

PLAN VIEW
SCALE: 1" = 20'

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION.
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DICES, 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.
- 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.
- SITE ANALYSIS:**
TOTAL AREA OF SITE: 2.82 ACRES
TOTAL AREA DISTURBED: .06 ACRES
AREA TO BE ROOFED OR PAVED: .04 ACRES
AREA TO BE VEGETATIVELY STABILIZED: .04 ACRES
TOTAL CUT: 0.00 CU. YDS.
TOTAL FILL: 0.00 CU. YDS.
OFF-SITE HAUL: 0.00 CU. YDS.
- 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 CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 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 ARE LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY AN OFF-SITE BORROW AREA WITH AN APPROVED SEDIMENT & EROSION CONTROL PLAN AND PERMIT.

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.

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 WEEDING 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 80 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.

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

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 SCHEDULES:

- 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.
- 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 SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

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

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 WEEDING LOVEGRASS (.07 LBS/1000 SQ FT). FOR

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED UNDER A SHORT-TERM VEGETATIVE COVER IS NEEDED.

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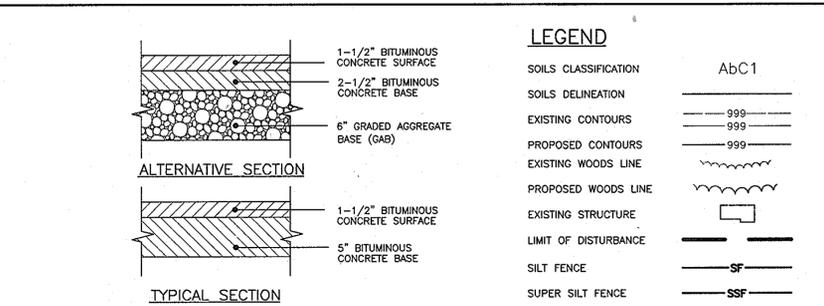
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P-2 PAVEMENT DETAIL
NOT TO SCALE

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

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

Purpose
To provide a suitable 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 Practice Applies

- The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
- The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
- The original soil to be vegetated contains material toxic to plant growth.
- The soil is so acidic that treatment with limestone is not feasible. If, 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 Material Specifications

- Topsoil salvaged from the existing site may be used provided that it meets the standards 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 Experimental Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - Topsoil shall be a loam, sandy loam, silt loam, silt 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. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutgrass, poison ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clays, 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. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
- For sites having disturbed areas under 5 acres:
 - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- For sites having disturbed areas over 5 acres:
 - On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
 - Organic content of topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.

Note: Topsoil substitutes or 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.

II. Topsoil Application

- When topsoiling, maintain needed erosion and sediment control practices such as diversion, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
- Grades on the areas to be topsoiled, which have been previously established, shall be maintained, about 4" - 8" higher in elevation.
- Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
- 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 seedbed preparation, 6-21-2.

VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

- Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall conform to the following requirements:
 - Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
 - 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. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements for use.
 - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
 - Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/2 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Seeding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1972.

III. Topsoil Application

- When topsoiling, maintain needed erosion and sediment control practices such as diversion, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
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 - Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
 - 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. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements for use.
 - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
 - Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/2 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Seeding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1972.

III. Topsoil Application

- When topsoiling, maintain needed erosion and sediment control practices such as diversion, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
- Grades on the areas to be topsoiled, which have been previously established, shall be maintained, about 4" - 8" higher in elevation.
- Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
- 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 seedbed preparation, 6-21-2.

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 - Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/2 the normal lime application rate.

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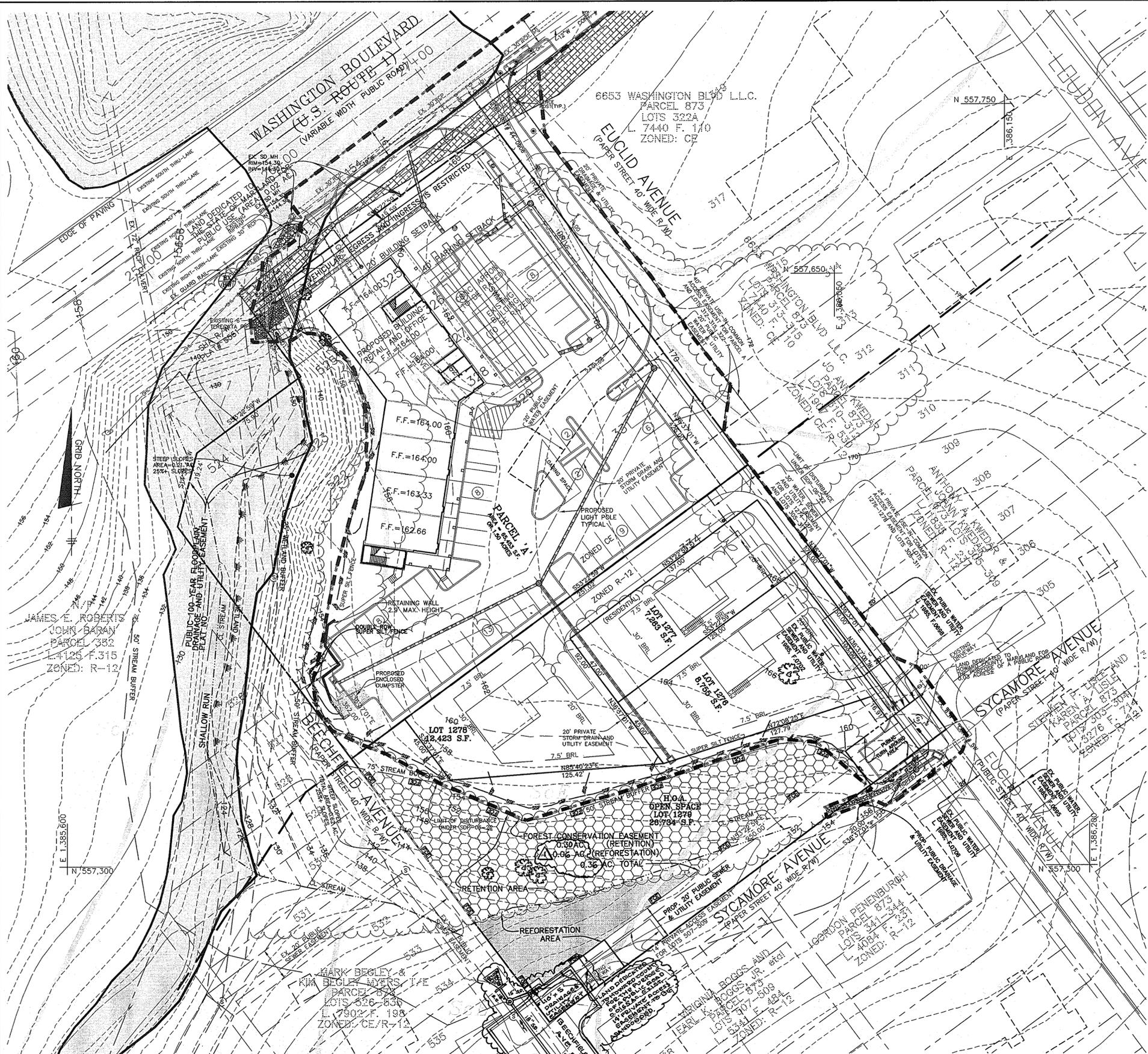
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FOREST CONSERVATION WORKSHEET

Version 1.0
 Project: Belle Grove - Residential Zoning Date: February 14, 2006
 NET TRACT AREA

A. Total tract area	Acres	1.3
B. Area within 100 Year Floodplain		0
C. Area to remain in Residential Zoning - R-12		1.3
D. Net Tract Area		1.3

LAND USE CATEGORY: (from table 3.2.1, page 40, Manual)
 ARA MDR IDA HDR MPD CIA

E. Afforestation Threshold (percentage)	0.15	0.2
F. Conservation Threshold (percentage)	0.2	0.26

EXISTING FOREST COVER:

G. Existing forest cover (excluding floodplain)	0.8
H. Area of forest above afforestation threshold	0.61
I. Area of forest above conservation threshold	0.54

BREAK EVEN POINT:

J. Forest retention above threshold with no mitigation	0.37
K. Clearing permitted without mitigation	0.43

PROPOSED FOREST CLEARING

L. Total area of forest to be Retained in FCE	0.30
---	------

PLANTING REQUIREMENTS

M. Reforestation for clearing above Conservation Threshold	0.13
N. Reforestation for clearing below Conservation Threshold	0.0
O. Credit for retention above conservation threshold	0.04
P. Total reforestation required	0.09
Q. Total afforestation required	0
R. Total reforestation and afforestation required	0.09

FOREST CONSERVATION WORKSHEET

Version 1.0
 Project: Belle Grove - Commercial Zoning Date: FEBRUARY 10, 2006
 NET TRACT AREA

A. Total tract area	Acres	1.52
B. Area within 100 Year Floodplain		0.16
C. Area to remain in Commercial Zoning - CE		1.52
D. Net Tract Area		1.36

LAND USE CATEGORY: (from table 3.2.1, page 40, Manual)
 ARA MDR IDA HDR MPD CIA

E. Afforestation Threshold (percentage)	0.15	0.2
F. Conservation Threshold (percentage)	0.15	0.2

EXISTING FOREST COVER:

G. Existing forest cover (excluding floodplain)	0.42
H. Area of forest above afforestation threshold	0.22
I. Area of forest above conservation threshold	0.22

BREAK EVEN POINT:

J. Forest retention above threshold with no mitigation	0.24
K. Clearing permitted without mitigation	0.16

PROPOSED FOREST CLEARING

L. Total area of forest to be Retained in FCE	0.0
---	-----

PLANTING REQUIREMENTS

M. Reforestation for clearing above Conservation Threshold	0.05
N. Reforestation for clearing below Conservation Threshold	0.4
O. Credit for retention above conservation threshold	0.0
P. Total reforestation required	0.45
Q. Total afforestation required	0
R. Total reforestation and afforestation required	0.45

LEGEND

- - - EXISTING CONTOURS
- - - PROPOSED CONTOURS
- - - LIMIT OF WETLANDS
- - - 100 YEAR FLOODPLAIN
- - - PROPOSED TREELINE
- - - EXISTING TREELINE
- ⊗ EXISTING SPECIMEN TREE
- LIMITS OF FOREST CONSERVATION EASEMENT
- TEMPORARY PROTECTIVE FENCING
- [FCE] PERMANENT PROTECTIVE SIGNAGE
- [] FOREST CONSERVATION EASEMENT RETENTION
- [] FOREST CONSERVATION EASEMENT REFORESTATION
- - - 100 YEAR FLOODPLAIN, DRAINAGE AND UTILITY ESMT.
- LIMITS OF DISTURBANCE
- SSF SUPER SILT FENCE

SOILS LEGEND

MAP SYMBOL	SOIL GROUP	SOIL TYPE
•	IuB C	IUKA LOAM, LOCAL ALLUVIUM, 1 TO 5 PERCENT SLOPES
Md	C	MADE LAND
ScD	C	SAND AND CLAYEY LAND, MODERATELY STEEP
ScE	C	SAND AND CLAYEY LAND, MODERATELY SLOPING
Ho	D	HATBORO SILT LOAM

* INDICATES HYDRIC SOILS
 TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 7

Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS
 1405 DORSETT PROFESSIONAL
 SUITE 200 BALTIMORE, MD 21225-2657
 P.O. Box 8006 6146 Ave. MD 21093 14101 592-4752
 3/8/07

BENCHMARK ENGINEERING, INC.
 ENGINEERS & LAND SURVEYORS & PLANNERS
 8480 BALTIMORE NATIONAL PIKE & SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-8105 FAX: 410-465-8644

Donnell Mason
 2/28/07

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Howard 2/28/07
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Howard 3/27/07
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

NOTE: FOR PROPOSED STORM DRAIN IMPROVEMENTS PROFILE REFER TO CAPITAL PROJECT D-1124-03

SURETY AMOUNT:
 RETENTION \$0.20 PER S.F. X 0.3 ACRES = \$ 2,613.60
 REFORESTED \$0.50 PER S.F. X 0.07 ACRES = \$ 1,524.60
 TOTAL FOREST CONSERVATION SURETY REQUIRED TO BE POSTED = \$ 4,138.20

SEAL & SIGNATURE FOR REV. ONLY

[Signature]

NO.	DATE	REVISION
1	8-6-12	APP. CAPITAL PROJECT D-1124-03 (BERCHFIELD AVE. IMPROVEMENTS) BY NOLAN ASSOC.

OWNER: BELLE GROVE CORP.
 4024 BELLE GROVE ROAD
 BALTIMORE, MD 21225-2657
 410-789-7070

PROJECT: EUCLID CORNERS - PARCEL 'A'
 LOTS 1276-1278 and O/S LOT 1279
 A RESUBDIVISION OF HARWOOD PARK LOTS
 324-350 AND 510-525

LOCATION: TAX MAP: 38, GRID: 13
 PART OF PARCEL: 873
 1st ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: FOREST CONSERVATION PLAN

DATE: AUGUST, 2005 PROJECT NO. 1465
 MARCH, 2007

DESIGN: RPS DRAFT: RPS CHECK: DAM SCALE: 1"=30' SHEET 2 OF 4

FOREST PROTECTION PROCEDURES - Preconstruction Phase

- The edge of the woods to be protected will be marked (staked or flagged) in the field per the limits of forest conservation easement shown in the approved site development plan prior to the start of construction activity. All areas within protective easement are to be considered "off limits" to any construction activities. The optional protective fencing shall be installed at the outside edge of forested areas and should be combined with sediment control devices when possible. The limit of the critical root zone and therefore the location of the protective devices is to be determined as follows:
Edge of Forested Area - 1 foot of protective radius/inch of DBH or an eight foot protective radius, whichever is greater.

Critical Root Zone for the forest on this site is an average of 12 feet from the trunk of the tree. Critical root zones for Specimen Tree #1 and #2 are 34' and 30'.

- Construction activities expressly prohibited within the preservation areas are:

- Placing or stockpiling backfill or top soil in protected areas
- Felling trees into protected areas
- Driving construction equipment into or through protected areas
- Burning in or in close proximity to protected areas
- Stacking or storing supplies of any kind
- Concrete wash-off areas
- Conducting trenching operations
- Grading beyond the limits of disturbance
- Parking vehicles or construction equipment
- Removal of root mat or topsoil
- Siting and construction of:
 - Utility lines
 - Access roads
 - Impervious surfaces
 - Stormwater management devices
 - Staging areas

- Protective fencing (see Figure "Protective Fencing") shall be the responsibility of the general contractor. The general contractor shall affix signs to the fencing at 25' minimum intervals indicating that these areas are "Forest Retention Area" (see Figure "Signage"). The general contractor shall take great care to assure the restricted areas are not violated and that root systems are protected from smothering, flooding, excessive wetting from dewatering operations, off-site runoff, spillage, and drainage or solutions containing materials hazardous to tree roots.

- The general contractor shall be responsible for any tree damaged or destroyed within the preservation areas whether caused by the contractor, his agents, employees, subcontractors, or licensees.

- Foot traffic shall be kept to a minimum in the protective areas.

- All trees which are not to be preserved within fifty feet of any tree preservation areas are to be removed in a manner that will not damage those trees that are designated for preservation. It is highly recommended that tree stumps within this fifty foot area be ground out with a stump grinding machine to minimize damage.

- The general contractor shall designate a "wash out" area onsite for concrete trucks which will not drain toward a protected area.

- A pre-construction meeting shall be held with local authorities before any disturbance has taken place on site.

FOREST PROTECTION PROCEDURES - Construction Phase

Forest and tree conditions should be monitored during construction and corrective measures taken when appropriate.

