

**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 without being seeded and mulched. Care should be exercised to prevent soil from damaging adjacent property and silting 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 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 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.

16. 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.

- All fill, including 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 percent of maximum density as determined by the Modified AASHTO T-180 Compaction Test (ASTM D 1557). 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.

# A SET OF AS-BUILTS FOR BRADFORD HEIGHTS, PLAT TWO

A TRACT OF LAND BEING PART OF SECTIONS 3 AND 4  
TOWNSHIP 46 NORTH, RANGE 3 EAST OF THE FIFTH PRINCIPAL MERIDIAN  
ST. CHARLES COUNTY, MISSOURI



**PRINCIPALS & 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. 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 when seeded. 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.
- 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 fps (feet per second) or less. Open channels with velocities more than 2 fps and less than 5 fps 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 fps.

**LEGEND**



**VEGETATIVE ESTABLISHMENT  
For Urban Development Sites  
APPENDIX A**

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

**DEVELOPMENT NOTES**

- Area of Tract: 26.09 Acres
  - Existing Zoning: R-1
  - Proposed Use: Single Family Homes
  - Number of Lots Proposed: 68 Lots
  - The proposed height and lot setbacks are as follows:  
Minimum Front Yard: 25 feet  
Minimum Side Yard: 6 feet  
Minimum Rear Yard: 25 feet  
Minimum Lot Area: 10,000 square feet
  - Maximum Height of Building: 2 1/2 stories or 35 feet  
Minimum Lot Area Provided: 10,000 square feet
  - Current Owner/Developer: Kaplan Development and Investment Co., Inc.  
5140 North Service Road  
St. Peters, Missouri 63376
  - Site is served by:  
Duckett Creek Sewer District  
AmerenUE  
St. Charles Gas Company  
St. Charles County Public Water District No. 2  
Verizon Telephone Company  
Fort Zumwalt School District  
O'Fallon Fire Protection District
  - The entirety of this tract lies within Zone X, "areas determined to be outside 500-year floodplain", per F.I.R.M. No. 29183C0243E, dated August 2, 1996.
  - Topographic survey by Bax Engineering, July 2000.
  - Boundary information from survey by Bax Engineering, July 2000.
  - All lots shall have one (1) tree (deciduous) planted in front yard for every fifty (50) of street frontage, as required by City code.
  - All streets will be constructed to City of O'Fallon standards. Streets will consist of 26 foot wide concrete pavement which shall have integral rolled curb centered in a 50 foot right-of-way. Minimum radius shall be 150 feet.
  - All cul-de-sacs and bubbles will have pavement radii of 42 feet with right-of-way radii of 54 feet. Street intersections shall have a minimum rounding radius of 25 feet with pavement radii of 37 feet.
  - Minimum street grades shall be 1%.
  - 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 places with 2-car garages.
  - All utilities must be located underground.
  - 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.
  - Additional lighting may be required by the City of O'Fallon.
  - The following lots are susceptible to street movement: 6, 7, 10, 11, 13, 14, 18, 19, 20, 21, 22, 29, 30, 31, 32, 33, 38, 40, 41, 42, 45, 46, 47, 48, 49, 51, 52, 53, 55, 56 and 57.
  - The smallest lots will require very close individual lot site plan reviews and inspection during construction to ensure required separation of structures and any required fire separation walls.
  - Tree Preservation Calculations:**  
Total Area of Existing Tree Masses = 1.0 Acres  
1.0 Acres x 20% = 0.2 Acres  
Total Area of Proposed Clearing = 1.0 Acres  
Total Area of Remaining Trees = 0 Acres  
Total Area of Trees to be Replaced = 0.2 Acres  
0.2 Acres x 15 Trees/Acre = 3 Trees
  - Landscape Requirements:**  
Length of Centerline of Streets = 3194 L.F.  
3194 L.F. x 2 = 6388 L.F.  
6388 L.F. / 50 L.F. = 128 Trees
- Note: Proposed trees shall be hardwood varieties with a 2" minimum diameter and a height of 8'. Trees to be planted on the individual lots shall be planted after home construction and yard finish grading by the homeowner, as required by the covenants and restrictions.

**REFERENCE BENCHMARK**

ELEV: 493.07 (U.S.G.S.) - RM-74 Chisled square on the top of the east concrete headwall of the Birdle Hills bridge over tributary no. 2.

