

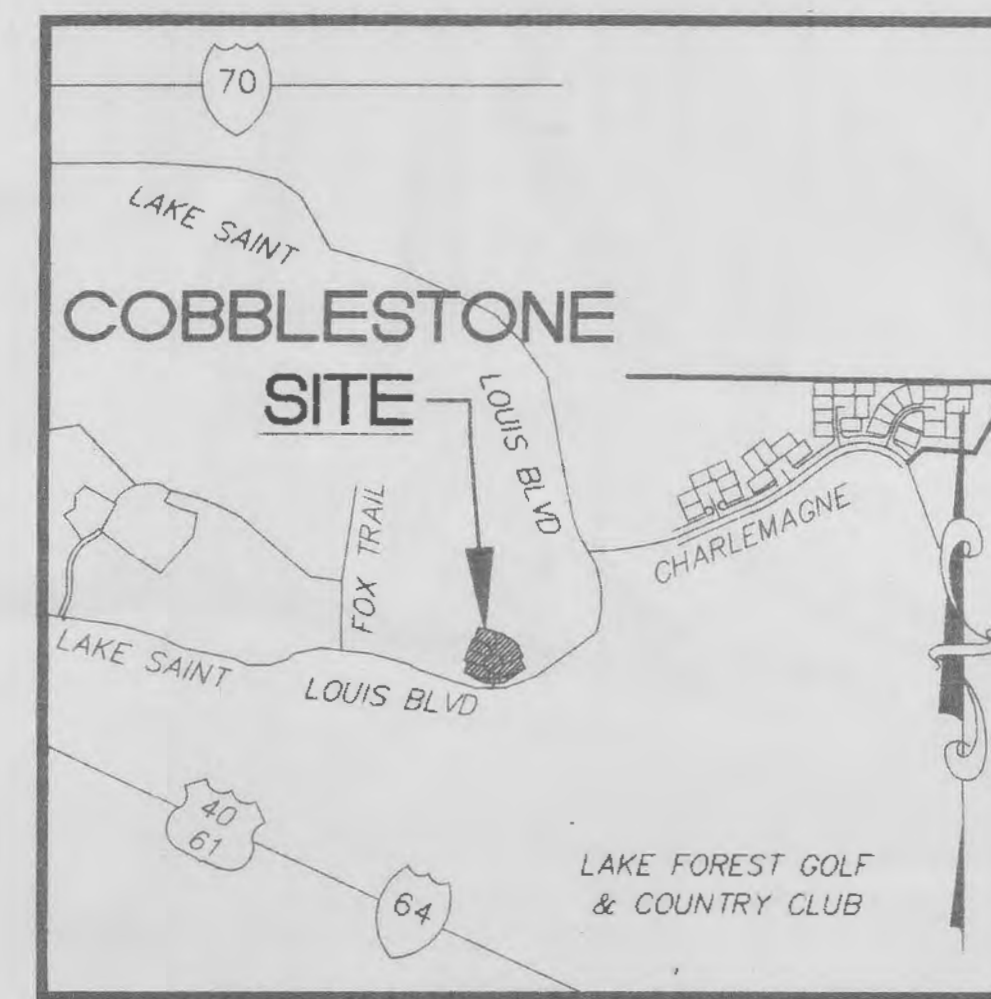
COBBLESTONE TERRACE

A TRACT OF LAND IN U.S. SURVEY 287,
TOWNSHIP 47 NORTH, RANGE 2 EAST
ST. CHARLES COUNTY, MISSOURI

IMPROVEMENT PLANS 7 LOTS

CITY OF LAKE SAINT LOUIS GENERAL NOTES

1. Gas, water and other underground utilities shall not conflict with the depth or horizontal locations of existing and proposed sanitary and storm sewers, including house laterals.
2. Underground utilities have been plotted from available information and, therefore, their locations must 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 grading or construction of improvements.
3. Polyvinyl Chloride (PVC) shall conform to the requirements of ASTM D-3034 Standard Specifications for the FSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings, SDR-35.
4. Storm sewers 18" in diameter or smaller shall be ASTM C-14.
5. Storm sewers 21" in diameter or larger shall be ASTM C-76, Class II.
6. All storm sewer pipe under pavement, regardless of size, shall be reinforced concrete pipe (ASTM C-76, Class III) unless noted otherwise in the plans.
7. Corrugated metal pipe shall conform to the standard specifications for corrugated culvert pipe M-36, A.A.S.H.T.O. See plans for gauge.
8. Topsoil shall be stored and used for the finishing of lot grading.
9. All filled places under buildings, proposed sanitary and storm sewer lines, and/or paved areas including trench backfills, and all earthen filled places within State, County, or City roads (Highways), shall be compacted to at least 90% of the maximum dry density as determined by the "Modified A.A.S.H.T.O. T-180 Compaction Test" (ASTM D-1557) unless otherwise specified by the local governing authority specifications. All tests will be verified by a soils engineer.
10. All storm and sanitary trench backfills shall be water jetted. 1" clean rock compacted in place will be under paved areas.
11. Easements shall be provided for storm sewers, sanitary sewers, and all utilities on the record plot. See record plat for location and size of easements. This does not apply to house laterals.
12. No area shall be cleared without the permission of the City Engineer and Developer.
13. All proposed grades shall be within 0.2 feet (more or less) of those shown on the grading plan.
14. No slope shall be greater than 3:1 and shall be either sodded or seeded and mulched or stabilized as determined by the City Engineer.
15. All manhole and curb inlet tops built without elevations furnished by the Engineer will be the responsibility of the sewer contractor. At the time of construction stake-out of the sewer lines, all curb and grate inlets will be face staked. If normal face stakes fall in line with sewer construction, the Engineer will set these stakes on a double offset. It shall be the responsibility of the sewer contractor to preserve all face stakes from destruction.
16. All standard street curb inlets to have front of inlet 2 feet behind curb.
17. The minimum vertical distance from the low point of the basement to the flowline of a sanitary sewer at the corresponding house connection shall not be less than the diameter of the sanitary sewer plus a vertical distance not less than two and one-half feet (2-1/2').
18. Water lines, valves, sleeves, meters and etc., shall meet all specifications and installation requirements of the local governing authority.
19. All water hydrants and valves shall be cast iron and installed in accordance with plans and details.
20. All sanitary and storm sewers shall meet all specifications and installation requirements of the local governing authority.
21. All PVC water pipe shall have a minimum pressure rating of PR-200 or SDR-21.
22. All PVC sanitary sewer pipe shall be DR-35 or equal with crushed stone bedding uniformly graded between 1" and 1/4" size. This bedding shall extend from 6" below the pipe to 12" above the top of the pipe.
23. All grading on Missouri State Highway and City of Lake Saint Louis Right-of-way shall be seeded and mulched and all disturbed right-of-way markers shall be reset at the completion of grading.
24. All streets must meet the specifications and installation requirements of the City of Lake Saint Louis.
25. All sanitary manholes top shall be set 0.2" higher than the proposed ground except in pavement areas.
26. All sanitary manholes shall have a 3/8" thick coat of coal tar pitch waterproofing.
27. All sanitary service lines shall have a 6" diameter for multi-family and a 6" diameter for single-family developments.
28. Manhole frame and cover shall be Clay and Bailey No. 2008 or Neenah R-1736 or Deeter 1315 or approved equal.
29. A drop of 0.2 feet is required through each sanitary manhole.
30. The City of Lake Saint Louis shall be notified at least 48 hours prior to construction of sanitary sewers for coordination and inspection.
31. Brick shall not be used on manholes.
32. Sewer contractor shall maintain 24" vertical separation between all storm sewers and the sewage force main. Contractor shall be responsible for verifying separation prior to storm sewer installation.
33. Waterproofing: Waterproofing will be required on the exterior of all manholes. The bitumen shall consist of two coats of asphalt, coat-for-pitch, or a coating meeting American Society for Testing and Materials (ASTM) D-41. Asphalt shall conform to the requirements of ASTM D-449. Coat-for-pitch shall conform to the requirements of ASTM D-450. Coating shall be 3/16" thick.
34. The grading and elevations shown on the grading plan are for construction purposes only. Finished grades and slopes will vary from those shown on the plans depending upon the location, size and type of house built on the lot. However, care should be taken to insure that finished grading conforms to drainage area maps.
35. All excavations, grading, or filling shall have a finished grade not to exceed a 3:1 slope (33%) - Steeper grades may be approved by the City Engineer if the excavation is through rock or the excavation or the fill is adequately protected (a designed head wall or toe wall may be required). Retaining walls that exceed a height of four (4) feet shall require the construction of safety guards as identified in the appropriate section(s) of the adopted BOCA Codes, and must be approved by the City Building Department. Permanent safety guards will be constructed in accordance with the appropriate section(s) of the adopted BOCA Codes.
36. Sediment and erosion control plans for sites shall provide for sediment or debris basins, silt traps or filters, staked straw bales or other approved measures to remove sediment from run-off waters. The design to be approved by the City Engineer. Temporary siltation control measures (structures) shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site. (Refer to Appendix A.)
37. Where natural vegetation is removed during grading, vegetation shall be re-established in such a density as to prevent erosion. Permanent type grasses shall be established within 30 days or less or during the next seeding period after grading has been completed. (Refer to Appendix A.)
38. When grading operations are completed or suspended for more than 30 days permanent grass must be established at sufficient density to provide erosion control on the site. Between permanent grass seeding periods, temporary cover shall be provided according to the City Engineer's recommendation. (Refer to Appendix A.) All finished grades (areas not to be disturbed by future improvement) in excess of 20% slopes (5:1) shall be mulched and tacked at the rate of 100 pounds per 1,000 square feet when seeded.
39. Provisions shall be made to accommodate the increased runoff caused by changed soil and surface conditions during and after grading. unvegetated open channels shall be designed so that gradients result in velocities of 2 fps (feet per second) or less. Open channels with velocities more than 2 fps and less than 5 fps shall be established in permanent vegetation by use of commercial erosion control blankets or lined with rock riprap or concrete or other suitable materials as approved by the City Engineer. Detention basins, diversions, or other appropriate structures shall be constructed to prevent velocities above 5 fps. (Refer to Appendices B, C, D, E, and F.)
40. The adjoining ground to development sites (lots) shall be provided with protection from accelerated and increased surface water, silt from erosion, and any other consequences of erosion. Run-off water from developed areas (parking lots, paved sites and buildings) above the area to be developed shall be directed to diversions, detention basins, concrete gutters and/or underground outlet systems. Sufficiently anchored straw bales may be temporarily substituted with the approval of the City Engineer. (Refer to Appendices B, C, D, E and F.)
41. Front and side yards shall be sodded. Rear yards shall be seeded or sodded. Cash escrows can be established during winter months to allow occupancies during unfavorable ground conditions.
42. All erosion control devices shall be constructed and in place prior to grading. A staging area shall be provided next to the grading area. This area will be used for storage and project staging. The staging shall have all erosion control devices in place prior to construction.
43. All erosion control must be installed as shown on Sediment / Erosion Control Detail sheet.
44. Site is served by or located in the following:
A) Water - St. Charles County Water District No. 2
B) Sanitary Sewers - St. Charles County Water District No. 2
C) Gas - St. Charles Gas Company
D) Telephone - Verizon
E) Fire - Lake St. Louis Fire Protection District
F) Electric - Cuivre River Electric
G) School - Wentzville R-4 School District
H) Cable TV - AT&T



LOCATION MAP
NTS

BENCH MARK: U.S.G.S. DATUM

ELEVATION = 508.91
CHISELED CROSS (+) ON NORTHWEST WINGWALL ON
U.S. HIGHWAY 40-61 BRIDGE WESTBOUND LANES
OVER PERUQUE CREEK AT SOUTH END OF LAKE
SAINT LOUIS.

DRAWING INDEX

Sheet	Description
1	COVER SHEET
2	SITE PLAN
3	PROFILES AND DETAILS
4	EROSION CONTROL DETAILS
5-10	CONSTRUCTION DETAILS

LEGEND

—●— Sanitary Sewer (Proposed)	⊗ Sanitary Structure	R.C.P. Reinforced Concrete Pipe
—○— Sanitary Sewer (Existing)	⊗ Storm Structure	C.M.P. Corrugated Metal Pipe
—■— Storm Sewer (Proposed)	⊕ Test Hole	C.I.P. Cast Iron Pipe
—□— Storm Sewer (Existing)	⊖ Power Pole	P.V.C. Polyvinyl Chloride
—○— Water Line & Size	⊖ Light Standard	V.C.P. Vitrified Clay Pipe
—EX W— Existing water line	⊗ Double Water Meter Setting	
⊕ Tee & Valve	⊗ Single Water Meter Setting	C.O. Clean Out
⊕ Hydrant	C.I. Curb Inlet	V.T. Vent Trap
⊕ Cap	S.C.I. Skewed Curb Inlet	T.B.R. To Be Removed
18 Lot or Building Number	D.C.I. Double Curb Inlet	T.B.R.&R. To Be Removed & Relocated
—x— Existing Fence Line	G.I. Grate Inlet	T.B.P. To Be Protected
⊕ Existing Tree Line	A.I. Area Inlet	T.B.A. To Be Abandoned
⊕ Street Sign	D.A.I. Double Area Inlet	B.C. Base Of Curb
⊕ Existing Contour	C.C. Concrete Collar	T.C. Top Of Curb
⊕ Proposed Contour	F.E. Flared End Section	T.W. Top Of Wall
⊕ Grouted Rip-Rap	E.P. End Pipe	B.W. Base Of Wall
⊕ End of Lateral	E.D. Energy Dissipator	(TYP) Typical
⊕ Asphalt Pavement	M.H. Manhole	U.N.O. Unless Noted Otherwise
⊕ Concrete Pavement	C.P. Concrete Pipe	U.I.P. Use in Place

REVISIONS

PICKETT RAY & SILVER INC.

Civil Engineers
Planners
Land Surveyors

333 Mid Rivers Mall Dr.
St. Peters, MO 63376
PHONE (636) 397-1211
FAX (636) 397-1104
EMAIL pickett3@prs3.com

ENGINEERS AUTHENTICATION
The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in the project and specifically includes revisions after this date unless reauthenticated.
PICKETT, RAY & SILVER, INC.



DEVELOPER

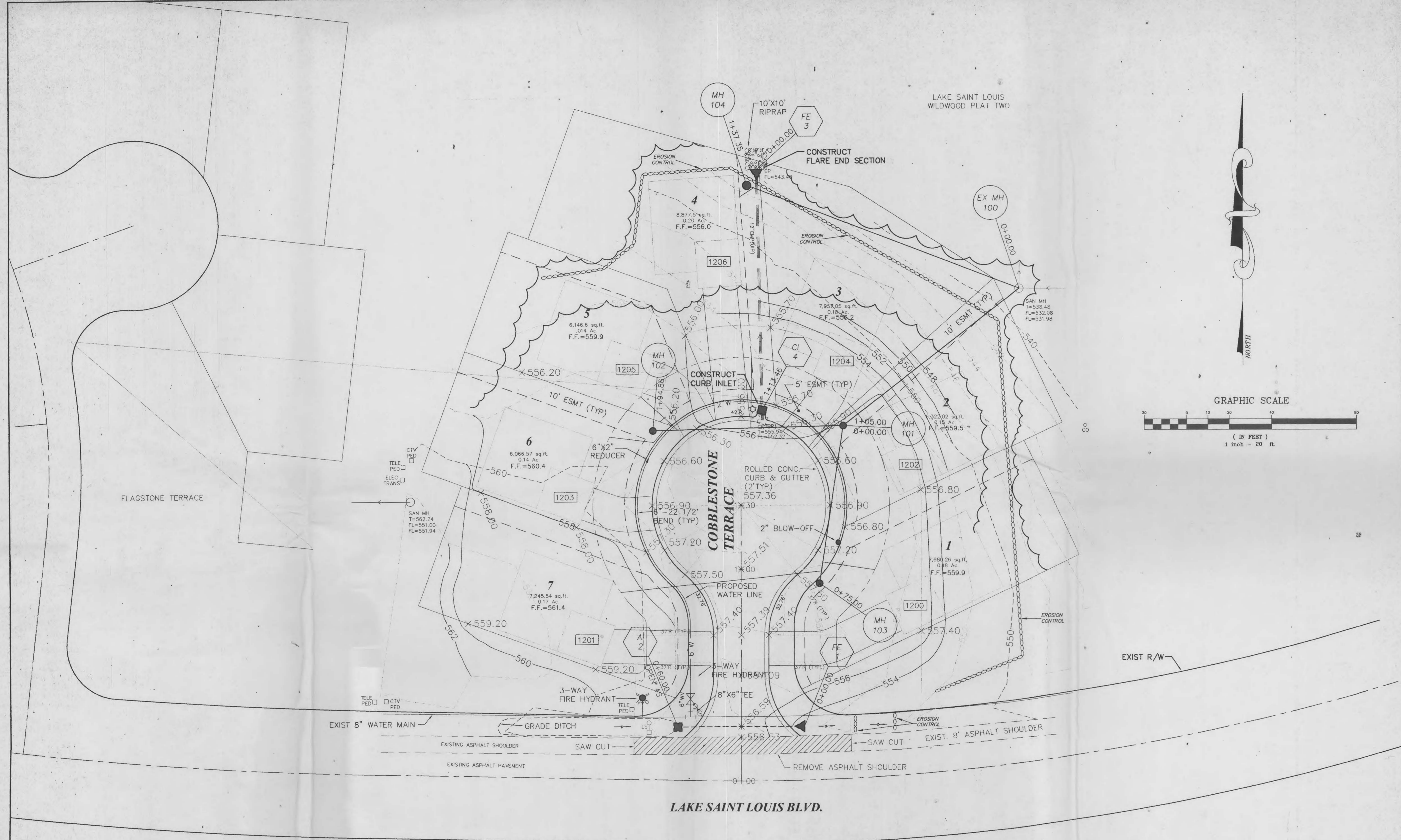
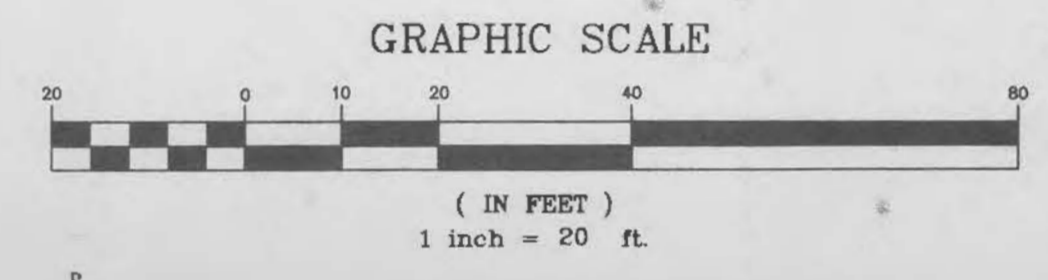
GREATER MISSOURI BUILDERS INC.

