CHESAPEAKE BEACH
CHARTER FISHING
ROD 'N REEL

CHESAPEAKE BEACH
ROD 'N' REEL

THE ROD & REEL INC. PROPERTIES

LOT 1 & RESIDUE TRACT ONE

THIRD DISTRICT

CALVERT COUNTY, MARYLAND

GENERAL NOTES:

1. This Site Plan is for the renovation and redevelopment of an existing hotel and resort, including restaurants, gaming and meeting rooms, and the continued use of a Museum, Marina and associated parking facilities.
2. The property is identified as Parcel 28, Lot 1 Tract 1 and Residue Tract 1 on Calvert County Tax Map 103.
3. Total Site Area: 230,544 sf or 5.29 acres
4. Area dedicated to public roads: 0 acres
5. The contractor will have sole responsibility for the construction means, methods, and techniques of executing his work, including safety.
6. The property is zoned M, Maritime and is located within the Bonus Density Overlay District, as shown on the Town of Chesapeake Beach Zoning Map.
7. Zoning Regulations for the M Zone

	Required	Provided
Minimum lot size:	5,000 sf	33,230 sf
Minimum lot width:	25 ft	230 ft ±

8. Setbacks, Open Space and Height

	Required	Provided
Minimum front yard setback:	10 ft	* **
Minimum side yard setback:	8 ft	* **
Minimum rear yard setback:	20 ft	* **
Minimum open space:	20%	32.7%
Maximum building height:	70 ft	70 ft

* The setbacks on Lot 1 adjoining Residue Tract 1 will be abandoned because the development is combined.
** The proposed building on the northeastern corner of Residue Tract 1 is being built over the existing building foundation.

9. Parking
   A. Parking Required: 722 spaces (see tabulation chart below)
   B. Parking Provided: 728 spaces
      551 Standard Parking spaces
      140 Compact Parking spaces (max 144 or 20%)
      17 Handicap spaces
      17 Van Accessible Handicap spaces (min 1/4 of H/C spaces)
      3 Bus Parking Spaces
      728 Total spaces provided
10. Loading: (See loading tabulation chart)
    Loading Required: 1 spaces
    Loading Provided: 3 spaces
11. Bicycle Parking: (See bicycle parking tabulation chart)
    Required: 22 spaces
    Provided: 24 spaces
12. The Property is located entirely in the Intensely Developed Area (IDA) of the Chesapeake Bay Critical Area. Stormwater Management facilities are indicated on the Site Plan which demonstrate compliance with the Development Standards in Intensely Developed Areas (IDA's), per Section 4-410(a)(5) of the Town of Chesapeake Beach Zoning Ordinance.
13. The subject property is located within the 100-year floodplain per the Federal Emergency Management Agency, Flood Insurance Rate Map for the Town of Chesapeake Beach, Maryland, Calvert County, Community Panel No. 24009 C0091G, Effective date: November 16, 2014.
14. The project area lies within the Flood Hazard Zone AE-Elevation 4.0', AE Elevation = 5.0' and VE Elevation 6.0' per the Chesapeake Beach Town Flood Management Ordinance. A 1-foot buffer shall be added to the base elevation of 6.0.
15. All mechanical and electrical infrastructure shall be no lower than elevation 7.0. All enclosed areas below elevation 7.0 shall be vented.
16. An Elevation Certificate shall be provided prior to the issuance of the Use and Occupancy Permit.
17. Impervious Area Summary
    Limits of Construction: 199,981.0 sf (4.59 ac)
    Existing Impervious Area: 192,575 sf (4.42 ac)
    Proposed Impervious Area: 176,823.0 sf (4.04 ac)
18. Existing Forest: There is no existing forest on site.
19. A Sediment and Erosion Control Plan will be prepared, in accordance with 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control and shall be filed with Calvert County Soil Conservation District.
20. The development is in conformance with the habitat protection areas provisions of the Town Critical Area Program.
21. Test pit required to locate all dry and wet utilities such as ex. water & sewer, gas, electric cable prior to constructing entire storm drain and water & sewer system. minimum 12" vertical clearance required between existing and proposed pipes. the contractor shall contact the engineer immediately if the above mentioned clearance can not be achieved prior to construction.
22. All walls, decks, and other areas with elevation change greater than 30" shall have a safety railing (42" min.) to match existing railings.
23. Provide handrails for all ramps and pedestrian areas with a longitudinal slope of 4% or greater.
24. Site Fills: Per geotechnical report prepared by Hillis-Carnes, the pavement section is based on at least 2 feet of imported soil. The soil can be common borrow excluding CH, CL (with less than 30% sand), OL, MH, ML (with less than 30% sand), or RC-6. The imported fill soil subgrade should be compacted to a minimum of 95% of the maximum dry density in accordance with ASTM D 698 or AASHTO T-99. Fills less than 2 feet shall be RC-6. Existing asphalt shall be sheeps foot rolled prior to placement. All concrete/asphalt shall be removed below green space areas.
25. Source of topography was field run by Ben Dyer Associates, Inc.
26. Provide railing on all walls over 30" in height.

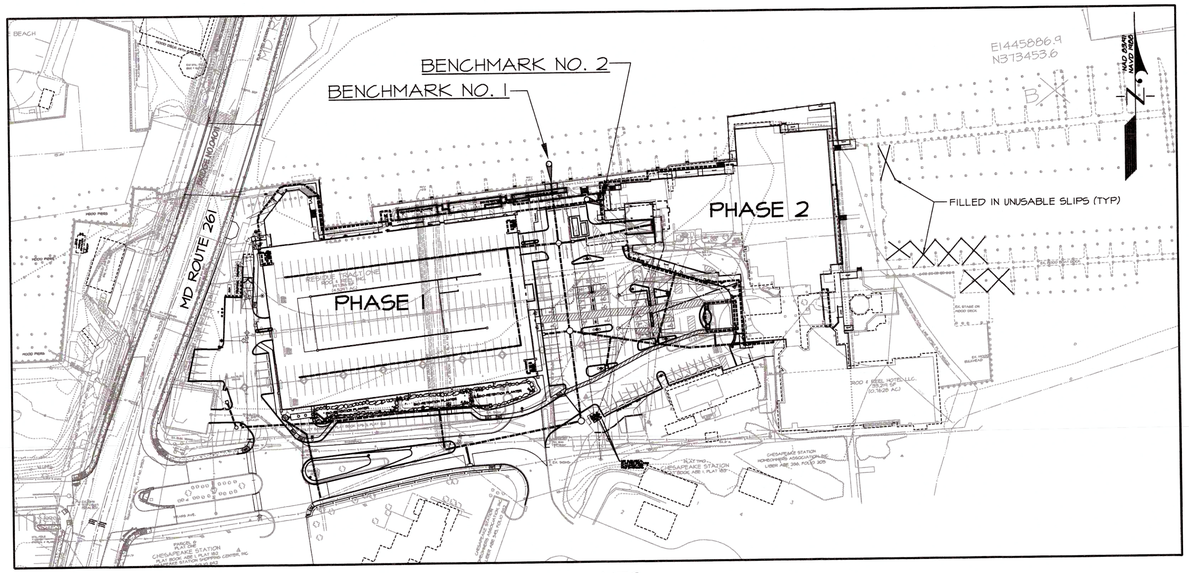
CRITICAL AREA CALCULATIONS

A) Area within 15' Buffer Yard = 13,450 SF
B) Area of Buffer Yard Plantings = 3,275 SF
C) Area of remaining Buffer Yard Mitigation ((A x 75%) - B) = 6,813 SF
D) Area of disturbance within the 100' BEA = 72,973 SF
E) Twice the size of area of disturbance within the 100' BEA (D x 2) = 145,916 SF
F) Area of onsite forest planting = 10,891 SF
G) Removal of existing impervious surface = 16,553 SF
H) Required offset mitigation ((C + E) - (F + G)) = 125,315 SF

Proposed Offsets:

I) Offsite Stormwater Runoff Treatment = 152,460 SF
J) Construction of Best Management Practices for stormwater in excess of those required = 20,038 SF
(includes excess drainage area from Mears Avenue treated in 1,123 SF of micro-bioretention area)
K) Total Offsets Proposed (I + J) = 172,498 SF

USE	AREA (GFA)	CAPACITY (persons)	LAND USE CLASSIFICATION	STANDARD REQUIREMENT	REQUIRED SPACES (sub)	(total)	Total (roundup)
Assembly						255.00	255
Banquet/Meeting Rooms/Atrium		850		30% of legal seating capacity of persons	255.00		
Dining (dining rooms only)			Restaurant	30% of legal seating/standing capacity of persons		120.60	121
Rod & Reel Main Dining Room & Bar		172		seating	51.60		
Crab House		120		seating	36.00		
Quick Serve (prev. Smokey Joe's)		50		seating	15.00		
Boardwalk Café deck		60		seating	18.00		
Outdoor Patron Area (East Sized Area)		475	Outdoor Entertainment	30% of legal seating capacity of persons*	142.50	142.50	143
Machine Gaming (278 machines)		278		0.5/ machine*	139.00	139.00	139
Bingo		150	Church	1/4 seats*	37.50	37.50	38
Spa	2,000 SF		Personal services	1/250 sf GFA	8.00	8.00	8
Hotel			Hotel	1/unit +1/staff		142.00	142
Units		132			132.00		
Staff		10			10.00		
Museum			Museum	1/500 sf GFA + 1/staff		3.00	3
Museum	1,000 SF				2.00		
Staff	1				1.00		
Marina			Marina	3/5 boat slips		56.75	57
Boat Slips		55	(65 - 10 transient)	3/5 boat slips	33.00		
Charter		25	(27 - 2 gas dock)	3/5 boat slips	15.00		
Yacht/Boat		1 35		1/4 persons	8.75		
TOTAL					904.35	904.35	905
Shared Parking Reduction (Sec 290-20-(5))				20% *	-180.87		
TOTAL with Shared Parking					723.48	723.48	724
*As determined by the Planning Commission							
Standard Parking spaces (9' x 18' angle, 9' x 22' parallel)					549		
Compact Parking spaces (up to 20%) (8' x 17')					114		
Handicap spaces (12' x 18')				1/25 spaces required	29		
TOTAL					722.00	722.00	722
Off-street Loading Spaces Sec. 290-20-A (8)(b)[2] (351' x 12' w x 15'h)							
Hotel Sec. 290-20-A (8)(c)[2]	72,932 SF		Hotels	1st 10,000 sf: none 1/10,000 sf to 100,000 sf 1/ea additional 100,000 sf or fraction thereof	1.00		
Retail sales and services Sec. 290-20-A (8)(c)[3]	1,762 SF		Retail sales and services, per store	1st 2,000 sf: none 1/2,000 sf to 10,000 sf 1/ea additional 25,000 sf or fraction thereof	0.00		
Sec. 290-20-D Off-street loading spaces Any building or part thereof occupied by GFA ≥ 4000 sf of manufacturing, storage, warehouse, goods display or sales, mortuary, or other uses similarly requiring the receipt and distribution by vehicles of material or merchandise - loading spaces (10'w x 45'l x 14'h)	957 SF		Retail	1 space + 1 space/10,000 sf GFA or major fraction thereof	1.00		
	12,700 SF		Restaurant				
TOTAL						2.00	
Bicycle Spaces (6' x 2')							
Hotel			Bed & breakfast, hotels, motels	2, or 1/25 employees	2.00		
Museum	1,000 SF		Museums, library, similar	4, or 1 /3000 sf GFA	1.00		
Indoor amusement (arcade, bingo & gaming)		500	Indoor amusement	4, or 1/50 seats	10.00		
Restaurants, ice cream shops, coffee shops		380	Restaurants, ice cream shops, coffee shops	4, or 1/50 seats	7.60		
Retail, spa	3,762 SF		Retail sales , service operations	2, or 1/5000 sf GFA	1.00		
TOTAL						22.00	

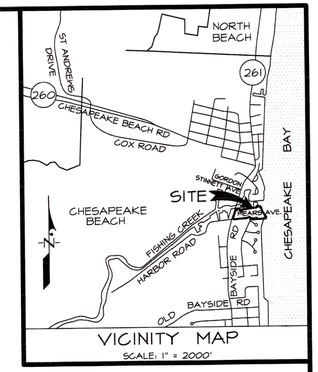


SUMMARY TABLE
SITE AREA = 5.29 AC.
LIMIT OF CONSTRUCTION = 4.59 AC.
EXISTING IMPERVIOUS AREA = 4.42 AC.
IMPERVIOUSNESS : ~~I=59~~ I = 83.6% > 40%
~~REDEVELOPMENT~~ PROJECT
PROPOSED IMPERVIOUS AREA = 4.04 AC.
REDUCTION IN IMPERVIOUS AREA = 0.38 AC.

BENCHMARK NO. 1
BM NAIL IN BULKHEAD
ELEV.=2.35 (NAVD 88)
N. 313,300.59 E. 1,445,278.86

BENCHMARK NO. 2
BM SQ. CUT
ELEV=2.45 (NAVD 88)
N. 313,273.33 E. 1,445,338.43

TOWN OF CHESAPEAKE BEACH
APPROVED Mayor V. Reis
APPROVED AS NOTED _____
COMMENTS _____
BY _____ DATE 12/6/17



BEN DYER ASSOCIATES, INC. DRAWING INDEX

SHEET NO.	SHEET NAME	BDAI DWG. #
CS	COVER SHEET	6.063-Y
C-1	SITE PLAN	6.064-Y
C-2	SITE PLAN	6.065-Y
C-3	SITE DETAILS	6.066-Y
C-4	SITE DETAILS	6.067-Y
L-1	LANDSCAPE PLAN	50.005-Y
L-2	LANDSCAPE PLAN	50.006-Y
L-3	LANDSCAPE DETAILS	50.007-Y

SITE DEVELOPMENT PLAN
COVER SHEET
FOR
LOT 1 & RESIDUE TRACT ONE
THE ROD & REEL INC. PROPERTIES
TOWN OF CHESAPEAKE BEACH
THIRD DISTRICT
CALVERT COUNTY, MARYLAND

GRAPHIC SCALE 1"= 200'
0 200 400 600

CS
PLAT BOOK KPS 2, PLAT NO. 122

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
MORGAN M. MALUBITA, JR.
LICENSE NO. 34788
EXPIRATION DATE: 10/03/21
STATE OF MARYLAND — MORGAN MICHAEL WALUBITA — 34788 — PROFESSIONAL ENGINEER
12/4/2020

DATE	DESCRIPTION	BY
	REVISIONS	
10-26-20	REVISED PHASE 2	PM
11-3-17	BID SET	PM

11721 WOODMORE ROAD, SUITE 200
MITCHELLVILLE, MARYLAND 20721
BEN DYER ASSOCIATES, INC.
Engineers / Surveyors / Planners
TELEPHONE (301) 430-2000
COPYRIGHT © 2015 BEN DYER ASSOCIATES, INC.
DRAWN BY JPS | DESIGNED BY CG | CHECKED BY FBA | RECORD NO. J-B03021
SCALE NO SCALE
DATE JANUARY 2016
DRWG. NO. 6.063-Y
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FISHING CREEK

BRIDGE NO.04011

MD ROUTE 261

MEARS AVENUE

MEARS AVE.

RESIDUE TRACT ONE
ROD & REEL INC.
197,316 SF
(4.5297 AC±)

PROPOSED RESTAURANT WEST
LL=8.0
2ND=19.0

ELEVATED DECK
EL=19.0 (SEE ARCH)

PROPOSED 4 LEVEL PARKING FACILITY
648 TOTAL SPACES
491 STANDARD 9' X 18' SPACES
140 COMPACT 8' X 18' SPACES
10 CAR HANDICAPPED SPACES
7 VAN HANDICAPPED SPACES

BIO-RETENTION PLANTER

PROPOSED 12'x35' DUMPSTER PAD WITH VINYL FENCE AND GATE (SEE DETAIL) +5.5

PROPOSED 5' CONC. SIDEWALK

PROPOSED STEPS FROM LOWER DECK (EL.=8.0) TO ELEVATED DECK (EL.=19.0) SEE ARCH.

