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# FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLAN

# RIVERCREST

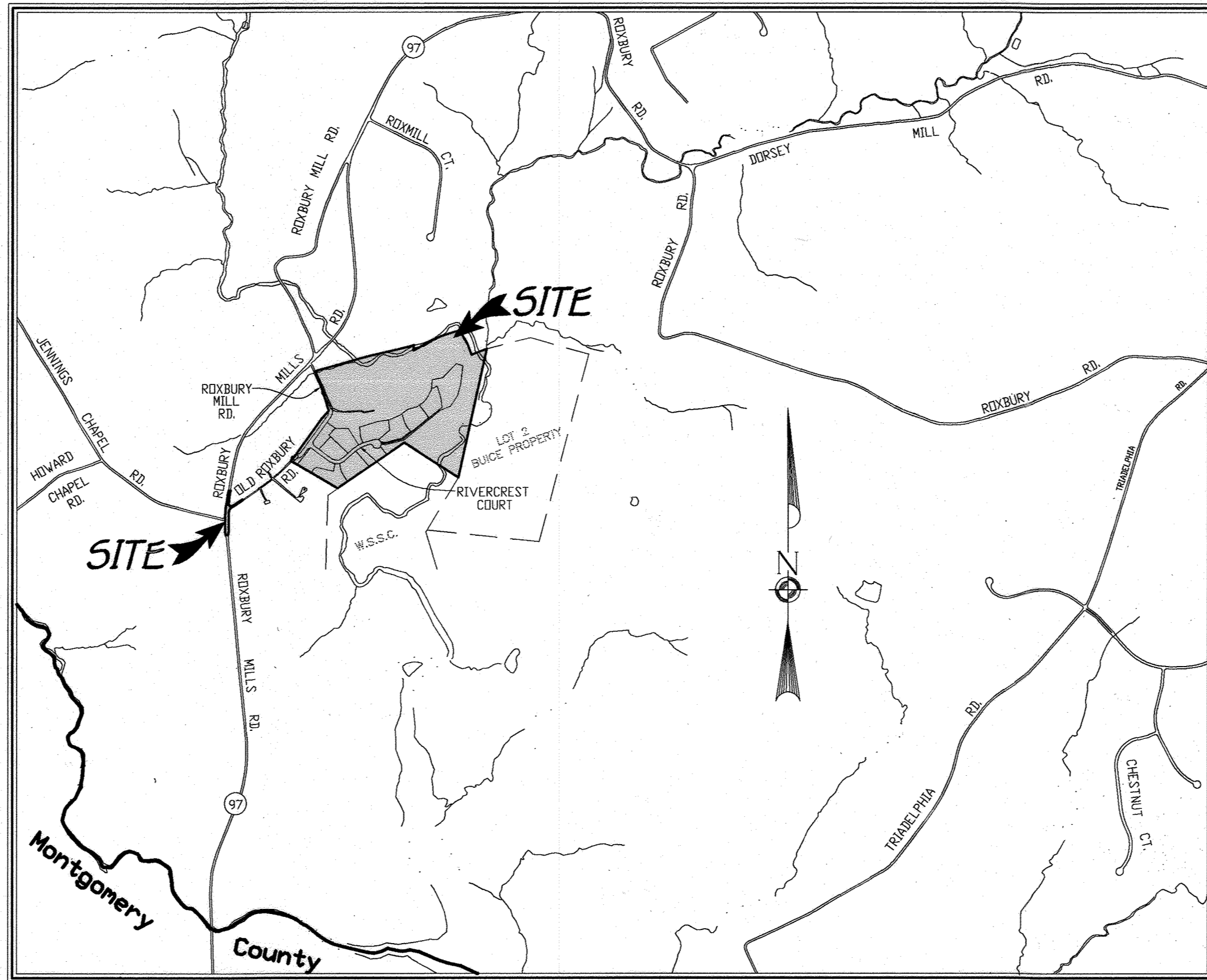
**LOTS 1 THRU 10, BUILDABLE PRESERVATION PARCEL 'A',  
NON-BUILDABLE PRESERVATION PARCEL 'B' & 'C'  
AND NON-BUILDABLE BULK PARCEL 'D'  
(A RESUBDIVISION OF LOT 1, "BUICE PROPERTY", PLAT Nos. 5426-5429)  
ZONED: RC-DEO**

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Walter J. ...* 12-21-05  
 CHIEF, BUREAU OF HIGHWAYS  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*...* 1/14/06  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
*...* 12/21/05  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

- GENERAL NOTES**
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MEHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
  - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT 4100 313-1000 AT LEAST 10 WORKING DAYS PRIOR TO THE START OF WORK.
  - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-227-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
  - TRAFFIC CONTROL, DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE BEGINNING OF ANY ASPHALT PAVING.
  - COORDINATES BASED ON NAD83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 0042 AND NO. 21EA.
  - APPROVED: HOWARD COUNTY MONUMENT NO. 0042 N 588,854,777 E 1,298,828,947  
 APPROVED: HOWARD COUNTY MONUMENT NO. 21EA N 588,257,323 E 1,300,855,657
  - BACKGROUND INFORMATION:  
 A. SUBDIVISION NAME: RIVERCREST  
 B. TAX MAP NO.: 21  
 C. PARCEL NO.: 84  
 D. ZONING: RC-DEO  
 E. ELECTION DISTRICT: FOURTH  
 F. TOTAL TRACT AREA: 21.0 AC.  
 G. TOTAL AREA OF 2% OR GREATER SLOPES: 2.28 AC.  
 H. TOTAL AREA OF 100 YEAR FLOODPLAIN: 24.64 AC.  
 I. NO. OF BUILDABLE LOTS: 10  
 J. NO. OF OPEN SPACE LOTS: 0  
 K. NO. OF NON-BUILDABLE PRESERVATION PARCELS: 2  
 L. NUMBER OF BUILDABLE PRESERVATION PARCELS: 1  
 M. NO. OF NON-BUILDABLE BULK PARCELS: 1  
 N. AREA OF BUILDABLE LOTS: 14.90  
 O. AREA OF OPEN SPACE LOTS: 0.00 AC.  
 P. AREA OF NON-BUILDABLE PRESERVATION PARCELS: 0.08 AC.  
 Q. AREA OF BUILDABLE PRESERVATION PARCEL: 34.43 AC.  
 R. AREA OF NON-BUILDABLE BULK PARCEL: 2.28 AC.  
 S. TOTAL AREA OF ROADWAY TO BE DEDICATED: 2.074 AC.  
 T. PREVIOUS FILE NOS.: 09-16, P 02-20 & WP 05-23, F19-001
  - NO CONSERVATION EASEMENTS EXIST ON THE PROPERTY.
  - ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-99.
  - THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
  - STORMWATER MANAGEMENT FACILITY:  
 TYPE - MICRO-POOL DESIGN, EXTENDED DETENTION  
 OWNER - HOMEOWNERS ASSOCIATION WITH JOINT MAINTENANCE CREDITS AREAS FOR S.W.M. COMPUTATIONS NATURAL AREA  
 STORMWATER MANAGEMENT PROVIDED IN ACCORDANCE WITH HOWARD COUNTY AND MARYLAND 376 SPECIFICATIONS. RECHARGE VOLUME WILL BE PROVIDED THROUGH THE USE OF DRY SWALES. WATER QUALITY AND CHANNEL PROTECTION VOLUME WILL BE PROVIDED BY A MICRO-POOL POND. OVERBANK FLOOD PROTECTION VOLUME AND EXTREME FLOOD VOLUME ARE NOT REQUIRED FOR THIS SITE.
  - THE PROPOSED WATER AND SEWER SYSTEMS SHALL BE PRIVATE.
  - THE SUBJECT PROPERTY IS LOCATED OUTSIDE OF THE METROPOLITAN DISTRICT.
  - TOPOGRAPHIC INFORMATION IS BASED ON DIGITAL HOWARD COUNTY ASIAL TOPOGRAPHY ALONG WITH FIELD RUN TOPOGRAPHY PREPARED BY FISHER, COLLINS & CARTER.
  - FOR FLAG OR PRESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE IS TO BE PROVIDED AT THE JUNCTION OF THE FLAG OR PRESTEM AND THE ROAD RIGHT-OF-WAY AND NOT INTO THE FLAG OR PRESTEM DRIVEWAY.  
 Use-In-Common Driveways Shall be Provided Prior To Residential Occupancy To Ensure Safe Access For Fire And Emergency Vehicles  
 Per The Following Minimum Requirements:  
 a) Width - 12 Feet 04 Feet Serving More Than One Residence  
 b) Surface - Six (6) Inches Of Compacted Crusher Run Base With Tar And Chip Coating (1/2" Minimum)  
 c) Geometry - Maximum 15% Grade, Maximum 10% Grade Change And 45-Foot Turning Radius  
 d) Structures (Culvert/Bridges) - Capable Of Supporting 25 Gross Tons (25-Ton Loadings)  
 e) Drainage Elements - Capable Of Safely Flushing 100 Year Flood With No More Than 1 Foot Depth Over Surface  
 f) Structure Clearances - Minimum 12 Feet  
 g) Maintenance - Sufficient To Ensure All Weather Use.
  - WETLAND AND FOREST STAND DELINEATION INFORMATION WAS TAKEN FROM REPORTS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED NOV., 1999 AND APPROVED UNDER S 01-16.
  - SOILS INFORMATION TAKEN FROM SOIL MAP NO. 17, SOIL SURVEY, HOWARD COUNTY, MARYLAND, JULY 1969 ISSUE.
  - THIS PROJECT IS SUBJECT TO THE 4TH EDITION OF THE HOWARD COUNTY SUBDIVISION REGULATIONS AND TO THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 50-2000.
  - SUBJECT PROPERTY ZONED RC-DEO PER 10/18/93 COMPREHENSIVE ZONING PLAN.
  - THERE ARE STEEP SLOPES LOCATED ON THIS PROPERTY AS DEFINED BY "SLOPES THAT AVERAGE 2% OR GREATER OVER 10 VERTICAL FEET" PER SECTION 16.1200 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. TOTAL AREA OF 2% OR GREATER SLOPES = 2.28 AC.
  - PRESERVATION PARCEL 'A' SHALL BE PRIVATELY OWNED AND MAINTAINED ENCLUMBERED WITH AN EASEMENT AGREEMENT WITH HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM, NON-BUILDABLE PRESERVATION PARCEL 'B' SHALL BE PRIVATELY OWNED AND MAINTAINED AND ENCLUMBERED WITH AN EASEMENT AGREEMENT WITH HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM, NON-BUILDABLE PRESERVATION PARCEL 'C' SHALL BE PRIVATELY OWNED AND MAINTAINED BY RIVERCREST HOMEOWNERS ASSOCIATION INC. AND ENCLUMBERED WITH AN EASEMENT AGREEMENT WITH HOWARD COUNTY, MARYLAND.  
 AS PER SECTION 104.F.4.3 OF THE ZONING REGULATIONS, ONLY ONE EASEMENT HOLDER IS REQUIRED FOR PRESERVATION PARCELS 'A' THROUGH 'C' FOR SWM FACILITIES OR COMPREHENSIVE SEWAGE DISPOSAL SYSTEMS.  
 "Non-Buildable Preservation Parcel 'C' To Be Privately Owned And Maintained By H.O.A. And The Easement Holder Shall Be Howard County, Martins. This Agreement Prohibits Further Subdivision Of The Parcel, Except The Subdivision Responsibility Of Their Owners And Enumerates The Uses Permitted On The Parcel."
  - NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, STREAM OR THEIR REQUIRED BUFFERS EXCEPT PER NOTES 26 & 28 BELOW. SEE ALSO NOTE 31.
  - THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY PROVIDING 1230 AC. OF FOREST RETENTION ON-SITE WITHIN PRESERVATION PARCEL 'A'. THE FOREST CONSERVATION SURETY AMOUNT WILL BE \$105,415.00.
  - THE LANDSCAPE SURETY IN THE AMOUNT OF \$21,750.00 FOR PERIMETER LANDSCAPE REQUIREMENTS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL IS POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS SUBDIVISION.
  - EXISTING SEPTIC FIELD LOCATED ON PRESERVATION PARCEL 'A' WILL REMAIN ALONG WITH THE TWO EXISTING FARM STRUCTURES. THESE TWO STRUCTURES WILL BE UTILIZED AS A FARM TENANT HOUSE AND FARMING OPERATION USES.
  - IN ACCORDANCE WITH SECTION 16.1304 AND 16.1314, FLOODPLAIN AND WETLANDS NEED NOT BE DELINEATED IN CLUSTER SUBDIVISIONS. THE WETLANDS AND BUFFERS WILL NOT BE IMPACTED BY THE PROPOSED LOTS OR DEVELOPMENT EXCEPT ALONG THE EXISTING 30 FOOT PUBLICLY OWNED AND MAINTAINED ROAD RIGHT-OF-WAY (ROXBURY HILL ROAD) LOCATED NEAR THE NORTHERN SITE ENTRANCE.
  - TENTATIVE APPROVAL OF THE SECTION PLAN IS GRANTED, SUBJECT TO COMPLIANCE WITH THE REQUIREMENTS OF COMAR 26.04.02.04C. SINCE THIS PROJECT IS LOCATED WITHIN 2500 FEET OF THE NORMAL WATER LEVEL OF THE EXISTING TRIADELPHIA RESERVOIR, THE MINIMUM LOT SIZE SHALL BE 2 ACRES. THE DENSITY FOR THIS PROJECT WILL BE 12 UNITS PER AVERAGE LOT SIZE OF 581 AC./12 LOTS = 4.258 UNITS PER ACRE. THE 12 UNITS ARE THE "31-80" YIELD AND PER SECTION 104.F.1.C.11, THE PROJECT IS ENTITLED TO A BONUS LOT FOR A TOTAL OF 13 LOTS. ALSO PER ZONING, SECTION 106.B.2.b, THIS PROJECT IS NOT ELIGIBLE TO BE DENSITY-RECEIVING SINCE IT IS LOCATED WITHIN 2500 FEET OF THE NORMAL WATER LEVEL OF A WATER SUPPLY RESERVOIR.
  - THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING HAS DETERMINED THAT DISTURBANCE TO ENVIRONMENTAL AREAS FOR THE PURPOSE OF THE NORTHERN ROAD CROSSING TO BE A NECESSARY DISTURBANCE IN ACCORDANCE WITH SECTION 16.1316 OF THE SUBDIVISION REGULATIONS.
  - BULK PARCEL 'D' RESERVES THE RIGHT TO BE FURTHER SUBDIVIDED INTO A MAXIMUM OF TWO (2) ONE ACRE CLUSTER LOTS.
  - THIS PROPERTY IS SUBJECT TO BA CASE NO. BA-02-69C FOR A CONDITIONAL USE FOR THE EXISTING FARMHOUSE AND OFFICE TO BE USED INSTEAD AS A TENANT HOUSE AND WAS APPROVED BY HOWARD COUNTY.  
 Conditions of Approval for BA Case No. 02-69C are as follows:  
 1. The petitioner must obtain a building permit for the construction of the new dwelling on the property within eight years of the date of this decision and order.  
 2. The petitioner must commence the use of the conditional use within two years after the building permit is issued.
  - PRESERVATION PARCEL 'A' IS ENCLUMBERED BY AN AGRICULTURAL LAND PRESERVATION EASEMENT HELD BY THE HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM AND IS RESTRICTED BY AN ACCOMPANYING DEED OF PRESERVATION EASEMENT. THE EASEMENT, ENTERED INTO BY THE OWNERS, OUTLINES MAINTENANCE RESPONSIBILITIES OF THE PARCEL OWNER, ENUMERATES PERMITTED USES AND PROHIBITS RESUBDIVISION OF THE PARCEL.
  - A WAIVER PETITION (WP 05-23) FOR THIS PROPERTY WAS APPROVED ON NOVEMBER 5, 2004 FROM SECTION 16.11.b.1 TO ALLOW GRADING AND REMOVAL OF VEGETATION WITHIN EXISTING STEEP SLOPES ADJACENT TO THE EAST SIDE OF LOT 2.

| ROAD NAME        | CLASSIFICATION      | DESIGN SPEED | R/W WIDTH |
|------------------|---------------------|--------------|-----------|
| OLD ROXBURY ROAD | PUBLIC ACCESS PLACE | 25 MPH       | VARIES    |
| RIVERCREST COURT | PUBLIC ACCESS PLACE | 25 MPH       | 40'       |

| ROAD NAME        | C.L. STA. | OFFSET | POSTED SIGN    | SIGN CODE |
|------------------|-----------|--------|----------------|-----------|
| RIVERCREST COURT | 0+30      | 22'L   | STOP           | R1-1      |
| RIVERCREST COURT | 1+00      | 12'R   | SPEED LIMIT 25 | R2-1      |



- STORMWATER MANAGEMENT FOR LOT 6 WILL BE PROVIDED IN ACCORDANCE WITH THE MDE STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2003. THIS PLAN PROPOSES STORMWATER MANAGEMENT BY THE USE OF 3 (M-3) DRY WELLS AND TWO AREAS OF NON-RECEPTOR DISCONNECTION CREDIT (N-2). ALL SWM FACILITIES ARE TO BE MAINTAINED BY THE HOMEOWNER.
- STORMWATER MANAGEMENT FOR LOT 2 WILL BE PROVIDED IN ACCORDANCE WITH THE MDE STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2003. THIS PLAN PROPOSES STORMWATER MANAGEMENT BY THE USE OF A (M-2) BIO-RETENTION FACILITY TO BE MAINTAINED BY THE HOMEOWNER.
- STORMWATER MANAGEMENT FOR LOT 4 WILL BE PROVIDED IN ACCORDANCE WITH THE MDE STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2003. THIS PLAN PROPOSES STORMWATER MANAGEMENT BY THE USE OF A (M-2) BIO-RETENTION FACILITY AND THREE (M-5) PRESTEMS TO BE MAINTAINED BY THE HOMEOWNER.
- STORMWATER MANAGEMENT FOR LOT 3 WILL BE PROVIDED IN ACCORDANCE WITH THE MDE STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2003. THIS PLAN PROPOSES STORMWATER MANAGEMENT BY THE USE OF A (M-2) BIO-RETENTION FACILITY AND A (M-5) PRESTEM FACILITY TO BE MAINTAINED BY THE HOMEOWNER.

- HOWARD COUNTY HEALTH DEPARTMENT GENERAL NOTES**
- THIS PROPERTY IS LOCATED WITHIN 2500 FEET OF THE TRIADELPHIA RESERVOIR. COMAR 26.04.02.04C STATES: "A LOT LOCATED WITHIN 2500 FEET OF THE NORMAL WATER LEVEL OF EXISTING OR PROPOSED WATER SUPPLY RESERVOIRS, MEASURED HORIZONTALLY OR WITHIN A 5000-FOOT RADIUS UPSTREAM FROM THE WATER INTAKE ON STREAMS USED AS POTABLE WATER SUPPLY SOURCES AND A 5000-FOOT RADIUS OF WATER INTAKE LOCATED WITHIN A RESERVOIR SHALL HAVE AN AREA OF NOT LESS THAN 2 ACRES WITH A MINIMUM WIDTH OF 175 FEET." A VARIANCE FROM MDE TO THIS SECTION OF THE REGULATION WAS GRANTED BY MDE ON MARCH 11, 2003 SUBJECT TO THE FOLLOWING CONDITIONS OF APPROVAL.
  - THE SEWAGE EASEMENTS SHOWN CAN NOT BE ADJUSTED WITHOUT ADDITIONAL PERCOLATION TESTS AND SITE EVALUATION.

## TAX MAP NO. 21 GRID NO. 20 PARCEL NO. 84

## FOURTH ELECTION DISTRICT

## HOWARD COUNTY, MARYLAND

**AS-BUILT CERTIFICATION**  
 I hereby certify that the facility shown on this plan was constructed as shown on the "AS-BUILT" plans and meet the Approved Plans and Specifications.  
*Aldo Michael Vitucci* 4/1/05  
 Aldo Michael Vitucci #20748 Date

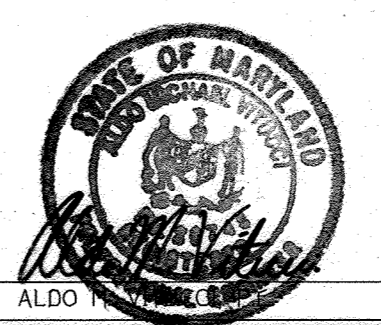
THE INSTRUMENTS USED IN PERFORMING AS-BUILT SURVEY:  
 10 SECOND ROTOTIC TOTAL STATION & PRISM

**OWNER**  
 Mr. Robert Preston Buice  
 21400 New Hampshire Avenue  
 Brookeville, Maryland 20833

**DEVELOPER**  
 Rivercrest, LLC  
 21400 New Hampshire Avenue  
 Brookeville, Maryland 20833

| NO. | REVISION            | DATE    |
|-----|---------------------|---------|
| 1   | ADD GENERAL NOTE 36 | 1/14/05 |
| 2   | ADD GENERAL NOTE 35 | 6/7/02  |
| 3   | ADD GENERAL NOTE 34 | 6/19/01 |
| 4   | ADD GENERAL NOTE 33 | 2/16/02 |

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 410-461-2999

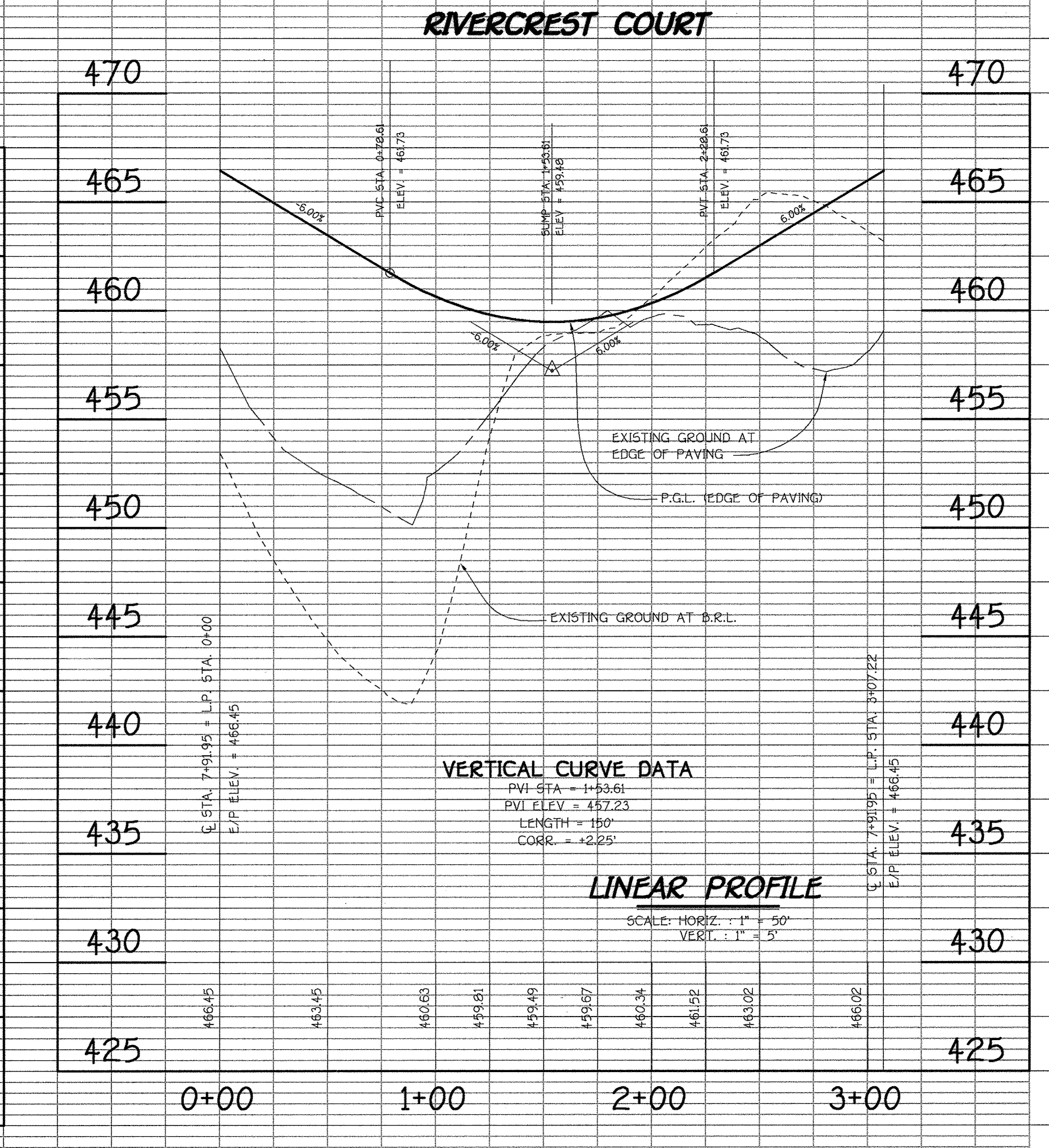
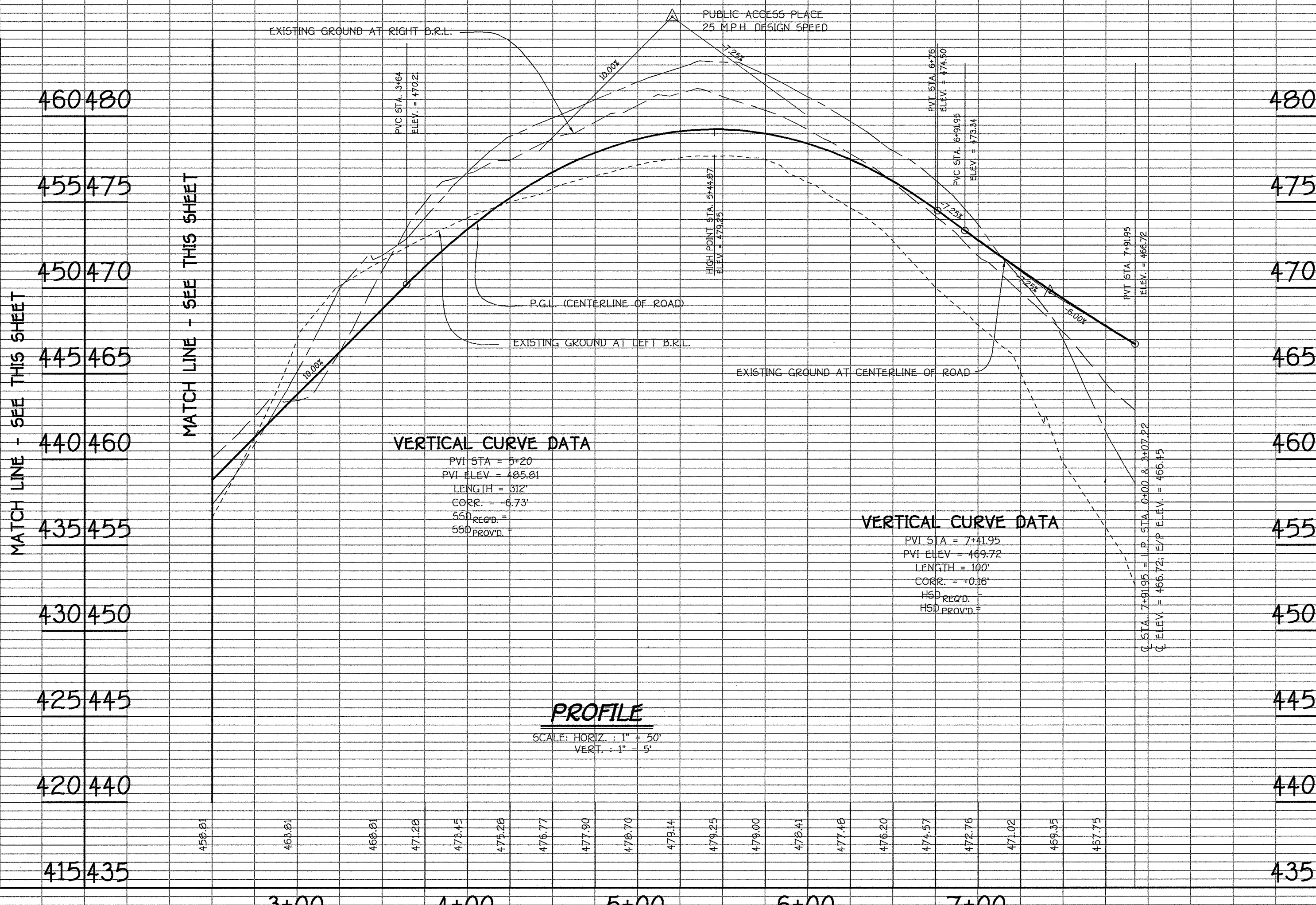
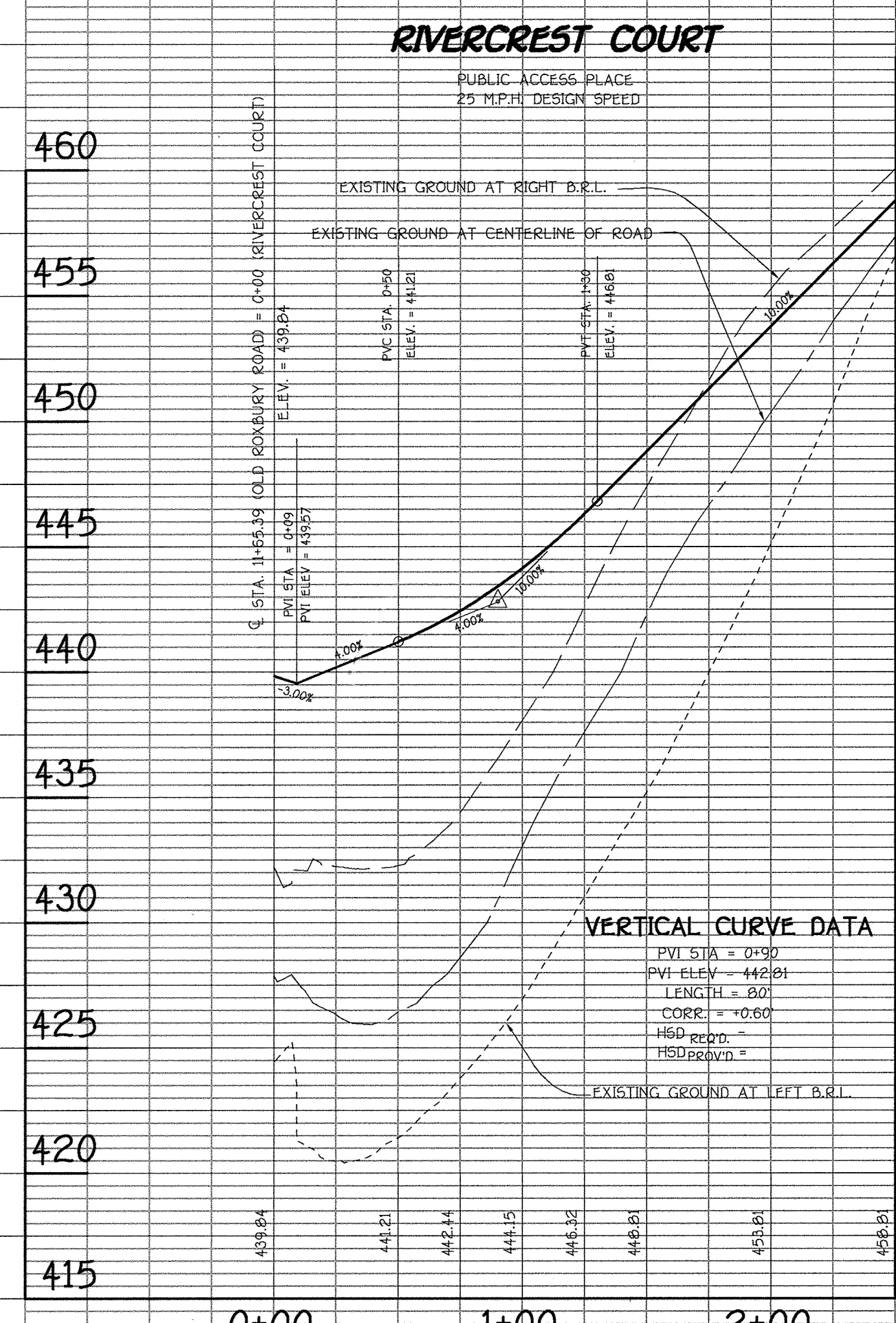
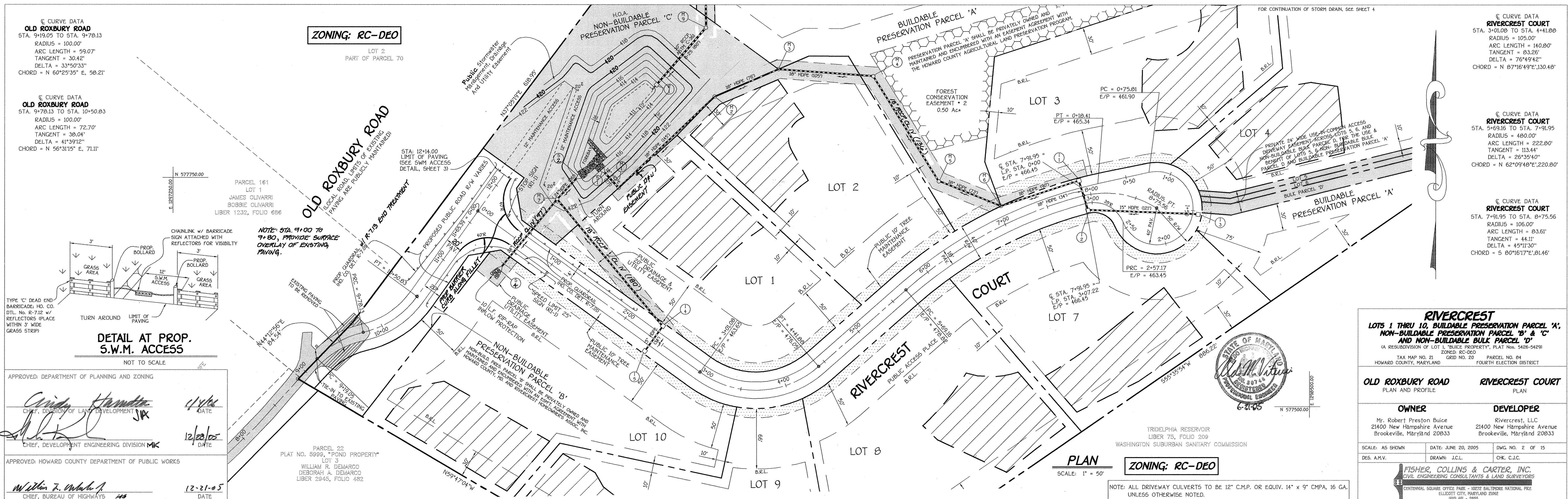


