



Easton Staff Development Review MEETING AGENDA

Wednesday, May 22, 2024 - 10:00 AM
Council Chambers, Easton Town Office
14 S Harrison Street

1. Staff Review

a. Staff review only time: 10:00 AM - 11:00 AM

Easton Staff Development Review (ESDR) meetings are an opportunity for staff to meet with applicants to discuss our preliminary review of their application. At the ESDR meeting, staff also confirm with the applicant the next steps in the review process.

No public comments will be taken at this meeting, but there will be opportunities for public comment at future Planning Commission and/or Town Council public hearings.

2. Discussion Items

- | | | |
|-----------|----------------------------|--|
| a. | Application Number: | 2024 - 10 |
| | Location: | 7741 Ocean Gateway - Hertrich GMC
Buick
Tax Map 0107, Grid 0000, Parcel 2783,
Lot 7 |
| | Applicant: | Willow Construction, LLC |
| | Request: | Concept and design review for
reconstruction to the interior and
exterior of the existing unoccupied car
dealership. |
|
 | | |
| b. | Application Number: | 2024 - 09 |
| | Location: | 1180 S. Washington Street
Tax Map 0108, Grid 0000, Parcel 2677 |
| | Applicant: | Rauch Inc. |
| | Request: | Sketch Site Plan review for the
development of the existing parking
facilities with associated stormwater
management improvements, and a
waiver for bufferyard requirements. |

c.	Application Number:	2024 - 11
	Location:	9719 Ocean Gateway Tax Map 0025, Grid 0006, Parcel 0013
	Applicant:	Rauch Inc.
	Request:	Sketch Site Plan review for the construction of a new automotive sales and services facility with associated parking, stormwater management, and other site improvements.



Town of Easton
Engineering, Planning and Zoning
14 South Harrison Street, Easton, MD 21601

RECEIVED
APR 17 2024
TOWN OF EASTON

Planning Commission Concept, Use, and Design Application

Site Information					
Structure's Floor Area	14,700	Structure's Square Feet	14,700		
Area of Disturbance	0	Number of Dwelling Units	0		
Property Size	Acres 2.18	Square Feet	14,700		
Address	7741 Ocean Gateway Easton MD 21601				
Tax Map	0107	Grid	0000	Parcel	2783 Lot 7
Zoning District	CG	Historic District	Y ☐ N ☒	PRD	Y ☐ N ☐
Other Information					
Existing Use	Unoccupied Car Dealership				
Owner					
Name	Hertrich Properties XIII LLC				
Mailing Address	26905 Sussex Highway P.O. Box 1420 Seaford DE 19973				
Telephone No.	302-839-0520	Email	aguckes@hertrichs.com		
Applicant / Agent					
Name	Willow Construction, LLC				
Mailing Address	8649 Commerce Drive Easton MD 21601				
Telephone No.	410-822-6000	Email	sturner@willowconstruction.com		
General Information:					
Renovation of 14,700 SF of an existing unoccupied car dealership that will be a Hetrich Kia dealership in Easton, MD. The scope includes interior and exterior renovations.					

Any modifications during review shall warrant an updated application.

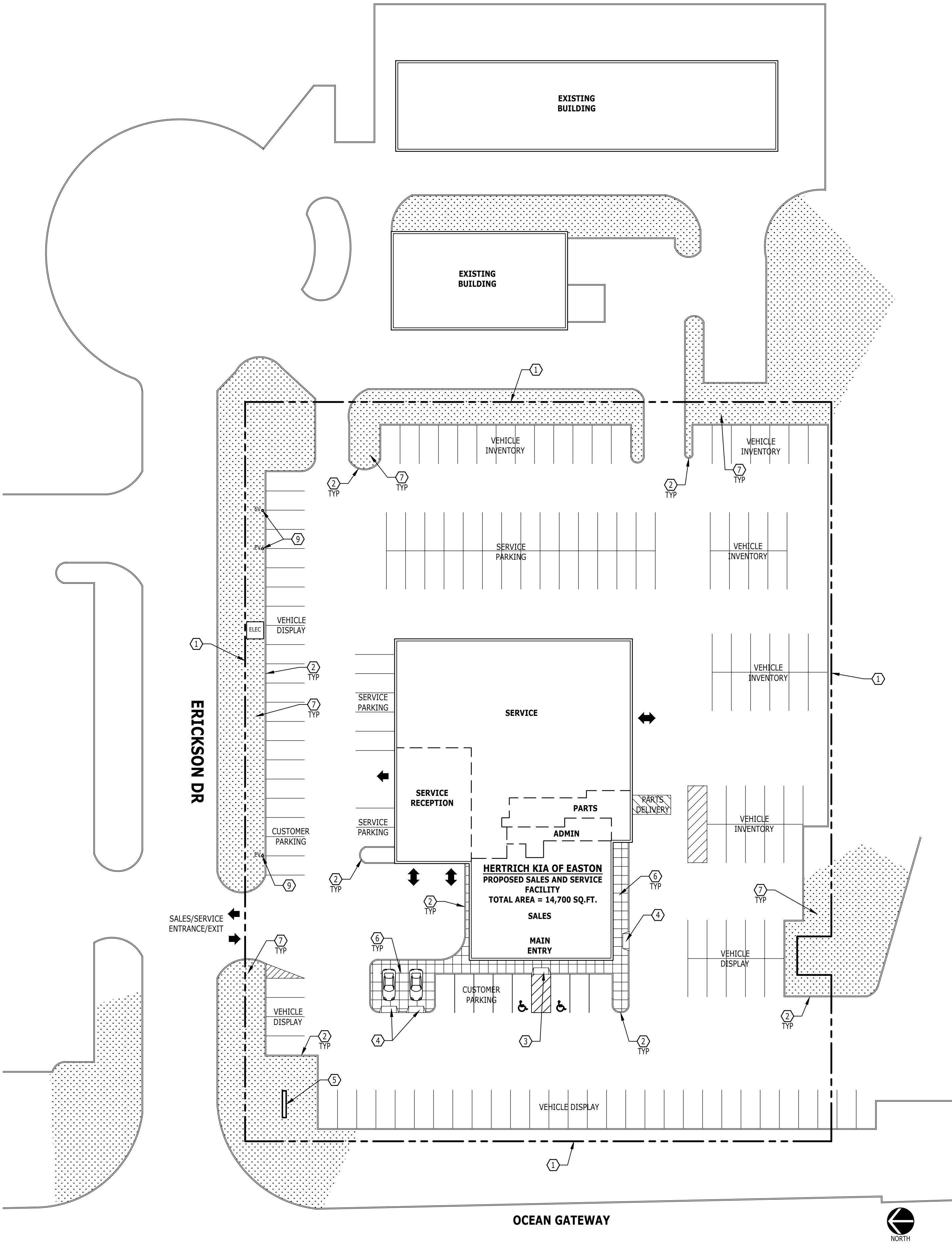
I do hereby solemnly declare and affirm that the information provided by this application and the documents attached hereto accurately represent the conditions of the request and that submission of an incomplete application will be returned for correction prior to processing.

Signature of Applicant or Agent 
Date 4/16/2024
Printed Name of Applicant or Agent Shaquille Turner

For Office Use Only

Planned Commission Meeting Date	05/16/2024
Review Fee Amount	\$250.00
Review Fee Paid Date	
ESDR Y / N Date	05/22/2024

Revised 02-2019



LEGEND	
	NOTE DESIGNATOR - REFER TO DRAWING NOTES ON THIS SHEET
	DETAIL DESIGNATOR - REFER TO DETAIL "X" ON SHEET A-X

GENERAL NOTES

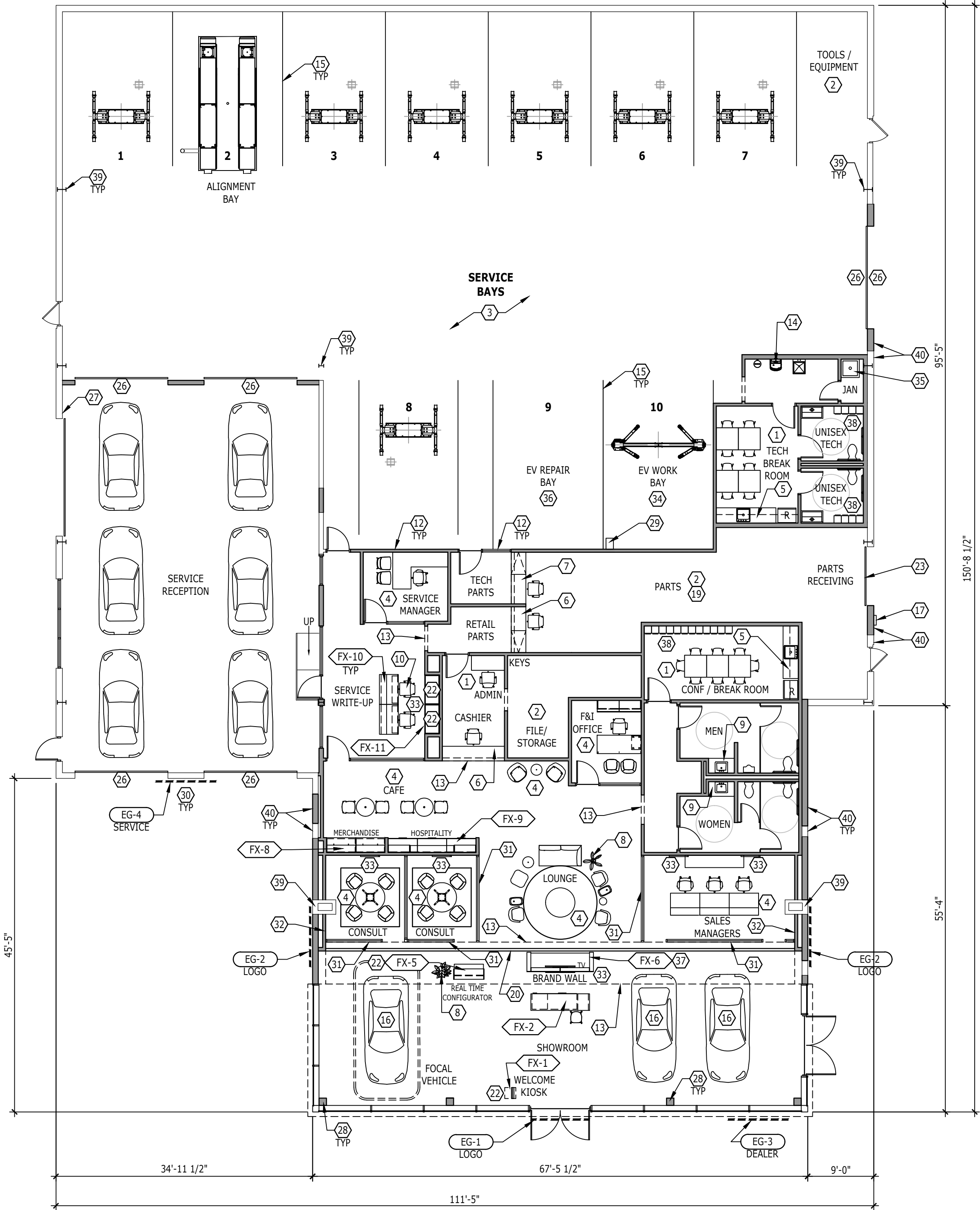
- A. THE PURPOSE OF THESE DRAWINGS IS TO CONVEY THE DESIGN INTENT AND FINISH MATERIAL SPECIFICATIONS ONLY. THEY ARE NOT TO BE USED TO OBTAIN BUILDING PERMITS OR FOR ACTUAL CONSTRUCTION OF THE PROJECT. COMPLIANCE WITH LOCAL BUILDING ORDINANCES, FIRE REGULATIONS, ZONING CODES AND ADA REGULATIONS ARE BEYOND THE SCOPE OF THESE DOCUMENTS.
- B. THE PROPOSED DESIGN SOLUTION MAY REQUIRE MODIFICATIONS BECAUSE OF JOB SPECIFIC INFORMATION REGARDING GRADING, UTILITIES, EASEMENTS, SETBACKS, WATER RETENTION AND SITE ACCESS. ALL STRUCTURAL MODIFICATIONS MUST BE CAREFULLY ANALYZED BY A LICENSED STRUCTURAL ENGINEER AND MODIFIED/DESIGNED AS REQUIRED.
- C. COMPLIANT CONSTRUCTION DOCUMENTS ARE TO BE PREPARED BY LICENSED PROFESSIONALS WHO ARE WILLING TO ACCEPT RESPONSIBILITY FOR PROPER APPLICATION OF THESE INTENT DOCUMENTS.
- D. ALL SIGNAGE IS SHOWN FOR DESIGN INTENT ONLY. APPROVAL SUBJECT TO LOCAL JURISDICTION. CONTACT ZONE MANAGER FOR INFORMATION ON SIGNAGE PROGRAM AND ONSITE SIGNAGE SURVEY.
- E. SEE SHEET A-18 FOR SITE AND CYLINDER LIGHTING DESIGN CRITERIA.
- F. SEE SHEET A-6 FOR BUILDING GRAPHICS LOCATIONS.
- G. SITE SIZE - 2.18 ACRES
- H. INDICATES GREEN SPACE/LOW LANDSCAPING. SEE SHEET A-1C.1 FOR PROTOTYPE LANDSCAPE PLAN.

DRAWING NOTES

- 1. PROPERTY LINE.
- 2. 6" HIGH CONCRETE CURB.
- 3. PROVIDE RAMPED SIDEWALK FOR ACCESSIBLE PEDESTRIAN ENTRY.
- 4. PROVIDE RAMPED SIDEWALK FOR VEHICLE ACCESS.
- 5. DIRECTIONAL SIGNAGE OR PYLON. SEE GENERAL NOTE "A".
- 6. CONCRETE PAVING WITH 4'-0" X 4'-0" JOINT PATTERN WITH ELEV. +6" ABOVE ADJACENT PAVED AREAS.
- 7. SUGGESTED LANDSCAPING LOCATIONS. ALL LAYOUTS TO BE DESIGNED AND CERTIFIED BY A LICENSED PROFESSIONAL.
- 8. NOT USED.
- 9. SUGGESTED EV CHARGING STATION LOCATIONS.

These drawings are for communication of design intent only. They are shown to a specific size, shape, color, feature and proportion, and not to be used as fabrication drawings.
© 2023 ChangeUp

DATE		JULY 2023	
REVISED		CG + ND	
SCALE	PROJECT NO.	KIA269	
1"=30'-0"			
DRAWING TITLE		SITE PLAN	
DWG NO.		A-1	



LEGEND	
#	NOTE DESIGNATOR - REFER TO DRAWING NOTES ON THIS SHEET
FN-#	FURNITURE ITEM - REFER TO FURNITURE SCHEDULE
FX-#	FIXTURE ITEM - REFER TO FX-SERIES SHEETS
	NEW FULL HEIGHT PARTITIONS/WALLS
	EXISTING WALLS AND/OR LOW WALLS/PARTITIONS

BUILDING CONFIGURATION, ROOM SIZES AND SHAPES ARE ALL SHOWN FOR DESIGN INTENT PURPOSES AS A GUIDELINE ONLY. ALL CRITICAL DIMENSIONING SHALL BE PERFORMED BY A LICENSED PROFESSIONAL AS PART OF CONTRACT DOCUMENT PREPARATION.

GENERAL NOTES

- A. THE PURPOSE OF THESE DRAWINGS IS TO CONVEY THE DESIGN INTENT AND FINISH MATERIAL SPECIFICATIONS ONLY. THEY ARE NOT TO BE USED TO OBTAIN BUILDING PERMITS OR FOR ACTUAL CONSTRUCTION OF THE PROJECT. COMPLIANCE WITH LOCAL BUILDING ORDINANCES, FIRE REGULATIONS, ZONING CODES AND ADA REGULATIONS IS BEYOND THE SCOPE OF THESE DOCUMENTS.
- B. THE PROPOSED DESIGN SOLUTION MAY REQUIRE MODIFICATIONS DUE TO JOB SPECIFIC INFORMATION REGARDING GRADING, UTILITIES, EASEMENTS, SETBACKS, WATER RETENTION, AND SITE ACCESS. ALL STRUCTURAL MODIFICATIONS MUST BE CAREFULLY ANALYZED BY A LICENSED STRUCTURAL ENGINEER AND MODIFIED/DESIGNED AS REQUIRED.
- C. COMPLIANT CONSTRUCTION DOCUMENTS ARE TO BE PREPARED BY LICENSED PROFESSIONALS WHO ARE WILLING TO ACCEPT RESPONSIBILITY FOR PROPER APPLICATION OF THESE INTENT DOCUMENTS.
- D. BUILDING CONFIGURATION, ROOM SIZES AND SHAPES ARE ALL SHOWN FOR DESIGN INTENT PURPOSES AS A GUIDELINE ONLY. ALL CRITICAL DIMENSIONING SHALL BE PERFORMED BY A LICENSED PROFESSIONAL AS PART OF CONTRACT DOCUMENT PREPARATION.

DRAWING NOTES

- 1. OFFICE FURNISHINGS LAYOUT BY OWNER. ITEMS CAN BE SELECTED FROM SPECIFIED FURNITURE SYSTEM. REFER TO FURNITURE SCHEDULE ON SHEET A-3B.1, A-3B.2.
- 2. STORAGE UNITS LAYOUT AND QUANTITY BY OWNER.
- 3. SERVICE BAY LIFT AND ALIGNMENT RACK LAYOUTS BY OWNER.
- 4. REFER TO FURNITURE LAYOUT PLAN ON SHEET A-3.
- 5. BASE CABINETS, COUNTERTOP WITH SINK, STORAGE CABINETS ABOVE - REFER TO FINISH SCHEDULE FOR STANDARD PL FINISHES.
- 6. CUSTOMER SERVICE VISIBLE COUNTERTOP, FINISHES TO BE SS-1.
- 7. STAINLESS STEEL COUNTER FOR BACK OF HOUSE SERVICE AREAS.
- 8. RECOMMENDED FOLIAGE / PLANTS LOCATIONS, THESE ITEMS TO BE COORDINATED AND PROVIDED BY THE OWNER.
- 9. SEE A-5E FOR RESTROOM COUNTER DETAILS.
- 10. ADA COMPLIANT CHAIR(S) TO CORRESPOND WITH ADA COMPLIANT DESK(S).
- 11. NOT USED.
- 12. FIRE RATED WALL - FIRE SHUTTERS OR FIRE RATED WINDOW WALL MAY BE REQUIRED.
- 13. LINE OF SOFFIT ABOVE.
- 14. ELECTRIC WATER COOLER - SUPPLY ONE FOR ADA ACCESSIBILITY.
- 15. DEFINES SERVICE STALL AREA.
- 16. VEHICLE LOCATION- MAINTAIN LOCATION.
- 17. OPTIONAL NIGHT DROP INTEGRATED INTO FACADE.
- 18. NOT USED.
- 19. MEZZANINE PARTS STORAGE MAY BE REQUIRED TO COMPLY WITH KIA MINIMUM REQUIREMENTS. SEE ZONE FOR REQUIREMENTS.
- 20. SEE SHEET A-4.1 FOR FLOOR FINISHES TRANSITION NOTES.
- 21. NOT USED.
- 22. PROVIDE POWER/DATA AS NEEDED AT FIXTURE, GRAPHIC OR MONITOR LOCATIONS .
- 23. PARTS OVERHEAD DOOR.
- 24. NOT USED.
- 25. NOT USED.
- 26. GROUND SENSORS TO TRIGGER DOOR OPENING AND CLOSING.
- 27. WATER SPIGOT LOCATION.
- 28. SUGGESTED STRUCTURAL COLUMN LAYOUT. ALL LAYOUTS TO BE CERTIFIED BY A LICENSED PROFESSIONAL.
- 29. INSTALL EV CHARGING STATION; ONE FAST CHARGER (MIN. 24KW), OR ONE LEVEL 2.
- 30. VEHICLE BOLLARD LAYOUT TO BE DETERMINED BY OWNER/ARCHITECT. SEE EQUIP-10 IN FINISH SCHEDULE.
- 31. ADD 50 IN. WIDE SAFETY/PRIVACY FILM GF-1 @ THE CENTER OF INTERIOR GLAZING, TYP.
- 32. 1" FURRING, SEE FINISH PLAN.
- 33. REFER TO SHEET GPP-2 FOR ALL GRAPHIC LOCATIONS.
- 34. ABOVE-GROUND LIFTS FOR DESIGNATED EV SERVICE STALL.
- 35. MOP SINK.
- 36. STALL ADJACENT TO EV SERVICE STALL SHALL REMAIN FREE OF VEHICLE LIFT.
- 37. BRAND WALL. SEE SHEET FX-6 FOR DETAILS.
- 38. LOCKER LAYOUT BY OWNER.
- 39. EXISTING COLUMN. EXACT LOCATION TO BE CERTIFIED BY A LICENSED PROFESSIONAL.
- 40. ALIGN WITH FACE OF EXISTING CONSTRUCTION.



HERTRICH KIA OF EASTON
EASTON, MD

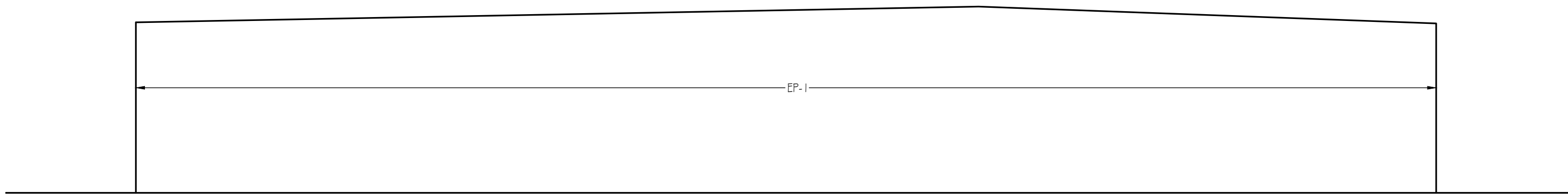


937.293.7700 changeupinc.com

These drawings are for communication of design intent only. They are shown to a specific size, shape, color, feature and proportion, and not to be used as fabrication drawings.

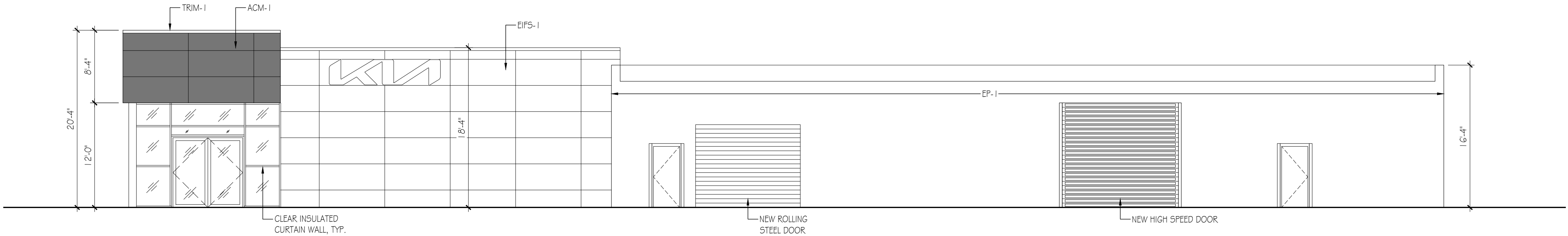
© 2023 ChangeUp

DATE	
JULY 2023	
REVISED	
CG + ND	
SCALE	PROJECT NO.
3/32"=1'-0"	KIA269
DRAWING TITLE	
FURNITURE/FIXTURE PLAN	
DWG NO.	
A-2	



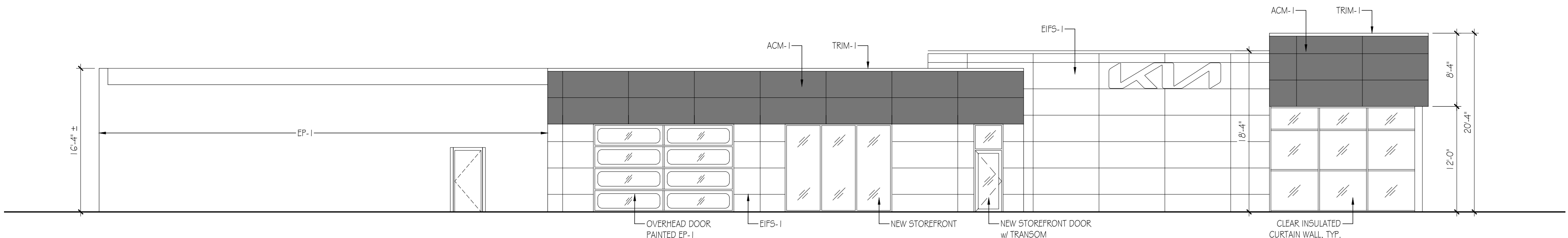
4 REAR ELEVATION

Scale: 1/8" = 1'-0"



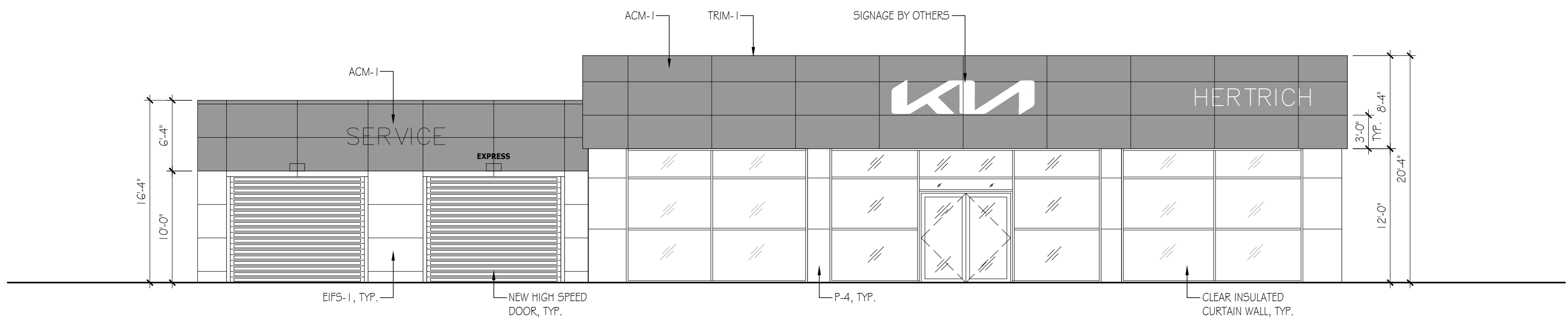
3 RIGHT ELEVATION

Scale: 1/8" = 1'-0"



2 LEFT ELEVATION

Scale: 1/8" = 1'-0"



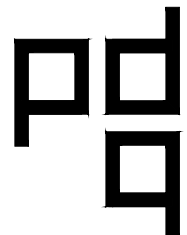
1 FRONT ELEVATION

Scale: 1/8" = 1'-0"

EXTERIOR MATERIALS SCHEDULE

TAG	TYPE	SPECIFICATION	REMARKS/ CONTACT
ACM-1	ALUMINUM COMPOSITE PANEL	ALPOLIC - ALPOLIC FR - TOB BLACK	
ACM-2	ALUMINUM COMPOSITE PANEL	ALPOLIC - ALPOLIC FR - BSX SILVER METALLIC	
CW-1	CURTAIN WALL	KAWNEER - 1620UT SSG CURTAIN WALL SYSTEM - ANODIZED ALUMINUM MULLIONS; CLEAR, LOW-IRON GLAZING	
EIFS-1	EXTERIOR INSULATION FINISH SYSTEM	DRYVIT - "DEMANDIT ADVANTAGE" - TO MATCH BM HC-1 69 CONVENTRY GRAY	
EP-1	PAINT	BEJAMIN MOORE - REGAL EXTERIOR LATEX PAINT - COLOR: BM HC-1 69 CONVENTRY GRAY; FINISH: EGG SHELL	

- GENERAL EXTERIOR FINISH SCHEDULE NOTES
- UNLESS NOTED OTHERWISE, PAINTED SURFACES SHALL BE PREPARED & FINISHED AS FOLLOWS:
 - EXTERIOR HOLLOW METAL DOOR FRAMES & MISCELLANEOUS METALS - 1 COAT PRIMER - 2 FINISH COATS - SEMI-GLOSS FINISH
 - EXTERIOR GYPSUM WALLBOARD CEILING/SOFFITS - 1 COAT PRIMER - 2 FINISH COATS - FLAT FINISH
 - EXTERIOR WALLS - STUCCO/EIFS - 1 COAT PRIMER - 2 FINISH COATS - SATIN FINISH



PENNEY DESIGN GROUP

8120 Woodmont Avenue | Suite 750 | Bethesda, Maryland 20814
p.301.979.7600 | f.301.710.6384 | www.penneydesigngroup.com

Hertrich Family Dealership

120 South Dupont Highway
New Castle, DE 19720

Proposed Elevations

October 18, 2023

Kia of Easton

6546 Ocean Gateway
Easton, MD 21601
HER010a

PE-1

SCALE:
1/8" = 1'-0"
24 x 36





Town of Easton
Engineering, Planning and Zoning
14 South Harrison Street, Easton, MD 21601

RECEIVED
APR 23 2024
TOWN OF EASTON

Easton Staff Development Review

Property Information

Address **1180 S. WASHINGTON ST, EASTON, MD 21601**

Tax Map **0108** Grid **0000** Parcel **2677** Lot

Deed Reference: Liber **02414** Folio **00448**

Plat Reference: Liber Folio

Base Zoning District **COMMERCIAL** Historic District Y ☐ N ☒ Planning Redevelopment Y ☐ N ☒

Purpose of Application / Description of Work:

The Easton Family YMCA at S. Washington St is renovating and expanding parking facilities on their property. Two gravel parking lots will be converted to new asphalt parking. The existing asphalt parking lot there now, will be renovated through mill and overlay of new surface course.

The YMCA is also renovating the south entrance coming into the new parking lot. A new stormwater management facility is being added in the southeast corner of the new south parking lot. The YMCA is also proposing tree removal south of the new entrance.

Owner

Name **YMCA OF THE CHESAPEAKE**

Mailing Address **202 PEACHBLOSSOM RD, EASTON, MD 21601**

Telephone No. **410-822-0566** Email **rgill@ymcachesapeake.org**

Applicant / Agent

Name **RAUCH Inc.**

Mailing Address **106 N. Harrison Street, Easton, MD 21601**

Telephone No. **410-770-9081** Email **casey@raucheng.com**

Surveyor / Engineer

Name **RAUCH Inc.** License No. **11024** Expiration Date **7-24-24**

Mailing Address **106 N. Harrison Street, Easton, MD 21601**

Telephone No. **410-770-9081** Email **robert@raucheng.com**

Any modifications during review shall warrant an updated application.

I do hereby solemnly declare and affirm that the information provided by this application and the documents attached hereto accurately represent the conditions of the request and that submission of an incomplete application will be returned for correction prior to processing.

Signature of Applicant or Agent 

Date **4/19/2024**

Printed Name of Applicant or Agent **Robert Rauch**

For Office Use Only

Easton Staff Development Review Meeting Required Y ☒ N ☐

Easton Staff Development Review Meeting Date

2024-1199 / ESDR 24-09

Completeness Check Date

Revisions/Resubmissions Required Y ☐ N ☐

Resubmission Date

Documents Received Y ☐ N ☐

Staff Determination

Planning Commission Required Y ☐ N ☐ TBD

BOZA Required Y ☐ N ☐

Historic District Commission Required Y ☐ N ☒

Resubmission for ESDR Required Y ☐ N ☐

Staff Signature

Date

Revised 02-2019



Town of Easton
Engineering, Planning and Zoning
14 South Harrison Street, Easton, MD 21601

RECEIVED
APR 23 2024
TOWN OF EASTON
2024-1199 / ESDR 24-09

Supplemental Waiver Request Application

Waiver Request Type

Sidewalk ☐ Parking Spaces ☐ Parking/Aisle Dimension ☐
Landscaping & Buffering ☒ Signage ☐ Other ☐

Project Information

Address	1180 S. WASHINGTON ST, EASTON, MD 21601				
Tax Map	0108	Grid	0000	Parcel	2677
Zoning District	Residential	PC Meeting Date		Historic District	Yes ☐ No ☒
Owner or Agent	RAUCH INC. (AGENT) ON BEHALF OF YMCA OF THE CHESAPEAKE (OWNER)				
Mailing Address	106 N. HARRISON ST, EASTON, MD 21601				
Telephone No.	410-770-9081	Email	casey@raucheng.com		

Request Details

Please attach a detailed description of the waiver request(s) being made and the justification(s) for requesting said waiver(s).

THE EXISTING CONDITIONS AT THE YMCA ALREADY HAVE STREET TREES WHICH ACT AS A BUFFERYARD. ADDITIONALLY, THERE IS NOT ENOUGH ROOM FOR AN EXPANDED BUFFERYARD. THE YMCA WANTS TO PLANT NEW TREES AND SHRUBS WHERE THEY ARE TRYING TO REMOVE A SECTION OF EXISTING PINE TREES.

☐ Ordinance Section Supporting Waiver Request.

SECT. 28 - 1014

Any modifications during review shall warrant an updated application.

I do hereby solemnly declare and affirm that the information provided by this application and the documents attached hereto accurately represent the conditions of the request and that submission of an incomplete application will be returned for correction prior to processing.

Signature of Applicant or Agent

Chris Schoenster

Date

4-19-24

Printed Name of Applicant or Agent

Chris Schoenster

CONTACT INFORMATION

OWNER/DEVELOPER: YOUNG MEN'S CHRISTIAN ASSOCIATION (YMCA)
C/O ROBBIE GILL
202 PEACHBLOSSOM RD
EASTON, MD 21601
(410)822-1515

ENGINEER: RAUCH Inc.
106 N HARRISON ST
EASTON, MARYLAND 21301
(410)770-9081

YMCA - SOUTH WASHINGTON
STREET
INFRASTRUCTURE IMPROVEMENT PLAN
FOR
YOUNG MEN'S CHRISTIAN ASSOCIATION OF THE CHESAPEAKE INC

SITE DATA	
PROPERTY ADDRESS:	1180 S WASHINGTON STREET EASTON, MD 21601
LONGITUDE:	38.751157° N
LATITUDE:	-76.071732° W
PRESENT ZONING CLASSIFICATION:	R10A
PRESENT USE:	RESIDENTIAL
TAX MAP:	0108
GRID:	0000
PARCEL:	2677
DEED REFERENCE:	02414/ 0488
SITE AREA:	205,603 SF / 4.72 ACRES
PROPOSED TOTAL LIMIT OF DISTURBANCE:	38,426 SF / 0.882 ACRES
TOTAL EXISTING IMPERVIOUS:	20,511 SF
TOTAL PROPOSED IMPERVIOUS:	23,986 SF
TOTAL CUT:	719 CY
TOTAL FILL:	117 CY
NET CUT/FILL:	602 (CUT)
FEMA FLOOD MAP:	PANEL 24041C0189D
SURVEY DATUM:	
HORIZONTAL:	NAVD83
VERTICAL:	NAVD88
EPSG CODE:	2248



SHEET NO.	DRAWING TITLE
G-100	COVER SHEET
C-101	OVERALL SITE PLAN
V-101.01	EXISTING CONDITIONS
V-101.02	DEMOLITION PLAN
C-200	EROSION & SEDIMENT CONTROL COVER
C-200.01	EROSION & SEDIMENT CONTROL LEGEND
C-201.00	EROSION & SEDIMENT CONTROL PLAN
C-205.01 - 02	EROSION & SEDIMENT CONTROL DETAILS
C-301.01 - 03	COMBINED SITE GRADING AND STORMWATER PLAN
C-301.04 - 05	PRE & POST-DEVELOPMENT DRAINAGE MAPS
C-303	PROFILES
C-305.01 - 03	SITE & STORMWATER DETAILS

GENERAL NOTES

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE DRAWINGS. SPECIFICATIONS, LOCAL BUILDING CODES, BEST PRACTICES OF THE RESPECTIVE TRADES AND THE STANDARD SPECIFICATIONS AND DETAILS REFERRED TO HEREON.

THIS DRAWING SHOWS INFORMATION OBTAINED FROM AVAILABLE RECORDS REGARDING PIPES, CONDUITS, TELEPHONE LINES AND OTHER STRUCTURES AND CONDITIONS WHICH EXIST WITHIN LIMITS OF THE WORK AT AND BELOW THE SURFACE OF THE GROUND. THE CONTRACTOR IS RESPONSIBLE FOR SUPPORTING AND PROTECTING ALL PIPES, CONDUITS, TELEPHONE LINES, AND OTHER STRUCTURES.

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING TWO (2) WEEKS PRIOR TO START OF CONSTRUCTION AND SHALL COORDINATE ALL CONSTRUCTION PHASES WITH THEM:

MDE (Main Number)	410-537-3000
MDE (Eastern Shore Field Office)	410-901-4020
TOWN OF EASTON DPW	410-882-0513
TALBOT COUNTY SCD	410-882-1577 x 3
MISS UTILITY	800-257-7777 or 811

SHOULD ANY DAMAGE OCCUR TO ANY MARKED UTILITIES, THEY SHALL BE REPAIRED SOLELY AT THE CONTRACTORS EXPENSE.

ALL LANDSCAPING SHALL BE PERFORMED BY QUALIFIED PROFESSIONALS. ALL PLANT MATERIALS SHALL BE FROM CERTIFIED NURSERYMAN AND BE GUARANTEED FOR ONE (1) YEAR FROM THE DATE OF PLANTING.

ANY PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE REPLACED SOLELY AT THE CONTRACTORS EXPENSE.

ESTIMATED TOWN IMPACT FEES
TOTAL FEE COST: \$1,500.00

ZONING & SUBDIVISION FEES

PLAN REVIEWS:
STORMWATER MANAGEMENT - UP TO 1 ACRE: \$1,250.00

PLANNING COMMISSION FEES

CONCEPT, USE & DESIGN REVIEW: \$250.00

NOTE: THE IMPACT FEES INDICATED IN THIS NOTATION SHALL NOT BE CONSTRUCTED AS VESTED AND UNTIL SUBMISSION OF THE BUILDING APPLICATION.

LINETYPES

TOPOGRAPHY
MAJOR CONTOURS
MINOR CONTOURS
TOP OF SLOPE BREAKLINE
BOTTOM OF SLOPE BREAKLINE
TOPOGRAPHY BREAKLINE

CATCHMENT AREA

Tc FLOW PATH

PARCEL BOUNDARY
PARCEL SETBACK/EASEMENT
FENCELINE WOOD
FENCELINE STEEL
TREELINE/VEGETATION
ROADWAY CENTERLINE
HIGHWAY BARRIER

UTILITIES
OVERHEAD ELECTRIC
UNDERGROUND ELECTRIC
TELEPHONE LINE
GAS PIPE LINE
CABLE TV
WATER PIPE
STORMWATER PIPE

UNDERDRAIN
SANITARY SEWER
FORCE MAIN SEWER

ENVIRONMENTAL
WETLAND LINE
FLOOD PLANE 100/500 YR
MEAN HIGH WATER
MEAN LOW WATER
CRITICAL AREA BOUNDARY
BUFFER 25'/100'
SOILS BOUNDARY

EROSION AND SEDIMENT CONTROL

SILT FENCE
SUPER SILT FENCE
SILT FENCE ON PAVEMENT
LIMITS OF DISTURBANCE
LOD & SILT FENCE
LOD & SILT FENCE
LOD & SILT FENCE ON PAVEMENT
STANDARD INLET PROTECTION
AT-GRADE INLET PROTECTION
CURB INLET PROTECTION
SWM EASEMENT 5'/10'

PROPOSED

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

EXISTING

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

SYMBOLS

FLARED END SECTION

YARD INLET

CURB INLET

CUSTOM INLET

NYLOPLAST INLET

STORM DRAIN MANHOLE

SANITARY SEWER MANHOLE

CLEANOUT

GATE VALVE

STUB

SIGN

WATER METER

FIRE HYDRANT

WELL

BOLLARD

ELECTRIC TRANSFORMER

TELEPHONE PEDESTAL

UTILITY POLE

GUY WIRE

CONIFEROUS TREE

DECIDUOUS TREE

SPOT ELEVATION

LAND SLOPE

BENCHMARK

BOREHOLE/MONITORING WELL

PROPOSED

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

EXISTING

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

45
44

HATCHES

ASPHALT

GRAVEL

CONCRETE

RIPRAP/ROCK

ESD BED BOTTOM

BRICK PAVING

EXISTING, TO BE
DEMOLISHED

STEEP SLOPES

ROOFTOP/NON-ROOFTOP
DISCONNECT

ABBREVIATIONS

ADA	AMERICANS WITH DISABILITIES ACT
AGIP	AT GRADE INLET PROTECTION
@	AT
BC	BACK OF CURB
BM	BENCHMARK
BRL	BUILDING RESTRICTION LINE
CES	CONCRETE END SECTION
C/O	CLEAN OUT
CHRD	CHORD
CI	CURB INLET
CIP	CURB INLET PROTECTION
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
Cul	CUSTOM INLET
CY	CUBIC YARD
DI	DUCTILE IRON
E	EAST
EL/ELEV	ELEVATION
EP	EDGE OF PAVE
ESC	EROSION AND SEDIMENT CONTROL
EX	EXISTING
FES	FLARED END SECTION
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FL	FLOW LINE
FT	FOOT
GFA	GROSS FLOOR AREA
GPD	GALLONS PER DAY
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
I	INLET
INV	INVERT
KV	KILOVOLTS
L	ARC LENGTH
LF	LINEAR FEET
LOD	LIMITS OF DISTURBED AREA
LT	LEFT
MAX	MAXIMUM
MBR	MICRO-BIORETENTION
MD	MARYLAND
MEP	MECHANICAL, ELECTRICAL, AND PLUMBING
MH	MANHOLE
MHW	MEAN HIGH WATER

COVER SHEET

OF THE LANDS OF

YMCA INC.

TAX MAP 108, GRID 0, PARCEL 2677

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR YMCA INC.

RAUCH

Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3987

REVISIONS

DESCRIPTION

DATE

REV. #



DATE: 4/23/2024
SCALE: AS SHOWN
DRAWN BY: BAC/AFK
DESIGNED BY: WCS
APPROVED BY: BBF

SHEET NO.:

G-100

FOR
REVIEW



- ### HATCH LEGEND

OVERALL SITE PLAN

OF THE LANDS OF

YMCA INC.

TAX MAP 108, GRID 0, PARCEL 2677

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR YMCA INC.



Main Office: 106 N Harrison St. - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3667

Page 12 of 128



- ## DEMOLITION NOTES

- 1 NORTH GRAVEL LOT TO BE DEMOLISHED
- 2 SOUTH GRAVEL LOT TO BE DEMOLISHED
- 3 FENCE POST TO BE DEMOLISHED
- 4 WOODEN FENCE TO BE DEMOLISHED
- 5 MILL AND OVERLAY TO RESURFACE EXISTING ASPHALT PARKING LOT (14,005 S.F.)
- 6 15 TREES TO BE REMOVED
- 6 REMOVE EXISTING 12" CULVERT PIPE CMP

REVISIONS	DESCRIPTION
-----------	-------------

[illegible]

DATE:	4/23/2024
SCALE:	1" = 60'
DRAWN BY:	BAOC
DESIGNED BY:	/ BAO
APPROVED BY:	

SHEET NO.: **V-101.02**

**FOR
REVIEW**

DEMOLITION PLAN

OF THE LANDS OF

YMCA INC.

TAX MAP 108, GRID 0, PARCEL 2677

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR YMCA INC.

RAUCH inc.

Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3667

STANDARD EROSION AND SEDIMENT CONTROL NOTES

- The contractor shall notify the Maryland Department of the Environment (MDE) Sediment Control Inspector at 410-901-4020 and the Talbot County Department of Public Works (DPW) at 410-770-8170 at least 48 hours prior to commencing any land disturbing activities and, unless waived by the Sediment Control inspector, shall be required to hold a pre-construction meeting at the project site. The contractor must provide the name of the person on the site who is responsible for inspection and maintenance of erosion and sediment control measures and a copy of their green card to the Sediment Control Inspector.
- All projects with construction activities disturbing 1 acre or more are required to submit a General Permit (NOI) to MDE to comply with the General Permit for Construction Activity for Stormwater Discharges. The General Permit must be approved prior to disturbance activities. To obtain a General Permit (NOI) form, contact the Permits Coordinator at the MDE Compliance Program at 410-537-3510.
- The limit of disturbance shall be clearly delineated in the field prior to the pre-construction meeting and any grading activities to ensure compliance with the approved plan.
- The approved Erosion and Sediment Control Plan must be kept at the project site.
- The Talbot Soil Conservation District (TSCD) reserves the right to modify the Erosion and Sediment Control Plans.
- The TSCD may revoke the approval of the Erosion and Sediment Control Plan if work performed at the project site does not conform to the provisions of the grading permit, to the approved plan or to any written instructions from MDE, Talbot County DPW or the TSCD.
- The contractor must request that the Sediment Control Inspector approve work completed in accordance with the approved Erosion and Sediment Control Plan, the grading or building permit and the Talbot County Erosion and Sediment Control Ordinance at the following points of project development:
 - Upon completion of the installation of perimeter erosion and sediment control measures but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by MDE is made.
 - Prior to removal or modification of any sediment control structure(s).
 - Upon final stabilization of the site and prior to the removal of any sediment control measures.
- The contractor shall construct all erosion and sediment control measures per the approved plan and construction sequence and shall have them inspected and approved by the Sediment Control Inspector prior to beginning any other land disturbances.
- The contractor shall ensure that all runoff from disturbed areas is directed to the sediment control devices and shall not remove any erosion or sediment control measure without prior permission from the Sediment Control Inspector.
- The following minor plan modifications may be approved by the Sediment Control Inspector in the field:
 - Sediment control structures (except basins and traps) may be moved to meet the existing contours and field conditions, when moving these structures would have no impact on their function or design criteria.
 - Substitution of perimeter control measures may be made provided the measure substituted is equivalent (i.e., silt fence for straw bales) or is an upgrade of the original measure (i.e., silt fence to a perimeter berm with properly sized outlet).
 - Addition and extension of perimeter controls (including stone construction entrances) may be made to meet field conditions. Any modifications to the plan which are not listed above require the plan to be submitted to the TSCD for review and approval.
- The contractor shall protect all points of construction ingress and egress to prevent the deposition of materials onto public roads. All materials deposited onto public roads shall be removed immediately.
- On-site temporary stockpile areas must be placed as shown on the approved plan. If the construction schedule is to exceed 3 days, the stockpile areas must be stabilized. Stockpile areas should not exceed fifteen feet in height. If a stockpile is to exceed fifteen feet in height, it must be shown on the plan to be terraced with pipe slope drains installed and approved by TSCD. Upon the completion of the use of the stockpile area, existing ground surfaces shall be restored to their original conditions and permanently stabilized.
- Various steps in the sequence of construction may require the contractor to remove excess excavated material to an approved location or to import material from an approved location. For purposes of this plan, an approved location shall be one which is operating under an approved erosion and sediment control plan and an active grading permit at the time of construction.
- The contractor shall inspect daily and maintain continuously in an effective operating condition all erosion and sediment control measures until such time as they are removed with prior permission from the Sediment Control Inspector.
- Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within:
 - Three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes equal to or greater than 3 horizontal to 1 vertical (3:1), and
 - Seven (7) days as to all other disturbed or graded areas on the project site. The above requirements do not apply to those areas which are shown on the plan and are currently being used for material storage or for those areas on which actual construction activities are currently being performed or to interior areas of a surface mine site where the stabilization material would contaminate the recoverable resource. Maintenance shall be performed as necessary to ensure that the stabilized areas continuously meet the appropriate requirements of the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control.
- Sediment control practices will be maintained until the entire contributing area to the practice has been permanently stabilized and meets the satisfaction of the Sediment Control Inspector. Sediment controls may only be removed with the authorization of the Sediment Control Inspector.
- All areas disturbed by the removal of sediment control devices must be immediately stabilized.
- Surface drainage flows over unstabilized cut and fill slopes shall be controlled by either preventing drainage flows from traversing the slopes or by installing protective devices to convey the water downslope without causing erosion. Dikes shall be installed and maintained at the top of cut or fill slopes until the slope and drainage area to it are fully stabilized, at which time the dikes must be removed and final grading done to promote sheet flow drainage. Erosion control measures must be implemented at points of concentrated flow where erosion is likely to occur.
- No permanent cut or fill slope with a gradient steeper than 3:1 will be permitted in lawn maintenance areas. A slope gradient of up to 2:1 will be permitted in non-maintenance areas provided that those areas are indicated on the erosion and sediment control plans with a low-maintenance ground cover specified for permanent stabilization. Slope gradient steeper than 2:1 will not be permitted with vegetation stabilization.
- All flow lines are to be stabilized with sod or seed with erosion control matting to a depth of flow of 1 foot.
- Sediment traps or basins are not permitted within 20 feet of a foundation which is existing or under construction. No structure may be constructed within 20 feet of an active sediment trap or basin.
- Temporary sediment traps and sediment basins shall be cleaned out and restored to the original dimensions when sediment has accumulated to one half (1/2) the wet storage depth of the trap or basin.
- Sediment removed from traps (and basins) shall be placed and stabilized in approved areas, but not within a floodplain, wetland or forest retention area. When pumping sediment laden water, the discharge must be directed to a sediment trapping device prior to release from the site.
- For approved dewatering strategies for traps and basins, see section F of the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control. Pumping sediment laden water into the waters of the State without filtration is strictly forbidden.
- Sediment control devices placed in infiltration areas must have bottom elevations at least two (2) feet higher than the finished grade elevation of the infiltration practice. When converting a sediment trap to an infiltration device, all accumulated sediment must be removed and disposed of prior to final grading of infiltration device.
- The developer is responsible for obtaining all necessary permits prior to any construction activities. Further, the issuance of a grading permit does not relieve the developer of the responsibility to obtain any additional local, state or federal permits.

ENVIRONMENTAL NOTES:

- THE PROJECT SITE IS NOT LOCATED WITHIN THE CRITICAL AREA BUFFER
- THE SITE IS NOT LOCATED WITHIN A 100 YEAR FLOODPLAIN

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR

TEMPORARY STABILATION MUST BE COMPLETE WITHIN:

- THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND
- SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING

HYDROLOGY NOTES:

- THE PROJECT WILL NOT ALTER HYDROLOGY TO OR FROM THE SITE
- NO OUTLETS WILL BE ALTERED BY THIS PROJECT

GENERAL NOTES

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, LOCAL BUILDING CODES, BEST PRACTICES OF THE RESPECTIVE TRADES AND THE STANDARD SPECIFICATIONS AND DETAILS REFERRED TO HEREON.

THIS DRAWING SHOWS INFORMATION OBTAINED FROM AVAILABLE RECORDS REGARDING PIPES, CONDUITS, TELEPHONE LINES AND OTHER STRUCTURES AND CONDITIONS WHICH EXIST WITHIN LIMITS OF THE WORK AT AND BELOW THE SURFACE OF THE GROUND. THE CONTRACTOR IS RESPONSIBLE FOR SUPPORTING AND PROTECTING ALL PIPES, CONDUITS, TELEPHONE LINES, AND OTHER STRUCTURES.

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING TWO (2) WEEKS PRIOR TO START OF CONSTRUCTION AND SHALL COORDINATE ALL CONSTRUCTION PHASES WITH THEM:

MDE (Main Number) 410-537-3000
MDE (Eastern Shore Field Office) 410-901-4020
TOWN OF EASTON DPW 410-882-0513
TALBOT COUNTY SCD 410-882-1577 x 3
MISS UTILITY 800-257-7777 or 811

SHOULD ANY DAMAGE OCCUR TO ANY MARKED UTILITIES, THEY SHALL BE REPAIRED SOLELY AT THE CONTRACTORS EXPENSE.

ALL LANDSCAPING SHALL BE PERFORMED BY QUALIFIED PROFESSIONALS. ALL PLANT MATERIALS SHALL BE FROM CERTIFIED NURSERYMAN AND BE GUARANTEED FOR ONE (1) YEAR FROM THE DATE OF PLANTING.

ANY PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE REPLACED SOLELY AT THE CONTRACTORS EXPENSE.

