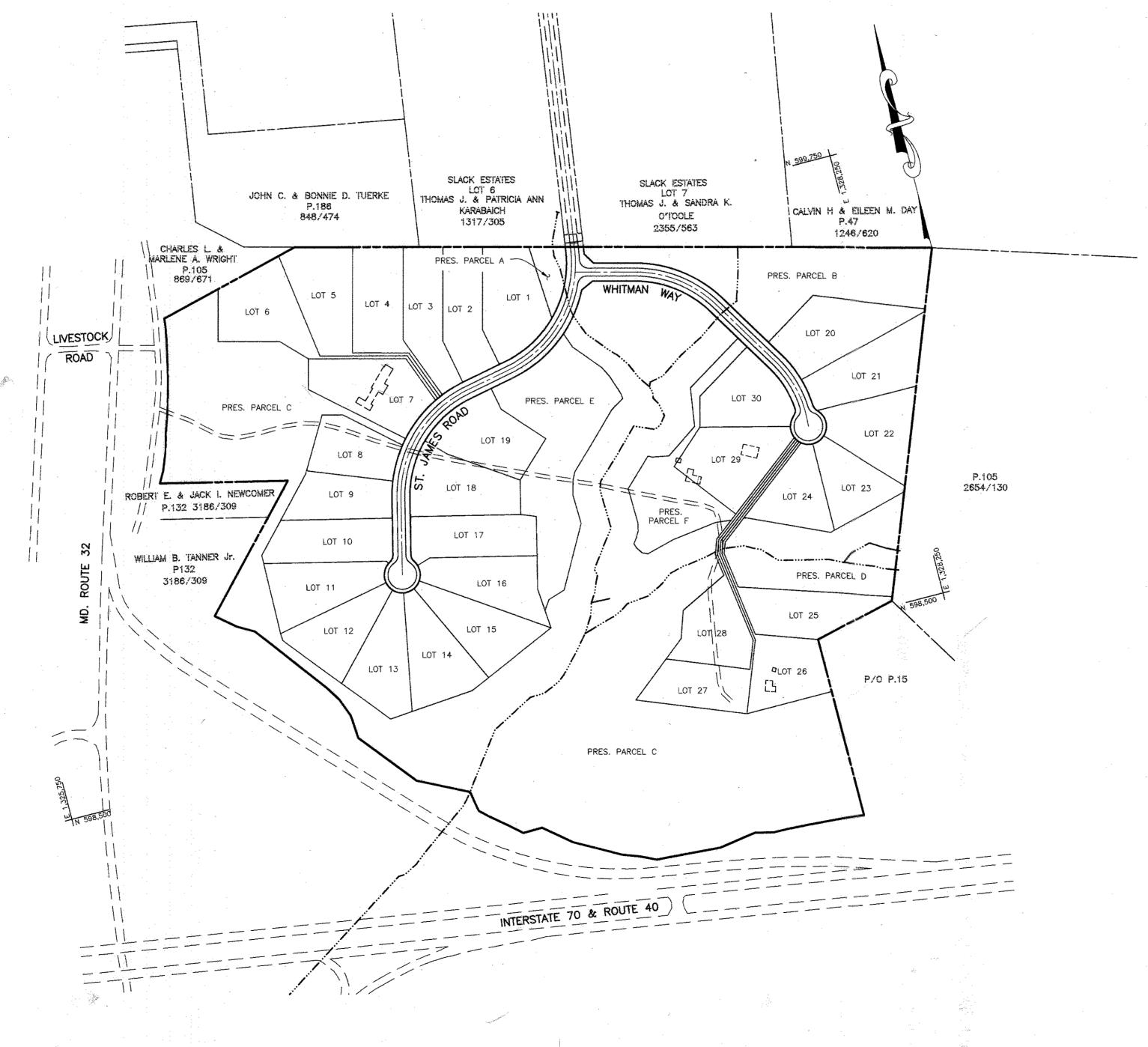
GENERAL NOTES

- 1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST 24 HOURS PRIOR TO THE START OF WORK.
- 3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- 4. PROJECT BACKGROUND: LOCATION: TAX MAP 15 PARCEL 40 ZONING: RR-DEO TOTAL TRACT AREA: 64.55 AC. NUMBER OF PROPOSED LOTS : 30 CLUSTER LOTS DATE PRELIMINARY PLAN APPROVED:
 DPZ REFERENCE #: S-96-01, WP-96-37, P-96-22, WP-97-126
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE MOST CURRENT 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.
- 6. TOPOGRAPHY TAKEN FROM FIELD RUN SURVEY BY TSA GROUP, INC., PERFORMED ON OR ABOUT MAY, 1995 7. HOWARD COUNTY MONUMENTS 15CA AND 15FA WERE USED FOR HORIZONTAL AND DATUM, AND
- HO. CO. 3536006 WAS USED FOR VERTICAL DATUM. 8. ALL ROAD FILLS SHALL BE COMPACTED TO 95% AS DETERMINED BY AASHTO T-180.
- 9. SEWER FOR THIS SUBDIVISION IS PROPOSED BY A SHARED PUBLIC SEPTIC SYSTEM FOR LOTS 8-12 AND 23-28 AND INDIVIDUAL SEPTIC SYSTEMS FOR ALL OTHER LOTS. WATER IS PRIVATE FOR ALL LOTS.
- 10. WETLANDS DELINEATION COMPILED BY ECO-SCIENCE, INC., DATED APRIL 1995
- 11. TRAFFIC STUDY COMPILED BY LEE CUNNINGHAM & ASSOC., APPROVED DECEMBER 1995
- 12. NOISE STUDY PREPARED BY POLYSONICS ACOUSTICAL ENGINEERS DATED SEPTEMBER 1996.
- 13. GEOTECHNICAL REPORT COMPILED BY HILLIS-CARNES ASSOC., INC., FEBRUARY 1996.
- 14. EXISTING UTILITIES WERE LOCATED BY RECORD DRAWINGS AND/OR FIELD RUN SURVEY BY TSA GROUP, INC., 5/95. CONTRACTOR IS RESPONSIBLE FOR LOCATION OF ALL EXISTING UTILITIES.
- 15. UNLESS NOTED AS "PRIVATE" ALL EASEMENTS ARE PUBLIC.
- 16. STORMWATER MANAGEMENT SHALL BE PROVIDED BY TWO RETENTION FACILITIES WHICH WILL BE PRIVATELY OWNED AND PUBLICLY MAINTAINED
- 17. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN WETLANDS, WETLAND BUFFERS, STREAM BUFFERS OR FOREST CONSERVATION AREAS EXCEPT FOR WORK SHOWN ON THESE PLANS WHICH WAS APPROVED UNDER
- 18. ANY STATE AND FEDERAL PERMITS REQUIRED FOR THIS PROJECT, IF APPLICABLE, SHALL BE OBTAINED PRIOR TO THE COMMENCEMENT OF WORK.
- 19. DEPARTMENT OF PUBLIC WORKS DESIGN MANUAL WAIVER WP -96-37 TO SECTION 16.116 OF THE SUBDIVISION REGULATIONS HAS BEEN APPROVED BY THE DIRECTOR OF PLANNING AND ZONING ON NOVEMBER 15, 1995 AND RECONSIDERED NOVEMBER 1, 1996 TO PERMIT THE COMMON ACCESS TO LOTS 25 - 28
- 20. FLOODPLAIN STUDY WAS PREPARED BY TSA GROUP, INC., DATED MAY 1996.
- 21. THE NOISE MITIGATION WALLS PROPOSED HEREON SHALL BE PRIVATELY OWNED BY THE HOMEOWNERS ASSOCIATION AND SHALL BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- 22. THE FOREST CONSERVATION EASEMENT(S) 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 OR SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- 23. WAIVER REQUEST WP-97-126 REQUESTING A WAIVER TO SECTION 16.145 FOR THE SUBMISSION OF A SKETCH PLAN AND 16.144(1) FOR THE SUBMISSION OF A PRELIMINARY PLAN AND TO ALLOW REACTIVATION OF THE FINAL PLAN APPLICATION WAS CONSIDERED AND APPROVED
- 24. EXISTING STRUCTURES ARE LOCATED ON LOT 29 AND ARE SHOWN TO BE REMOVED. THE DEVELOPER MUST SUBMIT DOCUMENTATION TO THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

ROADWAYS, STORM DRAINAGE AND STORMWATER MANAGEMENT LYNDONBROOK 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND



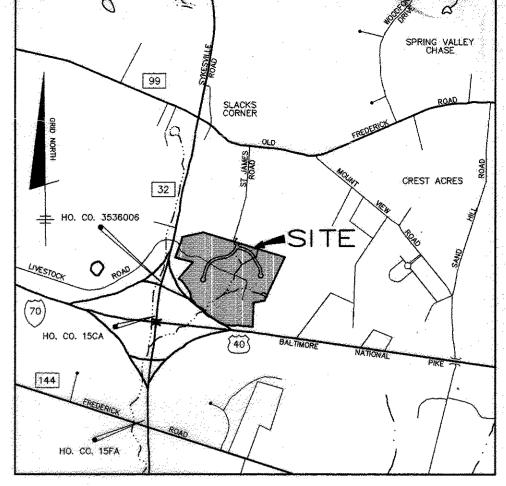
BENCH MARKS (NAD 83)

STAMPED CONC. MONUMENT LOCATED IN THE MEDIAN OF RTE 32, NORTH OF THE 1-70

HO. CO. #15FA

STAMPED CONC. MONUMENT LOCATED IN THE MEDIAN OF RTE 32, NORTH OF MD RTE 144 HO. CO. 3536006 (NAD 27) ELEV. 517.08 USED FOR VERTICAL DATUM

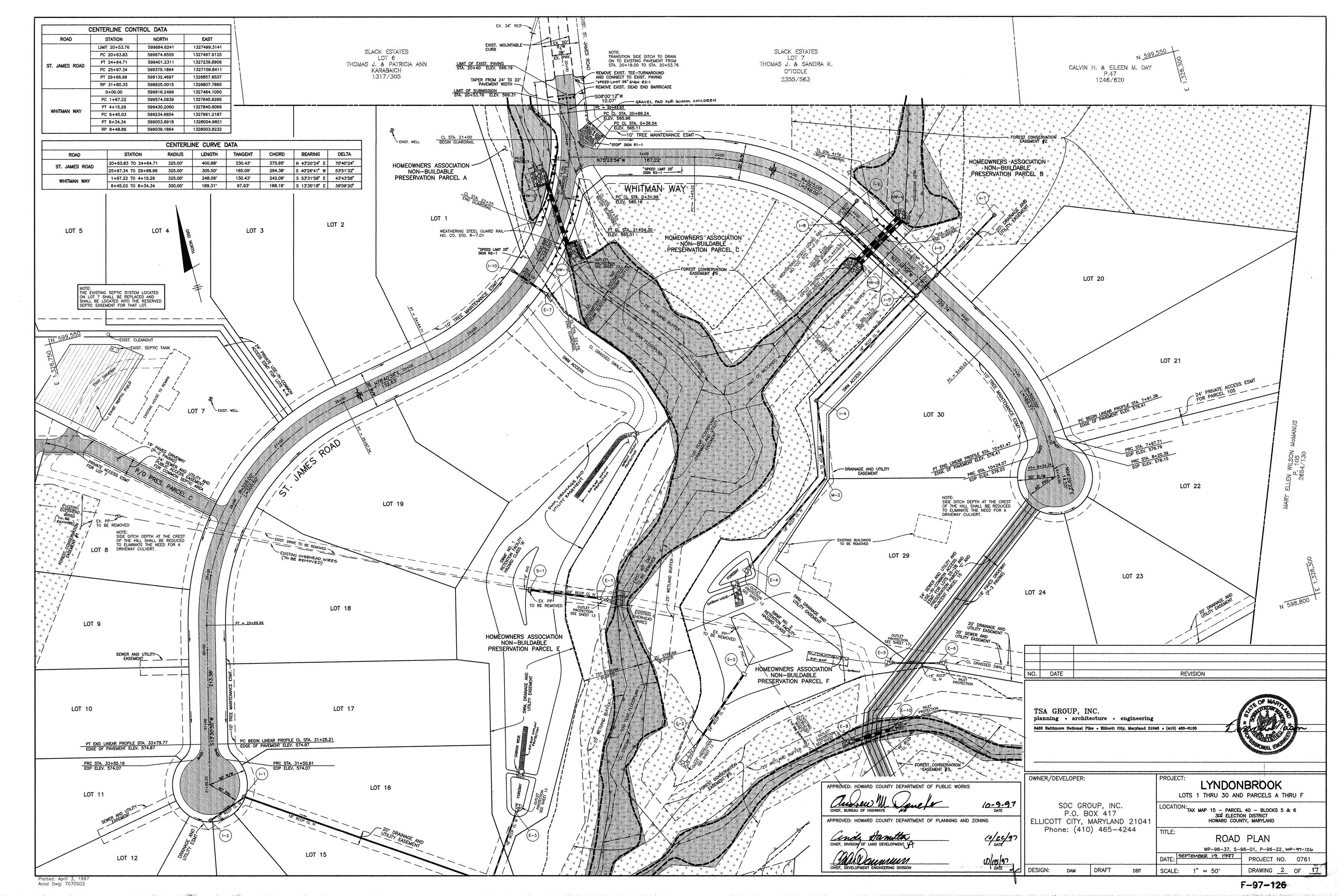
CONC. MONUMENT LOCATED IN THE MEDIAN MEDIAN OF RTE 32, NORTH OF THE WEST EXIT FOR 1-70