6-21-05  
 DATE

**RIVERCREST**  
**LOTS 1 THRU 10, BUILDABLE PRESERVATION PARCEL 'A',  
NON-BUILDABLE PRESERVATION PARCEL 'B' & 'C'  
AND NON-BUILDABLE BULK PARCEL 'D'**  
 (A RESUBDIVISION OF LOT 1, "BUICE PROPERTY", PLAT Nos. 5426-5429)  
 ZONED: RC-DEO  
 TAX MAP NO. 21 GRID NO. 20 PARCEL NO. 84  
 FOURTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: JUNE 20, 2005  
 SHEET 1 OF 10

"AS-BUILT" #.04.57

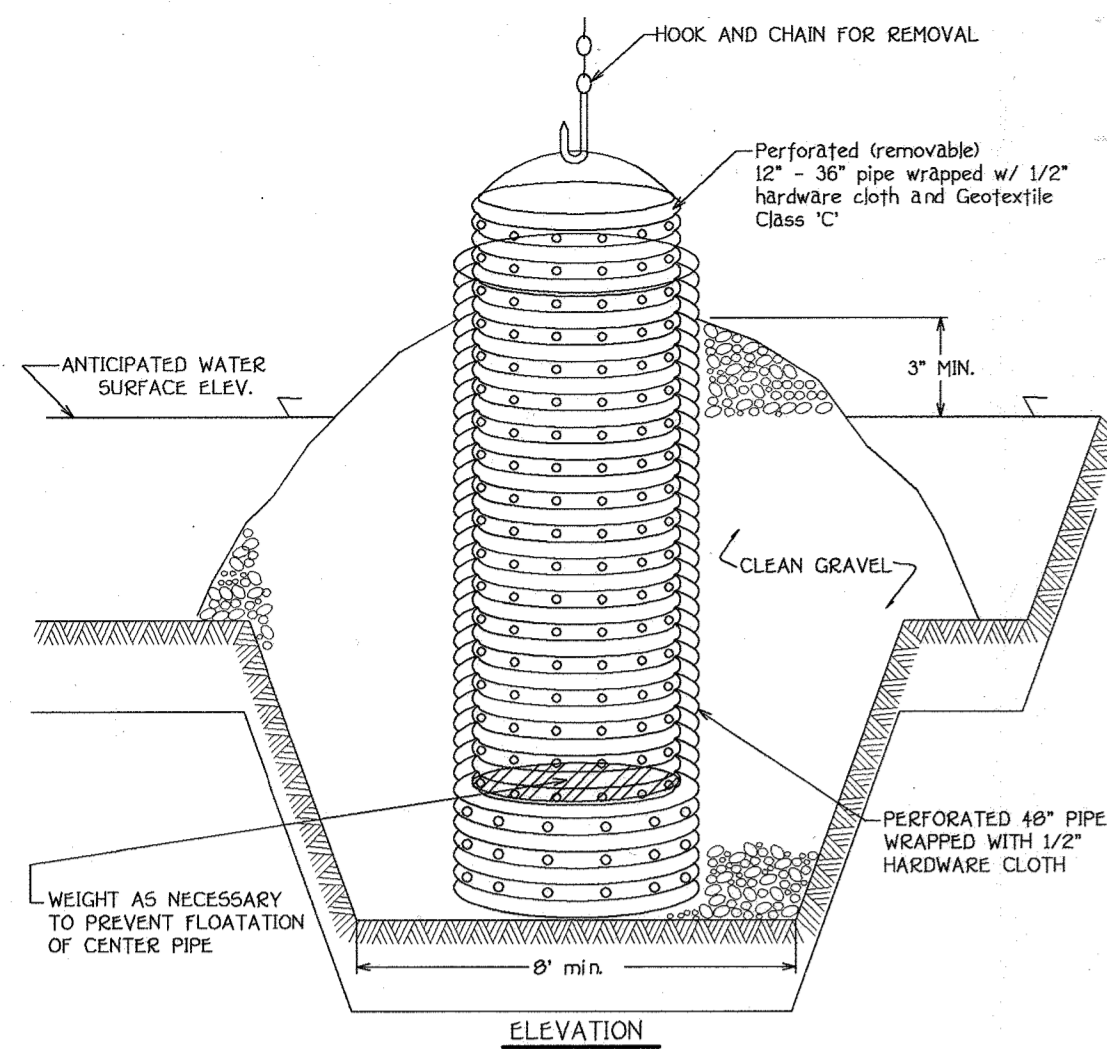
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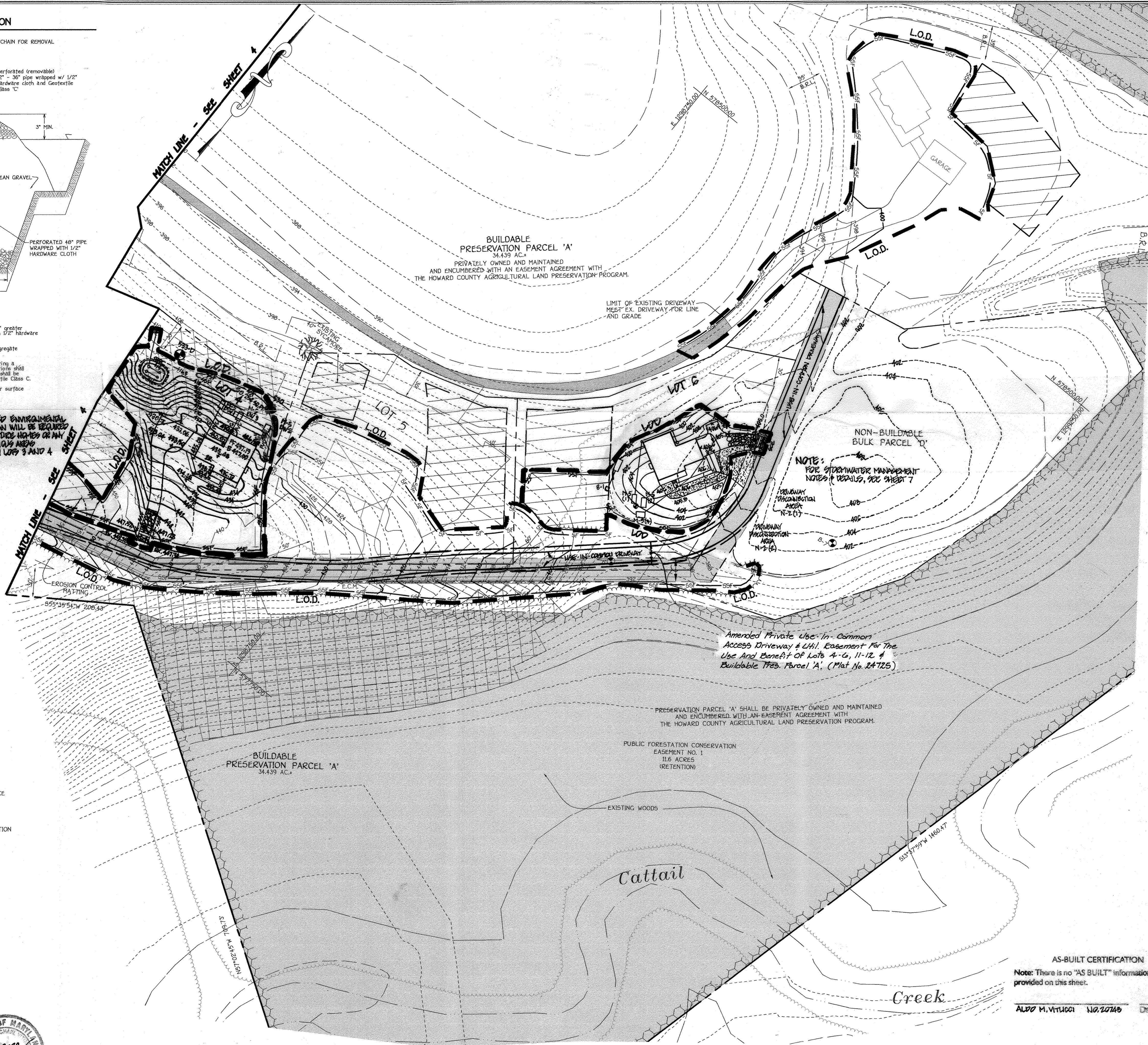
REMOVABLE PUMPING STATION



Construction Specifications

1. The outer pipe should be 40" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 30" in diameter. The perforations shall be 1/2" x 6" slots of 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.
4. The center pipe should extend 12" to 30" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

NOTE: A SIMPLIFIED ENVIRONMENTAL CONCEPT PLAN WILL BE REQUIRED FOR ANY FUTURE HOMES OR ANY NEW IMPERVIOUS AREAS PROPOSED ON LOTS 3 AND 4.



LEGEND

- SSF—SSF—SSF— SUPER-SILT FENCE
- SF—SF—SF— SILT FENCE
- TP—TP—TP— TREE PROTECTION FENCE
- I.P. INLET PROTECTION
- ▨ S.C.E. STABILIZED CONSTRUCTION ENTRANCE
- A-2 → EARTH DIKE
- L.O.D. — LIMIT OF DISTURBANCE
- I.P. RIP-RAP INFLOW PROTECTION
- ▨ E.C.M. EROSION CONTROL MATTING
- ▨ 25% OR GREATER SLOPES
- ▨ 15% TO 24.99% SLOPES



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CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK • 10272 BALTIMORE NATIONAL PIKE  
ELLICOTT CITY, MARYLAND 21042  
410.461.2000

|     |  |          |
|-----|--|----------|
| 3   | ADD GRADING, DRAINAGE & SPECIFIC HOME AND ROAD FOR LOT 4 | 6/7/21   |
| 2   | REVISE L.O.D. & SEDIMENT CONTROL DEVICES ON LOT 4        | 11/19/21 |
| 1   | ADD SPECIFIC HOME, DRAINAGE, GRADING & ROAD FOR LOT 5    | 2/10/21  |
| NO. | REVISION   | DATE     |

**OWNER**  
Mr. Robert Preston Buice  
21400 New Hampshire Avenue  
Brookeville, Maryland 20833

**DEVELOPER**  
Rivercrest, LLC  
21400 New Hampshire Avenue  
Brookeville, Maryland 20833

PLAN  
SCALE: 1" = 50'

NOTE: ALL DRIVEWAY CULVERTS TO BE 12" C.M.P. OR EQUIV. 14" x 9" C.M.P.A. 16 GA. UNLESS OTHERWISE NOTED.

By The Developer:  
"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Signature Of Developer: *Robert P Buice* Date: 6/2/05  
Printed Name Of Developer: Robert P Buice

By The Engineer:  
"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Feasible Design Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have No Knowledge Of Any Other Plans That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature: *Robert P Buice* Date: 6-2-05  
Printed Name Of Engineer: Robert P Buice

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA-Natural Resources Conservation Service Date: 6/29/05  
These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

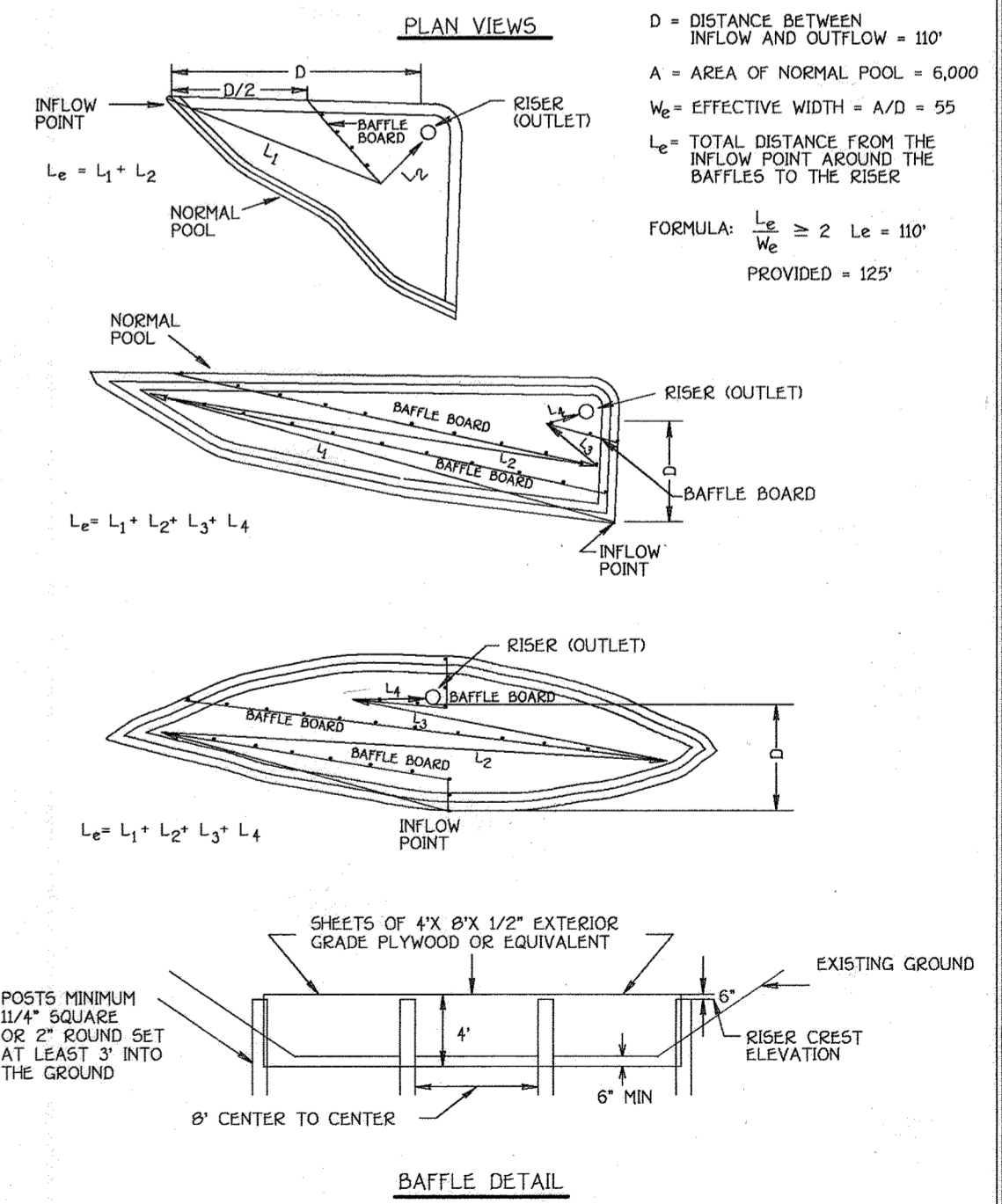
Howard Soil Conservation District Date: 6/29/05  
Approved: Department Of Public Works  
Chief: Bureau Of Highways Date: 12-21-05  
Approved: Department Of Planning And Zoning  
Chief: Division Of Land Development Date: 1/4/06  
Chief: Development Engineering Division Date: 12/01/05

AS-BUILT CERTIFICATION  
I Herby Certify That The Construction Shown On This Plan Was Constructed As Shown On This Plan And Meets The Approved Plans And Specifications.

Signature: *Robert P Buice* Date: 20749  
Professional Engineer No. 20749 Date: 11/22

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

SEDIMENT BASIN BAFFLES



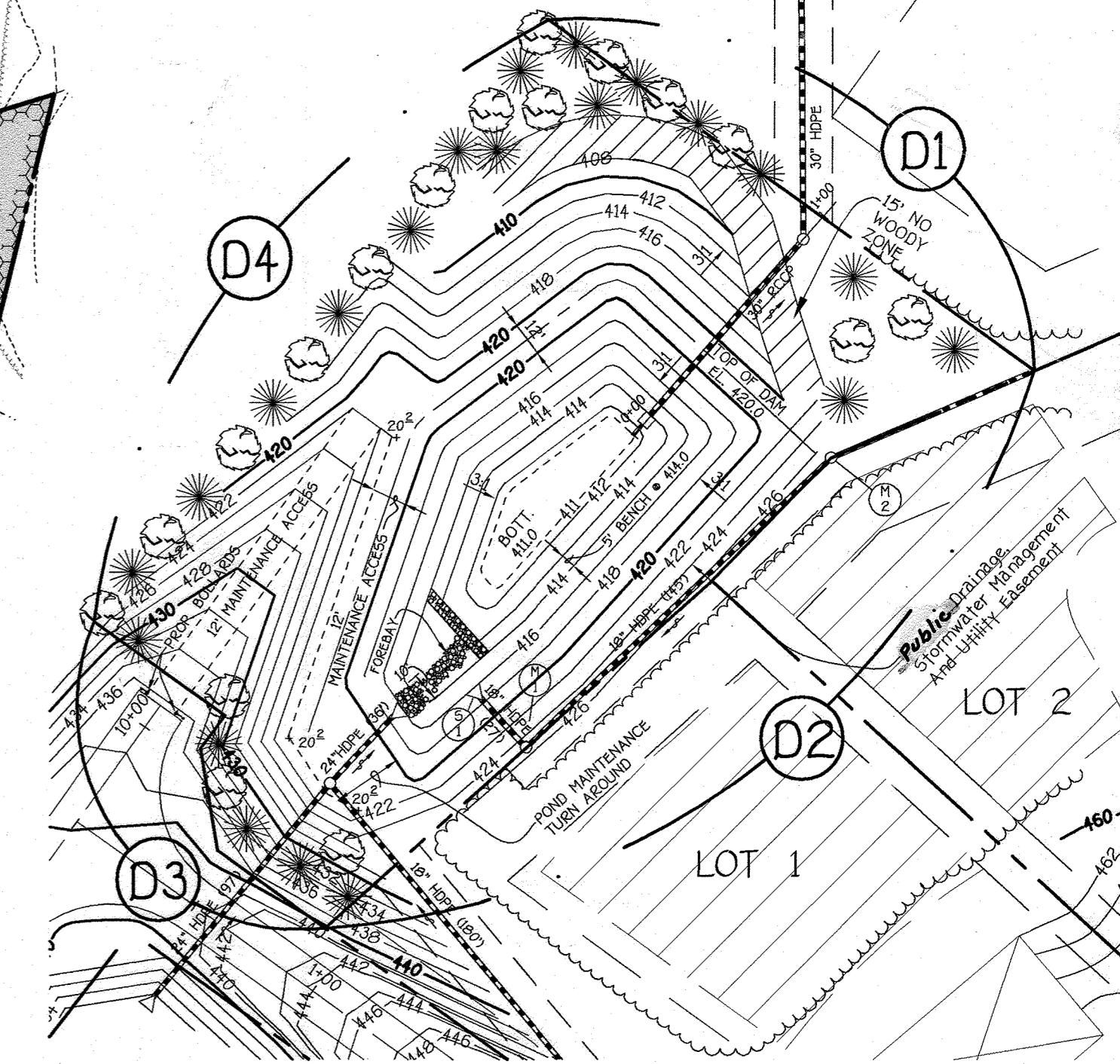
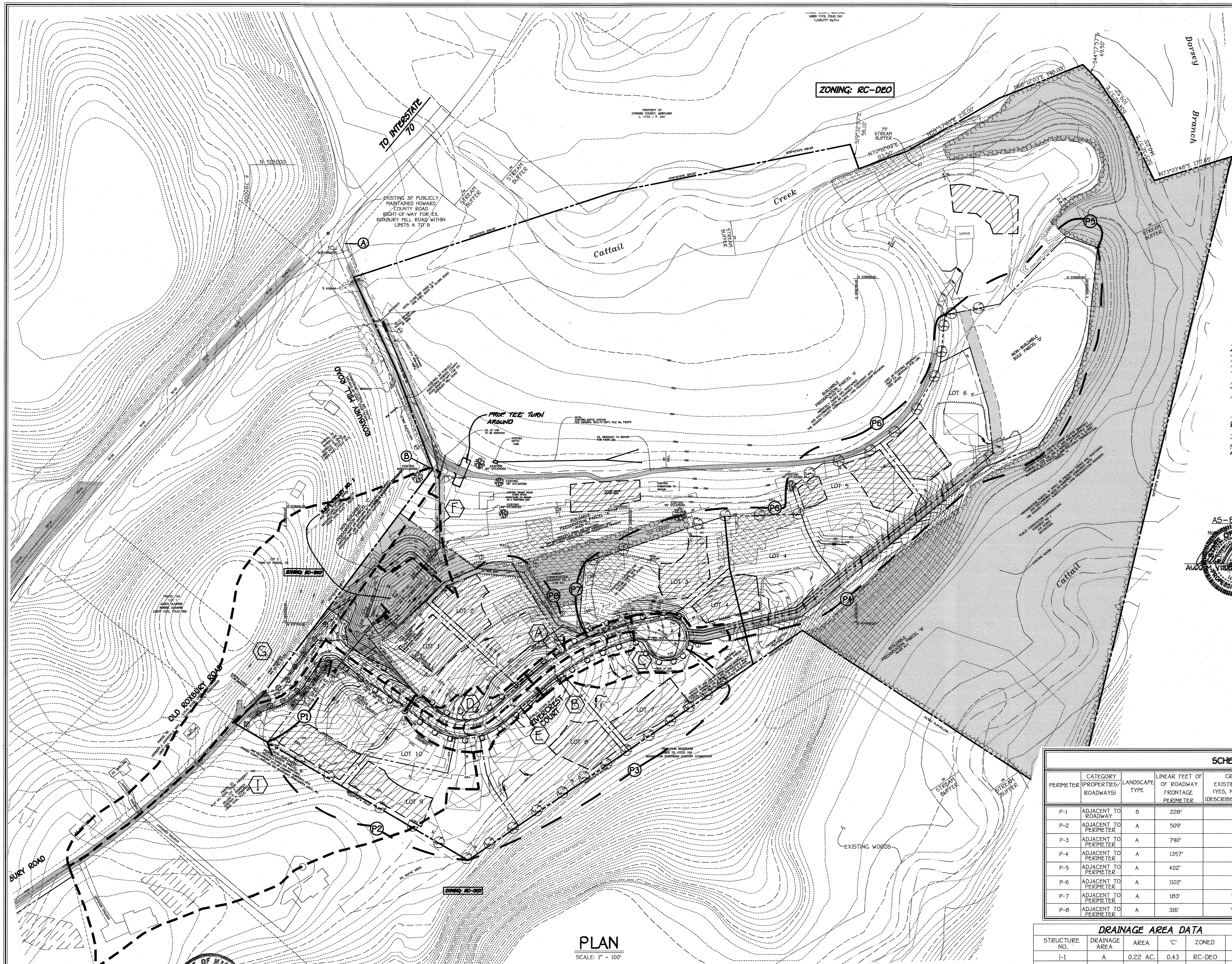
AS-BUILT CERTIFICATION  
Note: There is no "AS BUILT" information provided on this sheet.  
ALDO M. VITUCCI No. 20749 Date:

STREET TREE, GRADING & SEDIMENT CONTROL PLAN  
**RIVERCREST**  
LOTS 1 THRU 10, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCEL 'B' & 'C' AND NON-BUILDABLE BULK PARCEL 'D'  
(A RESUBDIVISION OF LOT 1, BUICE PROPERTY, PLAT No. 5426-5429)  
ZONED: RC-20  
TAX MAP NO. 21 GRID NO. 20 PARCEL NO. 84  
FOURTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
DATE: JUNE 20, 2009  
SHEET 5 OF 14

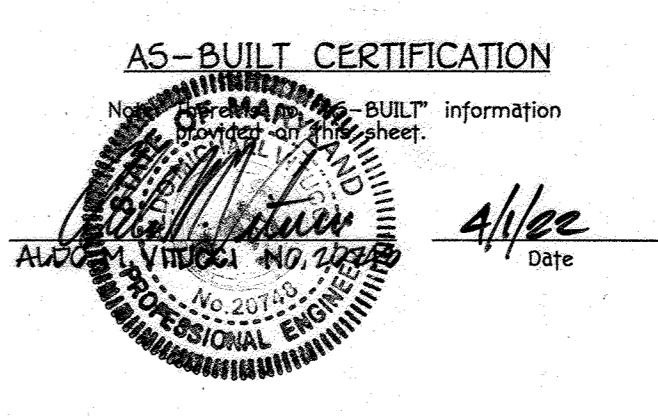
THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F.04.57

Approved: Department of Public Works  
 Chief: Bureau of Highways *W. Z. ...* 12-21-05  
 Date

Approved: Department of Planning and Zoning  
 Chief: Division of Land Development *...* 1/14/06  
 Chief: Development Engineering Division *...* 12/20/05  
 Date



S.W.M. FACILITY NO. 1 LANDSCAPE PLAN  
 SCALE: 1" = 50'



| LANDSCAPING PLANT LIST |     |   |  |  |
|------------------------|-----|---|--|--|
| QTY.                   | KEY | NAME  | SIZE                                     |  |
| 60                     |     | ACER RUBRUM<br>"OCTOBER GLOVE"<br>(OCTOBER RED MAPLE) | 2 - 2 1/2"<br>CALIPER FULL<br>CROWN, B&B |  |
| 25                     |     | PINUS STROBUS<br>EASTERN WHITE PINE                   | 6' - 8' HT.                              |  |

"THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL". FINANCIAL SURETY FOR THE 85 REQUIRED LANDSCAPE TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$21,750.00.

