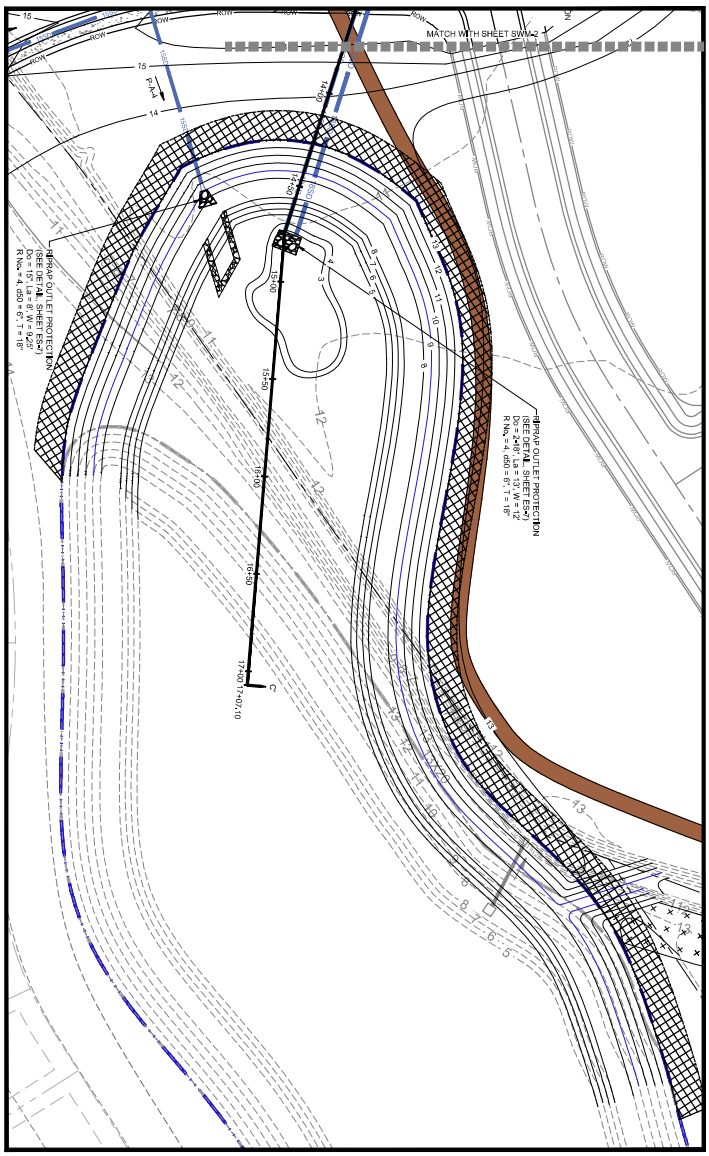


STORMWATER MANAGEMENT PLAN

FOR

MILLVILLE BY THE SEA

SUMMERWIND CONNECTOR

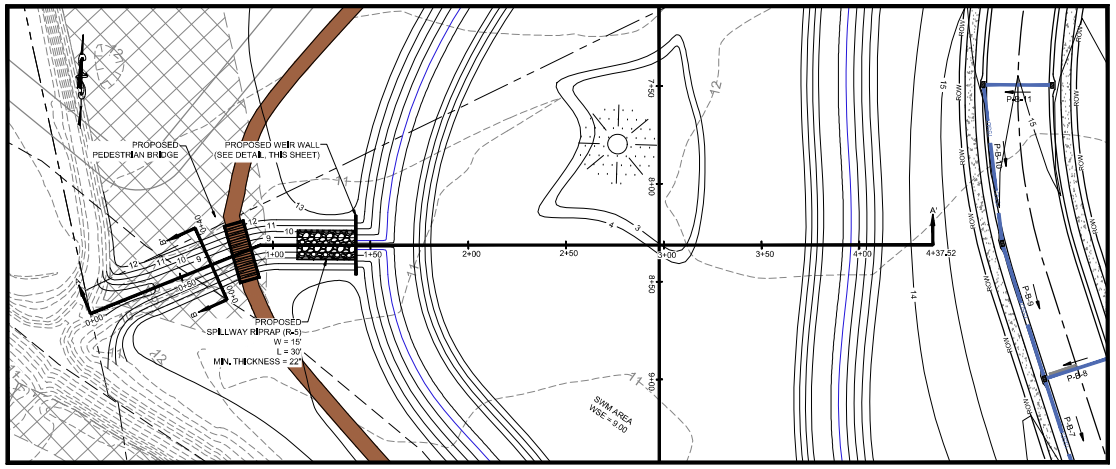
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

CIVIL ENGINEERING ASSOCIATES, LLC
ENGINEERING • SURVEYING • CONSTRUCTION SERVICES
55 W. MAIN STREET
MIDDLETOWN, DE 19709
PHONE (302) 376-8833
FAX (302) 376-8834
WWW.CEA-DE.COM

