE DOUBLE STREET INLET W/PRE CAST CONCRETE UNIT A
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 39



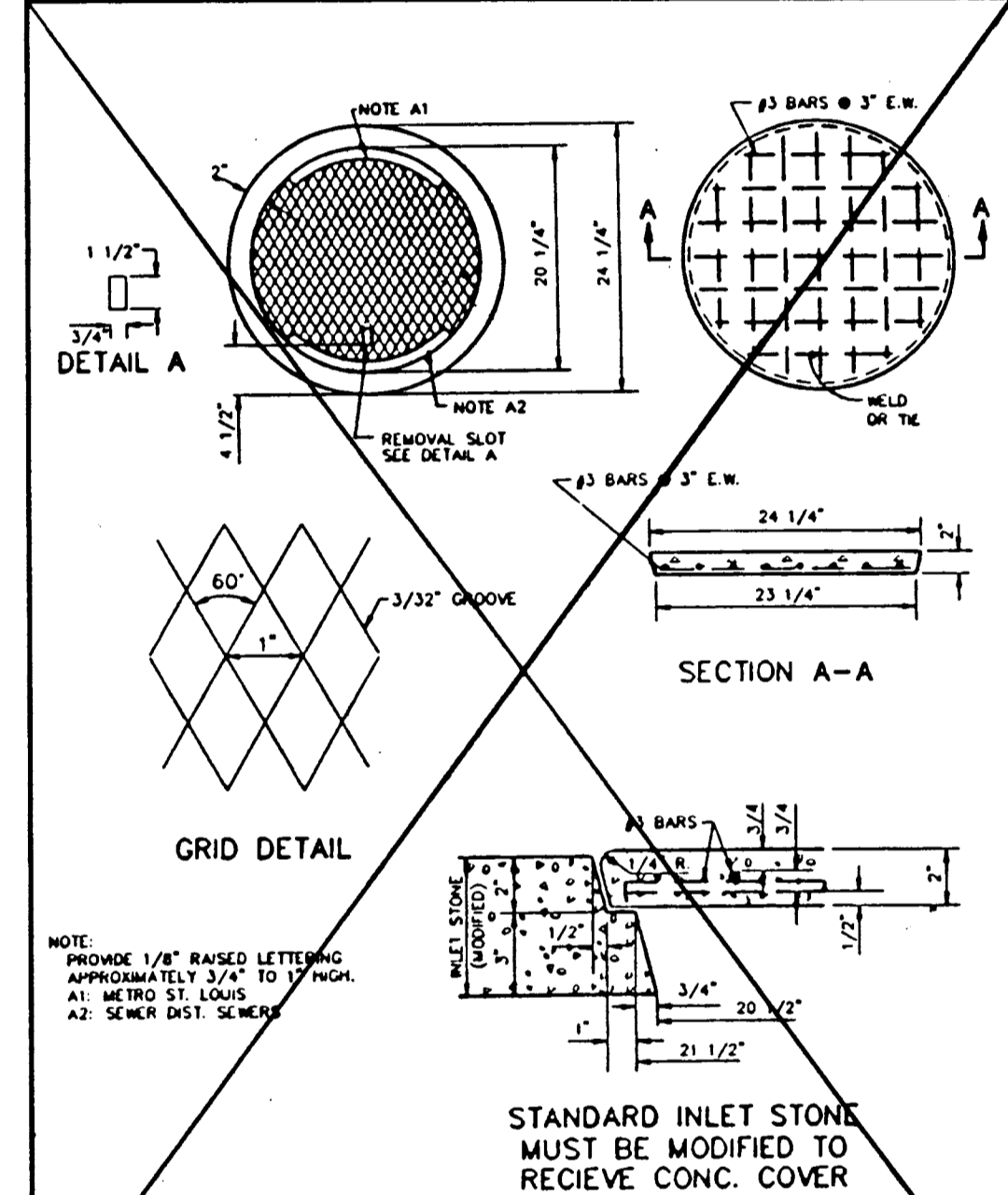
PRE-CAST CONCRETE UNIT A FOR STREET DOUBLE INLET
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 40



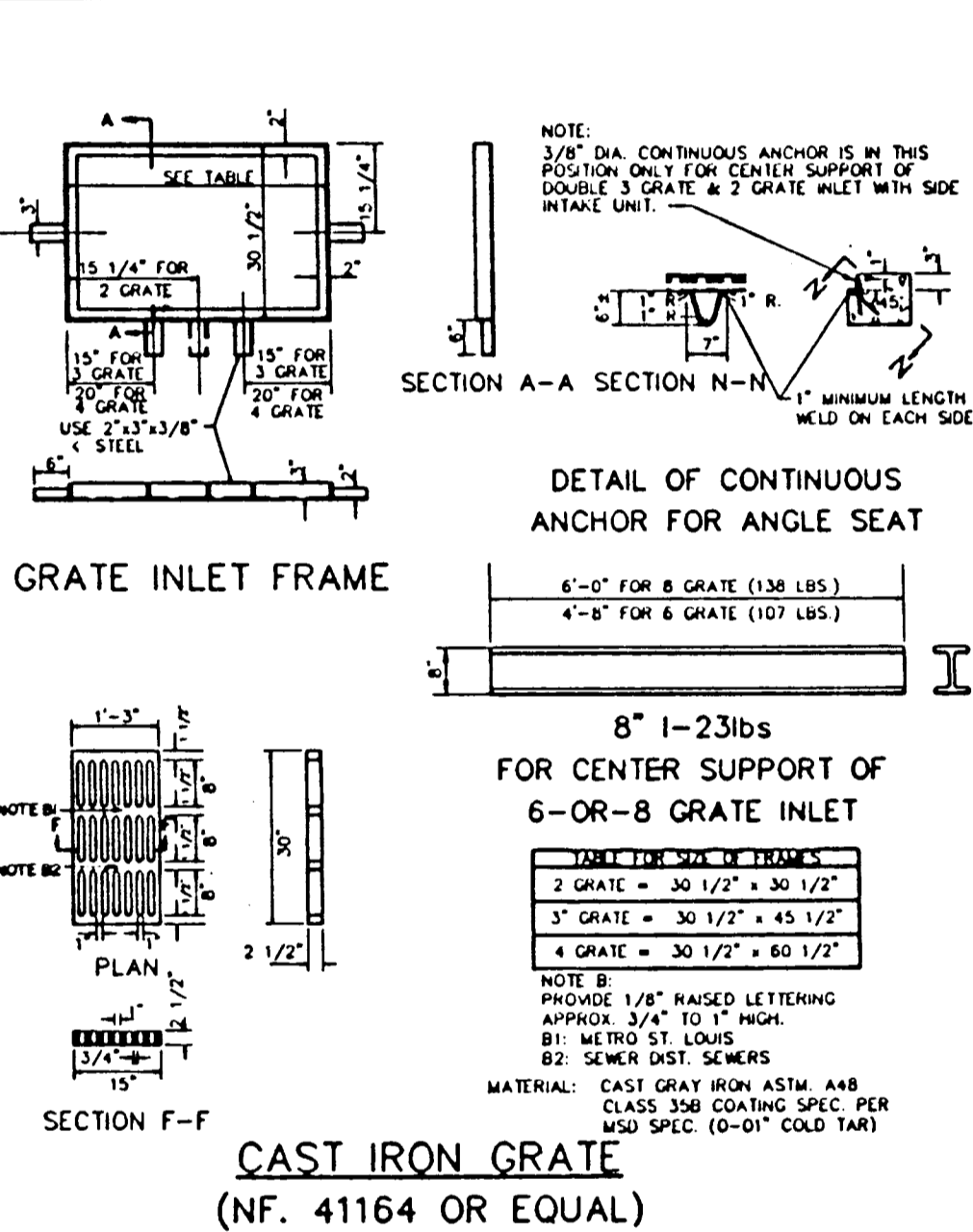
PRE-CAST CONCRETE UNIT B FOR STREET DOUBLE INLET
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 41



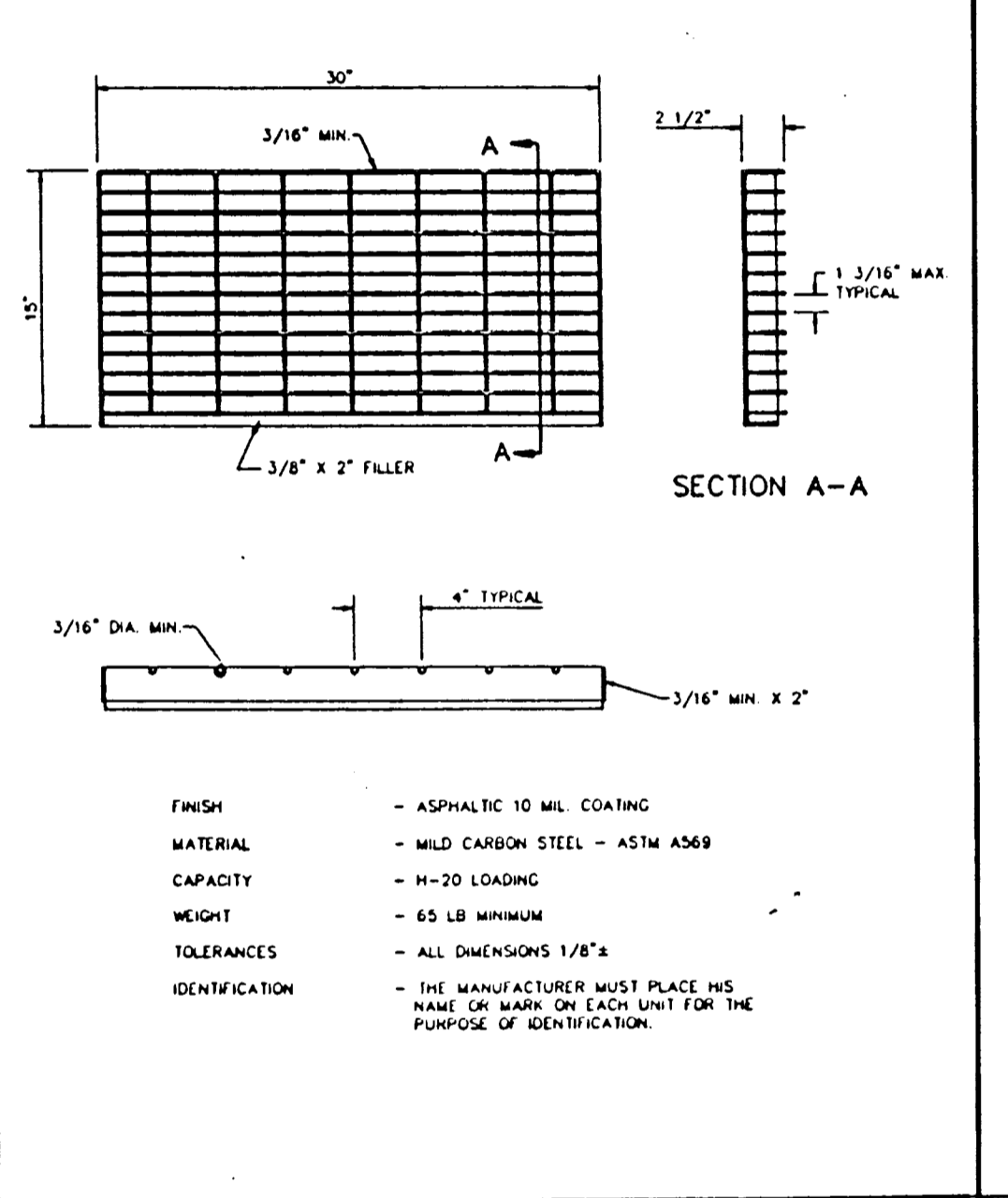
STANDARD - INLET STONES, BLOCKS & DESIGN DETAILS
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. W.S.H. Ch. J.C.K. 1992 SHEET 42



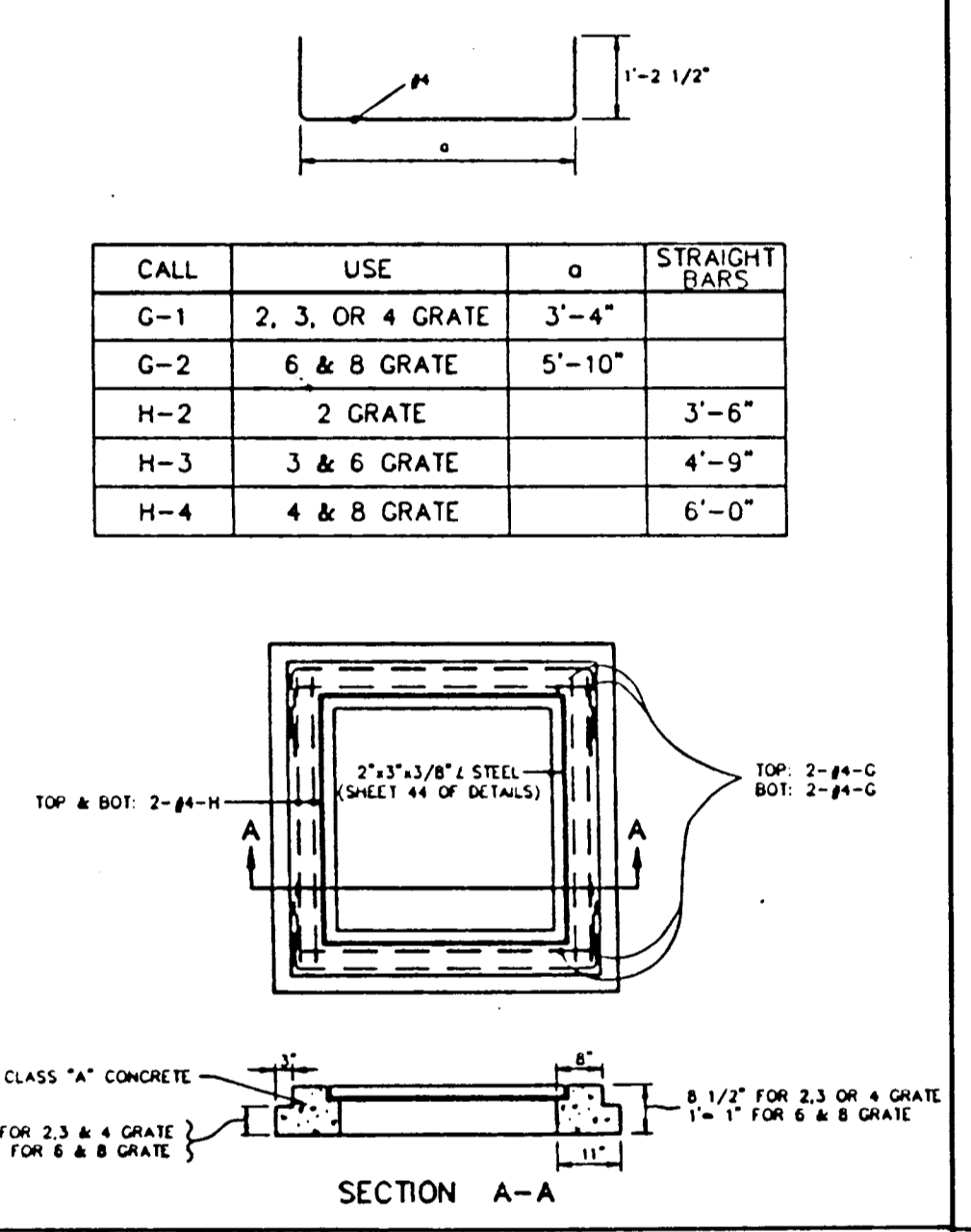
PRE-CAST CONCRETE INLET COVER
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 43



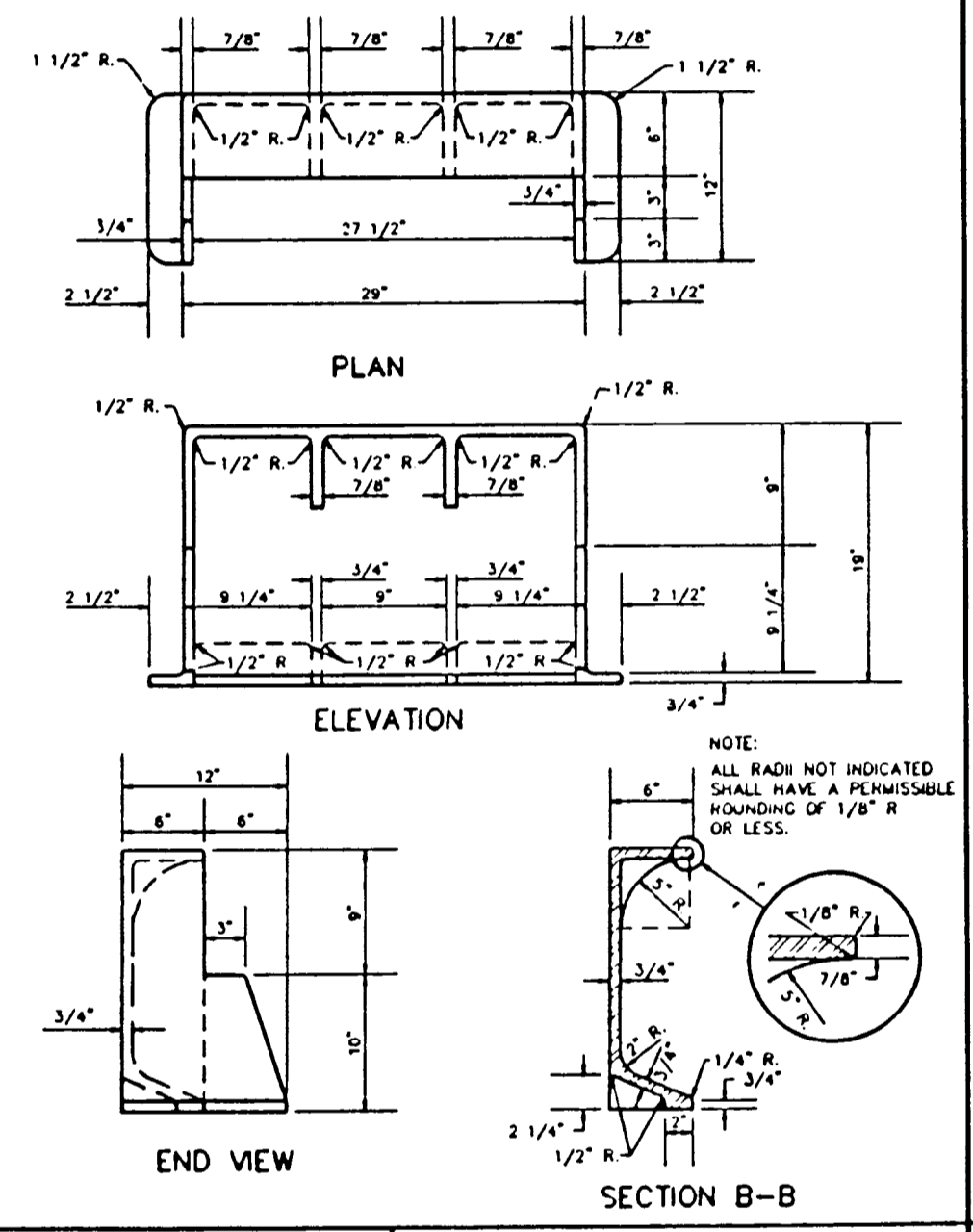
DETAILS OF INLET FRAME AND GRATES
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 44



