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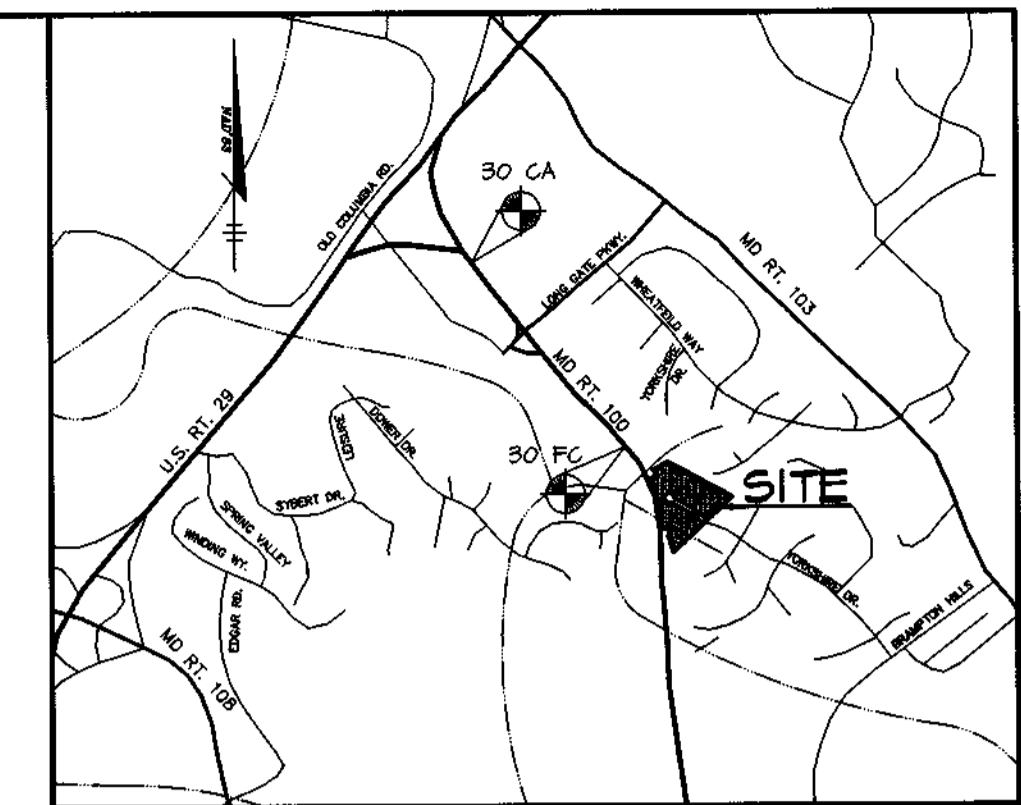
ROADWAYS, STORM DRAINS AND STORMWATER MANAGEMENT

BRAMPTON HILLS WEST

FORMERLY PARCEL 'S'

LOTS 1-16

2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND



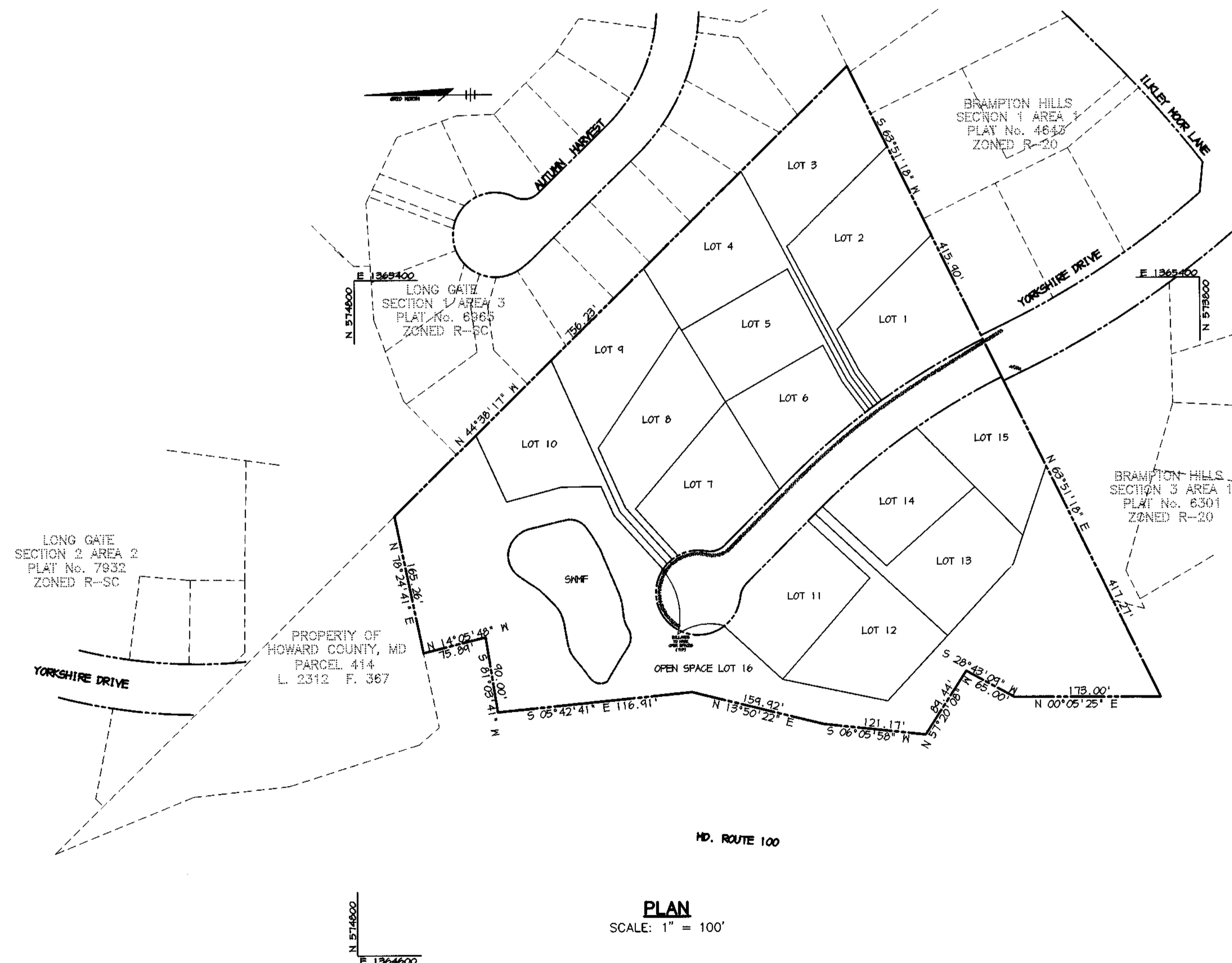
VICINITY MAP
SCALE: 1" = 2000'

AS-BUILT CONTROL
BENCHMARKS


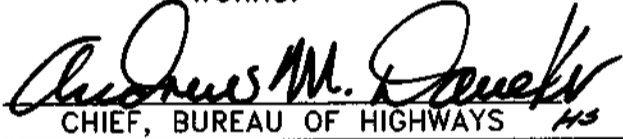


- ✓ HOWARD COUNTY SURVEY CONTROL STATION 30CA
N 575,083.45 E 1,364,601.71
ELEVATION 360.14
- ✓ HOWARD COUNTY SURVEY CONTROL STATION 30FC
N 572,916.53 E 1,364,610.17
ELEVATION 366.48

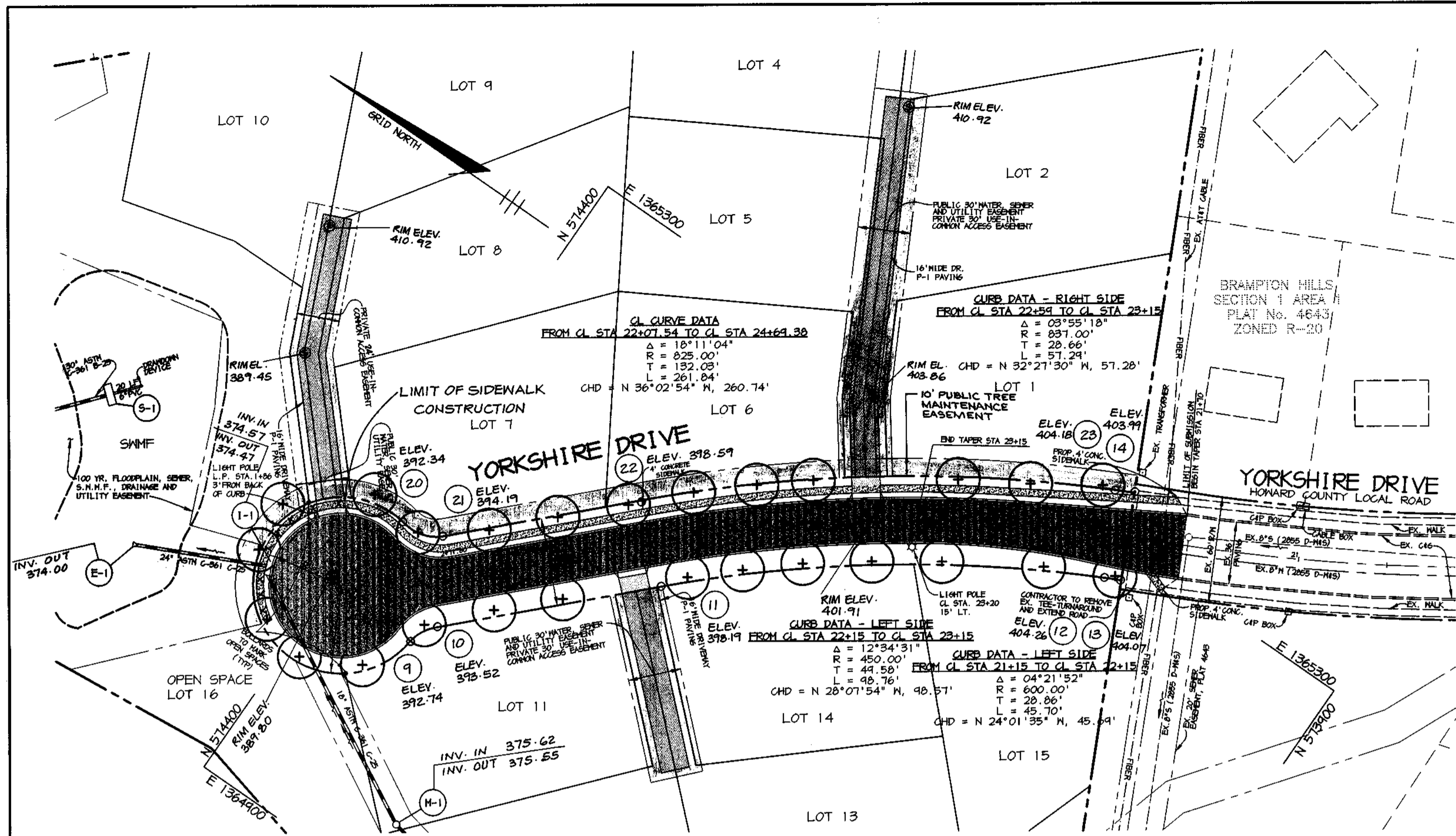
GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. IV "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION" PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7111 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 ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1998), AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS, (JANUARY 1998)".
A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY RIEMER MUEGGE & ASSOCIATES DATED FEBRUARY 1996.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 30 CA AND 30 FC WERE USED FOR THIS PROJECT.
- WATER IS PUBLIC. CONTRACT NO. 24-3647-D.
- SEWER IS PUBLIC. SEWER DRAINAGE AREA 108 PUMPING STATION CONTRACT NO. 24-3647-D.
- THE STORMWATER MANAGEMENT FACILITY PROPOSED FOR THIS SITE IS AN EXTENDED DETENTION HAZARD CLASS "A" FACILITY. THE FACILITY IS PUBLICLY OWNED AND WILL BE JOINTLY MAINTAINED BY THE HOME OWNERS ASSOCIATION AND HOWARD COUNTY. SEE SHEET 5 FOR HOME OWNER'S ASSOCIATION MAINTENANCE RESPONSIBILITY.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
- THE 100-YEAR FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY RIEMER MUEGGE & ASSOCIATES, DATED MARCH 1996.
- THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY RIEMER MUEGGE & ASSOCIATES DATED FEBRUARY 1996.
- A TRAFFIC STUDY FOR THIS PROJECT IS NOT REQUIRED.
- THE NOISE STUDY FOR THIS PROJECT WAS PREPARED BY RIEMER MUEGGE & ASSOCIATES DATED DECEMBER 1996.
- THE GEOTECHNICAL STUDY FOR STORMWATER MANAGEMENT FOR THIS PROJECT WAS PREPARED BY HILLIS-CARNES DATED APRIL 1997.
- THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY RIEMER MUEGGE & ASSOCIATES DATED FEBRUARY 1998.
- SUBJECT PROPERTY ZONED R-20 PER 10-18-93 COMPREHENSIVE ZONING PLAN.
- ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- SEE DEPARTMENT OF PLANNING AND ZONING FILE NO.'S. 9-46-14 P-48-05
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- ALL STORM DRAIN PIPE BEDDING SHALL BE CLASS 'C' AS SHOWN IN FIG. 11.4, VOLUME I OF HOWARD COUNTY DESIGN MANUAL UNLESS OTHERWISE NOTED.
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- STORM DRAIN TRENCHES WITHIN ROAD RIGHT OF WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, 1.0., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, LATEST AMENDMENTS.
- PROFILES STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIAL STANDARD:
ALL 50' RIGHT OF WAYS 25 AND 30 M.P.H.
- ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
- ALL STREET CURB RETURNS SHALL HAVE 25' RADIUS UNLESS OTHERWISE NOTED.
- ALL STREET LIGHTS SHALL BE LOCATED BETWEEN 2'-0" AND 4'-0" BEHIND FACE OF CURB.
- STREET TREES (26) LOCATION, TYPE AND NUMBER OF TREES SHOWN ON THIS PLAN ARE TENTATIVE AND ARE USED FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF TREES MAY VARY TO ACCOMMODATE FIELD CONDITIONS INCLUDING 20' CLEARANCE OF ANY STREET LIGHT AND BUILDERS LANDSCAPE PROGRAMS. BOND RELEASE IS CONTINGENT UPON SECTION 15.131 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS, AS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.
- A DESIGN MANUAL WAIVER NOT TO CONSTRUCT THE NOISE BERM ALONG THE REAR OF LOTS 7, 11, 12 & 15 WAS APPROVED ON DECEMBER 10, 1997 SUBJECT TO THE FOLLOWING THREE (3) CONDITIONS:
A. THE WAIVER REQUEST TO FULLY SATISFY THE NOISE REQUIREMENT WAS APPROVED CONSISTENT WITH THE HOWARD COUNTY RESOLUTION NO. 94-1995.
B. LOTS 7, 11, 12 & 15 ARE IN NOISE SENSITIVE AREA AND PROLONGED OUTDOOR EXPOSURE MAY RESULT IN HEARING IMPAIRMENT.
C. PROVIDE MITIGATION WITHIN EACH PROPOSED DWELLING VIA ACCEPTABLE ACOUSTICAL SOUNDPROOFING TECHNIQUES, SUFFICIENT TO LOWER INTERNAL LEVELS SO THAT ITS SOUND TRANSMISSION CLASS (STC) IS 45DBA.



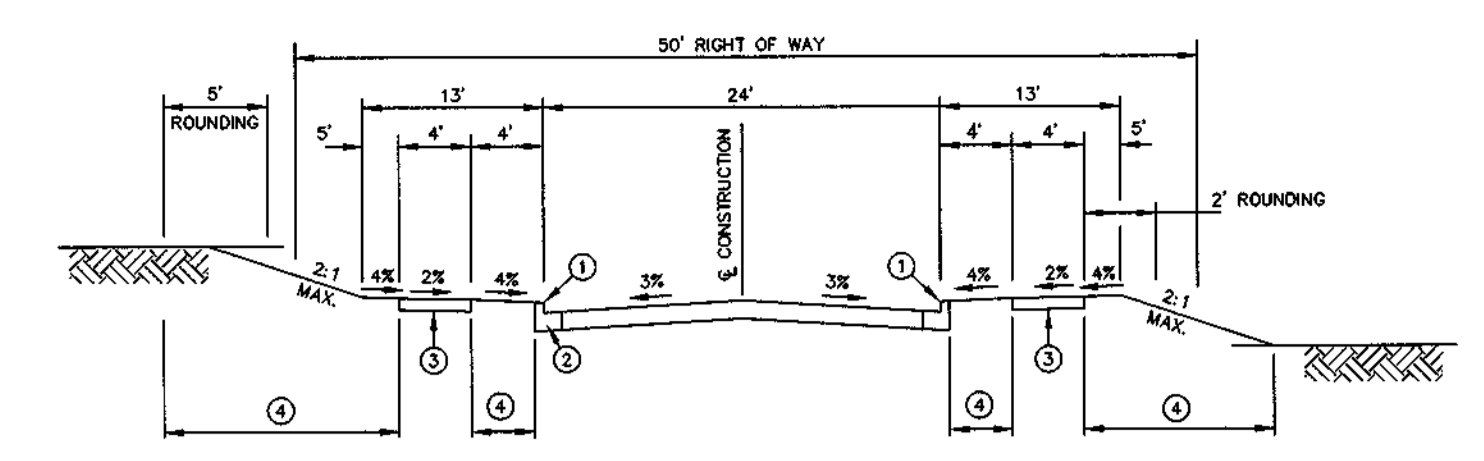
PLAN
SCALE: 1" = 100'

 STATE OF MARYLAND CHRISTOPHER J. REID # 19949 DATE 9-7-01	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  CHIEF, BUREAU OF HIGHWAYS DATE 9/2/98	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  CHIEF, DIVISION OF LAND DEVELOPMENT DATE 9/14/98	
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 9/10/98	
DATE	REVISION
OWNER/DEVELOPER	
ECO DEVELOPMENT, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 408 ELLICOTT CITY, MARYLAND 21043 410-465-4242	
PROJECT	
BRAMPTON HILLS WEST FORMERLY PARCEL 'S' LOTS 1 THRU 16	
AREA	
TAX MAP NO. 30 ZONED R-20 PART OF PARCEL 385 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE	
TITLE SHEET	
RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive, Columbia, Maryland 21045 tel 410.997.8900 fax 410.997.9282	
DATE	DESIGNED BY :
7-29-98	CJR
DATE	DRAWN BY :
7-29-98	DAM
DATE	PROJECT NO.:
AUGUST 20, 1998	SURVEY2/96H410 FINALRD RD1.DWG
DATE	SCALE :
AUGUST 20, 1998	1" = 100'
DATE	DRAWING NO.:
7-29-98	1 OF 9



STREET TREE TABLE	
STREET TREE REQUIREMENTS (S.T.E.)	TOTAL
S.T. REQUIRED: 10 TO L.F. / 40'	26
S.T. PROVIDED: (SHADE TREES)	26

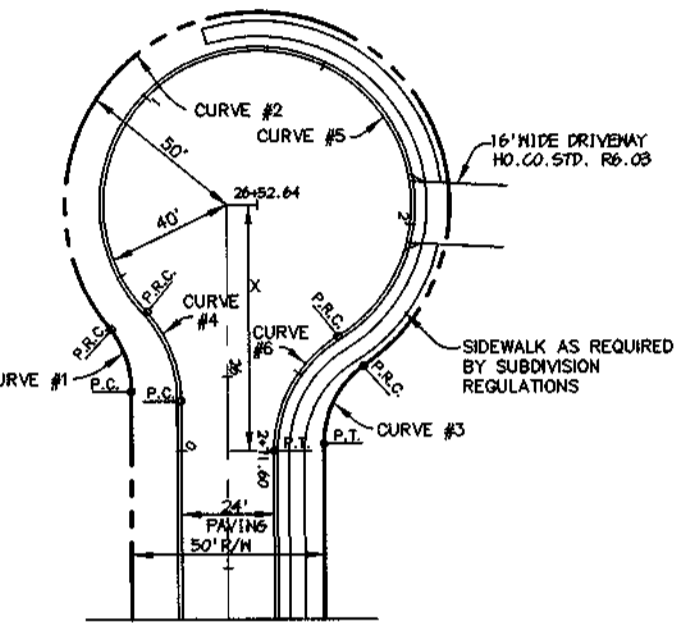
STREET TREE PLANT MATERIAL LIST					
SYMBOL	QUANTITY	BOTANICAL/COMMON NAME	SIZE	ROOT	REMARKS
(+)	26	Zelkova serrata "Green Vase" / Green Vase Zelkova	2 1/2-3" cal.	B&B	Central Leader Full Crown



- ① PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.
- ② TYPE OF CURB VARIES (MOD. COMB. CURB & GUTTER SEE DESIGN MANUAL).
- ③ 4" CONCRETE SIDEWALK AS REQUIRED BY SUBDIVISION REGULATIONS.
- ④ INDICATES 2" TOPSOIL, SEED AND MULCH.

