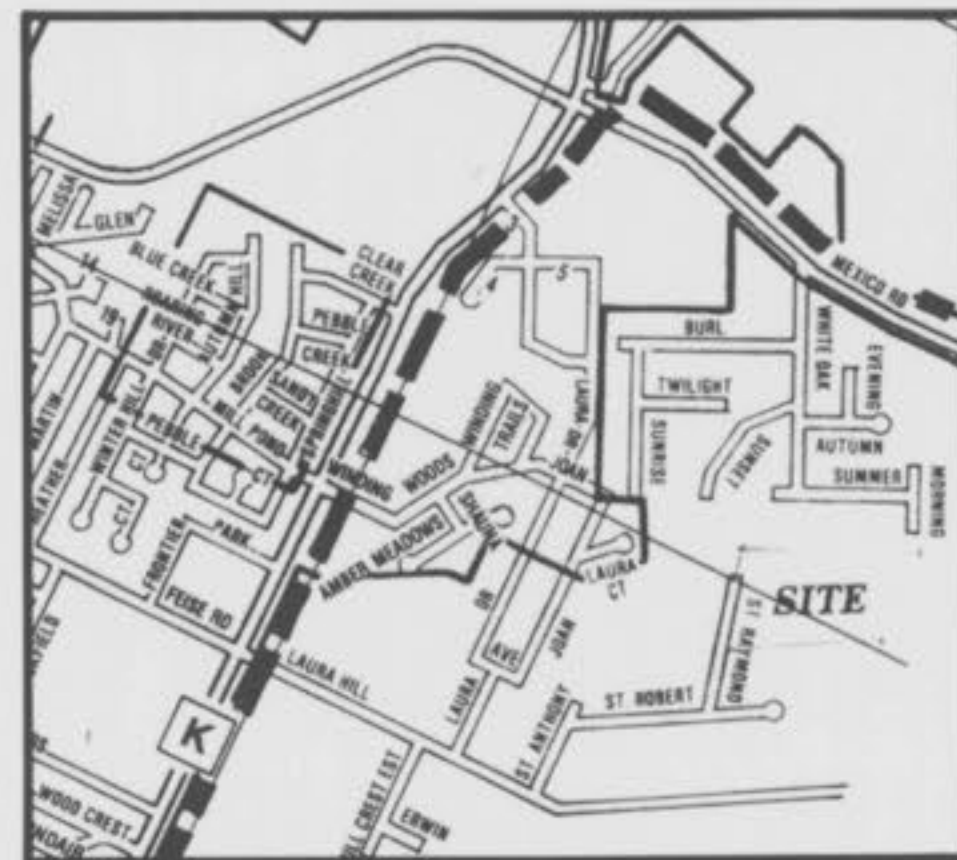


GENERAL NOTES

- 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 and/or construction of improvements.
- Erosion control shall not be limited to what is shown on the plans. The contractor shall take whatever means necessary to prevent siltation from entering adjacent roadways, properties, and ditches. Such control might include channeling runoff into sediment basins, channeling runoff into areas where an extra row of straw bales are used. A silt fence might be considered, if necessary.
- No area shall be cleared without permission of the developer.
- Owner/Developer assumes full responsibility as to the performance of the grading operation and assurance that all properties and County and State roads will be adequately protected.
- Soil preparation and re-vegetation shall be performed according to Appendix A of the Model Sediment and Erosion Control Regulations for Urban Development.
- 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 or during the next seeding period after grading has been completed. Refer to Appendix A of St. Charles Soil and Water Conservation District - Model Sediment and Erosion Control Regulations.
- 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 rollers or high speed impact type drum rollers acceptable to the Soils Engineer. The rollers 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 rejections 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 to at least 85 percent of the maximum density as determined by the Modified AASHTO T-1800 Compaction Test (ASTM-D1557). 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.
- 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% above the optimum moisture content.
- 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.
- All cut and fill slopes should be a maximum of 33% slope (3:1) after grading.
- All fill including filled places under proposed storm and sanitary sewer lines and paved areas including trench backfills within and off the road right-of-way shall be compacted to 90% of maximum density as determined by the "Modified AASHTO T-180 Compaction Test (ASTM D1557)". All tests shall be verified by a Soils Engineer concurrent with grading and backfilling operations. The compacted fill shall be free of rutting and shall be non-yielding and non-pumping during proofrolling and compaction.
- Fill placed within proposed street R.O.W. shall be compacted to 90% M.O.D. Proctor and be 2% below to 6% above optimum moisture content.
- Soft soil in the bottom and banks of any existing or former pond site 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.
- Any wells and/or springs which may exist on this property should be located and sealed in a manner acceptable to the City of O'Fallon.
- Temporary siltation control measures (structural) shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.
- If straw bales or silt fences are destroyed by heavy rains, vandalism, etc., they are to be replaced immediately by contractor.
- When grading operations are completed or suspended for more than thirty (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 Designated Official's recommendation. Refer to Appendix A of St. Charles Soil and Water Conservation District - Model Sediment and Erosion Control Regulations. All finished grades (areas not to be disturbed by improvement) in excess of 20% slopes (5:1) shall be mulched and tacked at the rate of 100 pounds per 1000 square feet when seeded.
- All existing trash and debris on-site must be removed and disposed of off-site.
- 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.
- The total yardage of this project is based on a 15% ± shrinkage factor.
- The shrinkage factor is subject to change, due to soil conditions (types and moisture content), weather conditions, and the percentage of compaction actually achieved at the time of the year grading is performed. As a result, adjustments in final grade may be required. If adjustments need to be made, the contractor shall contact St. Charles Engineering and Surveying prior to completion of the grading.
- Earth quantities were obtained from aerial grid mapping with contours at two foot intervals, with a tolerance of plus or minus one foot or one-half (1/2) contour intervals.
- The vertical grading tolerance shall be plus or minus 0.2 feet for all rough grading.
