

LEGEND		
	EXISTING	PROPOSED
PROPERTY LINE	----	----
EASEMENT LINE	----	----
SETBACK LINE	----	----
CONCRETE MONUMENT FOUND	CMF □	N/A
IRON PIPE FOUND	IPF ●	N/A
BENCH MARK	ELEV. ▲	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	-----	N/A
SIGN	-----	-----
EDGE OF WETLAND	-----	N/A
FLOODPLAIN	-----	N/A
STORM MANHOLE	-----	-----
CURB INLET	-----	-----
YARD INLET	-----	-----
STORM PIPE	-----	-----
RIP RAP	-----	-----
SANITARY MANHOLE	-----	-----
SANITARY CLEANOUT	-----	-----
SANITARY PIPE	-----	-----
SANITARY FORCEMAIN	-----	-----
WATER VALVE	-----	-----
WATER PIPE	-----	-----
FIRE HYDRANT	-----	-----
OVERHEAD ELECTRIC	-----	N/A
UNDERGROUND ELECTRIC	-----	N/A
UNDERGROUND TELECOMMUNICATIONS	-----	N/A
UTILITY POLE	-----	N/A
LIGHT POLE	-----	-----
DECIDUOUS TREE	-----	N/A
CONIFEROUS TREE	-----	N/A
TREE LINE	-----	-----
EDGE OF WATER/POND	N/A	-----
SWALE CL w/ FLOW DIRECTION	N/A	-----
RESOURCE PROTECTION ZONE	N/A	-----

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 BEE 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.

CONSTRUCTION PLANS

- COVER
- NOTES
- EXISTING CONDITIONS 1
- EXISTING CONDITIONS 2
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- ROAD AND STORM DRAIN PLAN A
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- ROAD AND STORM DRAIN PLAN D
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- ROAD AND STORM DRAIN PLAN F
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- ROAD PROFILES 2
- ROAD PROFILES 3
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- STORM DRAIN PIPE AND STRUCTURE CHARTS
- BULK GRADING PLAN A
- BULK GRADING PLAN B

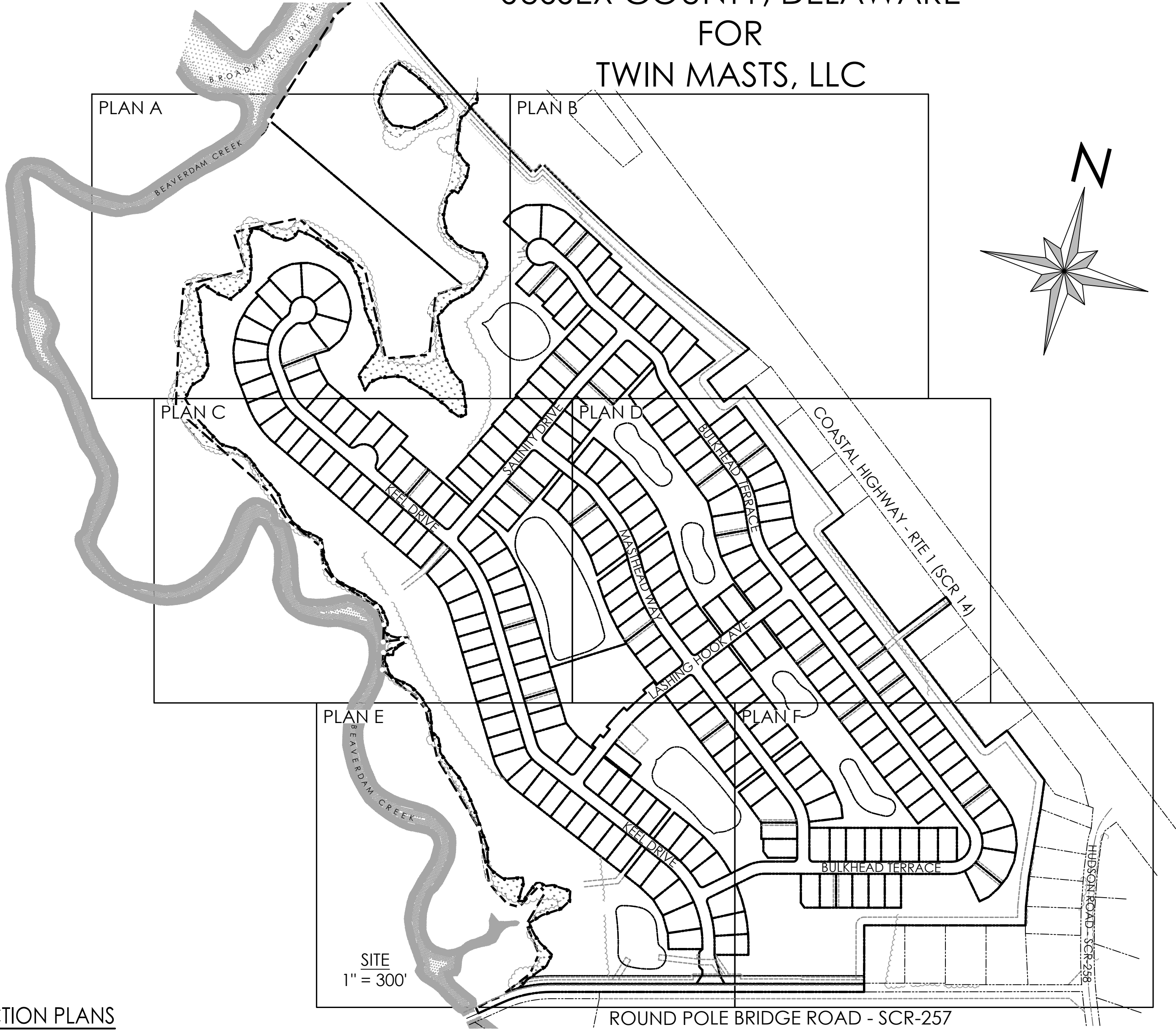
- WATER PLAN A
- WATER PLAN B
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- WATER PLAN E
- WATER PLAN F
- WATER PROFILES 1
- WATER PROFILES 2
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- ARTESIAN WATER NOTES AND DETAILS
- ARTESIAN WATER DETAILS
- EROSION AND SEDIMENT CONTROL COVER
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- DETAILED STORMWATER & EARTHWORK PHASING PLAN
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- PRE-CONSTRUCTION SITE SWM PLAN POND PHASE
- PRE-CONSTRUCTION SITE SWM PLAN PHASE 1
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- EROSION AND SEDIMENT CONTROL NOTES & DETAILS 1
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- EROSION AND SEDIMENT CONTROL NOTES & DETAILS 4
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- POST CONSTRUCTION SITE SWM
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- POST-CONSTRUCTION SWM PLAN - WET POND 3
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- POST-CONSTRUCTION SWM PLAN - INFILTRATION BASIN 4
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- PUMP STATION SITE PLAN & LEGEND
- S.E.C. DIAGRAM & DETAIL
- DETAILS, DIAGRAM, & SCHEDULE

DELDOT PLAN INDEX

- TITLE
- LEGEND
- CONSTRUCTION & MOT NOTES
- PLAN SHEET INDEX
- TYPICAL SECTIONS
- HORIZONTAL AND VERTICAL CONTROL
- CONSTRUCTION PLANS
- GRADING PLANS
- PROFILES & CONSTRUCTION DETAILS 1
- ROAD PROFILE - SCR-257 ROUND POLE BRIDGE ROAD
- SIGNING AND STRIPING PLANS
- ROUND POLE BRIDGE CROSS SECTIONS
- EROSION AND SEDIMENT CONTROL PLAN

ROADWAY, STORM DRAIN, SEWER, WATER, & ESC FOR TWIN MASTS BROADKILL HUNDRED SUSSEX COUNTY, DELAWARE FOR TWIN MASTS, LLC



SITE DATA:

OWNER/DEVELOPER: TWIN MASTS, LLC
5950 SYMPHONY WOODS ROAD, SUITE 408
COLUMBIA, MD 21044
PHONE: 410.861.7159
CONTACT: MEGAN CONNER

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

- TM 235-16.00-69.00
DEED REFERENCE: 5650/41
TM 235-16.00-68.00
DEED REFERENCE: 5701/102
- EXISTING ZONING:
AR-1
- PROPOSED USE: AR-1 CLUSTER SUBDIVISION

SINGLE FAMILY LOTS = 249 LOTS
MIN. LOT AREA = 7,500 S.F.
MIN. LOT WIDTH = 60'

MAXIMUM BUILDING HEIGHT: 42'

FRONT YARD = 25' (15' ON CORNER)
SIDE YARD = 10'
REAR YARD = 10'

- BOUNDARY AND TOPOGRAPHY AS SHOWN HEREON ARE AS PROVIDED BY SOLUTIONS IPEM LLC

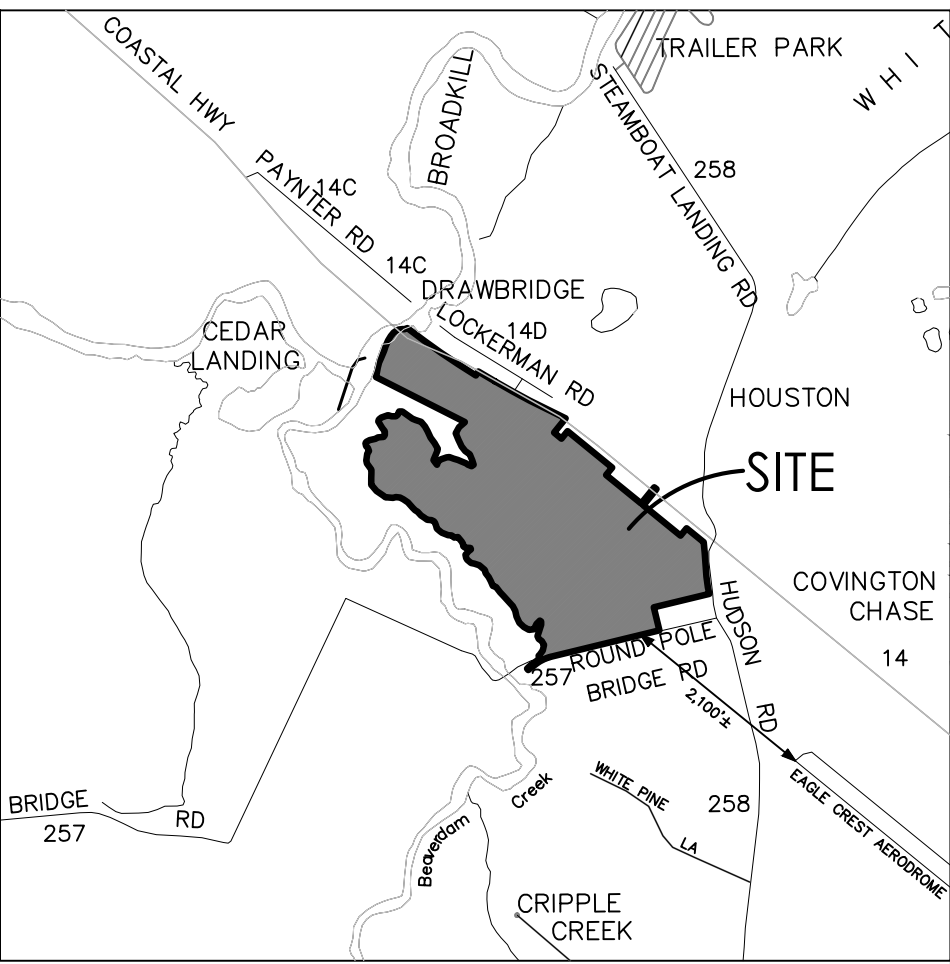
- PROPERTY IS LOCATED IN FLOOD ZONES AE (EL8), AE (EL9), AE (EL10) - SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. BASE FLOOD ELEVATIONS DETERMINED, ZONE X (SHADED) - AREAS DETERMINED TO BE WITHIN THE 0.2% ANNUAL FLOOD CHANCE FLOOD HAZARD, AND FLOOD ZONE X UNSHADED - AREAS DETERMINED TO BE OUTSIDE THE 0.2% CHANCE FLOODPLAIN, PER FIRM MAP NUMBER 10005C0167K AND 10005C0186K. MAPS REVISED MARCH 16, 2015.

- WATER SUPPLY:
ARTESIAN WATER COMPANY, INC.

- SANITARY SEWER:
ARTESIAN WASTEWATER MANAGEMENT, INC.

- GROSS AREA = 132.901 AC.±
NET AREA = 132.901 - 8.38 AC = 124.52 AC +/-
ALLOWABLE UNITS = 2.0 DU/AC * 124.52 AC.± = 249.0
PROPOSED UNITS = 249
(1.999 DU/AC.)

- PROJECT DATUM:
HORIZONTAL: DELAWARE STATE PLANE NAD 83
VERTICAL: NAVD 88



VICINITY MAP

SCALE: 1" = 2,000'

PRELIMINARY PLAT INDEX

- COVER SHEET
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- EXISTING CONDITIONS PLAN B
- EXISTING WETLAND COORDINATE TABLES
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- PRELIMINARY PLAT - PLAN B
- PRELIMINARY PLAT - PLAN C
- PRELIMINARY PLAT - PLAN D
- PRELIMINARY PLAT - PLAN E
- PRELIMINARY PLAT - PLAN F
- PRELIMINARY PLAT - PLAN G
- PRELIMINARY PLAT - LANDSCAPE PLAN A
- PRELIMINARY PLAT - LANDSCAPE PLAN B
- PRELIMINARY PLAT - LANDSCAPE PLAN C
- PRELIMINARY PLAT - LANDSCAPE PLAN D
- PRELIMINARY PLAT - LANDSCAPE PLAN E
- PRELIMINARY PLAT - LANDSCAPE PLAN F
- PRELIMINARY PLAT - LANDSCAPE PLAN G

WETLAND 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 COE Manual/CECW-OR, 9-26-1990, RCL 90-7/CECW-OR, 3-6-1992, 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
SOCIETY OF WETLANDS SCIENTISTS
CORPS OF ENGINEERS
CERTIFIED WETLAND 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, TWIN MASTS, LLC, HEREBY CERTIFIES THAT THESE DRAWINGS HAVE BEEN APPROVED.

MEGAN CONNER DATE

APPROVED, SUSSEX COUNTY ENGINEER AGREEMENT #1203

NAME DATE

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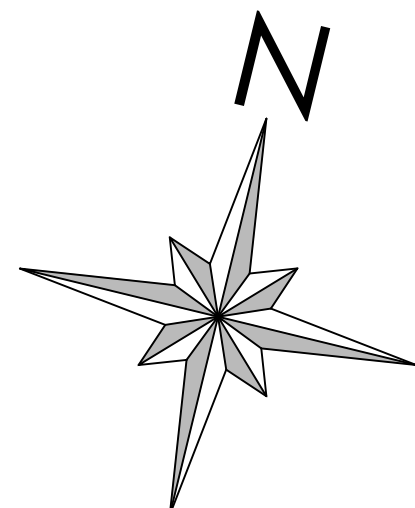
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2	PLANS REVISED PER AGENCIES COMMENTS.	6/28/24
3	PLANS REVISED PER ARTESIAN COMMENTS.	7/1/24
4	REVISED WATERMAIN SIZE AT BULKHEAD TERRACE	7/11/24
5	PLANS REVISED PER SCC COMMENTS	7/31/24
6	PLANS REVISED PER WPCC COMMENTS	8/1/24

COVER
for
TWIN MASTS
SUSSEX COUNTY, DELAWARE
Prepared for: Twin Masts, LLC

Date:	3/12/24
Job Number:	G21029
Scale:	AS NOTED
Drawn By:	JPR
Designed By:	JPR
Approved By:	JRE

Sheet No.:

File Name: G21029-Cover



NOTE:
1. CONTRACTOR TO VERIFY DEPTH AND LOCATION OF ALL UTILITIES AT CONNECTIONS PRIOR TO INSTALLATION.
2. CLEANOUTS SHOULD NOT BE LOCATED IN DRIVEWAYS.

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

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James R. Erikson

LICENSE

Professional Engineer

Date 8/1/2024

REVISIONS

NO.	DATE	DESCRIPTION
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3	7/1/24	PLANS REVISED PER ARTESIAN COMMENTS.
4	7/11/24	REVISED WATERMAIN SIZE AT BULKHEAD TERRACE
5	7/31/24	PLANS REVISED PER SCD COMMENTS
6	8/1/24	PLANS REVISED PER WPCC COMMENTS

SANITARY SEWER PLAN B

for

TWIN MASTS

SUSSEX COUNTY, DELAWARE

Prepared for: Twin Masts, LLC

3/12/24

Job Number: G21029

Scale: AS NOTED

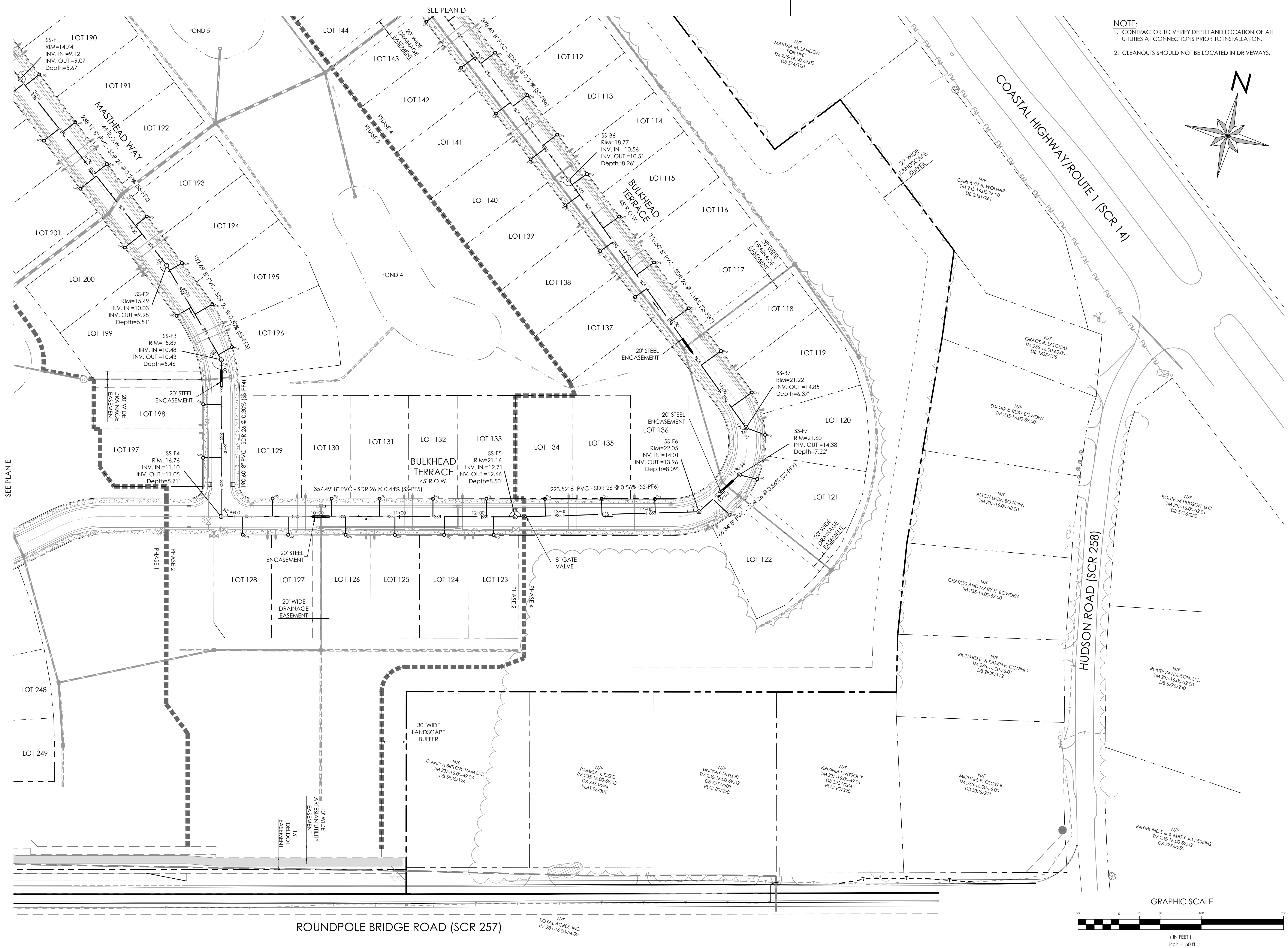
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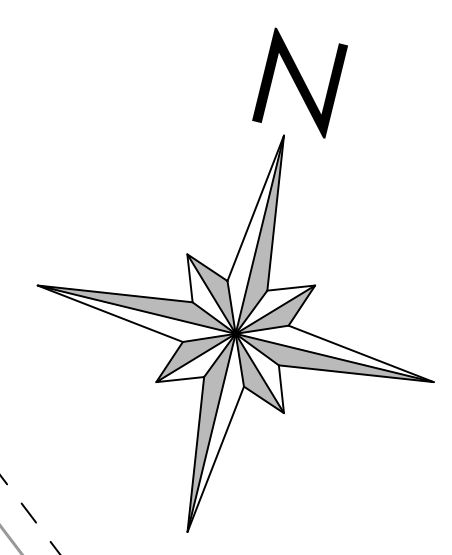
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File Name: G21029-Sewer



NOTE:
1. CONTRACTOR TO VERIFY DEPTH AND LOCATION OF ALL UTILITIES AT CONNECTIONS PRIOR TO INSTALLATION.
2. CLEANOUTS SHOULD NOT BE LOCATED IN DRIVEWAYS.



