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Artesian Water Company ▲ Artesian Wastewater Management ▲ Artesian Utility Development ▲ Artesian Water Pennsylvania  
Artesian Water Maryland ▲ Artesian Wastewater Maryland ▲ Artesian Consulting Engineers

January 12, 2024

Mr. Derrick P. Caruthers  
Environmental Engineer  
Ground Water Discharges Section  
89 Kings Highway  
Dover, DE 19901

RE: Permit Application  
Cypress Grove

Dear Mr. Caruthers:

Attached please find the permit application, associated fee, calculations, and cross section drawing to allow operation of a temporary holding tank to service the Cypress Grove residential community Phases 1A and 1B.

This project is located at the intersection of Broadkill Road, Bay Avenue, and Country Road, Milton Delaware 19968. The entire project consists of 144 apartment units, 96 townhouse units, and a clubhouse. A gravity sewer system that discharges to an on-site submersible pump station has been designed and permitted by Davis, Bowen & Friedel. An offsite 4-inch PVC force main will discharge to an existing manhole located on Yew Street that eventually reaches the Milton Wastewater Treatment plant. The developer requested a temporary holding tank be permitted for the first two buildings of phase 1A while the construction of the pump station and force main is underway.

Due to the long detention times which would result should the waste be pumped when there are only a few homes in the new phases, the developer is requesting permission to utilize the onsite gravity collection system as a temporary holding tank until a minimum number of homes are completed and occupied. Accordingly, the attached application has been completed in accordance with the regulations contained in Section 6.10 of the DNREC Groundwater Discharges Section. The following list presents pertinent information required under section 6.10.3:

1. DNREC application form
  - a. See attached.
2. Department Fees
  - a. The \$750 Application Fee and \$210 Advertising Fee are both attached.
3. Project overview
  - a. Please see above description.
4. Zoning certificate
  - a. Not applicable, the subdivision is not located within a municipal area.

5. Design flows
  - a. A design flow of 300 gpd/household was used in accordance with section 6.10.4.1.
6. Number of equivalent dwelling units that will be served.
  - a. 21 EDUs will be served by the temporary holding tank.
7. Design drawings including location
  - a. Please see attached drawing sheets which depict the subdivision, its phasing, sewer design, and location.
8. Design and sizing calculations
  - a. Please see attached spreadsheet
9. System technical specifications
  - a. Not applicable, storage tank will consist of the proposed gravity sewer system.
10. Alarm system specifications
  - a. Please see attached.
11. Non-Hazardous Liquid Waste Transporters Permit
  - a. Please see CDI's permit on file.
12. Agreement with a licensed operator and license certificate
  - a. Owner will contract with CDI.
13. Legal documentation of the agreement between the owner and a utility provider.
  - a. AWMI holds the CPCN and will be providing service.
14. A county conditional use ordinance approval.
  - a. Please see attached.
15. A CPCN for the development.
  - a. Already on file with DNREC.

The following table presents a summary of the values being requested for the Temporary Holding Tank:

Total Number of EDUs which can be served by Temporary Holding Tank:	21	EDUs
Total days of storage in Temporary Holding Tank:	2	days
Minimum pumping frequency	2	days
Alarm Volume:	11,522	gal
Alarm Elevation:	30.53	ft

If you should have any questions, please do not hesitate to contact me at 302-453-2396. Thank you for your attention to this matter.

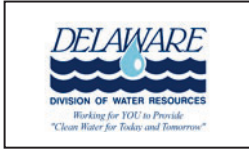
Sincerely,

Artesian Wastewater Management Inc.



Daniel W. Konstanski, P.E.  
Principle Engineer

attachments



APPLICATION - PERMIT
ON-SITE WASTEWATER SYSTEM



(Please Type or Print Legibly)

OWNER'S NAME: Milton Attainable Housing, LLC C/o Preston Schell PHONE: 302-542-6697

ADDRESS: 18949 Coastal Highway, Unit 301, Rehoboth Beach, DE 19971

PROJECT LOCATION: Broadkill Road, Bay Ave and Country Road, Milton DE 19968

TAX/MAP #: 235-14.00-123.00

APPLICATION PREPARER: Daniel W. Konstanski, P.E. DNREC LICENSE #: 5884

PREPARER'S ADDRESS: 664 Churchmans Road, Newark, DE 19702

PHONE: 302-453-6900

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

Preparer's Signature: Date:

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)

- Gravty (FD) Permanent Holding Tank
Gravty (CF) Elevated Sand Mound
Pressure Dose (FD) Wisconsin At-Grade
Pressure Dose (CF) Subsurface Micro Irrigation
Low Pressure Pipe (FD) Peat Bio- Filter
Low Pressure Pipe (CF) Other
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

Central Water Available Yes No

(If yes, please state Utility Name: Town of Milton)

Type of Construction:

- Replacement
New Construction
Component Replacement
Repair to Existing System

Authorization to Use Existing System

Permit #: Present Condition: Structure to be connected:

# of Bedrooms: 21@300 gpd
Avg. Percolation Rate: n/a
Gallons Per Day Flow: 6,300
Minimum Sq. Ft. Rcq'd: n/a
Sq. Ft. Proposed: n/a

- 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.

OWNER'S/AUTHORIZED AGENT SIGNATURE: \_\_\_\_\_

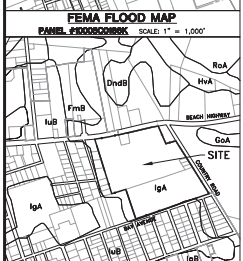
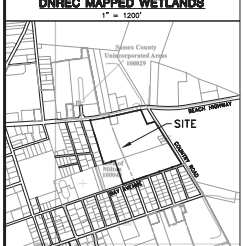
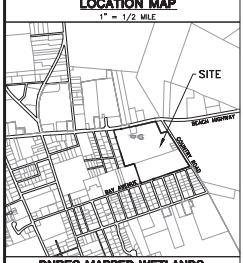
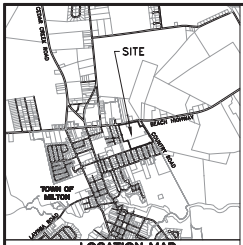


DATE: 1/12/2024

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

# CYPRESS GROVE CONSTRUCTION PLANS

## TOWN OF MILTON BROADKILL HUNDRED SUSSEX COUNTY, DELAWARE DBF #3311A001 MARCH, 2021



SOILS DATA		
LABEL	SOIL NAME	TYPE
UA	INLEISE SANDY LOAM, 0-2R SLIPES	A

### DATA COLUMN

PARCEL ID: 235-14.00-123.00 & 123.01  
235-14.16-1.00 THRU 4.00

ENGINEER: DAVIS, BOWEN & FRIEDEL, INC.  
1 PARK AVENUE  
MILFORD, DE 19963  
(302) 424-1441

OWNER/DEVELOPER: MILTON ATTAINABLE HOUSING, LLC.  
P.O. BOX 333  
REHOBOTH BEACH, DE 19971

DATE: NAVD 88  
HORIZONTAL: NAVD 83 (DE STATE PLANE)

LAND USE: EXISTING: VACANT/AGRICULTURE  
PROPOSED: RESIDENTIAL

DENSITY: 1 PER 4,000 SQFT. = 803/43.52 SQFT.  
MAXIMUM: (22.043 AC.) / 4,000 SQFT. = 240.04 UNITS  
PROPOSED: 1 PER 4,000 SQFT. = 240 UNITS

ZONING: EXISTING: R-3 (GENERAL & MULTIFAMILY RESIDENTIAL)  
C-1 (COMMERCIAL & BUSINESS USE DISTRICT)

PROPOSED USE: 144 MULTI-FAMILY UNITS WITH CLUBHOUSE  
28 2-BEDD. TOWNHOUSE UNITS  
240 TOTAL UNITS

R-3 MINIMUM SETBACK REQUIREMENTS  
FRONT SETBACK: 20 FT.  
SIDE SETBACK: 25 FT.  
REAR SETBACK: 25 FT.  
BUILDING SEPARATION: 40 FT.

PARKING: REQUIRED: 2.0 SPACES PER UNIT (240 UNITS x 2 = 480 SPACES)  
PROVIDED: 533 PARKING SPACES INCLUDING 22 HANDICAPPED ACCESSIBLE  
533 TOTAL SPACES

MAXIMUM REQUIREMENTS  
BUILDING HEIGHT: 40 FT. (3 STORIES)PROPOSED BUILDING HEIGHT: 40 FT. (3 STORIES)TOTAL SITE AREA: 4.348 ACRES COMMERCIAL  
22.043 ACRES RESIDENTIAL  
26.391 ACRES

PROPOSED SITE: 22.042 AC.  
RESIDENTIAL LANDS: 10.726 AC.  
OPEN SPACE: 2.885 AC.  
STORMWATER: 5.511 AC.  
PRIVATE ROADS & PARKING: 3.120 AC.

COUNTYLAND LANDS: 4.546 AC.  
COMMERCIAL: 0.445 AC.  
COMMERCIAL STORMWATER AREA: 4.101 AC.  
TOTAL SITE AREA: 28.388 AC.

PUBLIC CONNECTOR ROAD: 0.443 AC.  
R.O.W. DEDICATION

NET DEVELOPMENT AREA: 26.125 AC.

UTILITIES: SEWER: PUBLIC (TIDewater ENVIRONMENTAL SERVICES, INC.)  
WATER: PUBLIC (TOWN OF MILTON)

IMPERVIOUS COVERAGE: 9.525 ACRES / 22.042 ACRES = 43.2%

PROPOSED BUILDING CONSTRUCTION: WOOD CONSTRUCTION

FLOODPLAIN: THIS PROPERTY IS NOT IMPACTED BY THE 100 YEAR FLOODPLAIN AS DETERMINED BY FEMA MAP 17000C0168A, DATED MARCH 18, 2015

WETLANDS: DO NOT EXIST ON SITE

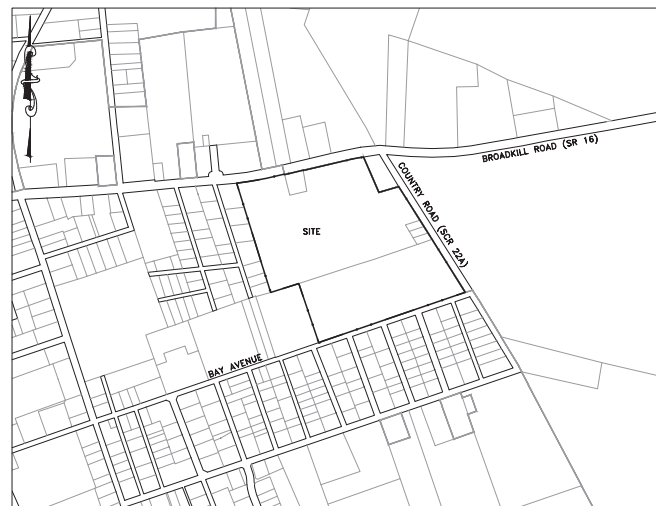
EXISTING PERMANENT MONUMENTS: 3 CONCRETE MONUMENTS  
6 IRON PIPE  
2 IRON PIPE WITH CAP  
7 IRON ROD WITH CAP

STATE STRATEGIES MAP: LEVEL 1 (2020)

TRANSPORTATION IMPROVEMENT DISTRICT (TID): NONE

THIS PROPERTY IS LOCATED ON THE SOUTHWEST CORNER OF THE INTERSECTION OF BROADKILL ROAD (SR 16) AND COUNTRY ROAD (SR 22A).

POSTED SPEED LIMIT: BROADKILL ROAD 40 & 50 M.P.H.  
COUNTRY ROAD



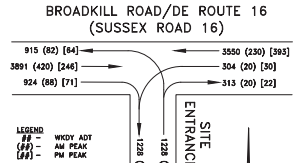
LOCATION MAP  
SCALE: 1"=400'

BENCHMARK INFORMATION			
BNF	DESCRIPTION	LOCATION	ELEVATION
1	IRON ROD CAP	N287266.0560 E687302.4810	36.00' (NAVD 88)
2	BONNETT ON FIRE HYDRANT	N286017.0265 E687178.7558	34.31' (NAVD 88)

INDEX OF SHEETS	
C-001	TITLE
C-002	GENERAL NOTES
C-003	LEGEND
C-101	SITE PLAN
C-102	SITE DETAILS
C-103	BAY AVENUE CONSTRUCTION PLAN
C-201 - C-203	STORMWATER PROFILES
C-301	GRADING OVERVIEW
C-302 - C-305	GRADING PLAN
C-401 - C-420	STORMWATER MANAGEMENT PLANS
C-501	SEWER OVERVIEW
C-502 - C-505	SEWER PLAN
C-506 - C-508	SEWER PROFILE
C-509	SEWER DETAILS
C-521	PUMP STATION SITE PLAN
C-522 - C-524	PUMP STATION DETAILS
E-1 - E-7	PUMP STATION ELECTRICAL PLANS
C-531	FORCE MAIN PLAN
C-541	WATER DISTRIBUTION OVERVIEW
C-542 - C-545	WATER DISTRIBUTION PLAN
C-546 - C-547	WATER DETAILS
C-550 - C-551	FIRE PROTECTION PLANS
V-101	RECORD TITLE
V-102	EXISTING BOUNDARY
V-103	RECORD PLAN
V-104	RECORD DETAILS

SITE TRIPS GENERATED - PROPOSED				
TYPE OF DEV.	CODE	# UNITS	AM	PM
MULTI-FAMILY (LOW-RISE)	220	98	48	57
MULTI-FAMILY (MED-RISE)	221	144	69	83
SHOPPING CENTER	820	20,000	182	185
TOTAL SITE			237	255
INTERNAL CAPTURE			2	80
EXTERNAL TRIPS			235	255
PASS-BY TRIPS			0	48
PRIMARY TRIPS			235	254

NOTES:  
-TRIP DISTRIBUTION AND TRAFFIC DATA BASED ON CLIFTON PROPERTY TIS  
-TRIP GENERATION IS BASED ON ITE TRIP GENERATION MANUAL, 10TH EDITION.  
-DESIGN VEHICLE: WB-40.  
-TWO (2) ACCESSES PROPOSED, ONE (1) FULL ACCESS ON DE ROUTE 16, ONE (1) FULL ACCESS ON BAY AVENUE (TOWN OF MILTON STREET).



TRAFFIC GENERATION DIAGRAM  
NO SCALE

### OWNER/DEVELOPER STATEMENT

I, THE UNDERSIGNED, HEREBY CERTIFY THAT I AM THE OWNER OF THE PROPERTY DESCRIBED AND SHOWN ON THIS PLAN. THE PLAN WAS MADE AT MY DIRECTION, AND I ACKNOWLEDGE THE SAME TO BE MY ACT AND DEED. THE PLAN IS BEING RECORDED ACCORDING TO ORDINANCE.

MILTON ATTAINABLE HOUSING, LLC. DATE  
P.O. BOX 333  
REHOBOTH BEACH, DE 19971

### ENGINEER'S STATEMENT

I, JAMES L. SEIGLER, P.E., HEREBY CERTIFY THAT I AM A REGISTERED ENGINEER IN THE STATE OF DELAWARE. THAT THE INFORMATION SHOWN HEREON HAS BEEN PREPARED UNDER MY SUPERVISION AND TO MY BEST KNOWLEDGE AND BELIEF REPRESENTS GOOD ENGINEERING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF DELAWARE.

BY JAMES L. SEIGLER, P.E. DATE  
DAVIS, BOWEN & FRIEDEL, INC.  
1 PARK AVE.  
MILFORD, DELAWARE, 19963

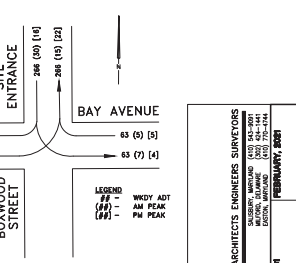
### WETLAND'S STATEMENT

ENVIRONMENTAL RESOURCES, INC. (ERI) COMPLETED A WETLAND INVESTIGATION ON JUNE 8, 2021 OF THESE PARCELS (235-14.16-1.00 & 235-14.16-1.01, 1.2, 1.3, 1.4, 1.5) ON THE SOUTH SIDE OF SR 16, AT THE NORTHEAST CORNER OF MILTON, SUSSEX COUNTY, DELAWARE. THAT TOTAL APPROX. 2 ACRES. ABOUT 18 ACRES OF THE LANDS WITH AN AGRICULTURAL PRODUCTION FROM TO THE CLAM WATER AREA OF 1970. THE NORMAL CONDITION IS THE PRESENCE OF A COMMODITY CRAN FACILITY OR INFORMATION FOR THE PRESENCE OF JURISDICTIONAL WETLANDS. THE INVESTIGATION WAS CONDUCTED BY ERI. ERI HAS MAPPED FARMED WETLAND JUST SOUTH OF THE HOUSE. OR SUSPECTED THIS SITE FOR THE PRESENCE OF JURISDICTIONAL WETLANDS, INCLUDING WETLANDS. ACCORDING TO THE CORPS OF ENGINEERS WETLAND DETERMINATION MANUAL (1987), THE ATLANTIC AND GULF COASTAL PLAIN SUBREGION (221A) ASSOCIATED WETLANDS IN THIS AREA ARE: 1. OPEN WATER WETLANDS (221A1), 2. OPEN WATER WETLANDS (221A2), 3. OPEN WATER WETLANDS (221A3), 4. OPEN WATER WETLANDS (221A4), 5. OPEN WATER WETLANDS (221A5), 6. OPEN WATER WETLANDS (221A6), 7. OPEN WATER WETLANDS (221A7), 8. OPEN WATER WETLANDS (221A8), 9. OPEN WATER WETLANDS (221A9), 10. OPEN WATER WETLANDS (221A10), 11. OPEN WATER WETLANDS (221A11), 12. OPEN WATER WETLANDS (221A12), 13. OPEN WATER WETLANDS (221A13), 14. OPEN WATER WETLANDS (221A14), 15. OPEN WATER WETLANDS (221A15), 16. OPEN WATER WETLANDS (221A16), 17. OPEN WATER WETLANDS (221A17), 18. OPEN WATER WETLANDS (221A18), 19. OPEN WATER WETLANDS (221A19), 20. OPEN WATER WETLANDS (221A20).

IN ACCORDANCE WITH DEL. CODE TITLE 7, CHAPTER 47, SECTION 4701, THE WETLANDS ON THIS PARCEL ARE: 1. OPEN WATER WETLANDS (221A1), 2. OPEN WATER WETLANDS (221A2), 3. OPEN WATER WETLANDS (221A3), 4. OPEN WATER WETLANDS (221A4), 5. OPEN WATER WETLANDS (221A5), 6. OPEN WATER WETLANDS (221A6), 7. OPEN WATER WETLANDS (221A7), 8. OPEN WATER WETLANDS (221A8), 9. OPEN WATER WETLANDS (221A9), 10. OPEN WATER WETLANDS (221A10), 11. OPEN WATER WETLANDS (221A11), 12. OPEN WATER WETLANDS (221A12), 13. OPEN WATER WETLANDS (221A13), 14. OPEN WATER WETLANDS (221A14), 15. OPEN WATER WETLANDS (221A15), 16. OPEN WATER WETLANDS (221A16), 17. OPEN WATER WETLANDS (221A17), 18. OPEN WATER WETLANDS (221A18), 19. OPEN WATER WETLANDS (221A19), 20. OPEN WATER WETLANDS (221A20).

NOEL S. WISSE  
PROFESSIONAL WETLAND SCIENTIST 000898  
SERVING WETLAND DETERMINATION THROUGH THE CORPS OF ENGINEERS & HYDROLOGISTS

ROAD DATA	
BAY AVENUE	FUNCTIONAL CLASSIFICATION - TOWN OF MILTON STREET
ADT (2019 DELAWARE VEHICLE VOLUME SUMMARY)	= N/A
10 YR PROJECTED ADT	= 1,118 N/A
10 YR PROJECTED ADT	= SITE ADT
PEAK HOUR	= N/A
DIRECTIONAL SPLIT	= N/A
TRUCK	= 25
SPEED - POSTED	= N/A
TRAFFIC PATTERN GROUP	= N/A



LEGEND:  
## - WVDY ADT  
## - AM PEAK  
## - PM PEAK

ARCHITECTS ENGINEERS SURVEYORS  
DAVIS, BOWEN & FRIEDEL, INC.  
1 PARK AVENUE  
MILFORD, DELAWARE 19963  
PERMIT NO. 2021  
FEBRUARY, 2021

## CIVIL PLAN GENERAL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING TWO WEEKS PRIOR TO THE START OF CONSTRUCTION AND SHALL APPRISE AND COORDINATE DURING ALL PHASES OF CONSTRUCTION:  
TOWN OF MILTON PUBLIC WORKS DEPARTMENT 302-482-1775  
DAVIS, BOWEN & FRIEDEL, INC. 302-482-1775  
SUSSEX CONSERVATION DISTRICT 302-884-2100  
TIDEWATER ENVIRONMENTAL SERVICES, INC. 302-453-8800  
DEPARTMENT OF TRANSPORTATION, SOUTH DISTRICT PERMITS SUPERVISOR 302-853-1242
2. ORIGINAL BOUNDARY AND TOPOGRAPHIC SURVEY WAS PERFORMED BY DAVIS, BOWEN & FRIEDEL, INC. OCTOBER 2019.
3. CONTRACTOR SHALL PROVIDE STAKEOUT NECESSARY FOR THE INSTALLATION OF UTILITIES, STORM DRAINS, PAVING AND ALL OTHER SITE WORK INCLUDED IN THESE PLANS. ALL STAKEOUT WORK IS TO BE PERFORMED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF DELAWARE.
4. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY DEVIATION FROM THESE PLANS UNLESS WRITTEN APPROVAL HAS BEEN PROVIDED BY THE ENGINEER.
5. ACCORDING TO FEMA FLOOD INVENTORY MAP #1000502186E, DATED MARCH 16, 2015 THIS SITE IS NOT BY THE 100 YEAR FLOODPLAIN.

## DRAINAGE, GRADING AND SEDIMENT CONTROL GENERAL NOTES

1. REVIEW AND OR APPROVAL OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITY FOR COMPLIANCE WITH THE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.
2. ALL STORM DRAIN PIPING, INLET, MANHOLE, AND END SECTION INSTALLATION SHALL BE IN ACCORDANCE WITH DWDOT CONSTRUCTION STANDARDS.
3. ALL STORM DRAIN DESIGNATED AS RCP IS TO BE REINFORCED CONCRETE PIPE, MEETING ASHTO M 170 SPECIFICATIONS, STORM DRAIN SEE PIPE SCHEDULE FOR PIPE CLASSIFICATION.
4. PIPE SPAN LENGTHS ARE MEASURED FROM C/L OF STRUCTURE TO C/L OF STRUCTURE, WHERE APPLICABLE ARE ROUNDED TO THE NEAREST FOOT.
5. ALL SEALS MUST BE WATERTIGHT WITH NON SHRINK GROUT OR RUBBER GASKETS AND CONCRETE STRUCTURES MUST BE PRECAST OR POURED IN PLACE.
6. CONTRACTOR SHALL GRADE, TOPSOIL, SEED AND MULCH ALL DISTURBED AREAS OF CONSTRUCTION, INCLUDING PIPE INSTALLATION OR DITCH CONSTRUCTION. EROSION CONTROL MATTING SHALL BE PROVIDED ON ALL SLOPES GREATER THAN 5:1.
7. THE CONTRACTOR SHALL PROVIDE SEDIMENT CONTROL MEASURES TO PROTECT STOCKPILE AREAS AND STORAGE AREAS. ALL AREAS USED BY THE CONTRACTOR FOR STAGING OPERATIONS SHALL BE FULLY RESTORED BY THE CONTRACTOR UPON COMPLETION OF THE PROJECT. IF THE STAGING AREA IS PAVED, IT SHALL BE RESTORED TO ORIGINAL CONDITION. IF THE STAGING AREA IS UNPAVED, IT SHALL BE RE-GRADED, TOPSOILED, SEEDS AND MULCHED TO THE SATISFACTION OF THE ENGINEER. ALL COSTS ASSOCIATED WITH RESTORATION OF THE STAGING AREA SHALL BE AT THE CONTRACTOR'S EXPENSE. THAT A SATISFACTORY STAND OF GRASS SHALL BE AT THE CONTRACTOR'S EXPENSE.
8. EQUIPMENT AND/OR STOCKPILE MATERIAL SHALL NOT BE STORED IN THE DRIPLINE AREA OF ANY TRENCH.
9. IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORMWATER CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY THE SUSSEX CONSERVATION DISTRICT.
10. CORRUGATED POLYETHYLENE SHEED SHALL BE INSTALLED IN ACCORDANCE WITH DELDOT SPECIAL PROVISIONS 6125XX.
11. ADDITIONAL EROSION AND SEDIMENT CONTROL NOTES CAN BE FOUND ON THE SEDIMENT AND STORMWATER MANAGEMENT PLANS.

## DEMOLITION AND SAFETY GENERAL NOTES

1. MISS UTILITY OF DELAWARE SHALL BE NOTIFIED THREE CONSECUTIVE WORKING DAYS PRIOR TO EXCAVATION, AT 1-800-282-8555.
2. EXISTING UTILITIES ARE SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION. COMPLETENESS OR CORRECTNESS THEREOF IS NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE UTILITY COMPANIES INVOLVED IN ORDER TO SECURE THE MOST ACCURATE INFORMATION AVAILABLE AS TO UTILITY LOCATION AND ELEVATION. NO CONSTRUCTION ARISING OR ADJACENT TO UTILITIES SHALL BEGIN WITHOUT NOTIFYING THEIR OWNERS AT LEAST 48 HOURS IN ADVANCE. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE AND ANY DAMAGE DONE TO THEM DUE TO HIS/HER NEGLIGENCE SHALL BE IMMEDIATELY AND COMPLETELY REPAIRED AT THE CONTRACTOR'S EXPENSE. TO LOCATE EXISTING UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT MISS UTILITY OF DELAWARE.
3. THE CONTRACTOR SHALL REMOVE AND IMMEDIATELY REPLACE, RELOCATE, RESET OR RECONSTRUCT ALL OBSTRUCTIONS IN THE ROAD WAY, INCLUDING BUT NOT LIMITED TO, MANHOLES, SIGN, LANDSCAPING, LIGHTING, PLANTERS, CULVERTS, DRIVEWAYS, PARKING AREAS, CURBS, BOLLARDS, FENCES, OR OTHER NATURAL OR MAN-MADE OBSTRUCTIONS. TRAFFIC CONTROL, REGULATORY, WARNING AND INFORMATIONAL SIGNS SHALL REMAIN FUNCTIONAL AND VISIBLE TO THE APPROPRIATE LANE(S) OF TRAFFIC AT ALL TIMES, WITH THEIR RELOCATION KEPT TO A MINIMUM DISTANCE. THE COST SHALL BE INCLUDED IN THE COST OF ITEMS BID.
4. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION.
5. DELAWARE REGULATIONS PROHIBIT THE BURIAL OF CONSTRUCTION DEMOLITION DEBRIS, INCLUDING TREES AND STUMPS ON CONSTRUCTION SITES. ANY SOLID WASTE FOUND DURING THE EXCAVATION FOR STRUCTURES AND UTILITY LINES ON AND OFF SITE MUST BE REMOVED AND PROPERLY DISCARDED. ANY REMEDIAL ACTION REQUIRED IS THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM. ADDITIONAL COSTS WILL BE INCURRED WITH THE OWNER.
6. DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL WORK MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AS AMENDED AND ALL RULES AND REGULATIONS THERE TO APPURTENANT.

