

SOILS LEGEND			
SOIL	NAME	CLASS	K' VALUE
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.20
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.20
GhB	Glenelg-Urban land complex, 0 to 8 percent slopes	B	0.20

Specimen Tree Chart

Key (X#)	Species	Size (in dbh)	CRZ (feet radius)	Comments
1	Tulip poplar	32.5	48.75	
2	Tulip poplar	31	46.5	
3	Tulip poplar	37	55.5	
4	Tulip poplar	37.5	56.25	twin stems
5	Tulip poplar	36	54	two specimen trunks joined at ground plus a 3" smaller trunk
6	Tulip poplar	44.5	66.75	fair, storm damage
7	Tulip poplar	31	46.5	
8	Black cherry	36	54	
9	Red oak	35	52.5	
10	Tulip poplar	43	64.5	
11	Tulip poplar	34	51	
12	Tulip poplar	35	52.5	
13	White pine	34	51	
14	White pine	31	46.5	
15	Tulip poplar	34	51	TO BE REMOVED



REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development *[Signature]* 10/16/20
Date

Chief, Development Engineering Division *[Signature]* 9/2/20
Date

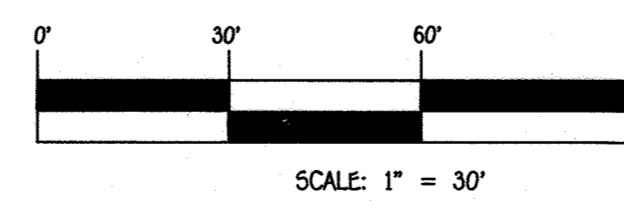
Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways *[Signature]* 8/21/20
Date

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PARK
 ELLICOTT CITY, MARYLAND 21142
 (410) 461-2299



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.
[Signature] 5/29/20
 FRANK H. HAULMAN II. Date



OWNERS

PARCEL 04
 LENNIS HAMRICK
 4489 CENTENNIAL LANE
 ELLICOTT CITY, MD 21142

PARCEL 449
 CHATEAU BUILDERS, INC.
 5305 VILLAGE CENTER DRIVE
 SUITE 305
 COLUMBIA, MD 21044

PARCEL 174 & PARCEL 05
 CENTENNIAL RESERVE, LLC
 308 MAGOTHY ROAD
 SEVERNA PARK, MARYLAND 21146

DEVELOPER

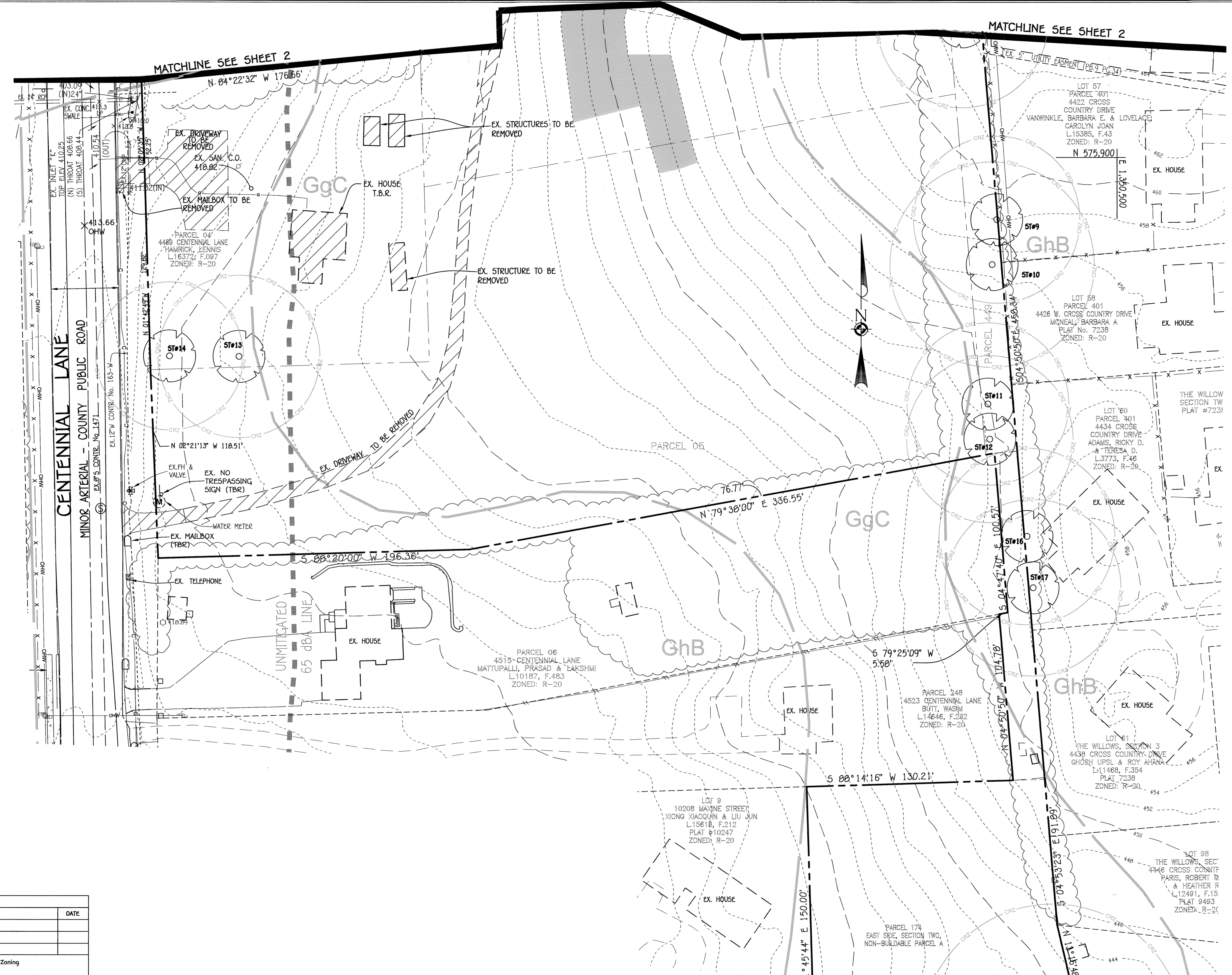
CENTENNIAL RESERVE, LLC
 308 MAGOTHY ROAD
 SEVERNA PARK, MARYLAND 21146

DAVE VOESSNER
 240-319-1735

EXISTING CONDITIONS AND DEMOLITION PLAN
CENTENNIAL RESERVE
 LOTS 1 THRU 17, OPEN SPACE LOT 18
 4509 & 4489 CENTENNIAL LANE & 10202 MAXINE STREET

TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOs.: 04, 05, 174, & 449
 ZONED R-20
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: MAY, 2020
 SHEET 2 OF 24

K:\Drawings\330501 Centennial Lane - Speedy\dwg\F-PLANS\330501 F-PLANS 02-03 - EXISTING CONDITIONS.dwg, C-03 DEMO PLAN, 1:1



MATCHLINE SEE SHEET 2

MATCHLINE SEE SHEET 2

CENTENNIAL LANE
MINOR ARTERIAL - COUNTY PUBLIC ROAD

EX. 12' W. CONTR. No. 163-W
EX. 6' S. CONTR. No. 147

EX. DRIVEWAY TO BE REMOVED
EX. SAN. C.O. 410.02
EX. MAILBOX TO BE REMOVED

PARCEL 04
4489 CENTENNIAL LANE
HAMRICK, LENNIS
L16373, F.097
ZONED: R-20

EX. FH & VALVE
EX. NO TRESPASSING SIGN (TBR)

EX. MAILBOX (TBR)
WATER METER

EX. TELEPHONE

UNMITIGATED
65 dbA LINE

EX. STRUCTURES TO BE REMOVED

EX. HOUSE
T.B.R.

EX. STRUCTURE TO BE REMOVED

PARCEL 06
4515 CENTENNIAL LANE
MATTUPALLI, PRASAD & LAKSHMI
L10187, F.483
ZONED: R-20

GhB

GgC

GhB

GhB

LOT 8
10208 MAXINE STREET
XIONG XIACOUN & LIU JUN
L15616, F.212
PLAT #10247
ZONED: R-20

PARCEL 248
4523 CENTENNIAL LANE
BUI, WASH
L14646, F.282
ZONED: R-20

LOT 61
THE HILLOWS SECTION 3
4438 CROSS COUNTRY DRIVE
GHOSH LIPSI & ROY ABHANA
L11468, F.354
PLAT 7238
ZONED: R-30

LOT 98
THE HILLOWS SEC 3
4446 CROSS COUNTRY
PARIS, ROBERT B
& HEATHER R
L12491, F.15
PLAT 9493
ZONED: R-20

PARCEL 174
EAST SIDE SECTION TWG.
NON-BUILDABLE PARCEL A

OWNERS

DEVELOPER

PARCEL 04
LENNIS HAMRICK
4489 CENTENNIAL LANE
ELLCOTT CITY, MD 21042

PARCEL 449
CHITRAU BUILDERS, INC.
5305 VILLAGE CENTER DRIVE
SUITE 305
COLUMBIA, MD 21044

PARCEL 174 & PARCEL 05
CENTENNIAL RESERVE, LLC
308 MAGOTHY ROAD
SEVERNA PARK, MARYLAND 21146

CENTENNIAL RESERVE, LLC
308 MAGOTHY ROAD
SEVERNA PARK, MARYLAND 21146
DAVE WOSSNER
240-319-1735

REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development *colletta* Date *9/2/20*

Chief, Development Engineering Division *John* Date *9/2/20*

Approved: Howard County Department Of Public Works

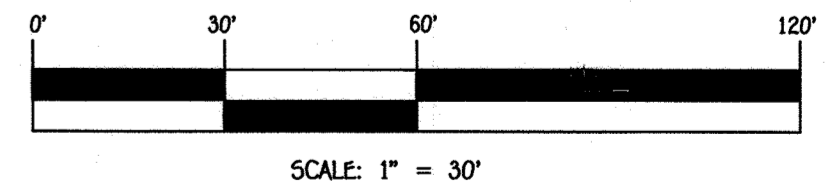
Chief, Bureau Of Highways *MZ* Date *8/21/2020*

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FILE
ELLCOTT CITY, MARYLAND 21042
(410) 461-2995



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.

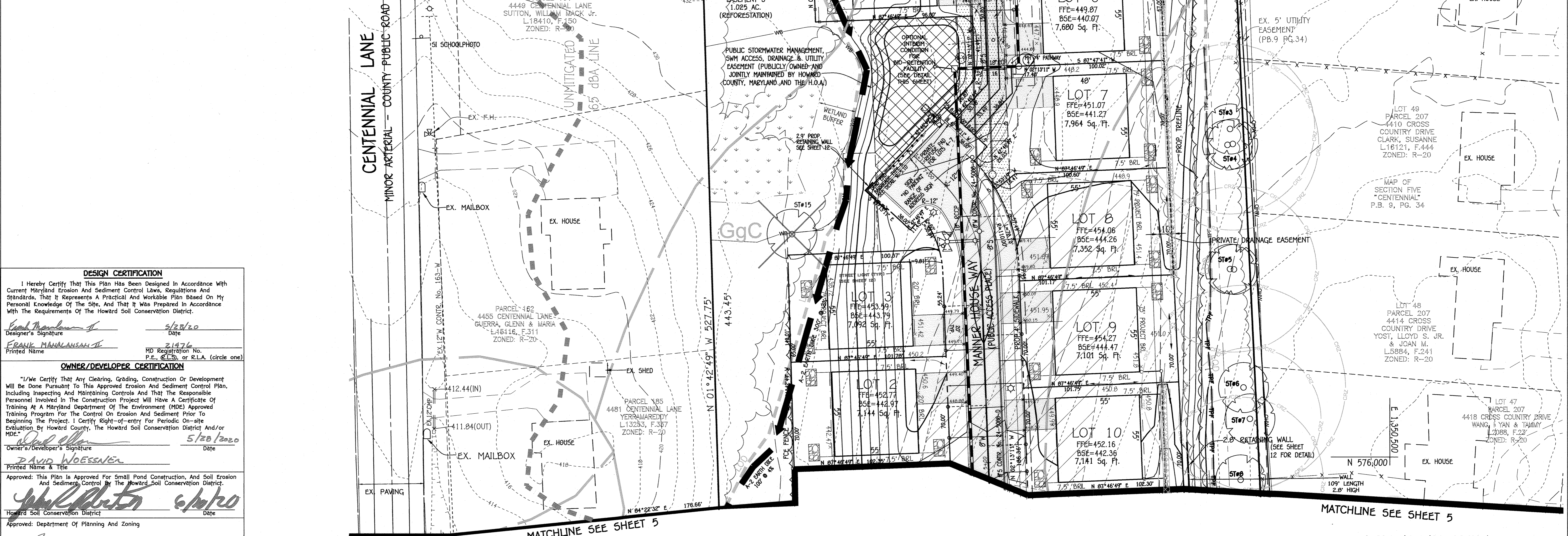
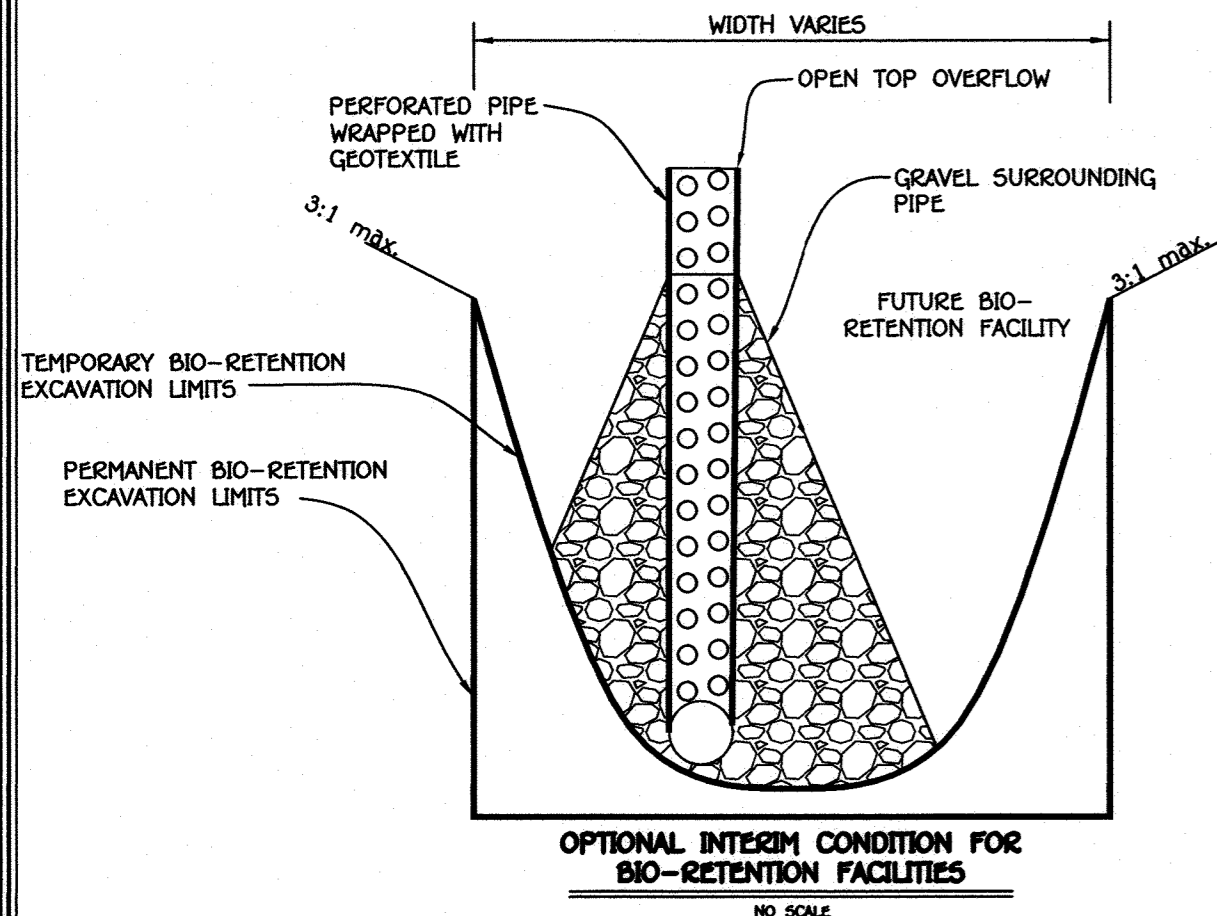
Frank Hurlingham II
FRANK HURLINGHAM II Date *5/28/20*



EXISTING CONDITIONS AND
DEMOLITION PLAN
CENTENNIAL RESERVE
LOTS 1 THRU 17, OPEN SPACE LOT 18
4509 & 4489 CENTENNIAL LANE & 10202 MAXINE STREET

TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOS.: 04, 05, 174, & 449
ZONED R-20
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MAY, 2020
SHEET 3 OF 24

SOILS LEGEND			
SOIL	NAME	CLASS	K VALUE
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.20
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.20
GhB	Glenelg-Urban land complex, 0 to 8 percent slopes	B	0.20



DESIGN CERTIFICATION
 I hereby certify that this plan has been designed in accordance with current Maryland Erosion and Sediment Control Laws, Regulations and Standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Designers Signature: *Frank Manalansan II* Date: 5/28/20
 Printed Name: FRANK MANALANSAN II MD Registration No. 21476 P.E., R.L.S., or R.L.A. (circle one)

OWNER/DEVELOPER CERTIFICATION

*I/we certify that any clearing, grading, construction or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls and that the responsible personnel involved in the construction project will have a certificate of training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, The Howard Soil Conservation District and/or MDE.

Owner's/Developer's Signature: *David Woessner* Date: 5/28/2020
 Printed Name & Title: DAVID WOESSNER

Approved: This Plan is Approved For Small Pond Construction, And Soil Erosion And Sediment Control By The Howard Soil Conservation District.
John Blanton 6/10/20
 Howard Soil Conservation District Date

Approved: Department Of Planning And Zoning
John Blanton 9/4/20
 Chief, Division Of Land Development Date

Approved: Howard County Department Of Public Works
John Blanton 8/21/2020
 Chief, Development Engineering Division Date

Approved: Howard County Department Of Public Works
John Blanton 8/21/2020
 Chief, Bureau Of Highways Date

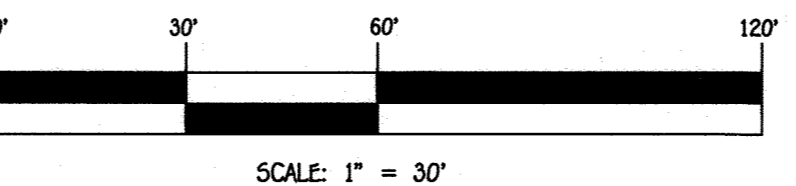
REVISIONS		
NO.	DESCRIPTION	DATE

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2855



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.
Frank Manalansan II 5/28/20
 Date

NOTE:
 PROPOSED HOUSES CANNOT BE CONSTRUCTED UNDER THIS PLAN.



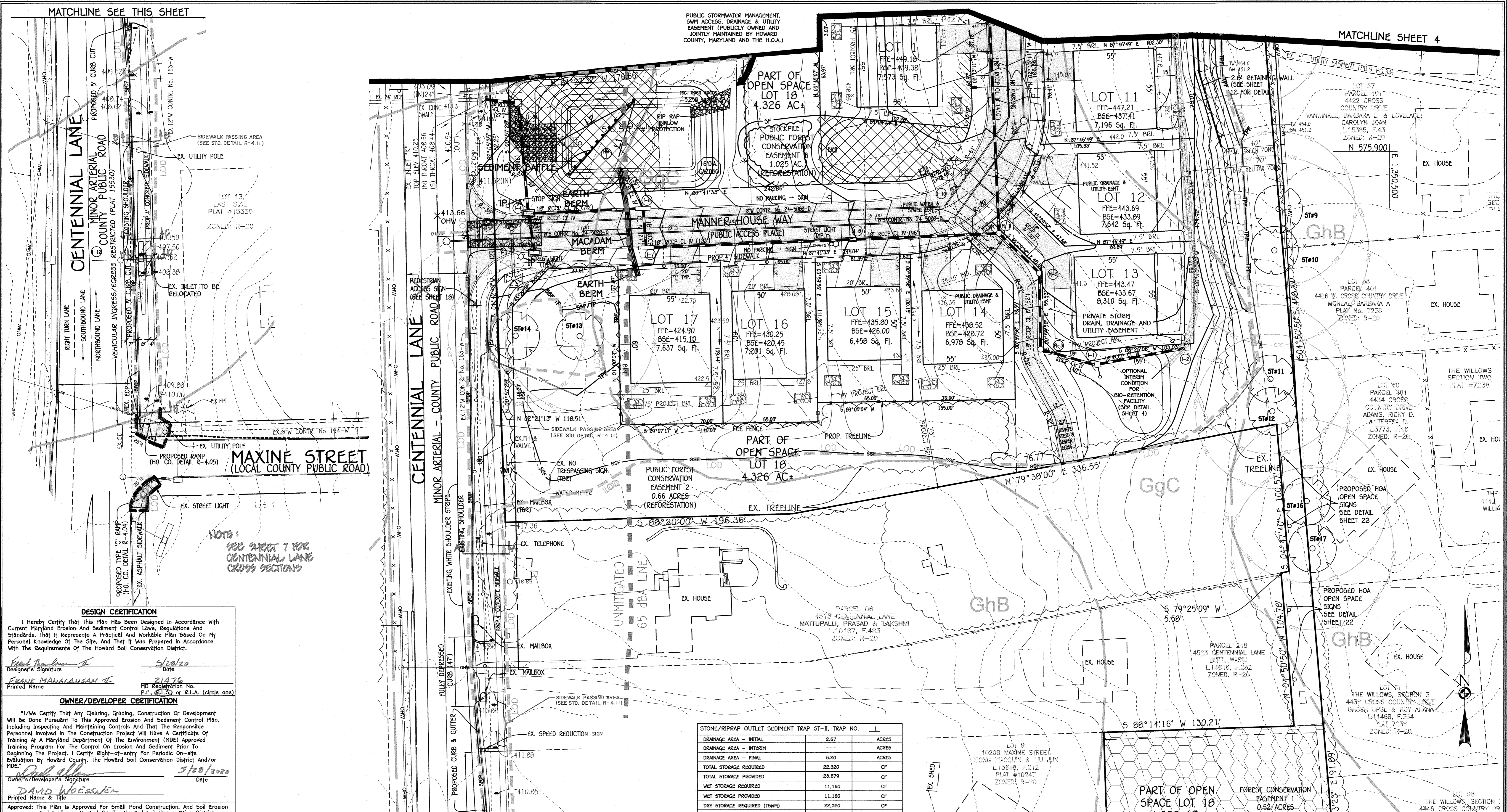
OWNERS		DEVELOPER	
PARCEL 04 LENNIS HARRICK 4480 CENTENNIAL LANE ELICOTT CITY, MD 21042	PARCEL 449 CHATEAU BUILDERS, INC. 5305 VILLAGE CENTER DRIVE SUITE 305 COLUMBIA, MD 21044	CENTENNIAL RESERVE, LLC 308 MAGOTHY ROAD SEVERNA PARK, MARYLAND 21146	DAVE WOESSNER 240-319-1735
PARCEL 174 & PARCEL 05 CENTENNIAL RESERVE, LLC 308 MAGOTHY ROAD SEVERNA PARK, MARYLAND 21146			

SEDIMENT AND EROSION CONTROL PLAN - PHASE 1 CENTENNIAL RESERVE
 LOTS 1 THRU 17, OPEN SPACE LOT 18
 4509 & 4489 CENTENNIAL LANE & 10202 MAXINE STREET
 TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOs.: 04, 05, 174, & 449
 ZONED R-20
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: MAY, 2020
 SHEET 4 OF 24
F-20-010

MATCHLINE SEE THIS SHEET

PUBLIC STORMWATER MANAGEMENT, SWM ACCESS, DRAINAGE & UTILITY EASEMENT (PUBLICLY OWNED AND JOINTLY MAINTAINED BY HOWARD COUNTY, MARYLAND AND THE H.O.A.)

MATCHLINE SHEET 4



NOTE:
SEE SHEET 7 FOR CENTENNIAL LANE CROSS SECTIONS

DESIGN CERTIFICATION
I Herby Certify That This Plan Has Been Designed In Accordance With Current Maryland Erosion and Sediment Control Laws, Regulations And Standards, That It Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site, And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

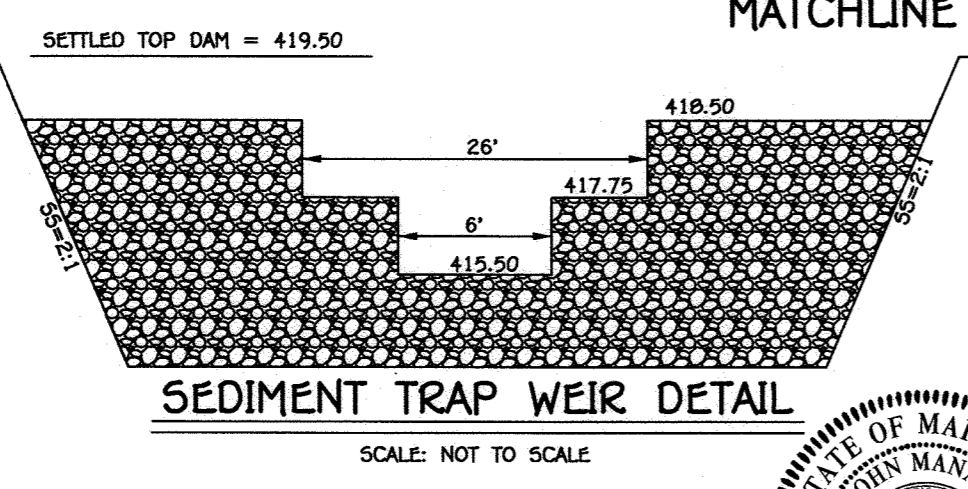
Designers' Signature: *Frank Manalusan II* Date: 5/20/20
Printed Name: FRANK MANALUSAN II
RD Registration No. 21476
P.E. (E.L.S.) or R.L.S. (circle one)

OWNER/DEVELOPER CERTIFICATION
"I/We Certify That Any Clearing, Grading, Construction Or Development Will Be Done Pursuant To This Approved Erosion And Sediment Control Plan, Including Inspecting And Maintaining Controls And That The Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Training At A Maryland Department Of The Environment (MDE) Approved Training Program For The Control On Erosion And Sediment Prior To Beginning The Project. I Certify Right-of-entry For Periodic On-site Evaluation By Howard County, The Howard Soil Conservation District And/or MDE."

Owner's/Developer's Signature: *David Woessner* Date: 5/20/2020
Printed Name & Title: DAVID WOESSNER
Approved: This Plan Is Approved For Small Pond Construction, And Soil Erosion And Sediment Control By The Howard Soil Conservation District.
Signature: *Shilpa Arora* Date: 5/20/20
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development: *William* Date: 5/20/20
Chief, Development Engineering Division: *9/4/20* Date: 9/4/20
Approved: Howard County Department Of Public Works
Chief, Bureau Of Highways: *MK* Date: 8/21/2020

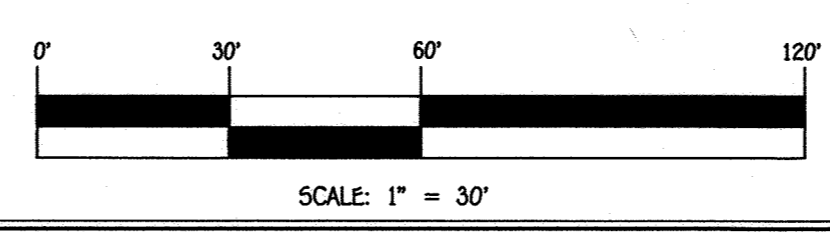
NO.	REVISIONS DESCRIPTION	DATE



NOTE:
PROPOSED HOUSES CANNOT BE CONSTRUCTED UNDER THIS PLAN.

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 1		
DRAINAGE AREA - INITIAL	2.67	ACRES
DRAINAGE AREA - FINAL	---	ACRES
DRAINAGE AREA - FINAL	6.20	ACRES
TOTAL STORAGE REQUIRED	22,320	CF
TOTAL STORAGE PROVIDED	23,679	CF
WET STORAGE REQUIRED	11,160	CF
WET STORAGE PROVIDED	11,160	CF
DRY STORAGE REQUIRED (TSSM)	22,320	CF
DRY STORAGE PROVIDED (TSSM)	22,320 @ 417.75	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	415.50	FT
TRAP BOTTOM ELEVATION	413.00	FT
TRAP BOTTOM DIMENSIONS	41.25' x 82.5'	FT x FT
WEIR LENGTH	24'	FT
WEIR CREST (DRY STORAGE) ELEVATION	417.75	FT
CLEANOUT ELEVATION	414.50	FT
TOP OF EMBANKMENT ELEVATION	419.00	FT
SIDE SLOPE	2	HV RATIO
EMBANKMENT TOP WIDTH	4	FT
OUTLET PROTECTION - LENGTH	10	FT
OUTLET PROTECTION - DEPTH	19	IN

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.
Signature: *Frank Manalusan II* Date: 5/20/20



OWNERS
PARCEL 04: LEWIS HANCOCK, 4495 CENTENNIAL LANE, ELLICOTT CITY, MD 21042
PARCEL 449: CHATEAU BUILDERS, INC., 5305 VILLAGE CENTER DRIVE, SUITE 309, COLUMBIA, MD 21044
PARCEL 174 & PARCEL 05: CENTENNIAL RESERVE, LLC, 308 MAGOTHY ROAD, SEVERNA PARK, MARYLAND 21146

DEVELOPER
CENTENNIAL RESERVE, LLC, 308 MAGOTHY ROAD, SEVERNA PARK, MARYLAND 21146
DAVE WOESSNER, 240-319-1735

SEDIMENT AND EROSION CONTROL PLAN - PHASE 1 CENTENNIAL RESERVE
LOTS 1 THRU 17, OPEN SPACE LOT 18
4509 & 4499 CENTENNIAL LANE & 10202 MAXINE STREET
TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOS.: 04, 05, 174, & 449
ZONED R-20
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MAY, 2020
SHEET 5 OF 24

SOILS LEGEND			
SOIL	NAME	CLASS	K-VALUE
GgB	Glengly loam, 3 to 8 percent slopes	B	0.20
GgC	Glengly loam, 8 to 15 percent slopes	B	0.20
GhB	Glengly-Urban land complex, 0 to 8 percent slopes	B	0.20

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
x 448.5	SPOT ELEVATION
---	EXISTING STORM DRAIN
---	PROPOSED STORM DRAIN PIPE
---	EX. F.H.
---	EXISTING WATER LINE
---	EXISTING SEWER LINE
---	PROPOSED SEWER
---	PROPOSED WATER
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
---	EXISTING OVERHEAD WIRE
---	PROPOSED ASPHALT PAVING/PATH
---	PROPOSED SIDEWALKS (CONCRETE)
---	FOREST CONSERVATION EASEMENT (REFORESTATION)
---	PERMANENT FOREST CONSERVATION EASEMENT FENCING
---	ACCESS EASEMENT
---	STORM DRAIN EASEMENT
---	WATER AND SEWER EASEMENT
---	TREE PROTECTION FENCE
---	LIMIT OF DISTURBANCE
---	SUPER SILT FENCE
---	SILT FENCE
---	EXISTING TREE LINE
---	PROPOSED TREE LINE
---	DRYWELL (M-5)-TYPICAL
---	PROPOSED STREET LIGHT
---	SOIL LINES AND TYPES
---	EXISTING WETLANDS & WETLAND BUFFER
---	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
---	PROPOSED ROOF LEADER
---	NOTES EXISTING TREES TO BE REMOVED
---	NOTES EXISTING TREES TO REMAIN
---	CRITICAL ROOT ZONE

DESIGN CERTIFICATION

I hereby certify that this plan has been designed in accordance with current Maryland Erosion and Sediment Control Laws, Regulations and Standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Designer's Signature: *Frank Manalansan Jr.* Date: 5/28/20
 Printed Name: FRANK MANALANSAN JR. MD Registration No. 21476 P.E., C.E.S. or R.L.A. (circle one)

OWNER/DEVELOPER CERTIFICATION

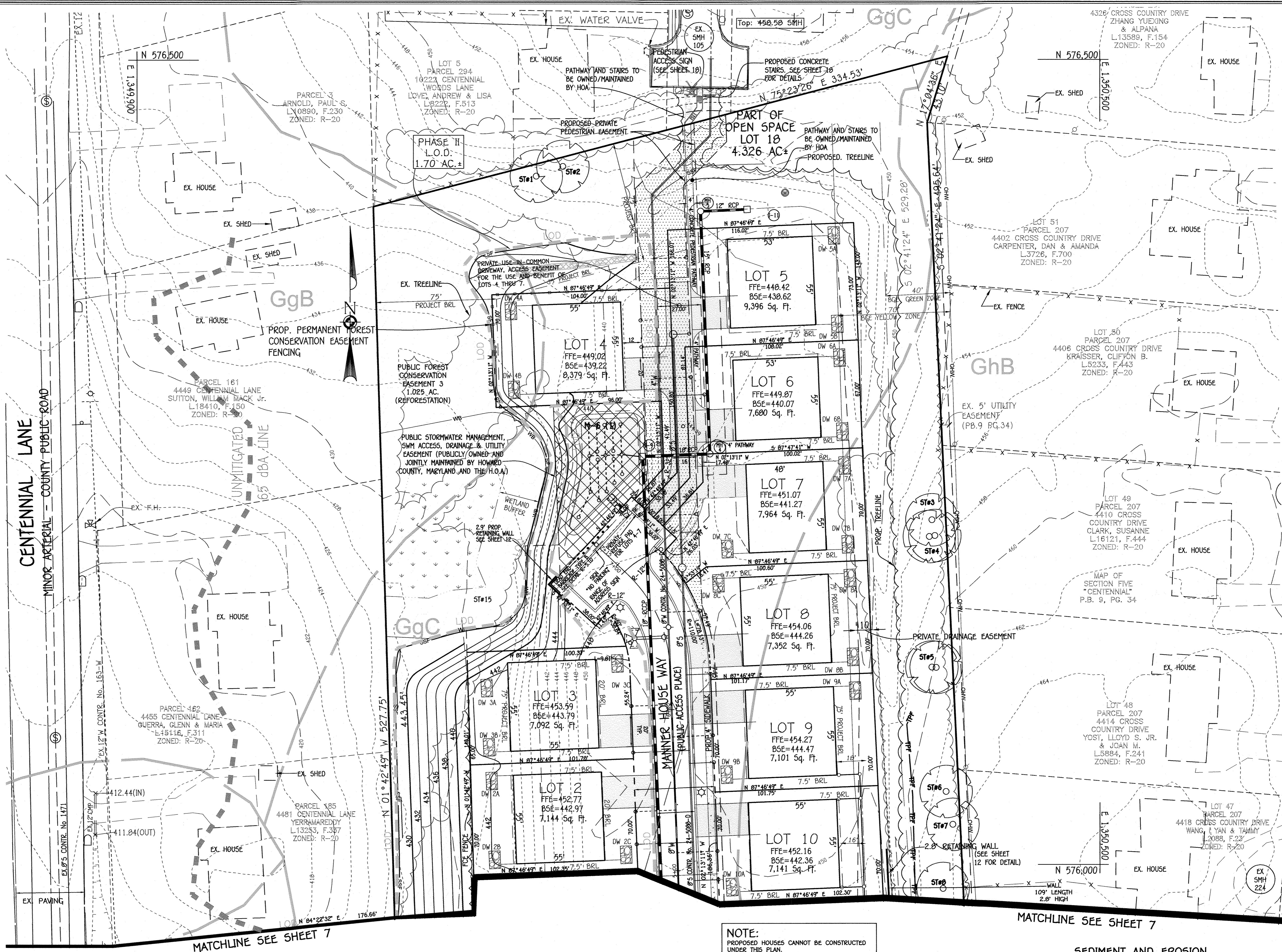
"I/we certify that any clearing, grading, construction or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls and that the responsible personnel involved in the construction project will have a certificate of training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."