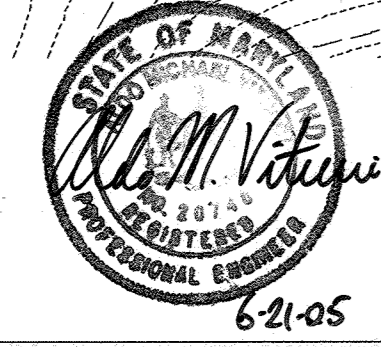
| SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING |          |          |          |          |  |
|---|----------|----------|----------|----------|--|
| LINEAR FEET OF PERIMETER                          | D1: 207' | D2: 319' | D3: 150' | D4: 260' |  |
| NUMBER OF TREES REQUIRED & PROVIDED:              |          |          |          |          |  |
| SHADE TREES                                       | 3        | 6        | 3        | 5        |  |
| EVERGREEN TREES                                   | 4        | 8        | 4        | 6        |  |
| CREDIT FOR EXISTING VEGETATION (NO, YES AND %)    | YES 50%  | NO       | NO       | NO       |  |
| CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)      | NO       | NO       | NO       | NO       |  |

| SCHEDULE A PERIMETER LANDSCAPE EDGE |                                 |                |   |  |  |             |                 |        |  |
|-------------------------------------|---------------------------------|----------------|---|--|--|-------------|-----------------|--------|--|
| PERIMETER                           | CATEGORY (PROPERTIES, ROADWAYS) | LANDSCAPE TYPE | LINEAR FEET OF ROADWAY FRONTAGE PERIMETER | CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED) | CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED) | SHADE TREES | EVERGREEN TREES | SHRUBS | NUMBER OF PLANTS PROVIDED (SHADE TREES, EVERGREEN TREES, SHRUBS) |
| P-1                                 | ADJACENT TO ROADWAY             | B              | 228'                                      | YES (80')  | NO   | 3           | 4               | -      | 3 4 -  |
| P-2                                 | ADJACENT TO PERIMETER           | A              | 509'                                      | NO   | NO   | 8           | -               | -      | 8 - -  |
| P-3                                 | ADJACENT TO PERIMETER           | A              | 790'                                      | YES (75')  | NO   | 12          | -               | -      | 12 - -   |
| P-4                                 | ADJACENT TO PERIMETER           | A              | 1357'                                     | YES (1357')  | NO   | 0           | -               | -      | 0 - -  |
| P-5                                 | ADJACENT TO PERIMETER           | A              | 402'                                      | YES (312')   | NO   | 2           | -               | -      | 2 - -  |
| P-6                                 | ADJACENT TO PERIMETER           | A              | 1102'                                     | YES (150')   | NO   | 16          | -               | -      | 16 - -   |
| P-7                                 | ADJACENT TO PERIMETER           | A              | 183'                                      | YES (158')   | NO   | 1           | -               | -      | 1 - -  |
| P-8                                 | ADJACENT TO PERIMETER           | A              | 316'                                      | YES (282')   | NO   | 1           | -               | -      | 1 - -  |

| DRAINAGE AREA DATA |               |          |      |        |        |
|--------------------|---------------|----------|------|--------|--------|
| STRUCTURE NO.      | DRAINAGE AREA | AREA     | 'C'  | ZONED  | % IMP. |
| I-1                | A             | 0.22 AC. | 0.43 | RC-DEO | 28%    |
| I-2                | B             | 0.79 AC. | 0.46 | RC-DEO | 34%    |
| I-3                | C             | 0.23 AC. | 0.45 | RC-DEO | 31%    |
| I-4                | D             | 0.14 AC. | 0.51 | RC-DEO | 41%    |
| I-5                | E             | 1.13 AC. | 0.29 | RC-DEO | 5%     |
| I-6                | F             | 0.08 AC. | 0.48 | RC-DEO | 41%    |
| I-7                | G             | 1.41 AC. | 0.33 | RC-DEO | 11%    |
| S-4                | H             | 5.59 AC. | 0.32 | RC-DEO | 10%    |

STORM DRAIN DRAINAGE AREA MAP AND LANDSCAPE PLAN  
**RIVERCREST**  
 LOTS 1 THRU 10, BUILDABLE PRESERVATION PARCEL 'A', PRESERVATION PARCEL 'B' & 'C' AND NON-BUILDABLE BULK PARCEL 'D'  
 (A RESUBDIVISION OF LOT 'L', "BUICE PROPERTY", PLAT NOS. 9426-9429) ZONED RC-DEO  
 TAX MAP NO. 21 GRID NO. 20 PARCEL NO. 84  
 FOURTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: JUNE 20, 2005  
 SHEET 6 OF 14

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL PIKE  
 ELLSWORTH CITY, MARYLAND 21042  
 410.667.2895



OWNER: Mr. Robert Preston Buice, 21400 New Hampshire Avenue, Brookeville, Maryland 20833

DEVELOPER: Rivercrest, LLC, 21400 New Hampshire Avenue, Brookeville, Maryland 20833

PLAN  
 SCALE: 1" = 100'

NOTE: THIS PLAN IS FOR LANDSCAPING AND DRAINAGE AREA INFORMATION ONLY.

**STRUCTURE SCHEDULE**

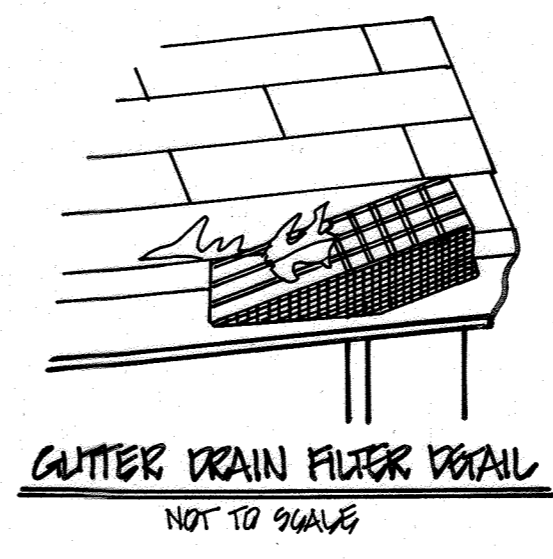
| STRUCTURE NO. | TOP ELEVATION | INV. IN       | INV. OUT      | ROAD NAME               | ROAD STA.                        | OFFSET | TYPE                      | REMARKS     |
|---------------|---------------|---------------|---------------|-------------------------|----------------------------------|--------|---------------------------|-------------|
| I-1           | * 458.00 3.11 | 458.00 1.85   | 458.00 1.41   | RIVERCREST COURT        | C.L. STA. 7+91.00 54             | 17' L  | 'D' INLET ✓               | S.D. - 4.39 |
| I-2           | * 458.00 2.75 | 458.00 2.04   | 458.00 1.51   | RIVERCREST COURT        | C.L. STA. 7+93.25                | 17' R  | 'D' INLET ✓               | S.D. - 4.39 |
| I-3           | * 458.00 4.42 | 458.00 3.28   | 458.00 2.44   | RIVERCREST COURT        | L.P. STA. 1+53.61                | 6' L   | 'D' INLET ✓               | S.D. - 4.39 |
| I-4           | * 458.00 4.47 | 449.00 7.56   | 449.00 2.44   | RIVERCREST COURT        | C.L. STA. 2+38                   | 17' L  | 'D' INLET ✓               | S.D. - 4.39 |
| I-5           | * 458.00 4.47 | 458.00 0.36   | 458.00 0.36   | RIVERCREST COURT        | C.L. STA. 2+38                   | 17' R  | 'D' INLET ✓               | S.D. - 4.39 |
| I-6           | * 395.50 1.24 | 389.00 910.02 | 389.00 88     |                         | N 578.07 6.85<br>E 1297.83 3.75  |        | 'D' INLET ✓               | S.D. - 4.39 |
| M-1           | 424.00 1.55   | 418.00 7.81   | 418.00 7.53   |                         | N 577.78 7.18<br>E 1297.74 3.75  |        | STD. MANHOLE ✓            | G - 5.11    |
| M-2           | 427.00 6.78   | 428.00 0.93   | 428.00 0.70   |                         | N 577.83 12.14<br>E 1297.84 4.58 |        | STD. MANHOLE ✓            | G - 5.11    |
| M-3           | 427.00 0.09   | 428.00 1.88   | 428.00 1.92   | RIVERCREST COURT        | C.L. STA. 6+00 14.03             | 24" L  | STD. MANHOLE ✓            | G - 5.11    |
| M-4           | 436.00 5.26   | 428.00 429.74 | 428.00 12     | RIVERCREST COURT        | C.L. STA. 6+00 50                | 24" L  | STD. MANHOLE ✓            | G - 5.11    |
| M-5           | 469.00 5      | 458.00 448.51 | 458.00 448.57 | RIVERCREST COURT        | C.L. STA. 6+61                   | 24" L  | STD. MANHOLE ✓            | G - 5.11    |
| M-6           | 472.00 448.91 | 458.00 449.45 | 458.00 449.10 | RIVERCREST COURT        | C.L. STA. 7+07 8                 | 20" L  | STD. MANHOLE ✓            | G - 5.11    |
| M-7           | 422.00 1.88   | 417.00 415.28 | 415.00 1.97   |                         | N 577.78 7.18<br>E 1297.74 3.75  |        | STD. MANHOLE ✓            | G - 5.11    |
| M-8           | 394.00 1.12   | 388.00 44.25  | 388.00 1.18   |                         | N 578.07 6.85<br>E 1297.83 3.75  |        | STD. MANHOLE ✓            | G - 5.11    |
| M-9           | 418.00 1.05   | 388.00 405.02 | 388.00 404.16 |                         | N 577.83 12.14<br>E 1297.84 4.58 |        | STD. MANHOLE ✓            | G - 5.11    |
| S-5           | 463.78        |               | 462.70        | OLD ROXBURY RD @ RT. 77 | C.L. STA. 18+12                  | 28" L  | CMFA END SECT.            |             |
| S-6           | 465.08        | 464.00        |               | OLD ROXBURY RD @ RT. 77 | C.L. STA. 17+56                  | 28" L  | CMFA END SECT.            |             |
| S-1           | 416.23        | 414.75        |               |                         | N 577.78 7.18<br>E 1297.74 3.75  |        | A.D.S. FLARED END SECTION |             |
| S-2           | 416.30        | 414.34        |               |                         | N 577.78 7.18<br>E 1297.74 3.75  |        | A.D.S. FLARED END SECTION |             |
| S-3           | 388.50        |               | 386.00 14     |                         | N 578.38 13.33<br>E 1297.72 2.19 |        | A.D.S. FLARED END SECTION |             |
| S-4           | 430.20        |               | 428.00 431.76 | RIVERCREST COURT        | C.L. STA. 0+56.50                | 36" R  | HDPE END SECTION          |             |
| R-1           | 419.83        | 418.72        | 418.00 409.83 |                         | N 577.83 12.14<br>E 1297.74 3.75 |        | CONCRETE RISER ✓          |             |

A.D.S. - ADVANCED DRAINAGE SYSTEMS  
LONDON, OHIO  
1-800-733-9554

\* DENOTES THROAT ELEVATION

**PIPE SCHEDULE**

| SIZE | CLASS        | LENGTH |
|------|--------------|--------|
| 15"  | HDPE         | 155'   |
| 18"  | HDPE         | 550'   |
| 24"  | HDPE         | 36'    |
| 30"  | HDPE         | 490'   |
| 18"  | RCCP, CL. IV | 316'   |
| 24"  | RCCP, CL. IV | 97'    |



**OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECT OF NON-ROOFTOP RUNOFF (N-2)**

1. MAINTENANCE OF AREAS REQUIRING DISCONNECT RUNOFF IS GENERALLY NOT APPROPRIATE UNLESS THE OWNER HAS AN AREA OF LAND REQUIRING AREAS. THE AREAS REQUIRING RUNOFF SHOULD BE PROTECTED FROM FUTURE CONSTRUCTION OR DEVELOPMENT OF IMPERVIOUS AREAS IN COMMERCIAL AREAS FOOT TRAFFIC SHOULD BE PROTECTED AS WELL.

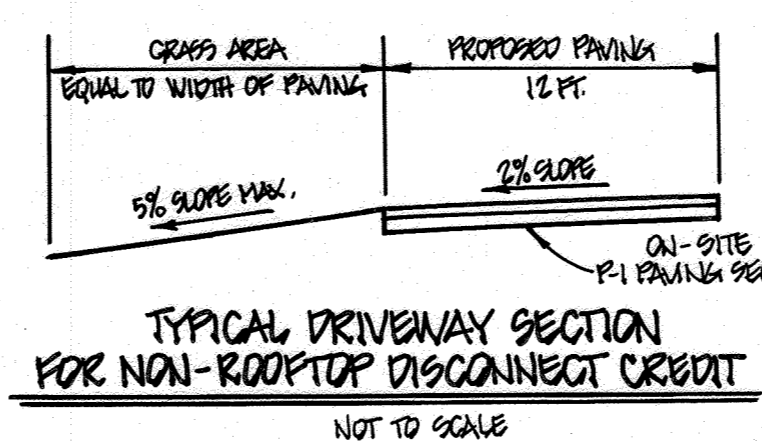
**DRY WELL CHART**

| LOT NO. | AREA OF ROOF PER DRYWELL | VOLUME REQUIRED | VOLUME PROVIDED | AREA OF TREATMENT | L x W x D       |
|---------|--------------------------|-----------------|-----------------|-------------------|-----------------|
| LOT 1   | 830 SQ.FT.               | 60 CF           | 84 CF           | 100%              | 10'5" x 5' x 4' |
| LOT 2   | 811 SQ.FT.               | 78 CF           | 84 CF           | 100%              | 10'5" x 5' x 4' |
| LOT 3   | 482 SQ.FT.               | 48 CF           | 56 CF           | 100%              | 9' x 6' x 4'    |

\* AREA OF TREATMENT EXCEEDS REQUIRED

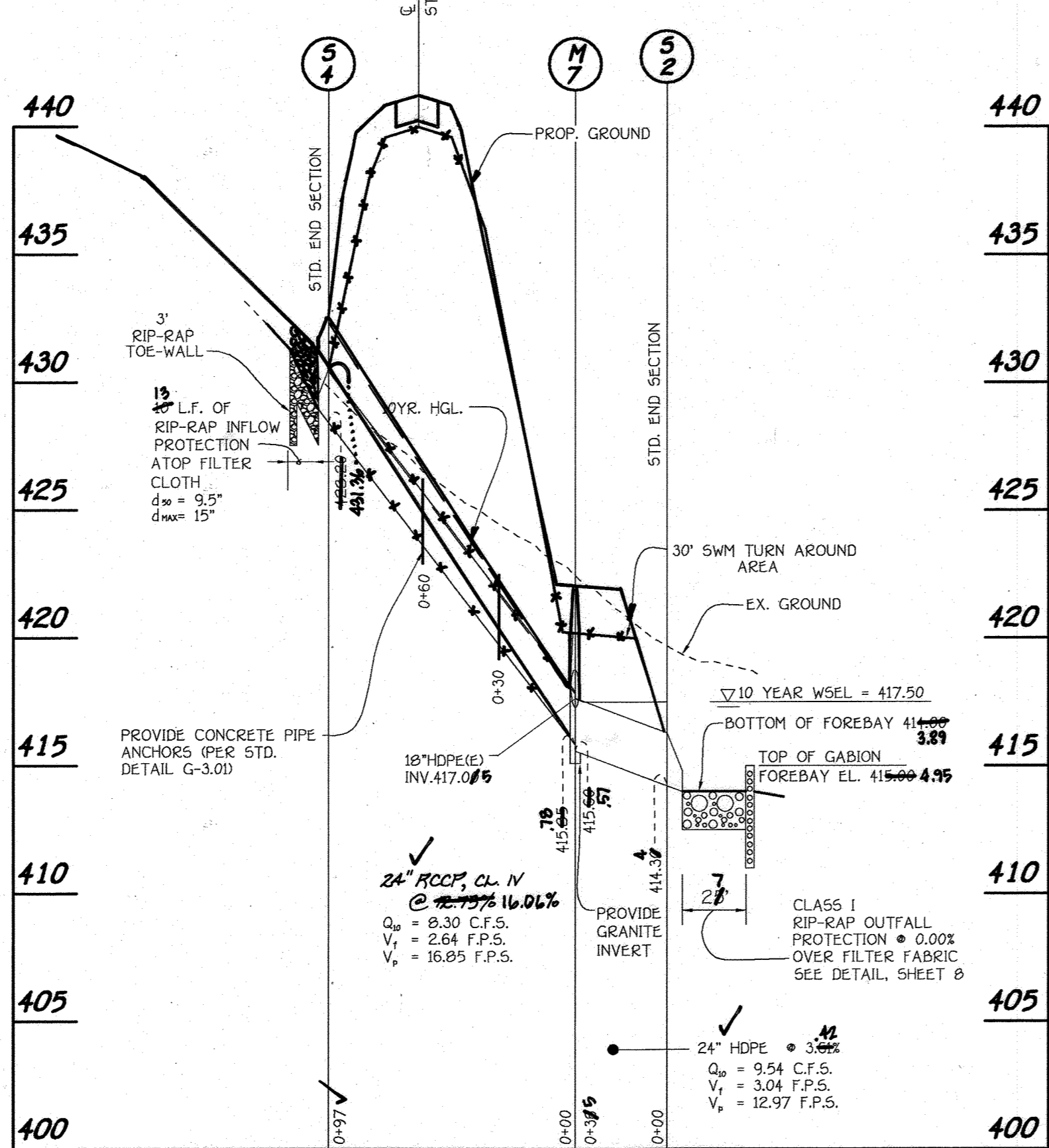
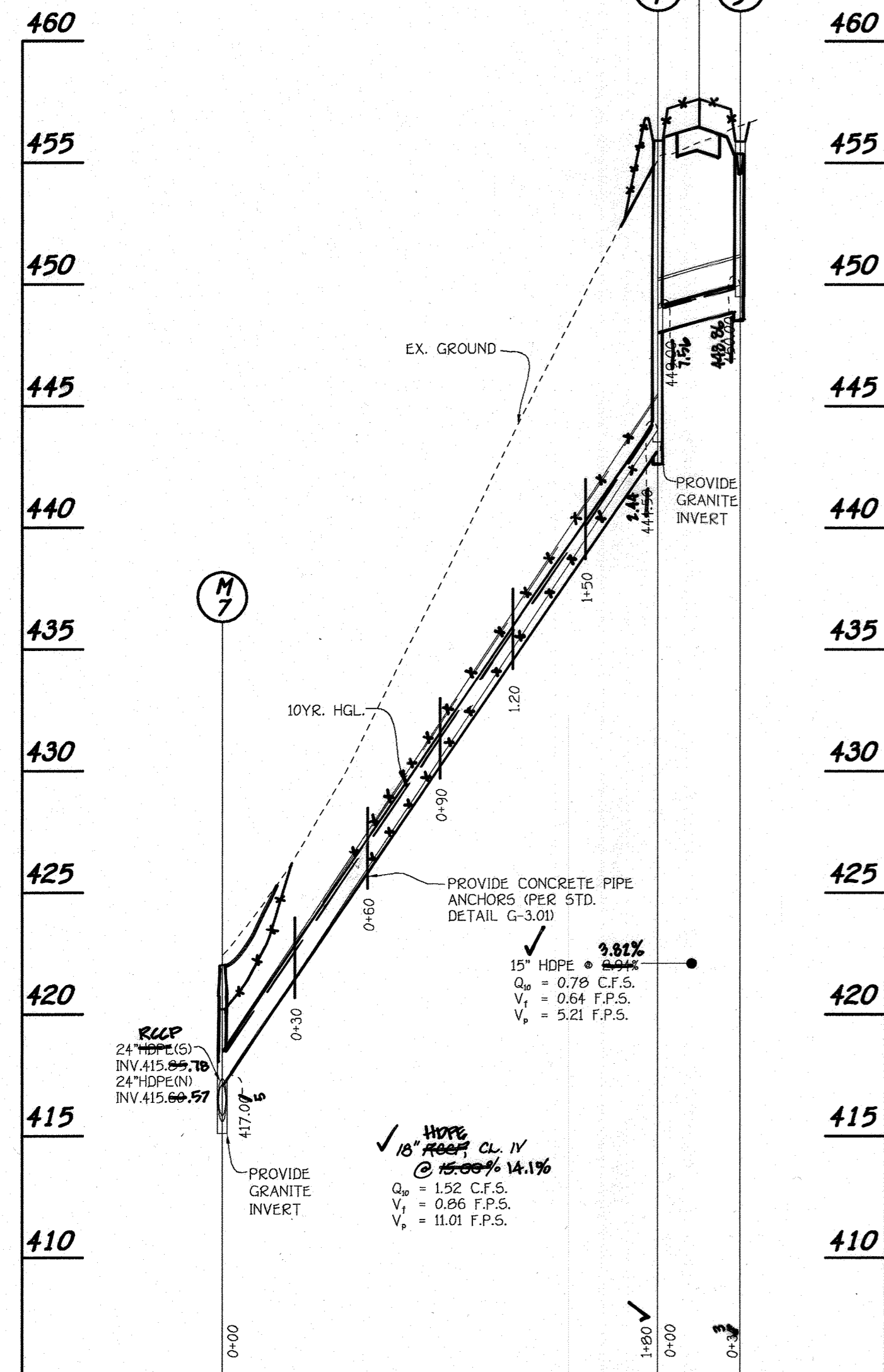
**OPERATION & MAINTENANCE SCHEDULE FOR DRYWELLS (M-5)**

A. THE OWNER SHALL INSPECT MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY RAIN EVENT.  
B. THE OWNER SHALL RECORD THE WATER LEVELS AND REPAIRS BUILT UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH PROTECTION.  
C. THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE DATE AT WHICH THE FACILITY DRAINS.  
D. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN WITHIN A SEVENTY TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.  
E. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION & MAINTENANCE CRITERIA.  
F. ONCE THE PERFORMANCE CHARACTERISTICS ON THE INFILTRATION FACILITY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION & MAINTENANCE CRITERIA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.



**STORMWATER MANAGEMENT PRACTICES**

| LOT | ADDRESS                | DRYWELLS (M-5) Y/N NUMBER | ROOFTOP DISCONNECT (N-1) Y/N NUMBER | NON-ROOFTOP DISCONNECT (N-2) Y/N NUMBER | MICRO BIO (M-3) Y/N NUMBER |
|-----|------------------------|---------------------------|-------------------------------------|---|----------------------------|
| 1   | 15445 RIVERCREST COURT | Y (3)                     | N                                   | Y (2)                                   | N                          |
| 2   | 15441 RIVERCREST COURT | N                         | N                                   | N                                       | Y (1)                      |
| 4   | 15439 RIVERCREST COURT | Y (3)                     | N                                   | N                                       | Y (1)                      |
| 5   | 15427 RIVERCREST COURT | Y (4)                     | N                                   | N                                       | Y (1)                      |

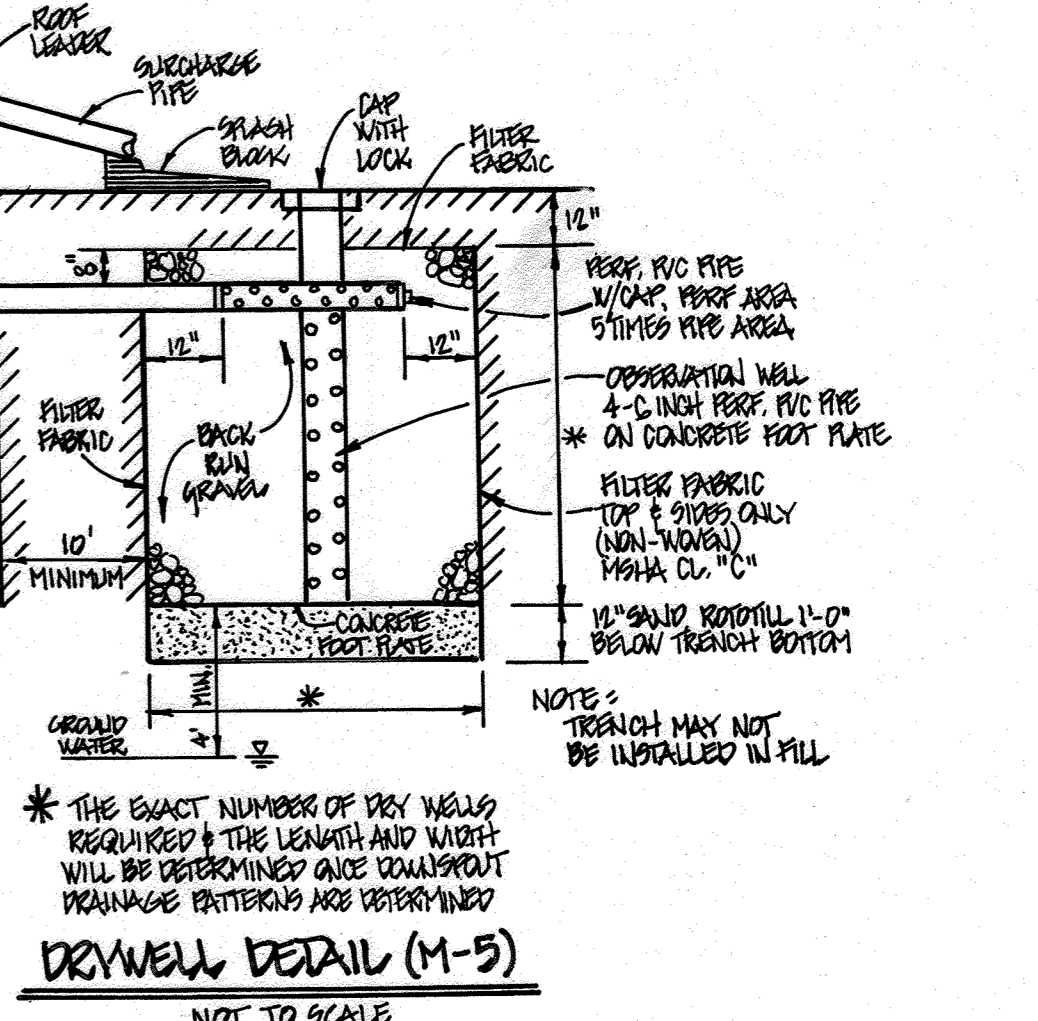
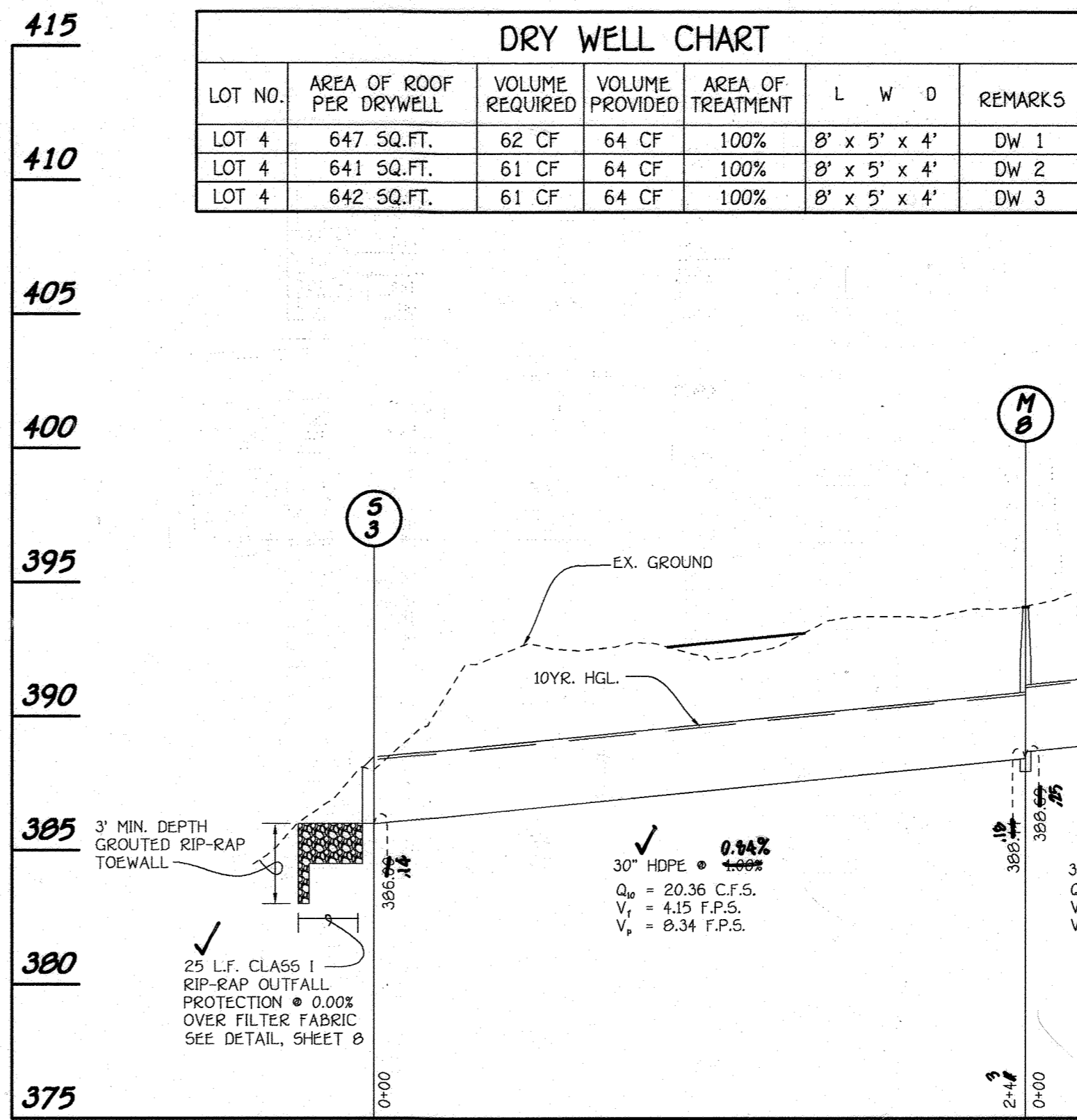


**STORMWATER MANAGEMENT INFORMATION (LOT 3)**

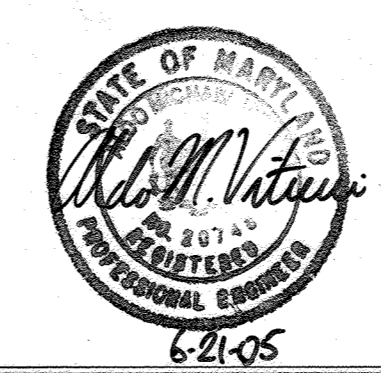
| AREA ID | DRAINAGE AREA | % IMPERVIOUS | ESD REQUIRED CUFT. | ESD PROVIDED CUFT. | REV REQUIRED CUFT. | REV PROVIDED CUFT. | Pe REQUIRED IN. | Pe PROVIDED IN. |
|---------|---------------|--------------|--------------------|--------------------|--------------------|--------------------|-----------------|-----------------|
| M-5(1)  | 434           | 100%         | 36                 | 36                 | 36                 | 36                 |                 |                 |
| M-5(2)  | 484           | 100%         | 64                 | 64                 | 64                 | 64                 |                 |                 |
| M-5(3)  | 431           | 100%         | 64                 | 64                 | 64                 | 64                 |                 |                 |
| M-5(4)  | 700           | 100%         | 96                 | 96                 | 96                 | 96                 |                 |                 |
| M-5(1)  | 19,728        | 12%          | 534                | 534                | 87                 | 87                 | 1.2             | 1.65            |
| TOTAL   |               |              | 600                | 806                | 127                | 407                |                 |                 |

**DRY WELL CHART**

| LOT NO. | AREA OF ROOF PER DRYWELL | VOLUME REQUIRED | VOLUME PROVIDED | AREA OF TREATMENT | L x W x D    | REMARKS |
|---------|--------------------------|-----------------|-----------------|-------------------|--------------|---------|
| LOT 3   | 734 SQ.FT.               | 58 CF           | 96 CF           | 100%              | 8' x 5' x 5' | DW 1    |
| LOT 3   | 464 SQ.FT.               | 37 CF           | 64 CF           | 100%              | 8' x 5' x 4' | DW 2    |
| LOT 3   | 431 SQ.FT.               | 34 CF           | 64 CF           | 100%              | 8' x 5' x 4' | DW 3    |
| LOT 3   | 700 SQ.FT.               | 55 CF           | 96 CF           | 100%              | 8' x 5' x 5' | DW 4    |



\* THE EXACT NUMBER OF DRY WELLS REQUIRED & THE LENGTH AND WIDTH WILL BE DETERMINED ONCE CALIBRATED DRAINAGE PATTERNS ARE OBTAINED



**AS-BUILT CERTIFICATION**

I hereby certify that the facilities shown on this plan were constructed as shown on the approved plans and specifications.