**SITE BENCHMARK**

ELEV: 603.47 - Cut box on the south edge of concrete drive on the east side of Knaut Road, 16' east of the centerline of Knaut Road at #437 Knaut Road.

THIS IS TO CERTIFY THAT WE HAVE DURING THE MONTH OF MAY, 2002, BY ORDER OF KAPLAN DEVELOPMENT COMPANY, EXECUTED AN ASBUILT SURVEY OF EXISTING SANITARY SEWERS, STORM SEWERS, FIRE HYDRANTS AND WATER VALVES WITHIN "BRADFORD HEIGHTS, PLAT TWO", A PROPOSED SUBDIVISION BEING PART OF SECTION 3 AND 4, TOWNSHIP 46 NORTH, RANGE 3 EAST OF THE FIFTH PRINCIPAL MERIDIAN, ST. CHARLES COUNTY MISSOURI. THE SANITARY LATERALS, IF ANY, WERE SUPPLIED TO BAX ENGINEERING BY THE CONTRACTOR, THEREFORE THEIR LOCATION IS ASSUMED APPROXIMATE. ALL SEWERS SHOWN BE WITHIN THE EASEMENTS AS SHOWN UNLESS OTHERWISE NOTED. THE RESULTS OF THIS AS-BUILT SURVEY ARE SHOWN ON THIS PLAT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



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

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

PREPARED FOR:  
KAPLAN DEVELOPMENT AND INVESTMENT CO., INC.  
5140 NORTH SERVICE ROAD  
ST. PETERS, MISSOURI 63376  
(636) 397-4471

DISCLAIMER OF RESPONSIBILITY: I hereby certify that the documents intended to be authorized by my seal are limited to this 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.

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**REVISIONS**

NO.	DATE	DESCRIPTION

**BAX**  
ENGINEERING  
PLANNING  
SURVEYING  
1052 South Cloverleaf Drive  
St. Peters, MO. 63376-6445  
636-928-5552  
FAX 928-1718

5-28-02  
DATE  
99-10916  
PROJECT NUMBER  
1 of 4  
SHEET OF  
10916ASB-2.DWG  
FILE NAME  
EF/ILT.WSK  
DRAWN CHECKED  
JP/JP 011105  
SURVEY BY DATE

Asbuilts Bradford Height Plat 2 14

CALUMET RANCH  
 PLAT THREE  
 BK.33 PG.275,276,277,278 & 279  
 CITY OF O'FALLON  
 ZONING R-1 PUD

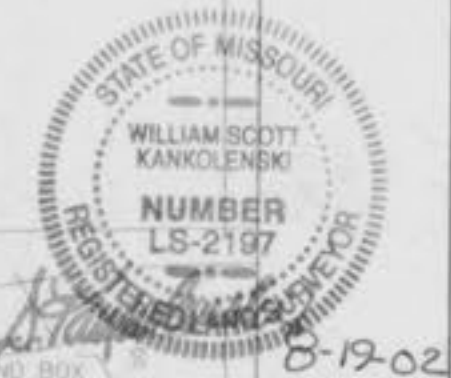
CALUMET RANCH  
 PLAT TWO  
 BK.33 PG.138,139 & 140  
 CITY OF O'FALLON  
 ZONING R-1 PUD



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.

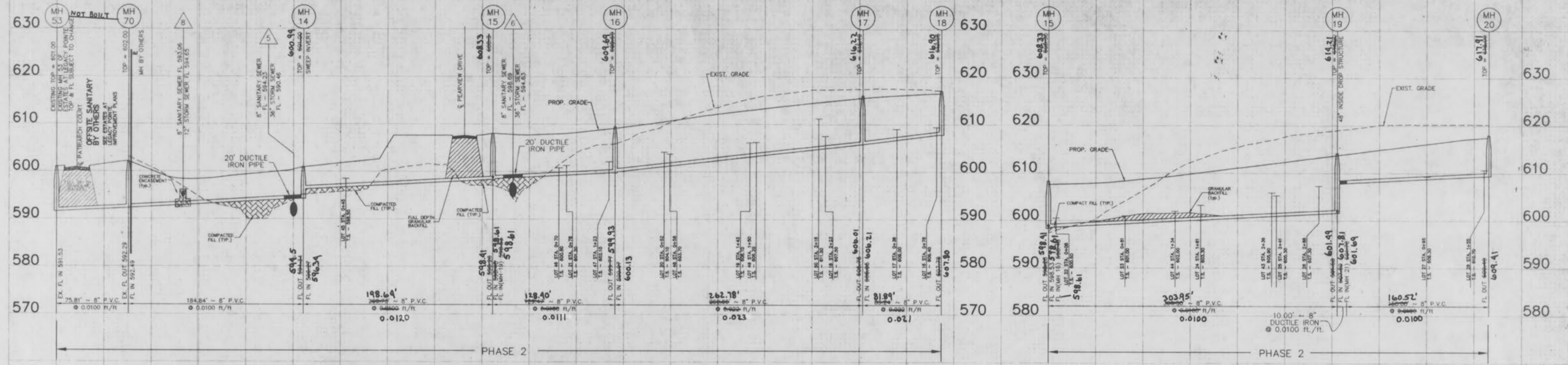
ASBUILTS NOTE:  
 ALL DISTANCE AND SLOPE CALCULATIONS ARE FROM  
 CENTER OF STRUCTURE TO CENTER OF STRUCTURE.