Owner's/Developer's Signature: *David Woessner* Date: 5/26/2020
 Printed Name & Title: DAVID WOESSNER

Approved: This Plan is Approved For Small Pond Construction, And Soil Erosion And Sediment Control By The Howard Soil Conservation District.
 Howard Soil Conservation District Date: 5/20/20

Chief, Division of Land Development Date: 5/14/20
 Chief, Development Engineering Division Date: 9/4/20
 Approved: Howard County Department of Public Works
 Chief, Bureau of Highways Date: 8/21/2020

REVISIONS		
NO.	DESCRIPTION	DATE



PROFESSIONAL CERTIFICATION

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional land surveyor under the laws of the State of Maryland, License No. 21476, expiration date: 7/14/21.

Signature: *Frank Manalansan Jr.* Date: 5/28/20
 Name: FRANK MANALANSAN JR.

NOTE:
PROPOSED HOUSES CANNOT BE CONSTRUCTED UNDER THIS PLAN.

OWNERS	DEVELOPER
PARCEL 04 LENNIS HAMRICK 4469 CENTENNIAL LANE ELLCOTT CITY, MD 21042	CENTENNIAL RESERVE, LLC 308 MAGOOTH ROAD SEVERNA PARK, MARYLAND 21146
PARCEL 449 CHATEAU BUILDERS, INC. 5305 VILLAGE CENTER DRIVE SUITE 305 COLUMBIA, MD 21044	DAVE WOESSNER 240-319-1735
PARCEL 174 & PARCEL 05 CENTENNIAL RESERVE, LLC 308 MAGOOTH ROAD SEVERNA PARK, MARYLAND 21146	DAVE WOESSNER 240-319-1735

SEDIMENT AND EROSION CONTROL PLAN - PHASE 2 CENTENNIAL RESERVE

LOTS 1 THRU 17, OPEN SPACE LOT 18
4509 & 4489 CENTENNIAL LANE & 10202 MAXINE STREET

TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOS.: 04, 05, 174, & 449
ZONED R-20
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MAY, 2020
SHEET 6 OF 24

SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS (B-4-2)

- A. SOIL PREPARATION**
1. TEMPORARY STABILIZATION
 - a. SEEDING PREPARATION CONSISTS OF LOSING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS CREEP HARROWS OR CREEP PLOWS OR IMPROVED HOLLOW CONSTRUCTION EQUIPMENT. IT MUST NOT BE SOLOID OR GRADED SWEEP BUT LEFT IN THE CONSTRUCTION CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACED 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 USING ONE OF THE 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 PPM PER HELLON (PPM)
 - iii. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GRAVEL) THAN 30 PERCENT SILT PLUS CLAY) TO HOLD THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE, AN EXCEPTION IF UNDERLAYS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - iv. SOIL CONTAINS 1.5 PERCENT NITROGEN 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 TIDE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCAPED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
 - d. SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - e. FOR SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY USING ONE OF THE SUITABLE MEANS, RAKE LEAVES AREA TO SMOOTH THE SURFACE, REMOVE LARGE ROCKS, LIMESTONE AND BRANCHES, AND READY THE AREA FOR SOIL APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO DISRUPT THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDING. SUPPLY 3:1 OR FLATTER WITH TRUCKED EQUIPMENT LEAVING THE SOIL IN A BROADCAST CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA.
 - f. UNLESS OTHERWISE SPECIFIED, SOIL TO BE 3 INCHES OF SOIL LOOSE AND RIDGES RUNNING PARALLEL MAY BE UNNECESSARY ON NEARLY 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 PROFILE FOR VEGETATION. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NITROGEN LEVELS, LOW NITROGEN AVAILABLE NITROGEN, LOW PH, AND/OR UNDESIRABLE PLANT GROWTH.
 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.
 3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - a. THE TEXTURE OF THE EXPOSED SUBSURFACE MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATION GROWTH.
 - b. THE SOIL MOISTURE IS SO SMALL THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH NUTRIENT SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS WADY, TOAD TO PLANT GROWTH.
 - d. THE SOIL MUST BE A LOAM, SILTY 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 AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF COMPACTED TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF COARSE, STONES, SLAG, CLAY, SAND, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.
 - e. TOPSOIL MUST BE FREE OF HAZARDOUS PLANTS OR PLANT PARTS SUCH AS BRUSH, GRASS, QUACK GRASS, JOHNSON GRASS, RITZ SEED, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - f. 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.
 4. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
 5. UNDESIRABLE VEGETATION IN THE TOPSOIL MUST BE REMOVED TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SOILING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY HERBICIDES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CONTROLLED TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 6. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A PROZON OF MUDDY CONDITION WHEN THE SUBSOIL IS DECEASEDLY WET OR IF THE CONDITION OF THE SUBSOIL IS SUCH AS TO BE DETERMINED TO PROPER GROWING AND SEEDING PREPARATION.

- C. SOIL AMENDMENTS (FERTILIZER & LIME SPECIFICATIONS)**
1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT GRADES AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSES MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR STATE LABORATORY. SOIL SAMPLES TAKEN FOR FERTILIZER PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSIS.
 2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FINE FLAKING, AND SUITABLE FOR ACCURATE APPLICATION BY APPROVED EQUIPMENT. HANJICE MAY BE SUBSTITUTED FOR FERTILIZERS WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST NOT BE DELIVERED TO THE SITE UNLESS LABELLED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAK THE NAME, TRADE NAME, OR TRADEMARK AND WARRANTY OF THE PRODUCT.
 3. LIME MATERIALS MUST BE GROUND LIME HYDRATE OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING WHERE OTHER LIME GRADES ARE USED. LIME MUST BE GROUND TO A MINIMUM OF 100 MESH SIEVE AND 90 TO 100 PERCENT WILL PASS THROUGH A 40 MESH SIEVE.
 4. LIME AND FERTILIZERS ARE TO BE APPLIED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY USING ONE OF THE SUITABLE MEANS.
 5. WHERE THE SUBSOIL IS HEAVILY GRADED OR COMPOSED OF HEAVY CLAYS, SPREAD GRADE LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

DUST CONTROL

- DEFINITION**
CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS.
- PURPOSE**
TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCE ON AND OFF-SITE DAMAGE, HEALTH AND ENVIRONMENTAL CONCERNS.
- CONDITIONS WHERE PRACTICE APPLIES**
THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.

NOTE:
PROPOSED HOUSES CANNOT BE CONSTRUCTED UNDER THIS PLAN.

DESIGN CERTIFICATION

I hereby Certify that This Plan Has Been Designed In Accordance With Current Maryland Erosion and Sediment Control Laws, Regulations And Standards, That It Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site, And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Frank Manalansan II
Designer's Signature
Date: 5/28/20

Frank Manalansan II
Printed Name
No. 21476
Registration No.
P.E. (C) or R.L.A. (circle one)

OWNER/DEVELOPER CERTIFICATION

"I/We Certify That Any Clearing, Grading, Construction Or Development Will Be Done Pursuant To This Approved Erosion And Sediment Control Plan, Including Inspecting And Maintaining Controls And That The Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Training At A Maryland Department Of The Environment (MDE) Approved Training Program For The Control On Erosion And Sediment Prior To Beginning The Project. I Certify Right-of-entry For Periodic On-site Evaluation By Howard County, The Howard Soil Conservation District And/or MDE."

David W. ...
Owner's/Developer's Signature
Date: 5/28/20

Frank Manalansan II
Printed Name
Date: 5/28/20

Approved: Department of Planning And Zoning

...
Date: 5/28/20

...
Date: 5/28/20

REVISIONS
NO. DESCRIPTION DATE

TEMPORARY METHODS SPECIFICATIONS

1. MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRUMPED OR TACKLED TO PREVENT BLOWING.
2. VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
3. TILLAGE - TO EQUIVOCATE SURFACE AND BRING CLAYS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF THE SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12' APART, SPRING-TOOTHED HARROWS AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY BE USED TO EQUIVOCATE SURFACE.
4. IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW.
5. BARROWS - SOLID BODIED FENCES, SILT FENCES, SOD FENCES, BURIED FENCES, STRAW BALE DICES AND SIMILAR MATERIAL CAN BE USED TO CONTROL ERO. CONTROLLING SOIL BLOWING, CROWDING AND SOIL BLOWING. BARROWS PLACED AT RIGHT ANGLES TO FLOW. BARROWS PLACED AT INTERVALS OF ABOUT 10 FEET THEIR HEIGHT ARE EFFECTIVE IN PREVENTING SOIL BLOWING.
6. CALCULUS CHAINING - APPLY AT RATES THAT WILL KEEP SURFACE MOIST. MAY REQUIRE RECURRENT APPLICATIONS.

TEMPORARY SEEDING NOTES (B-4-4)

1. PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER AND PERMANENT STABILIZATION WITH SOIL. EXISTING TREES OR LARGE SHRUBS MAY APPOINT VALUABLE PROTECTION IF LEFT IN PLACE.
2. TOPSOILING - MUST BE PERFORMED WITH LESS ERODIBLE SOIL. METHODS OF SOIL PREPARATION FOR TOPSOILING ARE DESCRIBED IN SECTION B-4-2.
3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

PERMANENT SEEDING NOTES (B-4-5)

HARDNESS ZONE (FROM FIGURE B.3)	SE	FERTILIZER RATE (LB./AC)	LIME RATE (TONS/AC)
1	9	3 1/2 - 5 1/2	436 LB/AC
2	9	8 1/2 - 10 1/2	2 TONS/AC
3	112		

1. GENERAL USE
 - a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.5 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURES, APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY.
 - b. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHOULDER, STREAM BANKS, OR DORIES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND UNDER SPECIAL PLANTING SPECIFICATIONS.
 - c. FOR SITES HAVING DISTURBED AREAS OF 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE AUTHORITY. APPLY USING THE RECOMMENDED RATES (40-60) AT 1/2 INCHES DEPTH. FOR AREAS BEING LOW MAINTENANCE, APPLY USING THE RECOMMENDED RATES (20-30) AT 1/2 INCHES DEPTH. FOR AREAS BEING MEDIUM MAINTENANCE, APPLY USING THE RECOMMENDED RATES (30-40) AT 1/2 INCHES DEPTH. FOR AREAS BEING HIGH MAINTENANCE, APPLY USING THE RECOMMENDED RATES (10-20) AT 1/2 INCHES DEPTH.
2. TURFGRASS MIXTURES
 - a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS AND COMMERCIAL SITES WHICH WILL RECEIVE A HIGH LEVEL OF MAINTENANCE.
 - b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURES, APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 - c. METHOD OF APPLICATION: FULL SUN METHOD: FOR USE IN AREAS THAT RECEIVE INTENSIVE MAINTENANCE. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED TURFGRASS SEEDING RATES: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. COVER A MINIMUM OF THREE CENTRIFUGAL MULCHES WITH EACH SPACING FROM 10 TO 35 PERCENT OF THE TOTAL TURF BY WEIGHT.
 - d. METHOD OF APPLICATION: FULL SUN METHOD: FOR USE IN AREAS WITH MEDIUM MAINTENANCE. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED TURFGRASS SEEDING RATES: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. COVER A MINIMUM OF THREE CENTRIFUGAL MULCHES WITH EACH SPACING FROM 10 TO 35 PERCENT OF THE TOTAL TURF BY WEIGHT.
 - e. METHOD OF APPLICATION: FULL SUN METHOD: FOR USE IN AREAS WITH LOW MAINTENANCE. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED TURFGRASS SEEDING RATES: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. COVER A MINIMUM OF THREE CENTRIFUGAL MULCHES WITH EACH SPACING FROM 10 TO 35 PERCENT OF THE TOTAL TURF BY WEIGHT.
 - f. METHOD OF APPLICATION: FULL SUN METHOD: FOR USE IN AREAS WITH HIGH MAINTENANCE. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED TURFGRASS SEEDING RATES: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. COVER A MINIMUM OF THREE CENTRIFUGAL MULCHES WITH EACH SPACING FROM 10 TO 35 PERCENT OF THE TOTAL TURF BY WEIGHT.

3. MULCHING
 - a. MULCH MATERIALS (IN ORDER OF PREFERENCE)
 - i. STRAW CONSISTING OF THROUSHLY DRESSED 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, MOLLY, CACKED, DEGRADED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STUBBLE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 - ii. WOOD CELLULOSE FIBER MULCH (WFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSING WASTE UNIFORM FIBROUS PHYSICAL SIZE.
 - iii. WFM IS TO BE OYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORM SPREAD.
 - iv. WFM INCLUDING DYE, MUST CONTAIN NO GRASS OR OTHER WEED SEEDS.
 - v. WFM 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 BUTTER-LIKE GROUND COVER ON APPLICATION, HAVING MODERATE ABSORPTION AND FUSION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDINGS.
 - vi. WFM MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - vii. WFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, MOISTURE APPROXIMATELY 10 PERCENT, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 15 PERCENT HUMAN AND WATER HOLDING CAPACITY OF 90 PERCENT BY WEIGHT.
 - b. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 - c. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LAYER. DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ADEQUATE 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.
 - d. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED TO A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A HARMONY OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

PERMANENT SEEDING SUMMARY

HARDNESS ZONE (FROM FIGURE B.3)	SE	FERTILIZER RATE (10-20-20)	LIME RATE
1	9		
2	9		
3	112		

GENERAL SPECIFICATIONS

1. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
2. SOD MUST BE MAINTAINED CUT AT A MINIMUM SOIL THICKNESS TO 3/4 INCH PLUS OR MINUS 1/4 INCH AT THE TIME OF CUTTING. MAINTENANCE FOR THICKNESS MUST EXCLUDE TOP AND THATCH. BROKEN PADS AND TORN EDGES UNDER EDGES WILL NOT BE ACCEPTABLE.
3. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETURN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIBRE GROP ON THE UPPER 10 PERCENT OF THE SECTION. SOD MUST NOT BE HANDED OR TRANSPORTED WITH MORE CONTENT (EXCESSIVELY DRY OR WET) THAN ADMITTED BY ITS SURVIVAL.
4. SOD MUST BE HANDED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPORTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
5. SOD INSTALLATION
 - a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SURFACE IMMEDIATELY PRIOR TO LAYING THE SOD.
 - b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. INSURE THAT SOD IS NOT COMPRESSED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT WIND WHICH WOULD CAUSE AIR DRIVING OF THE ROOTS.
 - c. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERS JOINTS. SOIL AND TIME FOR OTHERWISE SECURE THE SOD TO PREVENT SURFACE SOIL CONTACT. EXCESSIVE SOIL CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
 - d. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE HIGH SOD PAD AND SOIL SURFACE BELOW THE SOD ARE MOIST. COMPLETE THE OPERATIONS OF LAYING, TAMPING, AND WATERING FOR AN PERCENT OF SOD WITH EIGHT HOURS.
6. SOD MAINTENANCE
 - a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER ONLY DURING THE FIRST WEEK OR TWO AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT CRACKING.
 - b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT. DO NOT FLOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE MOW CUTTING OR SUBSEQUENT CUTTING. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

STANDARD STABILIZATION NOTE

1. FOLLOWING MIN. SOIL DISTURBANCE OR RE-RESTORATION, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
 - a. 30 DAYS FOR AREAS SUBJECT TO THE SURFACE OF ALL VEGETATIVE, DICES, SWALES, DITCHES, PERMETER SLOPES, AND ALL SLOPES STEEPER THAN 1:1 VERTICAL (3:1).
 - b. 60 DAYS FOR AREAS SUBJECT TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

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Frank Manalansan II
Date: 5/28/20

B-4-0 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

1. A mound or pile of soil protected by appropriately designed erosion and sediment control measures.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile must drain to a suitable sediment control practice.
4. Access to the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7-4 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1895 after the future L.O.D. and protected areas are marked clearly in the field. A minimum of 48 hour notice to CID must be given at the following stages:
 - a. Prior to the start of earthwork disturbances.
 - 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.
2. 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.
3. 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.
4. All sediment control structures are to remain in place, and are to be maintained in operative condition until their removal or they are no longer needed as determined by the CID.
5. Site Analysis For Total Site Area:
 - Total Area of Site: 8.13+/- Acres
 - LOD Total Area Disturbed: 5.02+/- Acres
 - Area to be roofed or paved: 1.99+/- Acres
 - Area to be vegetatively stabilized: 3.03+/- Acres
 - Total Cut: 25,252 Cu.Yds.
 - Total Fill: 20,595 Cu.Yds.
 - Offsite fill/borrow area location: N/A
6. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
 - Inspection date
 - Inspection time (routine, pre-storm event, during rain event)
 - Name and title of inspector
 - Brief description of project's status (e.g., percent complete) and/or current activities
 - Weather information (current conditions as well as time and amount of last recorded precipitation)
 - Evidence of sediment discharges
 - Identification of plant 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).
7. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be filled and stabilized by the end of each workday, whichever is shorter.
8. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may be allowed by the CID per the list of HSCD-approved field changes.
9. 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 HSCD. Unless otherwise specified and approved by the HSCD, no more than 30 acres cumulatively may be disturbed at a given time.
10. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
11. Topsoil shall be stockpiled and preserved on-site for redistribution until final grade.
12. All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be impregnated at 25' minimum intervals, with lower ends curved uphill by 2' in elevation.
13. Stream channels must not be disturbed during the following restricted time periods (inclusive):
 - Use I and IP March 1 - June 15
 - Use III and IIP October 1 - April 30
 - Use IV and IP March 1 - May 31
14. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and this plan shall be on-site and available when the site is active.

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

1. SPECIFICATIONS
 - a. ALL SEED MUST MEET THE REQUIREMENT OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING AT 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 TESTS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY THE 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 THAW.
 - c. INCULCATES THE INCULCATOR FOR TREATING LEASE SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PRESERVED SPECIALLY FOR THIS PURPOSE. INCULCATES MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER AND FRESH INCULCATES AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INCULCATOR AS CLOSE AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN KILL BACTERIA AND MAKE THE INCULCATOR USE EFFECTIVE.
 - d. SEED OR MULCH MUST NOT BE PLACED ON AREAS WHICH HAVE BEEN TREATED WITH SOIL STABILIZERS OR CHEMICALS USED FOR WEEDKILLING UNLESS SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN) TO PERMIT DEGRADATION OF PHYTO-TOXIC MATERIALS.
2. APPLICATION
 - a. EARTH 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.
 - ii. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON PERMANENT SEEDING TABLE B.1.
 - iii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. THE SECOND AREA WITH WEIGHTED BROADCAST TO PROVIDE GOOD SEED TO SOIL CONTACT.
 - iv. DRILL OR CULTIPACKER SEEDING MECHANIZED SEEDERS TO APPLY AND COVER SEED WITH SOIL.
 - v. DRILL OR CULTIPACKER SEEDING MECHANIZED SEEDERS TO BURY THE SEED IN SUCH A MANNER AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDING MUST BE FIRM PLANTING.
 - vi. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 - vii. HYDROSEEDING APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
 - viii. IF FERTILIZED IS BURE APPLIED AT THE TIME OF SEEDING. THE APPLICATION RATE SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE; TOTAL SOLUBLE NITROGEN, P₂O₅ (PHOSPHORUS), 200 POUNDS PER ACRE; K₂O (POTASSIUM), 200 POUNDS PER ACRE.
 - ix. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE AT 3 TO 5 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING. NORMALLY, NOT MORE THAN 1.0 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE LIME WITH HYDROSEEDING.
 - x. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 - xi. WHEN HYDROSEEDING, DO NOT INCORPORATE SEED INTO THE SOIL.
 - b. MULCHING
 - i. MULCH MATERIALS (IN ORDER OF PREFERENCE)
 - ii. STRAW CONSISTING OF THROUSHLY DRESSED 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, MOLLY, CACKED, DEGRADED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STUBBLE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 - ii. WOOD CELLULOSE FIBER MULCH (WFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSING WASTE UNIFORM FIBROUS PHYSICAL SIZE.
 - iii. WFM IS TO BE OYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORM SPREAD.
 - iv. WFM INCLUDING DYE, MUST CONTAIN NO GRASS OR OTHER WEED SEEDS.
 - v. WFM 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 BUTTER-LIKE GROUND COVER ON APPLICATION, HAVING MODERATE ABSORPTION AND FUSION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDINGS.
 - vi. WFM MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - vii. WFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, MOISTURE APPROXIMATELY 10 PERCENT, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 15 PERCENT HUMAN AND WATER HOLDING CAPACITY OF 90 PERCENT BY WEIGHT.
 - ii. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 - iii. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LAYER. DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ADEQUATE 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.
 - iv. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED TO A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A HARMONY OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

DEFINITION

1. TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES

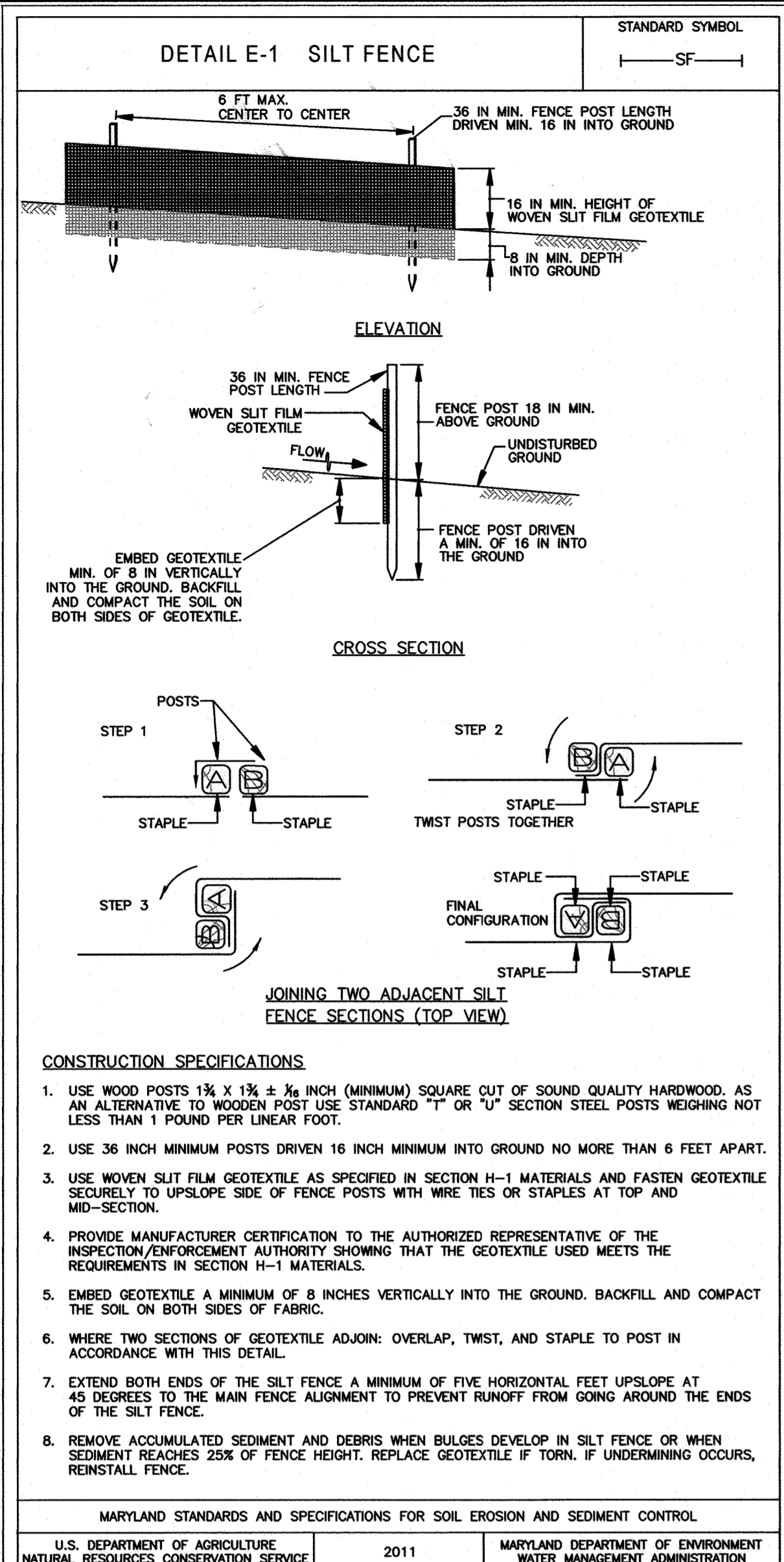
1. TO THE SURFACE OF ALL PERMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

PURPOSE

1. TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CRITERIA

1. GENERAL USE
 - a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.5 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURES, APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY.
 - b. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHOULDER, STREAM BANKS, OR DORIES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND UNDER SPECIAL PLANTING SPECIFICATIONS.
 - c. FOR SITES HAVING DISTURBED AREAS OF 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE AUTHORITY. APPLY USING THE RECOMMENDED RATES (40-60) AT 1/2 INCHES DEPTH. FOR AREAS BEING LOW MAINTENANCE, APPLY USING THE RECOMMENDED RATES (20-30) AT 1/2 INCHES DEPTH. FOR AREAS BEING MEDIUM MAINTENANCE, APPLY USING THE RECOMMENDED RATES (30-40) AT 1/2 INCHES DEPTH. FOR AREAS BEING HIGH MAINTENANCE, APPLY USING THE RECOMMENDED RATES (10-20) AT 1/2 INCHES DEPTH.
2. TURFGRASS MIXTURES
 - a.



CONSTRUCTION SPECIFICATIONS

- USE WOOD POSTS 1 1/2 x 1 1/2 x 1/4 INCH (MINIMUM) SQUARE "Q" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
- USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- USE WOVEN SILT 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.
- PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USES MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- 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.
- 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

DESIGN CERTIFICATION

I hereby certify that this Plan has been designed in accordance with Current Maryland Erosion and Sediment Control Laws, Regulations and Standards, that it represents a Practical and Workable Plan Based on My Personal Knowledge of the Site, and that it was prepared in accordance with the Requirements of the Howard Soil Conservation District.

Designer's Signature: *Frank Manalansan II* Date: 5/28/20

Printed Name: FRANK MANALANSAN II MD Registration No. 21476 P.E., (S.E.C.) or R.L.A. (circle one)

OWNER/DEVELOPER CERTIFICATION

"I/We Certify That Any Clearing, Grading, Construction Or Development Will Be Done Pursuant To This Approved Erosion And Sediment Control Plan, Including Inspecting And Maintaining Controls And That The Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Training At A Maryland Department Of The Environment (MDE) Approved Training Program For The Control On Erosion And Sediment Prior To Beginning The Project. I Certify Right-of-entry For Periodic On-site Evaluation By Howard County, The Howard Soil Conservation District And/or MDE."

Owner's/Developer's Signature: *David Woessner* Date: 5/26/2020

Printed Name & Title: DAVID WOESSNER

Approved: This Plan is Approved For Small Pond Construction, And Soil Erosion And Sediment Control By The Howard Soil Conservation District.

Howard Soil Conservation District Date: 6/16/20

Approved: Department Of Planning And Zoning

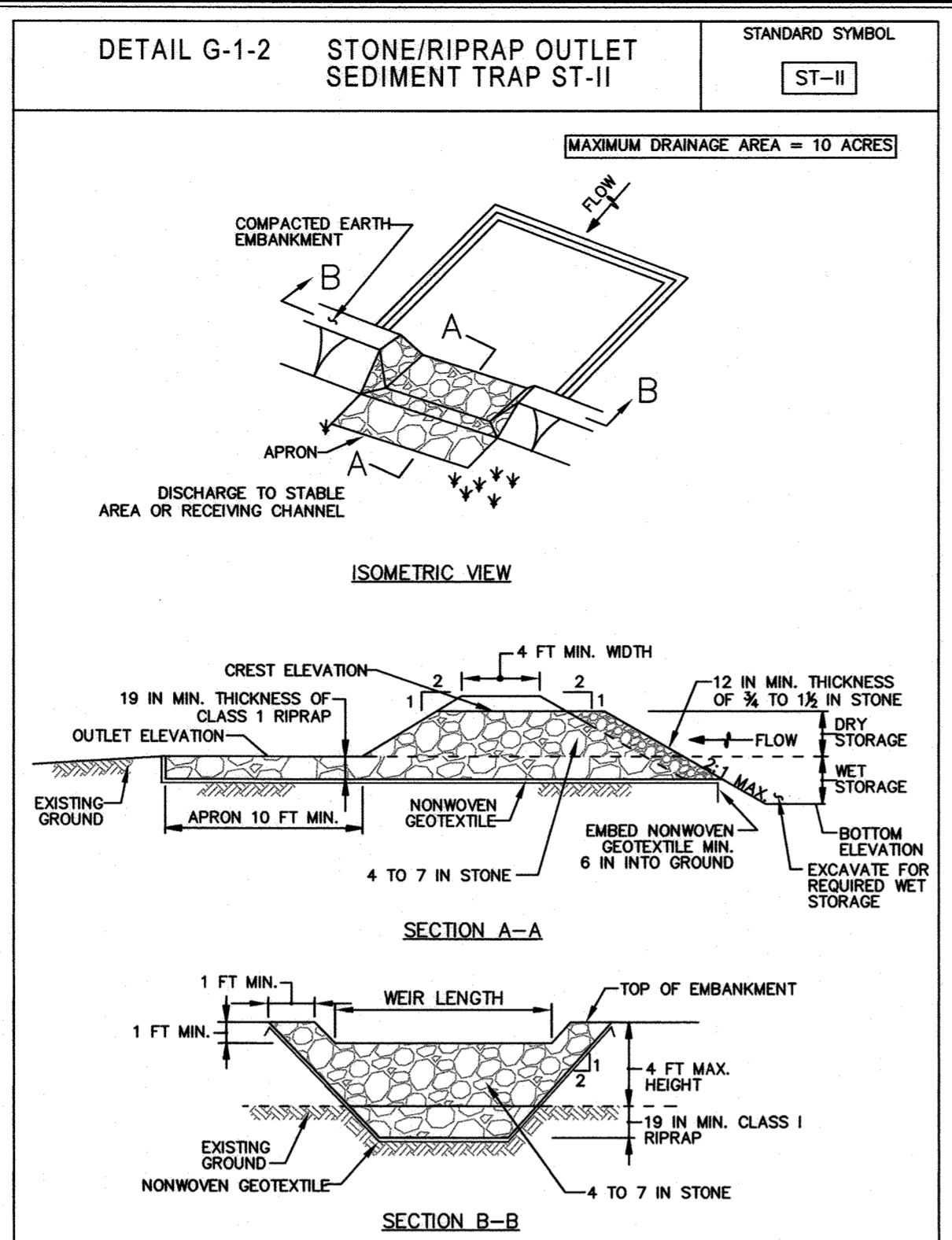
Chief, Division Of Land Development Date: 8/11/2020

Chief, Development Engineering Division Date: 8/2/20

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways Date: 8/24/2020

NO.	REVISIONS	DESCRIPTION	DATE



CONSTRUCTION SPECIFICATIONS

- CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
- CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
- USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERGROWN STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
- CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE WEIR CREST. COMPACT THE EMBANKMENT BY TRAVELING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
- MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
- PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE BOTTOM AND SIDES OF OUTLET AND APRON PRIOR TO PLACEMENT OF RIPRAP. OVERLAP SECTIONS OF GEOTEXTILE AT LEAST 1 FOOT WITH THE SECTION NEARER TO THE TRAP PLACED ON TOP. EMBED GEOTEXTILE AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
- USE CLEAN 4 TO 7 INCH RIPRAP TO CONSTRUCT THE WEIR. USE CLASS 1 RIPRAP FOR THE APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE.
- PLACE 1 FOOT OF CLEAN 1/2 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE ON THE UPSTREAM FACE OF THE WEIR.
- CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
- STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
- REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (50% OF WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION, AND REMOVE ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LINE, GRADE, AND CROSS SECTION.
- WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
- UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

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

NOTE:

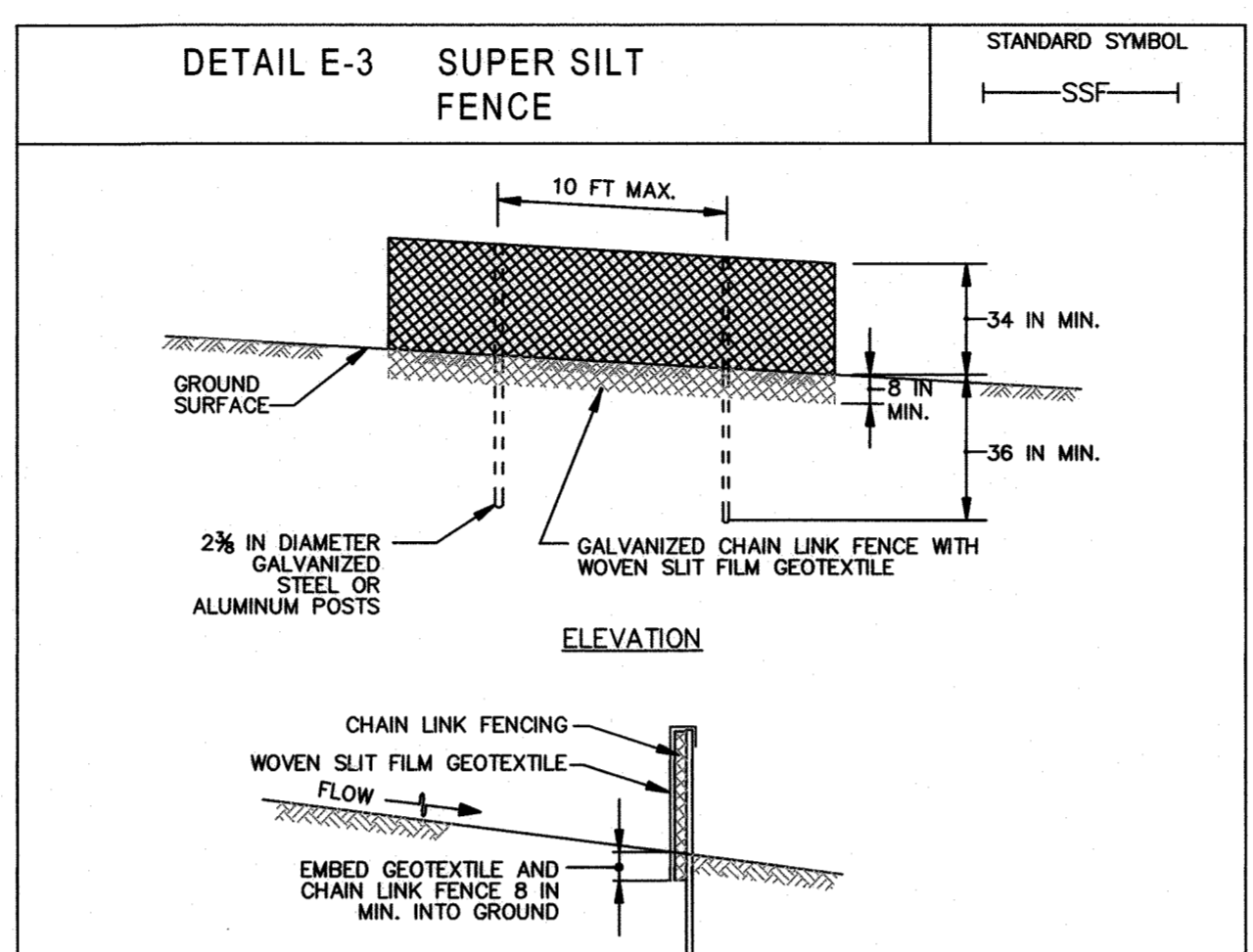
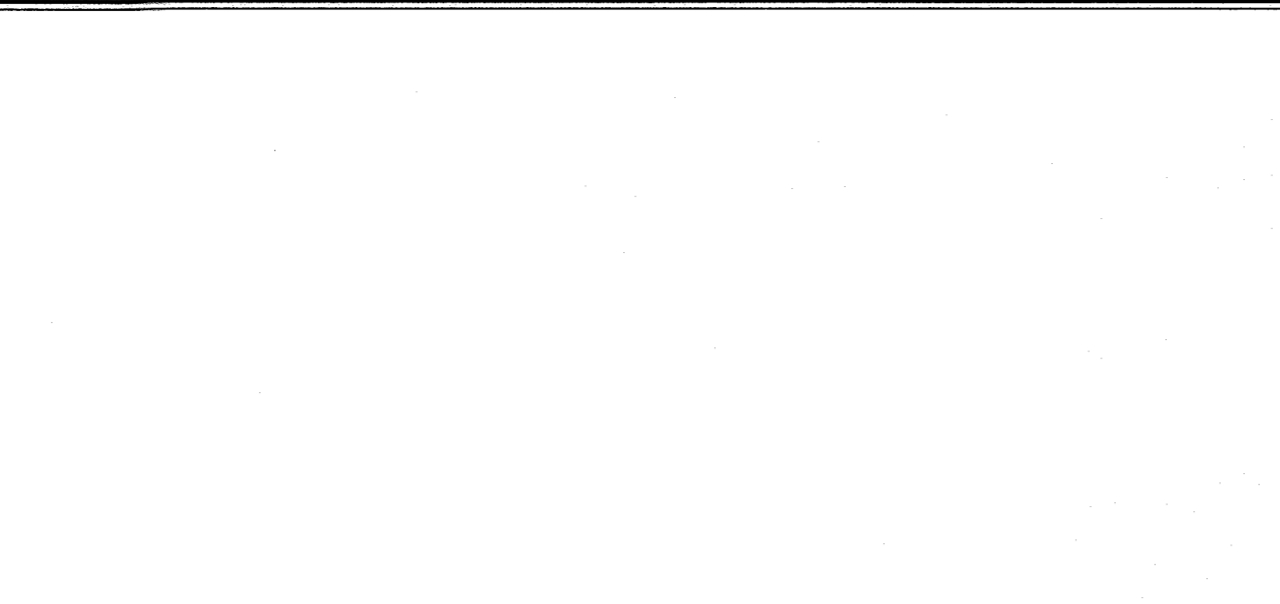
PROPOSED HOUSES CANNOT BE CONSTRUCTED UNDER THIS PLAN.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.