YMCA - SOUTH WASHINGTON STREET

EROSION & SEDIMENT CONTROL PLANS

FOR
YOUNG MENS CHRISTIAN ASSOCIATION (YMCA)
OF THE CHESAPEAKE INC



VICINITY MAP
SCALE: 1" = 2000'

REVIEWED FOR THE TALBOT SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

APPROVED: _____

TALBOT SOIL CONSERVATION DISTRICT _____ DATE _____

NOTE: THE TALBOT SOIL CONSERVATION DISTRICT RESERVES THE RIGHT TO ADD, DELETE, MODIFY OR OTHERWISE ALTER THE EROSION CONTROL PROVISIONS OF THIS PLAN IN THE EVENT THAT ADDITIONAL PROTECTION BECOMES NECESSARY.

DEVELOPER'S CERTIFICATION

I HEREBY CERTIFY THAT ALL OF THE DEVELOPMENT AND/OR CONSTRUCTION SHALL BE DONE IN ACCORDANCE TO THIS PLAN OF EROSION AND SEDIMENT CONTROL.

SIGNATURE _____ DATE _____

- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR OR SUBCONTRACTOR TO NOTIFY THE ENGINEER OF ANY DEVIATION MADE IN THIS PLAN. ANY CHANGE MADE TO THIS PLAN WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER WILL PLACE RESPONSIBILITY FOR SAID CHANGE ON THE CONTRACTOR OR SUBCONTRACTOR.
- ANY RESPONSIBLE PERSONNEL INVOLVED IN THIS CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT THE DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT.

CONTACT INFORMATION

OWNER/DEVELOPER: YOUNG MENS CHRISTIAN ASSOCIATION
C/O ROBBIE GILL
202 PEACHBLOSSOM RD
EASTON, MD 21601
(410)822-1515

ENGINEER: RAUCH Inc.
106 N HARRISON ST
EASTON, MARYLAND 21301
(410)770-9081

SITE DATA

PROPERTY ADDRESS: 1180 S WASHINGTON STREET
EASTON, MD 21601

LONGITUDE: 38.751157° N

LATITUDE: -76.071732° W

PRESENT ZONING CLASSIFICATION: R10A
PRESENT USE: RESIDENTIAL
TAX MAP: 0108
GRID: 0000
PARCEL: 2677
DEED REFERENCE: 02414/ 0488

SITE AREA: 205,603 SF / 4.72 ACRES
PROPOSED TOTAL LIMIT OF DISTURBANCE: 38,426 SF / 0.882 ACRES
TOTAL EXISTING IMPERVIOUS: 20,511 SF
TOTAL PROPOSED IMPERVIOUS: 23,986 SF

TOTAL CUT: 719 CY
TOTAL FILL: 117 CY
NET CUT/FILL: 602 (CUT)

FEMA FLOOD MAP: PANEL 24041C0189D

SURVEY DATUM:
HORIZONTAL: NAVD83
VERTICAL: NAVD88
EPSG CODE: 2248

SOILS DATA					
SYMBOL	SOIL SERIES	SLOPE	HYDRIC	HIGHLY ERODIBLE	HYDROLOGIC CLASSIFICATION
HFA	HAMBROOK-SASSAFRAS COMPLEX	0-2%	NO	NO	B
HFB	HAMBROOK-SASSAFRAS COMPLEX	2-5%	NO	NO	B

ESC DRAWING SHEET LIST

SHEET NO.	DRAWING TITLE
C-200.00	COVER SHEET
C-200.01	LEGEND
C-201	EROSION & SEDIMENT CONTROL PLAN
C-205.01 - 02	EROSION & SEDIMENT CONTROL DETAILS

EROSION AND SEDIMENT CONTROL COVER

OF THE LANDS OF

YMCA INC.

TAX MAP 108, GRID 0, PARCEL 2677

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND
PREPARED FOR YMCA INC.

RAUCH
Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3487

REVISIONS

DESCRIPTION

DATE

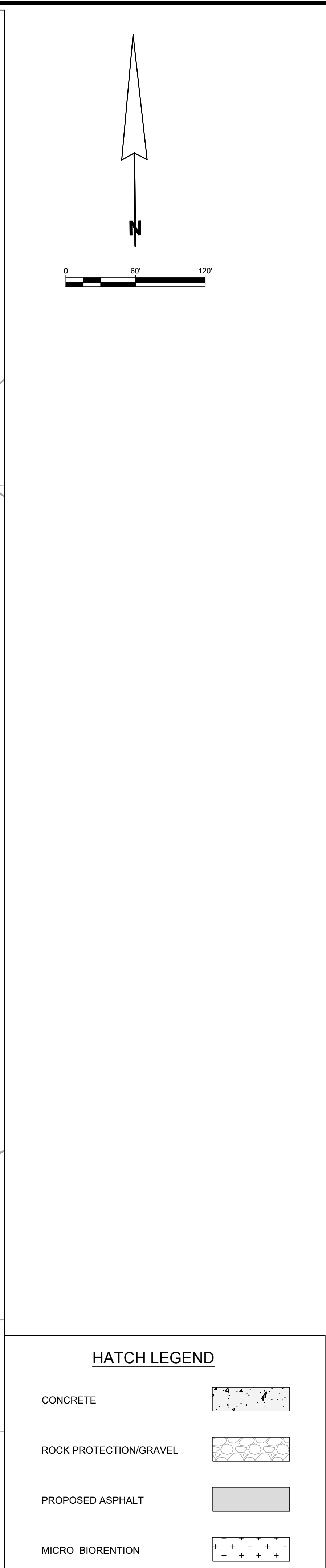
REV. #



DATE: 4/23/2024
SCALE: AS SHOWN
DRAWN BY: BACC/AFK
DESIGNED BY: WCS
APPROVED BY: BBF

SHEET NO.:
C-200.00

FOR
REVIEW



NOTE: STABILIZED CONSTRUCTION ENTRANCE NOT NECESSARY FOR EXISTING GRAVEL AND ASPHALT ENTRANCES.

SOILS DATA					
SYMBOL	SOIL SERIES	SLOPE	HYDRIC	HIGHLY ERODIBLE	HYDROLOGIC CLASSIFICATION
Hfa	HAMBROOK-SASSAFRAS COMPLEX	0-2%	NO	NO	B
Hfb	HAMBROOK-SASSAFRAS COMPLEX	0-5%	NO	NO	B

REVISIONS		DESCRIPTION
DATE	REV. #	
	1	





DATE:	4/23/2024
SCALE:	1" = 60'
DRAWN BY:	BAOC/AFK
DESIGNED BY:	WCS
APPROVED BY:	BBF

SHEET NO.:

C-201

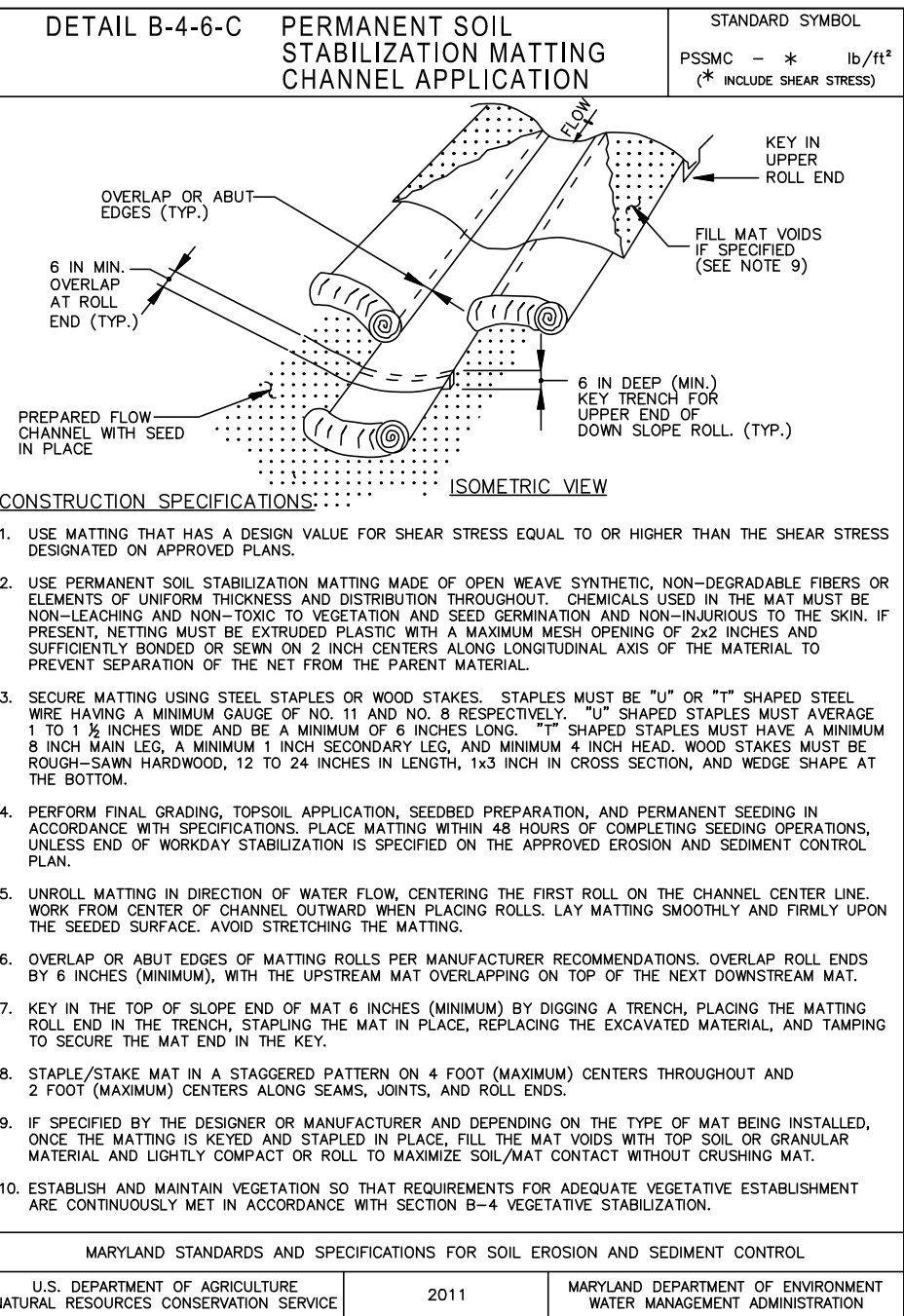
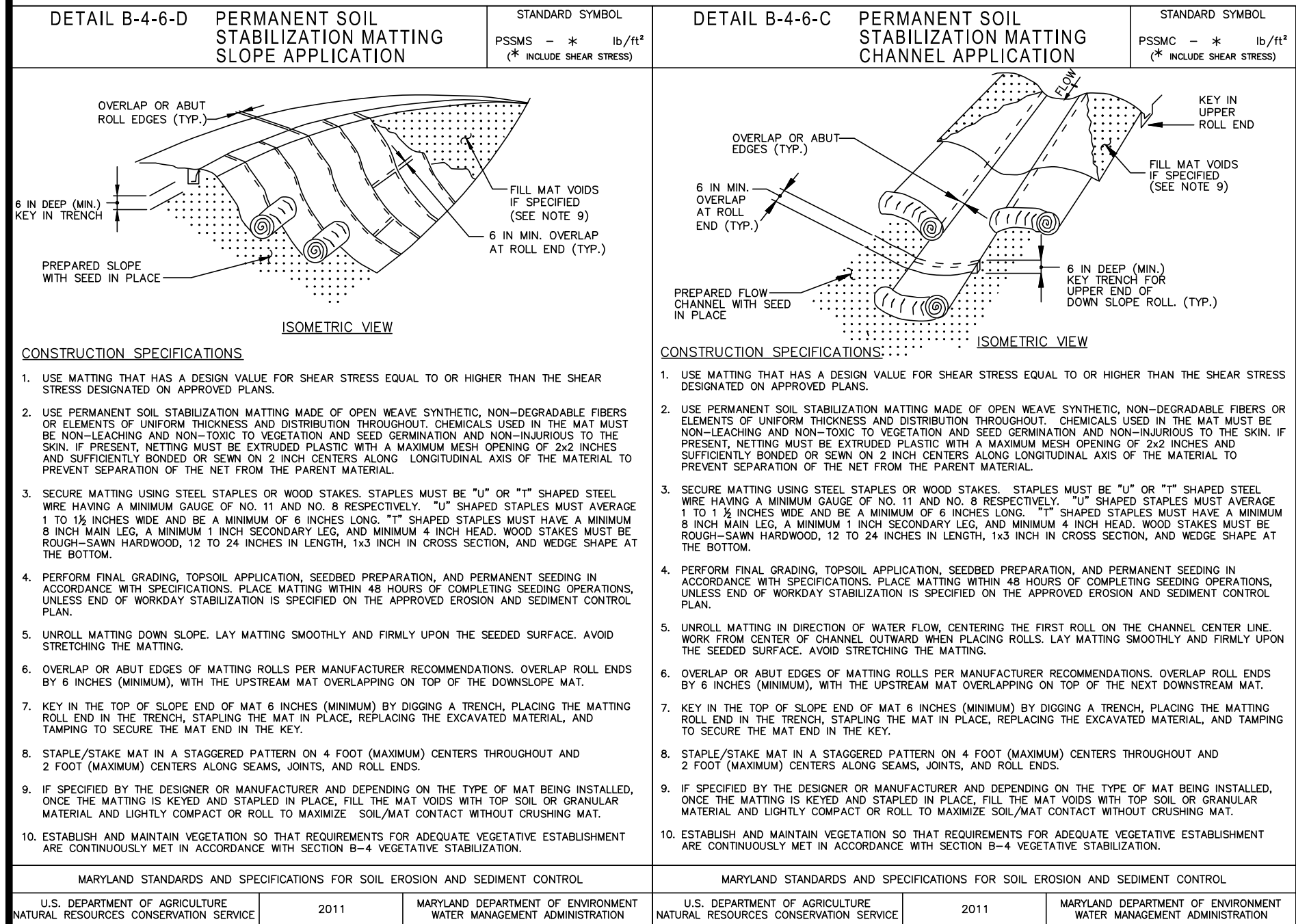
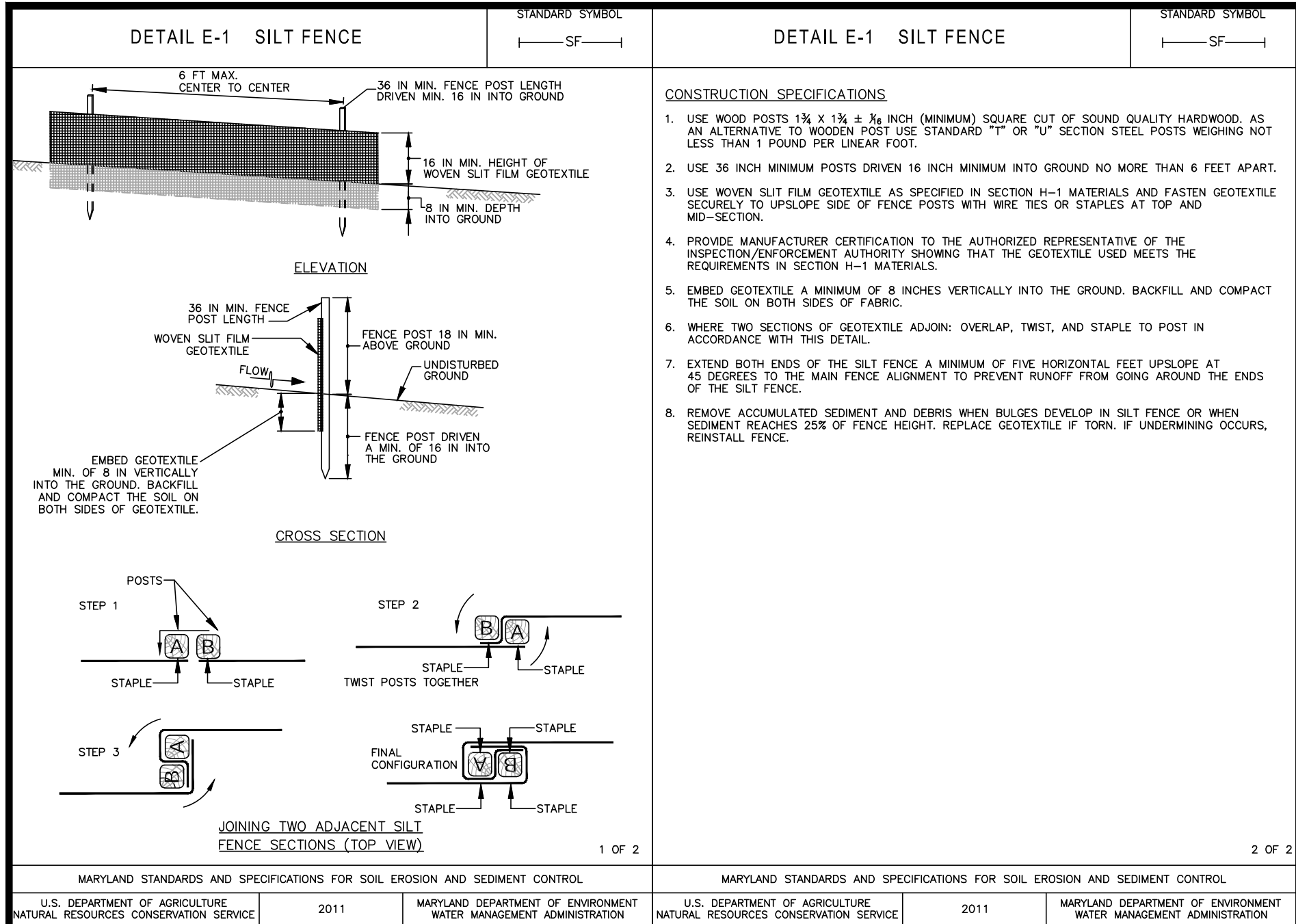
FOR
REVIEW

TAX MAP 108, GRID 0, PARCEL 2677

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR YMCA INC.

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3667



B-4 STANDARDS AND SPECIFICATIONS
FOR
VEGETATIVE STABILIZATION

Definition

Using vegetation as cover to protect exposed soil from erosion.

Purpose

To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies

On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity

Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment

Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseeds within the planting season.

- Adequate vegetative stabilization requires 95 percent groundcover.
- If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
- If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
- Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS
FOR VEGETATIVE STABILIZATION

- Contractor shall install soil erosion and sediment control devices prior to any grading. Following initial disturbance or re-disturbance, permanent or temporary stabilization shall be completed within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes greater than three (3) horizontal to one (1) vertical (3:1) and seven (7) days as to all other disturbed or graded areas on the project site not under active grading.
- All temporary erosion and sediment control devices are to be provided as indicated on this plan, with location adjustments to be made in the field as necessary, and to be maintained at the end of each working day until project completion. The minimum area practical shall be disturbed for the minimal amount of time possible.
- Cleaning and grubbing shall include all trees, brush, debris, root mat and organic materials to be removed.
- Temporary seeding shall be accomplished between February 15th through April 30th, or August 15th through November 30th. During other times, temporary mulching shall be provided.
- Temporary seeding shall conform to the following applications: 436 lbs. per acre of 10-20-20; 4,000 lbs. per acre of ground limestone, to be incorporated into the soil by disking or other suitable means. Annual ryegrass shall be applied at a rate of 50 lbs. per acre using suitable equipment. Mulching shall be accomplished immediately after seeding.

Seed Mixture (For Hardness Zone 7a) (From Table B.1)						Fertilizer Rate (10-20-20)		Lime Rate
No.	Species	Appl. Rate (lbs./ac.)	Seeding Dates	Seeding Depths				
ANNUAL RYEGRASS		50#	2/15 - 4/30 8/15 - 11/30	1/2"				
BARLEY OATS WHEAT CEREAL RYE	96#	2/15 - 4/30 / 8/15 - 11/30	1"		436 lb/ac	2 tons/ac		
	72#	2/15 - 4/30 / 8/15 - 11/30	1"		10 lb/	90 lb/		
	120#	2/15 - 4/30 / 8/15 - 11/30	1"		1000 sf	1000 sf		
FOXTAIL MILLET PEARL MILLET	112#	2/15 - 4/30 / 8/15 - 12/15	1"					
	20#	5/1 - 8/14	1/2"					
	30#	5/1 - 8/14	1/2"					

- Mulching shall be unchopped, unrotted, small grain straw applied at a rate of 2-2 1/2 tons per acre. Anchor mulch with a mulch anchoring tool on the Contour. Wood cellulose fiber may be used for anchoring straw at a rate of 750 lbs. per acre mixed with water at a maximum of 50 lbs. of wood cellulose fiber per 100 gals. of water, or with a synthetic liquid binder according to manufacturer recommendations. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1,500 lbs. per acre. Mix wood cellulose fiber with water to attain a mixture with a maximum of 50 lbs. of wood cellulose fiber per 100 gals. of water.
- Permanent seeding shall be accomplished between March 1st through May 15th, or August 15th through October 15th. Permanent seeding at other than specified times will be allowed only upon written approval. Permanent seeding shall conform to the following applications: Permanent seeding for sites having disturbed over five (5) acres shall use fertilizer rates recommended by a soil testing agency and the recommendations provided in the Permanent Seeding Summary Table. Permanent seeding for conditions other than listed above shall be performed at the rates and dates as provided in the Permanent Seeding Summary Table below. Fertilizer and lime amendments shall be incorporated into the top 3"-5" of the soil by disking or other suitable means. Mulching shall be accomplished as discussed in item #6 of these specifications.

Seed Mixture (For Hardness Zone 7a) (From Table B.3)					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Appl. Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P2O5	K2O	
7	CREEPING RED FESCUE	60#	3/1 - 5/15	1/4" - 1/2"				
	KENTUCKY BLUEGRASS	15#	8/15 - 10/15					
8	TALL FESCUE	100#	3/1 - 5/15	1/4" - 1/2"	45 lb/ac	90 lb/ac	90 lb/ac	2 tons/ac
			8/15 - 10/15		18/	26/	26/	
9	TALL FESCUE	60#	3/1 - 5/15	1/4" - 1/2"	1000 sf	1000 sf	1000 sf	1000 sq
	KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	40# 20#	8/15 - 10/15					

- Any spoil or borrow will be placed at a site approved by the Soil Conservation District.
- All areas remaining or intended to remain disturbed for longer than seven (7) days shall be stabilized in accordance with the USDA, Natural Resources Conservation Service Standards and Specifications for Soil Erosion and Sediment Control in developing areas for critical area stabilization.
- It will be the responsibility of the Contractor or Subcontractor to notify the Engineer of any deviation from this plan. Any change made in this plan without written authorization from the Engineer will place responsibility of said change on the Contractor or Subcontractor.

EROSION AND SEDIMENT CONTROL DETAILS

OF THE LANDS OF

YMCA INC.

TAX MAP 108, GRID 6, PARCEL 2677

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR YMCA INC.

RAUCH

Engineering | Survey | Architecture | Environmental

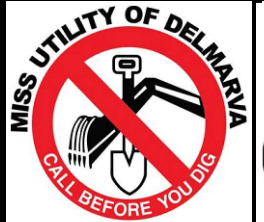
Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@rauch.com
Phone: 410 770 8081 | Fax: 410 770 3087

REVISIONS

DESCRIPTION

DATE

REV. #



DATE: 4/23/2024
SCALE: N/A
DRAWN BY: BADC/AFK
DESIGNED BY: WCS
APPROVED BY: BBF

SHEET NO.:
C-205.01

FOR
REVIEW

Page 19 of 12

SHEET C-301.02

N 00°30'26" E 195.59'
L=195.85 R=1090.23

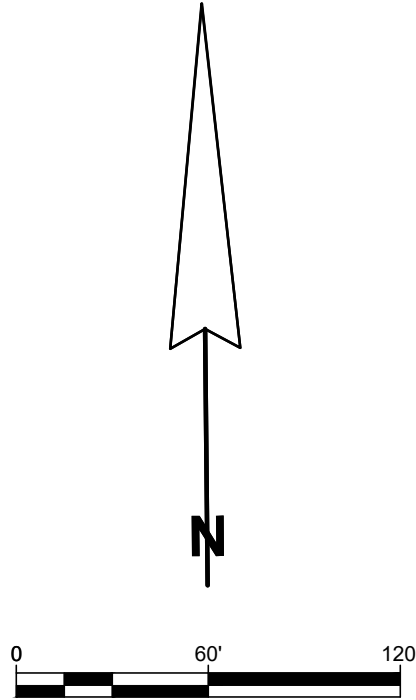
WASHINGTON
STREET
PUBLIC USE

SHEET C-301.03

TAX MAP 107, PARCEL 2634
NIF LANDS OF
TOWN OF EASTON
2165230

NIF LANDS OF
YOUNG MEN'S
CHRISTIAN
ASSOCIATION
237118

TAX MAP 107, PARCEL 2678A
NIF LANDS OF
BENCHMARK GREENS AT CROSS COURT, LLC
1548130



PROPOSED SITE FEATURES

- 1 NORTH ASPHALT PARKING LOT (58 PARKING SPACES, 24,045 S.F.)
- 2 SOUTH ASPHALT PARKING LOT (22 PARKING SPACES, 8,010 S.F.)
- 3 MICRO BIORETENTION. SEE DETAIL SHEET C-305.02.
- 4 CONCRETE SIDEWALK. SEE DETAIL SHEET C-305.01.
- 5 NON ROOFTOP DISCONNECT

OVERALL SITE GRADING AND STORMWATER PLAN

OF THE LANDS OF

YMCA INC.

TAX MAP 108, GRID 0, PARCEL 2677
FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND
PREPARED FOR YMCA INC.

RAUCH
Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 8081 | Fax: 410 770 3487

REVISIONS

DESCRIPTION

REV. # DATE

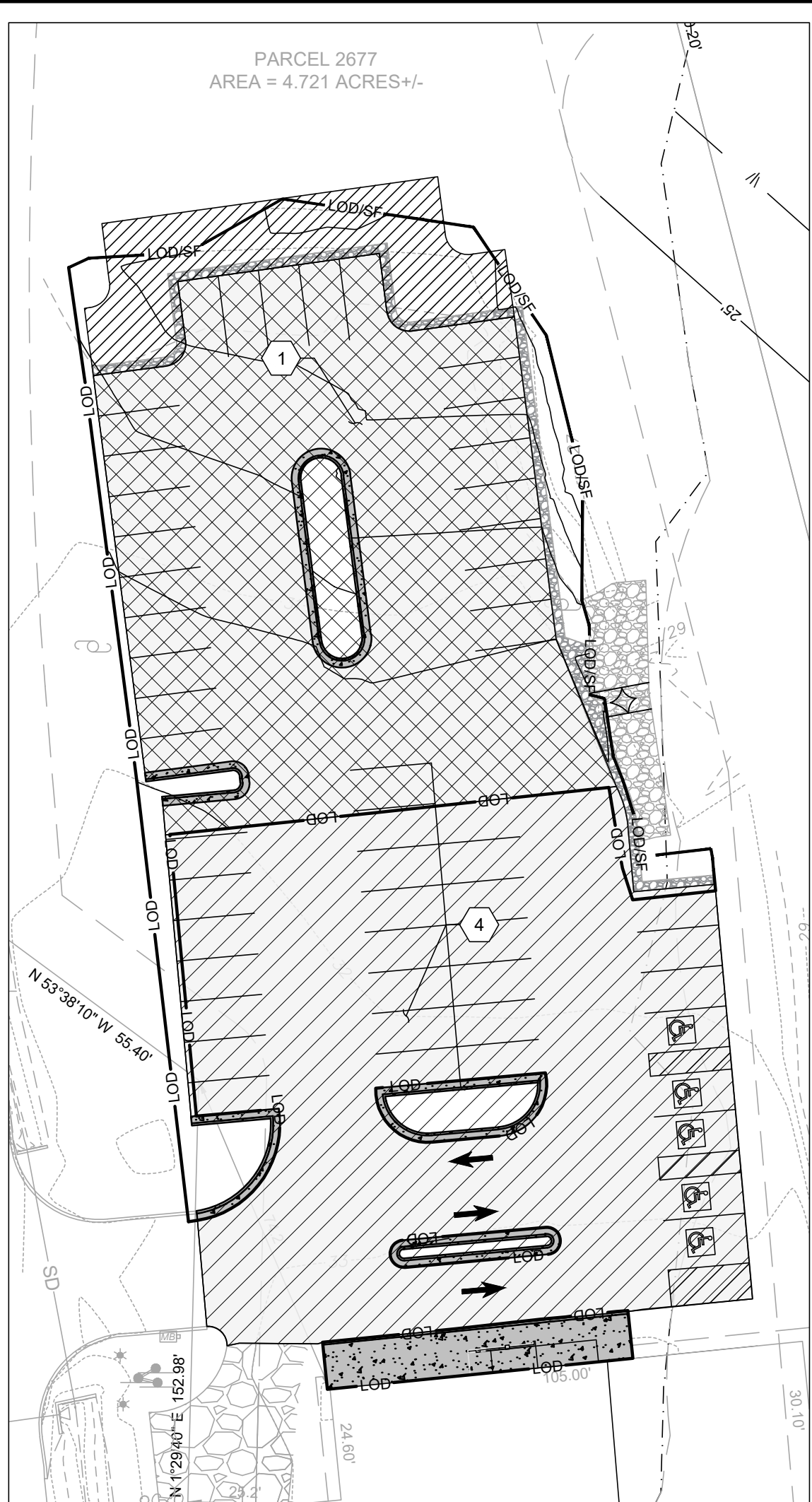
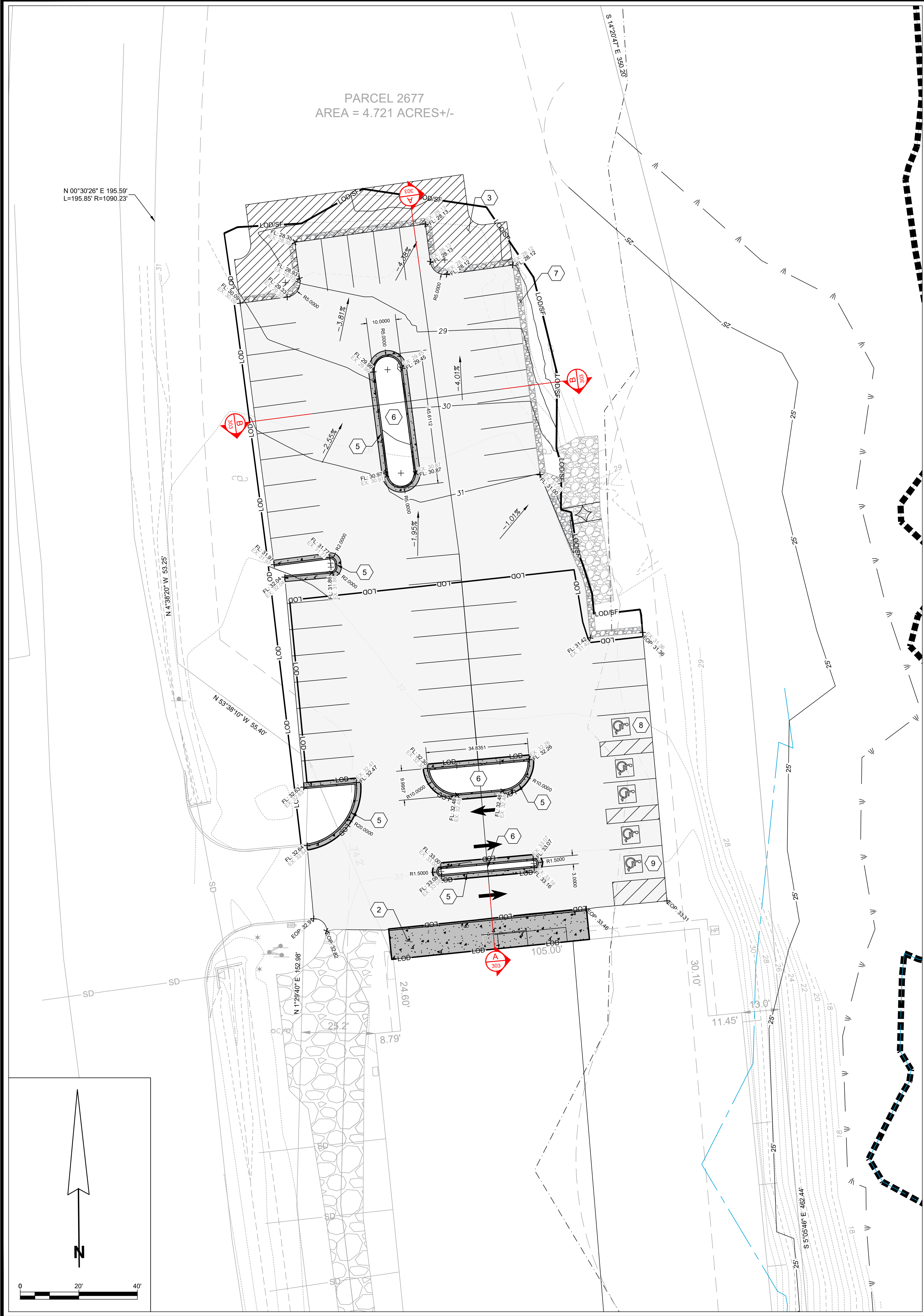
1



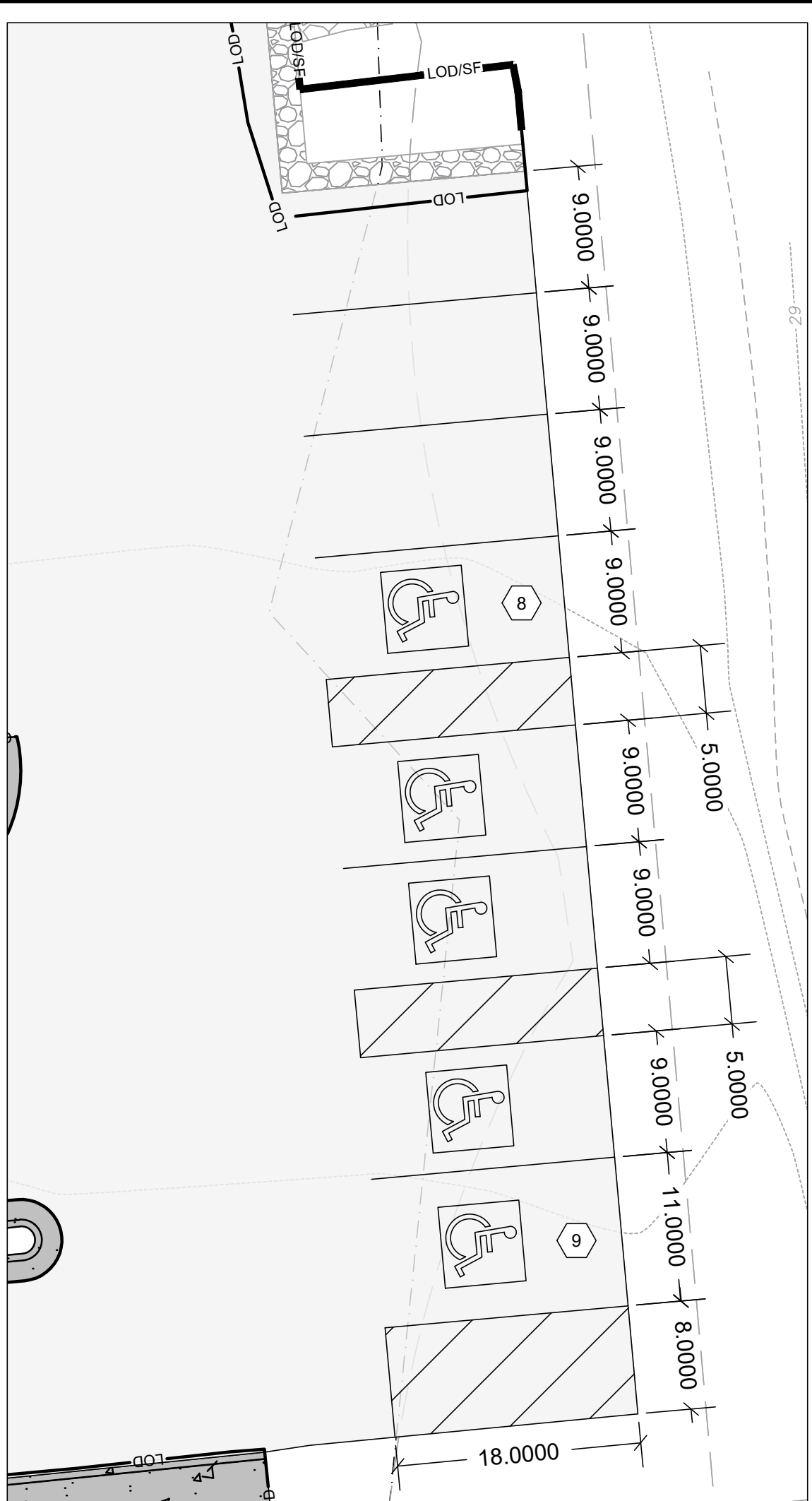
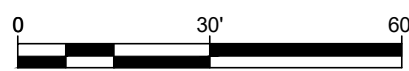
DATE: 4/23/2024
SCALE: 1" = 60'
DRAWN BY: BAOC/AFK
DESIGNED BY: WCS
APPROVED BY:

SHEET NO.:
C-301.01

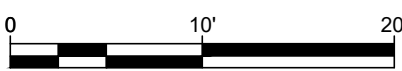
FOR
REVIEW



PARKING LOT RENOVATION PLAN



HANDICAP PARKING PLAN



- GENERAL NOTES:
1. NO LOD IS REQUIRED FOR MILL AND OVERLAY.
 2. CURB STOPS ALONG ALL PERIMETER PARKING SPACES.
 3. TYPICAL PARKING SPACES ARE 18' L x 9' W.
 4. TWO WAY DRIVE AISLES ARE 24' W.

PROPOSED SITE FEATURES

1. CONVERT GRAVEL PARKING LOT INTO EXPANDED ASPHALT PARKING LOT (10,040 S.F.). SEE DETAIL SHEET C-305.01.
2. PROVIDE CONCRETE SIDEWALK WITH A.D.A. RAMP. SEE DETAIL SHEET C-305.02
3. NON ROOFTOP DISCONNECT AREA
4. RENOVATE ASPHALT PARKING LOT (14,005 S.F.) THROUGH MILL AND OVERLAY. SEE DETAIL SHEET C-305.02.
5. STANDARD CURB AND GUTTER, SEE DETAIL SHEET C-305.01
6. PROVIDE PARKING ISLAND.
7. PROVIDE ROCK STRIP.
8. PROVIDE A.D.A. PARKING SPACE TYP. WITH 5' ACCESS AISLE.
9. PROVIDE VAN ACCESSIBLE A.D.A. PARKING SPACE WITH 8' ACCESS AISLE

HATCH LEGEND

- | | |
|--------------------------------------|--|
| GRAVEL | |
| PROPOSED ASPHALT | |
| EXPANDED ASPHALT | |
| MILL AND OVERLAY OF EXISTING ASPHALT | |

COMBINED SITE GRADING AND STORMWATER PLAN

OF THE LANDS OF

YMCA INC.

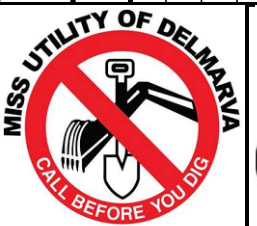
TAX MAP 108, GRID 0, PARCEL 2677
FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND
PREPARED FOR YMCA INC.

RAUCH
Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 8081 | Fax: 410 770 3487

REVISIONS

REV. #	DATE	DESCRIPTION
1		



DATE: 4/23/2024
SCALE: 1" = 30'
DRAWN BY: BAOC/AFK
DESIGNED BY: WCS
APPROVED BY:

SHEET NO.:
C-301.02

FOR
REVIEW

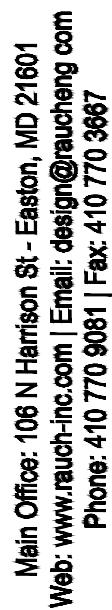


A north arrow pointing upwards, labeled with a bold 'N'. Below it is a scale bar with alternating black and white segments, marked with '0', '20', and '40'.

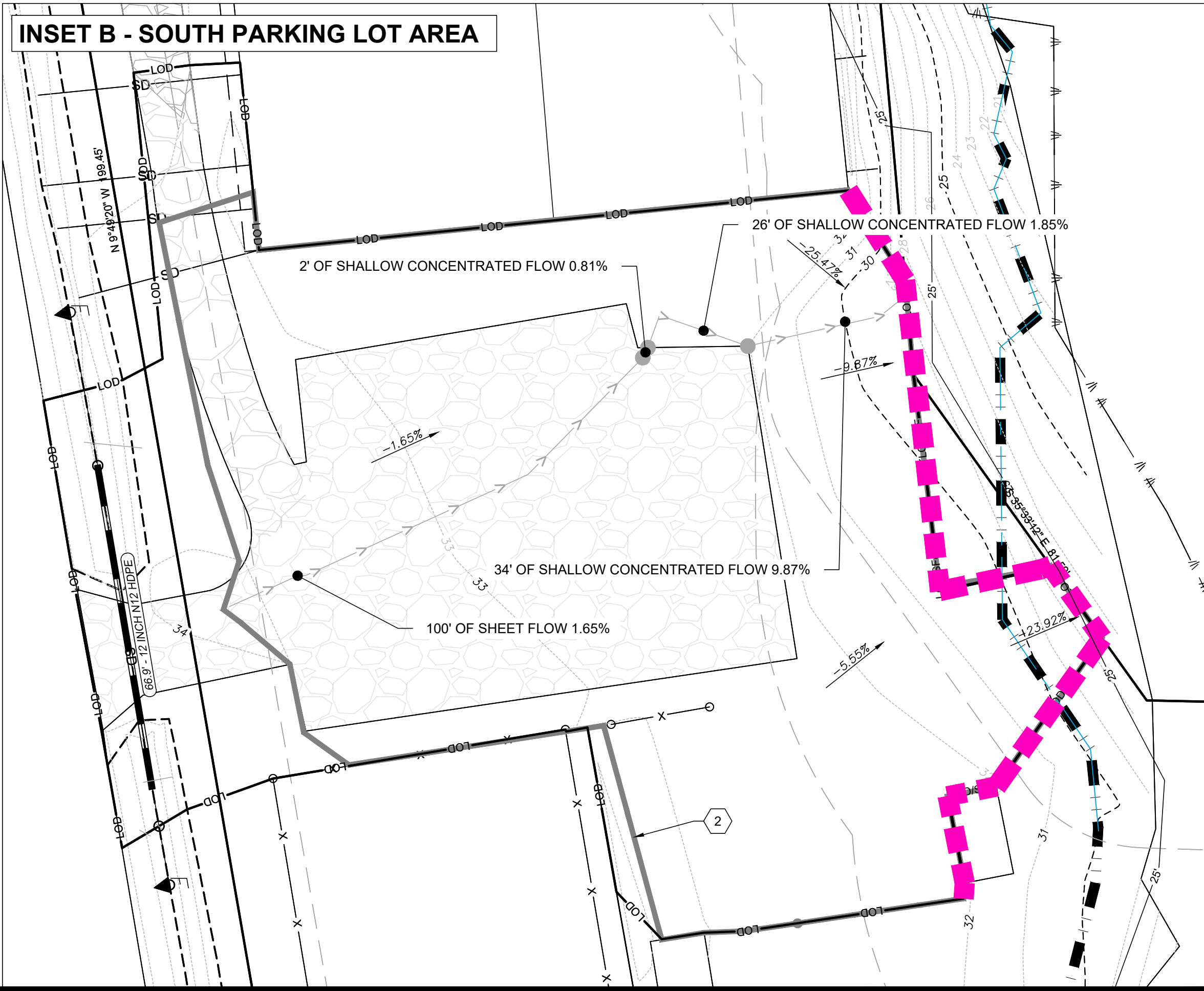
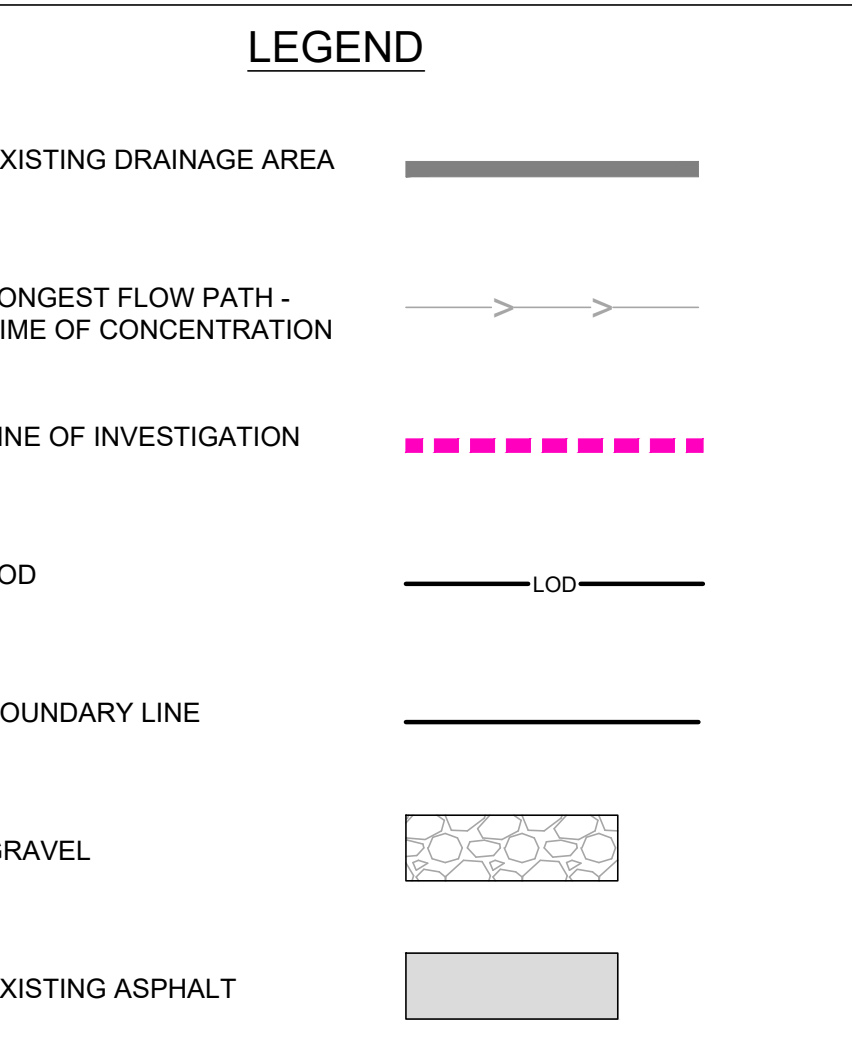
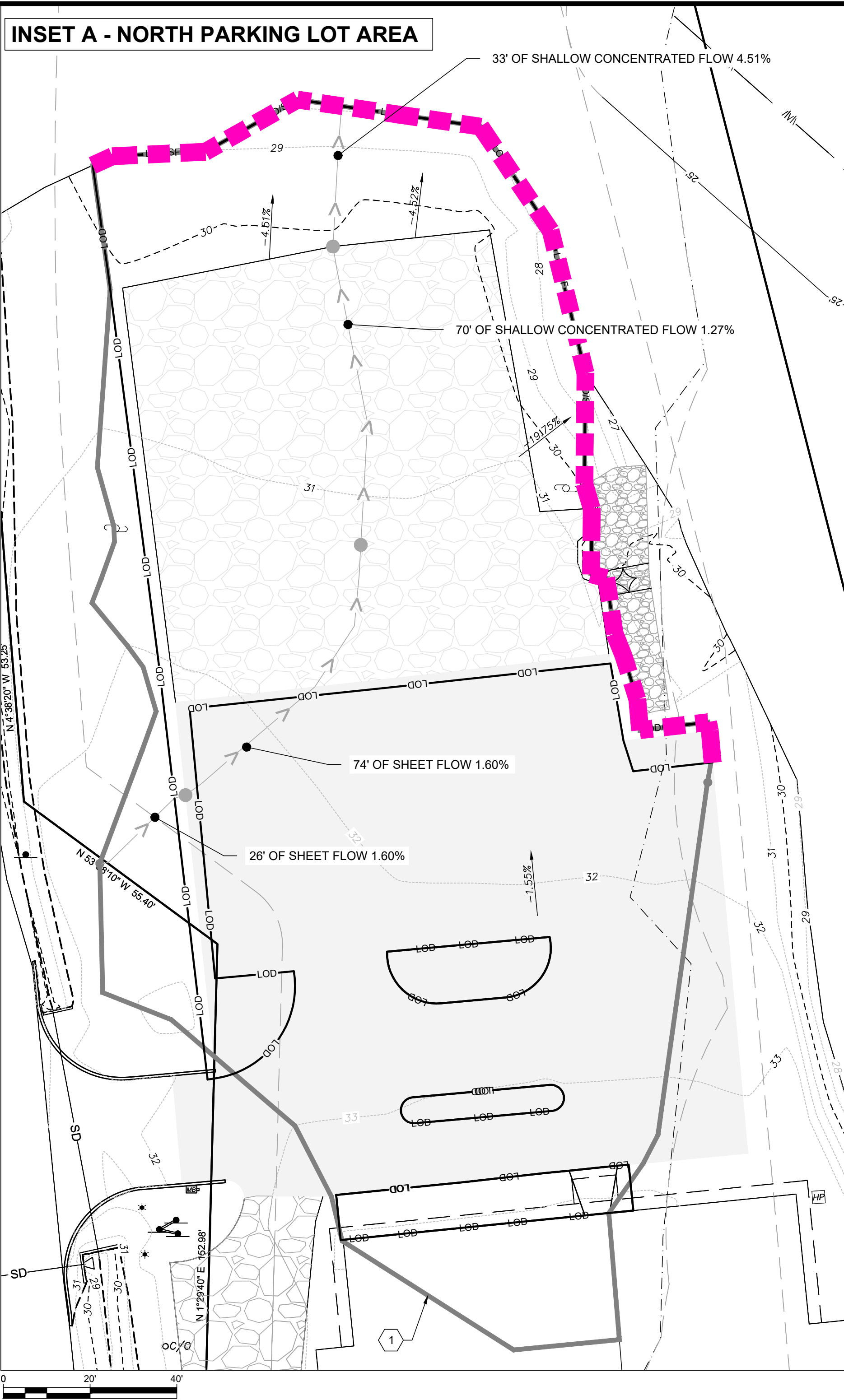
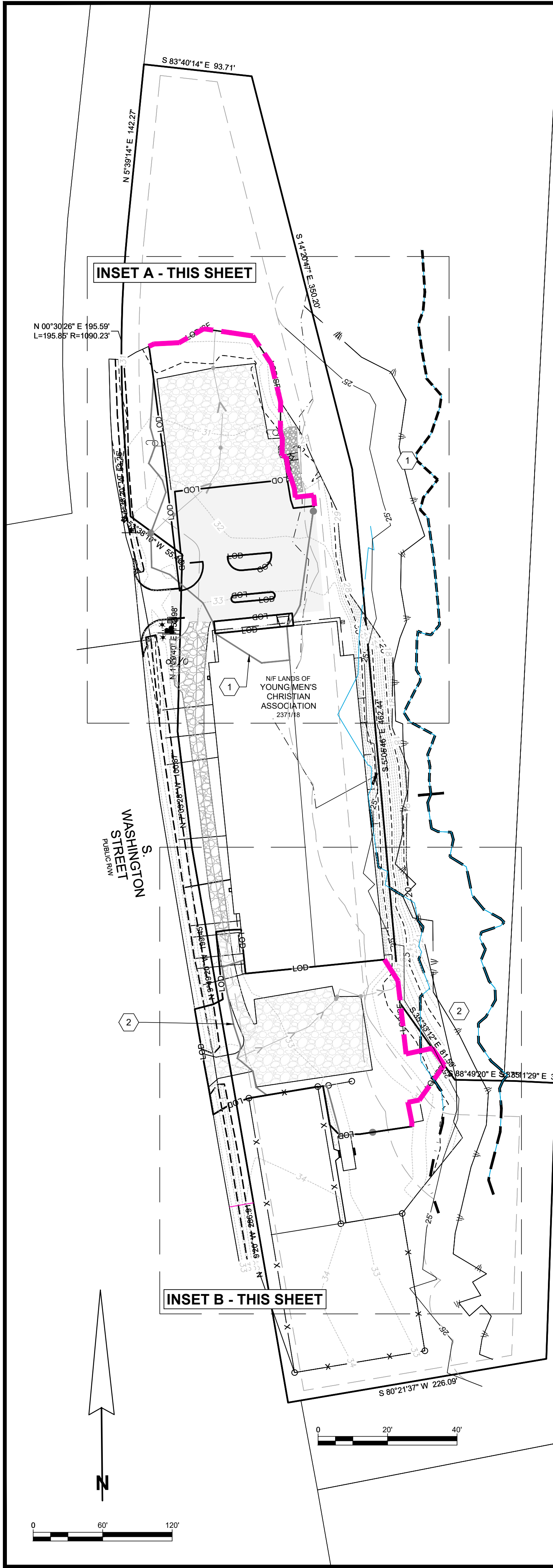
TAX MAP 108, GRID 0, PARCEL 2677

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR YMCA INC.