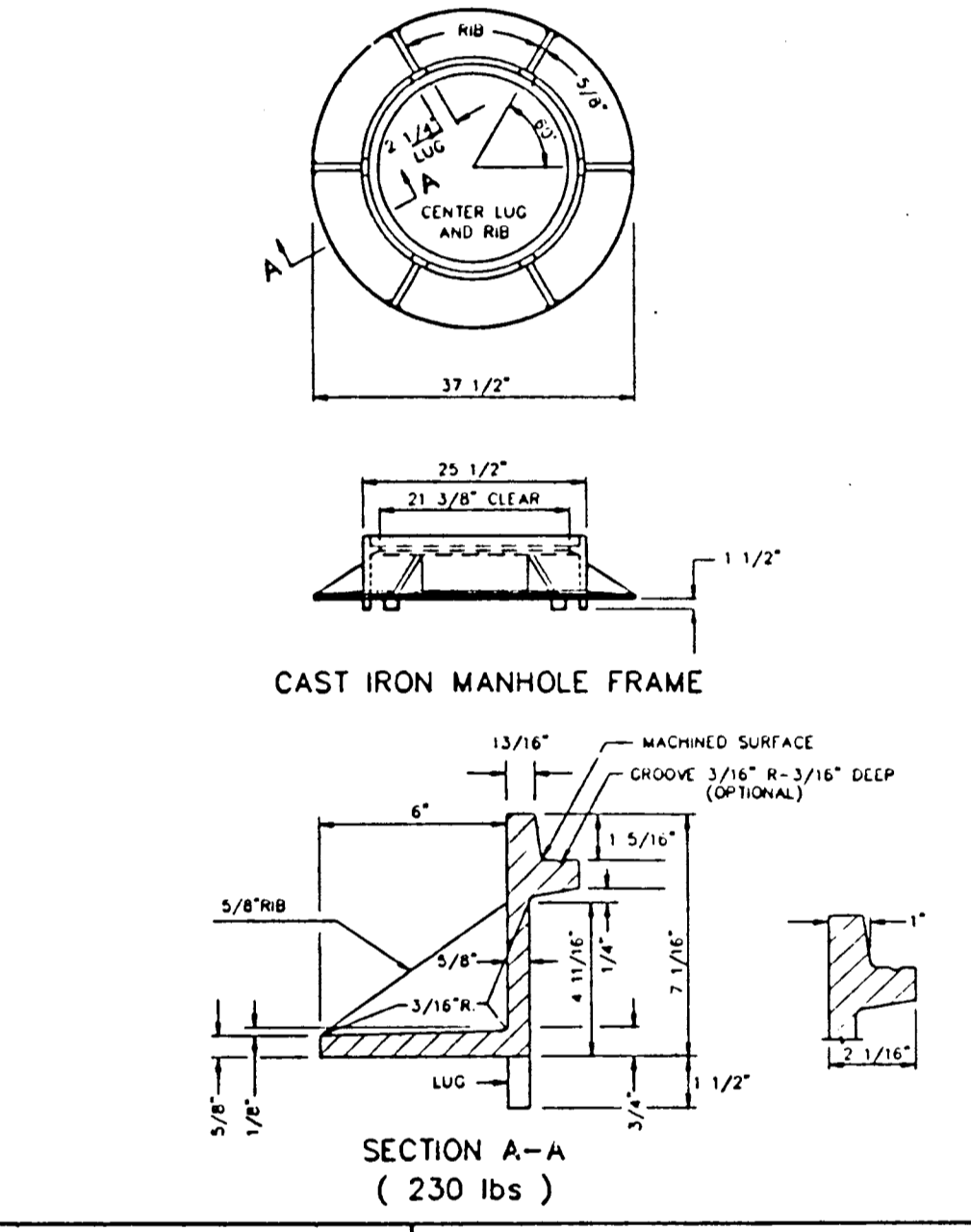
DETAIL OF STEEL GRATE
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 45



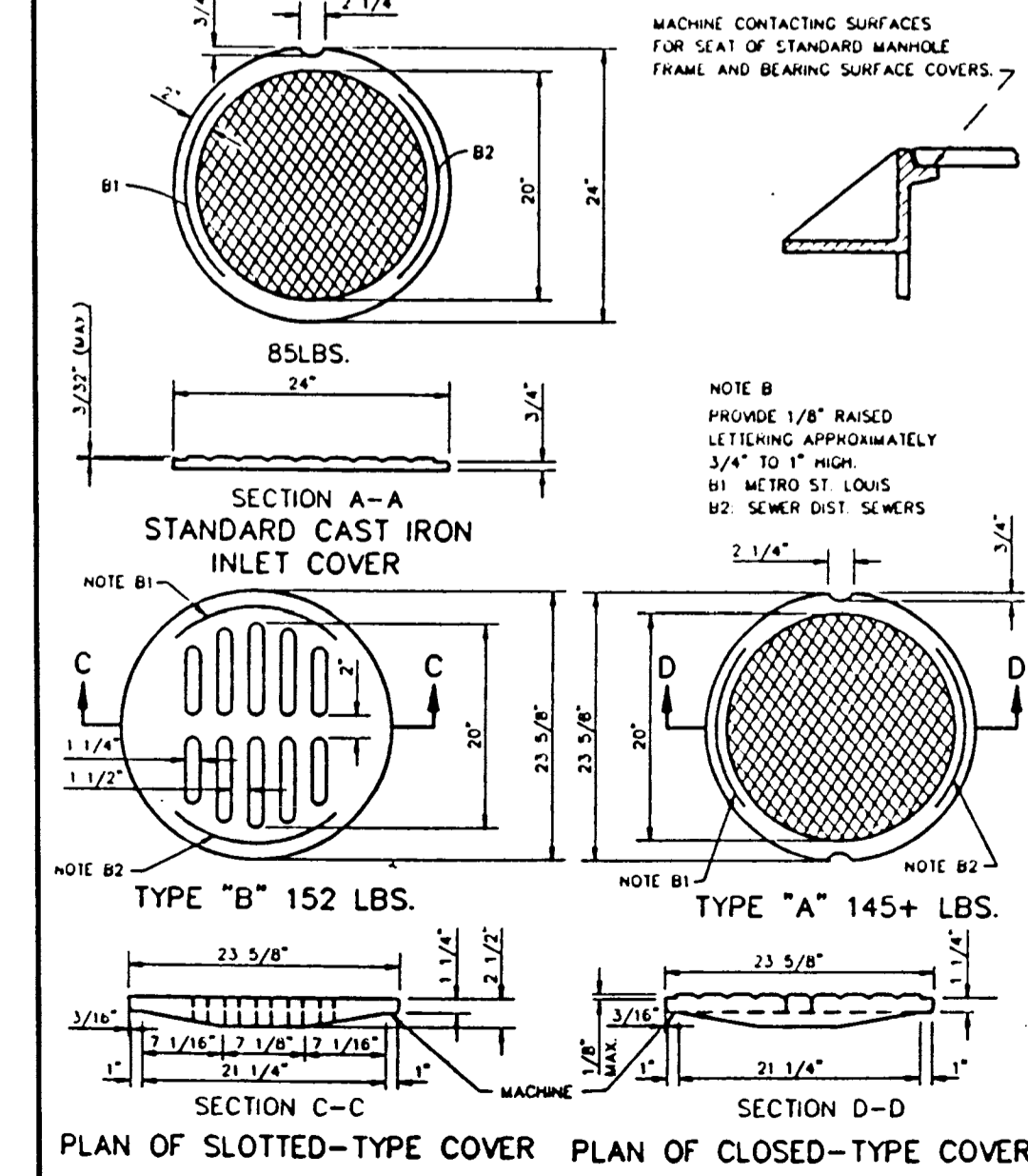
STEEL REQUIREMENTS FOR GRATE INLET SEAT
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. W.S.H. Ch. J.C.K. 1992 SHEET 46



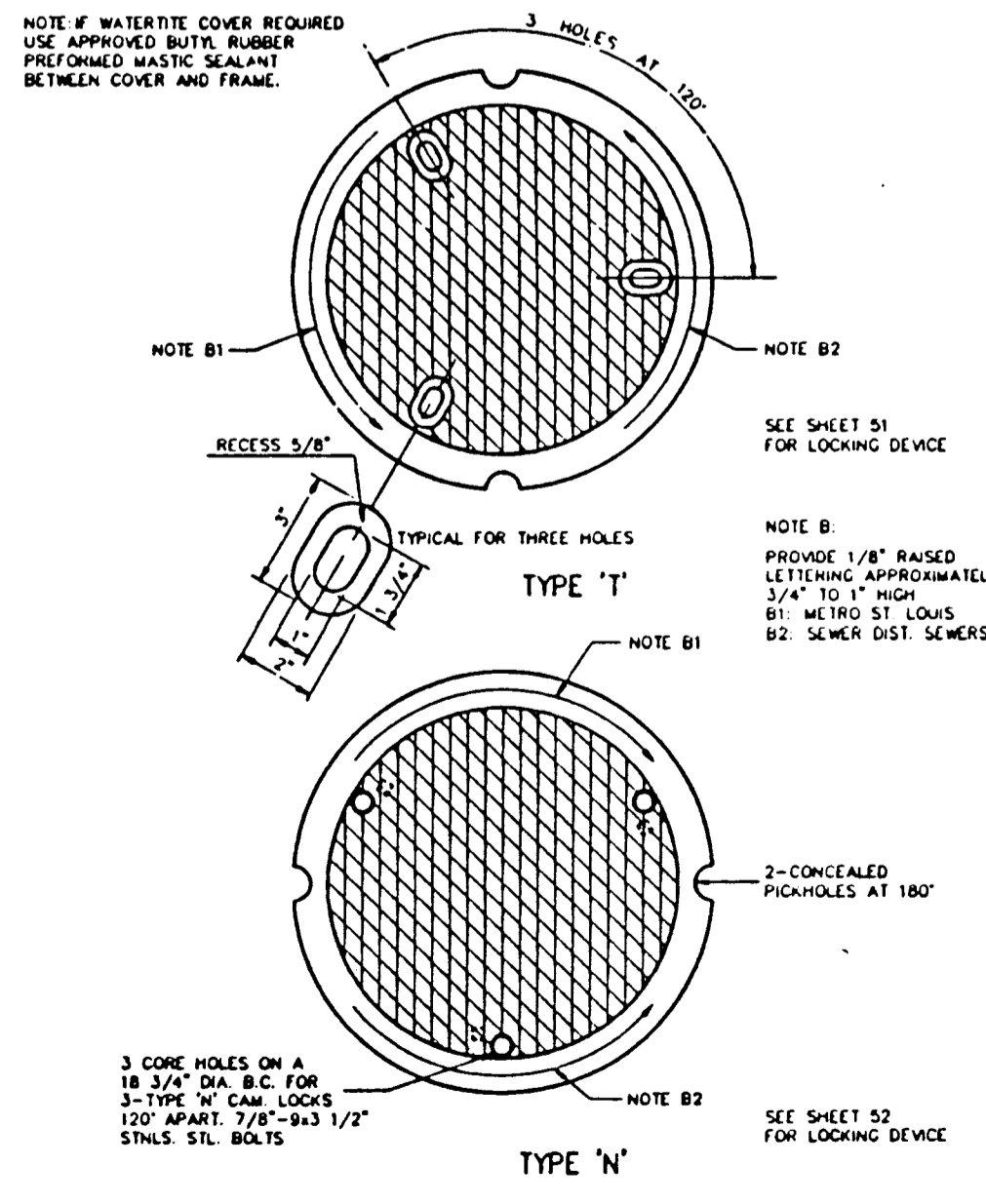
CAST IRON SIDE INTAKE UNIT FOR GRATED INLETS 249 LBS.
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 47



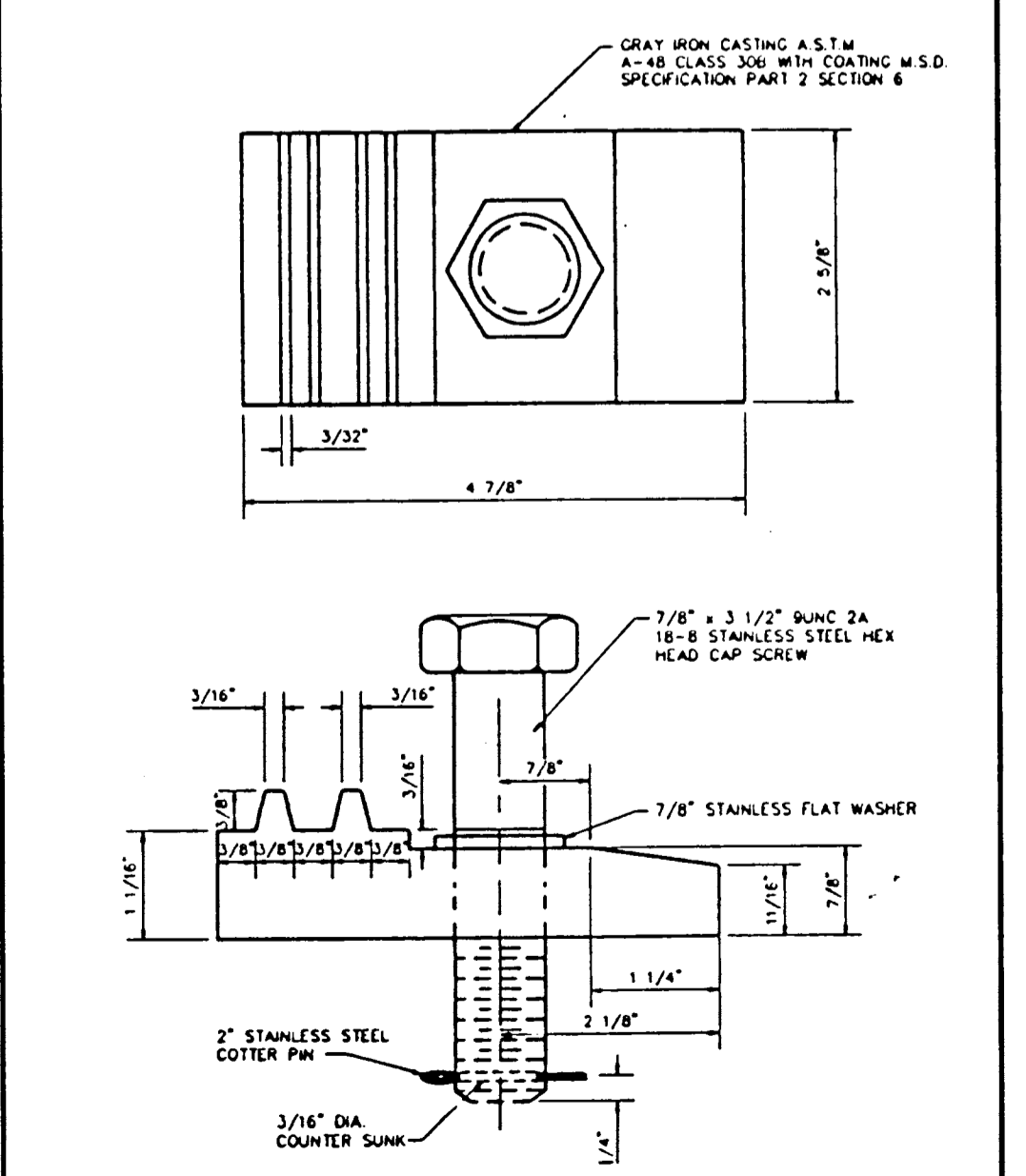
CAST IRON MANHOLE FRAME
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. D.A.B. Ch. J.C.K. 1992 SHEET 48



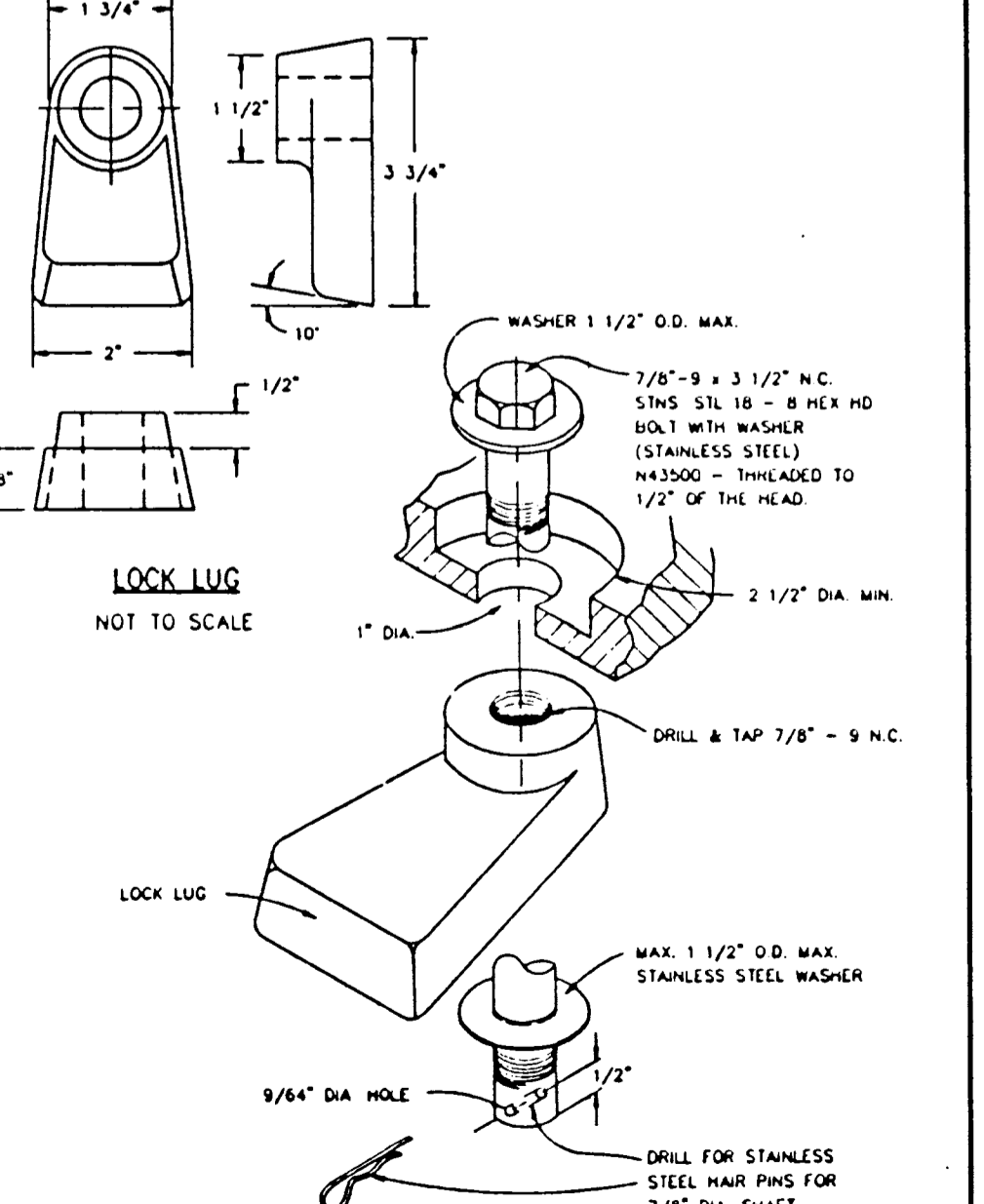
CAST IRON COVERS MANHOLES AND INLETS
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 49



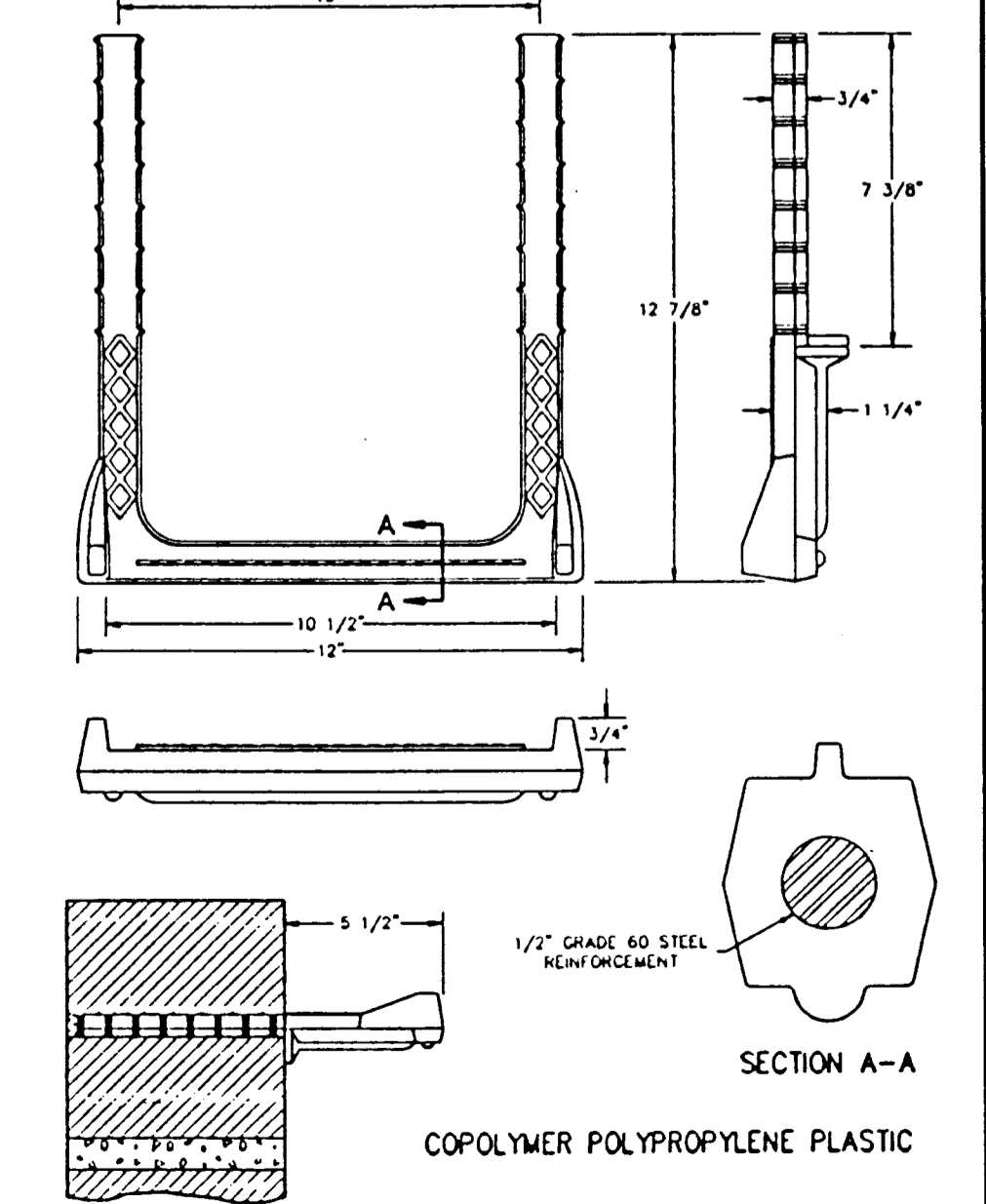
CAST IRON MANHOLE COVERS (LOCK TYPE)
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. W.S.H. Ch. J.C.K. 1992 SHEET 50