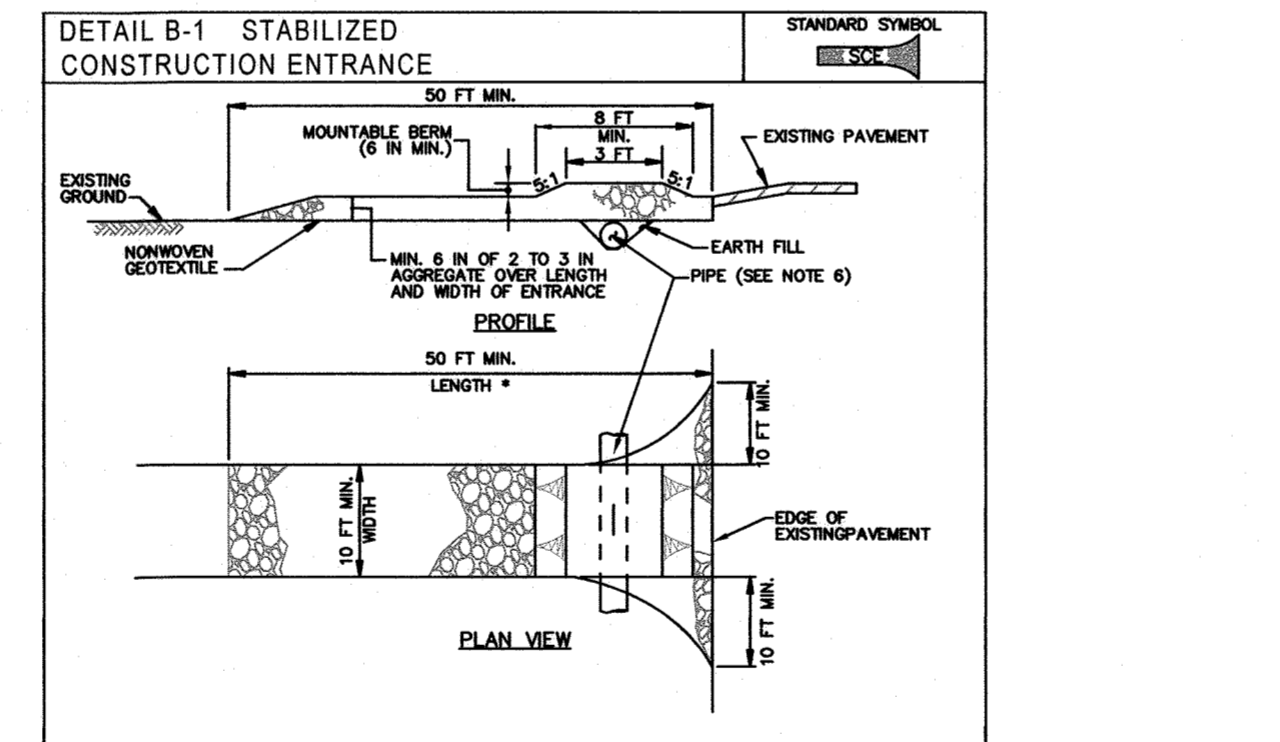
Signature: *Frank Manalansan II* Date: 5/28/20

FRANK MANALANSAN II



CONSTRUCTION SPECIFICATIONS

- INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 1/2 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SILT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- EXTEND BOTH ENDS OF THE SUPER 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 SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

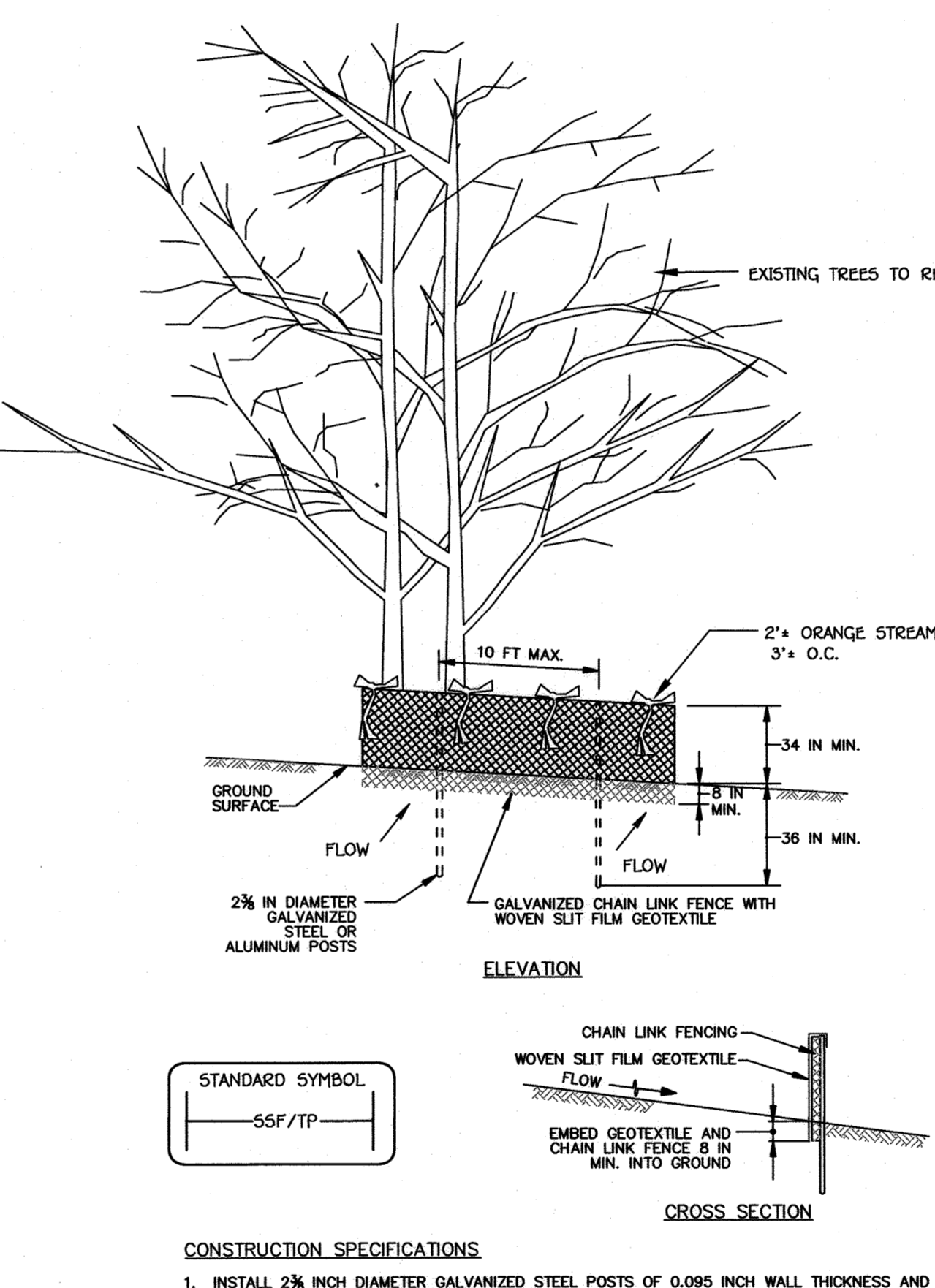
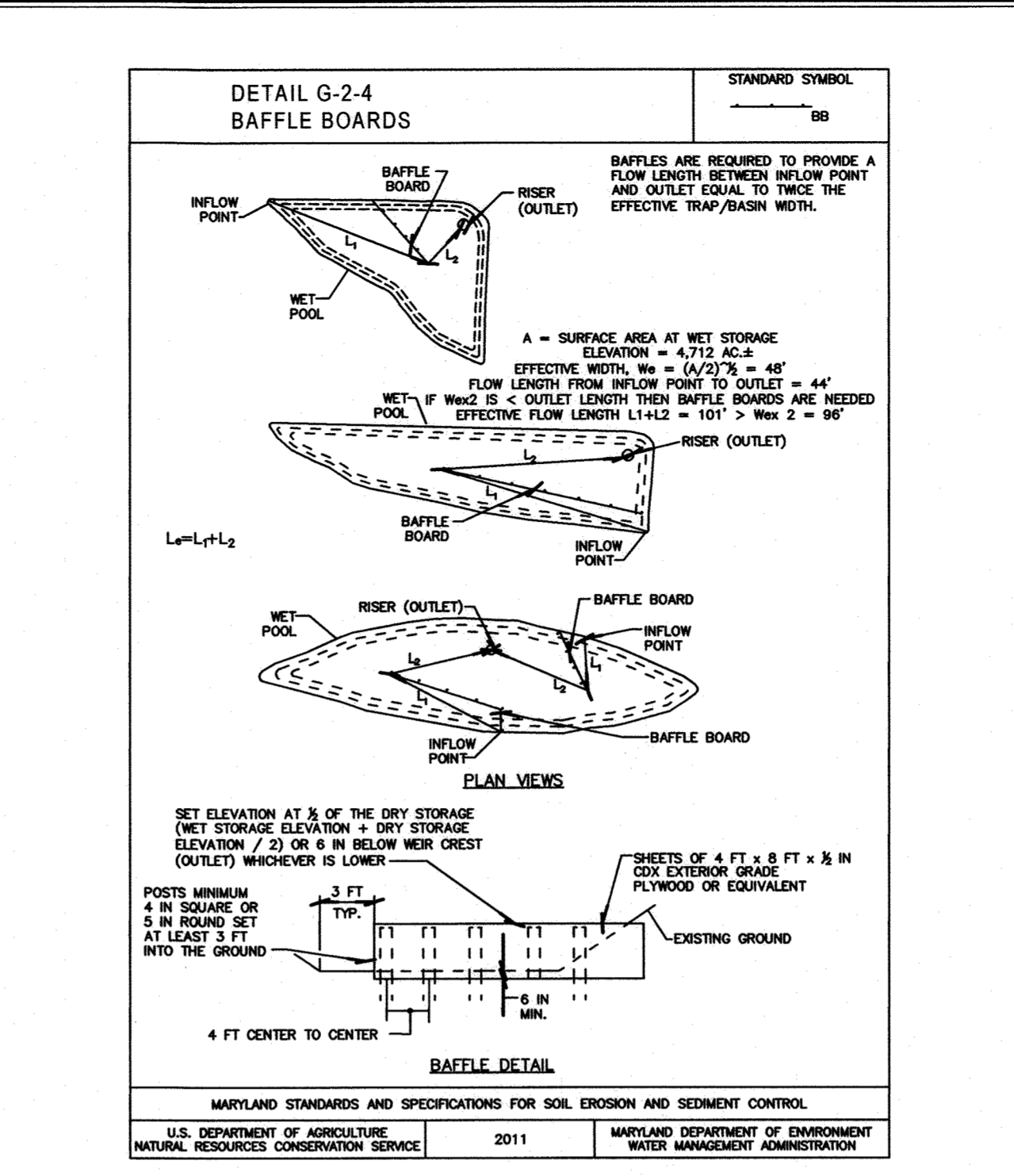


CONSTRUCTION SPECIFICATIONS

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SIZE USE MINIMUM LENGTH OF 50 FEET (50 FEET FOR SINGLE RESIDENCE LOT), USE MINIMUM WIDTH OF 10 FEET. PLACE SIZE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SIDE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SIDE WITH A MOUNTABLE BEAM WITH 5 1/2 INCHES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SIZE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO DOWN-SLOPE, A MOUNTABLE BEAM IS NOT NECESSARY. A MOUNTABLE BEAM IS REQUIRED WHEN SIZE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SIZE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE. MOUNTABLE BEAM, AND SPOILED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR DUMPING. WASHING ROADWAY TO REMOVE MUD TRACKS ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

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

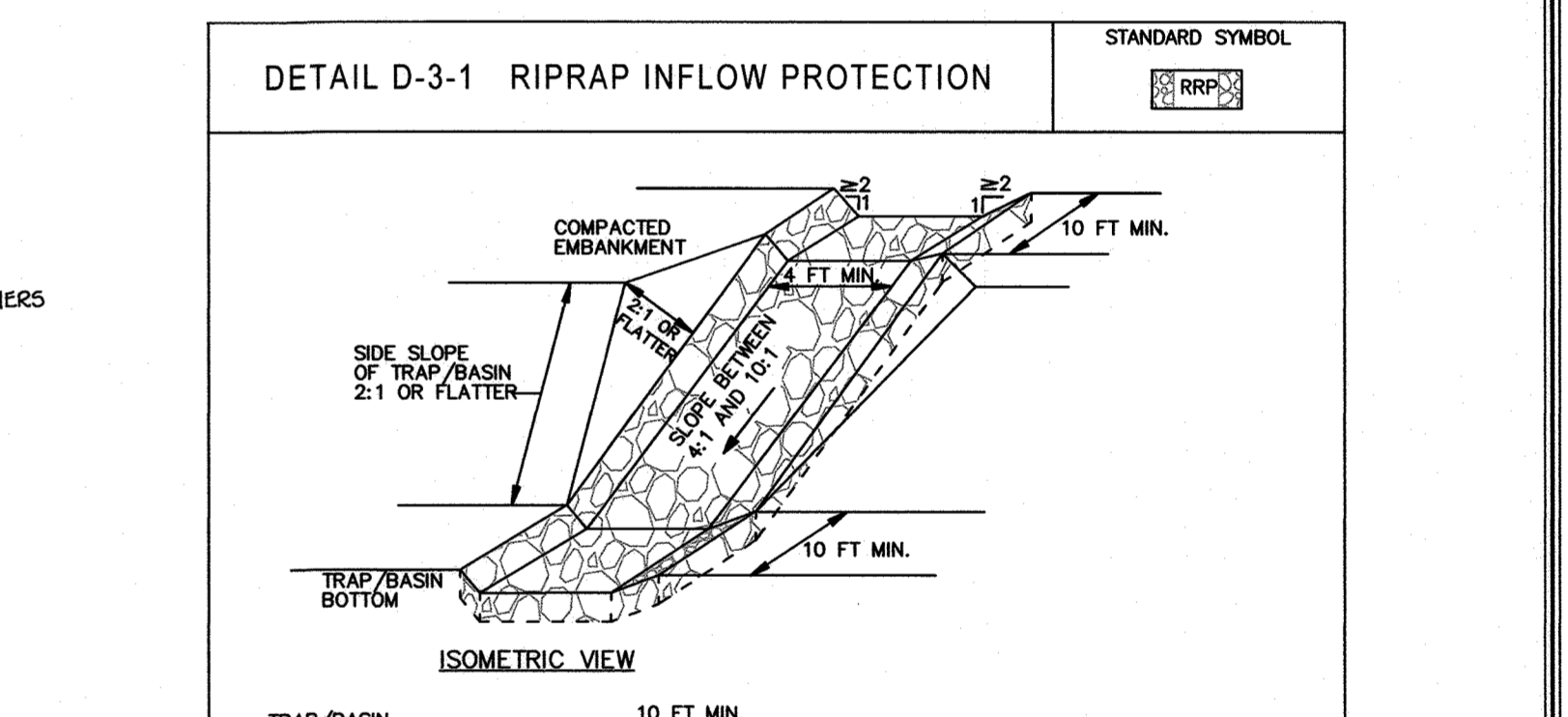
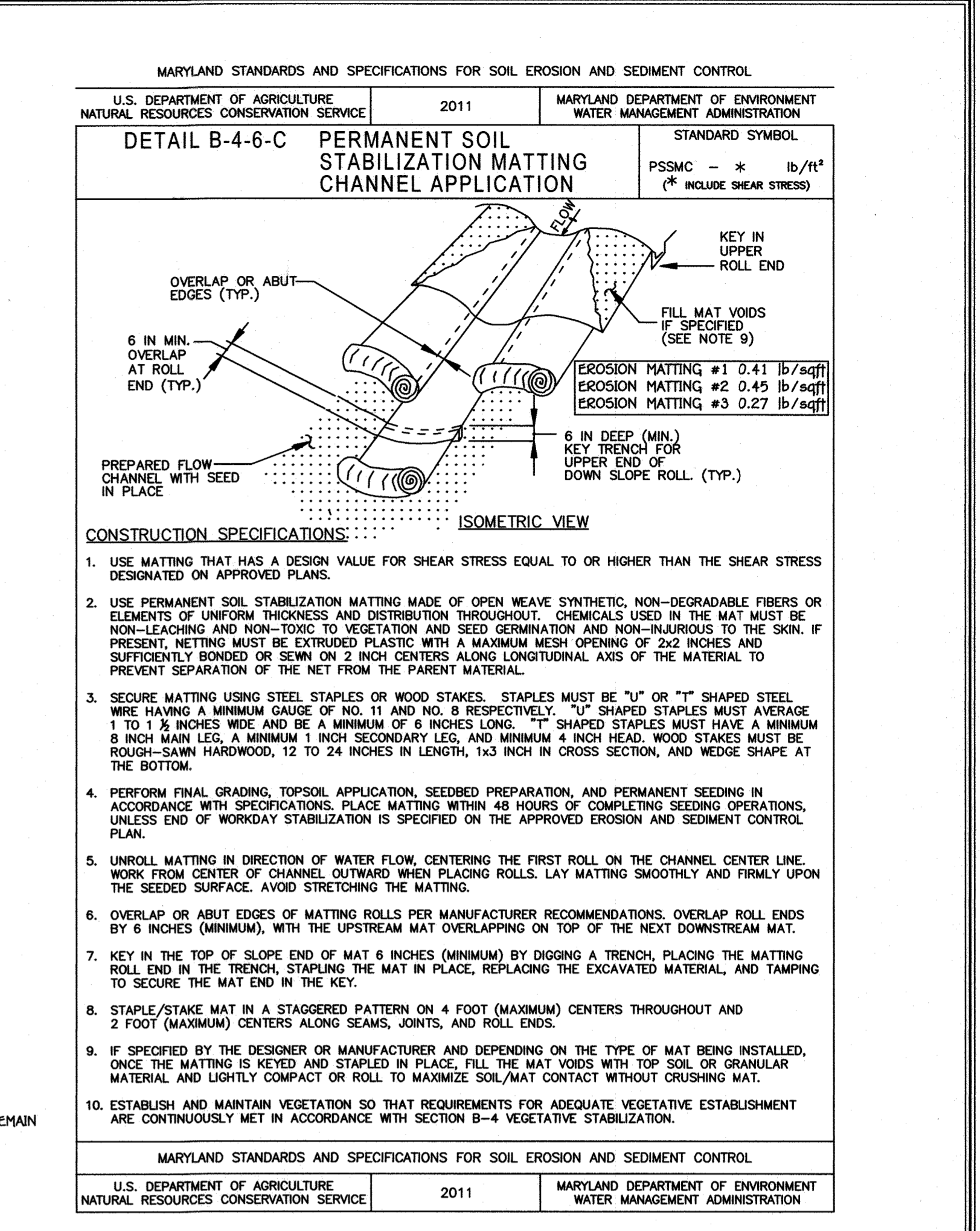


CONSTRUCTION SPECIFICATIONS

- INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 1/2 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SILT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- EXTEND BOTH ENDS OF THE SUPER 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 SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

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



CONSTRUCTION SPECIFICATIONS

- PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
- CONSTRUCT INFLOW CHANNEL WITH CLASS 1 RIPRAP OR EQUIVALENT RECYCLED CONCRETE LINING TO A MINIMUM DEPTH OF 19 INCHES (2 x D₅₀) AND A 1 FOOT DEEP FLOW CHANNEL. INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND A 4 FOOT MINIMUM BOTTOM WIDTH.
- INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
- BLEND RIPRAP INTO EXISTING GROUND.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION.

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

SEDIMENT AND EROSION CONTROL NOTES AND DETAILS CENTENNIAL RESERVE

LOTS 1 THRU 17, OPEN SPACE LOT 18
4509 & 4489 CENTENNIAL LANE & 10202 MAXINE STREET

PARCEL 04: LEWIS HANCOCK, 4489 CENTENNIAL LANE, ELLICOTT CITY, MD 21042

PARCEL 449: CHATEAU BUILDERS, INC., 309 MAGOTHY ROAD, SUITE 309, COLUMBIA, MD 21044

PARCEL 174 & PARCEL 05: CENTENNIAL RESERVE, LLC, 308 MAGOTHY ROAD, SEVERNA PARK, MARYLAND 21146

CENTENNIAL RESERVE, LLC, 308 MAGOTHY ROAD, SEVERNA PARK, MARYLAND 21146

DAVE WOESSNER, 240-319-1735

STAY MAP NO.: 30 GRID NO.: 01 PARCEL NOS.: 04, 05, 174, & 449 ZONED R-20

SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: MAY, 2020

SHEET 9 OF 24

SOILS LEGEND			
SOIL	NAME	CLASS	'K' VALUE
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.20
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.20
GhB	Glenelg-Urban land complex, 0 to 8 percent slopes	B	0.20

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
448.5	SPOT ELEVATION
18" 50	EXISTING STORM DRAIN
---	PROPOSED STORM DRAIN PIPE
---	EX. F.H.
---	EXISTING WATER LINE
---	EXISTING SEWER LINE
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
---	EXISTING OVERHEAD WIRE
---	PROPOSED ASPHALT PAVING/ PATH
---	PROPOSED SIDEWALKS (CONCRETE)
---	FOREST CONSERVATION EASEMENT (REFORESTATION)
---	PERMANENT FOREST CONSERVATION EASEMENT FENCING
---	EXISTING TREE LINE
---	PROPOSED TREE LINE
---	DRYWELL (M-5)-TYPICAL
---	SOIL LINES AND TYPES
---	EXISTING WETLANDS & WETLAND BUFFER
---	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
---	PROPOSED ROOF LEADER
---	DENOTES EXISTING TREES TO REMAIN
---	CRITICAL ROOT ZONE
---	DENOTES 15%-24.9% SLOPES
---	PROPOSED TREES (SEE SHEET 12 FOR DETAILS)
PERIMETER XX XX LF	LANDSCAPE PERIMETER LABEL AND LEADER
---	DENOTES TREES BEING USED FOR CREDIT

LANDSCAPE DEVELOPER'S CERTIFICATE

I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

Lawville Name 5/26/2020 Date

REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division of Land Development *collins*
Date

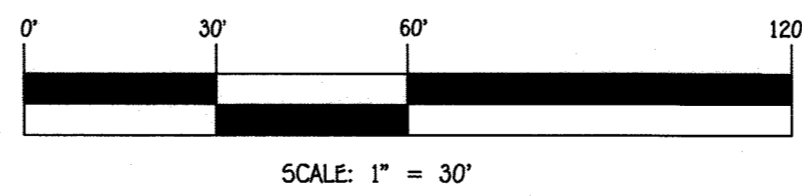
Chief, Development Engineering Division *9/4/20*
Date

Approved: Howard County Department Of Public Works
Chief, Bureau of Highways *8/2/2020*
Date

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-2899



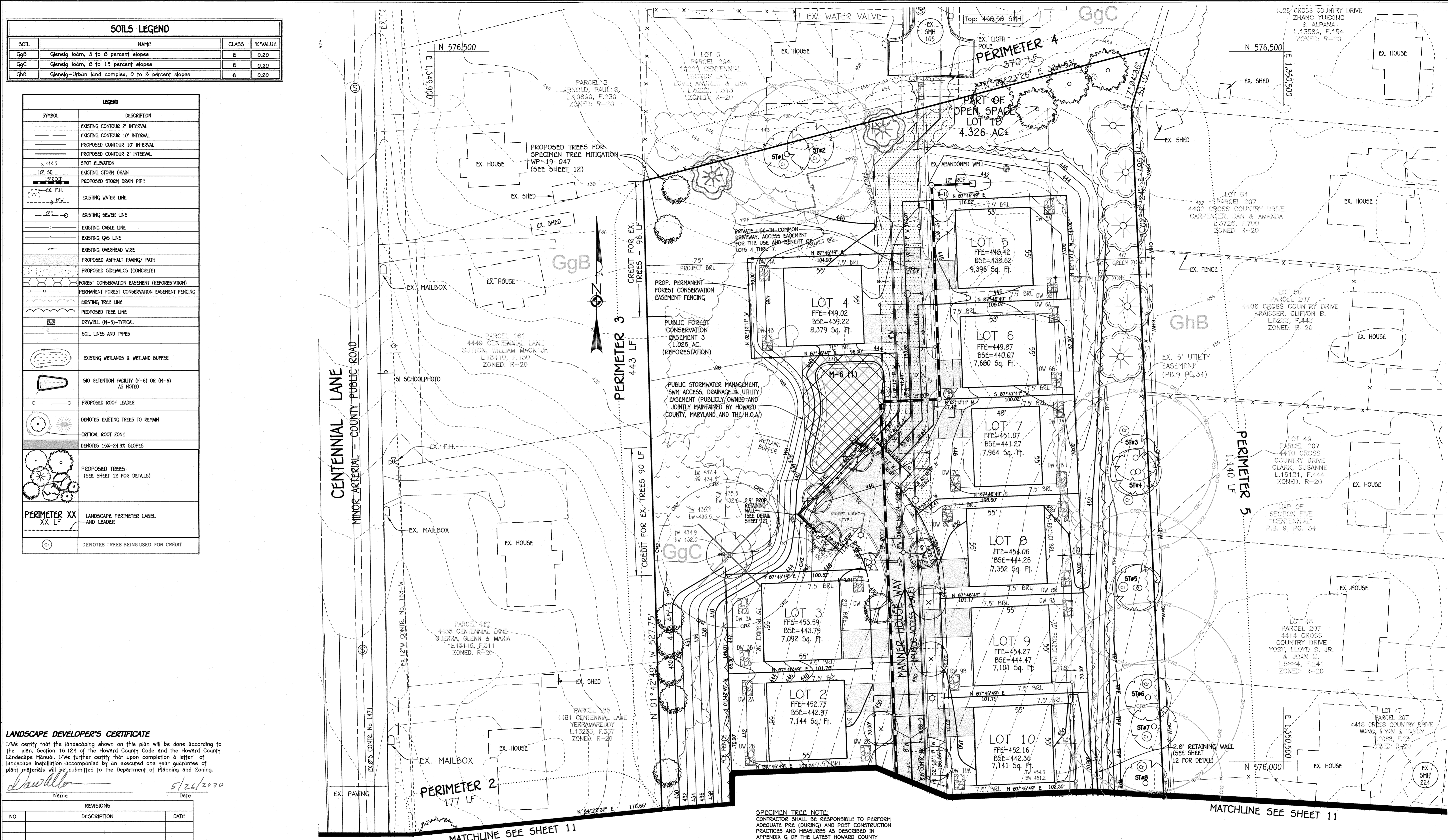
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3038, EXPIRATION DATE: 4/17/22.
Stephanie Jenene Turle 5/28/20
Date



NOTE: THIS SHEET IS FOR LANDSCAPE ONLY.

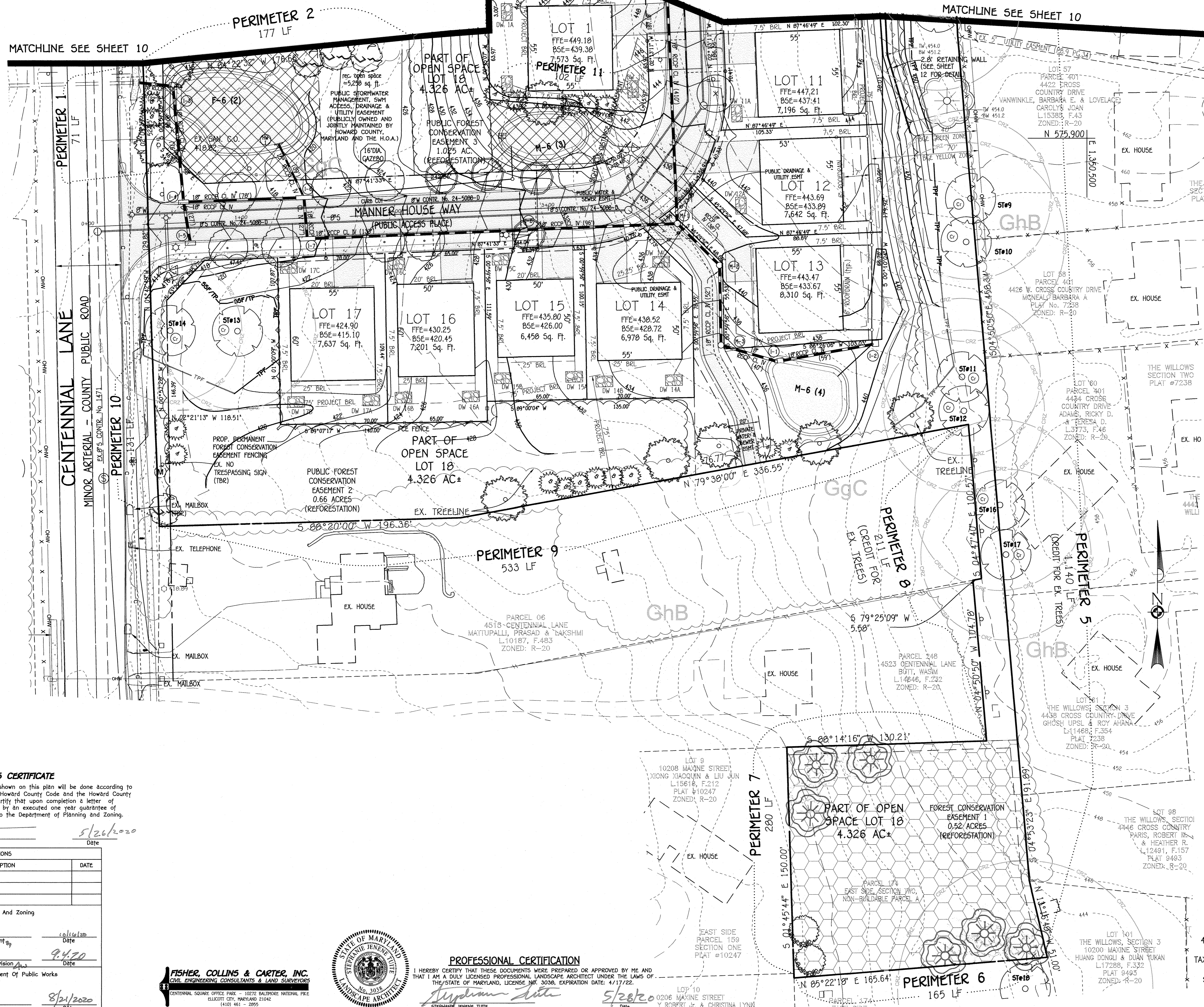
SPECIMEN TREE NOTE:
CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM ADEQUATE PRE (DURING) AND POST CONSTRUCTION PRACTICES AND MEASURES AS DESCRIBED IN APPENDIX G OF THE LATEST HOWARD COUNTY FOREST CONSERVATION MANUAL WHEN WORKING IN THE VICINITY OF THE SPECIMEN TREES IDENTIFIED TO REMAIN WITHIN THIS PROJECT TO ENSURE THE SURVIVAL OF THE TREES.

NOTE:
TREES MARKED AS CREDIT (C) SHALL BE PRESERVED OR REPLACED IF THEY PERISH. SPECIMEN TREES TO BE REPLACED AT 2-1.