TYPICAL SECTION CUL-DE-SAC
NO SCALE

YORKSHIRE DRIVE FROM STA 23+15 TO STA 25+00.50

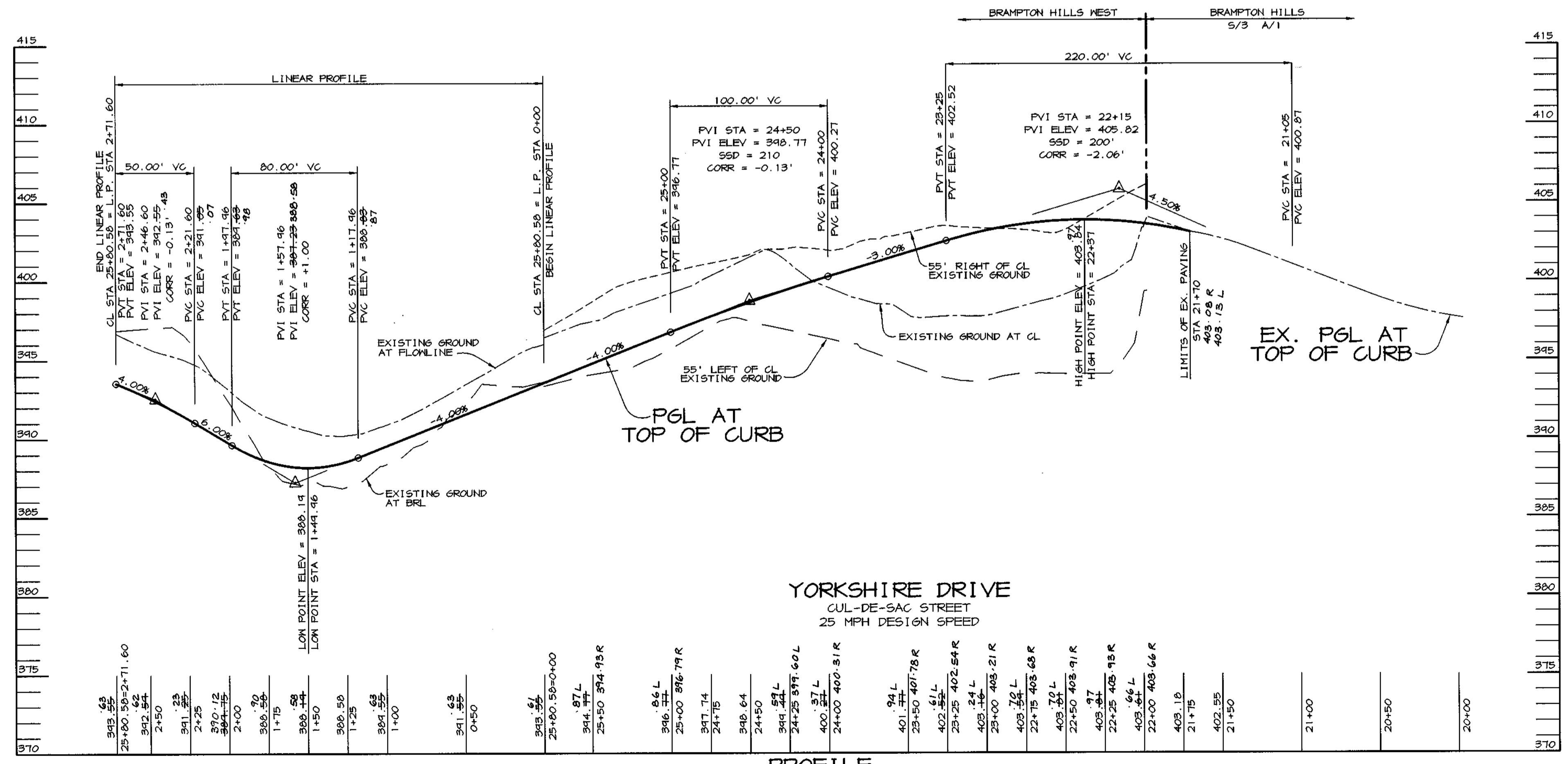


CURVE DATA					
RESIDENTIAL (24' APPROACH)					
CURVE	1	2	3	4	5
Δ	39°00'48"	27°07'24"	33°06'36"	42°00'00"	28°30'00"
R	25.00'	50.00'	25.00'	40.00'	35.00'
L	17.17'	24.02'	24.41'	26.17'	196.52'
T	8.94'	45.98'	13.29'	13.71'	33.68'
L.C.	16.83'	67.37'	23.45'	25.56'	50.62'

LEGEND
★ 100 MATT HPS VAPOR "TRADITIONAIRE" POST TOP FIXTURE MOUNTED ON A 14 FT. BLACK FIBERGLASS POLE.

PLAN
SCALE: 1" = 50'

NOTE: CURB IN THE VICINITY OF I-1 TO TRANSITION TO STD. C&B IN ACCORDANCE WITH HO. CO. STD. DETAIL R-9.06.



AS-BUILT 9-6-01 **F-98-104**

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. REID # 19949
DATE: 9-7-01

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
ANDREW M. CAULKINS # 412/98 DATE: 9/2/98
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
CINDY HANSTON # 9/10/98 DATE: 9/10/98
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
ARTHUR E. MUEGGE # 8707 DATE: 8-18-98
CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE NO. REVISION

OWNER/DEVELOPER
ECO DEVELOPMENT, INC.
8480 BALTIMORE NATIONAL PIKE
SUITE 408
ELLCOTT CITY, MARYLAND 21043
410-465-4242

PROJECT **BRAMPTON HILLS WEST**
FORMERLY PARCEL 'S'
LOTS 1 THRU 16

AREA TAX MAP NO. 30 ZONED R-20
PART OF PARCEL 383
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **PLAN AND PROFILE**
YORKSHIRE DRIVE

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive, Columbia, Maryland 21045
tel 410.997.8900 fax 410.997.9282

DESIGNED BY: CJR
DRAWN BY: DAM
PROJECT NO: SURVEY2/96H410
FINALRD RD2.DWG
DATE: AUGUST 20, 1998
SCALE: AS SHOWN
DRAWING NO. 2 OF 9

LEGEND

- SUPER SILT FENCE
- SILT FENCE
- DRAINAGE DIVIDE (STORM DRAINAGE)
- EARTH DIKE (A-2)
- LIMIT OF DISTURBANCE
- S.C.E. STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED TREE LINE
- EROSION CONTROL MATTING

SWM SUMMARY CHART SWMF DA: 7.20 AC.

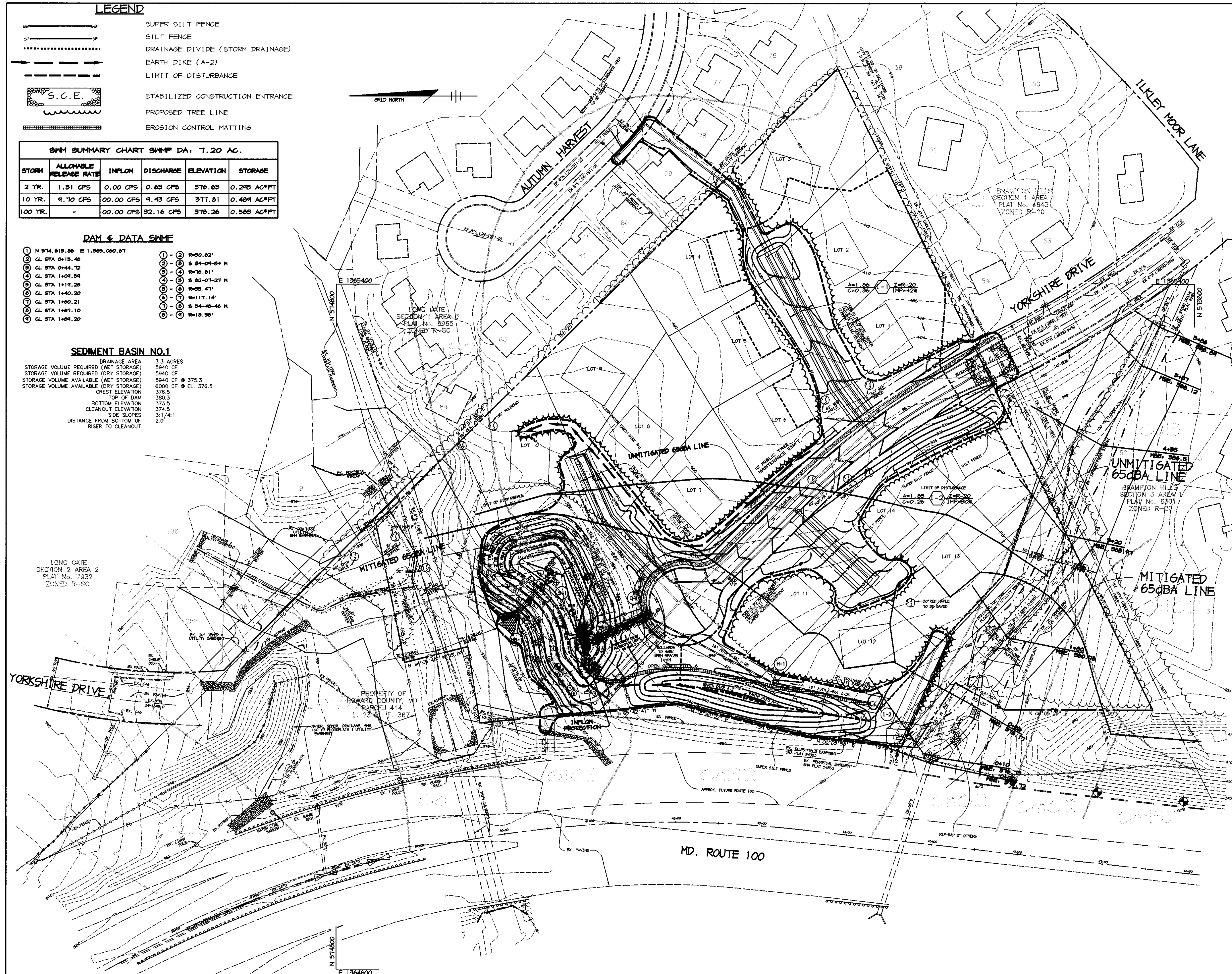
STORM	ALLOWABLE RELEASE RATE	INFLOW	DISCHARGE	ELEVATION	STORAGE
2 YR.	1.31 CFS	0.00 CFS	0.63 CFS	376.63	0.245 AC*FT
10 YR.	4.70 CFS	00.00 CFS	4.43 CFS	377.81	0.489 AC*FT
100 YR.	-	00.00 CFS	32.16 CFS	378.26	0.568 AC*FT

DAM & DATA SWMF

- ① N 574.615.00 E 1,365,090.67
- ② CL STA 0+19.46
- ③ CL STA 0+44.72
- ④ CL STA 1+09.89
- ⑤ CL STA 1+19.20
- ⑥ CL STA 1+40.20
- ⑦ CL STA 1+60.21
- ⑧ CL STA 1+81.10
- ⑨ CL STA 1+81.20
- ⑩ R=50.62'
- ⑪ S 34-01-54 M
- ⑫ S 82-07-27 M
- ⑬ R=28.47'
- ⑭ S 117.14'
- ⑮ S 54-48-46 M
- ⑯ R=10.50'

SEDIMENT BASIN NO.1

- STORAGE VOLUME REQUIRED (DRY STORAGE) 5940 CF
- STORAGE VOLUME REQUIRED (WET STORAGE) 5940 CF
- STORAGE VOLUME AVAILABLE (WET STORAGE) 5940 CF @ 375.3
- STORAGE VOLUME AVAILABLE (DRY STORAGE) 6000 CF @ EL. 376.5
- CREST ELEVATION 376.5
- TOP OF DAM 350.3
- BOTTOM ELEVATION 373.5
- CLEANOUT ELEVATION 374.5
- SIDE SLOPES 3:1 V:1
- DISTANCE FROM BOTTOM OF RISER TO CLEANOUT 2.0'



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 EROSION AND SEDIMENT 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.

Arthur E. Muegge 8-18-98
 DEVELOPER DATE

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 NOTIFIED THE DEVELOPER 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.

Arthur E. Muegge 8/18/98
 ENGINEER DATE

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.

Charles Sumner 8/25/98
 NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Arthur E. Muegge 8/25/98
 HOWARD SOIL CONSERVATION DISTRICT DATE

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 1994
 9-7-01
 CHRISTOPHER J. REID #19949 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Andrew M. Quaker 9/2/98
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Charles Sumner 9/1/98
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Arthur E. Muegge 9/10/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO. REVISION

OWNER/DEVELOPER
 ECO DEVELOPMENT, INC.
 8480 BALTIMORE NATIONAL PIKE
 SUITE 408
 ELLICOTT CITY, MARYLAND 21043
 410-465-4242

PROJECT **BRAMPTON HILLS WEST**
 FORMERLY PARCEL 'S'
 LOTS 1 THRU 16

AREA TAX MAP NO. 30 ZONED R-20
 PART OF PARCEL 383
 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE **DRAINAGE AREA MAP, GRADING AND SEDIMENT CONTROL PLAN**

RIEMER MUEGGE & ASSOCIATES, INC.
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
 8818 Centre Park Drive, Columbia, Maryland 21045
 tel 410.997.8900 fax 410.997.9282

8/18/98
 DATE

DESIGNED BY: CJR
 DRAWN BY: DAM
 PROJECT NO. SURVEY2/96H410
 FINALRD R03.DWG
 DATE: AUGUST 20, 1998
 SCALE: 1" = 50'
 DRAWING NO. 3 OF 9

Arthur E. Muegge
 ARTHUR E. MUEGGE #8707

K:\PROJECTS\96H410\FINAL\RD03 MON AUG 17 16:01:34 1998 RIEMER MUEGGE & ASSOCIATES, INC.

MD-378 STANDARDS AND SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

AREA PREPARATION
Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil.

AREA TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBSTACLES MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS.

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.

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 material.

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.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the surface of each layer covered by not less than one track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tire or vibratory roller.

Cutoff Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans.

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material.

PIPE CONDUITS
All pipes shall be circular in cross section.

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 comply with specification C-361.

2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length.

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.

4. Backfilling shall conform to Structure Backfill.

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

CONCRETE
Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

ROCK RIPRAP
All rock shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering.

1. Bulk specific gravity (saturated surface-dry basis) not less than 2.5.

2. Absorption not more than three percent.

3. Soundness: Weight loss in five cycles not more than 20 percent when sodium sulfate is used.

4. Riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous.

CARE OF WATER DURING CONSTRUCTION
All work on permanent structures shall be carried out in areas free from water.

STABILIZATION
All borrow areas shall be graded to provide proper drainage and left in a slightly condition.

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.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

Seeded Preparation - Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

Soil Amendments - Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq. ft.).

Seeding - For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bushels per acre of annual ryegrass (3.2 lbs. per 1000 sq. ft.).

Mulching - Apply 1 1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq. ft.) of unrotted small grain straw immediately after seeding.

Refer to the 1993 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seeded Preparation - Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

Soil Amendments - In lieu of soil test recommendations, use one of the following schedules:

1) Preferred - Apply 2 tons per acre dolomitic limestone (42 lbs. per 1000 sq. ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq. ft.) before seeding.

2) Acceptable - Apply 2 tons per acre dolomitic limestone (42 lbs. per 1000 sq. ft.) and 1000 lbs. per acre 10-10-10 fertilizer (28 lbs. per 1000 sq. ft.) before seeding.

Seeding - For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq. ft.) of Kentucky 31 Tall Fescue.

1) 2 tons per acre of well-anchored mulch straw and seed as soon as possible in the spring.

2) Use sod.

3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

Mulching - Apply 1 1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq. ft.) of unrotted small grain straw immediately after seeding.

Maintenance - Inspect all seeded areas and make needed repairs, replacements and reseeds.

SEDIMENT 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 (313-1855).

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 1944 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3:1.

4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THE PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1944 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOIL, TEMPORARY SEEDING, AND MULCHING (SEC. 6).

6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

7. SITE ANALYSIS:
TOTAL AREA OF SITE: 9.04 ACRES
AREA DISTURBED: 2.22 ACRES
AREA TO BE ROOFED OR PAVED: 0.56 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 1.66 ACRES
TOTAL CUT: 7600 CU. YARDS
TOTAL FILL: 7600 CU. YARDS

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

10. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.

11. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.

12. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL OR EMBANKMENT MATERIAL.

13. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 AC., APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS.

14. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

21.0 STANDARD SPECIFICATIONS FOR TOPSOIL

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

Purpose
To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where These Practices Apply
1. This practice is limited to areas having 2:1 or flatter slope where:
a. the texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

11. For the purpose of these standards and specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Historical Specifications
Refer to the 1993 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

1. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimentation Station.

1. Topsoil Specifications - Soil to be used as topsoil must meet the following:
1. Topsoil shall be a loam, sandy loam, clay loam, silty loam, sandy clay loam, loamy sand, other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority.

11. This subsoil is either highly acidic or composed of heavy clay, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

For sites having disturbed areas under 5 acres:
1. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.

11. For sites having disturbed areas over 5 acres:
1. On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
a. pH for topsoil shall be between 6.0 and 7.5.

2. No sod or seed shall be placed on soil which has been treated with soil stabilizers or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit disintegration of phytotoxic materials.

Notes: Topsoil substitutes to amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.

11. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.

V. Topsoil Application
1. When topsoiling, maintain needed erosion and sediment control practices such as diversions, erosion stabilization structures, bench dikes, slope stilt fences and sediment traps and basins.

11. Topsoil shall be uniformly distributed in a 4" to 8" layer and lightly compacted to a minimum thickness of 4".

1v. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seeded preparation.

1v. Alternative for Permanent Seeding - Instead of applying the full amount of lime and commercial fertilizer, computed sludge and amendments may be applied as specified below:

1. Composted Sludge Material for use on a soil conditions for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

a. Composted sludge shall be supplied by, or originate from, a person or persons that are FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3:1.

b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0.

c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

d. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lbs./1,000 square feet, and 1/3 the normal lime application rate.

Referenced: Subsoil Specifications, Soil Preparation and Seeding; MDVA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institute, Revised 1975.

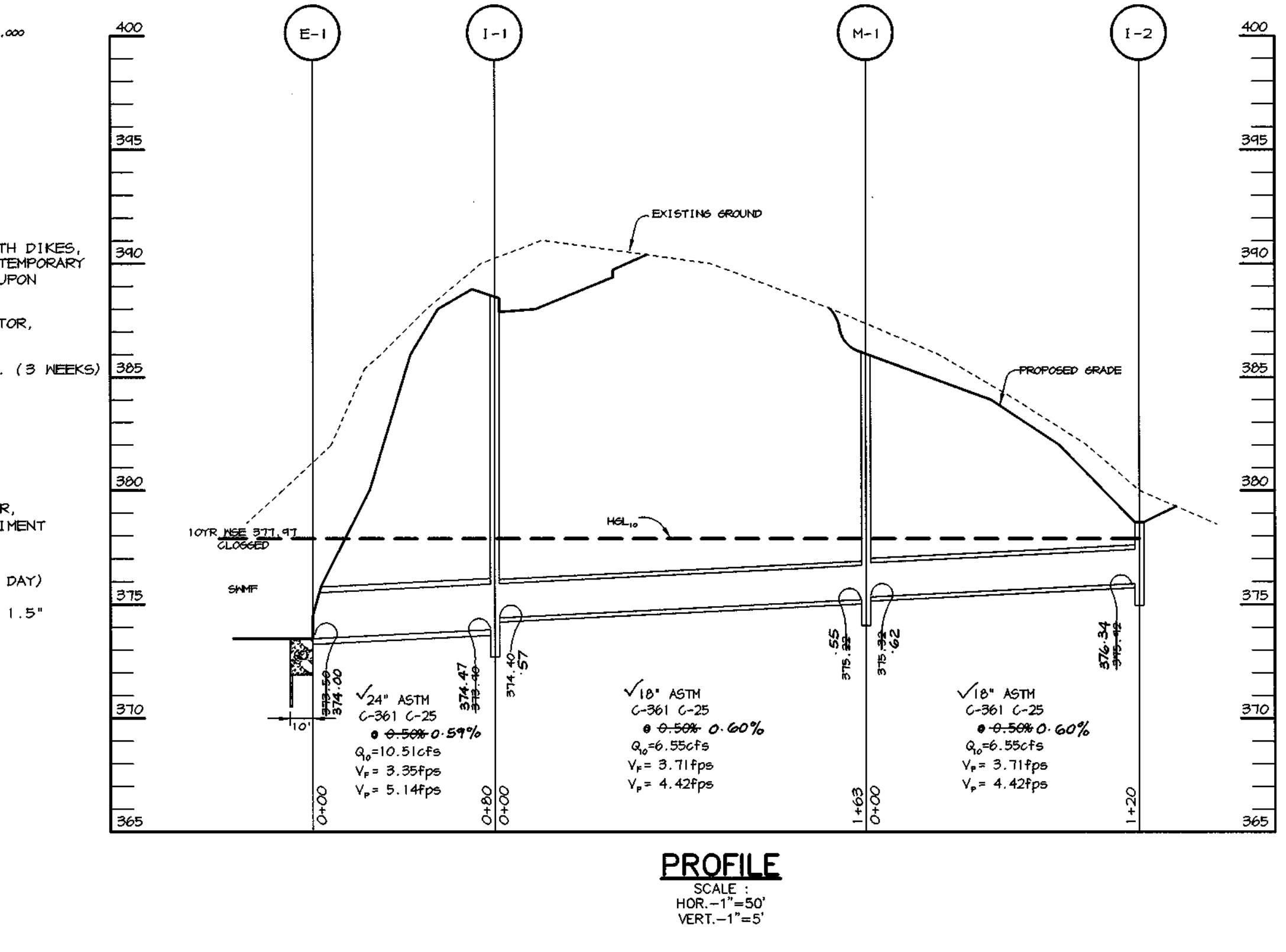
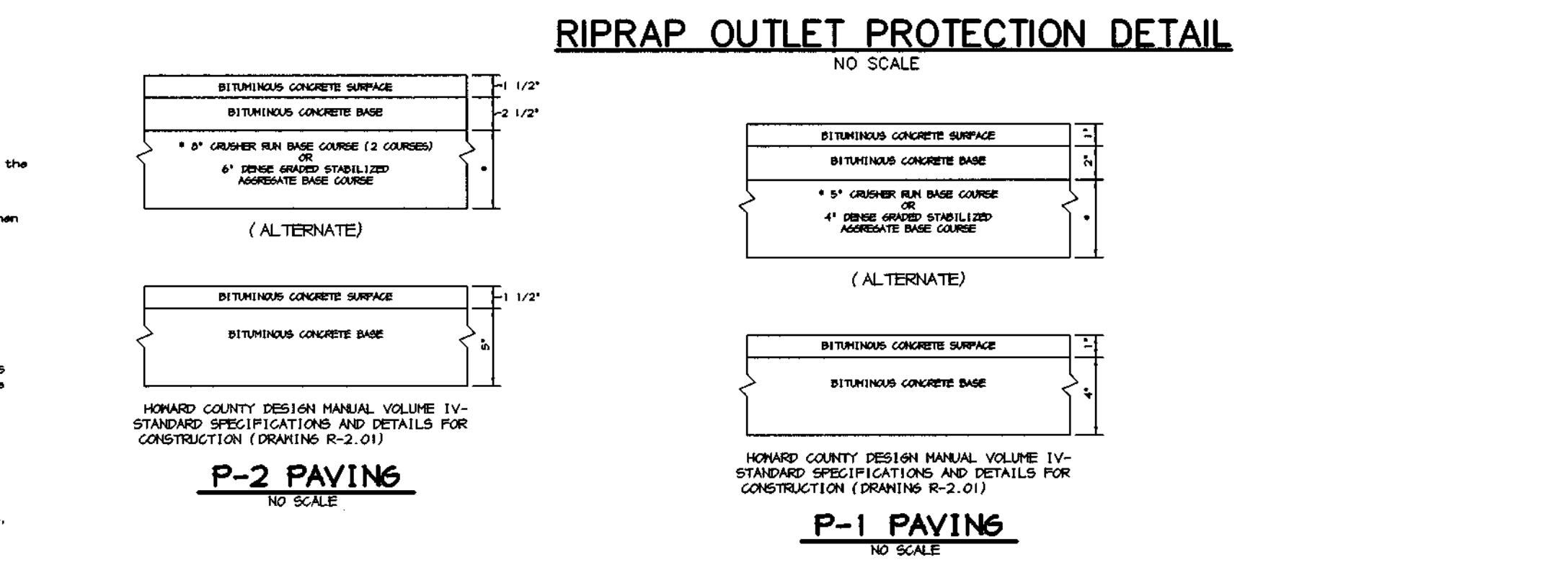
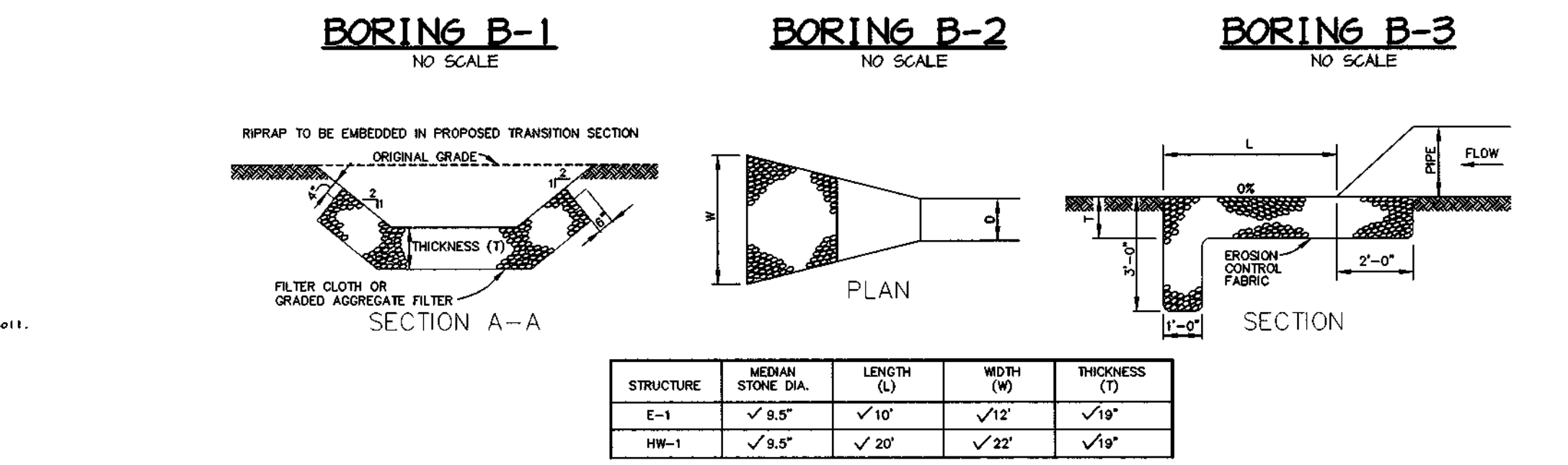
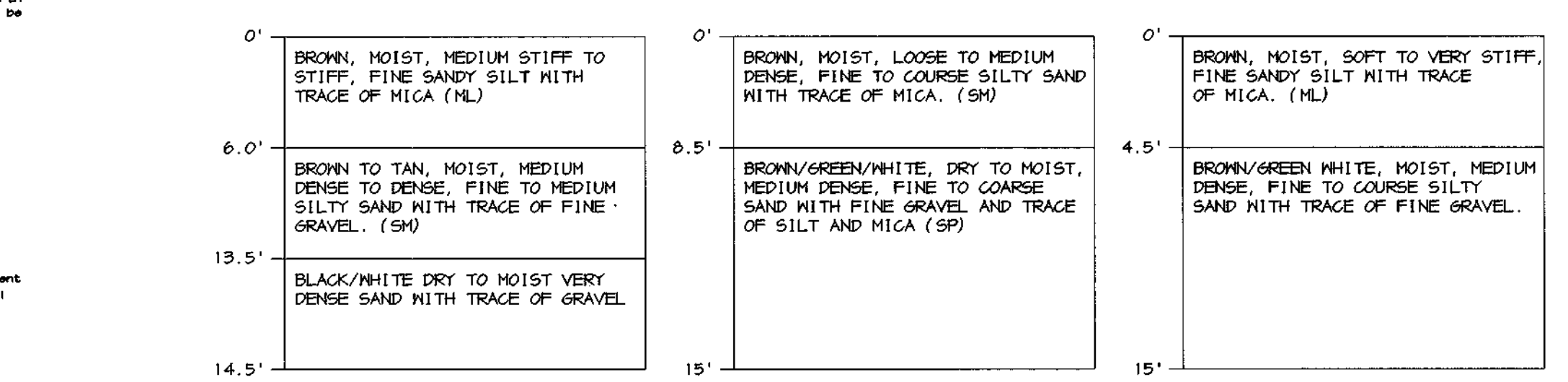
SEQUENCE OF CONSTRUCTION

