

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.
- 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 without being seeded and mulched. Care should be exercised to prevent soil from damaging adjacent property and siting up existing 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 on any storm sewer locations.
- Site preparation includes the clearance of oil 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.
- 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.
- 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 operations 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 of 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 day's 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 regraded 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	PERCENT COMPACTION
Fill in building areas below footings	90%
Fill under slabs, walls, 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.

All fill placed under proposed storm and sanitary sewer and/or paved areas shall be compacted to 90% of maximum density as determined by the Modified AASHTO T-180 Compaction Test or 95% of maximum density as determined by the Standard Proctor Test T-99.

All erosion control shall not be limited to what is shown on the plan. Whatever means necessary shall be taken to prevent siltation and erosion from entering natural streams and adjacent roadways, properties and ditches.

All erosion control systems shall be inspected and necessary corrections made within 24 hours of any rainstorm resulting in one-half inch of rain or more.

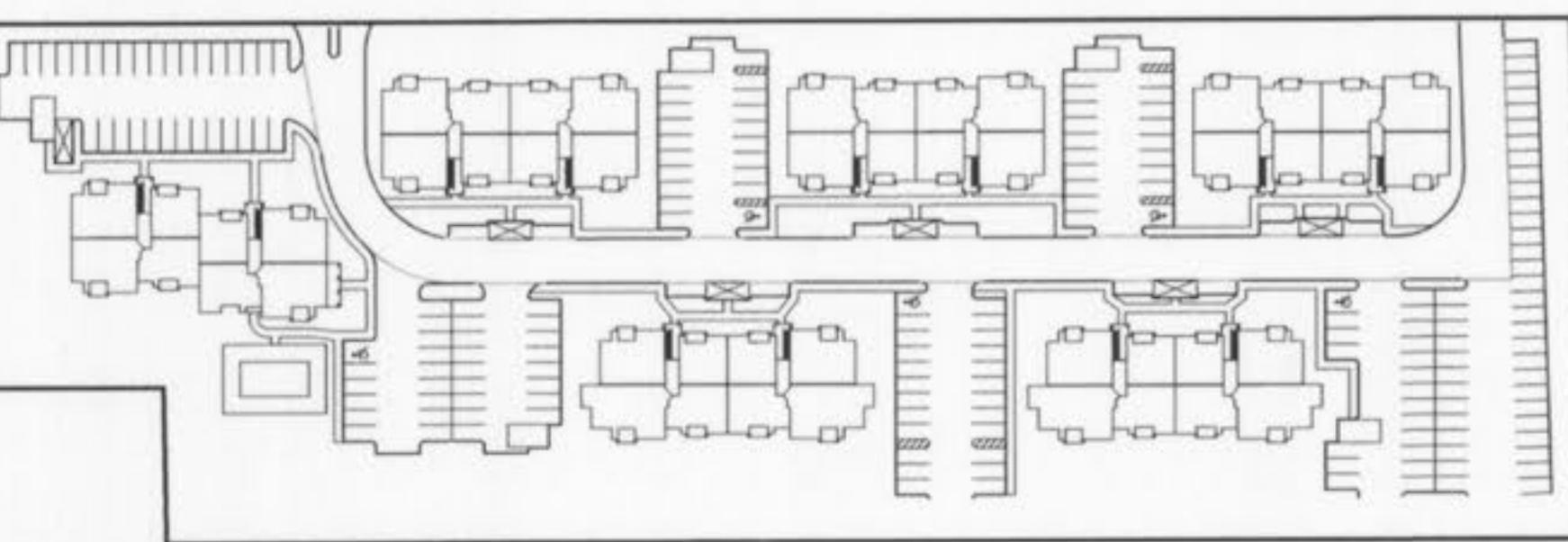
No graded area is to remain bare for over 6 months without being seeded and mulched.

AS-BUILT PLANS FOR PLACE DE CONCORDE

LOT 2 OF R & C SUBDIVISION, IN
THE WEST HALF OF THE NORTHWEST QUARTER OF
SECTION 31, TOWNSHIP 47 NORTH, RANGE 3 EAST,
CITY OF O'FALLON, ST. CHARLES COUNTY, MISSOURI
TOTAL AREA = 6.25 ACRES

GENERAL NOTES

- The Contractor shall assume complete responsibility for controlling all siltation and erosion of the project area. The Contractor shall use whatever 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 include all design and implementation as required to prevent erosion and the 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 of silts or mud on new or existing pavement in new or existing storm 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.
- Developer must supply City construction inspectors with soil reports prior to or during site soil testing.
- There will be no significant clearing of trees on site.

