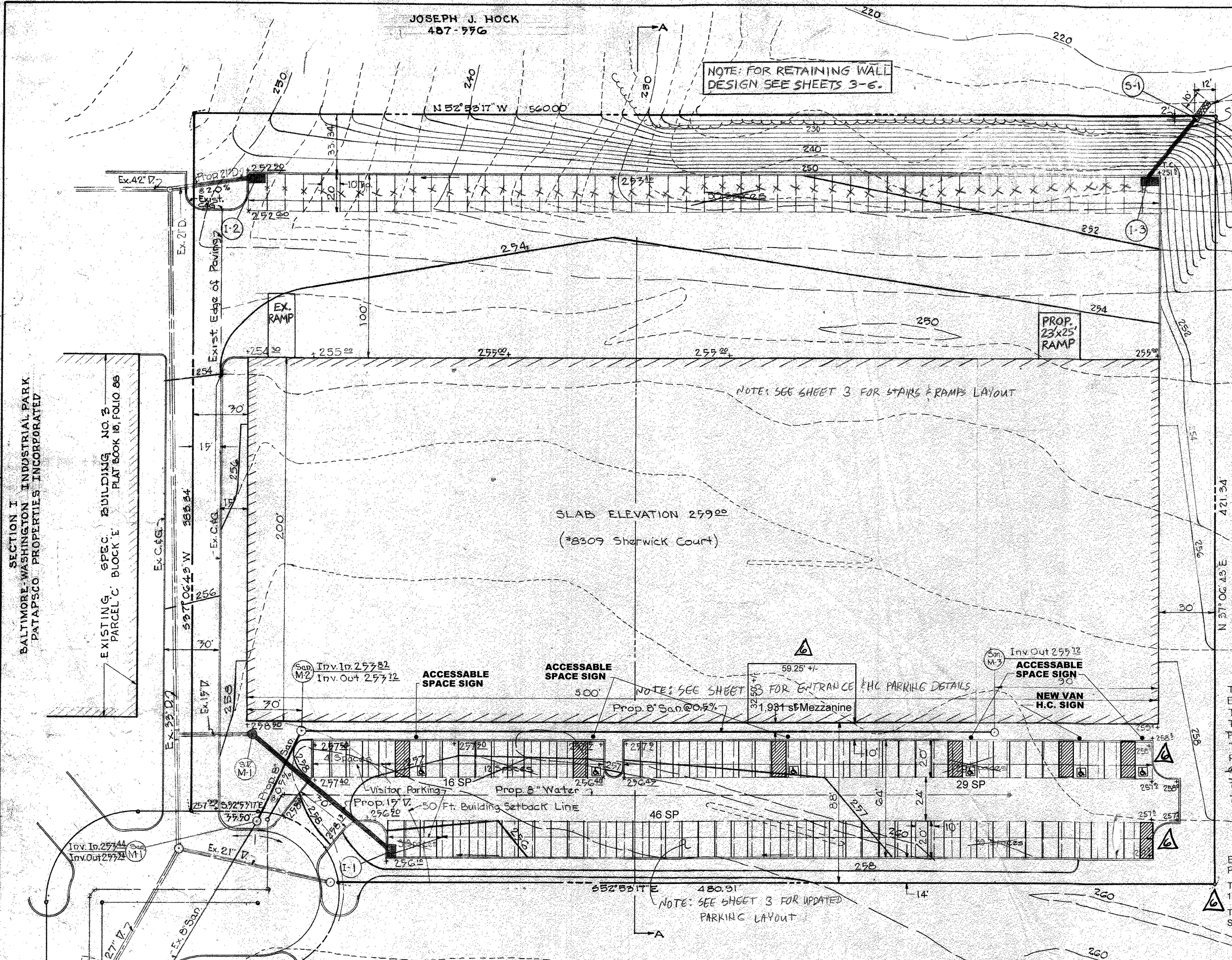
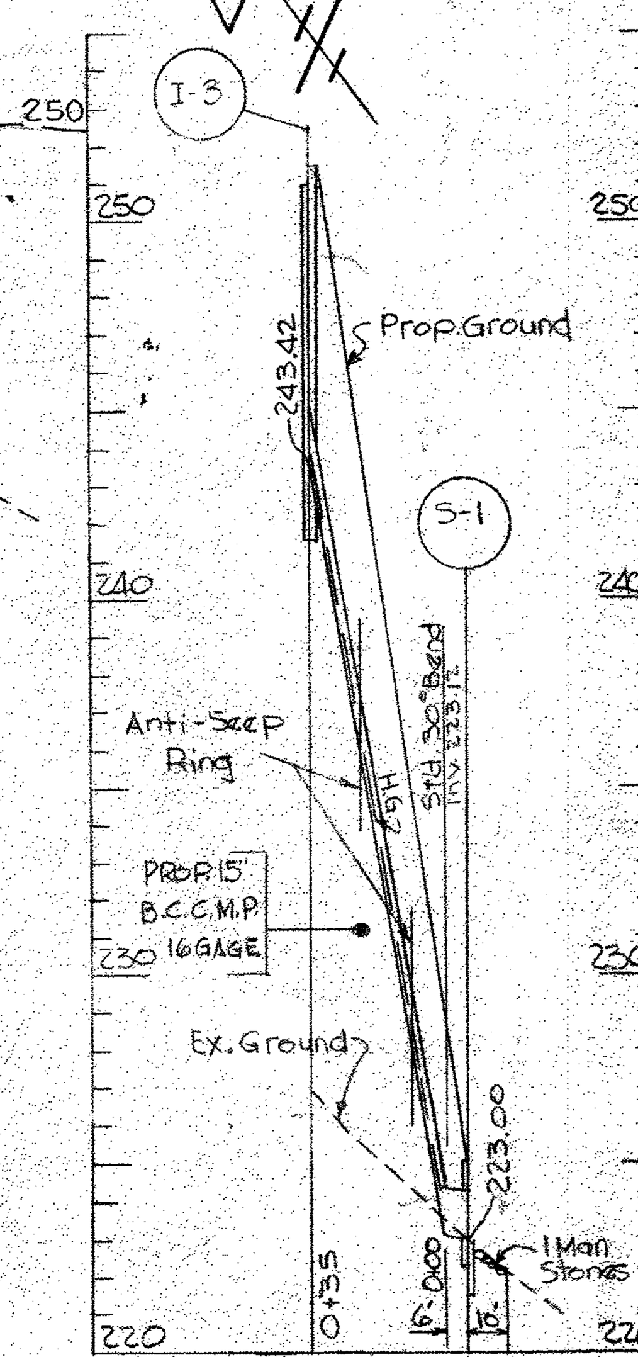
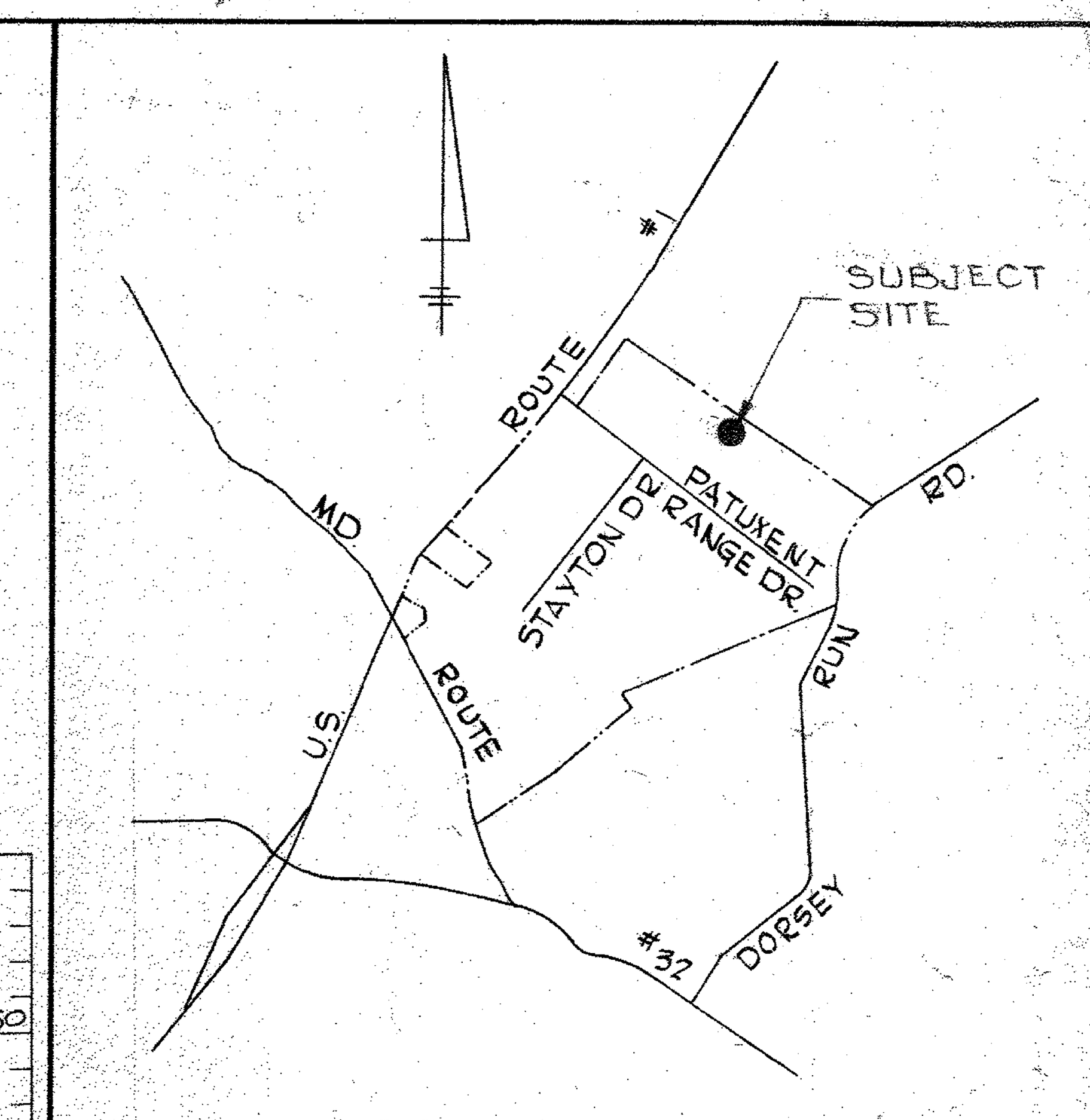


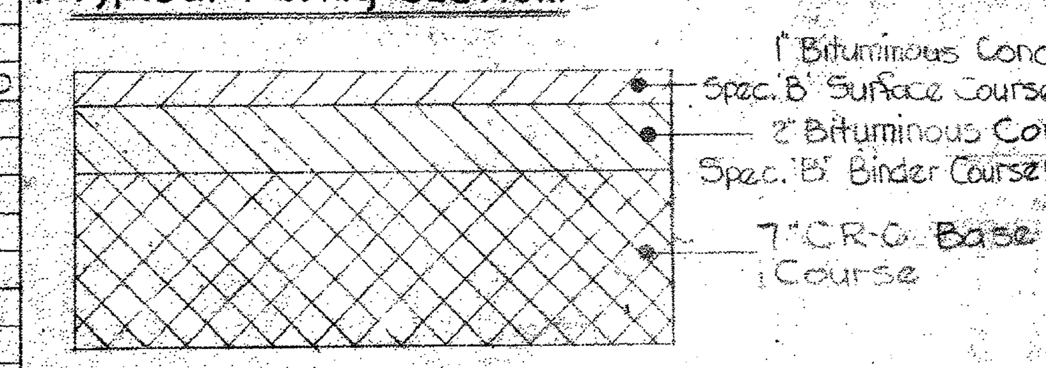


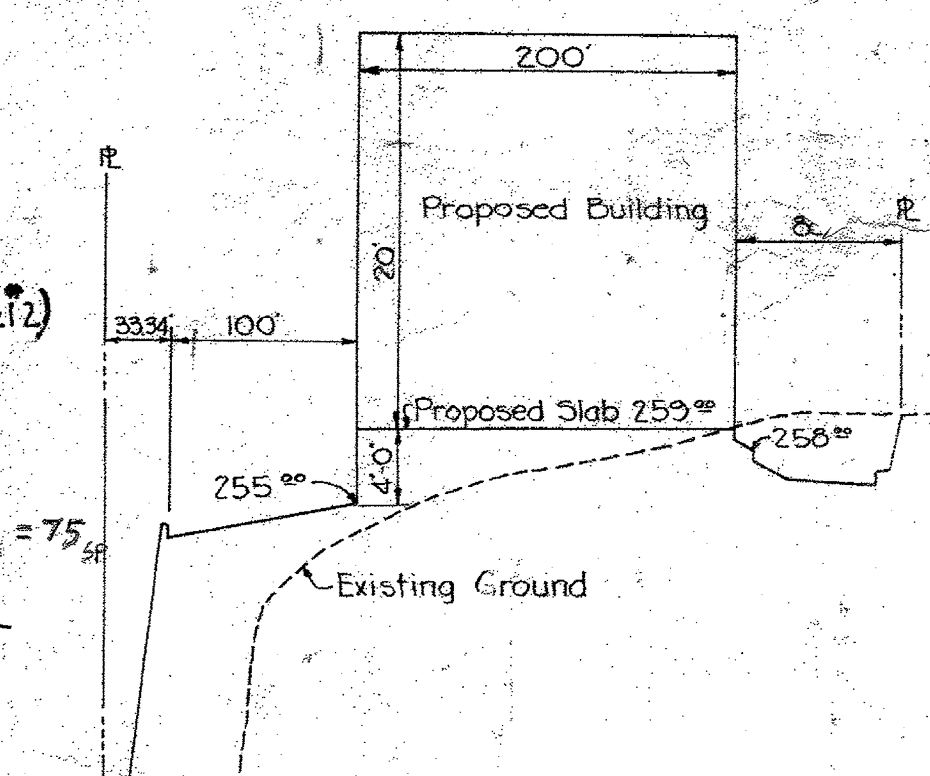


LOCATION MAP
SCALE: 1" = 2400'

GENERAL NOTES

1. All Disturbed Areas To Be Seeded In Conjunction With Howard County Soil Conservation Service And Howard County Planning Commission.
2. No Fences Or Walls.
3. Typical Paving Section.