- 1. CONTRACTOR TO OBTAIN GRADING PERMIT.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SEDIMENT BASIN, EARTH DIKES, AND SILT FENCE.
3. WITH PERMISSION OF HOWARD COUNTY DILP SEDIMENT CONTROL INSPECTOR, CLEAR AND GRUB SITE AND PERFORM ROUGH GRADINGS.
4. AS SUBGRADE ELEVATIONS ARE ESTABLISHED, INSTALL ALL UTILITIES.
5. INSTALL O&G THEN PAVE.
6. APPLY TOPSOIL AND STABILIZE DISTURBED AREAS AS NECESSARY IN ACCORDANCE WITH PERMANENT SEEDING NOTES.
7. INSTALL STREET LIGHTS, LANDSCAPING AND SIDEWALKS.
8. UPON APPROVAL OF HOWARD COUNTY DILP SEDIMENT CONTROL INSPECTOR, REMOVE ALL PERIMETER SEDIMENT CONTROL DEVICES AND CONVERT SEDIMENT BASIN TO PERMANENT SHIMP IN THE FOLLOWING STEPS:
a. CLEAN STORM DRAIN INLETS AND FLUSH OUT PIPES.
b. PUMP OUT STANDING WATER IN BASIN USING PUMPING STATION.
c. REMOVE ACCUMULATED SEDIMENT.
d. INSTALL RIP-RAP AND FOREBAY, REPLACE 4" ORIFICE PLATE WITH 1.5" ORIFICE PLATE AND REPLACE DRAW DOWN DEVICE.
e. STABILIZE REMAINING DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES.

STRUCTURE SCHEDULE

Table with columns: STRUCTURE, TYPE, LOCATION, INV. IN, INV. OUT, TOP, REMARKS. Includes structures I-1, I-2, M-1, S-1, E-1, HW-1 with specific dimensions and locations.

NOTES: * LOCATION IS AT CENTER OF THROAT OPENING AT FACE OF CURB FOR INLETS. TOP ELEVATION IS TOP OF CURB/GRATE/RIM FOR A-10 AND THROAT OPENING FOR 'D' INLETS. LOCATION IS AT END OF STRUCTURE FOR END SECTION. LOCATION IS AT END OF PIPE FOR HEADWALL.



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.

Developer signature: [Signature] DATE: 8-18-98

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.

Engineer signature: [Signature] DATE: 7-29-98

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: 8/25/98
NATURAL RESOURCES CONSERVATION SERVICE

Signature: [Signature] DATE: 8/25/98
HOWARD SOIL CONSERVATION DISTRICT

STATE OF MARYLAND seal
Signature: [Signature] DATE: 9-7-91
CHRISTOPHER W. WILHELM #19949

Signature: [Signature] DATE: 9/2/98
CHIEF, BUREAU OF HIGHWAYS

Signature: [Signature] DATE: 9/19/95
CHIEF, DIVISION OF LAND DEVELOPMENT

Signature: [Signature] DATE: 9/10/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Table with columns: DATE, NO., REVISION

OWNER/DEVELOPER: ECO DEVELOPMENT, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 408 ELLICOTT CITY, MARYLAND 21043 410-465-4242

PROJECT: BRAMPTON HILLS WEST FORMERLY PARCEL 'S' LOTS 1 THRU 16

AREA: TAX MAP NO. 30 ZONED R-20 PART OF PARCEL 383 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

