

GRADING NOTES

1. 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 developer shall also supply the City construction inspector with the soil report(s) prior to or during site soil testing.
2. The grading contractor shall perform a complete grading and compaction operation as shown on the plans, stated in these notes, or reasonably implied therefrom, all in accordance with the plans and notes as interpreted by the Geotechnical Engineer.
3. The Contractor shall notify the Soils Engineer at least two days in advance of the start of the grading operation.
4. All areas shall be allowed to drain. All low points shall be provided with temporary ditches.
5. All filled places, including trench backfills, under buildings, proposed storm and sanitary sewer lines and/or paved areas, shall be compacted to 90% of maximum density as determined by the "Modified A.A.S.H.T.O. T-180 Compaction Test," (A.S.T.M.-D-1557), or 95% maximum density as determined by the Standard Proctor Test A.A.S.H.T.O. T-99. All filled places within public roadways shall be compacted from the bottom of the fill up to 90% maximum density as determined by the Modified A.A.S.H.T.O. T-180 Compaction Test or 95% of maximum density as determined by the Standard Proctor Test A.A.S.H.T.O. T-99, Method "C" (A.S.T.M.-D-698). All test shall be verified by a soils engineer concurrent with grading and backfilling operations.
6. 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 without being seeded and mulched. Care should be exercised to prevent soil from damaging adjacent property and silting up existing downstream storm drainage systems. All erosion control systems shall be inspected and necessary corrections made within 24 hours of any rain storm resulting in 1/2 inch of rain or more.
7. Debris and foundation material from any existing on-site building or structure which is scheduled to be razed for this development must be disposed of off-site.
8. All trash and debris on site, either existing or from construction, must be removed and properly disposed of off-site.
9. Soft soil in the bottom and banks of any existing or former pond sites or tributaries or on any sediment basins or traps shall be removed, spread out and permitted to dry sufficiently to be used as fill. None of this material should be placed in proposed public right-of-way locations or on any storm sewer locations.
10. 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 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.
11. Compaction equipment shall consist of tamping rollers, pneumatic-tired rollers, vibratory rollers, or high speed impact type 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.
12. 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.
13. 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.
14. 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 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.
15. 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 content.
16. 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.
17. 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 (A.S.T.M.-D-1557).

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

GENERAL NOTES

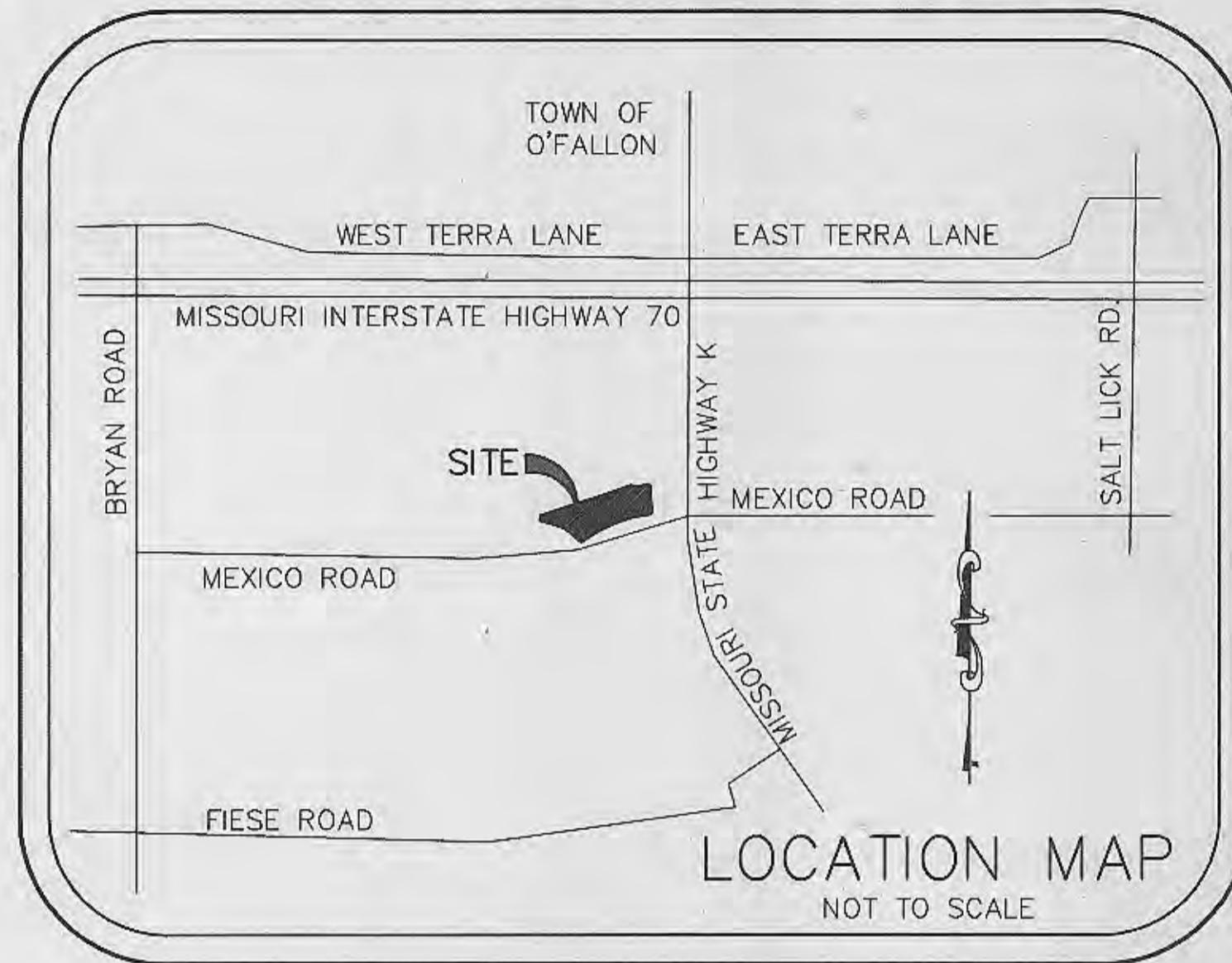
- 1) UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATION SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.
- 2) ALL TRENCH BACKFILLS 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 TRENCH BACKFILLS UNDER PAVED AREAS INCLUDING SIDEWALKS SHALL BE GRANULAR FILL. ALL OTHER TRENCH BACKFILLS MAY BE EARTH MATERIAL (FREE OF LARGE CLODS OR STONES).
- 3) NO AREA SHALL BE CLEARED WITH OUT THE PERMISSION OF THE PROJECT ENGINEER.
- 4) ALL GRADES SHALL BE WITHIN 0.2 FEET OF THOSE SHOWN ON THE GRADING PLAN.
- 5) NO SLOPE SHALL BE STEEPER THAN 3:1. ALL SLOPES SHALL BE SODDED OR SEEDED AND MULCHED.
- 6) ALL CONSTRUCTION AND MATERIALS USED SHALL CONFORM TO CURRENT CITY OF O'FALLON STANDARDS.
- 7) ALL UTILITIES ARE EXISTING UNLESS OTHERWISE NOTED. ALL NEW UTILITIES SHALL BE LOCATED UNDERGROUND.
- 8) ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
- 9) THE DEVELOPER SHALL COMPLY WITH CURRENT ARTICLE 13 PERFORMANCE STANDARDS.
- 10) ALL CONSTRUCTION METHODS AND PRACTICES TO CONFORM WITH OSHA STANDARDS.
- 11) OFF-SITE EASEMENTS WILL BE REQUIRED WHERE THEY ARE NECESSARY.
- 12) THE DEVELOPER SHALL COMPLY WITH CURRENT THREE PRESERVATION ORDINANCE NUMBER 1689 AND PROVIDE LANDSCAPING AS SET FORTH IN ARTICLE 23 OF THE CITY OF O'FALLON ZONING ORDINANCES.
- 13) THE DEVELOPER MUST PROVIDE CITY CONSTRUCTION INSPECTORS WITH SOIL REPORTS PRIOR TO AND DURING SITE SOIL TESTING.
- 14) THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. THE CONTRACTOR SHALL USE WHAT EVER MEANS NECESSARY TO CONTROL EROSION AND SILTATION INCLUDING, BUT NOT LIMITED TO, STAKED STRAW BALES AND/OR SILTATION FABRIC FENCES (POSSIBLE METHODS OF CONTROL ARE DETAILED IN THE PLAN). CONTROL SHALL COMMENCE WITH GRADING AND BE MAINTAINED THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER AND/OR THE CITY OF O'FALLON AND/OR MODOT. THE CONTRACTOR'S RESPONSIBILITIES DEPOSITING OF SILT. THE OWNER AND/OR THE CITY OF O'FALLON AND/OR MODOT MAY AT THEIR OPTION DIRECT THE CONTRACTOR IN HIS METHODS AS DEEMED FIT TO PROTECT PROPERTY AND IMPROVEMENTS. ANY DEPOSITING SEWERS OR SWALES SHALL BE REMOVED AFTER EACH RAIN AND AFFECTED AREAS CLEANED TO THE SATISFACTION OF THE OWNER AND/OR THE CITY OF O'FALLON AND/OR MODOT.
- 15) ALL FILLED PLACES UNDER PROPOSED STORM AND SANITARY SEWERS AND/OR PAVED AREAS SHALL BE COMPACTED TO 90% OF THE MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED AASHTO T-180 COMPACTION TEST OR 95% OF THE MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AASHTO T-99. ALL FILLED PLACES IN PROPOSED ROADS SHALL BE COMPACTED FROM THE BOTTOM OF THE FILL UP. ALL TEST SHALL BE VERIFIED BY A SOIL ENGINEERS CONCURRENT WITH GRADING AND BACKFILLING OPERATIONS.
- 16) ALL SIGN LOCATIONS AND SIZES MUST BE APPROVED SEPARATELY THROUGH THE PLANNING DIVISION. SIGN LOCATIONS NOT KNOWN AT THIS TIME.
- 17) ALL SIGN POSTS AND BACKS AND BRACKET ARMS SHALL BE PAINTED BLACK USING CARBOLINE RUSTBOND PENETRATING SEALER SG AND CARBOLINE 133 HB PAINT (OR EQUIVALENT AS APPROVED BY CITY AND MODOT). SIGNS DESIGNATING STREET NAMES SHALL BE ON THE OPPOSITE SIDE OF THE STREET FROM TRAFFIC CONTROL SIGNS.
- 18) LIGHTING VALUES WILL BE REVIEWED ON SITE PRIOR TO FINAL OCCUPANCY INSPECTION. CORRECTION WILL NEED TO BE MADE IF NOT IN COMPLIANCE WITH CITY STANDARDS.
- 19) ALL STORM AND SANITARY STRUCTURES SHALL NOT BE CONSTRUCTED WITH BRICK. ALL STORM AND SEWER JOINT SHALL BE GASKETED O-RING TYPE.