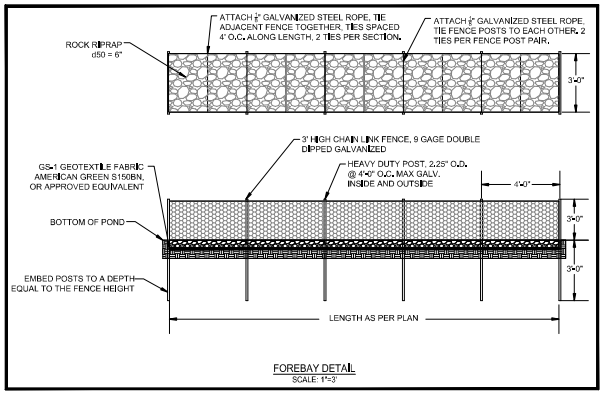
REVISIONS		
REVISION	DATE	DESCRIPTION
1	2/18/21	REVISED PER GMB COMMENTS DATED 12/22/20
2	05/06/21	REVISED PER GMB COMMENTS DATED 04/06/21
3	07/26/21	REVISED TO UPDATE CATCH BASINS

DATE

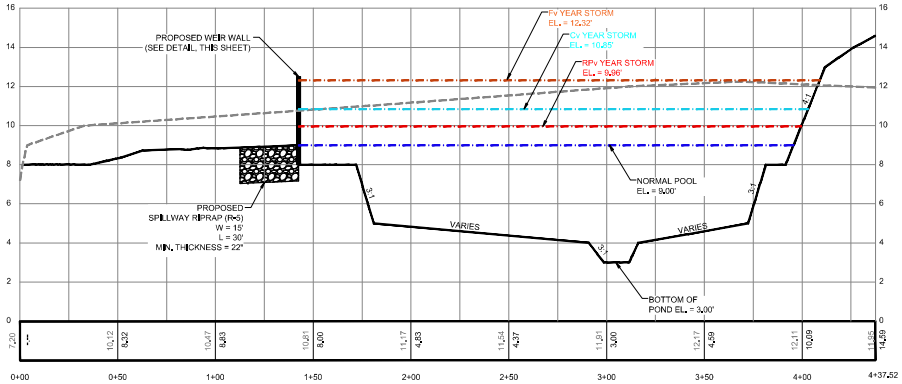
DATE: NOVEMBER 16, 2020
DESIGNED BY: YMR
APPROVED BY: RHS
TITLE: P20043-SWM PLAN.DWG
SHEET NO.: SWM-3



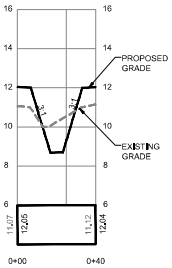
PLAN VIEW
SCALE: 1"=30'



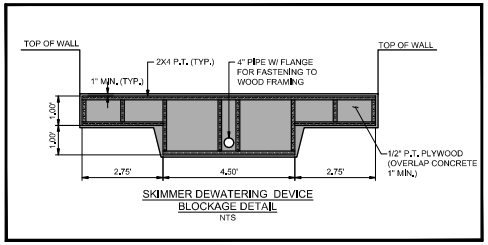
FOREBAY DETAIL
SCALE: 1"=3'



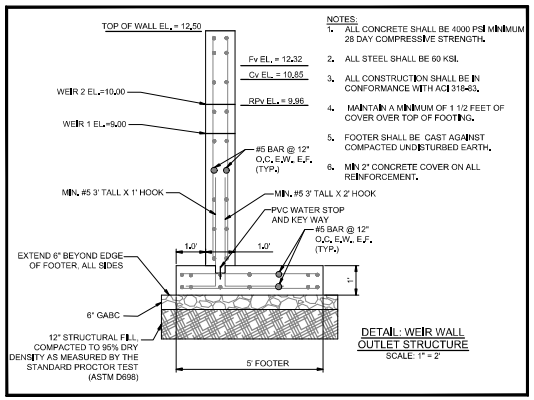
CROSS SECTION A - A' : STA. 0+00.00 TO 4+37.52
SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=3'



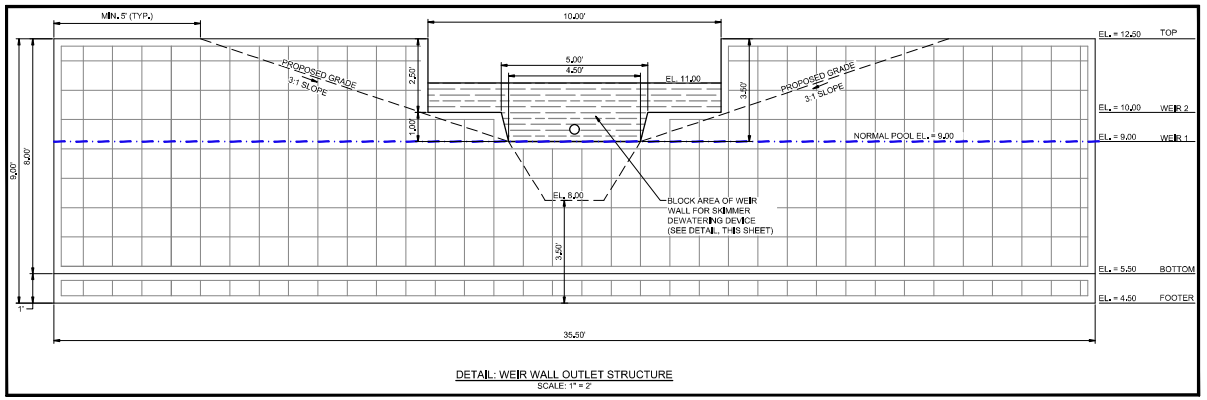
CROSS SECTION B - B' : STA. 0+00.00 TO 0+40
SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=3'