1550 WALL STREET
SUITE 31
ST. CHARLES, MO. 63303

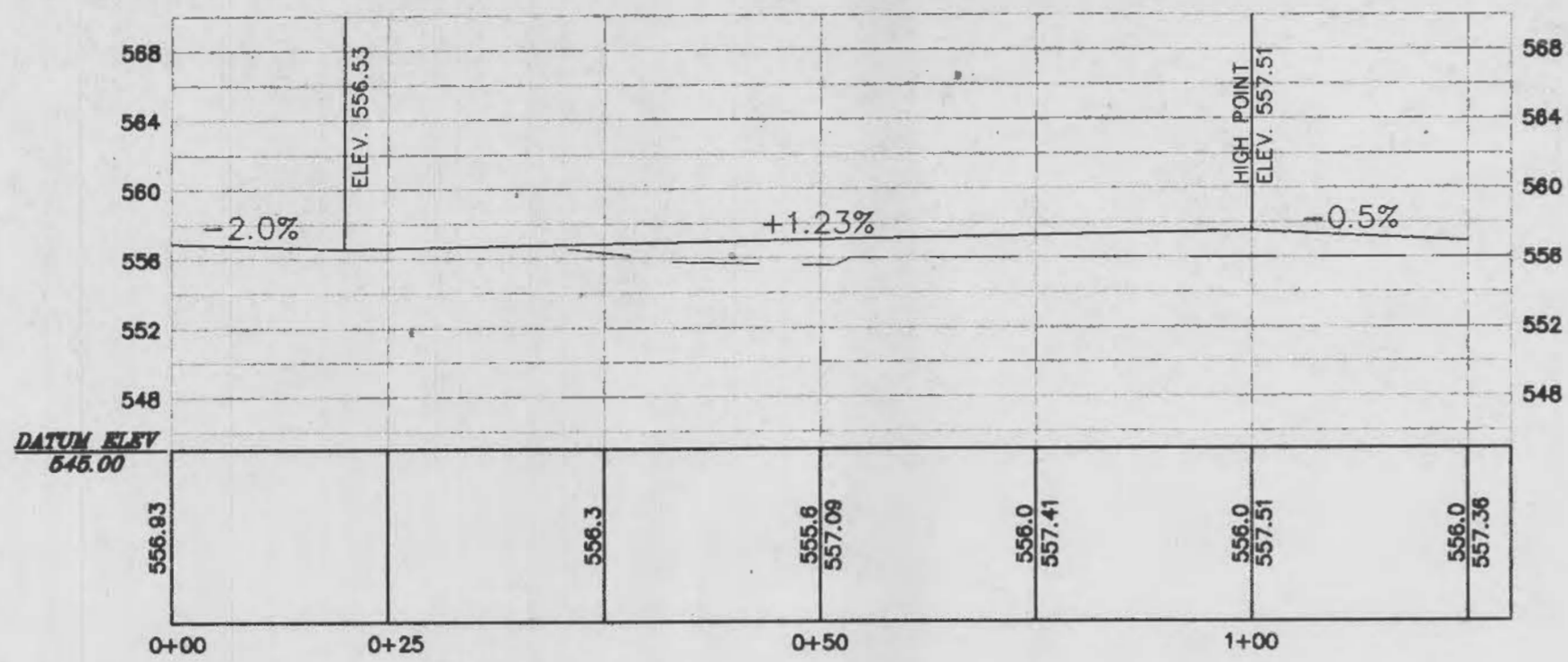
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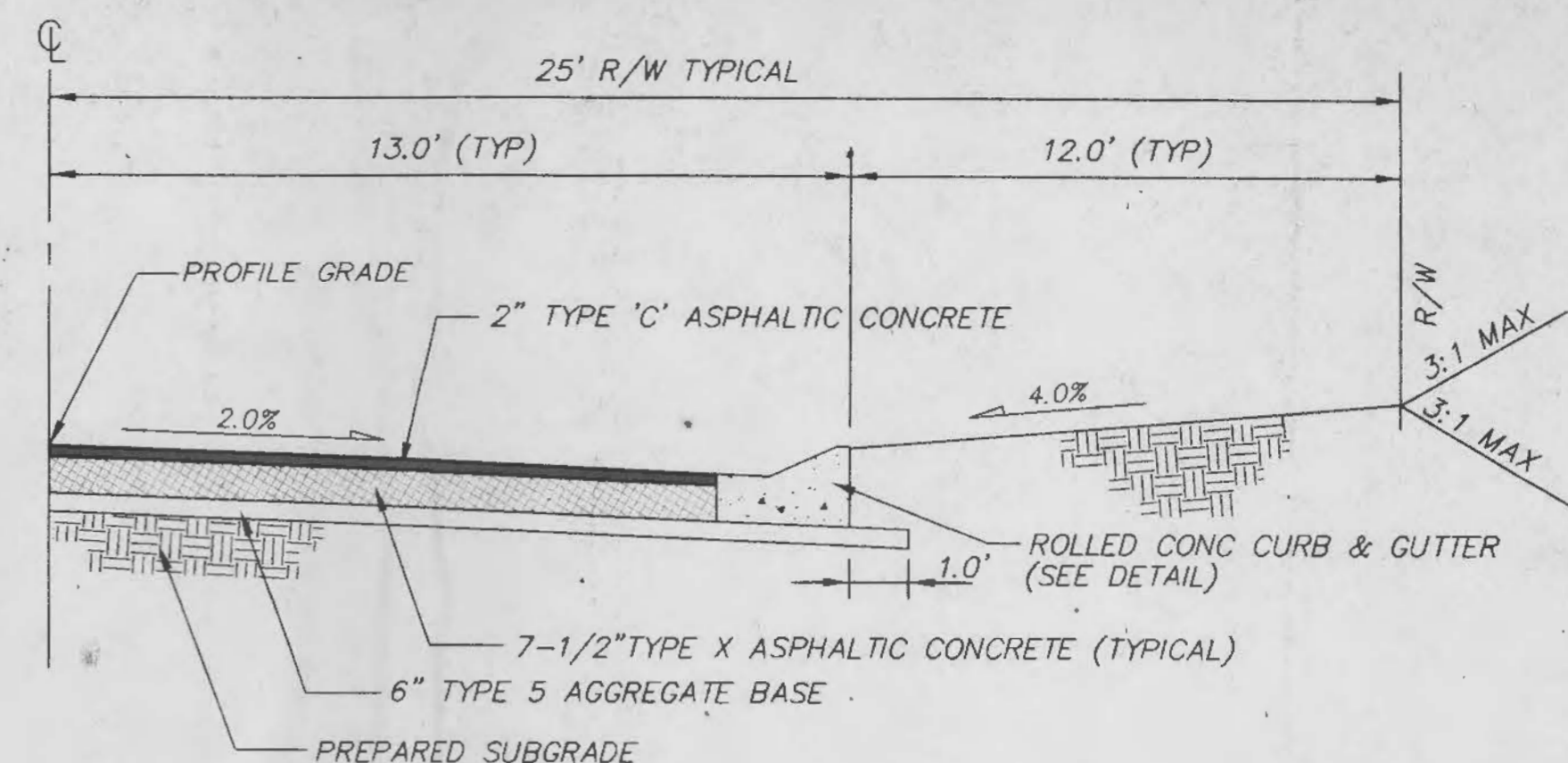
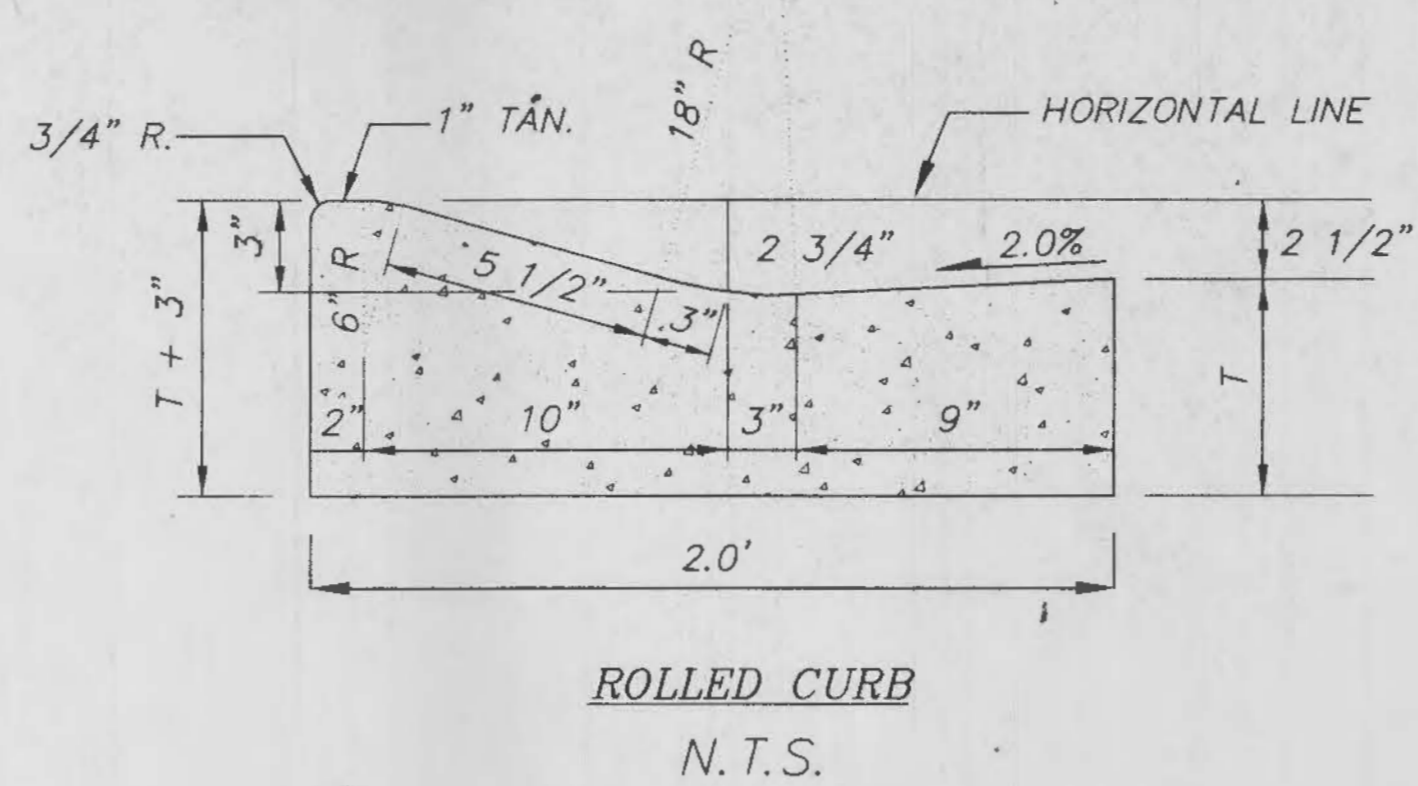
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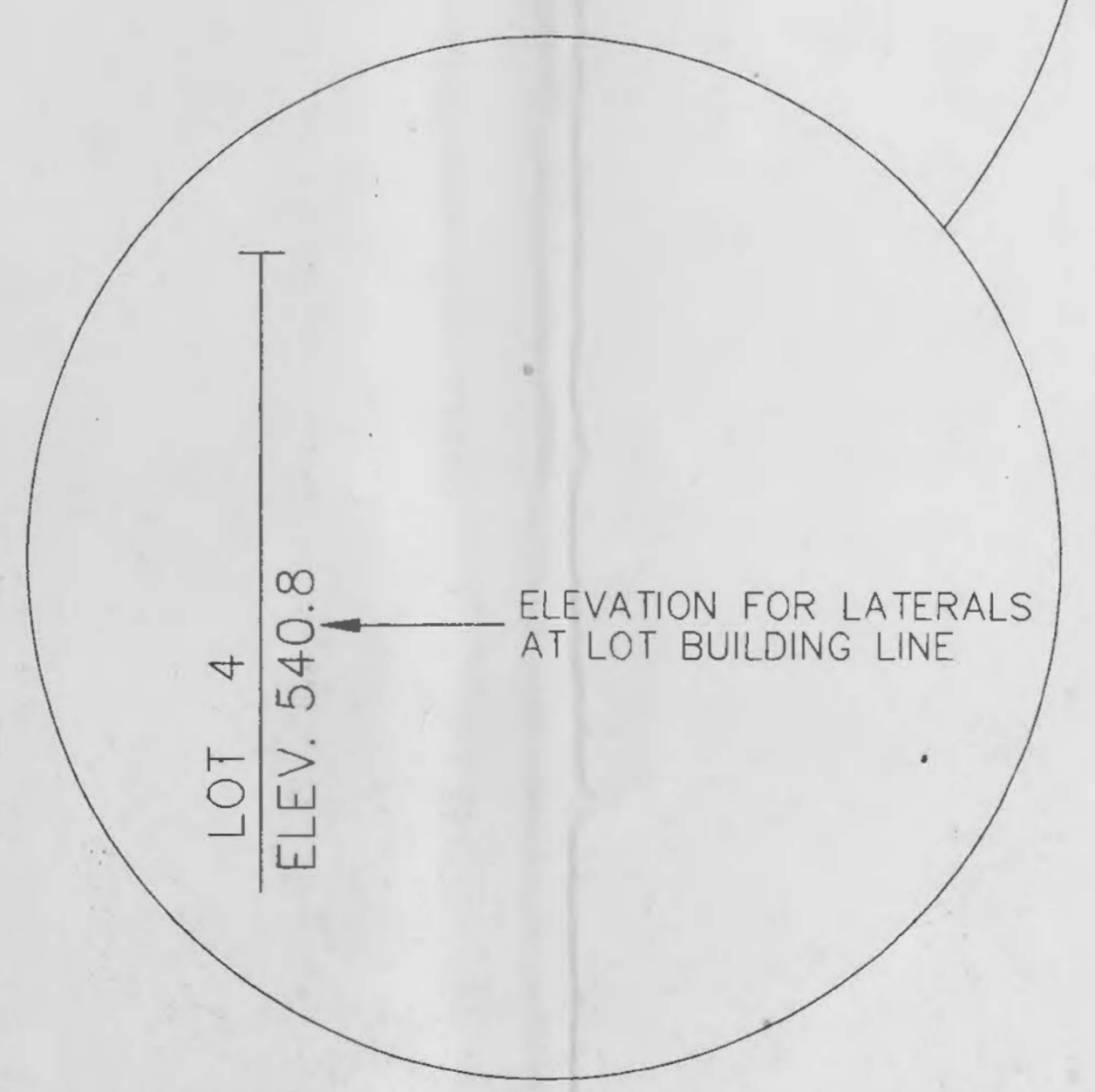
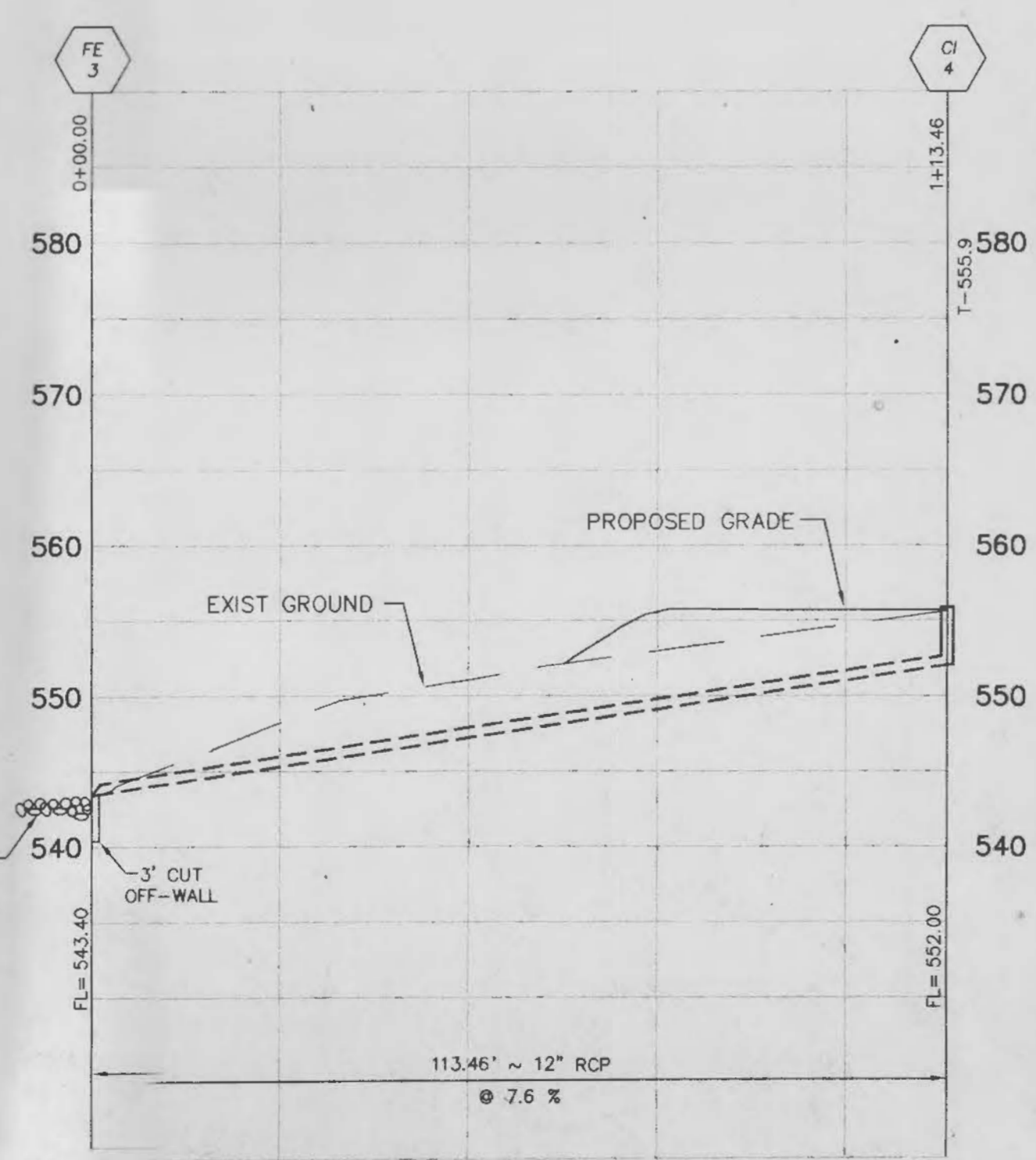
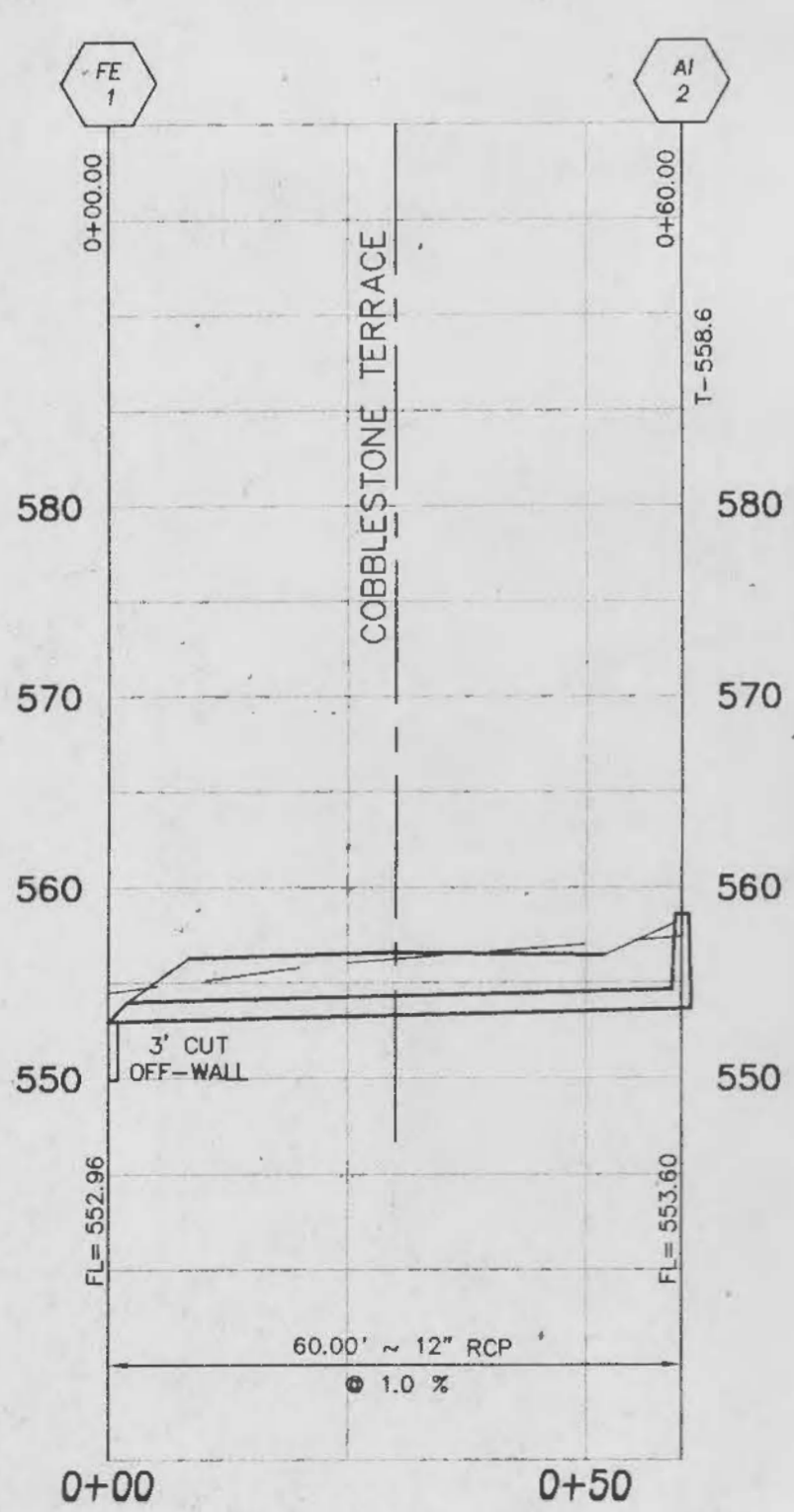
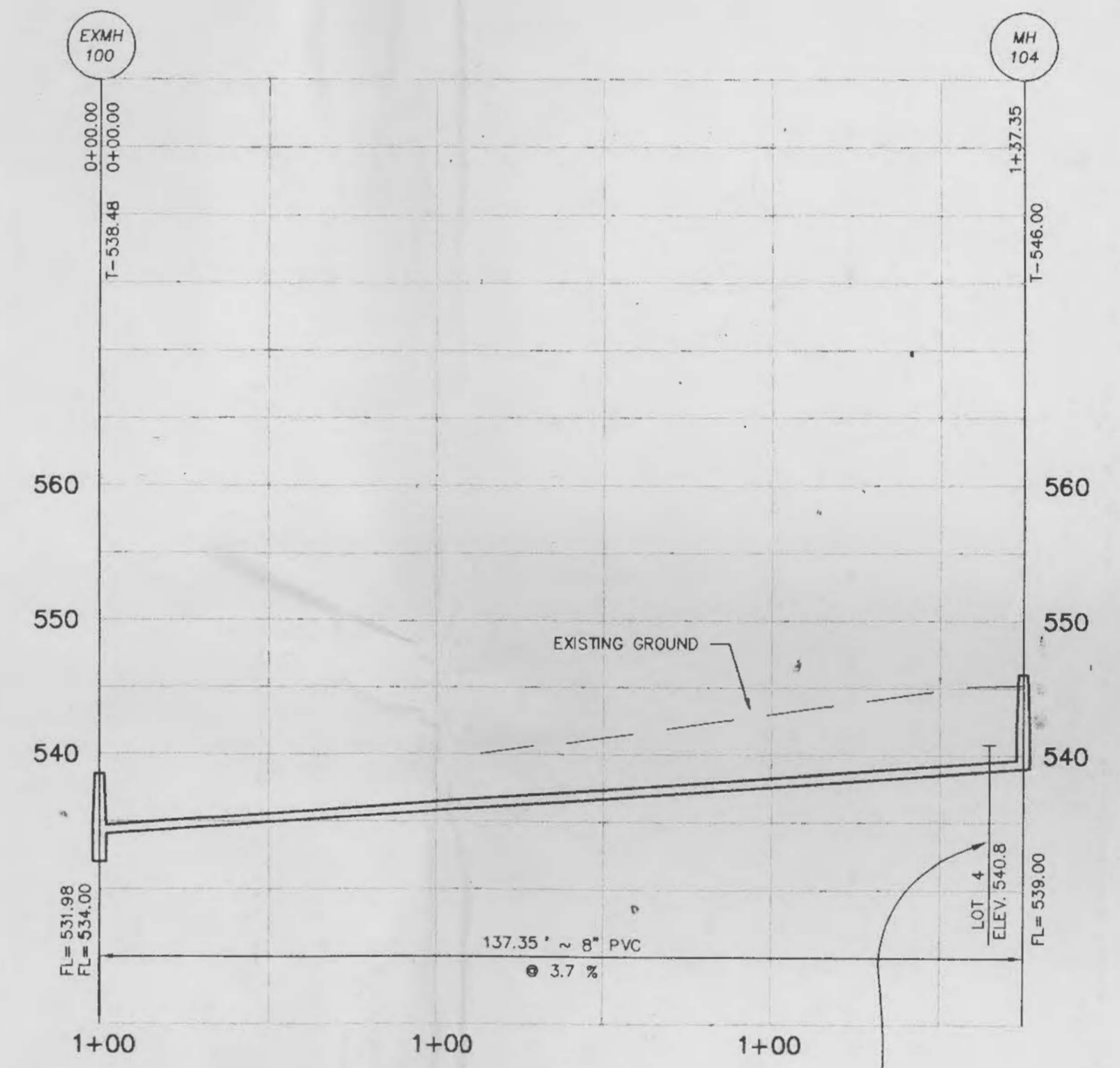
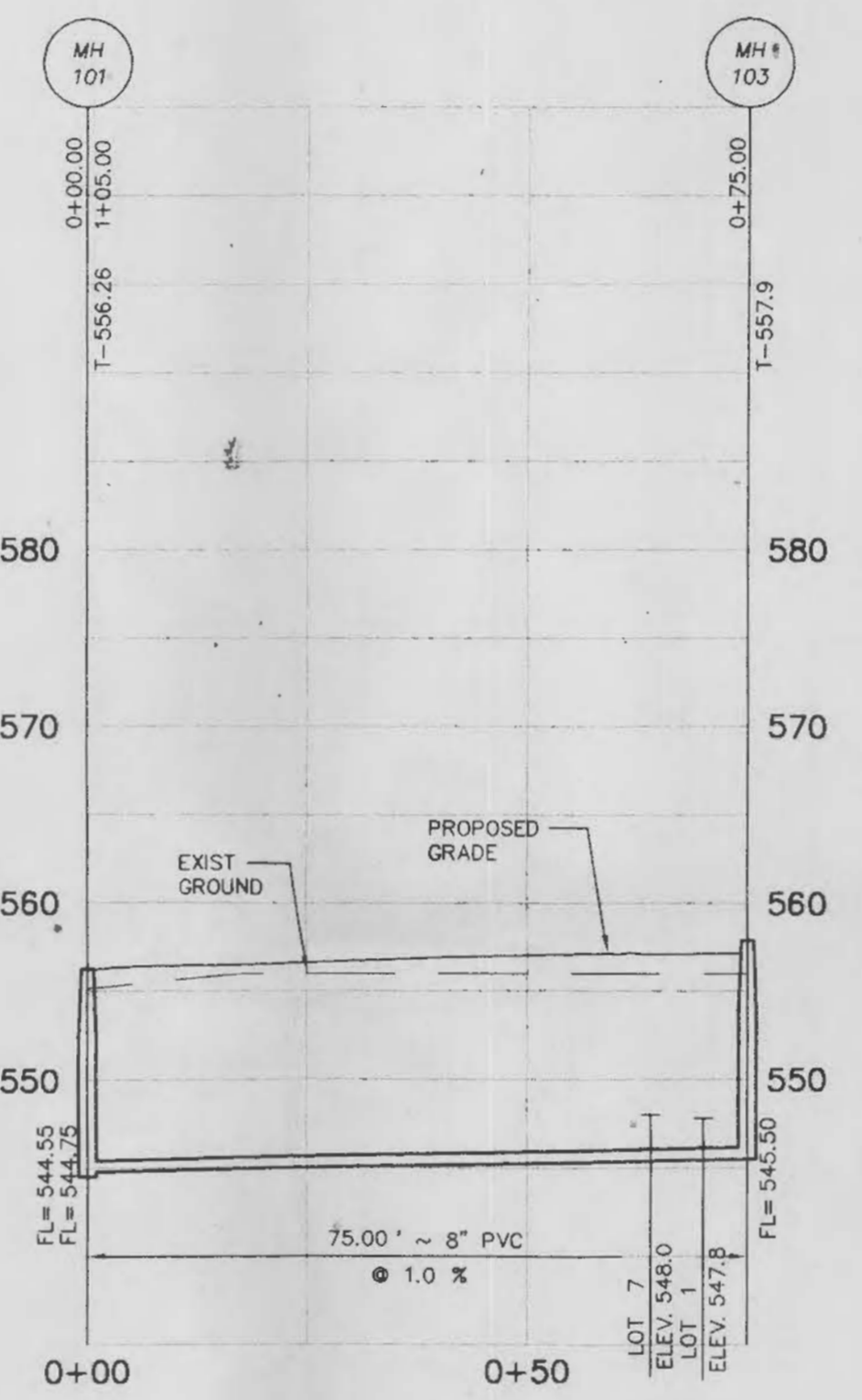
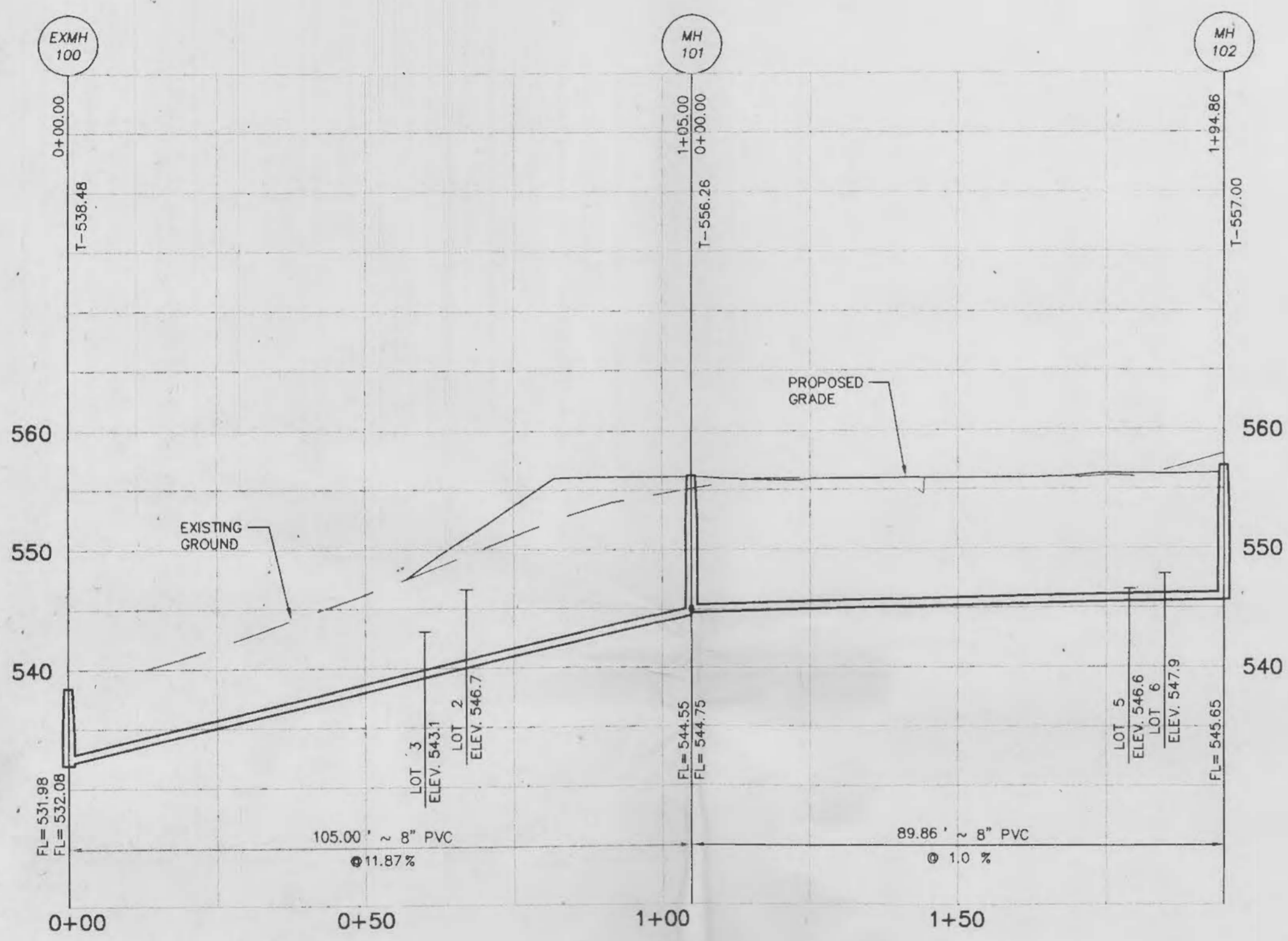
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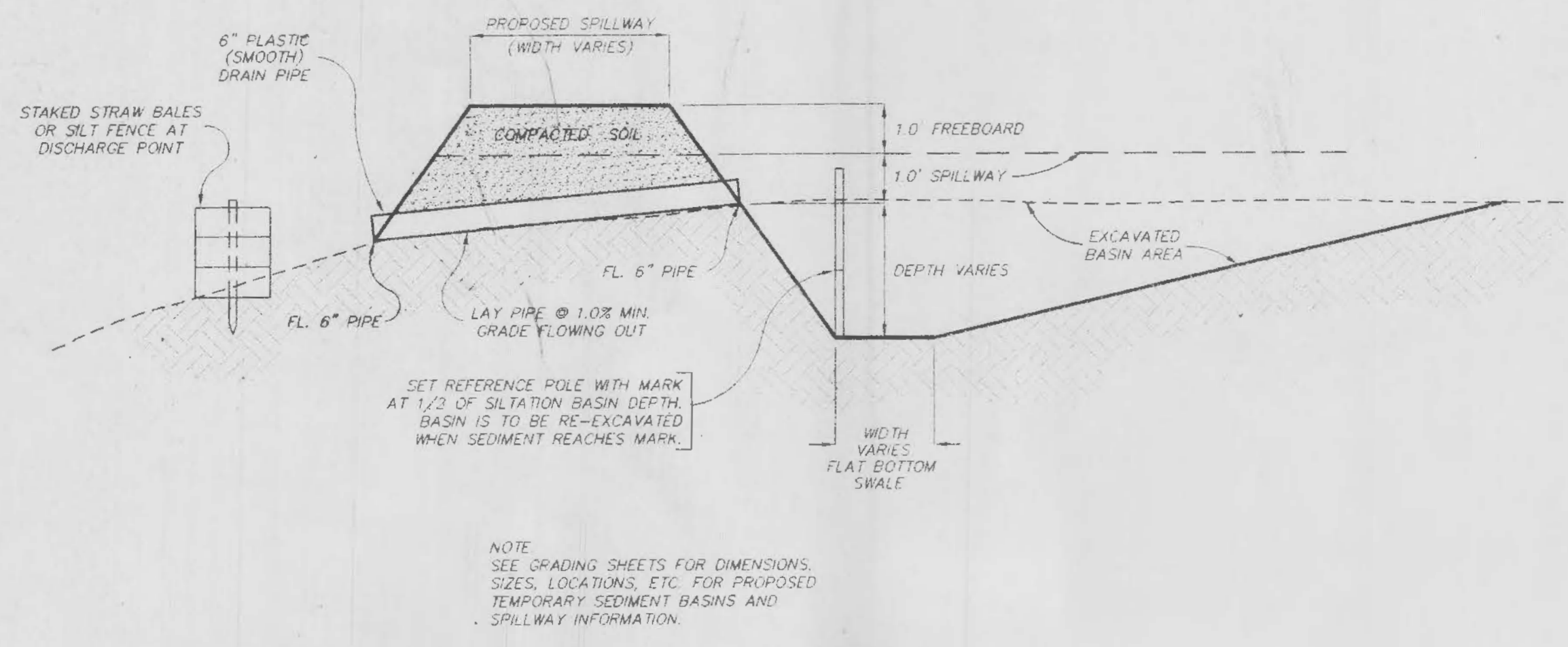
STREET PROFILE
COBBLESTONE TERRACE
 SCALE: 1"=20' HORIZONTAL
 1"=10' VERTICAL



ASPHALTIC CONCRETE
TYPICAL PAVEMENT 1/2 SECTION
 N.T.S.



SCALE: HORIZONTAL 1"=20'
 VERTICAL 1"=10'

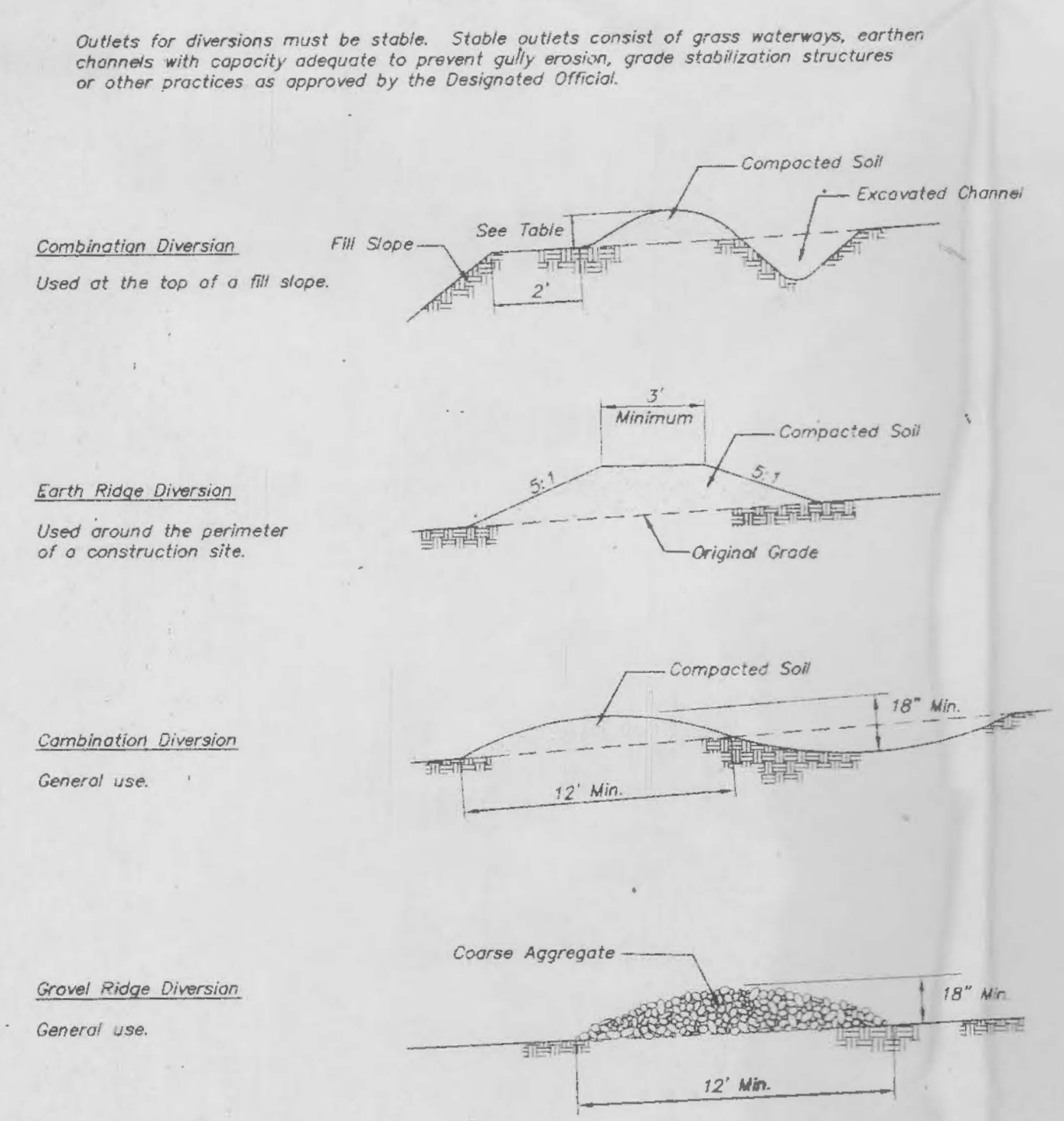


TEMPORARY SEDIMENT BASIN & SPILLWAY DETAIL
N.T.S.

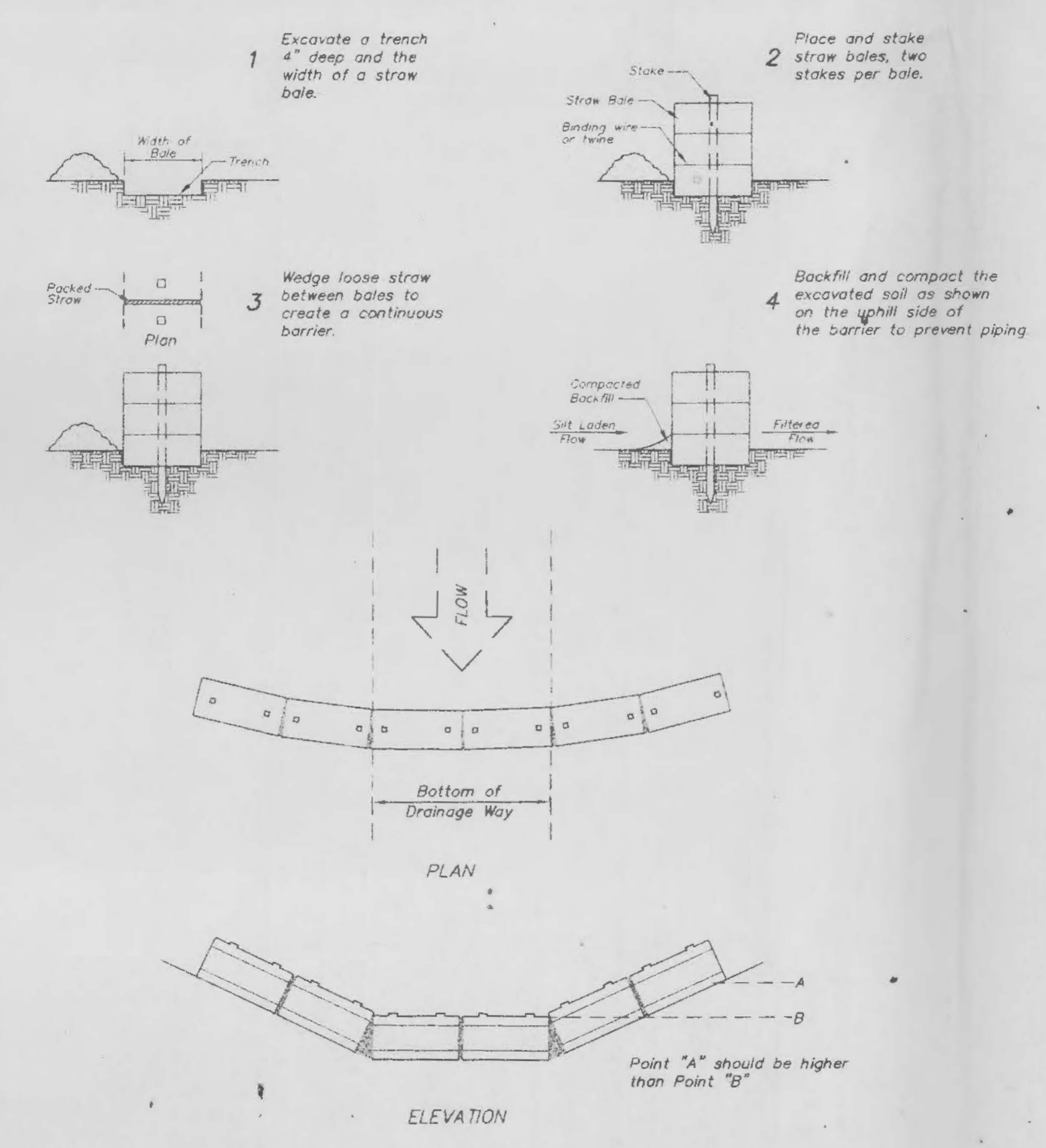
APPENDIX A

- Seeding Rates:**
- Permanent:**
Tall Fescue - 30 lbs./ac.
Smooth Brome - 20 lbs./ac.
Combined: Fescue @ 15 lbs./ac. and Brome @ 10 lbs./ac.
- Temporary:**
Wheat or Rye - 150 lbs./ac. (3.5 lbs. per square foot)
Oats - 120 lbs./ac. (2.75 lbs. per square foot)
- Seeding Periods:**
Fescue or Brome - March 1 to June 1
August 1 to October 1
Wheat or Rye - March 15 to November 1
Oats - March 15 to September 15
- Mulch rates:** 100 lbs. per 1,000 sq. ft. (4,356 lbs. per acre)
- Fertilizer rates:** Nitrogen 30 lbs./ac.
Phosphate 30 lbs./ac.
Potassium 30 lbs./ac.
Lime 800 lbs./ac. ENM*
- *ENM = effective neutralizing material as per State evaluation of quarried rock.

APPENDIX B
DIVERSIONS
For Urban Development Sites



APPENDIX C
STRAW BALE BARRIERS
For Urban Development Sites

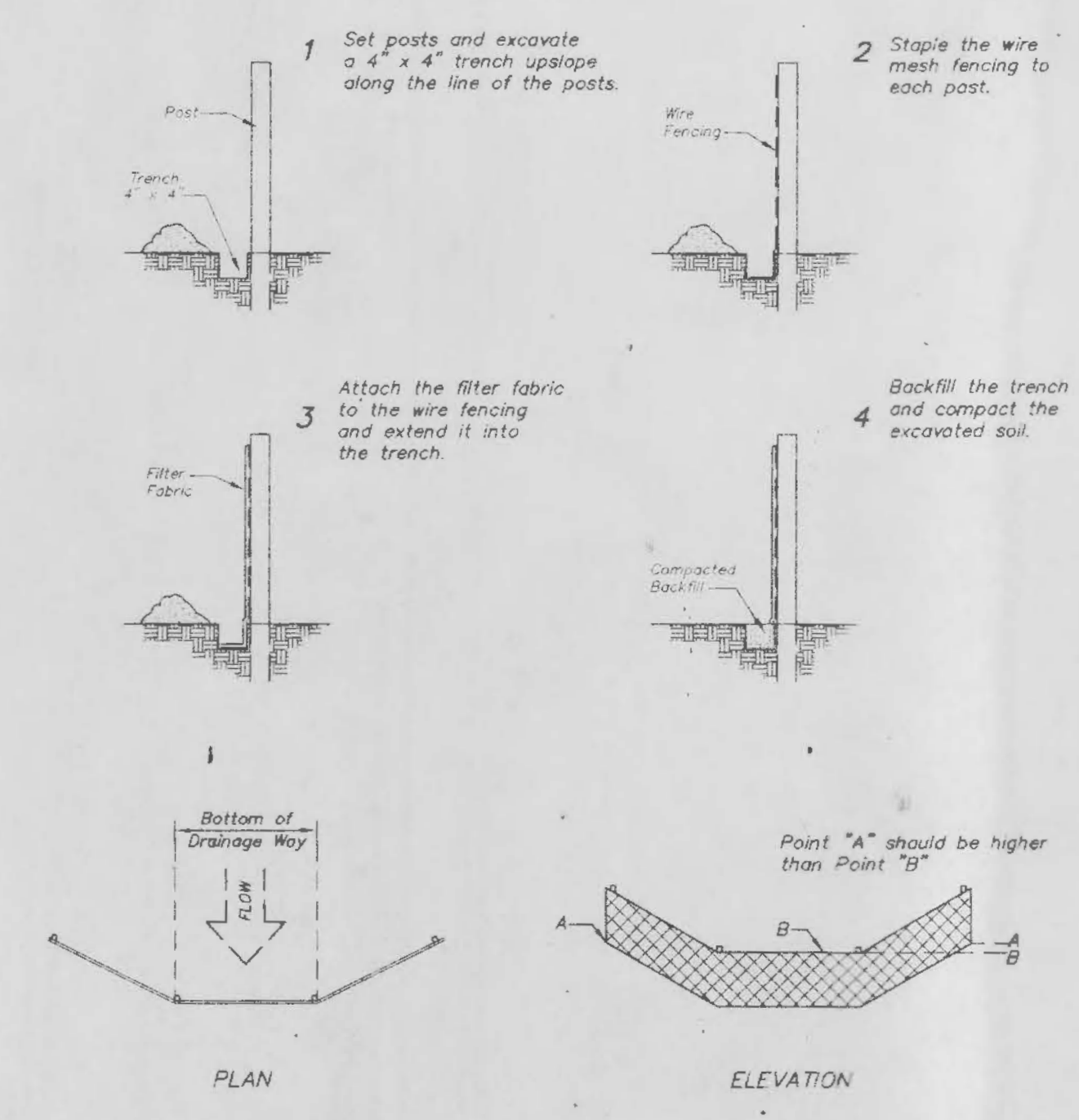


Placement and Construction of a Straw Bale Barrier

APPENDIX D
SYNTHETIC FILTER BARRIERS
For Urban Development Sites

MAINTENANCE

- Filter barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.
- Should the fabric decompose or become ineffective prior to the end of the expected usable life and the barrier still be necessary, the fabric shall be replaced promptly.
- Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately half the height of the barrier.
- Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared and seeded.