## INTERNAL PAVING / CONCRETE NOTES

1. BITUMINOUS CONCRETE SHALL BE INSTALLED IN ACCORDANCE WITH THE 2020 DWDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION INCLUDING SPECIAL PROVISIONS:  
1.1. SECTION 401 FOR PLACEMENT OF TACK COAT AND BITUMINOUS CONCRETE.  
1.2. BITUMINOUS CONCRETE SHALL BE FROM A DELDOT APPROVED PLANT.  
1.3. BITUMINOUS CONCRETE SHALL NOT BE APPLIED WHEN THE TEMPERATURE IS BELOW 40° F OR ON ANY WET OR FROZEN SURFACE.
2. ALL DISTURBED AREAS NOT COVERED WITH IMPERVIOUS MATERIAL, SHALL BE TOPSOILED (6" MINIMUM), FERTILIZED, SEEDS AND MULCHED.
3. ALL SIGNING AND MAINTENANCE OF TRAFFIC IS THE CONTRACTOR'S RESPONSIBILITY AND SHALL FOLLOW THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION).
4. DESIGN, FABRICATION, AND INSTALLATION OF ALL PERMANENT SIGNING SHALL BE AS OUTLINED IN THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION).
5. FOR FINAL PERMANENT PAVEMENT MARKINGS, EPOXY RESIN PAINT SHALL BE REQUIRED FOR LONG LINE STRIPING AND THERMO WILL BE REQUIRED FOR SHORT LINE STRIPING, I.A. SYMBOLS/LEGENDS.
6. ALL TRAFFIC CONTROL DEVICES SHALL BE IN NEW OR REFURBISHED CONDITION, SHALL COMPLY WITH THE 2011 DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION), AND SHALL BE MCHSP - 350 APPROVED AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. TRAFFIC CONTROL DEVICES SHALL BE MAINTAINED IN GOOD CONDITION FOR DURATION OF USE.
7. BREAKAWAY POSTS SHALL BE USED WHEN INSTALLING ALL SIGNS. DETAIL CAN BE FOUND IN DELDOT'S STANDARD CONSTRUCTION DETAILS.
8. PLAN LOCATION AND DIMENSIONS SHALL BE STRICTLY ADHERED TO UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT PAVING IS INSTALLED TO THE ELEVATIONS SHOWN AND THAT NO PONDING OF WATER EXISTS AFTER PAVING IS COMPLETE. PONDING IS DEFINED AS WATER STANDING IN AN AREA MORE THAN 1 HOUR AFTER A RAINFALL EVENT THAT PRODUCES RUNOFF. ELIMINATION OF PONDING WILL BE COMPLETED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
10. SUPERPAVE HOT-MIX SHALL BE USED IN ACCORDANCE WITH DWDOT SPECIAL PROVISIONS.
11. OPEN-CUT TRENCHES AND PROVIDE PAVEMENT RESTORATION IN ACCORDANCE WITH DELDOT STANDARDS AND SPECIFICATIONS.
12. CONCRETE SHALL BE PLACED IN ACCORDANCE WITH DELDOT STANDARD SPECIFICATIONS.

## POTABLE WATER DISTRIBUTION GENERAL NOTES

1. TOWN OF MILTON REPRESENTATIVE SHALL BE ON-SITE AT ALL TIMES WHEN THE CONTRACTOR IS INSTALLING AND/OR TESTING THE WATER DISTRIBUTION AND HOUSE SERVICE SYSTEM.
2. ALL WATER SYSTEM CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE TOWN OF MILTON STANDARD SPECIFICATIONS AND DETAILS FOR UTILITY DESIGN AND CONSTRUCTION.
3. ALL WORK MUST BE HYDROSTATICALLY TESTED AND THEN DISINFECTED. CONTRACTOR SHALL SUPPLY ALL MATERIALS TO TEST AND DISINFECT THE SYSTEM. CONTRACTOR IS REQUIRED TO OBTAIN A CERTIFICATE TO OPERATED FROM DSHS OFFICE OF DRINKING WATER.
4. AREAS DISTURBED SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. IF ADDITIONAL WORK IS REQUIRED IN THE FUTURE THEN THE AREA SHALL BE STABILIZED IN ACCORDANCE WITH THE SEDIMENT AND STORMWATER MANAGEMENT PLANS.
5. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM SEWER MAINS. WATER CROSSING SEWER MAINS SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 18" TO OUTSIDE OF PIPES. IF AN 18" CLEARANCE CANNOT BE OBTAINED, A 10 LINEAR FOOT CONCRETE ENCASMENT SHALL BE USED ON THE SEWER MAIN.
6. THE CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF CONTRACT DRAWINGS ON WHICH HE SHALL NOTE, IN RED, THE ALIGNMENTS AND INVERTS OF ALL UNDERGROUND UTILITIES INSTALLED OR DISCOUNTED DURING THE PROSECUTION OF THE WORK. ALL DISCREPANCIES BETWEEN THE PLAN LOCATIONS AND ELEVATIONS OF BOTH THE EXISTING AND PROPOSED UTILITIES SHALL BE SHOWN ON THE AS-BUILT DRAWINGS TO BE MAINTAINED BY THE CONTRACTOR IN THE FIELD.
7. PLAN LOCATIONS AND DIMENSIONS SHALL BE STRICTLY ADHERED TO UNLESS OTHERWISE SPECIFIED BY THE ENGINEER. THE CONTRACTOR SHALL ADJUST WATERLINE LOCATIONS AS REQUIRED TO AVOID CONTACTS WITH OTHER UTILITIES.
8. THE DEVELOPER SHALL CONFIRM THE LOCATION OF VALVES BETWEEN PHASES OF THE WATER SYSTEM TO FACILITATE CONSTRUCTION OF FUTURE PHASES OF THE DEVELOPMENT.
9. ALL WATER MAINS 6" AND UP SHALL BE C-909 CL35 PVC. WATER MAINS 4" SHOULD BE C-900 DR18 PVC.

## SANITARY SEWER GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE STAKEOUT SURVEY NECESSARY FOR THE INSTALLATION OF UTILITY WORK AND APPURTENANCES AS REQUIRED PER TIDEWATER ENVIRONMENTAL SERVICES, INC. STANDARDS AND SPECIFICATIONS.
2. SANITARY SEWER CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH TIDEWATER ENVIRONMENTAL SERVICES, INC., STANDARDS AND SPECIFICATIONS AND DETAILS.
3. ALL SANITARY SEWER MATERIALS AND APPURTENANCES SHALL MEET OR EXCEED THOSE REQUIRED BY TIDEWATER ENVIRONMENTAL SERVICES, INC., STANDARDS AND SPECIFICATIONS AND DETAILS.
4. SANITARY SEWER LATERAL SHALL BE 8" SDR-35 PVC (UNLESS OTHERWISE NOTED). SEWER LATERAL SHALL INCLUDE A 8" CLEANOUT, WYE, AND CAP JUST INSIDE THE RIGHT-OF-WAY LINE OR UTILITY EASEMENT.
5. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
6. TOP OF MANHOLE ELEVATIONS ARE TOP OF MANHOLE FRAME AND COVER.
7. PIPE SPAN LENGTHS ARE MEASURED FROM C/L OF STRUCTURE TO C/L OF STRUCTURE, WHERE APPLICABLE ARE ROUNDED TO THE NEAREST FOOT.
8. THE CONTRACTOR SHALL FIELD VERIFY INVERTS AND LOCATION OF EXISTING SANITARY SEWER MAINS OR MANHOLES TO WHICH NEW CONSTRUCTION WILL CONNECT.
9. THE SEWER LATERAL SHALL HAVE A MINIMUM COVER OF 3.0 FEET FROM PROPOSED GRADE, AS MEASURED FROM THE TOP OF PIPE.
10. THE CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH OR ACCESS PITS WHICH CAN BE BACKFILLED AND STABILIZED AT THE END OF EACH WORKING DAY. STEEL PLATES SHALL BE USED ON ANY TRENCH OR ACCESS PITS WHICH MUST REMAIN OPEN OVERNIGHT. THIS REQUIREMENT DOES NOT APPLY TO AREAS COMPLETELY CLOSED AND SECURE FROM VEHICULAR OR FOOTSTRAFFIC TRAFFIC.
11. FINAL APPROVED SET OF PLANS AND SPECIFICATIONS SHALL BE MAINTAINED ON THE JOB SITE. FAILURE TO COMPLY WITH THIS PROVISION SHALL BE CONSIDERED CAUSE TO STOP THE WORK.
12. THE CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF CONTRACT DRAWINGS ON WHICH HE SHALL NOTE, IN RED, THE ALIGNMENTS AND INVERTS OF ALL UNDERGROUND UTILITIES INSTALLED OR DISCOUNTED DURING THE PROSECUTION OF THE WORK. ALL DISCREPANCIES BETWEEN THE PLAN LOCATIONS AND ELEVATIONS OF BOTH THE EXISTING AND PROPOSED UTILITIES SHALL BE SHOWN ON THE AS-BUILT DRAWINGS TO BE MAINTAINED BY THE CONTRACTOR IN THE FIELD.
13. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO LOCATE PROPERTY LINES, EASEMENTS, AND RIGHT-OF-WAY LINES PRIOR TO CONSTRUCTION AND AVOID CONSTRUCTION ACTIVITIES ON PRIVATE PROPERTY AND/OR RIGHTS OF WAYS WHERE SAID CONSTRUCTION IS PROHIBITED. THE CONTRACTOR MAY CONDUCT CONSTRUCTION ACTIVITIES ON PRIVATE PROPERTY PROVIDED HE HAS OBTAINED PRIOR WRITTEN PERMISSION FROM THE PROPERTY OWNER AND HAS SUBMITTED A COPY OF SAID WRITTEN PERMISSION TO TIDEWATER ENVIRONMENTAL SERVICES, INC. ANY DISTURBED AREAS BEYOND THE RIGHT-OF-WAY OR EASEMENT LINES SHALL BE RESTORED IMMEDIATELY TO THEIR ORIGINAL CONDITION. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE COST OF ITEMS BID.
14. ALL TESTING AND INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH TIDEWATER ENVIRONMENTAL SERVICES, INC. STANDARDS AND SPECIFICATIONS.
15. ALL SANITARY SEWER PIPE SHALL BE POLYETHYLENE CHLORIDE (PVC), SDR 35 OR DUCTILE IRON (EPOXY COATED) PIPE (DIP), CLASS 52. ALL DIP SHALL HAVE AN BITUMINOUS COATING ON THE OUTSIDE SURFACE. ALL FITTINGS SHALL BE SDR-26.
16. ALL PIPE SHALL HAVE DETECTOR TAPE AS REQUIRED BY TIDEWATER ENVIRONMENTAL SERVICES, INC. STANDARDS AND SPECIFICATIONS.
17. SEWER AND FORCE MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM WATER MAINS. SEWER CROSSING WATER MAINS SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 18" TO OUTSIDE OF PIPES. IF AN 18" CLEARANCE CANNOT BE OBTAINED, A 10 LINEAR FOOT CONCRETE ENCASMENT SHALL BE USED ON THE SEWER MAIN.

Revisions:

Date: MARCH 2021  
Scale: NOT TO SCALE  
Drawn By: DJR  
Proj.No.: 33114001  
Drawn By:

C-002

MANMADE ROADSIDE FEATURES			
FEATURE DESCRIPTION	EXISTING	PROPOSED	ID
BOLLARD	○	○	
CURB, TYPE 1 AND 3			①
CURB OPENING WITH SIDEWALK		⊕	②
FENCE - CHAINLINK OR STRANDED	-x-x-x-x-x-	-x-x-x-x-x-	③
LAMP AND POST - RESIDENTIAL	⊗	⊗	
MAILBOX	MB	MB	
TRAFFIC SIGN AND POST	T	T	
CURB OPENING		⊕	④

DRAINAGE FEATURES			
FEATURE DESCRIPTION	EXISTING	PROPOSED	ID
FLARED END SECTION		⊕	⑤
DRAINAGE MANHOLE	⊕	⊕	⑥
DRAINAGE INLET	⊕	⊕	⑦
DIRECTIONAL FLOW ARROW	→	→	
RIPRAP	⊠	⊠	⑧
DRAINAGE PIPE	—	—	⑨
UNDERDRAIN	→	→	⑩
UNDERDRAIN OUTLET		→	⑪
SAFETY END SECTION		⊕	⑫
BIOFILTRATION SWALE		x---BFS---x	
DITCH CENTERLINE	-x-x-x-x-	-x-x-x-x-	
DRAINAGE JUNCTION BOX	J.B.	⊕	⑬
DRAINAGE PIPE HEADWALL	∩	∩	

IDENTIFIERS	
FEATURE DESCRIPTION	ID
ABANDON BY CONTRACTOR	⊕
ABANDON BY OTHERS	⊕
ADJUST BY CONTRACTOR	⊕
ADJUST BY OTHERS	⊕
CONVERT TO JUNCTION BOX	⊕
CONVERT TO DRAINAGE MANHOLE	⊕
DO NOT DISTURB	⊕
PEDESTRIAN CONNECTION/TYPE	⊕
PEDESTRIAN CONNECTION/TYPE WITHOUT DETECTABLE WARNING SYSTEM	⊕
RELOCATE BY CONTRACTOR	⊕
RELOCATE BY OTHERS	⊕
REMOVE BY CONTRACTOR	⊕
REMOVE BY OTHERS	⊕

UTILITY FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED
ELECTRIC - UNDERGROUND	—U—U—U—	—U—U—U—
ELECTRIC MANHOLE	⊕	
ELECTRIC METER	⊕	
ELECTRIC TRANSFORMER	⊕	⊕
GAS - UNDERGROUND	—UG—UG—UG—	—UG—UG—UG—
GAS MANHOLE	⊕	
GAS METER	G.M.	
GAS VALVE	G.V.	
RAILROAD TRACKS	—  —  —  —	—  —  —  —
SANITARY MAIN	—S—S—S—	—S—S—S—
SANITARY SEWER MANHOLE	⊕	⊕
SOIL BORING LOCATION		⊕
TELEPHONE TEST POINT	⊕	
UTILITY POLE GUY WIRE ANCHOR	—	—
UTILITY POLE	⊕	⊕
WATER MAIN	—W—W—W—	—W—W—W—
WATER - FIRE HYDRANT	⊕	⊕
WATER VALVE	⊕	⊕
WATER METER/LATERAL		⊕
SANITARY SEWER CLEANOUT/LATERAL	⊕	⊕

NATURAL FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED
HEDGEROW OR THICKET	⊕	⊕
SHRUBBERY	⊕	*
TREE - CONIFEROUS	⊕	⊕
TREE - DECIDUOUS	⊕	⊕
TREE LINE	—	—
CONTOUR ELEVATION & LABEL	—33—	—33—
ELEVATION	44.70	21.06

RIGHT-OF-WAY FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED
PERMANENT EASEMENT	— + + + + —	— + + + + —
PROPERTY LINE	—	—
RIGHT-OF-WAY BASELINE	— +1+00 —	— +1+00 —
RIGHT-OF-WAY LINE	—	—
TAX DITCH RIGHT OF WAY		— 50' RW —
DELDOT PERMANENT EASEMENT	— PE —	— PE —
TEMPORARY CONSTRUCTION EASEMENT		— TCE —

SURVEY CONTROL & MONUMENTATION		
FEATURE DESCRIPTION	EXISTING	PROPOSED
SURVEY BENCHMARK LOCATION		⊕
IRON ROD WITH CAP SET		⊕
CONCRETE MONUMENT	CMF	⊕
IRON PIPE FOUND	IPF	⊕
IRON ROD FOUND	IRF	⊕

MISCELLANEOUS FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED
LIMIT OF DISTURBANCE		— LOD —

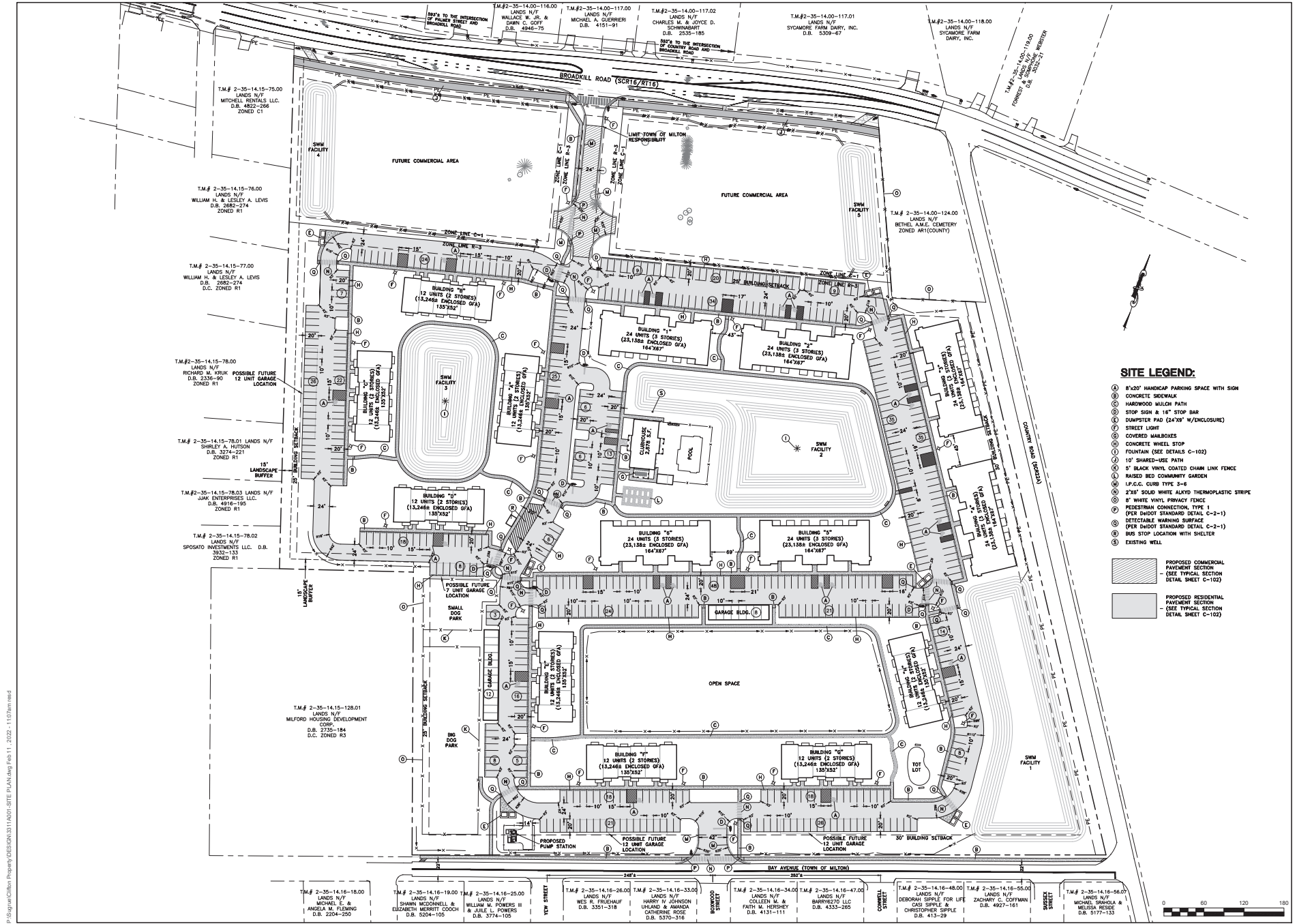
ARCHITECTS ENGINEERS SURVEYORS  
**DAVIS, BROWN & FRIEDEL, INC.**  
 1001 MARKET STREET, SUITE 200  
 WILMINGTON, DELAWARE 19801  
 PHONE: (302) 775-1144  
 FAX: (302) 775-1144

LEGEND

**CYPRESS GROVE**  
**RESIDENTIAL COMMUNITY**  
**SUSSEX COUNTY, DELAWARE**

Revisions:  
  
 Date: MARCH 2021  
 Scale: NOT TO SCALE  
 Drawn By: DJR  
 Proj.No.: 33114001  
 Draw.No.:

**C-003**



**SITE LEGEND:**

- ① 8'x20' HANDICAP PARKING SPACE WITH SIGN
  - ② CONCRETE SIDEWALK
  - ③ HARDWOOD MULCH PATH
  - ④ STOP SIGN & 18" STOP BAR
  - ⑤ DUMPSTER PAD (24'x24" W/ENCLOSURE)
  - ⑥ STREET LIGHT
  - ⑦ COVERED MAILBOXES
  - ⑧ CONCRETE WHEEL STOP
  - ⑨ FOUNTAIN (SEE DETAILS C-102)
  - ⑩ 10' SHARED-USE PATH
  - ⑪ 5' BLACK VINYL COATED CHAIN LINK FENCE
  - ⑫ RAISED BED COMMUNITY GARDEN
  - ⑬ I.P.C.C. CURB TYPE 1-4
  - ⑭ 2'x4" SOLID WHITE ALKALY THERMOPLASTIC STRIPE
  - ⑮ 8" WHITE VINYL PRIVACY FENCE
  - ⑯ PEDESTRIAN CONNECTION, TYPE 1
  - ⑰ OPEN SHOOT STANDING DETAIL C-2-1)
  - ⑱ DETECTABLE WARNING SURFACE (PER SHOOT STANDING DETAIL C-2-1)
  - ⑲ BUS STOP LOCATION WITH SHELTER
  - ⑳ EXISTING WELL
- [Hatched Box] PROPOSED COMMERCIAL PAVEMENT SECTION  
 - (SEE TYPICAL SECTION DETAIL SHEET C-102)
- [Solid Box] PROPOSED RESIDENTIAL PAVEMENT SECTION  
 - (SEE TYPICAL SECTION DETAIL SHEET C-102)

ARCHITECTURE ENGINEERS SURVEYORS  
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**SITE PLAN**

**CYPRESS GROVE**  
**RESIDENTIAL COMMUNITY**  
**SUSSEX COUNTY, DELAWARE**

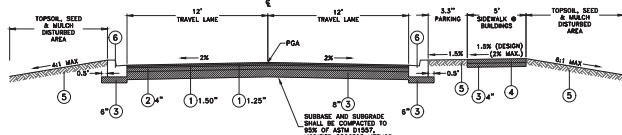
Revisions:

Date: MARCH 2021  
 Scale: 1"=60'  
 Drawn By: DJR  
 Proj. No.: 33114001  
 Draw. No.:  
**C-101**

P:\Spartan\Clifton Property\DESIGN\33114001-SITE PLAN.dwg Feb 11, 2022 - 11:03am rds

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**TYPICAL 24' WIDE COMMERCIAL SECTION**

SCALE: 1"=5'

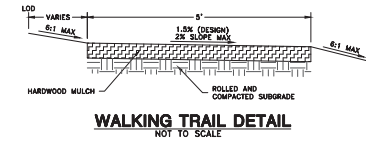
- ① ITEM 401005 - SUPERPAVE, TYPE C, PG 64-22, (CARBONATE STONE)
- ② ITEM 401014 - SUPERPAVE, TYPE B, PG 64-22
- ③ ITEM 301001 - GRADED AGGREGATE BASE COURSE, TYPE B
- ④ ITEM 705001 - PORTLAND CEMENT CONCRETE SIDEWALK, 4"
- ⑤ ITEM 908004 - TOPSOIL (6" DEPTH),  
ITEM 908014 - PERMANENT GRASS SEEDING, DRY GROUND
- ⑥ ITEM 701022 - INTEGRAL P.C.C. CURB AND GUTTER, TYPE 3-6

NOTES:  
 PGCA - PROPOSED DITCH GRADE APPLICATION  
 PGA - PROPOSED GRADE APPLICATION

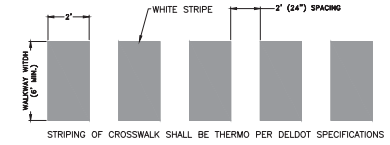
NOTE:  
 MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS ARE:

MATERIAL TYPE	BINDER GRADE	MINIMUM LIFT THICKNESS (in)	MAXIMUM LIFT THICKNESS (in)
TYPE C (4.75mm MX)	ALL	0.5	1.0
TYPE C (9.5mm MX)	ALL	1.25	2
TYPE C (12.5mm MX)	ALL	1.5	2
TYPE B (19mm MX)	76-22, 70-22	2.25	4
TYPE B (19mm MX)	64-22	2.25	6
TYPE B0BC (25mm MX)	64-22	3	6

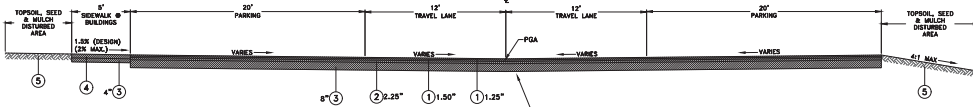
BORROW TYPE A SHALL BE USED UNDER ROADWAY FOOTPRINT.  
 BORROW TYPE F SHALL BE USED OUTSIDE OF ROADWAY FOOTPRINT.



**WALKING TRAIL DETAIL**  
NOT TO SCALE



**PEDESTRIAN CROSSWALK**  
NOT TO SCALE

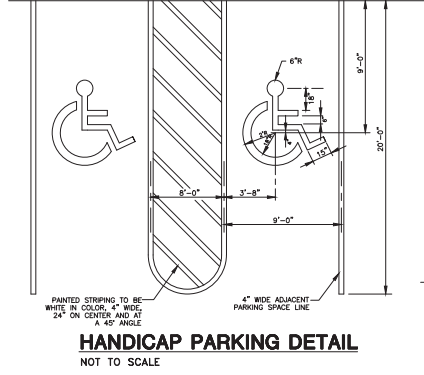


**TYPICAL 24' WIDE RESIDENTIAL SECTION**

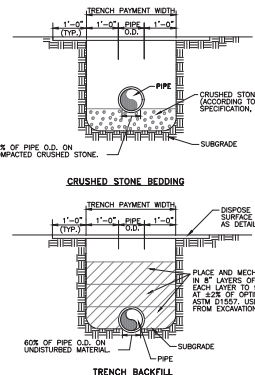
SCALE: 1"=5'

Advertisement for Aqua Master Fountain/Aerator details. It features the Aqua Master logo and contact information: 18024 County Rd X, Kiel, WI USA 53042, 800-693-3144, www.aquamasterfountains.com. The advertisement includes a table of fountain models and their specifications, and a diagram of the fountain/aerator assembly. The diagram shows the fountain/aerator assembly with a control panel and a pump. The control panel includes a power switch, a timer, and a digital display. The pump is a 1/2 HP pump with a 1/2" NPT outlet. The fountain/aerator assembly is made of 304 stainless steel and is designed for use in residential and commercial applications. The advertisement also includes a list of fountain/aerator design types and a list of fountain/aerator components.