SECTION A-A
NO SCALE

APPROVED
DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING
HOWARD COUNTY, MARYLAND
DATE 8/9/76

SITE DATA

Total Area Of Tract	5.36 Ac.±
Existing Zoning	M-2
Total Floor Area	100,000#
Tax Map Number	48 (Part of Parcel 2)
~~Parking Spaces Provided - 130 Empl., 7 Vist. = 137~~	
~~Total Sales Area~~	~~None @ Present~~

~~Parking Spaces Provided For 260 Employees @ 2/Space & 7 Parking Spaces Provided for Visitors.~~

~~TOTAL No. OF PARKING SPACES REQUIRED: 100,000# x 0.75 sp/1000# = 75 sp~~

~~TOTAL PARKING SPACES PROVIDED: 90 SPACES INCLUDING 5 HC. SPACES.~~

LEGEND

Existing Grades ---------- 248 ----------
Proposed Grades ———— 248 ————

TOTAL NUMBER OF PARKING SPACES REGUIRED = 101,931 SF X 0.75 / 1,000 = 77 PARKING SPACES

TOTAL NUMBER OF PARKING SPACES PROVIDED = 91 SPACES INCLUDING 5 ACCESSIBLE SPACES 1 VAN ACCESSIBLE SPACE

NOTE: Existing Slope To Be Notched In 12" Vertical Steps Before Placing New Fill.

Seed And Mulch Proposed Slopes Immediately After Placing Fill. (See Approved Sediment Control Plan.)

SECTION ONE
BALTIMORE-WASHINGTON INDUSTRIAL PARK
PATAPSCO PROPERTIES INCORPORATED
W.H.H. 477 FOLIO 530

STRUCTURE SCHEDULE

Number	Type	Howard County Standard Detail	Top Elevation	Invert In	Invert Out
I-1	"S" Comb.	D-99, page 154	256.10	——	252.08
I-2	"S" Comb.	D-99, page 154	252.50	——	247.67
M-1	Std. Manhole	D-103, page 158	258.40	250.34	Ex. 250.14
I-3	"S" Comb.	D-99, page 154	251.50	——	243.42
S-1	TYPE 'G' CONC. ENDWALL	D-61, page 116	225.00	——	223.00

Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No.: 22538
Expiration Date.: 11-24-21

SEAL 22538 FOR REVISION DATED 02-16-21 ONLY
STATE OF MARYLAND
GEOFFREY LIN CINIERO
No. 22538
PROFESSIONAL ENGINEER
2/16/21

Charles E. Fick
Reg. No. 5048 P.E. 6/30/70

Rachatta J Fisch
FOR REV. Dated 4/6/17

Note: Contractor to check all exist. inverts before beginning any construction of proposed drains.

REVISIONS	DATE
Added 1,931 sf mezzanine revised parking count	2/16/21
REVISED PARKING SPACE NO.	7-20-17
ADDED NOTES TO SEE SHEET 3.	4-6-17
Rev. Paving Sect.	5-28-71
Extended Building 100' Added Drain	5-6-71
Slope At Rear Of Lot Revised To 1:1	7-6-70

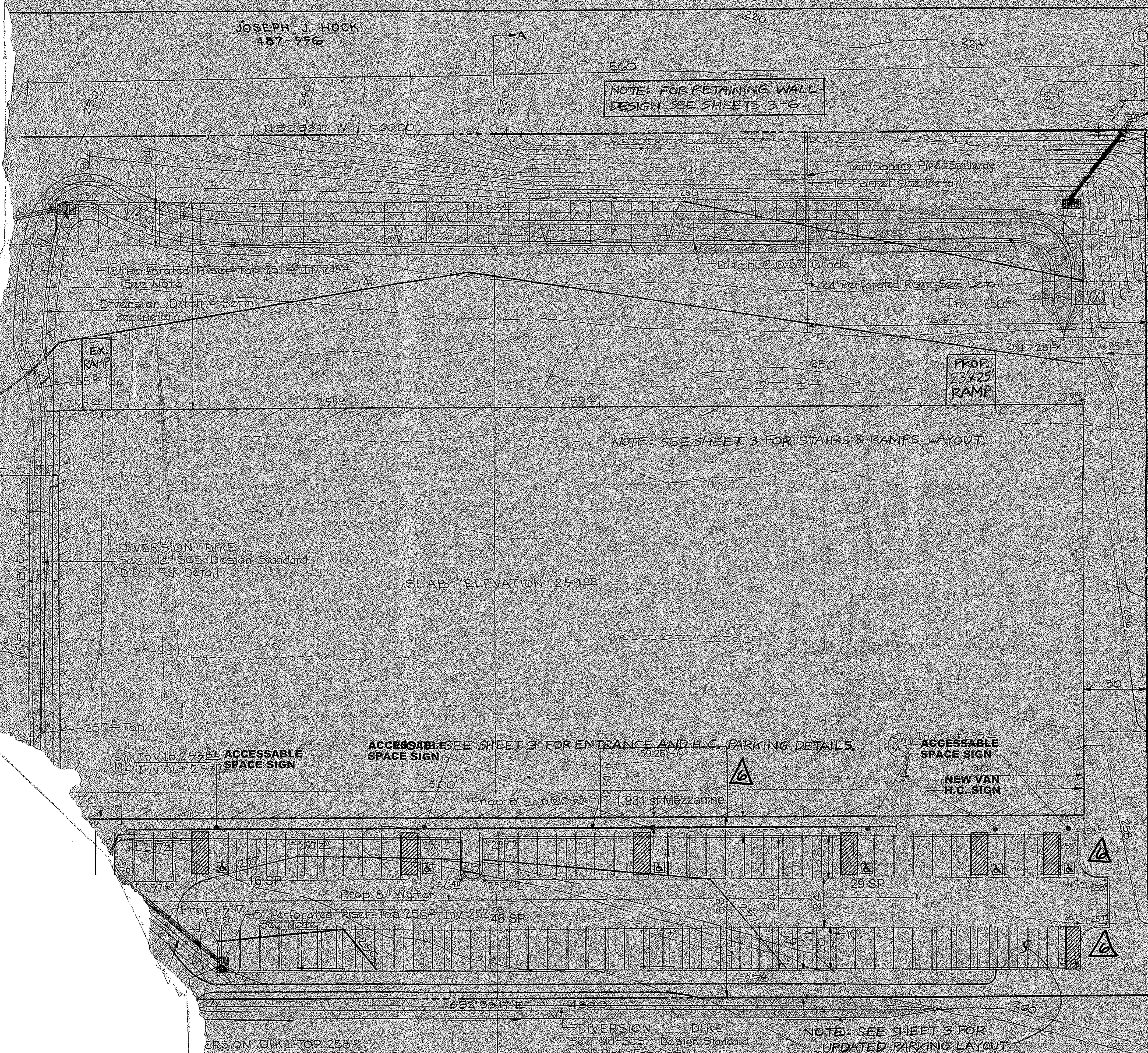
SITE PLAN
SPEC. BLDG. # 4 - WAREHOUSE
SECTION ONE BLOCK 'E' PARCEL 'D' P.B. 22 FOLIO 23
BALTIMORE-WASHINGTON INDUSTRIAL PARK
HOWARD CO., MD.
SCALE: 1" = 30'
ELECTION DISTRICT #6
DATE: JULY 1, 1970

OWNER & DEVELOPER
PATAPSCO PROPERTIES INC.
501 ST. PAUL STREET
BALTIMORE, MARYLAND 21202

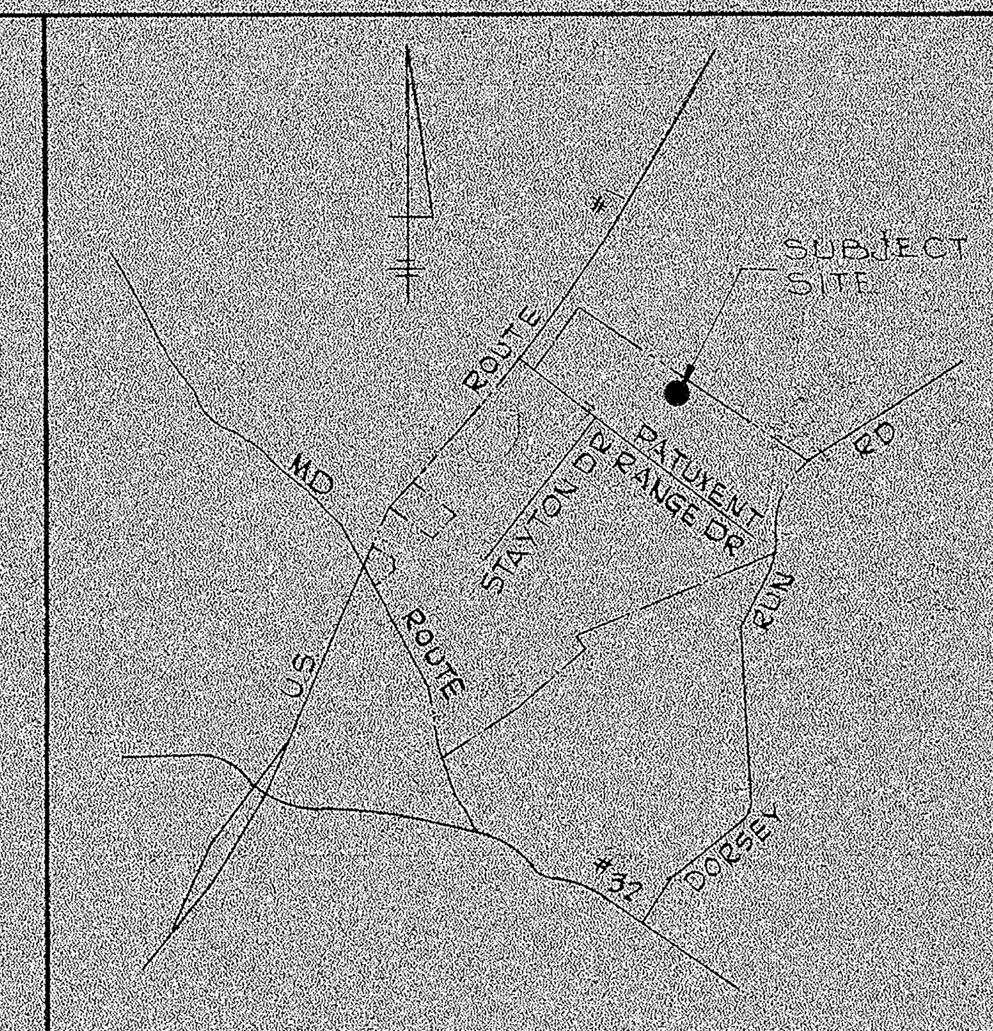
GEORGE WILLIAM STEPHENS JR. AND ASSOCIATES INC.
ENGINEERS
303 ALLEGHENY AVE.
TOWSON 4, M D

SDP 71-89

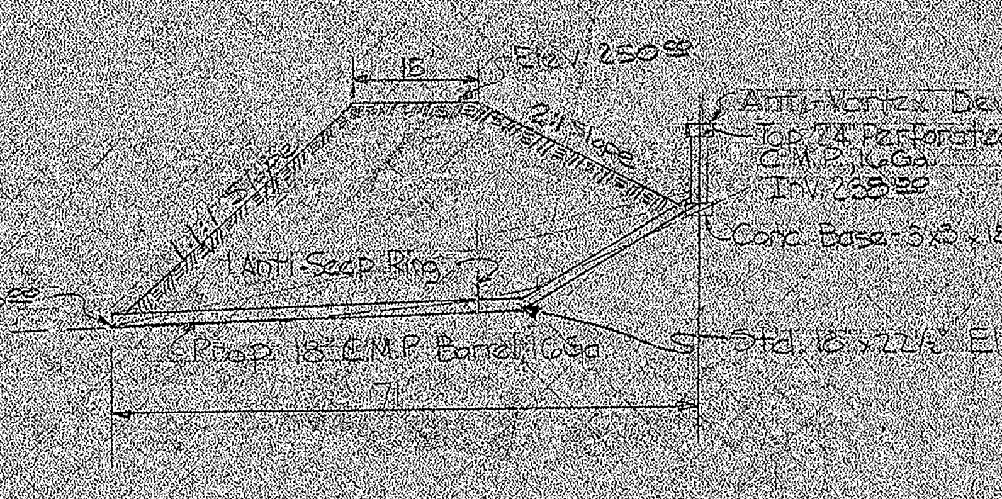
ZONED M-2



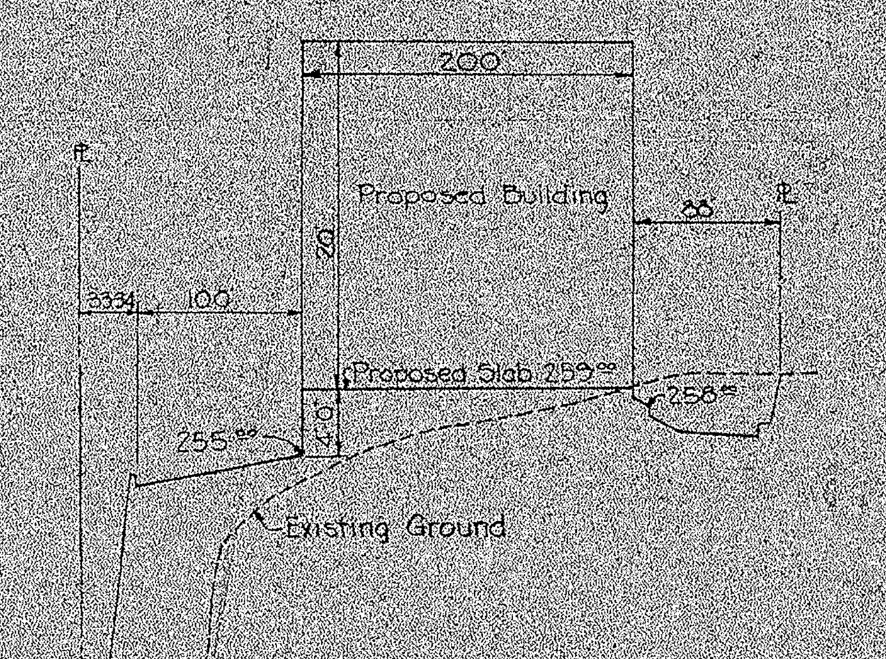
SECTION ONE
BALTIMORE-WASHINGTON INDUSTRIAL PARK
PATAPSCO PROPERTIES INCORPORATED
W.H.H. 477 FOLIO 530



LOCATION MAP
SCALE: 1"=2400'



DETAIL TEMPORARY PIPE SPILLWAY
No Scale



SECTION A-A
NO SCALE

SITE DATA

Total Area Of Tract	5.36 Ac.±
Existing Zoning	M-2
Total Floor Area	100,000±
Tax Map Number	
Parking Spaces Provided	~~48~~ 91 (6)
Total Sales Area	None @ Present
~~Parking Spaces Provided For 274 Employees @ 2/ Space~~	

LEGEND

Existing Grades - - - - 248 - - - -
Proposed Grades ——— 248 ———
(Finished Grades)

SOIL CONSERVATION

CERTIFICATION BY A PROFESSIONAL ENGINEER:
I CERTIFY THAT THE PLAN OF DEVELOPMENT AND THE PLANS FOR SILT AND EROSION CONTROL MEET THE REQUIREMENTS, STANDARDS & SPECIFICATIONS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

Charles E. Fick — 5048 — 5-14-71
SIGNATURE — REG.# — DATE

CERTIFICATION BY THE DEVELOPER:
I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN OF SILT AND SEDIMENT CONTROL.

