



Date: 6/26/2024

NO.	DATE	DESCRIPTION
3	7/19/2023	ADDRESSED ARTESIAN WATER & SEWER COMMENTS
4	10/11/2023	REVISE SEWER CONNECTIONS AND FORCE MAIN
5	12/16/2023	UPDATED PHASING AND SEWER CONNECTION
6	1/10/2024	ADDRESSED ARTESIAN SEWER COMMENTS
7	1/25/2024	ADDRESSED WPCF SEWER COMMENTS
8	6/26/2024	ADDED CLUSTER MAILBOXES AND PARKING

PHASING PLAN
for
RIVERWOOD
SUSSEX COUNTY, DELAWARE
INDIAN RIVER HUNDRED

Date:	10-25-2022	Job Number:	G20098	Scale:	1" = 100'	Drawn By:	EDT
Sheet No.:		Designed By:	AMW	Approved By:	JRE		

File Name: G20098-Phasing-Color.dwg

PHASES

- DELDOT
1.62 ACRES (+/-)
- PHASE 1.1 - 17.67 ACRES (+/-)
SINGLE FAMILY LOTS 1-17, 103-117 = 32 LOTS
1,659± L.F. ROADWAY
- PHASE 1.2 -PUMP STATION
0.21 ACRES (+/-)
- PHASE 2.1 - 12.60 ACRES (+/-)
SINGLE FAMILY LOTS 18-36, 93-102 = 29 LOTS
1,073± L.F. ROADWAY
- PHASE 2.2 - AMENITIES
0.44 ACRES (+/-)
AMENITY BATHHOUSE AND POOL
- PHASE 3 - 8.48 ACRES (+/-)
SINGLE FAMILY LOTS 54-80 = 27 LOTS
878± L.F. ROADWAY
- PHASE 4 - 6.58 ACRES (+/-)
SINGLE FAMILY LOTS 37-53, 81-92 = 29 LOTS
960± L.F. ROADWAY

CONFORMED COPY
Document # 202400024475 BK. 430 PG. 55
On 7/17/2024 at 10:19:29 AM
RECORDER OF DEEDS Alexandra Reed Baker
Sussex County
Consideration: \$0.00

PHASING NOTES

- PORTIONS OF PHASES WILL OVERLAP WHEN PARTIAL OR TEMPORARY IMPROVEMENTS ARE MADE FOR CONNECTION PURPOSES AND FINAL BUILD OUT IS IN A FUTURE PHASE. CONTRACTOR/OWNER/DEVELOPER SHALL ALERT THE ENGINEER IMMEDIATELY IF ISSUES WITH THE PHASING PLAN ARE FOUND IN THE FIELD.
- VARIATIONS FROM THE PHASING PLAN SHALL BE COORDINATED WITH THE ENGINEER AND ALL IMPACTED AGENCIES.
- SCD WRITTEN APPROVAL OF PHASING VARIATIONS AND PLAN REVISIONS IS REQUIRED PRIOR TO IMPLEMENTATION.
- NO MORE THAN 20 ACRES SHALL BE DISTURBED AT ANY TIME.
- MATERIAL EXCAVATED FROM STORMWATER PONDS MAY BE STOCK PILED WITHIN FUTURE PHASES FOR FILL IN THOSE PHASES. NO MORE THAN 20 ACRES MAY BE DISTURBED AT ANY TIME.
- PORTIONS OF PHASES MAY HAVE INTERMITTENT PERIODS OF OVERLAP. NO MORE THAN 20 ACRES MAY BE DISTURBED AT ANY TIME.
- PHASING PLAN SUBJECT TO CHANGE, PLEASE REFER TO LATEST RECORDED PHASING PLAN.

SUSSEX COUNTY PLANNING & ZONING CONDITIONS OF APPROVAL (AMENITIES)

1. AMENITIES INCLUDING A POOL AND BATHHOUSE SHALL BE CONSTRUCTED AND OPEN TO USE BY RESIDENTS OF THIS DEVELOPMENT ON OR BEFORE THE ISSUANCE OF THE 70TH RESIDENTIAL BUILDING PERMIT. THE FINAL SITE PLAN SHALL CONTAIN DETAILS AS TO THE SIZE AND LOCATION OF THESE AMENITIES.

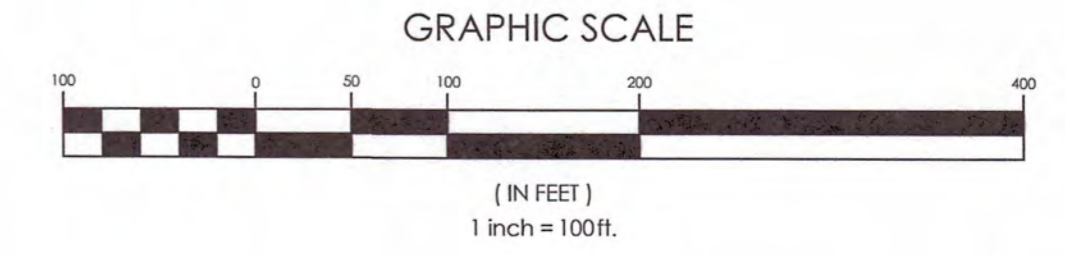
SITE DATA:

OWNER: RIVERWOOD DEVELOPMENT, LLC
30435 SOUTHAMPTON BRIDGE ROAD
SALISBURY, MD 21804

DEVELOPER: RIVERWOOD DEVELOPMENT, LLC
30 EAST PINE STREET
GEORGETOWN, DE 19947
PHONE: (302) 644-4442
CONTACT: JAMIE KING, ESQ

**ENGINEER/
LAND PLANNER:** SOLUTIONS IPEM, LLC
303 NORTH BEDFORD STREET
GEORGETOWN, DE 19947
PHONE: (302) 297-9215
CONTACT: JIM ERIKSEN, PE

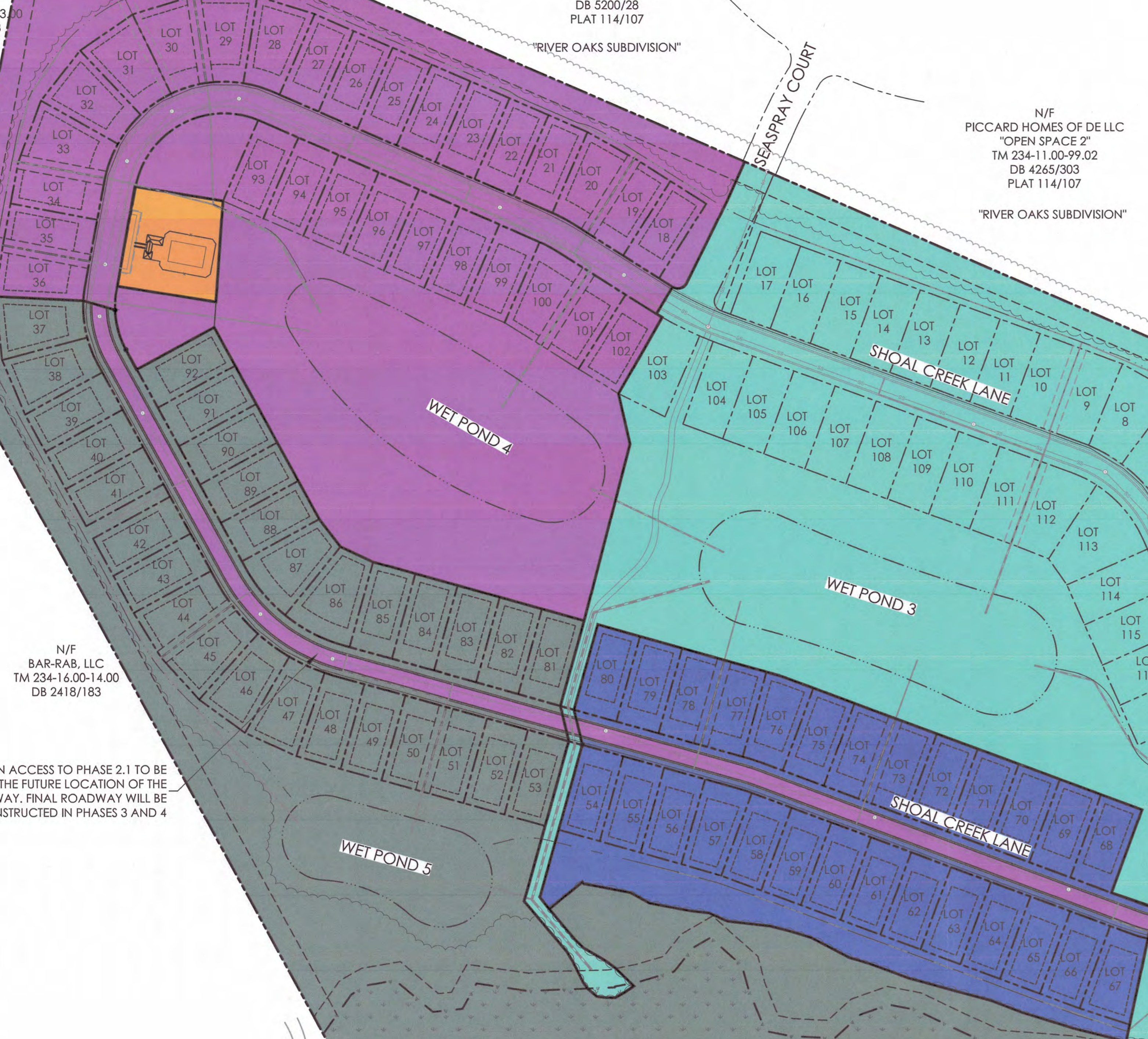
- TAX MAP 234-17.00-3.00
AREA: 58.6 ± ACRES
- SUBDIVISION NUMBER: 2021-32
- SUSSEX COUNTY AGREEMENT #1188
- WATER SUPPLY:
ARTESIAN WATER COMPANY, INC.
- SANITARY SEWER:
ARTESIAN WASTEWATER MANAGEMENT, INC



N/F
GALE L.
SCHAEFFER,
NANCY L. REED,
CHARLES D.
WARRINGTON,
ET.AL
TM 234-11.00-103.00
DB 5668/113

N/F
DELMARVA DEVELOPMENT
GROUP, LLC
TM 234-11.00-99.00
DB 5200/28
PLAT 114/107
"RIVER OAKS SUBDIVISION"

N/F
PICCARD HOMES OF DE LLC
"OPEN SPACE 2"
TM 234-11.00-99.02
DB 4265/303
PLAT 114/107
"RIVER OAKS SUBDIVISION"



N/F
BAR-RAB, LLC
TM 234-16.00-14.00
DB 2418/183

CONSTRUCTION ACCESS TO PHASE 2.1 TO BE PROVIDED IN THE FUTURE LOCATION OF THE ROADWAY. FINAL ROADWAY WILL BE CONSTRUCTED IN PHASES 3 AND 4

N/F
SHERI LYNN HUMPHREY
TM 234-17.00-10.00
DB 3486/338

N/F
DWAYNE D. &
VALERIE B.
WILT BANK
TM
234-17.00-9.01
DB 2443/105
PLAT 66/70

N/F
DWAYNE D. &
VALERIE B.
WILT BANK
TM
234-17.00-9.00
DB 5311/333
PLAT 66/70

N/F
MAURICE RICARDO
TUNNELL
TM 234-17.00-6.00
DB 2165/146
(SHOWN IN PART ON
PLAT 66/70)

N/F
ERIC A. RICKARDS
TM 234-17.00-4.00
DB 2630/285
PLAT 82/306

N/F
SYVESTER M. &
JOYCE D. RICKARDS
TM 234-17.00-7.00
DB 882/286
(SHOWN IN PART ON
PLAT 66/70)

N/F
BAR-SGR LLC
TM 234-17.00-15.00
DB 0/0

APPROVED
Phasing Plan
Sub 17, 2024
Am't SUSSEX COUNTY PLANNING & ZONING COMMISSION

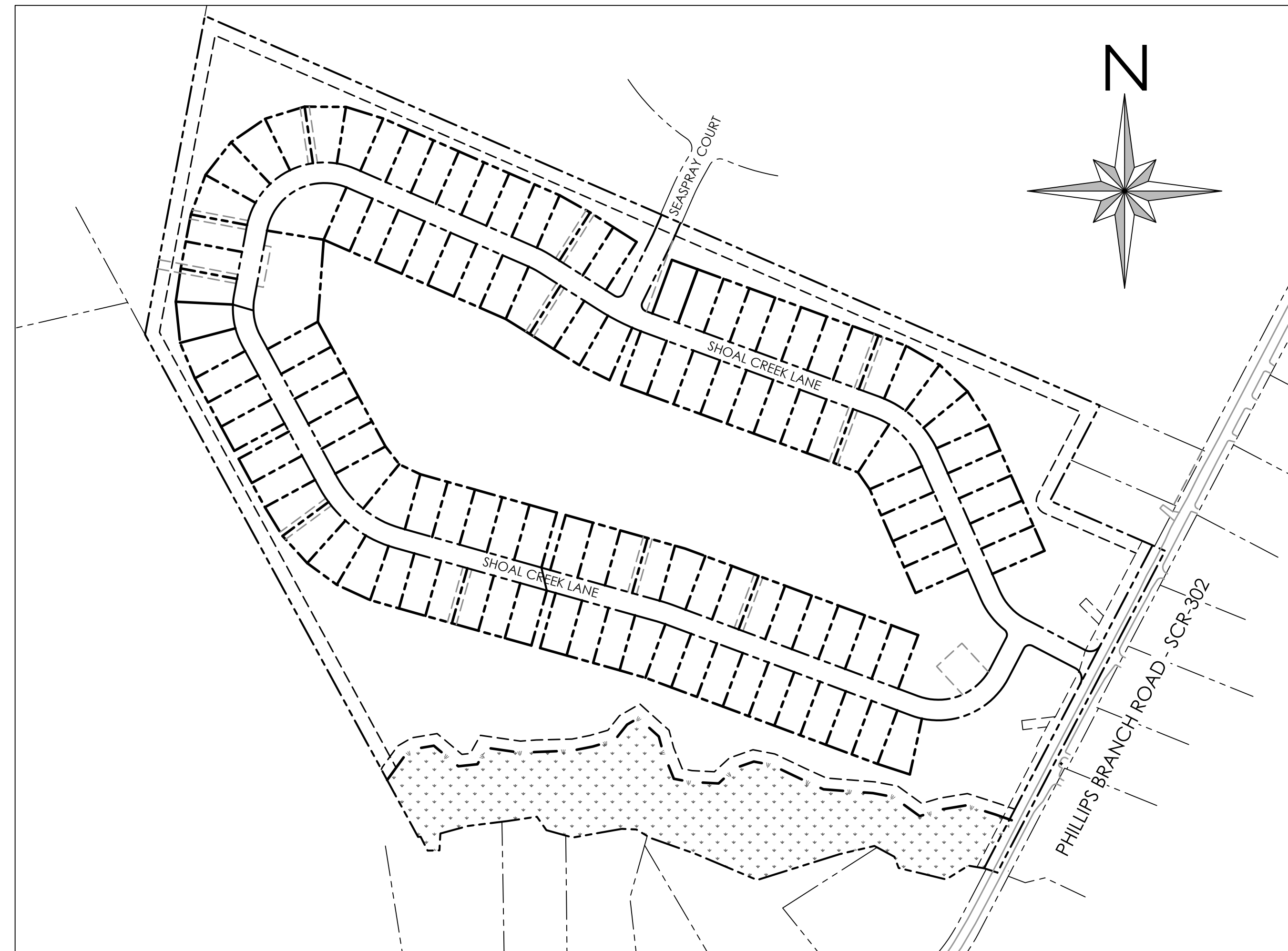
APPROVED
J. Dickson

7/16/2024
Sussex County
Engineering Department

ROADWAY, STORM DRAIN, SEWER, WATER, & ESC

FOR RIVERWOOD

INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE
FOR
RIVERWOOD DEVELOPMENT, LLC



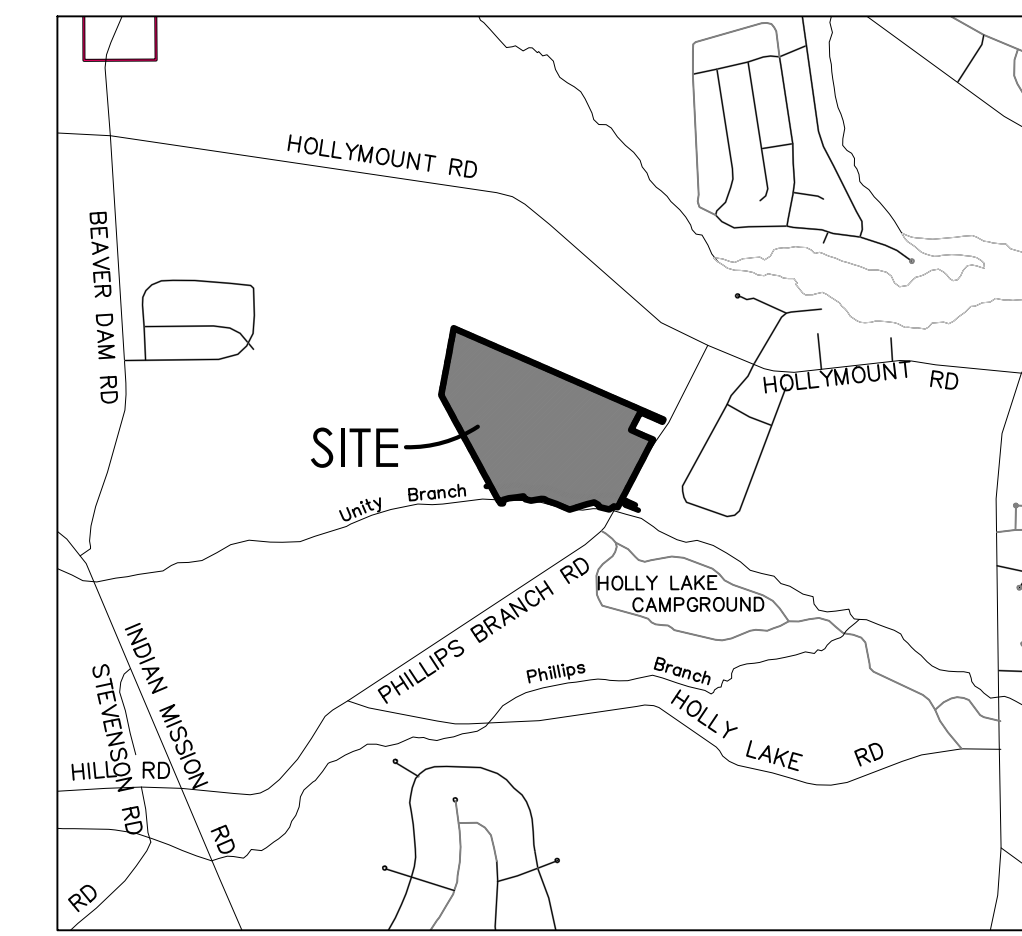
SITE
1" = 200'

