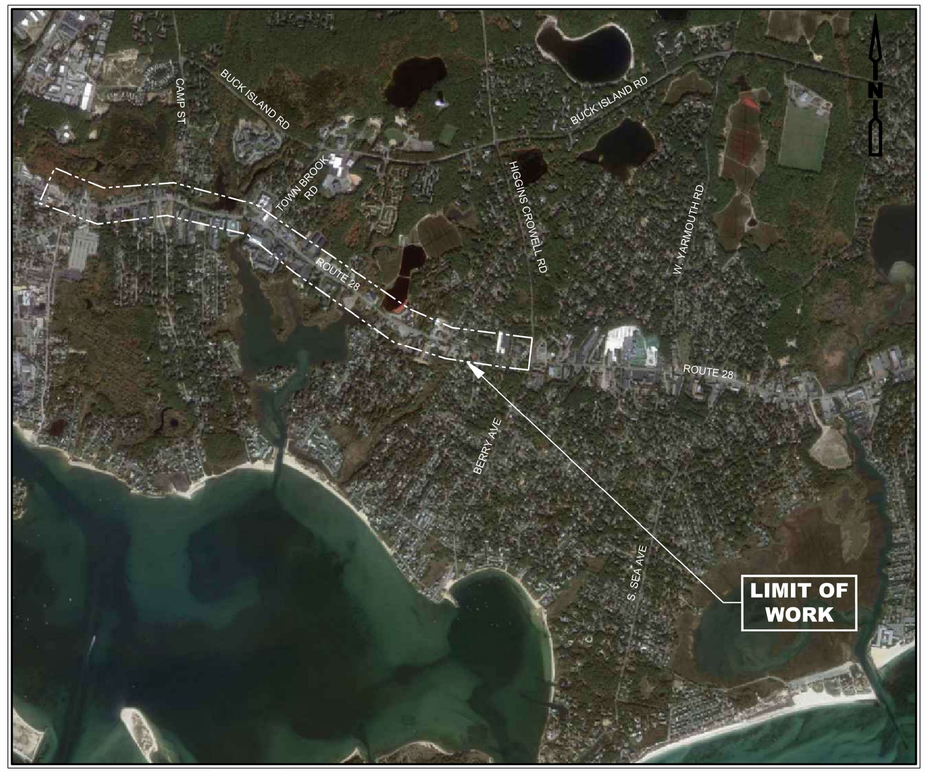
TOWN OF YARMOUTH, MASSACHUSETTS

WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES

PHASE 1 - CONTRACT NO. 6

PROJECT NO. CWSRF - 8349/6



LOCATION PLAN
NTS

SELECT BOARD

TRACY POST, CHAIR
JOYCE FLYNN
MARK FOREST
DORCAS MCGURRIN
LIZ ARGO

TOWN ADMINISTRATOR

ROBERT L. WHRITENOUR

DPW DIRECTOR

JEFFREY COLBY, P.E.

WATER/WASTEWATER SUPERINTENDENT

LAURIE RUSZALA, P.E.

NOVEMBER 2025

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 23074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:08:54-05'00'

CDM Smith

PROVIDENCE, RHODE ISLAND

Water Environment Transportation Energy Facilities

1125–273132

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NOTES:

1. SHEET CONTAINS WORK INCLUDED IN ADDITIVE ALTERNATES, SEE INDIVIDUAL DRAWINGS FOR DETAIL.

Michael P Guidice
2024.08.16 15:26:42-04'00'

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 26074
REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: W. HOTZ JR.
DRAWN BY: A. WELDON
SHEET CHK'D BY: W. HOTZ JR.
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

SHEET INDEX

PROJECT NO. 1125-273132
FILE NAME: G001NFSI.DWG
SHEET NO. G-1

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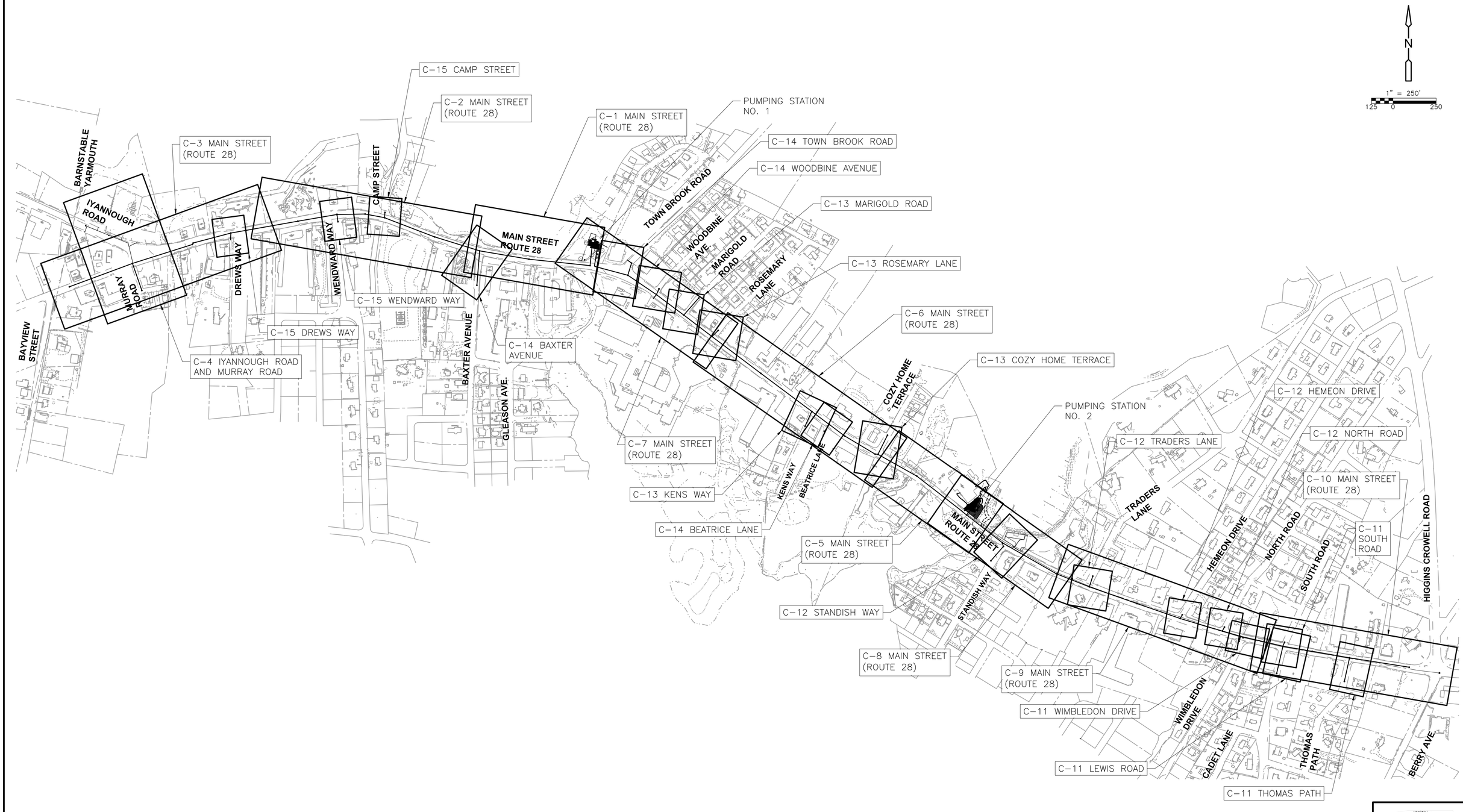

KEY PLAN
1" = 250'

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

KEY PLAN

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 52074
REGISTERED PROFESSIONAL ENGINEER

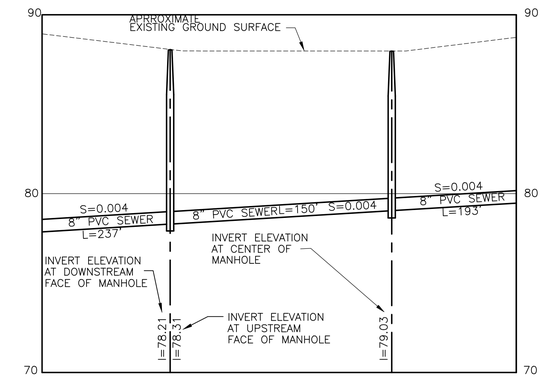
Michael P Guidice
2025.11.18 13:10:06-05'00'

PROJECT NO. 1125-273132
FILE NAME: KEYPLAN

SHEET NO.
G-2

GENERAL NOTES:

1. PLANS AND TOPOGRAPHY PREPARED FROM SURVEY PROVIDED BY GPI IN DECEMBER 2021.
2. ALL ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) WATER SURFACE ELEVATIONS ARE THOSE OCCURING AT TIME OF AERIAL PHOTOGRAPHY UNLESS INDICATED OTHERWISE.
3. THE LOCATION OF ALL UTILITIES AND SUBSURFACE STRUCTURES WERE TAKEN FROM SURVEY AND RECORDS OF TOWN, CORPORATIONS, AND UTILITIES, ETC., AND ARE CONSIDERED APPROXIMATE, BOTH AS TO SIZE AND LOCATIONS AND ARE INDICATED ON THESE DRAWINGS TO GIVE BIDDERS A GENERAL IDEA OF EXISTING CONDITIONS. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACTOR SHALL NOT RELY UPON THESE DRAWINGS FOR SUCH INFORMATION, BUT SHALL MAKE EXAMINATIONS IN THE FIELD BY VARIOUS AVAILABLE METHODS AND SHALL OBTAIN INFORMATION FROM UTILITY CORPORATIONS AND INDIVIDUALS AS TO THE LOCATION OF ALL SUBSURFACE STRUCTURES, BOTH PUBLIC AND PRIVATE. IT IS NOT WARRANTED THAT ALL PIPES AND UNDERGROUND STRUCTURES ARE SHOWN NOR THAT THEY ARE SHOWN IN THE CORRECT LOCATIONS.
4. GAS MAINS ARE ASSUMED TO HAVE THREE FEET OF COVER UNLESS SHOWN OTHERWISE. WATER MAINS ARE ASSUMED TO HAVE FIVE FEET OF COVER UNLESS SHOWN OTHERWISE. IT IS NOT WARRANTED THAT ALL UTILITIES ARE SHOWN OR SHOWN AT THE CORRECT ELEVATION.
5. UNDERGROUND SERVICES TO HOUSES ARE NOT SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR INVESTIGATING, LOCATING AND PROVIDING MARKS-OUTS FOR ALL UNDERGROUND UTILITIES, BOTH PUBLIC AND PRIVATE. WORK TO BE PAID FOR UNDER MISCELLANEOUS WORK AND CLEANUP BID ITEM.
6. BORINGS WERE DRILLED BY HAMPSHIRE BORING, INC. IN THE SPRING OF 2011.
7. BORING LOGS ARE APPENDED TO THE SPECIFICATIONS IN APPENDIX A. BORINGS ARE SHOWN IN PROFILE FOR INFORMATIONAL PURPOSES ONLY AND MAY NOT BE SHOWN AT EXACT LOCATIONS ALONG THE PIPE ALIGNMENT. GROUNDWATER ELEVATIONS SHOWN ON THE LOGS AND PROFILES ARE THOSE ENCOUNTERED AT THE TIME OF DRILLING AND MAY NOT BE REPRESENTATIVE OF ELEVATIONS ENCOUNTERED DURING CONSTRUCTION DUE TO SEASONAL FLUCTUATIONS AND OTHER FACTORS.
8. NOTES AND INSTRUCTIONS TO CONTRACTOR FOR NEW WORK ARE BOXED. ALL SLOPES AND INVERTS CALLED OUT BY NUMBER REPRESENT THE SLOPES AND INVERTS TO BE CONSTRUCTED UNDER THE CONTRACT.
9. LIMITS OF CLEARING AND GRUBBING ARE LIMITS OF TEMPORARY CONSTRUCTION EASEMENTS UNLESS INDICATED OTHERWISE. CONTRACTOR SHALL MINIMIZE CLEARING AND GRUBBING AS MUCH AS POSSIBLE. ALL CROSS COUINTRY AREAS SHALL BE LOAMED AND SEEDED OR SODDED TO THE LIMITS DISTURBED BY CONSTRUCTION UNLESS OTHERWISE NOTED.
10. CONTRACTOR SHALL NOT DISTURB ANY LAND OUTSIDE THE LIMITS OF EASEMENTS AND RIGHTS-OF-WAY. NECESSARY EASEMENTS TO BE PROVIDED BY TOWN OF YARMOUTH PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOT ENTER ANY OF THE EASEMENT AREAS UNTIL RECEIVING APPROVAL FROM THE TOWN OF YARMOUTH.
11. NEW SEWER MANHOLE LOCATIONS ARE APPROXIMATE AND MAY BE ALTERED TO MINIMIZE PIPE CUTTING WHEN DIRECTED BY THE ENGINEER.
12. WHEN THE HORIZONTAL SEPARATION BETWEEN THE NEW SEWER AND EXISTING OR RELOCATED WATER MAIN IS LESS THAN 10-FT. AND THE VERTICAL SEPARATION IS LESS THAN 18-IN. THE NEW SEWER SHALL BE CONSTRUCTED OF RESTRAINED MJDI OR CONCRETE ENCASED PIPE FOR A MINIMUM OF 10-FT. BEYOND WHERE THE SPACING IS LESS THAN 10-FT. HORIZONTAL AND 18-IN. VERTICAL.
13. IF A WATER MAIN CROSSES UNDER THE NEW SEWER, BOTH PIPES SHALL BE DUCTILE IRON OR CONCRETE ENCASED FOR A MINIMUM OF 10-FT. TO EITHER SIDE OF THE RESPECTIVE CENTER LINES. DUCTILE IRON PIPE SHALL BE PAID UNDER THE RESPECTIVE PIPE ITEMS. CONCRETE ENCASEMENT SHALL BE PAID UNDER MISCELLANEOUS CONCRETE ITEM.
14. WATER MAINS SHALL BE INSTALLED WITH 5 FEET MINIMUM DEPTH OF COVER OVER CROWN OF NEW MAIN UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
15. NEW SEWER SERVICE CONNECTIONS SHALL BE INSTALLED SUCH THAT THEY ARE BENEATH THE NEW WATER MAIN AND WATER SERVICE CONNECTIONS WHILE STILL MAINTAINING 5 FEET MINIMUM DEPTH OF COVER ON NEW WATER MAINS AND SERVICE CONNECTIONS. ALL NEW SEWER SERVICES SHALL BE INSTALLED WITH A MINIMUM OF 7.5 FEET OF COVER AND MAXIMUM OF 8 FEET OF COVER WHEREVER POSSIBLE.
16. ALL DI WATER MAINS SHALL HAVE RESTRAINED JOINTS ON EACH SIDE OF ALL FITTINGS AS INDICATED IN THE TABLES ON THE THRUST RESTRAINT AND CONCRETE THRUST BLOCK DETAILS SHEET.
17. THE CONTRACTOR SHALL FOLLOW ALL FEDERAL, STATE AND LOCAL REQUIREMENTS FOR SAFETY WHEN IN CONFINED SPACES. THE CONTRACTOR IS ALSO REFERRED TO RECOMMENDATIONS IN THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH PUBLICATION NO. 80-106, "WORKING IN CONFINED SPACES".
18. CONTRACTOR SHALL PROTECT AGAINST SILTATION OF WETLANDS AS SPECIFIED IN SECTION 312500, EROSION AND SEDIMENTATION CONTROLS AND SHALL COMPLY WITH ALL REQUIREMENTS CONTAINED IN THE ORDER OF CONDITIONS APPENDED TO THE SPECIFICATIONS IN APPENDIX D. FILTER BAGS SHALL BE PLACED IN ALL CATCH BASINS SUBJECT TO RUNOFF FROM CONSTRUCTION AREAS. CONTRACTOR SHALL NOT COMMENCE ANY WORK UNTIL RECEIVING APPROVAL OF THE CONTRACTOR'S WORK PLAN AND DEWATERING PLAN FROM THE TOWN OF YARMOUTH CONSERVATION COMMISSION.
19. EXACT LOCATIONS OF WYE BRANCHES FOR HOUSE CONNECTIONS TO BE DETERMINED IN THE FIELD. 6-IN DIAMETER SEWER SERVICE CONNECTIONS SHALL BE INSTALLED TO THE STREET RIGHT-OF-WAY OR EDGE OF PERMANENT EASEMENT UNLESS OTHERWISE NOTED AND/OR DIRECTED BY THE ENGINEER.
20. CONTRACTOR SHALL FURNISH AND INSTALL WYE BRANCHES, 6-IN PVC SERVICE CONNECTION PIPE AND CHIMNEYS TO BUILDABLE VACANT LOTS WHERE DIRECTED BY THE ENGINEER. ADDITIONAL QUANTITIES HAVE BEEN INCLUDED FOR THESE ITEMS IN THE BID FORM.
21. ALL DROP MANHOLE CONNECTIONS SHALL BE INTERNAL DROP CONNECTIONS. EXTERNAL DROP CONNECTIONS HAVE BEEN SHOWN IN PROFILES FOR GRAPHICAL PURPOSES ONLY. MINIMUM 5 FOOT DIAMETER MANHOLES SHALL BE USED AT ALL INTERNAL DROP CONNECTION MANHOLES.
22. CONTRACTOR TO MAINTAIN FLOW IN EXISTING DRAINS AT ALL TIMES.
23. THE CONTRACTOR SHALL HAVE ON SITE A SUPPLY OF 1-FT AND 2-FT MANHOLE RISER SECTIONS AND FLAT SLAB TOPS TO ADJUST THE MANHOLE FINISHED GRADES AS REQUIRED TO FIT THE ACTUAL ELEVATION OF THE GROUND OR ROAD SURFACE AT THE TIME OF CONSTRUCTION.
24. CONTRACTOR SHALL FOLLOW TOWN REGULATIONS FOR ALL "TOWN" TREES TO BE CUT/TRIMMED AND OR REMOVED WITHIN THE LIMITS OF THE TOWN RIGHT-OF-WAY.
25. CONTRACTOR SHALL CONFIRM ROAD PROFILE ELEVATIONS PRIOR TO ORDERING MANHOLE SECTIONS.
26. TEST PITS SHALL BE EXCAVATED AS SHOWN ON THE PLANS AND/OR AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL OBTAIN THE LOCATION OF THE UTILITY IN QUESTION WITH TIES TO SURROUNDING FEATURES AND THE ELEVATION OF BOTH THE TOP AND BOTTOM OF THE UTILITY/STRUCTURE.
27. CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO PREVENT DAMAGE TO ADJACENT PROPERTY. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO PRE-CONSTRUCTION CONDITION AT NO ADDITIONAL COST TO THE OWNER.
28. CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS FOR MAINTAINING TRAFFIC AS DETAILED ON THE TRAFFIC MANAGEMENT PLANS, IN THE CONTRACT SPECIFICATIONS AND IN THE MASSDOT PERMIT APPENDED TO THE SPECIFICATIONS.
29. THE CONTRACTOR IS REQUIRED TO FOLLOW THE PIPE TESTING PROCEDURES STATED IN THE SPECIFICATIONS. PIPE TESTING WILL BE STRICTLY ENFORCED.
30. THE CONTRACTOR SHALL BE AWARE THAT THE PIPE TRENCH AND PIPE BEDDING COMPACTION REQUIREMENTS STATED IN SECTION 312333 OF THE SPECIFICATIONS WILL BE STRICTLY ENFORCED. COMPACTION TESTING IS REQUIRED AS SPECIFIED IN SECTION 312333 OF THE SPECIFICATIONS.
31. ALL EXISTING WATER SERVICE CONNECTIONS ARE NOT SHOWN ON THE DRAWINGS. ALL EXISTING WATER SERVICE CONNECTIONS THAT ARE CONNECTED TO EXISTING WATER MAINS WILL BE REMOVED OR ABANDONED AND SHALL BE ABANDONED BETWEEN EXISTING WATER MAIN AND THE PROPERTY LINE AND BE REPLACED WITH NEW PVC WATER SERVICE (1-IN MIN.) CORPORATION COCK, AND CURB STOP AND BOX BETWEEN THE PROPERTY LINE AND THE NEW WATER MAIN. SEE SHEET CD-9 FOR WATER SERVICE CONNECTION DETAIL. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXACT LOCATION, SIZE AND TYPE OF ALL EXISTING WATER SERVICE CONNECTIONS BEFORE CONSTRUCTION.
32. EXACT LOCATION OF NEW PIPES, VALVES, FITTINGS, HYDRANTS, ETC. SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
33. THE LOCATIONS OF NEW HYDRANTS ARE SHOWN SCHEMATICALLY AND SHALL NOT BE PLACED ON PRIVATE PROPERTY. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, NEW HYDRANTS SHALL BE PLACED AT THE BACK OF SIDEWALK. SEE DETAILS, SHEET CD-9.
34. ALL EXISTING WATER MAINS ARE ASSUMED CAST IRON OR DUCTILE IRON, UNLESS OTHERWISE NOTED.
35. CAST-IN-PLACE THRUST BLOCKS SHALL BE USED AT ALL FITTINGS, AND AS DIRECTED BY THE ENGINEER. SEE THE THRUST RESTRAINT AND CONCRETE THRUST BLOCK DETAILS SHEET. THE USE OF BOULDERS OR PRECAST CONCRETE BLOCKS WILL NOT BE ALLOWED. CONCRETE USED FOR CONSTRUCTION OF THRUST BLOCKS SHALL BE PREPARED WITH A MECHANICAL MIXER. HAND MIXED CONCRETE WILL NOT BE ALLOWED.
36. THE CONTRACTOR SHALL BE AWARE THAT BOTH THRUST BLOCKS AND RESTRAINED JOINTS ARE REQUIRED FOR ALL FITTINGS.
37. NOTIFY FIRE DEPARTMENT 48 HOURS PRIOR TO REMOVAL/REPLACEMENT OF HYDRANTS.
38. ALL EXISTING HYDRANTS WHICH ARE TO BE REMOVED AND/OR REPLACED SHALL BE REMOVED, SALVAGED, AND DEPOSITED AT THE TOWN'S WATER DIVISION YARD AT 99 BUCK ISLAND ROAD AND WILL REMAIN PROPERTY OF THE OWNER, UNLESS OTHERWISE DIRECTED BY ENGINEER.
39. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXCAVATE TEST PITS AS REQUIRED TO DETERMINE EXACT LOCATION AND SIZE OF EXISTING WATER MAINS, TO VERIFY ANY UTILITY INFORMATION NEEDED, AND MEASUREMENTS NEEDED FOR FABRICATION AND ORDERING OF NEW MATERIALS.
40. PRIOR TO CONSTRUCTION AND/OR TEMPORARY FLOW INTERRUPTIONS, CONTRACTOR MUST VERIFY THAT ALL VALVES AND CONNECTIONS IN AND AROUND THE WORK SITE ARE OPERATIONAL. ONLY TOWN PERSONNEL SHALL OPERATE THE EXISTING VALVES.
41. EXISTING WATER MAIN SHALL REMAIN IN SERVICE UNTIL THE NEW WATER MAIN IS INSTALLED, TESTED, AND DISINFECTED AND ALL SERVICES ARE TRANSFERRED TO THE NEW WATER MAIN. THEN, EXISTING WATER MAIN SHALL BE ABANDONED WITH ENDS CUT AND PLUGGED.
42. THE OWNER DOES NOT GUARANTEE A TIGHT SHUTDOWN OF EXISTING VALVES. THE CONTRACTOR IS RESPONSIBLE FOR DEWATERING EXISTING WATER MAINS, CONTROL OF LEAKAGE AND DISPOSAL OF WATER IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS. CONTRACTOR IS REQUIRED TO HANDLE LEAKAGE OF UP TO 100 GALLONS PER MINUTE AT EACH VALVE THAT IS CLOSED TO FACILITATE THE WORK.
43. FOR WORK ON ROUTE 28, CONTRACTOR SHALL FOLLOW THE MASSDOT CONSTRUCTION STANDARD DETAILS DATED OCTOBER 2017 AND THE MASSDOT 2024 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES: DIVISION 1 THROUGH DIVISION III, 2024 APPENDIX A, AND SUPPLEMENT DATED 3/31/2024