[signature] PRESIDENT PATAPSCO PROPERTIES

HOWARD COUNTY SOIL CONSERVATION DISTRICT:
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY HOWARD COUNTY SOIL CONSERVATION DISTRICT.
Reviewed James M. Helm 6-29-71
DISTRICT CONSERVATIONIST

APPROVED Robert B. Campbell DATE 6-30-71
HOWARD COUNTY SOIL CONSERVATIONIST

NOTE: PRIOR TO ANY CONSTRUCTION, SEDIMENT CO[NTROL] MEASURE MUST BE INSTALLED.

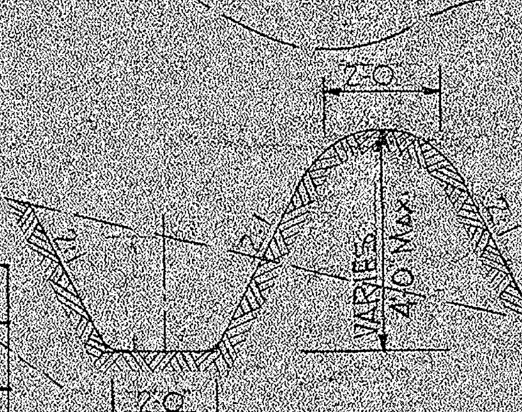
NOTES:

1. DIVERSION DIKE ALONG SOUTHWE[ST] AND EROSION CONTROL DEVICES TO BE CONSTRUCTED BEFORE SIT[E] SUBGRADED.
2. RISERS: THE RISERS SHALL BE C[...] OF B.C.C.M.P. 16 GAGE. THE UPPE[R] PORTION SHALL BE PERFORATE[D] DIAMETER HOLES SPACED 10-12"[...]
3. RISER BASE, ANTI VORTEX DEVICE [...] BE CONSTRUCTED IN ACCORDANCE [...] STANDARDS AND SPECIFICATIONS [...] HOWARD COUNTY SOIL CONSERVAT[ION] DISTRICT.
4. EXISTING SLOPE TO BE NOTCHED IN [...] VERTICAL STEPS BEFORE PLACING NEW [...]
5. AREAS TO BE PAVED TO HAVE BASE COURSE MATERIAL INSTALLED AS SOON AS POSSIBLE.
6. REAR SLOPE (ALONG NORTH ℄) SHALL BE HEAVILY FERTILIZED AND STABILIZED WITH VEGETATIVE COVER IN ACCORDANCE WITH HOWARD COUNTY SOIL CONSERVATION DISTRICT STANDARDS AND SPECIFICATIONS FOR "CRITICAL AREA STABILIZATION" (SEE NOTE #8)
7. CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OFFICE (PHONE 465-3180) 24 HOURS BEFORE STARTING WORK ON THIS PROJECT.
8. CONTRACTOR TO STABILIZE REAR SLOPE AS FOLLOWS:
   a.) PLANT HALLS JAPANESE HONEYSUCKLE (Lonicera Japonica Halliana) ON 3 FOOT CENTERS FOR FULL HEIGHT OF SLOPE FROM POINT © TO POINT ⓓ.
   b.) UTILIZE CENTER HOLE PLANTING (A Hole Dug For Each Plant.)
   c.) FERTILIZE EACH PLANT AT THE RATE OF ONE OUNCE PER PLANT OF A COMPLETE FERTILIZER SUCH AS 10-10-10. MIX THE FERTILIZER WITH SOIL BELOW THE ROOTS OF THE PLANTS.
   d.) COVER ENTIRE SLOPE WITH A WOOD CHIP MULCH TO CONSERVE MOISTURE & CONTROL EROSION.
9. STABILIZE REMAINDER OF SLOPE AREAS (OTHER THAN N. ℄) WITH VEGETATIVE COVER IMMEDIATELY AFTER PLACING FILL AS FOLLOWS:
   a.) APPLY 2000 LBS. OF PULVERIZED DOLOMITIC LIMESTO[NE] PER ACRE (46 LBS./1000 S.F.)
   b.) APPLY 1000 LBS. OF 10-10-10 FERTILIZER OR I[TS] EQUIVALENT PER ACRE (23 LBS./1000 S.F.)
   c.) HARROW OR DISC INTO SOIL TO A DEPTH [...] ALONG THE CONTOUR.
   d.) APPLY KENTUCKY 31 TALL FESCUE SEED [...] PER ACRE (1.4 LBS./1000 S.F.)
   e.) IMMEDIATELY AFTER SEEDING UNIFOR[MLY ...] AREAS WITH UNWEATHERED SMALL GRAIN [...] OF 2 TONS PER ACRE.
   f.) APPLY LIQUID ASPHALT BINDE[R ...] 0.1 GAL./S.Y.

TOTAL DRAINAGE ARE[A]
DISTURBED AREA
RUNOFF COEFFIC[IENT]
TIME OF CONCE[NTRATION]
INTENSITY (10 [...])
Q_{10}

STRUCTURE SCHEDULE

Number	Type	Howard County Standard Detail	Top Elevation	Invert In	Invert Out
I-1	"S" Comb.	D-99, page 154	256.10	———	252.08
I-2	"S" Comb.	D-99, page 154	252.50	———	248.11
M-1	Std. Manhole	D-103, page 158	258.40	250.24	250.14
I-3	"S" Comb.	D-99, page 154	251.50	———	245.00
S-1	TYPE "G" CONC. ENDWALL	D-61, page 116	225.00	———	223.00



TYPICAL DETAIL
DITCH & BERM
NO SCALE

Top Of Embankment To Be Rounded, So As Not To Trap Water. Elev. 252.0 From Point Ⓐ to Ⓑ.

Approx. Subgrade

REVISIONS	DATE
Added 1,931 sf mezzanine revised parking count (6)	2/16/21
REVISED PARKING SPACE NO.	7-20-17
ADDED NOTES TO SEE SHEET 3.	4-6-17
Add. Note #9	6-18-71
N. ℄ Slope Stabilization Notes added	6-10-71
Extended Building 100' Added Drain	5-6-71
Slope At Rear Of Lot Revised To 1:1	7-6-70

SEAL 22538 FOR REVISION DATED 02-16-21 ONLY

(6)

Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No.: 22538
Expiration Date.: 11-24-21

STATE OF MARYLAND — GEOFFREY LIN CINIERO — No. 22538 — REGISTERED PROFESSIONAL ENGINEER — 2/16/21

FOR REV. DATED 4/6/17

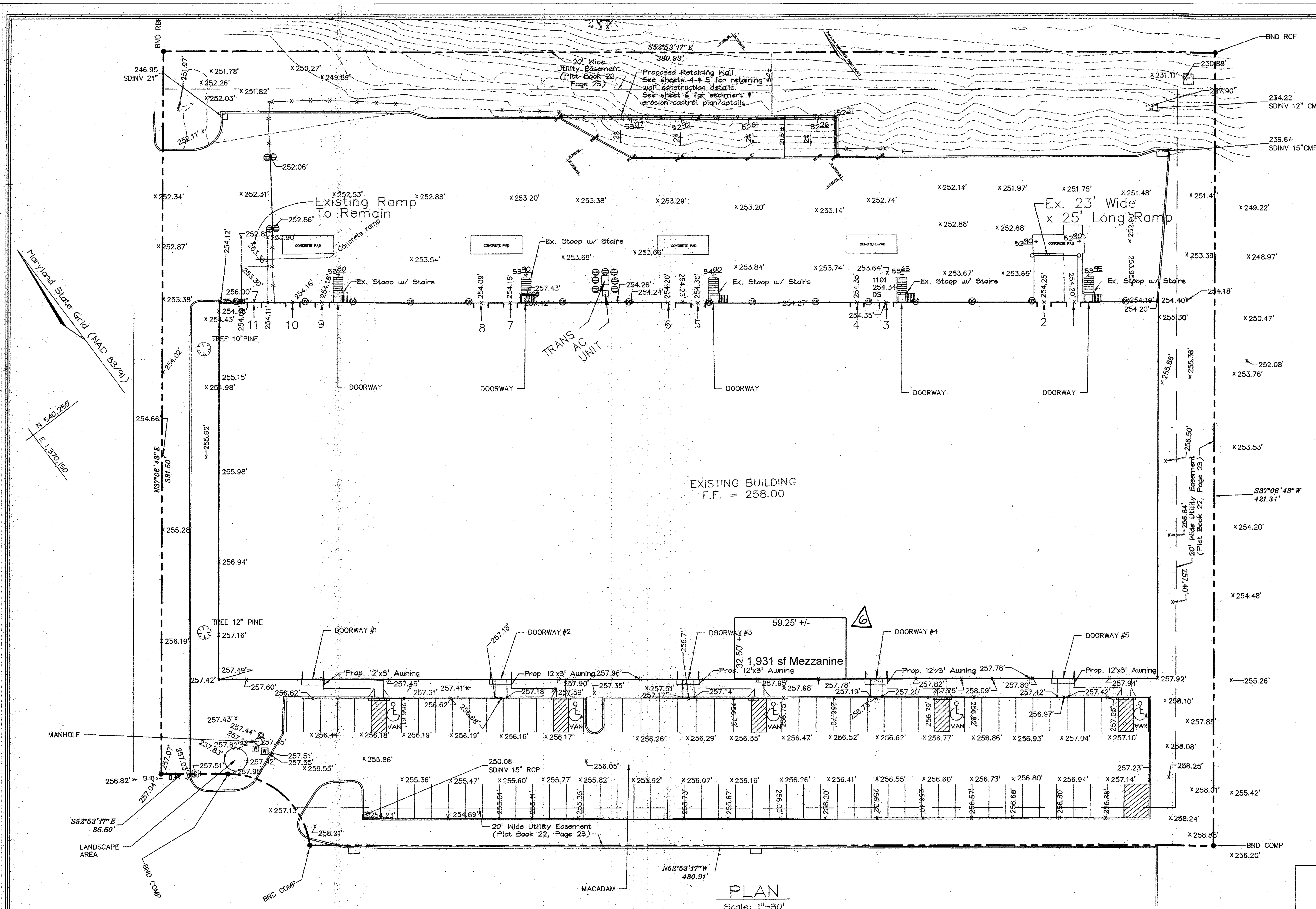
SEDIMENT CONTROL PLAN
SPEC. BLDG. # 4 WAREHOUSE
SECTION ONE BLOCK 'E' PARCEL '7' P.B. 22 FOLIO 23
BALTIMORE-WASHINGTON INDUSTRIAL PARK
HOWARD CO., MD — ELECTION DISTRICT #6
SCALE: 1"=30' — DATE: MAY 14, 1971

OWNER & DEVELOPER
PATAPSCO PROPERTIES INC.
501 ST. PAUL STREET
BALTIMORE, MARYLAND 21202

GEORGE WILLIAM STEPHENS JR.
AND ASSOCIATES INC.
ENGINEERS
303 ALLEGHENY AVE
TOWSON 4 MARYLAND

ZONED M-2

2 OF 6



PLAN
Scale: 1"=30'

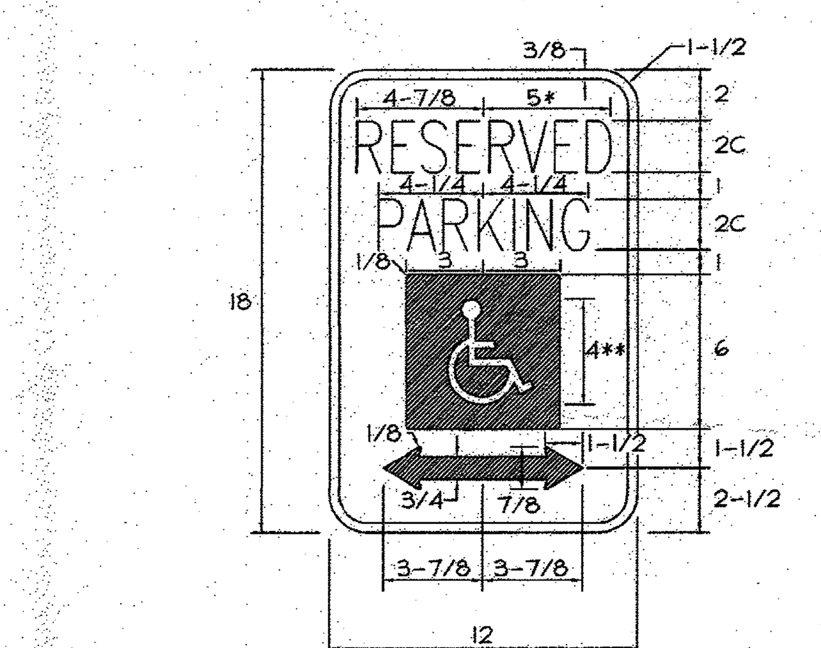
LEGEND

Existing Contour	382
Proposed Contour	382
Existing Spot Elevation at Paving	382.30
Existing Trees to Remain	
Limits of disturbance	LOD
Silt Fence	SF
Proposed Spot Elevation at Paving	52²⁶
Chain Link Fence	
Guardrail	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	7-27-17 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	8-1-17 DATE
DIRECTOR	8-2-17 DATE

6	Added 1,931 sf mezzanine revised parking count	2/16/21



NOTES:
All van accessible parking space aisle shall have a "No Parking in Access Aisle" Sign.
* Reduce spacing 50%
** See symbol 1860 for symbol design (all dimensions for signs in inches)