CONSTRUCTION PLANS

1 - COVER SHEET	19 - BULK GRADING PLAN C	37 - FIRE MARSHAL PLAN	55 - EROSION AND SEDIMENT CONTROL NOTES & DETAILS 5
2 - GENERAL NOTES	20 - BULK GRADING PLAN D	38 - WATER PLAN A	56 - EROSION AND SEDIMENT CONTROL NOTES & DETAILS 6
3 - EXISTING CONDITIONS	21 - DETAILS 1	39 - WATER PLAN B	57 - POST CONSTRUCTION SITE SWM
4 - INDEX PLAN	22 - DETAILS 2	40 - WATER PLAN C	58 - POST CONSTRUCTION SWM PLAN - POND 1
5 - ROAD AND STORM DRAIN PLAN A	23 - DETAILS 3	41 - WATER PLAN D	59 - POST CONSTRUCTION SWM PLAN - POND 2
6 - ROAD AND STORM DRAIN PLAN B	24 - SANITARY SEWER INDEX	42 - WATER PROFILES 1	60 - POST CONSTRUCTION SWM PLAN - POND 3
7 - ROAD AND STORM DRAIN PLAN C	25 - SANITARY SEWER PLAN A	43 - WATER PROFILES 2	61 - POST CONSTRUCTION SWM PLAN - POND 4
8 - ROAD AND STORM DRAIN PLAN D	26 - SANITARY SEWER PLAN B	44 - ARTESIAN WATER NOTES AND DETAILS	62 - POST CONSTRUCTION SWM PLAN - POND 5
9 - ROAD PROFILES 1	27 - SANITARY SEWER PLAN C	45 - ARTESIAN WATER DETAILS	63 - PHASING PLAN
10 - ROAD PROFILES 2	28 - SANITARY SEWER PLAN D	46 - EROSION AND SEDIMENT CONTROL COVER	E-1 - PUMP STATION SITE PLAN & LEGEND
11 - DETAILED INTERSECTION GRADING	29 - SANITARY SEWER PROFILES 1	47 - STORMWATER AND BULK EARTHWORK PHASING PLAN	E-2 - S.E.C. DIAGRAM & DETAIL
12 - STORM DRAIN PROFILES 1	30 - SANITARY SEWER PROFILES 2	48 - PRE-CONSTRUCTION SITE SWM PLAN	E-3 - DETAILS, DIAGRAM, & SCHEDULE
13 - STORM DRAIN PROFILES 2	31 - SANITARY SEWER PROFILES 3	49 - CONSTRUCTION SITE SWM PLAN	
14 - STORM DRAIN PROFILES 3	32 - SANITARY SEWER DETAILS 1	50 - STORM DRAIN OUTFALL CONSTRUCTION DETAILS	
15 - STORM DRAIN PROFILES 4	33 - SANITARY SEWER DETAILS 2	51 - EROSION AND SEDIMENT CONTROL NOTES & DETAILS 1	
16 - STORM DRAIN PIPE AND STRUCTURE CHARTS	34 - PUMP STATION SITE PLAN	52 - EROSION AND SEDIMENT CONTROL NOTES & DETAILS 2	
17 - BULK GRADING PLAN A	35 - PUMP STATION DETAILS 1	53 - EROSION AND SEDIMENT CONTROL NOTES & DETAILS 3	
18 - BULK GRADING PLAN B	36 - PUMP STATION DETAILS 2	54 - EROSION AND SEDIMENT CONTROL NOTES & DETAILS 4	

SITE DATA:

- OWNER:** RIVERWOOD DEVELOPMENT, LLC
30435 SOUTHAMPTON BRIDGE ROAD
SALISBURY, MD 21804
- APPLICANT/DEVELOPER:** RIVERWOOD DEVELOPMENT, LLC
30 EAST PINE STREET
GEORGETOWN, DE 19947
PHONE: 302-444-4442
CONTACT: JAMIE KING, ESQ
- ENGINEER:** SOLUTIONS IPEM
303 NORTH BEDFORD STREET
GEORGETOWN, DE 19947
PHONE: 302.297.9215
CONTACT: JIM ERIKSEN, PE
- TAX MAP: 234-17.00-3.00
SITE AREA = 58.6 ± ACRES
 - PROPOSED USE: AR-1 CLUSTER SUBDIVISION
117 SINGLE FAMILY LOTS
DENSITY = 117 UNITS / 58.60 AC = 1.997 UNITS/AC
PERMITTED DENSITY = 2.0 UNITS/AC
MIN. LOT AREA = 7,500 S.F.
MIN. LOT WIDTH = 60'
MAXIMUM BUILDING HEIGHT: 42'
 - EXISTING ZONING: AR-1
 - PROPOSED BUILDING SETBACKS:
FRONT: 25' (15' CORNER LOT)
SIDE: 10'
REAR: 10'
 - FLOOD ZONE: THE PROPERTY IS LOCATED WITHIN FLOOD ZONE AE (SPECIAL HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD, NO BASE ELEVATIONS DETERMINED) AND ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), PER FIRM MAP NUMBER 10005C0304K MAP REVISED MARCH 16, 2015
 - WATER SUPPLY: ARTESIAN WATER COMPANY, INC.
 - SANITARY SEWER: ARTESIAN WASTEWATER MANAGEMENT, INC.
 - SOIL CLASSIFICATIONS:
FHA: FORT MOTT-HENELOPEN COMPLEX, 0 TO 2 PERCENT SLOPES
FHB: FORT MOTT-HENELOPEN COMPLEX, 2 TO 5 PERCENT SLOPES
FHA: FORT MOTT LOAMY SAND, 0 TO 2 PERCENT SLOPES
LO: LONGMARSH AND IDANTOWN SOILS, FREQUENTLY FLOODED
 - TOPOGRAPHY AND BOUNDARY SHOWN HEREIN ARE AS PROVIDED BY SOLUTIONS IPEM LLC.
 - OPEN SPACE = 27 ± AC (46% ± OF DEVELOPED AREA)
OPEN SPACE A = 4 ± AC (15% ± OF OPEN SPACE)
OPEN SPACE B = 13 ± AC (45% ± OF OPEN SPACE)
OPEN SPACE C = 10 ± AC (37% ± OF OPEN SPACE)
 - EXISTING WOODLANDS = 56.81 ± AC
WOODLANDS TO REMAIN = 9.86 ± AC



VICINITY MAP
SCALE: 1"=200'

PRELIMINARY PLAT INDEX

- 1 - COVER
- 2 - EXISTING CONDITIONS
- 3 - PERLIMINARY PLAT A
- 4 - PRELIMINARY PLAT B
- 5 - PRELIMINARY PLAT C
- 6 - PRELIMINARY PLAT D

DELDOT PLAN INDEX

- 1 - TITLE
- 2 - LEGEND
- 3 - CONSTRUCTION & MOT NOTES
- 4 - PLAN SHEET INDEX
- 5 - TYPICAL SECTIONS 1
- 6 - TYPICAL SECTIONS 2
- 7 - HORIZONTAL & VERTICAL CONTROL
- 8 - PHASE 1 CONSTRUCTION & GRADING PLAN
- 9-10 - CONSTRUCTION PLANS
- 11-13 - GRADING PLANS
- 14 - PROFILES & CONSTRUCTION DETAILS
- 15-16 - SIGNING AND STRIPING PLANS
- 17-23 - PHILLIPS BRANCH ROAD CROSS SECTIONS
- 24-25 - MOT & EROSION SEDIMENT CONTROL PLANS

	EXISTING	PROPOSED
PROPERTY LINE	---	---
EASEMENT LINE	---	---
SETBACK LINE	---	---
CONCRETE MONUMENT FOUND	CMF □	N/A
IRON PIPE FOUND	IPF ●	N/A
BENCH MARK	▲ ELEV. 19.25	N/A
SPOT ELEV. LABEL	x 19.25	19.25
MAJOR CONTOUR	---10---	---10---
MINOR CONTOUR	---7---	---7---
ROAD CENTERLINE	---	---
EDGE OF CONCRETE	---	---
EDGE OF PAVEMENT	---	---
EDGE OF GRAVEL	---	N/A
PAINT STRIPE	---	---
CURB	---	---
PAVEMENT HATCH	▨	▨
CONCRETE HATCH	▨	▨
BUILDING OUTLINE	---	---
SIDEWALK	---	---
SIDEWALK HATCH	▨	▨
FENCE LINE	x	N/A
SIGN	▭	N/A
EDGE OF WETLAND	W	N/A
FLOODPLAIN	---	N/A
STORM MANHOLE	⊙	⊙
CURB INLET	⊙	⊙
YARD INLET	⊙	⊙
STORM PIPE	---	---
RIP RAP	▨	▨
SANITARY MANHOLE	⊙	⊙
SANITARY CLEANOUT	○	○
SANITARY PIPE	SS	SS
WATER VALVE	W	W
WATER PIPE	W	W
FIRE HYDRANT	⊙	⊙
OVERHEAD ELECTRIC	E	N/A
UNDERGROUND ELECTRIC	E	N/A
UNDERGROUND TELECOMMUNICATIONS	TC	N/A
UTILITY POLE	⊙	N/A
LIGHT POLE	★	N/A
DECIDUOUS TREE	●	N/A
CONIFEROUS TREE	●	N/A
TREE LINE	---	---

NOTES:

- ALL ON-SITE STREETS ARE PRIVATE AND SHALL BE MAINTAINED BY THE OWNER UNTIL DEDICATION TO THE HOMEOWNERS ASSOCIATION. THE PERPETUAL MAINTENANCE OF THE STREETS SHALL BE BY THE RESPECTIVE ORGANIZATION.
- STORMWATER MANAGEMENT AND STORM DRAINAGE SHALL BE IN ACCORDANCE WITH THE SUSSEX COUNTY CONSERVATION DISTRICT AND SUSSEX COUNTY ENGINEERING REQUIREMENTS. THE SITE IS TO BE TREATED BY MULTIPLE WET PONDS. MAINTENANCE OF THE ON-SITE STORMWATER MANAGEMENT FACILITIES AND STORM DRAINAGE SYSTEM SHALL BE BY THE OWNER UNTIL DEDICATION TO THE HOMEOWNERS ASSOCIATION. THE PERPETUAL MAINTENANCE OF THE ABOVE PROACTIVE SHALL BE BY THE RESPECTIVE ORGANIZATION.
- ALL OPEN SPACE, INCLUDING BUFFERS AND FOREST STRIPS, SHALL BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- FOR ANY NEW DEVELOPMENT LOCATED IN WHOLE OR IN PART WITH 50 FEET OF THE BOUNDARY OF LAND USED PRIMARILY FOR AGRICULTURAL PURPOSES, NO IMPROVEMENT REQUIRING AN OCCUPANCY APPROVAL FOR A RESIDENTIAL TYPE USE SHALL BE CONSTRUCTED WITHIN 50 FEET OF THE BOUNDARY OF THE LANDS USED PRIMARILY FOR AGRICULTURAL PURPOSES.
- POTABLE WATER, SANITARY SEWER, STORM DRAINAGE, STREET PAVEMENT SHALL BE CONSTRUCTED BY DEVELOPER. PHASING OF IMPROVEMENTS SHALL BE PER COUNTY AND CONSERVATION DISTRICT REQUIREMENTS.
- THIS PROPERTY IS LOCATED IN THE VICINITY OF LAND USED PRIMARILY FOR AGRICULTURAL PURPOSES ON WHICH NORMAL AGRICULTURAL PURPOSES AND ACTIVITIES HAVE BEEN AFFORDED THE HIGHEST PRIORITY USE STATUS. IT CAN BE ANTICIPATED THAT SUCH USES NOW OR IN THE FUTURE, INVOLVE NOISE, DUST, MANURE AND OTHER ODORS, THE USE OF AGRICULTURAL CHEMICALS AND NIGHTTIME FARM OPERATIONS. THE USE AND ENJOYMENT OF THIS PROPERTY IS EXPRESSLY CONDITIONED ON ACCEPTANCE OF ANY ANNOYANCE OR INCONVENIENCE WHICH MAY RESULT FROM NORMAL AGRICULTURAL USES AND ACTIVITIES.
- THE PROPERTY IS NOT LOCATED WITHIN ANY TRANSPORTATION IMPROVEMENT DISTRICTS.
- ALL SUBDIVISION LOTS SHALL HAVE FIVE FOOT WIDE EASEMENTS ALONG ALL LOT LINES FOR A TOTAL EASEMENT WIDTH OF 10 FEET ALONG A LOT LINE COMMON TO TWO LOTS. EASEMENTS ALONG PERIMETER (RIGHT-OF-WAY AND OPEN SPACE) SHALL BE 10 FEET IN WIDTH.
- ARTESIAN WATER COMPANY INC. AND ARTESIAN WASTEWATER MANAGEMENT INC. ARE HEREBY GRANTED UNINTERRUPTED AND PERPETUAL EASEMENT WITHIN THE PRIVATE COMMUNITY STREET RIGHT-OF-WAY AND OPEN SPACE.

WELAND STATEMENT

I, Edward M. Launay, PWS, STATES THAT THE BOUNDARIES OF WATERS OF THE UNITED STATES INCLUDING WETLANDS SUBJECT TO THE CORPS OF ENGINEERS REGULATORY PROGRAM DELINEATED UPON THIS PLAN HAVE BEEN DETERMINED USING MY PROFESSIONAL JUDGMENT IN ACCORDANCE WITH THE 1987 CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, ATLANTIC GULF COAST REGIONAL SUPPLEMENT, REGULATIONS AND SUPPLEMENTAL GUIDANCE (33 CFR 328.3(a)(8), Waters of the U.S., Definition/CECW-OR, 10-7-1991, Questions and Answers on the 1987 CDE Manual/CECW-OR, 9-26-1990, RCL 90-7/CECW-OR, 3-4-1992, Clarification and Interpretation of the 1987 Manual). THIS DELINEATION HAS NOT BEEN CONDUCTED FOR USDA PROGRAM OR AGRICULTURAL PURPOSES.

EDWARD M. LAUNAY, PWS No. 875 DATE 7/17/2023
SOCIETY OF WETLAND SCIENTISTS
CORPS OF ENGINEERS
CERTIFIED WELAND DELINEATOR WDCP93MD05100368

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THESE DRAWINGS HAVE BEEN PREPARED UNDER MY SUPERVISION.

JIM ERIKSEN, PE DATE

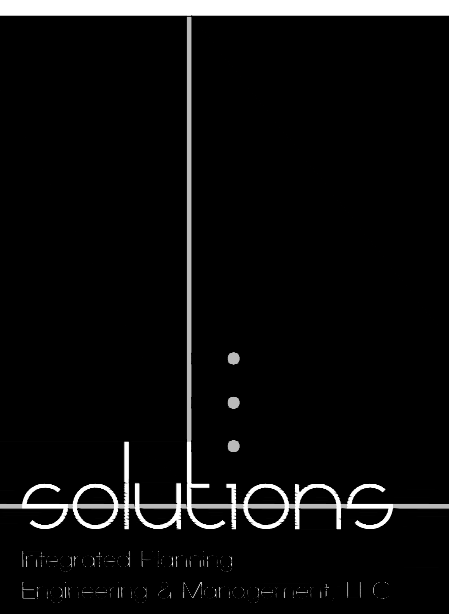
DEVELOPER'S CERTIFICATION

THE DEVELOPER, RIVERWOOD DEVELOPMENT, LLC, HEREBY CERTIFIES THAT THESE DRAWINGS HAVE BEEN APPROVED.

JAMIE KING, ESQ DATE 7/20/23

APPROVED, SUSSEX COUNTY ENGINEER AGREEMENT #1188

HANS MEDLARZ, PE DATE



303 North Bedford Street
Georgetown, DE 19947
T. 302.297.9215

3033 Manthill Mill Road
Salisbury, MD 21804
T. 410.572.8833

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Date: 1/25/2024

NO.	DATE	DESCRIPTION
1	6/29/2023	ADDRESSED ARTESIAN WATER & SEWER COMMENTS
2	7/17/2023	ADDRESSED ARTESIAN WATER & SEWER COMMENTS
3	10/11/2023	REVISE SEWER CONNECTIONS AND FOREMAIN
4	12/16/2023	UPDATED PHASING AND SEWER CONNECTION
5	1/10/2024	ADDRESSED ARTESIAN SEWER COMMENTS
6	1/25/2024	ADDRESSED WFCC SEWER COMMENTS

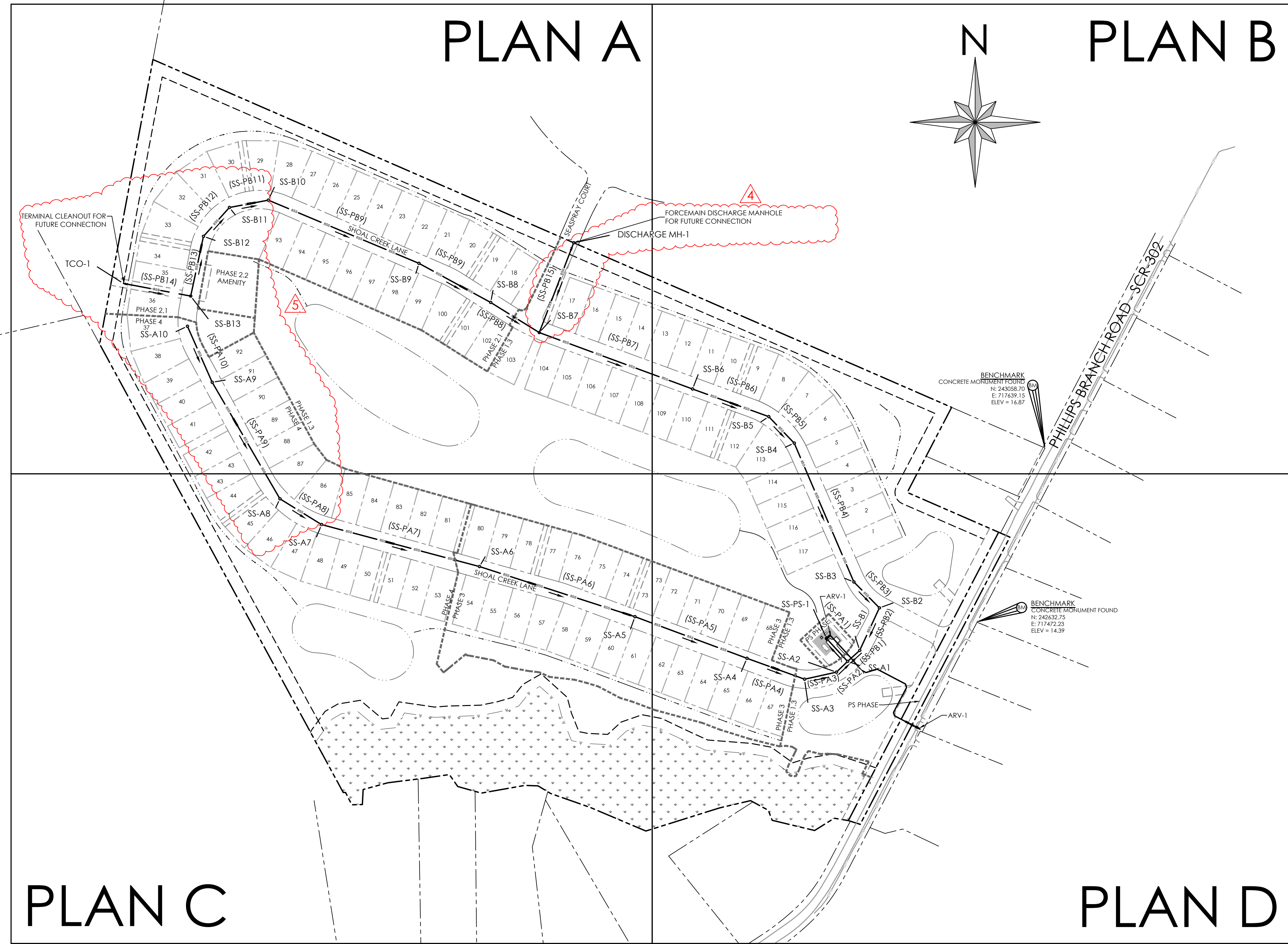
COVER SHEET

for
RIVERWOOD
SUSSEX COUNTY, DELAWARE
INDIAN RIVER HUNDRED

Date: 10-25-2022
Job Number: G20098
Scale: 1"=200'
Drawn By: AMW
Designed By: AMW
Approved By: JRE