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AS-BUILT PLAN FOR WOODLAWN PLAZA

A TRACT OF LAND BEING ALL OF CONSOLIDATED ADJUSTED OUTLOT A AND ALL OF OUTLOT B OF O'FALLON POINTE CENTRE, PLAT BOOK 40, PAGE 143 U.S. SURVEY 55, TOWNSHIP 47 NORTH, RANGE 3 EAST OF THE FIFTH PRINCIPAL MERIDIAN CITY OF O'FALLON ST. CHARLES COUNTY, MISSOURI



GENERAL NOTES

- 20) EACH FIRE HYDRANT SHALL NOT HAVE LESS THAN TWO 2-1/2 INCH OUTLETS AND ONE 4-1/2 INCH OUTLET, A 5-1/4 INCH VALVE, A 6 INCH BARREL AND SHALL BE OF THE BREAKAWAY DESIGN, FROST FREE WITH CHAIN, LEFT HAND OPEN DESIGN AND HAVE NATIONAL STANDARD THREADS.
- 21) FIRE HYDRANT SHALL BE PROVIDED WITH A CONTROL VALVE IN THE HYDRANT CONNECTION SUCH THAT THE HYDRANT CAN BE REMOVED FROM SERVICE WITHOUT SHUTTING OFF WATER SUPPLY TO OTHER FIRE HYDRANTS.
- 22) THERE SHALL BE NO OBSTRUCTION, I.E. PLANTINGS, BUSHES, TREES, SIGNS, LIGHT STANDARDS, MAILBOXES, ETC., WITHIN SIX (6) FEET OF ANY FIRE HYDRANT, AND/OR FIRE DEPARTMENT CONNECTIONS TO AN AUTOMATIC SPRINKLER SYSTEM.
- 23) ENSURE SIDEWALKS, CURB RAMPS, RAMP AND ACCESSIBLE PARKING SPACES SHALL BE IN ACCORDANCE WITH THE CURRENT APPROVED "AMERICAN WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES" (ADAAG) ALONG WITH THE REQUIRED GRADES, CONSTRUCTION MATERIALS, SPECIFICATIONS AND SIGNAGE. IF ANY CONFLICT OCCURS BETWEEN THE ABOVE INFORMATION AND THE PLANS, THE ADAAG GUIDELINES SHALL TAKE PRECEDENCE AND THE CONTRACTOR PRIOR TO ANY CONSTRUCTION SHALL NOTIFY THE PROJECT ENGINEER. INSURE AT LEAST ONE 8' WIDE HANDICAP ACCESS AISLE AND CURB RAMPS DO NOT PROJECT INTO HANDICAP AISLE.
- 24) PROJECTS WITHIN THE CITY OF O'FALLON ARE REQUIRED TO HAVE AS-BUILT PLANS DONE.

LEGEND

CL	CURB INLET	☆	STREET LIGHT
D.C.I.	DOUBLE CURB INLET	---	EXISTING CONTOUR
AL	AREA INLET	---	PROPOSED CONTOUR
M.H.	MANHOLE	5x5	STREET SIGN
F.E.	FLARED END SECTION	NO P	NO PARKING SIGN
E.P.	END PIPE	W	WATER VALVE
C.P.	CONCRETE PIPE	B.O.	BLOW OFF ASSEMBLY
R.C.P.	REINFORCED CONCRETE PIPE	---	FLOWLINE ELEVATION OF HOUSE CONNECTION
C.M.P.	CORRUGATED METAL PIPE	---	FLOWLINE ELEVATION OF SEWER MAIN
C.I.P.	CAST IRON PIPE	---	
P.V.C.	POLY VINYL CHLORIDE (PLASTIC)		
C.O.	CLEAN OUT		
⊗	FIRE HYDRANT		
⊕	STORM SEWER		
⊖	SANITARY SEWER		

U.S.G.S. BENCHMARK

REFERENCE BENCHMARK: ELEVATION 510.64' NGVD29 (USGS) DATUM SQUARE CUT ON SOUTHEAST CORNER HEADWALL OF BOX CULVERT UNDER MISSOURI STATE HIGHWAY K, 62' LEFT OF CENTERLINE STATION 34+95, MISSOURI HIGHWAY DEPARTMENT JOB NO. 6-U-K-562.

SITE BENCHMARK ELEVATION 518.44' NGVD29 CUT BOX ON WEST SIDE CONCRETE BASE TO ELECTRIC METER NEAR SOUTHWEST CORNER OF PROPERTY.

PRINCIPALS & STANDARDS

1. 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 designated official 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.
 2. Sediment and erosion control plans for sites that exceed 20,000 square feet of grading 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. Temporary water control measures shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.
 3. 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 as soon as possible during the next seeding period after grading has been completed.
 4. 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.
- All finished grades (areas not to be disturbed by future improvement) in excess of 20% slopes (5:1) shall be mulched and locked at the rate of 100 pounds per 1,000 square feet when seeded.
5. Provisions shall be made to accommodate the increased runoff caused by changed soils 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. Detention basins, diversions or any other appropriate structures shall be constructed to prevent velocities above 5 fps.
 6. The adjoining ground to development sites (lots) shall be provided with protection from accelerated and increased surface water, silt from erosion, and any other consequence 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.
 7. Development along natural watercourses shall have residential lot lines, commercial or industrial improvements, parking areas or driveways set back a minimum of 25 feet from the top of the existing stream bank. The watercourse shall be maintained and made the responsibility of the subdivision trustees or in the case of a site plan by the property owner. Permanent vegetation should be left intact. Variances will include designed stream bank erosion control measures. FEMA and U.S. Army Corps of Engineers guidelines shall be followed where applicable regarding site development areas designated as flood plains and wetlands.
 8. All lots shall be seeded and mulched or sodded before an occupancy permit shall be issued except that a temporary occupancy permit may be issued by the Building Department in cases of undue hardship because of unfavorable ground conditions.

SEWER MEASUREMENTS

THE EXISTING SEWER LENGTHS, SIZES, FLOWLINES, DEPTHS OF STRUCTURES AND SEWERS AND LOCATIONS WITH RESPECT TO EXISTING OR PROPOSED EASEMENTS HAVE BEEN MEASURED. THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS.

ALL PUBLIC SEWERS ARE LOCATED WITHIN DESIGNATED EXISTING OR PROPOSED EASEMENTS EXCEPT AS FOLLOWS:



ASBUILTS NOTE: ALL DISTANCE AND SLOPE CALCULATIONS ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.

AS-BUILTS ADDED NOVEMBER 2004

DEVELOPMENT NOTES

1. Area of Tract: 3.374 Acres
2. Existing Zoning: C-2 General Business District
3. Proposed Use: Retail Center
4. Area of Proposed Buildings: 32,900 sq.ft.
5. The required height and building setbacks are as follows:
Minimum Front Yard: 25 feet
Minimum Side Yard: 0 (25 feet abutting residential or office)
Minimum Rear Yard: 0 (10 feet abutting residential or office)
Maximum Height of Building: 1 stories
6. Site is served by:
City of O'Fallon Water: 636-281-2858
AmerenUE Company: 1-800-55-ASKUE
Laclede Gas Company: 636-946-8937
City of O'Fallon Sewer: 636-281-2858
SBC Telephone Company: 636-949-1301
O'Fallon Fire Department: 636-272-3493
7. According to the Flood Insurance Rate Map of the City of O'Fallon, (Community Panel number 290316 0237 E dated August 2, 1998) this property lies within Zone X and Zone AE. Zone X is defined as an area of minimal flood hazard and Zone AE is defined as an area within the 100 year special flood plain hazard. But per case No. 03-07-1162A dated August 6, 2003 this property now lies within Zone X completely.
8. Parking Required: 32,900 s.f. Leasable area.
32,900 s.f. leasable area x 80% = 26,320 s.f.
26,320 / 1,000 = 26.32
26.32 x 5.5 = 144.76 = 145
Total Parking Required: 145 spaces
Total Parking Provided: 140 spaces (including 3 handicap spaces)
9. Landscape Required:
145 (spa.) x 270 = 39,150 S.F.
39,150 sq. ft. x 0.06 (2%) = 2,349 S.F.
Total Interior Landscape Required: 2,349 S.F.
Total Interior Landscape Provided: 3,111.41 S.F.
880.98 L.F. / 40 L.F. = 22.02 ~ 22
Total Street Trees Required: 22 Trees
Total Street Trees Provided: 22 Trees
10. Site Coverage Calculations:
Building = 32,900 sq.ft. ~ 22.38%
Pavement = 59,723.88 sq.ft. ~ 47.43%
Green Space = 44,387.38 sq.ft. ~ 30.19%

VEGETATIVE ESTABLISHMENT For Urban Development Sites 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. feet (4,356 lbs. per acre)
Fertilizer Rates:	
Nitrogen	30 lbs./ac.
Phosphate	30 lbs./ac.
Potassium	30 lbs./ac.
Lime	600 lbs./ac. ENM*

* ENM = effective neutralizing material as per State evaluation of quarried rock.

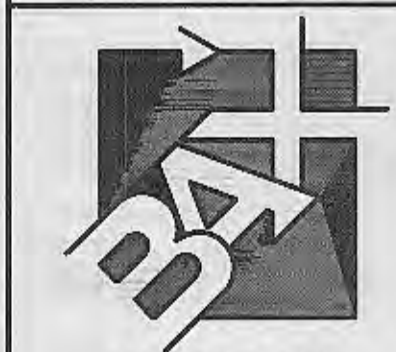
SHEET INDEX

- SHEET 1 COVER SHEET*
- SHEET 2 SITE PLAN
- SHEET 3 PROFILES
- SHEET 4 CONSTRUCTION DETAILS

DISCLAIMER OF RESPONSIBILITY I hereby specify that the documents intended to be constructed by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to or intended to be used for any part or parts of the architecture or engineering project of survey.

