

LEGEND

| | | |
|---|----------|-------|
| PROPERTY LINE | --- | --- |
| EASEMENT 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 | ▨ | ▨ |
| BUILDING OUTLINE | --- | --- |
| SIDEWALK | --- | --- |
| SIDEWALK HATCH | ▨ | ▨ |
| FENCE LINE | --- | N/A |
| SIGN | ○ | ○ |
| FLOODPLAIN | --- | N/A |
| STORM MANHOLE | ⊙ | ⊙ |
| CURB INLET | ▨ | ▨ |
| YARD INLET | ▨ | ▨ |
| STORM PIPE | --- | --- |
| RIP RAP | ▨ | ▨ |
| SWALE | N/A | → |
| SANITARY MANHOLE | N/A | ⊙ |
| SANITARY CLEANOUT | N/A | ○ C/O |
| SANITARY PIPE | N/A | SS |
| WATER VALVE | N/A | WV |
| WATER PIPE | N/A | W |
| FIRE HYDRANT | N/A | ⊗ |
| OVERHEAD ELECTRIC | --- | N/A |
| UNDERGROUND ELECTRIC | --- | N/A |
| UNDERGROUND TELECOMMUNICATIONS | --- | N/A |
| UTILITY POLE | ○ | N/A |
| LIGHT POLE | ★ | N/A |
| DECIDUOUS TREE | ● | N/A |
| CONIFEROUS TREE | ● | N/A |
| TREE LINE | --- | --- |
| NON-TIDAL WETLANDS | ▨ | N/A |
| NON-TIDAL WETLAND BUFFER | ▨ | N/A |
| STATE DELINEATED WETLANDS | ▨ | N/A |
| SHORELINE - TOP OF BANK, HIGH TIDE LINE | --- | N/A |
| POND PRESSURE RELIEF VALVE | N/A | ◇ |

ROADWAY, STORM DRAIN, SEWER, WATER, & EROSION AND SEDIMENT CONTROL PLANS

FOR KEASTONE BAY SECTION 2 INDIAN RIVER HUNDRED - SUSSEX COUNTY, DELAWARE

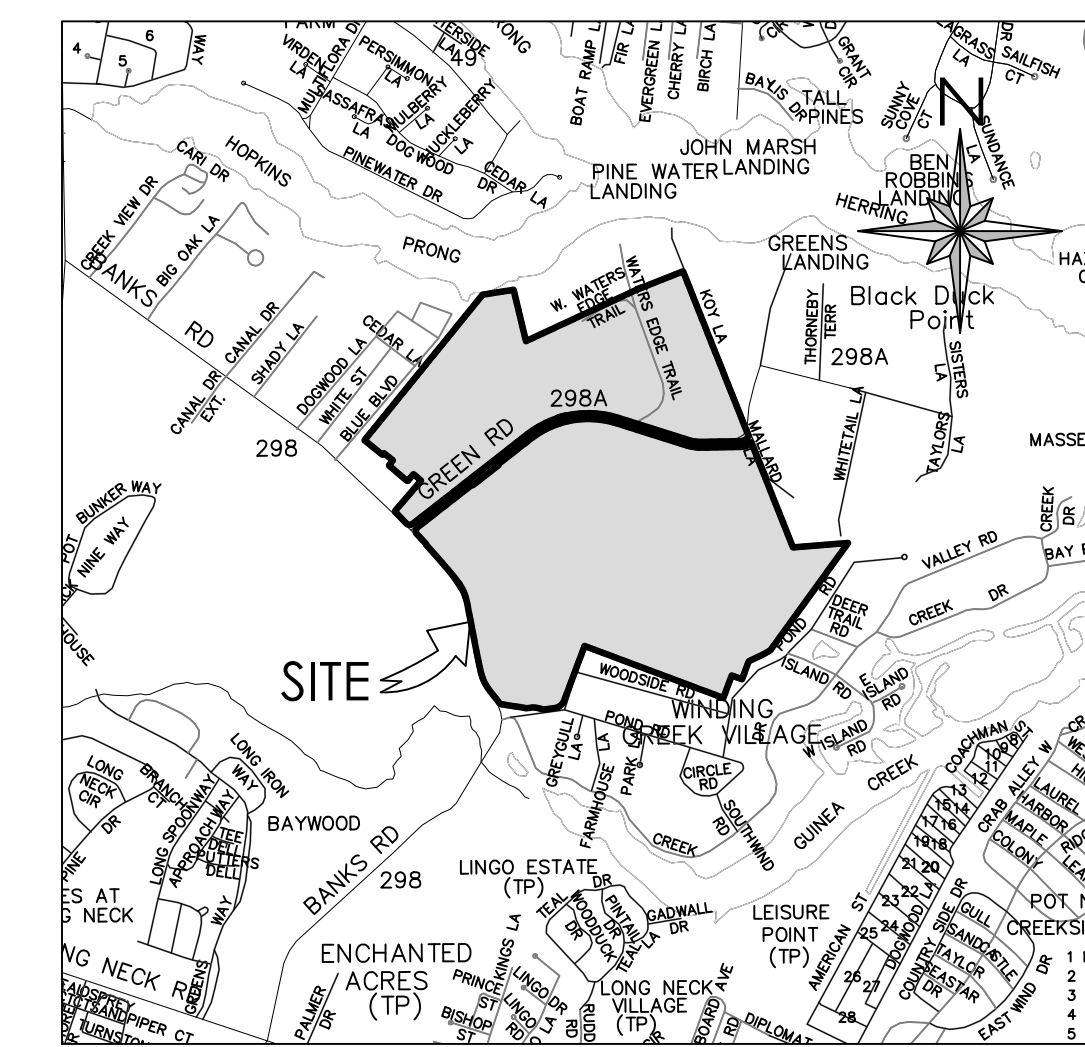


CONSTRUCTION PLANS

| | | |
|----------------------------------|---|---|
| 1 COVER SHEET | 23 SANITARY SEWER DETAILS 1 | 44 CONSTRUCTION DETAILS 4 |
| 2 GENERAL NOTES | 24 PUMP STATION SITE PLAN | 45 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN |
| 3 EXISTING CONDITIONS | 25 PUMP STATION DETAILS | 46 POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS |
| 4 INDEX SHEET | 26 FIRE MARSHAL PLAN | 47 POST CONSTRUCTION SWM PLAN - E.D. WET POND 14 |
| 5 ROAD CENTERLINE PLAN | 27 WATER PLAN A | 48 POST CONSTRUCTION SWM PLAN - E.D. WET POND 15 |
| 6 ROAD AND STORM DRAIN PLAN A | 28 WATER PLAN B | 49 POST CONSTRUCTION SWM PLAN - E.D. WET POND 15 SECTIONS |
| 7 ROAD AND STORM DRAIN PLAN B | 29 WATER PROFILES 1 | 50 POST CONSTRUCTION SWM PLAN - E.D. WET POND 16 |
| 8 ROAD PROFILES 1 | 30 WATER PROFILES 2 | 51 POST CONSTRUCTION SWM PLAN - E.D. WET POND 16 SECTIONS |
| 9 ROAD PROFILES 2 | 31 WATER PROFILES 3 | 52 POST CONSTRUCTION SWM PLAN - E.D. WET POND 17 |
| 10 STORM DRAIN PROFILES 1 | 32 WATER DETAILS 1 | 53 POST CONSTRUCTION SWM PLAN - E.D. WET POND 17 SECTIONS |
| 11 STORM DRAIN PROFILES 2 | 33 WATER DETAILS 2 | 54 POST CONSTRUCTION SWM PLAN - DRY POND 18 |
| 12 STORM DRAIN PROFILES 3 | <u>EROSION & SEDIMENT CONTROL PLANS</u> | 55 POST CONSTRUCTION SWM PLAN - E.D. WET POND 25 |
| 13 STORM DRAIN SCHEDULES | 34 SEDIMENT AND STORMWATER MANAGEMENT PLAN COVER SHEET | 56 POST CONSTRUCTION SWM PLAN - E.D. WET POND 25 |
| 14 BULK GRADING PLAN A | 35 OVERALL CONSTRUCTION SITE PHASING INDEX PLAN | 57 PLANTING PLAN |
| 15 BULK GRADING PLAN B | 36 PRE-CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN | |
| 16 DETAILED INTERSECTION GRADING | 37 OVERALL CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN | |
| 17 DETAILS 1 | 38 CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN A | |
| 18 DETAILS 2 | 39 CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN B | |
| 19 SANITARY SEWER PLAN A | 40 CONSTRUCTION SITE NOTES - SEQUENCE OF CONSTRUCTION | |
| 20 SANITARY SEWER PLAN B | 41 CONSTRUCTION DETAILS 1 | |
| 21 SANITARY SEWER PROFILES 1 | 42 CONSTRUCTION DETAILS 2 | |
| 22 SANITARY SEWER PROFILES 2 | 43 CONSTRUCTION DETAILS 3 | |

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 SHALL BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION.



VICINITY MAP
SCALE: 1" = 2,000'

SITE DATA:

- APPLICANT/ OWNER/ DEVELOPER: KEASTONE BAY, LLC
34024 LONG NECK ROAD, SUITE 7
LONG NECK, DE 19966
CONTACT: ROBERT TUNNELL
- ENGINEER: SOLUTIONS IPEM
303 NORTH BEDFORD STREET
GEORGETOWN, DE 19947
PHONE: 302-297-9215
CONTACT: JASON PALKIEWICZ, PE
- TAX MAP 234-24-00-200
 - TOTAL AREA, PARCEL 2.00 = 111.00 AC.±
SECTION 2 AREA = 31.25 AC.± (LIMITS OF DISTURBANCE)
 - PROPOSED USE: CLUSTER SUBDIVISION
SECTION 2 - 61 SINGLE FAMILY LOTS
 - EXISTING ZONING: AR-1 (COASTAL AREA)
 - BUILDING SETBACKS:
FRONT = 25'
SIDE = 10' (CORNER 15')
REAR 10'
 - FLOOD ZONE:
PROPERTIES ARE LOCATED WITHIN FLOOD ZONE A (NO BASE FLOOD ELEVATIONS DETERMINED). ZONE X (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREA PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD, AND ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, PER FIRM MAP NUMBER 10005C0345K, MAP REVISED MARCH 16, 2015
 - WATER SUPPLY: LONG NECK WATER COMPANY
 - SANITARY SEWER: INLAND BAYS PRESERVATION COMPANY, LLC
 - TOPOGRAPHY AND BOUNDARY SHOWN HEREIN ARE AS PROVIDED BY SOLUTIONS IPEM, LLC
 - PROJECT DATUM:
HORIZONTAL: DELAWARE STATE PLAN NAD 83
VERTICAL: NAVD 88



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Georgetown, DE 19947
T. 302-297-9215
3033 Manitt Mill Road
Salisbury, MD 21804
T. 410.572.8833
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Seal
Date

| NO. | DATE | DESCRIPTION |
|-----|----------|----------------------------------|
| 1 | 05/11/26 | REVISIONS PER SCD & SCD COMMENTS |

COVER SHEET
for
KEASTONE BAY - SECTION 2
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

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, RGL 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)

DEVELOPER'S CERTIFICATION
THE DEVELOPER, KEASTONE LLC, HEREBY CERTIFIES THAT THESE DRAWINGS HAVE BEEN APPROVED.

ROBERT TUNNELL, III DATE

ENGINEER'S CERTIFICATION
I HEREBY CERTIFY THAT THESE DRAWINGS HAVE BEEN PREPARED UNDER MY SUPERVISION.

JASON PALKIEWICZ, PE DATE

APPROVED, SUSSEX COUNTY ENGINEER AGREEMENT # _____
SUSSEX COUNTY ENGINEER DATE

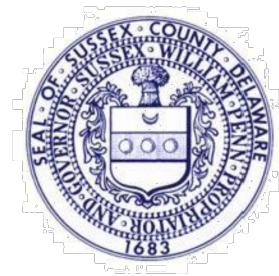
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| Date: | 7/29/25 |
| Job Number: | 10006 |
| Scale: | AS NOTED |
| Drawn By: | ML |
| Designed By: | JIP |
| Approved By: | JIP |

Sheet No.: 1
File Name: COVER

CONDITIONS OF APPROVAL:

PLANNING & ZONING COMMISSION

ROBERT C. WHEATLEY, CHAIRMAN
KIM HOEY STEVENSON, VICE-CHAIRMAN
R. KELLER HOPKINS
J. BRUCE MEARS
HOLLY J. WINGATE



Sussex County

DELAWARE
SUSSEXCOUNTYDE.GOV
302-855-7878 T
302-854-5078 F
JANELLE CORNWELL, AICP
DIRECTOR

January 27, 2020

Mr. Jason Palkewicz, P.E.
Solutions IP/EM, LLC
303 North Bedford Street
Georgetown, DE 19947

By email to: jpalkewicz@solutionsipem.com

RE: Notice of Decision Letter for the Preliminary Subdivision Plan for Keastone Bay (2018-34) for the creation of 675 single-family lots to be located on the northeast side of Banks Road (S.C.R. 298) and bisected by Green Road (S.C.R. 298A).
Tax Parcels: 234-17.00-170.00, 234-17.00-172.00, 234-17.00-173.00, 234-17.00-174.00, 234-18.00-68.00, 234-24.00-1.00 & 234-24.00-2.00

Dear Mr. Palkewicz,

At their meeting of **Thursday, January 23, 2020** the Planning & Zoning Commission **approved** the **Preliminary Subdivision Plan for Keastone Bay (2018-34)** for cluster subdivision for the creation of six-hundred and fifty-one (651) single-family lots within the Coastal Area. The property zoned Agricultural Residential (AR-1) and is located on the northeast side of Banks Road (S.C.R. 298) and is bisected by Green Road (S.C.R. 298A).

The Preliminary Subdivision Plan is valid for three (3) years from the date of Planning Commission decision. A Final Subdivision Plan shall be approved within three (3) years of the date of approval of the Preliminary Plan or the action of the Planning Commission shall be deemed canceled. Unless an extension is granted, approval shall be rendered null and void if substantial construction is not commenced within five (5) years of the date of recordation of the final plat.

