



APEX ENGINEERING INCORPORATED

27 WEST MARKET STREET
(302) 994-1900

NEWPORT, DE 19804
(302) 994-9099 FAX

www.apexengineeringinc.com

February 8, 2024

Apex Project #23194.000

Derrick P. Caruthers
Environmental Engineer
DNREC Division of Water
89 Kings Hwy.
Dover, DE 19901

RE: Quarry Walk, Yorklyn Road Hockessin
Temporary Holding Tank Application
Lots 1 through 16 and Lots 20 through 28 (25 Lots)
Tax Parcel #'s 08-008.10-117 to -120, 08-008.10-083 to -103
REVISED

Dear Mr. Caruthers –

The Quarry Walk subdivision was approved by New Castle County and recorded on May 25, 2016 per Instrument # 20160525-0024556. The subdivision consists of 61 attached dwelling units to be serviced by a pump station that is to be constructed by New Castle County and connected to the sanitary sewer in Yorklyn Road. Unfortunately, the County's timing for the construction of the pump station does not coincide with that of the construction of the dwellings by the developer; therefore, we are requesting permission to install a series of temporary holding tanks (10 total) to provide sanitary sewer service for 25 lots (referenced above) until such time that the pump station is constructed and functioning.

We are proposing to install twelve (12) Infiltrator 1,500-gallon tanks for a total capacity of 18,000 gallons (actual working capacity 18,444 Gal (1537 Gal/Tank x 12 Tanks)). Per DNREC's requirements, 90% of the 18,000 gallons is 16,200 gallons (actual 16,599 Gal). The daily usage of the 25 homes is as follows:

- 25 attached dwellings = (25) x 300 GPD/Lot = 7,500 GPD
- Tank to pumped out every two (2) days = 2 days x 7,500 GPD = 15,000 Gal

Based on the soils report prepared by Advanced GeoServices for the subject subdivision, no water was not detected at 18 feet; therefore, groundwater and the potential for the tank becoming buoyant is not a factor.

Derrick P. Caruthers

February 8, 2024


Page 2 of 2

Attached with this submission are the following items highlighted items. The unhighlighted items were submitted on 2/5/2024:

- a) DNREC Application Form
- b) \$750 Application Fee
- c) \$210 Advertisement Fee
- d) Project overview (noted in this cover letter)
- e) Zoning Certificate (NCC Parcel Information provided for Lots 1 through 16 and 20 through 28)
- f) Design Flows (noted in this cover letter)
- g) Number of Dwelling Units (noted in this cover letter)
- h) Location Plan
- i) Infiltrator Tank Spec Sheet; Sizing calculations noted in this cover letter
- j) Tank and Alarm specifications
- k) Non-Hazardous Liquid Waste Transporters Permit
- l) Copy of agreement with a licensed operator and license certification

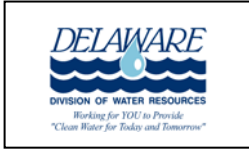
If you need any additional information, please do not hesitate to ask. If you have any questions or comments regarding the attached information, please feel free to contact me by email (cohms@apexengineeringinc.com) or by phone (302)994-1900, x-206.

Sincerely,



Carol W. Ohm, P.E.

Vice President



APPLICATION - PERMIT ON-SITE WASTEWATER SYSTEM



(Please Type or Print Legibly)

OWNER'S NAME: Quarry Walk LLC PHONE: _____

ADDRESS: 810 Yorklyn Road, Hockessin DE 19707

PROJECT LOCATION: Quarry Walk, Abner Road, Hockessin, DE 19707, approximately 1200 feet north of Old Wilmington Road

Lot #'s 1 through 8 TAX/MAP #: 08-008.10-117 to -120; 08-008.10-083 to -103

APPLICATION PREPARER: Carol W. Ohm DNREC LICENSE #: 2398

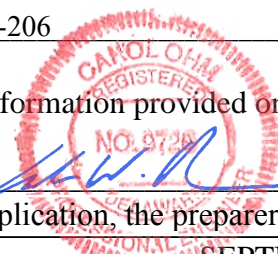
PREPARER'S ADDRESS: Apex Engineering Inc., 27 W Market Street, Newport, DE 19804

PHONE: (302)994-1900, x-206

I hereby affirm that the information provided on this document is accurate and complete.

