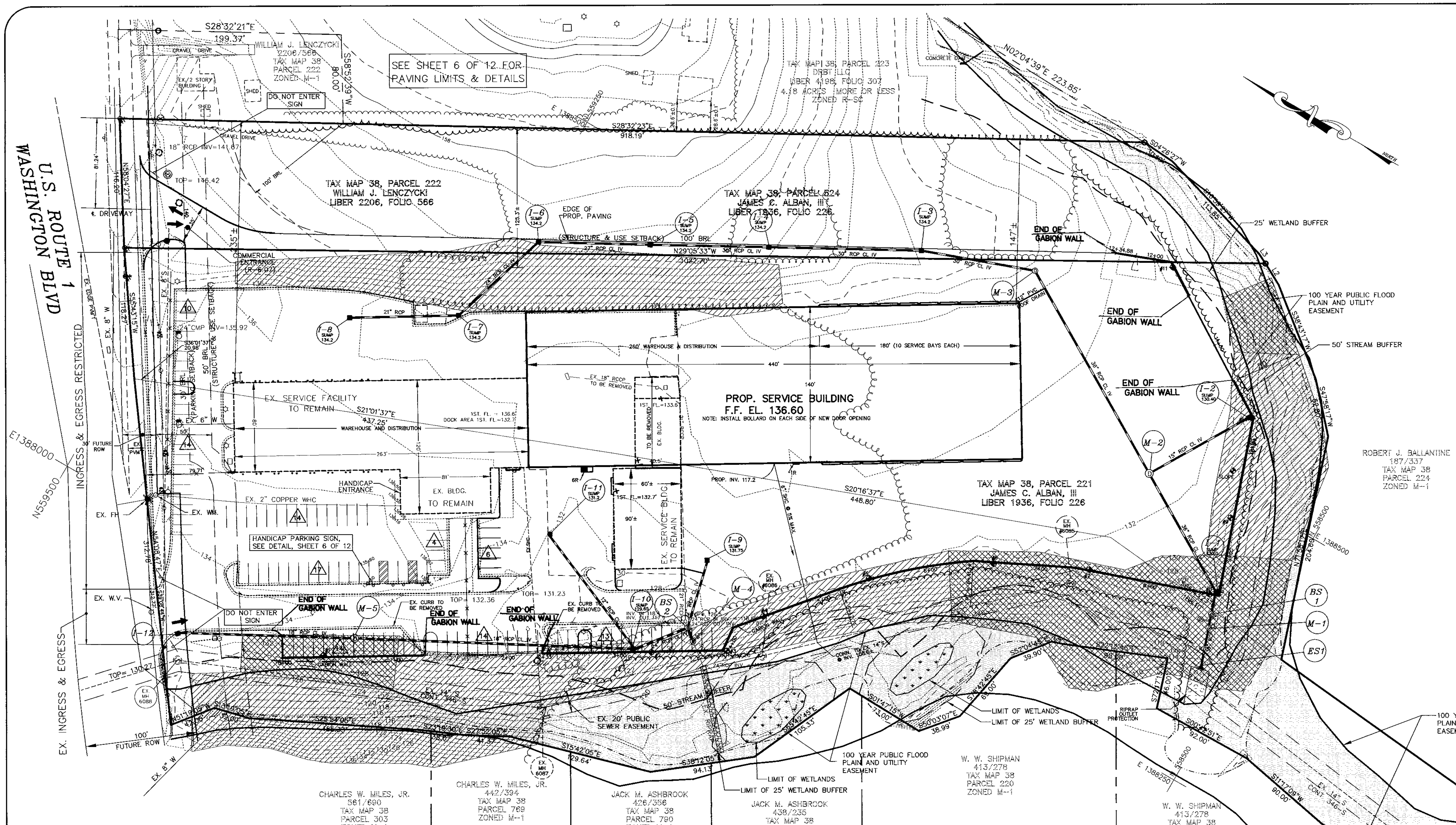
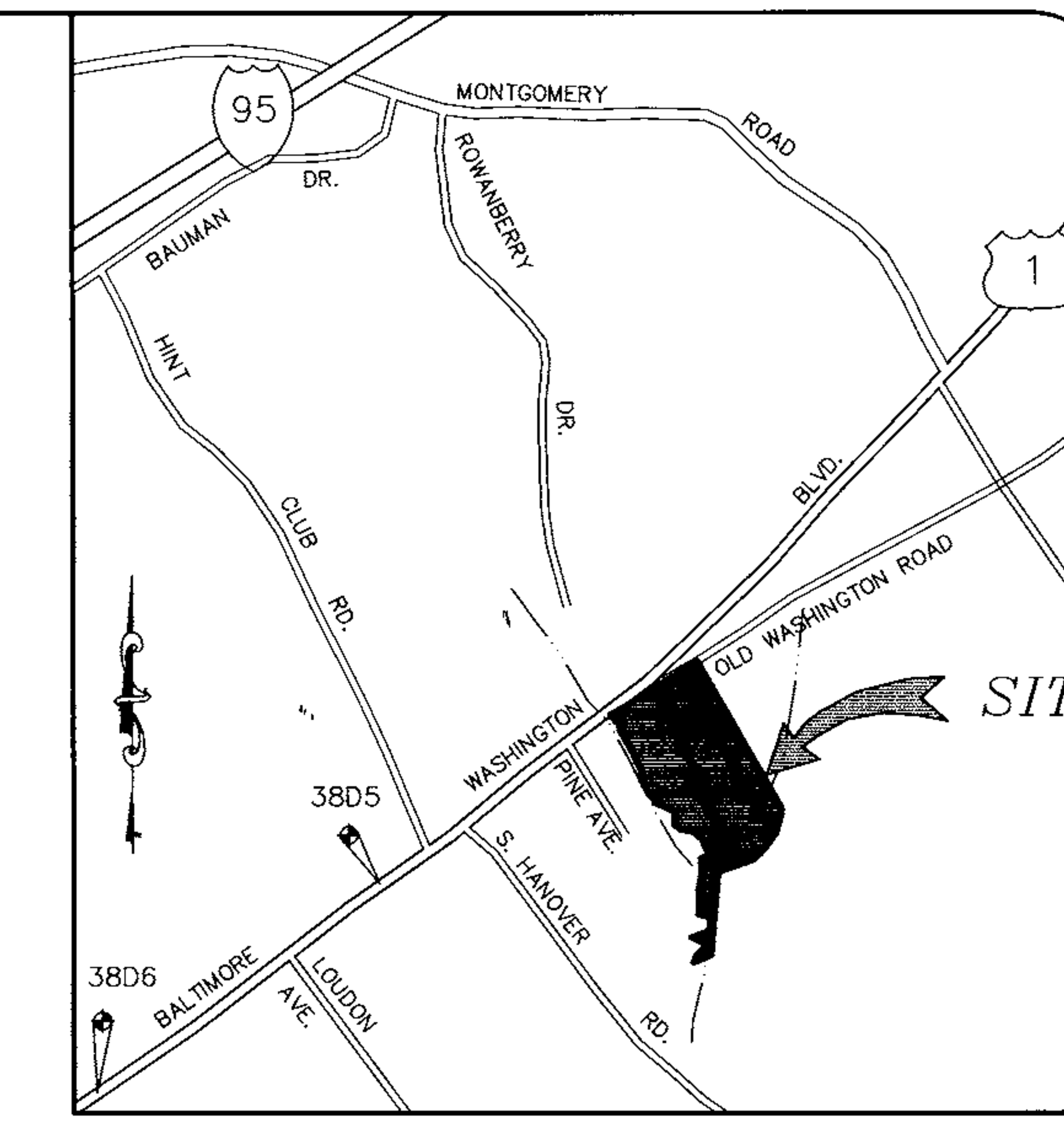




VICINITY MAP

SCALE: 1" = 1,000'

LEGEND

- EXISTING GRADES: 2' CONTOURS; 10' CONTOURS
- PROPOSED GRADES: 2' CONTOURS; 10' CONTOURS
- LIMIT 100 YEAR FLOODPLAIN
- EX. TREELINE
- SLOPES – 15% TO 24.9%
- SLOPES – 25% +
- FLOW ARROW
- PROP. TREELINE
- TRAFFIC FLOW
- WETLAND LIMIT
- 100 YEAR PUBLIC FLOOD PLAIN AND UTILITY EASEMENT
- GABION WALL (SEE SH. 6,8,9 FOR DETAILS)

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.

2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTIONS DIVISION AT (410) 313–1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.

3. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS PRIOR TO ANY EXCAVATION WORK:

MISS UTILITY	1–800–257–7777
C&P TELEPHONE COMPANY	(410) 725–9976
HOWARD COUNTY BUREAU OF UTILITIES	(410) 313–4900
AT&T CABLE LOCATION DIVISION	(410) 393–3533
BALTIMORE GAS & ELECTRIC	(410) 685–0123
STATE HIGHWAY ADMINISTRATION	(410) 531–5533
HOWARD COUNTY DEPT. OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION	(410) 313–1880

4. PROJECT BACKGROUND:

   LOCATION: 1ST ELECTION DISTRICT, TAX MAP 38, PARCELS 221 & 524.
   DEED REFERENCE: 1936/0226
   ZONING: M–1 PER 10/18/93 COMPREHENSIVE ZONING PLAN
   TOTAL TRACT AREA: 12.98 Ac.±
   DATE PREVIOUS PLANS APPROVED AND DPZ REFERENCE # : –SDP–73–20
   –SDP–88–103

5. TOPOGRAPHY SHOWN HEREON IS BASED ON APRIL, 1998 FIELD RUN SURVEY BY MILDENBERG, BOENDER AND ASSOCIATES, INC. AND BY CARROLL ENGINEERS, INC. DATED 8/17/95.

6. COORDINATES BASED ON NAD '83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS No. 38D5 AND 38D6.

   STA. No. 38D5 N 558,378.5683 E 1,386,524.3031 EL. = 193.75
   STA. No. 38D6 N 557,155.4454 E 1,384,992.3931 EL. = 175.261

7. WATER AND SEWER ARE PUBLIC, CONTRACT #'S 346–S & 349–W.

8. STORMWATER MANAGEMENT QUANTITY CONTROL WAIVER IS APPROVED ON JUNE 17, 1998.

9. STORMWATER MANAGEMENT QUALITY CONTROL BY STORMCEPTORS.

10. USE BITUMINOUS CURB STD. R–3.03.

11. SITE ANALYSIS DATA CHART:
    TOTAL PROJECT AREA: 12.98± ACRES
    LIMIT OF DISTURBED AREA: 7.99 AC.±
    PRESENT ZONING: M–1
    EX. FLOOR SPACE: WAREHOUSE & DIST. = 28,986 SF±
    OFFICE = 3,236 SF±
    PROPOSED USE: WAREHOUSE, DISTRIBUTION AND VEHICLE SERVICE
    BUILDING COVERAGE OF SITE : SERVICE BAYS – 30,600 SF
    WAREHOUSE & DISTRIBUTION – 63,222 SF
    TOTAL BUILDING COVERAGE – 93,822 SF±
    (OR 16.59% OF GROSS AREA)
    PARKING REQUIREMENT –
    WAREHOUSE & DISTRIBUTION (263'x120' + 260'x140'): 32 SPACES (0.5x63,222/1,000)
    SERVICE BAYS (180'x140' + 90'x60'): 69 SPACES (3 + 3x22)
    NUMBER OF PARKING SPACES REQUIRED: 101 SPACES
    NUMBER OF PARKING SPACES PROVIDED: 106 (9' x 20')
    (INCLUDING 2 HANDICAP PARKINGS)

12. ALL STORM DRAIN PIPE TO BE RCP CL. IV UNLESS OTHERWISE SHOWN.

13. TREELINE BASED ON FOREST STAND DELINEATION BY WILDMAN ENVIRONMENTAL SERVICES, MARCH 10, 1998.

14. FOR PAVING AND GABION WALL PROFLES & DETAILS SEE SHEET 8. GABION WALLS TO BE INSTALL BETWEEN STA. –0+21 TO STA. 1+26, STA. 2+33 TO STA. 10+64 AND STA. 11+50 TO STA. 12+37.

15. 100 YEAR FLOODPLAIN SHOWN IS PER CFP 25–47/97 & CFP 25–46/97 UPDATED BY KCI, INC. IN JANUARY 1997.

16. FOREST CONSERVATION EASEMENT(S) HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.200 OF HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING, OF CONSTRUCTION IS PERMITTED WITHIN THE FOREST EASEMENT, EXCEPT AS SHOWN ON AN APPROVED SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACICES AS DEFINED IN THE DEED OR CONSERVATION EASEMENT ARE ALLOWED.

17. THE FOREST CONSERVATION OBLIGATIONS INCURRED BY THIS SITE DEVELOPMENT (2.56 ACRES) HAS BEEN MET BY 0.29 ACRE OF ON–SITE REFORESTATION (SEE SH.11), 1.49 ACRES OF OFF–SITE REFORESTATION (SEE SH. 12) AND 0.79 ACRE OF FEE–IN–LIEU OF REFORESTATION.

18. NO NEW CONNECTIONS TO PUBLIC WATER AND SEWER IS PROPOSED.

19. WETLAND LIMIT AS SHOWN IS PER THE 'WETLAND INVESTIGATION AND FROEST STAND DELINEATION REPORT PREPARED BY WILDMAN ENVIRONMENTAL SERVICES DATED MARCH 10, 1998.

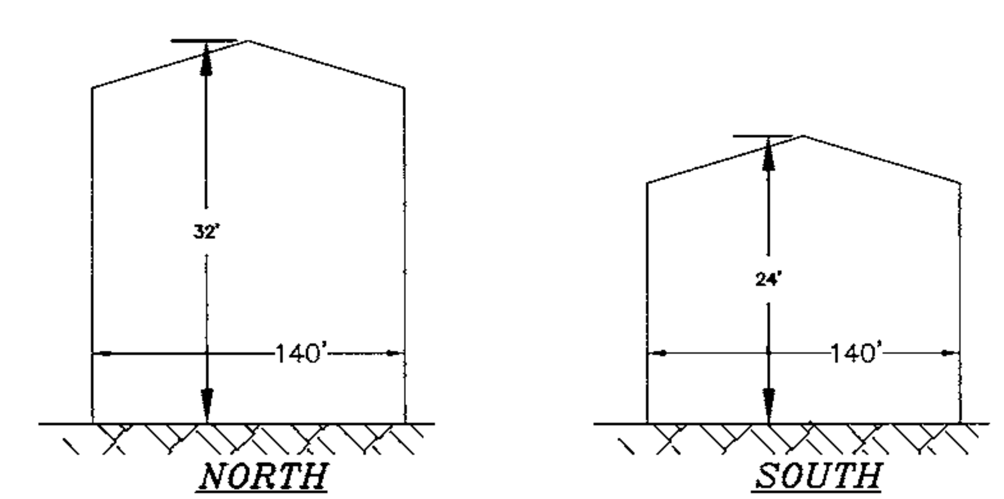
20. INSTALL THE PROPOSED BAYSAVERS AT INVERTS AND LOCATION AS SHOWN ON PLAN.

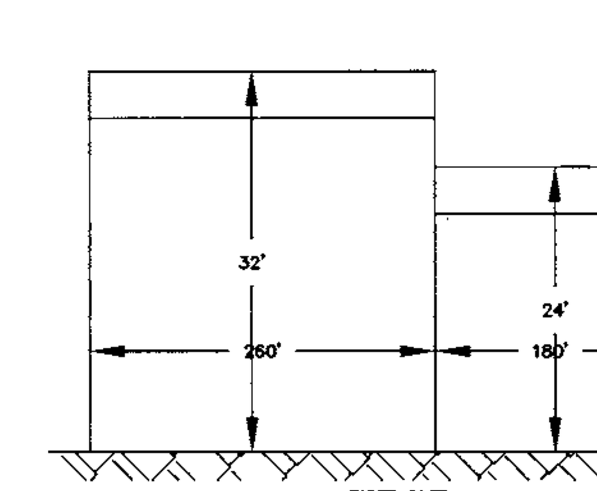
21. ACCESS EASEMENT ESTABLISHED ON THE ENTIRE AREA OF PARCEL 524 FOR THE BENEFIT OF PARCEL 221, LIBER 1936, FOLIO 226.

STATE OF MARYLAND
LIN, CHENG-HO
PROFESSIONAL ENGINEER
9/10/99

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	9/24/99 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT ~~AND RESEARCH~~	10/4/99 DATE
DIRECTOR	10/14/99 DATE





WEST ELEVATION

INDEX OF SHEETS

PERMIT INFORMATION CHART

SUBDIVISION NAME ALBAN TRACTOR CO., INC.			SECTION/AREA		LOT/PARCEL #
PLAT # OR L/F 1936/226	BLOCK # 8	ZONE M–1	TAX MAP 38	ELEC. DIST. FIRST	CENSUS TRACT 6012
WATER CODE A01			SEWER CODE 2150529		

OWNER/DEVELOPER

ALBAN TRACTOR CO., INC.
P. O. BOX 9595
BALTIMORE, MARYLAND 21237
(410) 686–7777
ATTN: CHUCK WITMER

project	date
98014	SEP. 1999
illustration	engineering
FCL/RJ	FCL
scale	approval
1" = 50'	JH

no.	description revisions	date

TAX MAP 38, PARCELS 221 & 524
ALBAN TRACTOR
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SITE DEVELOPMENT PLAN

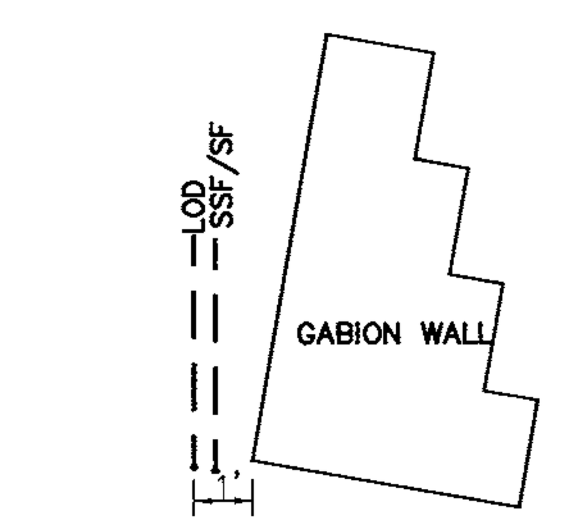
MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

SDP 98-139

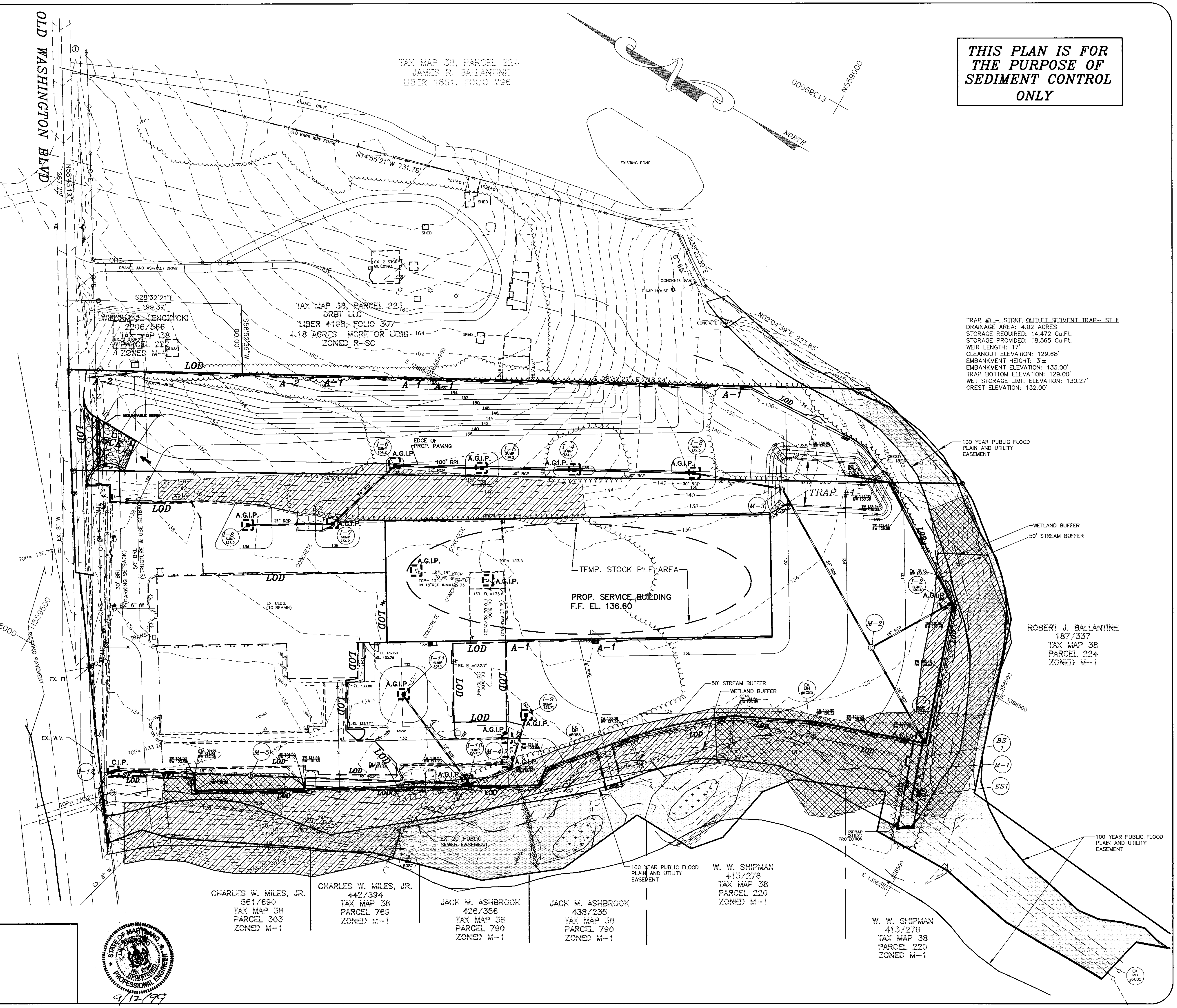
98014/DWG/SDP/SDP

LEGEND

- SLOPES - 15% TO 24.9%
- SLOPES - 25% +
- PROP. TREELINE
- WETLAND LIMIT
- PROP. GABION WALL (SEE SH. 6,8,9 FOR DETAILS)
- 100 YEAR PUBLIC FLOOD PLAIN AND UTILITY EASEMENT
- A.G.I.P. — AT GRADE INLET PROTECTION
- CIP — CURB INLET PROTECTION
- A-1 — EARTH DIKE
- SSF — SUPER SILT FENCE
- LOD — LIMIT OF DISTURBANCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- GIP — GABION INFLOW PROTECTION



TYPICAL SSF/SF PLACEMENT DETAIL
NOT TO SCALE



THIS PLAN IS FOR THE PURPOSE OF SEDIMENT CONTROL ONLY

TRAP #1 - STONE OUTLET SEDIMENT TRAP- ST II
DRAINAGE AREA: 4.02 ACRES
STORAGE REQUIRED: 14,472 Cu.Ft.
STORAGE PROVIDED: 18,565 Cu.Ft.
WEIR LENGTH: 17'
CLEANOUT ELEVATION: 129.68'
EMBANKMENT HEIGHT: 3'±
EMBANKMENT ELEVATION: 133.00'
TRAP BOTTOM ELEVATION: 129.00'
WET STORAGE LIMIT ELEVATION: 130.27'
CREST ELEVATION: 132.00'

DEVELOPERS CERTIFICATE

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

SIGNATURE OF DEVELOPER — 9/12/99 DATE

JAMES C . ALBAN, IV
PRINTED NAME OF DEVELOPER

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWEDGE OF THE SITE CONDTIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

CHENG-HO LIN
SIGNATURE OF ENGINEER — 9/12/99 DATE

PRINTED NAME OF ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

USDA - NATURAL RESOURCE CONSERVATION SERVICE — 9/22/99 DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — 9/22/99 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — 9/24/99 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT ~~AND RESEARCH~~ — 10/4/99 DATE

DIRECTOR — 10/4/99 DATE

98014/DWG/SDP/14-SED

project	date
98014	SEP. 99
illustration	engineering
SD/KR	FCL
scale	approval
1" = 50'	

no.	description / revisions	date

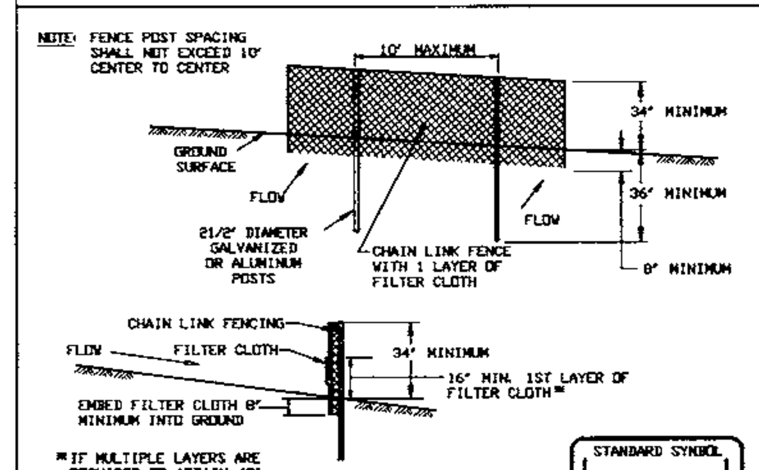
TAX MAP 38, PARCEL 221 & 524
ALBAN TRACTOR
FIRST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

SDP 98-139

DETAIL 33 - SUPER SILT FENCE



Construction Specifications

1. 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 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" 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 ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft²/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE H - 26 - 3 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

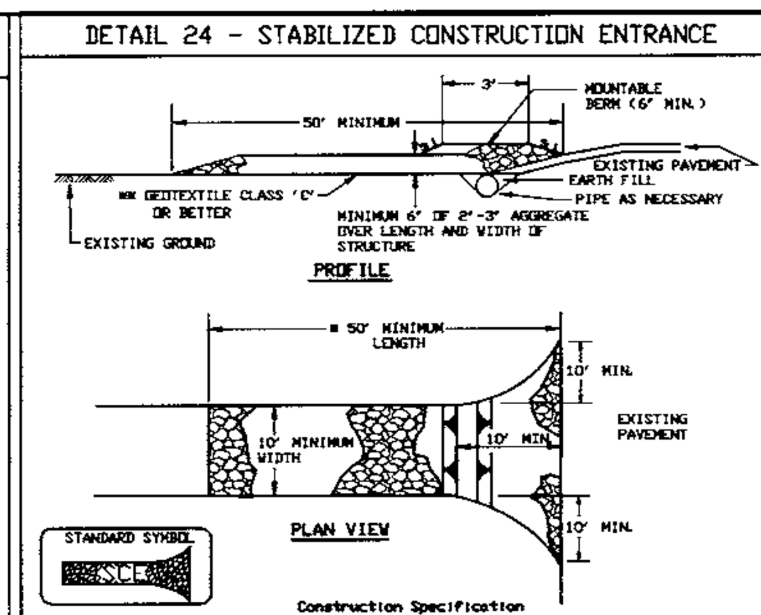
SUPER SILT FENCE

Design Criteria

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE H - 26 - 3A | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

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 residences to use geotextile.

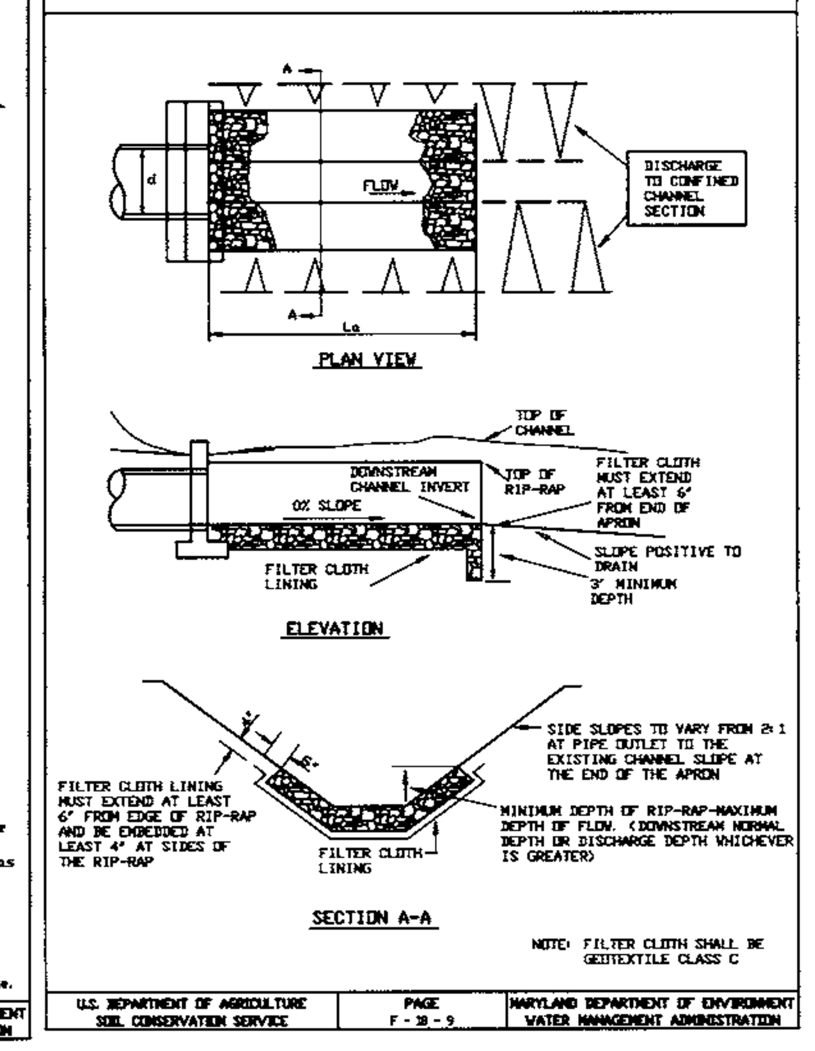
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or 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.

6. 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.

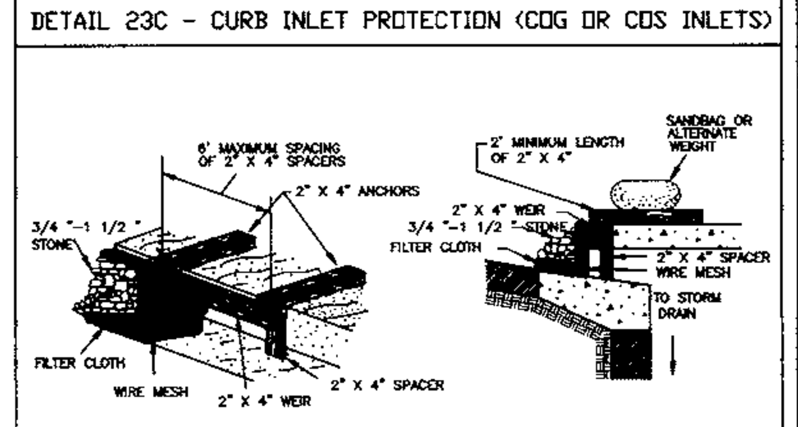
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE F - 17 - 3 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 26 - ROCK OUTLET PROTECTION II



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE F - 18 - 9 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS)



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.

2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

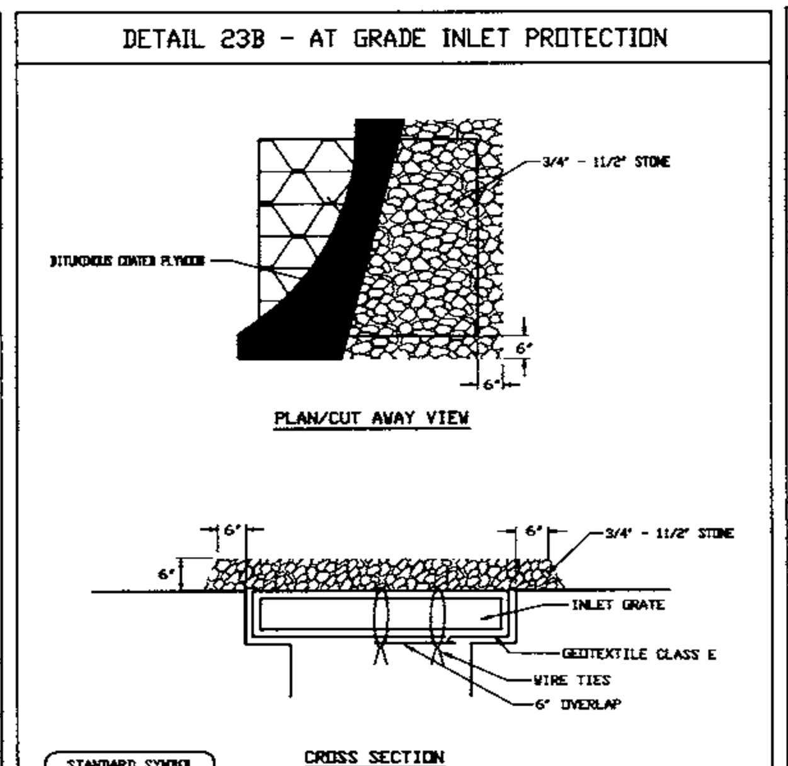
6. Form the 1/2 " x 1/2 " wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4 " x 1 1/2 " stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE E - 16 - 5B | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23B - AT GRADE INLET PROTECTION



MAX. DRAINAGE AREA = 1/4 ACRE

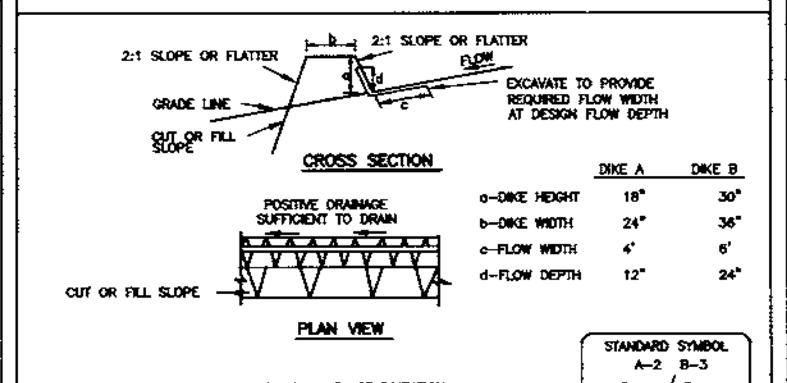
Construction Specifications

1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.

2. Seal the inlet by nailingl the Bituminous coated plywood .

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE E - 16 - 5A | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 1 - EARTH DIKE



	DIKE A	DIKE B
a-DIKE HEIGHT	18"	30"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	12"	24"

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. 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 device.

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.

5. 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.