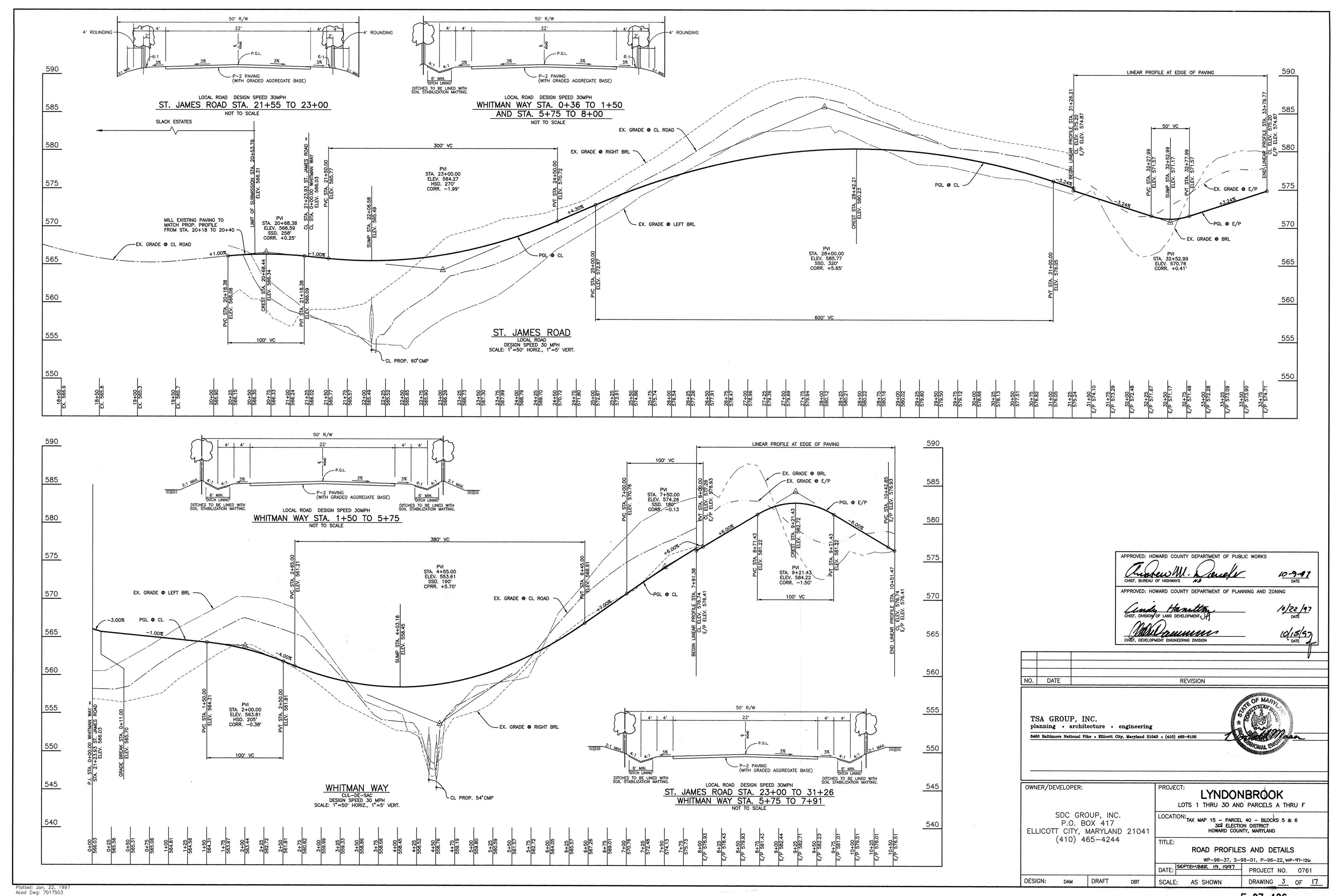


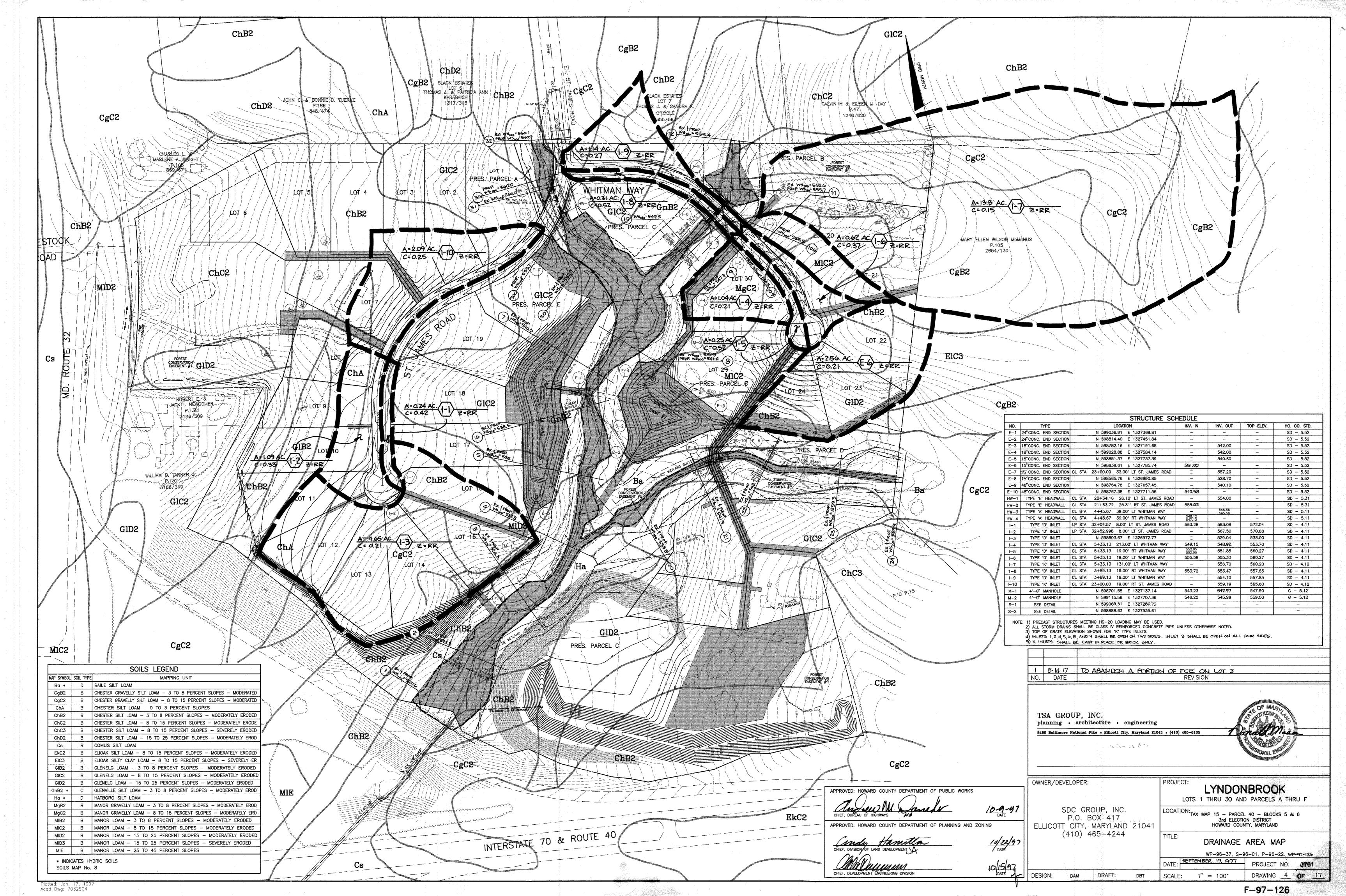
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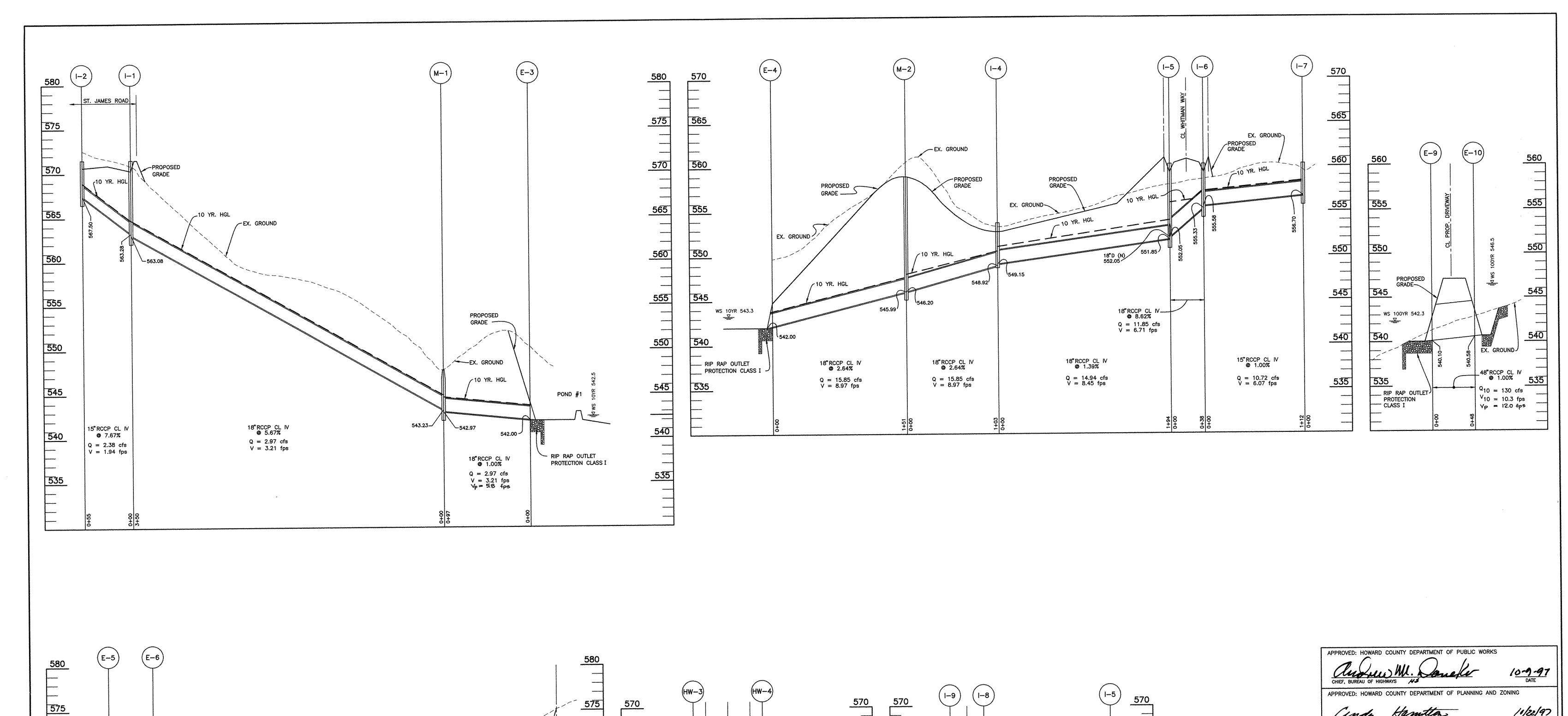
	SHEET INDEX
NO.	DESCRIPTION
1	TITLE SHEET
2	ROAD PLAN
3	ROAD PROFILES AND DETAILS
4	DRAINAGE AREA MAP
5	STORM DRAIN PROFILES
6	STORM DRAIN PROFILES AND BORING LOGS
7	GRADING, SEDIMENT AND EROSION CONTROL PLAN
8	GRADING, SEDIMENT AND EROSION CONTROL PLAN
9	GRADING, SEDIMENT AND EROSION CONTROL PLAN
10	GRADING, SEDIMENT AND EROSION CONTROL PLAN
11	STORMWATER MANAGEMENT NOTES AND DETAILS
12	SWM AND NOISE WALL PROFILES AND DETAILS
13	SEDIMENT CONTROL NOTES AND DETAILS
14	LANDSCAPE PLAN, NOTES AND DETAILS
15	FOREST CONSERVATION PLAN
16	FOREST CONSERVATION NOTES AND DETAILS
17	RIGHT TURN LANE PLAN

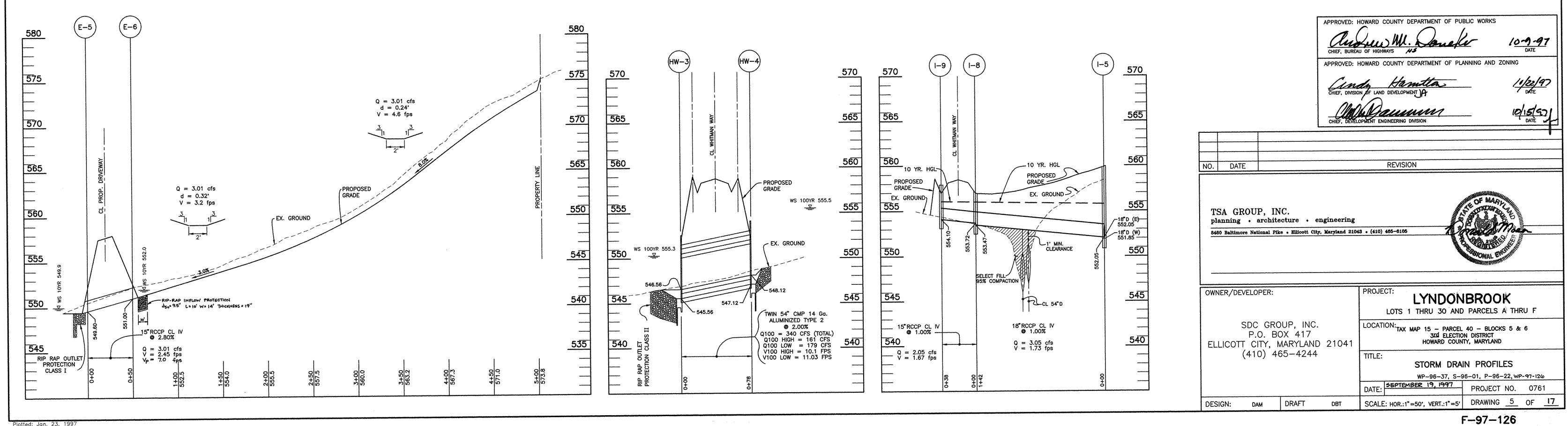
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	ELI	P. LICOTT C	C GROUP, INC O. BOX 417 ITY, MARYLANI	21041	LOCATION:	P 15 - PARCEL 40 - 3II ELECTION DIS HOWARD COUNTY, MA	TRICT	
- 1		(41	0) 465-4244		TITLE:			



