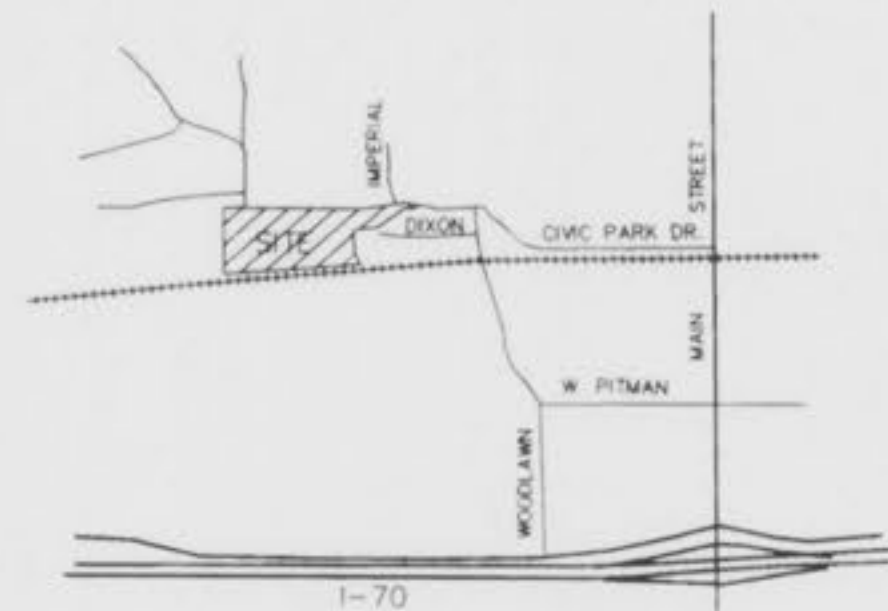


WATER, SANITARY & STORM SEWER AS-BUILTS

PLANS FOR CONSTRUCTION OF SANITARY SEWERS, STORM SEWERS,
PAVING, GRADING, AND WATER MAINS FOR.



A TRACT OF LAND BEING PART OF SECTION 20 AND PART OF FRACTIONAL SECTION 29
TOWNSHIP 47 NORTH, RANGE 3 EAST, ST. CHARLES COUNTY, MISSOURI



LOCATION MAP
N.T.S.

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 there from, 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.
- 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 over the winter without being seeded and mulched. Care should be exercised to prevent soil from damaging adjacent property and silting up existing downstream storm drainage system.
- Soft soil 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 right-of-way locations or on storm sewer locations.
- 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 roller, 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 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 percent above the optimum moisture control.
- 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.

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.
- 8" 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 and 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 material (free of large clods 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 flow 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 1/2 feet.
- No area shall be cleared without the permission of the Project Engineer.
- All grades shall be within 0.2 feet of those shown on the grading plan.
- No slope shall be steeper than 3:1 or as called for in the soils report for the project. All slopes shall be sodded or seeded and mulched.
- All construction and materials used shall conform to current City of O'Fallon Standards.
- 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.
- A 25' building line shall be established along all Public Right-Of-Way.
- All water lines shall be laid at least 10 feet horizontally, from any sanitary sewer, storm sewer, or manhole. Whenever 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 P.V.C. water mains shall have a minimum pressure rating of PR-200 or SDR-21.
- Water lines, valves, sleeves, meters, and fittings shall meet all specifications and installation requirements of the City Of O'Fallon.
- 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-106 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 lots with minimum basement floors to have elevation certificates.