AS-BUILTS ADDED MAY, 2002



**DUCKETT CREEK SANITARY SEWER SERVICE**

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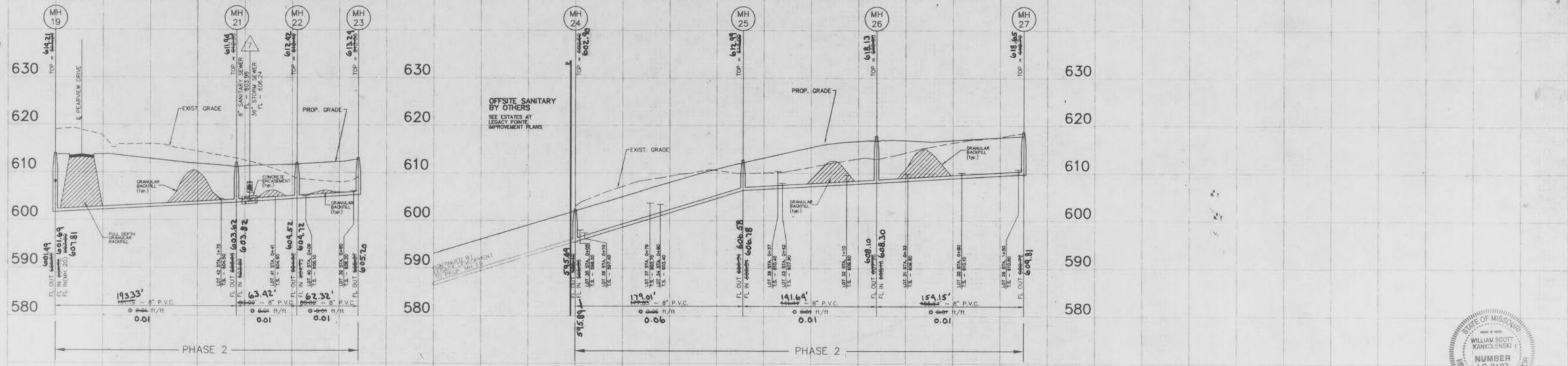


SCALES: 1"=50' HORIZONTAL  
 1"=10' VERTICAL

REFERENCE DETAIL SHEET  
 23 FOR SEWERS ON THIS SHEET

**DUCKETT CREEK SANITARY SEWER SERVICE**

**DUCKETT CREEK SANITARY SEWER SERVICE**



**AS-BUILT NOTE:**  
 \*ALL DISTANCE AND SLOPE CALCULATIONS ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.

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.