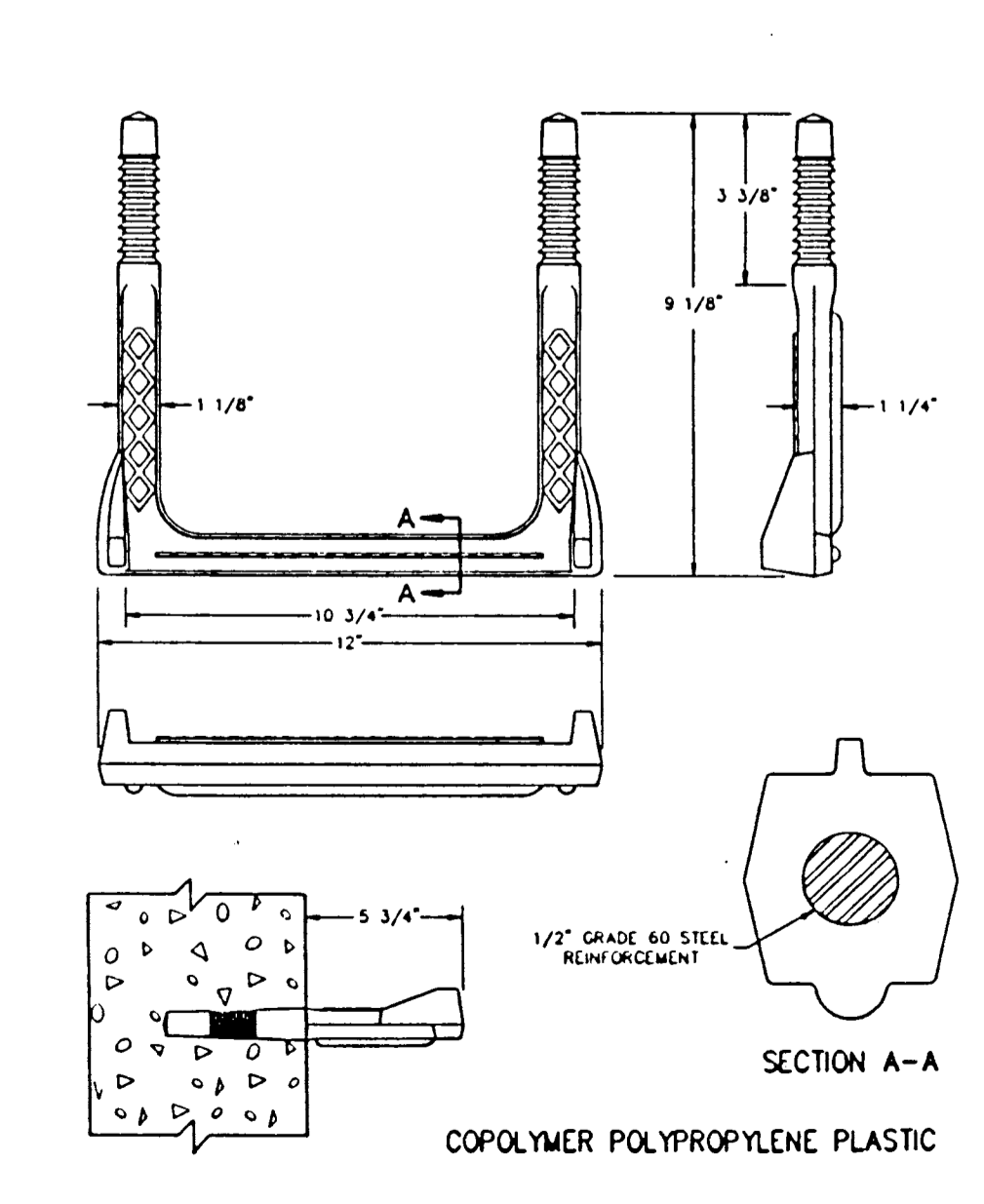
LOCKING DEVICE FOR TYPE 'T' LOCK TYPE MANHOLE COVER
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 51



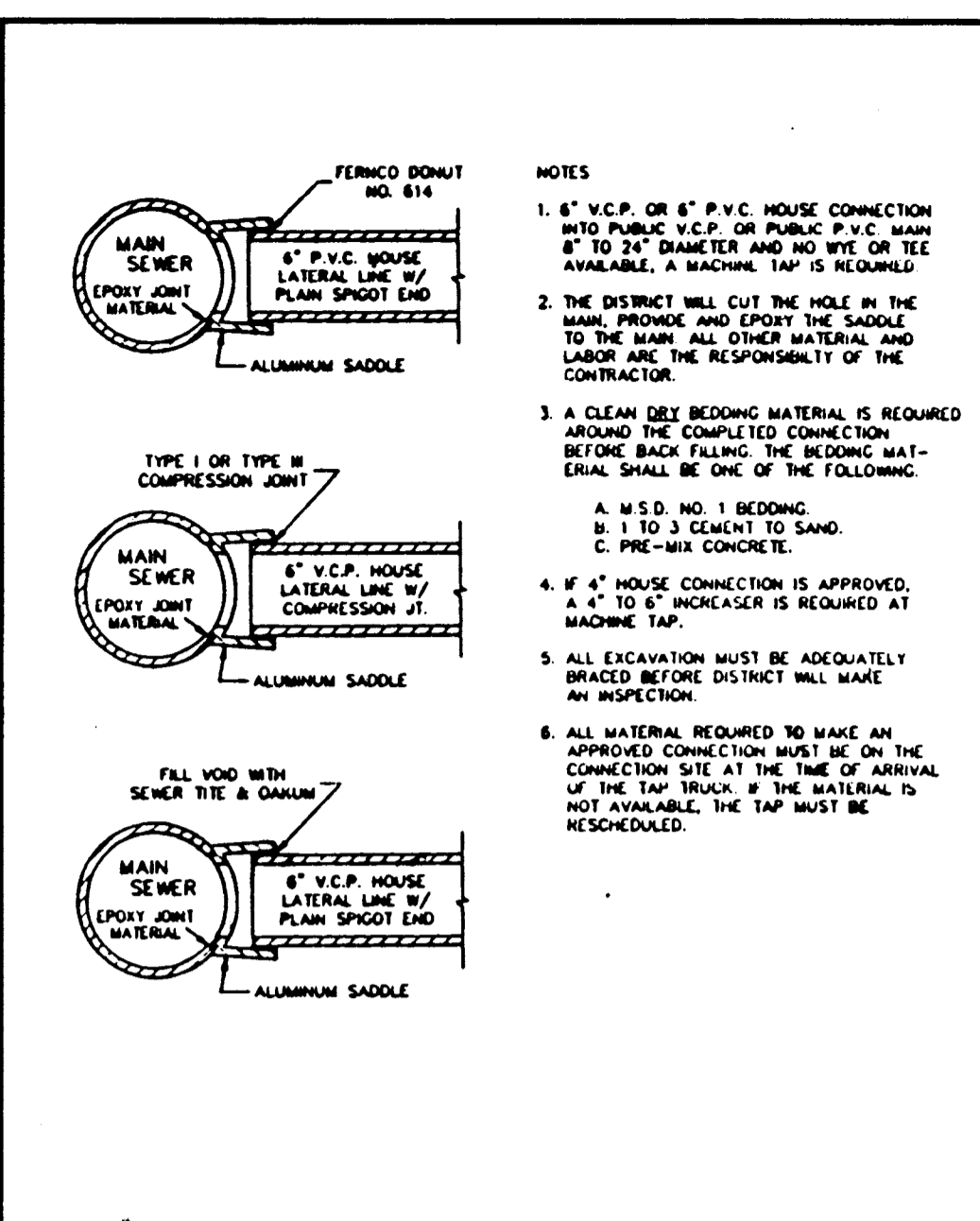
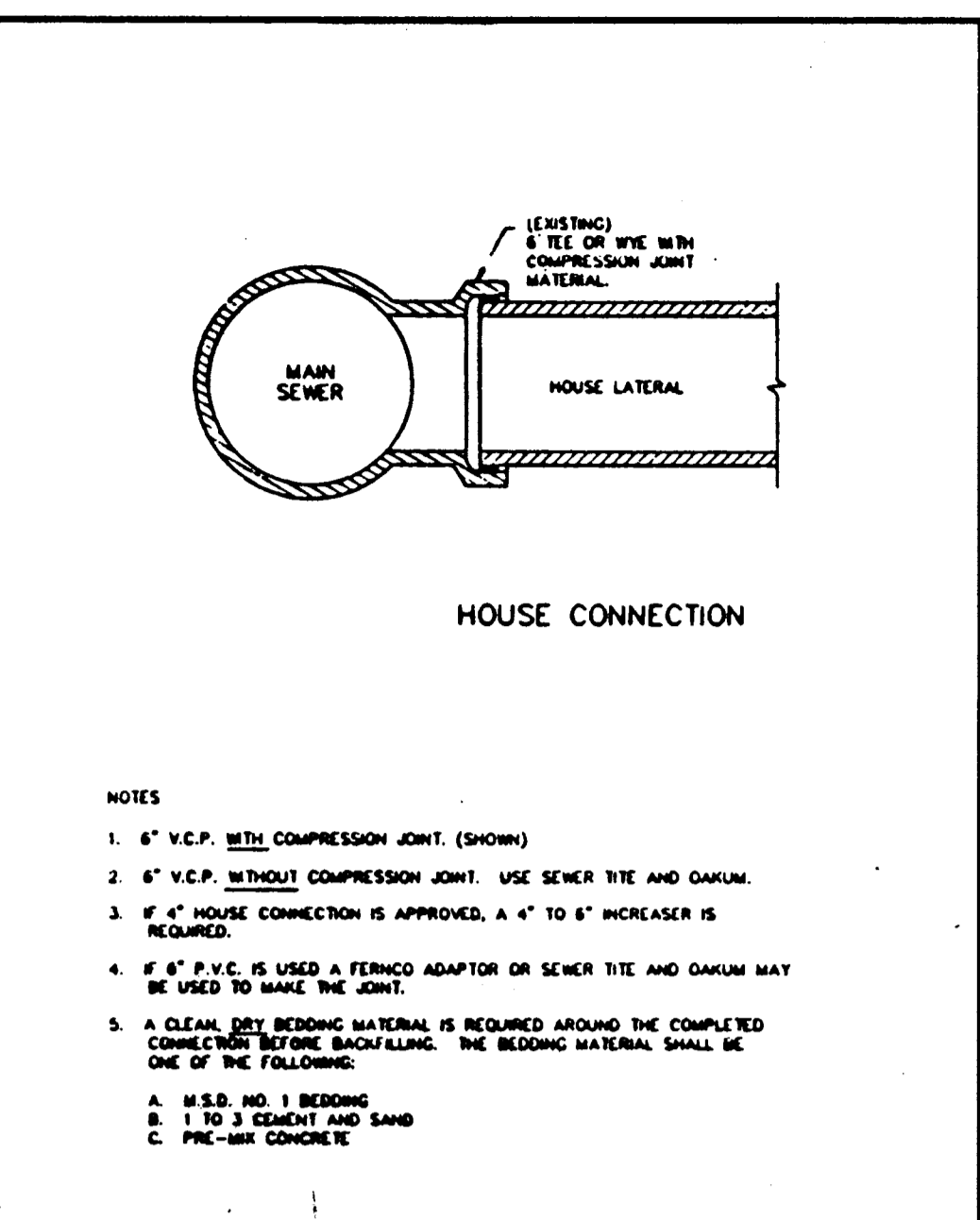
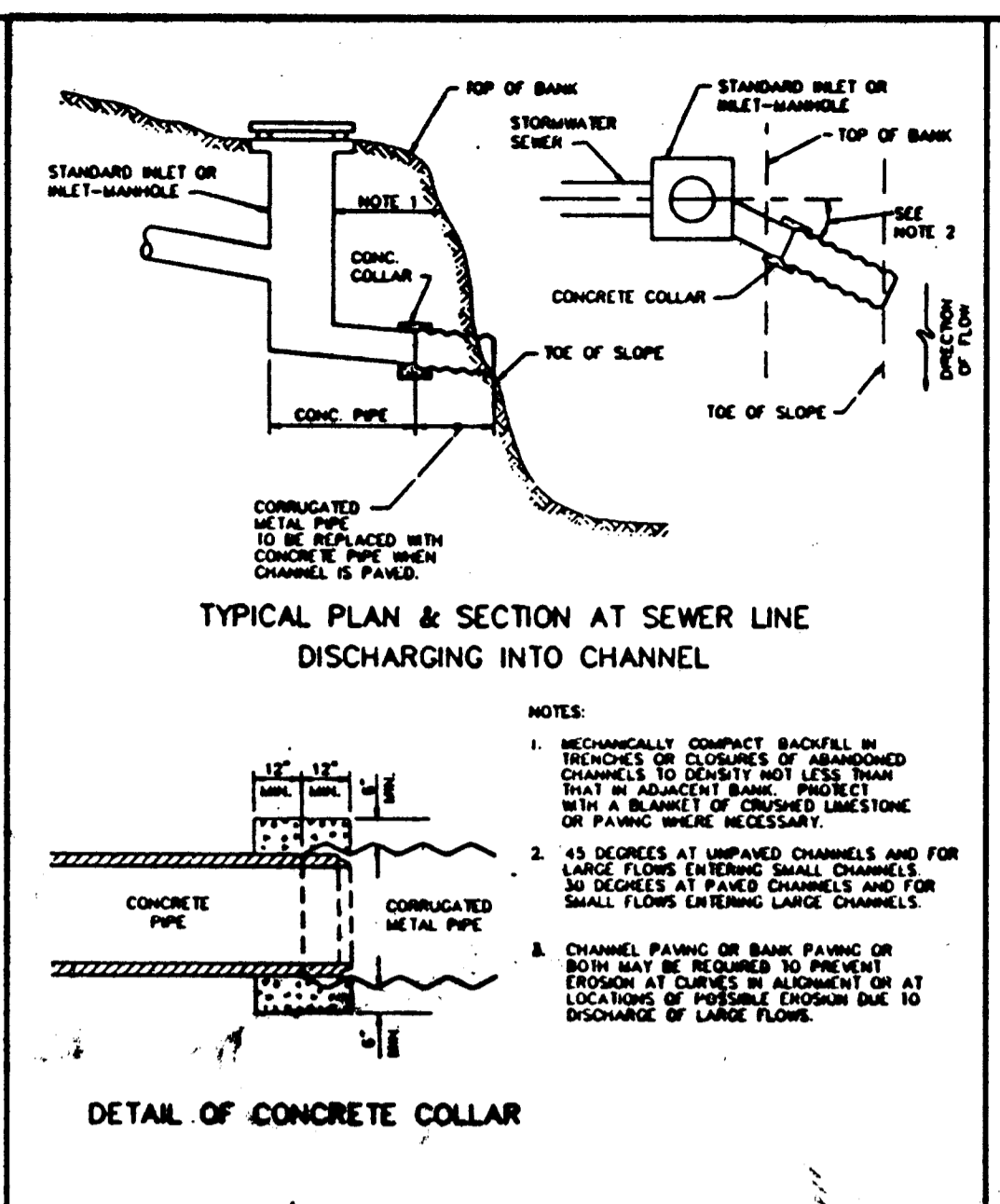
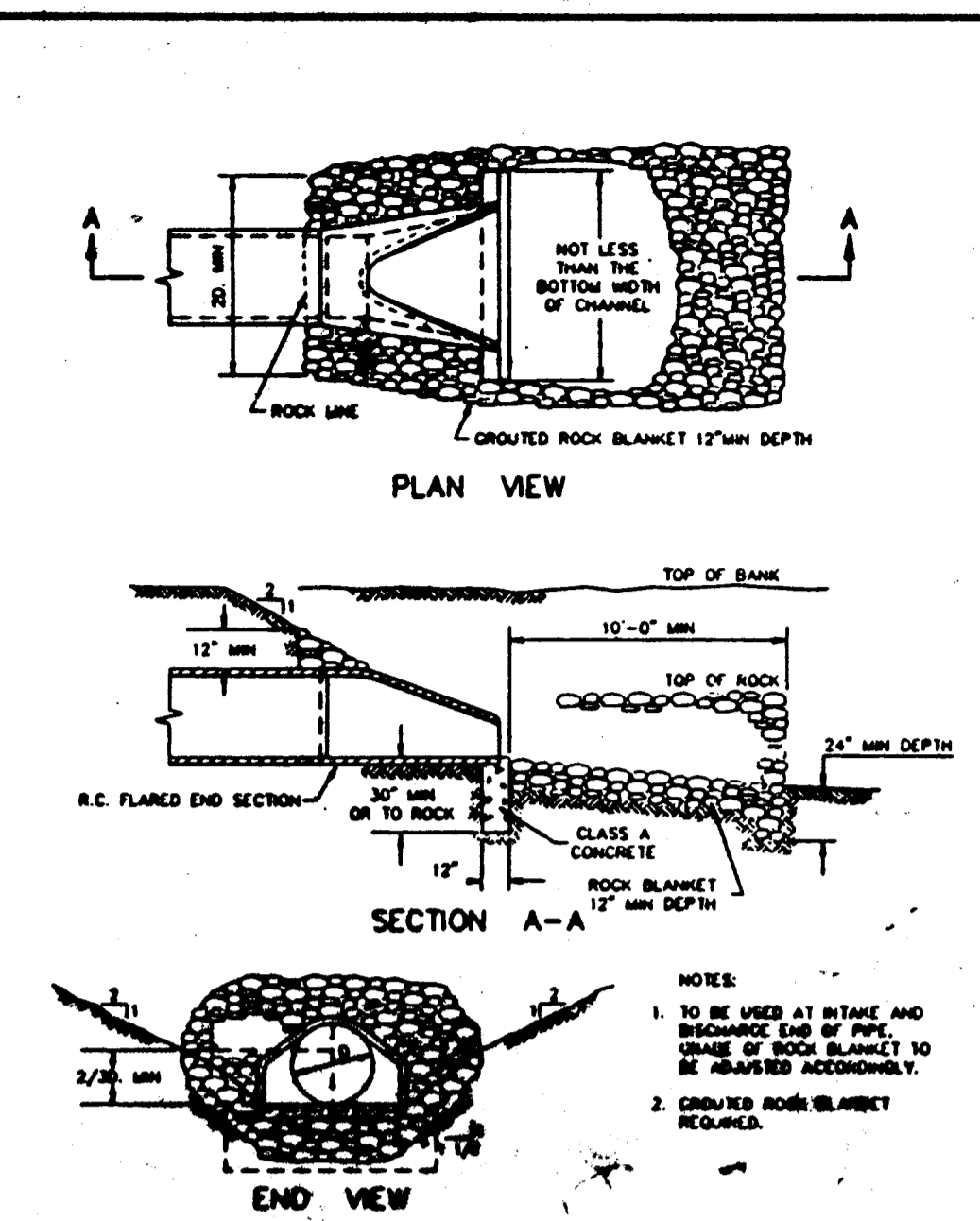
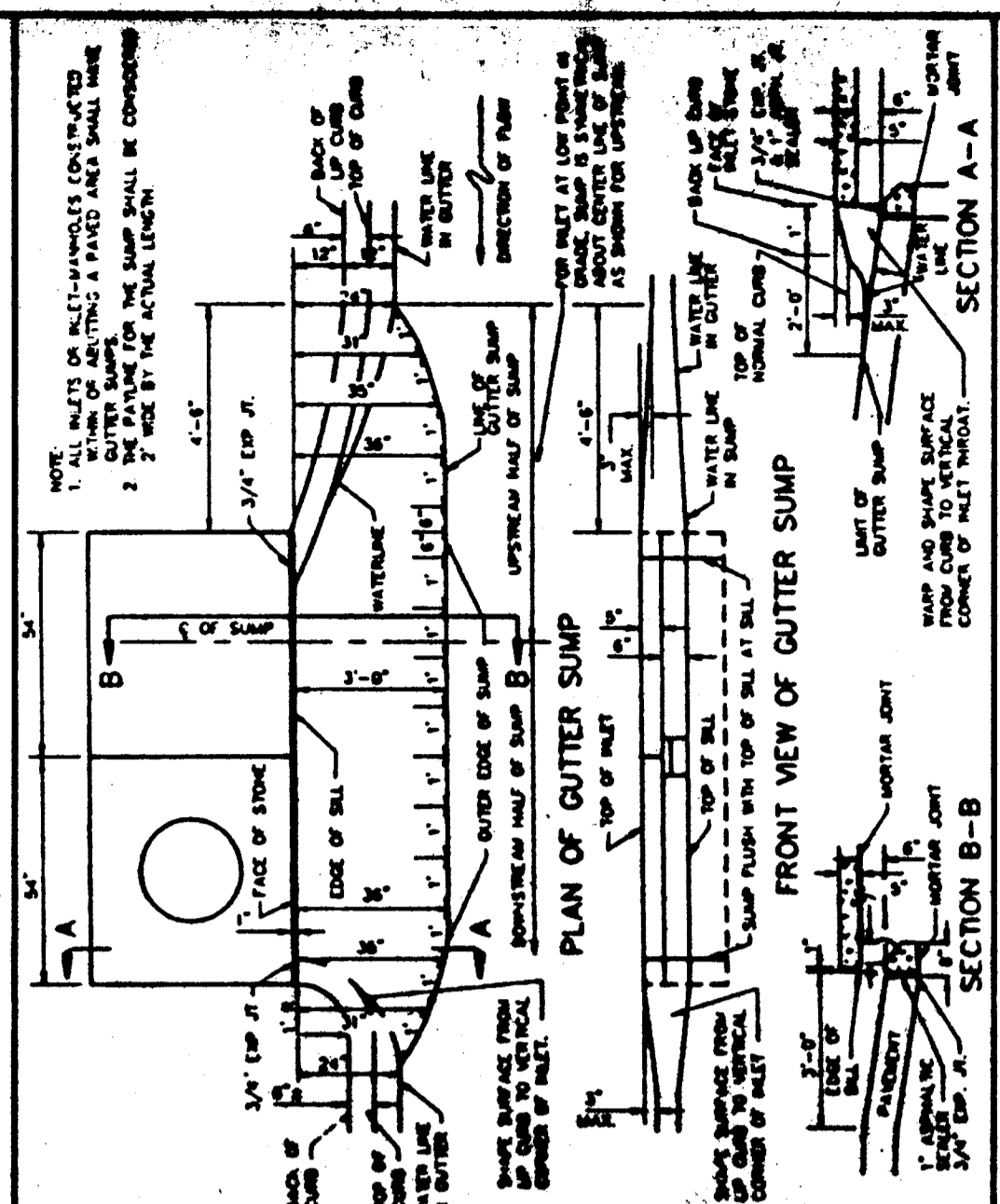
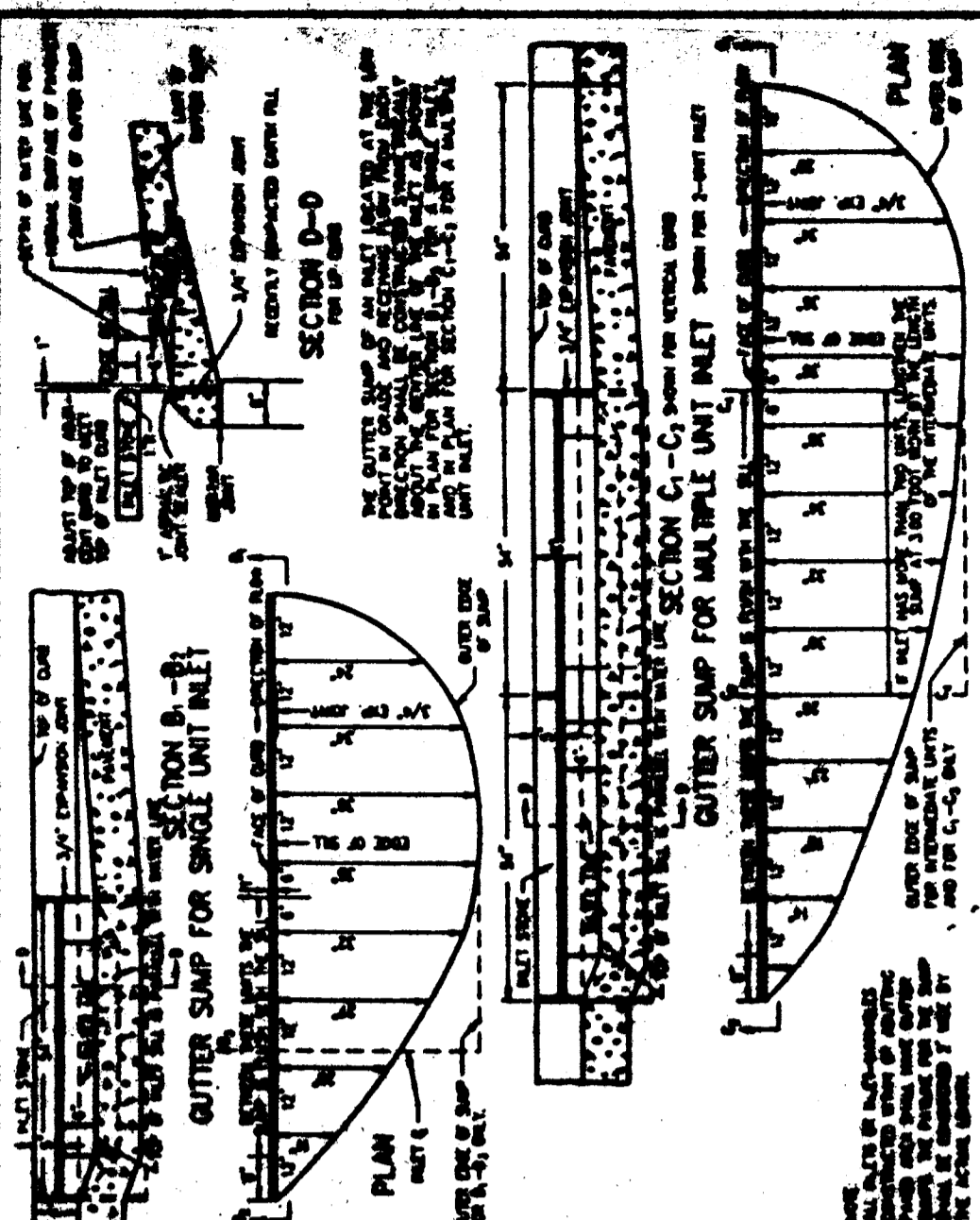
LOCKING DEVICE FOR TYPE 'N' LOCK TYPE MANHOLE COVER
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. J.L.C. Ch. J.C.K. 1992 SHEET 52