*Robert M. Vitous*  
Professional Engineer  
No. 1474  
Date: 6-21-05

APPROVED: DEPARTMENT OF PUBLIC WORKS  
Walter Z. ... 12-21-05  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Cindy ... 1/4/06  
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
... 12/28/05  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

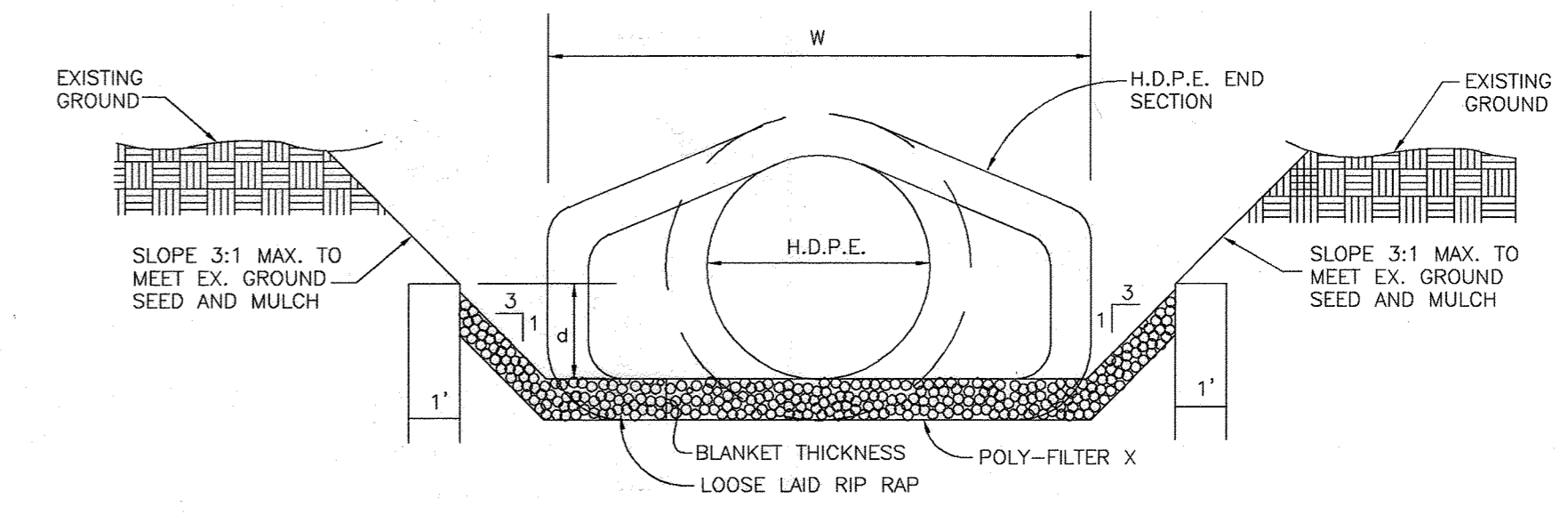
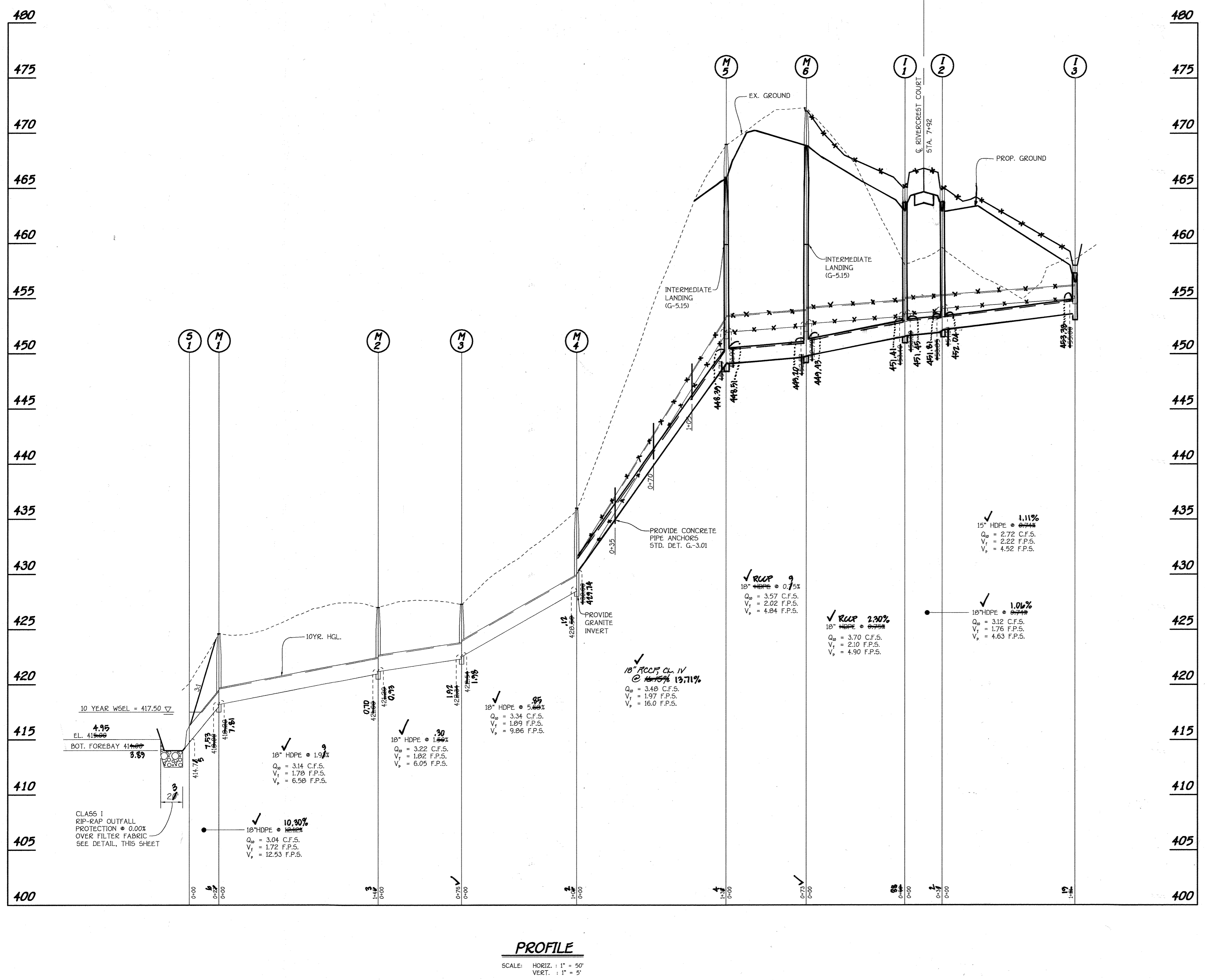
**REVISIONS**

| NO. | DESCRIPTION                                  | DATE    |
|-----|--|---------|
| 1   | ADD SHM NOTES & DETAILS                      | 2/8/06  |
| 2   | ADD SHM PRACTICES FOR LOT 2                  | 4/19/06 |
| 3   | ADD SHM PRACTICES & DRY WELL CHART FOR LOT 4 | 6/17/06 |
| 4   | ADD SHM PRACTICES & DRY WELL CHART FOR LOT 3 | 1/12/13 |

**STORM DRAIN PROFILES RIVERCREST**  
LOTS 1 THRU 10, BUILDABLE PRESERVATION PARCEL 'A', PRESERVATION PARCEL 'B' & 'C' AND NON-BUILDABLE BULK PARCEL 'D'  
(A RESUBDIVISION OF LOT 1, "BUICE PROPERTY", PLAT Nos. 5426-5429)  
ZONED RC-DO  
TAX MAP NO. 21 GRID NO. 20 PARCEL NO. 84  
FOURTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
DATE: JUNE 22, 2005  
SHEET 7 OF 14

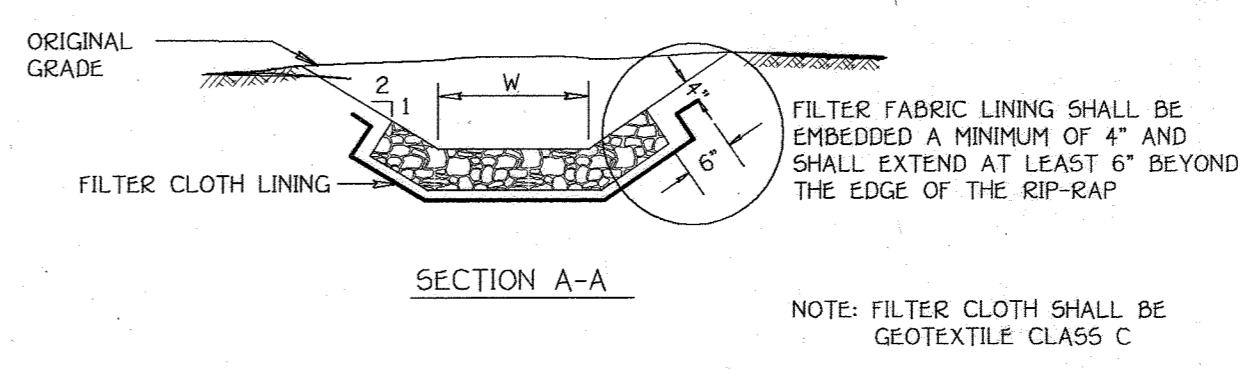
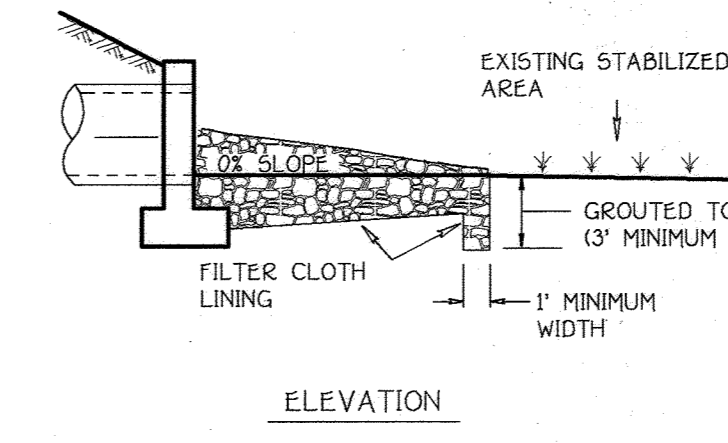
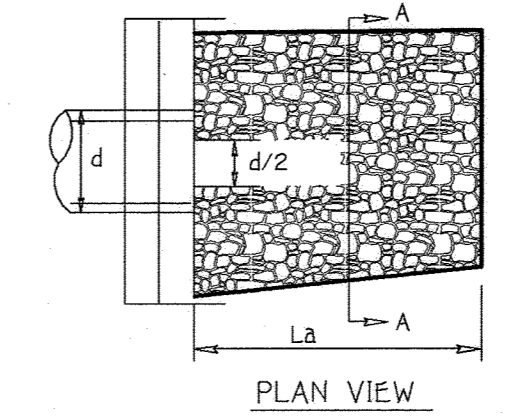
APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William Z. Walsh Jr.* 12-21-05  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hamata* 1/4/06  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*Stefan* 12/2/05  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

| REVISIONS |             |      |
|-----------|-------------|------|
| NO.       | DESCRIPTION | DATE |
|           |             |      |
|           |             |      |
|           |             |      |



RIP RAP CHANNEL DETAIL 'A-A'  
 NO SCALE

| RIP-RAP CHANNEL DESIGN DATA |            |                  |         |        |        |        |      |       |      |            |            |              |                   |                 |      |
|-----------------------------|------------|------------------|---------|--------|--------|--------|------|-------|------|------------|------------|--------------|-------------------|-----------------|------|
| STRUCTURE                   | AREA       | WETTED PERIMETER | R       | R 2/3  | S      | S 1/2  | W    | d     | N    | V (F.P.S.) | Q (C.F.S.) | RIP-RAP SIZE | BLANKET THICKNESS | Q <sub>10</sub> | DIA. |
| S-1                         | 2.44 S.F.  | 7.50'            | 0.3253' | 0.4730 | 0.0050 | 0.0707 | 3.0' | 0.40' | 0.04 | 1.24       | 3.04       | 9.5" 15"     | 19"               | 3.04            | 18"  |
| S-2                         | 5.38 S.F.  | 9.71'            | 0.5541' | 0.6746 | 0.0050 | 0.0707 | 4.0' | 0.74' | 0.04 | 1.77       | 9.54       | 9.5" 15"     | 19"               | 9.54            | 24"  |
| S-3                         | 14.84 S.F. | 14.75'           | 1.0061' | 1.0041 | 0.0050 | 0.0707 | 6.0' | 1.54' | 0.04 | 2.64       | 39.13      | 9.5" 15"     | 19"               | 39.13           | 30"  |



ROCK OUTLET PROTECTION III  
 NO SCALE

- Construction Specifications
- The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
  - The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
  - Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
  - Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
  - The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

PROFILE  
 SCALE: HORIZ. : 1" = 50'  
 VERT. : 1" = 5'



AS-BUILT CERTIFICATION  
 I hereby certify that the facilities shown on this plan were constructed as shown on this plan and in accordance with approved plans and specifications.  
*Robert Preston Buice*  
 PROFESSIONAL ENGINEER  
 LICENSE NO. 20749  
 DATE: 6/21/05



# 200 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

Using vegetation as cover for barren soil to protect it from forces that cause erosion. DEFINITION: Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas, and improving wildlife habitat and visual resources.

VEGETATIVE STABILIZATION METHODS AND MATERIALS 1. Site Preparation: Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.

SEED MIXTURES - Temporary Seeding: 1. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardness Zone from Figure 50 and enter them in the Temporary Seeding Summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed, then Table 26 must be put on the plans.

## SECTION 2 - TEMPORARY SEEDING

Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

Table 26: Seed Mixture (Hardness Zone) and Fertilizer Rate. Columns include No., Species, Application Rate (lb/a/c), Seeding Dates, Seeding Depth, Fertilizer Rate (lb/20-20-10), and Lime Rate (lb/1000 sq ft).

## SECTION 3 - PERMANENT SEEDING

Seeding grass and legumes to establish group cover for a minimum of one year on disturbed areas generally receiving low maintenance.

- 1. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardness Zone from Figure 50 and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 25. If this summary is not put on the plans and completed, then Table 25 must be put on the plans.

Table 25: Seed Mixture (Hardness Zone) and Fertilizer Rate. Columns include No., Species, Application Rate (lb/a/c), Seeding Dates, Seeding Depth, N, P205, K2O, and Lime Rate.

## SEEDING CONTROL NOTES

- 1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (316-1055).
- 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THEREOF.

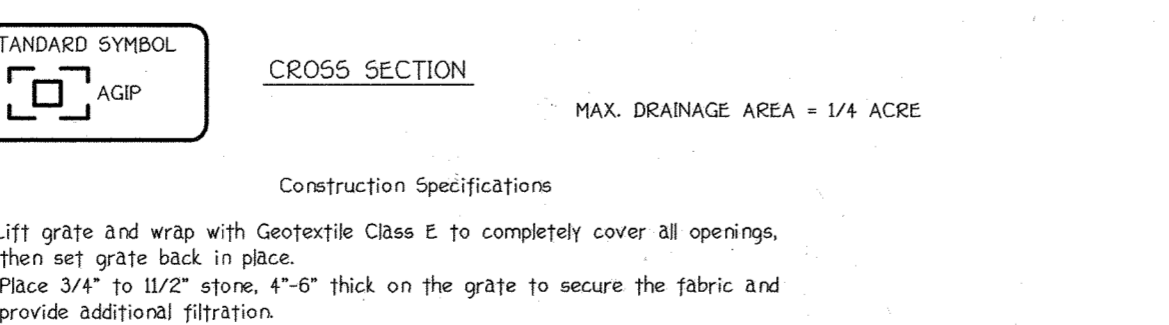
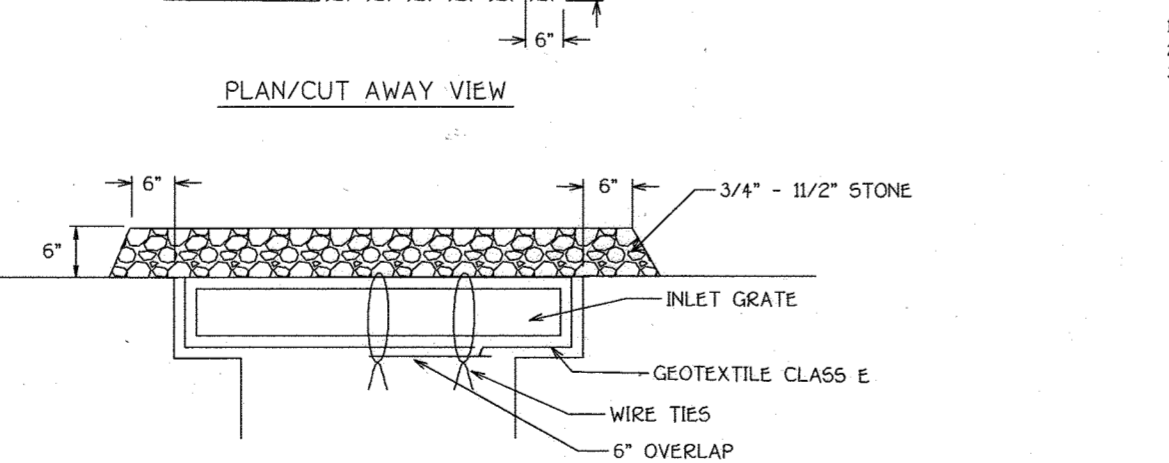
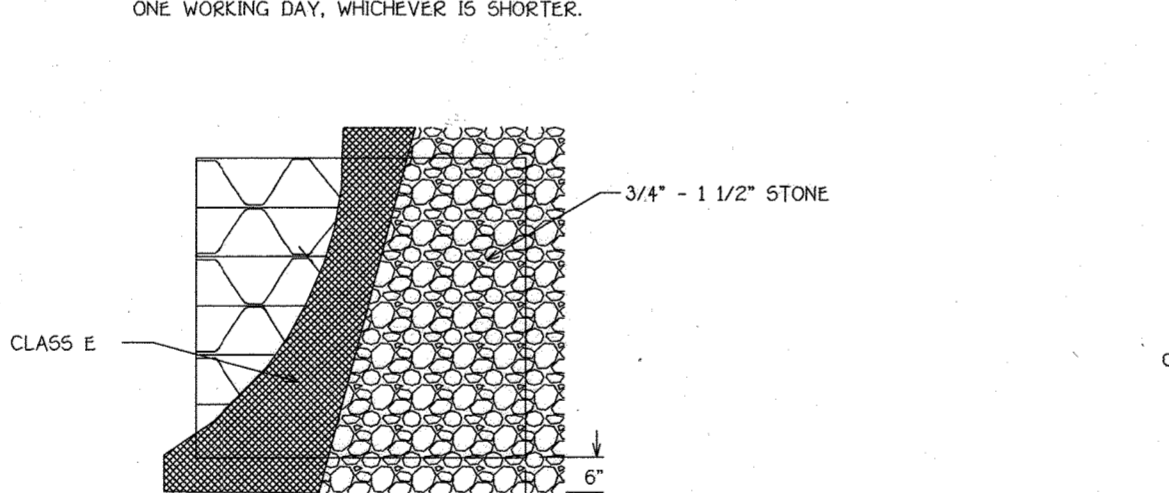


Table with 4 columns: No., Revised L.O.P. in Seeding Control Notes, Date, and Revision. Rows 1-4 show updates to seeding control notes and dates.

# STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition: Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

- 1. This practice is limited to areas having 20% or flatter slopes where: a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
- 2. For sites having disturbed areas under 5 acres: a. Place topsoil (if required) and apply soil amendments as specified in 200 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

- 3. For sites having disturbed areas over 5 acres: a. Place topsoil (if required) and apply soil amendments as specified in 200 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- 4. For sites having disturbed areas over 5 acres: a. Place topsoil (if required) and apply soil amendments as specified in 200 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

- 5. For sites having disturbed areas over 5 acres: a. Place topsoil (if required) and apply soil amendments as specified in 200 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- 6. For sites having disturbed areas over 5 acres: a. Place topsoil (if required) and apply soil amendments as specified in 200 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

- 7. For sites having disturbed areas over 5 acres: a. Place topsoil (if required) and apply soil amendments as specified in 200 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- 8. For sites having disturbed areas over 5 acres: a. Place topsoil (if required) and apply soil amendments as specified in 200 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

- 9. For sites having disturbed areas over 5 acres: a. Place topsoil (if required) and apply soil amendments as specified in 200 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- 10. For sites having disturbed areas over 5 acres: a. Place topsoil (if required) and apply soil amendments as specified in 200 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