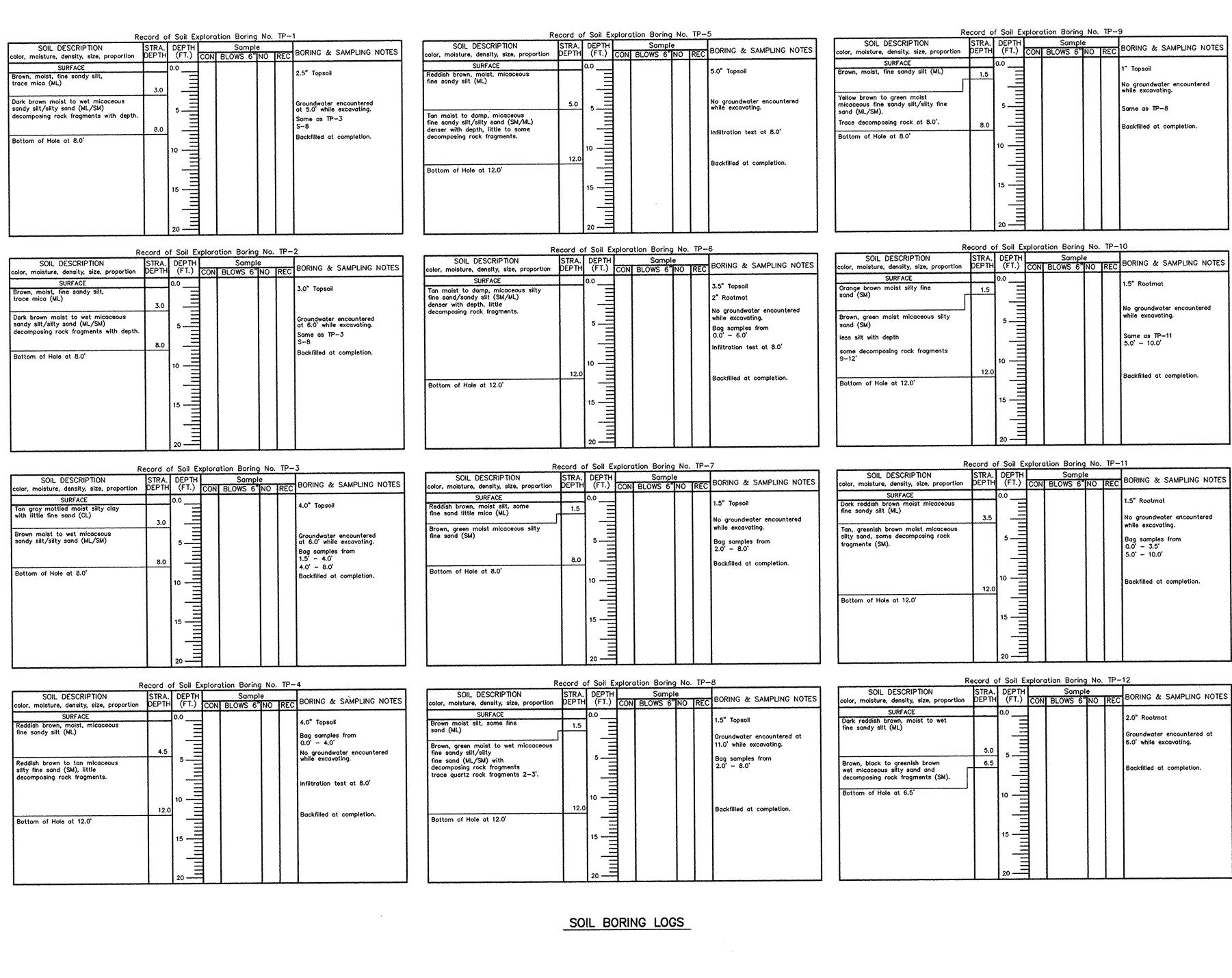


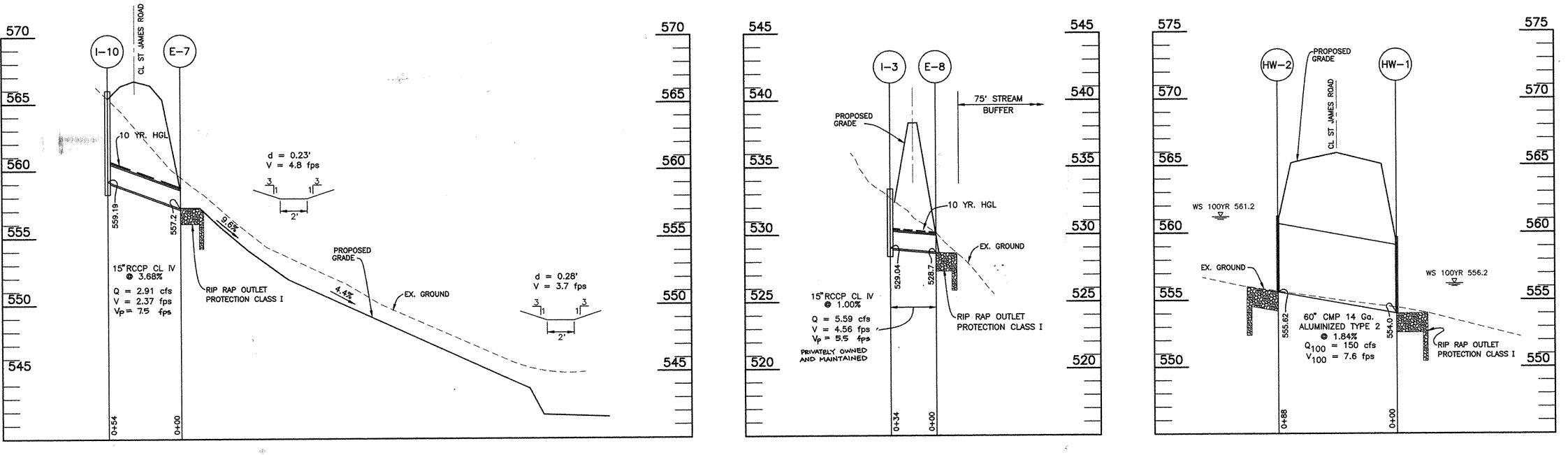




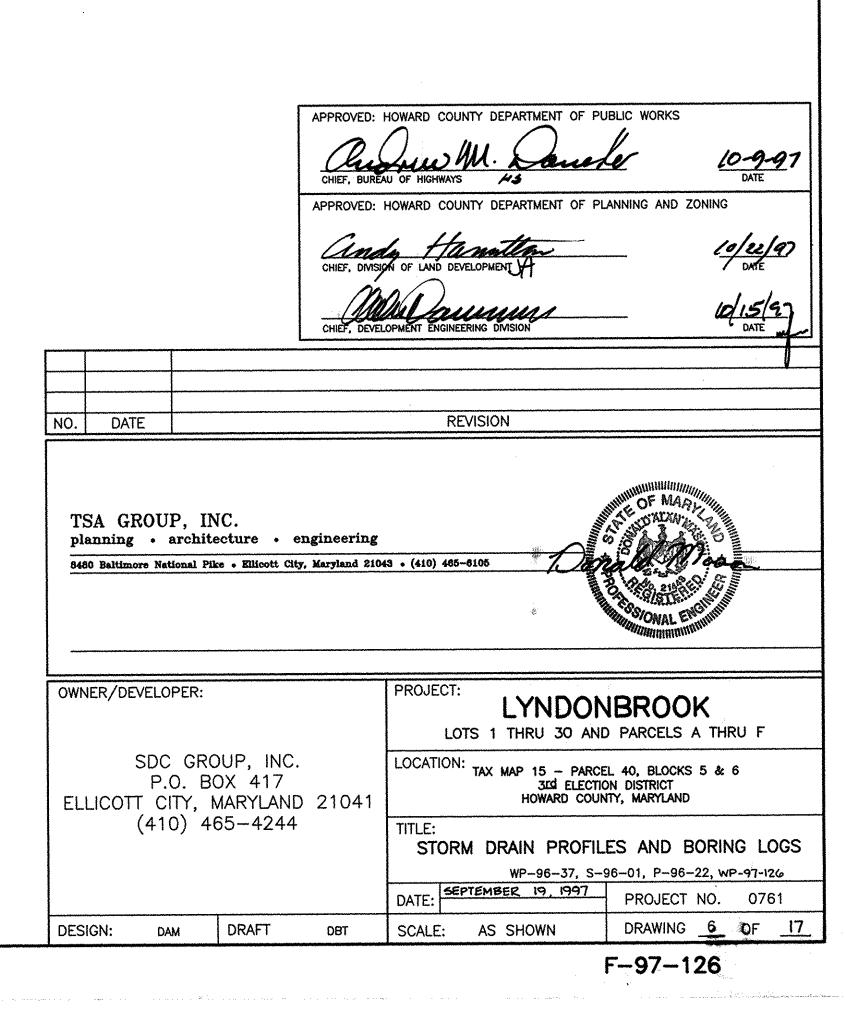


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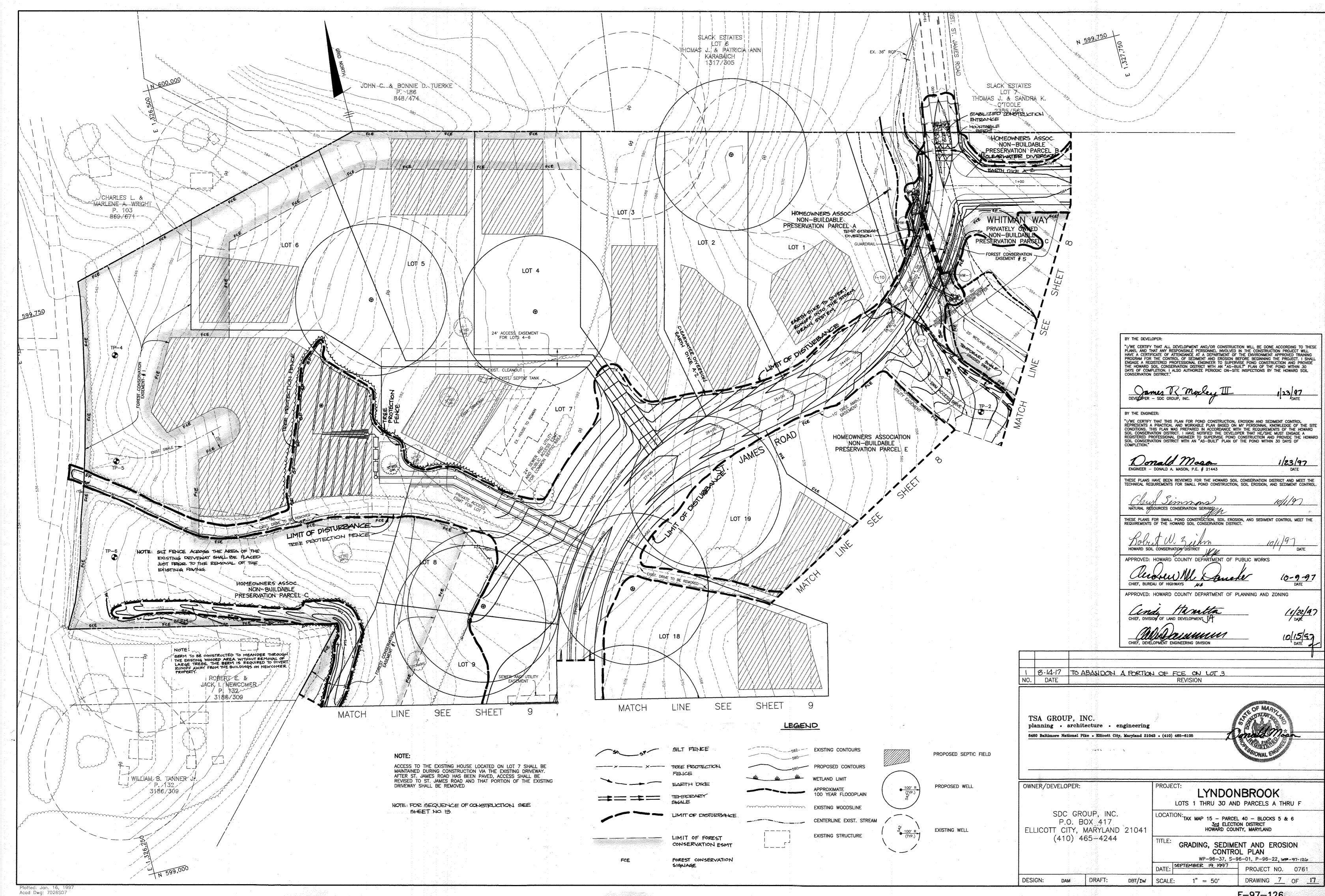


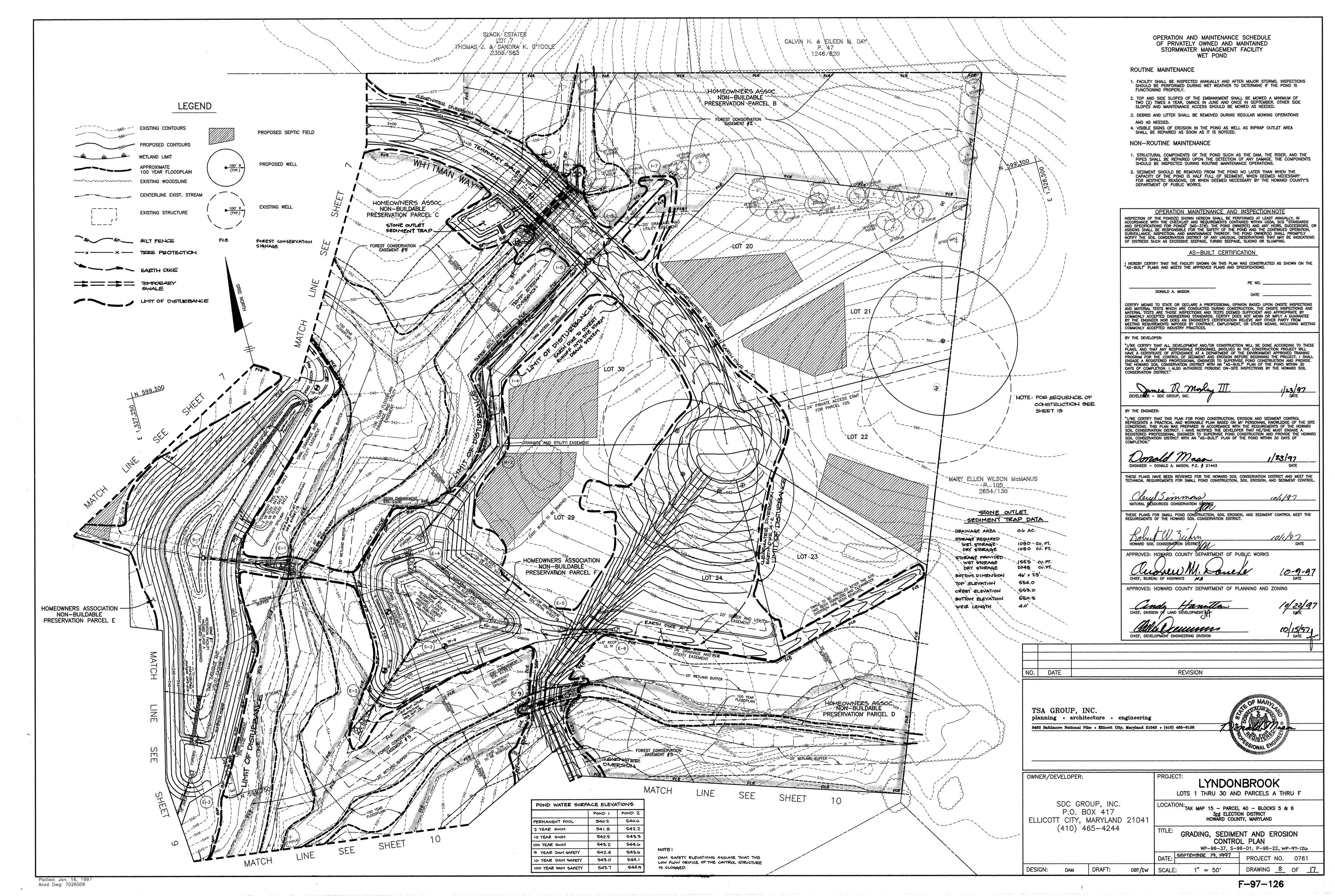


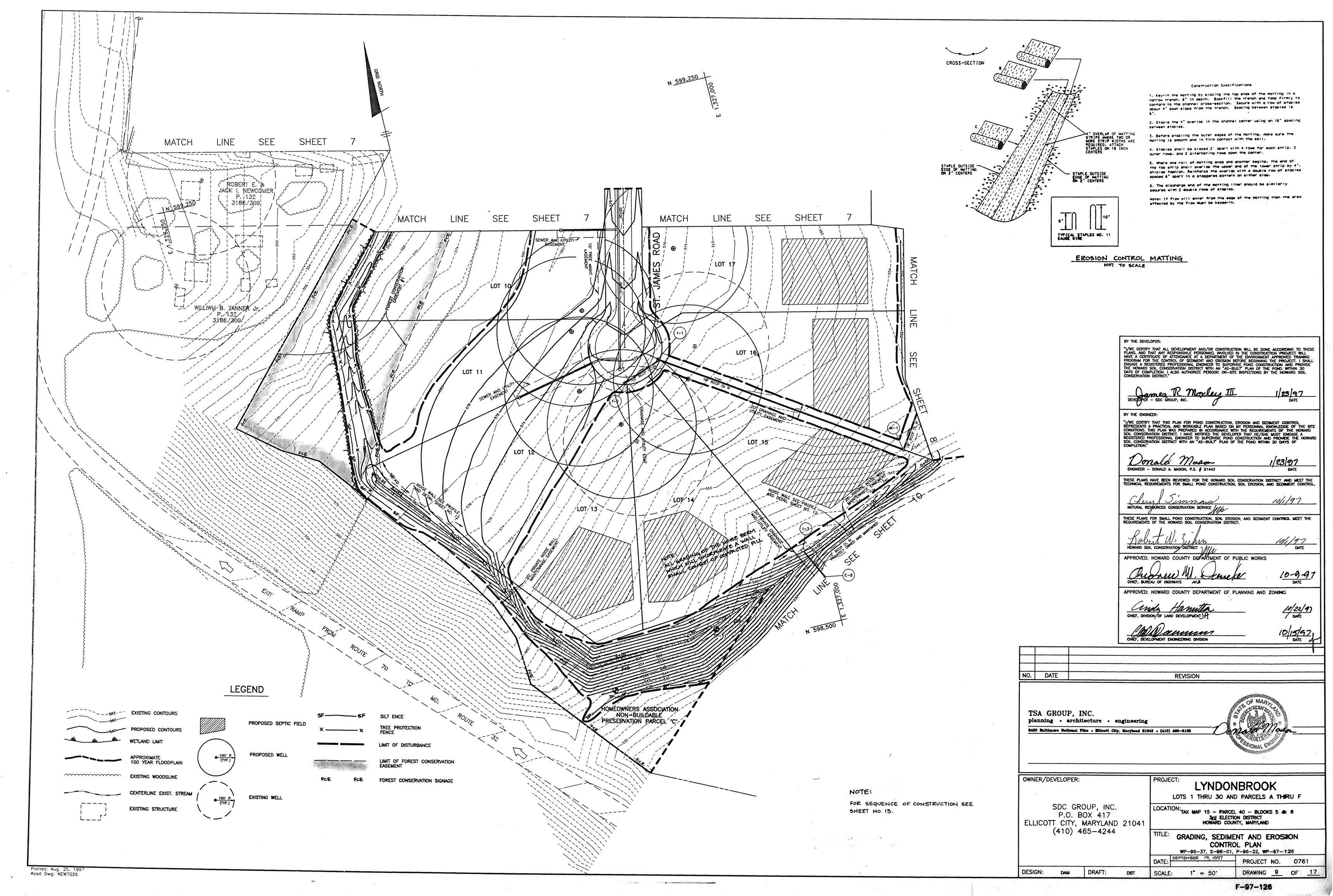
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VERT. 1"=5'