As part of their motion, the Planning Commission acted to approve the development subject to the following conditions (which shall be clearly annotated on the Revised Preliminary and Final Subdivision Plans):

- A. There shall be no more than six hundred and fifty-one (651) lots within the subdivision.
- B. The Final Site Plan shall confirm that at least 43% of the site remains as open space.
- C. As proffered by the Applicant, no more than 100 building permits shall be issued in any one calendar year.
- D. The developer shall establish a homeowner's association responsible for the maintenance of streets, roads, buffers, stormwater management facilities and other common areas.
- E. The stormwater management system shall meet or exceed the requirements of the State and County. The Final Site Plan shall contain the approval of the Sussex Conservation



COUNTY ADMINISTRATIVE OFFICES
2 THE CIRCLE | PO BOX 417
GEORGETOWN, DELAWARE 19947

Notice of Decision Letter
Keastone Bay (2018-34) Preliminary Subdivision Plan
January 27, 2020
Page 2

- District for the design and location of all stormwater management areas and erosion and sedimentation control facilities.
- F. As stated by the Applicant, there shall be a buffer of at least 50 feet along the entire perimeter of the project. This perimeter buffer shall include a forested or landscaped buffer of at least 20 feet in depth. This perimeter buffer may include existing forest. The Final Site Plan shall contain a landscaped plan for all of these areas.
- G. Water's Edge Trail is a roadway providing access to properties that are not part of this development. This roadway shall remain known as "Water's Edge Trail" within this development. In addition, no homes within this development shall have direct access onto Water's Edge Trail. The developer shall also provide a location for mail boxes with sufficient parking at the intersection of Water's Edge Trail and Green Road for the off-site Water's Edge Trail properties.
- H. As stated by the Applicant, there shall be a buffer of at least 100 feet between all wetlands and any lots.
- I. The development shall comply with all DelDOT entrance and roadway improvement requirements.
- J. As proffered by the Applicant, sidewalks shall be installed on both sides of all internal streets. A system of fully-shielded and downward-screened streetlighting shall also be provided.
- K. The subdivision shall be served by a central sewer system.
- L. The subdivision shall be served by a publicly regulated central water system providing drink water and fire protection.
- M. Street design shall meet or exceed Sussex County standards.
- N. Road naming and addressing shall be subject to the review and approval of the Sussex County Mapping and Addressing Department.
- O. Construction, site work and deliveries shall only occur on the site between the hours of 7:00 A.M. through 7:00 P.M., Monday through Friday, and 8:00 A.M. through 2:00 P.M. on Saturdays. No Sunday hours are permitted.
- P. The Applicant shall coordinate with the local school district regarding the location of a covered school bus stop within the subdivision. If required by the school district, the location of the bus stop area shall be shown on the Final Site Plan.
- Q. The development shall be served by a core recreational complex including a clubhouse with a minimum of 4,000 square feet of floor area, an outdoor pool and deck area, a children's splash pad, a playground, 4 bocce courts, 4 pickleball courts and 2 tennis courts. The core recreational complex shall be completed prior to the issuance of the 151st residential building permit. As proffered by the Applicant, there shall also be twelve (12) neighborhood parks built as each phase of the subdivision is developed.
- R. The Final Site Plan shall include a Landscape Plan depicting all landscaping to be provided and forested areas that will be preserved.
- S. A Grading Plan shall be submitted to the Planning and Zoning Department as part of the Final Site Plan.
- T. A revised Preliminary Site Plan either depicting or noting these conditions must be submitted to the Office of Planning and Zoning.
- U. The Final Site Plan shall be subject to the review and approval of the Planning and Zoning Commission.

Notice of Decision Letter
Keastone Bay (2018-34) Preliminary Subdivision Plan
January 27, 2020
Page 3

The Final Subdivision Plan must comply with the County's Subdivision Code, including submission of agency approval letters to the Planning and Zoning Office. The agency approvals required for Final Subdivision Plan approval include but are not limited to: (Items in which a check mark appear have been received by the Department. All items in bold still require submittal to the Department.)

- a. **Delaware Department of Transportation (DelDOT)**
- b. **Office of the State Fire Marshal**
- c. **Sussex County Mapping and Addressing**
- d. **Sussex County Engineering**
- e. **Office of Drinking Water**

Please note that a lot fee of \$10.00 per lot will be required to be paid prior to the approval of any Final Subdivision Plan. For 651 lots, the fee is \$6,510.00.

Please submit **(1) one full-size paper copy (24" x 36")** and **(1) one electronic PDF copy** of a Revised Preliminary Plan noting the Conditions of Approval Planning office no later than **February 3, 2020** for consideration at the **February 13, 2020** meeting of the Planning and Zoning Commission. It is recommended that **two (2) copies of a check print** are first submitted to staff for purposes of staff review and comment.

Please feel free to contact me during business hours with any question from 8:30 AM – 4:30 PM, Monday through Friday, at 302-855-7878.

Sincerely,

Ms. Lauren DeVore
Planner III

**SUSSEX COUNTY ENGINEERING
CONSTRUCTION NOTES**

1. ROADWAY STAKEOUTS:
A. RIGHT-OF-WAY STAKES SHALL BE OFF-SET A MINIMUM OF FIVE (5) FEET OUTSIDE THE RIGHT-OF-WAY.
B. STATION NUMBERS SHALL BE INDICATED ON EACH SIDE OF THE STAKE.
C. THE CENTERLINE ROADWAY CUT AND CUT-LINE SHALL BE LOCATED ON THE SIDE OF THE STAKE WHICH FACES THE CENTERLINE. ALSO, A "CL" DESIGNATION SHALL BE INCLUDED.
D. THE SWALE CUT AND CUT-LINE SHALL BE INDICATED ON THE OUTSIDE OF THE STAKE, WHILE ALSO CONTAINING A "SW" DESIGNATION.
2. THE CONTRACTOR SHALL PROVIDE TWO (2) WORKING DAYS NOTICE TO THE COUNTY INSPECTOR PRIOR TO PAVING. AT THIS TIME, THE INSPECTOR MAY REQUIRE THAT THE CONTRACTOR COMPLETE RELATED OR UNRELATED WORK ITEMS BEFORE PAVING MAY BEGIN.
3. SURFACE TREATMENT SHALL NOT BE APPLIED:
A. AFTER NOVEMBER 1 OR PRIOR TO APRIL 1; OR
B. WHEN THE TEMPERATURE IS BELOW 50° F; OR
C. ON ANY WET OR FROZEN SURFACE.
4. HOT MIX SHALL NOT BE APPLIED:
A. WHEN THE TEMPERATURE IS BELOW 40° F; OR
B. ON ANY WET OR FROZEN SURFACE.
5. FOR ALL WOODED AREAS, A SUFFICIENT AREA BEYOND THE RIGHT-OF-WAY LINE SHALL BE CLEARED AND GRUBBED TO ALLOW PROPER GRADING OF THE ROADWAY SWALE BACKSLOPES.
6. ALL DISTURBED AREAS MUST BE STABILIZED WITH 4 INCHES OF TOPSOIL, SEED, AND MULCH.
7. ALL CURB RETURN RADII ARE TO THE EDGE OF PAVEMENT.

GENERAL NOTES:

1. 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.
2. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE SUSSEX COUNTY CONSERVATION DISTRICT REGULATIONS.
3. ALL FIRE LANES, FIRE HYDRANTS, MARKINGS SHALL BE IN ACCORDANCE WITH THE DELAWARE STATE FIRE MARSHAL REGULATIONS.
4. THE DEVELOPER SHALL MAKE EVERY EFFORT TO PRESERVE ALL TREES EXCEPT WHERE NECESSARY TO CONSTRUCT ROADWAYS, UTILITIES AND BUILDINGS.
5. ALL SIDEWALKS, WHEN REQUIRED, AND/OR ARE SHOWN ON THE PLAN MUST BE INSTALLED PER THE APPROVED PLAN IN CONJUNCTION WITH THE PRIVATE STREET.

UTILITY NOTES

1. THE CONTRACTOR SHALL VERIFY EXISTING INVERTS PRIOR TO CONSTRUCTION OF UNDERGROUND UTILITIES. TEST PITTING OF EXISTING LINES PRIOR TO CONSTRUCTION, IF NECESSARY, SHALL BE COORDINATED WITH THE OWNER.
2. CONTRACTOR SHALL PROVIDE 12" MIN. COVER OVER STORM DRAIN PIPES DURING CONSTRUCTION. AT ALL TIMES, PROPER COVER TO BE PROVIDED OVER ALL UTILITIES 14" OVER WATER, 48" OVER SANITARY SEWER, 12" OVER STORMWATER, OR PER MANUFACTURERS RECOMMENDATIONS) UPON COMPLETION.
3. ALL MANHOLE FRAMES & COVERS AND CLEANOUTS SHALL BE ADJUSTED TO BE FLUSH WITH FINAL GRADE.

CONSTRUCTION NOTES

1. THESE DRAWINGS SHOW INFORMATION OBTAINED FROM THE AVAILABLE RECORDS REGARDING PIPES, CONDUITS, TELEPHONE LINES, AND OTHER STRUCTURES AND CONDITIONS WHICH EXIST ALONG THE LINES OF WORK AT AND BELOW THE SURFACE OF THE GROUND. THE OWNER AND ENGINEER DISCLAIM ANY RESPONSIBILITIES FOR THE ACCURACY OR COMPLETENESS OF SAID INFORMATION BEING SHOWN ONLY FOR THE CONVENIENCE OF THE CONTRACTOR WHO MUST VERIFY THE INFORMATION TO HIS OWN SATISFACTION. IF THE CONTRACTOR RELIES ON SAID INFORMATION, HE DOES SO AT HIS OWN RISK. THE GIVING OF THE INFORMATION ON THE DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF HIS OBLIGATIONS TO IDENTIFY, SUPPORT, AND PROTECT ALL PIPES, CONDUITS, TELEPHONE LINES, AND OTHER STRUCTURES.
2. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, LOCAL BUILDING CODES, AND THE STANDARD SPECIFICATIONS. MATERIALS AND METHODS OF CONSTRUCTION FOR WATER MAINS AND APPURTENANCES SHALL CONFORM TO TIDEWATER UTILITIES, INC. WATER STANDARDS.
3. ALL DISTURBED AREAS SHALL BE SMOOTHLY GRADED TO PROMOTE POSITIVE DRAINAGE AND STABILIZED WITH TOPSOIL, SEED, AND MULCH. IF SETTLEMENT OCCURS, TOPSOIL, SEEDING, AND MULCH SHALL BE REPEATED UNTIL SETTLEMENT SUBSIDES. (SEE EROSION AND SEDIMENT CONTROL DETAILS AND SPECIFICATIONS.)
4. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING TWO (2) WEEKS PRIOR TO THE START OF CONSTRUCTION AND SHALL COORDINATE ALL CONSTRUCTION PHASES WITH THEM:
SOLUTIONS IP/EM 302-297-9215
MISS UTILITIES 800-282-8555
DELDOT 302-856-5441
SUSSEX CONSERVATION DISTRICT 302-856-2105
SUSSEX COUNTY DPW 302-855-7703
LONG NECK WATER COMPANY 302-947-9600
INLAND BAYS PRESERVATION CO. 302-945-9300

SHOULD ANY DAMAGE OCCUR TO EXISTING UTILITIES, IT SHALL BE REPAIRED SOLELY AT THE CONTRACTOR'S EXPENSE.

5. CONTRACTOR SHALL CONTACT DELAWARE ELECTRIC COOPERATIVE AT 1-800-282-8595 PRIOR TO COMMENCING WORK WITHIN THE PROXIMITY OF OVERHEAD HIGH-VOLTAGE POWER LINES.
6. ALL DRAINAGE STRUCTURES AND TRENCHES SHALL REMAIN FUNCTIONAL DURING CONSTRUCTION.
7. THE OWNER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, BOTH TEMPORARY AND PERMANENT.
8. TRENCHES SHALL NOT REMAIN OPEN OVERNIGHT. IF IT IS NECESSARY FOR TRENCHES TO REMAIN OPEN, STEEL PLATES CAPABLE OF BEARING TRAFFIC SHALL BE USED TO COMPLETELY COVER THE TRENCH OPENINGS.
9. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR ANY DEVIATION FROM THESE PLANS.
10. ANY PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE REPLACED SOLELY AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL SURVEY CONTROL PRIOR TO STAKING OUT FOR CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
12. ALL PIPE LENGTHS ARE THE ACTUAL PIPE LENGTHS, NOT INCLUDING FLARED END SECTIONS. ALL PIPES SHALL HAVE FLARED END SECTIONS, UNLESS OTHERWISE NOTED.
13. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES.
14. CONTRACTOR SHALL PROVIDE 12" MIN. COVER OVER PIPES DURING CONSTRUCTION.
15. UTILITY GROUND SURFACE PROFILES, MANHOLE TOP ELEVATIONS, AND CROSSING PIPE ELEVATIONS ARE APPROXIMATE. REFER TO GRADING PLANS FOR GROUND SURFACE ELEVATIONS. INSTALL MANHOLE TOPS FLUSH WITH FINAL GRADE.
16. STORM SEWER PIPING AND CULVERTS SHALL BE CLASS IV REINFORCED CONCRETE OR HIGH-DENSITY POLYETHYLENE (HDPE) ADS N-12 AS INDICATED ON THE PLANS AND PROFILES.
17. STORM SEWER MANHOLES SHALL BE PRECAST CONCRETE WITH MINIMUM DIAMETER OF 48", BUT LARGER DIAMETER IF NEEDED TO ACCOMMODATE PIPES ENTERING AND EXISTING THE MANHOLE.
18. WHEN IT IS IMPOSSIBLE TO OBTAIN THE MINIMAL 10 FOOT HORIZONTAL AND/OR 18" VERTICAL SEPARATION BETWEEN WATER MAINS AND SANITARY SEWER, THE OFFICE OF DRINKING WATER MUST SPECIFICALLY APPROVE ANY VARIANCE SUPPORTED BY DATA FROM THE DESIGN ENGINEER.
19. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNER/ENGINEER IN A TIMELY MANNER IF ANY DISCREPANCIES ARE FOUND.
20. INSTALLATION OF ADS N-12 PIPE SHALL BE IN ACCORDANCE WITH ASTM D2321 AND LATEST/AMENDED ADS RECOMMENDED INSTALLATION GUIDELINES.



303 North Bedford Street
Georgetown, DE 19947
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3033 Manthill Hill Road
Salisbury, MD 21804
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Date

| REVISIONS | | DESCRIPTION |
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| NO. | DATE | REVISIONS PER SCD & SCD COMMENTS |
| 1 | 05/11/26 | |

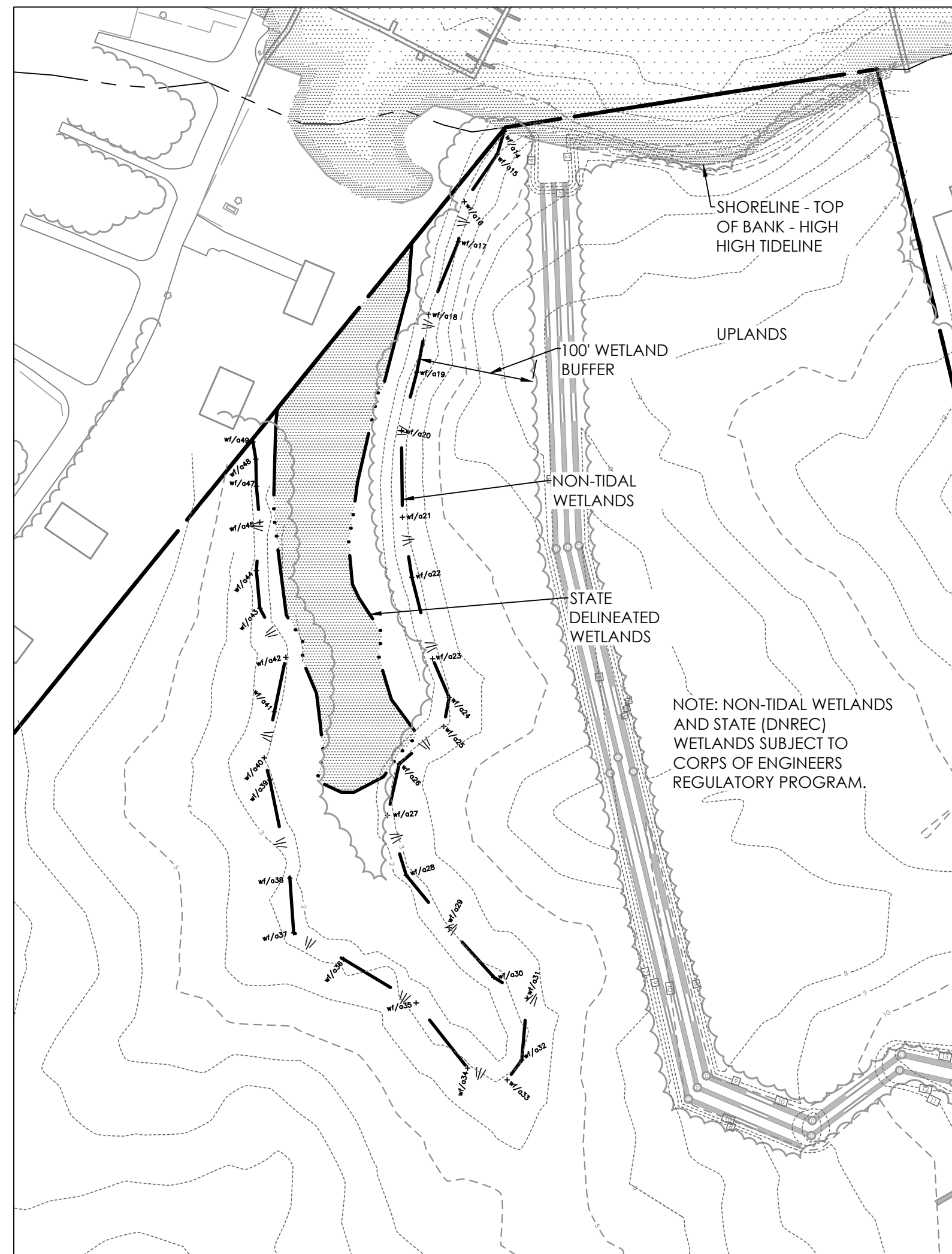
GENERAL NOTES
for
KEASTONE BAY - SECTION 2
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