PS1-B MANHOLE STEP INTO JOINT
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. W.S.H. Ch. J.C.K. 1992 SHEET 53



MANHOLE STEP FOR PRECAST MANHOLE
 METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction
 Dr. D.A.B. Ch. J.C.K. 1992 SHEET 54



GUTTER SUMP FOR VERTICAL CURB
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 55

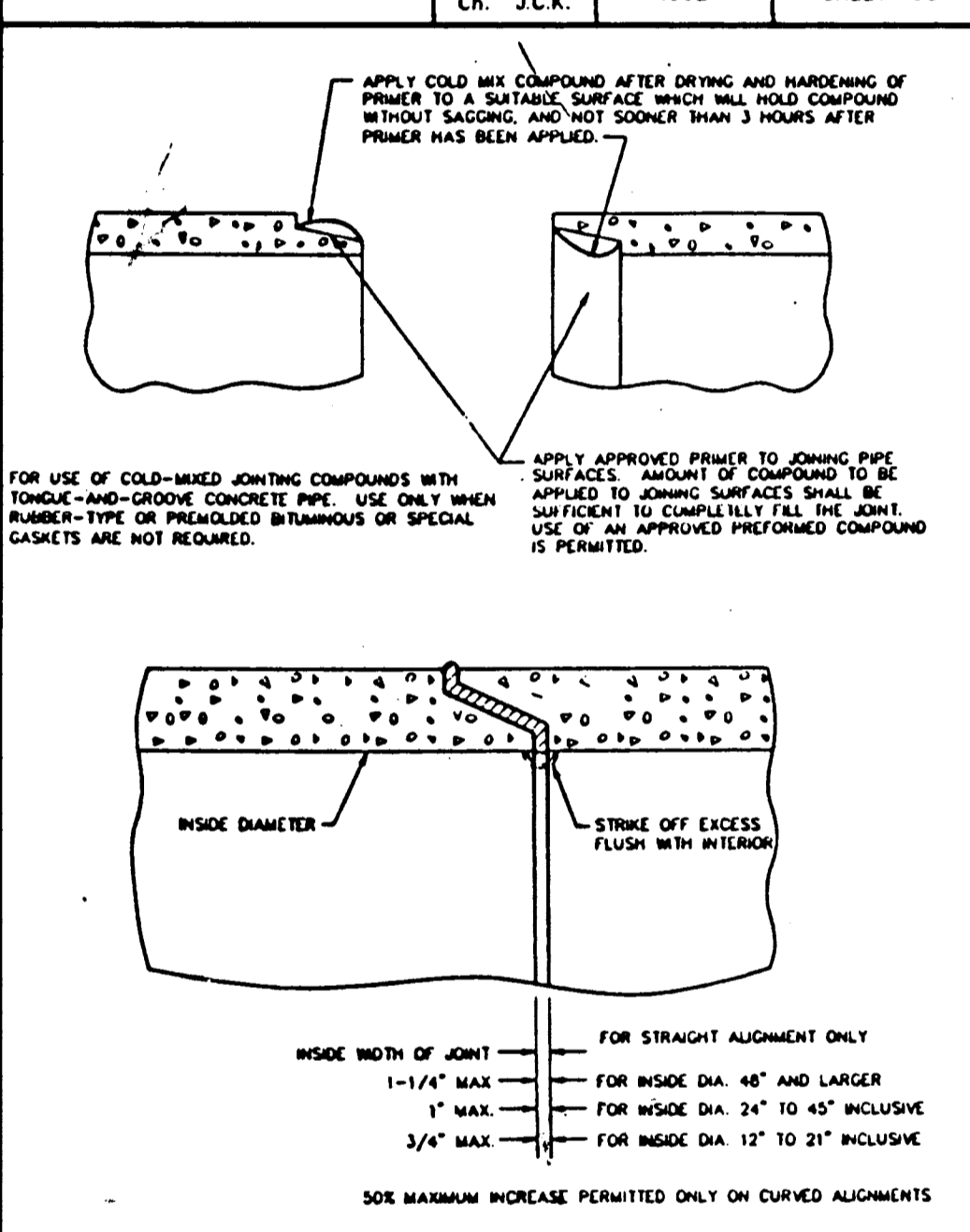
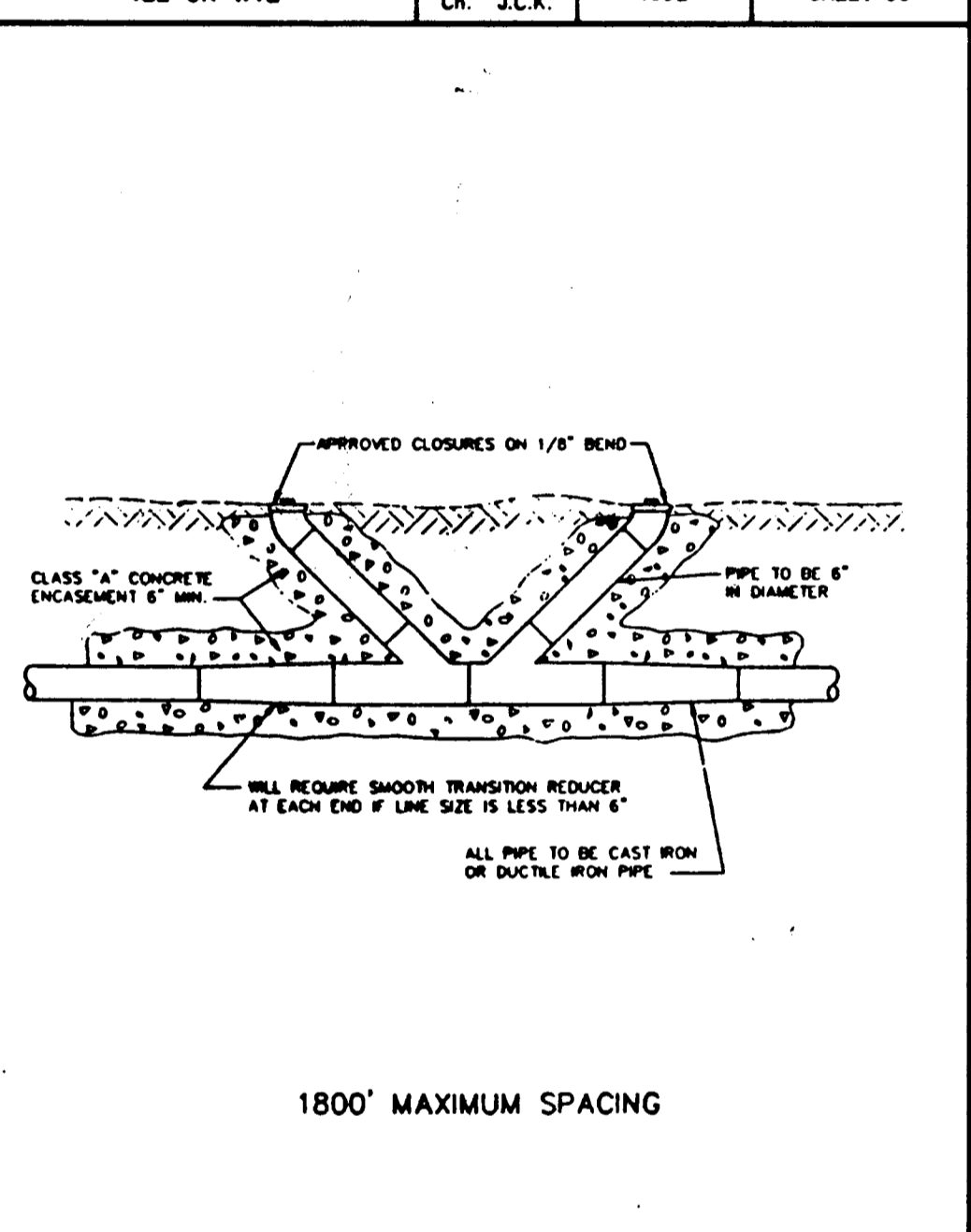
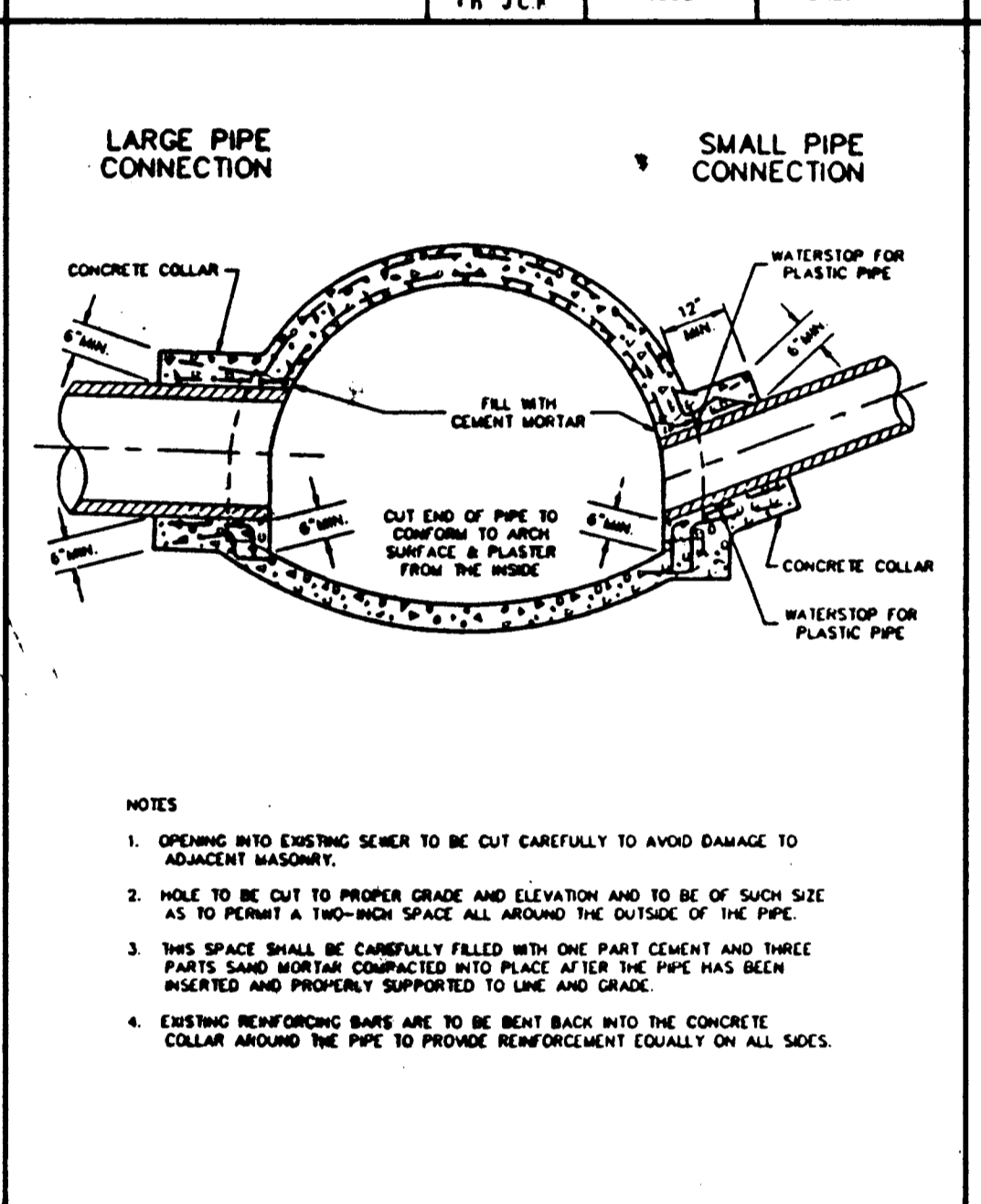
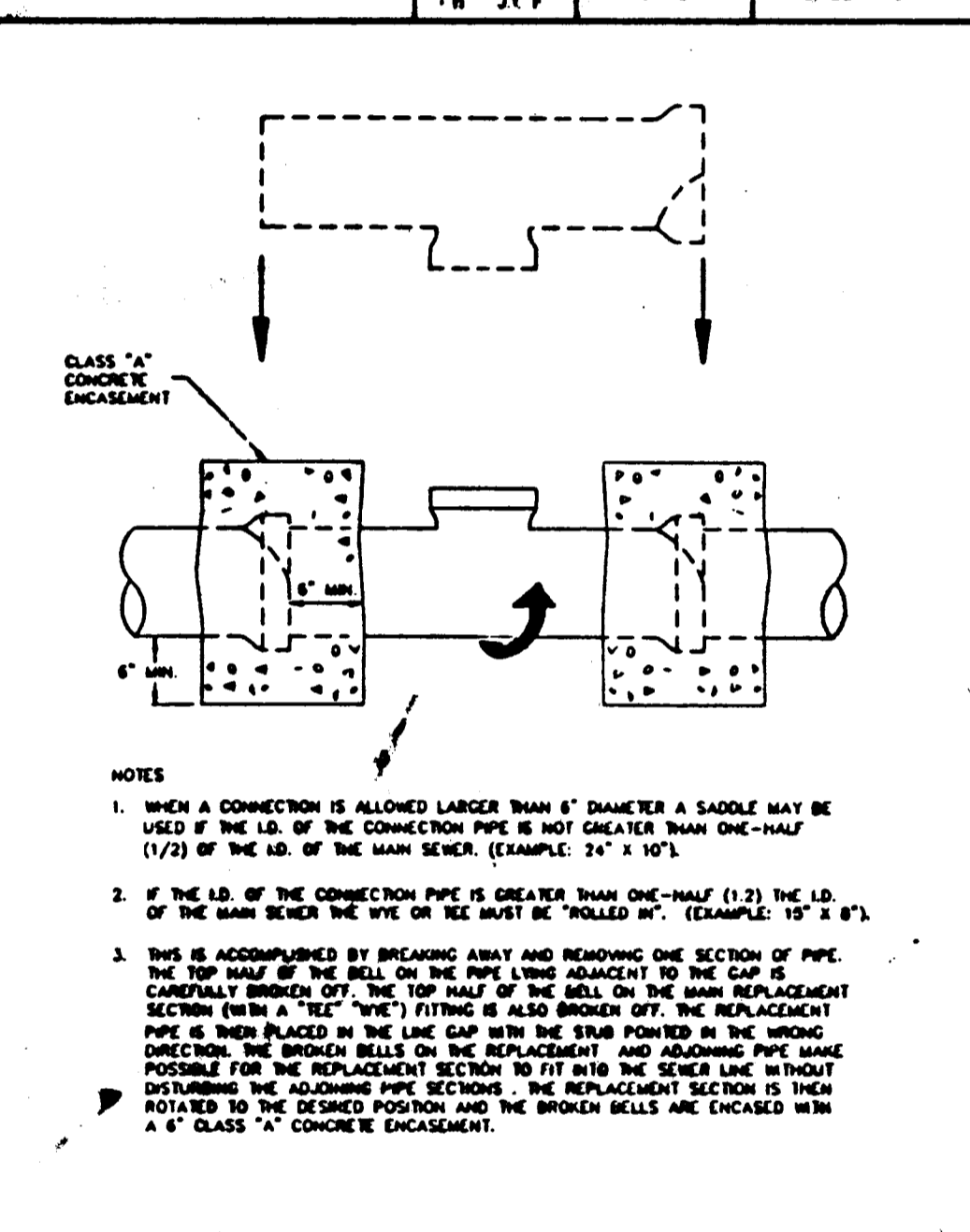
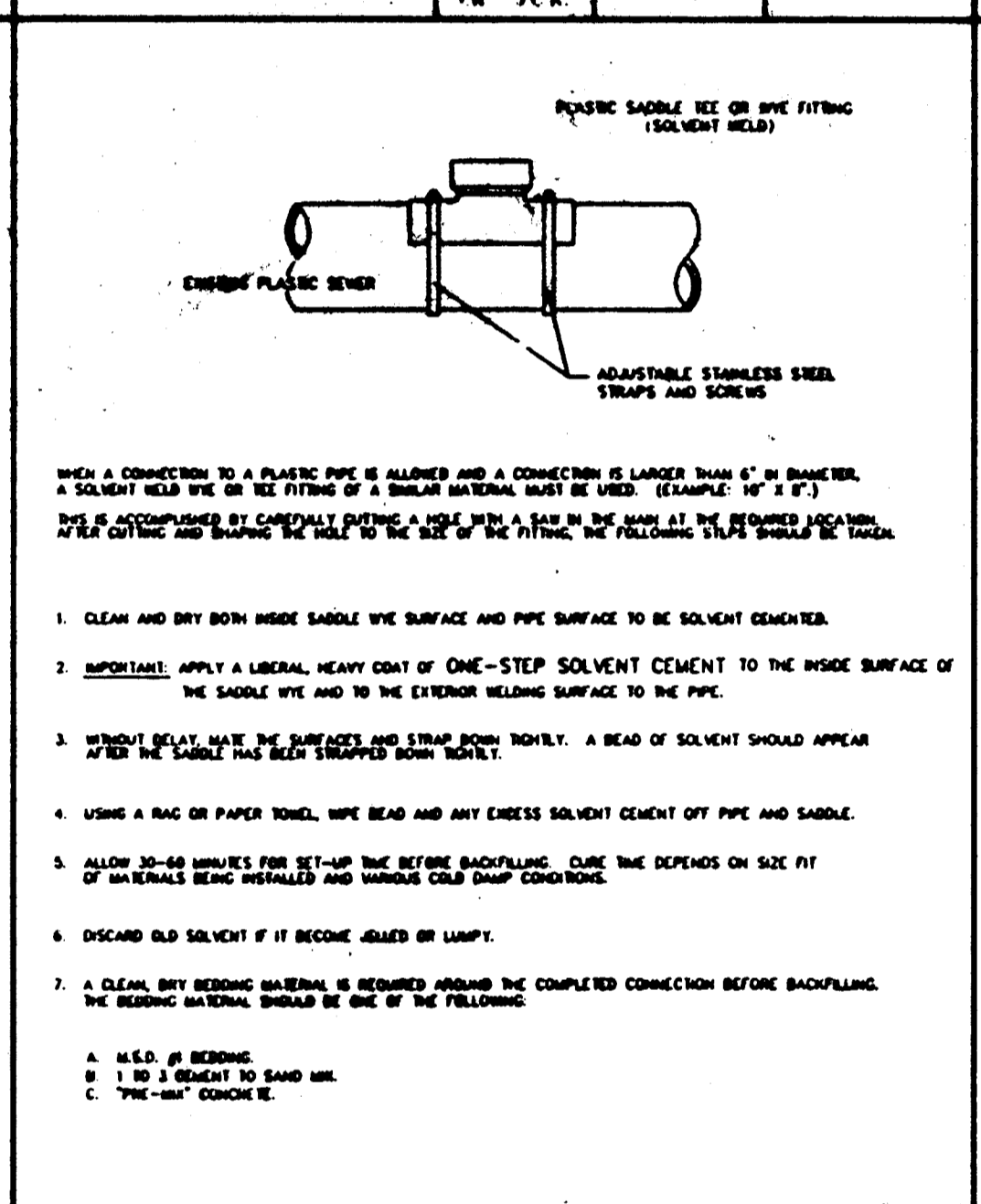
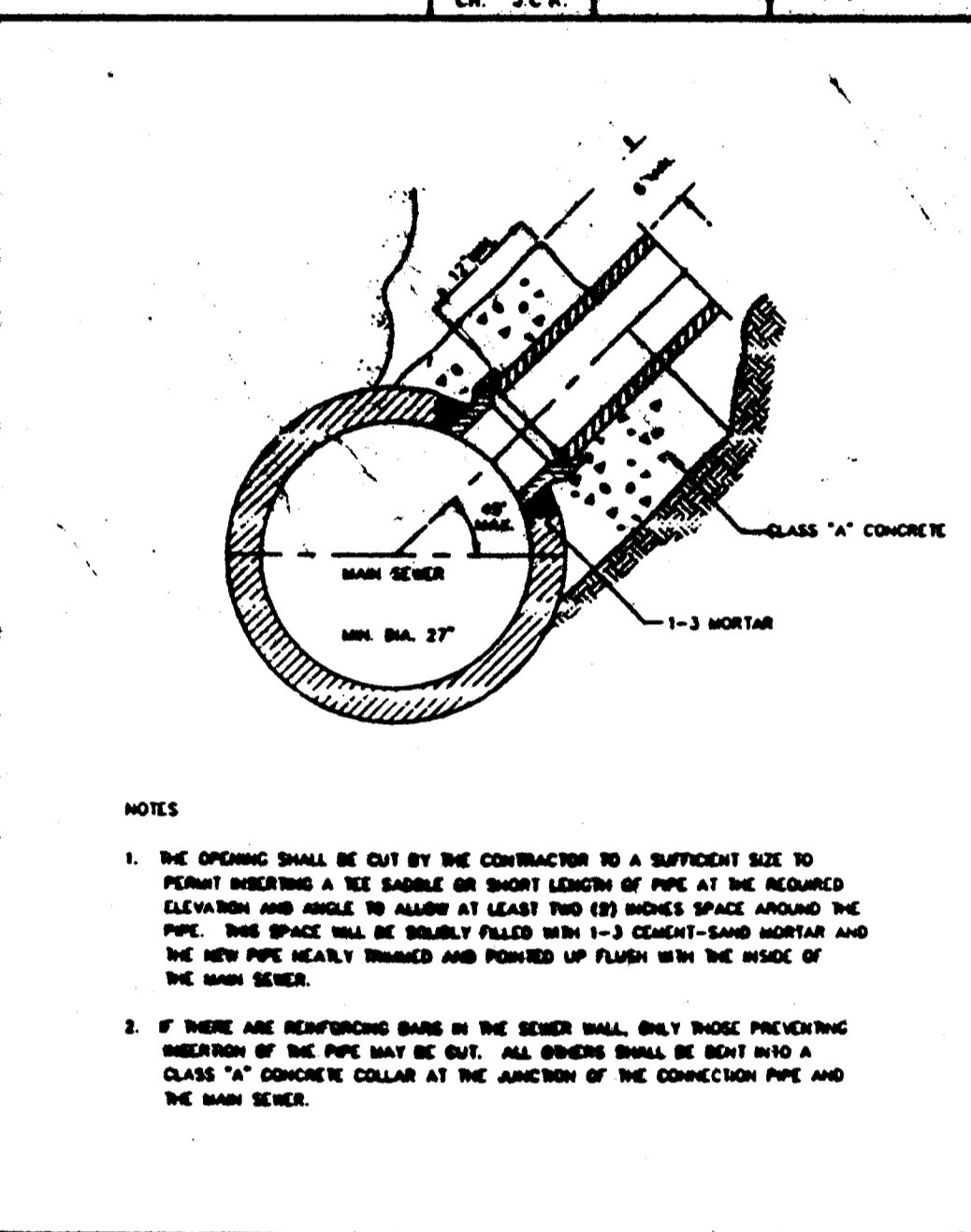
GUTTER SUMP FOR LIP CURB
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 56