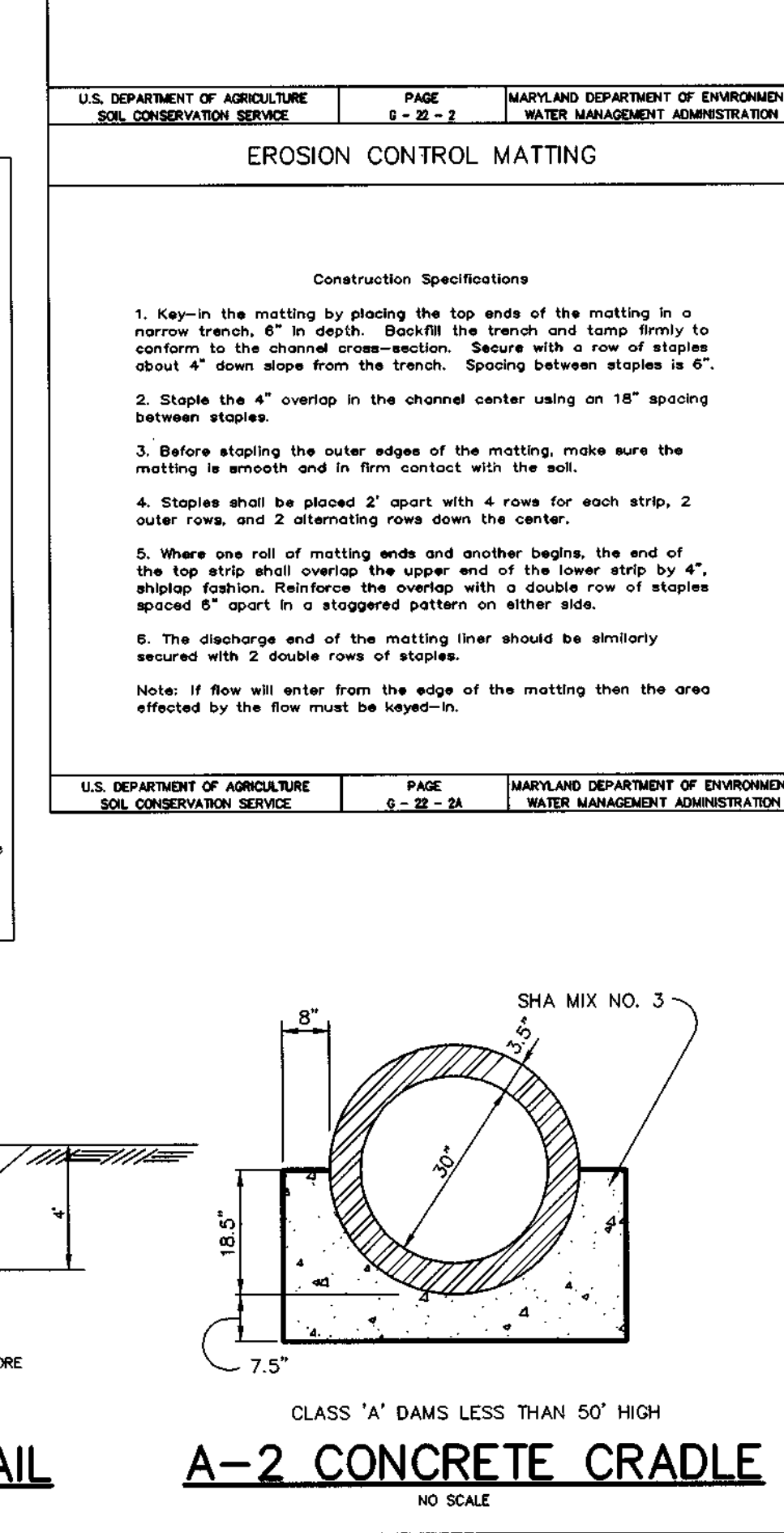
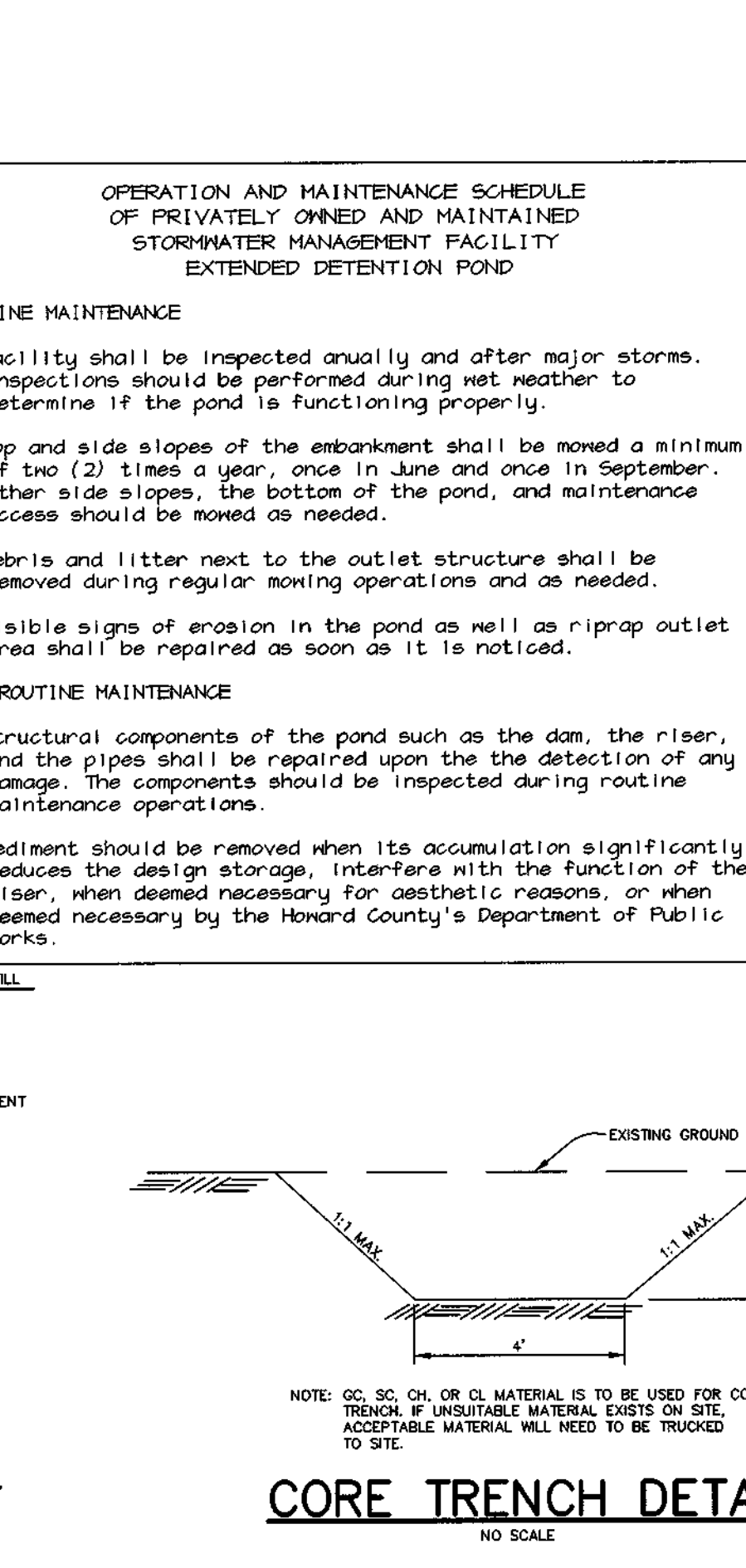
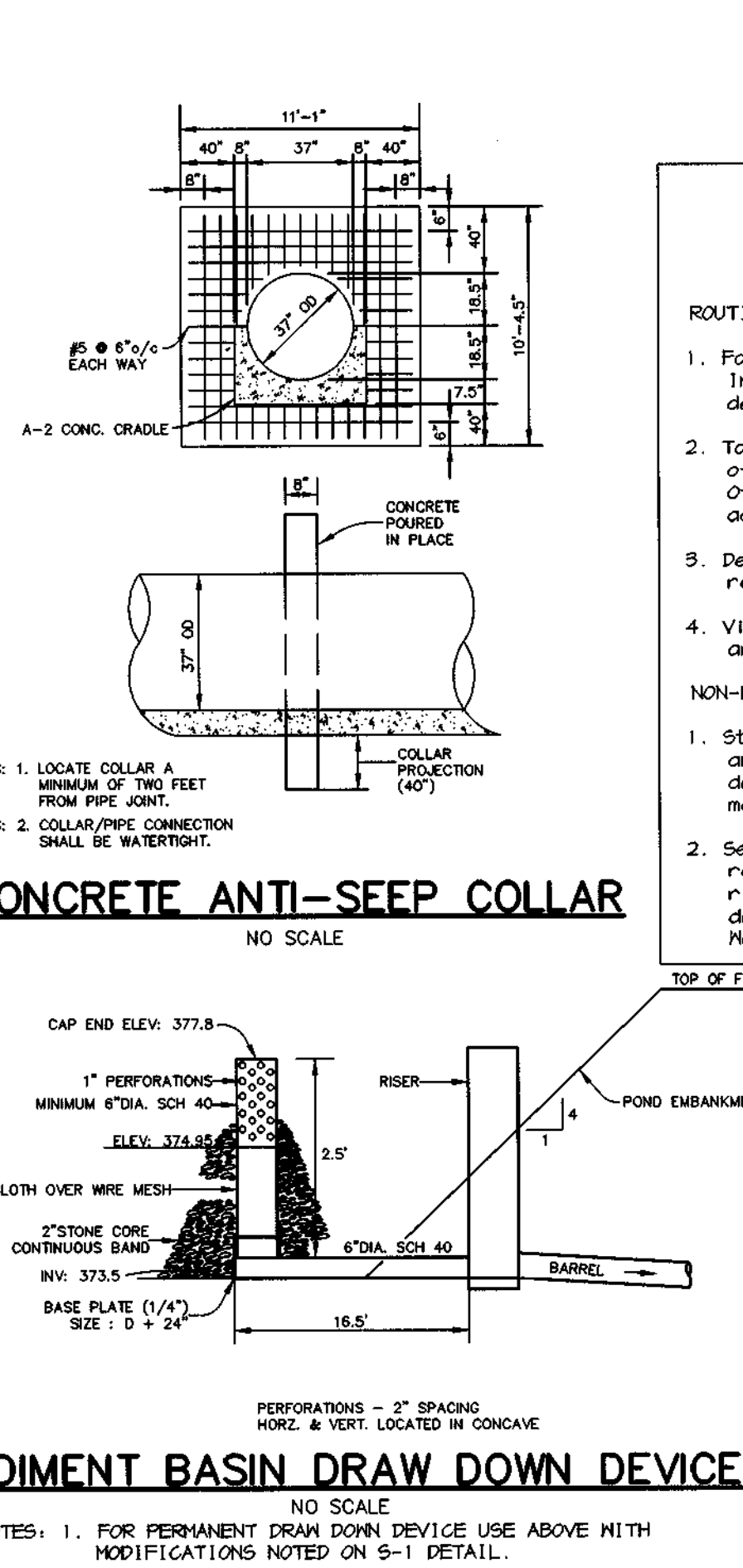
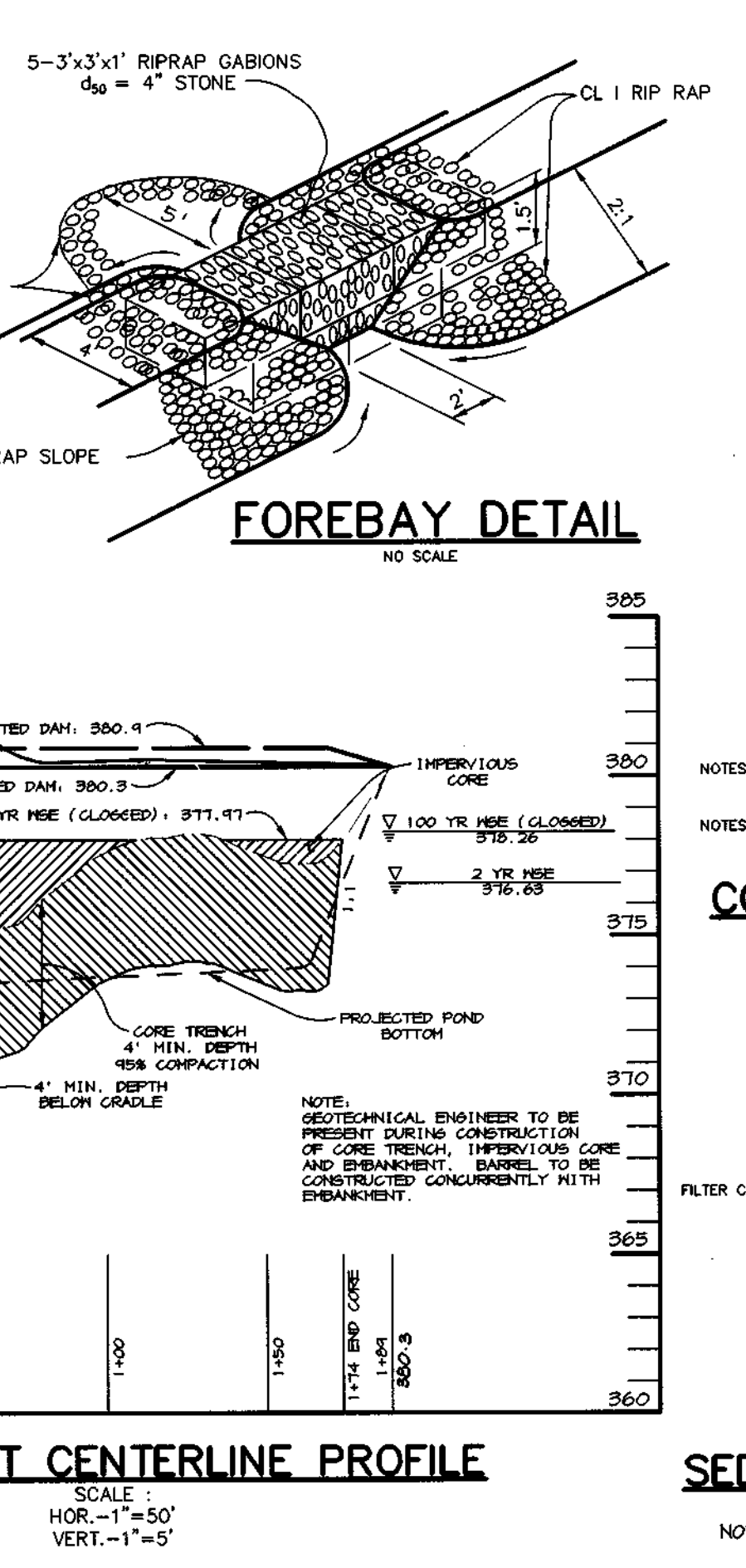
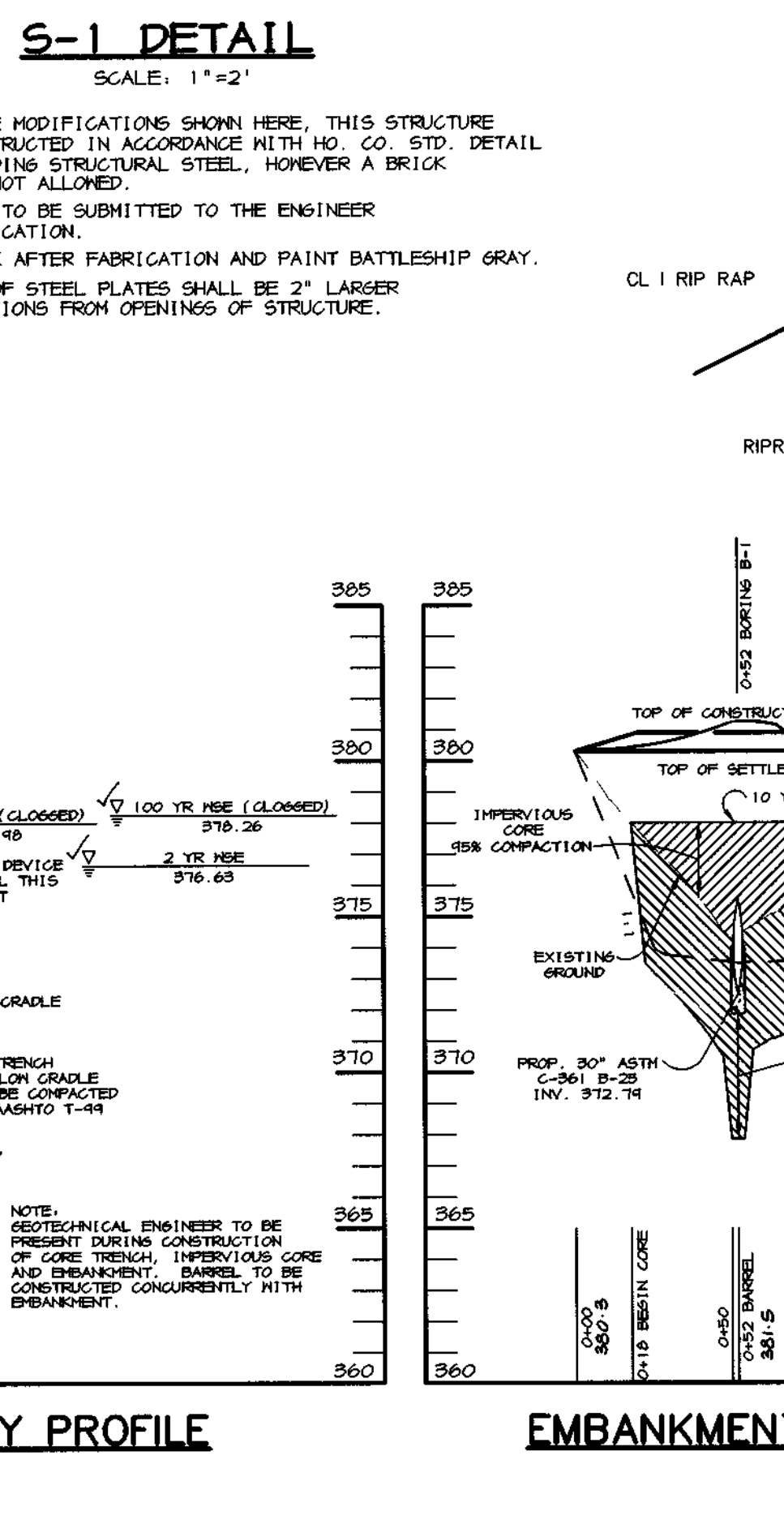
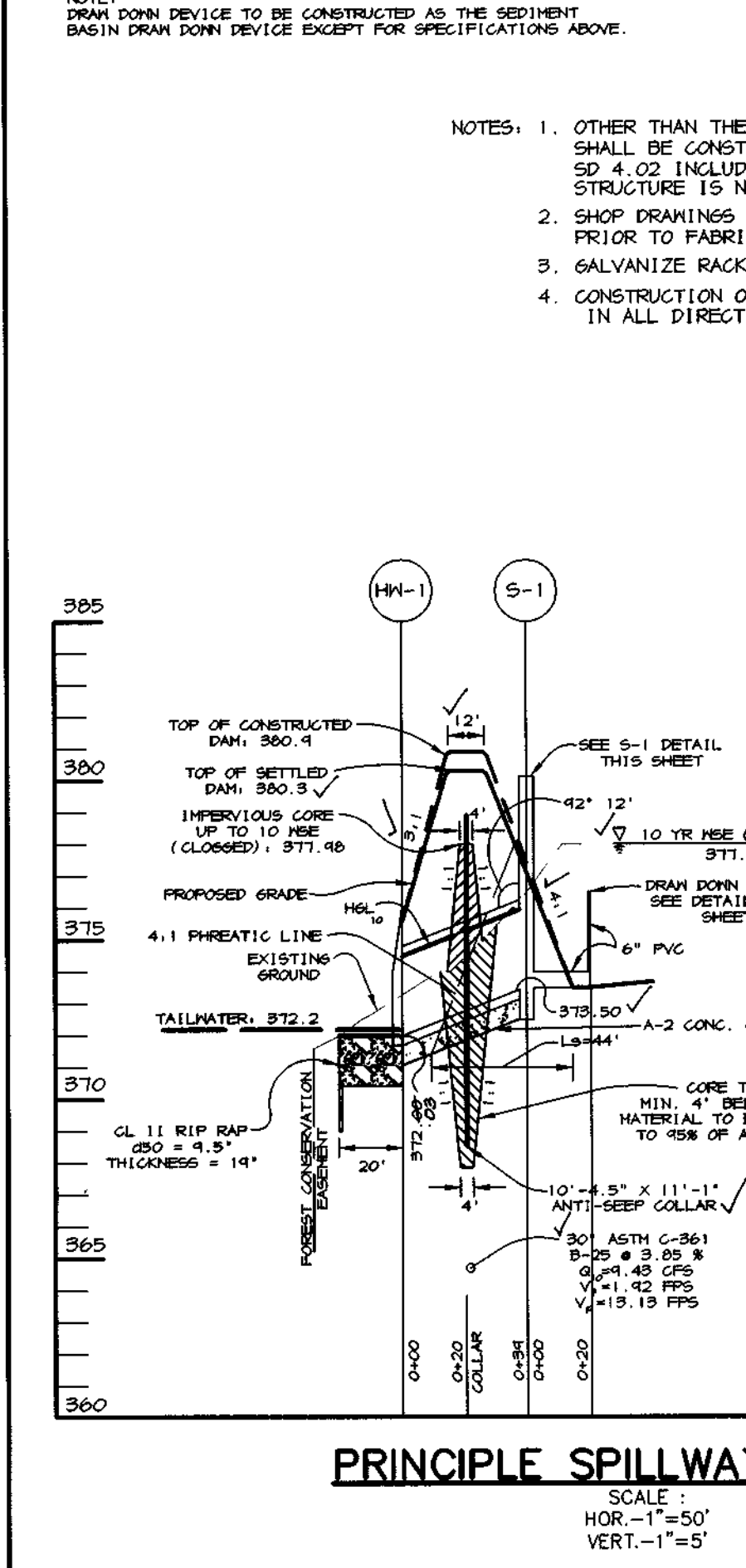
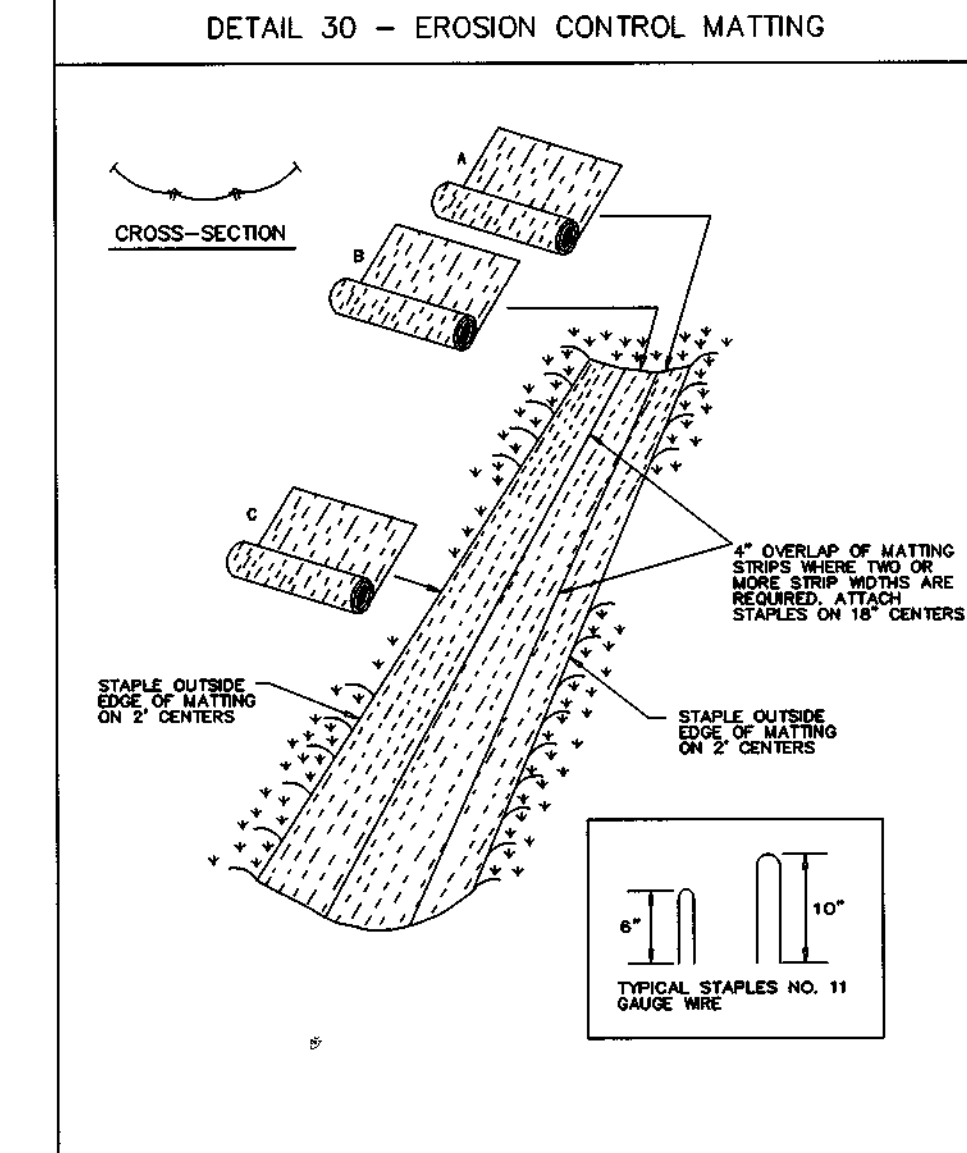
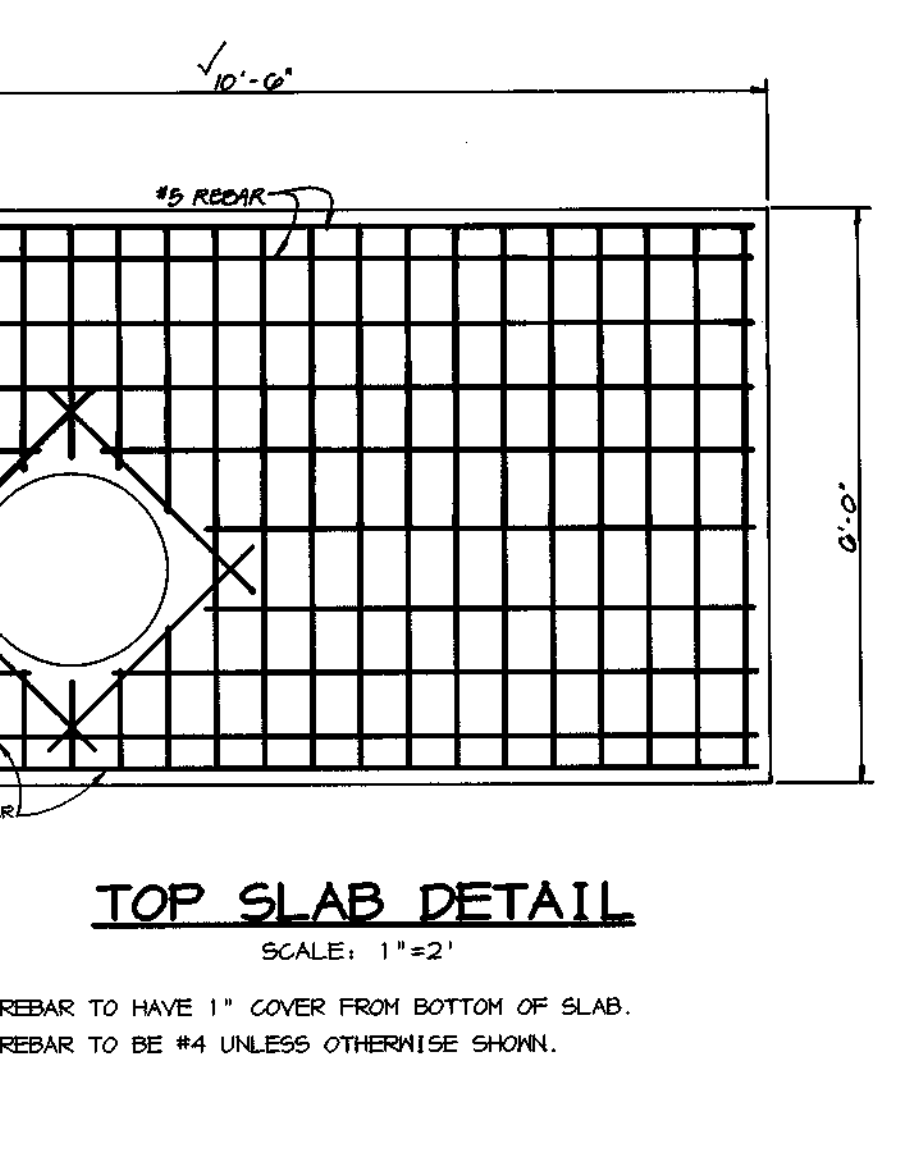
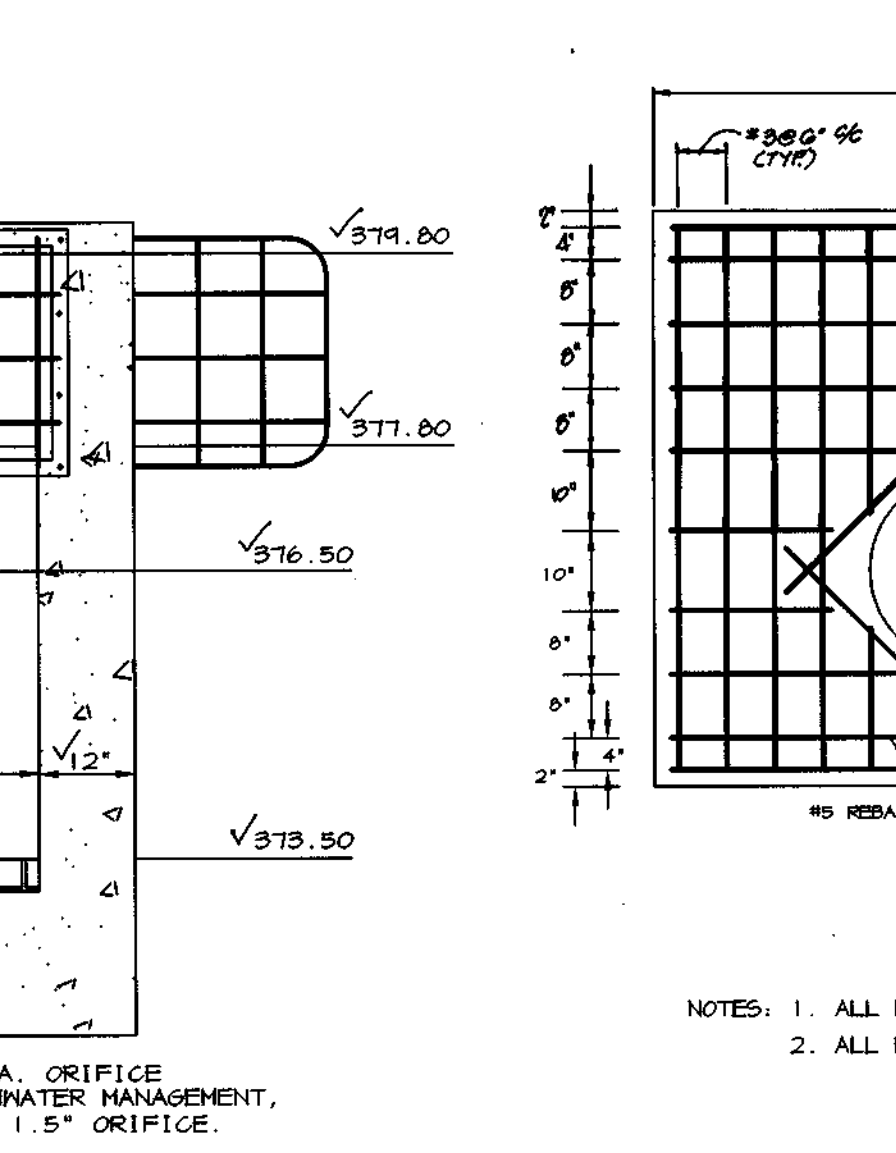
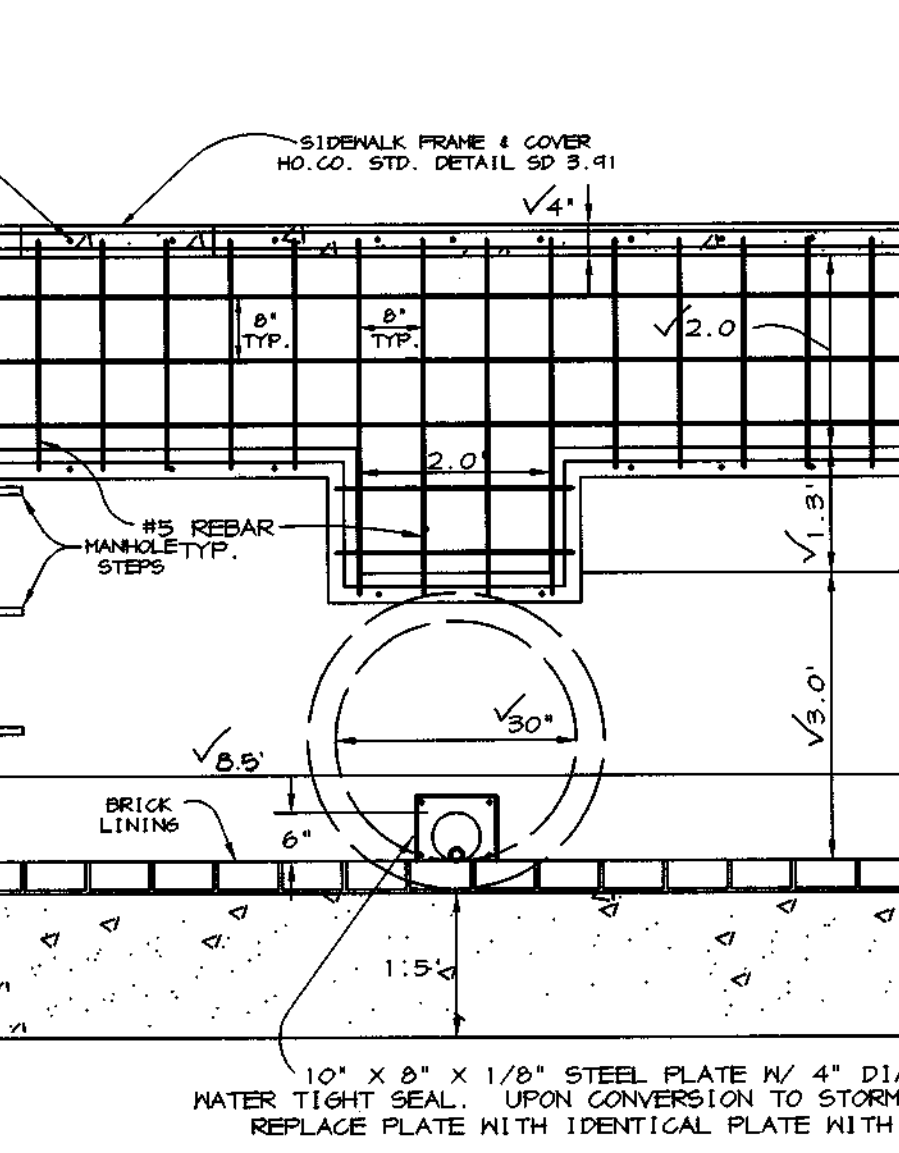