**FOR
REVIEW**



PROPOSED SITE FEATURES

- 1 DRAINAGE AREA 1: 29,402 SF (0.675 AC)
- 2 DRAINAGE AREA 2: 18,214 SF (0.418 AC)

EXISTING DRAINAGE MAPS

OF THE LANDS OF

YMCA INC.

TAX MAP 108, GRID 0, PARCEL 2677

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR YMCA INC.

RAUCH

Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@rauch.com
Phone: 410 770 8081 | Fax: 410 770 3987

REVISIONS

REV. #	DATE	DESCRIPTION
1		



DATE: 4/19/2024

SCALE: AS SHOWN

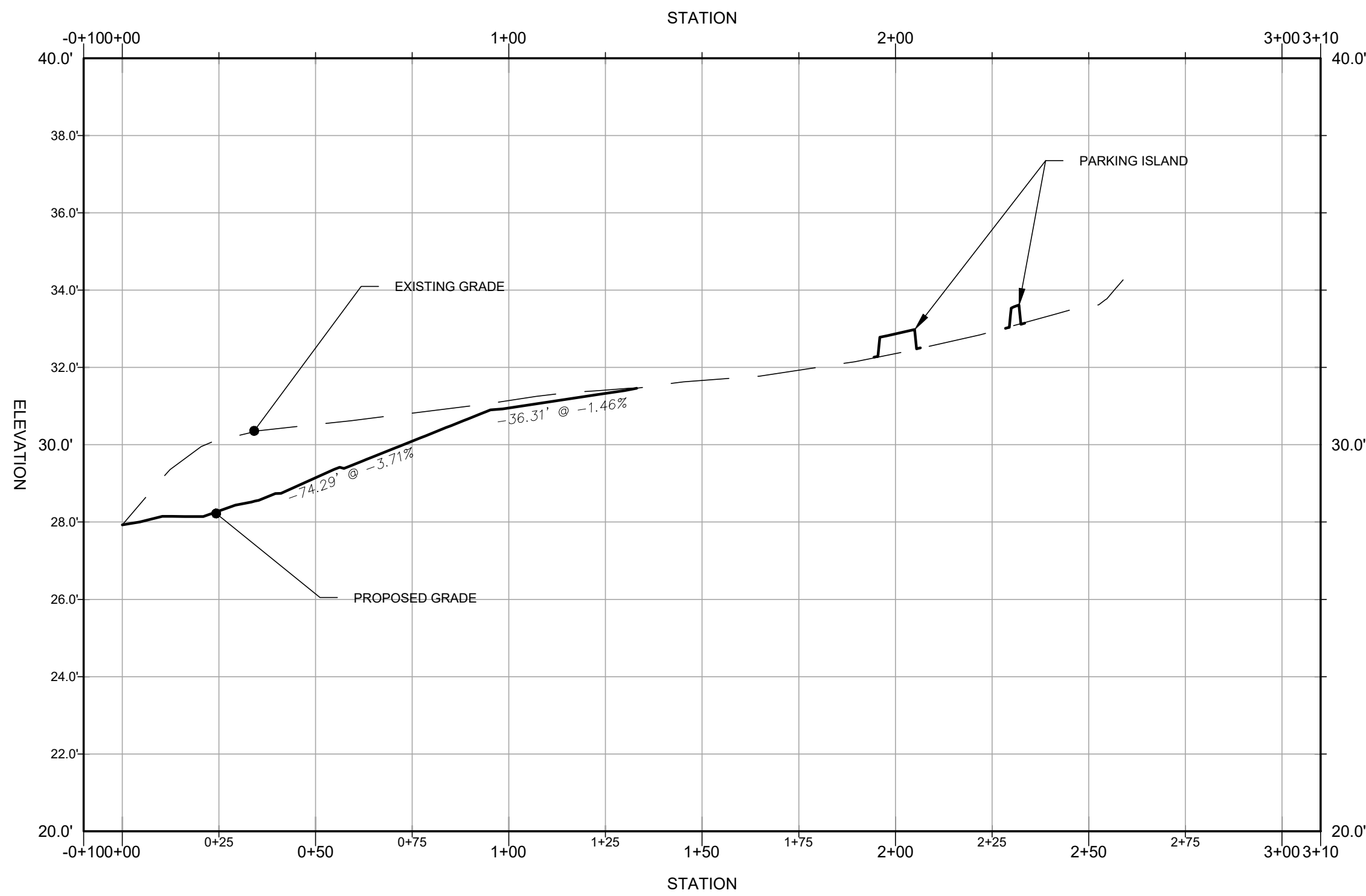
DRAWN BY: WCS

DESIGNED BY: WCS

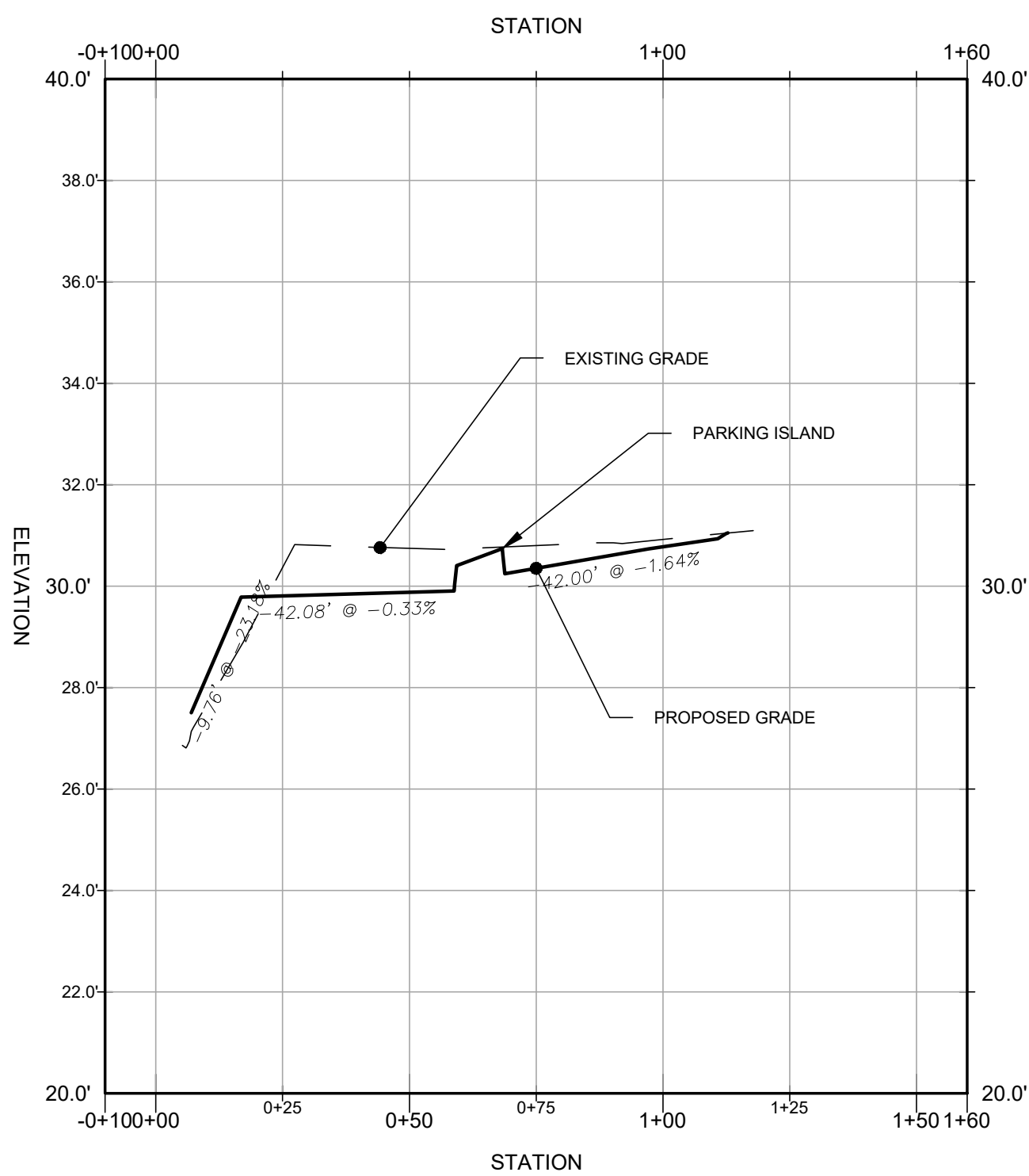
APPROVED BY: BBF

SHEET NO.: C-301.04

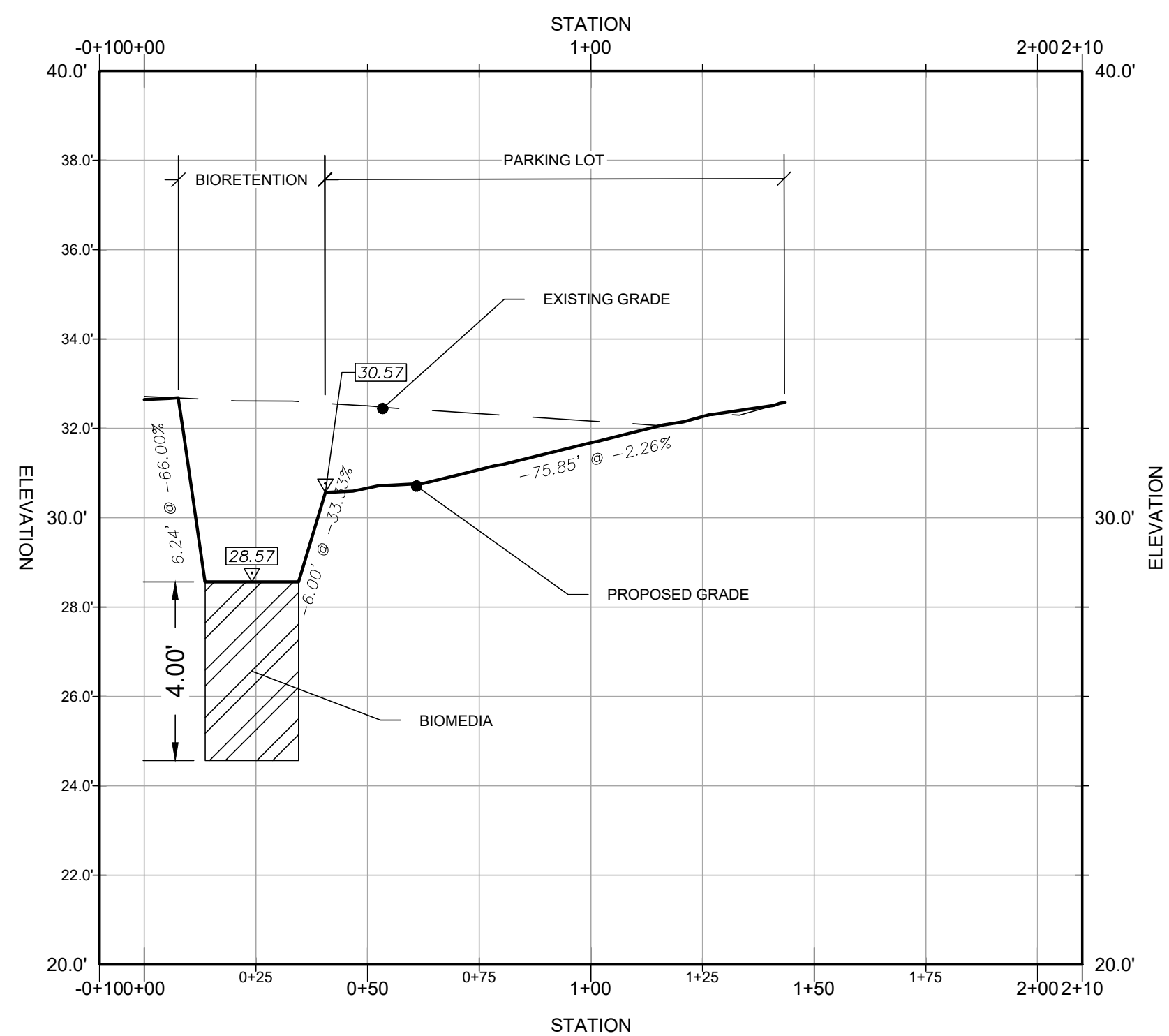
FOR REVIEW



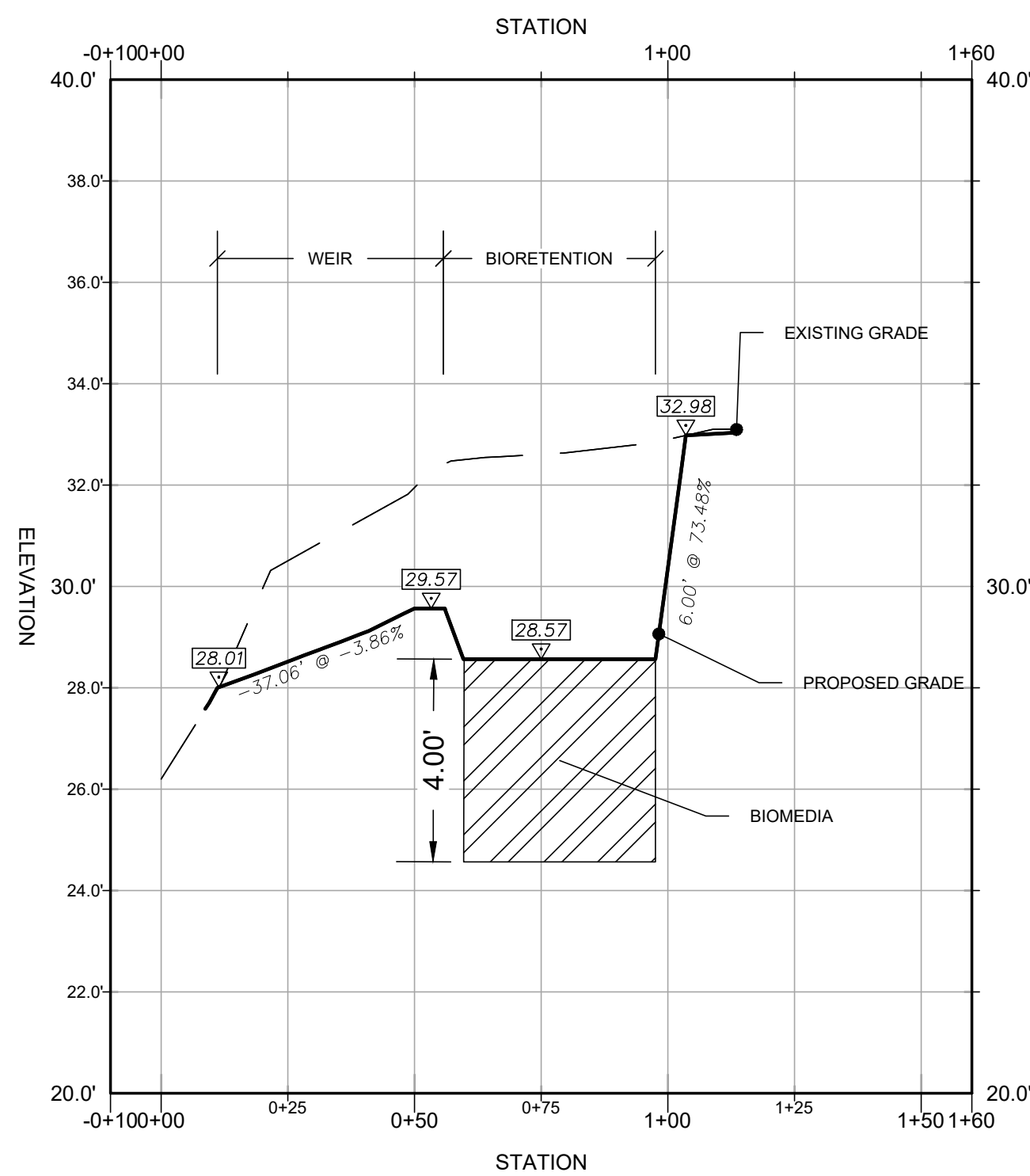
1V:10H EXAGGERATED PROFILE:
A



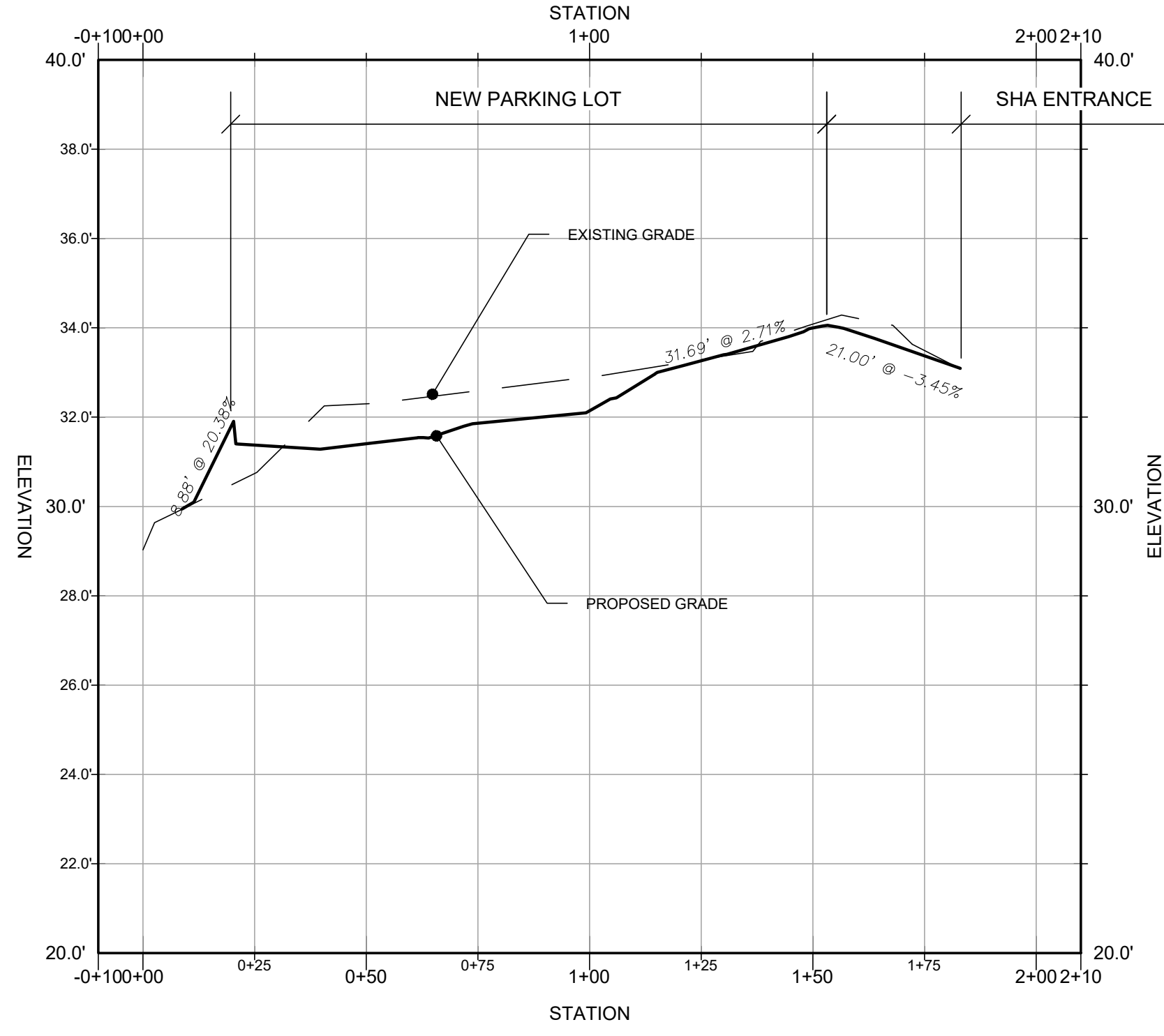
1V:10H EXAGGERATED PROFILE:
B



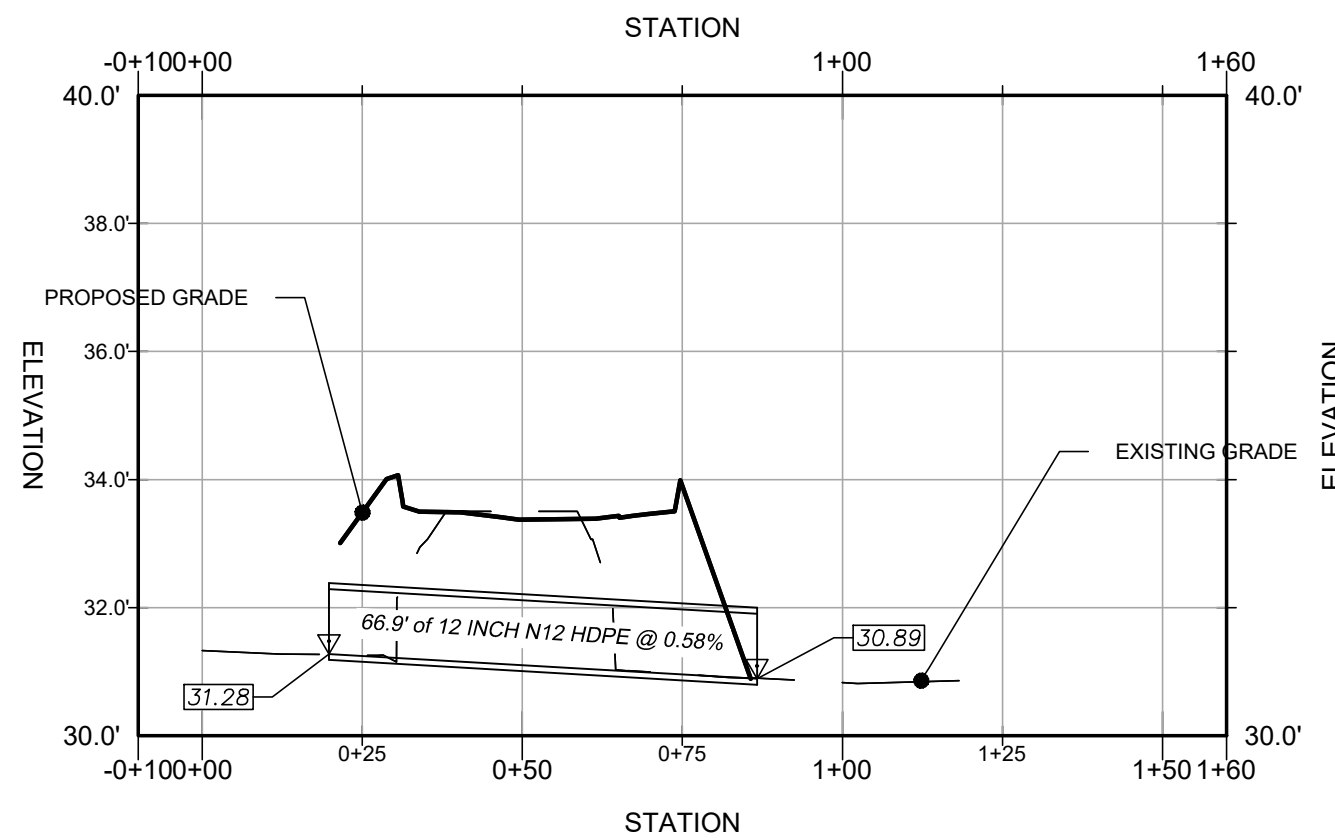
1V:10H EXAGGERATED PROFILE:
C



1V:10H EXAGGERATED PROFILE:
D



1V:10H EXAGGERATED PROFILE:
E



1V:10H EXAGGERATED PROFILE:
F

SCALE:
H: 1" = 30'

STORMWATER AND GRADING PROFILES

OF THE LANDS OF
YMCA INC.
TAX MAP 108, GRID 0, PARCEL 2677
FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND
PREPARED FOR YMCA INC.



Engineering | Survey | Architecture | Environmental
Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3987

REVISIONS

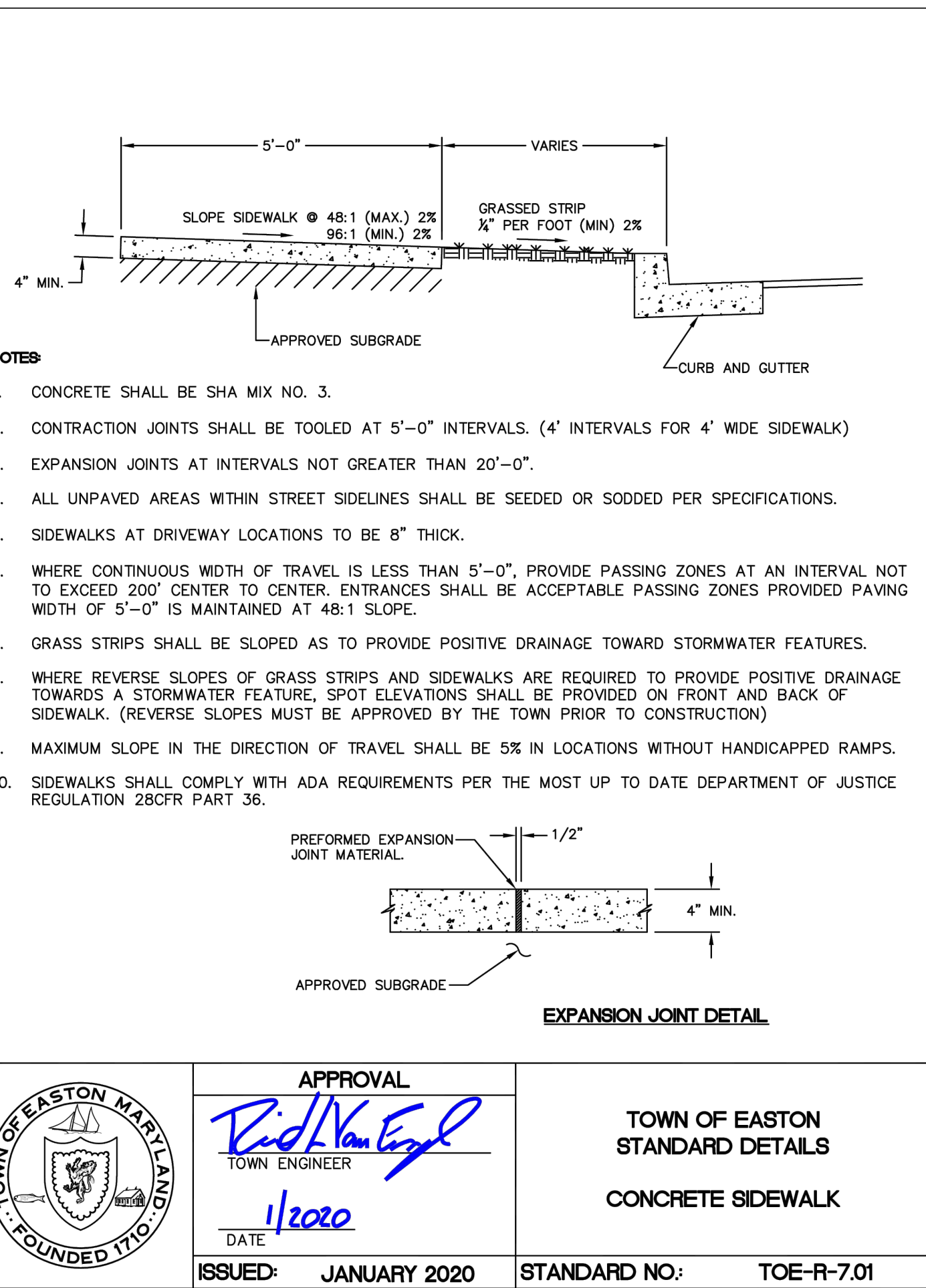
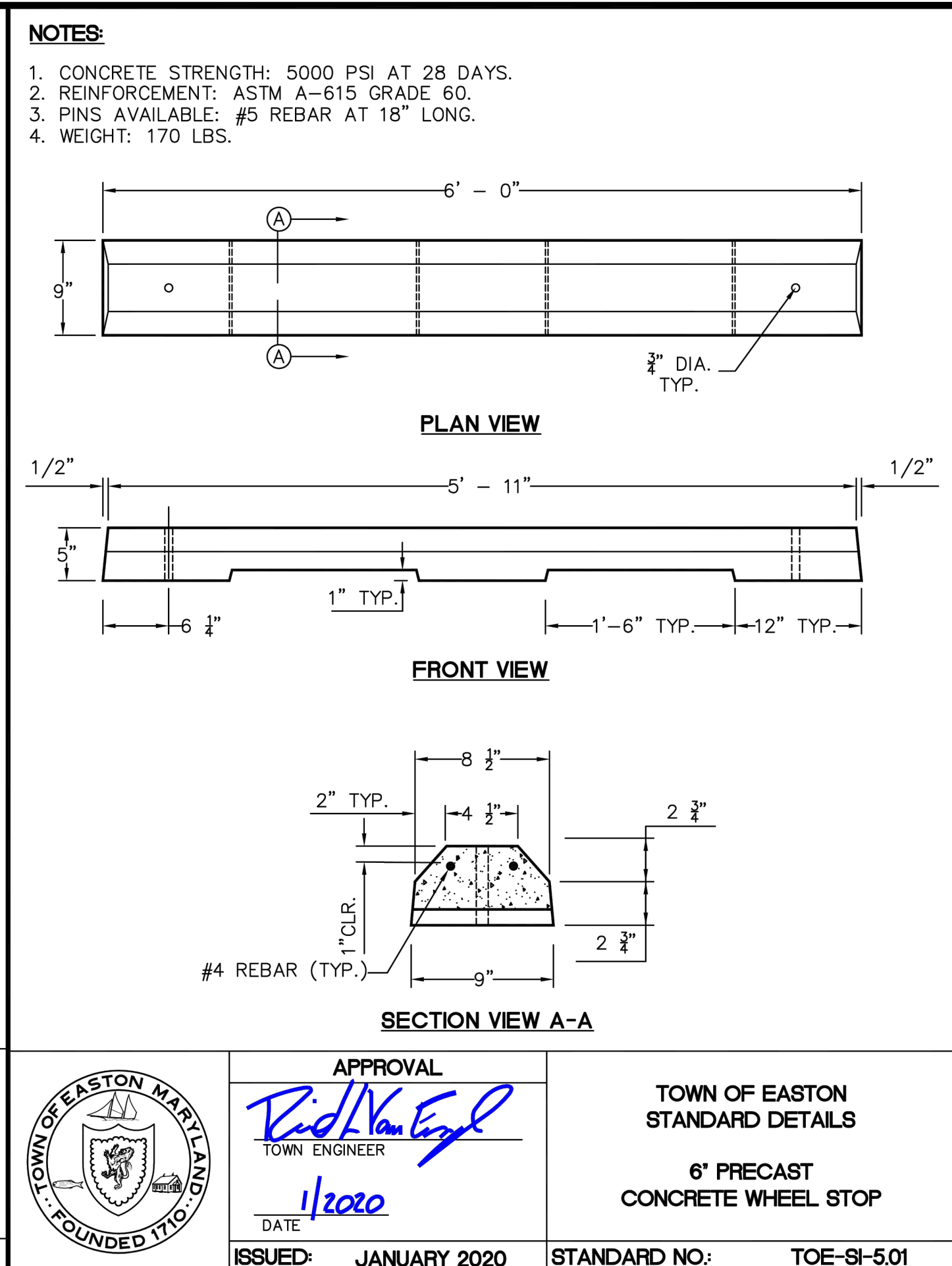
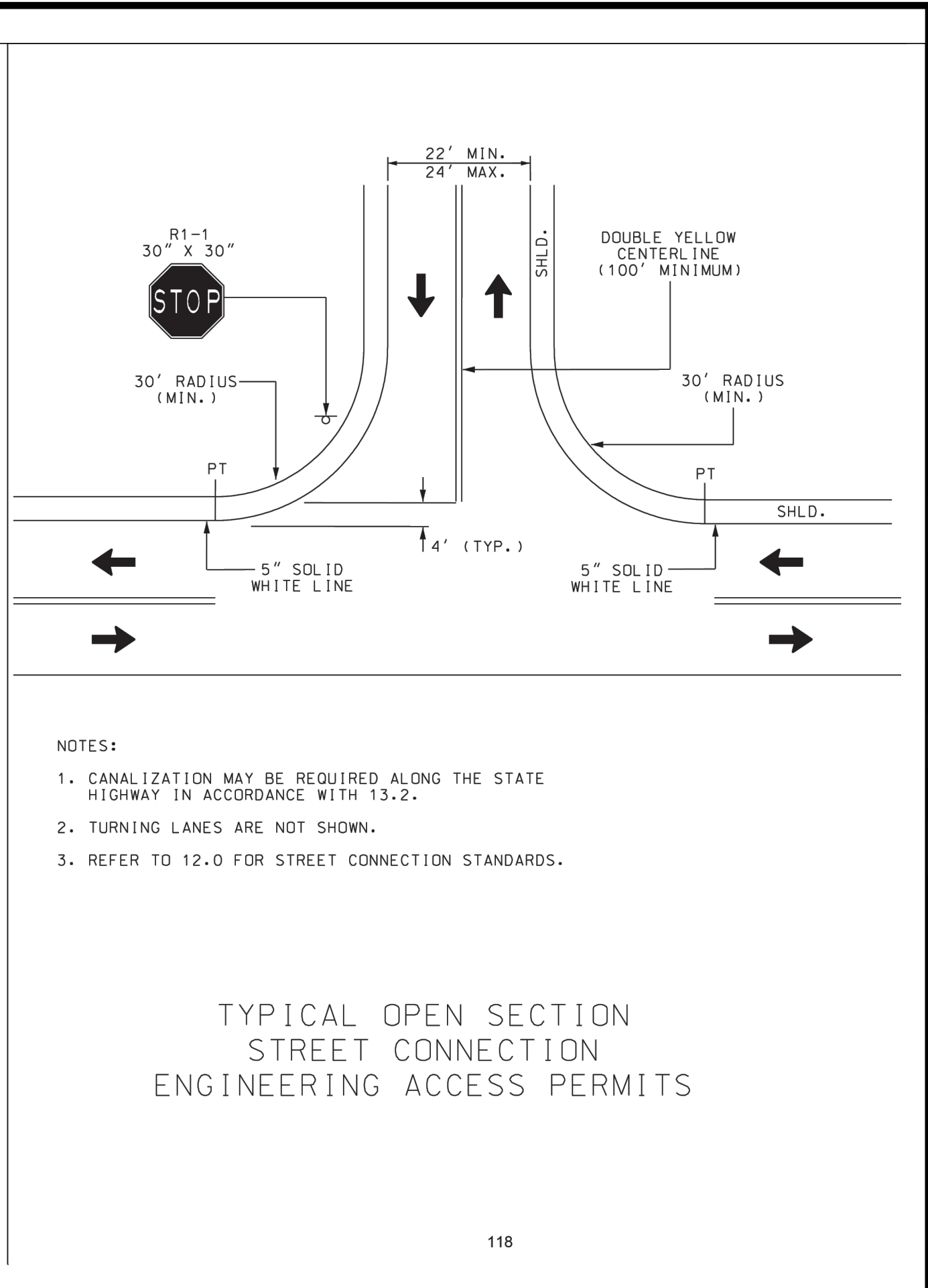
REV. #	DATE	DESCRIPTION
1		



DATE: 4/23/2024
SCALE: AS SHOWN
DRAWN BY: BACC/AFK
DESIGNED BY: WCS
APPROVED BY:

SHEET NO.:
C-303

FOR
REVIEW



STORMWATER BIORETENTION DETAIL
(MODIFIED RAIN GARDEN DETAIL FROM TOWN OF EASTON STANDARD DETAILS)

CONSTRUCTION INSPECTIONS

CALL THE TOWN OF EASTON ENGINEERING DEPARTMENT AT 410-820-8822 PRIOR TO CONSTRUCTION AND IMMEDIATELY FOLLOWING EACH OF THE FOLLOWING PHASES:

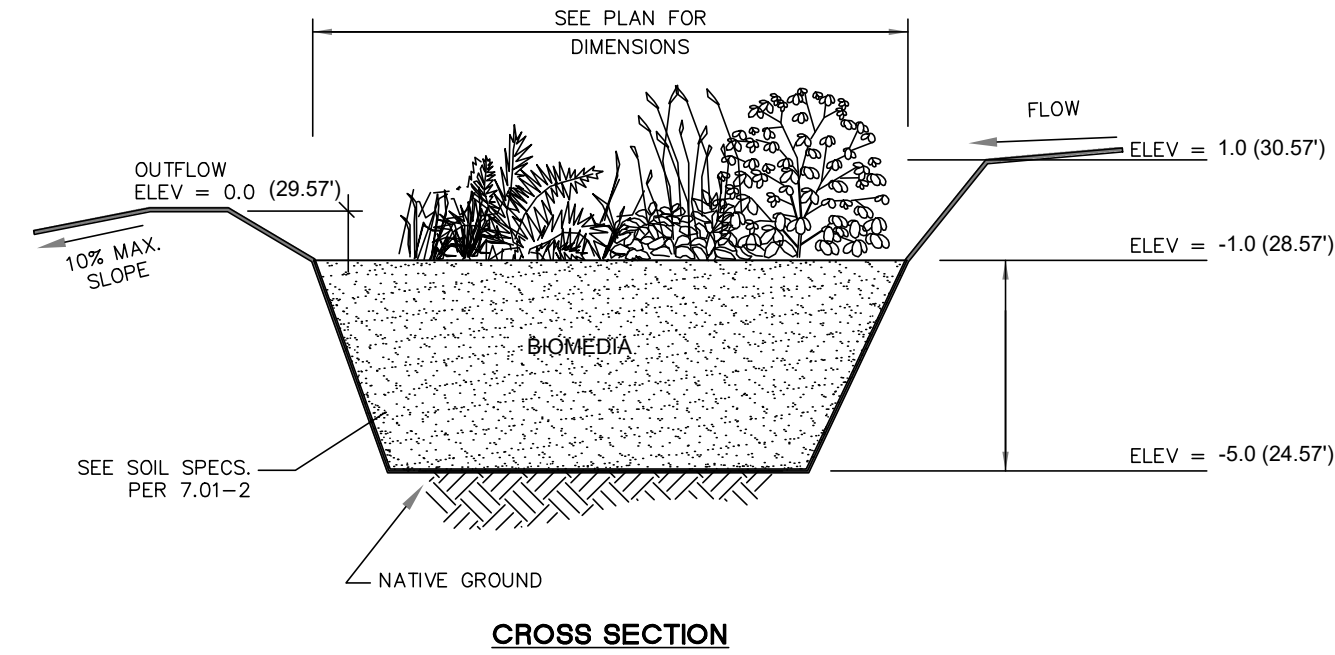
1. EXCAVATION TO SUB-GRADE AND BEFORE PLACEMENT OF SOIL.
2. FINE GRADING AND PERMANENT STABILIZATION OF ADJACENT SOILS.

CONSTRUCTION NOTES

1. RAIN GARDENS SHALL BE CONSTRUCTED AFTER ALL UPSTREAM AREAS HAVE BEEN STABILIZED WITH EITHER IMPERVIOUS SURFACES OR TOPSOIL AND VEGETATION.
2. RAIN GARDEN EXCAVATION SHALL BE ROUGH AND UNCOMPACTED. IF SMEARING OF BOTTOM OR WALLS OCCURS, SCRATCH WITH A RAKE AS NECESSARY TO EXPOSE ROUGH EARTH.
3. LANDSCAPING MATERIALS SHOULD BE INSTALLED DURING THE SPRING OR FALL IF POSSIBLE.
4. OVERFLOW FROM RAIN GARDEN SHALL BE DIRECTED OVER A 10" WIDE MINIMUM EARTH SPILLWAY STABILIZED WITH TURF AND SHALL NOT BE A SOURCE OF DOWNSTREAM EROSION.
5. THE OWNER IS ENCOURAGED TO ENHANCE THE VISUAL APPEAL OF THE RAIN GARDEN BY ADDING STONE OR TIMBER RETAINING WALLS.

MINIMUM SETBACKS

1. 10 FEET FROM A BUILDING OR PROPERTY LINE



PLANT SELECTION

1. THE OWNER IS ENCOURAGED TO WORK WITH A REGISTERED LANDSCAPE ARCHITECT OR NURSERY TO CREATE AN ATTRACTIVE AND FUNCTIONAL MIX OF NATIVE PLANT SPECIES THAT ARE TOLERANT OF BOTH SATURATED AND DRY CONDITIONS.
2. INFORMATION ON APPROPRIATE SPECIES IS AVAILABLE BY TYPING "BAYSAPES NATIVE PLANTS" INTO YOUR FAVORITE SEARCH ENGINE.
3. THE SCHEDULE AND TYPICAL DETAIL BELOW CAN BE USED AS A BASIS FOR PLANT SELECTION AND GROUPINGS, IF DESIRED.

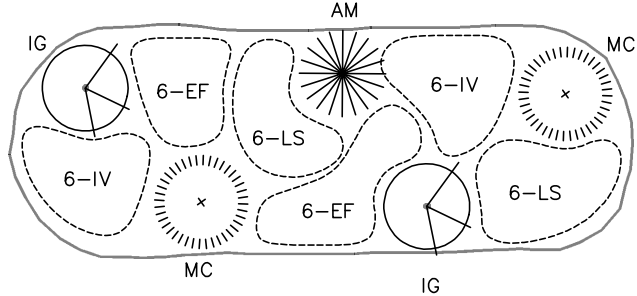
SOIL SPECIFICATIONS

1. THE RAIN GARDEN PLANTING SOIL SHALL HAVE A COMPOSITION OF 50% SAND, 20% COMPOSTED LEAVES, AND 30% TOPSOIL.
2. SOIL SHALL BE OF UNIFORM COMPOSITION, FREE OF STONES, DEBRIS, STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN ONE INCH.
3. SOIL SHALL BE FREE OF PLANTS (OR PLANT PARTS) OF BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, MUONORT, NUTSEDGE, POISON IVY, OR CANADIAN THISTLE.
4. PLANTING SOIL SHALL BE OVERLIFTED BY 1" TO 2" TO ALLOW FOR SETTLING. DO NOT COMPACT.

RAIN GARDEN PLANTING SCHEDULE

BOTANICAL NAME	COMMON NAME	SYMB.	SIZE	RAIN GARDEN SIZE (SQ. FT.)			
				70 QTY.	140 QTY.	210 QTY.	280 QTY.
SHRUBS:							
ILEX GLABRA	INKBERRY	IG	2 GAL.	1	2	3	3
ARONIA MELANOCARPA	BLACK CHOCOBERRY	AM	2 GAL.	1	1	2	3
MYRICIA CERIFERA	BAYBERRY	MC	2 GAL.	1	2	2	3
GROUND COVER:							
ANDROPOGON VIRGINICUS	BROOMSEDGE	IV	PLUG	6	12	18	24
LIATRIS SPICATA	BLAZING STAR	LS	PLUG	6	12	18	24
EUPATORIUM FISTULOSUM	JOE-PYE WEED	EF	PLUG	6	12	18	24

PLANTING EXAMPLE
FOR 140 SQ. FT. RAIN GARDEN



MAINTENANCE CRITERIA:

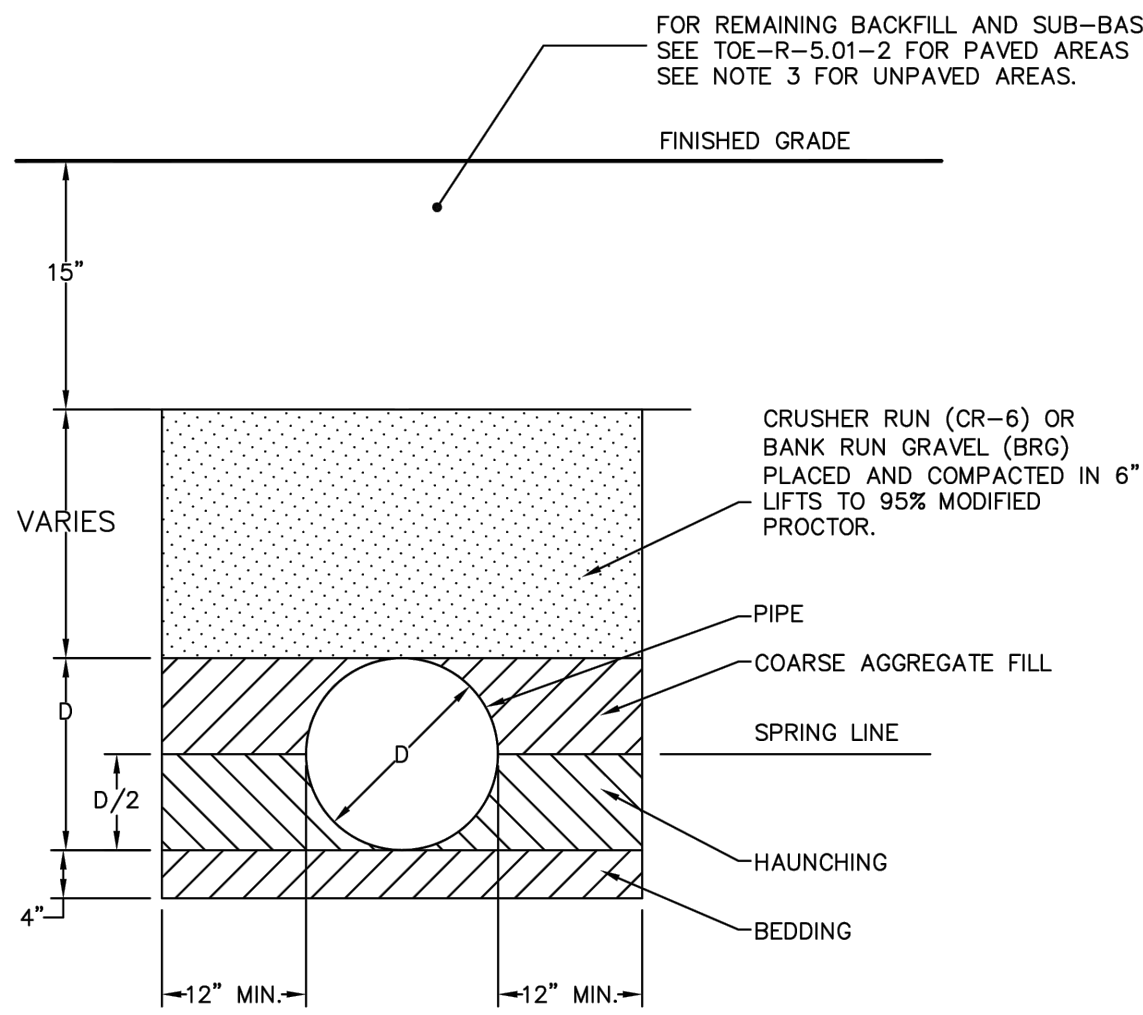
1. WATER PLANTS LIBERALLY THE FIRST GROWING SEASON AND DURING PERIODS OF DROUGHT THEREAFTER.
2. REMOVE ACCUMULATED TRASH AND VEGETATIVE DEBRIS EVERY FEW MONTHS.
3. PRUNE AND REMOVE DEAD VEGETATION PERIODICALLY, AS WITH ANY LANDSCAPE BED. IF SPECIFIC PLANTS ARE NOT SURVIVING, REPLACE WITH A DIFFERENT SPECIES. WATERING MAY BE REQUIRED DURING PROLONGED DRY PERIODS.
4. SILTS AND SEDIMENT SHOULD BE REMOVED FROM THE SURFACE OF THE FILTER BED WHEN ACCUMULATION EXCEEDS ONE INCH. THE TOP FEW INCHES OF FILTER MEDIA SHOULD BE REMOVED AND REPLACED WHEN WATER PONDS FOR MORE THAN 48 HOURS.
5. REFRESH MULCH WITH AN ADDITIONAL THIN LAYER ANNUALLY. REMOVE ALL MULCH AND REPLACE WITH A NEW THREE-INCH LAYER EVERY 3-5 YEARS.



APPROVAL
TOWN ENGINEER
DATE
ISSUED: JANUARY 2020

TOWN OF EASTON
STANDARD DETAILS
RAIN GARDEN LANDSCAPING
DETAILS AND NOTES

STANDARD NO.: TOE-SWM-6.01-2



NOTES:

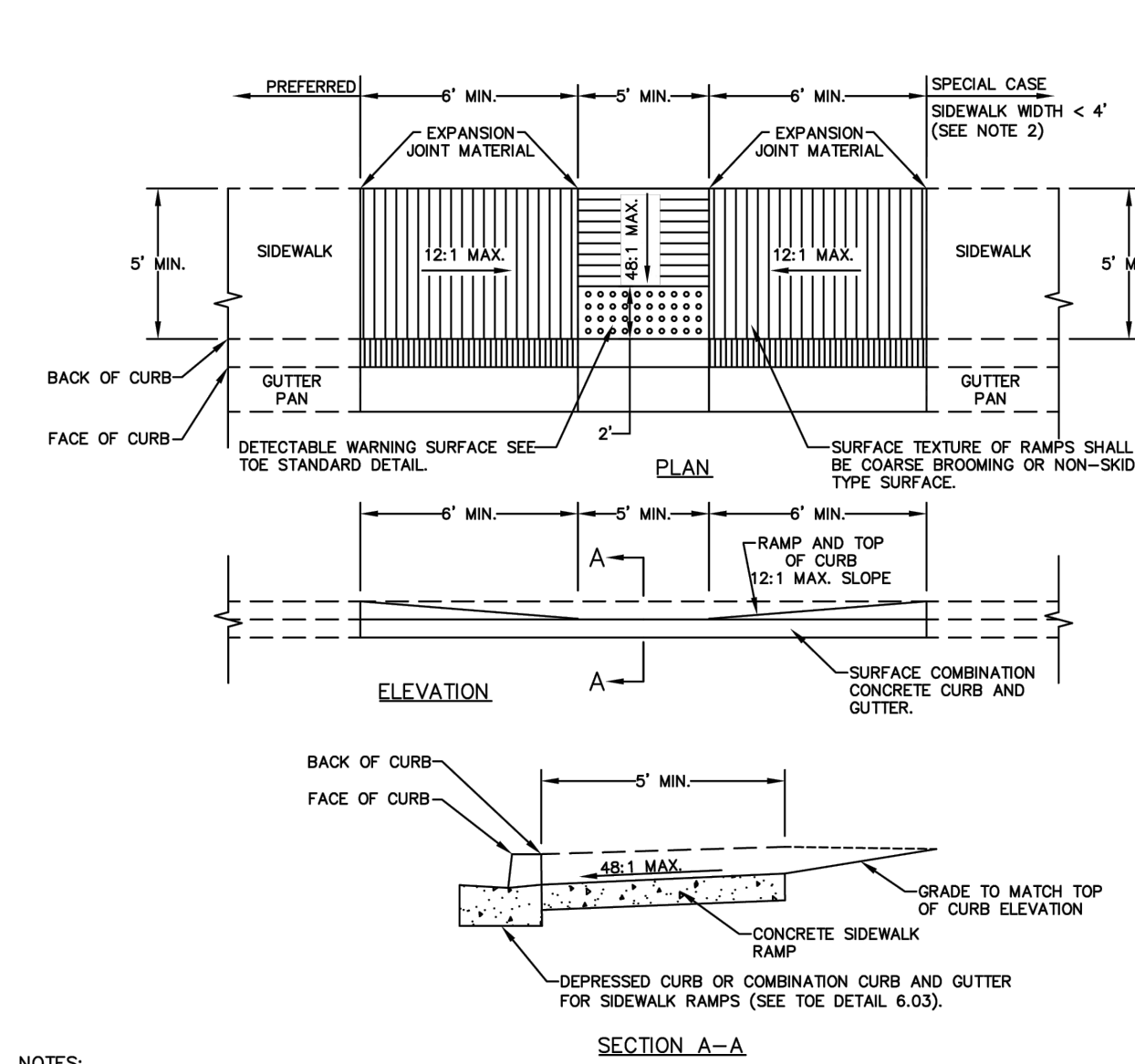
1. BEDDING, HAUNCHING AND FILL MATERIAL TO THE TOP OF THE PIPE SHALL BE COARSE AGGREGATE MEETING THE REQUIREMENTS OF ASHTO M43-SIZE NUMBER 57, UNLESS OTHERWISE SPECIFIED BY THE PIPE MANUFACTURER AND APPROVED BY THE TOWN ENGINEER.
2. DURING HAUNCHING, CONTRACTOR SHALL CAREFULLY WORK GRAVEL DOWN AROUND THE BOTTOM OF THE PIPE.
3. IN UNPAVED AREAS, FILL CR-6 OR BRG TO 6\"/>



APPROVAL
TOWN ENGINEER
DATE
ISSUED: JANUARY 2020

TOWN OF EASTON
STANDARD DETAILS
TRENCH DETAIL

STANDARD NO.: TOE-R-5.01-1



NOTES:

1. TO BE USED WHERE SIDEWALK IS ADJACENT TO THE CURB. THIS STANDARD MAY BE MODIFIED TO SUIT A PARTICULAR LOCATION.
2. WHERE 60\"/>
3. NO TRAVERSABLE SLOPE ON THE RAMP OR SIDEWALK SHALL EXCEED 12:1 IN THE DIRECTION OF PEDESTRIAN TRAVEL OR 48:1 PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL. THE GROSS SLOPE OF THE LANDING AREA CAN NOT EXCEED GRADE OF ROADWAY.
4. EXPANSION JOINT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH TOE STANDARD DETAIL.
5. SIDEWALK RAMPS TO BE SHOWN ON PLANS SYMBOLICALLY AND REFERENCED WITH THE CENTER OF THE RAMP ALIGNED TO A STATION ON THE CONSTRUCTION CENTERLINE. SEPARATE DETAILS SHALL BE SHOWN WHERE PROPOSED RAMP VARIES FROM STANDARD CASES.
6. TRANSITION PANELS TO TIE INTO EXISTING SIDEWALK MUST BE A MINIMUM OF 5\"/>



APPROVAL
TOWN ENGINEER
DATE
ISSUED: JANUARY 2020

TOWN OF EASTON
STANDARD DETAILS
SIDEWALK RAMPS
PARALLEL

STANDARD NO.: TOE-R-7.04

PAVING NOTES

PAVING REQUIREMENTS

A. BASE COURSE

1. SUB-GRADE SHALL BE PLACED ON PREPARED AND COMPACTED REFILLED EXCAVATIONS TO THE COMPACTED DEPTH AS SHOWN ON DETAIL 9W-1.03. MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE PROVISIONS OF MD SHA STANDARDS, SECTION 208.
2. GRADED AGGREGATE BASE COURSE:
 - a) GRADED AGGREGATE BASE COURSE SHALL BE SPREAD ON PREPARED AND COMPACTED REFILLED EXCAVATION TO THE COMPACTED DEPTH SHOWN ON THE DRAWING DETAILS.
 - b) GRADED AGGREGATE SHALL BE PER MD SHA STANDARD, SECTION 901.
 - c) RECYCLED CRUSHED CONCRETE IS AN ACCEPTABLE ALTERNATIVE PROVIDED THICKNESS ADJUSTMENTS ARE MADE BASED ON SUPPLEMENTAL TESTING TO BE SUBMITTED BY A QUALIFIED TESTING LABORATORY AND APPROVED BY THE TOWN ENGINEER.