The following shall be monitored:

- Soil compaction
- Root injury - prune and monitor; consider crown reduction
- Limb injury - prune and monitor
- Flooded conditions - drain and monitor; correct problem
- Drought conditions - water and monitor; correct problem
- Other stress signs - determine reason, correct, and monitor

FOREST PROTECTION PROCEDURES - Post Construction Phase

The following measures shall be taken:

- Corrective measures if damages were incurred due to negligence:
 - Stress reduction
 - Removal of dead or dying trees. This may be done only if trees pose an immediate safety hazard.
- Removal of temporary structures:
 - No burial of discarded materials will occur onsite within the conservation area.
 - No open burning within 100 feet of a wooded area.
 - All temporary forest protection structures will be removed after construction.
 - Remove temporary roads by removing stone or broadcasting mulch; pre-construction elevation should be maintained.
 - Aerate compacted soil.
 - Replant disturbed sites with trees, shrubs and/or herbaceous plants.
 - Retain signs for retention areas or specimen trees.
 - A County official shall inspect the entire site.
- Future protection measures:
 - Howard County and the developer shall arrange for the dedication of an appropriate forest conservation easement at a later date.

FOREST PROTECTION PROCEDURES - Preconstruction Phase

Stress Reduction and Protection of Specimen Trees Isolated from Forest Retention Areas and General Forest Retention Areas (as they may apply)

Isolated specimen trees that are to be preserved will be examined to determine if stress reduction techniques are needed. Protective measures and their evaluation criteria are provided on this plan only if they are employed herein.

Root Pruning

Evaluation Criteria

Will the critical root zone be affected by construction activities such as grade changes, digging for foundations and roads or utility installation?

Design Considerations

- Prune prior to construction as shown on the plan (see Figure "Root Pruning Detail.")
- Prune root with a clean cut using proper pruning equipment such as a vibratory knife.
- Exact location of pruning trench should be identified, and immediately backfilled to cover exposed roots after pruning with soil removed other topsoil, peat moss, or other suitable material or with other high organic soil.
- For trees over 15" in diameter, root pruning may be done up to one year in advance of construction.
- Tree(s) will be monitored for signs of stress.

Crown Reduction or Pruning

Evaluation Criteria

Has the root system been significantly reduced (>30%) or are there dead, damaged, or diseased limbs?

Design Considerations

- Reduce only at specified times of the year:
 - Flowering trees - only after flowering and before bud set
 - Non-flowering trees - in late winter, early spring or mid summer
- No more than 1/3 of the crown should be removed at one time using acceptable pruning methods (see Figure "Crown Reduction Detail")
- Monitor for signs of stress

Watering

Evaluation Criteria

Will construction activities alter the hydrology of the site? Has or will root pruning occur?

Design Considerations

- Water only as necessary
- Monitor for signs of stress (see Figure "Tree Planting and Maintenance Calendar")

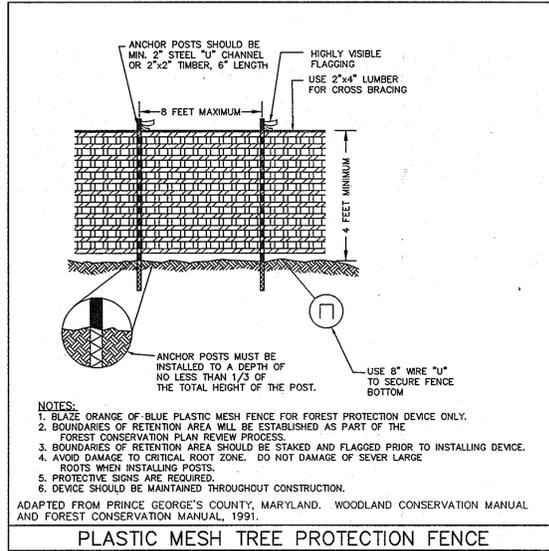
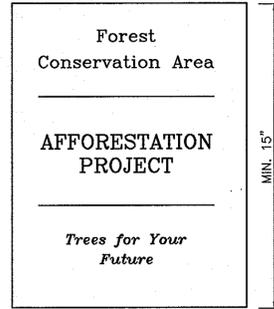
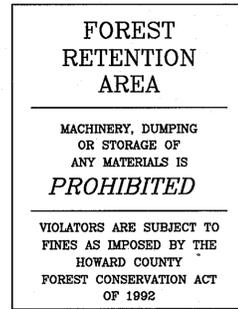
Fertilizing

Evaluation Criteria

Is or will be tree(s) be under stressful conditions? Has or will root pruning occur?

Design Considerations

- Use low nitrogen and slow release fertilizers.
- Apply in late fall or early spring (see Figure "Tree Planting and Maintenance Calendar")
- For small trees (<3" in diameter), use punch hole method or pressurized injection method (see Figure "Application of Fertilizers by Injection.")
- For larger trees (>3" diameter), use punch hole method or pressurized injection method (see Figure "Application of Fertilizers by Injection.")
- Do not apply fertilizer any closer than 3' from tree trunk for pressurized injection method.
- Monitor for signs of stress.



PLANTING SCHEDULE

FCE Reforestation Area - 0.10 acres

Planting units Required: 70
Planting units Provided: 70

Qty	Species	Size	Spacing	Total FCA Units
7	Acer rubrum - Red maple	2-3' whip	11' o.c.	
7	Nyssa sylvatica - Black gum	2-3' whip	11' o.c.	
7	Platanus occidentalis - Sycamore	2-3' whip	11' o.c.	
7	Ulmus rubra - Slippery Elm	2-3' whip	11' o.c.	
7	Quercus palustris - Pin oak	2-3' whip	11' o.c.	
35				70
			Total whip plantings x 2 units/tree = FCA unit credit	70
				Total Unit Credit
				70

Planting Notes:

Planting density based on 700 planting units per acre. 2" caliper trees = 7 planting units, 1" caliper trees = 3.5 planting units, whips with shelter = 2 planting units.

** - These species should not be planted within the wetland limits.

1" caliper trees should be staggered along the outer perimeter of the planting area to serve as demarcation of the boundary. The trees should be no closer than 15 foot spacing.

Planting shall be made in a curvilinear fashion along contour. The planting should avoid a grid appearance but should be spaced to facilitate maintenance

Multiflora rose/heavy brush removal/control may be required prior to installation of planting.

All whips are required to be installed with tree shelters per Howard County FCA requirements.

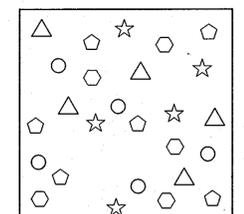
BASED ON REV. 0.0093/405.8 S.F. OF FOREST CONSERVATION EASEMENT AREA WILL BE ABANDONED. A FEE-IN-LIEU IN THE AMOUNT OF \$507.25 WILL BE PAID TO THE HOWARD COUNTY FOREST CONSERVATION FUND.

FCP NOTES

- ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
- THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE, FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- FORESTED AREAS OCCURRING OUTSIDE OF THE FCE SHALL NOT BE CONSIDERED PART OF THE FCE AND SHALL NOT BE SUBJECT TO PROTECTIVE LAND COVENANTS.
- LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
- THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
- NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
- TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE INSTALLED ALONG LIMITS OF DISTURBANCE OCCURRING WITHIN 50 FEET OF THE PROPOSED FCE LIMITS. PERMANENT SIGNAGE WILL BE POSTED AT A 50-100 FOOT INTERVALS ALONG ALL FCE LIMITS.
- THE FOREST CONSERVATION OBLIGATION FOR THIS SUBDIVISION HAS BEEN MET BY PROVIDING AN ONSITE FOREST CONSERVATION EASEMENT CONTAINING 0.3 ACRES OF RETENTION AND 0.07 ACRES OF REFORESTATION AND A FEE-IN-LIEU PAYMENT OF \$10,236.60 TO THE HO. CO. FOREST CONSERVATION FUND FOR THE REMAINING OBLIGATION OF 0.47 ACRES OF REFORESTATION.
- FOREST CONSERVATION SURETY IN THE AMOUNT OF \$4,138.20 WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THE ONSITE FOREST CONSERVATION EASEMENT.

Eco-Science Professionals, Inc. CONSULTING ECOLOGISTS
P.O. Box 5006 01an Am, MD 21057 (410) 392-4732
MD DVE Qualified Professional
USACE Registered Designer
Certification No. 000404423
John P. Cantis 3/6/07

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644



- SYCAMORE
 - ☆ BLACK GUM
 - RED MAPLE
 - △ SLIPPERY ELM
 - ⬠ PIN OAK
- TO BE PLANTED IN RANDOM DISTRIBUTION PATTERN

RANDOM PLANTING DETAIL NOT TO SCALE

FLOODPLAIN NOTE:

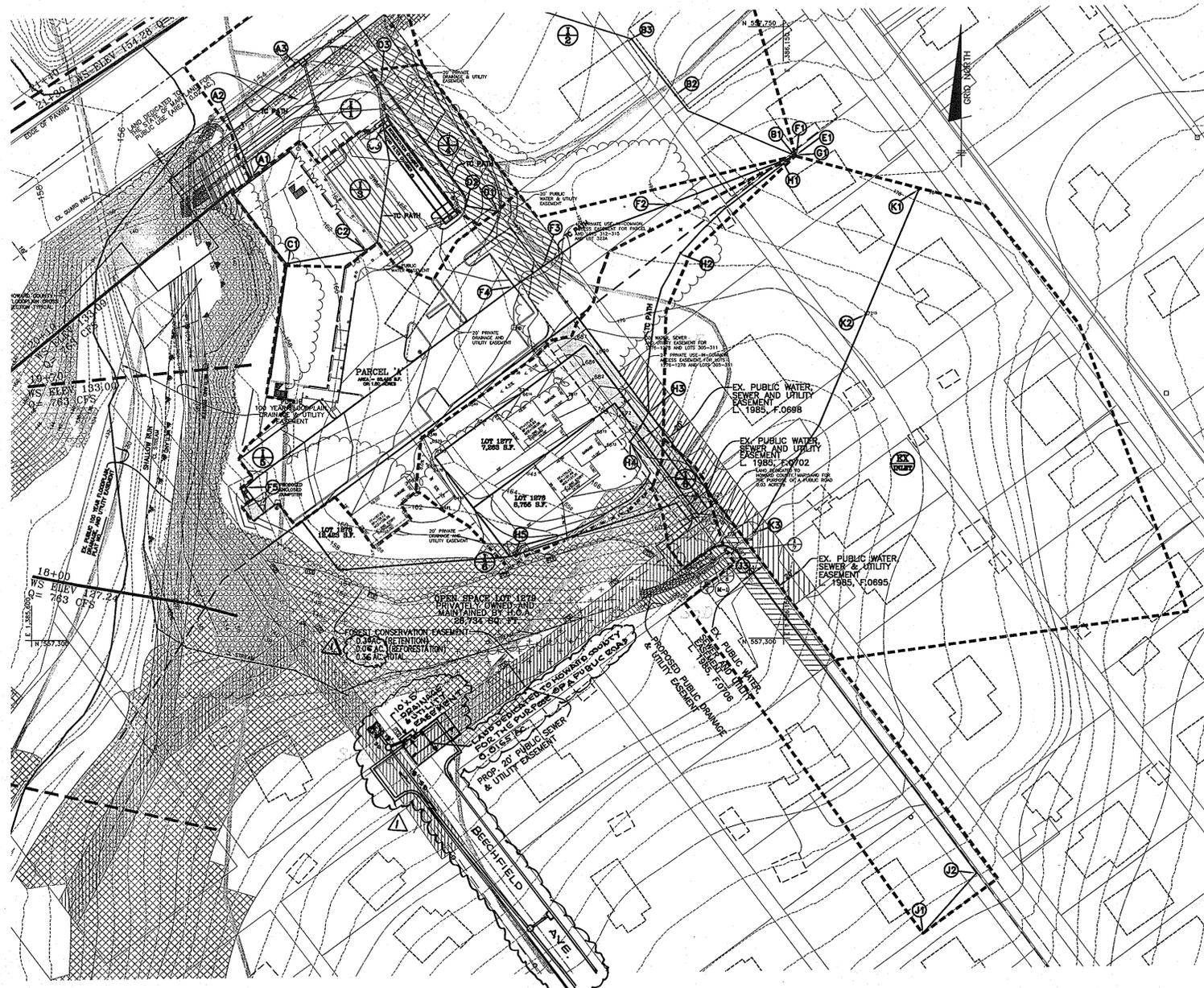
PORTIONS OF THE SITE OCCURRING WITHIN THE 100 YEAR FLOODPLAIN ARE NOT INCLUDED AS PART OF THE NET TRACT AREA ON THE SITE. AREAS OF FLOODPLAIN FOREST OCCURRING WITHIN THE LIMITS OF A FOREST CONSERVATION EASEMENT WILL BE PROTECTED BY THE EASEMENT RESTRICTIONS BUT HAVE NOT BEEN CREDITED TOWARD THE PROJECTS FCA OBLIGATIONS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

APPROVED: [Signature] 3/24/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION
APPROVED: [Signature] 3/27/07
CHIEF, DIVISION OF LAND DEVELOPMENT

SEAL & SIGNATURE FOR REV. ONLY

OWNER:	PROJECT: EUCLID CORNERS - PARCEL 'A', LOTS 1276-1278 and 0/5 LOT 1279 A RESUBDIVISION OF HARWOOD PARK LOTS 324-350 AND 510-525
LOCATION:	TAX MAP: 38, GRID: 13 PART OF PARCEL: 873 1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE:	FOREST CONSERVATION PLAN
DATE:	AUGUST, 2005 MARCH, 2007
PROJECT NO.:	1465
DESIGN: RPS	DRAFT: RPS
CHECK: DAM	SHEET 3 OF 4
SCALE: 1"=30'	



PLAN VIEW
SCALE: 1" = 50'

PIPE SCHEDULE		
TYPE & CLASS	SIZE	LENGTH
HDPEP	15"	7'
HDPEP	18"	34'

ACSP = ALUMINIZED CORRUGATED STEEL PIPE
HDPEP = SMOOTH BORE HIGH DENSITY POLYETHYLENE PIPE
PVC = POLYVINYL CHLORIDE PIPE

STRUCTURE SCHEDULE						
STORM INLETS						
NO.	TYPE	LOCATION		INV. IN	INV. OUT	HO. CO. STD.
ES-1	END SECTION	N 557347.6311	E 1386084.6312	152.1	153.88	SD-4.37
I-7	A-5 INLET	N 557366.3141	E 1386111.5894	155.93/156.83	154.73	SD-4.40
I-8	A-5 INLET	N 557363.5323	E 1386093.2894	153.99	159.48	SD-4.40
M-1	MANHOLE	N 557356.4523	E 1386098.1766	153.85/153.60	153.0	SD-4.40

- STRUCTURE TOP ELEVATION AND LOCATION FOR MANHOLES IS AT THE TOP AND CENTER OF RIM.
- STRUCTURE TOP ELEVATION AND LOCATION FOR INLETS IS AT THE TOP, CENTER FACE OF THE INLET FOR CURB INLETS AND AT THE CENTER TOP FOR YARD INLETS.
- STRUCTURE TOP ELEVATION AND LOCATION FOR END SECTIONS IS AT THE CONNECTION OF PIPE AND END SECTION AT CENTERLINE.

