

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, discing or other

acceptable means before seeding. Soil Amendments: In lieu of soil test recommendations, use one of the following schedule

- 1) Preferred Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square ft) . and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (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 disc 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 thre July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 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 tons/acre well anchored straw.

Mulching - Apply 12 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.

Matinenance - Inspect all seeded 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, discing or other acceptable means before seeding.

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

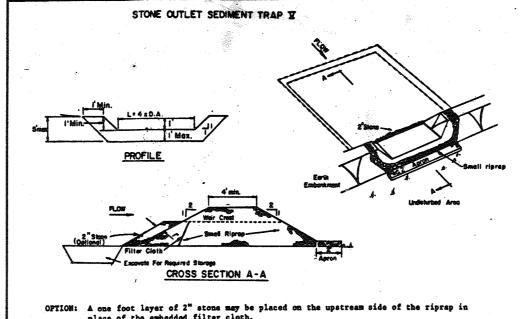
Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 22 bushel per acre of annual rye (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 12 to 2 tons per acre 670 to 90 lbs/1000 aq ft) of unrotted 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 ft 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 rate and methods not covered.

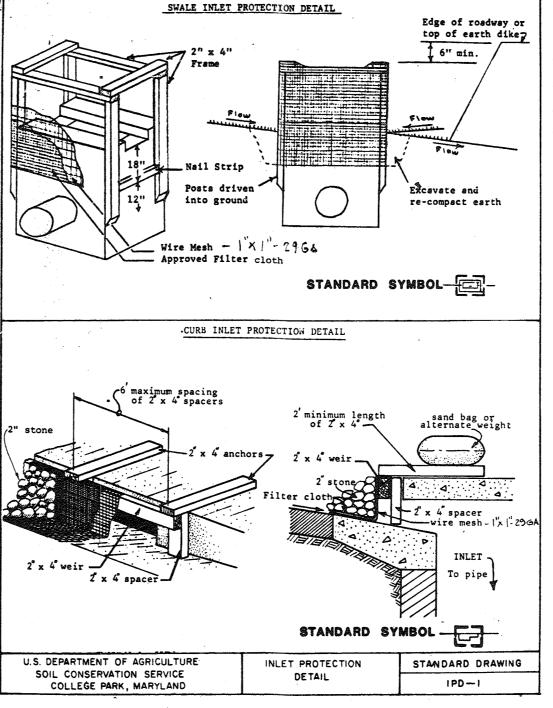
SEDIMENT CONTROL NOTES

- 1) A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
- 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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- 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, Chaper 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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52.) Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- 6) All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector
- 7) Site Analysis:
 - 4.37 Acres Total Area of Site 7.2 Acres Area Disturbed Area to be roofed or paved 0.78 Acres Area to be vegetatively stabilized 1.42 Acres 9000 Cu. yds Total Cut Total Fill 2000 Cu. yds
 Offsite waste/borrow area location
- 8) Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- 9) Additional sediment controls must be provided, if deemed necessary by the Howard County DPW 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.



- . 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. 6. The stone used in the outlet shall be small riprep 4"-8" along with a 1' thickness of 2" aggragate placed on the up-grade side on the small riprep on embedded filter cloth in the
- 5. Sediment shall be removed and trap restored to its original dimensions when the sedimen
- 6. The structure shall be inspected after each rain and repairs made as needed.
- 7. Construction operations shall be carried out in such a manner than erosion and water
- S. The structure shall be removed and the area stabilised when the drainage area has been

Maximum Drainage Area: 5 Acres U.S. DEPARTMENT OF AGRICULTURE STORE OUTLET SEDIMENT TRAF SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND ST-V



V V V V V V V CONSTRUCTION SPECIFICATIONS ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.

FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.

LARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF

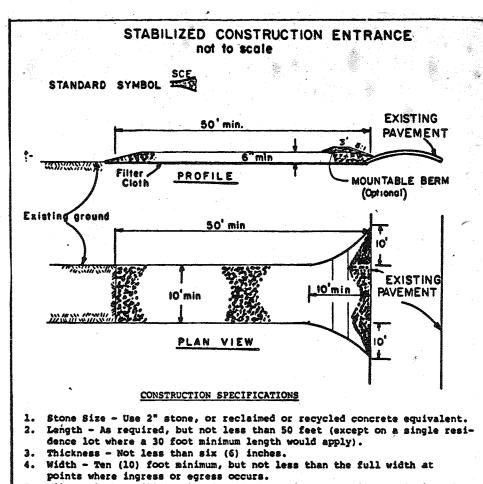
SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT

BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.

STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED THE CHART BELOW. FLOW CHANNEL STABILIZATION DIKE B .5-3,0% SEED AND STRAW MULCH SEED AND STRAW MULCH SEED AND STRAW MULCH SEED USING JUTE, OR EXCELSION; SOD; 2" STONE LINED RIP-RAP 4-8" SEED WITH JUTE, OR SOD; 8.1-20% LINED RIP-RAP 4-8" A. Stone to be 2 inch stone, or recycled concrete equivalent, in a layer at least 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.