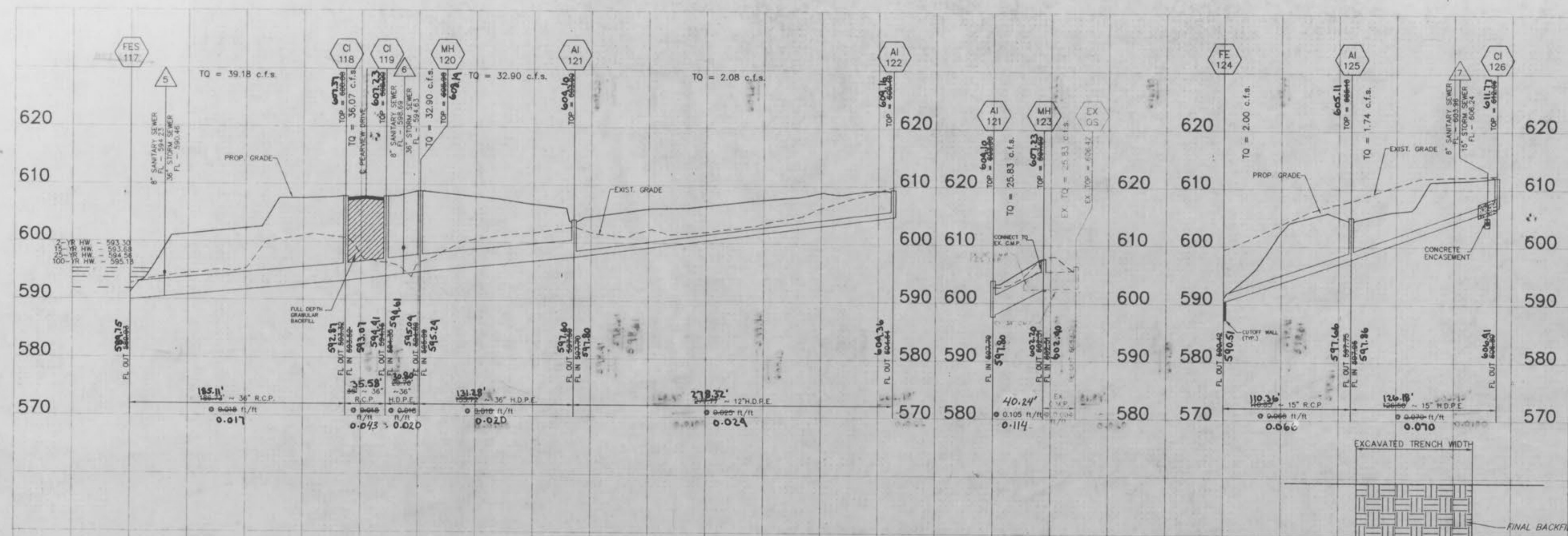
These engineering plans have been prepared at the request of the developer for the responsibility of the developer and or his contractor to contact Box Engineering Co., Inc. and the soils engineer for the project at the time of encounter to determine the best design to continue construction.

If existing rock conditions are encountered during construction it shall be the responsibility of the developer and or his contractor to contact Box Engineering Co., Inc. and the soils engineer for the project at the time of encounter to determine the best design to continue construction.

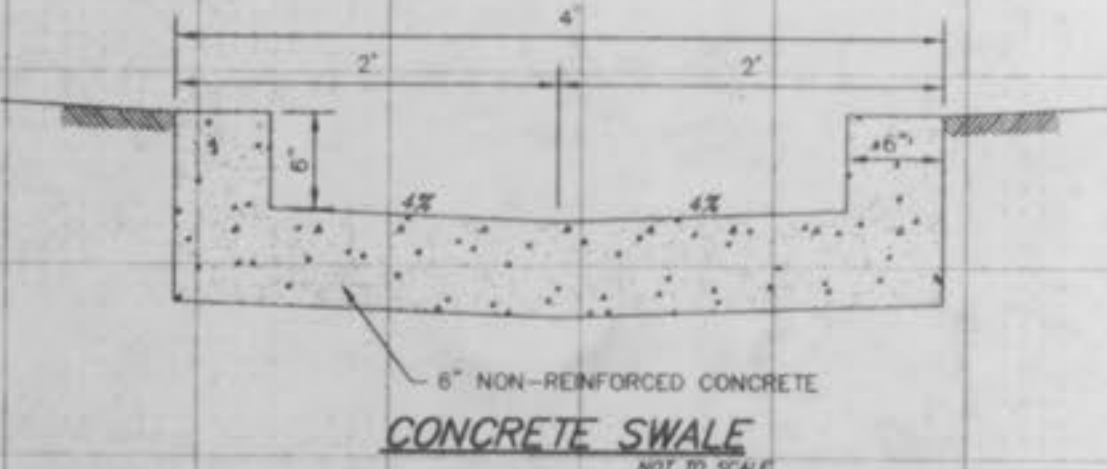
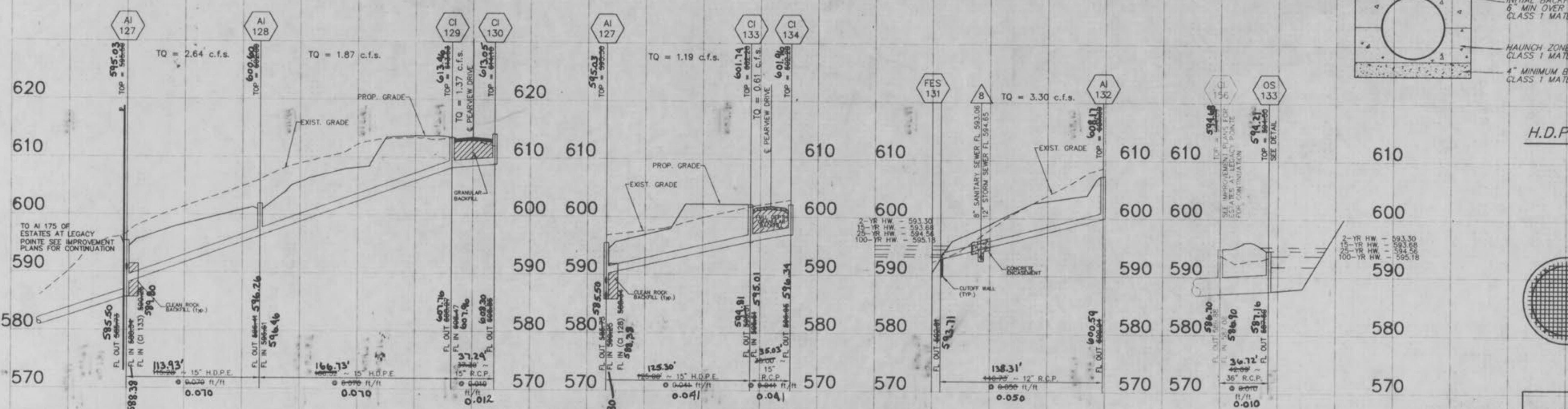
**ASBUILTS ADDED MAY 2002**