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

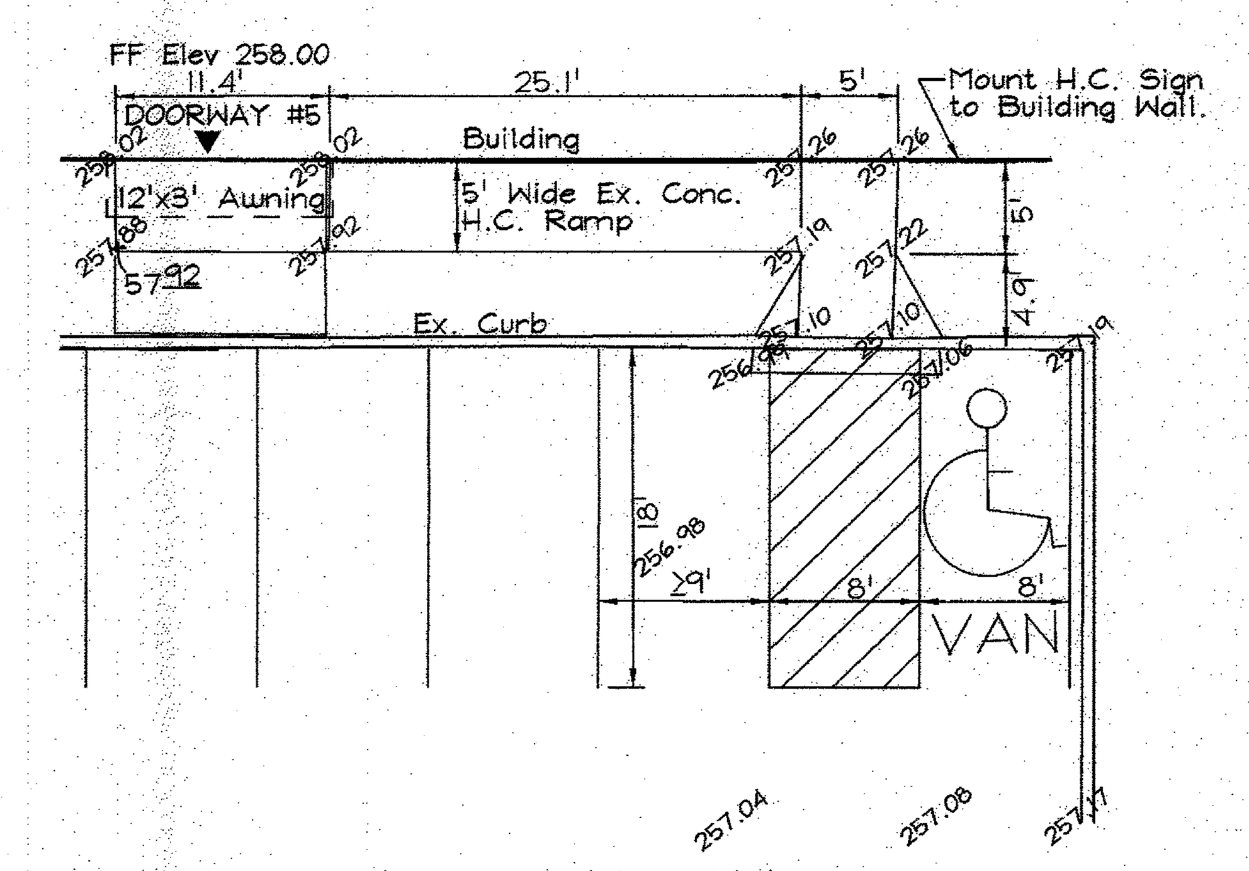
REFERENCE: STATE OF MARYLAND STANDARD HIGHWAY SIGNS BOOKLET MARYLAND DEPARTMENT OF TRANSPORTATION.

HANDICAP PARKING SIGN
NOT TO SCALE

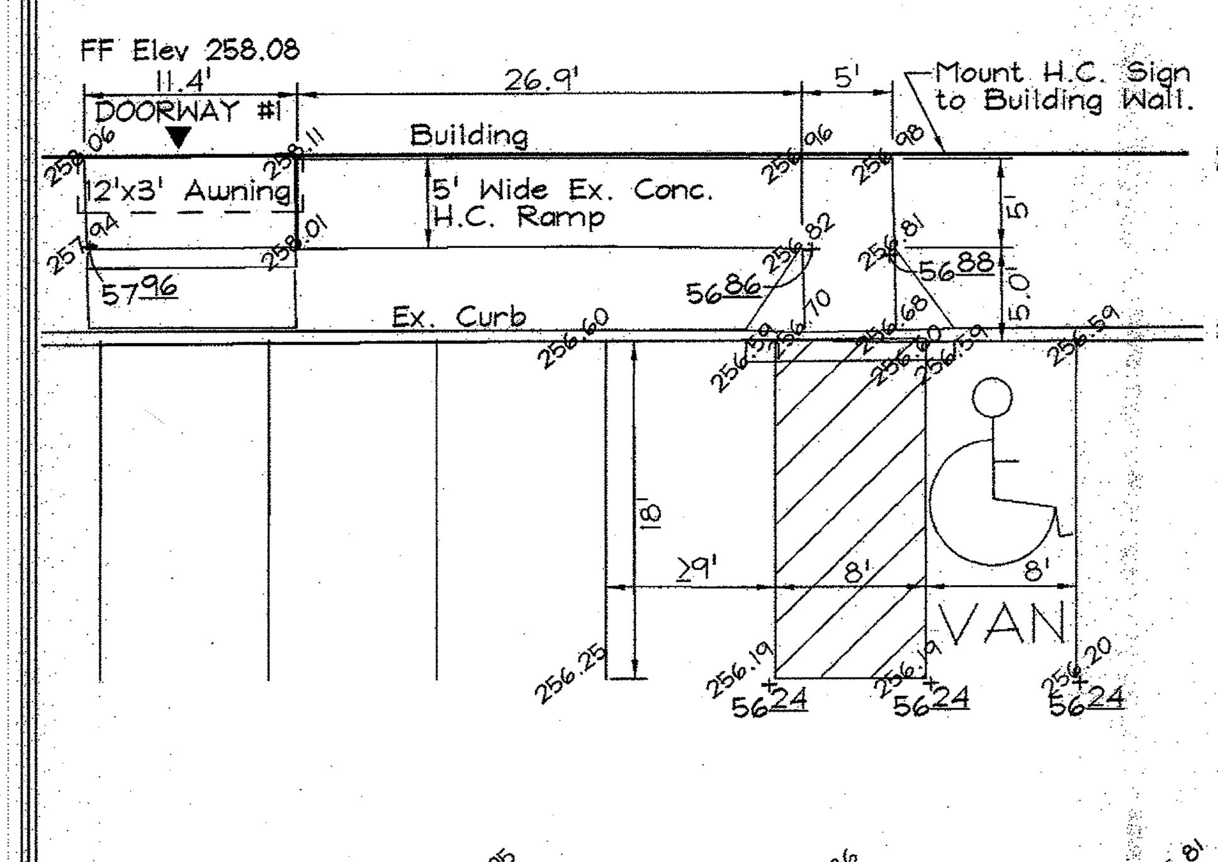
NOTE:
H.C. signs to be mounted on building wall, in front of H.C. spots.

SEAL 22538 FOR REVISION DATED 02-15-21 ONLY

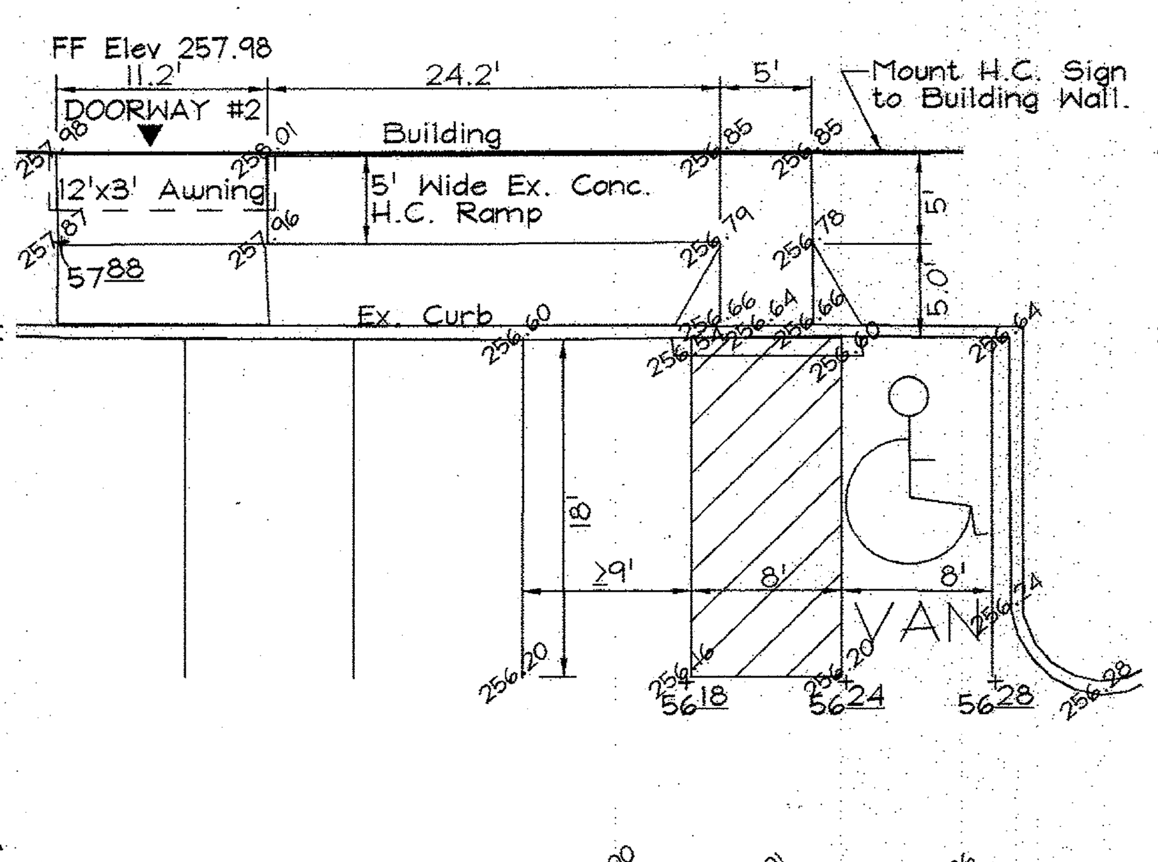
Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No.: 22538
Expiration Date: 11-24-21



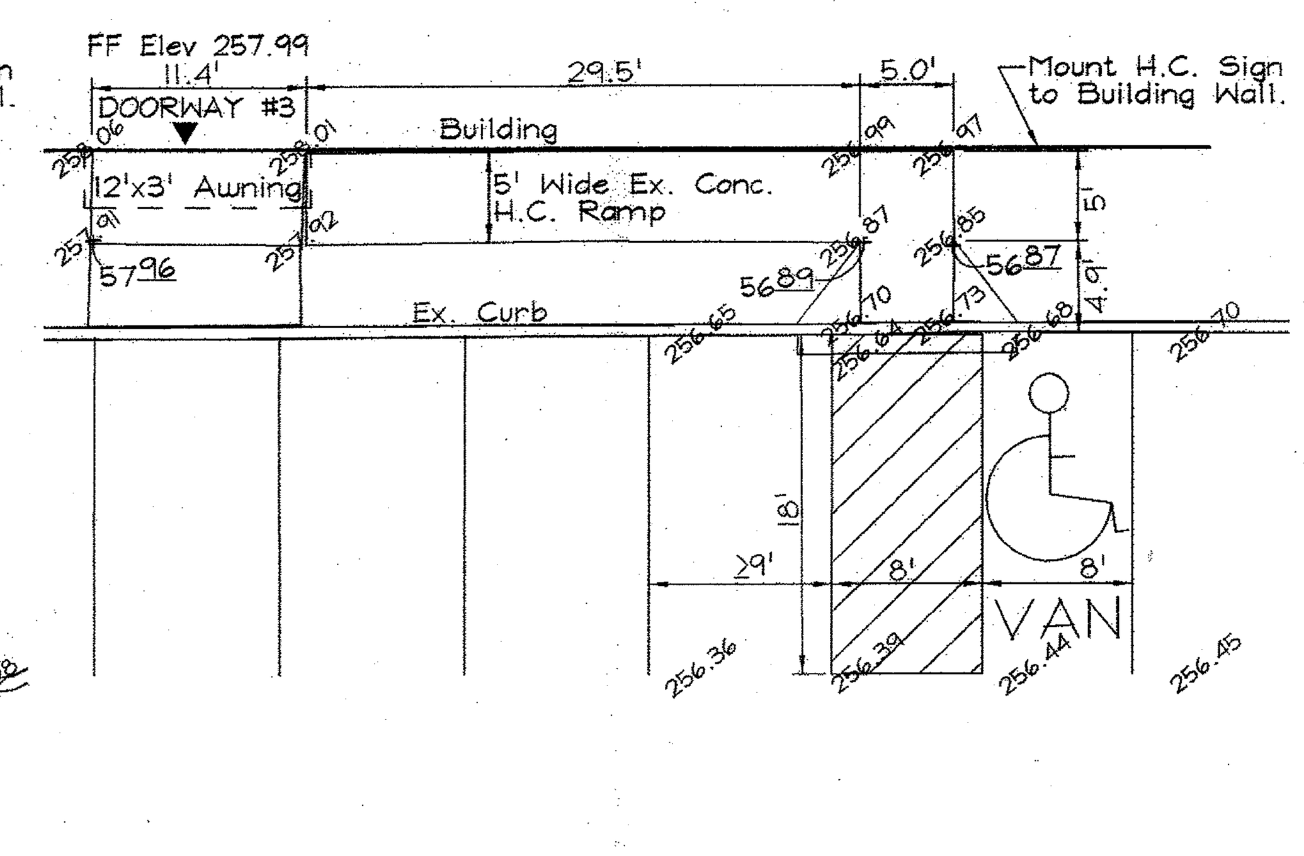
H.C. ENTRANCE DOORWAY #5 DETAIL
Scale: 1"=10'



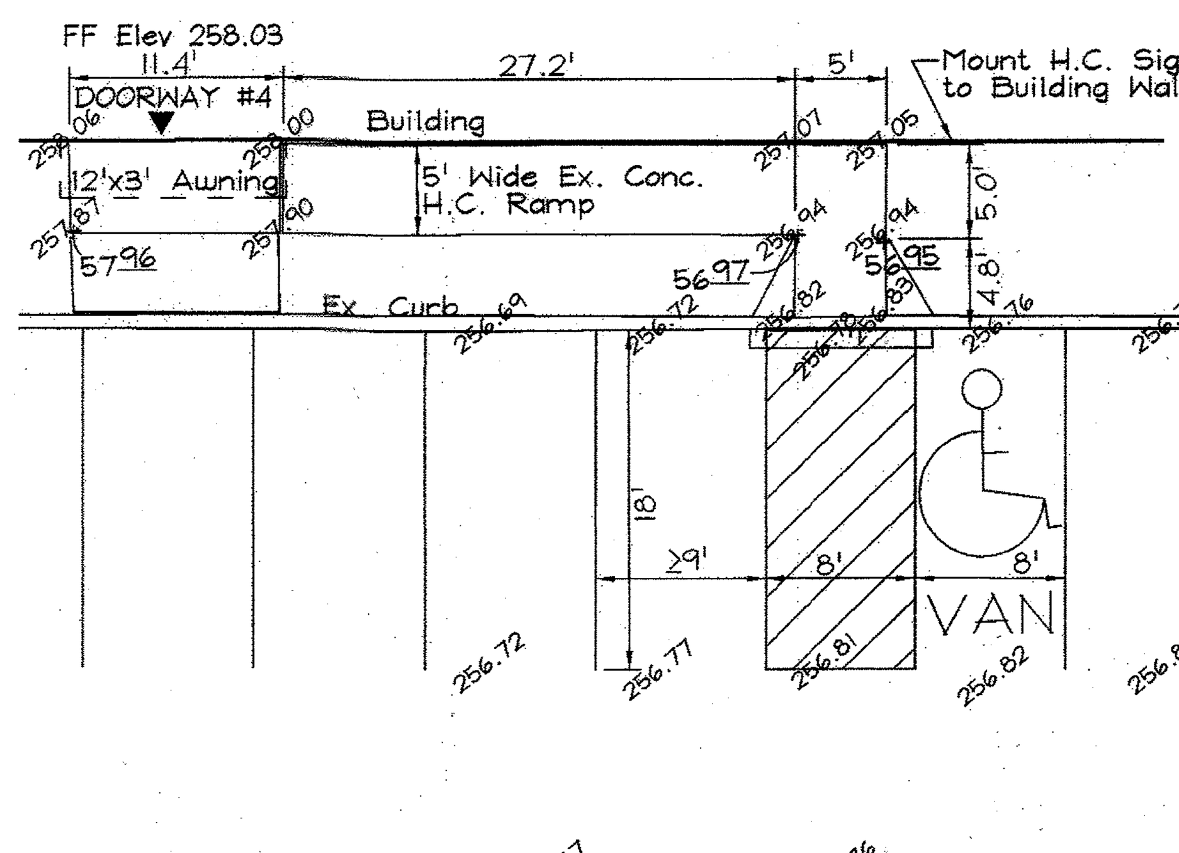
H.C. ENTRANCE DOORWAY #1 DETAIL
Scale: 1"=10'



H.C. ENTRANCE DOORWAY #2 DETAIL
Scale: 1"=10'



H.C. ENTRANCE DOORWAY #3 DETAIL
Scale: 1"=10'



H.C. ENTRANCE DOORWAY #4 DETAIL
Scale: 1"=10'

PURPOSE STATEMENT
The purpose of this SDP sheet is to accurately depict the front and back of the existing building and its parking spaces. Revise the design of handicap accessible parking spaces and entrance ways. Also, to depict the proposed stairways and ramp in the back of the building and retaining wall.