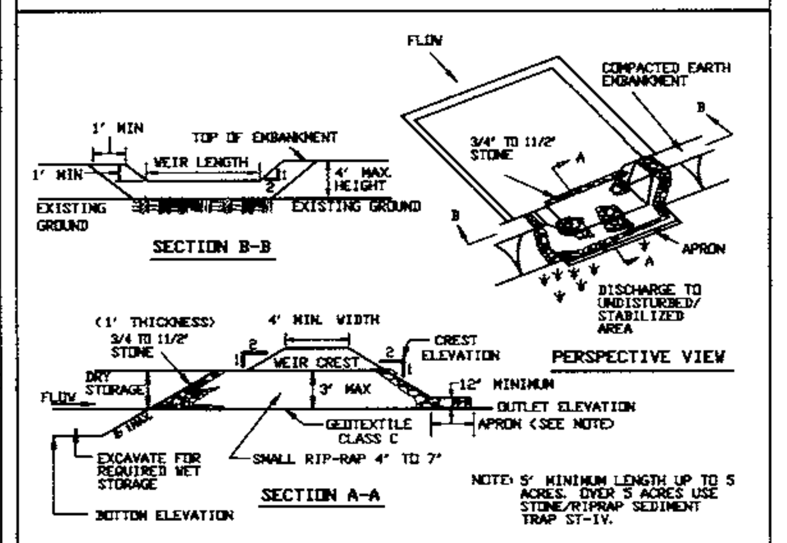
6. Fill shall be compacted by earth moving equipment.

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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE A - 1 - 6 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 9 - STONE OUTLET SEDIMENT TRAP - ST II



Construction Specifications

1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.

2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.

3. All cut and fill slopes shall be 2:1 or flatter.

4. The stone used in the outlet shall be small rip-rap 4" to 7" in size with a 1' thick layer of 3/4" to 11/2" washed aggregate placed on the upstream face of the outlet. Stone facing shall be as necessary to prevent clogging. Geotextile Class C may be substituted for the stone facing by placing it on the inside face of the stone outlet.

5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE C - 9 - 10 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SILT FENCE

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE E - 15 - 3A | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DEVELOPERS CERTIFICATE

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

SIGNATURE OF DEVELOPER — 9/12/99 DATE

JAMES C. ALBAN, IV
PRINTED NAME OF DEVELOPER

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWEDGE OF THE SITE CONDTIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

SIGNATURE OF ENGINEER — 9/12/99 DATE

CHENG-HO LIN
PRINTED NAME OF ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

USDA — NATURAL RESOURCE CONSERVATION SERVICE — 9/22/99 DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — 9/22/99 DATE

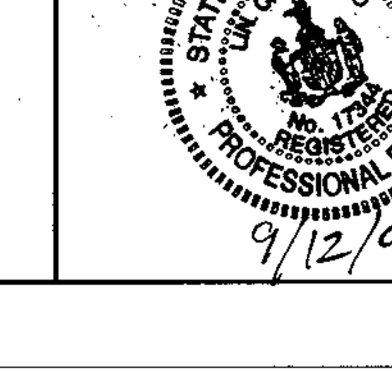
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — 9/24/99 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 10/4/99 DATE

DIRECTOR — 10/4/99 DATE

98014/DWG/NEW-SDP/SEDNO



HOWARD SOIL CONSERVATION DISTRICT

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

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

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
1) PREFERRED – APPLY 2 TONS PER ACRES 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 DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING , APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS./1000 SQ.FT.).
2) 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 DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING – FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE 1.4 LBS/1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LOBS. PER ACRE (.05 LBS./1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU 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./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONE/ACRE 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 SQ.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 SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

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

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

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

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.) FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (.07 LBS./1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU NOVEMBER 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.

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

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

STANDARD SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF NAY CONSTRUCTION, (313-1855).

2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND REVISIONS THERETO.

3) 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.

4) 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.

5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (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:	12.81	ACRES±
AREA DISTURBED:	7.46	ACRES±
AREA TO BE ROOFED OR PAVED:	4.84	ACRES±
AREA TO BE VEGITATIVELY STABILIZED:	2.62	ACRES±
TOTAL CUT:	32,170	CU. YDS.
TOTAL FILL:	10,790	CU. YDS.
TOTAL WASTE/BORROW AREA LOCATION:	PARCEL 223*	

*OWNED BY ALBAN TRACTOR.

THESE QUANTITIES ARE FOR PERMIT PURPOSES ONLY.
CONTRACTOR IS REQUIRED TO PROVIDE HIS OWN QUANTITY MEASUREMENTS.

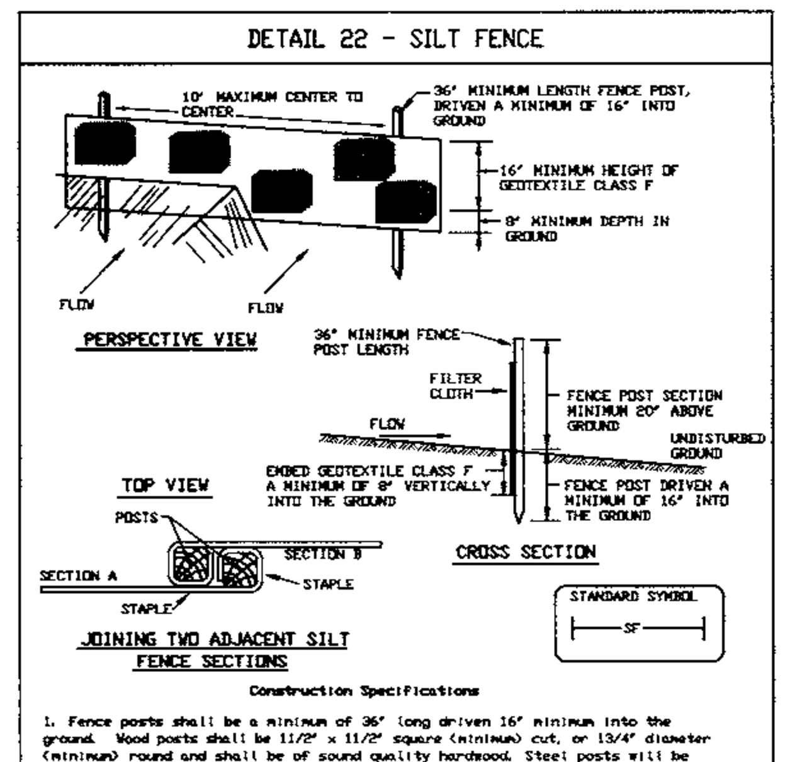
8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

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

10) 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.

11) 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, WHICHEVER IS SHORTER.

DETAIL 22 - SILT FENCE



Construction Specifications

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 T or U section weighting not less than 1.00 pond per linear foot.

2. 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 F:

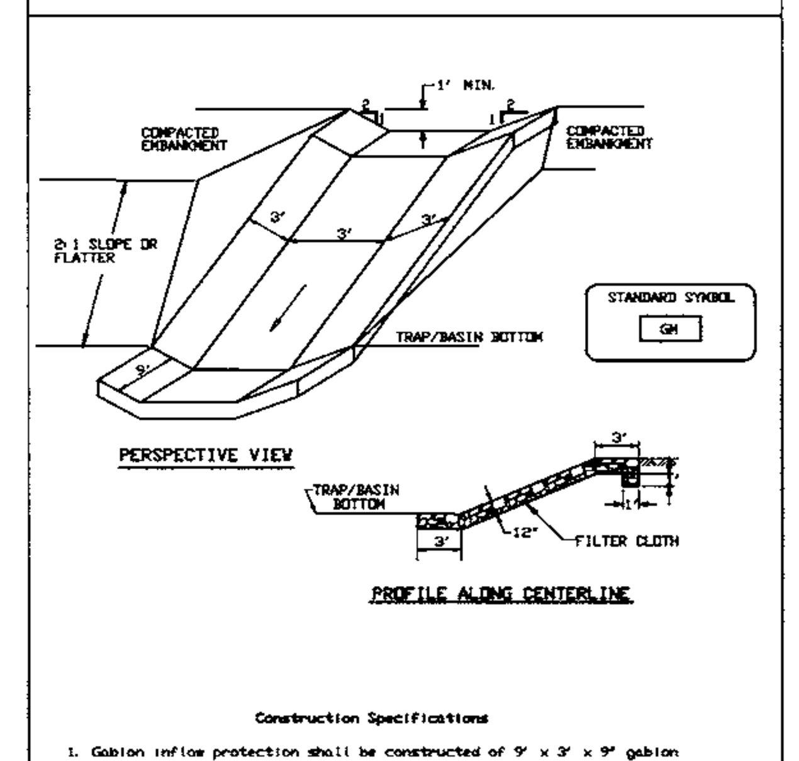
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE E - 15 - 3 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 6 - GABION INFLOW PROTECTION



Construction Specifications

1. Gabion inflow protection shall be constructed of 9' x 3' x 9" gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.

2. Geotextile Class C shall be installed under all gabion baskets.

3. The stone used to fill the gabion baskets shall be 4" - 7".

4. Gabions shall be installed in accordance with manufacturers recommendations.

5. Gabion Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE J - 7 - 2 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW pH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.

b. 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.

c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.

d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

II. 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

I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATION. 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.

II. TOPSOIL SPECIFICATIONS – SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

i. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY 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 1/2" IN DIAMETER.

ii. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONSON GRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

iii. 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.

III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:

i. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION – SECTION i – VEGETATIVE STABILIZATION METHODS AND MATERIALS.

IV. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:

i. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:

a. pH FOR TOPSOILS SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A pH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PERSCRIBED TO RAISE THE pH TO 6.5 OR HIGHER.

b. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.

c. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.

d. 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 PHYTO-TOXIC 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. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION – SECTION I – VEGETATIVE STABILIZATION METHODS AND MATERIALS.

V. TOPSOIL APPLLICATION

i. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.

ii. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4" – 8" HIGHER IN ELEVATION.

iii. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" TO 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 SOIL 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.

iv. 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.

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:

i. COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

a. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS WHO ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.

b. COMPOSTED SLUDGE SHALL CONTAIN AT LEASE 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHOURUS, 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 PRIOR TO USE.

c. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.

iv. COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILLIZER APPLIED AT THE RATE OF 4 LB/1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATION RATE.

REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING. MD-VA, PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE, WITH MOUNTABLE BERM & FOREST PROTECTION DEVICES (SEE DETAILS ON SH. 12) AT LOCATION SHOWN. (1 DAY)
3. CONSTRUCT SILT FENCE, EARTH DIKE AND INLET PROTECTIONS ON EXISTING INLETS. (1 DAY)
4. CONSTRUCT SUPER SILT FENCES ALONG THE STREAM BUFFER AND AS SHOWN. (3 DAYS)
5. REMOVE ALL EXISTING STORM DRAINS EAST OF THE PROPOSED BAYSAVER BS-2. (2 DAYS)
6. CONSTRUCT THE PROPOSED 6" SHC. (1 DAY)
7. CONSTRUCT THE SEDMENT TRAP AND GABION INFLOW PROTECTIONS. (1 DAY)
8. CONSTRUCT THE PROPOSED GABION WALL AND BRING SITE TO GRADE. (20 DAYS)
9. INSTALL STORM DRAIN SYSTEM, STORMCEPTORS AND INLET PROTECTION. (10 DAYS) (TEMP. SEAL ALL PROPOSED INLETS WITH PLYWOOD)
9. CONNECT THE PROPOSED BAYSAVER BS-2 TO THE EXISTING STORM DRAIN. (1 DAY)
10. PAVE THE SITE WITHOUT THE BITUMINOUS CURB. (20 DAYS)
11. REMOVE SILT FENCE, SUPER SILT FENCE AND INLET PROTECTIONS AFTER PAVEMENT IS CONSTRUCTED AND BITUMINOUS CURB INSTALLED. (5 DAYS)
12. STABILIZE ALL REMAINING DISTURBED AREAS. (3 DAYS)
13. WHEN ALL CONTRIBUTING DRAINAGE AREAS TO SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE REMAINING DISTURBED AREAS. (3 DAYS)

OWNER/DEVELOPER

ALBAN TRACTOR CO., INC.
P. O. BOX 9595
BALTIMORE, MARYLAND 21237
(410) 686-7777
ATTN: CHUCK WITMER

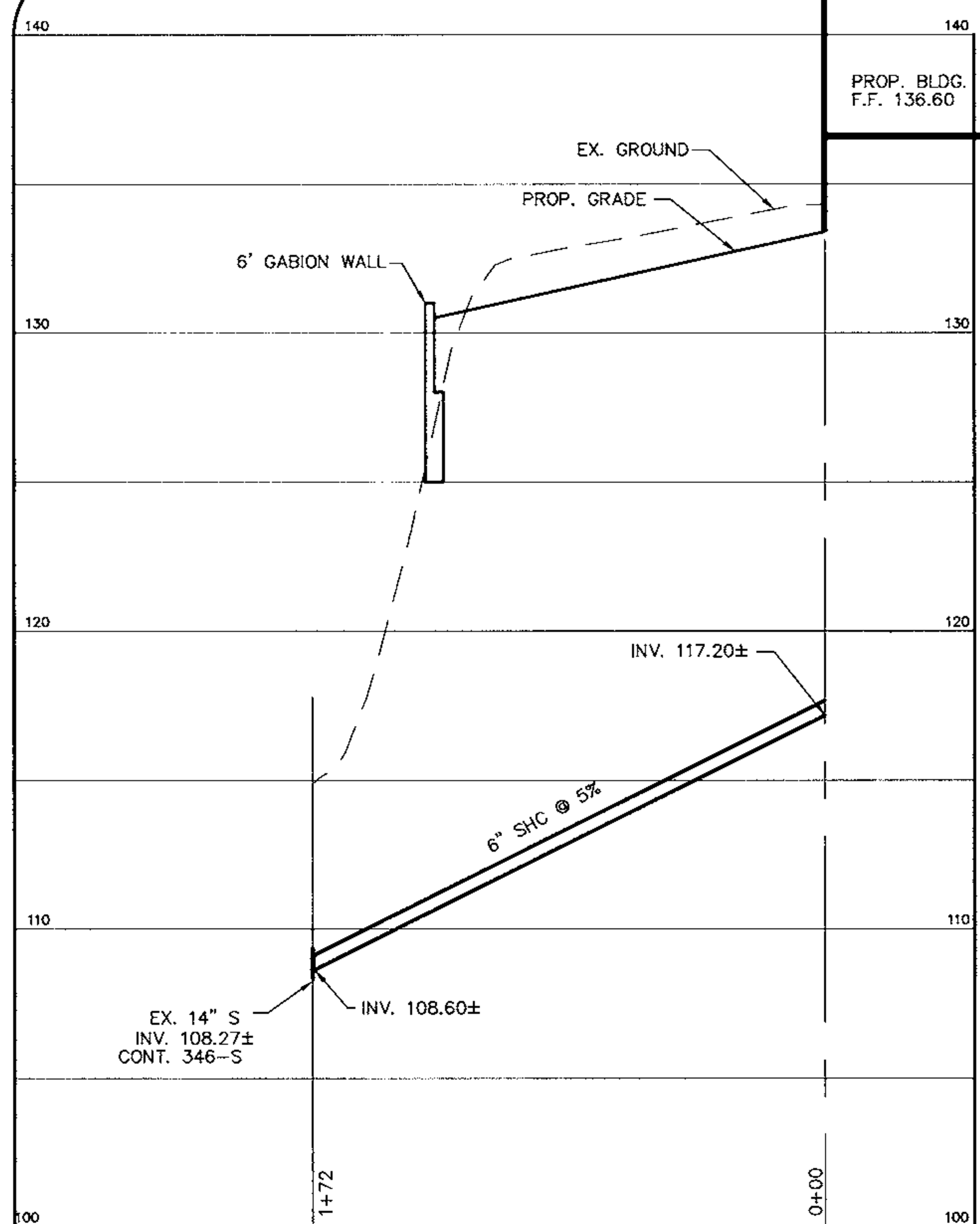
project	date	engineering	approval
98014	SEP. 99	FCL	JH
illustration	scale		
FCL/RJ	1" = 50'		

no.	description / revisions	date

TAX MAP 38, PARCELS 221 & 524
ALBAN TRACTOR
FIRST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
SEDIMENT CONTROL PLAN

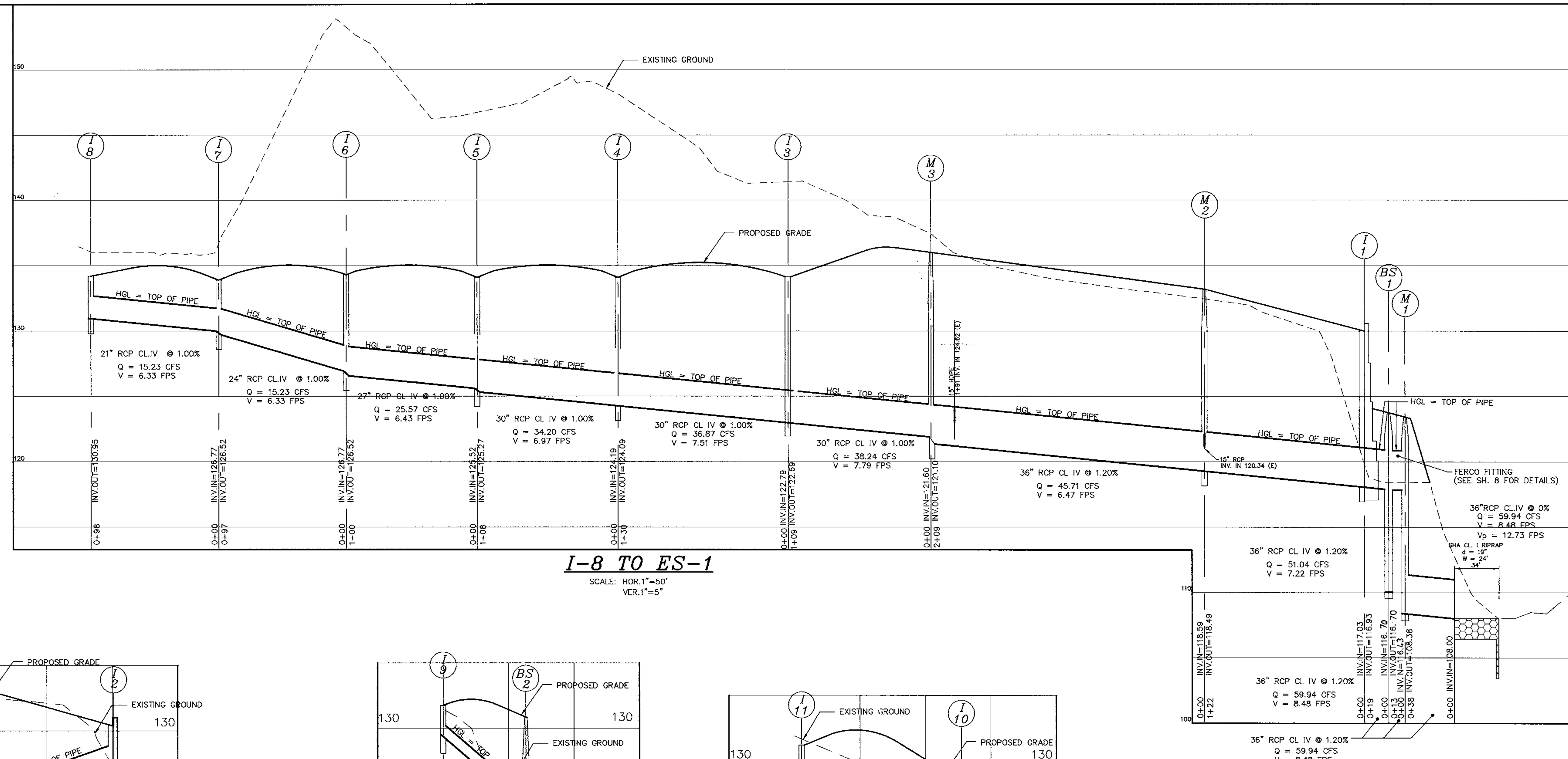
MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

SDP 98-139



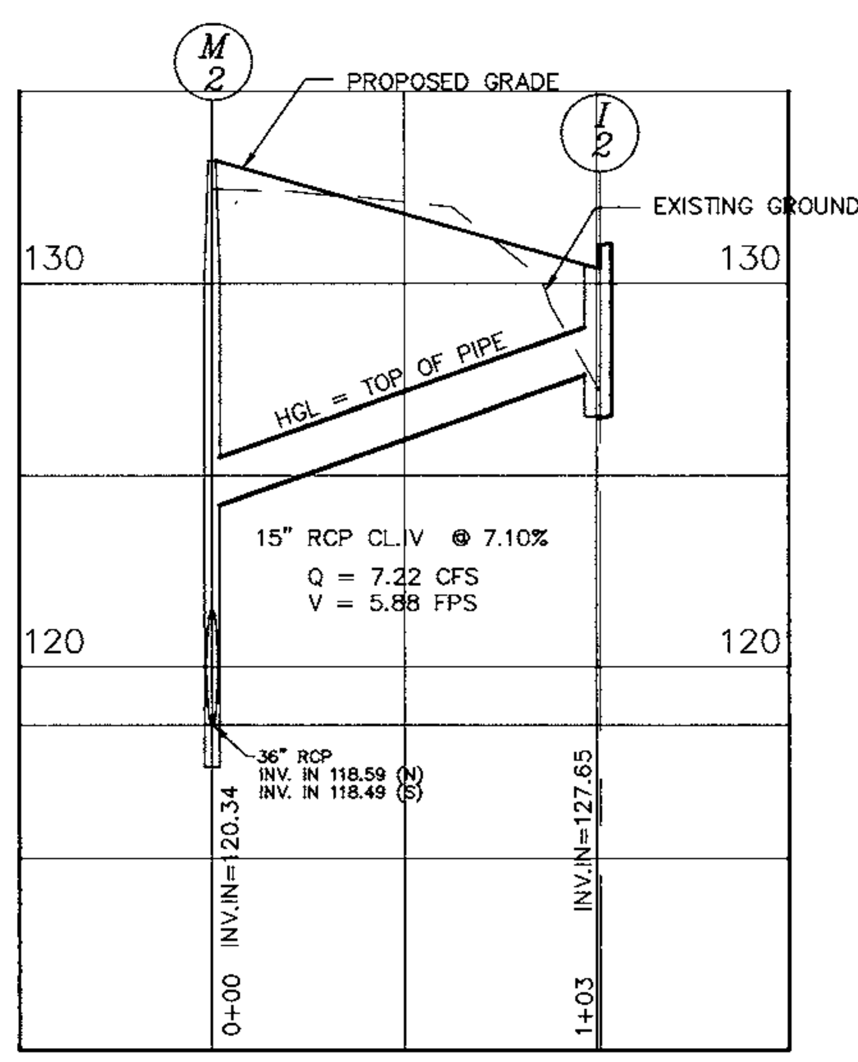
6" SHC PROFILE

SCALE: HOR.1"=50'



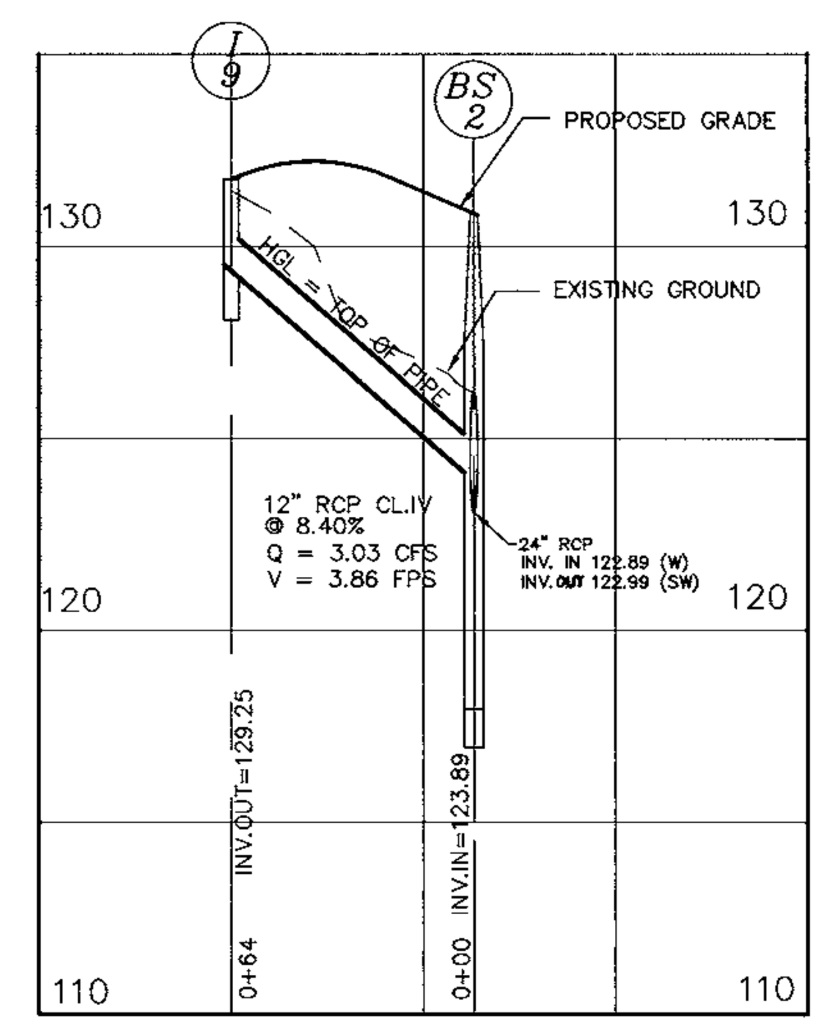
I-8 TO ES-1

SCALE: HOR.1"=50'
VER.1"=5"



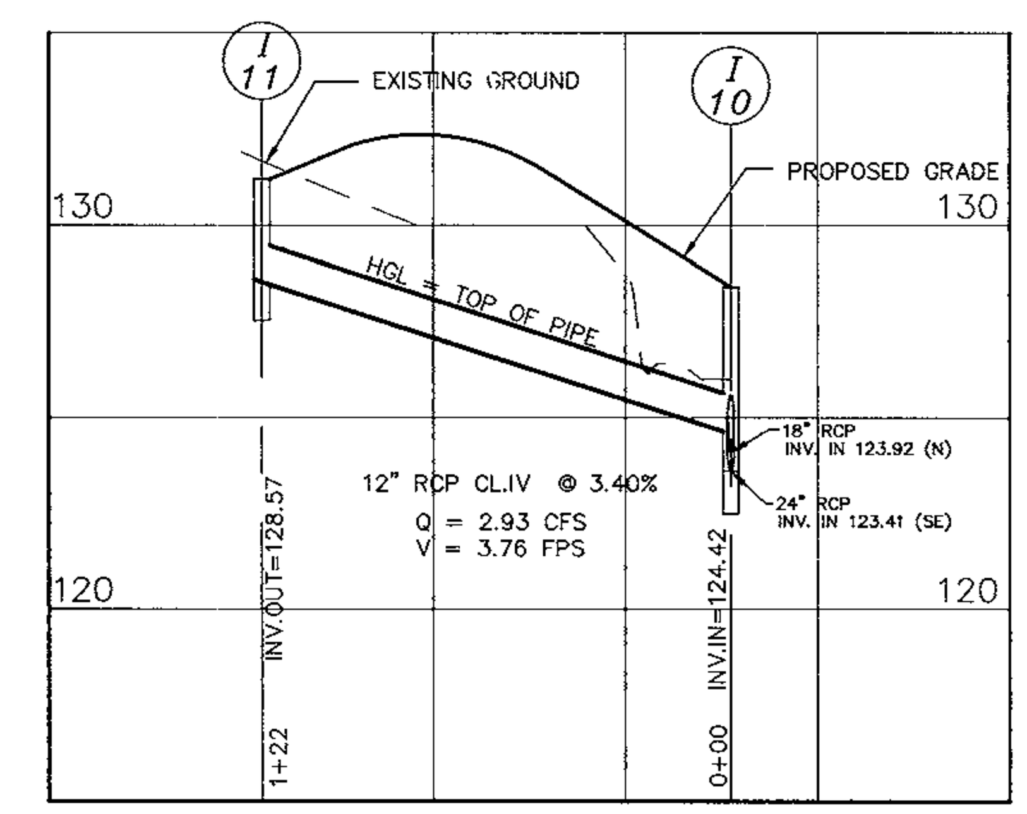
M-2 TO I-2

SCALE: HOR.1"=50'
VER.1"=5"



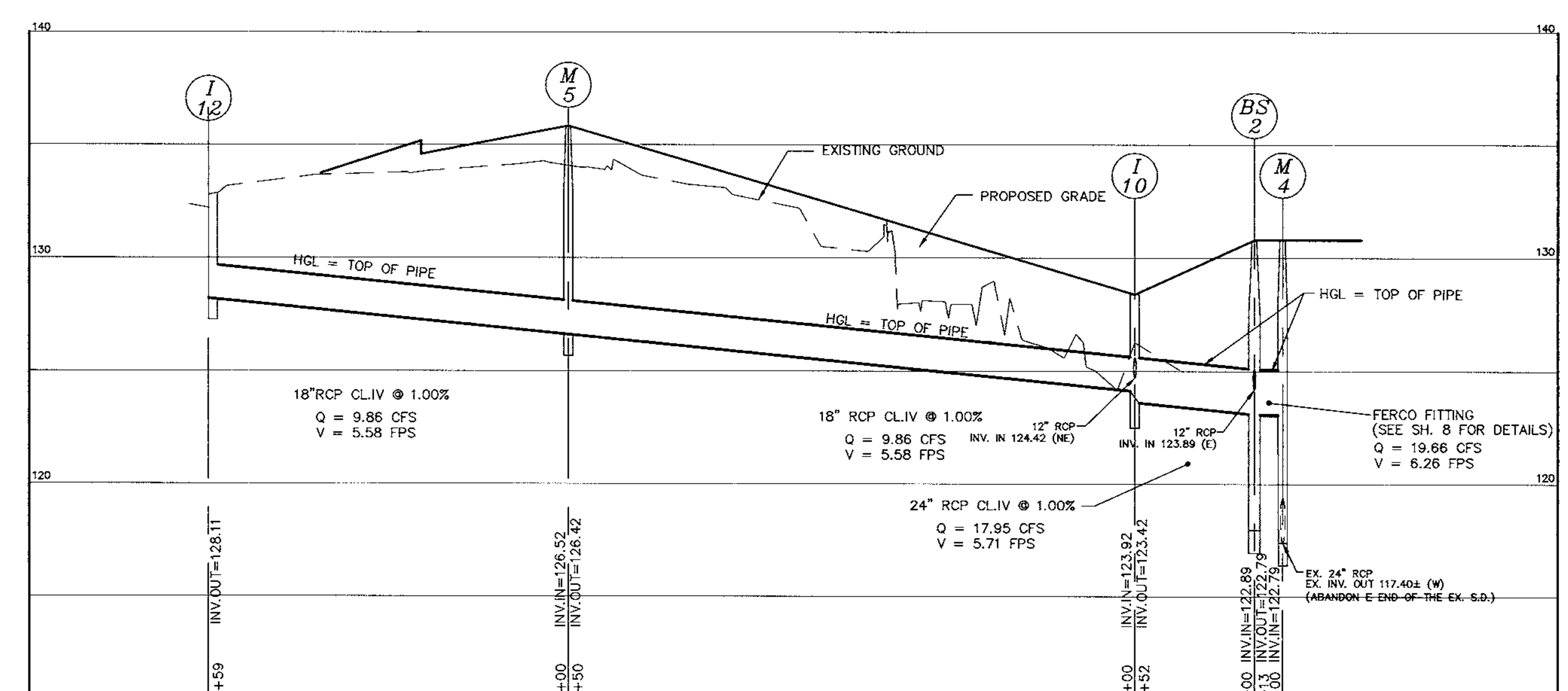
I-9 TO BS-2

SCALE: HOR.1"=50'
VER.1"=5"



I-11 TO 1-10

SCALE: HOR.1"=50'
VER.1"=5"



I-12 TO M-4

SCALE: HOR.1"=50'
VER.1"=5"

STRUCTURE SCHEDULE

NO.	LOCATION*	TOP**	INV. IN	INV. OUT	COMMENTS
I-1	N 558,550.45 E 1,388,416.24	130.00	117.03	116.93	DOUBLE TYPE 'S' COMB. INLET (STD. SD-4.34) - SUMP
I-2	N 558,603.04 E 1,388,566.82	130.40	------	127.65	TYPE 'S' INLET (STD. SD-4.22) - SUMP
I-3	N 558,944.18 E 1,388,557.28	134.20	122.79	122.69	TYPE 'S' COMB. INLET (STD. SD-4.32) - SUMP
I-4	N 559,066.51 E 1,388,501.59	134.20	124.19	124.09	TYPE 'E' INLET (STD. SD-4.21) - SUMP
I-5	N 559,148.43 E 1,388,436.45	134.20	125.52	125.42	TYPE 'E' INLET (STD. SD-4.21) - SUMP
I-6	N 559,234.17 E 1,388,385.19	134.20	126.77	126.52	TYPE 'E' INLET (STD. SD-4.21) - SUMP
I-7	N 559,263.19 E 1,388,292.29	134.20	129.97	129.72	TYPE 'E' INLET (STD. SD-4.21) - SUMP
I-8	N 559,346.79 E 1,388,241.98	134.20	----	130.95	TYPE 'E' INLET (STD. SD-4.21) - SUMP
I-9	N 558,958.88 E 1,388,213.52	131.75	----	129.25	TYPE 'S' INLET (STD. SD-4.22) - SUMP
I-10	N 558,978.30 E 1,388,109.49	129.65	124.42 (NE) 123.92 (N)	123.42	DOUBLE TYPE 'S' INLET (STD. SD-4.01) - SUMP
I-11	N 559,094.06 E 1,388,162.77	131.20	----	128.70	TYPE 'S' INLET (STD. SD-4.22) - SUMP
I-12*	N 559,338.88 E 1,387,919.93	132.00	----	128.40	TYPE 'A-10' INLET (STD. SD-4.02) - SUMP
M-1	N 558,540.95 E 1,388,383.90	123.60	116.43	118.54	MANHOLE (STD. G-5.01)
M-2	N 558,656.17 E 1,388,477.65	133.12	118.59 (N) 120.32 (E)	118.49	MANHOLE (STD. G-5.01)
M-3	N 558,835.47 E 1,388,584.48	136.15	123.59	123.09	MANHOLE (STD. G-5.01)
M-4	N 558,945.77 E 1,388,150.94	130.80	122.79	117.40±	MANHOLE (STD. G-5.01)
M-5	N 559,199.60 E 1,387,997.20	133.12	120.66 (N) 122.41 (E)	121.39	MANHOLE (STD. G-5.01)
BS-1	N 558,544.98 E 1,388,395.73	123.80	116.70	116.60	BAYSAVER 5K SYSTEM
BS-2	N 558,935.55 E 1,388,142.91	131.00	123.79 (NE) 122.89 (W)	122.79	BAYSAVER 3K SYSTEM
ES1	N 558,528.49 E 1,388,348.71	-----	108.00	108.00	CONCRETE END SECTION (STD. SD-5.51)

NOTE: LOCATION SHOWN IS AT CENTER OF INLET.
* LOCATION SHOWN IS CENTER AT FACE OF CURB.