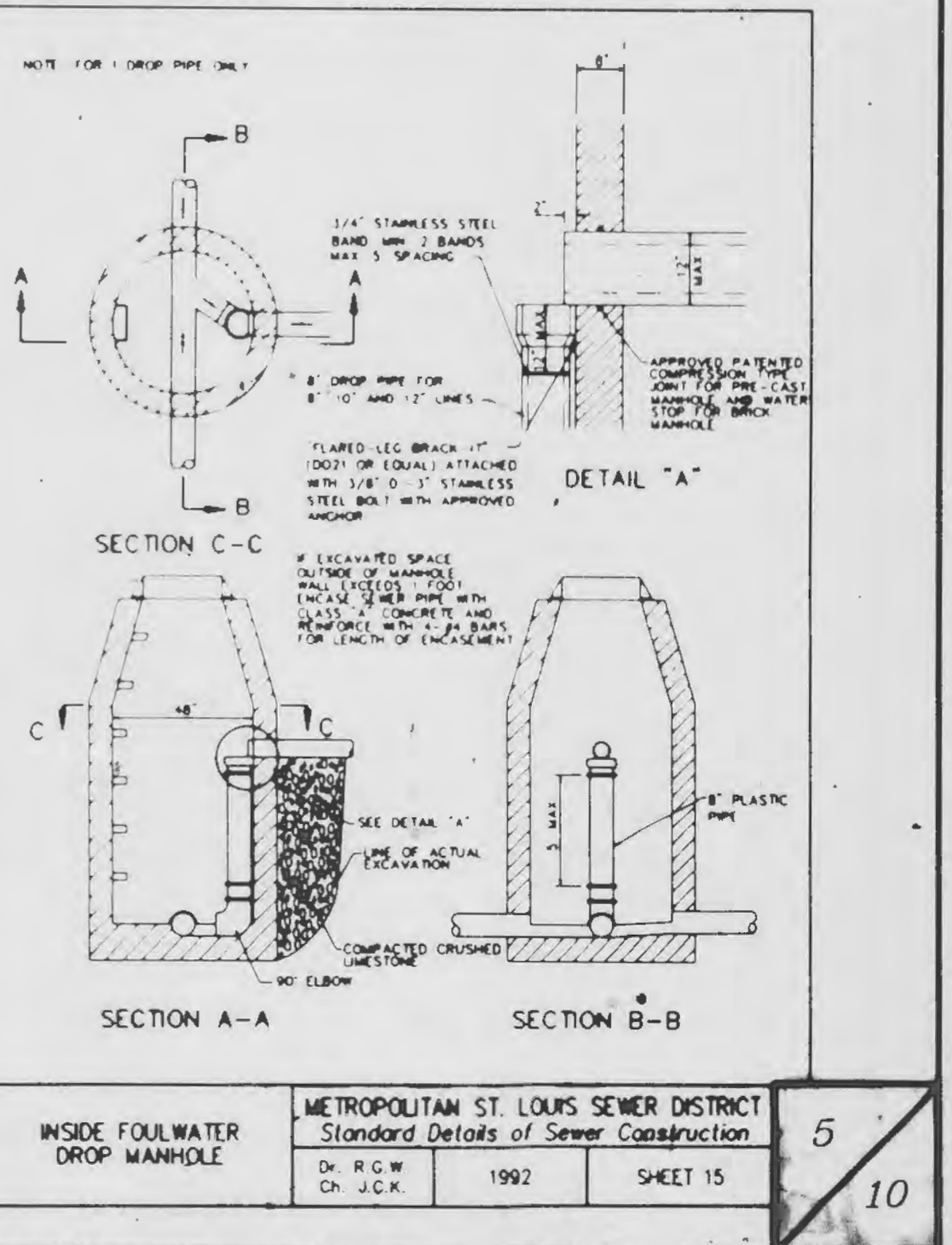
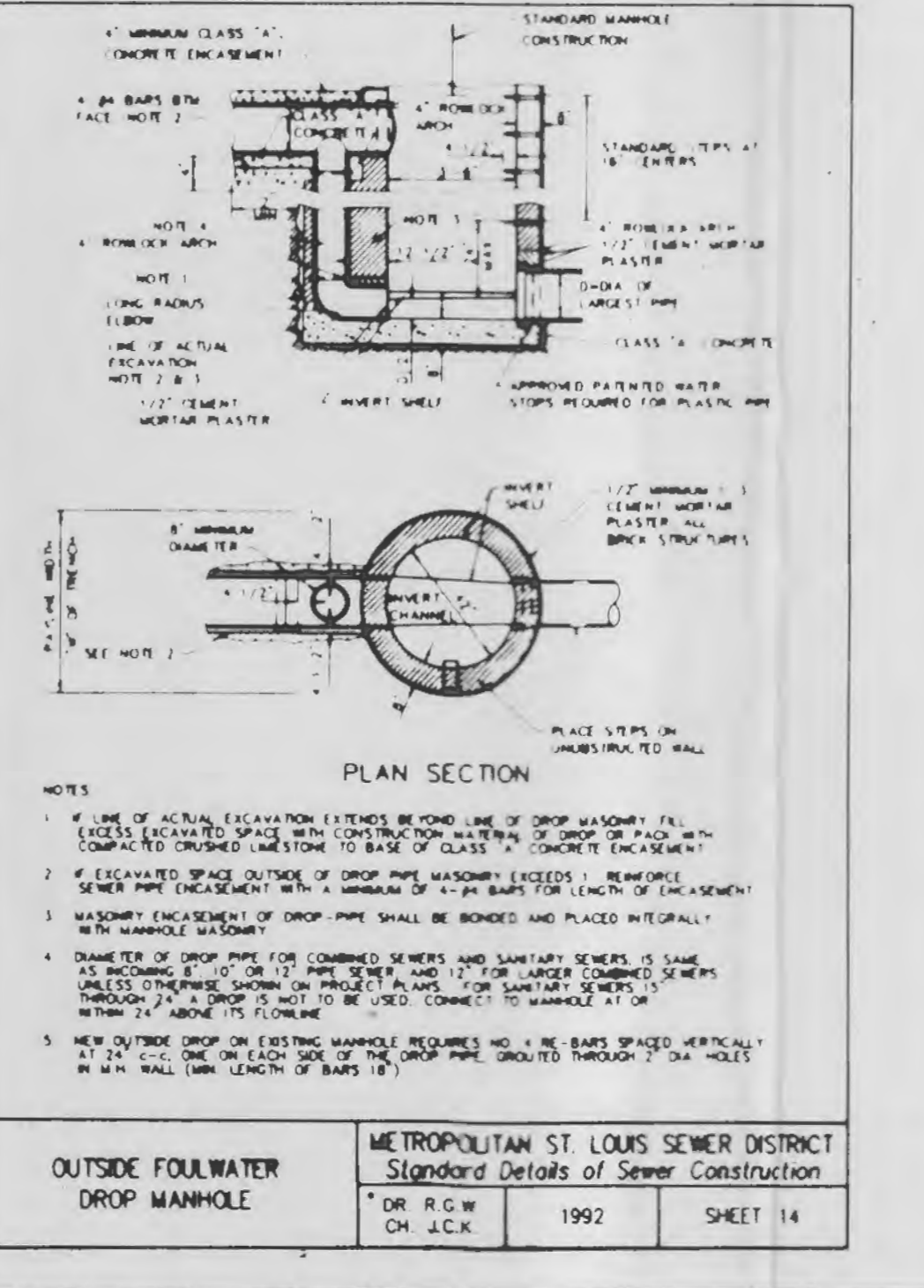
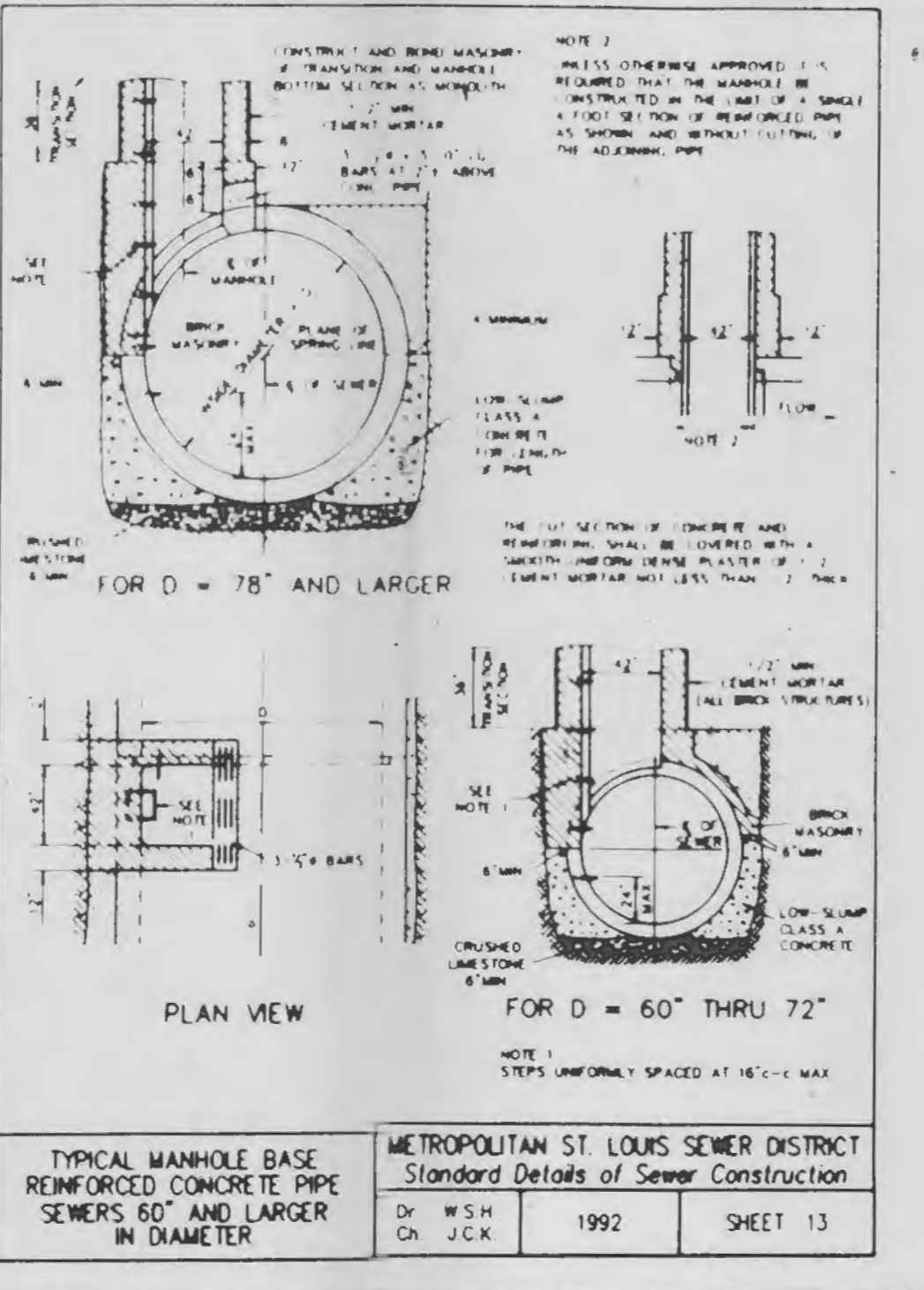
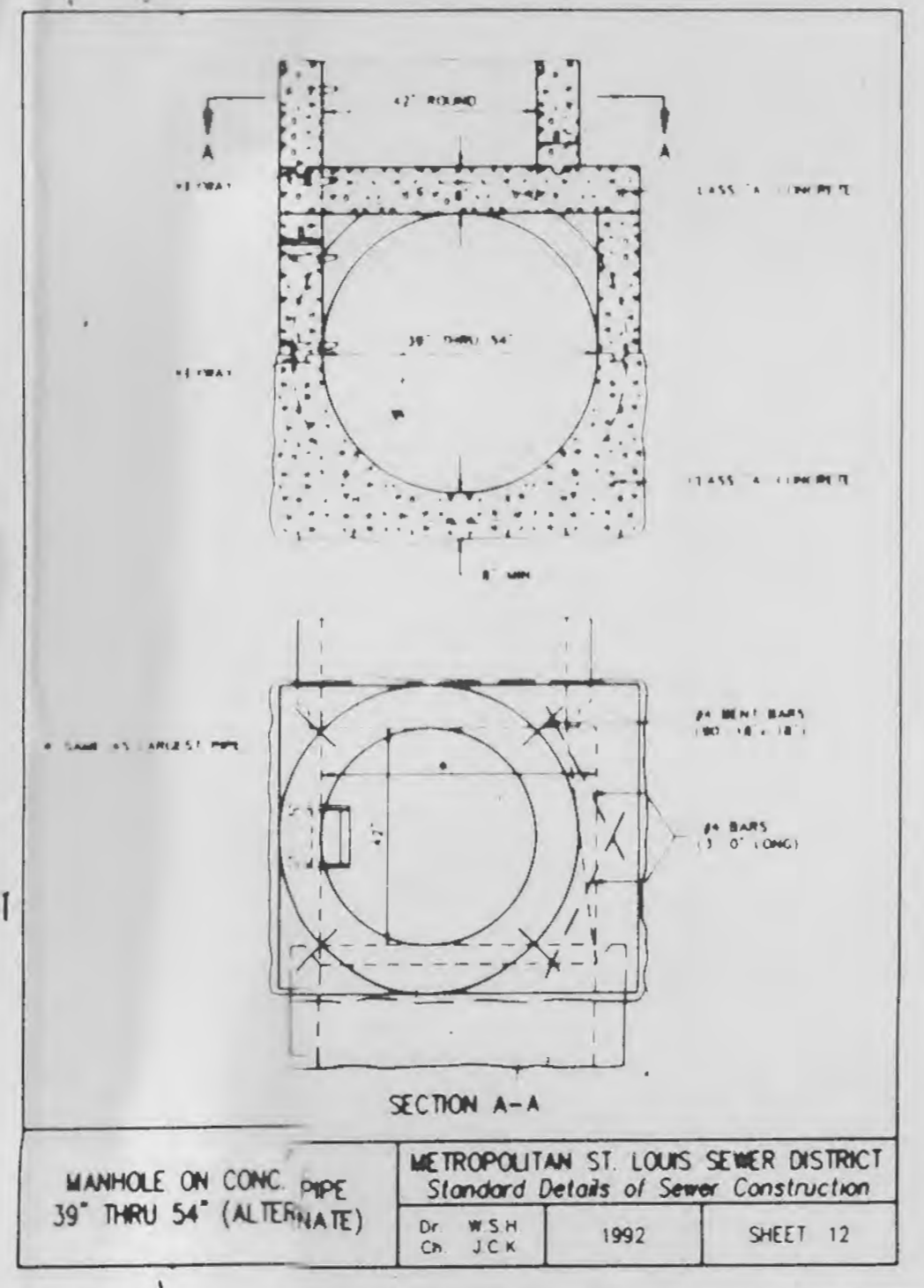
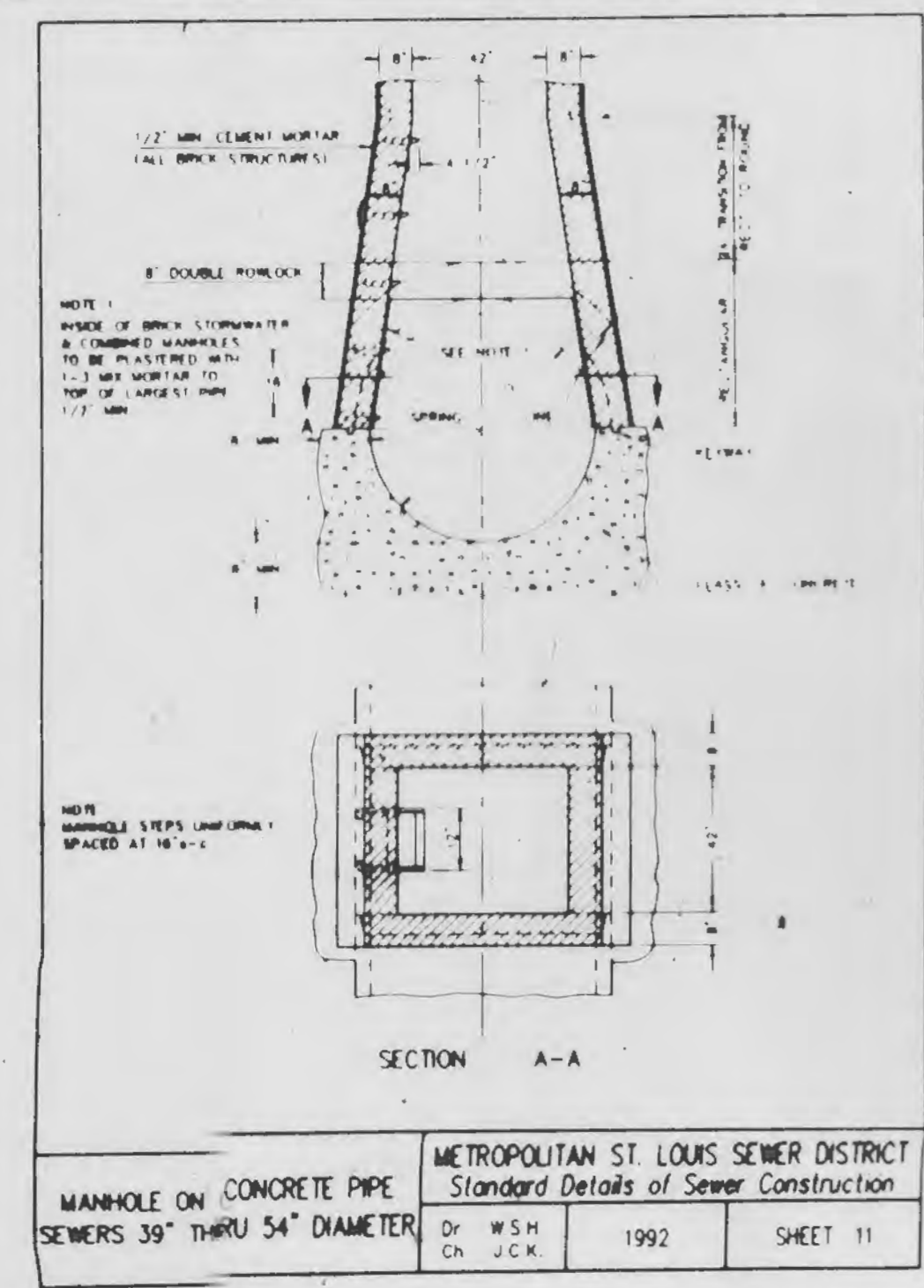
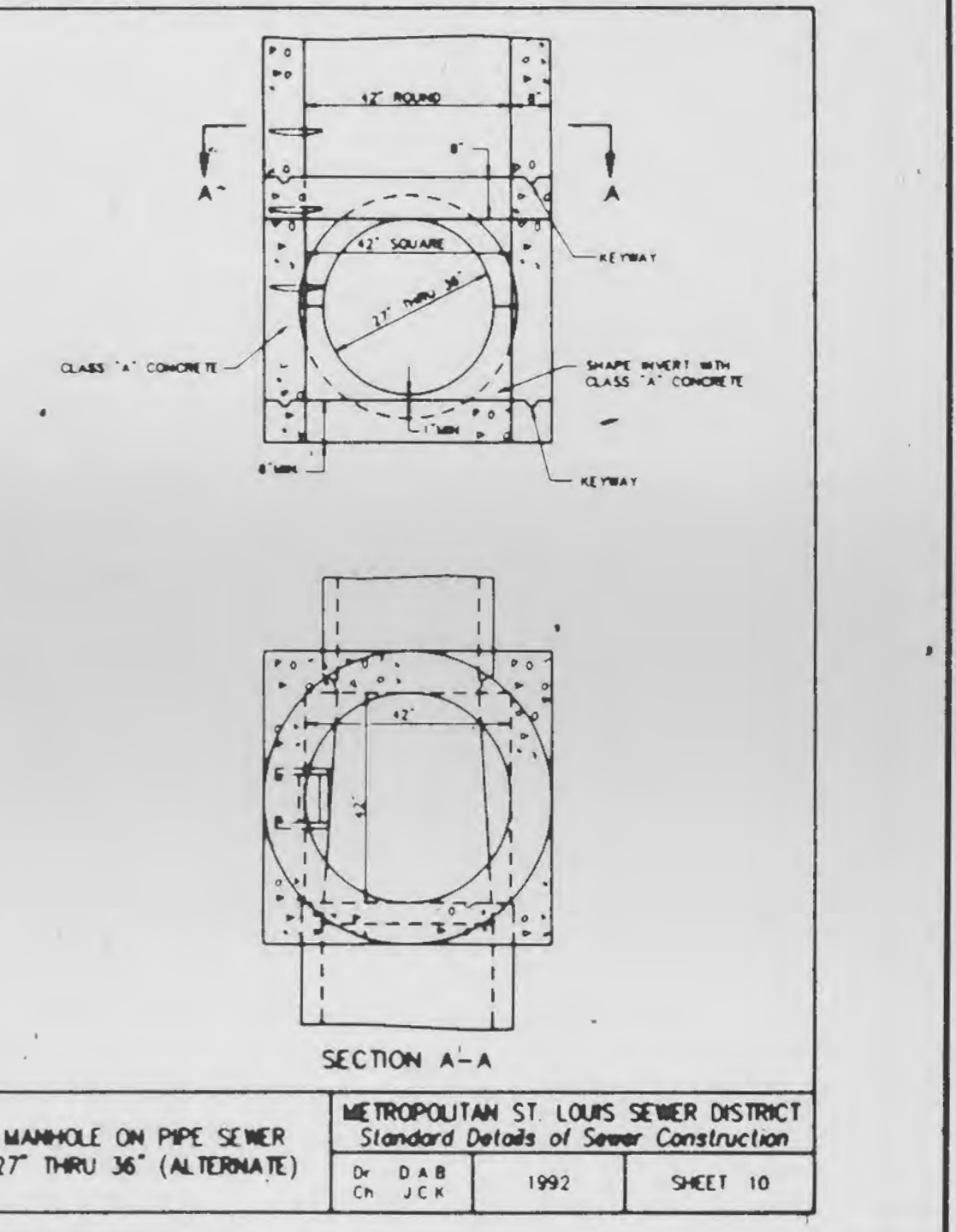
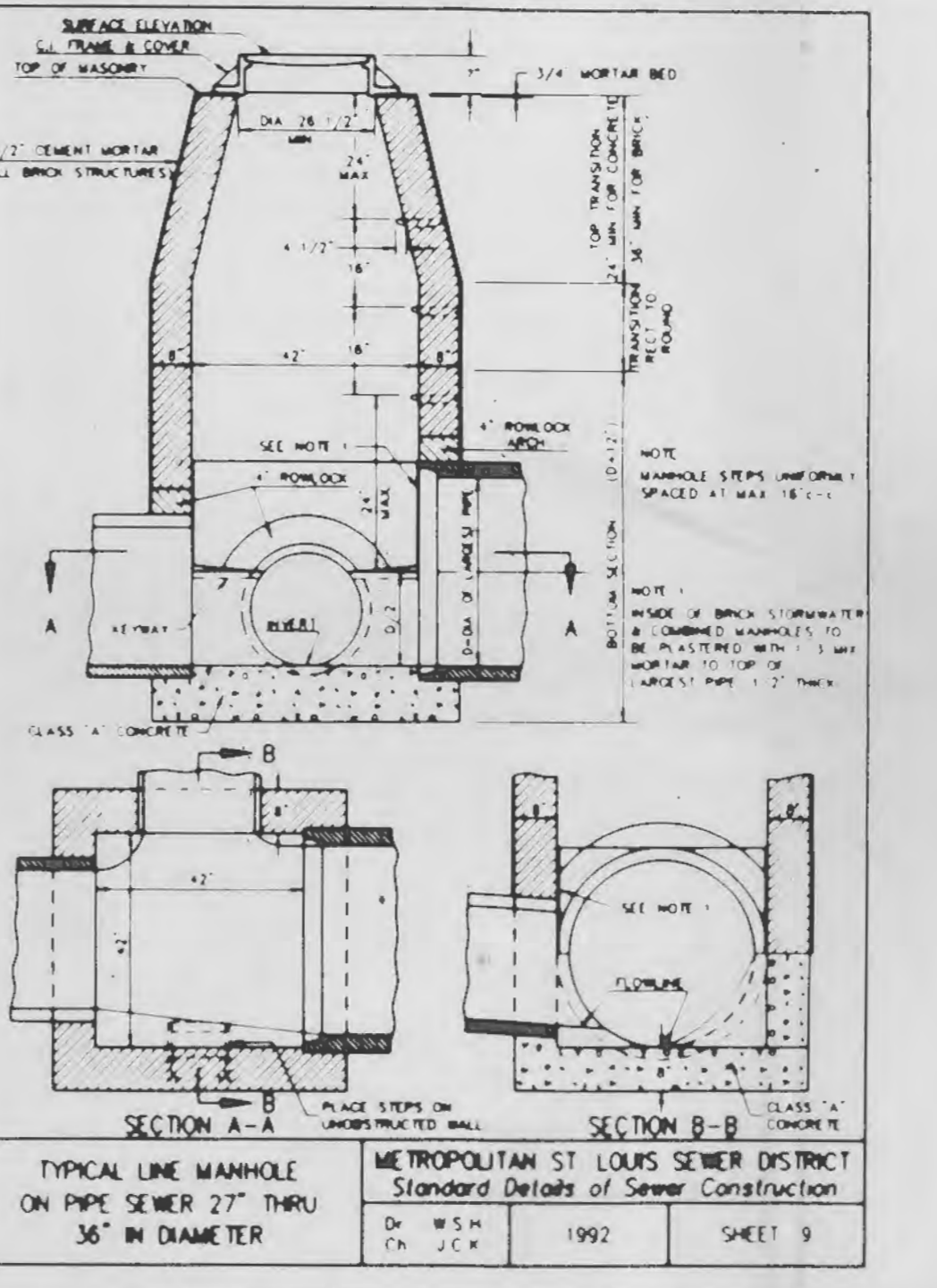
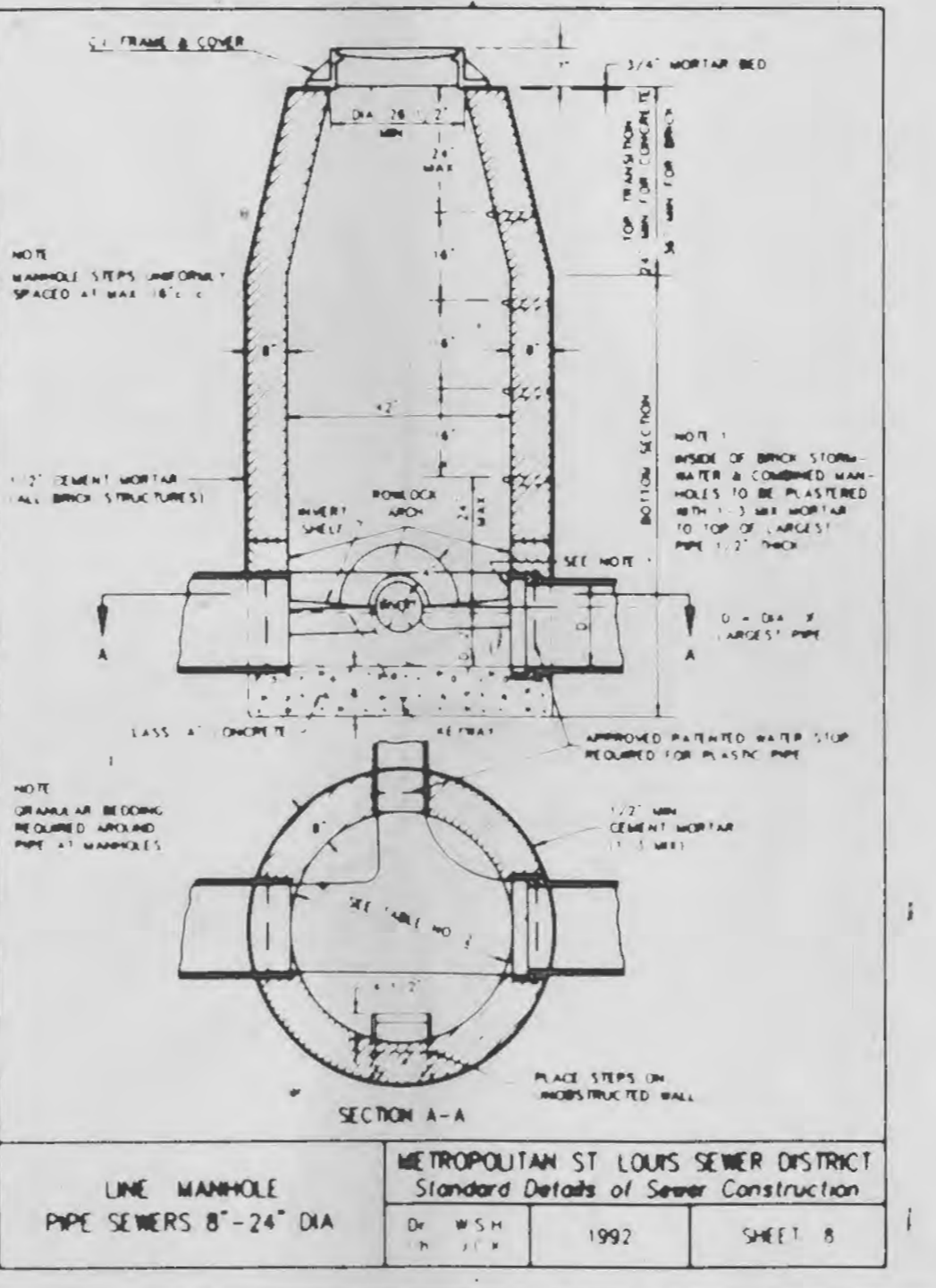
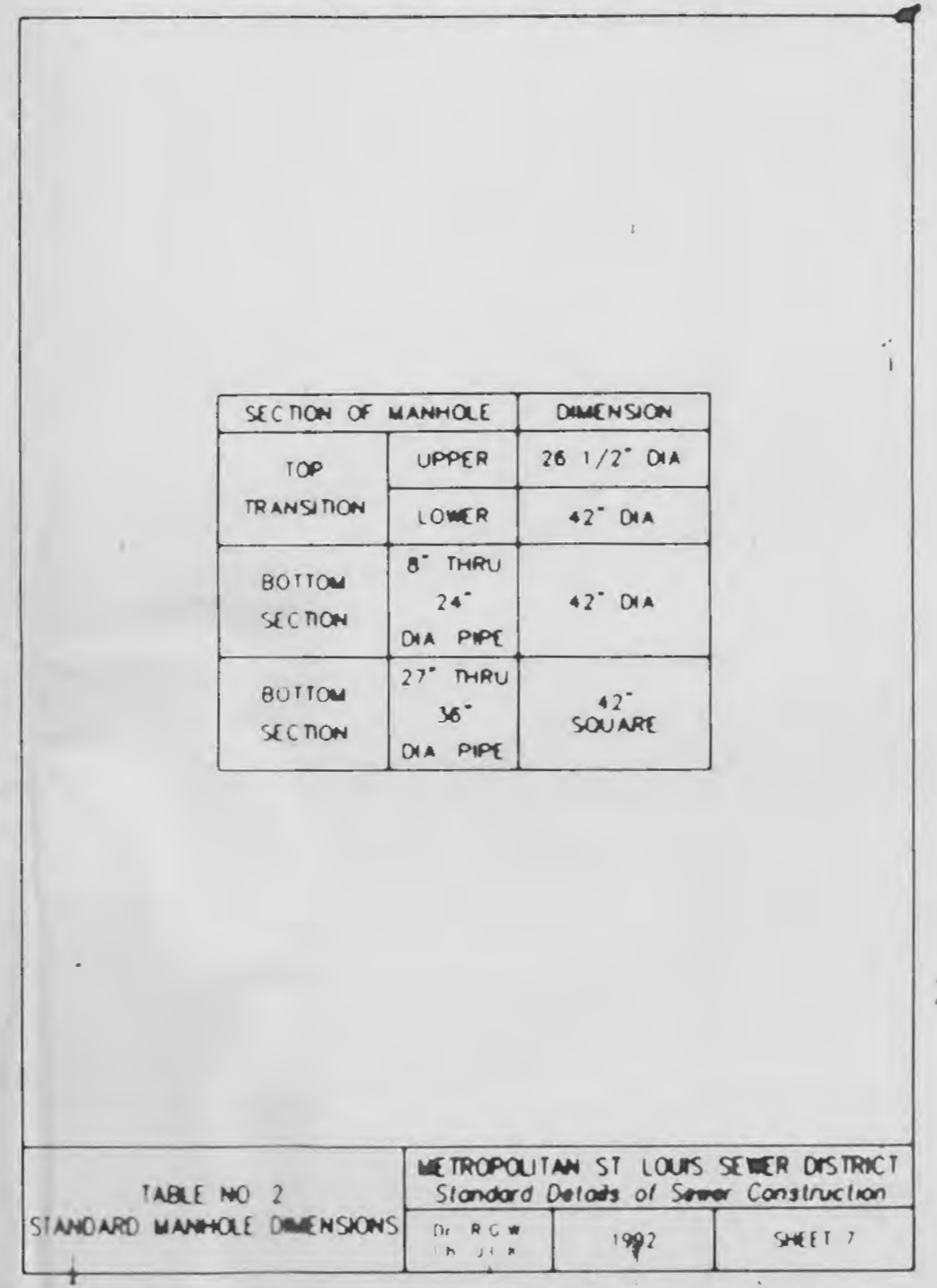
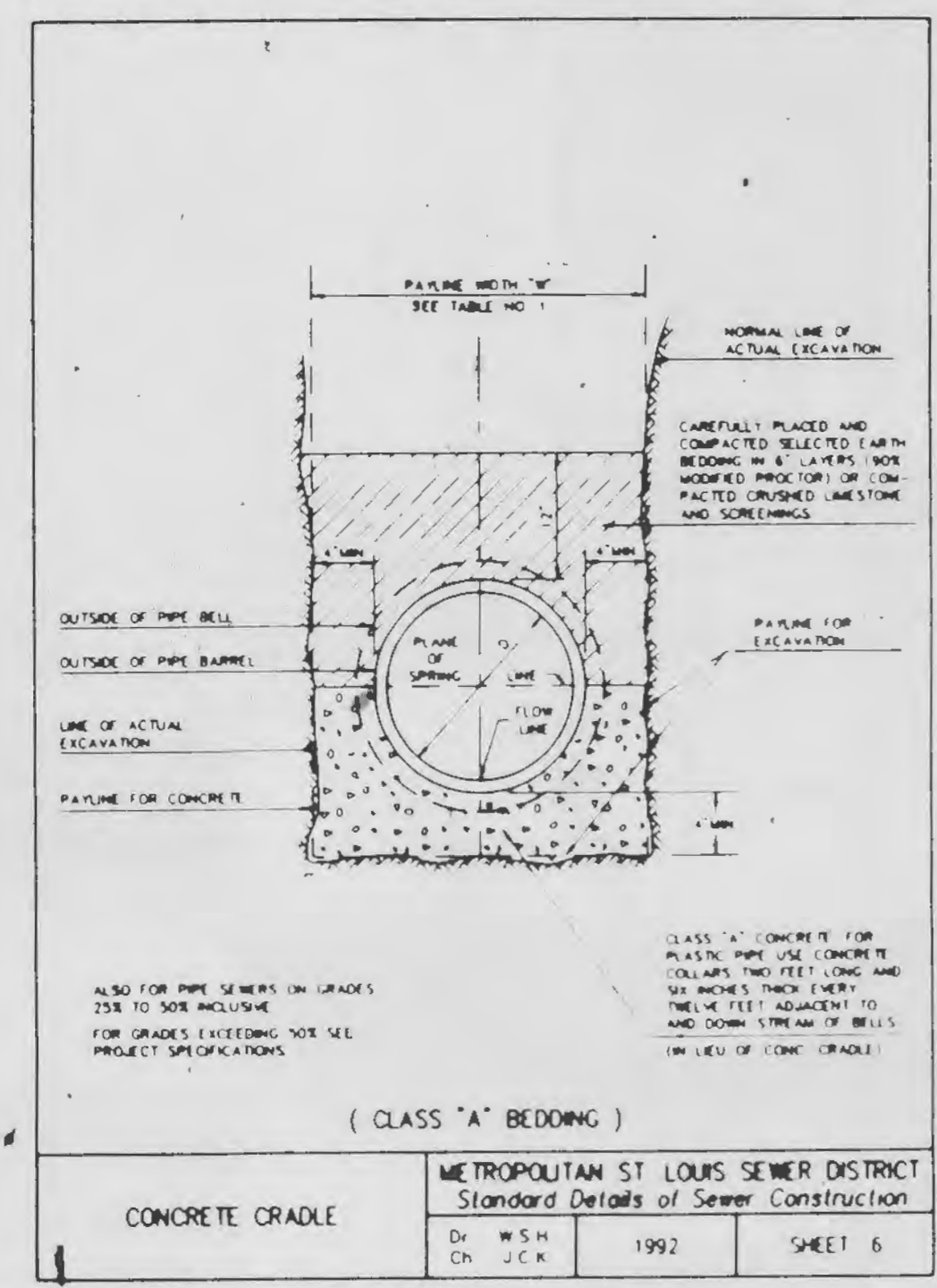
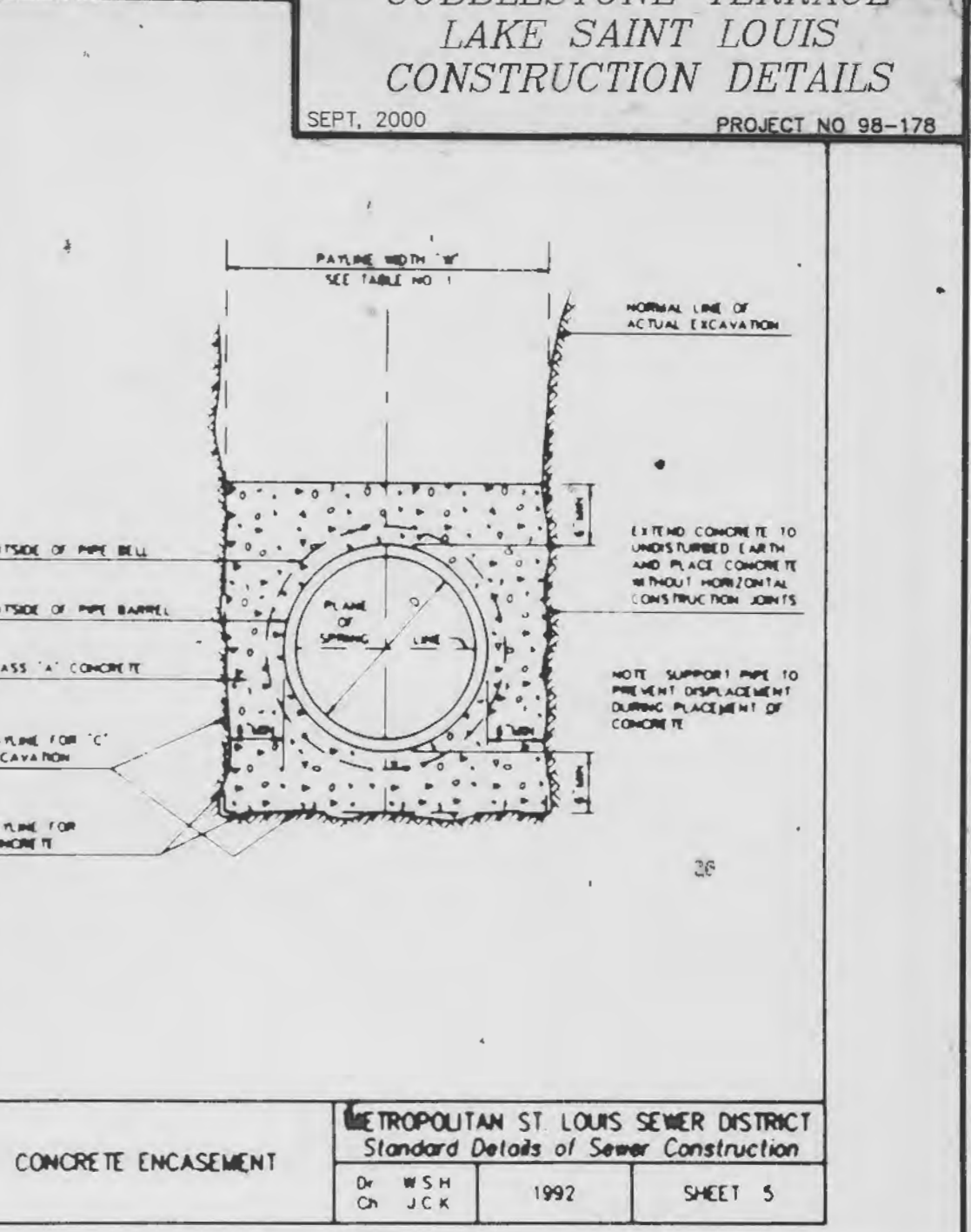
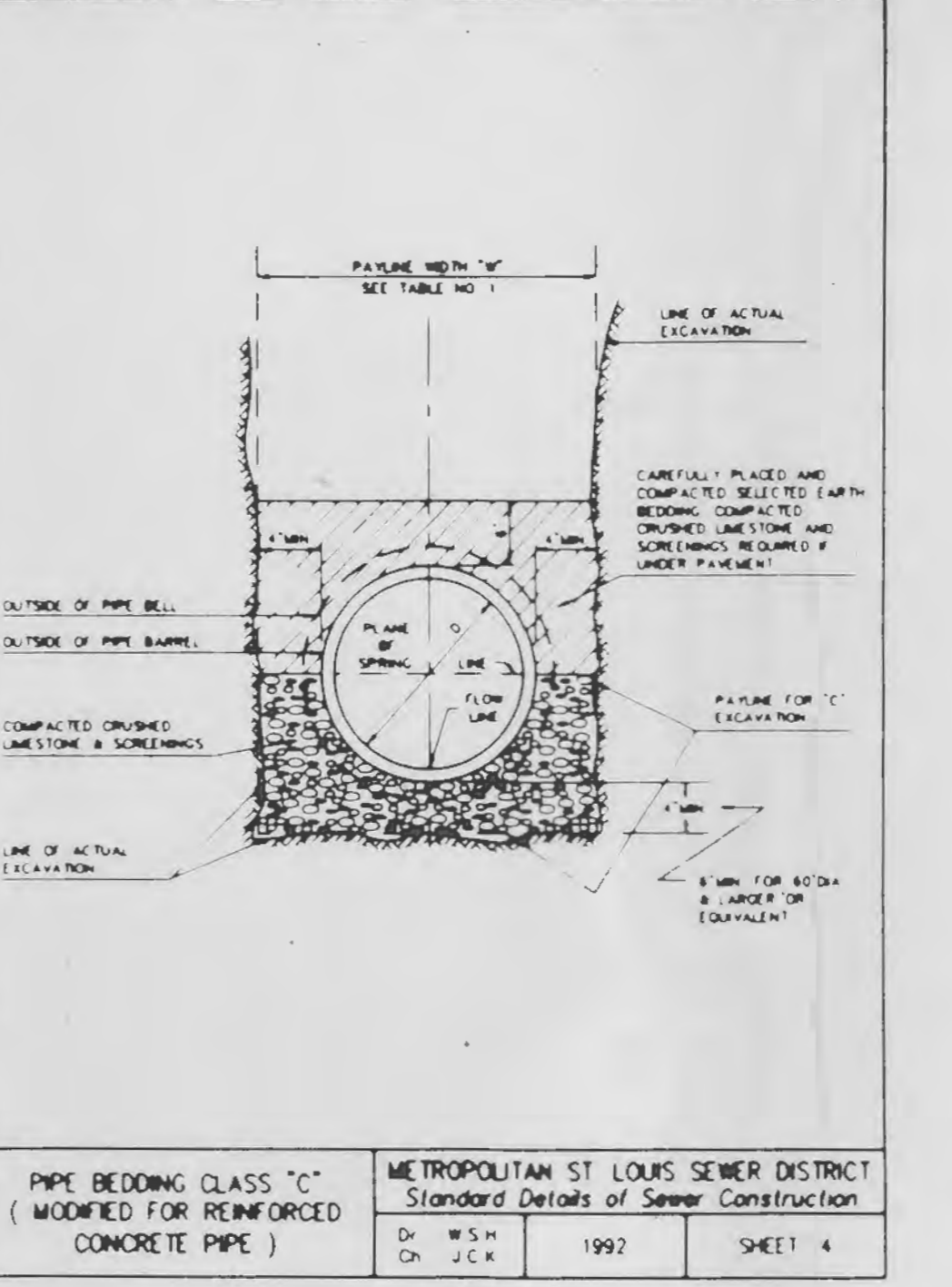
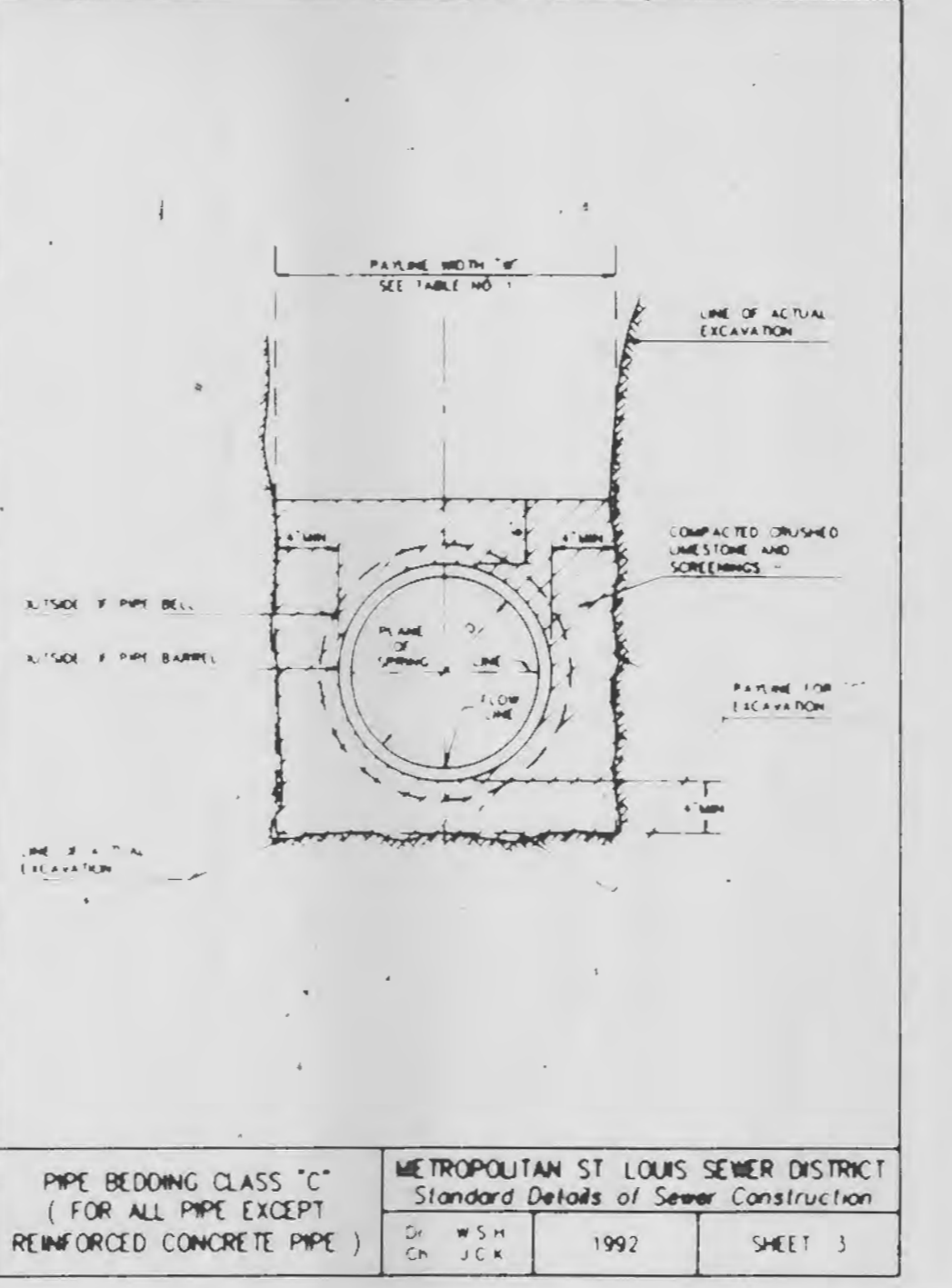
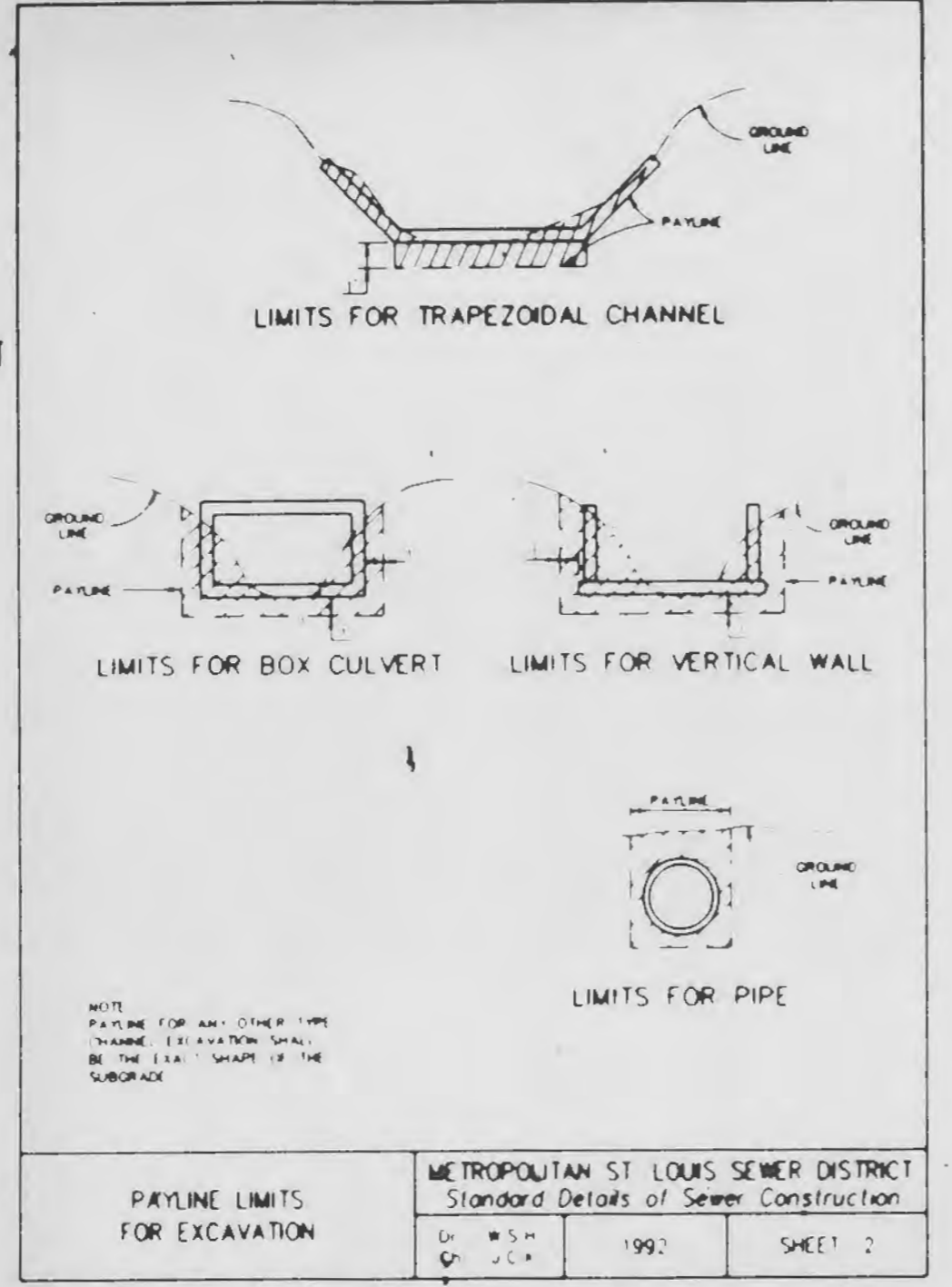