OWNER
IDIG SHERWICK LLC
1100 Peachtree St. NE - Suite 1000
Atlanta, GA 30309
(854) 663-2898

DEVELOPER
IDI GAZELEY
740 Centre View Blvd - Floor 3
Crestview Hills, KY 41017
(859) 663-2898

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. #22418, Expiration Date: 07/29/2017.

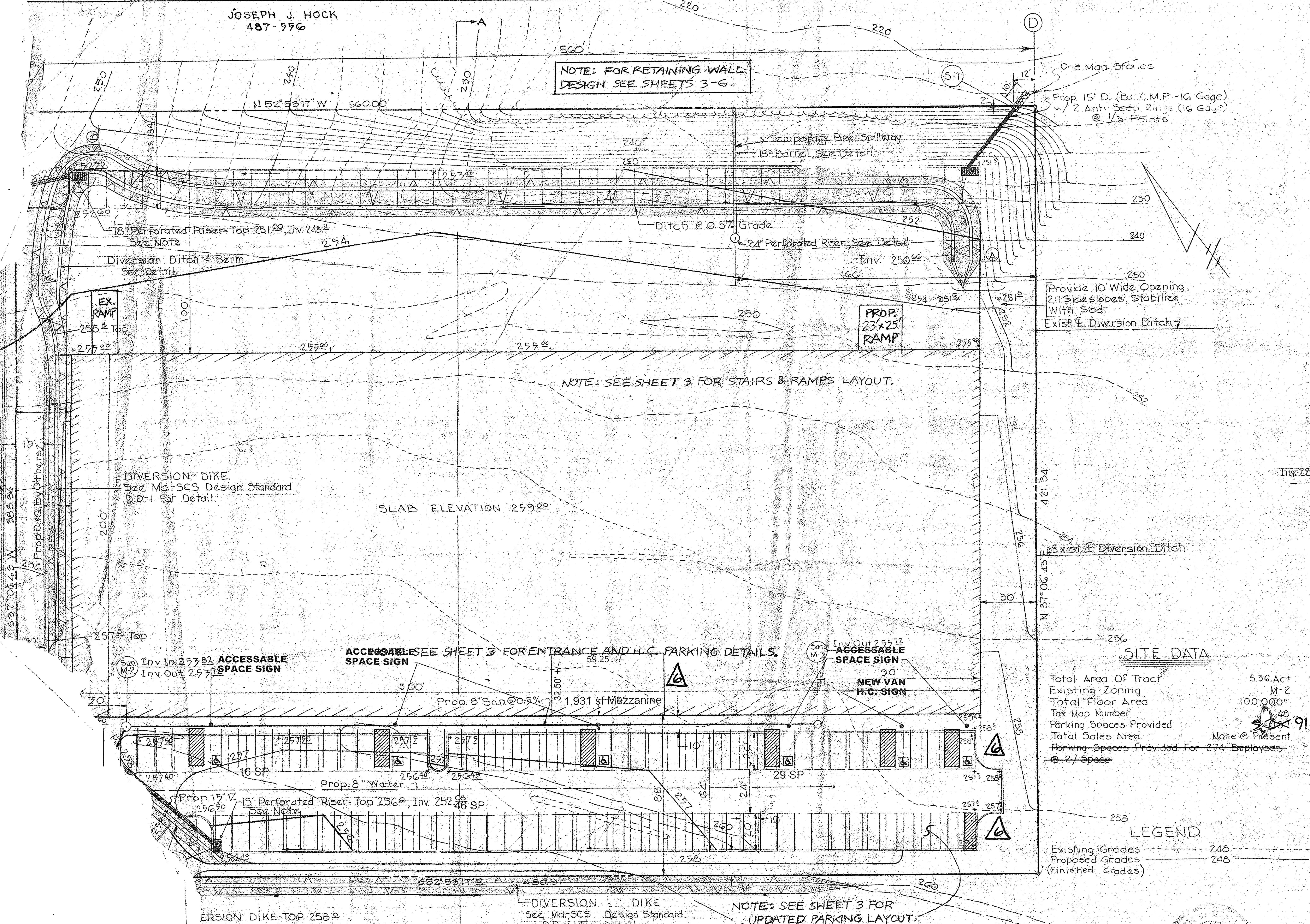
REVISED SITE DEVELOPMENT PLAN
BALTIMORE WASHINGTON INDUSTRIAL PARK
8309 SHERWICK CT
ZONED: M-2

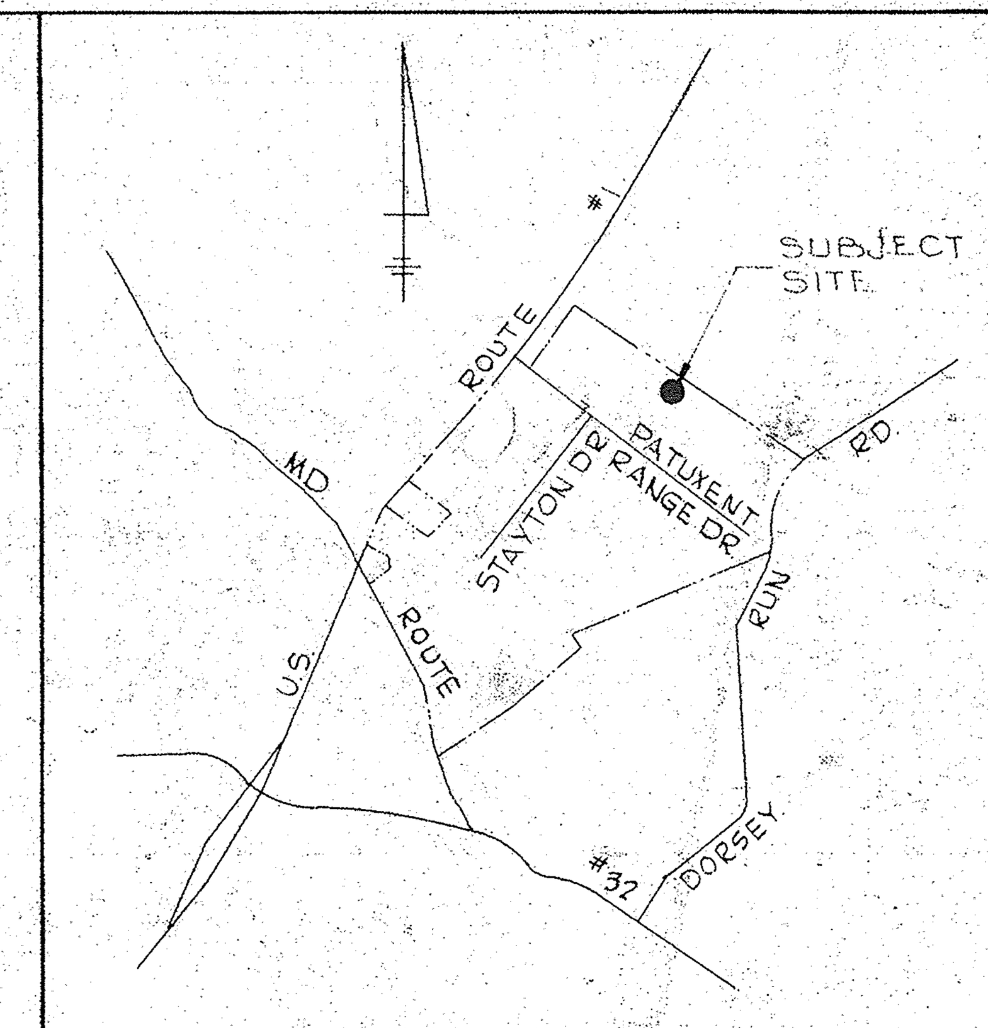
TAX MAP 48 GRID 1 — PARCEL 146
6TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel:410-567-5200 Fax: 410-796-1562
E-mail: info@fsheri.com

DESIGN BY:	CRH2
DRAWN BY:	JO4CRH2
CHECKED BY:	ZYF
SCALE:	As Shown
DATE:	July 20, 2017
W.O. No.:	4009
SHEET No.:	3 OF 6

SDP-71-089





LOCATION MAP
SCALE: 1"=2400'

SOIL CONSERVATION

CERTIFICATION BY A PROFESSIONAL ENGINEER:
I CERTIFY THAT THE PLAN OF DEVELOPMENT, AND THE PLANS FOR SILT AND EROSION CONTROL MEET THE REQUIREMENTS, STANDARDS & SPECIFICATIONS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

Charles E. Fick — 5048 — 5-14-71
SIGNATURE — REG. — DATE

CERTIFICATION BY THE DEVELOPER:
I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT, AND PLAN OF SILT AND SEDIMENT CONTROL.

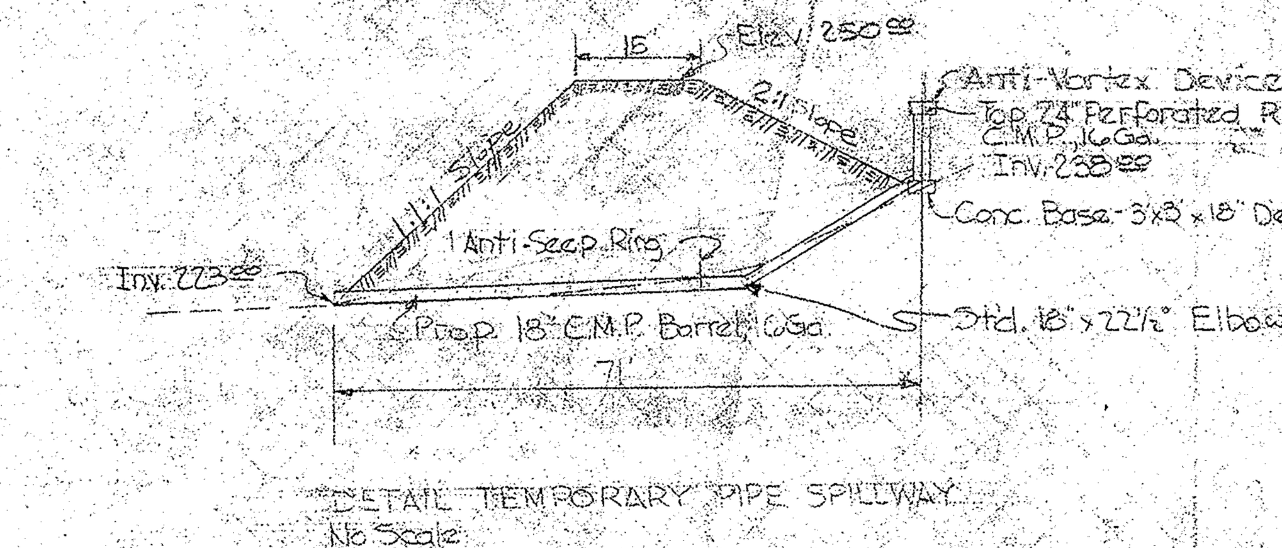
PRESIDENT PATAPSCO PROPERTIES

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

Reviewed — James M. Nelson — 6-29-71
DISTRICT CONSERVATIONIST

APPROVED Robert B. Campbell — DATE 6-30-71
HOWARD COUNTY SOIL CONSERVATIONIST

NOTE: PRIOR TO ANY CONSTRUCTION, SEDIMENT CO… MEASURE MUST BE INSTALLED.



DETAIL TEMPORARY PIPE SPILLWAY
No Scale

NOTES:

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3. RISER BASE, ANTI VORTEX DEVICE… BE CONSTRUCTED IN ACCORDANCE… STANDARDS AND SPECIFICATIONS… HOWARD COUNTY SOIL CONSERVAT… DISTRICT.
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   f.) APPLY LIQUID ASPHALT BIND… 0.1 GAL. /S.Y.