OWNER/DEVELOPER

ALBAN TRACTOR CO., INC.
P. O. BOX 9595
BALTIMORE, MARYLAND 21237
(410) 686-7777
ATTN: CHUCK WITMER

STATE OF MARYLAND — PROFESSIONAL ENGINEER (seal) 9/10/99

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 9/24/99
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/4/99
DIRECTOR — DATE 10/8/99

98014/DWG/NEW-SDP/1105

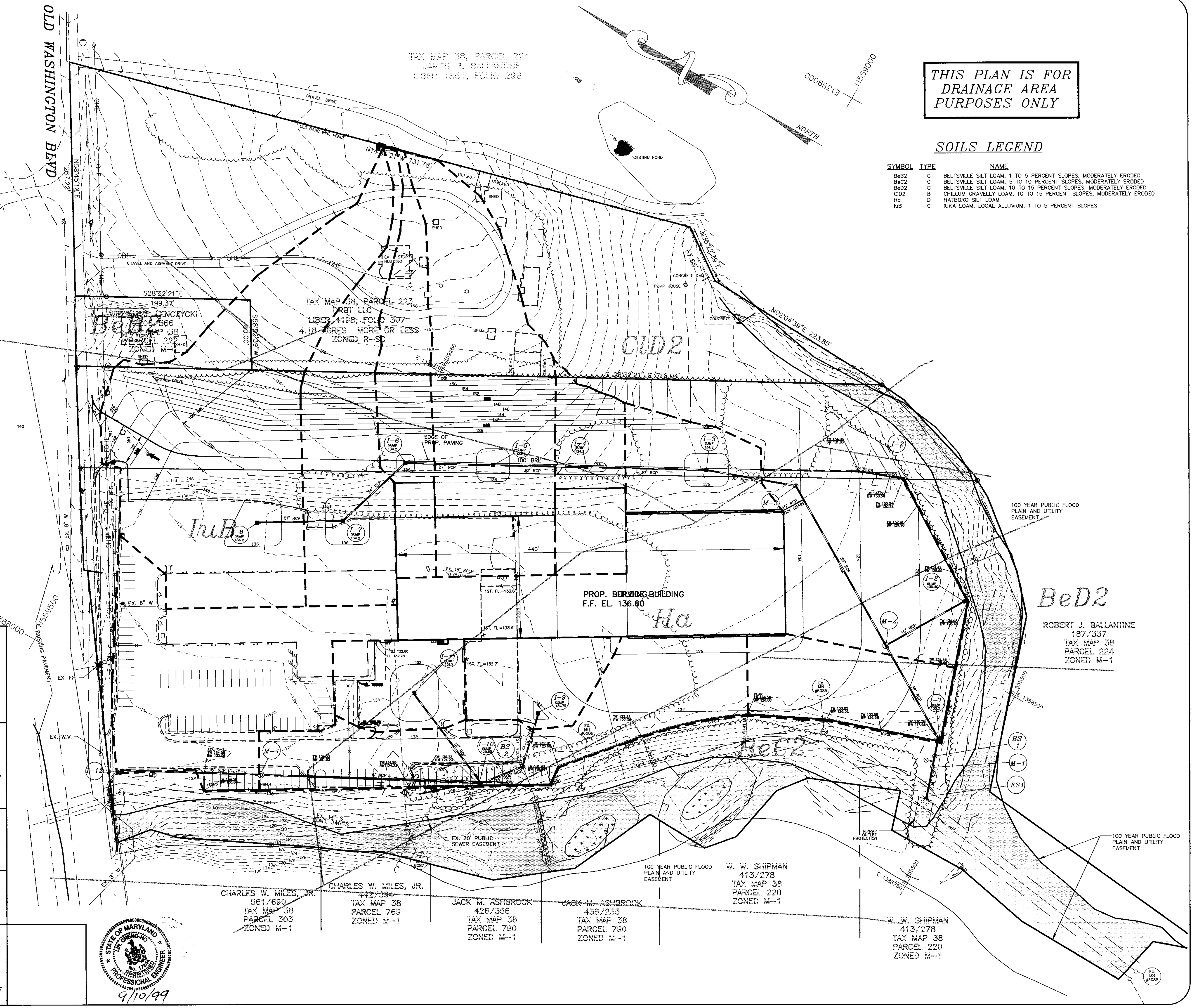
project	date
98014	SEP. 1999
illustration	engineering
FCL/RI	FCL
scale	approval
1" = 50'	JH

no.	description / revisions	date

TAX MAP 38, PARCELS 221 & 524
ALBAN TRACTOR
FIRST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
STORMDRAIN AND SHC PROFILES

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

SDP 98 139



THIS PLAN IS FOR DRAINAGE AREA PURPOSES ONLY

SOILS LEGEND

SYMBOL	TYPE	NAME
BeB2	C	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BeC2	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED
BeD2	C	BELTSVILLE SILT LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED
ClD2	B	CHILLUM GRAVELLY LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED
Ha	D	HATBORO SILT LOAM
IuB	C	IUKA LOAM, LOCAL ALLUVIUM, 1 TO 5 PERCENT SLOPES

DEVELOPERS CERTIFICATE

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

[signature] 9/7/99
SIGNATURE OF DEVELOPER — DATE

JAMES C. ALBAN IV
PRINTED NAME OF DEVELOPER

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWEDGE OF THE SITE CONDTIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

[signature] 9/10/99
SIGNATURE OF ENGINEER — DATE

CHENG-HO LIN
PRINTED NAME OF ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

USDA - NATURAL RESOURCE CONSERVATION SERVICE — DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] 9/24/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE

Cindy Hamilton 10/4/99
CHIEF, DIVISION OF LAND DEVELOPMENT ~~AND RESEARCH~~ — DATE

[signature] 10/4/99
DIRECTOR — DATE

98014/DWG/NEWSDP/DAM

STATE OF MARYLAND — CHENG-HO LIN — No. 17... — REGISTERED PROFESSIONAL ENGINEER
9/10/99

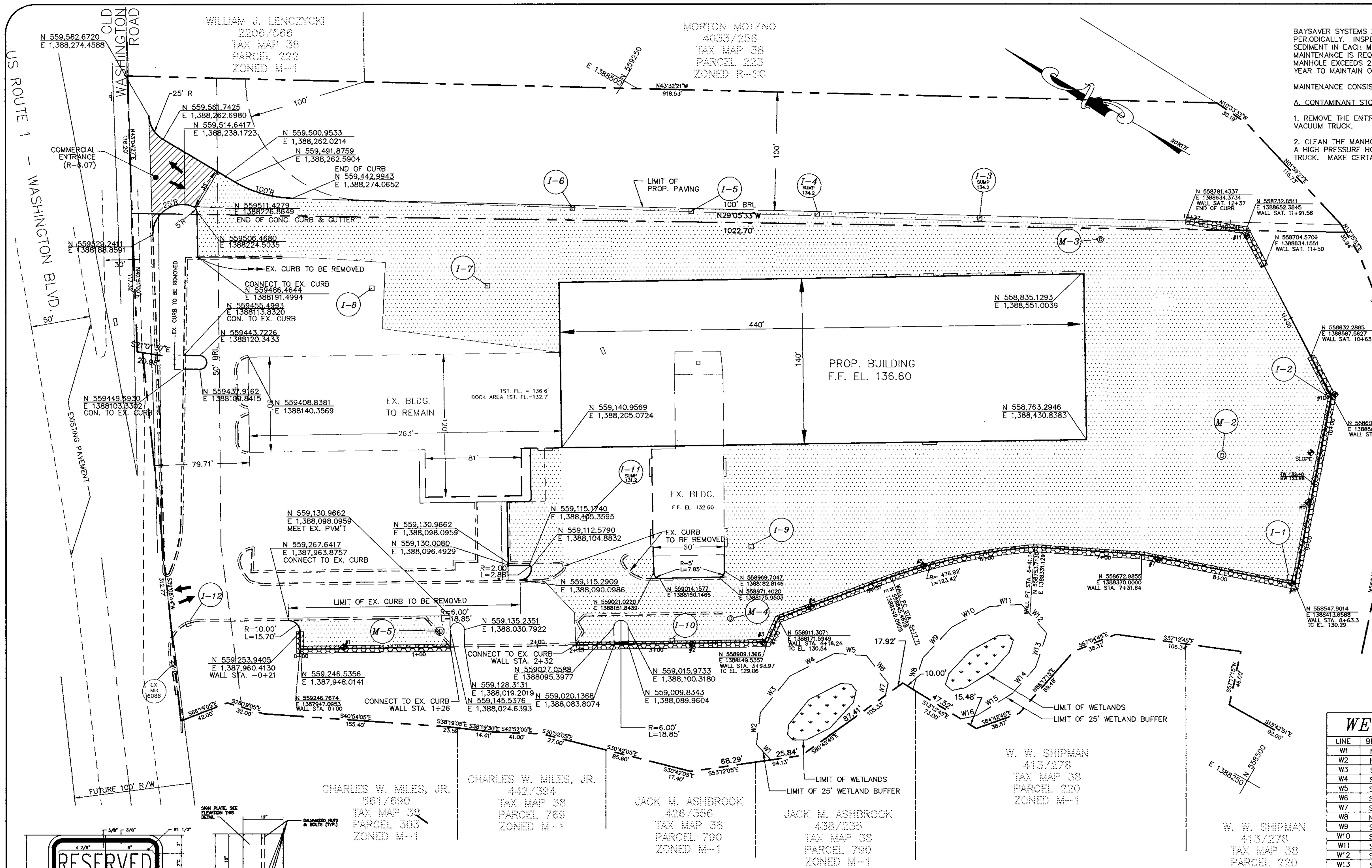
project	date	illustration	engineering	scale	approval
98014	SEP. 1999	SD/KR	FCL	1" = 50'	RJH

no.	description	date
	revisions	

TAX MAP 38, PARCEL 221 & 524
ALBAN TRACTOR
FIRST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
DRAINAGE AREA MAP

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

SDP 98-139



PAVING LAYOUT PLAN

SCALE: 1" = 50'

NOTE: GABION WALL STATIONING IS AT THE BACK OF THE PROPOSED.

WETLAND	
LINE	BEARING & DISTANCE
W1	N17°01'57"E 17.93'
W2	N67°00'11"E 27.34'
W3	S81°03'15"E 39.69'
W4	S56°56'24"E 42.13'
W5	S26°04'55"E 27.06'
W6	S22°10'45"W 29.79'
W7	S72°56'06"W 10.39'
W8	N77°57'03"E 27.76'
W9	S76°49'48"E 35.75'
W10	S58°39'45"E 36.20'
W11	S33°52'57"E 26.95'
W12	S18°47'56"W 32.46'
W13	S78°10'25"W 30.13'
W14	N78°17'50"W 29.49'
W15	N61°59'32"W 35.91'
W16	N41°13'14"W 13.43'

BAYSAVER MAINTENANCE

BAYSAVER SYSTEMS MUST BE INSPECTED AND MAINTAINED PERIODICALLY. INSPECTION IS MADE BY CHECKING THE DEPTH OF SEDIMENT IN EACH MANHOLE WITH A GRADE STICK OR SIMILAR DEVICE. MAINTENANCE IS REQUIRED WHEN THE SEDIMENT DEPTH IN EITHER MANHOLE EXCEEDS 2 FEET. MINIMUM INSPECTION IS REQUIRED TWICE A YEAR TO MAINTAIN OPERATION AND FUNCTION OF BAYSAVER.

MAINTENANCE CONSISTS OF THE FOLLOWING:

A. CONTAMINANT STORAGE MANHOLE

1. REMOVE THE ENTIRE VOLUME OF THE CONTAMINATED WATER BY VACUUM TRUCK.

2. CLEAN THE MANHOLE WALLS AND FLUSH OUT THE MANHOLE USING A HIGH PRESSURE HOSE AND REMOVE FLUSHING WATER BY VACUUM TRUCK. MAKE CERTAIN MANHOLE IS CLEAN.

B. PRIMARY SEPARATION MANHOLE

1. USING A SUBMERSIBLE PUMP, PUMP THE CLEAN WATER FROM THE CENTER OF THE MANHOLE DIRECTLY INTO THE EMPTY STORAGE MANHOLE UNTIL THE WATER LEVEL FALLS TO 1 FOOT ABOVE THE SEDIMENT LAYER.

2. REMOVE THE SETTLED SEDIMENT AND REMAINING WATER BY VACUUM TRUCK.

3. CLEAN THE MANHOLE WALLS AND FLUSH OUT THE MANHOLE USING A HIGH PRESSURE HOSE AND REMOVE FLUSHING WATER BY VACUUM TRUCK. MAKE CERTAIN MANHOLE IS CLEAN.

4. CONTAMINATED MATERIAL REMOVED FROM THE MANHOLES MUST BE DISPOSED OF RESPONSIBLY AND LEGALLY BY THE OPERATOR OF THE VACUUM TRUCK.

BAYSAVER INSTALLATION INSTRUCTIONS

1. EXCAVATION MUST PROVIDE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO SEPARATOR MANHOLE AND BAYSAVER UNIT. INSTALL PRECAST DROP STRUCTURES ON SOLID GROUND AS VERIFIED BY A GEOTECHNICAL ENGINEER.

2. VERIFY THE SUBGRADE ELEVATION AGAINST THE MANHOLE DIMENSIONS AND CONNECTING STORM DRAIN INVERTS.

3. MAKING SURE THE BASES ARE LEVEL AND THE STORAGE MANHOLE OPENINGS ARE ALIGNED WITH THE SEPARATOR UNIT, INSTALL PRIMARY AND STORAGE MANHOLES. INSTALL RUBBER GASKETS ON BASE UNITS AND COAT WITH LUBRICATING GREASE. INSTALL ADDITIONAL MANHOLE SECTIONS AS REQUIRED. SEAL LIFT HOLES WITH NON-SHRINK GROUT.

4. BACKFILL BASE SECTIONS OF MANHOLES TO INVERT OF STORAGE MANHOLE CONNECTING PIPES. USING APPROVED BACKFILL MATERIAL, BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL AND COMPACTION SHOULD BE MONITORED BY A GEOTECHNICAL ENGINEER.

5. INSTALL BAYSAVER SEPARATOR UNIT AND CONNECTING PIPES. SEAL ALL CONNECTING JOINTS AND INSTALL SEPARATOR UNIT/STORM DRAIN JOINT COLLAR. CUT EXCESS LENGTH OFF CONNECTING PIPES INSIDE STORAGE MANHOLE.

6. BACKFILL SEPARATOR UNIT AND MANHOLES. AREAS NOT ACCESSIBLE TO COMPACTION EQUIPMENT MUST BE BACKFILLED WITH LEAN CONCRETE OR FLOWABLE FILL.

7. INSTALL AND SET MANHOLE COVER GRADE ADJUSTMENT RINGS AS NECESSARY.

8. INSTALL AND SET MANHOLE FRAME AND COVER UNITS.

BAYSAVER GENERAL CONSTRUCTION NOTES

1. ALL WORK MUST BE DONE WITH REGARD FOR THE SAFETY OF THE CONSTRUCTION CREW.

2. ALL WORK AND MATERIALS MUST COMPLY WITH APPLICABLE STATE AND LOCAL REGULATIONS.

3. KNOW THE LOCATION AND DEPTH OF ANY UNDERGROUND UTILITIES BEFORE EXCAVATION BEGINS.

BAYSAVER SEPARATION SYSTEM – BS1
SEPARATOR UNIT ORDER FORM

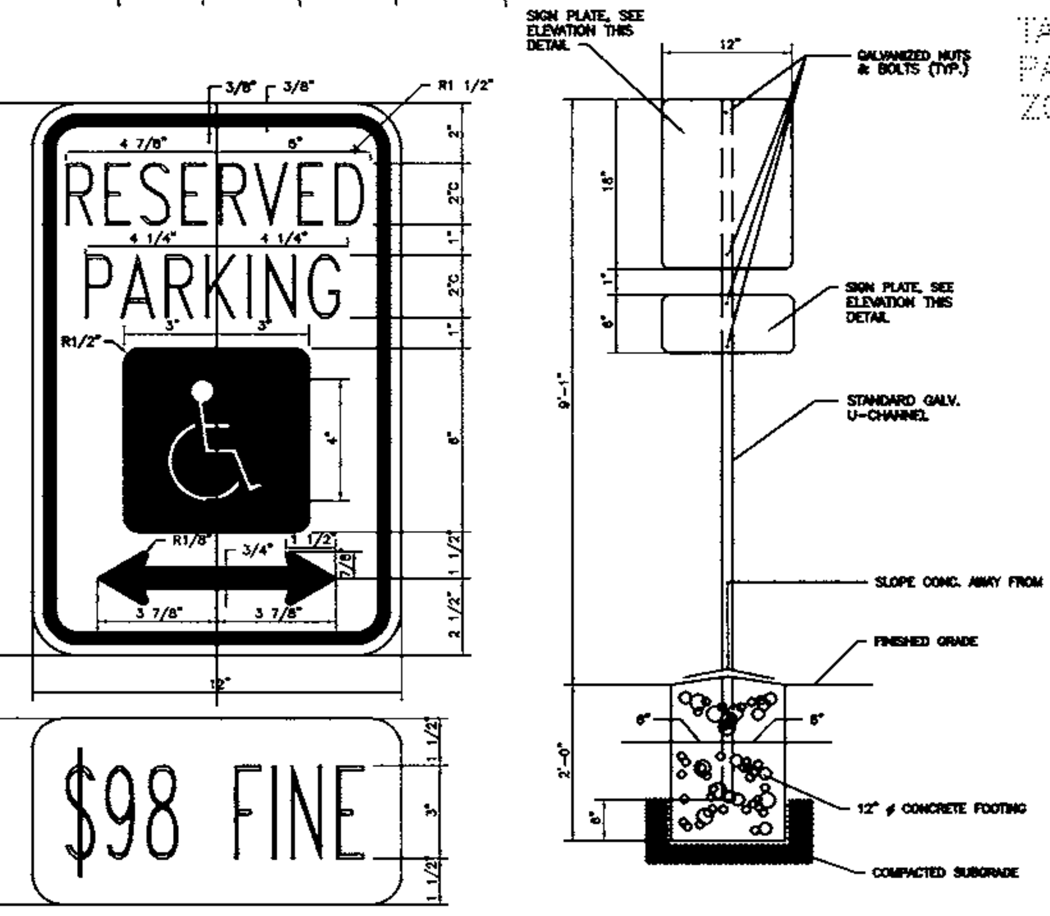
PROJECT: ALBAN TRACTOR CO., INC.
ADDRESS: P. O. BOX 9595, BALTIMORE, MARYLAND 21237
DESIGNER: MILDENBERG,BOENDER & ASSOC., INC.
CONTACT: FRANK C. LIN
PHONE: (410) 997-0296
FAX: (410) 997-0298
DELIVERY DATE:
OWNER:
CONTACT:
ADDRESS:
CONTRACTOR:
CONTACT:
PHONE:
FAX:

SEPARATOR UNIT MODEL: 5K

MANHOLE SPECIFICATIONS:
PRIMARY MANHOLE DIAMETER: 72"
STORAGE MANHOLE DIAMETER: 72"
FLOOR ELEVATIONS
PRIMARY MANHOLE: 108.60
STORAGE MANHOLE: 108.60
PRIMARY MANHOLE INVERT ELEVATIONS
SEPARATOR UNIT: 116.60
INLET PIPE(S): 36" RCP (IN) 36" RCP (OUT)
MANHOLE COVER ELEVATIONS
PRIMARY MANHOLE: 123.80
STORAGE MANHOLE: 123.80

36" RCP 6' R 36" RCP

FOR QUESTIONS, PRICES, OR TECHNICAL SUPPORT, PLEASE CONTACT BaySaver, Inc. at (301) 829-6119

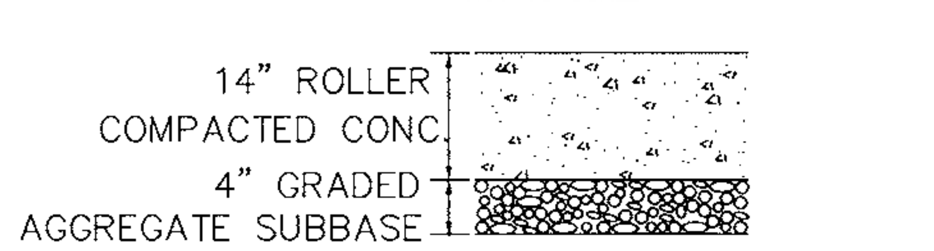


COLORS:
LEGEND AND BORDER – GREEN
WHITE SYMBOL ON BLUE BACKGROUND
BACKGROUND – WHITE

NOTE : PROVIDE ONE SIGN AND POST PER HANDICAPPED PARKING SPACE. SEE PLAN.

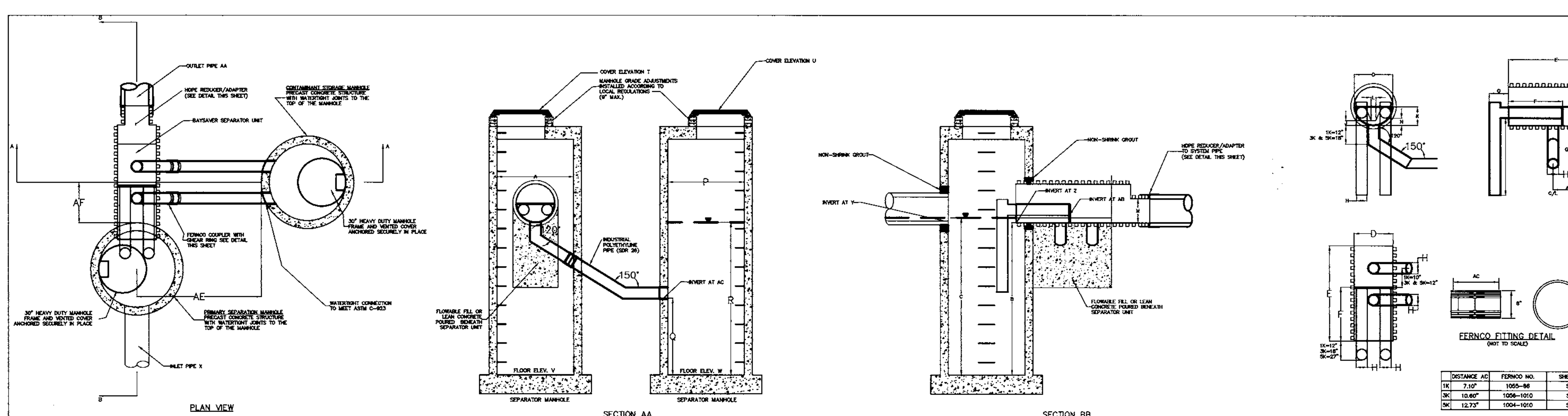
HANDICAPPED SIGN AND POST

NOT TO SCALE



TYPICAL PAVING SECTION

NOT TO SCALE



	DISTANCE AC	FERNCO NO.	SHEAR RING
1K	7.10"	1055-86	SR-27
3K	10.60"	1056-1010	SR-39
5K	12.73"	1004-1010	SR-44

BAYSAVER DETAILS

NOT TO SCALE

BAYSAVER SEPARATION SYSTEM – BS2
SEPARATOR UNIT ORDER FORM

PROJECT: ALBAN TRACTOR CO., INC.
ADDRESS: P. O. BOX 9595, BALTIMORE, MARYLAND 21237
DESIGNER: MILDENBERG,BOENDER & ASSOC., INC.
CONTACT: FRANK C. LIN
PHONE: (410) 997-0296
FAX: (410) 997-0298
DELIVERY DATE:
OWNER:
CONTACT:
ADDRESS:
CONTRACTOR:
CONTACT:
PHONE:
FAX:

SEPARATOR UNIT MODEL: 3K

MANHOLE SPECIFICATIONS:
PRIMARY MANHOLE DIAMETER: 60"
STORAGE MANHOLE DIAMETER: 60"
FLOOR ELEVATIONS
PRIMARY MANHOLE: 114.78
STORAGE MANHOLE: 114.78
PRIMARY MANHOLE INVERT ELEVATIONS
SEPARATOR UNIT: 122.78
INLET PIPE(S): 12" & 24" RCP IN 24" RCP OUT
MANHOLE COVER ELEVATIONS
PRIMARY MANHOLE: 128.50±
STORAGE MANHOLE: 129.70±

24" RCP 5' R 24" RCP 12" RCP

FOR QUESTIONS, PRICES, OR TECHNICAL SUPPORT, PLEASE CONTACT BaySaver, Inc. at (301) 829-6119

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — 9/24/99 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT ~~AND RESEARCH~~ — 10/4/99 DATE

DIRECTOR — 10/4/99 DATE

STATE OF MARYLAND LIN, CHENG-HO REGISTERED PROFESSIONAL ENGINEER 9/10/99

OWNER/DEVELOPER

ALBAN TRACTOR CO., INC.
P. O. BOX 9595
BALTIMORE, MARYLAND 21237
(410) 686-7777
ATTN: CHUCK WITMER

98014/DWG/NEWSDP/MISC

project	date
98014	SEP. 1999
illustration	engineering
FCL	FCL
scale	approval
AS SHOWN	JH

no. | description | date — revisions

TAX MAP 38, PARCEL 221 & 524
ALBAN TRACTOR
FIRST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
PAVING & MISCELLANEOUS DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

SDP 98.139

Project Name Alban Tractor-Gabion Wall, STA. 0+40 — Boring # B-1
Location Elkridge, Maryland — Job # 98510A

SAMPLER — Datum — Hammer Wt. — Lbs. — Hole Diameter — Foreman
Surf. Elev. — Hammer Drop — Inches — Rock Core Dia. — Inspector: Bryan Kirk
Date Started: 12-09-98 — Pipe Size — Inches OD — Boring Method: Hand Auger — Date Completed: 12-09-98

D.C.P.

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE Blows/1.75"	SAMPLE NO.	SAMPLE REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					STA. 0+40
	Topsoil	1"						
	Brown dry sandy silt with gravel				20-23-23-23	1		1" Topsoil
		18"	1					No groundwater encountered
	Hand auger refusal at 18"		2					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. · PT-PRESSED SHELBY TUBE · CA-CONTINUOUS FLIGHT AUGER · RC-ROCK CORE
SAMPLE CONDITIONS: D-DISINTEGRATED · I-INTACT · U-UNDISTURBED · L-LOST
GROUND WATER DEPTH: AT COMPLETION Dry FT. · AFTER ____ FT. · AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS · CFA-CONT. FLIGHT AUGERS · DC-DRIVING CASING · MD-MUD DRILLING

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

Project Name Alban Tractor Gabion Wall STA. 3+30 — Boring # B-2
Location Elkridge, Maryland — Job # 98510A

SAMPLER — Datum — Hammer Wt. — Lbs. — Hole Diameter — Foreman
Surf. Elev. — Hammer Drop — Inches — Rock Core Dia. — Inspector: Bryan Kirk
Date Started: 12-09-98 — Pipe Size — Inches OD — Boring Method: Hand Auger — Date Completed: 12-09-98

D.C.P.

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE Blows/1.75"	SAMPLE NO.	SAMPLE REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					STA. 3+30
	Topsoil	2"			10-14-23	1		2" Topsoil
	Brown dry sandy silt with rock fragments		1					No groundwater encountered
		2.5'	2		17-30	2		
	Hand auger refusal at 2.5'		3					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. · PT-PRESSED SHELBY TUBE · CA-CONTINUOUS FLIGHT AUGER · RC-ROCK CORE
SAMPLE CONDITIONS: D-DISINTEGRATED · I-INTACT · U-UNDISTURBED · L-LOST
GROUND WATER DEPTH: AT COMPLETION Dry FT. · AFTER ____ FT. · AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS · CFA-CONT. FLIGHT AUGERS · DC-DRIVING CASING · MD-MUD DRILLING

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

Project Name Alban Tractor-Gabion Wall, STA. 3+90 — Boring # B-3
Location Elkridge, Maryland — Job # 98510A

SAMPLER — Datum — Hammer Wt. — Lbs. — Hole Diameter — Foreman
Surf. Elev. — Hammer Drop — Inches — Rock Core Dia. — Inspector: Bryan Kirk
Date Started: 12-09-98 — Pipe Size — Inches OD — Boring Method: Hand Auger — Date Completed: 12-09-98

D.C.P.

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE Blows/1.75"	SAMPLE NO.	SAMPLE REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					STA. 3+90
	Topsoil	2"			9-12-16-18	1		
	Brown, dry sandy silt with rock fragments	8"						2" Topsoil
	Tan silty sand and reddish brown sandy clay		1					
			2		11-12-12-14	2		No groundwater encountered
			3					
			4					
		5.0'	5		18-43	3		
	Bottom of Hole at 5.0'		6					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. · PT-PRESSED SHELBY TUBE · CA-CONTINUOUS FLIGHT AUGER · RC-ROCK CORE
SAMPLE CONDITIONS: D-DISINTEGRATED · I-INTACT · U-UNDISTURBED · L-LOST
GROUND WATER DEPTH: AT COMPLETION Dry FT. · AFTER ____ FT. · AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS · CFA-CONT. FLIGHT AUGERS · DC-DRIVING CASING · MD-MUD DRILLING

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

Project Name Alban Tractor-Gabion Wall, STA. 4+75 — Boring # B-4
Location Elkridge, Maryland — Job # 98510A

SAMPLER — Datum — Hammer Wt. — Lbs. — Hole Diameter — Foreman
Surf. Elev. — Hammer Drop — Inches — Rock Core Dia. — Inspector: Bryan Kirk
Date Started: 12-09-98 — Pipe Size — Inches OD — Boring Method: Hand Auger — Date Completed: 12-09-98

D.C.P.

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE Blows/1.75"	SAMPLE NO.	SAMPLE REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					STA. 4+75
	Topsoil	3"			10-16-21-21	1		
	Brown, dry sandy silt with rock		1					3" Topsoil
	Hand auger refusal at 18"	18"						
			2					No groundwater encountered
			3					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. · PT-PRESSED SHELBY TUBE · CA-CONTINUOUS FLIGHT AUGER · RC-ROCK CORE
SAMPLE CONDITIONS: D-DISINTEGRATED · I-INTACT · U-UNDISTURBED · L-LOST
GROUND WATER DEPTH: AT COMPLETION Dry FT. · AFTER ____ FT. · AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS · CFA-CONT. FLIGHT AUGERS · DC-DRIVING CASING · MD-MUD DRILLING

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

Project Name Alban Tractor-Gabion Wall, STA. 5+65 — Boring # B-5
Location Elkridge, Maryland — Job # 98510A

SAMPLER — Datum — Hammer Wt. — Lbs. — Hole Diameter — Foreman
Surf. Elev. — Hammer Drop — Inches — Rock Core Dia. — Inspector: Bryan Kirk
Date Started: 12-10-98 — Pipe Size — Inches OD — Boring Method: Hand Auger — Date Completed: 12-10-98

D.C.P.

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE Blows/1.75"	SAMPLE NO.	SAMPLE REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					STA. 5+65
	Topsoil	1"			5-7-12-13	1		
	Red and brown, dry sandy clay		1					1" Topsoil
		2.5'	2		34	2		No groundwater encountered
	Hand Auger refusal at 2.5'		3					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. · PT-PRESSED SHELBY TUBE · CA-CONTINUOUS FLIGHT AUGER · RC-ROCK CORE
SAMPLE CONDITIONS: D-DISINTEGRATED · I-INTACT · U-UNDISTURBED · L-LOST
GROUND WATER DEPTH: AT COMPLETION Dry FT. · AFTER ____ FT. · AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS · CFA-CONT. FLIGHT AUGERS · DC-DRIVING CASING · MD-MUD DRILLING

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

Project Name Alban Tractor-Gabion Wall, STA. 6+65 — Boring # B-6
Location Elkridge, Maryland — Job # 98510A

SAMPLER — Datum — Hammer Wt. — Lbs. — Hole Diameter — Foreman
Surf. Elev. — Hammer Drop — Inches — Rock Core Dia. — Inspector: Bryan Kirk
Date Started: 12-10-98 — Pipe Size — Inches OD — Boring Method — Date Completed: 12-10-98

D.C.P.

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE Blows/1.75"	SAMPLE NO.	SAMPLE REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					STA. 6+65
	Topsoil	1.5"			13-29-30	1		
	Brown, dry, sandy silt with rock fragments	1.0'	1					1.5" Topsoil
	Hand auger refusal at 1.0'		2					No groundwater encountered
			3					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. · PT-PRESSED SHELBY TUBE · CA-CONTINUOUS FLIGHT AUGER · RC-ROCK CORE
SAMPLE CONDITIONS: D-DISINTEGRATED · I-INTACT · U-UNDISTURBED · L-LOST
GROUND WATER DEPTH: AT COMPLETION Dry FT. · AFTER ____ FT. · AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS · CFA-CONT. FLIGHT AUGERS · DC-DRIVING CASING · MD-MUD DRILLING

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

Project Name Alban Tractor-Gabion Wall, STA. 7+65 — Boring # B-7
Location Elkridge, Maryland — Job # 98510A

SAMPLER — Datum — Hammer Wt. — Lbs. — Hole Diameter — Foreman
Surf. Elev. — Hammer Drop — Inches — Rock Core Dia. — Inspector: Bryan Kirk
Date Started: 12-10-98 — Pipe Size — Inches OD — Boring Method: Hand Auger — Date Completed: 12-10-98

D.C.P.

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE Blows/1.75"	SAMPLE NO.	SAMPLE REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					STA. 7+65
	Topsoil	2"			7-16-25-28	1		
	Brown silty sand, some decomposed rock	1.0'	1					2" Topsoil
	Hand auger refusal at 1'		2					No groundwater encountered
			3					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. · PT-PRESSED SHELBY TUBE · CA-CONTINUOUS FLIGHT AUGER · RC-ROCK CORE
SAMPLE CONDITIONS: D-DISINTEGRATED · I-INTACT · U-UNDISTURBED · L-LOST
GROUND WATER DEPTH: AT COMPLETION Dry FT. · AFTER ____ FT. · AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS · CFA-CONT. FLIGHT AUGERS · DC-DRIVING CASING · MD-MUD DRILLING

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

Project Name Alban Tractor-Gabion Wall, STA. 8+65 — Boring # B-8
Location Elkridge, Maryland — Job # 98510A

SAMPLER — Datum — Hammer Wt. — Lbs. — Hole Diameter — Foreman
Surf. Elev. — Hammer Drop — Inches — Rock Core Dia. — Inspector: Bryan Kirk
Date Started: 12-10-98 — Pipe Size — Inches OD — Boring Method: Hand Auger — Date Completed: 12-10-98

D.C.P.

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE Blows/1.75"	SAMPLE NO.	SAMPLE REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					STA. 8+65
	Topsoil	1"			6-9-10-8	1		
	Brown silty sand with rock fragments some decomposed rock	1.5'	1					1" Topsoil
	Hand auger refusal at 1.5'		2					No groundwater encountered
			3					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. · PT-PRESSED SHELBY TUBE · CA-CONTINUOUS FLIGHT AUGER · RC-ROCK CORE
SAMPLE CONDITIONS: D-DISINTEGRATED · I-INTACT · U-UNDISTURBED · L-LOST
GROUND WATER DEPTH: AT COMPLETION Dry FT. · AFTER ____ FT. · AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS · CFA-CONT. FLIGHT AUGERS · DC-DRIVING CASING · MD-MUD DRILLING

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

Project Name Alban Tractor-Gabion Wall, STA. 9+50 — Boring # B-9
Location Elkridge, Maryland — Job # 98510A

SAMPLER — Datum — Hammer Wt. — Lbs. — Hole Diameter — Foreman
Surf. Elev. — Hammer Drop — Inches — Rock Core Dia. — Inspector: Bryan Kirk
Date Started: 12-10-98 — Pipe Size — Inches OD — Boring Method: Hand Auger — Date Completed: 12-10-98

D.C.P.