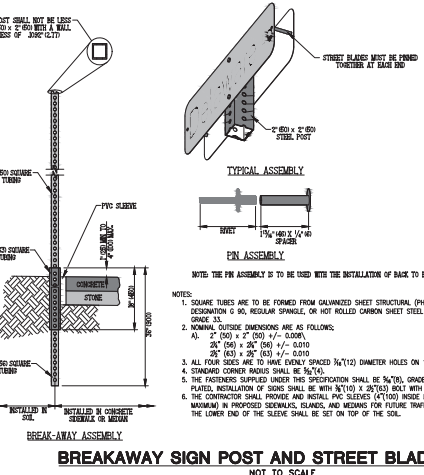
**FOUNTAIN/AERATOR DETAIL**  
NOT TO SCALE



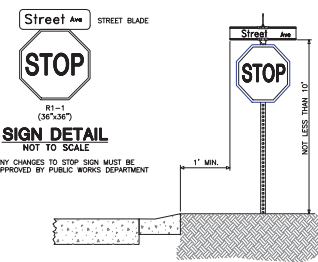
**HANDICAP PARKING DETAIL**  
NOT TO SCALE



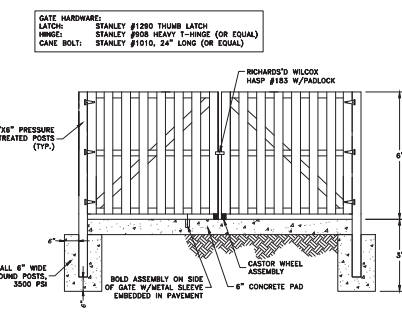
**STORM DRAINAGE TRENCH BACKFILL AND PIPE BEDDING DETAIL**  
NO SCALE



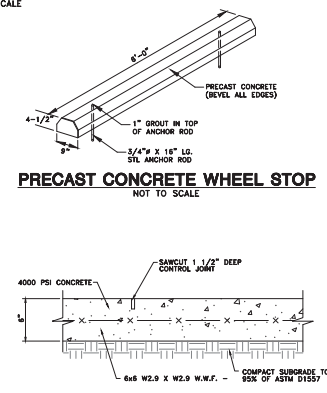
**BREAKAWAY SIGN POST AND STREET BLADE DETAIL**  
NOT TO SCALE



**TYPICAL SIGN INSTALLATION**  
NOT TO SCALE

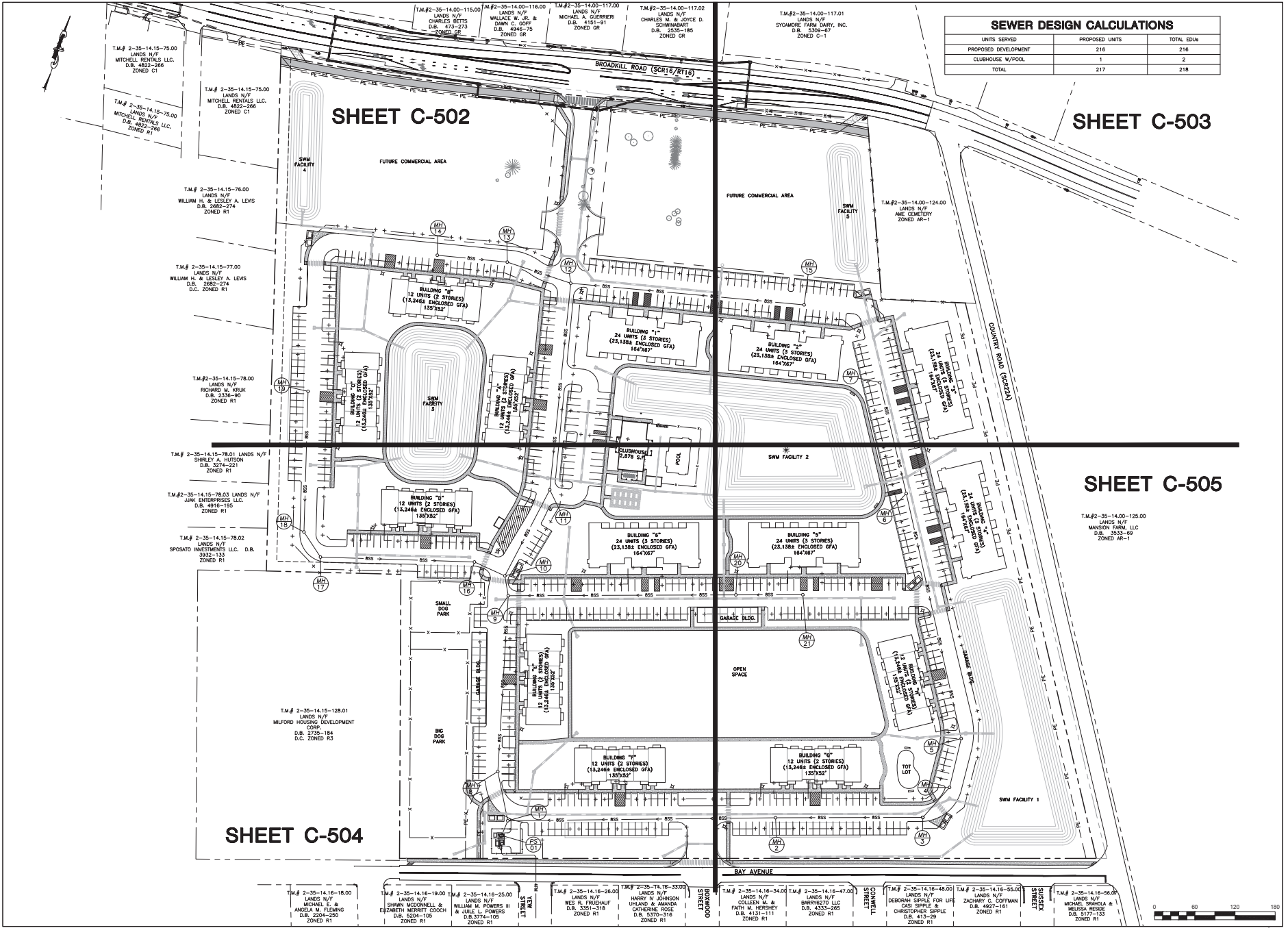


**DUMPSTER PAD ENCLOSURE GATE/FENCE DETAIL**  
NOT TO SCALE



**DUMPSTER PAD DETAIL**  
NOT TO SCALE

P:\Sugarcreek\Property\02\03\14001-SEWER PLANS.dwg, Feb. 14, 2022, 1:04pm east



SEWER DESIGN CALCULATIONS		
UNITS SERVED	PROPOSED UNITS	TOTAL EDUs
PROPOSED DEVELOPMENT	216	216
CLUBHOUSE W/POOL	1	2
TOTAL	217	218

ARCHITECTURE ENGINEERS SURVEYORS  
**DAVIS BOWEN & FRIEDEL, INC.**  
 1000 MARKET STREET, SUITE 200  
 DARTON, MARYLAND 21033-2144  
 PHONE: 410-326-7500  
 FAX: 410-326-7501  
**SEWER OVERVIEW**

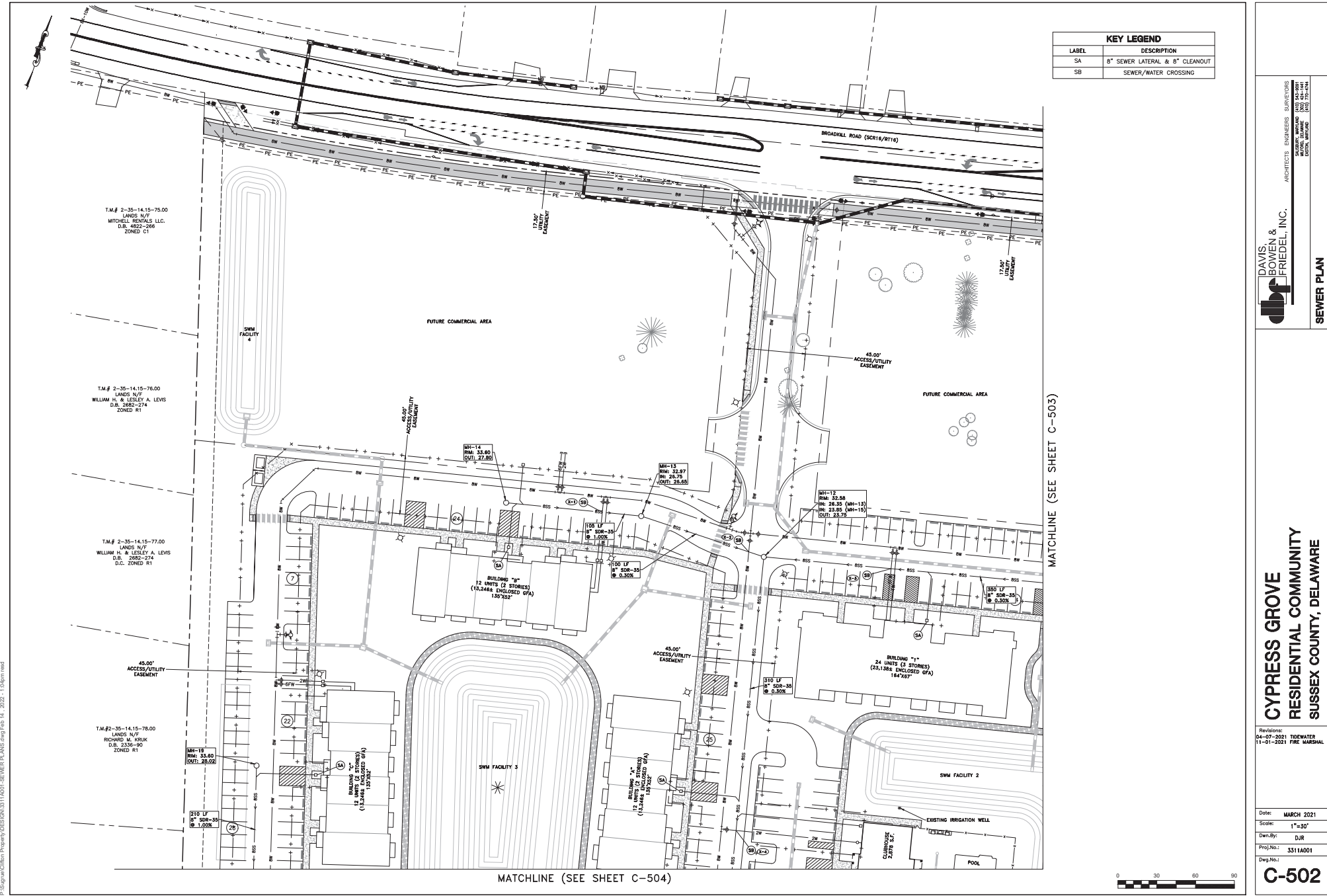
**CYPRESS GROVE  
 RESIDENTIAL COMMUNITY  
 SUSSEX COUNTY, DELAWARE**

Revisions:  
 04-07-2021 TIDewater  
 11-01-2021 FBE, MARSHAL

Date: MARCH 2021  
 Scale: 1"=60'  
 Drawn By: DJR  
 Proj. No.: 33114001  
 Draw. No.:  
**C-501**

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KEY LEGEND	
LABEL	DESCRIPTION
SA	8" SEWER LATERAL & 8" CLEANOUT
SB	SEWER/WATER CROSSING



ARCHITECTS ENGINEERS SURVEYORS  
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 DELEWARE, DELAWARE 19701-2444  
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**CYPRESS GROVE**  
**RESIDENTIAL COMMUNITY**  
**SUSSEX COUNTY, DELAWARE**

Revisions:  
 04-07-2021 THERWATER  
 11-01-2021 FINE MARSHAL

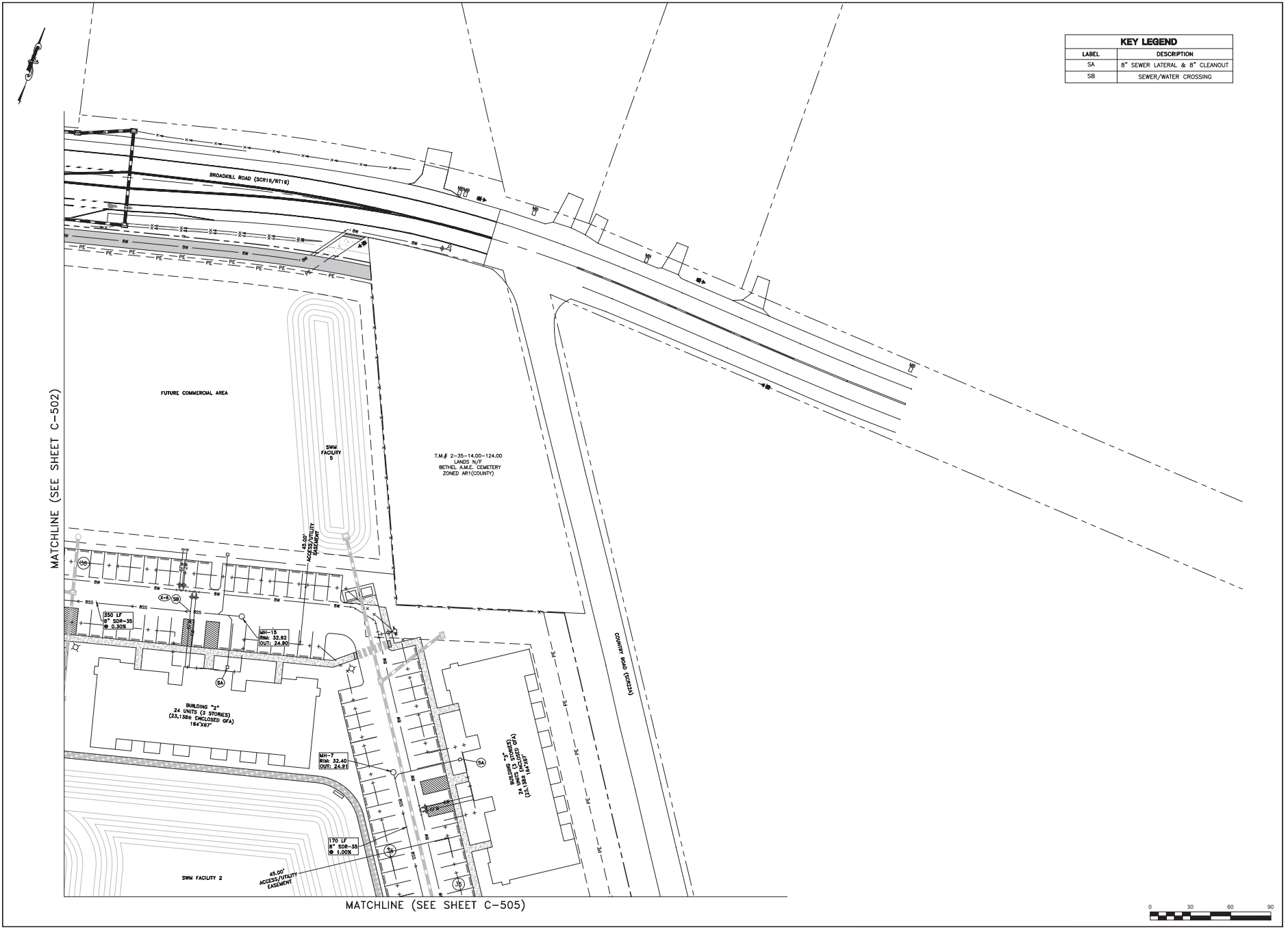
Date: MARCH 2021  
 Scale: 1"=30'  
 Drawn By: DJR  
 Proj. No.: 33114001  
 Draw. No.:

**C-502**

P:\S:\proj\Chilton Property\DESIGN\33114001-SEWER PLANS.dwg (Rev. 14, 2022 - 1:04pm)

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KEY LEGEND	
LABEL	DESCRIPTION
SA	8" SEWER LATERAL & 8" CLEANOUT
SB	SEWER/WATER CROSSING



**DAVIS BROWN & FRIEDEL, INC.**  
 ARCHITECTS ENGINEERS SURVEYORS  
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 PHONE: (302) 441-1941  
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 WWW.DBFRIEDEL.COM

**CYPRESS GROVE  
 RESIDENTIAL COMMUNITY  
 SUSSEX COUNTY, DELAWARE**

Revisions:  
 04-07-2021 TIDWATER  
 11-01-2021 FIRE MARSHAL

Date: MARCH 2021  
 Scale: 1"=30'  
 Drawn By: DJR  
 Proj. No.: 33114001  
 Draw. No.:

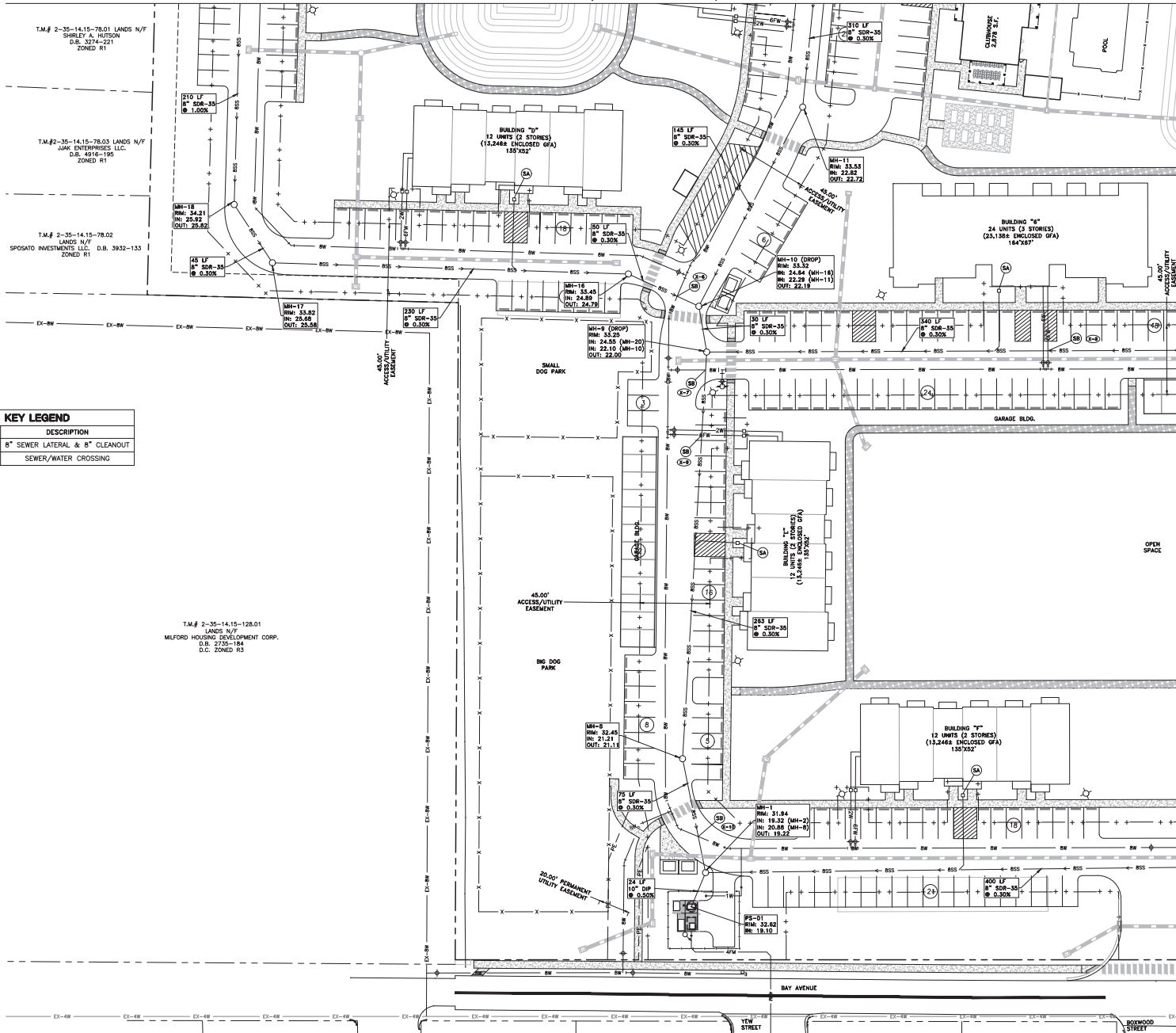
**C-503**



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MATCHLINE (SEE SHEET C-502)



**KEY LEGEND**

LABEL	DESCRIPTION
SA	8" SEWER LATERAL & 8" CLEANOUT
SB	SEWER/WATER CROSSING

MATCHLINE (SEE SHEET C-505)



ARCHITECTS ENGINEERS SURVEYORS  
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 1000 MARKET STREET, SUITE 200  
 WILMINGTON, DELAWARE 19801  
 PHONE: (302) 775-1144  
 FAX: (302) 775-1144

**CYPRESS GROVE  
 RESIDENTIAL COMMUNITY  
 SUSSEX COUNTY, DELAWARE**

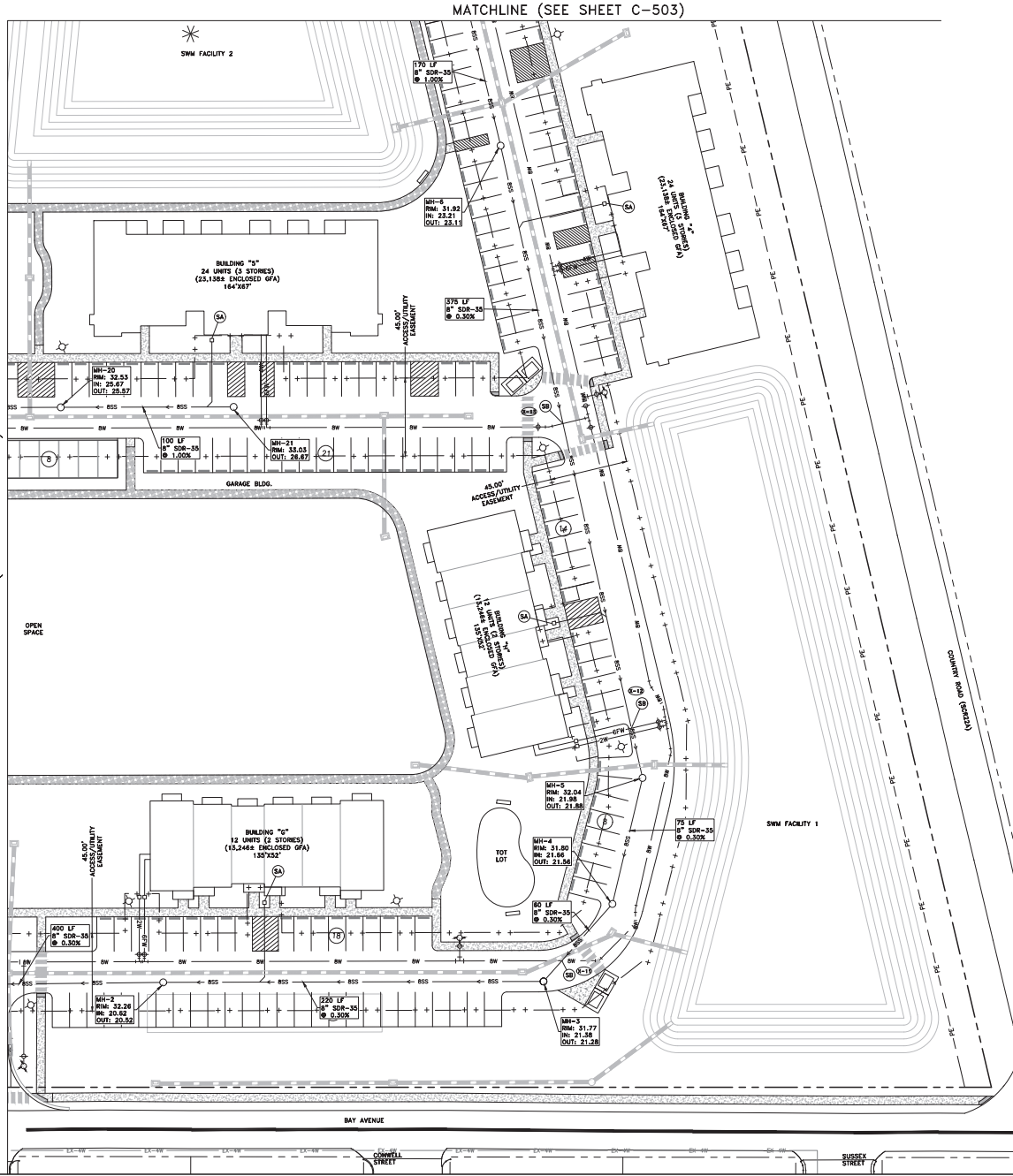
Revisions:  
 04-07-2021 THE WATER  
 11-01-2021 FIRE MARSHAL

Date: MARCH 2021  
 Scale: 1"=30'  
 Drawn By: DJR  
 Project No.: 33114001  
**C-504**

P:\S:\proj\Chilton Property\DESIGN\3311A001-SEWER PLANS.dwg (Rev. 14, 2022 - 1:04pm) mcd



MATCHLINE (SEE SHEET C-504)



MATCHLINE (SEE SHEET C-503)

KEY LEGEND	
LABEL	DESCRIPTION
SA	8" SEWER LATERAL & 8" CLEANOUT
SB	SEWER/WATER CROSSING

**DAVIS BROWN & FRIEDEL, INC.**

ARCHITECTS ENGINEERS SURVEYORS  
 1000 MARKET STREET, SUITE 200  
 DUBLIN, OHIO 43017  
 (614) 544-1000

**CYPRESS GROVE  
 RESIDENTIAL COMMUNITY  
 SUSSEX COUNTY, DELAWARE**

Revisions:  
 04-07-2021 TWEATER  
 11-01-2021 FINE MARSHAL

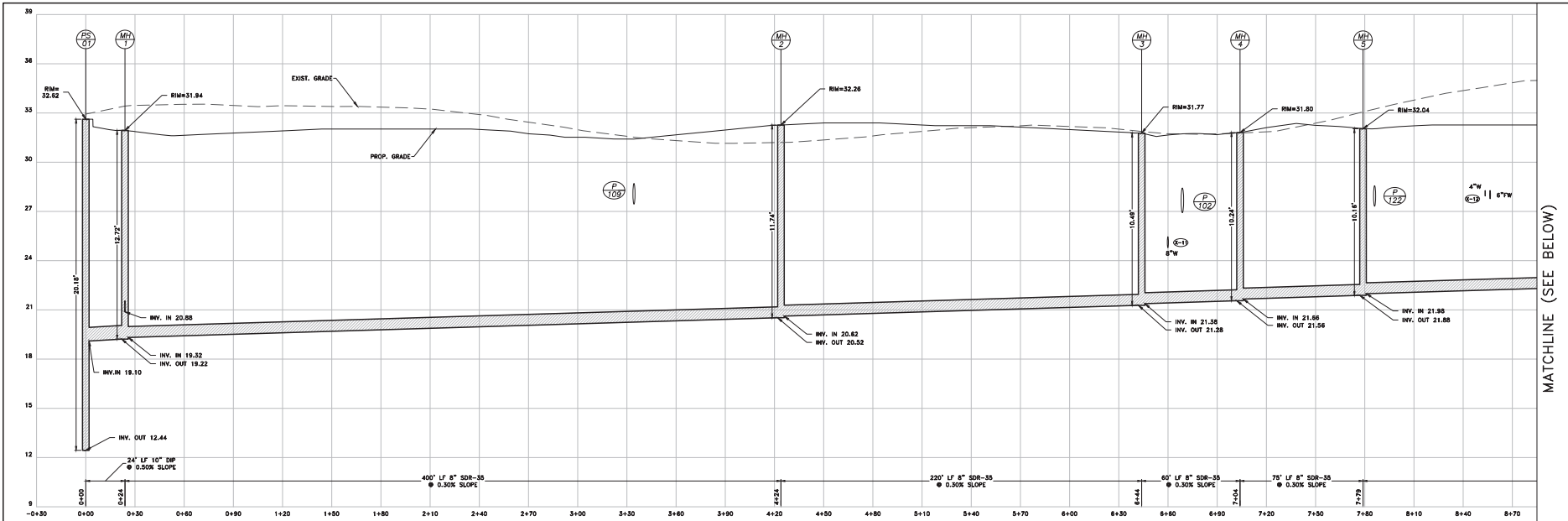
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 Proj.No.: 3311A001  
 Draw.No.:

**C-505**

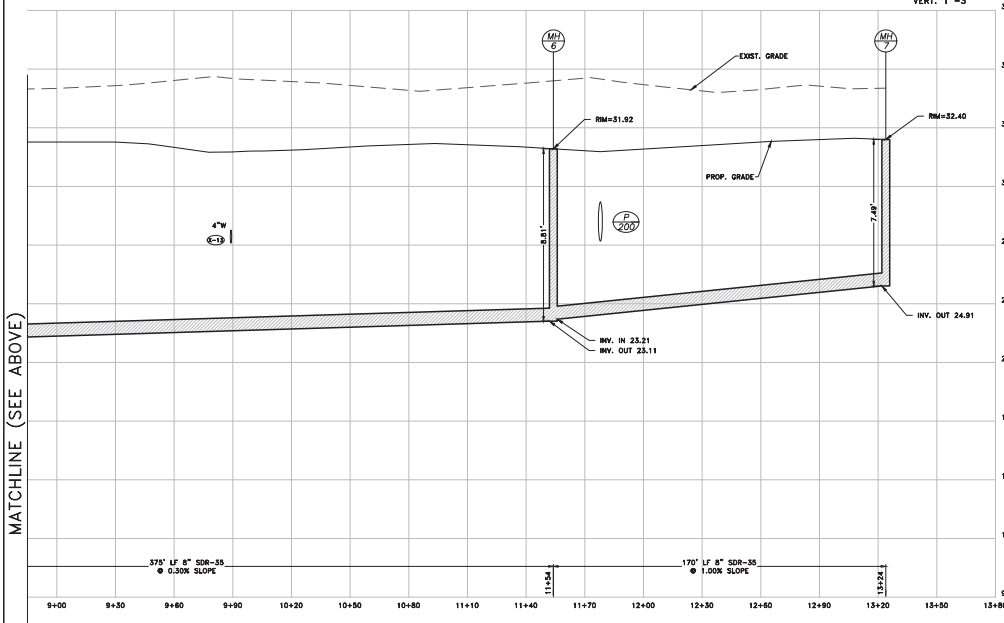


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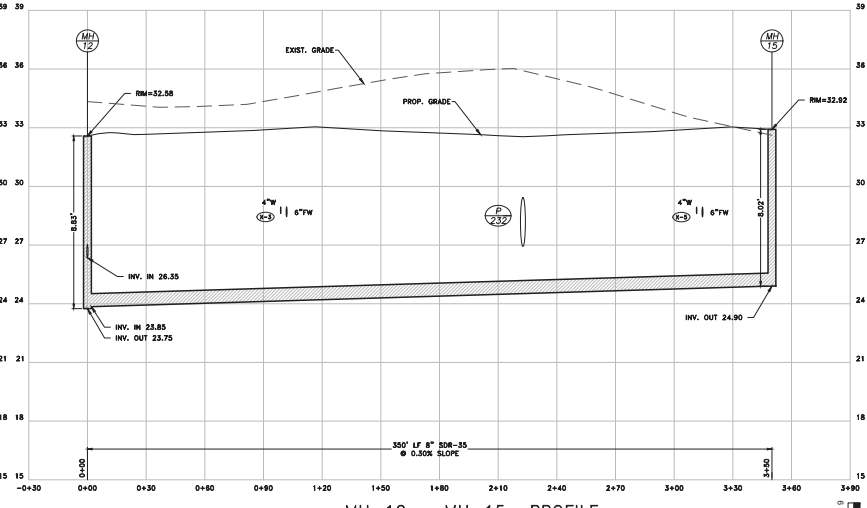
P:\S:\projects\Chilton Property\025\CON\311A001-SEWER PLANS.dwg (Rev. 14, 2022 - 1:06pm.msd)



PS-01 - MH-7 PROFILE  
SCALE: HORIZ. 1"=30'  
VERT. 1"=3'



PS-01 - MH-7 PROFILE  
SCALE: HORIZ. 1"=30'  
VERT. 1"=3'



MH-12 - MH-15 PROFILE  
SCALE: HORIZ. 1"=30'  
VERT. 1"=3'

MATCHLINE (SEE BELOW)

MATCHLINE (SEE ABOVE)

**DAVIS BROWN & FRIEDEL, INC.**  
ARCHITECTS ENGINEERS SURVEYORS  
1001 MARKET STREET, SUITE 200  
DELTRE, MARYLAND 20626  
(301) 751-1144  
FAX: (301) 751-1144

**CYPRESS GROVE  
RESIDENTIAL COMMUNITY  
SUSSEX COUNTY, DELAWARE**

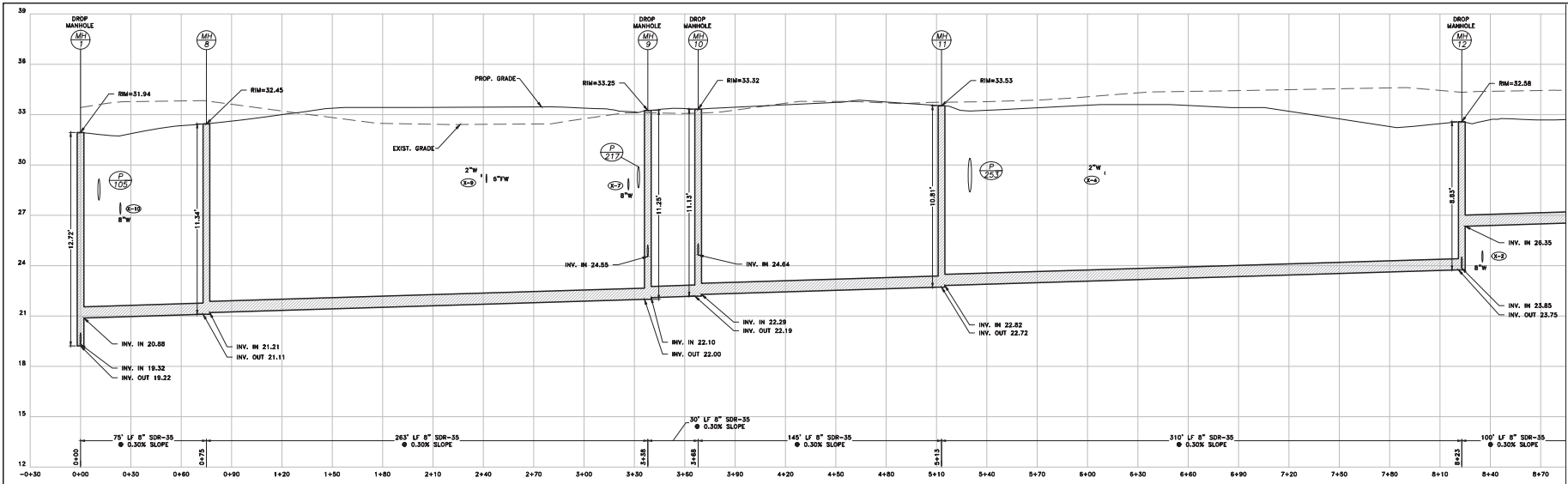
Revisions:  
04-07-2021 THE WATER  
11-01-2021 FIRE MARSHAL

Date: MARCH 2021  
Scale: AS NOTED  
Des. By: DJR  
Proj. No.: 3311A001

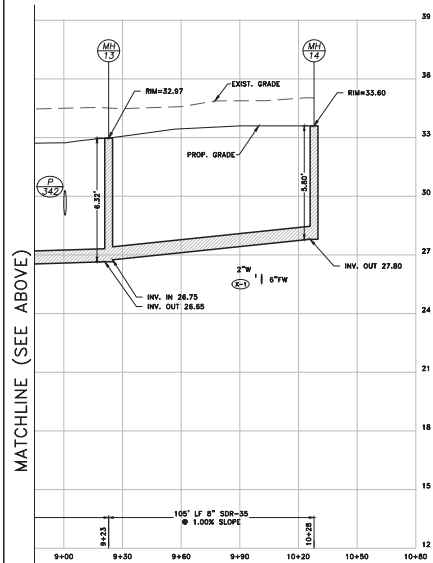
**C-506**

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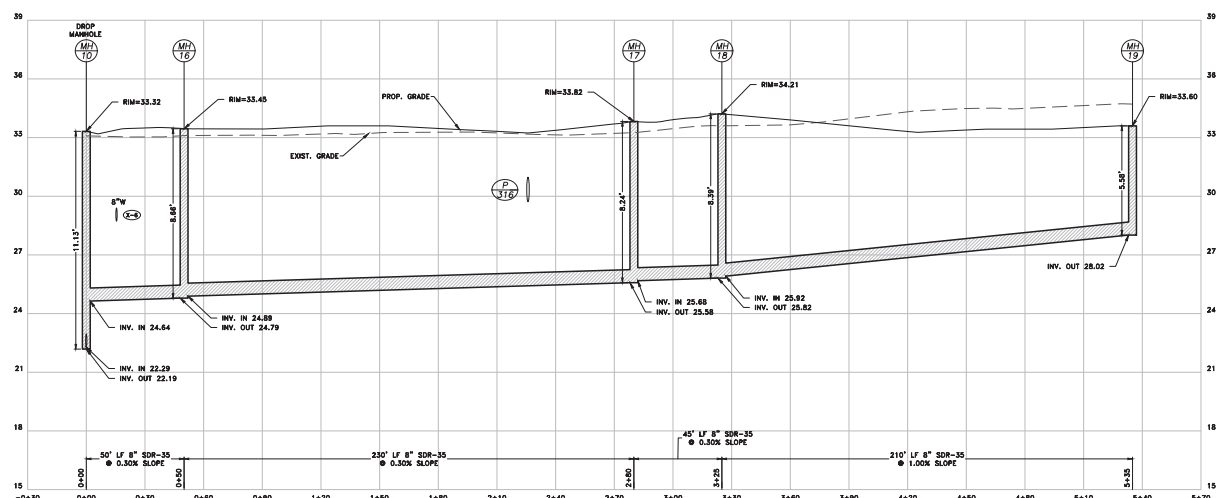
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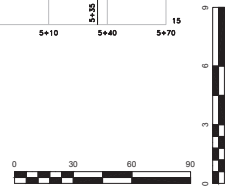
**MH-1 - MH-14 PROFILE**  
SCALE: HORIZ. 1"=30'  
VERT. 1"=3'



**MH-1 - MH-14 PROFILE**  
SCALE: HORIZ. 1"=30'  
VERT. 1"=3'



**MH-10 - MH-19 PROFILE**  
SCALE: HORIZ. 1"=30'  
VERT. 1"=3'



MATCHLINE (SEE BELOW)

**DAVIS BROWN & FRIEDEL, INC.**  
ARCHITECTS ENGINEERS SURVEYORS  
1000 W. MARKET STREET, SUITE 200  
DOVER, DELAWARE 19901  
TEL: 302-739-1144 FAX: 302-739-1144

**CYPRESS GROVE  
RESIDENTIAL COMMUNITY  
SUSSEX COUNTY, DELAWARE**

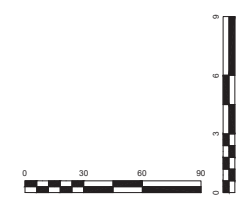
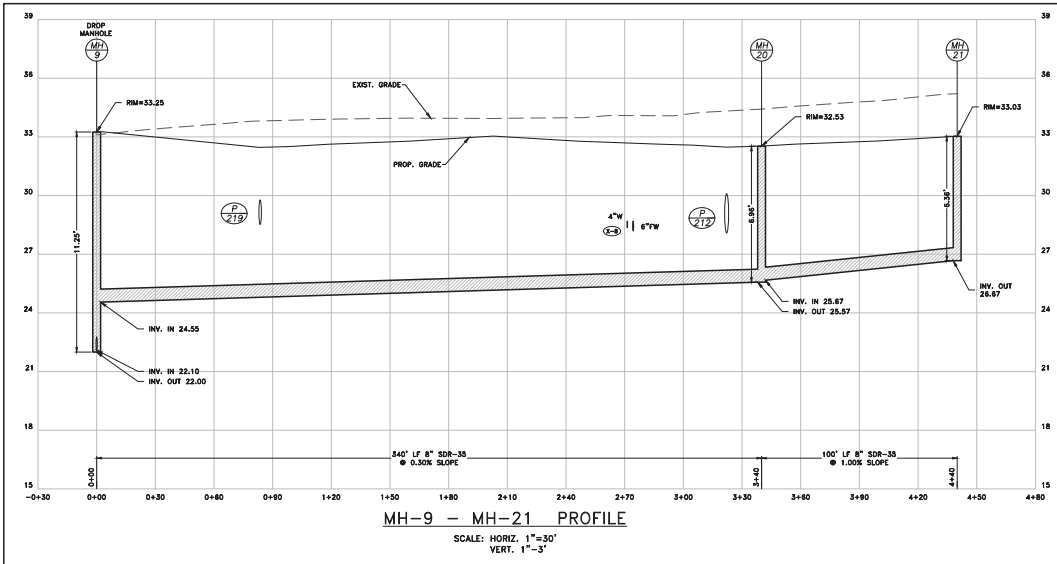
Revisions:  
04-07-2021 TIDEWATER  
11-01-2021 FIRE MARSHAL

Date: MARCH 2021  
Scale: AS NOTED  
Drawn By: DJR  
Proj. No.: 3311A001  
Dwg. No.:

C-507



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 1000 MARKET STREET, SUITE 200  
 DELAWARE, OHIO 43015  
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 FAX: (614) 775-1144

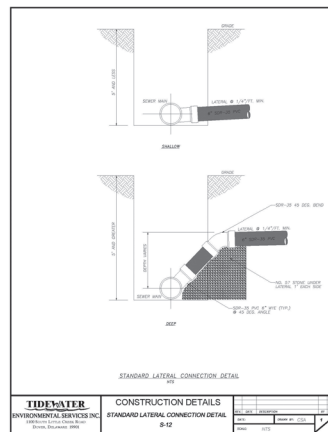
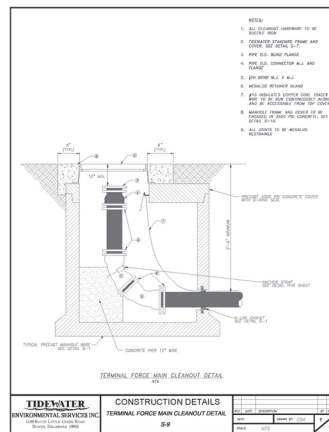
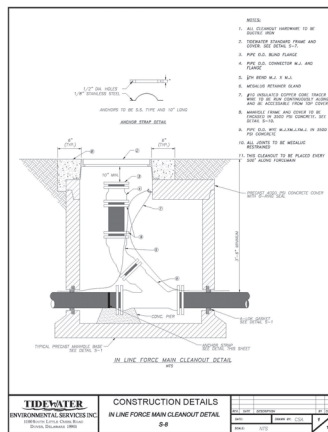
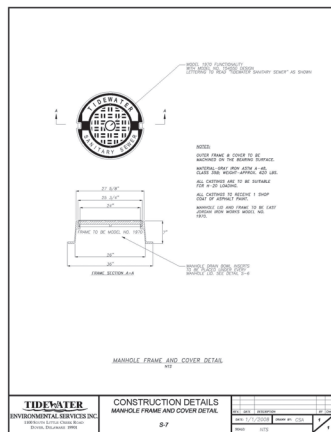
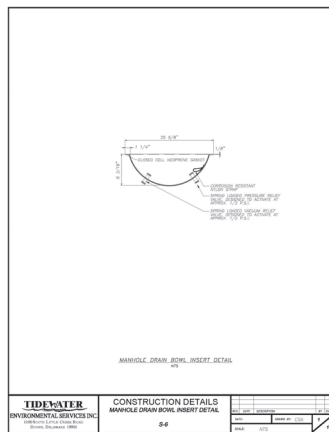
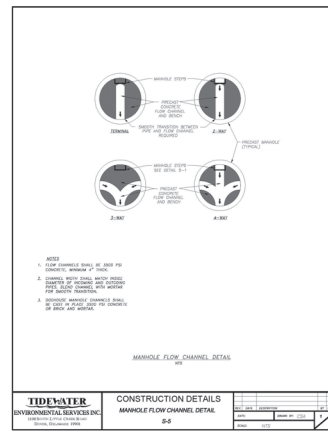
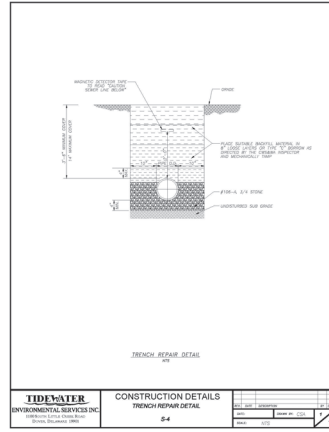
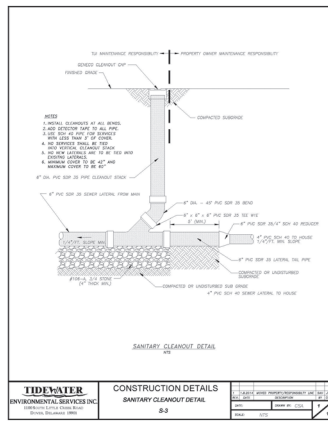
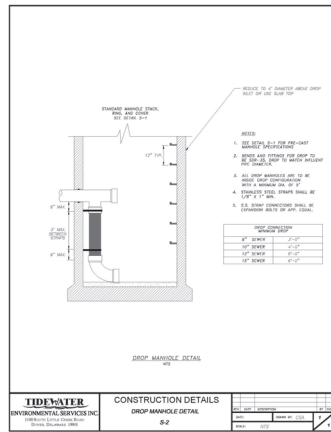
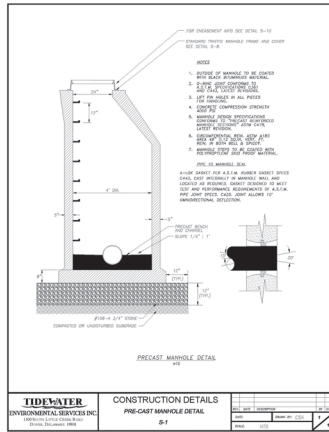
**CYPRESS GROVE  
 RESIDENTIAL COMMUNITY  
 SUSSEX COUNTY, DELAWARE**

Revisions:  
 04-07-2021 TIDEWATER  
 11-01-2021 FIRE MARSHAL

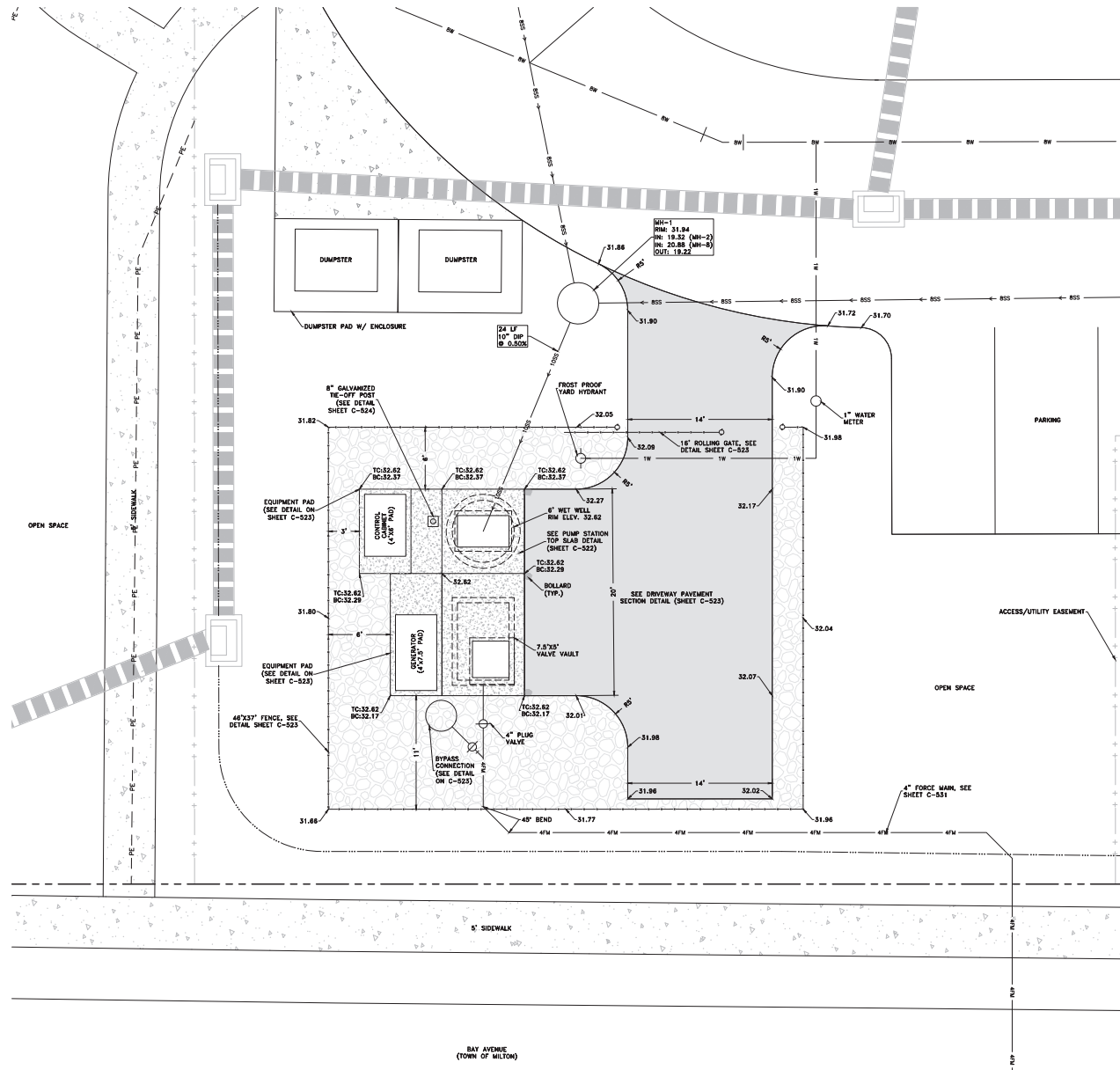
Date:	MARCH 2021
Scale:	AS NOTED
Drawn By:	DJR
Proj. No.:	3311A001
Draw. No.:	<b>C-508</b>

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P:\S:\purch\Chilton Property\DESIGN\311A001-PUMP STATION PLANS.dwg Feb. 14, 2022 - 11:22am read



BAY AVENUE  
(TOWN OF MILTON)  
**PUMP STATION SITE PLAN**  
SCALE: HORIZ. 1"=5'



DAVIS BOWEN & FRIEDEL, INC.  
ARCHITECTS ENGINEERS SURVEYORS  
1001 MARKET STREET, SUITE 200  
MILFORD, DELAWARE 19966  
(302) 434-1941  
(302) 434-1942  
(302) 775-1144

**PUMP STATION SITE PLAN**

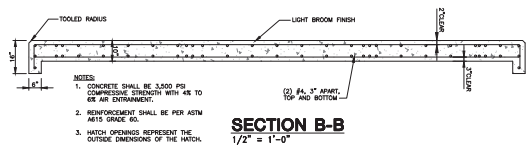
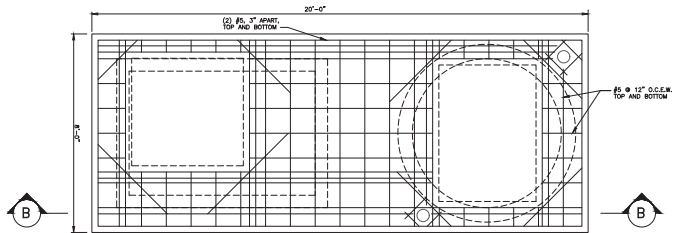
**CYPRESS GROVE  
RESIDENTIAL COMMUNITY  
SUSSEX COUNTY, DELAWARE**

Revisions:

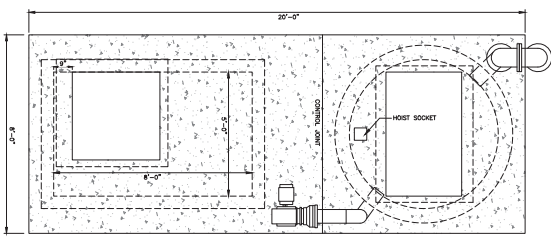
Date: FEBRUARY 2021  
Scale: 1"=5'  
Drawn By: DJR  
Proj.No.: 3311A001  
Dwg.No.:

**C-521**

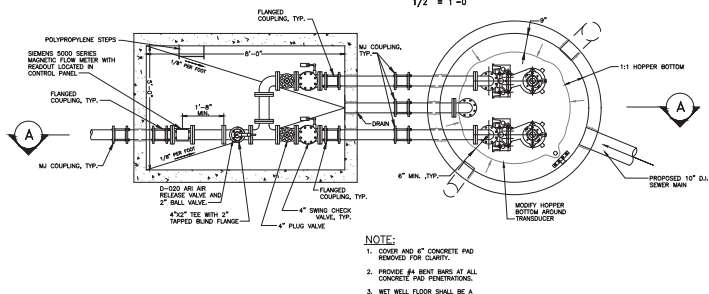
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**REINFORCEMENT PLAN**  
1/2" = 1'-0"



**TOP SLAB PLAN**  
1/2" = 1'-0"

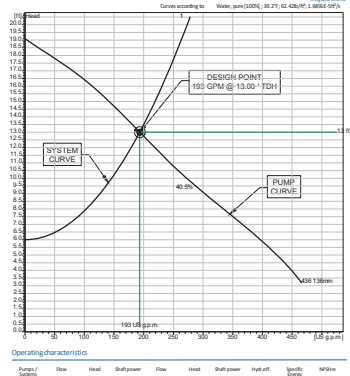


**NOTE:**

1. COVER AND 6" CONCRETE PAD REMOVED FOR CLARITY.
2. PROVIDE #4 BENT BARS AT ALL CONCRETE PAD PENETRATIONS.
3. WET WELL FLOOR SHALL BE A HOPPER BOTTOM.

**PLAN**  
1/2" = 1'-0"

NP 3069 MT 3- Adaptive 436  
Duty Analysis



**PUMP CURVE**  
PUMPS SHALL BE FLYGT (2-4) NP 43088 MT 3 PHASE ADAPTIVE 46 WITH 438 IMPELLER OR APPROVED EQUAL.

**SANITARY FLOW DATA**

PROPOSED AVERAGE DAILY FLOW: 61,000 G.P.D.  
ON SITE 244 EDU'S x 250 G.P.D.

**PUMP STATION WET WELL SIZING**

PEAK DESIGN FLOW(61,000 GPD/1440 MIN/DAY) x 4.0 (P.F.)= 170 GPM (USE 167 GPM)

**WET WELL VOLUME:**  
MIN=7.5 MIN. x 167 GPM/4=351 GAL. (46.92 CF)  
USING 6 FT DIAMETER WET WELL: AREA= 28.26 SF  
DISTANCE FROM PUMP ON TO PUMP OFF: 46.92 CF/24.00 SF= 1.96 FT.

**PUMP DESIGN DATA (BASED ON 167 GPM)**

**FORCE MAIN LENGTHS:** 160 FT.

**4 INCH PVC (C=150):**

**FORCE MAIN VELOCITY (AT 167 GPM):** 5.50 FPS  
**4 INCH FORCE MAIN:** 5.50 FPS  
**STATIC HEAD: (27.67'-15.19')** 12.48 FT.

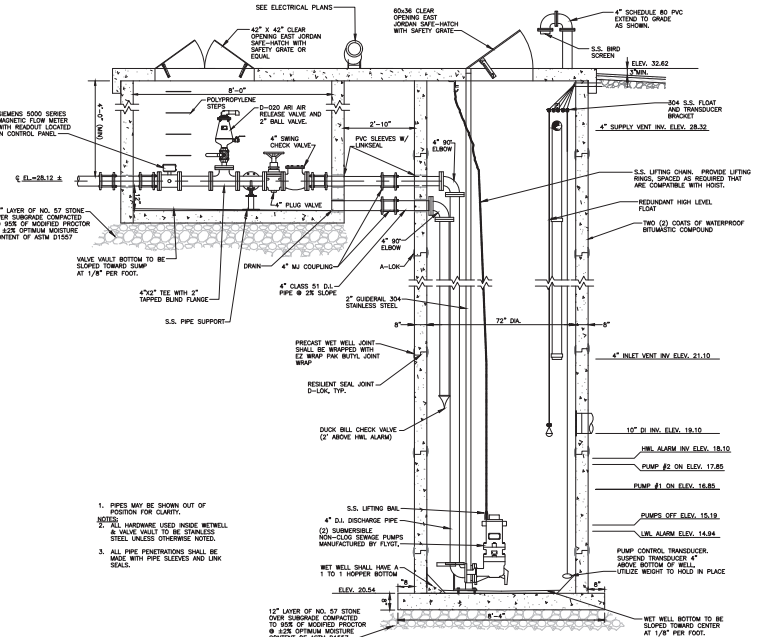
**FORCE MAIN LOSSES:**

**TOTAL MINOR LOSSES:** Hm = 3.00 FT.  
**TOTAL FRICTION LOSSES:** Hf = 3.28 FT.  
**TOTAL VELOCITY LOSSES:** Hv = 0.30 FT.