SKIMMER DEWATERING DEVICE BLOCKAGE DETAIL
NTS



DETAIL: WEIR WALL OUTLET STRUCTURE
SCALE: 1" = 2'



DETAIL: WEIR WALL OUTLET STRUCTURE
SCALE: 1" = 2'

REVISIONS

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3	07/26/22	REVISED TO ADD RIP RAP AT CATCH BASINS

DATE

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STORMWATER MANAGEMENT PLAN
FOR
MILLVILLE BY THE SEA
SUMMERWIND CONNECTOR
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

DATE: NOVEMBER 16, 2020

DESIGNED BY:	APPROVED BY:
YMR	RHS

FILE: P20043-SWM PLAN.DWG

SHEET NO.:
SWM-4

OPERATION & MAINTENANCE (O&M) NOTES:

1. THE DNREC SEDIMENT AND STORMWATER PROGRAM AND/OR SUSSEX CONSERVATION DISTRICT RESERVES THE RIGHT TO ENTER PRIVATE PROPERTY FOR PURPOSES OF PERIODIC SITE REVIEWS.
2. THE DNREC SEDIMENT AND STORMWATER PROGRAM [OR SUSSEX CONSERVATION DISTRICT] SHALL BE NOTIFIED WITHIN 30 BUSINESS DAYS IF THE PROPERTY OWNERSHIP IS TRANSFERRED TO A NEW PERSON OR ENTITY.
3. THE DNREC SEDIMENT AND STORMWATER PROGRAM AND/OR SUSSEX CONSERVATION DISTRICT MAY SEEK ENFORCEMENT ACTION AGAINST ANY OWNER DEEMED NEGLIGENT IN FULFILLING THE OPERATION AND MAINTENANCE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
4. THE DNREC SEDIMENT AND STORMWATER PROGRAM [OR, SUSSEX CONSERVATION DISTRICT] SHALL BE CONTACTED IF A CONCERN ARISES REGARDING A STORMWATER MANAGEMENT FACILITY, BEFORE ANY NON- ROUTINE MAINTENANCE, OR IF MODIFICATIONS TO THE FACILITY ARE DESIRED.
5. ANY DESIGN MODIFICATIONS MADE TO THE STORMWATER SYSTEM SHALL REQUIRE THE CREATION OF A NEW POST CONSTRUCTION STORMWATER MANAGEMENT PLAN AND/OR OPERATIONS AND MAINTENANCE PLAN, WITH APPROVAL OF THE PLAN(S) BY THE DNREC SEDIMENT AND STORMWATER PROGRAM [OR SUSSEX CONSERVATION DISTRICT].
6. FOR ALL STORMWATER EASEMENT AREAS (I.E., ACCESS, MAINTENANCE, OR OFFSITE) AND THE MINIMUM 15-FOOT WIDE ACCESSWAYS TO ALL STORMWATER FACILITIES AND THEIR STRUCTURAL COMPONENTS. REGULAR MOWING SHALL BE PERFORMED TO KEEP THE GRASS 6" OR LESS; NO TREES OR SHRUBS SHALL BE PLANTED, AND ANY FOUND GROWING SHALL BE REMOVED; AND NO PERMANENT STRUCTURES, SUCH AS FENCES OR SHEDS, SHALL BE LOCATED WITHIN THE EASEMENT OR ACCESSWAY.
7. TREES SHALL NOT BE PLANTED, AND SHALL BE REMOVED IF FOUND GROWING, ON AND WITHIN 15 FEET OF ALL POND EMBANKMENTS, ON POND SLOPES OR SAFETY BENCHES, AND WITHIN 10 FEET OF STRUCTURAL COMPONENTS, SUCH AS PIPE INLETS.
8. WHEN THE FACILITY IS EXCAVATED TO REMOVE ACCUMULATED SEDIMENT, THE DISPOSAL AREA SHALL BE PERMANENTLY STABILIZED SO THAT IT DOES NOT RECREATE AN EROSION PROBLEM. ANY MATERIAL TAKEN OFF-SITE SHALL STILL BE UTILIZED OR DISPOSED OF IN AN APPROVED DNREC MANNER.
9. BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL CALL MISS UTILITY AT 811 OR 1,800,282,8555 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO HAVE ALL EXISTING UTILITIES MARKED ONSITE.
10. IT SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER TO OPERATE AND MAINTAIN EACH POST CONSTRUCTION STORMWATER FACILITY.