B. TACK COAT

1. COATING SHALL BE RESIDUAL ASPHALT UNIFORMLY SPREAD BETWEEN .01 AND .05 GALLONS/SQ. YARD.
2. CONTRACTOR SHALL TAKE CARE NOT TO TACK COAT ON SURFACE COURSES.

C. HOT MIX ASPHALT PAVEMENT

1. HOT MIX ASPHALT PAVEMENT SHALL CONSIST OF A NUMBER OF COURSES OF HMA SUPERPAVE MATERIAL AND AGGREGATE ON A PREPARED SUB-BASE AS SHOWN WITHIN THE TOWN STANDARDS.
2. MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE PROVISIONS OF SECTION 504 AND SECTION 504 OF THE MD SHA STANDARDS AND DETAILS.
3. SURFACE COURSES OF BITUMINOUS CONCRETE MIXES SHALL HAVE LESS THAN 15% OF RECYCLED ASPHALT PAVEMENT (RAP).
4. BASE COURSES SHALL HAVE NO MORE THAN 20% RAP.
5. WEATHER RESTRICTIONS:
 - a) PLANT MIXED SEAL - MINIMUM SURFACE TEMPERATURE 60°F AND RISING.
 - b) SURFACE COURSE - MINIMUM SURFACE TEMPERATURE 40°F AND RISING.
 - c) BASE COURSE - MINIMUM SURFACE TEMPERATURE 32°F AND RISING.

D. CONCRETE PAVEMENT

1. CONCRETE USED IN THE RESTORATION OF STREET AND ROADS SHALL BE PLACED TO THE MINIMUM THICKNESS THAT SHALL BE APPROVED BY THE TOWN. CONCRETE MAY BE A BASE COURSE WITH A BITUMINOUS CONCRETE OVERLAY OR A FINISHED SURFACE COURSE.
2. CONCRETE PAVEMENT SHALL MEET THE PROVISIONS OF MD SHA STANDARDS, SECTION 522.
3. CONCRETE SIDEWALK AND CURB AND GUTTER RESTORATION SHALL BE AS INDICATED WITHIN THE TOWN STANDARDS.

E. SOIL CEMENT

1. WHERE THE CBR VALUES ARE FOUND TO BE LOW WITHIN THE PAVED AREA, THE TOWN WILL ALLOW THE SUB-GRADE BE REINFORCED BY A CEMENTOUS MATERIAL BEING MIXED IN THE SUBGRADE. APPLICATION SHALL BE SUBJECT TO THE GEOTECHNICAL INVESTIGATION.
2. A MINIMUM OF 2\"/>
3. MINIMUM MIX DEPTH OF THE SOIL CEMENT MIXTURE SHALL BE 8\"/>



APPROVAL
TOWN ENGINEER
DATE
ISSUED: JANUARY 2020

TOWN OF EASTON
STANDARD DETAILS
PAVING NOTES

STANDARD NO.: TOE-R-1.02

CONCRETE QUICK REFERENCE LIST

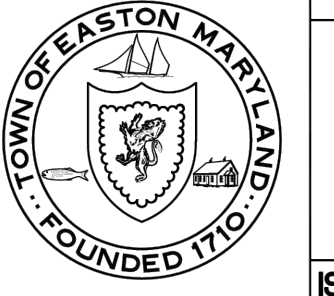
CAST-IN-PLACE CONCRETE SIDEWALKS AND CURBING

A. SUBMITTALS

1. SUBMIT MIX DESIGN FOR APPROVAL PRIOR TO PLACING CONCRETE (MSHA MIX #3 FOR ALL CONCRETE SIDEWALKS, AIR ENTRAINED, MINIMUM 3500 PSI MIX). FOR CURB AND GUTTER, UTILIZE MSHA MIX #7, EXCEPT MAXIMUM WATER CEMENTITIOUS RATIO OF 0.45 AND 611 POUNDS MINIMUM CEMENTITIOUS MATERIALS - AIR ENTRAINED, MINIMUM 4200 PSI MIX.
2. SUBMIT CONCRETE TESTING AGENCY FOR APPROVAL, WHICH CONTRACTOR OR PROJECT OWNER SHALL EMPLOY FOR INFIELD AND LABORATORY TESTING.

B. CONCRETE PLACEMENT

1. NOTIFY TOWN OF INTENTION TO POUR CONCRETE 24 HOURS PRIOR TO PERFORMING WORK. (PHONE: 410-822-8822).
2. DRIVER SHALL PRESENT COMPUTER GENERATED MIX DELIVERY TICKET UPON ARRIVAL TO SITE.
3. DO NOT ADD WATER TO MIX AT JOB SITE UNLESS APPROVED BY ENGINEER. DO NOT POUR CONCRETE DURING RAIN EVENTS.
4. TESTING AGENCY SHALL TEST FOR SLUMP, TEMPERATURE AND AIR ENTRAINMENT AT THE JOB SITE, PRIOR TO POURING EACH TRUCK LOAD DELIVERED TO SITE. THE MAXIMUM TIME FROM ADDING WATER TO BATCH AT PLANT TO DISCHARGE AT SITE SHALL BE WITHIN 1 1/2 HOURS. TESTING AGENCY SHALL VERIFY THAT SUB-GRADE IS PROPERLY COMPACTED.
5. TESTING AGENCY SHALL COLLECT CYLINDERS FOR COMPRESSION TESTING ON EACH TRUCK LOAD OF CONCRETE DELIVERED TO SITE PER ACI REQUIREMENTS. TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER WITHIN 48 HOURS OF 7 AND 28 DAY BREAKS. REPORT SHALL INCLUDE LOCATION OF POUR PER PLAN STATIONING.
6. ENGINEER OR HIS/HER REPRESENTATIVE SHALL VERIFY THAT AREA OF CONCRETE WORK IS PROPERLY PREPARED, FREE OF WATER, FREE OF UNSTABLE MATERIALS AND THAT ALL REINFORCEMENT REQUIRED AT DRIVEWAYS, RAMP, VALLEY GUTTERS, ETC. IS IN PLACE AND PROPERLY SUPPORTED.
7. COLD WEATHER CONCRETE PLACEMENT SHALL BE PROTECTED FROM DAMAGE AND FROST, FREEZING ACTION OR LOW TEMPERATURES. NO UNAPPROVED ADMIXTURES ARE PERMITTED.
8. CONCRETE CURB AND SIDEWALKS SHALL HAVE PROPER CONTROL JOINTS INSTALLED AT 10 FOOT INTERVALS FOR CURB AND 5 FOOT INTERVALS FOR SIDEWALK. EXPANSION JOINTS FOR CURBING SHALL BE AT EACH 100 FOOT INTERVAL PLUS AT EACH POINT OF TANGENT OR CURVE. SIDEWALKS SHALL HAVE EXPANSION JOINTS AT 20 FOOT INTERVALS OR AT CHANGE OF DIRECTION.



APPROVAL
TOWN ENGINEER
DATE
ISSUED: JANUARY 2020

TOWN OF EASTON
STANDARD DETAILS
CONCRETE QUICK REFERENCE LIST

STANDARD NO.: TOE-R-1.03

PAVEMENT MARKINGS

- A. CENTERLINE PAVEMENT MARKINGS SHALL BE USED TO DELINEATE THE SEPARATION OF TRAFFIC LANES THAT HAVE OPPOSITE DIRECTIONS OF TRAVEL.

1. THE CENTERLINE SHALL BE IN THE GEOMETRICAL CENTER OF THE ROADWAY UNLESS OTHERWISE REQUIRED BY FIELD CONDITIONS.
2. ALL TWO WAY STREETS GREATER THAN 16' WIDE SHALL HAVE A CENTERLINE.
3. THE CENTERLINE MARKING SHALL BE YELLOW LINES, CONFIGURATION TO BE APPROVED BY THE TOWN ENGINEER.

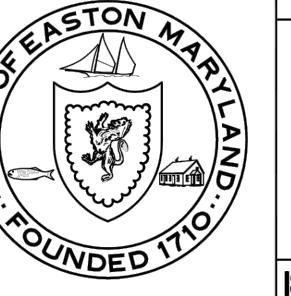
- B. EDGE LINE PAVEMENT MARKINGS SHALL BE USED TO DELINEATE THE SHOULDER AND TRAVEL LANES.

1. THE EDGE OF THE TRAVEL LANE SHALL CONSIST OF A SINGLE SOLID WHITE LINE.
2. EXCEPT FOR DOTTED EDGE LINE EXTENSIONS, EDGE LINES SHALL NOT BE EXTENDED THROUGH INTERSECTIONS OR MAJOR DRIVEWAYS.
3. WHILE SEPARATING TRAFFIC LANES TRAVELING IN THE SAME DIRECTION A SINGLE BROKEN WHITE LINE SHALL BE USED WHERE CROSSING LANES IS PERMITTED.
4. LONGITUDINAL PAVEMENT MARKINGS SHALL BE READY-MIXED WHITE OR YELLOW PAINT WHICH MAY BE USED AS A BASE FOR DROP-ON REFLECTING GLASS BEADS, OR FOR USE AS A PLAIN NON-REFLECTIVE TRAFFIC PAINT SUITABLE FOR EITHER BITUMINOUS OR CONCRETE SURFACES.

1. GLASS BEADS SHALL CONFORM TO AASHTO M 247 WITH A MOISTURE RESISTANCE COATING.
2. IMMEDIATELY BEFORE APPLYING THE PAVEMENT MARKING PAINT TO THE PAVEMENT, THE CONTRACTOR SHALL INSURE THE SURFACE IS DRY AND ENTIRELY FREE FROM DIRT, SAND, GREASE, OIL, OR OTHER MATTER WHICH WOULD PREVENT EFFECTIVE ADHESION OF THE PAINT TO THE PAVEMENT.
3. THE SURFACE TEMPERATURE OF THE PAVEMENT SHALL BE A MINIMUM OF 5°C (40°F).
4. EVERY EFFORT SHALL BE MADE TO APPLY PAINT ACCORDINGLY TO THE REQUIREMENTS STATED IN THIS SECTION. WHEN PAINT MUST BE APPLIED BETWEEN THE DATES OF OCTOBER 15 THROUGH APRIL 15 INCLUSIVE OR ON PAVEMENT WITH A SURFACE TEMPERATURE BELOW 5°C (40°F), COLD WEATHER PAINT CAN BE USED WHICH DOES NOT EXCEED EPA'S FEDERAL REGISTER/RULES AND REGULATIONS (40 CFR PART 59 [AD-FRL-6149-7] RIN 2060-AE55), AS AMENDED, FOR VOC CONTENT LIMIT AND SHALL MEET THE AASHTO M248 F AND REQUIREMENTS NOTED BELOW. THESE PRODUCTS SHALL BE APPLIED ACCORDING TO THE MANUFACTURERS REQUIREMENTS.
5. THE COLD WEATHER PAINT SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS.

- a) PROPERTY TEST METHOD REQUIREMENT.
- b) DRY OPACITY (CONTRAST RATIO) ASTM D2244-WITH A WET FILM THICKNESS OF 18 ± 1 mils.
- c) VOC ASTM D3960 150 g/l (1.25 lb/gal) MAX.
- d) DRYING TIME ASTM D7111 WITH WET FILM THICKNESS OF 15 mils. 15 MINUTES MAX @ 25°C (77°F).

6. GLASS BEADS SHALL BE EVENLY APPLIED THROUGH THE ENTIRE PAINT THICKNESS AT A RATE OF 7 TO 9 lbs. TO EACH GALLON OF PAINT. GLASS BEADS SHALL BE APPLIED SIMULTANEOUSLY WITH PAINT, BY PRESSURIZED OR MECHANICAL DROP METHODS.
7. PAINTED LANE LINES, EDGE LINES, AND CENTERLINES SHALL HAVE A MINIMUM RETROREFLECTIVITY OF 250 MILLICANDELAS FOR WHITE AND 150 MILLICANDELAS FOR YELLOW. THE RETROREFLECTIVITY MEASUREMENT WILL BE TAKEN BY THE TOWN ON LINES THAT ARE CLEAN AND DRY WITHIN 30 DAYS OF APPLICATION, BEFORE ANY WINTER MAINTENANCE TAKES PLACE.
8. PAINT SHALL BE MARYLAND FAST DRY WATERBORNE TRAFFIC PAINT, LEAD FREE BY SHERMAN WILLIAMS OR APPROVED EQUAL. (FEDERAL STANDARD 595-38907 YELLOW OR 37925 WHITE).
9. PAVEMENT MARKINGS SHALL BE WARRANTED FOR A MINIMUM OF 2 YEARS FROM FINAL ACCEPTANCE BY THE TOWN.



APPROVAL
TOWN ENGINEER
DATE
ISSUED: JANUARY 2020

TOWN OF EASTON
STANDARD DETAILS
LONGITUDINAL PAVEMENT MARKINGS

STANDARD NO.: TOE-R-1.04

SITE & STORMWATER DETAILS

OF THE LANDS OF

YMCA INC.

TAX MAP 108, GRID 6, PARCEL 2677

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR YMCA INC.

RAUCH
Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 8081 | Fax: 410 770 3887

REVISIONS

REV. #	DATE	DESCRIPTION
1		



DATE: 4/23/2024
SCALE: 1" = 60'
DRAWN BY: BADC/AFK
DESIGNED BY: WCS
APPROVED BY: BBF

SHEET NO.: C-305.02

FOR
REVIEW

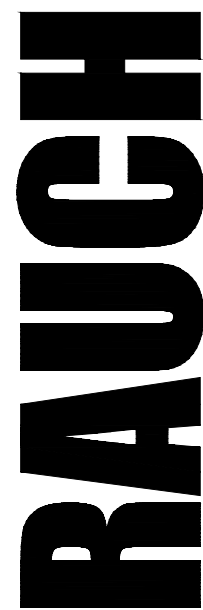


OF THE LANDS OF

YMCA INC.

TAX MAP 108, GRID 0, PARCEL 2677

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND
PREPARED FOR YMCA INC.



Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3667



DATE:	4/23/2024
SCALE:	1" = 60'
DRAWN BY:	BAOC/AF
DESIGNED BY:	WCS
APPROVED BY:	BBF

SHEET NO.:

C-305.03

**FOR
REVIEW**



Site Development Stormwater Management Analysis

FOR

Easton Family YMCA @ Washington
1180 S Washington St
Easton, Md 21601

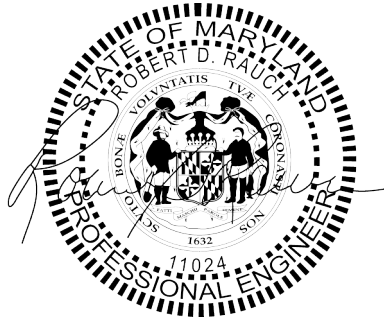
PREPARED FOR:

Young Men's Christian Association (YMCA) of the Chesa
101 N Wasker Drive
Chicago, IL 60606

PREPARED BY:

RAUCH, INC
106 N. HARRISON STREET
EASTON, MD 21601

April 18, 2024



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM
A DULY LICENCED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

3/21/2024

ROBERT D. RAUCH, LICENCE NO. 11024
EXPIRATION DATE 7/24/2024

DATE

TABLE OF CONTENTS

SECTION 1.....	Stormwater Management Narrative
SECTION 2.....	Existing & Proposed Drainage Area Plans
SECTION 3.....	ESD Water Quality Calculations
SECTION 4.....	Pre/Post-Development Quantity Calculations
SECTION 5.....	Soil Report

SECTION 1 – STORMWATER MANAGEMENT NARRATIVE

SITE DEVELOPMENT STORMWATER MANAGEMENT NARRATIVE

The proposed parking lot renovations at the Easton Family YMCA at 1180 S Washington is located on 4.72-acre lot of land. The site is outside of the Critical Area, does not qualify for Forest Conservation, is outside of the floodplain, and outside of the Tanyard Branch watershed. Minimal vegetation will be cleared for this project as most of the redevelopment is on existing impervious surface. The entire limit of disturbance is 38,426 sq-ft, which exempts it from needing a state discharge permit through the NPDES. The dominant Hydrologic Soil Type is Type B. The unique site constraints of the YMCA being located on a ridge above a nearby stream valley have made the use of ‘lines of investigation’, versus commonly used study points, as the main way to estimate the water volume leaving the proposed site developments.

Within the LOD development, the plan will add 0.080 acres (3,375 sq-ft) of impervious surfaces, or a 9% increase. Based on the conditions of the existing parcel, the proposed development will be categorized as “Re-Development”. The spreadsheets found in Section 2 of this report calculate the required ESD volume to be 1,527 CF of ESD storage.

Water quality will be met through non-rooftop disconnection to treat the northern parking lot and one micro-bioretenention to treat the south parking lot. The proposed ESD practices slightly overtreat 2,622 CF of water, compared to the required and calculated 1,527 CF (1095 CF difference). The existing site conditions predict a deep ground water table, being on top of a ridge before rapidly falling into a nearby stream valley. Additionally, the proposed micro-bioretenention will have a maximum of four feet of planting media depth and water will primarily exfiltrate through the bottom of the bioretention media. A weir is provided for the micro-bioretenention to overflow during large stormwater events, where water can overflow and roll downhill into the stream below. No underdrains are provided as they are estimated to be unnecessary for this site and configuration.

Water quantity control is required for a post-development 10-year storm event to be less than the pre-development 10-year storm event within the Town of Easton, except within the Tanyard Branch. The proposed stormwater management practices reduce the combined 10-year CFS rate from 5.97 CFS to 4.52 CFS. The table for all lines of investigation are shown below for existing and proposed. Water quantity control is accomplished through both the non-rooftop disconnection and the one micro-bioretenention, but primarily through the micro-bioretenention.

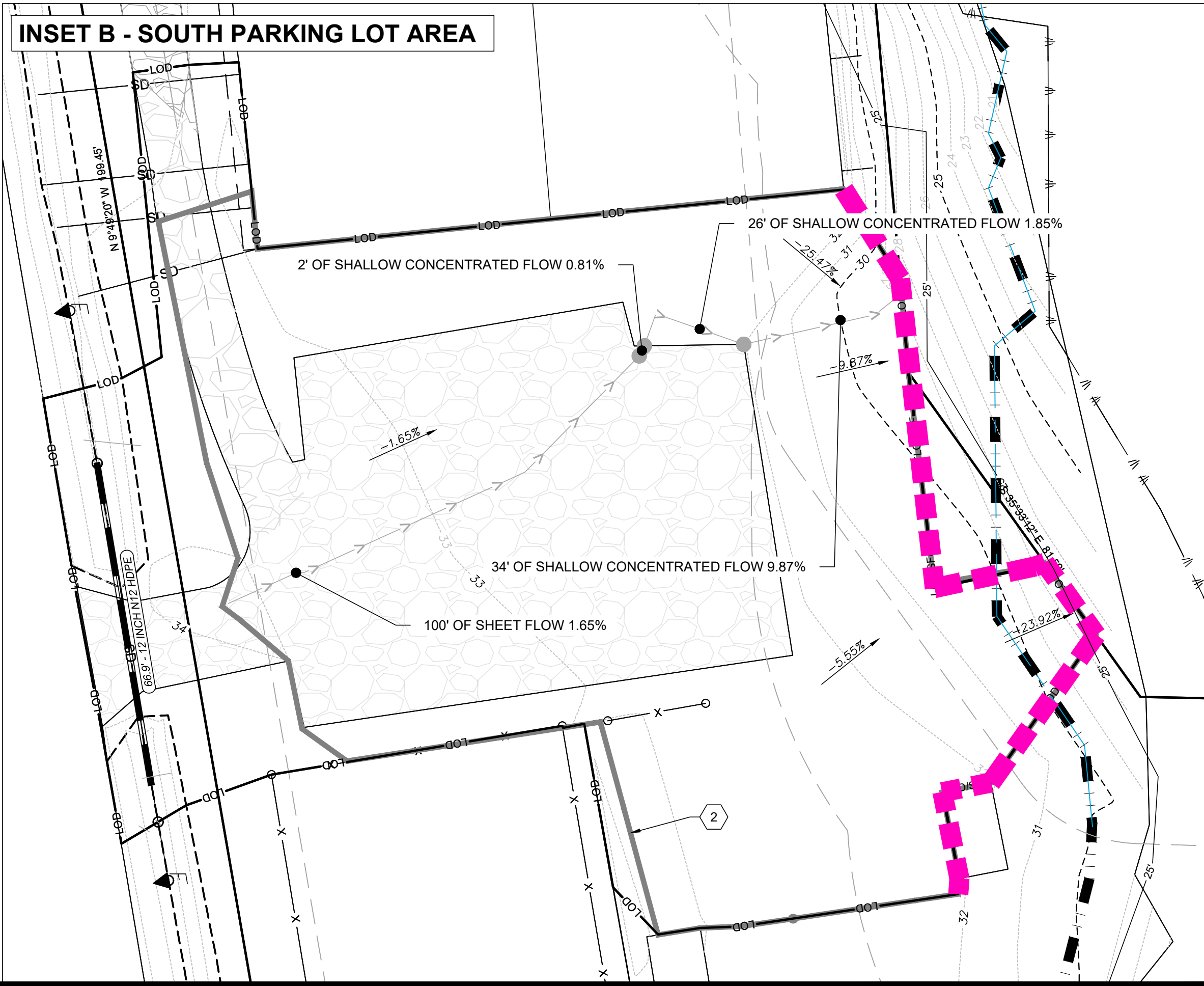
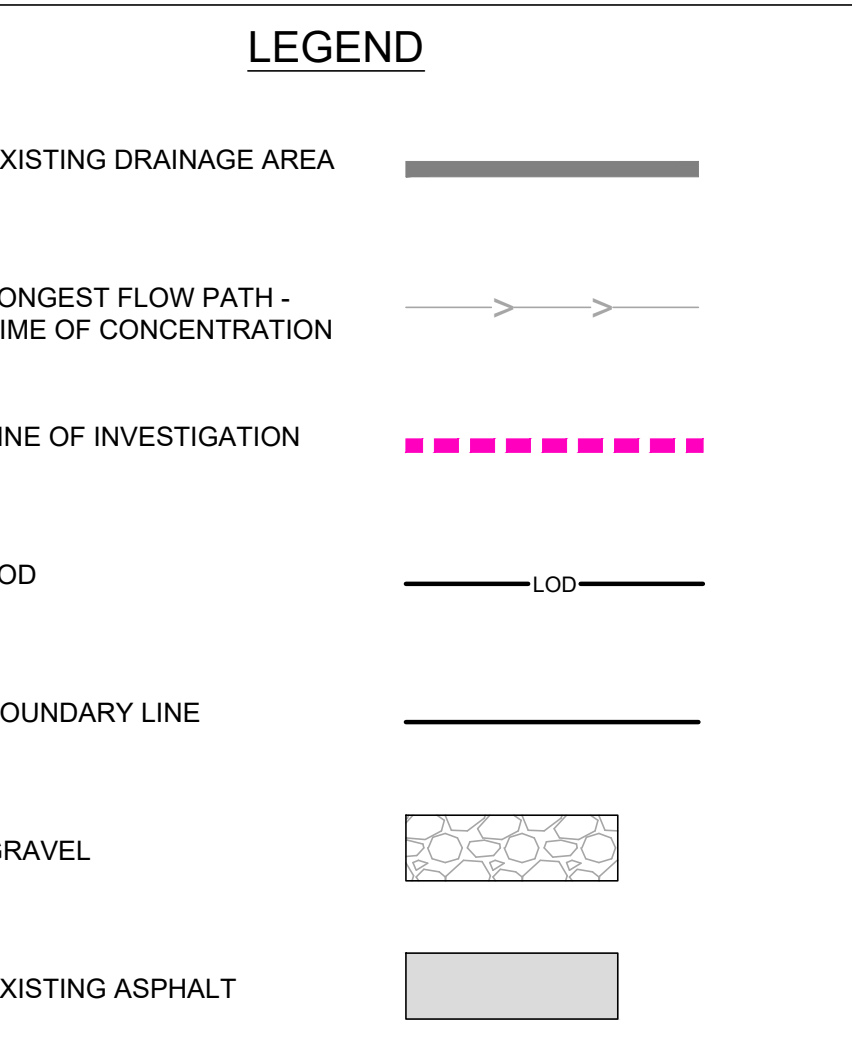
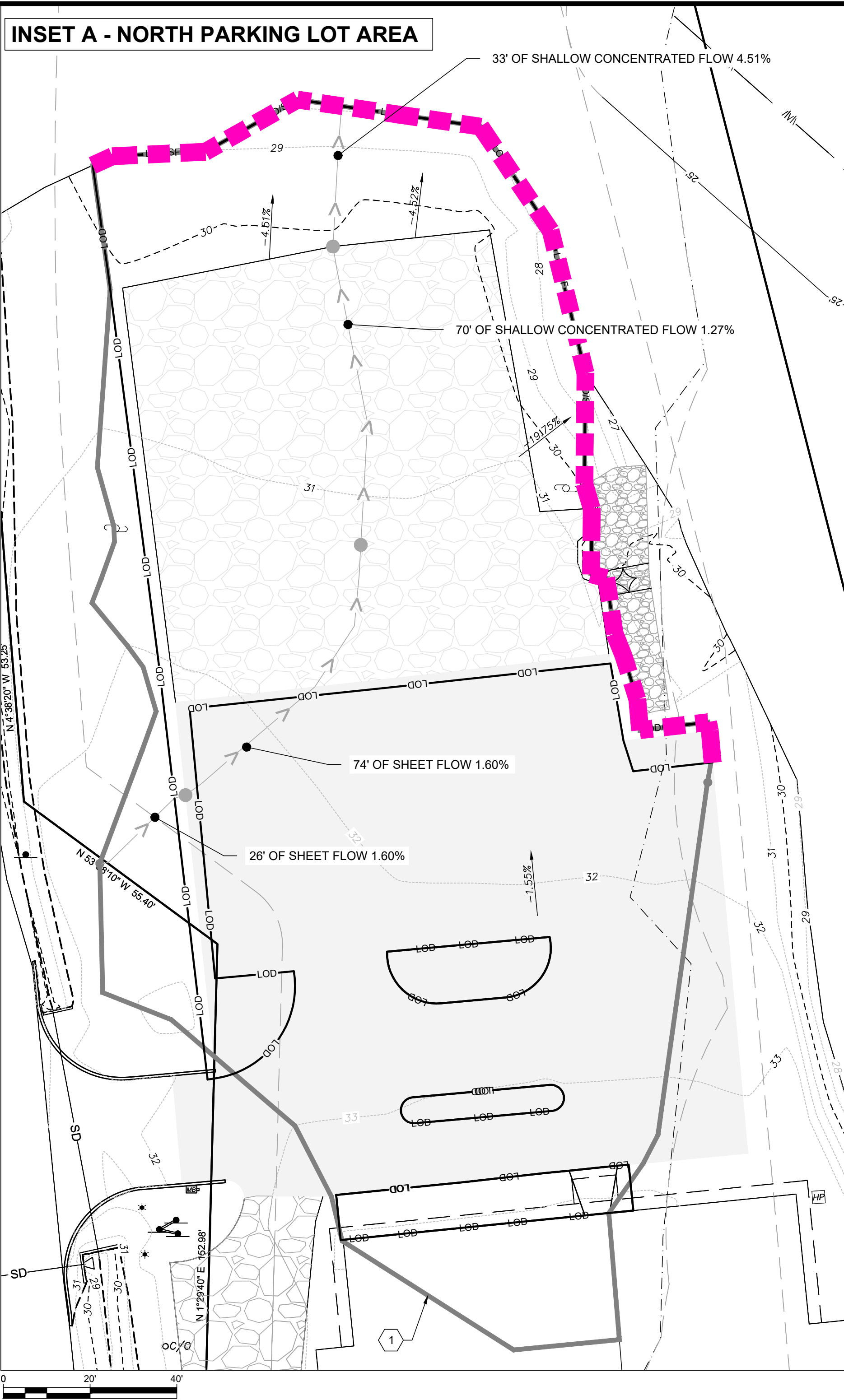
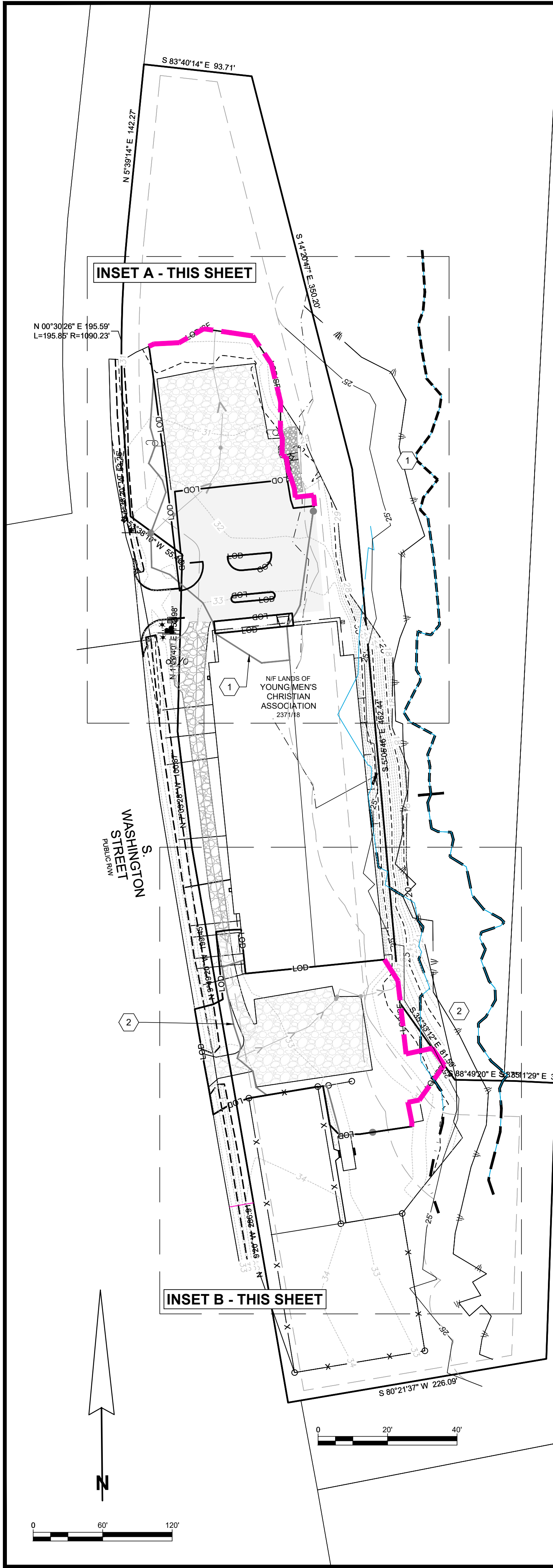
Line of Investigation 1 – North Parking Area		
	2-YR (CFS)	10-YR (CFS)
Existing	2.24	3.84
Proposed	2.33	3.95

Line of Investigation 2 – South Parking Area		
	2-YR (CFS)	10-YR (CFS)
Existing	1.01	2.13
Proposed	0.14	0.57

Pre-Development Combined 10-Year CFS = 5.97 CFS

Post-Development Combined 10-Year CFS = 4.52 CFS

SECTION 2 – EXISTING & PROPOSED DRAINAGE AREA MAPS



PROPOSED SITE FEATURES

- 1 DRAINAGE AREA 1: 29,402 SF (0.675 AC)
- 2 DRAINAGE AREA 2: 18,214 SF (0.418 AC)



EXISTING DRAINAGE MAPS

OF THE LANDS OF

YMCA INC.

TAX MAP 108, GRID 0, PARCEL 2677

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR YMCA INC.

RAUCH

Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3987

REVISIONS

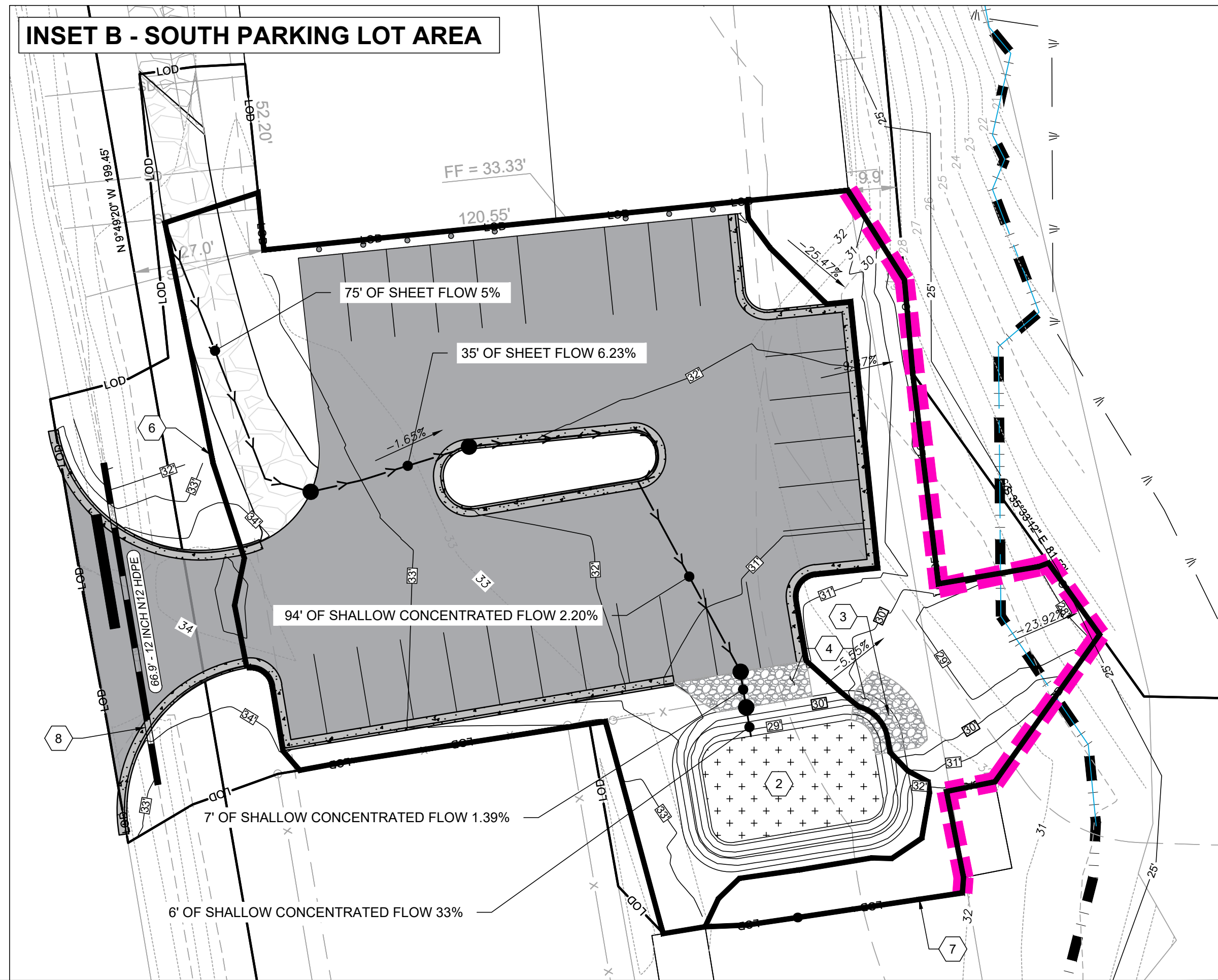
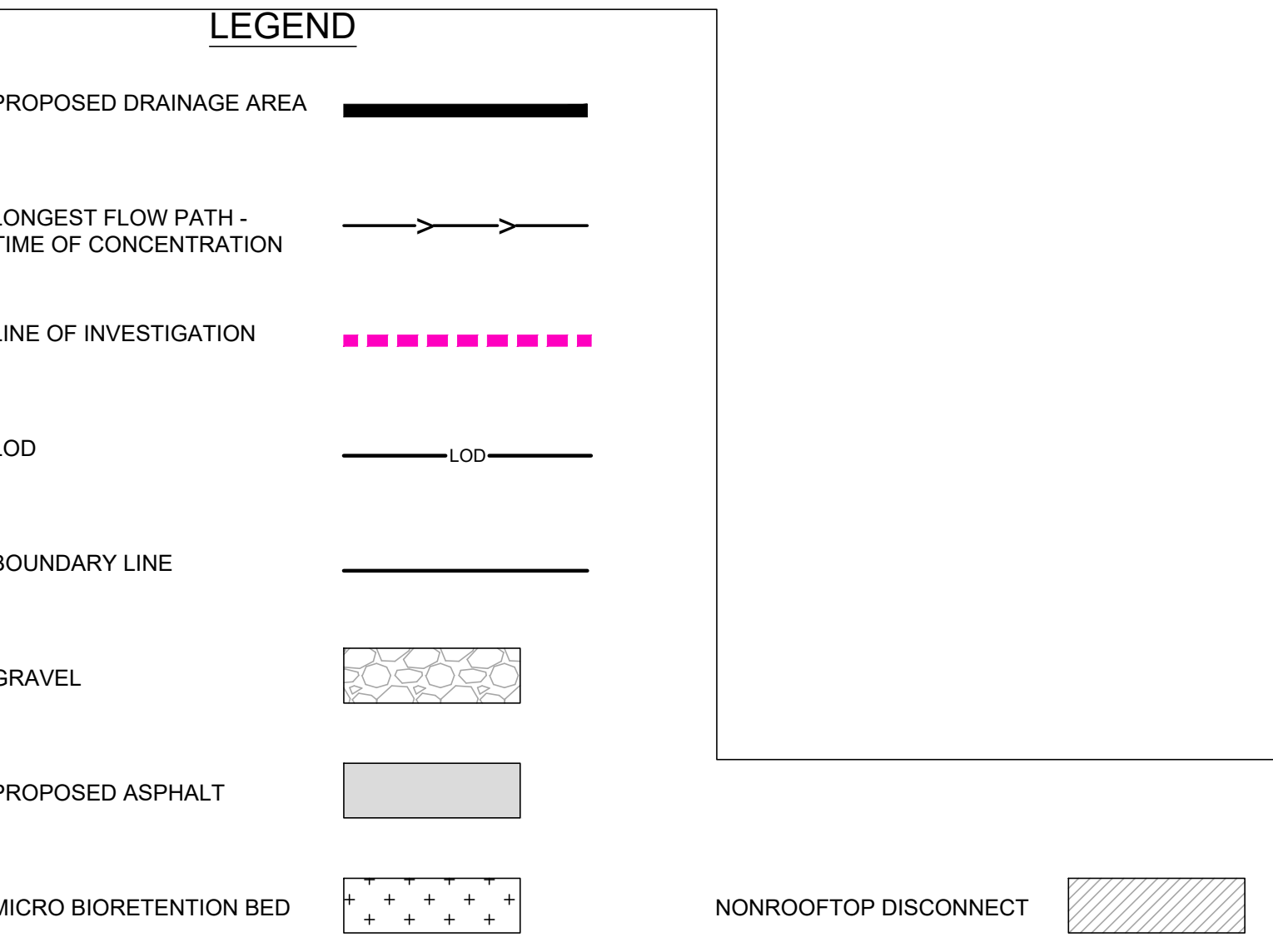
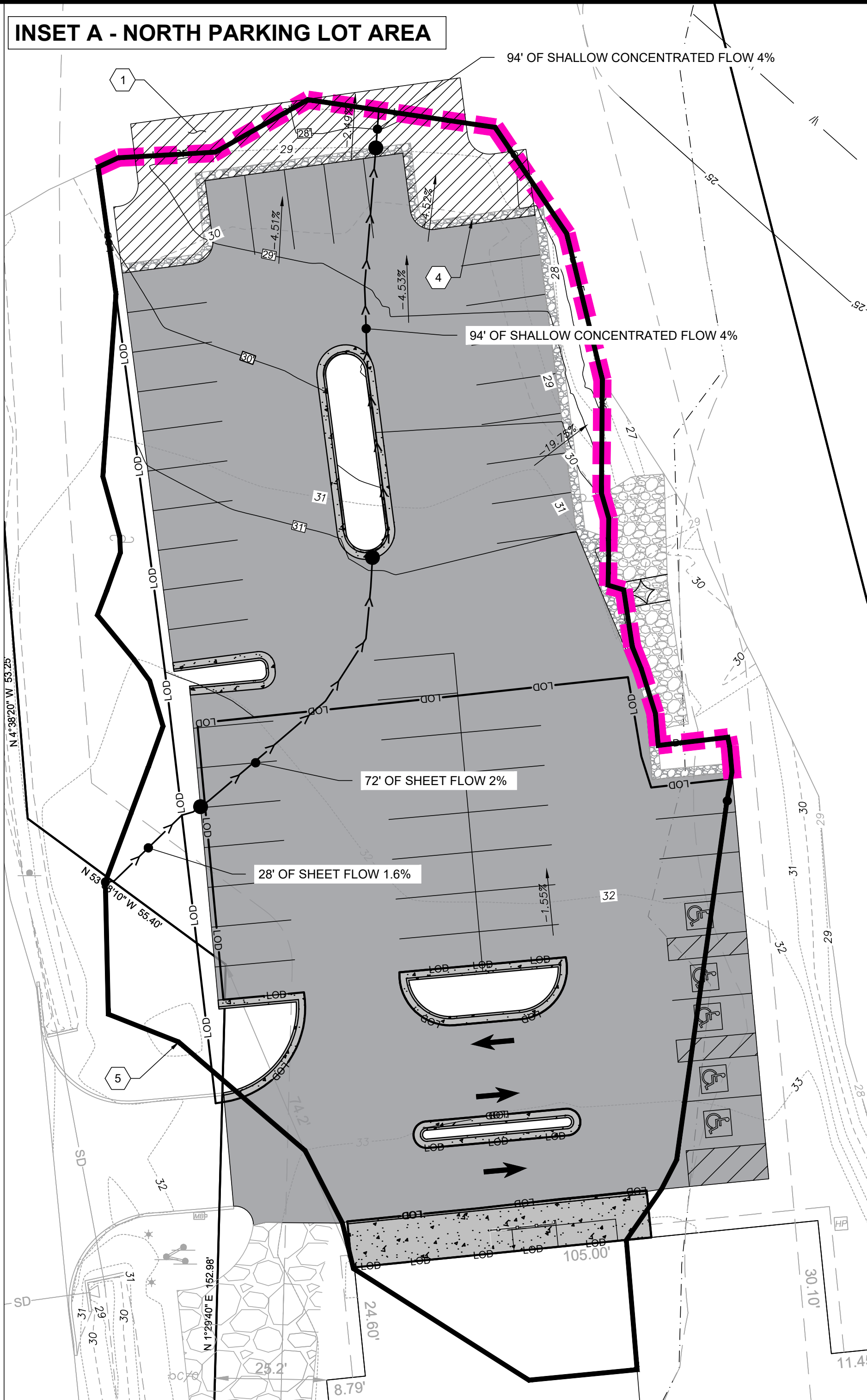
REV. #	DATE	DESCRIPTION
1		



DATE: 4/19/2024
SCALE: AS SHOWN
DRAWN BY: WCS
DESIGNED BY: WCS
APPROVED BY: BBF

SHEET NO.: C-301.04

FOR REVIEW



- ## PROPOSED SITE FEATURES
- | | |
|---|--|
| 1 | NON-ROOFTOP DISCONNECTION AREA: 1,951 SF
(DISCONNECTION LENGTH: 15' - CONTRIBUTING LENGTH: 75') |
| 2 | MICRO-BIORETENTION: BED AREA: 728 SF |
| 3 | WEIR |
| 4 | ROCK PROTECTION |
| 5 | DRAINAGE AREA 1: 29,432 SF (0.675 AC) |
| 6 | DRAINAGE AREA 2: 15,311 SF (0.351 AC) |
| 7 | DRAINAGE AREA 3: 3,597 SF (0.0825 AC) |
| 8 | PROVIDE AND INSTALL 67" HDPE PIPE UNDER EXPANDED SOUTH ENTRANCE |

PROPOSED DRAINAGE MAPS

OF THE LANDS OF

YMCA INC.

TAX MAP 108, GRID 0, PARCEL 2677

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND
PREPARED FOR YMCA INC.