PROPOSED WOOD WALK (ELEV. 3.5) (SEE ARCHITECTURE)

PROVIDE RAILING ON ALL WALLS OVER 30" HT.

RAISED CONCRETE FUEL PAD (TO ELEVATION 3.5)

EXISTING SIDEWALK SHALL BE REMOVED AND REPLACED

3RD FLOOR DECK/ROOF OVERHANG

FILL EXISTING GRASS AREA WITH 2" DIA. x 6" DEEP RIVERSTONE OVER FILTER FABRIC TO MATCH EDGE OF EXISTING SIDEWALK/DECK

NEW PROPOSED WOOD DOCK TO MEET EXISTING SIDEWALK

RAMP WOOD WALKWAY DOWN FROM ELEVATION 3.5 TO 2.5

4 SPACE BIKE RACK ON LOWER WALK (SEE DETAIL)

INTERPRETIVE SIGNAGE

PLANTING AREA SEE BDAI NO. 50.005-1

MEET AND MATCH SHA GRADING ON-SITE

PROP GREASE TRAP

(1) 12'x35' LOADING SPACE

SEE MECHANICAL PLANS FOR BOLLARD PLACEMENT AND PAD DIMENSIONS

SEE ELECTRICAL PLAN FOR BOLLARD PLACEMENT AND PAD DIMENSIONS

ACCESS ISLAND WITH GATES (SEE ARCHITECTURE)

WHEEL STOPS TYP

FLUSH CURB

STORMFILTER WATER QUALITY DEVICE OR APPROVED EQUAL TO TREAT 3.5 ACRES OF OFFSITE STORMWATER RUNOFF FROM 5 ACRE DRAINAGE AREA INCLUDING CHESAPEAKE STATION SHOPPING CENTER, SEE STORM DRAIN DRAWINGS

FILL VOID UNDER RAMP W/ RC-6 STONE TO EL. 5.9

ALL LIGHTS ALONG MEARS AVENUE TO BE MOUNTED FLUSH TO GROUND LEVEL

EXISTING LIGHT POLE (TO BE REMOVED)

INTERPRETIVE SIGNAGE

PROPOSED NO IDLING AND NO LOADING OR UNLOADING SIGNS

BUS PARKING (3)

SEE BDAI SHEET C.18 FOR FLUSH CURB AND RAMP DETAIL

EXISTING SPLIT RAIL FENCING SHALL BE REMOVED AND RELOCATED AS REQUIRED 2'MIN. BEHIND PROPOSED SIDEWALK / EX. DECK

THE CONTRACTOR SHALL NOTIFY MISS UTILITY 1-800-257-7777, FORTY-EIGHT (48) HOURS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.

MATCH LINE SEE SHEET C-2

MD STATE PLANE MERIDIAN

NAD 83/91 NAVD 1988

LEGEND

- PARKING LOT LIGHTING SEE DETAIL 20 SHEET C-4 FOR ALL OTHER LIGHTING SEE ARCHITECTURE
- BOLLARD LOCATIONS
- LIGHT BOLLARD LOCATIONS
- FH FIRE HYDRANT LOCATIONS
- CONCRETE WHEEL STOP
- 78 EXISTING CONTOURS
- 78 PROPOSED CONTOURS
- 08x3 10x3 EXISTING SPOT ELEVATION
- 08.3+ 10.3 + PROPOSED SPOT ELEVATION
- LOC LIMIT OF CONSTRUCTION
- LOD LIMIT OF DISTURBANCE
- PROPOSED FLOW ARROWS
- PROPOSED WOOD DECK
- PROPOSED CONCRETE PAVING
- PROPOSED HEAVY DUTY CONCRETE PAVING
- 2" X 6" DEEP RIVERSTONE OVER FILTER FABRIC SEE NOTE FOR SIDE PANELS
- PROPOSED MILL & OVERLAY
- PROPOSED ASPHALT PAVING
- EXISTING SEWER
- PROPOSED SEWER
- EXISTING WATER
- PROPOSED WATER
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING GAS LINE
- PROPOSED GAS LINE
- EXISTING TREE LINE
- 4 STANDARD PARKING SPACES
- 4 HANDICAPPED PARKING SPACES
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER
- FLOOD HAZARD ZONE
- HISTORICAL EASEMENT
- PROPOSED ELECTRICAL DUCT BANK

VICINITY MAP

SCALE: 1" = 2000'

NORTH BEACH, 261, 260, ST ANDREWS DRIVE, CHESAPEAKE BEACH RD, COX ROAD, STONEHOUSE DRIVE, HOSPITAL AVENUE, SITE, CHESAPEAKE BEACH, FISHING CREEK, HARBOR ROAD, BAYSIDE ROAD, OLD BAYSIDE RD, CHESAPEAKE BAY

1. OUTDOOR RAMP AND HANDRAILS (TYPICAL) SEE C-3
2. RAILINS (TYPICAL) SEE C-4
3. CURB RAMP TYPE 2 (TYPICAL) SEE C-3
4. CURB RAMP TYPE 1 (TYPICAL) SEE C-3
5. HANDICAPPED PARKING SPACE DETAIL SEE C-3
6. HANDICAPPED PARKING AND ACCESS AISLE SIGN (TYPICAL) SEE C-3
7. CONCRETE STAIR DETAIL (TYPICAL) SEE C-3
8. BIKE RACK DETAIL (TYPICAL) SEE C-3
9. HEAVY DUTY PAVING SECTION LOCATED OVER FUEL TANKS, HANDICAPPED AREAS AND PORTE-COCHERE SEE C-3
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14. NOSE DOWN CURB (TYPICAL) SEE C-3
15. VINYL GATE AT DUMPSTER (TYPICAL) SEE C-3
16. TYPICAL FENCE AT DUMPSTER (TYPICAL) SEE C-3
17. LIGHT POLE FOUNDATION DETAIL (TYPICAL) SEE C-4
18. INTERPRETIVE SIGNAGE DETAIL (TYPICAL) SEE C-4
19. BOLLARD DETAIL (TYPICAL) SEE C-4

TOWN OF CHESAPEAKE BEACH
APPROVED Meagan K Reiss
APPROVED AS NOTED
COMMENTS
BY DATE 12/6/17

NOTE: ALL ON SITE CURB & GUTTER SHALL BE CAL. CO STD# RD-19B

NOTE: INSET INFORMATION SHOWN ON SHEET C-4 BDAI NO. 6.066-Y

NOTE: FOR ALL PROPOSED SIGNING AND MARKING INFORMATION ON MEARS AVENUE SEE LENHART TRAFFIC CONSULTING, INC.

NOTE: SEE ARCHITECTURAL DRAWINGS FOR OUTSIDE BUILDING LIGHTING (EXCLUDING THE LIGHT POLES SHOWN IN THE PARKING LOT AND MEARS AVENUE)

SITE PLAN
FOR
LOT 1 & RESIDUE TRACT ONE
THE ROD & REEL INC. PROPERTIES
TOWN OF CHESAPEAKE BEACH
THIRD DISTRICT
CALVERT COUNTY, MARYLAND

GRAPHIC SCALE 1" = 20'
0 20 40 60

C-1
PLAT BOOK KPS 2, PLAT NO. 122

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 34788
EXPIRATION DATE: 10/23/21
STATE OF MARYLAND MORGAN M. WALUBITA 34788 PROFESSIONAL ENGINEER
12/4/2020

11721 WOODMORE ROAD, SUITE 200
MITCHELLVILLE, MARYLAND 20721
BEN DYER ASSOCIATES, INC.
Engineers / Surveyors / Planners
TELEPHONE (301) 430-2000

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11-3-17	BID SET	PM	
DATE	DESCRIPTION	BY	
	REVISIONS		

DRAWN BY: JEDI | DESIGNED BY: GS | CHECKED BY: PBM | RECORD NO.: J-B03021
SCALE: 1"=20' | DRWG. NO.: 6.064-Y
DATE: JANUARY 2016

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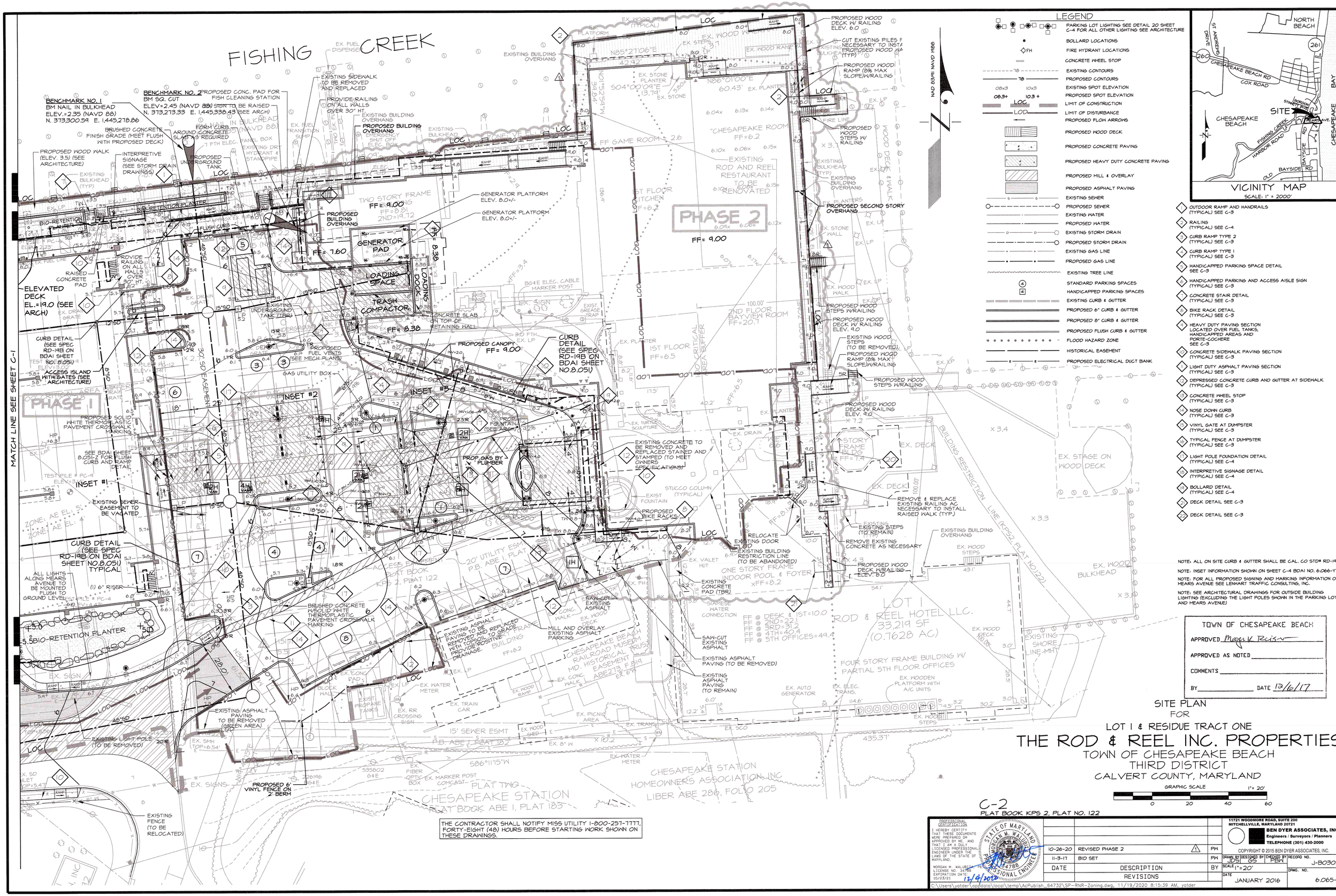

LEGEND

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- FH FIRE HYDRANT LOCATIONS
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- 083+ 103 + LIMIT OF CONSTRUCTION
- LOC LIMIT OF DISTURBANCE
- LOD PROPOSED FLOW ARROWS
- PROPOSED WOOD DECK
- PROPOSED CONCRETE PAVING
- PROPOSED HEAVY DUTY CONCRETE PAVING
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- PROPOSED 6" CURB & GUTTER
- PROPOSED 8" CURB & GUTTER
- PROPOSED FLUSH CURB & GUTTER
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- HISTORICAL EASEMENT
- E PROPOSED ELECTRICAL DUCT BANK

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21. DECK DETAIL SEE C-3
22. DECK DETAIL SEE C-3

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TOWN OF CHESAPEAKE BEACH

APPROVED Maggie K. Reiss

APPROVED AS NOTED _____

COMMENTS _____

BY _____ DATE 12/6/17

THE CONTRACTOR SHALL NOTIFY MISS UTILITY 1-800-257-7777, FORTY-EIGHT (48) HOURS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.

SITE PLAN
FOR
LOT 1 & RESIDUE TRACT ONE
THE ROD & REEL INC. PROPERTIES
TOWN OF CHESAPEAKE BEACH
THIRD DISTRICT
CALVERT COUNTY, MARYLAND

GRAPHIC SCALE 1" = 20'

0 20 40 60

C-2

PLAT BOOK KPS 2, PLAT NO. 122

PROFESSIONAL CERTIFICATION.