TYPICAL WET POND MAINTENANCE ITEMS AND FREQUENCY

DURING ESTABLISHMENT, AS NEEDED (FIRST YEAR)	• INSPECT THE SITE AFTER STORM EVENT THAT EXCEEDS 0.5 INCHES OF RAINFALL. • STABILIZE ANY BARE OR ERODING AREAS IN THE CONTRIBUTING DRAINAGE AREA INCLUDING THE WET POND PERIMETER AREA.
QUARTERLY OR AFTER MAJOR STORMS (>1 INCH OF RAINFALL)	• REMOVE DEBRIS AND BLOCKAGES. • REPAIR UNDERCUT, ERODED, AND BARE SOIL AREAS.
TWICE A YEAR	• MOWING OF THE WET POND VEGETATED PERIMETER AREA AND EMBANKMENT.
ANNUALLY	• CLEANUP TO REMOVE TRASH, DEBRIS AND FLOATABLES. • A FULL MAINTENANCE REVIEW. • OPEN UP THE RISER TO ACCESS AND TEST THE VALVES. • REPAIR BROKEN MECHANICAL COMPONENTS, IF NEEDED.
EVERY 5 TO 7 YEARS	• FOREBAY SEDIMENT REMOVAL.
FROM 5 TO 25 YEARS	• REPAIR PIPES, THE RISER AND SPILLWAY, AS NEEDED. • REMOVE SEDIMENT FROM WET POND AREA OUTSIDE OF FOREBAYS.

SEQUENCE OF CONSTRUCTION FOR THE OPEN SPACE

1. THE PERIMETER OF THE CONSERVED OPEN SPACE SHALL BE PROTECTED BY SUPER SILT FENCE, CHAIN LINK FENCE, ORANGE SAFETY FENCE, OR OTHER MEASURES TO PREVENT COMPACTION AND SEDIMENT DISCHARGE.
2. THE LIMITS OF DISTURBANCE SHOULD BE CLEARLY IDENTIFIED AND PROTECTED IN THE FIELD BY ACCEPTABLE SIGNAGE, SILT FENCE, SNOW FENCE, OR OTHER PROTECTIVE BARRIER.
3. CONSTRUCTION OF THE GRAVEL DIAPHRAGM OR ENGINEERED LEVEL SPREADER SHALL NOT COMMENCE UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED AND PERIMETER E&S CONTROLS HAVE BEEN REMOVED AND CLEANED OUT.
4. STORMWATER SHOULD NOT BE DIVERTED TO THE CONSERVED OPEN SPACE UNTIL THE GRAVEL DIAPHRAGM AND/OR LEVEL SPREADER ARE INSTALLED AND STABILIZED.

SEQUENCE OF CONSTRUCTION FOR THE WET POND

1. PREPARE AND ASSEMBLE THE MAINTENANCE SET-ASIDE AREA.
2. INSTALL THE NECESSARY EROSION AND SEDIMENT CONTROLS.
3. EXCAVATE TO THE DESIGN DIMENSIONS, USING A BACKHOE OR EXCAVATOR. UTILIZE LOW GROUND PRESSURE EQUIPMENT ALONG SIDE SLOPES.
4. INSTALL THE OUTFALL STRUCTURE, OUTFALL PIPE, STORMDRAIN, ROCK OUTLET PROTECTION AND FOREBAYS FOR EACH IN-FLOW PIPE, AND SKIMMER DE-WATERING DEVICE.
5. CLEAN OUT ACCUMULATED SEDIMENT AFTER POND HAS BEEN CONSTRUCTED TO DESIGN DIMENSIONS AND SURROUNDING AREAS ARE STABILIZED.
6. USE SOD, WHERE APPLICABLE TO ESTABLISH A DENSE TURF COVER FOR AT LEAST 10 FEET AROUND THE SIDES OF THE WET POND TO REDUCE EROSION AND SLOUGHING.

REVISIONS

REVISION	DATE	DESCRIPTION
1	2/16/21	REVISED PER GMB COMMENTS DATED 12/22/20
2	10/06/21	REVISED PER GMB COMMENTS DATED 04/06/21
3	07/26/21	REVISED TO UPDATE CATCH BASINS

DATE

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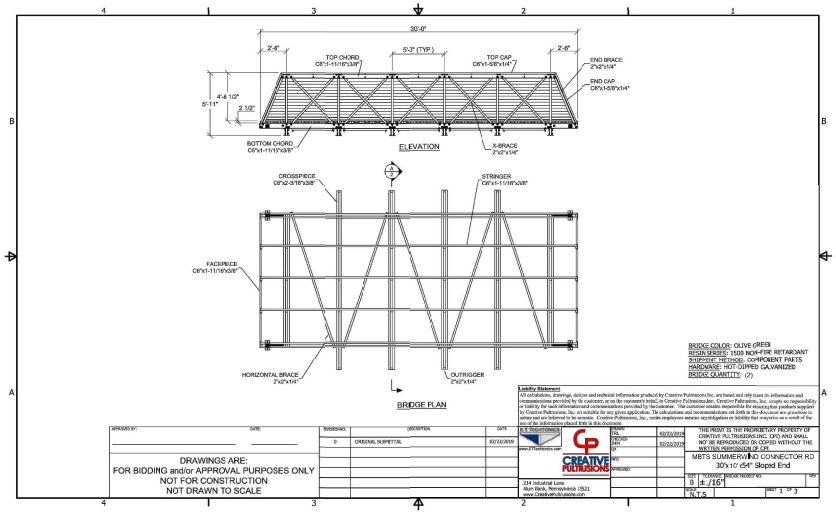
STORMWATER MANAGEMENT PLAN
FOR
MILLVILLE BY THE SEA
SUMMERWIND CONNECTOR
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