Preparer's Signature:  Date: 1/5/2024

By signing this permit application, the preparer further certifies they were physically present at the site.



-SEPTIC DESIGN CRITERIA-

(Please check all boxes that apply)

System Type: (CF = Cap & Fill / FD = Full Depth)

- | | |
|--|--|
| <input type="checkbox"/> Gravity (FD) | <input type="checkbox"/> Permanent Holding Tank |
| <input type="checkbox"/> Gravity (CF) | <input type="checkbox"/> Elevated Sand Mound |
| <input type="checkbox"/> Pressure Dose (FD) | <input type="checkbox"/> Wisconsin At-Grade |
| <input type="checkbox"/> Pressure Dose (CF) | <input type="checkbox"/> Subsurface Micro Irrigation |
| <input type="checkbox"/> Low Pressure Pipe (FD) | <input type="checkbox"/> Peat Bio- Filter |
| <input type="checkbox"/> Low Pressure Pipe (CF) | <input type="checkbox"/> Other _____ |
| <input checked="" type="checkbox"/> Temporary Holding Tank | |

- Bed or Trench
- Gravelless Chamber Stone/Gravel Tire Chips
- Sand-lined Yes No

Existing System Malfunctioning Yes No N/A

Pre-Treatment Units

Septic Tank

Other Temporary Holding Tank

Central Water Available Yes No
(If yes, please state Utility Name: Artesian)

Type of Construction:

- Replacement
- New Construction
- Component Replacement
Component: _____
- Repair to Existing System
Reason: _____

Authorization to Use Existing System
Permit #: _____
Present Condition: _____
Structure to be connected: _____

of Bedrooms: 3 bdrms/Lot - 25 lots
Avg. Percolation Rate: N/A
Gallons Per Day Flow: 7,500 GPD*
Maximum Volume Permitted 16,200 Gal**
Volume Proposed: 15,000 Gal

* and ** SEE NEXT PAGE

- SITE PLAN & CROSS SECTION -
(INDICATE DIRECTIONS OF NORTH & SCALE OF SITE PLAN)

Draw a general location map of project location and give distance to nearest road junction.

See Quarry Walk Site Plan (Apex File #23194 Temporary Septic Tank Location Map) for location of proposed Holding Tanks

VOLUME CALCULATIONS

* Each attached dwelling = 300 GPD
Holding tank to be pumped every
2 days - 600 Gal/Lot
25 Lots Proposed - 15,000 Gal/Pumping

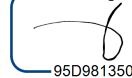
** (12) 1,500 Gal Tanks Propose (18,000 Gal)
90% Capacity - 16,200 Gal

*** ALARM: Required to be set at 75% of capacity
Each 1,500 Gal tank - 75% capacity = 1,125 Gal

Liquid Level of tank is 44"

75% of 44" = 33" ----- Alarm should be set at an elevation of 33" above the bottom of the tank(s).

DocuSigned by:

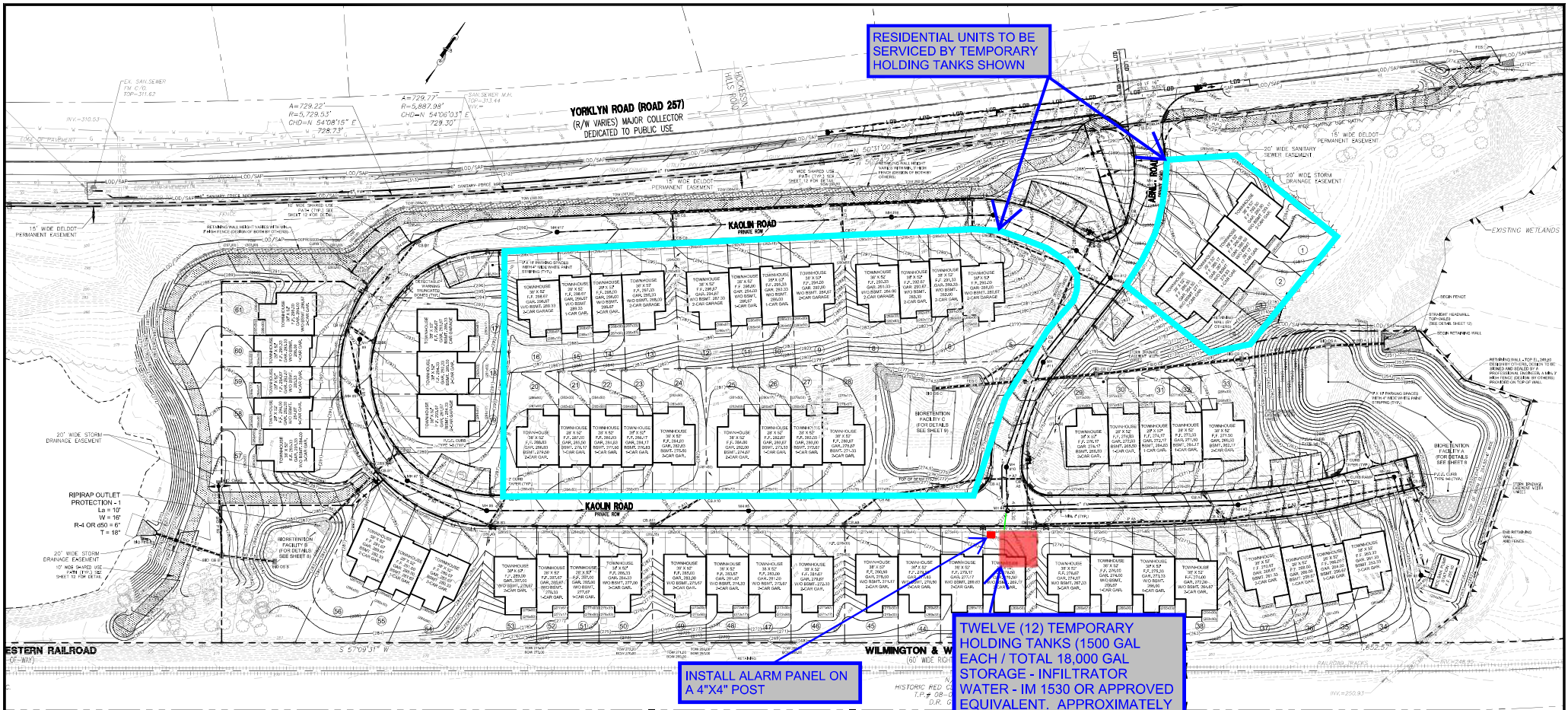

95D981350CBB45D...

2/9/2024

OWNER'S/AUTHORIZED AGENT SIGNATURE: _____

DATE: _____

- A copy of this page must be submitted with both septic system and well construction report(s)



RESIDENTIAL UNITS TO BE SERVICED BY TEMPORARY HOLDING TANKS SHOWN

TWELVE (12) TEMPORARY HOLDING TANKS (1500 GAL EACH / TOTAL 18,000 GAL STORAGE - INFILTRATOR WATER - IM 1530 OR APPROVED EQUIVALENT. APPROXIMATELY 39' X 34' FOOTPRINT

INSTALL ALARM PANEL ON A 4'X4' POST

CONSTRUCTION NOTES:

1. ALL WORK AND MATERIALS WILL BE IN ACCORDANCE WITH THE NEW CASTLE COUNTY STANDARD SPECIFICATIONS AND DETAILS, AND/OR THE DELAWARE DEPARTMENT OF TRANSPORTATION (DEDOT) STANDARD SPECIFICATIONS, DATED JULY 1995, AND THE DEDOT STANDARD DETAILS, LATEST REVISION, OR AS MODIFIED BY THESE PLANS.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, FEBRUARY 2019.
3. MATCH PROPOSED PAVING AND CURBING ELEVATIONS TO EXISTING PAVING AND CURBING ELEVATIONS WHEREVER THEY ADJOIN.
4. SAW CUT AT THE JUNCTION FOR ALL EXISTING PAVEMENT, AND FOR ALL PAVEMENT RELATIONS.
5. PLAN LOCATIONS AND DIMENSIONS SHALL BE STRICTLY ADHERED TO, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
6. ALL RADIUS AND DIMENSIONS ARE MEASURED TO THE FACE OF CURBS, UNLESS OTHERWISE NOTED.
7. ALL CONSTRUCTION SHALL NOTIFY MISS UTILITY AT 1-800-282-8555 A MINIMUM OF 72 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.
8. EXISTING AERIAL UTILITIES ARE NOT SHOWN.
9. STORM DRAINAGE PIPE: A. ALL CORRUGATED PLASTIC DRAINAGE PIPE SHALL BE HIGH DENSITY CORRUGATED POLYETHYLENE HAVING A MINIMUM (N) VALUE OF 0.010 (NOTE: N-1) AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC. OR APPROVED EQUAL. UNLESS OTHERWISE NOTED, ALL PIPE LENGTHS INCLUDE FLOATED END SECTION (HDS) WHEN APPLICABLE. PIPE JOINTS SHALL BE WATER-TIGHT.
10. ALL PIPE BEDDING SHALL MEET THE REQUIREMENTS OF CLASS "C" UNLESS OTHERWISE NOTED.
11. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THERE IS SUFFICIENT COVER ON ALL RIPPING EXCAVATION OR CONSTRUCTION.
12. ALL PROPOSED UNDERGROUND UTILITIES SHALL BE MARKED WITH 6-INCH WIDE MINIMUM METALLIC MARKING TAPE OF APPROPRIATE COLOR AND MESSAGE TO CONFORM TO UTILITY BURIED BENEATH IT AND SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.
13. ALL UTILITY EXCAVATION SHALL BE KEPT DRY AT ALL TIMES.
14. PROVIDE EROSION CONTROL MATTING ON ALL SLOPES 3:1 OR STEEPER. ALL EARTHEN SLOPES WITH A SLOPE GREATER THAN 2:1 SHALL BE CONSIDERED NON-MOVABLE AND SHALL BE VEGETATIVELY STABILIZED AS SUCH, AND SHALL BE MATTED WITH THE APPROPRIATE STABILIZATION MATTING.
15. ALL NECESSARY PERMITS, LICENSES, BONDS, INSURANCE POLICIES, ETC. REQUIRED BY LOCAL STATE AND/OR FEDERAL LAWS SHALL BE PROVIDED BY THE CONTRACTOR AT HIS OWN EXPENSE.
16. MINIMUM COMPACTON AS DEFINED BY STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) SHALL BE REQUIRED. SURFACE AS REQUIRED. PAYMENT SUBGRADE AS PER STATE, SIDEWALK AND LAWN SUBGRADE AS PER STATE. A GEOTECHNICAL ENGINEER SHALL CERTIFY TO ALL SUBGRADE COMPACTON.

17. THE PLAN SET DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND THE RULES AND REGULATIONS THEREOF APPLICABLE.
18. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL EROSION AND SEDIMENT CONTROL STRUCTURES AND STORMWATER MANAGEMENT FACILITIES DURING CONSTRUCTION INCLUDING THOSE DAMAGED DURING UTILITY INSTALLATION.
19. ALL SITE IMPROVEMENTS INCLUDING LANDSCAPING, PERMANENT SITE STABILIZATION AND PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE IN PLACE AND APPROVED BY OWNER PRIOR TO SIGNATURE OF CERTIFICATE OF OCCUPANCY.
20. ANY FILL REQUIRED FOR THIS SITE TO BE OBTAINED BY CONTRACTOR.
21. NO DEBRIS SHALL BE BURIED ON SITE.
22. EXISTING UTILITIES ARE SHOWN IN ACCORDANCE WITH INFORMATION PROVIDED BY THE RESPECTIVE UTILITY COMPANIES AT THE TIME THAT THIS PLAN WAS PREPARED.
23. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND ALLOW FOR THE LOCATION OF ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH ALL UTILITY COMPANIES INVOLVED.
24. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE IN THE AREA OF ANY POTENTIAL UTILITY CROSSING TO VERIFY THAT THE UTILITY WILL NOT INTERFERE WITH CONSTRUCTION. IF, AFTER UNCOVERING OF THE UTILITY, THERE IS ANY QUESTION CONCERNING A POSSIBLE CONFLICT, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER.
25. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ALL EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY AND ALL DAMAGES DONE TO THE UTILITIES DUE TO HIS/HER NEGLIGENCE SHALL BE IMMEDIATELY AND COMPLETELY REPAIRED AT HIS/HER EXPENSE.
26. THE LIMITS OF CONSTRUCTION SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO ANY GRADING ACTIVITIES TO ENSURE COMPLIANCE WITH THE APPROVED PLANS. THE APPROVED EROSION AND SEDIMENT CONTROL PLANS ARE CONSIDERED AN INTEGRAL PART OF THIS PLAN.
27. NO CLEARING OR GRADING IS PERMITTED BEYOND THE LIMITS OF DISTURBANCE SHOWN HEREON. ANY EXPANDED CLEARING AND/OR GRADING MAY BE CONSIDERED NON-COMPLIANCE WITH THE STATE OF DELAWARE SEDIMENT AND STORMWATER REGULATIONS, AND THE DEVELOPER AND/OR BUILDER MAY BE SUBJECT TO THE ENFORCEMENT OF THE PENALTY PROVISIONS THEREIN.
28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF DAMAGED OR DESTROYED LANDSCAPE.
29. THE BODER IS REQUIRED TO EXAMINE CAREFULLY THE SITE OF THE WORK, THE PROPOSAL, PLANS, SPECIFICATIONS AND OTHER CONTRACT DOCUMENTS FOR THE WORK CONTRACTED AND IT WILL BE ASSUMED THAT HE HAS FAMILIARIZED AND SATISFIED HIMSELF TO THE CHARACTER, QUALITY AND QUANTITIES OF WORK TO BE PERFORMED AND MATERIALS TO BE FURNISHED, AND AS TO THE REQUIREMENTS OF THESE SPECIFICATIONS, PLANS AND OTHER CONTRACT DOCUMENTS AND HE MUST BE PREPARED TO EXECUTE A FINISHED JOB IN EVERY PARTICULAR WITHOUT ANY EXTRA CHARGE WHATSOEVER, EXCEPT AS MAY BE SPECIFICALLY PROVIDED FOR ELSEWHERE IN THESE CONTRACT DOCUMENTS.