C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT. EARTH DIKE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND



Filter Cloth - Will be placed over the entire area prior to placing of stone Filter will not be required on a single family residence lot. . Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This ma

require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way mus Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area

stabilized with stone and which drains into an approved sediment trapping

EXISTING GRADE = ----- (250) -----

FINISHED GRADE (OR PROPOSED GRADE) ------- 260 ----

APPROVED! FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

HOWARD COUNTY HEALTH DEPARTMENT

HOWARD COUNTY OFFICE OF PLANNING & ZONING

52547

DATE

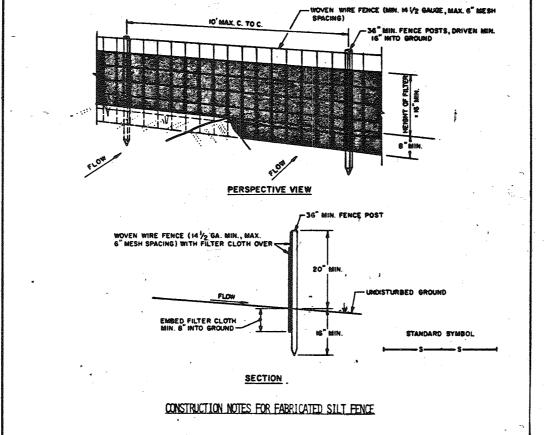
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5-22-87

OATE

STABILIZED CONSTRUCTION ENTRANCE : S.C.E.

U. S. DEPARTMENT OF AGRICULTURE | STABILIZED CONSTRUCTION SOIL CONSERVATION SERVICE



SILT FENCE

- Moven wire fence to be fastened securely to fence posts with wire ties or staples
- 2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
- When two sections of filter cloth adjoin each other they shall be over-lapped by SIX inches and folded.
- U.S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND

1/16/19

Maryland SCS/WRA

POSTS: STEEL EITHER T OR U
TYPE OR 2" HARDWOOD

FENCE: WOVEN WIRE, 14: GA. 6" MAX. MESH OPENING

SILT FENCE SF-I

STANDARD AND SPECIFICATIONS SILT FENCE

Definition A temporary barrier of geotextile fabric (filter cloth) used to intercept sediment laden runoff from small drainage areas of disturbed soil,

The purpose of a silt fence is to reduce runoff velocity and effect deposition of transported sediment load. Limits imposed by ultraviolet stability of the fabric will dictate the maximum period the silt fence may

Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

Maximum allowable slope lengths contributing runoff to a silt fence

- Maximum drainage area for overland flow to a silt fence shall not exceed a scre per 100 feet of fence: and
- Brosion would occur in the form of sheet erosion; and

There is no concentration of water flowing to the barrier. Design Criteria

Design computations are not required. All silt fences shall be placed as close to the contour as possible, and the area below the fence must A detail of the silt fence shall be shown on the plan, and contain the

The type, size, and spacing of fence posts

Add Sheets 6-8 For New Retaining Wall

Revisions Description SEQUENCE OF CONSTRUCTION

- , OBTAIN GRADING PERMIT ZWKS
- 2. CLEAR AND GRUGO FOR THE INSTALLATION OF PERIMETER CONTROLS IWK
- 3. INSTALL SEDIMENT CONTROL MEASURES ZWKS
- 4. CLEAR & GRUBB REMAINER OF SITE,
- 5. ROUGH GRADE SITE. STABILIZE AS REQ. 3WKS.
- G. INSTALL UTILITIES, PROTECT INLETS. IWK .
- 7. CONSTRUCT BUILDING 6 MONTHS
- B. INSTALL SUB BASE PAVING 2 WKS
- 9. INSTALL PAVING SURF COURSE & CURB, EWKS
- 10 FINE GRADE & STABILIZE AS REQ 3WKS
- II. CONVERT STONE OUTLET TRAP TO BECOME 3 WKS
- PART OF SWM BASIN
- 12 MODIFY EARTH DIKE TO CHANNEL BRAINAGE TO THE SWM BASIN
- 13 AFTER FINAL INSPECTION STAB, SITE AS REQ. REMOVE SED. MEASURES

AFTER PERMISSION FROM THE HO

April 1983

CO. SEDIMENT CONTROL INSPECTOR

DIVISION OF LAND DEVELOPMENT DATE 5-12-87

SEDIMENT, CONTROL

- () Provide the following certification blocks on sediment control plans:
- () By the Developer:

"I/We 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 Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil

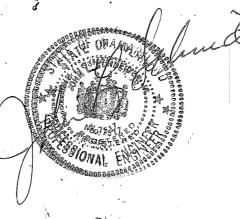
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Conservation District."

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Reviewed for HOWARD S.C.D. and

.S. Soil Conservation Service



5-22-1 CHIEF BUREAU OF ENGINEERING DATE SEDIMERT CONTROL DETAILS (REVISED) RICHARD A JONES PROPERTY DEED REF. L 297 F 485 PROP. 130'x 80' BLDG RETAIL SALES - 10,400 S.F

APPROVED; FOR PUBLIC WATER AND PUBLIC SEWERAGE

STORM DRAINAGE SYSTEMS AND PUBLIC RDADS

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

4882 MONTGOMERY RD. (RT 103) TAX MAP 31 BLOCK 7 PAR. 36 END. DISTR HO.CO.MO SCALE: AS SHOWN FEB. 23 1987 OWNER : RICHARD A. JONES

SEDIMENT CONTROL LEGEND

LIMITS OF DISTURBANCE:

CHIEF DIVISION OF LAND DEVELOPMENT

ALID' ZOLING ADMINISTRATION

DIRECTOR

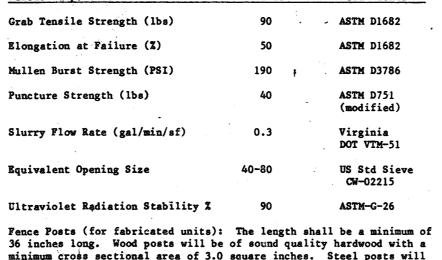
SILT PENCE (WHERE APPLICABLE)

8440 GROVE ANGLE RD. ELLICOTT CITY MD, 21043 301-465-0647

EHGINEERS!