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JAMES R. ERIKSEN
P.E.
Professional Engineer
Date 8/1/2024

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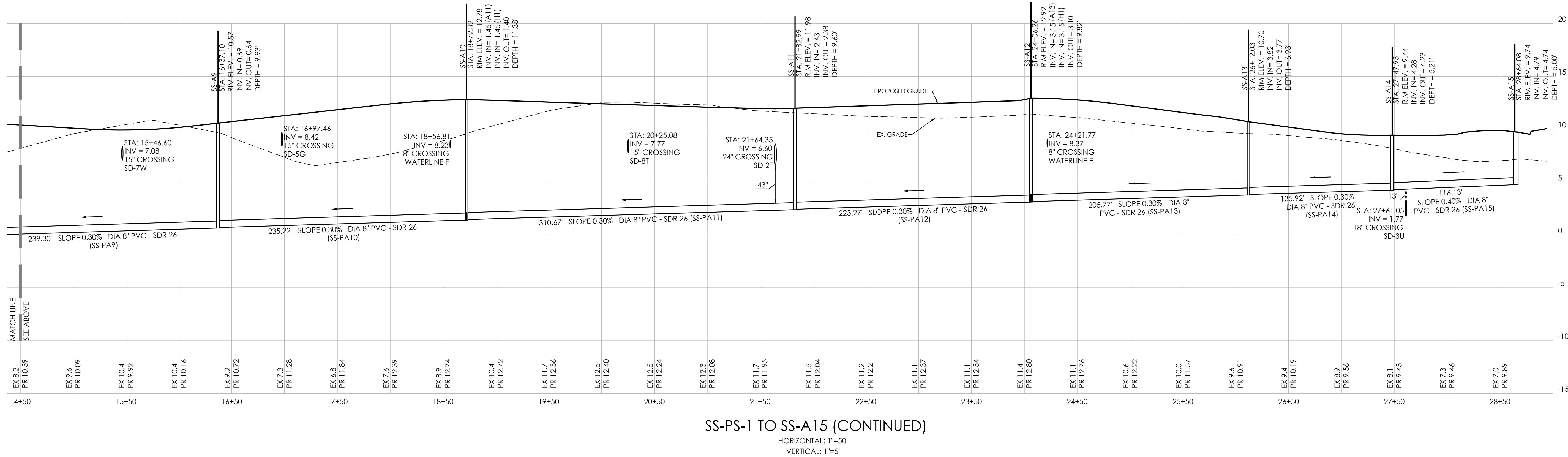
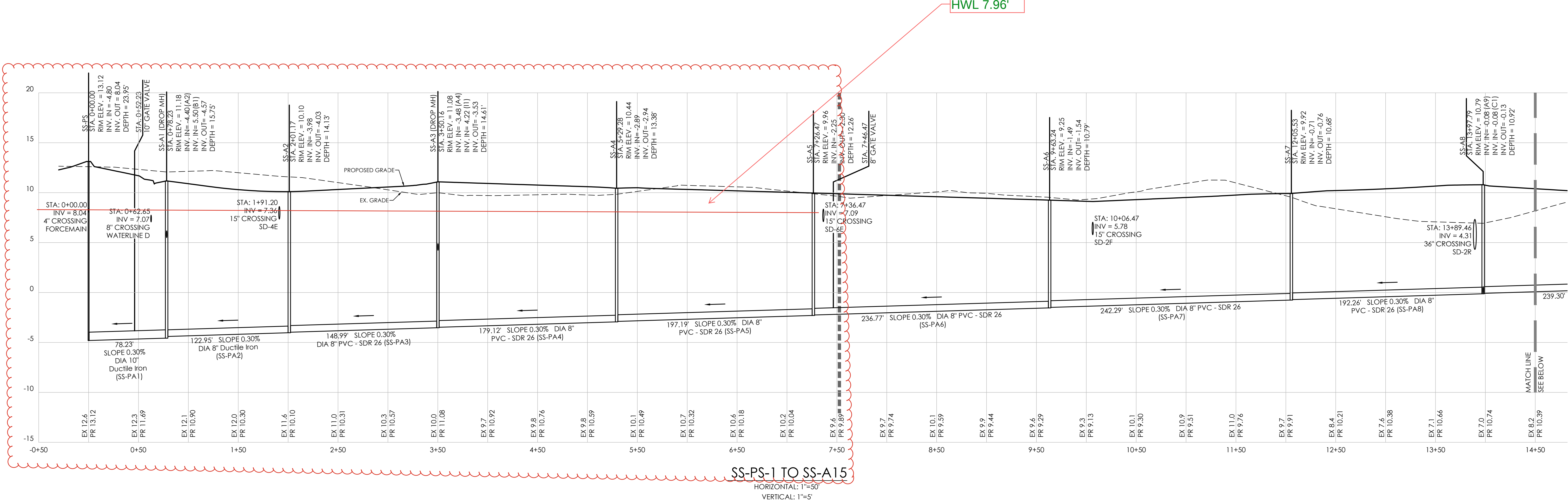
SANITARY SEWER PLAN F

for
TWIN MASTS
SUSSEX COUNTY, DELAWARE
Prepared for: Twin Masts, LLC

Date: 3/12/24
Job Number: G21029
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- NOTES:
- ALL PVC GRAVITY-FED SANITARY SEWER PIPE SHALL BE GREEN SDR 26 PVC UNLESS OTHERWISE NOTED
 - ALL FORCE MAINS SHALL BE GREEN C900 PVC
 - 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 ENCASEMENT 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 ENCASEMENT SHALL BE REQUIRED TO BE INSTALLED IN MINIMUM OF 5' ON EITHER SIDE OF THE CROSSING POINT ON THE LOWEST UTILITY.

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INCORPORATED

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REGISTERED PROFESSIONAL ENGINEER

STATE OF DELAWARE

8/1/2024

Date

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6	8/1/24	PLANS REVISED PER WPCC COMMENTS

SANITARY SEWER PROFILE 1

for

TWIN MASTS

SUSSEX COUNTY, DELAWARE

Prepared for: Twin Masts, LLC

3/12/24

Date:

G21029

Job Number:

AS NOTED

Scale:

JPR

Drawn By:

JPR

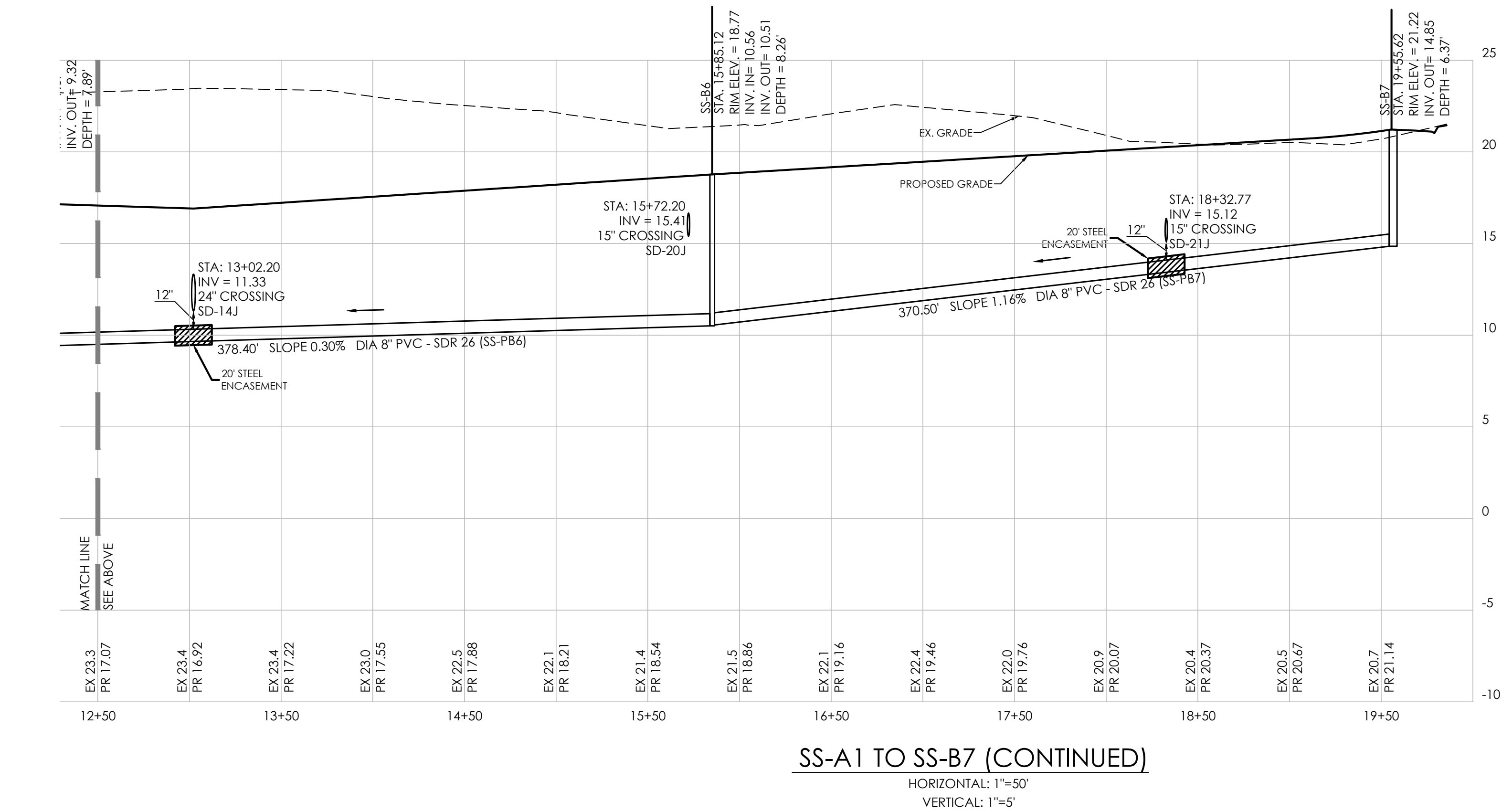
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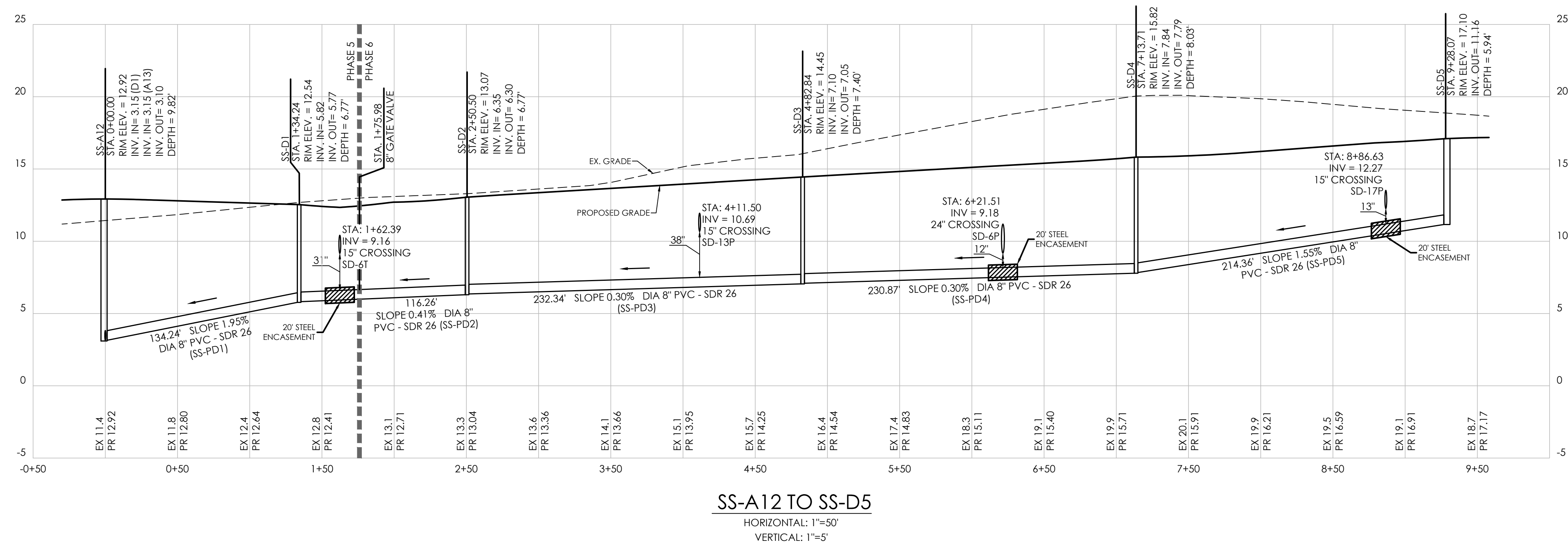
SANITARY SEWER PROFILE 2	for TWIN MASTS SUSSEX COUNTY, DELAWARE Prepared for: Twin Masts, LLC
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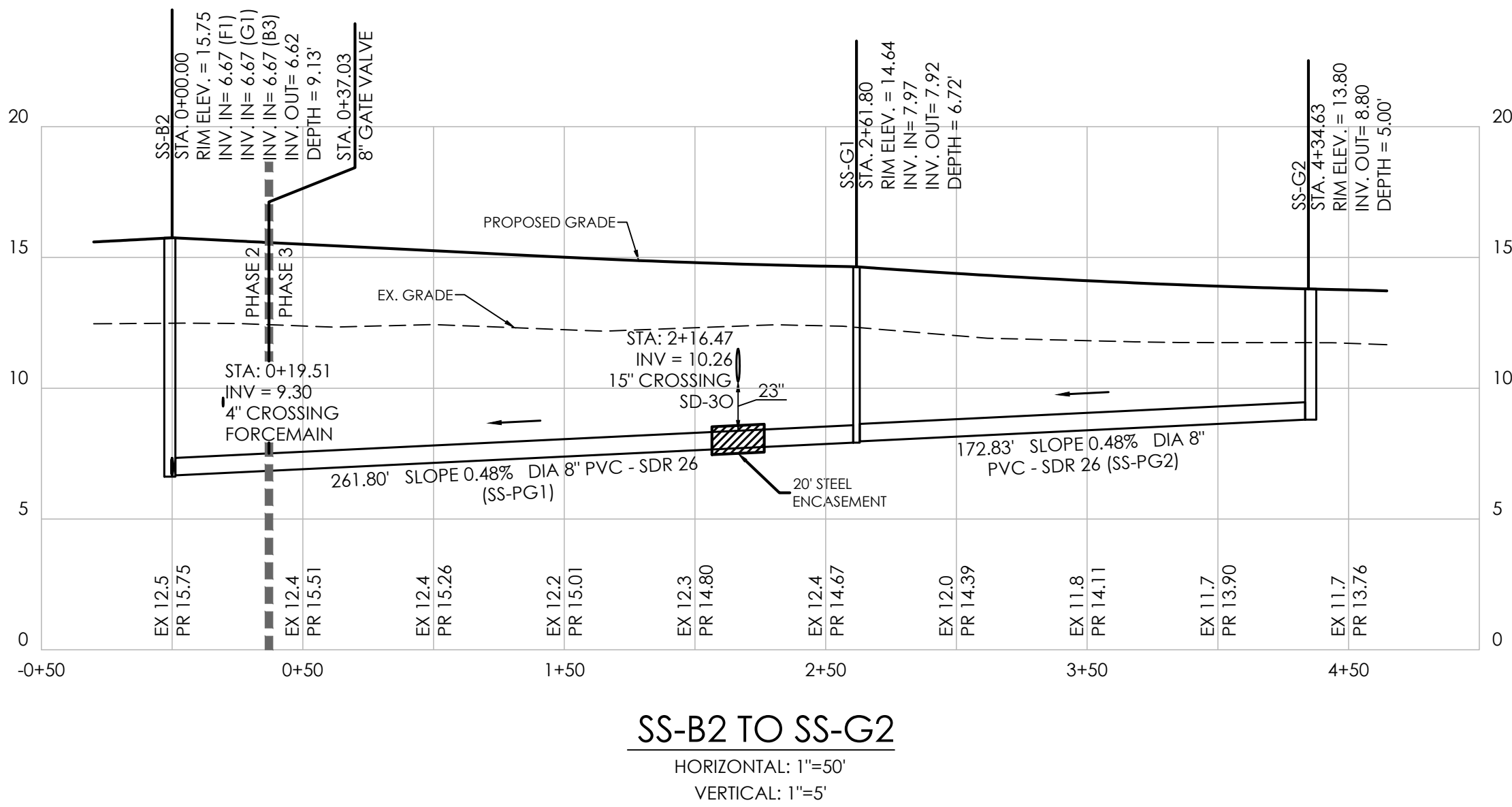
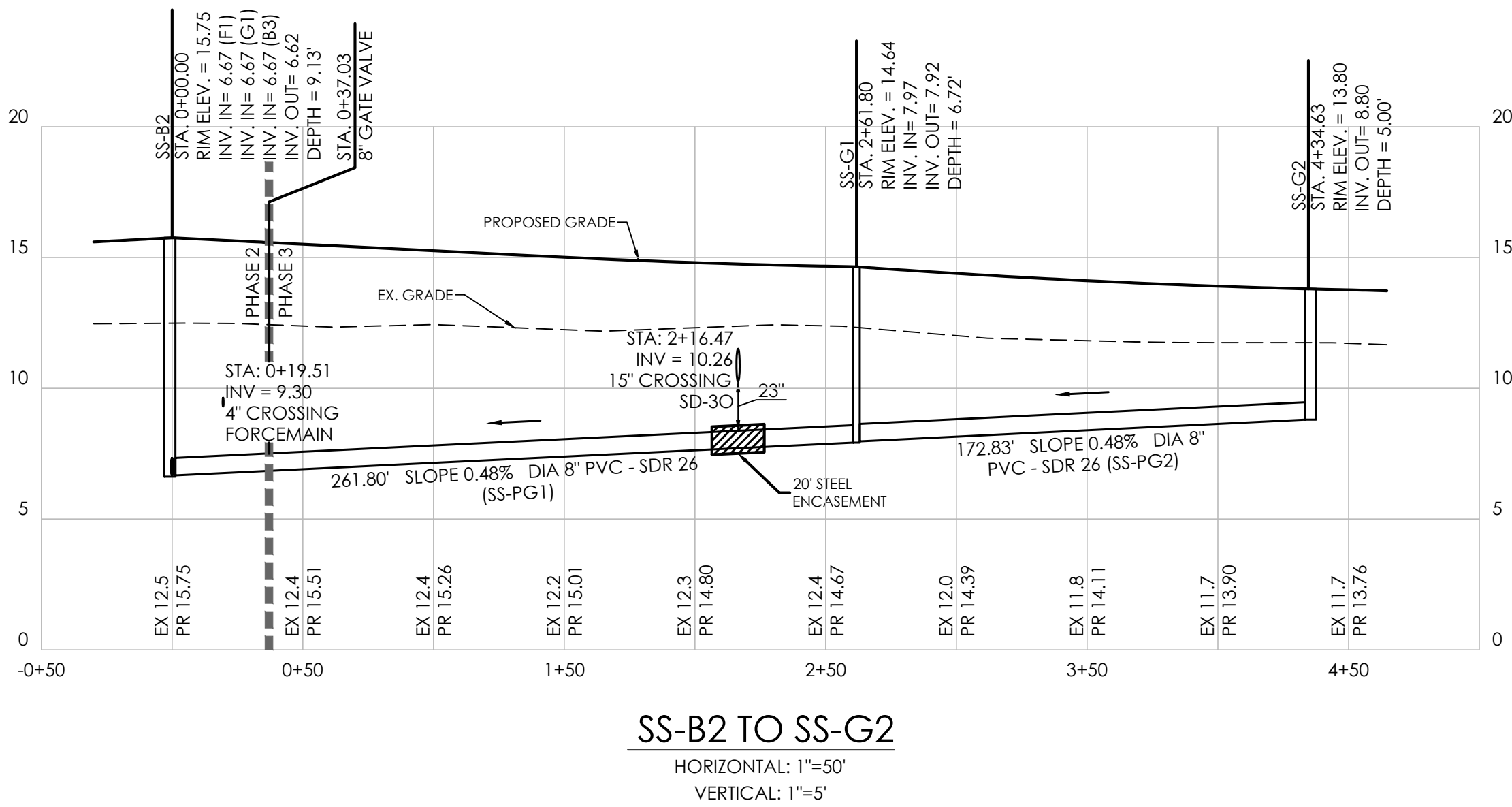
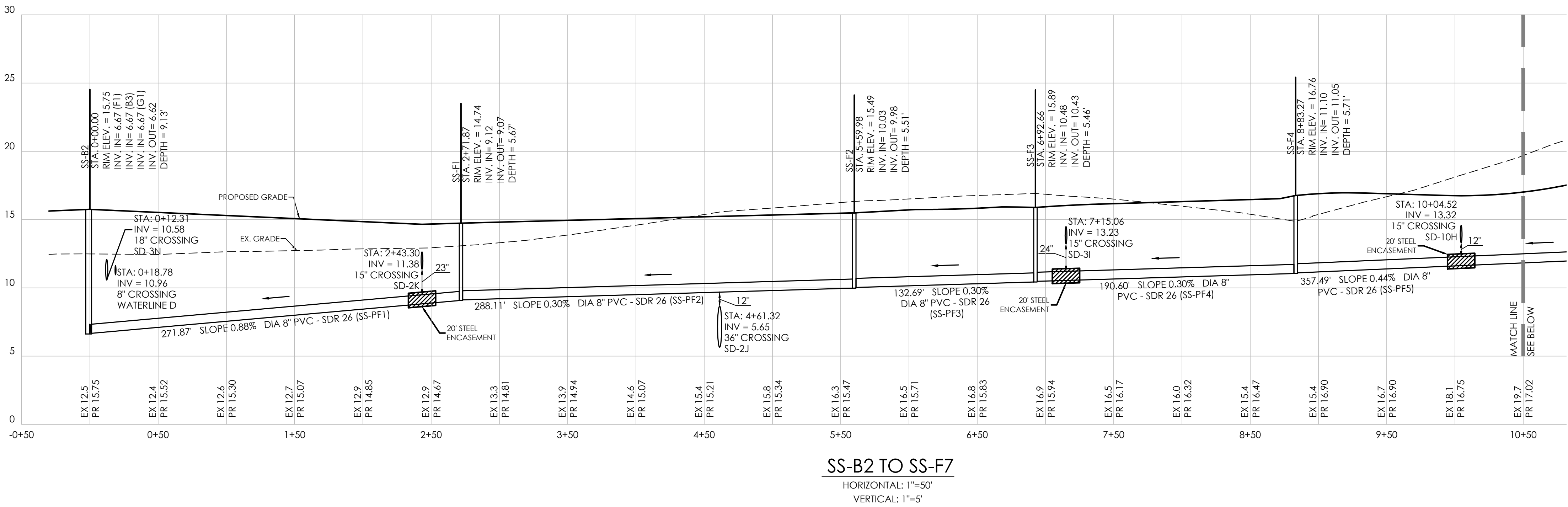
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SANITARY SEWER PROFILE 2		for	
TWIN MASTS			
SUSSEX COUNTY, DELAWARE			
Prepared for: Twin Masts, LLC			
Title:	3/12/24	Drawn By:	JPR
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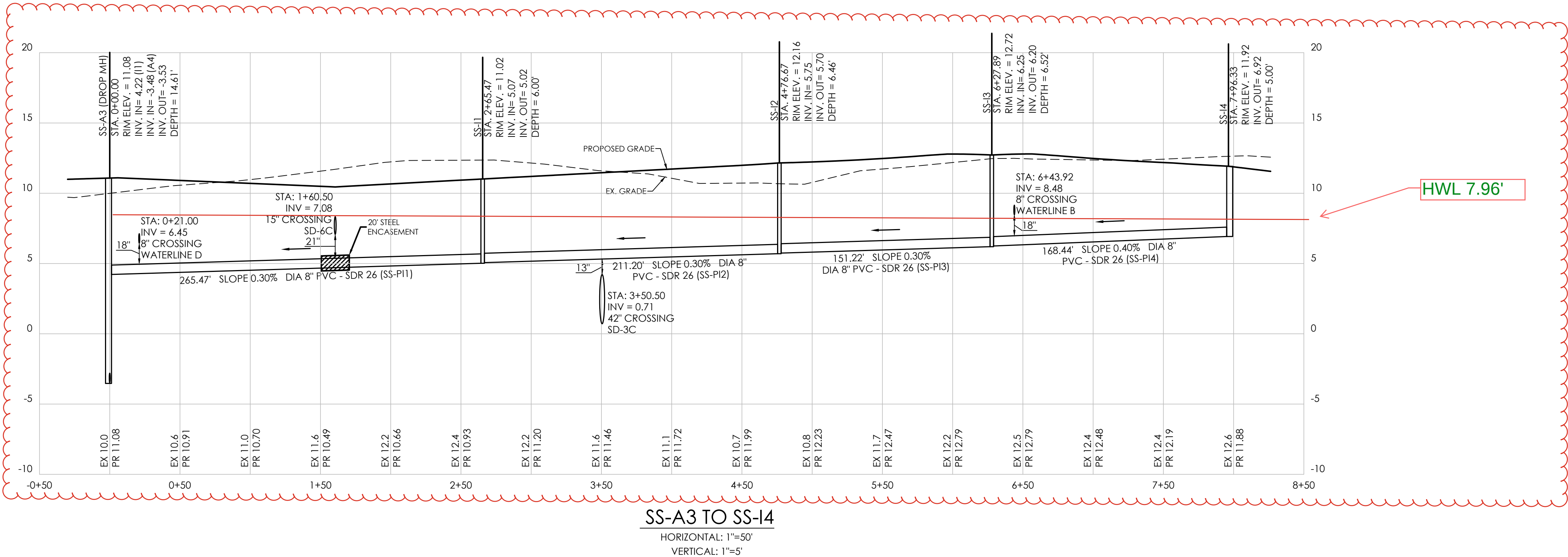
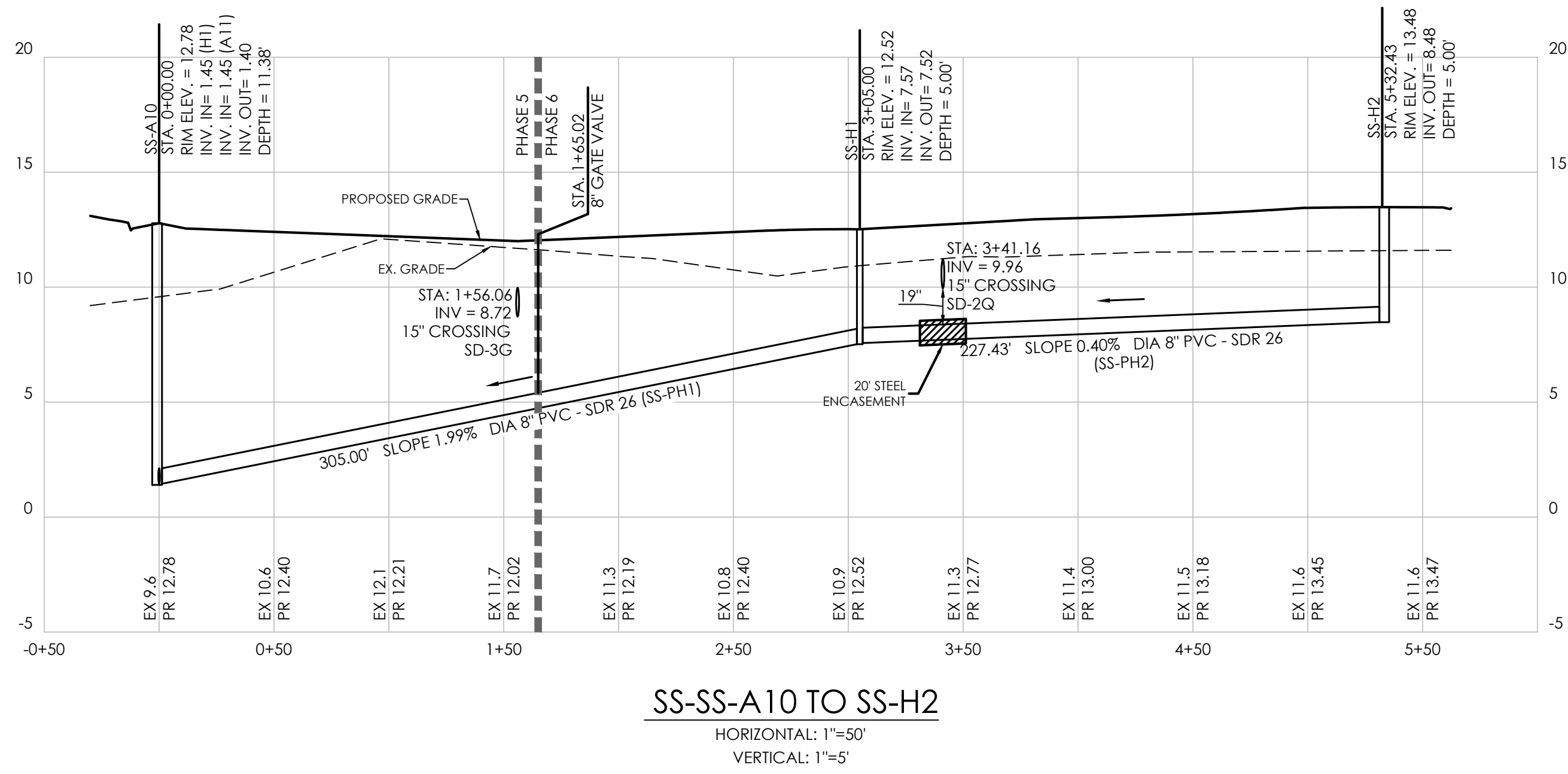
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- NOTES:
- ALL PVC GRAVITY-FED SANITARY SEWER PIPE SHALL BE GREEN SDR 26 PVC UNLESS OTHERWISE NOTED
 - ALL FORCE MAINS SHALL BE GREEN C900 PVC
 - SEWERS CROSSING WATER MAINS SHALL BE LAID OUT TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18" BETWEEN THE 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 ENCASEMENT 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 ENCASEMENT SHALL BE REQUIRED TO BE INSTALLED IN MINIMUM OF 5' ON EITHER SIDE OF THE CROSSING POINT ON THE LOWEST UTILITY.

