

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.
- 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.
- 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 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.
- 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.
- All cut and fill slopes should be a maximum of 33% slope (3:1) after grading.
- 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.
- 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.
- Soft soils in the bottom and banks of any existing or former pond sites or tributaries should be removed, spread out, and permitted to dry sufficiently to be used as fill. None of this material should be placed in proposed public right-of-way locations or on any storm sewer location.
- No area shall be cleared without permission of the developer.
- 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 Standards.
- All storm sewers shall be Reinforced A.S.T.M. C-76, Class II 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 II 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.

IMPROVEMENT PLANS FOR WINDING OAKS

PART OF THE N.E. 1/4 OF FRACT. SECTION 20,
TOWNSHIP 47 NORTH, RANGE 3 EAST
CITY OF O'FALLON ST. CHARLES CO., MO.



- 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 length of the concrete encasement around the P.V.C. sanitary sewers and the concrete storm sewers shall extend at least 5' into undisturbed soil to bridge the pipe across the trench backfill. Reinforcing steel shall be placed in the concrete encasement for tensile strength.
- 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 Duckett Creek Sanitary 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 City of O'Fallon Standards and Specifications.
- The contractor shall place all fire hydrants within (3') two feet of the street curb.

- The contractor shall place the "steamer" outlet of the fire hydrant toward the street.
- The Duckett Creek Sanitary 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.

- Barricades will be constructed per the standard specifications as shown in the "Manual of Uniform Traffic Control Devices". End of roadway markers shall be mounted 4 feet above the pavement on two pound "U" channel sign posts. Each marker shall consist of an 18" diamond panel with red reflectors.
- Sidewalk curb ramps, ramp and accessible parking spaces shall be constructed in accordance with the current approved "Americans with Disabilities Act Accessibility Guidelines" (ADAAC) along with the required grades, construction materials, specifications and signage. If any conflict occurs between the above information and the plans, the ADAAC guidelines shall take precedence and the Project Engineer shall be notified by the contractor prior to any construction.

- The most stringent of the above requirements shall apply.
- 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 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 and Inlet Structures shall be required.

- The most stringent of the above requirements shall apply.

SPECIFICATIONS

- 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.
- 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.
- The most stringent of the above requirements shall apply.

- The current property Owner/Developer is: Homes by Robert Bruner (HRB, Inc.) P.O. Box 1041 St. Peters, MO 63376 (314)-279-2518
- Gross Acreage of Residential Property: 10.13 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 Community-Panel Number 29183C0120 D (O'Fallon, MO), this property is in the flood plain.
- This development will require issuance of a flood plain development permit by the Engineering Department.

Benchmark:
"M" in Mueller on Hydrant at
Water Plant. Elev. = 527.99.

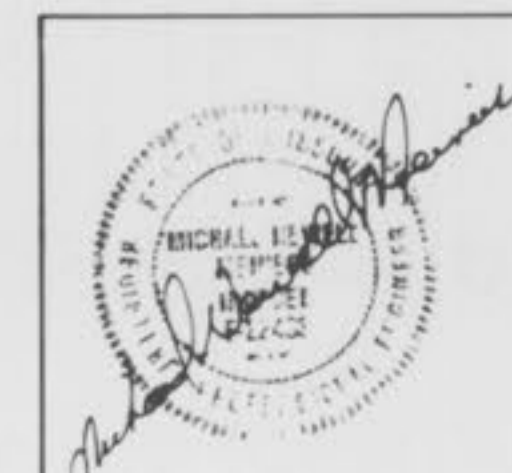
LEGEND

- BUILDING LINE
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING WOOD AREA
- SILTATION CONTROL
- CREEK OR DITCH
- 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
- FIRE HYDRANT
- WATER MAIN
- BLOW-OFF VALVE
- DENOTES STREET ADDRESS
- CLEAN-OUT

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SANITARY & STORM AS-BUILTS
(AS SHOWN ON PROFILES)
Nov. 27, 1995



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 re-authenticated.