DEVELOPMENT NOTES

- Existing Zoning: R-1 P.U.D.
- Number of Lots Proposed: 28 Lots
- Area of Tract: 10.75 acres
- Minimum Lot Area: 10,000 sq.ft.
- The proposed height and lot setbacks are as follows:
Minimum Front Yard: 25 feet
Minimum Side Yard: 5 feet
Minimum Rear Yard: 25 feet
Maximum Height of Building: 2 1/2 stories or 35 feet
- Current Owner of Property and Developer: R & D EMGE, INC.
306 Imperial Drive
O'Fallon, MO 63366
314-281-1274
- Site is served by:
City of O'Fallon Sewer District
Union Electric Company
St. Charles Gas Company
City of O'Fallon Water Company
GTE Telephone Company
Fort Zumwalt School District
O'Fallon Fire Protection District
- Boundary information is per survey by Pickett Ray & Silver dated June, 1982.
- Topographic information is per topographic survey by Pickett, Ray & Silver during June, 1982.
- All streets will be constructed to City of O'Fallon standards. Streets will consist of 26 foot wide concrete pavement with integral rolled curb centered in a 50 foot right-of-way. Minimum radius shall be 150 feet.
- All cul-de-sacs will have pavement radii of 42 feet with right-of-way radii of 54 feet. Street intersection shall have a minimum rounding radii of 25 feet with pavement radii of 37 feet.
- Minimum street grades shall be 1%.
- The minimum house size will be 1,100 square feet.
- All utilities must be located underground.
- Siltation control devices shall be approved by the City Engineer. Additional siltation control, if required, will be placed at the direction of the soils Engineer on site and/or the City Engineer prior to placement.
- The Developer shall comply with current Tree Preservation Ordinance Number 1689 and provide landscaping as set forth in Article 23 of the City of O'Fallon Zoning Ordinance.
- A 4 foot wide concrete sidewalk shall be constructed on one side of streets where indicated.
- All homes shall have a minimum of 2 off-street parking spaces with 2-car garages.
- Flood plain information is per F.I.R.M. Map # 29183 C0110 D.
- U.S.G.S. Benchmark: Elevation = 501.91
Top headwall at north side of box culvert located at southwest corner of "Sigmund Auto Service" site on West Second Street (Civic Park Drive).

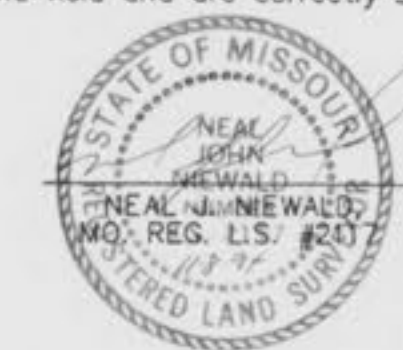
LEGEND

- C.I. CURB INLET
- D.C.I. DOUBLE CURB INLET
- A.I. AREA INLET
- M.H. MANHOLE
- F.E. FLARED END SECTION
- E.P. END PIPE
- C.P. CONCRETE PIPE
- R.C.P. REINFORCED CONCRETE PIPE
- C.M.P. CORRUGATED METAL PIPE
- C.I.P. CAST IRON PIPE
- P.V.C. POLY VINYL CHLORIDE (PLASTIC)
- C.O. CLEAN OUT
- Fire Hydrant
- Storm Sewer
- Sanitary Sewer
- Street Light
- Existing Contour
- Proposed Contour
- Street Sign
- Water Valve
- Blow Off Assembly
- Flowline Elevation of House Connection
- Flowline Elevation of Sewer Main
- Street Address



KEY MAP

This is to certify that following as-built locations were located in the field and are correctly shown herein.



SHEET INDEX

- 1 OF 4 - COVER SHEET
- 2 OF 4 - SITE PLAN
- ~~3 OF 13 - GRADING SHEET~~
- 3 OF 4 - WATER PLAN
- ~~5 OF 13 - STREET PROFILES~~
- 4 OF 4 - SEWER PROFILES
- ~~7 OF 13 - DRAINAGE AREA MAP~~
- 8 THRU 13 - DETAIL SHEETS

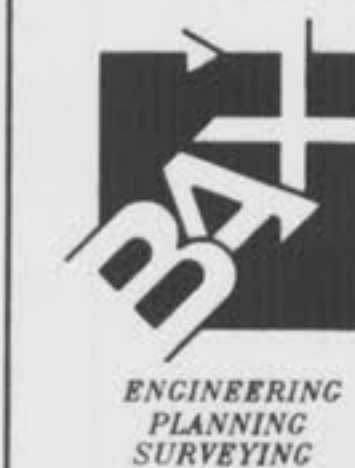
PREPARED FOR:
R & D EMGE INC.
306 IMPERIAL DRIVE
O'FALLON, MO 63366
314-281-1274

DISCLAIMER OF RESPONSIBILITY
I hereby certify that the documents intended to be authorized by my seal are limited to the 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 architectural or engineering project or survey.