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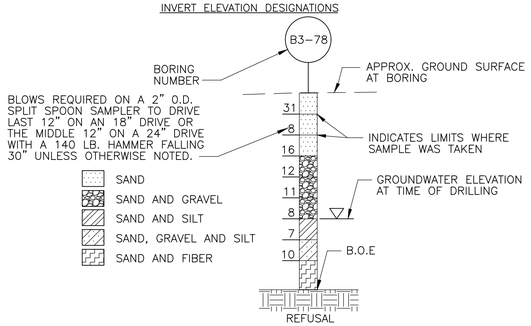

NOTE:
FOR STRATA DESCRIPTIONS, SEE BORING LOGS APPENDED TO THE SPECIFICATIONS

TYPICAL BORING LOG

LEGEND

NEW

NEW SEWER	RAILROAD
NEW MANHOLE	PAVED ROAD
NEW WYE-BRANCH & SERVICE CONNECTION ON PVC SEWER	GRAVEL ROAD
NEW TEE AND SERVICE CONNECTION ON DI SEWER	RETAINING WALL
NEW MANHOLE WITH PLUGGED STUB	SPOT ELEVATION (X 7.9)
NEW FORCE MAIN	TREES
NEW SEWER SHOWN ON OTHER SHEET UNDER THIS CONTRACT	ROCK RETAINING WALL
PROPOSED SEWER BY OTHERS	HEDGE
NEW WATER MAIN WITH HYDRANT	EDGE OF WOODS
NEW EASEMENT LINE	WETLANDS
LIMIT OF COMPOST LOG	100-YR FLOOD ELEVATION
	TOP OF COASTAL BANK
	LAND SUBJECT TO COASTAL STORM FLOWAGE (LSCSF)
	LIMIT OF 100-FT BUFFER ZONE TO WETLAND
	STREAM, WATERLINE
	CONTOUR (100)
	STONE WALL
	LIMITS OF WETLAND WITH NUMBER AND LOCATION OF WETLAND FLAG (4-6)
	HOUSES WITH STREET NUMBER AND SILL ELEVATION (HSE# 37, SILL EL.= 95.0)

EXISTING

FM	FORCE MAIN
S	SEWER & MANHOLE
W	WATER MAIN
D	STORM DRAIN
G	GAS MAIN
E	UNDERGROUND ELECTRIC
TS	TRAFFIC SIGNAL WIRE
T	UNDERGROUND TELEPHONE
CATV	UNDERGROUND CABLE TELEVISION
	HYDRANT
	GATE VALVE
	UTILITY POLE
	CATCH BASIN
B-5	BORING
S	SIGN
	STREET LIGHT
	STOCKADE WOOD FENCE
	WIRE OR WOOD FENCE
	GUARD RAIL
	CHAIN LINK FENCE
	PROPERTY LINE
N	NORTH ARROW

ABBREVIATIONS

CL	CEMENT LINED
CI	CAST IRON
DI	DUCTILE IRON
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
AC	ASBESTOS CEMENT
VC	VITRIFIED CLAY
I=	INVERT ELEVATION
MH	MANHOLE
BFV	BUTTERFLY VALVE
GV	GATE VALVE
W	WATER
D	STORM DRAIN
G	GAS
E	ELECTRIC
T	TELEPHONE
CATV	CABLE TELEVISION
MB	MAIL BOX
CB	CATCH BASIN
S	SLOPE
MJDI	MECHANICAL JOINT DUCTILE IRON

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE, JR.
CIVIL
No. 22074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:10:21-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: D. POLCARI
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