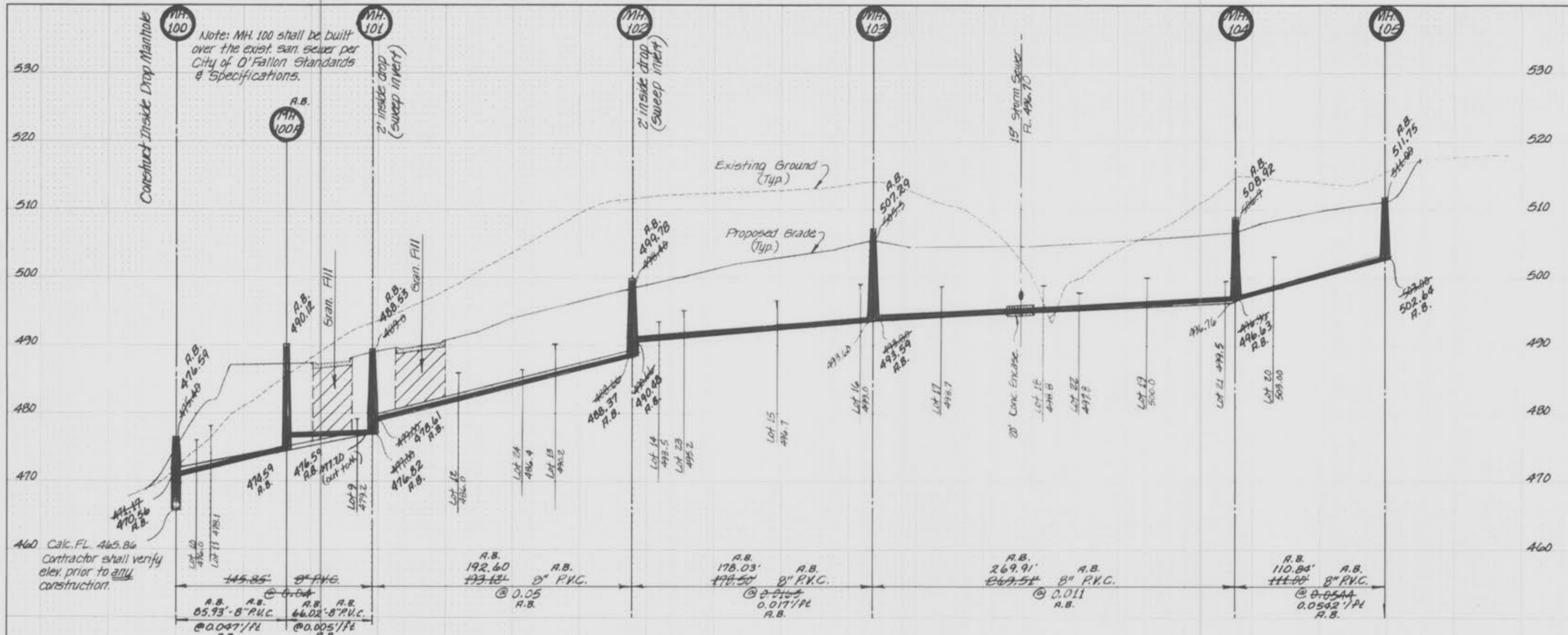
St. Charles Engineering and Surveying
Revised 4/14/95, 5/31/95, 11/27/95-As-Builts Sheet 1 of 12
S C ST. CHARLES ENGINEERING & SURVEYING Order No. 94-1471
E S 801 South Fifth Street, Suite 202 Date 4/4/95
St. Charles, Missouri 63301
Off. 947-0607, Fax 947-2448

Rev. 5/31/95
As-Built - 11/27/95

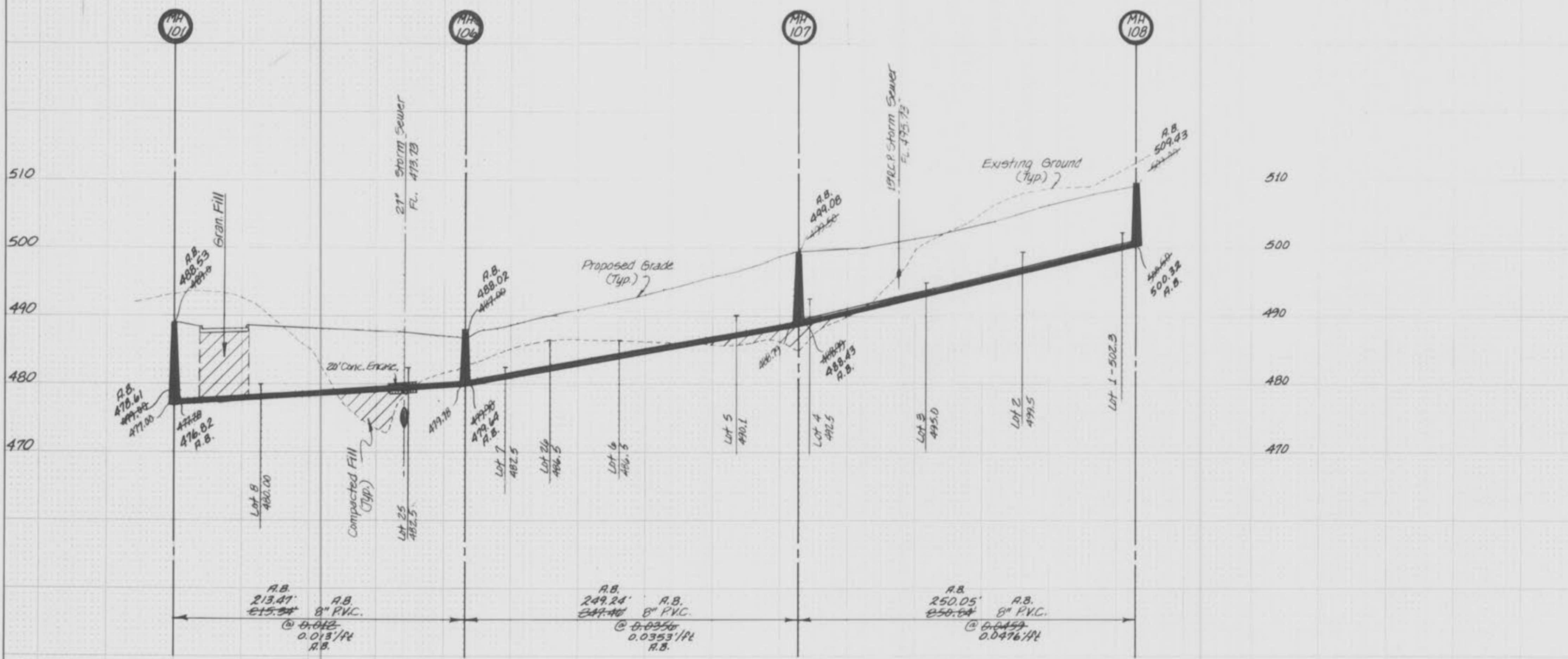
**WINDING OAKS
SANITARY PROFILES**
94-1471

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

FINAL SURVEY	DATE
SURVEYED	BY
PLOTTED	
NOTE BOOK	
AREAS CHECKED	



ORIGINAL SURVEY	DATE
SURVEYED	BY
PLOTTED	
NOTE BOOK	
AREAS CHECKED	



SANITARY & STORM AS-BUILTS
(AS SHOWN ON PROFILES)
Nov. 27, 1995