REVISIONS		DESCRIPTION
NO.	DATE	
1	5/23/24	PLANS REVISED PER AGENCIES COMMENTS.
2	6/28/24	PLANS REVISED PER AGENCIES COMMENTS.
3	7/1/24	PLANS REVISED PER ARTESIAN COMMENTS.
4	7/11/24	REVISED WATERMAIN SIZE AT BULKHEAD TERRACE
5	7/31/24	PLANS REVISED PER SCD COMMENTS
6	8/1/24	PLANS REVISED PER WPCC COMMENTS

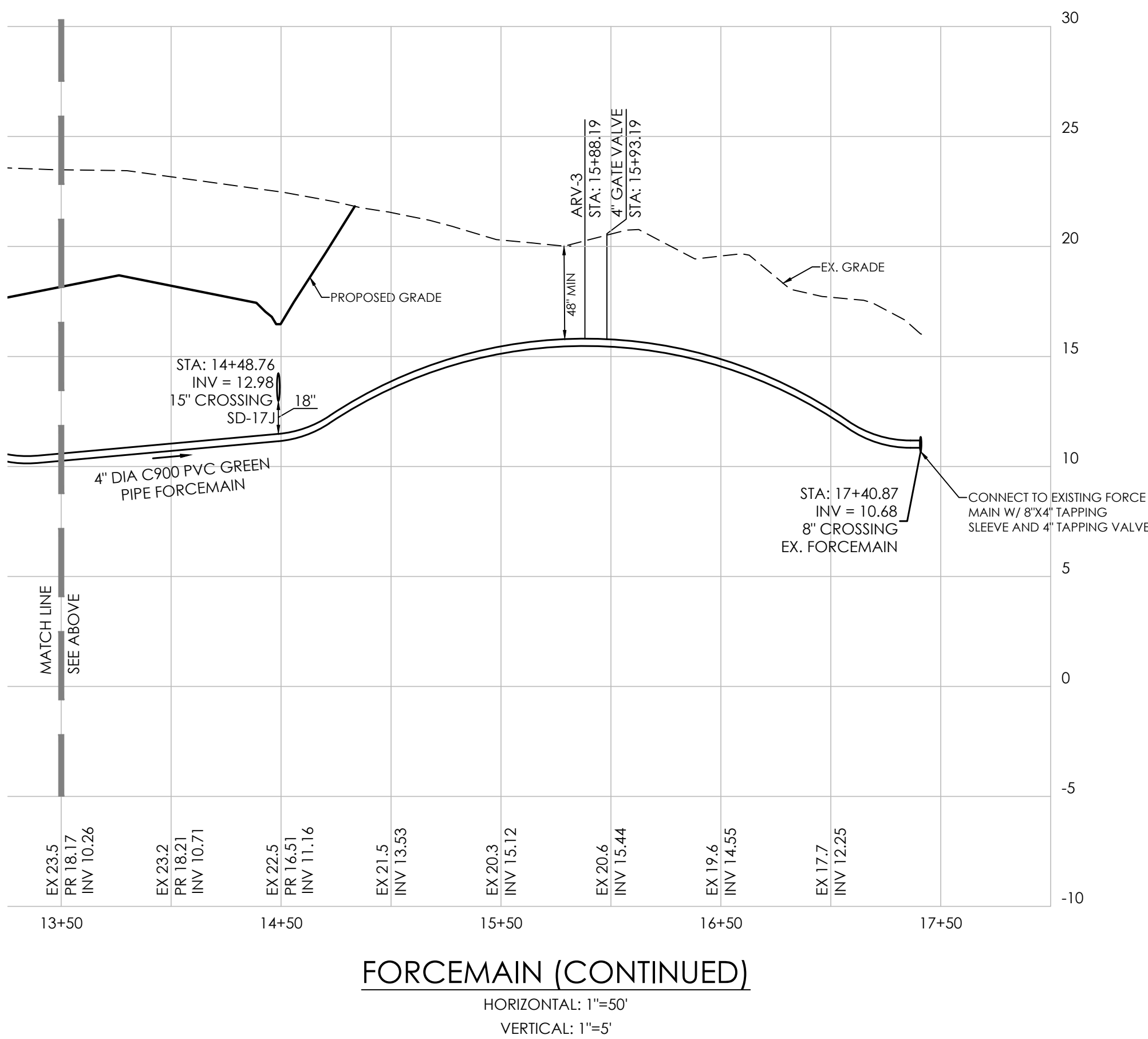
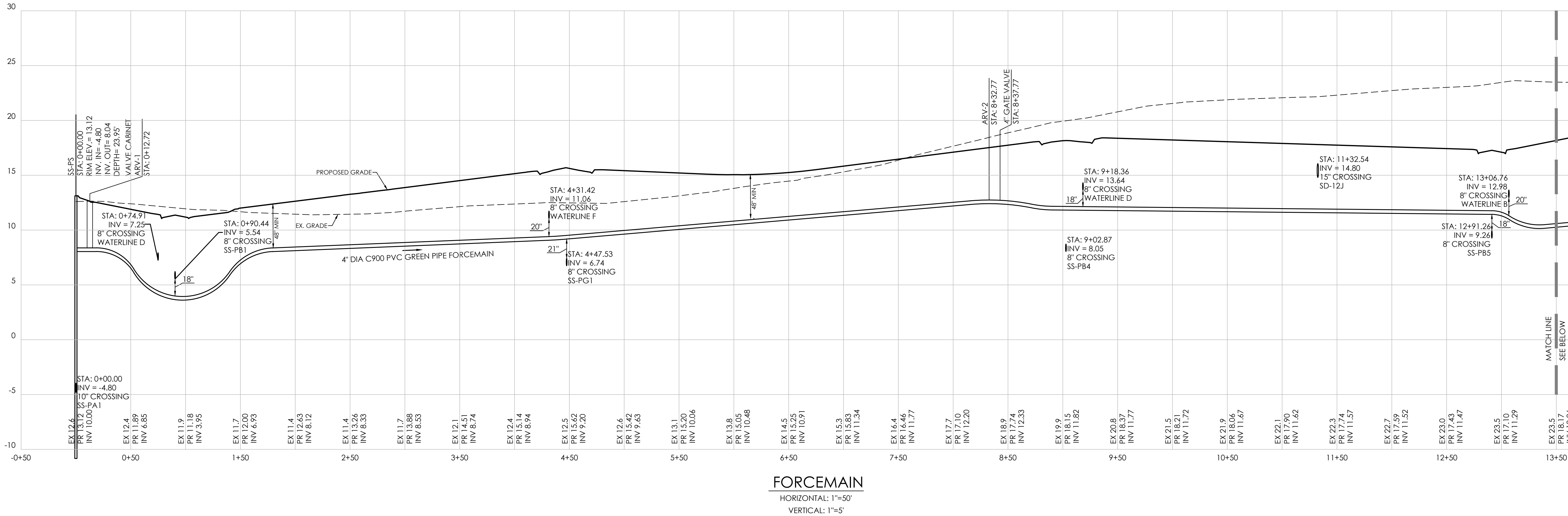
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for

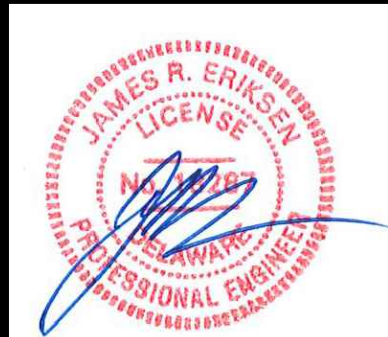
TWIN MASTS

SUSSEX COUNTY, DELAWARE

Prepared for: Twin Masts, LLC



- NOTES:**
- ALL PVC GRAVITY-FED SANITARY SEWER PIPE SHALL BE GREEN SDR 26 PVC UNLESS OTHERWISE NOTED
 - ALL FORCE MAINS SHALL BE GREEN C900 PVC
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Date 8/1/2024