FLARED END SECTION
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 57

STORMWATER CHANNELS
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 58

HOUSE CONNECTION TO EXISTING TEE OR WYE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. D.A.B. Ch. J.C.K. 1992 SHEET 59

MACHINE TAP
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 60



HOUSE CONNECTIONS ALLOWED BY TEE SADDLE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. D.A.B. Ch. J.C.K. 1992 SHEET 61

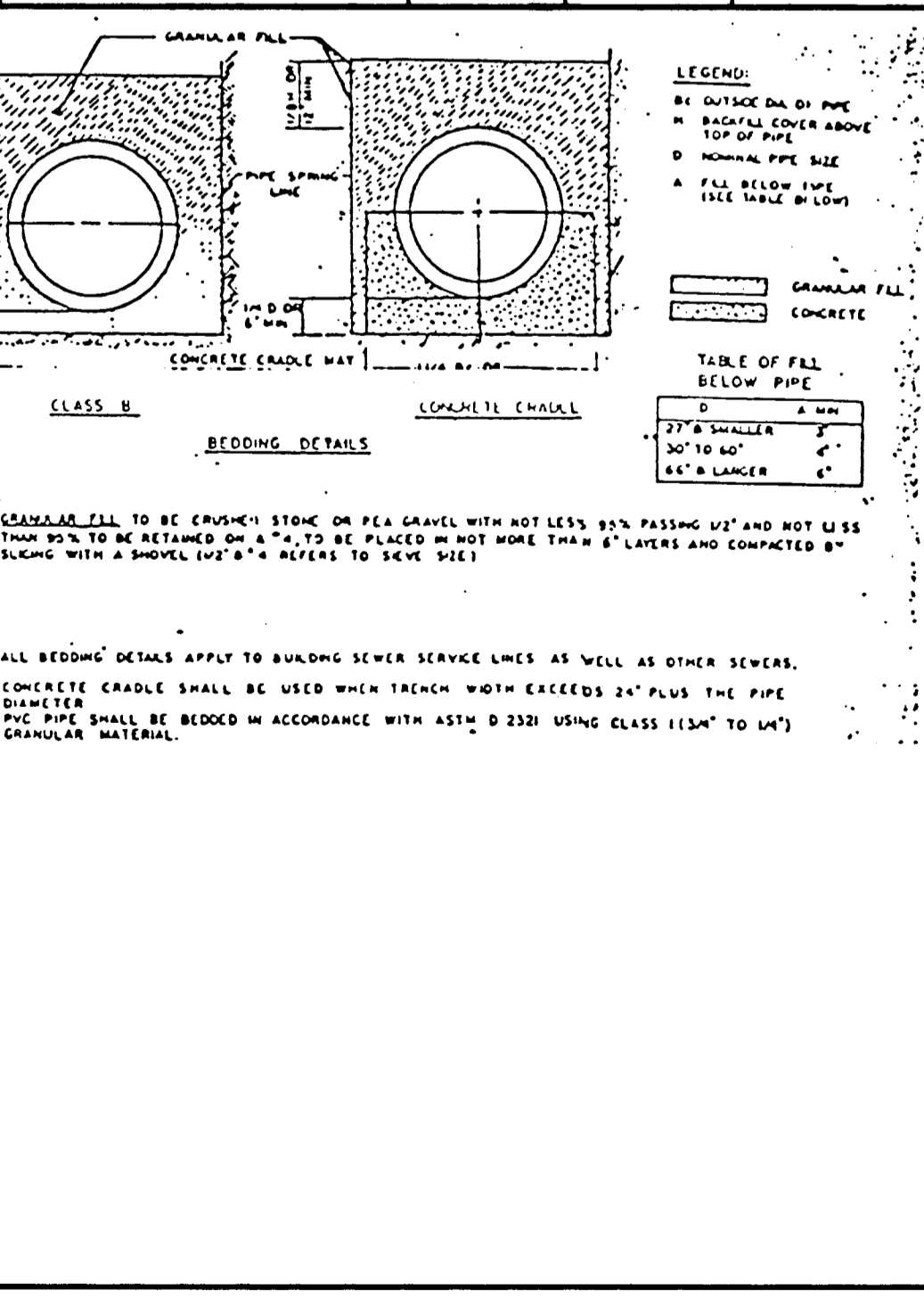
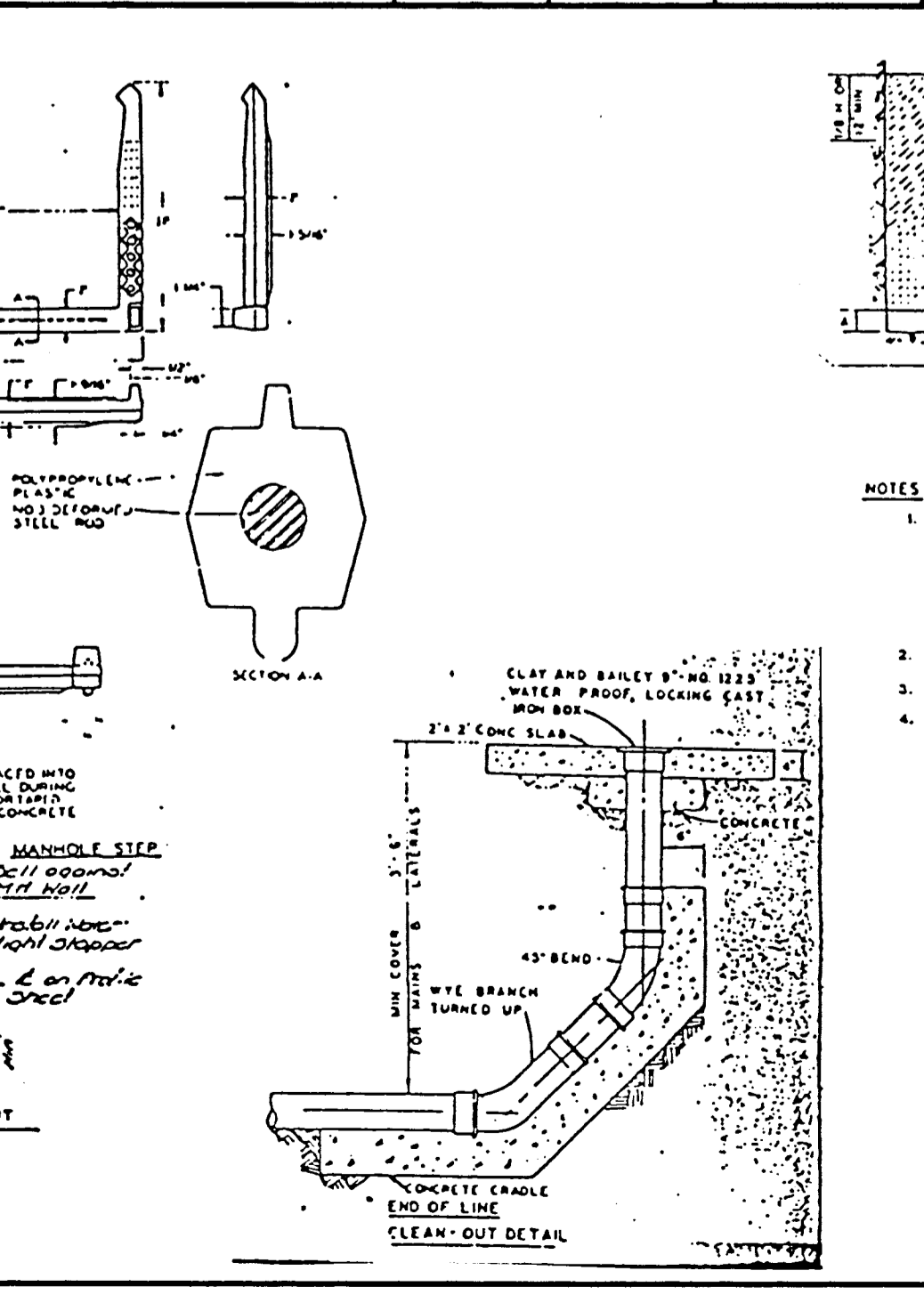
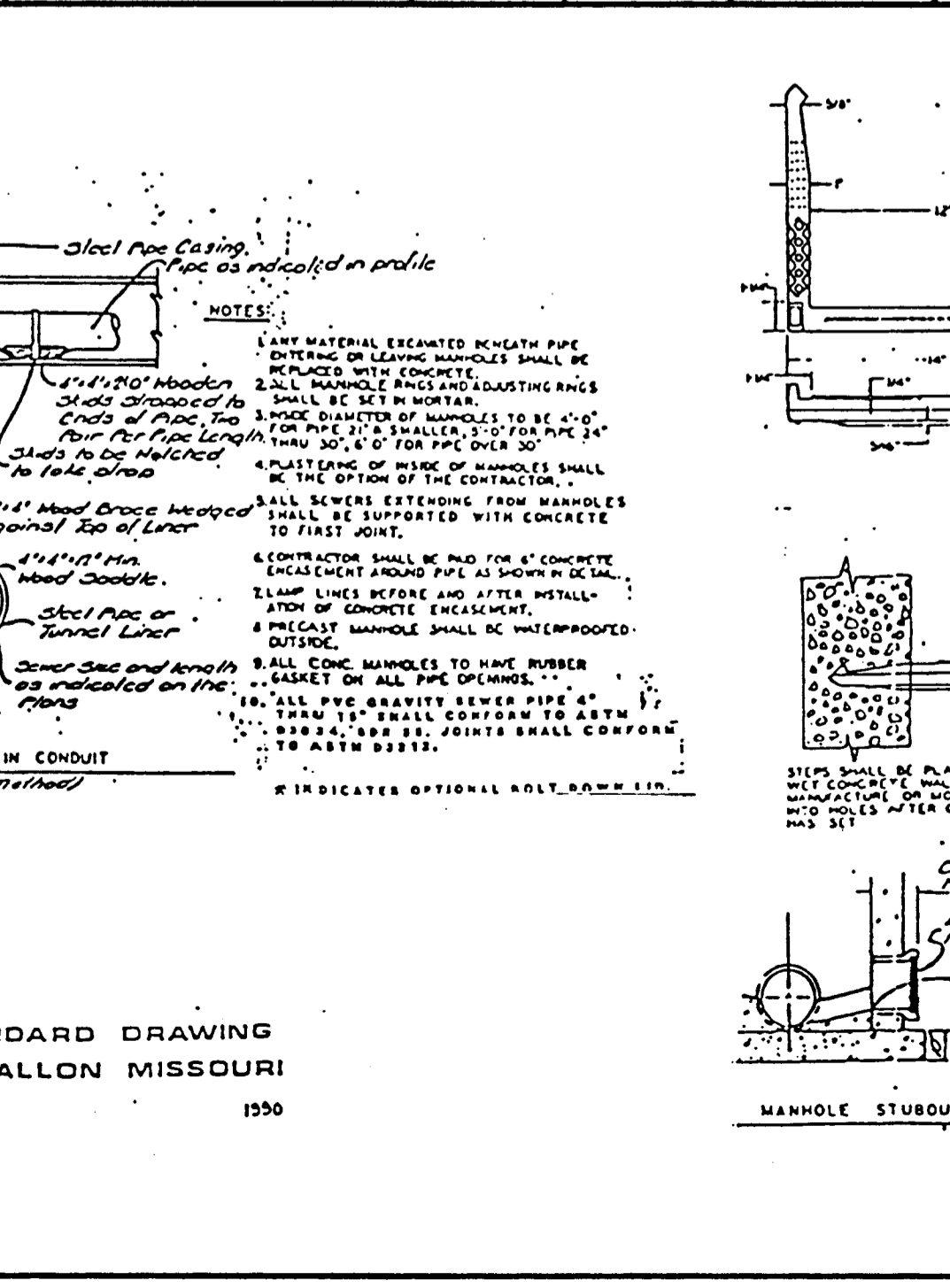
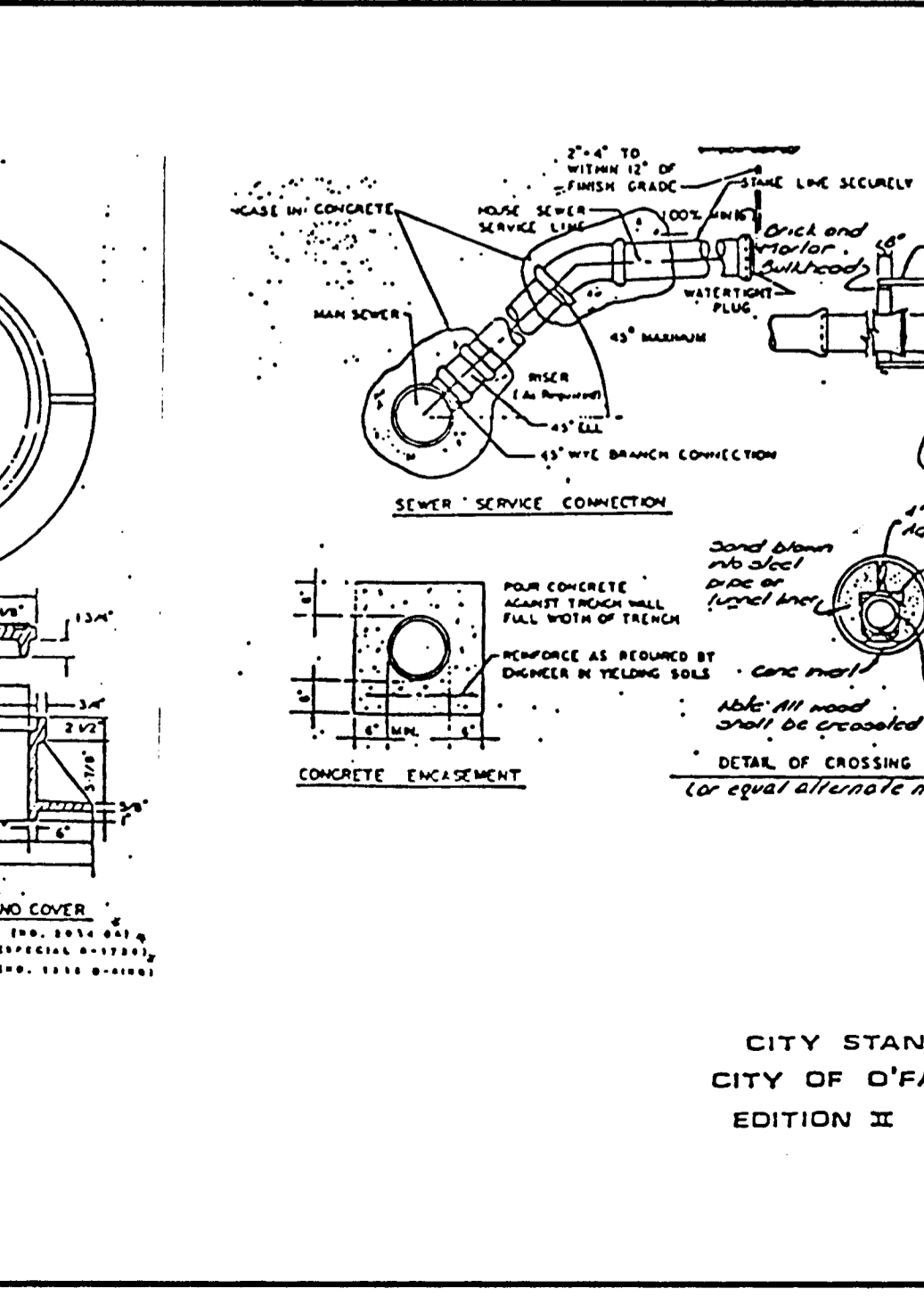
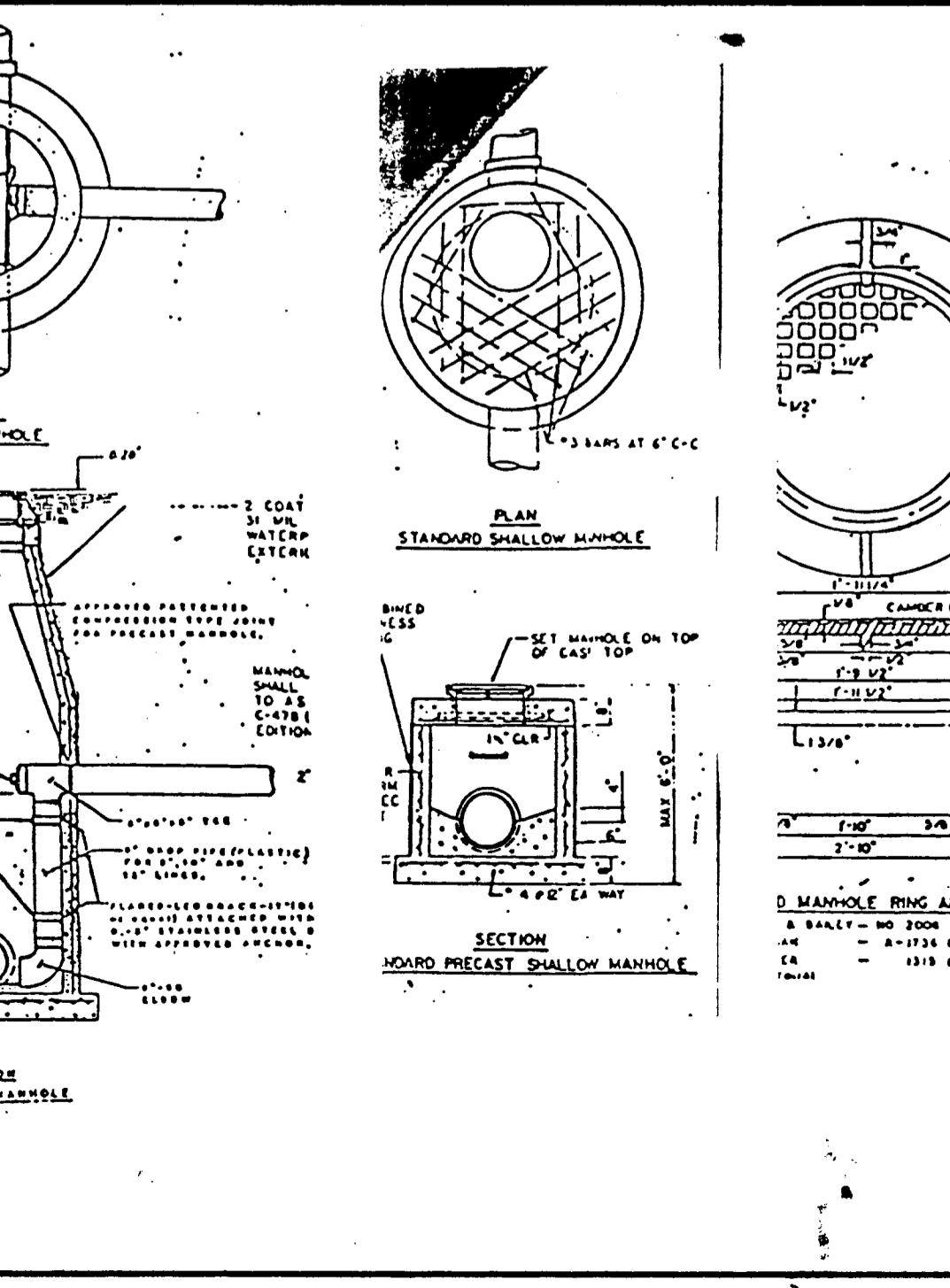
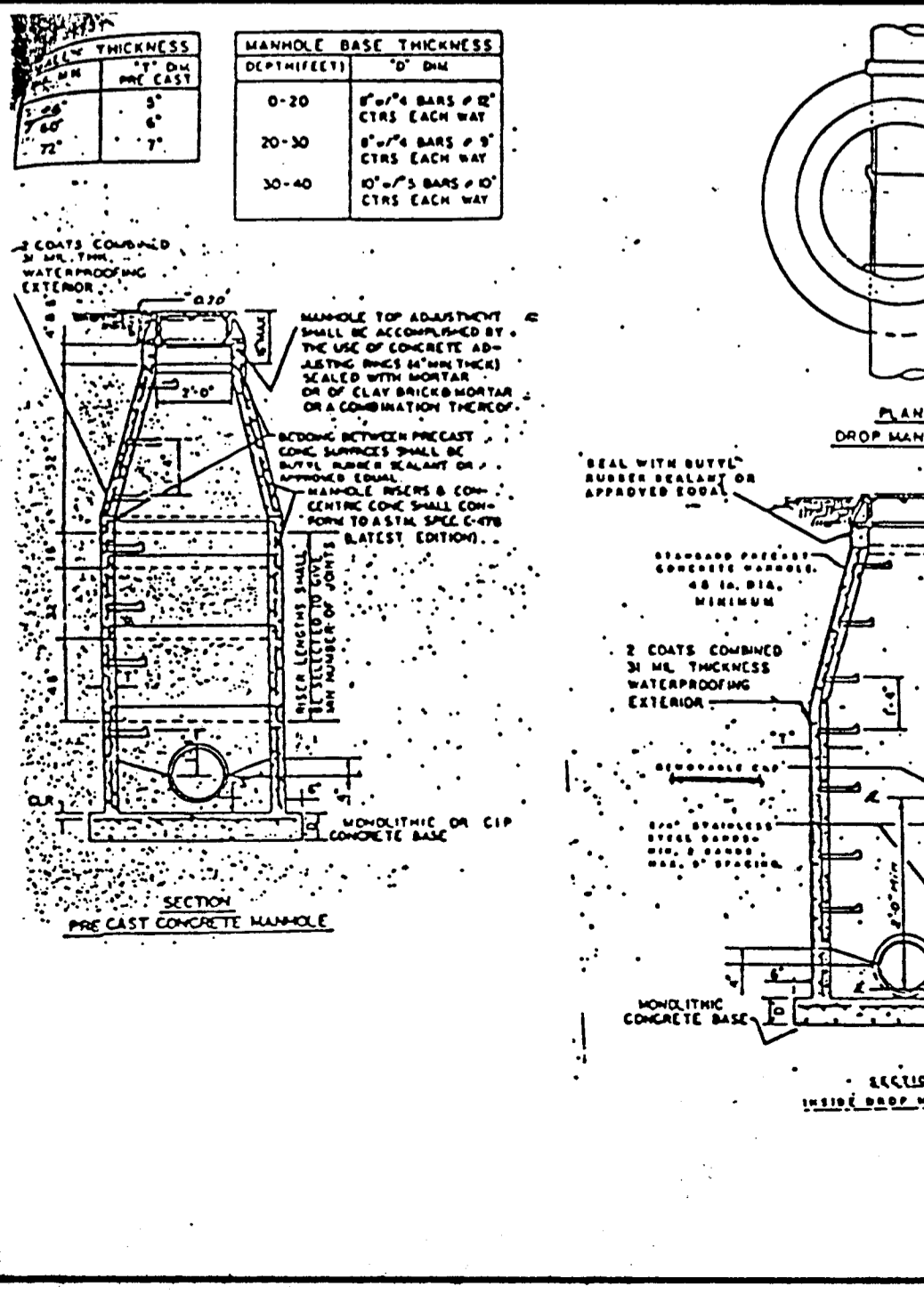
8" (& LARGER) CONNECTION TO PLASTIC MAIN
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. D.A.B. Ch. J.C.K. 1992 SHEET 62

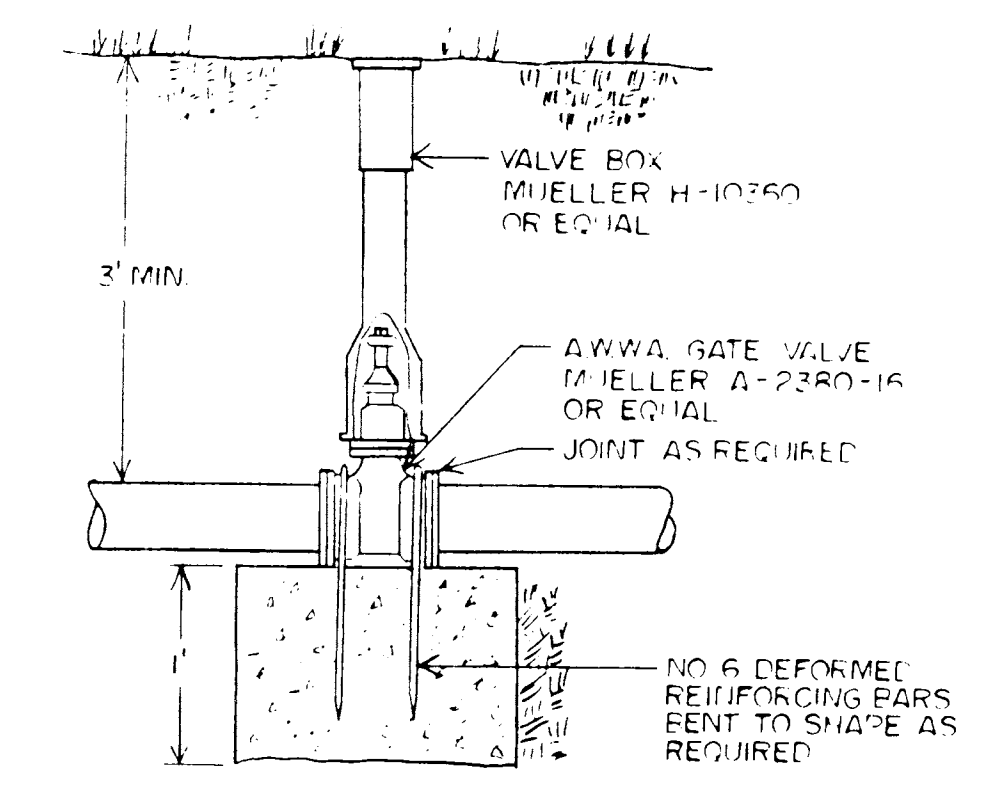
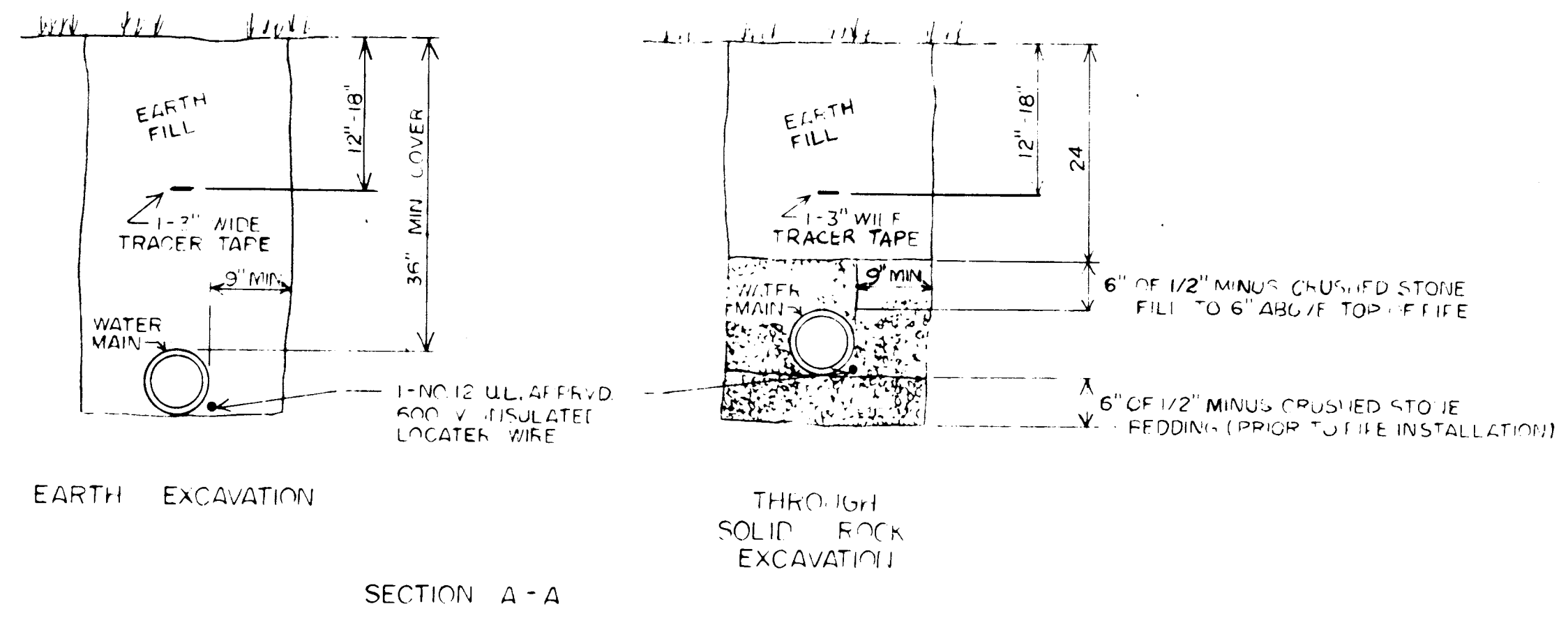
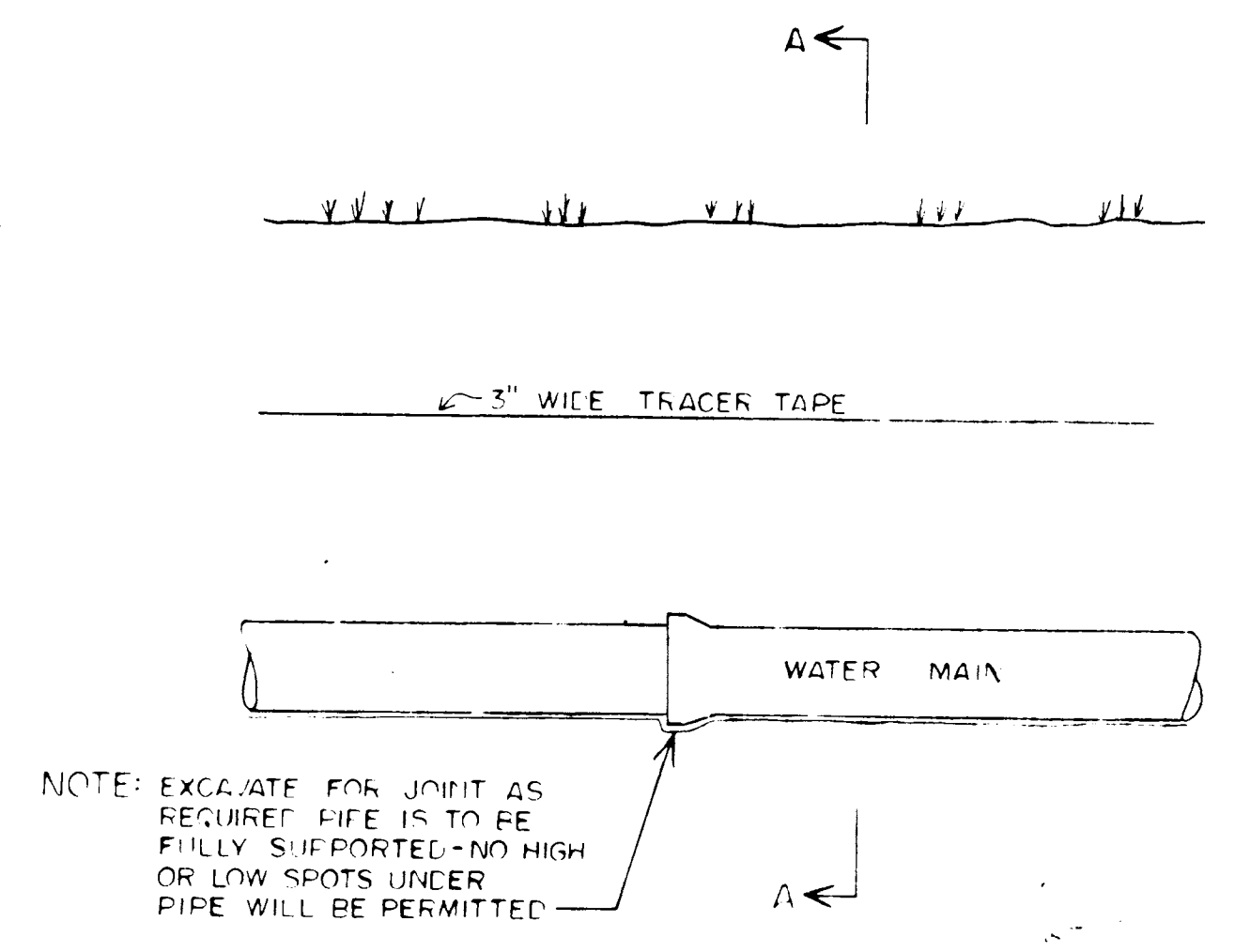
"ROLL-IN" (FOR EXISTING CLAY OR CONCRETE PIPE)
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. D.A.B. Ch. J.C.K. 1992 SHEET 63