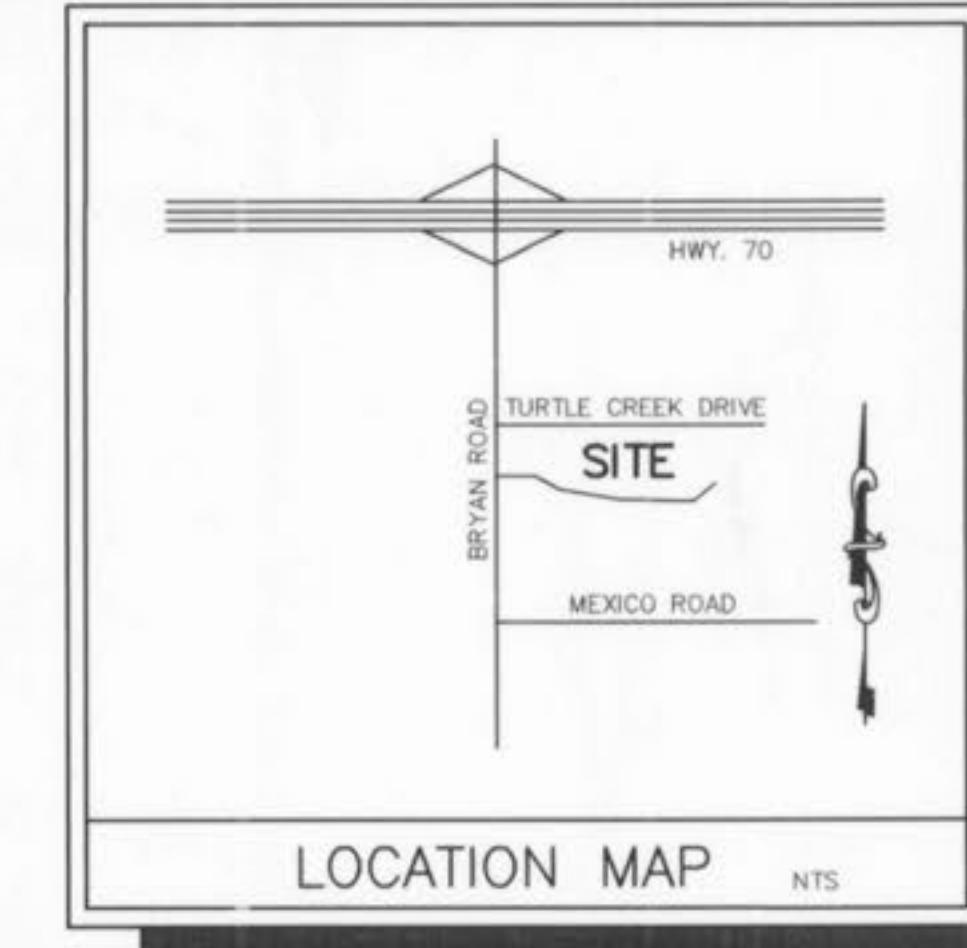


KEY MAP

- Underground utilities have been plotted from available information and therefore their location shall be considered approximate only. The location 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-3024 SDR-35, with wall thickness compression test of 1.5 times nominal. An optional rubber seal gasket as approved by the sewer district shall be installed between P.V.C. pipe and masonry structures.
- All filled places, including trench backfilling, 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 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 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 of the corresponding house connection 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 P.V.C. sanitary sewer is to be SDR-35 or equal with clean 1/2" to 1" smaller stone bedding uniformly graded. This 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 water lines shall be laid at least 10 feet horizontally, from any sanitary sewer, storm sewer or modular concrete curb. 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 drain or sewer. Modular concrete curb joints will be kept at a distance 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 ASTM D2241, SDR 21 Standard Specification for P.V.C. Pressure Pipe, 200 P.S.I. working pressure for water, with approved joint.
- Notes/Miscellaneous anticipated development criteria:
 - A. All drive and parking shall be asphalt and shall be private.
 - B. All paved areas shall be curbed.
 - C. Pavement width of interior drives shall be 25 feet (face of curb).
 - D. Storm Sewers shall meet the requirements of the City of O'Fallon.
 - E. Storm Water Detention Facilities shall comply with the requirements of the City of O'Fallon.
 - F. Sanitary Sewers and Water line shall comply with the specifications of the City of O'Fallon.
 - G. All proposed utility service lines shall be located underground.
- This site is not within the 100 year flood limits as shown on firm map 29183C0240E, dated August 2, 1998.
- Lot configuration, dimensions, areas, density calculations, utilities, clearing and grading subject to revision pending final engineering, actual boundary and topographic surveys.
- Retaining walls are proposed to be of the modular, interlocking block type. Building permits will be obtained from the Building Department, if required.
- A geotechnical report for the project will address the stability of the soil and any special procedures that may be necessary to accommodate the soil types on the site.
- The design will attempt to preserve the existing trees on the site. As part of the topographic survey, additional information will be obtained in these areas in order to design the project to accommodate the trees should any have to be removed, the City of O'Fallon's tree preservation ordinance shall be adhered to.