LANDELOPMENT CONSULTANTS 37 MT. GREEN CIRCLE BALTO MO 21207 301.265-6543

5DP-87-159



minimum cross sectional area of 3.0 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per

3. Wire Fence (for fabricated units): Wire fencing shall be a minimum 14% gage with a maximum 6" mesh opening, or as approved.

Acceptable Fabric Properties Test Method

4. Prefabricated Units: Envirofence or approved equal may be used in

The method of fastening the filter cloth to the fencing support

Where ends of filter cloth come together, they shall be overlapped, folded and

Criteria for Silt Fence Materials

specifications unless otherwise approved by the appropriate erosion

and sediment control plan approval authority. Such approval shall

depend on in-field and/or laboratory observations and evaluations.

not constitute statewide acceptance. Statewide acceptability shall

The size of woven wire support fences.

The method of anchoring the filter cloth.

1. Silt Fence Fabric: The fabric shall meet the following

The type of filter cloth used.

See Standard Drawing SF-1 for details.

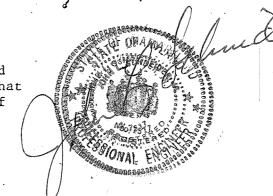
2. Fence Posts (for fabricated units): The length shall be a minimum of

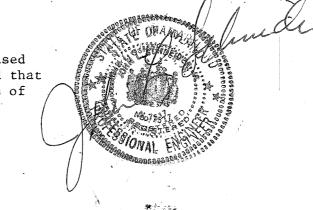
() By the Engineer:

Singature of Engineer / Da/te Print name below signature

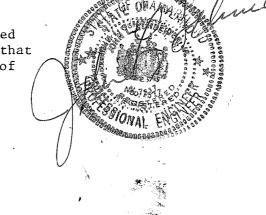
meets Technical Requirements down M. Kelm

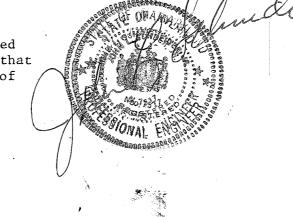
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION



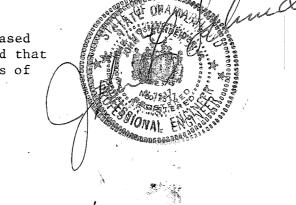








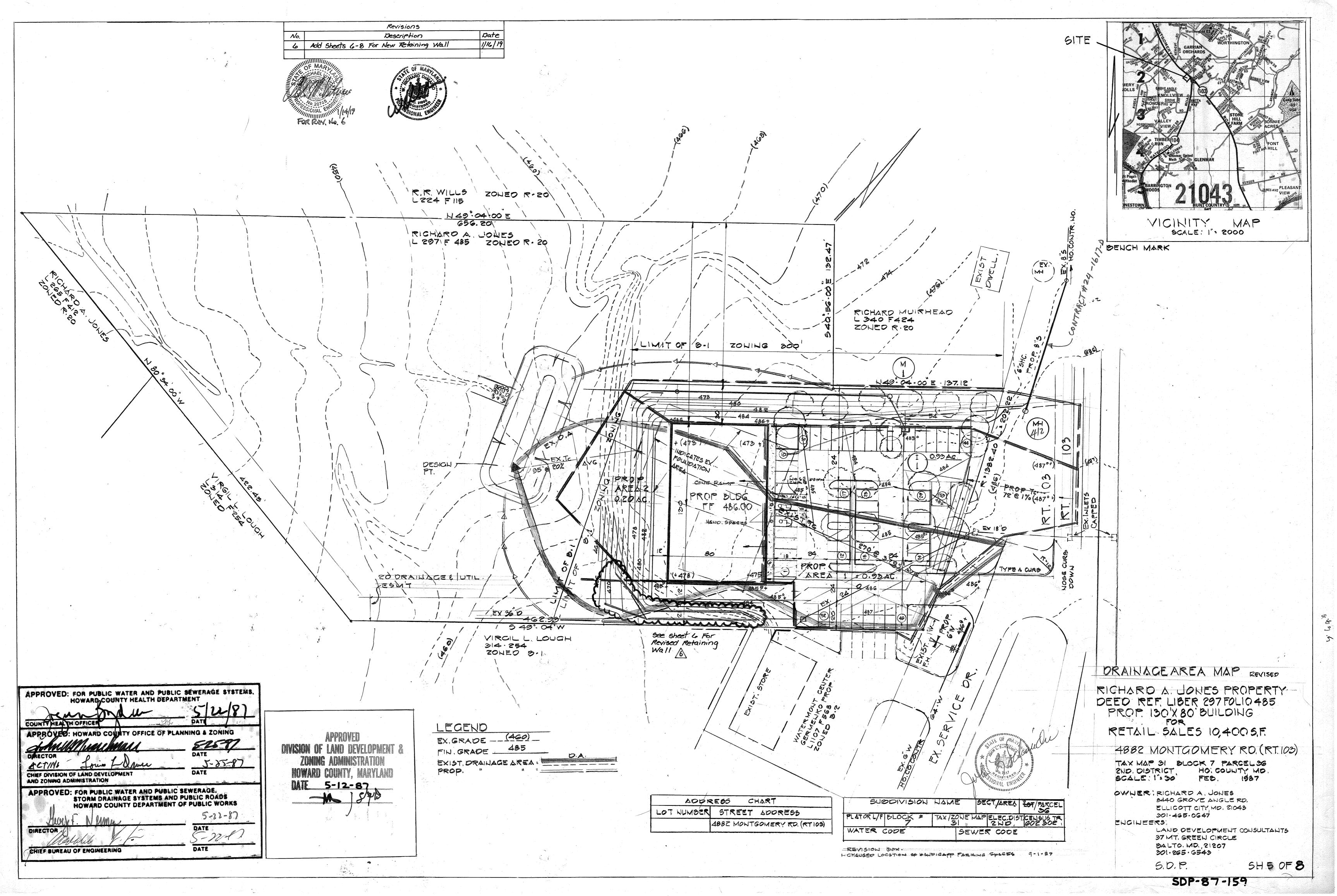


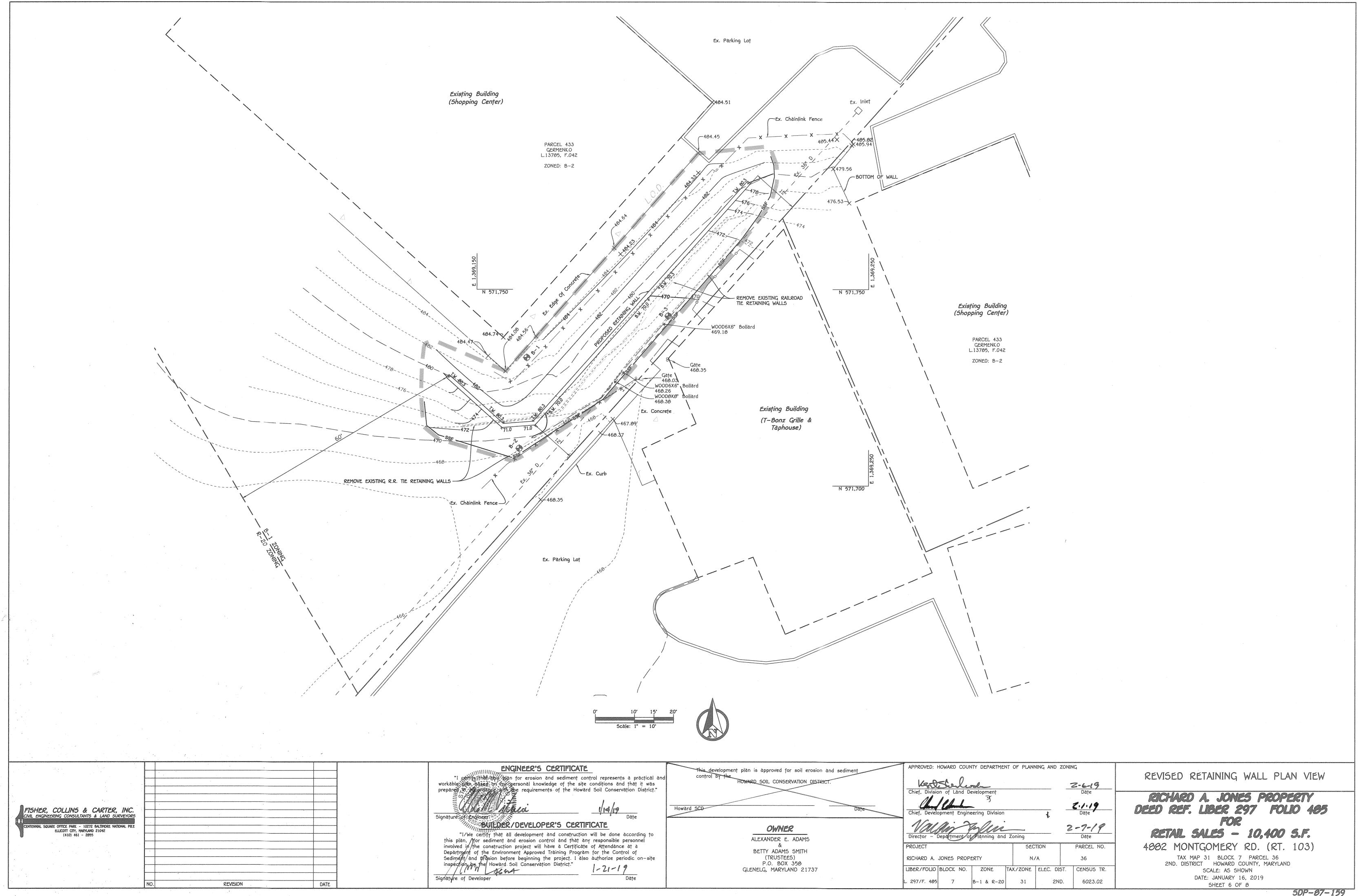




50P 87-159

SH.4 OF 8





5DP-87-159

Ex. Parking Lot Ex. Chainlink Fence Existing Building -484.45 485.44× ,------··· PARCEL 433 GERMENKO L.13785, F.042 ZONED: B-2 √STA. 1+10 STA. 1+00 APPROVAL OF OWNER. N 571,750 - REMOVE EXISTING R.R. TIE RETAINING WALLS Existing Building PARCEL 433 SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS. WOOD6X6" Bollard GERMENKO L.13785, F.042 469.18 ZONED: B-2 RETAINING WALL 468.35 468.03 ISTA. 0+00 WOOD6X6",Bollard 468.26 WOOD8X8" Bollard 468.38 -Ex. Edge Of Concrete -468lb7 Existing Building -----468 REMOVE EXISTING R.R. TIE RETAINING WALLS N 571,700 `Ex. Chainlink Fence -Ex. Parking Lot WALL LOCATION PLAN 1" = 10'

SPECIFICATIONS

MODULAR CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

1.01 DESCRIPTION

A. WORK SHALL CONSIST OF FURNISHING AND CONSTRUCTION OF A MODULAR RETAINING WALL SYSTEM

IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES. GRADES, DESIGN, AND DIMENSIONS SHOWN ON THE

B. WORK INCLUDES PREPARING FOUNDATION SOIL. FURNISHING AND INSTALLING LEVELING PAD, UNIT DRAINAGE FILL AND BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS.