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SANITARY SEWER PROFILE 6

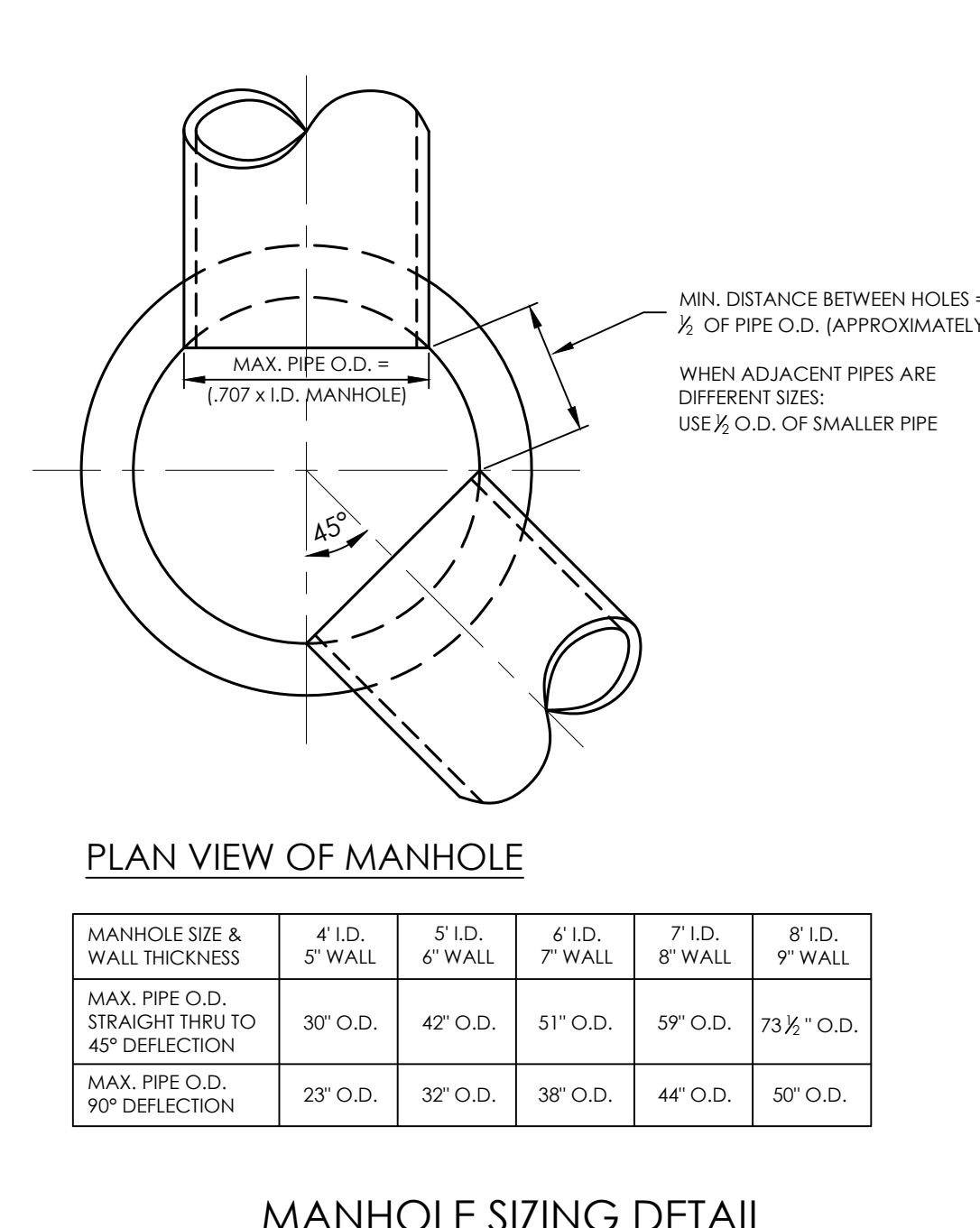
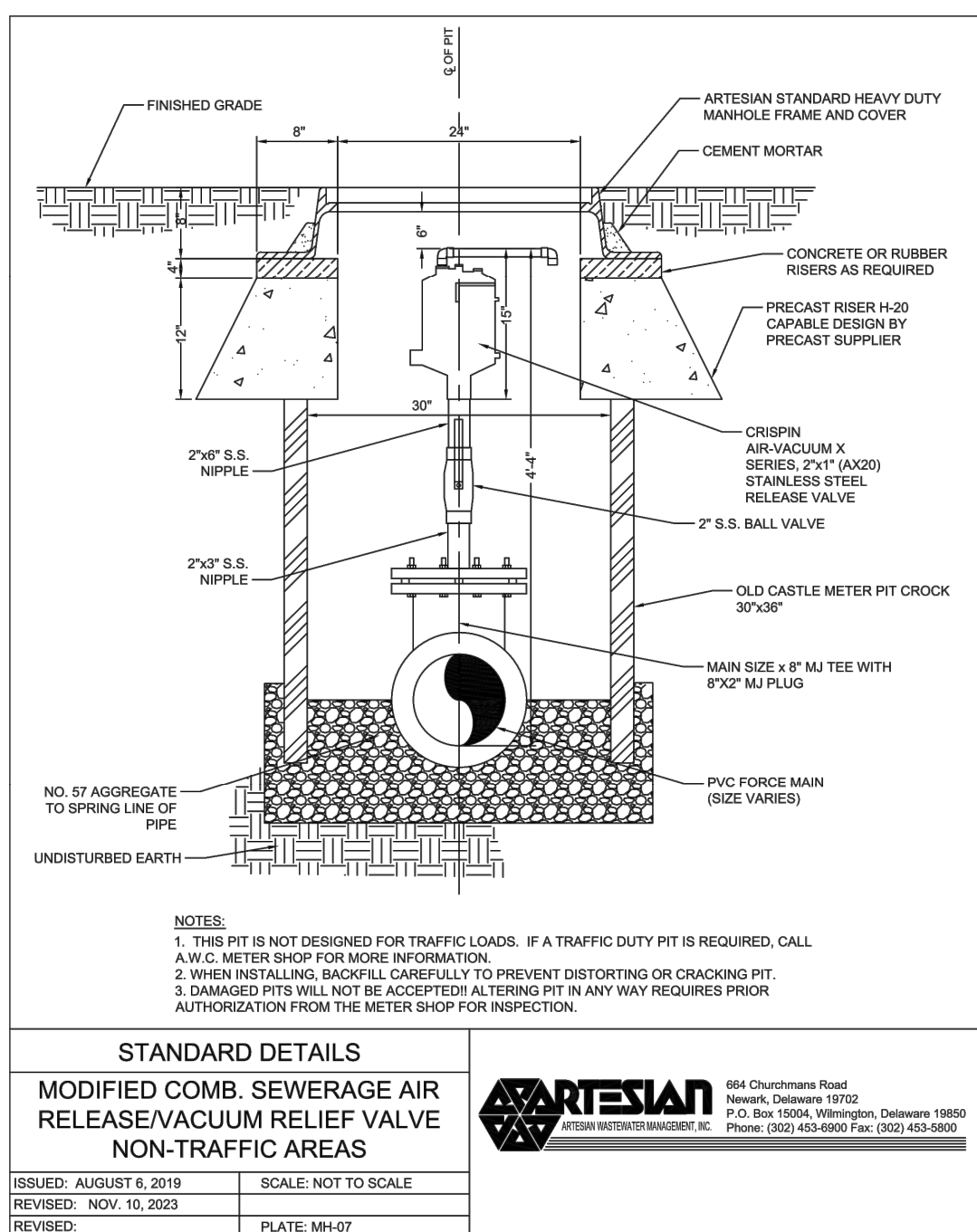
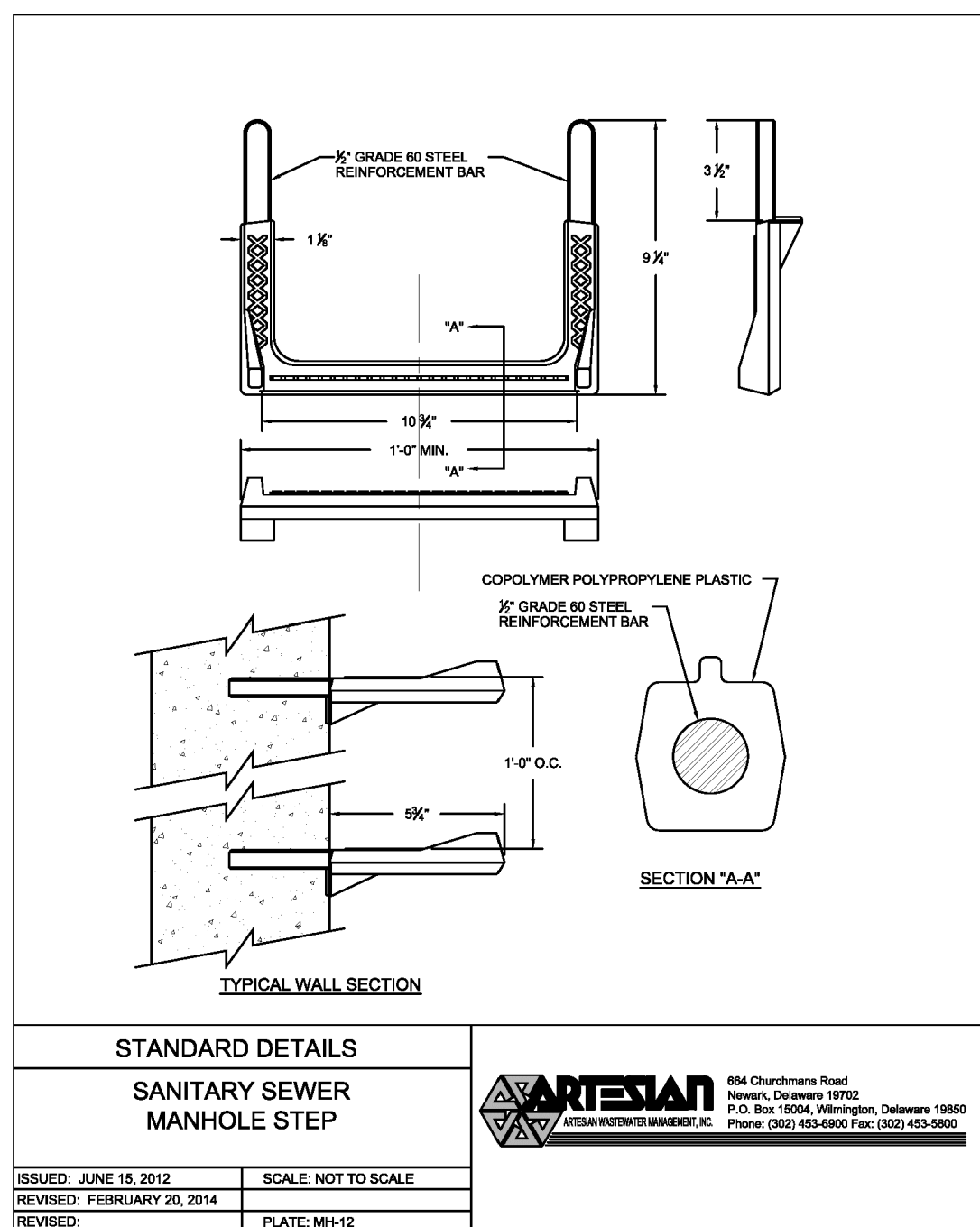
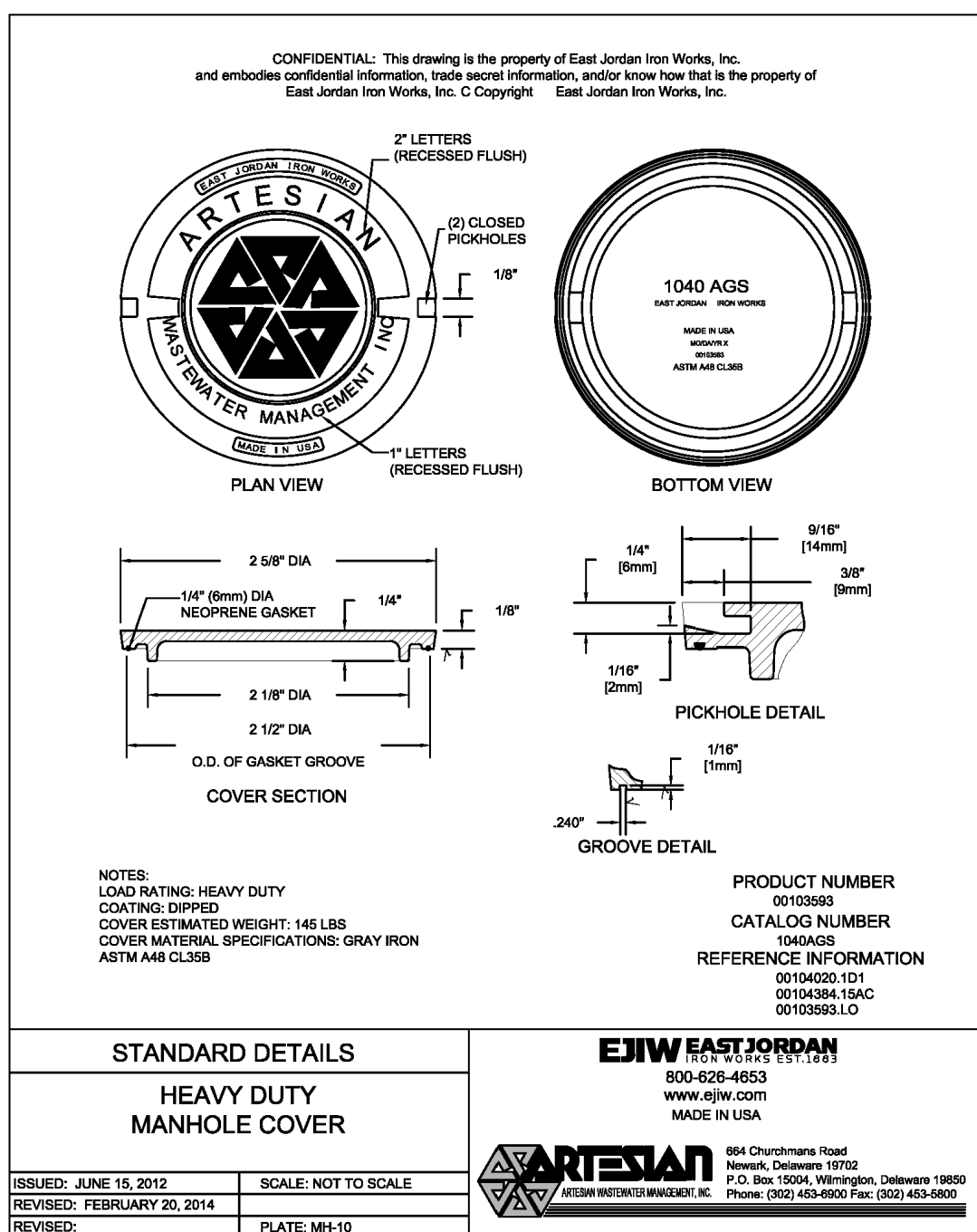
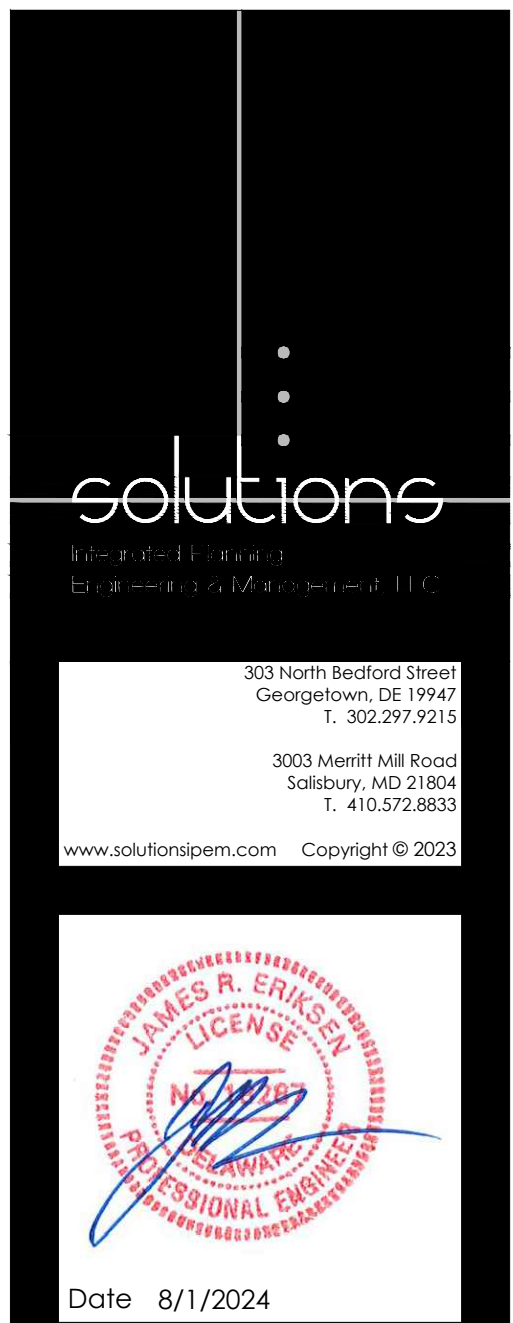
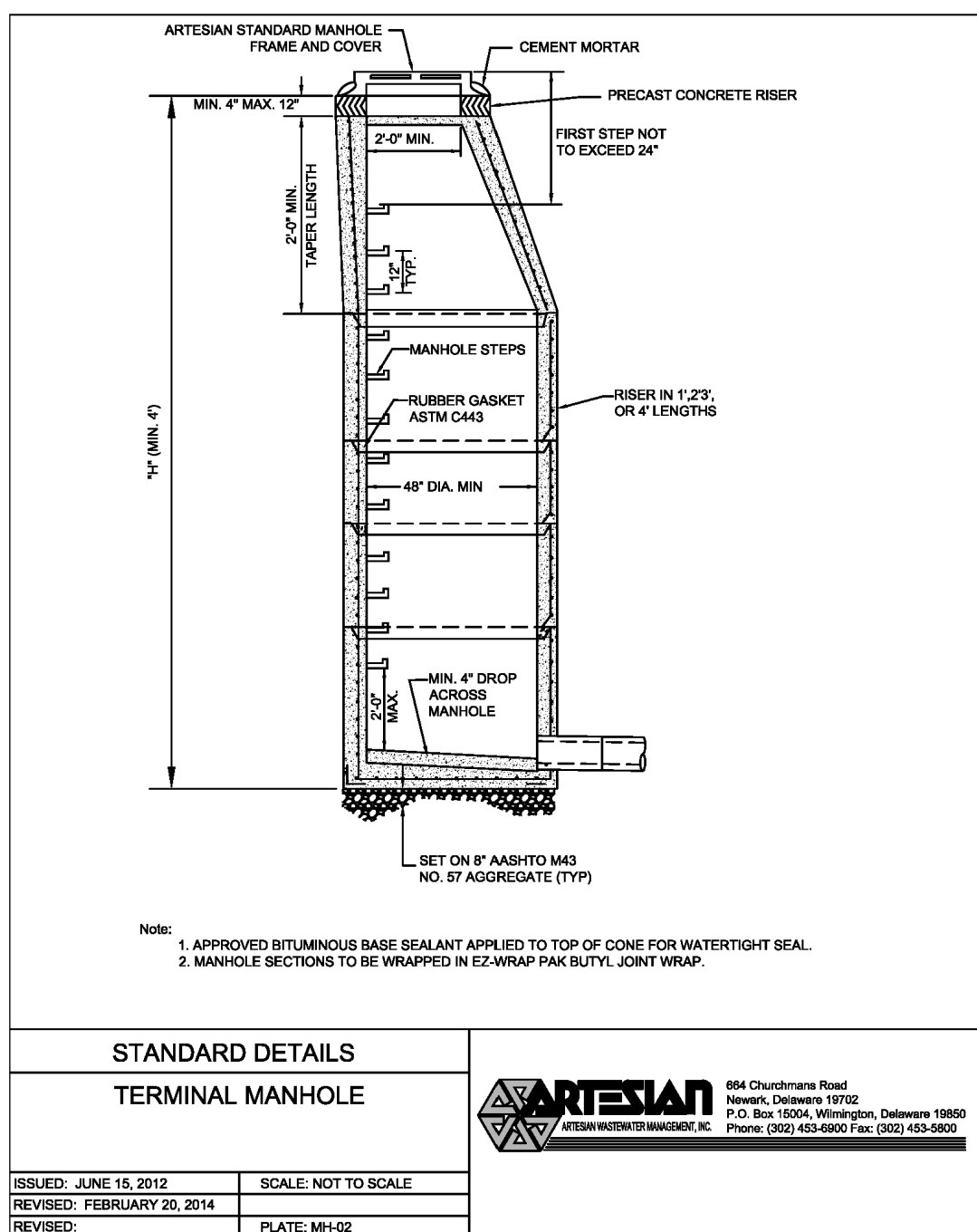
for
TWIN MASTS
SUSSEX COUNTY, DELAWARE
Prepared for: Twin Masts, LLC

Date:	3/12/24
Job Number:	G21029
Scale:	AS NOTED
Drawn By:	EDT
Designed By:	JPR
Approved By:	JRE

Sheet No.:

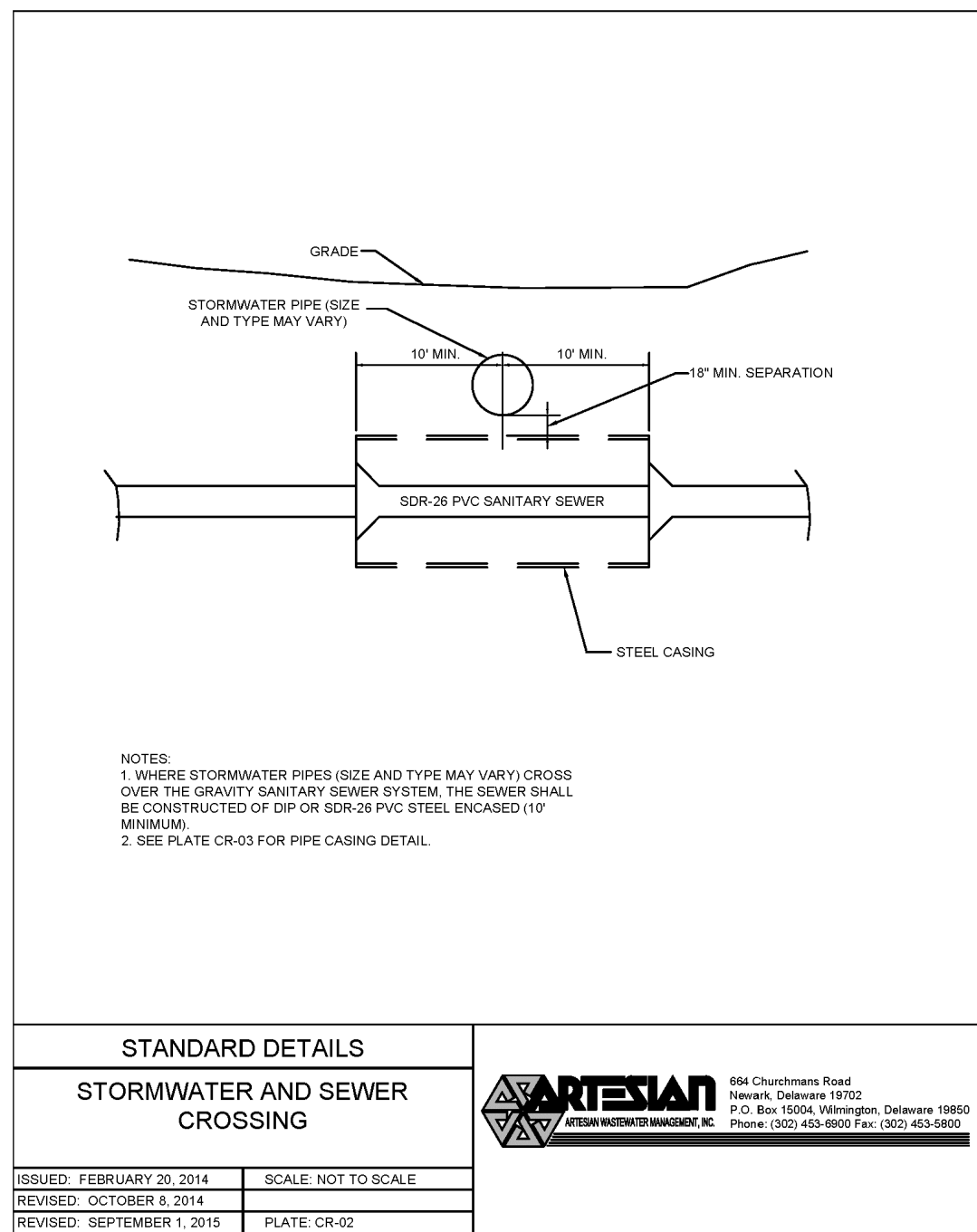
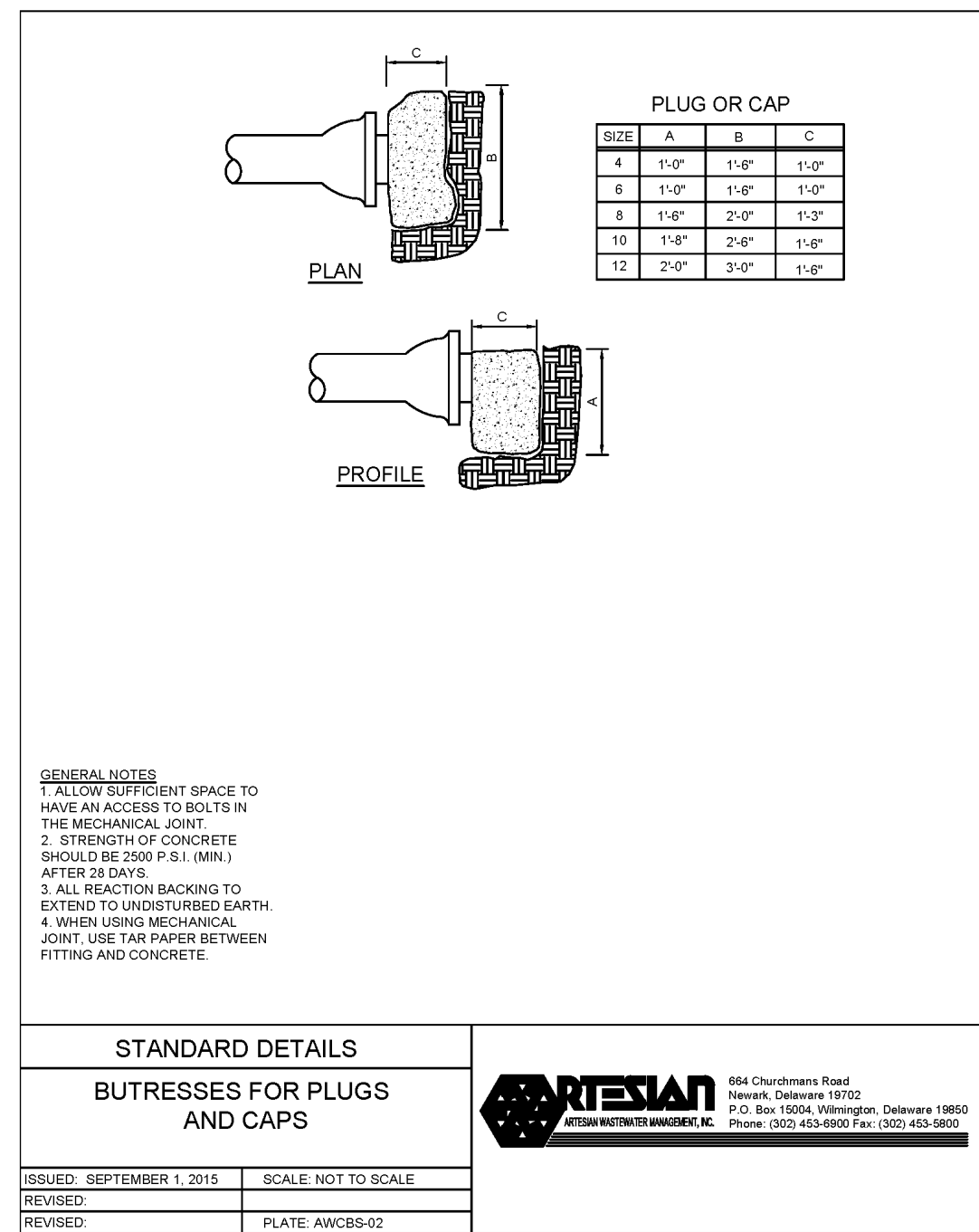
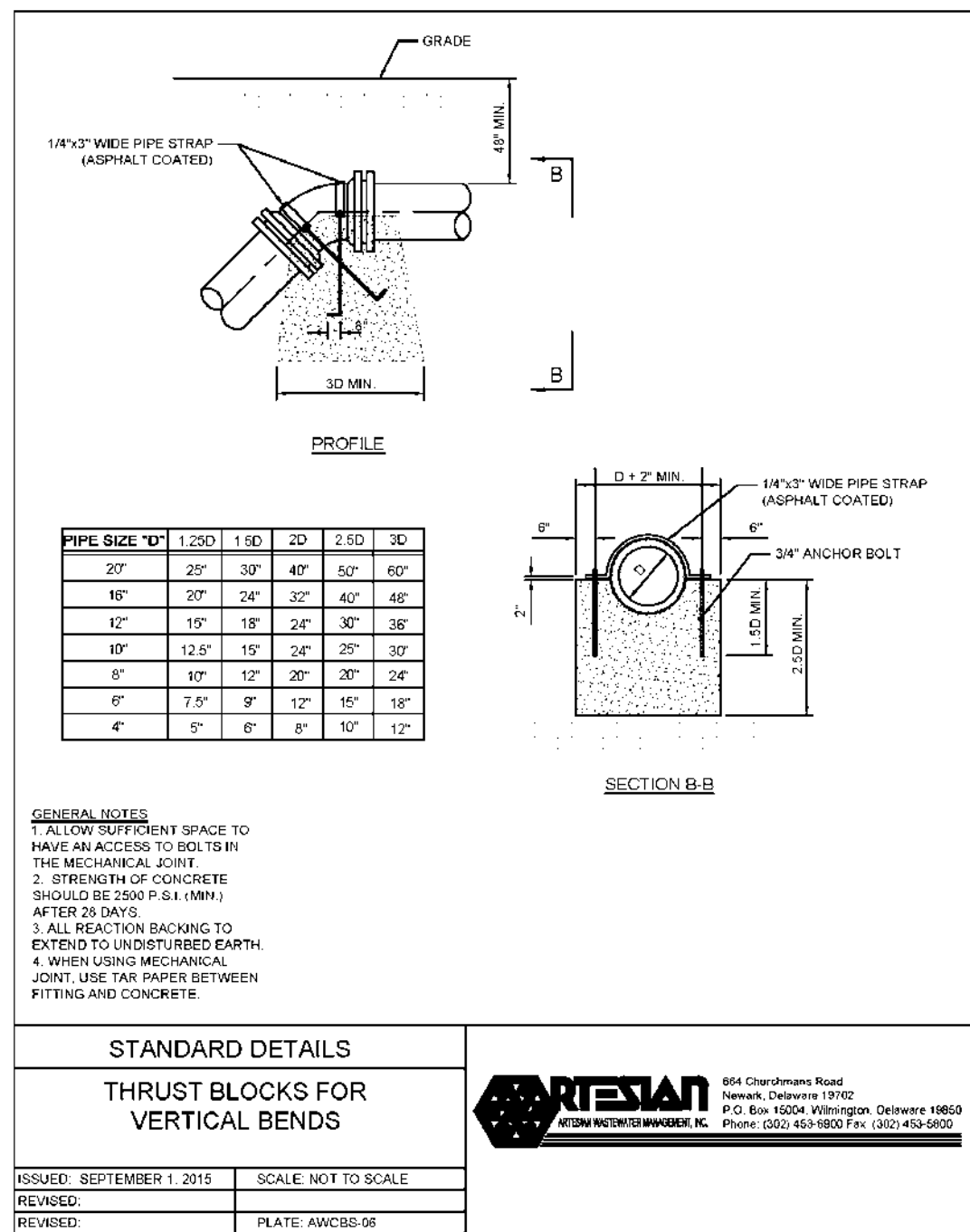
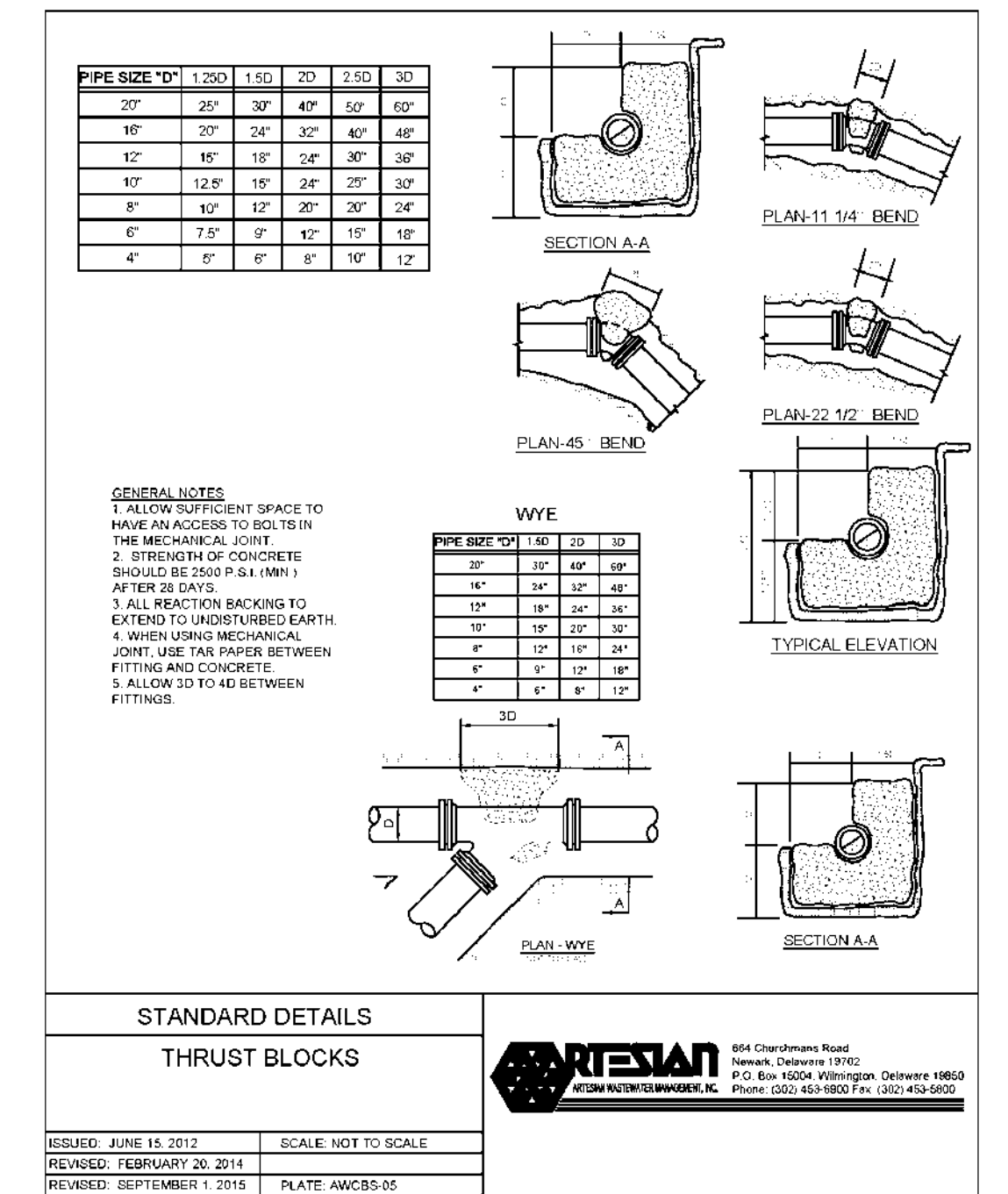
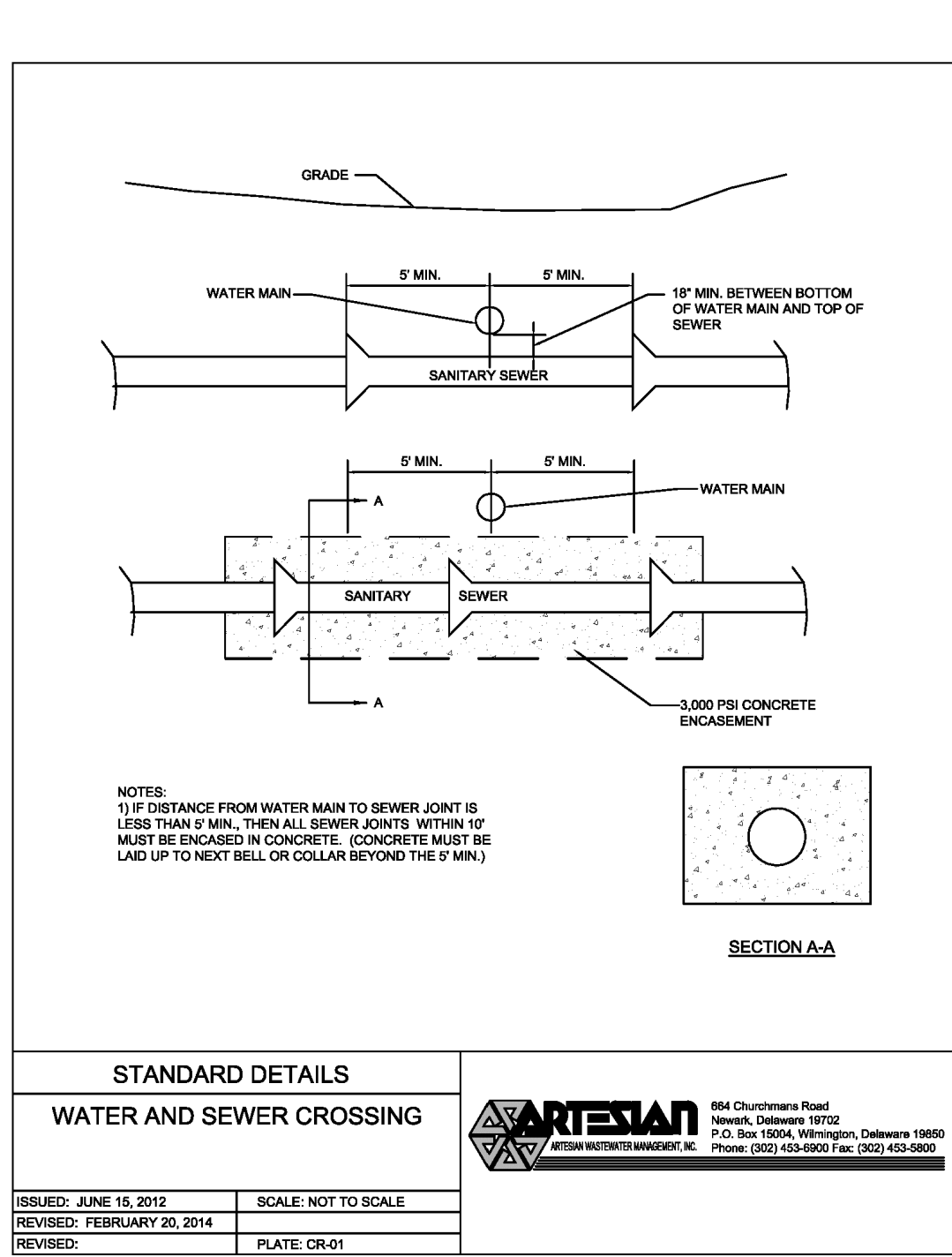
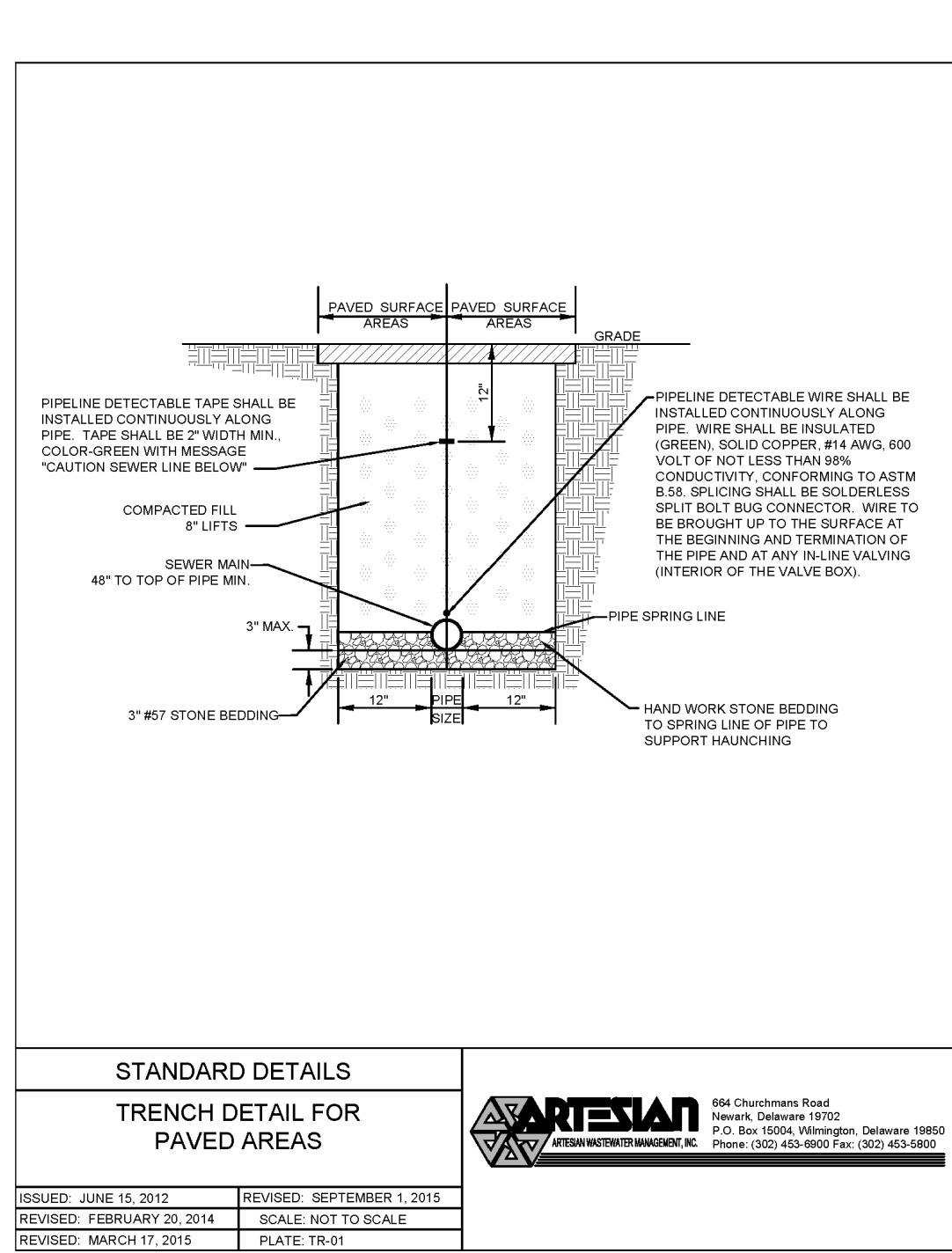
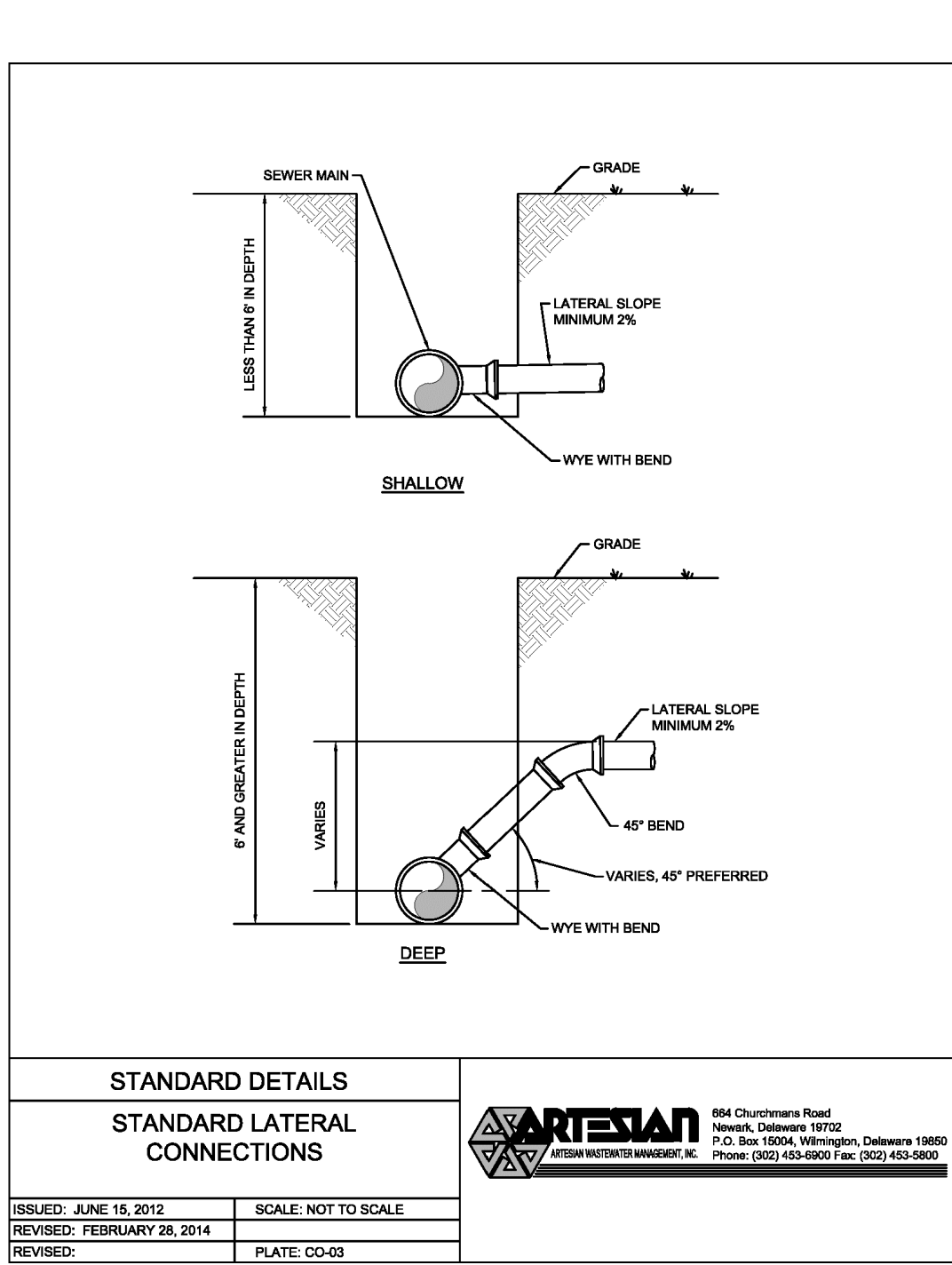
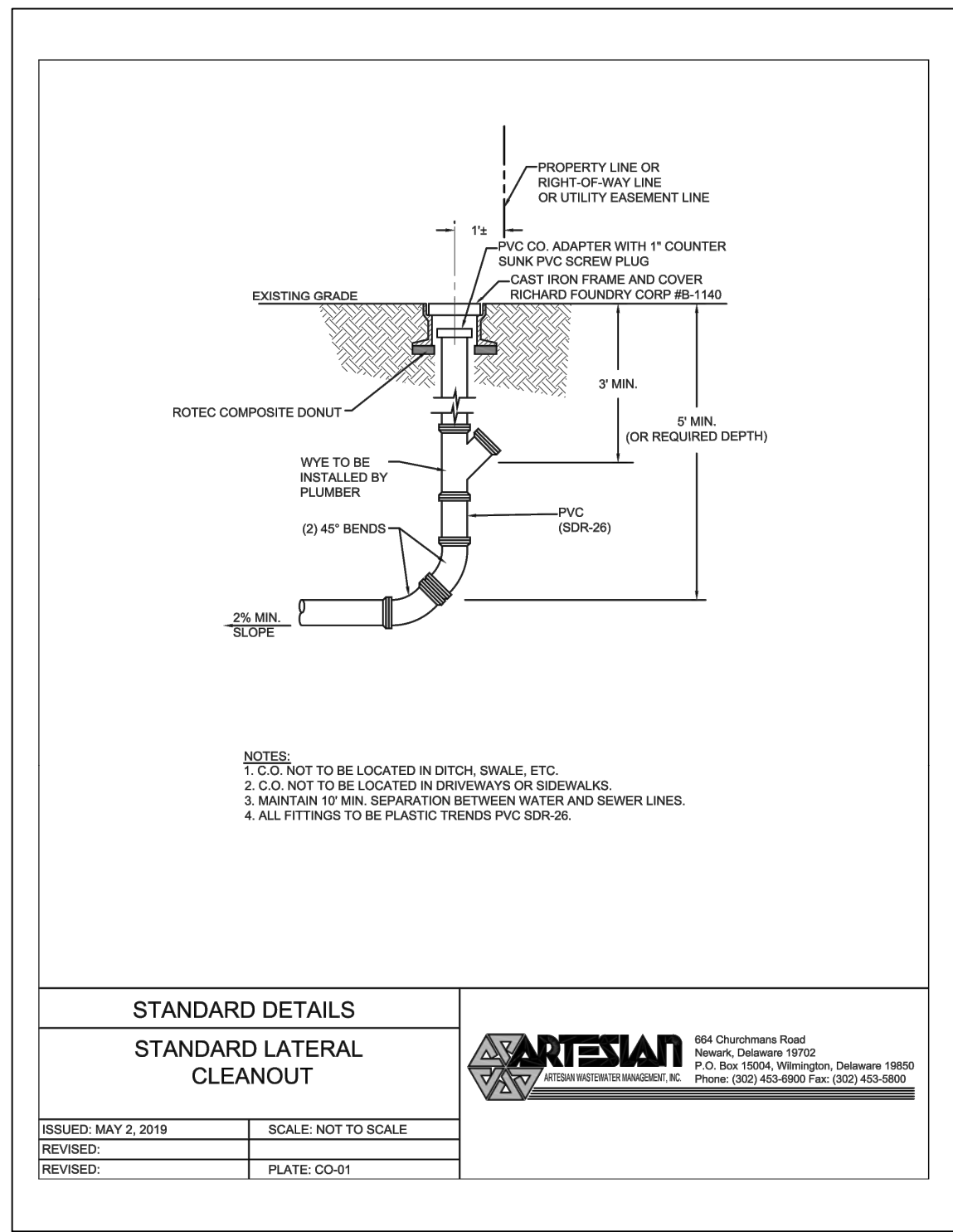
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File Name:
G21029-Sewer-Profiles