Phone: 410 770 9081 | Fax: 410 770 3867

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com

Phone: 410 770 9081 | Fax: 410 770 3867

Phone: 410 770 9081 | Fax: 410 770 3867

[illegible]

SECTION 3 – ESD WATER QUALITY CALCULATIONS

LIMITS OF DISTURBANCE

0

north
north
north
south
south

EXISTING LOD COVERAGE			
COVERAGE DESCRIPTION	COVERAGE CATEGORY	COVERAGE AREA SQ-FT	SOIL TYPE
DRIVEWAY	IMPERVIOUS	2268	B
TURF LAWN	PERVIOUS	4398	B
GRAVEL	IMPERVIOUS	9076	B
GRAVEL	IMPERVIOUS	9167	B
TURF LAWN	PERVIOUS	13517	B

TOTAL SITE AREA 38426 SQ-FT
EXISTING IMPERVIOUS AREA 20511 SQ-FT
PERCENT IMPERVIOUS 53%

PROPOSED LOD COVERAGE		
COVERAGE DESCRIPTION	COVERAGE CATEGORY	COVERAGE AREA SQ-FT
IMPERVIOUS PAV	IMPERVIOUS	20765
IMPERVIOUS PAV	IMPERVIOUS	0
TURF LAWN	PERVIOUS	0
GRAVEL	IMPERVIOUS	949
PAVEMENT	IMPERVIOUS	2272

TOTAL SITE AREA 38426 SQ-FT
PROPOSED IMPERVIOUS AREA 23986 SQ-FT
PERCENT IMPERVIOUS 62%

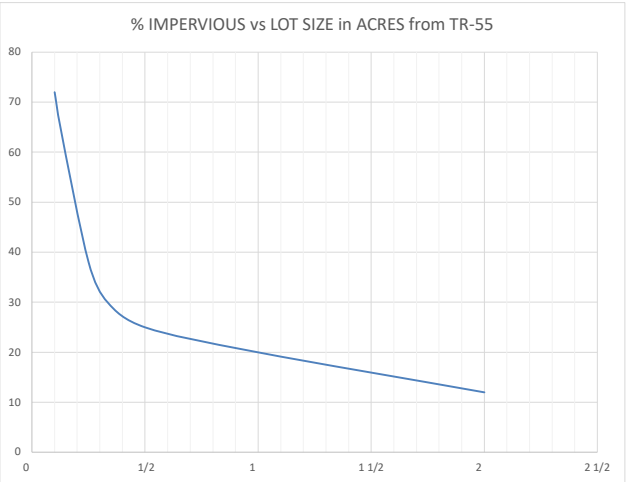
PERCENT HSG A 0%
PERCENT HSG B 100%
PERCENT HSG C 0%
PERCENT HSG D 0%

3475 sf change

0.080 in acres

FROM TR-55		
LOT SIZE	% IMPERVIOUS	
2.00	12	
1.00	20	
1/2	0.50	25
1/3	0.33	30
1/4	0.25	38
1/8	0.13	65
0.10	72	

0.166667



PERVIOUS A
IMPERVIOUS B
C GRAVEL IMPERVIOUS
ROOFS IMPERVIOUS
BUS PARKING IMPERVIOUS

D

DRIVEWAY IMPERVIOUS
ROADWAY IMPERVIOUS
WATER IMPERVIOUS
PAVEMENT IMPERVIOUS
SIDEWALK IMPERVIOUS
LANDSCAPING PERVIOUS
PERVIOUS PARKING PERVIOUS
TREES/VEGETATION PERVIOUS
TURF LAWN PERVIOUS
CONSERVATION AREA PERVIOUS
PERMEABLE PAVEMENT PERVIOUS

Maryland ESD Calculations and 10% Phosphorus Removal

Last Update: 1/6/2019 Rauch Inc.
Difference

0

Project Name:	YMCA Wash St
Date:	
	2268
data input cells	
calculation cells	9076

20765
0
0
949
2272

Step 1: Complete ESD Implementation Checklist

Check all of the Following ESD Practices That Were Implemented at Site	Yes - No - N/A
Environmental Mapping Was Conducted at Site Prior to Layout	YES
Natural Areas Were Conserved (e.g., forests, wetlands, steep slopes, floodplains)	YES
Stream, Wetland and Shoreline Buffers Were Reserved	YES
Disturbance of Permeable Soils Was Minimized	YES
Natural Flow Paths Were Maintained Across the Site	YES
Building Layout Was Fingerprinted to Reduce Clearing and Grading at Site	YES
Site Grading Promoted Sheetflow From Impervious Areas to Pervious Ones	YES
Site Design Was Evaluated to Reduce Creation of Needless Impervious Cover	YES
Site Design Was Evaluated to Maximize Disconnection of Impervious Cover	YES
Site Design Was Evaluated to Identify Potential Hotspot Generating Area for Stormwater Treatment	YES
Erosion and Sediment Control Practices and Post Construction Stormwater Management Practices Were Integrated into a Comprehensive Plan	YES
Tree Planting/Was Used at the Site to Convert Turf Areas into Forest	YES

Step 2: Calculate Site Imperviousness and Water Quality Volume, WQv (for redevelopment)

defined as A single tract, lot, parcel of land or combination of tracts, lots parcels of land that are in one ownership or are contiguous and in diverse ownership where development is to be performed as part of a unit, subdivision or project. See page 5.117 in the design handbook. This means that a project may be classed as redevelopment even if the LOD is less than 40% impervious

Total SITE Area, A (acres or sq-ft)	4.72
Existing SITE Impervious Area (acres or sq-ft)	2.21
SITE percent impervious	47%
Development Category (for ESD)	Redevelopment

LOD Area, A (acres)	0.88
Existing LOD Impervious Surface Area (acres)	0.47
Proposed LOD Impervious Surface Area (acres)	0.55
Rainfall Depth, P (in)	1.0

Existing LOD Imperviousness, I _{pre}	53%
Proposed LOD Imperviousness, I _{post}	62%

Water Quality Calculation for Redevelopment Only

Required Treatment Area (acres)	0.235
Runoff Coefficient, Rv	0.95

Water Quality Volume, WQv (cf)	812
--------------------------------	-----

Step 4: Calculate Environmental Site Design (ESD) Rainfall Target, P_E

% Soil Type A	0%	RCN Soil Type A	75.45
% Soil Type B	100%	RCN Soil Type B	83.97
% Soil Type C	0%	RCN Soil Type C	88.97
% Soil Type D	0%	RCN Soil Type D	91.48

Target Pre-Developed Condition, RCN _{code}	55.00000	Post-Developed Condition, RCN	83.97
---	----------	-------------------------------	-------

Soil Type A ESD Rainfall Target, P _E (in)	0.00
Soil Type B ESD Rainfall Target, P _E (in)	2.60
Soil Type C ESD Rainfall Target, P _E (in)	0.00
Soil Type D ESD Rainfall Target, P _E (in)	0.00
Maximum P _E (in)	2.7

Site ESD Rainfall Target, P _E (in)	2.60
---	------

ESD Runoff Depth, Q _c (in)	2.47
---------------------------------------	------

ESD Runoff Volume, ESDv (cf)	715
------------------------------	-----

Total Treatment Volume (cf)	1,527
-----------------------------	-------

Runoff depths for H and H analysis		
2yr	3.4	5.3
100yr	7.6	

Step 3: Calculate Phosphorous Removal Requirement, RR for Critical Area Sites

Development Category (for 10%)	0 sf change	Redevelopment
	0.000	in acres

New Development	
Average Annual Predevelopment Load, L _{pre} (lbs P / yr)	0.44

Redevelopment:	
Predevelopment Runoff Coefficient, Rv _{pre}	0.53
Phosphorous Mean Concentration, C (mg/L)	0.3
Average Annual Predevelopment Load, L _{pre} (lbs P / yr)	1.15

Post-Development Runoff Coefficient, Rv _{post}	0.61
Average Annual Post-Development Load, L _{post} (lbs P / yr)	1.32

Removal Requirement, RR (lbs P / yr)	0.29
--------------------------------------	------

Step 5: Select Nonstructural Practices to Treat the ESD Rainfall Target

Nonstructural Practices	P ₂ Credit Description	Contributing Drainage Area (sf)	Direct WQv or ESDv Received by Practice (cf)	WQv or ESDv from Up-Gradient Practices (cf)	Average P _e Credit (in)	WQv or ESDv credit (cf)	Runoff Volume Remaining (cf)
Disconnection of Rooftop Runoff 1	Up to 1 inch credit provided based upon disconnection flow length.	0	0	N/A	#DIV/0!	0	0
Disconnection of Rooftop Runoff 2	Up to 1 inch credit provided based upon disconnection flow length.	0	0	N/A	#DIV/0!	0	0
Disconnection of Non-Rooftop Runoff 1	Up to 1 inch credit provided based upon disconnection and contributing flow lengths.	9,362	2,001	N/A	0.20	148	2,802
Disconnection of Non-Rooftop Runoff 2	Up to 1 inch credit provided based upon disconnection and contributing flow lengths.	0	0	N/A	#DIV/0!	0	0
Sheetflow to Conservation Areas 1	Up to 1 inch credit provided based upon conservation area width.	0	0	0	#DIV/0!	0	0
Sheetflow to Conservation Areas 2	Up to 1 inch credit provided based upon conservation area width.	0	0	0	#DIV/0!	0	0

Step 6: Select Micro-Scale Practices to Treat the ESD Rainfall Target

Micro-Scale Practices	P ₂ Credit Description	Contributing Drainage Area (sf)	Direct ESDv Received by Practice (cf)	WQv or ESDv from Up-Gradient Practices (cf)	WQv or ESDv credit (cf)	Runoff Volume Remaining (cf)
Green Roof (Level 1)	ESDv credit is based on roof thickness	0	0	N/A	0	0
Green Roof (Level 2)	ESDv credit is based on roof thickness	0	0	N/A	0	0
Pemeable Pavement (A Soils)	ESDv credit is based on subbase thickness	0	0	N/A	0	0
Pemeable Pavement (B Soils)	ESDv credit is based on subbase thickness	0	0	N/A	0	0
Pemeable Pavement (C Soils)	ESDv credit is based on subbase thickness	0	0	N/A	0	0
Rainwater Harvesting	ESDv credit is based on design storage volume and annual use	0	0	0	0	0
Submerged Gravel Wetlands	ESDv credit is based on design storage volume	0	0	0	0	0
Infiltration berms	ESDv credit is based on design storage volume	0	0	0	0	0
Rain Gardens 1	ESDv credit is based on design storage volume	0	0	0	0	0
Rain Gardens 2	ESDv credit is based on design storage volume	0	0	0	0	0
Micro-Bioretenention 1	ESDv credit is based on design storage volume	15,311	2,473	2473	2,473	0
Micro-Bioretenention 2	ESDv credit is based on design storage volume	0	0	0	0	0
Landscape Infiltration	ESDv credit is based on design storage volume	0	0	0	0	0
Grass Swales 1	ESDv credit is based on design storage volume	0	0	0	0	0
Grass Swales 2	ESDv credit is based on design storage volume	0	0	0	0	0
Bio-swales 1	ESDv credit is based on design storage volume	0	0	0	0	0
Bio-swales 2	ESDv credit is based on design storage volume	0	0	0	0	0
Wet Swales	ESDv credit is based on design storage volume	0	0	0	0	0

Critical Area Credits				
Baseline Phosphorous Removal Efficiency	Average Adjusted Removal Efficiency Rate	P Load to Practice (lbs/yr)	Load Reduction (lbs/yr)	Remaining Load (lbs/yr)
#DIV/0!	#DIV/0!	0.00	0.00	0.00
#DIV/0!	#DIV/0!	0.00	0.00	0.00
50%	25%	0.00	0.12	0.00
#DIV/0!	#DIV/0!	0.00	0.00	0.00
#DIV/0!	#DIV/0!	0.00	0.00	0.00
#DIV/0!	#DIV/0!	0.00	0.00	0.00

Baseline Phosphorous Removal Efficiency	Average Adjusted Removal Efficiency Rate	P Load to Practice (lbs/yr)	Load Reduction (lbs/yr)	Remaining Load (lbs/yr)
#DIV/0!	#DIV/0!	0.00	0.00	0.00
#DIV/0!	#DIV/0!	0.00	0.00	0.00
80%	#DIV/0!	0.00	0.00	0.00
80%	#DIV/0!	0.00	0.00	0.00
40%	#DIV/0!	0.00	0.00	0.00
45%	#DIV/0!	0.00	0.00	0.00
#DIV/0!	#DIV/0!	0.00	0.00	0.00
#DIV/0!	#DIV/0!	0.00	0.00	0.00
#DIV/0!	#DIV/0!	0.00	0.00	0.00
#DIV/0!	#DIV/0!	0.00	0.00	0.00
75%	98%	0.62	0.61	0.01
#DIV/0!	#DIV/0!	0.00	0.00	0.00
#DIV/0!	#DIV/0!	0.00	0.00	0.00
#DIV/0!	#DIV/0!	0.00	0.00	0.00
#DIV/0!	#DIV/0!	0.00	0.00	0.00
#DIV/0!	#DIV/0!	0.00	0.00	0.00

Step 7: Check for ESDv to MEP compliance and Revise Site If Necessary

Drainage Area Treated (sf)	24,673
----------------------------	--------

WQv or ESDv Treated (cf) using ESD practices	2,622
Pe achieved (inches)	9.53

Entire ESDv Treated Through ESD Practices?	YES
ESDv Remaining? (cf)	0
If ESDV is not fully treated, is ESD to MEP achieved?	NO

Redevelopment WQv Requirements Met Through ESD Practices?	YES
WQv Remaining? (cf)	0

New Development WQv Requirements Met Through ESD Practices?	N/A
WQv Remaining? (cf)	0

New Development Water Quality Volume Requirements

Required Treatment Area (acres)	0.08
Runoff Coefficient, Rv	0.95
Water Quality Volume, WQv (cf)	0

Step 8: Determine Reduced RCN and Volume Management Requirements Based Upon Pe Achieved

Reduced RCN for Type A Soils	N/A
Reduced RCN for Type B Soils	N/A
Reduced RCN for Type C Soils	N/A
Reduced RCN for Type D Soils	N/A

Composite Reduced RCN CN* 1 yr	N/A
--------------------------------	-----

Target Reduced RCN woods 1 yr	55.00
-------------------------------	-------

Qc (in) for Reduced RCN	N/A
V (ft³) for Reduced RCN	N/A

Qc (in) for pre developed RCN	0.12
V (ft³) for pre developed RCN	140

Volume Management Required (cf)	0
---------------------------------	---

Volume Required for structural practices (cf)	0
---	---

Composite reduced runoff curve number for H and H analysis (TR-55)

S	Ia	Pe achieved x Rv
1.91	0.38	9.05
2 yr	10 yr	100 yr
1.85	3.54	5.71
-7.20	-5.51	-3.34
-10.97	#NUM!	#NUM!

Return period
Or
Qr-(Pe achieved x Rv)
CN*

Step 9: Select Structural Practices to Meet Volume Management Requirements

Structural Practices	Contributing Drainage Area (sf)	% Impervious Cover	Direct ESDv Received by Practice (cf)	ESDv from Upstream Practices (cf)	Treatment Volume (cf)
Stormwater Ponds (Level 1)	0	0%	0	0	0
Stormwater Ponds (Level 2)	0	0%	0	0	0
Stormwater Wetlands (Level 1)	0	0%	0	0	0
Stormwater Wetlands (Level 2)	0	0%	0	0	0
Stormwater Filtering Systems (Level 1)	0	0%	0	0	0
Stormwater Filtering Systems (Level 2)	0	0%	0	0	0
Stormwater Infiltration (Level 1)	0	0%	0	0	0
Stormwater Infiltration (Level 2)	0	0%	0	0	0

Total structural CPv or WQv provided	0
WQv Requirement Met through structural practices?	YES
WQv Remaining (cf)	0
CPv Requirement Met through structural practices?	YES
CPv Remaining (cf)	0

Critical Area Credits

Phosphorous Removal Efficiency	Adjusted Phosphorous Removal Efficiency	P Load to Practice (lbs/yr)	Load Reduction (lbs/yr)	Remaining Load (lbs/yr)
50%	0%	0.00	0.00	0.00
75%	0%	0.00	0.00	0.00
50%	0%	0.00	0.00	0.00
75%	0%	0.00	0.00	0.00
60%	0%	0.00	0.00	0.00
65%	0%	0.00	0.00	0.00
60%	0%	0.00	0.00	0.00
90%	0%	0.00	0.00	0.00

Total Load Reduction (lbs P / year)	0.73
Total Load Reduction Remaining (lbs P / yr)	0.00

Calculation Summary

0.5 acre site
.25 acres to .38 acres
50% to 75%

Critical Area 10% Calculations

Removal Requirement, RR (lbs P / yr) after non-structural and micro-scale BMPs (Steps 5 and 6)	0.29
Total Load Reduction (lbs P / year)	0.73
Total Load Reduction Remaining (lbs P / yr) after structural practices (Step 9)	0.00
Total Load Reduction (lbs P / year)	0.73
Total Load Reduction Remaining (lbs P / yr)	0.00

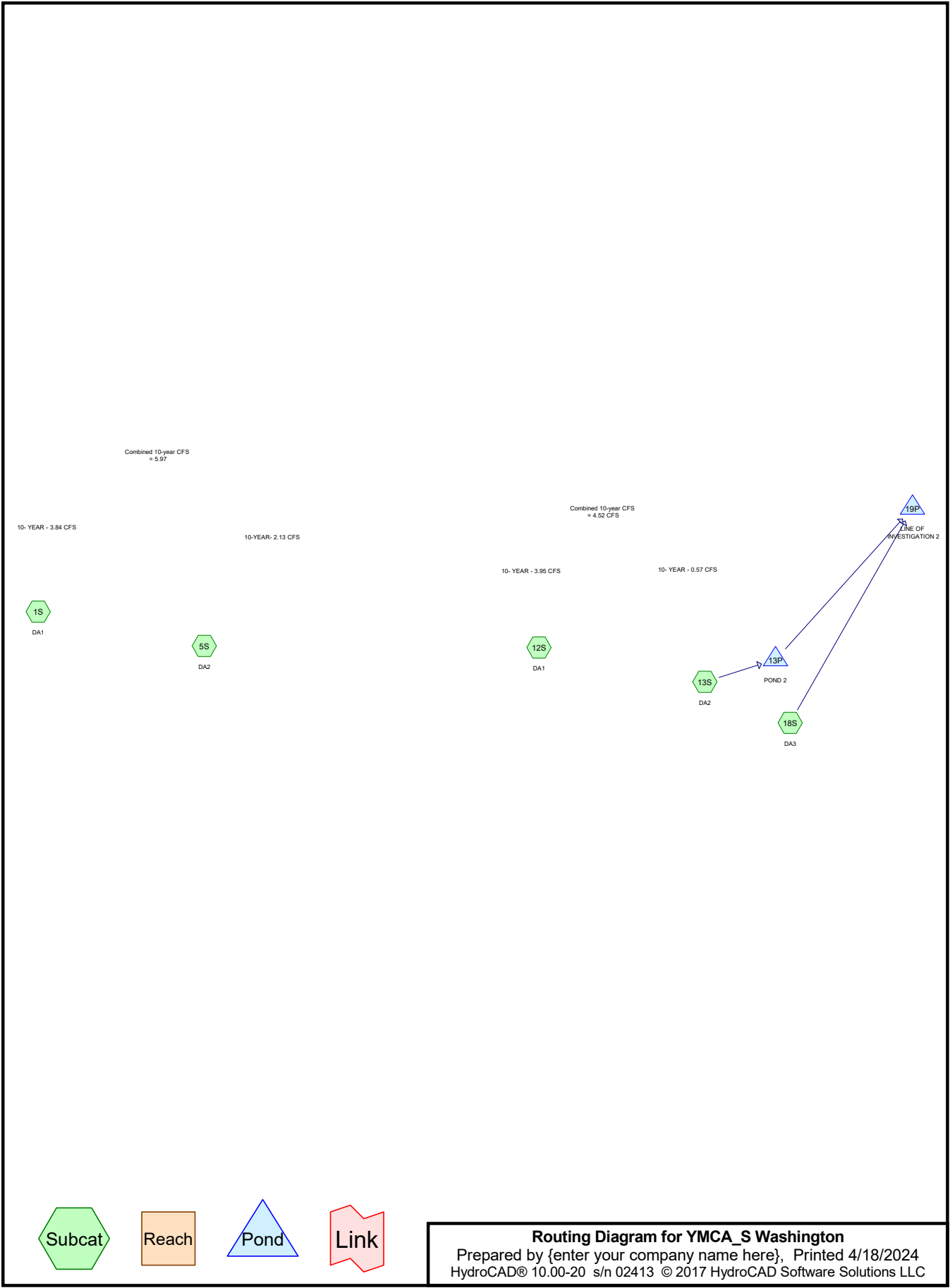
MDE's ESD to the MEP Calculations

ESD Runoff Volume, ESDv (cf)	715.00
Total Treatment Volume (cf)	1526.89
WQv or ESDv Treated (cf) using ESD practices	2621.65
PE achieved (inches)	9.53
Entire ESDv Treated Through ESD Practices?	YES
ESDv Remaining? (cf)	0.00
If ESDV is not fully treated, is ESD to MEP achieved?	NO
Redevelopment WQv Requirements Met Through ESD Practices?	YES
WQv Remaining? (cf)	0.00
New Development WQv Requirements Met Through ESD Practices?	N/A
WQv Remaining? (cf)	0.00

Micro-Scale Practices	Contributing Drainage Area (sf)	% Impervious Cover ----- RV	To fully treat sub area ----- PE ----- WQV required	Max available WQv or ESDv from CDA (cf)	Area of upstream catchment (sf)	WQv or ESDv from Up- Gradient Practices (cf)	Total catchment area ----- Total ESDv to practice	Practice Specific Parameter(s)			Bed area % of direct catchment area	WQV or ESDv provided (cf)	Runoff Volume Remainin g (cf)	Down-Gradient Practice and Row	SOIL TYPE	Baseline Phosphorous Removal Efficiency	Adjusted Removal Rate	P Load to Practice (lbs/yr)	Load Reduction (lbs/yr)	Remainin g Load (lbs/yr)	Watershe d-inches treated (PE Provided)	Annual Rainfall Treated (%)
		74%	2.20				15,311	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)												
Micro-Bioretenention 1	15,311	0.71798	2015	2,473	0	0	2473	728	20765		4.8%	2,473	0		A/B	75%	98.28%	0.62	0.61	0.01	2.70	108.20%
		0%	1.00				0	Surface Area (sf)	0													
Micro-Bioretenention 1		0.05	0	0	0	0	0	0			#DIV/0!	0	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0%	1.00				0	Surface Area (sf)	949	Media Depth (ft)												
Micro-Bioretenention 1		0.05	0	0	0	0	0	2272			#DIV/0!	0	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0%	1.00				0	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)												
Micro-Bioretenention 1		0.05	0	0	0	0	0				#DIV/0!	0	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0%	100%				0	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)												
Micro-Bioretenention 1		0.05	0	0	0	0	0				#DIV/0!	0	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0%	1.00				0	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)												
Micro-Bioretenention 1		0.05	0	0	0	0	0				#DIV/0!	0	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0%	1.00				0	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)												
Micro-Bioretenention 1		0.05	0	0	0	0	0				#DIV/0!	0	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0%	1.00				0	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)												
Micro-Bioretenention 1		0.05	0	0	0	0	0				#DIV/0!	0	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0%	1.00				0	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)												
Micro-Bioretenention 1		0.05	0	0	0	0	0				#DIV/0!	0	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0%	1.00				0	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)												
Micro-Bioretenention 1		0.05	0	0	0	0	0				#DIV/0!	0	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0%	1				0	Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)												
Micro-Bioretenention 1		0.05	0	0	0	0	0				#DIV/0!	0	0				0.00%	0.00	0.00	0.00	0.00	0.00%
Total	15,311			2,473		0						2,473	0			75%	98.28%	0.62	0.61	0.01	2.70	108.20%

Nonstructural Practices	Contributing Drainage Area (sf)	% Impervious Cover ----- RV	To fully treat sub area ----- PE required ----- WQV required	Max available WQv or ESDv from CDA (cf)	Practice Specific Parameter(s)		P _E Credit (in)	WQV or ESDv provided (cf)	Runoff Volume Remaining (cf)	Down-Gradient Practice and Row	SOIL TYPE	Baseline Phosphor ous Removal Efficiency	Adjusted Removal Rate	P Load to Practice (lbs/yr)	Load Reduction (lbs/yr)	Remaining Load (lbs/yr)	Watershed- inches treated (PE Provided)	Annual Rainfall Treated (%)
Disconnection of Non- Rooftop Runoff 1	9,362	100%	2.60	2,001	Disconnection Length (ft)	Contributing Length (ft) (Impervious)	0.20	148.23	1,853		A/B	50%	24.86%	0.50	0.12	0.38	0.20	41.05%
		0.95	1927		15	75												
Disconnection of Non- Rooftop Runoff 1		100%	2.60	0	Disconnection Length (ft)	Contributing Length (ft) (Impervious)	0.00	0.00	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0.95	0															
Disconnection of Non- Rooftop Runoff 1		100%	2.60	0	Disconnection Length (ft)	Contributing Length (ft) (Impervious)	0.00	0.00	949				0.00%	0.00	0.00	0.00	0.00	0.00%
		0.95	0															
Disconnection of Non- Rooftop Runoff 1		100%	2.60	0	Disconnection Length (ft)	Contributing Length (ft) (Impervious)	0.00	0.00	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0.95	0															
Disconnection of Non- Rooftop Runoff 1		100%	2.60	0	Disconnection Length (ft)	Contributing Length (ft) (Impervious)	0.00	0.00	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0.95	0															
Disconnection of Non- Rooftop Runoff 1		100%	2.60	0	Disconnection Length (ft)	Contributing Length (ft) (Impervious)	0.00	0.00	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0.95	0															
Disconnection of Non- Rooftop Runoff 1		100%	2.60	0	Disconnection Length (ft)	Contributing Length (ft) (Impervious)	0.00	0.00	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0.95	0															
Disconnection of Non- Rooftop Runoff 1		100%	2.60	0	Disconnection Length (ft)	Contributing Length (ft) (Impervious)	0.00	0.00	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0.95	0															
Disconnection of Non- Rooftop Runoff 1		100%	2.60	0	Disconnection Length (ft)	Contributing Length (ft) (Impervious)	0.00	0.00	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0.95	0															
Disconnection of Non- Rooftop Runoff 1		100%	2.60	0	Disconnection Length (ft)	Contributing Length (ft) (Impervious)	0.00	0.00	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0.95	0															
Disconnection of Non- Rooftop Runoff 1		100%	2.60	0	Disconnection Length (ft)	Contributing Length (ft) (Impervious)	0.00	0.00	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0.95	0															
Disconnection of Non- Rooftop Runoff 1		100%	2.60	0	Disconnection Length (ft)	Contributing Length (ft) (Impervious)	0.00	0.00	0				0.00%	0.00	0.00	0.00	0.00	0.00%
		0.95	0															
Total	9,362			2,001			0	148	2,802			50%	24.86%	0.50	0.12	0.38	0.20	41.05%

SECTION 4 – PRE/POST-DEVELOPMENT QUANTITY CALCULATIONS



YMCA_S Washington

Prepared by {enter your company name here}

HydroCAD® 10.00-20 s/n 02413 © 2017 HydroCAD Software Solutions LLC

Printed 4/18/2024

Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.220	69	50-75% Grass cover, Fair, HSG B (1S, 12S)
0.083	79	<50% Grass cover, Poor, HSG B (18S)
0.322	61	>75% Grass cover, Good, HSG B (5S, 13S)
0.423	96	Gravel surface, HSG B (1S, 5S, 13S)
0.237	98	Paved parking, HSG B (13S)
0.832	98	Unconnected pavement, HSG B (1S, 12S)
0.086	65	Woods/grass comb., Fair, HSG B (1S)
2.203	87	TOTAL AREA

YMCA_S Washington

Prepared by {enter your company name here}

HydroCAD® 10.00-20 s/n 02413 © 2017 HydroCAD Software Solutions LLC

Printed 4/18/2024

Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
2.203	HSG B	1S, 5S, 12S, 13S, 18S
0.000	HSG C	
0.000	HSG D	
0.000	Other	
2.203		TOTAL AREA

YMCA_S Washington

Prepared by {enter your company name here}

Printed 4/18/2024

HydroCAD® 10.00-20 s/n 02413 © 2017 HydroCAD Software Solutions LLC

Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.220	0.000	0.000	0.000	0.220	50-75% Grass cover, Fair	1S, 12S
0.000	0.083	0.000	0.000	0.000	0.083	<50% Grass cover, Poor	18S
0.000	0.322	0.000	0.000	0.000	0.322	>75% Grass cover, Good	5S, 13S
0.000	0.423	0.000	0.000	0.000	0.423	Gravel surface	1S, 5S, 13S
0.000	0.237	0.000	0.000	0.000	0.237	Paved parking	13S
0.000	0.832	0.000	0.000	0.000	0.832	Unconnected pavement	1S, 12S
0.000	0.086	0.000	0.000	0.000	0.086	Woods/grass comb., Fair	1S
0.000	2.203	0.000	0.000	0.000	2.203	TOTAL AREA	

YMCA_S Washington*Type II 24-hr 2-YR Rainfall=3.40"*

Prepared by {enter your company name here}

Printed 4/18/2024

HydroCAD® 10.00-20 s/n 02413 © 2017 HydroCAD Software Solutions LLC

Page 5

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: DA1 Runoff Area=29,402 sf 46.42% Impervious Runoff Depth=2.35"
Flow Length=203' Tc=5.4 min CN=90 Runoff=2.24 cfs 0.132 af

Subcatchment 5S: DA2 Runoff Area=18,214 sf 0.00% Impervious Runoff Depth=1.36"
Flow Length=162' Tc=2.5 min CN=77 Runoff=1.01 cfs 0.047 af

Subcatchment 12S: DA1 Runoff Area=29,432 sf 76.77% Impervious Runoff Depth=2.45"
Flow Length=203' Tc=5.2 min CN=91 Runoff=2.33 cfs 0.138 af

Subcatchment 13S: DA2 Runoff Area=15,311 sf 67.40% Impervious Runoff Depth=2.18"
Flow Length=217' Tc=1.4 min CN=88 Runoff=1.38 cfs 0.064 af

Subcatchment 18S: DA3 Runoff Area=3,597 sf 0.00% Impervious Runoff Depth=1.49"
Flow Length=47' Slope=0.0386 '/' Tc=8.8 min CN=79 Runoff=0.14 cfs 0.010 af

Pond 13P: POND 2 Peak Elev=29.01' Storage=1,829 cf Inflow=1.38 cfs 0.064 af
Discarded=0.02 cfs 0.064 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.064 af

Pond 19P: LINE OF INVESTIGATION 2 Inflow=0.14 cfs 0.010 af
Primary=0.14 cfs 0.010 af

Total Runoff Area = 2.203 ac Runoff Volume = 0.391 af Average Runoff Depth = 2.13"
51.48% Pervious = 1.134 ac 48.52% Impervious = 1.069 ac

Summary for Subcatchment 1S: DA1

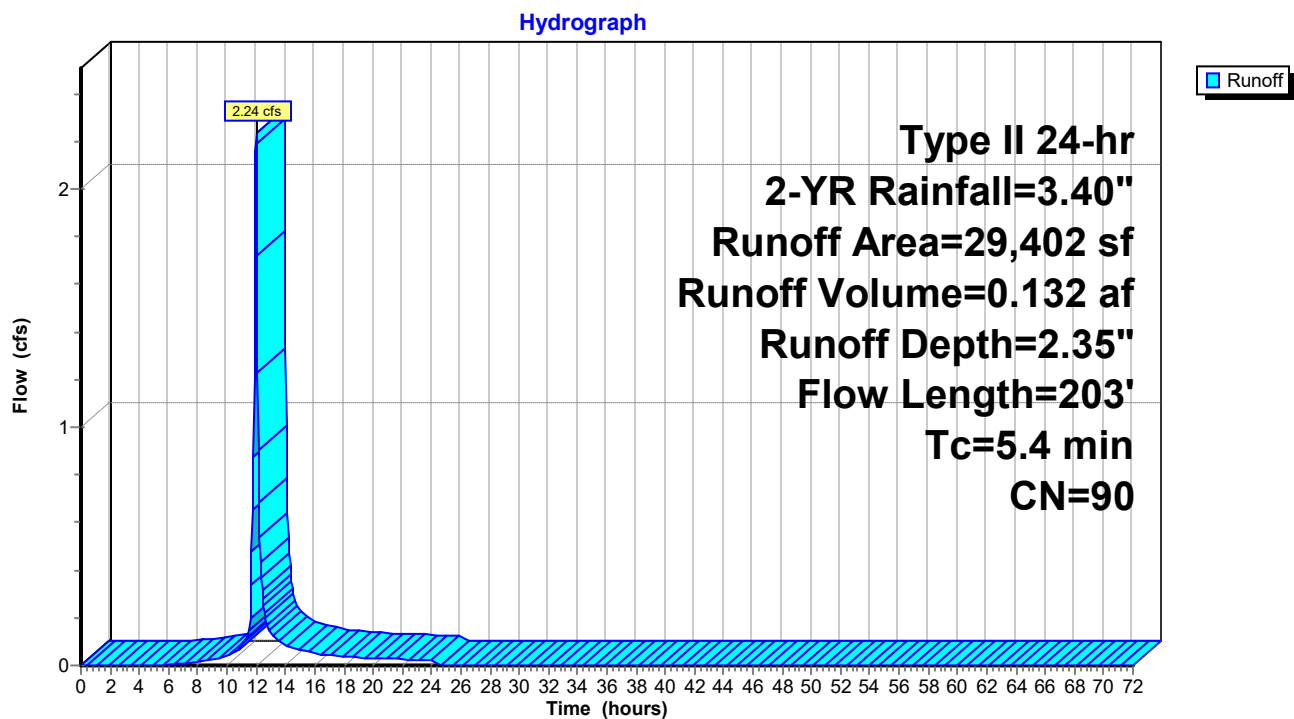
Runoff = 2.24 cfs @ 11.98 hrs, Volume= 0.132 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
2,751	69	50-75% Grass cover, Fair, HSG B
9,263	96	Gravel surface, HSG B
13,649	98	Unconnected pavement, HSG B
3,739	65	Woods/grass comb., Fair, HSG B
29,402	90	Weighted Average
15,753		53.58% Pervious Area
13,649		46.42% Impervious Area
13,649		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	26	0.0160	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
1.0	74	0.0160	1.22		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.5	70	0.0127	2.29		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.4	33	0.0451	1.49		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.4	203	Total			

Subcatchment 1S: DA1



Summary for Subcatchment 5S: DA2

Runoff = 1.01 cfs @ 11.95 hrs, Volume= 0.047 af, Depth= 1.36"

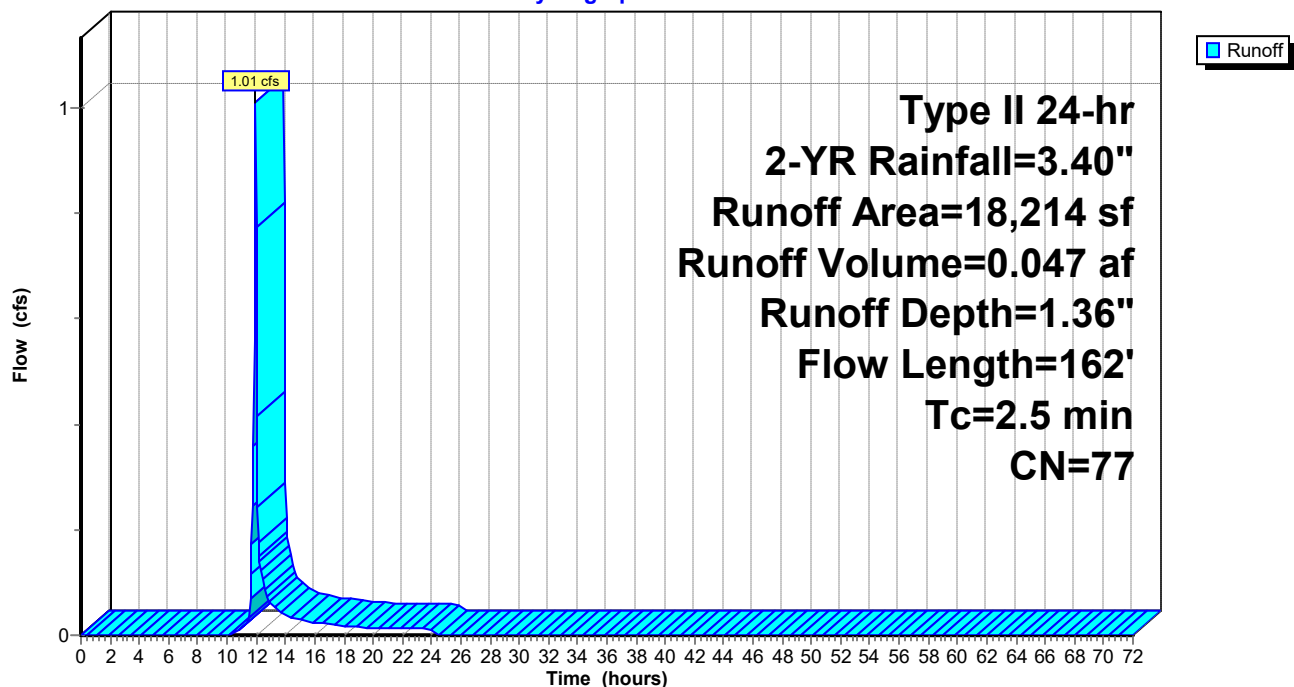
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
8,155	96	Gravel surface, HSG B
10,059	61	>75% Grass cover, Good, HSG B
18,214	77	Weighted Average
18,214		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0165	1.31		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.0	2	0.0081	1.83		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	26	0.0185	0.95		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	34	0.0987	0.79		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
2.5	162	Total			

Subcatchment 5S: DA2

Hydrograph



Summary for Subcatchment 12S: DA1

Runoff = 2.33 cfs @ 11.97 hrs, Volume= 0.138 af, Depth= 2.45"

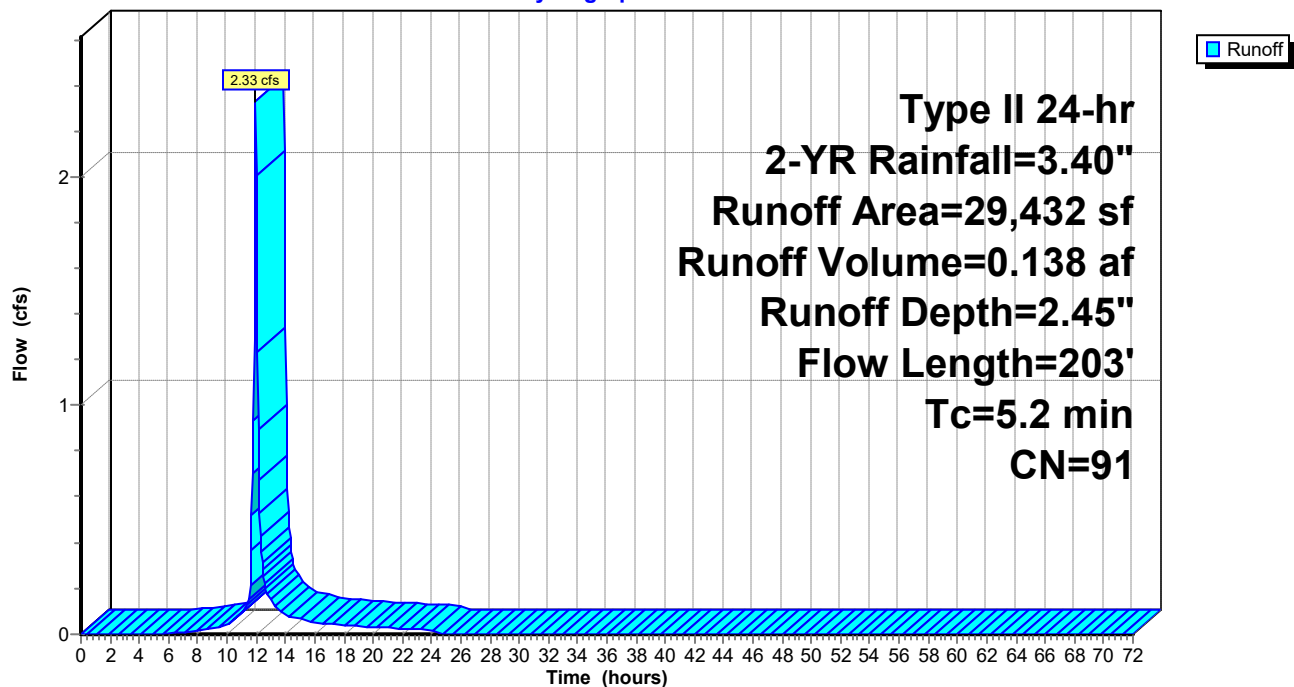
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
6,838	69	50-75% Grass cover, Fair, HSG B
22,594	98	Unconnected pavement, HSG B
29,432	91	Weighted Average
6,838		23.23% Pervious Area
22,594		76.77% Impervious Area
22,594		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	28	0.0160	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
0.9	72	0.0200	1.33		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.4	94	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	9	0.0234	1.07		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.2	203	Total			

Subcatchment 12S: DA1

Hydrograph



Summary for Subcatchment 13S: DA2

Runoff = 1.38 cfs @ 11.92 hrs, Volume= 0.064 af, Depth= 2.18"

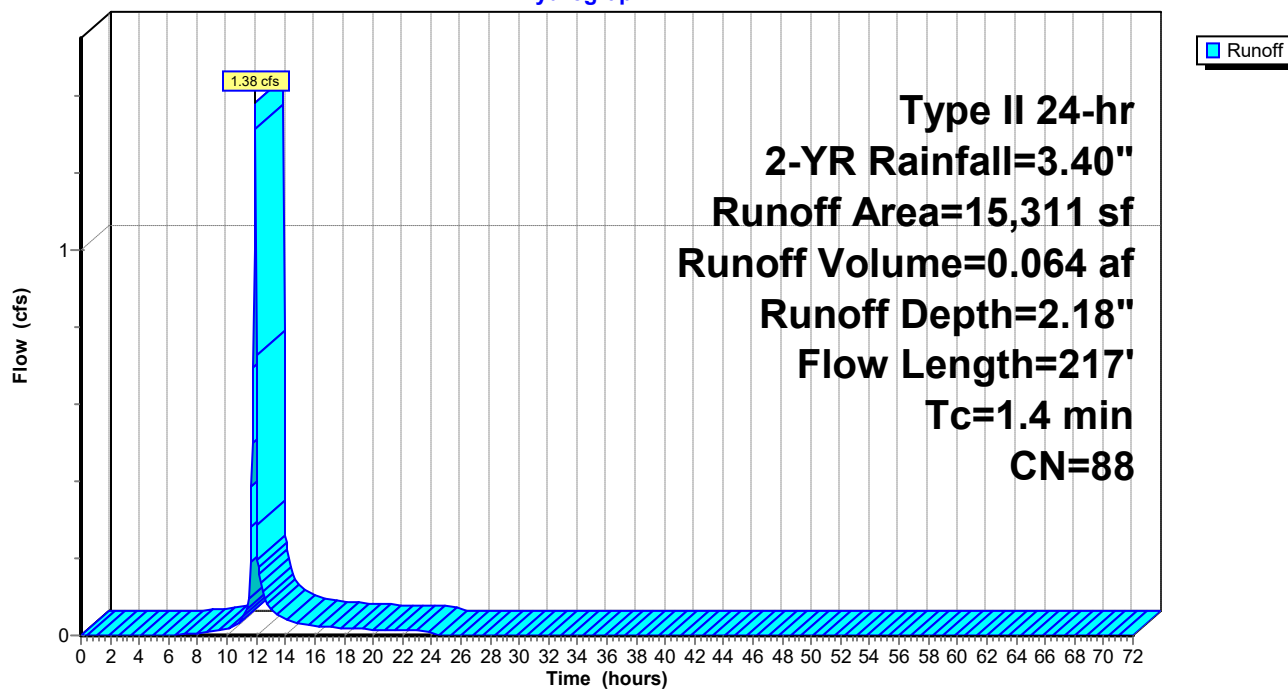
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
1,021	96	Gravel surface, HSG B
3,971	61	>75% Grass cover, Good, HSG B
10,319	98	Paved parking, HSG B
15,311	88	Weighted Average
4,992		32.60% Pervious Area
10,319		67.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	75	0.0500	1.93		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.3	35	0.0623	1.81		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.5	94	0.0220	3.01		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.0	7	0.0139	2.39		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.0	6	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.4	217	Total			

Subcatchment 13S: DA2

Hydrograph



Summary for Subcatchment 18S: DA3

Runoff = 0.14 cfs @ 12.02 hrs, Volume= 0.010 af, Depth= 1.49"

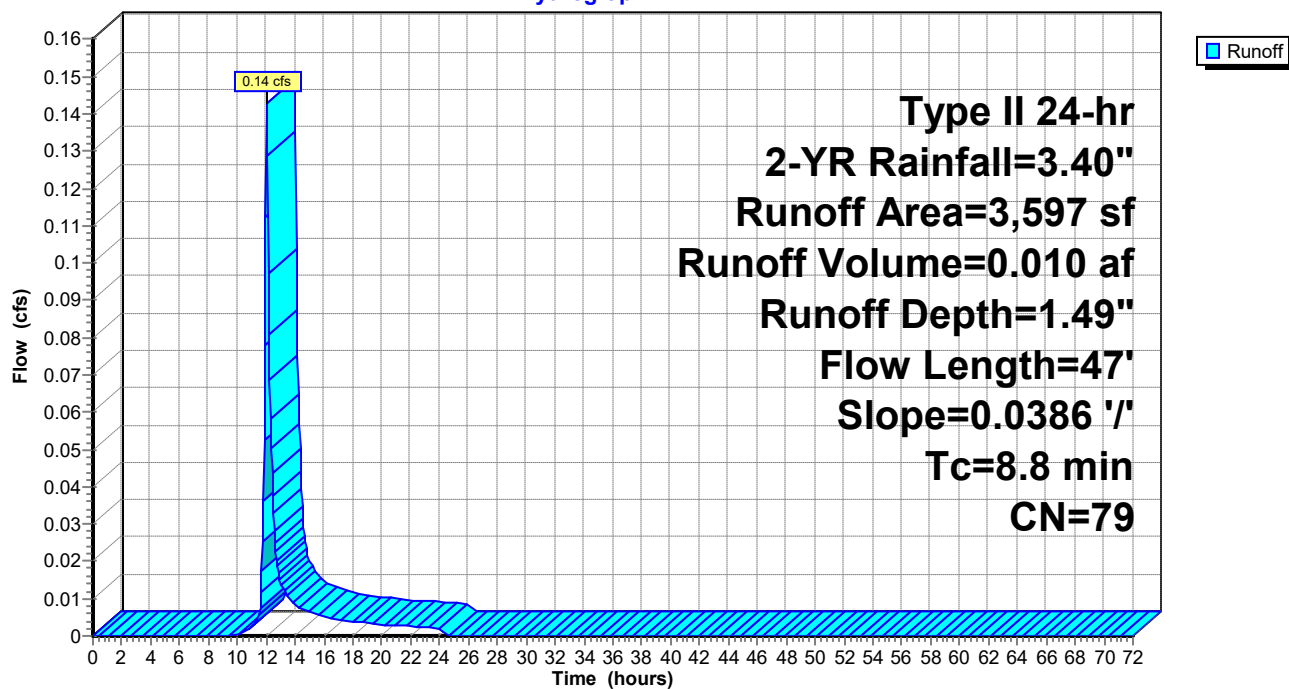
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-YR Rainfall=3.40"

Area (sf)	CN	Description
3,597	79	<50% Grass cover, Poor, HSG B
3,597		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	47	0.0386	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"

Subcatchment 18S: DA3

Hydrograph



Summary for Pond 13P: POND 2

Inflow Area = 0.351 ac, 67.40% Impervious, Inflow Depth = 2.18" for 2-YR event
 Inflow = 1.38 cfs @ 11.92 hrs, Volume= 0.064 af
 Outflow = 0.02 cfs @ 16.27 hrs, Volume= 0.064 af, Atten= 98%, Lag= 261.2 min
 Discarded = 0.02 cfs @ 16.27 hrs, Volume= 0.064 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 29.01' @ 16.27 hrs Surf.Area= 1,473 sf Storage= 1,829 cf

Plug-Flow detention time= 952.6 min calculated for 0.064 af (100% of inflow)

Center-of-Mass det. time= 953.4 min (1,759.5 - 806.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	24.56'	4,278 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.56	0	0.0	0	0
24.57	728	40.0	1	1
28.56	728	40.0	1,162	1,163
28.57	1,473	100.0	11	1,174
30.57	1,473	100.0	2,946	4,120
30.58	30,000	100.0	157	4,278

Device	Routing	Invert	Outlet Devices
#1	Discarded	24.56'	0.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 19.00'
#2	Primary	29.57'	17.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=0.02 cfs @ 16.27 hrs HW=29.01' (Free Discharge)

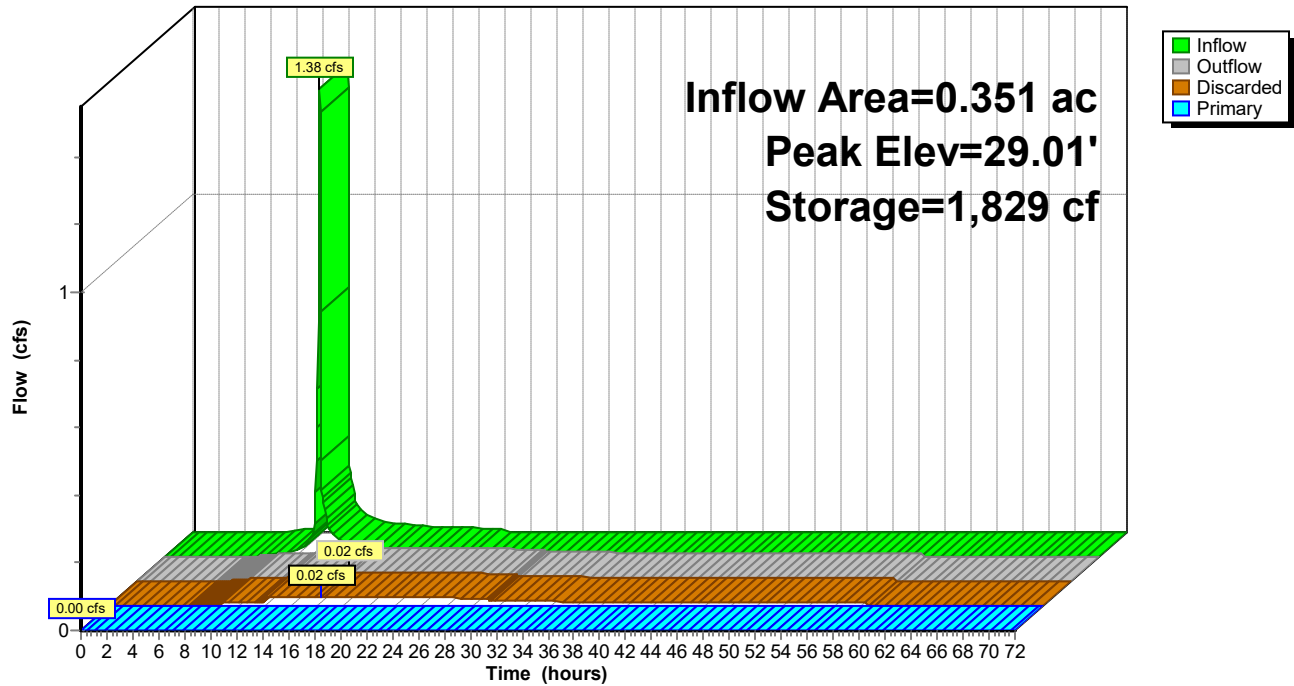
↑1=Exfiltration (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=24.56' TW=0.00' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

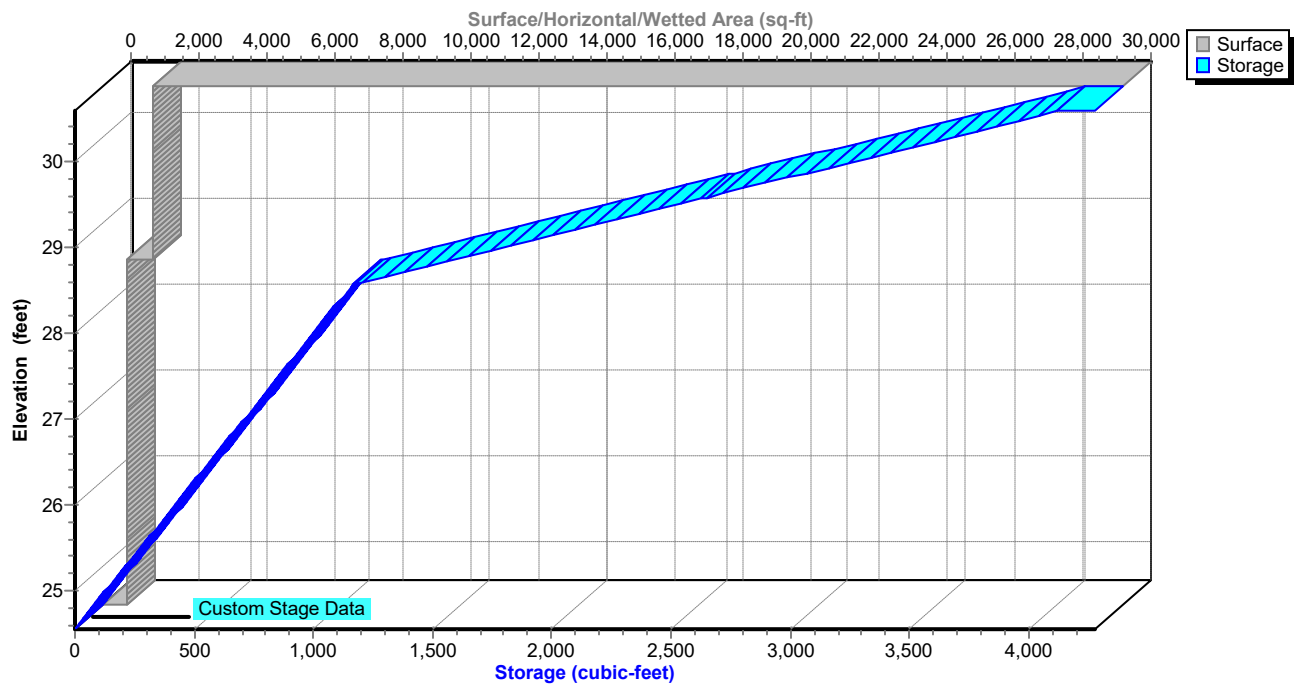
Pond 13P: POND 2

Hydrograph



Pond 13P: POND 2

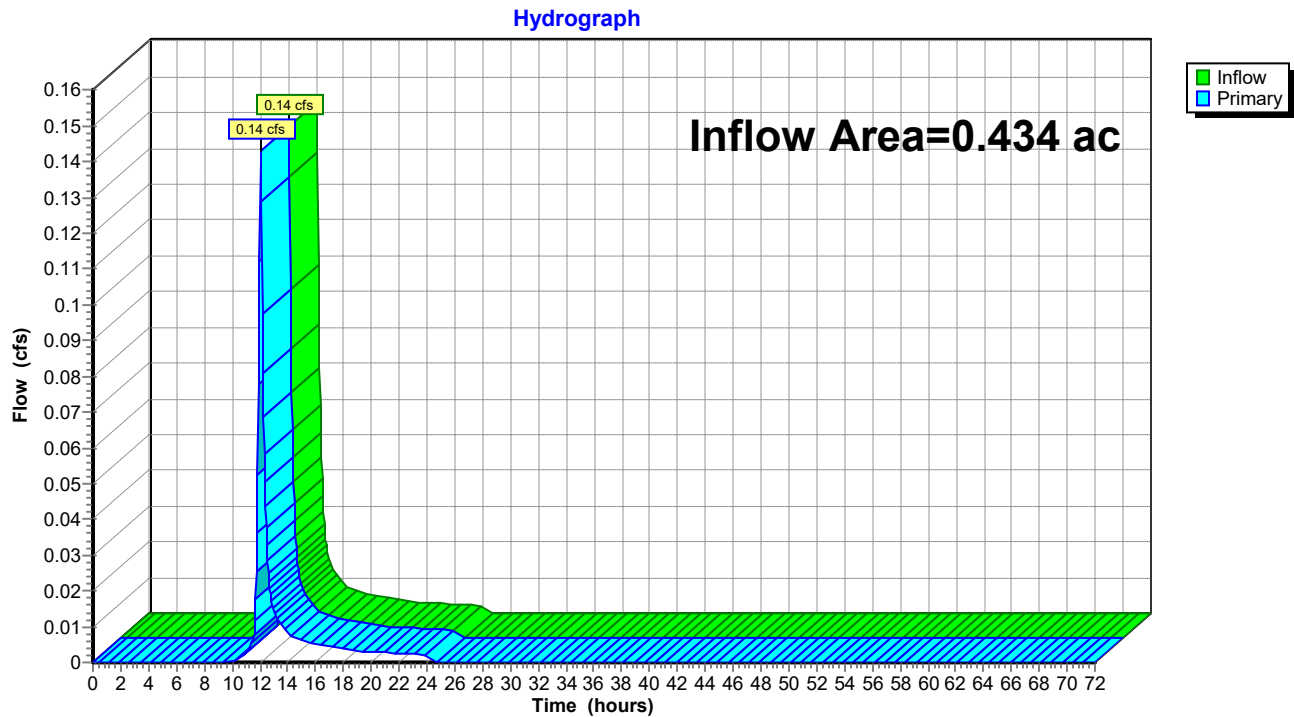
Stage-Area-Storage



Summary for Pond 19P: LINE OF INVESTIGATION 2

Inflow Area = 0.434 ac, 54.57% Impervious, Inflow Depth = 0.28" for 2-YR event
Inflow = 0.14 cfs @ 12.02 hrs, Volume= 0.010 af
Primary = 0.14 cfs @ 12.02 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 19P: LINE OF INVESTIGATION 2