. WORK INCLUDES FURNISHING AND INSTALLING GEOGRID SOIL REINFORCEMENT OF THE TYPE, SIZE, LOCATION, AND LENGTHS DESIGNATED ON THE CONSTRUCTION

1.02 DELIVERY, STORAGE AND HANDLING

- . CONTRACTOR SHALL CHECK ALL MATERIALS UPON DELIVERY TO ASSURE THAT THE PROPER TYPE, GRADE, COLOR, AND CERTIFICATION HAS BEEN RECEIVED.
- B. CONTRACTOR SHALL PROTECT ALL MATERIALS FROM DAMAGE DUE TO JOB SITE CONDITIONS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DAMAGED MATERIALS SHALL NOT BE INCORPORATED INTO THE WORK.

PART 2: PRODUCTS

2.01 MODULAR CONCRETE RETAINING WALL UNITS

- A. MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING ARCHITECTURAL REQUIREMENTS:
- FACE COLOR COLOR MAY BE SPECIFIED BY THE OWNER FACE FINISH - SCULPTURED ROCK FACE IN ANGULAR TRI-PLANER OR FLAT CONFIGURATION. OTHER FACE FINISHES WILL NOT BE ALLOWED WITHOUT WRITTEN
- BOND CONFIGURATION RUNNING WITH BONDS NOMINALLY LOCATED AT MIDPOINT VERTICALLY ADJACENT UNITS, IN BOTH STRAIGHT AND CURVED ALIGNMENTS. EXPOSED SURFACES OF UNITS SHALL BE FREE OF CHIPS.
- CRACKS OR OTHER IMPERFECTIONS WHEN VIEWED FROM A DISTANCE OF 10 FEET UNDER DIFFUSED LIGHTING. . MODULAR CONCRETE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C1372 - STANDARD
- C. MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING STRUCTURAL AND GEOMETRIC REQUIREMENTS MEASURED IN ACCORDANCE WITH APPROPRIATE REFERENCES:
- COMPRESSIVE STRENGTH = 3000 PSI MINIMUM; ABSORPTION = 8% MAXIMUM (6% IN NORTHERN STATES)
- FOR STANDARD WEIGHT AGGREGATES; DIMENSIONAL TOLERANCES = ±1/8" FROM NOMINAL UNIT DIMENSIONS NOT INCLUDING ROUGH SPLIT FACE, ±1/16"
- UNIT HEIGHT TOP AND BOTTOM PLANES; UNIT SIZE 8" (H) X 18" (W) X 12" (D) MINIMUM;

8" DIA. x 24" SONO-TUBES

UNIT WEIGHT - 75 LBS/UNIT MINIMUM FOR STANDARD WEIGHT AGGREGATES;

INTER-UNIT SHEAR STRENGTH - 1000 PLF MINIMUM AT 2 PSI NORMAL PRESSURE; AT 2 PSI NORMAL FORCE. GEOGRID/UNIT PEAK CONNECTION STRENGTH - 1000 PLF

D. MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING CONSTRUCTABILITY REQUIREMENTS: (IF

APPLICABLE) VERTICAL SETBACK = 1/8"± PER COURSE (NEAR VERTICAL) OR 1"+ PER COURSE PER THE DESIGN: ALIGNMENT AND

GRID POSITIONING MECHANISM - FIBERGLASS PINS, TWO

MAXIMUM HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE - 1/2 INCH.

2.02 SHEAR CONNECTORS (IF APPLICABLE)

2.03 BASE LEVELING PAD MATERIAL

PER UNIT MINIMUM;

A. SHEAR CONNECTORS SHALL BE 1/2 INCH DIAMETER THERMOSET ISOPTHALIC POLYESTER RESIN-PROTRUDED FIBERGLASS REINFORCEMENT RODS OR EQUIVALENT TO PROVIDE CONNECTION BETWEEN VERTICALLY AND HORIZONTALLY ADJACENT UNITS. STRENGTH OF SHEAR CONNECTORS BETWEEN VERTICAL ADJACENT UNITS SHALL BE APPLICABLE OVER A DESIGN TEMPERATURE OF 10 DEGREES F TO + 100 DEGREES F. B. SHEAR

GEOGRID IN THE PROPER DESIGN POSITION DURING GRID PRE-TENSIONING AND BACKFILLING.

CONNECTORS SHALL BE CAPABLE OF HOLDING THE

A. MATERIAL SHALL CONSIST OF A COMPACTED #57 CRUSHED

STONE BASE AS SHOWN ON THE CONSTRUCTION

2.04 UNIT DRAINAGE FILL

A. UNIT DRAINAGE FILL SHALL CONSIST OF #57CRUSHED

2.05 REINFORCED BACKFILL

A. REINFORCED BACKFILL SHALL BE TYPE SM. FREE OF DEBRIS AND MEET THE FOLLOWING GRADATION TESTED IN ACCORDANCE WITH ASTM D-422 AND MEET OTHER PROPERTIES SHOWN ON THE PLAN:

PERCENT PASSING
100-75
100-75
0-60
0-35

PLASTICITY INDEX (PI) <10 AND LIQUID LIMIT <35 PER ASTM

MATERIAL CAN BE SITE EXCAVATED SOILS WHERE THE ABOVE REQUIREMENTS CAN BE MET. UNSUITABLE SOILS FOR BACKFILL (HIGH PLASTIC CLAYS OR ORGANIC SOILS) SHALL NOT BE USED IN THE REINFORCED SOIL MASS.