STORM DRAIN RUNOFF					
INLET	DA (Ac.)	C	%IMP	ZONE	
I-7	0.48	.56	57	R-12	
I-8	0.06	.64	38	R-12	
Ex. Inlet	2.21	.33	67	R-12	

TIME OF CONCENTRATION DRAINAGE AREA I-7:
 J1 TO J2 = LAWN, SHEET FLOW, 60', SLOPE 2.0%
 J2 TO J3 = PAVED CONCENTRATED FLOW, 298', SLOPE 6.7%

TIME OF CONCENTRATION DRAINAGE AREA EX. INLET:
 K1 TO K2 = LAWN, SHEET FLOW, 100', SLOPE 8.0%
 K2 TO K3 = UNPAVED, CONCENTRATED FLOW, 144', SLOPE 6.4%

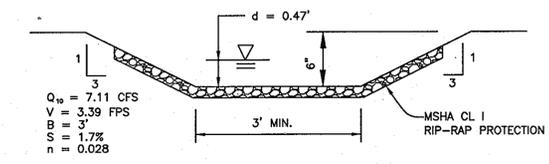
STRUCTURE	D-50	LENGTH (L)	WIDTH (W)	THICKNESS (T)	SHA CLASS
ES-1	9.5"	40'	6.0'	19"	I

OUTLET PROTECTION DETAIL
NOT TO SCALE

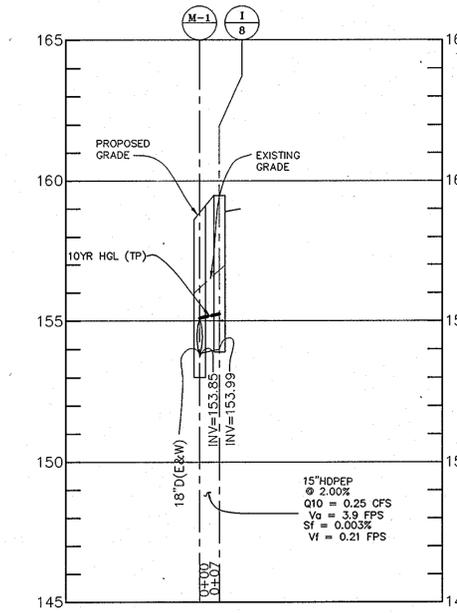
SOILS LEGEND	
MAP SYMBOL	SOIL TYPE
* IuB	C IUKA LOAM, LOCAL ALLUVIUM, 1 TO 5 PERCENT SLOPES
Md	C MADE LAND
Scd	C SAND AND CLAYEY LAND, MODERATELY STEEP
ScE	C SAND AND CLAYEY LAND, MODERATELY SLOPING
Hd	D HATBORO SILT LOAM

* INDICATES HYDRIC SOILS
 TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 7

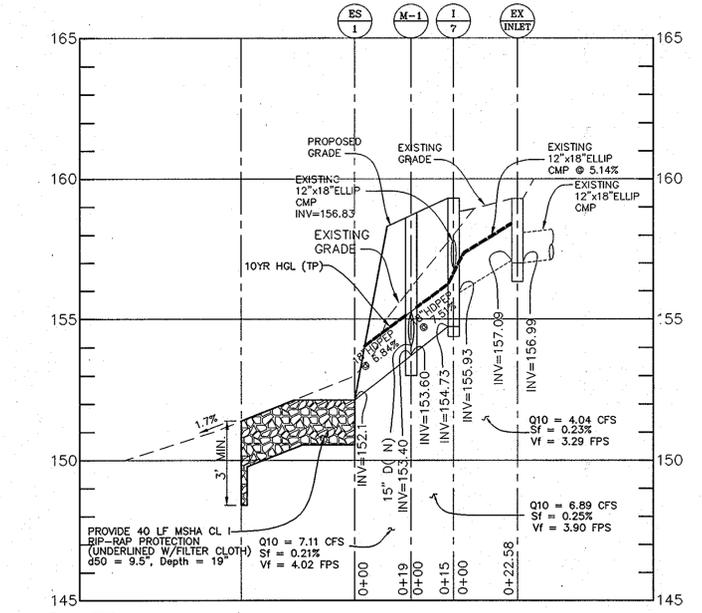
LEGEND	
SOILS CLASSIFICATION	
SOILS DELINEATION	999
EXISTING CONTOURS	999
PROPOSED CONTOURS	999
STEEP SLOPES 15% TO 24.99%	
STEEP SLOPES 25% +	
100 YEAR FLOODPLAIN DRAINAGE AND UTILITY EASEMENT	
DRAINAGE AREA LIMITS	
TC PATH	
DRAINAGE AREA DESIGNATION	
LIMITS OF DISTURBANCE	



CHANAL SECTION (TYP.)
N.T.S.

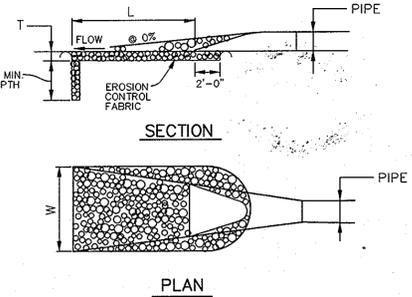


M-1 TO INLET 8
SCALE: VERT. = 1" = 3', HORIZ. = 1" = 30'



ES-1 TO INLET 7
SCALE: VERT. = 1" = 3', HORIZ. = 1" = 30'

- CONSTRUCTION SPECIFICATIONS**
- THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
 - THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
 - GEOTEXTILE CLASS C28 OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.
 - STONE FOR THE RIP-RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR THE RIP-RAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
 - THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.



SEAL & SIGNATURE FOR REV. ONLY

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 3-21-07
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 3/27/07
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 3/26/07
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

BENCHMARK ENGINEERS, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE • SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644
 E-MAIL: www.benchmark@bci-civilengineering.com

Donald Mann
 2/28/07

OWNER: BELLE GROVE CORP.
 4024 BELLE GROVE ROAD
 BALTIMORE, MD 21225-2657
 410-789-7070

PROJECT: EUCLID CORNERS- PARCEL 'A', LOTS 1276-1278 AND O/S LOT 1279 A RESUBDIVISION OF HARWOOD PARK LOTS 324-350 AND 510-525

LOCATION: TAX MAP: 38, GRID: 14
 PART OF PARCEL: 873
 1st ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: I-7 TO ES-1 PROFILE, STRUCTURE SCHEDULE, PIPE SCHEDULE FOR I-7 TO ES-1 & DRAINAGE AREA MAP

DATE: AUGUST, 2005
 MARCH, 2007

PROJECT NO. 1465
 SHEET 4 OF 4

COLUMBIA

ELECTION DISTRICT 5

VILLAGE OF WILDE LAKE

SECTION 3

WILDE LAKE AND PORTOFINO

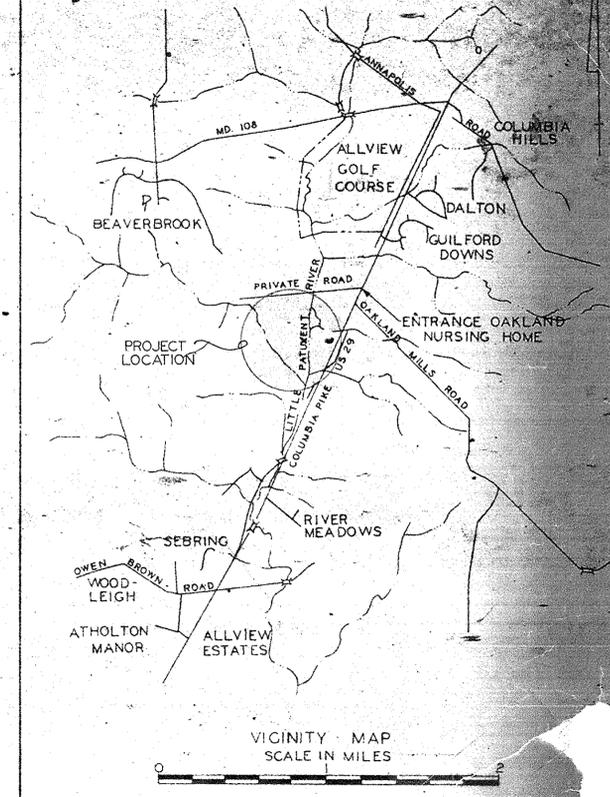
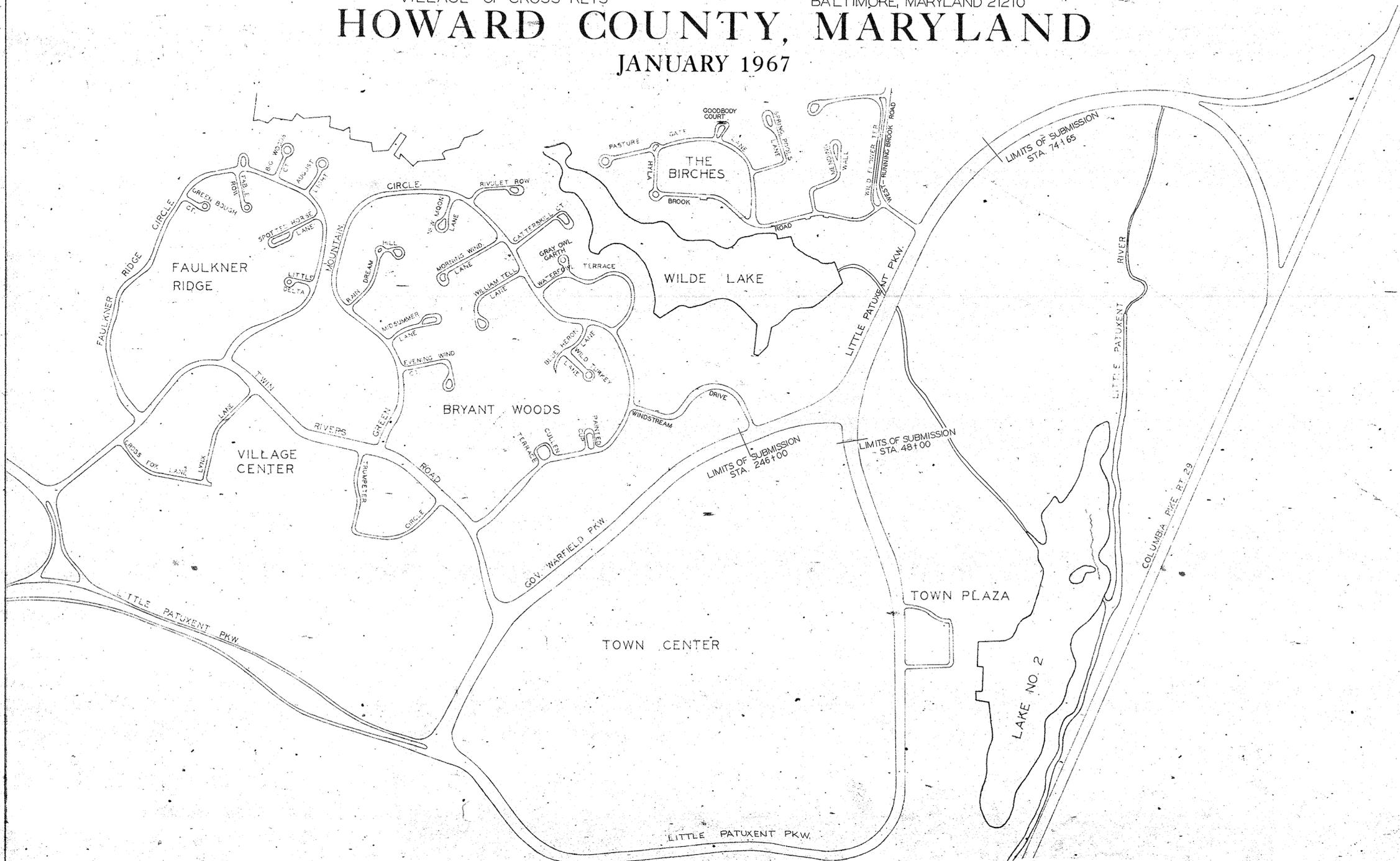
HOWARD RESEARCH & DEVELOPMENT CORP.

VILLAGE OF CROSS KEYS

BALTIMORE, MARYLAND 21210

HOWARD COUNTY, MARYLAND

JANUARY 1967



VICINITY MAP
SCALE IN MILES

INDEX

DESCRIPTION	STREET NAME	DRAWING NO.
TITLE		1
DETAILS	TYPICAL SECTIONS	2, 3, 3
PLAN & PROFILE	LITTLE PATUXENT PARKWAY	4, 5 & 6
PLAN & PROFILE	GOV. WARFIELD PARKWAY	7
PLAN & PROFILE	WINDSTREAM DRIVE	8
DETAILS	DRAINAGE	9
PROFILES	DRAINAGE	10, 11 & 12

- 2015 Governor Warfield Improvements
- Grading Plan 13
 - Maintenance of Traffic Plan 14
 - Traffic Signal Plan For Little Patuxent Parkway at Governor Warfield Parkway 15
 - General Information Plan For Little Patuxent Parkway at Governor Warfield Parkway 16
 - Traffic Signal Plan for Governor Warfield Parkway at Windstream Dr./ Mall Entrance 17
 - General Information Plan for Governor Warfield Parkway at Windstream Dr./ Mall Entrance 18
 - Signage and Pavement Marking Plan 19
- Note: Construction of the 2015 Improvements to be completed prior to the use occupancy permits for RDP-20-020 & RDP-14-024

APPROVED BY

HOWARD COUNTY PLANNING COMMISSION *J. H. Lawson* 2-2-67
SENIOR ENGINEER DATE

HOWARD COUNTY ROAD DEPARTMENT *Herman E. Chell* 2-2-67
ROAD SUPT. DATE

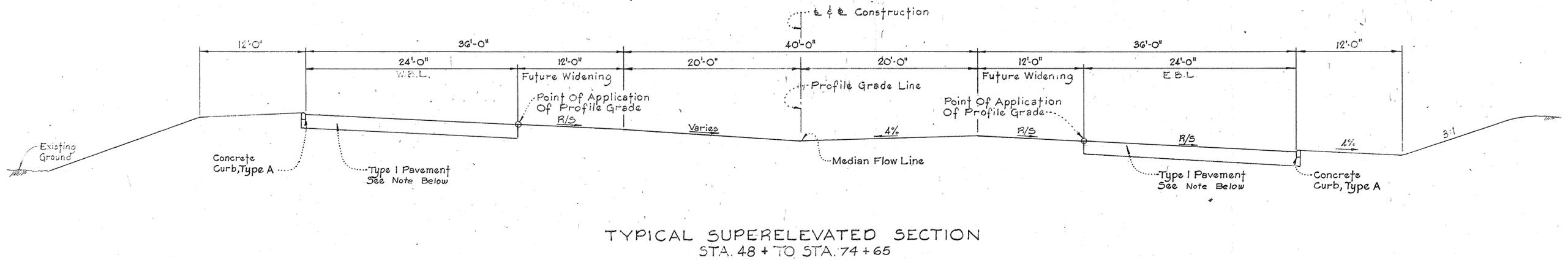
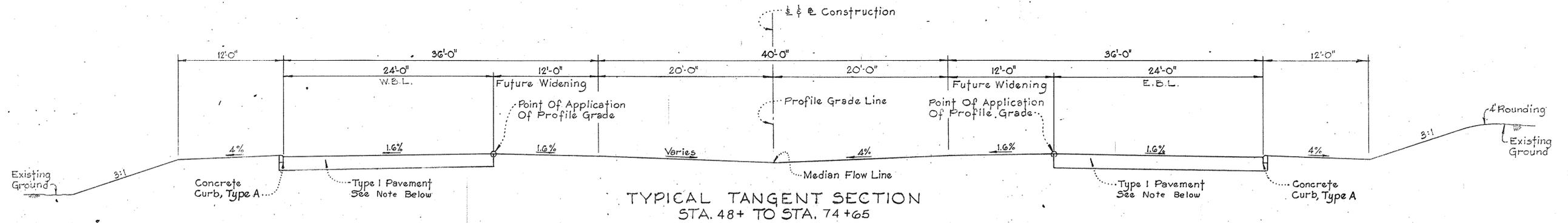
HOWARD COUNTY METROPOLITAN COMMISSION *W. O. H. H. H.* 6-19-67
CHIEF ENGINEER DATE

RUMMEL, KLEPPER AND KAHL
CONSULTING ENGINEERS
BALTIMORE, MARYLAND
SHEETS 2 TO 7, 9 TO 11 *August W. Muehl*

C. D. MESSICK, JR. & ASSOCIATES,
CONSULTING ENGINEERS & LAND SURVEYORS
21 WEST STREET ANNAPOLIS MARYLAND
SHEETS 8 & 12 *Russell E. Simpson*

IS REVISED MARCH 1967

Note: 2" Topsoil, Seed (Art. 36.04) & Mulch (Art. 36.05) To Be Placed On All Median Areas, Construction Slopes & Ditches, Unless Otherwise Noted On The Plans.