Sheet No.: 1

File Name: G20098-Cover.dwg



SANITARY SEWER STRUCTURE CHART				
NAME	RIM ELEV.(FT)	INVERT-IN ELEV.(FT) (1)	INVERT-IN ELEV.(FT) (2)	INVERT-OUT ELEV.(FT)
SS-PS-1	14.43	4.31	N/A	9.27
SS-A1	12.52	4.78	N/A	4.61
SS-A2	12.60	5.83	N/A	5.78
SS-A3	13.27	7.85	N/A	7.80
SS-A4	15.04	9.09	N/A	9.04
SS-A5	16.10	10.50	N/A	10.45
SS-A6	20.06	12.37	N/A	12.32
SS-A7	20.92	13.42	N/A	13.57
SS-A8	21.66	14.45	N/A	14.40
SS-A9	22.79	16.68	N/A	16.63
SS-A10	22.67	N/A	N/A	17.67
SS-B1	12.76	4.95	N/A	4.90
SS-B2	13.20	5.34	N/A	5.29
SS-B3	12.94	5.66	N/A	5.61
SS-B4	14.95	6.82	N/A	6.77
SS-B5	15.45	7.14	N/A	7.09
SS-B6	16.44	7.79	N/A	7.74
SS-B7	18.62	9.04	9.04	8.99
SS-B8	18.26	9.51	N/A	9.46
SS-B9	18.48	10.16	N/A	10.11
SS-B10	20.02	11.41	N/A	11.36
SS-B11	20.40	11.75	N/A	11.70
SS-B12	20.77	12.08	N/A	12.03
SS-B13	21.98	12.73	N/A	12.68
SS-B14	22.63	N/A	N/A	13.80
SS-B15	23.53	N/A	N/A	11.08
TCO-1	22.63	N/A	N/A	13.80
DISCHARGE MH-1	17.08	N/A	N/A	11.08

SANITARY SEWER PIPE TABLE						
NAME	SIZE (IN)	MATERIAL	LENGTH (FT)	SLOPE (%)	UP INVERT (FT)	DOWN INVERT (FT)
SS-PA1	10	Ductile Iron	76.19	0.40	4.61	4.31
SS-PA2	8	PVC - SDR 26	38.00	2.63	5.78	4.78
SS-PA3	8	PVC - SDR 26	80.00	2.46	7.80	5.83
SS-PA4	8	PVC - SDR 26	150.00	0.79	9.04	7.85
SS-PA5	8	PVC - SDR 26	292.58	0.46	10.45	9.09
SS-PA6	8	PVC - SDR 26	400.00	0.46	12.32	10.50
SS-PA7	8	PVC - SDR 26	400.00	0.30	13.57	12.37
SS-PA8	8	PVC - SDR 26	120.00	0.65	14.40	13.62
SS-PA9	8	PVC - SDR 26	330.00	0.66	16.63	14.45
SS-PA10	8	PVC - SDR 26	150.00	0.66	17.67	16.68
SS-PB1	8	PVC - SDR 26	400.00	0.30	4.90	4.78
SS-PB2	8	PVC - SDR 26	114.67	0.30	5.29	4.95
SS-PB3	8	PVC - SDR 26	89.11	0.30	5.61	5.34
SS-PB4	8	PVC - SDR 26	370.00	0.30	6.77	5.66
SS-PB5	8	PVC - SDR 26	90.00	0.30	7.09	6.82
SS-PB6	8	PVC - SDR 26	198.42	0.30	7.74	7.14
SS-PB7	8	PVC - SDR 26	400.00	0.30	8.99	7.79
SS-PB8	8	PVC - SDR 26	140.00	0.30	9.46	9.04
SS-PB9	8	PVC - SDR 26	200.00	0.30	10.11	9.51
SS-PB10	8	PVC - SDR 26	400.00	0.30	11.36	10.16
SS-PB11	8	PVC - SDR 26	297.00	0.30	11.70	11.41
SS-PB12	8	PVC - SDR 26	95.00	0.30	12.03	11.75
SS-PB13	8	PVC - SDR 26	149.54	0.40	12.68	12.08
SS-PB14	8	PVC - SDR 26	167.50	0.64	13.80	12.73
SS-PB15	8	PVC - SDR 26	235.53	0.87	11.08	9.04

SITE DATA:

OWNER: RIVERWOOD DEVELOPMENT, LLC
30435 SOUTHAMPTON BRIDGE ROAD
SALISBURY, MD 21804

APPLICANT/ DEVELOPER: RIVERWOOD DEVELOPMENT, LLC
30 EAST PINE STREET
GEORGETOWN, DE 19947
PHONE: 302-644-4442
CONTACT: JAMIE KING, ESQ

ENGINEER: SOLUTIONS IPEM
303 NORTH BEDFORD STREET
GEORGETOWN, DE 19947
PHONE: 302.297.9215
CONTACT: JIM ERIKSEN, PE

- TAX MAP: 234-17.00-3.00
SITE AREA = 58.6 ± ACRES
- PROPOSED USE: AR-1 CLUSTER SUBDIVISION
117 SINGLE FAMILY LOTS
- EXISTING ZONING: AR-1
- FLOOD ZONE: THE PROPERTY IS LOCATED WITHIN FLOOD ZONE AE (SPECIAL HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD, NO BASE ELEVATIONS DETERMINED) AND ZONE X (AREAS DETERMINED TO OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), PER FIRM MAP NUMBER 10005C0340K MAP REVISED MARCH 16, 2015
- WATER SUPPLY: ARTESIAN WATER COMPANY, INC.
- SANITARY SEWER: ARTESIAN WASTEWATER MANAGEMENT, INC.
- TOPOGRAPHY AND BOUNDARY SHOWN HEREIN ARE AS PROVIDED BY SOLUTIONS IPEM LLC.

SEWER PLAN SHEETS

- 24 - SANITARY SEWER INDEX
- 25 - SANITARY SEWER PLAN A
- 26 - SANITARY SEWER PLAN B
- 27 - SANITARY SEWER PLAN C
- 28 - SANITARY SEWER PLAN D
- 29 - SANITARY SEWER PROFILES 1
- 30 - SANITARY SEWER PROFILES 2
- 31 - SANITARY SEWER PROFILES 3
- 32 - SANITARY SEWER DETAILS 1
- 33 - SANITARY SEWER DETAILS 2
- 34 - PUMP STATION SITE PLAN
- 35 - PUMP STATION DETAILS 1
- 36 - PUMP STATION DETAILS 2
- E-1 - PUMP STATION SITE PLAN & LEGEND
- E-2 - S.E.C. DIAGRAM & DETAIL
- E-3 - DETAIL, DIAGRAM, & SCHEDULE

NOTES:

- THE SANITARY SEWER AND FORCE MAIN SHALL CONFORM TO THE ARTESIAN WASTEWATER MANAGEMENT, INC. STANDARDS AND SPECIFICATIONS AND COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
- ARTESIAN WASTEWATER MANAGEMENT, INC. WILL OWN, OPERATE, AND MAINTAIN THE ON-SITE COMMUNITY WASTEWATER TREATMENT SYSTEM. THE ON-SITE COMMUNITY WASTEWATER PLAN WILL BE OPERATED UNDER THE PUBLIC SERVICE COMMISSION.
- AN AGREEMENT FOR OPERATION AND MAINTENANCE OF THE ON-SITE COMMUNITY WASTEWATER SYSTEM MUST BE MAINTAINED IN ACCORDANCE WITH DNREC REQUIREMENTS.
- TOTAL NUMBER OF LATERALS ASSOCIATED WITH THESE PLANS IS 118 (INCLUDING AMENITY AREA).
- ALL PVC GRAVITY-FED SANITARY SEWER PIPES SHALL BE GREEN SDR-26.
- FORCE MAIN SHALL BE PVC C900 GREEN PIPE.
- CONTRACTOR TO COORDINATE CONSTRUCTION SEQUENCING WITH ARTESIAN TO AVOID SERVICE INTERRUPTIONS AS PRACTICABLE.
- POOL BACKWASH WILL NOT BE ALLOWED TO TIE INTO THE SEWER SYSTEM. CARTRIDGE SYSTEM SHALL BE UTILIZED.



303 North Bedford Street
Georgetown, DE 19947
T. 302.297.9215

3035 Manthill Mill Road
Salisbury, MD 21804
T. 410.572.8833

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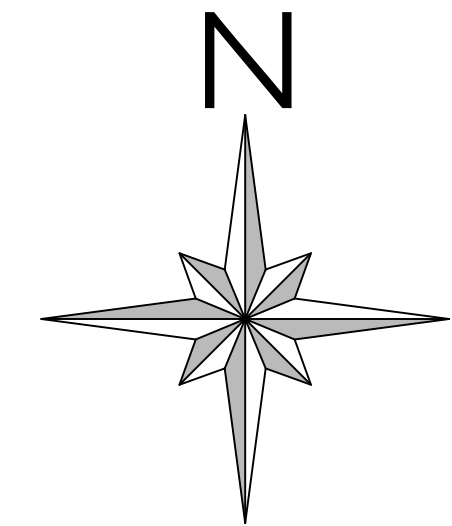
Date: 1/25/2024

NO.	DATE	DESCRIPTION
2	6/29/2023	ADDRESSED ARTESIAN WATER & SEWER COMMENTS
3	7/19/2023	ADDRESSED ARTESIAN WATER & SEWER COMMENTS
4	10/11/2023	REVISE SEWER CONNECTIONS AND FORCE MAIN
5	12/16/2023	UPDATED PHASING AND SEWER CONNECTION
6	1/10/2024	ADDRESSED ARTESIAN SEWER COMMENTS
7	1/25/2024	ADDRESSED WFCC SEWER COMMENTS

SANITARY SEWER INDEX

for
RIVERWOOD
SUSSEX COUNTY, DELAWARE
INDIAN RIVER HUNDRED

Date:	10-25-2022
Job Number:	G20098
Scale:	1" = 150'
Drawn By:	EDT
Designed By:	AMW
Approved By:	JRE



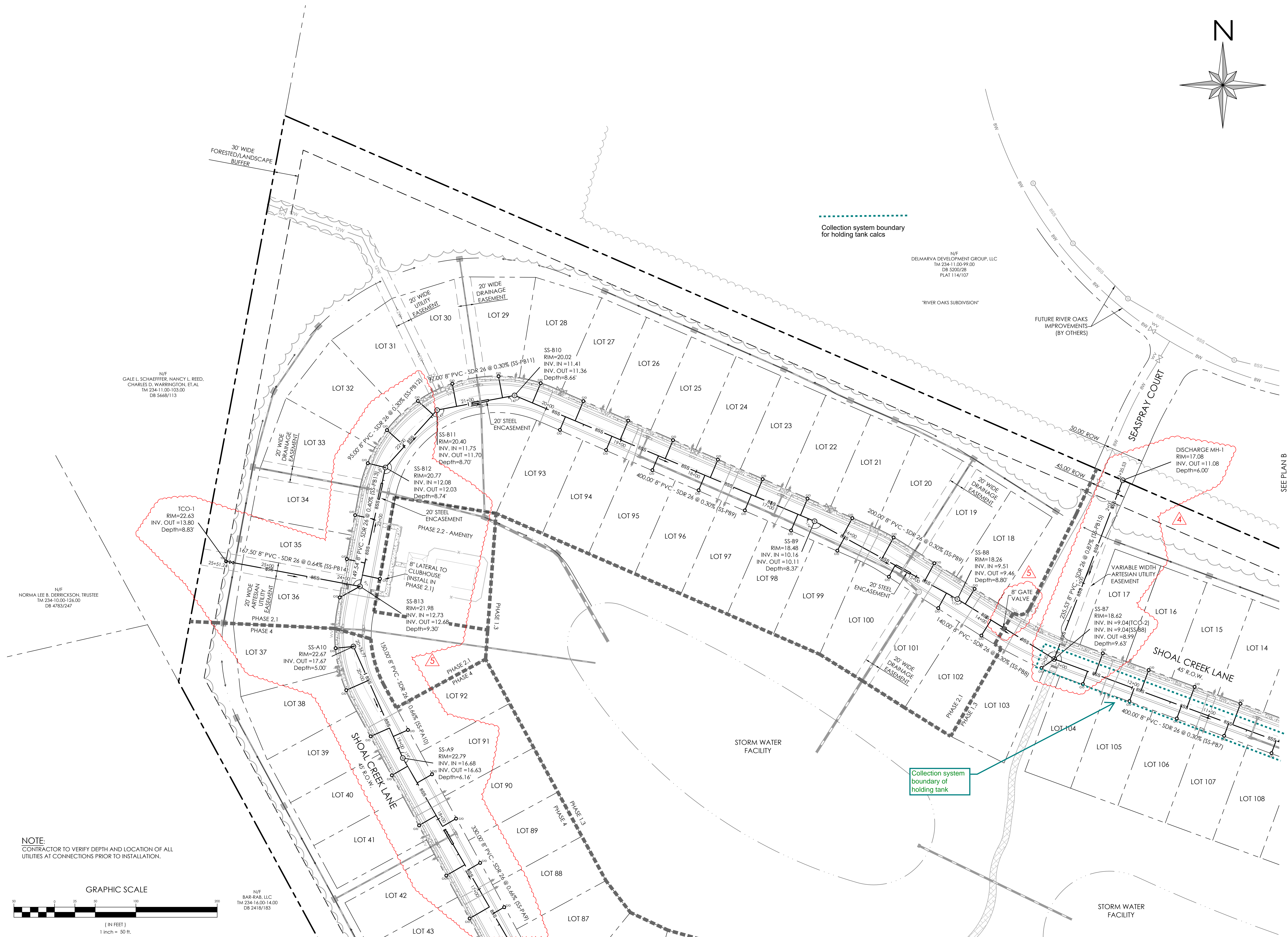
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NO.	DATE	DESCRIPTION
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7	1/25/2024	ADDRESSED WPCC SEWER COMMENTS

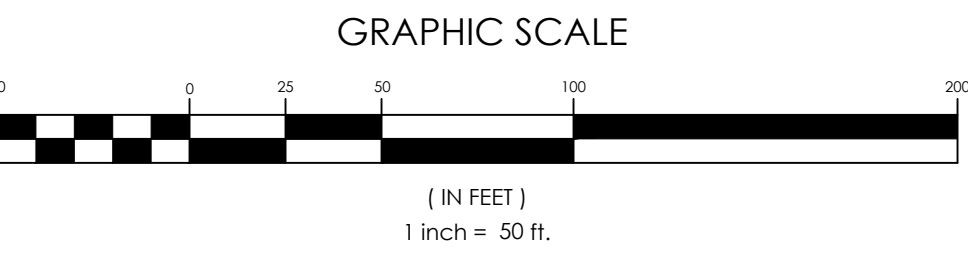
for
RIVERWOOD
SUSSEX COUNTY, DELAWARE
INDIAN RIVER HUNDRED

Date:	10-25-2022
Job Number:	G20098
Scale:	1"=50'
Drawn By:	EDT
Designed By:	AMW
Approved By:	JRE

Sheet No.: **25**
File Name: G20098-Sewer.dwg



NOTE:
CONTRACTOR TO VERIFY DEPTH AND LOCATION OF ALL UTILITIES AT CONNECTIONS PRIOR TO INSTALLATION.



N/F
BAR-RAB, LLC
TM 234-16.00-14.00
DB 2418/183

N/F
GALE L. SCHAEFFER, NANCY L. REED,
CHARLES D. WARRINGTON, ET AL.
TM 234-11.00-103.00
DB 5668/113

N/F
NORMA LEE B. DERRICKSON, TRUSTEE
TM 234-10.00-126.00
DB 4783/247

N/F
DELMARVA DEVELOPMENT GROUP, LLC
TM 234-11.00-99.00
DB 5203/26
PLAT 114/107

"RIVER OAKS SUBDIVISION"

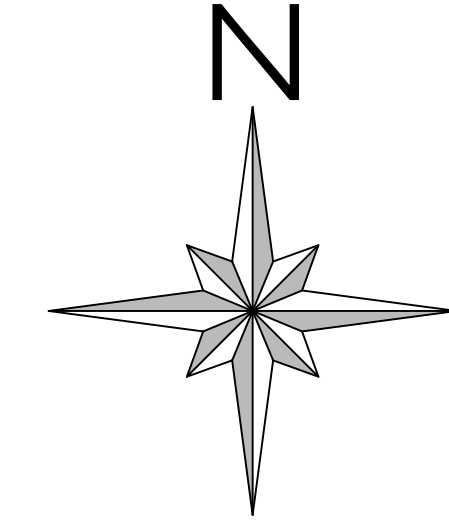
FUTURE RIVER OAKS
IMPROVEMENTS
(BY OTHERS)

Collection system boundary
for holding tank calcs

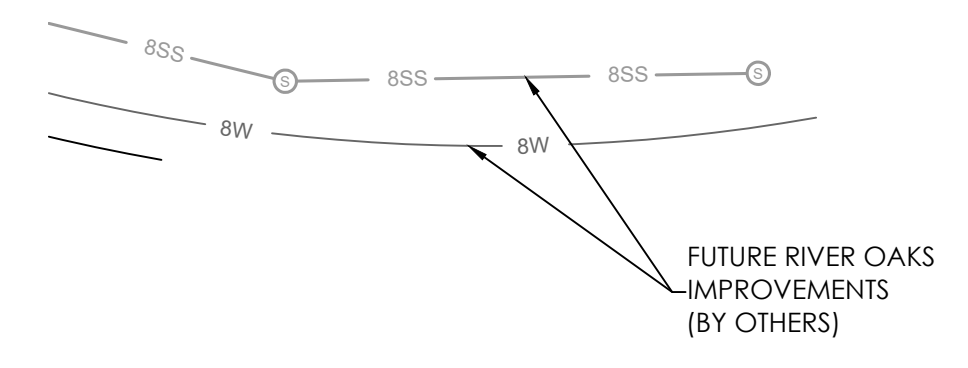
Collection system
boundary of
holding tank