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE Blows/1.75"	SAMPLE NO.	SAMPLE REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					STA. 9+50
	Topsoil	1"			4-16-19-27	1		
	Brown dry sandy silt with rock fragments	2.0'	1					1" Topsoil
	Hand Auger refusal at 2'		2					No groundwater encountered
			3					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. · PT-PRESSED SHELBY TUBE · CA-CONTINUOUS FLIGHT AUGER · RC-ROCK CORE
SAMPLE CONDITIONS: D-DISINTEGRATED · I-INTACT · U-UNDISTURBED · L-LOST
GROUND WATER DEPTH: AT COMPLETION Dry FT. · AFTER ____ FT. · AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS · CFA-CONT. FLIGHT AUGERS · DC-DRIVING CASING · MD-MUD DRILLING

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

Project Name Alban Tractor-Gabion Wall, STA. 10+50 — Boring # B-10
Location Elkridge, Maryland — Job # 98510A

SAMPLER — Datum — Hammer Wt. — Lbs. — Hole Diameter — Foreman
Surf. Elev. — Hammer Drop — Inches — Rock Core Dia. — Inspector: Bryan Kirk
Date Started: 12-10-98 — Pipe Size — Inches OD — Boring Method: Hand Auger — Date Completed: 12-10-98

D.C.P.

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE Blows/1.75"	SAMPLE NO.	SAMPLE REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					STA. 10+50
	Topsoil	1"			11-13-12-12	1		
	Light brown sandy silt with some rock fragments		1					1" Topsoil
			2		11-11-12-11	2		No groundwater encountered
	Hand auger refusal at 3.0'	3.0'	3					
			4					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. · PT-PRESSED SHELBY TUBE · CA-CONTINUOUS FLIGHT AUGER · RC-ROCK CORE
SAMPLE CONDITIONS: D-DISINTEGRATED · I-INTACT · U-UNDISTURBED · L-LOST
GROUND WATER DEPTH: AT COMPLETION Dry FT. · AFTER ____ FT. · AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS · CFA-CONT. FLIGHT AUGERS · DC-DRIVING CASING · MD-MUD DRILLING

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

Project Name Alban Tractor-Gabion Wall, STA. 12+60 — Boring # B-11
Location Elkridge, Maryland — Job # 98510A

SAMPLER — Datum — Hammer Wt. — Lbs. — Hole Diameter — Foreman
Surf. Elev. — Hammer Drop — Inches — Rock Core Dia. — Inspector: Bryan kirk
Date Started: 12-10-98 — Pipe Size — Inches OD — Boring Method: Hand Auger — Date Completed: 12-10-98

D.C.P.

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE Blows/1.75"	SAMPLE NO.	SAMPLE REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					STA. 12+60
	Topsoil	1"			9-11-10-12	1		
	Brown dry sandy silt with rock fragments		1					1" Topsoil
	Hand auger refusal at 1.5'	1.5						
			2					No groundwater encountered
			3					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. · PT-PRESSED SHELBY TUBE · CA-CONTINUOUS FLIGHT AUGER · RC-ROCK CORE
SAMPLE CONDITIONS: D-DISINTEGRATED · I-INTACT · U-UNDISTURBED · L-LOST
GROUND WATER DEPTH: AT COMPLETION Dry FT. · AFTER ____ FT. · AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS · CFA-CONT. FLIGHT AUGERS · DC-DRIVING CASING · MD-MUD DRILLING

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

Location Elkridge, Maryland — Job # 98510B

SAMPLER — Datum — Hammer Wt. 140 — Lbs. — Hole Diameter 6" — Foreman: Palmer Stephens
Surf. Elev. — Hammer Drop 30 — Inches — Rock Core Dia. - — Inspector
Date Started: 12-17-98 — Pipe Size 2.0 — Inches OD — Boring Method HSA — Date Completed: 12-17-98

ELEV.	SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH SCALE	SAMPLE CON	SAMPLE BLOWS 6"	SAMPLE NO.	SAMPLE REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					
	Brown, gray, dry, medium dense to dense, clayey sand with traces gravel, wood and glass (SC) (Fill)			D	2-6-12	1	14"	0" Topsoil
				D	23-20-19	2	15"	No groundwater encountered while drilling
			5	D	11-11-11	3	16"	Caved in at 17.5' at Completion
				D	16-19-19	4	8"	Very hard augering From 12.0' to 19.5
	Dark gray, dry, very dense sand, gravel wood and topsoil (Fill)	9.5	10	D	11-51/6"	5	8"	Caved in at 17' after 24 hours
	Brown, gray and red, dry, very dense silty fine to medium sand little clay with trace mica (SM) trace roots in S-6	12.0	15	D	14-23-39	6	16"	
			20	D	28-32-51	7	18"	
	Brown, gray and red, dry, very dense silty fine to medium sand, little clay with trace mica (SM) trace roots in S-6 Bottom of Test Hole at 21.0'	21.0	25					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. · PT-PRESSED SHELBY TUBE · CA-CONTINUOUS FLIGHT AUGER · RC-ROCK CORE
SAMPLE CONDITIONS: D-DISINTEGRATED · I-INTACT · U-UNDISTURBED · L-LOST
GROUND WATER DEPTH: AT COMPLETION Dry FT. · AFTER 24 hr Dry FT. · AFTER ____ FT.
BORING METHOD: HSA-HOLLOW STEM AUGERS · CFA-CONT. FLIGHT AUGERS · DC-DRIVING CASING · MD-MUD DRILLING

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

DEVELOPERS CERTIFICATE

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE NATURAL RESOURCE CONSERVATION SERVICE.

SIGNATURE OF DEVELOPER — 9/12/99 DATE

JAMES C. ALBAN, IV
PRINTED NAME OF DEVELOPER

ENGINEER'S CERTIFICATE

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCE CONSERVATION SERVICE.

SIGNATURE OF ENGINEER — 9/12/99 DATE

CHENG-HO LIN
PRINTED NAME OF ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

USDA – NATURAL RESOURCE CONSERVATION SERVICE — DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — 9/23/99 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT — 10/1/99 DATE
DIRECTOR — 10/4/99 DATE

98014/DWG/NEW-SDP/BORING

STATE OF MARYLAND — PROFESSIONAL ENGINEER — 9/10/99

OWNER/DEVELOPER
ALBAN TRACTOR CO., INC.
P. O. BOX 9595
BALTIMORE, MARYLAND 21237
(410) 686-7777
ATTN: CHUCK WITMER

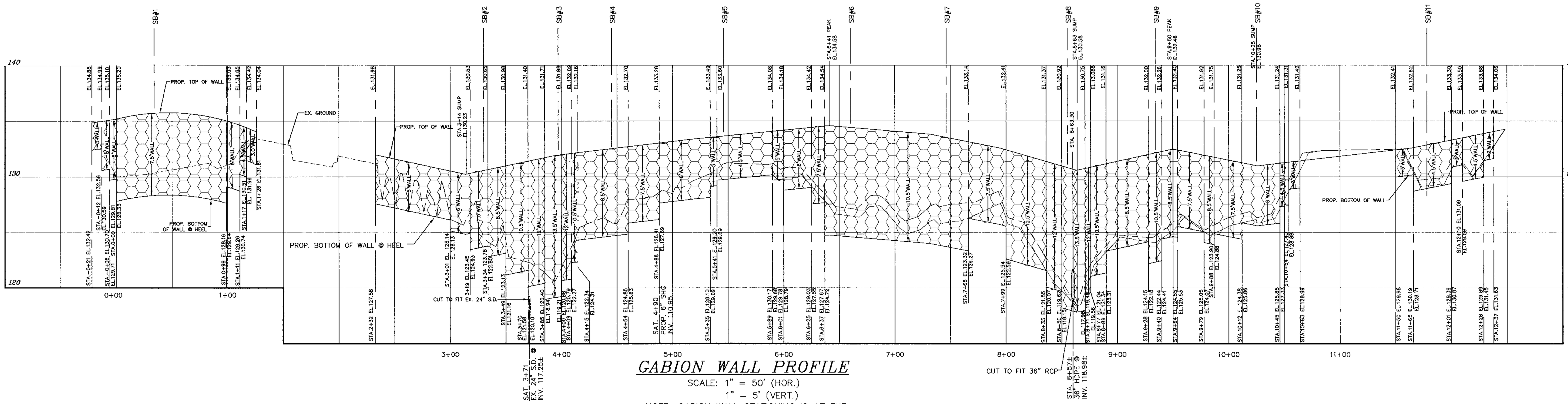
date: SEP. 99 | engineering: | approval: JH
project: 98014 | illustration: | FCL | scale: N.A.

date | description revisions | no.

TAX MAP 38, PARCELS 221 & 524
ALBAN TRACTOR
HOWARD COUNTY, MARYLAND
RECORD OF SOIL EXPLORATION
FIRST ELECTION DISTRICT

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax

SDP 98-139



GABION WALL PROFILE

SCALE: 1" = 50' (HOR.)
1" = 5' (VERT.)

NOTE: GABION WALL STATIONING IS AT THE BACK OF THE PROPOSED CURB.

GABION WALL SPECIFICATION & CONSTRUCTION NOTES

SECTION 000

PVC COATED GABIONS
January 1999

000.1 Description

This work shall consist of furnishing, assembling, and filling woven wire mesh baskets with rock to form gabions as specified in the contract to the dimensions, lines and grades shown on the plans, or as determined by the engineer. These specifications include gabions as manufactured by Maccaferri Gabions, Inc.

000.2 Materials

000.2.1 Woven Mesh Gabions

000.2.1.1 Wire (zinc):
* All test on the wire mesh must be performed prior to manufacturing the mesh.
(Tensile strength: both the wire used for the manufacture of gabions and the lacing wire, shall have a tensile strength of 54,039 to 68,259 psi (38–48 kg/mm2).
(Elongation: the test must be carried out on a sample at least 12 in. (30 cm) long. Elongation shall not be less than 12 % in accordance with ASTM A370–92.
(Zinc coating: minimum quantities of zinc according to ASTM A641–92, Class III soft temper coating.
(Adhesion of zinc coating: the adhesion of the zinc coating to the wire shall be such that, when the wire is wrapped six turns round on a mandrel having four times the diameter of the wire, it does not flake or crack when rubbing it with the bare fingers, in accordance with ASTM A641–92.

000.2.1.2 PVC (Polyvinyl Chloride) Coating
When specified in the plans:
(Specific gravity: 81–84 pcf (1.30–1.35 kg/dm3,) in accordance with ASTM D2287–92, Table 1
(Hardness: between 50 and 60 Shore D, according to ASTM D 2287–92;
(Tensile strength: not less than 2,986 psi (210 kg/cm2), according to ASTM D412–92;
(Modulus of elasticity: not less than 2,702 psi (190 kg/cm2), in accordance with ASTM D412–92;
(Weight loss: less than 5% after 24 hours at 221°F (105°C), according to ASTM D2287–92;
(Residual ashes: less than 2% according to ASTM D2124–62T;
(Abrasion resistance: the percentage of the weight loss shall be less than 12%, according to ASTM D1242–92.
(Creeping corrosion: max. penetration of corrosion of the wire from a square cut end shall be 1 in. (25 mm) when the specimen has been immersed for 2,000 hrs in a 5% solution HCl (hydrochloric acid 12 Be).
The accelerated aging tests are:
(Salt spray test: test period 3,000 hours, test method ASTM B117–94;
(Exposure to UV rays: test period 3,000 hours at 145°F (63°C), test method ASTM D1499–92a and ASTM G23–93 apparatus Type E;
(Exposure to high temperatures: test period 24 hours at 221°F (105°C), test method ASTM D1203–89 and ASTM D2287–92;
(Brittleness temperature: no higher than 15°F (– 9°C), or lower temperature when specified by the purchaser, when tested in accordance with ASTM D746.

The properties after aging tests shall be as follows:
(Appearance of coated mesh: no cracking, stripping or air bubbles, and no appreciable variation in color;
(Specific Gravity: variations shall not exceed 6%;
(Hardness: variations shall not exceed 10%;
(Tensile strength: variations shall not exceed 25%;
(Modulus of elasticity: variations shall not exceed 25%;
(Abrasion resistance: variations shall not exceed 10%;
(Brittleness temperature: shall not exceed + 64°F (+18°C);

000.2.1.3 Galvanized Gabion Mesh with PVC Sleeve 8 x 10 type
(Mesh Wire: Diameter – 0.106 inches (2.70 mm) plus PVC coating
(Selvedge Wire: Diameter – 0.134 inches (3.40 mm) plus PVC coating
(Mesh Opening: Nominal Dimension D 3.25 inches as per Fig. 1.

000.2.1.4 Galvanized Lacing Wire with PVC Sleeve, Internal Stiffeners for Gabions Only
Before PVC coating:
* Lacing wire: Diameter – 0.087 inches (2.20 mm)
* Wire: Diameter – 0.087 inches (2.20 mm)

000.2.1.5 Spenax Fasteners (Overlapping Fasteners):
* Overlapping fasteners may be used in lieu of lacing wire for basket assembly and installation. The spacing of the fasteners during all phases of assembly and installation shall be in accordance with spacing based on 1,400 lbs. pull apart resistance for galvanized mesh and with a nominal spacing of 100 mm (4 inches), and not to exceed 150 mm (6 inches).
* According to ASTM A313, Type 302, Class I. Tensile strength: 222,000 to 253,000 psi (156 – 178 kg/mm2) in Stainless Steel Fasteners (used with PVC coated baskets) – Diameter: 0.120 inch (3.05 mm), accordance with ASTM A313–92.
* Proper installation of rings: A properly formed Spenax fastener shall have a nominal overlap of one (1) inch after closure (Fig. 2).

000.2.2 Tolerances
* Wire: Zinc coating, in accordance with ASTM A641–92, Class III soft temper coating.
* Gabions: ± 5 % on the length, width, and height.
* Mesh opening: Tolerances on the hexagonal, double twisted wire mesh opening shall not exceed ± 10% on the nominal dimension D values (see Fig.1):

000.2.3 Fabrication
All baskets shall be of single unit construction made from non–raveling, double twisted, woven wire mesh. The front, base, back and lid of the gabions shall be woven into a single unit. The ends and diaphragm(s) shall be factory connected to the base. The lid may be a separate piece made of the same type mesh as the basket. All perimeter edges of the mesh forming the basket and top, or lid, shall be selvedged with selvage wire.
The gabion is divided into cells by means of diaphragms positioned at approximately 3 ft centers. The diaphragms shall be secured in position of the base so that no additional tying is necessary at the jobsite.

000.2.4 Rock
* The rock for gabions shall be hard, angular to round, durable and of such quality that they shall not disintegrate on exposure to water or weathering during the life of the structure. The size shall be such that a minimum of two layers of rock must be achieved when filling the gabions. Any rock smaller than the minimum size shall not be greater than 5% by weight; any rock greater than the maximum size shall not be greater than 5% by weight. The smallest dimension of any rock shall be larger than the smallest opening dimension of the gabion mesh.
* The minimum rock size for gabion mesh (8 x 10 cm) is four (4) inches (0.1 m) . For channel applications the maximum rock size shall not exceed two thirds (2/3) the thickness of the gabion lining. For non–hydraulic applications gabion rock is a nominal four (4) inches (0.1m) to eight (8) inches (0.2m).

000.3 Construction Requirements

000.3.1 Assembly
Gabions are supplied folded flat. Larger units may be supplied in rolls and packed in bundles. The units are assembled individually by erecting the sides, ends, and diaphragms, ensuring that all panels are in the correct position, and the tops of all sides are satisfactorily aligned. The four corners shall be connected first, followed by the internal diaphragms to the outside walls. All connections should use lacing wire or fasteners as previously described in Section 000.2.1.7, Section 000.2.1.8 and Section 000.2.1.9.

The procedure for using lacing wire consists of cutting a sufficient length of wire, and first looping and/or twisting the lacing wire to the wire mesh. Then proceed to lace with alternating single and double loops through every mesh opening (approximately every 150 mm or 6 inches) pulling each loop tight and finally securing the end of the lacing wire to the wire mesh by looping and/or twisting.

The installation of the fasteners shall be done in accordance with the manufacturer's recommendations as specified in Section 000.2.1.9.

000.3.2 Installation
After initial assembly, the gabion baskets are carried to their final position and are securely joined together along the vertical and top edges of their contact surfaces using the same connecting procedure(s) described in Section 000.3.1. Whenever a structure requires more than one layer, the upper empty baskets shall also be connected to the top of the lower layer along the front and back edges of the contact surface using the same connecting procedure(s) described in Section 000.3.1.

000.3.3 Filling
Baskets shall be filled with rock as specified in Section 000.2.4. During the filling operation some manual stone placement is required to minimize voids. The exposed faces of vertical structures may be carefully hand placed to give a neat, flat, and compact appearance. Care shall be taken when placing fill material to assure that the sheathing on the PVC coated baskets will not be damaged.

The cells shall be filled in stages so that local deformation may be avoided. That is, at no time shall any cell be filled to a depth exceeding 0.3 meter (1 foot) higher than the adjoining cell. It is also recommended to slightly overfill the baskets to allow for settlement of the rock. Behind gabion walls, compact the backfill material simultaneously to the same level as the filled gabions.

Well packed filling without undue bulging, and secure lacing and/or fastening, is essential in all structures.

000.3.4 Internal Connecting Wires
Internal connecting wires should be used when a structure requires layers of gabions to be stacked on top of each other. Internal Connecting Wires shall connect the exposed face of a cell to the opposite side of the cell. An exposed face is any side of a gabion cell that will be exposed or unsupported after the structure is completed. Lacing wire or prefabricated internal connecting wires may be used.

000.3.4.1 3 Feet High Gabions
3 feet high gabions shall be filled in three layers, 1 feet at a time. Connecting wires shall be installed after the placement of each layer, that is, at 1 feet high and 2 feet high.

000.3.4.2 1.5 Feet High Gabions
1.5 feet high gabions do not require connecting wires unless the baskets are used to build vertical structures. In some cases, these units shall be filled in two layers, 9 inches at a time. Connecting wires shall be installed after the placement of the first layer, which is at 9 inches high.

000.3.5 Lid Closing
Once the gabion baskets are completely full, the lids will be pulled tight until the lid meets the perimeter edges of the basket. The lid must then be tightly laced and/or fastened along all edges, ends and tops of diaphragm(s) in the same manner as described in Section 000.3.1.

000.3.6 Mesh cutting and folding
Where shown on the drawings or otherwise directed by the engineer, the basket mesh shall be cut, folded and fastened together to suit existing site conditions. The mesh must be cleanly cut and surplus mesh either folded back or overlapped so that it can be securely fastened together with lacing wire or fasteners in the manner described in Section 000.3.1. Any reshaped gabions shall be assembled, installed, filled and closed as specified in the previous sections.

000.4 Method of Measurement

000.4.1 The payment quantities for excavation shall be determined by the outside limits of the gabion structure. Quantities will be determined from cross sections and the linear distance, and paid for under the appropriate excavation bid items.

000.4.2 The quantity to be paid for "in place gabions" shall be the number of cubic meters or cubic yards of gabion baskets measured in their final position. Project conditions and material availability will determine the actual size of gabion baskets to be used.

000.4.3 Excavated material beyond the limits of the baskets shall be backfilled with gravel, crushed rock or other material approved by the engineer.

000.4.4 This bid price shall include the installed in place cost of all materials, equipment, and labor, including gabion baskets, rock, and backfill material.

000.5 Basis of Payment
Accepted gabions will be paid for at the unit price for each pay item included in the contract.

MACTEX
MX225 Nonwoven Geotextile

MACTEX MX225 is a polypropylene, staple fiber, needlepunched nonwoven geotextile. The fibers are needled to form a stable network that retain dimensional stability relative to each other. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils. MACTEX MX225 conforms to the property values listed below:

PROPERTY	TEST METHOD	TYPICAL VALUES 1 English	Metric
Mechanical			
Grab Tensile Strength	ASTM D4632	150 lbs.	665 N
Grab Elongation	ASTM D4632	50 %	50 %
Puncture Strength	ASTM D4833	95 lbs.	420 N
Mullen Burst	ASTM D3786	325 psi.	2240 kPa
Trapezoidal Tear	ASTM D4533	60 lbs.	265 N
Hydraulic			
Apparent Opening Size(AOS)	ASTM D4751	70 (US Std.Sieve)	0.212 mm
Permittivity, Y	ASTM D4491	1.30 sec−1	1.30 sec−1
Permeability, k = Y * t	ASTM D4491	0.24 cm/sec	0.24 cm/sec
Water Flow Rate	ASTM D4491	110 gpm/ft2	4480 l/min/m2
Endurance			
UV Resistance (%Retained @ 500 hours)	ASTM D4355	70%	70%

Notes:

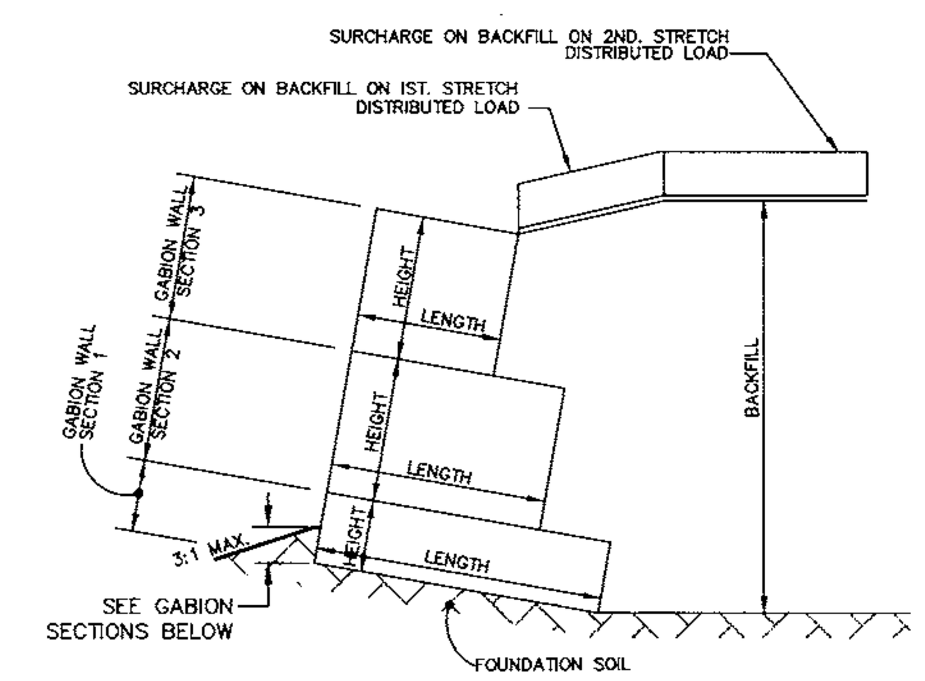
1 Values shown are typical or average roll values in weaker principal direction. Minimum average roll values represent a 95 percent confidence level, calculated as the mean minus two standard deviations.

Standard Roll Size:

12.5' x 300' = 417 Square Yards
15.0' x 300' = 500 Square Yards

NOTES:
1. CONTROLLED COMPACTED FILL SHALL BE PLACED OVER A STABLE, APPROVED SUBGRADE IN LOOSE LIFTS NOT EXCEEDING 8 TO 12 INCHES.
2. THE COMPACTION OF EACH LIFT SHALL BE CONFIRMED BY IN–PLACE DENSITY TESTING PRIOR TO THE PLACEMENT OF SUBSEQUENT LIFTS.
3. STRUCTURAL FILL SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROTOR METHOD (ASTM D 1557, AASHTO T–180).
4. FILL IN LANDSCAPE AREAS SHALL BE COMPACTED TO AT LEAST 85 PERCENT IN ORDER TO MINIMIZE SUBSIDENCE.
5. STRUCTURE FILL SHALL BE PROPERLY BENCHED INTO EXISTING SOILS.
6. THE CONSTRUCTION OF ALL RETAINING WALL SHALL BE PERFORMED UNDER THE OBSERVATION OF A MARYLAND REGISTERED PROFESSIONAL ENGINEER.

STATE OF MARYLAND LIN, CHENG-HO No. 17343 REGISTERED PROFESSIONAL ENGINEER 9/10/99



GABION WALL DESIGN PARAMETERS

NOT TO SCALE

DESIGN PARAMETERS:

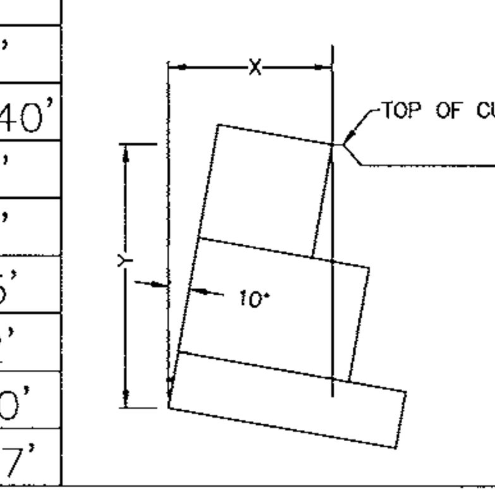
NO SURCHARGE ON WALL
PAVING SURCHARGE – 625lb/lf
(5' DISTRIBUTED LOAD @ 125lb/ft – PER HO. CO. DED)
WALL BATTER – 10 degrees
ROCKFILL UNIT WEIGHT – 156pcf
POROSITY OF GABIONS – 0.33

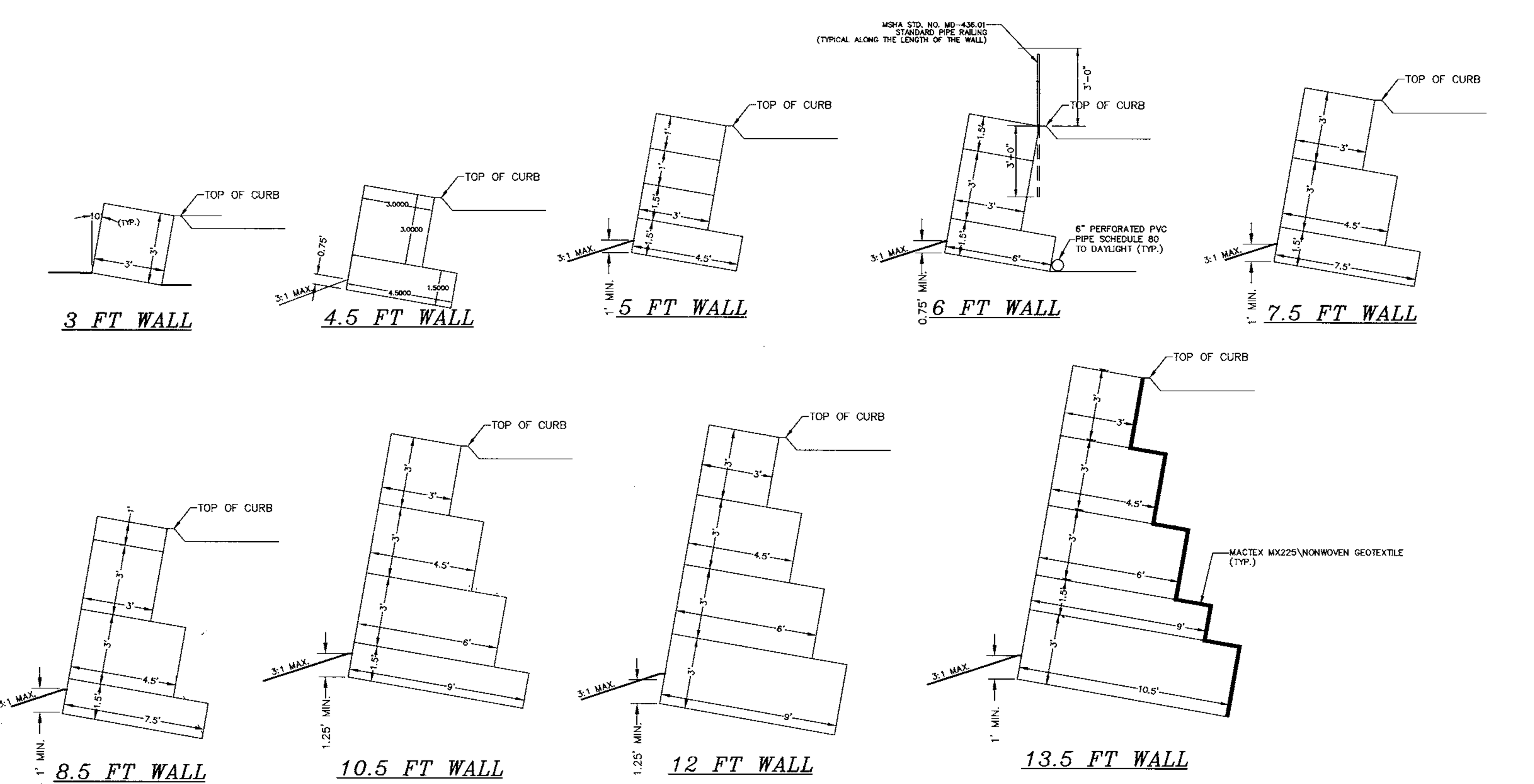
THE FOLLOWING PARAMETERS ARE PER GEOTECHNICAL ENGINEERING STUDY BY HILLIS–CARNES DATED JANUARY 4, 1999:

ALLOWABLE SOIL BEARING PRESSURE" 3,000 psf
SELECT GRANULAR BACKFILL:
ANGLE OF INTERNAL FRICTION = 30 degrees
CONHESION = 0 psf
BULK (wet) DENSITY = 120 pcf
SOILS AT THE FOUNDATION LEVEL:
ANGLE OF INTERNAL FRICTION = 28 degrees
COHESION = 0 psf
BULK (wet) DENSITY = 125 psf

GABION WALL METRICS

WALL HEIGHT	X	Y
3'	3.48'	2.43'
4.5'	3.74'	3.91'
5.0'	3.3.82'	4.40'
6'	4.00'	5.39'
7.5'	4.20'	6.87'
8.5'	4.43'	7.85'
10.5'	4.78'	9.82'
12'	5.04'	11.30'
13.5'	5.30'	12.77'





GABION WALL SECTIONS

NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 9/24/99

CHIEF, DIVISION OF LAND DEVELOPMENT ~~AND RESEARCH~~ — DATE 10/4/99

DIRECTOR — DATE 10/4/99

98014/DWG/NEWSDP/WALL

OWNER/DEVELOPER
ALBAN TRACTOR CO., INC.
P. O. BOX 9595
BALTIMORE, MARYLAND 21237
(410) 686-7777
ATTN: CHUCK WITMER

project	date
98014	SEP. 1999
illustration	engineering
FCL/SJD	FCL
scale	approval
AS SHOWN	JH

no.	description	date
	revisions	

TAX MAP 38, PARCEL 221 & 524
ALBAN TRACTOR
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

MISCELLANEOUS DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

SDP 98 139

Supply and Delivery:

Gabions are supplied folded flat, and packed in bundles. For ease in handling, the number of gabions per bundle varies according to the size of the gabion. The gabions are identified by color stripes and by labels indicating their code size and dimensions. The lacing wire is supplied in coils.

If contract specification requires additional wiring extra coils may be ordered at reasonable cost.

Stone:

Order only hard durable stone of the correct size range.

Assembly:

Remove a single gabion from the bundle and proceed to unfold it on a hard flat surface. Stretch the gabion and stamp out all kinks (See Fig. No. 1). Fold the front and back panels to a right angle by stepping on the base along the crease. Fold up the end panels and diaphragms and fasten them to the front and back panels using the heavy gauge wire projecting from the upper corners of each panel. This procedure will assure properly squared baskets with the tops of all panels even. Securely lace all vertical edges of ends and diaphragms. Use only Maccaferri connecting wire supplied for this purpose. No substitution of common wire is allowed, as this may not meet the specification requirements.

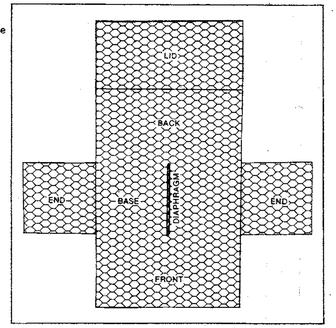


Fig. No. 1

The lacing procedure is as follows: cut a length of lacing wire approximately 1½ times the distance to be laced but not exceeding 5 feet. Secure the wire terminal at the corner by looping and twisting, then proceed lacing with single and double loops at approximately five (5) inch intervals (See Fig. No. 2). Securely fasten the other lacing wire terminal.

Fig. No. 2

Note:
Alternatives to lacing wire are available. Please inquire at any Maccaferri Area Office.

Installation:

Before placing the gabions, it is necessary to make the ground surface relatively smooth and even.

The assembled gabions are carried to the job site and placed in their proper location. It is convenient to place the gabions front to front and back to back, as illustrated in Fig. No. 3, in order to expedite the stone filling and lid lacing operations.

For structural integrity, adjacent gabions must be laced along the perimeter of ALL contact surfaces.

To facilitate this operation it may be easier to construct sub-assemblies in the yard consisting of as many gabions as can be handled by the crew at one time. The sub-assembly is then placed at the job site and laced along the perimeter of ALL contact surfaces.

The base of the empty gabions placed on top of a completed row must also be tightly wired to the latter. (See blown up section).

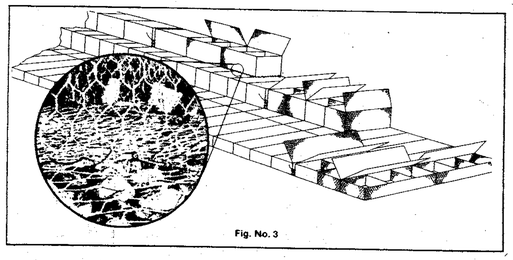


Fig. No. 3

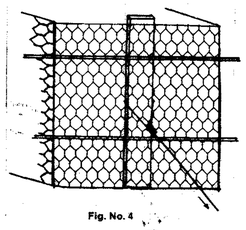


Fig. No. 4

The following method applies to three foot high gabions. Gabions should be placed empty and laced for a stretch approximately 100 linear feet. The first gabion shall be firmly anchored and tension shall be applied to the other end with a come-a-long or other means, in order to achieve the proper alignment. (See Fig. No. 4.) Anchoring can be accomplished by partially filling the first gabion with stone.

While gabions are being stretched, inspect all corners for open "V's" which will result if corners were not properly secured. Such "V's" must be closed by relacing.

Keep gabions in tension while being filled; leave the last gabion empty to allow for easily lacing the subsequent sub-assembly.

Filling:

The fill material shall consist of hard, durable stone, graded between 4 to 8 inches or as approved by the Engineer. Normally all stone should be of a size sufficient to be retained within the mesh.

Gabions shall be filled in lifts of one foot at a time. Two connecting wires shall be placed between each lift in each cell of all exposed faces and firmly wired as indicated in Figures 5 and 6. This operation is repeated until the gabions are completely filled.

It is important that the mesh forming the lid be stretched tight when the gabion is wired closed in order that there can be no movement of the fill.

For coastal structures additional requirements apply to choice of fill and to workmanship. Information on these requirements will gladly be supplied on application to any Maccaferri Area Office.