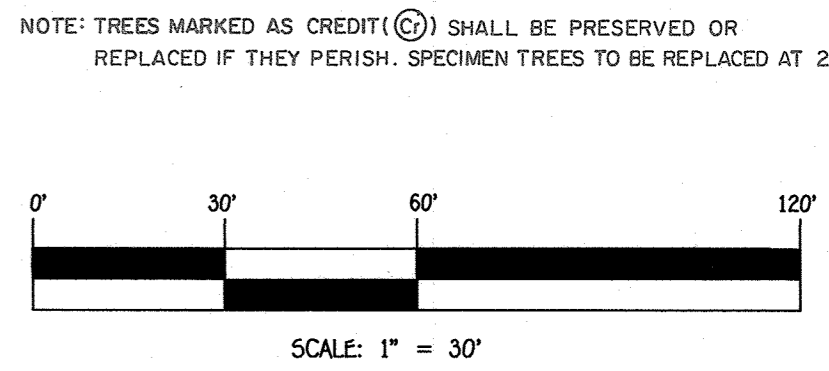


MATCHLINE SEE SHEET 11

LANDSCAPE PLAN
CENTENNIAL RESERVE
LOTS 1 THRU 17, OPEN SPACE LOT 18
4509 & 4489 CENTENNIAL LANE & 10202 MAXINE STREET
TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOS.:04, 05, 174, & 449
ZONED R-20
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MAY, 2020
SHEET 10 OF 24



LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
•	SPOT ELEVATION
---	EXISTING STORM DRAIN
---	PROPOSED STORM DRAIN PIPE
---	EXISTING WATER LINE
---	EXISTING SEWER LINE
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
---	EXISTING OVERHEAD WIRE
---	PROPOSED ASPHALT PAVING/ PATH
---	PROPOSED SIDEWALKS (CONCRETE)
---	FOREST CONSERVATION EASEMENT (REFORESTATION)
---	PERMANENT FOREST CONSERVATION EASEMENT FENCING
---	EXISTING TREE LINE
---	PROPOSED TREE LINE
---	DRYWELL (M-5)-TYPICAL
---	SOIL LINES AND TYPES
---	EXISTING WETLANDS & WETLAND BUFFER
---	BID RETENTION FACILITY (F-6) OR (M-6) AS NOTED
---	PROPOSED ROOF LEADER
---	Denotes EXISTING TREES TO REMAIN
---	CRITICAL ROOT ZONE
---	Denotes 15%-24.9% SLOPES
---	PROPOSED TREES (SEE SHEET 12 FOR DETAILS)
---	PERIMETER XX LANDSCAPE PERIMETER LABEL AND LEADER
---	Denotes TREES BEING USED FOR CREDIT



LANDSCAPE DEVELOPER'S CERTIFICATE
 I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

Sauwillo 5/26/2020
 Name Date

REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning
 Chief, Division Of Land Development Date 9/4/20
 Chief, Development Engineering Division Date 8/21/2020
 Approved: Howard County Department Of Public Works
 Chief, Bureau Of Highways Date

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENIAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 451 - 2995



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3038, EXPIRATION DATE: 4/17/22.
Stephanie Jenene Tuttle 5/28/20
 Stephanie Jenene Tuttle Date

LANDSCAPE PLAN
CENTENNIAL RESERVE
 LOTS 1 THRU 17, OPEN SPACE LOT 18
 4509 & 4409 CENTENNIAL LANE & 10202 MAXINE STREET
 TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOS.: 04, 05, 174, & 449
 ZONED R-20
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: MAY, 2020
 SHEET 11 OF 24

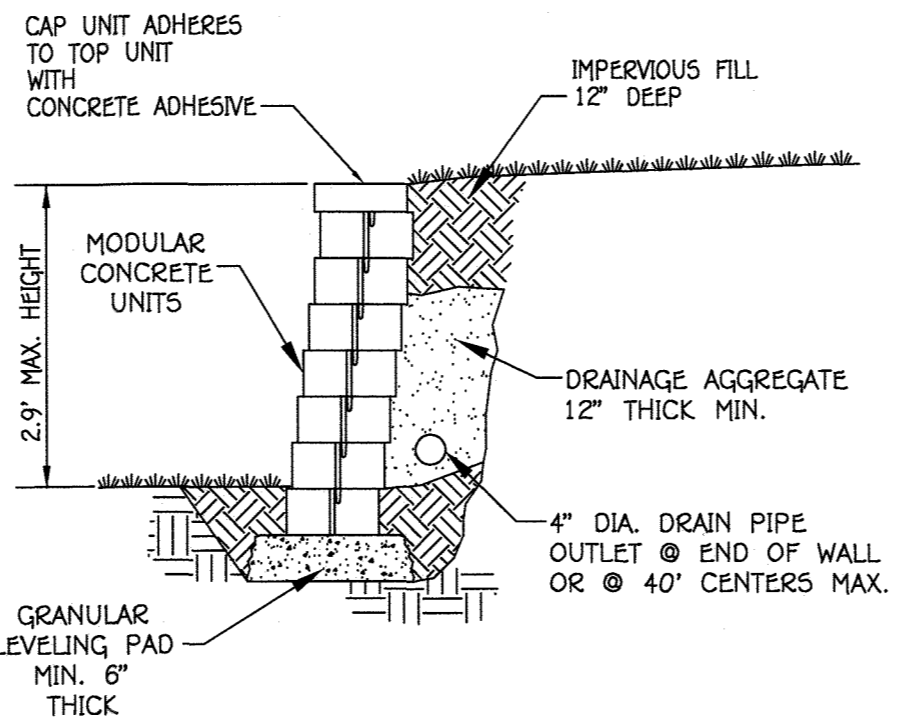
PERIMETER	SCHEDULE A PERIMETER LANDSCAPE EDGE											TOTALS	
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11		
PERIMETER	Open space to Roadway	Adjacent to Perimeter Properties	Adjacent to Perimeter Properties	Adjacent to Perimeter Properties	Adjacent to Perimeter Properties	Adjacent to Perimeter Properties	Adjacent to Perimeter Properties	Adjacent to Perimeter Properties	Adjacent to Perimeter Properties	Adjacent to Perimeter Properties	Open space to Roadway	Adjacent to Roadway	MITIGATION FOR SPECIMEN TREE REMOVAL PER WP-19-047
LANDSCAPE TYPE	B	A	A	A	A	A	A	A	A	A	B	B	
LINEAR FEET OF PERIMETER	71 LF	177 LF	443 LF	370 LF	1,140 LF	165 LF	280 LF	211 LF	533 LF	131 LF	102 LF		
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DISCLOSE BELOW IF NEEDED)	NO	-	YES, 186 lf	YES, 2 SPEC. TREES	YES, 12 SPEC. TREES	-	-	YES, 211 LF	-	YES, 2 SPEC. TREES	-		227 L.F. 16 SPEC. TREES
CREDIT FOR WALL, FENCE OR BERRY (YES, NO, LINEAR FEET) (DISCLOSE BELOW IF NEEDED)	NO	NO	NO	-	-	-	-	-	-	-	-		
NUMBER OF PLANTS REQUIRED													
SHADE TREES	2	3	5	5	7	3	5	0	9*	1	2*	2	44
EVERGREEN TREES	2	-	-	-	-	-	-	-	-	-	-	-	7
SHRUBS	-	-	-	-	-	-	-	-	-	-	-	-	-
NUMBER OF PLANTS PROVIDED													
SHADE TREES	2	3	5	5	7	3	5	0	5*	1	1*	2	39
SMALL DECIDUOUS	-	-	-	-	-	-	-	-	-	-	-	-	-
EVERGREEN TREES	2	-	-	-	-	-	-	-	8*	2	5*	-	17
SHRUBS	-	-	-	-	-	-	-	-	-	-	-	-	-

SUBSTITUTION NOTE:
 * PERIMETER 9 - 2.1 EVERGREEN SUBSTITUTION; 8 EVERGREEN TREES FOR 4 SHADE TREES (SUBSTITUTION PROVIDES NATIVE PLANT VARIETY)
 * PERIMETER 11 - 2.1 EVERGREEN SUBSTITUTION; 2 EVERGREEN TREES FOR 1 SHADE TREES (SUBSTITUTION ACCOMMODATES FOR LIMITED SPACE AND PROVIDES PLANT VARIETY)
CREDIT NOTE: TREES TAKEN FOR CREDIT ON THE APPROVED LANDSCAPE PLANS MUST BE MAINTAINED OR REPLACED IF THEY PERISH. SPECIMEN TREES USED AS CREDIT SHALL BE REPLACED 2.1 WITH 2.5" CALIBER TREES.

QTY.	KEY	NAME	SIZE
9*		ACER RUBRUM (OCTOBER GLORY) (OCTOBER RED MAPLE)	2 1/2" - 3" CALIBER FULL CROWN, B&B
4		PRUNUS SARGENTII (SARGENT CHERRY)	2 1/2" - 3" CALIBER FULL CROWN, B&B
12		ZELKOVA SERRATA (JAPANESE ZELKOVA)	2 1/2" - 3" CALIBER FULL CROWN, B&B
14		HEDGE MAPLE (ACER CAMPESTRE)	2 1/2" - 3" CALIBER FULL CROWN, B&B
9		THUJA STANDISHII X PLICATA (GREEN GIANT ARBOVITAE)	5'-6" HT. B&B
8		ILEX x 'NELLIE STEVENS' (NELLY STEVENS HOLLY)	5'-6" HT. B&B

QTY.	SYMBOL	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
5		QUERCUS RUBRA NORTHERN RED OAK	2.5-3" CAL.	40' APART ON PUBLIC R/W
9		ACER TATARICUM TATARICUM MAPLE	2.5-3" CAL.	30' APART ON PUBLIC R/W
9		PRUNUS SERRULATA 'KWANZAN' KWANZAN CHERRY	2.5-3" CAL.	30' APART ON PUBLIC R/W

TOTAL: 23



CONCRETE BLOCK LANDSCAPE WALL DETAIL
NO SCALE

TOTAL: 39 SHADE TREES, 17 EVERGREEN TREES
 * PER CONDITION #2 OF WP-19-047 TWO 2.5" CALIBER TREES ARE REQUIRED TO BE PLANTED AS MITIGATION FOR THE REMOVAL OF 1 SPECIMEN TREE IN THE FOREST CONSERVATION EASEMENT. TWO (2) 'OCTOBER GLORY' RED MAPLE TREES ARE PROPOSED AS REPLACEMENT. SEE SHEET 10 FOR LOCATION.

*At the time of plant installation, all trees listed and approved on the Landscape Plan, shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviations from the approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revisions are made to the road drawing plans.
 *The Owner, tenants and/or their agents shall be responsible for maintenance of the required perimeter landscaping. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All the other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.

PLANTING SPECIFICATIONS

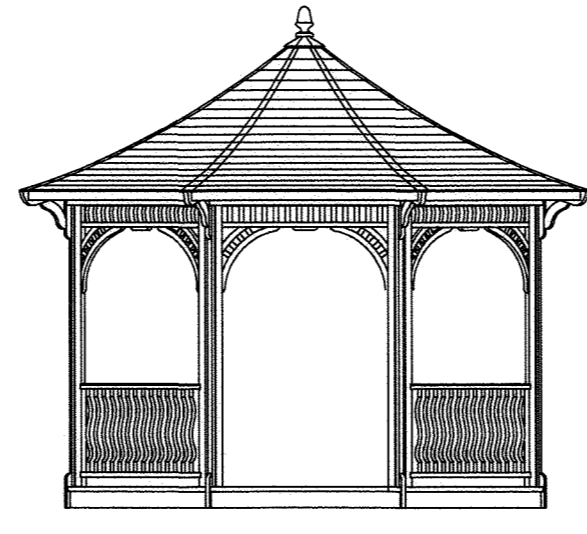
PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN.
 ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE NURSERY GROWN, UNIFORMLY BRANCHED, HAVE A VIGOROUS ROOT SYSTEM, AND SHALL CONFORM TO THE SPECIES, SIZE, ROOT AND SHAPE SHOWN ON THE PLANT LIST AND THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN) STANDARDS. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUN SCALD INJURIES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BORERS AND ALL FORMS OF INSECT INFESTATIONS OR OBJECTIONABLE DISFIGUREMENTS. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LARGER GRADES TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORKED LEADERS WILL NOT BE ACCEPTED. ALL PLANTS SHALL BE FRESHLY DUG; NO HEALED-IN PLANTS FROM COLD STORAGE WILL BE ACCEPTED.
 UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATION SHALL CONFORM TO "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECT, LATEST EDITION, INCLUDING ALL AGENDA.
 CONTRACTOR SHALL BE REQUIRED TO GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION OF THE LANDSCAPE GUIDELINES. CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.
 BID SHALL BE BASE ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.
 ALL SHRUBS SHALL BE PLANTED IN CONTINUOUS TRENCHES OR PREPARED PLANTING BEDS AND MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILS AND SPECIFIED EXCEPT WHERE NOTED ON PLANS.
 POSITIVE DRAINAGE SHALL BE MAINTAINED IN PLANTING BEDS 2 PERCENT SLOPE.
 PLANTING MIX SHALL BE AS FOLLOWS: DECIDUOUS PLANTS - TWO PARTS TOPSOIL, ONE PART WELL-ROTTED COW OR HORSE MANURE, ADD 3 LBS. OF STANDARD FERTILIZER PER CUBIC YARD OF PLANTING MIX. EVERGREEN PLANTS - TWO PARTS TOPSOIL, ONE PART HUMUS OR OTHER APPROVED ORGANIC MATERIAL. ADD 3 LBS. OF EVERGREEN (ACIDIC) FERTILIZER PER CUBIC YARD OF PLANTING MIX. TOPSOIL SHALL CONFORM TO THE LANDSCAPE GUIDELINES.
 WEED CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. CAUTION: BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUND COVER TO BE TREATED.
 ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED AND SEEDED.
 A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND TREE.

PRE-CONSTRUCTION MEETING

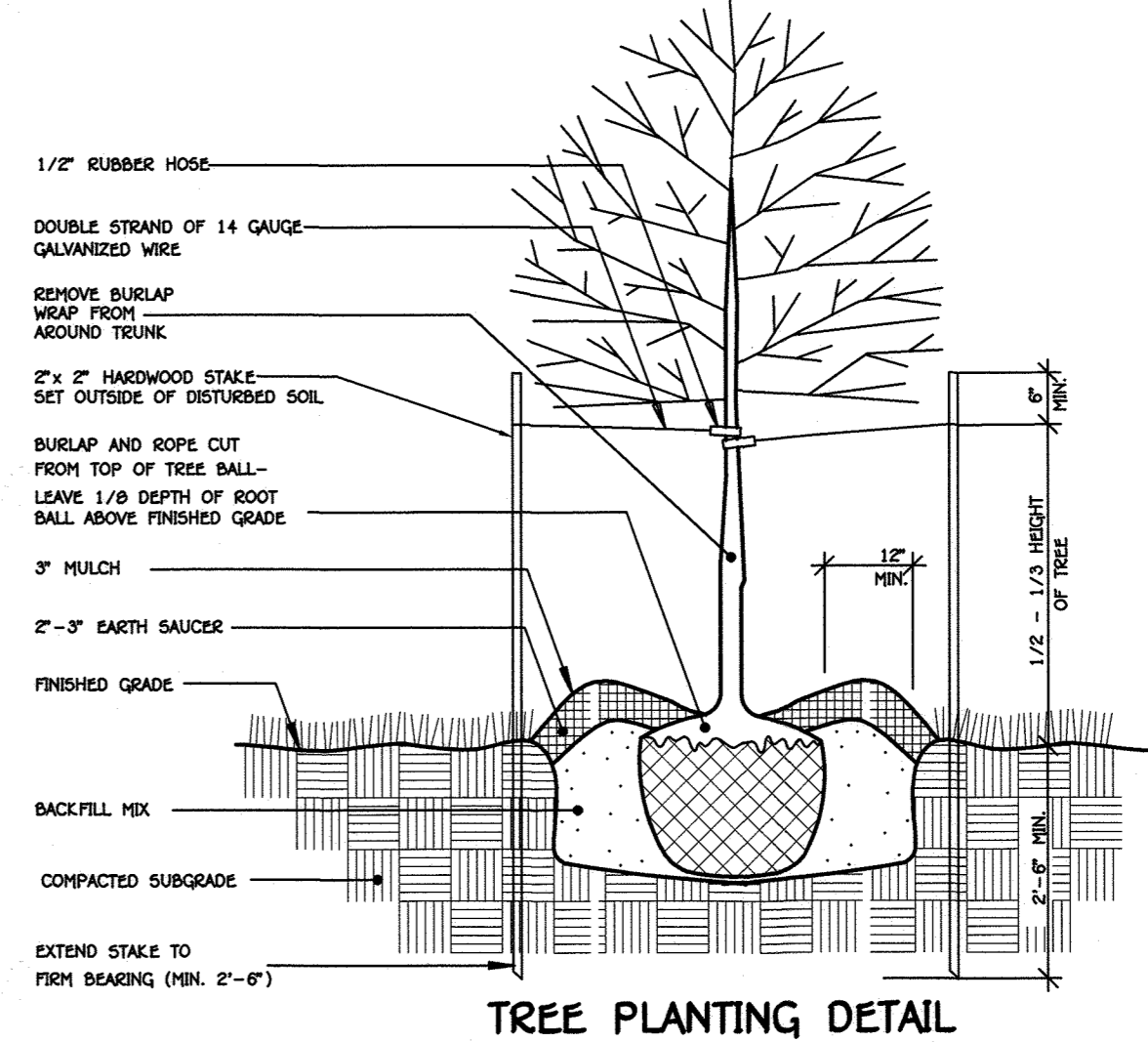
- AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER,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

CONSTRUCTION MONITORING

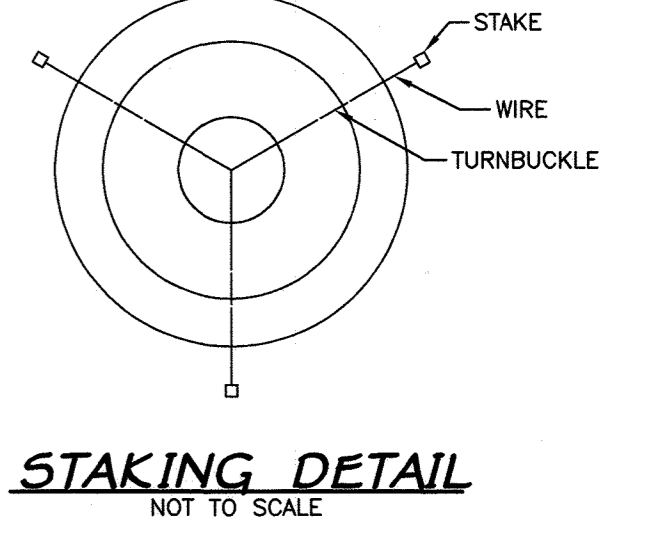
- THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK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



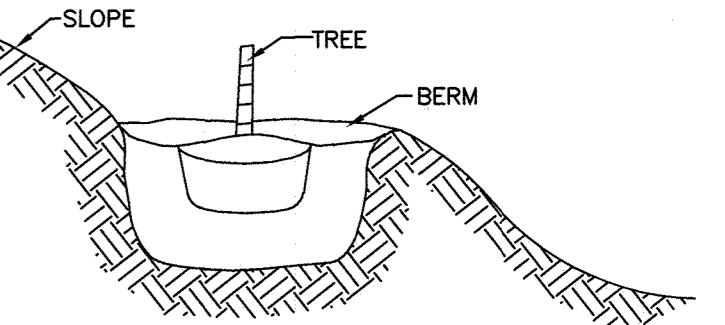
GAZEBO DETAIL
(OR APPROVED EQUAL)
SCALE: 1" = 30'



TREE PLANTING DETAIL



STAKING DETAIL
NOT TO SCALE



GRADING FOR PLANTING ON SLOPES
NOT TO SCALE

LANDSCAPE DEVELOPER'S CERTIFICATE

I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

Name: Paul Elkan Date: 5/26/2020

NO.	REVISIONS DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development Date: collu20
 Chief, Development Engineering Division Date: 9/4/20
 Approved: Howard County Department Of Public Works
 Chief, Bureau Of Highways Date: 8/21/2020



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3036, EXPIRATION DATE: 1/17/22.
 Stephanie Jenene Tuttle 5/29/20
 DATE

OWNERS
 PARCEL 04
 LENNIS HAMRICK
 4489 CENTENNIAL LANE
 ELLICOTT CITY, MD 21042
 PARCEL 449
 CHATRAU BUILDINGS, INC.
 5305 VILLAGE CENTER DRIVE
 SUITE 305
 COLUMBIA, MD 21044
 PARCEL 174 & PARCEL 05
 CENTENNIAL RESERVE, LLC
 308 MAGOTHY ROAD
 SEVERNA PARK, MARYLAND 21146
DEVELOPER
 CENTENNIAL RESERVE, LLC
 308 MAGOTHY ROAD
 SEVERNA PARK, MARYLAND 21146
 DAVE WESSNER
 240-319-1735

LANDSCAPE NOTES & DETAILS
CENTENNIAL RESERVE
 LOTS 1 THRU 17, OPEN SPACE LOT 18
 4509 & 4489 CENTENNIAL LANE & 10202 MAXINE STREET
 TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOS.:04, 05, 174, & 449
 ZONED R-20
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: MAY, 2020
 SHEET 12 OF 24

INFILTRATION AND FILTER SYSTEM CONSTRUCTION SPECIFICATIONS

INFILTRATION AND FILTER SYSTEMS EITHER TAKE ADVANTAGE OF EXISTING PERMEABLE SOILS OR CREATE A PERMEABLE MEDIUM SUCH AS SAND FOR WC), AND RE V. IN SOME INSTANCES WHERE PERMEABILITY IS GREAT, THESE FACILITIES MAY BE USED FOR QP AS WELL. THE MOST COMMON SYSTEMS INCLUDE INFILTRATION TRENCHES, INFILTRATION BASINS, SAND FILTERS, AND ORGANIC FILTERS.

WHEN PROPERLY PLANTED, VEGETATION WILL THRIVE AND ENHANCE THE FUNCTIONING OF THESE SYSTEMS. FOR EXAMPLE, PRE-TREATMENT BUFFERS WILL TRAP SEDIMENTS THAT OFTEN ARE BOUND WITH PHOSPHORUS AND METALS. VEGETATION PLANTED IN THE FACILITY WILL AID IN NUTRIENT UPTAKE AND WATER STORAGE. ADDITIONALLY, PLANT ROOTS WILL PROVIDE ARTERIES FOR STORMWATER TO PERMEATE SOIL FOR GROUNDWATER RECHARGE. FINALLY, SUCCESSFUL PLANTINGS PROVIDE AESTHETIC VALUE AND WILDLIFE HABITAT MAKING THESE FACILITIES MORE DESIRABLE TO THE PUBLIC.

DESIGN CONSTRAINTS:

- > PLANTING BUFFER STRIPS OF AT LEAST 20 FEET WILL CAUSE SEDIMENTS TO SETTLE OUT BEFORE REACHING THE FACILITY, THEREBY REDUCING THE CLOGGING.
- > DETERMINE AREAS THAT WILL BE SATURATED WITH WATER AND WATER TABLE DEPTH SO THAT APPROPRIATE PLANTS MAY BE SELECTED (HYDROLOGY WILL BE SIMILAR TO BIORETENTION FACILITIES, SEE FIGURE A.5 AND TABLE A.4 FOR PLANTING MATERIAL GUIDANCE).
- > PLANTS KNOWN TO SEND DOWN DEEP TAPROOTS SHOULD BE AVOIDED IN SYSTEMS WHERE FILTER FABRIC IS USED AS PART OF FACILITY DESIGN.
- > TEST SOIL CONDITIONS TO DETERMINE IF SOIL AMENDMENTS ARE NECESSARY.
- > PLANTS SHALL BE LOCATED SO THAT ACCESS IS POSSIBLE FOR STRUCTURE MAINTENANCE.
- > STABILIZE HEAVY FLOW AREAS WITH EROSION CONTROL MATS OR SOG.
- > TEMPORARILY DIVERT FLOWS FROM SEEDING AREAS UNTIL VEGETATION IS ESTABLISHED.
- > SEE TABLE A.5 FOR ADDITIONAL DESIGN CONSIDERATIONS.

BIO-RETENTION SOIL BED CHARACTERISTICS

THE CHARACTERISTICS OF THE SOIL FOR THE BIORETENTION FACILITY ARE PERHAPS AS IMPORTANT AS THE FACILITY LOCATION, SIZE, AND TREATMENT VOLUME. THE SOIL MUST BE PERMEABLE ENOUGH TO ALLOW RUNOFF TO FILTER THROUGH THE MEDIA, WHILE HAVING CHARACTERISTICS SUITABLE TO PROMOTE AND SUSTAIN A ROBUST VEGETATIVE COVER CROP. IN ADDITION, MUCH OF THE NUTRIENT POLLUTANT UPTAKE (NITROGEN AND PHOSPHORUS) IS ACCOMPLISHED THROUGH ABSORPTION AND MICROBIAL ACTIVITY WITHIN THE SOIL PROFILE. THEREFORE, SOILS MUST BALANCE THEIR CHEMICAL AND PHYSICAL PROPERTIES TO SUPPORT BOTH COMMUNITIES ABOVE AND BELOW GROUND.

THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR A LOAM/SAND MIX (SHOULD CONTAIN A MINIMUM 35 TO 60% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BE LESS THAN 25% BY WEIGHT. THE ENVIRONMENTAL QUALITY RESOURCES (EQRS), 1996; ENGINEERING TECHNOLOGY INC. AND BIOHABITATS, INC. (ETAB), 1993. SOILS SHOULD FALL WITHIN THE SM, ML, SC CLASSIFICATIONS OR THE UNITED SOIL CLASSIFICATION SYSTEM (USCS). A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.5"/HR) IS REQUIRED (A CONSERVATIVE VALUE OF 0.5 FEET PER DAY IS USED FOR DESIGN). THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR SEEDS FROM NOXIOUS WEEDS (E.G., JOHNSON GRASS, HUACWORT, NUTSEDGE, AND CANADA THISTLE OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COVER #10.01) SHOULD NOT BE PRESENT IN THE SOILS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN 12 TO 18 LIFTS THAT ARE LOOSELY COMPACTED (TAMPED LIGHTLY WITH A BACKHOE BUCKET OR TRAVELED BY DOZER TRACKS). THE SPECIFIC CHARACTERISTICS ARE PRESENTED IN TABLE A.3.

TABLE A.3 PLANTING SOIL CHARACTERISTICS

PARAMETER	VALUE
PH RANGE	5.2 TO 7.00
ORGANIC MATTER	1.5 TO 4.0% (BY WEIGHT)
MAGNESIUM	35 LBS. PER ACRE, MINIMUM
PHOSPHORUS (PHOSPHATE - P2O5)	75 LBS. PER ACRE, MINIMUM
POTASSIUM (POTASH - K2O)	85 LBS. PER ACRE, MINIMUM
SOLUBLE SALTS	500 PPM
CLAY	10 TO 25 %
SILT	30 TO 55 %
SAND	35 TO 60%

MULCH LAYER

THE MULCH LAYER PLAYS AN IMPORTANT ROLE IN THE PERFORMANCE OF THE BIORETENTION SYSTEM. THE MULCH LAYER HELPS MAINTAIN SOIL MOISTURE AND AVOIDS SURFACE SEALING, WHICH REDUCES PERMEABILITY. MULCH HELPS PREVENT EROSION, AND PROVIDES A MICROENVIRONMENT SUITABLE FOR SOIL BIOTA AT THE MULCH/SOIL INTERFACE. IT ALSO SERVES AS A PRE-TREATMENT LAYER, TRAPPING THE FINER SEDIMENTS, WHICH REMAIN SUSPENDED AFTER THE PRIMARY PRE-TREATMENT.

THE MULCH LAYER SHOULD BE STANDARD LANDSCAPE STYLE, SINGLE OR DOUBLE SHREDDED HARDWOOD MULCH OR CHIPS. THE MULCH LAYER SHOULD BE WELL AGED (STOCKPILED OR STORED FOR AT LEAST 12 MONTHS), UNIFORM IN COLOR, AND FREE OF OTHER MATERIALS, SUCH AS WEED SEEDS, SOIL, ROOTS, ETC. THE MULCH IS TO BE APPLIED TO A MAXIMUM DEPTH OF THREE INCHES. GRASS CLIPPINGS SHOULD NOT BE USED AS A MULCH MATERIAL.

PLANTING GUIDANCE

PLANT MATERIAL SELECTION SHOULD BE BASED ON THE GOAL OF SIMULATING A TERRESTRIAL FORESTED COMMUNITY OF NATIVE SPECIES. BIORETENTION SIMULATES AN UPLAND-SPECIES ECOSYSTEM. THE COMMUNITY SHOULD BE DOMINATED BY TREES, BUT HAVE A DISTINCT COMMUNITY OF UNDERSTORY TREES, SHRUBS AND HERBACEOUS MATERIALS. BY CREATING A DIVERSE, DENSE PLANT COVER, A BIORETENTION FACILITY WILL BE ABLE TO TRAP STORMWATER RUNOFF AND WITHSTAND URBAN STRESSES FROM INSECTS, DISEASE, DROUGHT, TEMPERATURE, WIND, AND EXPOSURE. THE PROPER SELECTION AND INSTALLATION OF PLANT MATERIALS IS KEY TO A SUCCESSFUL SYSTEM. THERE ARE ESSENTIALLY THREE ZONES WITHIN A BIORETENTION FACILITY (FIGURE A.5). THE LOWEST ELEVATION SUPPORTS PLANT SPECIES ADAPTED TO STANDING AND FLUCTUATING WATER LEVELS. THE MIDDLE ELEVATION SUPPORTS PLANTS THAT LIKE DRIER SOIL CONDITIONS, BUT CAN STILL TOLERATE OCCASIONAL INUNDATION BY WATER. THE OUTER EDGE IS THE HIGHEST ELEVATION AND GENERALLY SUPPORTS PLANTS ADAPTED TO DRIER CONDITIONS. A SAMPLE OF APPROPRIATE PLANT MATERIALS FOR BIORETENTION FACILITIES ARE INCLUDED IN TABLE A.4. THE LAYOUT OF PLANT MATERIAL SHOULD BE FLEXIBLE, BUT SHOULD FOLLOW THE GENERAL PRINCIPALS DESCRIBED IN TABLE A.5. THE OBJECTIVE IS TO HAVE A SYSTEM, WHICH RESEMBLES A RANDOM, AND NATURAL PLANT LAYOUT, WHILE MAINTAINING OPTIMAL CONDITIONS FOR PLANT ESTABLISHMENT AND GROWTH. FOR A MORE EXTENSIVE BIORETENTION PLAN, CONSULT ETAB, 1993 OR CLAYTOR AND SCHUELER, 1997.

PRIVATELY OWNED OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6) (4)

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDER BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

REVISIONS		DATE
NO.	DESCRIPTION	

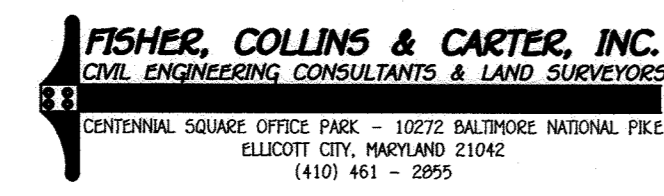
Approved: Department Of Planning And Zoning

Chief, Division of Land Development *[Signature]* *[Date]*

Chief, Development Engineering Division *[Signature]* *[Date]*

Approved: Howard County Department of Public Works

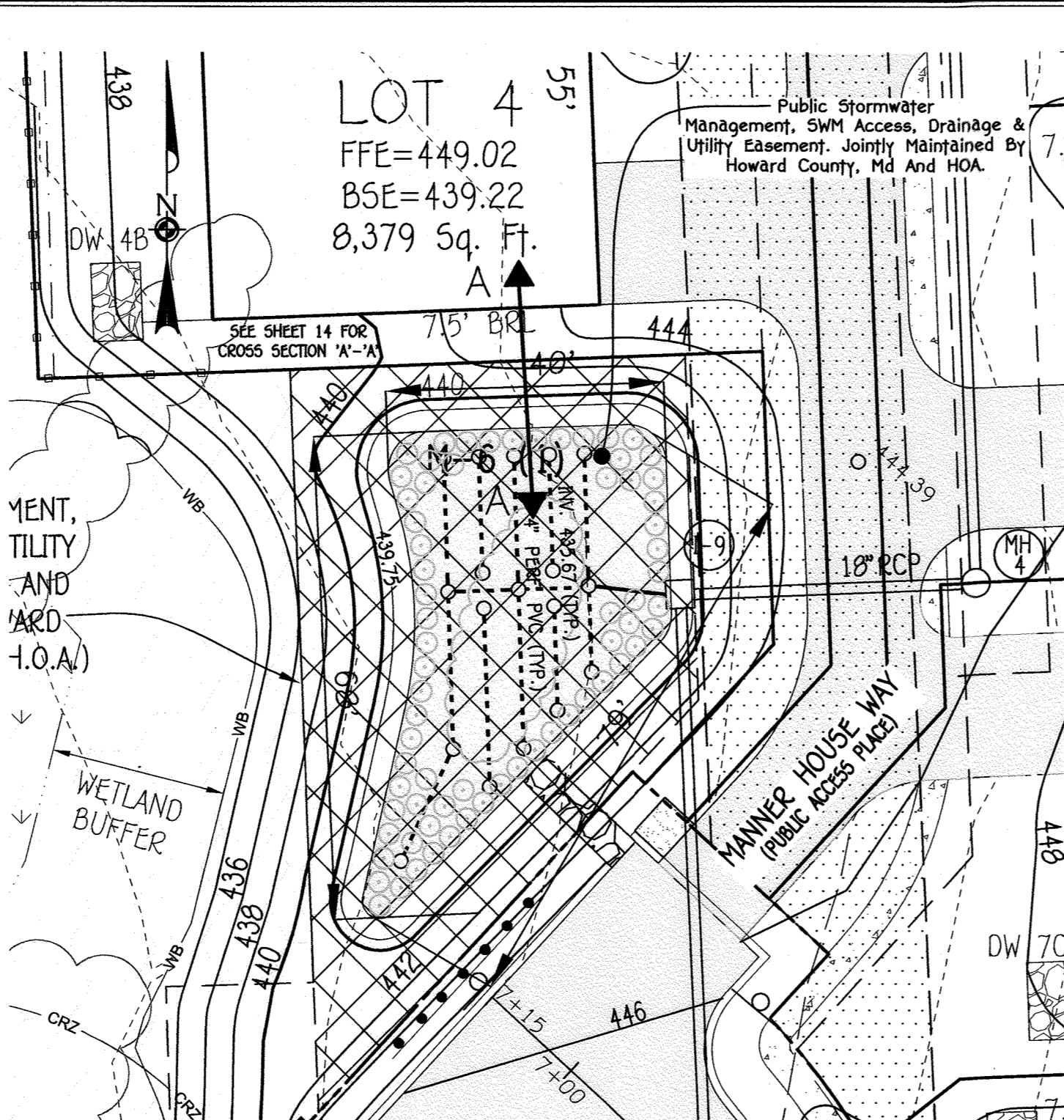
Chief, Bureau of Highways *[Signature]* *[Date]*



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.