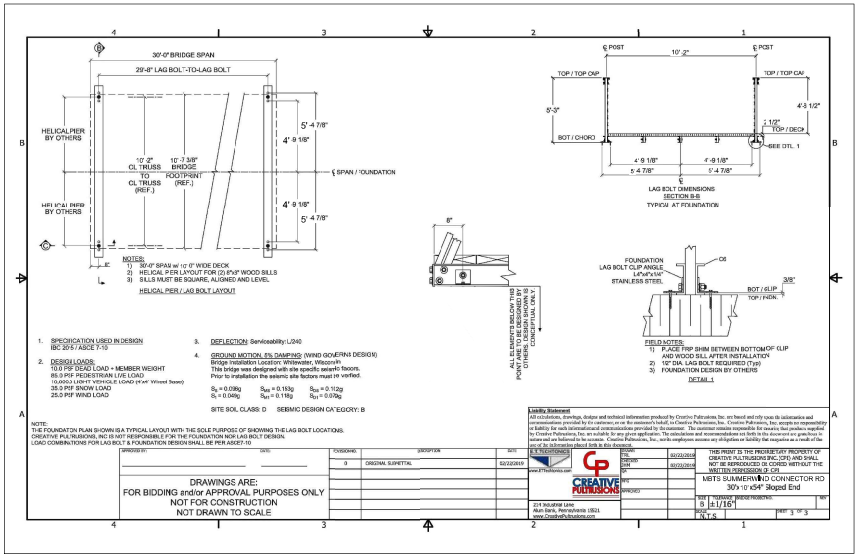
DATE: NOVEMBER 16, 2020

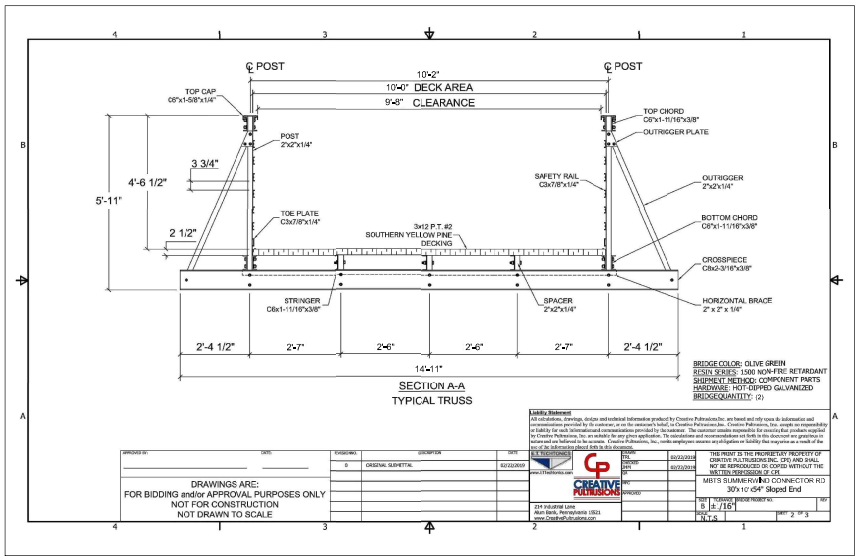
DESIGNED BY: YMR | APPROVED BY: RHS

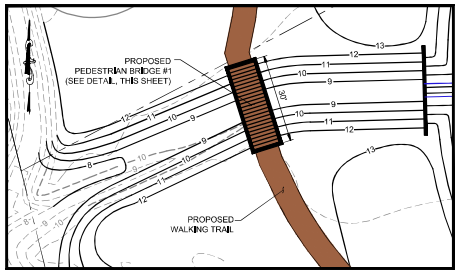
FILE: P20043-SWM PLAN.DWG

SHEET NO.: **SWM-5**

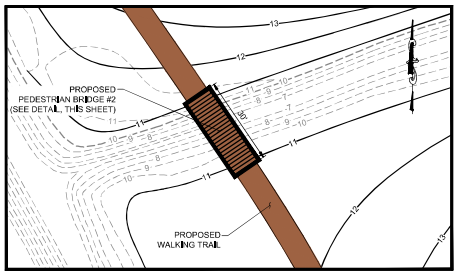




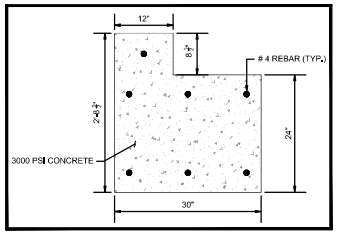




PEDESTRIAN BRIDGE #1 PLAN VIEW
SCALE: 1" = 20'



PEDESTRIAN BRIDGE #2 PLAN VIEW
SCALE: 1" = 20'



CONCRETE ANCHOR BLOCK DETAIL
N.T.S.

NOTE:

BRIDGE SHALL BE CONNECTED TO CONCRETE ANCHOR BLOCK WITH 2" Ø WEDGE ANCHORS AS SPECIFIED BY THE MANUFACTURE.