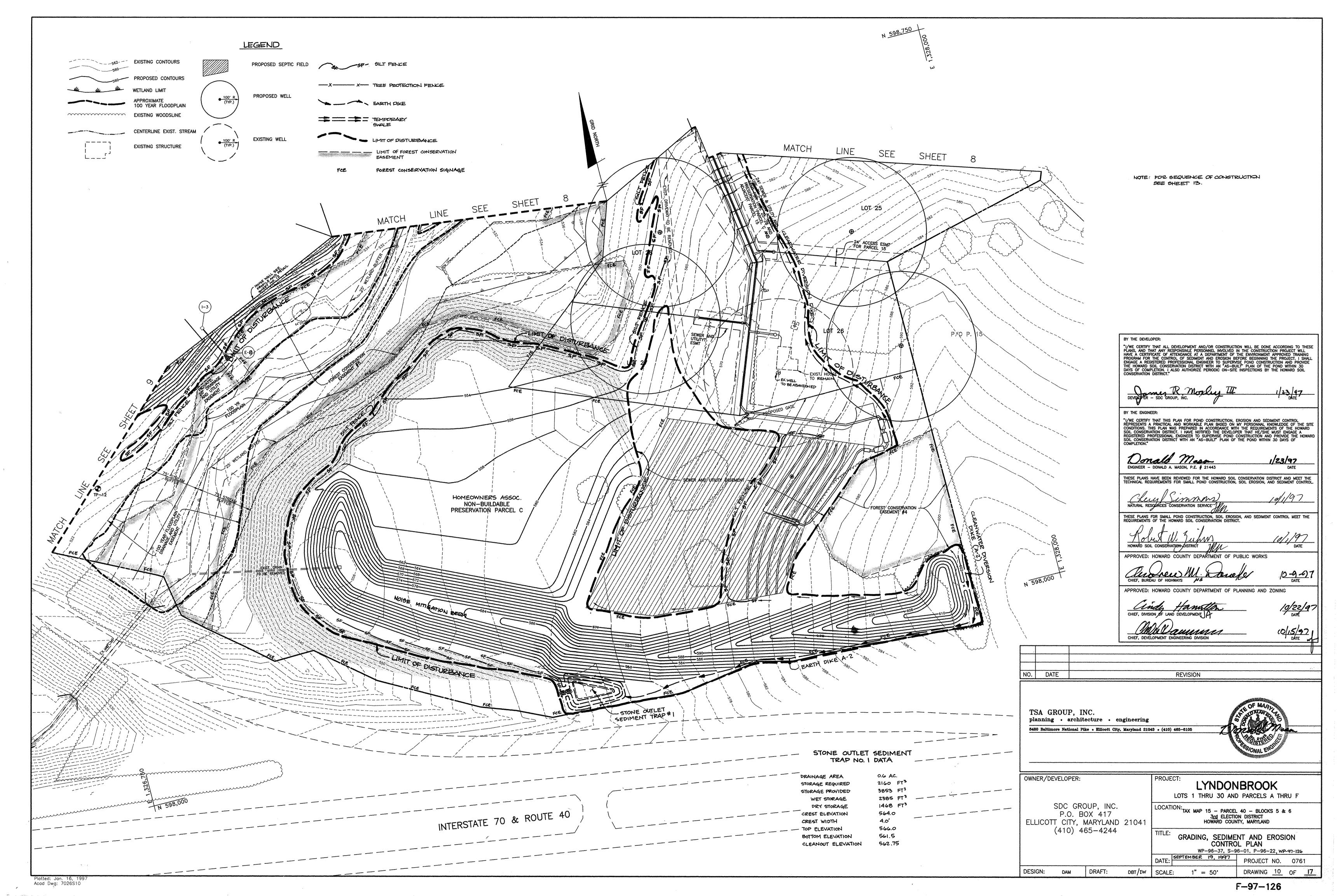


Plotted: Jan. 22, 199 Acad Dwg: 7044S06









POND CONSTRUCTION SPECIFICATIONS

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.

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 50 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 topsoll 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 GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

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 the 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 such 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.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within $\pm/-$ 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.

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.

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 compacted by hand tampers of 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 concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or

Pipe Conduits

All pipes shall be circular in cross section.

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

Materials — (Steel Pipe) — This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plasti Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

Materials - (Aluminum Coated Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

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 surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. 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 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 rerolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 48" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12" wide hugger type band with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 48" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24". Helically corrugated pipe shall have either continuously welded seams or have lock

- 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:

- Materials Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361. An approved equivalent is AWWA Specification C-302.
- 2. Bedding All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawinas.
- 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 origina line and grade of the pipe. The first joint must be located within 2 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.

Polyvinyl Chloride (PVC) Pipe — All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

- Materials PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.
- Joints and connections to anti-seep collars shall be completely watertight.
- 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.

Concrete

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

All rock shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. The rock fragments shall be angular to subrounded in shape. The least dimension of an individual rock fragment shall be not less than one

The rock shall have the following properties:

third the greatest dimension of the fragment.

- Bulk specific gravity (saturated surface—dry basis) not less
- 2. Absorption not more than three percent.
- 3. Soundness: Weight loss in five cycles not more than 20 percent when sodium sulfate is used.

Bulk specific gravity and absorption shall be determined according to ASTM C 127. The test for soundness shall be performed according to ASTM C 88.

The 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 with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth 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 919.12.

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 the 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 of 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 to sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a sightly 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 Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

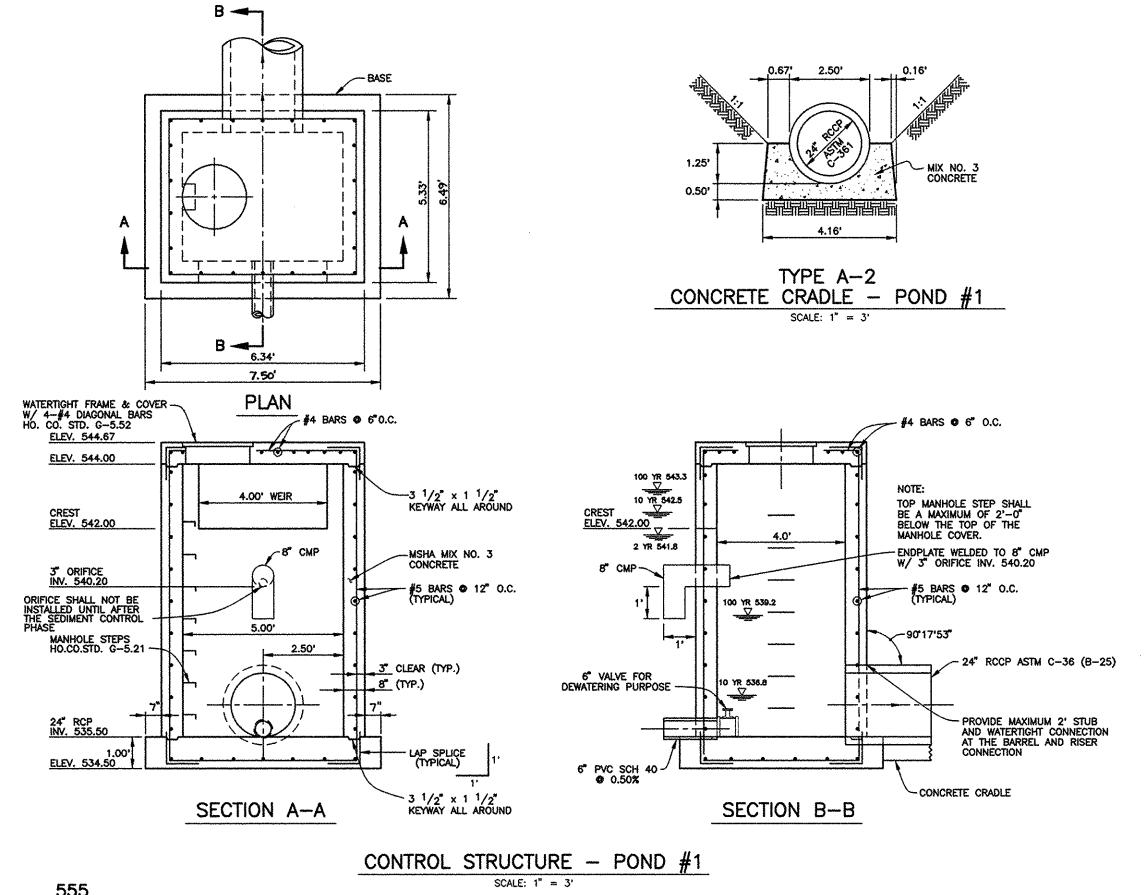
Erosion and Sediment Control

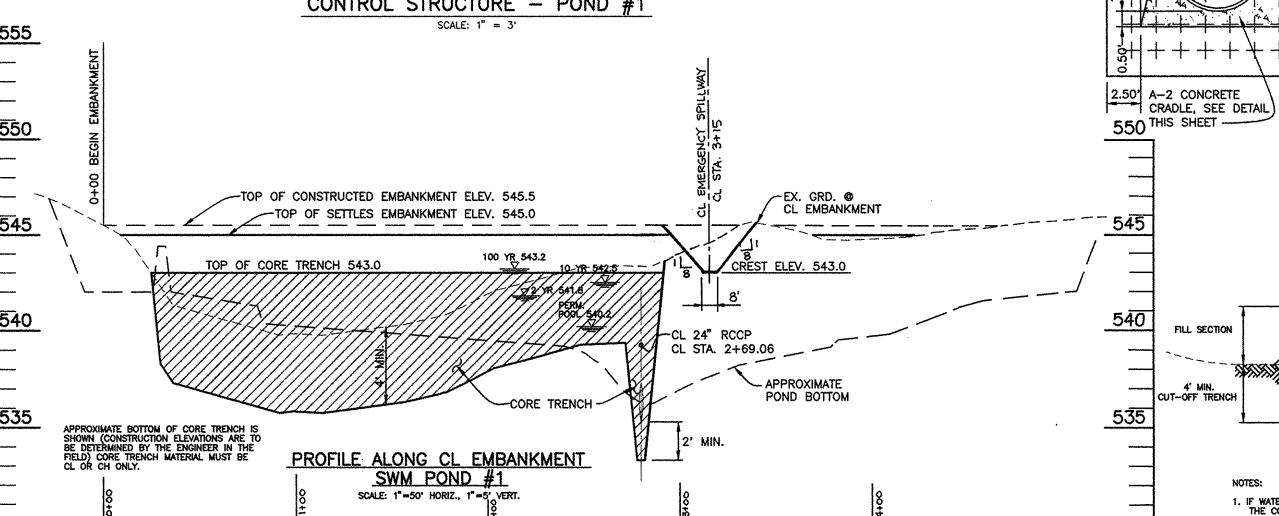
Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction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

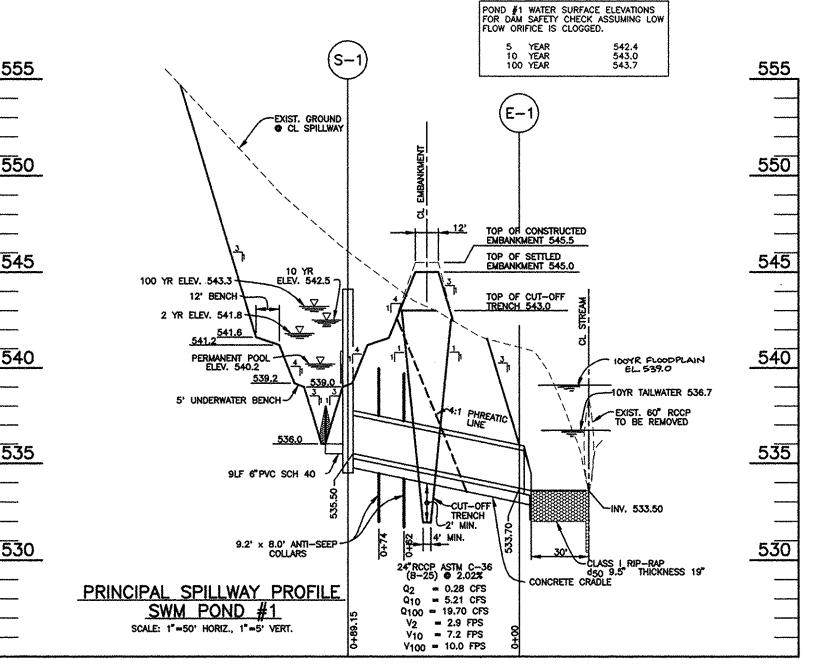
Embankment and Cut-off trench Construction

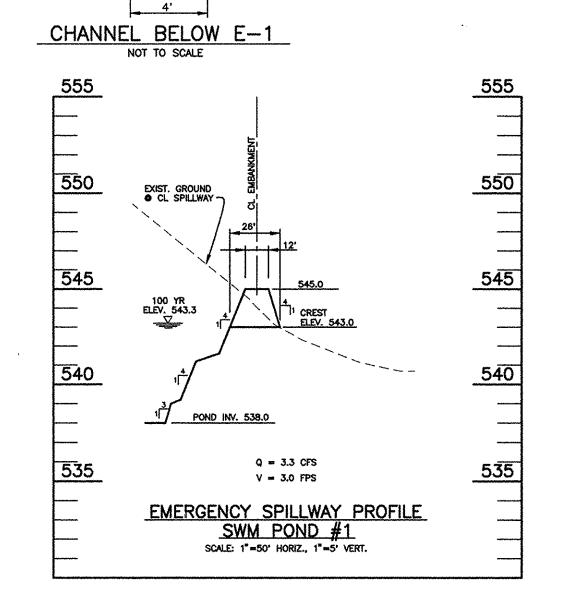
The site should be stripped of topsoil and any other unsuitable materials from the embankment or structure area in accordance with Soil Conservation Guidelines. After stripping operations have been completed, the exposed subgrade materials should be proofrolled with a loaded dumptruck or similar equipment in the presence of a geotechnical engineer or his representative. For areas that are not accessible to a dump truck, the exposed materials should be observed and tested by a geotechnical engineer or his representative should be observed and tested by a geotechnical engineer or his representative utilizing a Dynamic Cone Penetrometer. Any excessively soft or loose materials 530 identified by proofrolling or penetrometer testing should be excavated to suitable firm soil, and then grades re-established by backfilling with suitable

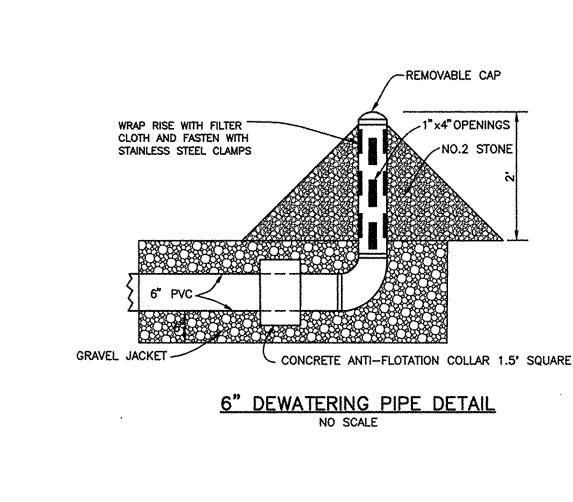
A representative of the geotechnical Engineer should be present to monitor placement and compaction of fill for each embankment and cut—off trench. in accordance with Maryland Soil Conservation Specification 378, soils considered suitable for the center of embankment and cut-off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Per SCS 378, consideration may be given to the use of other materials in the embankment If design and construction are supervised by a geotechnical engineer.











. TRASH RACK SHALL BE GALVANIZED AFTER FABRICATION.

SIDE ELEVATION

COLLAR SIZE:

4 4

-95% COMPACTION

NO. DATE

IN ACCORDANCE WITH HO. CO.

9.2' x 8.0'

COLLAR PROJECTION

2.50' ———

CRADLE

ANTI-SEEP COLLAR

NOT TO SCALE

DDDDDDDD

IF WATER IS ENCOUNTERED DURING THE CONSTRUCTION OF THE CORE TRENCH, IT IS TO BE REMOVED BY PUMPING.
 CORE TRENCH SHALL CONSIST OF IMPERVIOUS MATERIAL (CL,CH) AS DIRECTED BY A GEOTECHNICAL ENGINEER ONSITE AND MAY REQUIRE TO BE HAULED FROM AN OFFSITE LOCATION.

CORE TRENCH SECTION

NOT TO SCALE

- CONCRETE

POURED

NOTE:

LOCATE COLLARS

A MINIMUM OF 2' FROM PIPE JOINT

IN PLACE

. TRASH RACK SHALL BE PAINTED BATTLESHIP GREY.

BOLTS TO FASTEN PLATE TO STRUCTURE (BOLTS TO BE REMOVABLE)

- 2"x1/8" -STEEL PLATE

TRASH RACK - POND #1

FRONT ELEVATION

-#5 @ 9"O.C.