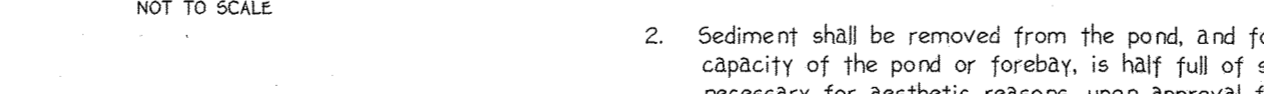
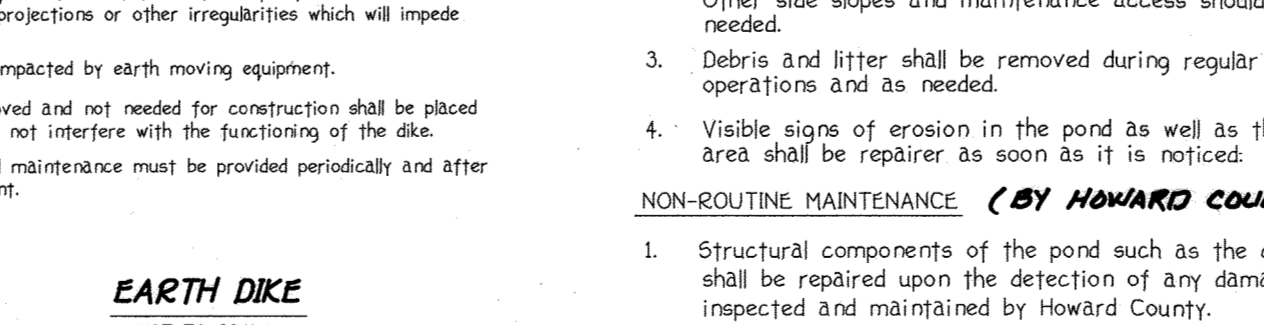
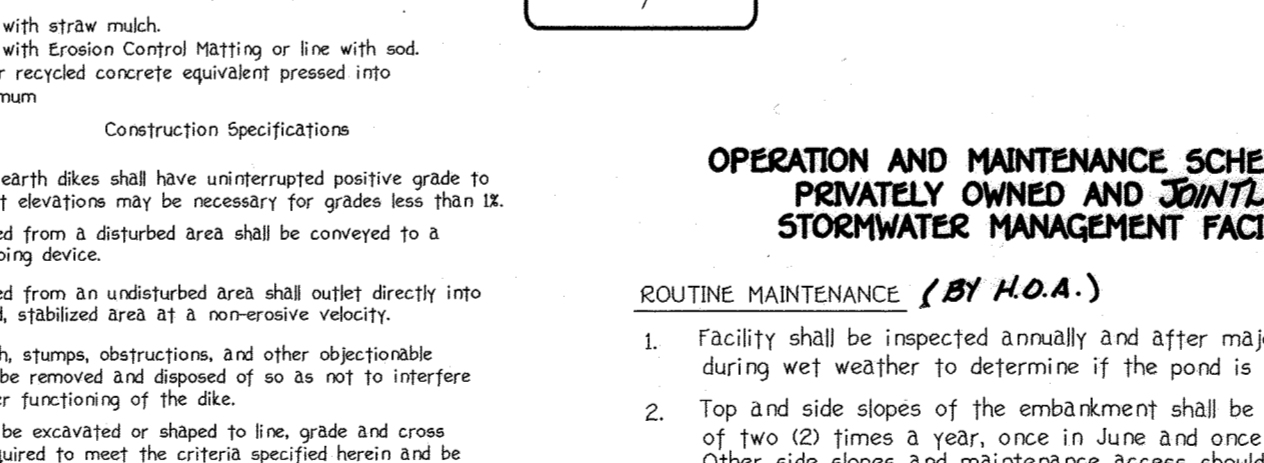
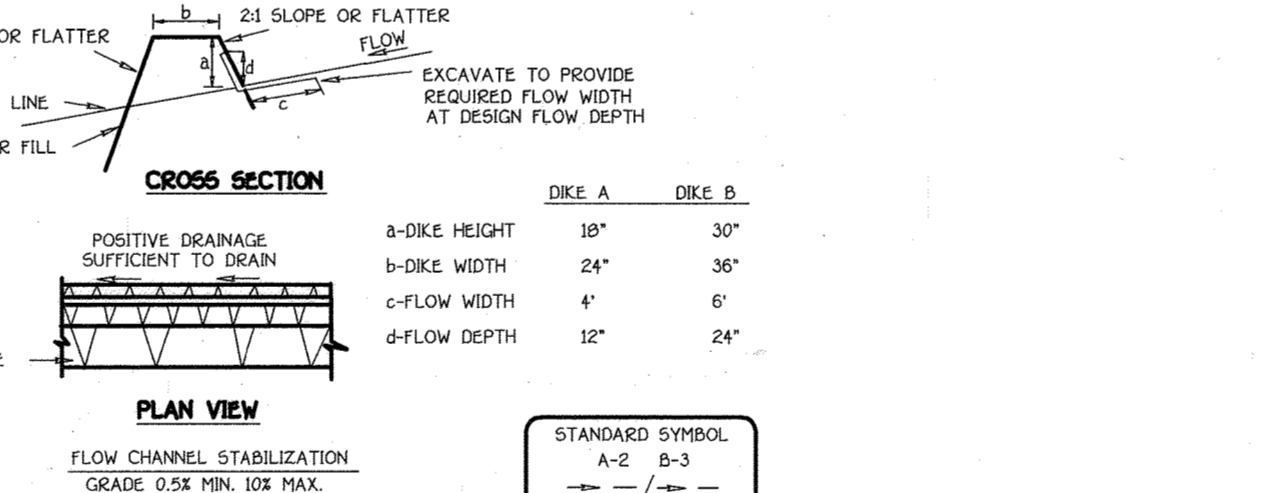
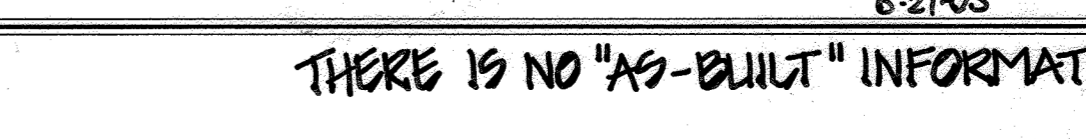
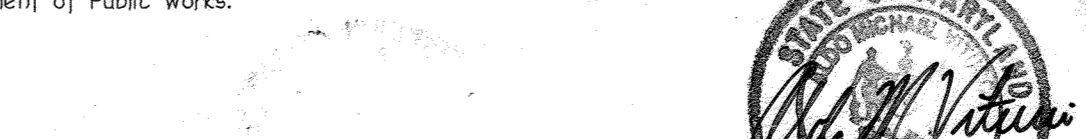
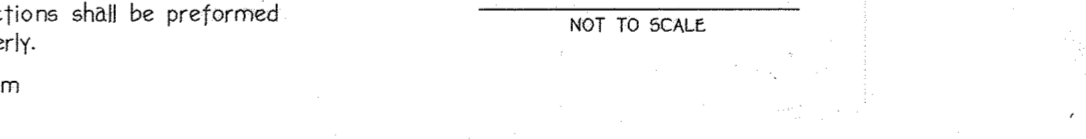
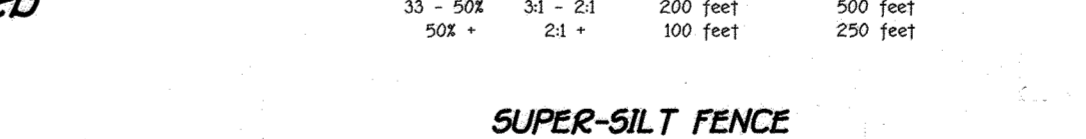
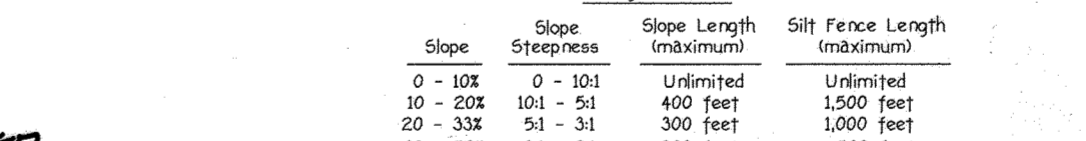
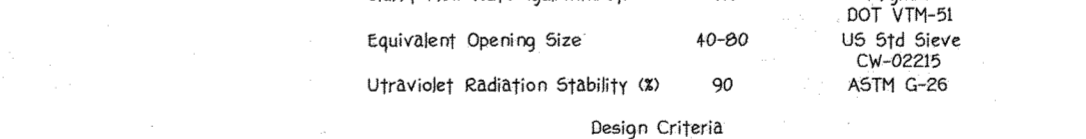
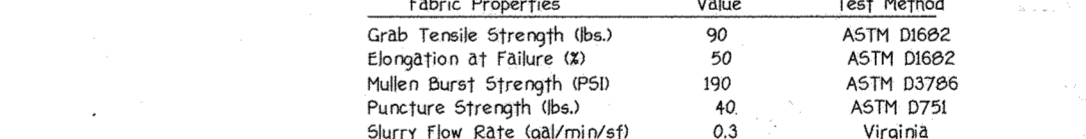
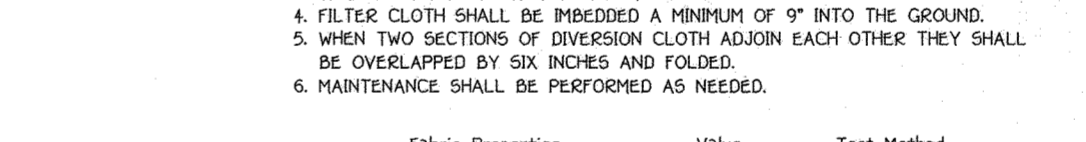
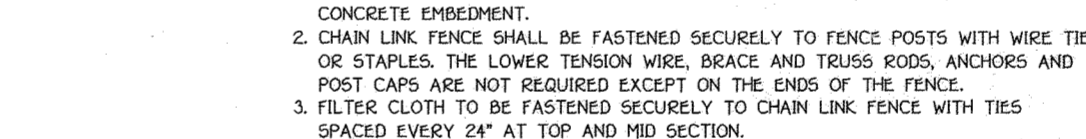
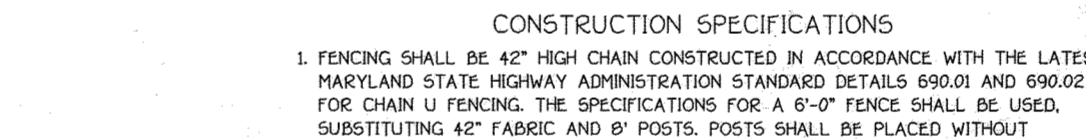
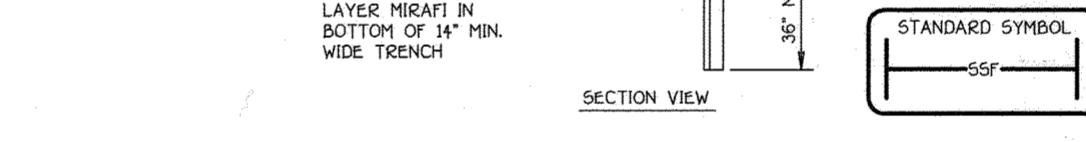
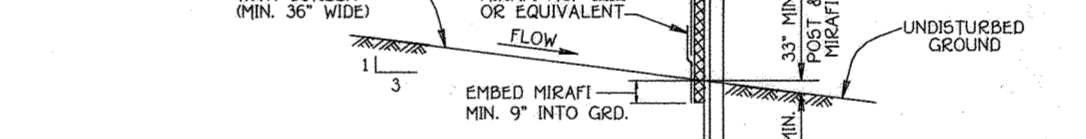
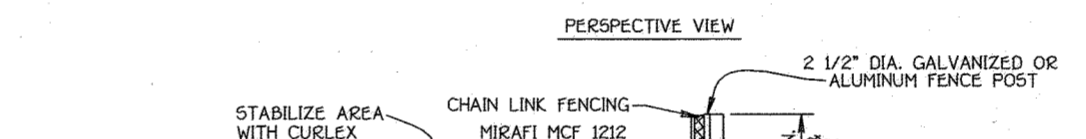
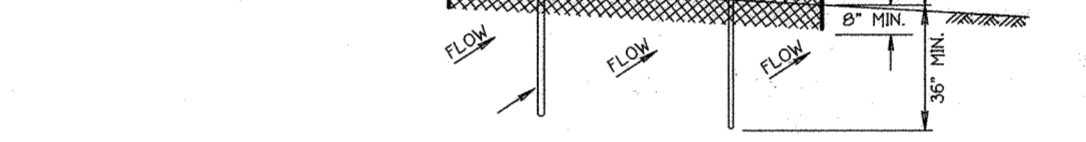
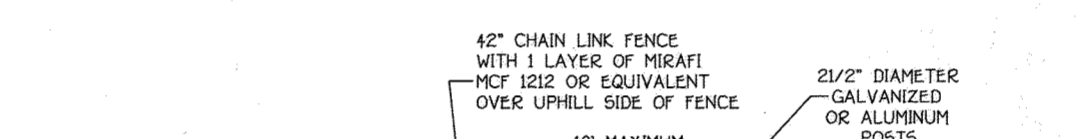
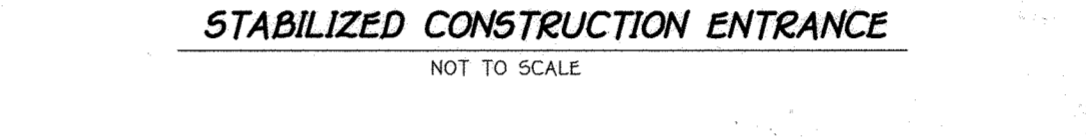
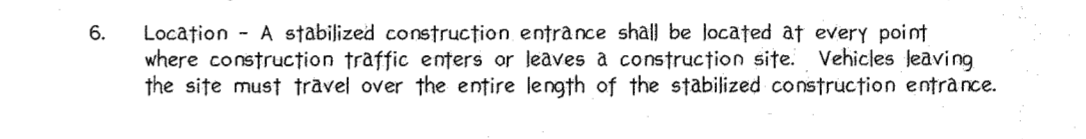
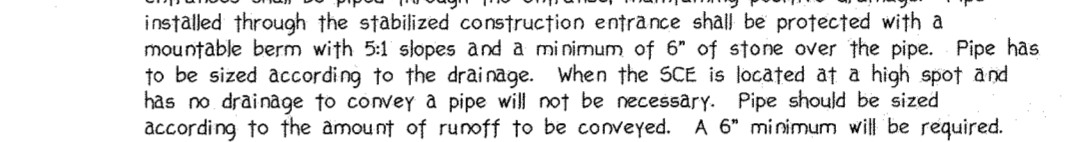
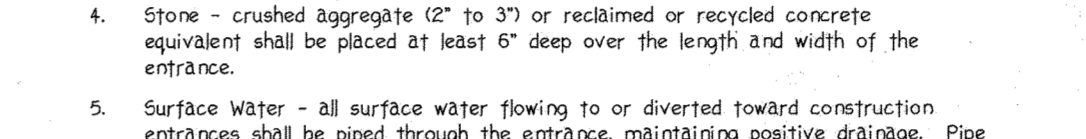
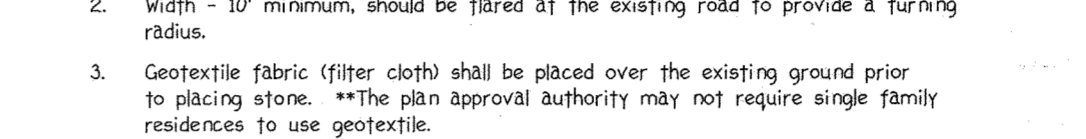
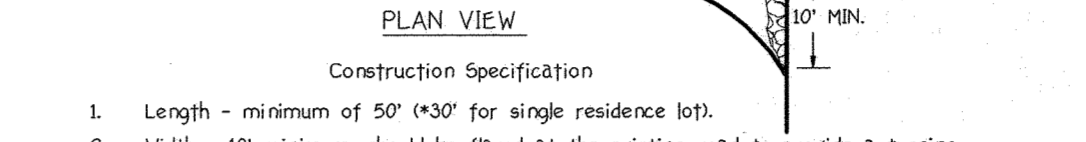
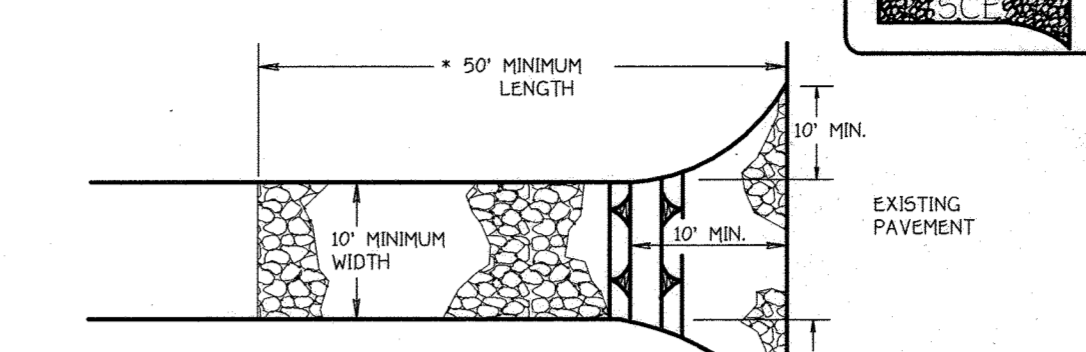
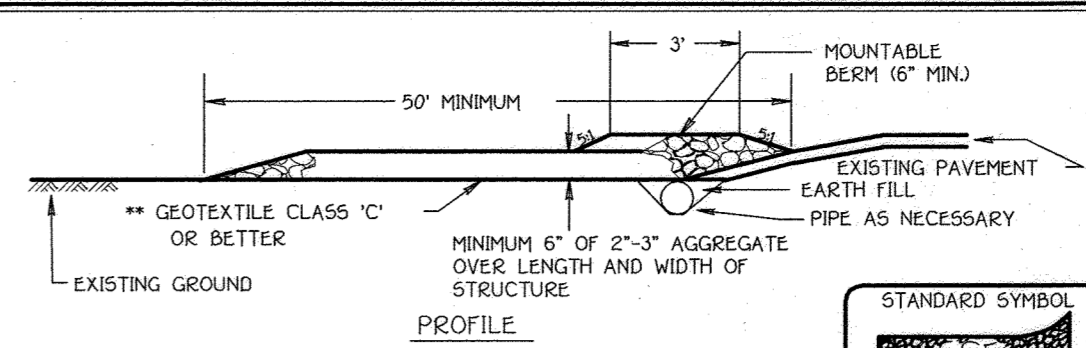
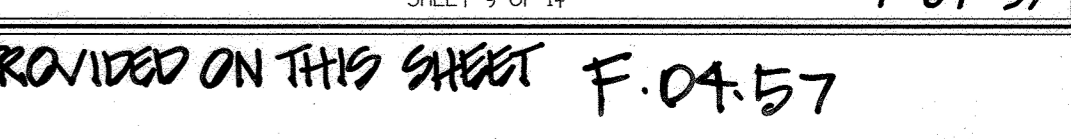
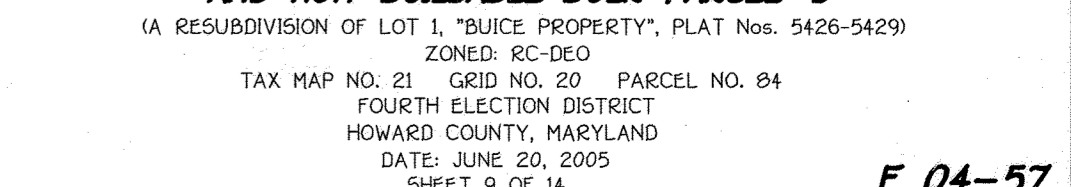
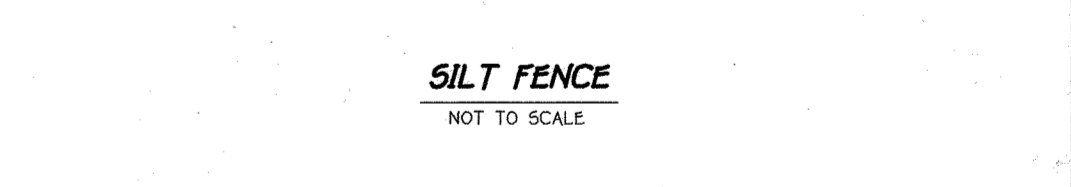
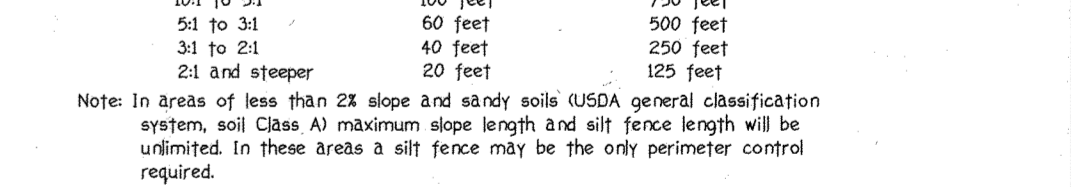
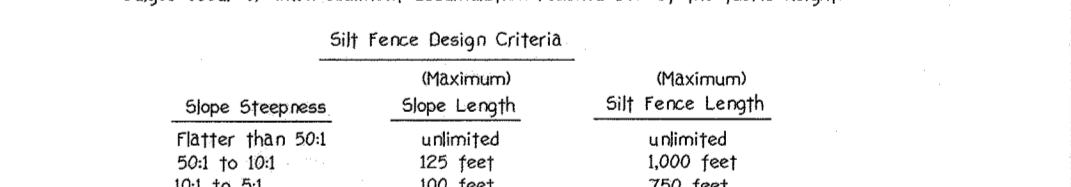
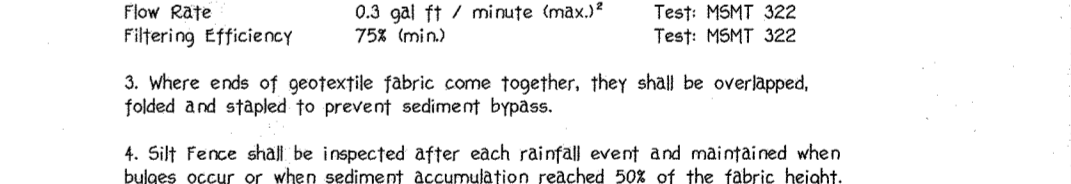
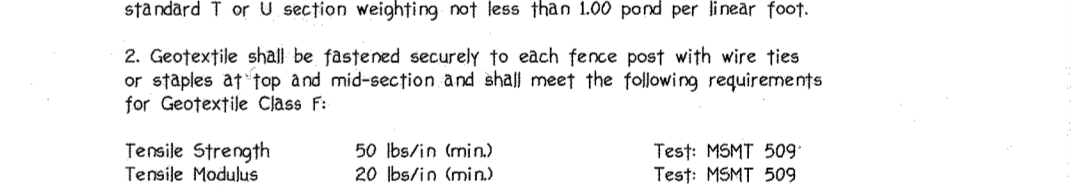
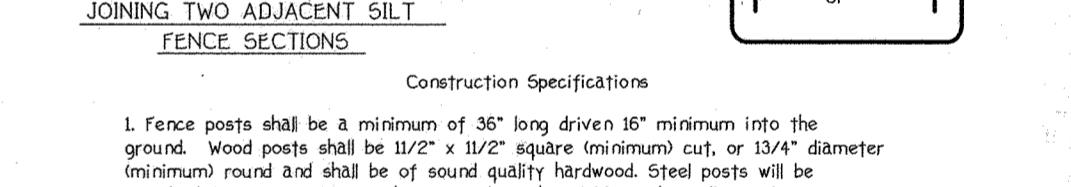
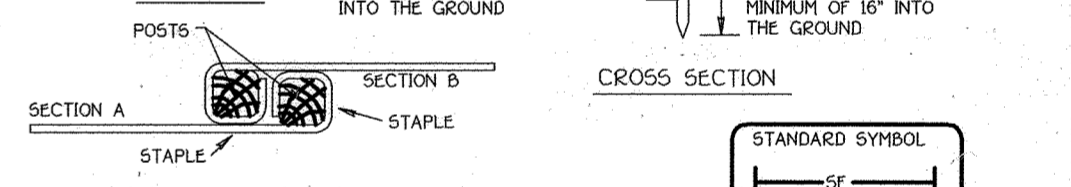
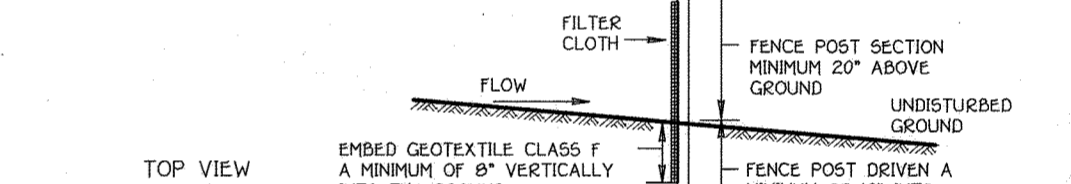
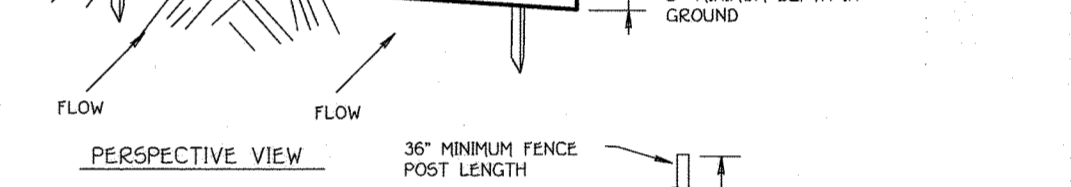
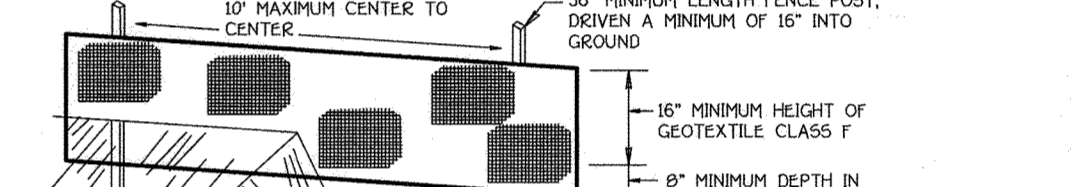
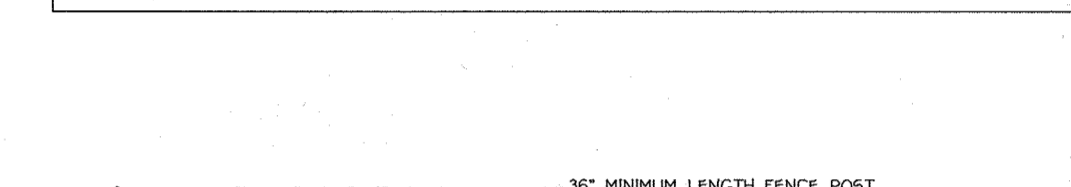


Table with 4 columns: No., Revised L.O.P. in Seeding Control Notes, Date, and Revision. Rows 1-4 show updates to seeding control notes and dates.



ENGINEER'S CERTIFICATE: I have prepared this Plan For Erosion And Sediment Control... DEVELOPER'S CERTIFICATE: I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project.



FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTRAL SQUARE OFFICE PARK - 1877 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042

OWNER: Mr. Robert Preston Buice 21400 New Hampshire Avenue Brookeville, Maryland 20833 DEVELOPER: Rivercrest, LLC 21400 New Hampshire Avenue Brookeville, Maryland 20833

SEDIMENT AND EROSION CONTROL NOTES AND DETAILS RIVERCREST LOTS 1 THRU 10, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCEL 'B' & 'C' AND NON-BUILDABLE BULK PARCEL 'D' (A RESUBDIVISION OF LOT 1, "ZONED PROPERTY," PLAT NOS. 5426-9429)

ASPHALT CERTIFICATION: Note: This information provided by the contractor is not to be used for anything other than the purpose for which it was provided.

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F.04.57

# STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-37B. All references to ASTM and AASHTO specifications apply to the most recent version.

## Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

## EARTH FILL

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification Group, SC, CH, CL, or CL, and must have at least 30% passing the #20 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8-inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture so that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within +2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cut Off Trench - The cutoff trench shall be excavated into impervious material, along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

## Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and shall be placed by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (the flowable fill zone shall be of the type and quality conforming to the specified for the core of the embankment or other embankment materials).

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi, 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be over bedding, over and on the sides of the pipe. If any pipe needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (the flowable fill zone shall be of the type and quality conforming to the specified for the core of the embankment or other embankment materials).

## Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

1. Materials - Polymer Coated steel pipe - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

Materials - Aluminum Coated Steel Pipe - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials - Aluminum Pipe - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following pipe connections are acceptable for pipes less than 24-inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lip type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide lugger type band with 3/8-inch thick closed cell circular neoprene gasket. Pipes 24-inches in diameter and larger shall be connected by a 24-inch long annular corrugated band using a minimum of 4 (four) rods and nuts, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12-inches on the end of each pipe. Flanged joints with 3/8-inch closed cell gaskets the full width of the flange is also acceptable.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill".

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

## Plastic Pipe

The following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirement of AASHTO M252 Type 5, and 12" through 24" inch shall meet the requirement of AASHTO M294 Type 5.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

## Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 411, Mix No. 3.

## Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

## Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water surps from which the water shall be pumped.