YMCA_S Washington*Type II 24-hr 10-YR Rainfall=5.30"*

Prepared by {enter your company name here}

Printed 4/18/2024

HydroCAD® 10.00-20 s/n 02413 © 2017 HydroCAD Software Solutions LLC

Page 16

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: DA1 Runoff Area=29,402 sf 46.42% Impervious Runoff Depth=4.17"
Flow Length=203' Tc=5.4 min CN=90 Runoff=3.84 cfs 0.234 af

Subcatchment 5S: DA2 Runoff Area=18,214 sf 0.00% Impervious Runoff Depth=2.88"
Flow Length=162' Tc=2.5 min CN=77 Runoff=2.13 cfs 0.100 af

Subcatchment 12S: DA1 Runoff Area=29,432 sf 76.77% Impervious Runoff Depth=4.27"
Flow Length=203' Tc=5.2 min CN=91 Runoff=3.95 cfs 0.241 af

Subcatchment 13S: DA2 Runoff Area=15,311 sf 67.40% Impervious Runoff Depth=3.95"
Flow Length=217' Tc=1.4 min CN=88 Runoff=2.43 cfs 0.116 af

Subcatchment 18S: DA3 Runoff Area=3,597 sf 0.00% Impervious Runoff Depth=3.06"
Flow Length=47' Slope=0.0386 '/' Tc=8.8 min CN=79 Runoff=0.30 cfs 0.021 af

Pond 13P: POND 2 Peak Elev=29.61' Storage=2,706 cf Inflow=2.43 cfs 0.116 af
Discarded=0.03 cfs 0.090 af Primary=0.34 cfs 0.026 af Outflow=0.37 cfs 0.116 af

Pond 19P: LINE OF INVESTIGATION 2 Inflow=0.57 cfs 0.047 af
Primary=0.57 cfs 0.047 af

Total Runoff Area = 2.203 ac Runoff Volume = 0.712 af Average Runoff Depth = 3.88"
51.48% Pervious = 1.134 ac 48.52% Impervious = 1.069 ac

Summary for Subcatchment 1S: DA1

Runoff = 3.84 cfs @ 11.98 hrs, Volume= 0.234 af, Depth= 4.17"

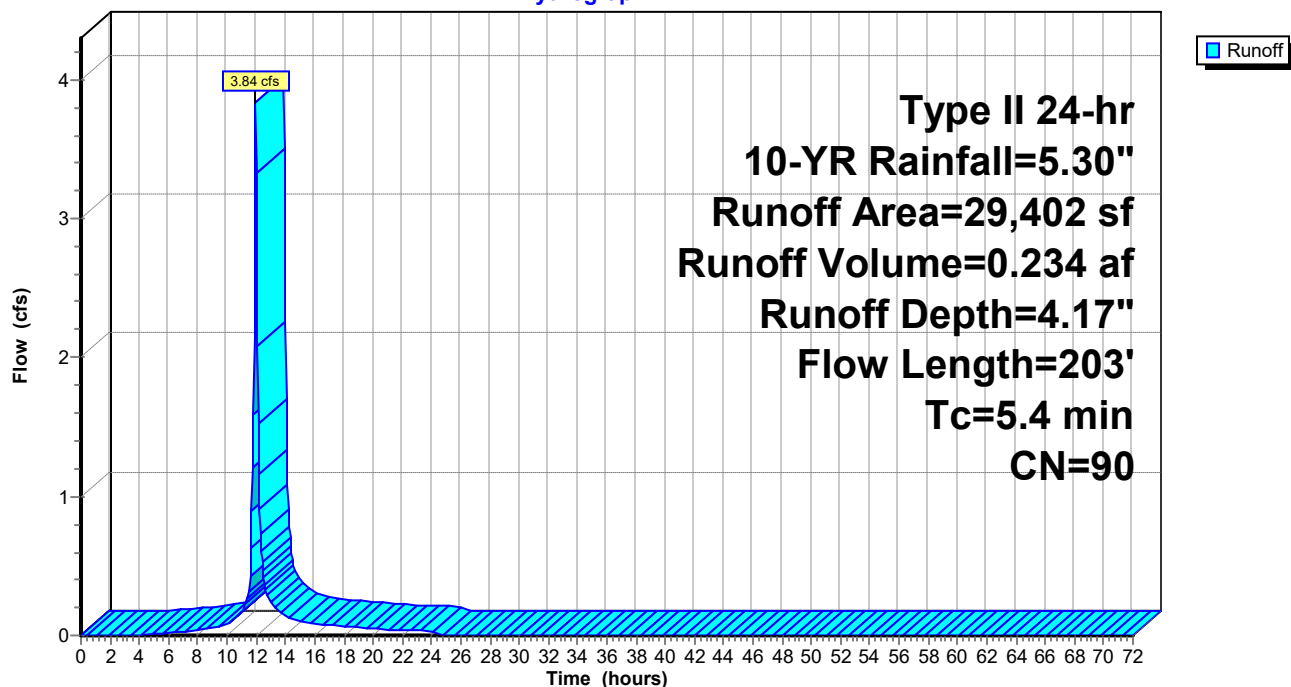
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
2,751	69	50-75% Grass cover, Fair, HSG B
9,263	96	Gravel surface, HSG B
13,649	98	Unconnected pavement, HSG B
3,739	65	Woods/grass comb., Fair, HSG B
29,402	90	Weighted Average
15,753		53.58% Pervious Area
13,649		46.42% Impervious Area
13,649		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	26	0.0160	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
1.0	74	0.0160	1.22		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.5	70	0.0127	2.29		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.4	33	0.0451	1.49		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.4	203	Total			

Subcatchment 1S: DA1

Hydrograph



Summary for Subcatchment 5S: DA2

Runoff = 2.13 cfs @ 11.94 hrs, Volume= 0.100 af, Depth= 2.88"

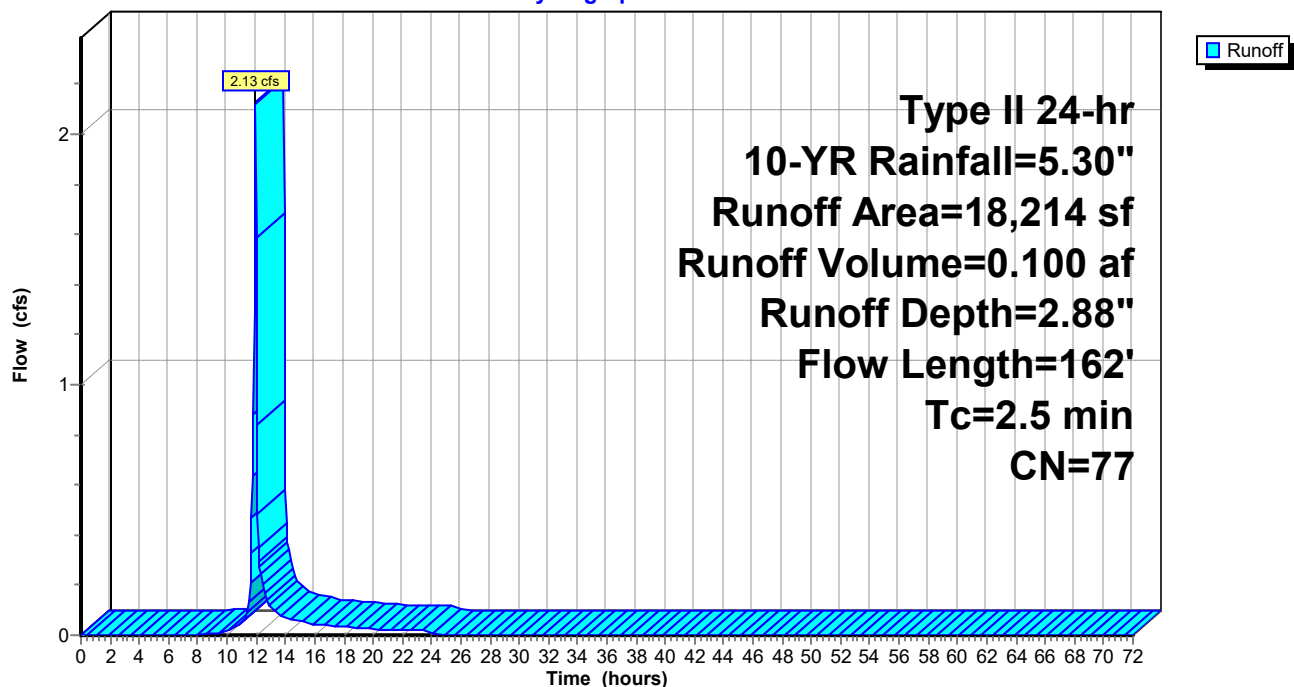
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
8,155	96	Gravel surface, HSG B
10,059	61	>75% Grass cover, Good, HSG B
18,214	77	Weighted Average
18,214		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0165	1.31		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.0	2	0.0081	1.83		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	26	0.0185	0.95		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	34	0.0987	0.79		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
2.5	162	Total			

Subcatchment 5S: DA2

Hydrograph



Summary for Subcatchment 12S: DA1

Runoff = 3.95 cfs @ 11.97 hrs, Volume= 0.241 af, Depth= 4.27"

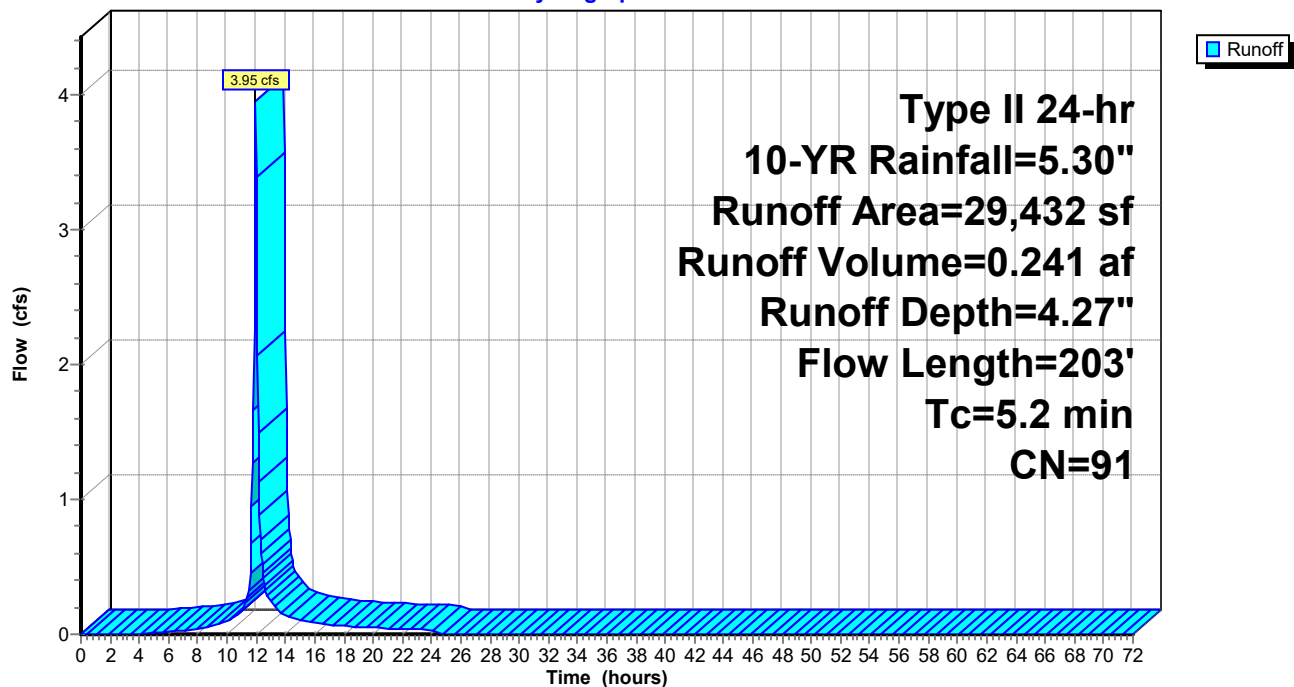
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
6,838	69	50-75% Grass cover, Fair, HSG B
22,594	98	Unconnected pavement, HSG B
29,432	91	Weighted Average
6,838		23.23% Pervious Area
22,594		76.77% Impervious Area
22,594		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	28	0.0160	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
0.9	72	0.0200	1.33		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.4	94	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	9	0.0234	1.07		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.2	203	Total			

Subcatchment 12S: DA1

Hydrograph



Summary for Subcatchment 13S: DA2

Runoff = 2.43 cfs @ 11.92 hrs, Volume= 0.116 af, Depth= 3.95"

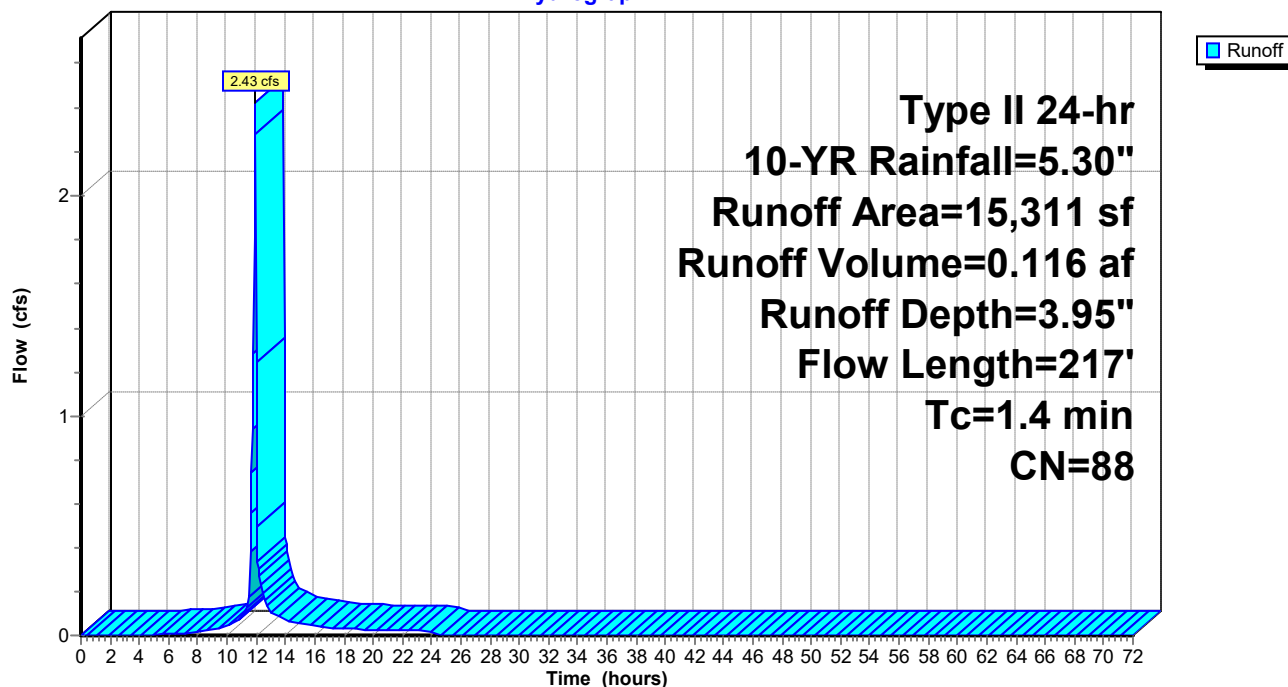
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
1,021	96	Gravel surface, HSG B
3,971	61	>75% Grass cover, Good, HSG B
10,319	98	Paved parking, HSG B
15,311	88	Weighted Average
4,992		32.60% Pervious Area
10,319		67.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	75	0.0500	1.93		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.3	35	0.0623	1.81		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.5	94	0.0220	3.01		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.0	7	0.0139	2.39		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.0	6	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.4	217	Total			

Subcatchment 13S: DA2

Hydrograph



Summary for Subcatchment 18S: DA3

Runoff = 0.30 cfs @ 12.02 hrs, Volume= 0.021 af, Depth= 3.06"

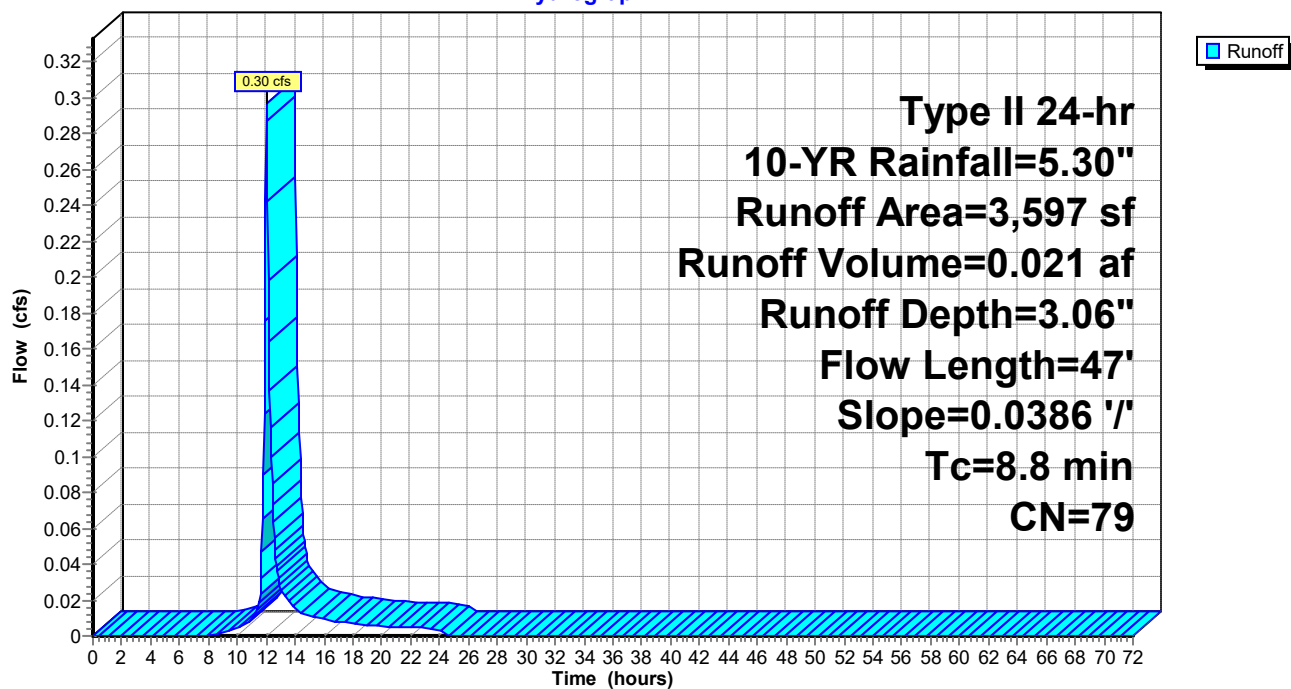
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=5.30"

Area (sf)	CN	Description
3,597	79	<50% Grass cover, Poor, HSG B
3,597		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	47	0.0386	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"

Subcatchment 18S: DA3

Hydrograph



Summary for Pond 13P: POND 2

Inflow Area = 0.351 ac, 67.40% Impervious, Inflow Depth = 3.95" for 10-YR event
 Inflow = 2.43 cfs @ 11.92 hrs, Volume= 0.116 af
 Outflow = 0.37 cfs @ 12.12 hrs, Volume= 0.116 af, Atten= 85%, Lag= 12.1 min
 Discarded = 0.03 cfs @ 12.10 hrs, Volume= 0.090 af
 Primary = 0.34 cfs @ 12.12 hrs, Volume= 0.026 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 29.61' @ 12.10 hrs Surf.Area= 1,473 sf Storage= 2,706 cf

Plug-Flow detention time= 941.4 min calculated for 0.116 af (100% of inflow)
 Center-of-Mass det. time= 942.6 min (1,731.8 - 789.2)

Volume	Invert	Avail.Storage	Storage Description	
#1	24.56'	4,278 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.56	0	0.0	0	0
24.57	728	40.0	1	1
28.56	728	40.0	1,162	1,163
28.57	1,473	100.0	11	1,174
30.57	1,473	100.0	2,946	4,120
30.58	30,000	100.0	157	4,278

Device	Routing	Invert	Outlet Devices
#1	Discarded	24.56'	0.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 19.00'
#2	Primary	29.57'	17.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=0.03 cfs @ 12.10 hrs HW=29.61' (Free Discharge)

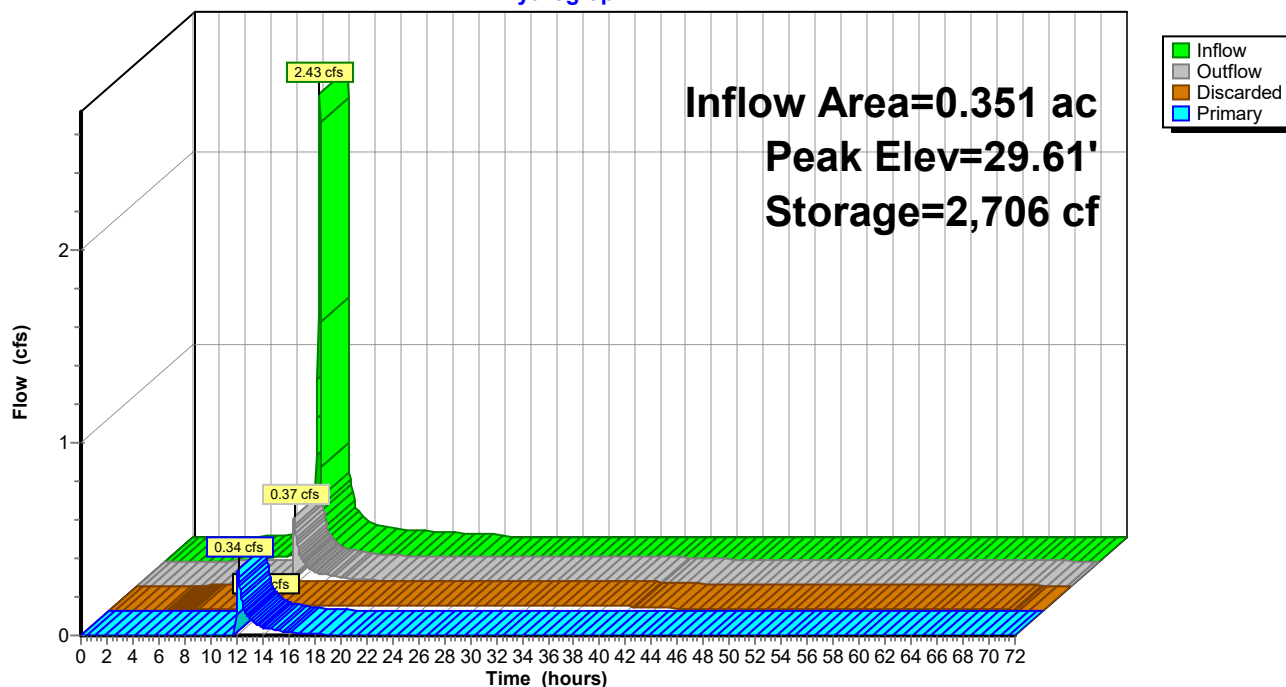
↑1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.31 cfs @ 12.12 hrs HW=29.61' TW=0.00' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Weir Controls 0.31 cfs @ 0.47 fps)

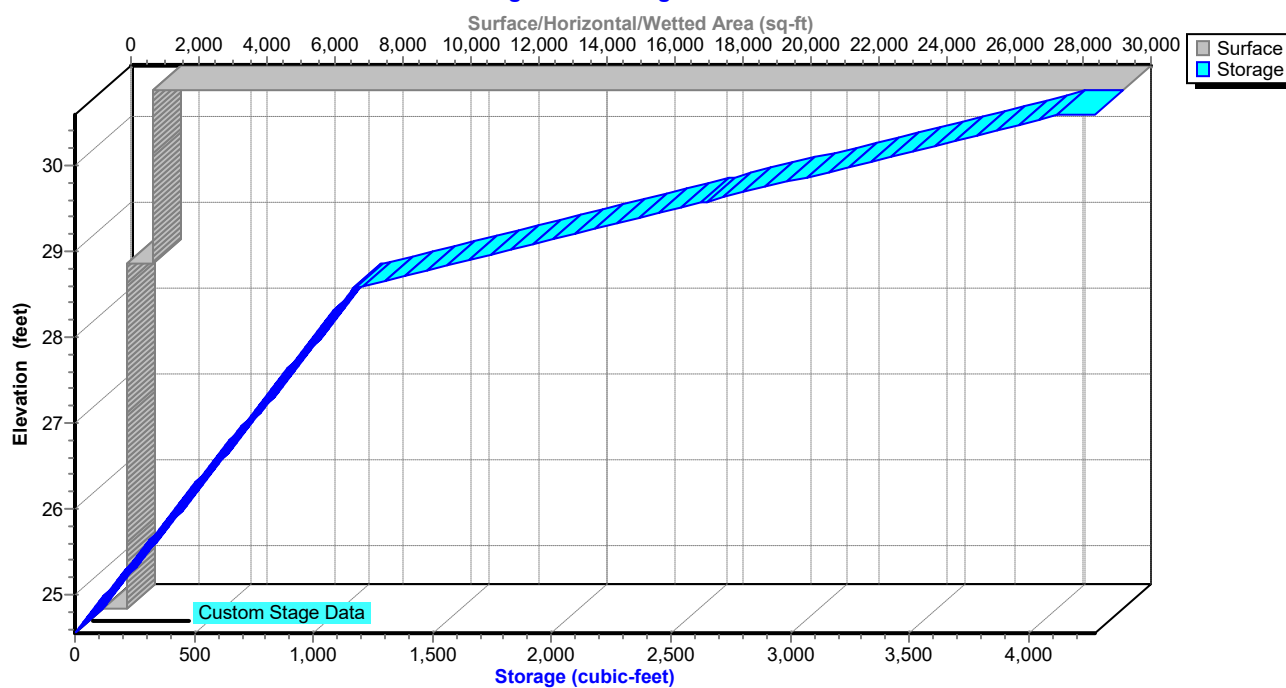
Pond 13P: POND 2

Hydrograph



Pond 13P: POND 2

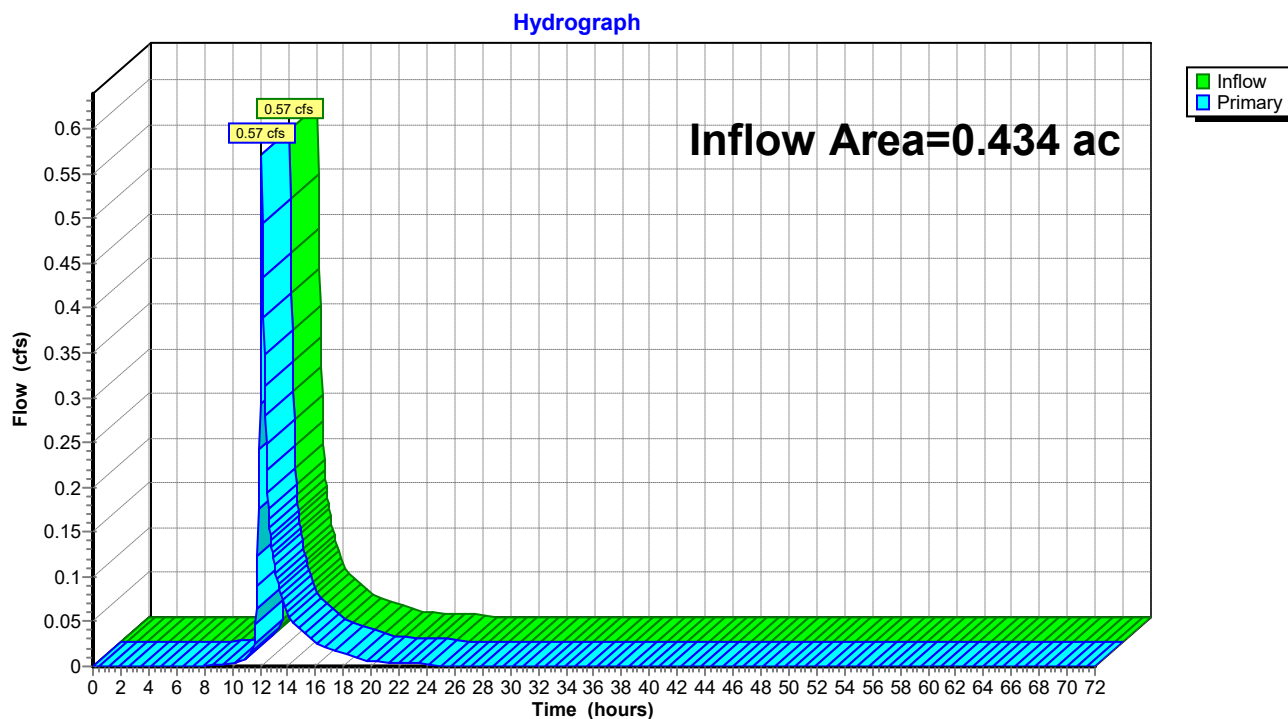
Stage-Area-Storage



Summary for Pond 19P: LINE OF INVESTIGATION 2

Inflow Area = 0.434 ac, 54.57% Impervious, Inflow Depth = 1.30" for 10-YR event
Inflow = 0.57 cfs @ 12.11 hrs, Volume= 0.047 af
Primary = 0.57 cfs @ 12.11 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 19P: LINE OF INVESTIGATION 2

YMCA_S Washington

Type II 24-hr 100-YR Rainfall=7.60"

Prepared by {enter your company name here}

Printed 4/18/2024

HydroCAD® 10.00-20 s/n 02413 © 2017 HydroCAD Software Solutions LLC

Page 27

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: DA1 Runoff Area=29,402 sf 46.42% Impervious Runoff Depth=6.41"
Flow Length=203' Tc=5.4 min CN=90 Runoff=5.76 cfs 0.361 af

Subcatchment 5S: DA2 Runoff Area=18,214 sf 0.00% Impervious Runoff Depth=4.91"
Flow Length=162' Tc=2.5 min CN=77 Runoff=3.56 cfs 0.171 af

Subcatchment 12S: DA1 Runoff Area=29,432 sf 76.77% Impervious Runoff Depth=6.53"
Flow Length=203' Tc=5.2 min CN=91 Runoff=5.89 cfs 0.368 af

Subcatchment 13S: DA2 Runoff Area=15,311 sf 67.40% Impervious Runoff Depth=6.18"
Flow Length=217' Tc=1.4 min CN=88 Runoff=3.68 cfs 0.181 af

Subcatchment 18S: DA3 Runoff Area=3,597 sf 0.00% Impervious Runoff Depth=5.14"
Flow Length=47' Slope=0.0386 '/' Tc=8.8 min CN=79 Runoff=0.49 cfs 0.035 af

Pond 13P: POND 2 Peak Elev=29.78' Storage=2,949 cf Inflow=3.68 cfs 0.181 af
Discarded=0.03 cfs 0.093 af Primary=3.75 cfs 0.088 af Outflow=3.77 cfs 0.181 af

Pond 19P: LINE OF INVESTIGATION 2 Inflow=4.16 cfs 0.123 af
Primary=4.16 cfs 0.123 af

Total Runoff Area = 2.203 ac Runoff Volume = 1.116 af Average Runoff Depth = 6.08"
51.48% Pervious = 1.134 ac 48.52% Impervious = 1.069 ac

Summary for Subcatchment 1S: DA1

Runoff = 5.76 cfs @ 11.98 hrs, Volume= 0.361 af, Depth= 6.41"

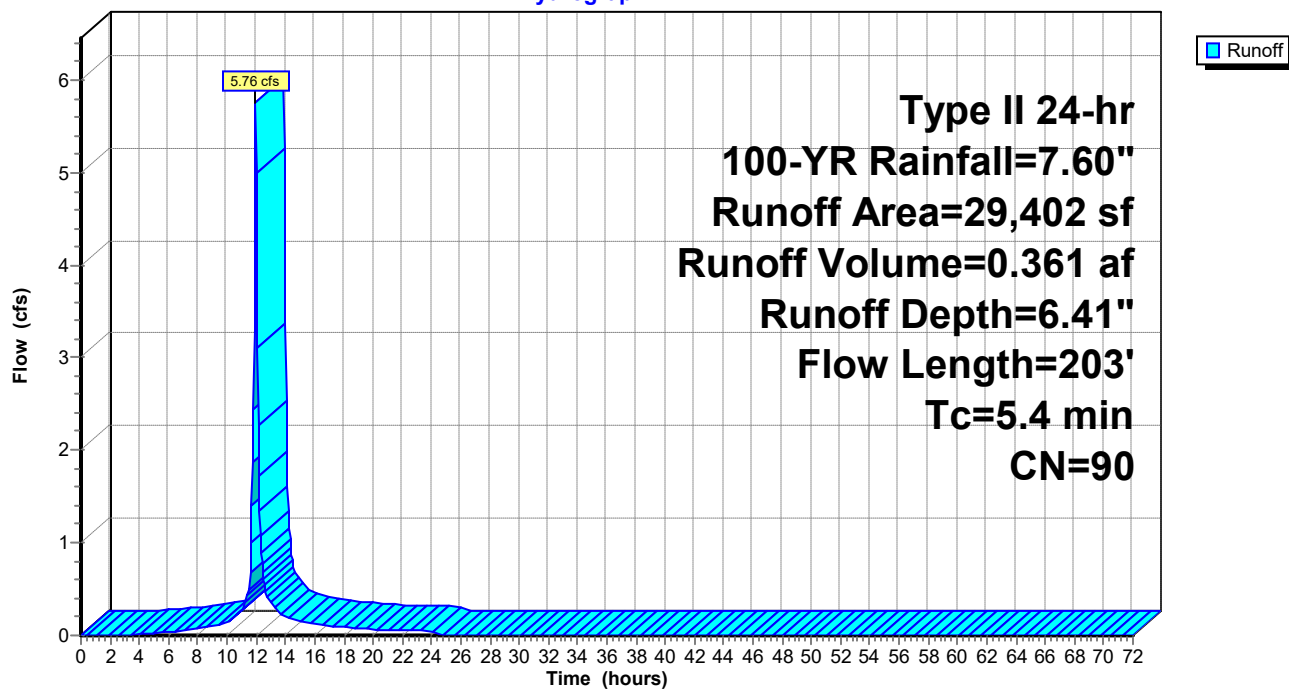
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
2,751	69	50-75% Grass cover, Fair, HSG B
9,263	96	Gravel surface, HSG B
13,649	98	Unconnected pavement, HSG B
3,739	65	Woods/grass comb., Fair, HSG B
29,402	90	Weighted Average
15,753		53.58% Pervious Area
13,649		46.42% Impervious Area
13,649		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	26	0.0160	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
1.0	74	0.0160	1.22		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.5	70	0.0127	2.29		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.4	33	0.0451	1.49		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.4	203	Total			

Subcatchment 1S: DA1

Hydrograph



Summary for Subcatchment 5S: DA2

Runoff = 3.56 cfs @ 11.94 hrs, Volume= 0.171 af, Depth= 4.91"

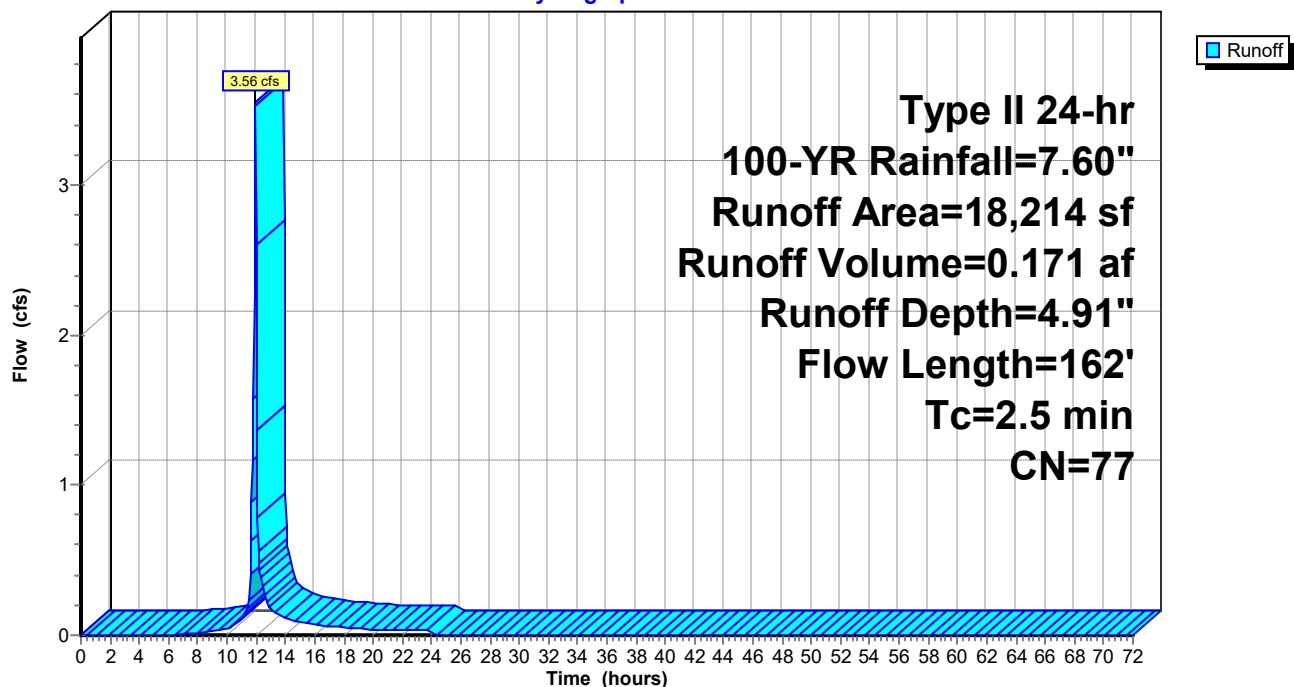
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
8,155	96	Gravel surface, HSG B
10,059	61	>75% Grass cover, Good, HSG B
18,214	77	Weighted Average
18,214		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0165	1.31		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.0	2	0.0081	1.83		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	26	0.0185	0.95		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	34	0.0987	0.79		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
2.5	162	Total			

Subcatchment 5S: DA2

Hydrograph



Summary for Subcatchment 12S: DA1

Runoff = 5.89 cfs @ 11.97 hrs, Volume= 0.368 af, Depth= 6.53"

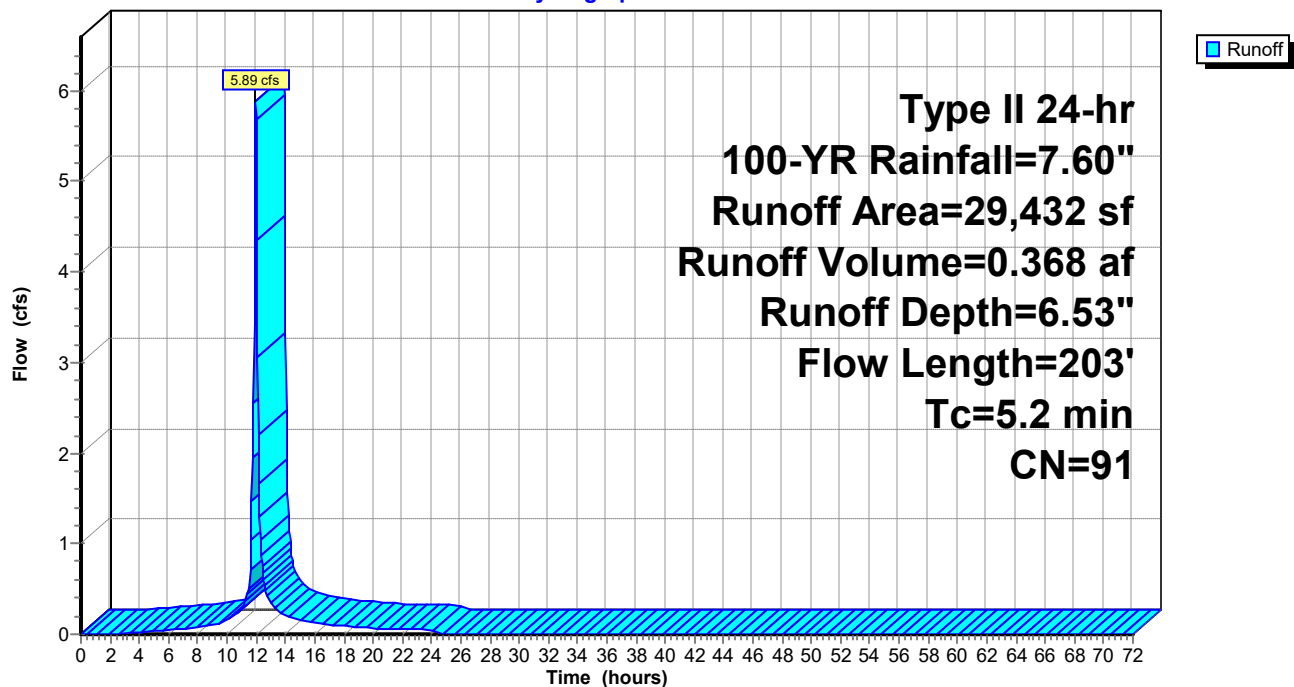
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
6,838	69	50-75% Grass cover, Fair, HSG B
22,594	98	Unconnected pavement, HSG B
29,432	91	Weighted Average
6,838		23.23% Pervious Area
22,594		76.77% Impervious Area
22,594		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	28	0.0160	0.12		Sheet Flow, Grass: Short n= 0.150 P2= 3.40"
0.9	72	0.0200	1.33		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.4	94	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	9	0.0234	1.07		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.2	203	Total			

Subcatchment 12S: DA1

Hydrograph



Summary for Subcatchment 13S: DA2

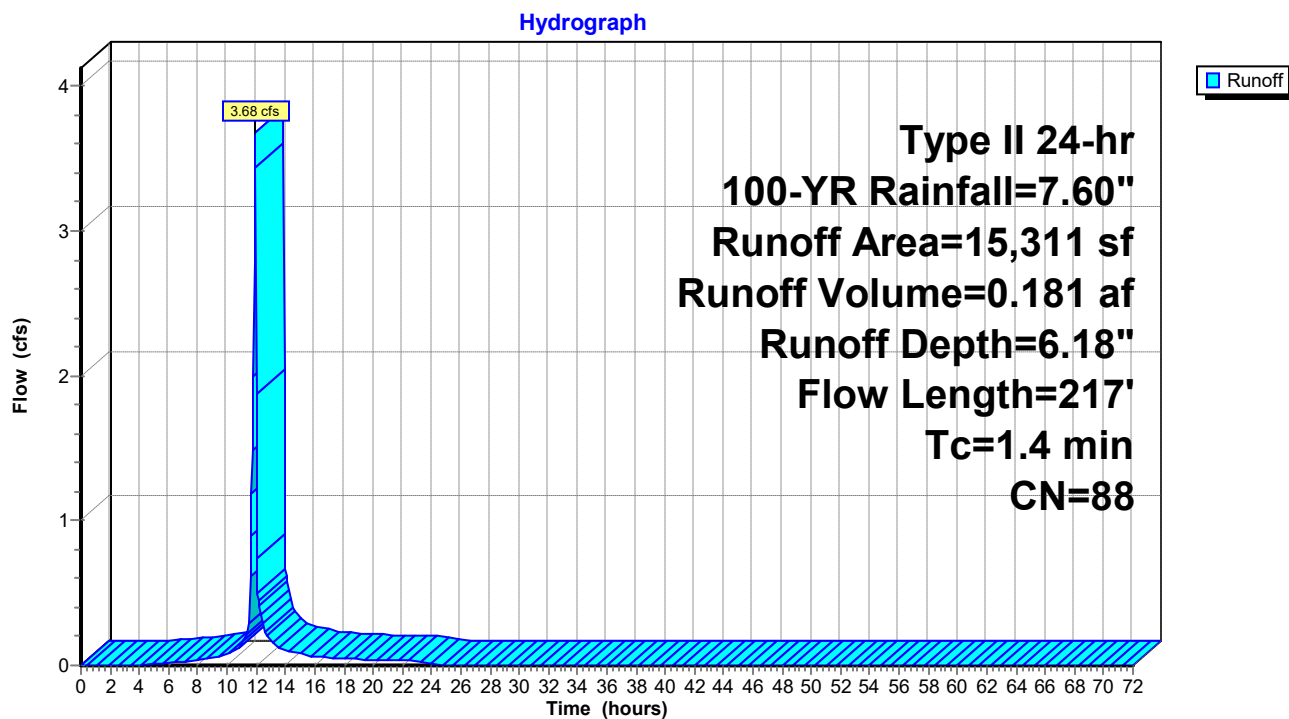
Runoff = 3.68 cfs @ 11.92 hrs, Volume= 0.181 af, Depth= 6.18"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
1,021	96	Gravel surface, HSG B
3,971	61	>75% Grass cover, Good, HSG B
10,319	98	Paved parking, HSG B
15,311	88	Weighted Average
4,992		32.60% Pervious Area
10,319		67.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	75	0.0500	1.93		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.3	35	0.0623	1.81		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.40"
0.5	94	0.0220	3.01		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.0	7	0.0139	2.39		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.0	6	0.3300	4.02		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.4	217	Total			

Subcatchment 13S: DA2



Summary for Subcatchment 18S: DA3

Runoff = 0.49 cfs @ 12.02 hrs, Volume= 0.035 af, Depth= 5.14"

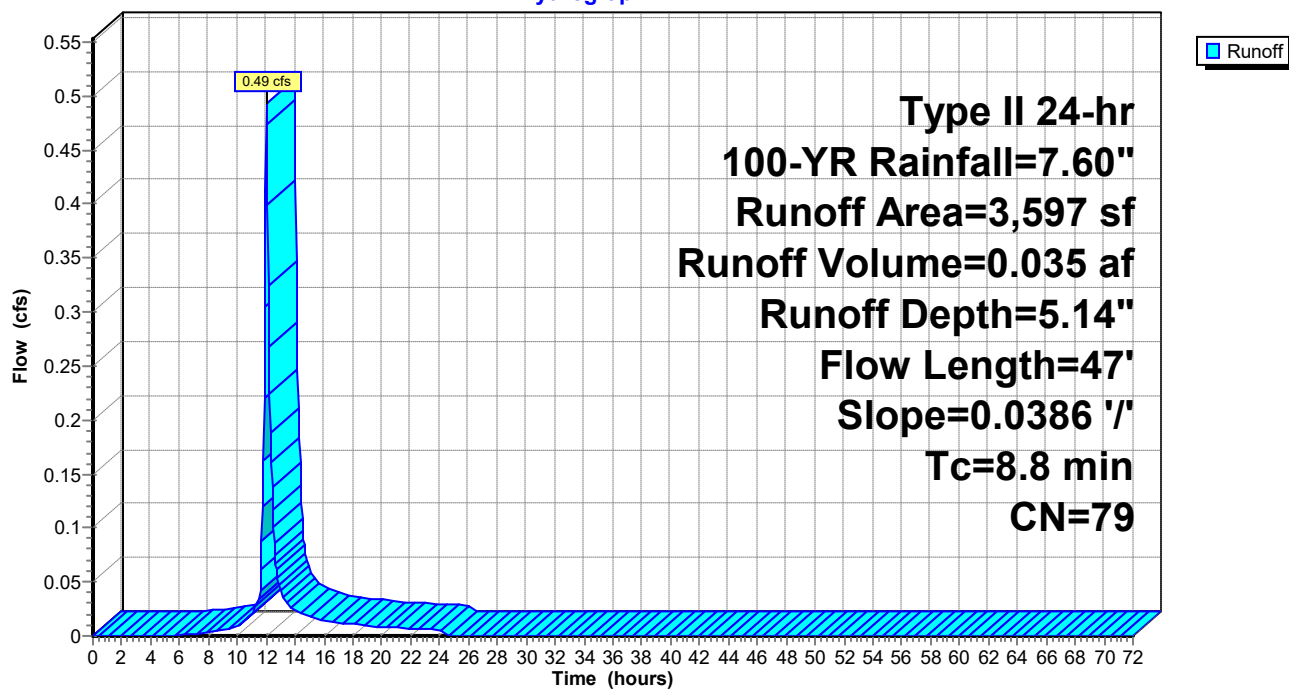
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
3,597	79	<50% Grass cover, Poor, HSG B
3,597		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	47	0.0386	0.09		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.40"

Subcatchment 18S: DA3

Hydrograph



Summary for Pond 13P: POND 2

Inflow Area = 0.351 ac, 67.40% Impervious, Inflow Depth = 6.18" for 100-YR event
 Inflow = 3.68 cfs @ 11.92 hrs, Volume= 0.181 af
 Outflow = 3.77 cfs @ 11.95 hrs, Volume= 0.181 af, Atten= 0%, Lag= 2.0 min
 Discarded = 0.03 cfs @ 11.95 hrs, Volume= 0.093 af
 Primary = 3.75 cfs @ 11.95 hrs, Volume= 0.088 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 29.78' @ 11.95 hrs Surf.Area= 1,473 sf Storage= 2,949 cf

Plug-Flow detention time= 627.7 min calculated for 0.181 af (100% of inflow)
 Center-of-Mass det. time= 629.2 min (1,406.1 - 777.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	24.56'	4,278 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.56	0	0.0	0	0
24.57	728	40.0	1	1
28.56	728	40.0	1,162	1,163
28.57	1,473	100.0	11	1,174
30.57	1,473	100.0	2,946	4,120
30.58	30,000	100.0	157	4,278

Device	Routing	Invert	Outlet Devices
#1	Discarded	24.56'	0.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 19.00'
#2	Primary	29.57'	17.0' long x 6.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=0.03 cfs @ 11.95 hrs HW=29.77' (Free Discharge)

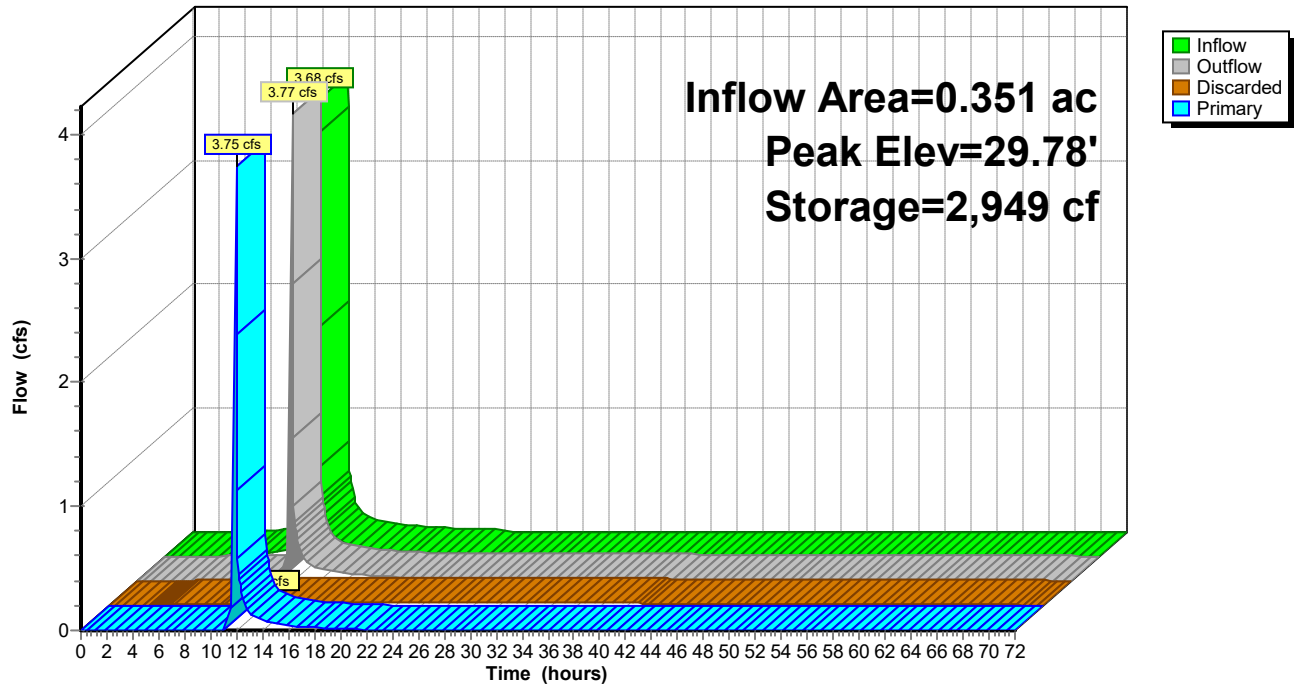
↑1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=3.73 cfs @ 11.95 hrs HW=29.77' TW=0.00' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Weir Controls 3.73 cfs @ 1.07 fps)