EACH WAY

FILL SECTION

AS-BUILT CERTIFICATION HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS. DONALD A. MASON 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 BY 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. BY THE DEVELOPER: "I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSINLE 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, I ALSO AUTHORIZE PERIODIC ON—SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT." DEVÆLOPER - SDC GROUP, INC "I/WE CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONNAL 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." Donald Moson

-REMOVABLE CAP

_1"x4"OPENINGS

NO.2 STONE

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 10/1/97 Cherry Simmons NATURAL REMOURCES CONSERVATION SERVICE 100 THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Robert W. Zuhro-HOWARD SOIL CONSERVATION DISTRICT APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS 10-9-97 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING and Hamitta DIVISION OF LAND DEVELOPMENT \A

10/22/97 DATE 10/15/97 Mittemmen

REVISION TSA GROUP, INC. planning • architecture • engineering 8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410) 465-6105

SCALE: AS SHOWN

OWNER/DEVELOPER: LYNDONBROOK LOTS 1 THRU 30 AND PARCELS A THRU F SDC GROUP, INC. P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 (410) 465-4244

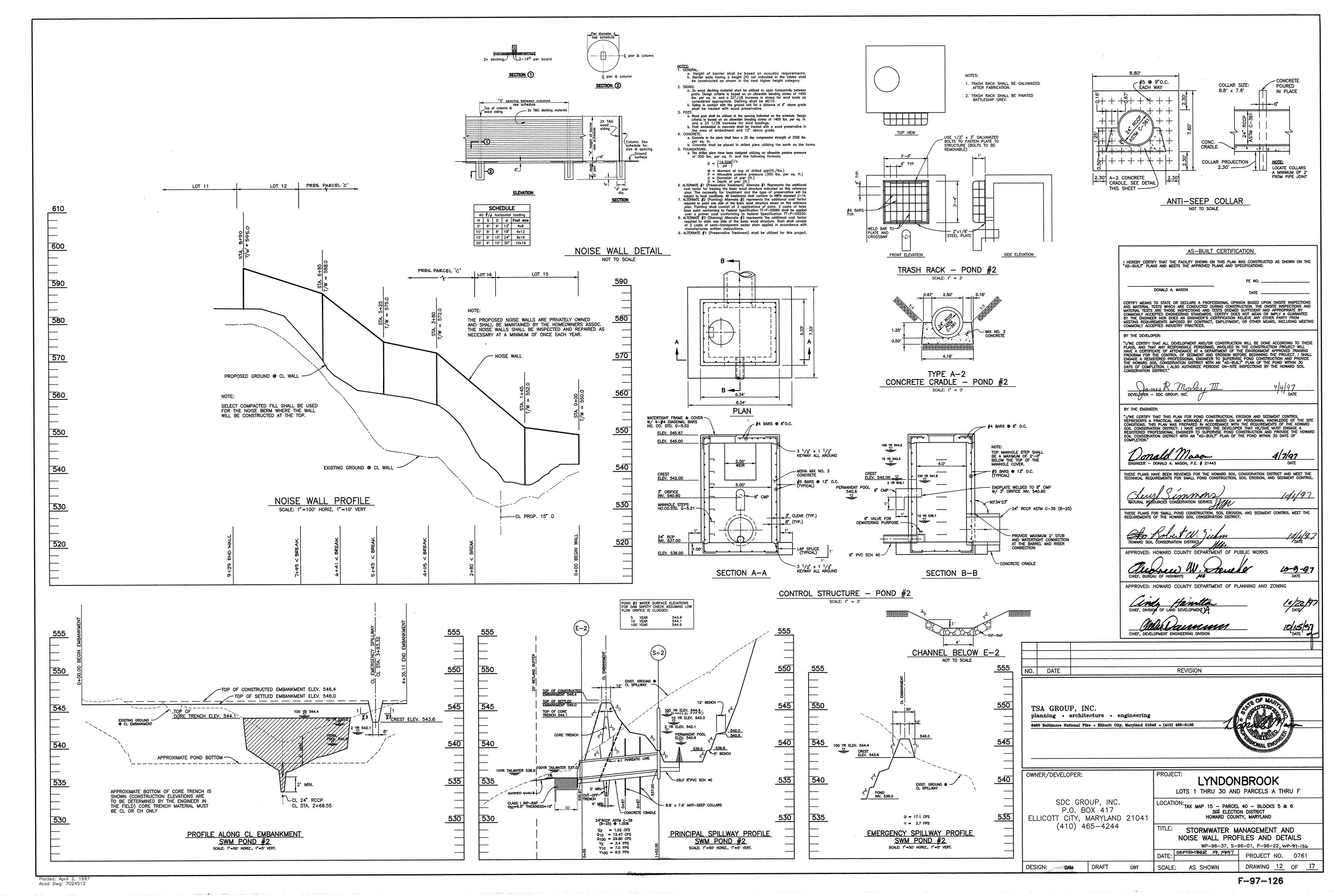
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DRAFT

DAM

LOCATION: TAX MAP 15 - PARCEL 40 - BLOCKS 5 & 6 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND TITLE: STORMWATER MANAGEMENT NOTES AND DETAILS WP-96-37, S-96-01, P-96-22, WP-97-126 DATE: SEPTEMBER 19, 1997 PROJECT NO. 0761

Plotted: April 2, 199 Acad Dwg: 7024S11 DRAWING 11 OF 17



SEDIMENT CONTROL NOTES

- 1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE
- 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 SPECIFICATION FOR SOIL EROSION AND SEDIMENT
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52), TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 7. SITE ANALYSIS:

TOTAL AREA OF SITE	64.55	_ ACRES
AREA DISTURBED	27.60	_ ACRES
AREA TO BE ROOFED OR PAVED	1.76	_ ACRES
AREA TO BE VEGETATIVELY STABILIZED	20.84	_ ACRES
TOTAL CUT	65,250	_ CY
TOTAL FILL	65,250	_ CY
OFFSITE WASTE/BORROW AREA LOCATION	N/A	

- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL EXSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY,

TEMPORARY SEEDBED PREPARATION

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SEEDING: FOR PERIOD MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT). FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ FT). FOR THE PERIOD NOVEMBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT).

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING, ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

EFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDBED PREPARATION

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ON OF THE FOLLOWING

PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0- UREAFORM FERTILIZER

ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE STEDING, HARROW OR DISC INTO UPPER THREE INCHES OF SOIL

SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (.05 LBS/1000 SQ FT) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SO FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

SEQUENCE OF CONSTRUCTION

0AY 1	OBTAIN A GRADING PERMIT.
DAY 2-5	INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, CLEANWATER DIVERSION DIKES AND TREE PROTECTION DEVICES IN ACCORDANCE WITH THE FOREST CONSERVATION PLANS (SHEETS IS (16) ON THE NORTH SIDE OF THE STREAMS.

INSTALL TEMPORARY SWALE ACROSS WHITMAN WAY AND INSTALL STONE OUTLET SEDIMENT TRAP. INSTALL CULVERTS UNDER ST. JAMES ROAD AND WHITMAN WAY

UTILIZING TEMPORARY STREAM DIVERSION MEASURES, AND INSTALL SILT FENCE AROUND HEADWALLS. DAY 21

INSTALL SILT FENCE BELOW STORMWATER MANAGEMENT FACILITIES NO. I AND Z. INSTALL STORMWATER MANAGEMENT FACILITIES NOS. LAND 2, INSTALL

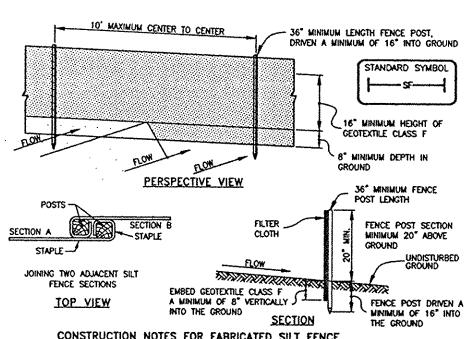
8"CMP AND WELDED ENDPLATE, "DO NOT DRILL LOW FLOW ORIFICE AT THIS TIME." DAY 36-40 INSTALL THE STORM DRAIN FROM 1-10 TO E-7 AND TEMPORARY SWALE FROM E-7 TO STORMWATER MANAGEMENT FACILITY NO I AND ALL

OF THE REMAINING SEDIMENT CONTROL DEVICES WITHIN THE AREAS INSTALL THE STORM DRAIN FROM 1-7 TO E-4 AND INSTALL EARTH

DIKES AT 1-5 AND 1-6 TO DIRECT RUNOFF INTO THE STORM DRAIN SYSTEM. INSTALL ALL OTHER SEDIMENT CONTROL DEVICES AND GRADE THE SITE TO SUBGRADE.

INSTALL REMAINING STORM DRAINS AND PAVING. STABILIZE GRADED AREAS IN ACCORDANCE WITH PERMANENT SEEDBED

> REMOVE ALL REMAINING SEDIMENT CONTROL FEATURES, REMOVE SEDIMENT FROM THE STORMWATER MANAGEMENT FACILITIES AND RESTORE THEM TO THE PLAN GRADES, STABILIZE ANY DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDBED NOTES AND DRILL LOW FLOW ORIFICE IN WELDED ENDPLATE INSIDE THE STORMWATER MANAGEMENT STRUCTURES.

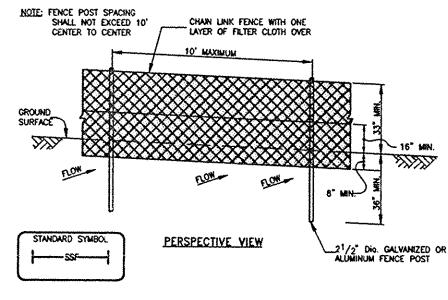


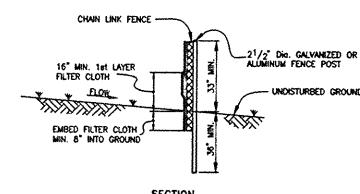
CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard 1 or U section weighing not less than 1.00 pond per linear foot. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid—section and shall meet the following requirements for Geotextile Class

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges

SILT FENCE NOT TO SCALE

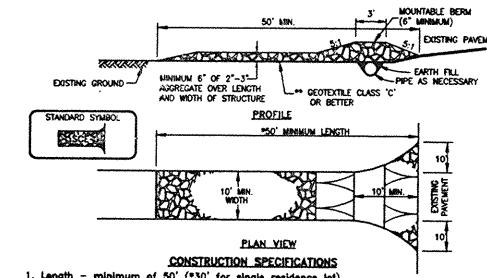




CONSTRUCTION SPECIFICATIONS

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
- 2. Chain link fence shall be fastened securely to the fence posts with wire ties. The
- lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
- 3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- 4. Filter cloth shall be embedded a minimum of δ^{α} into the ground.
- 5. When two sections of filter cloth adjoin each other, they shall be overlapped by 8" and folded 6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height
- 7. Filter cloth shall be fastened securely to each fence post with wire fies or staples at top and mid section and shall meet the following requirements for Geotextile Class F

SUPER SILT FENCE NOT TO SCALE



 Length - minimum of 50' (*30' for single residence lot). 2. Width - 10' minimum, should be flored at the existing road to provide a turning

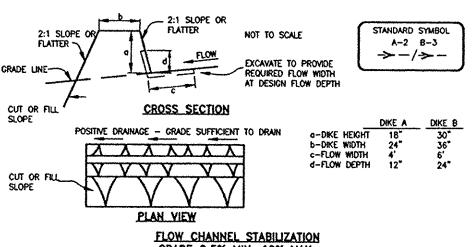
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family

4. Stone — crushed aggregate (2" to 3") or recialmed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water — all surface water flowing to ar diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

STABILIZED CONSTRUCTION ENTRANCE NOT TO SCALE



Seed and cover with straw mulch. Seed and cover with Erosion Control Matting or line with sod.
 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum. CONSTRUCTION SPECIFICATIONS

 All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%. 2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping

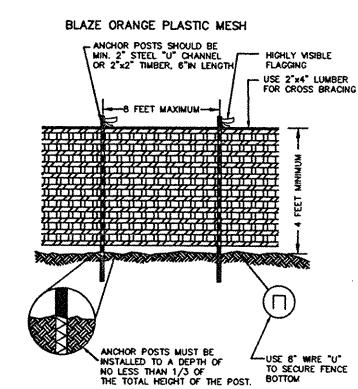
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed stabilized area at a non-erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

6. Fill shall be compacted by earth moving equipment. 7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

8. Inspection and maintenance must be provided periodically and after each rain event.

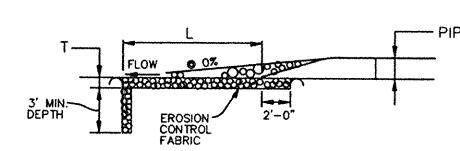
NOT TO SCALE

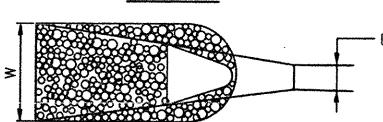


NOTES:

 FOREST PROTECTION DEVICE ONLY.
 RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED. 4. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS. 6. PROTECTIVE SIGNAGE IS ALSO REQUIRED.

TREE PROTECTION FENCE NOT TO SCALE

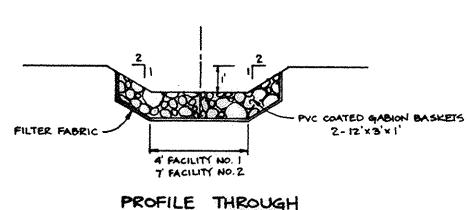




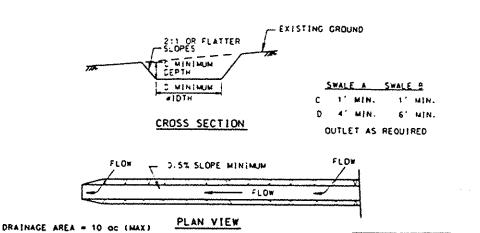
PLAN

STRUCTURE	D-50	LENGTH (L)	WIDTH (W)	THICKNESS (T)	SHA CLASS
HW-1	9.5	20'	50,	19"	I
H₩-3	16"	30'	39'	32"	II
E-3	9.5*	10'	12'	19"	I
E-4	9.5*	23'	12'	19"	I
E-5	9.5*	12'	14'	19"	I
E-7	9.5*	12'	14'	19"	I
E-8	9.5"	10'	12'	19"	I
Ε-9	9.5*	28'	32'	19"	I
E-I	9.5"	30'	14'	19"	1
E-2	9.5"	30'	14'	19"	1
	OUTLE	T PROTE	CTION	DETAIL	**************************************
-		NOT TO			

NOT TO SCALE



FOREBAY WEIR NOT TO SCALE



STANDARD SYMBOL

A - 2/6 - 3

SLOPE = 10% (MAX) FLOW CHANNEL STABILIZATION

1. Seed and cover with straw mutch. 2. Seed and cover with Erosian Control Matting or line with sod. 3. 4"-7" stone or recycled concrete equivalent pressed into soil in a minimum 7" layer.

1. All temporary swales shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

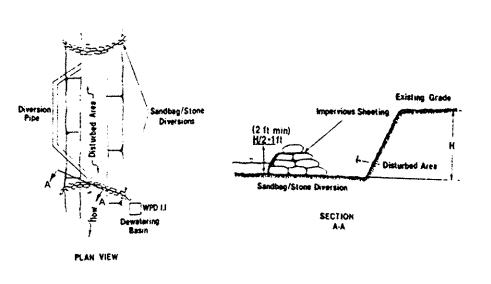
Construction Specifications

 Runoff diverted from on undisturbed orea shall outlet directly into an undisturbed stabilized area at a non-erosive velocity 4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the

5. The swole shall be excavated or shaped to line, arade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow. 6. Fills if necessory, shall be compacted by earth moving equipment

T. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the swale-8. Inspection and maintenance must be provided periodically and after

TEMPORARY SWALE NOT TO SCALE



Description
The work shall consist of installing a flow diversion structure when construction activities take place within the stream channel such as culvent construction or culvent replacement.

. Material Specifications.

1. Sandbags: Sandbags shall consist of materials which are resistant to sifterwiolet radiation, taering and puncture and eoven tightly enough to prevent leanage of fill material (i.e., sand, fine gravel, etc.).