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| Date: | 7/29/25 |
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| Drawn By: | ML |
| Designed By: | JP |
| Approved By: | JP |

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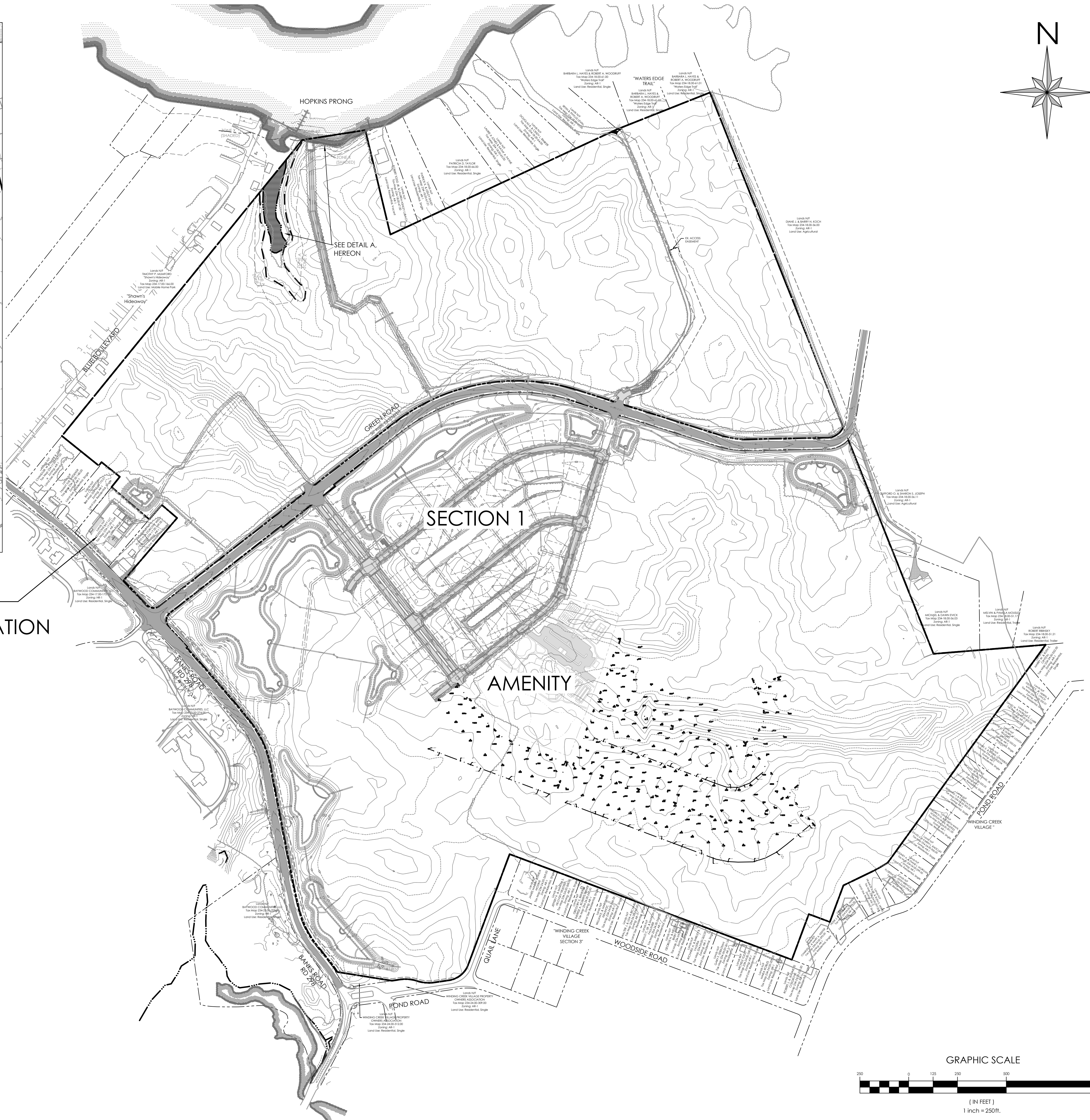
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DETAIL A
SCALE: 1"=100'

| FLAG # | NORTHING | EASTING |
|--------|-----------|-----------|
| wf/a1 | 238257.70 | 725764.78 |
| wf/a2 | 238250.55 | 725752.59 |
| wf/a3 | 238246.93 | 725746.15 |
| wf/a4 | 238242.47 | 725730.13 |
| wf/a5 | 238231.97 | 725700.15 |
| wf/a6 | 238214.50 | 725678.53 |
| wf/a7 | 238204.99 | 725667.04 |
| wf/a8 | 238198.75 | 725656.21 |
| wf/a9 | 238194.67 | 725622.89 |
| wf/a10 | 238200.66 | 725598.62 |
| wf/a11 | 238209.50 | 725540.74 |
| wf/a12 | 238208.05 | 725520.36 |
| wf/a13 | 238216.39 | 725480.29 |
| wf/a14 | 238224.28 | 725452.33 |
| wf/a15 | 238204.48 | 725446.45 |
| wf/a16 | 238163.01 | 725417.68 |
| wf/a17 | 238128.40 | 725412.49 |
| wf/a18 | 238065.19 | 725386.59 |
| wf/a19 | 238014.70 | 725376.34 |
| wf/a20 | 237964.13 | 725363.00 |
| wf/a21 | 237888.80 | 725363.95 |
| wf/a22 | 237836.66 | 725372.10 |
| wf/a23 | 237765.85 | 725390.14 |
| wf/a24 | 237732.27 | 725404.55 |
| wf/a25 | 237707.00 | 725399.80 |
| wf/a26 | 237674.52 | 725361.10 |
| wf/a27 | 237629.77 | 725350.99 |
| wf/a28 | 237577.73 | 725367.22 |
| wf/a29 | 237532.16 | 725404.48 |
| wf/a30 | 237488.85 | 725443.52 |
| wf/a31 | 237470.94 | 725472.27 |
| wf/a32 | 237416.98 | 725467.57 |
| wf/a33 | 237399.81 | 725454.95 |
| wf/a34 | 237410.08 | 725420.50 |
| wf/a35 | 237466.70 | 725375.76 |
| wf/a36 | 237504.43 | 725312.87 |
| wf/a37 | 237527.65 | 725269.39 |
| wf/a38 | 237575.18 | 725266.03 |
| wf/a39 | 237660.48 | 725248.61 |
| wf/a40 | 237679.73 | 725243.73 |
| wf/a41 | 237719.66 | 725252.67 |
| wf/a42 | 237767.09 | 725262.56 |
| wf/a43 | 237809.77 | 725239.95 |
| wf/a44 | 237842.49 | 725236.98 |
| wf/a45 | 237884.46 | 725239.87 |
| wf/a47 | 237915.75 | 725236.93 |
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| wf/a49 | 237944.27 | 725233.93 |

WATER RECLAMATION FACILITY



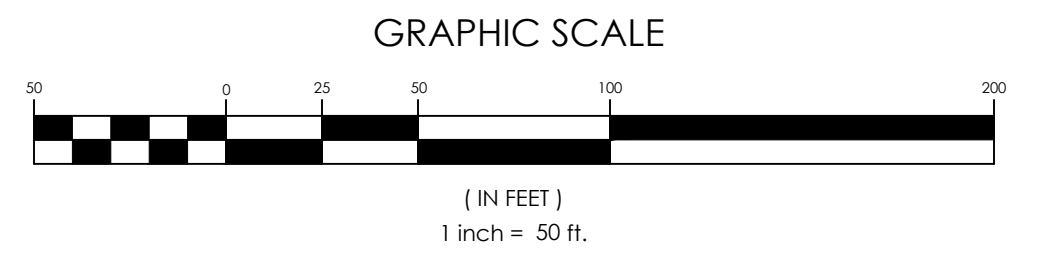
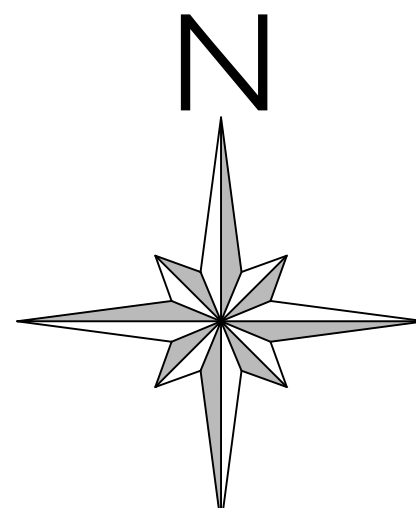
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Seal _____
Date _____

| NO. | DATE | DESCRIPTION |
|-----|----------|----------------------------------|
| 1 | 05/11/26 | REVISIONS PER SCD & SCD COMMENTS |

EXISTING CONDITIONS
for
KEASTONE BAY - SECTION 2
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date: 7/29/25
Job Number: 10006
Scale: 1"=250'
Drawn By: MLL
Designed By: JIP
Approved By: JIP
Sheet No.: 3
File Name: 10006-P2-EX COND.dwg



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 Environmental Solutions
 Professional Services, LLC

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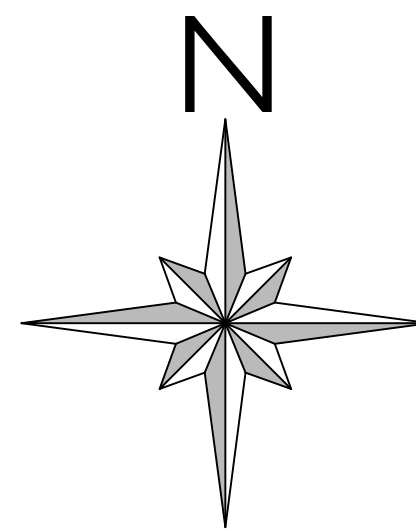
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|-----------|----------|------------------------------------|
| NO. | DATE | DESCRIPTION |
| 1 | 05/11/26 | REVISIONS PER SCD & S'CED COMMENTS |

SANITARY SEWER PLAN A
 for
KEASTONE BAY - SECTION 2
 INDIAN RIVER HUNDRED
 SUSSEX COUNTY, DELAWARE

| | |
|--------------|---------|
| Date: | 7/29/25 |
| Job Number: | 10006 |
| Scale: | 1"=50' |
| Drawn By: | ML |
| Designed By: | JP |
| Approved By: | JP |

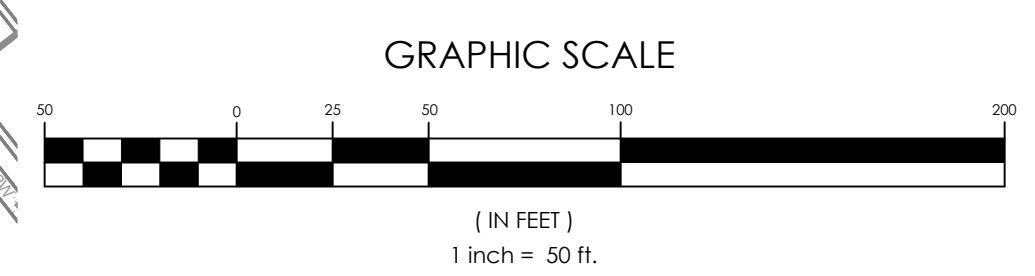
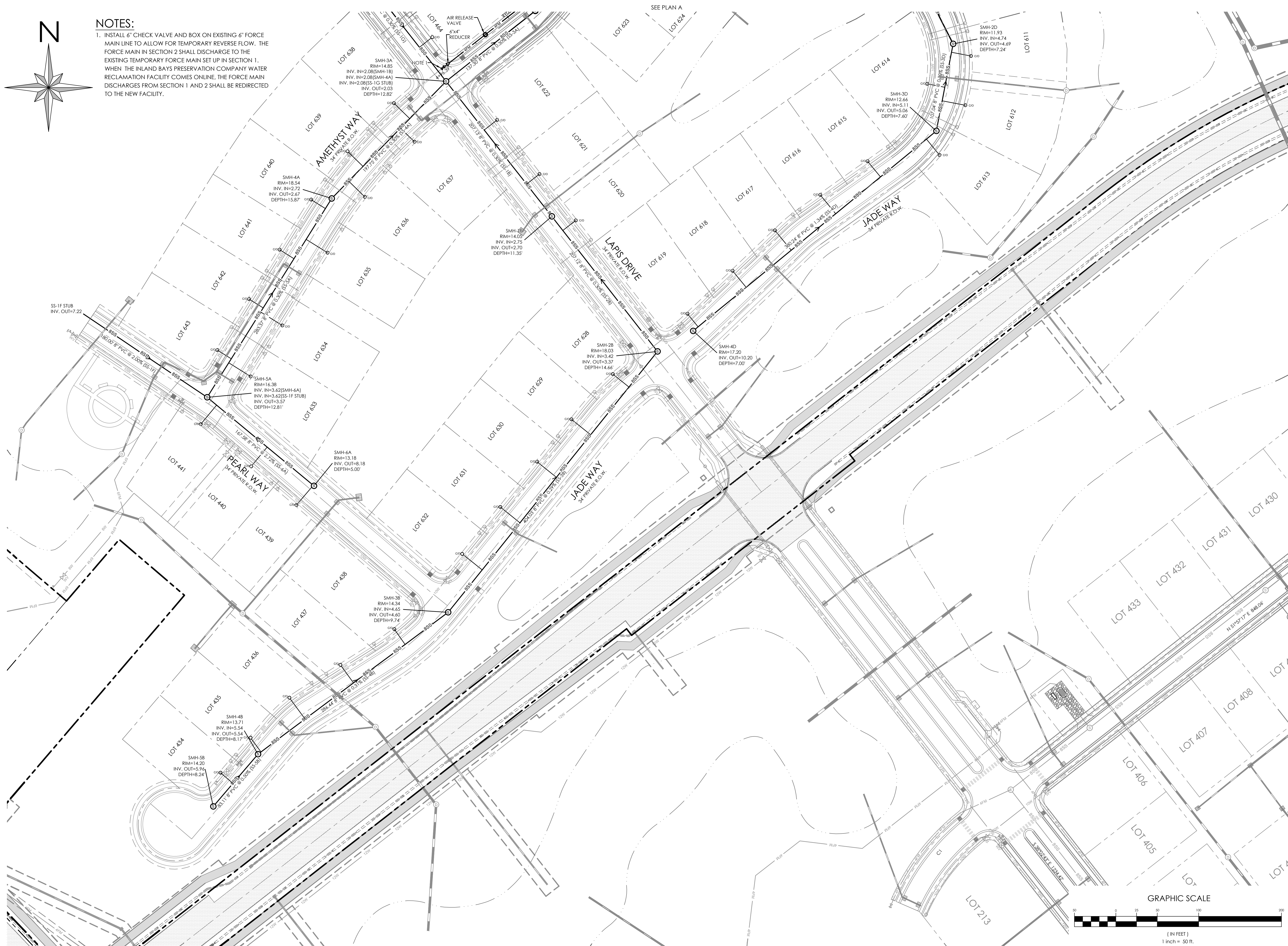
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File Name:
 10006-P2-SEWER.dwg



NOTES:

1. INSTALL 6" CHECK VALVE AND BOX ON EXISTING 6" FORCE MAIN LINE TO ALLOW FOR TEMPORARY REVERSE FLOW. THE FORCE MAIN IN SECTION 2 SHALL DISCHARGE TO THE EXISTING TEMPORARY FORCE MAIN SET UP IN SECTION 1. WHEN THE INLAND BAYS PRESERVATION COMPANY WATER RECLAMATION FACILITY COMES ONLINE, THE FORCE MAIN DISCHARGES FROM SECTION 1 AND 2 SHALL BE REDIRECTED TO THE NEW FACILITY.