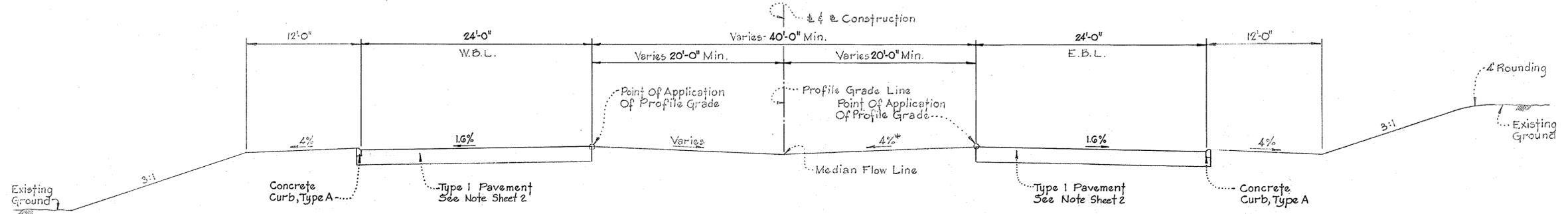
Note: Type I Pavement
 7" Crusher Run Subbase
 4" Bituminous Concrete Base Course
 2 1/2" Bituminous Concrete Binder Course
 2-1 1/2" Bituminous Concrete Surface Courses
 This surface type to be constructed in accordance with the Howard County Road Construction Code and specification Dwg D112 Page 165b

Pavement Spec. Amended	2/10/67
Added Note	1/10/67
Curb Type	9/22/66
LITTLE PATUXENT PARKWAY	
TYPICAL SECTION	
COLUMBIA	
Scale: 1" = 6'	Date: 2/10/67
Design by:	Traced by:
Checked by:	Drawing No. 2-14

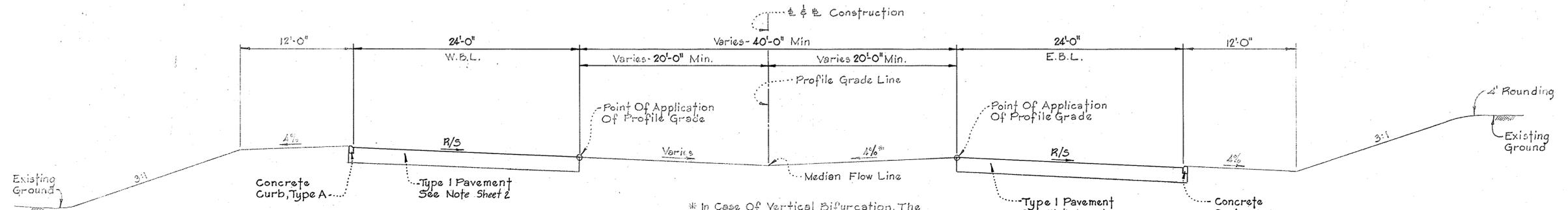
LITTLE PATUXENT PARKWAY

RIMMEL, KLEPPER & KAHL
 CONSULTING ENGINEERS
 BALTIMORE, MARYLAND

Note: 2" Topsoil, Seed (Art. 36.04) & Mulch (Art. 36.05) To Be Placed On All Median Areas, Construction Slopes & Ditches, Unless Otherwise Noted On The Plans.

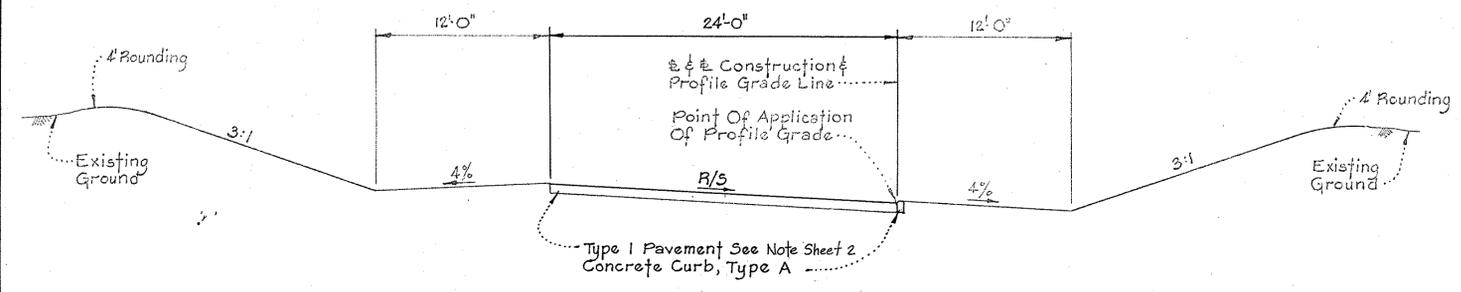


STA. 246+ TO STA. 252+
TYPICAL TANGENT SECTION



STA. 246+ TO STA. 252+
TYPICAL SUPERELEVATED SECTION

* In Case Of Vertical Bifurcation, The 4% Median Cross Slope Is Controlled By The Lower Profile Grade.



E.B.L. STA. 250+ TO STA. 252+
W.B.L. STA. 250+ TO STA. 255+
LOOKING IN DIRECTION OF TRAFFIC

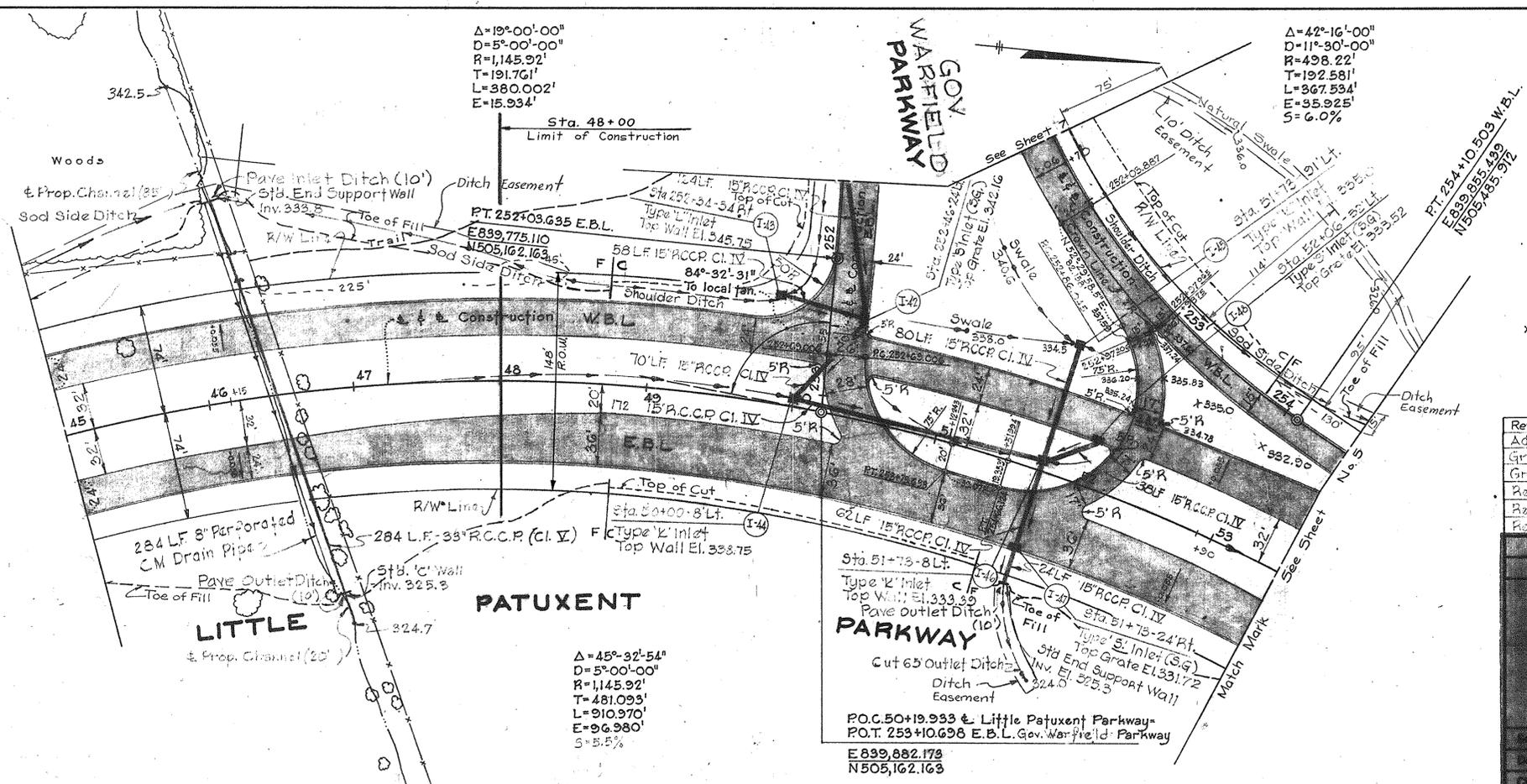
GOV. WARFIELD PARKWAY

Curb Type	9/22/66
GOV. WARFIELD PARKWAY	
TYPICAL SECTION	
3:30-66	
2 of 11	

PLAN	SURVEYED	DATE
	PLOTTED	BY
	ALIGNED	CHECKED
	PT. OF WAY	CHECKED
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	ALIGNED	CHECKED
	STRUCTURE NOTATIONS	CHECKED
	NO.	

RUMMEL, KLEPPER & KAHL
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

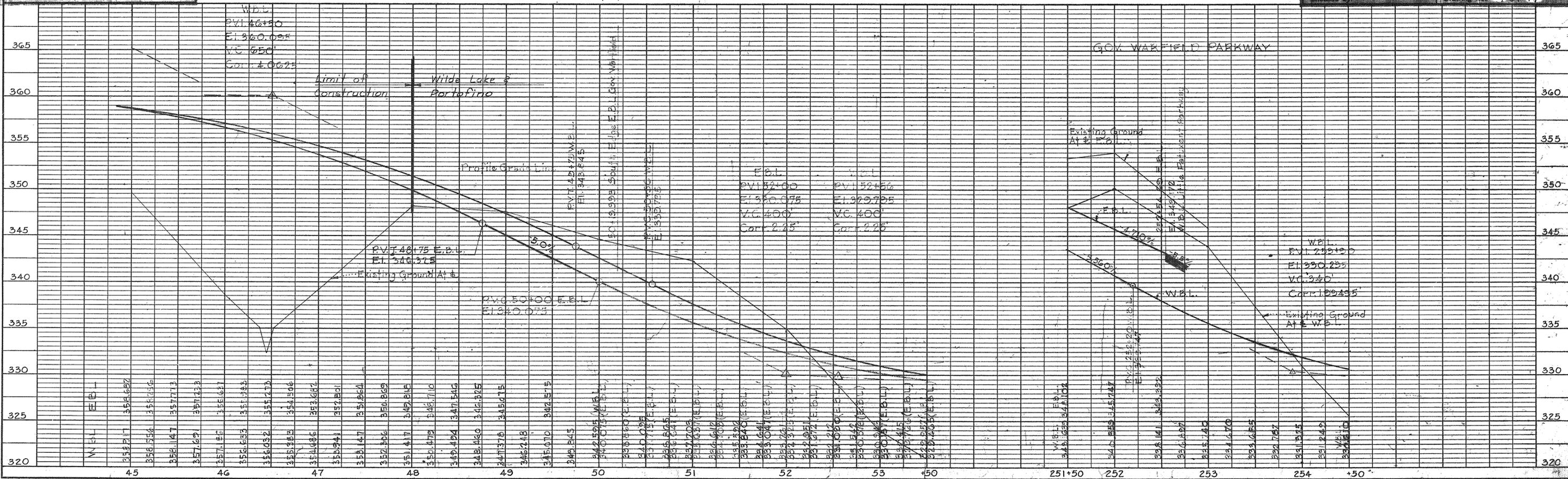


STORM DRAIN PROFILES
Sta 45+46 See Sheet No. 10

NOTE: SEE SHEETS 13-16 FOR 2014 IMPROVEMENTS TO GOVERNOR WARFIELD PARKWAY AND LITTLE PATUXENT PARKWAY

Revise Sheet No's	1/10/67
Added Drainage	9/22/66
Grade Change Gov. Warfield Parkway	6/12/66
Grade Change Gov. Warfield Parkway	7/22/66
Revised Drainage	6/29/66
Revised Grade	6/24/66
Revised Grade	5/18/66

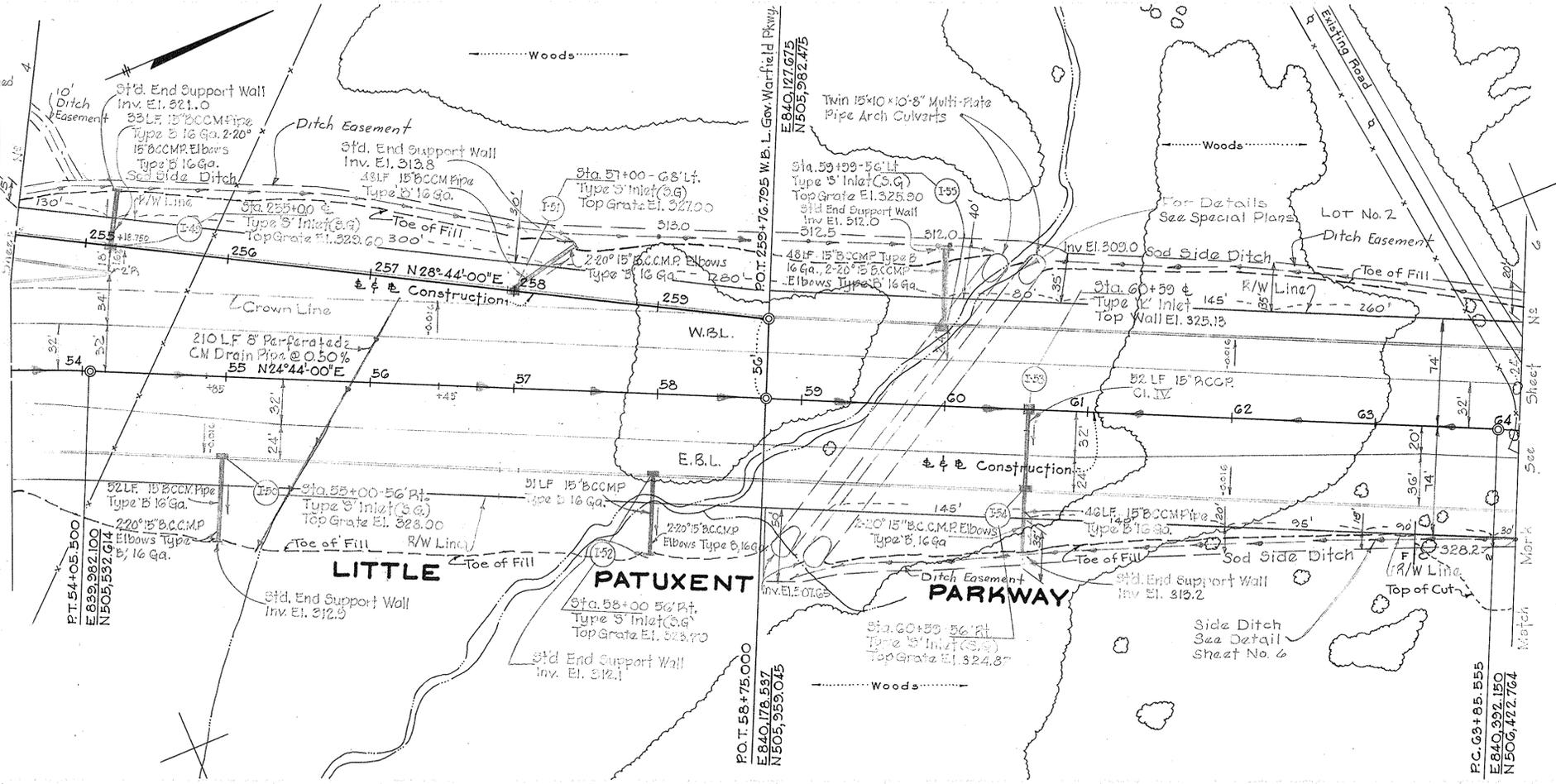
Description	By	Mark	Date
LITTLE PATUXENT PARKWAY			
COLUMBIA			
Checked by		Drawing No.	4-19



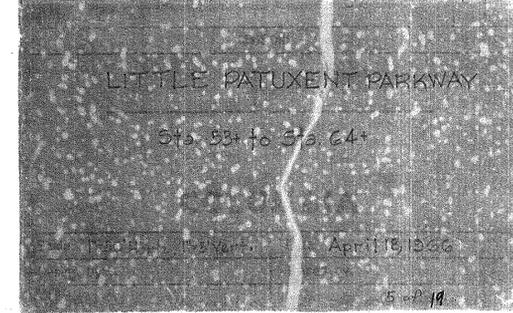
Sta. 54+75.075
Remove Unsuitable Material For The Full Width Of Embankment Construction To The Depth Indicated In The Following Table And Replace With Granular Backfill. Exact Limits Of Removal To Be Determined By The Engineer.

