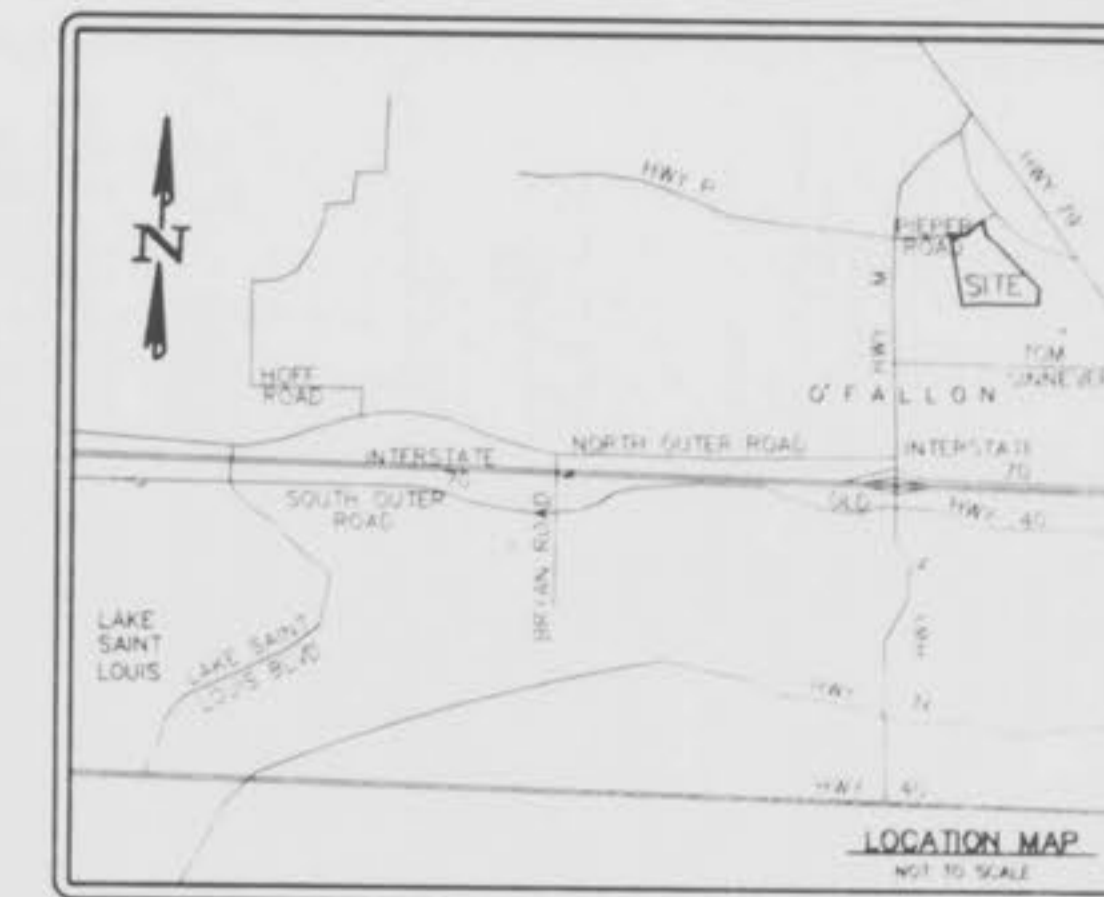


SANITARY SEWERS AND STORM SEWERS AS-BUILTS OF HOMEFIELD BOULEVARD - COLLECTOR ROAD

A TRACT OF LAND IN FRACTIONAL SECTION 16,
TOWNSHIP 47 NORTH, RANGE 3 EAST
CITY OF O'FALLON,
ST. CHARLES COUNTY, MISSOURI



HOMEFIELD BLVD.
COLLECTOR ROAD

PREPARED FOR:
CITY OF O'FALLON AND T.R. HUGHES INC.
138 SOUTH MAIN
O'FALLON, MO. 63366
(636) 240-2000

DISCLAIMER OF RESPONSIBILITY:
The undersigned hereby certifies that the drawings, specifications, reports and other documents prepared by him or under his direct supervision and control are true and correct and that he is a duly licensed Professional Land Surveyor in the State of Missouri.

REVISIONS

NO.	DESCRIPTION	DATE

REVISIONS

347
ENGINEERING
PLANNING
SURVEYING
1052 South Cloverleaf Drive
St. Peters, MO. 63376-6445
314-928-5552
FAX 928-1718

FEBRUARY, 2000
DATE
98-10001U
PROJECT NUMBER
1 of 7
SHEET OF
10001UASCV.DWG
FILE NAME
HWB WSK
DRAWN CHECKED
DATE DONE IN FIELD

GRADING NOTES

- A Geotechnical Engineer shall be employed by the owner and be on site during grading operations. All soils tests shall be verified by the Geotechnical Engineer concurrent with the grading and backfilling operations.
- The grading contractor shall perform a complete grading and compaction operation as shown on the plans, stated in these notes, or reasonably implied therefrom, all in accordance with the plans and notes as interpreted by the Geotechnical Engineer.
- The Contractor shall notify the Soils Engineer at least two days in advance of the start of the grading operation.
- All areas shall be allowed to drain. All low points shall be provided with temporary ditches. Maximum slope allowed is 3:1.
- A sediment control plan that includes monitored and maintained sediment control basins and/or straw bales shall 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 silt from entering downstream storm drainage system.
- 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.
- All trash and debris on site, either existing or from construction, must be removed and properly disposed of off-site.
- Soft soil in the bottom and banks of any existing or former pond sites or tributaries or on any sediment basins or traps 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 in any storm sewer lines.
- Site preparation includes the clearance of all stumps, trees, bushes, shrubs, and weeds, the grubbing and removal of stumps and other surface obstructions from the site, and the demolition and removal of any masonry structures. The material shall be properly disposed of off-site. Topsoil and grass in the fill areas shall be thoroughly discing prior to the placement of any fill. The Soils Engineer shall approve the discing operation.
- Compaction equipment shall consist of tambling, walk-behind, pneumatic-tire rollers, vibratory rollers, or high speed impact type drum rollers acceptable to the Soils Engineer. The roller shall be designed so as to avoid the creation of a layered fill without proper blending of successive fill layers.
- The Soils Engineer shall observe and test the placement of the fill to verify that specifications are met. A series of fill density tests will be determined on each lift of fill, interim reports showing fill quality will be made to the Owner at regular intervals.
- The Soils Engineer shall notify the Contractor of rejection of a lift of fill or portion thereof. The Contractor shall rework the rejected portion of fill and obtain notification from the Soils Engineer of its acceptance prior to the placement of additional fill.
- All areas to receive fill shall be scarified to a depth of not less than 6 inches and then compacted in accordance with the specifications given below. Natural slopes steeper than 3:1 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 5 percent 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 and backfill should be compacted to the criteria specified in the following table:

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

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

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

GENERAL NOTES

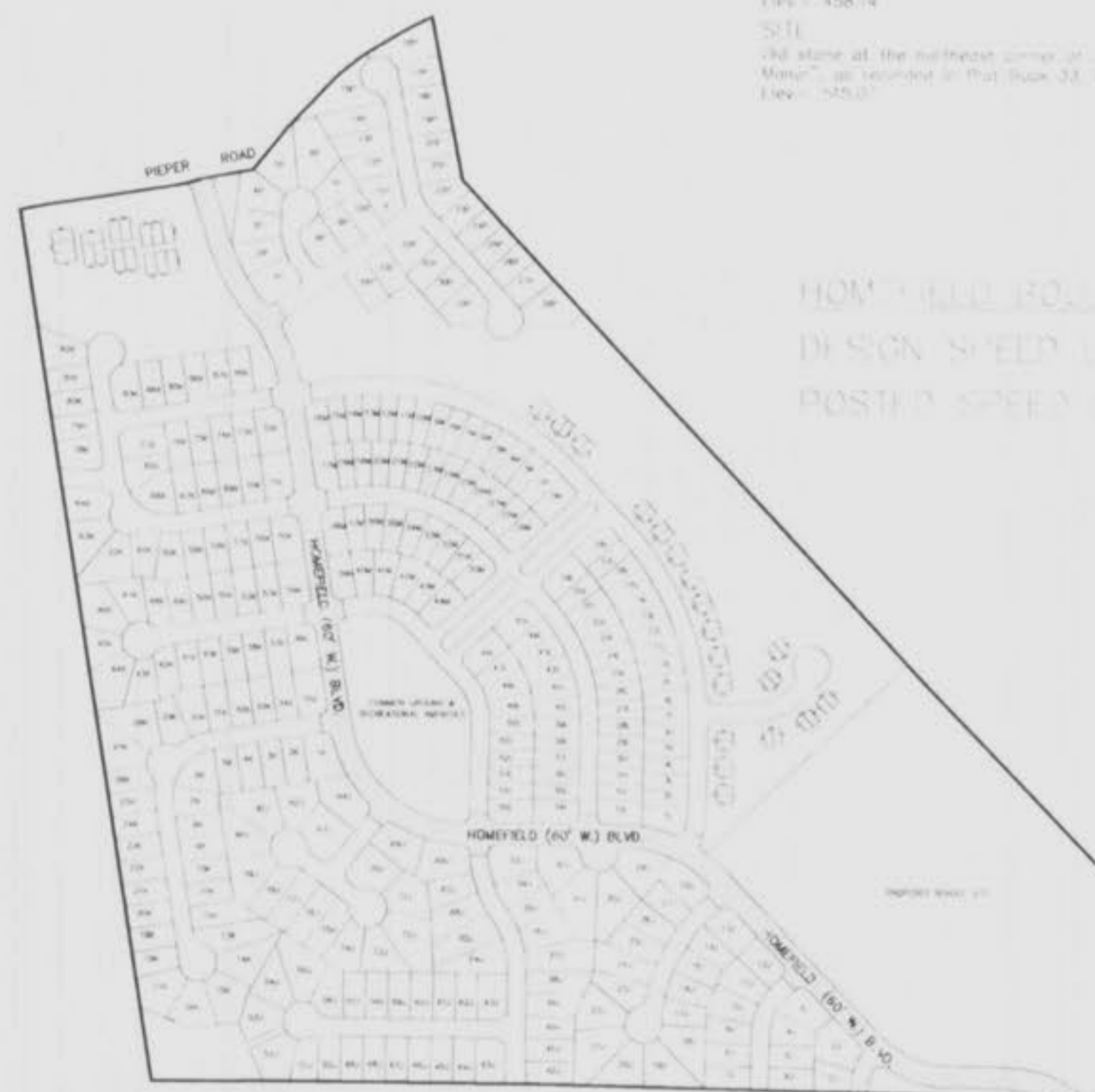
- Underground utilities have been plotted from available information and therefore their locations shall be considered approximate only. The verification of the location of all underground utilities, either shown or not shown on these plans shall be the responsibility of the contractor, and shall be located prior to any grading or construction of the improvements.
- All manhole tops built without elevations furnished by the Engineer will be the responsibility of the sewer contractor.
- 5" P.V.C. sanitary sewer pipe shall meet the following standards: A.S.T.M. D-3034 SDR-35, with wall thickness compression joint A.S.T.M.-D-3212. An appropriate rubber seal waterstop as approved by the sewer district shall be installed between P.V.C. pipe and masonry structures.
- All filled places, including trench backfills, under buildings, proposed storm and sanitary sewer lines and/or paved areas, shall be compacted to 90% maximum density as determined by the Modified AASHTO T-180 Compaction Test (A.S.T.M.-D-1557). All filled places within public roadways shall be compacted to 95% of maximum density as determined by the Standard Proctor Test AASHTO T-99, Method C (A.S.T.M.-D-698).
- All trench backfills under paved areas shall be granular backfill and shall be compacted to 90% of the maximum density as determined by the Modified AASHTO T-180 Compaction Test (A.S.T.M.-D-1557). All other trench backfills may be earth materials (free of large rocks or stones). All trench backfills shall be water-jetted.
- All sanitary house connections have been designed so that the minimum vertical distance from the low point of the basement to the low line of a sanitary sewer at the corresponding house connection is not less than the diameter of the pipe plus the vertical distance of 2'-0" feet.
- No area shall be cleared without the permission of the Project Engineer.
- All P.V.C. sanitary sewer is to be SDR-35 or equal with clean 1/2" to 1" granular stone bedding uniformly graded. The bedding shall extend from 4" below the pipe to the springline of the pipe. Immediate backfill over pipe shall consist of some size "clean" or minus stone from springline of pipe to 12" above the top of pipe.
- All soils test shall be verified by a Soils Engineer concurrent with the grading and backfilling operations.
- Easements shall be provided for sanitary sewers, and all utilities on the Record Plat. See Record Plat for location and size of easements.
- Maintenance and upkeep of the common ground area shall be the responsibility of the developer and/or successors.
- All building lines shall be established as shown on plans.
- All water lines shall be laid at least 10 feet horizontally, from any sanitary sewer, storm sewer, or manhole. 18" vertical clearance from outside of pipe to outside of pipe shall be maintained wherever water lines must cross sanitary sewers, laterals, or storm drains. The water line shall be laid at such an elevation that the bottom of the water line is above the top of the drain or sewer. A full length of water pipe shall be centered over the sewer line to be crossed so that the joints will be equally distant from the sewer and as remote therefrom as possible. This vertical separation shall be maintained for that portion of the water line located within 10 feet horizontally, of any sewer or drain it crosses.
- All PVC water pipe shall conform to A.S.T.M.-D-2241, SDR 21 Standard Specification for P.V.C. Pressure Pipe, 200 P.S.I. working pressure for water, with approved joint.
- Water lines, valves, sleeves, meters, and fittings shall meet all specifications and installation requirements of Public Water Supply District No. 2 of St. Charles County.
- All water hydrants and valves shall be ductile iron and installed in accordance with plans and details. All ductile iron pipe for water mains shall conform to A.W.W.A. Specifications C-105 and/or C-108. The ductile iron fittings shall conform to A.W.W.A. Specification CC-110. All rubber gasket joints for water ductile iron pressure pipe and fittings shall conform to A.W.W.A. Specification C-111.
- All sanitary manholes shall be waterproofed on the exterior in accordance with Missouri Department of Natural Resources specifications 10 CSR-8-120 (7)E.
- Brick will not be used in the construction of sanitary sewer manholes.
- All pipes shall have positive drainage through manholes. No flat base structures are allowed.
- The City of O'Fallon shall be notified 48 hours prior to construction for coordination and inspection.
- Gas, water and other underground utilities shall not conflict with the depth or horizontal location of existing or proposed sanitary or storm sewers, including house laterals.
- All existing site improvements disturbed, damaged or destroyed shall be repaired or replaced to closely match pre-construction conditions.