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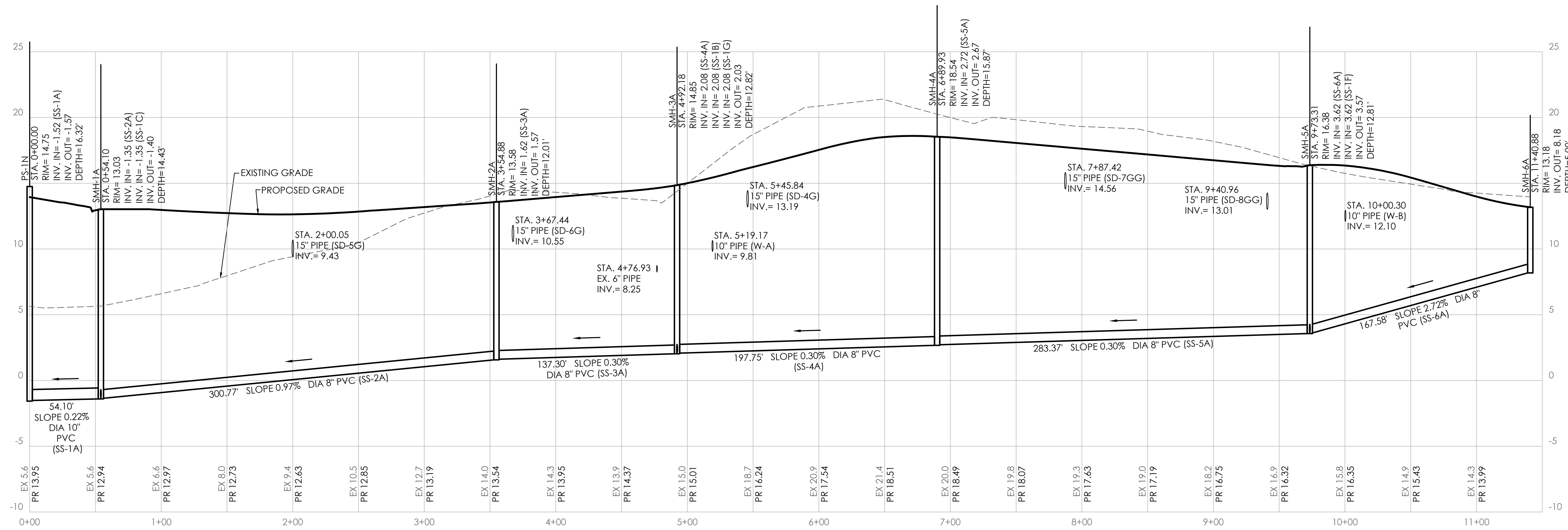
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 Date _____

| REVISIONS | |
|----------------------------------|----------|
| NO. | DATE |
| 1 | 05/17/26 |
| REVISIONS PER SCD & SCD COMMENTS | |

SANITARY SEWER PLAN B
 for
KEASTONE BAY - SECTION 2
 INDIAN RIVER HUNDRED
 SUSSEX COUNTY, DELAWARE

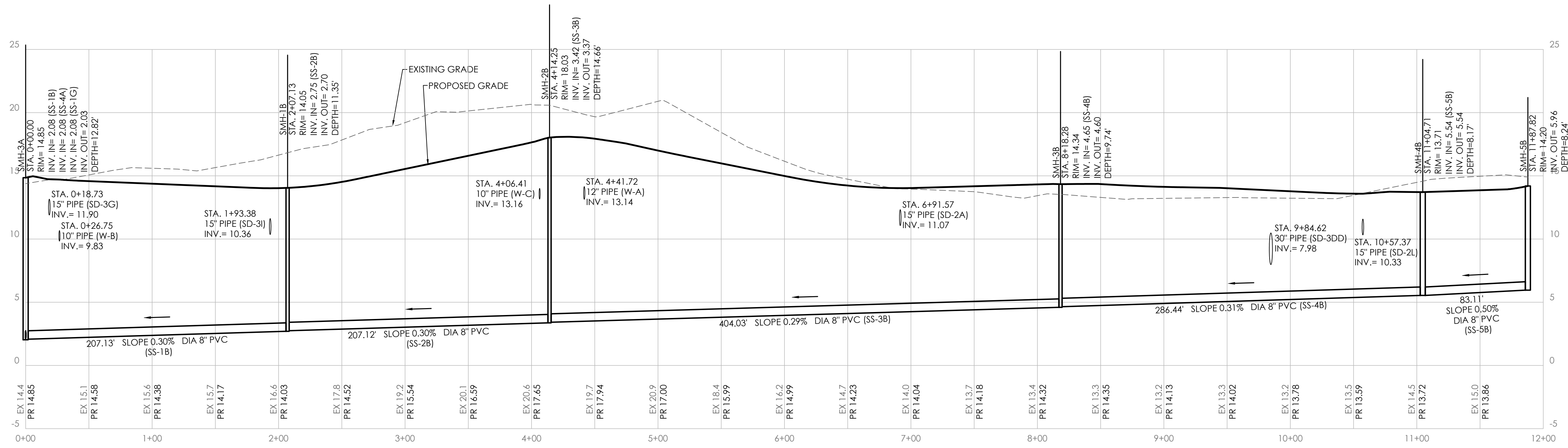
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|--------------|---------|
| Date: | 7/29/25 |
| Job Number: | 10006 |
| Scale: | 1"=50' |
| Drawn By: | ML |
| Designed By: | JP |
| Approved By: | JP |

Sheet No.: **20**
 File Name: 10006-P2-SEWER.dwg



P.S. 1N TO SMH-6A

SCALE: HORIZ.: 1"=50'
VERT.: 1"=5'



SMH-3A TO SMH-5B

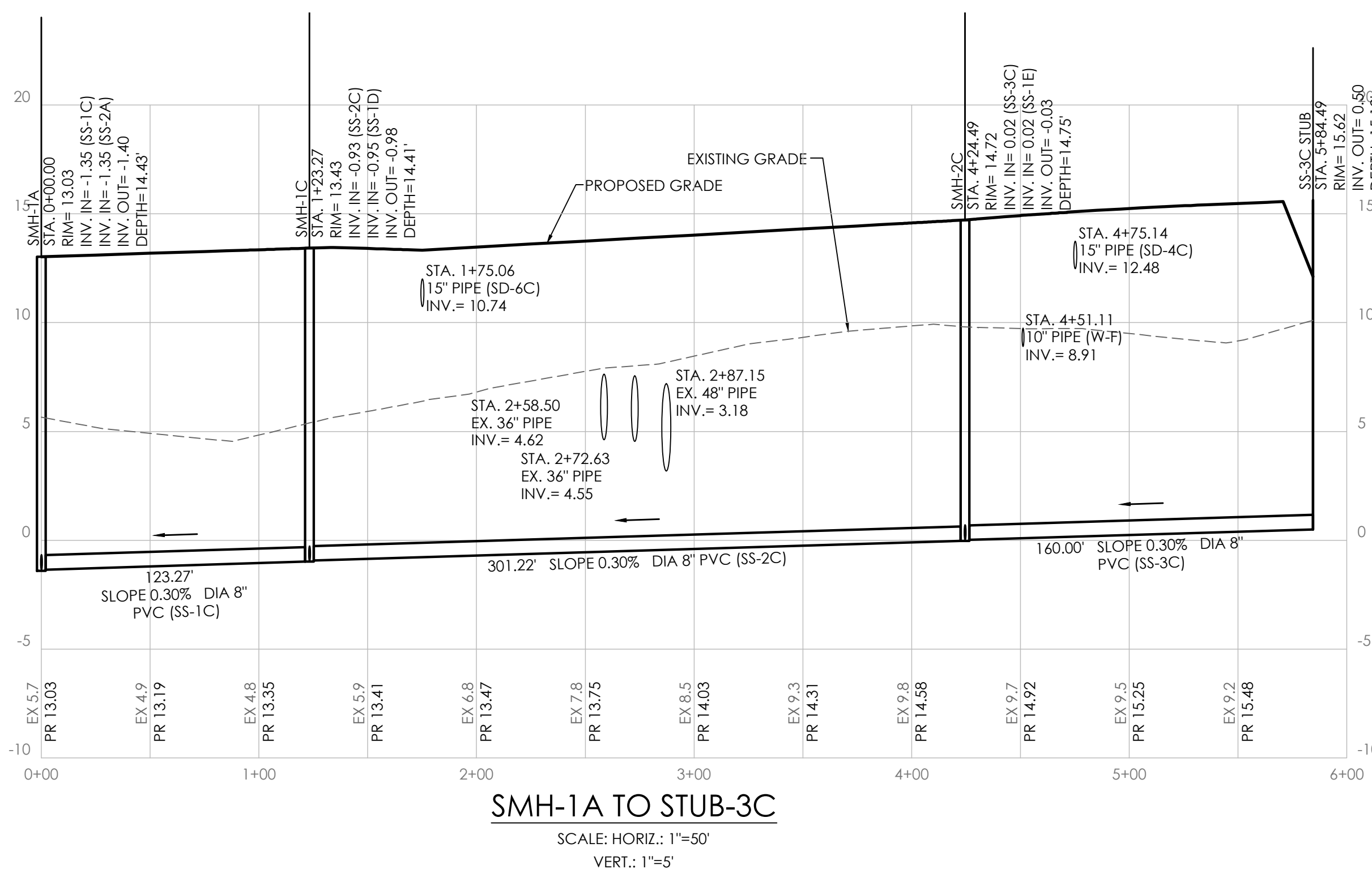
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VERT.: 1"=5'

Seal _____
Date _____

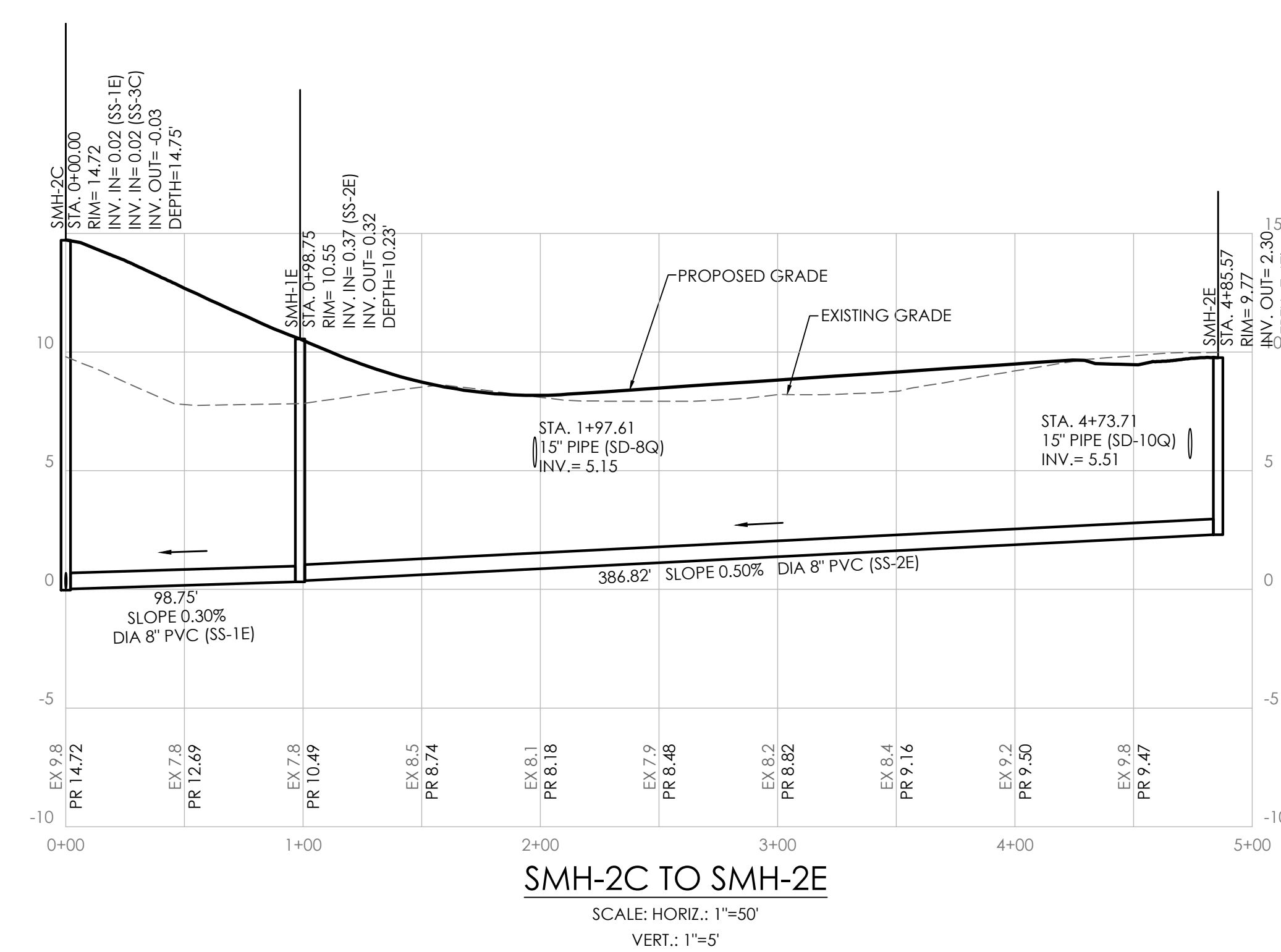
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|-----------|----------|-----------------------------------|
| NO. | DATE | DESCRIPTION |
| 1 | 05/11/26 | REVISIONS PER SCD & SCED COMMENTS |

SANITARY SEWER PROFILES 1
for
KEASTONE BAY - SECTION 2
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