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REVISIONS



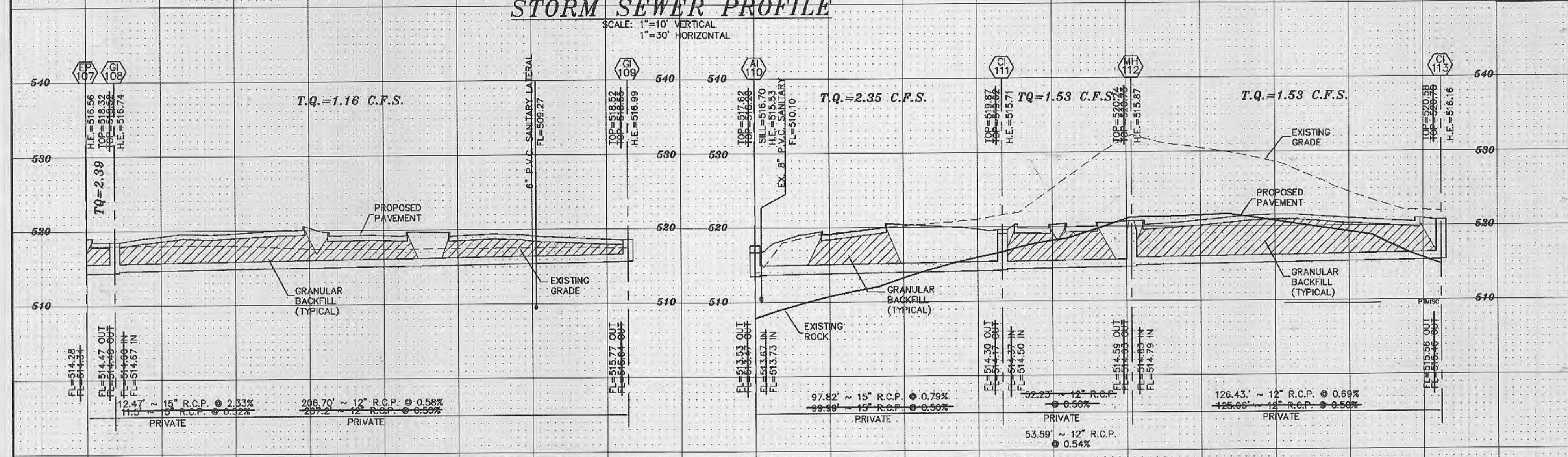
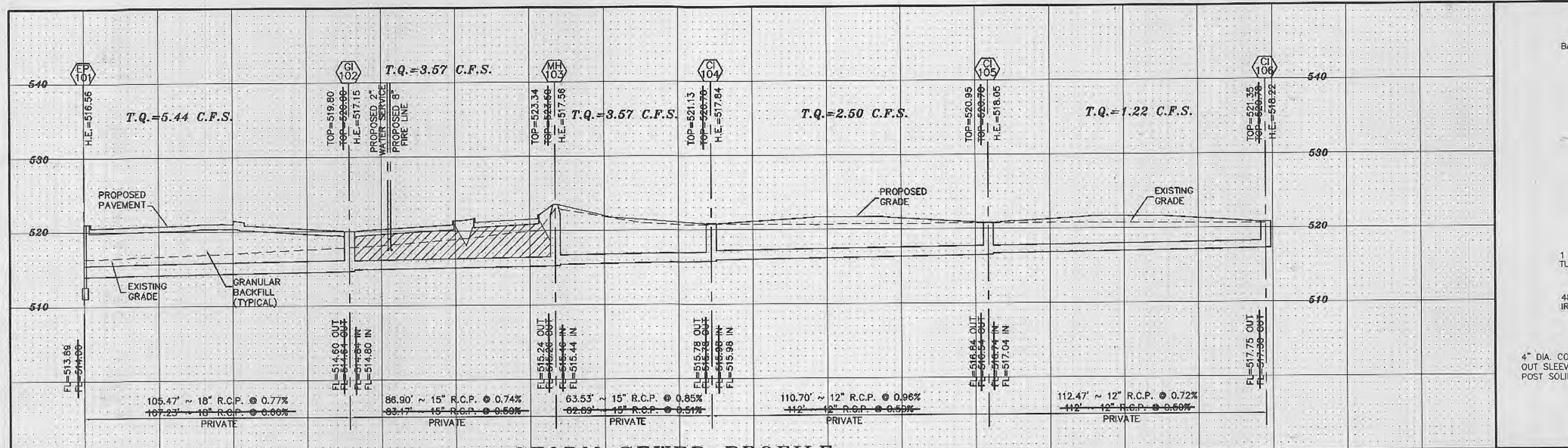
ENGINEERING PLANNING SURVEYING