- All construction and materials shall conform to the City of O'Fallon and Missouri American Water Company Standards and Specifications.
- All storm sewers shall be Reinforced A.S.T.M. C-76, Class III minimum, unless otherwise shown on the plans.
- All storm sewer pipe in the right-of-way shall be reinforced concrete pipe (A.S.T.M. C-76, Class III minimum).
- All corrugated steel pipe shall conform to the requirements of AASHTO M-36 and shall be fully coated with bituminous material conforming to the requirements of AASHTO M-190. Corrugated steel pipe shall be helical pipe with reformed ends. Pipes shall be joined using either hugger bands with rubber o-ring gaskets or universal corrugated bands with sponge neoprene gaskets. All gasket materials shall conform to ASTM D-1056.
- All standard curb inlets are to have front-of-inlet 2' (two feet) behind curb, within public right-of-way, unless otherwise noted.
- Concrete Pipe Joints shall be M.S.D. Type "A" Approved Compression Joints and shall conform to the requirements of the Specification for Joints and Circular Concrete Sewer and Culvert Pipe, using flexible, watertight, rubber-type gaskets A.S.T.M. C-443. Band-Type Gaskets depending entirely on cement for adhesion and resistance to displacement during jointing shall not be used.
- All grout for rip-rap shall be high slump ready-mix concrete.
- 8" P.V.C. sanitary sewer pipe shall meet the following standards: A.S.T.M. D-3034 SDR35, 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.
- The Contractor shall prevent all storm/surface water, mud or construction debris from entering the existing sanitary sewer system.
- The minimum vertical distance from the low point of the basement to the flowline of the sanitary sewer at the corresponding house connection shall not be less than two and one half feet (2 1/2') plus the diameter of the sanitary sewer.
- All sanitary laterals shown on plan are to be constructed of 4 inch P.V.C. pipe.
- All P.V.C. sanitary sewer pipe is to be SDR35 or equal with "clean 1/2" to 1" granular stone bedding", uniformly graded. This bedding shall extend from 4" below the pipe to springline of pipe to 6" above the top of pipe.
- Brick shall not be used on sanitary manholes.
- All sanitary sewer manholes shall be waterproofed on the exterior in accordance with Missouri D.N.R. Specification 10CSR-8.120 (7) (E).
- All sanitary sewer construction shall conform to current City of O'Fallon Sewer District Standards and Specifications.
- All pipes shall have positive drainage through manholes. No flat base structures are allowed.
- All trench backfills under paved areas shall be granular backfill, and water jetted. All other trench backfills may be earth material (free of large clods or stones) and shall be water jetted.
- All sewer tops built without elevations furnished by the Engineer will be the responsibility of the sewer contractor.
- Easements shall be provided for storm sewers, sanitary sewers, and all utilities on the record plat. See record plat for location, size, and width of easements.
- 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 Missouri American Water Company Standards and Specifications.
- The contractor shall place all fire hydrants within (3') three feet of the street curb.
- The contractor shall place the "steamer" outlet of the fire hydrant toward the street.
- The City of O'Fallon Sewer District shall be notified at least 48 hours prior to construction of sanitary sewers for coordination and inspections.
- All streets within this set of improvement plans shall be Publicly maintained.
- All streets and right-of-ways shown on these improvement plans will be dedicated to the City of O'Fallon for public use forever.
- Sidewalk curb ramps, ramp and accessible parking spaces shall be constructed in accordance with the current approved "Americans 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 Project Engineer shall be notified by the contractor prior to any construction.
- The use of High Density Polyethylene Corrugated Pipe with smooth interior wall will be permitted as an acceptable alternative to R.C.P. outside of the Public R/W. Pipe shall meet A.S.T.M. D-2321 A.A.S.H.T.O. M-294-921. Concrete Flared End Sections, Manholes and Inlet Structures shall be required.
- The most stringent of the above requirements shall apply.