- Access to sanitary sewers shall be made available for future development.
- All proposed storm sewers to remain private.
- Per ordinance, two (2) plant units are required. These shall be provided as indicated on the landscaping plan.
- 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 offsite 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.
- Minimum street grades shall be 1%.
- The developer realizes that they will comply with current Tree Preservation Ordinance Number 1689 and provide landscaping as set forth in Article 23 of the City of O'Fallon Zoning Ordinances.
- No graded area is to remain bare for over 6 months without being seeded and mulched.

PRINCIPLES & STANDARDS

- 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.
- 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 siltation control measures shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.
- 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.
- 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 tacked at the rate of 100 pounds per 1,000 square feet when seeded.
- 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 fpm (feet per second) or less. Open channels with velocities more than 2 fpm and less than 5 fpm 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 fpm.
- 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.
- 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 streambank 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.
- 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.



LEGEND

C.L.	CURB INLET	○ STREET LIGHT
D.G.I.	DOUBLE CURB INLET	— Existing Contour
A.I.	AREA INLET	— Proposed Contour
F.E.	FLARED END SECTION	— Street Sign
E.P.	END PIPE	— No Parking Sign
C.P.	CONCRETE PIPE	— Water Valve
R.C.P.	REINFORCED CONCRETE PIPE	— Blow Off Assembly
C.M.P.	CORRUGATED METAL PIPE	— Fire Hydrant
C.J.P.	CAST IRON PIPE	— Storm Sewer
P.V.C.	POLY VINYL CHLORIDE (PLASTIC)	— Sanitary Sewer
C.C.	CLEAN OUT	— Flowline Elevation of House Connection
		— Flowline Elevation of Sewer Main

SHEET INDEX

- COVER SHEET
- SITE PLAN
- SANITARY SEWER PROFILES
- STORM SEWER PROFILES

VEGETATIVE ESTABLISHMENT
For Urban Development Sites
APPENDIX A

Seeding Rates:
Permanent:
Tall Fescue - 30 lbs./ac.
Smooth Brrome - 20 lbs./ac.
Combined Fescue @ 15 lbs./ac. and Brrome @ 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 Brrome - 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.



ENGINEERING
PLANNING
SURVEYING

■ 221 Point West Blvd.
St. Charles, MO. 63301
314-928-5552
FAX 928-1718

8-30-05

DATE
01-11583
PROJECT NUMBER

1 OF 5

SHEET OF

11583ASB.DWG

FILE NAME

BGC DRO

DRAWN CHECKED

Place de Concorde App 3/3/06 ABC

PLACE DE CONCORDE
BLUE RIBBON HOMES

2515 HIGHWAY K
O'FALLON, MO. 63366
(636) 978-3399

PREPARED FOR:

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REVISIONS

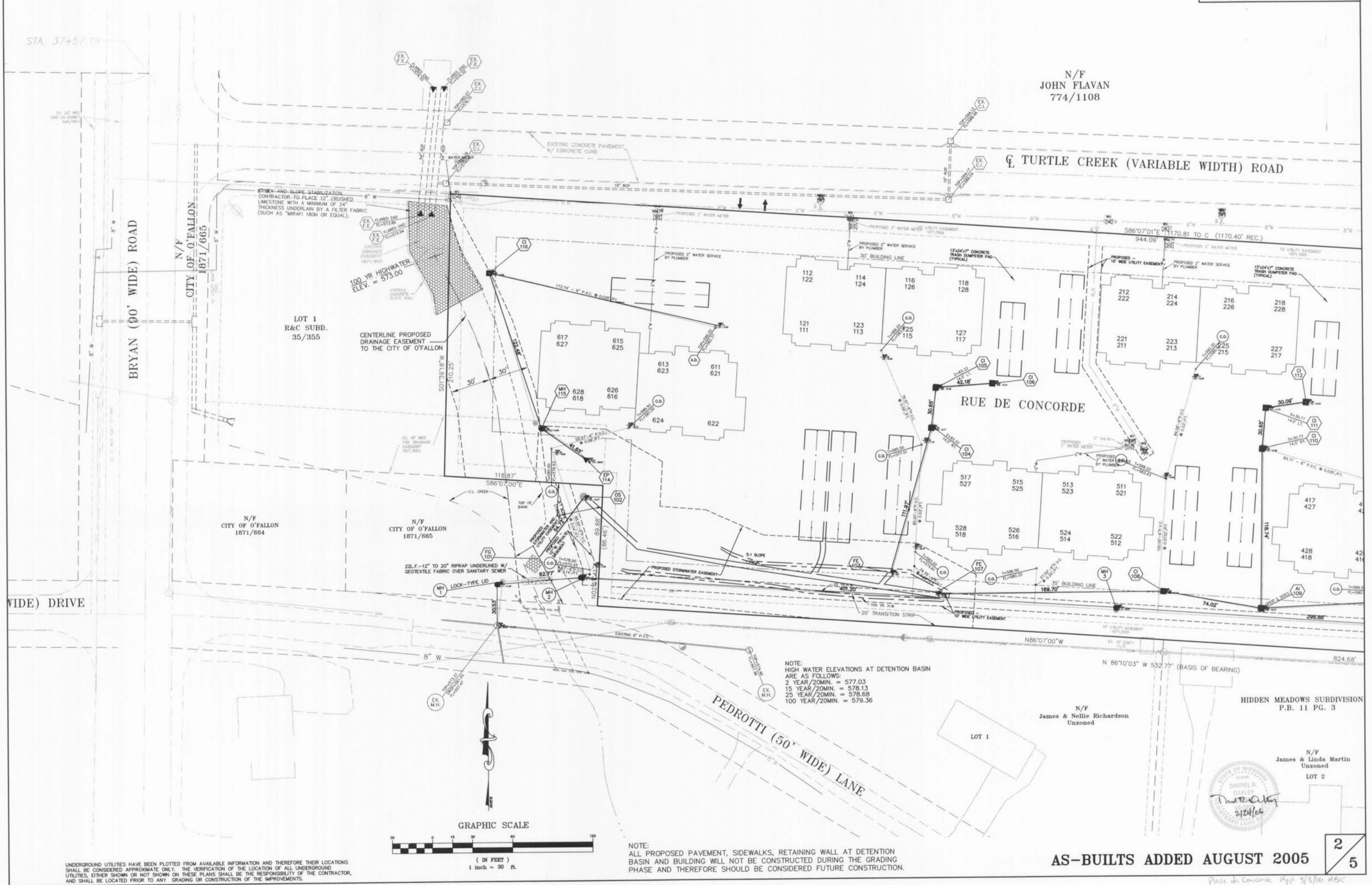
BENCHMARK : RM44 ELEVATION = 595.53
CROSS CUT ON THE NORTH BOLT OF A FIRE HYDRANT LOCATED
AT THE NORTHEAST CORNER OF MEXICO ROAD AND BRYAN ROAD.