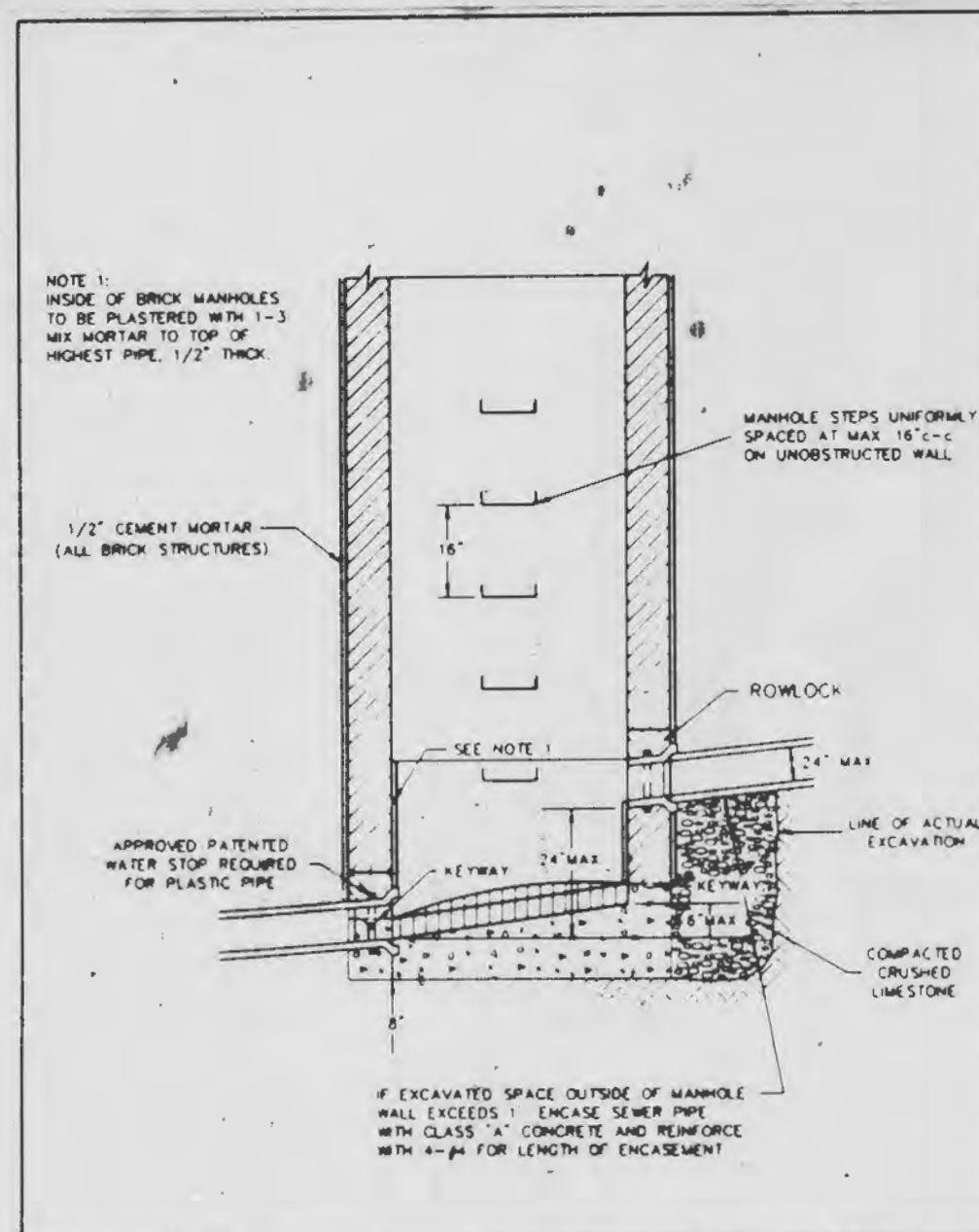
Placement and Construction of a Synthetic Filter Barrier

ROUND PIPE				HORIZONTAL ELLIPTICAL PIPE			
INSIDE DIAMETER OF PIPE (INCHES)	"W" PAYLINE WIDTH OF TRENCH (INCHES)	"T" PAYLINE WIDTH OF TRENCH (FEET)	PAY-VOLUME CU FT PER FT	INSIDE DIMENSIONS OF PIPE (INCHES)	"W" PAYLINE WIDTH OF TRENCH (INCHES)	"T" PAYLINE WIDTH OF TRENCH (FEET)	PAY-VOLUME CU FT PER FT
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	5.50				
18	36	3.00	5.77	14 x 23	41	3.42	5.94
21	36	3.25	6.41				
24	42	3.50	7.38	18 x 30	49	4.08	7.68
27	45	3.75	8.18	22 x 34	53	4.42	8.81
30	48	4.08	9.30	24 x 38	58	4.83	9.70
33	42	10.53	27.42	62	5.17	10.71	
36	48	4.87	11.43	28 x 45	66	5.50	11.72
39	42	10.53	27.42	62	5.82	13.14	
42	63	5.25	13.38	34 x 53	75	6.25	14.05
48	70	5.83	15.87	38 x 60	83	6.92	16.18
54	77	6.42	18.15	43 x 68	92	7.67	18.81
60	84	7.00	20.73	48 x 76	101	8.37	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	29.38	63 x 98	126	10.50	30.30
84	112	9.33	32.57	68 x 108	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	40.89
102	133	11.08	42.99	82 x 128	160	13.33	44.45
108	140	11.67	46.75	87 x 138	168	14.00	47.78
114	147	12.25	50.64	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	118 x 180	218	18.17	73.58

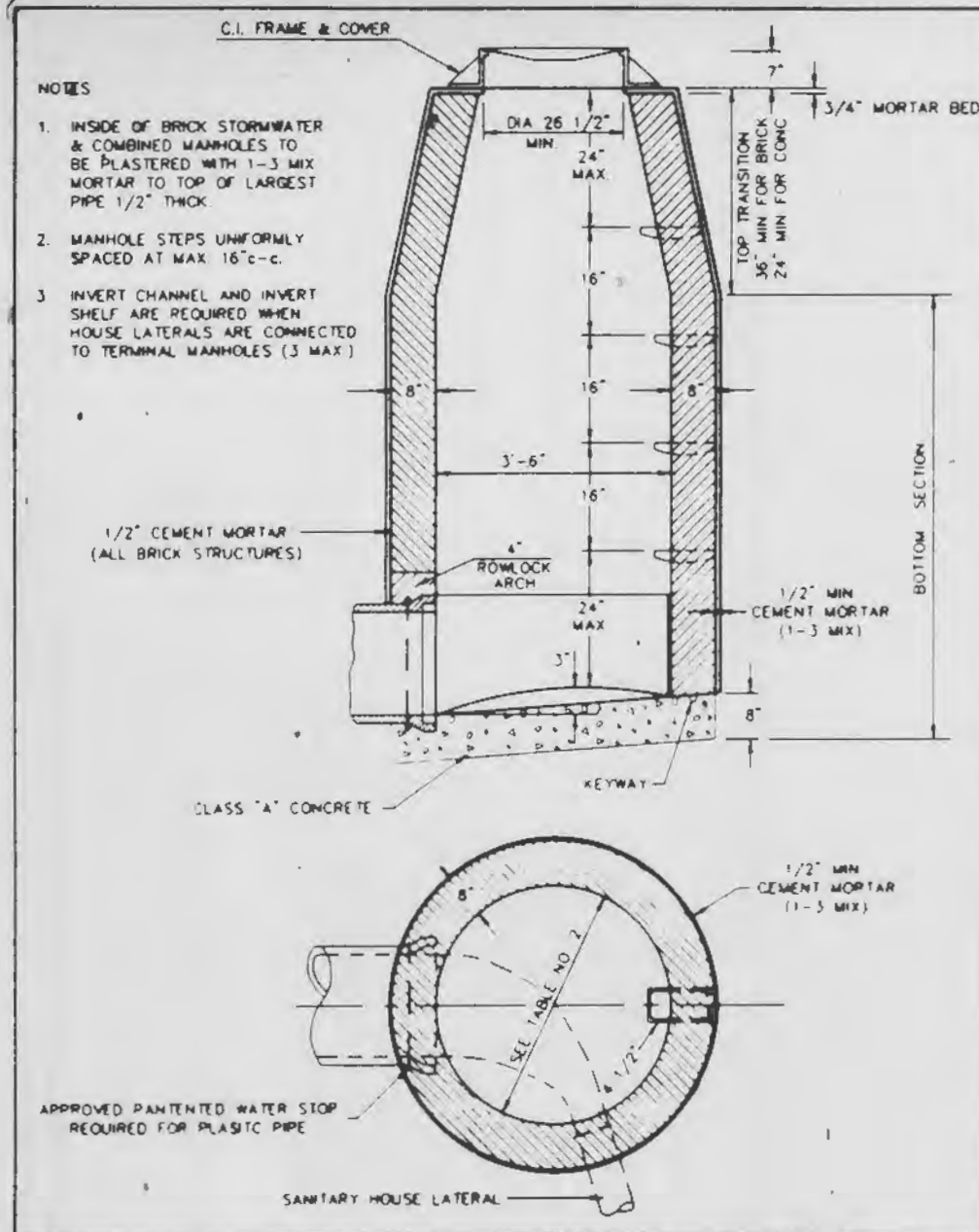
TABLE 1
PAYLINE WIDTHS OF TRENCH AND PAY-VOLUMES OF CONCRETE

METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
DR. W.S.H. CH. J.C.K. 1992 SHEET 1

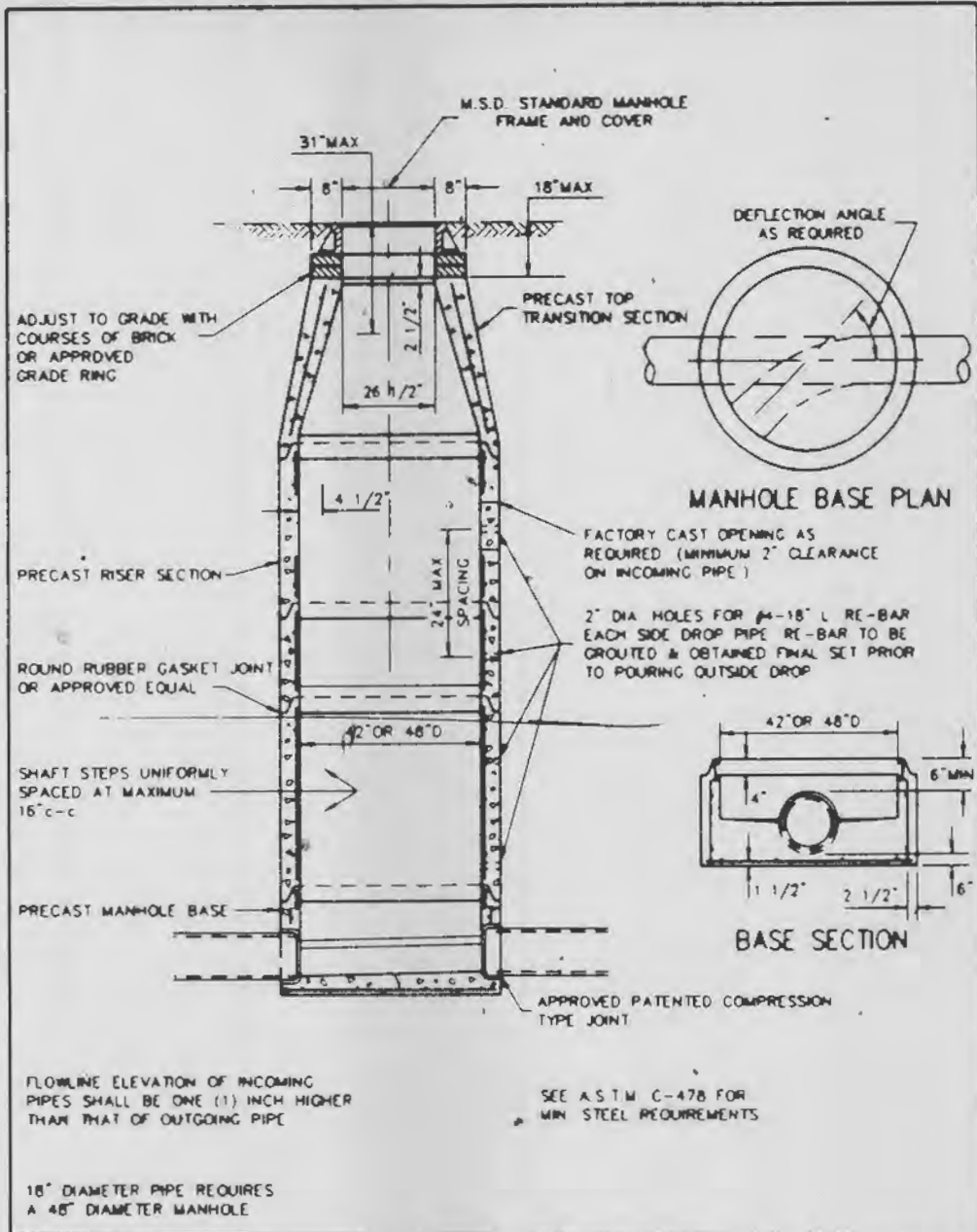




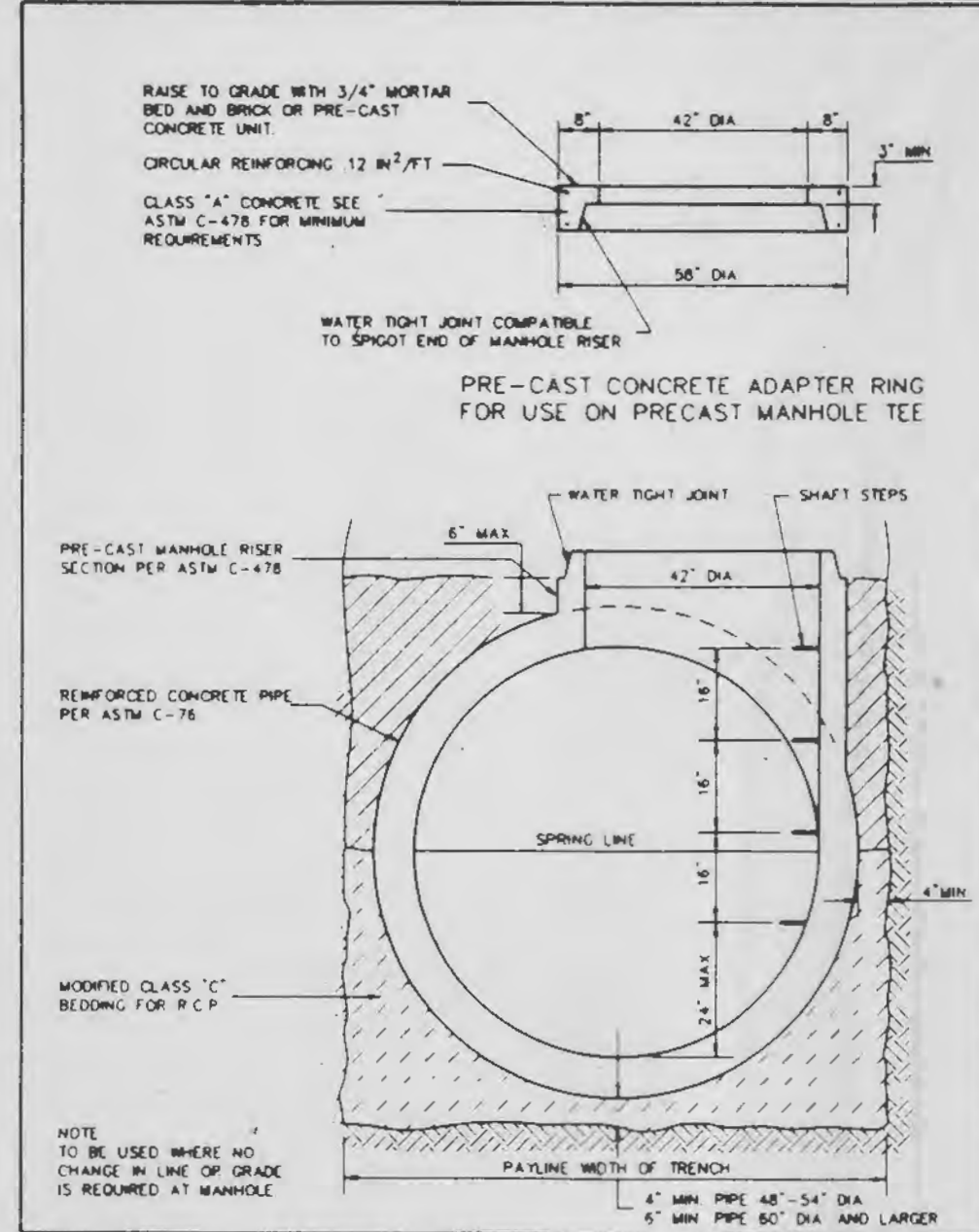
INSIDE FOULWATER DROP MANHOLE (FOR FREE-FALL)
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. 1992 SHEET 16
 Ch. J.C.K.



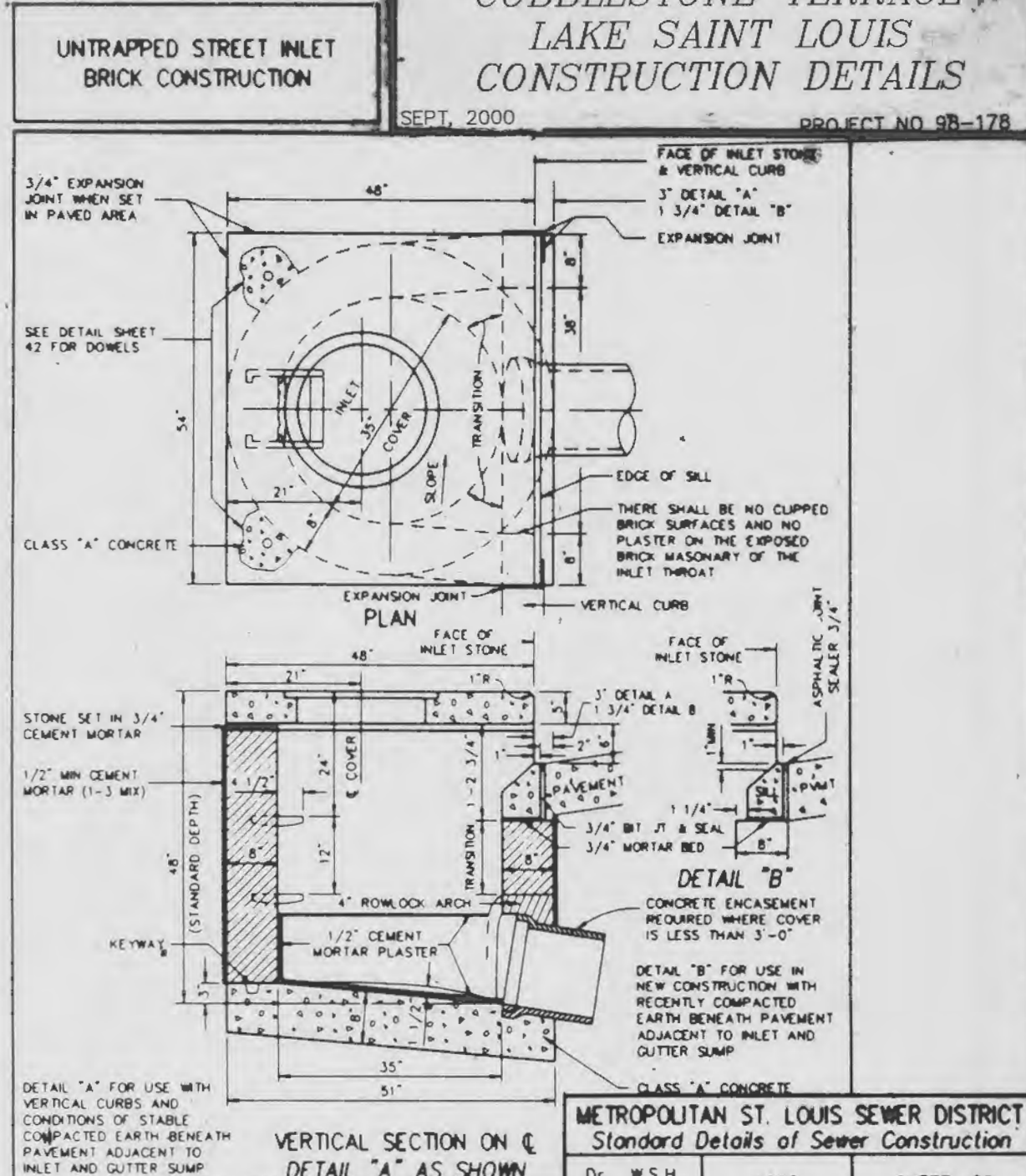
TERMINAL MANHOLE
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. 1992 SHEET 17
 Ch. J.C.K.