CONNECTIONS TO LARGE SEWERS
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 64

FORCE MAIN CLEANOUT (6" DIA. & SMALLER)
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. R.C.W. Ch. J.C.K. 1992 SHEET 65

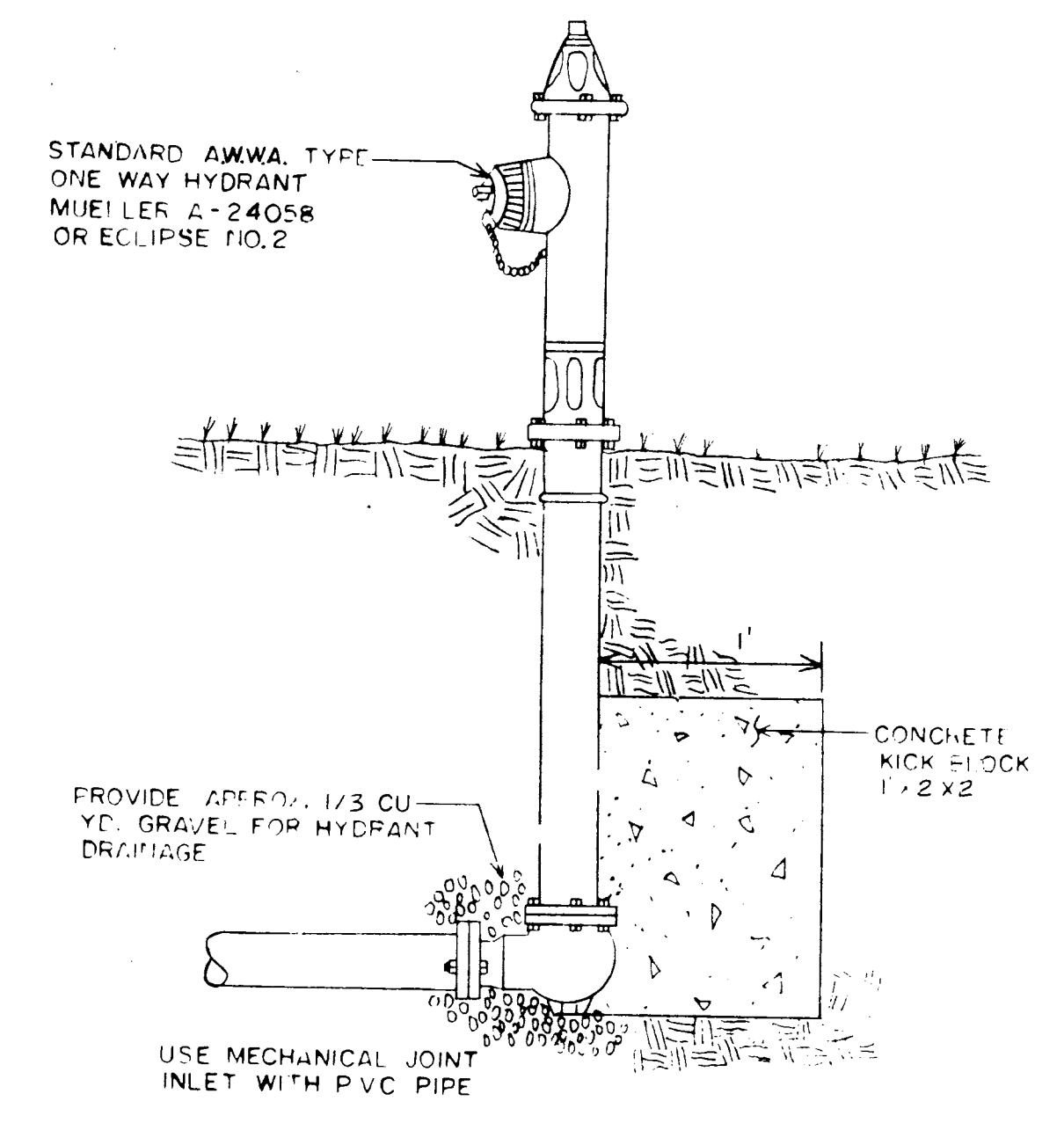
TONGUE AND GROOVE CONCRETE PIPE JOINTS
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. D.A.B. Ch. J.C.K. 1992 SHEET 66