REVISIONS		
NO.	DATE	DESCRIPTION
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4	7/11/24	REVISED WATERMAIN SIZE AT BULKHEAD TERRACE
5	7/31/24	PLANS REVISED PER SCD COMMENTS
6	8/1/24	PLANS REVISED PER WRPC COMMENTS

SHEET NO. 47	
DATE: 3/12/24	
JOB NUMBER: G21029	
SCALE: AS NOTED	
DRAWN BY: EDI	
DESIGNED BY: JPR	
APPROVED BY: JRE	



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Engineering & Construction

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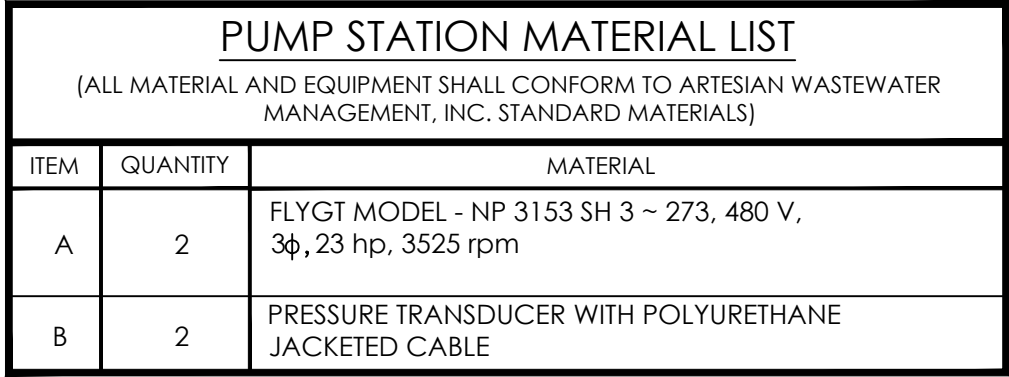
Date 8/1/2024

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SANITARY SEWER DETAILS 2

for
TWIN MASTS
SUSSEX COUNTY, DELAWARE
Prepared for: Twin Masts, LLC

Date:	3/12/24
Job Number:	G21029
Scale:	AS NOTED
Drawn By:	EDT
Designed By:	JPR
Approved By:	JRE



NOTE:

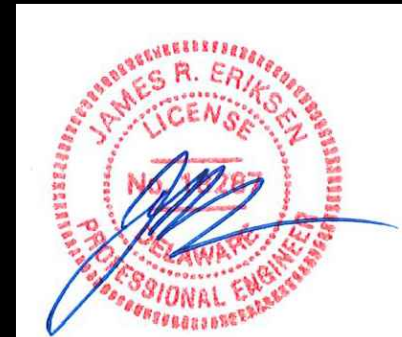
THE CONTRACTOR SHALL PROVIDE A DOUBLE FLANGED SPOOL PIECE, THE SAME LAYING LENGTH AS THE MAGNETIC FLOW METER.



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6	8/1/24	PLANS REVISED PER WPCO COMMENTS

PUMP STATION DETAILS 1

for
TWIN MASTS
SUSSEX COUNTY, DELAWARE
Prepared for: Twin Masts, LLC

50

File Name:
G21029-PumpStation

3" TYPE "C" SURFACE COURSE

3" TYPE "B" BASE COURSE

TYPAR FILTER EQUIVALENT

STANDARD DETAILS

JUMP STATION DRIVEWAY PAVEMENT SECTION

ARTESIAN
ARTESIAN WASTEWATER MANAGEMENT, INC.

664 Churchmans Road
Newark, Delaware 19702
P.O. Box 15004, Wilmington, Delaware 19850
Phone: (302) 453-6900 Fax: (302) 453-6900

STANDARD DETAILS

PUMP STATION EQUIPMENT
CONCRETE PAD TYPICAL SECTION

ARTESIAN
ARTESIAN WASTEWATER MANAGEMENT, INC.

684 Churchmans Road
Newark, Delaware 19702
P.O. Box 15004, Wilmington, Delaware 19850
Phone: (302) 453-6900 Fax: (302) 453-5800

STANDARD DETAILS

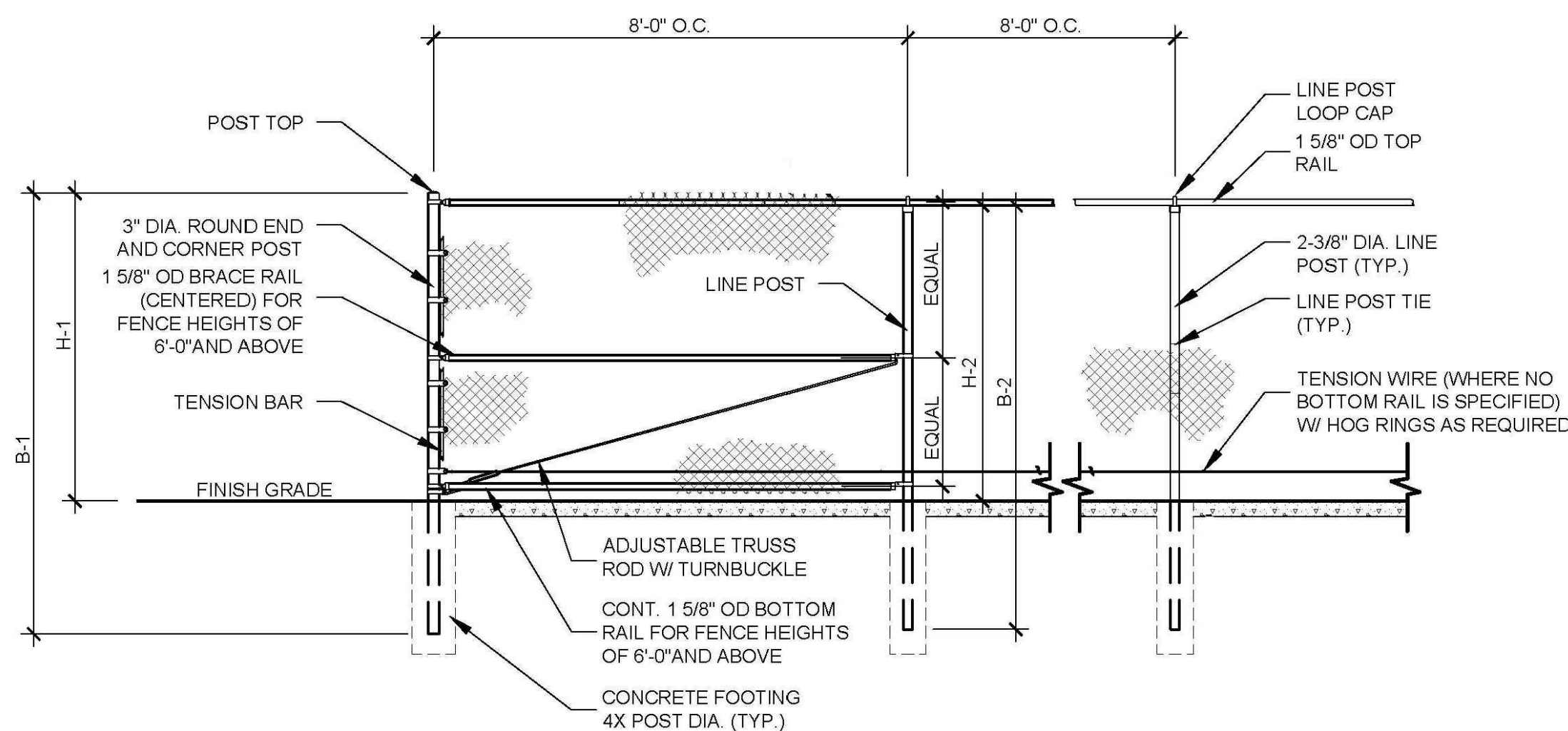
TRENCH DETAILS FOR UNPAVED AREAS

ARTESIAN
ARTESIAN WASTEWATER MANAGEMENT, INC.

664 Churchmans Road
Newark, Delaware 19702
P.O. Box 15004, Wilmington, Delaware 19851
Phone: (302) 453-6900 Fax: (302) 453-5900

POST CAP	TOP & BOTTOM FABRIC DETAIL
DOME 	KNUCKLE 

FENCE HEIGHT	END & CORNER POSTS		LINE POSTS	
NOMINAL HEIGHT	B-1 BAR LENGTH	H-1 HEIGHT ABOVE GRADE	B-2 BAR LENGTH	H-2 HEIGHT ABOVE GRADE
4'-0"	7'-0"	4'-0 5/8"	6'-8"	3'-8 7/8"
6'-0"	9'-0"	6'-0 5/8"	8'-8"	5'-8 7/8"
8'-0"	11'-0"	8'-0 5/8"	10'-8"	7'-8 7/8"
10'-0"	13'-0"	10'-0 5/8"	12'-8"	9'-8 7/8"
12'-0"	15'-0"	12'-0 5/8"	14'-8"	11'-8 7/8"



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6	8/1/24	PLANS REVISED PER WPCC COMMENTS

PUMP STATION DETAILS 2

for

TWIN MASTS

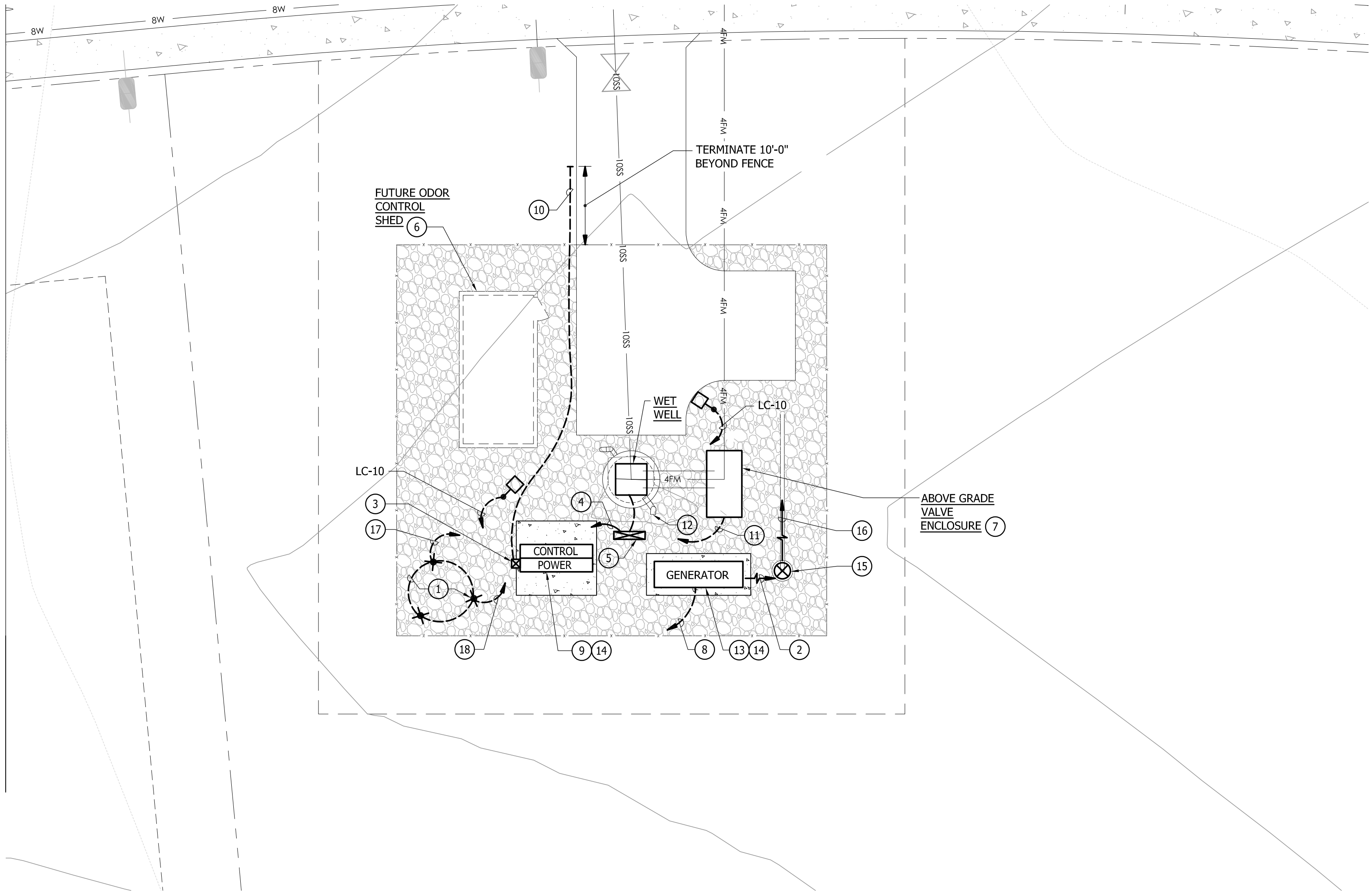
SUSSEX COUNTY, DELAWARE

Prepared for: Twin Masts,

Date:	3/12/24
Job Number:	G21029
Scale:	AS NOTED
Drawn By:	JPR
Designed By:	JPR
Approved By:	JRE

Sheet No.:

File Name:
G21029-PumpStation



SITE PLAN - PUMP STATION
SCALE: 1" = 10'-0"

SHEET NOTES:

- GROUND GRID CONSISTING OF THREE (3) DRIVEN GROUND RODS (3/4"DIA.X10'-0" LONG, ONE PIECE COPPER CLAD STEEL) INTERCONNECTED WITH #1/0 BARE COPPER CONDUCTOR. ALL UG. CONNECTIONS SHALL BE EXOTHERMIC WELDED.
- DIRECTION OF ENGINE EXHAUST & RADIATOR DISCHARGE.
- SERVICE METER & SERVICE DISCONNECT - MOUNT ON EXTERIOR OF SERVICE EQUIPMENT CABINET UTILIZING VERTICAL ALUMINUM CHANNEL SUPPORTS (MINIMUM 1-1/2" SQUARE X 12 GAUGE) SECURED WITH STAINLESS STEEL THRU-BOLT ASSEMBLIES.
- PUMP MOTOR & LEVEL SENSING CONDUITS TO SERVICE EQUIPMENT CABINET VIA EQUIPMENT MOUNTING PEDESTAL. SEE SINGLE LINE DIAGRAM, SHEET NO. E-2.
- EQUIPMENT MOUNTING PEDESTAL - REFER TO DETAIL, THIS SHEET & SINGLE LINE DIAGRAM, SHEET NO. E-2.
- REFER TO SINGLE LINE DIAGRAM, SHEET NO. E-2 FOR FUTURE ELECTRICAL POWER SUPPLY PROVISIONS.
- FURNISH & INSTALL TWO (2) UTILITY HEATERS, LOCATED ON OPPOSITE WALLS OF THE ENCLOSURE. SEE SINGLE LINE DIAGRAM, SHEET NO. E-2, FOR ELECTRICAL CONNECTIONS. HEATERS SHALL BE 500 WATT, 120 VOLT, WITH INTEGRAL LINE VOLTAGE THERMOSTAT (40°F TO 70°F RANGE), FURNISH Q MARK CATALOG NO. WHT500, OR EQUAL.
- GENERATOR SUPPLY, CONTROL, ALARM & AUXILIARY POWER CIRCUITS TO SERVICE EQUIPMENT CABINET - SEE SINGLE LINE DIAGRAM, SHEET NO. E-2.
- FREE STANDING, PAD MOUNTED SERVICE EQUIPMENT CABINET "SEC". SEE DETAIL/ ELEVATION, SHEET NO. E-2.

ABBREVIATIONS:

- | | |
|--------|--|
| A. | AMP OR AMPERES |
| A.F.F. | ABOVE FINISHED FLOOR |
| BRKR. | BREAKER |
| C. | CONDUIT |
| CTD | COATED |
| CFM | CUBIT FEET/MINUTE |
| DEC | DELAWARE ELECTRICAL COOPERATIVE |
| DIA. | DIAMETER |
| DT | DISTRIBUTION TERMINAL |
| ELEV. | ELEVATION |
| G.F.I. | GROUND FAULT INTERRUPTER |
| GND. | GROUND |
| GRS. | GALVANIZED RIDID STEEL |
| H.O.A. | HAND OFF AUTOMATIC SELECTOR SWITCH |
| HP | HORSEPOWER |
| HZ | HERTZ |
| J.B. | JUNCTION BOX |
| K.V.A. | KILOVOLT AMPERES |
| K.W. | KILOWATTS |
| LED | LIGHT EMITTING DIODE |
| LR | LINE REACTOR |
| M.H. | MOUNTING HEIGHT - TO CENTER OF DEVICE OR EQUIPMENT UNLESS OTHERWISE INDICATED. |
| P. | POLE OR POLES |
| PCP | PUMP CONTROL PANEL |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| PVC | POLYVINYL CHLORIDE |
| Ø | PHASE |
| RPM | REVOLUTIONS PER MINUTE |
| SCADA | SUPERVISORY CONTROL AND DATA ACQUISITION |
| SCH. | SCHEDULE |
| S.P. | STATIC PRESSURE |
| TYP. | TYPICAL |
| UG. | UNDERGROUND |
| UPS | UNINTERRUPTIBLE POWER SUPPLY |
| V. | VOLT OR VOLTS |
| VFD | VARIABLE FREQUENCY DRIVE CONTROLLER |
| WP. | WEATHERPROOF |
| WW. | WET WELL |

ELECTRICAL LEGEND

- | | |
|--|---|
| | FIXTURE - POLE MOUNTED LED LUMINAIRE - SEE DETAIL, SHEET NO. E-3. |
| | SWITCH - SINGLE POLE, M.H. 4'-0". |
| | RECEPTACLE - 20A., 125V. - SIMPLEX, DUPLEX, DUPLEX G.F.I. |
| | JUNCTION BOX |
| | MOTOR - NUMBER DENOTES HORSEPOWER. |
| | CONDUIT-EXPOSED |
| | CONDUIT-IN OR UNDER FLOOR SLAB OR UNDERGROUND. |
| | HOMERUN TO PANEL - NO. OF ARROWS INDICATES NO. OF CIRCUITS AND NO. OF CROSSLINES INDICATES NO. OF #12 CONDUCTORS. |
| | DENOTES REFERENCE TO DRAWING NOTE. |
| | NEMA 1 ENCLOSED CIRCUIT BREAKER |
| | SPECIAL EQUIPMENT OR DEVICE AS NOTED. |
| | THERMOSTAT |
| | THERMAL MANUAL MOTOR STARTER |
| | AUTOMATIC TRANSFER SWITCH - NEMA 1 ENCLOSED |
| | PUMP CONTROL PANEL |
| | TRANSIENT VOLTAGE SURGE SUPPRESSOR |
| | SERVICE METER |
| | FLOW METER |
| | VARIABLE FREQUENCY DRIVE CONTROLLER |
| | 5% LINE REACTOR |
| | DISTRIBUTION TERMINAL |
| | AUTOMATIC TELEPHONE DIALER |
| | UNINTERRUPTIBLE POWER SUPPLY |
| | VOLUME MONITOR |
| | OPERATORS INTERFACE TERMINAL |
| | PAPERLESS RECORDER |
| | GAS (HYDROGEN SULFIDE) ANALYZER |
| | GAS (HYDROGEN SULFIDE) SENSOR |
| | GROUND BUS |
| | DENOTES GROUND CONNECTION. |

SYMBOLS:

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 DELAWARE,
LICENSE No. 17123,
EXPIRATION DATE:
06/30/2024.