Copyright 1994
R&D Engineering Company, Inc.
All Rights Reserved.

REVISIONS

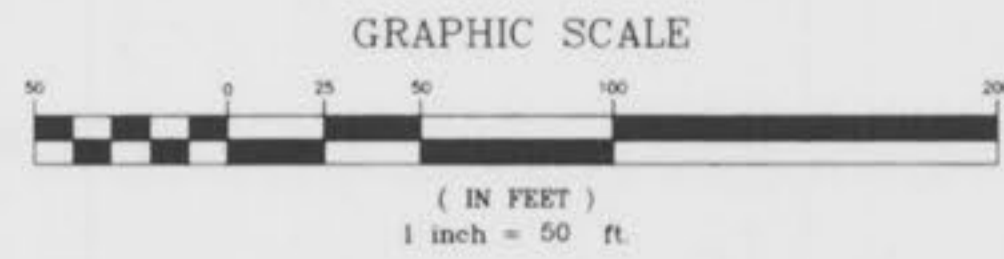
NO.	DATE	DESCRIPTION



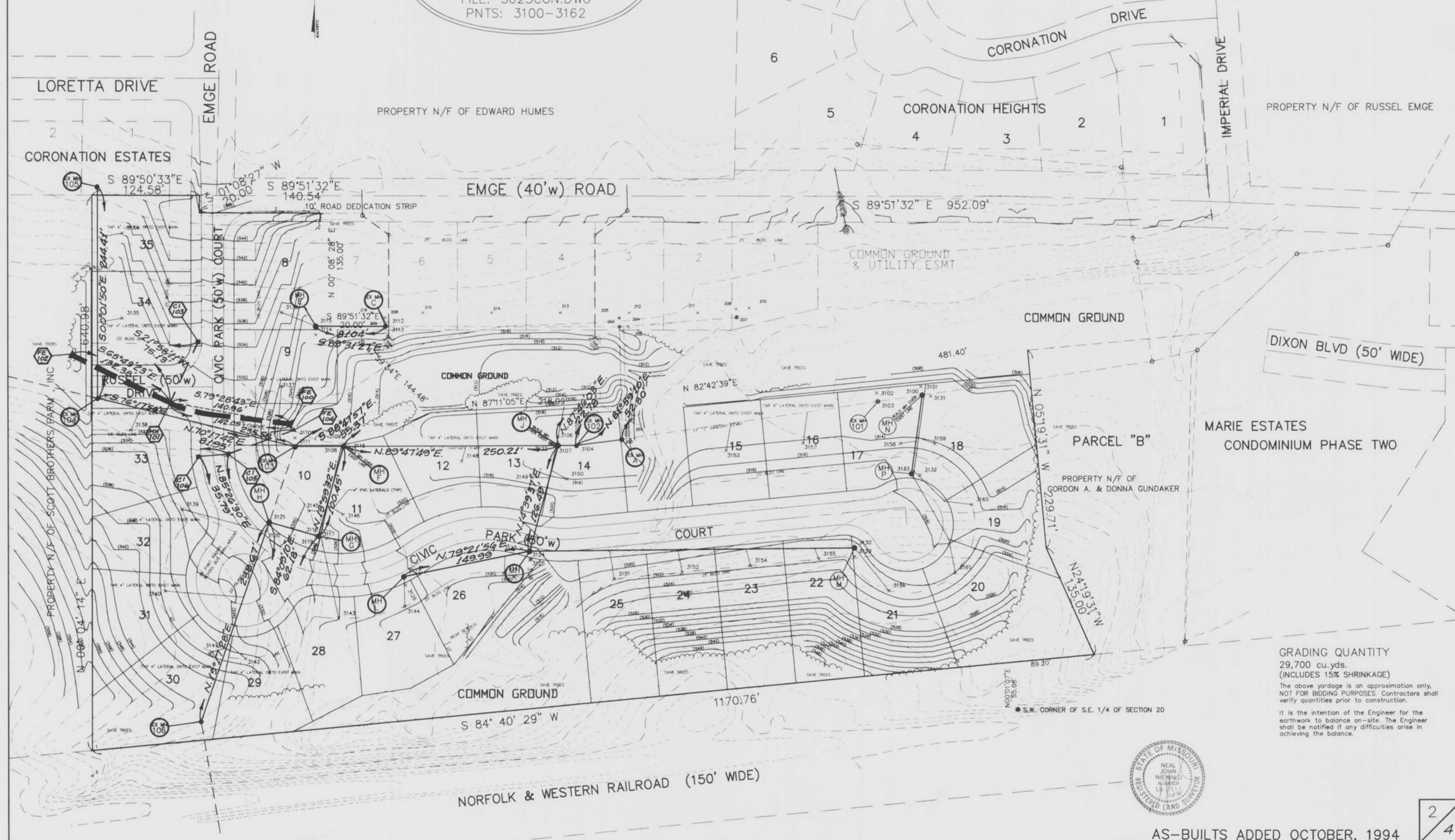
221 Point West Boulevard
St. Charles, MO. 63301
314-946-6588
314-724-3330
FAX 947-9182