2. Stone: Stone shall be weeked and have a similaw element of 6 inches.

3. Sheeting: Sheeting shall consist of polyethylene or other material which is impervious and resistant to puncture and tearing.

. Construction Requirements

1. All erosion and sediment control devices shall be installed as the The height of the sandbag/stone diversion structure shall be one helf the distance from the stream bad to the bank plus one foot, as indicated in section are. The sandbags shall be alaced on a smooth, present surface. prepared surface.

3. All excepted materials shall be disposed of in a SCD approved disposal area outside the 100-year troodplain unless otherwise epicuseo on the plans by the MA.

4. All sewatering of the construction area shall be pumped to a determiny basin (Plate MPDI, I) or otherwise approved on the plans by the MA.

the MRA, 5. Sheeting shall be overlapped a minimum of 18 inches.

5. The diversion pipe shall have a minimum diameter of sufficient size to convey the normal stream flow.

7. If necessary, soft fence or strempoles shall be installed ground the perimeter of the work area.

8. Sediment control devices are to remain in place until all disturbed areas are stabilized and the inspecting authority approves their removal.

TEMPORARY STREAM DIVERSION NOT TO SCALE

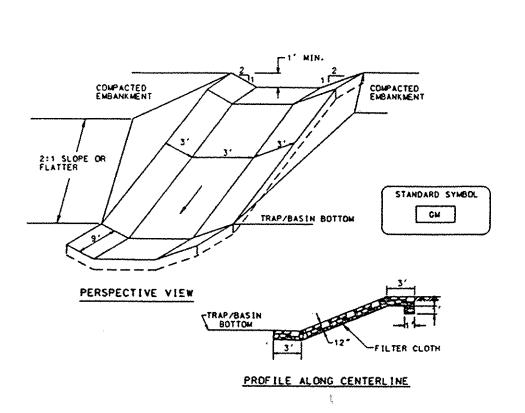
FOREBAY

ELEV. 542.0

542.0

542

540



- 1. Gabian inflow protection shall be constructed of 9' x 3' x 9" applan baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes.
- 2. Georestile Class C shall be installed under all gabion baskets.
- 3. The stone used to fill the gabian baskets shall be 4'' 7''.
- 4. Gabiens shall be installed in accordance with manufacturers recommendations. 5. Gabian Inflow Protection shall be used where concentrated flow is present

GABION INFLOW PROTECTION

NOT TO SCALE

on slopes steeper than 4:1.

____ BANKEL

TOP ELEV. 544.0

CREST 543.0

CREST 543.0

-GABION WEIR

FOREBAY SECTION

POND #

TOP 544.0

FOREBAY

FOREBAY SECTION

POND #2

SCALE: I"= 20' HORIZ , I"= 2' VERT.

SCALE: I" = 20' HORIZ, I"=2' VERT.

- GABION WEIR 104R WS 5425

RIP-RAP INFLOW PROTECTION

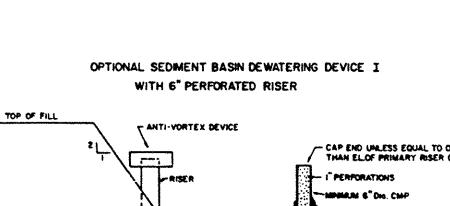
540.2

10 YK WS 543.3

GABION INFLOW PROTECTION

PERMANENT POOL 540.6

- 540

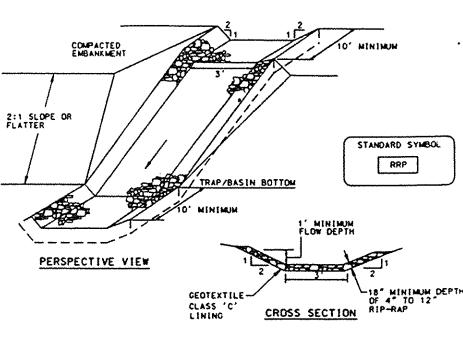


DEWATERING DEVICE

NOT TO SCALE

544

PERFORATIONS OR SLITS, MUST NOT-BE MADE ANY LOWER THAN 6" ABOVE TOP OF THE HORIZONTAL



Construction Specifications

1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip- rap to a depth of 18"

2. Filter cloth shall be installed under all rip-rap. Filter cloth shall 3. Entrance and exit sections shall be installed as shown on the detail

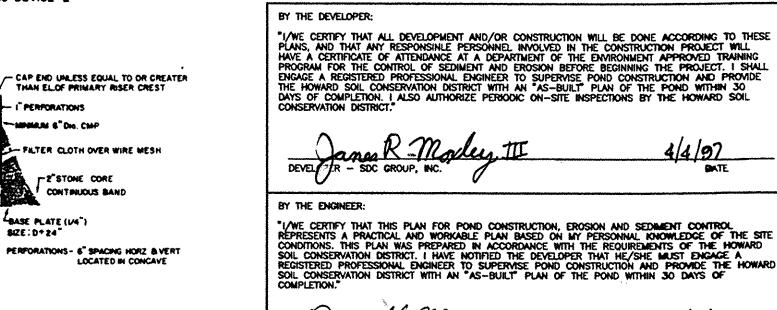
4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a starmwater management

5. Gabion inflow Protection may be used in lieu of Rip-rap inflow

6. Rip-rap should blend into existing ground.

7. Rip-rop Inflow Protection shall be used where the slope is between 4:1 and 10:1. for slopes flatter than 10:1 use Earth Dike or Temporary Swale

> RIP-RAP INFLOW PROTECTION NOT TO SCALE



"I/WE CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL. REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONNAL 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." 4/7/97 ENGINEER - DONALD A. MASON, P.E. # 21443 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 11/197 mmens NATURAL RESOURCES CONSERVATION SERVICE THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. HOWARD SOIL CONSERVATION DISTRICT//// APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT A Mulaumus CHIEF, DEVELOPMENT ENGINEERING DIVISION NO. DATE REVISION

TSA GROUP. INC. planning • architecture • engineering 8480 Baltimore National Pike + Elicott City, Karyland 21943 + (410) 465-6105



10-4-97

10/15/57 J

OWNER/DEVELOPER: PROJECT: SDC GROUP, INC P.O. BOX 417 ELLICOTT CITY, MARYLAND 21041 (410) 465-4244

DADRAFT

DAM

DESIGN:

LYNDONBROOK LOTS 1 THRU 30 AND PARCELS A THRU F LOCATION: TAX MAP 15 - PARCEL 40 - BLOCKS 5 & 6 3ED ELECTION DISTRICT HOWARD COUNTY, MARYLAND

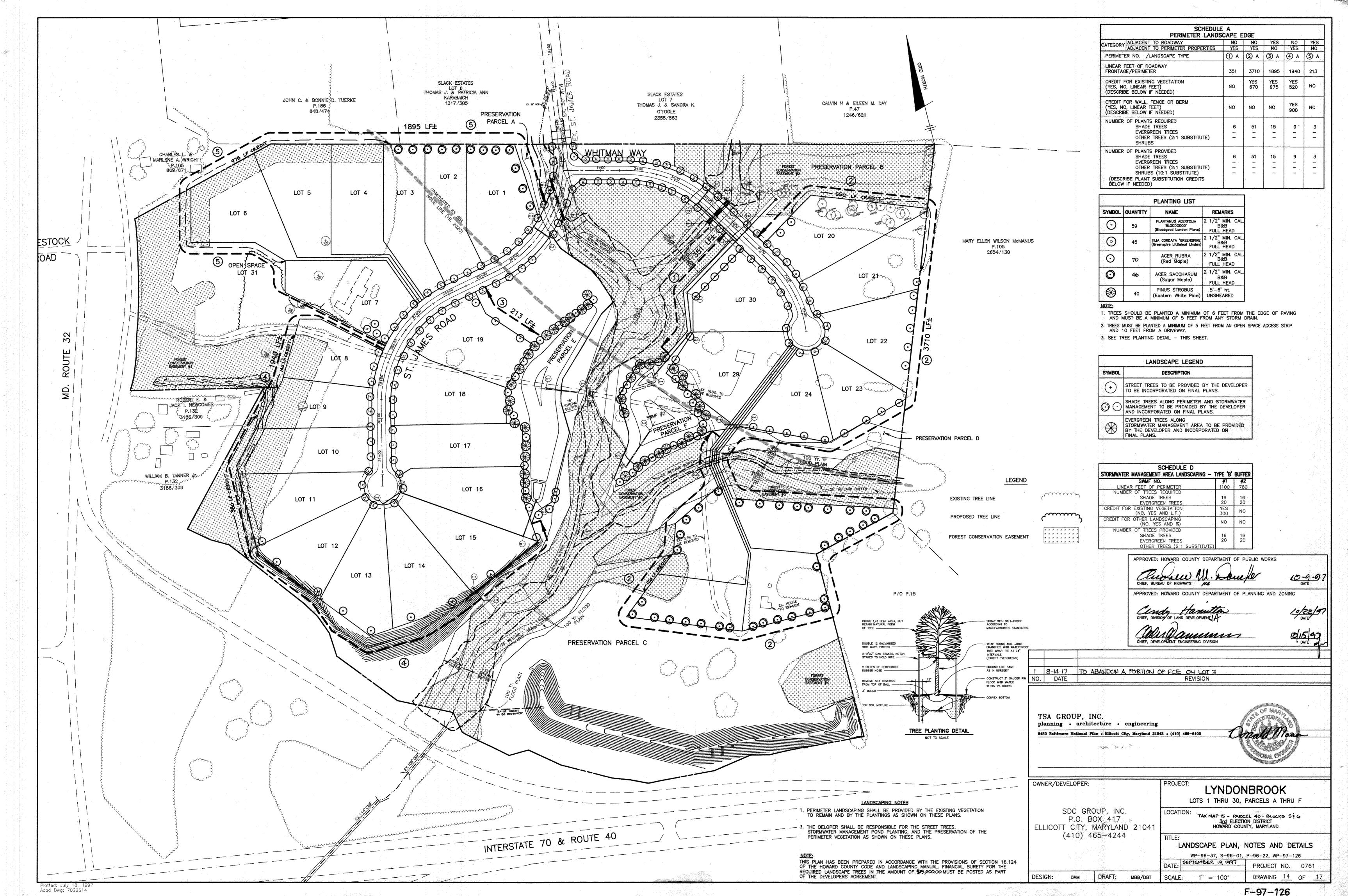
AS SHOWN

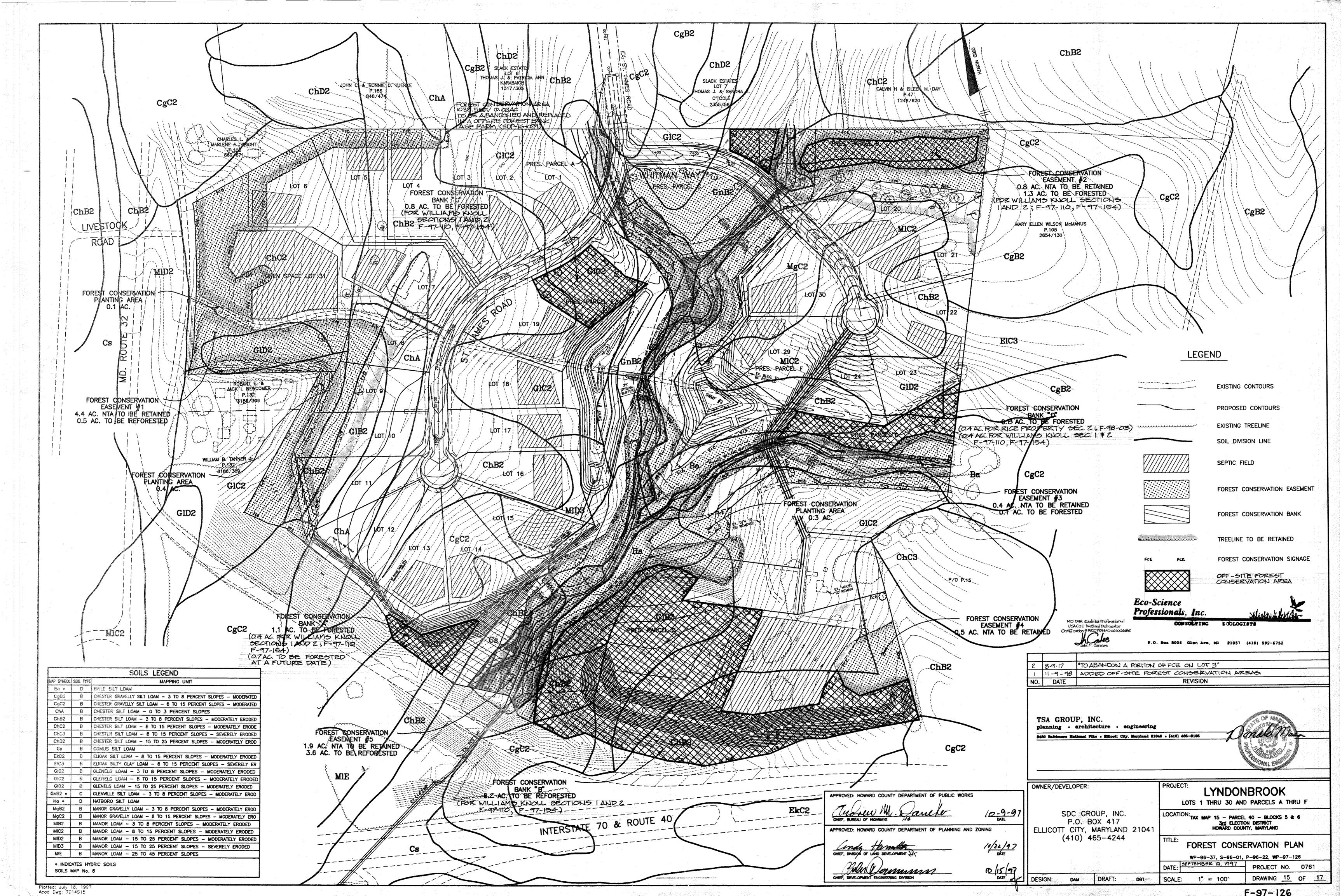
SCALE:

SEDIMENT CONTROL NOTES AND DETAILS WP-96-37, S-96-01, P-96-22, WP-97-126 DATE: SEPTEMBER 19, 1997 PROJECT NO. 0761

DRAWING 13 OF 17

Piotted: Jon. 23, 199 Acad Dwg: 7023S13





Planting Schedule

Forest Conservation Easement \$5 (3.6 acres) Spacing Liriodendron tulipifera - Poplar 1" cal. Quercus rubra - Red oak 1" cal. Acer rubrum - Red maple 3-4'whip Cornus florida - Flowering dogwood 3-4'whip Fraxinus pennsylvanica - Green ash 3-4'whip Lindera benzoin - Spicebush 18-24"b.t. Liriodendron tulipifera - Poplar 2-3'whip Prunus serotina - Black cherry 3-4'whip 125 Quercus rubra - Red oak 2-3'whip Viburnum dentatum - Arrowwood 18-24"b.t. BANK Forest Conservation Easement #2 (1.3 acres) (TO BE PLANTED AT A FUTURE DATE) Oty. <u>Species</u> Spacing 4 Liriodendron tulipifera - Poplar 1" cal. Acer rubrum - Red maple 3-4'whip Juniperus virginiana - Red Cedar 18-24" BR Liriodendron tulipifera - Poplar 2-3'whip Prunus serotina - Black cherry 3-4'whip Quercus rubra - Red oak 2-3'whip Viburnum prunifolium - Blackhaw 18-24"b.t. BANK Forest Conservation Easement #3 (0.1 acres) - (To BE PLANTED AT A FUTURE DATE) Oty. Species Spacing Acer rubrum - Red maple Liziodendron tulipifera - Poplar 1" cal. Acer rubrum - Red maple 3-4'whip 2-3'whip Juglans nigra - Black walnut Prunus serotina - Black cherry 3-4'whip ** Platanus occidentalis -Sycamore 2-3'whip Viburnum dentatum - Arrowwood 18-24"b.t. Conservation Bank "A" (1.3 acres) (TO BE PLANTED AT A FUTURE DATE) Spacing <u>Size</u> Species 4 Quercus rubra - Red oak 1" cal 85 Acer rubrum - Red maple 3-4'whip Cornus florida - Flowering dogwood 3-4'whip 3-4'whip Fraxinus pennsylvanica - Green ash 18-24"b.t Lindera benzoin - Spicebush Liriodendron tulipifera - Poplar 2-3 whip Prunus serotina - Black cherry 3-4 whip .2-3'whip 45 Quercus rubra - Red oak Forest Conservation Bank "B" (6.3 acres) (TO BE PLANTED AT A FUTURE DATE) Oty. Species 1" cal 1" cal Liriodendron tulipifera - Poplar Acer rubrum - Red maple 3-4 whip Cornus florida - Flowering dogwood 2-3 whip Juniperus virginiana - Red Cedar 18-24" BR Liriodendron tulipifera - Poplar 2-3'whip Populus grandidentata - Bigtooth Aspen 2-3'whip Prunus serotina - Black cherry 3-4'whip Quercus rubra - Red oak 2-3'whip Viburnum prunifolium - Blackhaw 12-18"b.t Forest Conservation Bank "C" (0.8 acres) (TO BE PLANTED AT A FUTURE DATE) Liriodendron tulipifera - Poplar 1" cal Quercus rubra - Red oak 1" cal 3-4'whip Acer rubrum - Red maple Cornus florida - Flowering dogwood 2-3'whip Juniperus virginiana - Red Cedar 18-24" BR Liriodendron tulipifera - Poplar 2-3'whip Populus grandidentata - Bigtooth Aspen 2-3'whip Prunus serotina - Black cherry 3-4'whip Quercus rubra - Red oak 2-3'whip Viburnum prunifolium - Blackhaw 12-18"b.t. Forest Conservation Bank "D" (0.7 acres) (TO BE PLANTED AT A FUTURE DATE) Species Acer rubrum - Red maple Liriodendron tulipifera - Poplar 1" cal. Acer rubrum - Red maple Juglans nigra - Black walnut 3-4'whip 2-3'whip Prunus serotina - Black cherry 3-4'whip Platanus occidentalis -Sycamore 2-3'whip Viburnum dentatum - Arrowwood 18-24"b.t * - Planting sites for 1" caliper stock is shown on FCE as Species selection for each individual planting site should be made randomly. ** - plants shall be spaced randomly eleven feet on center, not in a grid pattern b.t. - branched transplant: cal. - caliper: BR - bare root Forest Conservation Easement # 1 (0.5 acres) Liriodendron tulipifera - Poplar Quercus rubra - Red cak Acer rubrum - Red maple 3-4 whip Cornus florida - Flowering dogwood 2-3 whip

Planting/Soil Specifications

Planting of nursery stock shall take place between March 15th and April 30th. A twelve (12) inch layer of topsoil shall be spread over all afforestation areas impacted by site grading to assure a suitable planting area. Disturbed areas shall be seeded and stabilized as per general construction plan for project. Planting areas not impacted by site grading shall have no additional topsoil installed. All bareroot planting stock shall have their root systems dipped into an anti-desicant gel prior to planting Plants shall be installed so that the top of root mass is level with the top of existing grade. Backfill in the planting pits shall consist of 3 parts existing soil to 1 part pine fines or

Fertilizer shall consist of Agriform 22-8-2, or equivalent, applied as per manufacturer's A two (2) inch layer of hardwood mulch shall be placed over the root area of all Plant material shall be transported to the site in a tarped or covered truck. Plants shall

All non-organic debris associated with the planting operation shall be removed from the

Sequence of Construction

be kept moist prior to planting.

site by the contractor.

Plants shall be installed as per Plant Schedule and the Planting/Soil Specifications for the Upon completion of the planting, signage shall be installed as per the Forest Retention Area Protection Devices shown on Sheet 2 of the Forest Conservation Plan. Plantings shall be maintained and guaranteed in accordance with the Maintenance and Guarantee requirements for project.

Maintenance of Plantings

Maintenance of plantings shall last for a period of 24 months. All plant material shall be watered twice a month during the 1st growing season. Watering may be more or less frequent depending on weather conditions. During second growing season, once a month during May-September, if needed. Invasive exotics and noxious weeds will be removed from reforestation areas. Old field successional species will be retained. Plants will be examined a minimum two times during the growing season for serious plant

pests and diseases. Serious problems will be treated with the appropriate agent.

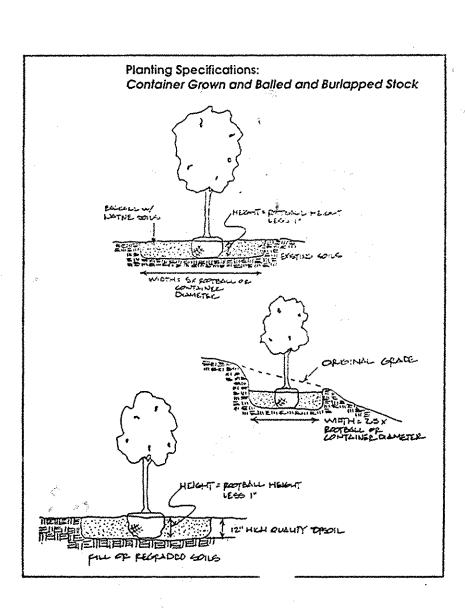
Guarantee Requirements

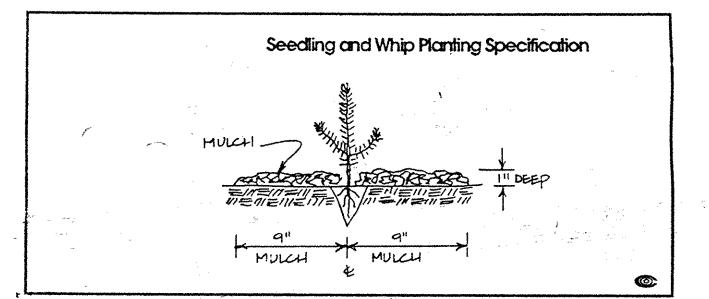
Dead branches will be pruned from plantings.

A 75 percent survival rate of reforestation plantings will be required at the end of the 24 month maintenance period. All plant material below the 75 percent threshold will be replaced at the beginning of the next growing season. After one growing season, plant material shall be maintained at 90% survival threshold. The contractor will not be liable for plant loss due to theft or vandalism

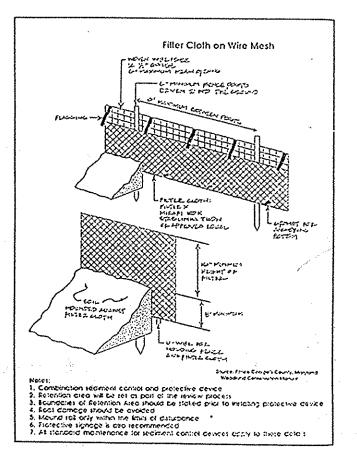
Surety for Reforestation

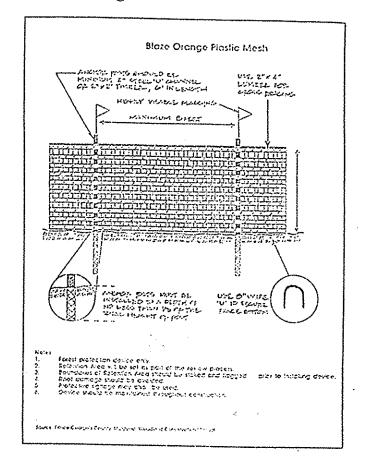
The developer shall post a surety (bond, letter of credit) to ensure that reforestation plantings are completed. Upon acceptance of the plantings by the County, the bond shall





Temporary Protective Fencing





Permanent Protective Signage

FOREST CONSERVATION AREA

Unauthorized disturbance of vegetation is prohibited. Violators subject to penalties under the Howard County Forest Conservation Act of 1992.

> Trees for Your Future

FCP NOTES

- 1. 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.
- 2. 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.
- 4. There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
- 5. No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as Forest Conservation Easements.
- 6. Temporary fencing shall be used to protect forest resources during construction. The fencing shall be placed along all FCE boundaries which occur within 25 feet of the proposed limits of disturbance.
- 7. Permanent signage shall be placed 50-100' apart along the boundaries of all areas included in Forest Conservation Easements.
- 8. Forestation Areas shown hereon that are not labeled as Forest Conservation Easements shall be considered part of a Forest Conservation Bank and credit for this plantings will be taken to offset forestry obligations for other projects. Recordation and approval of these forestry credits will be the responsibility of the future
- No Forest Conservation credit shall be taken without the written approval of Howard County Department of Planning and Zoning.

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Eco-Science Professionals, Inc. CONSULTING

*
REVISION

SCALE:

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

WNER/DEVELOPER:	PROJE
(+	
SDC GROUP, INC. P.O. BOX 417	LOCATI
(410) 465-4244	TITLE:

DRAFT:

DESIGN:

LYNDONBROOK LOTS I THRU 30 AND PARCELS A THRU F

Land the state of the will be a second

10-9-97

TION:
TAX MAP 15 - PARCEL 40 - BLOCKS 5, & 6

3rd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

FOREST CONSERVATION NOTES AND DETAILS WP-96-37, S-96-01, P-96-22, WP-97-126 SEPTEMBER 19, 1997 DATE: PROJECT NO. 0761

> DRAWING 16 OF 17 AS SHOWN

P.O. Box 5006 Glen Arm, MD 21057 (410) 592-6752

Plotted: Nov. 18, 1996 Acod Dwg: 30FCPS2

Juniperus virginiana - Red Cedar

Liriodendron tulipifera - Poplar

Prunus serotina - Black cherry

Viburnum prunifolium - Blackhaw

Quercus rubra - Red oak

Populus grandidentata - Bigtooth Aspen

18-24" BR

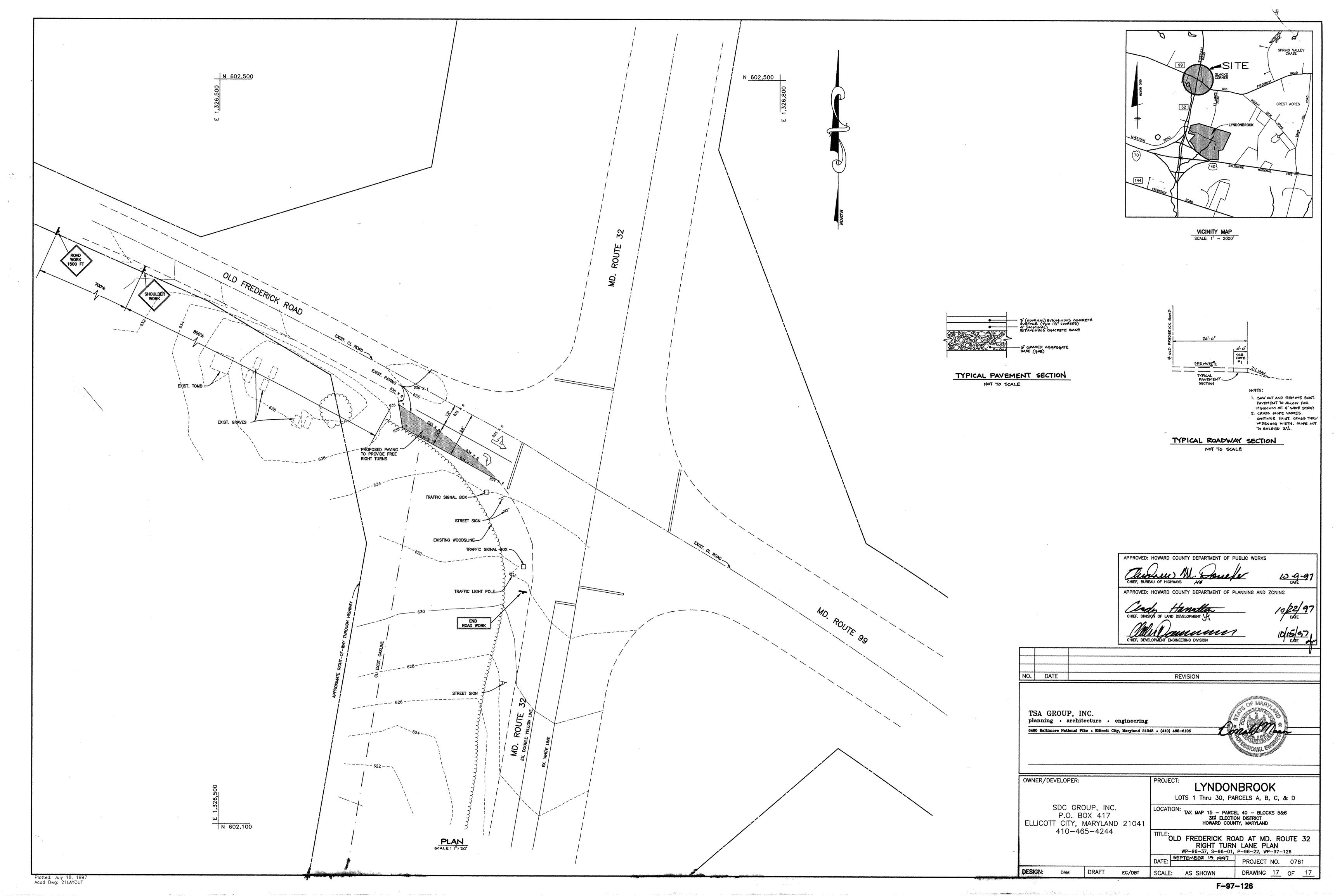
2-3'whip

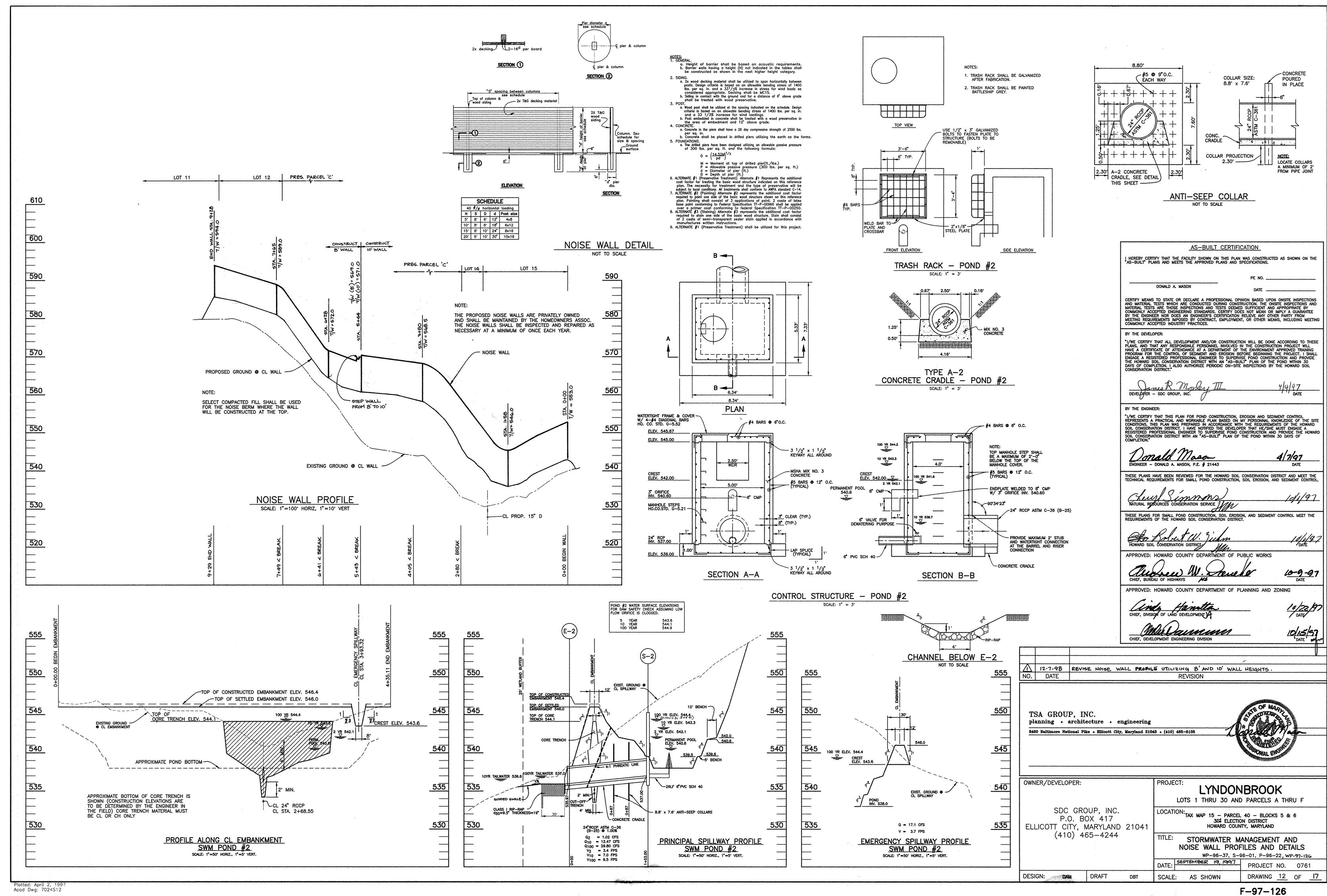
2-3'whip

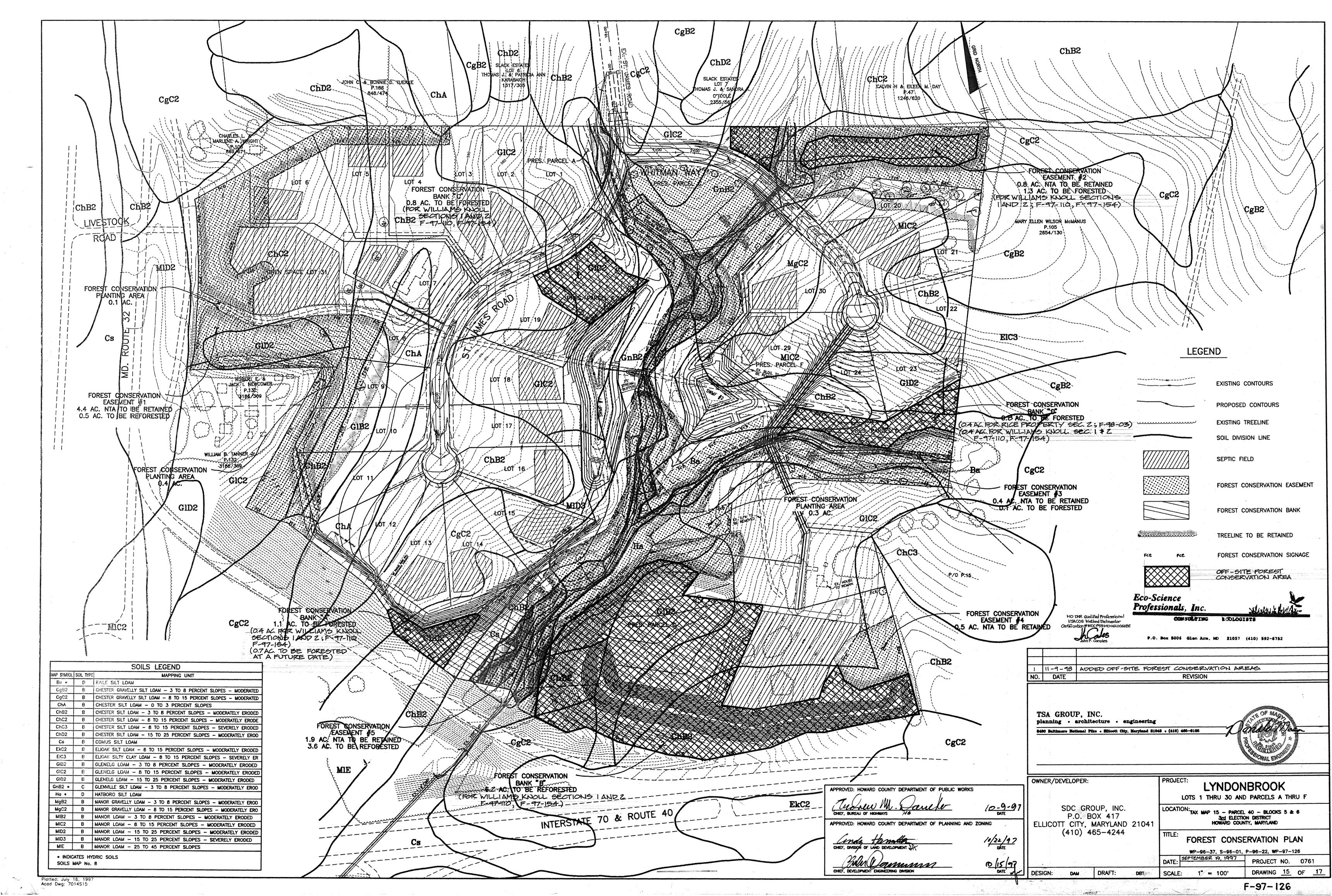
3-4'whip

2-3 whip

12-18"b. t







Planting Schedule

Forest Conservation Easement #5 (3.6 acres)

Species Spacing Liriodendron tulipifera - Poplar 1" cal. Quercus rubra - Red oak 1" cal. 3-4'whip Cornus florida - Flowering dogwood 3-4'whip Fraxinus pennsylvanica - Green ash 3-4'whip Lindera benzoin - Spicebush 18-24"b.t. Liriodendron tulipifera - Poplar 2-3'whip Prunus serotina - Black cherry 3-4 whip 2-3'whip Quercus rubra - Red oak 85 Viburnum dentatum - Arrowwood 18-24"b.t FOR WILLIAMS KNOW SECTIONS I AND Z F-97-110, F-97-154 BANK Forest Conservation Easement #2 (1.3 acres) Spacing 4 Liriodendron tulipifera - Poplar 1" cal. Acer rubrum - Red maple 3-4'whip Juniperus virginiana - Red Cedar 18-24" BR 110 Liriodendron tulipifera - Poplar 2-3'whip Prunus serotina - Black cherry 3-4'whip Quercus rubra - Red oak 2-3'whip 50 Viburnum prunifolium - Blackhaw 18-24"b.t. BANK Forest Conservation Easement #3 (0.1 acres) - (To BE PLANTED AT A FUTURE DATE) Oty. Spacing 2 Acer rubrum - Red maple 2 Liriodendron tulipifera - Poplar 1" cal. Acer rubrum - Red maple 3-4'whip Juglans nigra - Black walnut 2-3 whip Prunus serotina - Black cherry 3-4 whip Platanus occidentalis -Sycamore 2-3'whip Viburnum dentatum - Arrowwood 18-24"b.t. Conservation Bank "A" (1.1 acres) 0.4 Ac FOR WILLIAMS KNOLL SECTIONS I AND Z F-97-110 , F-47-154 Size 4 Quercus rubra - Red oak 1" cal. Acer rubrum - Red maple Cornus florida - Flowering dogwood 3-4'whip Fraxinus pennsylvanica - Green ash 3-4'whip Lindera benzoin - Spicebush 18-24"b.t Liriodendron tulipifera - Poplar 2-3'whip Prunus serotina - Black cherry 3-4'whip Quercus rubra - Red oak -2-3'whip Forest Conservation Bank "B" (6.2 acres) FOR WILLIAMS KNOW SECTIONS IAND Z Qty. Liriodendron tulipifera - Poplar 1" cal. Quercus rubra - Red oak 3-4'whip Acer rubrum - Red maple Cornus florida - Flowering dogwood Juniperus virginiana - Red Cedar 2-3'whip 18-24" BR Liriodendron tulipifera - Poplar 2-3'whip Populus grandidentata - Bigtooth Aspen 2-3'whip Prunus serotina - Black cherry 3-4'whip Quercus rubra - Red oak 2-3'whip Viburnum prunifolium - Blackhaw 12-18"b.t Forest Conservation Bank "C" (0.8 acres) FOR WILLIAMS KNOLL SECTIONS LAND Z F-97-110, F-97-154 Liriodendron tulipifera - Poplar Quercus rubra - Red oak Acer rubrum - Red maple 3-4'whip Cornus florida - Flowering dogwood 2-3'whip Juniperus virginiana - Red Cedar 18-24" BR Liriodendron tulipifera - Poplar 2-3'whip Populus grandidentata - Bigtooth Aspen 2-3'whip 3-4'whip Prunus serotina - Black cherry Quercus rubra - Red oak 2-3'whip Viburnum prunifolium - Blackhaw Forest Conservation Bank "D" (0.8 acres) (0.4 Ac. FOR WILLIAMS KNOLL SECTIONS I AHD Z F-97-110, F-97-154) (04 AC. FOR RICE PROPERTY Spacing SECTION Z; F-98-03) Acer rubrum - Red maple Liriodendron tulipifera - Poplar 1" cal. Acer rubrum - Red maple 3-4'whip Juglans nigra - Black walnut 2-3'whip Prunus serotina - Black cherry 3-4'whip 2-3'whip Platanus occidentalis -Sycamore Viburnum dentatum - Arrowwood 18-24"b.t * - Planting sites for 1" caliper stock is shown on FCE as Species selection for each individual planting site should be made randomly.

b.t. - branched transplant; cal. - caliper; BR - bare root

2-3'whip

2-3'whip

2-3'whip

9-4'whip

2-3'whip

12-18"b.

18-24" BR

Forest Conservation Easement # 1 (0.5 acres)

Liriodendron tulipifera - Poplar

Cornus florida - Flowering dogwood Juniperus virginiana - Red Cedar

Populus grandidentata - Sigtooth Aspen

Liriodendron tulipifera - Poplar

Prunus serotina - Black cherry

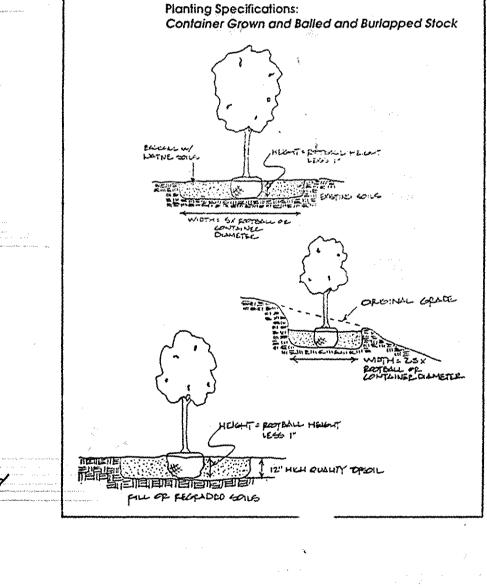
18 Viburnum prunifolium - Blackhaw

Quercus rubra - Red oak

Acer rubrum '- Red maple

Quercus rubra - Red oak

Plotted: Nov. 18, 19: Acad Dwg: 30FCPS2



Planting/Soil Specifications

Planting of nursery stock shall take place between March 15th and April 30th.

grading shall have no additional topsoil installed.

be kept moist prior to planting.

Guarantee requirements for project.

successional species will be retained.

Dead branches will be pruned from plantings.

material shall be maintained at 90% survival threshold.

The contractor will not be liable for plant loss due to theft or vandalism.

site by the contractor.

Sequence of Construction

Maintenance of Plantings

Guarantee Requirements

Surety for Reforestation

A twelve (12) inch layer of topsoil shall be spread over all afforestation areas impacted

by site grading to assure a suitable planting area. Disturbed areas shall be seeded and

stabilized as per general construction plan for project. Planting areas not impacted by site

All bareroot planting stock shall have their root systems dipped into an anti-desicant gel

Plants shall be installed so that the top of root mass is level with the top of existing grade. Backfill in the planting pits shall consist of 3 parts existing soil to 1 part pine fines or

Fertilizer shall consist of Agriform 22-8-2, or equivalent, applied as per manufacturer's

A two (2) inch layer of hardwood mulch shall be placed over the root area of all

Plant material shall be transported to the site in a tarped or covered truck. Plants shall

All non-organic debris associated with the planting operation shall be removed from the

Plants shall be installed as per Plant Schedule and the Planting/Soil Specifications for the

Upon completion of the planting, signage shall be installed as per the Forest Retention

Plantings shall be maintained and guaranteed in accordance with the Maintenance and

All plant material shall be watered twice a month during the 1st growing season.

Watering may be more or less frequent depending on weather conditions. During second

Invasive exotics and noxious weeds will be removed from reforestation areas. Old field

Plants will be examined a minimum two times during the growing season for serious plant pests and diseases. Serious problems will be treated with the appropriate agent.

A 75 percent survival rate of reforestation plantings will be required at the end of the 24 month maintenance period. All plant material below the 75 percent threshold will be

replaced at the beginning of the next growing season. After one growing season, plant

The developer shall post a surety (bond, letter of credit) to ensure that reforestation

plantings are completed. Upon acceptance of the plantings by the County, the bond shall

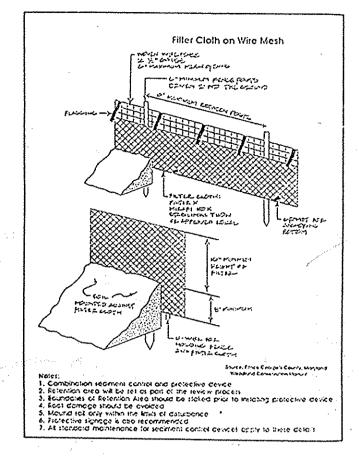
Area Protection Devices shown on Sheet 2 of the Forest Conservation Plan.

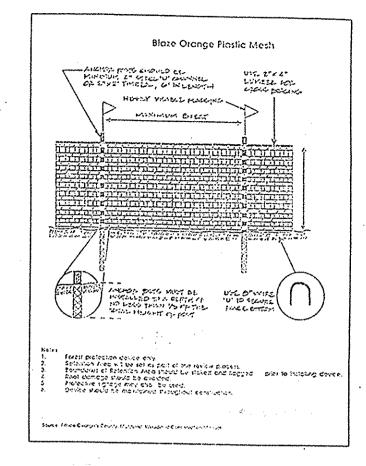
Maintenance of plantings shall last for a period of 24 months.

growing season, once a month during May-September, if needed.

Seedling and Whip Planting Specification MULCH ___ MULCH

Temporary Protective Fencing





Permanent Protective Signage

FOREST CONSERVATION AREA

Unauthorized disturbance of vegetation is prohibited. Violators subject to penalties under the Howard County Forest Conservation Act of 1992.

> Trees for Your Future

FCP NOTES

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- 2. Forested areas occurring outside of the FCE shall not be considered part of the FCE and shall not be subject to protective land covenants.
- 3. Limits of disturbance shall be restricted to areas outside the limit of temporary fencing or the FCE boundary, whichever is greater.

4. 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

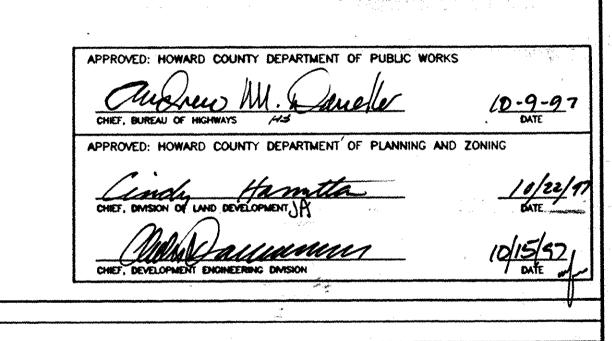
designated as Forest Conservation Easements.

the proposed limits of disturbance.

- 6. Temporary fencing shall be used to protect forest resources during construction. The fencing shall be placed along all FCE boundaries which occur within 25 feet of
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- No Forest Conservation credit shall be taken without the written approval of Howard County Department of Planning and Zoning.

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Eco-Science Professionals, Inc. CONSULTING ECOLOGISTS



SA GROUP, INC. lanning • architecture • engineering 180 Baltimore National Pike • Efficient City, Maryland 21043 • (410) 486-4185 SONAL ENGINEERING		11-9-98 DATE	ADD OFF-SITE FOREST CONSERVATION REVISION	AREA INFORMATION
	1	lanning .	architecture • engineering	- Donald Wage

PROJECT: LYNDONBROOK
LOTS I THRU 30 AND PARCELS AT
LOCATION: TAX MAP 15 - PARCEL 40 - BLOCKS 5 & C

3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

FOREST CONSERVATION NOTES AND DETAILS WP-96-37, S-96-01, P-96-22, WP-97-126 SEPTEMBER 19, 1997 PROJECT NO. 0761 DATE:

AS SHOWN DRAWING 16 OF 17 P.O. Box 5006 Glen Arm, MD 21057 (410) 592-6752 SCALE:

OWNER/DEVELOPER:

SDC GROUP, INC.

P.O. BOX 417

ELLICOTT CITY; MARYLAND 21041

(410) 465-4244