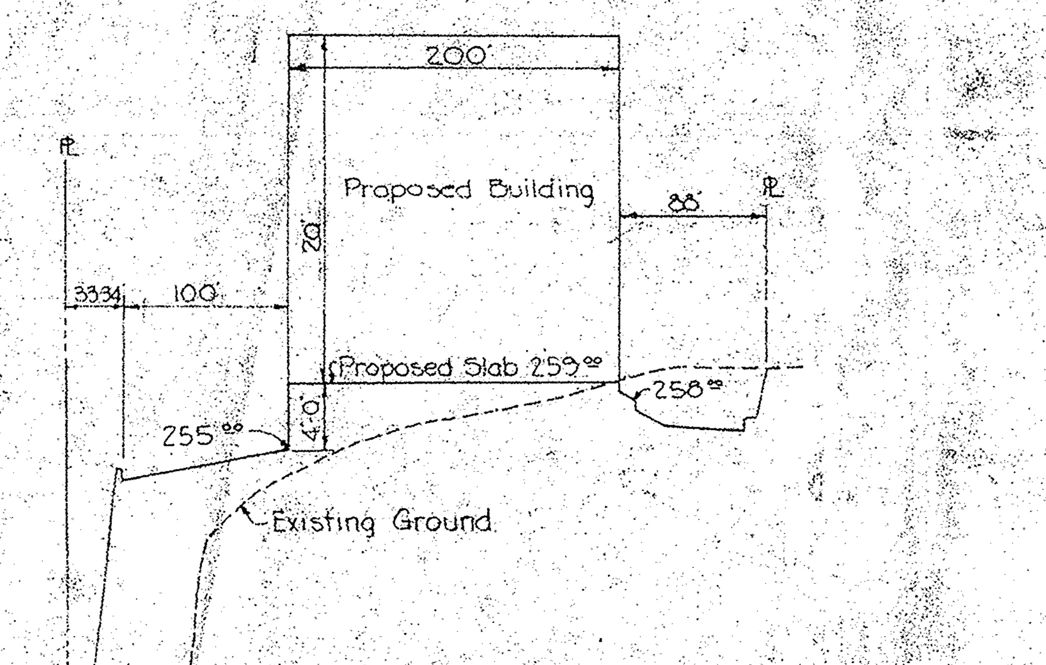
SITE DATA

Total Area Of Tract	5.36 Ac.±
Existing Zoning	M-2
Total Floor Area	100,000 □'
Tax Map Number	48
Parking Spaces Provided	~~…~~ 91 (6)
Total Sales Area	None @ Present

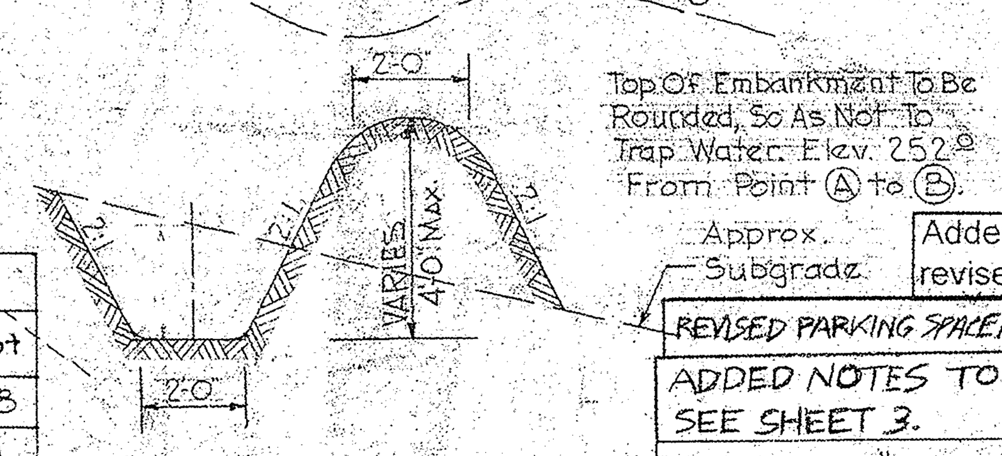
~~Parking Spaces Provided For 274 Employees @ 2/Space~~

LEGEND

Existing Grades — 248
Proposed Grades — 248
(Finished Grades)



SECTION A-A
NO SCALE



TYPICAL DETAIL
DITCH & BERM
NO. SCALE

STRUCTURE SCHEDULE

Number	Type	Howard County Standard Detail	Top Elevation	Invert In	Invert Out
I-1	"S" Comb.	D-99, page 154	256.10	———	252.08
I-2	"S" Comb.	D-99, page 154	252.50	———	248.11
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I-3	"S" Comb.	D-99, page 154	251.50	———	245.00
S-1	TYPE G CONC. ENDWALL	D-61, page 116	225.00	———	223.00

REVISIONS	DATE
Added 1,931 sf mezzanine revised parking count (6)	2/16/21
REVISED PARKING SPACE NO.	7-20-17
ADDED NOTES TO SEE SHEET 3.	4-6-17
Add. Note #9	6-18-71
"N" ℄ Slope Stabilization Notes added	6-10-71
Extended Building 100' Added Drain	5-6-71
Slope At Rear Of Lot Revised To 1:1	7-6-70

SEAL 22538 FOR REVISION DATED 02-16-21 ONLY

Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland
License No.: 22538
Expiration Date: 11-24-21

STATE OF MARYLAND — GEOFFREY LIN CINIERO — No. 22538 — PROFESSIONAL ENGINEER

FOR REV. DATED 4/6/17

SEDIMENT CONTROL PLAN

SPEC. BLDG. #4 WAREHOUSE
SECTION ONE BLOCK 'E' PARCEL 'I' P.B. 22 FOLIO 23

BALTIMORE-WASHINGTON INDUSTRIAL PARK

HOWARD CO., MD. — ELECTION DISTRICT #6
SCALE: 1"=30' — DATE: MAY 14, 1971

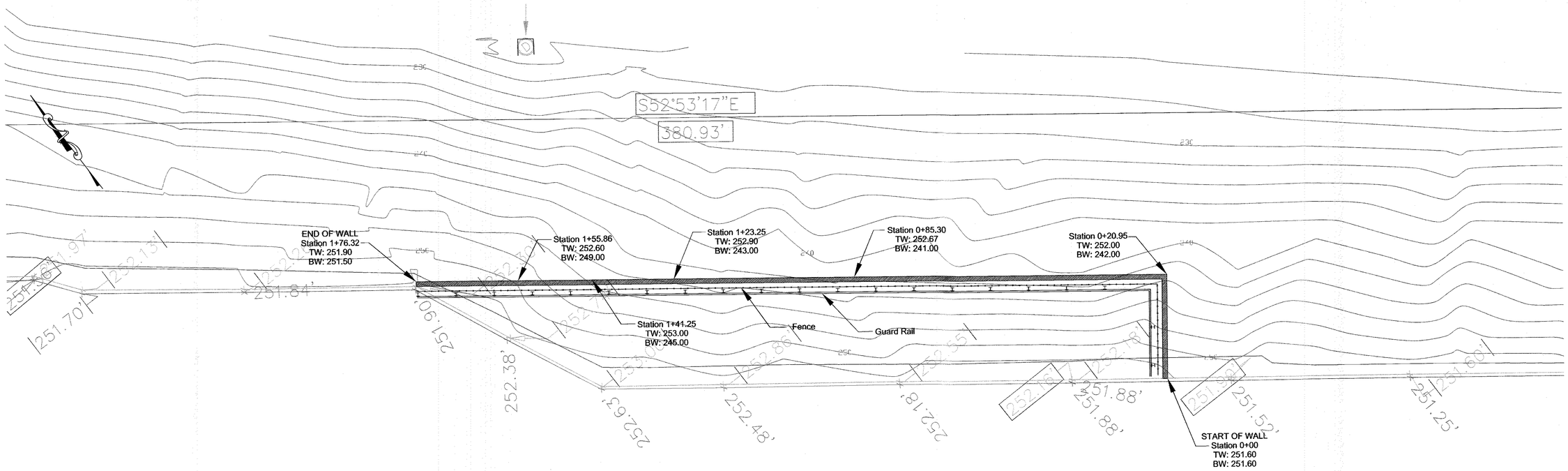
OWNER & DEVELOPER
PATAPSCO PROPERTIES INC.
501 ST. PAUL STREET
BALTIMORE, MARYLAND 21202

GEORGE WILLIAM STEPHENS JR. AND ASSOCIATES INC.
ENGINEERS
303 ALLEGHENY AVE
TOWSON 4, MARYLAND

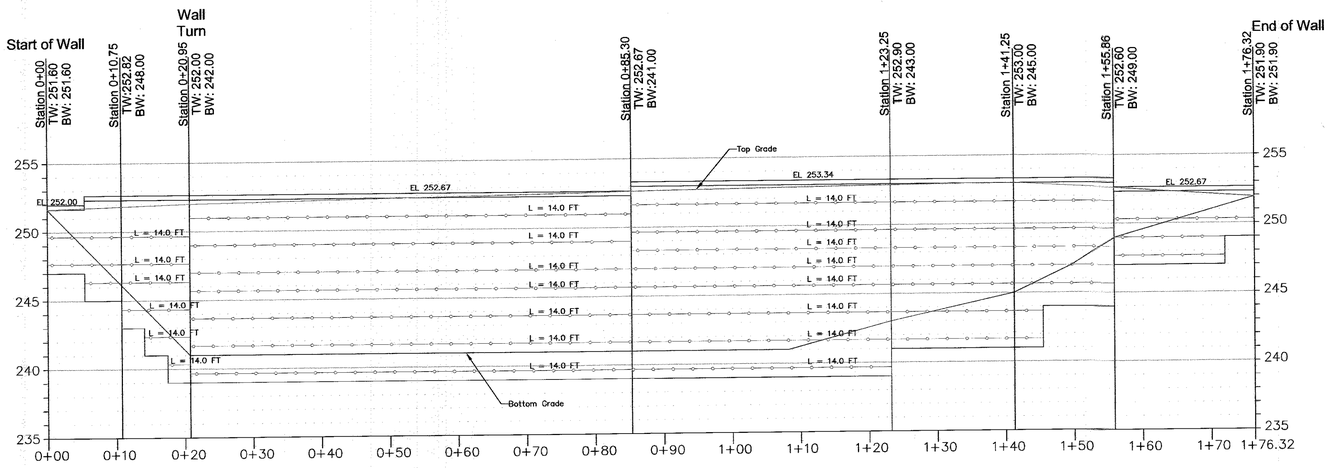
ZONED M-2

TOTAL DRAINAGE ARE…
DISTURBED AREA…
RUNOFF COEFFIC…
TIME OF CONCE…
INTENSITY (10…
Q_{10}

2 OF 6



SITE PLAN
SCALE: 1"=10'



NOTE: ALL GEOGRIDS CONSIST OF 14 FT MIRAFI 5XT
TW: TOP FINISHED GRADE
BW: BOTTOM FINISHED GRADE

WALL PROFILE
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"=5'

NO.	REVISIONS	DATE

Retaining Wall Plan & Profile
Sherwick Court Retaining Wall
Jessup, Howard County, Maryland
Zoned: M-2

IDI Gazeley

DMA	DMA	July 2017	8358	4 of 6

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7.27.17
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8-1-17
DIRECTOR — DATE 8-2-17

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License No. 29553, Expiration Date: 12/31/17

STATE OF MARYLAND · HASAN M. ABOUMATAR · No. 29553 · PROFESSIONAL ENGINEER

HASAN M. ABOUMATAR, P.E.

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FAX (410) 859-4324
"Setting The Standard For Service"

SDP-71-089

MSE RETAINING WALL SPECIFICATION GUIDELINES

PART 1: GENERAL

1.01 Description
- A. Retaining walls must be constructed under the supervision of a Maryland Registered Professional Engineer.
- B. Work includes furnishing and installing concrete modular block retaining wall units to the lines and grades shown on the construction drawings and as specified herein.
- C. Work includes preparing foundation soil, furnishing and installing leveling pad, unit fill and reinforced backfill to the lines and grades shown on the construction drawings.
- D. Work includes furnishing and installing all related materials required for construction of the retaining wall as shown on the construction drawings.

1.02 Reference Standards
- A. ASTM C 90 — Load Bearing Concrete Masonry Units.
- B. ASTM C 140 — Sampling and Testing Concrete Masonry Units.
- C. ASTM D 448 — Sizes of Aggregate for Road and Bridge Construction.
- D. ASTM D 698 — Laboratory Compaction Characteristics using Standard Effort.

1.03 Delivery, Storage and Handling
- A. Contractor shall check the materials upon delivery to assure that proper materials have been received.
- B. Contractor shall prevent excessive mud, wet cement, epoxy, and similar materials (which may affix themselves) from coming in contact with the materials.
- C. Contractor shall protect the materials from damage and exposure to sunlight. Damaged materials shall not be incorporated into the retaining wall structure and backfill.

1.04 Quality Assurance
- A. Owner will be responsible for soil testing and construction observations for quality control during earthwork and retaining wall construction operations.

PART 2: MATERIALS

2.01 Definitions
- A. Modular Wall Units — KEYSTONE modular concrete facing and corner units, machine made from portland cement, water, and mineral aggregates.
- B. Structural Geogrid — a structural geogrid formed by a regular network of integrity connected tensile elements with apertures of sufficient size to allow interlocking with surrounding soil, rock, or earth and function primarily as reinforcement.
- C. Unit Fill/Drainage Aggregate — drainage aggregate, such as No. 57 Stone, which is placed within the cells of the modular concrete units and immediately behind the units to a width of at least 12 inches.
- D. Reinforced Backfill — Compacted soil which is within the reinforced soil volume as shown on the plans.
- E. Excavation Face — The interface between the reinforced backfill and the retained fill. During construction, measures shall be taken to avoid developing a shear plane at this interface.
- F. Retained Backfill — On-site material located behind the reinforced zone of soil.

2.02 Concrete Units
- A. Concrete segmental units shall conform to the requirements of NCMA TEK 2-4 and have a minimum 28-day compression strength of 4,000 psi. The units shall also pass 150 freeze thaw cycles in water with less than 1% weight loss for samples tested in accordance with ASTM C-1262.
- B. Wall Face Units for general wall construction shall be KEYSTONE Compac III Units. Sculptured face or straight (flat) face may be used.
- C. Top of wall Cap Units shall be KEYSTONE Cap Units with fiberglass connecting pins.
- D. KEYSTONE Compac III Units shall be tan in color, based on manufacturer's availability.

2.03 Fiberglass Connecting Pins
- A. Connecting pins shall be 1/2" diameter thermoset isophthalic polyester resin-pultruded fiberglass reinforcement rods supplied by the unit manufacturer.

2.04 Construction Adhesive
- A. Construction adhesive for top of wall cap blocks shall be KEYSTONE KapSeal™. Material shall conform to ASTM 2339 and shall be supplied by the block unit supplier.

2.06 Soil Fill Materials
- A. Base Leveling and Pad Material
  1. Material shall consist of crushed stone (GA 57/8) as shown on the construction drawing. The leveling pad shall be, at a minimum, 6-inches thick. MSHA No. 57 Stone or pea gravel is not permitted.
- B. Unit Fill/Drainage Aggregate
  1. Fill for units shall be free draining crushed stone or gravel, with a maximum aggregate size of 1/2" to 3/4" and no more than 5% passing the No. 50 sieve and conforming to ASTM D 448. Gradation of the unit fill shall be approved by the Geotechnical Engineer. Pea gravel shall not be used. MSHA No. 57 stone may be used.
- C. Reinforced Backfill
  1. Material shall consist of soil classified as SM or more granular soils per USCS with minimum soil parameters as indicated under design parameters. The backfill material shall contain no particles greater than 2.5 inches in diameter. The backfill material shall contain no more than 35 percent by weight passing on the US Standard No. 200 sieve. Other backfill materials my be approved by the Geotechnical Engineer.
- D. Sample Submittal
  1. The contractor shall submit samples and material specifications of the proposed backfill soils (unit fill, pad material, reinforced backfill) to the Geotechnical Engineer for approval.
  2. Soil must meet or exceed the friction angle specified in design parameters.