Approx. Depth Of Unsuitable Material (In Feet)	Sta. 100' Left	50' Left	±	50' Right	100' Right
0-1	0	0	0	0	0
1-2	0	0	0	0	0
2-3	0	0	0	0	0
3-4	0	0	0	0	0
4-5	0	0	0	0	0
5-6	0	0	0	0	0
6-7	0	0	0	0	0
7-8	0	0	0	0	0
8-9	0	0	0	0	0
9-10	0	0	0	0	0

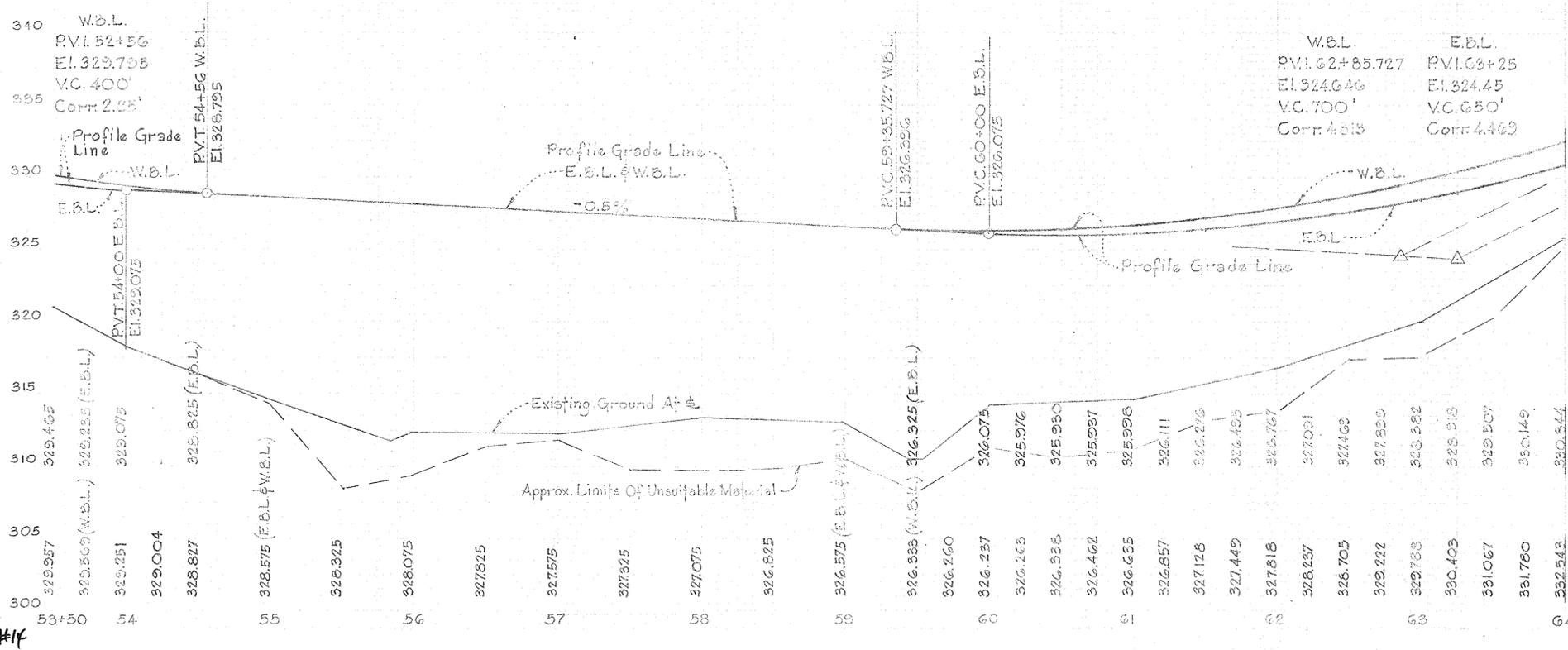
STORM DRAIN PROFILES
Sta. 54+ To Sta. 64+ See Sheet No. 10



Removed Pedestrian Underpass	11/10/67
Added Drainage	9/22/66
Grade Change Gov Warfield Pkwy	8/12/66
Added Limits Of Unsuitable Material	7/15/66
Drainage	6/25/66
Grade	5/13/66



E.B.L.
P.V. 152+00
El. 350.075
V.C. 400'
Corr. 2.25'

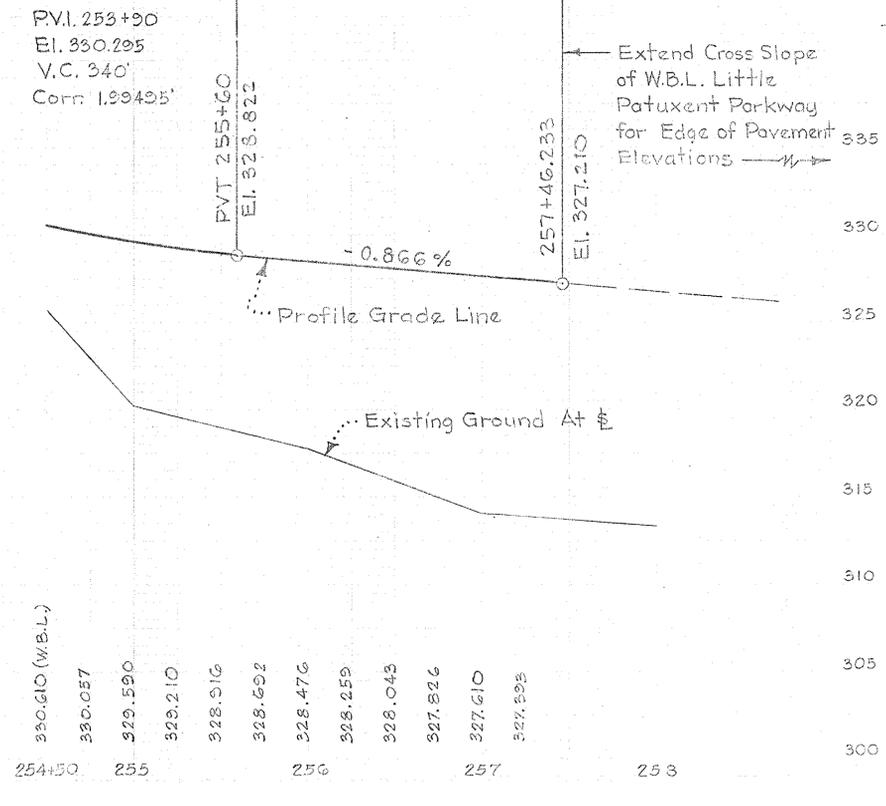


P.V. 152+00
El. 350.075
V.C. 400'
Corr. 2.25'

W.B.L.
P.V. 62+85.727
El. 324.646
V.C. 700'
Corr. 4.815

E.B.L.
P.V. 63+25
El. 324.45
V.C. 650'
Corr. 4.469

GOV. WARFIELD PARKWAY

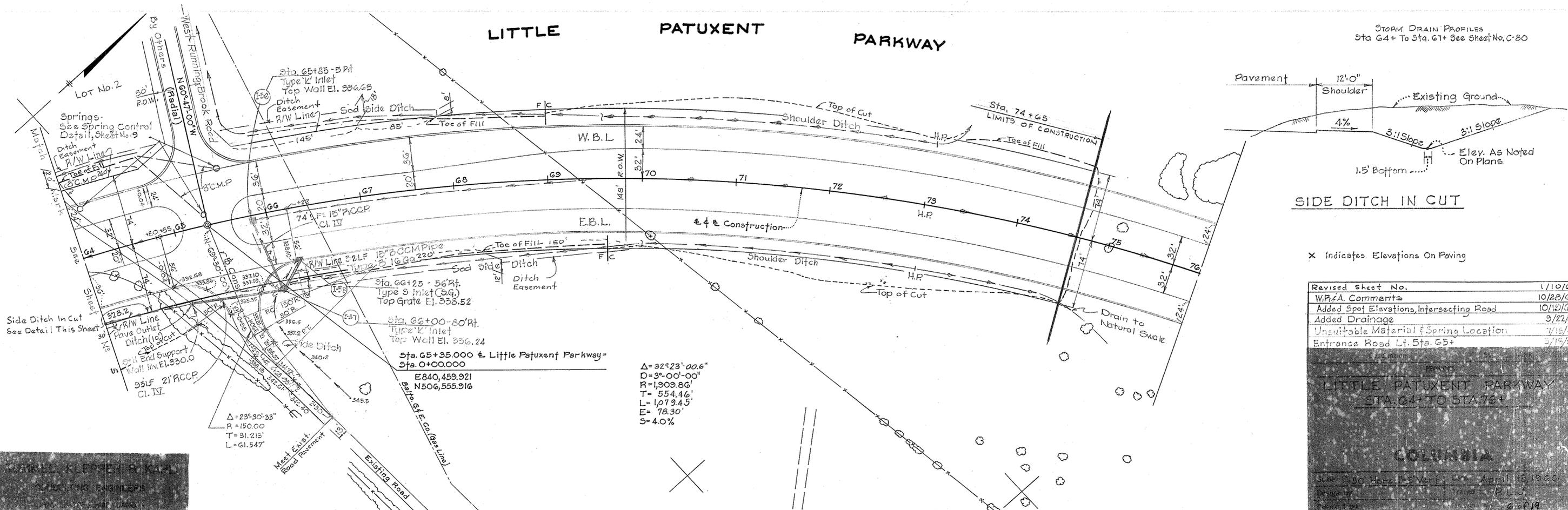


P.V. 253+90
El. 330.295
V.C. 340'
Corr. 1.99495'

Extend Cross Slope of W.B.L. Little Patuxent Parkway for Edge of Pavement ± Elevations

LITTLE PATUXENT PARKWAY

STORM DRAIN PROFILES
Sta. 64+ To Sta. 67+ See Sheet No. C-80



SIDE DITCH IN CUT

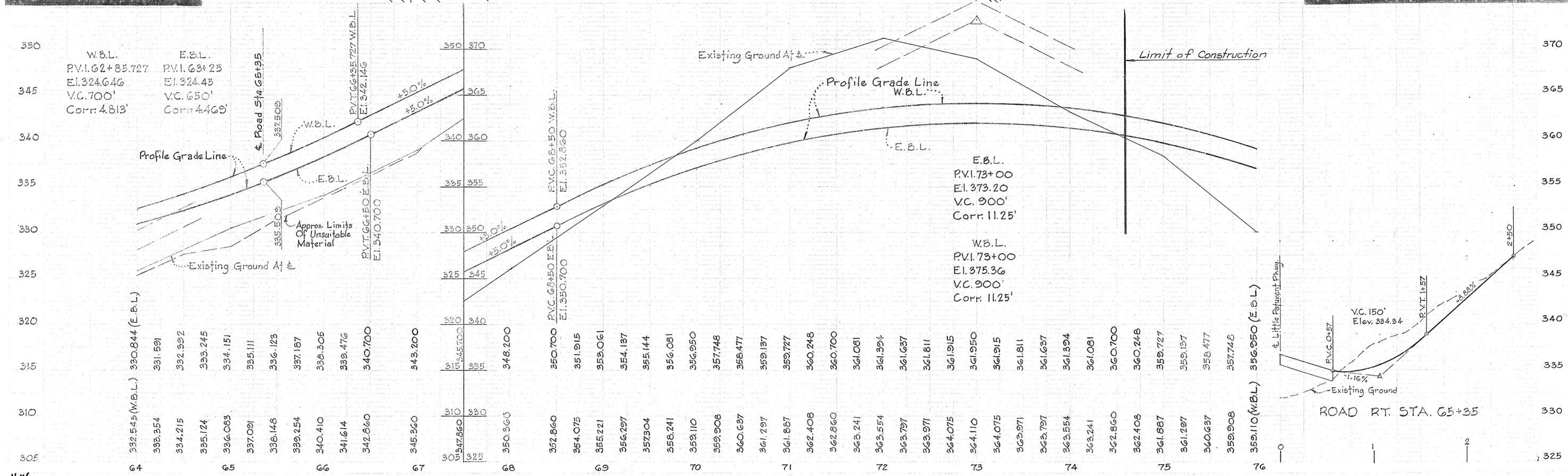
X Indicates Elevations On Paving

Revised Sheet No.	1/10/67
W.P.A. Comments	10/28/66
Added Spot Elevations, Intersecting Road	10/12/66
Added Drainage	3/22/66
Unsuitable Material & Spring Location	7/15/66
Entrance Road Lt. Sta. 65+	5/15/66

LITTLE PATUXENT PARKWAY
STA. 64+ TO STA. 76+

COLUMBIA

Scale: 1" = 40' Horiz. 1" = 10' Vert. Date: April 15, 1966
 Design by: [Signature] R.L.U.
 Checked by: [Signature]