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

MORGAN W. WALLBRIDGE
LICENSE NO. 34789
EXPIRATION DATE: 10/23/21

STATE OF MARYLAND — MORGAN W. WALLBRIDGE — 34789 — PROFESSIONAL ENGINEER

12/4/2020

DATE	DESCRIPTION	BY
	REVISIONS	
10-26-20	REVISED PHASE 2	PW
11-3-17	BID SET	PW

11721 WOODMORE ROAD, SUITE 200
MITCHELLVILLE, MARYLAND 20721
BEN DYER ASSOCIATES, INC.
Engineers / Surveyors / Planners
TELEPHONE (301) 430-2000

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DRAWN BY JDS | DESIGNED BY GS | CHECKED BY PBW

RECORD NO. J-B03021

SCALE 1"=20'

DATE JANUARY 2016

DRWG. NO. 6.065-Y

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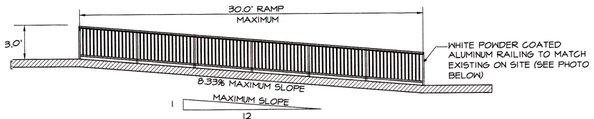
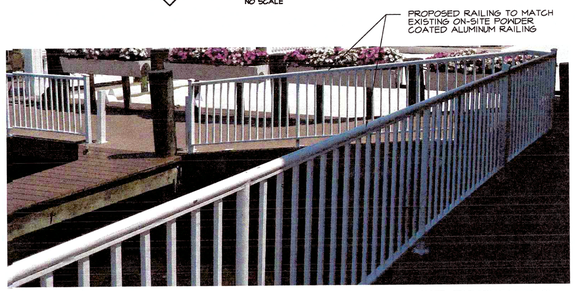
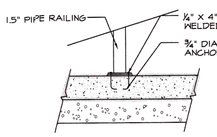


1 OUTDOOR RAMP AND HANDRAILS
NO SCALE

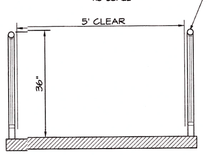


2 RAILING
NTS

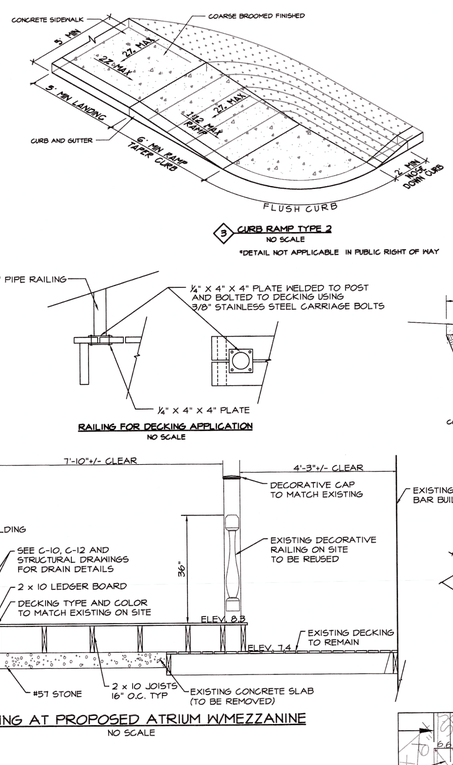
NOTE: PROVIDE RAILING ON ALL WALLS OVER 42" IN HEIGHT



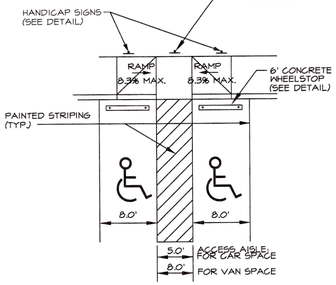
RAILING FOR CONCRETE APPLICATION
NO SCALE



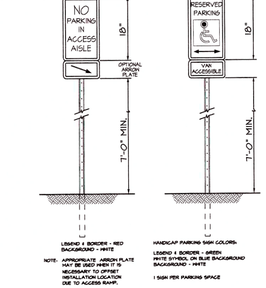
NOTE:HAND RAILS TO BE PROVIDED ON BOTH SIDES OF RAMP



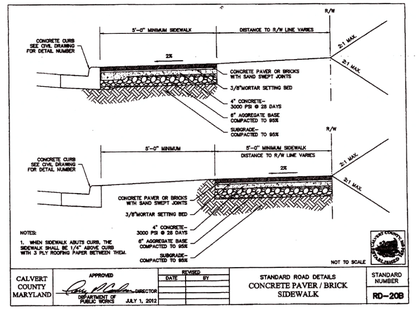
3 CURB RAMP TYPE 2
NO SCALE
*DETAIL NOT APPLICABLE IN PUBLIC RIGHT OF WAY



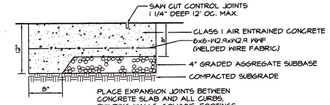
5 HANDICAPPED PARKING SPACE DETAIL
NO SCALE



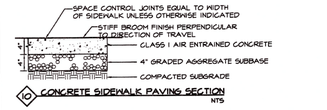
6 HANDICAPPED PARKING AND ACCESS AISLE SIGN
NO SCALE



SIDEWALK ADD ALTERNATE
(CONCRETE WALKS ADJACENT TO NEW BUILDING IN PHASE II)

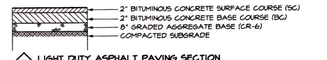


9 HEAVY DUTY CONCRETE PAVING SECTION
NTS



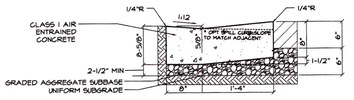
10 CONCRETE SIDEWALK PAVING SECTION
NTS

HEAVY DUTY ASPHALT PAVING SECTION
NTS
ALL DRIVE AISLES SHALL BE HEAVY DUTY APHALT

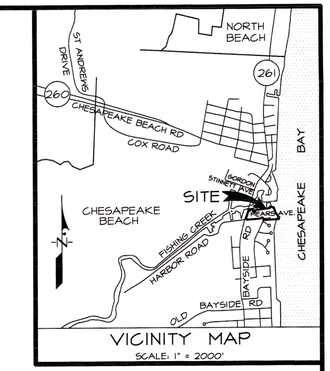


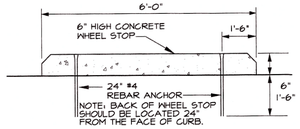
11 LIGHT DUTY ASPHALT PAVING SECTION
NTS

PAVING SECTIONS
PAVING SECTIONS SUBJECT TO REVIEW AND/OR REVISION BY GEOTECHNICAL ENGINEER

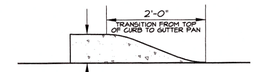


12 DEPRESSED CONCRETE CURB AND GUTTER AT SIDEWALK
THE SLOPE (*) OF A SPILL CONCRETE CURB AND GUTTER PLAN SHALL BE EQUAL TO THE CROSS SLOPE OF ROADWAY PAVING

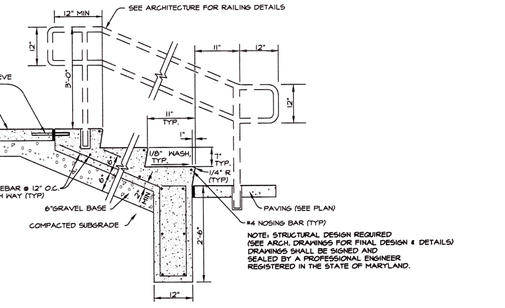




13 CONCRETE WHEEL STOP
NTS

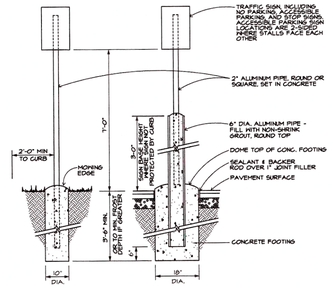


14 NOSE DOWN CURB ELEVATION
NTS



NOTE: STRUCTURAL DESIGN REQUIRED (SEE ARCH. DRAWINGS FOR FINAL DESIGN & DETAILS) DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND.

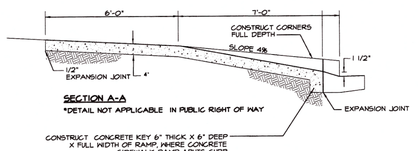
7 CONCRETE STAIR DETAIL
NO SCALE



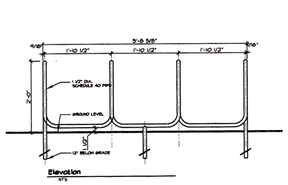
SIGN IN LANDSCAPE AREA OR SIDEWALKS
NTS

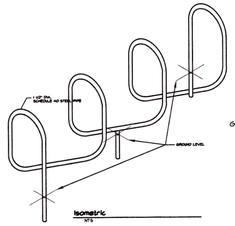
SIGN IN PARKING LOT OR DRIVE
NTS

RAILING FOR DECKING APPLICATION
NO SCALE



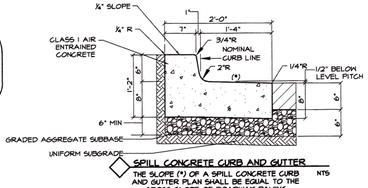
SECTION A-A
*DETAIL NOT APPLICABLE IN PUBLIC RIGHT OF WAY



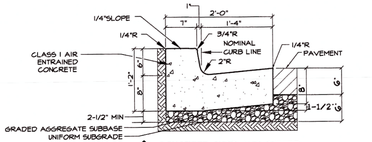


Isometric

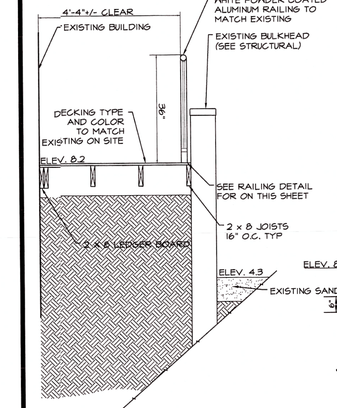
8 BIKE RACK DETAIL
NO SCALE
From www.2hbrack.com
8 Bike Rib Series III or equivalent
Material: Schedule 40 Steel
Color: Black (BK12)



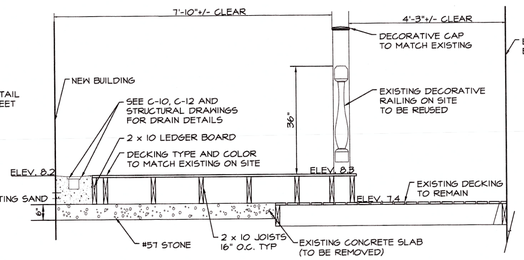
SPILL CONCRETE CURB AND GUTTER
THE SLOPE (*) OF A SPILL CONCRETE CURB AND GUTTER PLAN SHALL BE EQUAL TO THE CROSS SLOPE OF ROADWAY PAVING
NTS



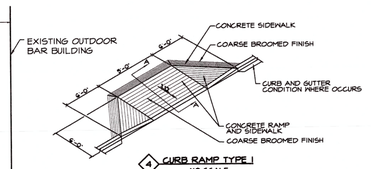
CONCRETE CURB AND GUTTER
NTS
NOTE: CONSTRUCT EXPANSION JOINTS AT 100' INTERVALS, AT BEGINNING AND END OF SHORT RADIUS (LESS THAN 100') CURVES AT STRUCTURES AND AT MID POINT OF CURB RETURN. USING ½" PERFORMED EXPANSION JOINT FILLER. NON EXTRUDING.



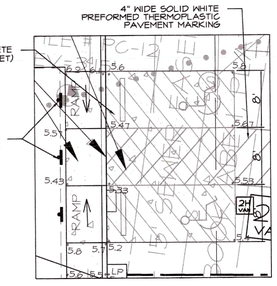
23 DECKING AT HOTEL
NO SCALE



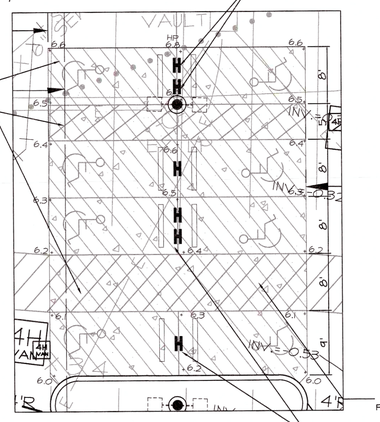
22 DECKING AT PROPOSED ATRIUM W/MEZZANINE
NO SCALE



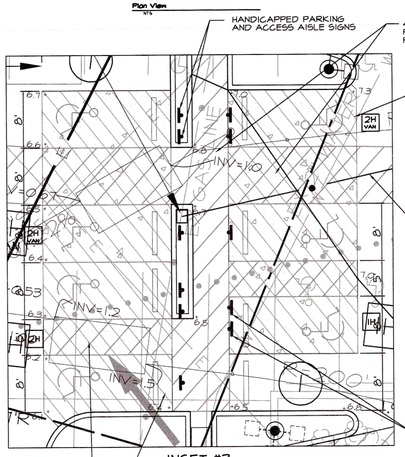
4 CURB RAMP TYPE 1
NO SCALE
*DETAIL NOT APPLICABLE IN PUBLIC RIGHT OF WAY



INSET #1
HANDICAPPED PARKING GRADING
SCALE: 1"=10'



INSET #2
HANDICAPPED PARKING GRADING
SCALE: 1"=10'



INSET #3
HANDICAPPED PARKING GRADING
SCALE: 1"=10'

TOWN OF CHESAPEAKE BEACH
APPROVED Morris K. Reis
APPROVED AS NOTED
COMMENTS
BY DATE 12/6/17

SITE DETAILS
FOR
LOT 1 & RESIDUE TRACT ONE
THE ROD & REEL INC. PROPERTIES
TOWN OF CHESAPEAKE BEACH
THIRD DISTRICT
CALVERT COUNTY, MARYLAND

C-3
PLAT BOOK KPS 2, PLAT NO. 122

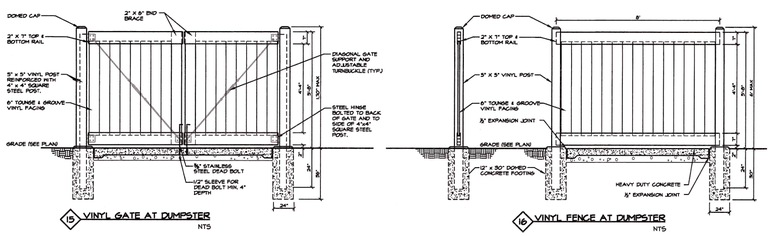
PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
MORGAN M. WALUBITA PE
LICENSE NO. 34788
EXPIRATION DATE
10/23/21
STATE OF MARYLAND MORGAN M. WALUBITA 34788 PROFESSIONAL ENGINEER
12/4/2020

DATE	DESCRIPTION	BY
11-3-17	Bid set	PW
	REVISIONS	

C:\Users\yatder\appdata\local\temp\AcPublish_64732\SP-RNR-Zoning.dwg, 11/19/2020 8:16:01 AM, yatder

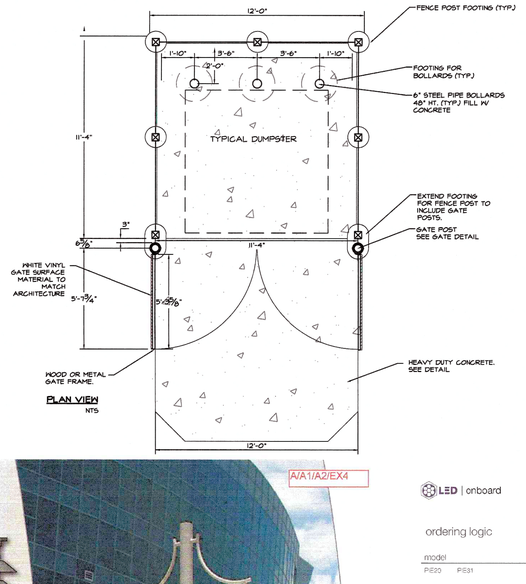
11721 WOODMORE ROAD, SUITE 200
MITCHELLVILLE, MARYLAND 20721
BEN DYER ASSOCIATES, INC.
Engineers / Surveyors / Planners
TELEPHONE (301) 430-2000
COPYRIGHT © 2015 BEN DYER ASSOCIATES, INC.