## Stabilization

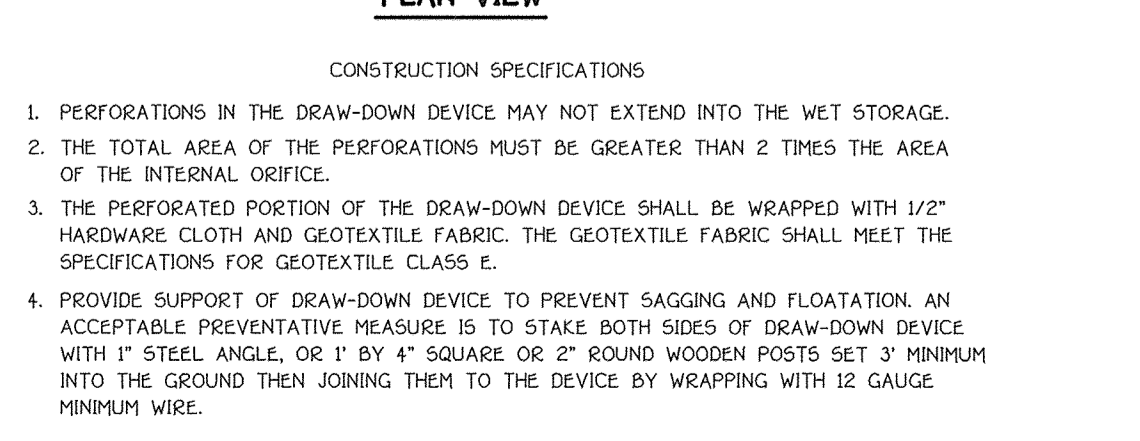
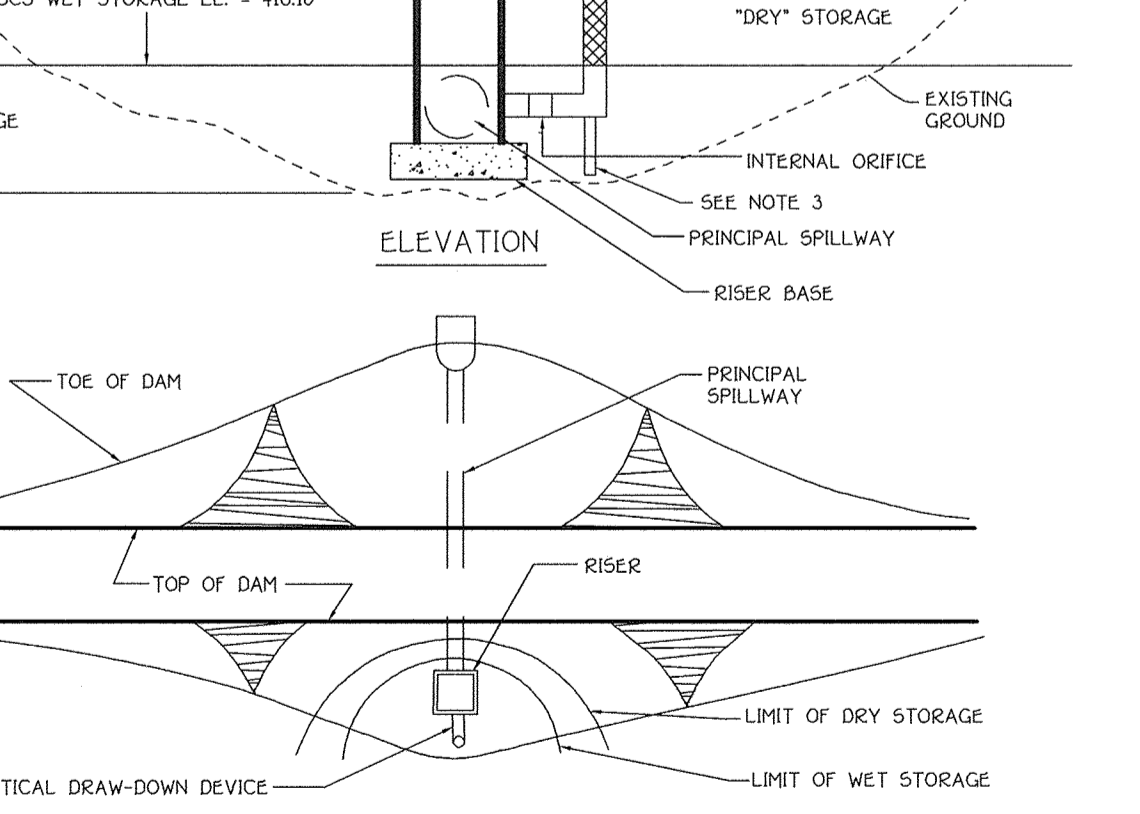
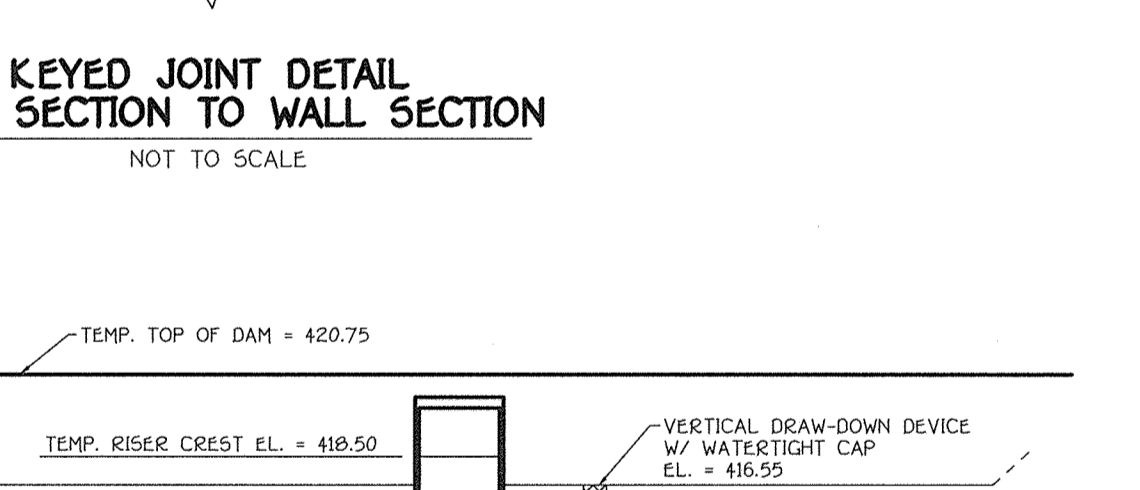
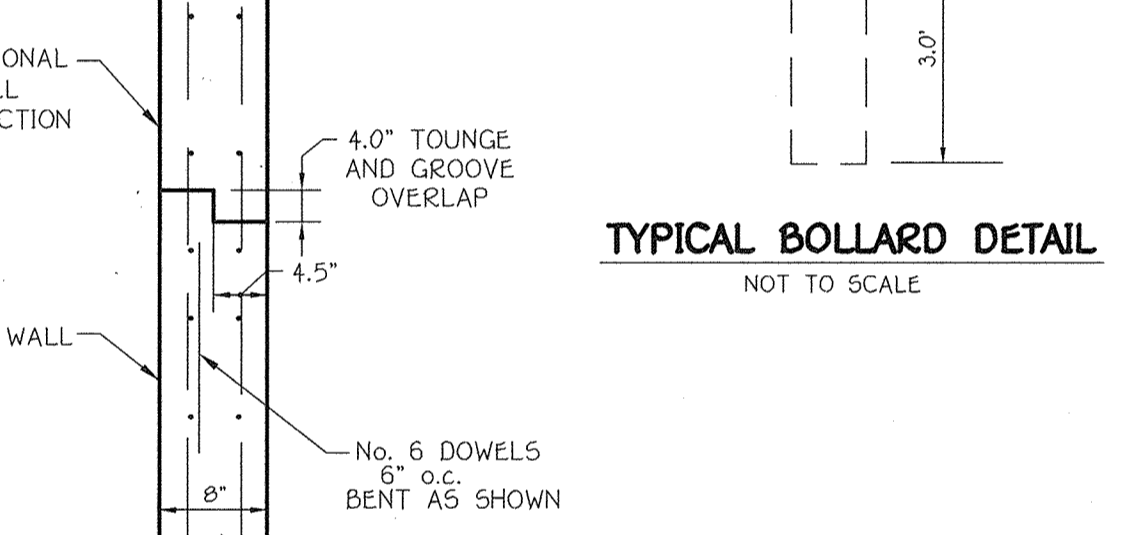
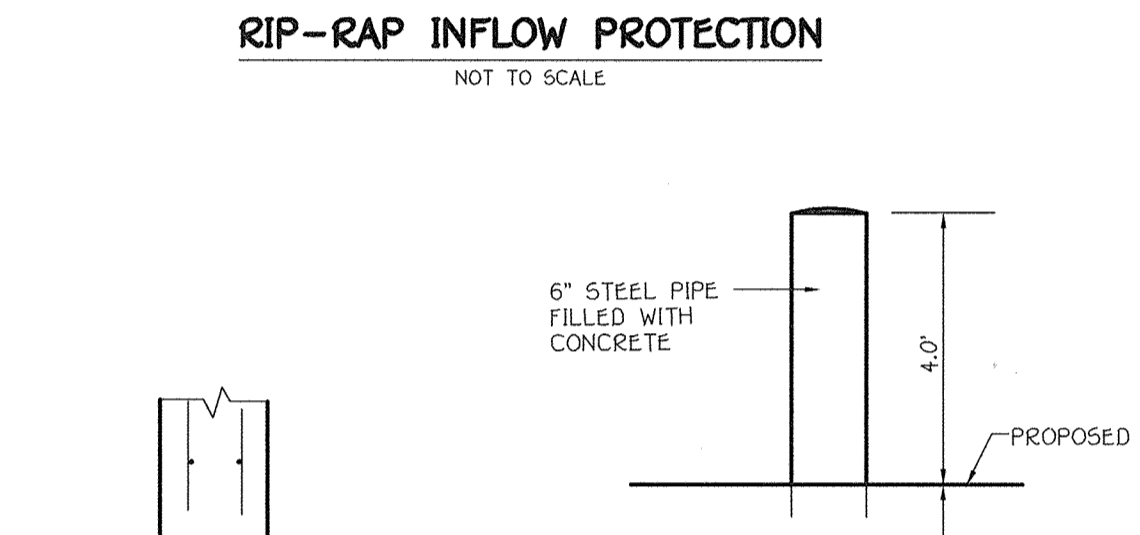
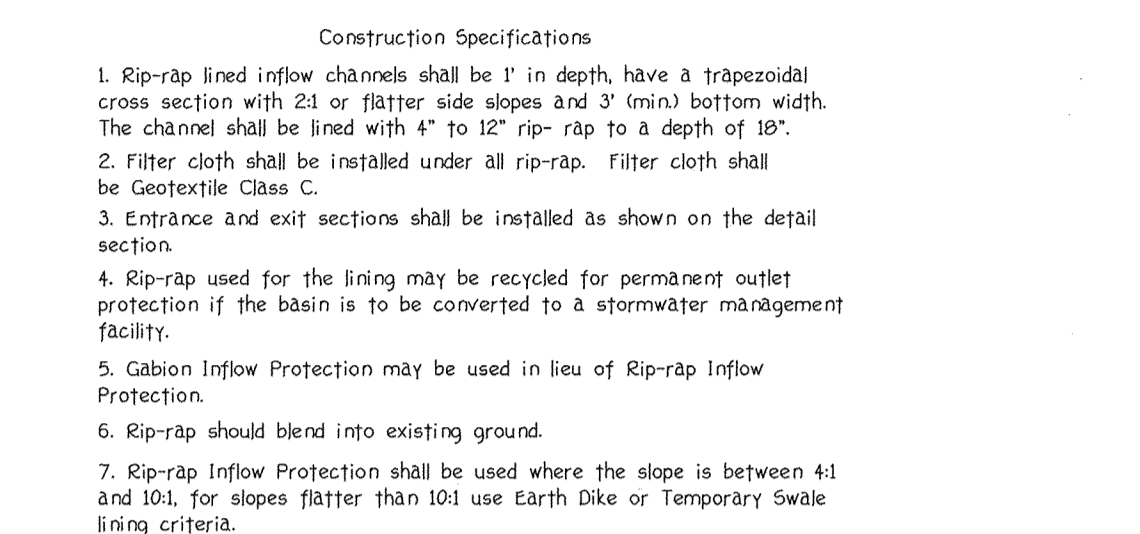
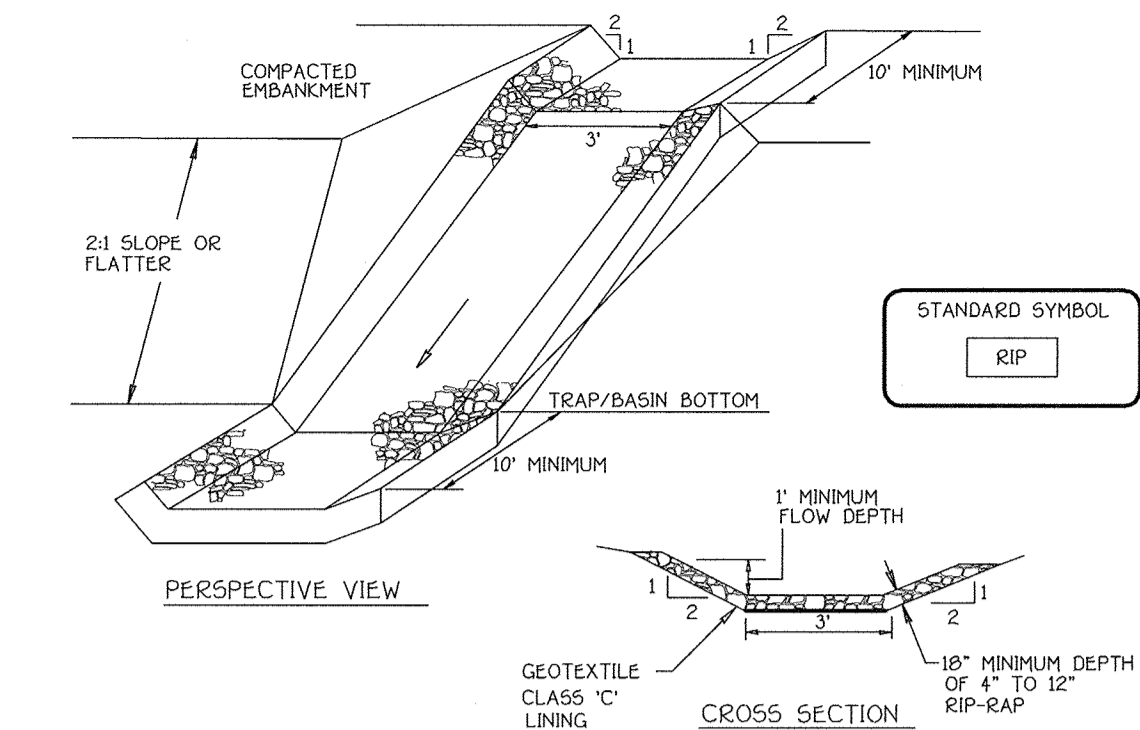
All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

## Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

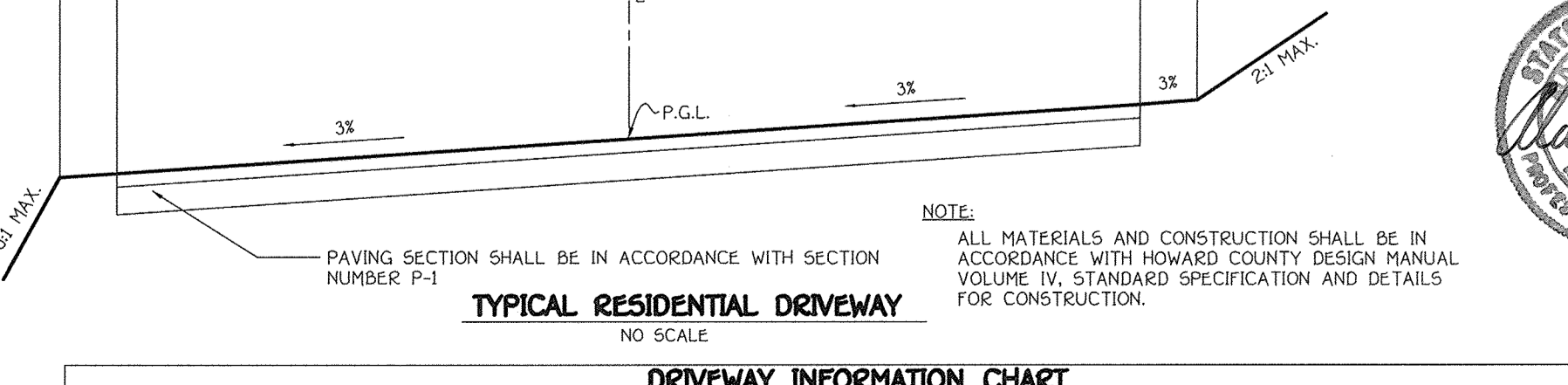
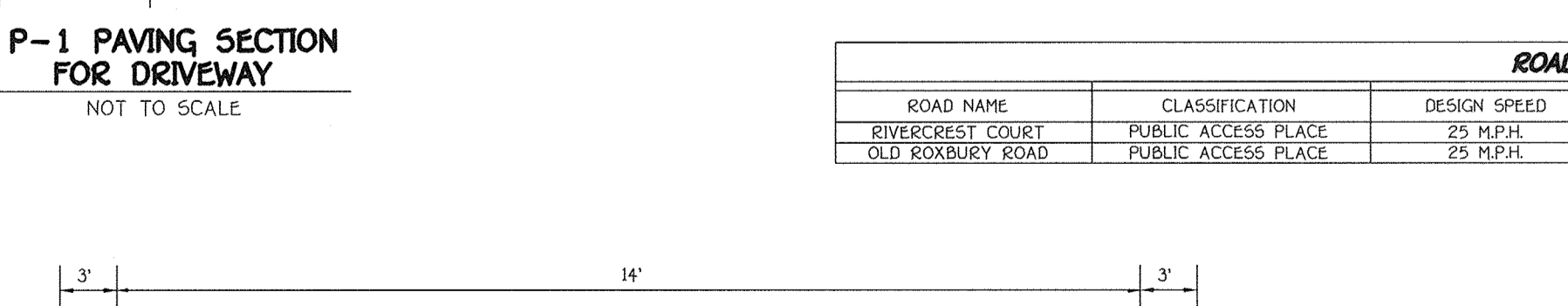
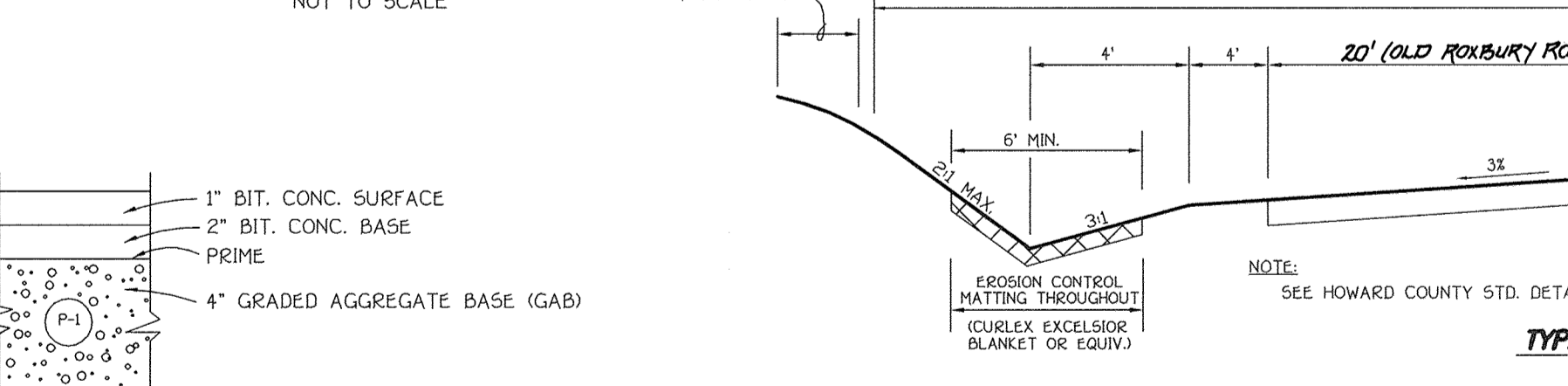
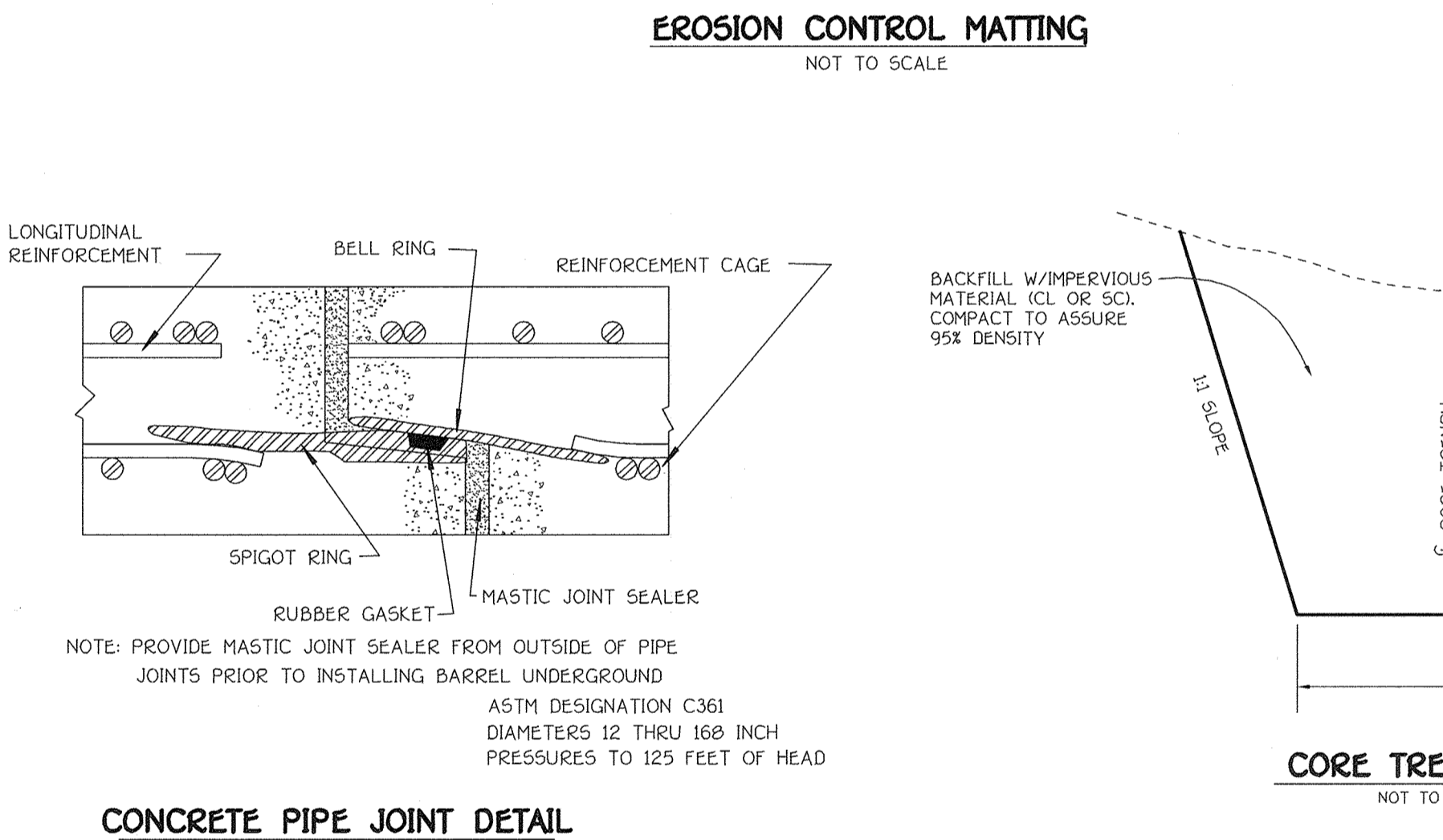
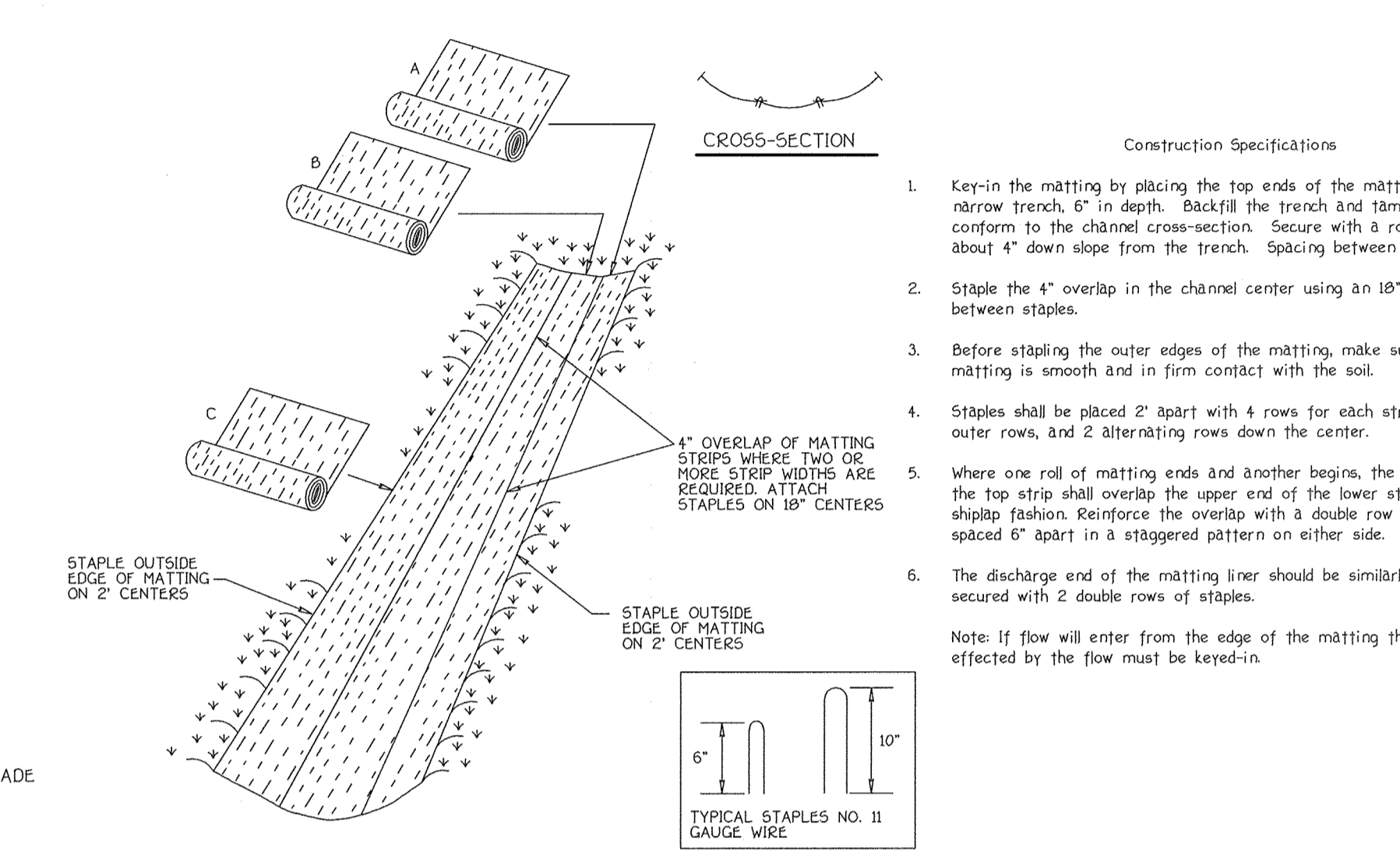
## OPERATION AND MAINTENANCE

An operation and maintenance plan in accordance with Local or State Regulations will be prepared for all ponds. As a minimum, the dam inspection checklist located in Appendix A shall be included as part of the operation and maintenance plan and performed at least annually. Written records of maintenance and major repairs needs to be retained in a file. The issuance of a Maintenance and Repair permit for any repairs or maintenance that involves the modification of the dam or spillway from its original design and specifications is required. A permit is also required for any repairs or reconstruction that involve a substantial portion of the structure. All indicated repairs are to be made as soon as practical.



## Embankment and Cut-off Trench Construction

THE AREA OF THE PROPOSED SWM POND SHOULD BE STRIPPED OF TOPSOIL AND OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFROLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRASSES RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL. A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATION 37B SOILS CONSIDERED SUITABLE FOR THE CENTER OF THE EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GROUP, SC, CH, OR CL. IT IS OUR PROFESSIONAL OPINION THAT IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE A FINE GRAINED SOIL, INCLUDING SILT (ML) WITH A PLASTICITY INDEX OF 10 OR MORE CAN BE UTILIZED FOR THE CENTER OF THE EMBANKMENT AND CORE TRENCH. BASED ON OUR VISUAL CLASSIFICATIONS IT APPEARS THAT SOME OF THE ON-SITE SOILS, ESPECIALLY THE NEAR SURFACE SOILS, WILL BE SUITABLE FOR USE AS CORE TRENCH MATERIAL. IT IS RECOMMENDED THAT ADDITIONAL EXPLORATION AND LABORATORY TESTING BE PERFORMED PRIOR TO POND CONSTRUCTION TO IDENTIFY AND QUANTIFY POTENTIAL BORROW AREAS FOR CORE TRENCH MATERIAL. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED WITH MD SC5 37B SPECIFICATIONS.



| ROAD NAME        | CLASSIFICATION      | DESIGN SPEED | ZONING | STATION LIMITS      | PAVING SECTION |
|------------------|---------------------|--------------|--------|---------------------|----------------|
| RIVERCREST COURT | PUBLIC ACCESS PLACE | 25 MPH       | RC-DEO | 0+00 TO 8+75.56     | P-2            |
| OLD ROXBURY ROAD | PUBLIC ACCESS PLACE | 25 MPH       | RC-DEO | 9+19.05 TO 12+14.00 | P-2            |

| ROAD NAME | CLASSIFICATION   | DESIGN SPEED | ZONING | STATION LIMITS | PAVING SECTION |
|-----------|------------------|--------------|--------|----------------|----------------|
| DRIVEWAY  | PRIVATE DRIVEWAY | 15 MPH       | RC-DEO | 0+00 TO 0+05   | P-1            |

By The Developer:  
 I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District.

Signature Of Developer: Robert P. Ruice  
 Date: 6/21/05

By The Engineer:  
 I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Reviewed The Plans And I Certify That The Plans Meet The Requirements Of The Howard Soil Conservation District. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion.

Signature Of Engineer: [Signature]  
 Date: 6-21-05

Printed Name Of Developer: [Name]  
 Date: 6-21-05

Printed Name Of Engineer: [Name]  
 Date: 6-21-05

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

Signature: [Signature]  
 Date: 6/28/05

Signature: [Signature]  
 Date: 6/28/05

Signature: [Signature]  
 Date: 12-21-05

Signature: [Signature]  
 Date: 1/4/06

Signature: [Signature]  
 Date: 12/20/05

Signature: [Signature]  
 Date: 1/4/06

Signature: [Signature]  
 Date: 12/20/05

Signature: [Signature]  
 Date: 12/20/05

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 Date: 12/20/05

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 Date: 12/20/05

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Signature: [Signature]  
 Date: 12/20/05

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PARK  
 ELKOTTS CITY, MARYLAND 21042  
 410-481-2955

OWNER  
 Mr. Robert Preston Ruice  
 21400 New Hampshire Avenue  
 Brooksville, Maryland 21033

DEVELOPER  
 Rivercrest, LLC  
 21400 New Hampshire Avenue  
 Brooksville, Maryland 21033

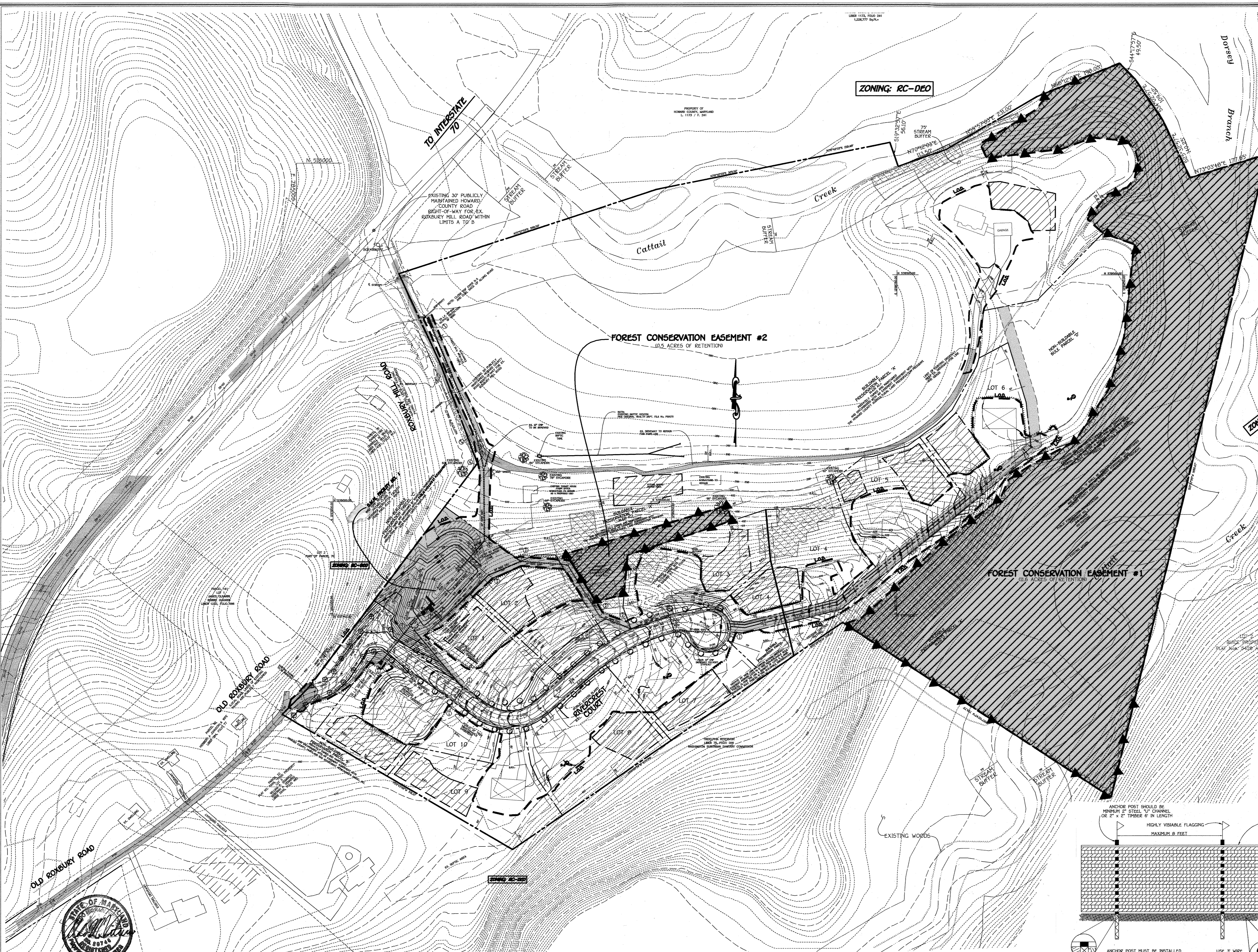
CONSTRUCTION SPECIFICATIONS

1. PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.  
 2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 2 TIMES THE AREA OF THE INTERNAL ORIFICE.  
 3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS C.  
 4. PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOATION. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF DRAW-DOWN DEVICE WITH 1" STEEL ANGLE OR 1" BY 4" SQUARE OR 2" ROUND WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 3/4 GAUGE MINIMUM WIRE.