1052 South Cloverleaf Drive
St. Peters, MO. 65376-6445
636-928-5552
FAX 928-1718

11-02-2004	DATE
03-12238	PROJECT NUMBER
1 OF 4	SHEET OF
12238ASB.DWG	FILE NAME
BGC	DRAWN
	DESIGNED
	CHECKED

Woodlawn Plaza ASB - 2 versions

PREPARED FOR: ARBOR HOMES, INC.
5710 WESTWOOD DRIVE
ST. CHARLES, MISSOURI 63304
(636) 940-8222



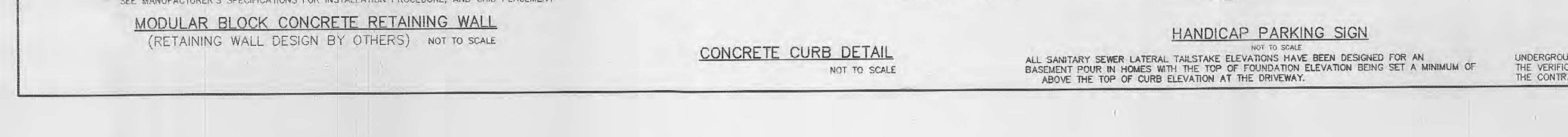
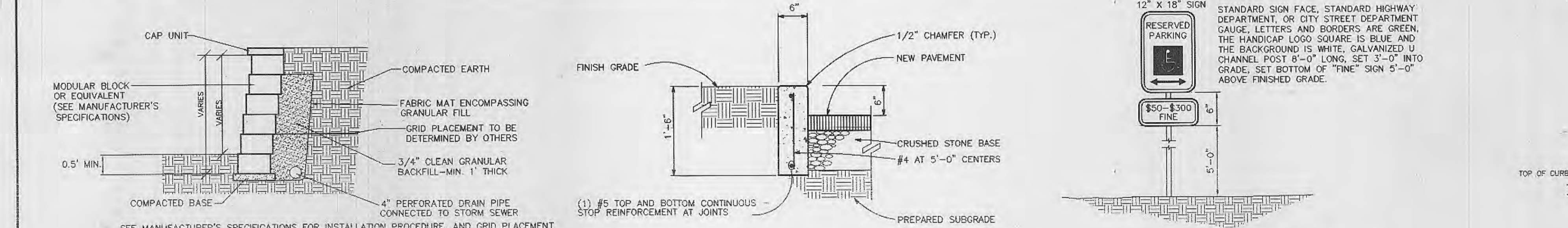
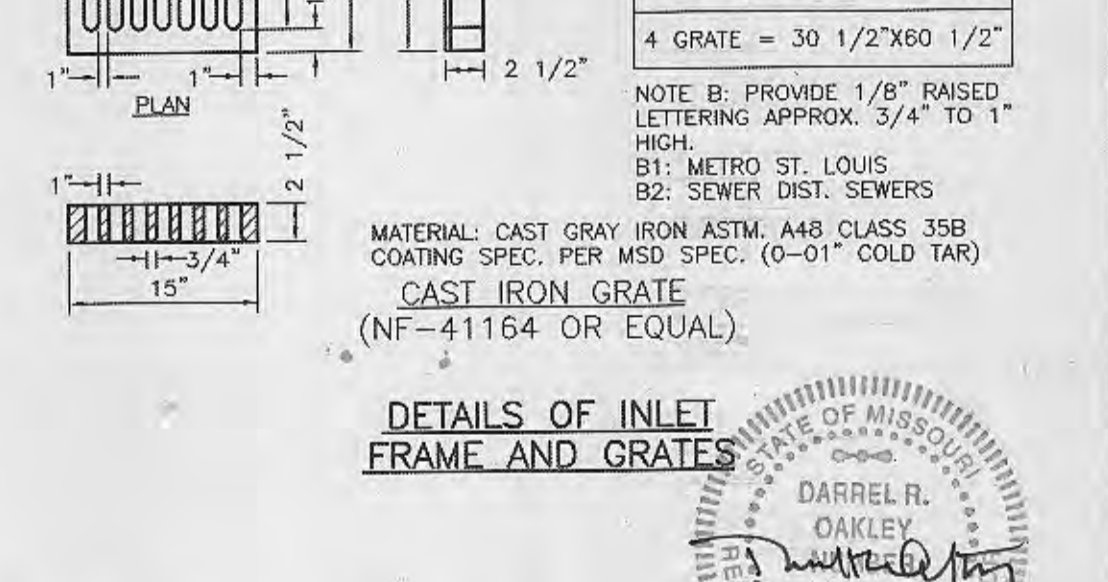
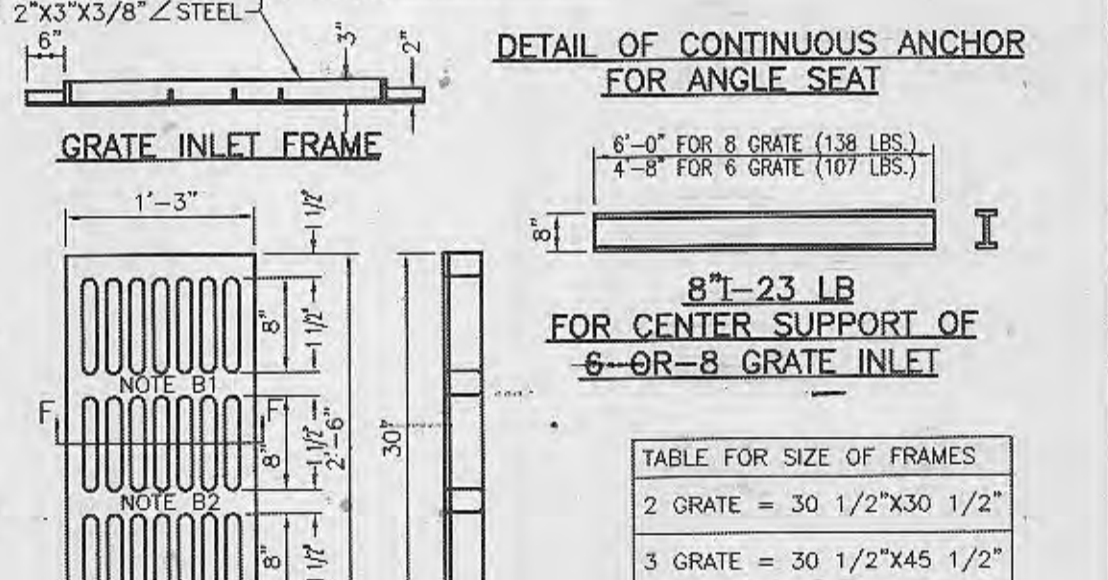
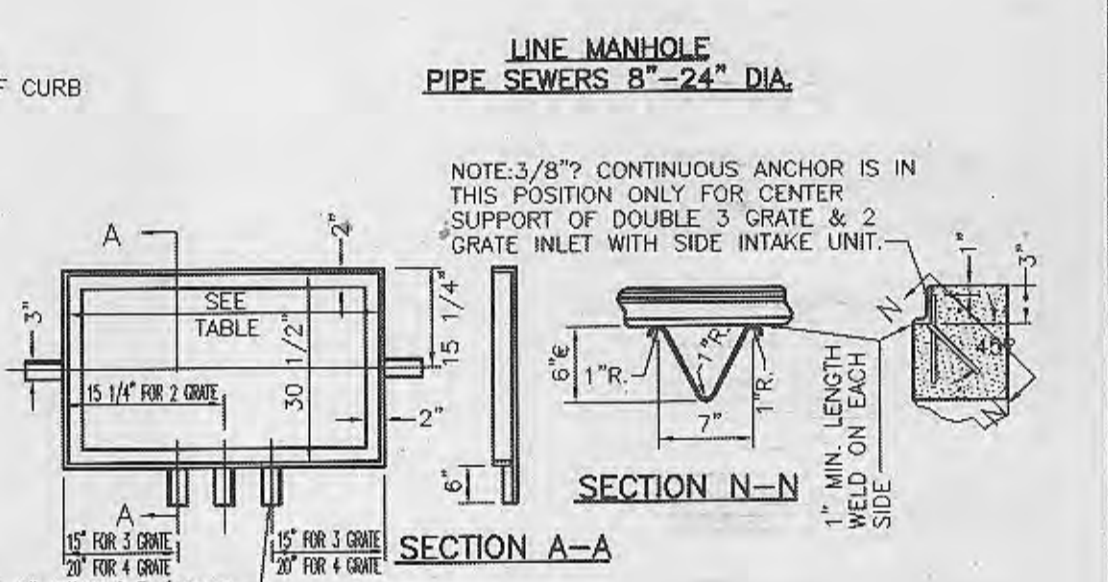
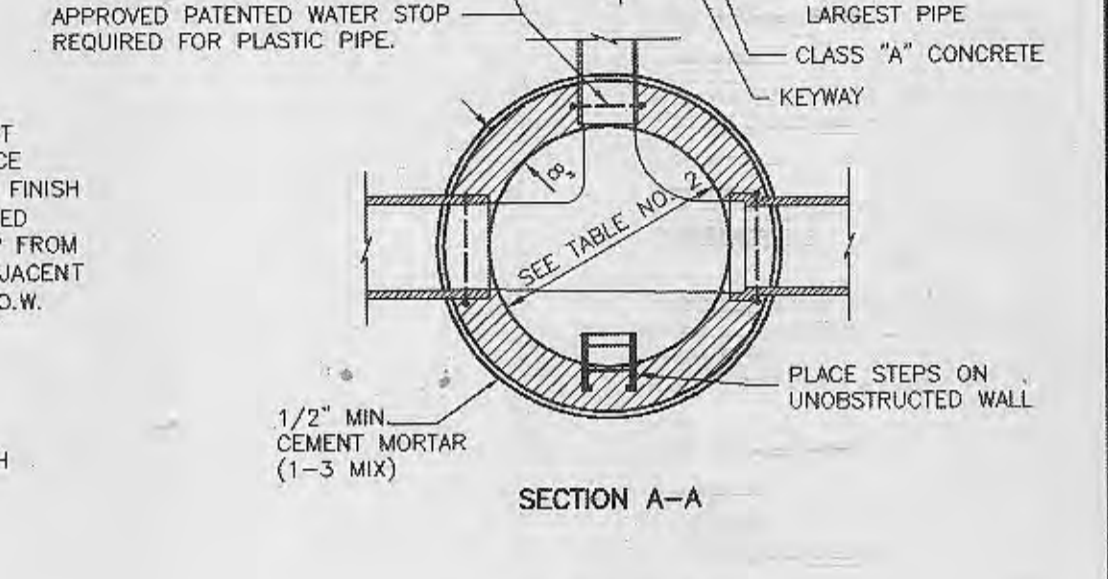
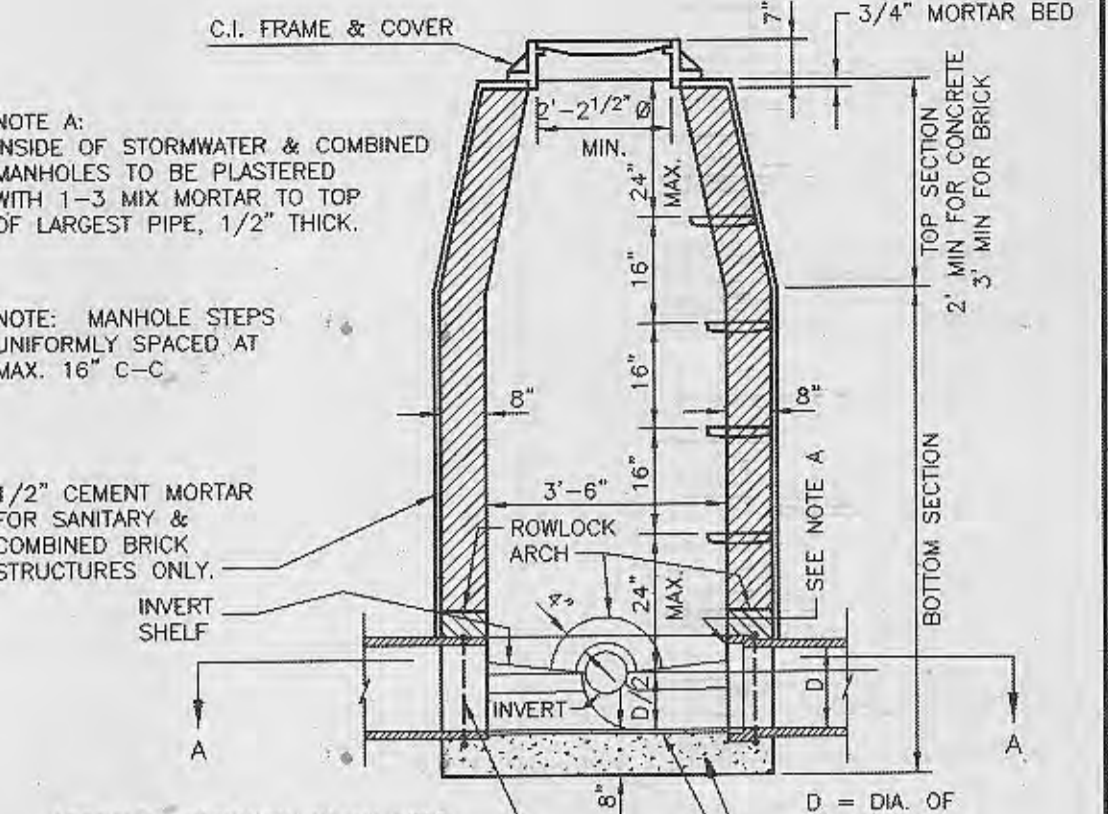
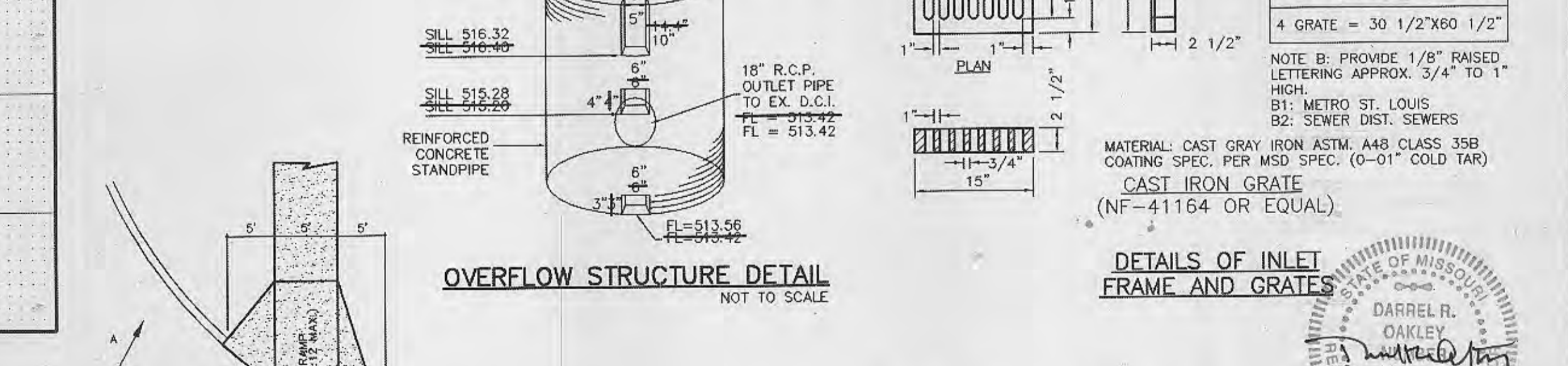
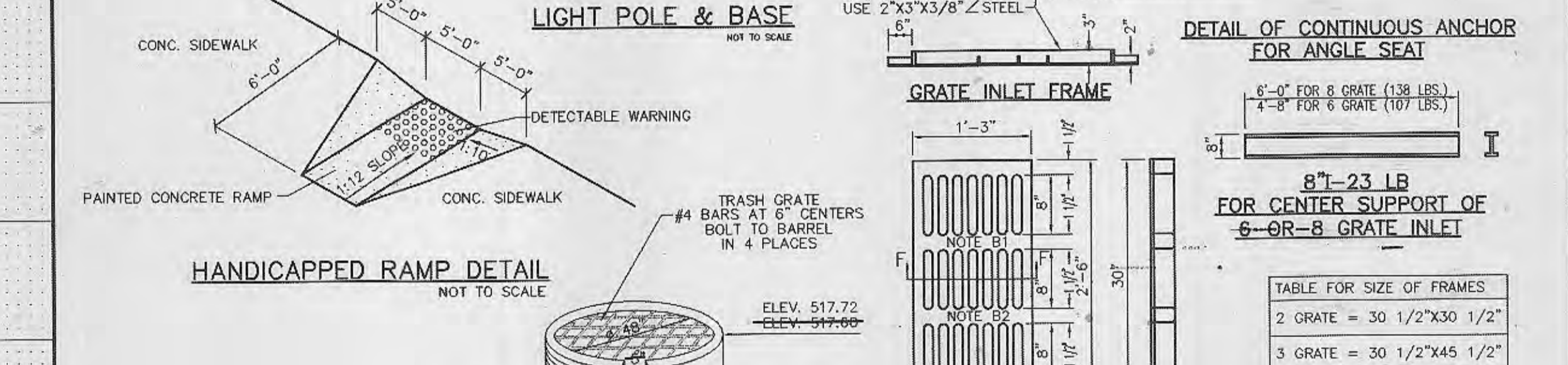
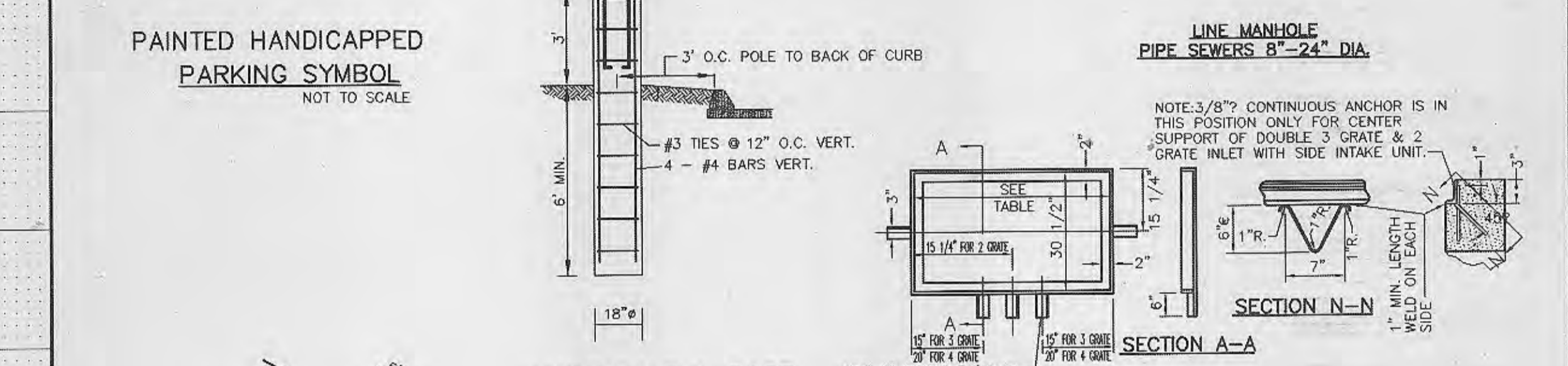
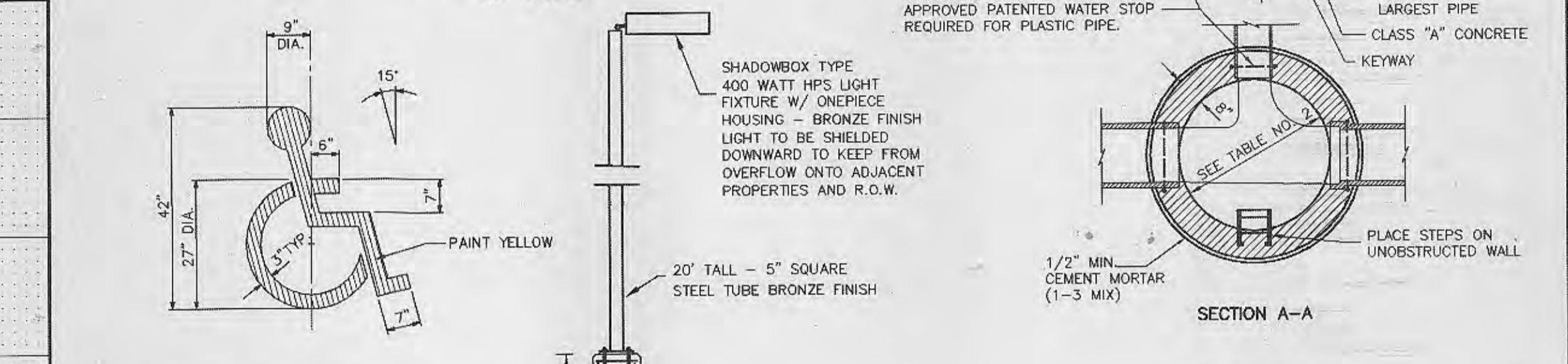
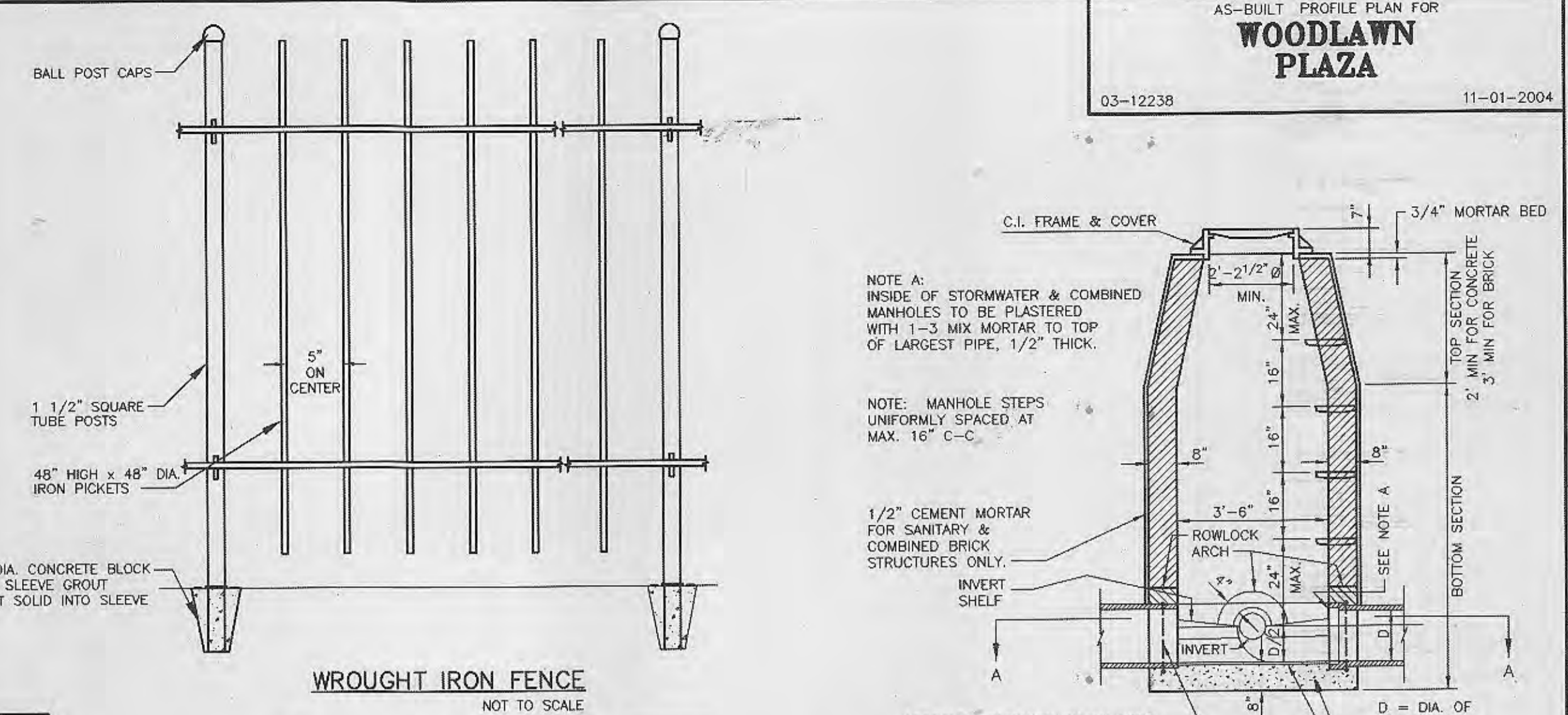
STORM SEWER PROFILE
SCALE: 1"=10' VERTICAL
1"=30' HORIZONTAL