DRAWN BY	DESIGNED BY	CHECKED BY	RECORD NO.
DSJ	SG	PBM	J-B03021
SCALE	AS INDICATED		DRWG. NO.
DATE	JANUARY 2016		6.066-Y

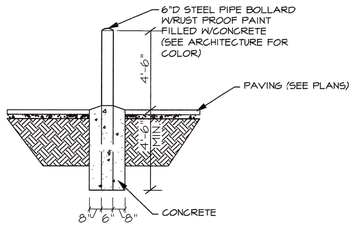


10 VINYL GATE AT DUMPSTER
NTS

10 VINYL FENCE AT DUMPSTER
NTS

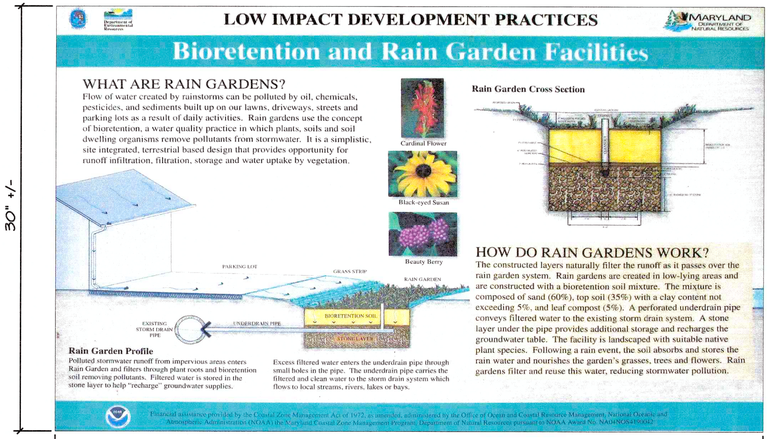


PLAN VIEW
NTS



SEE CIVIL ENGINEERING SITE PLANS FOR BOLLARD LOCATIONS

18 BOLLARD DETAIL
NTS

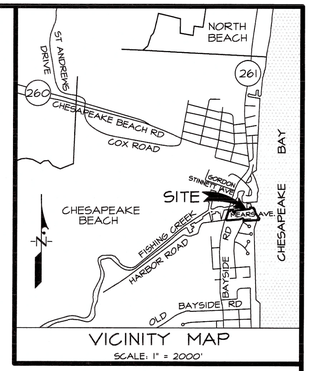


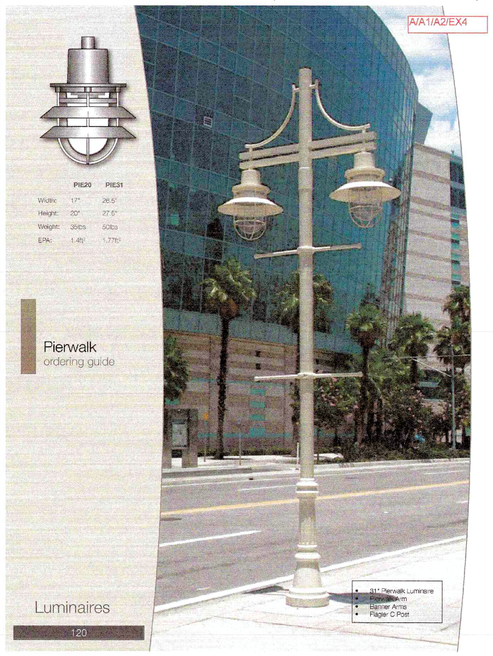
30" +/-

36" +/-

EXTERIOR INTERPRETIVE SIGNAGE
NTS
GRAPHICS BY CONTRACTOR; (SIMILAR TO ABOVE) CONTENT OF SIGN TO BE DETERMINED BY OWNER

18 INTERPRETIVE SIGNAGE DETAIL
NTS





* NOTE: FOR ALL LIGHTS ALONG HEARS AVENUE, MOUNT FLUSH TO GROUND LEVEL SIMILAR TO THE IMAGE ABOVE

LED | onboard — Contemporary Collection | Pierwalk

ordering logic

model			model (cont)		
PIE20	PIE31	20" & 31" Pierwalk	PIE20	PIE31	20" & 31" Pierwalk

lens material
- P polycarbonate

lens finish
- C clear
- F frosted
- W white

source
- LED 24, 48 & 70W
- QL 55, 85 & 165W QL induction
- PSMH 50-150W
- PSMH 175 - 250W
- HPS 50-150W
- HPS 150 - 250W
- CF 13 - 42W
- INC 150W

optics
- DFS direct type III (LED)
- DRS direct type V (LED)
- INL internal louvers
- DFS glass reflector type III
- DRS glass reflector type V

electrical options
- FS fusing
- PEC photocell
- DRS quattro resi-live
- IO lamp/ballast diagnostics
- LSP lightning surge protector

style options
- UQS unequal shades
- EQS equal shades
- SS single shade

mounting options
- PT post top (Tenon)
- PM pendant mount

Luminaires | Bollards & Columns | Floodlights | Posts & Arms | Specialties

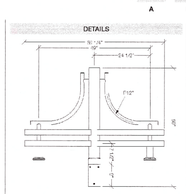
ordering ex: PIE31 / PC / PSMH150 / GR3 / PEC / UQS / PM / BB

BeaconProducts | 121

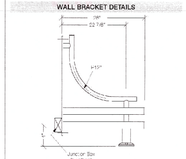
BEACON design · performance · technology
www.beaconproducts.com
Type: Project Name: Notes:
rev. 02.24.2014
AA-38 LARGE PIERWALK
Arma

Sample AA-38 S 4 B P BBT
Ordering / / / / /
A B C D E F

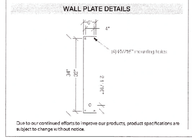
DETAILS



WALL BRACKET DETAILS



WALL PLATE DETAILS



Due to our continued efforts to improve our products, product specifications are subject to change without notice.

A. MODEL
AA-38 Large Pierwalk

B. POST SHAFT PROFILE
W wall mount
S smooth
F fluted

C. POST SHAFT DIAMETER
4 4"
5 5"
6 6"
OTHER

D. ARRANGEMENT
see arrangement table below

E. LUMINAIRE MOUNTING
P pendant

F. COLOR
BBT basic black textured
BMT black matte textured
WHT white textured
MBT metallic bronze textured
BZT bronze textured
DBT dark bronze textured
GYS gray smooth
DPS dark platinum smooth
GNT green textured
MST metallic silver textured
MTT metallic titanium textured
GWI old world iron
RAL

Construction: All cast aluminum parts shall be low copper alloy A356. All extruded aluminum parts shall be alloy 6061-T6, 6063-T5 or equal.

EPA (effective projected area): EPA is de-fined as projected surface area X drag factor) and measured in ft2. Allowable pool, luminaire arm, luminaire and accessory EPAs are derived from the most current published AASHTO (American Association of State Highway and Transportation Officials) standard, currently AASHTO 2001 (50yr design life). Customer assumes all responsibility for selecting the appropriate pole for installation (consult factory for assistance). Luminaire arm, luminaire and accessory EPA must be equal to or less than allowable EPA of pole. Consult a professional engineer for compliance with local codes and standards.

Fasteners: All fasteners shall ce Corrosion Resistant. When tamper resistant fasteners are required, spanner HD (onsite eyes style shall be provided (special tool required, available at additional cost).

Finish: Finish shall be a Beacolo V polyester powder-coat electro-statically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Limited Warranty: Beacon Products warrants its products, to the original purchaser, against defects in materials and workmanship for proper usage for a period of 5 years after date of production, when properly installed, maintained and appropriately specified. See Warranty Information on www.beaconproducts.com for complete details and exclusions.

5 watt @		A	B	C	D	E	F	G	H	I	J
20'	wt. (#)	75	-	-	-	-	-	-	-	-	-
	EPA	0.32	0.71	0.85	0.96	-	6 - 9	6.21	-	-	-
	no.of	-	-	97	90	-	55	52	-	-	-
25'	EPA	-	-	0.53	0.72	0.83	0.92	6.05	6.42	6.56	6.60
	no.of	-	-	81	67	47	33	26	20	17	17
30'	watt	-	-	6.55	6.07	6.36	6.45	6.64	6.67	6.68	6.51
	wt. (#)	-	-	55	47	40	27	19	12	10	7

array pattern (EPA # dia. ft² / weight (lbs)

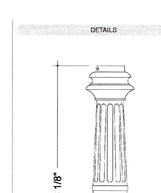
Due to our continued efforts to improve our products, product specifications are subject to change without notice.

2041 58th Avenue Circle East Bradenton, fl 34203 Phone: (800) 345-4928 Fax: (941) 751-5535 ORDERING

BEACON design · performance · technology
www.beaconproducts.com
Type: Project Name: Notes:
rev. 02.20.2014
FLAGLER C
Poles & Bases

Sample FLCC 5 BBT
Ordering / /
A B C

DETAILS



A. MODEL
FLCC Flagler C

B. POST SHAFT DIAMETER
3 3"
4 4"
5 5"

C. COLOR
BBT basic black textured
BMT black matte textured
WHT white textured
MBT metallic bronze textured
BZT bronze textured
DBT dark bronze textured
GYS gray smooth
DPS dark platinum smooth
GNT green textured
MST metallic silver textured
MTT metallic titanium textured
GWI old world iron
RAL

Construction: All cast aluminum parts shall be low copper alloy A356. All extruded aluminum parts shall be alloy 6061-T6, 6063-T5 or equal. Standard fluted shaft profile shall be 15 flat flutes for 3"OD and 12-flat flutes for 4", 5", & 6"OD.

Base Covers: require specification of smooth or fluted shafts of the size required to meet wind load requirements

Vibration Dampeners: Vibration dampener pads shall be provided when required by customer or deemed necessary by Beacon Products. Please consult factory for bridge mounted applications.

EPA (effective projected area): EPA is defined as (projected surface area X drag factor) and measured in ft2. Allowable pool, luminaire arm, luminaire and accessory EPAs are derived from the most current published AASHTO (American Association of State Highway and Transportation Officials) standard, currently AASHTO 2001 (50yr design life). Customer assumes all responsibility for selecting the appropriate pole for installation (consult factory for assistance). Luminaire arm, luminaire and accessory EPA must be equal to or less than allowable EPA of pole. Consult a professional engineer for compliance with local codes and standards.

Anchor Bolt: Anchor bolts, sized as required, double hex nuts and flat washers shall be hot dipped galvanized steel. A bolt circle template shall be provided for installation.

Fasteners: All fasteners shall be Corrosion Resistant. When tamper resistant fasteners are required, spanner HD (onsite eye) style shall be provided (special tool required, available at additional cost).

Finish: Finish shall be a Beacolo V polyester powder-coat electrostatically applied and thermocured. Beacote V finish shall consist of a five stage iron phosphate chemical pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pound.

Limited Warranty: Beacon Products warrants its products, to the original purchaser, against defects in materials and workmanship for proper usage for a period of 5 years after date of production, when properly installed, maintained and appropriately specified. See Warranty Information on www.beaconproducts.com for complete details and exclusions.

Due to our continued efforts to improve our products, product specifications are subject to change without notice.

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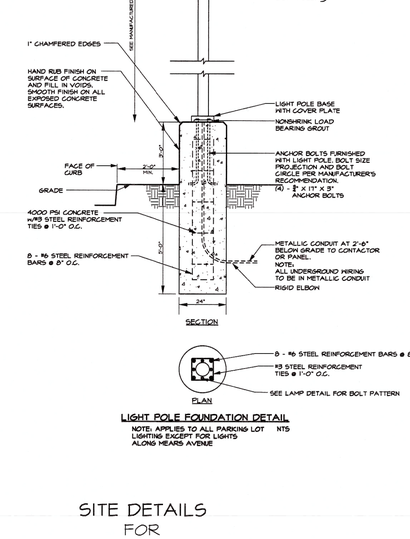

LIGHT POLE FOUNDATION DETAIL
NOTE: APPLIES TO ALL PARKING LOT LIGHTING EXCEPT FOR LIGHTS ALONG HEARS AVENUE
NTS

17 PARKING LOT LIGHTING DETAIL
NTS

footnotes:
1. Medium socket is standard for all HID sources under 250W.
2. IND and DIR optics require LED source, LED source requires IND or DIR optics.
3. LED and CF sources utilize a 120-277 voltage-sensing electronic driver, HID sources utilize a Quad-Tap (120, 208, 240 &277V) core & coil magnetic ballast, consult factory for 347 or 480V. 12VDC LED drivers are available for solar power assembly integration, consult factory.
4. QL induction source shall be supplied at 4000K (CCT), specify if 3000K is required.
5. LED source shall be supplied at 4500K (CCT), specify is other color temp. is required (minimum quantities may apply).

TOWN OF CHESAPEAKE BEACH
APPROVED Maggie K. Reiser
APPROVED AS NOTED _____
COMMENTS _____
BY _____ DATE 12/6/17

SITE DETAILS
FOR
LOT 1 & RESIDUE TRACT ONE
THE ROD & REEL INC. PROPERTIES
TOWN OF CHESAPEAKE BEACH
THIRD DISTRICT
CALVERT COUNTY, MARYLAND

C-4
PLAT BOOK KPS 2, PLAT NO. 122

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
MORGAN M. WALLBRETTA, PE
LICENSE NO. 34788
EXPIRATION DATE: 10/23/21
12/4/2020

DATE	DESCRIPTION	BY
11-3-17	BID SET	PN
DATE	REVISIONS	

11721 WOODMORE ROAD, SUITE 200
MITCHELLVILLE, MARYLAND 20721
BEN DYER ASSOCIATES, INC.
Engineers / Surveyors / Planners
TELEPHONE (301) 430-2000

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DRAWN BY: LDS | DESIGNED BY: GS | CHECKED BY: PSW | RECORD NO.: J-B03021
SCALE: AS INDICATED | DATE: JANUARY 2016 | DRWG. NO.: 6.067-Y

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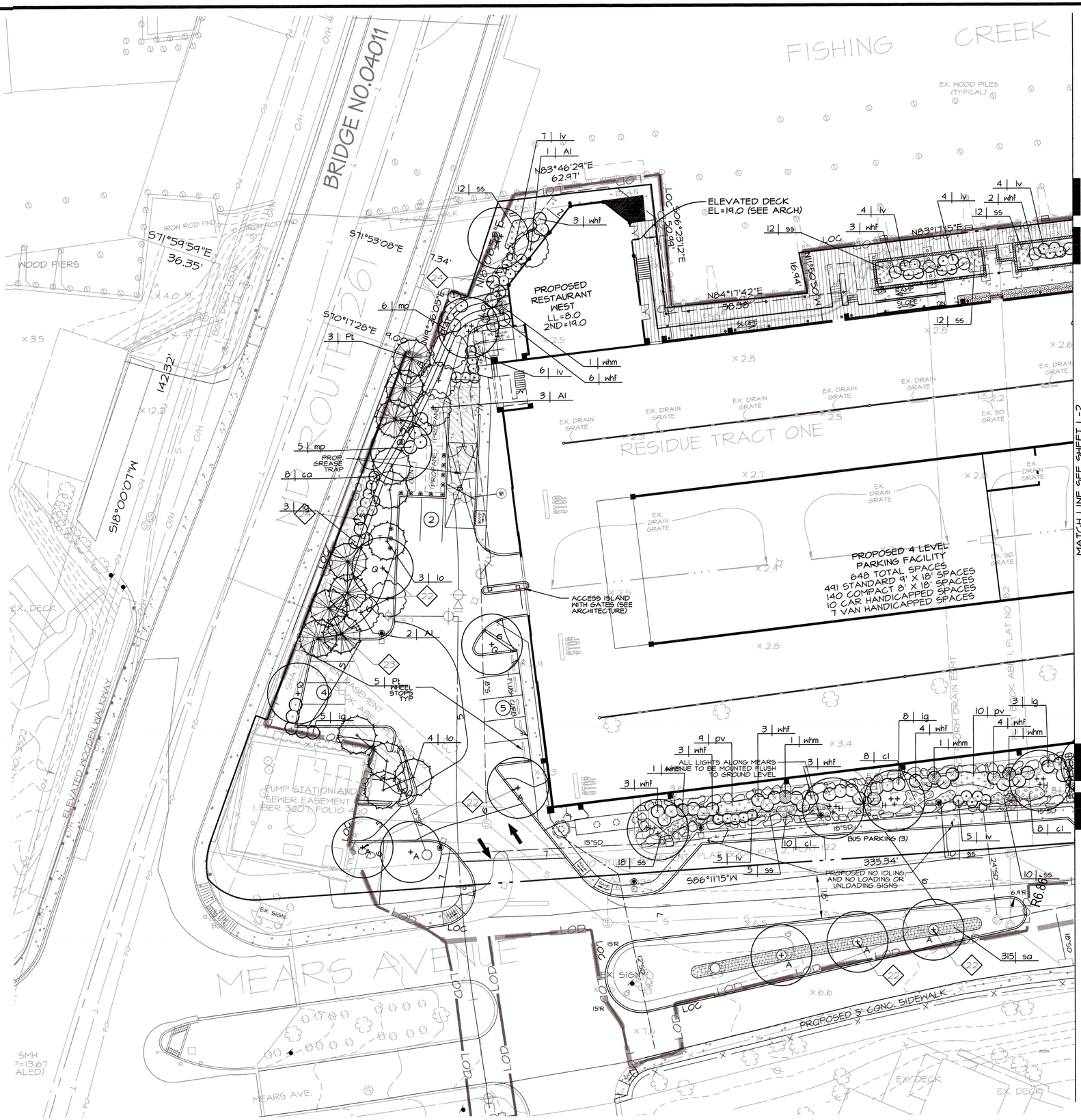