2.06 GEOGRID SOIL REINFORCEMENT

A. GEOSYNTHETIC REINFORCEMENT SHALL CONSIST OF GEOGRIDS MANUFACTURED SPECIFICALLY FOR SOIL

HOWARD CO. CODE

REINFORCEMENT APPLICATIONS AND SHALL BE MANUFACTURED FROM HIGH TENACITY POLYESTER YARN. 2.07 DRAINAGE PIPE

A. THE DRAINAGE PIPE SHALL BE PERFORATED CORRUGATED HDPE PIPE MANUFACTURED IN ACCORDANCE WITH ASTM

PART 3 EXECUTION

3.01 EXCAVATION

CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. OWNER'S REPRESENTATIVE SHALL BE RESPONSIBLE FOR INSPECTING AND APPROVING THE EXCAVATION PRIOR TO PLACEMENT OF LEVELING MATERIAL OR FILL SOILS.

3.02 BASE LEVELING PAD

- A. LEVELING PAD MATERIAL SHALL BE PLACED TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS, TO A MINIMUM THICKNESS OF 6 INCHES AND EXTEND LATERALLY A MINIMUM OF 6" IN FRONT AND BEHIND THE MODULAR WALL UNIT.
- LEVELING PAD SHALL BE PREPARED TO INSURE FULL CONTACT TO THE BASE SURFACE OF THE CONCRETE

3.03 MODULAR UNIT INSTALLATION

- A. FIRST COURSE OF UNITS SHALL BE PLACED ON THE LEVELING PAD AT THE APPROPRIATE LINE AND GRADE. ALIGNMENT AND LEVEL SHALL BE CHECKED IN ALL DIRECTIONS AND INSURE THAT ALL UNITS ARE IN FULL CONTACT WITH THE BASE AND PROPERLY SEATED.
- B. PLACE THE FRONT OF UNITS SIDE-BY-SIDE. DO NOT LEAVE GAPS BETWEEN ADJACENT UNITS. LAYOUT OF CORNERS AND CURVES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- C. INSTALL SHEAR/CONNECTING DEVICES PER MANUFACTURER'S RECOMMENDATIONS.
- D. PLACE AND COMPACT DRAINAGE FILL WITHIN AND BEHIND WALL UNITS. PLACE AND COMPACT BACKFILL SOIL BEHIND DRAINAGE FILL. FOLLOW WALL ERECTION AND DRAINAGE
- FILL CLOSELY WITH STRUCTURE BACKFILL. MAXIMUM STACKED VERTICAL HEIGHT OF WALL UNITS. PRIOR TO UNIT DRAINAGE FILL AND BACKFILL PLACEMENT

AND COMPACTION, SHALL NOT EXCEED THREE COURSES.

3.04 STRUCTURAL GEOGRID INSTALLATION

- A. GEOGRID SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PERPENDICULAR TO THE WALL
- B. GEOGRID REINFORCEMENT SHALL BE PLACED AT THE STRENGTHS, LENGTHS, AND ELEVATIONS SHOWN ON THE CONSTRUCTION DESIGN DRAWINGS OR AS DIRECTED BY THE ENGINEER
- THE GEOGRID SHALL BE LAID HORIZONTALLY ON COMPACTED BACKFILL AND ATTACHED TO THE MODULAR WALL UNITS. PLACE THE NEXT COURSE OF MODULAR CONCRETE UNITS OVER THE GEOGRID. THE GEOGRID SHALL BE PULLED TAUT, AND ANCHORED PRIOR TO BACKFILL PLACEMENT ON THE GEOGRID.

D. GEOGRID REINFORCEMENTS SHALL BE CONTINUOUS THROUGHOUT THEIR EMBEDMENT LENGTHS AND PLACED SIDE-BY-SIDE TO PROVIDE 100% COVERAGE AT EACH LEVEL. SPLICED CONNECTIONS BETWEEN SHORTER PIECES OF GEOGRID OR GAPS BETWEEN ADJACENT PIECES OF GEOGRID ARE NOT PERMITTED.

3.05 REINFORCED BACKFILL PLACEMENT

- A. REINFORCED BACKFILL SHALL BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF SLACK IN THE GEOGRID AND INSTALLATION DAMAGE.
- B. REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES WHERE HAND COMPACTION IS USED, OR 8 - 10 INCHES WHERE HEAVY COMPACTION EQUIPMENT IS USED. LIFT THICKNESS SHALL BE DECREASED TO ACHIEVE THE REQUIRED DENSITY AS REQUIRED.
- C. REINFORCED BACKFILL SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D698. THE MOISTURE CONTENT OF THE BACKFILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER AND
- D. ONLY LIGHTWEIGHT HAND-OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET FROM THE TAIL OF THE MODULAR CONCRETE UNIT.

SHALL BE + 3% TO - 3% OF OPTIMUM.