As-Built IMPROVEMENT PLANS FOR FAWN MEADOWS

A TRACT OF LAND IN THE NW 1/4 OF
THE SE 1/4 OF FRACTIONAL SECTION 33
TOWNSHIP 47 NORTH, RANGE 3 EAST
CITY OF O'FALLON ST. CHARLES COUNTY, MO.



LOCATION MAP
N.T.S.

BENCHMARK

RM 61 (FEMA BENCHMARK- USGS DATUM)

CHISELED SQUARE ON THE CONCRETE CURB AT THE NORTHWEST CORNER OF INTERSECTION OF LAURA HILL ROAD AND OAK BEND DRIVE
ELEVATION= 541.65 (USGS DATUM)

SITE BENCHMARK

OLD IRON PIPE AT THE SOUTHWEST CORNER OF THE SITE
ELEVATION= 580.11 (USGS DATUM)

LEGEND

- BUILDING LINE
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- 240'— EXISTING CONTOUR
- 240.0— PROPOSED CONTOUR
- EXISTING WOOD AREA
- SILTATION CONTROL
- CREEK OR DITCH
- FL. FLOWLINE
- GAS MAIN
- TELEPHONE CABLE
- WATER MAIN
- UNDERGROUND ELECTRIC
- OVERHEAD ELECTRIC
- STREET SIGN
- GENERAL SURFACE DRAINAGE
- LIGHT STANDARD
- CLEARING AND GRADING LIMITS
- STORM SEWER DESIGNATOR
- SANITARY MANHOLE DESIGNATOR
- LATERAL TAIL STAKE
- F.H. FIRE HYDRANT
- 8" W.M. WATER MAIN
- B.O. BLOW-OFF VALVE
- 1234 DENOTES STREET ADDRESS
- CA CLEAN-OUT

DEVELOPMENT NOTES

- Gross Acreage of Residential Property: 22.43 Acres
- The Developer shall comply with current Tree Preservation Ordinance No. 1689 and provide landscaping as set forth in Article 23 of the City of O'Fallon Zoning Ordinance.
- According to the 1992 Preliminary Flood Insurance Rate Map for St. Charles County (Dated December 15, 1992) Community-Panel Number 29183CO116D (O'Fallon, MO), this property is not in the 100 year flood plain.