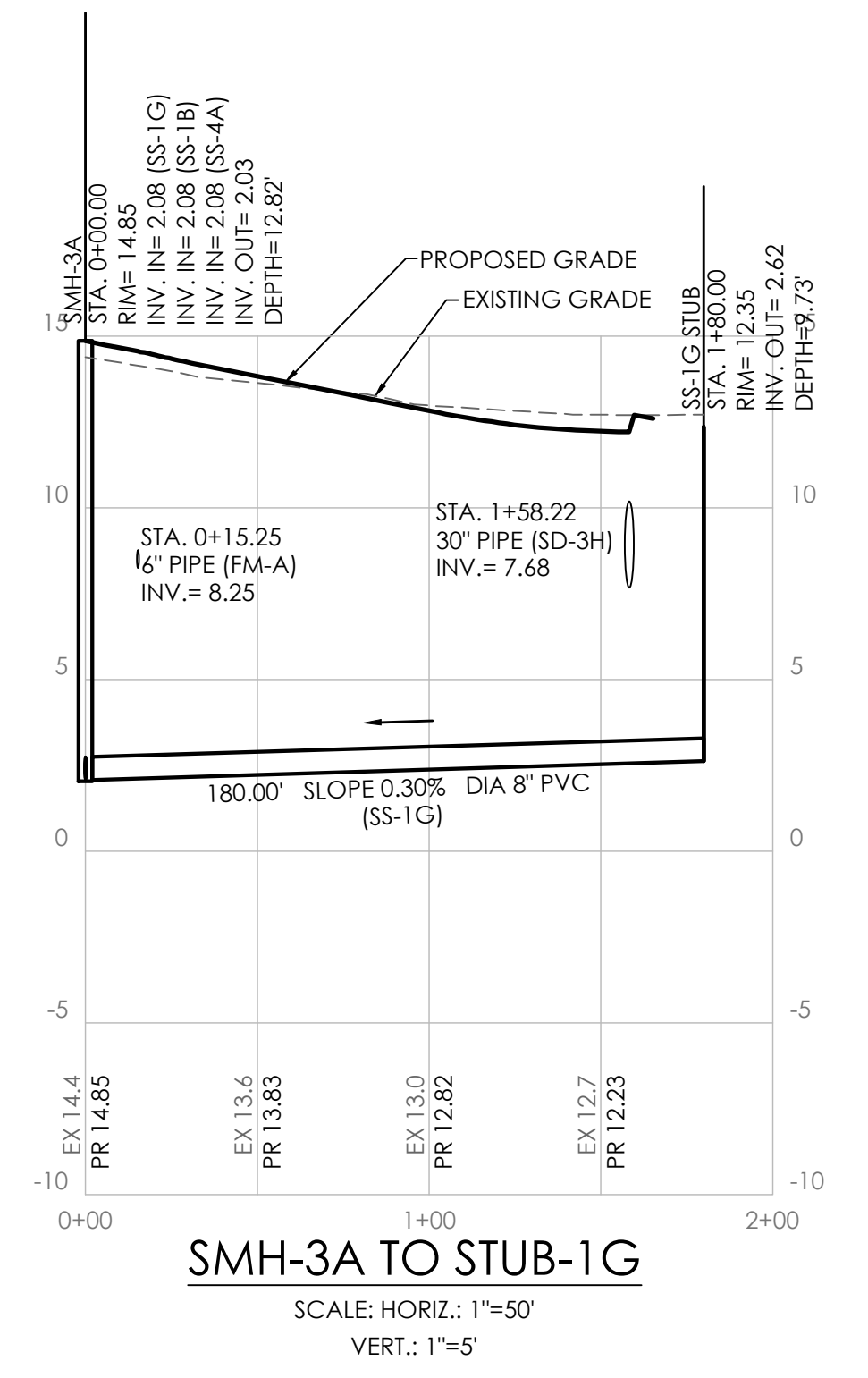
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| Date: | 7/29/25 |
| Job Number: | 10006 |
| Scale: | AS SHOWN |
| Drawn By: | HHB |
| Designed By: | HHB |
| Approved By: | JJP |



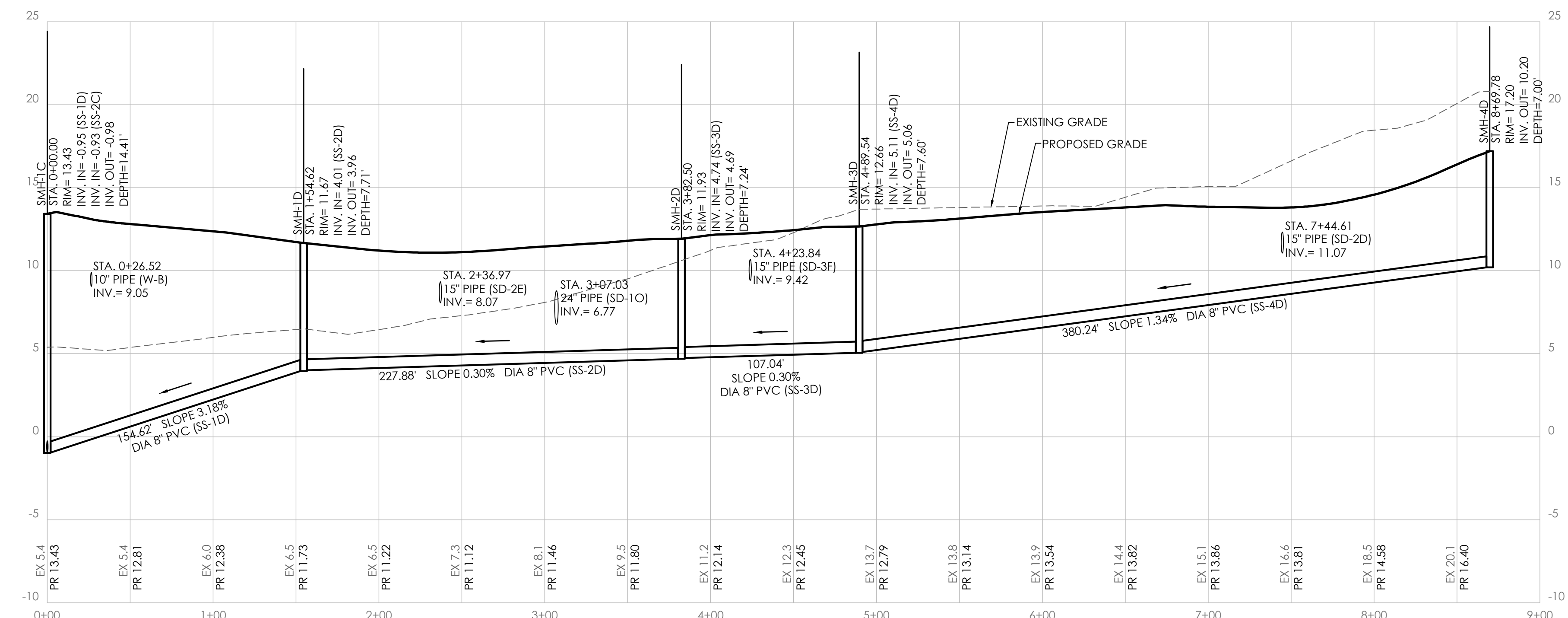
SMH-1A TO STUB-3C
SCALE: HORIZ.: 1"=50'
VERT.: 1"=5'



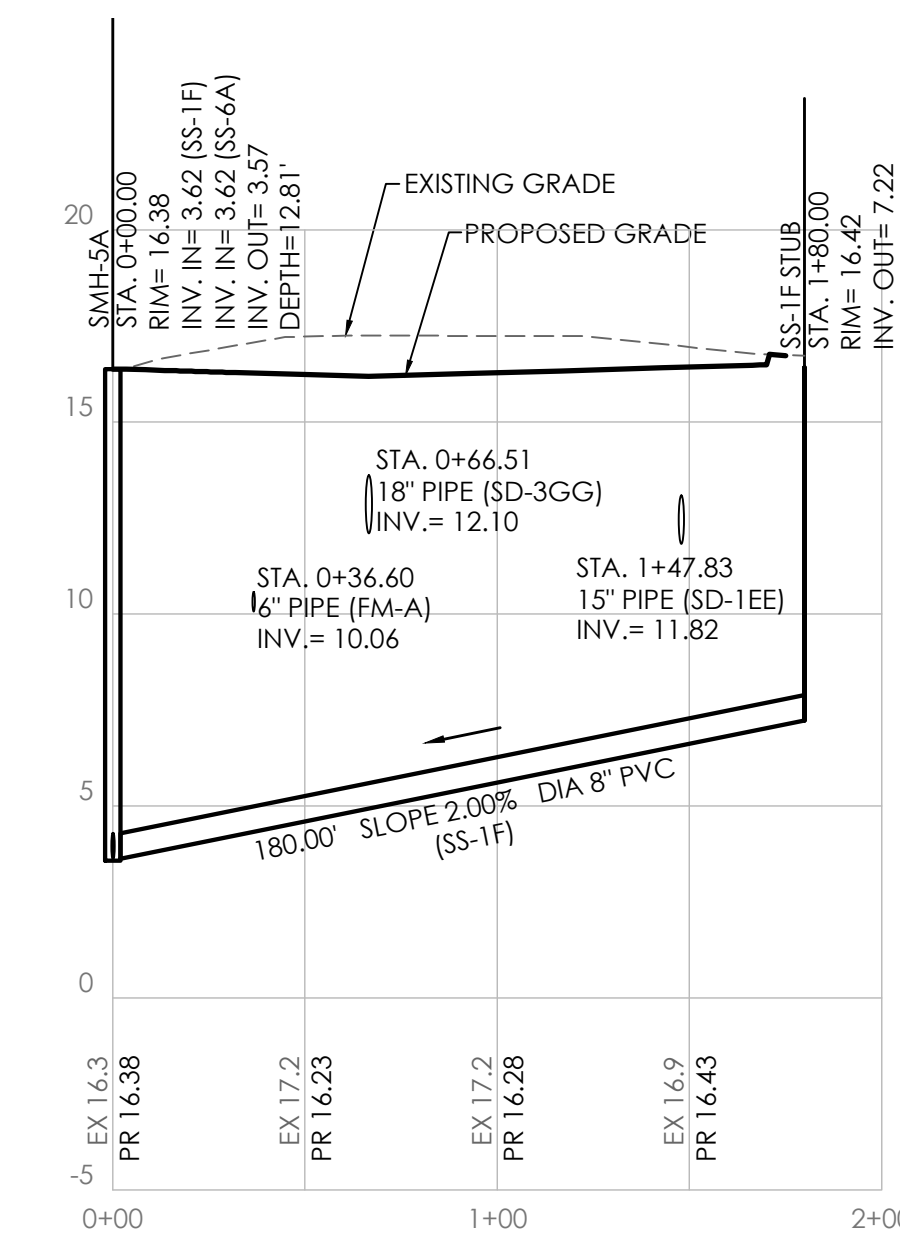
SMH-2C TO SMH-2E
SCALE: HORIZ.: 1"=50'
VERT.: 1"=5'



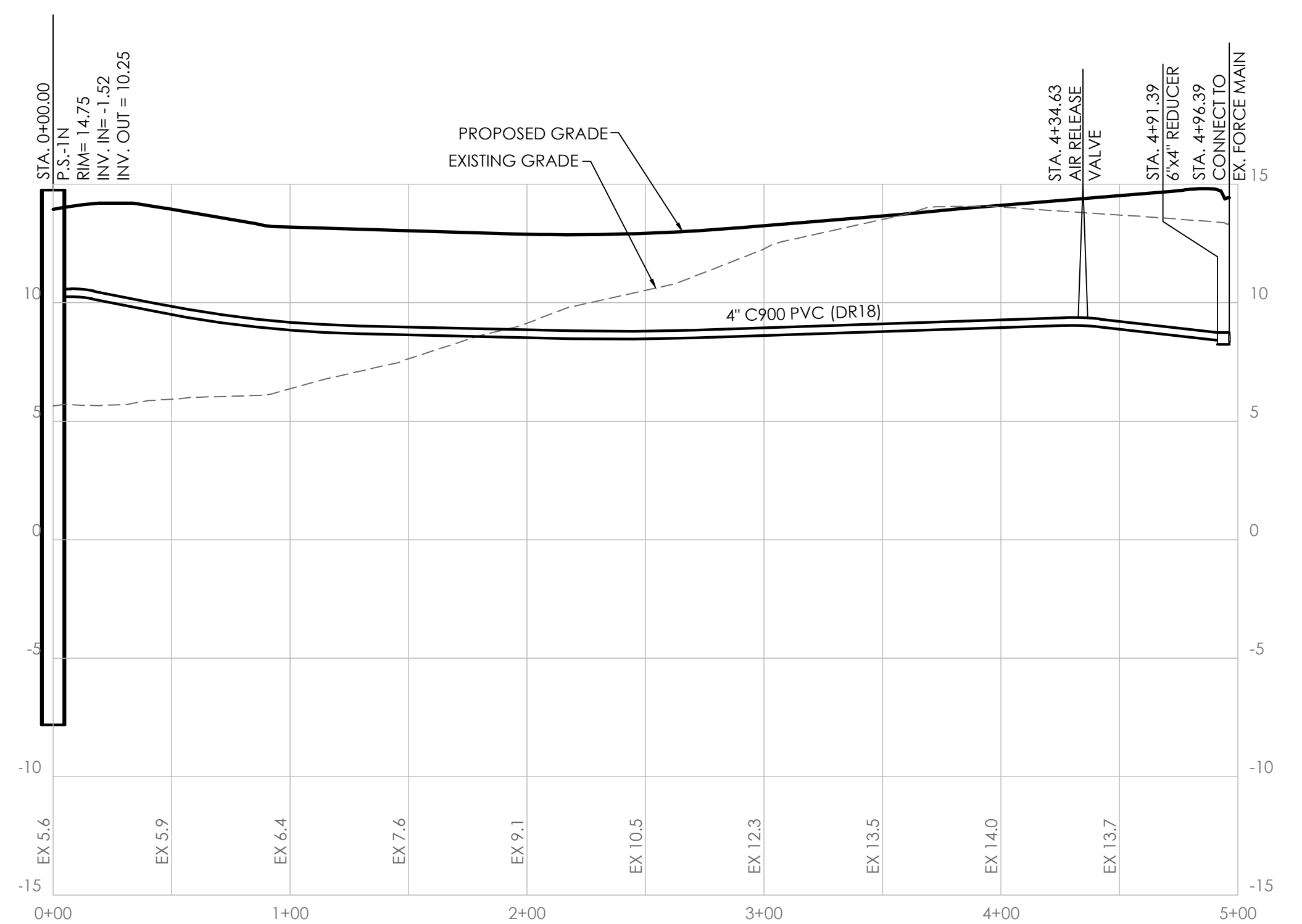
SMH-3A TO STUB-1G
SCALE: HORIZ.: 1"=50'
VERT.: 1"=5'



SMH-1C TO SMH-4D
SCALE: HORIZ.: 1"=50'
VERT.: 1"=5'



SMH-5A TO STUB-1F
SCALE: HORIZ.: 1"=50'
VERT.: 1"=5'



FORCE MAIN
SCALE: HORIZ.: 1"=50'
VERT.: 1"=5'