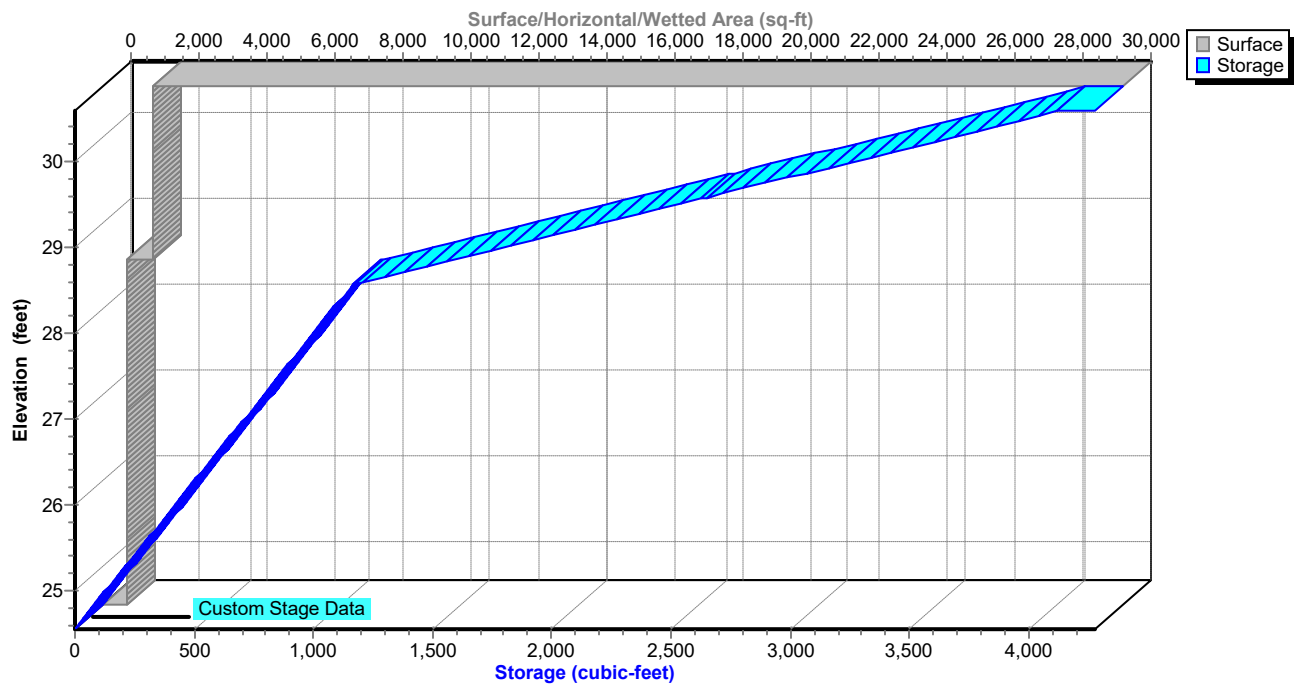
Pond 13P: POND 2

Hydrograph



Pond 13P: POND 2

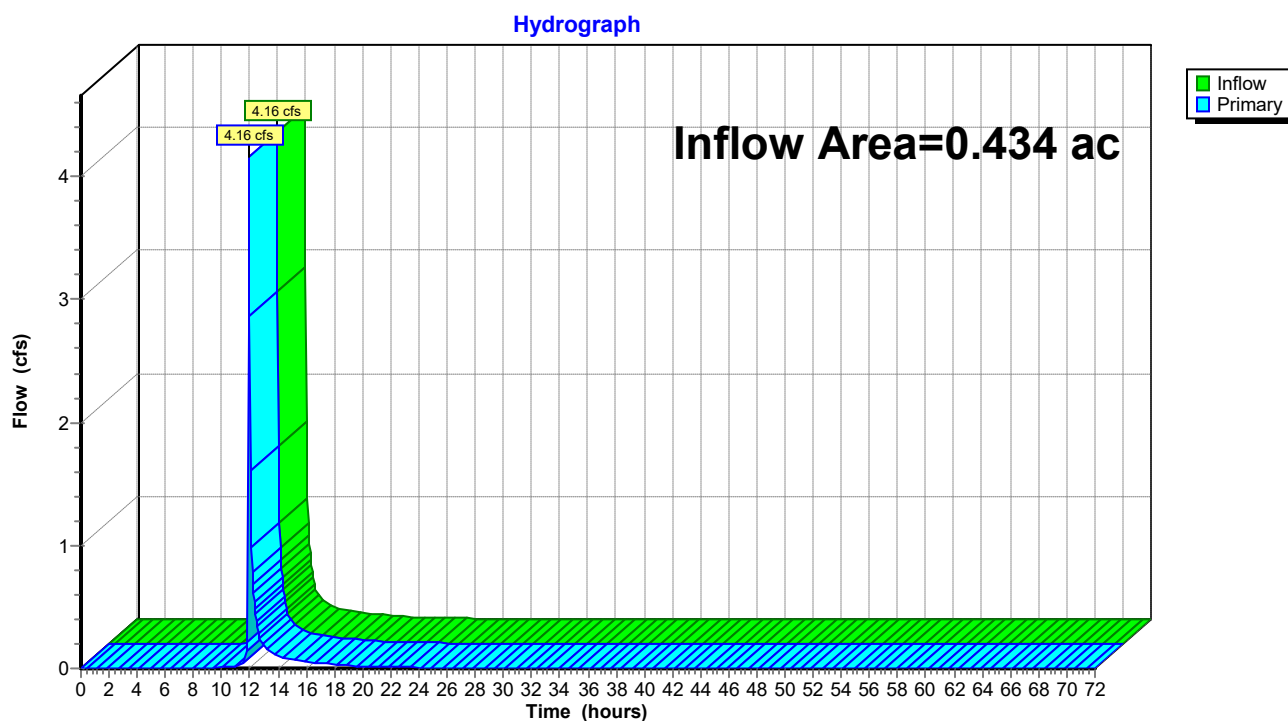
Stage-Area-Storage



Summary for Pond 19P: LINE OF INVESTIGATION 2

Inflow Area = 0.434 ac, 54.57% Impervious, Inflow Depth = 3.41" for 100-YR event
Inflow = 4.16 cfs @ 11.95 hrs, Volume= 0.123 af
Primary = 4.16 cfs @ 11.95 hrs, Volume= 0.123 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Pond 19P: LINE OF INVESTIGATION 2

SECTION 5 – SOIL REPORTS

Custom Soil Resource Report for Talbot County, Maryland



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Talbot County, Maryland.....	13
CsA—Crosiadore silt loam, 0 to 2 percent slopes.....	13
HfA—Hambrook-Sassafras complex, 0 to 2 percent slopes.....	14
HfB—Hambrook-Sassafras complex, 2 to 5 percent slopes.....	16
HfC—Hambrook-Sassafras complex, 5 to 10 percent slopes.....	18
OtA—Othello silt loams, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain.....	20
UbB—Udorthents, borrow area, 0 to 5 percent slopes.....	22
WdcA—Woodstown sandy loam, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain.....	24
Zk—Zekiah silt loam, frequently flooded.....	26
References	28

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

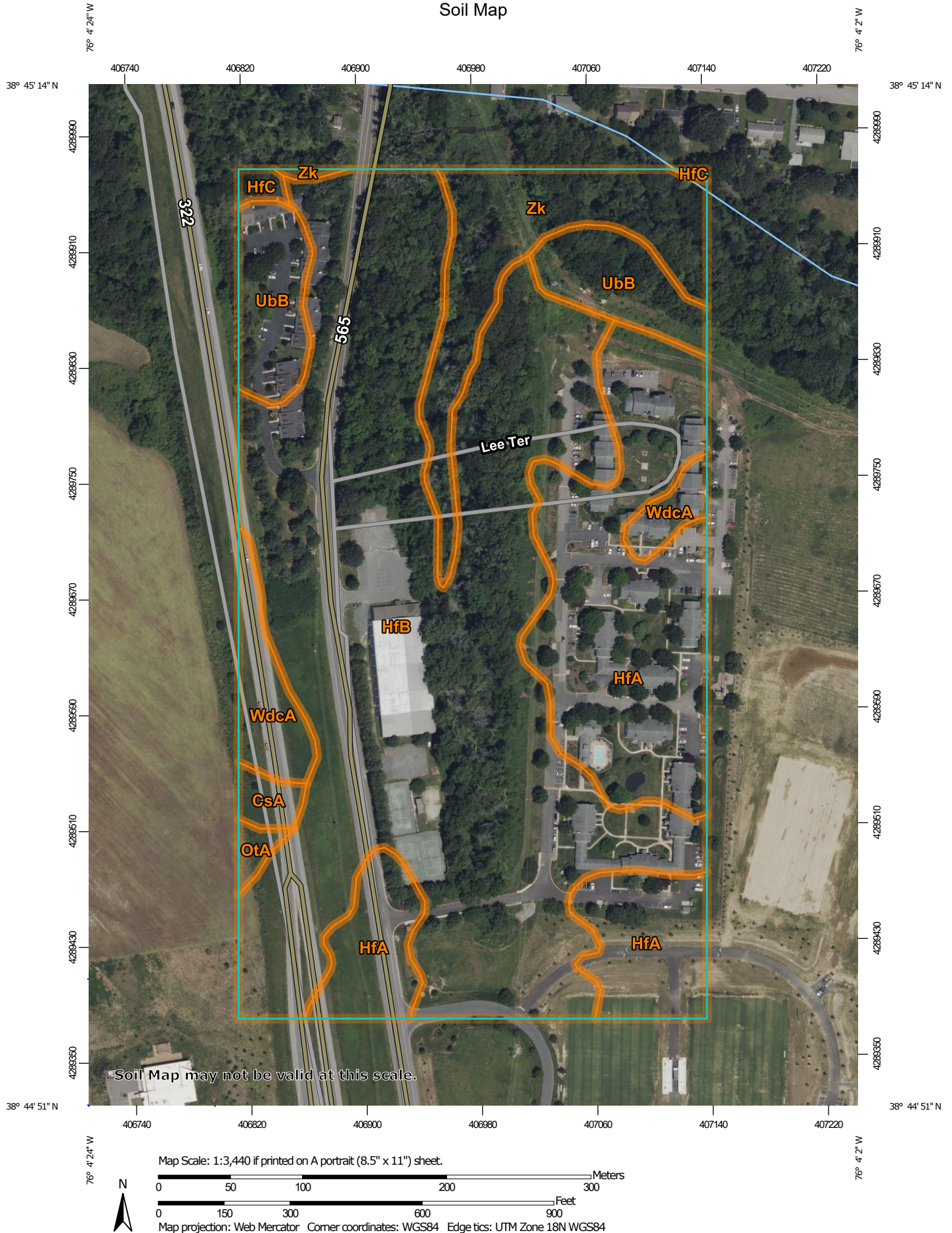
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Talbot County, Maryland
Survey Area Data: Version 20, Sep 12, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 30, 2022—Jul 4, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CsA	Crosiadore silt loam, 0 to 2 percent slopes	0.4	0.8%
HfA	Hambrook-Sassafras complex, 0 to 2 percent slopes	11.1	23.4%
HfB	Hambrook-Sassafras complex, 2 to 5 percent slopes	26.8	56.6%
HfC	Hambrook-Sassafras complex, 5 to 10 percent slopes	0.2	0.4%
OtA	Othello silt loams, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain	0.2	0.5%
UbB	Udorthents, borrow area, 0 to 5 percent slopes	3.1	6.5%
WdcA	Woodstown sandy loam, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain	1.7	3.6%
Zk	Zekiah silt loam, frequently flooded	3.9	8.2%
Totals for Area of Interest		47.3	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the

scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Talbot County, Maryland

CsA—Crosiadore silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: nmd5

Elevation: 0 to 100 feet

Mean annual precipitation: 42 to 48 inches

Mean annual air temperature: 52 to 58 degrees F

Frost-free period: 180 to 220 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Crosiadore and similar soils: 75 percent

Minor components: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crosiadore

Setting

Landform: Depressions, flats

Landform position (three-dimensional): Talf

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Parent material: Silty eolian deposits over fluviomarine sediments

Typical profile

Ap - 0 to 10 inches: silt loam

Bt - 10 to 28 inches: silt loam

2Btg - 28 to 33 inches: sandy loam

2Cg - 33 to 50 inches: sandy loam

2C1 - 50 to 57 inches: gravelly loamy sand

2C2 - 57 to 80 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)

Depth to water table: About 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C/D

Ecological site: F153CY020MD - Moist Loess Upland

Hydric soil rating: No

Minor Components

Mattapex

Percent of map unit: 10 percent

Landform: Flats

Landform position (three-dimensional): Rise

Ecological site: F153CY020MD - Moist Loess Upland

Hydric soil rating: No

Kentuck

Percent of map unit: 5 percent

Landform: Depressions

Ecological site: F149AY090NJ - Coastal Plain Hardwood Swamp

Hydric soil rating: Yes

Elkton

Percent of map unit: 5 percent

Landform: Swales, flats, depressions

Ecological site: F149AY090NJ - Coastal Plain Hardwood Swamp

Hydric soil rating: Yes

Othello

Percent of map unit: 5 percent

Landform: Flats, depressions, drainageways, swales

Landform position (three-dimensional): Dip

Ecological site: F149AY090NJ - Coastal Plain Hardwood Swamp

Hydric soil rating: Yes

HfA—Hambrook-Sassafras complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1vh08

Elevation: 0 to 330 feet

Mean annual precipitation: 42 to 48 inches

Mean annual air temperature: 52 to 58 degrees F

Frost-free period: 180 to 220 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Hambrook and similar soils: 41 percent

Sassafras and similar soils: 39 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hambrook

Setting

Landform: Depressions, flats, fluviomarine terraces

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Typical profile

Ap - 0 to 10 inches: sandy loam
BE - 10 to 14 inches: loam
Bt - 14 to 28 inches: sandy clay loam
BC - 28 to 65 inches: loamy sand
2Cg - 65 to 80 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 1.98 in/hr)
Depth to water table: About 42 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: B
Ecological site: F149AY170MD - Well Drained Fine-Loamy Upland
Hydric soil rating: No

Description of Sassafras

Setting

Landform: Low hills, flats, fluviomarine terraces, knolls
Landform position (three-dimensional): Riser, dip
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear

Typical profile

Ap - 0 to 9 inches: sandy loam
E - 9 to 15 inches: sandy loam
Bt - 15 to 30 inches: loam
BC - 30 to 37 inches: sandy loam
C - 37 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: B

Custom Soil Resource Report

Ecological site: F149AY170MD - Well Drained Fine-Loamy Upland

Hydric soil rating: No

Minor Components

Woodstown

Percent of map unit: 10 percent

Landform: Flats, depressions

Landform position (three-dimensional): Dip

Ecological site: F149AY130NJ - Moist Loamy Upland

Hydric soil rating: No

Mattapex

Percent of map unit: 5 percent

Landform: Depressions, flats

Landform position (three-dimensional): Dip

Ecological site: F153CY020MD - Moist Loess Upland

Hydric soil rating: No

Ingleside

Percent of map unit: 5 percent

Landform: Flats

Landform position (three-dimensional): Talf

Ecological site: F153DY160NJ - Well Drained Coarse-Loamy Upland

Hydric soil rating: No

HfB—Hambrook-Sassafras complex, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1vh09

Elevation: 0 to 330 feet

Mean annual precipitation: 42 to 48 inches

Mean annual air temperature: 52 to 58 degrees F

Frost-free period: 180 to 220 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Hambrook and similar soils: 41 percent

Sassafras and similar soils: 39 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hambrook

Setting

Landform: Flats, depressions, knolls, fluvio-marine terraces

Landform position (three-dimensional): Rise

Down-slope shape: Linear, concave, convex

Across-slope shape: Linear, concave, convex

Typical profile

Ap - 0 to 10 inches: sandy loam
BE - 10 to 14 inches: loam
Bt - 14 to 28 inches: sandy clay loam
BC - 28 to 65 inches: loamy sand
2Cg - 65 to 80 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 1.98 in/hr)
Depth to water table: About 40 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F149AY170MD - Well Drained Fine-Loamy Upland
Hydric soil rating: No

Description of Sassafras

Setting

Landform: Low hills, flats, fluviomarine terraces, knolls
Landform position (three-dimensional): Riser, dip
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear

Typical profile

Ap - 0 to 9 inches: sandy loam
E - 9 to 15 inches: sandy loam
Bt - 15 to 30 inches: loam
BC - 30 to 37 inches: sandy loam
C - 37 to 80 inches: loamy sand

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B

Custom Soil Resource Report

Ecological site: F149AY170MD - Well Drained Fine-Loamy Upland
Hydric soil rating: No

Minor Components

Woodstown

Percent of map unit: 10 percent
Landform: Flats, depressions
Landform position (three-dimensional): Dip
Ecological site: F149AY130NJ - Moist Loamy Upland
Hydric soil rating: No

Mattapex

Percent of map unit: 5 percent
Landform: Flats, depressions
Landform position (three-dimensional): Dip
Ecological site: F153CY020MD - Moist Loess Upland
Hydric soil rating: No

Ingleside

Percent of map unit: 5 percent
Landform: Flats
Landform position (three-dimensional): Talf
Ecological site: F153DY160NJ - Well Drained Coarse-Loamy Upland
Hydric soil rating: No

HfC—Hambrook-Sassafras complex, 5 to 10 percent slopes

Map Unit Setting

National map unit symbol: 1vh0b
Elevation: 20 to 120 feet
Mean annual precipitation: 42 to 48 inches
Mean annual air temperature: 52 to 58 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hambrook and similar soils: 60 percent
Sassafras and similar soils: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hambrook

Setting

Landform: Knolls, fluviomarine terraces, low hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear

Typical profile

Ap - 0 to 10 inches: sandy loam
BE - 10 to 14 inches: loam
Bt - 14 to 28 inches: sandy clay loam
BC - 28 to 65 inches: loamy sand
2Cg - 65 to 80 inches: silt loam

Properties and qualities

Slope: 5 to 10 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 1.98 in/hr)
Depth to water table: About 40 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F149AY170MD - Well Drained Fine-Loamy Upland
Hydric soil rating: No

Description of Sassafras

Setting

Landform: Low hills, fluviomarine terraces, knolls
Landform position (three-dimensional): Side slope, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear

Typical profile

Ap - 0 to 9 inches: sandy loam
E - 9 to 15 inches: sandy loam
Bt - 15 to 30 inches: loam
BC - 30 to 37 inches: sandy loam
C - 37 to 80 inches: loamy sand

Properties and qualities

Slope: 5 to 10 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B

Custom Soil Resource Report

Ecological site: F149AY170MD - Well Drained Fine-Loamy Upland
Hydric soil rating: No

Minor Components

Galestown

Percent of map unit: 5 percent
Landform: Knolls, low hills
Landform position (three-dimensional): Side slope
Ecological site: F153DY170NJ - Sandy, Excessively Drained Upland
Hydric soil rating: No

Mattapex

Percent of map unit: 5 percent
Landform: Low hills
Landform position (three-dimensional): Base slope
Ecological site: F153CY020MD - Moist Loess Upland
Hydric soil rating: No

OtA—Othello silt loams, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain

Map Unit Setting

National map unit symbol: 2thwn
Elevation: 0 to 100 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 46 to 68 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Othello, drained, and similar soils: 48 percent
Othello, undrained, and similar soils: 28 percent
Minor components: 24 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Othello, Drained

Setting

Landform: Swales, depressions, flats
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Parent material: Silty eolian deposits over fluviomarine deposits

Typical profile

Ap - 0 to 9 inches: silt loam
Btg - 9 to 29 inches: silt loam

Custom Soil Resource Report

2BCg - 29 to 34 inches: sandy loam

2Cg - 34 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)

Depth to water table: About 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: Rare

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C/D

Ecological site: F149AY090NJ - Coastal Plain Hardwood Swamp

Hydric soil rating: Yes

Description of Othello, Undrained

Setting

Landform: Drainageways, swales, depressions, flats

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Dip, tal

Down-slope shape: Concave, linear

Across-slope shape: Linear, concave

Parent material: Silty eolian deposits over fluviomarine deposits

Typical profile

Oe - 0 to 2 inches: peat

A - 2 to 4 inches: silt loam

Eg - 4 to 10 inches: silt loam

Btg - 10 to 29 inches: silt loam

2BCg - 29 to 35 inches: sandy loam

2Cg - 35 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)

Depth to water table: About 0 to 10 inches

Frequency of flooding: None

Frequency of ponding: Occasional

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: C/D

Ecological site: F149AY090NJ - Coastal Plain Hardwood Swamp

Hydric soil rating: Yes

Minor Components

Mattapex

Percent of map unit: 7 percent
Landform: Broad interstream divides, swales, depressions, flats
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: F153CY020MD - Moist Loess Upland
Hydric soil rating: No

Crosiadore

Percent of map unit: 7 percent
Landform: Depressions, fluviomarine terraces, flats
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: F153CY020MD - Moist Loess Upland
Hydric soil rating: No

Kentuck, undrained

Percent of map unit: 5 percent
Landform: Swales, depressions, flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: F149AY090NJ - Coastal Plain Hardwood Swamp
Hydric soil rating: Yes

Fallsington, undrained

Percent of map unit: 5 percent
Landform: Drainageways, swales, depressions, flats
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Dip, talf
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: F149AY090NJ - Coastal Plain Hardwood Swamp
Hydric soil rating: Yes

UbB—Udorthents, borrow area, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1vh0s
Elevation: 0 to 150 feet
Mean annual precipitation: 42 to 48 inches

Custom Soil Resource Report

Mean annual air temperature: 52 to 58 degrees F

Frost-free period: 180 to 220 days

Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, borrow area, and similar soils: 75 percent

Minor components: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Borrow Area

Setting

Landform: Knolls, flats

Down-slope shape: Convex, linear

Across-slope shape: Convex, linear

Parent material: Fluvio-marine sediments fluvio-marine deposits

Typical profile

AC - 0 to 2 inches: loam

C - 2 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 5 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 19.98 in/hr)

Depth to water table: About 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Udorthents, loamy

Percent of map unit: 10 percent

Landform: Broad interstream divides

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Talf

Down-slope shape: Linear, convex

Across-slope shape: Linear

Hydric soil rating: No

Water

Percent of map unit: 5 percent

Hydric soil rating: No

Askecksy, drained

Percent of map unit: 5 percent

Landform: Swales, depressions, flats

Landform position (three-dimensional): Talf

Custom Soil Resource Report

Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: F153DY130MD - Sandy Coastal Plain Swamp
Hydric soil rating: Yes

Klej

Percent of map unit: 5 percent
Landform: Depressions, flats
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: F153DY150NJ - Moist Sandy Upland
Hydric soil rating: No

WdcA—Woodstown sandy loam, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain

Map Unit Setting

National map unit symbol: 2thvt
Elevation: 0 to 90 feet
Mean annual precipitation: 42 to 48 inches
Mean annual air temperature: 52 to 58 degrees F
Frost-free period: 180 to 220 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Woodstown and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodstown

Setting

Landform: Flats, broad interstream divides, depressions, fluvio-marine terraces
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Tread, tal, dip
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Parent material: Loamy fluvio-marine deposits

Typical profile

Ap - 0 to 7 inches: sandy loam
E - 7 to 11 inches: sandy loam
Bt - 11 to 29 inches: sandy loam
BCg - 29 to 45 inches: fine sandy loam
Cg - 45 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: About 20 to 40 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C

Ecological site: F149AY130NJ - Moist Loamy Upland

Hydric soil rating: No

Minor Components

Fallsington

Percent of map unit: 6 percent

Landform: Flats, swales, depressions, drainageways

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear, concave

Across-slope shape: Linear, concave

Ecological site: F149AY090NJ - Coastal Plain Hardwood Swamp

Hydric soil rating: Yes

Hammonton

Percent of map unit: 6 percent

Landform: Broad interstream divides, flats

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F149AY130NJ - Moist Loamy Upland

Hydric soil rating: No

Mattapex

Percent of map unit: 4 percent

Landform: Broad interstream divides, swales, depressions, flats

Landform position (two-dimensional): Summit, footslope

Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear, concave

Across-slope shape: Linear, concave

Ecological site: F153CY020MD - Moist Loess Upland

Hydric soil rating: No

Hambrook

Percent of map unit: 4 percent

Landform: Flats, fluviomarine terraces

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread, talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F149AY170MD - Well Drained Fine-Loamy Upland

Hydric soil rating: No

Zk—Zekiah silt loam, frequently flooded

Map Unit Setting

National map unit symbol: 1vh0y
Elevation: 0 to 120 feet
Mean annual precipitation: 42 to 48 inches
Mean annual air temperature: 52 to 58 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Zekiah and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Zekiah

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile

A - 0 to 3 inches: silt loam
Cg - 3 to 20 inches: silt loam
2Ab - 20 to 27 inches: sandy loam
2Cg1 - 27 to 37 inches: sandy loam
2Cg2 - 37 to 50 inches: loam
2Cg3 - 50 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.38 to 1.98 in/hr)
Depth to water table: About 0 to 10 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Ecological site: R149AY060DE - Wet Alluvial Floodplain
Hydric soil rating: Yes

Minor Components

Longmarsh

Percent of map unit: 10 percent

Landform: Flood plains

Ecological site: R149AY060DE - Wet Alluvial Floodplain

Hydric soil rating: Yes

Hurlock

Percent of map unit: 5 percent

Landform: Flood plains

Ecological site: F149AY090NJ - Coastal Plain Hardwood Swamp

Hydric soil rating: Yes

Hammonton

Percent of map unit: 5 percent

Landform: Flats

Landform position (three-dimensional): Rise

Ecological site: F149AY130NJ - Moist Loamy Upland

Hydric soil rating: No

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf



Town of Easton
Engineering, Planning and Zoning
14 South Harrison Street, Easton, MD 21601

RECEIVED
MAY 01 2024
TOWN OF EASTON

Easton Staff Development Review

Property Information

Address 9719 Ocean Gateway, Easton, MD 21601
Tax Map 0025 Grid 0006 Parcel 0113 Lot
Deed Reference: Liber 03002 Folio 00214
Plat Reference: Liber Folio
Base Zoning District R10A Historic District Y ☐ N ☒ Planning Redevelopment Y ☐ N ☒
Purpose of Application / Description of Work:

The project consists of some minimal tree clearing and existing gravel demolition to construct a new powersports sales and service facility for Preston Automotive. There will water, sewer, electric, and communication services provided to the structure. There will be parking for both the powersports products for sale and for customers. Management for stormwater will be provided via a submerged gravel wetlands with forebay to the North side of the site. A deceleration lane will be required for the entrance off Rt 50.

Owner

Name ADBMD Route 50, LLC
Mailing Address 101 Bay St, Suite 12A
Telephone No. 302-745-6788 Email chris@dhwholdings.com

Applicant / Agent

Name Same as above
Mailing Address
Telephone No. Email

Surveyor / Engineer

Name Robert Rauch License No. 11024 Expiration Date 7/24/2024
Mailing Address 106 N. Harrison St, Easton, MD, 21601
Telephone No. 410-770-9081 Email robert@raucheng.com; brian@raucheng.com

Any modifications during review shall warrant an updated application.

I do hereby solemnly declare and affirm that the information provided by this application and the documents attached hereto accurately represent the conditions of the request and that submission of an incomplete application will be returned for correction prior to processing.

Signature of Applicant or Agent

Date 05/01/2024

Printed Name of Applicant or Agent

Robert Rauch

For Office Use Only

Easton Staff Development Review Meeting Required Y ☒ N ☐

Easton Staff Development Review Meeting Date 05/22/2024

Completeness Check Date 05/02/2024

Revisions/Resubmissions Required Y ☐ N ☒

Resubmission Date

Documents Received Y ☐ N ☐

Staff Determination

Planning Commission Required Y ☐ N ☐ TBD

2024 - 1210 / ESDR 24-11

BOZA Required Y ☐ N ☐ TBD

Historic District Commission Required Y ☐ N ☒

Resubmission for ESDR Required Y ☐ N ☐ TBD

Staff Signature *Samantha N. Smith*

Date 05/02/2024

Revised 02-2019

GRAVEL PATH DEMOLITION AND REMOVAL

1	PROPERTY LINE
2	TRAFFIC BARRIER
3	OVERHEAD ELECTRIC
4	STORM PIPE
5	TREE LINE
6	NON-TIDAL WETLAND
7	UTILITY POLE
8	GRAVEL PATH
9	TOP OF DITCH
10	BOTTOM OF DITCH

- 1 CMU/BRICK WALL TO BE DEMOLISHED AND HAULED OFFSITE
- 12 SIGN TO BE REMOVED
- 13 FLAG POLE TO BE REMOVED
- 14 LIGHT POLE TO BE REMOVED
- 15 FENCE TO BE REMOVED
- 16 SOLID WHITE EDGE LINE
- 17 DASHED WHITE ROAD STRIPING
- 18 SOLID YELLOW LINE
- 19 FENCE TO REMAIN
- 20 UTILITY POLE TO BE REMOVED
- 21 SEPTIC TO BE REMOVED PER TALBOT HEALTH DEPARTMENT STANDARDS
- 22 WELL TO BE ABANDONED PER HEALTH DEPARTMENT STANDARDS
- 23 25' FRONT SETBACK
- 24 15' REAR SETBACK
- 25 10' SIDE SETBACK

EXISTING CONDITIONS AND DEMO PLAN

PRESTON POWERSPORTS

TAX MAP 25, GRID 6, PARCEL 113

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR ADBMD ROUTE 50, LLC

RAUCH
INC.
Engineering | Survey | Architecture | Environmental

Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3687

REVISIONS

DESCRIPTION

REV. #	DATE
--------	------

REV. #

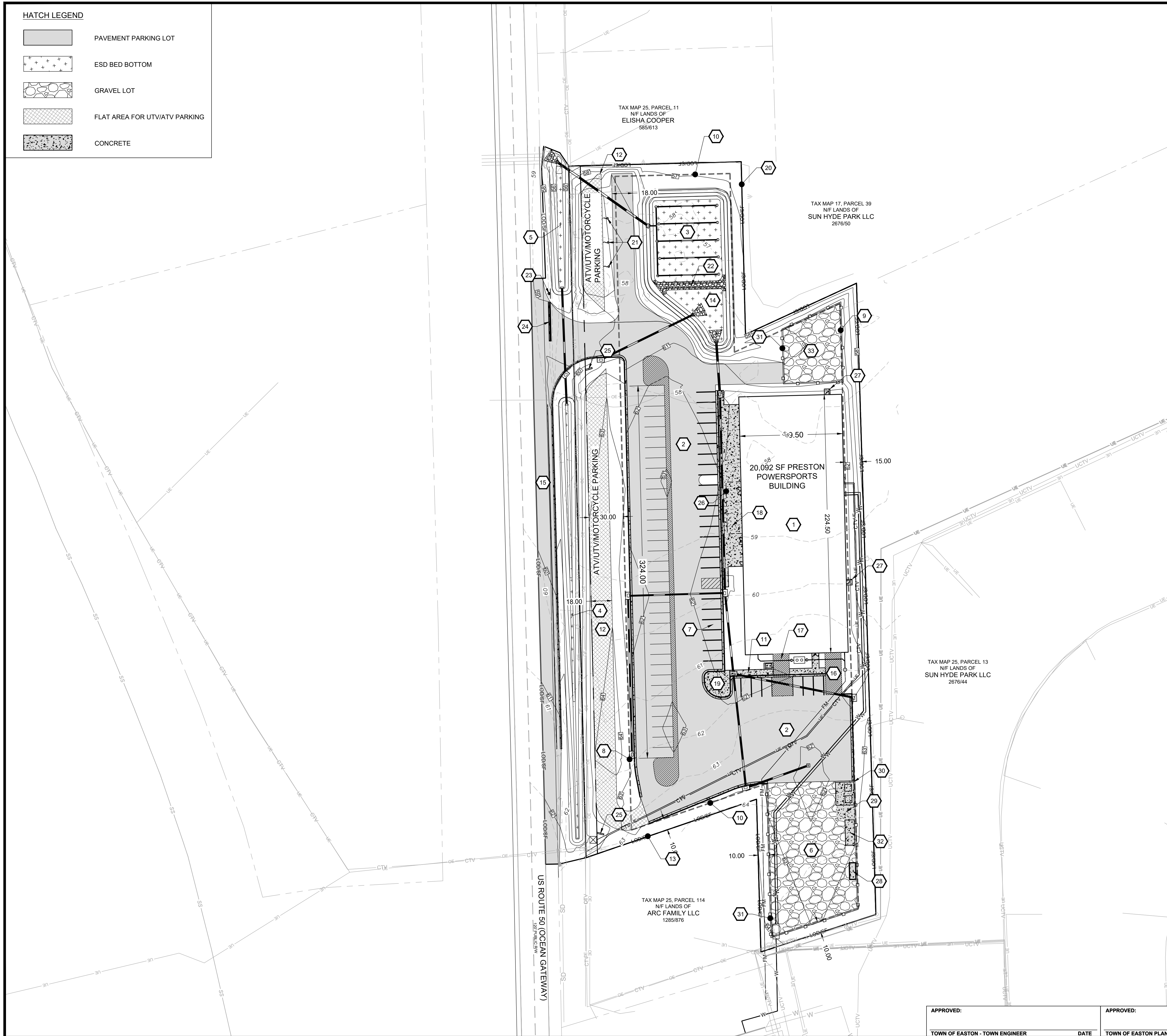


DATE:	5/1/2024
SCALE:	1" = 40'
DRAWN BY:	JWL
DESIGNED BY:	JWL
APPROVED BY:	JWL

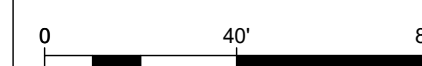
SHEET NO.: **V-101**

**FOR
REVIEW**

	PAVEMENT PARKING LOT
	ESD BED BOTTOM
	GRAVEL LOT
	FLAT AREA FOR UTV/ATV PARKING
	CONCRETE



1	20,092 S.F. PRESTON POWERSPORTS BUILDING
2	PAVEMENT PARKING LOT (79 PARKING SPACES)
3	4,176 S.F. SUBMERGED GRAVEL WETLAND
4	757 S.F. GRASS SWALE #1
5	530 S.F. GRASS SWALE #2
6	STORAGE YARD GRAVEL LOT #1
7	9' PARKING SPACE TYP.
8	40' FRONT BUILDING RESTRICTION LINE
9	10' REAR BUILDING RESTRICTION LINE
10	15' SIDE BUILDING RESTRICTION LINE
11	CONCRETE SIDEWALK
12	TOPSOIL BERM WITH FLAT TOP TO BE USED AS UTV/ATV PARKING
13	LIMITS OF DISTURBANCE
14	1,261 S.F. FOREBAY
15	DECELERATION LANE
16	LOADING/STORAGE ACCESS
17	SERVICE ACCESS
18	COVERED OUTDOOR DISPLAY
19	DEPRESSED CONCRETE ISLAND
20	LIMITS OF DISTURBANCE/SILT FENCE
21	FLAG POLE
22	STONE WEIR
23	STOP SIGN
24	STOP BAR
25	MONUMENT SIGN
26	OVERHANG
27	CONCRETE PAD
28	JET SKI TESTING TANK
29	TIRE DUMPSTER
30	TRASH AND RECYCLING BINS
31	CHAIN LINK FENCE
32	METAL BIN
33	STORAGE YARD GRAVEL LOT #2



APPROVED

EASTON UTILITIES - ENGINEER

PRESTON POWERSPORTS

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR ADBMD ROUTE 50, LLC

RAUCH
inc.

inc.
Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3667

DESCRIPTION

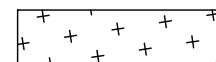
REV. #	DATE
--------	------

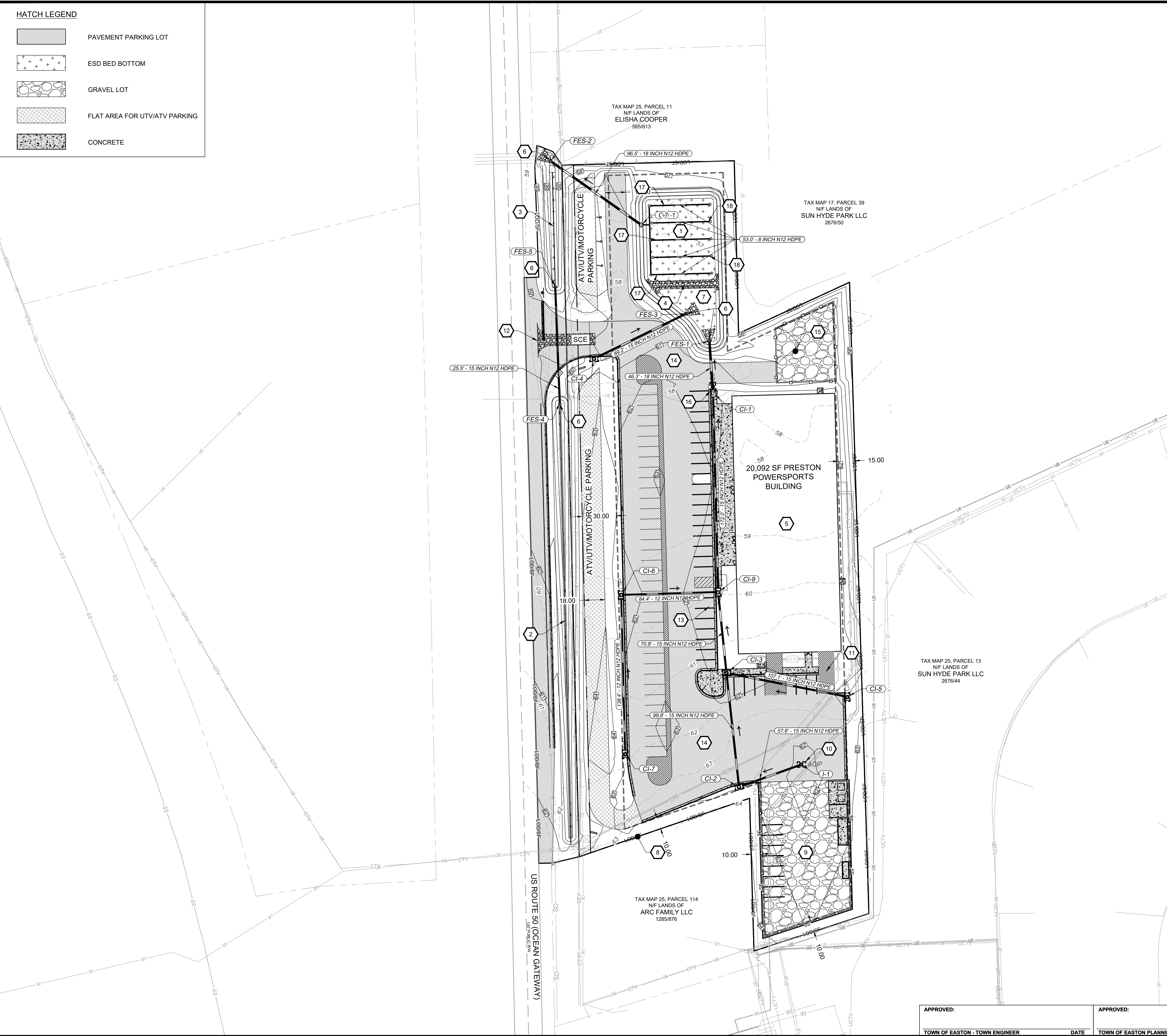
DATE:	5/1/20
SCALE:	1" = 4'
DRAWN BY:	JWL
SIGNED BY:	JWL
APPROVED BY:	JWL

C-100

**FOR
REVIEW**

HATCH LEGEND

- 
- PAVEMENT PARKING LOT
- 
- ESD BED BOTTOM
- 
- GRAVEL LOT
- 
- FLAT AREA FOR UTV/ATV PARKING
- 
- CONCRETE



PROPOSED SITE FEATURES

- 1

4,944 S.F. SUBMERGED GRAVEL WETLAND #1
- 2

757 S.F. GRASS SWALE #1
- 3

530 S.F. GRASS SWALE #2
- 4

STONE WEIR
- 5

20,092 SF PRESTON POWERSPORTS BUILDING
- 6

FLARED END SECTION WITH 19" THICK CLASS 1 RIP RAP OUTFALL PROTECTION
- 7

1,260 S.F. FOREBAY
- 8

LIMITS OF DISTURBANCE
- 9

STAGING & STOCKPILE AREA
- 10

AGIP TYP.
- 11

LOADING/STORAGE ACCESS
- 12

STABILIZED CONSTRUCTION ENTRANCE
- 13

SERVICE ACCESS
- 14

PAVEMENT PARKING LOT (79 PARKING SPACES)
- 15

LIMITS OF DISTURBANCE/SILT FENCE
- 16

CIP TYP.
- 17

COLLECTOR PIPES
- 18

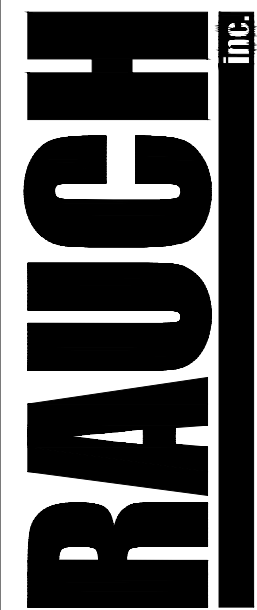
DISTRIBUTION PIPE WITH DOME GRATE INLET

ESC & STORMWATER MANAGEMENT PLAN

OF THE LANDS OF

PRESTON POWERSPORTS

TAX MAP 25, GRID 6, PARCEL 113
FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND
PREPARED FOR ADBMD ROUTE 50, LLC



Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3987

REVISIONS

DESCRIPTION

REV. #

DATE



DATE: 5/1/2024
SCALE: 1" = 40'
DRAWN BY: JWJ
DESIGNED BY: JWJ
APPROVED BY: JWJ

SHEET NO.: C-201

FOR REVIEW

APPROVED:

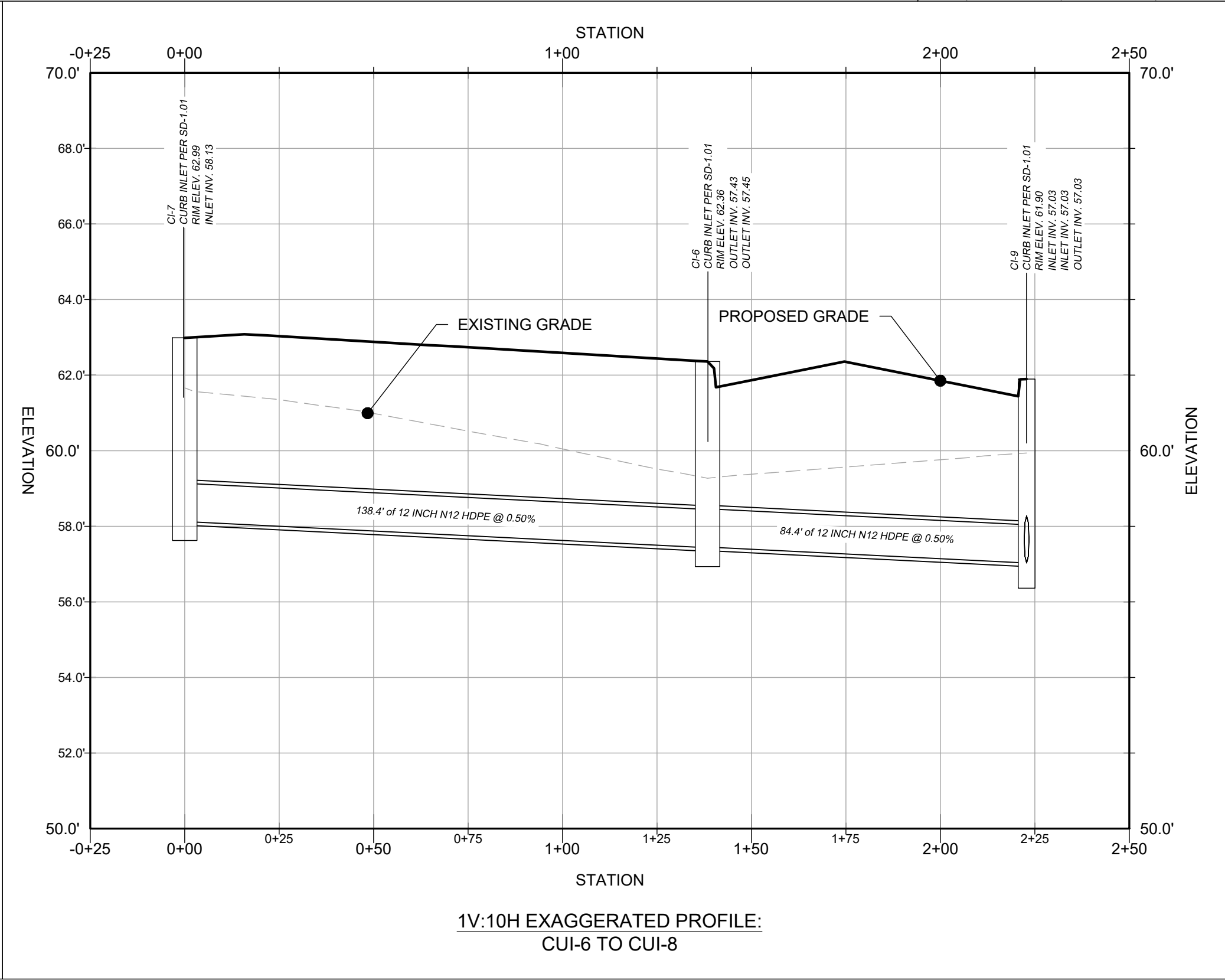
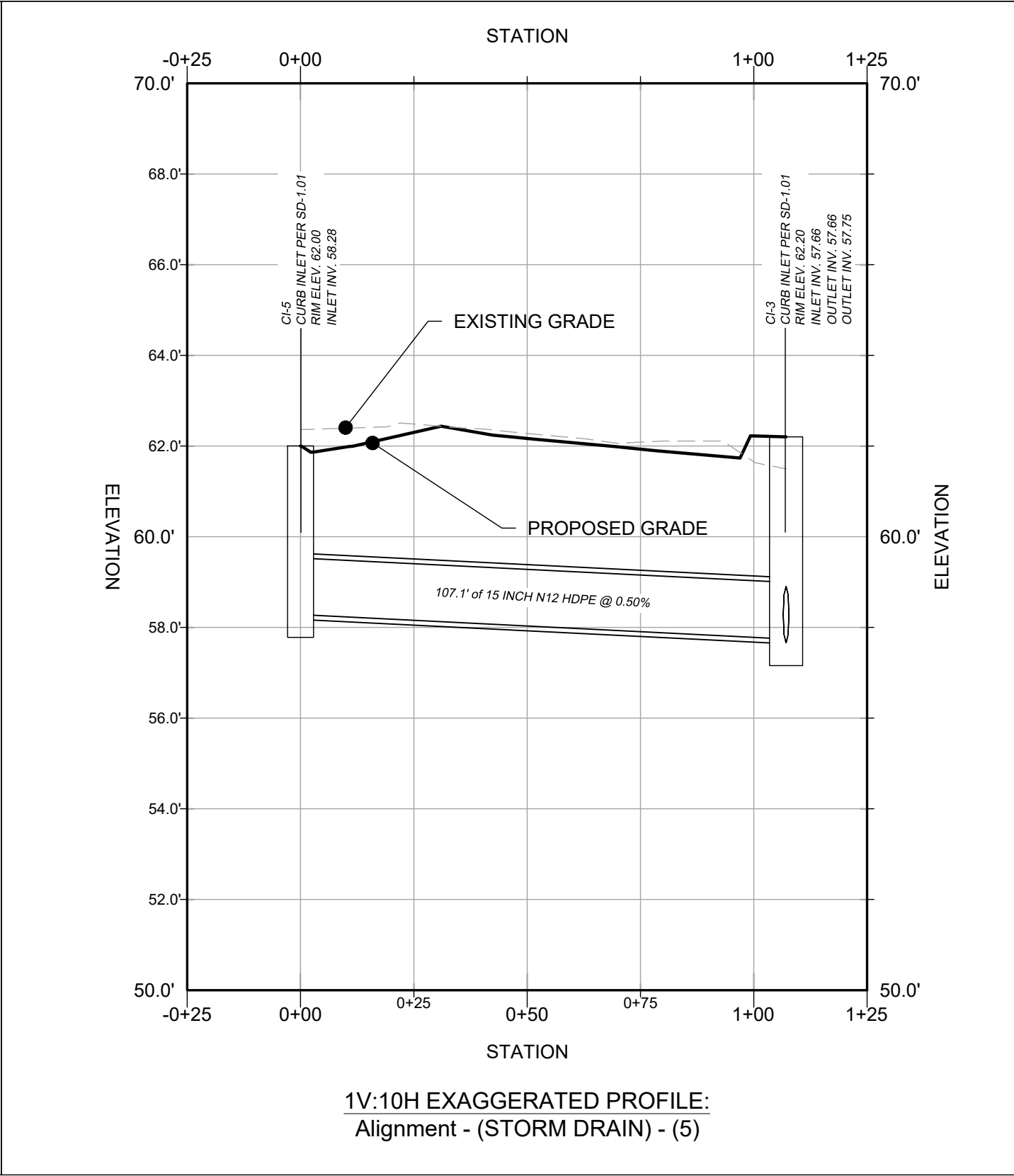
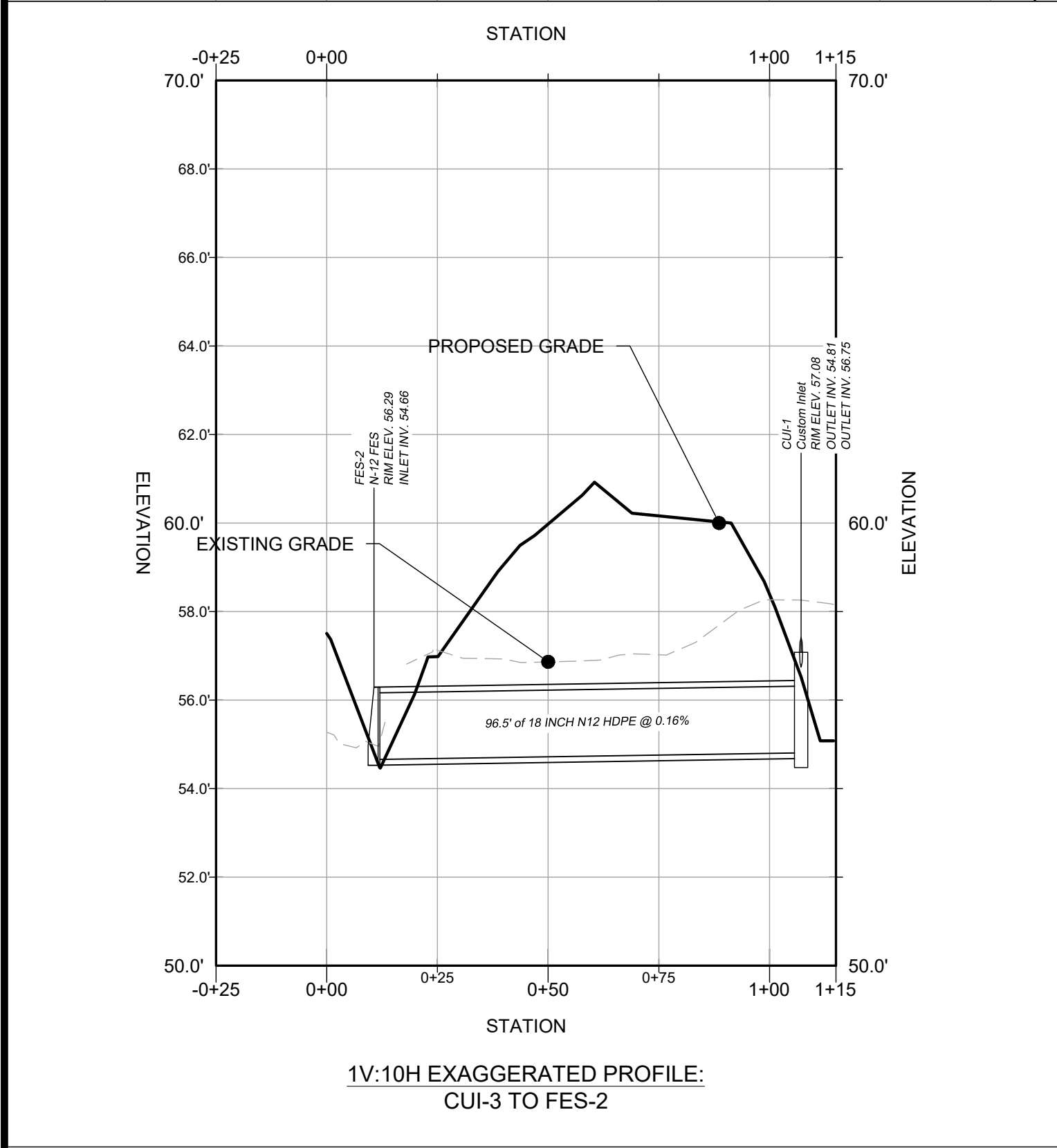
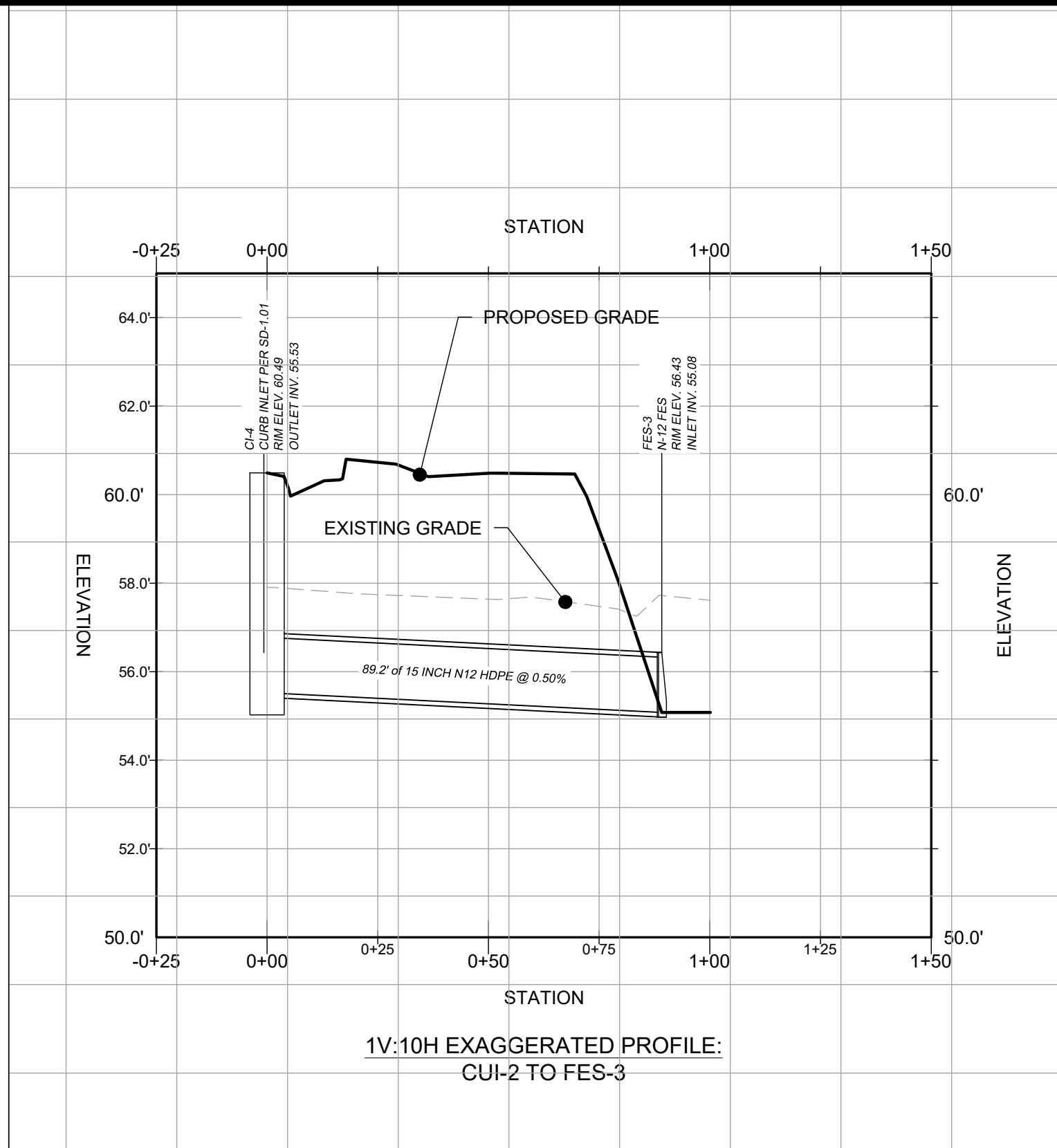
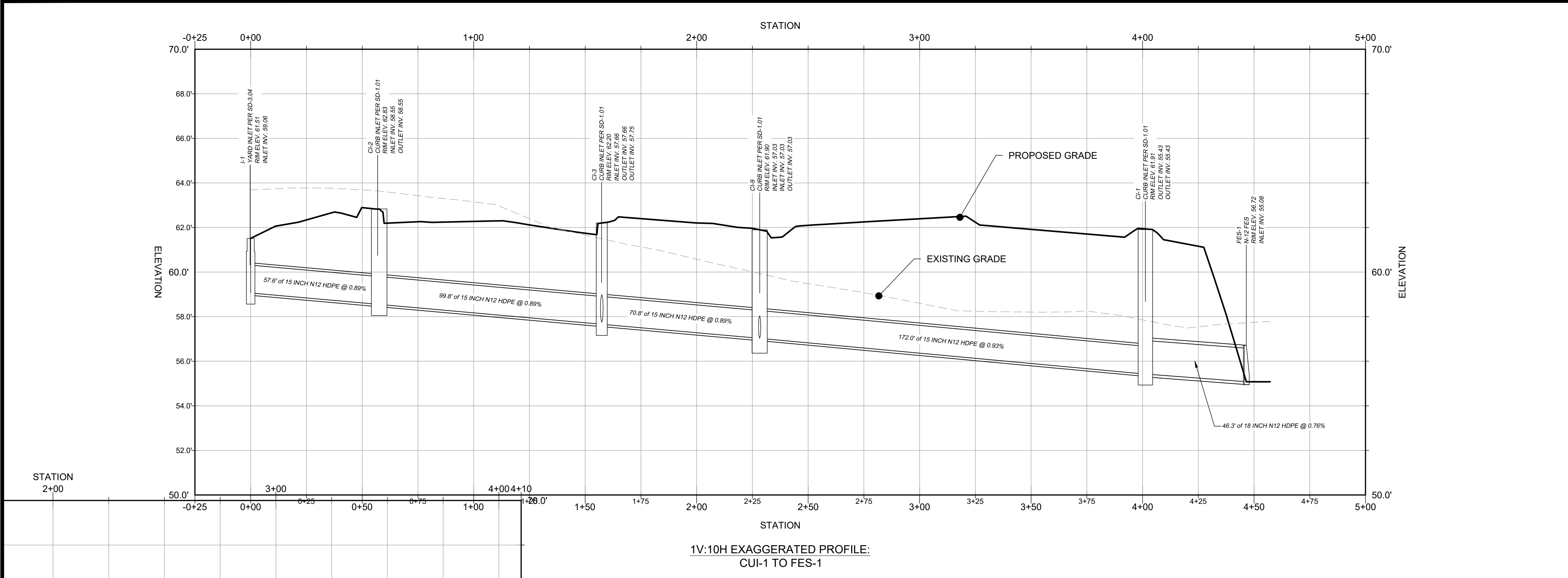
TOWN OF EASTON - TOWN ENGINEER