NOTES:

1) BOTH PEDESTRIAN BRIDGE CROSSINGS SHALL BE 30' LONG.

2) PEDESTRIAN BRIDGE SHALL BE MANUFACTURED BY CREATIVE PULTRUSIONS OR AN ENGINEERED APPROVED EQUIVALENT.

REVISIONS

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1	2/16/21	REVISED PER GMB COMMENTS DATED 12/22/20
2	10/06/21	REVISED PER GMB COMMENTS DATED 04/06/21
3	07/26/21	REVISED TO ADD PLACE TO CATCH BRACING

DATE

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BRIDGE PLAN
FOR
MILLVILLE BY THE SEA
SUMMERWIND CONNECTOR
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

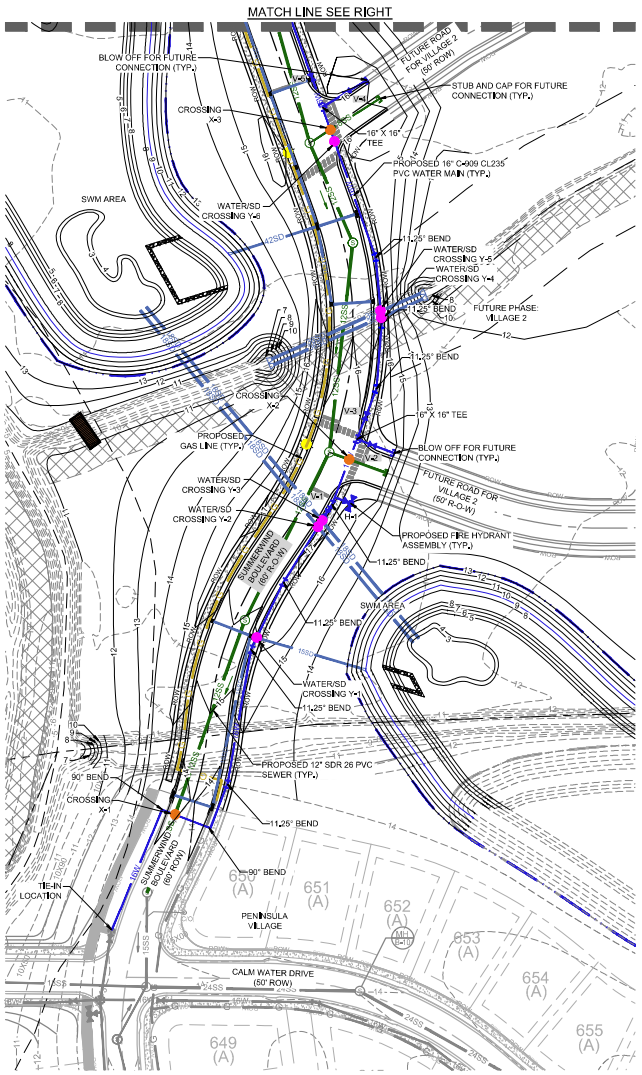
DATE: NOVEMBER 16, 2020

DESIGNED BY: YMR

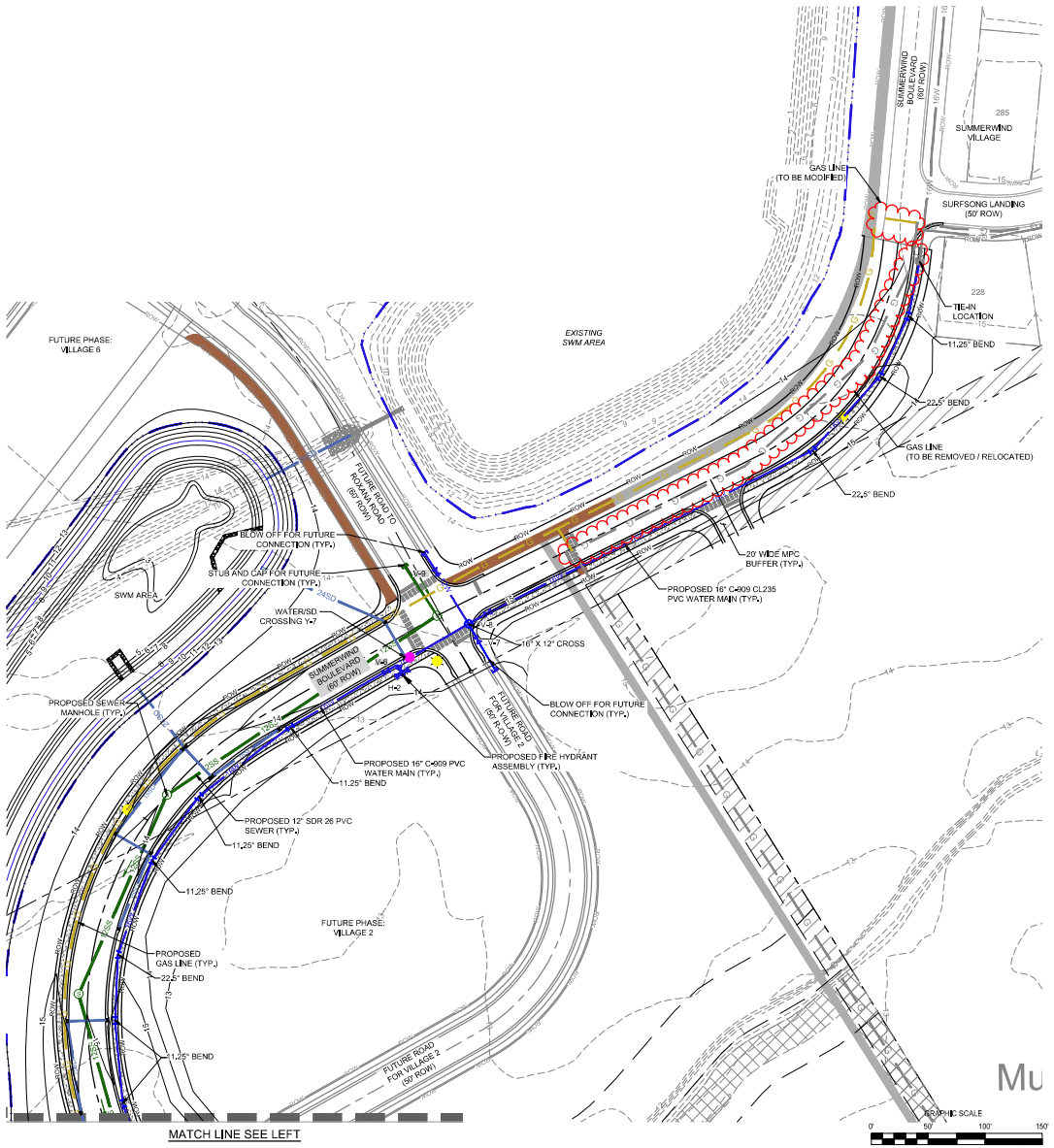
APPROVED BY: RHS

FILE: P20043-BRIDGE PLAN.DWG

SHEET NO.: **S-1**



NOTES:
1. ALL WATER MAINS SHALL BE C-909 CL235 PVC UNLESS OTHERWISE NOTED.
2. VALVES SHALL NOT BE PLACED IN THE ROADWAY SURFACE.



MATCH LINE SEE LEFT

REVISIONS

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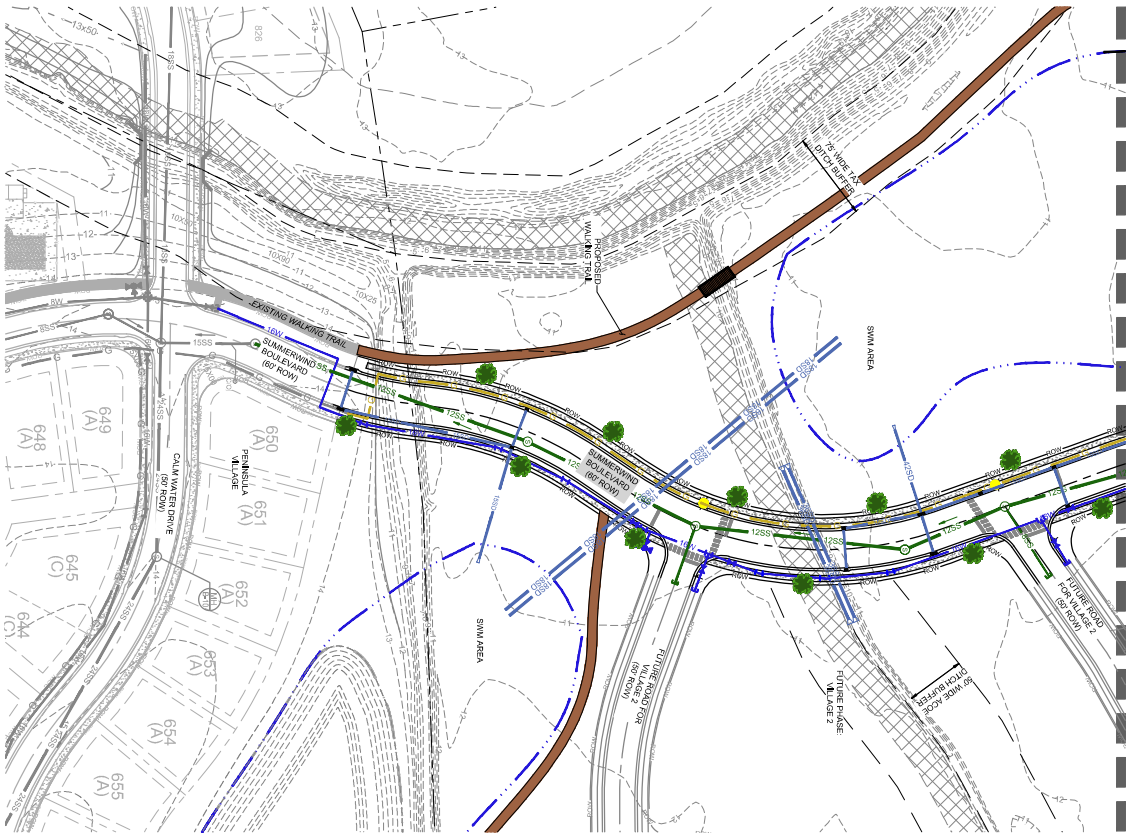
UTILITY PLAN
FOR
MILLVILLE BY THE SEA
SUMMERWIND CONNECTOR
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