2.07 Structural Geogrid
- A. The geogrid identified for the retaining wall consists of the following: Mirafi 5XT.
- B. The material shall be protected from sunlight and weather while stored on site in accordance with the manufacturer's recommendation.

2.08 Geotextile
- A. A non-woven geotextile shall be utilized as shown on the plans to provide a filter between the unit fill/drainage aggregate and the reinforced backfill.
- B. The geotextile shall consist of a Mirafi 140N.
- C. Where geogrids are located, the geotextile shall be placed as illustrated on the plans. At junctions and ends, the geotextile shall be overlapped at least 12 inches. The geotextile shall be placed so that intimate contact is made between the geotextile and the backfill material.
- D. Ripped or otherwise damaged material shall not be used. The material shall be protected from sunlight and weather while stored on site in accordance with the manufacturer's recommendation.

PART 3: INSTALLATION

3.01 Excavation
- A. Contractor shall excavate to the lines and grades shown on the construction drawings. Contractor shall be careful not to disturb embankment and foundation materials beyond lines shown.
- B. All existing topsoil, rootmat and other soft or unsuitable materials shall, at a minimum, be removed from the footprint of the retained soil mass.
- C. If groundwater is encountered during the excavation of the backslope, a backslope drainage system shall be utilized. The system shall tie into the internal wall drainage system to provide adequate release of any water which accumulates behind the reinforced zone.

3.02 Foundation Preparation
- A. Foundation shall be excavated as required for leveling pad dimensions shown on the construction drawings, or as directed by the Geotechnical Engineer.
- B. The required bearing pressure beneath the footing of the wall must be verified in the field by a Geotechnical Engineer.
- C. Unsuitable soils shall be removed and replaced with approved material.
- D. Over-excavated areas shall be backfilled with approved, compacted backfill material or as approved by the Geotechnical Engineer.

3.03 Base Leveling Pad
- A. Leveling pad materials shall be placed upon an approved foundation as shown on the construction drawings to a minimum thickness of 6 inches.
- B. Aggregate material shall be compacted to provide a dense, level surface on which to place the first course of modular units. Compaction shall be to at least 95% of the maximum dry density as determined by the Modified Proctor Compaction Test (ASTM D 1557). Leveling pad shall be prepared and leveled to ensure complete contact of retaining wall unit with base.

3.04 Unit Installation
- A. The first course of concrete modular units shall be carefully placed on the base leveling pad. Each unit shall be checked for level (in both directions) and alignment.
- B. Install fiberglass connecting pins and fill all voids in and around the modular units with unit fill material. Tamp or rod unit fill to ensure that all voids are completely filled.
- C. Sweep excess material from top of units and install the next course. Ensure that the units of each course are completely filled, backfilled and compacted prior to proceeding to next course.
- D. Place each subsequent course, ensuring that pins protrude into adjoining courses a minimum of 1 inch. Two pins are required per unit. Pull each unit forward to obtain the desired offset (as noted on the plans), away from the fill zone, locking against the pins in the previous course and backfill as the course is completed.
- E. Repeat procedure to the extent of wall height. Wall construction shall not exceed 2 courses in height before reinforced backfill is placed.
- F. Follow wall erection and unit fill placement closely with any other backfilling required. Compaction of all soils shall be to 95% of the maximum dry density as determined in accordance with ASTM D 1557.
- G. As approved by the engineer, changes elevations, units can be stepped with the grade or stepped into the embankment with a convex return end. Provide appropriate buried units on compacted leveling pad in area of convex return end.

3.05 Geogrid Installation
- A. The geogrid type and length (direction perpendicular to the wall face) shall conform to those indicated on the construction drawings. Geogrid shall be laid continuously at the proper elevations and orientation as shown on the construction drawings or as directed by the Geotechnical Engineer.
- B. Correct orientation (roll direction) of the geogrid shall be verified by the Contractor.
- C. The geogrid shall be connected to the modular wall units by placing the geogrid over fiberglass pins and laying the grid back on the fill side.
- D. A minimum tensile force geogrid shall be located between the drainage aggregate/unit fill and the reinforced backfill. Non-essential material shall be folded back parallel, above and below the geogrid as necessary to ensure continuous grid placement.
- E. The geogrid shall be pulled taut to set the geogrid against the fiberglass pins and to eliminate loose folds in the material. The fill surface shall be level. To tension the geogrid, backfill shall be placed over the geogrid from immediately behind the wall to the back end of the geogrid.
- F. No geogrid overlaps will be allowed in any length of geogrid perpendicular to the wall face except at corners or angled locations. The geogrid shall overlap rather than provide no coverage. A minimum of 3 inches of soil cover is required between over lapping layers of geogrid.

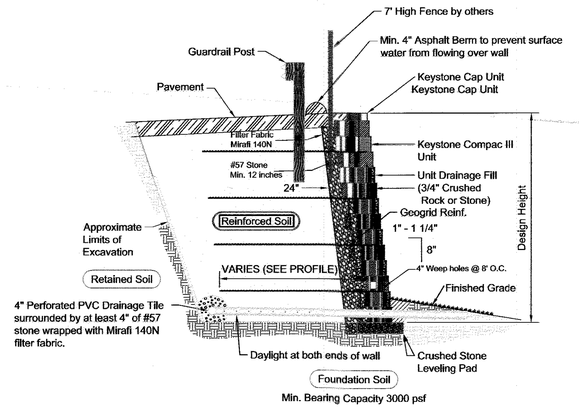
3.06 Drainage Installation
- A. Provide 4-inch weep holes every 8 feet along the wall.

3.07 Fill Placement
- A. Backfill material shall be placed in 8 inch loose lifts and compacted to at least 95% of the maximum dry density as determined by ASTM D 1557. The in-place moisture content shall be in the range of at the optimum moisture content to 2 percentage points higher than the optimum moisture content, as determined in accordance with ASTM D 1557.
- B. Backfill shall be placed, spread and compacted in such a manner that minimizes the development of slack or loss of pretension of the geogrid. Backfill shall be placed in horizontal layers. The excavation face shall be stepped or notched to provide compaction of backfill on a level surface and to increase the interlock between the retained soils and the reinforced backfill.
- C. Only hand-operated compaction equipment shall be allowed within 5 feet of the back surface of the KEYSTONE or equivalent units.
- D. Backfill shall be placed from immediately behind the wall towards the excavation face/retained soils and compacted to the specifications presented herein with appropriate compaction equipment.
- E. Tracked construction equipment shall not be operated directly on the geogrid. A minimum backfill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Turning of tracked vehicles shall not be performed on overlap the geogrid.
- F. Rubber-tired equipment may pass over the geogrid reinforcement at slow speeds (less than 10 mph). Avoid sudden braking and sharp turning.
- G. The suitability of the fill material must be confirmed by a Geotechnical Engineer.

3.08 Cap Installation
- A. Provide permanent mechanical connection to wall units with KEYSTONE KapSeal™. Apply adhesive to top surface of lower unit and place cap unit atop adhesive.
- B. Place Cap Units over projecting pins from the units below. Pull forward to setback position.
- C. Backfill and compact to finished grade.

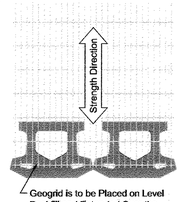
DESIGN PARAMETERS

Geometry:		Soil Parameters:	Minimum Friction Angle	Minimum Unit Weight (pcf)
Configuration:	Battered face wall (4 DEG.)	Soil Type		
Maximum Wall Height / Minimum Allowable Bearing Pressure (psf):	12'-0" / 3,000	Reinforced fill (3/4" or more granular)	32	125
Backslope Angle:	N/A	Retained soils	32	125
Toe Slope Angle:	Varies (3H:1V maximum)			
Wall Embedment:	Varies (24 inches minimum) (See Profile)	Foundation soils	32	125

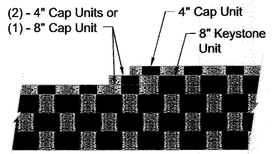


Typical Reinforced Wall Section

Geogrid Layers and Length Vary - See Profile

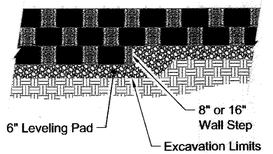


Grid & Pin Connection

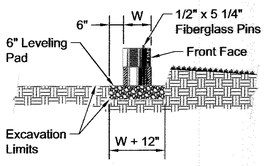


Note:
1. Secure all cap units with Keystone Kapseal or equal.

Top of Wall Steps



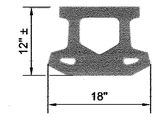
Note:
1. The leveling pad is to be constructed of crushed stone or 2000 psi ± unreinforced concrete.



Section

Leveling Pad Detail

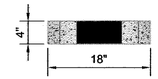
Compac III Elevation



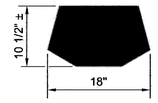
Compac III Plan

Compac III Unit

* Dimensions May Vary by Region



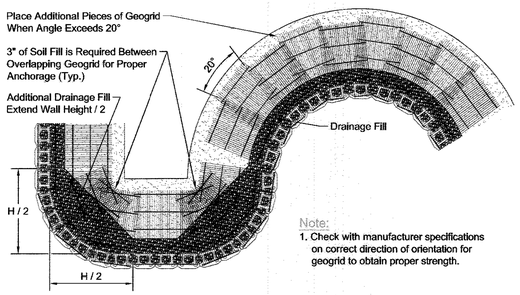
Cap Unit Elevation



Cap Unit Plan

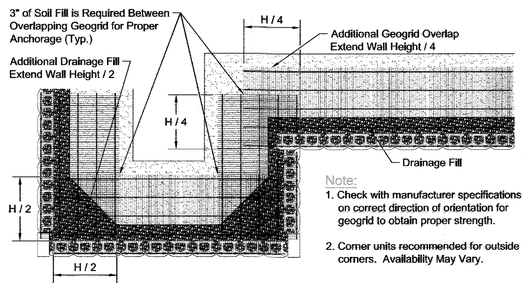
3-Plane Split Cap Unit Option

* Dimensions & Availability Will Vary by Region



Note:
1. Check with manufacturer specifications on correct direction of orientation for geogrid to obtain proper strength.

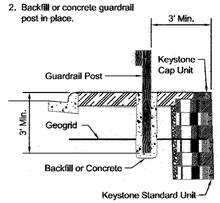
Geogrid Installation on Curves



Note:
1. Check with manufacturer specifications on correct direction of orientation for geogrid to obtain proper strength.
2. Corner units recommended for outside corners. Availability May Vary.

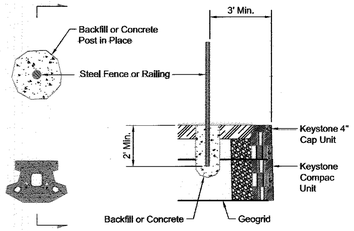
Geogrid Installation at Corners

Note:
1. Auger through geogrid layers.
2. Backfill or concrete guardrail post in place.



Typical Guardrail Detail

Standard Unit - Near Vertical Setback Shown

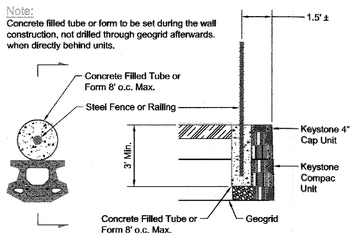


Fence Plan Detail

Fence SectionDetail

Compac Unit - Near Vertical Setback

Note:
Concrete filled tube or form to be set during the wall construction, not drilled through geogrid afterwards. when directly behind units.



Fence Plan Detail

Fence Section & Plan Detail

CompacII Unit - Near Vertical Setback

NO.	REVISIONS	DATE

Retaining Wall Sections and Details
Sherwick Court Retaining Wall

Jessup, Howard County, Maryland

Zoned: M-2

IDI Gazeley

DMA	HMA	July 2017	8358	5 of 6

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7.27.17

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SDP-71-089

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition

The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose

To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies

Where vegetative stabilization is to be established.

Criteria

A. Soil Preparation

1. Temporary Stabilization
   a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
   b. Apply fertilizer and lime as prescribed on the plans.
   c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
2. Permanent Stabilization
   a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
      i. Soil pH between 6.0 and 7.0.
      ii. Soluble salts less than 500 parts per million (ppm).
      iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
      iv. Soil contains 1.5 percent minimum organic matter by weight.
      v. Soil contains sufficient pore space to permit adequate root penetration.
   b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
   c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
   d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
   e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling

1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is 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.
2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
3. Topsoiling 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.
4. Areas having slopes steeper than 2:1 require special consideration and design.
5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
   a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
   b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
   c. 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.
6. Topsoil Application
   a. Erosion and sediment control practices must be maintained when applying topsoil.
   b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to 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 must be corrected in order to prevent the formation of depressions or water pockets.
   c. Topsoil must not be placed if 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.

C. Soil Amendments (Fertilizer and Lime Specifications)

1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

Permanent Seeding Summary

Hardiness Zone (from Figure B.3): 6b Seed Mixture (from Table B.3): 6					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P_2O_5	K_2O	
6	Tall Fescue	40	3/1 - 5/15 8/1 - 10/15	¼- ½ in	45 pounds per acre (1.0 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
	Perennial Ryegrass	25	3/1 - 5/15 8/1 - 10/15	¼- ½ in				
	White Clover	5	3/1 - 5/15 8/1 - 10/15	¼- ½ in				

Temporary Seeding Summary

Hardiness Zone (from Figure B.3): 6b Seed Mixture (from Table B.1): n/a					Fertilizer Rate (10-20-20)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
n/a	Annual Ryegrass	40	3/1 - 5/15 8/1 - 10/15	0.5"	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	Foxtail Millet	30	5/16 - 7/31	0.5"		

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

A. Seeding

1. Specifications
   a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
   b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
   c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
   d. Sod or seed must not 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.
2. Application
   a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
      ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
   b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
      ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
   c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
      i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P_2O_5 (phosphorous), 200 pounds per acre; K_2O (potassium), 200 pounds per acre.
      ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
      iii. Mix seed and fertilizer on site and seed immediately and without interruption.
      iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching

1. Mulch Materials (in order of preference)
   a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. **Note: Use only sterile straw mulch in areas where one species of grass is desired.**
   b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
      i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
      ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
      iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
      iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
      v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
2. Application
   a. Apply mulch to all seeded areas immediately after seeding.
   b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
   c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
3. Anchoring
   a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
      i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
      ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
      iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. **Use of asphalt binders is strictly prohibited.**
      iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

H-5 STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

Definition

Controlling the suspension of dust particles from construction activities.

Purpose

To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage including health and traffic hazards.