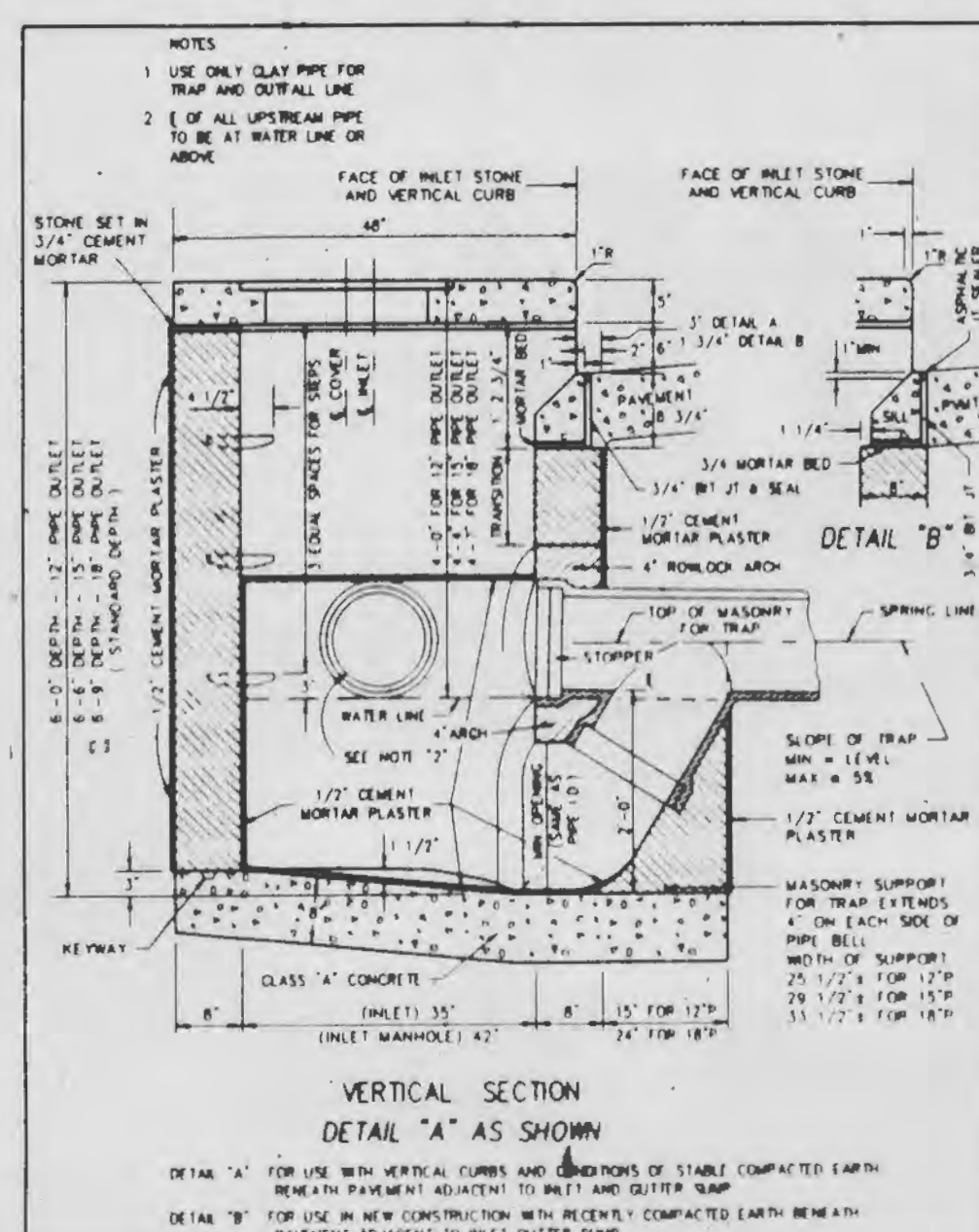
PRE-CAST CONCRETE MANHOLE FOR SEWERS 8" THROUGH 18"
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. 1992 SHEET 18
 Ch. J.C.K.



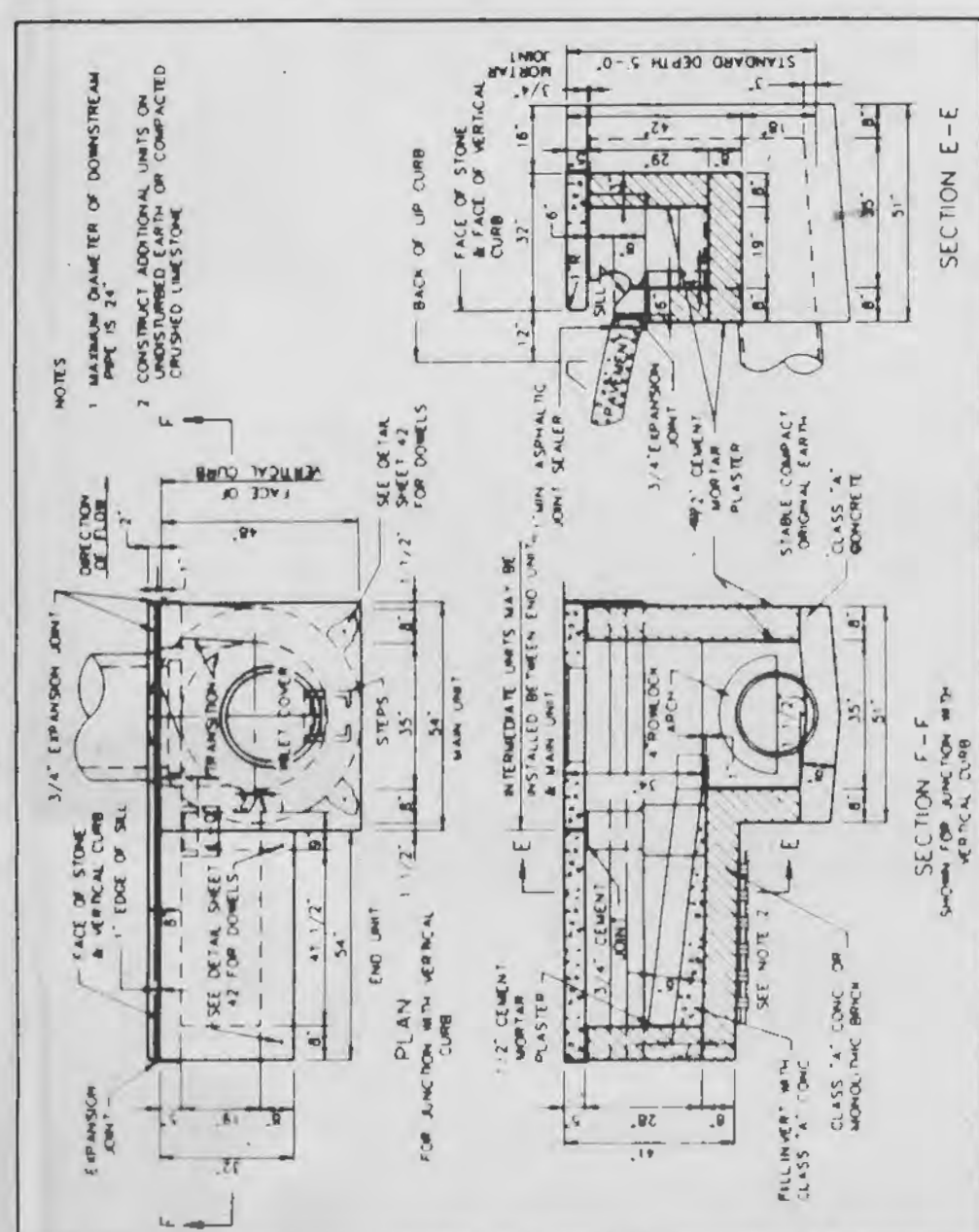
TYPICAL PRE-CAST MH. TEE FOR REINFORCED CONCRETE PIPE SEWERS 48" AND LARGER IN DIAMETER
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. 1992 SHEET 19
 Ch. J.C.K.



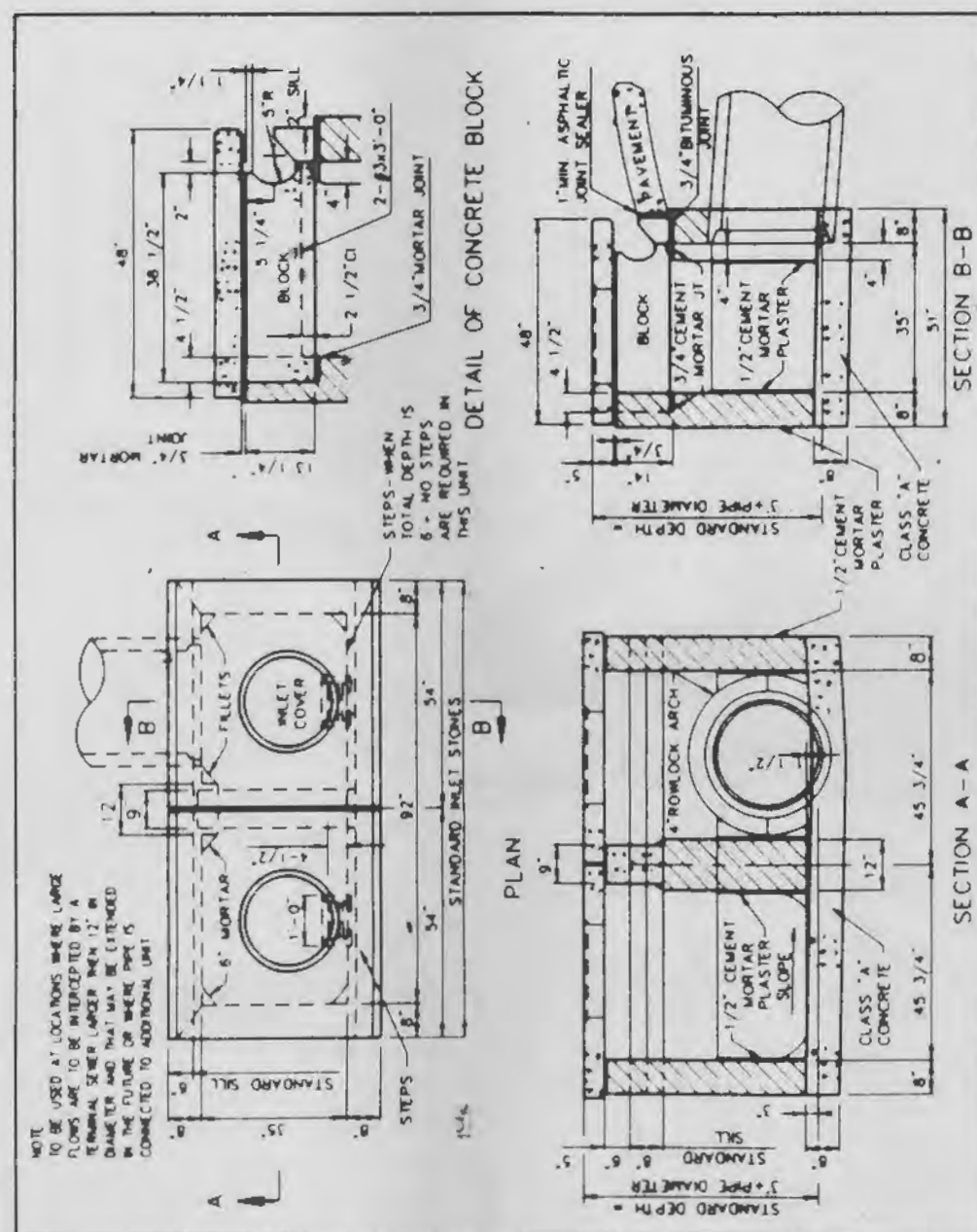
UNTRAPPED STREET INLET BRICK CONSTRUCTION
 COBBLESTONE TERRACE, LAKE SAINT LOUIS CONSTRUCTION DETAILS
 SEPT. 2000 PROJECT NO. 98-178
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. 1992 SHEET 20
 Ch. J.C.K.



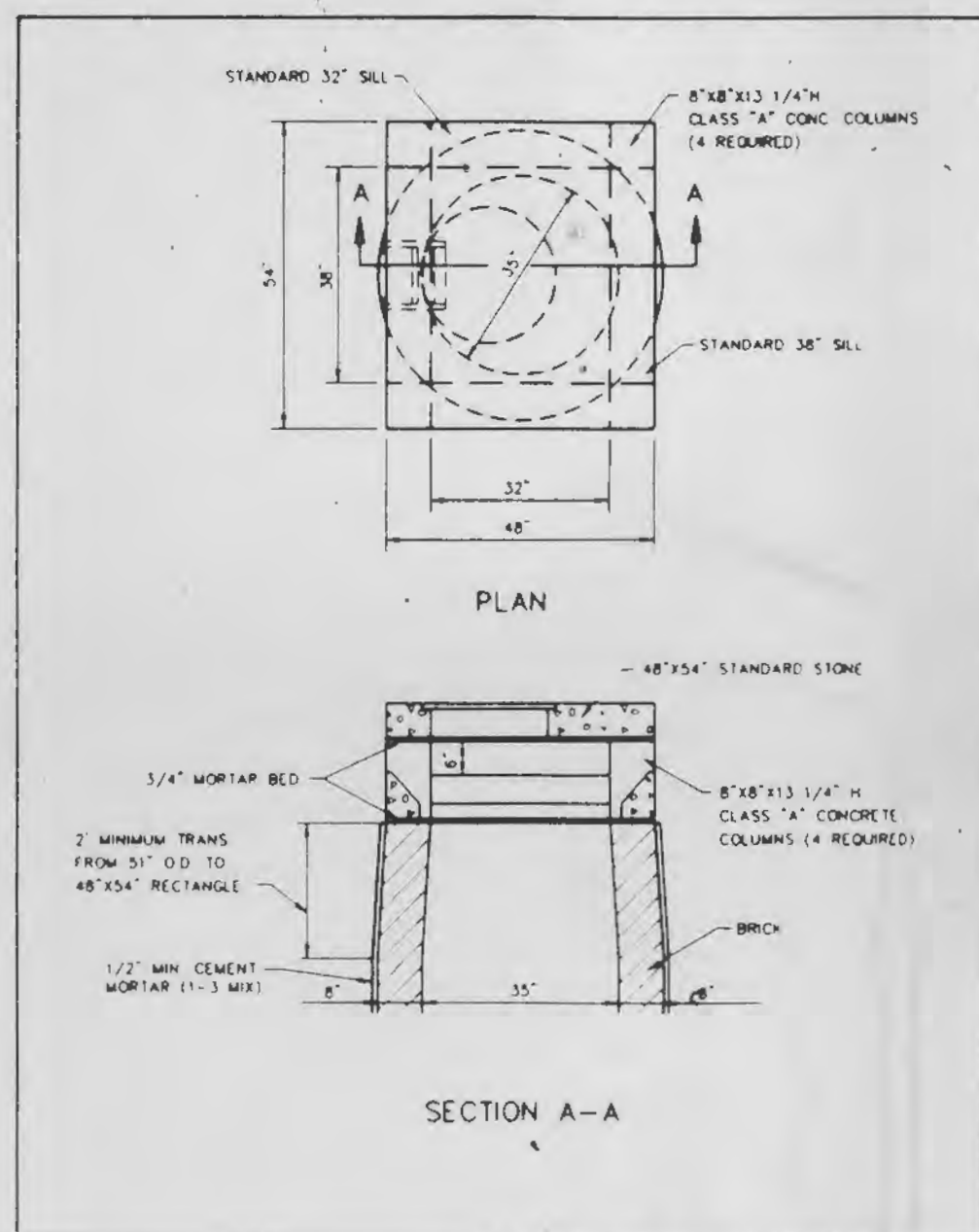
TRAPPED STREET INLET BRICK CONSTRUCTION
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. 1992 SHEET 21
 Ch. J.C.K.



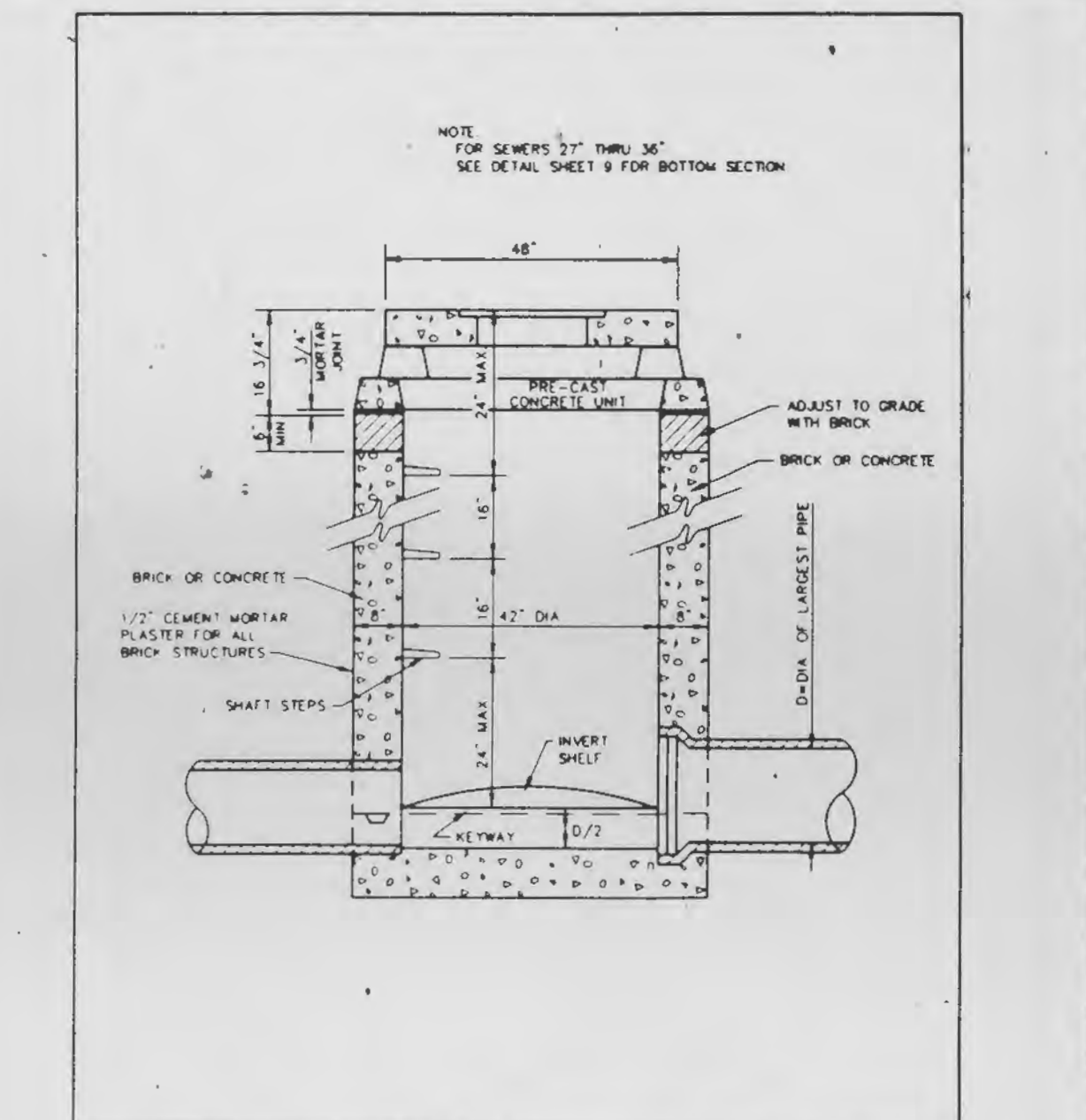
MULTIPLE STREET INLET BRICK CONSTRUCTION
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. 1992 SHEET 22
 Ch. J.C.K.



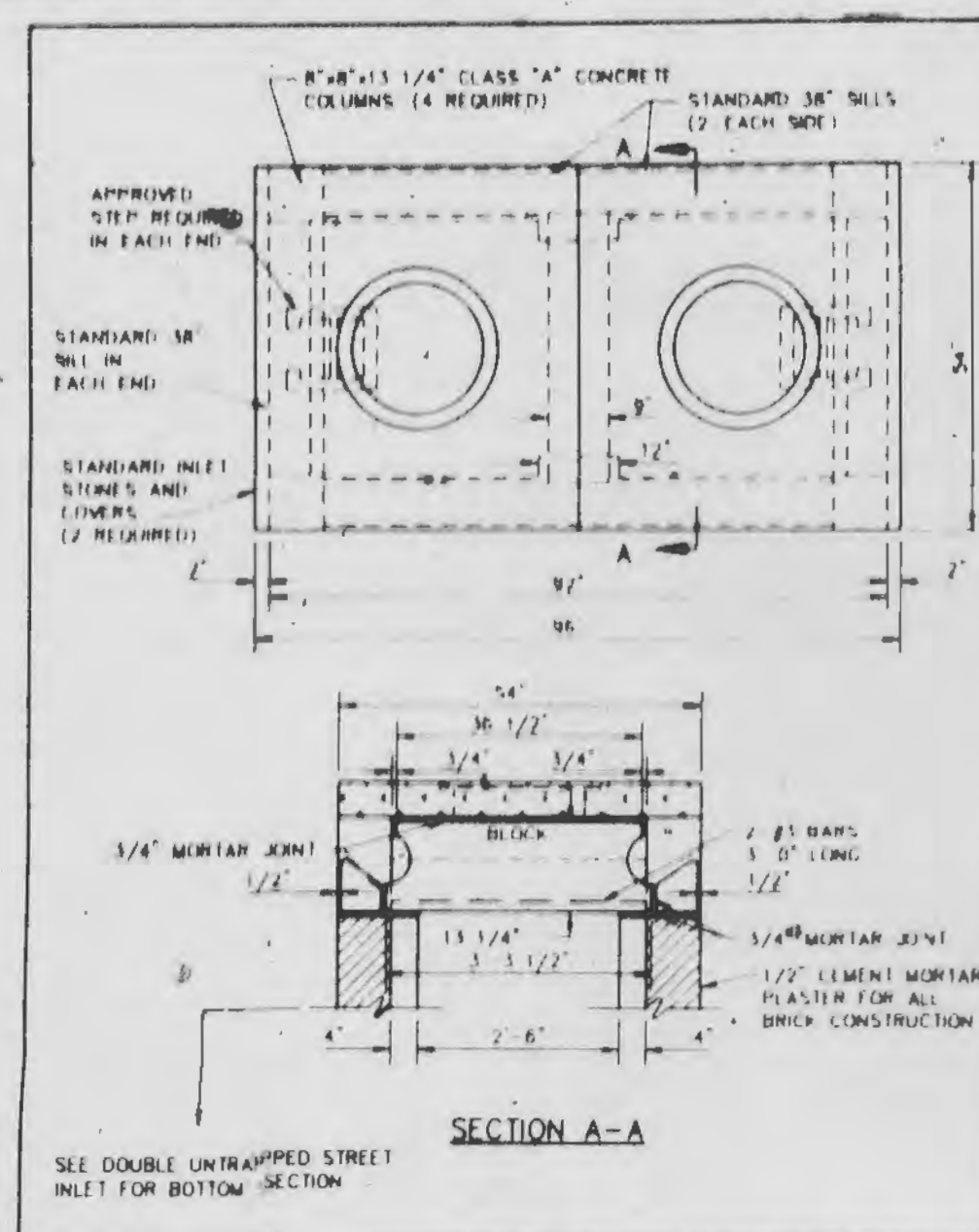
DOUBLE UNTRAPPED STREET INLET BRICK CONSTRUCTION
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. D.A.B. 1992 SHEET 23
 Ch. J.C.K.



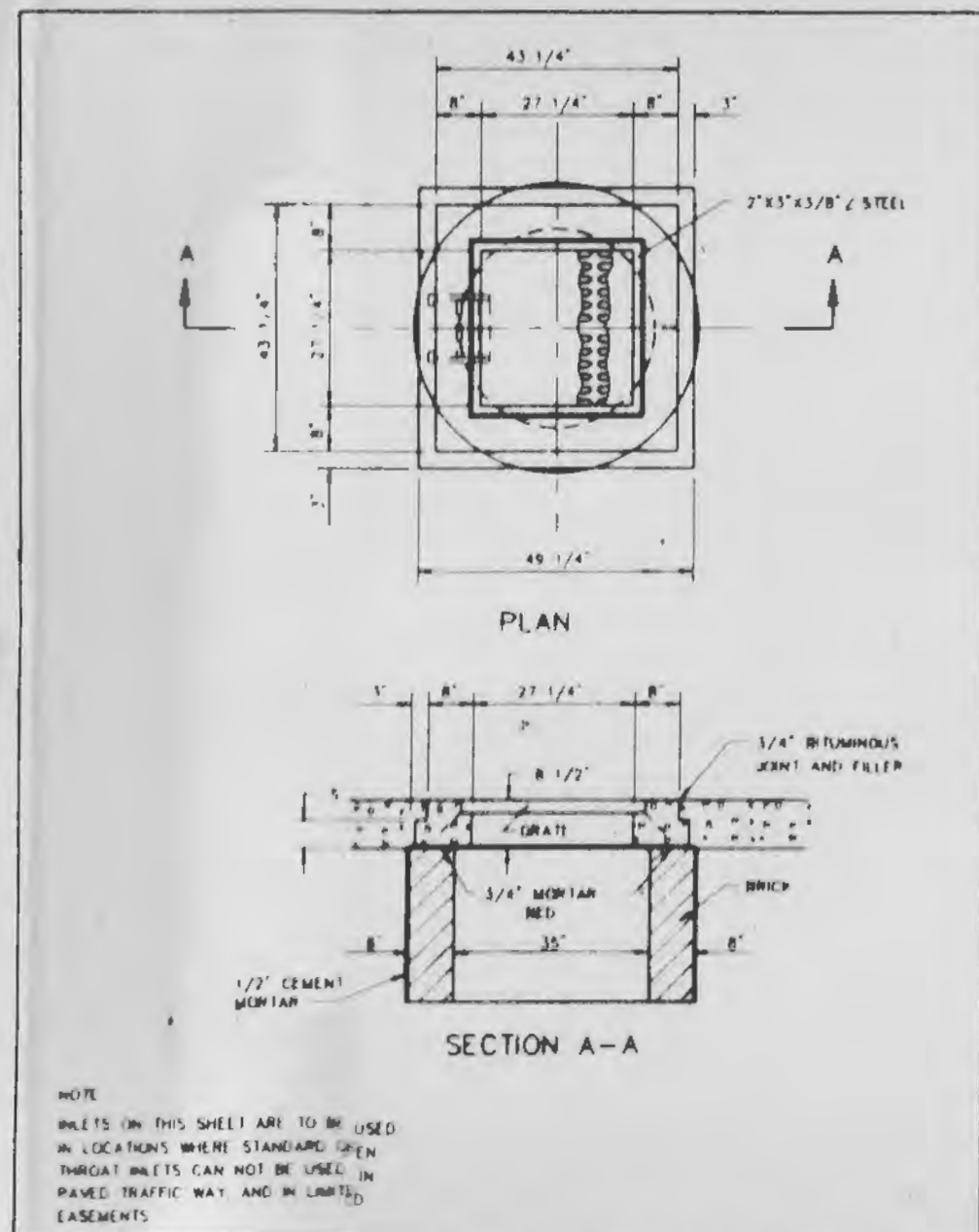
AREA INLET OPEN 4 SIDES BRICK CONSTRUCTION
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. 1992 SHEET 24
 Ch. J.C.K.



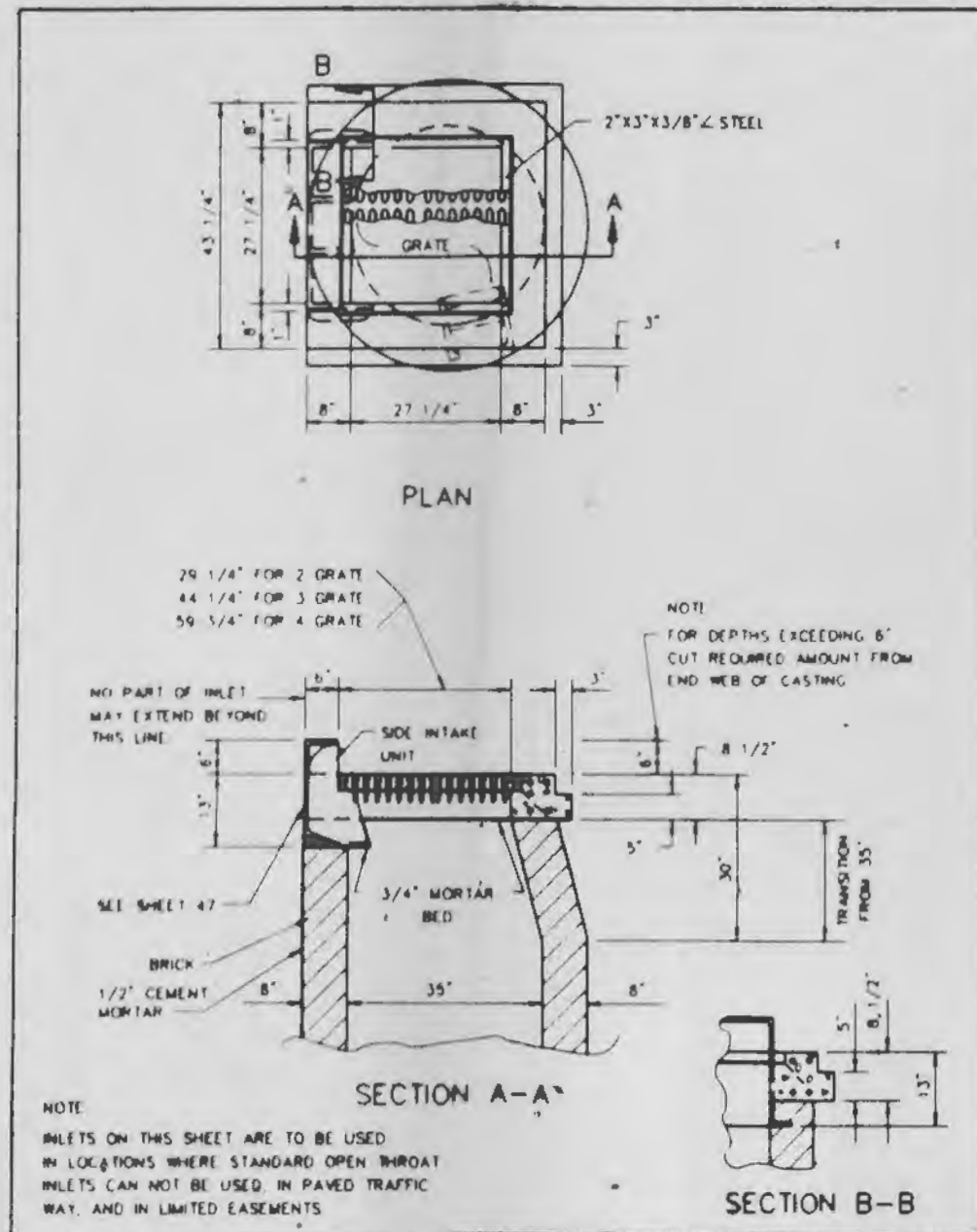
AREA INLET MANHOLE (12" THRU 24")
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. 1992 SHEET 25
 Ch. J.C.K.



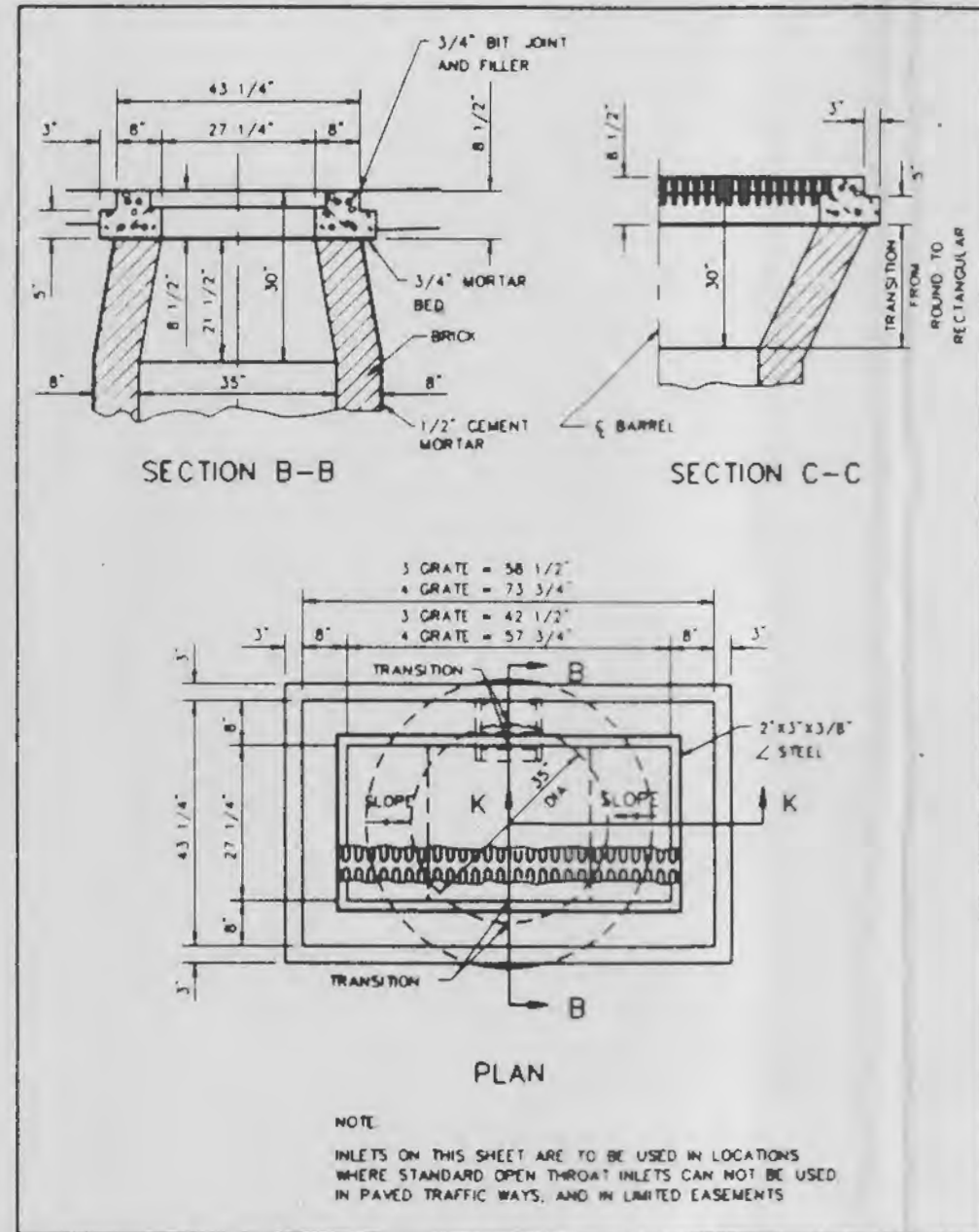
DOUBLE AREA INLET OPEN 4 SIDES BRICK CONSTRUCTION
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. 1992 SHEET 26
 Ch. J.C.K.