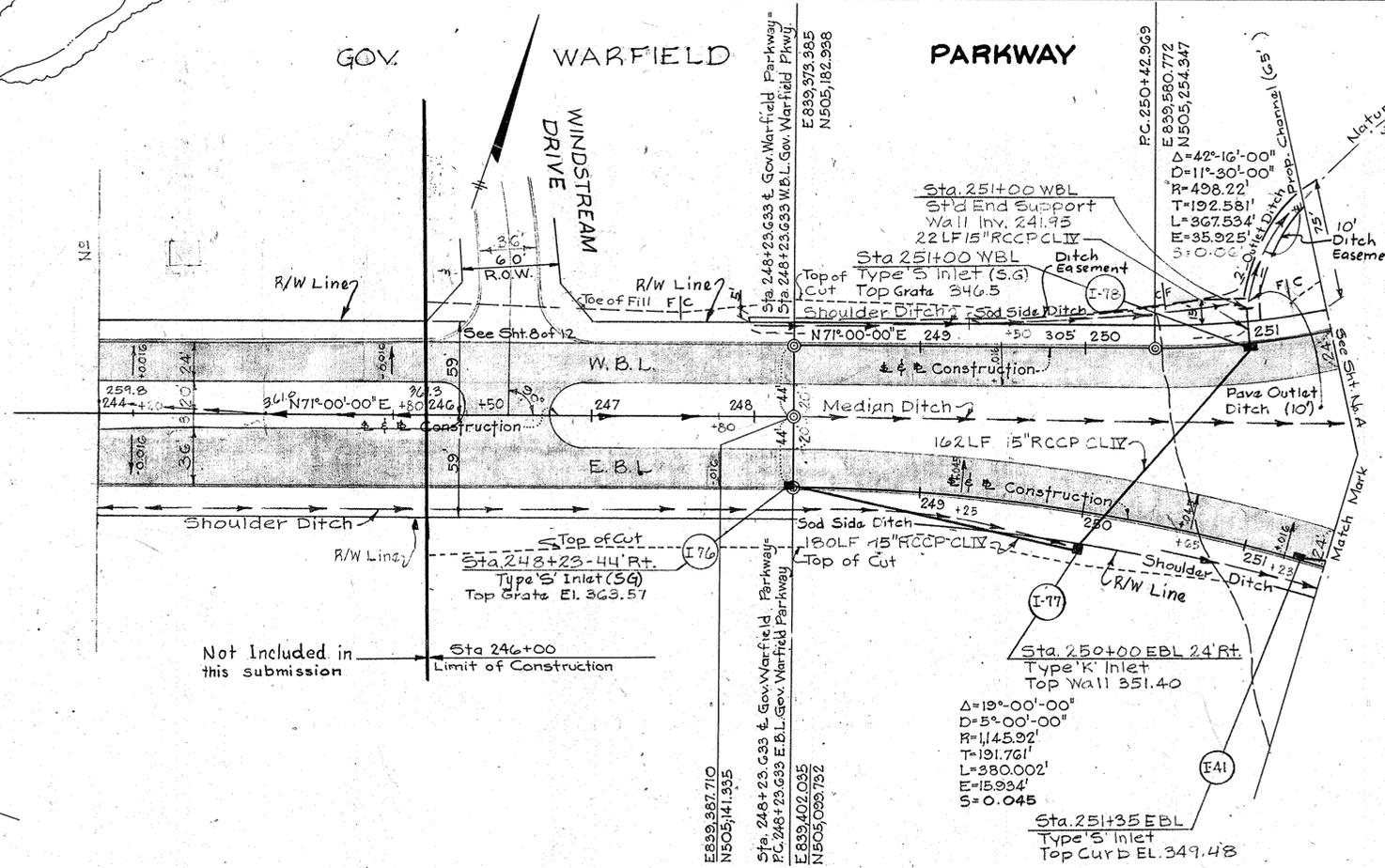
#14

NOTE: SEE SHEETS 13-16 FOR 2014 IMPROVEMENTS TO GOVERNOR WARFIELD PARKWAY AND LITTLE PATUXENT PARKWAY

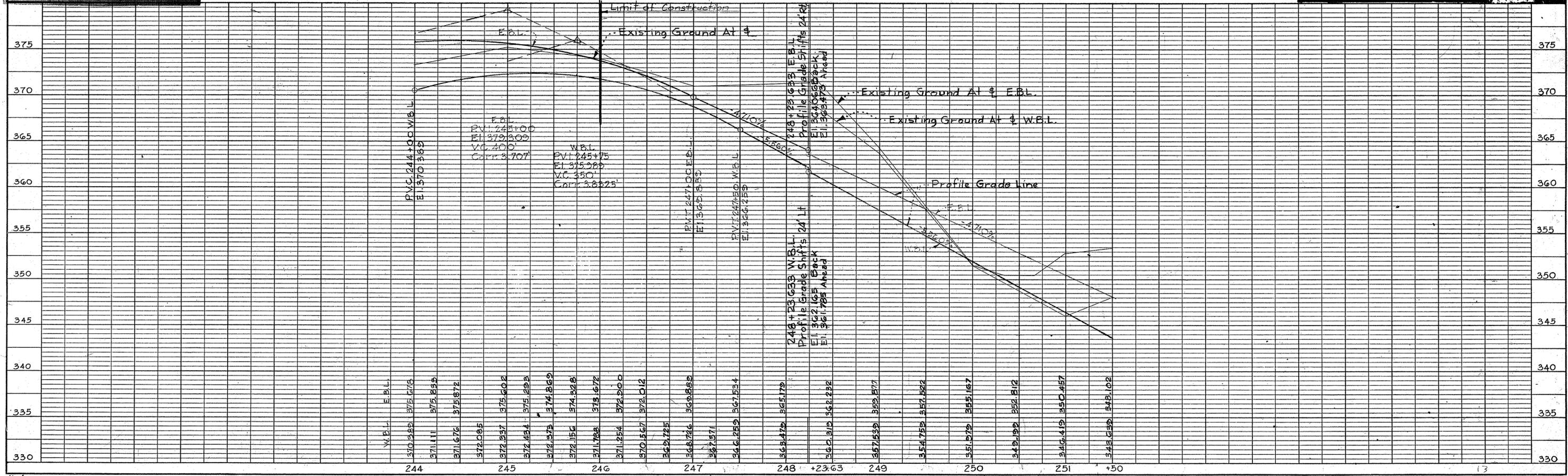
PLAN	DATE
BY	
NO.	
REVISIONS	
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PROFILE	DATE
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RUMMEL, KLEPPER & KAY
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

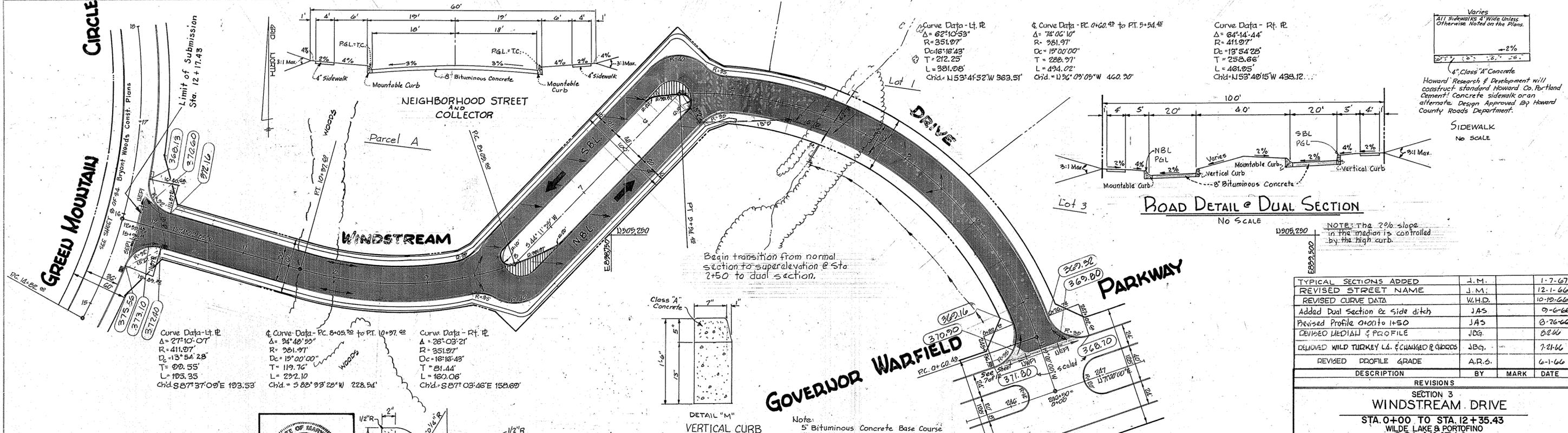


Added Limits	1/10/67
Added Drainage	9/22/66
Grades Revised	8/12/66
Grades Revised	7/23/66
Drainage	4/23/66
Grades & Gravel Cove Road Location	5/18/66



DATE: _____ BY: _____
 SURVEYED: _____
 NOTE BOOK: _____
 NO. _____
 ALIGNED CHECKED: _____
 RET. OF WAY CHECKED: _____

DATE: _____ BY: _____
 SURVEYED: _____
 NOTE BOOK: _____
 NO. _____
 GRADES CHECKED: _____
 STRUCTURE NOTAS CHECKED: _____

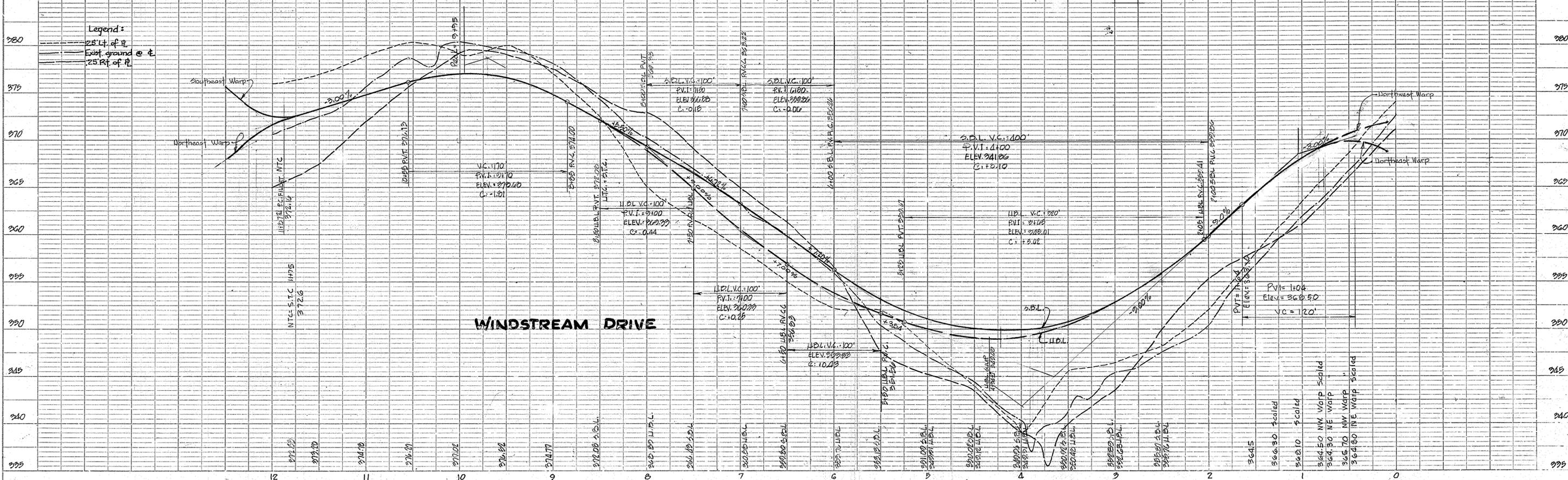
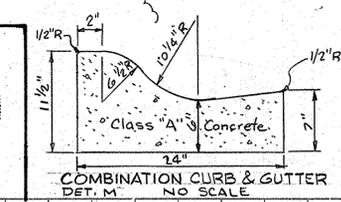
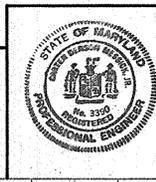


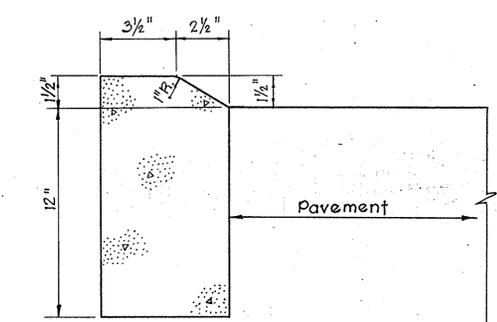
Note:
 5" Bituminous Concrete Base Course
 1 1/2" Bituminous Concrete Binder Course
 1 1/2" Bituminous Concrete Surface Course
 This surface type to be constructed in accordance with the Howard County Road Construction Code and Specifications Dwg. D115 Page 1650

TYPICAL SECTIONS ADDED	J.M.	1-7-67
REVISED STREET NAME	J.M.	12-1-66
REVISED CURVE DATA	W.H.D.	10-10-66
Add Dual Section & side ditch	JAS	9-6-66
Revised Profile 0+00 to 1+50	JAS	8-26-66
REVISED MEDIAN & PROFILE	JBG	8-26-66
DELETED WILD TURKEY L.A. & CHANGED R CHORDS	JBG	7-21-66
REVISED PROFILE GRADE	A.R.S.	6-1-66

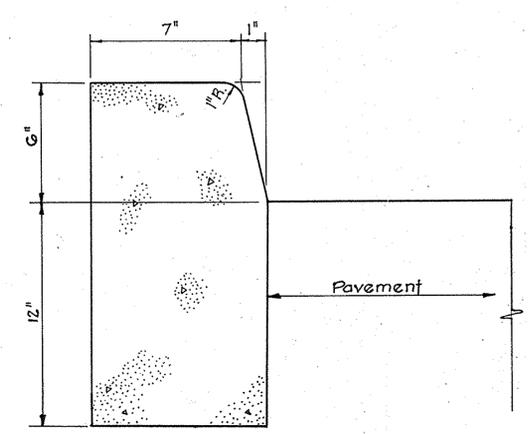
REVISIONS			
SECTION 3			
WINDSTREAM DRIVE			
STA. 0+00 TO STA. 12+35.43			
WILDE LAKE & PORTOFINO			
COLUMBIA			
ROAD PLAN			
DESCRIPTION	BY	MARK	DATE
SCALE: AS SHOWN			DATE: 5-21-66
DESIGN BY: J.A.S. J.C.S.			TRACED BY: A.R.S.
CHECKED BY: REL.			DRAWING NO. 8 of 19

C.D. MESSICK JR. & ASSOCIATES, INC.
 CONSULTING ENGINEERS & LAND SURVEYORS
 21 WEST STREET ANNAPOLIS, MARYLAND
C.D. Messick Jr.
 C.D. MESSICK JR. P.E. NO. 3390 DATE: 5/23/66

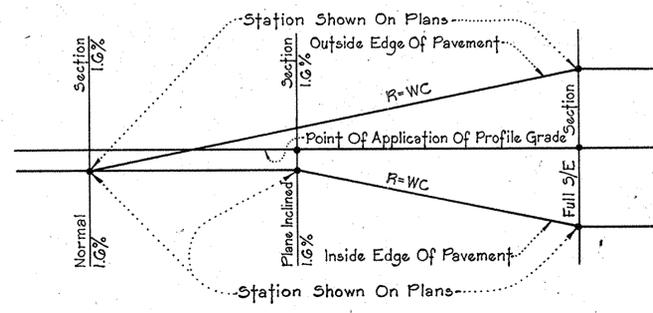




**DETAIL
CONCRETE CURB - TYPE A**
Scale: 3" = 1'-0"

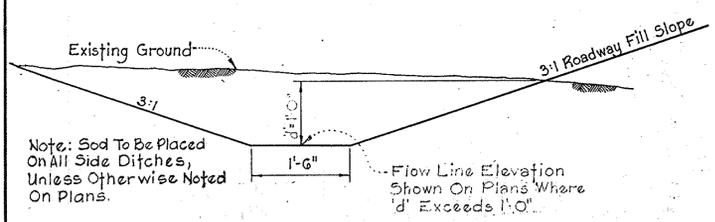


**DETAIL
VERTICAL CONCRETE CURB
TYPE B**
Scale: 3" = 1'-0"

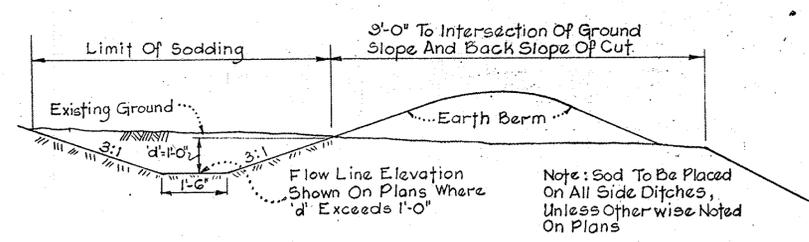


W: Width Of Pavement.
R: Rate Of Change Of A Given Point On The Pavement With Respect To The Point Of Application Of Profile Grade.
C: 0.0002 ft. per ft. Except For The Transitions Between Station 28+95 And Station 43+21.67, Which Are 0.00015 ft. per ft.