**TOTAL HEAD:** 19.00 FT.

**CONTROL SETTINGS**

**10 INCH WELLET INVERT ELEV.=** 19.10 FT.  
**HIGH WATER ALARM ELEV.=** 18.10 FT.  
**LAG PUMP ON ELEV.=** 17.85 FT.  
**LEAD PUMP ON ELEV.=** 16.85 FT.  
**PUMP OFF ELEV.=** 15.19 FT.  
**LOW WATER ALARM ELEV.=** 14.94 FT.  
**BOTTOM OF WET WELL=** 12.44 FT.



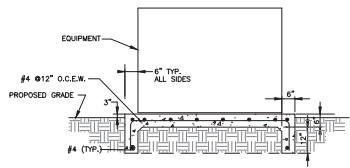
**SECTION A-A**  
N.T.S.

DAVIS, BOWEN & FRIEDEL, INC.  
 ARCHITECTS ENGINEERS SURVEYORS  
 1000 MARKET STREET, SUITE 200  
 DEWESPORT, DELAWARE 19841  
 PHONE: 302-338-7500  
 FAX: 302-338-7501  
 WWW.DBFINC.COM

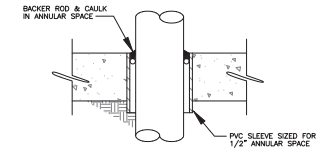
PUMP STATION DETAILS

CYPRESS GROVE  
 RESIDENTIAL COMMUNITY  
 SUSSEX COUNTY, DELAWARE

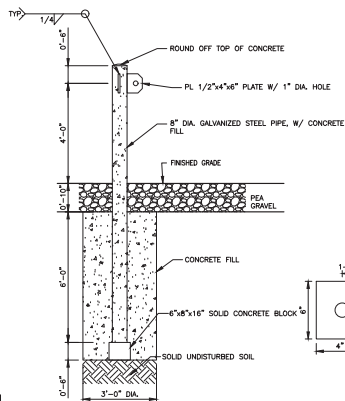
Date: FEBRUARY 2021  
 Scale: AS SHOWN  
 Drawn By: DJR  
 Proj No.: 3311A001  
 Dwg No.: C-522



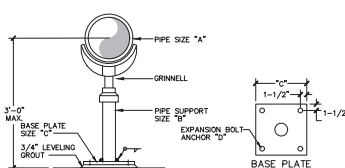
**EQUIPMENT PAD DETAIL**  
NOT TO SCALE



**SLAB SLEEVE & CAULK DETAIL**  
NOT TO SCALE



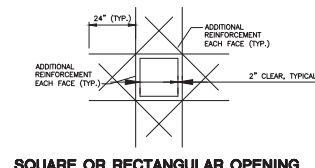
**8" GALVANIZED TIE-OFF POST FOR FALL PROTECTION DETAIL**  
NOT TO SCALE



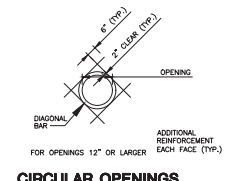
"A"	"B"	"C"	"D"	MAX. WEIGHT (LB.)
3	2-1/2"	1/2 X 9 X 9	3/8"	170
4	3"	1/2 X 9 X 9	3/8"	330
6	3"	1/2 X 9 X 9	3/8"	780
8	3"	1/2 X 9 X 9	3/8"	1240
10	4"	3/4 X 10 X 10	1/2"	2200
12	4"	3/4 X 10 X 10	1/2"	2280
14	4"	3/4 X 10 X 10	1/2"	2640
16	4"	3/4 X 10 X 10	1/2"	3260
18	6"	7/8 X 12 X 12	1/2"	4940
20	6"	7/8 X 12 X 12	1/2"	5880
24	6"	7/8 X 12 X 12	1/2"	8010

- NOTES:  
 (1) ALL DIMENSIONS IN INCHES.  
 (2) CONCRETE FLOOR SLAB TO HAVE MIN. 3500 PSI.  
 (3) SUPPORT PIPE TO BE ASME A53, GRADE B, TYPE E OR S, STANDARD WEIGHT, CARBON STEEL.  
 (4) EXPANSION BOLTS TO HAVE 3500 OR EQUIVALENT LISTING.  
 (5) THIS DETAIL IS NOT APPLICABLE FOR STEAM OR HOT WATER PIPING.

ALL MATERIALS IN PIPING SUPPORTS SHALL BE 304 STAINLESS STEEL.



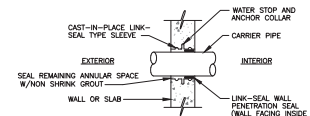
**SQUARE OR RECTANGULAR OPENING**



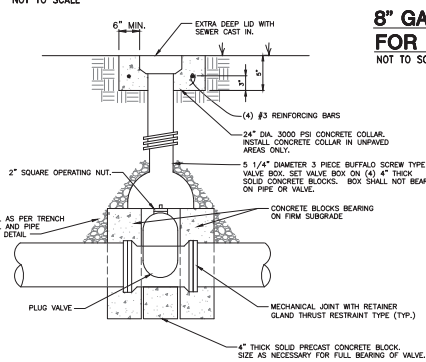
**FOR OPENINGS 12" OR LARGER**

**TYPICAL OPENING AND CORNER REINFORCEMENT DETAILS**  
NOT TO SCALE

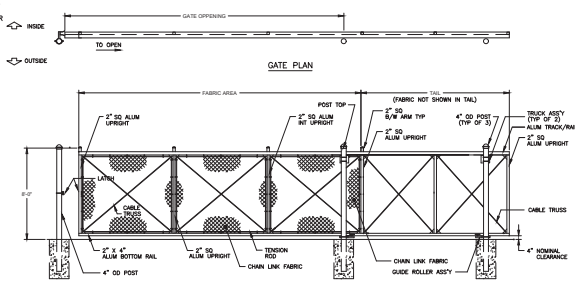
NOTE: BOWLS & ADDITIONAL REINFORCING SHALL BE SAME SIZE AS BARS AT THAT FACE.



**SLEEVE - PROPOSED WALL OR SLAB WALL SLEEVE DETAIL**  
NOT TO SCALE

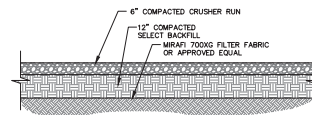


**PLUG VALVE DETAIL**  
NOT TO SCALE



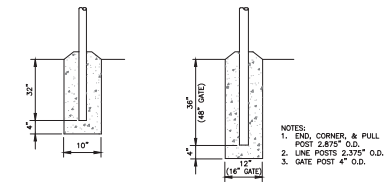
GATE ELEVATION - (3) BAYS SHOWN

- NOTES:  
 1. FOLDING BOLTS TO BE 1/2" POST WELLS. MIN. DEPTH TO BE 3".  
 2. GATES MAY BE MANUALLY OR ELECTRICALLY OPERATED.



**GRAVEL SECTION**  
NOT TO SCALE

NOTE: SUB GRADE COMPACTED TO 65% OF MODIFIED PROCTOR @ 3.25% OPTIMUM MOISTURE CONTENT OF ASTM D1557.



**POST ANCHORAGE DETAIL**  
NOT TO SCALE

ELEVATION (VIEWED FROM INSIDE FENCE)

ELEVATION (VIEWED FROM INSIDE FENCE)

CHAIN LINK FENCE DETAIL

NOT TO SCALE

NOTES:  
 1. INSTALL PVC PRIVACY SLATS. COLOR SHALL BE APPROVED BY OWNER.  
 2. FENCE FABRIC TO BE VINYL COATED.

NOTE: TRUCK BRACKET AND BOTTOM GUIDE ROLLER ASSEMBLY CAN ALSO BE BOLTED TO A SOLID GROUTED CHAIN WALL.

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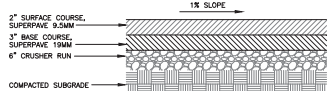
NOTE: TRUCK BRACKET AND BOTTOM GUIDE ROLLER ASSEMBLY CAN ALSO BE BOLTED TO A SOLID GROUTED CHAIN WALL.

NOTE: TRUCK BRACKET AND BOTTOM GUIDE ROLLER ASSEMBLY CAN ALSO BE BOLTED TO A SOLID GROUTED CHAIN WALL.

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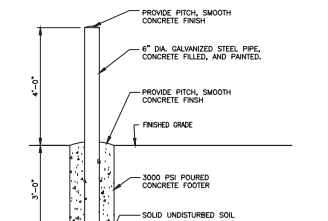
NOTE: TRUCK BRACKET AND BOTTOM GUIDE ROLLER ASSEMBLY CAN ALSO BE BOLTED TO A SOLID GROUTED CHAIN WALL.

NOTE: TRUCK BRACKET AND BOTTOM GUIDE ROLLER ASSEMBLY CAN ALSO BE BOLTED TO A SOLID GROUTED CHAIN WALL.



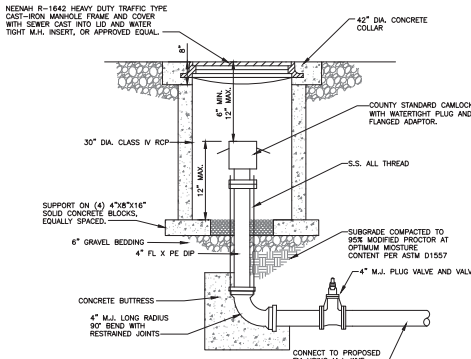
**DRIVEWAY PAVEMENT SECTION**  
NOT TO SCALE

- NOTES:  
 1. ALL THICKNESS ARE MINIMUM. COMPACTED, IN PLACE.  
 2. SLOPE PAVING FOR POSITIVE DRAINAGE, OR AS INDICATED.



**6" GALVANIZED STEEL PIPE BOLLARD DETAIL**  
NOT TO SCALE

- NOTES:  
 1. ALL CONCRETE USED FOR BOLLARDS SHALL BE PORTLAND CEMENT CONCRETE MIX NO. 2.  
 2. SURFACE PREPARATION FOR PAINTED BOLLARDS INCLUDES REMOVAL OF ANY INK MARKINGS BY WIPING DOWN PIPE WITH CLEAN LINT-FREE CLOTHS SATURATED WITH CENTURATED ALCOHOL, PROVIDING UNIFORM SCOURING AS NECESSARY, AND WIPING OFF DUST RESIDUE.  
 3. PAINTING OF BOLLARDS TO CONSIST OF PRIMER, INTERMEDIATE AND FINISH COATS AS FOLLOWS: PRIMER - 2.0 TO 3.0 MILS THICK; INTERMEDIATE - 2.0 TO 3.0 MILS THICK; FINISH COAT - 2.0 TO 3.0 MILS THICK. TOTAL DRY FILM THICKNESS TO BE 7.0 TO 10.0 MILS.  
 4. BOLLARD COLOR SCHEDULE IS AS FOLLOWS: MECHANICAL, ELECTRICAL, AND HVAC EQUIPMENT, HYDRANTS - YELLOW.



**EMERGENCY BYPASS DETAIL & FORCEMAIN CLEANOUT DETAIL**  
NOT TO SCALE

**FAST-TRAC CANTILEVERED SLIDING CHAINLINK FENCE GATE DETAIL**  
NOT TO SCALE

**FAST-TRAC CANTILEVERED SLIDING CHAINLINK FENCE GATE DETAIL**  
NOT TO SCALE

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NOT TO SCALE

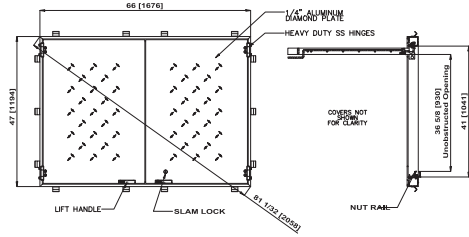
**FAST-TRAC CANTILEVERED SLIDING CHAINLINK FENCE GATE DETAIL**  
NOT TO SCALE

Revisions:

Date: FEBRUARY 2021  
 Scale: AS SHOWN  
 Drawn By: DJR  
 Proj. No.: 33114001  
 Draw. No.:

**C-523**

## CLN2 Pedestrian Rated Aluminum SAFE HATCH



Style "CLN2" access hatch, as manufactured by EJ.

Material shall be 6061-T6 aluminum for bars, angles, and extrusions. 1/4" diamond plate shall be 5086 aluminum.

Unit designed pedestrian rated, for a minimum live load of 300 lbs./sq. ft. Hinges shall be of heavy duty design. Material shall be grade 316 stainless steel. Each hinge shall have a grade 316 stainless steel, 3/8" diameter pin. Hinges shall be fastened to the channel frame and diamond plate using grade 316 stainless steel bolts and ny-lock nuts.

Each door shall be equipped with a stainless steel hold open arm. Door shall lock open in the 90 degree position. Hold open arm shall be fastened to the frame with a 1/2" grade 316 stainless steel bolt.

Frame shall be of extruded aluminum. A dovetail groove shall be extruded into the seat of the frame for a 1/8" silicone gasket.

Exterior of frame which comes in contact with the concrete shall be coated with one coat of black paint. All hardware shall be stainless steel. Each hatch shall be equipped with an aluminum lift handle. The lift handle shall be flush with the top of the 1/4" diamond plate.

Units shall be supplied with hinged safety grates to provide protection against fall through and to control access to the confined space.

Each "CLN2" style hatch is supplied with a 1/2" threaded Drain coupler on underside of channel frame for pipe connection.

Each hatch shall be supplied with a grade 316 stainless steel slam lock, with key way protected by a threaded plug. Plug shall be flush with the top of the 1/4" diamond plate. Slam lock shall be fastened with four grade 316 stainless steel bolts and washers.

- Product Number**  
H36601591
- Design Features**
- Material: 6061-T6 Aluminum
  - Design Load: 300 psf
  - Open Area
  - Coating: Mill Finish
  - Mill Finish
  - Designates Machined Surface

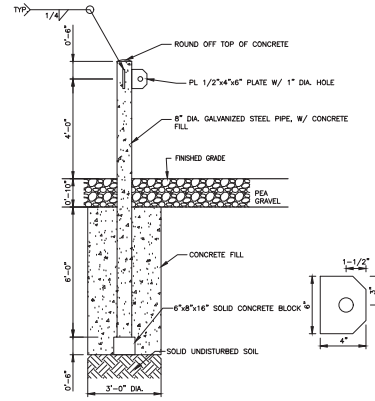
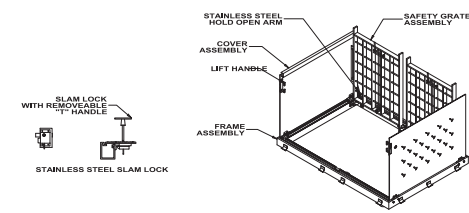
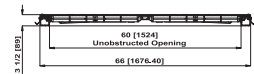
- Certification**
- NPTF-xxxx
  - WT 197 lbs
  - Country of Origin: USA

- Drawing Revision**  
5/1/2017 Designer: RJM  
Revised By:

**Disclaimer**  
Weights (lbs.), dimensions (inches/millimeters) and drawings provided by your guidance. We reserve the right to modify specifications without prior notice.

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**Contact**  
800 626 4653  
ejco.com



**8" GALVANIZED TIE-OFF POST FOR FALL PROTECTION DETAIL**  
NOT TO SCALE

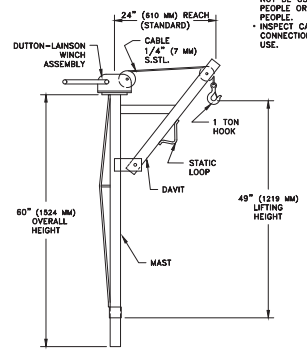
- STANDARD FEATURES:**
- TYPE-304 STAINLESS STEEL CONSTRUCTION
  - 30 FEET (9 METERS) OF 1/4" (7 MM) STAINLESS STEEL CABLE
  - GALVANIZED 1 TON HOOK
  - DUTTON-LANSON MARINE GRADE BRAKE WINCH
  - 3 YEAR GUARANTEE
- OPTIONS:**
- TYPE-316 CONSTRUCTION
  - ADDITIONAL CABLE AVAILABLE (SPECIFY LENGTH)
  - STAINLESS STEEL WINCH
  - STAINLESS STEEL HOOK
  - OTHER REACHS AVAILABLE UPON REQUEST (CONSULT FACTORY)

**HP**  
HALLIDAY PRODUCTS  
www.HallidayProducts.com  
Phone 800-288-1027  
Fax 407-288-4386  
Sales@HallidayProducts.com

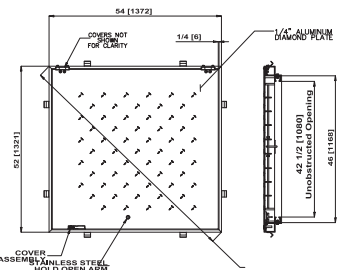
STANDARD SIZES			
QTY	MODEL NO.	MAX. LOAD LBS. (KG.)	UNIT WT. LBS. (KG.)
CS24C	8002009	60,000	60.000
CS24C	1000454	88,000	88.000
CS24C	1000460	103,000	103.000

**NOTICE:**

- HALLIDAY PRODUCTS STAINLESS STEEL PORTABLE HOIST SHOULD NOT BE USED TO MOVE PEOPLE OR LOADS ABOVE PEOPLE.
- INSPECT CABLE AND HOOK CONNECTIONS BEFORE EACH USE.



## CLN1 Pedestrian Rated Aluminum SAFE HATCH



Style "CLN2" access hatch, as manufactured by EJ.

Material shall be 6061-T6 aluminum for bars, angles, and extrusions. 1/4" diamond plate shall be 5086 aluminum.

Unit designed pedestrian rated, for a minimum live load of 300 lbs./sq. ft. Hinges shall be of heavy duty design. Material shall be grade 316 stainless steel. Each hinge shall have a grade 316 stainless steel, 3/8" diameter pin. Hinges shall be fastened to the channel frame and diamond plate using grade 316 stainless steel bolts and ny-lock nuts.

Each door shall be equipped with a stainless steel hold open arm. Door shall lock open in the 90 degree position. Hold open arm shall be fastened to the frame with a 1/2" grade 316 stainless steel bolt.

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Units shall be supplied with hinged safety grates to provide protection against fall through and to control access to the confined space.

Each "CLN2" style hatch is supplied with a 1/2" threaded Drain coupler on underside of channel frame for pipe connection.

Each hatch shall be supplied with a grade 316 stainless steel slam lock, with key way protected by a threaded plug. Plug shall be flush with the top of the 1/4" diamond plate. Slam lock shall be fastened with four grade 316 stainless steel bolts and washers.

- Product Number**  
H42421491
- Design Features**
- Material: Aluminum
  - Design Load: 300 psf
  - Open Area
  - Coating: Mill Finish
  - Mill Finish
  - Designates Machined Surface

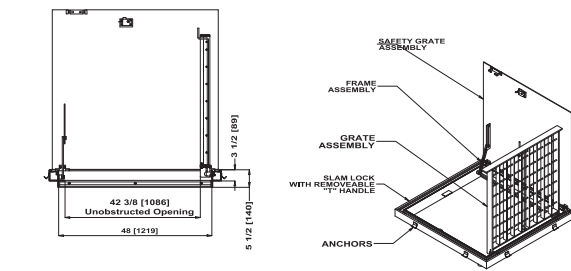
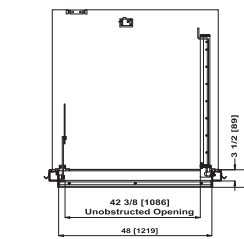
- Certification**
- NPTF-xxxx
  - WT 197 lbs
  - Country of Origin: USA

- Drawing Revision**  
5/9/2018 Designer: RJM  
Revised By:

**Disclaimer**  
Weights (lbs.), dimensions (inches/millimeters) and drawings provided by your guidance. We reserve the right to modify specifications without prior notice.

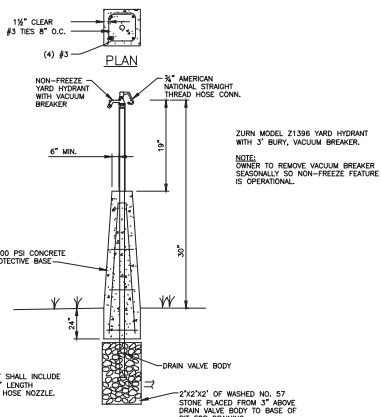
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## SERIES DA PORTABLE HOIST

NOT TO SCALE



**YARD HYDRANT DETAIL**  
NOT TO SCALE

ARCHITECTURE ENGINEERS - SURVEYORS  
REGISTERED PROFESSIONALS  
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DALLAS, TEXAS 75201  
(972) 775-1144



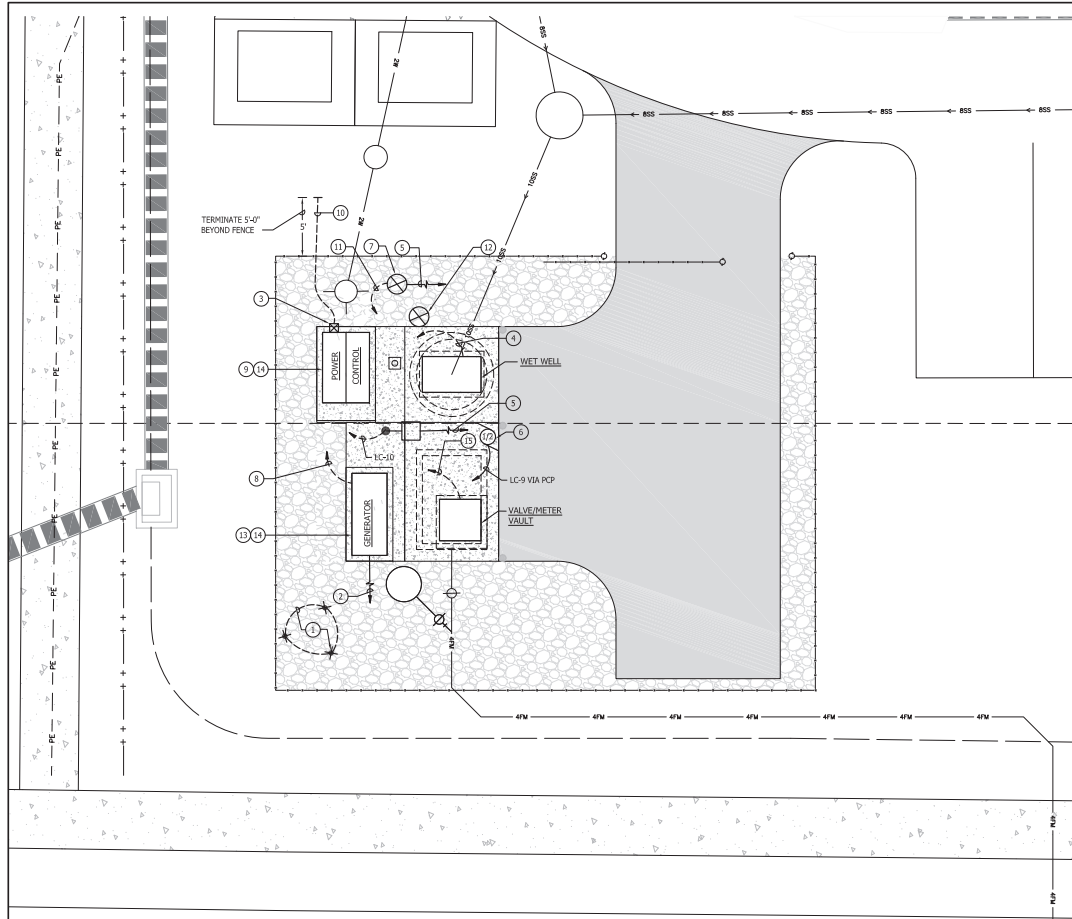
PUMP STATION DETAILS

CYPRESS GROVE  
RESIDENTIAL COMMUNITY  
SUSSEX COUNTY, DELAWARE

Revisions:

Date: FEBRUARY 2021  
Scale: AS SHOWN  
Drawn By: DJR  
Proj. No.: 33114001  
Drawn No.:

**C-524**



PUMP STATION SITE PLAN  
SCALE: 1" = 5'-0"



**ELECTRICAL LEGEND**

**ABBREVIATIONS:**

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

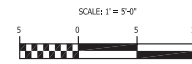
**SYMBOLS:**

- POLE MOUNTED LED LUMINAIRE - SEE DETAIL, SHEET NO. E-7.
- ⋮ SWITCH - SINGLE POLE, M.H. 4'-0".
- ⊕, ⊖, ⊕, ⊖ RECEPTACLE - 20A., 125V. - SIMPLEX, DUPLEX, DUPLEX G.F.I.
- JUNCTION BOX
- ⊕ MOTOR - NUMBER DENOTES HORSEPOWER.
- CONDUIT-EXPOSED } 2 #12 R, 1 #12 GND- 3/4" C. UNLESS OTHERWISE NOTED.
- - - CONDUIT-IN OR UNDER FLOOR SLAB OR UNDERGROUND.
- ⋮ HOMERUN TO PANEL - NO. OF ARROWS INDICATES NO. OF CIRCUITS AND NO. OF GROSSLINES INDICATES NO. OF #12 CONDUCTORS.
- ⊕ DENOTES REFERENCE TO DRAWING NOTE.
- CB NEMA 1 ENCLOSED CIRCUIT BREAKER
- ⊗ SPECIAL EQUIPMENT OR DEVICE AS NOTED
- ⊖ THERMOSTAT
- T THERMAL MANUAL MOTOR STARTER
- ATS AUTOMATIC TRANSFER SWITCH - NEMA 1 ENCLOSED
- PCP PUMP CONTROL PANEL
- TVSS TRANSIENT VOLTAGE SURGE SUPPRESSOR
- M SERVICE METER
- FR, FM FLOW RECEIVER, FLOW METER
- LR 5% LINE REACTOR
- VFD VARIABLE FREQUENCY DRIVE CONTROLLER

**DRAWING NOTES:**

- 1 GROUND GRID CONSISTING OF THREE (3) DRIVEN GROUND RODS (3/4"DIA X 10'-0" LONG, ONE PIECE COPPER CLAD STEEL) INTERCONNECTED WITH #1/0 BARE COPPER CONDUCTOR. ALL UG. CONNECTIONS SHALL BE EXOTHERMIC WELDED.
- 2 DIRECTION OF ENGINE EXHAUST & RADIATOR DISCHARGE.
- 3 SERVICE METER - 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.
- 4 PUMP MOTOR & LEVEL SENSING CONDUITS TO SERVICE EQUIPMENT CABINET - SEE SINGLE LINE DIAGRAM, DRAWING NO. E-2.
- 5 POLE HINGE DIRECTION.
- 6 WET WELL VENTILATION FAN - SEE SINGLE LINE CONTROL DIAGRAM, DRAWING NO. E-2; SEE INSTALLATION DETAIL, DRAWING NO. E-7.
- 7 SCADA ANTENNA POLE - SEE DETAIL, DRAWING NO. E-7.
- 8 GENERATOR SUPPLY, CONTROL, ALARM & AUXILIARY POWER CIRCUITS TO SERVICE EQUIPMENT CABINET - SEE SINGLE LINE DIAGRAM, DRAWING NO. E-2.
- 9 FREE STANDING, PAD MOUNTED SERVICE EQUIPMENT CABINET "SEC". SEE DETAIL/ ELEVATION, DRAWING NO. E-2.
- 10 4" C. (SCHEDULE 80 PVC) TURNOUT FOR INCOMING 240/120V., 1ϕ, 3 WIRE DELAWARE ELECTRIC COOPERATIVE (DEC) SERVICE CONDUCTORS.
- 11 1 1/4" C. W/ANTENNA CABLE TO PCP.
- 12 VENTILATION EXHAUST PIPE - SEE DETAIL, DRAWING NO. E-7.
- 13 PAD MOUNTED & ENCLOSED DIESEL ENGINE DRIVEN GENERATOR SET - SEE SINGLE LINE DIAGRAM, DRAWING NO. E-2.
- 14 SEE CONCRETE PAD DETAIL, DRAWING NO. E-7.
- 15 FLOW METER CABLES IN CONDUITS TO SERVICE EQUIPMENT CABINET - SEE SINGLE LINE DIAGRAM, DRAWING NO. E-7.