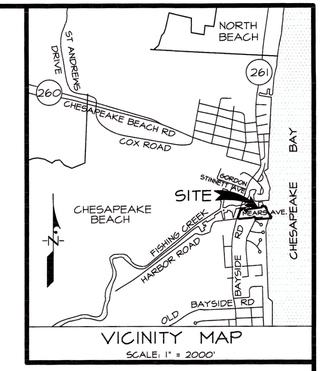
LEGEND

- PARKING LOT LIGHTING SEE DETAIL 20 SHEET C-3 FOR ALL OTHER LIGHTING SEE ARCHITECTURE
- BOLLARD LOCATIONS
- FH — FIRE HYDRANT LOCATIONS
- CONCRETE WHEEL STOP
- 78 — EXISTING CONTOURS
- 78 — PROPOSED CONTOURS
- 08x3 — EXISTING SPOT ELEVATION
- 08.3+ — PROPOSED SPOT ELEVATION
- LOC — LIMIT OF CONSTRUCTION
- LOD — LIMIT OF DISTURBANCE
- PROPOSED FLOW ARROWS
- PROPOSED WOOD DECK
- PROPOSED CONCRETE PAVING
- PROPOSED HEAVY DUTY CONCRETE PAVING
- 2" X 6" DEEP RIVERSTONE OVER FILTER FABRIC
- S — EXISTING SEWER
- PROPOSED SEWER
- EXISTING WATER
- PROPOSED WATER
- D — EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING GAS LINE
- PROPOSED GAS LINE
- EXISTING TREE LINE
- (4) — STANDARD PARKING SPACES
- [4] — HANDICAPPED PARKING SPACES
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER
- FLOOD HAZARD ZONE
- HISTORICAL EASEMENT
- E — PROPOSED ELECTRICAL DUCT BANK

- B4B TREE PLANTING DETAIL (TYPICAL) SEE L-2
- EVERGREEN TREE PLANTING DETAIL (TYPICAL) SEE L-2
- SHRUB PLANTING DETAIL SEE C-2

SEE BDAI DRAWING 6.065-Y FOR PLANTING SPECIFICATIONS AND DETAILS

NOTE: CONTRACTOR TO REUSE PLANT LOCATIONS IN FIELD TO ACCOMODATE PROPOSED SITE STRUCTURES. NOTIFY ENGINEER PRIOR TO CHANGES. THIS PLAN IS FOR LANDSCAPE PURPOSES ONLY.



NAD 83/91 NAVD 1988

TOWN OF CHESAPEAKE BEACH

APPROVED Mureen K Reis-v

APPROVED AS NOTED

COMMENTS

BY _____ DATE 12/16/17

LANDSCAPE PLAN
FOR
LOT 1 & RESIDUE TRACT ONE
THE ROD & REEL INC. PROPERTIES
TOWN OF CHESAPEAKE BEACH
THIRD DISTRICT
CALVERT COUNTY, MARYLAND

GRAPHIC SCALE 1"= 30'
0 30 60 90

L-1

PLAT BOOK KPS 2, PLAT NO. 122

PROFESSIONAL CERTIFICATION

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MORGAN M. WALUBITA, PE
LICENSE NO. 34788
EXPIRATION DATE: 10/23/21
12/4/2020

STATE OF MARYLAND — MORGAN M. WALUBITA — 34788 — PROFESSIONAL ENGINEER

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SCALE 1"=30'

DATE JANUARY 2016

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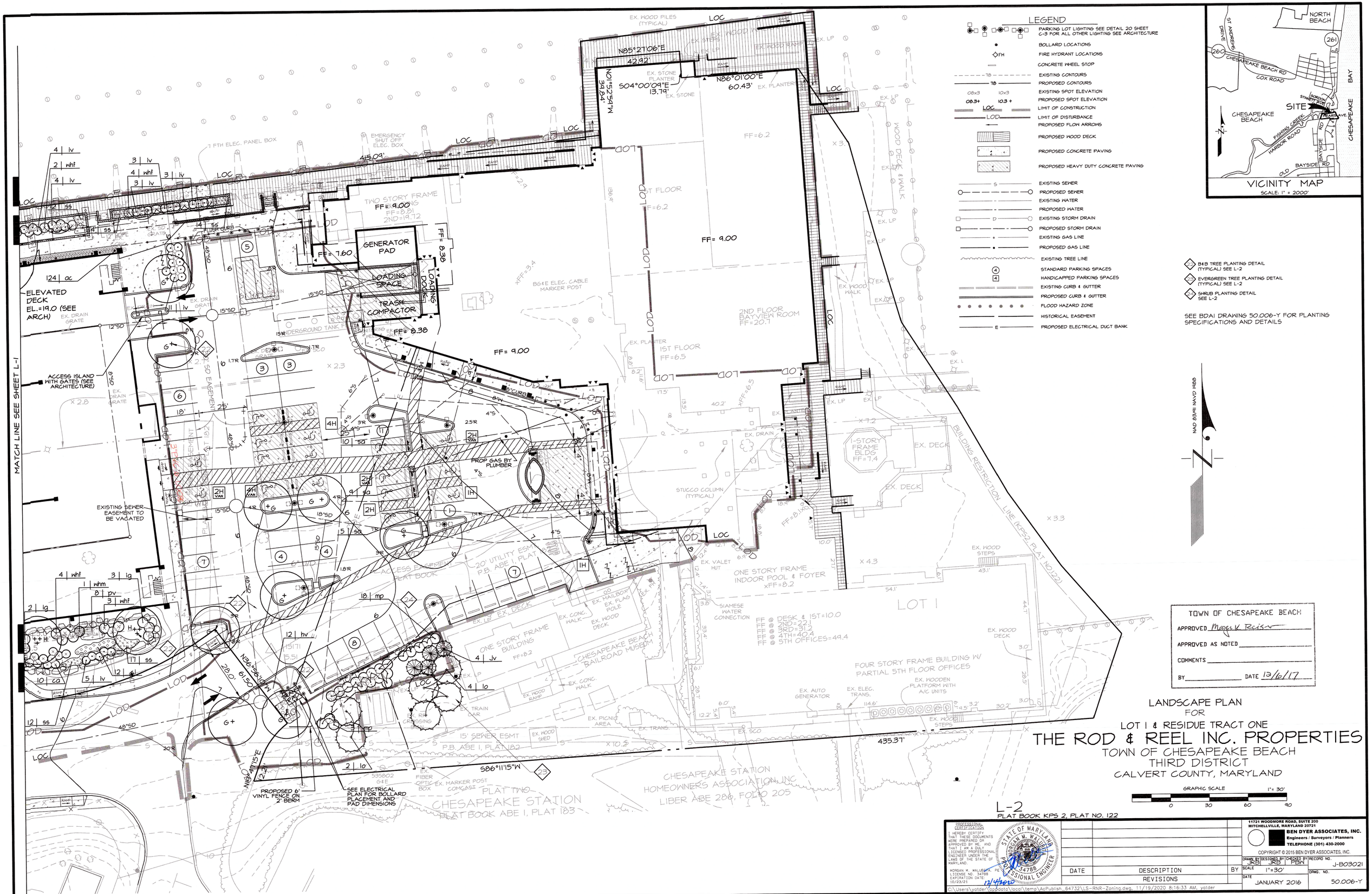

TOWN OF CHESAPEAKE BEACH

APPROVED Morgan K Reis

APPROVED AS NOTED _____

COMMENTS _____

BY _____ DATE 12/6/17

LANDSCAPE PLAN
FOR
LOT 1 & RESIDUE TRACT ONE
THE ROD & REEL INC. PROPERTIES
TOWN OF CHESAPEAKE BEACH
THIRD DISTRICT
CALVERT COUNTY, MARYLAND

GRAPHIC SCALE 1" = 30'
0 30 60 90

L-2
PLAT BOOK KPS 2, PLAT NO. 122

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
MORGAN M. WALLACE, P.E.
LICENSE NO. 34788
EXPIRATION DATE: 10/23/21
STATE OF MARYLAND MORGAN M. WALLACE 34788 PROFESSIONAL ENGINEER
12/4/2020

DATE	DESCRIPTION	BY
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PLANTING SPECIFICATIONS

I. General

A. Scope: The Landscape Contractor shall provide all labor, materials, and equipment necessary to complete the work shown on the drawings and described in the specifications. The Landscape Contractor shall verify all quantities of plant material shown on the plan and in the plant list. In the event of a discrepancy between the quantities shown on the plan and in the plant list, the plan shall govern. Immediately inform the Landscape Architect of any such discrepancy before delivering or installing any plant material.

B. Utilities: The Landscape Contractor shall notify Miss Utility (1-800-257-7777) to verify the location of all main utilities and shall ask the General Contractor to locate lighting and other on-site utilities in the field before proceeding with the installation of any planting. If conditions arise in the field which necessitate the shifting of a plant location more than 15', the Landscape Architect is to be consulted.

C. Substitutions: Any change in the type, size and quantity of plant material must be approved by the Landscape Architect prior to installation.

D. Quality Standards: All plant material must be nursery grown and meet all of the qualitative criteria established by the current issue of the American Standard for Nursery Stock specifications published by the American Nursery & Landscape Association.

Furthermore, all plant material must exhibit a full, symmetrical habit of growth that is characteristic of quality grown nursery stock. Any plant material exhibiting a spindly or lop-sided habit or any other feature that detracts from its health or appearance, will be rejected.

E. Dug Material: All dug plant material shall have been dug before bud break or after leaf maturation. Any plant material exhibiting ongoing new growth within two (2) weeks of being planted will be rejected and must be removed from the job.

Balled and burlapped plants shall be dug with firm natural balls of earth.

Anti-desiccants shall be applied on all material dug while in foliage.

F. Poor Drainage: No plants shall be planted in situations that show obvious poor drainage. Such situations shall immediately be brought to the attention of the Landscape Architect and Owner, and if they deem necessary, the plants shall be relocated or the contract shall be adjusted to allow for drainage correction at a negotiated cost.

G. Site Preparation: It shall be the General Contractor's responsibility to present "clean" soil conditions to the Landscape Contractor prior to any landscape installation. "Clean" soil may include on-site soil but must be free of pavement materials, muck, root systems, petroleum or other chemical substances, blue stone, construction debris and other materials larger than 4" in diameter. The "clean" soil shall extend to the following minimum depths: 18" where trees are proposed, 12" where shrubs are proposed and 4" where lawn is proposed. If the Landscape Contractor encounters any areas to be deficient regarding these "clean" soil specifications, he shall report this condition to the Landscape Architect and Owner prior to planting in those areas.

H. Workmanship: During planting, all areas shall be kept neat and clean, and all reasonable precautions shall be taken to avoid damage to existing plants, turf and structures. Upon completion, all debris and waste material resulting from planting operations shall be removed from the project and the area cleaned up. Any damaged areas shall be restored to their original condition.

I. Water: If available on-site, the Owner shall supply water at no cost. It will be the Landscape Contractor's responsibility to supply water if there is none on the site.

J. Guarantee: All plant material shall be guaranteed for a period of one (1)year. It is the Landscape Contractor's responsibility to assure that all plant material be maintained in a healthy condition during this period.

The Landscape Contractor shall replace within 30 days of notice any and all plant material that declines to less than 75% of its original planted condition due to cultural reasons. The Landscape Contractor shall not be responsible for replacing plants for cultural reasons after the first instance of decline. If decline for cultural reasons occurs a second time, the Landscape Architect shall be notified and an alternative planting remedy will be negotiated at an extra cost to the owner.

The Landscape Contractor shall not be held responsible for any plant losses due to mechanical injury, theft or vandalism after the job is accepted by the owner.

II. Planting Procedures

A. Planting Beds: With the exception of those trees shown on the plan as individuals, all plants are to be planted into prepared planting beds which are designated on the plan with dashed outlines. The outline of each bed shall be spade dug to be a smooth, continuous sharp-cut edge. The entire area within the outline of the bed shall be thoroughly loosened to a depth of 6-8" by picking or other means and all materials unsuitable for plant growth and all rocks and debris greater than 4" diameter are to be removed. Topsoil (that meets the qualitative description of the Maryland State Highway Administration's Materials Specification 920.02 Natural Topsoil) shall be applied over the loosened subsoil to a minimum depth of 6", creating a slightly raised planting bed in relation to the surrounding area.

B. Tree Planting:

1. Preparing tree pit: The walls of the tree pit shall be dug so that they are vertical and scarified. The diameter of the pit shall be a total of 24" wider than the ball diameter. Care should be taken not to excavate the tree pit below a depth that allows 2" of the ball to be above finished grade. If the pit is dug too deep, then the bottom of the pit must be firmly tamped (to prevent settlement).

2. Placing Tree in Pit: Place the tree in the pit either by lifting and carrying the tree by its ball (never lift by branches or trunk) and then lowering it into the pit.

Set the tree straight and in the center of the pit with the most desirable side of the tree facing toward the prominent view (sidewalk, building, street, etc.).

3. Backfilling Tree Pit: Backfill the tree pit with a mixture of 2/3 original excavated material amended with 1/3 topsoil (as specified in II.A. above)This step will have been partially completed if the tree is planted into a prepared bed as described above.)

Backfill sides of tree pit halfway with soil mixture and tamp before adding more backfill. Cut rope or wire on ball of tree and pull burlap back to the edge of the tree ball. Remove all plastic wraps and twine.

Finish backfilling sides of tree pit and tamp firmly. Never cover top of root ball with soil.

Form a saucer above existing grade and around the outer rim of the tree pit. Mulch top of root ball and saucer within 48 hours to a depth of 2" to 3".

Water thoroughly on the interior of the tree saucer until it is filled, even if it is raining. A second watering may be necessary to insure saturation of the root ball. Prune out any dead or broken branches.

4. Tree bracing: All trees less than 2" cal. are to be braced with two (2) 6' hardwood stakes 180 degrees apart. All trees 2" cal. or larger are to be braced with three (3) guy wires and ground stakes spaced evenly apart (120 degrees) in a circle (see details on plan for additional information). Staking and guying shall be completed within 48 hours of planting the tree.

C. Shrub Planting:

1. Preparing Shrub Pit: The walls of the shrub pit shall be dug so that they are vertical and scarified. The diameter of the pit shall be a total of 12" wider than the ball diameter. The depth of the pit shall be at an elevation that allows 2" of the ball to be above finished grade, after the bottom of the pit has been firmly tamped (to prevent settlement).

2. Placing Shrub in Pit: Container grown material shall have the container removed and the outside of the root ball examined for the presence of encircling roots. If present, these roots should be severed with a sharp knife and loosened from the earth ball by means of pulling them out slightly by hand prior to planting. Place the shrub in the pit either by lifting or carrying the shrub by its root ball (never lift by branches) and then lowering it into the pit.

Set the shrub straight and in the center of the pit with the most desirable side of the shrub facing toward the prominent view (sidewalk, building, street, etc.).

3. Backfilling Shrub Pit: Backfill the shrub pit halfway with soil mixture and tamp before adding more backfill. Cut rope or wire on ball of shrub and pull burlap (if B&B) back to the edge of the root ball. Remove all plastic wraps and twine.

Finish backfilling sides of pit and tamp firmly. Never cover top of root ball with soil. Form a saucer above existing grade and around the outer rim of the shrub pit. Mulch top of root ball, saucer, and the entire planting bed within 48 hours to a depth of 2" to 3".