- E. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEOGRID REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6 INCHES IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. TRACKED VEHICLE TURNING SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING THE GEOGRID.
- RUBBER TIRED EQUIPMENT MAY PASS OVER GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND SHARP TURNING SHALL BE
- G. AT THE END OF EACH DAY'S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LIFT OF REINFORCED BACKFILL AWAY FROM THE WALL UNITS TO DIRECT RUNOFF AWAY FROM WALL FACE. THE CONTRACTOR SHALL NOT ALLOW SURFACE RUNOFF FROM ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION

3.06 CAP INSTALLATION

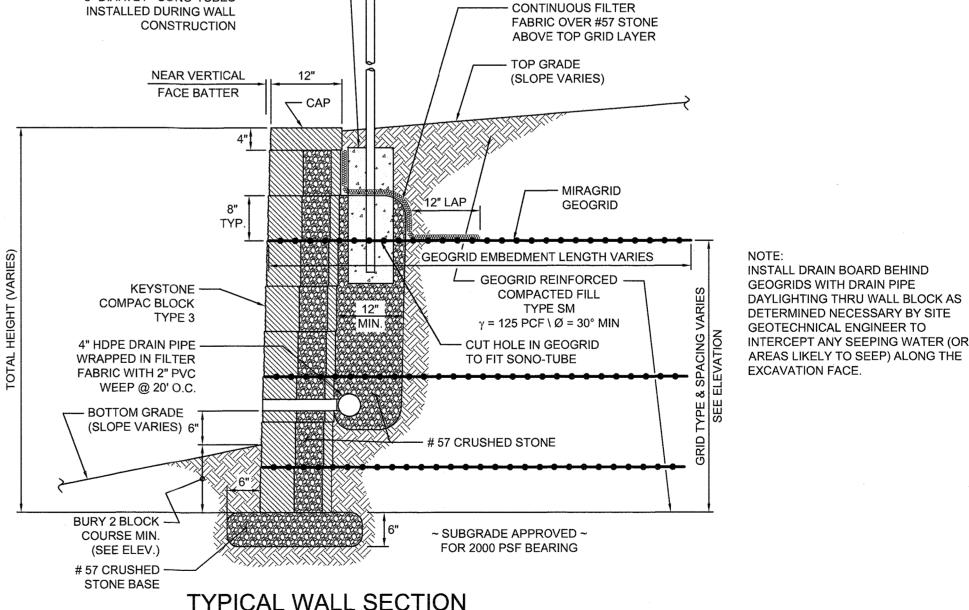
A. CAP UNITS SHALL BE GLUED TO UNDERLYING UNITS WITH AN ALL-WEATHER ADHESIVE RECOMMENDED BY THE MANUFACTURER.

3.07 FIELD QUALITY CONTROL

- A. THE OWNER SHALL ENGAGE INSPECTION AND TESTING SERVICES, INCLUDING INDEPENDENT LABORATORIES, TO PROVIDE QUALITY ASSURANCE AND TESTING SERVICES DURING CONSTRUCTION.
- B. AS A MINIMUM, QUALITY ASSURANCE TESTING SHOULD INCLUDE FOUNDATION SOIL INSPECTION, SOIL AND BACKFILL TESTING, VERIFICATION OF DESIGN PARAMETERS, AND OBSERVATION OF CONSTRUCTION FOR GENERAL COMPLIANCE WITH DESIGN DRAWINGS AND SPECIFICATIONS.

HOWARD COUNTY NOTES:

- NO TREES SHALL BE PLANTED WITHIN 10 FEET OF THE TOP OF THE RETAINING WALL.
- RETAINING WALLS SHALL ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A (NICET, WACEL OR EQUIVALENT) CERTIFIED SOILS TECHNICIAN.
- ONE SOIL BORING SHALL BE REQUIRED EVERY ONE HUNDRED FEET ALONG THE ENTIRE LENGTH OF THE WALL. COPIES OF ALL BORING REPORTS SHALL BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO THE START OF CONSTRUCTION.
- THE REQUIRED BEARING PRESSURE BENEATH THE WALL SYSTEM SHALL BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION MUST BE PROVIDED TO THE HOWARD COUNTY INSPECTOR PRIOR TO START OF CONSTRUCTION. THE REQUIRED BEARING TEST SHALL BE THE DYNAMIC CONE PENETROMETER TEST ASTM STP-399.
- THE SUITABILITY OF FILL MATERIAL SHALL BE CONFIRMED BY THE ON-SITE SOILS TECHNICIAN. EACH 8" LIFT MUST BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY AND THE TESTING REPORT SHALL BE MADE AVAILABLE TO THE HOWARD COUNTY INSPECTOR UPON COMPLETION OF CONSTRUCTION.
- WALLS SHALL NOT BE CONSTRUCTED ON UNCERTIFIED FILL MATERIALS.
- WALLS SHALL NOT BE CONSTRUCTED WITHIN A HOWARD COUNTY RIGHT-OF-WAY OR EASEMENT.



TYPICAL WALL SECTION N.T.S.

This development plan is approved for soil erosion and sedimen HOWARD SOIL CONSERVATION DISTRICT. Howard SCD **OWNER** ALEXANDER E ADAMS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING Ret Ce Desola 2-6-19 2.1.19 2-7-19 PARCEL NO. RICHARD A. JONES PROPERTY N/A CENSUS TR. LIBER/FOLIO BLOCK NO. ZONE TAX/ZONE | ELEC. DIST. 6023.02

B-1 & R-20

2ND.

RETAINING WALL PLAN AND CONSTRUCTION DETAILS

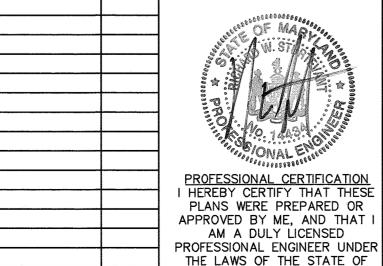
RICHARD A. JONES PROPERTY DEED REF. LIBER 297 FOLIO 485

FOR RETAIL SALES - 10,400 S.F. 4882 MONTGOMERY RD. (RT. 103)

TAX MAP 31 BLOCK 7 PARCEL 36 2ND. DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: JANUARY, 2019

SHEET 7 OF 8

SDP-87-159



REVISION

MARYLAND, LICENSE NO. 14434,

EXPIRATION DATE: 05/13/19.