Seal _____
Date _____

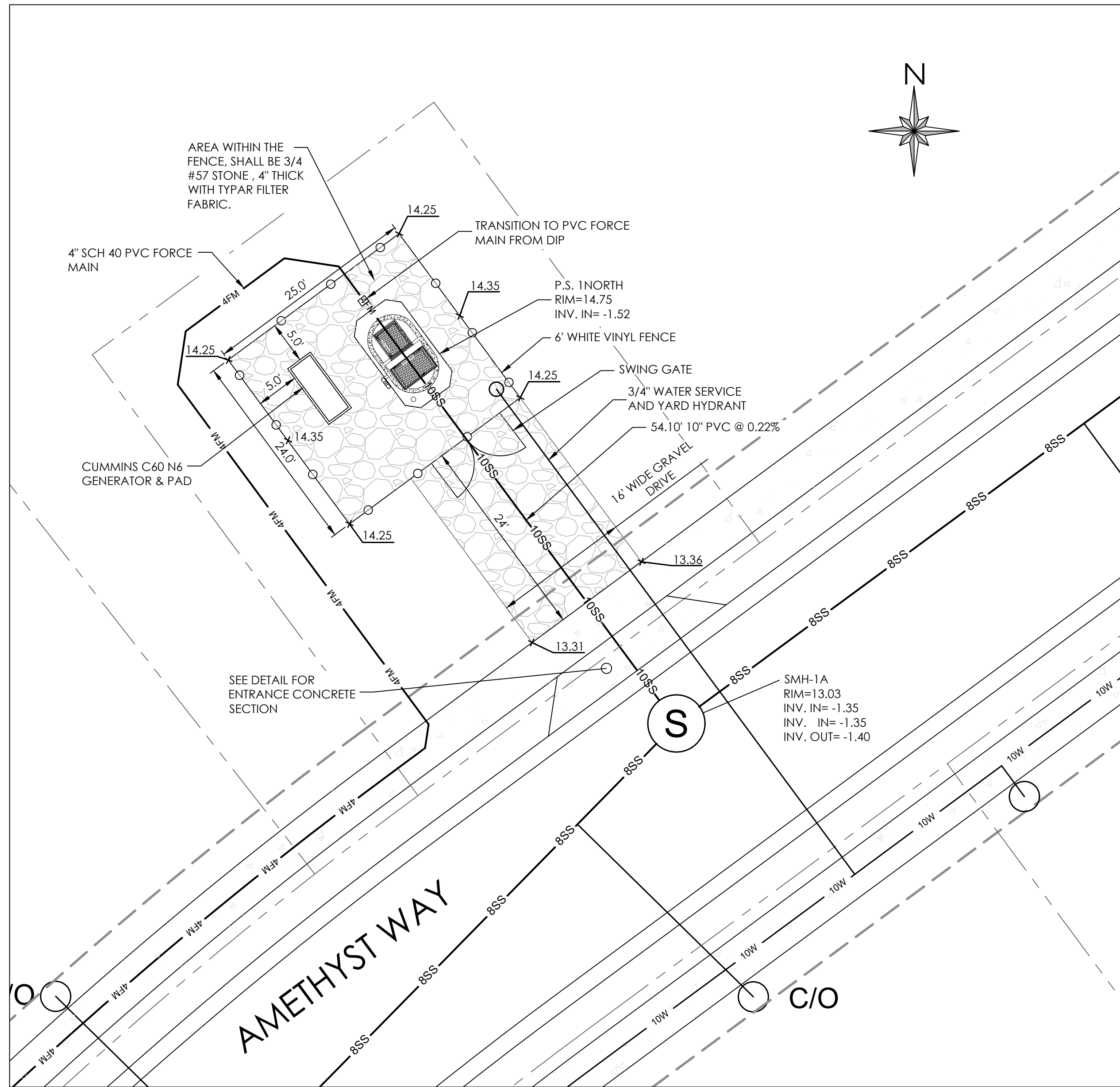
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|-----------|----------------------------------|
| NO. | DESCRIPTION |
| 1 | REVISIONS PER SCD & SCD COMMENTS |
| | DATE: 05/11/26 |

SANITARY SEWER PROFILES 2
for
KEASTONE BAY - SECTION 2
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

| | |
|--------------|----------|
| Date: | 7/29/25 |
| Job Number: | 10006 |
| Scale: | AS SHOWN |
| Drawn By: | HHB |
| Designed By: | HHB |
| Approved By: | JP |

Sheet No.: _____

PUMP STATION DESIGN AND CALCULATIONS BY MID ATLANTIC PUMP & EQUIPMENT



KEASTONE PUMP STATION FOR PS 1N

I. FLOW DATA:

| FLOW DATA | (gpd) | (gpm) |
|-------------------------|--------|-------|
| Estimate Flow (Average) | 54,750 | 38.0 |
| Design*(4 x Average) | | 153.0 |
| ACTUAL | | 190.0 |

II. FORCE MAIN DESIGN:

| Design F.M. Dia. (in.) | 4.266 | 6.134 |
|------------------------|-------|-------|
| Min. Velocity (fps) | 2.00 | 2.00 |
| Actual Velocity (fps) | 4.27 | 2.06 |

III. TOTAL HEAD:

A. Static Head

| | |
|----------------------|-------|
| High Point Elevation | 25 |
| Pump Off Elevation | -5.08 |
| Static Head | 30.08 |

B. Friction Head Loss

1. Force Main Friction Losses:

a. PVC Force Main:

| F.M. Dia. (in.) | 4.266 | 6.134 |
|-------------------|---------|-----------------|
| F.M. Material | SDR 21C | SDR 21C |
| F.M. Length (ft.) | 470 | 929 |
| 6-45° Elbows | | 48 |
| 6-45° Elbows | 36 | |
| Total Length | 506 | 977 |
| | | TOTAL FM |

2. Friction Losses Calculated Using Hazen Williams Formula:

$$HF = 0.2083 * ((100/C)^{1.852}) * (Q^{1.852}) / (D^{4.8655}) * (EL/100)$$

a. Friction Losses:

b. Station Losses- DI Pipe and fittings

| Equivalent Pipe Lengths | | | |
|---------------------------------------|-------------|-------------|-------|
| Units | Quantity 4" | Quantity 6" | |
| | C900 DR18 | C900 DR18 | |
| Flow (Q) | gpm | 190 | 190 |
| Length (L) | ft. | 506 | 977 |
| Pipe Dia. (D) | in | 4.266 | 6.134 |
| Coefficient C | - | 140 | 140 |
| Force Main Friction Loss (ft.) | | 8.07 | 2.66 |

PUMP STATION LOSSES

| DI PIPING | | | |
|---|-------------|----------------|---------------------------|
| Type of Fitting | Loss / Unit | Total Fittings | Equivalent 4" Pipe Length |
| | (ft.) | (ea.) | (ft.) |
| Linear Pipe Inside Station | 20 | 1 | 20 |
| 4" 90° Elbow | 6 | 3 | 18 |
| Tee | 12 | 1 | 12 |
| Check Valve | 12 | 1 | 12 |
| Gate Valve | 1 | 1 | 1 |
| Total Equivalent Pipe Length (ft.) | | | 42 |

$$HF = 0.2083 * ((100/C)^{1.852}) * (Q^{1.852}) / (D^{4.8655}) * (EL/100)$$

| Pump Station Data | | |
|-------------------|-----|-----|
| Units | 4" | |
| Pipe ID(Inches) | 4.1 | |
| Flow (Q) | gpm | 190 |
| Coefficient C | - | 130 |

Friction Loss PVC (ft.)-Station 0.93

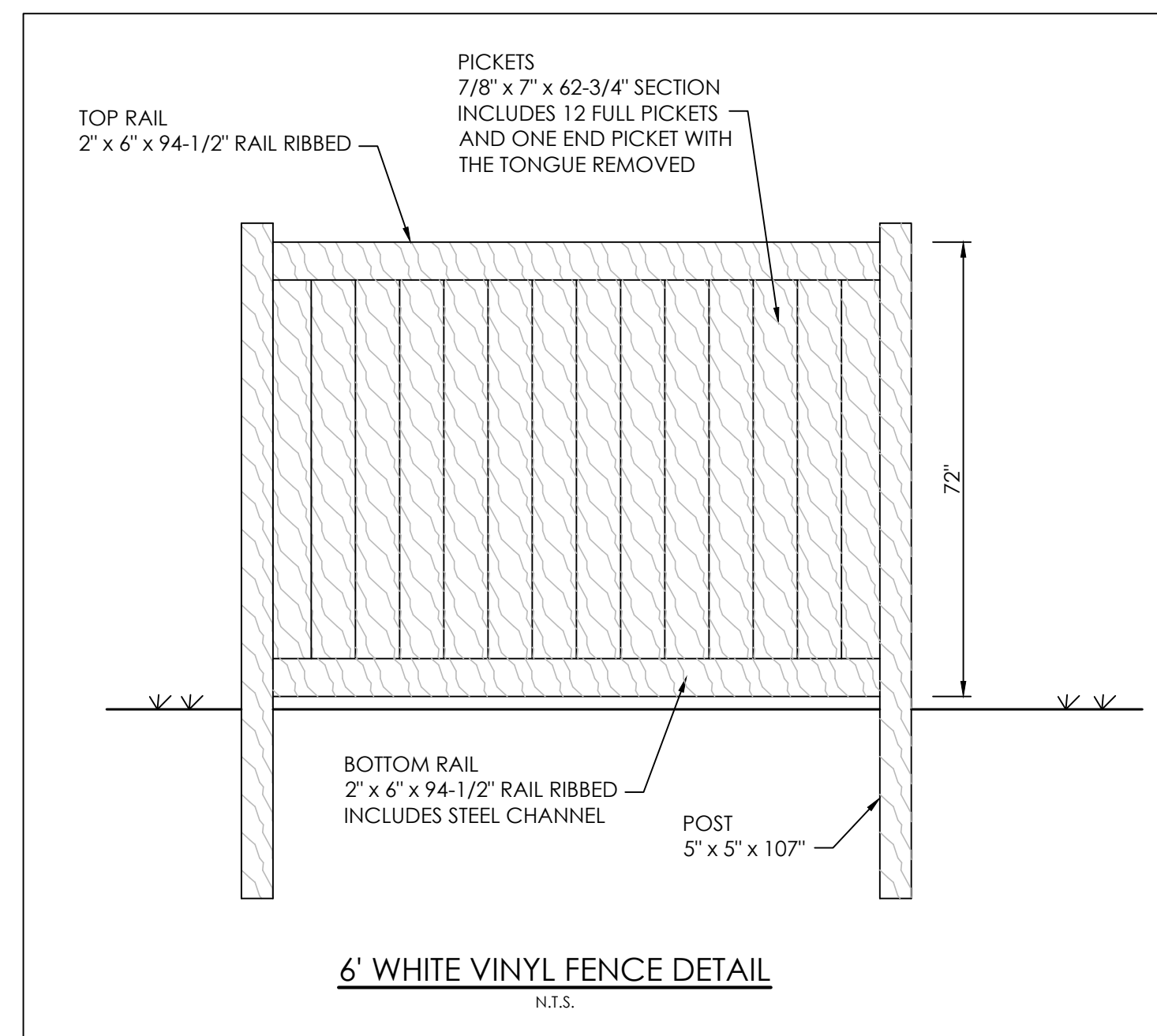
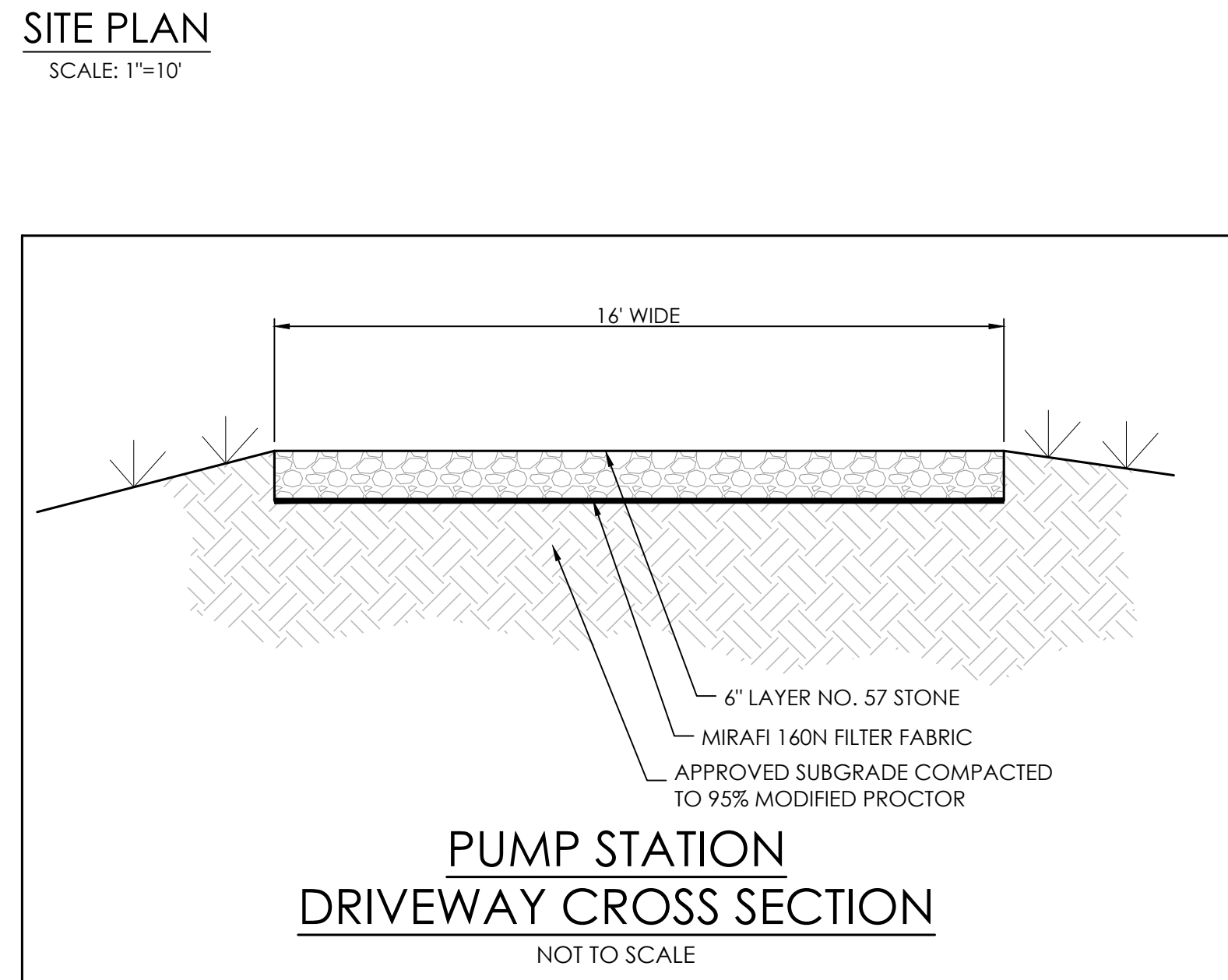
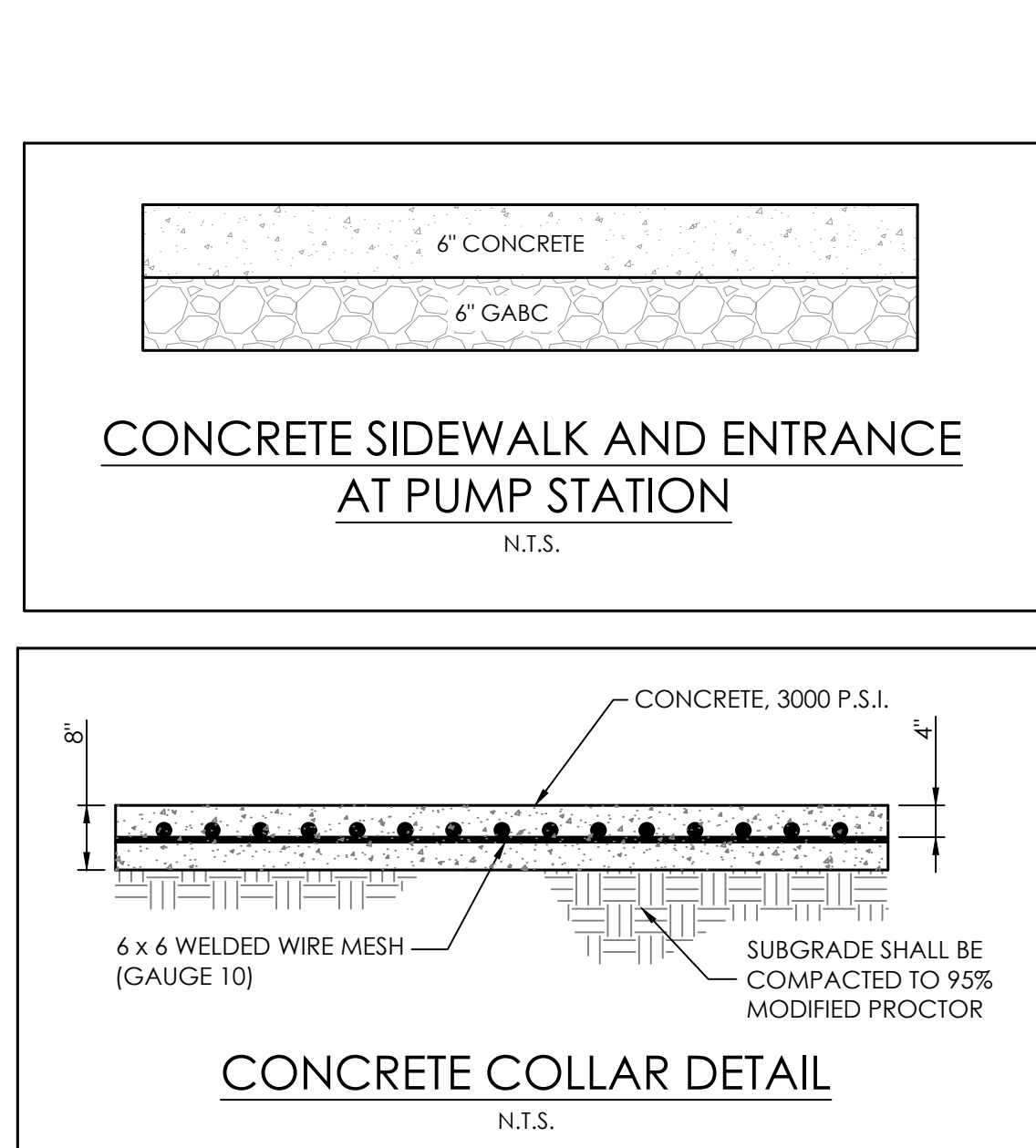
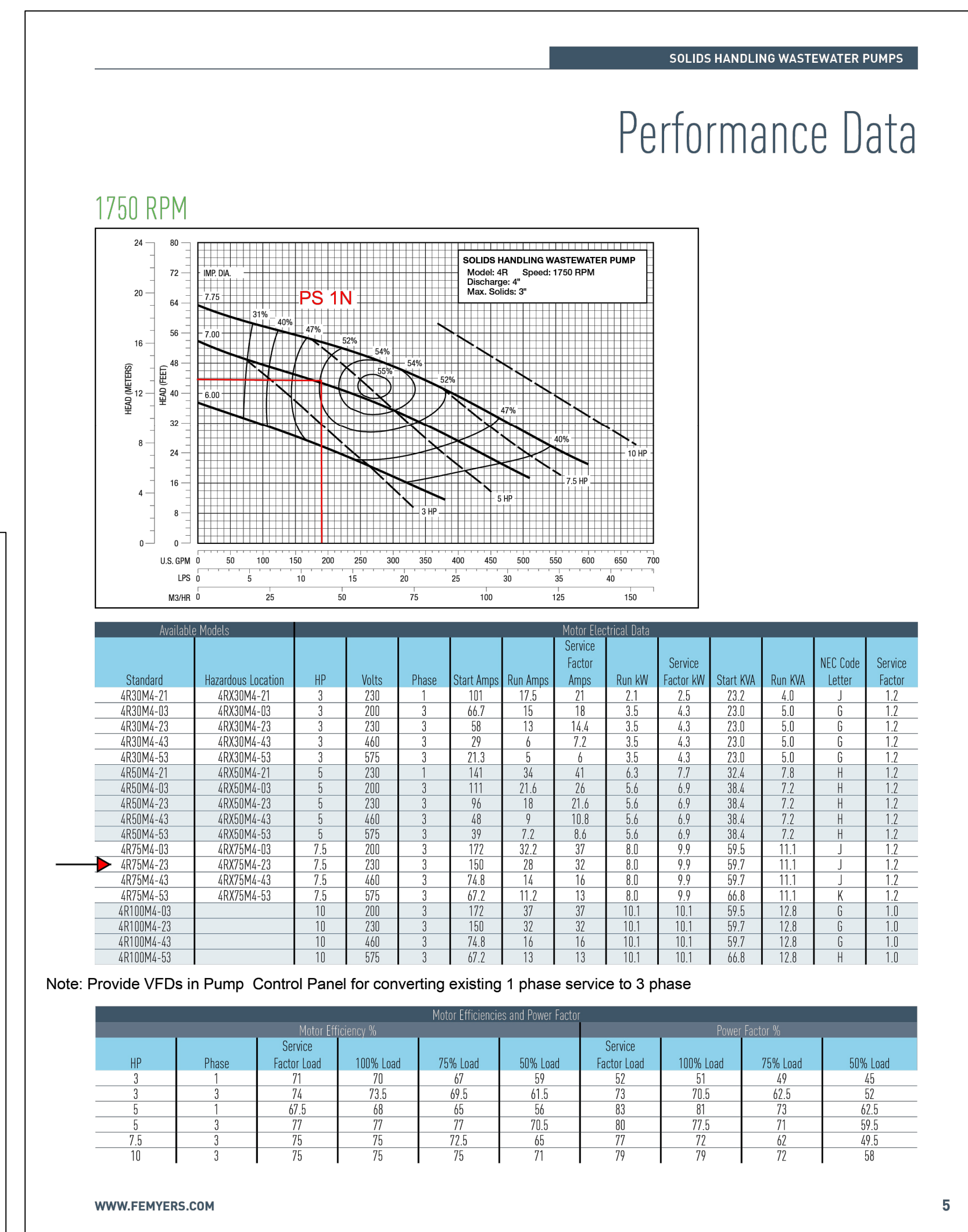
C. Total Dynamic Head