SEWER MEASUREMENTS

THE EXISTING SEWER LENGTHS, SIZES, FLOWLINES, DEPTHS OF STRUCTURES AND
SERVING AREAS 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:

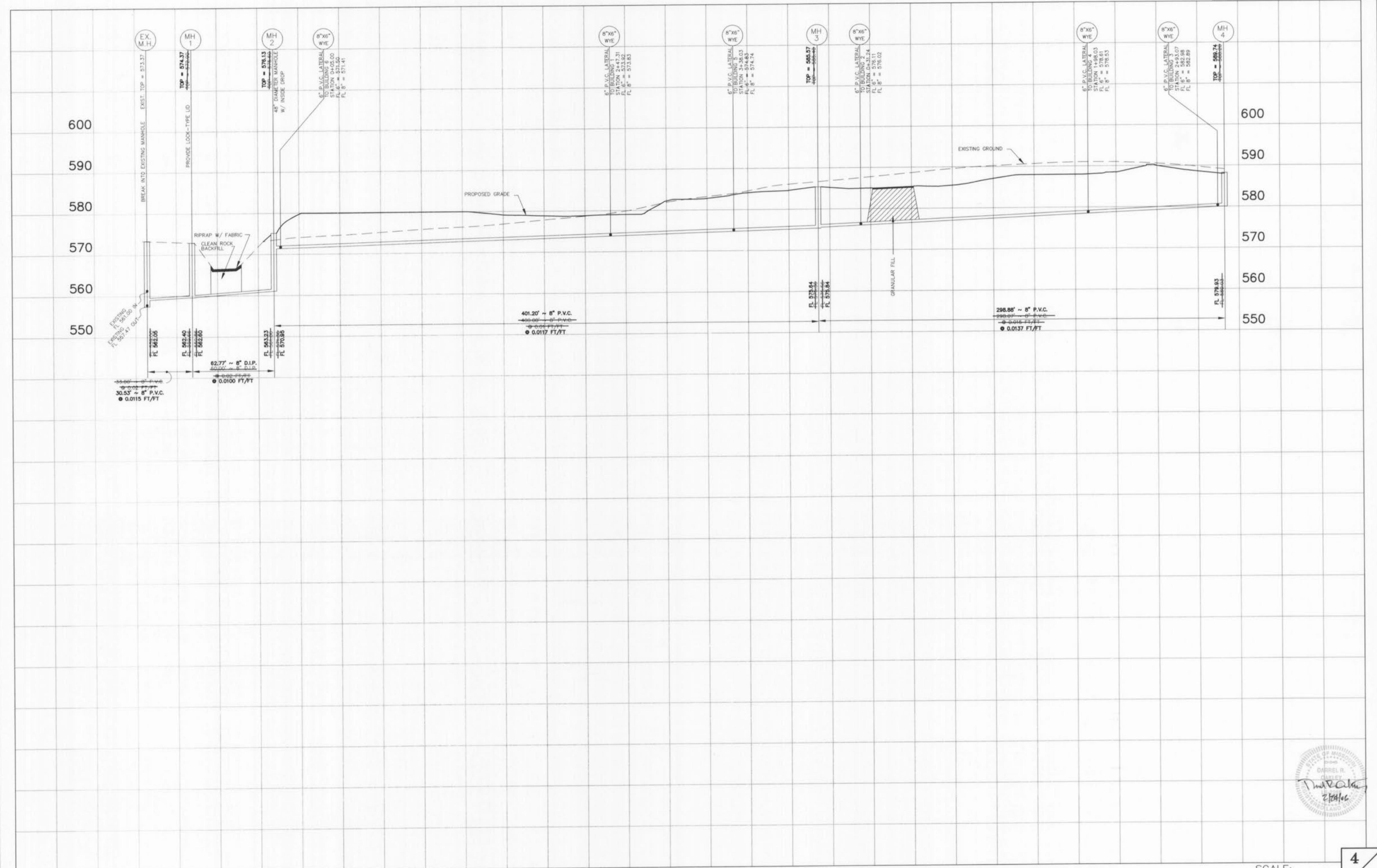
SIGNED:
P.E./S. DANIEL J. AMBERZ 7/28/06
NUMBER LS-2264
STATE OF MISSOURI
COUNTY ST. CHARLES
TOWNSHIP 47
SECTION 31
LOT 2
BLOCK 1
PARCEL 1
ACRES 6.25
DATE 7/28/06
PROJECT NUMBER 01-11583
SHEET OF 1 OF 5
FILE NAME 11583ASB.DWG
DRAWN DRO
CHECKED