LEGEND, ABBREVIATIONS AND GENERAL NOTES

PROJECT NO. 1125-273132
FILE NAME: G006LGND.DWG
SHEET NO. G-3

XREFs: [CDMS_2436] Images: []
Last saved by: HAMILPURKARS Time: 11/7/2025 12:31:06 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pl\1125\273132\04 Design Services NM_30%\01 General\10 BIM_CADD\G006LGND.DWG
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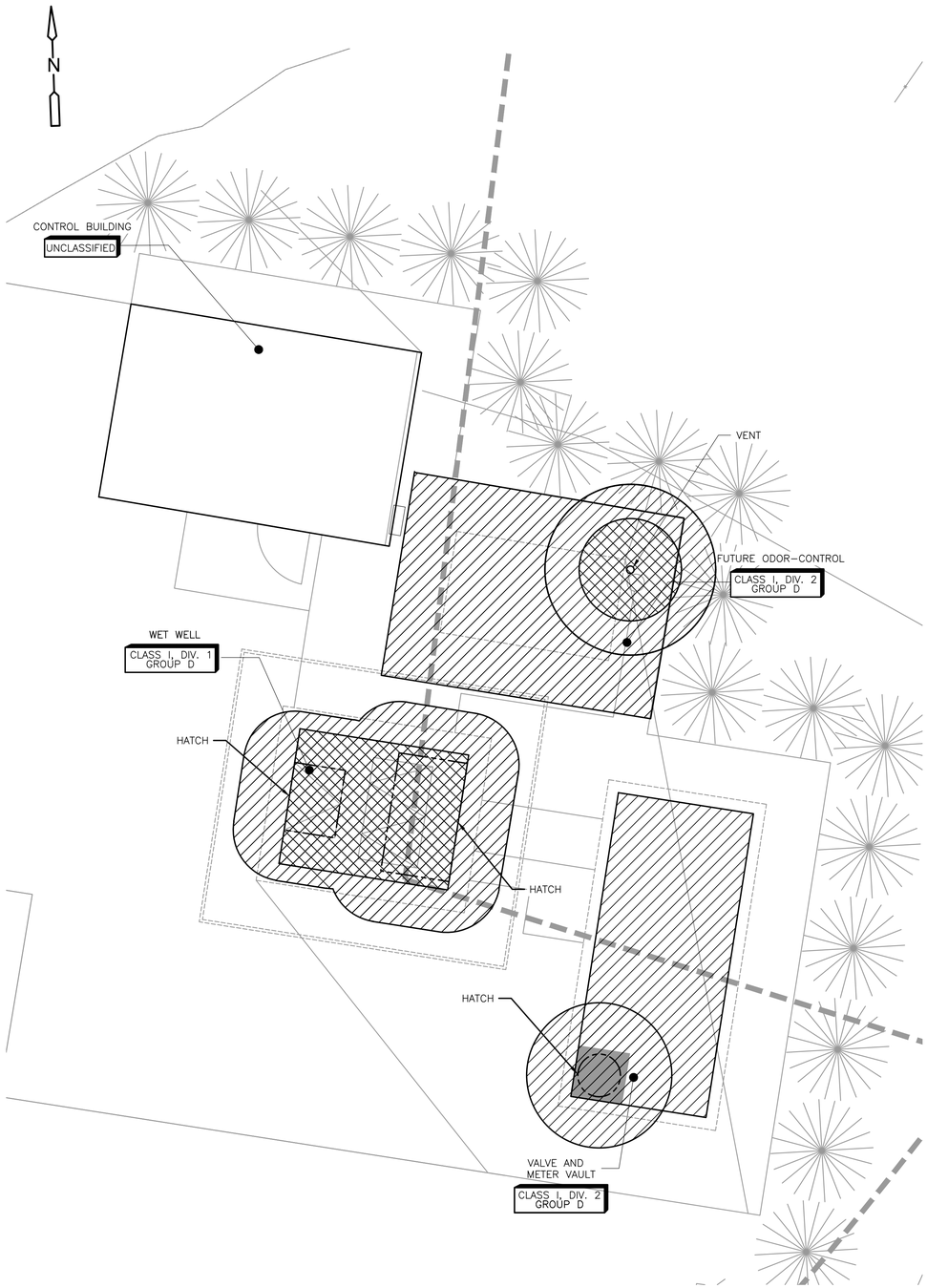


PUMPING STATION NO.1 AREA CLASSIFICATION

PLAN

1/4" = 1'-0"

LEGEND:

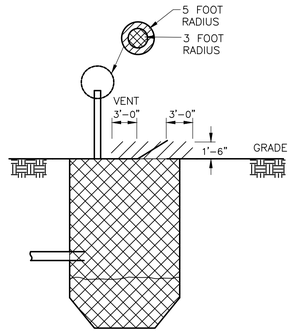
- CLASS I, DIV. 1
- CLASS I, DIV. 2
- UNCLASSIFIED

GENERAL NOTES:

1. ELECTRICAL EQUIPMENT PLACED IN CLASS 1, DIV. 1 OR 2, GROUPS C & D LOCATIONS SHALL MEET "T3" TEMPERATURE RATINGS.
2. ALL OUTDOOR SPACES, BELOW GRADE STRUCTURES, & BASEMENTS ARE "WET" IN ADDITION TO THE HAZARDOUS CLASSIFICATION.
3. REFER TO THE DIVISION 26 SPECIFICATIONS FOR ADDITIONAL DETAILS AND REQUIREMENTS REGARDING EQUIPMENT AND ENCLOSURE RATINGS.
4. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

TABLE OF ELECTRICAL AREA CLASSIFICATIONS

AREA	DESIRED CLASSIFICATION	NFPA 820 TABLE 2020 EDITION	VENTILATION REQUIREMENTS	EXTENT OF CLASSIFIED AREA	FIRE AND GAS DETECTION
WET WELL	CLASS 1, DIVISION 1, GROUP D	4.2.2-ROW 14A	NOT VENTILATED OR AT LESS THAN 12ACH	ENTIRE ROOM OR SPACE. ALSO REFER DIAGRAM 1 IN THIS SHEET	COMBUSTIBLE GAS DETECTION SYSTEM.
BELOWGRADE VALVE & METER VAULT	CLASS 1, DIVISION 2, GROUP D	4.2.2-ROW 34A & 29A	NOT NORMALLY VENTILATED	ENCLOSED SPACE. ALSO REFER DIAGRAM 2 IN THIS SHEET	NOT REQUIRED
CONTROL BUILDING	UNCLASSIFIED	N/A	N/A	ENTIRE ROOM OR SPACE	NOT REQUIRED
FUTURE ODOR-CONTROL	CLASS 1, DIVISION 2, GROUP D	4.2.2-ROW 18D	N/A	NOT ENCLOSED.	FIRE EXTINGUISHER

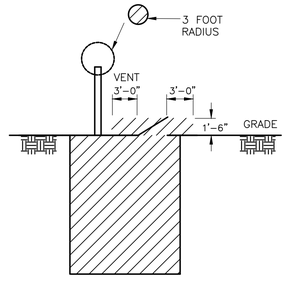


NFPA 820 (2024) FIGURE A.4.2(b)

WET WELL

DIAGRAM 1

NTS



NFPA 820 (2024) FIGURE A.4.2(d)

VALVE AND METER VAULT

DIAGRAM 2

NTS

1/4" = 1'- 0"

2 1 0 2 4

Bethany Charis-Molling
2024.08.16 14:07:33-04'00'

COMMONWEALTH OF MASSACHUSETTS
BETHANY LYNN CHARIS-MOLLING
ELECTRICAL
NO. 54516
REGISTERED
PROFESSIONAL ENGINEER

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: B CHARIS-MOLLING
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1 AREA CLASSIFICATION PLAN

PROJECT NO. 1125-273132
FILE NAME: G004NFAC.DWG

SHEET NO.
G-4

XREFs: [xsvpl001_CBSPL001_EW001ST_CDMS_2436] Images: []
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C:\Users\charismollingbl\OneDrive - CDM Smith\Desktop\Temp\temp 6\G004NFAC.DWG
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LEGEND:

CLASS I, DIV. 1

CLASS I, DIV. 2

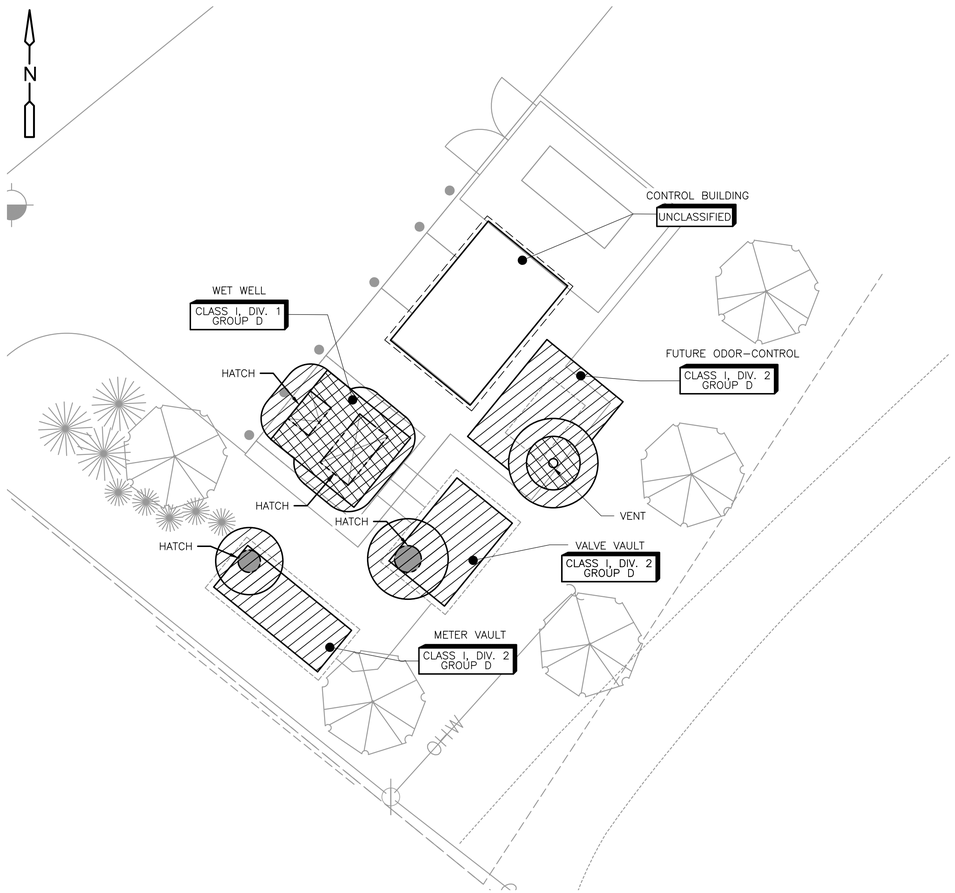
UNCLASSIFIED

GENERAL NOTES:

1. ELECTRICAL EQUIPMENT PLACED IN CLASS 1, DIV. 1 OR 2, GROUPS C & D LOCATIONS SHALL MEET "T3" TEMPERATURE RATINGS.
2. ALL OUTDOOR SPACES, BELOW GRADE STRUCTURES, & BASEMENTS ARE "WET" IN ADDITION TO THE HAZARDOUS CLASSIFICATION.
3. REFER TO THE DIVISION 26 SPECIFICATIONS FOR ADDITIONAL DETAILS AND REQUIREMENTS REGARDING EQUIPMENT AND ENCLOSURE RATINGS.

TABLE OF ELECTRICAL AREA CLASSIFICATIONS

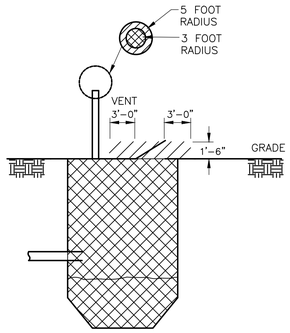
AREA	DESIRED CLASSIFICATION	NFPA 820 TABLE 2020 EDITION	VENTILATION REQUIREMENTS	EXTENT OF CLASSIFIED AREA	FIRE AND GAS DETECTION
WET WELL	CLASS 1, DIVISION 1, GROUP D	4.2.2–ROW 14A	NOT VENTILATED OR AT LESS THAN 12ACH	ENTIRE ROOM OR SPACE. ALSO REFER DIAGRAM 1 IN THIS SHEET	COMBUSTIBLE GAS DETECTION SYSTEM.
BELOWGRADE VALVE VAULT	CLASS 1, DIVISION 2, GROUP D	4.2.2–ROW 29A	NOT NORMALLY VENTILATED	ENCLOSED SPACE. ALSO REFER DIAGRAM 2 IN THIS SHEET	NOT REQUIRED
CONTROL BUILDING	UNCLASSIFIED	N/A	N/A	ENTIRE ROOM OR SPACE	NOT REQUIRED
BELOWGRADE METER VAULT	CLASS 1, DIVISION 2, GROUP D	4.2.2–ROW 34A	NOT NORMALLY VENTILATED	ENCLOSED SPACE. ALSO REFER DIAGRAM 2 IN THIS SHEET	NOT REQUIRED
FUTURE ODOR–CONTROL	CLASS 1, DIVISION 2, GROUP D	4.2.2–ROW 18D	N/A	NOT ENCLOSED.	FIRE EXTINGUISHER



PUMPING STATION NO.2 AREA CLASSIFICATION

PLAN

1/8" = 1'–0"

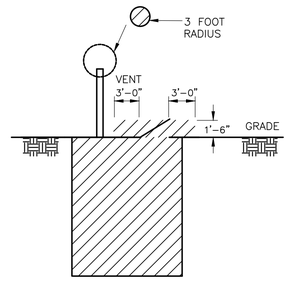


NFPA 820 (2024) FIGURE A.4.2(b)

WET WELL

DIAGRAM 1

NTS



NFPA 820 (2024) FIGURE A.4.2(d)

VALVE AND METER VAULT

DIAGRAM 2

NTS

1/8" = 1'– 0"

4 2 0 4 8

COMMONWEALTH OF MASSACHUSETTS
CELESTINE A. FONDUNGALLAH
ELECTRICAL
No. 52324
REGISTERED
PROFESSIONAL ENGINEER

CELESTINE A FONDUNGALLAH
2025.11.18 15:26:43-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: C. FONDUNGALLAH
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 2
AREA CLASSIFICATION PLAN

PROJECT NO. 1125–273132
FILE NAME: G005NFAC.DWG

SHEET NO.
G-5

XREFs: [xsvp001, CDMS_2436, CBSPL001] Images: []
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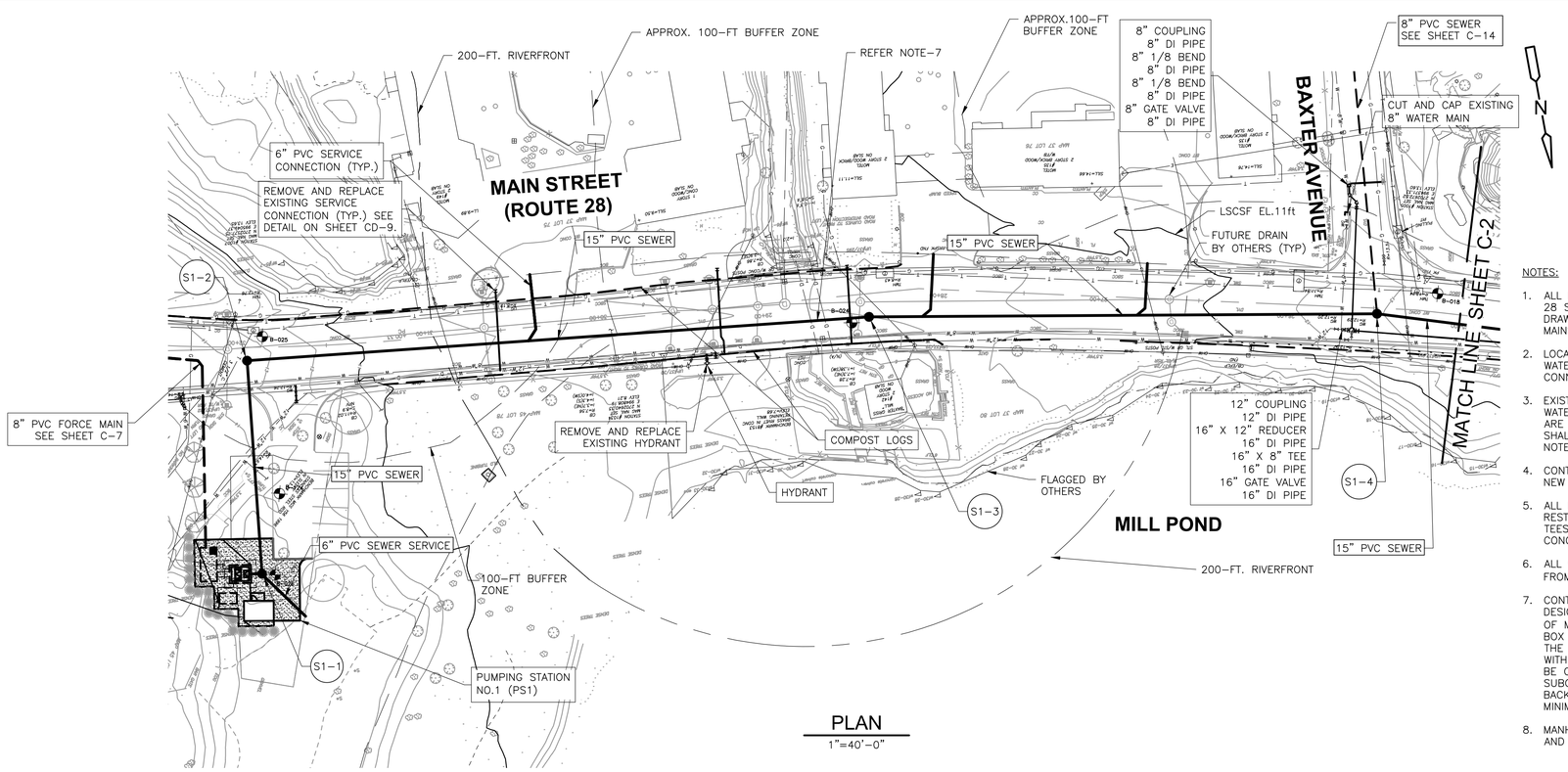
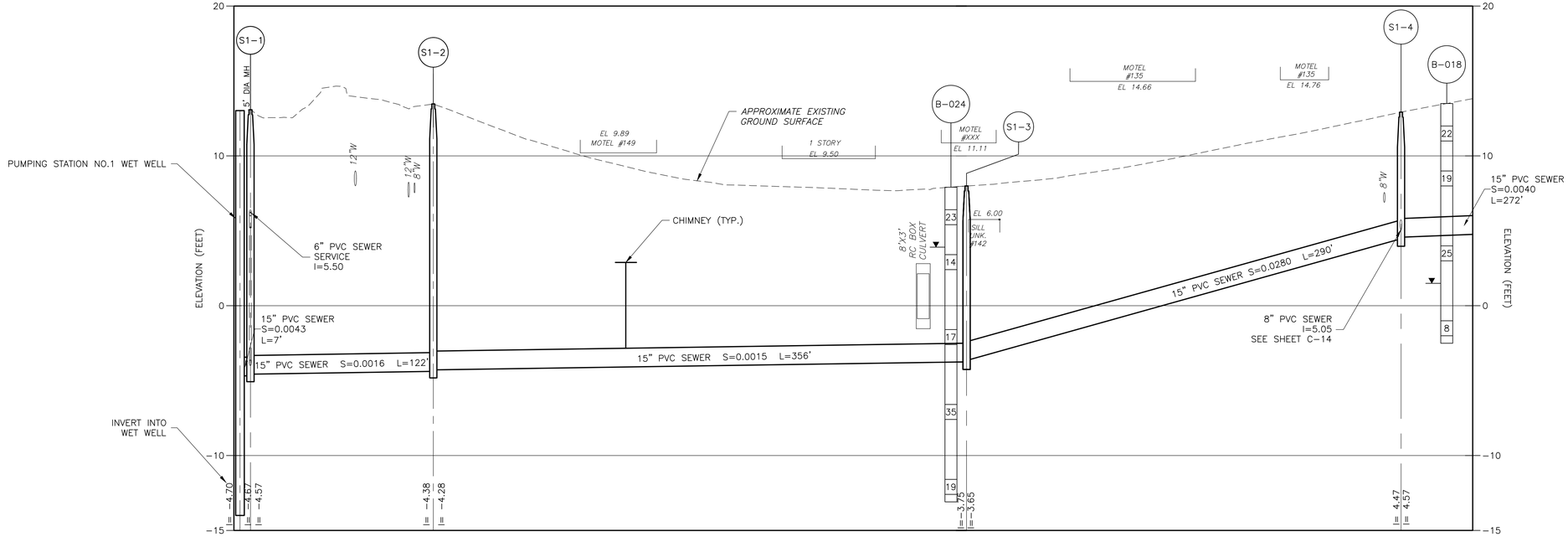