INDEX

Cover Sheet	1
Flat Plan	2
Grading Plan	3
Street Profiles	4
Sanitary Profiles	5
Storm Profiles	6
Drainage Area Plan	7
Construction Details	8-12

March 4, 1996
SANITARY & STORM AS-BUILTS
(AS SHOWN ON PROFILES)

FAWN MEADOWS

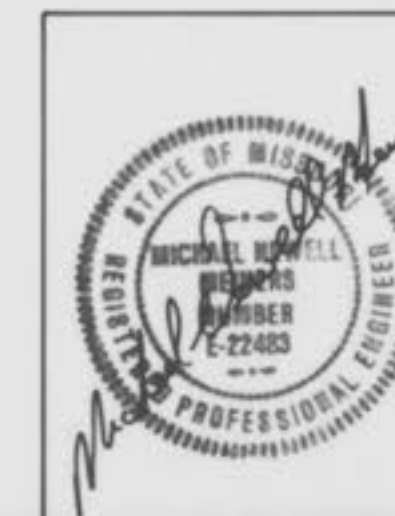
ENGINEERS AUTHENTICATION

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 excludes revisions after this date unless reauthenticated.

St. Charles Engineering and Surveying

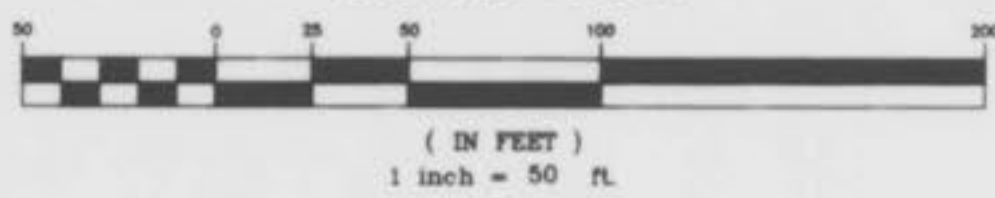
Revised 10/24/95 11/16/95 Sheet 1 of 12

S/C E/S	ST. CHARLES ENGINEERING & SURVEYING	Order No. 95-482
	801 South Fifth Street, Suite 202 St. Charles, Missouri 63301 Off. 947-0607, Fax 947-2448	Date 9/26/95