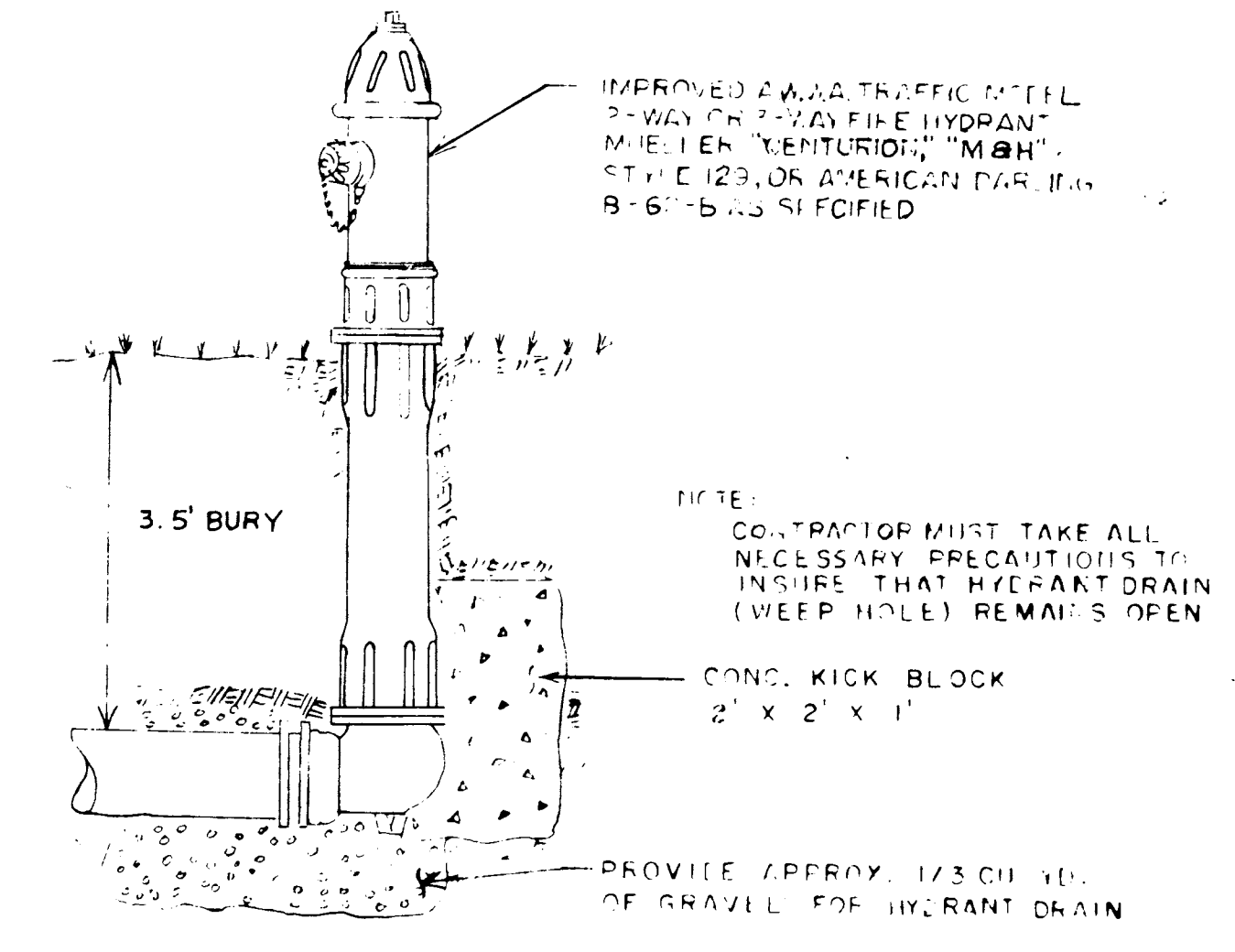


TYPICAL WATER MAIN INSTALLATION DETAILS
NO SCALE

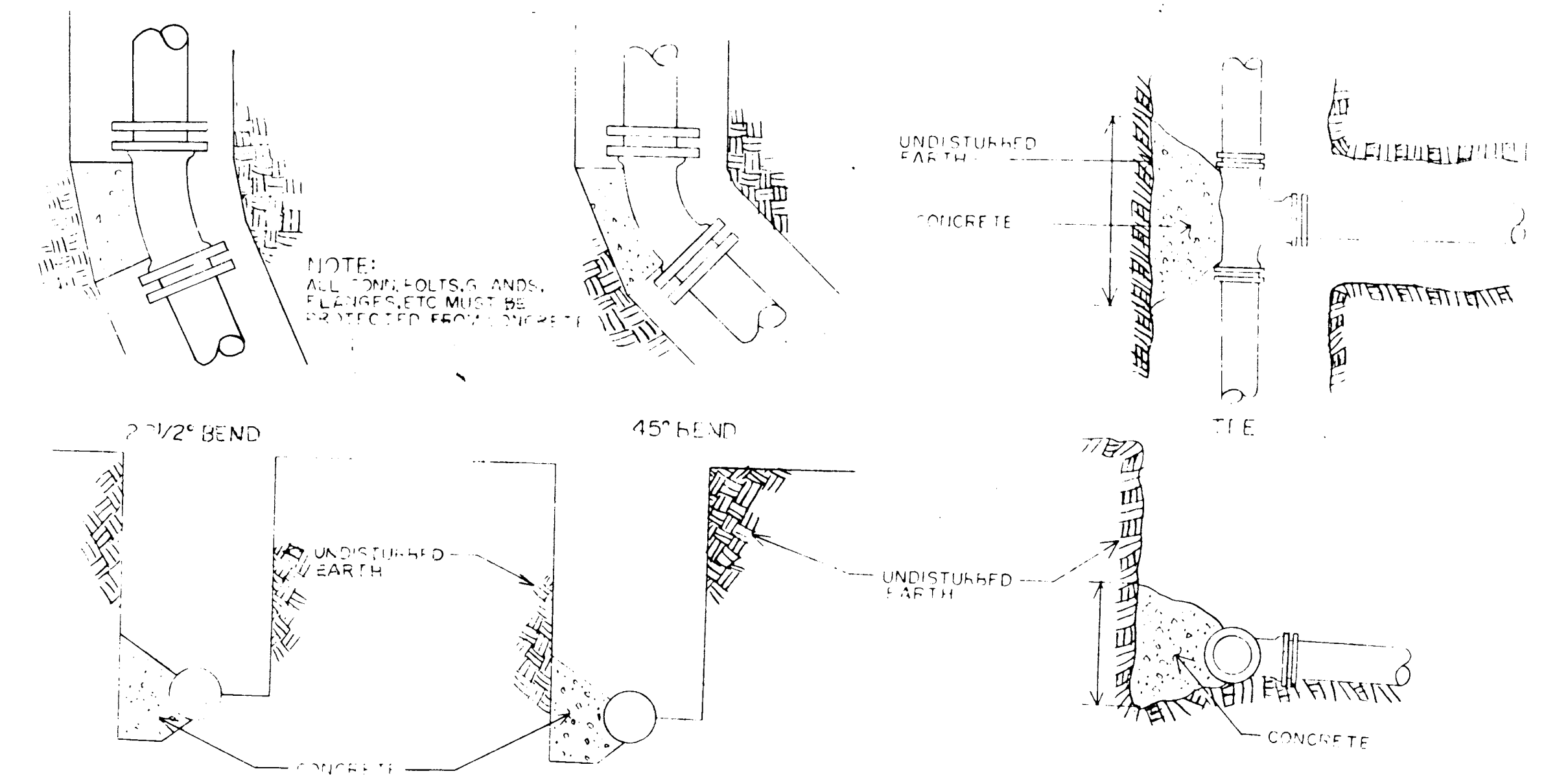
GATE VALVE W / THRUST BLOCK DETAIL
NO SCALE



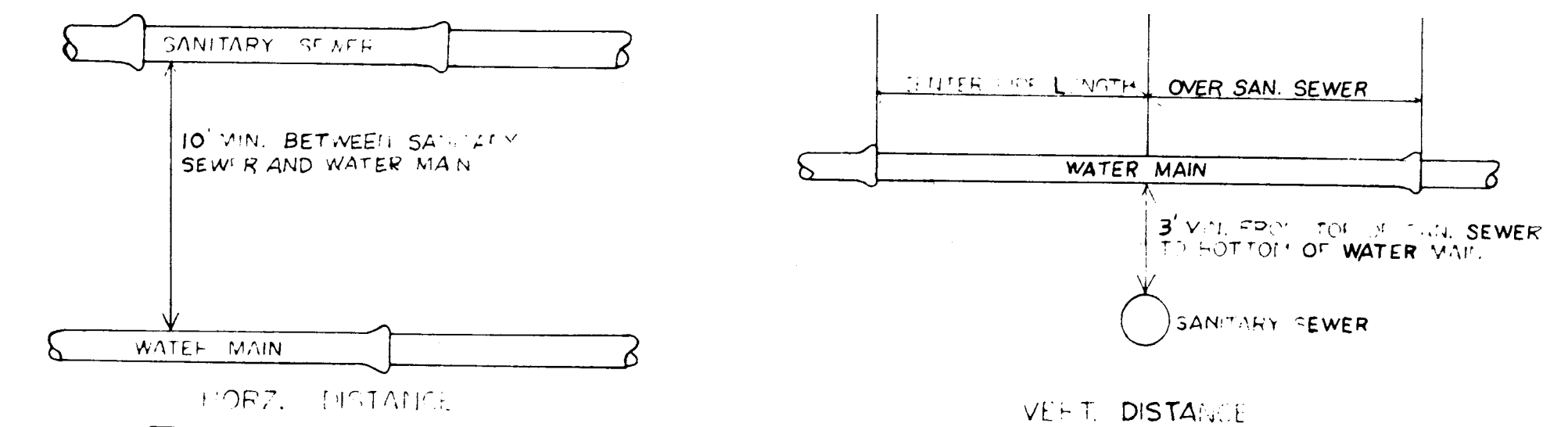
FLUSHING HYDRANT
NO SCALE



FIRE HYDRANT INSTALLATION DETAIL
NO SCALE



TYPICAL THRUST BLOCK DETAIL
NO SCALE



TYPICAL WATER & SEWER SEPARATION
NO SCALE

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

16
17

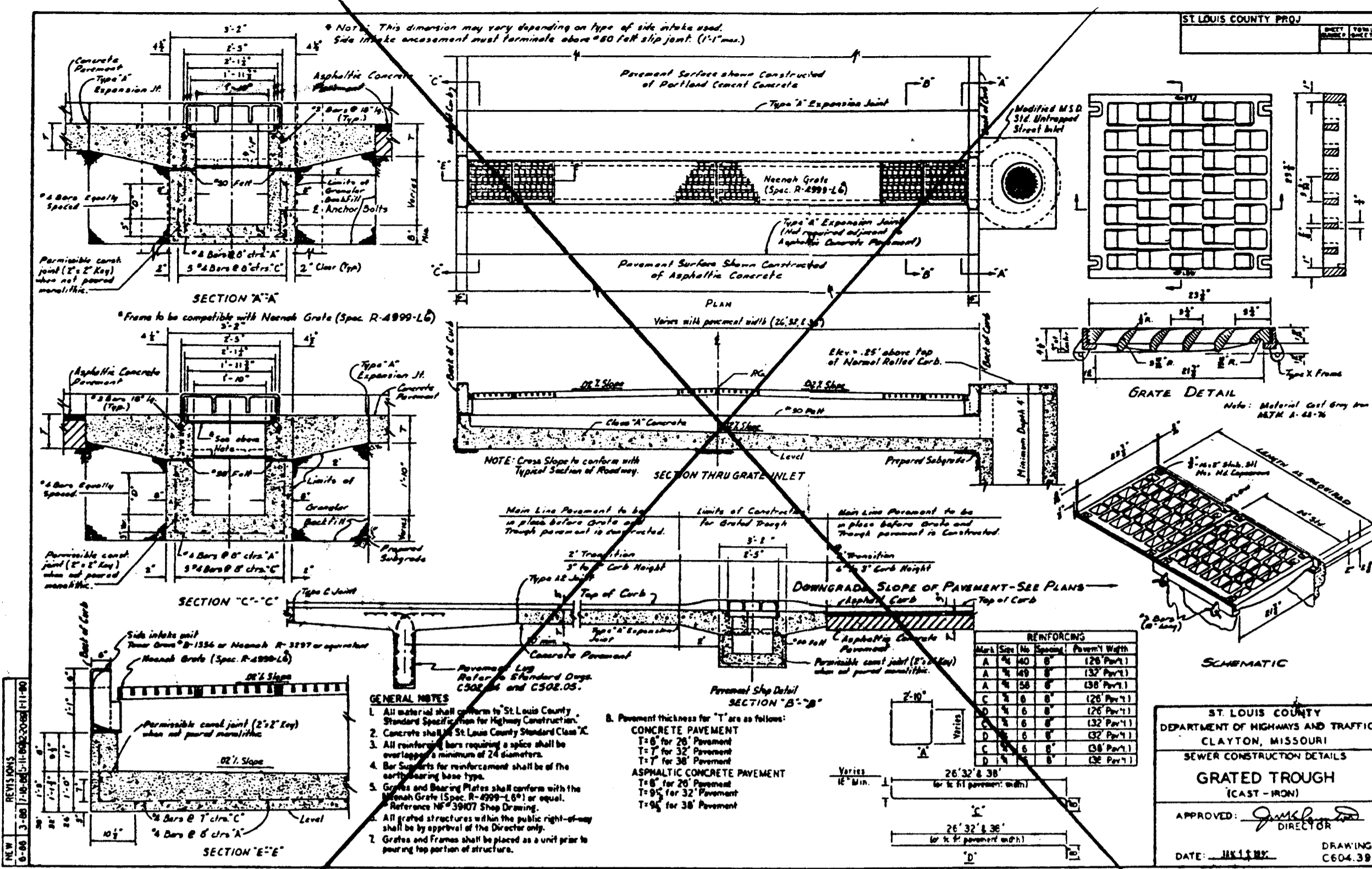
ST. CHARLES COUNTY
PUBLIC WATER SUPPLY DISTRICT
NO. 2

Revised from Drawing by: COCHRAN ENGINEERING COMPANY WASHINGTON, MISSOURI

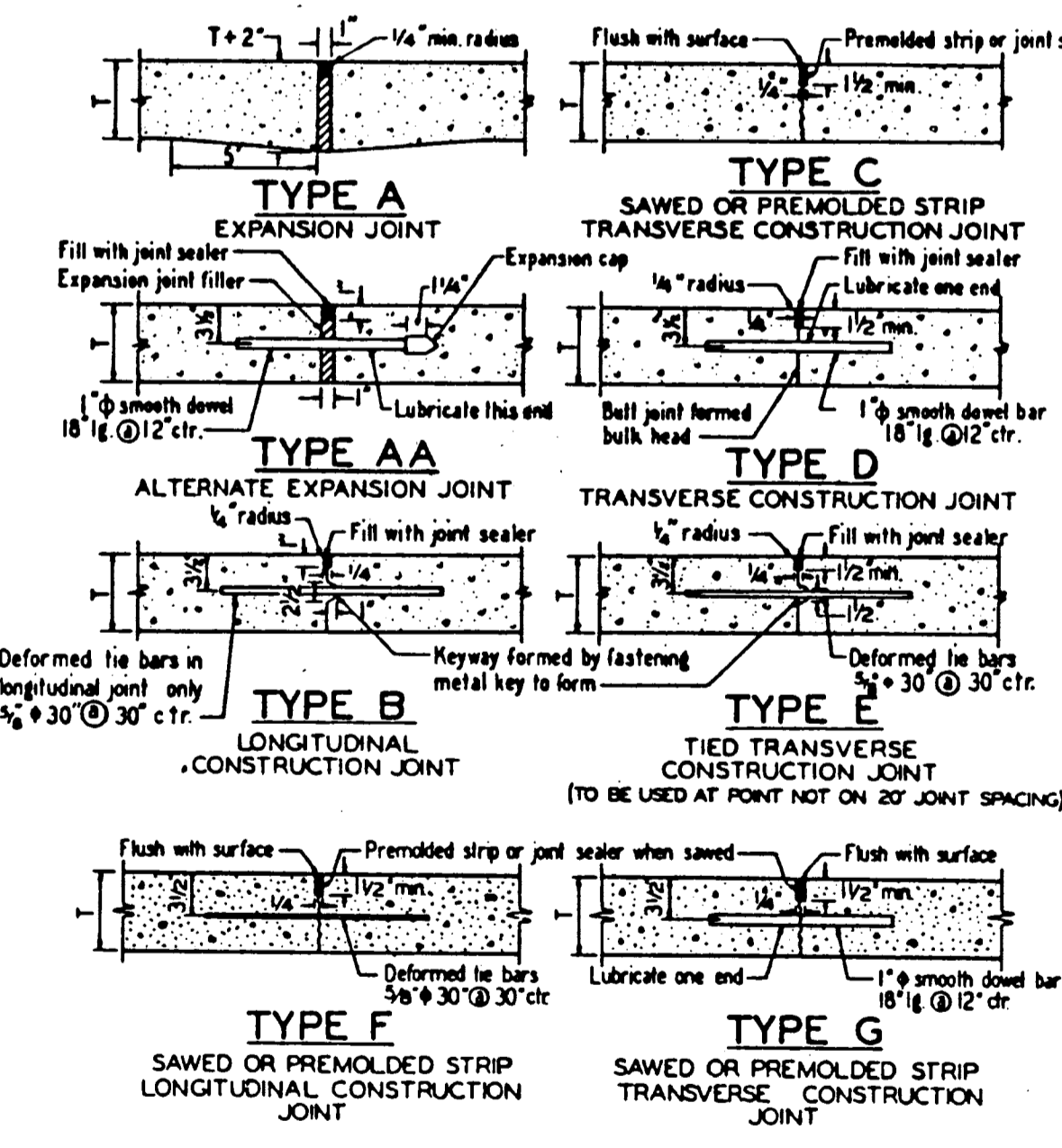
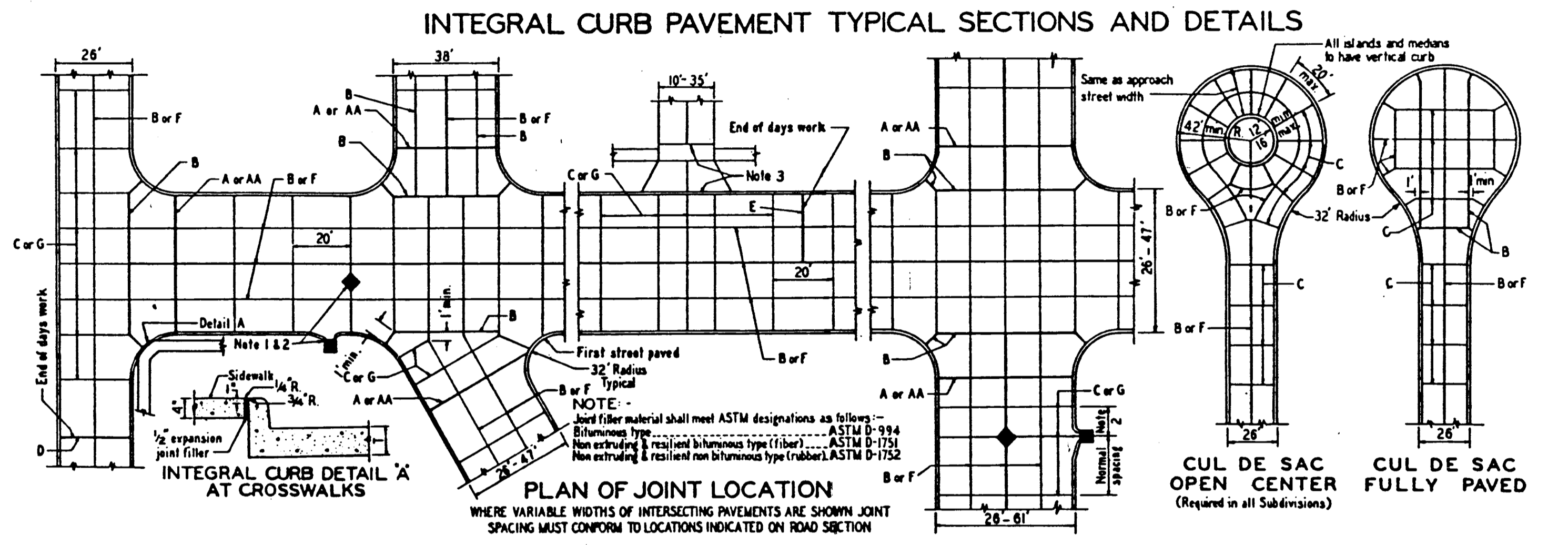
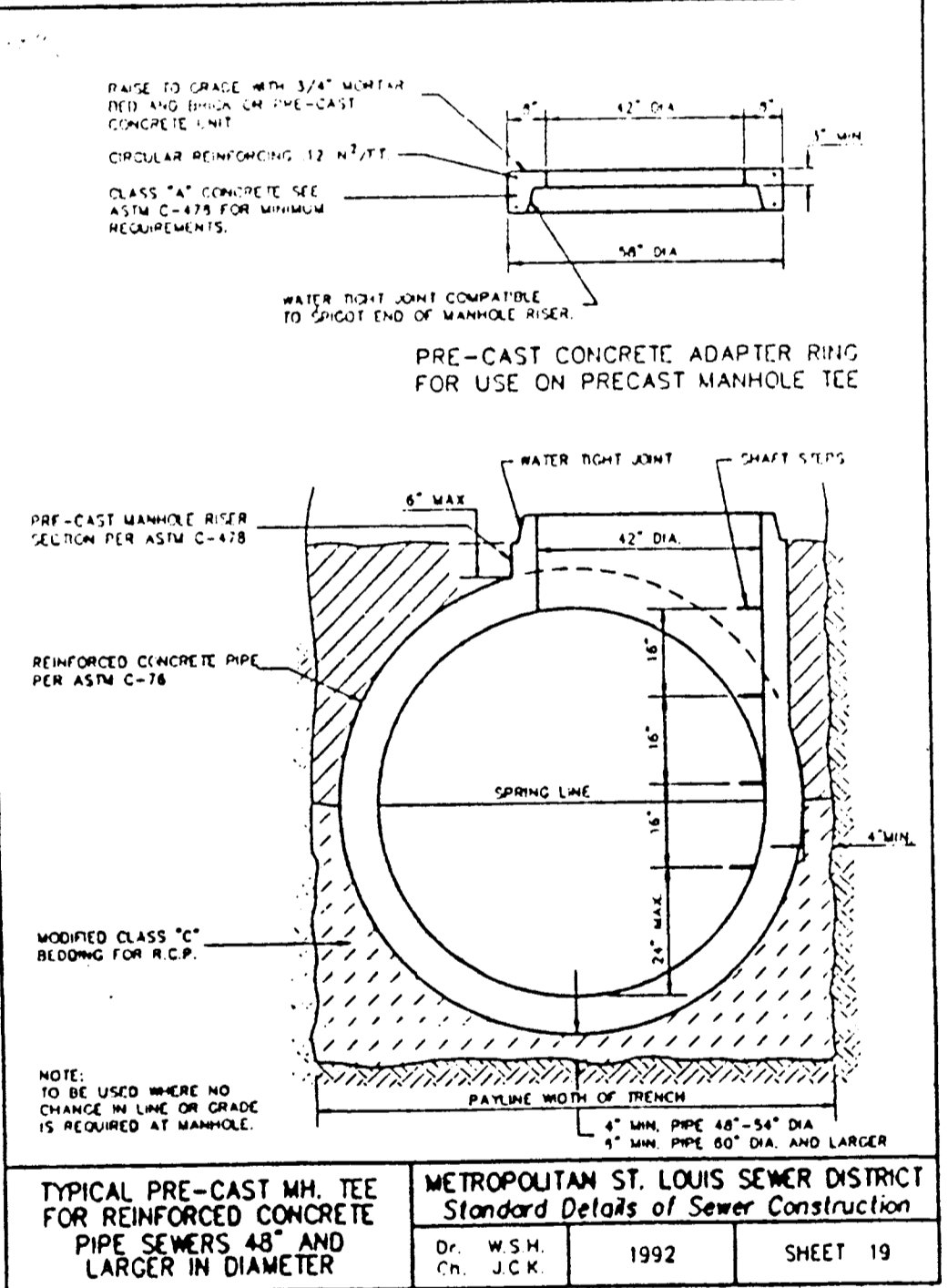
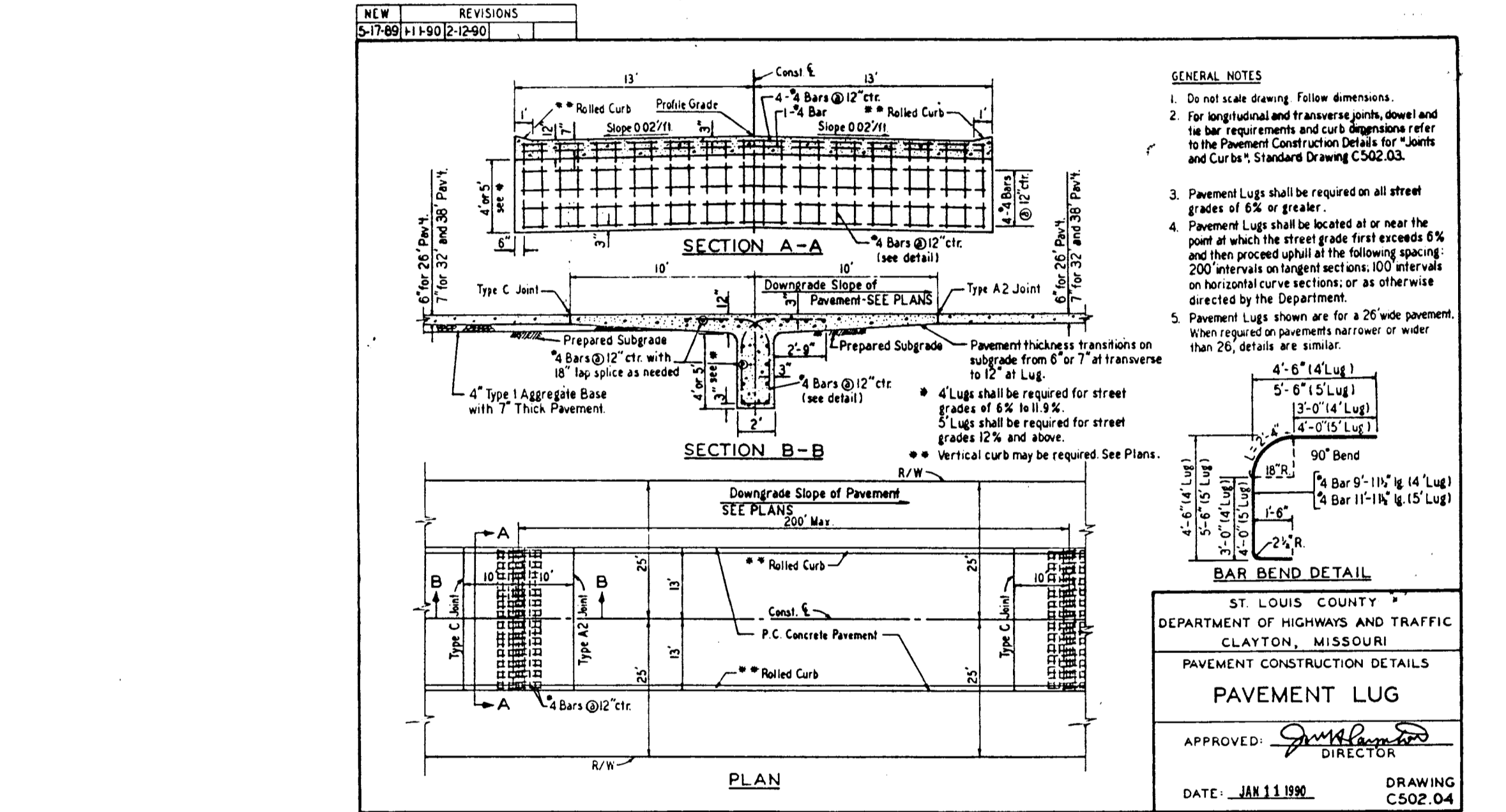
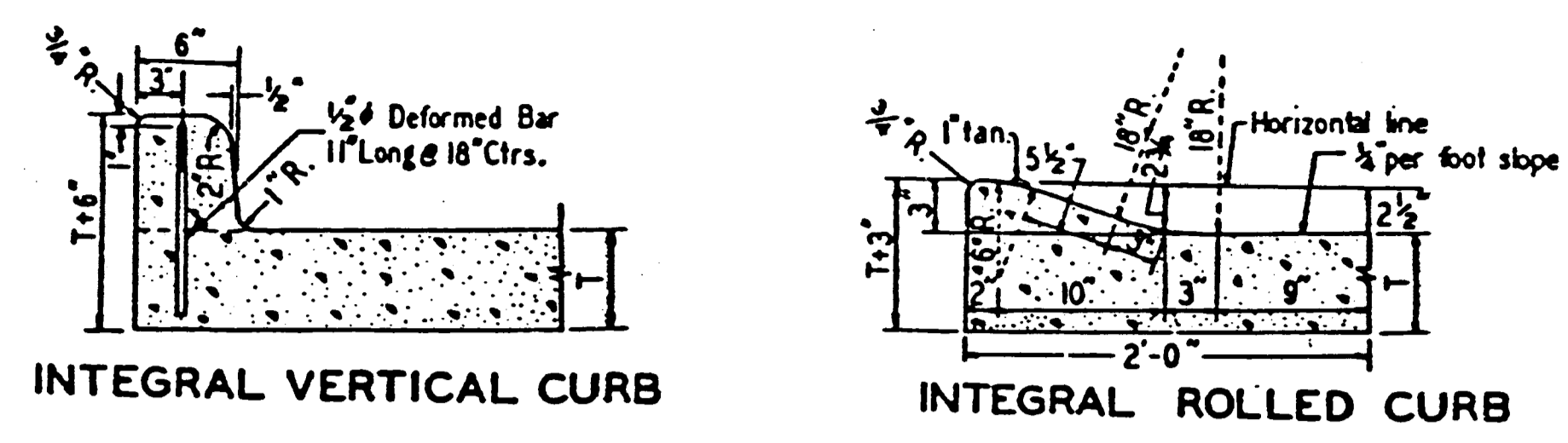
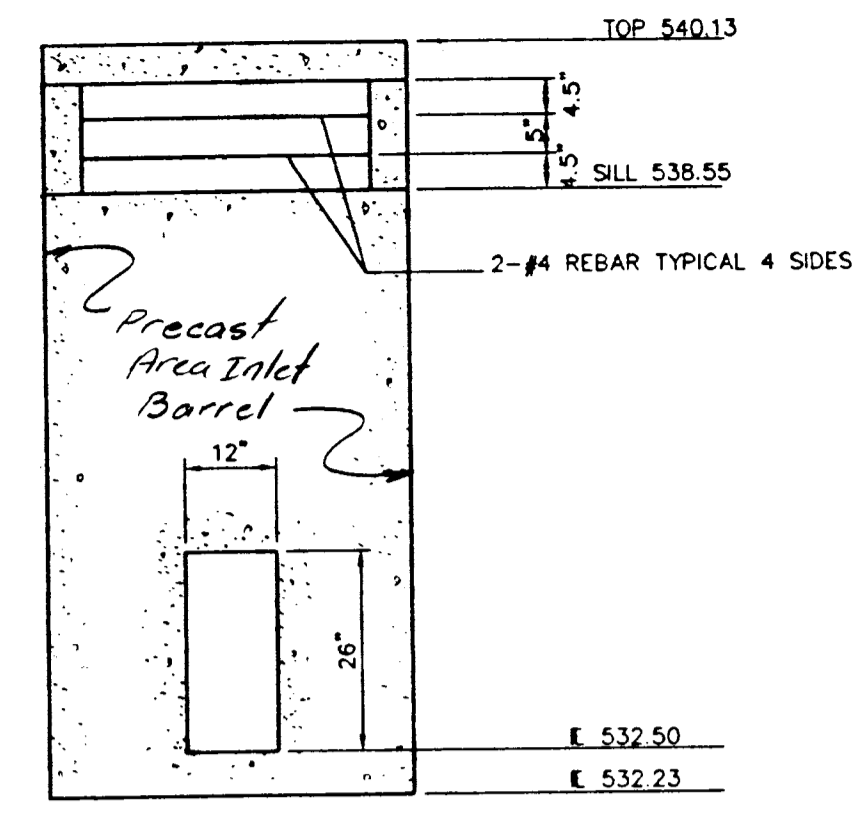
APPROVED:

TYPICAL WATER INSTALLATION DETAILS

DATE	SCALE	SHEET NO.	REVISIONS
FEB-88	AS SHOWN		



OUTFLOW STRUCTURE 222



- GENERAL NOTES:
- All catch basins shall be separate from the pavement and curb by expansion joint material extending completely through curb and slab. Manhole castings within the pavement limits shall be boxed as shown in the "Sewer Construction Details".
 - When a joint falls within 5 ft. of or contacts basin, manhole, or other structure, shorten one or more panels either side of opening to permit joint to fall on round structures and at or between corners of rectangular structures.
 - Driveway configurations are shown in the "Entrance Construction Details".
 - Construction joint and dowel bars may be omitted when curb is poured integral with pavement.
 - Minimum Thickness for Pavement is:
- | | |
|--------------------------------|----|
| CONCRETE (T) | |
| Local or Minor Streets | 6" |
| Major or Industrial Streets | 7" |
| Arterial or Industrial Streets | 8" |
- Base material under pavement will be made with 4 inches of Rolled Stone Base.
- For minor rural or urban and minor subdivision pavements (6" thick concrete), 1/2" O deformed tie bars 30" lg. @ 30" ctr. shall be used for Type B longitudinal joints.
 - Refer to Exhibit 13A for joint and bar requirements for different street classifications. Note that width and location of each poured portion of the pavement may change the type and location of joint required.
 - Transverse or longitudinal construction joints in slip formed pavement may be made with groove or tool, if such device has been approved in advance by the St. Louis County Department of Highways & Traffic.
 - The locations of the Type B and Type F longitudinal construction joints in above sections may be interchanged for the different widths of construction if approval is obtained.
 - Standard St. Charles County & City of Fallon Paving Specifications shall apply.