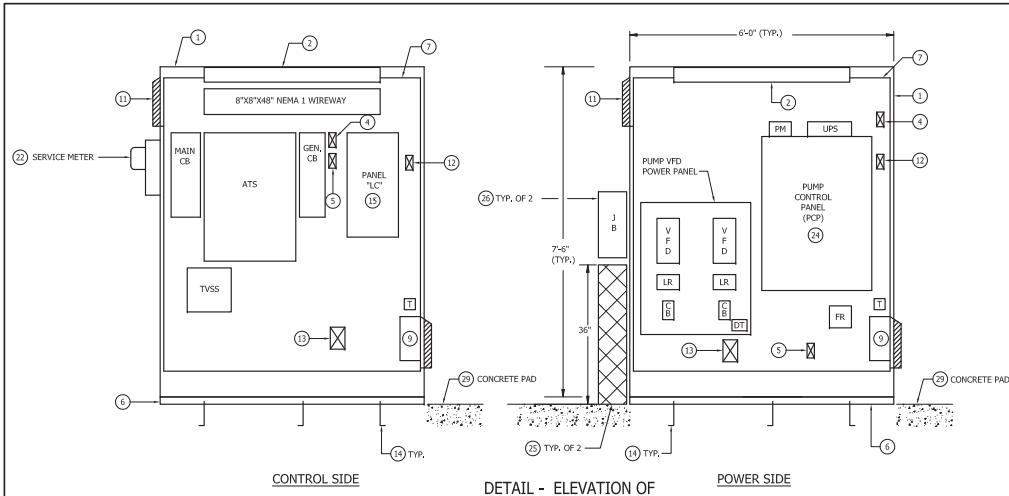
PROFESSIONAL CERTIFICATION:  
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Consulting Engineers  
1001 East Main Street, Suite 100 Newark, DE 19711  
Newark, Delaware (410) 892-2400  
Newark, DE (410) 892-2499

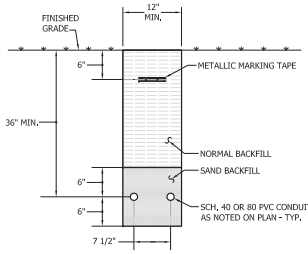
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Revisions:	
Date:	MARCH 2021
Scale:	AS SHOWN
Drawn By:	J.P.
Proj. No.:	3311A001
Draw. No.:	E-1



**DETAIL - ELEVATION OF SERVICE EQUIPMENT CABINET**  
SCALE: 3/4"=1'-0"

NOTE:  
FRONT/REAR ACCESS CABINET-48" TOTAL DEPTH, SHOWN WITH DOORS REMOVED FOR CLARITY.

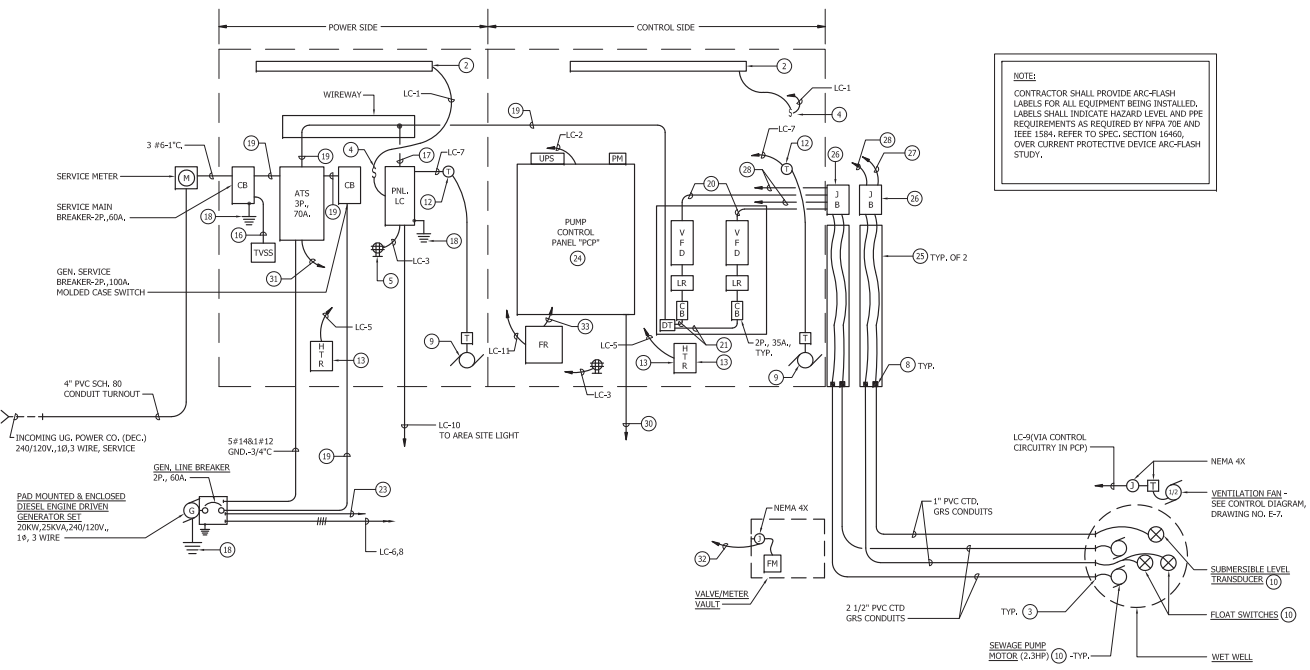


**TYPICAL UNDERGROUND PVC CONDUIT INSTALLATION DETAIL**  
NOT TO SCALE

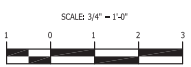
**DRAWING NOTES:**

- 1 SERVICE EQUIPMENT CABINET, SIZED AS INDICATED - SEE SPECIFICATIONS.
- 2 48" TWO LAMP LED FIXTURE, MOUNT TOWARDS FRONT OF CABINET.
- 3 TERMINATE CONDUIT 4" INSIDE WET WELL. PROVIDE INSULATED TYPE BUSHING & STAINLESS STEEL CABLE STRAIN RELIEF GRIP.
- 4 LIGHT SWITCH FOR INTERIOR CABINET LIGHTS.
- 5 DUPLEX G.F.I. RECEPTACLE.
- 6 1 1/2" x 3" GALVANIZED 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 FLEXUM & COMPOSITE FINGER GUARD. FURNISH HOFFMAN CATALOG NO. A-PALOXFN, 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-AH40018, 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, DRAWING NO. E-7 FOR BRANCH BREAKER SIZES & USAGE.
- 16 4 #8 & 1 #10 GND. - 1" C.
- 17 3 #8 & 1 #10 GND. - 3/4" C.
- 18 1 #6 - 3/4" C. TO GROUND GRID.
- 19 3 #8 & 1 #8 GND. - 1" C.
- 20 3 #10 & 1 #10 GND. - 3/4" C.
- 21 2 #8 & 1 #8 GND.
- 22 SECURE TO CABINET UTILIZING VERTICAL CHANNEL SUPPORTS AS DESCRIBED IN NOTE 3, DRAWING NO. E-1.
- 23 5 #14 & 1 #12 GND. - 3/4" C. TO PCP.
- 24 PUMP CONTROL PANEL (PCP) - SEE DRAWINGS NO. E-3-E-4-E-5 & E-6 & SPECIFICATIONS.
- 25 PROVIDE STAINLESS STEEL, NO. 6 GAUGE MINIMUM, WIRE 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 3/4" #18 SHIELDED CABLE IN 3/4" C. TO PCP.
- 28 4 #14 & 1 #12 GND. - 3/4" C. TO PCP.
- 29 SEE DETAIL, DRAWING NO. E-7.
- 30 1-1/4" W/AUTOMATIC CABLE TO SCADA ANTENNA.
- 31 3 #14 & 1 #12 GND. - 3/4" C. TO PCP.
- 32 ELECTRODE CABLE IN 3/4" C. & COIL CURRENT CABLE IN 3/4" C. TO FLOW RECEIVER. CABLES WILL BE SUPPLIED BY THE FLOW METER MANUFACTURER.
- 33 2/C #18 SHIELDED CABLE IN 3/4" C. TO PLC.
- 34 1 #2 - 3/4" C. FOR GENERATOR SKID GROUND TO GROUND GRID.

NOTE:  
CONTRACTOR SHALL PROVIDE ARC-FLASH LABELS FOR ALL EQUIPMENT BEING INSTALLED. LABELS SHALL INDICATE HAZARD LEVEL AND PPE REQUIREMENTS AS REQUIRED BY NFPA 70E AND IEEE 1584. REFER TO SPEC. SECTION 16460, OVER CURRENT PROTECTIVE DEVICE ARC-FLASH STUDY.



**ELECTRICAL SINGLE LINE DIAGRAM**



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410.833.1108  
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410.833.1110



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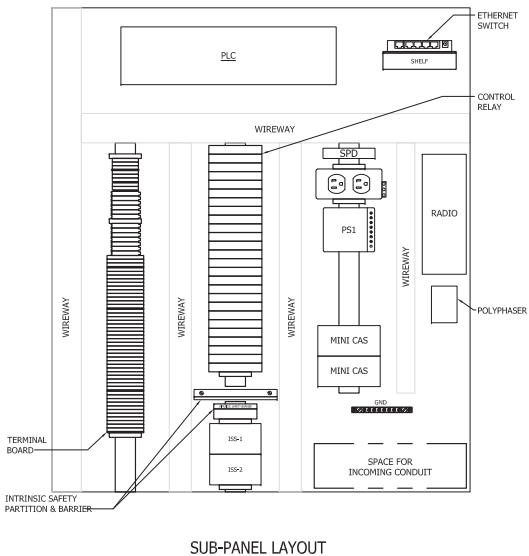
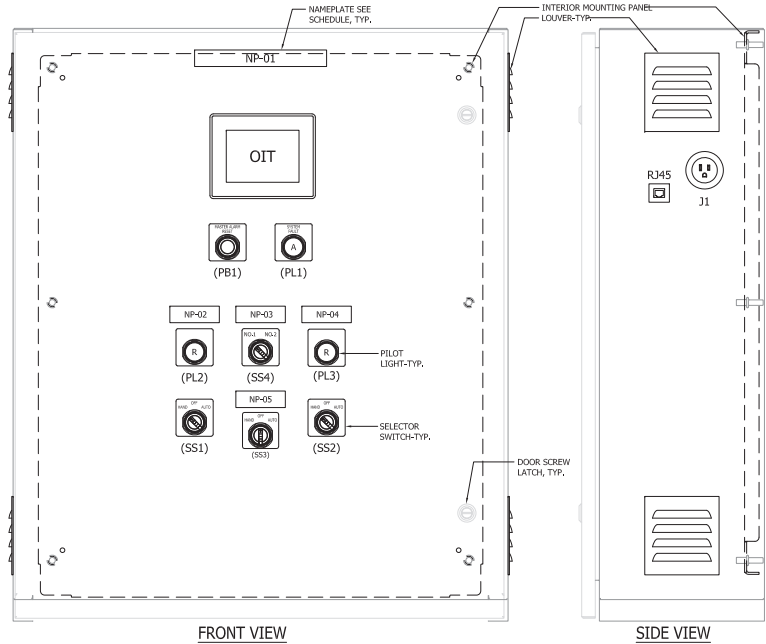
**CYPRESS GROVE  
RESIDENTIAL COMMUNITY  
SUSSEX COUNTY, DELAWARE**

**DAVIS, BOWEN & FRIEDEL, INC.**  
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Date: MARCH 2021  
Scale: AS SHOWN  
Drawn By: J.P.  
Project No.: 3311A001  
Drawn No.: E-2

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REF.	NAME PLATE SIZE	TEXT HEIGHT	LINE	TEXT
NP-01	8" X 1"	1/2"	L1	PUMP CONTROL PANEL
NP-02	3" X 1"	1/2"	L1	PUMP NO.1
NP-03	3" X 1"	1/2"	L1	FLOAT SYSTEM
NP-04	3" X 1"	1/2"	L1	PUMP NO.2
NP-05	3" X 1"	1/2"	L1	WET WELL FAN

NOTES:  
 1. NAMEPLATES: WHITE LAMICOID (2-PL) WITH BLACK ENGRAVED LETTERS,  
 2. ATTACH WITH U.S. DRIVE SCREWS (COAT REAR OF SCREW WITH SILICON SEAL).

DETAIL - PUMP CONTROL PANEL (PCP)  
NOT TO SCALE

PART DESIGN.	QTY.	MANUFACTURER	DESCRIPTION	MANUFACTURER	MODEL NO.
PCP	1		ENCLOSURE w/MOUNTING PANEL 36" H x 30" W x 10.625" D	SCHAEFFERS	SPLNH-363010
PCP	1		SUB PANEL 32" H x 28.5" W	SCHAEFFERS	SPLNP-3630
PCP	4		LOUVER PLATE KIT	SCHAEFFERS	SP-1K/34
SPD	1		SURGE PROTECTION DEVICE	PHOENIX CONTACT	2856812
UPS	1		UNINTERRUPTIBLE POWER SUPPLY, 500VA	APC	BE550G
OR	28		DPDT RELAY, 24VDC COIL, 2 FORM "C" CONTACTS	WEIDMULLER	833061001
ORP	1		DPDT RELAY, 120VAC COIL, 2 FORM "C" CONTACTS	WEIDMULLER	833061001
OIT	1		COLOR TOUCHSCREEN OIT, 5.7", 24VDC	TELEMECANIQUE	18TGT2220
PLC	1		M340 8 SLOT RACK	MODICON	BMX B8P 8600
PLC	1		M340 POWER SUPPLY 120 VAC, 20W	MODICON	BMX CPS 3000
PLC	1		M340 PROCESSOR w/MODBUS PORT AND ETHERNET PORT	MODICON	BMX P34 2020
PLC	2		M340 16PT, 24VDC D.I. MODULE	MODICON	BMX DDO 1602
PLC	1		M340 16PT, 24VDC D.O. MODULE	MODICON	BMX DDO 1602
PLC	1 EA		M340 SPT. A.I. MODULE, M340 SPT. A.O. MODULE	MODICON	BMX AM 5415, BMX AIO 0410
PS1	1		24VDC POWER SUPPLY	MODICON	BMX P3 2010
	6		120VAC FUSE TERMINAL w/BLOWN FUSE INDICATOR	PHOENIX CONTACT	3046100
	8		24VDC FUSE TERMINAL w/BLOWN FUSE INDICATOR	PHOENIX CONTACT	3046000
F1.3 & 11	5		FUSE, 2A	WOERTZ	WF520F/2
F4.5, 12-18	9		FUSE, 1A	WOERTZ	WF520F/1
	10		SINGLE LEVEL TERMINAL	PHOENIX CONTACT	3044102
	3		SINGLE LEVEL END BARRIER	PHOENIX CONTACT	3047028
	48		DOUBLE LEVEL TERMINAL	PHOENIX CONTACT	3044814
	4		DOUBLE LEVEL END BARRIER	PHOENIX CONTACT	3047293
	10		END STOP, CLEAR	PHOENIX CONTACT	800886
J2	1		1DR NAIL MOUNTED RECEPTACLE	WERTZ	WRD-1SS1TBKTY
CB	1		20A CIRCUIT BREAKER	WOERTZ	WCB-1P-2-20
SS4	1		2-POSITION SELECTOR SWITCH, 2 N.O./2 N.C. CONTACTS	SQUARE D	9001KS118HZ
SS1, SS2, SS3, SS8	3		3-POSITION SELECTOR SWITCH, 2 N.O./2 N.C. CONTACTS	SQUARE D	9001KS143BHZ
USE w/SS1, SS2, SS3	3		1 N.O./1 N.C. CONTACT BLOCK	SQUARE D	9001KA1
PL1	1		PILOT LIGHT, AMBER	SQUARE D	9001KP1A31
PL2, PL3	2		PILOT LIGHT, RED	SQUARE D	9001KP1B1
USE w/PL2, PL3	2		PILOT LIGHT, NAMEPLATE ENGRAVED "RUN"	SQUARE D	9001KN124WP
USE w/SS1, SS2	2		3-POSITION SELECTOR SWITCH, NAMEPLATE ENGRAVED "HAND/OFF/AUTO"	SQUARE D	9001KN160WP
USE w/SS3	1		2-POSITION SELECTOR SWITCH, NAMEPLATE ENGRAVED "PI SELECTED/P"	SQUARE D	9001KN198WP
USE w/PL1	1		PILOT LIGHT, NAMEPLATE ENGRAVED "SYSTEM FAIL"	SQUARE D	9001KN199WP
USE w/PB1	1		PUSH BUTTON, NAMEPLATE ENGRAVED "MASTER ALARM RESET"	SQUARE D	9001KN199WP
PB1	1		NEUF-BUTTON, 1 N.O./1 N.C. CONTACT	SQUARE D	9001KA1913
EFBR	1		RJ45 FEEDTHRU RECEPTACLE/D-SIZED	NEUTREK	NE8FD
	1		DIRECTIONAL YAGI ANTENNA w/MOUNTING BRACKET	AS DIRECTED BY OWNER	
ISS-1, 2	2		INTRINSICALLY SAFE SWITCH	SYMCON	ISS-100
ISS1	1		INTRINSIC SAFETY BARRIER	STAHL	900101-280-100-101
	1		GROUND BAR	ILSCO	D167-6
LSH-1, LSL-1	2		PLC M SWITCH w/40 FT. CABLE		REFER TO SPECIFICATIONS
LT-1	1		LEVEL TRANSDUCER 0-5 PSIG w/SURGE PROTECTOR PSI		REFER TO SPECIFICATIONS
PM	1		PHASE MONITOR		REFER TO SPECIFICATIONS
RADIO	1		SCHNIDER ELECTRIC TRO Q-SERIES		REFER TO SPECIFICATIONS

NOTES:

- CONSTRUCTION: NEMA 12.  
 A. ENCLOSURE BODY/DOOR: 125" 5052 H32 INDUSTRIAL GRADE ALUMINUM.  
 B. SUB PANEL: 12 GAUGE CARBON STEEL.
- FINISH:  
 A. ENCLOSURE: ALL SURFACES ANSI 61 GRAY POWDER COAT.  
 B. SUB PANEL: WHITE POWDER COAT.
- PLASTIC WIRE WRAPS SHALL BE USED TO BUNDLE WIRES EXCEPT WITHIN WIRING DUCTS, BUNDLES WILL BE SECURELY FASTENED TO STEEL STRUCTURE.
- WIRE TO BE STRANDED COPPER, INSULATED FOR NOT LESS THAN 600 VOLTS WITH A MOISTURE-RESISTANT & FLAME RETARDANT COVERING.
- CONTROL CIRCUIT WIRING TO BE 16 AWG MINIMUM. ANALOG CIRCUIT WIRING TO BE 18 AWG TWISTED SHIELDED PAIRS.
- BOTH ENDS OF ALL WIRES SHALL BE MARKED.
- WIRE COLORS:  
 AC PHASE: WHITE  
 AC NEUTRAL: GREEN  
 AC CONTROL (PANEL POWERED): RED  
 AC CONTROL (FIELD POWERED): YELLOW  
 DC CONTROL: ORANGE  
 (+) 24VDC: BLUE  
 (-) 24VDC: BROWN  
 DC SIGNAL (ANALOG): (+) RED, (-) BLACK
- REFER TO SHEETS NO. E-4, E-5 & E-6 FOR CONTROL & PLC CONNECTION DIAGRAMS.
- MOTOR PROTECTION RELAYS (MINI CAS) WILL BE FURNISHED BY THE PUMP MANUFACTURER & TURNED OVER TO THE PUMP CONTROL MANUFACTURER FOR INSTALLATION.

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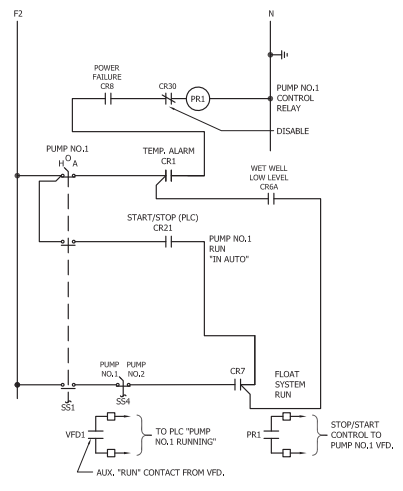
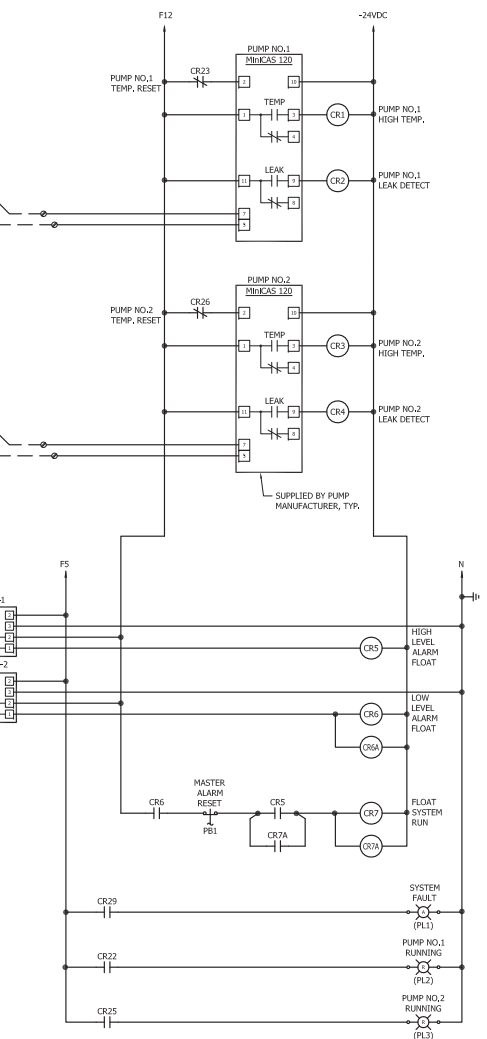
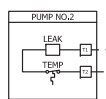
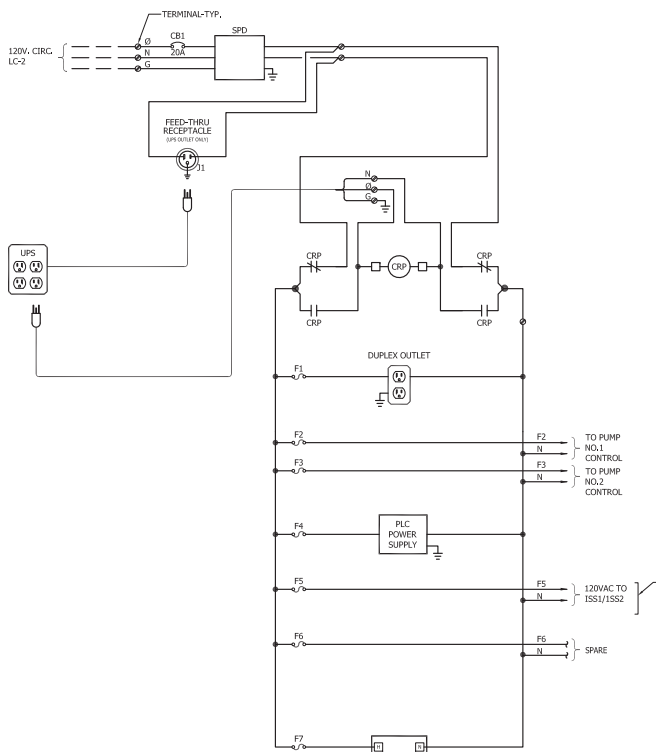


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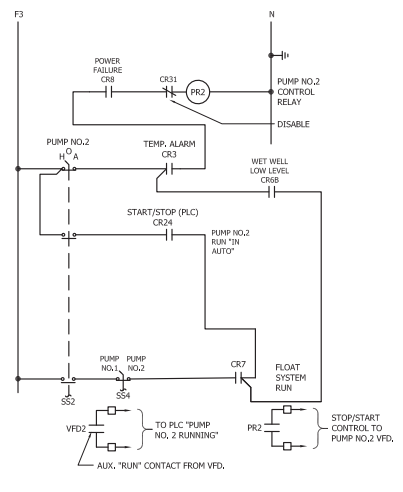
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 Drawn By: J.P.  
 Project No.: 3311A001  
 Drawn No.:

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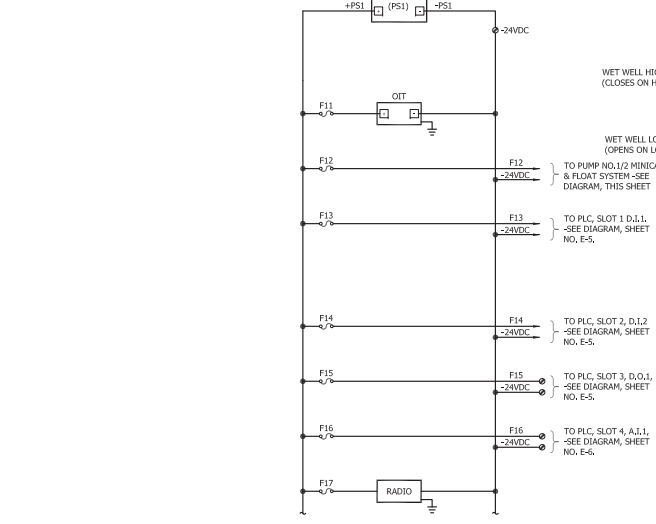


**PUMP NO. 1 CONTROL DIAGRAM**  
NOTE: VFD NOT SHOWN FOR CLARITY.



**PUMP NO. 2 CONTROL DIAGRAM**  
NOTE: VFD NOT SHOWN FOR CLARITY.

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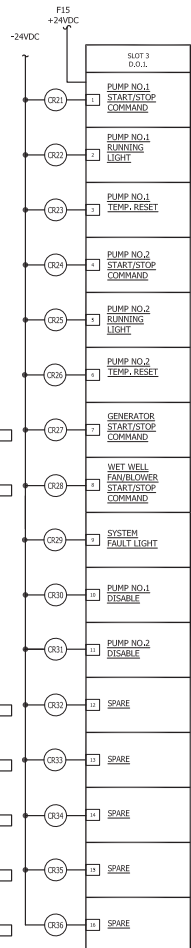
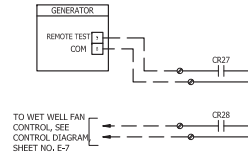
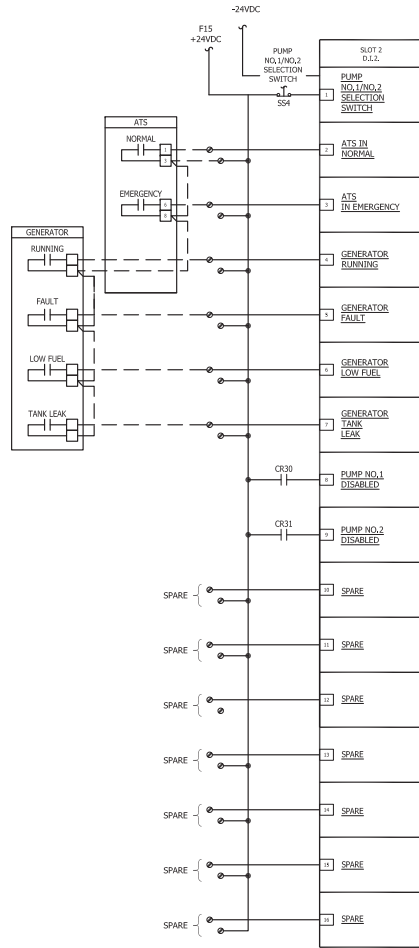
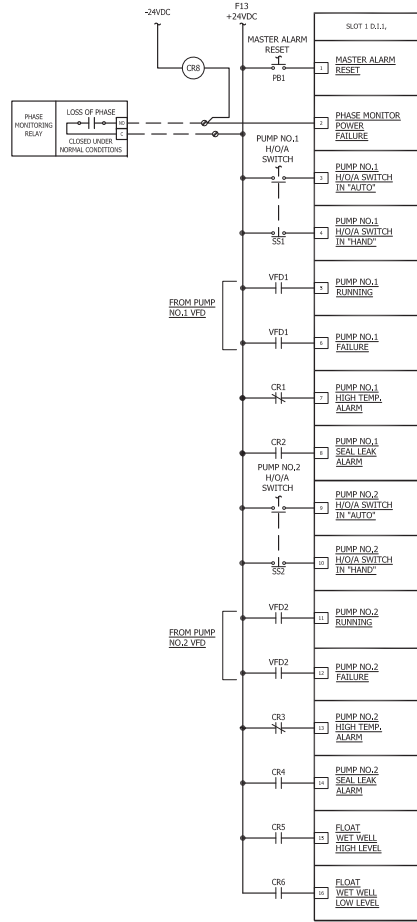
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Drawn No.:  
E-4