FOR CONTINUATION OF CONSTRUCTION NOTES SEE SHEET 6:

LEGEND

- PROPOSED TOWNHOUSE
- EXISTING 1 FOOT CONTOUR
- EXISTING 5 FOOT CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- PROPOSED SIDEWALK
- PROPOSED 10' WIDE MULTI-USE PATH
- EXISTING SANITARY SEWER & MH
- PROPOSED SANITARY SEWER & MH
- EXISTING STORM DRAINAGE
- PROPOSED STORM DRAINAGE
- EXISTING GUARD RAIL
- EXISTING FIRE HYDRANT
- EXISTING FENCE LINE
- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING OVERHEAD POWER LINES
- EXISTING WATER LINE
- PROPOSED WATER
- EXISTING GAS LINE
- PROPOSED INTEGRAL PCC CURBS & GUTTER, TYPE 2
- PROPOSED PCC CURBS TYPE 1-8
- PROPOSED NUMBER OF PARKING SPACES
- CENTELINE OF EXISTING STREAM
- EXISTING WETLANDS LINE
- EXISTING TREE LINE
- PROPOSED TREE LINE
- EXISTING SANITARY FORCE MAIN
- PROPOSED SANITARY FORCE MAIN
- PROPOSED GUARD RAIL

NO.	DATE	REVISION
5	9-7-21	RAISED GRADING TWO FEET
4	3-2-21	REVISED PER DNRC COMMENTS DATED 3-1-21
3	2-25-21	REVISED PER DNRC COMMENTS DATED 2-23-21
2	2-1-21	REVISED PER DNRC COMMENTS DATED 1-20-21
1	5-15-20	REVISED PER DNRC COMMENTS

TEMPORARY HOLDING TANK LOCATION PLAN

DNRC #2019-015
OVERALL POST-CONSTRUCTION SEDIMENT AND STORMWATER MANAGEMENT PLAN
 OF
QUARRY WALK
 PREPARED FOR
QUARRY WALK, LLC
 250 CLAY CREEK WATERLOO RD
 MILL CREEK HUNDRED NEW CASTLE COUNTY, DELAWARE