SEE PLAN B

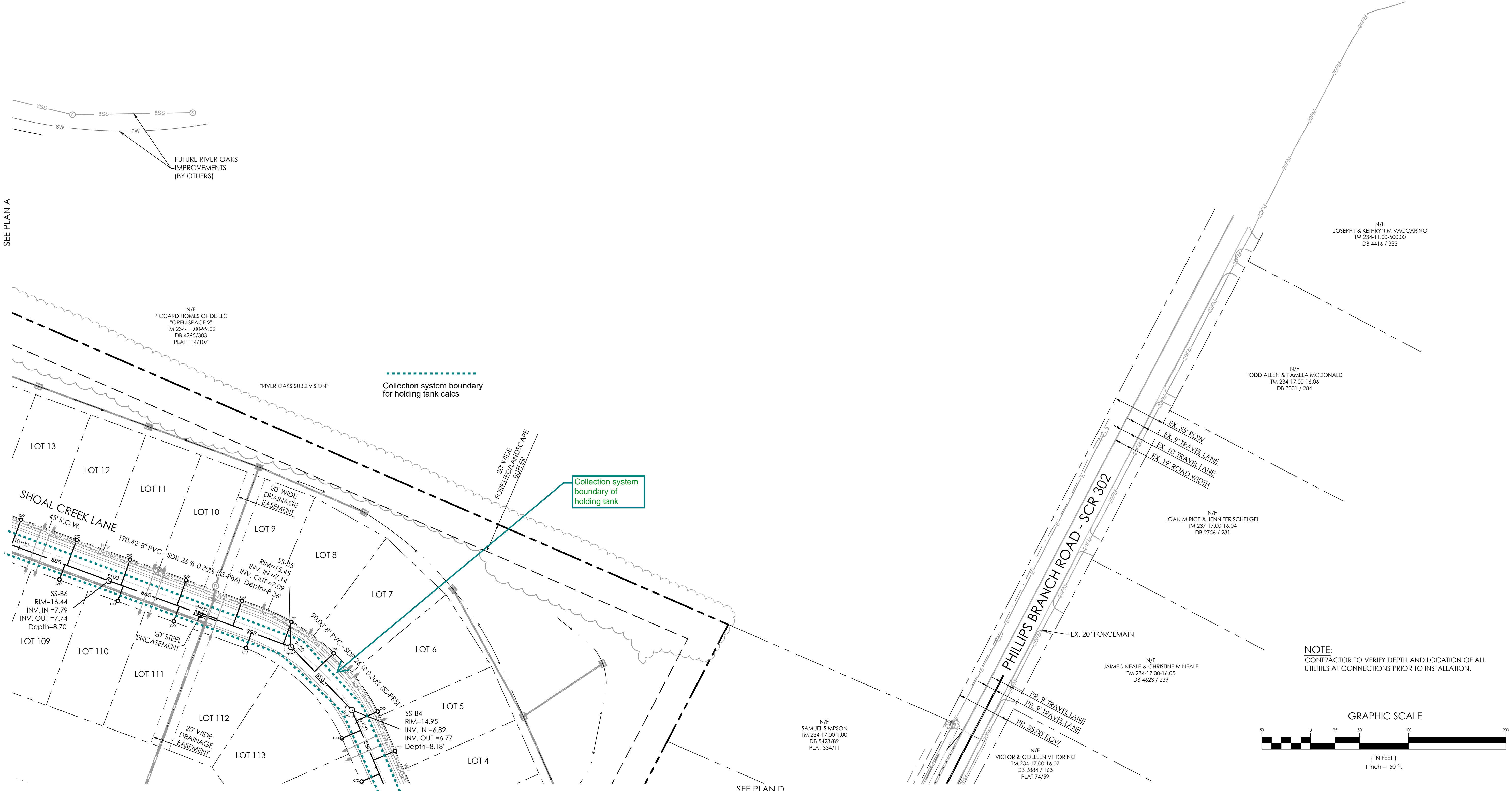
SEE PLAN C



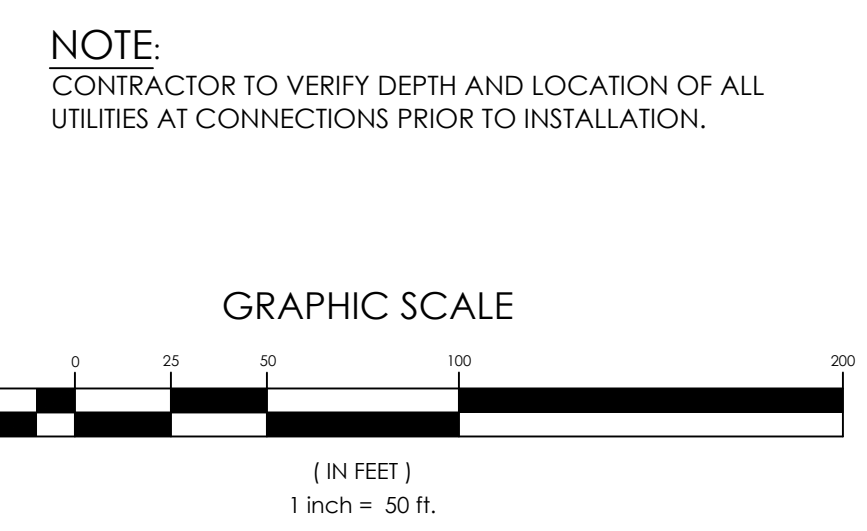
Date: 1/25/2024



SEE PLAN A



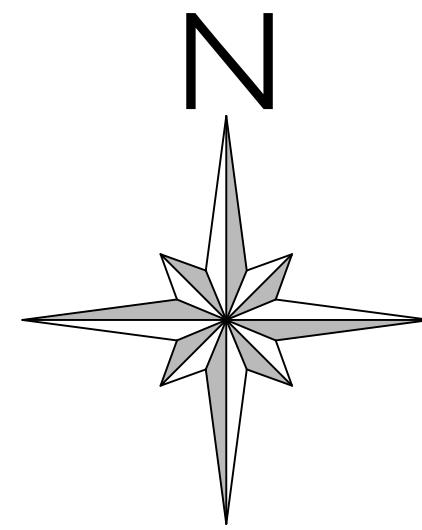
SEE PLAN D



NO.	DATE	DESCRIPTION
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7	1/25/2024	ADDRESSED WPCC SEWER COMMENTS

SANITARY SEWER PLAN B
 for
RIVERWOOD
 SUSSEX COUNTY, DELAWARE
 INDIAN RIVER HUNDRED

Date:	10-25-2022
Job Number:	G20098
Scale:	1"=50'
Drawn By:	EDT
Designed By:	AMW
Approved By:	JRE



N/F
BAR-RAB, LLC
TM 234-16.00-14.00
DB 2418/183



NOTE:
CONTRACTOR TO VERIFY DEPTH AND LOCATION OF ALL UTILITIES AT CONNECTIONS PRIOR TO INSTALLATION.

GRAPHIC SCALE



(IN FEET)
1 inch = 50 ft.

N/F
SHERI LYNN HUMPHREY
TM 234-17.00-9.01
DB 3484/338

N/F
DWAYNE D. & VALERIE B. WILTBANK
TM 234-17.00-9.00
DB 2443/105
PLAT 66/70

N/F
DWAYNE D. & VALERIE B. WILTBANK
TM 234-17.00-9.00
DB 5311/333
PLAT 66/70

N/F
SYVESTER M. & JOYCE D. RICKARDS
TM 234-17.00-7.00
DB 882/286
(SHOWN IN PART ON PLAT 66/70)

solutions
Engineering & Construction

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Georgetown, DE 19147
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Salisbury, MD 21804
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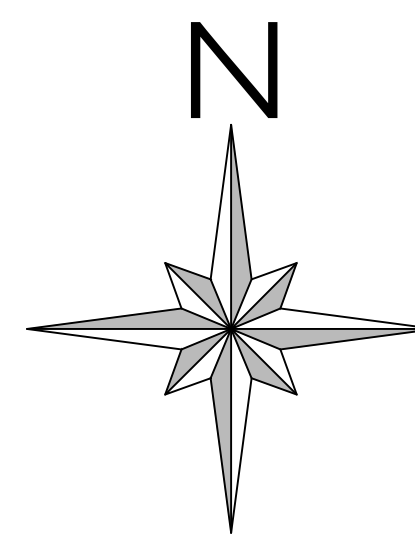
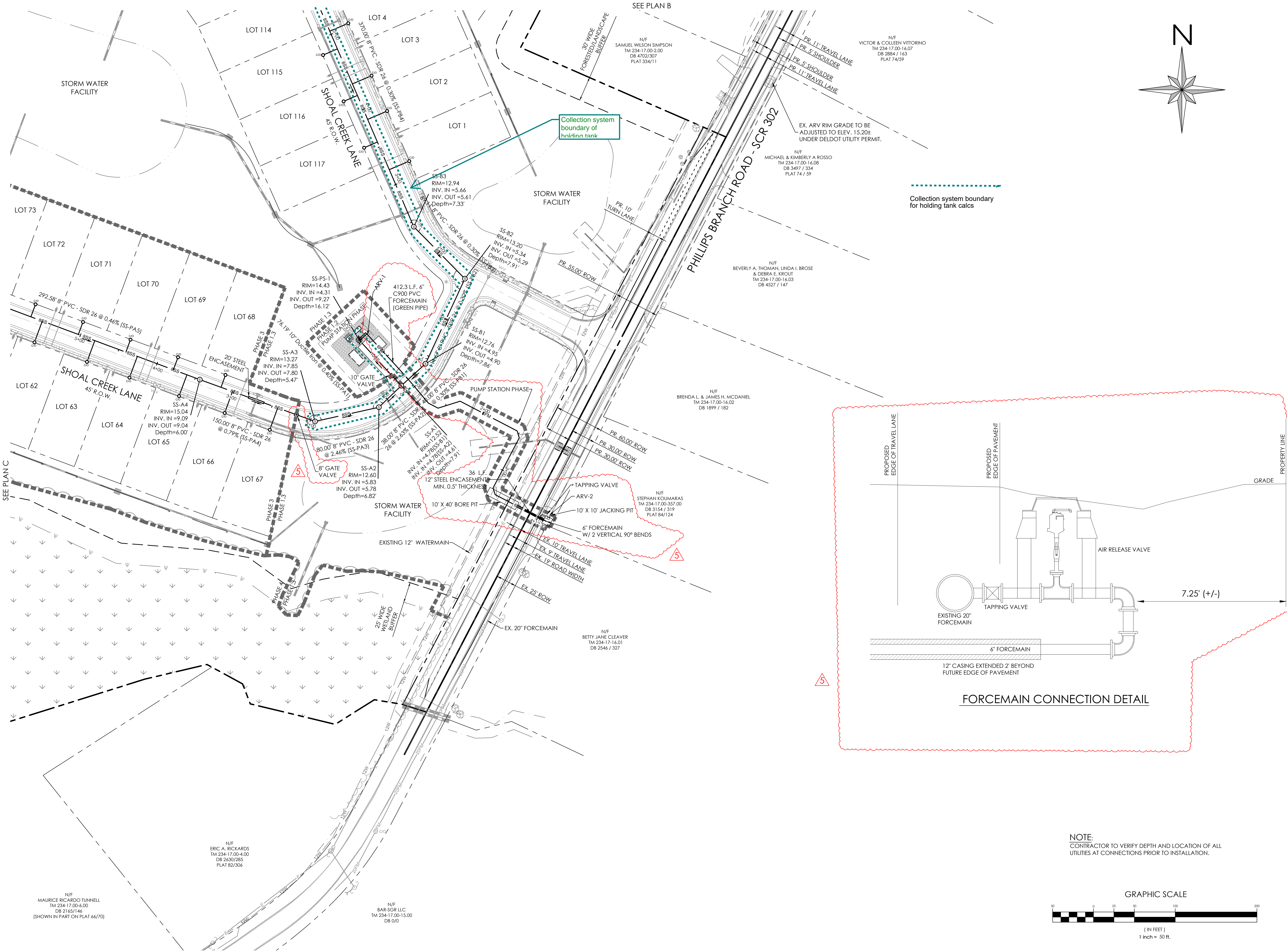
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7	1/25/2024	ADDRESSED WPCC SEWER COMMENTS

SANITARY SEWER PLAN C
for
RIVERWOOD
SUSSEX COUNTY, DELAWARE
INDIAN RIVER HUNDRED

Date:	10-25-2022
Job Number:	G20098
Scale:	1"=50'
Drawn By:	EDT
Designed By:	AMW
Approved By:	JRE

Sheet No.: **27**
File Name: G20098-Sewer.dwg



Date: 1/25/2024

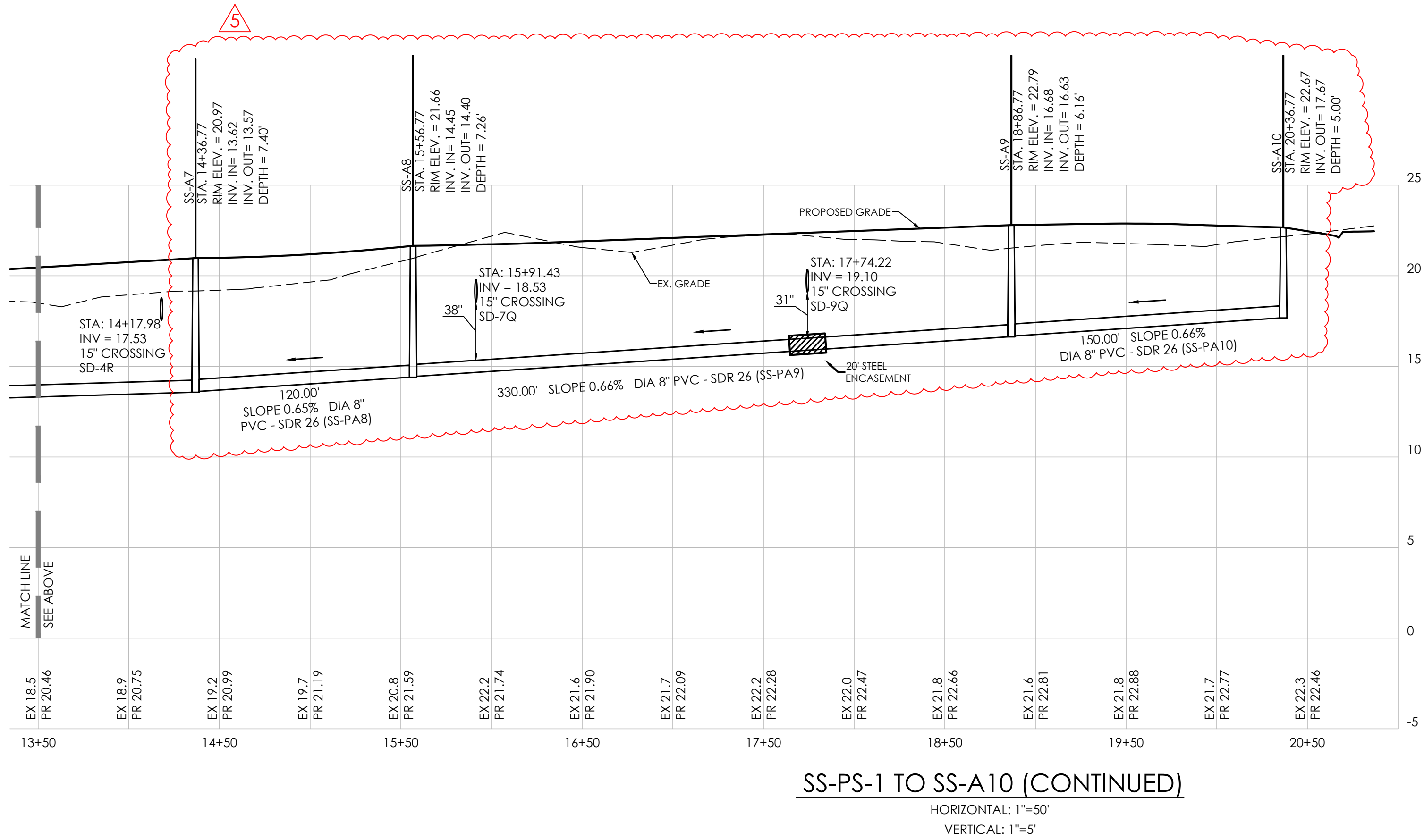
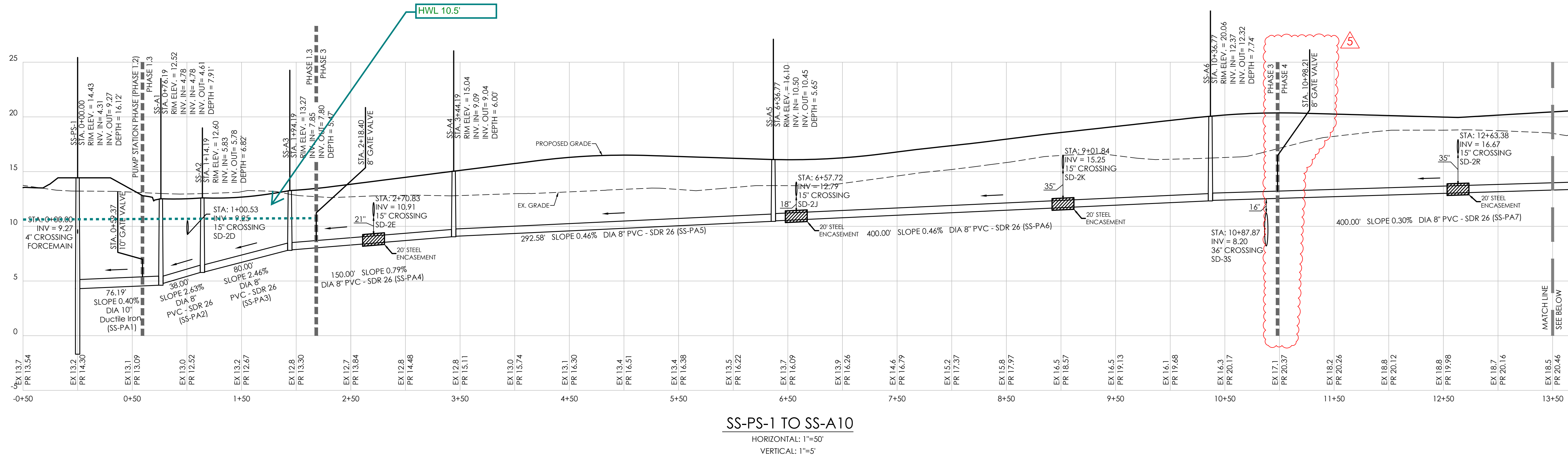
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7	1/25/2024	ADDRESSED WPCC SEWER COMMENTS

SANITARY SEWER PLAN D
for
RIVERWOOD
SUSSEX COUNTY, DELAWARE
INDIAN RIVER HUNDRED

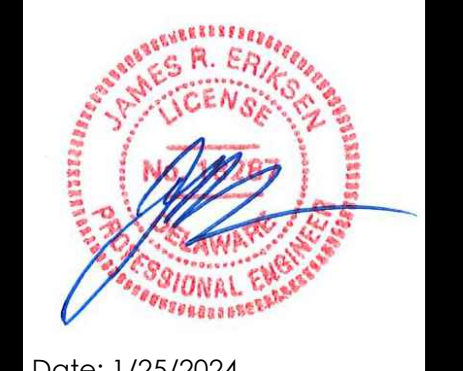
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Job Number:	G20098
Scale:	1"=50'
Drawn By:	EDT
Designed By:	AMW
Approved By:	JRE

Sheet No.: **28**

File Name: G20098-Sewer.dwg



- NOTES:**
- ALL PVC GRAVITY-FED SANITARY SEWER PIPE SHALL BE GREEN SDR 26 PVC UNLESS OTHERWISE NOTED
 - ALL FORCE MAINS SHALL BE C900 PVC GREEN PIPE.
 - SEWERS CROSSING WATER MAINS SHALL BE LAID OUT TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18" BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. THE CROSSING SHALL BE ARRANGED SO THE SEWER JOINTS WILL BE EQUIDISTANT, AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS. CONCRETE ENCASUREMENT SHALL BE REQUIRED WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION.
 - ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE SEWER PIPE. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION CONCRETE ENCASUREMENT SHALL BE REQUIRED TO BE INSTALLED IN MINIMUM OF 5' ON EITHER SIDE OF THE CROSSING POINT ON THE LOWEST UTILITY.