Conditions Where Practice Applies

Areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

Specifications

1. Mulches: See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3 Seeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to prevent blowing.
2. Vegetative Cover: See Section B-4-4 Temporary Stabilization.
3. Tillage: Till to roughen surface and bring clods to the surface. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.
4. Irrigation: Sprinkle site with water until the surface is moist. Repeat as needed. The site must not be irrigated to the point that runoff occurs.
5. Barriers: Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing.
6. Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.

SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hours notice to CID must be given at the following stages:
   a. Prior to the start of earth disturbance.
   b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading.
   c. Prior to the start of another phase of construction or opening of another grading unit.
   d. Prior to the removal or modification of sediment control practices.

   Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.
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 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes and all slopes greater than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site, except for those areas under active grading.
4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-3), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
5. 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 CID.

Site Analysis:

Total Area of Site	5.36 Acres
Area Disturbed	4,965 SF± or 0.114 Acres
Area to be roofed or paved	0.062 Acres
Area to be vegetatively stabilized	0.052 Acres
Total Cut	* 0 CY±
Total Fill	* 600 CY±
Offsite waste/borrow area location	

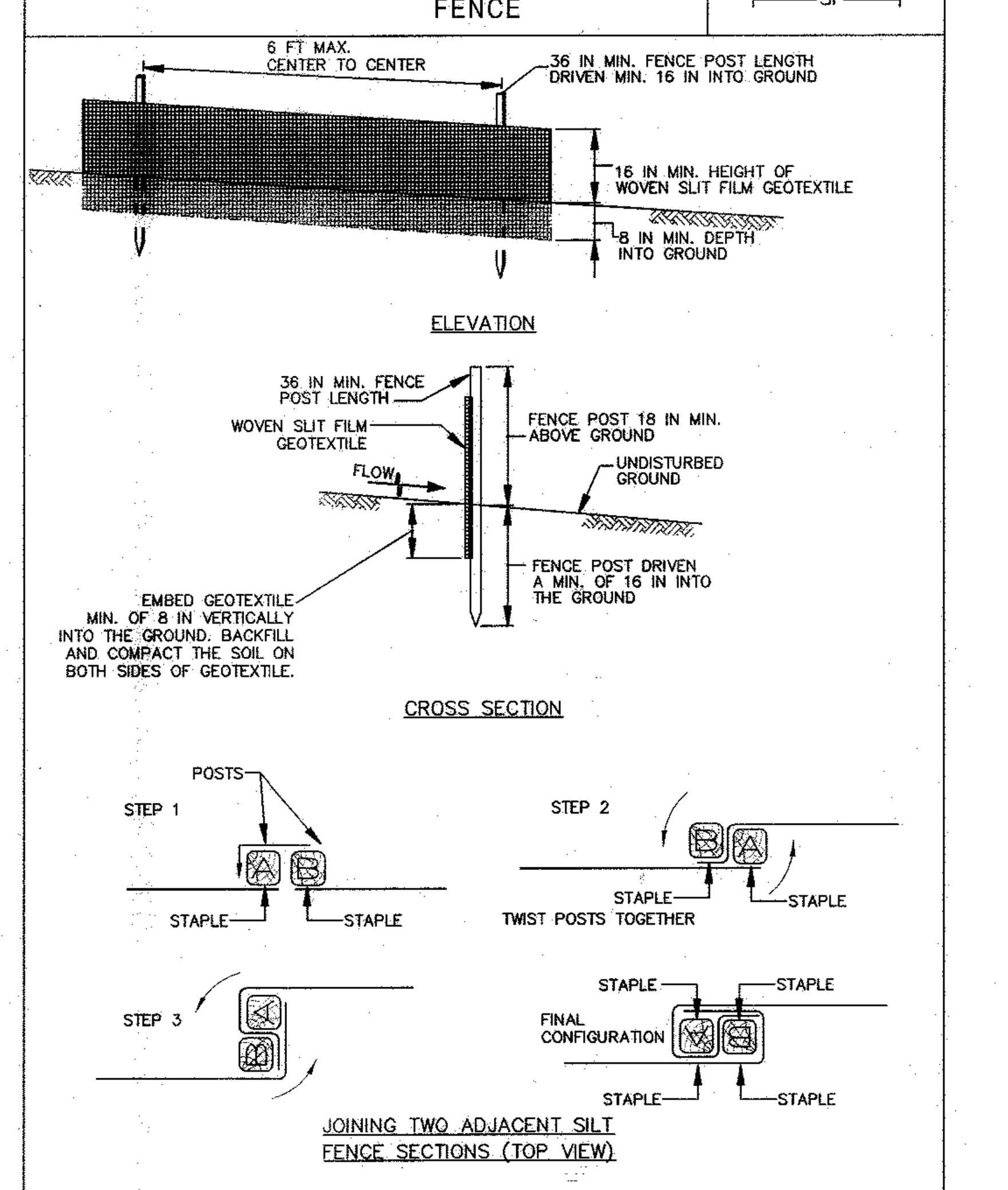
7. Any sediment control practice that is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
8. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:
   - Inspection date
   - Inspection type (routine, pre-storm event, during rain event)
   - Name and title of inspector
   - Weather information (current conditions as well as time and amount of last recorded precipitation)
   - Brief description of project's status (e.g. percent complete) and/or current activities
   - Evidence of sediment discharges
   - Identification of plan deficiencies
   - Identification of sediment controls that require maintenance
   - Identification of missing or improperly installed sediment controls
   - Compliance status regarding the sequence of construction and stabilization requirements
   - Photographs
   - Monitoring/sampling
   - Maintenance and/or corrective action performed
   - Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).
9. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.
10. Any major changes or revisions to the sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may allowed by the CID per the list of HSCD-approved field changes.
11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the CID, no more than 30 acres cumulatively may be disturbed at a given time.
12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.
14. All silt fence and super silt fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled uphill by 2' in elevation.
15. Stream channels must not be disturbed during the following restricted time periods (inclusive):
   - Use I and IP March 1 - June 15
   - Use III and IIIP October 1 - April 30
   - Use IV March 1 - May 31
16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

* Earthwork quantities are solely for the purpose of calculating fees. Contractor to verify all quantities prior to the start of construction.

** To be determined by contractor, with pre-approval of the Sediment Control Inspector with an approved and active grading permit.

DETAIL E-1 SILT FENCE

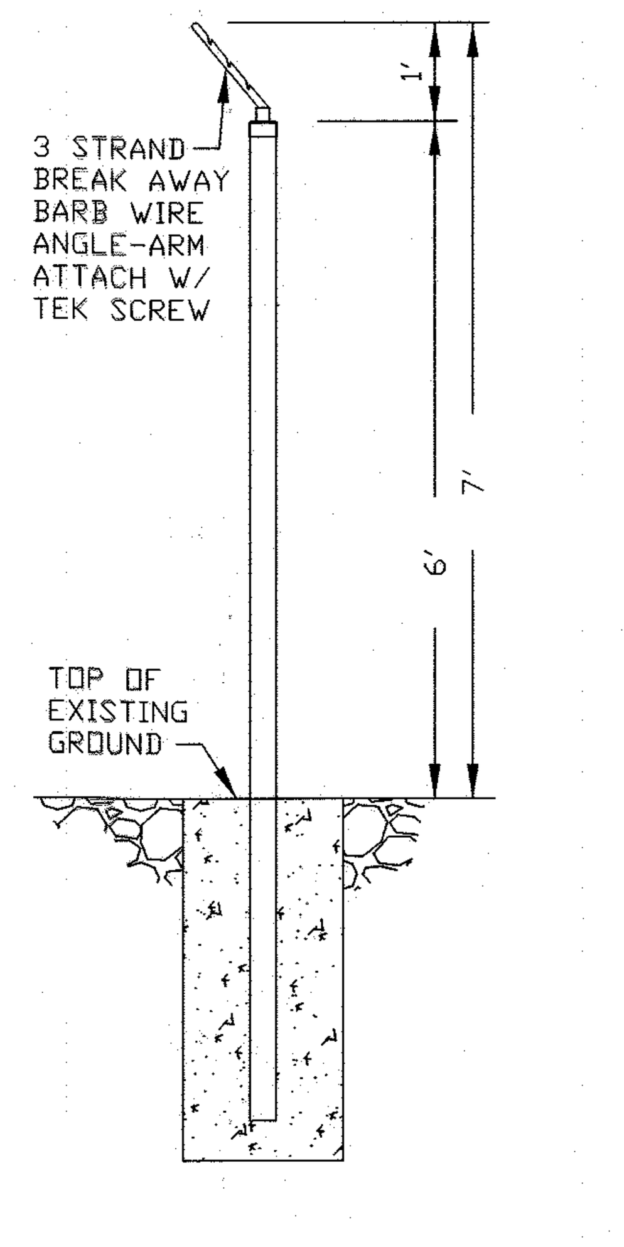
STANDARD SYMBOL: ——SF——



CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± 1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

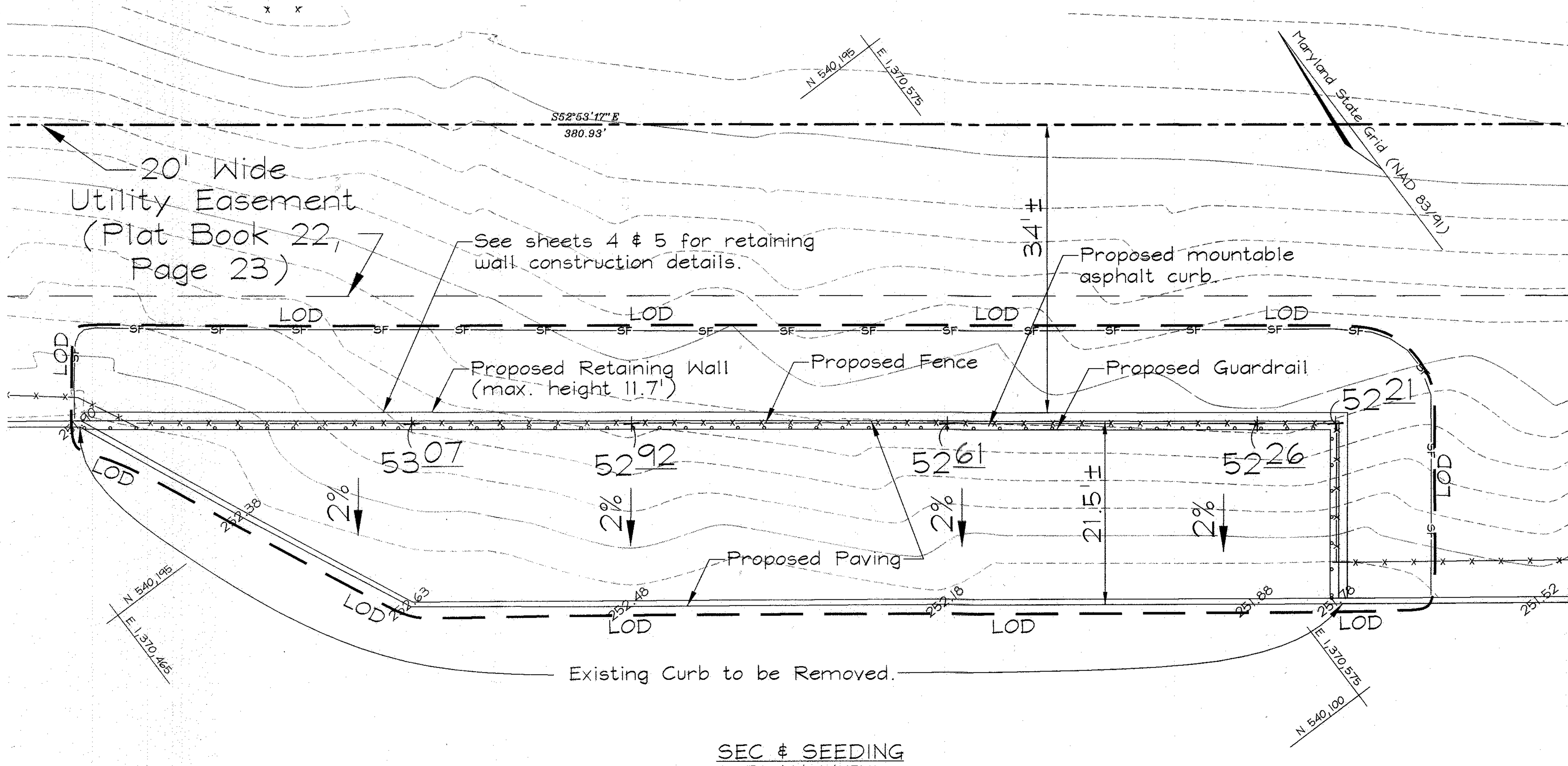
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



FENCE DETAIL
TYP. FENCE SECTION
N.T.S

LEGEND

Existing Contour	382
Proposed Contour	382
Existing Spot Elevation at Paving	382.30
Existing Trees to Remain	
Limits of disturbance	LOD
Silt Fence	SF
Proposed Spot Elevation at Paving	52²⁶
Chain Link Fence	—x—x—x—
Guardrail	



SEC & SEEDING PLAN VIEW
SCALE: 1"=10'

NOTE: Retaining wall and fencing must adhere to all regulations under Section 128.0.9

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	K VALUE	SOIL GROUP
UtD	Urban land-Udorthents complex, 0 to 15 percent slopes		D

NOTE: Entire site is of Soil Type UtD.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] CHIEF, DEVELOPMENT ENGINEERING DIVISION JP	7-27-16 DATE
[signature] CHIEF, DIVISION OF LAND DEVELOPMENT	8-1-17 DATE
[signature] DIRECTOR	8-2-17 DATE

OWNER
IDIG SHERWICK LLC
1100 Peachtree St. NE - Suite 1000
Atlanta, GA 30309
(859) 663-2898

DEVELOPER
IDI GAZELEY
740 Centre View Blvd - Floor 3
Crestview Hills, KY 41017
(859) 663-2898

PROFESSIONAL CERTIFICATION
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. #22418, Expiration Date: 07/29/2017.

PURPOSE STATEMENT

The purpose of this plan is to provide a sediment control plan and details for the construction of a retaining wall. Also, to provide a typical fence detail.

REVISED SITE DEVELOPMENT PLAN
BALTIMORE WASHINGTON INDUSTRIAL PARK

8309 SHERWICK CT
ZONED: M-2
TAX MAP 48 GRID 1 — PARCEL 146
6TH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

STATE OF MARYLAND — ZACHARIA YOSEF FISCH — 22418 — PROFESSIONAL ENGINEER

FSH Associates
Engineers Planners Surveyors
6339 Howard Lane, Elkridge, MD 21075
Tel:410-567-5200 Fax: 410-796-1562
E-mail: info@fsheri.com

DESIGN BY:	CRH2
DRAWN BY:	CRH2
CHECKED BY:	ZYF
SCALE:	As Shown
DATE:	July 20, 2017
W.O. No.:	4009
SHEET No.:	6 OF 6

SDP-71-089