Water thoroughly on the interior of the shrub saucer until it is filled, even if it is raining. A second watering may be necessary to insure saturation of root ball. Prune out any dead branches.

D. Seeding & Sodding

All disturbed areas not covered by buildings, pavements and planting areas are to be established in a lawn of turf-type Tall Fescue either by seed or sod, or combination, depending on the time of year, availability of materials and Owner's preference.

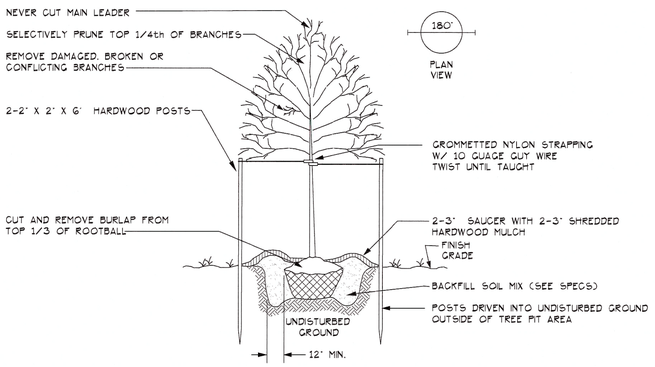
TOWN OF CHESAPEAKE BEACH

APPROVED Maggie V. Reisz

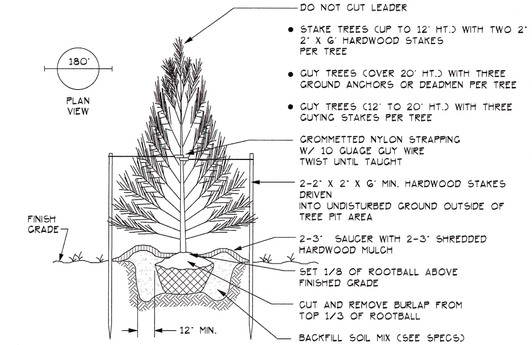
APPROVED AS NOTED _____

COMMENTS _____

BY _____ DATE 12/6/17



20 B&B TREE PLANTING DETAIL
DECIDUOUS NTS



21 EVERGREEN TREE PLANTING DETAIL
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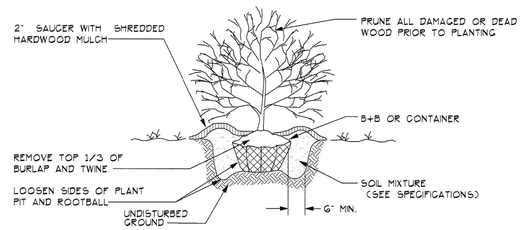
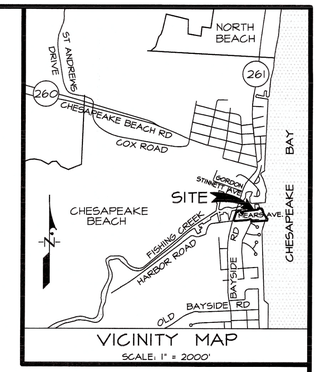


22 SHRUB PLANTING DETAIL
DECIDUOUS OR EVERGREEN NTS



PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
SHADE TREES						
A	6	Acer x saccharum 'Legacy'	Legacy Maple	2.5"-3" cal	As shown	B&B
H	8	Betula nigra 'Heritage'	Heritage River Birch	10'-12' Ht.	As shown	B&B; Clump form
G	9	Gleditsia triacanthos var inermis 'Shademaster'	Shademaster Honeylocust	2.5"-3" cal	As shown	B&B
Q	4	Quercus palustris	Pin Oak	2.5"-3" cal	As shown	B&B
EVERGREEN TREES						
Io	13	Ilex opaca	American Holly	7'-8' Ht.	As shown	B&B/Container
Pt	8	Pinus taeda	Loblolly Pine	8'-10' Ht.	As shown	B&B/Container
Jv	4	Juniperus virginiana 'Hillspire'	Hillspire Juniper	7'-8' Ht.	As shown	B&B/Container
ORNAMENTALS						
Al	6	Amelanchier laevis	Allegheny Serviceberry	7'-8' Ht.	As shown	B&B/Container
SHRUBS, GROUNDCOVERS & BULBS						
ca	18	Clethra alnifolia 'Hummingbird	Hummingbird Summersweet	18"-24" spd	3.5-4'	Container
ig	28	Ilex glabra 'nigra'	Nigra Inkberry	18"-24" spd	4' o.c.+/-	Container
whf	47	Ilex verticillata 'Winter Red'	Winter Red Winterberry Holly	24"-30" Ht.	4. o.c.+/-	Container
whm	6	Ilex verticillata 'Southern Gentleman'	Southern Gentleman Winterberry	24"-30" Ht.	As shown	Container
iv	68	Itea virginica 'Little Henry"	Little Henry Virginia Sweetspire	18"-24" Ht.	3' o.c.+/-	Container
mp	32	Myrica pensylvanica	Northern Bayberry	24"-30" Ht.	5' o.c.+/-	Container
GRASSES, PERENNIALS & ANNUALS						
ac	124	Aster cordifolius	Blue Wood Aster	1 gal.	1'-1.5'	Container
cl	38	Chasmanthium latifolium	Northern Sea Oats	2 gal.	2'-3'	Container
hv	12	Heuchera villosa 'Autumn Bride'	Coral Bells	1 gal.	1.5-2'	Container
pv	27	Panicum virgatum 'Rotstrahlbusch'	Red Switch Grass	2 gal.	2.5'-3'	Container
ss	160	Schizachyrium scoparium 'The Blues'	'The Blues' Little Bluestem	1 gal.	18" +/-	Container
sa	353	Species vary by season	Seasonal Annuals	4" pots	18" +/-	Container

LANDSCAPE DETAILS
FOR
LOT 1 & RESIDUE TRACT ONE
THE ROD & REEL INC. PROPERTIES
TOWN OF CHESAPEAKE BEACH
THIRD DISTRICT
CALVERT COUNTY, MARYLAND

L-3
PLAT BOOK KPS 2, PLAT NO. 122

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
MORGAN M. WALUBITA, LICENSE NO. 34788
EXPIRATION DATE: 10/23/21
STATE OF MARYLAND · MORGAN M. WALUBITA · 34788 · PROFESSIONAL ENGINEER
14/9/2020

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DATE: JANUARY 2016			

CALVERT COUNTY

STORMWATER MANAGEMENT
&
POLLUTANT REMOVAL REQUIREMENT
(10% RULE)

COMPUTATIONS

FOR

ROD & REEL INC. PROPERTIES

J-B03021-5006

Revised
pages 1,2,3,5 & 6
TM
10/28/2020.

Prepared by: Tekle Moges, P.E.
February, 2016

"Professional Certification, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 33846, Expiration Date: 12/24/2019."

11721 WOODMORE ROAD, SUITE 200
MITCHELLVILLE, MARYLAND 20721
BEN DYER ASSOCIATES, INC.
Engineers / Surveyors / Planners
TELEPHONE (301) 430-2000

Revision: Revised Limit of Construction to remove The Rod N' Reel Restaurant
TM
8/25/17

TM
5/15/17

STATE OF MARYLAND
TEKLEGIORGIS MOGES
33846
PROFESSIONAL ENGINEER

TM
03/26/18.

02/22/16

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Project Summary

The project site is located on the north side of Mears Ave and east side of Bayside Road Chesapeake Beach, MD. The site is approximately 0.35 miles south of the Chesapeake Beach Road and Bayside Road intersection. The site is zoned commercial and is currently developed.

The existing site has a paved parking lot with commercial buildings. The majority of soil type within the site limits is "Ub" which is an HSG D soil. The project proposes to construct a 4 level parking structure, an asphalt parking lot, demolish partially existing buildings and expand existing buildings.

The site is located within 1,000 feet from the head of tide of Chesapeake Bay shoreline: therefore, the site is located in the critical area. This project must reduce stormwater pollutant loads from the development site to a level at least 10% below the load generated by same site prior to development. It is known as Critical Area 10% Rule Compliance.

The total site area is 5.29 acres and the area of the limit of construction (LOC) is 4.59 acres. The existing impervious area within the LOC is 4.42 acres and the proposed impervious area within the LOC is 4.04 acres. The impervious area between the proposed and existing condition within the limit of construction will decrease by 0.38 ac. Current state regulations require that an impervious area shall be reduced and/or water quality treatment provided for 50% of the existing impervious area and the increased impervious area must be treated for water quality and quantity via Environmental Site Design (ESD). ESD is not required because the project will not increase an impervious area. Therefore, 1.83 ac. which is 50% of the existing impervious area minus the reduction in impervious area of 0.38 ac. must be treated for water quality. This project will be treated as a re-development project, because the total site impervious area under existing condition exceeds 40%.
In order to meet the water quality requirements of the site, this project will provide micro bio-retention and planter box facilities on the south and north side of the proposed parking structure. During a storm event, runoff temporarily ponds 6" above the mulch layer and is stored the water quality control volume (WQv) to remove pollutants in the micro-bioretention facilities. The treated runoff is returned to conveyance system through a 6" underdrain pipe.

The storm drain system is designed to convey the peak 10 year storm event.

SWM COMPUTATIONS

ROD & REEL INC. PROPERTIES

Site Area = 5.29 Acres

Limit of Construction = 4.59 Acres

Existing Impervious Area = 4.42 Acres

Proposed Impervious Area = 4.04 Acres

Reduction in Impervious Area = 0.38 Acres

- Redevelopment

Area to be treated:

- 50% of the existing impervious area = 4.42 X 0.5 = 2.21 Acres
- Reduction in impervious area = 4.42 – 4.04= 0.38 Acres

Area to be treated = 2.21 – 0.38 = 1.83 Acres

- Required Water Quality Volume
  $= \frac{1" \text{ X } 0.95 \text{ X } 1.83}{12}$ Rv = 0.95

  = 0.1449 Ac-Ft

  = 6,311 CF

- Required surface area of the ESD Facilities (Bio-Retention Planter Boxes)
  - Each facility will have a 0.5' surface ponding depth and 2.5' bio soil media

6,311 = 0.5 (Surface Area) + (Surface Area) (Media Depth) (0.4)

= 0.5 (Surface Area) + (Surface Area) (2.5) (0.4)

6,311 = 1.5 (Surface Area)

Required Surface Area = 4,207.3 SF

Surface Area Provided = 4,786 SF

- ESDv provided:

I. Facilities with 2.5' media depth (Surface Area = 3,590 SF; Ponding Depth = 0.5')

ESDv = 0.5 (3,590) + 3,590 (2.5) (0.4)
= 3,590 (1.5)
= 5,385 CF

II. Facilities with 2.0' media depth (Surface Area = 1,196 SF; Ponding Depth = 0.75')

ESDv = (0.75) (1,196) + 1,196 (2.0) (0.4)
= 1,854 CF

Total ESDv provided = 7,239 CF

Calculation Summary

Critical Area 10% Calculations

Removal Requirement, RR (lbs P / yr)	**0.19**
after non-structural and micro-scale BMPs (Steps 5 and 6)	
Total Load Reduction (lbs P / year)	2.38
Total Load Reduction Remaining (lbs P / yr)	**0.00**
after structural practices (Step 9)	
Total Load Reduction (lbs P / year)	2.38
Total Load Reduction Remaining (lbs P / yr)	**0.00**

MDE's ESD to the MEP Calculations

ESD Runoff Volume, ESDv (cf)	0.00
Total Treatment Volume (cf)	6310.76

WQv or ESDv Treated (cf)	7238.80
PE achieved (inches)	N/A

Entire ESDv Treated Through Environmental Site Design?	YES
ESDv Remaining? (cf)	0.00
If ESDV is not fully treated, is ESD to MEP achieved?	0.00

Redevelopment WQv Requirements Met Through Environmental Site Design?	YES
WQv Remaining? (cf)	0.00

New Development WQv Requirements Met Through Environmental Site Design?	N/A
WQv Remaining? (cf)	0.00

Maryland ESD Calculations and 10% Phosphorus Removal

Last Update: 10/28/2020

Project Name:	ROD & REEL INC. PROPERTIES
Date:	28-Oct-20
	data input cells
	calculation cells

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 PlantingWas Used at the Site to Convert Turf Areas into Forest	*YES*

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

Site Area, A (acres)	4.59
Existing Impervious Surface Area (acres)	4.42
Proposed Impervious Surface Area (acres)	4.04
Rainfall Depth, P (in)	1.0
Existing Imperviousness, I_{pre}	96.3%
Proposed Imperviousness, I_{post}	88.0%
Water Quality Calculation for Redevelopment Only	
Required Treatment Area (acres)	1.83
Runoff Coefficient, Rv	0.95
Water Quality Volume, WQv (cf)	**6,311**

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

Development Category (for ESD)	**Redevelopment**
% Soil Type A	0%
% Soil Type B	0%
% Soil Type C	0%
% Soil Type D	100%
Pre-Developed Condition, RCN_{woods}	77
Soil Type A ESD Rainfall Target, P_E (in)	0.00
Soil Type B ESD Rainfall Target, P_E (in)	0.00
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)	**0.00**
ESD Runoff Depth, Q_E (in)	0.00
ESD Runoff Volume, ESDv (cf)	**0**
Total Treatment Volume (cf)	**6,311**

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

Development Category (for 10%)	**Redevelopment**
New Development	
Average Annual Predevelopment Load, Lpre (lbs P / yr)	2.30
Redevelopment:	
Predevelopment Runoff Coefficient, Rv_{pre}	0.92
Phosphorous Mean Concentration, C (mg/L)	0.3
Average Annual Predevelopment Load, L_{pre} (lbs P / yr)	10.30
Post-Development Runoff Coefficient, Rv_{post}	0.84
Average Annual Post-Development Load, L_{post} (lbs P / yr)	9.46
Removal Requirement, RR (lbs P / yr)	**0.19**

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

Nonstructural Practices	P_E Credit Description	Contributing Drainage Area (sf)	Direct WQv or ESDv Received by Practice (cf)	WQv or ESDv from Up-Gradient Practices (cf)	P_E Credit (in)	WQV or ESDv credit (cf)	Runoff Volume Remaining (cf)	*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)
Disconnection of Rooftop Runoff (A/B Soils)	Up to 1 inch credit provided based upon disconnection flow length.	0	0	0	#DIV/0!	0	0	50%	0%	0.00	0.00	0.00
Disconnection of Rooftop Runoff (C/D Soils)	Up to 1 inch credit provided based upon disconnection flow length.	0	0	0	#DIV/0!	0	0	25%	0%	0.00	0.00	0.00
Disconnection of Non-Rooftop Runoff (A/B Soils)	Up to 1 inch credit provided based upon disconnection and contributing flow lengths.	0	0	0	#DIV/0!	0	0	50%	0%	0.00	0.00	0.00
Disconnection of Non-Rooftop Runoff (C/D Soils)	disconnection and contributing flow lengths.	0	0	0	#DIV/0!	0	0	25%	0%	0.00	0.00	0.00
Sheetflow to Conservation Areas (A/B Soils)	Up to 1 inch credit provided based upon conservation area width.	0	0	0	0	0	0	50%	0%	0.00	0.00	0.00
Sheetflow to Conservation Areas (C/D Soils)	Up to 1 inch credit provided based upon conservation area width.	0	0	0	0	0	0	25%	0%	0.00	0.00	0.00