N/F
JOHN FLAVAN
774/1108

TURTLE CREEK (VARIABLE WIDTH) ROAD

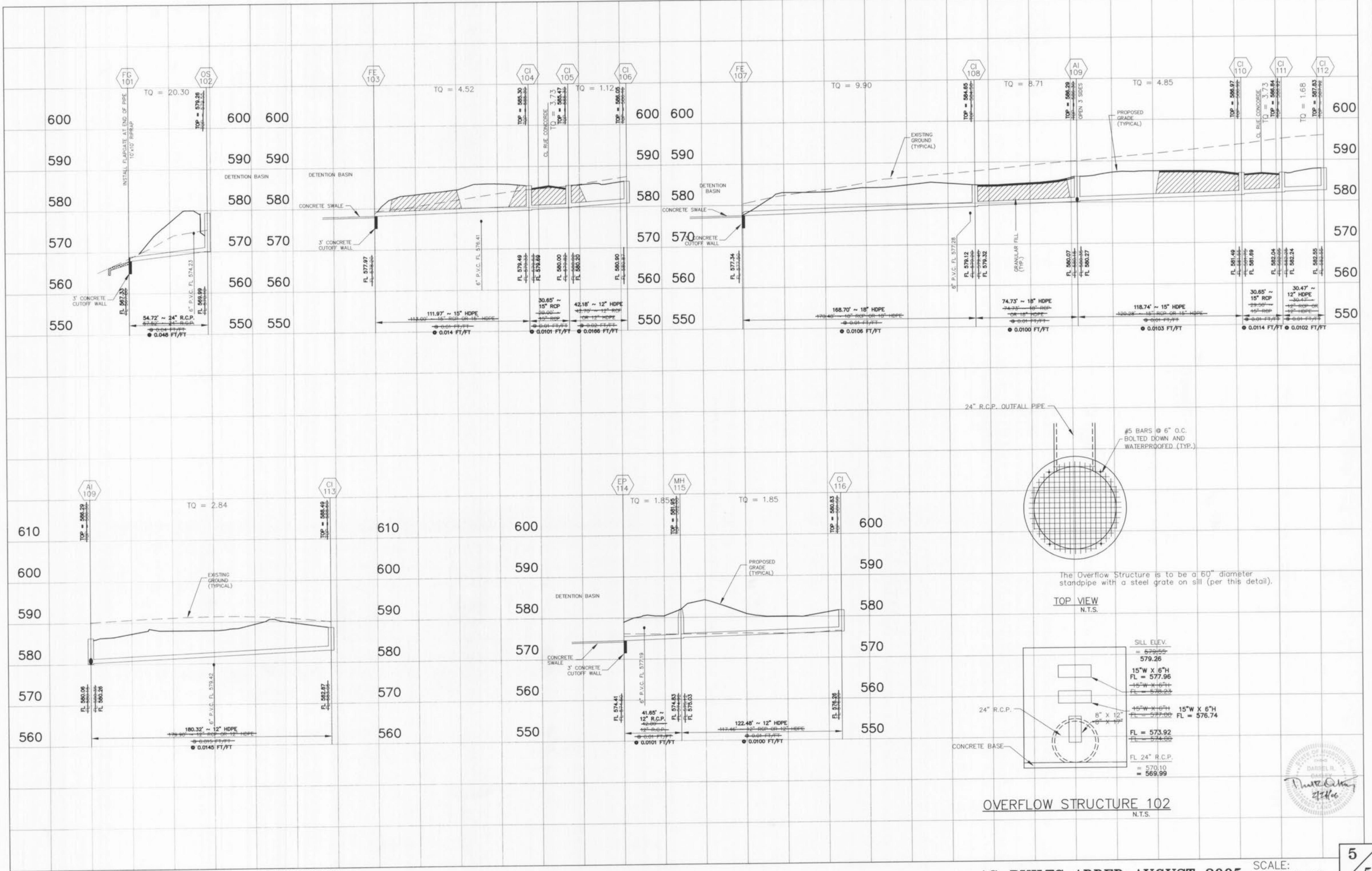




UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.

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

Place de Concorde App 3/3/06 ARK



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.

AS-BUILTS ADDED AUGUST 2005

SCALE:
VERTICAL = 1" = 10'
HORIZONTAL = 1" = 30'
Place de Concorde (App 3/3) ob ABC