PLAN

1"=40'-0"



PROFILE

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

NO WORK ALLOWED IN ROUTE 28 BETWEEN MEMORIAL DAY AND LABOR DAY

WORK SHOWN ON THIS SHEET INCLUDED IN ADD ALTERNATIVE 2

NOTES:

1. ALL EXISTING WATER MAINS ALONG PROPOSED WATER MAINS WITHIN ROUTE 28 SHALL BE ABANDONED IN PLACE UNLESS OTHERWISE NOTED ON THE DRAWINGS OR NEED TO BE REMOVED FOR INSTALLATION OF NEW WATER MAINS, OR AS DIRECTED BY THE ENGINEER.
2. LOCATION OF SERVICE CONNECTIONS ARE APPROXIMATE BASED ON EXISTING WATER SERVICE CONNECTION CARDS.CONTRACTOR MUST VERIFY SERVICE CONNECTION LOCATIONS IN THE FIELD.
3. EXISTING WATER MAIN ON ROUTE 28 SHALL REMAIN IN SERVICE UNTIL NEW WATER MAIN IS INSTALLED, TESTED, AND DISINFECTED AND ALL SERVICES ARE TRANSFERRED TO THE NEW WATER MAIN. THEN, EXISTING WATER MAIN SHALL BE ABANDONED WITH ENDS CUT AND PLUGGED, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
4. CONTRACTOR SHALL MAINTAIN 10 FEET OF HORIZONTAL SEPARATION BETWEEN NEW WATER MAIN AND SEWER MAIN, WHERE POSSIBLE.
5. ALL BENDS, TEES, FITTINGS, VALVES, AND COUPLINGS SHALL HAVE RESTRAINED JOINTS. INSTALL CONCRETE THRUST BLOCKS AT ALL BENDS, TEES, END CAPS, AND FITTINGS AS SHOWN ON THE THRUST RESTRAINT AND CONCRETE THRUST BLOCK DETAILS SHEET.
6. ALL WATER SERVICES THAT CROSS THE NEW SEWER SHALL BE REPLACED FROM CORPORATION TO CURB STOP (TYP.)
7. CONTRACTOR SHALL UTILIZE A TEMPORARY EXCAVATION SUPPORT SYSTEM DESIGNED BY A PROFESSIONAL ENGINEER CERTIFIED IN THE COMMONWEALTH OF MASSACHUSETTS FOR INSTALLATION OF THE SEWER UNDER THE 8'X3' RC BOX CULVERT. THE SEWER TRENCH SHALL BE A MAXIMUM OF 3-FT WIDE AT THE CULVERT CROSSING. IF A JOINT ALONG THE BOX CULVERT IS LOCATED WITHIN THE LIMITS OF THE SEWER TRENCH, TEMPORARY SUPPORTS SHALL BE CONSTRUCTED BETWEEN THE BOTTOM OF THE CULVERT AND THE TRENCH SUBGRADE ON BOTH SIDES OF THE JOINT. THE SEWER TRENCH SHALL BE BACKFILLED WITH FLOWABLE FILL TO THE BOTTOM OF THE CULVERT AND A MINIMUM OF 5-FT ON EITHER SIDE OF THE CULVERT.
8. MANHOLES LOCATED BELOW ELEVATION 11 SHALL HAVE WATERTIGHT FRAMES AND COVERS.

HOR. 1" = 40'
20 0 40
VERT. 1" = 4'
2 0 4

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 52074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:10:48-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MAIN STREET (ROUTE 28)

PROJECT NO. 1125-273132
FILE NAME: C001STPP
SHEET NO.
C-1

XREFs: [XGTWP001, CBSPLI001, cwtwp001, 608264_SV(EG), 608264_SV, CDMS8_2436, cstwp001, xsvpl001, CEP000ST, 2100059WS C3D2018_R3, 608264_DU (Town Line to HCR_Berry)] Images: []
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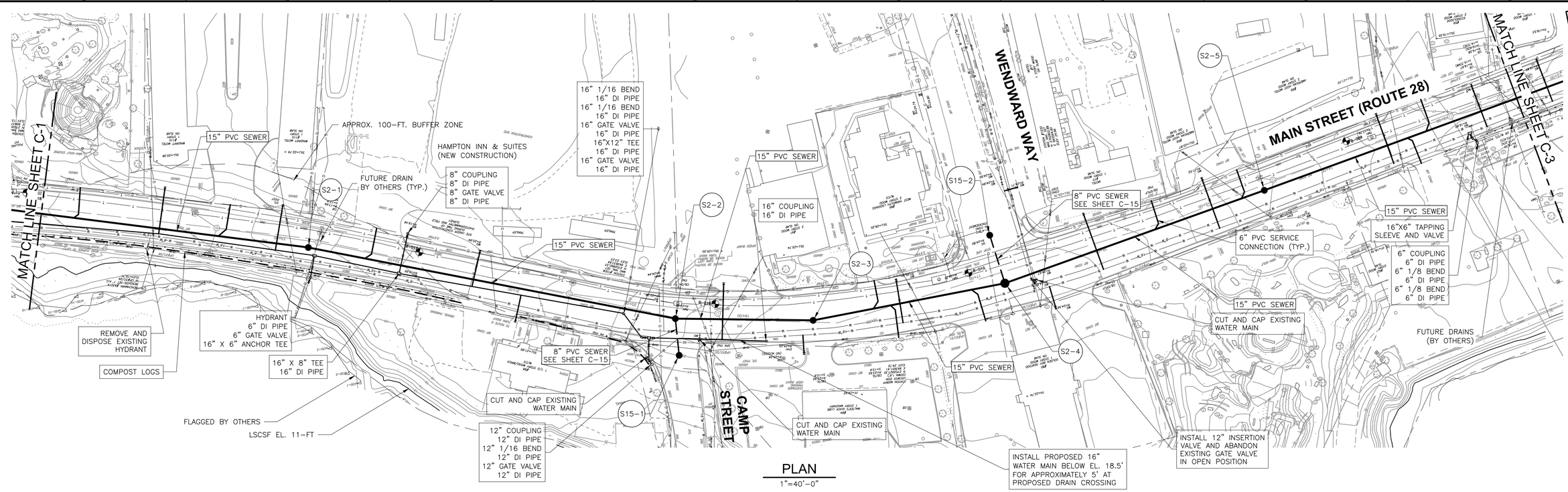