BAX PROJECT NAME: Woodlawn Plaza
BAX PROJECT NO.: 03-12238
DESIGN DATE: 11-11-03
DESIGNED BY: HLT
15 YEAR STORM DESIGN

SUBMITTED: FILENAME: 12238-2

UPPER STA	LOWER STA	PIPE DIA	UPPER EL	LOWER EL	PS	UPPER ST EL	DEPTH HY	UPPER HY EL	LOWR HY EL	HYDR GRADE	FR HEAD	VEL	W/L HEAD	JUNC LOSS	TURN LOSS	CURVE LOSS	STR GRADE	INL CAP	DR AREA	PI	Q	TQ	PIPE CAP	REMARKS
CI 113 MH 112	12	12	515.46	514.43	0.50	520.78	4.62	516.36	515.87	0.0180	0.23	1.55	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	2.53	1
MH 112 CI 111	58	12	514.63	514.47	0.50	520.78	4.86	515.87	515.71	0.0180	0.10	1.55	0.06	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	1.33	2.51	2
CI 111 AI 110	100	15	514.17	513.47	0.50	519.62	3.91	515.71	515.53	0.0130	0.13	1.91	0.06	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	2.35	4.57	3
AI 110 EX GI	106	24	513.47	512.35	1.05	517.62	2.05	515.53	515.47	0.0020	0.02	1.02	0.02	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	3.19	23.22	4
GI 109 GI 108	207	12	515.64	514.60	0.50	518.55	1.64	516.91	516.66	0.0130	0.22	1.48	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	2.52	5
GI 108 EP 107	12	15	514.40	514.34	0.52	518.79	2.13	516.66	516.26	0.0140	0.22	1.95	0.06	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	2.38	4.67	6
CI 106 CI 105	111	12	517.30	516.74	0.50	520.78	2.69	518.09	517.92	0.0120	0.13	1.55	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.22	2.52	7
CI 105 CI 104	111	15	516.54	515.78	0.50	520.78	2.96	517.92	517.43	0.0130	0.17	2.04	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	4.57	8
CI 104 MH 103	65	15	515.78	515.46	0.51	520.78	3.07	517.71	517.43	0.0310	0.19	2.91	0.13	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.57	4.61	9
MH 103 GI 102	88	15	515.26	514.84	0.50	523.50	6.07	517.43	517.02	0.0310	0.25	2.91	0.13	0.09	0.00	0.00	0.00	0.00	0.00	0.00	3.77	4.59	10	
GI 102 FE 101	107	18	514.64	514.00	0.60	520.00	2.98	517.02	516.56	0.0270	0.29	3.08	0.15	0.11	0.06	0.00	0.00	0.00	0.00	0.00	5.44	8.12	11	
OS 100 EX DCI	98	18	513.42	512.43	1.06	517.60	3.61	513.99	513.93	0.0040	0.04	1.23	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.17	10.84	12

* INDICATES CRITICAL DEPTH

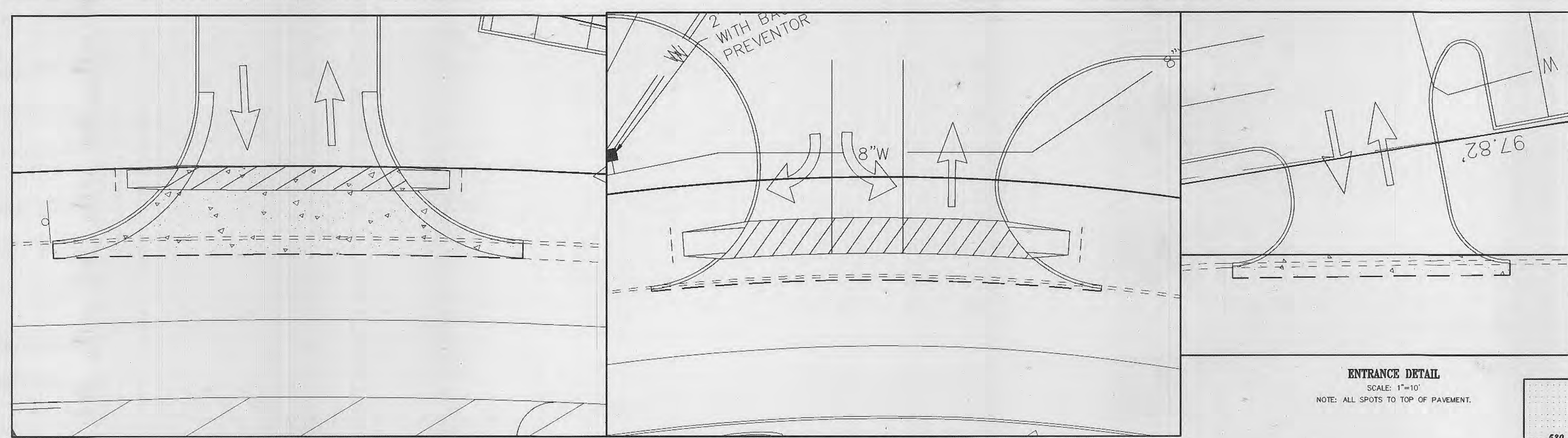


AS-BUILTS ADDED NOVEMBER 2004

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.