APRIL 7, 1994
DATE
92-3623
PROJECT NUMBER
1 OF 4
SHEET OF
3623CON.DWG
FILE NAME
BJB
DRAWN
CHECKED

AS-BUILTS ADDED OCTOBER, 1994



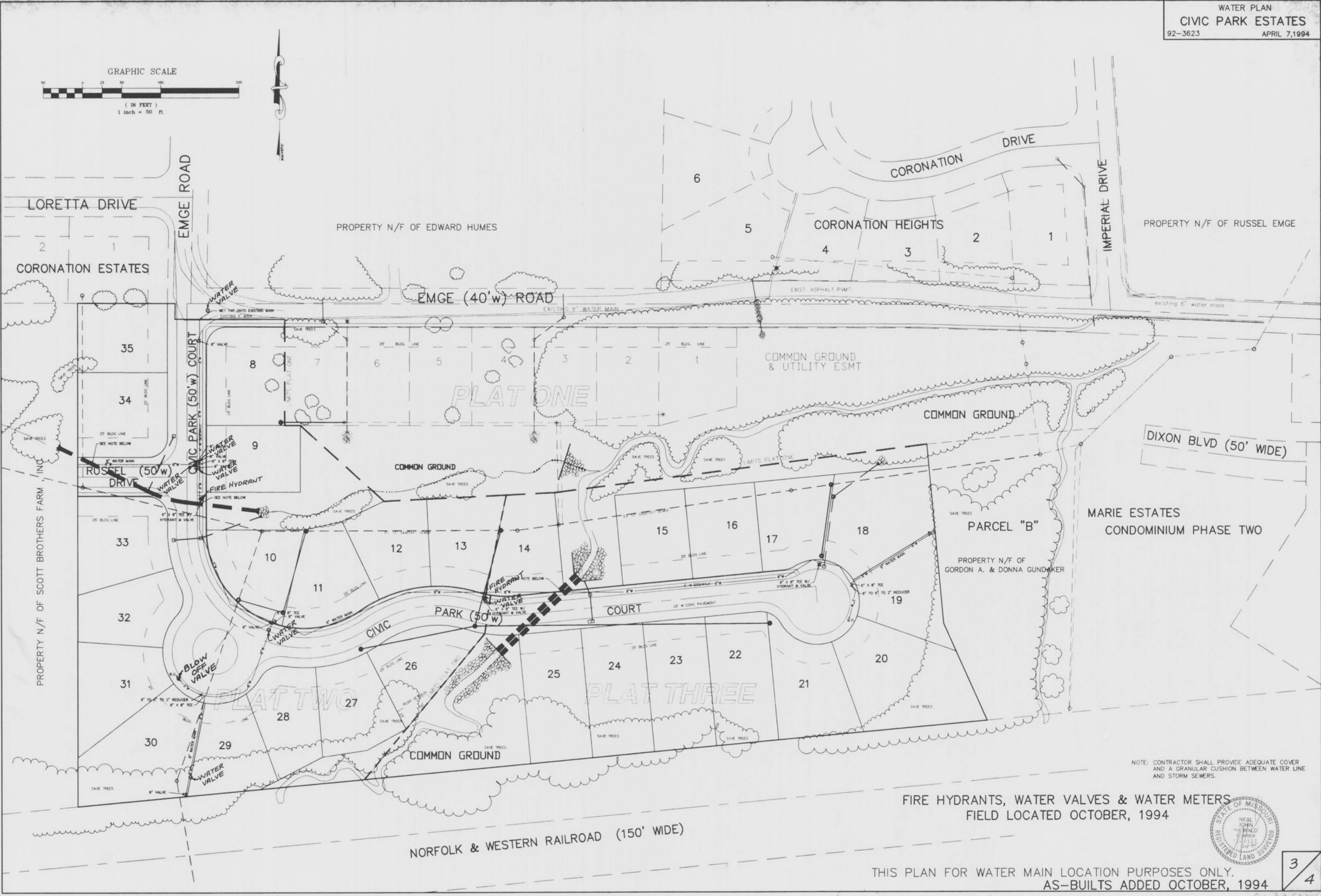
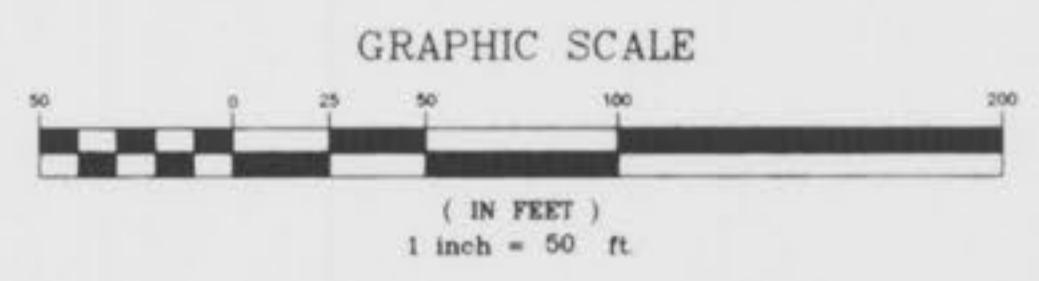
CIVIC PARK ESTATES
 SAN SEWER CALC PLAT
 8-4-94
 FILE: 3623CON.DWG
 PNTS: 3100-3162



GRADING QUANTITY
 29,700 cu.yds.
 (INCLUDES 15% SHRINKAGE)
 The above yardage is an approximation only,
 NOT FOR BIDDING PURPOSES. Contractors shall
 verify quantities prior to construction.
 It is the intention of the Engineer for the
 earthwork to balance on-site. The Engineer
 shall be notified if any difficulties arise in
 achieving the balance.



AS-BUILTS ADDED OCTOBER, 1994



NOTE: CONTRACTOR SHALL PROVIDE ADEQUATE COVER AND A GRANULAR CUSHION BETWEEN WATER LINE AND STORM SEWERS.