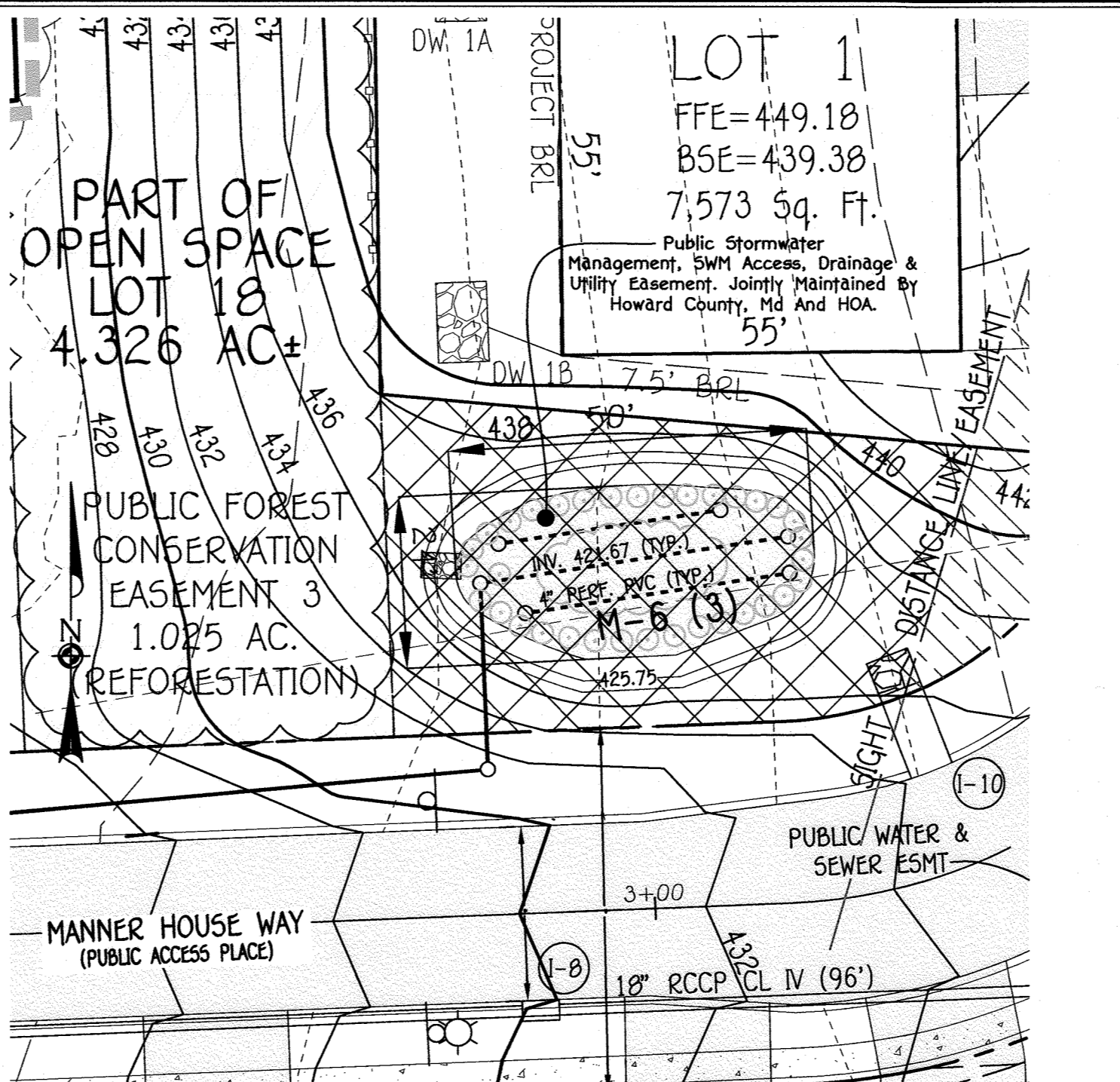
[Signature] *[Date]*



M-6 (1)

SCALE: 1" = 20'
DRAINAGE AREA: 36,650 sq.ft.
FILTER AREA: 1,884 sq.ft.
ELEVATION: 438.75
PERIMETER: 194'
WEIR ELEVATION: 439.75

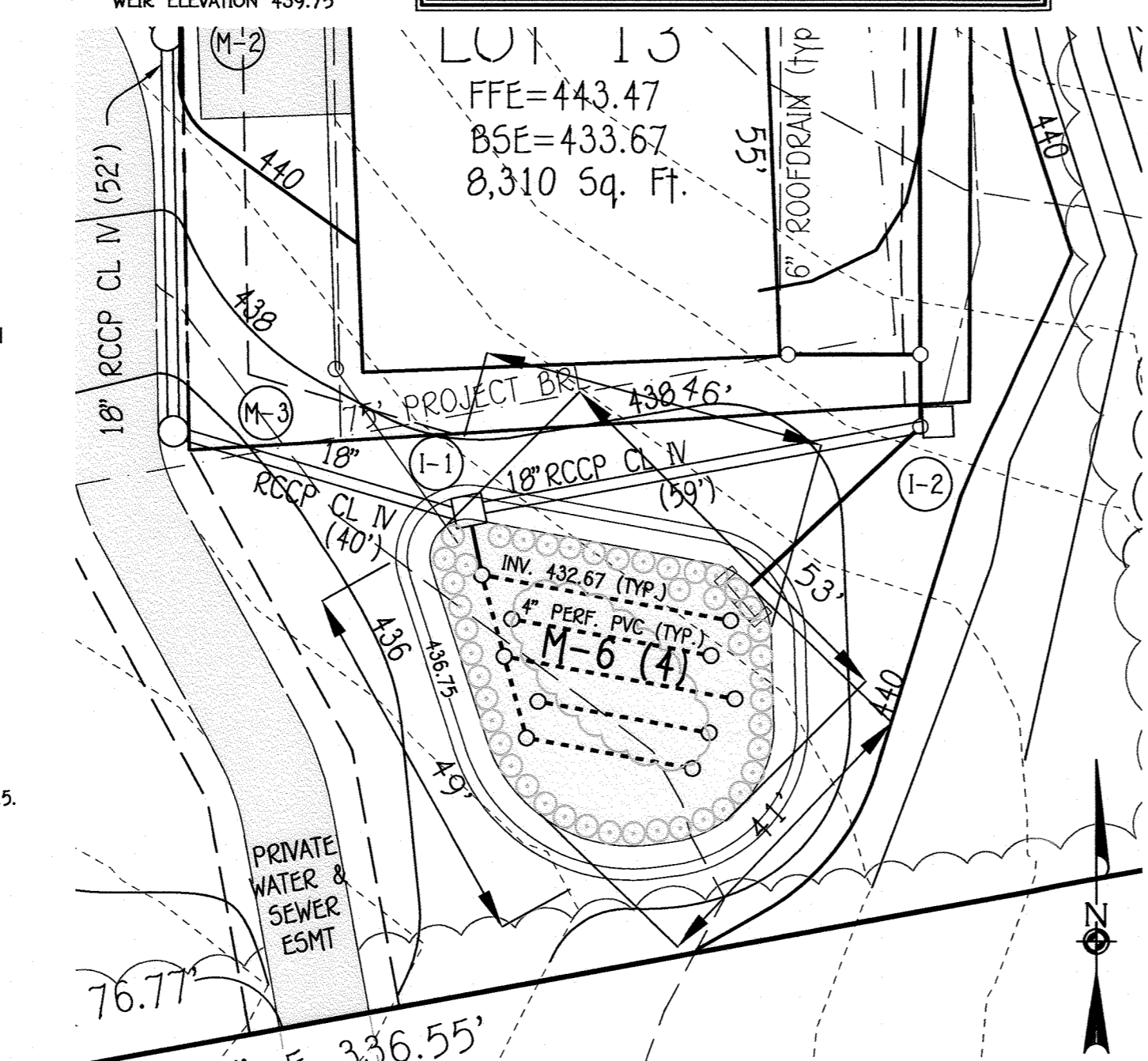
QUANTITY	NAME	MAXIMUM SPACING (FT.)
157 (471 sq.ft.)	GRASSES	36" o.c.
68	SHRUBS	36"-40" o.c.



M-6 (3)

SCALE: 1" = 20'
DRAINAGE AREA: 21,098 sq.ft.
FILTER AREA: 937 sq.ft.
ELEVATION: 424.75
PERIMETER: 120'
WEIR ELEVATION: 425.75

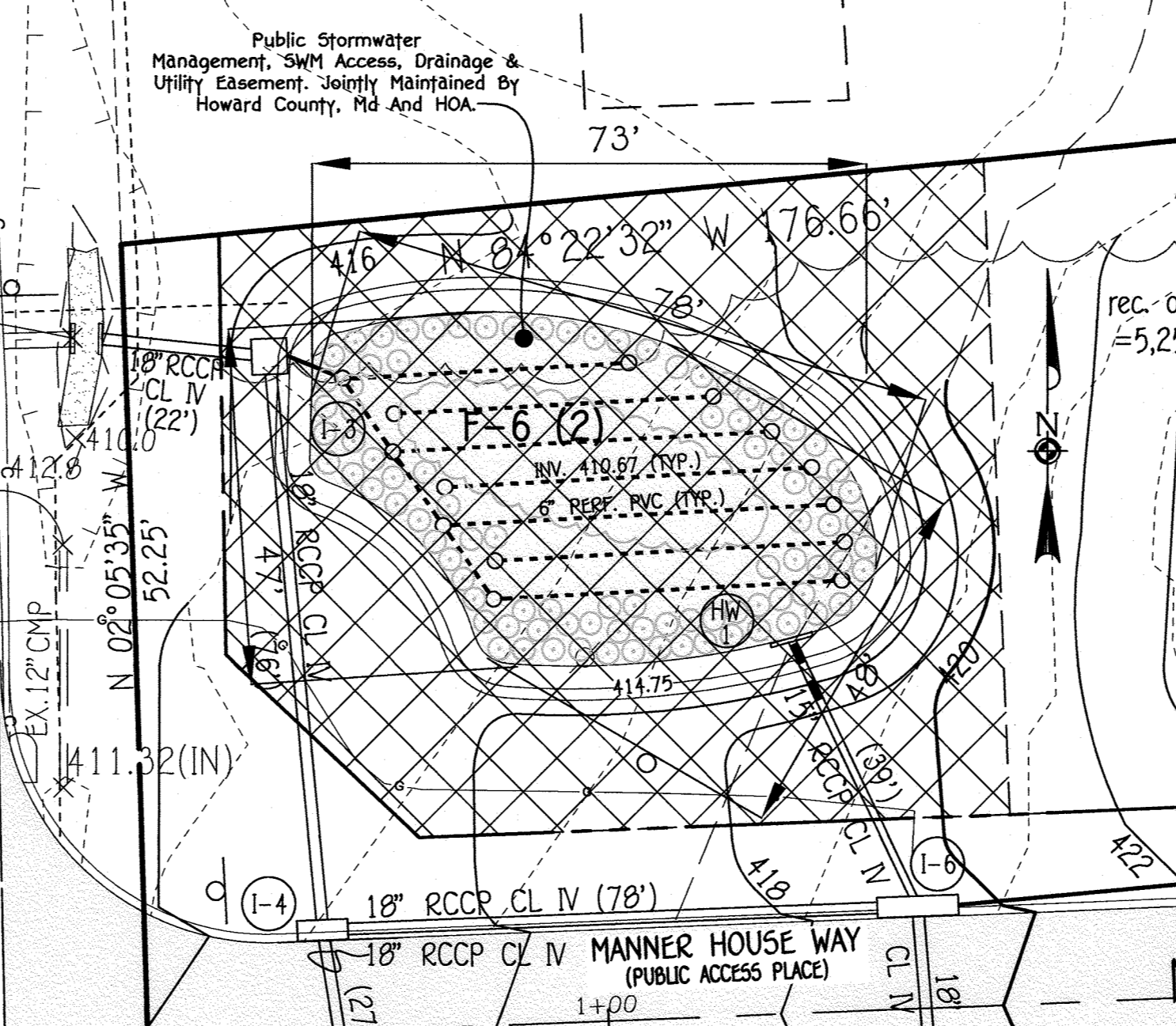
QUANTITY	NAME	MAXIMUM SPACING (FT.)
78 (235 sq.ft.)	GRASSES	36" o.c.
34	SHRUBS	36"-40" o.c.



M-6 (4)

SCALE: 1" = 20'
DRAINAGE AREA: 92,963 sq.ft.
FILTER AREA: 1,456 sq.ft.
ELEVATION: 435.75
PERIMETER: 143'
WEIR ELEVATION: 436.75

QUANTITY	NAME	MAXIMUM SPACING (FT.)
129 (388 sq.ft.)	GRASSES	36" o.c.
45	SHRUBS	36"-40" o.c.

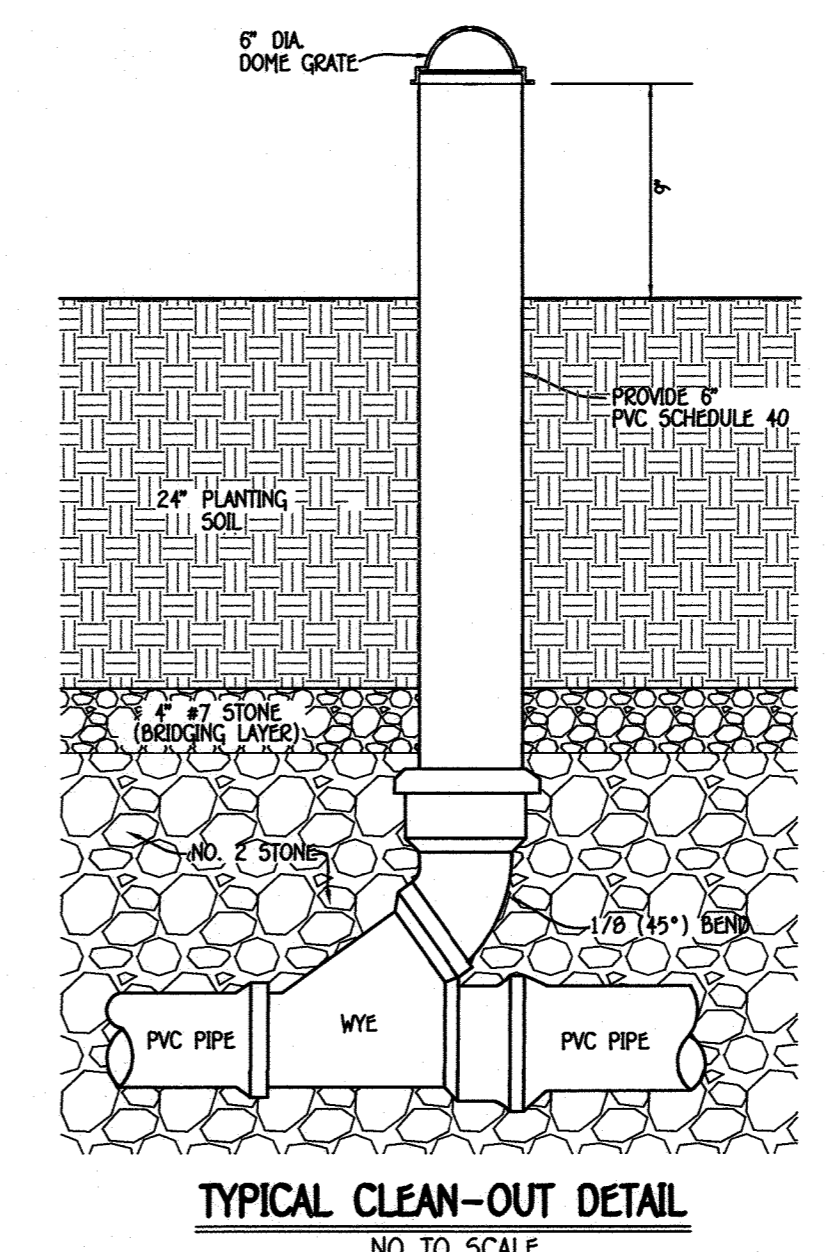
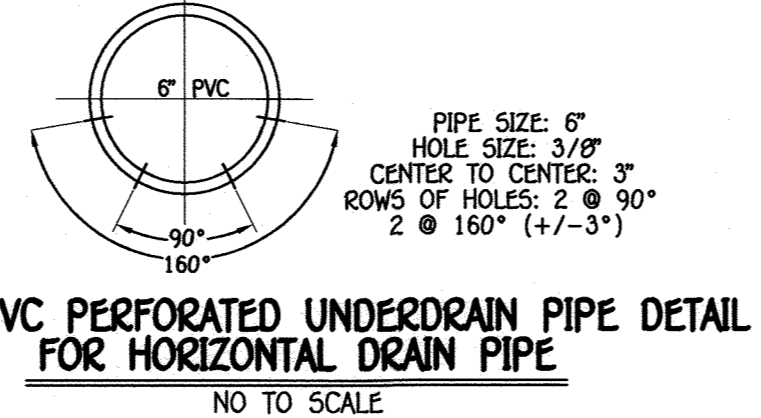


F-6 (2)

SCALE: 1" = 20'
DRAINAGE AREA: 69,442 sq.ft.
FILTER AREA: 2,555 sq.ft.
ELEVATION: 413.75
PERIMETER: 198'
WEIR ELEVATION: 414.75

QUANTITY	NAME	MAXIMUM SPACING (FT.)
221 (664 sq.ft.)	GRASSES	36" o.c.
91	SHRUBS	36"-40" o.c.

FACILITY NO.	A	B
M-6 (1)	438.75	435.67
F-6 (2)	413.75	410.67
M-6 (3)	424.75	421.67
M-6 (4)	435.75	432.67

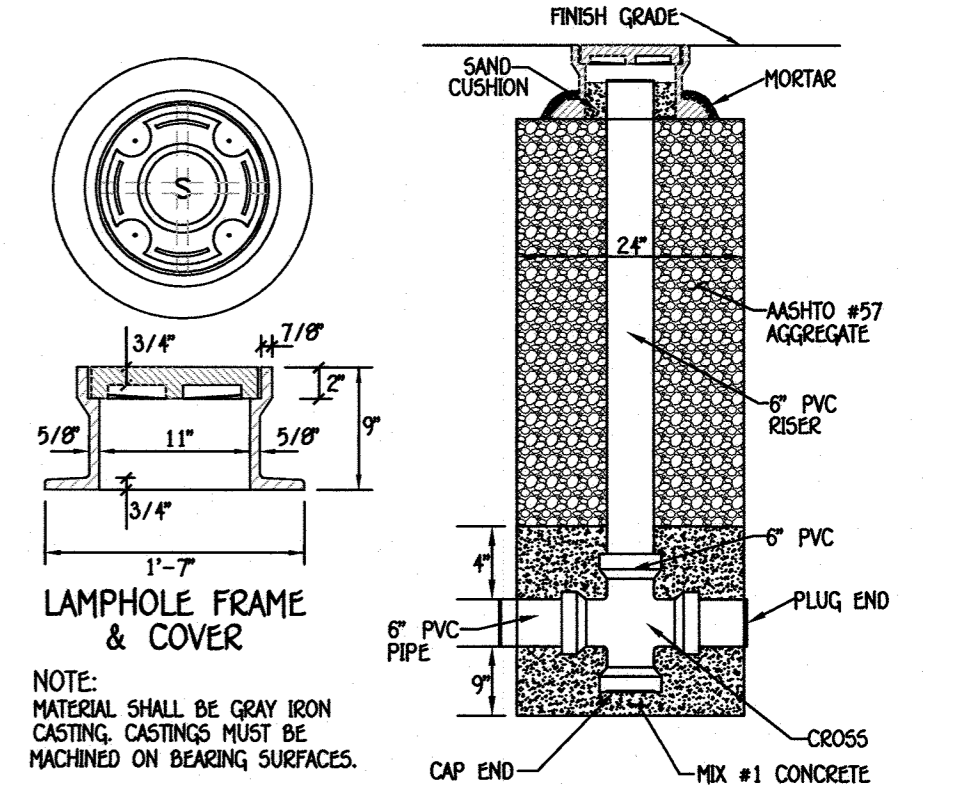


OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (M-5)

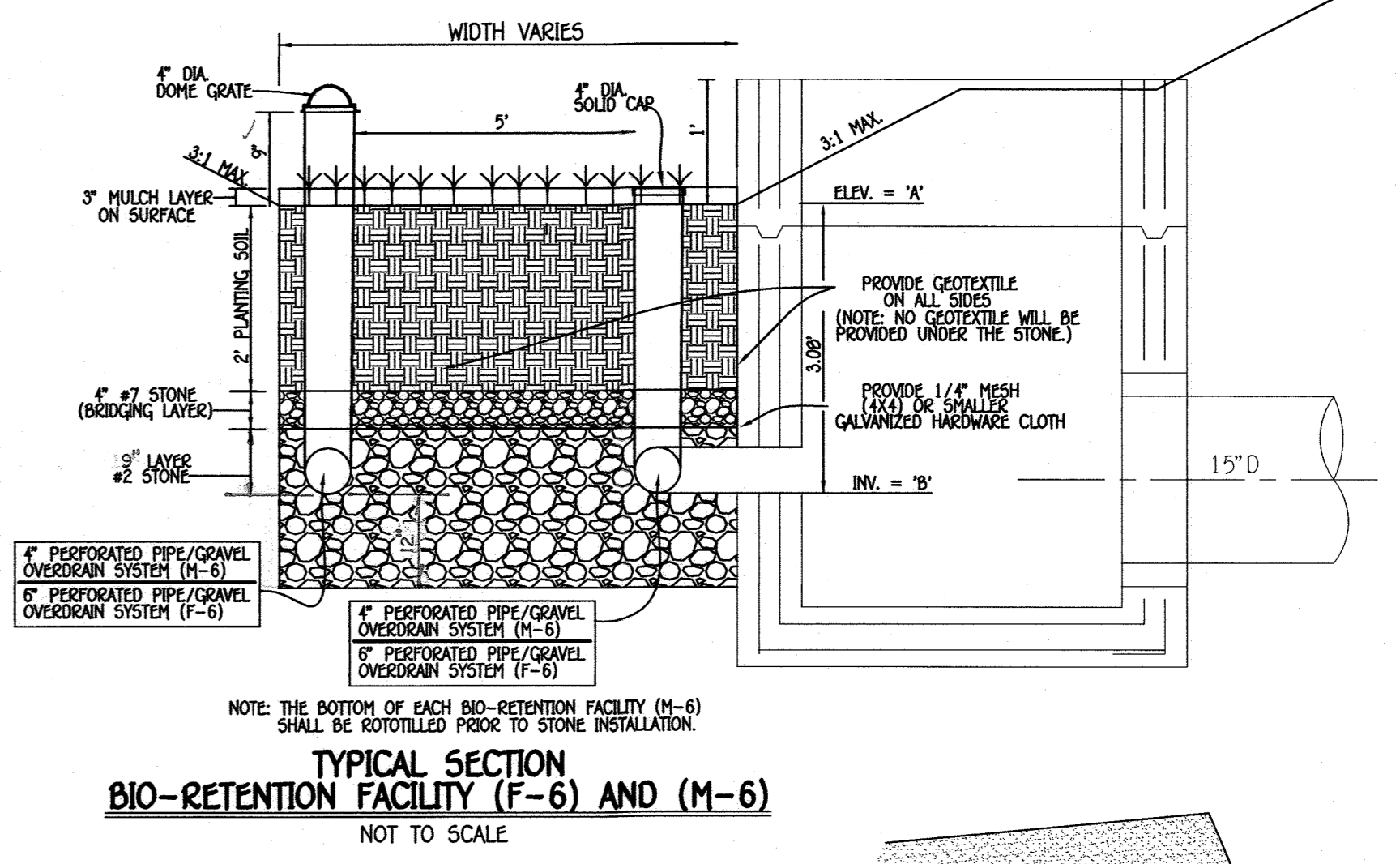
- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.

STORMWATER MANAGEMENT PRACTICES

LOT NO.	STREET ADDRESS	DRY WELLS (Y/N)	MICRO BIO-RETENTION (Y/N)
1	5027 MANNER HOUSE WAY	Y(3)	Y PROVIDED BY M-(6)(3)
2	5031 MANNER HOUSE WAY	Y(3)	Y PROVIDED BY M-(6)(2)
3	5035 MANNER HOUSE WAY	Y(3)	Y PROVIDED BY M-(6)(1)
4	5049 MANNER HOUSE WAY	Y(2)	Y PROVIDED BY M-(6)(1)
5	5027 MANNER HOUSE WAY	Y(2)	Y PROVIDED BY M-(6)(1)
6	5048 MANNER HOUSE WAY	Y(2)	Y PROVIDED BY M-(6)(1)
7	5044 MANNER HOUSE WAY	Y(3)	Y PROVIDED BY M-(6)(1)
8	5040 MANNER HOUSE WAY	Y(3)	Y PROVIDED BY M-(6)(1)
9	5036 MANNER HOUSE WAY	Y(2)	Y PROVIDED BY M-(6)(1)
10	5032 MANNER HOUSE WAY	Y(1)	Y PROVIDED BY M-(6)(4)
11	5028 MANNER HOUSE WAY	Y(1)	Y PROVIDED BY M-(6)(1)
12	5024 MANNER HOUSE WAY	Y(1)	Y PROVIDED BY M-(6)(4)
13	5020 MANNER HOUSE WAY	N	Y PROVIDED BY M-(6)(1)
14	5012 MANNER HOUSE WAY	Y(3)	Y PROVIDED BY M-(6)(2)
15	5008 MANNER HOUSE WAY	Y(3)	Y PROVIDED BY M-(6)(2)
16	5004 MANNER HOUSE WAY	Y(3)	Y PROVIDED BY M-(6)(2)
17	5000 MANNER HOUSE WAY	Y(3)	Y PROVIDED BY M-(6)(2)

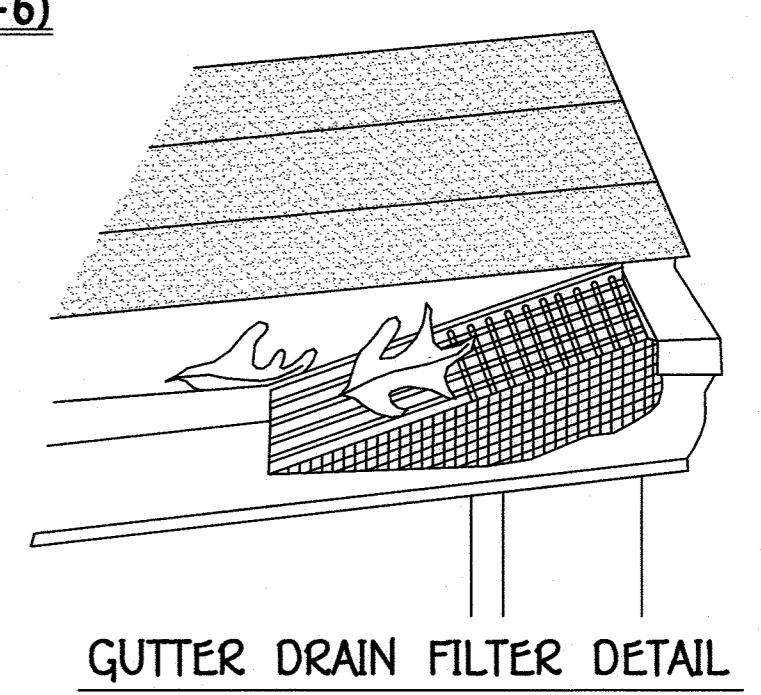


CLEANOUT/ WATER QUALITY SAMPLING PORT DETAIL

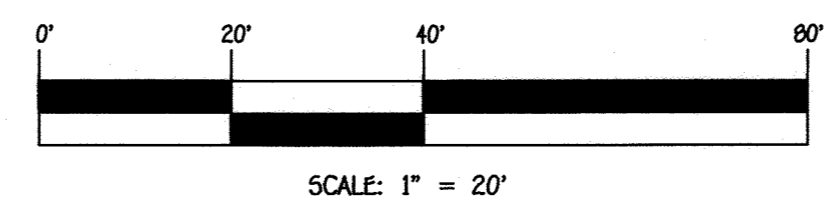


PUBLICLY OWNED AND JOINTLY MAINTAINED OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6) (1), (3) & (F-6) (2)

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDER BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.



GUTTER DRAIN FILTER DETAIL



OWNERS

PARCEL 04
LENNIS HAMROCK
4469 CENTENNIAL LANE
ELLICOTT CITY, MD 21042

PARCEL 449
CENTENNIAL RESERVE, INC.
5305 VILLAGE CENTER DRIVE
SUITE 305
COLUMBIA, MD 21044

PARCEL 174 & PARCEL 05
CENTENNIAL RESERVE, LLC
308 MAGDOFF ROAD
SEVERNA PARK, MARYLAND 21146

DEVELOPER

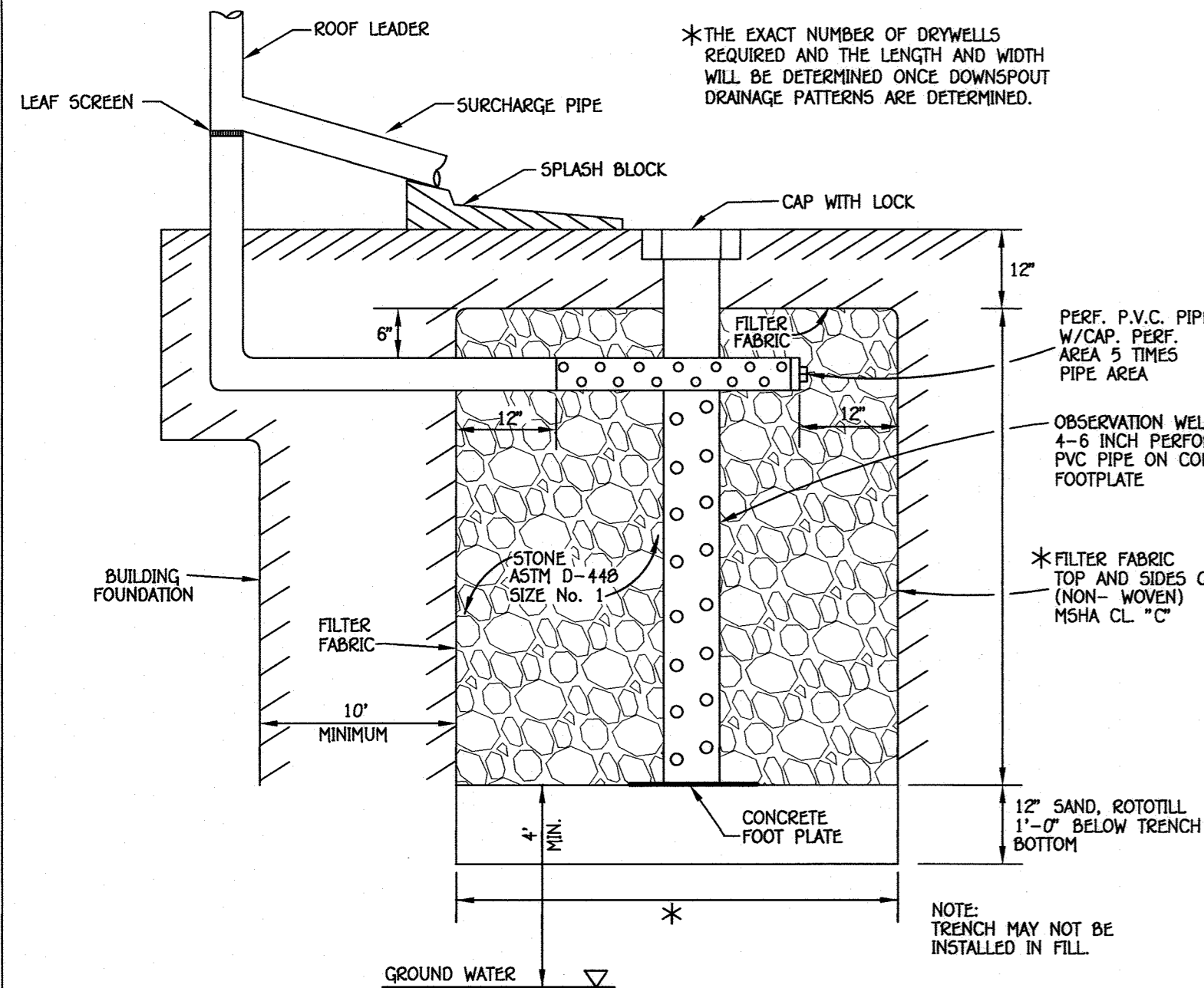
CENTENNIAL RESERVE, LLC
308 MAGDOFF ROAD
SEVERNA PARK, MARYLAND 21146
DAVE WOODS/SENSE
240-319-1795

STORMWATER MANAGEMENT NOTES AND DETAILS

CENTENNIAL RESERVE

LOTS 1 THRU 17, OPEN SPACE LOT 18
4509 & 4409 CENTENNIAL LANE & 10202 MAXINE STREET

TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOS.: 04, 05, 174, & 449
ZONED R-20
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MAY, 2020
SHEET 13 OF 24



DRY WELL DETAIL
NOT TO SCALE

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (M-5)

- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS. D. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.

CONSTRUCTION CRITERIA:

THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING CONSTRUCTION OF PROJECTS WITH DRY WELLS:

EROSION AND SEDIMENT CONTROL:
FINAL GRADING FOR PROPOSED DRY WELLS SHOULD NOT TAKE PLACE UNTIL THE SURROUNDING SITE IS COMPLETELY STABILIZED. IF THIS CANNOT BE ACCOMPLISHED, RUNOFF FROM DISTURBED AREAS SHALL BE DIVERTED.

SOIL COMPACTION:
EXCAVATION SHOULD BE CONDUCTED IN DRY CONDITIONS WITH EQUIPMENT LOCATED OUTSIDE OF THE PRACTICE TO MINIMIZE BOTTOM AND SIDEWALL COMPACTION. CONSTRUCTION OF A DRY WELL SHALL BE PERFORMED WITH LIGHTWEIGHT, WIDE-TRACKED EQUIPMENT TO MINIMIZE DISTURBANCE AND COMPACTION. EXCAVATED MATERIALS SHALL BE PLACED IN A CONTAINED AREA.

UNDERGROUND CHAMBER:
A SUBSURFACE PREFABRICATED CHAMBER MAY BE USED.

DRY WELL BOTTOM:
THE BOTTOM SHALL BE AS LEVEL AS POSSIBLE TO MINIMIZE POOLED WATER IN SMALL AREAS THAT MAY REDUCE OVERALL INFILTRATION AND LONGEVITY.

FILTER CLOTH:
FILTER CLOTH SHALL NOT BE INSTALLED ON THE BOTTOM OF THE WELL. NON-WOVEN FILTER CLOTH SHOULD BE USED TO LINE THE TOP AND SIDES OF THE DRY WELL TO PREVENT THE PORE SPACE BETWEEN THE STONES FROM BEING BLOCKED BY THE SURROUNDING NATIVE MATERIAL.

GRAVEL MEDIA:
THE AGGREGATE SHALL BE COMPOSED OF AN 18 TO 48-INCH LAYER OF CLEAN WASHED, OPEN GRADED MATERIAL WITH 40% POROSITY (E.G., ASTM D448 4, 5, OR 6 STONE OR EQUIVALENT).