BENCHMARK

U.S.C.S.
Checked 1. on concrete curb top at southwest corner of State Highway 19 and/or over bridge over River Road Elevation 458.14

NOTE

The slope at the northwest corner of Lot 16 on "Lakeside Manor", as recorded in Plat Book 23, Page 28/27, Elevation 458.00.



LOCATION MAP
N.T.S.

- The contractor shall prevent all storm, surface water, mud and construction debris from entering the existing sanitary sewer system.
- All construction and materials shall conform to the current construction standards of the City of O'Fallon.
- All sanitary and storm sewer trench backfills shall be water-jetted. Granular backfill will be used under pavement areas.
- All existing areas disturbed during construction of the off-site sanitary sewer line shall be seeded and mulched to prevent erosion.
- All sanitary sewer laterals shall be a minimum of 4" in diameter per City of O'Fallon.
- No flushing hydrants or water meters shall be located in driveways and/or walkways.
- Concrete pipe for storm sewers shall be Class III, A.S.T.M. C-76 with a minimum diameter of 12" except in the R.O.W. it shall be 15".
- The ADS N-12 pipe shall have a smooth interior wall.
- Concrete pipe joints shall be MSD type "A" approved compression-type joints and shall conform to the requirements of the specifications for joints for 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.
- When HDPE pipe is used, City of O'Fallon specifications or manufacturers specifications, which ever are more stringent, shall be followed.
- The use of High Density Polyethylene Corrugated pipe, ADS N-12 or equal will be permitted as an acceptable alternative to reinforced concrete pipe, ADS N-12 HC shall be used for all ADS pipe greater than 36". Pipe shall meet A.S.T.M.-D-2321 and A.A.S.H.T.O. M-294-291.
- All flared end sections and inlet structures will be concrete.
- All storm sewer pipe installed in the Public Right-of-Way shall be Reinforced concrete Class III pipe.
- All concrete pipe or ADS N-12 pipe shall be installed with "O-Ring" Rubber type gaskets per M.S.D. standard construction specifications or manufacturer.
- All Fire Hydrants and Water Meters shall not be located in driveways and/or sidewalks.