PLC-2021-01001.dwg: SPS-01-PLC-2021-01001-PLC Connection Diagram.dwg, Date: 03/13/2021, 3:37pm, 3x60



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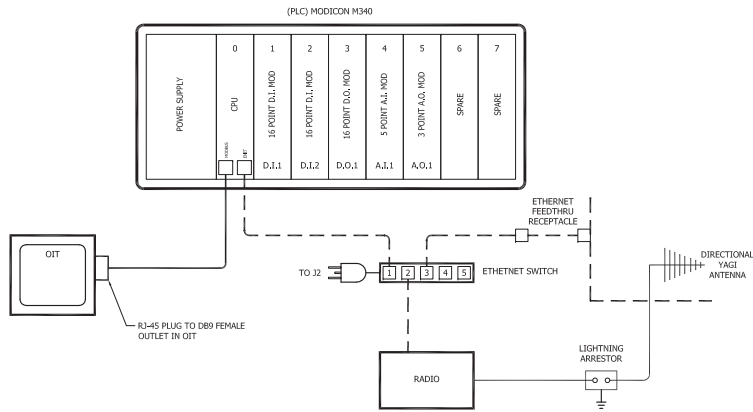
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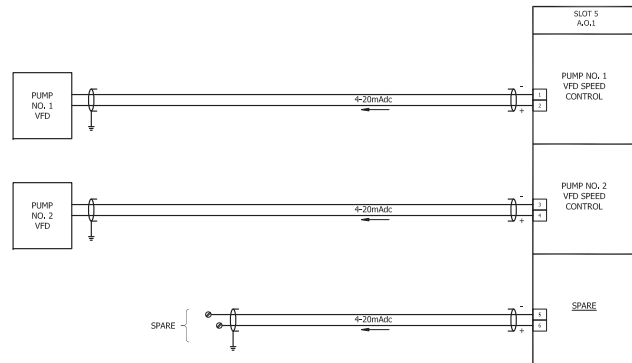
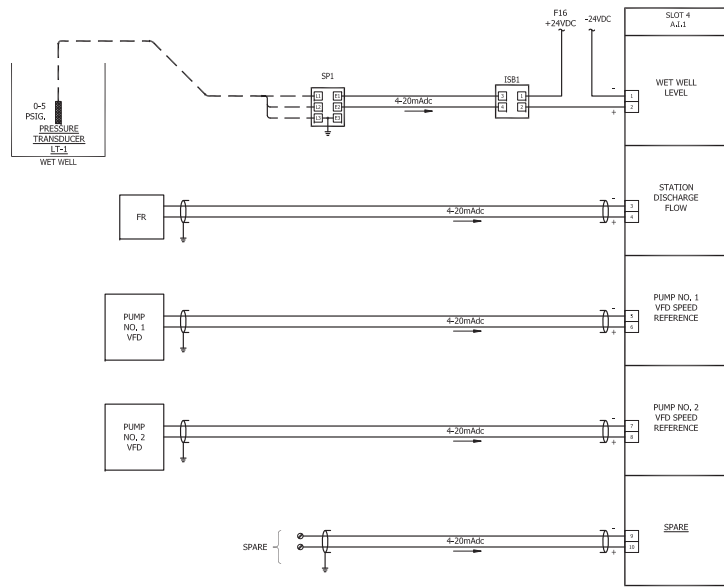
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Proj. No.:	3311A001
Dwg. No.:	

**E-5**

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PLC BLOCK DIAGRAM



PLC CONNECTION DIAGRAMS - CONTINUED

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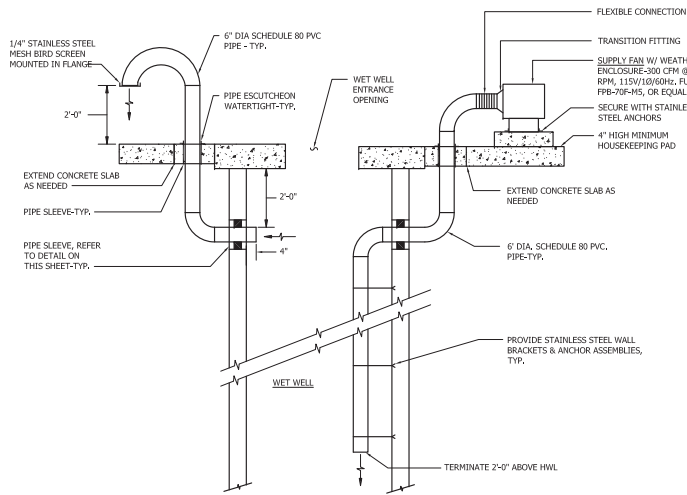
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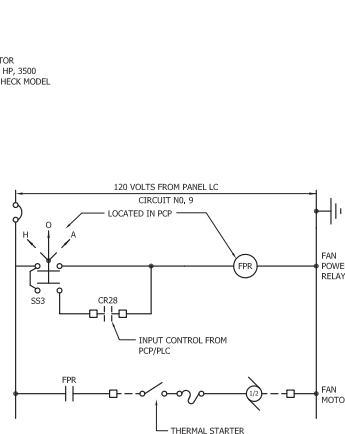
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**PCP/PLC CONNECTION DIAGRAMS**



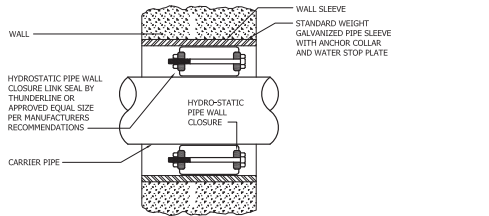
**DETAIL - WET WELL SUPPLY FAN INSTALLATION**  
NO SCALE



**WET WELL SUPPLY FAN CONTROL DIAGRAM**

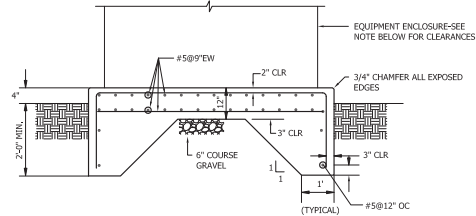
PANEL SCHEDULE : "LC" 240/120V., 1 PHASE, 3 WIRE

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	SPARE	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	WELL SUPPLY FAN	100	1	20	10	SITE LIGHT	100	1	20
11	FLOW METERING SYS.	100	1	20	12	SPACE W/BUS	-	1	-
13	SPACE W/BUS	-	1	-	14	SPACE W/BUS	-	1	-
15	SPACE W/BUS	-	1	-	16	SPACE W/BUS	-	1	-



**DETAIL - TYPICAL PIPE SLEEVE THRU EXTERIOR WALL**

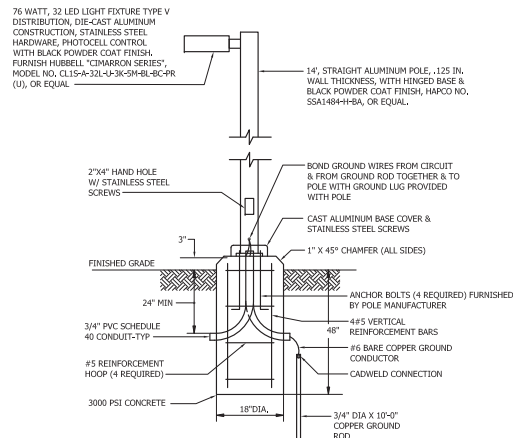
1. DETAIL TYPICAL FOR ABOVE GRADE AND BELOW GRADE



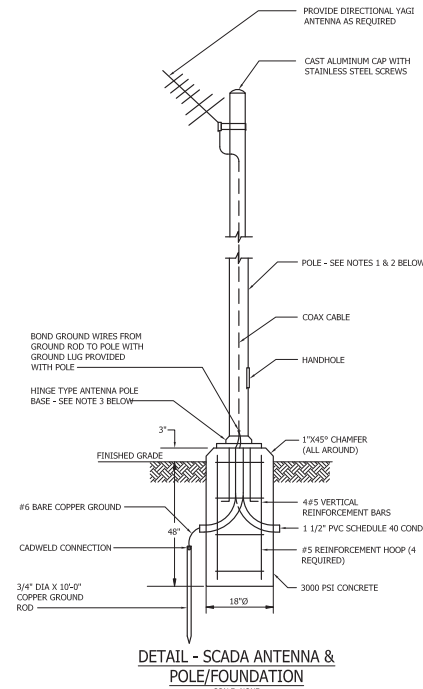
**DETAIL - TYPICAL GENERATOR/SERVICE EQUIPMENT CONCRETE PAD**  
SCALE: NONE

**CLEARANCES:**

- GENERATOR - 6" ON ALL SIDES.
- SERVICE EQUIPMENT CABINET - 6" ON CONTROL SIDE & POWER SIDE; 6" ON SERVICE METER END; 18" ON PUMP STATION CABLE ENTRANCE END.



**DETAIL - LIGHT FIXTURE AND POLE/FOUNDATION**  
SCALE: NONE



**DETAIL - SCADA ANTENNA & POLE/FOUNDATION**  
SCALE: NONE

**NOTES**

- POLE HEIGHT WILL SHALL BE 20'-0" AND SHALL BE DETERMINED BY THE OWNER DURING CONSTRUCTION AFTER COORDINATES HAVE BEEN SUBMITTED AND A RADIO PATH REPORT HAS BEEN COMPLETED BY THE OWNER.
- POLES SHALL BE HINGED ALUMINUM FOR ANTENNA HEIGHTS 3' AND BELOW. POLES SHALL BE NON HINGED ALUMINUM FOR ANTENNA HEIGHTS GREATER THAN 20'.
- MOUNTING STUDS SHALL BE POURED INTO CONCRETE BASE PER MANUFACTURERS RECOMMENDATIONS. LAGS OR DRIVE PINS WILL NOT BE PERMITTED.

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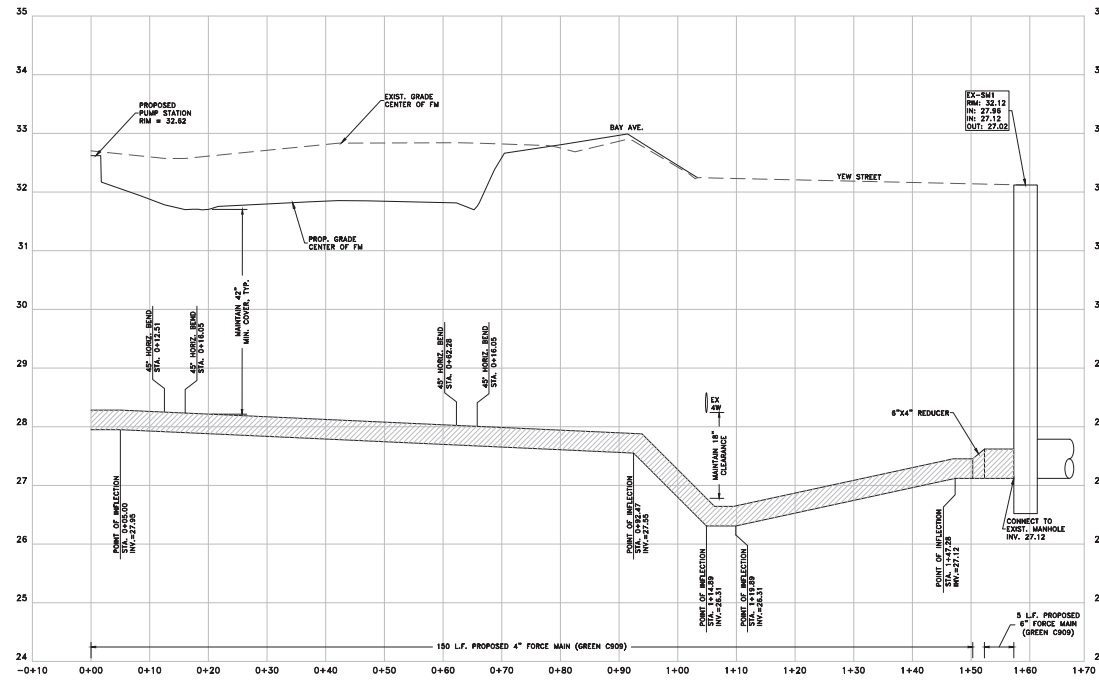
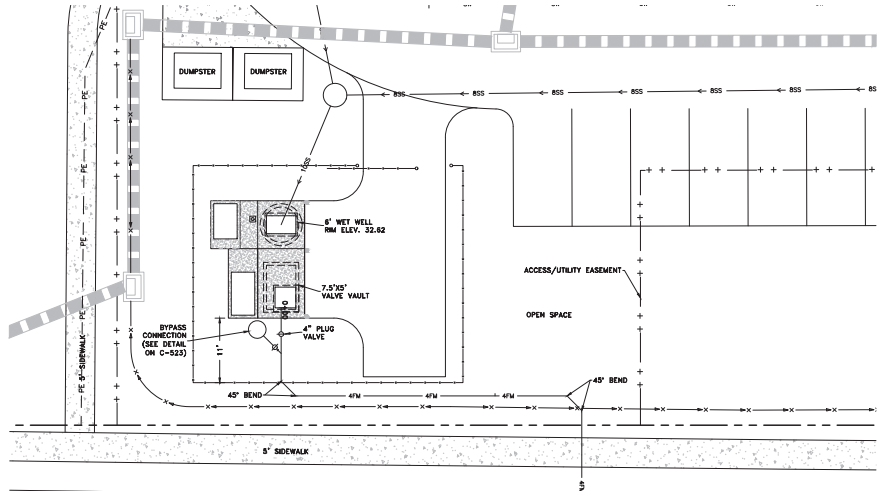
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Proj. No.: 3311A001  
Drawn No.:

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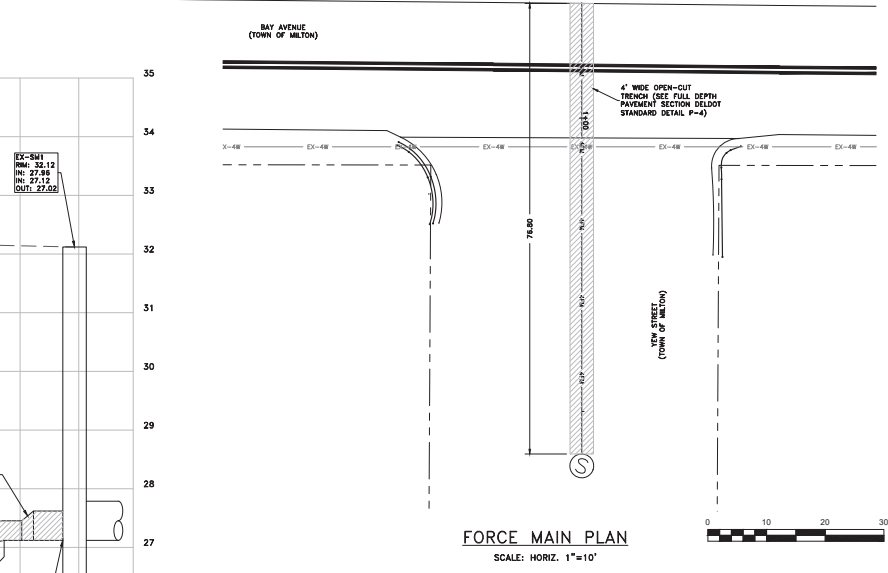
**SCHEDULE, DIAGRAMS AND DETAILS**

P:\S:\projects\114001-01\114001-01-FORCE MAIN PLANS.dwg Job 14, 2021 - 1:12pm read



**FORCE MAIN PROFILE**

SCALE: HORIZ. 1"=10'  
VERT. 1"=1'



**FORCE MAIN PLAN**  
SCALE: HORIZ. 1"=10'

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Revisions:

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 Drawn By: DJR  
 Proj. No.: 33114001  
 Draw. No.:

**C-531**



BOUNDARY CURVE TABLE				
CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
BC-1	2891.61'	206.47'	206.42'	N 87°29'52" E
BC-2	1075.77'	79.15'	79.13'	N 80°08'29" E
				DELTA ANGLE
				4°05'28"
				41°25'56"

**LEGEND**

- PROPERTY BOUNDARY LINE
- EXISTING RIGHT-OF-WAY LINE
- EXISTING PROPERTY LINE (ADJACENT PROPERTY)
- EXISTING PROPERTY LINE (TO BE REMOVED)
- EXISTING ZONE LINE

**BOUNDARY MONUMENT LEGEND**

- POINT ○ POINT (8 SHOWN)
- CMF ■ CONCRETE MONUMENT FOUND (3 EXISTING)
- IPF ○ IRON PIPE FOUND (6 EXISTING)
- IPCF ○ IRON PIPE WITH CAP FOUND (2 EXISTING)
- IRCF ○ IRON ROD WITH CAP FOUND (7 EXISTING)

**TIS REQUIREMENTS:**

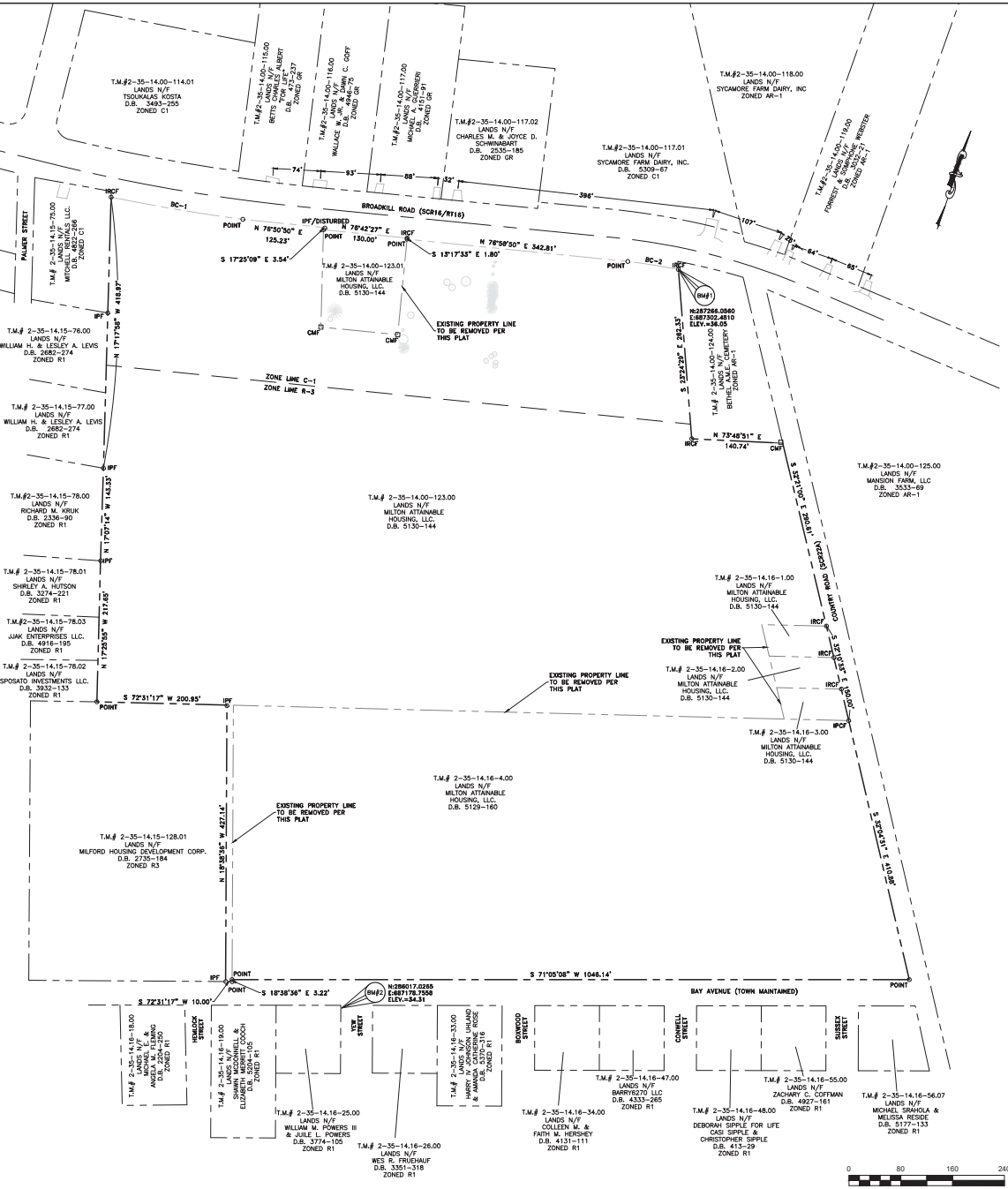
- THE DEVELOPER SHOULD PROVIDE A BITUMINOUS CONCRETE OVERLAY TO THE EXISTING TRAVEL LANES ALONG DELAWARE ROUTE 16 SITE FRONTAGE IN THE AREA AFFECTED BY ENTRANCE PLAN CONSTRUCTION, INCLUDING ANY AUXILIARY LANES. AT DEDOT'S DISCRETION, DEDOT SHOULD ANALYZE THE EXISTING LANES PAVEMENT SECTION AND RECOMMEND AN OVERLAY THICKNESS TO THE DEVELOPER'S ENGINEER, IF NECESSARY.
- THE DEVELOPER SHOULD COORDINATE WITH THE TOWN REGARDING IMPROVEMENTS ALONG THE BAY AVENUE SITE FRONTAGE.
- THE DEVELOPER SHOULD CONSTRUCT A FULL ACCESS SITE ENTRANCE FOR THE PROPOSED CLAYTON PROPERTY DEVELOPMENT ALONG DELAWARE ROUTE 16, APPROXIMATELY 520 FEET EAST OF THE SEVENTH POINT OF TANGENCY WITH THE PALMER STREET INTERSECTION TO BE CONSISTENT WITH THE LANE CONFIGURATIONS SHOWN IN THE TABLE BELOW.

APPROACH	CURRENT CONFIGURATION	PROPOSED CONFIGURATION
EASTBOUND DELAWARE ROUTE 16	ONE THROUGH LANE	ONE THROUGH LANE & ONE RIGHT-TURN LANE
WESTBOUND DELAWARE ROUTE 16	ONE THROUGH LANE	ONE THROUGH LANE & ONE LEFT-TURN LANE
NORTHBOUND SITE ENTRANCE	APPROACH DOES NOT EXIST	ONE SHARED LEFT-TURN / RIGHT-TURN

BASED ON DELDOT'S DEVELOPMENT COORDINATION MANUAL, THE RECOMMENDED MINIMUM STORAGE LENGTHS ALONG DELAWARE ROUTE 16 IS 180 FEET (EXCLUDING TAPER) ON THE EASTBOUND APPROACH RIGHT TURN LANE AND 120 FEET (EXCLUDING TAPER) ON THE WESTBOUND APPROACH LEFT TURN. THE CALCULATED QUEUE LENGTHS FROM THE ICS ANALYSIS CAN BE ACCOMMODATED WITHIN THE RECOMMENDED STORAGE LENGTHS.

- THE DEVELOPER SHOULD CONSTRUCT A FULL ACCESS SITE ENTRANCE FOR THE PROPOSED CLAYTON PROPERTY DEVELOPMENT ALONG BAY AVENUE DIRECTLY ACROSS FROM VIEW STREET, TO BE CONSISTENT WITH THE LANE CONFIGURATIONS SHOWN IN THE TABLE BELOW.
- | APPROACH                  | CURRENT CONFIGURATION                | PROPOSED CONFIGURATION                       |
|---------------------------|--------------------------------------|--|
| EASTBOUND BAY AVENUE      | ONE SHARED THROUGH/RIGHT-TURN LANE   | ONE SHARED LEFT-TURN/THROUGH/RIGHT-TURN LANE |
| WESTBOUND BAY AVENUE      | ONE SHARED THROUGH/LEFT-TURN LANE    | ONE SHARED LEFT-TURN/THROUGH/RIGHT-TURN LANE |
| NORTHBOUND BOXWOOD STREET | ONE SHARED LEFT-TURN/RIGHT-TURN LANE | ONE SHARED LEFT-TURN/RIGHT-TURN LANE         |
| SOUTHBOUND BOXWOOD STREET | APPROACH DOES NOT EXIST              | ONE SHARED LEFT-TURN/RIGHT-TURN LANE         |

- THE FOLLOWING BICYCLE, PEDESTRIAN, AND TRANSIT IMPROVEMENTS SHOULD BE INCLUDED:
  - A MINIMUM FIFTEEN-FOOT WIDE PERMANENT EASEMENT FROM THE EDGE OF THE RIGHT-OF-WAY SHOULD BE DEDICATED TO DEDOT ALONG DELAWARE ROUTE 16 AND COUNTRY ROAD SITE FRONTAGES. WITHIN THE DELAWARE ROUTE 16 EASEMENT, A SHARED USE PATH SHOULD BE CONSTRUCTED TO MEET ASHITO AND ADA STANDARDS. IF FEASIBLE, THE SUP SHOULD BE PLACED BEHIND UTILITY POLES AND STREET TREES SHOULD BE PROVIDED WITHIN THE BUFFER AREA. THE DEVELOPER SHOULD COORDINATE WITH DEDOT'S DEVELOPMENT COORDINATION SECTION DURING THE PLAN REVIEW PROCESS TO IDENTIFY THE EXACT LOCATION OF THE SUP.
  - AN INTERNAL CONNECTION FROM THE SUP ALONG THE EASTERNMOST AND WESTERNMOST DELAWARE ROUTE 16 SITE FRONTAGES INTO THE SITE SHOULD BE INSTALLED.
  - AN INTERNAL CONNECTION BETWEEN THE COMMERCIAL USE AND RESIDENTIAL USE SHOULD BE INSTALLED.
  - WHERE INTERNAL SIDEWALKS ARE LOCATED ALONGSIDE OF PARKING SPACES, A BUFFER, PHYSICAL BARRIER OR SIGNAGE SHOULD BE ADDED TO ELIMINATE VEHICULAR OVERHANG ONTO THE SIDEWALK.
  - INTERNAL BICYCLE RACKS SHOULD BE INSTALLED FOR THE COMMERCIAL USE SECTION OF THE SITE. THE BIKE PARKING SHOULD BE PROVIDED NEAR THE BUILDING ENTRANCES, WHERE THE BUILDING ARCHITECTURE PROVIDES FOR AN AMNING OR OTHER OVERHANG. THE BIKE PARKING SHOULD BE COVERED.
- A DIRECT PEDESTRIAN PATHWAY BETWEEN THE SITE AND FARM ROYAL APARTMENTS INTERNAL SIDEWALK SHOULD ALSO BE CREATED TO CONNECT THE SITE WITH THE EXISTING BUS STOP ALONG PALMER STREET. THE DEVELOPER SHOULD COORDINATE WITH DEDOT'S DEVELOPMENT COORDINATION SECTION FOR THE EXACT LOCATION OF THE PATHWAY.
- ADA COMPLIANT CURB RAMPS AND MARKED CROSSWALKS SHOULD BE PROVIDED ALONG THE SITE ENTRANCE APPROACHES TO DELAWARE ROUTE 16 AND BAY AVENUE. THE USE OF DIAGONAL CURB RAMPS IS DISCOURAGED. THE CURB RAMPS SHOULD BE DESIGNED TO ACCOMMODATE THE SUP.
- MINIMUM FIVE-FOOT WIDE BICYCLE LANES SHOULD BE INCORPORATED IN THE RIGHT TURN LANE AND SHOULDER ALONG THE DELAWARE ROUTE 16 APPROACHES TO THE SITE ENTRANCE.
- UTILITY COVERS SHOULD BE MOVED OUTSIDE OF ANY DESIGNATED BICYCLE LANES AND ANY PROPOSED SIDEWALKS/SHARED-USE PATHS OR SHOULD BE FLUSH WITH THE PAVEMENT.
- A FIVE-FOOT BY EIGHT-FOOT TYPE 2 BUS STOP SHOULD BE INSTALLED ALONG THE WESTERLY DELAWARE ROUTE 16 SITE FRONTAGE. THE DEVELOPER SHOULD COORDINATE WITH DEDOT'S DEVELOPMENT COORDINATION SECTION FOR THE EXACT LOCATION OF THE BUS STOP.