DRY WELL CHART									
LOT NO.	DRYWELL NUMBER	NO. OF DOWNSPOUTS	AREA OF ROOF	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF STORAGE	AREA OF TREATMENT	NO. OF DRYWELLS	DIMENSIONS OF DRYWELLS
1	M-5 (1A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
1	M-5 (1B)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
1	M-5 (1C)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
2	M-5 (2A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
2	M-5 (2B)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
2	M-5 (2C)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
3	M-5 (3A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
3	M-5 (3B)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
3	M-5 (3C)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
4	M-5 (4A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
4	M-5 (4B)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
5	M-5 (5A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
5	M-5 (5B)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
6	M-5 (6A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
6	M-5 (6B)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
7	M-5 (7A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
7	M-5 (7B)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
7	M-5 (7C)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
8	M-5 (8A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
8	M-5 (8B)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
8	M-5 (8C)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
9	M-5 (9A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
9	M-5 (9B)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
10	M-5 (10A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
11	M-5 (11A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
12	M-5 (12A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
14	M-5 (14A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
14	M-5 (24A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
14	M-5 (14B)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
15	M-5 (15A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
15	M-5 (15B)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
15	M-5 (15C)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
16	M-5 (16A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
16	M-5 (16B)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
16	M-5 (16C)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
17	M-5 (17A)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
17	M-5 (17B)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'
17	M-5 (17C)	2	756 SqFt	108 CuFt	123 CuFt	100%	100%	1	11" X 7' X 4'

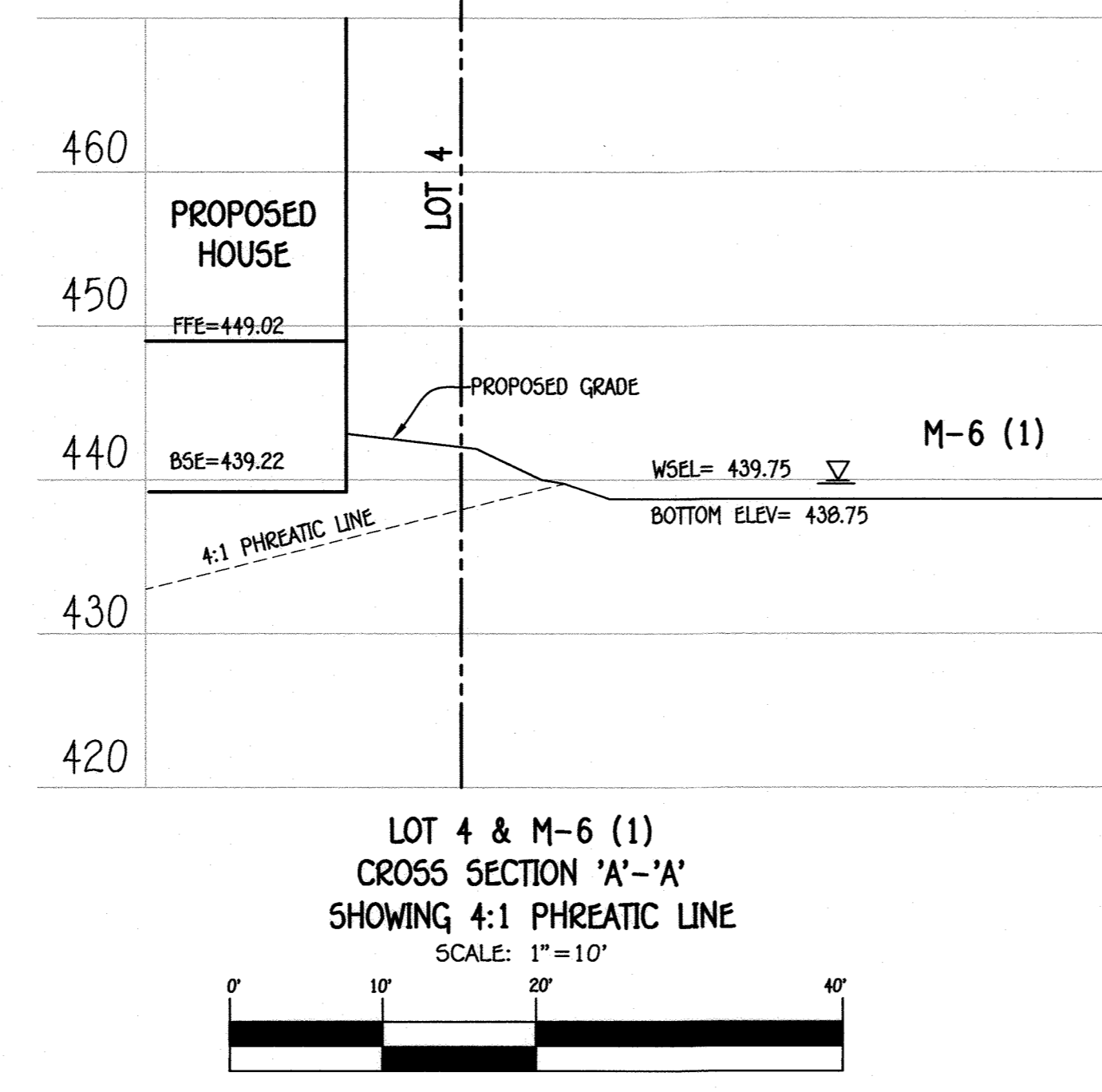
REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division of Land Development
Date: 8/20/20

Chief, Development Engineering Division
Date: 8/20/20

Approved: Howard County Department of Public Works
Chief, Bureau of Highways
Date: 8/21/2020

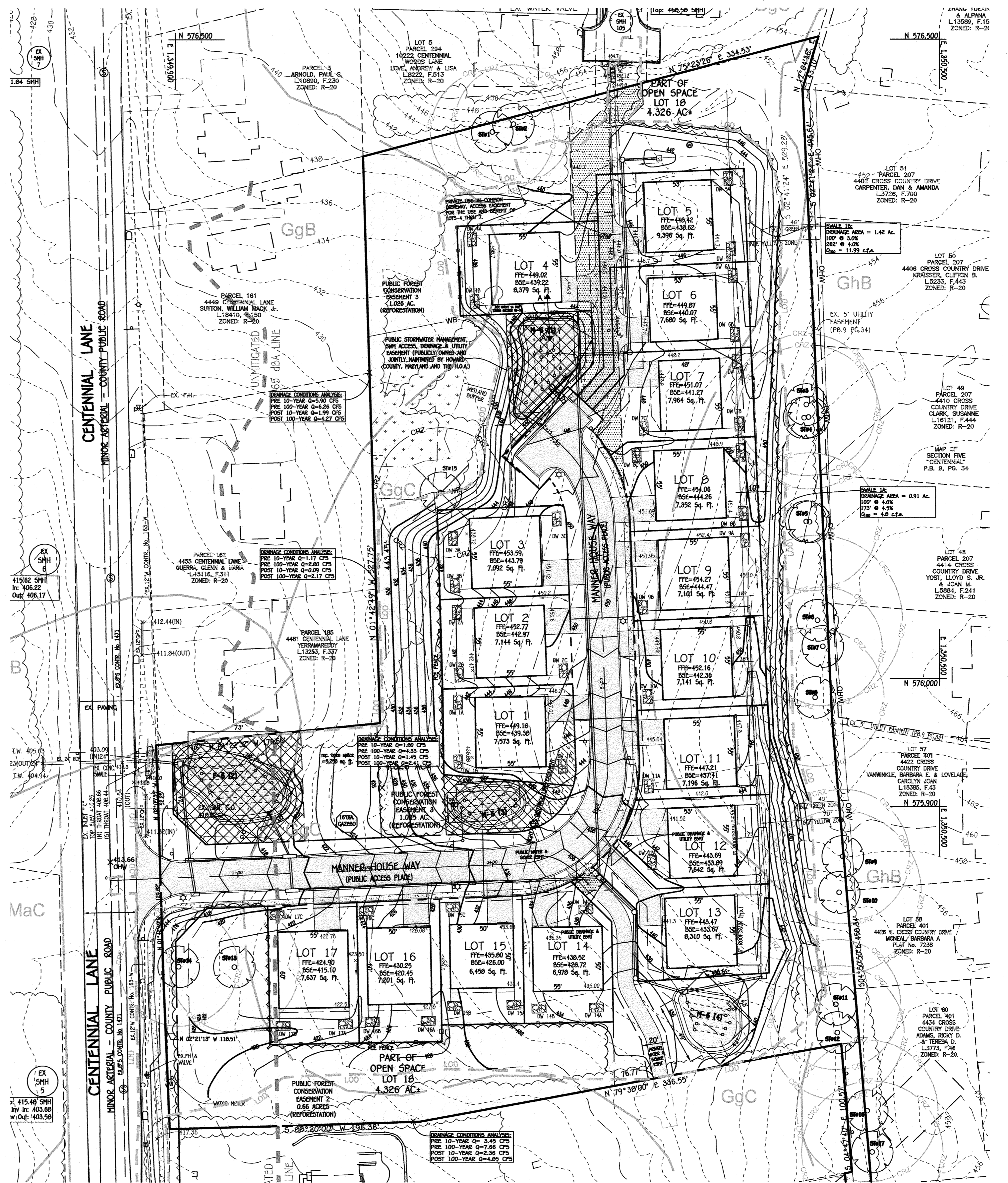


NOTE: THIS SHEET IS FOR S.W.M. ONLY.



PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.

Frank Mawlanian II
Date: 8/20/20



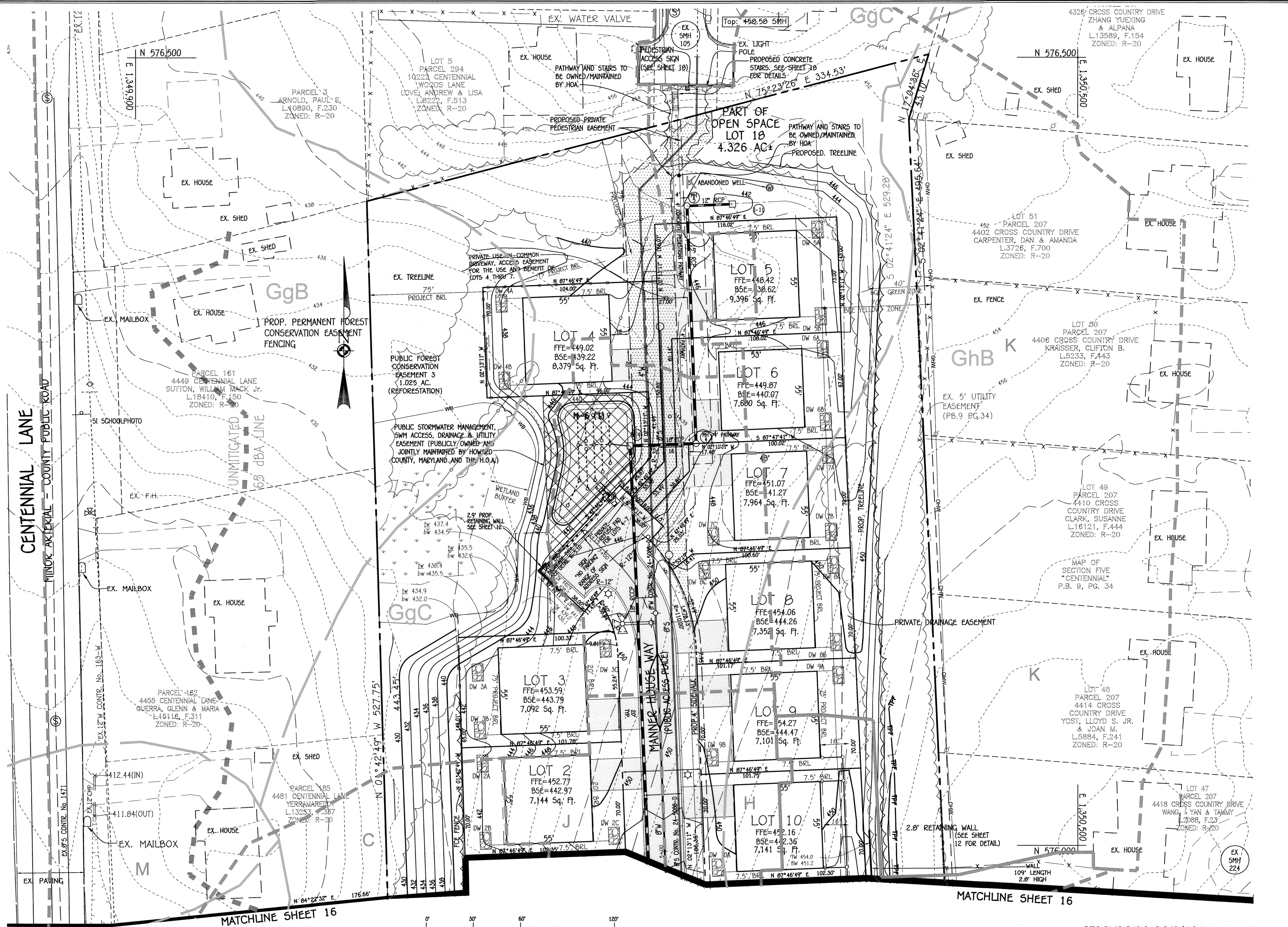
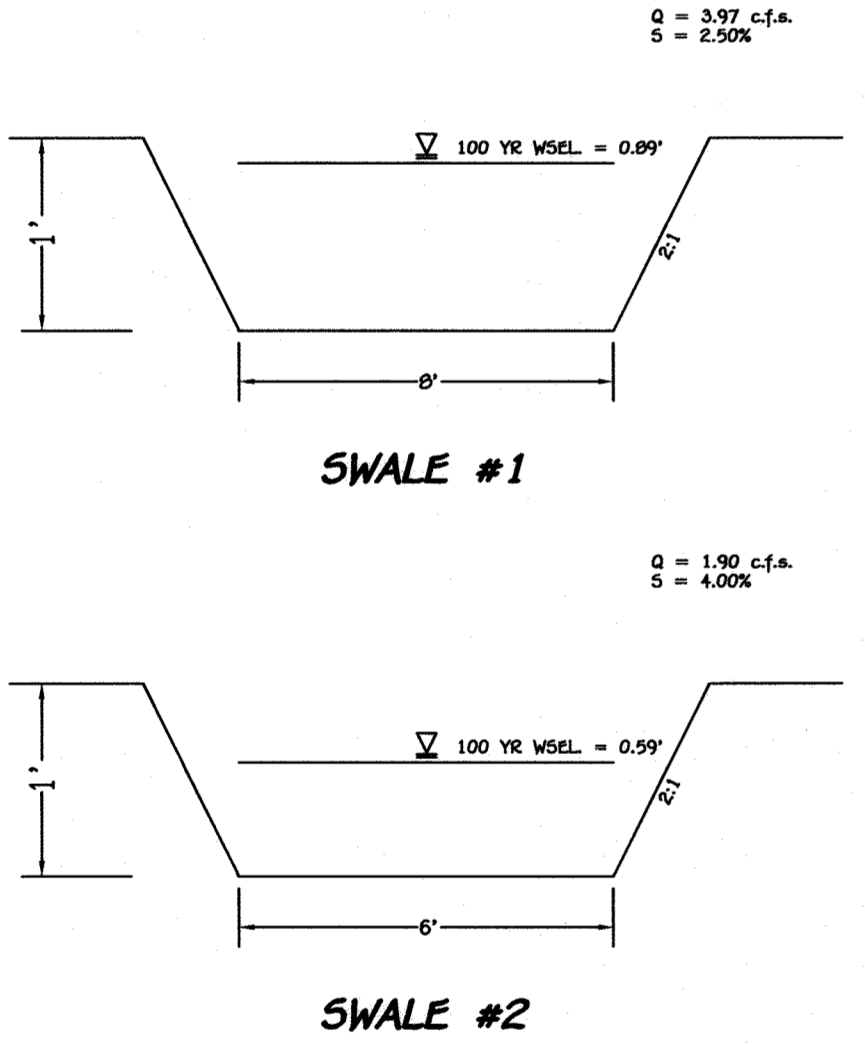
OWNERS	DEVELOPER
PARCEL 04 LENNIS HAMRICK 4469 CENTENNIAL LANE ELICOTT CITY, MD 21042	CENTENNIAL RESERVE, LLC 308 MAGOOTH ROAD SEVERNA PARK, MARYLAND 21146
PARCEL 449 CHAPEL BUILDERS, INC. 5305 VILLAGE CENTER DRIVE SUITE 305 COLUMBIA, MD 21044	DAVE WOODS/ENR 240-319-1755
PARCEL 174 & PARCEL 05 CENTENNIAL RESERVE, LLC 308 MAGOOTH ROAD SEVERNA PARK, MARYLAND 21146	

STORMWATER MANAGEMENT PLAN
CENTENNIAL RESERVE
LOTS 1 THRU 17, OPEN SPACE LOT 18
4509 & 4489 CENTENNIAL LANE & 10202 MAXINE STREET

TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOS.: 04, 05, 174, & 449
ZONED R-20
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MAY, 2020
SHEET 14 OF 24

SOILS LEGEND			
SOIL	NAME	CLASS	K' VALUE
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.20
GgC	Glenelg loam, 8 to 15 percent slopes	B	0.20
GhB	Glenelg-Urban land complex, 0 to 8 percent slopes	B	0.20

DRAINAGE AREA DATA					
AREA ID	STRUCTURE NO.	AREA	% C	ZONED	% IMP.
A	I-1	0.20 AC.	.15	R-20	37%
B	I-2	1.01 AC.	.25	R-20	12%
C	I-3	1.62 AC.	.15	R-20	0%
D	I-4	0.02 AC.	.95	R-20	100%
E	I-5	0.10 AC.	.54	R-20	49%
F	I-6	0.15 AC.	.57	R-20	52%
G	I-7	0.28 AC.	.69	R-20	67%
H	I-8	0.85 AC.	.63	R-20	60%
I	I-9	0.62 AC.	.54	R-20	49%
J	I-10	0.45 AC.	.56	R-20	54%
K	I-11	3.04 AC.	.21	R-20	7%
L	I-12	0.43 AC.	.91	R-20	95%
M	EX. 'K'	5.55 AC.	.41	R-20	32%



REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development: *[Signature]* Date: 8/4/20

Chief, Development Engineering Division: *[Signature]* Date: 8/4/20

Approved: Howard County Department Of Public Works

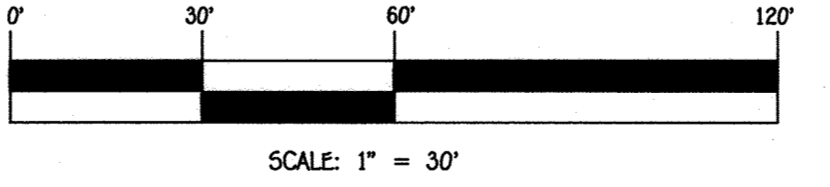
Chief, Bureau Of Highways: *[Signature]* Date: 8/21/2020



PROFESSIONAL CERTIFICATION

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[Signature] 5/28/20
FRANK HAVALANJAN E.



NOTE: THIS SHEET IS FOR DRAINAGE AREAS & SOILS ONLY.

OWNERS		DEVELOPER
PARCEL 04 LENNIS HAMROCK 4489 CENTENNIAL LANE ELICOTT CITY, MD 21042	PARCEL 449 CHITAU BUILDERS, INC. 5305 VILLAGE CENTER DRIVE SUITE 305 COLUMBIA, MD 21044	CENTENNIAL RESERVE, LLC 308 MAGOTHY ROAD SEVERNA PARK, MARYLAND 21146 DAVE MOESSNER 240-319-1735
PARCEL 174 & PARCEL 05 CENTENNIAL RESERVE, LLC 308 MAGOTHY ROAD SEVERNA PARK, MARYLAND 21146		

STORMDRAIN DRAINAGE AREA MAP

CENTENNIAL RESERVE

LOTS 1 THRU 17, OPEN SPACE LOT 18

4509 & 4489 CENTENNIAL LANE & 10202 MAXINE STREET

TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOS.: 04, 05, 174, & 449

ZONED R-20

SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: MAY, 2020

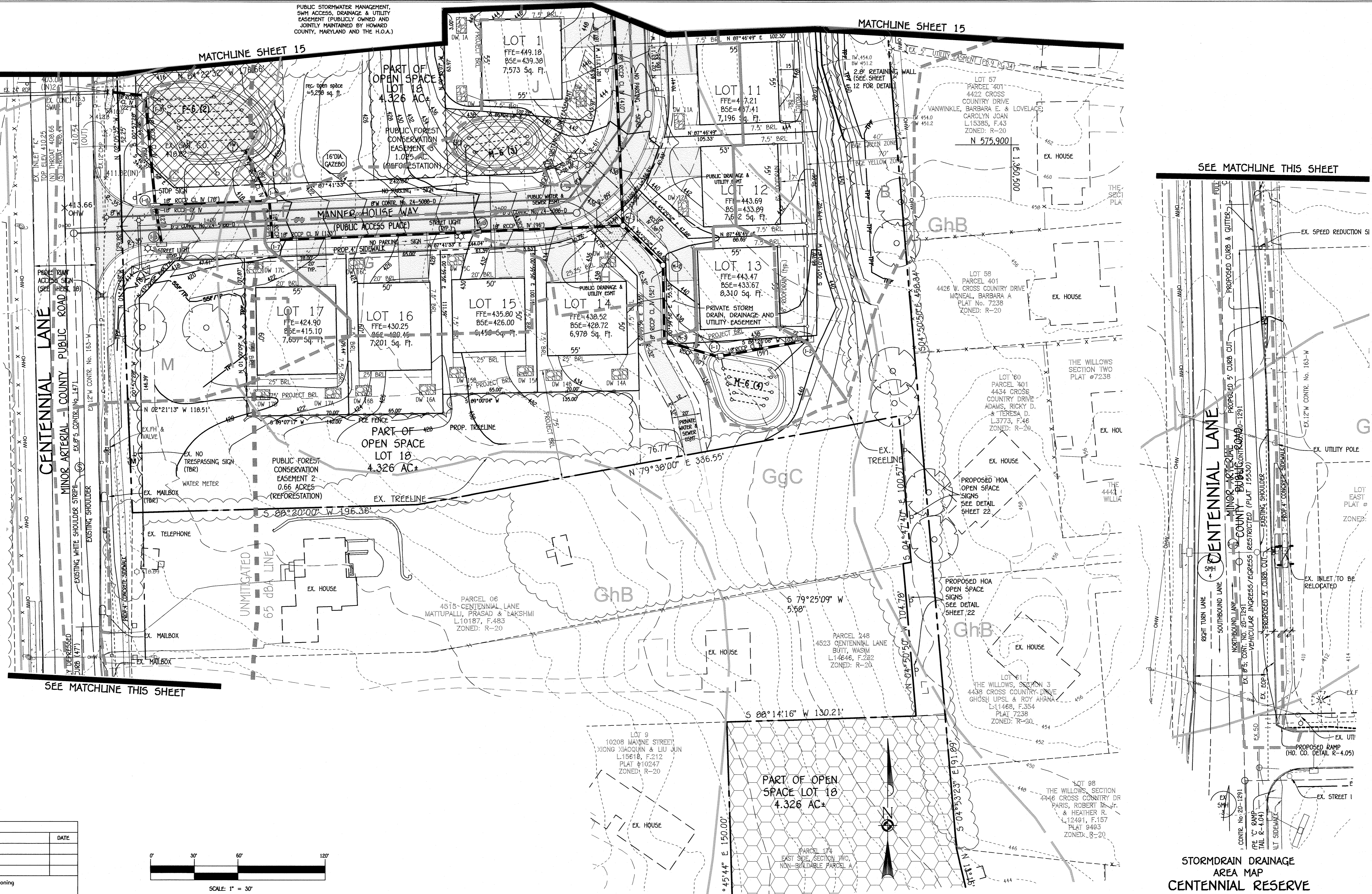
SHEET 15 OF 24

F-20-010

PUBLIC STORMWATER MANAGEMENT, SWM ACCESS, DRAINAGE & UTILITY EASEMENT (PUBLICLY OWNED AND JOINTLY MAINTAINED BY HOWARD COUNTY, MARYLAND AND THE H.O.A.)

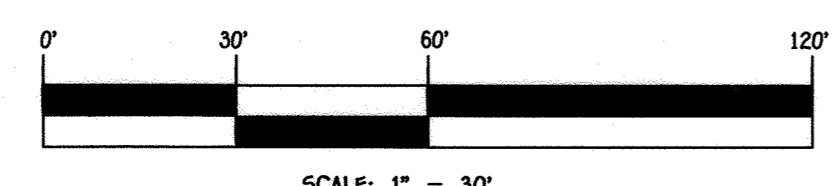
MATCHLINE SHEET 15

MATCHLINE SHEET 15



SEE MATCHLINE THIS SHEET

SEE MATCHLINE THIS SHEET



REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development: *[Signature]* Date: 9/4/20

Chief, Development Engineering Division: *[Signature]* Date: 8/21/2020

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways: *[Signature]* Date: 8/21/2020



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.

[Signature] Date: 5/28/20

FRANK MANALANGAN II

OWNERS	DEVELOPER
PARCEL 04 LENNIS HANBICK 4489 CENTENNIAL LANE ELLCOTT CITY, MD 21042	CENTENNIAL RESERVE, LLC 308 MAGOTHY ROAD SEVERNA PARK, MARYLAND 21146
PARCEL 449 CHITKAU BUILDINGS, INC. 5305 VILLAGE CENTER DRIVE SUITE 305 COLUMBIA, MD 21044	DAVE MOESSNER 240-319-1735
PARCEL 174 & PARCEL 05 CENTENNIAL RESERVE, LLC 308 MAGOTHY ROAD SEVERNA PARK, MARYLAND 21146	

STORMDRAIN DRAINAGE AREA MAP

CENTENNIAL RESERVE

LOTS 1 THRU 17, OPEN SPACE LOT 18

4509 & 4489 CENTENNIAL LANE & 10202 MAXINE STREET

TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOS.:04, 05, 174, & 449

ZONED R-20

SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

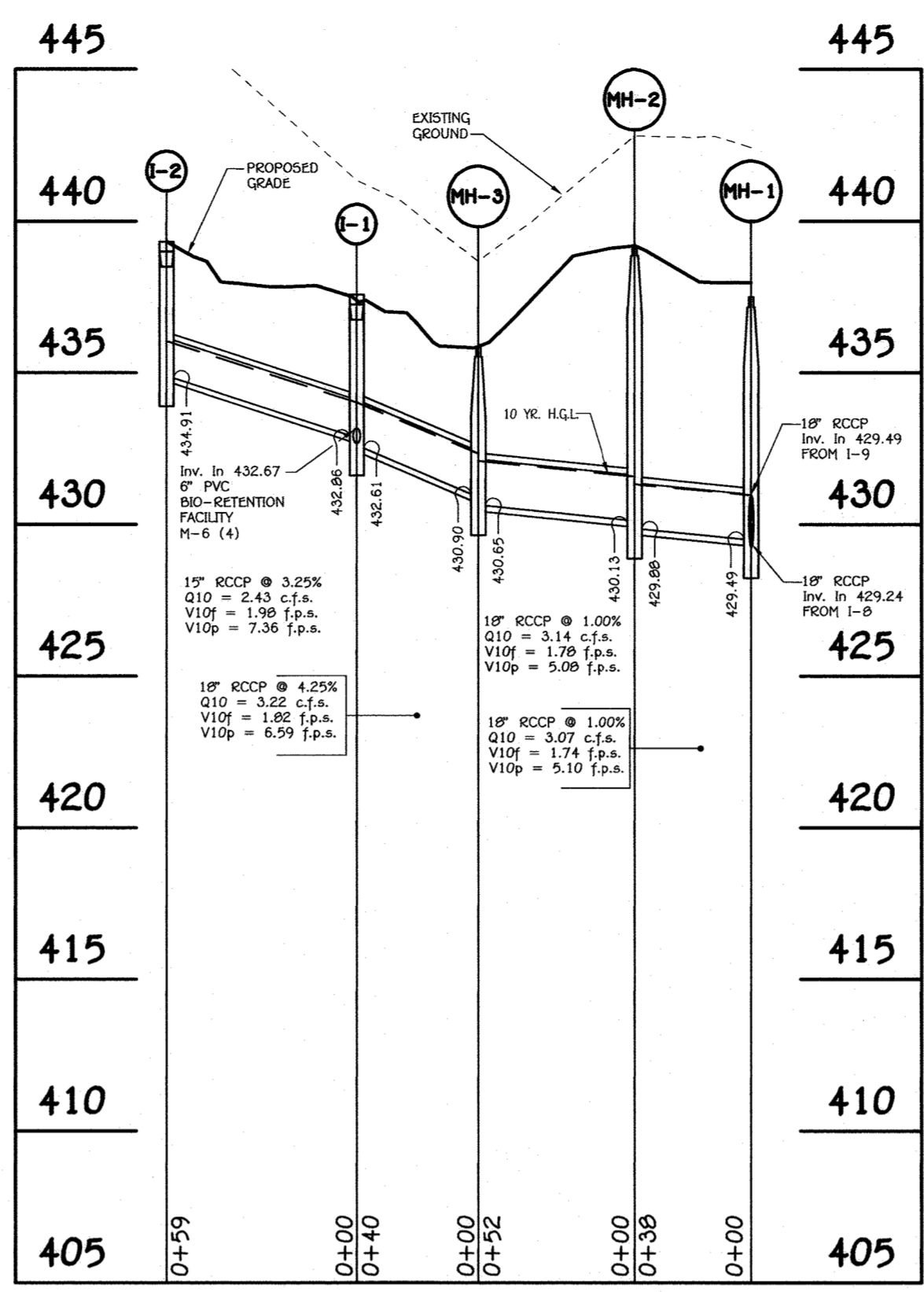
SCALE: AS SHOWN DATE: MAY, 2020

SHEET 16 OF 24

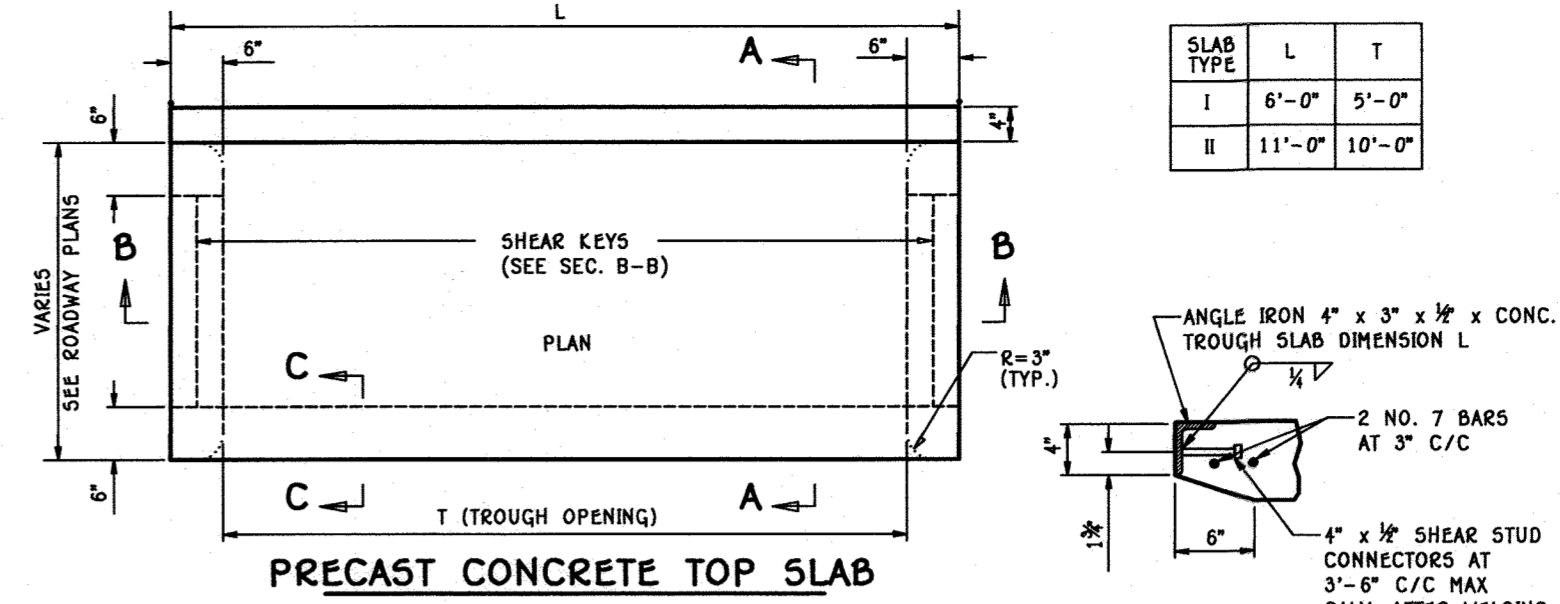
F-20-010

STRUCTURE SCHEDULE						
STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV IN	INV OUT	COORDINATES	REMARKS
EX. HW	PUBLIC	412.13	406.68 (1-3) 24"	-----		
HW-1	PRIVATE	415.75	413.75 (1-6) 15"	-----	N 575096.59 E 1349972.94	TYPE 'C' ENDWALL D. - 5.21
I-1	PRIVATE	436.75	432.86 (1-2) 15"	432.61 18"	N 575755.35 E 1350300.19	'S' INLET D. - 4.24
I-2	PRIVATE	438.50 *	-----	434.91 15"	N 575767.00 E 1350362.05	'D' INLET D. - 4.10
I-3	PUBLIC	415.75	410.06 (1-4) 24"	409.81 24"	N 575933.70 E 1349904.19	'S' INLET D. - 4.24
I-4	PUBLIC	414.97	411.32 (1-6) 18"	410.82 24"	N 575050.40 E 1349911.10	A-5 INLET D. - 4.02
I-5	PUBLIC	415.10	-----	411.59 18"	N 575031.80 E 1349915.54	A-10 INLET D. - 4.03
I-6	PUBLIC	419.23	415.00 (1-7) 18"	414.75 15"	N 575061.64 E 1349909.54	A-5 INLET D. - 4.01
I-7	PUBLIC	419.30	415.52 (1-8) 18"	417.01 18"	N 575034.00 E 1349991.67	A-10 INLET D. - 4.03
I-8	PUBLIC	429.90	426.58 (MH-1) 18"	426.33 18"	N 575040.50 E 1350132.04	A-10 INLET D. - 4.03
I-9	PRIVATE	439.75	434.00 (MH-4) 18"	434.63 18"	N 576253.00 E 1350215.00	'S' INLET D. - 4.24
I-10	PRIVATE	434.74	-----	-----	N 575074.40 E 1350186.50	COG/COS OPENING 5' WIDE SEE DETAIL THIS SHEET
I-11	PRIVATE	441.50 *	-----	438.60 12"	N 576407.22 E 1350280.13	'D' INLET D. - 4.10
MH-1	PRIVATE	437.50	429.49 (I-9) 18"	429.24 18"	N 575044.61 E 1350232.00	4' DIA. MANHOLE G. - 5.12
MH-2	PRIVATE	439.20	430.13 (MH-3) 18"	429.00 18"	N 575017.57 E 1350260.40	4' DIA. MANHOLE G. - 5.12
MH-3	PRIVATE	435.86	430.90 (I-1) 18"	430.65 18"	N 575765.67 E 1350261.31	4' DIA. MANHOLE G. - 5.12
MH-4	PRIVATE	445.50	435.97 (MH-5) 15"	435.72 18"	N 576255.42 E 1350256.99	4' DIA. MANHOLE G. - 5.12
MH-5	PRIVATE	443.00	437.73 (I-11) 12"	437.40 15"	N 576406.10 E 1350251.15	4' DIA. MANHOLE G. - 5.12

* DENOTES THROAT OPENING

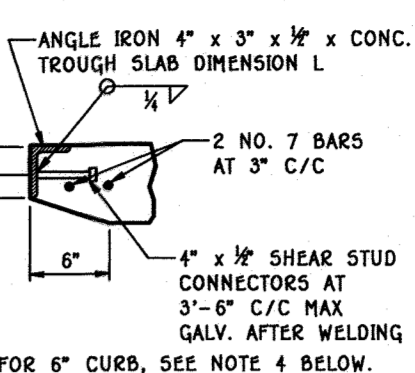


STORM DRAIN PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



PRECAST CONCRETE TOP SLAB

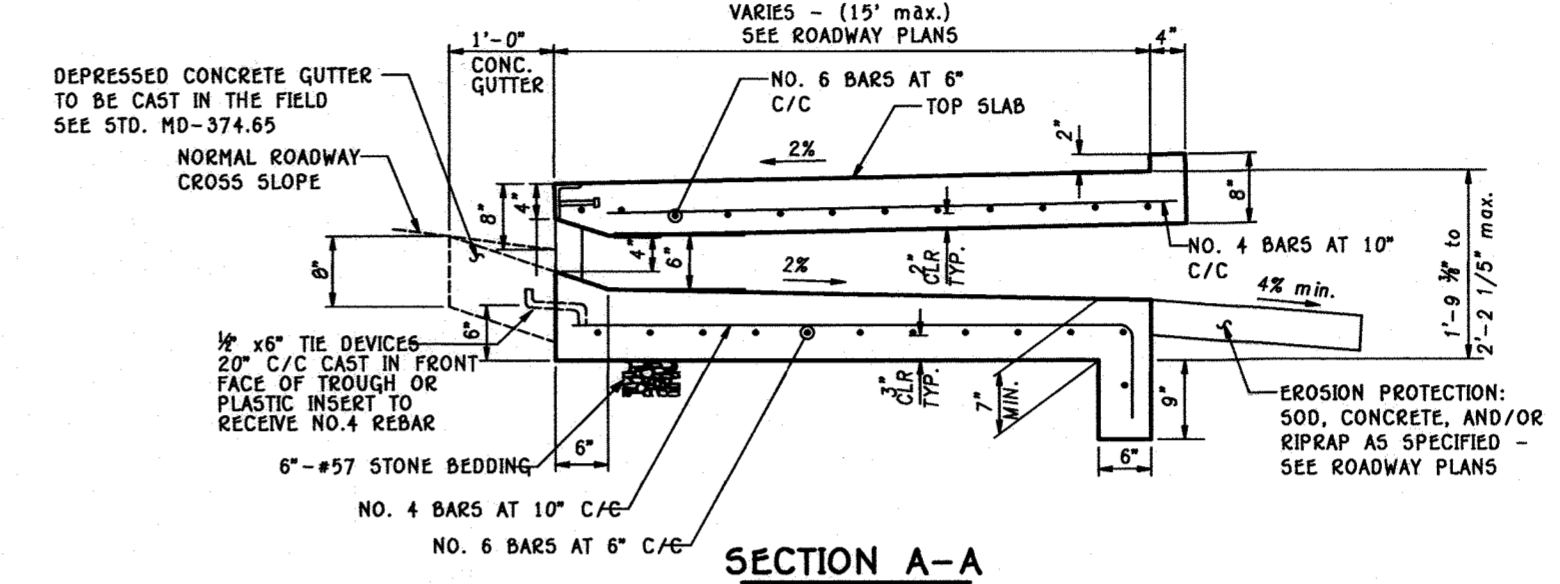
SLAB TYPE	L	T
I	6'-0"	5'-0"
II	11'-0"	10'-0"



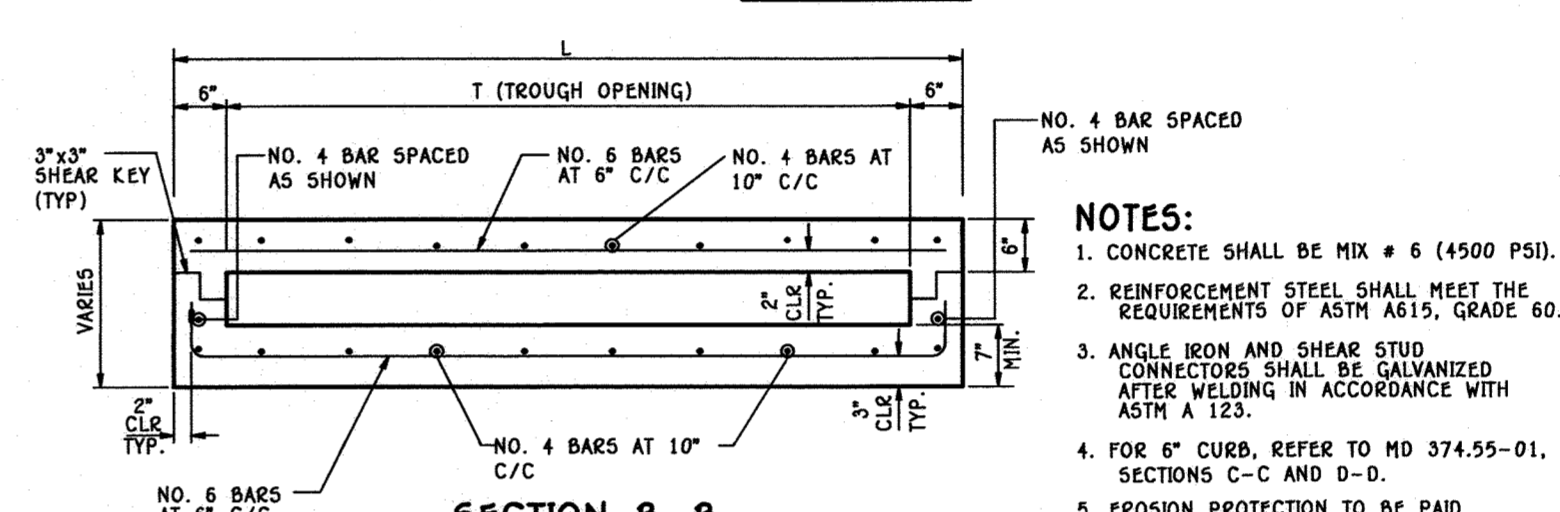
SECTION C-C

PIPE SCHEDULE		
SIZE	CLASS	LENGTH
6"	PERFORATED PVC, SCH.40	821 L.F.
6"	PVC, SCH.40	59 L.F.
12"	RCCP, CL. IV	29 L.F.
15"	RCCP, CL. IV	249 L.F.
18"	RCCP, CL. IV	955 L.F.
24"	RCCP, CL. IV	90 L.F.