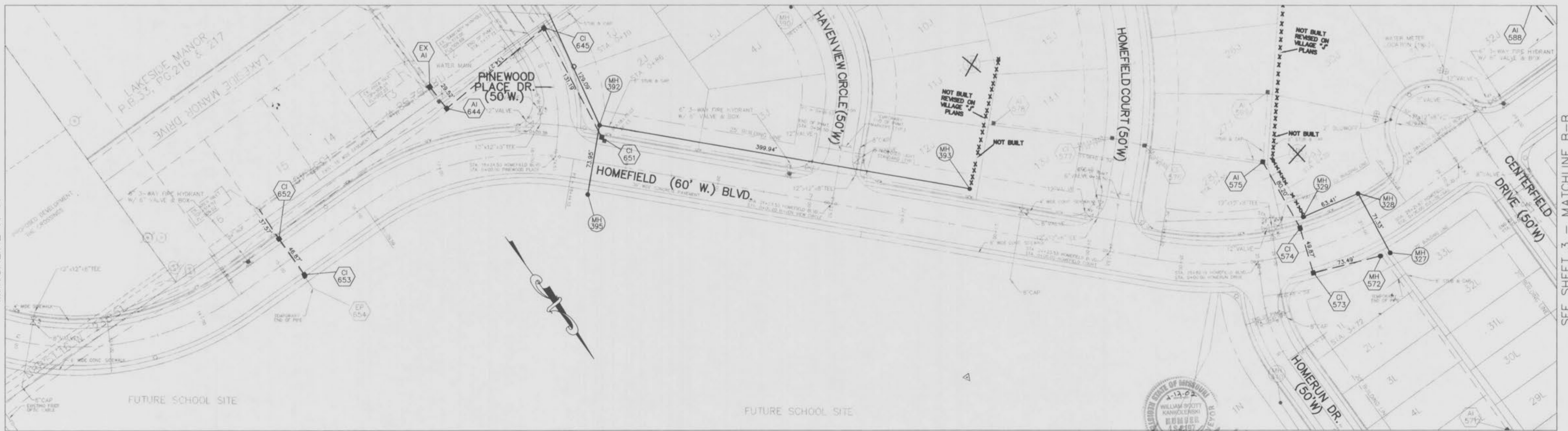
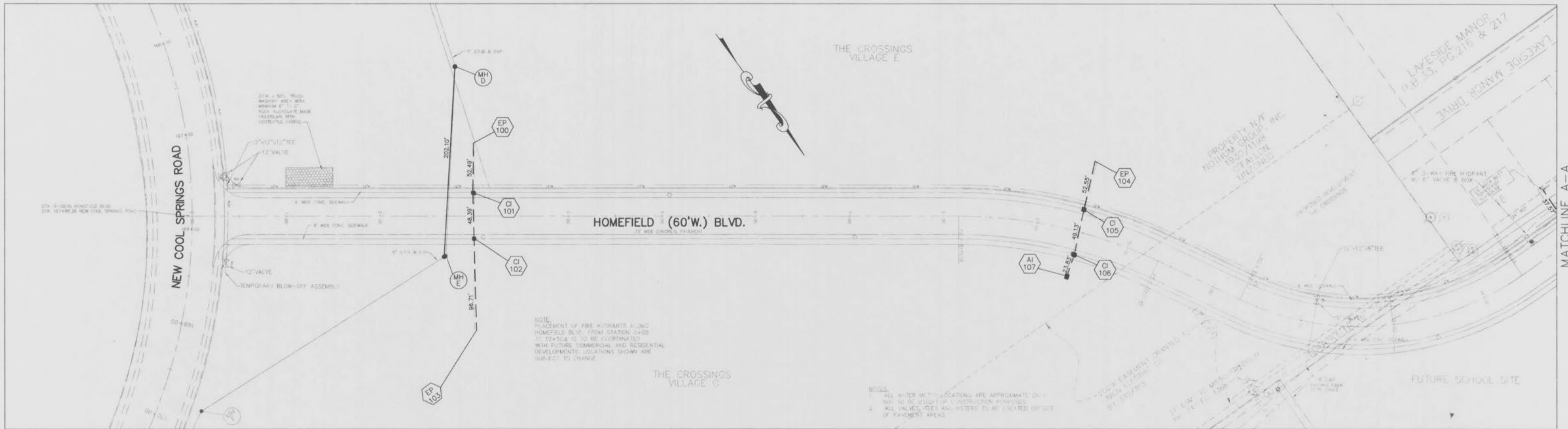
"SANITARY AND STORM SEWER AS-BUILTS
AS-BUILTS ADDED FEBRUARY, 2000"
(REVISED JANUARY 2002)

THIS IS TO CERTIFY THAT WE HAVE DURING THE MONTH OF FEBRUARY, 2000, BY ORDER OF T.R. HUGHES DEV. CO., EXECUTED AN AS-BUILT SURVEY OF EXISTING SANITARY SEWERS, STORM SEWERS, WITHIN "THE ROAD DEDICATION EASEMENTS AND RECORD PLAT OF HOMEFIELD BOULEVARD" ACCORDING TO THE PROPOSED PLAT THEREOF, TO BE RECORDED IN ST. CHARLES COUNTY RECORDS. ALL SEWERS WILL LIE WITHIN THE EASEMENTS AS SHOWN ON SAID PROPOSED PLAT OR BY SEPARATE DOCUMENT. THE RESULTS OF THE AS-BUILT SURVEY ARE SHOWN ON THIS PLAT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WILLIAM SCOTT
KANKOLENSKI
MISSOURI PROFESSIONAL LAND SURVEYOR
BAX ENGINEERING CO., INC.
MISSOURI PROFESSIONAL LAND SURVEYOR #2197

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

Homefield Blvd.



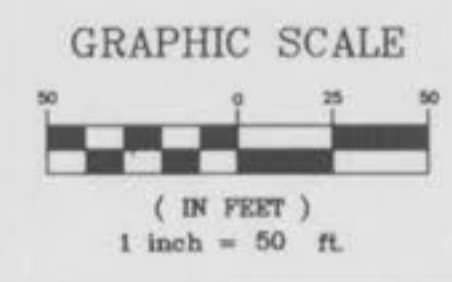
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MATCHLINE A-A

SEE SHEET 3 - MATCHLINE B-B

MATCHLINE A-A

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.