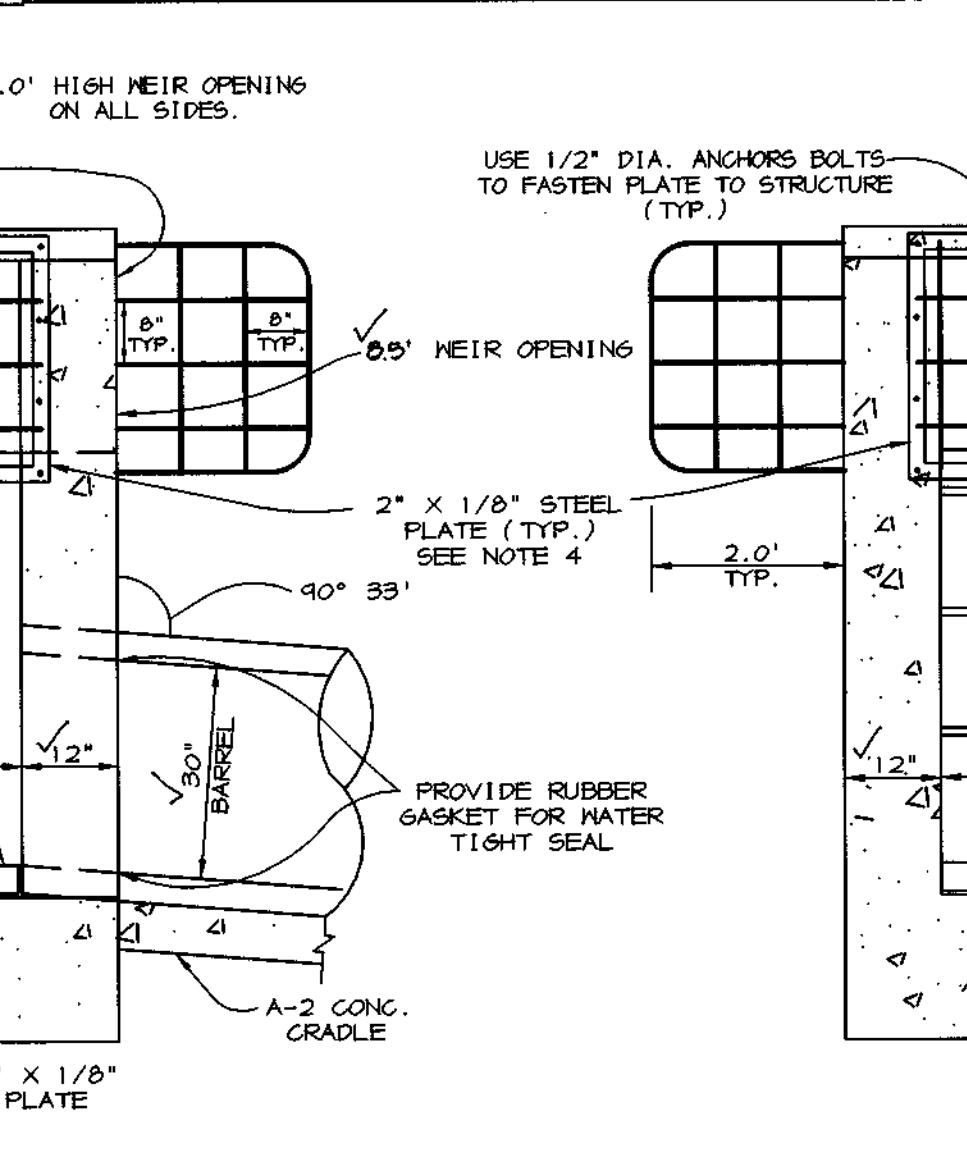
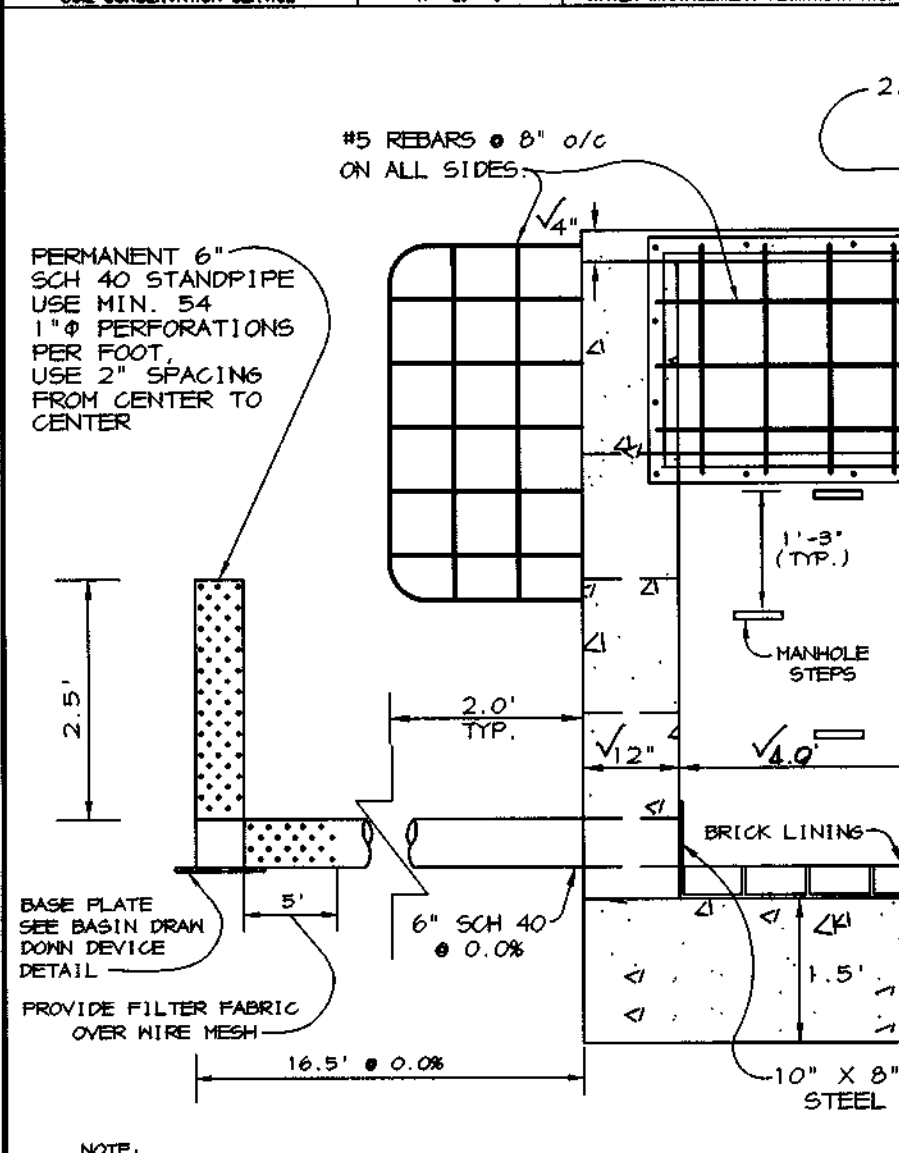
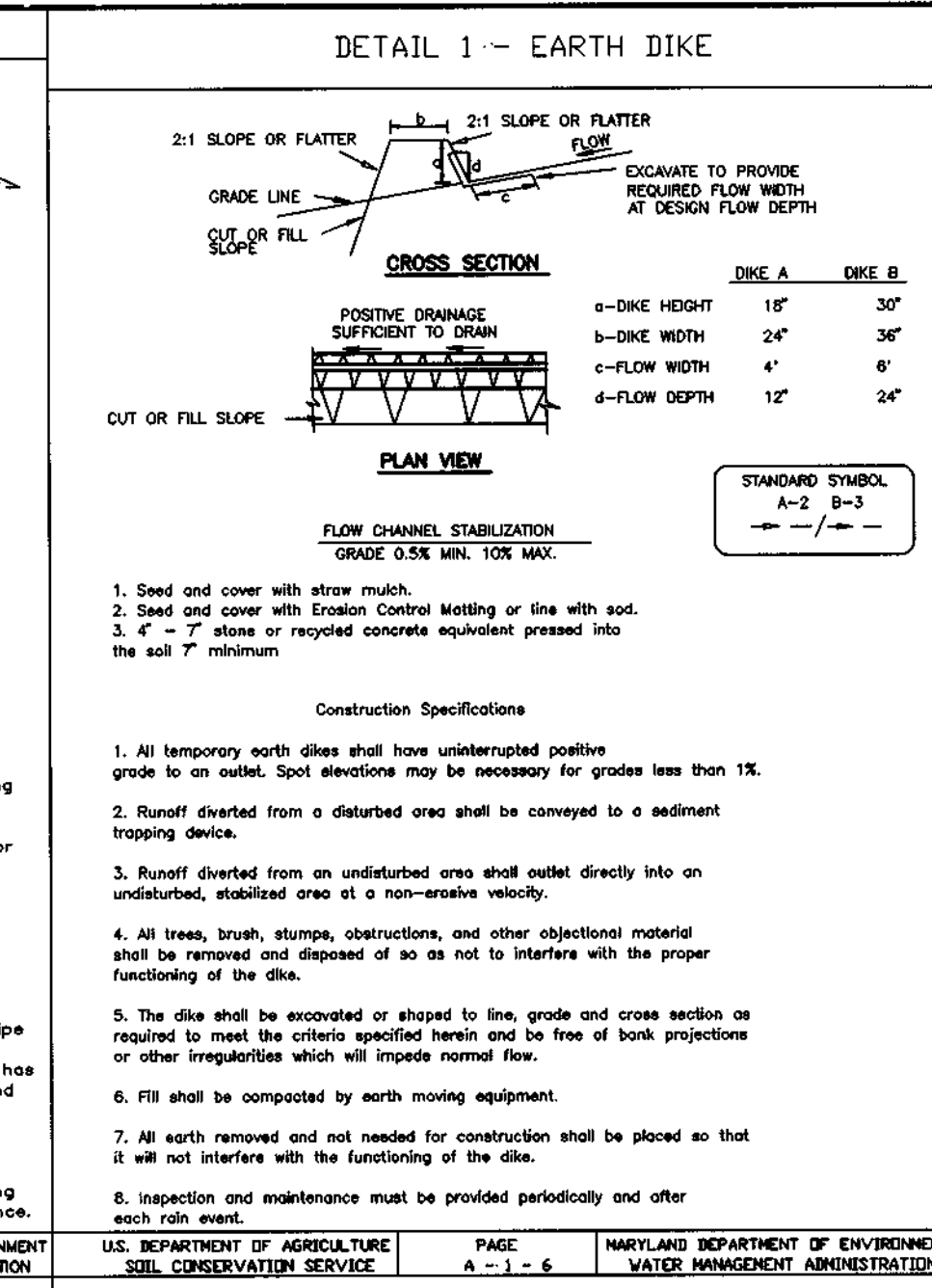
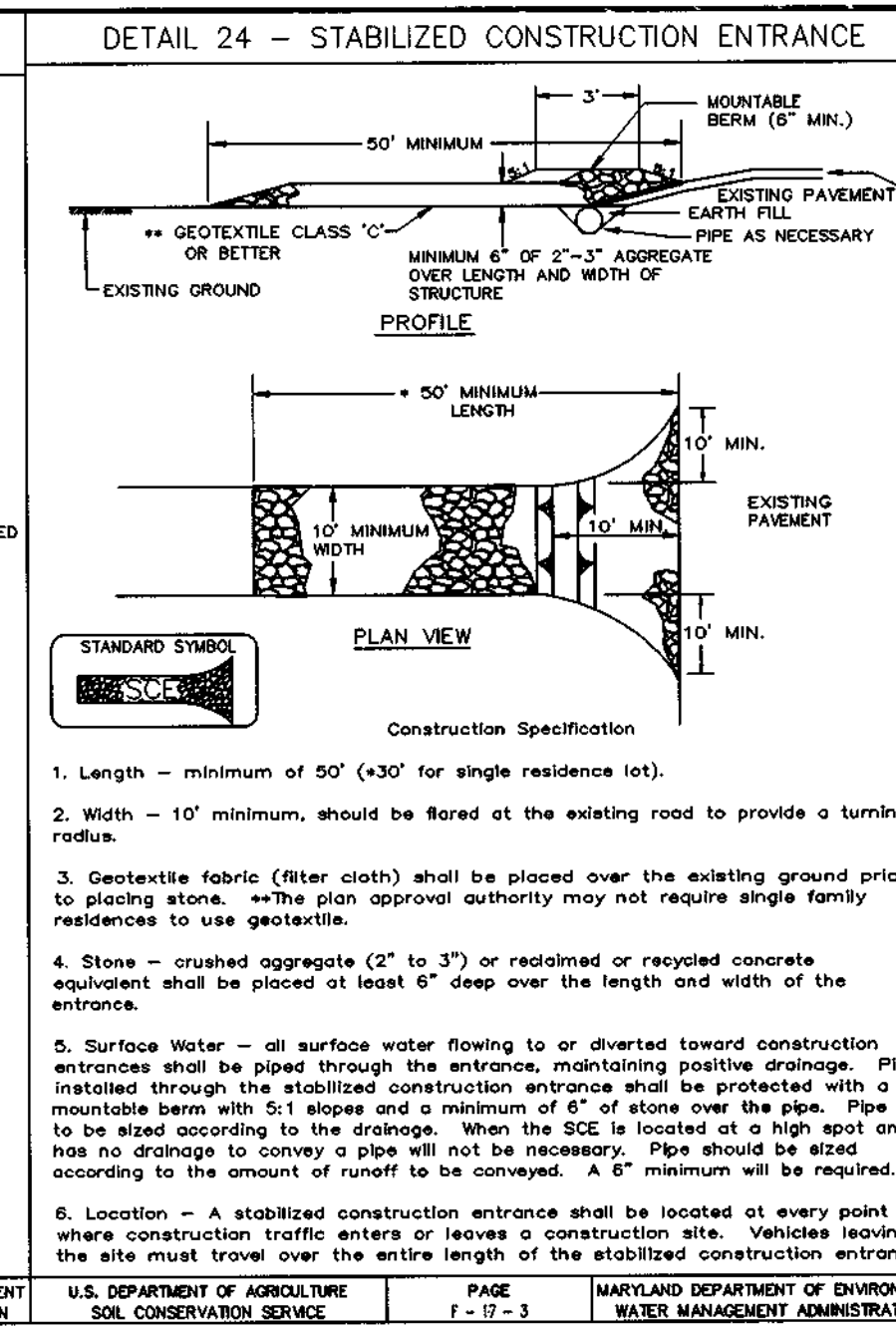
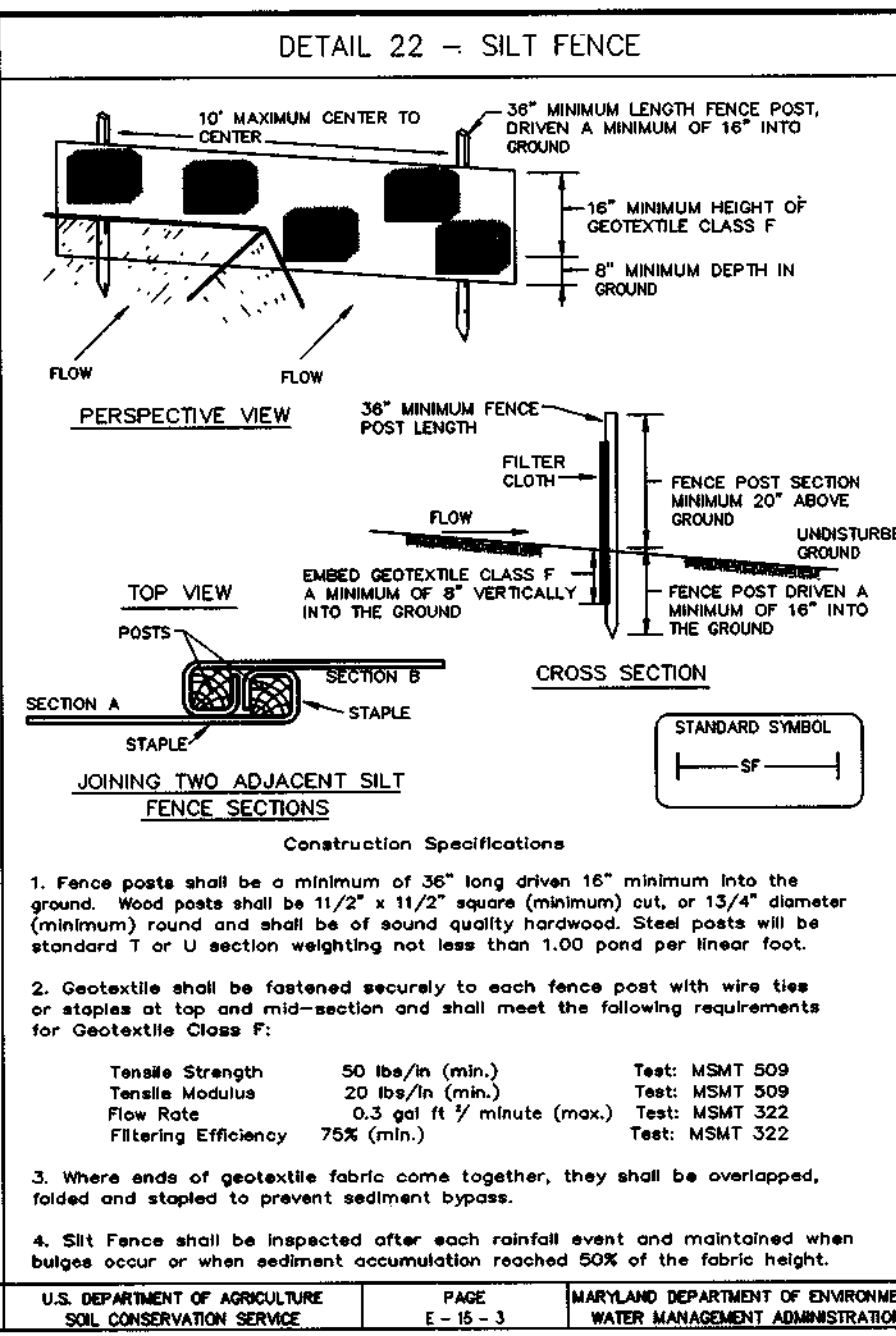
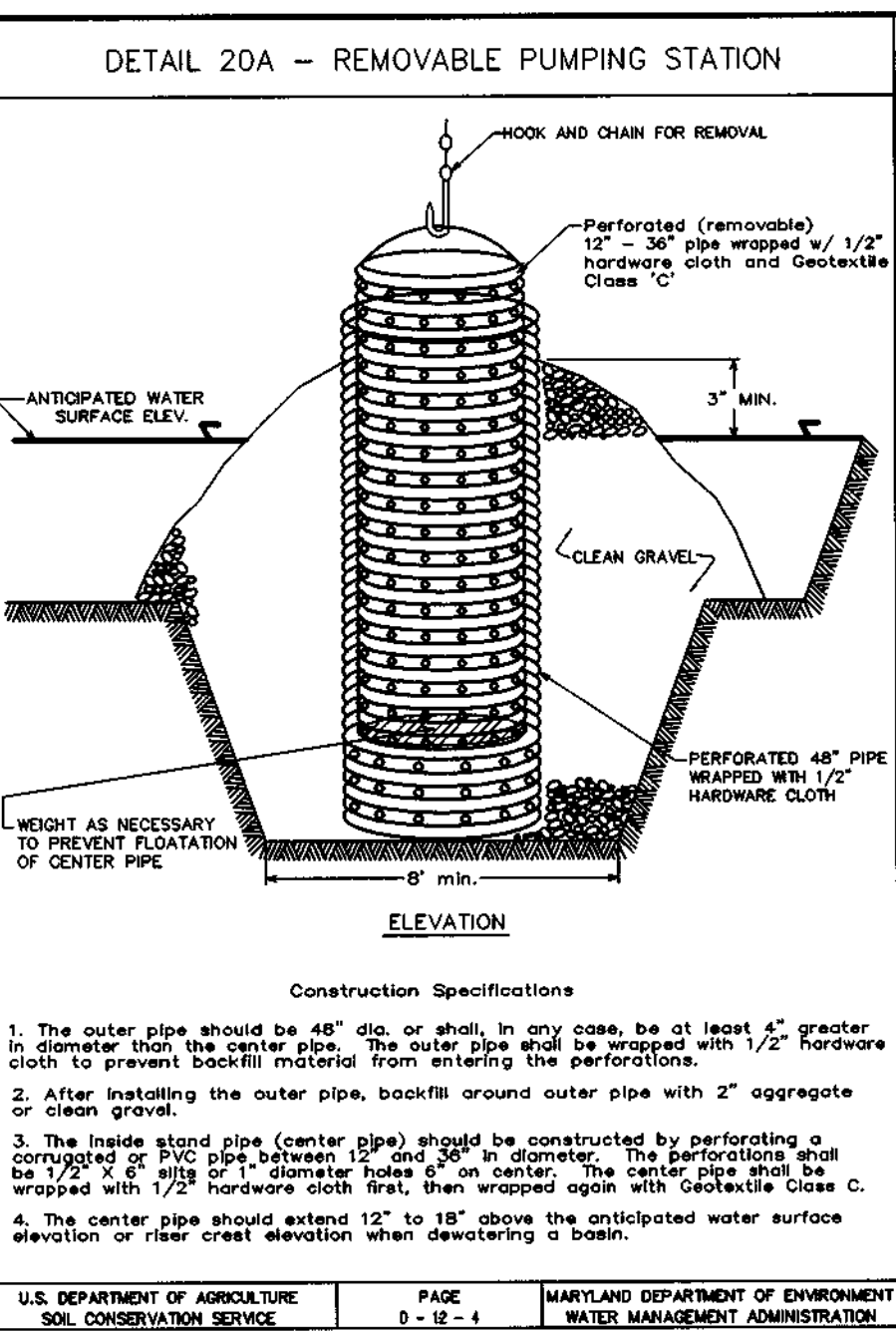
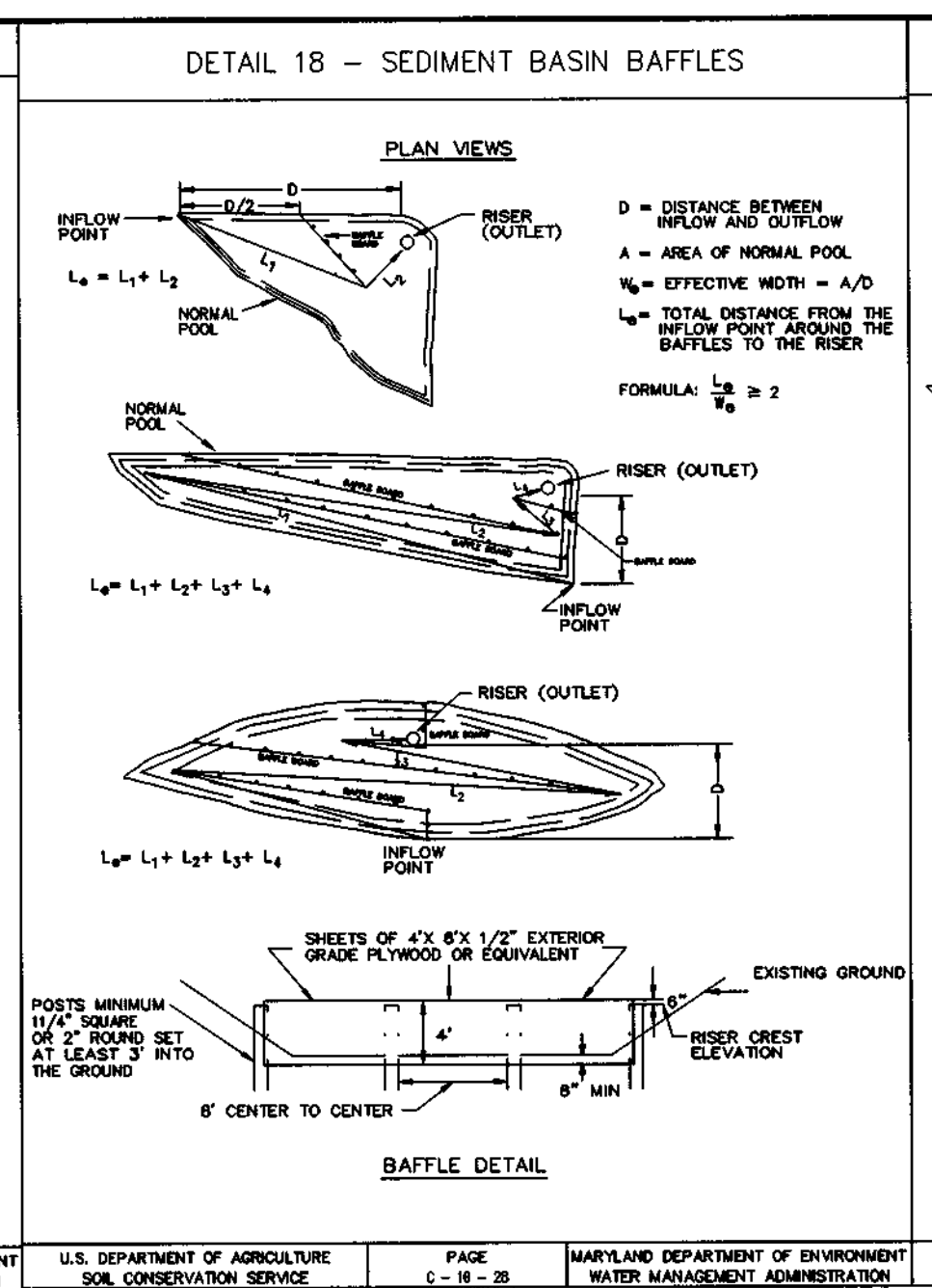
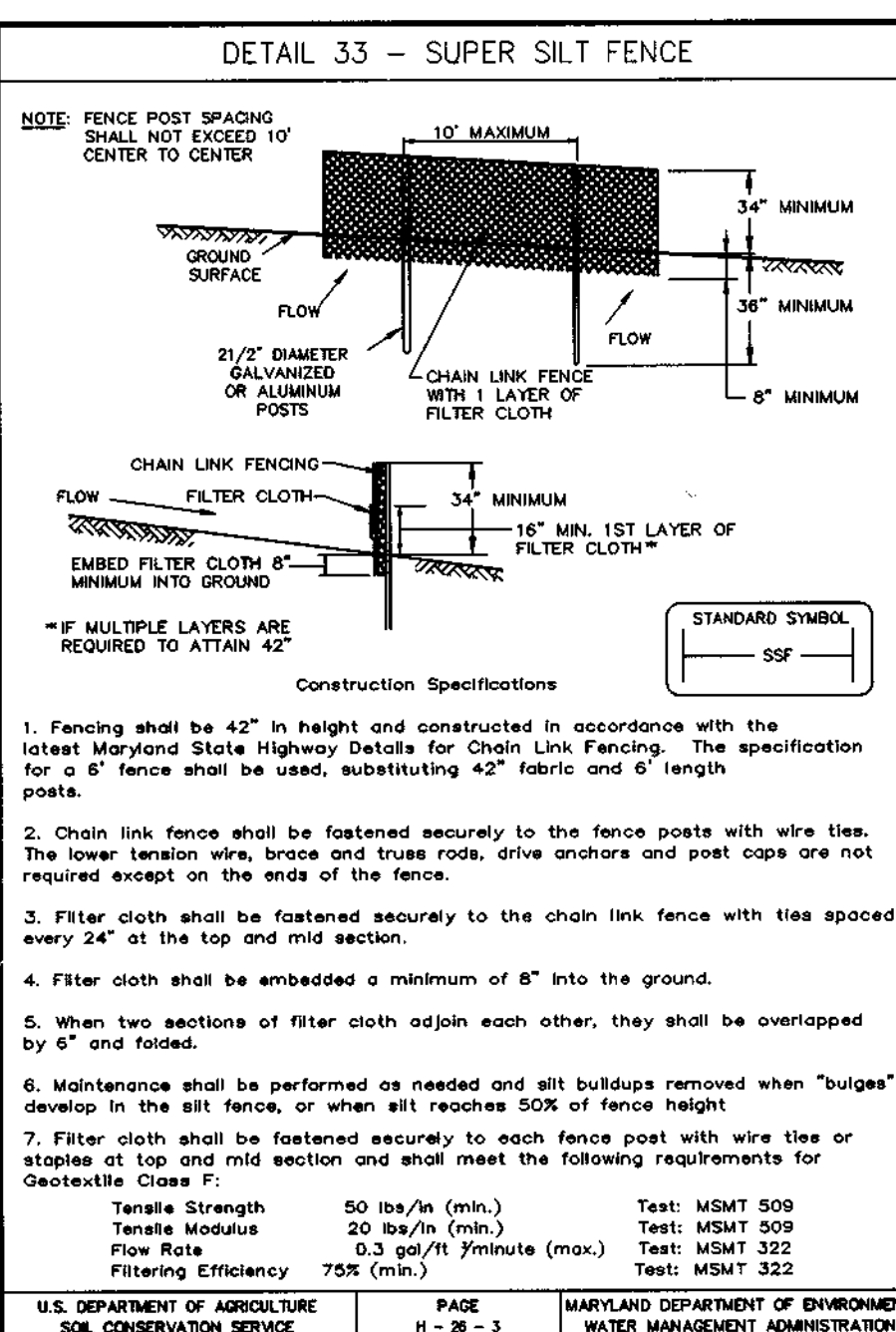
TITLE: STORMWATER MANAGEMENT NOTES AND DETAILS

RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING * ENVIRONMENTAL SERVICES * PLANNING * SURVEYING 8818 Centre Park Drive, Columbia, Maryland 21045

tel 410.997.8900 fax 410.997.9282

Signature: [Signature] DATE: 7-29-98

DESIGNED BY: CJR
DRAWN BY: DAM
PROJECT NO: SURVEY/98H410 FINAL RD4.DWG
DATE: AUGUST 20, 1998
SCALE: 1" = 50'
DRAWING NO. 4 OF 9



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.

Arthur E. Muegge 8-18-98
DEVELOPER DATE

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 NOTIFIED THE DEVELOPER 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.

Arthur E. Muegge 8-18-98
ENGINEER DATE

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.

Cheryl Simms 8/25/98
NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Christopher J. Reid 8/25/98
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Richard M. Daniels 9/2/98
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Chris Hammit 9/14/98
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Chris Hammit 9/10/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO. REVISION

OWNER/DEVELOPER

ECO DEVELOPMENT, INC.
8480 BALTIMORE NATIONAL PIKE
SUITE 408
ELLCOTT CITY, MARYLAND 21043
410-465-4242

PROJECT **BRAMPTON HILLS WEST FORMERLY PARCEL 'S' LOTS 1 THRU 16**

AREA TAX MAP NO. 30 ZONED R-20 PART OF PARCEL 383 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE **PROFILES AND DETAILS**

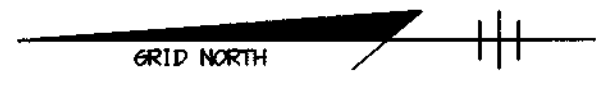
RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive, Columbia, Maryland 21045
tel 410.997.8900 fax 410.997.9282

8-18-98 DATE

DESIGNED BY: CJR
DRAWN BY: DAM
PROJECT NO: SURVEY2/96H410 FINAL RDS.DWG
DATE: AUGUST 20, 1998
SCALE: AS SHOWN
DRAWING NO. 5 OF 9

Arthur E. Muegge #8701
ARTHUR E. MUEGGE #8701
AS-BUILT 9-6-01 F-98-104

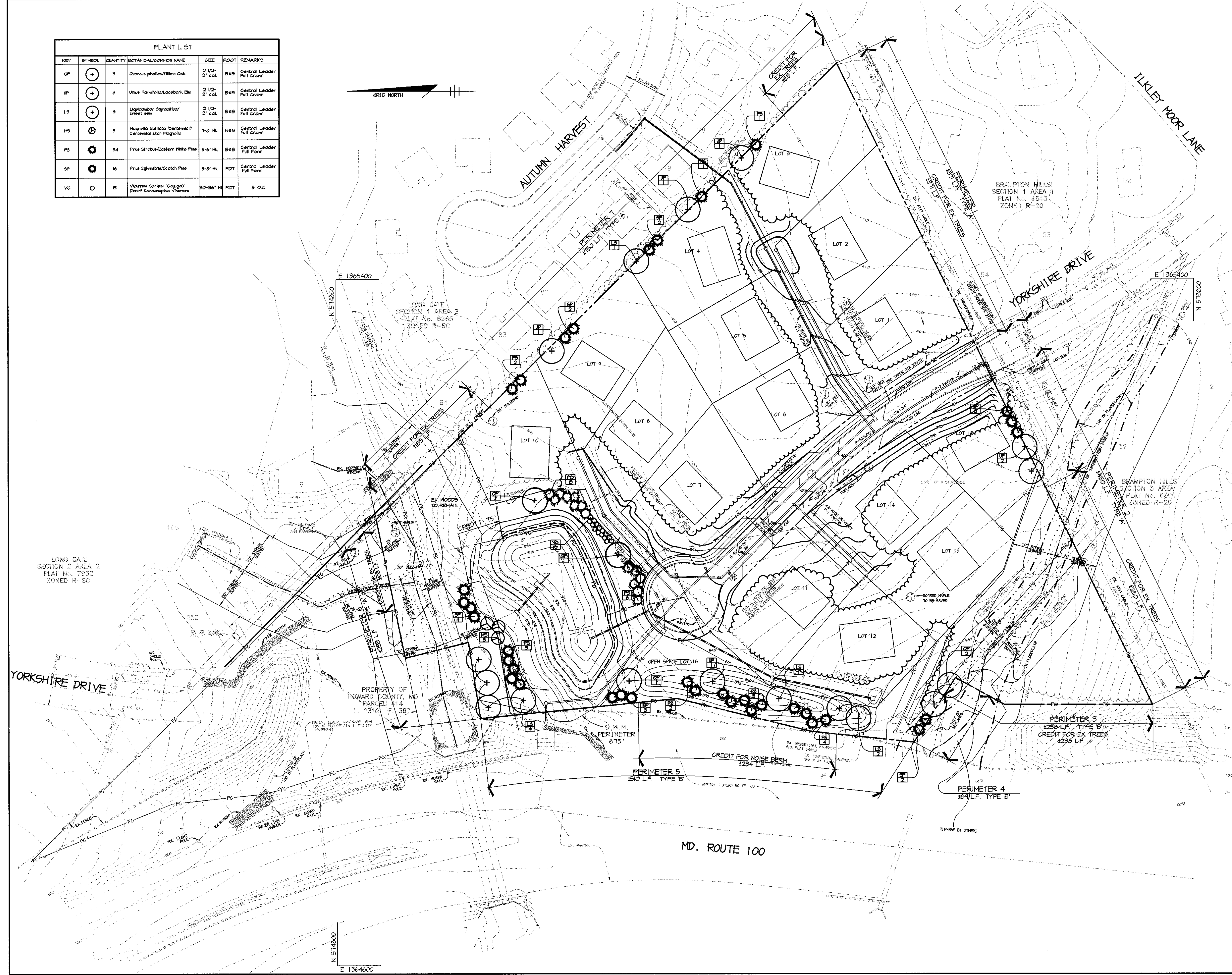
PLANT LIST						
KEY	SYMBOL	QUANTITY	BOTANICAL/COMMON NAME	SIZE	ROOT	REMARKS
OP	(+)	5	Quercus phellos/Willow Oak	2 1/2-3" cal.	B4B	Central Leader Full Crown
UP	(*)	6	Ulmus Parvifolia/Lacebark Elm	2 1/2-3" cal.	B4B	Central Leader Full Crown
LS	(*)	8	Liquidambar styraciflua/Sweet gum	2 1/2-3" cal.	B4B	Central Leader Full Crown
MS	(*)	3	Magnolia Stellata 'Centennial'/Centennial Star Magnolia	7-8' Ht.	B4B	Central Leader Full Crown
PS	(*)	34	Pinus Strobus/Eastern White Pine	5-6' Ht.	B4B	Central Leader Full Form
SP	(*)	16	Pinus Sylvestris/Scotch Pine	5-6' Ht.	POT	Central Leader Full Form
VC	(o)	15	Viburnum Carlesii 'Cayuga'/Dwarf Koreanopice Viburnum	30-36" Ht.	POT	5" O.C.



PLANTING LEGEND

SYMBOL	TYPE OF PLANT MATERIAL
(---)	EXISTING TREE LINE
(---)	PROPOSED TREE LINE
(*)	EXISTING TREE
(+)	NEW SHADE TREE
(*)	NEW ORNAMENTAL TREE
(*)	NEW EVERGREEN TREE
(o)	NEW SHRUB

- NOTES:**
- FOR LANDSCAPE SCHEDULE, PLANTING DETAILS, AND PLANTING SPECIFICATIONS, SEE LANDSCAPE NOTES AND DETAILS SHEET, DRAWING NO. 7.
 - STREET TREES ARE PROVIDED, AS REQUIRED BY THE HOWARD COUNTY SUBDIVISION REGULATIONS AND LANDSCAPE MANUAL, ON THE ROADWAY DRAWING, SHEET 2.
 - THIS PLAN IS FOR LANDSCAPE PURPOSES ONLY. SEE SHEET 3 FOR FINAL GRADING AND SHEETS 8 & 9 FOR REFORESTATION REQUIREMENTS.
 - 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 REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DFW DEVELOPERS AGREEMENT IN THE AMOUNT OF \$10,000.



AS BUILT CERTIFICATE CHRISTOPHER J. REID #19949 DATE 9.7.01	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. CHIEF, BUREAU OF HIGHWAYS DATE 9/2/01	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. CHIEF, DIVISION OF LAND DEVELOPMENT DATE 7/17/01	
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 9/10/01	
DATE NO.	REVISION
OWNER/DEVELOPER	
ECO DEVELOPMENT, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 408 ELLICOTT CITY, MARYLAND 21043 410-465-4242	
PROJECT BRAMPTON HILLS WEST FORMERLY PARCEL 'S' LOTS 1 THRU 16	
AREA TAX MAP NO. 30 ZONED R-20 PART OF PARCEL 383 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE LANDSCAPE PLAN	
RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive, Columbia, Maryland 21045 tel 410.997.8900 fax 410.997.9282	
DESIGNED BY : CJR BLW DRAWN BY : DAM BLW PROJECT NO: SURVEY2/96H410 FINALRD/NEWSLSCP.DWG DATE : AUGUST 20, 1998 SCALE : 1" = 50' DRAWING NO. 6 OF 9	7.22.98 DAVID T. DOWS #830

PROJECT/SURVEY/96H410/FINALRD/NEWSLSCP Tue Jul 21 10:10:32 1998 RIEMER MUEGGE & ASSOCIATES, INC.

LANDSCAPE SCHEDULES

SCHEDULE A PERIMETER LANDSCAPE EDGE							
PERIMETER	ADJACENT TO ROADWAYS			ADJACENT TO PERIMETER PROPERTIES			
	3	4	5	1	2	6	7
LANDSCAPE TYPE	B	B	B	A	A	A	A
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	± 250 L.F.	± 84 L.F.	± 510 L.F.	± 371 L.F.	± 480 L.F.	± 258 L.F.	± 750 L.F.
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES ± 250'	NO	NO	YES ± 91'	YES ± 200'	YES ± 108'	YES ± 210'
CREDIT FOR WALL FENCE OR BORN (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	YES ± 294 L.F.	NO	NO	NO	NO
NET PERIMETER L.F.	(60 L.F.)	(84 L.F.)	(276 L.F.)	(40 L.F.)	(250 L.F.)	(150 L.F.)	(480 L.F.)
NUMBER OF PLANTS REQUIRED							
SHADE TREES	0	0	0	0	0	0	0
EVERGREEN TREES	0	0	0	0	0	0	0
SHRUBS	0	0	0	0	0	0	0
NUMBER OF PLANTS PROVIDED							
SHADE TREES	0	0	4	0	0	0	4
EVERGREEN TREES	0	0	11	0	0	0	0
SHRUBS	0	0	0	0	0	0	0
SMALL FLOWERING TREES	0	0	0	0	0	0	0

SUBSTITUTION NOTES:

- PERIMETER 5
(4) EVERGREEN TREES HERE SUBSTITUTED FOR (2) SHADE TREES.
PERIMETER 7
(6) EVERGREEN TREES HERE SUBSTITUTED FOR (4) SHADE TREES.

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING	
1. LINEAR FEET OF PERIMETER	± 675 L.F.
2. CREDIT FOR EXISTING VEGETATION (NO, YES AND %) (DESCRIBE BELOW IF NEEDED)	YES 75 L.F.
3. CREDIT FOR OTHER LANDSCAPING (NO, YES AND %) (DESCRIBE BELOW IF NEEDED)	NO
4. NUMBER OF TREES REQUIRED (± 600' PERIMETER)	
SHADE TREES (± 1/2")	12
EVERGREEN TREES (± 1/4")	8
5. NUMBER OF TREES PROVIDED	
SHADE TREES	4
EVERGREEN TREES	3
FLOWERING TREES	15
SHRUBS	15

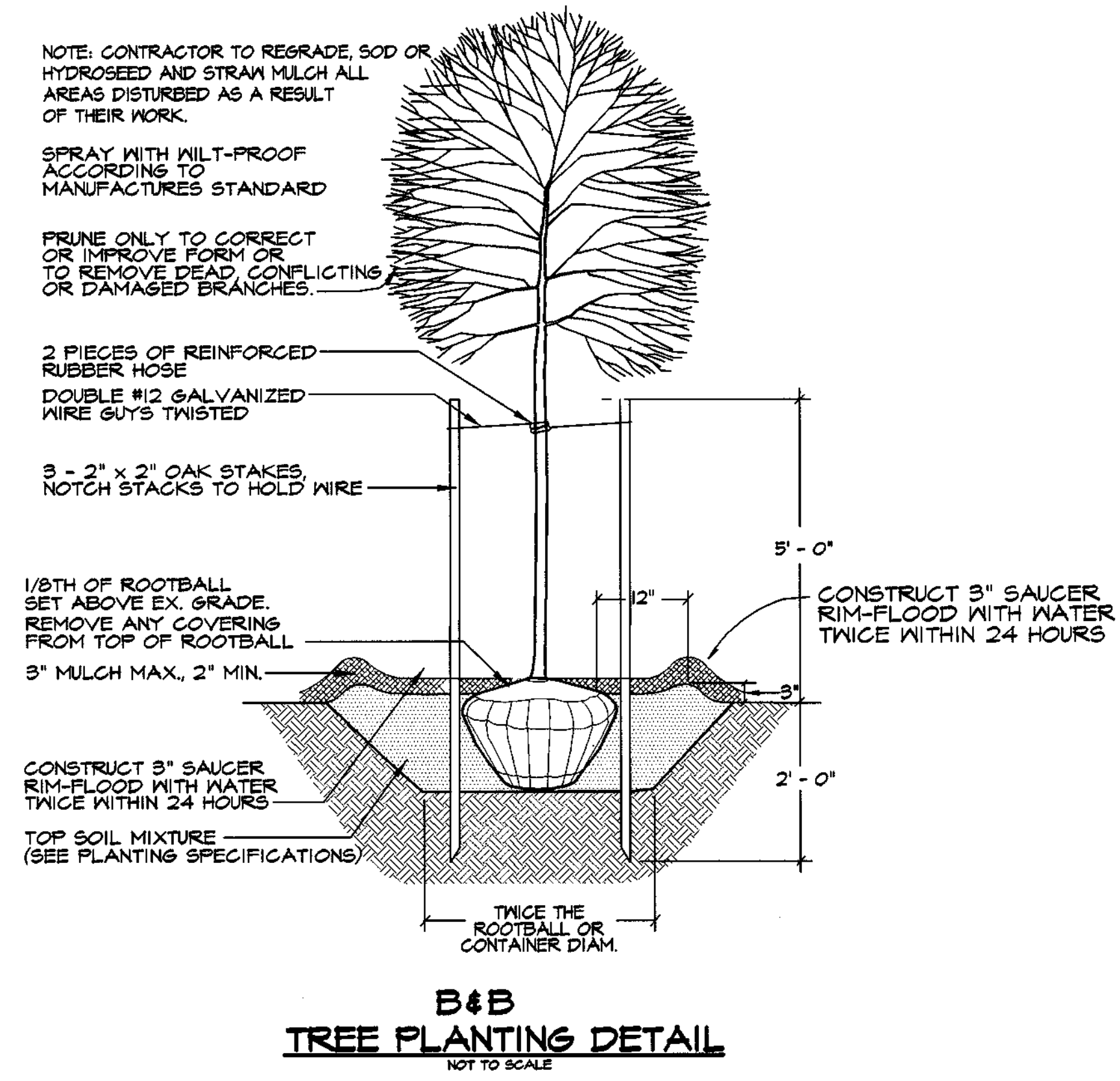
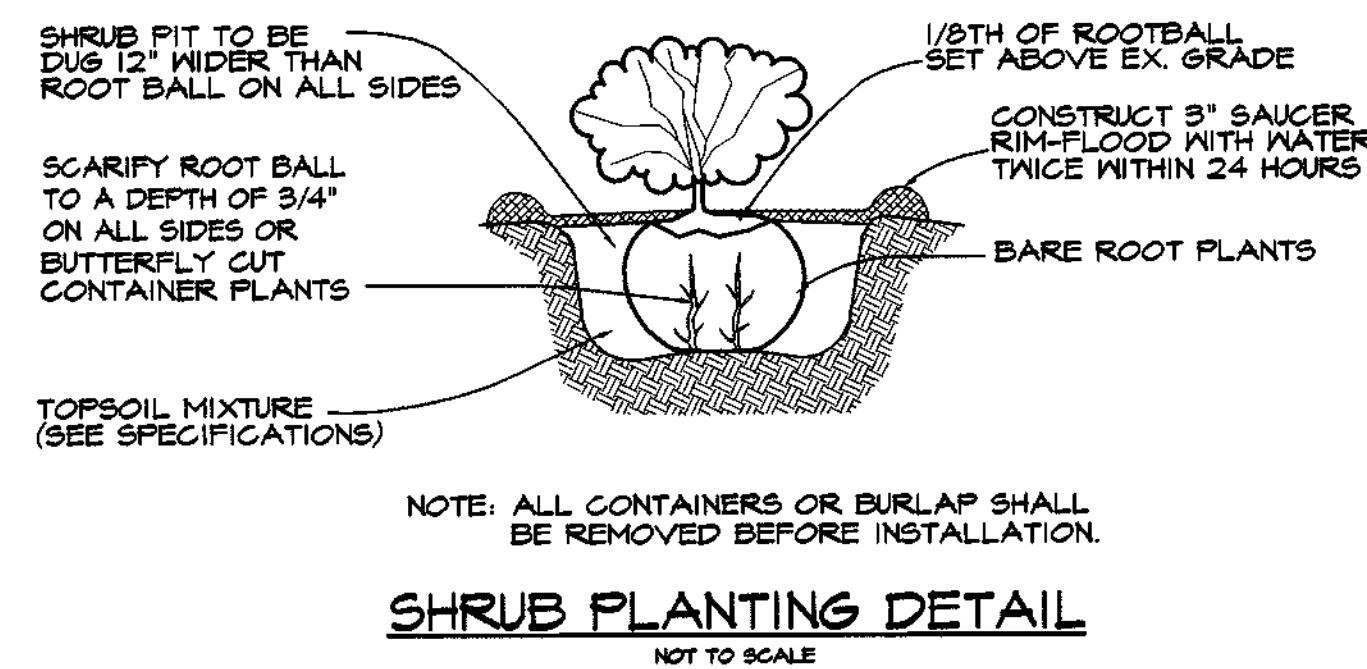
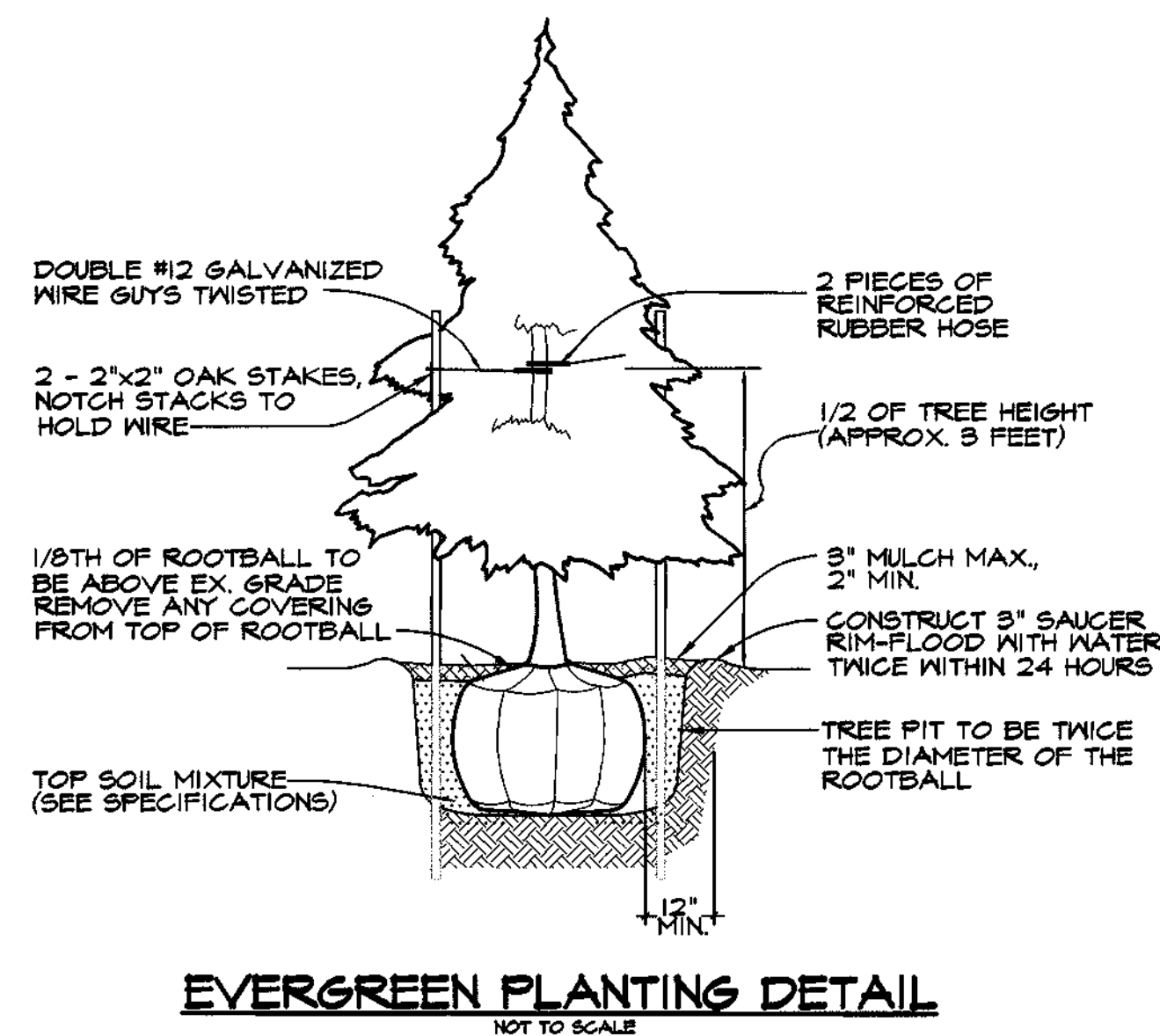
SUBSTITUTION NOTES:

- (1) EVERGREEN TREES SUBSTITUTED FOR (5) SHADE TREES, TO PROVIDE YEAR-ROUND SCREENING.
(2) FLOWERING TREES SUBSTITUTED FOR (1) SHADE TREES, TO PROVIDE VISUAL INTEREST.
(3) SHRUBS SUBSTITUTED FOR (1) SHADE TREE, TO PROVIDE A LOW SCREEN FROM MD. 100.
(5) SHRUBS EXTRA TO CONTINUE SCREEN FROM MD. 100.

PLANTING SPECIFICATIONS

- Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.
- All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, unsound injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug; no heated-in plants or plants from cold storage will be accepted.
- Unless otherwise specified, all general conditions, planting operations, details and planting specifications shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Area", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architects, latest edition, including all agenda.
- Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.
- Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.
- Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.
- Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within growing season of completion of site construction.
- Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.
- Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence.
- All shrubs and groundcover areas shall be planted in continuous prepared planting beds mulched with composted hardwood mulch as detailed and specified except where noted on plans.
- Positive drainage shall be maintained in planting beds (minimum 2 percent slope).
- Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Add 3 lbs of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Contractors Association Guidelines.
- Need Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific groundcover to be treated.
- Mulch: Groundcover beds should be mulched with minimum 2 inches of shredded composted hardwood, or as specified on the details, whichever is greater.
- All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.
- This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.

PLANTING DETAILS



STATE OF MARYLAND
AS BUILT CERTIFICATE

CHRISTOPHER J. REID # 1994-9 DATE 9-7-01

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
CHRISTOPHER J. REID # 1994-9 DATE 9/7/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
CINDY HANCOCK # 9/14/01 DATE 9/14/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
DAVID T. DOWS # 880 DATE 9/10/01

DATE NO. REVISION

OWNER/DEVELOPER
ECO DEVELOPMENT, INC.
8480 BALTIMORE NATIONAL PIKE
SUITE 408
ELLCOTT CITY, MARYLAND 21043
410-465-4242

PROJECT **BRAMPTON HILLS WEST**
FORMERLY PARCEL 'S'
LOTS 1 THRU 16

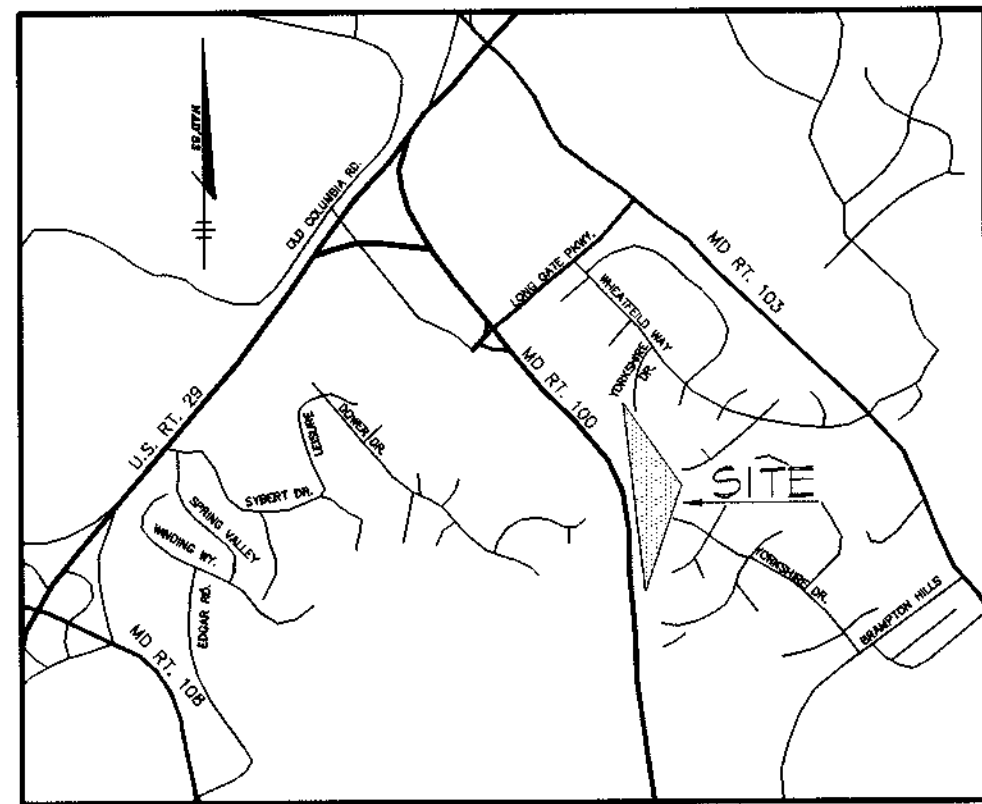
AREA TAX MAP NO. 30 ZONED R-20
PART OF PARCEL 383
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
LANDSCAPE NOTES AND DETAILS

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive, Columbia, Maryland 21045
tel 410.997.8900 fax 410.997.9282

DESIGNED BY: CJR BLW
DRAWN BY: DAM BLW
PROJECT NO: SURVEY2/96H410
FINALRD/LSCPTL0WG
DATE: AUGUST 20, 1998
SCALE: AS SHOWN
DRAWING NO. 7 OF 9

DAVID T. DOWS #880

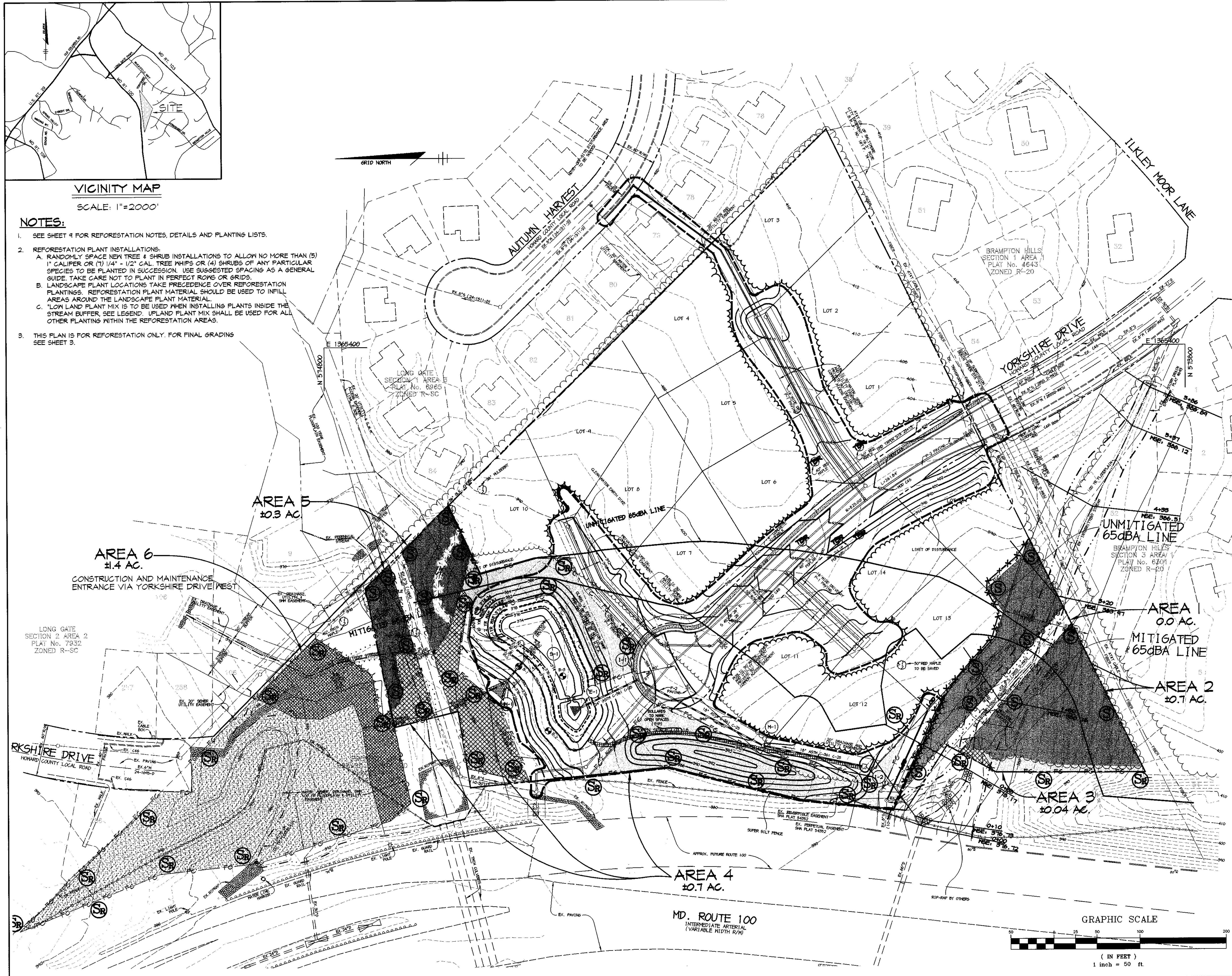


VICINITY MAP

SCALE: 1"=2000'

NOTES:

- SEE SHEET 4 FOR REFORESTATION NOTES, DETAILS AND PLANTING LISTS.
- REFORESTATION PLANT INSTALLATIONS:
 - RANDOMLY SPACE NEW TREE & SHRUB INSTALLATIONS TO ALLOW NO MORE THAN (5) 1" CALIFER OR (1) 1/4" - 1/2" CAL. TREE WHIPS OR (4) SHRUBS OF ANY PARTICULAR SPECIES TO BE PLANTED IN SUCCESSION. USE SUGGESTED SPACING AS A GENERAL GUIDE. TAKE CARE NOT TO PLANT IN PERFECT ROWS OR GRIDS.
 - LANDSCAPE PLANT LOCATIONS TAKE PRECEDENCE OVER REFORESTATION PLANTINGS. REFORESTATION PLANT MATERIAL SHOULD BE USED TO INFILL AREAS AROUND THE LANDSCAPE PLANT MATERIAL.
 - "LOW LAND PLANT MIX IS TO BE USED WHEN INSTALLING PLANTS INSIDE THE STREAM BUFFER, SEE LEGEND. "UPLAND PLANT MIX SHALL BE USED FOR ALL OTHER PLANTING WITHIN THE REFORESTATION AREAS.
- THIS PLAN IS FOR REFORESTATION ONLY. FOR FINAL GRADING SEE SHEET 3.



GENERAL LEGEND:

- EXISTING FOREST EDGE
- PROPOSED FOREST EDGE
- 100 YR. FLOODPLAIN
- LIMIT OF WETLANDS
- 25' WETLAND BUFFER
- STREAM BUFFER
- SPECIMEN TREE (30" DBH OR GREATER)
- TREE TO BE REMOVED
- LIMIT OF DISTURBANCE AND TREE PROTECTION FENCE
- FC - FOREST CONSERVATION EASEMENT
- FOREST CONSERVATION SIGNAGE
- REFORESTATION SIGNAGE
- ON-SITE FOREST RETENTION WITHIN FOREST CONSERVATION EASEMENT (AREAS 2 & 5)

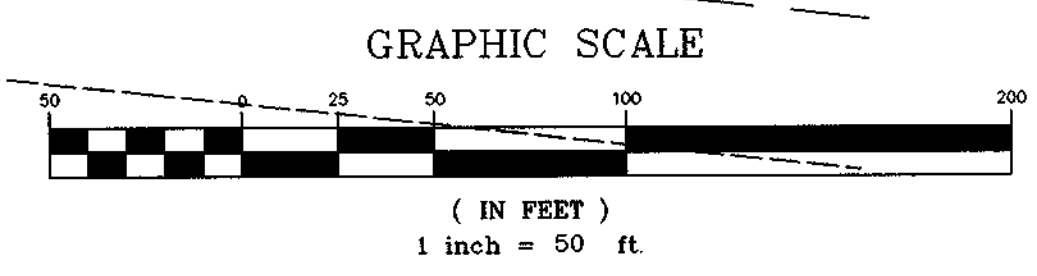
REFORESTATION LEGEND:

- ON-SITE REFORESTATION WITHIN FOREST CONSERVATION EASEMENT (AREAS 2 & 4) - UPLAND PLANTING AREAS
- ON-SITE REFORESTATION WITHIN FOREST CONSERVATION EASEMENT (AREAS 2 & 4) - LOWLAND PLANTING AREAS
- OFF-SITE REFORESTATION (AREA 6) - UPLAND PLANTING AREAS
- OFF-SITE REFORESTATION (AREA 6) - LOWLAND PLANTING AREAS

STATE OF MARYLAND ENGINEERING PROFESSIONAL BUILT CERTIFICATE	
	9-7-01 DATE
CHRISTOPHER BREID #19949	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
	9/2/01 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
	9/11/01 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
	9/10/00 DATE

DATE NO.	REVISION
OWNER/DEVELOPER	
ECO DEVELOPMENT, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 408 ELLCOTT CITY, MARYLAND 21043 410-465-4242	
PROJECT BRAMPTON HILLS WEST FORMERLY PARCEL 'S' LOTS 1 THRU 16	
AREA TAX MAP NO. 30 ZONED R-20 PART OF PARCEL 383 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE REFORESTATION PLAN	
RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 6818 Centre Park Drive, Columbia, Maryland 21045 tel 410.997.8900 fax 410.997.9282	

7-22-98 	DESIGNED BY : CJR BLW
	DRAWN BY : DAM BLW
	PROJECT NO: SURVEY2/96H410 FINAL/REFRST-1
	DATE : AUGUST 20, 1998
	SCALE : 1" = 50'
	DRAWING NO. 8 OF 9



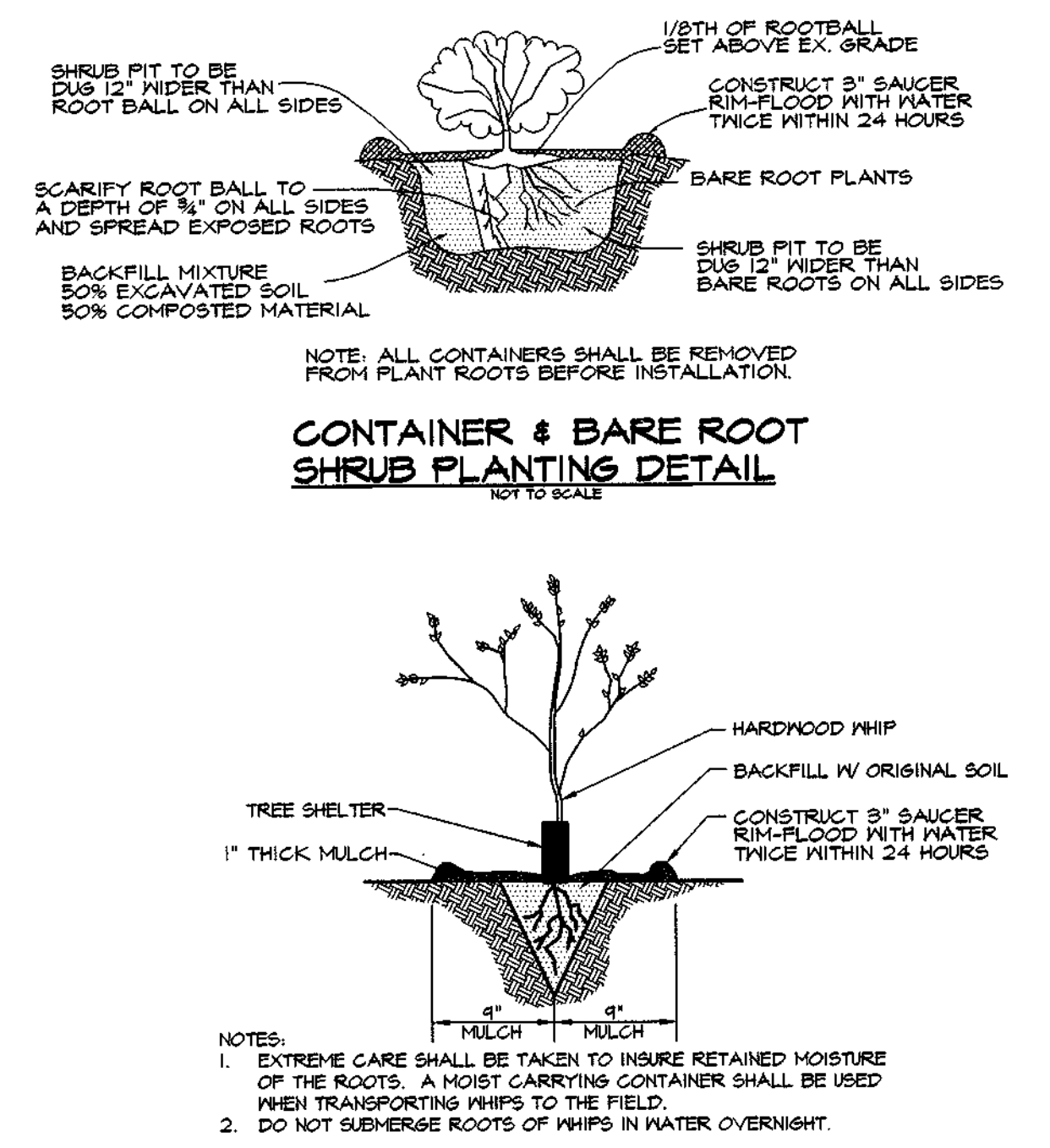
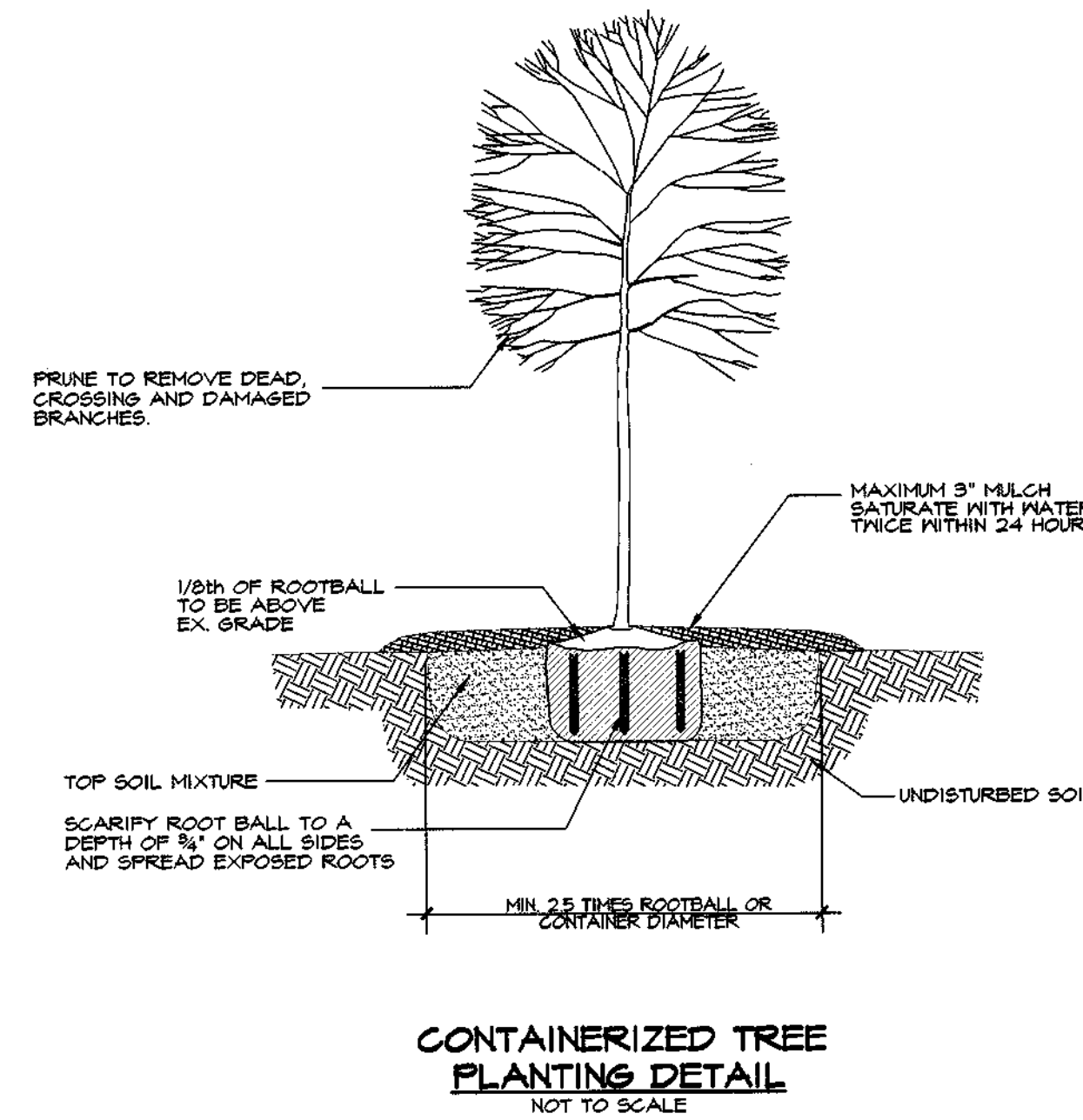
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REFORESTATION PLANTING LISTS