8-19-02



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



- NOTES:
1. A MINIMUM OF 0.5% SLOPE SHALL BE PROVIDED.
  2. CONSTRUCTION JOINTS SHALL BE PROVIDED EVERY 20 FEET.
  3. EXPANSION JOINTS SHALL BE PROVIDED EVERY 100 FEET.

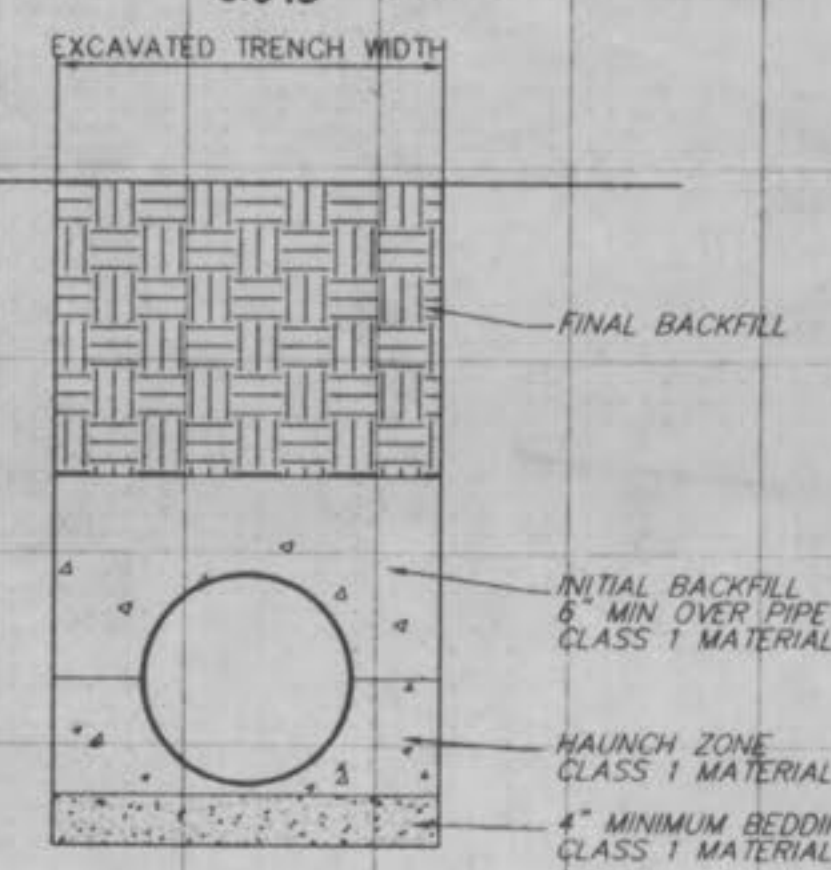
1. The use of High Density Polyethylene Corrugated pipe A.D.S. N12 or Equal will be permitted as an acceptable alternative to reinforced concrete pipe. Pipe shall meet A.S.T.M. D-2321 and AASHTO M-294-921. Concrete flared end sections and inlet structures shall be required. Pipe must have smooth interior wall and is not to be used inside the Public Right-of-Way.