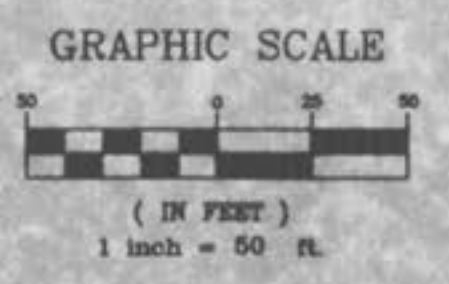
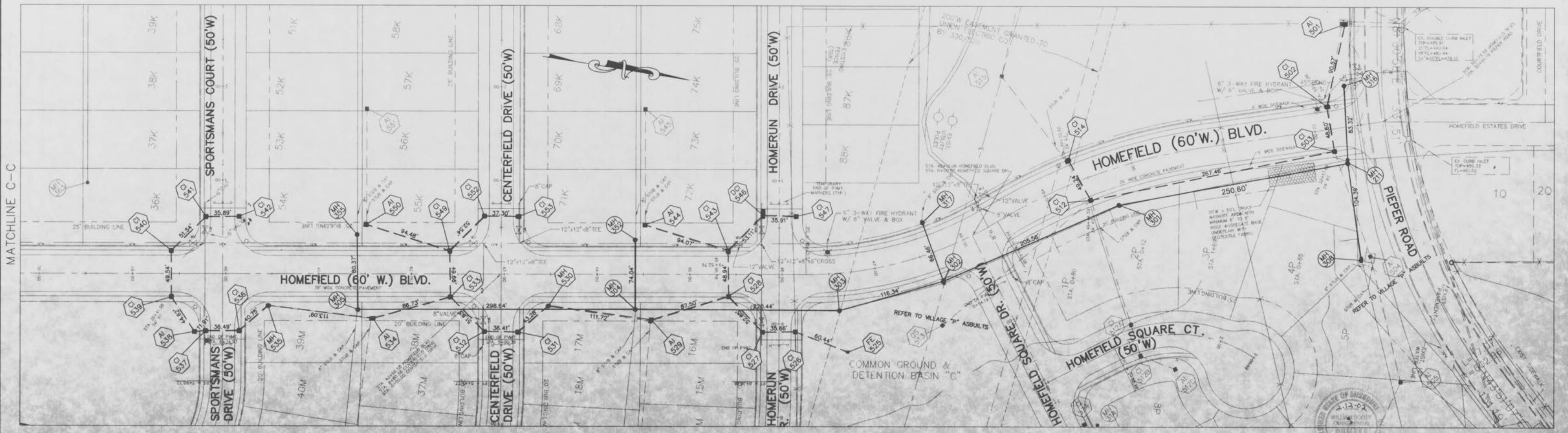
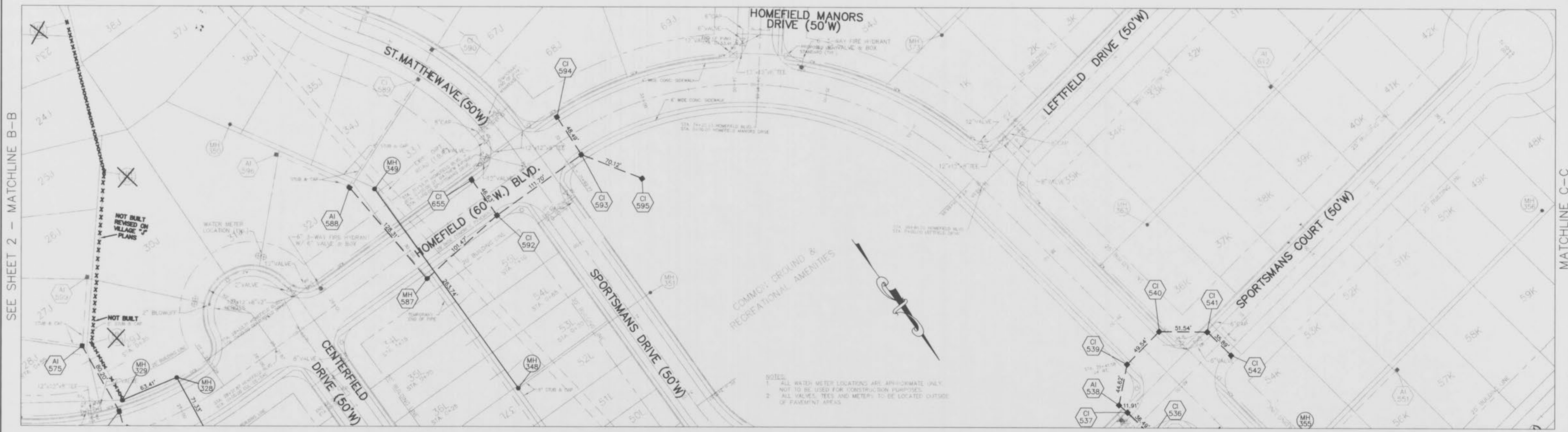


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AS-BUILTS ADDED FEBRUARY, 2000
 REVISED JANUARY 2002