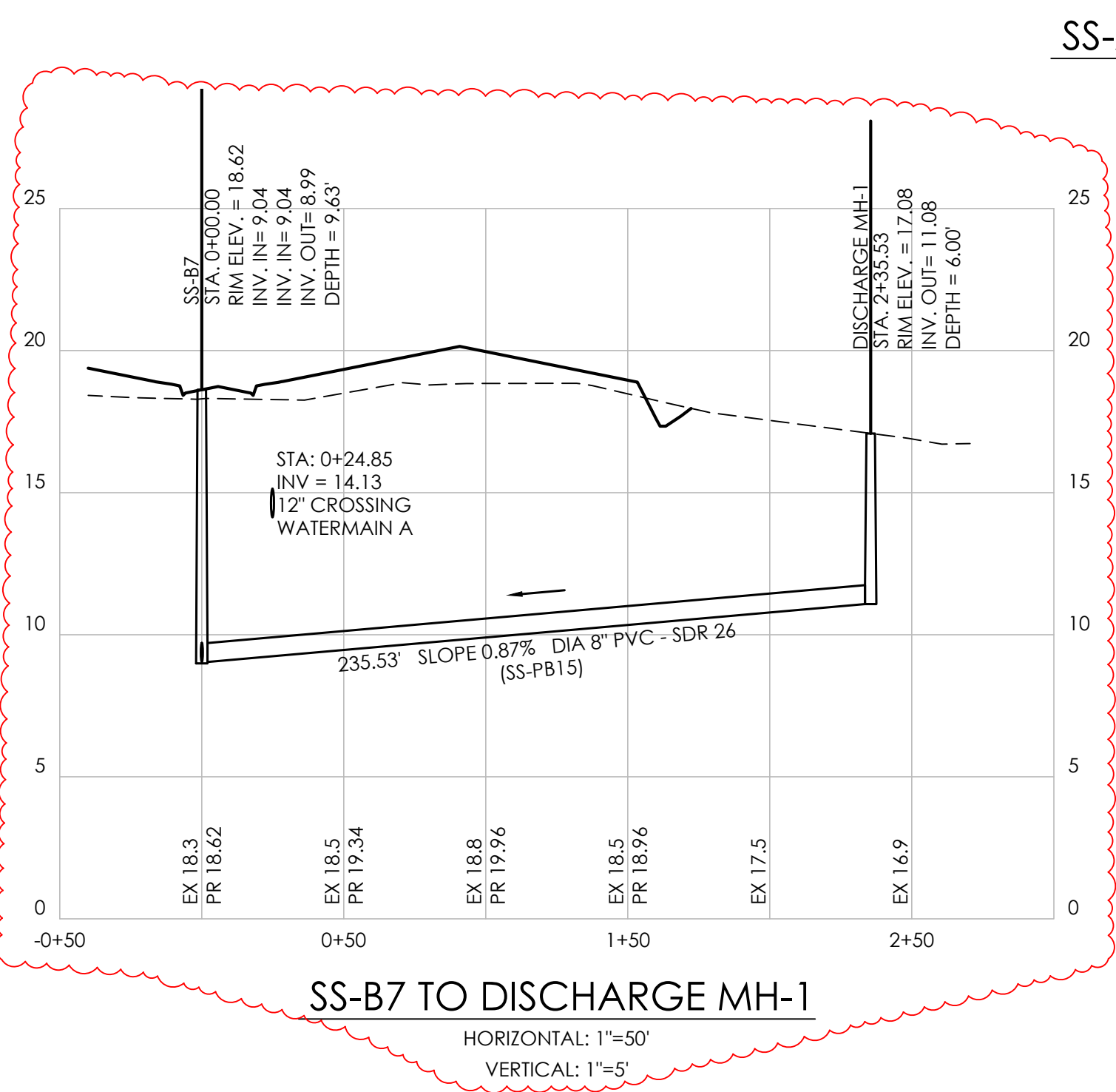
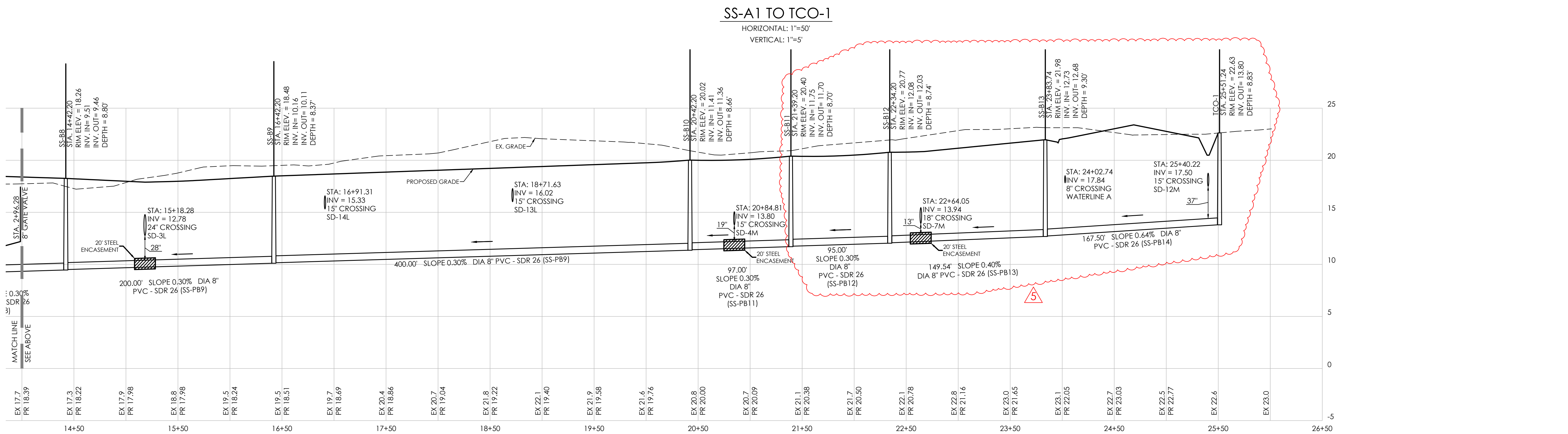
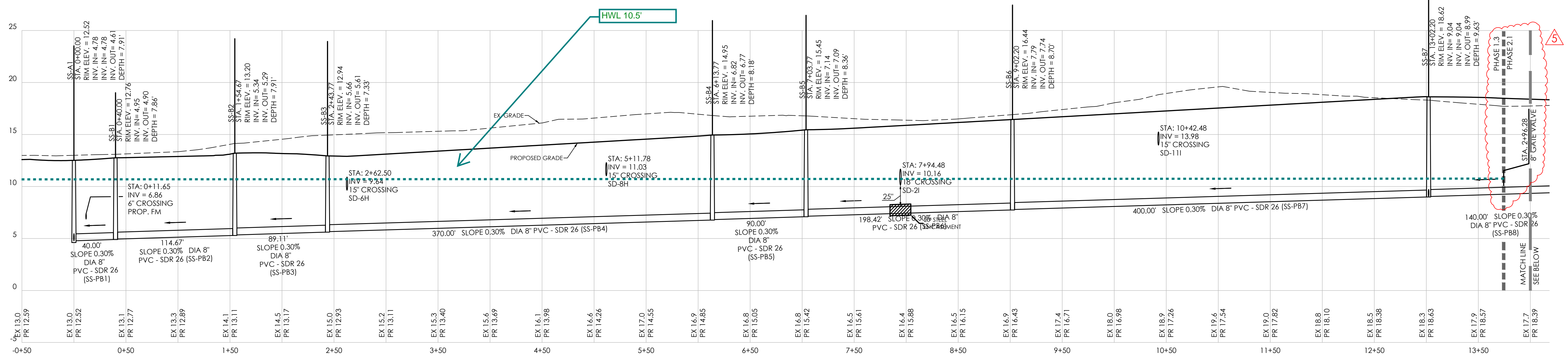
Date: 1/25/2024

REVISIONS	
NO.	DESCRIPTION
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7	ADDRESSED WPCCC SEWER COMMENTS

SANITARY SEWER PROFILES 1
 for
RIVERWOOD
 SUSSEX COUNTY, DELAWARE
 INDIAN RIVER HUNDRED

Date:	10-25-2022
Job Number:	G20098
Scale:	1"=50' (H), 1"=5'(V)
Drawn By:	EDT
Designed By:	AMW
Approved By:	JRE

Sheet No.:



- NOTES:**
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 - ALL FORCE MAINS SHALL BE C900 PVC, GREEN PIPE.
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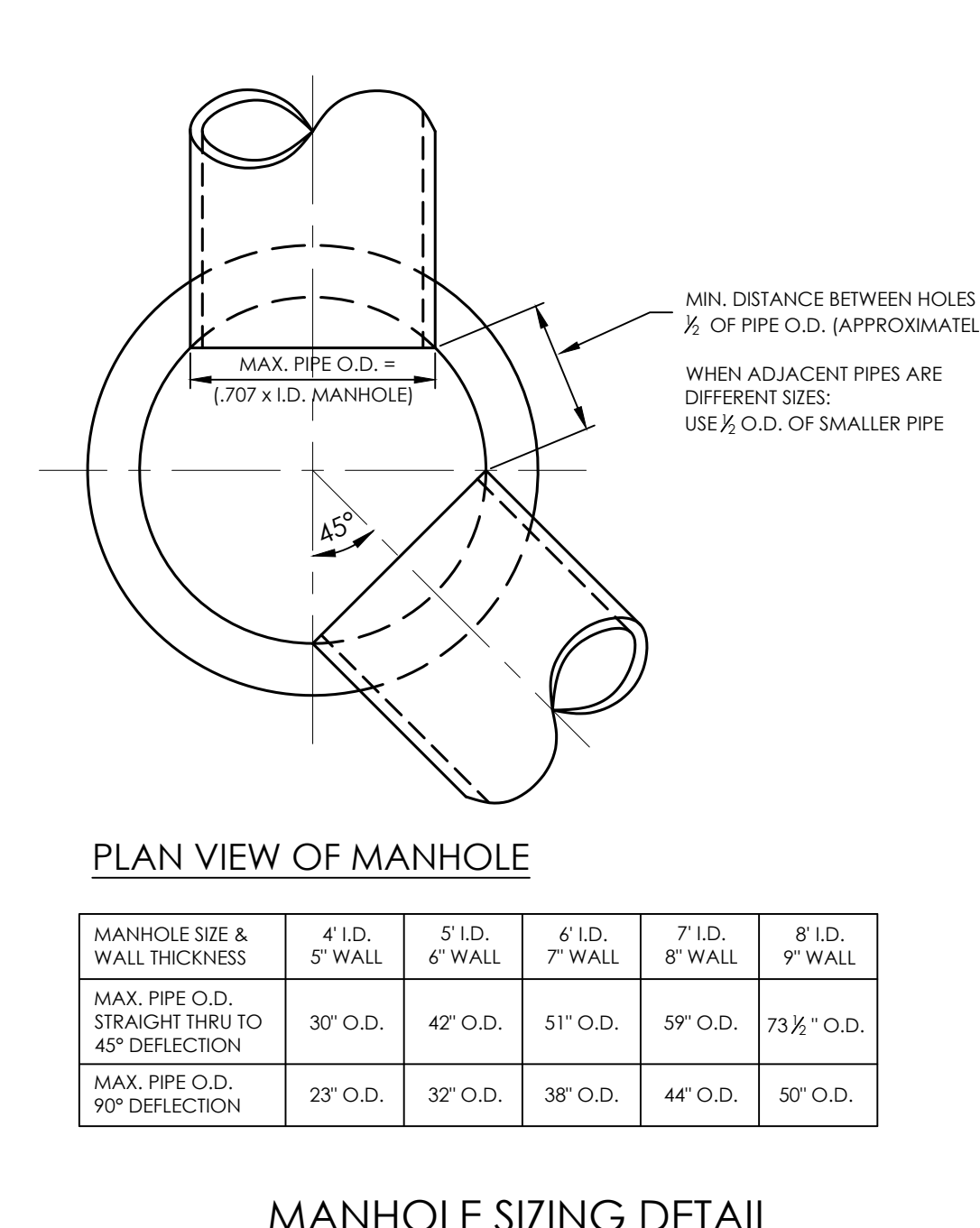
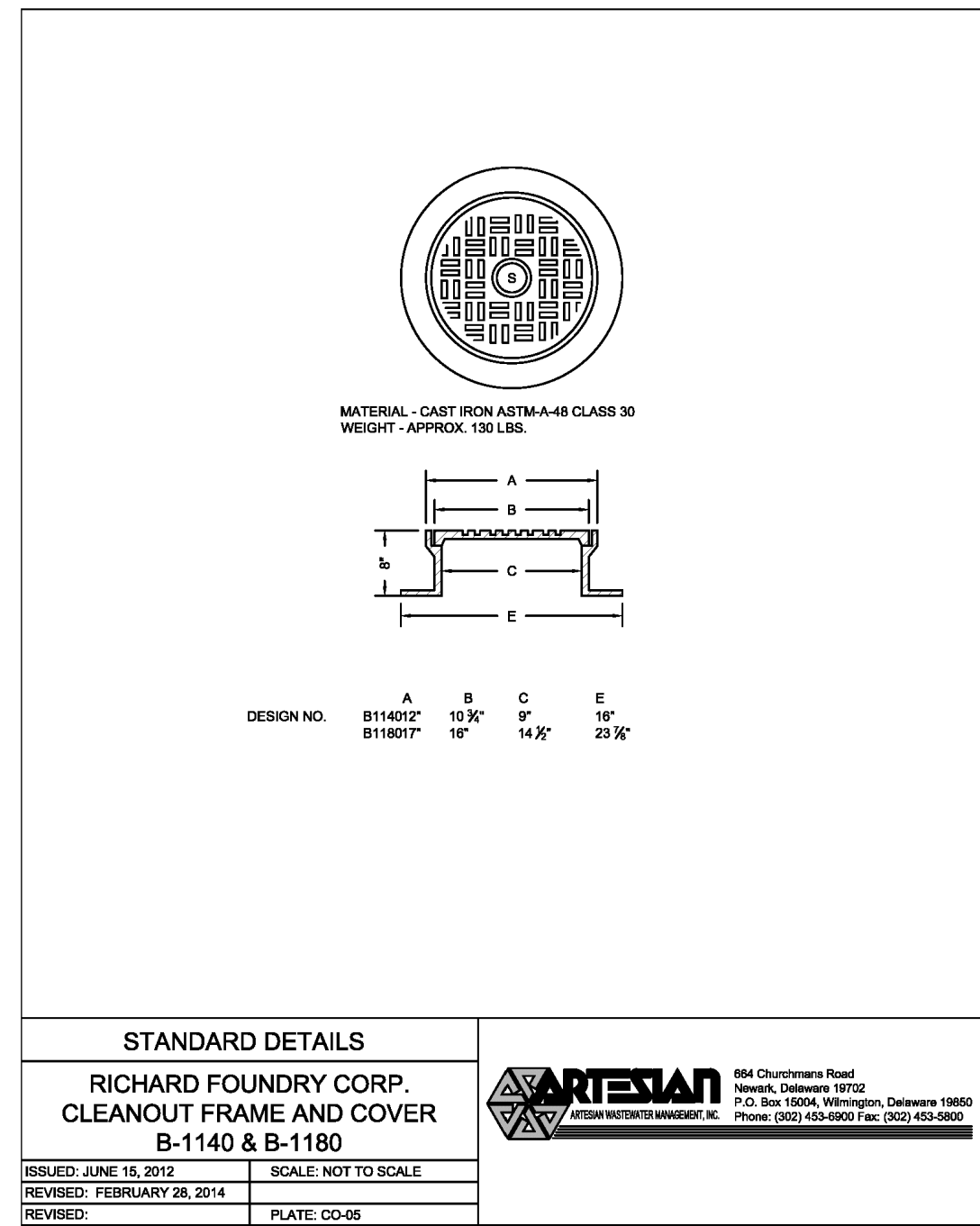
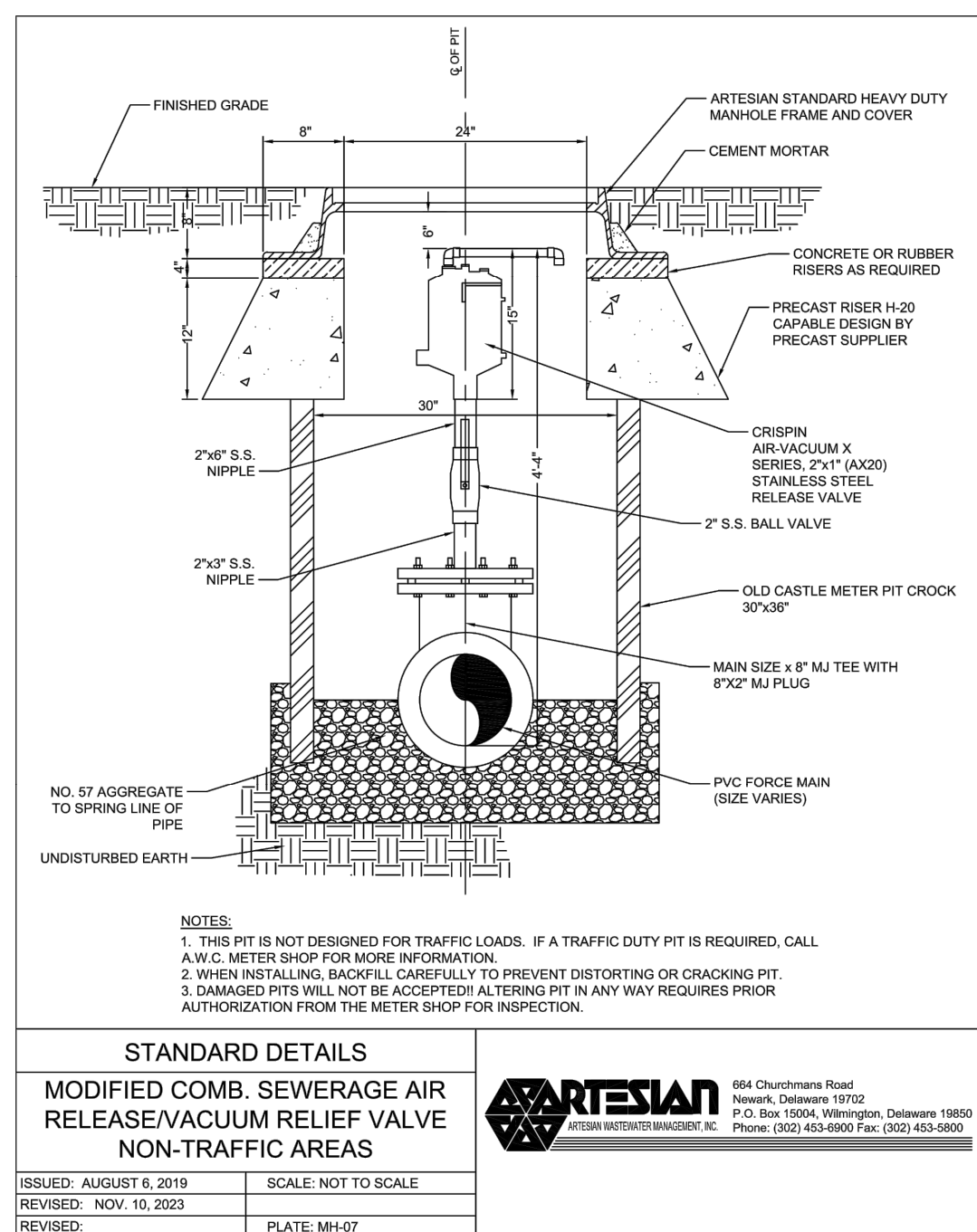
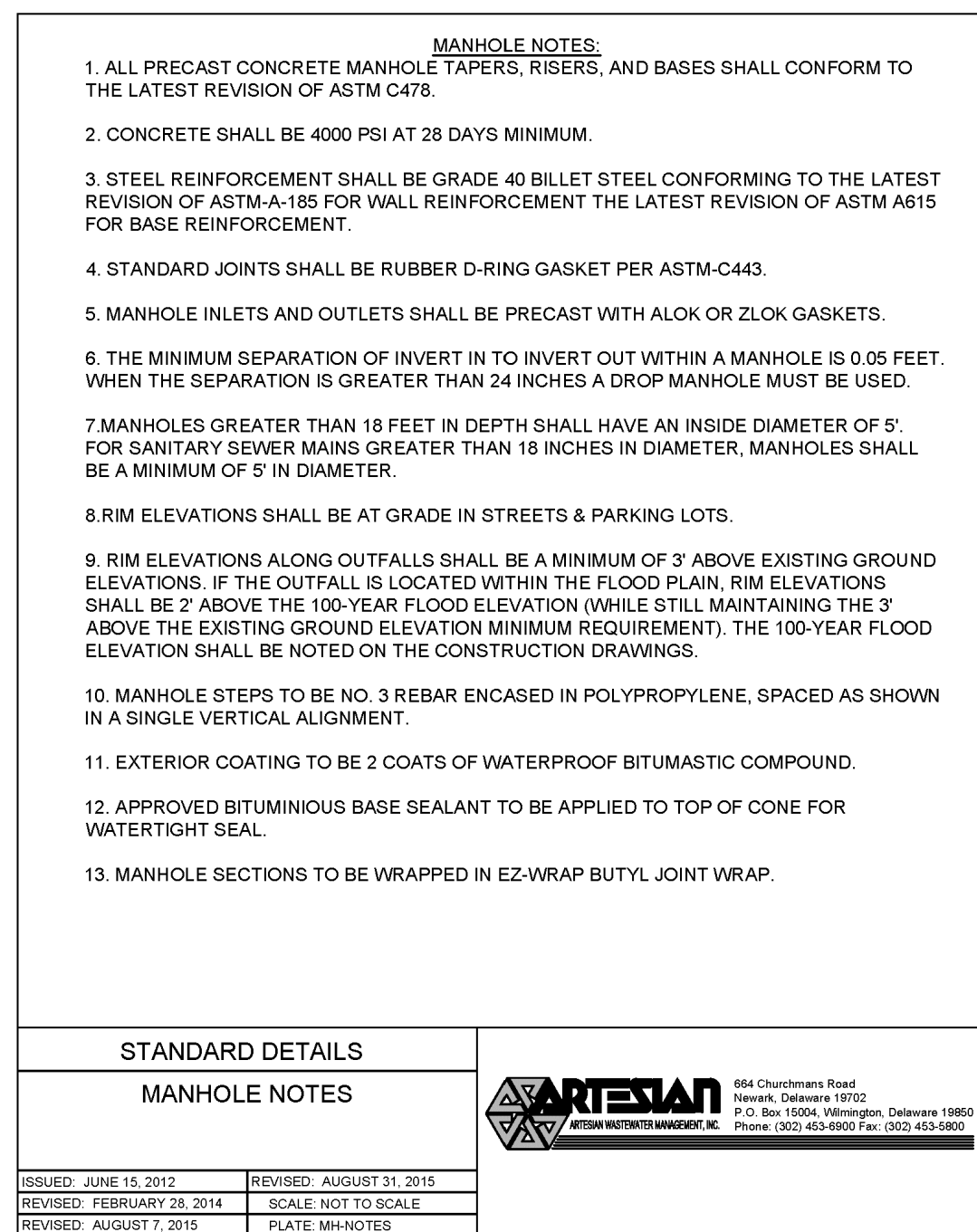
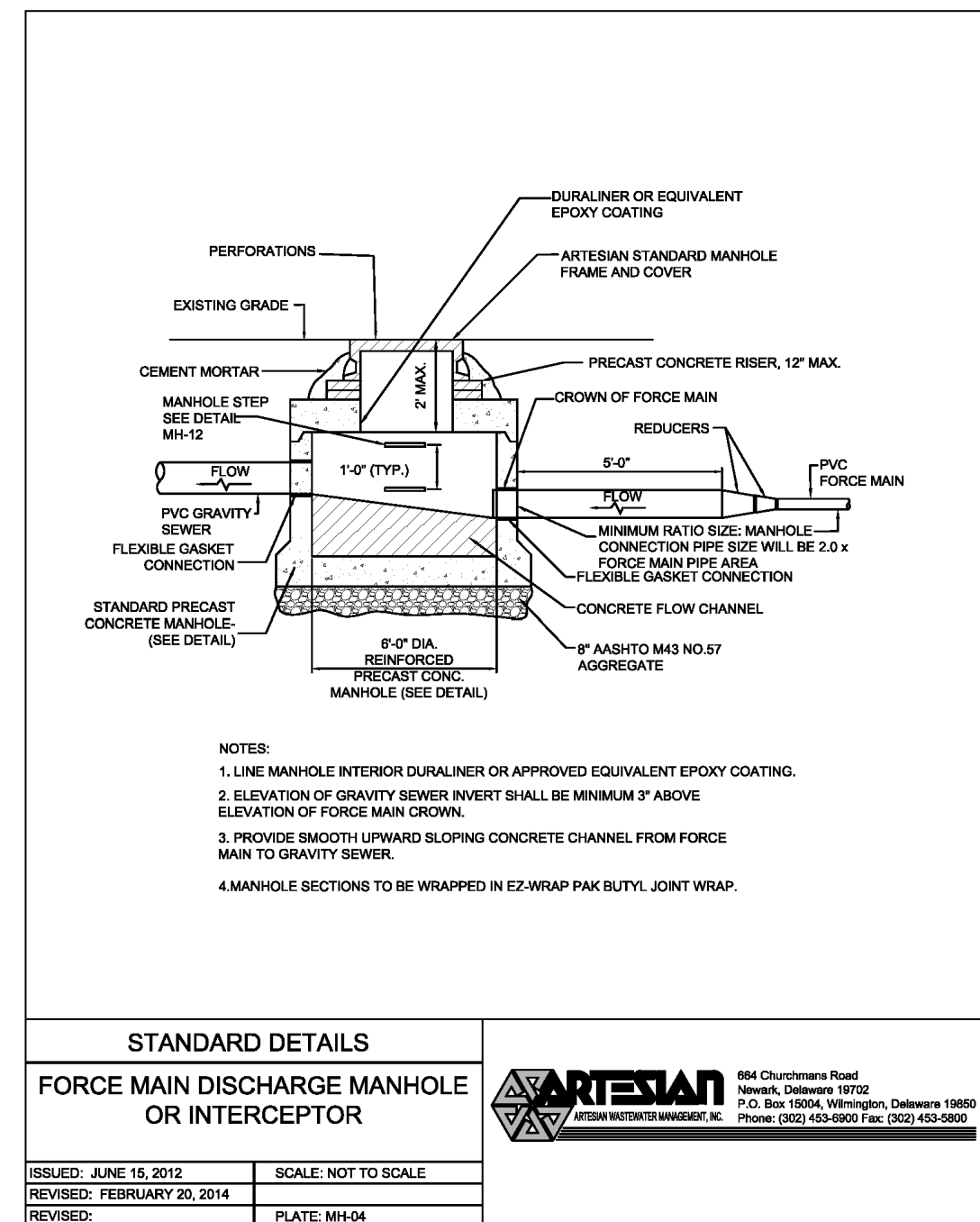
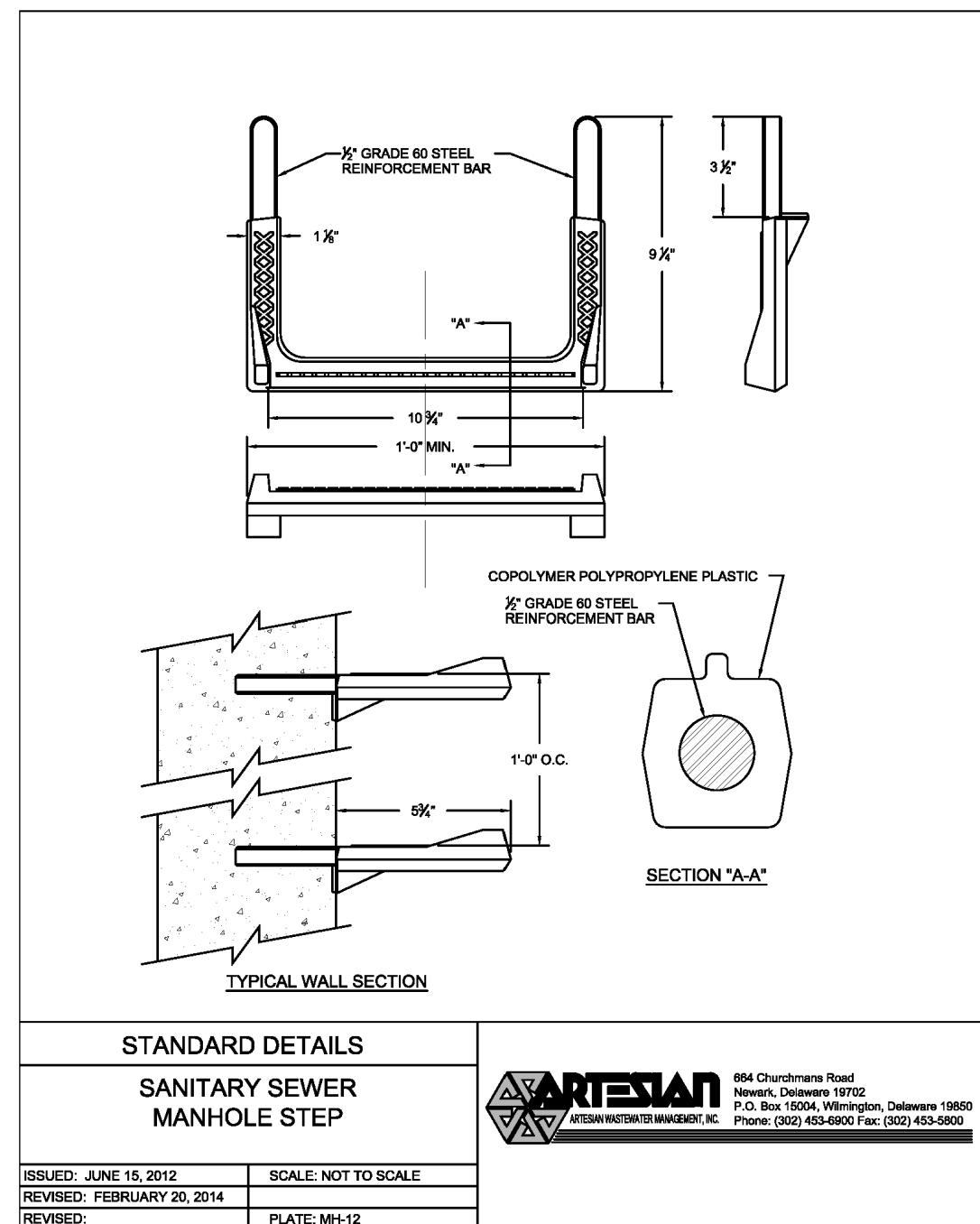
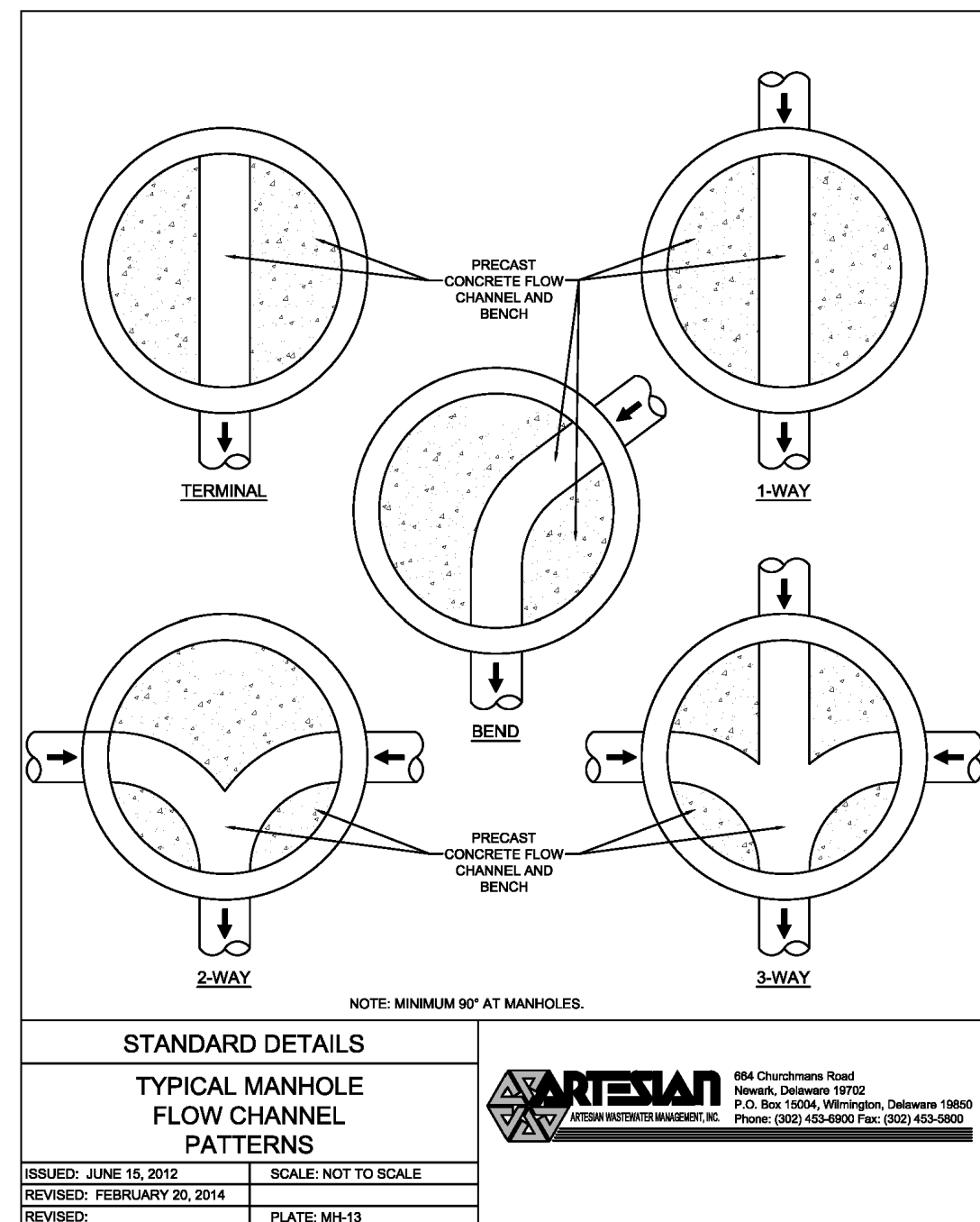
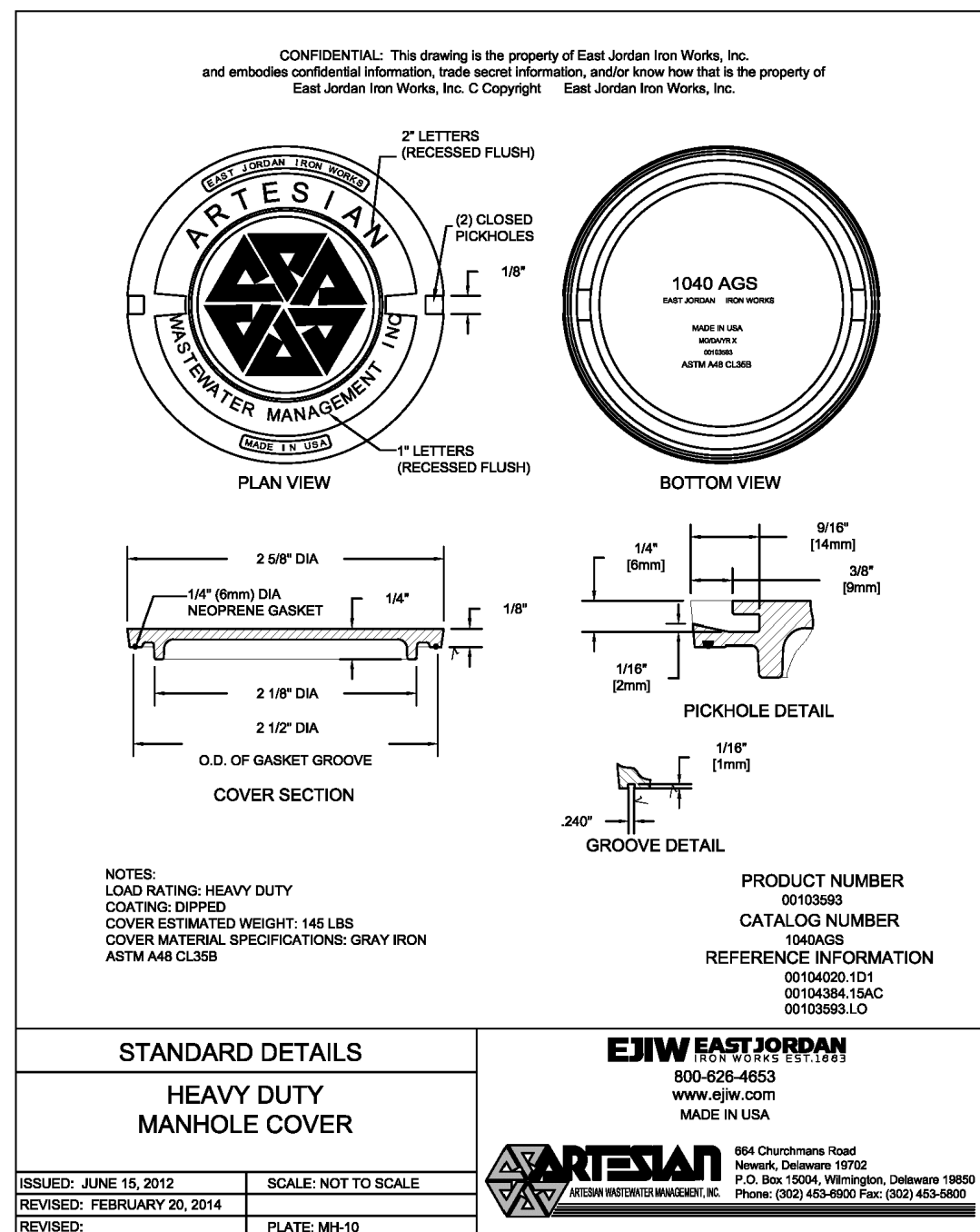
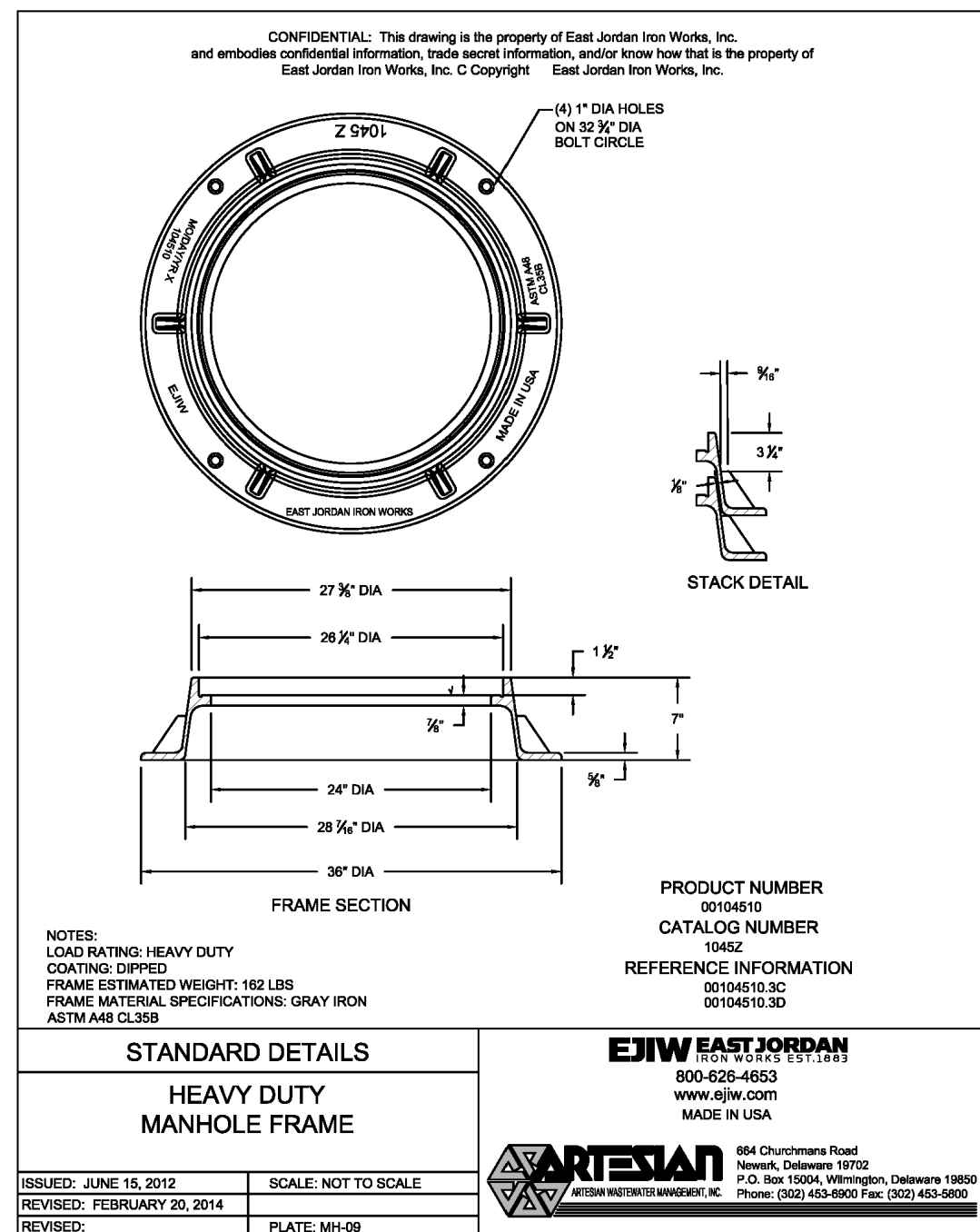
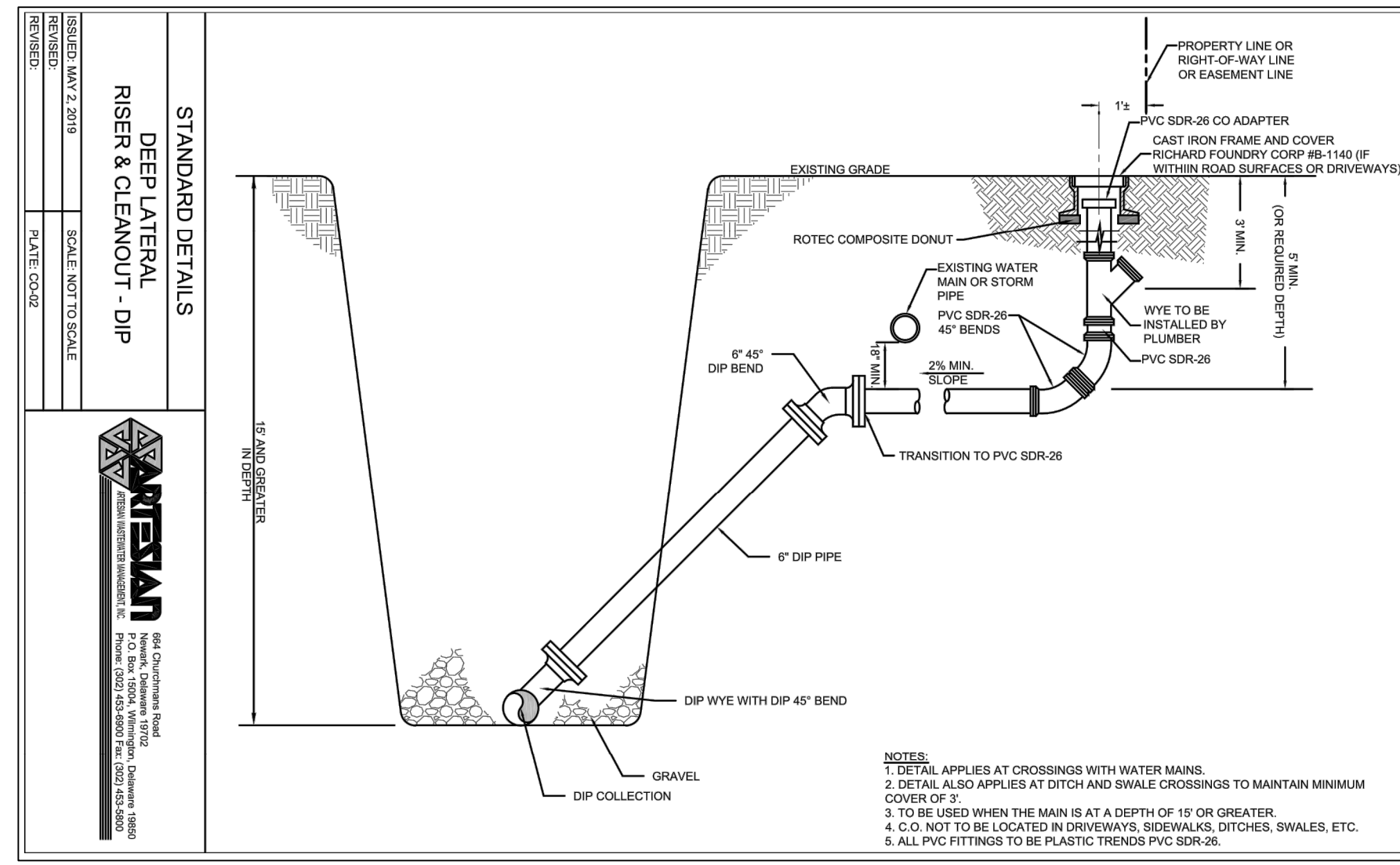
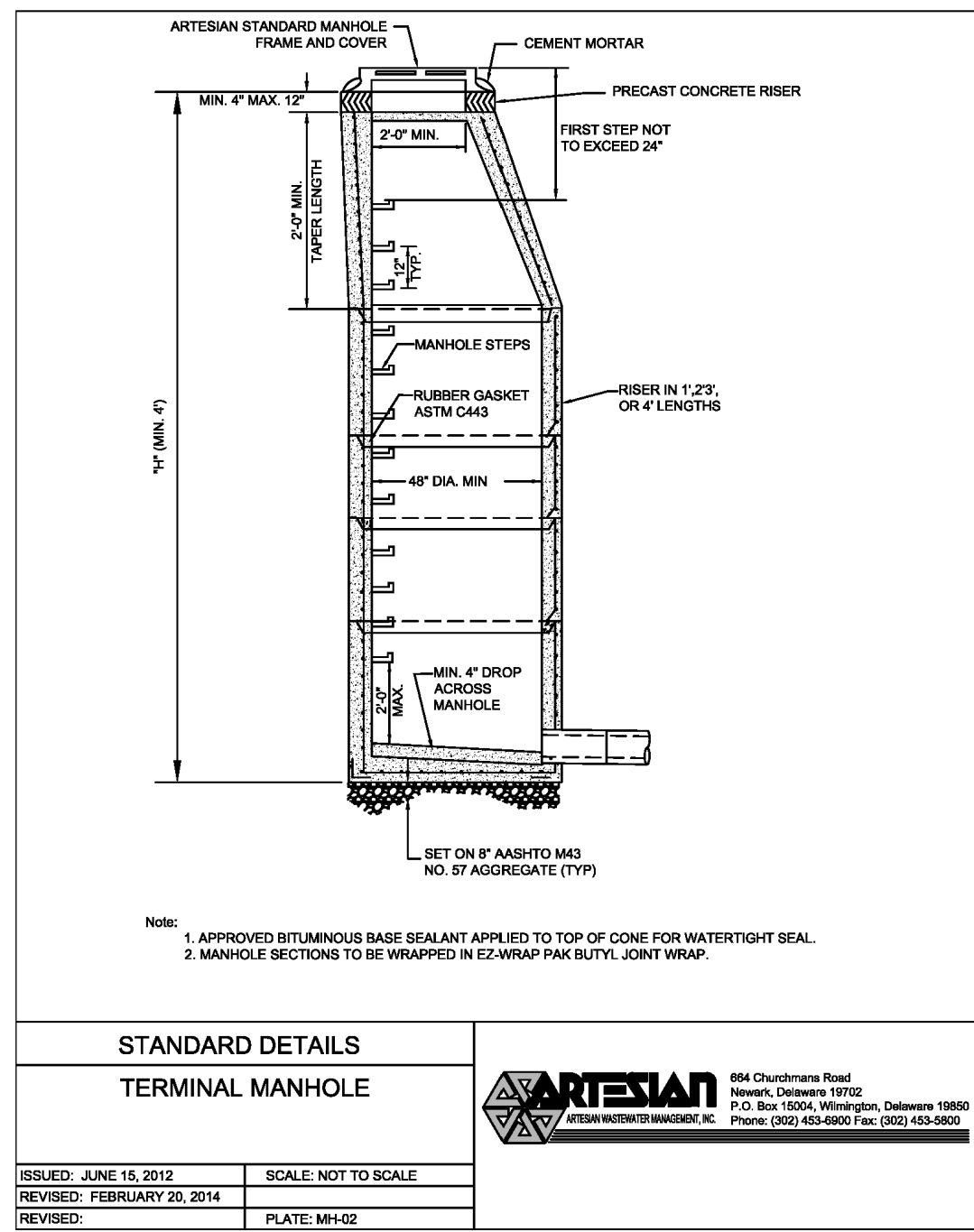
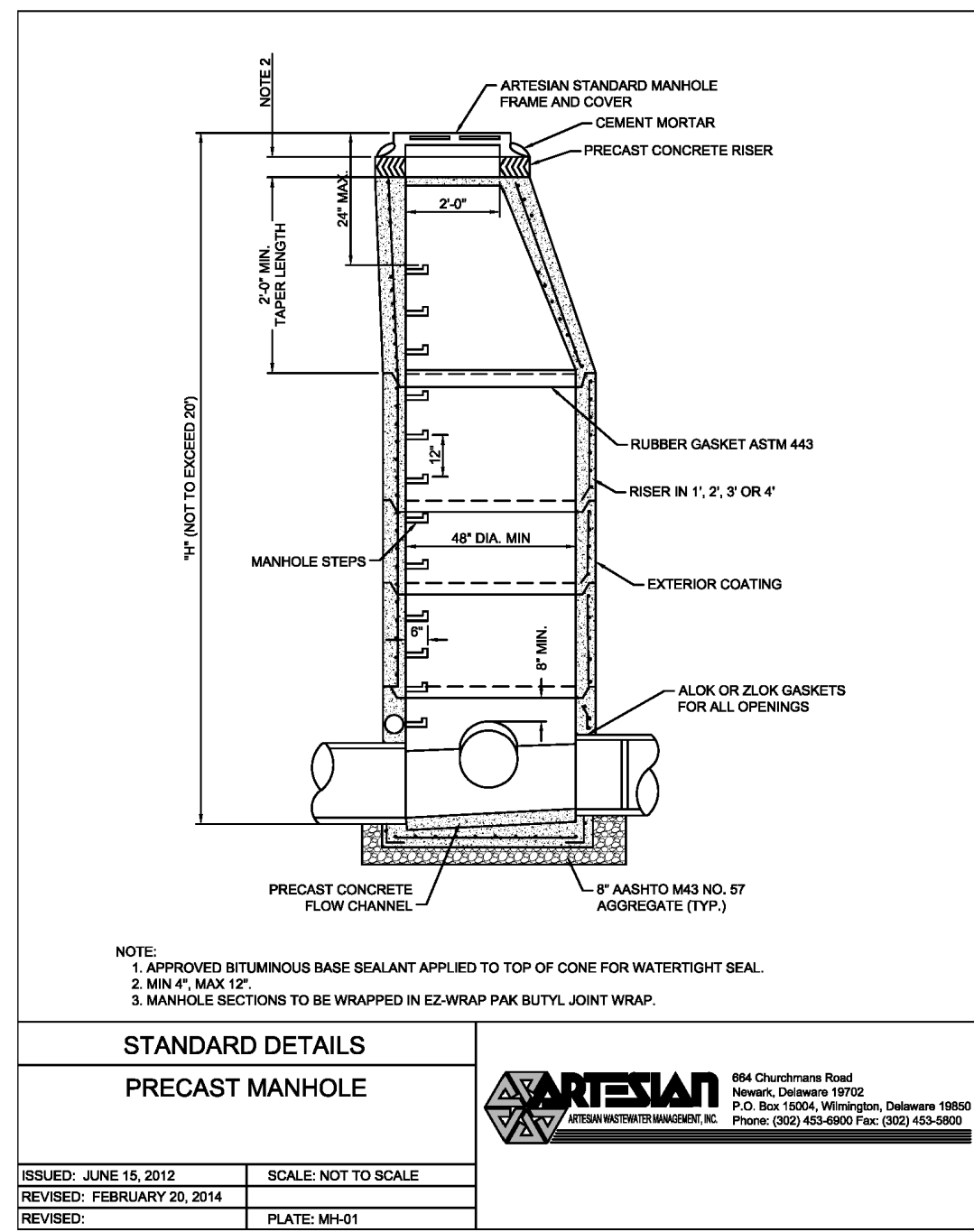
SANITARY SEWER PROFILES 2
 for
RIVERWOOD
 SUSSEX COUNTY, DELAWARE
 INDIAN RIVER HUNDRED