NOTE: RCCP, CL. IV MAY BE SUBSTITUTED WITH HDPE PIPE MATERIAL WHERE DEPTH OF COVER PERMITS.

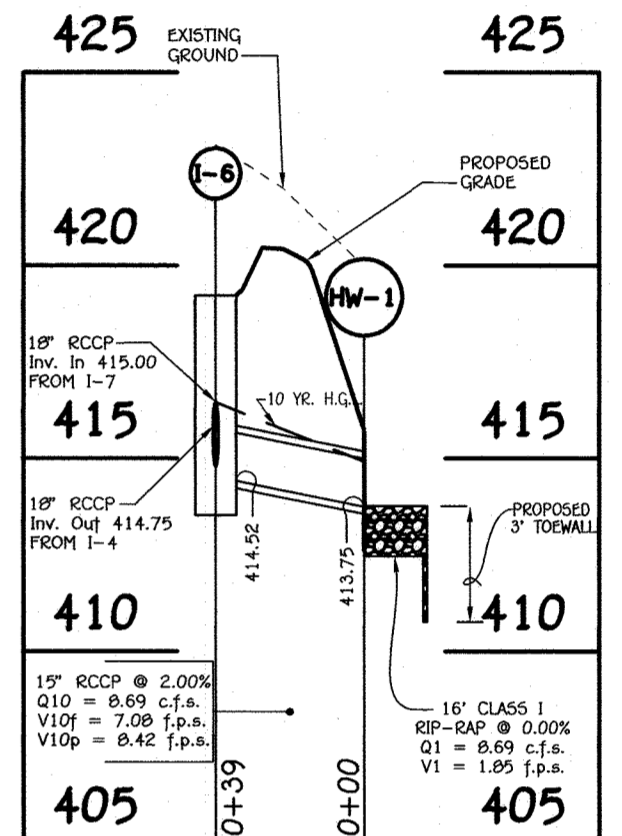


SECTION A-A

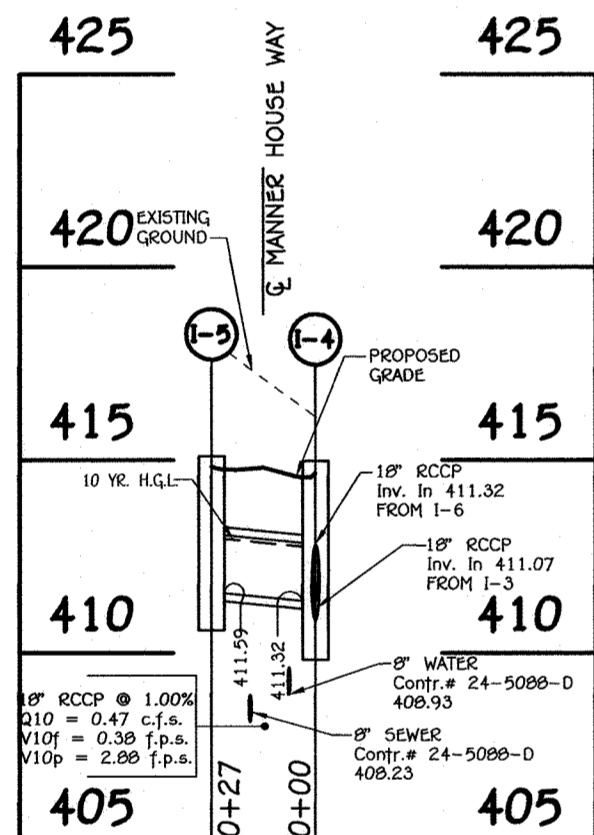


SECTION B-B

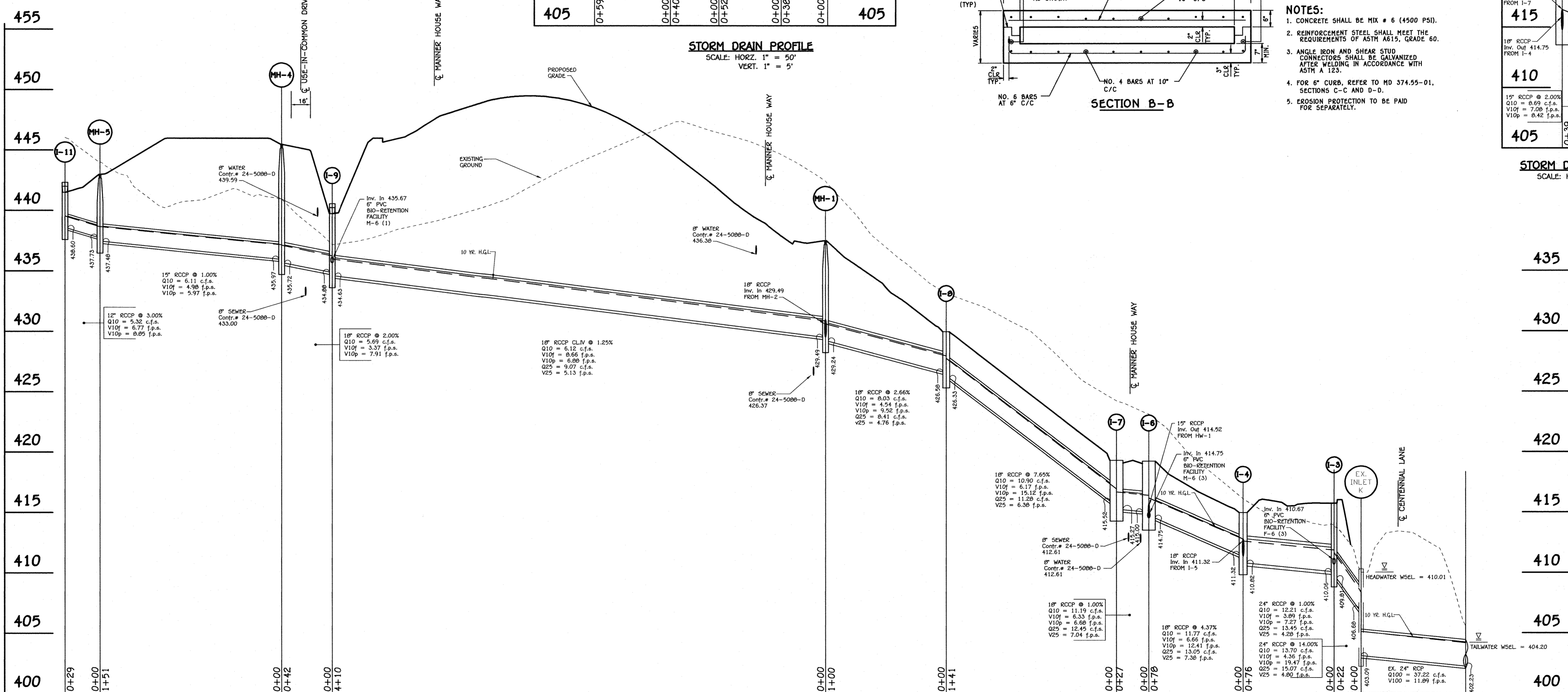
- NOTES:
1. CONCRETE SHALL BE MIX # 6 (4500 PSI).
 2. REINFORCEMENT STEEL SHALL MEET THE REQUIREMENTS OF ASTM A615, GRADE 60.
 3. ANGLE IRON AND SHEAR STUD CONNECTORS SHALL BE GALVANIZED AFTER WELDING IN ACCORDANCE WITH ASTM A 123.
 4. FOR 6" CURB, REFER TO MD 374.55-01, SECTIONS C-C AND D-D.
 5. EROSION PROTECTION TO BE PAID FOR SEPARATELY.



STORM DRAIN PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



STORM DRAIN PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



STORM DRAIN PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'

STORM DRAIN PROFILES
CENTENNIAL RESERVE
LOTS 1 THRU 17, OPEN SPACE LOT 18
4509 & 4409 CENTENNIAL LANE & 10202 MAXINE STREET

REVISIONS		
NO.	DESCRIPTION	DATE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development *caluliza* Date *9/4/20*

Chief, Development Engineering Division *9/4/20* Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways *8/21/2020* Date



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/21.

Frank Pawlarski II
FRANK PAWLARSKI II
Date *5/28/20*

OWNERS

PARCEL 04
LENNIS HAMBICK
4469 CENTENNIAL LANE
ELLIOTT CITY, MD 21042

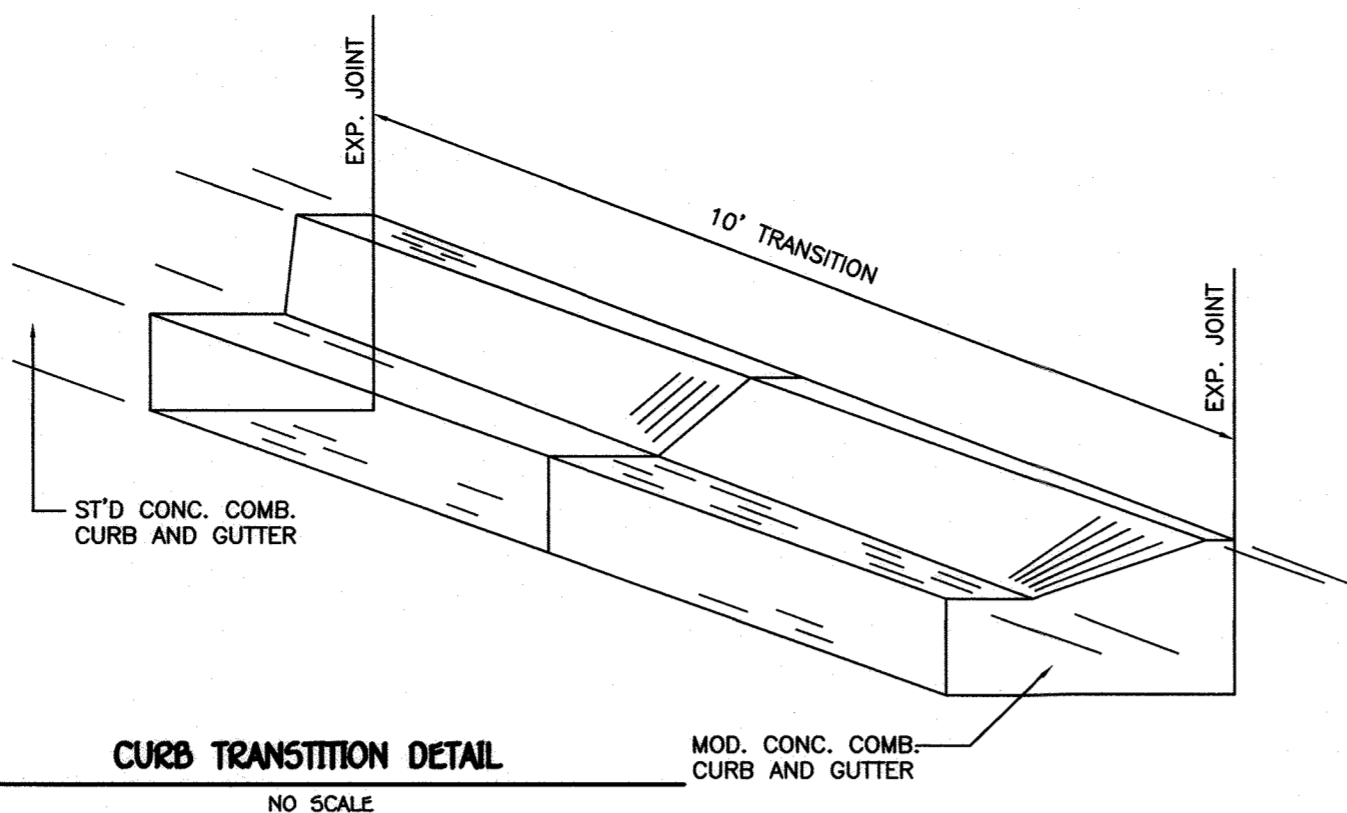
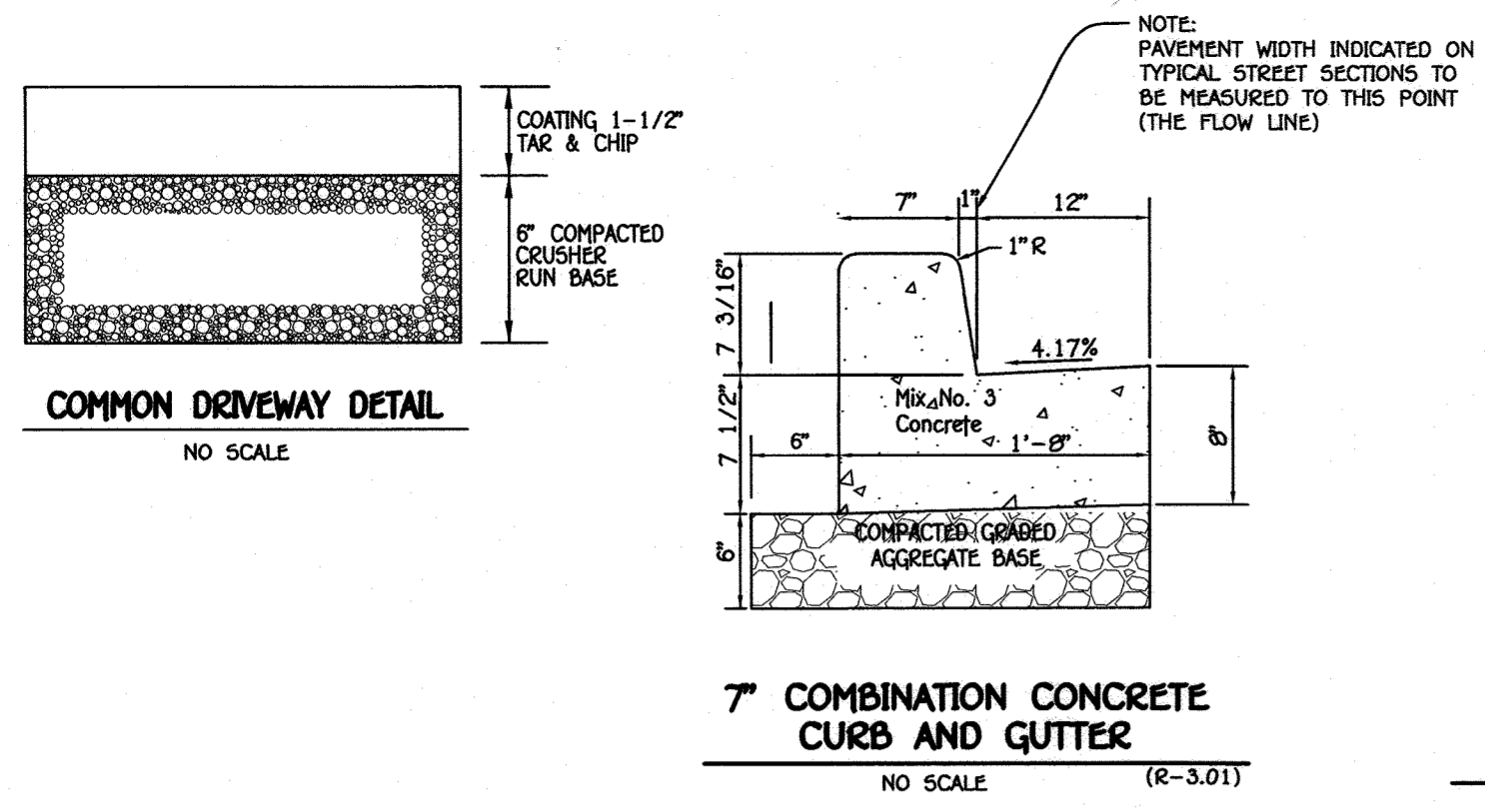
PARCEL 449
CHATEAU BUILDERS, INC.
5305 VILLAGE CENTER DRIVE
SUITE 305
COLUMBIA, MD 21044

PARCEL 174 & PARCEL 05
CENTENNIAL RESERVE, LLC
308 MAGDOOTH ROAD
SEVERNA PARK, MARYLAND 21146

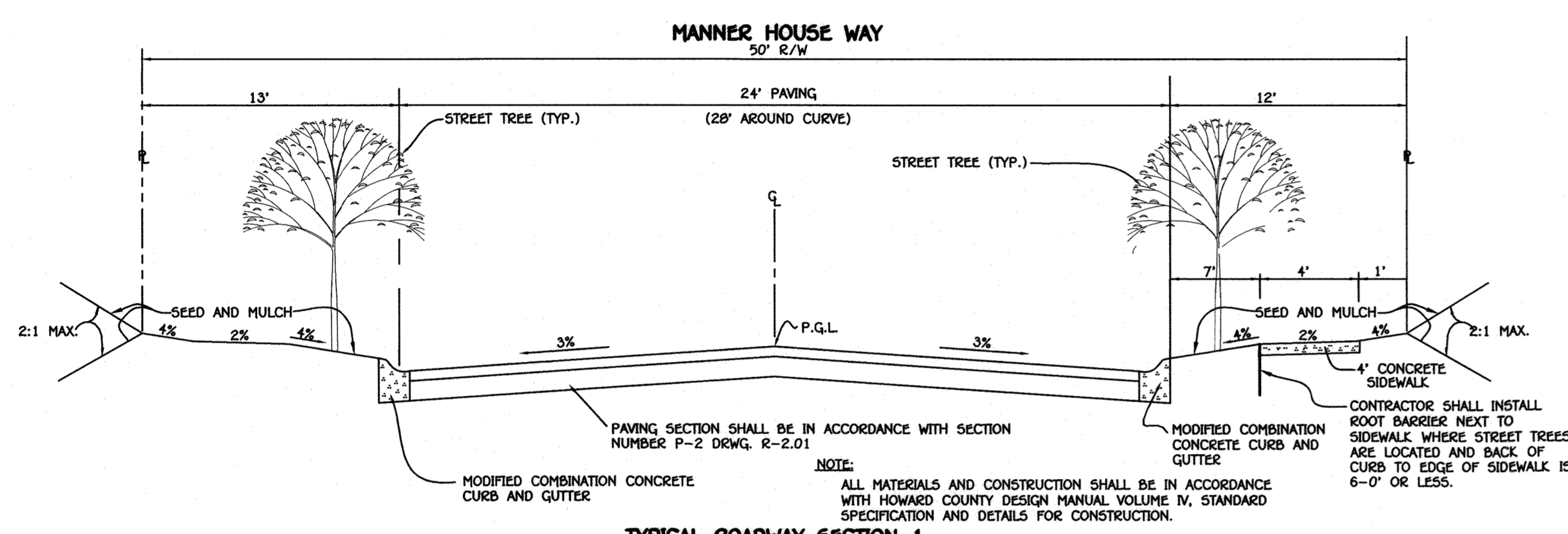
DEVELOPER

CENTENNIAL RESERVE, LLC
308 MAGDOOTH ROAD
SEVERNA PARK, MARYLAND 21146
DAVE WOSSNER
240-319-1735

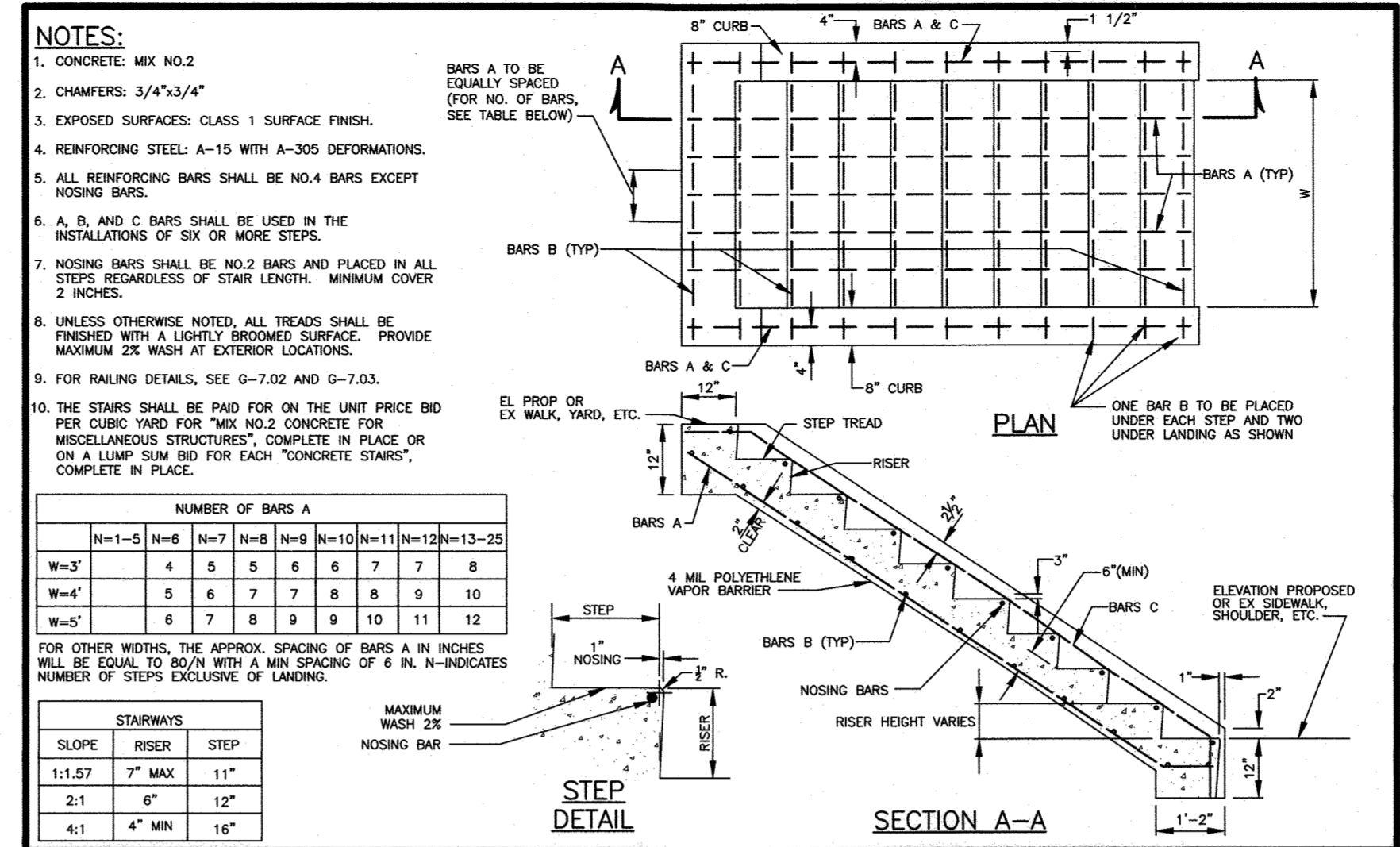
TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOS.: 04, 05, 174, & 449
ZONED R-20
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MAY, 2020
SHEET 17 OF 24



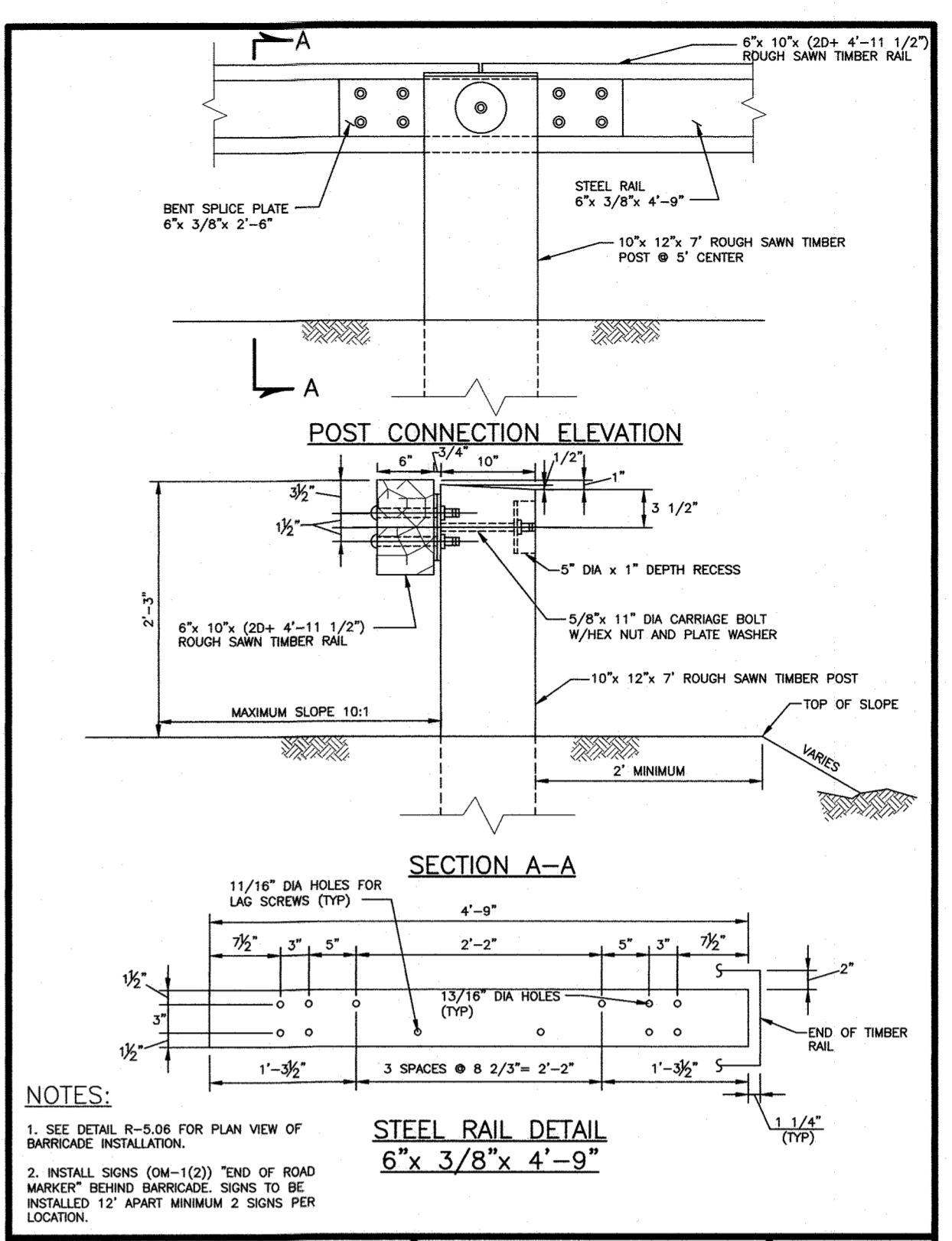
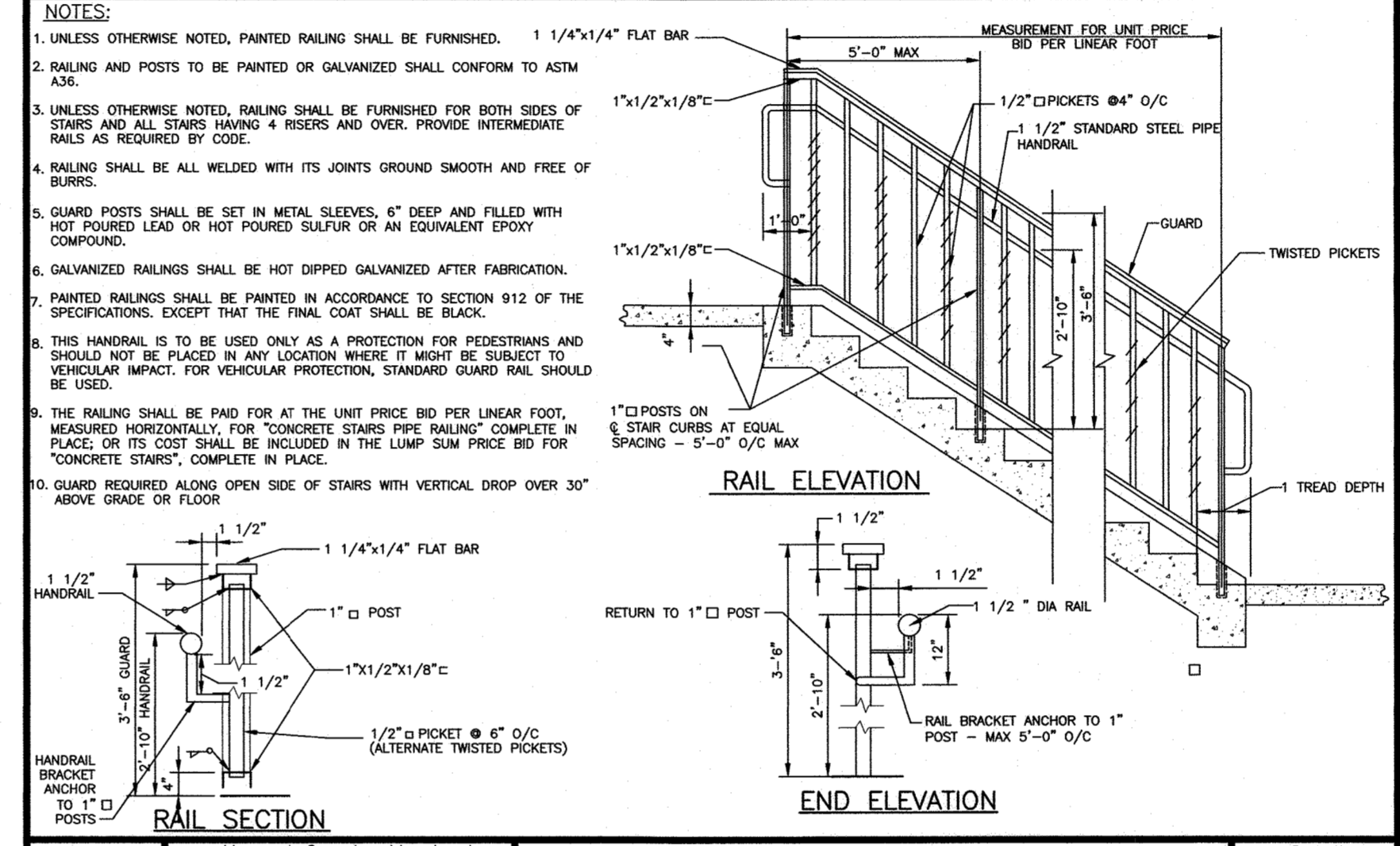
7" COMBINATION CONCRETE CURB AND GUTTER
NO SCALE (R-3.01)