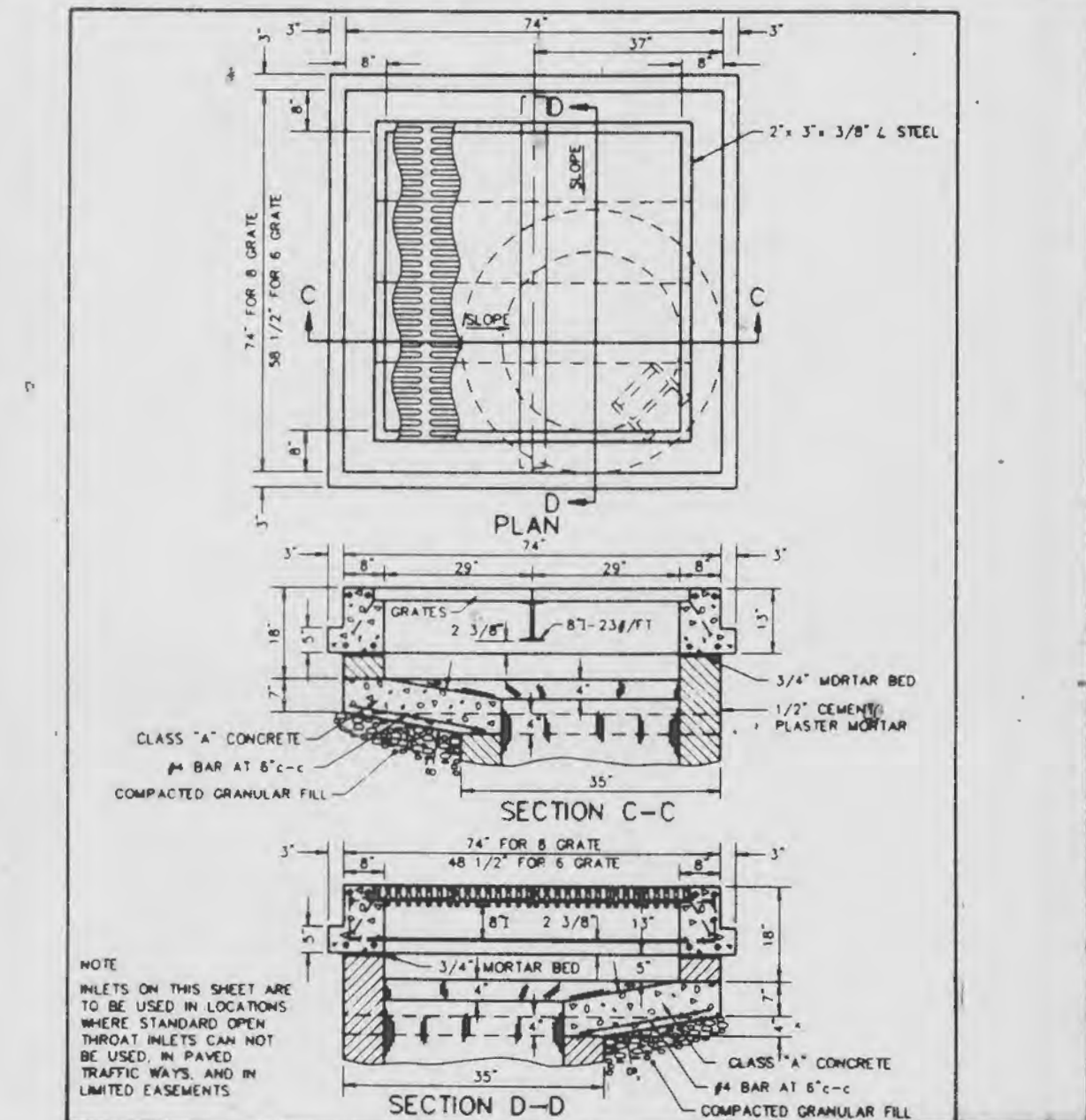
2 GRATE INLET BRICK CONSTRUCTION
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. 1992 SHEET 27
 Ch. J.C.K.



2 GRATE INLET WITH SIDE INTAKE BRICK CONSTRUCTION
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. 1992 SHEET 28
 Ch. J.C.K.



3 & 4 GRATE INLET BRICK CONSTRUCTION
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. 1992 SHEET 29
 Ch. J.C.K.



6 & 8 GRATE INLET BRICK CONSTRUCTION
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. 1992 SHEET 30
 Ch. J.C.K.

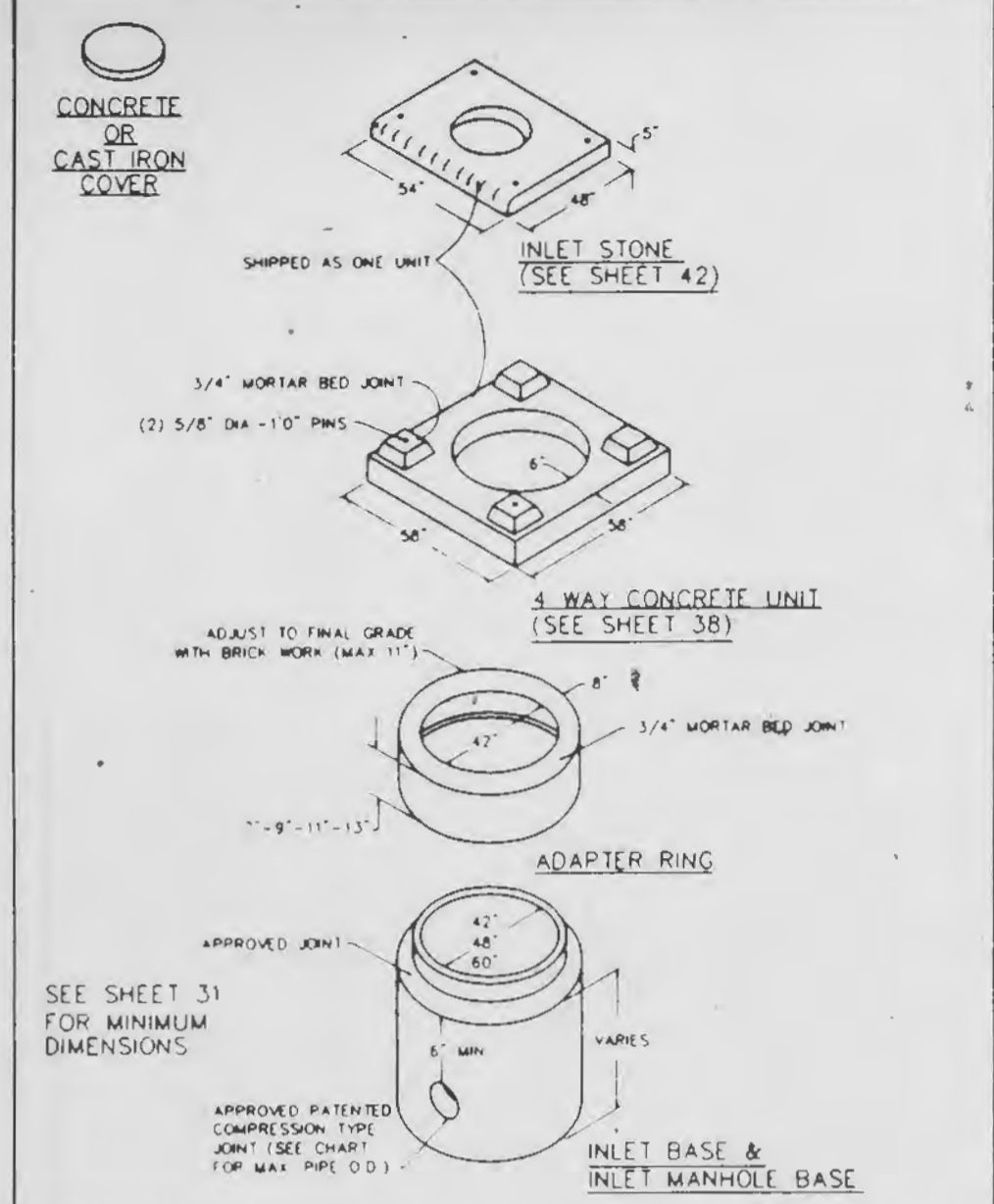
PRECAST CONCRETE STORMWATER STRUCTURES

MINIMUM DISTANCE FLOWLINE TO TOP OF STONE OR GRATE

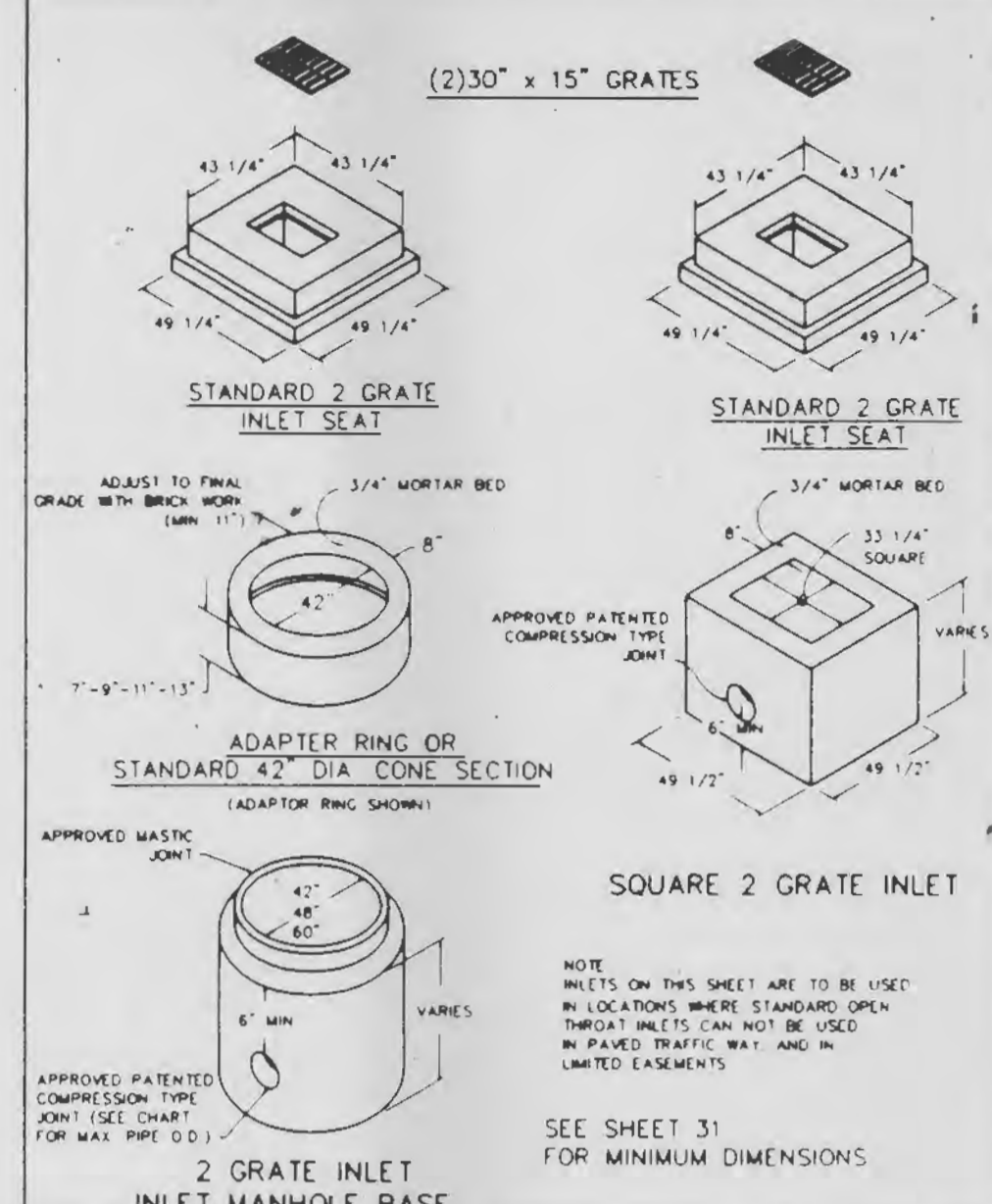
PIPE ID NOMINAL INCHES	AREA INLET CIRCULAR BASE DIA. (INCHES)	2 GRATE INLET CIRCULAR BASE DIA. (INCHES)	SINGLE STREET INLET CIRCULAR BASE DIA. (INCHES)
12"	45"	48"	48"
15"	48"	51"	51"
18"	51"	54"	54"
21"	54"	57"	57"
24"	57"	60"	60"
27"	60"	63"	63"
30"	63"	66"	66"
33"	66"	69"	69"

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.

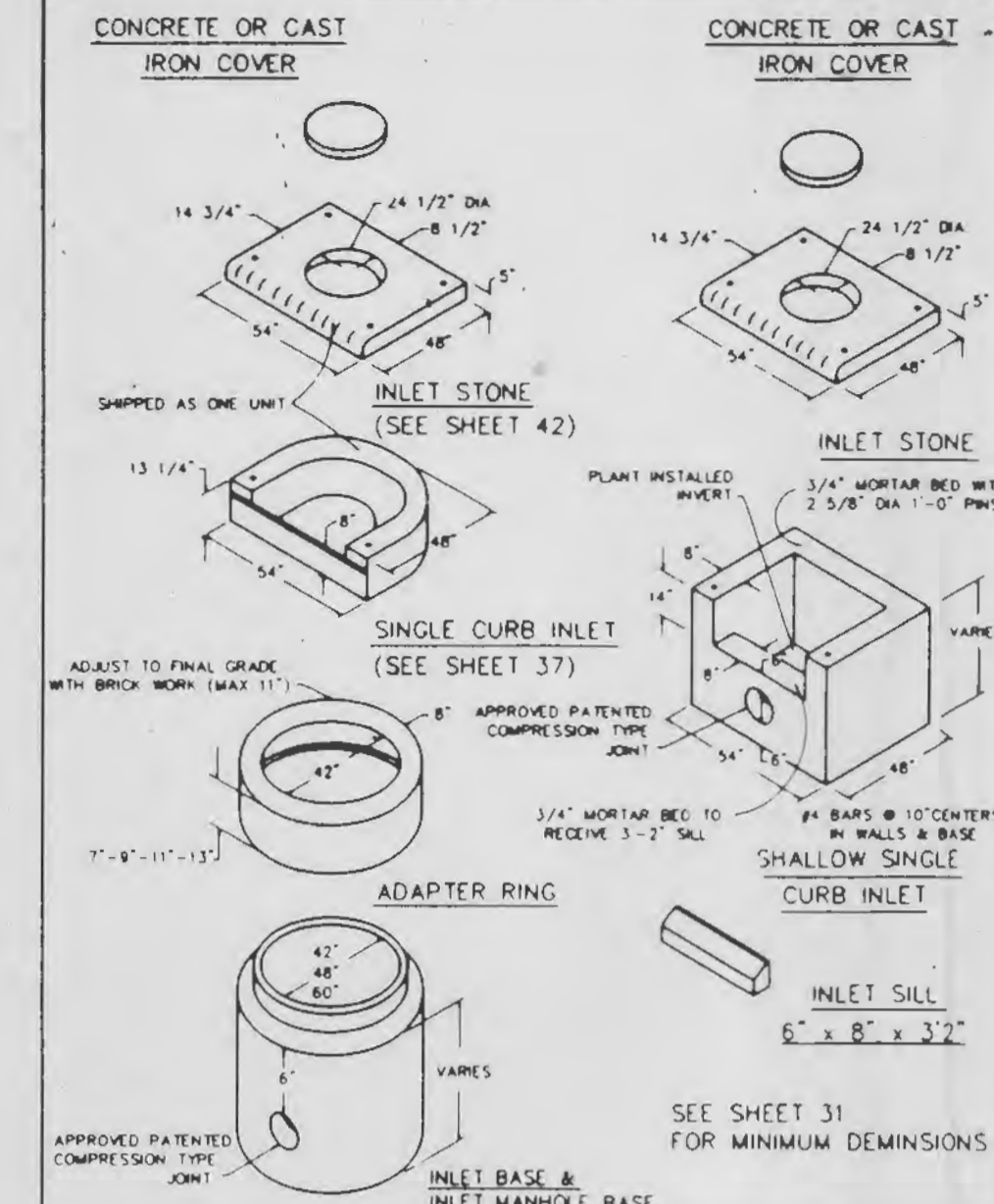
PRECAST CONCRETE STORMWATER STRUCTURES
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. J.L.G. Ch. J.C.K. SEPT 1990 SHEET 31



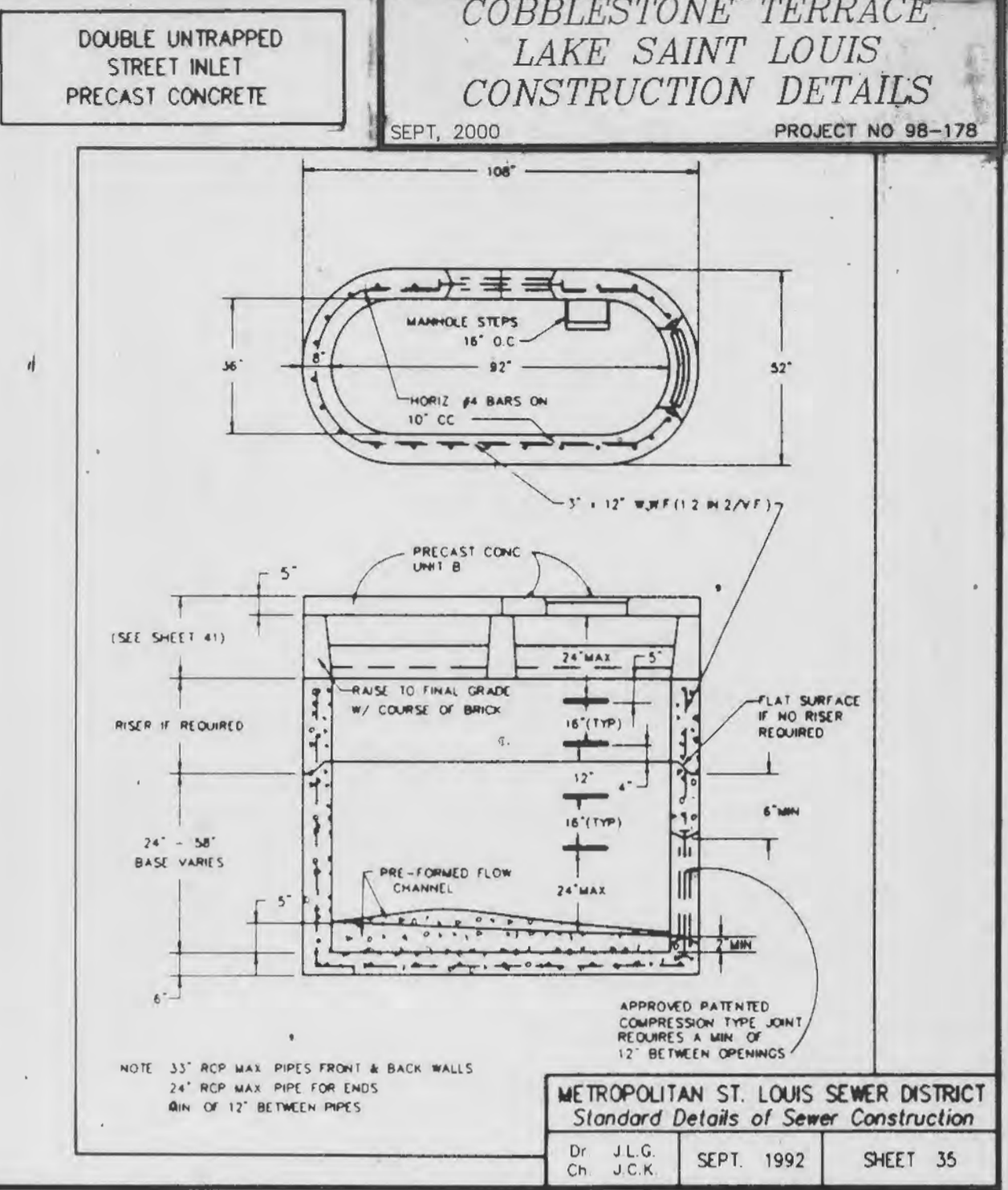
AREA INLET PRECAST CONCRETE
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. J.L.G. Ch. J.C.K. APRIL 1992 SHEET 32



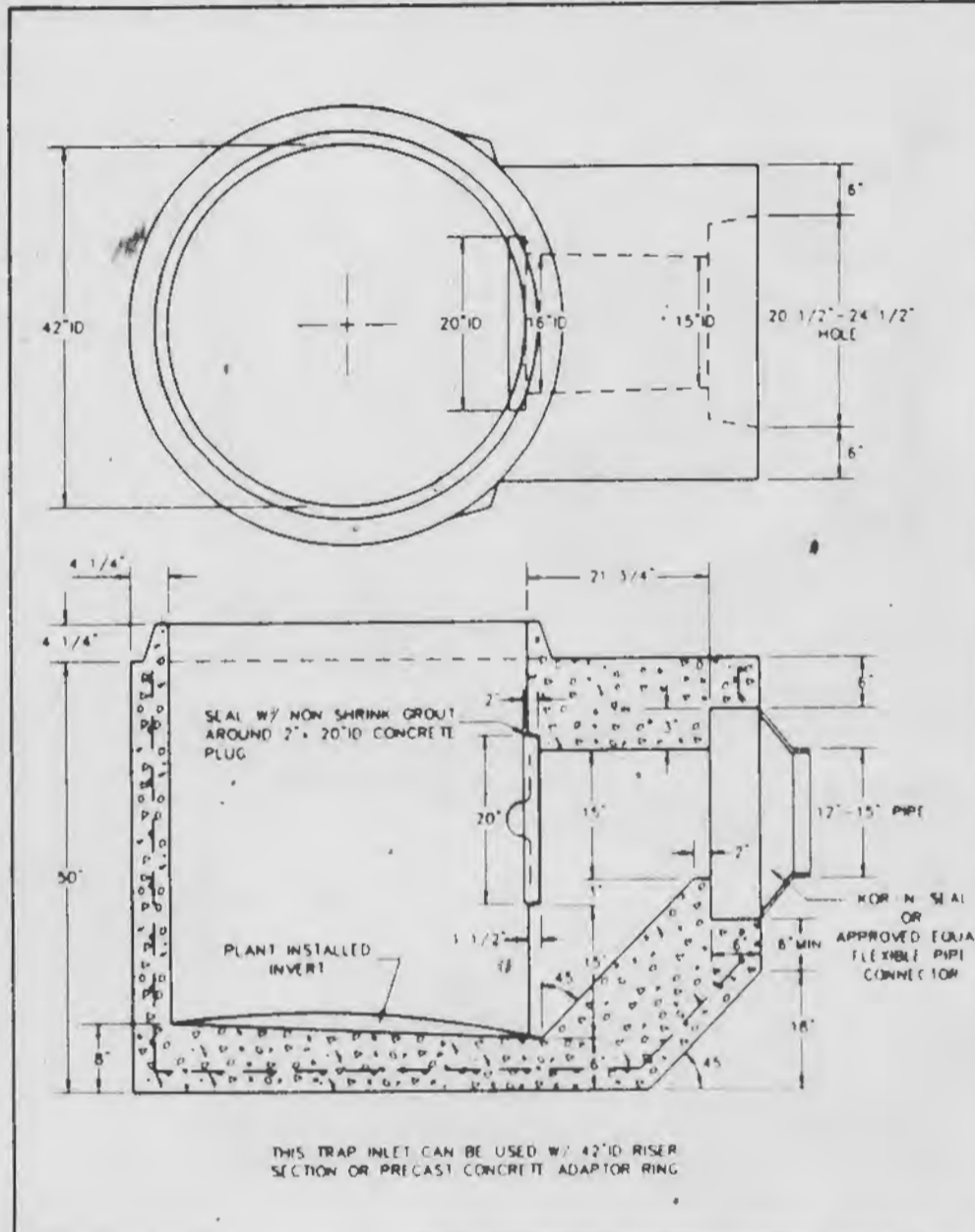
2 GRATE INLETS PRECAST CONCRETE
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. J.L.G. Ch. J.C.K. APRIL 1992 SHEET 33



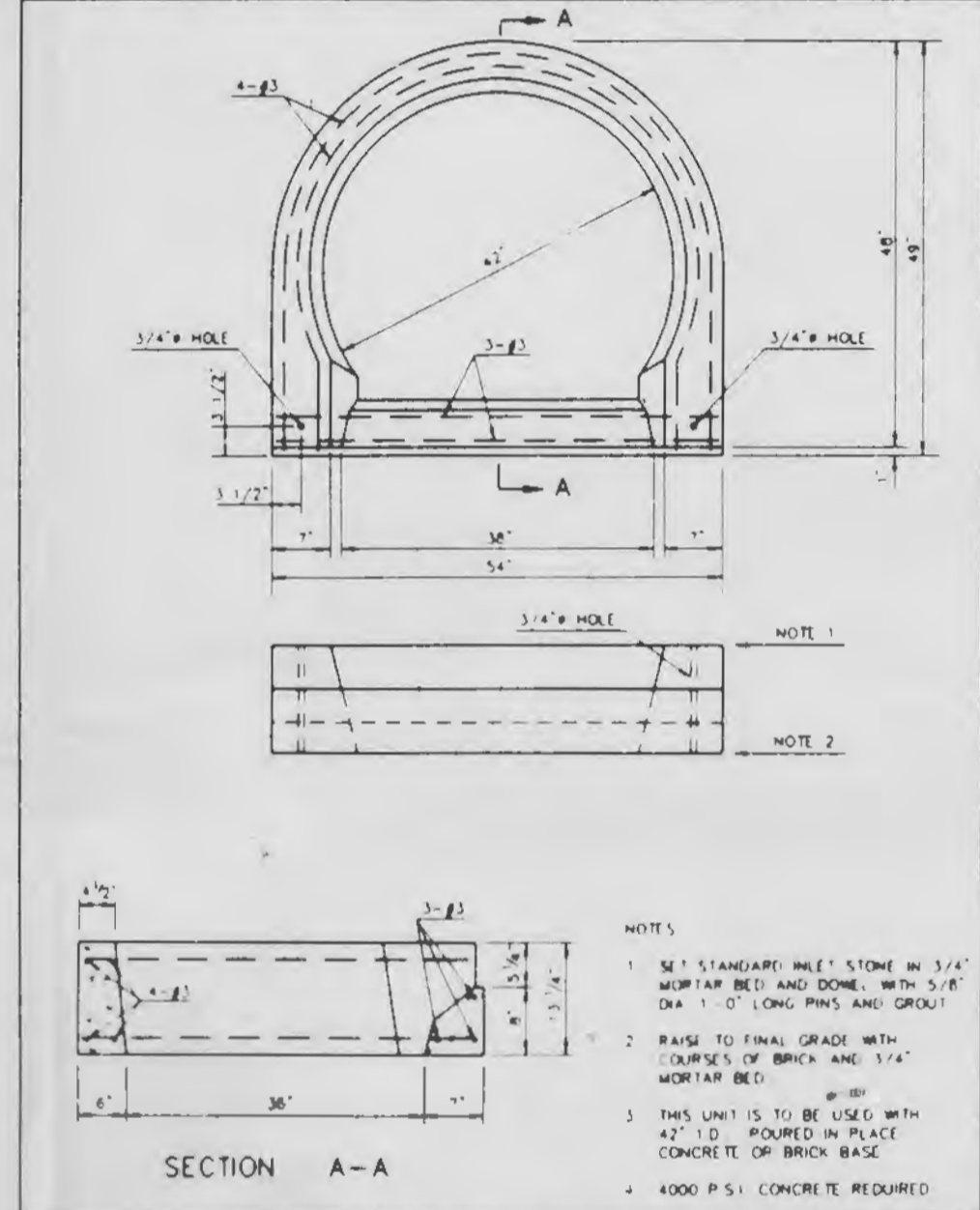
SINGLE STREET INLETS PRECAST CONCRETE
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. J.L.G. Ch. J.C.K. APRIL 1991 SHEET 34



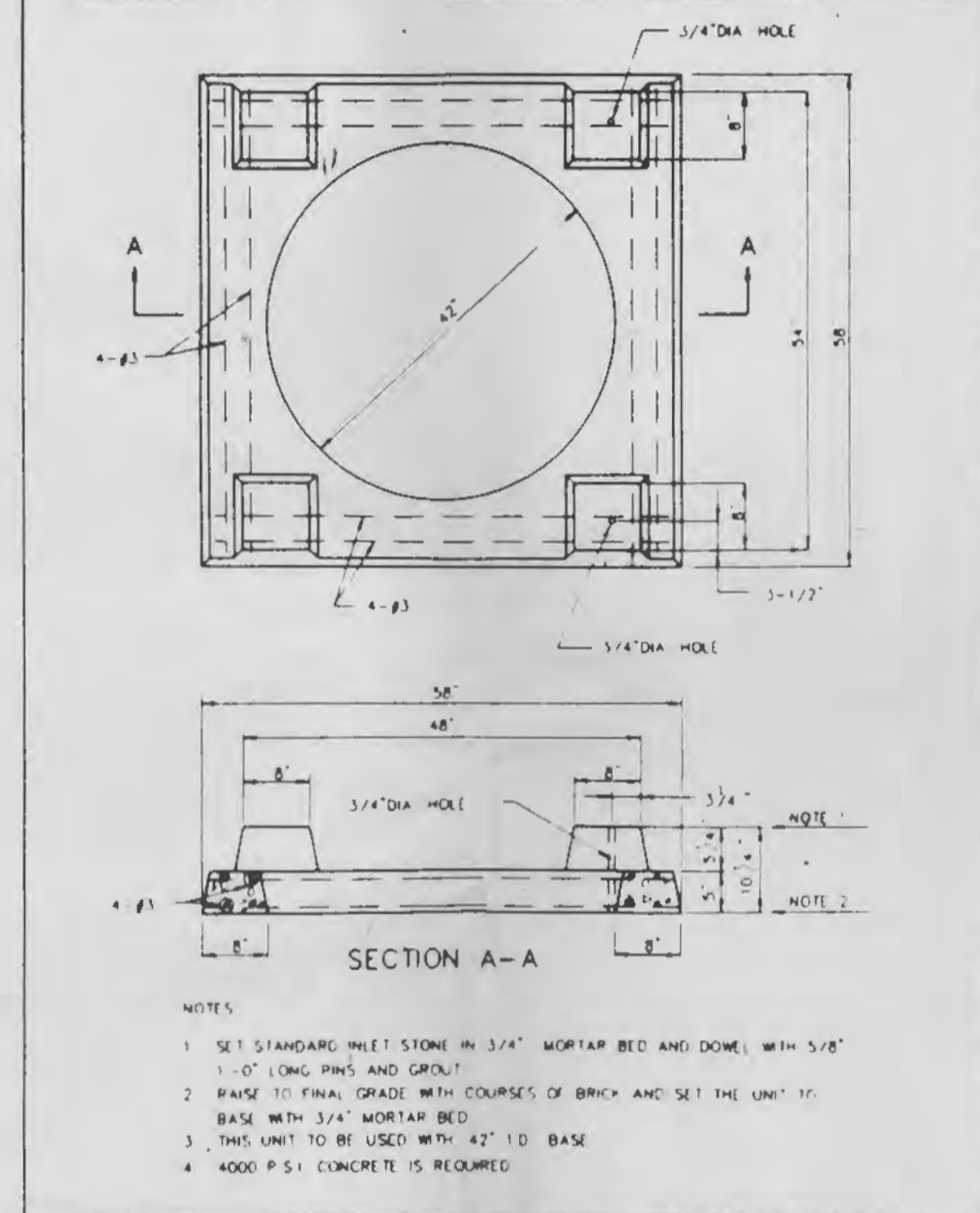
DOUBLE UNTRAPPED STREET INLET PRECAST CONCRETE
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. J.L.G. Ch. J.C.K. SEPT 1992 SHEET 35