Date:	10-25-2022
Job Number:	G20098
Scale:	1"=50' (H), 1"=5'(V)
Drawn By:	EDT
Designed By:	AMW
Approved By:	JRE

Sheet No.:

30

File Name:
 G20098-Sewer-Profiles.dwg



Date: 1/25/2024

NO.	DATE	DESCRIPTION
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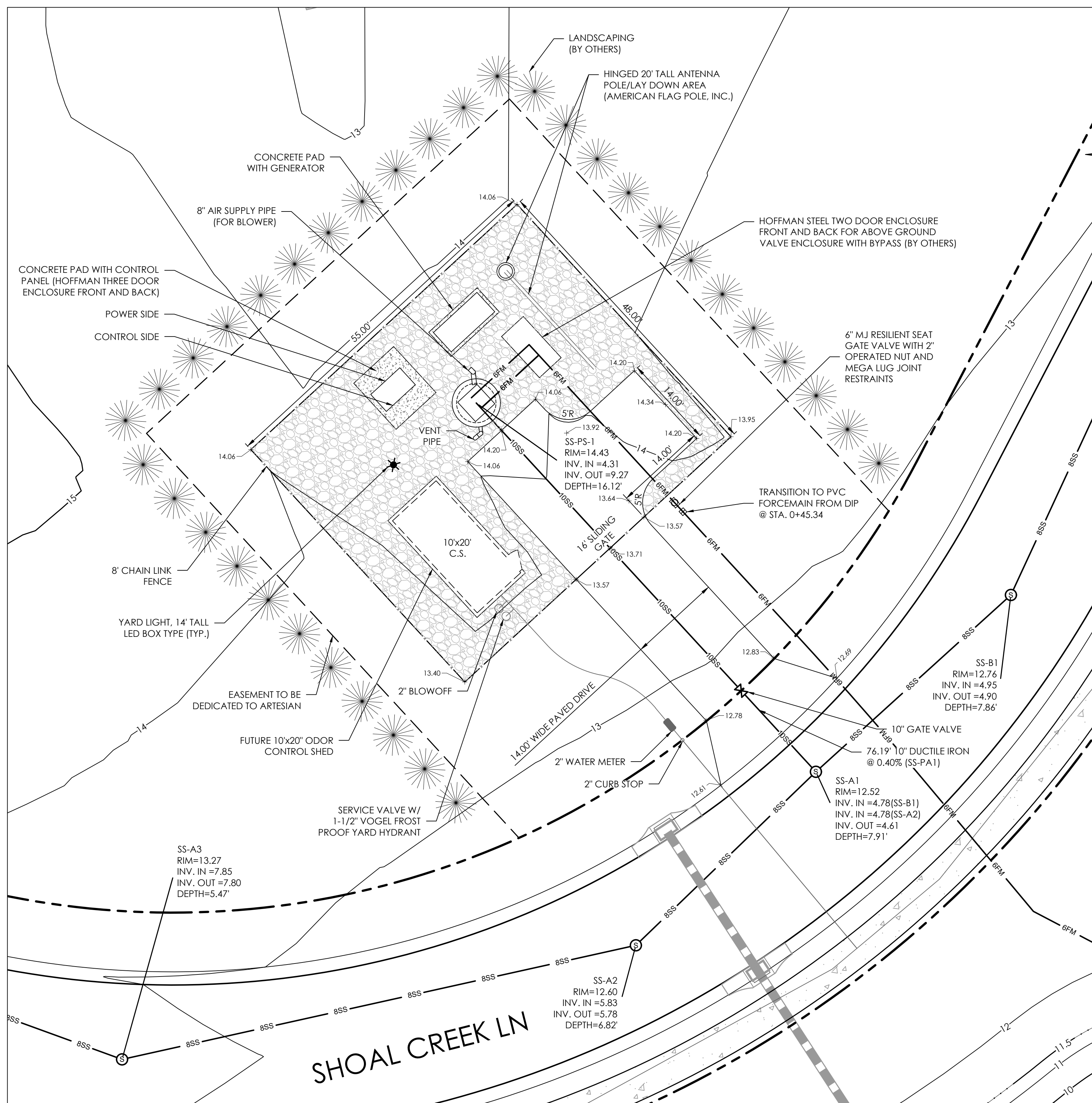
SANITARY SEWER DETAILS 1

for
RIVERWOOD
SUSSEX COUNTY, DELAWARE
INDIAN RIVER HUNDRED

Date:	10-25-2022
Job Number:	G20098
Scale:	AS NOTED
Drawn By:	EDT
Designed By:	AMW
Approved By:	JRE

Sheet No.: 32

File Name: G20098-Sewer-Details.dwg



SITE PLAN - PUMP STATION
SCALE: 1" = 10'

DESIGN FLOW

The pump station will serve 315 EDUs (See Pump Station Calculations, hereon)

COLLECTION SYSTEM

The collection system will consist of 8" PVC SDR-26 & 10" diameter ductile iron pipe and associated manholes. All sewer materials and installation shall be per Artesian Wastewater Management Standards.

TRANSMISSION

The new 6" diameter PVC force main will be installed from the proposed pump station to an existing 20" forcemain at Phillips Branch Rd.

Diameter = 6" PVC

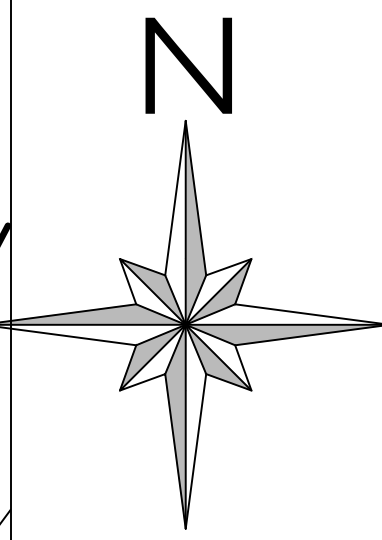
Design Flow = 210 gpm

Static Head = 42 feet (Elevation of plant - 1.01' = 41 feet per Artesian)

PUMP STATION CALCULATIONS

Community	Homes	Amenities	Total EDUs
RIVERWOOD	117	2	119
WARRINGTON	107	2	109
RIVER OAKS	85	2	87
TOTAL	309	6	315

Number of EDU's	=	315
Base Flow (240 GPD/EDU)	=	75,600 GPD 52.50 GPM
Peak Factor (Per Equation)	=	4.0
Peak Flow	=	302,400 GPD 210 GPM
Volume = 2 min. x 210 GPM	=	420 GALLONS
8" Diameter, 1.2 ft Depth (160 GALLONS)		
PIPING	=	6" @ 2.38 FPS



NP 3102 SH 3~ Adaptive 257
Technical specification

Motor - General

Motor number	Phases	Rated speed	Rated power
N3102-920 18-10-2AS-W IE3 7.2hp	3~	3600 rpm	7.2 hp
ATX approved No.	Number of poles	Rated current	Stator variant
6014	2	18 A	68
Frequency	Rated voltage	Insulation class	Type of Duty
60 Hz	220 V	H	S1
Version code	920		

Motor - Technical

Power factor - 1/2 Load	Motor efficiency - 1/2 Load	Total moment of inertia	Starts per hour max.
0.88	90.0 %	0.275 lb ft²	30
Power factor - 3/4 Load	Motor efficiency - 3/4 Load	Starting current, direct starting	
0.85	90.3 %	148 A	
Power factor - 1/2 Load	Motor efficiency - 1/2 Load	Starting current, star-delta	
0.77	88.3 %	49.3 A	

NP 3102 SH 3~ Adaptive 257
Patented self-cleaning semi-open channel impeller. Ideal for pumping in waste water applications. Modular based design with high adaptation grade.