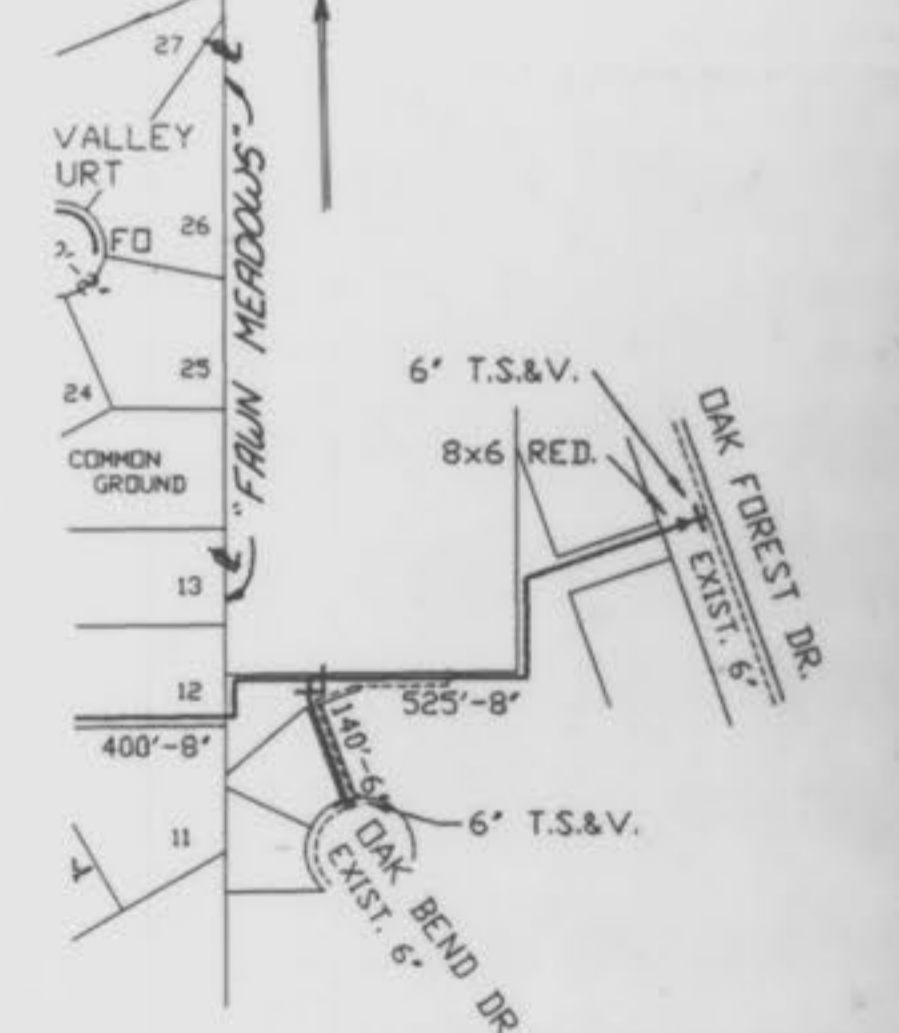
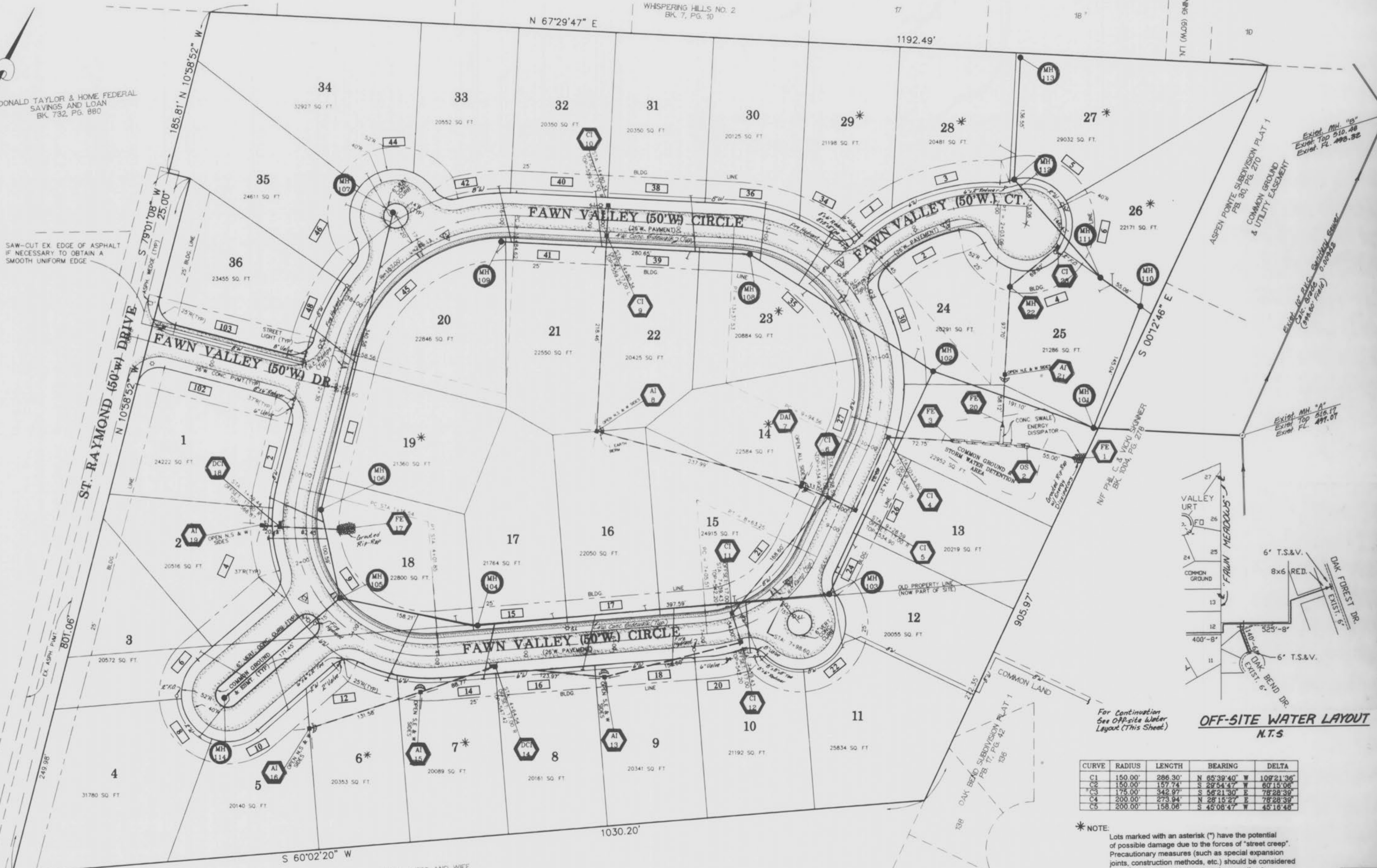
PREPARED FOR:
HOMES BY ROBERT BRUNER (HRB, Inc.)
P.O. BOX 1041
ST. PETERS, MO. 63376
(314) 279-2518