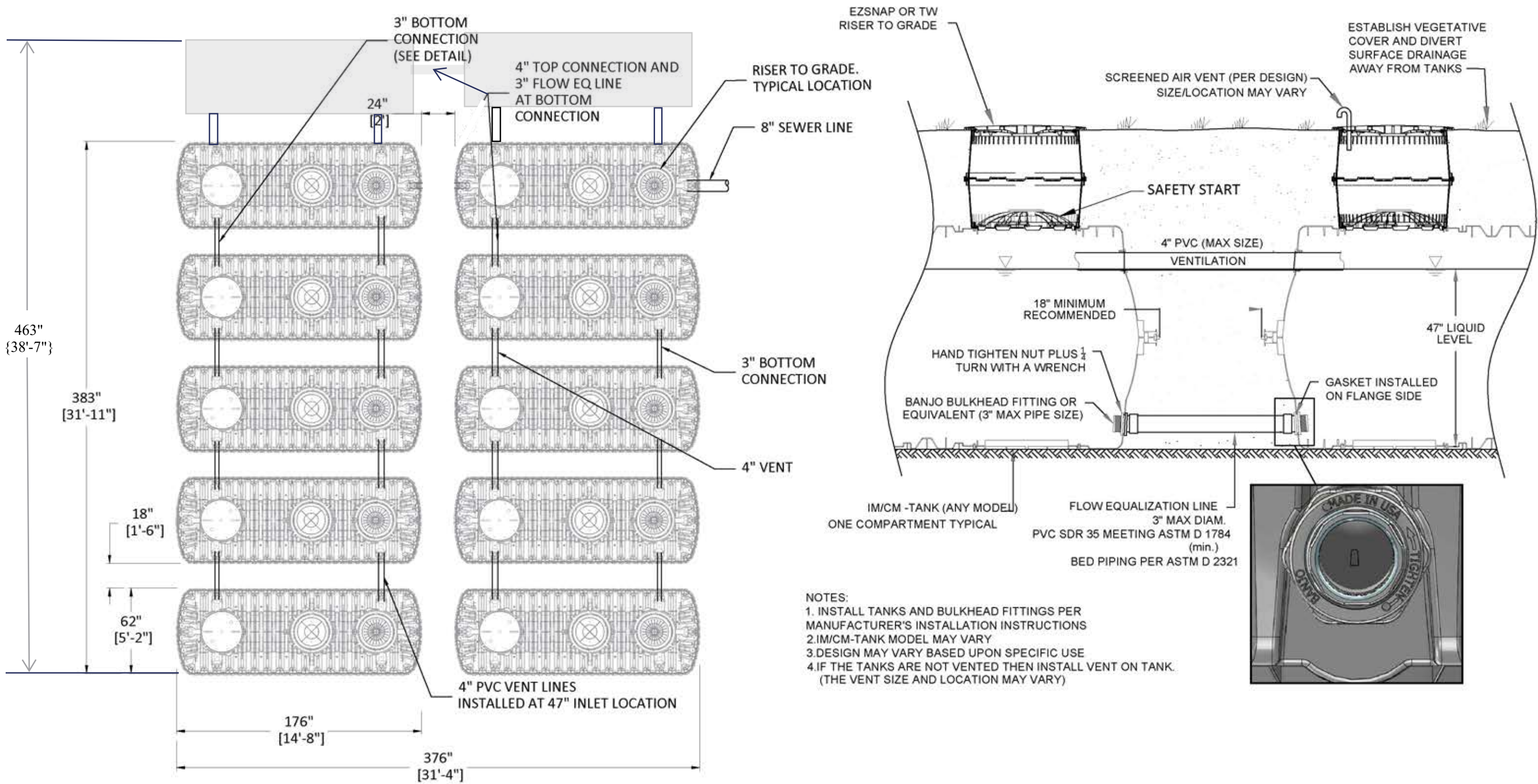
M & Z

McBRIDE & ZIEGLER, INC.
 LAND SURVEYORS • PLANNERS • ENGINEERS
 2807 EASTERN CENTER, NEWARK, DELAWARE 19711
 PHONE: (302) 737-9138 • FAX: (302) 737-0810

APPROVED BY: [Signature] DATE: 5-2-21

SURVEY BY: M&Z CHECKED BY: M.Z.
 DESIGN BY: LEH SCALE: 1" = 40'
 DRAWN BY: LEH DATE: MARCH 1, 2019
 DWG. NO.: 2014-0069-9-250 SHEET 5 OF 15

2024-0208 REVISED TO ADD TWO (2) ADDITIONAL TANKS FOR A TOTAL OF 12



- NOTES:
 1. INSTALL TANKS AND BULKHEAD FITTINGS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS
 2. IM/CM-TANK MODEL MAY VARY
 3. DESIGN MAY VARY BASED UPON SPECIFIC USE
 4. IF THE TANKS ARE NOT VENTED THEN INSTALL VENT ON TANK. (THE VENT SIZE AND LOCATION MAY VARY)