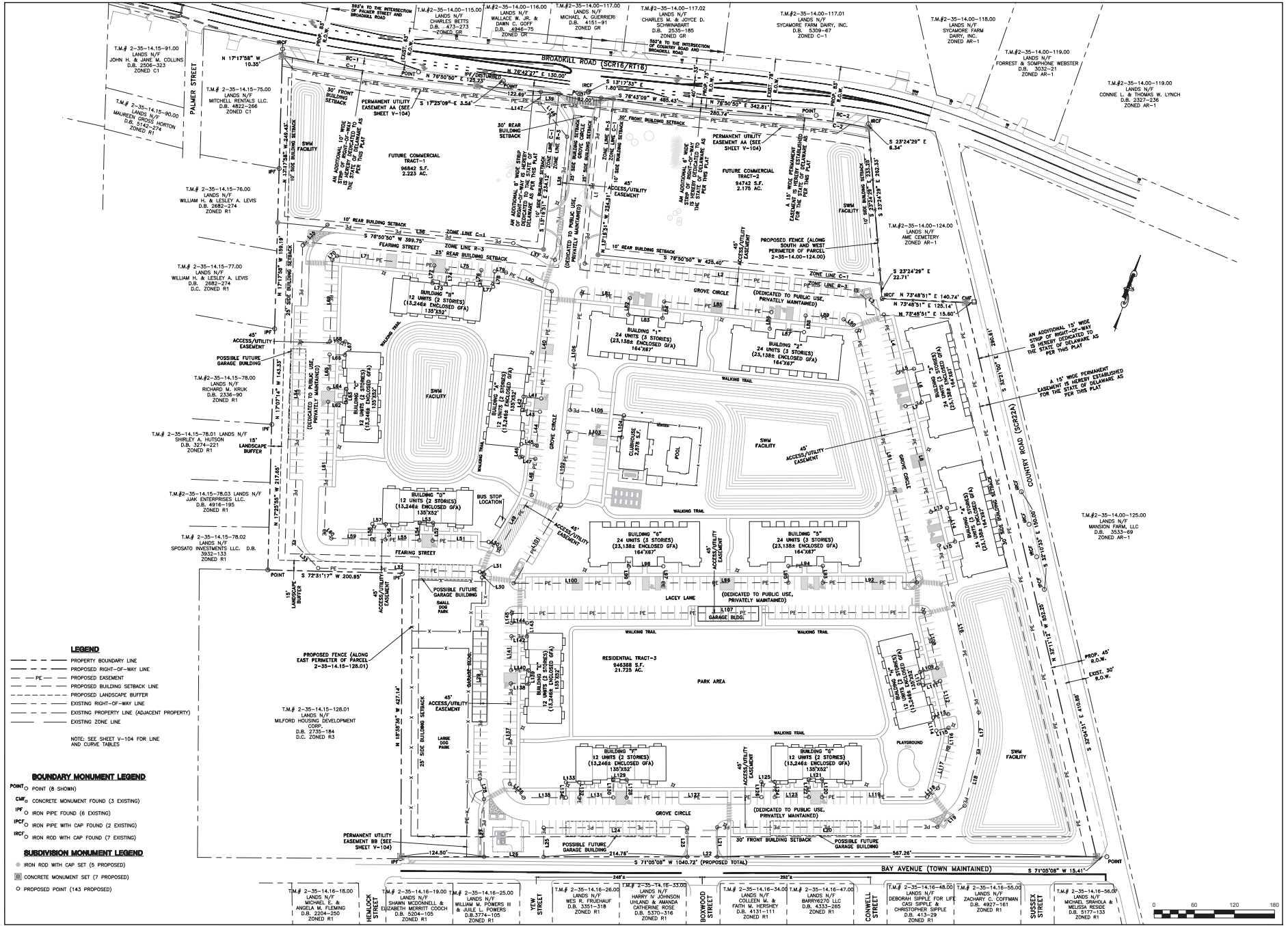
ARCHITECTURE ENGINEERS - SURVEYORS  
**DAVIS BROWN & FRIEDEL, INC.**  
 1000 W. MARKET STREET, SUITE 200  
 MILTON, DELAWARE 19968  
 PHONE: (302) 341-9441  
 FAX: (302) 341-9444  
 EMAIL: INFO@DAVISBROWN.COM  
 WWW.DAVISBROWN.COM

**CYPRESS GROVE**  
**RESIDENTIAL COMMUNITY**  
**TOWN OF MILTON, SUSSEX COUNTY, DELAWARE**

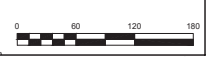
Revisions:  
 7-08-21 DELDOT  
 10-21-21 DELDOT

Date: MARCH 2021  
 Scale: 1"=80'  
 Drawn By: DJS  
 Proj.No.: 33114001  
 Draw No.: V-102





- LEGEND**
- PROPERTY BOUNDARY LINE
  - PROPOSED RIGHT-OF-WAY LINE
  - PE PROPOSED EASEMENT
  - PROPOSED BUILDING SETBACK LINE
  - PROPOSED LANDSCAPE BUFFER
  - EXISTING RIGHT-OF-WAY LINE
  - EXISTING PROPERTY LINE (ADJACENT PROPERTY)
  - EXISTING ZONE LINE
- NOTE: SEE SHEET V-104 FOR LINE AND CURVE TABLES
- BOUNDARY MONUMENT LEGEND**
- POINT (8 SHOWN)
  - CMW CONCRETE MONUMENT FOUND (3 EXISTING)
  - IPF IRON PIPE FOUND (6 EXISTING)
  - IPCF IRON PIPE WITH CAP FOUND (2 EXISTING)
  - IRC IRON ROD WITH CAP FOUND (7 EXISTING)
- SUBDIVISION MONUMENT LEGEND**
- IRON ROD WITH CAP SET (5 PROPOSED)
  - CONCRETE MONUMENT SET (7 PROPOSED)
  - PROPOSED POINT (143 PROPOSED)



P:\Sigsbee\Clinton Property\0253\CON\311A001-RECORD PLAN.dwg Feb 11, 2022 - 11:31am rseid

**RECORD PLAN**

ARCHITECTURE ENGINEERS - SURVEYORS  
 DAVIS, BOWEN & FRIEDEL, INC.  
 1000 MARKET STREET, SUITE 200  
 MILTON, DELAWARE 19968  
 PHONE: (302) 755-1144  
 FAX: (302) 755-1144

**CYPRESS GROVE  
 RESIDENTIAL COMMUNITY  
 TOWN OF MILTON, SUSSEX COUNTY, DELAWARE**

Revision: 7-08-21 DELDOT  
 10-21-21 DELDOT

Date: MARCH 2021  
 Scale: 1"=60'  
 Drawn By: DJS  
 Proj. No.: 3311A001  
 Drawn No.: V-103

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SCADA Made Simple

1-877-993-1911

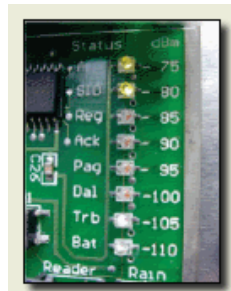
Username:

Password:

[Forgot username?](#) [Forgot password?](#)

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- Services
- Solutions
- Case Studies
- About Us

**Products**



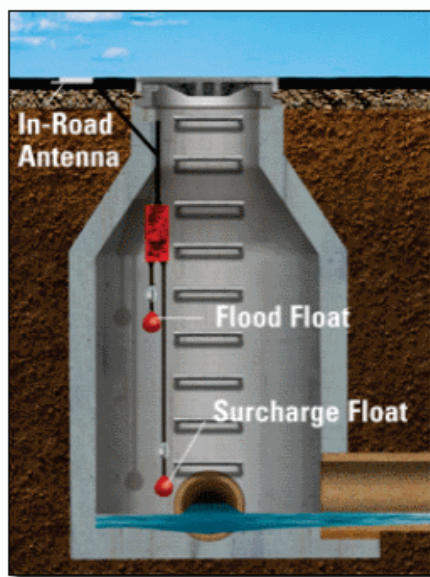
**MISSION's high reliability RTU circuitry comes in a wide variety of packages to suit the installation requirements.**

**MISSION Model 80 In-Sewer Sewer Overflow Detector**

The MISSION Model 80 is complete overflow condition transmitter designed to be installed in **Combined Sewer Overflow (CSO) and Sanitary Sewer Overflow (SSO)** locations. It uses third-generation cellular service to track conditions and send alarms to personnel regarding the time and duration of manhole surcharges and overflows. The complete package includes M80 sealed transmitter with 5-year sealed battery, two floats, and proprietary in-road antenna.



A typical M80 installation is shown below. The M80 is simply hung from a convenient area near the manhole (no confined-space entry is required). The floats hang down to levels in the manhole, one at a "surcharge" level and one at a pre-flood levels. Flows exceeding system capacity tip the float and the M80 transmits an alarm message using the in-road antenna. Notifications are then sent out to the selected call-out list.



Feature	Benefit
Wireless SSO/CSO reporting system	No power or phone lines to install
Installs from the surface	Confined-space-entry permit not required
Electronics, radio and battery are conformal coated, sealed, and UL approved. Exposed hardware is 316 stainless steel	Corrosion resistant, "set it and forget it"
Includes level floats and 5-year battery	Nothing else to buy
Test messages sent every 3 days.	Documents cellular channel signal strength and battery level

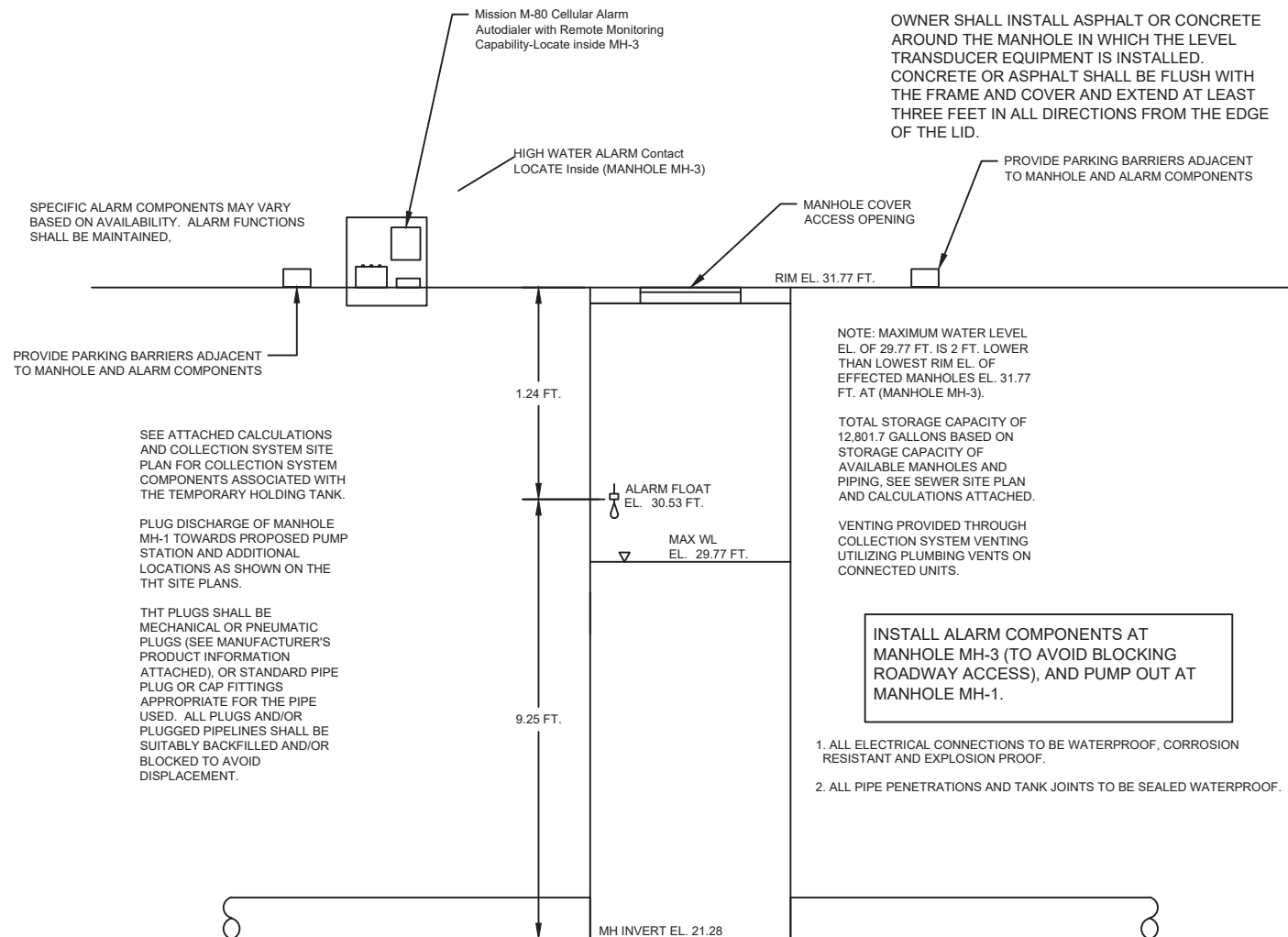
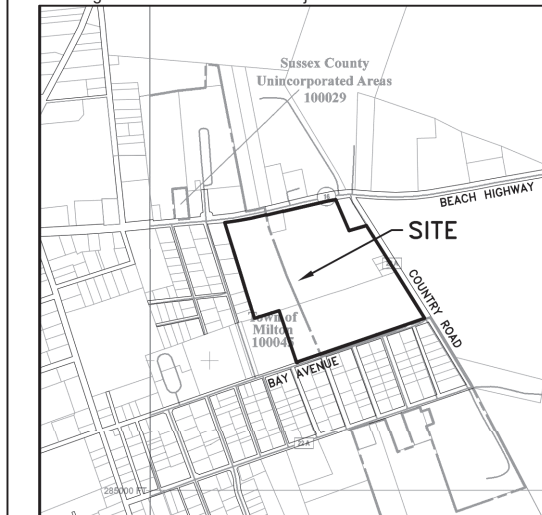
**- CROSS SECTION -**

DETERMINATION OF PUMPING SCHEDULE BASED ON UNITS SERVED

<u>UNITS SERVED</u>	<u>REQUIRED HAULING SCHEDULE</u>
13	NO SPECIFIC SCHEDULE, SCHEDULE HAULING WHEN ALARM ACTIVATES
14	HAULING TO BE SCHEDULED AT LEAST ONCE EVERY 3 DAYS
21	HAULING TO BE SCHEDULED AT LEAST ONCE EVERY 2 DAYS
42	HAULING TO BE SCHEDULED AT LEAST ONCE EVERY 1 DAY

BASED ON STORAGE CAPACITY OF 12,801.7 GALLONS AND 300 GPD/UNIT WITH A HAULING SAFETY FACTOR OF 2.0.

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



Owner's/Authorized Agent Signature: \_\_\_\_\_ Date: \_\_\_\_\_

\* A copy of this page must be submitted with both the on-site wastewater system and well construction report(s).



DELAWARE DEPARTMENT OF  
**NATURAL RESOURCES AND  
ENVIRONMENTAL CONTROL**

89 Kings Highway  
Dover, DE 19901  
(302) 739-9000  
dnrec.delaware.gov

April 7, 2022

Mr. Ben Gordy  
Milton Attainable Housing, LLC  
P.O. Box 333  
Rehoboth Beach, DE 19971

Ref: Cypress Grove  
State Wastewater Construction Permit No. WPCC 3078/21

To Mr. Gordy:

Please find enclosed the revised construction permit that was issued for the referenced project.

We expect the permitted construction to be completed within the permit term. If the construction cannot be completed by the permit expiration date, a one-time, no-cost two-year permit extension is available, as long as the request is received in writing prior to the expiration date and as long as the scope of the project has not changed significantly, as determined by the Department.

Per Part II.A.2.a of the enclosed permit, notify the Department of any changes to the construction authorized therein. Per Part II.B.1, submit a set of "as-built" plans of the constructed wastewater facilities within ninety (90) days of construction completion. The as-built plans must be signed and sealed by a Professional Engineer licensed in Delaware.

If you have any questions, please contact me at (302) 739-9351 or via email at [Keith.Kooker@delaware.gov](mailto:Keith.Kooker@delaware.gov).

From,

A handwritten signature in blue ink that reads "Keith Kooker".

Keith Kooker, P.E.  
Environmental Finance

Email Enclosure:

1. Dustin Ressler - Davis, Bowen & Friedel (DJR@dbfinc.com)
2. Jamie Sechler - Davis, Bowen & Friedel (JLS@dbfinc.com)
3. Janet Lardner - Davis, Bowen & Friedel (JML@dbfinc.com)
4. Katherine Garrison - Artesian Wastewater Mgt. (KGarrison@artesianwater.com)
5. Kristy Rogers - Milton Town Manager (KRogers@ci.milton.de.us)
6. Greg Wingo - Milton Public Works Director (GWingo@ci.milton.de.us)



**AUTHORIZATION TO CONSTRUCT UNDER THE  
LAWS OF THE STATE OF DELAWARE**

**PART I**

1. **In compliance with the provisions of 7 Del. C., §6003,**

**Tidewater Environmental Services  
1100 South Little Creek Road  
Dover, DE 19901**

**and**

**Milton Attainable Housing, LLC  
P.O. Box 333  
Rehoboth Beach, DE 19971**

**are authorized, jointly and individually, to construct facilities consisting of the following:**

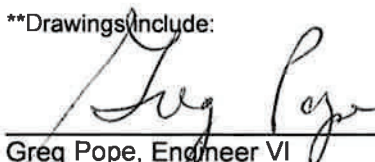
approximately three thousand six hundred and fifty-three linear feet (3,653 LF) of eight (8) inch diameter gravity sewer main, twenty-four linear feet (24 LF) of ten (10) inch diameter gravity sewer main, one hundred and sixty linear feet (160 LF) of four (4) inch diameter force main, twenty-one (21) gravity manholes, laterals, cleanouts, a duplex submersible sanitary sewer pump station, a valve vault, emergency generator and related appurtenances to serve the proposed two hundred and forty (240) unit Cypress Grove apartment complex located at the southwest corner of Broadkill Rd. and County Rd. in Milton, Delaware. The proposed pump station will be on the south side of the property next to Bay Avenue and the proposed force main will discharge to a Milton gravity sewer manhole located on Yew St. near the Bay Avenue intersection.

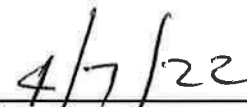
**in accordance with plans and specifications as described below and limitations, requirements and other conditions set forth in Parts I, II and III hereof.**

2. The plans, specifications, municipality standards and other documents submitted with the permit application consist of the following, which are incorporated by reference and made part of this authorization:

Fourteen (14) drawings\*\* prepared by Davis, Bowen & Friedel, titled "Cypress Grove", with a latest revision date of 4-4-55 and the current Artesian Tidewater Environmental Services Standards and Specifications.

\*\*Drawings include:

  
\_\_\_\_\_  
Greg Pope, Engineer VI  
By Agreement with Surface Water Discharges Section  
Division of Water  
State of Delaware Department of Natural Resources  
and Environmental Control

  
\_\_\_\_\_  
Date Signed

Sheet C501 – Sewer Overview  
Sheets C502-C505 – Sewer Plan  
Sheets C506-C508 – Sewer Profile  
Sheet C509 – Sewer Details  
Sheet C521 – Pump Station Site Plan  
Sheets C522-C524 – Pump Station Details  
Sheet C531 – Force Main Plan

3. The liquid waste will be discharged through an existing wastewater collection and transmission system to the Town of Milton/Artesian Wastewater Management Wastewater Treatment Facility, which discharges treated wastewater to the Broadkill River, in accordance with NPDES Permit No. DE 0021491.

A. Effluent Limitations on Pollutants Attributable to Industrial Users

The use of the constructed facility is conditioned on meeting all applicable pretreatment standards under 40 CFR, Part 403, or toxic pollutant discharge limitations under Section 307(a) of the Clean Water Act of 1977, PL 95-217.

B. Flow and Usage Limitations

This permit authorizes a daily average discharge of N/A gallons\*. The flow in the system shall be measured at least every N/A.

The estimated average daily discharge for the subject pump station is 58,080 GPD, which is based on 240 apartments and 2 pool EDUs at 240 GPD/EDU.

\* This permit authorizes only the construction of the wastewater collection and conveyance facilities referenced herein.

C. Monitoring and Reporting (When Required)

1. Representative sampling of the volume and nature of the monitored discharge shall be conducted at the request of the Division of Water.

2. Reporting

Monitoring results shall be reported to the:  
Delaware Department of Natural Resources and Environmental Control  
Division of Water, Surface Water Discharges Section  
89 Kings Highway  
Dover, DE 19901  
302-739-9946

3. Definitions

- a. "Daily average flow" means the total flow during a calendar month divided by the number of days in the month that the facility was operating.
- b. "Daily maximum flow" means the highest total flow during any calendar day.
- c. "Daily Peak Flow" means the flow which can be safely transported within the sewage system without causing an overflow or a backup into the building(s) or residence(s).
- d. "Bypass" means the intentional diversion of wastes from any portion of a treatment facility.



- e. "Measured flow" means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.
- f. "Estimate" means a value to be based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The date, exact place and time of sampling or measurement;
- b. The person(s) who performed the sampling and/or measurement;
- c. The date(s) and time(s) analysis was performed;
- d. The individual(s) who performed each analysis;
- e. The analytical technique(s) or method(s) used;
- f. The results of each analysis; and
- g. Appropriate quality assurance information.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed, all records of instrument calibration and maintenance and all charts from continuous monitoring instruments, shall be retained for three (3) years. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Department.

6. Test Procedures

Test procedures for the analysis of pollutants shall conform to the applicable test procedures identified in 40 CFR, Part 136, unless otherwise specified in this permit.

END OF PART I

## PART II

### A. Management Requirements

#### 1. Duty to Comply

The permittee must comply with the terms and conditions of this permit. Failure to do so constitutes a violation of this permit, which is grounds for enforcement and the imposition of penalties as provided in 7 Del.C., Chapter 60, grounds for permit termination or loss of authorization to discharge or operate pursuant to this permit, grounds for permit revocation and reissuance or permit modification, or denial of a permit renewal application.

#### 2. Notification

##### a. Changes in Authorized Activities

The permittee shall notify the Department of any proposed change in the activity authorized herein, of any proposed substantive change in the operation of the facility or facilities authorized herein, or of any anticipated facility expansions, production increases, or process modifications. Notification is required only when such alteration, addition or change may justify the inclusion of conditions that are absent or different from those specified in this permit. This includes, for example, the construction of additional wastewater collection, transmission or treatment facilities and changes which will result in new, different, or increased discharges of pollutants. Following such notice, the Department may require the submission of a new permit application and this permit may be reopened and modified to address the proposed changes.

##### b. Noncompliance

If, for any reason, the permittee does not comply with or will be unable to comply with any limitation specified in this permit, the permittee shall provide the Department with the following information, in writing, within five (5) days of becoming aware of such condition:

A description of the discharge and cause of noncompliance; and

The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

#### 3. Facilities Operation

The permittee shall, at all times, maintain in good working order and operate as efficiently as possible all collection and treatment facilities and systems (and related appurtenances) installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes, but is not limited to, effective management, adequate operator staffing and training and adequate laboratory process controls, including appropriate quality assurance procedures.

#### 4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to waters of the State resulting from noncompliance with this permit, including such accelerated or

additional monitoring as necessary to determine the nature and extent of the noncomplying discharge.

5. Bypassing

Any bypass or intentional diversion of waste streams from the facilities authorized by this permit, or any portion thereof, is prohibited, except (i) where unavoidable to prevent loss of human life, personal injury or severe property damage, or (ii) where excessive storm drainage or run-off would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Department, in writing, of each such diversion or bypass.

6. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewater shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the surface water or groundwater.

B. Responsibilities

1. Within 90 days following the completion of construction, the permittee shall submit to the Department an "as-built" set of plans of the facility or facilities constructed, bearing the seal and signature of a licensed Professional Engineer registered in the State of Delaware.

2. Right of Entry

The permittee shall allow the Secretary of the Department of Natural Resources and Environmental Control, or his authorized representative(s), upon the presentation of credentials:

- a. To enter upon the permittee's premises for inspection of any records, flow measurements, construction or other activity authorized by this permit or any condition required under the terms of this permit; and
- b. At reasonable times, to have access to and to copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and
- c. To sample any discharge.

3. Transferability

This permit is transferable with the Department's consent, provided that an intention to transfer accompanied by a copy of the permit is provided to the Department, signed by both the transferor and the transferee at least ten (10) days prior to the actual transfer.

4. Availability of Reports

All reports submitted with the application and those reports required under the terms of this permit shall be available for public inspection at the offices of the Department of Natural Resources and Environmental Control. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in 7 Del. C., §6013. Any person who causes or contributes to the discharge of a pollutant into State waters either in excess of any conditions specified in this permit or in absence of a specific permit condition shall report such an incident to the Department required

under 7 Del. C. §6028.

5. Permit Modification

This permit may be modified, suspended or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. Violation of any term or condition of this permit;
- b. Obtaining this permit by misrepresentation or failure to fully disclose all relevant facts;
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized activity; or
- d. Information that the permitted activity poses a threat to human health or welfare, or to the environment.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under 7 Del. C., Chapter 60.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

8. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

9. Severability

The provisions of this permit are severable. If any provision of this permit is held invalid, or if the application of any provision of this permit to any circumstances is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

END OF PART II

**PART III**

A. Special Conditions

1. This permit authorizes only the construction of the wastewater facilities and related work referenced herein.
2. If wellpointing is required during construction, the wells must be installed by a licensed well driller, and a permit to construct such wells must first be obtained from the Well Permits Branch of the Water Supply Section.
3. All construction shall be in agreement with plans and specifications submitted under this project and approved by the Department of Natural Resources and Environmental Control.
4. All construction shall be in accordance with Ten States Standards and other applicable local utility construction specifications and standards.
5. Connections or additions to the proposed system, other than those proposed on the plans, will not be allowed without prior approval from the Department.

END OF PART III