GRAPHIC SCALE



DONALD TAYLOR & HOME FEDERAL SAVINGS AND LOAN BK. 732, PG. 880

SAW-CUT EX. EDGE OF ASPHALT IF NECESSARY TO OBTAIN A SMOOTH UNIFORM EDGE



CURVE	RADIUS	LENGTH	BEARING	DELTA
C1	150.00'	286.30'	N 65°39'40" W	109°21'36"
C2	150.00'	157.74'	S 22°54'47" E	60°15'06"
C3	175.00'	342.97'	S 58°21'30" E	78°28'39"
C4	200.00'	273.94'	N 28°15'27" E	78°28'39"
C5	200.00'	158.06'	S 45°08'47" W	45°16'48"

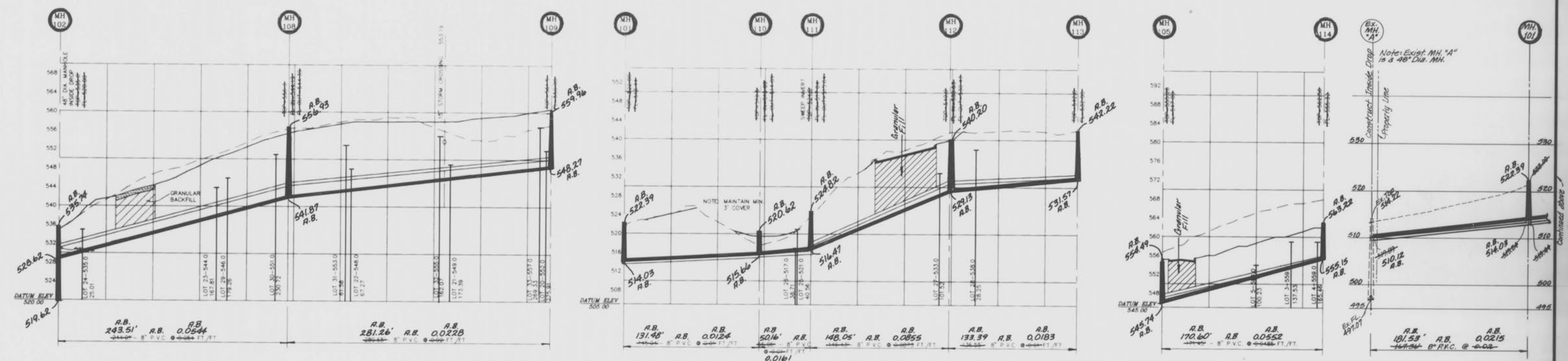
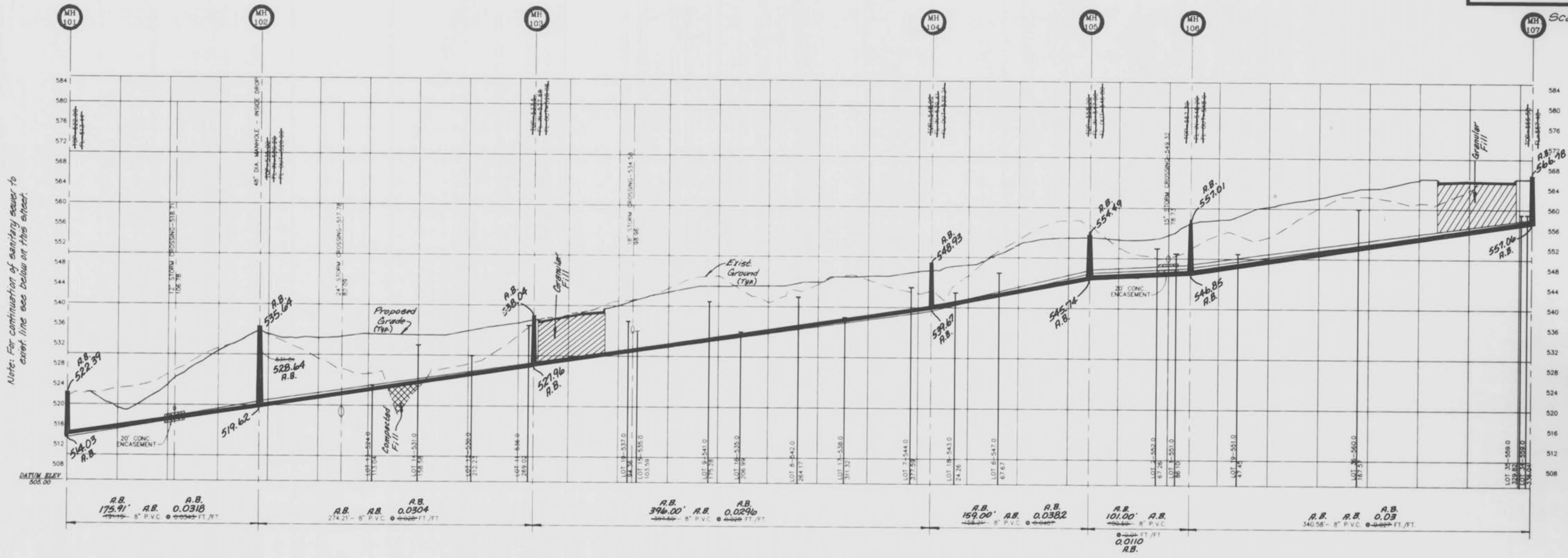
* NOTE:
 Lots marked with an asterisk (*) have the potential of possible damage due to the forces of "street creep". Precautionary measures (such as special expansion joints, construction methods, etc.) should be considered when constructing driveways and connection to pavement to prevent "street creep" damage.