HILLIS-CARNES

ENGINEERING ASSOCIATES

10975 Guilford Road, Suite A Annapolis Junction, Maryland

(410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098

LENGINEER'S CERTIFICATE by that this brank for erosion and sediment control represents a practical and workable and hase the first personal knowledge of the site conditions and that it was prepared in secondance with the requirements of the Howard Soil Conservation District." MALLILIDER DEVELOPER'S CERTIFICATE "I/We certify that all development and construction will be done according to this plan, for sediment and erosion control 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

by the Howard Soil Conservation District."

II W sont

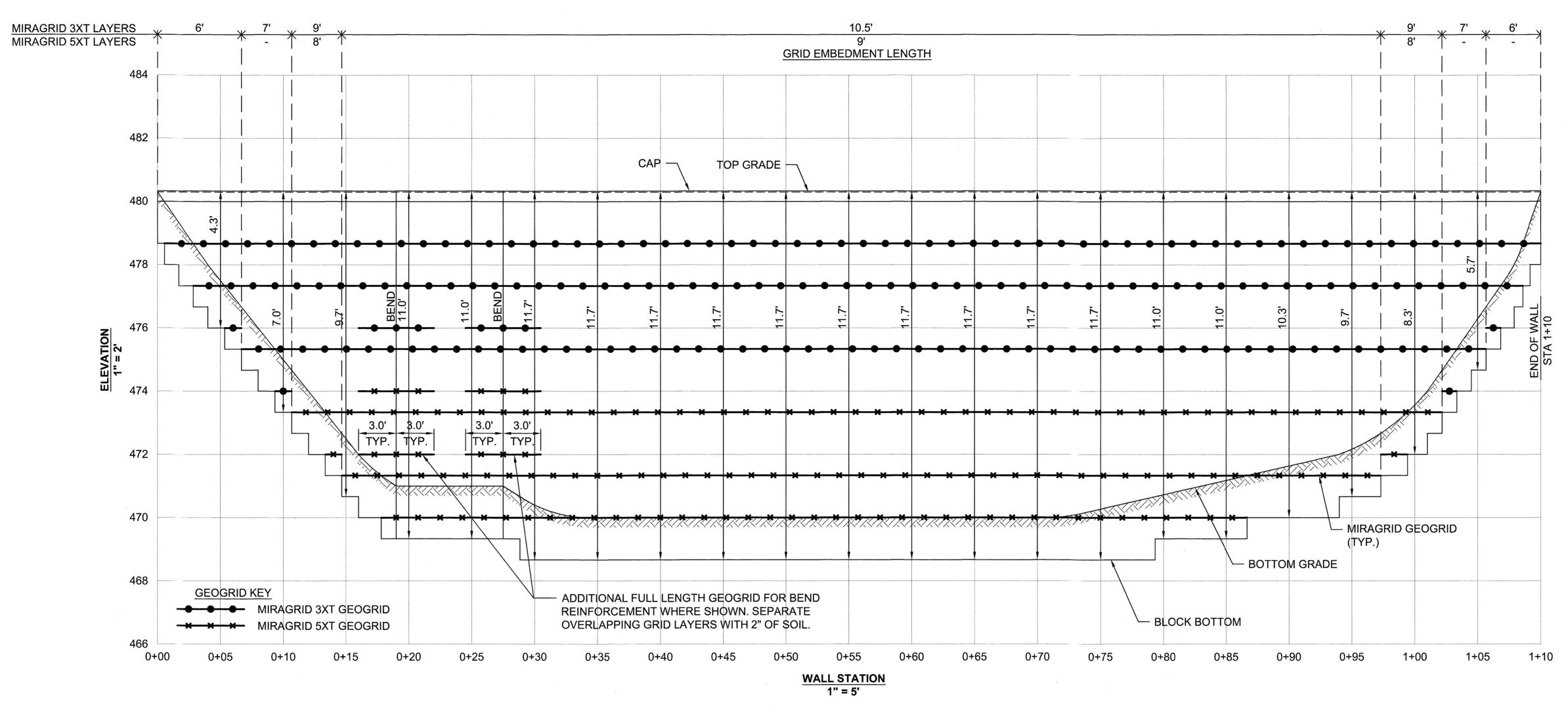
Signature of Developer

and Frosion before beginning the project. I also authorize periodic on-site inspection

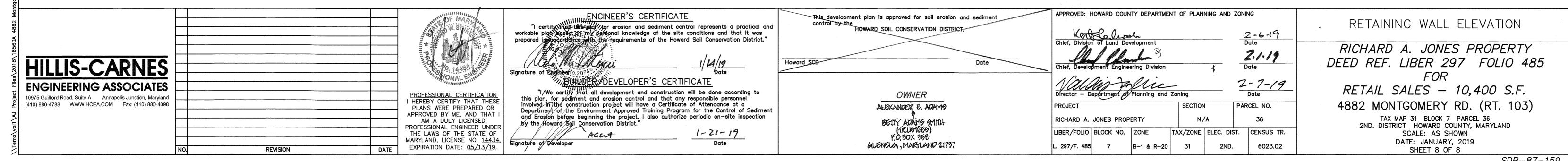
BETTY ADAMS SMITH

P.O. BOX 358

GLENGLIG, MARTLAND 21737



WALL ELEVATION



SDP-87-159