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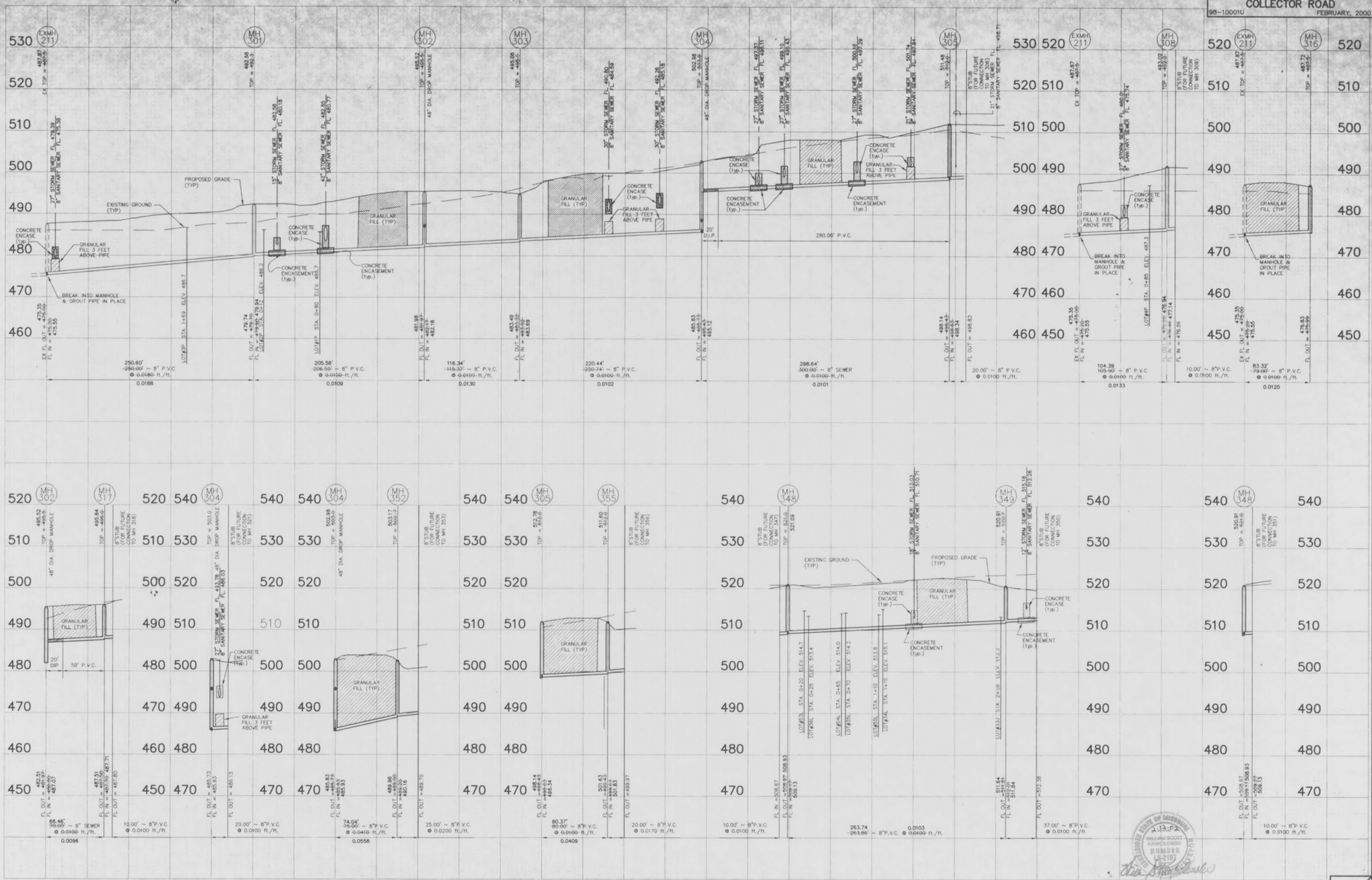


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AS-BUILTS ADDED FEBRUARY, 2000
 AS-BUILTS REVISED JULY, 2000 REVISED JANUARY 2002

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Homefield Blvd.



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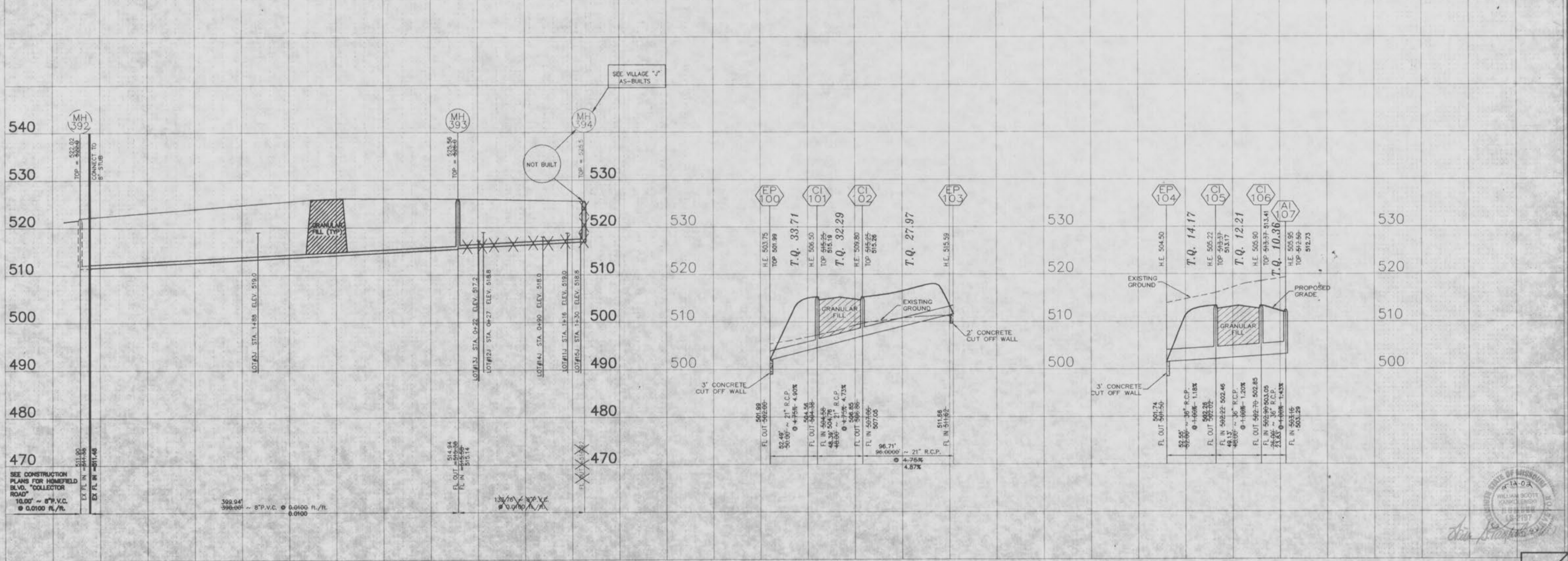
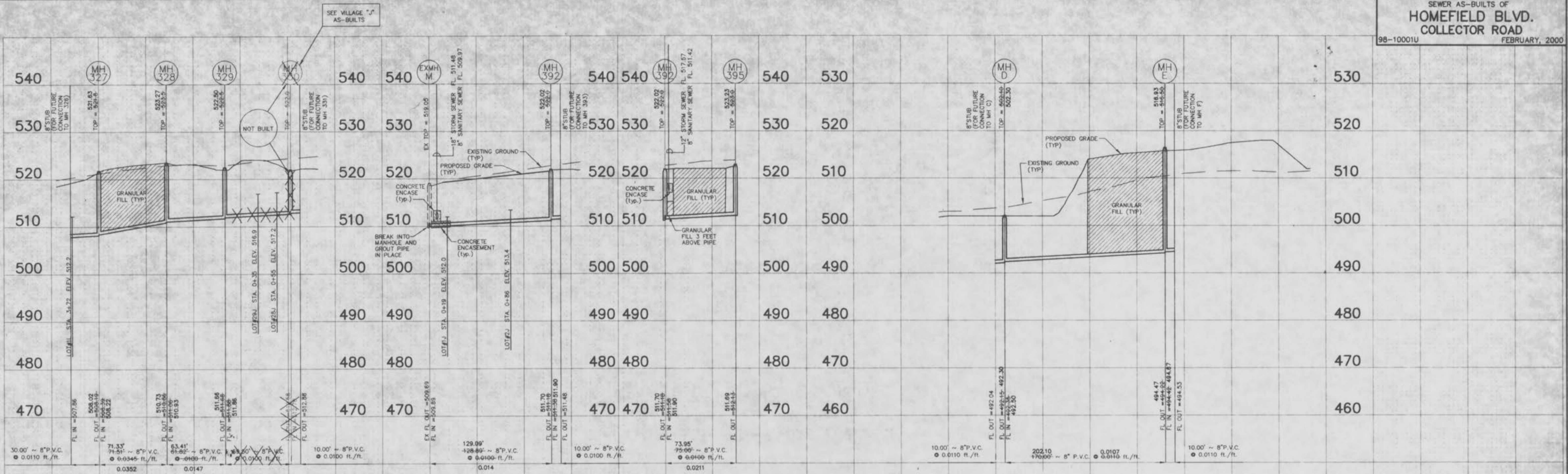
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NOTE:
 All sanitary sewer lateral to/stock elevations have been designed for 8.0' basements in homes.