APPROVED:

TOWN OF EASTON PLANNING AND ZONING

APPROVED:

EASTON UTILITIES - ENGINEER



LINETYPE LEGEND

———— PROPOSED GRADE

----- EXISTING GRADE

SCALE:
H: 1" = 30'

STORMWATER MANAGEMENT PROFILES

OF THE LANDS OF

PRESTON POWERSPORTS

TAX MAP 25, GRID 6, PARCEL 113

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR ADBMD ROUTE 50, LLC

RAUCH

Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3987

REVISIONS

REV. #	DATE	DESCRIPTION
1		

MISS UTILITY OF DELAWARE

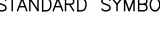
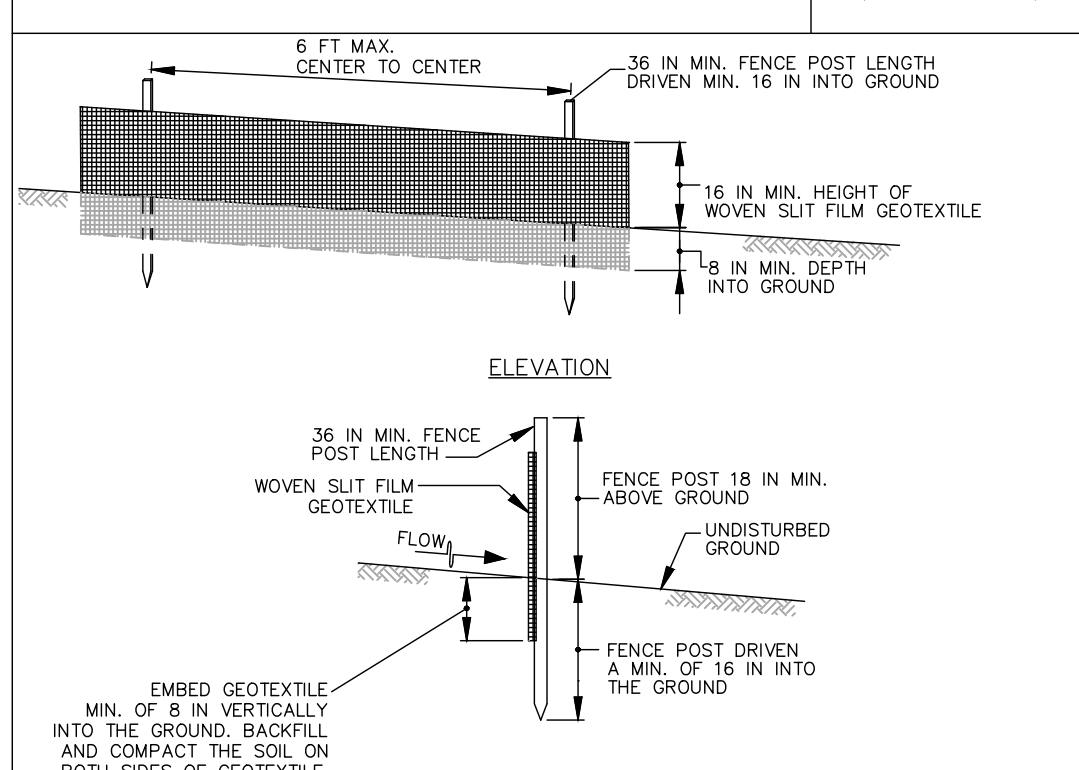
811

DATE: 5/1/2024
SCALE: AS SHOWN
DRAWN BY: JWJ
DESIGNED BY: JWJ
APPROVED BY: JWJ

SHEET NO.: C-203

FOR REVIEW

APPROVED:	APPROVED:	APPROVED:
TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - ENGINEER
DATE	DATE	DATE

DETAIL E-1 SILT FENCE STANDARD SYMBOL  SF  ELEVATION 6 FT MAX. CENTER TO CENTER 36 IN MIN. FENCE POST LENGTH DRIVEN MIN. 16 IN INTO GROUND 16 IN MIN. HEIGHT OF WOVEN SLIT FILM GEOTEXTILE 8 IN MIN. DEPTH INTO GROUND CROSS SECTION 36 IN MIN. FENCE POST LENGTH WOVEN SLIT FILM GEOTEXTILE FENCE POST 18 IN MIN. ABOVE GROUND UNDISTURBED GROUND FENCE POST DRIVEN A MIN. OF 16 IN INTO THE GROUND EMBED GEOTEXTILE MIN. OF 8 IN VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF GEOTEXTILE. JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW) STEP 1 POSTS STAPLE STEP 2 STAPLE</		
--	--	--

EROSION AND SEDIMENT CONTROL DETAILS

OF THE LANDS OF

PRESTON POWERSPORTS

TAX MAP 25, GRID 6, PARCEL 113
FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND
PREPARED FOR ADBMD ROUTE 50, LLC

RAUCH

Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3987

REVISIONS

DESCRIPTION

DATE

REV. #



DATE: 5/1/2024
SCALE: AS SHOWN
DRAWN BY: JWJ
DESIGNED BY: JWJ
APPROVED BY: JWJ

SHEET NO.:
C-205.01

FOR
REVIEW

APPROVED:

TOWN OF EASTON - TOWN ENGINEER

DATE

APPROVED:

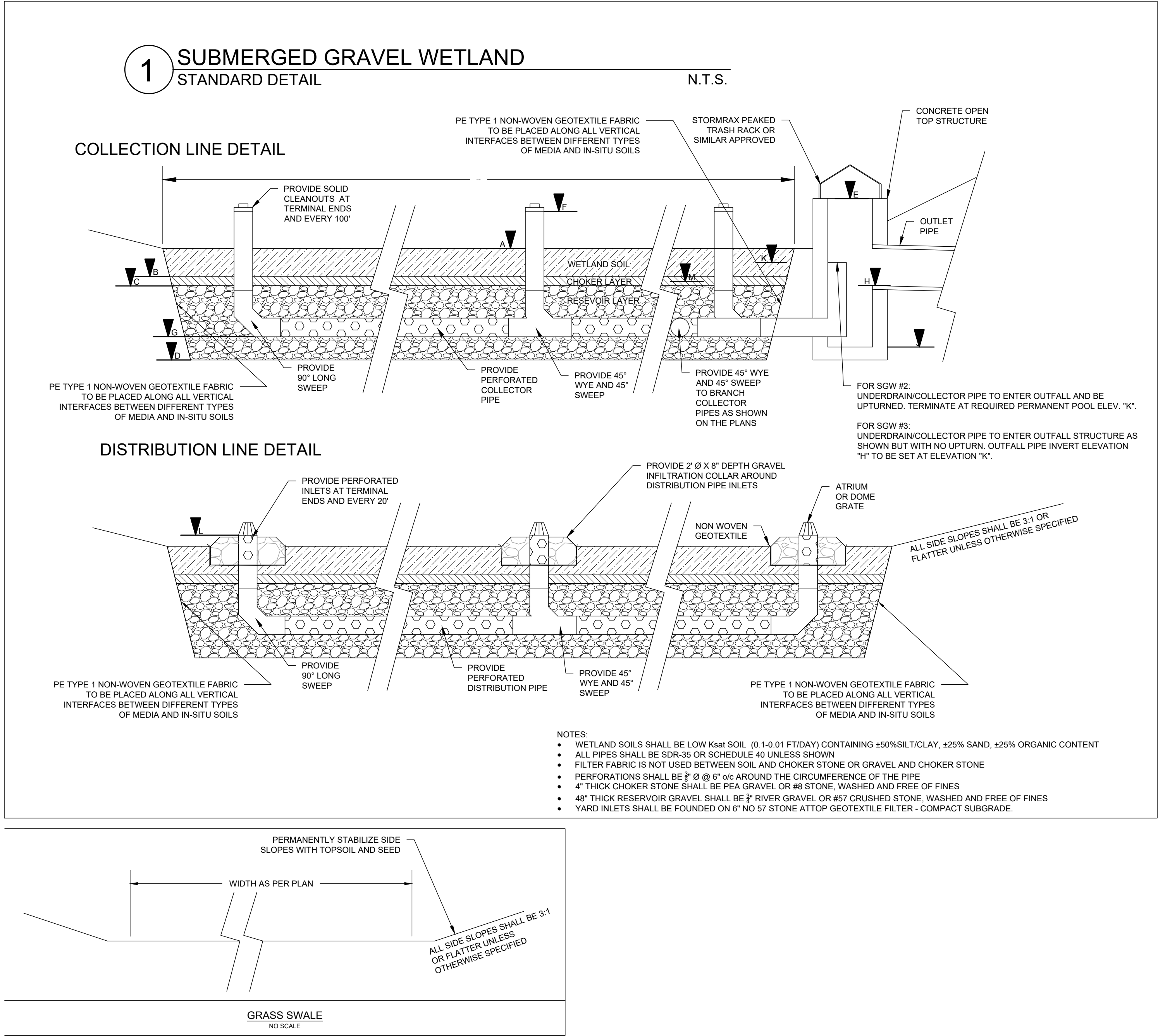
TOWN OF EASTON PLANNING AND ZONING

DATE

APPROVED:

EASTON UTILITIES - ENGINEER

DATE



GRASS SWALE INSPECTION AND MAINTENANCE NOTES

- INSPECTION:
- REGULAR INSPECTIONS SHALL BE MADE DURING THE FOLLOWING STAGES OF CONSTRUCTION:
 - UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.
- MAINTENANCE CRITERIA:
- THE FOLLOWING ITEMS SHOULD BE ADDRESSED TO ENSURE PROPER MAINTENANCE AND LONG-TERM PERFORMANCE OF SWALES:
- FOR GRASSED SWALES, REGULAR MOWING (AT LEAST BI-ANNUALLY) IS CRITICAL IN ORDER TO REDUCE COMPETITION FROM WEEDS AND IRRIGATION MAY BE NEEDED DURING DRY WEATHER TO ESTABLISH VEGETATION. SPARSELY VEGETATED AREAS NEED TO BE RE-SEEDED TO MAINTAIN DENSE COVERAGE.
 - IF WATER DOES NOT DRAIN WITHIN 48 HOURS, THE BOTTOM SOIL SHOULD BE TILLED AND REVEGETATED.
 - INSPECTIONS SHOULD BE PERFORMED ONCE A YEAR TO ASSESS SLOPE INTEGRITY, VEGETATIVE HEALTH, SOIL STABILITY, COMPACTION, EROSION, PONDING, AND SEDIMENTATION. PERIODIC REMOVAL OF SEDIMENT, LITTER, OR OBSTRUCTIONS SHOULD BE DONE AS NEEDED. ERODED SIDE SLOPES AND THE SWALE BOTTOM SHOULD BE REPAIRED AND STABILIZED WHERE NEEDED.

APPROVED:	APPROVED:	APPROVED:
TOWN OF EASTON - TOWN ENGINEER	TOWN OF EASTON PLANNING AND ZONING	EASTON UTILITIES - ENGINEER
DATE	DATE	DATE

STORMWATER MANAGEMENT DETAILS

OF THE LANDS OF

PRESTON POWERSPORTS

TAX MAP 25, GRID 6, PARCEL 113

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR ADBMD ROUTE 50, LLC

RAUCH

Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 8081 | Fax: 410 770 3887

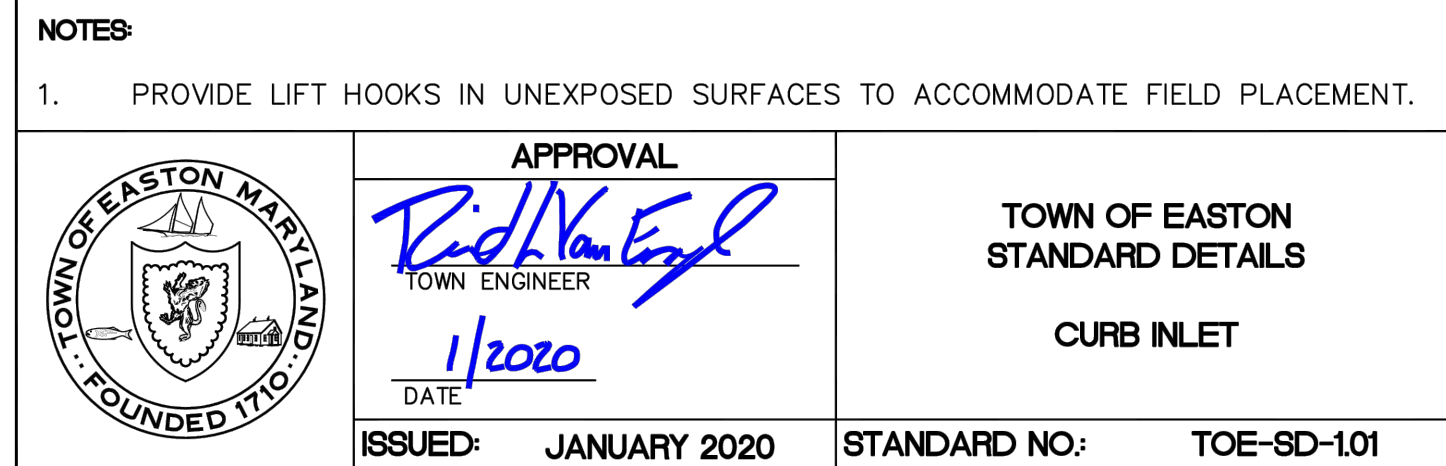
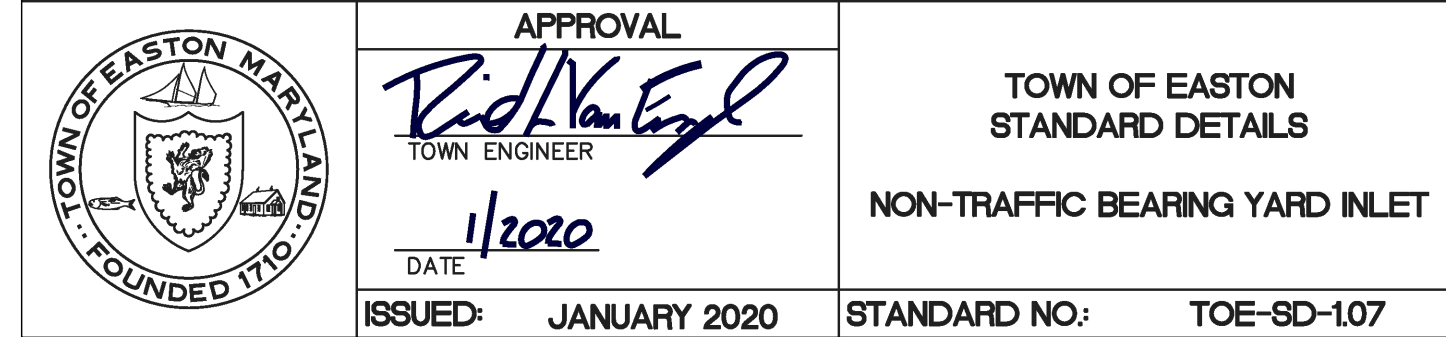
REV.	DATE	DESCRIPTION
1		



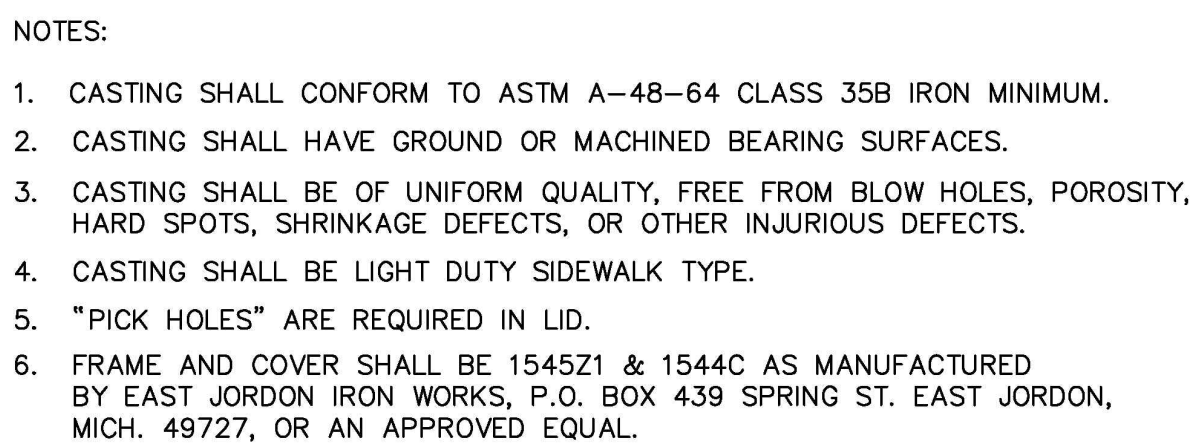
DATE: 5/1/2024
SCALE: AS SHOWN
DRAWN BY: JWJ
DESIGNED BY: JWJ
APPROVED BY: JWJ

SHEET NO.: C-205.02

FOR REVIEW



CURB INLET
DETAIL SD-1.01

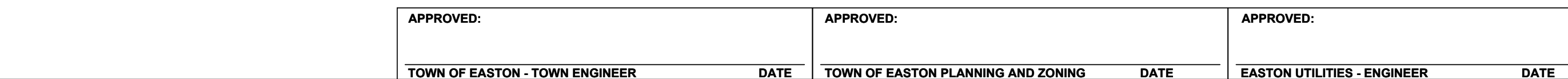


FOREBAY TO SGW #2

CREST ELEV.	= 42.83
CREST LENGTH	= 55 FT
CREST BREADTH/WIDTH	= 4 FT

FOREBAY TO SGW #3

CREST ELEV.	= 47.83
CREST LENGTH	= 56 FT
CREST BREADTH/WIDTH	= 4 FT



CONSTRUCTION SPECIFICATIONS		II	32 IN
		III	46 IN
1.	RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.		
2.	USE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.		
3.	PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (¾ TO 1½ INCH MINIMUM STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.		
4.	EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.		
5.	CONSTRUCT RIPRAP OUTLET TO FULL CURVE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPERSED OR UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.		
6.	WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.		
7.	CONSTRUCT APRON WITH OR SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.		
8.	MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND RIPRAP DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.		

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

STORMWATER MANAGEMENT DETAILS

PRESTON POWERSPORTS

OF THE LANDS OF

TAX MAP 25: GRID 6, PARCEL 113

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR ABBMD ROUTE 50, LLC

RAUCH
INC.
Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3667

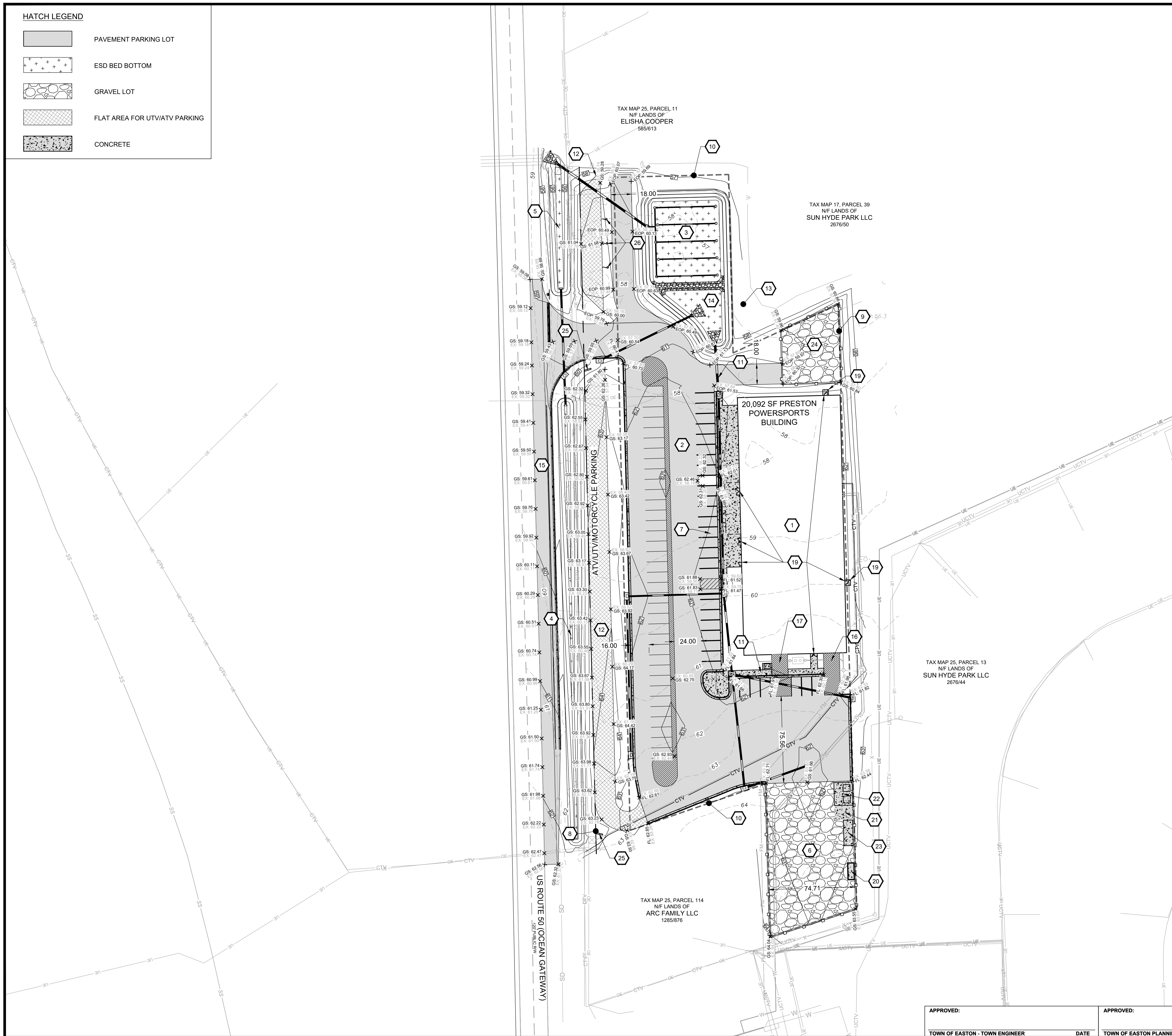
[illegible]

DATE:	5/1/2024
SCALE:	AS SHOWN
DRAWN BY:	JWL
DESIGNED BY:	JWL
APPROVED BY:	JWL

SHEET NO.: **C-205.03**

**FOR
REVIEW**

	PAVEMENT PARKING LOT
	ESD BED BOTTOM
	GRAVEL LOT
	FLAT AREA FOR UTV/ATV PARKING
	CONCRETE

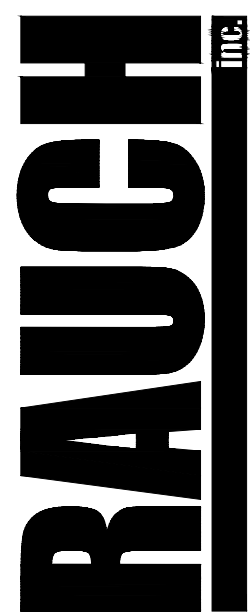


1	20,092 S.F. PRESTON POWERSPORTS BUILDING
2	PAVEMENT PARKING LOT (79 PARKING SPACES) SEE DETAIL ON SHEET 305.01
3	4,944 S.F. SUBMERGED GRAVEL WETLAND
4	757 S.F. GRASS SWALE #1
5	350 S.F. GRASS SWALE #2
6	STORAGE YARD GRAVEL LOT #2
7	9' PARKING SPACE TYP.
8	40' FRONT BUILDING RESTRICTION LINE
9	10' REAR BUILDING RESTRICTION LINE
10	15' SIDE BUILDING RESTRICTION LINE
11	CONCRETE SIDEWALK
12	TOPSOIL BERM WITH FLAT TOP TO BE USED AS UTV/ATV PARKING
13	LIMITS OF DISTURBANCE
14	FOREBAY
15	DECELERATION LANE
16	LOADING/STORAGE ACCESS
17	SERVICE ACCESS
18	DEPRESSED CONCRETE ISLAND
19	CONCRETE PAD
20	JET SKI TESTING TANK
21	TIRE DUMPSTER
22	TRASH AND RECYCLING BINS
23	METAL BIN
24	STORAGE YARD GRAVEL LOT #2
25	SITE MONUMENT SIGN
26	FLAG POLE
27	OVERHEAD DOOR

OF THE LANDS OF

PRESTON POWERSPORTS

TAX MAP 25, GRID 6, PARCEL 113
FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND
PREPARED FOR ADEMD ROUTE 50, LLC



Engineering | Survey | Architecture | Environmental

REVISIONS

[illegible]

DATE:	5/1/2024
SCALE:	1" = 40'
DRAWN BY:	JWL
DESIGNED BY:	JWL
APPROVED BY:	JWL

SHEET NO.:
C-301

**FOR
REVIEW**

COMMERCIAL ASPHALT PAVEMENT FOR ROADS	SURFACE COURSE: 2" HOT MIX ASPHALT SUPERPAVE 9.5 MM BASE COURSE: 4" HOT MIX ASPHALT SUPERPAVE, 19.0 MM PLACED IN 2-2" LIFTS SUB BASE: 2" CR-6 GRADED AGGREGATE COMPACTED TO 95% OF ASTM D1557, MOIST PROCTOR METHOD
---	--

PAVING NOTES	
<u>PAVING REQUIREMENTS</u>	
A. BASE COURSE 1) SUB-BASE GRAD SHALL BE PLACED ON PREPARED AND COMPACTED REEFLED EXCAVATIONS TO THE COMPACTED DEPTH AS SHOWN ON DETAIL, 99%-1.0% MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATION.	TO THE COMPACTED DEPTH AS SHOWN ON DETAIL, 99%-1.0% MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATION.
B. GRADED AGGREGATE BASE COURSE:	
0) GRADED AGGREGATE BASE COURSE SHALL BE SPREAD ON PREPARED AND COMPACTED REEFLED EXCAVATIONS TO THE COMPACTED DEPTH AS SHOWN ON DETAIL, 99%-1.0% MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATION.	TO THE COMPACTED DEPTH AS SHOWN ON DETAIL, 99%-1.0% MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATION.
C. GRADED AGGREGATE SHALL BE PER NO. 57 MIXED, SECTION 801.	
1) RECYCLED COURSE CONCRETE IS AN ACCEPTABLE ALTERNATIVE PROVIDED THICKNESS ADJUSTMENTS ARE MADE BASED ON SUPPLEMENTAL TESTING TO BE SUBMITTED BY A QUALIFIED TESTING LABORATORY AND APPROVED BY THE TOWN ENGINEER.	
D. TACK COAT	
1) COATING SHALL BE RESIDUAL ASPHALT EMULSION SPREAD BETWEEN .01 AND .05 GALLONS/SQ. YARD.	TO THE COMPACTED DEPTH AS SHOWN ON DETAIL, 99%-1.0% MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATION.
2) CONTRACTOR SHALL TAKE CARE NOT TO TRACK COAT ON SURFACE BEHIND.	
E. HOT MIX ASPHALT PAVEMENT	
1) HOT MIX ASPHALT PAVEMENT SHALL CONSIST OF A NUMBER OF COURSES WITH A MAX. SUPERPAVE MATERIAL AND AGGREGATE ON A PREPARED SUB-BASE AS SHOWN WITHIN THE TOWN STANDARDS.	TO THE COMPACTED DEPTH AS SHOWN ON DETAIL, 99%-1.0% MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATION.
MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE PROVISIONS OF SECTION 504 AND SECTION 505.	
2) SURFACE COURSES OF BITUMINOUS CONCRETE MIXES SHALL HAVE LESS THAN 15% OF RECYCLED ASPHALT (SECTION 804).	
3) BASE COURSES SHALL HAVE NO MORE THAN 20% RAP.	
4) WEATHER RESISTANT.	
5) PLANT MIXED SEAL - MINIMUM SURFACE TEMPERATURE 60T AND RISING.	TO THE COMPACTED DEPTH AS SHOWN ON DETAIL, 99%-1.0% MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATION.
SURFACE - MINIMUM SURFACE TEMPERATURE 40T AND RISING.	
6) BASE COURSE - MINIMUM SURFACE TEMPERATURE 37T AND RISING.	
F. CONCRETE PAVEMENT	
1) CONCRETE USED IN THE RESTORATION OF STREET AND ROADS SHALL BE PLACED TO THE MINIMUM THICKNESS THAT SHALL APPROVED BY THE TOWN. CONCRETE MAY BE A BASE COURSE WITH A BITUMINOUS CONCRETE OVERLAY OR A FINISHED SURFACE COURSE.	TO THE COMPACTED DEPTH AS SHOWN ON DETAIL, 99%-1.0% MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATION.
2) CONCRETE PAVEMENT SHALL MEET THE PROVISIONS OF THE TOWN STANDARDS, SECTION 822.	
3) CONCRETE SIDEWALKS AND CURBS AND OTHER RESTORATION SHALL, AS INDICATED WITHIN THE TOWN STANDARDS.	
G. SOIL CEMENT	
1) WHERE THE SOIL VALUES ARE FOUND TO BE LOW WITHIN THE PAVED AREA, THE TOWN WILL ALLOW THE SOIL CEMENT TO BE REINFORCED BY A CONCRETE MESH, BEING APPLIED IN THE SUBGRADE. APPLICATION SHALL BE SUBJECT TO THE GEOLOGICAL INVESTIGATION.	
2) A MINIMUM 12" OF 2" OR 1" INSTALLED BETWEEN THE AMENDED SOIL AND THE SUBGRADE.	
3) MINIMUM MAX DEPTH OF THE SOIL CEMENT MIXTURE SHALL BE 18" WITH A 5-5-55 CEMENT CONTENT.	
 TOWN OF EASTON TOWN ENGINEER APPROVAL <i>[Signature]</i> TOWN ENGINEER TOWN OF EASTON STANDARD DETAILS	
PAYING NOTES	
DATE: <u>1/10/20</u>	
ISSUED: <u>JANUARY 2020</u> STANDARD NO: <u>TOE-R-102</u>	

CONCRETE QUICK REFERENCE LIST

CAST-IN-PLACE CONCRETE SIDEWALKS AND CURBS

A. MATERIALS

1. SUBMIT MAXIMUM TEST FOR APPROVAL PRIOR TO PLACING CONCRETE (MPSA MAX #5 FOR ALL CONCRETE SIDEWALKS AND ENTRANCES, MINIMUM JOB SPEC UNLESS APPROVED BY ENGINEER. DO NOT PUT CONCRETE EXCEPT MAXIMUM WATER CEMENTitious RATIO OF 0.45 AND 81% MINIMUM CEMENTitious MATERIALS, AND EXCEEDING MAXIMUM LABORATORY TESTING.

2. SUBMIT CONCRETE TESTING AGENCY FOR APPROVAL, WHICH CONTRACTOR OR PROJECT OWNER SHALL EMPLOY FOR INFELD AND LABORATORY TESTING.

B. CONCRETE PLACEMENT

1. NOTIFY TOWN OF INTENTION TO PUT CONCRETE 24 HOURS PRIOR TO PERFORMING WORK. (PHONE: 100-862-4421)

2. TOWNSHIP SHALL PRESENT CONTRACTOR GENERATED MAX DELIVERY TICKET UPON ARRIVAL TO TOWNSHIP. DO NOT EXCEED WATER TO MAX 1 JOB SPEC UNLESS APPROVED BY ENGINEER. DO NOT PUT CONCRETE DURING RAIN EVENTS.

3. TESTING AGENCY SHALL TEST FOR SLUMP, TEMPERATURE, AND AIR ENTRAINMENT AT THE JOB SITE, PRIOR TO POURING EACH TRUCK LOAD DELIVERED TO SITE. THE MAXIMUM TIME FROM AGGREGATE WATER BATCH AT PLANT TO POURING AT SITE SHALL BE WITHIN 150 MINUTES. TESTING AGENCY SHALL VERIFY EACH TRUCK LOAD MEETS ALL REQUIREMENTS. TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER WITHIN 48 HOURS OF 7 AND 28 DAY BREAKS. REPORT SHALL INCLUDE LOCATION OF TOWN PER PLAN STATION(S).

4. TESTING AGENCY SHALL COLLECT CORES FOR COMPRESSION TESTING ON EACH TRUCK LOAD OF CONCRETE. FOUR (4) CORES PER TRUCK LOAD. TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER WITHIN 48 HOURS OF 7 AND 28 DAY BREAKS. REPORT SHALL INCLUDE LOCATION OF TOWN PER PLAN STATION(S).

5. PREPARE, FRESH OR REPAIR, CONCRETE SHALL VERIFY THAT AREA OF CONCRETE WORK IS PROPERLY PREPARED, FREE OF WATER, FREE OF UNDESIRABLE MATERIALS AND THAT ALL REINFORCEMENT REQUIRED AT DRAINAGE, RAMP, VALLEY SLOTTING, ETC IS IN PLACE AND PROPERLY SUPPORTED.

6. COLD WEATHER CONCRETE PLACEMENT SHALL BE PROTECTED FROM DAMAGE AND PROOF FREEZING.

7. CONCRETE CURE AND SIDEWALKS SHALL HAVE PROPER CURING, INSTALLED AT 10 FOOT INTERVALS AND JOINTS AT 20 FOOT INTERVALS. MAXIMUM EXPANSION JOINTS SHALL BE 100 FEET.

8. CONCRETE CURE AND SIDEWALKS SHALL HAVE PROPER CURING, INSTALLED AT 10 FOOT INTERVALS AND JOINTS AT 20 FOOT INTERVALS. MAXIMUM EXPANSION JOINTS SHALL HAVE UNPAVED JOINTS AT 20 FOOT INTERVALS UP AT CHANGE OF DIRECTION.

APPROVAL

[Signature]
TOWN OF EASTON
STANDARD DETAILS

CONCRETE QUICK REFERENCE LIST

DATE *1/30/20* **ISSUED** **JANUARY 2020** **STANDARD NO:** **TCE-R-103**

CAST-IN-PLACE CONCRETE SIDEWALKS AND CURBS

A. Summary

- 1) Submit mix design for approval prior to placing concrete (MSHA MC #3 for all concrete sidewalks, air entrained, minimum 3500 psi min.). For curb and gutter, utilize MSHA MC #7; exceed maximum water cementitious ratio of 0.45 and 611 pounds minimum cementitious materials or air entrained, minimum 4200 psi min.
- 2) Submit Concrete Testing Agency for approval, which contractor or project owner will arrange for testing and laboratory testing.

B. Concrete Placement

- 1) Notify the Town of Intention to pour concrete 24 hours prior to performing work. (Phone: 410-825-8822).
- 2) Diver shall present computer generated mix delivery ticket upon arrival to site. Do not add water to mix at job site unless approved by Engineer. Do not pour concrete during rain events.
- 3) Testing Agency shall test for slump, temperature and air entrainment at the job site, prior to pouring each truck load delivered to site. The maximum time from adding water to batch of concrete to discharge of site shall be 1 1/2 hours. Testing Agency shall verify that subgrade is properly compacted.
- 4) Testing Agency shall collect samples for compression testing on each truck load of concrete delivered to site per ACI requirements. Test results shall be reported to the Engineer within 48 hours of test and 28 day results. Report shall include location of pour per plan stationing.
- 5) Engineer or his representative shall verify that area of concrete work is properly prepared, free of water, free of undesirable material and that all reinforcement required at driveway, ramp, curb and gutter is in place and properly supported.
- 6) Cold weather concrete placement shall be protected from damage and frost, freezing action or low temperatures. No unapproved admixtures are permitted.
- 7) Concrete curb and sidewalks shall have proper control joints installed at 10' intervals for curb and 5' foot intervals for sidewalks, curb & gutter shall have contraction joints every 10'-0" and expansion joints every 45'-0". Extended concrete curb & gutter shall have contraction joints every 10'-0", and expansion joints every 100'-0" and at point of tangent or curve. Sidewalk shall have expansion joints at 20' intervals or at change of direction.

PLAN

ELEVATION

SECTION A-A

NOTES

- TO BE USED ON WIDE SIDEWALKS OR SIDEWALKS WITH SLOPED GRADIENT FROM THE ROADWAY WHERE THE CURBVIEW IS DESIRED. DETAILS ABOVE CAN BE SATISFIED, MAY BE MODIFIED TO SUIT A PARTICULAR LOCATION.
- WHERE 6" SIDEWALK CAN NOT BE PROVIDED, A DESIGN WALKER MUST BE REQUESTED.
- NO TRANSVERSE CURB ON THE TOP OF SIDEWALK SHALL EXCEED 12:1 IN THE DIRECTION OF PEDESTRIAN TRAVEL OR 4:1 IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- EXPANSION JOINT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY STANDARD 7.0.3.
- EXPANSION JOINT SHALL BE SHOWN ON PLANS TRANSLVERSELY AND PERSPECTIVE WITH THE CENTER OF THE RAMP ALIGNED TO A LINE ON THE CONSTRUCTION CONNECTION. SEPARATE DETAILS SHALL BE SHOWN WHERE PROPOSED RAMP VARIES FROM STANDARD SLOPES.
- TRANSITION POINTS TO THE INTO EXISTING SIDEWALK SHALL BE A MINIMUM OF 5' IN LENGTH.

APPROVAL

[Signature]

CITY ENGINEER

DATE: 1/10/20

TOWN OF EASTON
STANDARD DETAILS

SIDEWALK RAMPS
PERPENDICULAR

ISSUED: JANUARY 2020

STANDARD NO: TOE-R-7.03

The diagram illustrates a cross-section of a pavement repair. At the top, a 5'-0" MIN. REPAIR WIDTH is indicated. Below this, a 1'-2" MIN. dimension is shown for the base course. The repair consists of several layers: a 2" SURFACE COURSE, a TACK COAT, a 2" SURFACE COURSE, a TACK COAT, and a 4" BASE COURSE. A 4" MIN. dimension is shown for the base course. The repair is shown on a 12" MIN. dimension. A legend at the bottom indicates: [Hatched Box] - HOT MIX ASPHALT and [Stippled Box] - CR-6.

5'-0" MIN. REPAIR WIDTH

1'-2" MIN.

2" SURFACE COURSE

TACK COAT

4" MIN.

4" BASE COURSE

12" MIN.

[Hatched Box] - HOT MIX ASPHALT

[Stippled Box] - CR-6

[illegible]

OF THE LANDS OF

GRADING DETAILS

PRESTON POWERSPORTS

TAX MAP 25, GRID 6, PARCEL 113
FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND
PREPARED FOR AEBMD ROUTE 50, LLC

RAUCH
inc.
Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3667

REVISIONS

DESCRIPTION

REV. #	DATE
--------	------



DATE:	5/1/2024
SCALE:	1" = 40'
DRAWN BY:	JWL
DESIGNED BY:	JWL
APPROVED BY:	JWL

SHEET NO.: **C-305**

**FOR
REVIEW**

APPROVED:

TOWN OF EASTON - TOWN ENGINEER

APPROVED:	
TOWN OF EASTON PLANNING AND ZONING	DATE

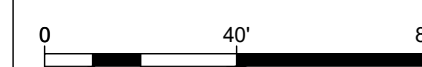
APPROVED:

EASTON UTILITIES - ENGINEER DATE

	PAVEMENT PARKING LOT
	ESD BED BOTTOM
	GRAVEL LOT
	FLAT AREA FOR UTV/ATV PARKING
	CONCRETE

1	EXISTING FENCE/VEGETATION TO PROVIDE BUFFER TO HYDE PARK PROPERTY
2	SUBMERGED GRAVEL WETLAND AND FOREBAY TO BE PLANTED WITH SHENANDOAH, HENRY'S GARNET, SWAMP ROSE, AND OR APPROVED NATIVE EQUIVALENT SPECIES

GENERAL NOTE: ALL LANDSCAPE PLANTINGS SHALL BE APPROVED NATIVE SPECIES



APPROVED:

TOWN OF EASTON - TOWN ENGINEER

APPROVED:	
TOWN OF EASTON PLANNING AND ZONING	DATE

APPROVED:	
EASTON UTILITIES - ENGINEER	DATE

LANDSCAPING PLAN

OF THE LANDS OF

PRESTON POWERSPORTS

TAX MAP 25, GRID 6, PARCEL 113

FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND

PREPARED FOR ADBMD ROUTE 50, LLC

RAUCH
INC.

**Engineering | Survey | Architecture | Environmental
inc.**

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 9081 | Fax: 410 770 3667

REVISIONS

REV. #	DATE	DESCRIPTION
1		






DATE: 5/1/2024

SCALE: 1" = 4'

DRAWN BY:	JWL
DESIGNED BY:	JWL

DESIGNED BY:	JWL
APPROVED BY:	JWL

SHEET NO. :

SHEET NO.: C-4

0-4

FOR

REVIEW

HATCH LEGEND

	PAVEMENT PARKING LOT
	ESD BED BOTTOM
	GRAVEL LOT
	FLAT AREA FOR UTV/ATV PARKING
	CONCRETE

TAX MAP 25, PARCEL 11
N/F LANDS OF
ELISHA COOPER
885/613

TAX MAP 17, PARCEL 39
N/F LANDS OF
SUN HYDE PARK LLC
2676/50

TAX MAP 25, PARCEL 13
N/F LANDS OF
SUN HYDE PARK LLC
2676/44

TAX MAP 25, PARCEL 114
N/F LANDS OF
ARC FAMILY LLC
1285/676

PROPOSED SITE FEATURES

- 1 20,092 SF PRESTON POWERSPORTS BUILDING
- 2 6" SDR-35 SEWER
- 3 SEWER CLEANOUT
- 4 OIL/WATER SEPARATOR
- 5 1.5" HDPE SDR-11 FORCE MAIN
- 6 E-ONE GRINDER PUMP AND ALARM PANEL
- 7 6" FIRE SUPPRESSION LINE
- 8 4" UNDERGROUND ELECTRIC CONDUIT
- 9 3 PHASE TRANSFORMER
- 10 2" POTABLE WATER LINE
- 11 2" COMMERCIAL WATER METER
- 12 2" COMMUNICATION CONDUIT
- 13 6" WATER SERVICE WITH TAPPING SLEEVE AND 6" C509 AWWA GATE VALE
- 14 500 GAL. FUEL TANK ON A CONCRETE PAD

UTILITY PLAN

OF THE LANDS OF

PRESTON POWERSPORTS

TAX MAP 25, GRID 6, PARCEL 113
FIRST ELECTION DISTRICT, TALBOT COUNTY, MARYLAND
PREPARED FOR ADBMD ROUTE 50, LLC

RAUCH
Engineering | Survey | Architecture | Environmental

Main Office: 106 N Harrison St - Easton, MD 21601
Web: www.rauch-inc.com | Email: design@raucheng.com
Phone: 410 770 8081 | Fax: 410 770 3987

REVISIONS

DESCRIPTION

REV. #

DATE



DATE: 5/1/2024
SCALE: 1" = 40'
DRAWN BY: JWL
DESIGNED BY: JWL
APPROVED BY: JWL

SHEET NO.: C-501

FOR REVIEW

APPROVED:

TOWN OF EASTON - TOWN ENGINEER

DATE

APPROVED:

TOWN OF EASTON PLANNING AND ZONING

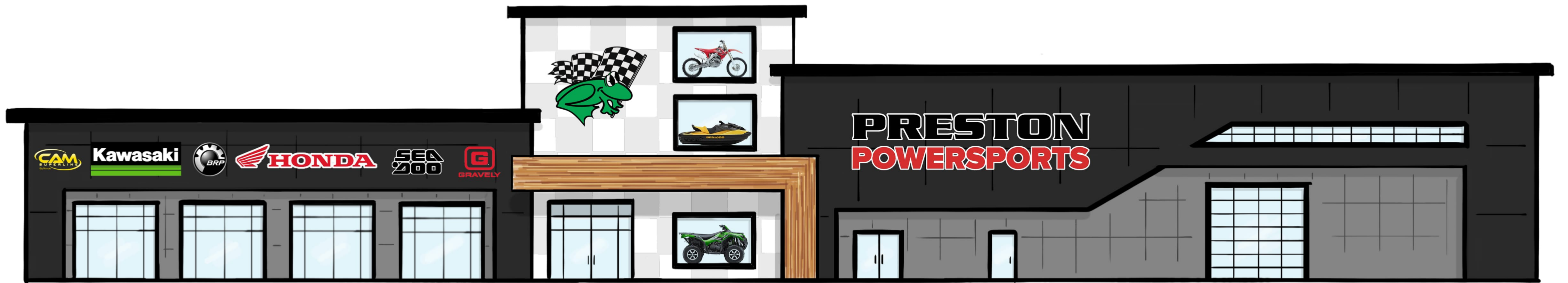
DATE

APPROVED:

EASTON UTILITIES - ENGINEER

DATE





Preston Powersports - Easton, MD
 Preliminary Design - Exterior Elevation
 April 25, 2024

Page 128 of 128