PLAN

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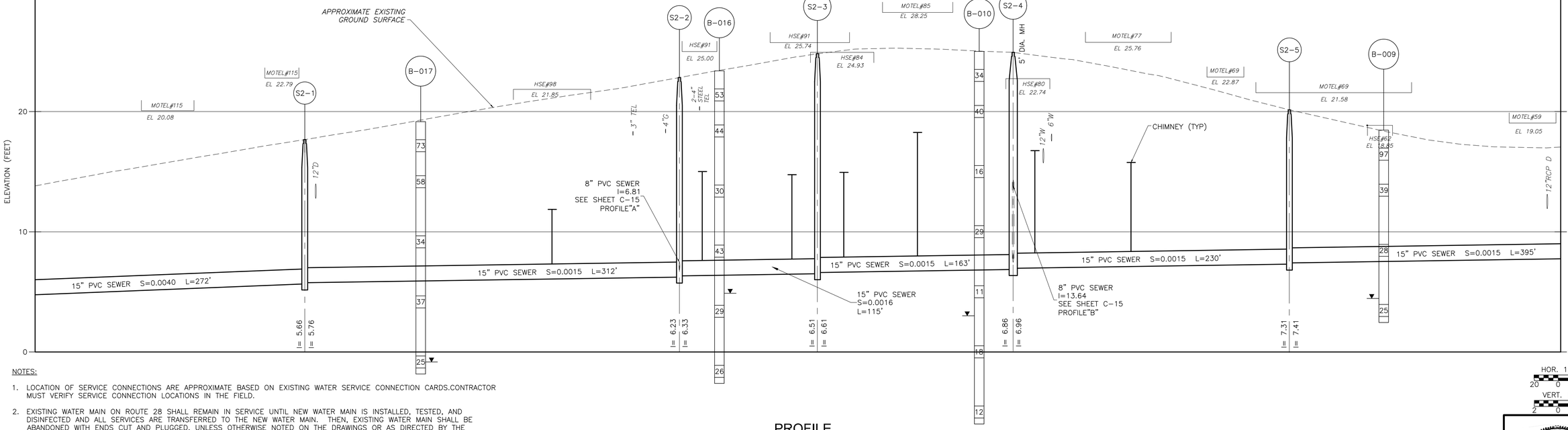


PROFILE

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

HOR. 1" = 40'
VERT. 1" = 4'

NOTES:

1. LOCATION OF SERVICE CONNECTIONS ARE APPROXIMATE BASED ON EXISTING WATER SERVICE CONNECTION CARDS.CONTRACTOR MUST VERIFY SERVICE CONNECTION LOCATIONS IN THE FIELD.
2. EXISTING WATER MAIN ON ROUTE 28 SHALL REMAIN IN SERVICE UNTIL NEW WATER MAIN IS INSTALLED, TESTED, AND DISINFECTED AND ALL SERVICES ARE TRANSFERRED TO THE NEW WATER MAIN. THEN, EXISTING WATER MAIN SHALL BE ABANDONED WITH ENDS CUT AND PLUGGED, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
3. CONTRACTOR SHALL MAINTAIN 10 FEET OF HORIZONTAL SEPARATION BETWEEN NEW WATER MAIN AND SEWER MAIN, WHERE POSSIBLE.
4. ALL BENDS, TEES, FITTINGS, VALVES, AND COUPLINGS SHALL HAVE RESTRAINED JOINTS. INSTALL CONCRETE THRUST BLOCKS AT ALL BENDS, TEES, END CAPS, AND FITTINGS AS SHOWN ON THE THRUST RESTRAINT AND CONCRETE THRUST BLOCK DETAILS SHEET.
5. ALL WATER SERVICES THAT CROSS THE NEW SEWER SHALL BE REPLACED FROM CORPORATION TO CURB STOP (TYP.)

WORK SHOWN ON THIS SHEET INCLUDED IN ADD ALTERNATIVE 2

NO WORK ALLOWED IN ROUTE 28 BETWEEN MEMORIAL DAY AND LABOR DAY

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 25074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:10:59-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

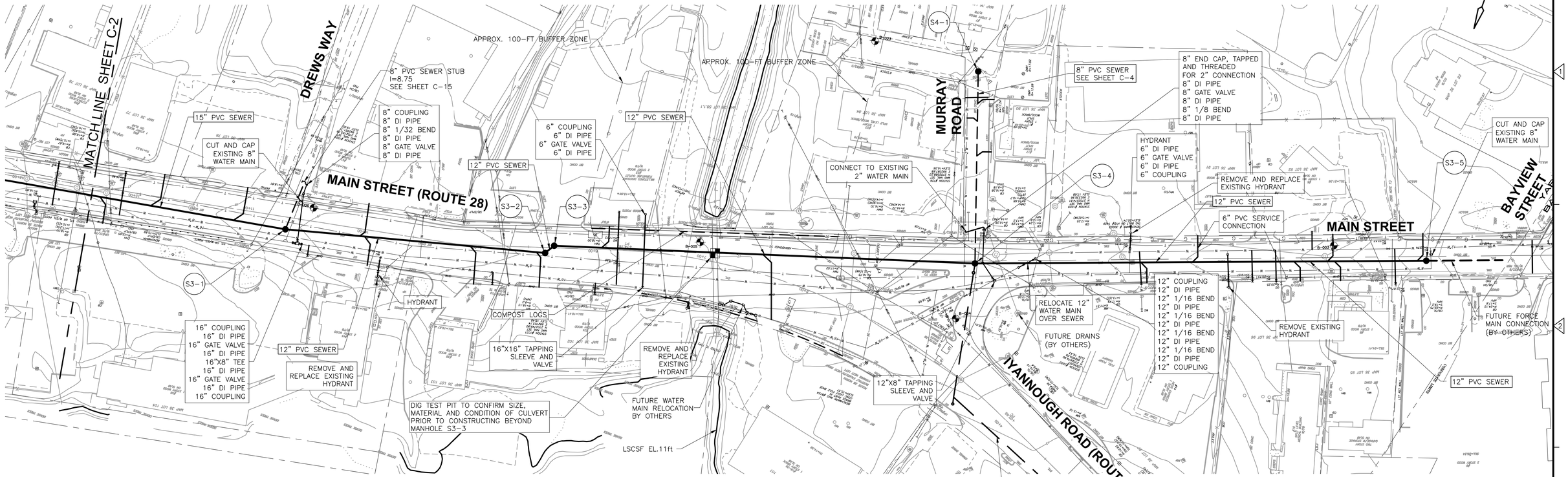
DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

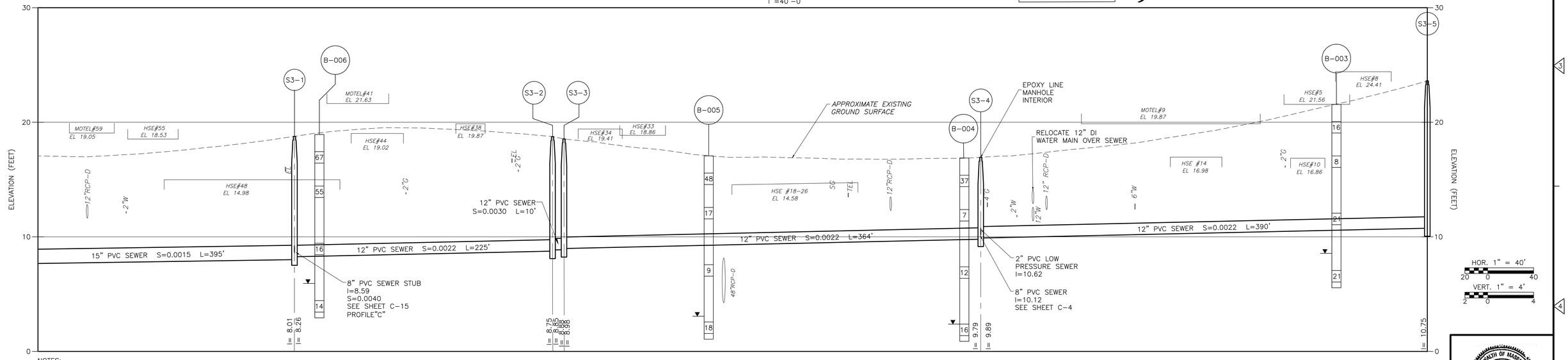
TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MAIN STREET (ROUTE 28)

PROJECT NO. 1125-273132
FILE NAME: C002STPP
SHEET NO. C-2



PLAN
1"=40'-0"



PROFILE
SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

NOTES:

1. LOCATION OF SERVICE CONNECTIONS ARE APPROXIMATE BASED ON EXISTING WATER SERVICE CONNECTION CARDS.CONTRACTOR MUST VERIFY SERVICE CONNECTION LOCATIONS IN THE FIELD.
2. EXISTING WATER MAIN ON ROUTE 28 SHALL REMAIN IN SERVICE UNTIL NEW WATER MAIN IS INSTALLED, TESTED, AND DISINFECTED AND ALL SERVICES ARE TRANSFERRED TO THE NEW WATER MAIN.THEN, EXISTING WATER MAIN SHALL BE ABANDONED WITH ENDS CUT AND PLUGGED, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
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4. ALL BENDS, TEES, FITTINGS, VALVES, AND COUPLINGS SHALL HAVE RESTRAINED JOINTS.INSTALL CONCRETE THRUST BLOCKS AT ALL BENDS, TEES, END CAPS, AND FITTINGS AS SHOWN ON THE THRUST RESTRAINT AND CONCRETE THRUST BLOCK DETAILS SHEET.
5. ALL WATER SERVICES THAT CROSS THE NEW SEWER SHALL BE REPLACED FROM CORPORATION TO CURB STOP (TYP.)