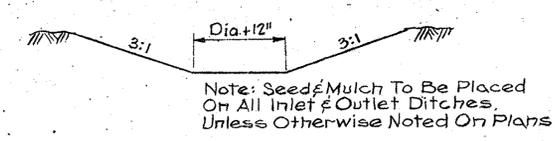
**DETAIL
SUPERELEVATION TRANSITION**



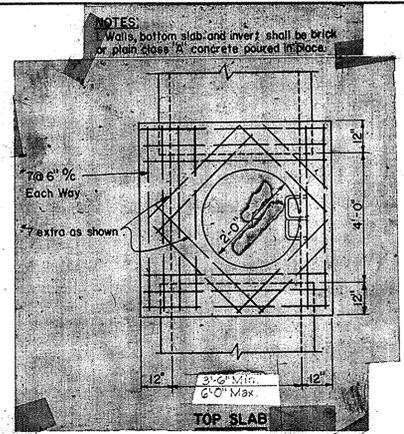
**DETAIL
SIDE DITCH**
Scale: 3/4" = 1'-0"



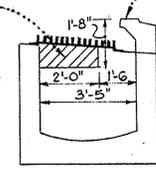
**DETAIL
BERM DITCH**



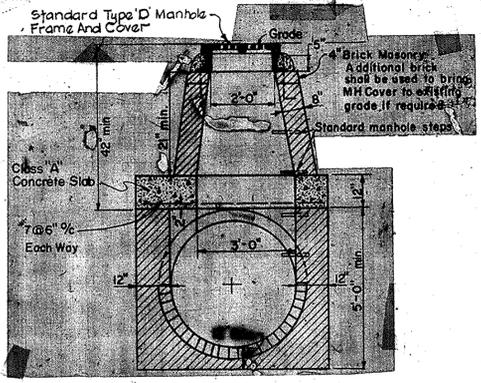
**TYPICAL CHANNEL
CONSTRUCTION
(INLET AND OUTLET DITCHES)**



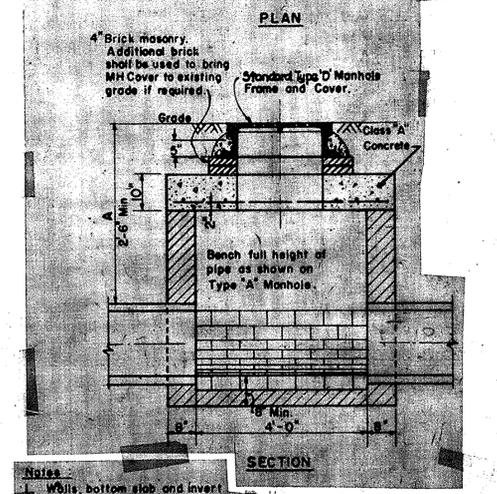
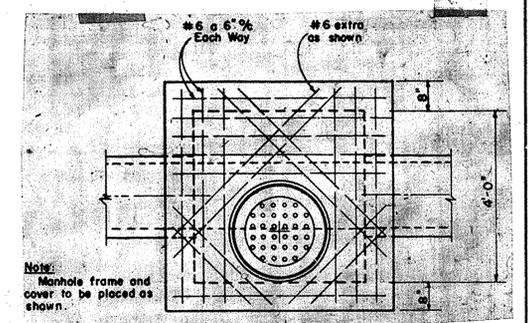
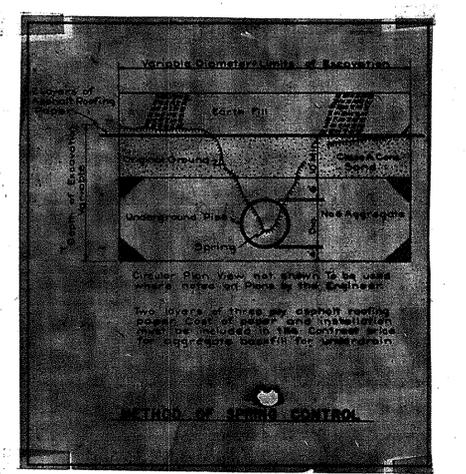
Provide Temporary Slot In End Of 'S'-Inlet As Shown



**TEMPORARY DRAINAGE SLOT
'S'-INLETS**
Note: To Be Constructed Where Noted On Plans

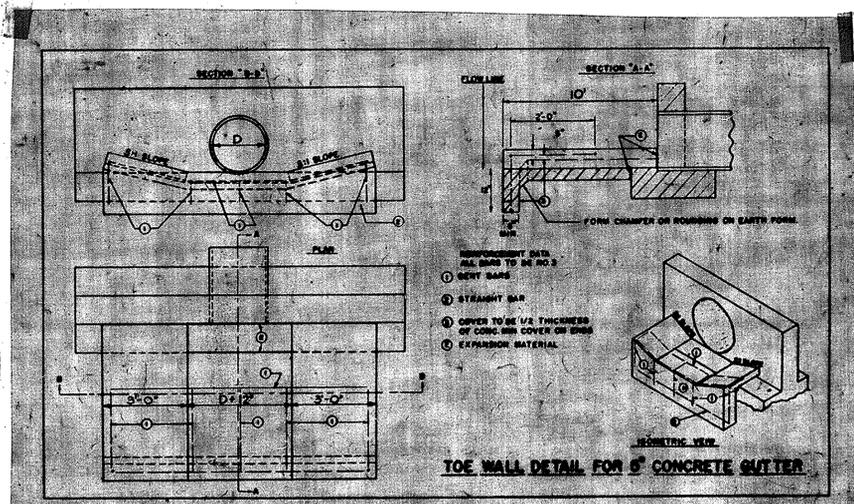


**DETAIL
TYPE 'C' MANHOLE**

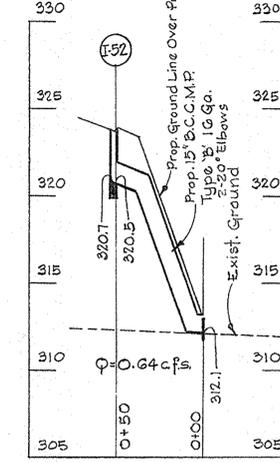
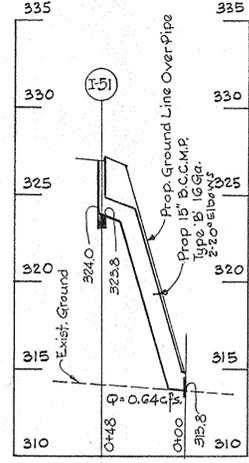
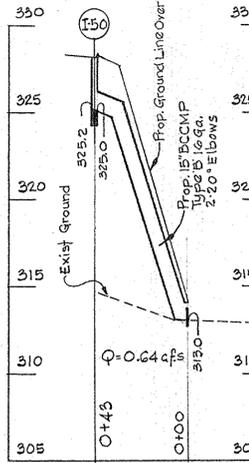
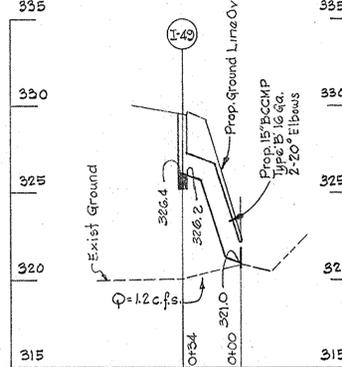
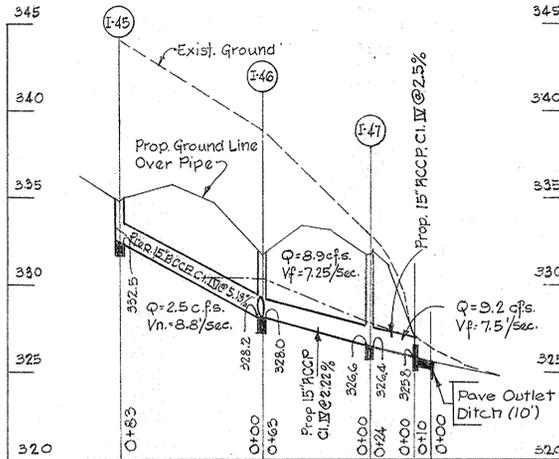
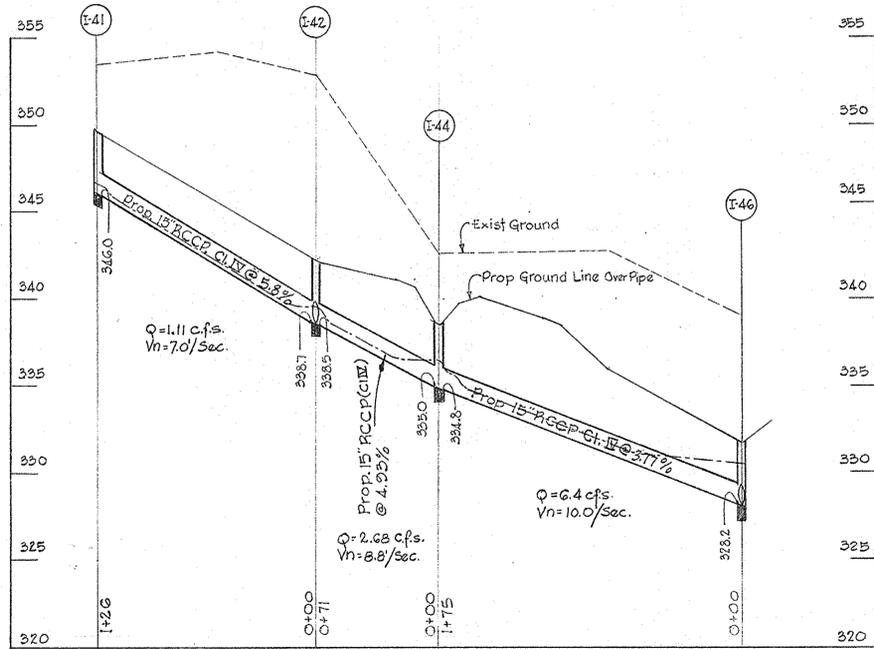


**DETAIL
TYPE 'B' MANHOLE**

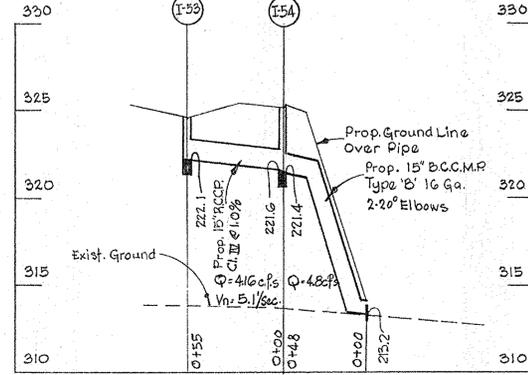
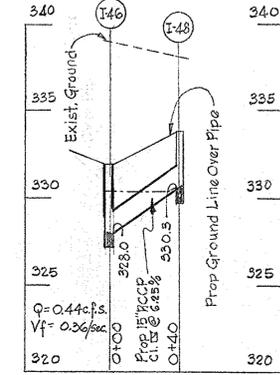
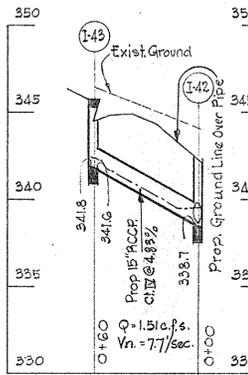
Revised Sheet Number 1/10/67
Manhole & Curb Type 2/22/66



**CHANNEL PROTECTION
AT CULVERTS**
Note: To Be Constructed Where Noted On Plans

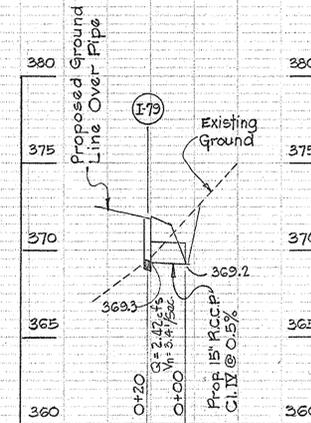
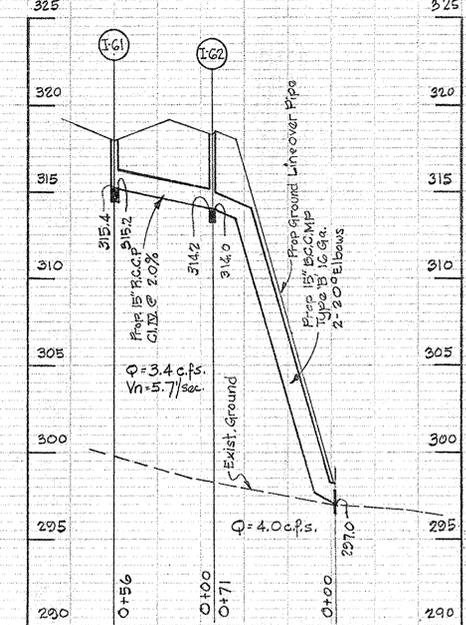
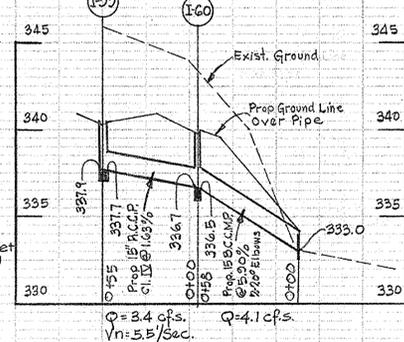
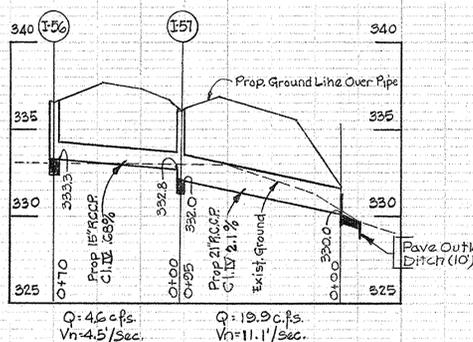
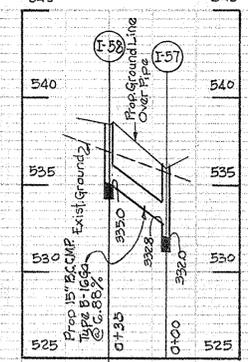
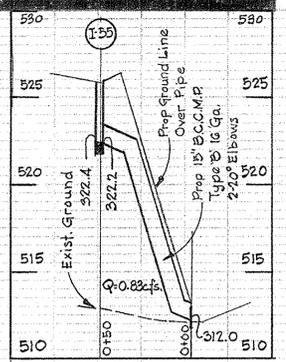


NOTE: All Pipe Elbows Shown On This Sheet Are 20" 15" B.C.C.M.P. Type 'B' 16 Ga.
See Detail Sheet No. 9 For:
1. Typical Section Of Inlet/Outlet Ditch
2. Paving Details For Ditches