SANITARY & STORM AS-BUILTS
 (AS SHOWN ON PROFILES)

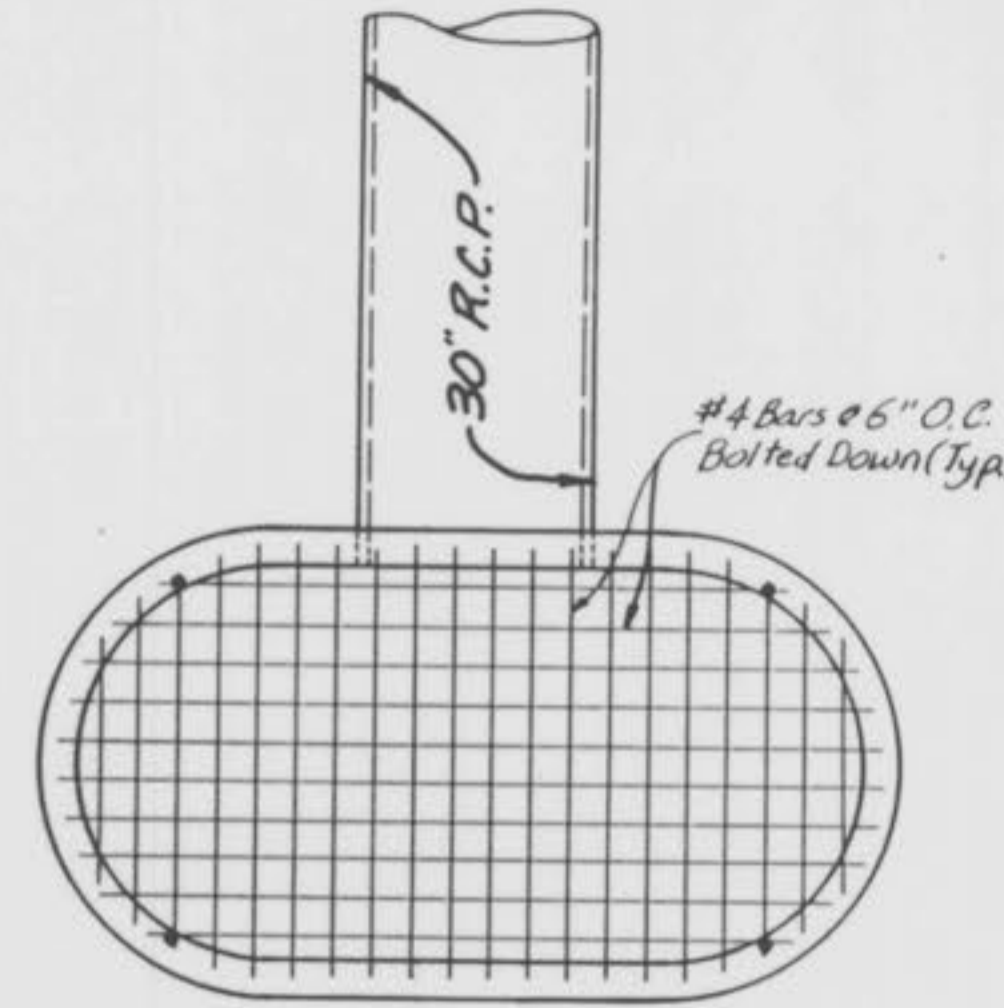
March 4, 1996

**FAWN MEADOWS
SANITARY SEWER
PROFILES**
10/20/95 95-482

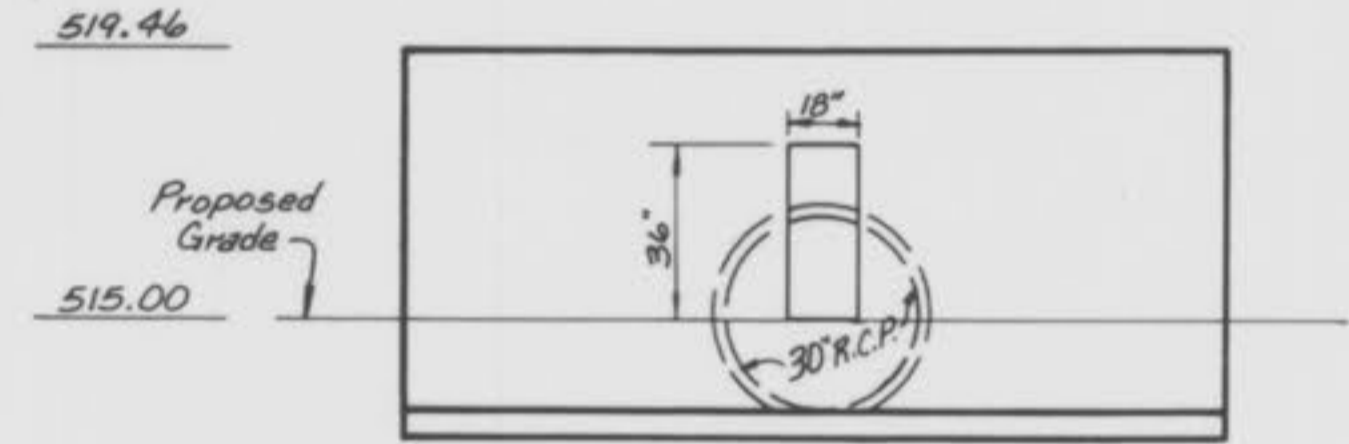
Scales: Hor. 1" = 50'
Vert. 1" = 10'



SCALES: HOR. 1"=50'
VERT. 1"=10'



**TOP VIEW
N.T.S.**



**OVERFLOW STRUCTURE 2
N.T.S.**

Note: The Overflow Structure is to be a Standard Double Untrapped Street Inlet Precast Concrete (Without Top). See M.S.D. Detail 35. The bottom must be constructed to the correct height so that no brick will be used. A rectangular orifice 18"W x 36"H, with a flowline of 515.00 will be used. (See Detention Calcs.) (See Detail This Sheet).