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

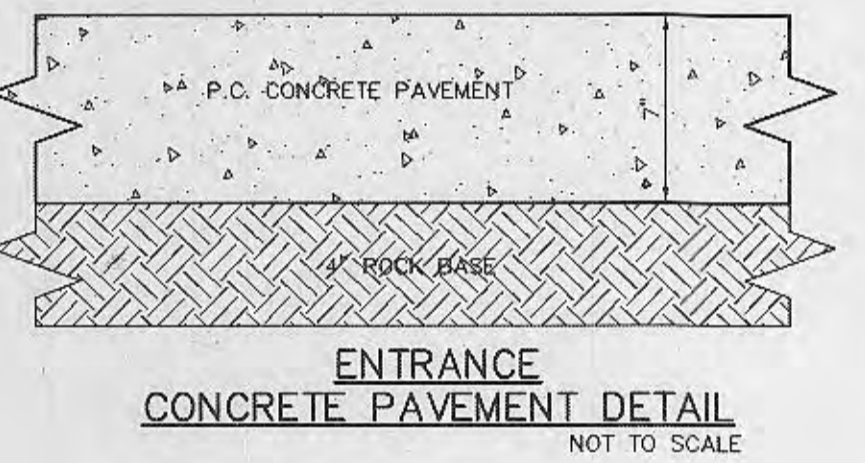
3
4



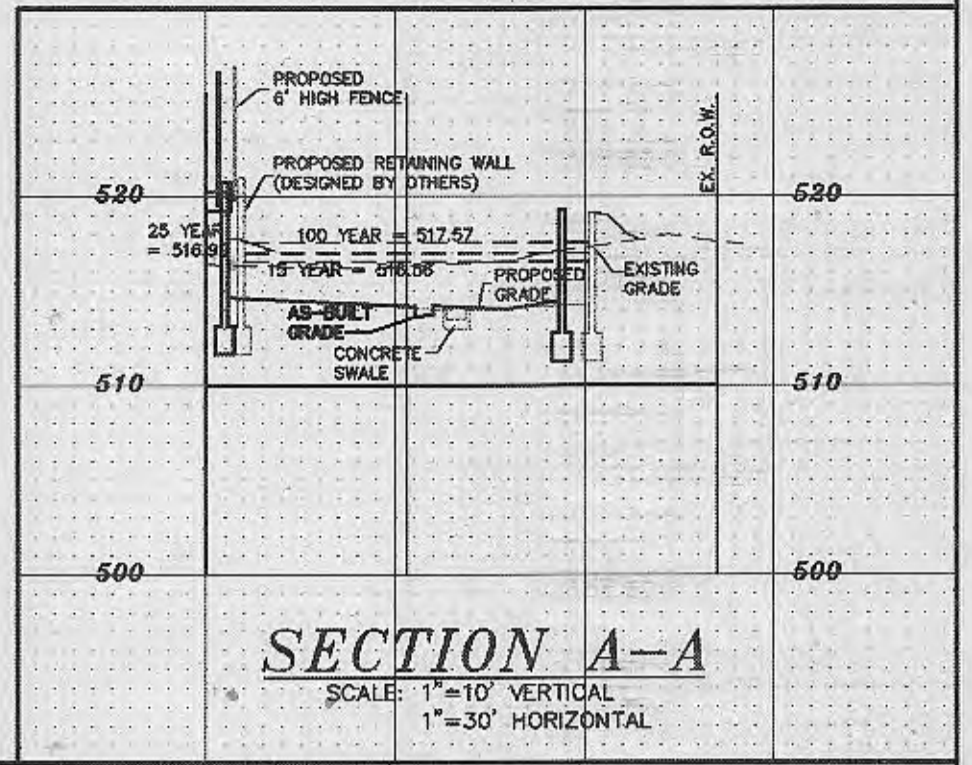
ENTRANCE DETAIL
SCALE: 1"=10"
NOTE: ALL SPOTS TO TOP OF PAVEMENT.

ENTRANCE DETAIL
SCALE: 1"=10"
NOTE: ALL SPOTS TO TOP OF PAVEMENT.

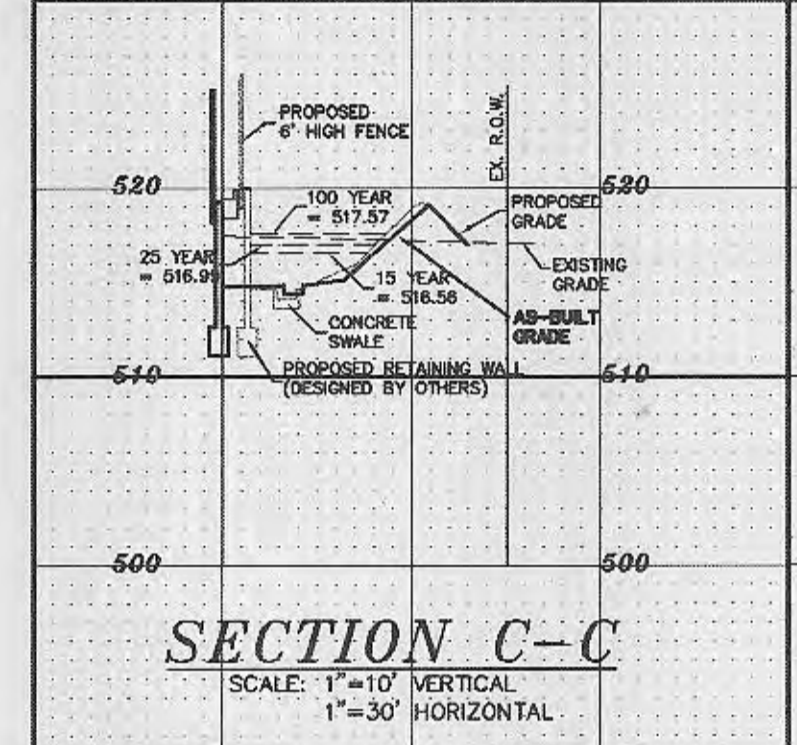
ENTRANCE DETAIL
SCALE: 1"=10"
NOTE: ALL SPOTS TO TOP OF PAVEMENT.



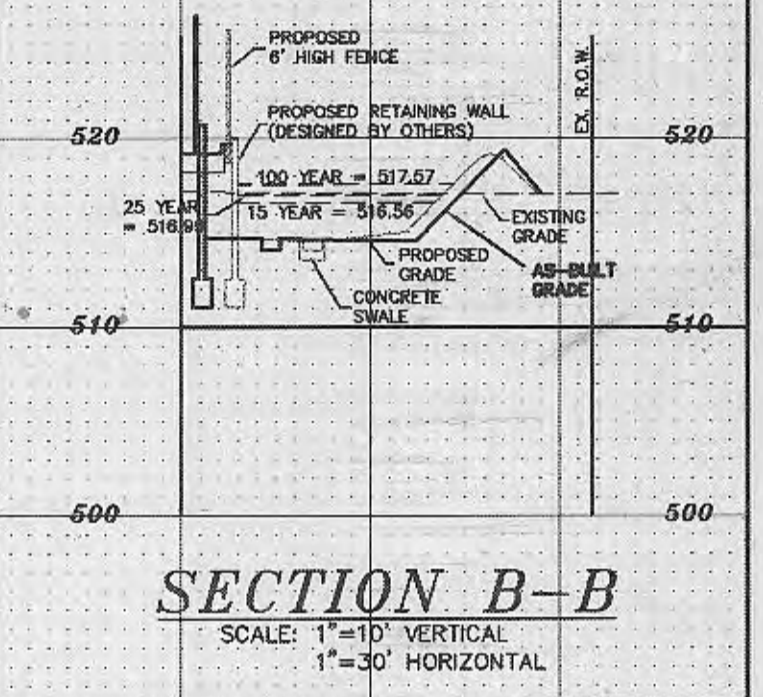
ENTRANCE CONCRETE PAVEMENT DETAIL
NOT TO SCALE



SECTION A-A
SCALE: 1"=10' VERTICAL
1"=30' HORIZONTAL



SECTION C-C
SCALE: 1"=10' VERTICAL
1"=30' HORIZONTAL



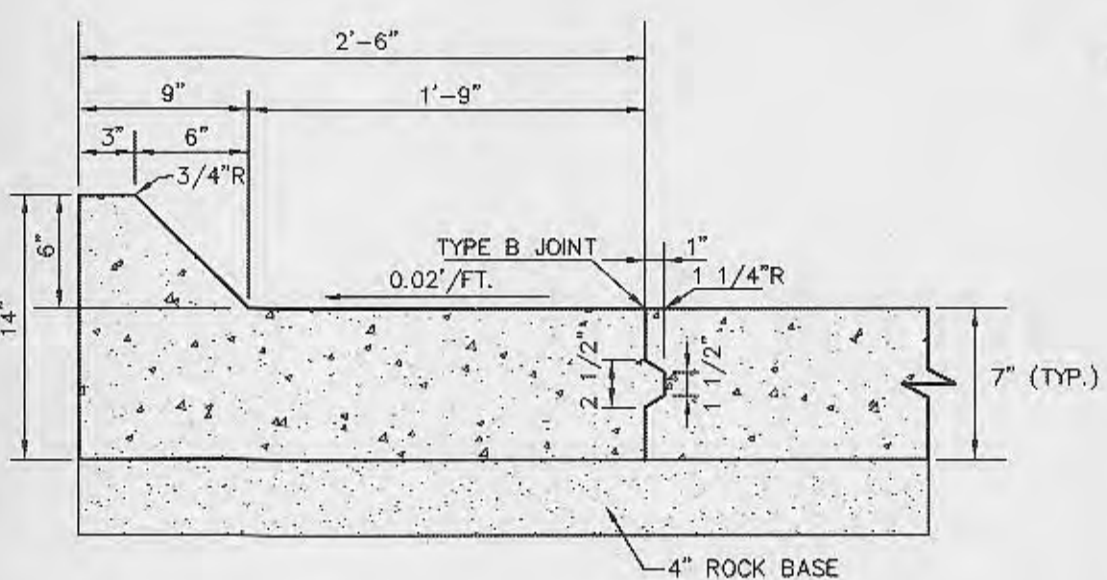
SECTION B-B
SCALE: 1"=10' VERTICAL
1"=30' HORIZONTAL

INSTALLATION OF WATER MAINS

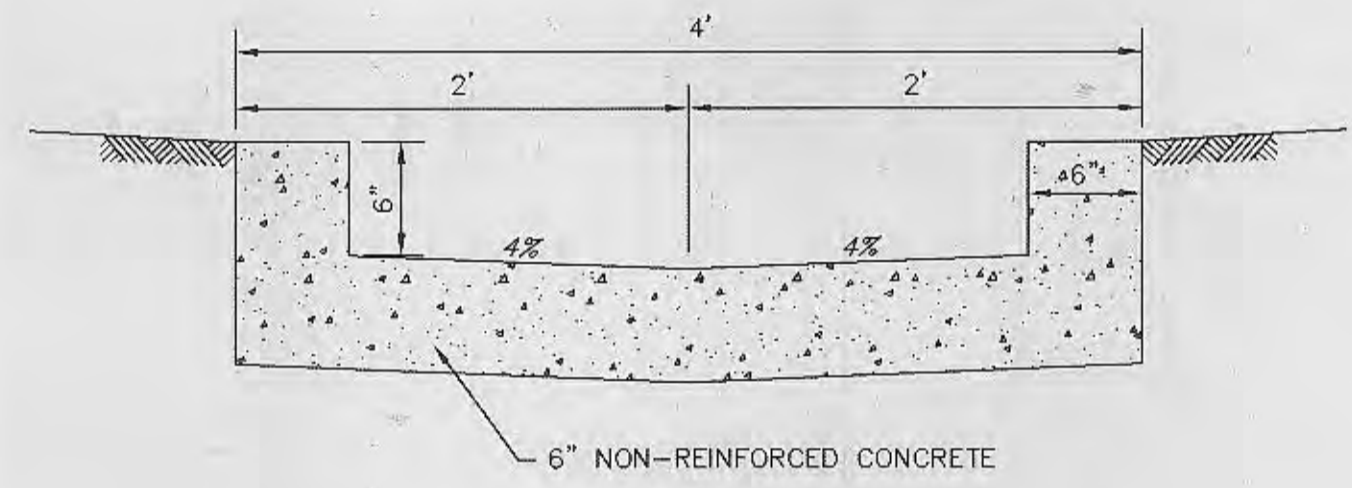
"ALWAYS KEEP THE WATER MAIN ON EASEMENT"