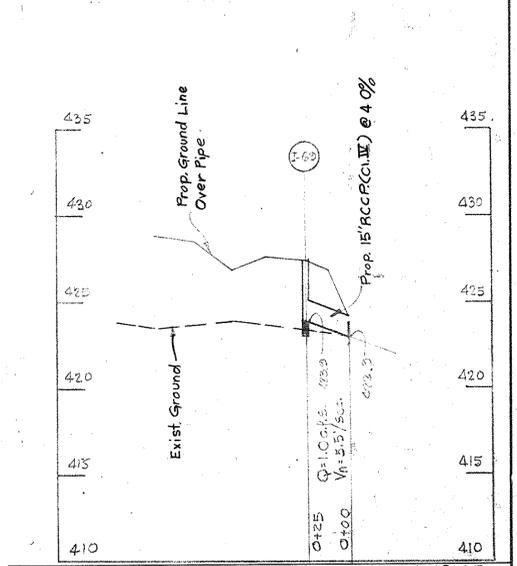
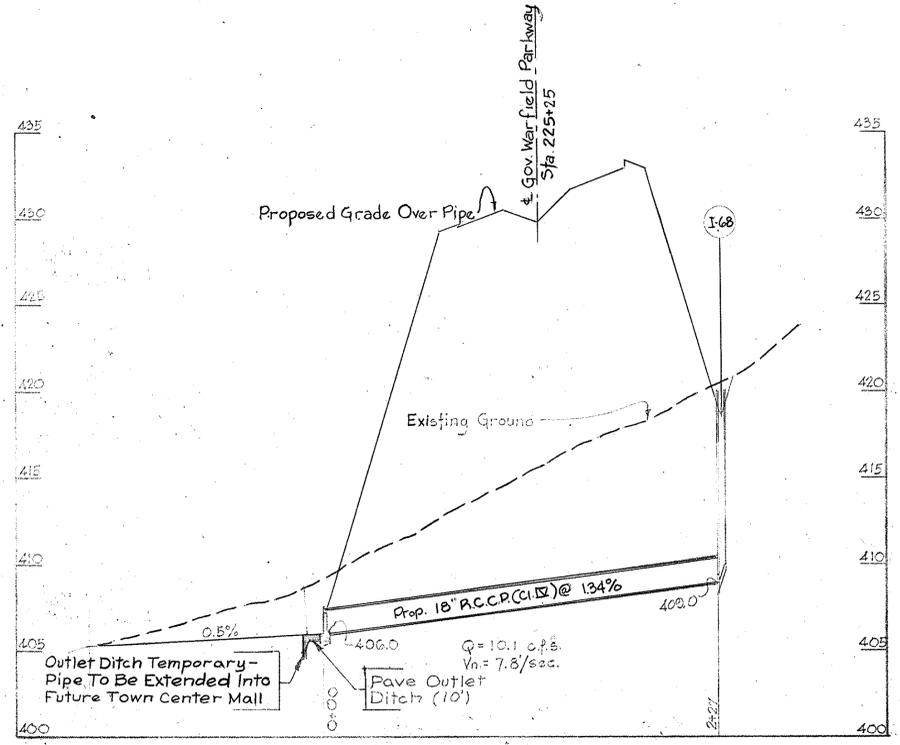
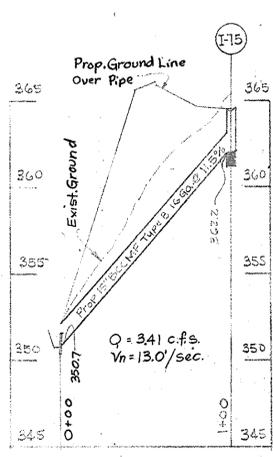
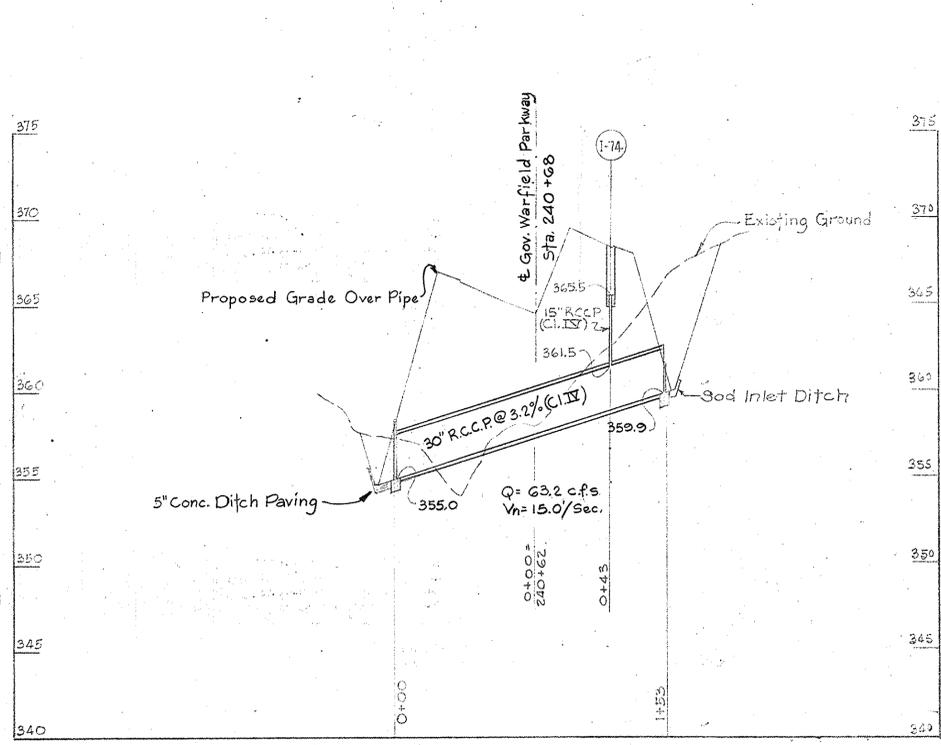


Revised Sheet Number	1-10-67
W.P. & Comments	10-28-66
Added H.G. Line & Profile I-79	10-19-66

LE BATOXENT PARKWAY
DRAIN DRAIN PROFILES
10-19-66



PLAN	SURVEYED	BY	DATE
NOTE BOOK	ALIGNMENT CHECKED		
NO.	RT. OF WAY CHECKED		

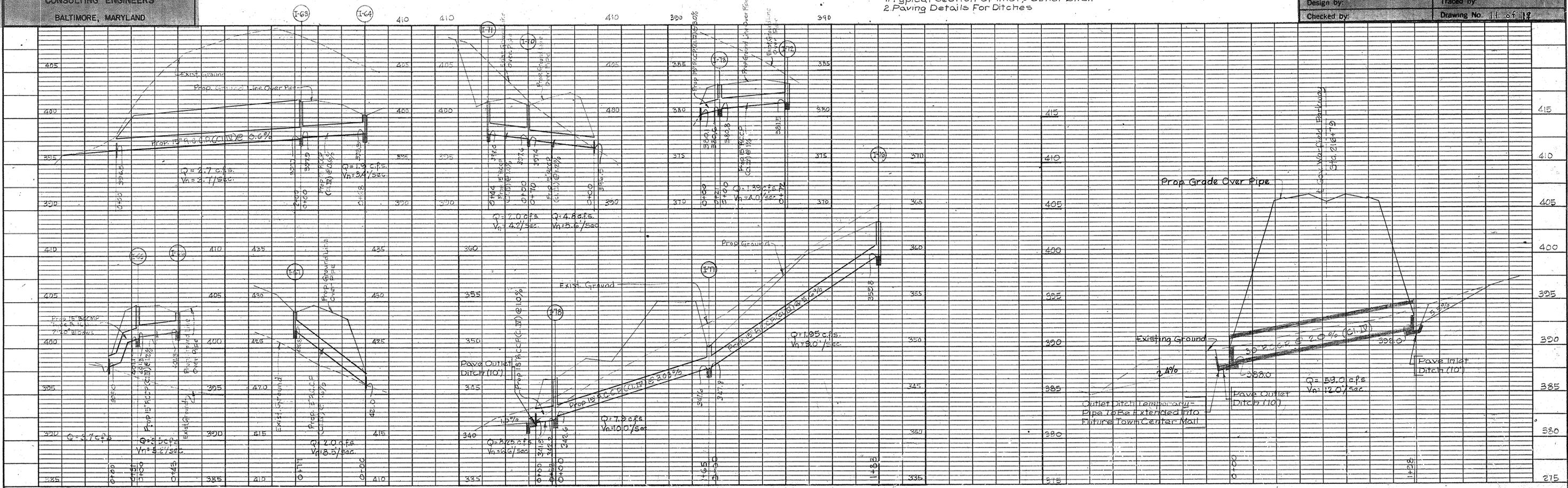


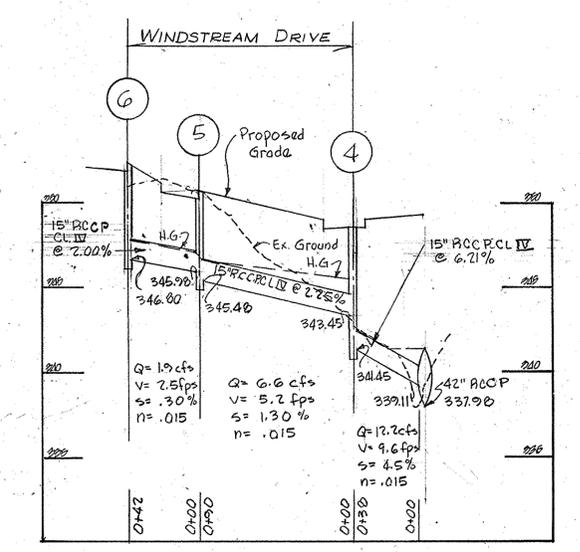
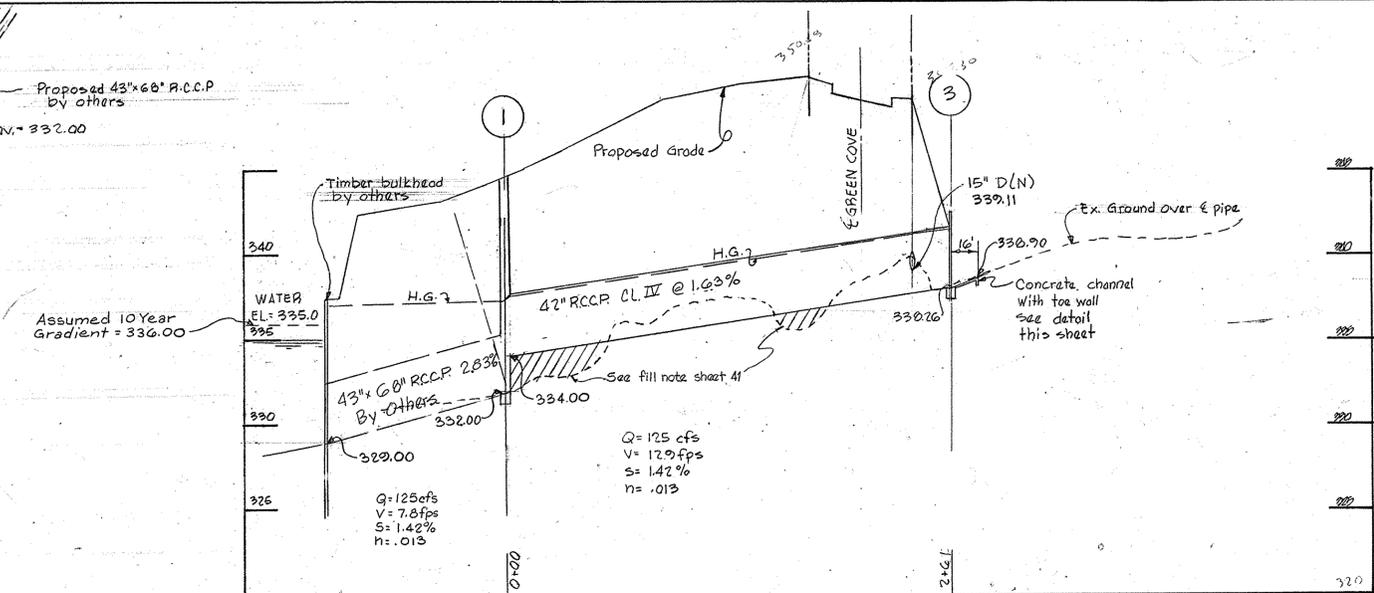
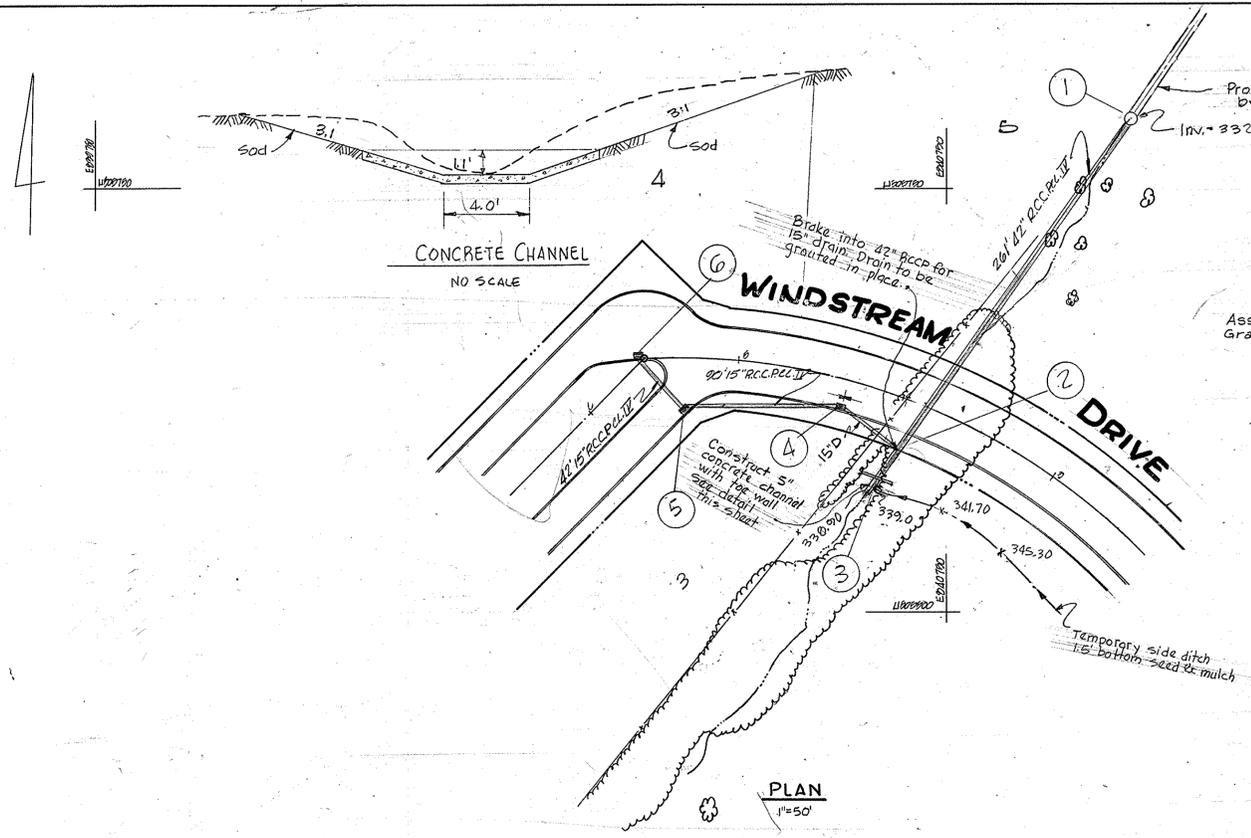
RUMMEL, KLEPPER & KAHL
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

See Detail Sheet No. 9 For:
1. Typical Section Of Inlet & Outlet Ditch
2. Paving Details For Ditches

Revised Sheet No.	1-10-67		
W.P.A. Comments	10-28-66		
Description	By	Mark	Date
REVISIONS			
GOV. WARFIELD PARKWAY STORM DRAIN PROFILES			
COLUMBIA			
Scale: Horiz. 1"=50' Vert. 1"=5'	Date: Aug 22, 1966		
Design by:	Traced by:		
Checked by:	Drawing No. 11 of 17		

PROFILE	SURVEYED	BY	DATE
NOTE BOOK	GRADES CHECKED		
NO.	B. M. NOTED		
	STRUCTURE NOTATIONS CHECKED		





PROFILE
Hor: 1"=50'
Ver: 1"=5'

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	T.C. ELEV.	INV. IN	INV. OUT	REMARKS
6	Mod. "S" Comb. Single Gr. Und.	Rt. Sta. 5+54.45	352.49		346.80	See Detail Sheet 22
5	"S" Comb. Dbl. Grate Depr.	Lt. Sta. 5+60	350.75	345.90	345.40	Ho. Co. Road Code Pa. 151
4	Mod. "S" Comb. Single Grate Und.	Lt. Sta. 4+34.67	349.08	343.45	341.45	See Detail Sheet 22
3	"C" Endwall	Lt. Sta. 3+97	342.76		338.26	Ho. Co. Road Code Pa. 101
2	Cut-In	Lt. Sta. 3+25				
1	Special Manhole	See Plan		334.00	332.00	See detail sheet 22 of 34

C.D. MESSICK JR. & ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
21 WEST STREET
ANNAPOLIS, MARYLAND

Russell E. Lowman
9-8-66
RUSSELL E. LOWMAN L.S. NO. 3947 DATE



REVISED SHEET NUMBER	JM.	1-10-67	
REVISED STREET NAME	JM.	12-1-66	
GENERAL STORM DRAIN REVISIONS	JAS	10-17-66	
DESCRIPTION	BY	MARK	DATE
REVISIONS			
VILLAGE OF WILDE LAKE SECTION 3 WILDE LAKE & PORTOFINO			
COLUMBIA SYSTEM "N" STORM DRAIN			
SCALE: As shown	DATE: NOV. 1966		
DESIGNED BY: JAS	TRACED BY: JAS		
CHECKED BY:	DRAWING NO. 12 of 19		