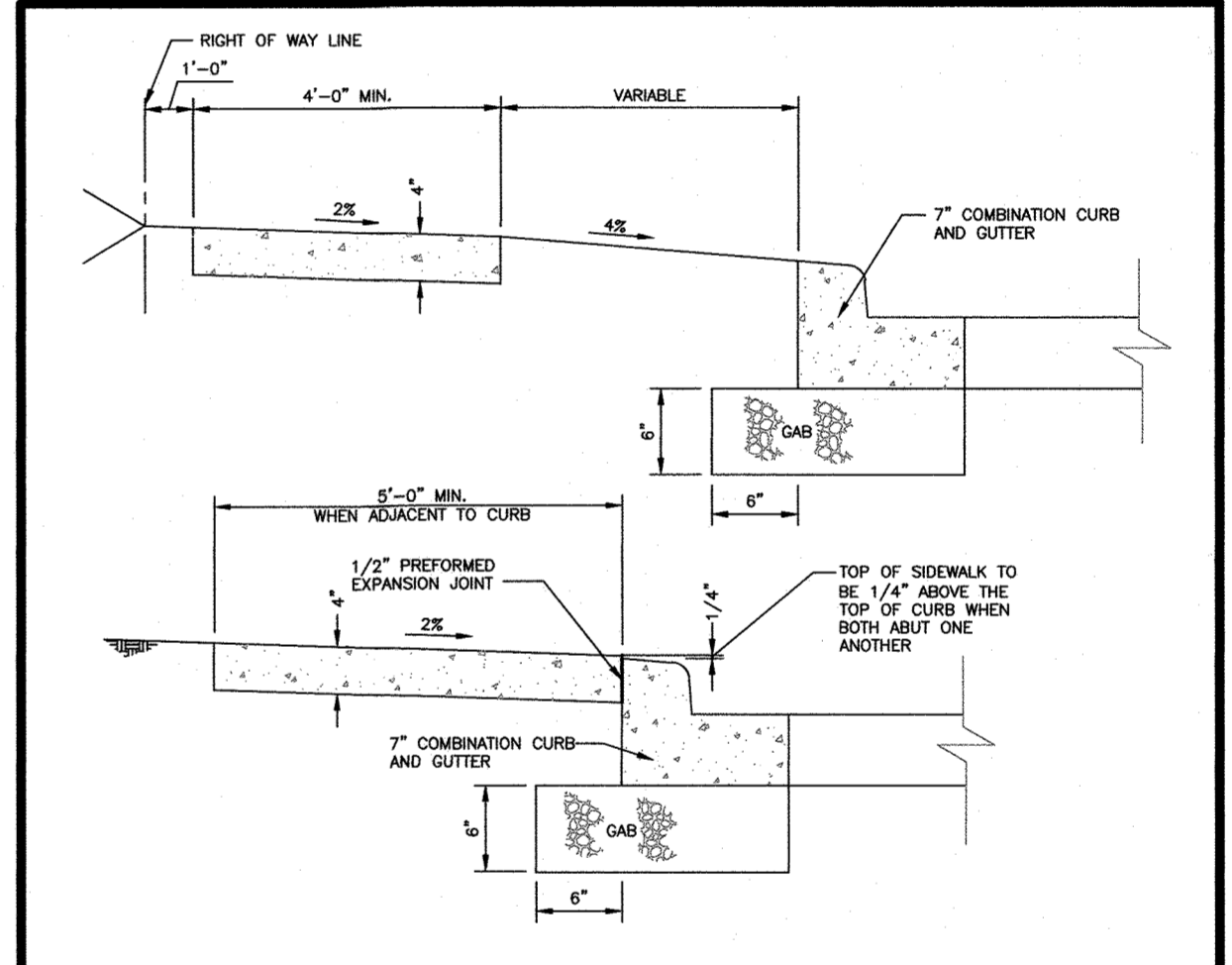
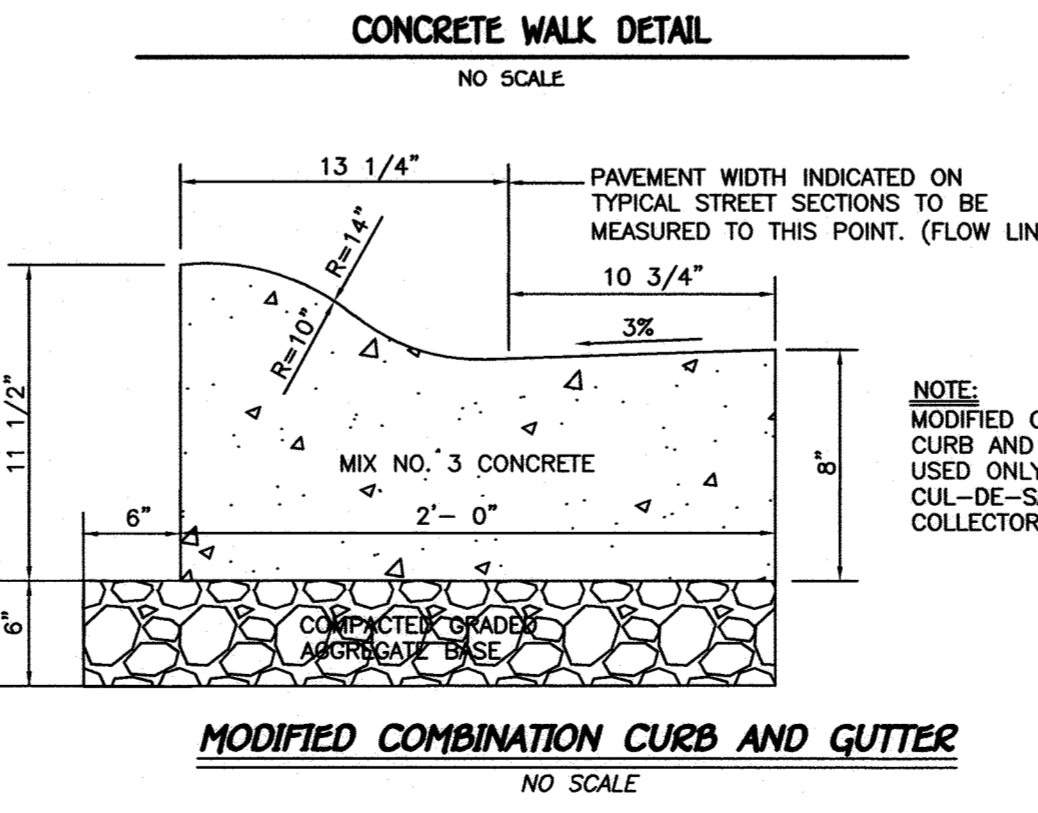
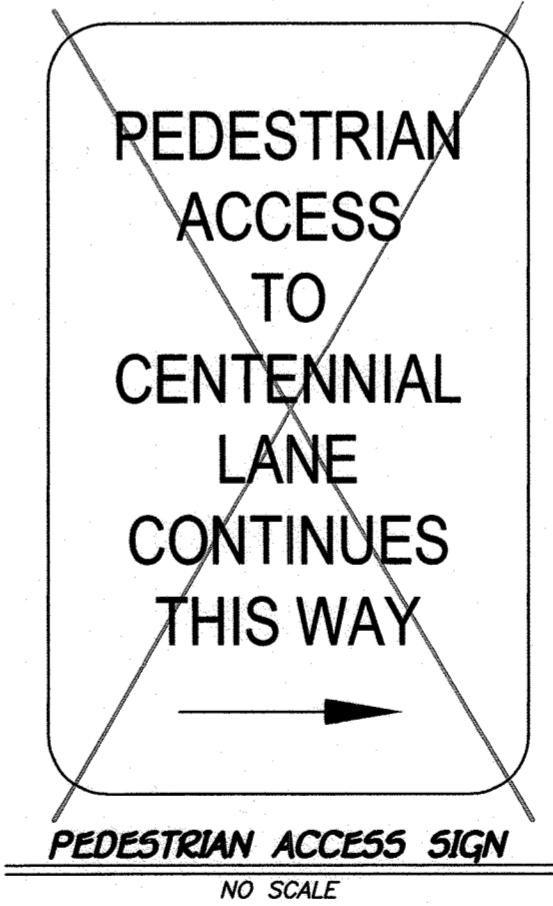
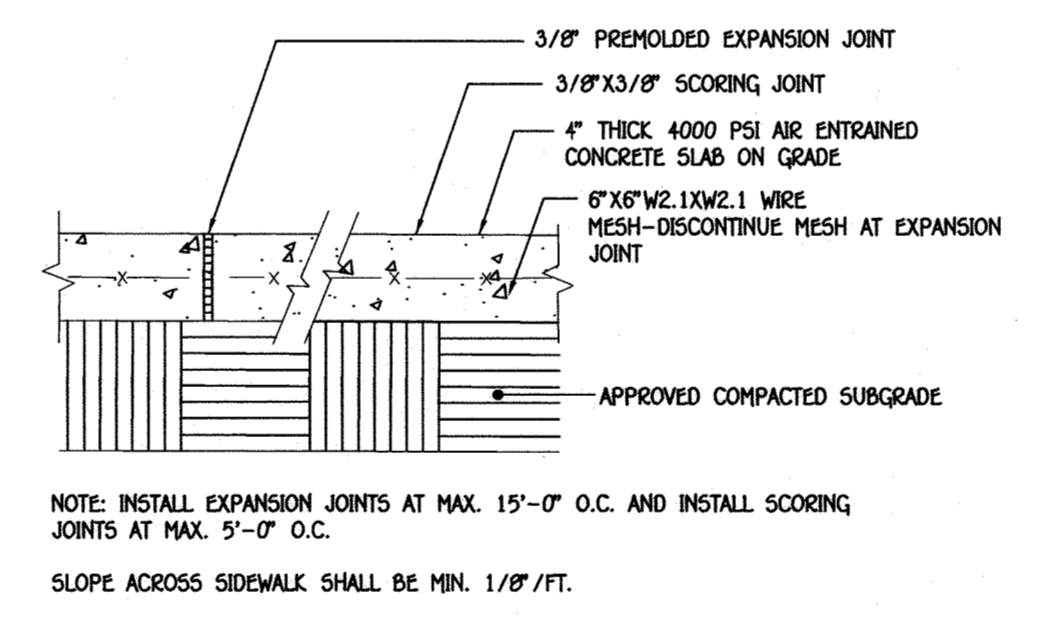
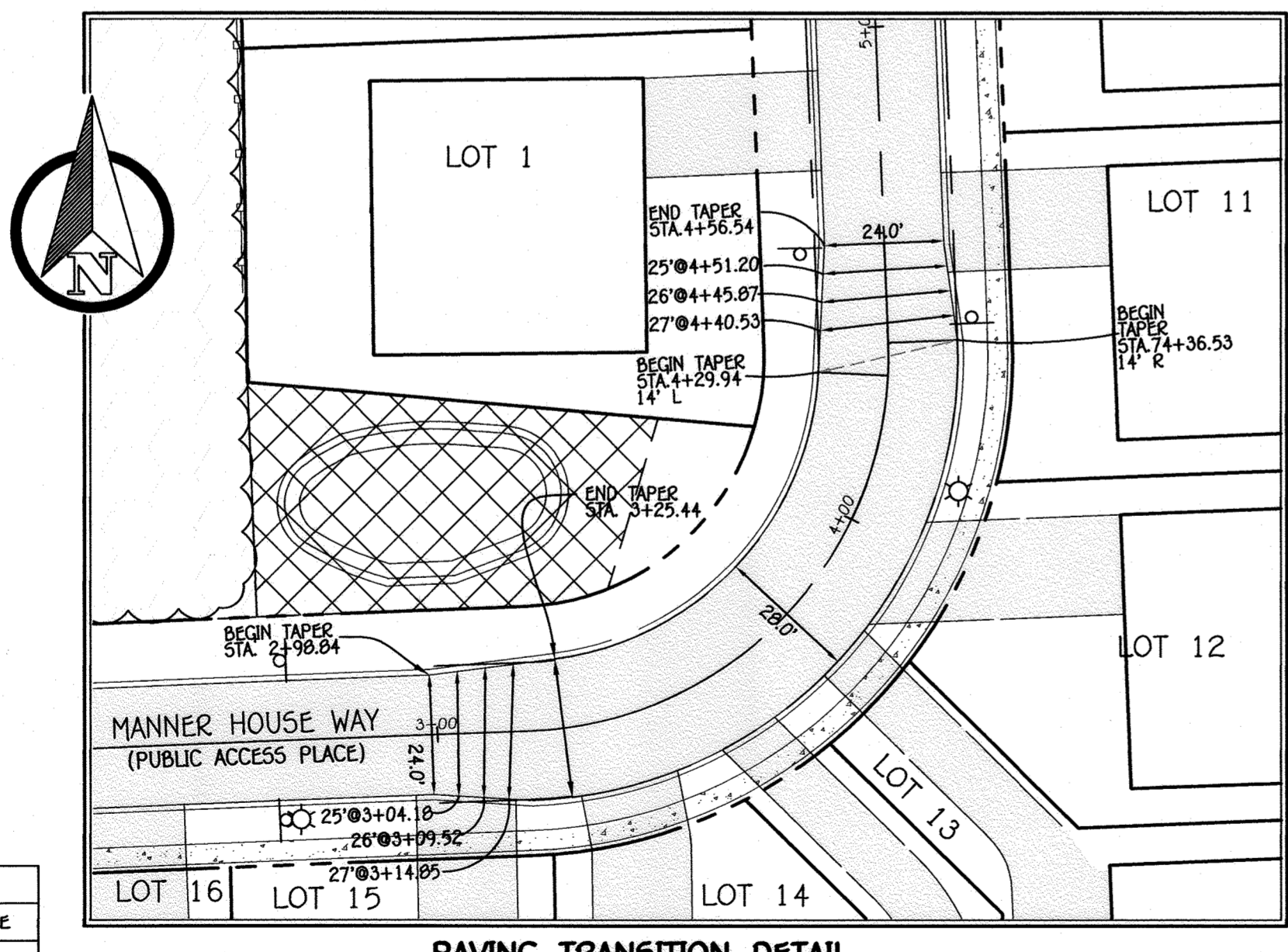
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)				
		3 TO <5	5 TO <7	>7	3 TO <5	
P-1	PARKING BAYS: RESIDENTIAL AND NON-RESIDENTIAL PARKING DRIVE ASILES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 2 HEAVY TRUCKS PER DAY DRIVEWAYS	HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE N/A	N/A	N/A	N/A	N/A
		HMA SUPERPAVE BASE 19.0 MM PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	0.5	0.5	0.5	0.5
P-2	PARKING DRIVE ASILES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SACS: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5
		HMA SUPERPAVE BASE 2.0	2.0	2.0	2.0	
		GRADED AGGREGATE BASE (GAB)	0.0	0.0	0.0	0.0



NUMBER OF BARS A	
N=1-5	N=6-10
N=11-15	N=16-20
N=21-25	N=26-30



HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS	
Revised: 5/20/2017	Approved: 5/2/2020



HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS	
Revised: 5/20/2017	Approved: 5/2/2020

NO.	REVISIONS DESCRIPTION	DATE

Approved: Department Of Planning And Zoning
Chief, Division Of Land Development
Chief, Development Engineering Division
Approved: Howard County Department Of Public Works
Chief, Bureau Of Highways

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21142
(410) 461-2995



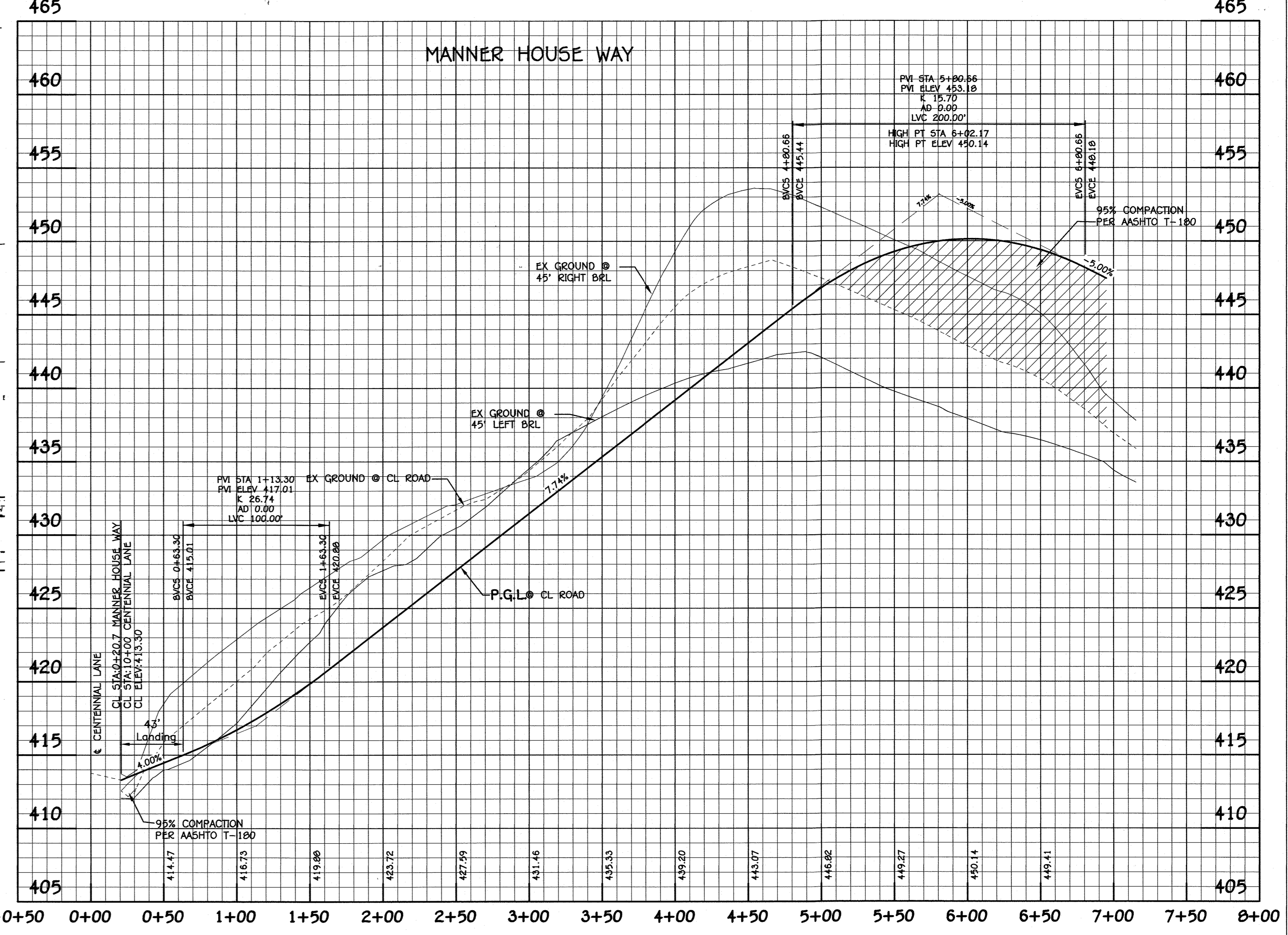
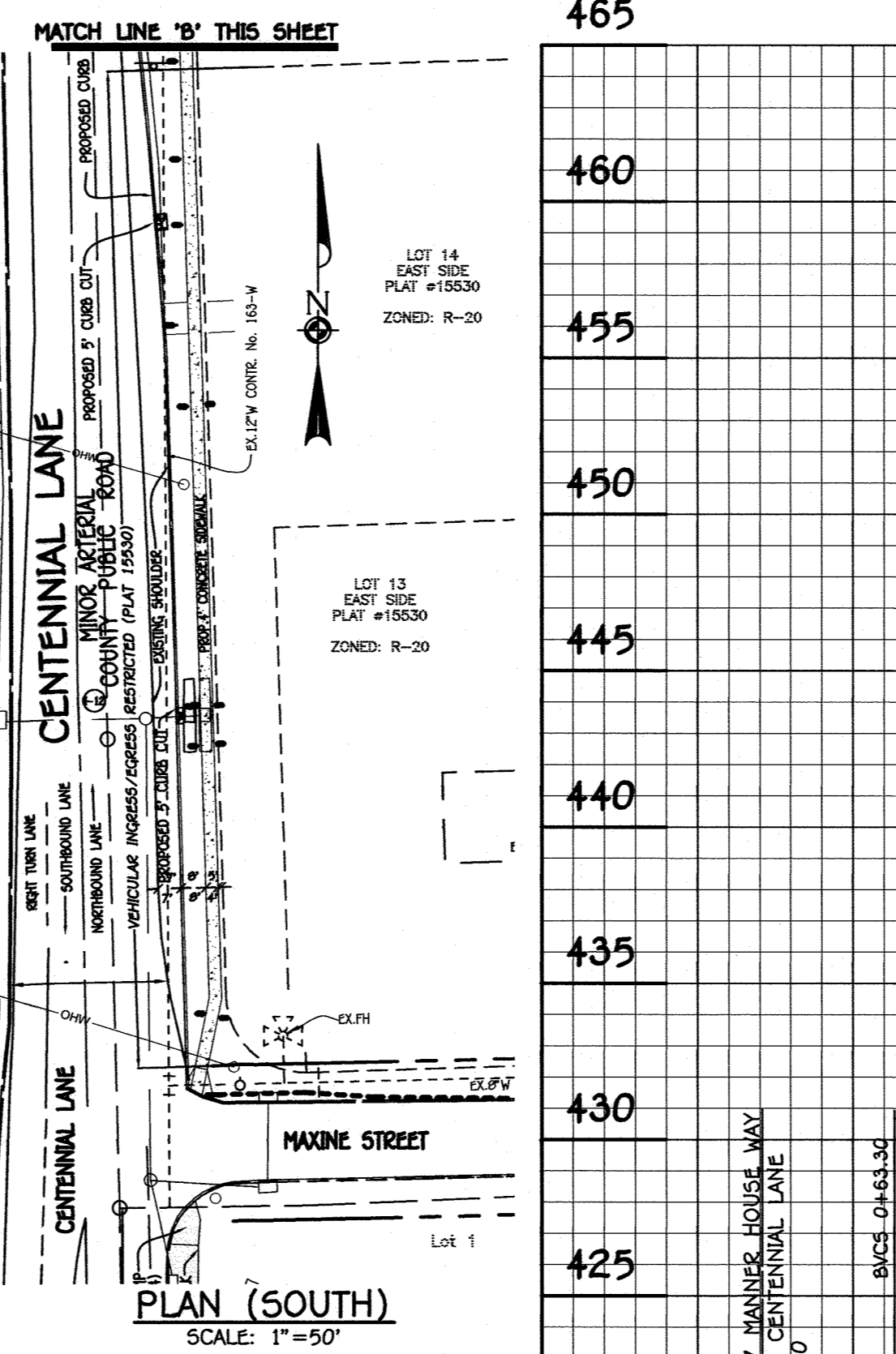
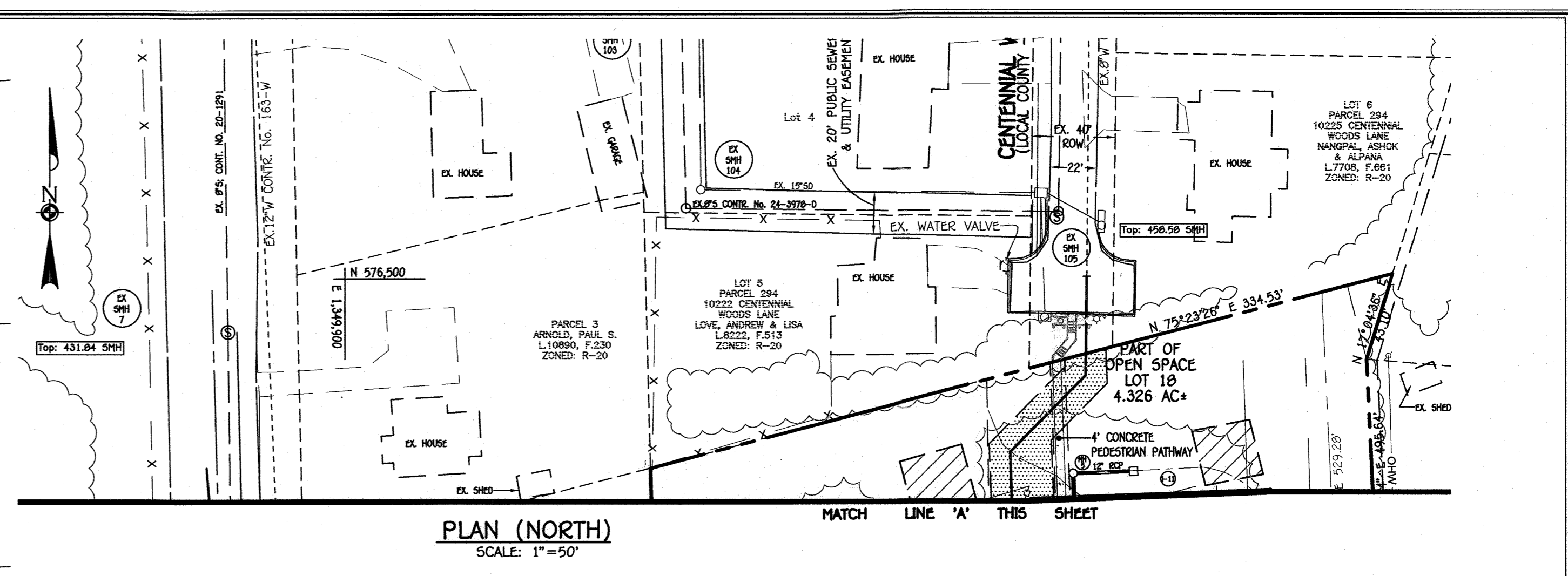
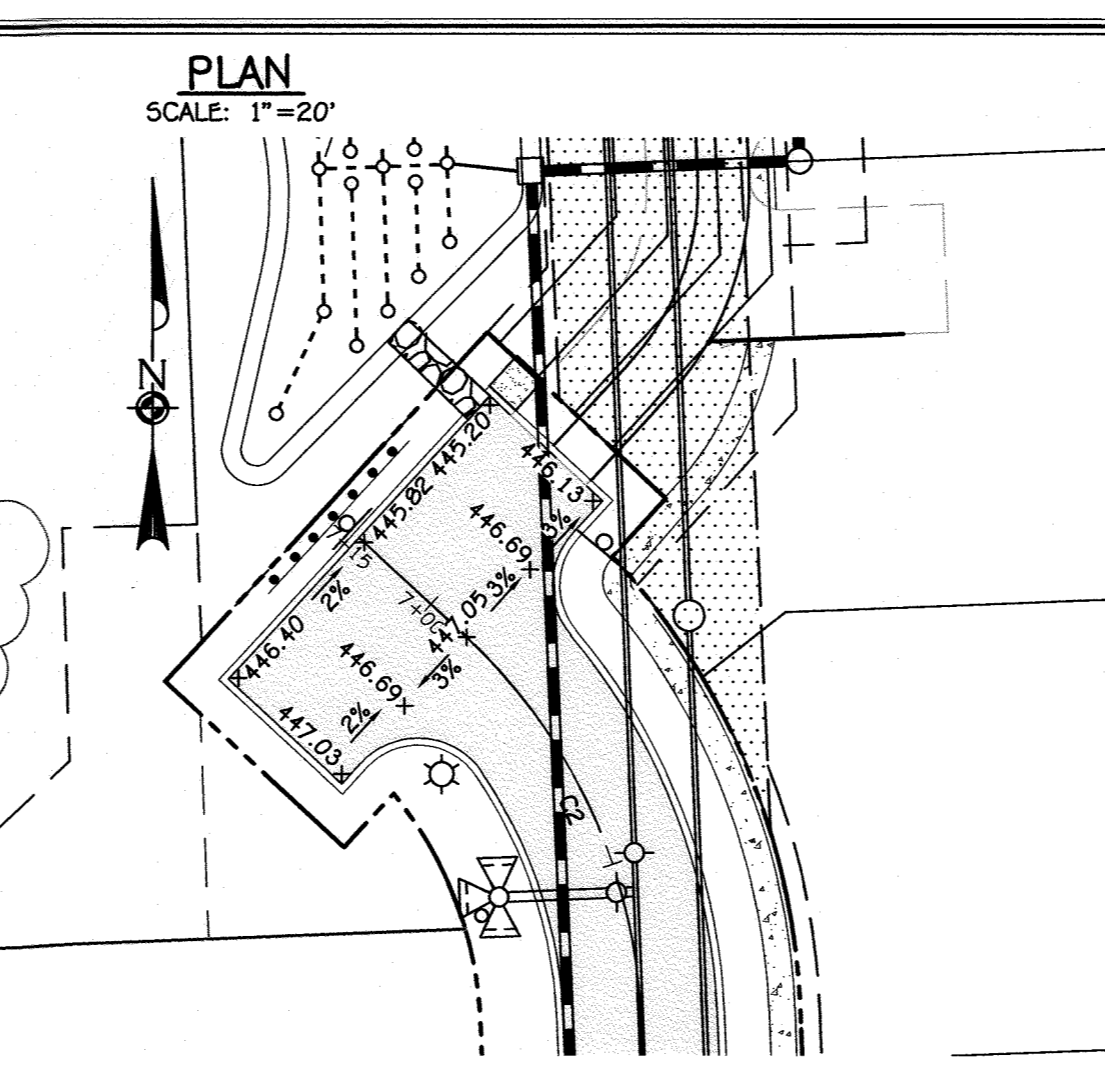
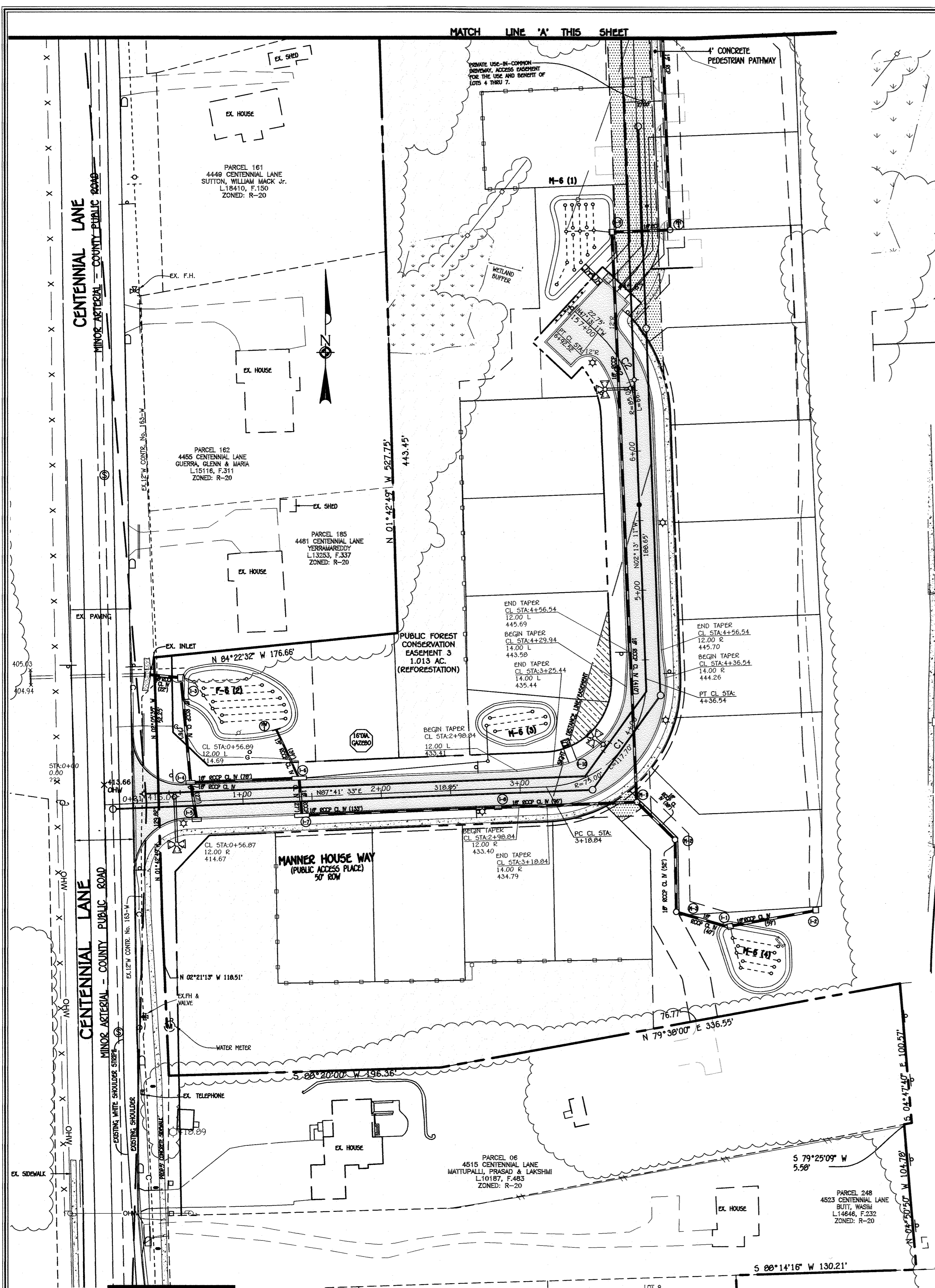
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Frank HAWLANSON II
5/28/20

OWNERS	DEVELOPER
PARCEL 04 LENNIS HAMRICK 4489 CENTENNIAL LANE ELLCOTT CITY, MD 21142	PARCEL 449 CHATEAU BUILDINGS, INC. 5305 VILLAGE CENTER DRIVE SUITE 305 COLUMBIA, MD 21044 PARCEL 174 & PARCEL 05 CENTENNIAL RESERVE, LLC 308 MAGOTHY ROAD SEVERNA PARK, MARYLAND 21146

MANNER HOUSE WAY ROADWAY SECTION AND DETAILS
CENTENNIAL RESERVE
LOTS 1 THRU 17, OPEN SPACE LOT 18
4509 & 4489 CENTENNIAL LANE & 10202 MAXINE STREET

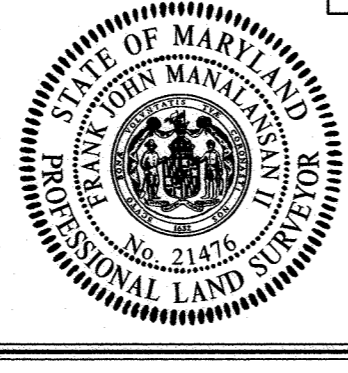
TAX MAP NO.: 30 GRID NO.: 01 PARCEL Nos.: 04, 05, 174, & 449
ZONED R-20
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MAY, 2020
SHEET 18 OF 24



NO.	REVISIONS DESCRIPTION	DATE

Approved: Department Of Planning And Zoning
 Chief, Division of Land Development
 Chief, Development Engineering Division
 Approved: Howard County Department of Public Works
 Chief, Bureau of Highways

PLAN
 SCALE: 1"=50'



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CURVE #	ROAD NAME	STATION	RADIUS	LENGTH	DELTA	TANGENT	CHORD
C1	MANNER HOUSE WAY	STA 3+18.84 TO STA 4+36.54	75.00'	117.69'	076°23'40"	105.98'	N42° 44' 10.80"E
C2	MANNER HOUSE WAY	STA 6+25.19 TO STA 6+69.94	56.97'	44.74'	100°34'07"	43.60'	N24° 43' 03.28"W

OWNERS
 PARCEL 04
 LENNIS HAMRICK
 4489 CENTENNIAL LANE
 ELLICOTT CITY, MD 21042

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DEVELOPER
 CENTENNIAL RESERVE, LLC
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 SEVERNA PARK, MARYLAND 21146
 DAVE WOSSNER
 240-319-1735

ROAD PLAN AND PROFILE
CENTENNIAL RESERVE
 LOTS 1 THRU 17, OPEN SPACE LOT 18
 4509 & 4489 CENTENNIAL LANE & 10202 MAXINE STREET

TAX MAP NO.: 30 GRID NO.: 01 PARCEL NOS.: 04, 05, 174, & 449
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 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
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