| | |
|---------------------------------|--------------|
| Static Head | 30.08 |
| FM Friction Losses | 10.74 |
| Station Friction Losses | 0.93 |
| 5% SF | 2.15 |
| Total Dynamic Head (ft.) | 43.90 |

D. PUMP MODEL: 4R75

IV. PUMP STATION DATA

| | |
|--|---------|
| Rim Elevation, Ft. | 14.75 |
| Invert inlet Elev, Ft. | -1.52 |
| Bottom Of Station, Elev, Ft. | -7.08 |
| Pump Off Elev, Ft. | -5.08 |
| Lead Pump On Elev, Ft. | -4.08 |
| Lag Pump On Elev, Ft. | -3.33 |
| HW Alarm Elev, Ft. | -2.83 |
| Wet Well Size | 5' x 9' |
| Wet Well Volume, Gal/Ft | 297 |
| Pump Down Volume | 297 |
| V DETENTION TIME | |
| $T = V / Q_{in} + V / (Q_{pump} - Q_{in})$ | 9.8 |
| V = 297.0 | |
| Q _{in} = 38.0 | |
| Q _p = 190.0 | |



Seal _____

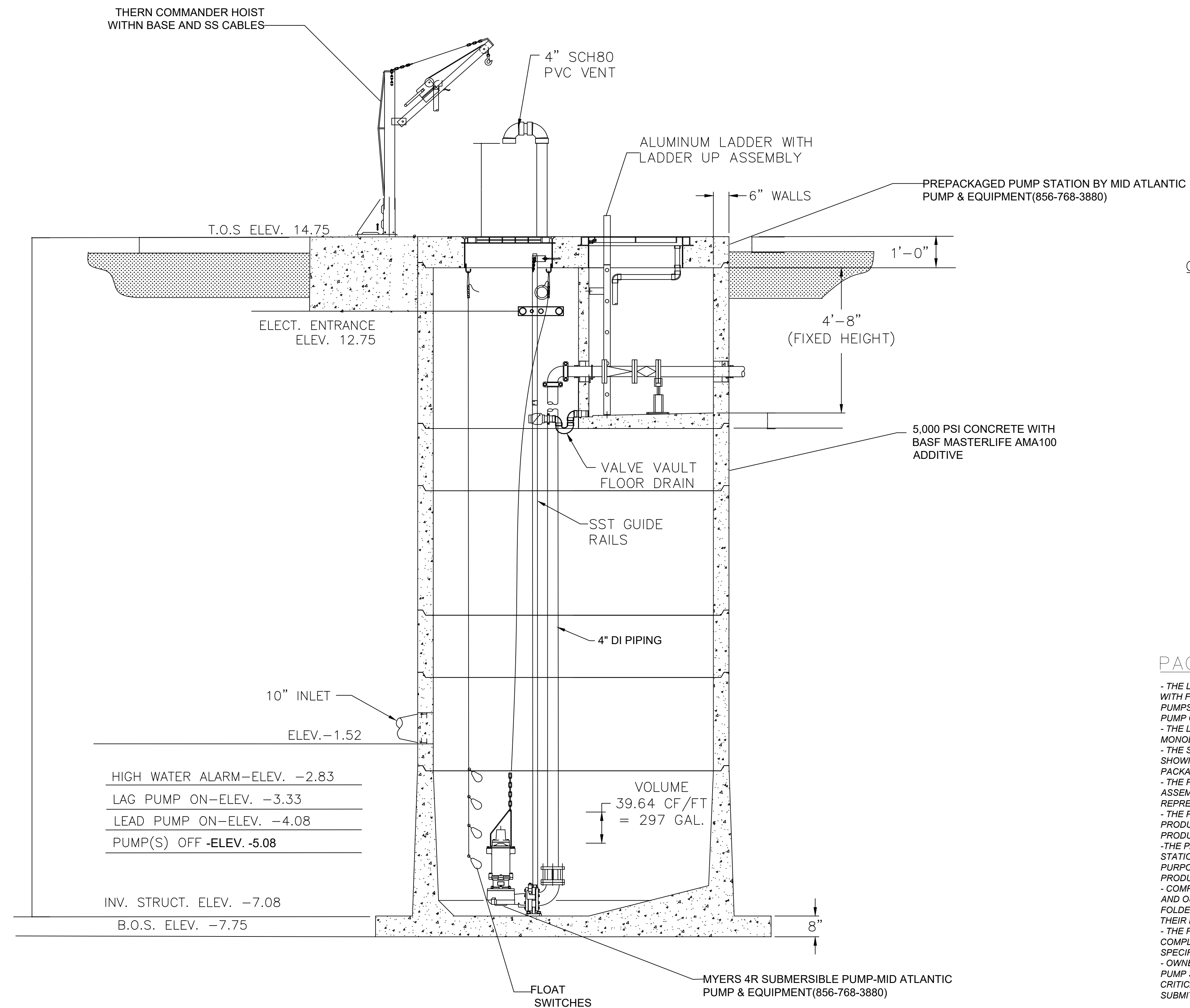
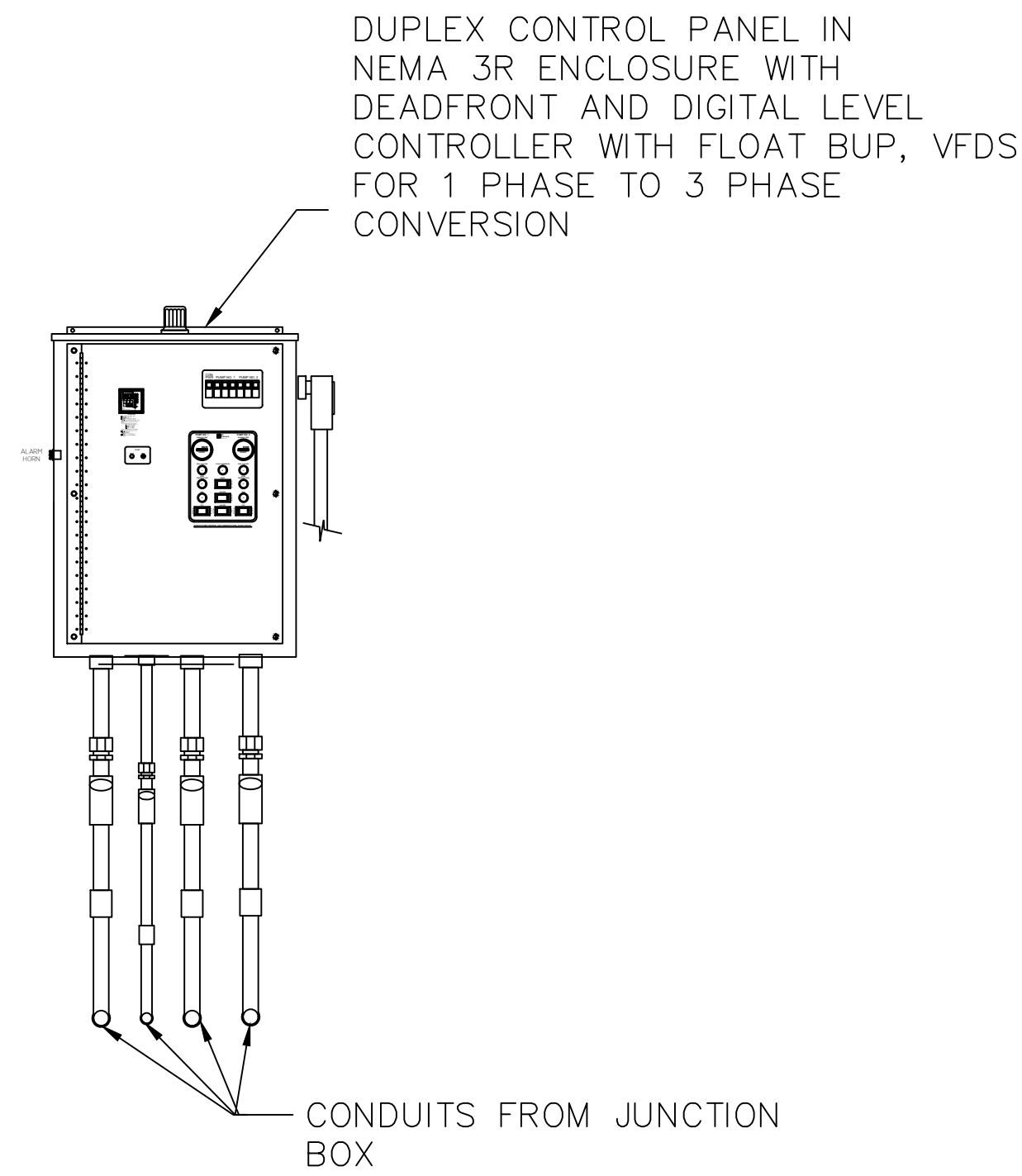
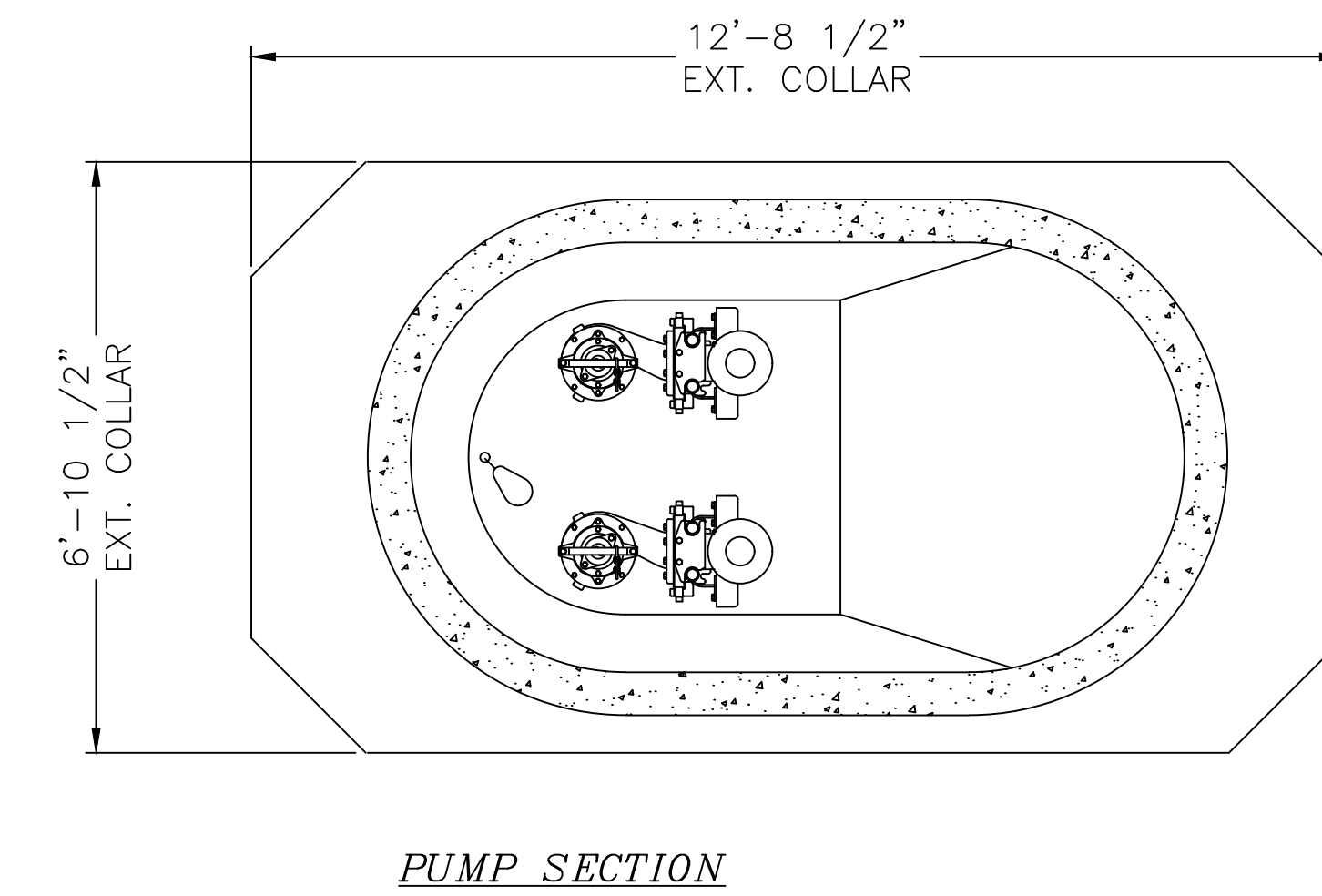
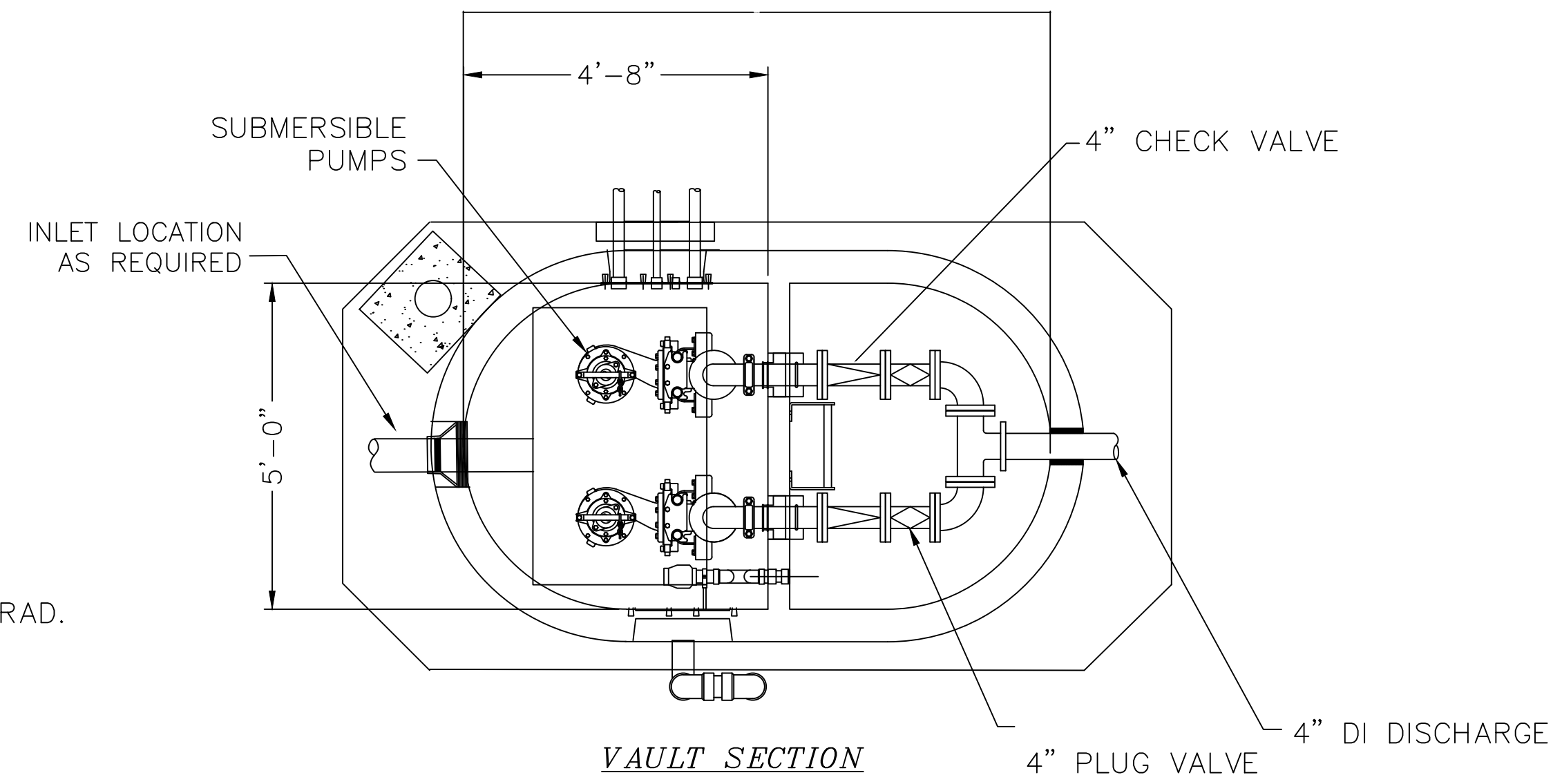
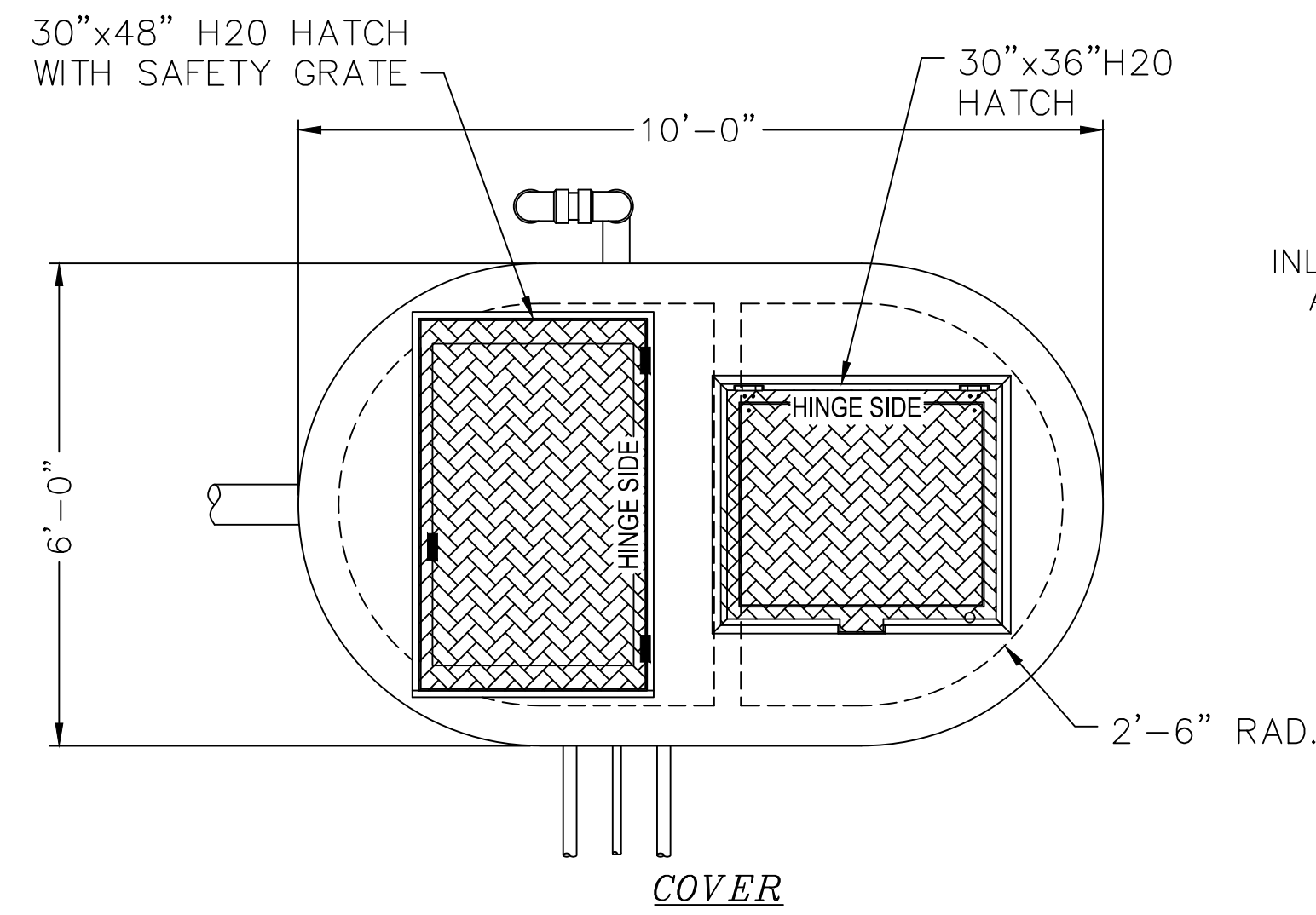
Date _____

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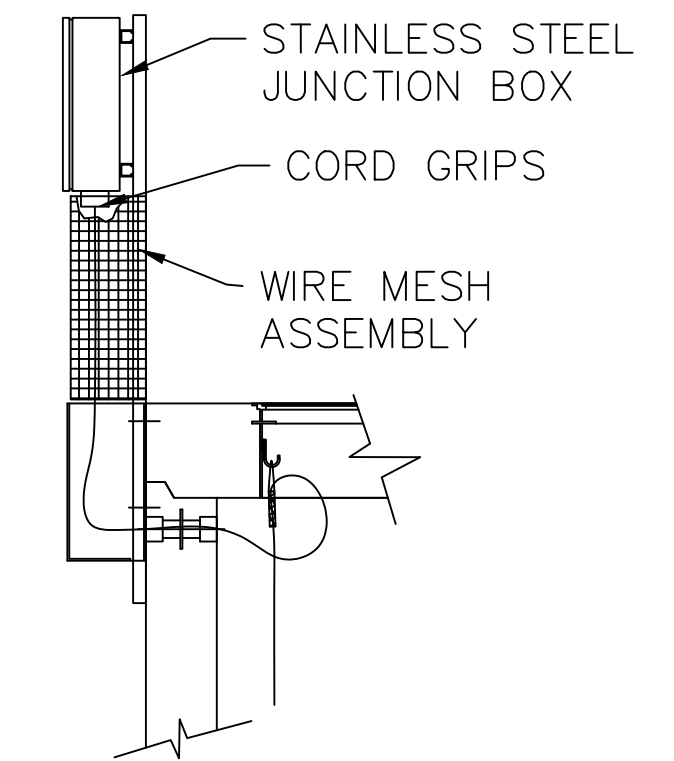
PUMP STATION SITE PLAN for

KEASTONE BAY - SECTION 2

INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE



OPTIONAL JUNCTION BOX DETAIL



PACKAGE LIFT STATION NOTES:

- THE LIFT STATION SHALL BE SUPPLIED AS A TURN-KEY PACKAGE WITH FULL MANUFACTURE'S RESPONSIBILITY FOR STRUCTURE, PUMPS, PIPING, VALVES, SUPPORTS, ACCESS EQUIPMENT, DUPLEX PUMP CONTROLS, AND ALL RELATED ITEMS AS SHOWN HEREIN.
- THE LIFT STATION STRUCTURE SHALL BE ROUNDED CORNER, MONOLITHICALLY CAST TO REDUCE RESIDUAL BUILD-UP