REVISIONS

NO.	DATE	DESCRIPTION

PUMP STATION SITE PLAN & LEGEND

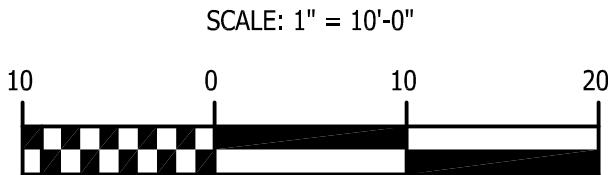
for
TWIN MASTS
SUSSEX COUNTY, DELAWARE
Prepared for: Twin Masts, LLC

Date:	6/24
Job Number:	G21029
Scale:	AS SHOWN
Drawn By:	JLP
Designed By:	DKJ
Approved By:	DKJ

Sheet No.:

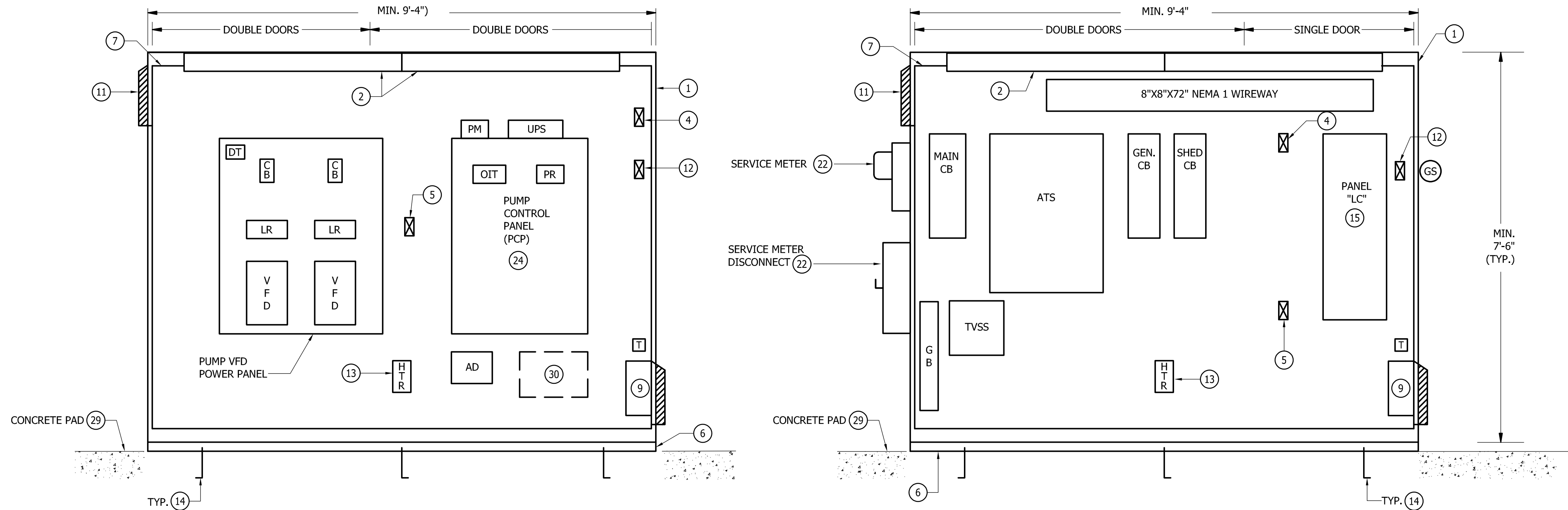
E-1

File Name:
G21029-PUMPSTATION



Gipe Associates, Inc.
CONSULTING ENGINEERS
1220 East Joppa Road, Suite 102
Towson, Maryland 21286
Baltimore, Maryland
410.832.2420
410.822.8688
W.O.# 24030
www.gipe.net

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POWER SIDE

CONTROL SIDE

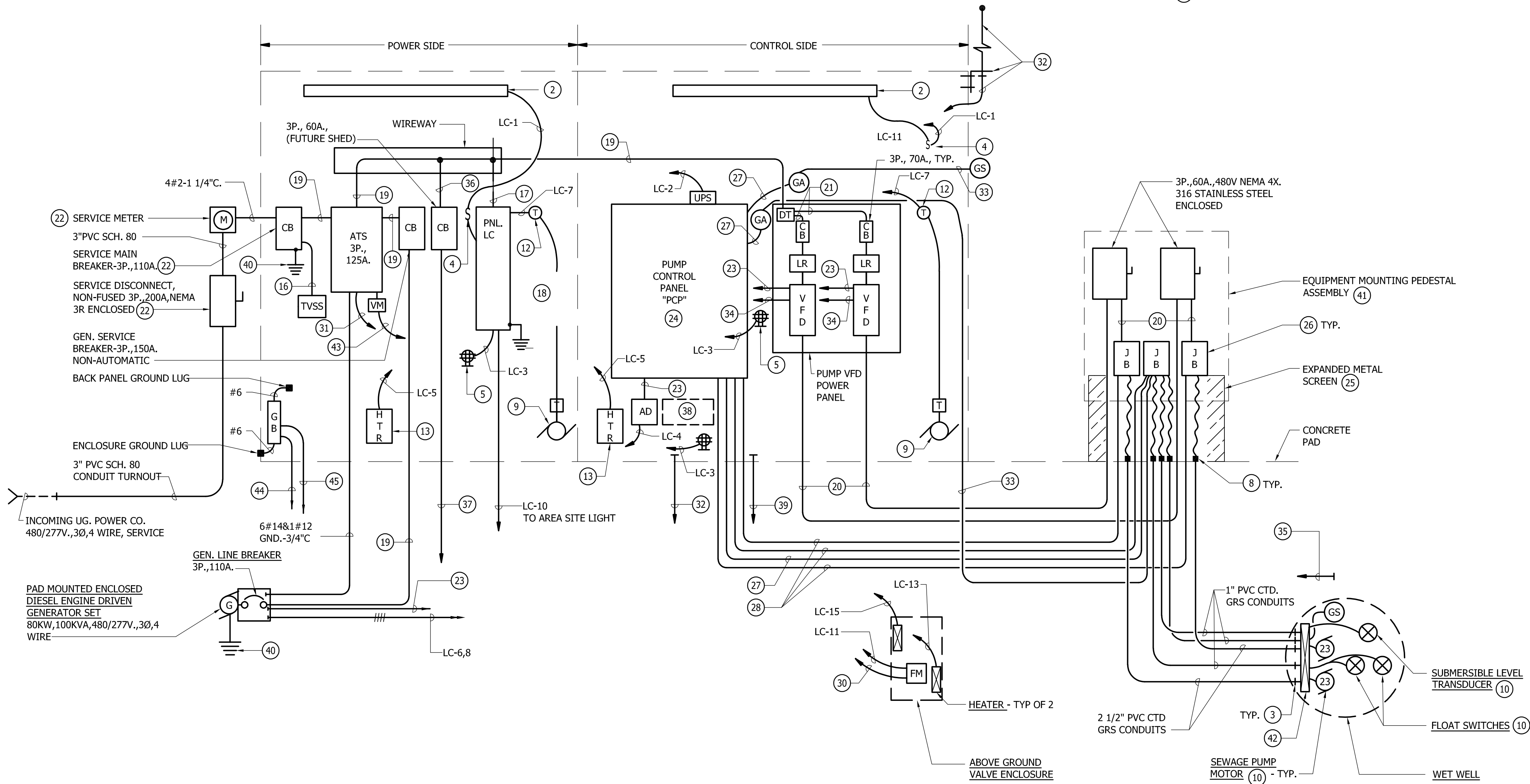
DETAIL - ELEVATION OF
SERVICE EQUIPMENT CABINET

SCALE: 3/4"=1'-0"

- NOTE:
1. MULTI-DOOR, FRONT/REAR ACCESS CABINET-48" TOTAL DEPTH.
2. INNER VERTICAL DOOR SUPPORTS SHALL BE REMOVABLE.

SHEET NOTES CONTINUED:

- 43 2 #14 & 1 #12 GND. - 3/4" C. TO PCP/PLC FOR STATION LOSS OF POWER ALARM.
44 1 #2 - 3/4" C. TO GROUND GRID.
45 1 #2 - 3/4" C. TO WET WELL CONCRETE SLAB RE-BAR.



ELECTRICAL SYSTEM SINGLE LINE DIAGRAM

SHEET NOTES:

- 1 SERVICE EQUIPMENT CABINET, MINIMUM SIZE AS INDICATED - SEE SPECIFICATIONS SECTION 16100.
2 48" LED LIGHT FIXTURE. MOUNT TOWARDS FRONT OF CABINET.
3 TERMINATE CONDUIT 4" INSIDE WET WELL. PROVIDE INSULATED TYPE BUSHING & STAINLESS STEEL CABLE STRAIN RELIEF GRIP. REFER TO TYPICAL DETAIL, SHEET NO. E-3.
4 LIGHT SWITCH FOR INTERIOR CABINET LIGHTS.
5 DUPLEX G.F.I. RECEPTACLE.
6 1 1/2" x 3" STAINLESS STEEL BASE CHANNELS, FULL LENGTH FRONT AND BACK. PROVIDE FINISH TO MATCH CABINET.
7 WHITE FINISHED INTERIOR MOUNTING BACK PANEL.
8 CONDUIT SEALING BUSHINGS WITH GLAND LOCKING COLLAR, OZ GEDNEY TYPE CS BG, OR EQUAL.
9 COOLING AIR FAN PACKAGE: 560 CFM, 1650 RPM, 115V., 1ø, 35 WATTS COMPLETE W/STAINLESS STEEL GRILLE, ALUMINUM AIR FILTER, COMPOSITE AIR PLENUM & COMPOSITE FINGER GUARD. FURNISH HOFFMAN CATALOG NO. A-PA10AXFN, OR EQUAL.
10 WITH INTEGRAL CABLE(S) COMPLETE TO JB.
11 AIR EXHAUST GRILL ASSEMBLY: CONSISTING OF 11.62" x 13.00" STAINLESS STEEL GRILLE, ALUMINUM AIR FILTER & MOUNTING HARDWARE. FURNISH HOFFMAN CATALOG NO. A-EXGR10, OR EQUAL.
12 COOLING AIR FAN THERMOSTAT: ADJUSTABLE RANGE OF 70° F TO 140° F, ANODIZED ALUMINUM HOUSING, RATED 12.5 AMPS AT 120VOLT. FURNISH HOFFMAN CATALOG NO. D-TEMA, OR EQUAL.
13 HEATER: 400 WATTS, 115V., 1ø, ANODIZED ALUMINUM HOUSING WITH INTEGRAL THERMOSTAT & FAN. FURNISH HOFFMAN CATALOG NO. D-AH4001B, OR EQUAL.

- 14 3/4" DIA. x 10" LONG "L" STAINLESS STEEL ANCHOR BOLT ASSEMBLY, FRONT AND BACK, SET IN CONCRETE PAD.
15 SEE PANEL SCHEDULE, SHEET NO. E-3 FOR BRANCH BREAKER SIZES & USAGE.
16 4 #8 & 1 #8 GND. - 3/4" C.
17 3 #8 & 1 #10 GND. - 3/4" C.
18 1 #6 - 3/4" C. TO GROUND GRID.
19 4 #2 & 1 #8 GND. - 1 1/2" C.
20 3 #8 & 1 #8 GND. - 3/4" C.
21 3 #8 & 1 #8 GND.
22 SECURE TO CABINET UTILIZING VERTICAL CHANNEL SUPPORTS AS DESCRIBED IN NOTE 3, SHEET NO. E-1.
23 14 #14 & 1 #12 GND. - 1 1/4" C. TO PCP/PLC.
24 PUMP CONTROL PANEL (PCP) - REFER TO SPECIFICATION SECTION, 16920.

- 25 PROVIDE STAINLESS STEEL, NO. 6 GAUGE MINIMUM, WIRE METAL MESH SCREEN TO ENCLOSE/PROTECT CABLES. ATTACH TO S.E.C. WITH STAINLESS STEEL HARDWARE. SUBMIT FABRICATION DRAWINGS FOR REVIEW PRIOR TO CONSTRUCTION.
26 18" HIGH X 8" DEEP X 12" WIDE NEMA 4X JUNCTION BOX, STAINLESS STEEL CONSTRUCTION WITH HINGED LOCKABLE COVER, INTERIOR BACKPLATE WITH WHITE FINISH & SQUARE D TERMINAL BLOCKS FOR ALL INCOMING & OUT GOING WIRING
27 2/C #18 SHIELDED CABLE IN 3/4" C. TO PCP/PLC.
28 4 #14 & 1 #12 GND. - 3/4" C. TO PCP/PLC.
29 SEE TYP. CONCRETE PAD DETAIL, SHEET NO. E-3.
30 2/C #18 SHIELDED CABLE IN 3/4" C. TO PCP/PLC.
31 4 #14 & 1 #12 GND. - 3/4" C. TO PCP/PLC FOR ATS NORMAL POSITION & EMERGENCY POSITION STATUS SIGNALS.
32 CELLULAR ANTENNA BRACKET MOUNTED TO S.E.C. (STAINLESS STEEL ANGLE BRACKET THRU BOLT SECURED TO S.E.C. W/STAINLESS STEEL HARDWARE) WITH ANTENNA CABLE TO AUTO-DIALER.
33 3/C #18 SHIELDED CABLE IN 3/4" C.
34 3-2/C #18 SHIELDED CABLES IN 3/4" C. TO PCP/PLC.
35 PROVIDE 1" EMPTY CONDUIT WITH PULL LINE TO CONTROL SIDE OF S.E.C. TERMINATE WITHIN SIX INCHES OF THE AIR SUPPLY PIPE AT THE WET WELL FOR FUTURE ELECTRICAL CONNECTIONS.
36 4 #6 & 1 #10 GND. - 1" C.
37 1 1/2" EMPTY CONDUIT WITH PULL LINE. EXTEND TO WITHIN THREE FEET OF THE FUTURE ODOR CONTROL SHED & TERMINATE FOR FUTURE ELECTRICAL CONNECTION.
38 ALLOW SPACE IN CABINET FOR FUTURE RADIO & ANTENNA CABLE LIGHTNING ARRESTOR.
39 1 1/4" C. TO SCADA POLE FOR FUTURE ANTENNA CABLE.
40 1 #4 - 3/4" C. TO GROUND GRID.
41 REFER TO DETAIL, SHEET NO. E-3.
42 PROVIDE SIX HOOK, STAINLESS CABLE BRACKET ASSEMBLY CONERY MFG. INC. U-TYPE NO. 6 AHB, OR EQUAL. SECURE TO CONCRETE FACE UTILIZING CONERY STAINLESS STEEL WEDGE ANCHORS. COORDINATE INSTALLATION WITH STRUCTURAL ENGINEER. SUPPORT CABLES UTILIZING APPROPRIATE STAINLESS STEEL CABLE STRAIN RELIEF DEVICES W/EYE HOOKS.

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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 DELAWARE,
LICENSE NO. 17123,
EXPIRATION DATE:
06/30/2024.

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Seal
Date: / /24

REVISIONS		DESCRIPTION	DATE	NO.
NO.	DATE			

S.E.C. DIAGRAM & DETAIL
for
TWIN MASTS
SUSSEX COUNTY, DELAWARE
Prepared for: Twin Masts, LLC

Date:	6/24
Job Number:	G21029
Scale:	A3 SHOWN
Drawn By:	JLP
Designed By:	DKJ
Approved By:	DKJ

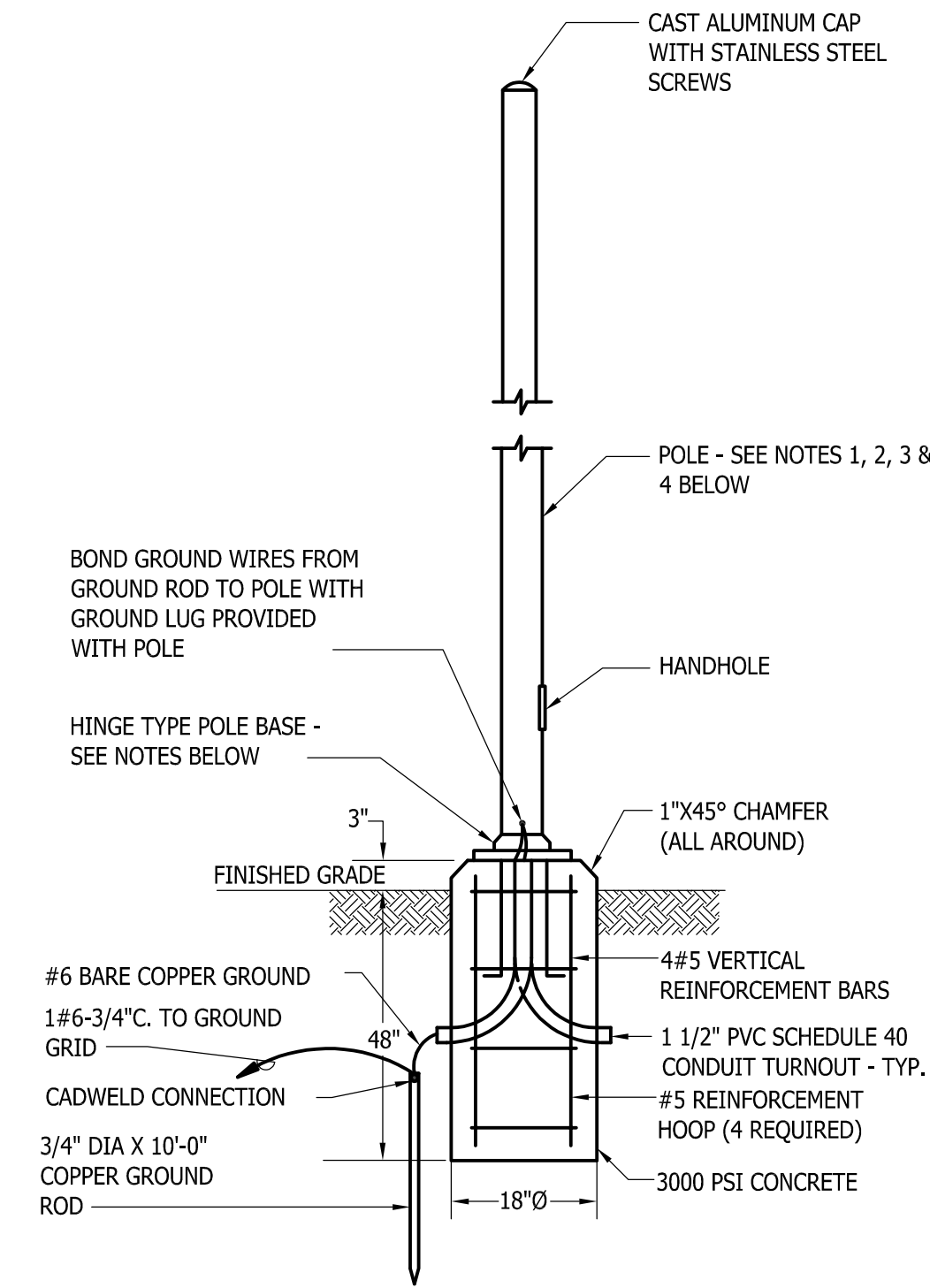
Sheet No.:

E-2

File Name: G19087-pump

Gipe Associates, Inc.
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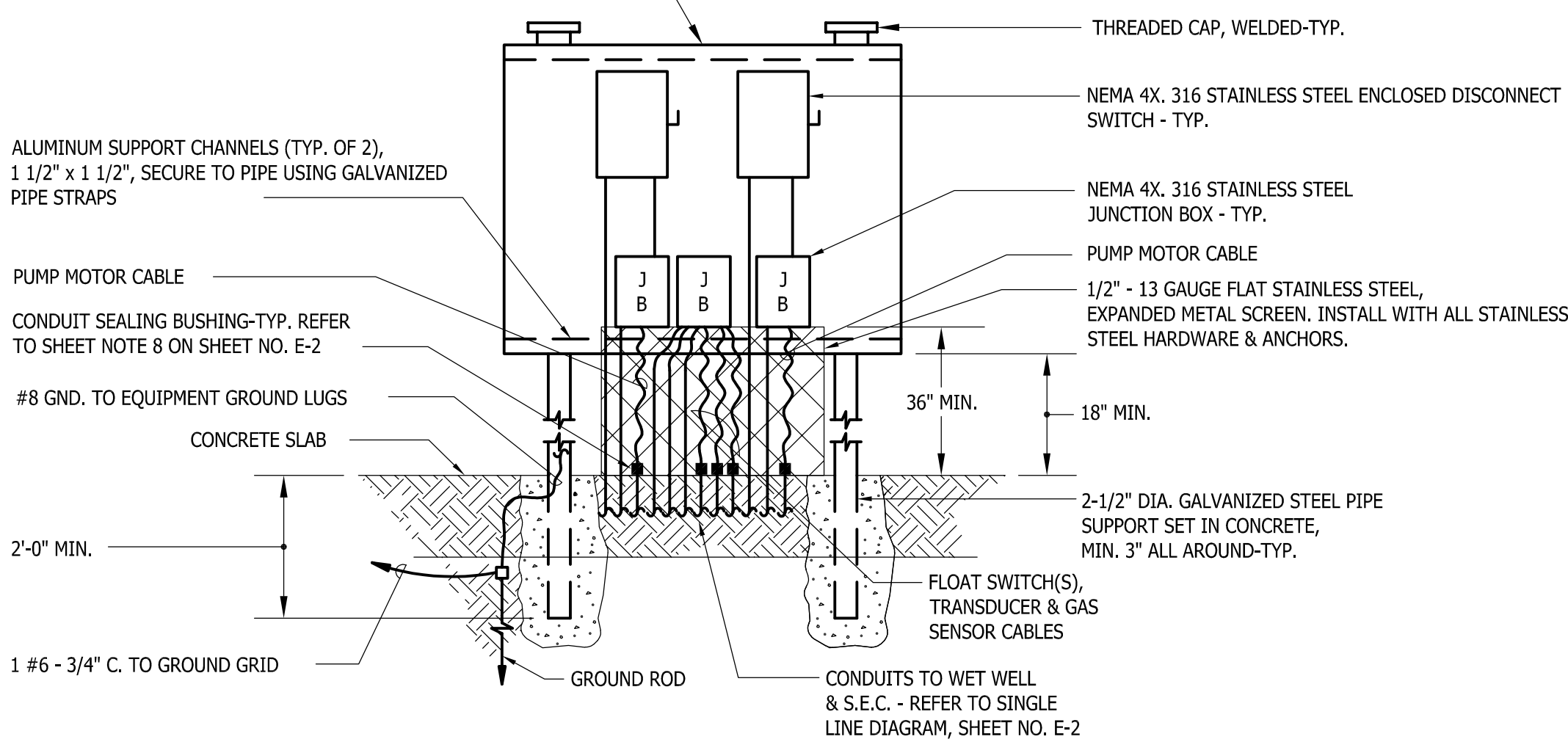


DETAIL - SCADA ANTENNA
POLE/FOUNDATION
SCALE: NONE

NOTES:

- POLE HEIGHT SHALL BE 20'.
- POLE SHALL BE HINGED ALUMINUM.
- MOUNTING STUDS SHALL BE POURED INTO CONCRETE BASE PER MANUFACTURERS RECOMMENDATIONS. LAGS OR DRIVE PINS WILL NOT BE PERMITTED.
- FURNISH LITHONIA LIGHTING POLE NO. RSAH 205C, OR EQUAL.