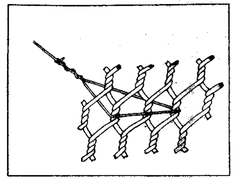


Fig. No. 5

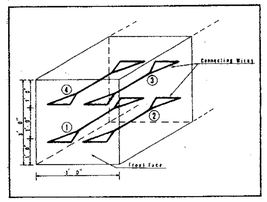


Fig. No. 6

Mechanical Filling:

As most filling operations are carried out by machine it is helpful to protect the top edges of the diaphragms and end panels from being bent or folded by the stone during placement. There are several methods by which this can be achieved.

Rebars may be temporarily placed across the top edges of each mesh panel and laced to them to prevent movement.

Alternatively lengths of pliable metal may be bent into a V shape and placed over the vertical panels to deflect the stone.

During filling the stone should be dumped from the bucket when it is in the lowest practicable position.

Gabions may be filled by almost any type of earth-handling equipment: payloader, gradall, crane, conveyor or modified concrete bucket. Some manual stone adjustment, during the filling operation is required to prevent undue voids. (See Figs. No. 7 & 8.)

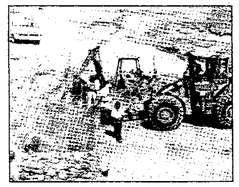


Fig. No. 8

Fig. No. 7

The exposed face may be hand-placed using selected stone. This hand placing can add to the appearance of the structure by preventing the gabions from bulging. However care should be taken to avoid oversize stone. (See Figs. No. 9 & 10.)

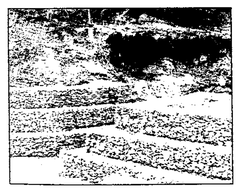


Fig. No. 9

The last lift of stone should be level with the top of the gabion to properly close the lid and provide an even surface for the next course. The mesh must be stretched tight at all times.

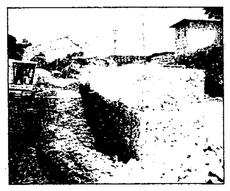


Fig. No. 10

Lid Closing:

Fold the lid down along the hinge line so that the lid and gabion edges meet closely without gaps. To assist in closing and lacing the lids, a pinch bar or Maccaferri lid closer may be used. (See Figs. 11 & 12.) Secure the lid at the corners with the wire projecting from the lid. Lace the lid shut, starting with the front face and then the ends and diaphragms. A tight joint must be achieved during the lacing operation by pulling the edges together. To expedite the lacing operation, adjacent lids may be wired to the vertical panels in one operation.

Fig. No. 11

Fig No. 12

General Notes:

Gabions may be readily cut or bent to form regular shapes to fit bridge piers, culverts, transitions, etc. Part of the mesh may also be cut to allow the laying of pipelines. Where this is done the cut or bent edges of the mesh must not be left loose but shall be fastened securely to another part of the structure.

Power & hand tools are available to assist these operations. Please inquire at the Area Office listed below. Field assistance by members of our technical staff is also available on request.

The construction process is shown in a movie/ video film which is available on loan.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/24/99

CHIEF, DIVISION OF LAND DEVELOPMENT ~~AND RESEARCH~~ — DATE 10/1/99

~~DIRECTOR~~ — DATE 10/4/99

STATE OF MARYLAND — PROFESSIONAL ENGINEER — 9/10/99

project 98014 | date SEP. 99
illustration FCL | engineering FCL
scale AS SHOWN | approval JH

no.	description / revisions	date

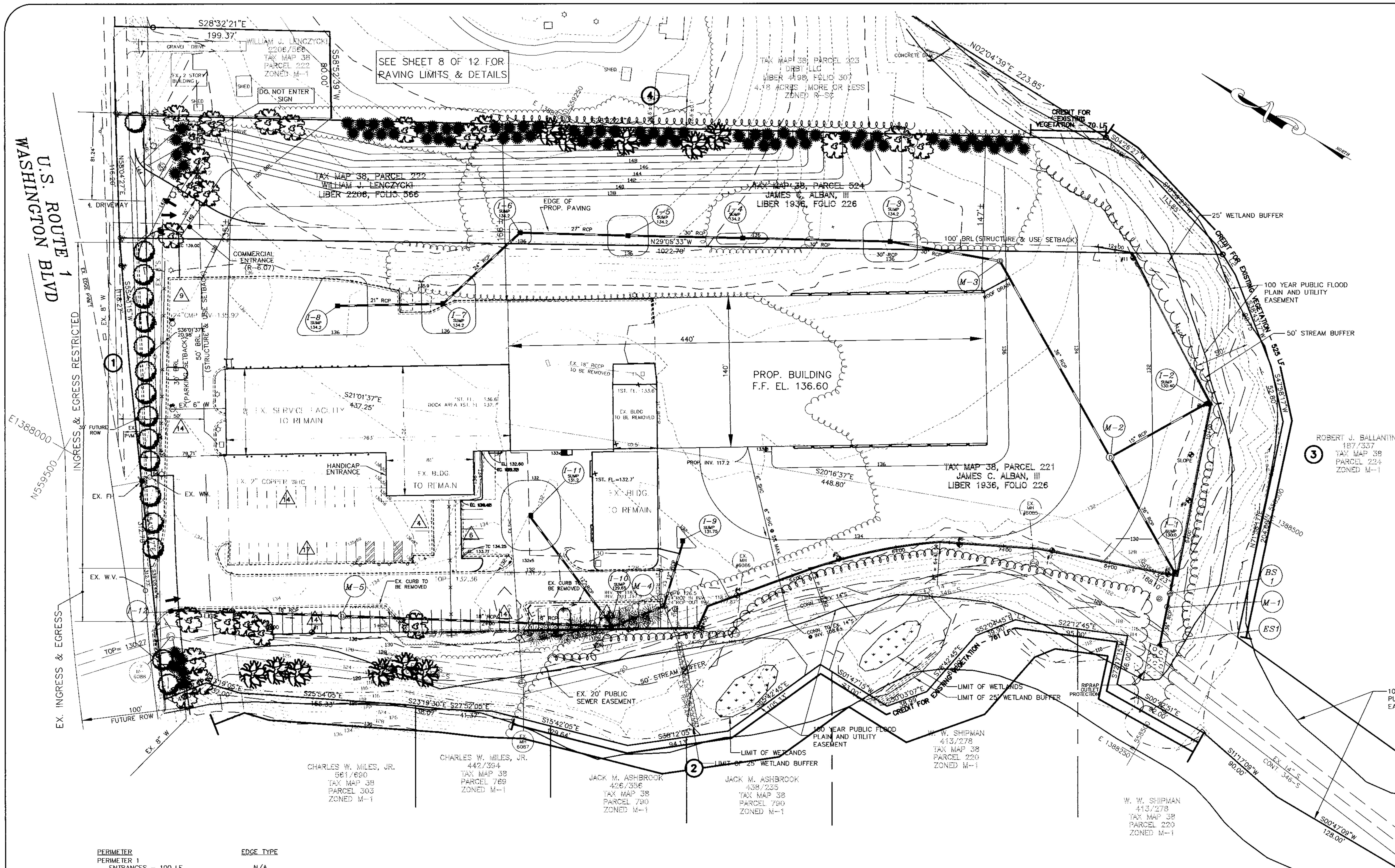
TAX MAP 38, PARCEL 221 & 524
ALBAN TRACTOR
HOWARD COUNTY, MARYLAND
FIRST ELECTION DISTRICT
GABION WALL ASSEMBLY & ERECTION INSTRUCTIONS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

SDP 98-139

98014/DWG/SDP/WALLCONS

NOTE: THIS DRAWING IS TO BE USED FOR LANDSCAPE PLAN PURPOSES ONLY.



NOTES:

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL
2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF $ 21,600.00 .
3. SWM PERIMETER LANDSCAPING IS NOT REQUIRED.

LEGEND

- EXISTING GRADES: 2' CONTOURS, 10' CONTOURS
- PROPOSED GRADES: 2' CONTOURS, 10' CONTOURS
- LIMIT 100 YEAR FLOODPLAIN
- EXISTING TREELINE
- PROPOSED TREELINE
- SLOPES – 15% TO 24.9%
- SLOPES – 25% +
- WETLAND LIMIT
- 3+00 PROP. GABION WALL
- 100 YEAR PUBLIC FLOOD PLAIN AND UTILITY EASEMENT
- PERIMETER LANDSCAPE EDGE

PERIMETER		EDGE TYPE
PERIMETER 1		
ENTRANCES – 100 LF		N/A
NON-RES TO ROAD – 447.25 LF		B
1 SHADE TREE / 50 LF	9	
1 EVERGREEN / 40 LF	11	
PERIMETER 2		
M-1 TO M-1 – 761 LF		A
EXISTING TREES TO REMAIN		
M-1 TO M-1 – 330.76		A
1 SHADE TREE / 60 LF	6	
PERIMETER 3		
M-1 TO M-1 – 525 LF		A
EXISTING TREES TO REMAIN		
PERIMETER 4		
NON-RES TO RES – 70 LF		D
EXISTING TREES TO REMAIN		
NON-RES TO RES – 648.56 LF		D
1 SHADE TREE / 60 LF	11	
1 EVERGREEN / 10 LF	65	
M-1 TO M-1 – 199.63 LF		A
1 SHADE TREE / 60 LF	3	
TOTAL PLANTING OBLIGATION		
SHADE TREES	29	
EVERGREEN TREES	76	
SHRUBS	0	

STREET TREE CALCULATIONS

US ROUTE 1 - 166 / 30 = 6
OLD BALTIMORE-WASHINGTON BLVD - 280 / 30 = 9

TOTAL TREES REQUIRED = 15 SMALL TREES
TOTAL TREES PROVIDED = 15 SMALL TREES

SCHEDULE B: PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	96
NUMBER OF PLANTING ISLANDS REQUIRED	5
NUMBER OF PLANTING ISLANDS PROVIDED	5
NUMBER OF TREES REQUIRED SHADE TREES	5 SHADE TREES
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTION)	5 SHADE TREES 0 TREES

SCHEDULE A : PERIMETER LANDSCAPED EDGE

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES	
LANDSCAPE TYPE	B (PERIMETER 1)	D (P/O PERIMETER 4)	A (PERIMETER 2, 3, P/O 4)
LINEAR FEET OF PERIMETER	447.25 LF	718.56 LF	1816.39 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	NO	YES, 70 LF OF EXISTING TREES TO REMAIN	YES, 1286 LF OF EXISTING TREES TO REMAIN
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET)	NO	NO	NO
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	9 SHADE TREES 11 EVERGREEN TREES 0 SHRUBS	11 SHADE TREES 65 EVERGREEN TREES 0 SHRUBS	9 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION)	9 SHADE TREES 11 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS	11 SHADE TREES 65 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS	9 SHADE TREES 0 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS

LANDSCAPE REQUIREMENT PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
23		ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2" – 3" CAL.
76		PINUS STROBUS	EASTERN WHITE PINE	6' – 8' HT.
15		PRUNUS CERASIFERA ATROPUPUREA 'THUNDERCLOUD'	THUNDERCLOUD PURPLELEAF PLUM	1 1/2" – 2" CAL.
11		QUERCUS RUBRA	RED OAK	2 1/2" – 3" CAL.

TOTAL
125 TREES & SHRUBS (34 SHADE TREES, 15 SMALL DECIDUOUS TREES, 76 EVERGREEN TREES)

STATE OF MARYLAND LIN, CHENG-HO REGISTERED PROFESSIONAL ENGINEER
9/10/99

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 9/24/99
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 10/4/99
DIRECTOR — DATE 10/4/99

98014/DWG/NEWSDP/14-LP.DWG

OWNER/DEVELOPER

ALBAN TRACTOR CO., INC.
P. O. BOX 9595
BALTIMORE, MARYLAND 21237
(410) 686-7777
ATTN: CHUCK WITMER

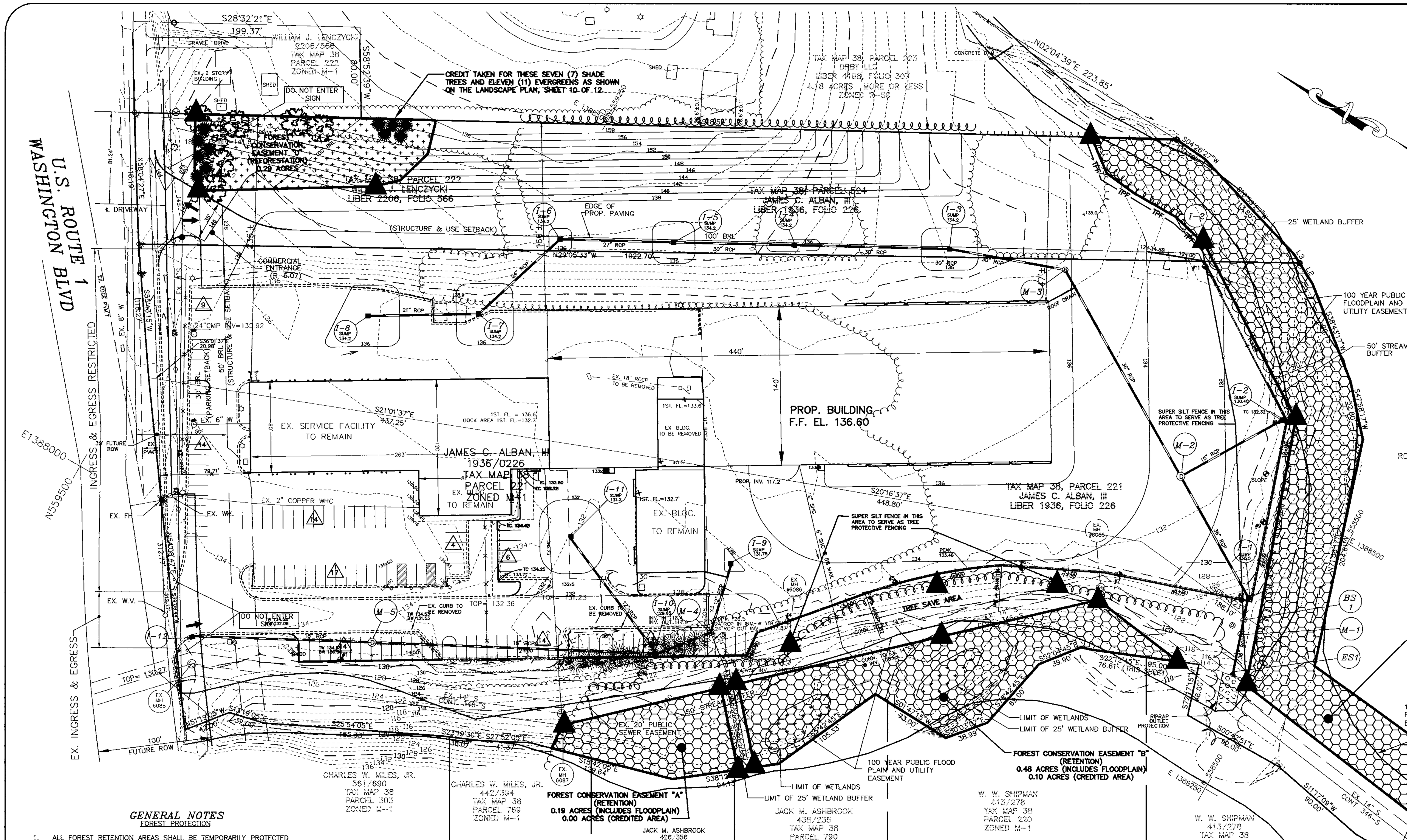
project	date
98014	SEP. 1999
illustration	engineering
FCL/RJ	SJD
scale	approval
1" = 50'	

no.	description revisions	date

TAX MAP 38, PARCELS 221 & 524
ALBAN TRACTOR
FIRST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
LANDSCAPE PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

SDP 98-139



NOTE: THIS PLAN IS TO BE USED FOR FOREST CONSERVATION PURPOSES ONLY.

NOTES :

1. FEE-IN-LIEU OF REFORESTATION HAS BEEN REQUESTED FOR THE REMAINING AREA REQUIRED TO BE REFORESTED BY THE HOWARD COUNTY FOREST CONSERVATION MANUAL, SEE FOREST CONSERVATION CALCULATIONS THIS SHEET. THE TOTAL FOREST CONSERVATION OBLIGATION IS 3.33 ACRES, 2.56 ACRES OF REFORESTATION AND 0.17 ACRES OF RETENTION. (OF THE 2.56 ACRES OF REFORESTATION REQUIRED, 0.29 ACRES OF REFORESTATION HAVE BEEN SHOWN ON-SITE AND 1.48 ACRES OF REFORESTATION HAVE BEEN SHOWN OFF-SITE. THE REMAINING 0.79 ACRES WILL BE PART OF THE FEE-IN-LIEU REQUEST IN THE AMOUNT OF $10,323.60.)
2. FINANCIAL SURETY FOR THE REQUIRED FOREST CONSERVATION AND REFORESTATION HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF $24,916.30. FOREST CONSERVATION CREDIT IN THE AMOUNT OF 5,275 SQ. FT. OF LANDSCAPING IS BEING TAKEN FOR THE SEVEN (7) SHADE TREES AND ELEVEN (11) EVERGREENS AS SHOWN ON THIS PLAN TO BE PLANTED AS PART OF THE LANDSCAPE REQUIREMENTS. FINANCIAL SURETY FOR THESE TREES IS BEING POSTED AS PART OF THE LANDSCAPE SURETY.

FOREST CONSERVATION	TREE PROTECTION	FOREST CONSERVATION AREA
FOREST PRESERVATION AREA	TREE SAVE AREA	REFORESTATION PROJECT
TREES FOR YOUR FUTURE	TREES FOR YOUR FUTURE	TREES FOR YOUR FUTURE

Min 11' / Min 15'

SIGNAGE DETAIL

NOT TO SCALE

LEGEND

- EXISTING GRADES 2' CONTOURS 10' CONTOURS
- PROPOSED GRADES 2' CONTOURS 10' CONTOURS
- LIMIT 100 YEAR FLOODPLAIN
- EXISTING TREELINE
- PROP. TREELINE
- SLOPES – 15% TO 24.9%
- SLOPES – 25% +
- WETLAND LIMIT
- 3+00 PROP. GABION WALL
- 100 YEAR PUBLIC FLOOD PLAIN AND UTILITY EASEMENT
- FOREST CONSERVATION AREA (RETENTION)
- FOREST CONSERVATION AREA (REFORESTATION)
- FOREST CONSERVATION SIGNAGE
- TPF TREE PROTECTIVE FENCING

GENERAL NOTES

FOREST PROTECTION

1. ALL FOREST RETENTION AREAS SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED BLAZE ORANGE PLASTIC MESH FENCING AND SIGHAGE AS INDICATED ON THE PLANS. THE DEVICES SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.
2. THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF ALL TREES WITHIN THE RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES.
3. ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION, INCLUDING SILT FENCE BEING USED AS PROTECTIVE FENCING. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
4. ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THESE PROTECTED AREAS.
5. INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
6. THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS.
7. REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED.
8. THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS.
9. ROOT PRUNING SHALL BE USED AT THE LIMIT OF DISTURBANCE OR LIMIT OF GRADING WITHIN AND ADJACENT TO ALL PRESERVATION AREAS, AS NECESSARY.

PRE-CONSTRUCTION MEETING

1. AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND HOWARD COUNTY INSPECTORS SHALL ATTEND. THE PURPOSE OF THIS MEETING WILL BE:
   - A. TO IDENTIFY THE LOCATIONS OF THE FOREST RETENTION AREAS, SPECIMEN TREES WITHIN 50 FEET OF THE LIMIT OF DISTURBANCE, LIMITS OF CONSTRUCTION, EMPLOYEE PARKING AREAS AND EQUIPMENT STAGING AREAS;
   - B. INSPECT ALL FLAGGED BOUNDARIES AND PROTECTION DEVICES;
   - C. MAKE ALL NECESSARY ADJUSTMENTS;
   - D. ASSIGN RESPONSIBILITIES AS APPROPRIATE AND DISCUSS PENALTIES.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	9/24/99 DATE
[signature] CHIEF, DIVISION OF LAND DEVELOPMENT ~~AND RESEARCH~~	10/1/99 DATE
[signature] DIRECTOR	10/4/99 DATE

98014/DWG/NEWSDP/14-FCP.DWG

CONSTRUCTION MONITORING

1. THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK WOUNDS, LIMB INJURY, OR STRESS CAUSED BY FLOODING OR DROUGHT CONDITIONS.
2. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.
3. THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS. ANY DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

NOTE :

THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENTS EXCEPT AS PERMITTED BY THE HOWARD COUNTY FOREST CONSERVATION PROGRAM.

THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION, SOIL COMPACTION, OR EXCAVATION, INTRODUCTION OF TOXIC CHEMICALS OR OTHER DISTURBANCES DETRIMENTAL TO THE LIVE SPECIMEN TREES OR CRITICAL ROOT ZONES FOR THESE TREES EXCEPT AS PERMITTED BY THE HOWARD COUNTY FOREST CONSERVATION PROGRAM.

** FOR FOREST STAND DELINEATION INFORMATION, SEE REPORT PREPARED BY WILDMAN ENVIRONMENTAL SERVICES ON MARCH 10, 1998.

PLANTING SPECIFICATIONS AND NOTES

SITE PREPARATION AND SOILS

1. PROTECTION FENCING AND SILT FENCES FOR SEDIMENT AND EROSION CONTROL ARE TO BE INSTALLED AS A FIRST ORDER OF BUSINESS, IF NECESSARY.
2. DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT. AS SHOWN ON THE DETAIL VIEW, A PLANTING FIELD OF RADIUS = 5 X DIAMETER OF THE ROOT BALL OR CONTAINER IS RECOMMENDED.
3. SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME OF COMPOSTED SLUDGE.
4. SOIL MIX FOR ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
5. ALL MIXING IN 3 AND 4 SHALL BE LIMITED TO CONTAINER GROWN OR BALL AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

PLANT STORAGE AND INSPECTION

1. FOR CONTAINER GROWN NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN 2 WEEKS AFTER DELIVERY TO THE SITE.
2. FOR BALL AND BURLAP NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN THREE DAYS AFTER DELIVERY TO THE SITE.
3. PLANTING STOCK SHOULD BE INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS AND DISEASE SHOULD BE REPLACED.
4. UNTIL PLANTED, ALL PLANT STOCK SHALL BE KEPT IN A SHADED, COOL, AND MOISTENED ENVIRONMENT .

PLANT INSTALLATION

1. THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE STOCKPILED SOILS SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER, GENEROUSLY, TO SETTLE SOIL BACKFILLED AROUND TREES.
2. PLANTING FIELD DIAMETERS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST.
3. CARE SHALL BE TAKEN WHEN DIGGING PLANTING FIELDS NOT TO CHOP THRU LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. IF ROOTS GREATER THAN 1/2 INCH ARE ENCOUNTERED PLEASE TRY TO DIG AROUND THEM AS MUCH AS POSSIBLE TO MINIMIZE IMPACT TO EXISTING TREES. THEY WERE HERE FIRST.
4. CONTAINER GROWN STOCK SHOULD BE REMOVED FROM THE CONTAINER AND ROOTS GENTLY LOOSENED FROM THE SOIL. IF THE ROOTS ENCIRCLE THE ROOT BALL, SUBSTITUTION IS STRONGLY RECOMMENDED. J-SHAPED OR KINKED ROOT SYSTEMS SHOULD ALSO BE NOTED. ROOTS MAY NOT BE TRIMMED ON SITE, DUE TO THE INCREASED CHANCES OF SOIL BORNE DISEASES.
5. FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND/OR STRING FROM ROOT BALL. THEN PEEL BACK BURLAP TO BASE OF ROOT BALL AND COVER ENTIRE ROOT BALL WITH TOPSOIL MIXTURE INDICATED ABOVE AND WATER GENEROUSLY.
6. FOR TREES PLANTED IN THE AFFORESTATION AREA, CONTRACTOR SHALL EVENLY DISPERSE SPECIES IN GROUPS OF TWO (2) TO FOUR (4), PER SPECIES, OVER THE ENTIRE DESIGNATED AREA TO BE PLANTED WHILE MAINTAINING AN AVERAGE RANDOM SPACING OF INDIVIDUAL TREES AT PROPER SPACING INDICATED ON PLANT LIST.
7. AVOID PLANTING IN A STRAIGHT GRID PATTERN. TREES SHALL BE PLANTED ON AN AVERAGE SPACING AS INDICATED ON PLANT LISTS TO OBTAIN A MORE NATURAL APPEARANCE.
8. NEWLY PLANTED TREES MAY NEED WATERING AS MUCH AS ONCE A WEEK FOR THE ENTIRE GROWING SEASON, DUE TO THE WELL DRAINED NATIVE SOILS FOUND ON THIS SITE COMBINED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD. THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY A FEW TIMES A YEAR DURING SUMMER AND DRY MONTHS. AFTER THAT PERIOD, TREES SHOULD ONLY NEED WATER IN SEVERE DROUGHTS. ANY WATERING PLAN SHOULD COMPENSATE FOR RECENT RAINFALL PATTERNS.

FERTILIZING

1. DO NOT FERTILIZE NEWLY PLANTED TREES WITHIN THE FIRST GROWING SEASON AFTER PLANTING. DOING SO MAY CAUSE A SPURT OF CANOPY GROWTH WHICH THE ROOTS CANNOT SUPPORT AND ADD ADDITIONAL SHOCK TO THE ALREADY DISTURBED PLANT.
2. NOTHING SHOULD BE ADDED TO THE SOIL WITHOUT TESTING IT FIRST TO DETERMINE ITS NEEDS.
3. IF AND WHEN IT IS TIME TO FERTILIZE, ORGANIC FERTILIZERS ARE PREFERRED TO SYNTHETIC FERTILIZERS. BONE MEAL OR SEAWEED BASED PRODUCTS ARE AVAILABLE COMMERCIALLY AND ARE RECOMMENDED. THEY HAVE THE ABILITY TO SUPPLY NUTRIENTS TO THE PLANT AS NEEDED WHILE MINIMIZING THE RISK OF EXCESS NUTRIENTS ENTERING THE FOREST SYSTEM AND WATER SUPPLY.

MAINTENANCE SCHEDULE

1. ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A THREE YEAR PERIOD.
2. ASSESS TREE MORTALITY OF PLANTING STOCK, REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
3. VOLUNTEER SEEDING OF NATIVE, LOCAL AND ENDEMIC VEGETATION IS TO BE EXPECTED. DO NOT DISCOURAGE THIS EFFORT UNLESS IT IS NEGATIVELY EFFECTING THE PLANTED STOCK.
4. REMOVE THROUGH MANUAL MEANS (GRUBBING, PULLING, CUTTING) AGGRESSIVE, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-FOOT RADIUS SURROUNDING THE PLANTED WOODY NURSERY STOCK.
5. REMOVE AND DISPOSE OF MAN-MADE TRASH, INCLUDING ITEMS CONTAINED WITHIN ENTIRE PLANTING AREA. DO NOT REMOVE DOWN AND DEAD MATERIAL NATURALLY OCCURRING OR ACCUMULATING, UNLESS IT IS SMOTHERING PLANTING STOCK.
6. A 75 PERCENT SURVIVAL OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTINGS MAY BE REQUIRED TO ACHIEVE THIS GOAL.

REFORESTATION PLANT LIST

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C. SPACING	SIZE & REMARKS
4	Acer rubrum Red Maple	VT	D-W	FAC	15'	CONT/B & B 1" CALIPER
8	Cornus florida Flowering Dogwood	VT	D-M	FACU-	8'	CONT/B & B 3'-5' HEIGHT
8	Nyssa sylvatica Black Gum	T	M-W	FAC	11'	CONT/B & B 1" CALIPER
8	Prunus serotina Wild Black Cherry	I	M	FACU	11'	CONT/B & B 3'-5' HEIGHT
3	Quercus palustris Pin Oak	I	M-W	FACW	15'	CONT/B & B 1" CALIPER
3	Quercus rubra Red Oak	MT	D-M	UPL	15'	CONT/B & B 1" CALIPER

TOTAL
34 TREES

NOTE : WHIPS OR SEEDLINGS MAY BE SUBSTITUTED FOR THE 1" CALIPER OR 3' – 5' TREES. IF WHIPS OR SEEDLINGS ARE TO BE USED, MULTIPLY THE QUANTITIES BY 3.5 TO DETERMINE THE NUMBER OF TREES REQUIRED.

FOREST CONSERVATION DATA

	ACRES
I. BASIC SITE DATA	
GROSS SITE AREA	12.98
AREA WITHIN 100 YEAR FLOODPLAIN	2.04
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL	0.00
NET TRACT AREA	10.94
LAND USE CATEGORY COMM/IND/OFFICE	
II. FOREST CONSERVATION WORKSHEET DATA SUMMARY	
B. REFORESTATION THRESHOLD (15%)	1.64
C. AFFORESTATION MINIMUM (15%)	1.64
D. EXISTING FOREST ON NET TRACT AREA	4.93
E. FOREST AREAS TO BE CLEARED	4.16
F. FOREST AREAS TO BE RETAINED	0.77
IV, REFORESTATION CALCULATIONS	
G. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	3.29
H. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	0.87
I. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	0.00
REFORESTATION FOR CLEARING ABOVE THRESHOLD	0.82
REFORESTATION FOR CLEARING BELOW THRESHOLD	1.74
TOTAL REFORESTATION REQUIRED	2.56
TOTAL REFORESTATION PROVIDED (ON-SITE REFORESTATION = 0.29 ACRES & OFF-SITE REFORESTATION = 1.48 ACRES)	1.77
TOTAL FEE-IN-LIEU OF REFORESTATION	0.79

* FOR PLANTING DETAIL AND PROTECTIVE FENCING DETAIL, SEE SHEET 12 OF 12.

MD DNR QUALIFIED PROFESSIONAL

[signature] 9/10/99
STEPHANIE DEMCHIK

OWNER/DEVELOPER

ALBAN TRACTOR CO., INC.
P. O. BOX 9595
BALTIMORE, MARYLAND 21237
(410) 686-7777
ATTN: CHUCK WITMER

project	date
98014	SEP. 1999
illustration	engineering
FCL/RJ	SJD
scale	approval
1" = 50'	

no.	description	date
	revisions	

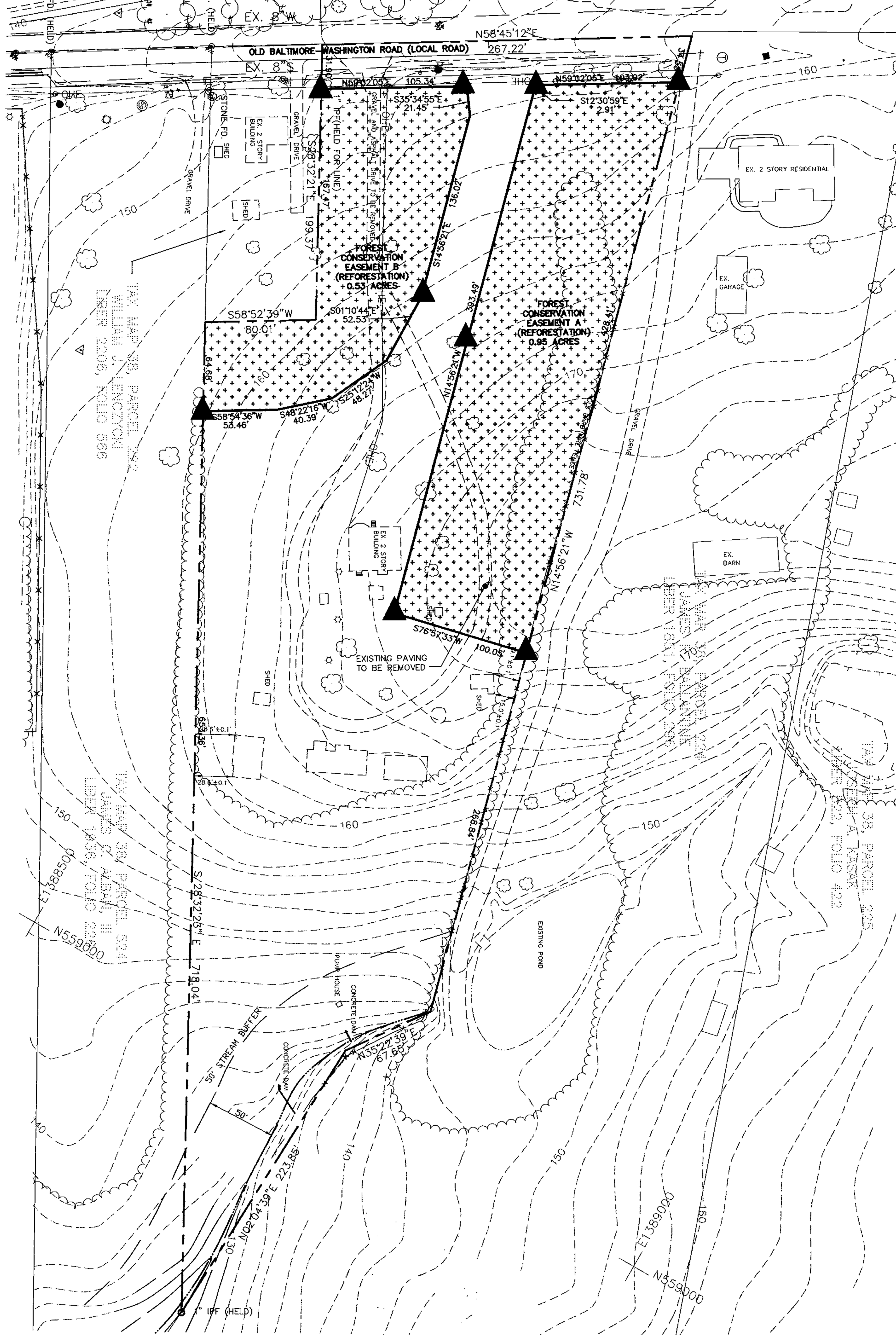
TAX MAP 38, PARCELS 221 & 524
ALBAN TRACTOR
FIRST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
FOREST CONSERVATION & REFORESTATION PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

SDP 98-139

NOTE: THIS PLAN IS TO BE USED FOR FOREST CONSERVATION PURPOSES ONLY.

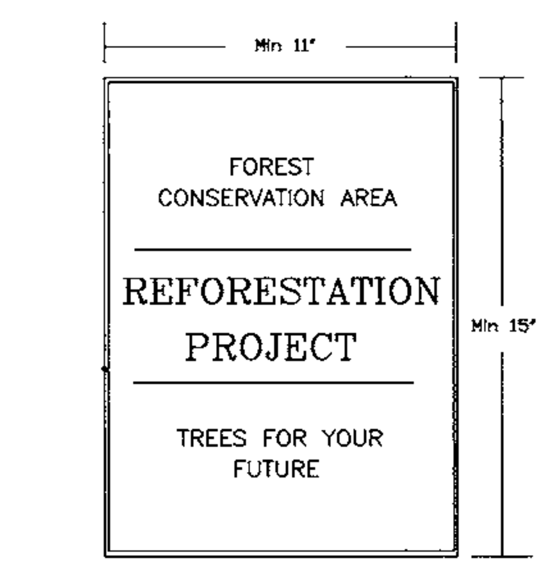
1. SEE SHEET 11 OF 12 FOR FEE-IN-LIEU OF REFORESTATION INFORMATION.
2. FINANCIAL SURETY FOR THE REQUIRED FOREST CONSERVATION AND REFORESTATION HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF $24,916.30. SEE SHEET 11 OF 12 FOR DETAILS REGARDING THE CREDIT FOR LANDSCAPING.



APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	9/24/99 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT ~~AND RESEARCH~~	10/4/99 DATE
DIRECTOR	10/4/99 DATE

98014\dwg\sdp\14-ref-fcp.dwg 8-25-99 9:35:07 am EST



SIGNAGE DETAIL

NOT TO SCALE

LEGEND

▲ FOREST CONSERVATION SIGNAGE

FOREST CONSERVATION EASEMENT (REFORESTATION)

PLANTING SPECIFICATIONS AND NOTES

SITE PREPARATION AND SOILS

1. PROTECTION FENCING AND SILT FENCES FOR SEDIMENT AND EROSION CONTROL ARE TO BE INSTALLED AS A FIRST ORDER OF BUSINESS, IF NECESSARY.
2. DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT. AS SHOWN ON THE DETAIL VIEW, A PLANTING FIELD OF RADIUS = 5 X DIAMETER OF THE ROOT BALL OR CONTAINER IS RECOMMENDED.
3. SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME OF COMPOSTED SLUDGE.
4. SOIL MIX FOR ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
5. ALL MIXING IN 3 AND 4 SHALL BE LIMITED TO CONTAINER GROWN OR BALL AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

PLANT STORAGE AND INSPECTION

1. FOR CONTAINER GROWN NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN 2 WEEKS AFTER DELIVERY TO THE SITE.
2. FOR BALL AND BURLAP NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN THREE DAYS AFTER DELIVERY TO THE SITE.
3. PLANTING STOCK SHOULD BE INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS AND DISEASE SHOULD BE REPLACED.
4. UNTIL PLANTED, ALL PLANT STOCK SHALL BE KEPT IN A SHADED, COOL, AND MOISTENED ENVIRONMENT .

PLANT INSTALLATION

1. THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE STOCKPILED SOILS SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER, GENEROUSLY, TO SETTLE SOIL BACKFILLED AROUND TREES.
2. PLANTING FIELD DIAMETERS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST.
3. CARE SHALL BE TAKEN WHEN DIGGING PLANTING FIELDS NOT TO CHOP THRU LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. IF ROOTS GREATER THAN 1/2 INCH ARE ENCOUNTERED PLEASE TRY TO DIG AROUND THEM AS MUCH AS POSSIBLE TO MINIMIZE IMPACT TO EXISTING TREES. THEY WERE HERE FIRST.
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5. FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND/OR STRING FROM ROOT BALL. THEN PEEL BACK BURLAP TO BASE OF ROOT BALL AND COVER ENTIRE ROOT BALL WITH TOPSOIL MIXTURE INDICATED ABOVE AND WATER GENEROUSLY.
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7. AVOID PLANTING IN A STRAIGHT GRID PATTERN. TREES SHALL BE PLANTED ON AN AVERAGE SPACING AS INDICATED ON PLANT LISTS TO OBTAIN A MORE NATURAL APPEARANCE.
8. NEWLY PLANTED TREES MAY NEED WATERING AS MUCH AS ONCE A WEEK FOR THE ENTIRE GROWING SEASON, DUE TO THE WELL DRAINED NATIVE SOILS FOUND ON THIS SITE COMBINED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD. THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY A FEW TIMES A YEAR DURING SUMMER AND DRY MONTHS. AFTER THAT PERIOD, TREES SHOULD ONLY NEED WATER IN SEVERE DROUGHTS. ANY WATERING PLAN SHOULD COMPENSATE FOR RECENT RAINFALL PATTERNS.

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MAINTENANCE SCHEDULE

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4. REMOVE THROUGH MANUAL MEANS (GRUBBING, PULLING, CUTTING) AGGRESSIVE, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-FOOT RADIUS SURROUNDING THE PLANTED WOODY NURSERY STOCK.
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6. A 75 PERCENT SURVIVAL OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTINGS MAY BE REQUIRED TO ACHIEVE THIS GOAL.

SUPERVISION

ALL FOREST CONSERVATION ACTIVITIES SHALL BY DONE UNDER THE DIRECT SUPERVISION OF SOMEONE FROM THE DESIGN TEAM OR OTHER "QUALIFIED PROFESSIONAL" AS DETERMINED BY THE REQUIREMENTS OF COMAR 08.19.06.01 AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, PUBLIC LANDS AND FORESTRY DIVISION.

STANDARD NON-DISTURBANCE NOTE:

"THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENTS EXCEPT AS PERMITTED BY HOWARD COUNTY ."

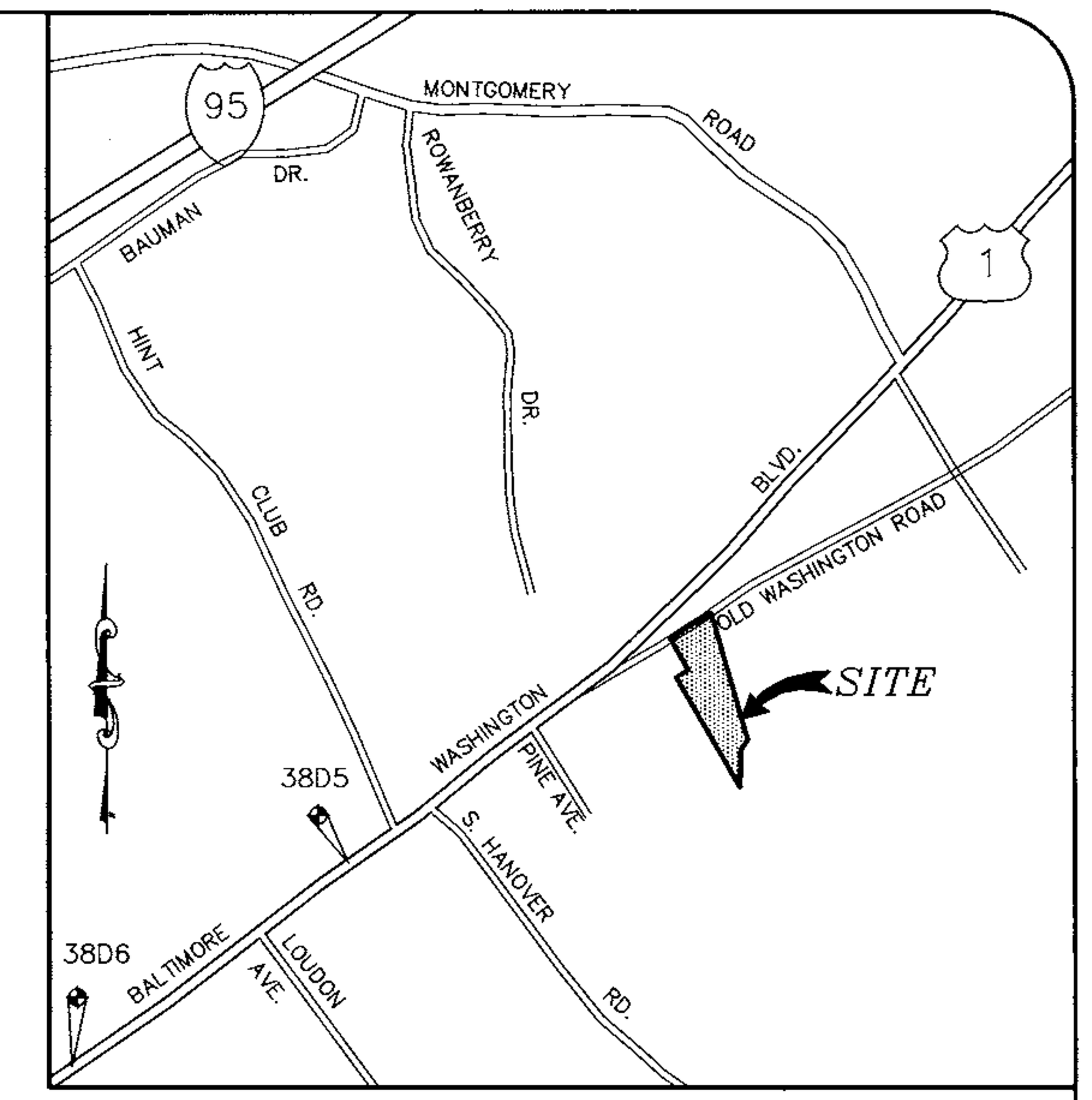
REFORESTATION PLANT LIST

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C. SPACING	SIZE & REMARKS
46	Acer rubrum Red Maple	VT	D-W	FAC	15'	CONT/B & B 1" CALIPER
53	Cornus florida Flowering Dogwood	VT	D-M	FACU-	8'	CONT/B & B 3'-5' HEIGHT
53	Nyssa sylvatica Black Gum	T	M-W	FAC	11'	CONT/B & B 1" CALIPER
53	Prunus serotina Wild Black Cherry	I	M	FACU	11'	CONT/B & B 3'-5' HEIGHT
46	Quercus palustris Pin Oak	I	M-W	FACW	15'	CONT/B & B 1" CALIPER
45	Quercus rubra Red Oak	MT	D-M	UPL	15'	CONT/B & B 1" CALIPER

TOTAL
296 TREES

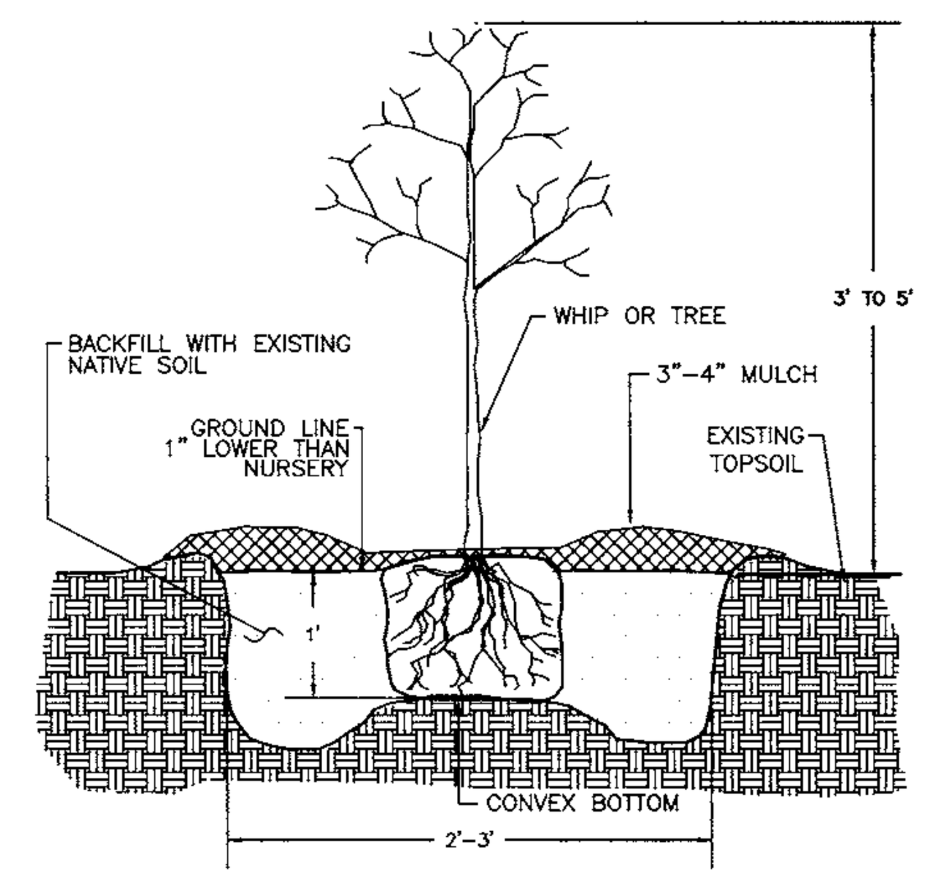
NOTE : WHIPS OR SEEDLINGS MAY BE SUBSTITUTED FOR THE 1" CALIPER OR 3' - 5' TREES. IF WHIPS OR SEEDLINGS ARE TO BE USED, MULTIPLY THE QUANTITIES BY 3.5 TO DETERMINE THE NUMBER OF TREES REQUIRED.

EVERGREENS MAY BE ADDED AS PART OF THIS REFORESTATION REQUIREMENT, BUT EVERGREENS CAN ONLY MAKE UP 20% OF THE AREA BEING PLANTED.



VICINITY MAP

SCALE: 1" = 1,000'

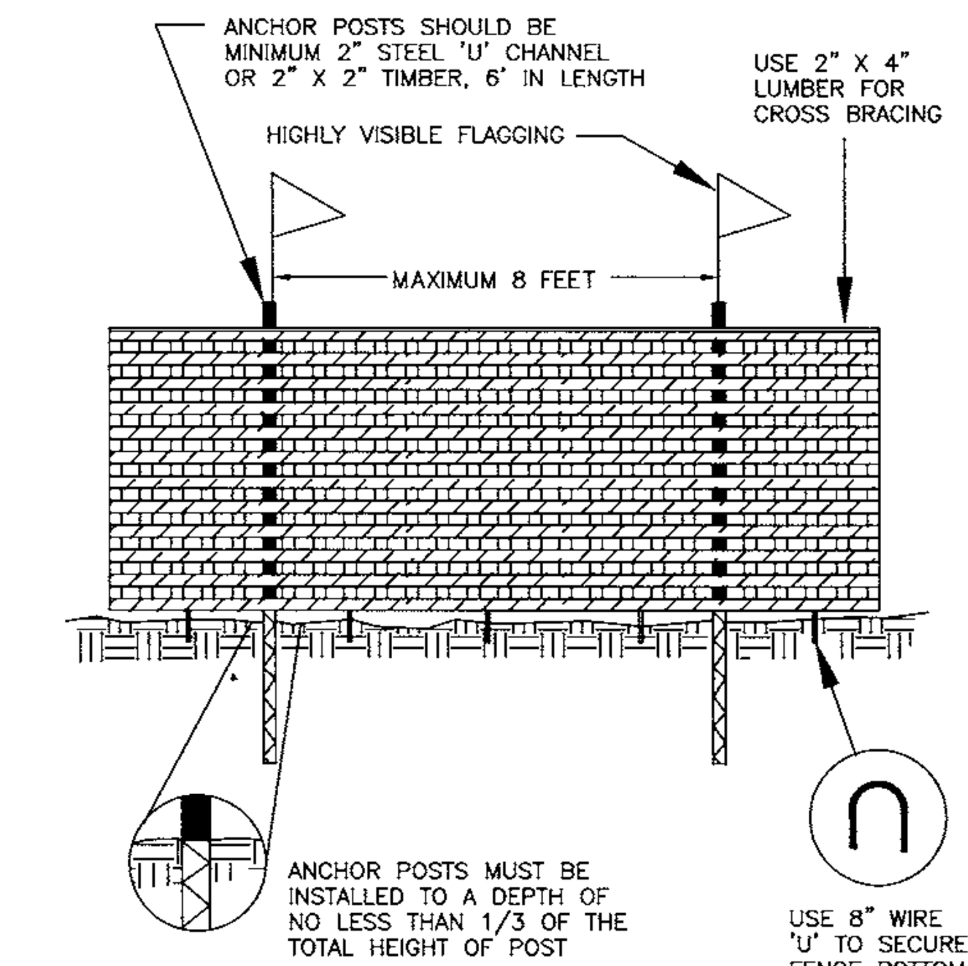


TREE PLANTING DETAIL

CONTAINER GROWN

PROTECTIVE FENCE DETAIL

BLAZE ORANGE PLASTIC MESH



NOTES
1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

MD DNR QUALIFIED PROFESSIONAL

Stephanie Demchik 9/10/99
STEPHANIE DEMCHIK

OWNER
JAMES C. ALBAN, IV
c/o ALBAN TRACTOR
8531 PULASKI HIGHWAY
BALTIMORE, MD. 2127
PHONE No.: (410) 686-7777

project	date
98014	SEP. 1999
illustration	engineering
FCL/SJD	SJD
scale	approval
1" = 50'	

no.	description revisions	date

TAX MAP No. 38 PARCEL 223

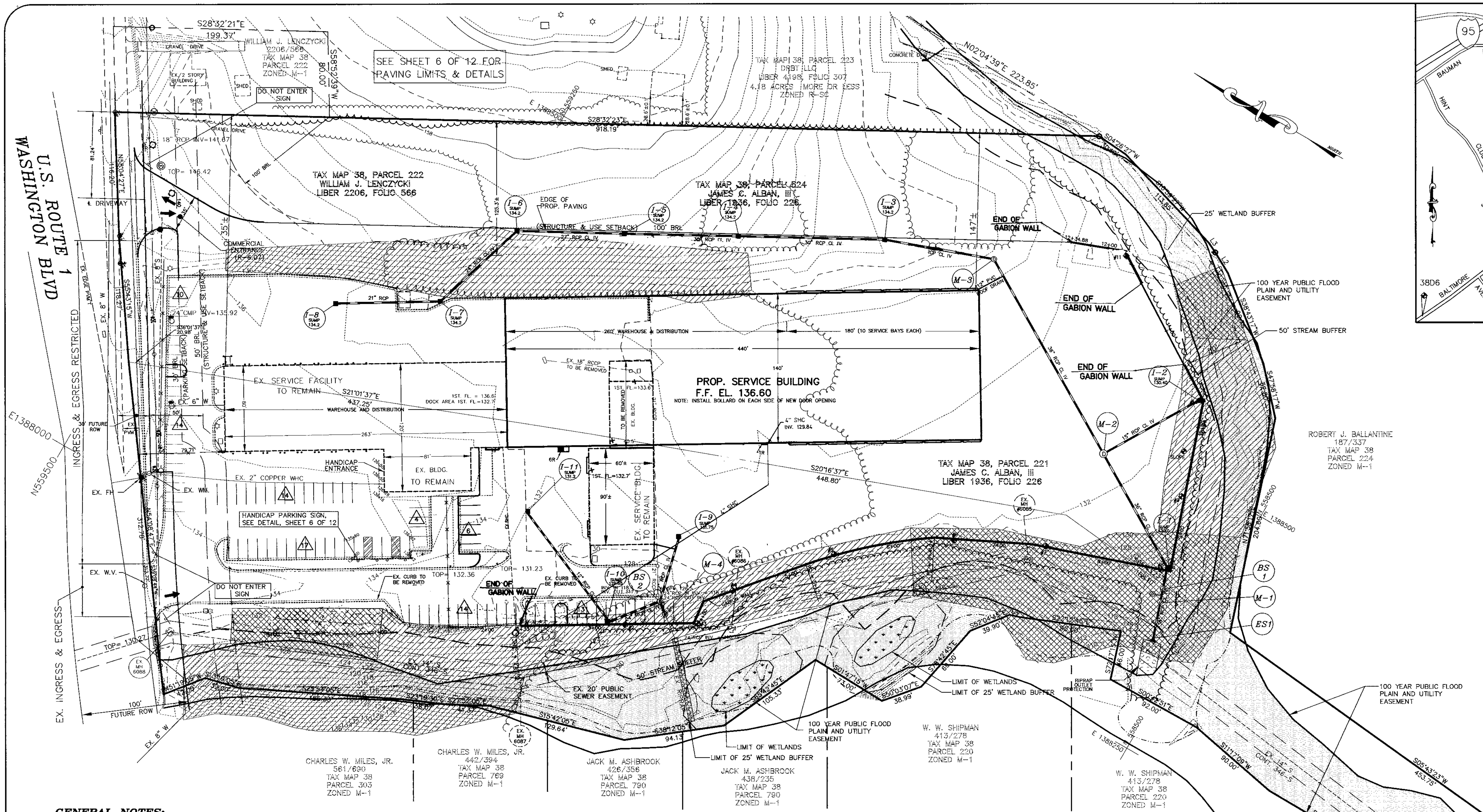
ALBAN TRACTOR

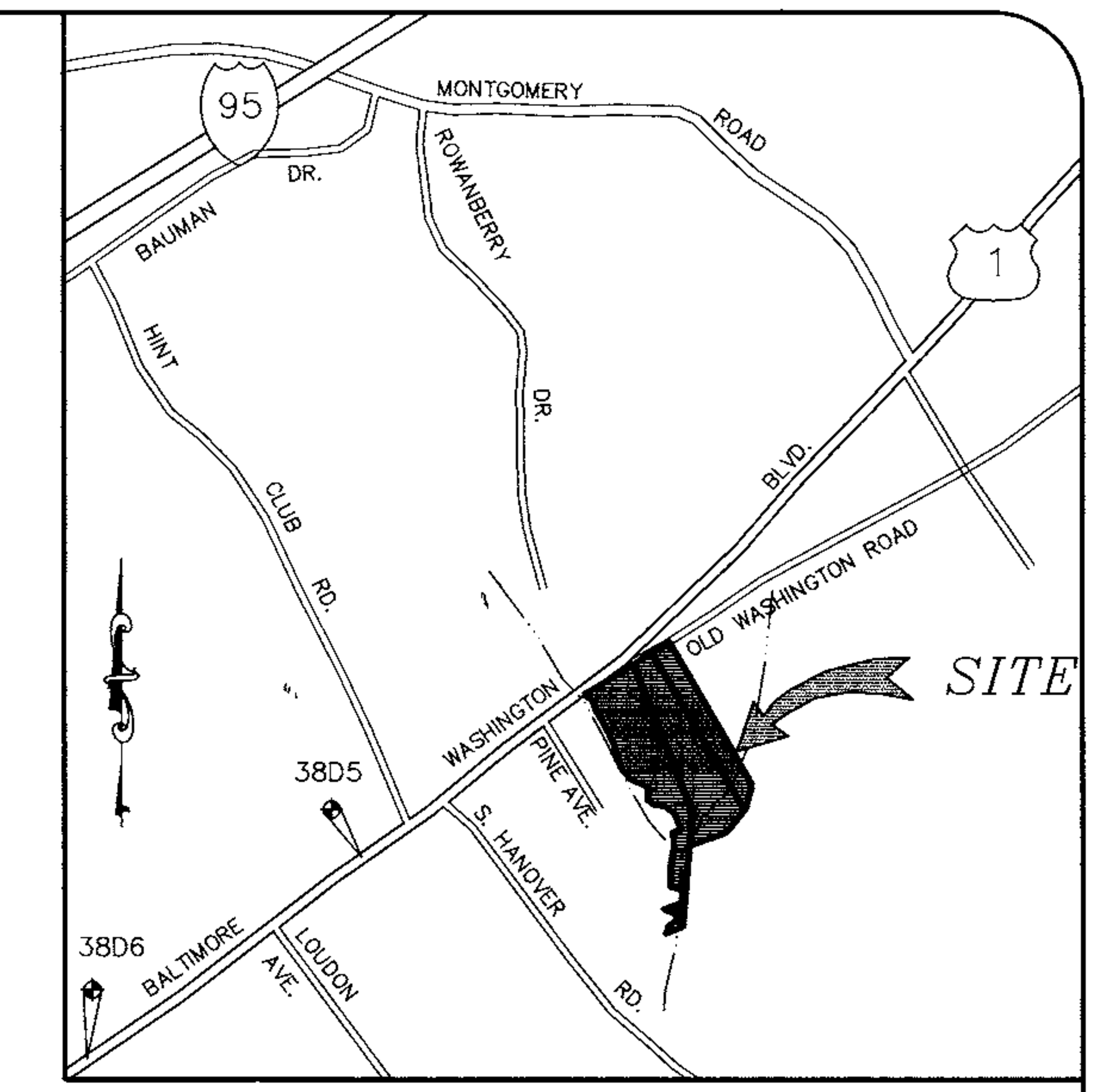
FIRST ELECTION DISTRICT ELKRIDGE, HOWARD COUNTY, MARYLAND

OFF-SITE REFORESTATION PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

SDP 98-139





VICINITY MAP

SCALE: 1" = 1,000'

LEGEND

- EXISTING GRADES — 2' CONTOURS, 10' CONTOURS
- PROPOSED GRADES — 2' CONTOURS, 10' CONTOURS
- LIMIT 100 YEAR FLOODPLAIN
- EX. TREELINE
- SLOPES – 15% TO 24.9%
- SLOPES – 25% +
- FLOW ARROW
- PROP. TREELINE
- TRAFFIC FLOW
- WETLAND LIMIT
- 100 YEAR PUBLIC FLOOD PLAIN AND UTILITY EASEMENT
- GABION WALL (SEE SH. 6,8,9 FOR DETAILS)

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTIONS DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS PRIOR TO ANY EXCAVATION WORK:

MISS UTILITY	1-800-257-7777
C&P TELEPHONE COMPANY	(410) 725-9976
HOWARD COUNTY BUREAU OF UTILITIES	(410) 313-4900
AT&T CABLE LOCATION DIVISION	(410) 393-3533
BALTIMORE GAS & ELECTRIC	(410) 685-0123
STATE HIGHWAY ADMINISTRATION	(410) 531-5533
HOWARD COUNTY DEPT. OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION	(410) 313-1880

4. PROJECT BACKGROUND:

   LOCATION: 1ST ELECTION DISTRICT, TAX MAP 38, PARCELS 221 & 524.
   DEED REFERENCE: 1936/0226
   ZONING: M-1 PER 10/18/93 COMPREHENSIVE ZONING PLAN
   TOTAL TRACT AREA: 12.98 Ac.±
   DATE PREVIOUS PLANS APPROVED AND DPZ REFERENCE # : -SDP-73-20 -SDP-88-103

5. TOPOGRAPHY SHOWN HEREON IS BASED ON APRIL, 1998 FIELD RUN SURVEY BY MILDENBERG, BOENDER AND ASSOCIATES, INC. AND BY CARROLL ENGINEERS, INC. DATED 8/17/95.
6. COORDINATES BASED ON NAD '83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS No. 38D5 AND 38D6.

   STA. No. 38D5 N 558,378.5683 E 1,386,524.3031 EL. = 193.75
   STA. No. 38D6 N 557,155.4454 E 1,384,992.3931 EL. = 175.261

7. WATER AND SEWER ARE PUBLIC, CONTRACT #'S 346-S & 349-W.
8. STORMWATER MANAGEMENT QUANTITY CONTROL WAIVER IS APPROVED ON JUNE 17, 1998.
9. STORMWATER MANAGEMENT QUALITY CONTROL BY STORMCEPTORS.
10. USE BITUMINOUS CURB STD. R-3.03.
11. SITE ANALYSIS DATA CHART:

    TOTAL PROJECT AREA: 12.98± ACRES
    LIMIT OF DISTURBED AREA: 7.99 AC.±
    PRESENT ZONING: M-1
    EX. FLOOR SPACE: WAREHOUSE & DIST. = 28,986 SF±
    OFFICE = 3,236 SF±
    PROPOSED USE: WAREHOUSE, DISTRIBUTION AND VEHICLE SERVICE
    BUILDING COVERAGE OF SITE : SERVICE BAYS – 30,600 SF
    WAREHOUSE & DISTRIBUTION – 63,222 SF
    TOTAL BUILDING COVERAGE – 93,822 SF±
    (OR 16.59% OF GROSS AREA)

    PARKING REQUIREMENT –
    WAREHOUSE & DISTRIBUTION (263'x120' + 260'x140'): 32 SPACES (0.5x63,222/1,000)
    SERVICE BAYS (180'x140' + 90'x60'): 69 SPACES (3 + 3x22)
    NUMBER OF PARKING SPACES REQUIRED: 90 SPACES
    NUMBER OF PARKING SPACES PROVIDED: 93 (9' x 20')
    (INCLUDING 2 HANDICAP PARKINGS)

12. ALL STORM DRAIN PIPE TO BE RCP CL. IV UNLESS OTHERWISE SHOWN.
13. TREELINE BASED ON FOREST STAND DELINEATION BY WILDMAN ENVIRONMENTAL SERVICES, MARCH 10, 1998.
14. FOR PAVING AND GABION WALL PROFLES & DETAILS SEE SHEET 8. GABION WALLS TO BE INSTALL BETWEEN STA. -0+21 TO STA. 1+26, STA. 2+33 TO STA. 10+64 AND STA. 11+50 TO STA. 12+37.
15. 100 YEAR FLOODPLAIN SHOWN IS PER CFP 25-47/97 & CFP 25-46/97 UPDATED BY KCI, INC. IN JANUARY 1997.
16. FOREST CONSERVATION EASEMENT(S) HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.200 OF HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING, OF CONSTRUCTION IS PERMITTED WITHIN THE FOREST EASEMENT, EXCEPT AS SHOWN ON AN APPROVED SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACICES AS DEFINED IN THE DEED OR CONSERVATION EASEMENT ARE ALLOWED.
17. THE FOREST CONSERVATION OBLIGATIONS INCURRED BY THIS SITE DEVELOPMENT (2.56 ACRES) HAS BEEN MET BY 0.29 ACRE OF ON-SITE REFORESTATION (SEE SH.11), 1.49 ACRES OFOFF-SITE REFORESTATION (SEE SH. 12) AND 0.79 ACRE OF FEE-IN-LIEU OF REFORESTATION.
18. NO NEW CONNECTIONS TO PUBLIC WATER AND SEWER IS PROPOSED.
19. WETLAND LIMIT AS SHOWN IS PER THE 'WETLAND INVESTIGATION AND FROEST STAND DELINEATION REPORT PREPARED BY WILDMAN ENVIRONMENTAL SERVICES DATED MARCH 10, 1998.
20. INSTALL THE PROPOSED BAYSAVERS AT INVERTS AND LOCATION AS SHOWN ON PLAN.
21. ACCESS EASEMENT ESTABLISHED ON THE ENTIRE AREA OF PARCEL 524 FOR THE BENEFIT OF PARCEL 221, LIBER 1936, FOLIO 226.
22. NUMBER OF PARKING REQUIRED IS PER THE "PARKING ACCUMULATION ASSESSMENT" BY LEE CUNNINGHAM & ASSOCIATES, INC. DATED FEBRUARY 29, 2000.

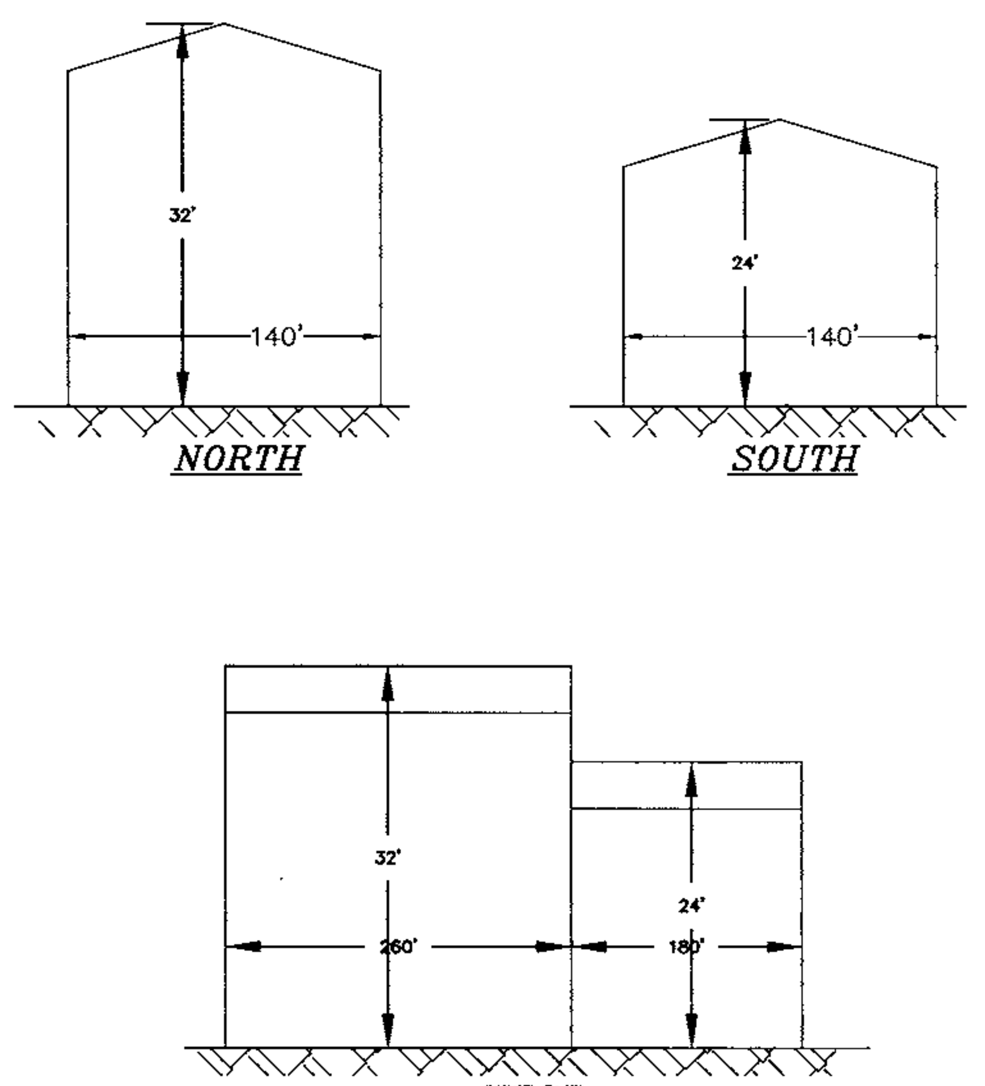
(INCLUDING 2 HANDICAP PARKINGS)

State of Maryland seal: LIN, CHENG-HO, PROFESSIONAL ENGINEER — 9/10/99

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	9/24/99 DATE
[signature] CHIEF, DIVISION OF LAND DEVELOPMENT ~~AND RESEARCH~~	10/4/99 DATE
[signature] DIRECTOR	10/4/99 DATE

98014/DWG/SDP/SDP



ELEVATION

INDEX OF SHEETS

NO	TITLE
1	SITE DEVELOPMENT PLAN
2	SEDIMENT CONTROL PLAN
3	SEDIMENT CONTROL NOTES AND DETAILS
4	STORMDRAIN PROFILES
5	DRAINAGE AREA MAP
6	PAVING PLAN & MISCELLANEOUS DETAILS
7	RECORD OF SOIL EXPLORATION
8	GABION WALL PLAN, PROFILE, DETAILS & NOTES
9	GABION WALL ASSEMBLY & ERECTION INSTRUCTIONS
10	LANDSCAPE PLAN
11	FOREST CONSERVATION & REFORESTATION PLAN
12	OFF-SITE FOREST MITIGATION PLAN

PERMIT INFORMATION CHART

SUBDIVISION NAME			SECTION/AREA		LOT/PARCEL #
ALBAN TRACTOR CO., INC.					
PLAT # OR L/F: 1936/226	BLOCK #: 8	ZONE: M-1	TAX MAP: 38	ELEC. DIST.: FIRST	CENSUS TRACT: 6012
WATER CODE: A01			SEWER CODE: 2150529		

OWNER/DEVELOPER

ALBAN TRACTOR CO., INC.
P. O. BOX 9595
BALTIMORE, MARYLAND 21237
(410) 686-7777
ATTN: CHUCK WITMER

project	date	illustration	engineering	scale	approval
98014	SEP. 1999	FCL/RJ	FCL	1" = 50'	JH

no.	description (revisions)	date
1	REVISE 6" SHC & PARKING TABULATION, REMOVE 14 PARKING & RELATED GABION WALL REMOVE STORM DRAIN & STRUCTURES BETWEEN I10-I12	5/15/2000