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

Micro-Scale Practices	P_E 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)	Baseline Phosphorous Removal Efficiency	Average Adjusted Removal Efficiency Rate	P Load to Practice (lbs/yr)	Load Reduction (lbs/yr)	Remaining Load (lbs/yr)
Green Roof (Level 1)	ESDv credit is based on roof thickness	0	0	N/A	0	0	45%	0%	0.00	0.00	0.00
Green Roof (Level 2)	ESDv credit is based on roof thickness	0	0	N/A	0	0	60%	0%	0.00	0.00	0.00
Pemeable Pavement (A Soils)	ESDv credit is based on subbase thickness	0	0	N/A	0	0	80%	0%	0.00	0.00	0.00
Pemeable Pavement (B Soils)	ESDv credit is based on subbase thickness	0	0	N/A	0	0	80%	0%	0.00	0.00	0.00
Pemeable Pavement (C Soils)	ESDv credit is based on subbase thickness	0	0	N/A	0	0	40%	0%	0.00	0.00	0.00
Rainwater Harvesting	ESDv credit is based on design storage volume and annual use	0	0	0	0	0	45%	0%	0.00	0.00	0.00
Submerged Gravel Wetlands	ESDv credit is based on design storage volume	0	0	0	0	0	60%	0%	0.00	0.00	0.00
Micro-Infiltration/Dry Wells	ESDv credit is based on design storage volume	0	0	0	0	0	65%	0%	0.00	0.00	0.00
Rain Gardens (A/B Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	65%	0%	0.00	0.00	0.00
Rain Gardens (C/D Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	25%	0%	0.00	0.00	0.00
Micro-Bioretention (A/B Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	75%	0%	0.00	0.00	0.00
Micro-Bioretention (C/D Soils)	ESDv credit is based on design storage volume	88,750	18,970	0	7,239	11,732	50%	49%	4.74	2.38	2.36
Landscape Infiltration	ESDv credit is based on design storage volume	0	0	0	0	0	75%	0%	0.00	0.00	0.00
Grass Swales (A/B Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	40%	0%	0.00	0.00	0.00
Grass Swales (C/D Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	20%	0%	0.00	0.00	0.00
Bio-swales (A/B Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	75%	0%	0.00	0.00	0.00
Bio-swales (C/D Soils)	ESDv credit is based on design storage volume	0	0	0	0	0	50%	0%	0.00	0.00	0.00
Wet Swales	ESDv credit is based on design storage volume	0	0	0	0	0	40%	0%	0.00	0.00	0.00

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

Drainage Area Treated (sf)	88,750	WQv or ESDv Treated (cf)	7,239	Total Load Reduction (lbs P / year)	2.38
		P_E achieved (inches)	N/A	**Total Load Reduction Remaining (lbs P / yr)**	**0.00**
		Entire ESDv Treated Through Environmental Site Design?	YES		
		ESDv Remaining? (cf)	0		
		If ESDV is not fully treated, is ESD to MEP achieved?			
		Redevelopment WQv Requirements Met Through Environmental Site Design?	YES		
New Development Water Quality Volume Requirements		**WQv Remaining? (cf)**	0		
Required Treatment Area (acres)	0.00				
Runoff Coefficient, Rv	0.95				
Water Quality Volume, WQv (cf)	0	**New Development WQv Requirements Met Through Environmental Site Design?**	N/A		
		WQv Remaining? (cf)	0		

Step 8: Determine Reduced RCN and Volume Management Requirements Based Upon P_E 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	N/A		
Q_E (in) for Reduced RCN	N/A	Q_E (in) for RCN of 55	0.12
V (ft^3) for Reduced RCN	N/A	V (ft^3) for RCN of 55	822
Volume Management Required (cf)	0		

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)	Phosphorous Removal Efficiency	*Critical Area Credits* Adjusted Phosphorus Removal Efficiency	P Load to Practice (lbs/yr)	Load Reduction (lbs/yr)	Remaining Load (lbs/yr)
Stormwater Ponds (Level 1)	0	0%	0	0	0	50%	0%	0.00	0.00	0.00
Stormwater Ponds (Level 2)	0	0%	0	0	0	75%	0%	0.00	0.00	0.00
Stormwater Wetlands (Level 1)	0	0%	0	0	0	50%	0%	0.00	0.00	0.00
Stormwater Wetlands (Level 2)	0	0%	0	0	0	75%	0%	0.00	0.00	0.00
Stormwater Filtering Systems (Level 1)	0	0%	0	0	0	60%	0%	0.00	0.00	0.00
Stormwater Filtering Systems (Level 2)	0	0%	0	0	0	65%	0%	0.00	0.00	0.00
Stormwater Infiltration (Level 1)	0	0%	0	0	0	60%	0%	0.00	0.00	0.00
Stormwater Infiltration (Level 2)	0	0%	0	0	0	90%	0%	0.00	0.00	0.00
			Total structural CPv provided		0			Total Load Reduction (lbs P / year)		2.38
			Management Requirement Met?		YES			**Total Load Reduction Remaining (lbs P / yr)**		**0.00**
			Volume Remaining (cf)		0					

Micro-Scale Practices	P_E Credit Description	Contributing Drainage Area (sf)	% Impervious Cover	Direct ESDv Received by Practice (cf)	WQv or ESDv from Up-Gradient Practices (cf)	Practice Specific Parameter(s)			WQv or ESDv credit (cf)	Runoff Volume Remaining (cf)	Down-Gradient Practice	Baseline Phosphorous Removal Efficiency	Adjusted Removal Efficiency Rate	P Load to Practice (lbs/yr)	Load Reduction (lbs/yr)	Remaining Load (lbs/yr)
						Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)								
Micro-Bioretention (C/D Soils)	ESDv credit is based on design storage volume	20,000	100%	4,275	0	1,088	0.5	2.5	1,632	2,643		50%	50%	1.07	0.54	0.53
						Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)								
Micro-Bioretention (C/D Soils)	ESDv credit is based on design storage volume	20,000	100%	4,275	0	1,123	0.5	2.5	1,685	2,591		50%	51%	1.07	0.54	0.52
						Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)								
Micro-Bioretention (C/D Soils)	ESDv credit is based on design storage volume	20,000	100%	4,275	0	1,299	0.5	2.5	1,949	2,327		50%	53%	1.07	0.57	0.50
						Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)								
Micro-Bioretention (C/D Soils)	ESDv credit is based on design storage volume	10,454	100%	2,235	0	407	0.75	2	631	1,604		50%	46%	0.56	0.26	0.30
						Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)								
Micro-Bioretention (C/D Soils)	ESDv credit is based on design storage volume	10,890	100%	2,328	0	548	0.75	2	849	1,478		50%	50%	0.58	0.29	0.29
						Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)								
Micro-Bioretention (C/D Soils)	ESDv credit is based on design storage volume	4,792	100%	1,024	0	241	0.75	2	374	651		50%	50%	0.26	0.13	0.13
						Surface Area (sf)	Ponding Depth (ft)	Media Depth (ft)								
Micro-Bioretention (C/D Soils)	ESDv credit is based on design storage volume	2,614	100%	559	0	80	0.5	2.5	120	439		50%	41%	0.14	0.06	0.08
Total		88,750		18,970	0				7,239	11,732		50%	49%	4.74	2.38	2.36

AquaShield
STORMWATER TREATMENT SOLUTIONS

AquaShield™ sizing calculation for Rod N Reel Project

Project Name: **Rod N Reel**
Project location: **Chesapeake Beach, MD**

Design flowrate = 0.046 CFS/SF filter media

Design flow rate= 5.2 CFS
Filter area required= 5.2/0.046 = 113 SF
Filtering area per row of filter= 12 SF
Hence number of filter rows= 113/ 12= 9.42= **10 rows**
Swirl pre-treatment chamber size= **AS-6**
Hence filter design size is **AF-6.10**

October 4, 2017

2733 Kanasita Drive, Suite B
Chattanooga, Tennessee 37343
Phone (888) 344-9044
Fax (423) 826-2112
www.AquaShieldInc.com

* * * STORM DRAIN PIPE COMPUTATIONS * * *
Date: 3,22,2018 Time: 14:13: 7

J:\LD7-PROJ\b03021-LD7\SD\COMPUTATIONS\RNR\PIPE RUN 2016-05-13\REV 3-22-18

STRUCTURE FROM no	TO no	INCRE AREA acres	TOTAL AREA acres	RUN COEF	INCRE AREA*R	TOTAL AREA*R	STORM FREQ yr	TIME CONC min	RAIN INTEN in/hr	`Q' cfs	PIPE `n'	PIPE SIZE in	PIPE SLOPE %	PIPE VEL fps	PIPE LENGTH ft	PIPE TIME min	STRUCTURE NO	STRUCTURE LOSS ft
16	14	.34	.34	.85	.29	.29	10	7.00	6.50	1.88	.013	15	.08	1.53	28	.30	16	.00
14	12	.00	.34	.00	.00	.29	10	7.30	6.43	1.88	.013	15	.08	1.53	92	1.00	14	.26
12	10	.46	.80	.85	.39	.68	10	8.31	6.22	4.23	.013	18	.16	2.39	126	.88	12	.33
18	10	.46	.46	.85	.39	.39	10	7.00	6.50	2.54	.013	15	.15	2.07	56	.45	18	.00
10	8	.46	1.72	.85	.39	1.46	10	9.18	6.04	8.83	.013	24	.15	2.81	43	.26	10	.35
34	8	5.00	5.00	.80	4.00	4.00	10	7.00	6.50	25.99	.013	33	.24	4.38	146	.56	34	.00
8	7	.00	6.72	.00	.00	5.46	10	9.44	5.99	32.71	.013	48	.05	2.60	8	.05	8	.11
23	7	7.50	7.50	.40	3.00	3.00	10	7.00	6.50	19.49	.013	18	3.44	11.03	19	.03	23	.00
7	6	.00	14.22	.00	.00	8.46	10	9.49	5.98	50.59	.013	48	.12	4.03	143	.59	7	.23
6	5	.00	14.22	.00	.00	8.46	10	10.08	5.86	50.59	.013	48	.12	4.03	96	.40	6	.36
9	5	.15	.15	.85	.13	.13	10	7.00	6.50	.83	.013	15	.02	.68	24	.59	9	.00
26	24	1.08	1.08	.85	.92	.92	10	7.00	6.50	5.97	.013	18	.32	3.38	52	.26	26	.00
25	24	.47	.47	.85	.40	.40	10	7.00	6.50	2.60	.013	15	.16	2.12	34	.27	25	.00
24	5	.00	1.55	.00	.00	1.32	10	7.27	6.44	8.48	.013	18	.65	4.80	42	.15	24	.51
5	3	.00	15.92	.00	.00	9.91	10	10.48	5.78	57.26	.013	48	.16	4.56	93	.34	5	.31
22	20	.57	.57	.85	.48	.48	10	7.00	6.50	3.15	.013	15	.24	2.57	88	.57	22	.00
20	3	.18	.75	.85	.15	.64	10	7.57	6.37	4.06	.013	15	.40	3.31	12	.06	20	.36
3	2	.00	16.67	.00	.00	10.54	10	10.82	5.71	60.21	.013	48	.18	4.79	65	.23	3	.28

Facility Name: Pond#1

Rectangular Weir Release

$Q = CLH^{3/2}$

	Design Storm		
	2 Year	10 Year	100 Year
Peak Discharge (cfs)	**0.00**	**20.20**	**0.00**

where:

Discharge Coeff. (C) =	3.1	
Weir Length (L) =	**3.50**	feet
Crest Elevation =	**5.30**	
H = Measured Head in feet		

Head		***Release***		***Water Surface Elevation***	
H2 =	**0.000** feet	Q2 =	**0.00** c.f.s.	2 year =	**5.30**
H10 =	**1.513** feet	Q10 =	**20.20** c.f.s.	10 year =	**6.81**
H100 =	**0.000** feet	Q100 =	**0.00** c.f.s.	100 year =	**5.30**

Notes: This analysis does not allow for quality control orifice flow release simultaneously.

NOTE: Q10= 26 CFS AT STR 34 FROM PIPERUN COMPS
Q1" =5.2 CFS SO 26.0 - 5.2 =20.2 CFS WILL BE OVERFLOWED ON THE WEIR WALL

Compute WQv Storm Discharge -

Sizing Rule: MDE Stormwater Design Manual, Appendix D.10

TR-55 Summary:

Rv	**0.95**
P =	**1**
Qa =	**0.95**
Tc =	**0.1**

$$Rv = 0.05 + 0.009 * \%Impervious$$

% Impervious = 100%

Runoff (Qa) = *Rv*P*

$$CN = \frac{1000}{\left[10 + 5 * P + 10 * Q_a - 10 * \sqrt{Q_a^2 + 1.25 * Q_a * P}\right]}$$

CN = **99.57**

Initial Abstraction (Ia) = ***[(200 / CN) - 2]*** **0.009**

Water Quality Rainfall (P) = **1.00 inches (ESD Pe)**

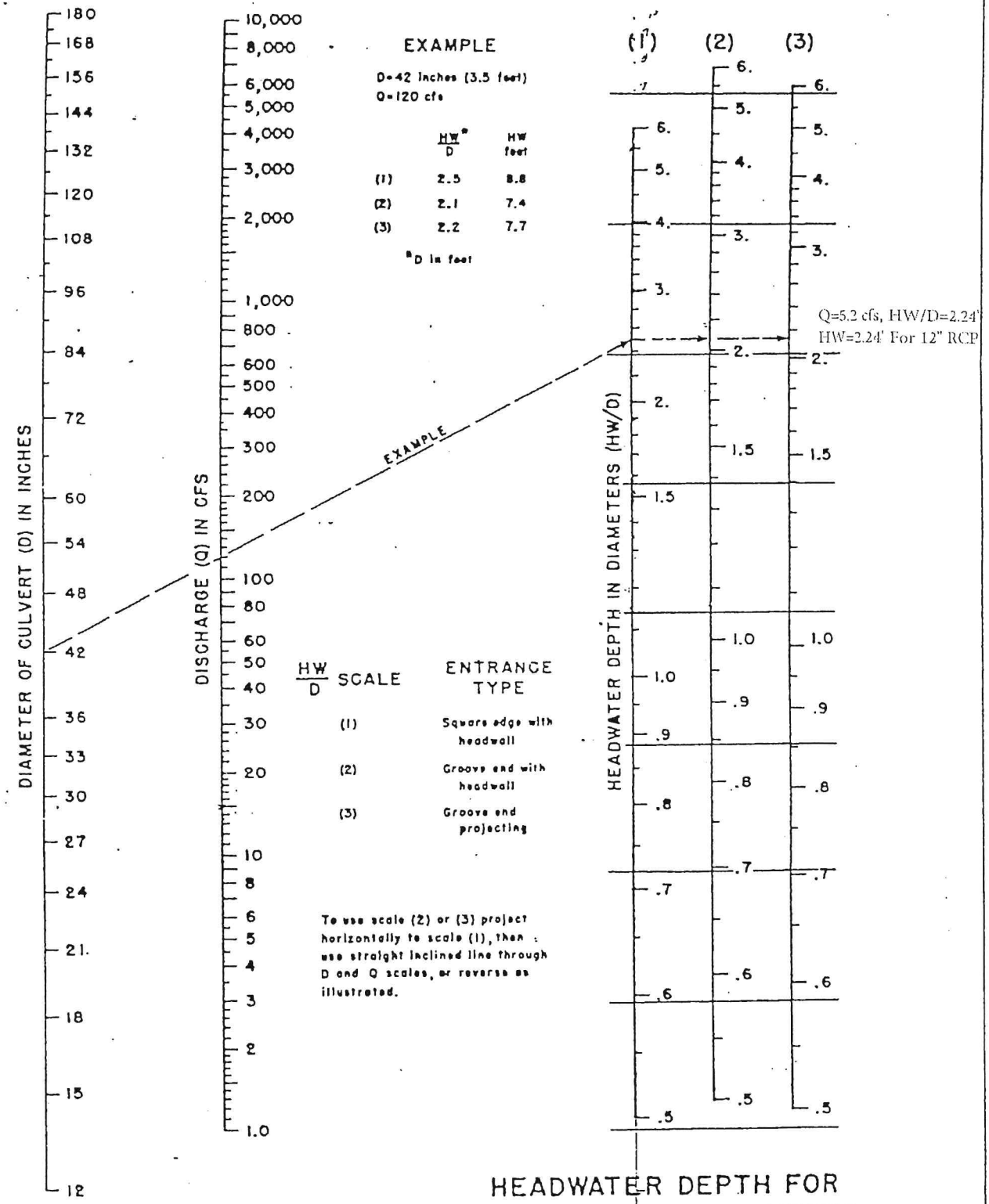
Ia/P = **0.009**

Unit Peak Factor (qu) = **1000 csm / in. (from Figure D-11.1)**

Site Area (A) = **3.50** ***acres or*** **0.005469** ***mi² (Am)***

WQv Post Development Peak Discharge (Qp) = ***(qu * Am * Qa)*** = **5.20** ***cfs***

EX. STR. 34 to Storm Filter STR. 28



HEADWATER SCALES 2&3
REVISED MAY 1964

HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

MARYLAND STATE HIGHWAY ADMINISTRATION 5/64 SHA-61.1-420.1-1.0

INLET CAPACITY COMPUTATIONS

STR. #10

$Q = CIA$. $C = 0.85$; $I = 7.0$ in/hr. (10-yr intensity); $A = 0.36$ Ac.