FIRE HYDRANTS, WATER VALVES & WATER METERS
 FIELD LOCATED OCTOBER, 1994



THIS PLAN FOR WATER MAIN LOCATION PURPOSES ONLY.
 AS-BUILTS ADDED OCTOBER, 1994

SEWER PROFILES
CIVIC PARK ESTATES

12.36.23 APRIL 7, 1994

FINAL SURVEY PLOTTED
NOTE BOOK TEMPLATE
NO. AREAS OUTLINED

ORIGINAL SURVEY PLOTTED
NOTE BOOK TEMPLATE
NO. AREAS OUTLINED

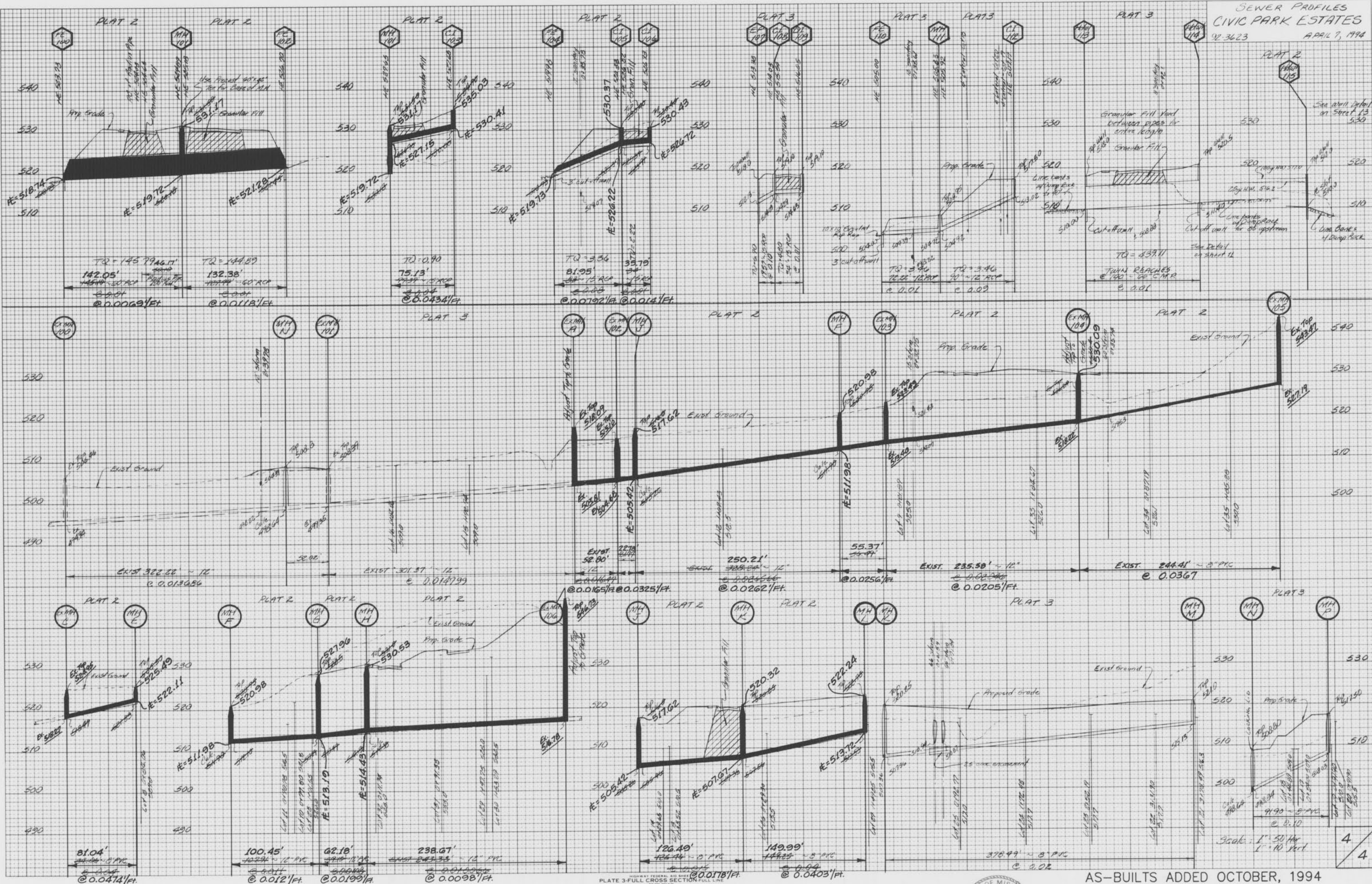


PLATE 3-FULL CROSS SECTION FULL LINE

AS-BUILTS ADDED OCTOBER, 1994