ASBUILTS NOTE:
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AS-BUILTS ADDED FEBRUARY 2000
 REVISED JANUARY 2002

SCALE:
 1" = 10' VERTICAL
 1" = 50' HORIZONTAL



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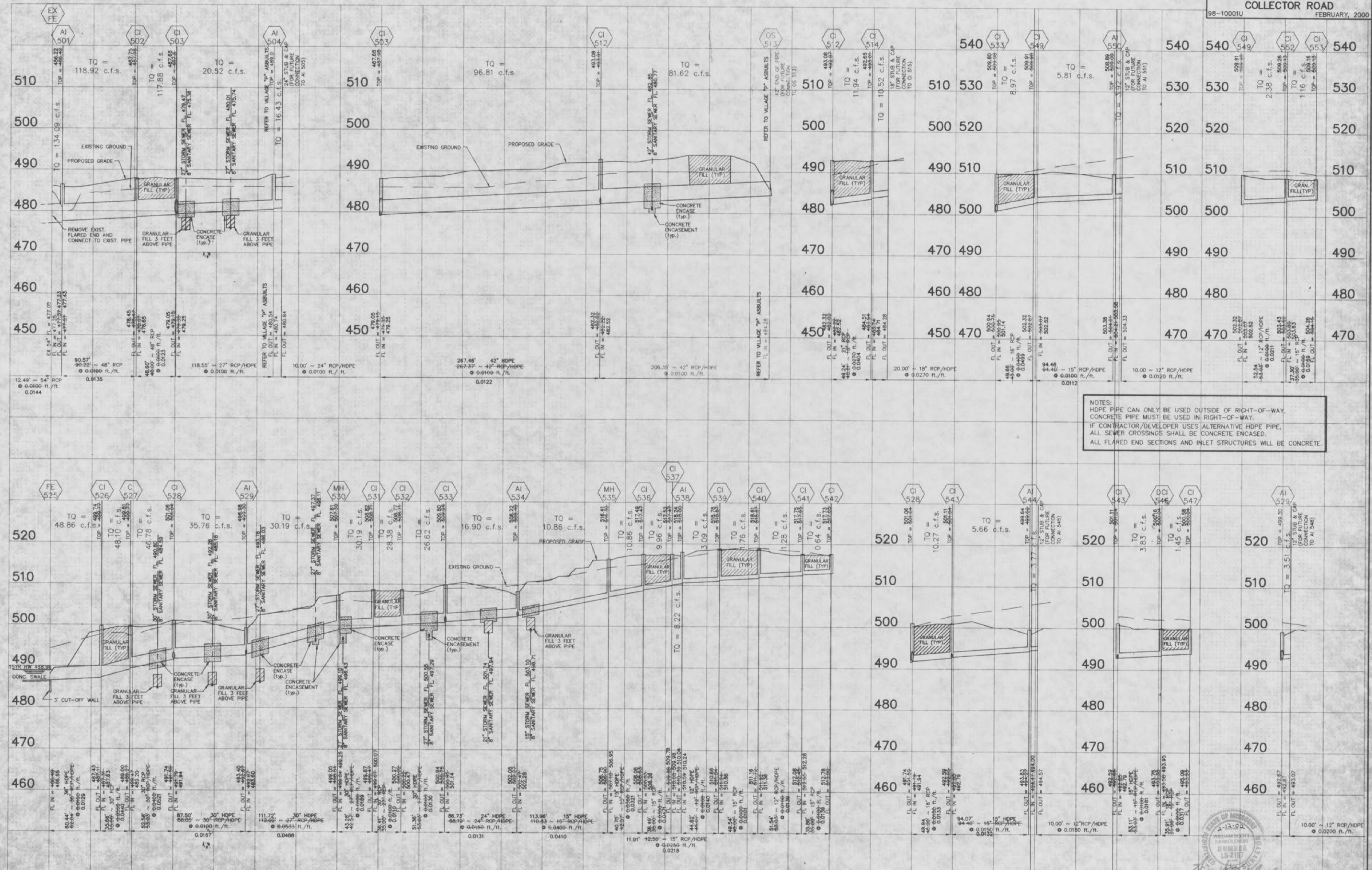
NOTE:
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 REVISED JULY, 2000

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5
 7
 Homefield Blvd.