REVISED 2024-0208 ADDED TWO (2) ADDITIONAL TANKS FOR A TOTAL OF 12

PRELIMINARY

REV.	DATE	INITIALS	DESCRIPTION

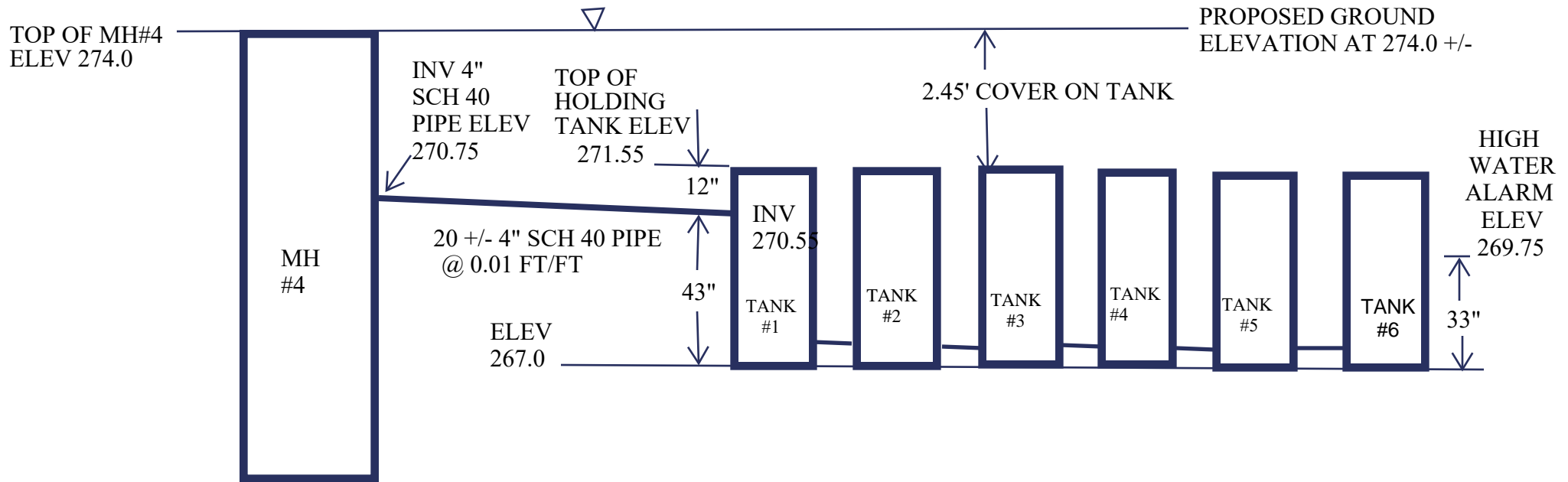
INFILTRATOR
 INFILTRATOR WATER TECHNOLOGIES, LLC

COPYRIGHT (C) 2023 INFILTRATOR WATER TECHNOLOGIES, LLC (IWT). INFORMATION CONTAINED HEREIN IS CONFIDENTIAL AND IS THE PROPERTY OF IWT. NO PART OF THIS DRAWING SHALL BE REPRODUCED, DISTRIBUTED, DISCLOSED OR USED BY ANY PERSON OR ORGANIZATION IN WHOLE OR IN PART, WITHOUT THE PRIOR WRITTEN PERMISSION OF IWT. THIS INFORMATION IS BASED ON SPECIFIC INPUT PARAMETERS AND IS FOR BUDGETARY OR PRELIMINARY USE ONLY. USE AND INTERPRETATION OF THIS INFORMATION AND DETERMINING THE APPLICABILITY TO A SPECIFIC PROJECT IS AT THE SOLE DISCRETION OF THE USER AND/OR THE ENGINEER OF RECORD.

QUARRY WALK

IM1530 SERIAL CONNECTION FIELD

HORIZ. SCALE	PROJECT NO.
N/A	N/A
VERT. SCALE	DATE
N/A	12/26/2023
DRAWN BY	DESIGNED BY
EA	DH
DRAWING NO.	SHEET NO.
P1.0	01 of 01



CROSS-SECTION DETAIL

QUARRY WALK TEMPORARY HOLDING TANKS