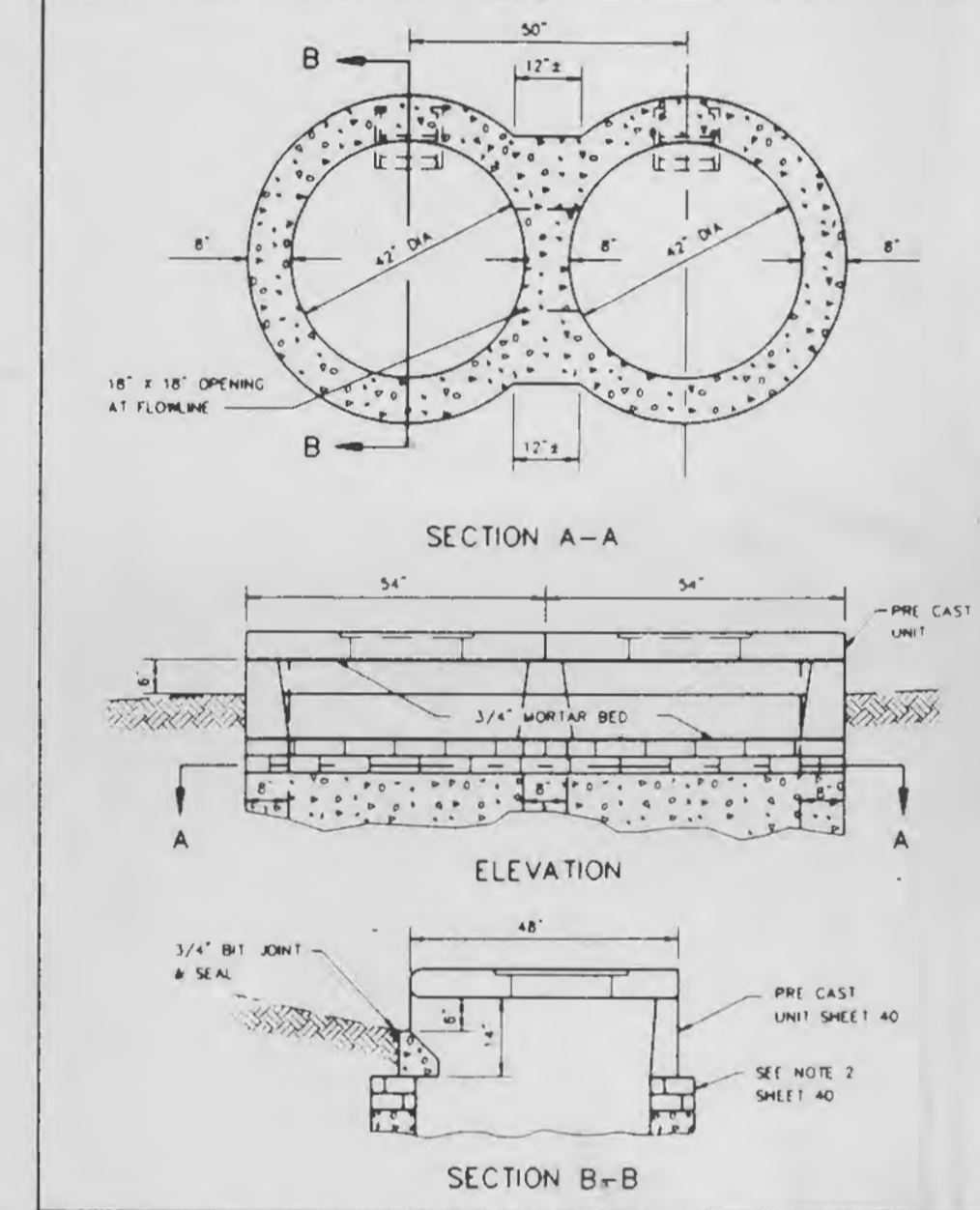
TRAPPED STREET INLET BASE PRECAST CONCRETE
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. Ch. J.C.K. 1992 SHEET 36



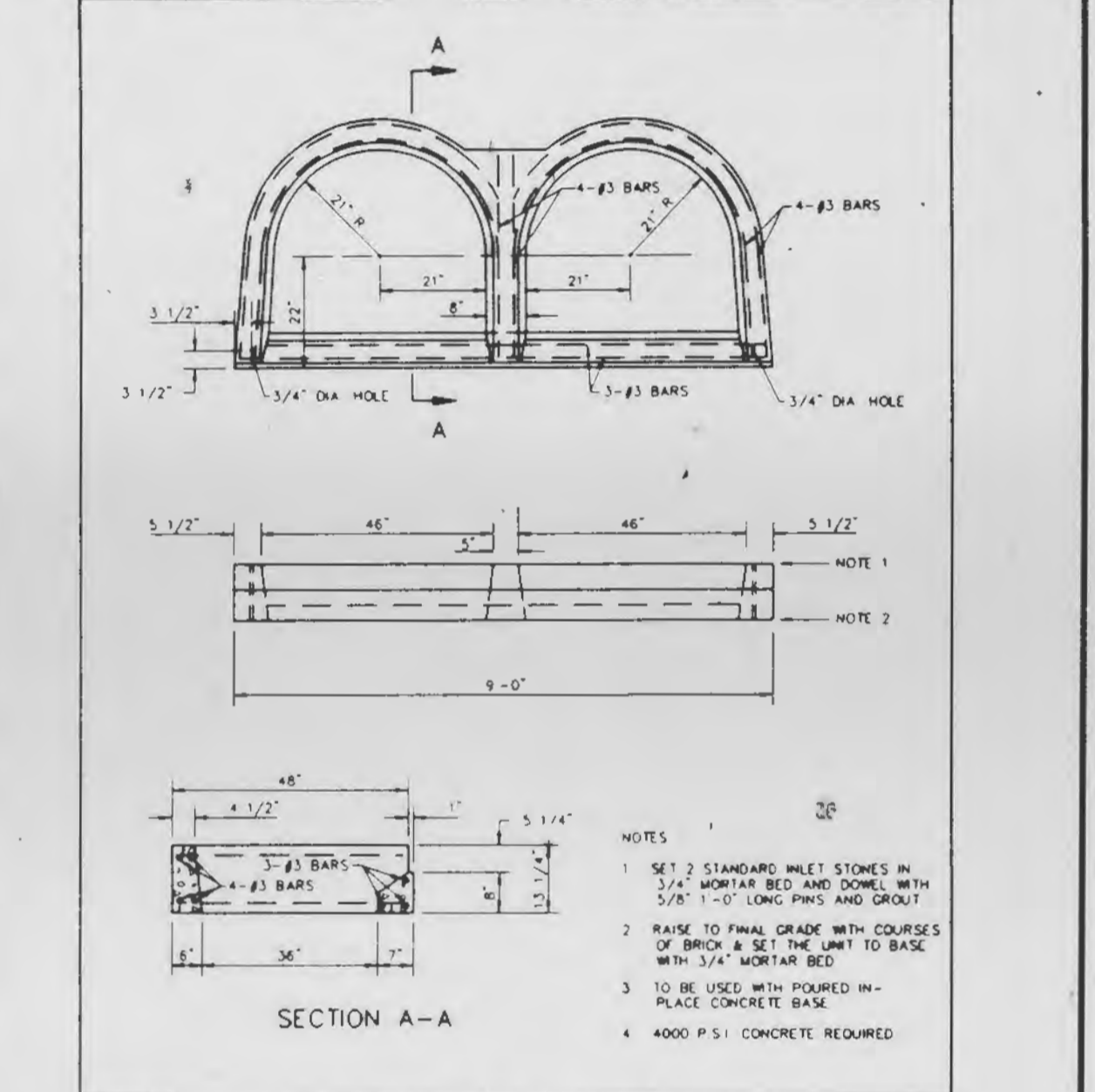
PRE-CAST CONCRETE UNIT FOR SINGLE STREET INLET
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. Ch. J.C.K. 1992 SHEET 37



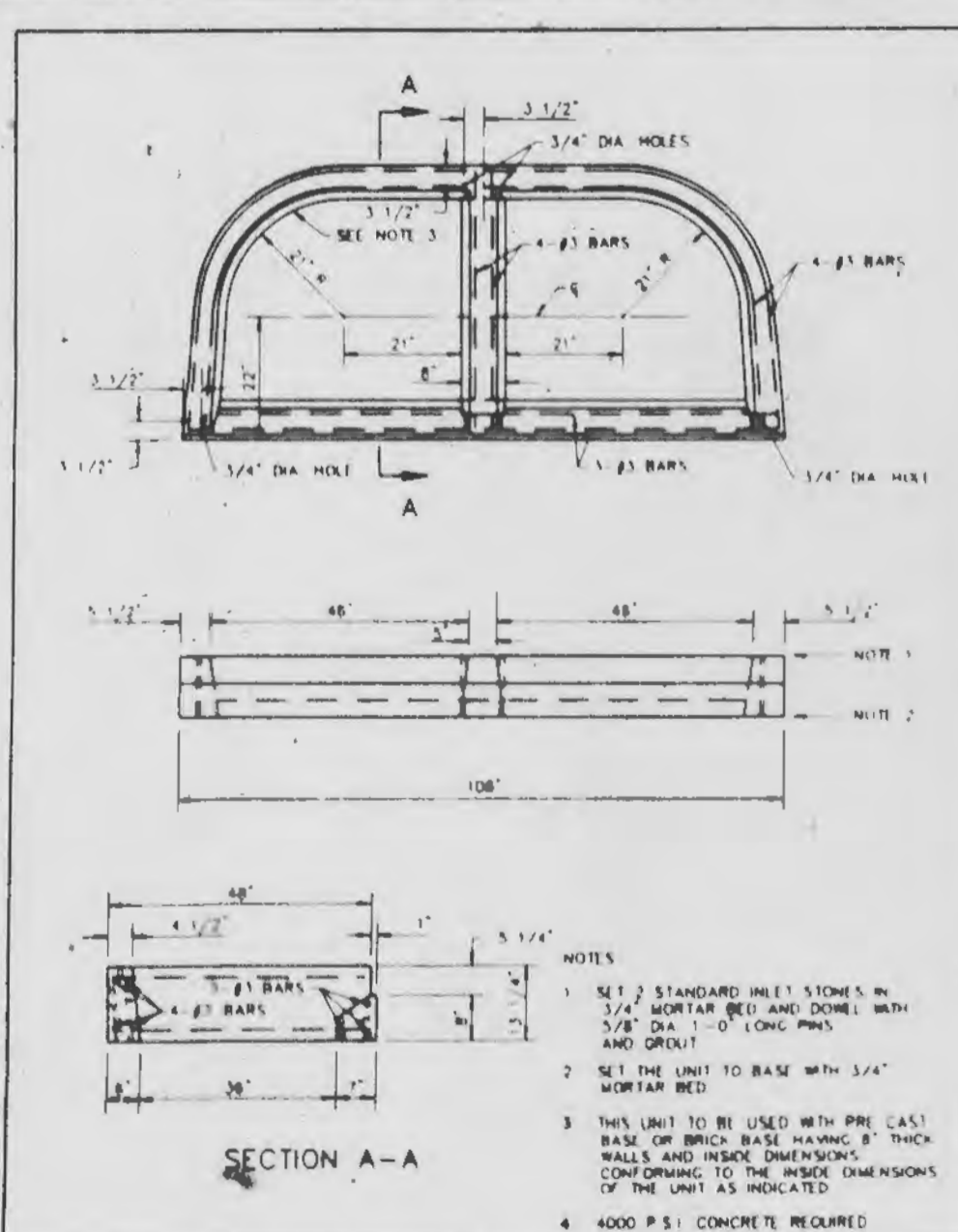
PRE-CAST CONCRETE UNIT FOR 4 WAY AREA INLET
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. D.A.B. Ch. J.C.K. 1992 SHEET 38



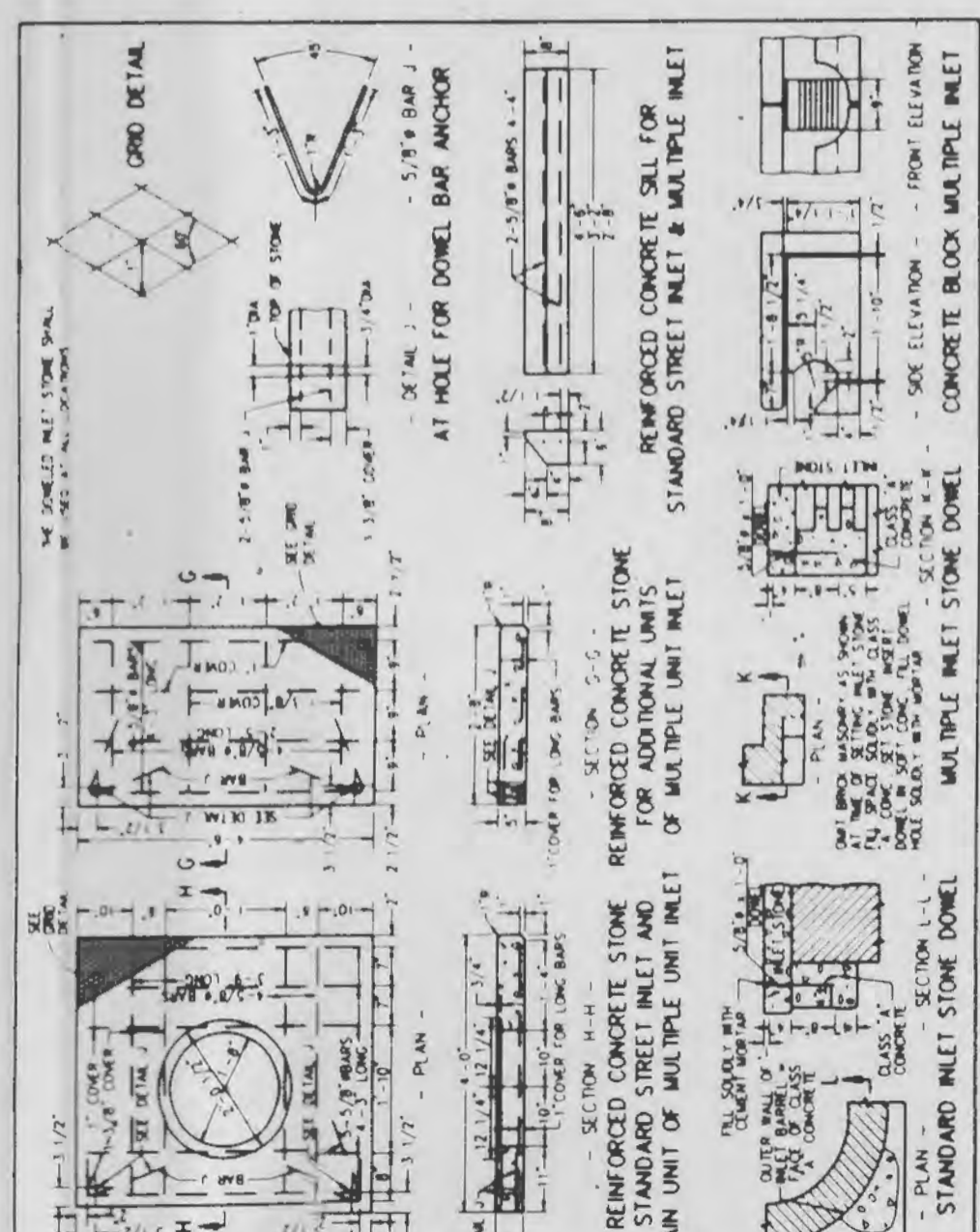
CONCRETE DOUBLE STREET INLET W/PRE CAST CONCRETE UNIT A
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 39



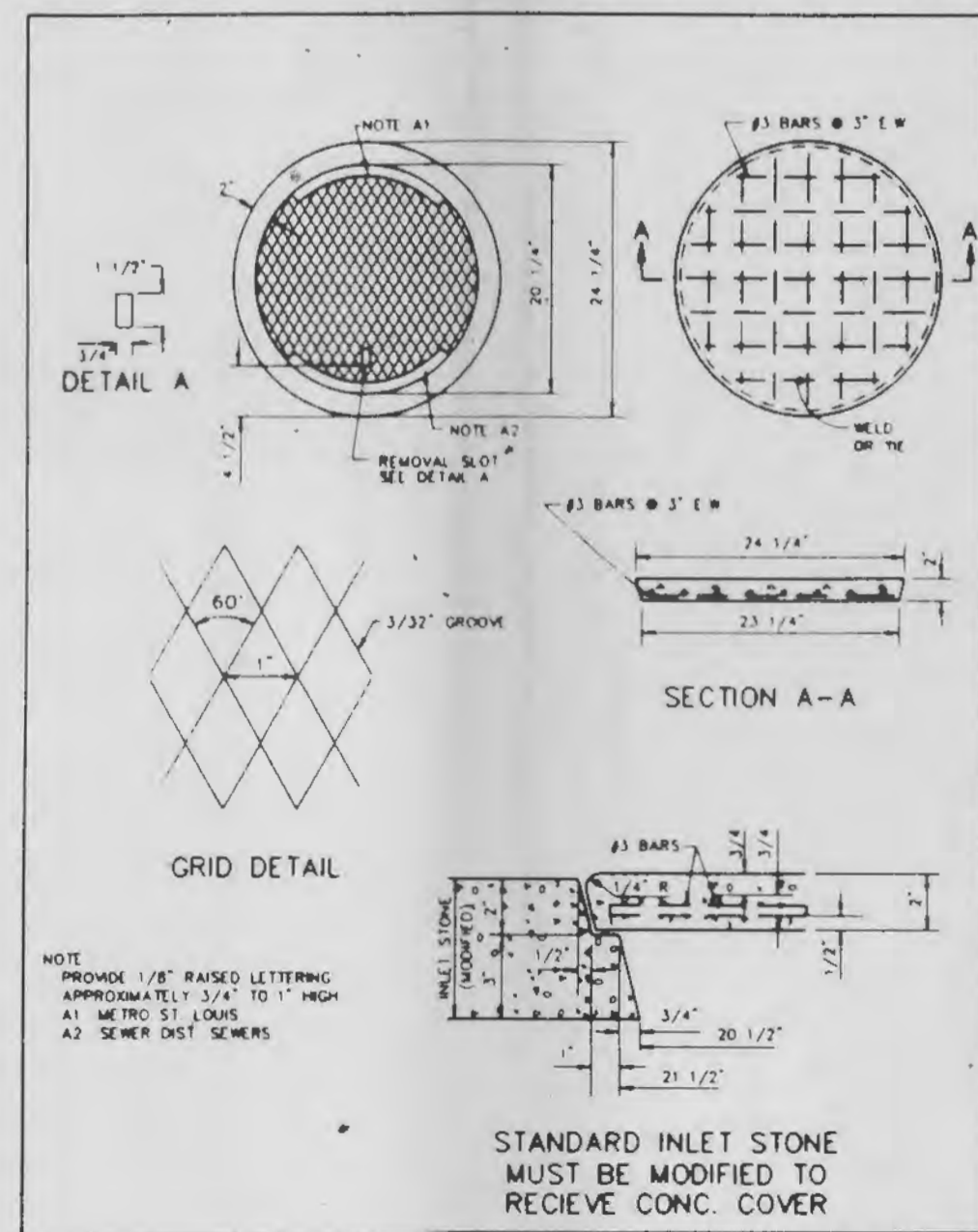
PRE-CAST CONCRETE UNIT A FOR STREET DOUBLE INLET
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 40



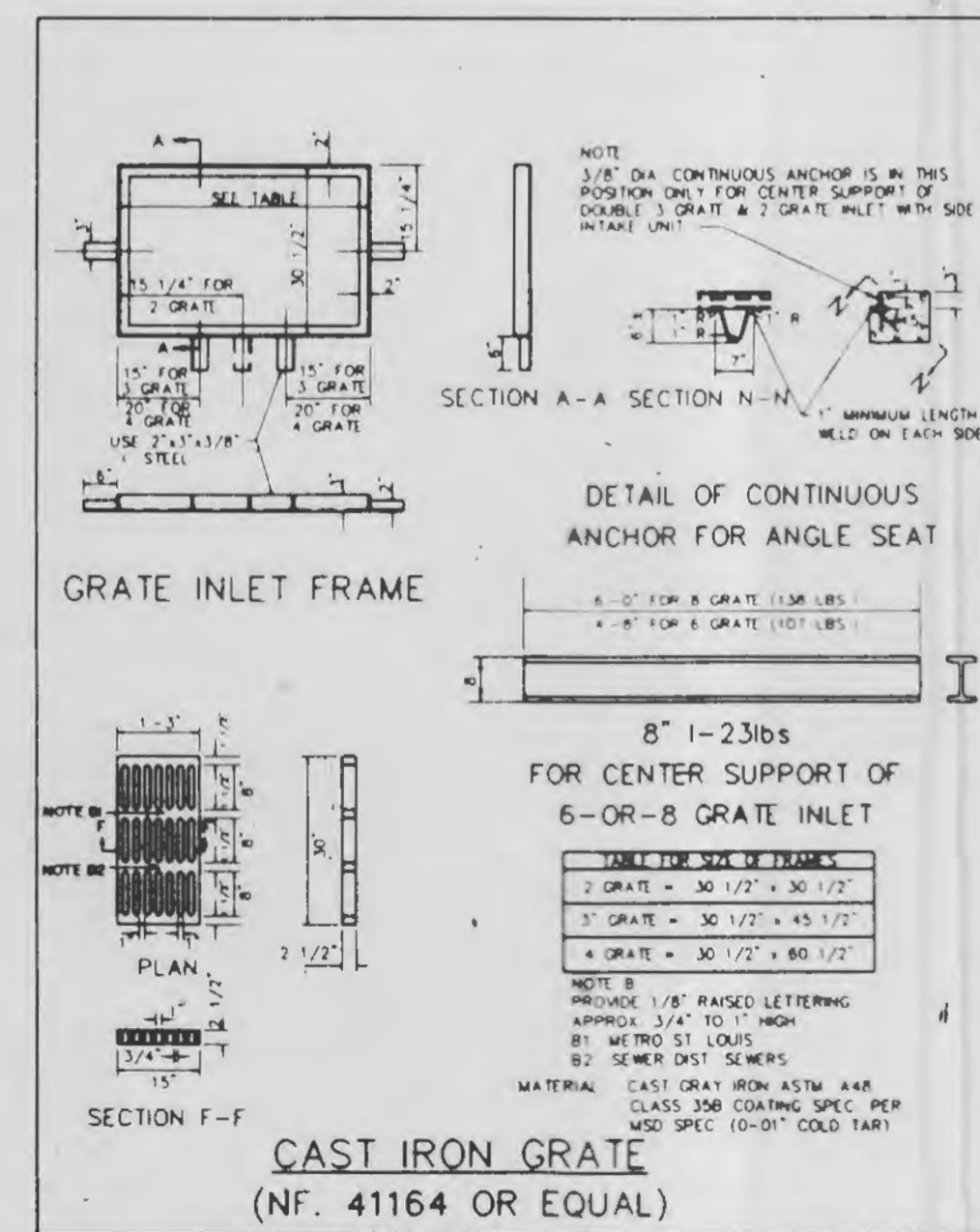
PRE-CAST CONCRETE UNIT B FOR STREET DOUBLE INLET
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 41



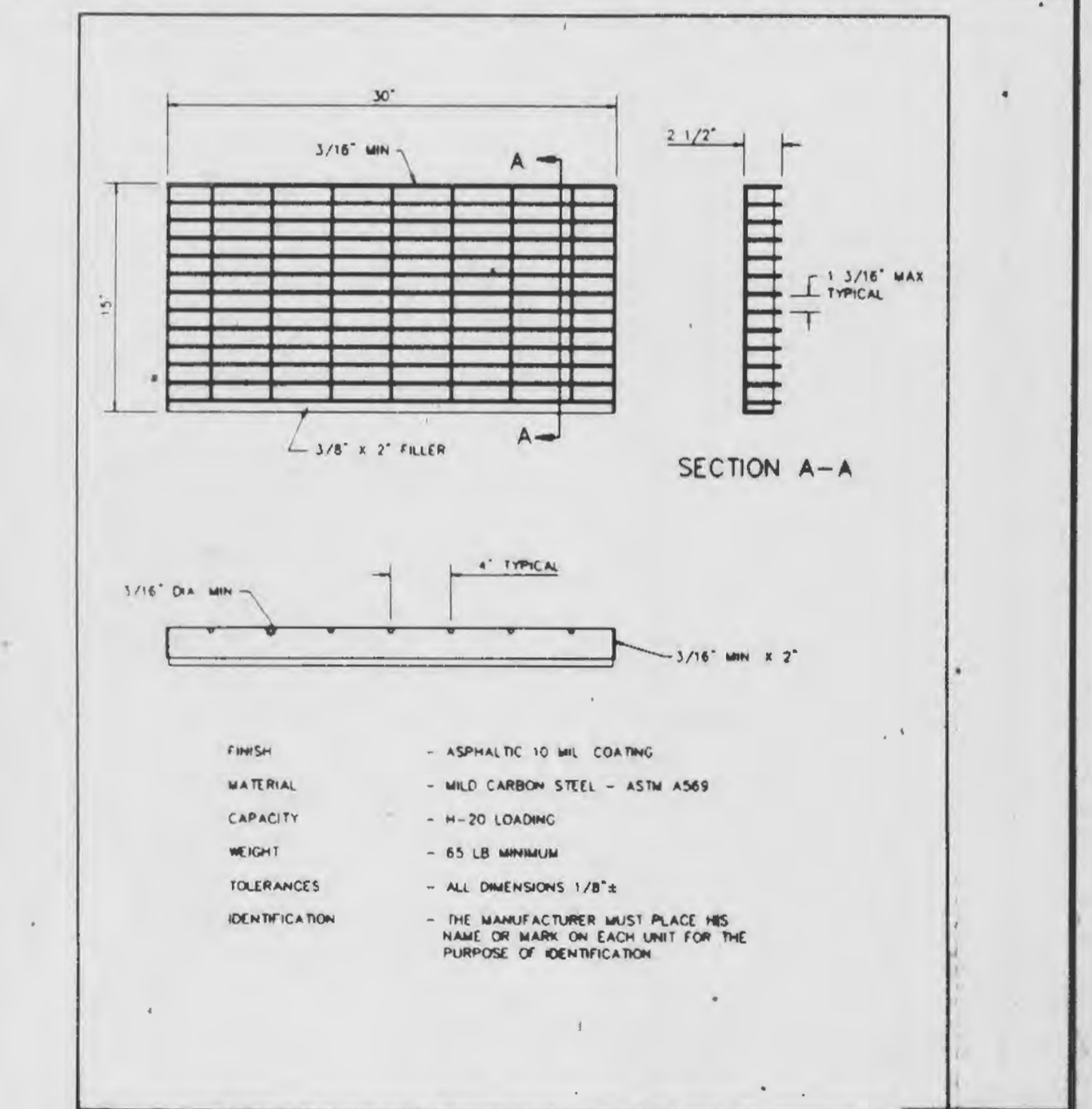
STANDARD - INLET STONES, BLOCKS & DESIGN DETAILS
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. Ch. J.C.K. 1992 SHEET 42



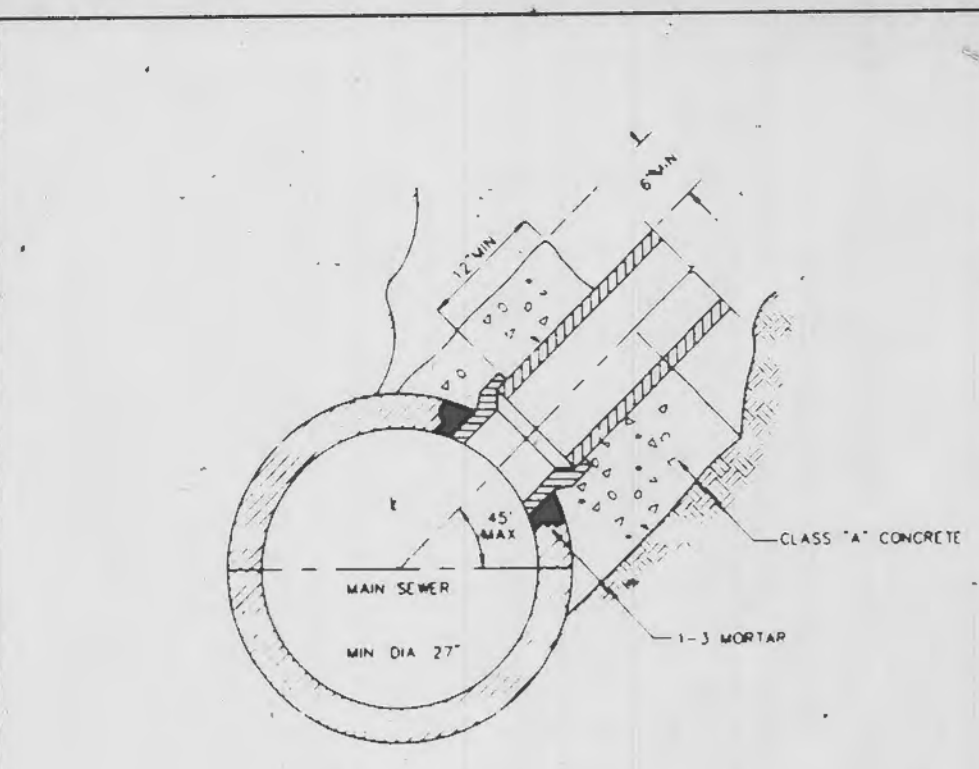
PRE-CAST CONCRETE INLET COVER
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 43



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

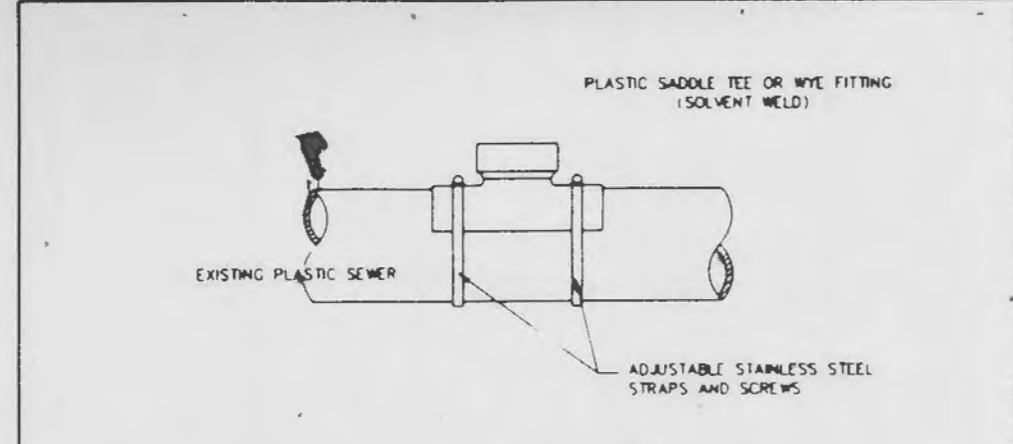


DETAIL OF STEEL GRATE
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 45



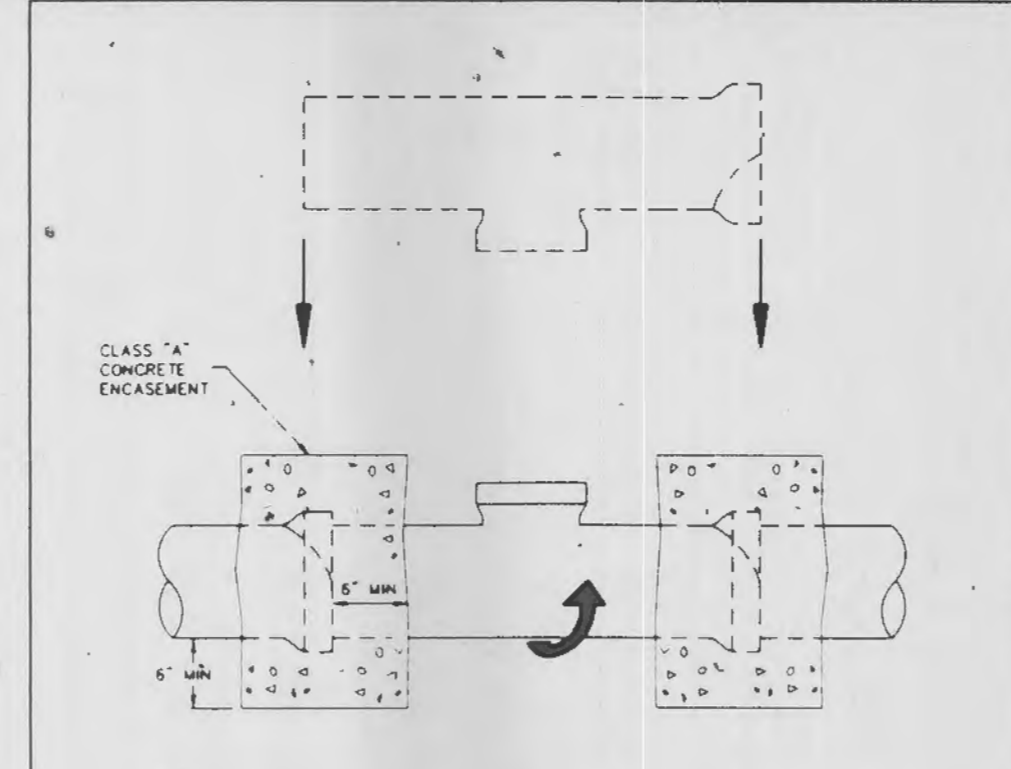
- NOTES
- THE OPENING SHALL BE CUT BY THE CONTRACTOR TO A SUFFICIENT SIZE TO PERMIT INSERTING A TEE SADDLE OR SHORT LENGTH OF PIPE AT THE REQUIRED ELEVATION AND ANGLE TO ALLOW AT LEAST TWO (2) INCHES SPACE AROUND THE PIPE. THIS SPACE WILL BE SQUALLY FILLED WITH 1-3 CEMENT-SAND MORTAR AND THE NEW PIPE NEATLY TRIMMED AND POINTED UP FLUSH WITH THE INSIDE OF THE MAIN SEWER.
 - IF THERE ARE REINFORCING BARS IN THE SEWER WALL, ONLY THOSE PREVENTING INSERTION OF THE PIPE MAY BE CUT. ALL OTHERS SHALL BE BENT INTO A CLASS "A" CONCRETE COLLAR AT THE JUNCTION OF THE CONNECTION PIPE AND THE MAIN SEWER.