NOTES:
 HDPE PIPE CAN ONLY BE USED OUTSIDE OF RIGHT-OF-WAY.
 CONCRETE PIPE MUST BE USED IN RIGHT-OF-WAY.
 IF CONTRACTOR/DEVELOPER USES ALTERNATIVE HDPE PIPE,
 ALL SEWER CROSSINGS SHALL BE CONCRETE ENCASED.
 ALL FLARED END SECTIONS AND INLET STRUCTURES WILL BE CONCRETE.

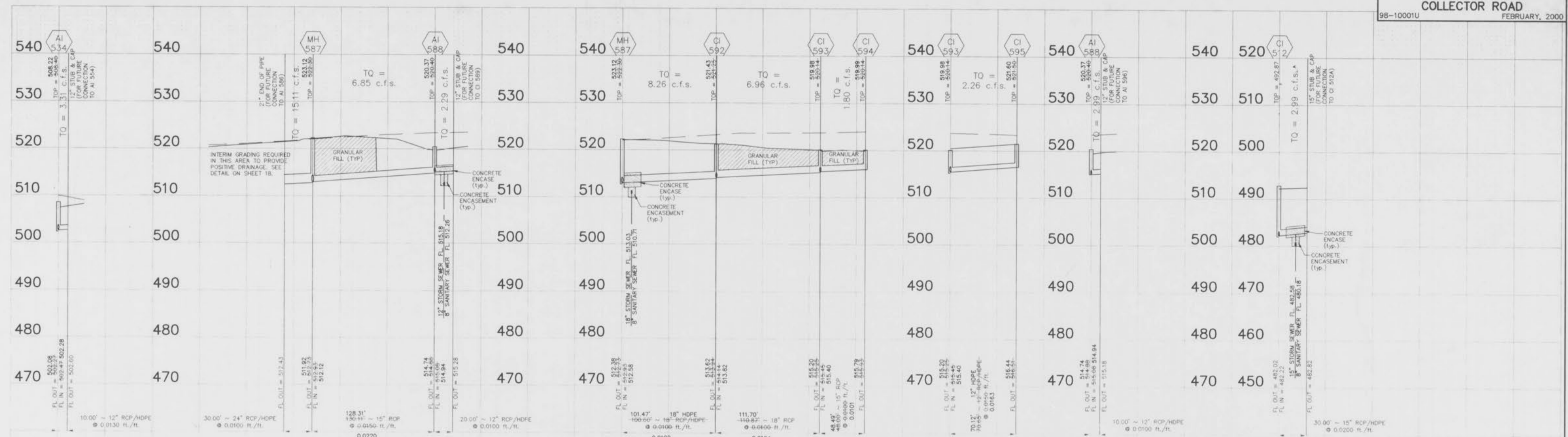
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 REVISED JULY, 2000 REVISED JANUARY 2002

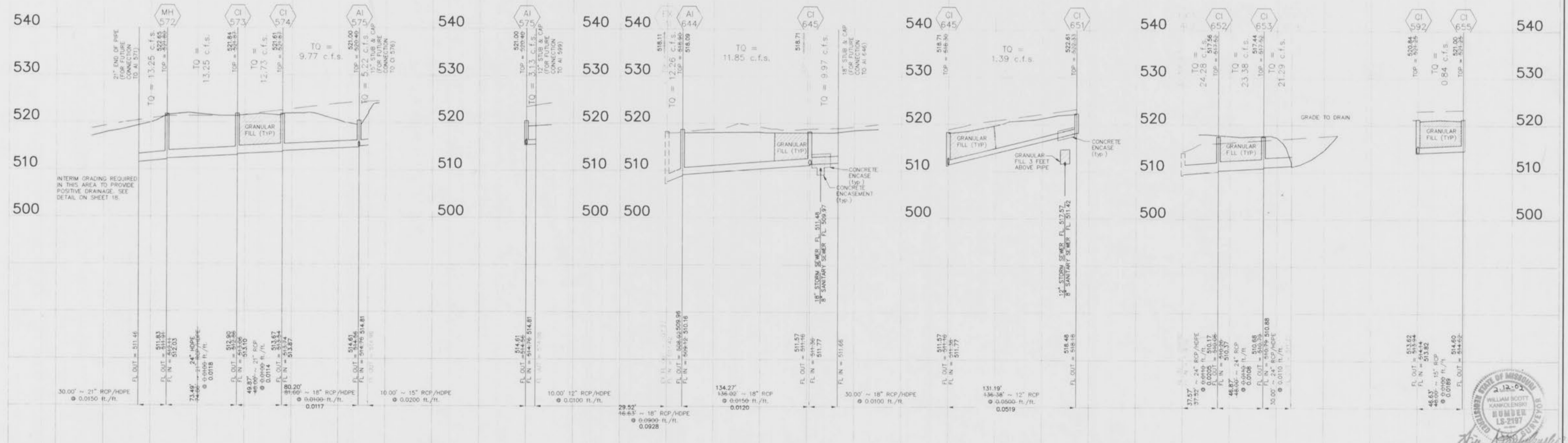
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