3/8" THICK ALUMINUM BACKPLATE (4' MIN. WIDTH x 4' MIN. HEIGHT, EXACT SIZE TO SUIT EQUIPMENT), SECURELY BOLT TO HORIZONTAL SUPPORT CHANNELS.

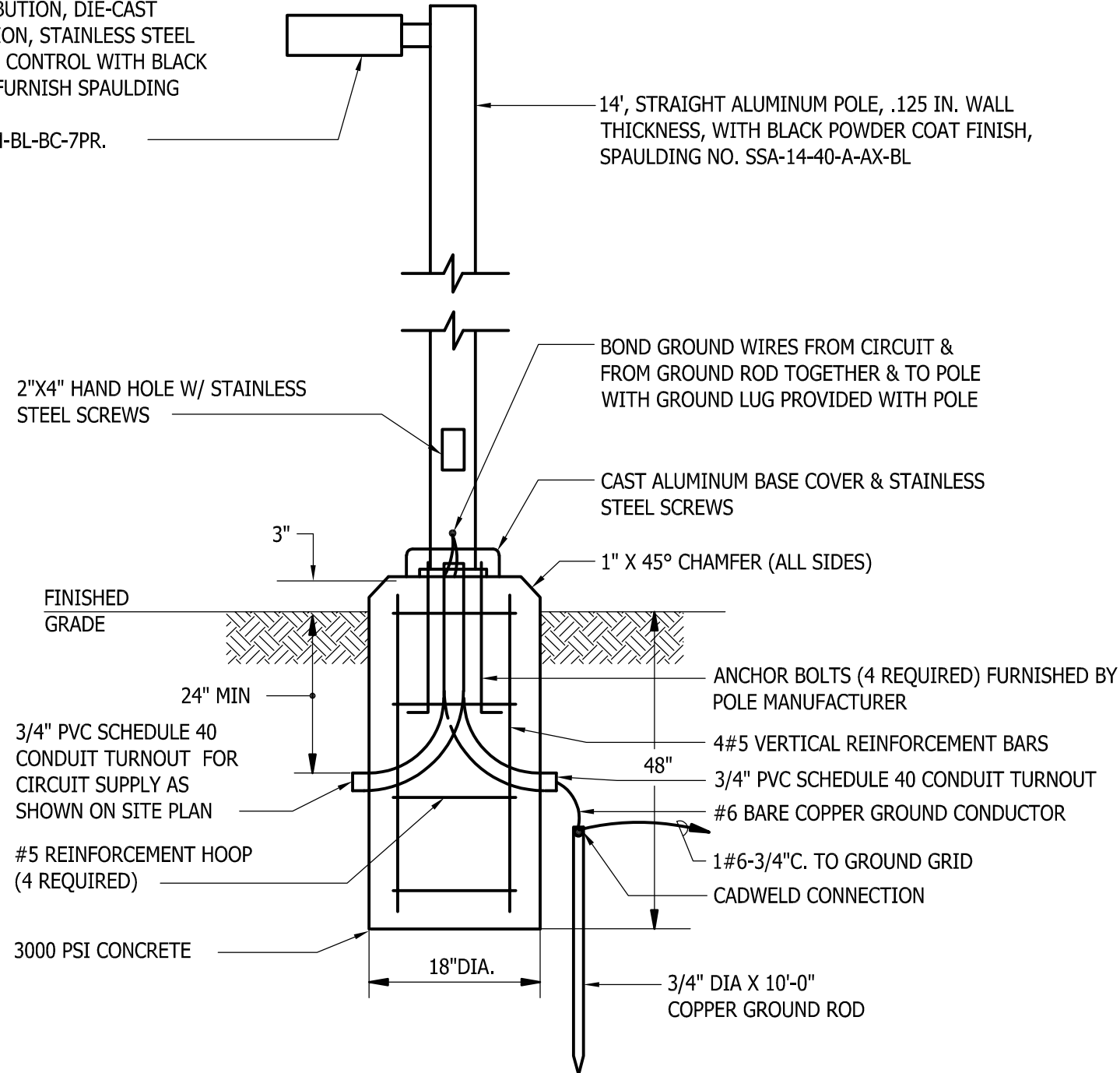


DETAIL - EQUIPMENT MOUNTING PEDESTAL
NO SCALE

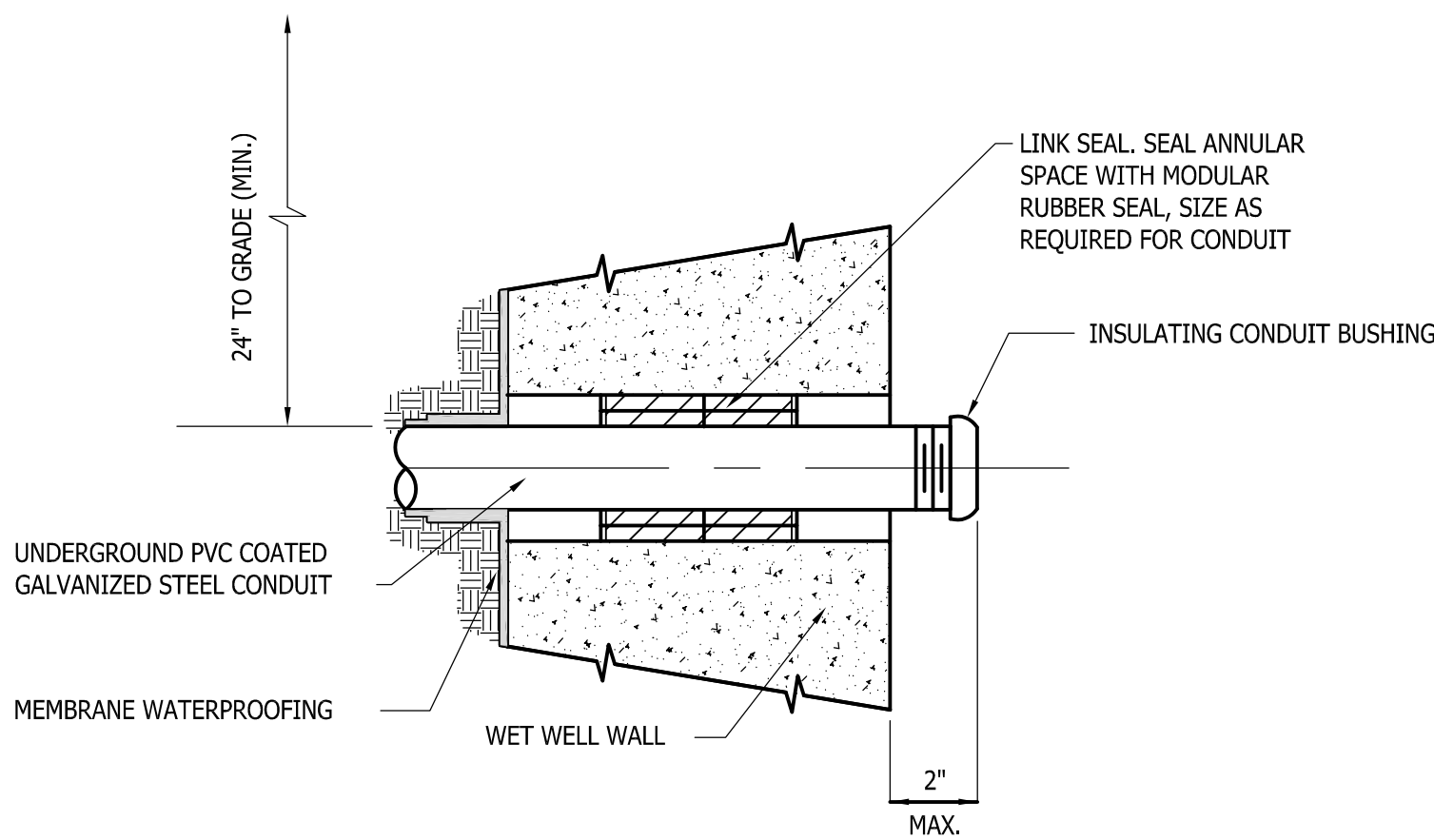
NOTE:

BACK TO FACE TOWARDS WET WELL,
FRONT TOWARDS THE S.E.C.

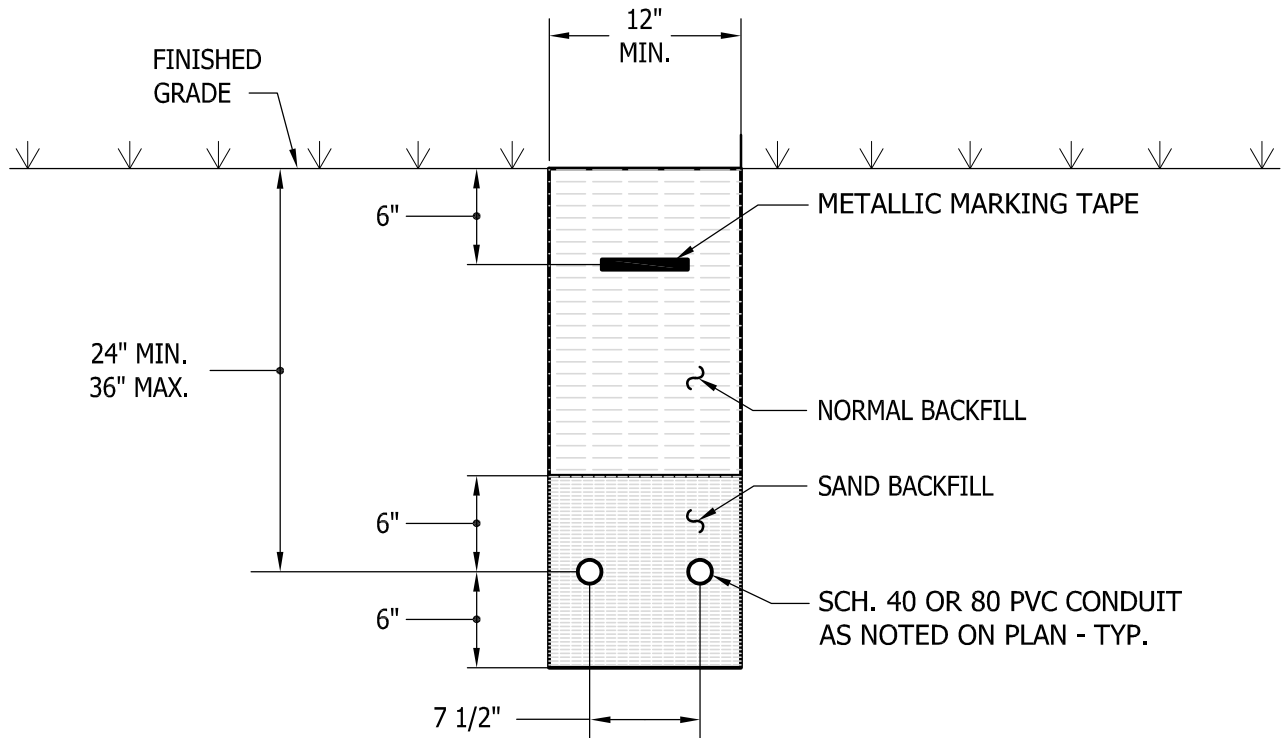
38 WATT, 32 HIGH BRIGHTNESS LED'S LIGHT
FIXTURE TYPE V DISTRIBUTION, DIE-CAST
ALUMINUM CONSTRUCTION, STAINLESS STEEL
HARDWARE, PHOTOCELL CONTROL WITH BLACK
POWDER COAT FINISH. FURNISH SPAULDING
"CIMARRON SERIES"
NO. CR15-A-32L-U-3K-5M-BL-BC-7PR.



DETAIL - LIGHT FIXTURE AND
POLE/FOUNDATION
SCALE: NONE

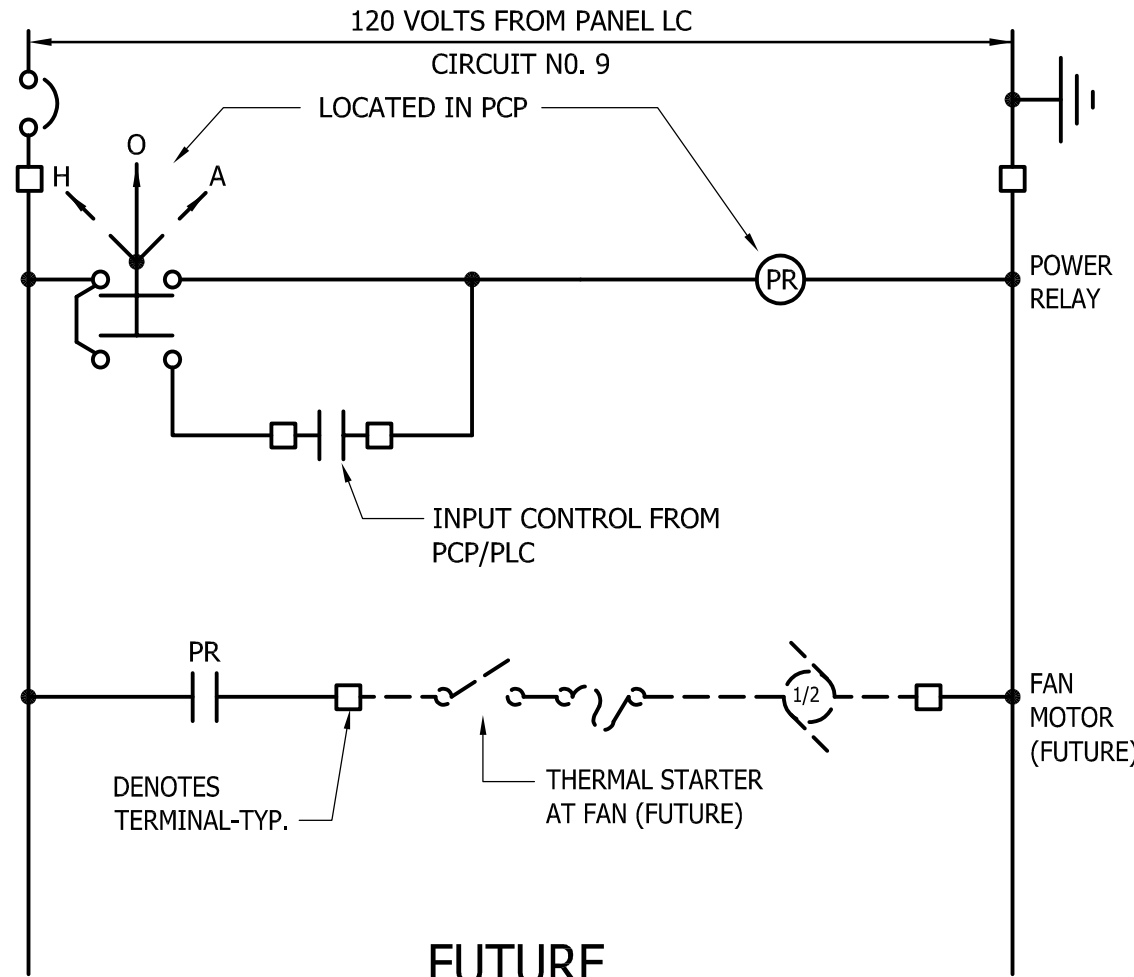


TYPICAL WET WELL ELECTRICAL
CONDUIT ENTRY DETAIL
NOT TO SCALE

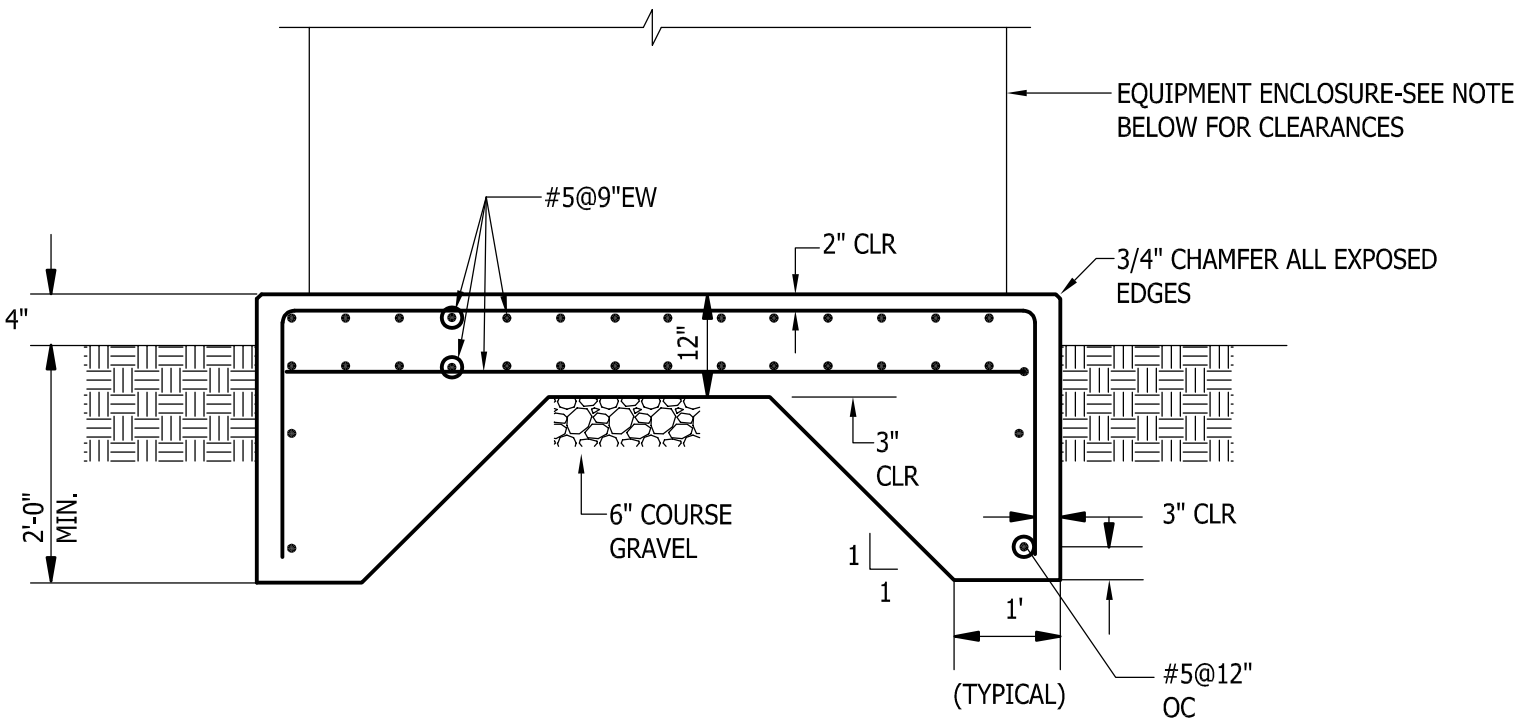


UNDERGROUND PVC CONDUIT
INSTALLATION DETAIL
NOT TO SCALE

PANEL SCHEDULE : "LC" 240/120V., 1 PHASE, 3 WIRE					(MINI POWER ZONE, REFER TO SPEC SECTION 16100)					<u>100</u> A. BUS CAPACITY		<u>80</u> A. MAIN BREAKER	
CIRC. NO.	FOR	BREAKERS			CIRC. NO.	FOR	BREAKERS						
		FRM.	P	TRIP			FRM.	P	TRIP				
1	S.E.C. LIGHTS	100	1	20	2	PCP	100	1	20				
3	S.E.C. RECEPTACLE	100	1	20	4	AUTO DIALER	100	1	20				
5	S.E.C. HEATERS	100	1	20	6	GEN. BLOCK HEATER	100	1	20				
7	S.E.C. COOLING FANS	100	1	20	8	GEN. BATTERY CHARGER	100	1	20				
9	W.W. VENT FAN (FUTURE)	100	1	20	10	SITE LIGHTS	100	1	20				
11	FLOW MTRG. SYS.	100	1	20	12	SPARE	100	1	20				
13	VALVE ENCL. HEATER	100	1	20	14	SPARE	100	1	20				
15	VALVE ENCL. HEATER	100	1	20	16	SPACE W/BUS	-	1	-				



FUTURE
WET WELL VENTILATION
FAN CONTROL DIAGRAM



DETAIL - TYPICAL GENERATOR/SERVICE EQUIPMENT
CONCRETE PAD
SCALE: NONE

CLEARANCES:

- GENERATOR - 12" ON ALL SIDES.
- SERVICE EQUIPMENT CABINET - 3'-0" ON CONTROL SIDE & POWER SIDE; 6" ON BOTH ENDS.
- SECURE GENERATOR TO PAD (WITH STAINLESS STEEL ANCHOR BOLT ASSEMBLIES) AS RECOMMENDED BY THE GENERATOR MANUFACTURER.

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DIVAN M. DIXON
No. 17123
PROFESSIONAL ENGINEER
Seal
Date: / / 24

REVISIONS			
NO.	DATE	DESCRIPTION	

DETAILS, DIAGRAM & SCHEDULE
for
TWIN MASTS
SUSSEX COUNTY, DELAWARE
Prepared for: Twin Masts, LLC

Date:	6/24
Job Number:	G21029
Scale:	AS SHOWN
Drawn By:	JLP
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Sheet No.:

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File Name:
G19087-pump

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