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 [Signature]  
 6-21-05

STORMWATER MANAGEMENT NOTES AND DETAILS  
**RIVERCREST**  
 LOTS 1 THRU 10, BUILDABLE PRESERVATION PARCEL 'A',  
 NON-BUILDABLE PRESERVATION PARCEL 'B' & 'C',  
 AND NON-BUILDABLE BULK PARCEL 'D'  
 (A RESUBDIVISION OF LOT 1, 'BUICE PROPERTY', PLAT NOS. 5426-5429)  
 ZONED RC-DEO  
 TAX MAP NO. 21 GRID NO. 20 PARCEL NO. 84  
 FOURTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: JUNE 20, 2005  
 SHEET 10 OF 14





Approved Department Of Public Works  
 Chief Bureau Of Highways *W. Z. M. M.* Date 12-21-05

Approved Department Of Planning And Zoning  
 Chief, Division Of Land Development *Anda Hernandez* Date 1/9/06  
 Chief, Development Engineering Division *Shelton* Date 12/20/05

**ON-SITE SIGNAGE**

**FOREST CONSERVATION EASEMENT**

UNAUTHORIZED DISTURBANCE OF VEGETATION IS PROHIBITED. VIOLATORS SUBJECT TO PENALTIES UNDER THE HOWARD COUNTY FOREST CONSERVATION ACT OF 1991.

TREES FOR YOUR FUTURE

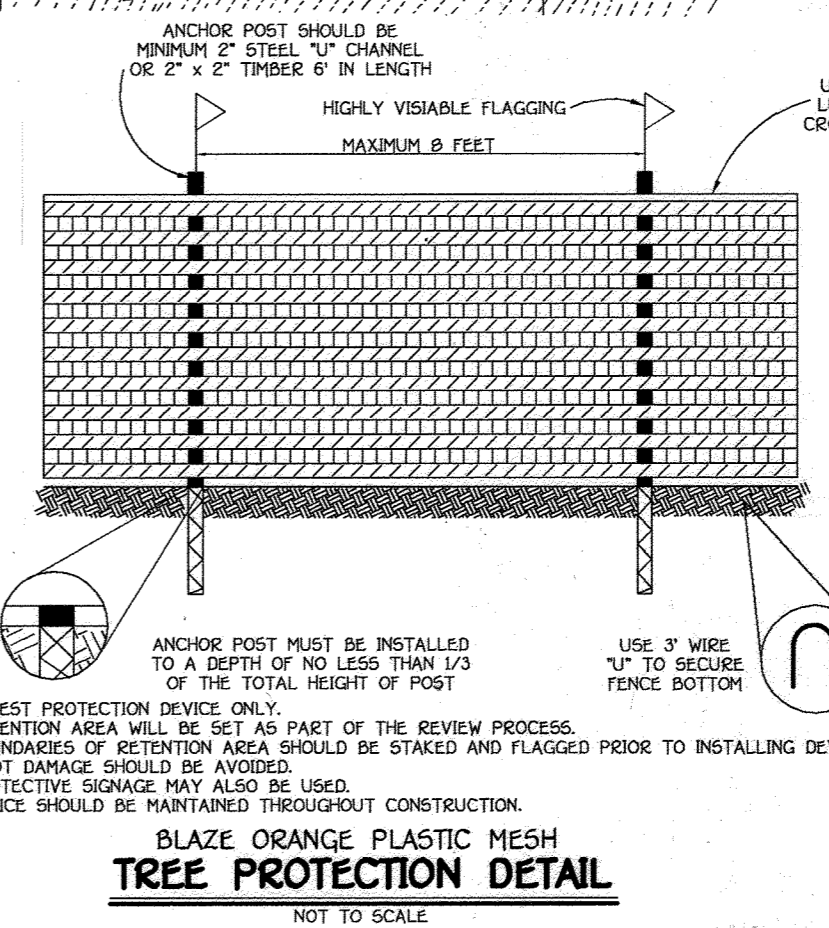
15" MINIMUM  
11" MINIMUM

PROFESSIONAL CERTIFICATION  
 Note: This plan provides information  
 State of Maryland  
 PROFESSIONAL ENGINEERING  
 License No. 14162  
 Date 4/1/06

- FOREST CONSERVATION NOTES**
- Any Forest Conservation Easement (FCE) area shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.
  - Forested areas occurring outside of the FCE shall not be considered part of the FCE and shall not be subject to protective land covenants.
  - Limits of disturbance shall be restricted to areas outside the limit of temporary fencing or the FCE boundary, whichever is greater.
  - There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
  - No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as Forest Conservation Easements.
  - Temporary fencing shall be used to protect forest resources during construction. The fencing shall be placed along all FCE boundaries which occur within 15 feet of the proposed limits of disturbance.
  - Permanent signage shall be placed 50-100' apart along the boundaries of all areas included in Forest Conservation Easements.
  - All FCA calculations shown to the nearest 0.1 acre as per the FCA requirements.
  - Planting plans, signage, fencing and details for Forest Conservation Easement reforestation areas will be provided on the Forest Conservation Plan.
  - The forest conservation obligation is based on the memo interpretation of Appendix "L" dated May 9, 2003 allowing inclusion of wooded floodplain in net tract area for credited retention of forest in which the Preservation Parcel Easement is held by the ALP.
- study for retention =  $\$105,415^{\circ}$  (12.1 acres @  $\$70.20/\text{s.f.}$ )

**FOREST CONSERVATION WORKSHEET**

|  |                            |       |
|--|----------------------------|-------|
| NET TRACT AREA:  |                            |       |
| A. TOTAL TRACT AREA  |                            | 51.10 |
| B. DEDUCTIONS (area of non-wooded floodplain)  |                            | 13.24 |
| C. NET TRACT AREA (net tract area - total area (A) - deductions (B))                     |                            | 37.86 |
| LAND USE CATEGORY:   | Medium Density Residential |       |
| D. AFFORESTATION THRESHOLD (net tract area (C) x 20%)                                    |                            | 7.57  |
| E. FOREST CONSERVATION THRESHOLD (net tract area (C) x 25%)                              |                            | 9.47  |
| EXISTING FOREST COVER:   |                            |       |
| F. EXISTING FOREST COVER WITHIN THE NET TRACT AREA                                       |                            | 22.64 |
| G. AREA OF FOREST ABOVE CONSERVATION THRESHOLD   |                            | 13.17 |
| BREAK EVEN POINT:  |                            |       |
| H. BREAK EVEN (amount of forest that must be retained so that no mitigation is required) |                            | 12.10 |
| I. FOREST CLEARING PERMITTED WITHOUT MITIGATION  |                            | 10.54 |
| PROPOSED FOREST CLEARING:  |                            |       |
| J. TOTAL AREA OF FOREST TO BE CLEARED  |                            | 10.53 |
| K. TOTAL AREA OF FOREST TO BE RETAINED (AREA #1 AND #2)                                  |                            | 12.10 |
| PLANTING REQUIREMENTS:   |                            |       |
| L. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD                               |                            | 0.00  |
| M. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD                               |                            | 0.00  |
| N. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD                                     |                            | 0.00  |
| O. TOTAL REFORESTATION REQUIRED  |                            | 0.00  |
| P. TOTAL AFFORESTATION REQUIRED  |                            | 0.00  |
| Q. TOTAL PLANTING REQUIRED   |                            | 0.00  |



NOTE: THIS PLAN IS FOR FOREST CONSERVATION INFORMATION ONLY.

FISHER, COLLINS & CARTER, INC.  
 CIVIL, ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 20834  
 410-461-2955

Eco-Science Professionals, Inc.  
 CONSULTING ECOLOGISTS

MD DNR Qualified Professional  
 USACOE Wetland Delineator  
 Certification # WDCPS3MD06100448  
 JOHN P. CANOLES

**OWNER**  
 Mr. Robert Preston Buice  
 21400 New Hampshire Avenue  
 Brookeville, Maryland 20833

**DEVELOPER**  
 Rivercrest, LLC  
 21400 New Hampshire Avenue  
 Brookeville, Maryland 20833

**FOREST CONSERVATION PLAN**  
**RIVERCREST**  
 LOTS 1 THRU 10, BUILDABLE PRESERVATION PARCEL 'A',  
 NON-BUILDABLE PRESERVATION PARCEL 'B' & 'C'  
 AND NON-BUILDABLE BULK PARCEL 'D'  
 (A RESUBDIVISION OF LOT 1, "BUICE PROPERTY", PLAT Nos. 5426-5429)  
 ZONED: RC-DEO  
 TAX MAP NO. 21 GRID NO. 20 PARCEL NO. 84  
 FOURTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: JUNE 20, 2005  
 SHEET 12 OF 14

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F.04.57

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION Page 1 of 1

Project Name: Buice Property SWM Location: Howard County, Maryland Boring Number: B-3 Job #: 02118A

Date: 3/4/2002 Foreman: T. Colmer

| ELEV. | SOIL DESCRIPTION  | DEPTH | SCALE | CON | SAMPLE BLOWS | NO. | REC. | BORING & SAMPLING NOTES         |
|-------|---|-------|-------|-----|--------------|-----|------|---------------------------------|
| 0.0   | SURFACE   |       |       |     |              |     |      | 3" Topsoil                      |
| 2.0   | Brown moist very soft silty clay trace fine sand trace roots trace mica (ML) (FILL) |       |       | D   | 1-2-3        | 1   | 14"  | PVC pipe installed at 5.5'      |
| 2.0   | Brown moist medium dense silty fine sand trace mica (SM)                            |       |       | D   | 3-5-9        | 2   | 18"  | Caved in at 5.5' at completion  |
|       |   |       |       | D   | 7-8-9        | 3   | 18"  | Caved in at 4.0' after 24 hours |
|       |   |       |       | D   | 9-10-10      | 4   | 18"  |                                 |
| 10.0  | Bottom of Test Hole - 10.0 Ft.  |       |       |     |              |     |      |                                 |

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION Page 1 of 1

Project Name: Buice Property SWM Location: Howard County, Maryland Boring Number: B-2 Job #: 02118A

Date: 3/4/2002 Foreman: T. Colmer

| ELEV. | SOIL DESCRIPTION  | DEPTH | SCALE | CON | SAMPLE BLOWS | NO. | REC. | BORING & SAMPLING NOTES                 |
|-------|---|-------|-------|-----|--------------|-----|------|---|
| 0.0   | SURFACE   |       |       |     |              |     |      | 2" Topsoil                              |
| 2.0   | Brown moist very loose silty fine sand trace roots trace mica (SM) (FILL) |       |       | D   | 1-2-1        | 1   | 16"  | PVC pipe installed at 5.5'              |
| 2.0   | Brown moist medium stiff to stiff silt trace fine sand trace mica (ML)    |       |       | D   | 3-5-7        | 2   | 18"  | Caved in at 7.5' at completion          |
|       |   |       |       | D   | 7-9-5        | 3   | 0"   | Caved in at 7.0' after 24 hours         |
|       |   |       |       | D   | 2-4-7        | 4   | 8"   | Sample 3 - no recovery after 3 attempts |
| 10.0  | Bottom of Test Hole - 10.0 Ft.  |       |       |     |              |     |      |   |

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

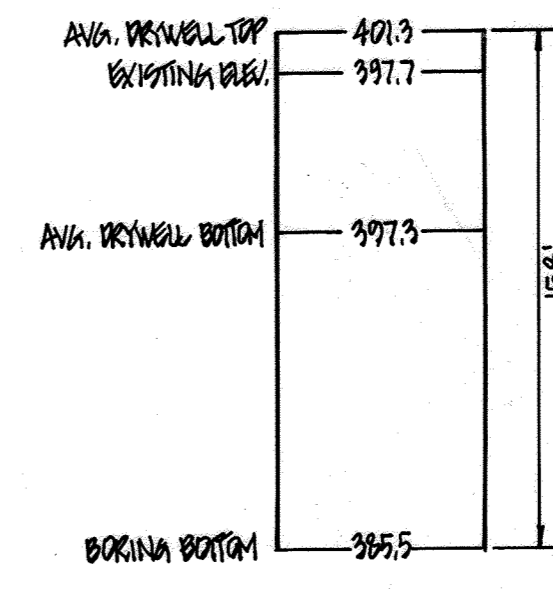
HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION Page 1 of 1

Project Name: Buice Property SWM Location: Howard County, Maryland Boring Number: B-1 Job #: 02118A

Date: 3/4/2002 Foreman: T. Colmer

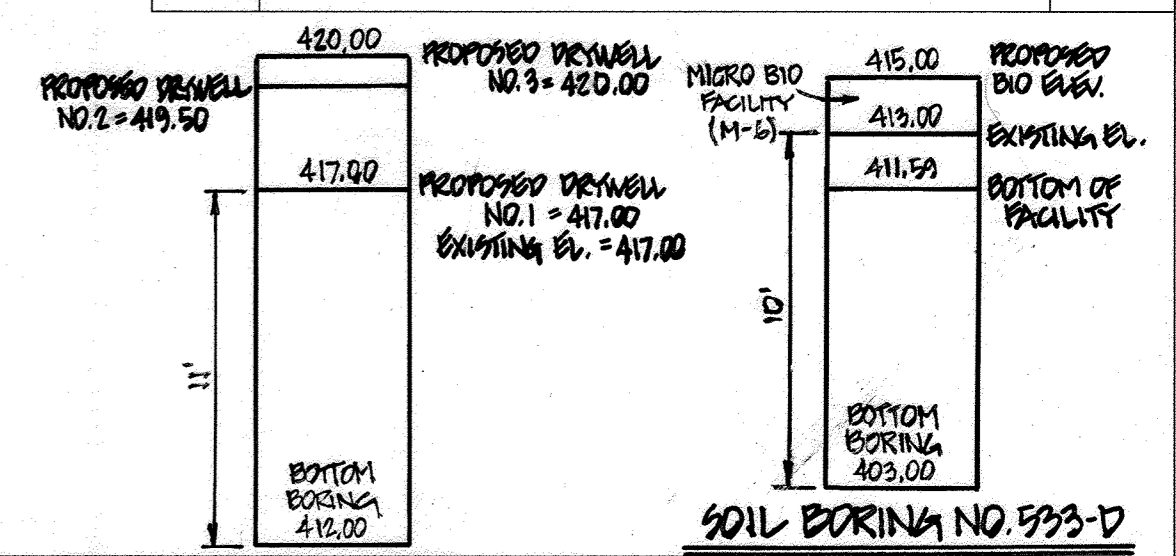
| ELEV. | SOIL DESCRIPTION  | DEPTH | SCALE | CON | SAMPLE BLOWS | NO. | REC. | BORING & SAMPLING NOTES         |
|-------|---|-------|-------|-----|--------------|-----|------|---------------------------------|
| 0.0   | SURFACE   |       |       |     |              |     |      | 3" Topsoil                      |
| 2.0   | Brown moist very loose silty fine sand trace roots trace mica (SM) (FILL)             |       |       | D   | 3-2-3        | 1   | 10"  | PVC pipe installed at 5.5'      |
| 2.0   | Brown moist soft to stiff silt trace to little fine sand trace gravel trace mica (ML) |       |       | D   | 5-5-8        | 2   | 18"  | Caved in at 7.5' at completion  |
|       |   |       |       | D   | 2-2-3        | 3   | 9"   | Caved in at 5.5' after 24 hours |
|       |   |       |       | D   | 2-1-2        | 4   | 18"  |                                 |
| 10.0  | Bottom of Test Hole - 10.0 Ft.  |       |       |     |              |     |      |                                 |

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS



APPROVED: DEPARTMENT OF PUBLIC WORKS  
 12-21-05  
 CHIEF, BUREAU OF HIGHWAYS  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 1/14/06  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 APPROVED: DEPARTMENT OF ENGINEERING DIVISION  
 12/16/05

| NO. | DESCRIPTION                     | DATE    |
|-----|---------------------------------|---------|
| 1   | ADD SOIL BORING NO. 1           | 1/8/02  |
| 2   | ADD PERU TEST #1989             | 1/19/02 |
| 3   | ADD SOIL BORING # 530 & # 533-D | 1/17/02 |



HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION Page 1 of 1

Project Name: Buice Property SWM Location: Howard County, Maryland Boring Number: B-7 Job #: 02118A

Date: 3/4/2002 Foreman: T. Colmer

| ELEV. | SOIL DESCRIPTION   | DEPTH | SCALE | CON | SAMPLE BLOWS | NO. | REC. | BORING & SAMPLING NOTES         |
|-------|--|-------|-------|-----|--------------|-----|------|---------------------------------|
| 0.0   | SURFACE  |       |       |     |              |     |      | 3" Topsoil                      |
| 2.0   | Brown moist very soft silt trace clay trace fine sand trace roots trace mica (ML) (FILL) |       |       | D   | 1-2-1        | 1   | 10"  | PVC pipe installed at 5.0'      |
| 2.0   | Brown moist very stiff silt trace to little fine sand (ML)                               |       |       | D   | 7-12-13      | 2   | 14"  | Caved in at 6.5' at completion  |
|       |  |       |       | D   | 10-12-15     | 3   | 10"  | Caved in at 6.0' after 24 hours |
|       |  |       |       | D   | 17-19-11     | 4   | 12"  |                                 |
| 10.0  | Bottom of Test Hole - 10.0 Ft.   |       |       |     |              |     |      |                                 |

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION Page 1 of 1

Project Name: Buice Property SWM Location: Howard County, Maryland Boring Number: B-6 Job #: 02118A

Date: 3/4/2002 Foreman: T. Colmer

| ELEV. | SOIL DESCRIPTION   | DEPTH | SCALE | CON | SAMPLE BLOWS | NO. | REC. | BORING & SAMPLING NOTES         |
|-------|--|-------|-------|-----|--------------|-----|------|---------------------------------|
| 0.0   | SURFACE  |       |       |     |              |     |      | 2" Topsoil                      |
| 2.0   | Brown moist very soft silt trace fine sand gravel mica and roots (ML) (FILL) |       |       | D   | 1-2-1        | 1   | 18"  | PVC pipe installed at 5.0'      |
| 2.0   | Brown dry medium stiff to very stiff silt trace fine sand trace mica (ML)    |       |       | D   | 4-4-5        | 2   | 10"  | Caved in at 7.2' at completion  |
|       |  |       |       | D   | 4-7-9        | 3   | 16"  | Caved in at 8.8' after 24 hours |
|       |  |       |       | D   | 10-11-16     | 4   | 9"   |                                 |
| 10.0  | Bottom of Test Hole - 10.0 Ft.   |       |       |     |              |     |      |                                 |

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION Page 1 of 1

Project Name: Buice Property SWM Location: Howard County, Maryland Boring Number: B-5 Job #: 02118A

Date: 3/4/2002 Foreman: T. Colmer

| ELEV. | SOIL DESCRIPTION   | DEPTH | SCALE | CON | SAMPLE BLOWS | NO. | REC. | BORING & SAMPLING NOTES         |
|-------|--|-------|-------|-----|--------------|-----|------|---------------------------------|
| 0.0   | SURFACE  |       |       |     |              |     |      | 3" Topsoil                      |
| 2.0   | Reddish brown moist very soft clayey silt trace fine sand mica and roots (ML) (FILL)         |       |       | D   | 1-2-1        | 1   | 16"  | PVC pipe installed at 5.0'      |
| 2.0   | Reddish brown to reddish brown and white dry loose to medium dense silt trace fine sand (ML) |       |       | D   | 2-5-7        | 2   | 14"  | Caved in at 8.4' at completion  |
|       |  |       |       | D   | 6-7-8        | 3   | 12"  | Caved in at 7.0' after 24 hours |
|       |  |       |       | D   | 8-9-7        | 4   | 18"  |                                 |
| 10.0  | Bottom of Test Hole - 10.0 Ft.   |       |       |     |              |     |      |                                 |

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS

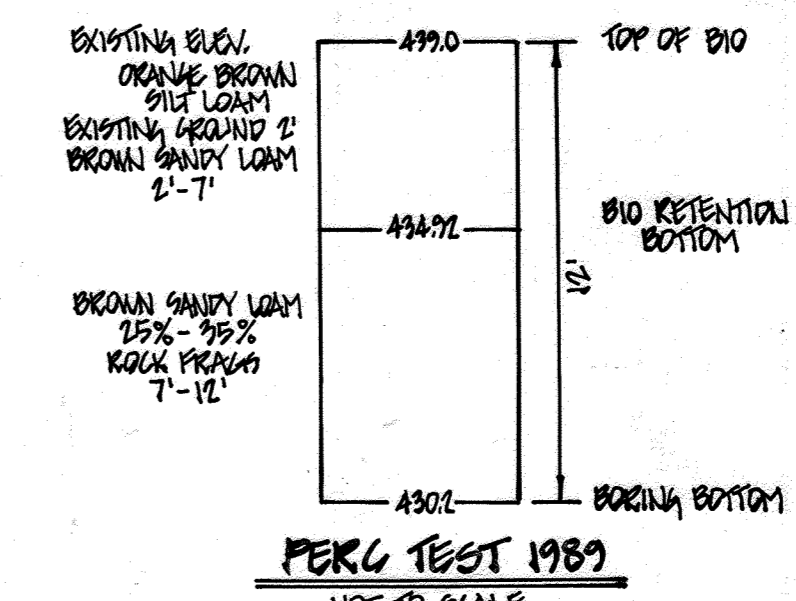
HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION Page 1 of 1

Project Name: Buice Property SWM Location: Howard County, Maryland Boring Number: B-4 Job #: 02118A

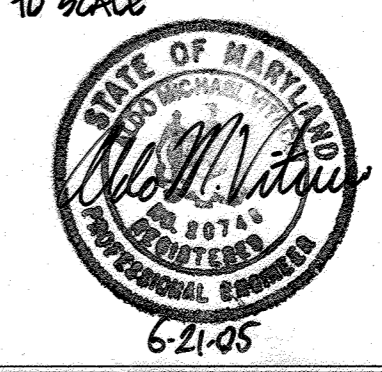
Date: 3/4/2002 Foreman: T. Colmer

| ELEV. | SOIL DESCRIPTION   | DEPTH | SCALE | CON | SAMPLE BLOWS | NO. | REC. | BORING & SAMPLING NOTES         |
|-------|--|-------|-------|-----|--------------|-----|------|---------------------------------|
| 0.0   | SURFACE  |       |       |     |              |     |      | 3" Topsoil                      |
| 2.0   | Brown moist very soft silt trace clay trace fine sand trace roots trace mica (ML) (FILL) |       |       | D   | 1-2-1        | 1   | 16"  | PVC pipe installed at 5.0'      |
| 2.0   | Brown medium dense to very dense silty fine sand trace mica (SM)                         |       |       | D   | 27-31-32     | 2   | 18"  | Caved in at 5.3' at completion  |
|       |  |       |       | D   | 7-10-13      | 3   | 10"  | Caved in at 6.5' after 24 hours |
|       |  |       |       | D   | 10-11-11     | 4   | 4"   |                                 |
| 10.0  | Bottom of Test Hole - 10.0 Ft.   |       |       |     |              |     |      |                                 |