- Water main should be located 5' behind the curb, as not to interfere with other utility locations.
- All water mains should be 8 inches in diameter, the last 300' can be 6" diameter pipe. The pipe should have a Minimum Pressure Rating (PR) of 200 or SDR-21. All water mains of PVC materials shall be certified by NSF (National Sanitation Foundation) and listed in NSF Standard 61 (certified drinking water system components). Missouri DNR requires that any product which comes in contact with drinking water be listed in NSF Standard 61. If the pipe is NSF certified, it will have a stamp on the pipe that says "NSF-pw".
- Fire hydrants must be Mueller Steamer Centurion and painted yellow in color and all valves must be Mueller mechanical joint resilient wedge gate valve.
- All fire hydrants are to have valves flanged to the tee and (with a total length of 38" or less) hydrant swivel anchored to the valve. Clean 1" rock should be used to backfill above the weep holes of the fire hydrant.
- The contractor shall place all fire hydrants between 1.5 (1-1/2) feet and three feet (3') from the street curb (measured from the edge of the fire hydrant).
- These water bends (45 degree, 22-1/2 degree, 11-1/4 degree), are to be made with mechanical joint fittings using mego lugs. Ninety degree (90°) bends are not allowed. The first slip joint, up and down stream after fittings, should be restrained per pipe manufacturer specs.
- Tees, 4-ways, etc. shall have concrete blocking. Concrete not to be on nuts or bolts.
- Rocky soils shall require bedding 6" under and 6" over water pipe.
- Concrete encasement required, to DNR Specification, when crossing storm or sanitary sewers. Sanitary: vertical is 18", horizontal is 10" - Storm: vertical is 12", horizontal is 3".
- Must use appropriate sized casings when crossing streets.
- Must attach coated solid core, 12 gauge tracer wire, taped to the top of the pipe. All wire must run up the outside of the valve box and come up inside the valve box under the water lid.
- Use 3M waterproof splice kits for all splicing of tracer wire.
- Any project with over 1500' of pipe should use the 2500' role of tracer wire to eliminate splicing.
- A chlorine test is required. It must initially test at 25 PPM, or greater, and 24 hours later 10 PPM must be present. It must be tested by a City Inspector, and have 24 hours notice prior to that inspection. The main will be tested for CL₂ every 1,200' of pipe.
- If chlorine test fails then main must be rechlorinated.
- The contractor will meter water and pay for it. Hydrant meters are at Public Works and require a \$1,600 deposit.
- Coliform samples should be collected every 1,200'.
- Final Pressure Test: The water main must be pumped up to 125 PSI and maintain this pressure for one hour without any drop in pressure.
- Gas, water, and other underground utilities shall not conflict with the depth or horizontal location of existing and proposed sanitary and storm sewers including house laterals.
- All waterline construction shall conform to current City of Wentzville Standards and Specifications.
- The contractor shall place the "steamer" outlet of the fire hydrant toward the street.
- Backfill no debris larger than 6" in diameter.
- All creek crossings will require ductile iron pipe. If less than 3' of cover, concrete encasement with rip-rap required.
- Hydrant distances: 600'/300' - Residential/Commercial pending.
- Easements shall be provided for water mains, and all utilities on the record plat. See record plat for location size, and width of easements.
- The City of Wentzville Water Department shall be notified at least 48 hours prior to construction of water mains for coordination and inspections.
- All open mains should be properly capped when the main is unattended for more than 4 hours. Duct tape the end closed so it is visually seen.
- All bore casings, except service lines, shall have a casing spacer every 10'.
- All service lines under the streets are to have a 2" PVC casing installed, at a minimum of 30" depth.

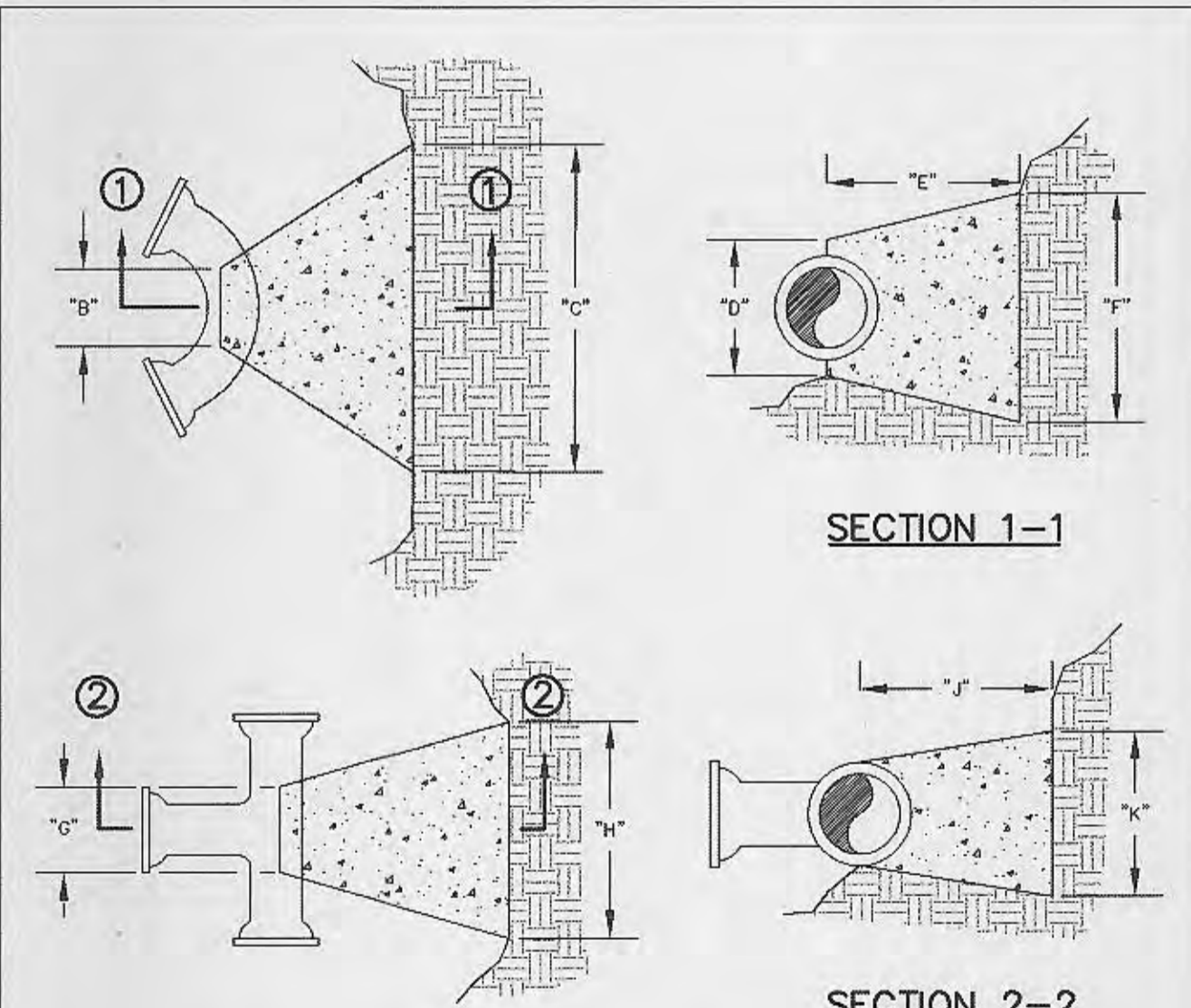
NOTE: 24 HOUR NOTICE REQUIRED ON ALL INSPECTIONS



TYPICAL CURB & GUTTER (MOUNTABLE)
NOT TO SCALE



CONCRETE SWALE
NOT TO SCALE



BENDS	"B"	"C"	"D"	"E"	"F"
6"-11 1/4"	8"	15"	12"	24"	10"
6"-22 1/2"	8"	19"	12"	24"	13"
6"-45"	8"	30"	12"	24"	14"
6"-90"	8"	30"	12"	24"	27"
8"-11 1/4"	8"	20"	12"	24"	10"
8"-22 1/2"	8"	22"	12"	24"	17"
8"-45"	8"	30"	12"	24"	24"
8"-90"	8"	38"	12"	24"	36"
12"-11 1/4"	8"	30"	12"	24"	15"
12"-22 1/2"	8"	35"	12"	24"	25"
12"-45"	8"	40"	12"	24"	40"
12"-90"	8"	40"	12"	24"	52"