$Q_{10} = (0.85)(7.0)(0.36)$

$= 2.14$ cfs.

Inlet Capacity: (Single WR-Inlet)

→ 50% blocage. $Q = 4.28$ cfs → Head (h) $\cong 0.1$ FT. (See Inlet Capacity chart)

STR. #12.

$C = 0.85$; $I = 7.0$ in/hr; $A = 0.46$ Ac.

$Q_{10} = (0.85)(7.0)(0.46)$

$= 2.74$ cfs.

Inlet Capacity (Single WR-Inlet)

→ 50% blocage: $Q = 5.48$ cfs → Head (h) $\cong 0.14$ FT.

STR. #18

$C = 0.85$; $I = 7.0$ in/hr; $A = 0.44$ Ac.

$Q_{10} = (0.85)(7.0)(0.44)$

$= 2.62$ cfs

Inlet Capacity (Single WR-Inlet)

→ 50% blockage $Q = 5.24$ cfs → Head (h) $\cong 0.12$ FT.

INLET CAPACITIES (WR2.WB3) (**50% BLOCKED**)
MSHA STD. MD-374.23
PRECAST SINGLE WR INLET - SINGLE GRATE

Q = CA(2gh)^1/2 C = 0.6, A=6.25 sf*, g=32.2 ft/sec^2 Q = CL(H)^3/2 C=3.0 L=10.58 ft

HEAD VS. FLOW RATE

h(ft)	Q(cfs)
0.0	0.0
0.1	4.8
0.2	6.7
0.3	8.2
0.4	9.5
0.5	10.6
0.6	11.7
0.7	12.6
0.8	13.5
0.9	14.3
1.0	15.0

HEAD VS. FLOW RATE

H(ft)	Q(cfs)
0.0	0.0
0.1	0.5
0.2	1.5
0.3	2.7
0.4	4.1
0.5	5.8
0.6	7.6
0.7	9.6
0.8	11.7
0.9	14.0
1.0	16.4

STR. # 46.

$Q = CIA$; $C = 0.85$, $I = 7.0$ in/hr. (10-Yr Intensity)
$A = 0.24$ Ac.

$Q_{10} = (0.85)(7.0)(0.24)$
$= 1.43$ CFS.

Inlet Capacity:
→ 50% blockage. (18" ϕ Nyloplast Drain Basin)

$Q = 2.86$ CFS.
→ Head (h) ≅ 0.33 FT. (See Inlet Capacity chart).

STR. #48.

$Q = CIA$; $C = 0.85$, $I = 7.0$ in/hr
$A = 0.25$ Ac.

$Q_{10} = (0.85)(7.0)(0.25)$
$= 1.49$ CFS.

Inlet Capacity:
→ 50% blockage: (18" ϕ Nyloplast Drain Basin)

$Q = 2.98$ CFS.
→ Head (h) ≅ 0.34 FT.

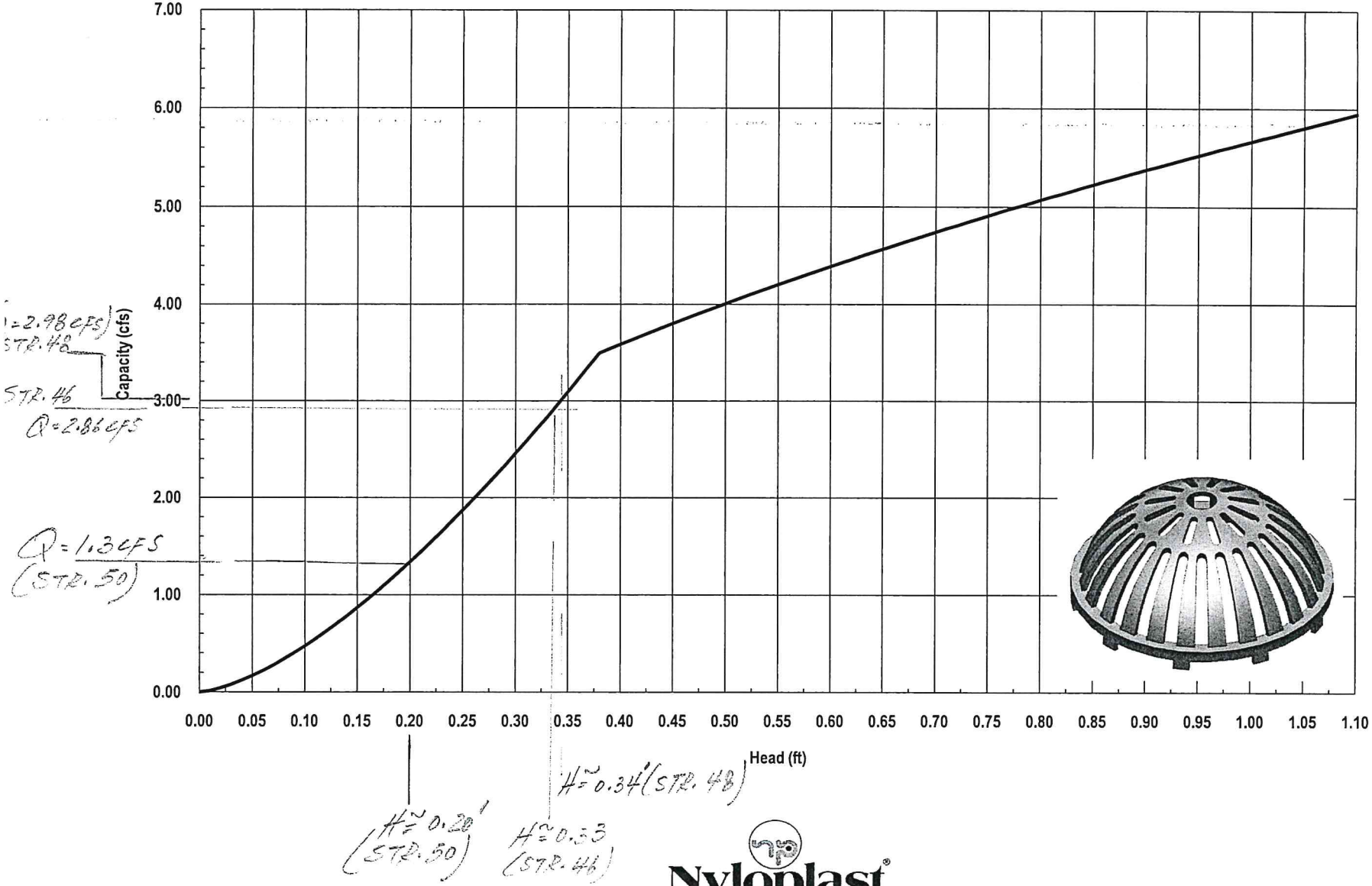
STR. # 50

$Q = CIA$; $C = 0.85$, $I = 7.0$ in/hr.
$A = 0.11$ Ac.

$Q = (0.85)(7.0)(0.11)$
$= 0.65$ CFS.

Inlet Capacity:
→ 50% blockage (18" ϕ Nyloplast Drain Basin)
$Q = 1.3$ CFS
→ Head (h) = 0.20 FT.

Nyloplast 18" Dome Grate Inlet Capacity Chart



Nyloplast®
3130 Verona Avenue • Buford, GA 30518
(866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490

© Nyloplast Inlet Capacity Charts June 2012

HGL Computation

Outfall at Structure #2 : MHW El. = 0.42'

Start 10-Yr HGL Computation at 0.42'.

STR 3 – STR. 2.

0.42

+ (65 × 0.21%) = 0.14

0.56

STR. Loss at Str. #3 : 0.38

0.94

STR. 5 – STR. 3

0.94

+ (93 × 0.16%) = 0.15

1.09

STR. Loss at Str. #5 : 0.30

1.39

STR. 6 – STR. 5

1.39

+ (96 × 0.12%) = 0.12

1.51

STR. Loss at STR. #6 : 0.36

1.87

STR. EX. 8 – STR. 6.

1.87

+ (152 × 0.12%) = 0.18

2.05

STR. Loss at STR. Ex. 8 = 0.11

2.16.

STR. 10 – STR EX. 8.

2.16
+ (43 × 0.15%) = 0.06
2.22

STR. Loss
at STR. 10 . 0.35
2.57

At. STR. 10 : HGL. 2.57.

STR. #18 – STR. 10.

2.57
+ (56 × 0.15%) = 0.08
2.65

STR. #12 – STR. 10.

2.57
+ (126 × 0.16%) = 0.20
2.77

STR. Loss
at STR. 12 . 0.33
3.10

STR. #14 – STR. 12.

3.10
+ (92 × 0.08%) = 0.07
3.17

STR. Loss
at STR. 14 . 0.26
3.43

STR. #16 – STR. #14.

3.43
+ (28 × 0.08%) = 0.02
3.45

HGL at STR. #5 . 1.39.

STR. #9 – STR. #5.

1.39
+ (24 × 0.02%) = 0.01
1.40

STR. #26 – STR. #5.

1.39
+ (94 × 0.65%) = 0.61
2.00

HGL @ STR. #24. 1.66
STR Loss at STR #24. 0.51

STR. #24: 2.17

STR. #25 – STR. 24.

2.17
+ (34 × 0.16%) = 0.05
2.22

HGL at #7. 2.04.

STR. Loss at Str. #7. 0.23

HGL @ #7. 2.27.

STR EX. 23 - STR #7

2.27

+ (19 × 3.44%) = 0.65

2.92

HGL at STR. #3. 0.94.

STR. #20 - STR. #3: 0.94

+ (12 × 0.40%) = 0.05

0.99.

STR. Loss at STR. #20. 0.36

1.35

STR. #22 — STR. #20

1.35

+ (88 × 0.24%) = 0.21

1.56

TOWN OF CHESAPEAKE BEACH
ZONING PERMIT APPLICATION

Permit #: _____
Issued: _____

Fee Paid: Yes / No

PROPERTY INFORMATION **SEE ATTACHED FEE SCHEDULE**

Property Street Address: 4165 Mears Avenue
Property Tax ID#: 0503085635
Specific Use of Property: Commercial

Water: Well ☐ Municipal ☑ Sewerage: Septic System ☐ Municipal ☑

Is the above address within the floodplain? ☑ Yes ☐ No, In the Critical Area ☑ Yes ☐ No
(If in Critical Area, please complete page 2 of this application)

Property Owner Information
Name: Rod & Reel, Inc.
Address 4165 Mears Avenue
City, State, Zip Chesapeake Beach, 20732
Day phone 301-855-8351
E-mail GWD@chesapeakebeachresortspa.com

Applicant Information
Name: Rod & Reel, Inc.
Address 4165 Mears Avenue
City, State, Zip Chesapeake Beach, 20732
Day phone 301-855-8351
E-mail GWD@chesapeakebeachresortspa.com

Description of Proposed Work: Please submit four (4) hard copies of the proposed site plan and one (1) electronic copy with this application and a Grading Exemption Form for any project that involves grading.

Phase II Building Revision. (See enclosed)

Signature of Owner or Authorized Agent

By signing below, I certify and agree as follows: (1) I am authorized to make this application; (2) all information provided is correct; (3) I will comply with all regulations of the Town of Chesapeake Beach which are applicable hereto; (4) I will perform only the work specifically described in this application and my submitted site plan; (5) I grant Town officials the right to enter onto the property for the purpose of evaluating my plan, inspecting the work permitted and posting notices if applicable; (6) I understand that if I choose to appeal, my appeal shall be in writing stating the grounds for appeal and shall be filed with the Board of Zoning Appeals within 30 calendar days of the date of issuance, decision, determination or order and that the right to appeal is waived if not timely filed.

Owner or Authorized Agent: (print) Gerald W. Donovan

Signature: _____ Date: 11/19/2020

FOR TOWN USE ONLY:

Reviewed by: _____ Date: _____

Final Approval: _____ Date: _____

Planning & Zoning Administrator

Is there a supplemental condition letter or notice to applicant: ☐ Yes ☐ No

Is this a application for Use & Occupancy: ☐ Yes ☐ No

Is there a requirement for Public Works to review prior to breaking ground: ☐ Yes ☐ No

If marked yes, the Public Works Administrator must provide approval prior to breaking ground:

Final Approval Public Works Administrator: _____ Date: 11/19/202

Critical Area Lot Coverage Worksheet with Zoning Permit

Completion of this form is required for all projects within the Critical Area. If mitigation of any form is required, it shall be noted and/or shown on the site plan. For mitigation in the form of vegetative planting, the site plan or a separate landscape plan must show the location for the proposed planting and include a table that shows the species of the plants and number of each species. Additional information may be required. This form shall accompany a site plan and other relevant plan that shows the proposed work.

Property Information

Property Address: 4160 Mears Avenue
Critical Area Designation: Circle one: IDA, LDA, RCA
Within the 100-foot buffer? ☑ Yes, ☐ No

Total Site Area (square footage): 230,432 sf
Zoning District: 3

Lot Coverage Calculations

	EXISTING CONDITIONS (square footage)		PROPOSED CONDITIONS (square footage)	
1.	Main Building		Main Building	X
2.	Accessory Structures		Accessory Structures	
3.	Driveway/Parking	X	Driveway/Parking	X
4.	Walkways	X	Walkways	X
5.	Patios		Patios	
6.	Other		Other	
	Total Square footage	192,535	Total Square footage	175,982
	Percentage of Total Site Area	84%	Percentage of Total Site Area	76%

Will trees be removed in the Critical Area?

☐ Yes ☑ No If yes, please indicate location and number on the site plan.

Certification

I certify these statements to be true and accurate and herby grant the Town of Chesapeake Beach official permission to enter my property to review the plan and conduct inspections.

Owner / Authorized Agent: (print) Gerald W. Donovan
Signature: _____

WHAT IS LOT COVERAGE? The following is counted toward lot coverage:
Area coverage by buildings and structures, accessory structures, (e.g. sheds, garages, swimming pools), parking areas, driveways, walkways, patios, or roads. Area covered by gravel, stone, shells, impermeable decking, pavers, or any man-made impervious material. Lot coverage does not include a fence or wall, less than one foot in width, a walkway in the Buffer or expanded buffer including a stairway that provides direct access to a pier, a wood mulch pathway, or a deck with gaps to allow water to pass freely.