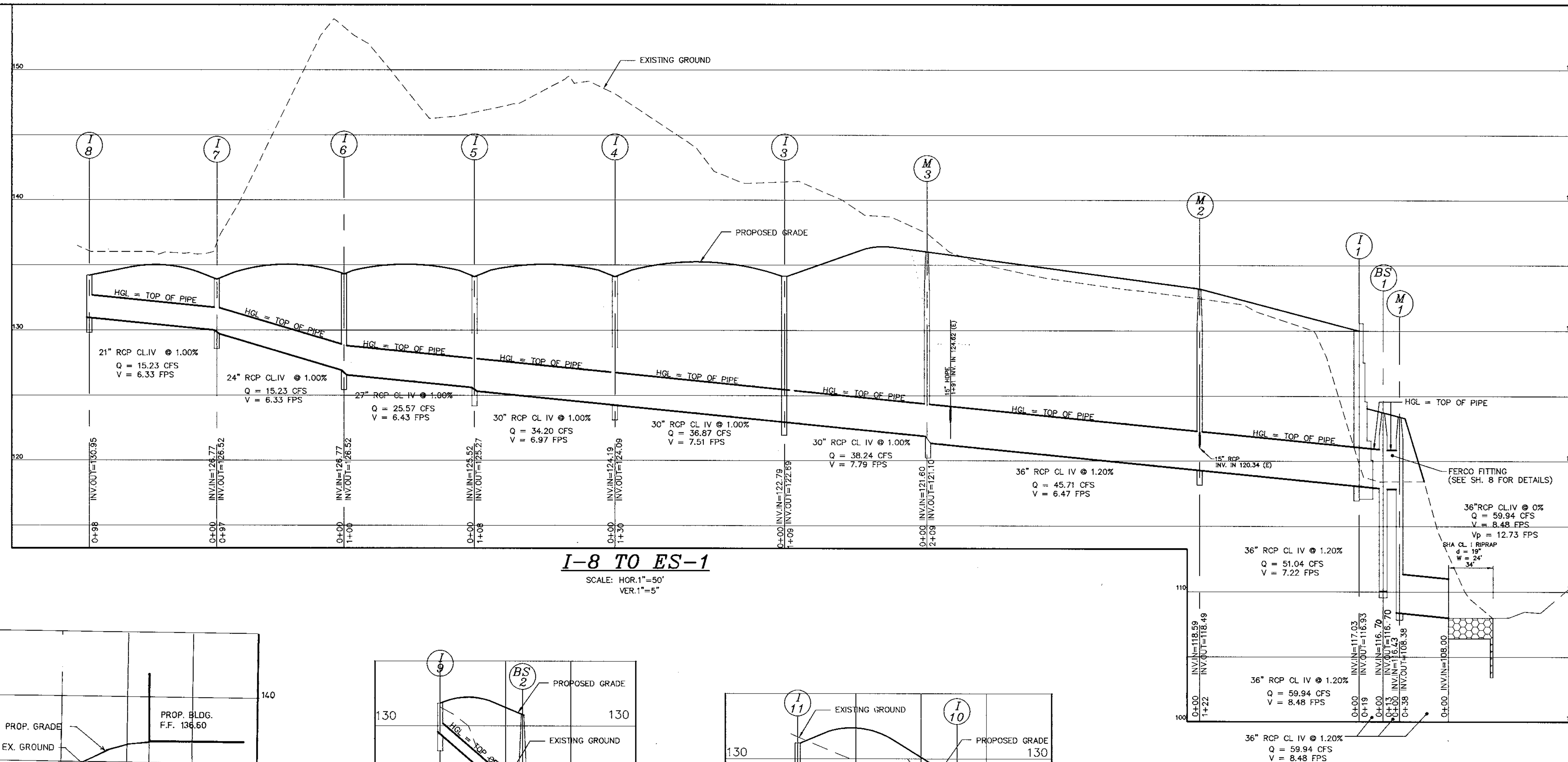
TAX MAP 38, PARCELS 221 & 524
ALBAN TRACTOR

FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SITE DEVELOPMENT PLAN

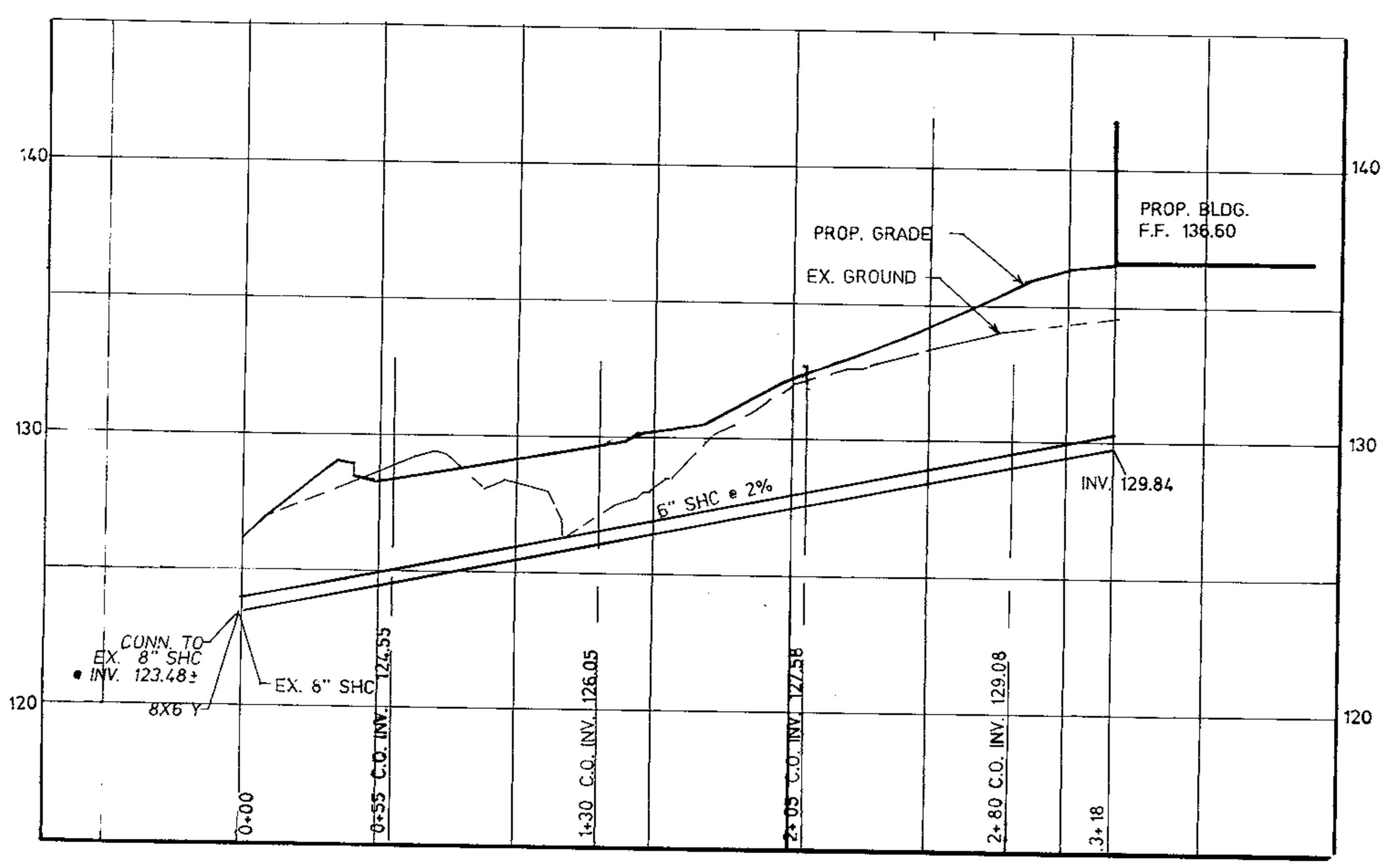
MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

SDP 98-139



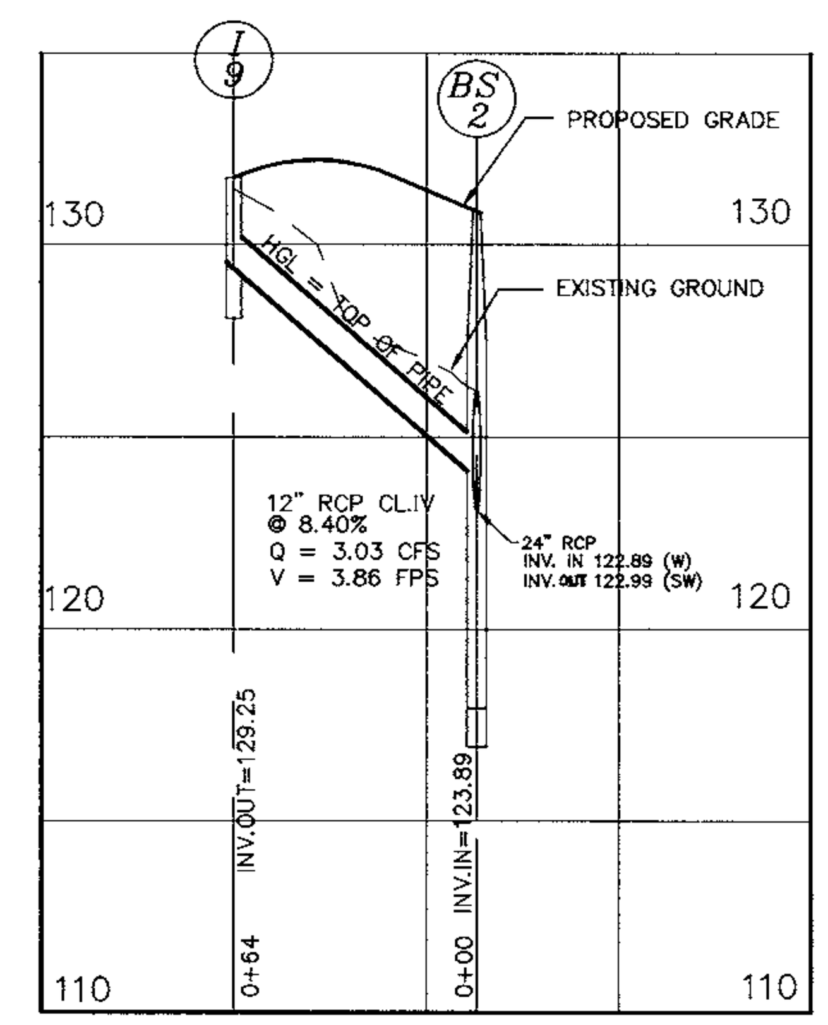
I-8 TO ES-1

SCALE: HOR.1"=50'
VER.1"=5"



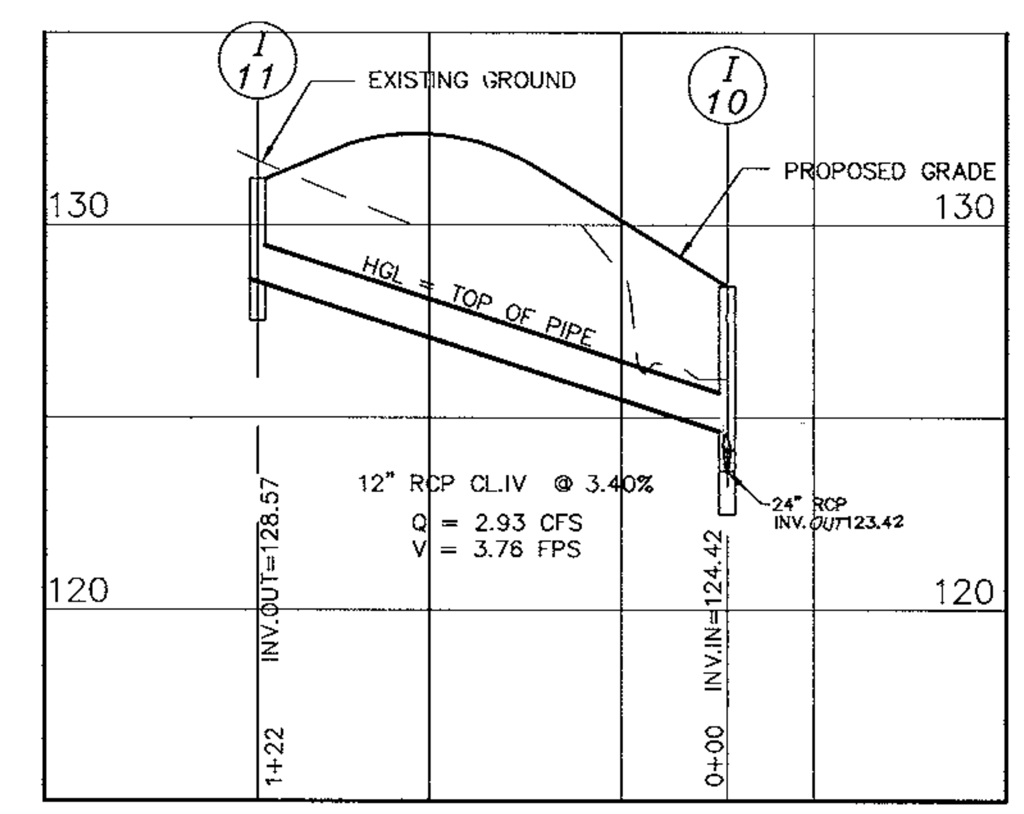
6" SHC PROFILE

SCALE: HOR. 1"= 50'
VERT. 1"= 5'



I-9 TO BS-2

SCALE: HOR.1"=50'
VER.1"=5"



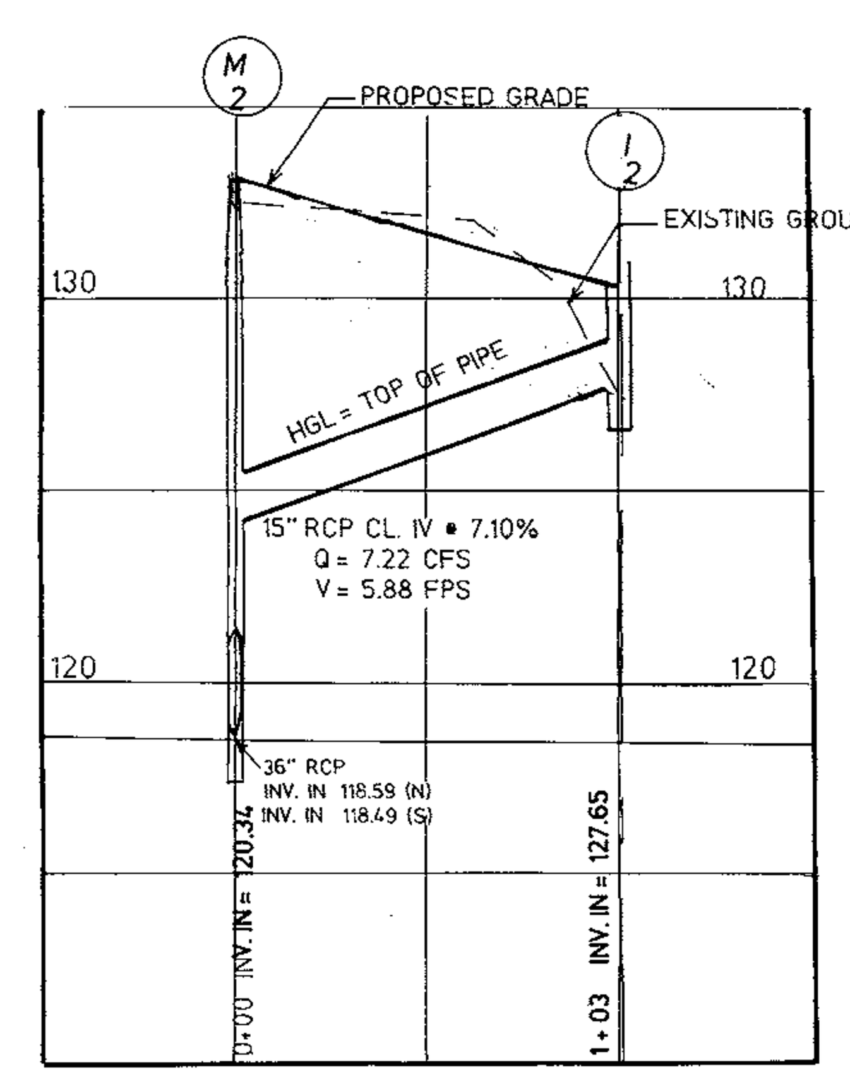
I-11 TO 1-10

SCALE: HOR.1"=50'
VER.1"=5"

STRUCTURE SCHEDULE

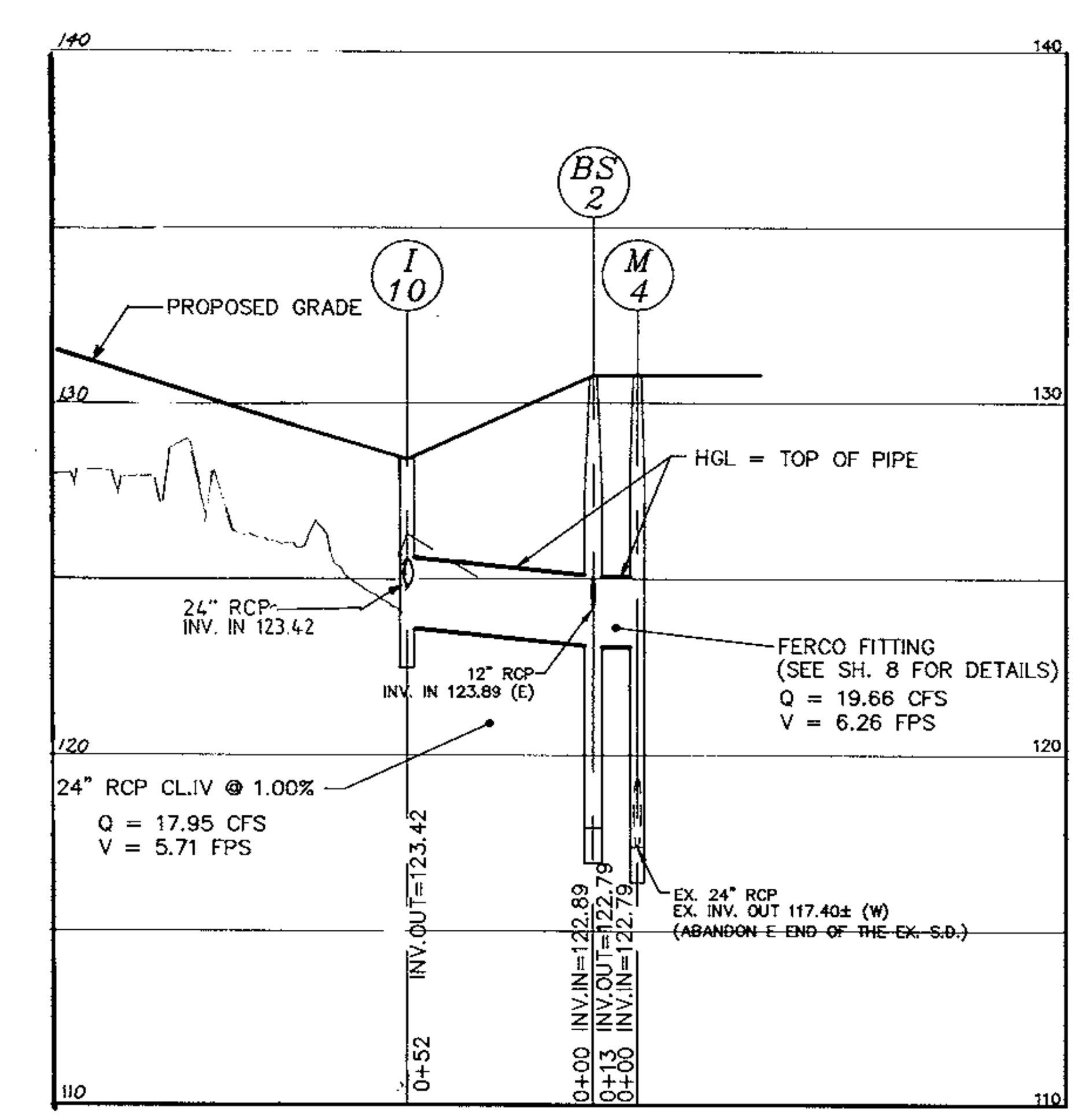
NO.	LOCATION*		TOP**	INV. IN	INV. OUT	COMMENTS
I-1	N 558,550.45	E 1,388,416.24	130.00	117.03	116.93	DOUBLE TYPE 'S' COMB. INLET (STD. SD-4.34) - SUMP
I-2	N 558,603.04	E 1,388,566.82	130.40	----	127.65	TYPE 'S' INLET (STD. SD-4.22) - SUMP
I-3	N 558,944.18	E 1,388,557.28	134.20	122.79	122.69	TYPE 'S' COMB. INLET (STD. SD-4.32) - SUMP
I-4	N 559,066.51	E 1,388,501.59	134.20	124.19	124.09	TYPE 'E' INLET (STD. SD-4.21) - SUMP
I-5	N 559,148.43	E 1,388,436.45	134.20	125.52	125.42	TYPE 'E' INLET (STD. SD-4.21) - SUMP
I-6	N 559,234.17	E 1,388,385.19	134.20	126.77	126.52	TYPE 'E' INLET (STD. SD-4.21) - SUMP
I-7	N 559,263.19	E 1,388,292.29	134.20	129.97	129.72	TYPE 'E' INLET (STD. SD-4.21) - SUMP
I-8	N 559,346.79	E 1,388,241.98	134.20	----	130.95	TYPE 'E' INLET (STD. SD-4.21) - SUMP
I-9	N 558,958.88	E 1,388,213.52	131.75	----	129.25	TYPE 'S' INLET (STD. SD-4.22) - SUMP
I-10	N 558,978.30	E 1,388,109.49	129.65	123.92 (N)	123.42	DOUBLE TYPE 'S' INLET (STD. SD-4.01) - SUMP
I-11	N 559,094.06	E 1,388,162.77	131.20	----	128.70	TYPE 'S' INLET (STD. SD-4.22) - SUMP
—	—		—	—	—	—
M-1	N 558,540.95	E 1,388,383.90	123.60	116.43	118.54	MANHOLE (STD. G-5.01)
M-2	N 558,656.17	E 1,388,477.65	133.12	118.59 (N) 120.32 (E)	118.49	MANHOLE (STD. G-5.01)
M-3	N 558,835.47	E 1,388,584.48	136.15	123.59	123.09	MANHOLE (STD. G-5.01)
M-4	N 558,945.77	E 1,388,150.94	130.80	122.79	117.40±	MANHOLE (STD. G-5.01)
BS-1	N 558,544.98	E 1,388,395.73	123.80	116.70	116.60	BAYSAVER 5K SYSTEM
BS-2	N 558,935.55	E 1,388,142.91	131.00	123.79 (NE) 122.89 (W)	122.79	BAYSAVER 3K SYSTEM
ES1	N 558,528.49	E 1,388,348.71	-----	108.00	108.00	CONCRETE END SECTION (STD. SD-5.51)

NOTE: LOCATION SHOWN IS AT CENTER OF INLET.
* LOCATION SHOWN IS CENTER AT FACE OF CURB.



M-2 TO I-2

SCALE: HOR. 1"=50'
VER. 1"= 5'

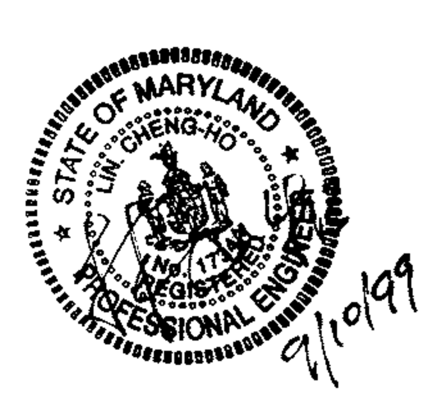


I-10 TO M-4

SCALE: HOR.1"=50'
VER.1"=5"

OWNER/DEVELOPER

ALBAN TRACTOR CO., INC.
P. O. BOX 9595
BALTIMORE, MARYLAND 21237
(410) 686-7777
ATTN: CHUCK WITMER



APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — 9/24/99 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 10/4/99 DATE

DIRECTOR — 10/4/95 DATE

98014/DWG/NEW-SDP/1105

project	date	illustration	engineering	scale	approval
98014	SEP. 1999	FCL/RJ	FCL	1" = 50'	JH

no.	description	date
2	CHANGES TO SEWER & STORMDRAIN PROFILS	8/16/2000
1	REMOVE PROP. WALL & PAVING	5.18.00

revisions

TAX MAP 38, PARCELS 221 & 524

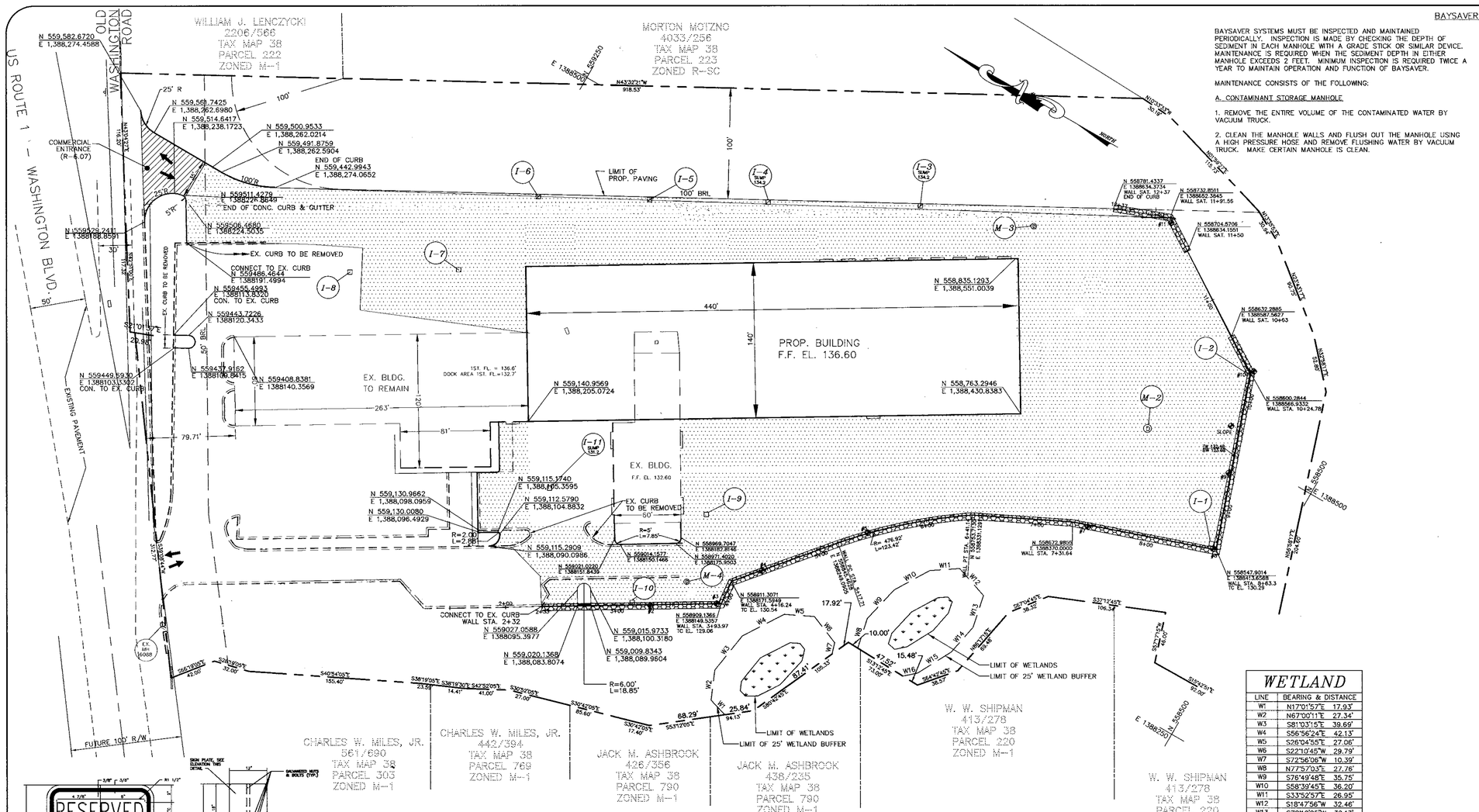
ALBAN TRACTOR

FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

STORMDRAIN AND SHC PROFILES

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

SDP 98-139

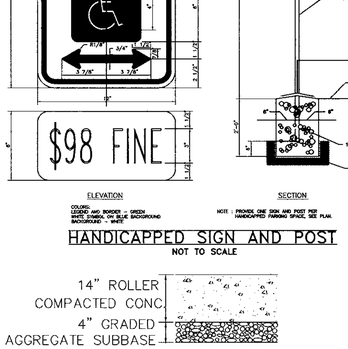


PAVING LAYOUT PLAN

SCALE: 1" = 50'

NOTE: GABION WALL STATIONING IS AT THE BACK OF THE PROPOSED.

WETLAND		
LINE	BEARING & DISTANCE	
W1	N17°01'57"E	17.93'
W2	N67°00'11"E	27.34'
W3	S81°03'15"E	39.69'
W4	S56°56'24"E	42.13'
W5	S26°04'55"E	27.06'
W6	S22°10'45"W	29.79'
W7	S72°56'06"W	10.39'
W8	N77°57'03"E	27.76'
W9	S76°49'48"E	35.75'
W10	S58°39'45"E	36.20'
W11	S33°52'57"E	26.95'
W12	S18°47'56"W	32.46'
W13	S78°10'25"W	30.13'
W14	N78°17'50"W	29.49'
W15	N61°59'32"W	35.91'
W16	N41°13'14"W	13.43'

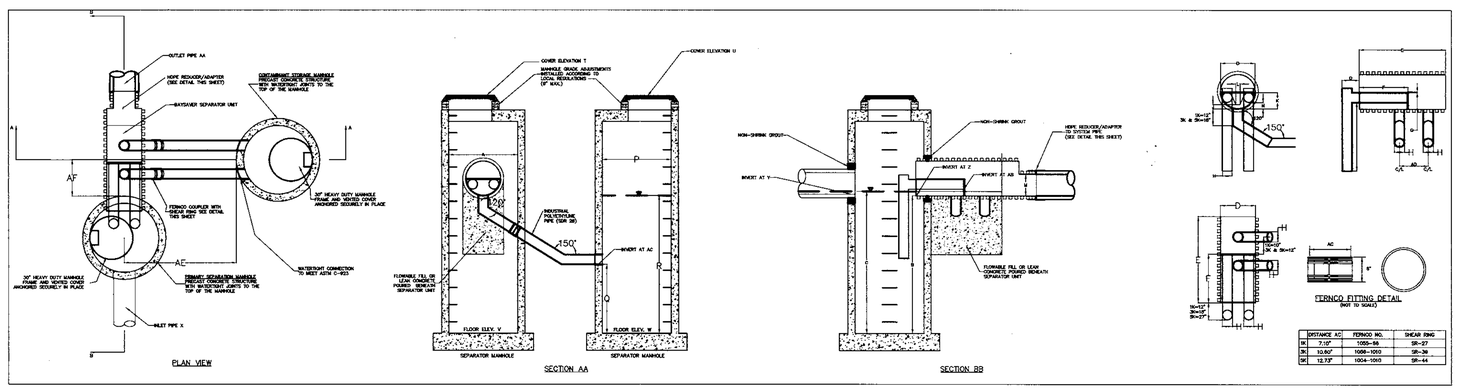


HANDICAPPED SIGN AND POST

NOT TO SCALE

TYPICAL PAVING SECTION

NOT TO SCALE



	DISTANCE AC	FERNCO NO.	SHEAR RING
3K	7.15"	1055-99	SR-37
5K	10.80"	1056-1200	SR-36
6K	12.73"	1004-1065	SR-44

BAYSAVER DETAILS

NOT TO SCALE

OWNER/DEVELOPER

ALBAN TRACTOR CO., INC.
P. O. BOX 9595
BALTIMORE, MARYLAND 21237
(410) 686-7777
ATTN: CHUCK WIMER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 9/24/99

CHIEF, DIVISION OF LAND DEVELOPMENT ~~AND RESEARCH~~ — DATE 10/5/99

DIRECTOR — DATE 10/4/99

STATE OF MARYLAND — FRANCIS C. LIN — REGISTERED PROFESSIONAL ENGINEER — 9/10/99

BAYSAVER MAINTENANCE

BAYSAVER SYSTEMS MUST BE INSPECTED AND MAINTAINED PERIODICALLY. INSPECTION IS MADE BY CHECKING THE DEPTH OF SEDIMENT IN EACH MANHOLE WITH A GRADE STICK OR SIMILAR DEVICE. MAINTENANCE IS REQUIRED WHEN THE SEDIMENT DEPTH IN EITHER MANHOLE EXCEEDS 2 FEET. MINIMUM INSPECTION IS REQUIRED TWICE A YEAR TO MAINTAIN OPERATION AND FUNCTION OF BAYSAVER.

MAINTENANCE CONSISTS OF THE FOLLOWING:

A. CONTAMINANT STORAGE MANHOLE

1. REMOVE THE ENTIRE VOLUME OF THE CONTAMINATED WATER BY VACUUM TRUCK.

2. CLEAN THE MANHOLE WALLS AND FLUSH OUT THE MANHOLE USING A HIGH PRESSURE HOSE AND REMOVE FLUSHING WATER BY VACUUM TRUCK. MAKE CERTAIN MANHOLE IS CLEAN.

B. PRIMARY SEPARATION MANHOLE

1. USING A SUBMERSIBLE PUMP, PUMP THE CLEAN WATER FROM THE CENTER OF THE MANHOLE DIRECTLY INTO THE EMPTY STORAGE MANHOLE UNTIL THE WATER LEVEL FALLS TO 1 FOOT ABOVE THE SEDIMENT LAYER.

2. REMOVE THE SETTLED SEDIMENT AND REMAINING WATER BY VACUUM TRUCK.

3. CLEAN THE MANHOLE WALLS AND FLUSH OUT THE MANHOLE USING A HIGH PRESSURE HOSE AND REMOVE FLUSHING WATER BY VACUUM TRUCK. MAKE CERTAIN MANHOLE IS CLEAN.

4. CONTAMINATED MATERIAL REMOVED FROM THE MANHOLES MUST BE DISPOSED OF RESPONSIBLY AND LEGALLY BY THE OPERATOR OF THE VACUUM TRUCK.

BAYSAVER INSTALLATION INSTRUCTIONS

1. EXCAVATION MUST PROVIDE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO SEPARATOR MANHOLE AND BAYSAVER UNIT. INSTALL PRECAST DROP STRUCTURES ON SOLID GROUND AS VERIFIED BY A GEOTECHNICAL ENGINEER.

2. VERIFY THE SUBGRADE ELEVATION AGAINST THE MANHOLE DIMENSIONS AND CONNECTING STORM DRAIN INVERTS.

3. MAKING SURE THE BASES ARE LEVEL AND THE STORAGE MANHOLE OPENINGS ARE ALIGNED WITH THE SEPARATOR UNIT, INSTALL PRIMARY AND STORAGE MANHOLES. INSTALL RUBBER GASKETS ON BASE UNITS AND COAT WITH LUBRICATING GREASE. INSTALL ADDITIONAL MANHOLE SECTIONS AS REQUIRED. SEAL LIFT HOLES WITH NON-SHRINK GROUT.