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS



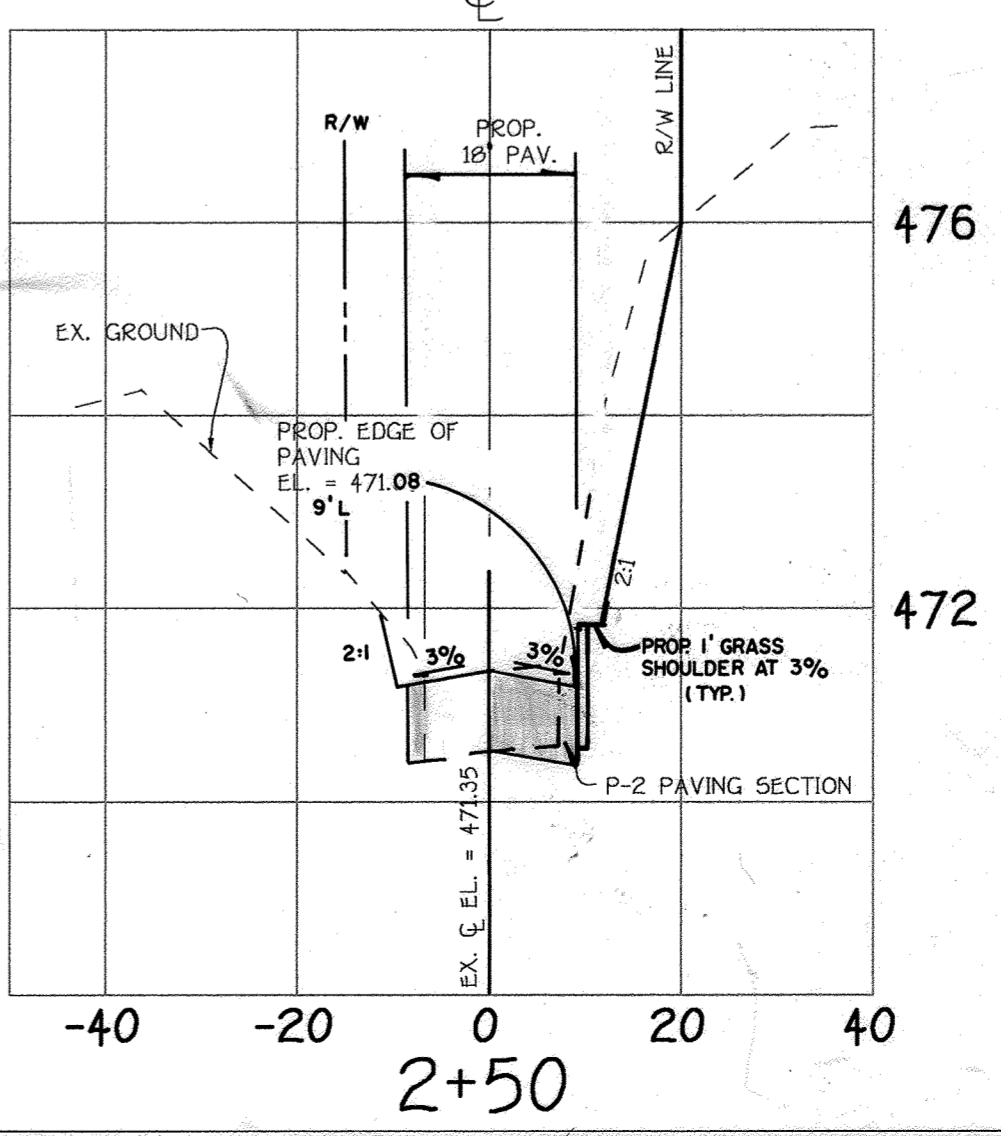
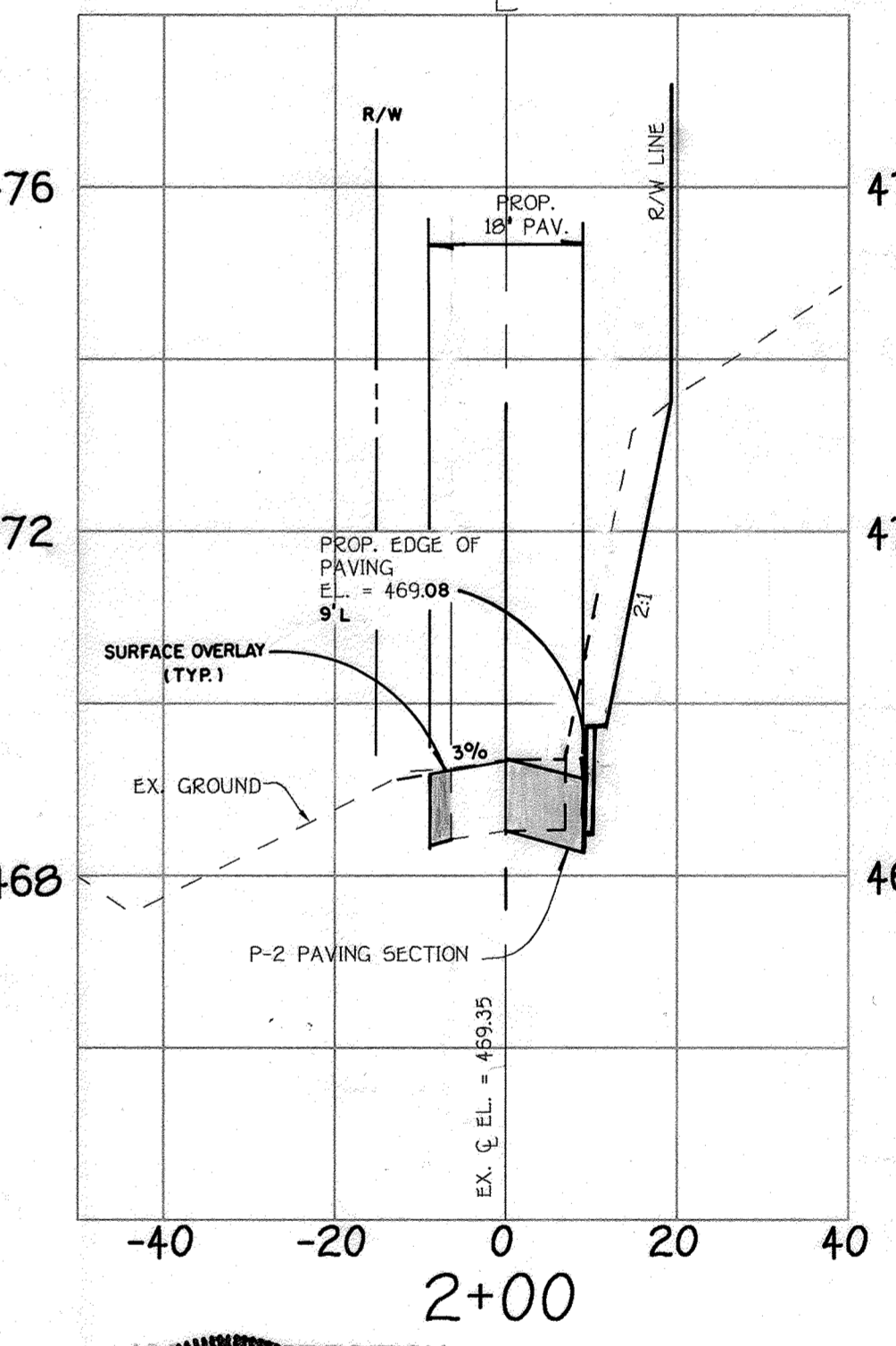
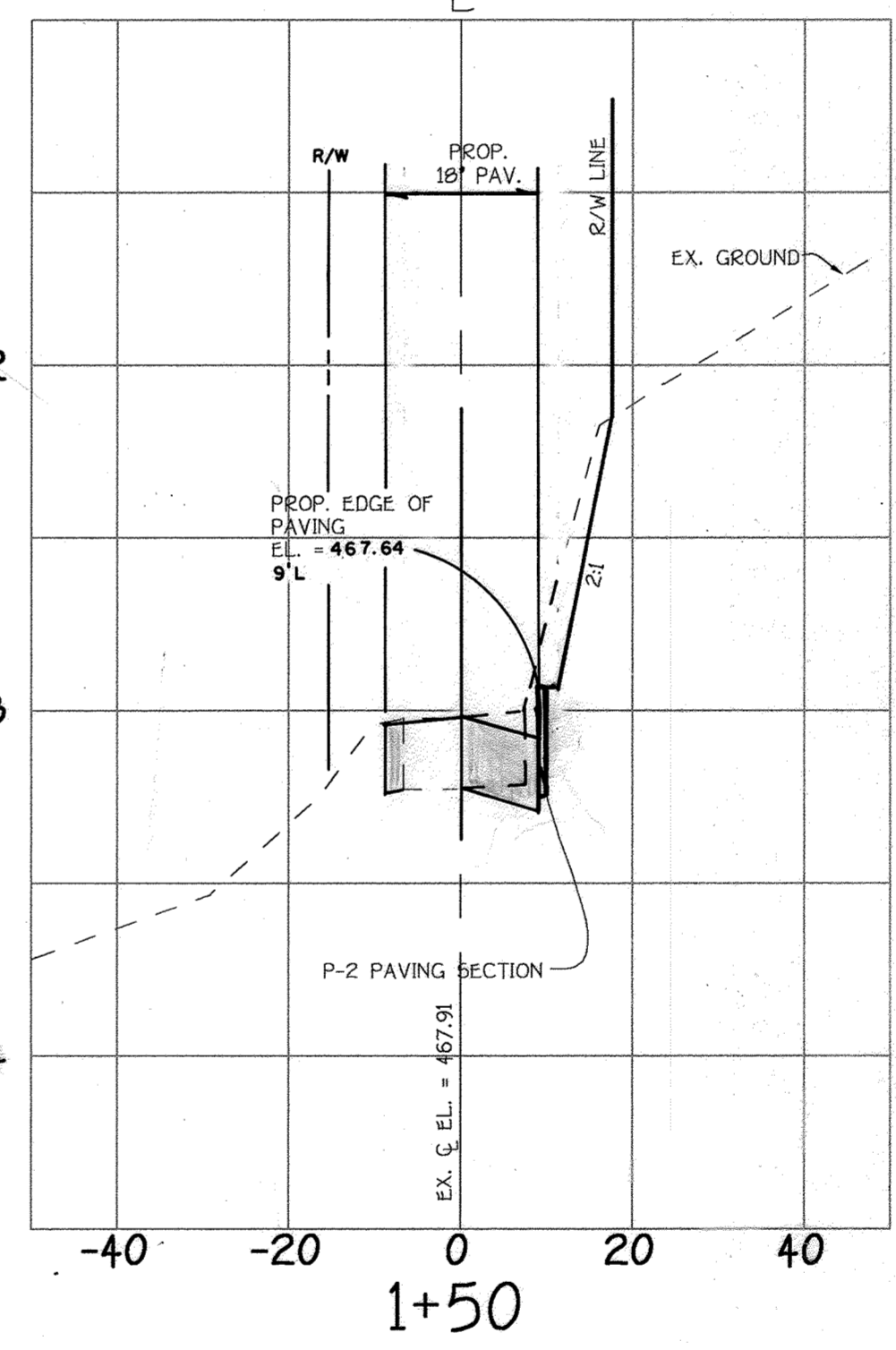
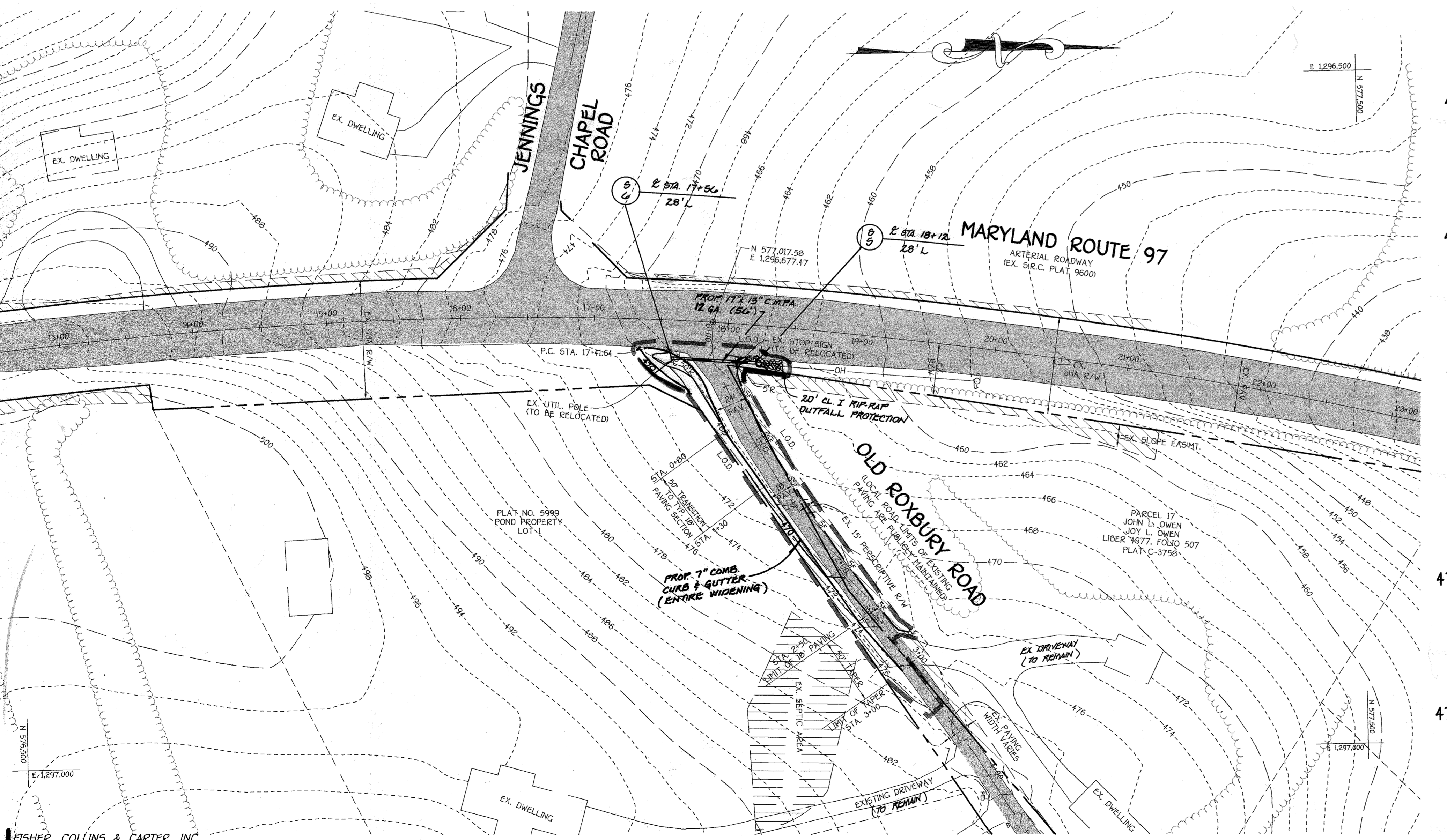
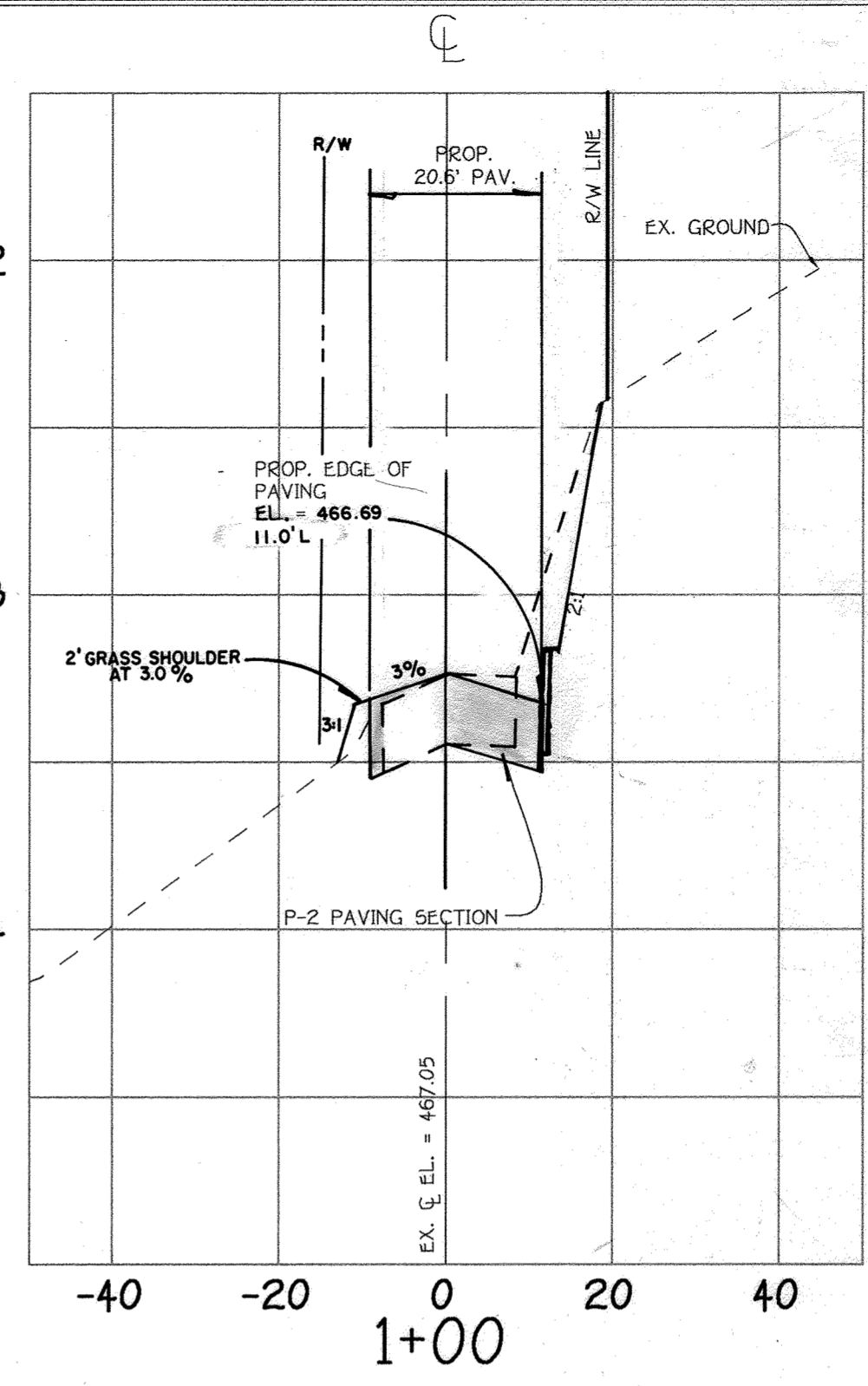
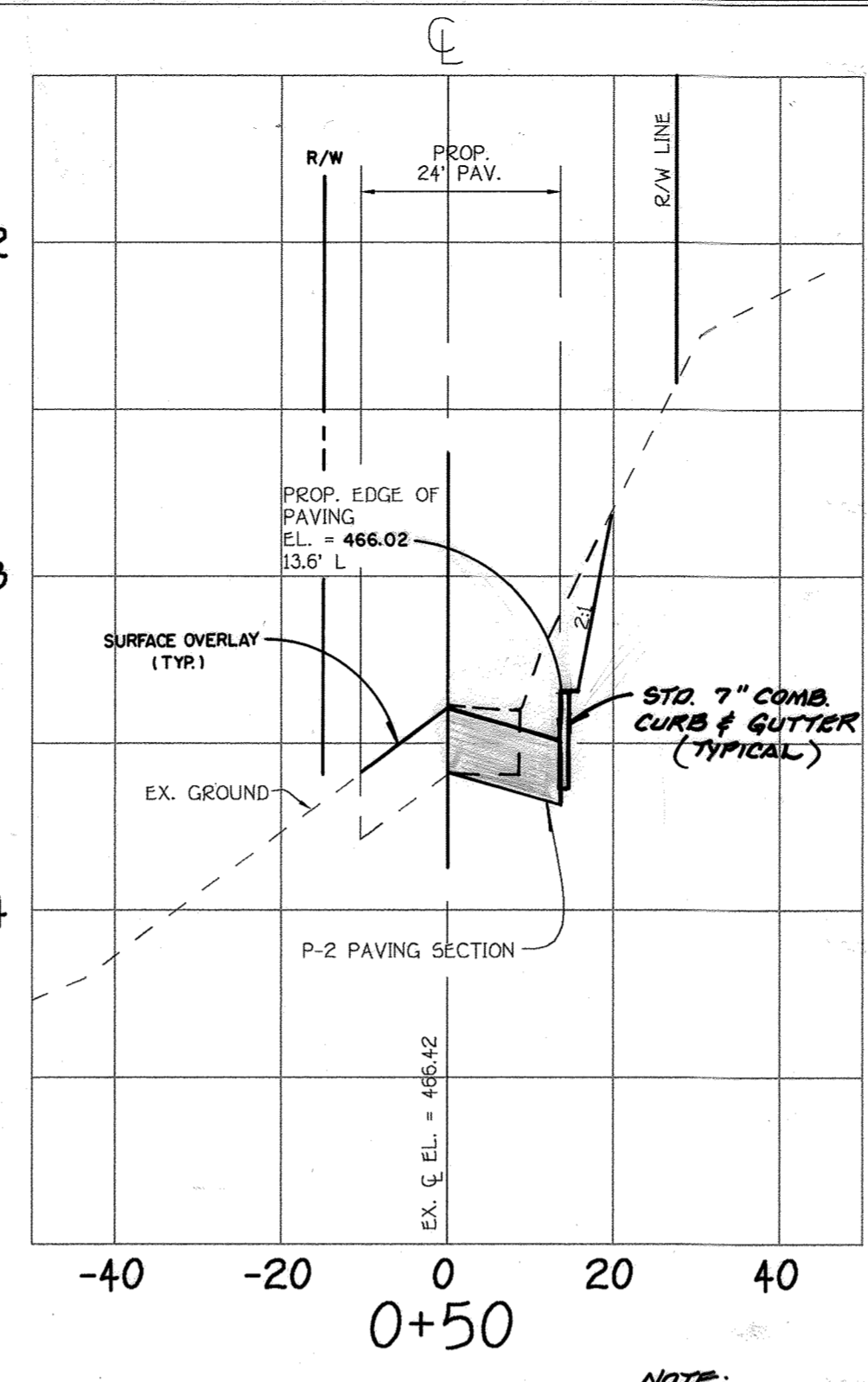
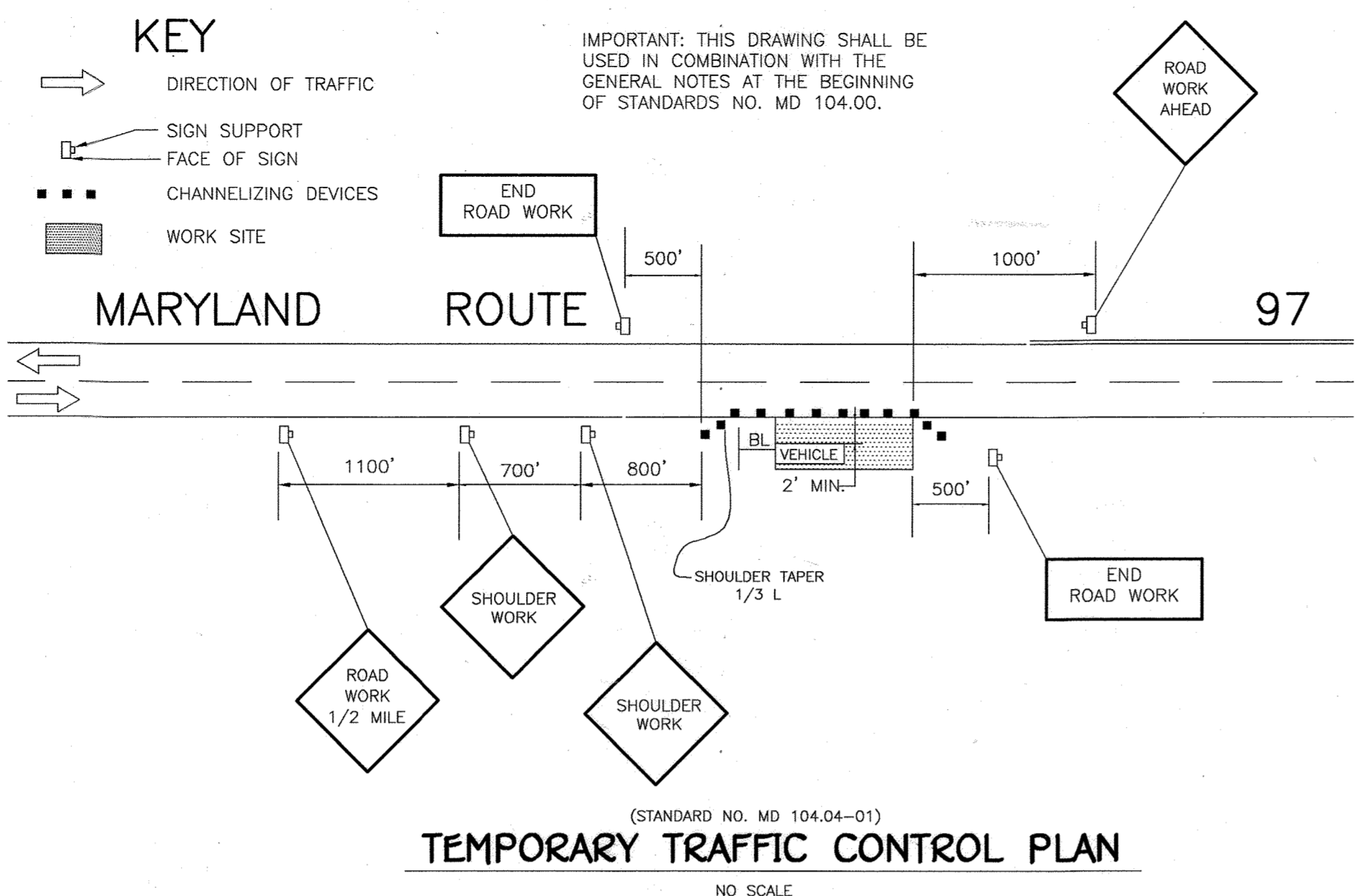
AS-BUILT CERTIFICATION  
 Note: SEE "AS-BUILT" INFORMATION  
 ALICE M. VITTOCCO, No. 50740



SOIL BORINGS  
**RIVERCREST**  
 LOTS 1 THRU 10, BUILDABLE PRESERVATION PARCEL 'A',  
 NON-BUILDABLE PRESERVATION PARCEL 'B' & 'C'  
 AND NON-BUILDABLE BULK PARCEL 'D'  
 (A RESUBDIVISION OF LOT 1, "BUICE PROPERTY", PLAT No. 5426-5429)  
 ZONED RC-DO  
 TAX MAP NO. 21 GRID NO. 20 PARCEL NO. 04  
 FOURTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 DATE: JUNE 20, 2005  
 SHEET 13 OF 14

**MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS**

- GENERAL**
- THE PURPOSE OF THIS PORTION OF THE SPECIAL PROVISION IS TO SET FOR THE TRAFFIC CONTROL REQUIREMENTS NECESSARY FOR THE SAFE AND EFFICIENT MAINTENANCE TO TRAFFIC WITHIN WORK AREAS, AND TO MINIMIZE ANY INCONVENIENCES TO THE TRAVELING PUBLIC AND THE CONTRACTOR AND/OR PERMITTEE.
  - PROPERTY TRAFFIC CONTROL THROUGH WORK AREAS IS ESSENTIAL FOR INSURING THE SAFETY AND THAT OF HIGHWAY WORKERS HAS THE HIGHEST PRIORITY OF ALL TASKS WITHIN THIS PROJECT. THE PROPER APPLICATION OF THE APPROVED TRAFFIC CONTROL PLAN (TCP) WILL PROVIDE THE DESIRED LEVEL OF SAFETY.
  - THROUGHOUT THESE SPECIAL PROVISIONS, ANY MENTION OF THE TCP SHALL BE IMPLIED TO INCLUDE ANY COMBINATION OF TYPICAL TRAFFIC CONTROL STANDARDS WHICH FORM THE OVERALL TCP FOR THIS PROJECT WHICH HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER.
  - THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE PROVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) 1990 EDITION, ESPECIALLY PART VI, AND TO SECTION 814 OF THE MARYLAND DOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS (JANUARY, 1992), INCLUDING ALL REVISIONS AND SUPPLEMENTS TO EACH.
  - THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE REQUIREMENTS SET FORTH IN THE TCP AND THESE SPECIAL PROVISIONS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ANY REQUESTS TO MAKE MINOR CHANGES TO THE TCP OR THE SPECIAL PROVISIONS WITH REGARD TO THE TRAFFIC CONTROL ITEMS SHALL BE MADE IN WRITING TO THE ENGINEER A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE PROPOSED SCHEDULING CHANGE. THE CONTRACTOR AND/OR PERMITTEE SHALL HAVE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO THE IMPLEMENTATION OF ANY CHANGE.
  - NO WORK SHALL BEGIN ON ANY WORK ACTIVITY OR WORK PHASE UNTIL ALL REQUIRED TRAFFIC CONTROL PATTERNS AND DEVICES INDICATED ON THE TCP FOR THAT ACTIVITY OR PHASE ARE COMPLETELY AND CORRECTLY IN PLACE TO HAVE BEEN CHECKED FOR APPROVED USAGE.
  - GENERAL AND SPECIFIC WARNING SIGNS SHALL ONLY BE IN PLACE WHEN SPECIFIC WORK TASKS AND ACTIVITIES ARE ACTUALLY UNDERWAY OR CONDITIONS EXIST THAT POSE A POTENTIAL HAZARD TO THE PUBLIC, AND ANY ADDITIONAL SIGNING HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER. NOTE: THE PRACTICE OF PLACING SIGNING AND OTHER TRAFFIC CONTROL DEVICES IN ADDITION TO THOSE INDICATED ON THE APPROVED TCP IS NOT PERMITTED.
  - THE CONTRACTOR AND/OR PERMITTEE SHALL PROVIDE, MAINTAIN IN NEW CONDITION, AND MOVE WHEN NECESSARY, OR AS DIRECTED BY THE ENGINEER, ALL TRAFFIC CONTROL DEVICES USED FOR THE GUIDANCE AND PROTECTION OF MOTORISTS, PEDESTRIANS, AND WORKERS.
  - ALL TRAFFIC CONTROL DEVICES REQUIRED BY THE TCP SHALL BE KEPT IN GOOD CONDITION, FULLY PERFORMING AS SET FORTH IN THE MUTCD AND/OR SECTION 814 OF THE SPECIFICATIONS. FOR REFLECTIVE DEVICES, A PARTICULAR DEVICE IS ASSUMED TO HAVE FAILED TO MEET MINIMUM OPERATIONAL STANDARDS WHEN THE DEVICE NO LONGER HAS RETRO-REFLECTANCE CAPABILITY OF AT LEAST 80% OF THE SPECIFIED MINIMUM VALUE, COVER AT LEAST 90% OF THE VISIBLE REFLECTIVE SURFACE.
  - ALL TRAFFIC CONTROL DEVICES NOT REQUIRED FOR THE SAFE CONDUCT OF TRAFFIC SHALL BE PROMPTLY REMOVED, COMPLETELY COVERED, TURNED AWAY FROM TRAFFIC, OR OTHERWISE TAKEN OUT OF SERVICE. IT IS INTENDED THAT NO TRAFFIC CONTROL DEVICE IS TO BE IN SERVICE WHEN THERE IS NO CLEAR CUT REASON FOR THE DEVICE.
  - THROUGHOUT THE PERIODS OF WORK ACTIVITIES, TRAFFIC SHALL BE MAINTAINED BY IMPLEMENTING THE APPROVED TCP IN LIEU OF THE TCP PREPARED FOR THIS PROJECT, AND/OR INDIVIDUAL TYPICAL TRAFFIC CONTROL STANDARDS. THE CONTRACTOR AND/OR PERMITTEE HAS THE OPTION OF PREPARING AND SUBMITTING A TCP, WHOLLY OR IN PART, OF HIS OWN DESIGN, FOLLOWING GUIDELINES SET FORTH IN THE MUTCD AND PRESCRIBED BY THE ADMINISTRATION. A TCP DEVELOPED BY THE CONTRACTOR AND/OR PERMITTEE SHALL NOT BE IMPLEMENTED UNTIL ADVANCE WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. TCP'S MAY BE IMPLEMENTED WITHIN A SINGLE PROJECT OR JOINTLY BETWEEN TWO OR MORE PROJECTS. IN SITUATIONS WHERE TCP'S JOINTLY IMPLEMENTED, CARE SHALL BE EXERCISED TO PRESENT CORRECT AND NON-CONFLICTING GUIDANCE TO THE TRAVELING PUBLIC.
  - THROUGHOUT THESE SPECIAL PROVISIONS, WHERE SPEED OF TRAFFIC IS NOTED, THIS MEANS THE POSTED SPEED OR PREVAILING TRAVEL SPEED, WHICHEVER IS HIGHER, UNLESS OTHERWISE NOTED.
  - TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT, UNLESS OTHERWISE NOTED. NO TRAVEL LANES OTHER THAN THOSE DESIGNATED FOR POSSIBLE CLOSURE IN THE TCP SHALL BE CLOSED WITHOUT OBTAINING PRIOR APPROVAL FROM THE ENGINEER. ALL INGRESS AND EGRESS TO THE WORK AREA BY THE CONTRACTOR AND/OR PERMITTEE SHALL BE PERFORMED WITH THE FLOW OF TRAFFIC.



**ENGINEER'S CERTIFICATE**

I hereby certify that this Plan for Erosion and Sediment Control represents a practicable and workable plan based on my personal knowledge of the site and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature: *[Signature]* Date: 6-21-05

**DEVELOPER'S CERTIFICATE**

"We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature Of Developer: *[Signature]* Date: 6/21/05

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements: *[Signature]* Date: 6/21/05

U.S.D.A. - Natural Resources Conservation Service

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District. *[Signature]* Date: 6/28/05

District Howard Soil Conservation Dist.

Approved: Department Of Planning And Zoning: *[Signature]* Date: 1/14/06

Chief, Division Of Land Development

Approved: *[Signature]* Date: 12/21/05

Chief, Development Engineering Division

Approved: Howard County Department Of Public Works: *[Signature]* Date: 12-21-05

Chief, Bureau Of Highways

Note: The information provided is for informational purposes only.

**OLD ROXBURY ROAD CROSS-SECTIONS**

SCALE: HOR. 1" = 20' VER. 1" = 2'

**OLD ROXBURY ROAD GRADING AT MARYLAND ROUTE 97 AND TRAFFIC CONTROL PLAN RIVERCREST**

**LOTS 1 THRU 10, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCEL 'B' & 'C' AND NON-BUILDABLE BULK PARCEL 'D'**

(A RESUBDIVISION OF LOT 1, "BUICE PROPERTY", PLAT NO. 5426-5429)

ZONED RC-20

TAX MAP NO. 21 GRID NO. 20 PARCEL NO. 84

FOURTH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

DATE: JUNE 20, 2005

SHEET 14 OF 14

F 04-57

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 1872 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 410-481-2295

**OWNER**  
 Mr. Robert Preston Buice  
 21400 New Hampshire Avenue  
 Brookeville, Maryland 21033

**DEVELOPER**  
 Rivercrest, LLC  
 21400 New Hampshire Avenue  
 Brookeville, Maryland 21033

THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET F 04-57