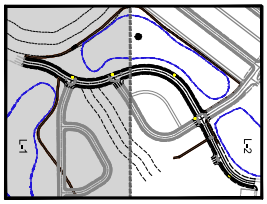
DATE: NOVEMBER 16, 2020
DESIGNED BY: YMR
APPROVED BY: RHS
FILE: P20043-UTILITY PLAN.DWG
SHEET NO.: U-1



LEGEND

SHADE TREE

GRAPHIC SCALE
SCALE: 1"=50'



LANDSCAPE PLAN
FOR
MILLVILLE BY THE SEA
SUMMERWIND CONNECTOR

BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

SHEET NO.: L-1
TITLE: P20043-LANDSCAPE PLAN.DWG
DESIGNED BY: YMR
APPROVED BY: RHS
DATE: NOVEMBER 16, 2020

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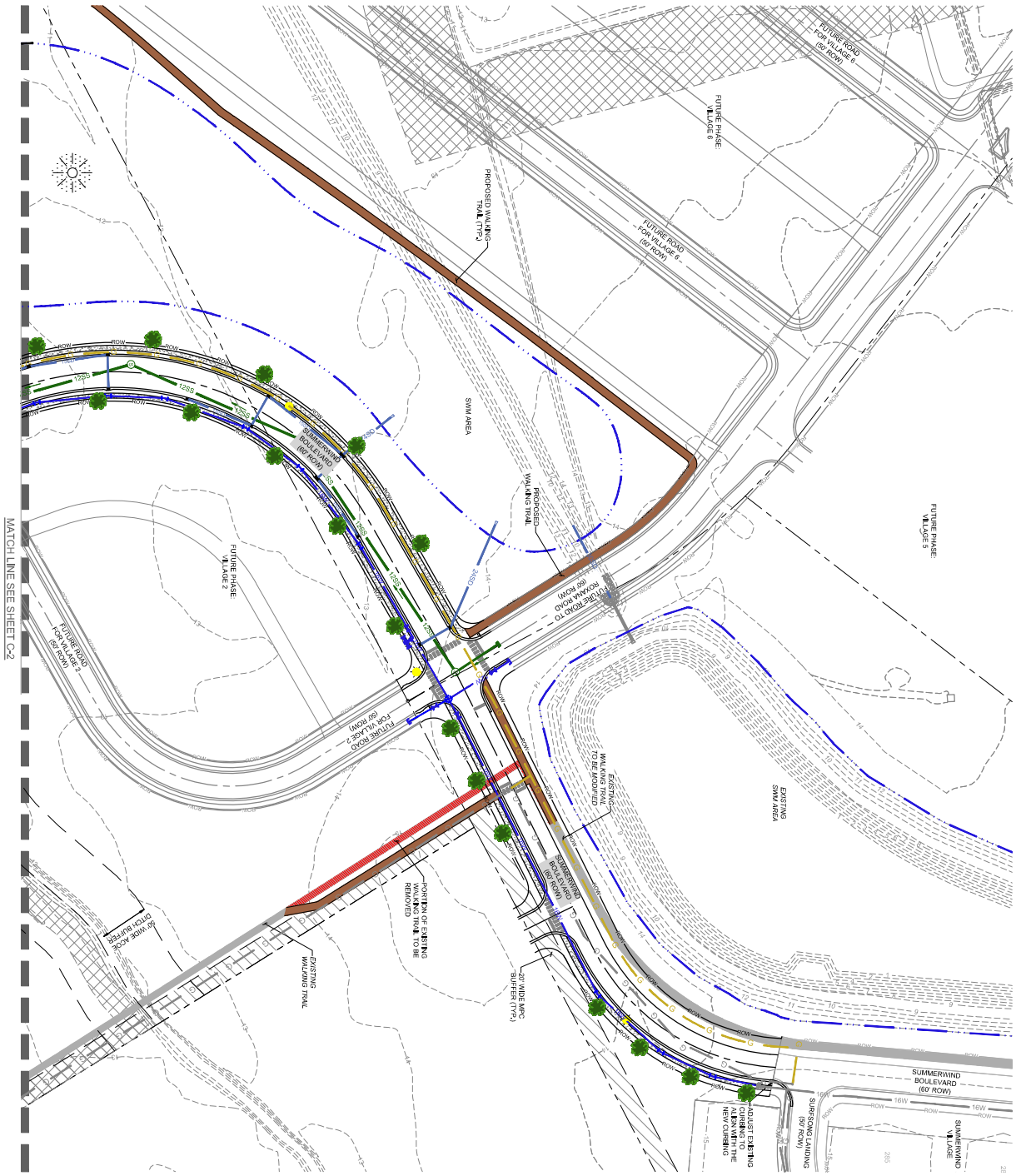

SHEET NO.: L-2	TITLE: P20043-SITEPLANZDWG	DESIGNED BY: YMR / APPROVED BY: RHS
		DATE: NOVEMBER 16, 2020

LANDSCAPE PLAN
FOR
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SUMMERWIND CONNECTOR

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