- THE STRUCTURE SHALL INCLUDE AN INTEGRAL VALVE VAULT AS SHOWN TO ELIMINATE DIFFERENTIAL SETTLEMENT AND REDUCE PACKAGE FOOTPRINT SIZE ON SITE.
- THE PACKAGE LIFT STATION SHALL BE FACTORY STACKED AND ASSEMBLED IN ITS ENTIRETY, AND FACTORY INSPECTED BY OWNER'S REPRESENTATION PRIOR TO LOADING FOR SITE DELIVERY
- THE PACKAGE LIFT STATION SUPPLIER SHALL BE AVAILABLE FOR PRODUCT COORDINATION MEETINGS PRIOR TO PRODUCT PRODUCTION, AND ON SITE FOR PRODUCT INSTALLATION OVERSIGHT.
- THE PACKAGE LIFT STATION SUPPLIER SHALL BE ON SITE DURING STATION TESTING AND STATION START-UP & TRAINING FOR THE PURPOSES OF PRODUCT ADJUSTMENT, DEMONSTRATION, AND PRODUCT Q&A.
- COMPLETE PACKAGE DOCUMENTATION (SUBMITTALS, DRAWINGS AND O&M MANUALS) SHALL BE SUPPLIED UNDER "ONE" BOUND FOLDER EACH BY THE PACKAGE LIFT STATION MANUFACTURER OR THEIR DISTRIBUTOR.
- THE PACKAGE LIFT STATION SUPPLIER SHALL BE RESPONSIBLE FOR COMPLETE PACKAGE WARRANTIES THROUGH THE TIME PERIOD AS SPECIFIED.
- OWNER'S REPRESENTATIVES SHALL COORDINATE AND VERIFY ALL PUMP STATION INLET SIZES AND LOCATIONS, AS WELL AS ALL CRITICAL ELEVATIONS PRIOR TO COMMENCEMENT OF PRODUCT SUBMITTALS.

PUMP STATION DESIGN AND CALCULATIONS BY MID ATLANTIC PUMP & EQUIPMENT

Seal _____
Date _____

| NO. | DATE | DESCRIPTION |
|-----|----------|----------------------------------|
| 1 | 05/11/26 | REVISIONS PER SCD & SCD COMMENTS |

PUMP STATION DETAILS
for
KEASTONE BAY - SECTION 2
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

| | |
|--------------|----------|
| Date: | 7/29/25 |
| Job Number: | 10006 |
| Scale: | AS NOTED |
| Drawn By: | ML |
| Designed By: | HHB |
| Approved By: | JP |

Sheet No.: 25