All concrete pipe or HDPE pipe shall be installed with o-ring rubber type gaskets per M.S.D. Standard Construction Specifications or Manufacturer.

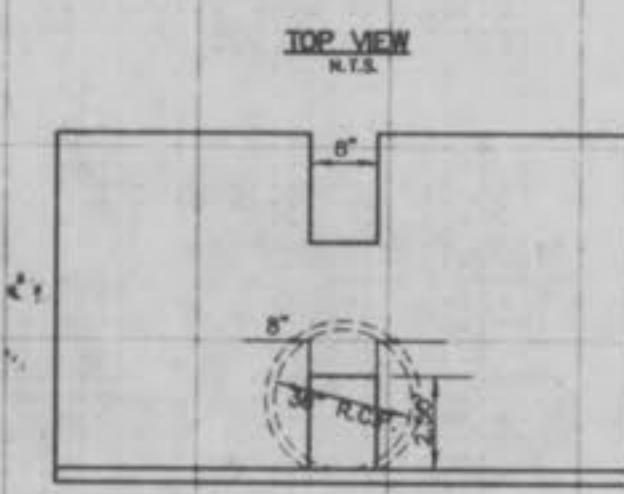
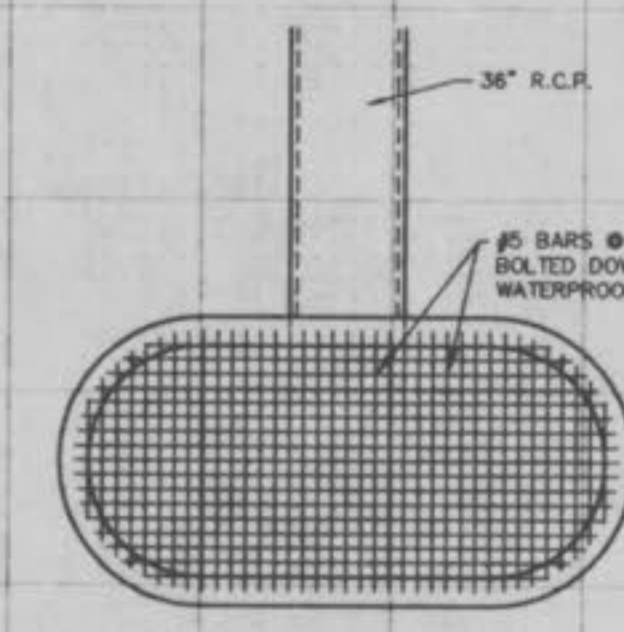
2. In typical conditions the minimum trench width is determined by the size of the pipe and the ability to get compaction equipment between the pipe and the trench walls. The minimum trench width should not be less than the outside diameter plus 16 inches or the pipe outside diameter times 1.25 plus 12 inches, whichever is greater. High speed trenchers may enable satisfactory installation of pipe in narrower trenches. Poor initial soil conditions such as peat, muck, running sands, or expansive clays will require substantially wider backfill as well as deeper foundation and bedding. Trench width and foundation depth should be based on a thorough site investigation.

3. Backfill in the area up to the springline should be carefully placed and compacted to achieve a minimum E value of 1,000 psi as detailed in ASTM D2321. A minimum of 12\"/>

4. Flexible pipe should never be installed in a concrete cradle, as done for rigid pipe in a Class A installation. This type of installation could create concentrated forces at the ends of the cradle when the pipe has deformed.



H.D.P.E. PIPE DETAIL  
N.T.S.



OVERFLOW STRUCTURE #133  
BASIN B

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 6\"/>

AS-BUILT NOTE:  
ALL DISTANCE AND SLOPE CALCULATIONS ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.

ASBUILTS ADDED MAY 2002

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.

These engineering plans have been prepared at the request of the developer for construction with some rock data, but not sufficient enough to determine the exact location of all existing rock conditions.

If existing rock conditions are encountered during construction it shall be the responsibility of the developer and/or his contractor to contact Box Engineering Co., Inc. and the soils engineer for the project at the time of encounter to determine the best design to continue construction.