Technical specification

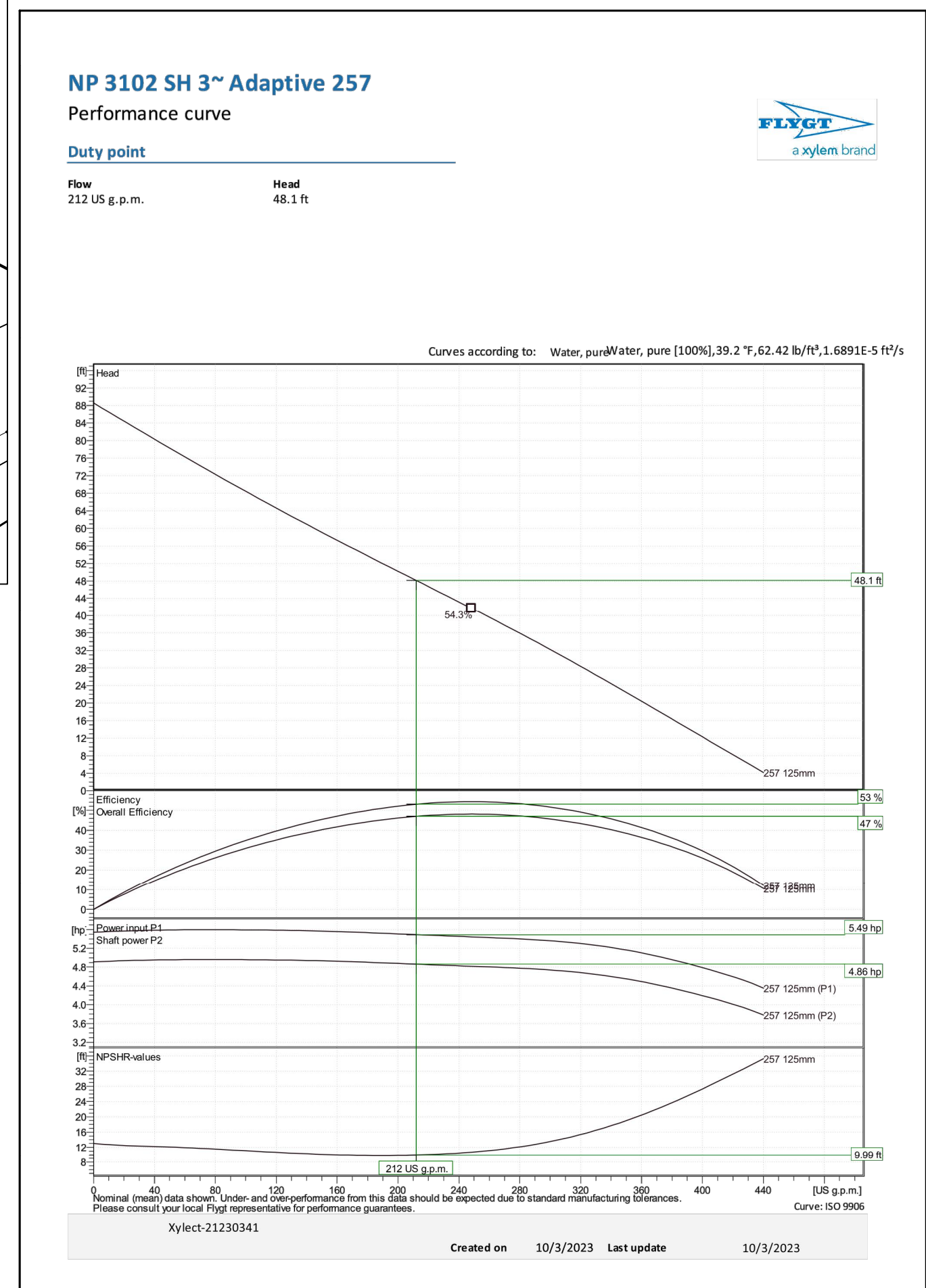
Curves according to: Water, pure Water, pure [100%], 39.2 °F, 62.42 lb/ft³, 1.6891E-5 ft/s

Configuration

Motor number	Installation type
N3102-920 18-10-2AS-W IE3 7.2hp	P - Semi permanent, Wet
Impeller diameter	Discharge diameter
125 mm	125 mm
Pump information	Material
Impeller diameter: 125 mm	Impeller: Hard-Iron™
Discharge diameter: 3 inch	Stator housing material: Grey cast iron
Inlet diameter: 100 mm	Maximum operating speed: 3600 rpm
Number of blades: 2	Max. fluid temperature: 40 °C

Project: Xylect-21230341
Created on: 10/3/2023
Last update: 10/3/2023

PUMP SPECIFICATIONS



SYSTEM CURVE

Friction loss calculation

Pumped fluid	Static head	Layout
Water, pure	41	Wet well installation
Flow	Number of pumps	Calculation model
210 US g.p.m.	1	Colebrook-White
Viscosity	Nature of system	
1.69E-5 ft/s	Single head pump	

Type	Ø (inch)	7 or L	Qty.	v (ft/s)	k (inch)	ΔH (ft)
Force Main - Metal / Ductile iron cement lining PN 16 / DN 100 (118x44 mm) / Used piping / Old Pipes						
Pipe length	4.016	50 ft	1	5.32	0.04724	2.629
Elbows	4.016	0.6	2	5.32		0.2638
Non-return valves	4.016	0.8	1	5.32		0.3953
T-piece	4.016	0.4	1	5.32		0.1758
VALVE	4.016	0.3	1	5.32		0.1319
Total friction head						3.596
Force Main - Plastic / PVC PN 16 / DN 150 (160x11,9 mm) / Used piping / Old Pipes						
Pipe length	5.362	440 ft	1	2.983	0.001575	2.75
Elbows	5.362	2.4	8	2.983		0.3319
Total friction head						3.082
Force Main - Plastic / PE100 (HDPE) PE 4710 SDR 11 (PN 16) / DN 500 (560x50,8 mm)						
Pipe length	19.69	16100 ft	1	0.2214	0	0.1899
Elbows	19.69	3	10	0.2214		0.002284
VALVE	19.69	1.5	5	0.2214		0.001142
Total friction head						0.1933
Friction loss head						6.871 ft
Total static head						41 ft
Total head						47.87 ft

Project: Xylect-21230341
Created on: 10/3/2023
Last update: 10/3/2023

HEAD CALCULATIONS

solutions
303 North Bedford Street
Georgetown, DE 19427
T. 302-297-9215

3033 Manitt Mill Road
Salisbury, MD 21804
T. 410-572-8833

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Date: 1/25/2024

NO.	DATE	DESCRIPTION
2	6/29/2023	ADDRESSED ARTESIAN WATER & SEWER COMMENTS
3	7/19/2023	ADDRESSED ARTESIAN WATER & SEWER COMMENTS
4	10/11/2023	REVISE SEWER CONNECTIONS AND FORCEMAIN
5	12/6/2023	UPDATED PHASING AND SEWER CONNECTION
6	1/10/2024	ADDRESSED ARTESIAN SEWER COMMENTS
7	1/25/2024	ADDRESSED WPCC SEWER COMMENTS

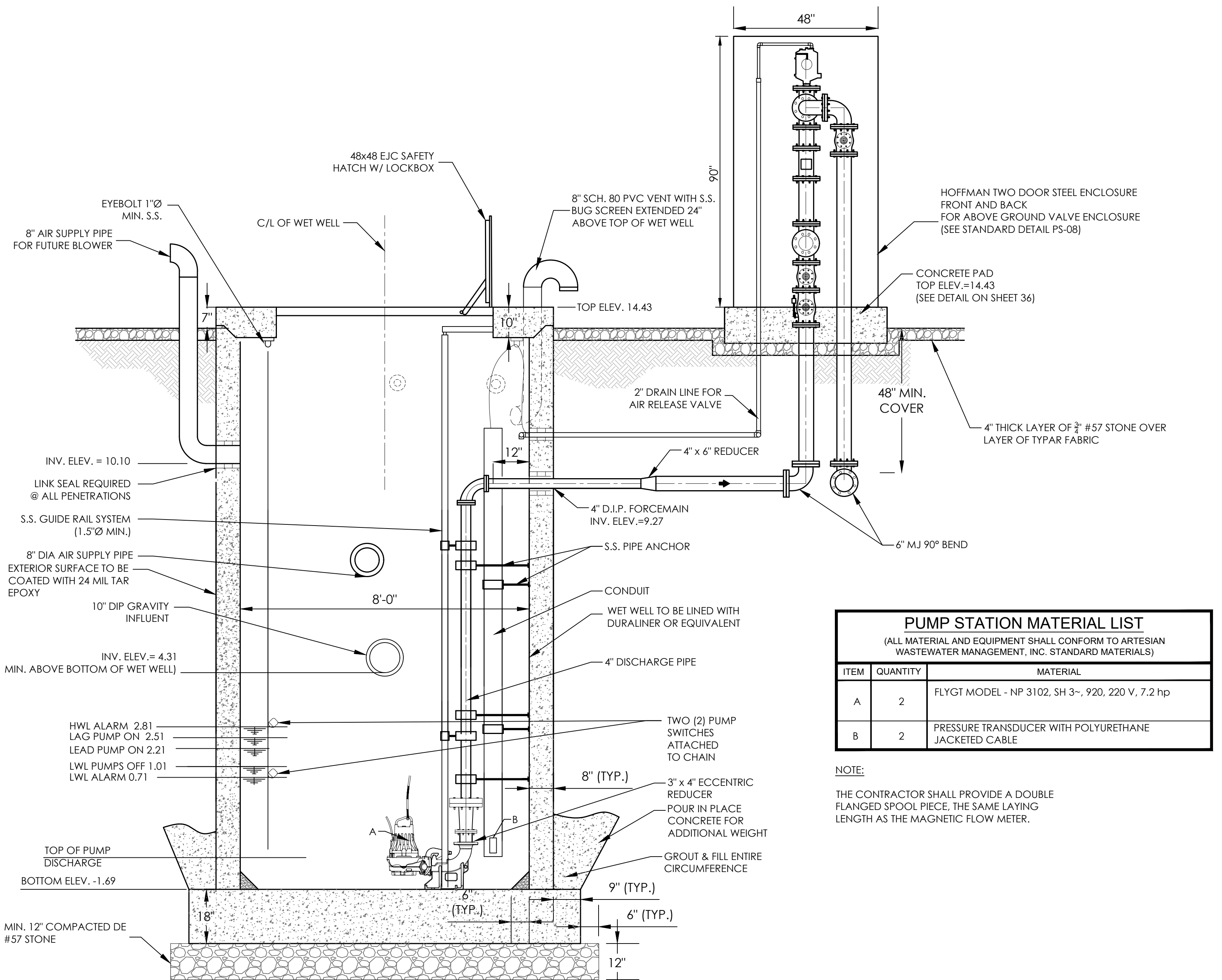
PUMP STATION SITE PLAN

for
RIVERWOOD
SUSSEX COUNTY, DELAWARE
INDIAN RIVER HUNDRED

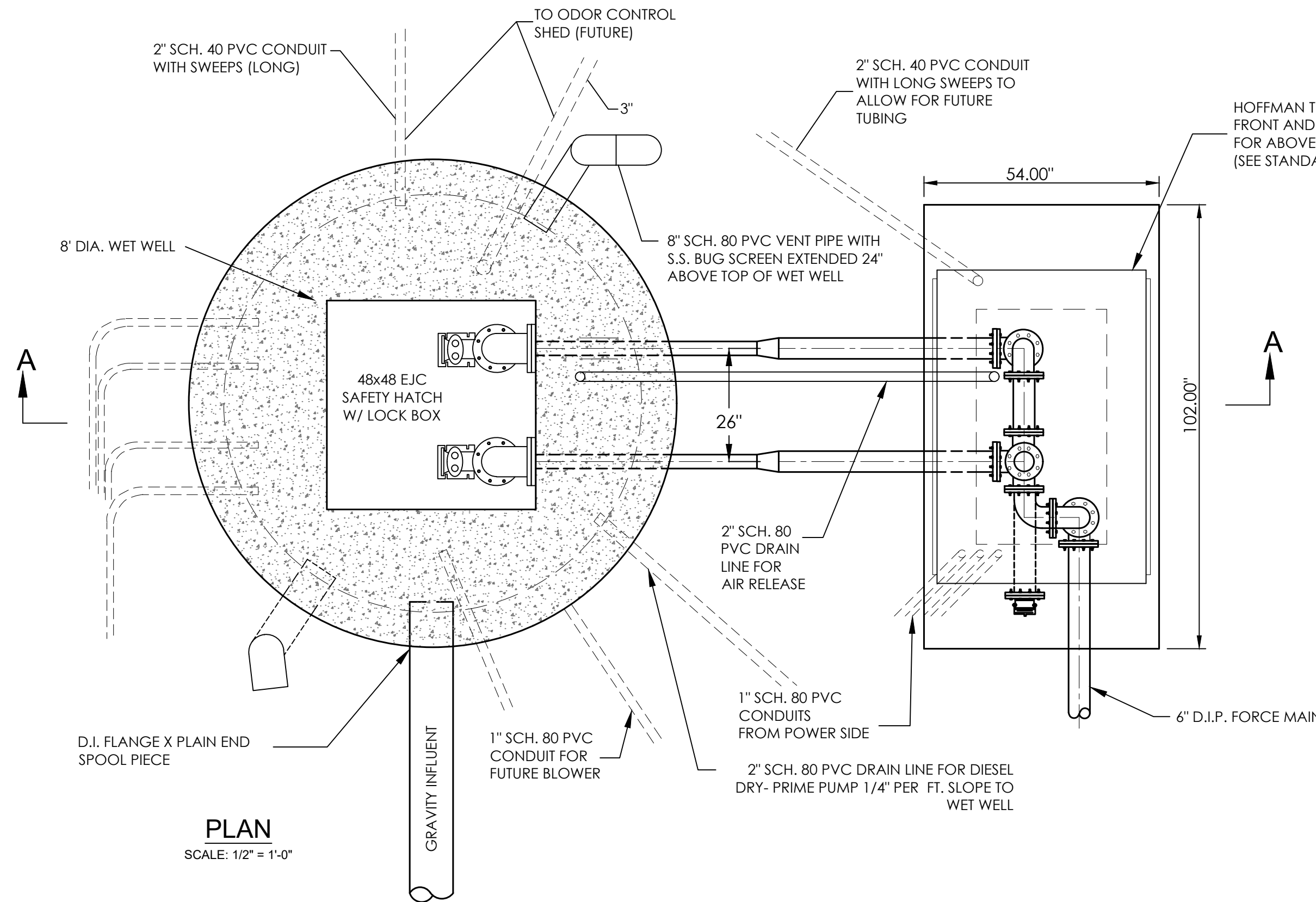
Date:	10-25-2022	Job Number:	G20079	Scale:	AS NOTED	Drawn By:	EDT	Designed By:	AMW	Approved By:	JRE
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Sheet No.: **34**

File Name: G20079-Pumpstation.dwg



SECTION A-A
SCALE: 1/2" = 1'-0"



PLAN
SCALE: 1/2" = 1'-0"

PUMP STATION MATERIAL LIST		
(ALL MATERIAL AND EQUIPMENT SHALL CONFORM TO ARTESIAN WASTEWATER MANAGEMENT, INC. STANDARD MATERIALS)		
ITEM	QUANTITY	MATERIAL
A	2	FLYGT MODEL - NP 3102, SH 3--, 920, 220 V, 7.2 hp
B	2	PRESSURE TRANSDUCER WITH POLYURETHANE JACKETED CABLE

NOTE:
THE CONTRACTOR SHALL PROVIDE A DOUBLE FLANGED SPOOL PIECE, THE SAME LAYING LENGTH AS THE MAGNETIC FLOW METER.

WETWELL BOUANCY CALCULATIONS

Input Parameters	Calculated Parameters
Flood Elevations = 12 feet	Wet Well Height (not including lid) = 15.28667 feet
Inside Diameter = 8 feet	Wet Well Height (including lid) = 16.12 feet
Wall Thickness = 8 inches = 0.66667 feet	Total Excavated Depth (Top of lid to Bottom of base) = 17.62 feet
Top Elevation = 14.43 feet	Outside Diameter = 9.33333 feet
Bottom of Tank Elevation = -1.69 feet	Base Diameter = 10.83333 feet
Width of Hatch = 48 inches = 4 feet	Depth of Soil on Footer = 15.28667 feet
Length of Hatch = 48 inches = 4 feet	Lid Radius = 4.66667 feet
Lid Diameter = 112 inches = 9.333 feet	Wet Well Inside Radius = 4 feet
Lid Thickness = 10 inches = 0.833 feet	Wet Well Outside Radius = 4.66667 feet
Base Thickness = 18 inches = 1.5 feet	Base Radius = 5.41667 feet
Footing Kickout = 9 inches = 0.75 feet	Wet Well Submerged Height = 13.69 feet
Inlet Pipe Elevation = 4.31 feet	
Depth of Concrete Ballast = 0 inches = 0 feet	
Desired Factor of Safety = 1.2	

Constants
Density of Water = 62.43 lbs/ft³
Density of Soil = 110 lbs/ft³
Density of Concrete = 150 lbs/ft³

Formulas
Volume of Cylinder = πr²h
Weight = Volume x Density

Weight

Volume of Lid Including Hatch = π(Lid Radius)² x (Lid Thickness) = 57.01409 ft³

Volume of Lid Excluding Hatch = (Volume of Lid Including Hatch) - [(Width of Hatch) x (Length of Hatch)] x (Lid Thickness) = 43.68076 ft³

Weight of Lid Excluding Hatch = 6552.113 lbs.

Volume of Wet Well Structure = π(WetWell Outside Radius)² x (Wet Well Height) = 1045.866 ft³

Inside Volume of Wet Well = π(WetWell Inside Radius)² x (Wet Well Height) = 768.3917 ft³

Volume of Wet Well Wall = (Volume of Wet Well) - (Inside Volume of Wet Well) = 277.4748 ft³

Weight Wet Well Wall = 41621.22 lbs

Volume of Base = π(Base Radius)² x (Base Thickness) = 138.2628 ft³

Weight of Base = 20739.42 lbs

Volume of Concrete on Footer = [π(Base Radius)² x (Depth of Concrete Ballast)] - [π(WetWell Outside Radius)² x (Depth of Concrete Ballast)] = 0 ft³

Weight of Concrete on Footer = 0 lbs

Volume of Soil on Footer = [π(Base Radius)² x (Depth of Soil on Footer)] - [π(WetWell Outside Radius)² x (Depth of Soil on Footer)] = 363.1851 ft³

Weight of Soil on Footer = 39950.36 lbs

Total Weight = (Weight of Lid Excluding Hatch) + (Weight of Wet Well Wall) + (Weight of Base) + (Weight of Concrete on Footer) + (Weight of Soil on Footer) = 108863.1 lbs

Bouyancy

Base Bouyancy = (Volume of Base) x (Density of Water) = 8631.747 lbs

Volume of Bouyant Wet Well = π(WetWell Outside Radius)² x (Wet Well Submerged Height) = 936.6275 ft³

Bouyancy of Wet Well = 58473.65 lbs

Volume of Bouyant Material on Footer = [π(Base Radius)² x (Wet Well Submerged Height)] - [π(WetWell Outside Radius)² x (Wet Well Submerged Height)] = 325.2511 ft³

Bouyancy of Material on Footer = 20305.42 lbs

Total Bouyancy = (Base Bouyancy) + (Bouyancy of Wet Well) + (Bouyancy of Material on Footer) = 87410.82 lbs

Bouyancy Factor of Safety

Desired Factory of Safety = 1.2

$$\frac{\text{(Total Weight)}}{\text{(Total Bouyancy)}} = \frac{108863.1134}{87410.82167} = 1.25$$

Meets Safety Factor Requirements



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PUMP STATION DETAILS 1

for
RIVERWOOD
SUSSEX COUNTY, DELAWARE
INDIAN RIVER HUNDRED

Date:	10-25-2022
Job Number:	G20079
Scale:	1" = 1'-0"
Drawn By:	EDT
Designed By:	AMW
Approved By:	JRE

Sheet No.:

35

File Name:
G20079-Pumpstation.dwg