UPLAND PLANT LIST						
QUANTITIES			SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
AREA 3	AREA 4	AREA 6				
1	8	18	LIRIODENDRON TULIPIFERA / TULIP TREE	1" CAL.	CONT.	FULL CROWN PLANT 15' O.C.
-	7	18	LIQUIDAMBAR STRYACIFLUA / SWEET GUM			
2	7	18	ACER RUBRUM / RED MAPLE			
-	7	18	QUERCUS ALBA / WHITE OAK			
-	7	17	FAGUS GRANDIFOLIA / AMERICAN BEECH			
2	15	39	LIRIODENDRON TULIPIFERA / TULIP TREE	1/4" - 1/2" CAL.	CONT.	PLANT HT. MIN. 3-4', MIN. ROOT LENGTH: 8" PLANT 11' O.C.
-	16	39	LIQUIDAMBAR STRYACIFLUA / SWEET GUM			
-	16	39	ACER RUBRUM / RED MAPLE			
2	16	39	QUERCUS ALBA / WHITE OAK			
2	16	39	FAGUS GRANDIFOLIA / AMERICAN BEECH			
3	16	39	VIBURNUM FRUNIFOLIUM / BLACKHAM VIBURNUM	18" - 24"	CONT.	FULL FORM PLANT 8' O.C.
-	16	39	VIBURNUM ACERIFOLIUM / MAPLELEAF VIBURNUM			

LOW LAND PLANT LIST						
QUANTITIES			SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
AREA 3	AREA 4	AREA 6				
-	5	6	ACER RUBRUM / RED MAPLE	1" CAL.	CONT.	FULL CROWN PLANT 15' O.C.
2	5	6	FRAXINUS PENNSYLVANICA / GREEN ASH			
-	5	6	QUERCUS PALUSTRIS / PIN OAK			
-	5	6	NYSSA SYLVATICA / BLACK GUM	1/4" - 1/2" CAL.	CONT.	PLANT HT. MIN. 3-4', MIN. ROOT LENGTH: 8" PLANT 11' O.C.
-	11	13	ACER RUBRUM / RED MAPLE			
-	11	13	FRAXINUS PENNSYLVANICA / GREEN ASH			
-	11	13	QUERCUS PALUSTRIS / PIN OAK			
-	11	12	NYSSA SYLVATICA / BLACK GUM			
-	9	11	LINDERA BENZOIN / SPICEBUSH	18" - 24"	CONT.	FULL FORM PLANT 8' O.C.
-	9	10	VIBURNUM DENTATUM / ARROW WOOD			

PLANTING DETAILS



SEQUENCE OF OPERATIONS

- PRE-CONSTRUCTION SITE PREPARATION**
- INSTALL TREE PROTECTION FENCE AND IMPLEMENT TREE PROTECTION METHODS AS SHOWN.
 - MON OR BRUSH HOS THE SITE WITHIN THE LIMITS OF THE PROPOSED REFORESTATION AREA. DO NOT REMOVE OR DAMAGE ANY EXISTING TREES OR SAPLINGS UNLESS OTHERWISE INDICATED.
 - *THERE SHALL BE NO STAKING, STORAGE, OR STOCKPILES OF MATERIALS WITHIN THE NONTIDAL WETLANDS OR 25' NONTIDAL WETLANDS BUFFER.
 - REMOVE OR TREAT WITH AN ACCEPTABLE METHOD NOXIOUS PLANT MATERIAL, SUCH AS MULTIFLORA ROSE, TEAKTAINS, AND JOHNSON GRASS BEFORE INSTALLING REFORESTATION PLANTS.
 - INSTALL TREE PROTECTION SIGNAGE.
 - STABILIZE ANY DISTURBED AREAS USING THE SPECIFIED STABILIZATION MIXTURE WHICH ALLOWS FOR NATURAL REVEGETATION OF FOREST COMMUNITIES.

FOREST CONSERVATION SEQUENCE OF OPERATIONS

- Prior to beginning any grading operations on this site or on a respective lot, there shall be a preconstruction meeting held at the site which is to include the Contractor and representatives from Riemer Muegge & Associates, Inc. (RMA). The Howard County Department of Planning and Zoning (DPZ) and the Owner will be notified by the Contractor as to the time and place of the meeting should they wish to send a representative. The purpose of this meeting will be to review the approved FCP and to field verify the correct Limits of Disturbance (LOD).
- The Limits of Disturbance (LOD) pertinent to the preservation of wooded areas shall be staked in the field with final adjustments being made as necessary to insure adequate protection of the Critical Root Zone of trees designated for retention. Stakes to be used shall be those specified for the "TREE PROTECTION DEVICE" to which approved protective material will be attached. Alternate means of defining the LOD may be used if approved by the DPZ.
- All forest retention areas shall be protected by highly visible, well anchored temporary protection devices (see detail), which shall be securely in place prior to any clearing or grading operations.
- Grading operations or other construction operations which could dislodge or otherwise damage the protective devices shall be avoided along the edges of the LOD lines if possible. Any protective devices which are damaged during site construction operations shall be properly repaired immediately by the Contractor.
- After site grading, utility access road, and driveway construction have been completed, all trees adjacent to the LOD line shall be inspected for indications of crown die-back (summer indicator), damage within respective critical root zones or any dead wood or other conditions which might be hazardous to pedestrians, buildings, utility lines, vehicular access ways or parked vehicles.
- Should there be evidence of any damage to tree trunks, branches or the critical root zone of trees within the protected areas or to isolated specimen trees to be preserved, the damage shall be examined within a period of two (2) days from the date of observance by a licensed tree care professional. Exposed roots should be covered immediately to a depth of 6 - 8 inches with soil, preferably mixed with 50% peat moss or leaf mold.
- Remove damaged, dead or dying trees or limbs only if the trees or limbs pose an immediate safety hazard to buildings, utility lines, vehicles, or access and egress drives or pedestrian areas. Trees designated for pruning or removal shall be pruned or removed using equipment and methods which will not damage or destroy adjacent large trees or understory trees or shrubs designated for retention.
- All temporary forest protection devices will be carefully removed after all general construction, necessary tree surgery, removal of debris, etc., regrading and reseeding of sediment and erosion control disturbance have been completed and acceptance and approval of the work and site conditions have been given by the DPZ.

AFFORESTATION/REFORESTATION PLANTING SEQUENCE OF OPERATIONS

- The Contractor(s) shall inform the Howard County Department of Planning and Zoning (DPZ) when planting operations are to begin.
- Determine storage areas for materials and equipment. Obtain approval of location from Owner and the DPZ.
- Prior to beginning any planting the soils within the area(s) designated for Afforestation or Reforestation shall be analyzed regarding the following features: nutrient content, organic matter, structure, pH and cation exchange capacity. Soils that have been actively farmed may require evaluation for pesticide or herbicide contamination. Such analysis may be performed by the local Soil Conservation Service or Agricultural Extension Service. A minimum of three random samples should be collected for the analysis. An assessment of soil moisture should also be made at this time. Corrective measures shall be made in accordance with analysis results and recommendations.
- The Contractor, assisted by a Representative of Riemer Muegge & Associates, shall stake (or wire-flag) planting area limits and plant locations in accordance with the plan and details.
- Provide and plant all trees of the species and sizes specified and in accordance with the details shown on the Forest Conservation Plans, unless otherwise directed by the DPZ.
- At the completion of planting, remove all excess materials and miscellaneous debris from the respective area(s) of work.
 - Protection Devices - to prevent damage within planted areas, all reforestation and/or afforestation sites must be posted with appropriate signs and the area(s) delineated with appropriate protective fencing. No construction equipment nor storage of materials shall be permitted within the planted areas. Details are shown on the Forest Conservation Plans regarding typical sign size and wording. No pedestrian traffic shall be allowed within the protected areas.
 - Attachment of signs or any other objects to trees within the protected areas is prohibited.

PLANTING SPECIFICATIONS

AFFORESTATION OR REFORESTATION MAINTENANCE AND REPLACEMENT REQUIREMENTS

A two year (24) month maintenance and replacement warranty period is required for all newly planted materials. The maintenance and replacement warranty period shall commence upon the date of the written acceptance by the Owner of the planted areas. A written warranty will be delivered to the Owner upon acceptance of the planted areas. Maintenance and replacement shall be provided by the contractor responsible for the initial planting operations and related work. All landscape plant material included as forest conservation credits shall be covered under this maintenance and replacement warranty period.

- MAINTENANCE:**
The Contractor shall field check the newly planted area(s) and shall provide the following maintenance items in accordance with the following schedule which shall begin after the completion and acceptance of the initial Afforestation or Reforestation planting.
 - 1. WATERING:** Watering of all newly planted materials once per week as weather permits during the entire initial growing season. Following the initial growing season, watering shall be done on an "as needed" basis depending on the frequency of natural rainfall. During the months of July and August and periods of severe drought, all newly planted materials shall be watered thoroughly twice every week. Watering shall be done deeply and slowly using an open end hose or watering probe, at low pressure, allowing the water to be absorbed into the soil until thoroughly saturated. The watered area shall include the whole root zone as the tree becomes more established.
 - 2. FERTILIZING:** Fertilizing shall be applied only after the soil has been tested to determine its needs. Organic fertilizer should be applied in accordance with the amounts recommended in the soil analysis report. Fertilizing of newly planted trees shall be done within the first growing season after initial planting. Following the first growing season, apply fertilizer as recommended either in late fall or early spring.
 - 3. SUPPLEMENTAL MULCH:** To control undesirable vegetation adjacent to the newly planted materials and to prevent tree roots from drying out, additional mulch shall be placed over the existing mulch field where required. Carefully remove any invasive plants (including the root system) within the mulch fields. Do not damage trees in any way during removal of invasive plants or mulching operations.
 - 4. PRUNING:** Remove dead, diseased, dying and broken branches from all plant materials. Pruning shall be done cleanly leaving no ragged ends.
- MAINTENANCE ITEMS:**

REPLACEMENT OF DEAD OR DYING MATERIALS:

- Replacement:** Any plant materials which are 25% dead or more shall be replaced during the appropriate spring or fall planting seasons in accordance with the methods indicated in the Planting Specifications. A tree shall be considered dead when the main leader has died back.
- All replacements shall be plants of the same genus, species and size as specified on the plant list.
- Contractor shall schedule an inspection of the Afforestation or Reforestation area(s) by a qualified representative of the DPZ and by the qualified professional who prepared the plan, at the beginning and at the end of the growing season to observe any problems, monitor survival rates and specify necessary remedial actions needed to correct existing problems. The inspection should focus on the following items when determining survival potential:
 - Vigor and threat of competing vegetation
 - Plant structure
 - Growth rate
 - Grown development
 - Trunk conditions and health

PLANT CONDITION CHECK SHEETS

The Contractor shall maintain accurate records on appropriate field data check sheets which shall include all conditions observed relative to the health and potential survival of the plant materials. Such check sheets shall be completed during each scheduled maintenance session during the 24-month management and maintenance program. One copy of the check sheets shall be sent to the client, one copy to RMA, and one copy shall be sent to the Howard County Department of Planning and Zoning.

SURVIVAL REQUIREMENT:

The survival rate for Afforestation and Reforestation areas shall be a minimum of seventy-five percent (75%) of the total number of trees required to be planted per acre under the approved plan.

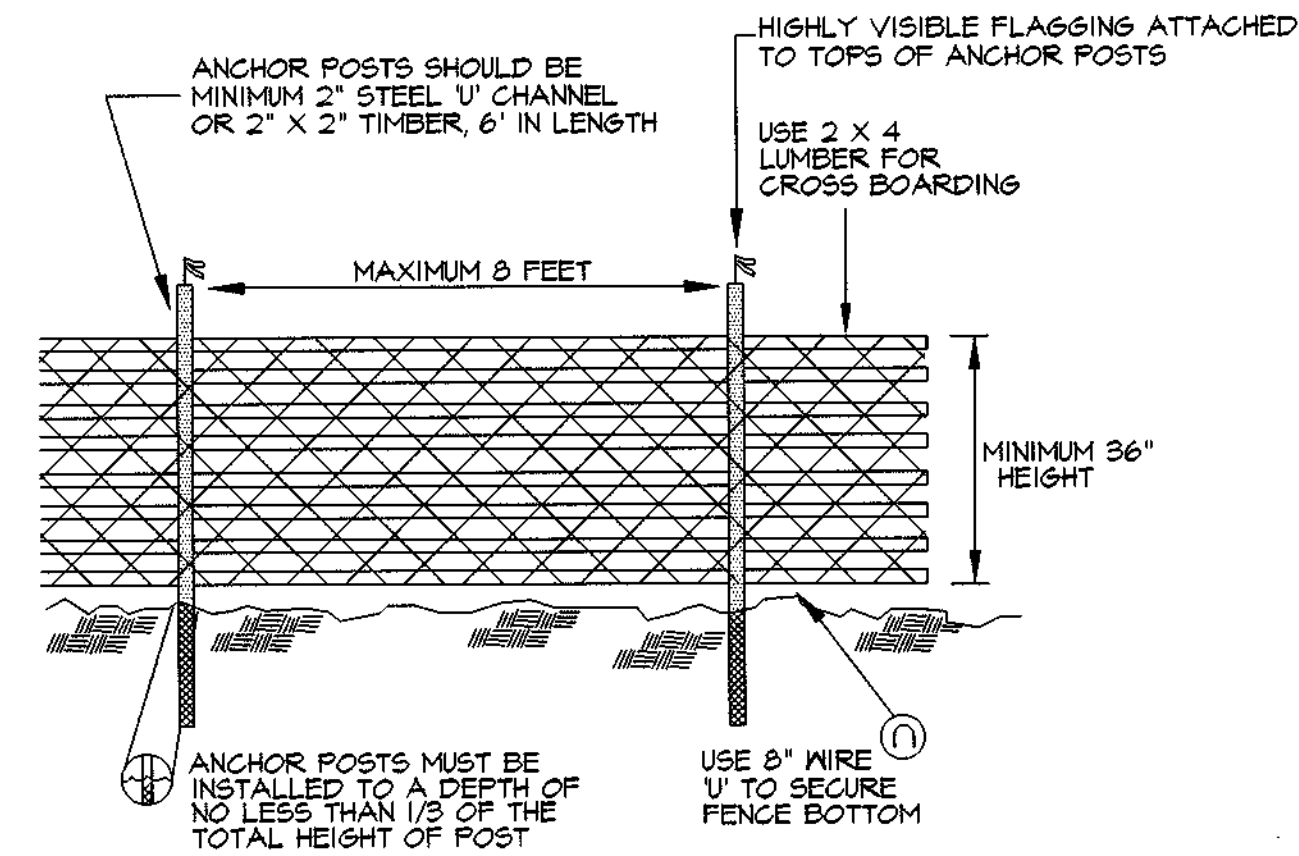
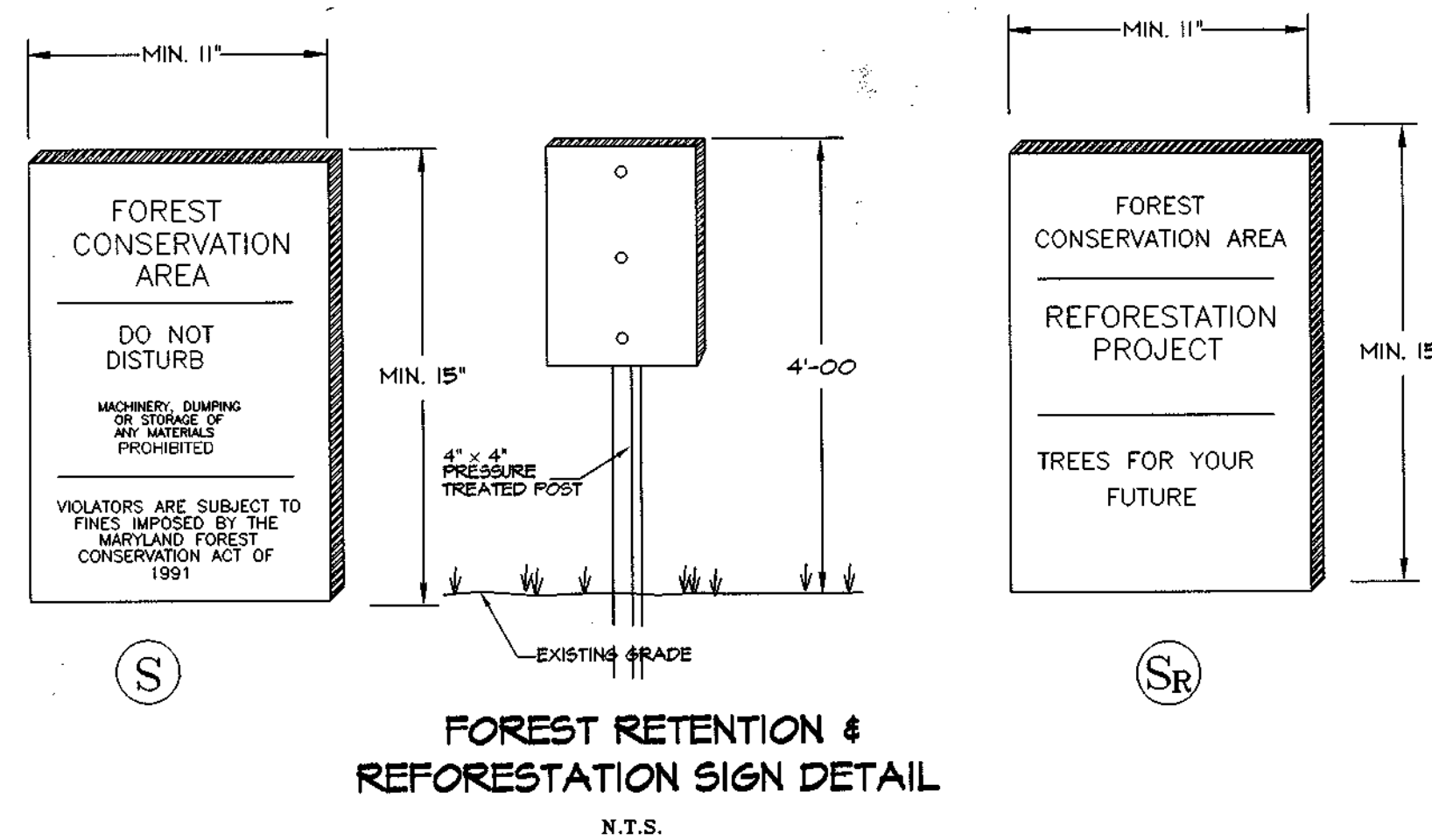
INSPECTION/CERTIFICATION SCHEDULE:

The Contractor shall submit with his bid, a schedule for the work which shall include inspections by RMA at the conclusion of installation and at the start and conclusion of each growing season during the two-year warranty period.

PENALTY FOR VIOLATION:

A site inspection shall take place at the end of the 24-month management and maintenance agreement period. If the survival rate of the Afforestation or Reforestation area(s) falls below the established survival requirements by the end of the 24-month management agreement, the remaining amount of the cash bond or other surety may be subject to forfeiture, or other penalties may be imposed.

TREE PROTECTION SIGNAGE & FENCING



- NOTES:**
- BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR FOREST PROTECTION DEVICE, ONLY.
 - BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
 - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 - AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
 - PROTECTION SIGNS ARE REQUIRED, SEE SIGN DETAIL.
 - FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCING

Not To Scale

AS BUILT CERTIFICATE	
	DATE: 9-7-01
CHRISTOPHER J. REID # 19999	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
	DATE: 9/2/01
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
	DATE: 9/19/01
	DATE: 9/10/01
DATE NO. REVISION	
OWNER/DEVELOPER	
ECO DEVELOPMENT, INC. 8480 BALTIMORE NATIONAL PIKE SUITE 408 ELLCOTT CITY, MARYLAND 21043 410-465-4242	
PROJECT BRAMPTON HILLS WEST FORMERLY PARCEL 'S' LOTS 1 THRU 16	
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TITLE REFORESTATION NOTES AND DETAILS	
RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive, Columbia, Maryland 21045 tel 410.997.8900 fax 410.997.9282	
	DESIGNED BY: CJR BLW
	DRAWN BY: DAM BLW
	PROJECT NO: SURVEY2/96H410 FINAL/REFRS-2
	DATE: AUGUST 20, 1998
	SCALE: NO SCALE
	DRAWING NO. 9 OF 9
AS-BUILT 9-6-01 F-98-104	