4. BACKFILL BASE SECTIONS OF MANHOLES TO INVERT OF STORAGE MANHOLE CONNECTING PIPES. USING APPROVED BACKFILL MATERIAL, BACKFILL AND COMPACT IN 8 INCH LIFTS. BACKFILL AND COMPACTION SHOULD BE MONITORED BY A GEOTECHNICAL ENGINEER.

5. INSTALL BAYSAVER SEPARATOR UNIT AND CONNECTING PIPES. SEAL ALL CONNECTING JOINTS AND INSTALL SEPARATOR UNIT/STORM DRAIN JOINT COLLAR. CUT EXCESS LENGTH OFF CONNECTING PIPES INSIDE STORAGE MANHOLE.

6. BACKFILL SEPARATOR UNIT AND MANHOLES. AREAS NOT ACCESSIBLE TO COMPACTION EQUIPMENT MUST BE BACKFILLED WITH LEAN CONCRETE OR FLOWABLE FILL.

7. INSTALL AND SET MANHOLE COVER GRADE ADJUSTMENT RINGS AS NECESSARY.

8. INSTALL AND SET MANHOLE FRAME AND COVER UNITS.

BAYSAVER GENERAL CONSTRUCTION NOTES

1. ALL WORK MUST BE DONE WITH REGARD FOR THE SAFETY OF THE CONSTRUCTION CREW.

2. ALL WORK AND MATERIALS MUST COMPLY WITH APPLICABLE STATE AND LOCAL REGULATIONS.

3. KNOW THE LOCATION AND DEPTH OF ANY UNDERGROUND UTILITIES BEFORE EXCAVATION BEGINS.

BAYSAVER SEPARATION SYSTEM – BS1 SEPARATOR UNIT ORDER FORM

PROJECT: ALBAN TRACTOR CO., INC.
ADDRESS: P. O. BOX 9595, BALTIMORE, MARYLAND 21237
DELIVERY DATE:
OWNER:
CONTACT:
ADDRESS:

DESIGNER: MILDENBERG, BOENDER & ASSOC., INC.
CONTACT: FRANK C. LIN
PHONE: (410) 997-0296
FAX: (410) 997-0298
CONTRACTOR:
CONTACT:
PHONE:
FAX:

SEPARATOR UNIT MODEL: 5K

MANHOLE SPECIFICATIONS:

PRIMARY MANHOLE DIAMETER:	72"
STORAGE MANHOLE DIAMETER:	72"
FLOOR ELEVATIONS PRIMARY MANHOLE:	108.60
STORAGE MANHOLE:	108.60
PRIMARY MANHOLE INVERT ELEVATIONS SEPARATOR UNIT:	116.60
INLET PIPE(S):	36" RCP (IN)
	36" RCP (OUT)
MANHOLE COVER ELEVATIONS PRIMARY MANHOLE:	123.80
STORAGE MANHOLE:	123.80

FOR QUESTIONS, PRICES, OR TECHNICAL SUPPORT, PLEASE CONTACT
BaySaver, Inc. at (301) 629-6119

BAYSAVER SEPARATION SYSTEM – BS2 SEPARATOR UNIT ORDER FORM

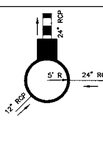
PROJECT: ALBAN TRACTOR CO., INC.
ADDRESS: P. O. BOX 9595, BALTIMORE, MARYLAND 21237
DELIVERY DATE:
OWNER:
CONTACT:
ADDRESS:

DESIGNER: MILDENBERG, BOENDER & ASSOC., INC.
CONTACT: FRANK C. LIN
PHONE: (410) 997-0296
FAX: (410) 997-0298
CONTRACTOR:
CONTACT:
PHONE:
FAX:

SEPARATOR UNIT MODEL: 3K

MANHOLE SPECIFICATIONS:

PRIMARY MANHOLE DIAMETER:	60"
STORAGE MANHOLE DIAMETER:	60"
FLOOR ELEVATIONS PRIMARY MANHOLE:	114.78
STORAGE MANHOLE:	114.78
PRIMARY MANHOLE INVERT ELEVATIONS SEPARATOR UNIT:	123.79
INLET PIPE(S):	12" & 24" RCP IN
	24" RCP OUT
MANHOLE COVER ELEVATIONS PRIMARY MANHOLE:	128.504
STORAGE MANHOLE:	129.704



FOR QUESTIONS, PRICES, OR TECHNICAL SUPPORT, PLEASE CONTACT
BaySaver, Inc. at (301) 629-6119

project	date
98014	SEP. 1999
illustration	engineering
FCL	FCL
scale	approval
AS SHOWN	JH

no.	description revisions	date
1	REVISED STORM DRAIN STRUCTURE 7, 12 REMOVED PROP. WALL / PAVING / PROPERTY LINE	8/6/1999 8/31/2000

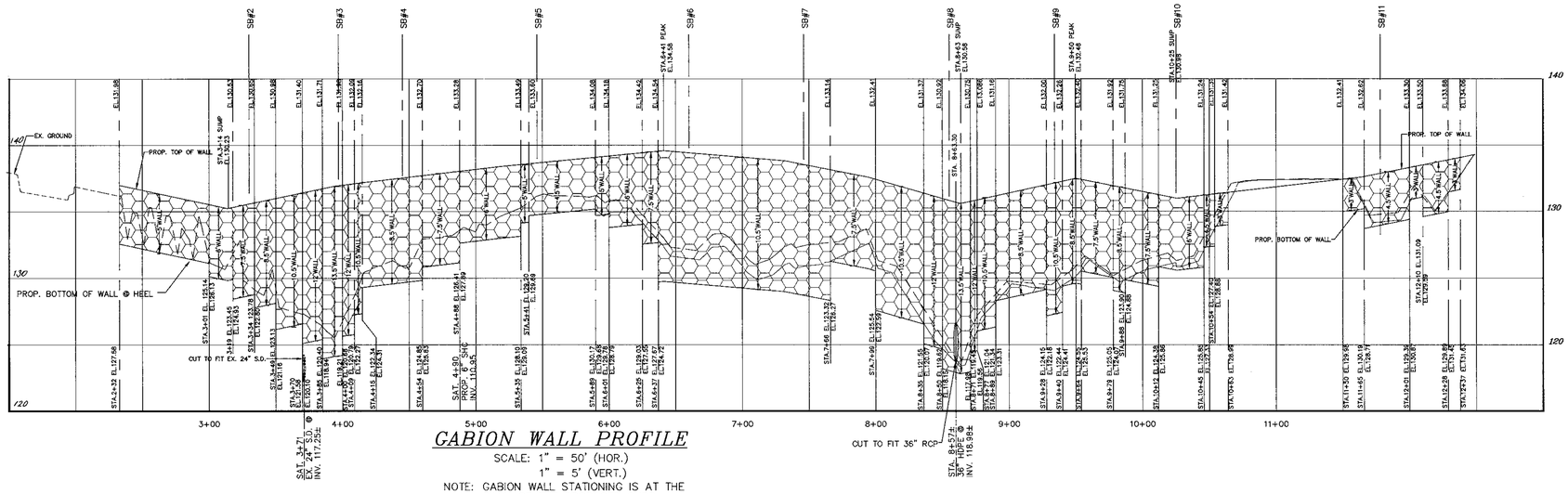
TAX MAP 38, PARCEL 221 & 524
ALBAN TRACTOR
HOWARD COUNTY, MARYLAND
FIRST ELECTION DISTRICT
PAVING & MISCELLANEOUS DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax

6 OF 12

SDP 98-139

98014/DWG/NEWSDP/MISC



GABION WALL PROFILE

SCALE: 1" = 50' (HOR.)
1" = 5' (VERT.)

NOTE: GABION WALL STATIONING IS AT THE BACK OF THE PROPOSED CURB.

GABION WALL SPECIFICATION & CONSTRUCTION NOTES

SECTION 000

PVC COATED GABIONS
January 1999

000.1 Description

This work shall consist of furnishing, assembling, and filling woven wire mesh baskets with rock to form gabions as specified in the contract to the dimensions, lines and grades shown on the plans, or as determined by the engineer. These specifications include gabions as manufactured by Maccaferri Gabions, Inc.

000.2 Materials

000.2.1 Woven Mesh Gabions

000.2.1.1 Wire (zinc):
* All test on the wire mesh must be performed prior to manufacturing the mesh.
(Tensile strength: both the wire used for the manufacture of gabions and the lacing wire, shall have a tensile strength of 54,039 to 68,259 psi (38–48 kg/mm2).
(Elongation: the test must be carried out on a sample at least 12 in. (30 cm) long. Elongation shall not be less than 12 % in accordance with ASTM A370–92.
(Zinc coating: minimum quantities of zinc according to ASTM A641–92, Class III soft temper coating.
(Adhesion of zinc coating: the adhesion of the zinc coating to the wire shall be such that, when the wire is wrapped six turns round on a mandrel having four times the diameter of the wire, it does not flake or crack when rubbing it with the bare fingers, in accordance with ASTM A641–92.

000.2.1.2 PVC (Polyvinyl Chloride) Coating
When specified in the plans:
(Specific gravity: (1–64 pcf (1.30–1.35 kg/dm3.) in accordance with ASTM D2287–92, Table 1
(Hardness: between 50 and 60 Shore D, according to ASTM D 2287–92;
(Tensile strength: not less than 2,986 psi (210 kg/cm2), according to ASTM D412–92;
(Modulus of elasticity: not less than 2,702 psi (190 kg/cm2), in accordance with ASTM D412–92;
(Weight loss: less than 5% after 24 hours at 221F (105C), according to ASTM D2287–92;
(Residual ashes: less than 2% according to ASTM D2124–62T;
(Abrasion resistance: the percentage of the weight loss shall be less than 12% according to ASTM D1242–92.
(Creeping corrosion: max. penetration of corrosion of the wire from a square cut end shall be 1 in. (25 mm) when the specimen has been immersed for 2,000 hrs in a 5% solution HCl (hydrochloric acid 12 Be).
The accelerated aging tests are:
(Salt spray test: test period 3,000 hours, test method ASTM B117–94;
(Exposure to UV rays: test period 3,000 hours at 145F (63C), test method ASTM D1499–92a and ASTM G23–93 apparatus type E;
(Exposure to high temperatures: test period 24 hours at 221F (105C), test method ASTM D1203–89 and ASTM D2287–92;
(Brittleness temperature: no higher than 15F (– 9C), or lower temperature when specified by the purchaser, when tested in accordance with ASTM D746.

The properties after aging tests shall be as follows:
(Appearance of coated mesh: no cracking, stripping or air bubbles, and no appreciable variation in color;
(Specific Gravity: variations shall not exceed 6%;
(Hardness: variations shall not exceed 10%;
(Tensile strength: variations shall not exceed 25%;
(Modulus of elasticity: variations shall not exceed 25%;
(Abrasion resistance: variations shall not exceed 10%;
(Brittleness temperature: shall not exceed + 64F (+18C);

000.2.1.3 Galvanized Gabion Mesh with PVC Sleeve 8 x 10 type
(Mesh Wire: Diameter – 0.106 inches (2.70 mm) plus PVC coating
(Selvedge Wire: Diameter – 0.134 inches (3.40 mm) plus PVC coating
(Mesh Opening: Nominal Dimension D 3.25 inches as per Fig. 1.

000.2.1.4 Galvanized Lacing Wire with PVC Sleeve, Internal Stiffeners for Gabions Only
Before PVC coating:
* Lacing wire: Diameter – 0.087 inches (2.20 mm)
* Wire: Diameter – 0.087 inches (2.20 mm)

000.2.1.5 Spenax Fasteners (Overlapping Fasteners):
* Overlapping fasteners may be used in lieu of lacing wire for basket assembly and installation. The spacing of the fasteners during all phases of assembly and installation shall be in accordance with spacing based on 1,400 lbs. pull apart resistance for galvanized mesh and with a nominal spacing of 100 mm (4 inches), and not to exceed 150 mm (6 inches).
* According to ASTM A313, Type 302, Class I. Tensile strength: 222,000 to 253,000 psi (156 – 178 kg/mm2) in Stainless Steel Fasteners (used with PVC coated baskets) – Diameter: 0.120 inch (3.05 mm), accordance with ASTM A313–92.
* Proper installation of rings: A properly formed Spenax fastener shall have a nominal overlap of one (1) inch after closure (Fig. 2).

000.2.2 Tolerances
* Wire: Zinc coating, in accordance with ASTM A641–92, Class III soft temper coating.
* Gabions: ± 5 % on the length, width, and height.
* Mesh opening: Tolerances on the hexagonal, double twisted wire mesh opening shall not exceed ± 10% on the nominal dimension D values (see Fig.1):

000.2.3 Fabrication
All baskets shall be of single unit construction made from non–raveling, double twisted, woven wire mesh. The front, base, back and lid of the gabions shall be woven into a single unit. The ends and diaphragm(s) shall be factory connected to the base. The lid may be a separate piece made of the same type mesh as the basket. All perimeter edges of the mesh forming the basket and top, or lid, shall be selvedged with selvage wire.
The gabion is divided into cells by means of diaphragms positioned at approximately 3 ft centers. The diaphragms shall be secured in position of the base so that no additional tying is necessary at the jobsite.

000.2.4 Rock
* The rock for gabions shall be hard, angular to round, durable and of such quality that they shall not disintegrate on exposure to water or weathering during the life of the structure. The size shall be such that a minimum of two layers of rock must be achieved when filling the gabions. Any rock smaller than the minimum size shall not be greater than 5% by weight; any rock greater than the maximum size shall not be greater than 5% by weight. The smallest dimension of any rock shall be larger than the smallest opening dimension of the gabion mesh.
* The minimum rock size for gabion mesh (8 x 10 cm) is four (4) inches (0.1 m) . For channel applications the maximum rock size shall not exceed two thirds (2/3) the thickness of the gabion lining. For non–hydraulic applications gabion rock is a nominal four (4) inches (0.1m) to eight (8) inches (0.2m).

000.3 Construction Requirements

000.3.1 Assembly
Gabions are supplied folded flat. Larger units may be supplied in rolls and packed in bundles. The units are assembled individually by erecting the sides, ends, and diaphragms, ensuring that all panels are in the correct position, and the tops of all sides are satisfactorily aligned. The four corners shall be connected first, followed by the internal diaphragms to the outside walls. All connections should use lacing wire or fasteners as previously described in Section 000.2.1.7, Section 000.2.1.8 and Section 000.2.1.9.

The procedure for using lacing wire consists of cutting a sufficient length of wire, and first looping and/or twisting the lacing wire to the wire mesh. Then proceed to lace with alternating single and double loops through every mesh opening (approximately every 150 mm or 6 inches) pulling each loop tight and finally securing the end of the lacing wire to the wire mesh by looping and/or twisting.

The installation of the fasteners shall be done in accordance with the manufacturer's recommendations as specified in Section 000.2.1.9.

000.3.2 Installation
After initial assembly, the gabion baskets are carried to their final position and are securely joined together along the vertical and top edges of their contact surfaces using the same connecting procedure(s) described in Section 000.3.1. Whenever a structure requires more than one layer, the upper empty baskets shall also be connected to the top of the lower layer along the front and back edges of the contact surface using the same connecting procedure(s) described in Section 000.3.1.

000.3.3 Filling
Baskets shall be filled with rock as specified in Section 000.2.4. During the filling operation some manual stone placement is required to minimize voids. The exposed faces of vertical structures may be carefully hand placed to give a neat, flat, and compact appearance. Care shall be taken when placing fill material to assure that the sheathing on the PVC coated baskets will not be damaged.

The cells shall be filled in stages so that local deformation may be avoided. That is, at no time shall any cell be filled to a depth exceeding 0.3 meter (1 foot) higher than the adjoining cell. It is also recommended to slightly overfill the baskets to allow for settlement of the rock. Behind gabion walls, compact the backfill material simultaneously to the same level as the filled gabions.

Well packed filling without undue bulging, and secure lacing and/or fastening, is essential in all structures.

000.3.4 Internal Connecting Wires
Internal connecting wires should be used when a structure requires layers of gabions to be stacked on top of each other. Internal Connecting Wires shall connect the exposed face of a cell to the opposite side of the cell. An exposed face is any side of a gabion cell that will be exposed or unsupported after the structure is completed. Lacing wire or prefabricated internal connecting wires may be used.

000.3.4.1 3 Feet High Gabions
3 feet high gabions shall be filled in three layers, 1 feet at a time. Connecting wires shall be installed after the placement of each layer, that is, at 1 feet high and 2 feet high.

000.3.4.2 1.5 Feet High Gabions
1.5 feet high gabions do not require connecting wires unless the baskets are used to build vertical structures. In some cases, these units shall be filled in two layers, 9 inches at a time. Connecting wires shall be installed after the placement of the first layer, which is at 9 inches high.

000.3.5 Lid Closing
Once the gabion baskets are completely full, the lids will be pulled tight until the lid meets the perimeter edges of the basket. The lid must then be tightly laced and/or fastened along all edges, ends and tops of diaphragm(s) in the same manner as described in Section 000.3.1.

000.3.6 Mesh cutting and folding
Where shown on the drawings or otherwise directed by the engineer, the basket mesh shall be cut, folded and fastened together to suit existing site conditions. The mesh must be cleanly cut and surplus mesh either folded back or overlapped so that it can be securely fastened together with lacing wire or fasteners in the manner described in Section 000.3.1. Any reshaped gabions shall be assembled, installed, filled and closed as specified in the previous sections.

000.4 Method of Measurement

000.4.1 The payment quantities for excavation shall be determined by the outside limits of the gabion structure. Quantities will be determined from cross sections and the linear distance, and paid for under the appropriate excavation bid items.

000.4.2 The quantity to be paid for "in place gabions" shall be the number of cubic meters or cubic yards of gabion baskets measured in their final position. Project conditions and material availability will determine the actual size of gabion baskets to be used.

000.4.3 Excavated material beyond the limits of the baskets shall be backfilled with gravel, crushed rock or other material approved by the engineer.

000.4.4 This bid price shall include the installed in place cost of all materials, equipment, and labor, including gabion baskets, rock, and backfill material.

000.5 Basis of Payment
Accepted gabions will be paid for at the unit price for each pay item included in the contract.

MACTEX
MX225 Nonwoven Geotextile

MACTEX MX225 is a polypropylene, staple fiber, needlepunched nonwoven geotextile. The fibers are needled to form a stable network that retain dimensional stability relative to each other. The geotextile is resistant to ultraviolet degradation and to biological and chemical environments normally found in soils. MACTEX MX225 conforms to the property values listed below:

PROPERTY	TEST METHOD	TYPICAL VALUES 1 English	Metric
Mechanical			
Grab Tensile Strength	ASTM D4632	150 lbs.	665 N
Grab Elongation	ASTM D4632	50 %	50 %
Puncture Strength	ASTM D4833	95 lbs.	420 N
Mullen Burst	ASTM D3786	325 psi.	2240 kPa
Trapezoidal Tear	ASTM D4533	60 lbs.	265 N
Hydraulic			
Apparent Opening Size(AOS)	ASTM D4751	70 (US Std.Sieve) 0.212 mm	
Permittivity, Y	ASTM D4491	1.30 sec–1	1.30 sec–1
Permeability, k = Y * t	ASTM D4491	0.24 cm/sec	0.24 cm/sec
Water Flow Rate	ASTM D4491	110 gpm/ft2	4480 l/min/m2
Endurance			
UV Resistance (%Retained @ 500 hours)	ASTM D4355	70%	70%

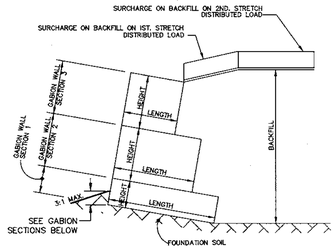
Notes:

1 Values shown are typical or average roll values in weaker principal direction. Minimum average roll values represent a 95 percent confidence level, calculated as the mean minus two standard deviations.

Standard Roll Size:

12.5' x 300' = 417 Square Yards
15.0' x 300' = 500 Square Yards

NOTES:
1. CONTROLLED COMPACTED FILL SHALL BE PLACED OVER A STABLE, APPROVED SUBGRADE IN LOOSE LIFTS NOT EXCEEDING 8 TO 12 INCHES.
2. THE COMPACTION OF EACH LIFT SHALL BE CONFIRMED BY IN–PLACE DENSITY TESTING PRIOR TO THE PLACEMENT OF SUBSEQUENT LIFTS.
3. STRUCTURAL FILL SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROTOR METHOD (ASTM D 1557, AASHTO T–180).
4. FILL IN LANDSCAPE AREAS SHALL BE COMPACTED TO AT LEAST 85 PERCENT IN ORDER TO MINIMIZE SUBSIDENCE.
5. STRUCTURE FILL SHALL BE PROPERLY BENCHED INTO EXISTING SOILS.
6. THE CONSTRUCTION OF ALL RETAINING WALL SHALL BE PERFORMED UNDER THE OBSERVATION OF A MARYLAND REGISTERED PROFESSIONAL ENGINEER.



GABION WALL DESIGN PARAMETERS

NOT TO SCALE

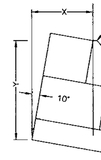
DESIGN PARAMETERS:

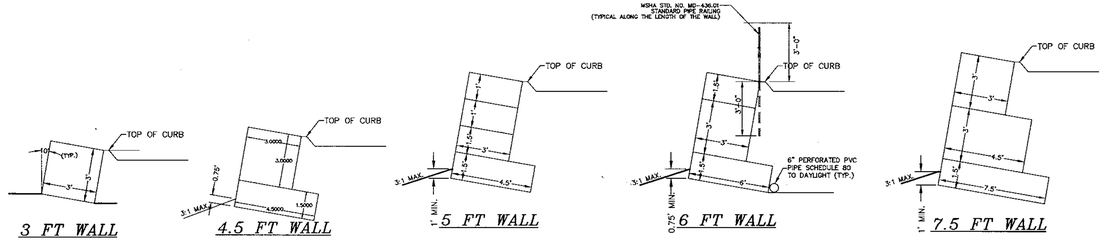
NO SURCHARGE ON WALL
PAVING SURCHARGE – 625lb/lf
(5' DISTRIBUTED LOAD @ 125lb/ft – PER HO. CO. DED)
WALL BATTER – 10 degrees
ROCKFILL UNIT WEIGHT – 156pcf
POROSITY OF GABIONS – 0.33

THE FOLLOWING PARAMETERS ARE PER GEOTECHNICAL ENGINEERING STUDY BY HILLIS–CARNES DATED JANUARY 4, 1999:

ALLOWABLE SOIL BEARING PRESSURE" 3,000 psf
SELECT GRANULAR BACKFILL:
ANGLE OF INTERNAL FRICTION = 30 degrees
COHESION = 0 psf
BULK (wet) DENSITY = 120 pcf
SOILS AT THE FOUNDATION LEVEL:
ANGLE OF INTERNAL FRICTION = 28 degrees
COHESION = 0 psf
BULK (wet) DENSITY = 125 psf

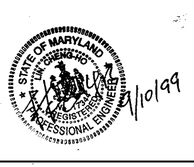
GABION WALL METRICS		
WALL HEIGHT	X	Y
3'	3.48'	2.43'
4.5'	3.74'	3.91'
5.0'	3.3.82'	4.40'
6'	4.00'	5.39'
7.5'	4.20'	6.87'
8.5'	4.43'	7.85'
10.5'	4.78'	9.82'
12'	5.04'	11.30'
13.5'	5.30'	12.77'





GABION WALL SECTIONS

NOT TO SCALE



9/10/99

OWNER/DEVELOPER

ALBAN TRACTOR CO., INC.
P. O. BOX 9595
BALTIMORE, MARYLAND 21237
(410) 686–7777
ATTN: CHUCK WITMER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 9/24/99
CHIEF, DIVISION OF LAND DEVELOPMENT ~~AND RESEARCH~~ — DATE 10/4/99
DIRECTOR — DATE 10/4/99

98014/DWG/NEWSDP/WALL

project 98014 | date SEP. 1999
illustration | engineering
PCL/SJD | FCL
scale AS SHOWN | approval JH

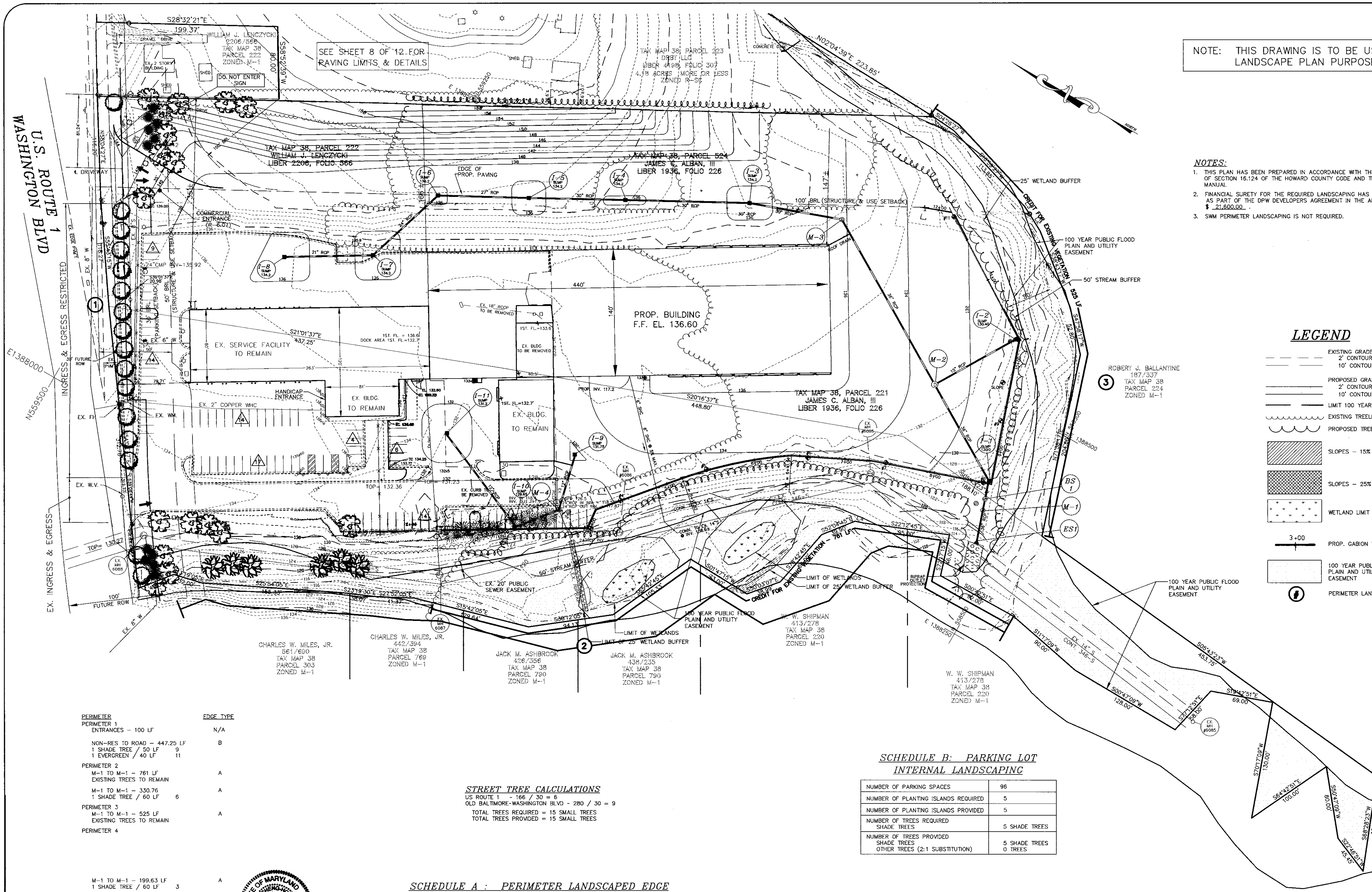
no. 1 | description REVISE PROP. WALL | date 5/17/2000
revisions

TAX MAP 38, PARCEL 221 & 524
ALBAN TRACTOR
HOWARD COUNTY, MARYLAND
MISCELLANEOUS DETAILS
FIRST ELECTION DISTRICT

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997–0296 Balt. (301) 621–5621 Wash. (410) 997–0298 Fax.

SDP 98 139

NOTE: THIS DRAWING IS TO BE USED FOR LANDSCAPE PLAN PURPOSES ONLY.



U.S. ROUTE 1
WASHINGTON BLVD
SEE SHEET 8 OF 12 FOR PAVING LIMITS & DETAILS
WILLIAM J. LENCZYCKI
2206/566
TAX MAP 38
PARCEL 222
ZONED M-1
TAX MAP 38, PARCEL 222
WILLIAM J. LENCZYCKI
LIBER 2206, FOLIO 566
TAX MAP 38, PARCEL 524
JAMES C. ALBAN, III
LIBER 1936, FOLIO 226
TAX MAP 38, PARCEL 223
LIBER 4198, FOLIO 307
ZONED R-SC
N02°04'39"E 223.85'
S28°32'21"E
199.37'
DO NOT ENTER SIGN
EDGE OF PROP. PAVING
COMMERCIAL ENTRANCE
100' BRL (STRUCTURE & USE SETBACK)
25' WETLAND BUFFER
100 YEAR PUBLIC FLOOD PLAIN AND UTILITY EASEMENT
50' STREAM BUFFER
CREDIT FOR EXISTING VEGETATION
525 LF
PROP. BUILDING
F.F. EL. 136.60
440'
140'
EX. SERVICE FACILITY TO REMAIN
S21°01'37"E
437.25'
EX. BLDG. TO BE REMOVED
EX. BLDG. TO REMAIN
HANDICAP ENTRANCE
EX. 2" COPPER WHC
TAX MAP 38, PARCEL 221
JAMES C. ALBAN, III
LIBER 1936, FOLIO 226
S20°16'37"E
448.80'
ROBERT J. BALLANTINE
187/337
TAX MAP 38
PARCEL 224
ZONED M-1
INGRESS & EGRESS RESTRICTED
EX. INGRESS & EGRESS
50' STREAM BUFFER
EX. 20' PUBLIC SEWER EASEMENT
LIMIT OF WETLANDS
LIMIT OF 25' WETLAND BUFFER
CREDIT FOR EXISTING VEGETATION - 761 LF
RIPRAP OUTLET PROTECTION
100 YEAR PUBLIC FLOOD PLAIN AND UTILITY EASEMENT
CHARLES W. MILES, JR.
561/690
TAX MAP 38
PARCEL 303
ZONED M-1
CHARLES W. MILES, JR.
442/394
TAX MAP 38
PARCEL 769
ZONED M-1
JACK M. ASHBROOK
428/356
TAX MAP 38
PARCEL 790
ZONED M-1
JACK M. ASHBROOK
438/235
TAX MAP 38
PARCEL 790
ZONED M-1
W. W. SHIPMAN
413/278
TAX MAP 38
PARCEL 220
ZONED M-1
W. W. SHIPMAN
413/278
TAX MAP 38
PARCEL 220
ZONED M-1
100' FUTURE ROW

NOTES:

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL
2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF $ 21,600.00 .
3. SWM PERIMETER LANDSCAPING IS NOT REQUIRED.

LEGEND

- EXISTING GRADES: 2' CONTOURS, 10' CONTOURS
- PROPOSED GRADES: 2' CONTOURS, 10' CONTOURS
- LIMIT 100 YEAR FLOODPLAIN
- EXISTING TREELINE
- PROPOSED TREELINE
- SLOPES - 15% TO 24.9%
- SLOPES - 25% +
- WETLAND LIMIT
- PROP. GABION WALL
- 100 YEAR PUBLIC FLOOD PLAIN AND UTILITY EASEMENT
- PERIMETER LANDSCAPE EDGE

PERIMETER		EDGE TYPE
PERIMETER 1		
ENTRANCES - 100 LF		N/A
NON-RES TO ROAD - 447.25 LF		B
1 SHADE TREE / 50 LF	9	
1 EVERGREEN / 40 LF	11	
PERIMETER 2		
M-1 TO M-1 - 761 LF		A
EXISTING TREES TO REMAIN		
M-1 TO M-1 - 330.76		A
1 SHADE TREE / 60 LF	6	
PERIMETER 3		
M-1 TO M-1 - 525 LF		A
EXISTING TREES TO REMAIN		
PERIMETER 4		
M-1 TO M-1 - 199.63 LF		A
1 SHADE TREE / 60 LF	3	
TOTAL PLANTING OBLIGATION		
SHADE TREES	18	
EVERGREEN TREES	11	
SHRUBS	0	

STREET TREE CALCULATIONS

US ROUTE 1 - 166 / 30 = 6
OLD BALTIMORE-WASHINGTON BLVD - 280 / 30 = 9

TOTAL TREES REQUIRED = 15 SMALL TREES
TOTAL TREES PROVIDED = 15 SMALL TREES

SCHEDULE B: PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	96
NUMBER OF PLANTING ISLANDS REQUIRED	5
NUMBER OF PLANTING ISLANDS PROVIDED	5
NUMBER OF TREES REQUIRED SHADE TREES	5 SHADE TREES
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTION)	5 SHADE TREES 0 TREES

SCHEDULE A : PERIMETER LANDSCAPED EDGE

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES	
LANDSCAPE TYPE	B (PERIMETER 1)		A (PERIMETER 2, 3, P/O 4)
LINEAR FEET OF PERIMETER	447.25 LF		1816.39 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	NO		YES, 1286 LF OF EXISTING TREES TO REMAIN
CREDIT FOR WALL, FENCE, OR BERM (YES, NO, LINEAR FEET)	NO		NO
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	9 SHADE TREES 11 EVERGREEN TREES 0 SHRUBS		9 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION)	9 SHADE TREES 11 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS		9 SHADE TREES 0 EVERGREEN TREES 0 SUBSTITUTION TREES 0 SHRUBS

LANDSCAPE REQUIREMENT PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
17		ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2 1/2" - 3" CAL.
16		PINUS STROBUS	EASTERN WHITE PINE	6' - 8' HT.
15		PRUNUS CERASIFERA ATROPUPUREA 'THUNDERCLOUD'	THUNDERCLOUD PURPLELEAF PLUM	1 1/2" - 2" CAL.
6		QUERCUS RUBRA	RED OAK	2 1/2" - 3" CAL.

TOTAL
54 TREES & SHRUBS (23 SHADE TREES, 15 SMALL DECIDUOUS TREES, 16 EVERGREEN TREES)

STATE OF MARYLAND
REGISTERED PROFESSIONAL ENGINEER
9/10/99

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	9/24/99 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH	10/1/99 DATE
DIRECTOR	10/4/99 DATE

98014/DWG/NEWSDP/14-LP.DWG

OWNER/DEVELOPER

ALBAN TRACTOR CO., INC.
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BALTIMORE, MARYLAND 21237
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TAX MAP 38, PARCELS 221 & 524
ALBAN TRACTOR
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
LANDSCAPE PLAN

no.	description	date
2	REMOVE 14 PARKING & RELOCATED GABION WALL. REMOVE STORM DRAIN & STRUCTURE BETWEEN I-10 - I12	8/16/2000
1	REMOVE PROP. TREES	7/21/2000
	revisions	

project 98014	date SEP. 1999
illustration FCL/RJ	engineering SJD
scale 1" = 50'	approval

SDP 98-139