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



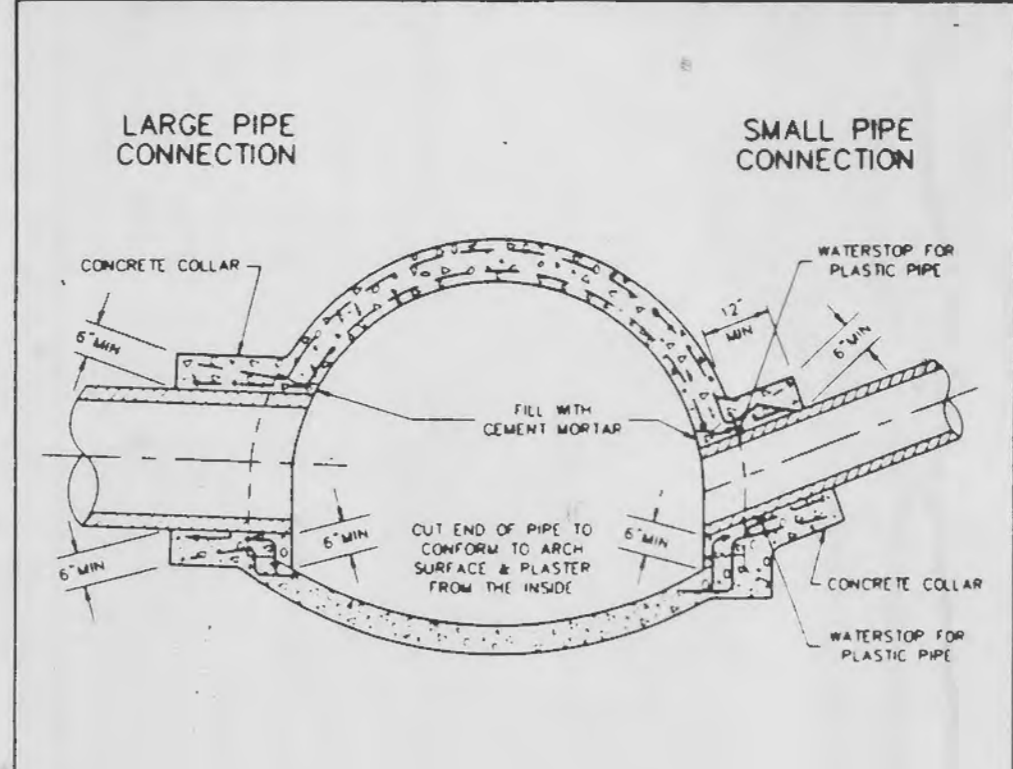
- WHEN A CONNECTION TO A PLASTIC PIPE IS ALLOWED AND A CONNECTION IS LARGER THAN 8" IN DIAMETER A SOLVENT WELD WYE OR TEE FITTING OF A SIMILAR MATERIAL MUST BE USED. (EXAMPLE: 10" x 8") THIS IS ACCOMPLISHED BY CAREFULLY CUTTING A HOLE WITH A SAW IN THE MAIN AT THE REQUIRED LOCATION AFTER CUTTING AND SHARPENING THE HOLE TO THE SIZE OF THE FITTING. THE FOLLOWING STEPS SHOULD BE TAKEN:
- CLEAN AND DRY BOTH INSIDE SADDLE WYE SURFACE AND PIPE SURFACE TO BE SOLVENT CEMENTED.
 - IMPORTANT: APPLY A LIBERAL HEAVY COAT OF ONE-STEP SOLVENT CEMENT TO THE INSIDE SURFACE OF THE SADDLE WYE AND TO THE EXTERIOR WELDING SURFACE TO THE PIPE.
 - WITHOUT DELAY, WASTE THE SURFACE AND STRIP DOWN TO IT. A BEAD OF SOLVENT SHOULD APPEAR AFTER THE SADDLE HAS BEEN STRIPPED DOWN THOROUGHLY.
 - USING A RAG OR PAPER TOWEL, Wipe BEAD AND ANY EXCESS SOLVENT CEMENT OFF PIPE AND SADDLE.
 - ALLOW 30-45 MINUTES FOR SETUP TIME BEFORE BACKFILLING. DURE TIME DEPENDS ON SIZE FIT OF MATERIALS BEING INSTALLED AND VARIOUS COLD DAMP CONDITIONS.
 - DISCARD OLD SOLVENT. IT BECOME GELLED OR LUMPY.
 - A CLEAN DRY BEDDING MATERIAL IS REQUIRED AROUND THE COMPLETED CONNECTION BEFORE BACKFILLING. THE BEDDING MATERIAL SHOULD BE ONE OF THE FOLLOWING:
 - A. #50 F BEDDING
 - B. 1-3 CEMENT TO SAND MIX
 - C. "ONE-HALF" CONCRETE

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



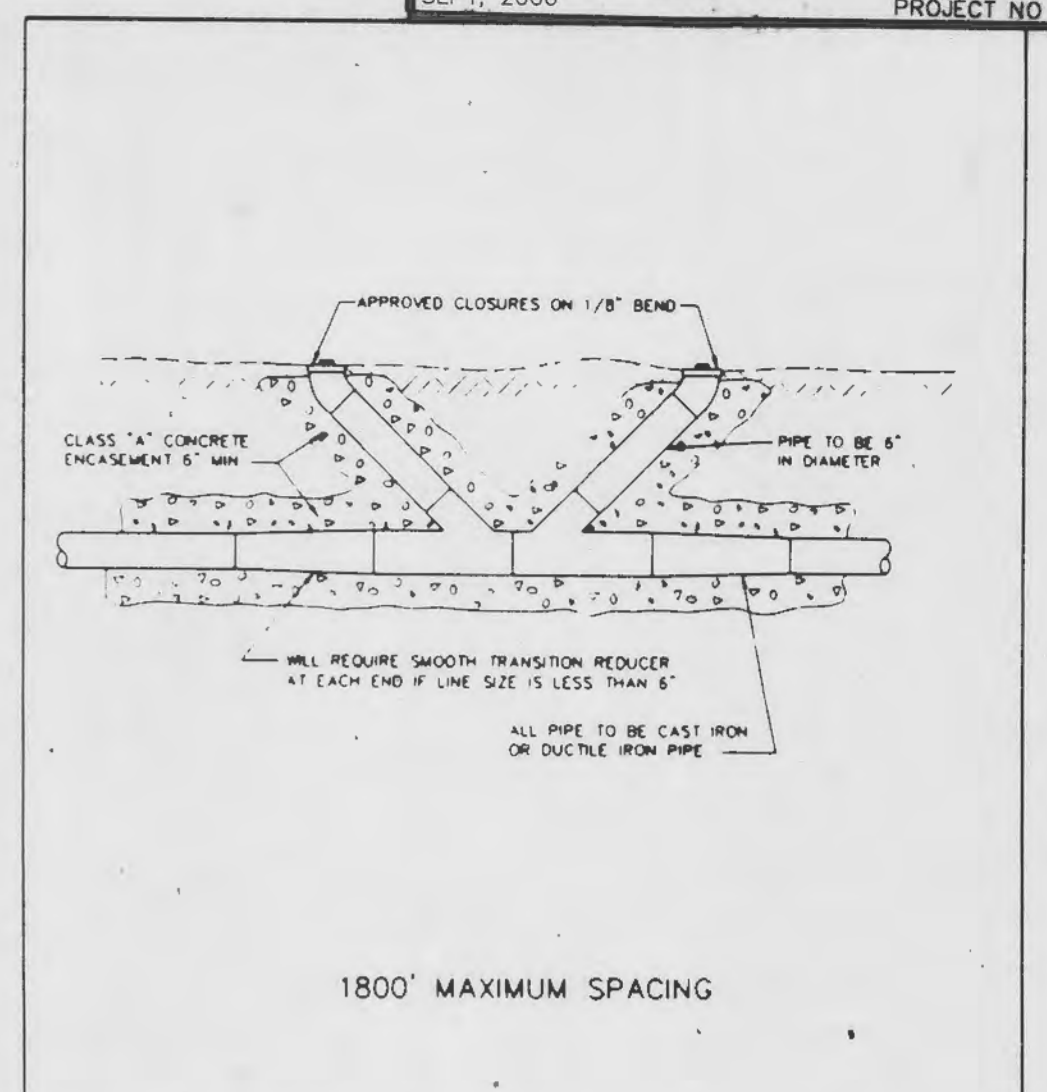
- NOTES
- WHEN A CONNECTION IS ALLOWED LARGER THAN 8" DIAMETER A SADDLE MAY BE USED IF THE I.D. OF THE CONNECTION PIPE IS NOT GREATER THAN ONE-HALF (1/2) OF THE I.D. OF THE MAIN SEWER. (EXAMPLE: 24" x 10")
 - IF THE I.D. OF THE CONNECTION PIPE IS GREATER THAN ONE-HALF (1/2) THE I.D. OF THE MAIN SEWER THE WYE OR TEE MUST BE "ROLLED IN". (EXAMPLE: 15" x 8")
 - THIS IS ACCOMPLISHED BY BREAKING AWAY AND REMOVING ONE SECTION OF PIPE THE TOP HALF OF THE BELL ON THE PIPE LONG ADJACENT TO THE GAP IS CAREFULLY BROKEN OFF. THE TOP HALF OF THE BELL ON THE MAIN REPLACEMENT SECTION WITH A "TEE" WYE FITTING IS ALSO BROKEN OFF. THE REPLACEMENT PIPE IS THEN PLACED IN THE LINE GAP WITH THE STUB POINTED IN THE WRONG DIRECTION. THE BROKEN BELLS ON THE REPLACEMENT AND ADJOINING PIPE MAKE POSSIBLE FOR THE REPLACEMENT SECTION TO FIT INTO THE SEWER LINE WITHOUT DISTURBING THE ADJOINING PIPE SECTIONS. THE REPLACEMENT SECTION IS THEN ROTATED TO THE DESIRED POSITION AND THE BROKEN BELLS ARE ENCASED WITH A 6" CLASS "A" CONCRETE ENCASUREMENT.

"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

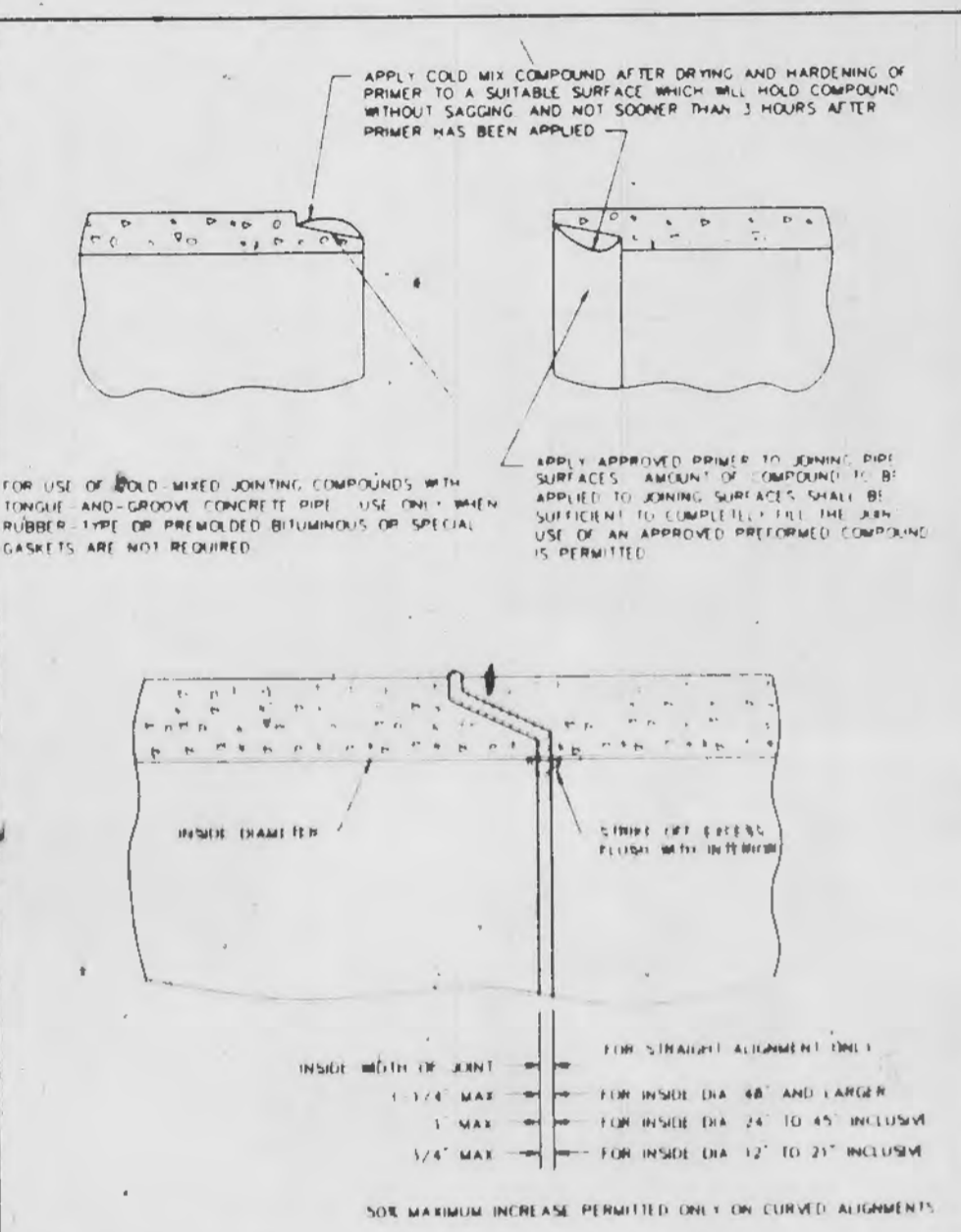


- NOTES
- OPENING INTO EXISTING SEWER TO BE CUT CAREFULLY TO AVOID DAMAGE TO ADJACENT MASONRY.
 - HOLE TO BE CUT TO PROPER GRADE AND ELEVATION AND TO BE OF SUCH SIZE AS TO PERMIT A TWO-INCH SPACE ALL AROUND THE OUTSIDE OF THE PIPE.
 - THIS SPACE SHALL BE CAREFULLY FILLED WITH ONE PART CEMENT AND THREE PARTS SAND MORTAR COMPACTED INTO PLACE AFTER THE PIPE HAS BEEN INSERTED AND PROPERLY SUPPORTED TO LINE AND GRADE.
 - EXISTING REINFORCING BARS ARE TO BE BENT BACK INTO THE CONCRETE COLLAR AROUND THE PIPE TO PROVIDE REINFORCEMENT EQUALLY ON ALL SIDES.

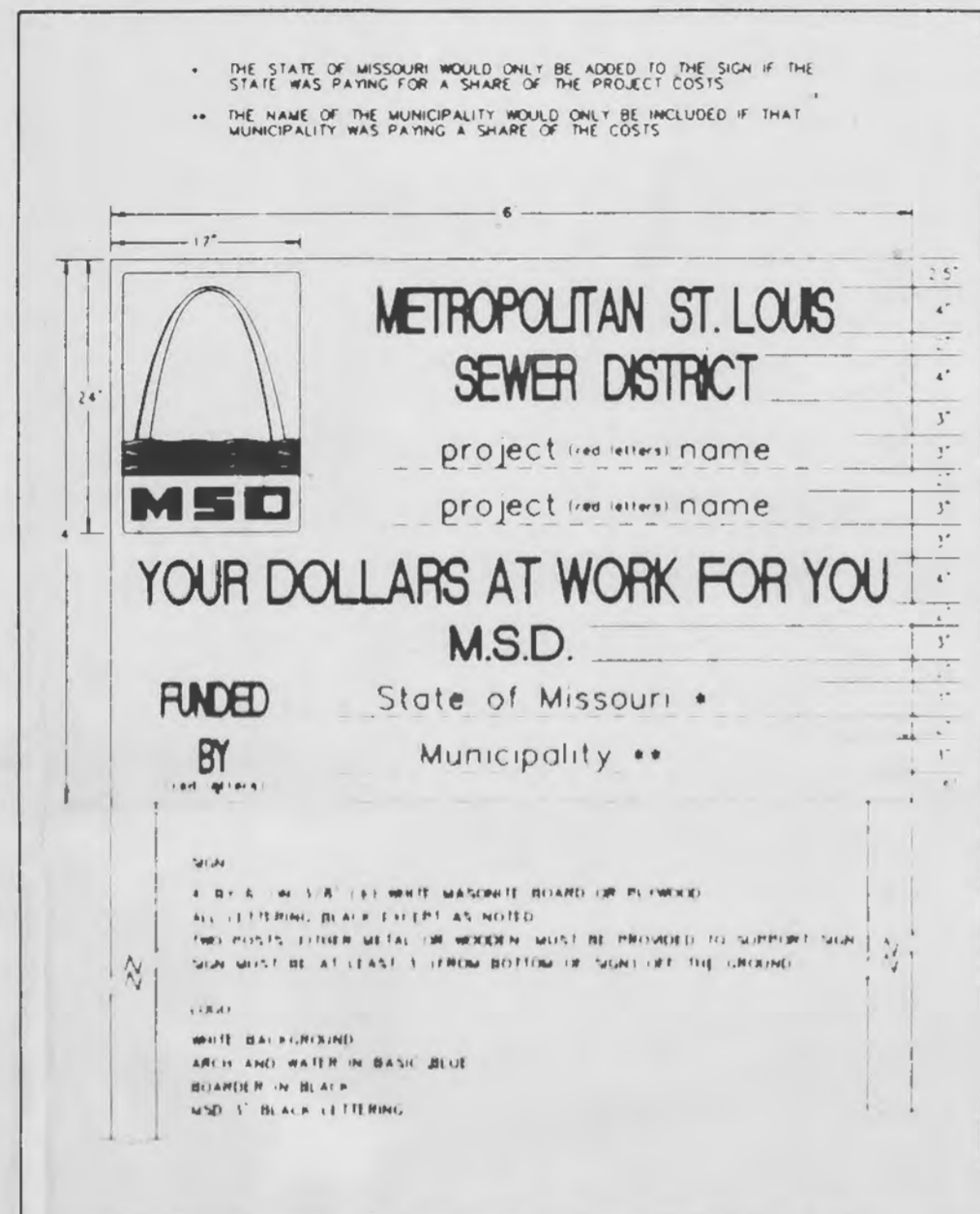
CONNECTIONS TO LARGE SEWERS	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction		
	Dr. W S H Ch. J C K	1992	SHEET 64



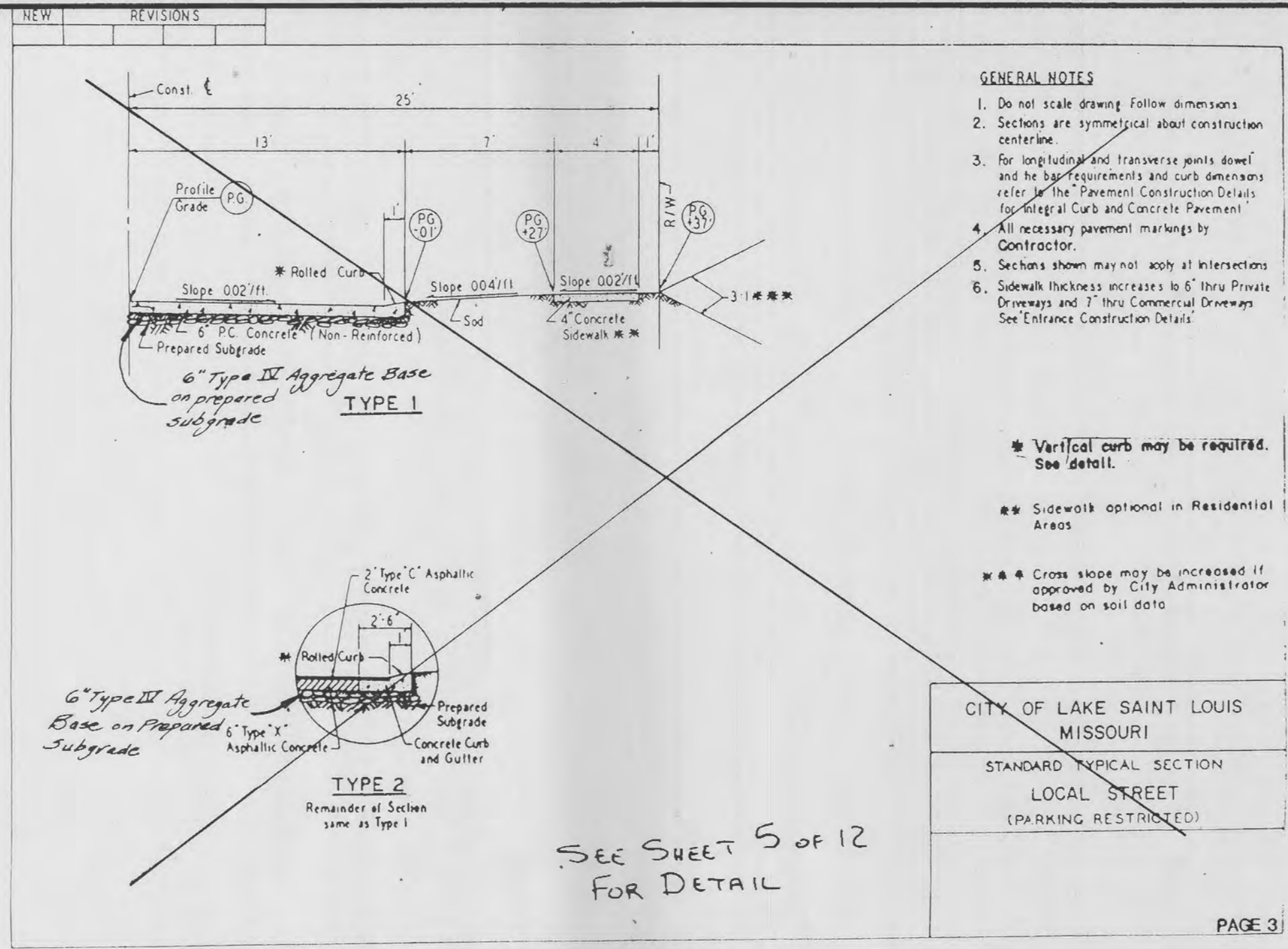
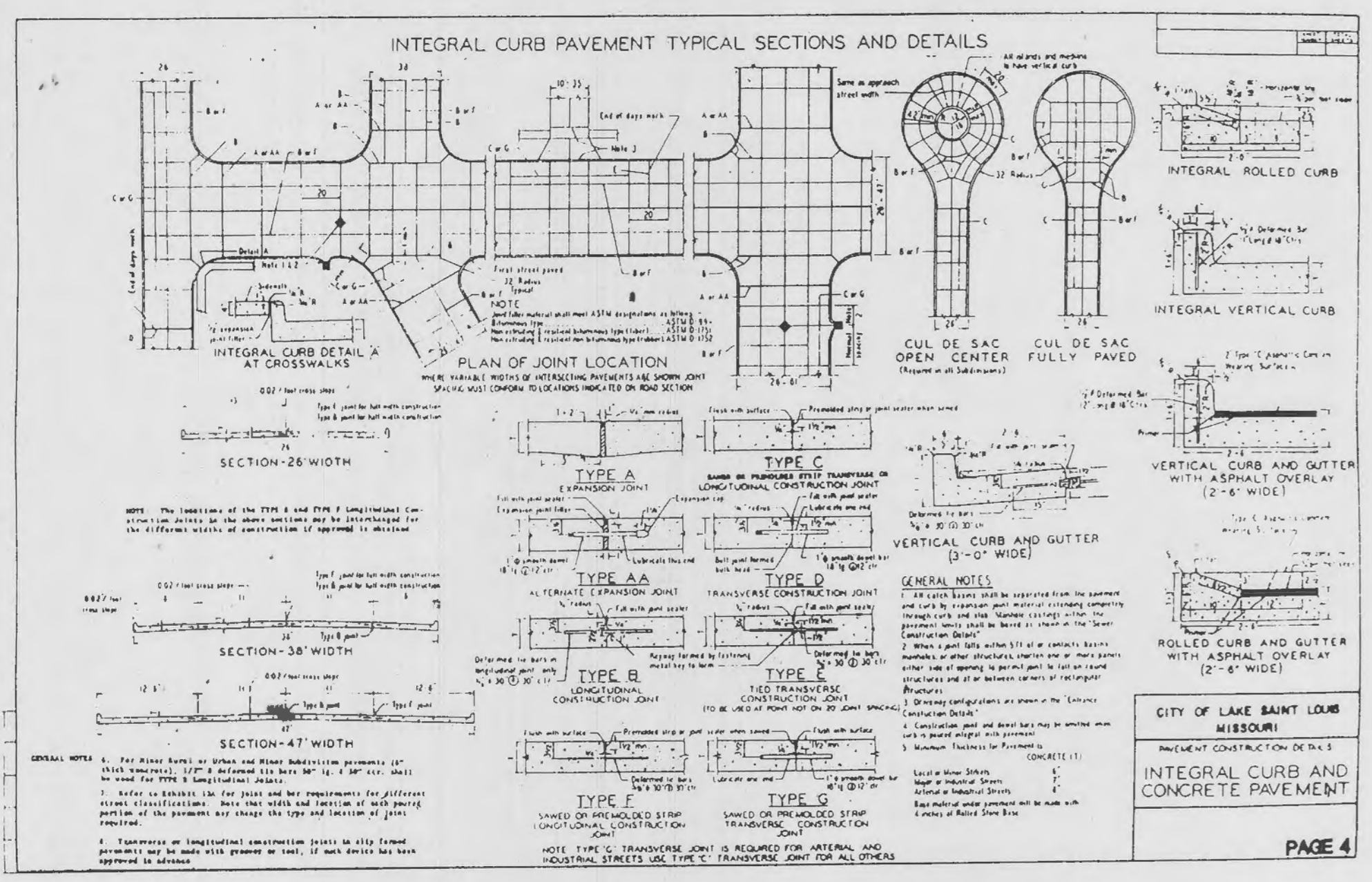
FORCE MAIN CLEANOUT (6" DIA. & SMALLER)	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction		
	Dr. R W W Ch. J C K	1992	SHEET 65



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



SIGNS	METROPOLITAN ST. LOUIS SEWER DISTRICT Standard Details of Sewer Construction		
	Dr. W S H Ch. J C K	1992	SHEET 67

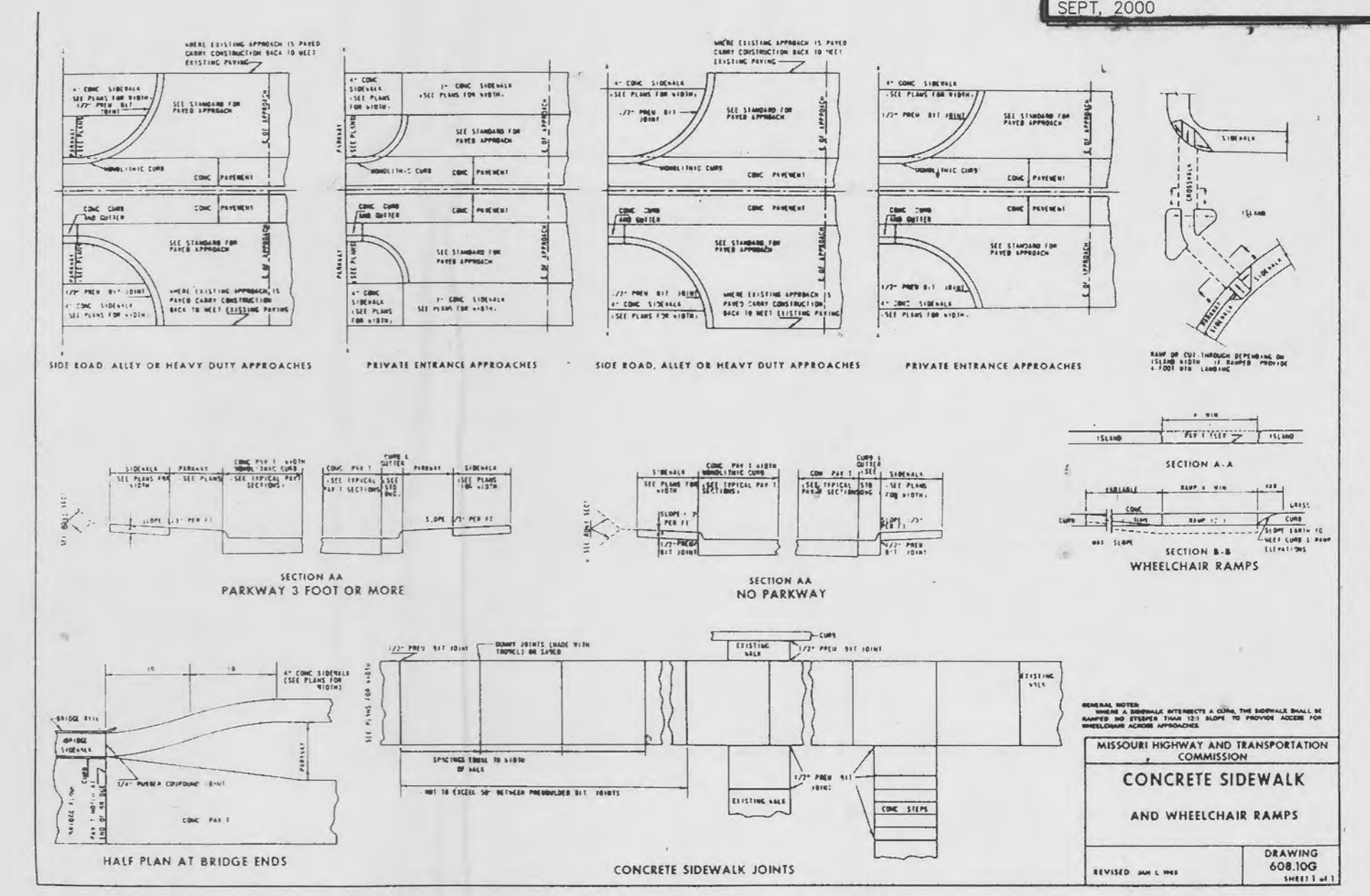


- GENERAL NOTES**
1. Do not scale drawing follow dimensions
 2. Sections are symmetrical about construction centerline
 3. For longitudinal and transverse joints down and the top requirements and curb dimensions refer to the "Pavement Construction Details for Integral Curb and Concrete Pavement"
 4. All necessary pavement markings by Contractor.
 5. Sections shown may not apply at intersections
 6. Sidewalk thickness increases to 8" thru Private Driveways and 7" thru Commercial Driveways See Entrance Construction Details

- * Vertical curb may be required. See detail.
- * Sidewalk optional in Residential Areas
- * Cross slope may be increased if approved by City Administrator based on soil data

CITY OF LAKE SAINT LOUIS
MISSOURI
STANDARD TYPICAL SECTION
LOCAL STREET
(PARKING RESTRICTED)

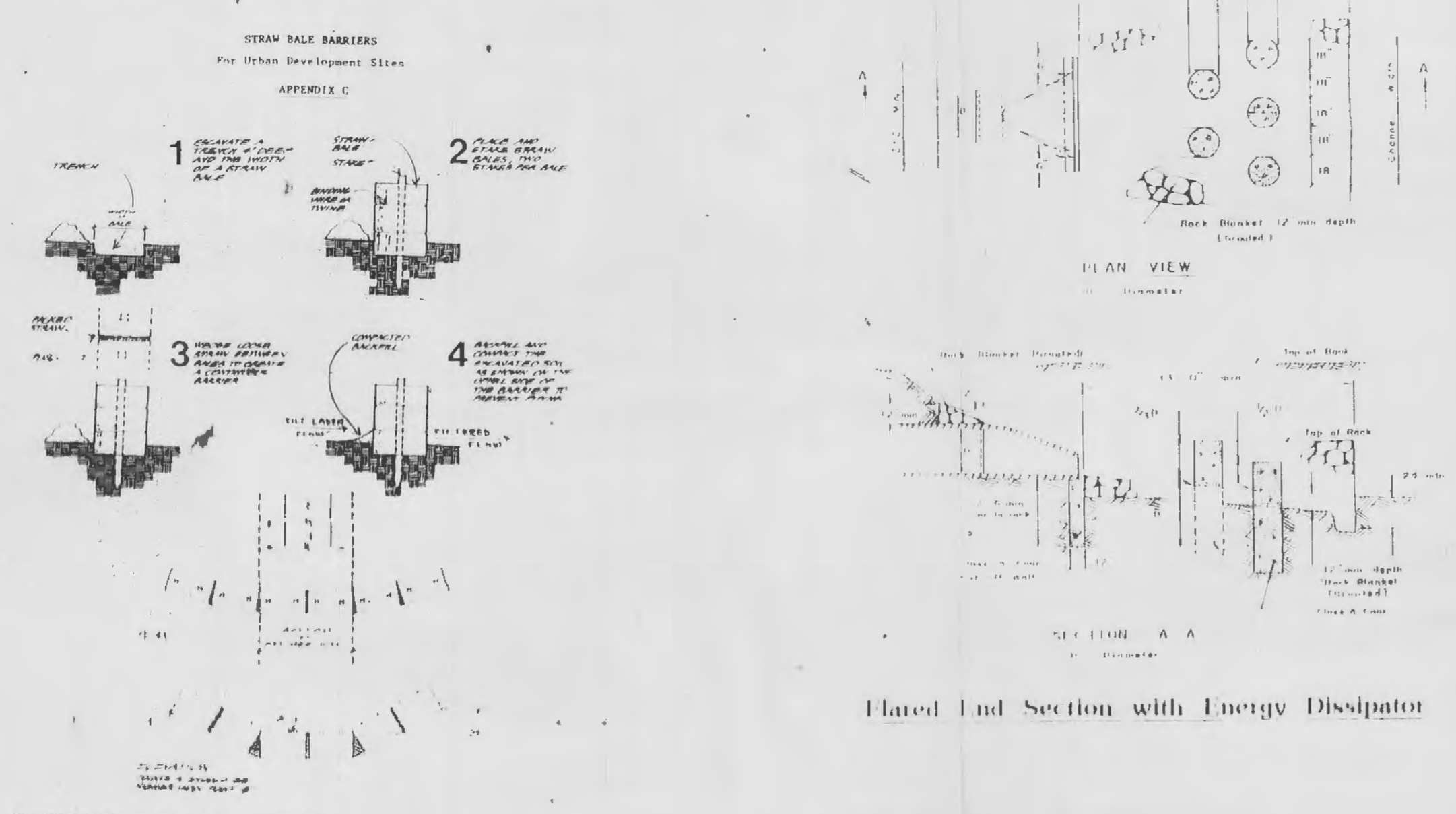
PAGE 3



- 1) "A six inch aggregate base, Type 4, as per the Missouri State Highway Specifications shall be required for all street construction."
- 2) Perforated tile drain 4" in diameter with fabric sleeve shall be provided at all low spots within the vertical profile of the streets and connected to curb inlets.
- 3) Longitudinal and transverse joint reinforcing is required for all concrete pavements. Per page 4 of Appendix A pavement construction details.

SEE SHEET 5 OF 12
FOR DETAIL

Placement and Construction of a Synthetic Filter Barrier



Flared End Section with Energy Dissipator

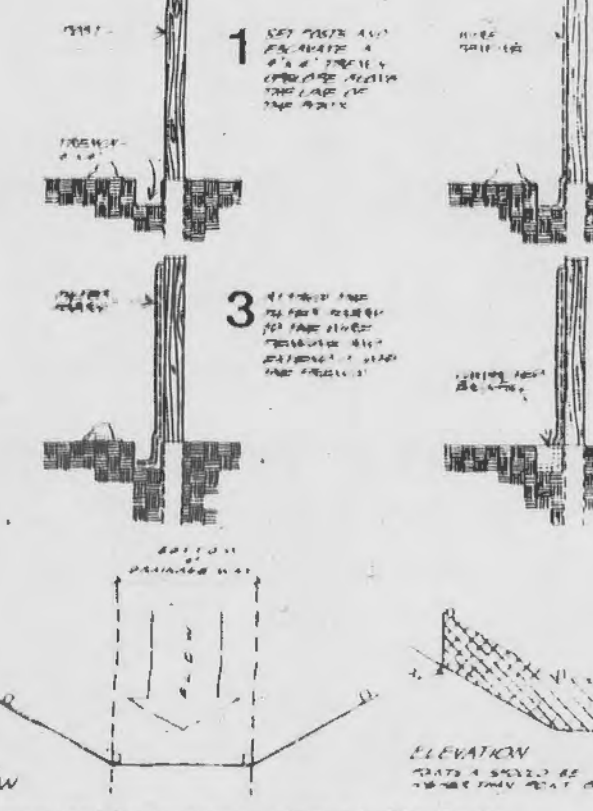
Placement and Construction of a Straw Bale Barrier

APPENDIX B

Maintenance

1. Filter barriers shall be inspected weekly after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.
2. Should the fabric, the top or the bottom of the barrier, be damaged or the barrier is not effective prior to the end of the event, the barrier shall be replaced immediately.

1. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately half the height of the barrier.
2. Any sediment deposits remaining in place after the site has been inspected shall be removed. Sediment shall be removed with the existing grade, prepared and seeded.



Placement and Construction of a Synthetic Filter Barrier

APPENDIX C