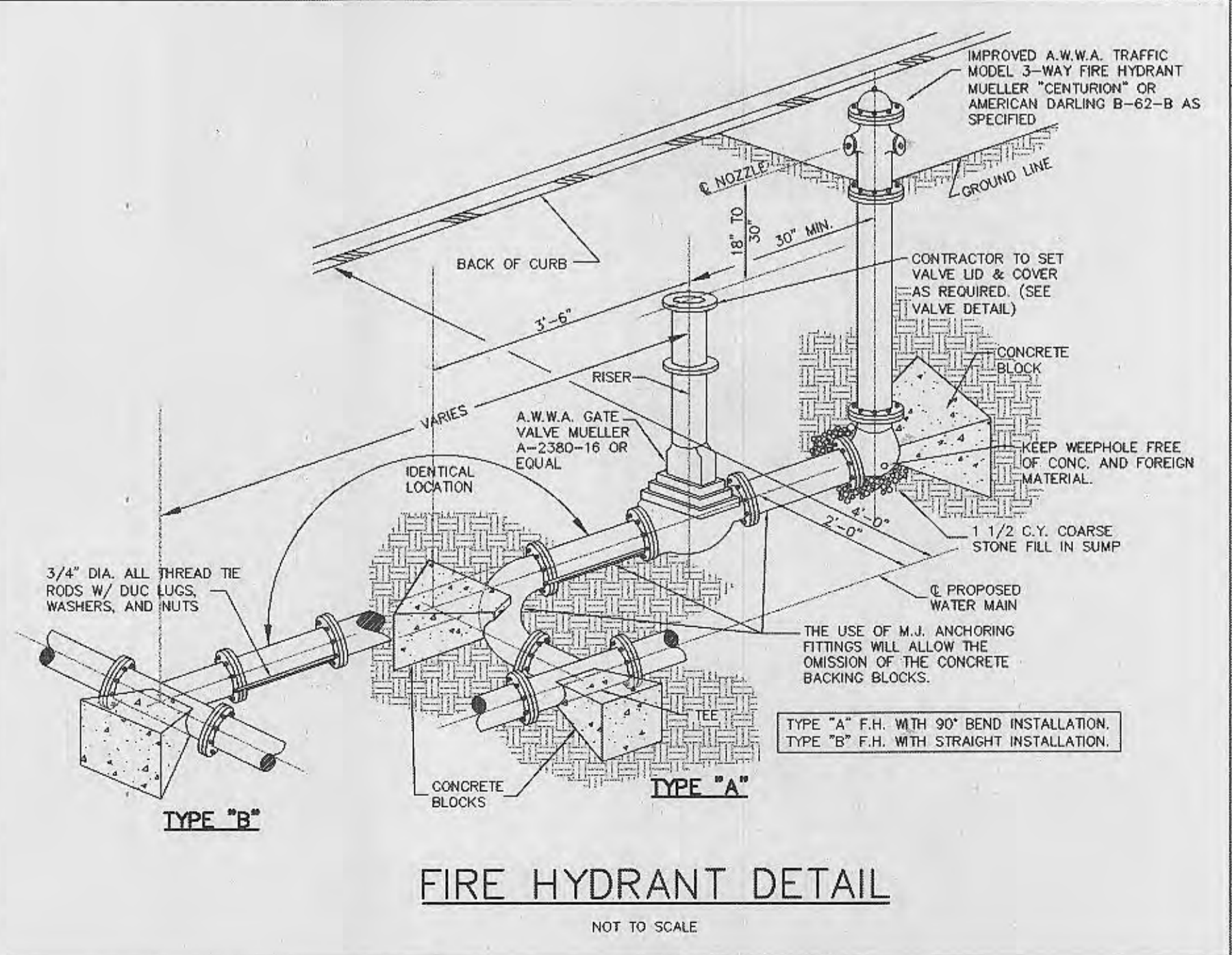
NOTES:
1. 2" & 4" FITTINGS EQUIVALENT TO 6" FITTINGS.
2. TAPPING SLEEVES TO HAVE BACKING BLOCKS SAME SIZE AS REQUIRED FOR TEES.

TEES	"G"	"H"	"J"	"K"
6"X6"X6"	12"	24"	24"	18"
8"X8"X8"	12"	24"	24"	18"
8"X8"X6"	12"	24"	24"	18"
12"X12"X6"	12"	24"	24"	18"
12"X12"X8"	12"	24"	24"	24"
12"X12"X12"	12"	36"	24"	56"

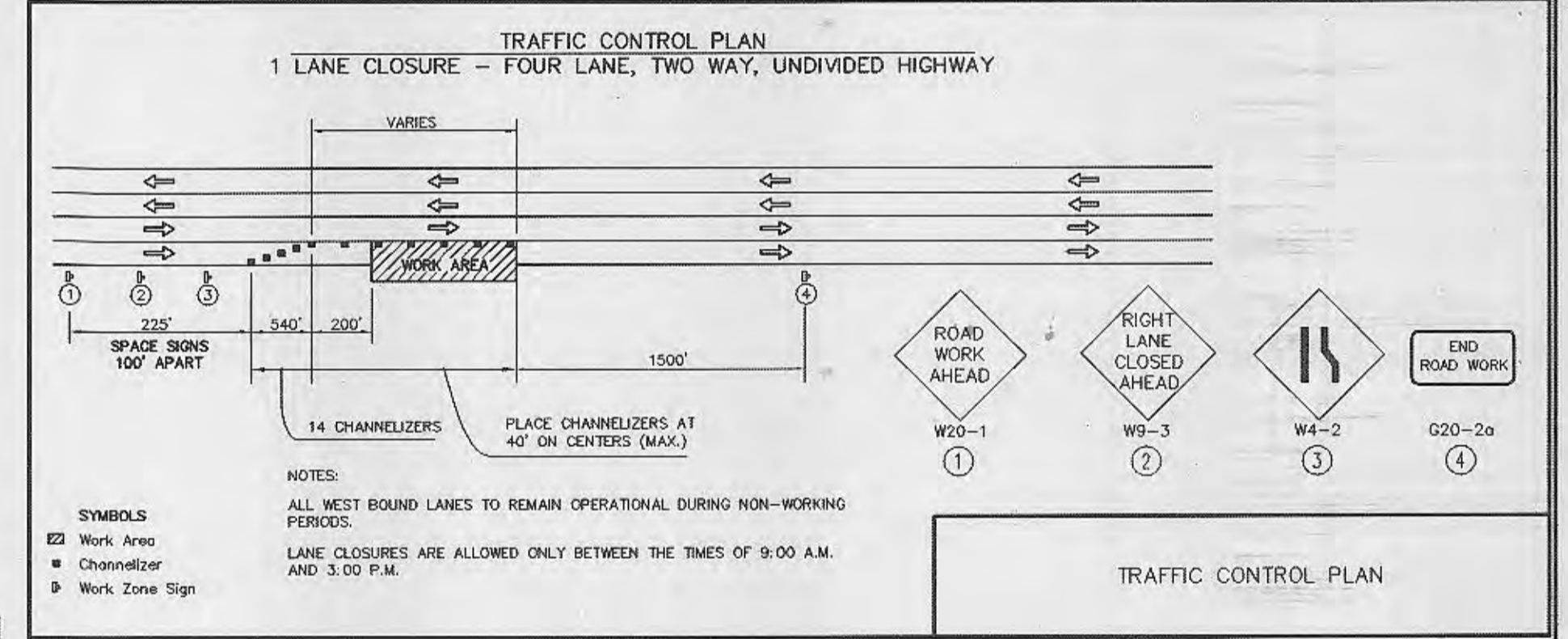
CUBIC FEET OF CONCRETE REQUIRED	BEND	11 1/4"	22 1/2"	45"	90"
6"	1.7	2.4	3.5	5.5	
8"	2.1	3.1	5.0	8.5	
12"	3.7	5.9	9.7	17.9	

TEE X	6"	8"	12"	PLUG
6"	4.0	--	--	4.0
8"	4.0	5.0	--	5.0
12"	4.0	5.5	10.5	10.5

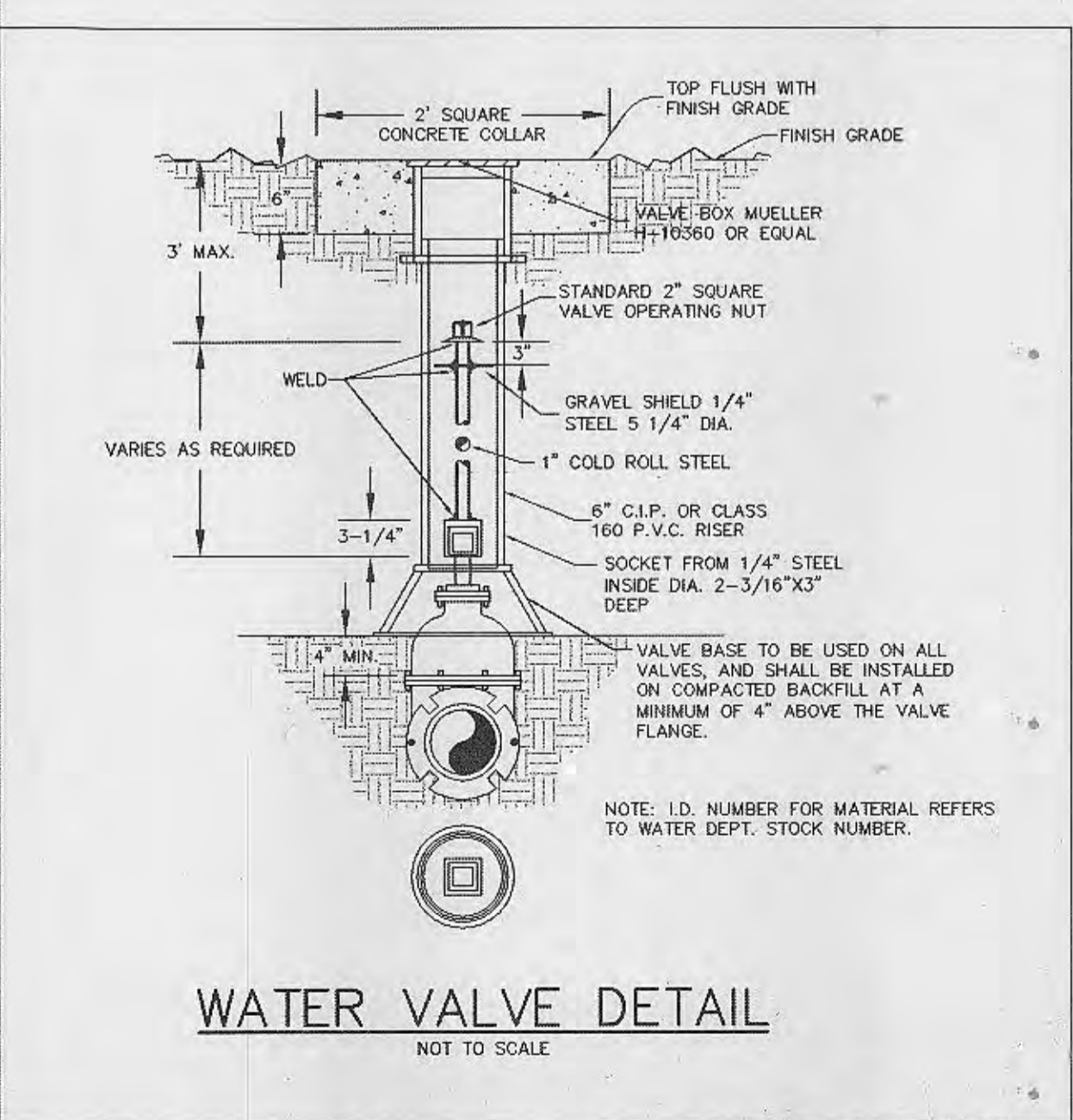
BACKING BLOCKS
NOT TO SCALE



FIRE HYDRANT DETAIL
NOT TO SCALE



TRAFFIC CONTROL PLAN



WATER VALVE DETAIL
NOT TO SCALE



AS-BUILTS ADDED NOVEMBER 2004

O'FALLON FILE #1503