NO WORK ALLOWED IN ROUTE 28 BETWEEN MEMORIAL DAY AND LABOR DAY

WORK SHOWN ON THIS SHEET
INCLUDED IN ADD ALTERNATIVE 2

Michael P Guidice
2025.11.18 13:11:12-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MAIN STREET (ROUTE 28)

PROJECT NO. 1125-273132
FILE NAME: C003STPP
SHEET NO. C-3

XREFs: [XGTWP001, cwtwp001, 608264_SV(EG), 608264_SV, CDMS6_2436, cstwp001, xsvp001, 2100059WS CSD20218_R3, 608264_DU (Town Line to HCR_Berry)] Images: []
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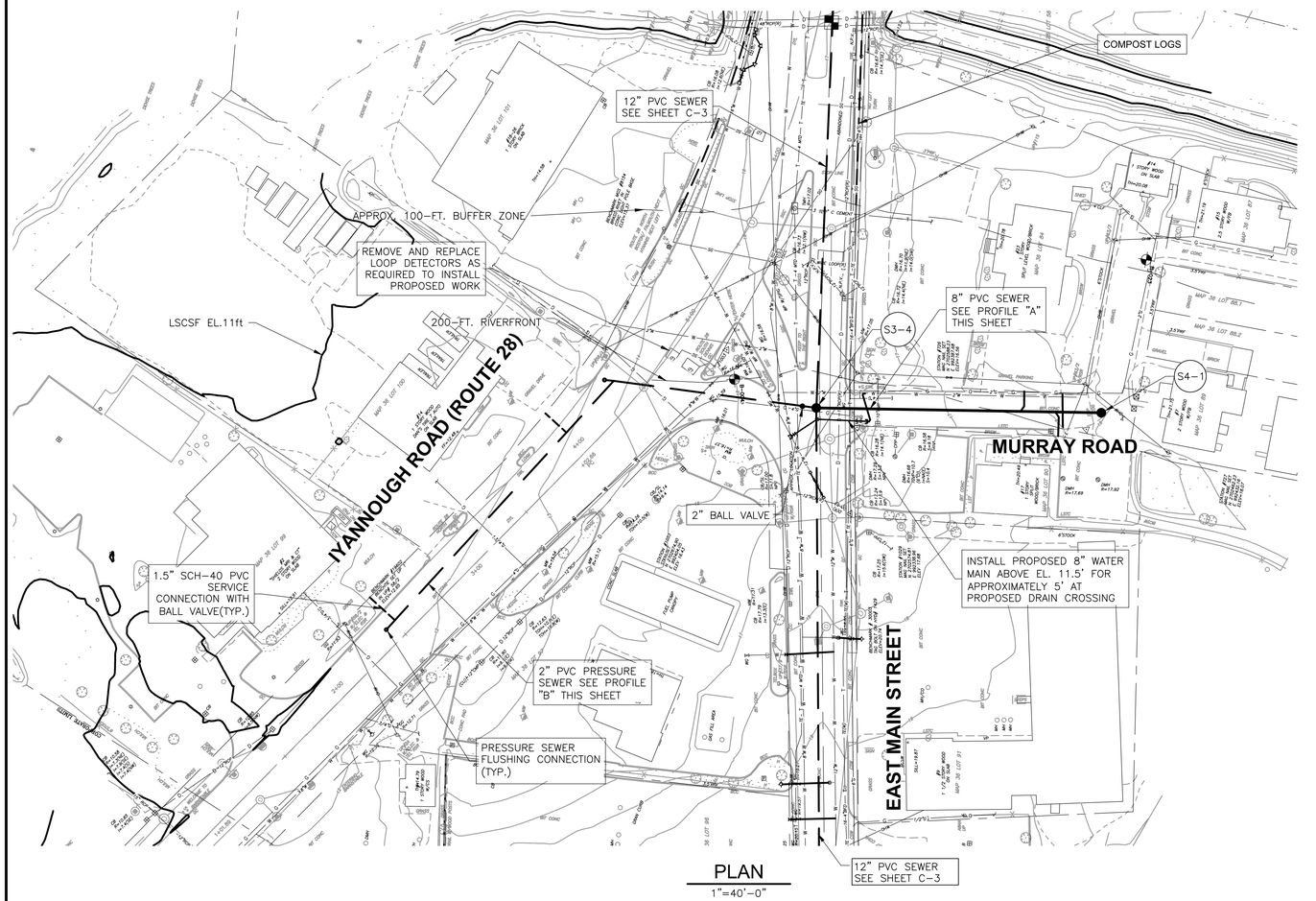
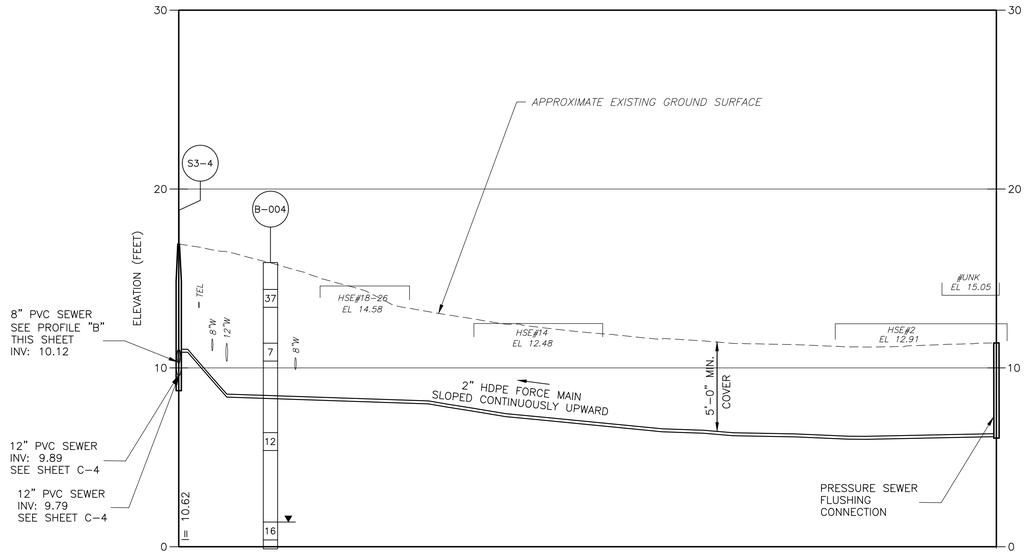


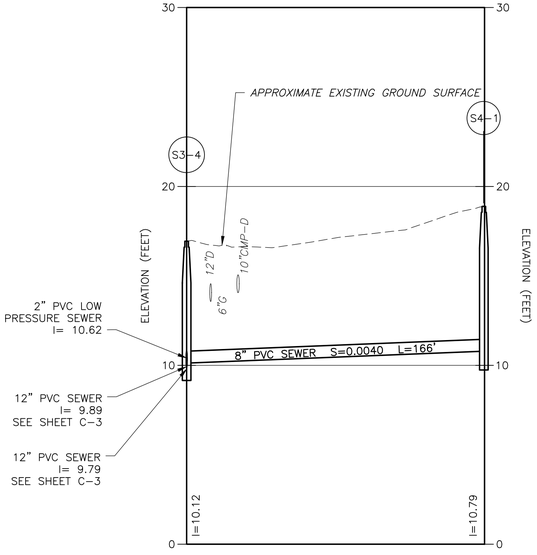
PLAN

1"=40'-0"



PROFILE "B"

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"



PROFILE "A"

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

NOTES:

1. LOCATION OF SERVICE CONNECTIONS ARE APPROXIMATE BASED ON EXISTING WATER SERVICE CONNECTION CARDS. CONTRACTOR MUST VERIFY SERVICE CONNECTION LOCATIONS IN THE FIELD.
2. EXISTING WATER MAIN ON ROUTE 28 SHALL REMAIN IN SERVICE UNTIL NEW WATER MAIN IS INSTALLED, TESTED, AND DISINFECTED AND ALL SERVICES ARE TRANSFERRED TO THE NEW WATER MAIN. THEN, EXISTING WATER MAIN SHALL BE ABANDONED WITH ENDS CUT AND PLUGGED, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
3. CONTRACTOR SHALL MAINTAIN 10 FEET OF HORIZONTAL SEPARATION BETWEEN NEW WATER MAIN AND SEWER MAIN, WHERE POSSIBLE.
4. ALL BENDS, TEES, FITTINGS, VALVES, AND COUPLINGS SHALL HAVE RESTRAINED JOINTS. INSTALL CONCRETE THRUST BLOCKS AT ALL BENDS, TEES, END CAPS, AND FITINGS AS SHOWN ON THE THRUST RESTRAINT AND CONCRETE THRUST BLOCK DETAILS SHEET.
5. ALL WATER SERVICES THAT CROSS THE NEW SEWER SHALL BE REPLACED FROM CORPORATION TO CURB STOP (TYP.)

WORK SHOWN ON THIS SHEET
INCLUDED IN ADD ALTERNATIVE 2

NO WORK ALLOWED IN ROUTE 28 BETWEEN MEMORIAL DAY AND LABOR DAY

HOR. 1" = 40'
20 0 40
VERT. 1" = 4'
2 0 4

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE, JR.
CIVIL
No. 26074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:11:22-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

IYANNOUGH ROAD AND MURRAY ROAD

PROJECT NO. 1125-273132
FILE NAME: C004STPP
SHEET NO. C-4

XREFs: [XGTWP001, cwtwp001, CDMS_2436, 608264_SV, 608264_SV(EG), xsvp001, 2100059WS C3D2018_R3, 608264_DU (Town Line to HCR_Berry)] Images: []
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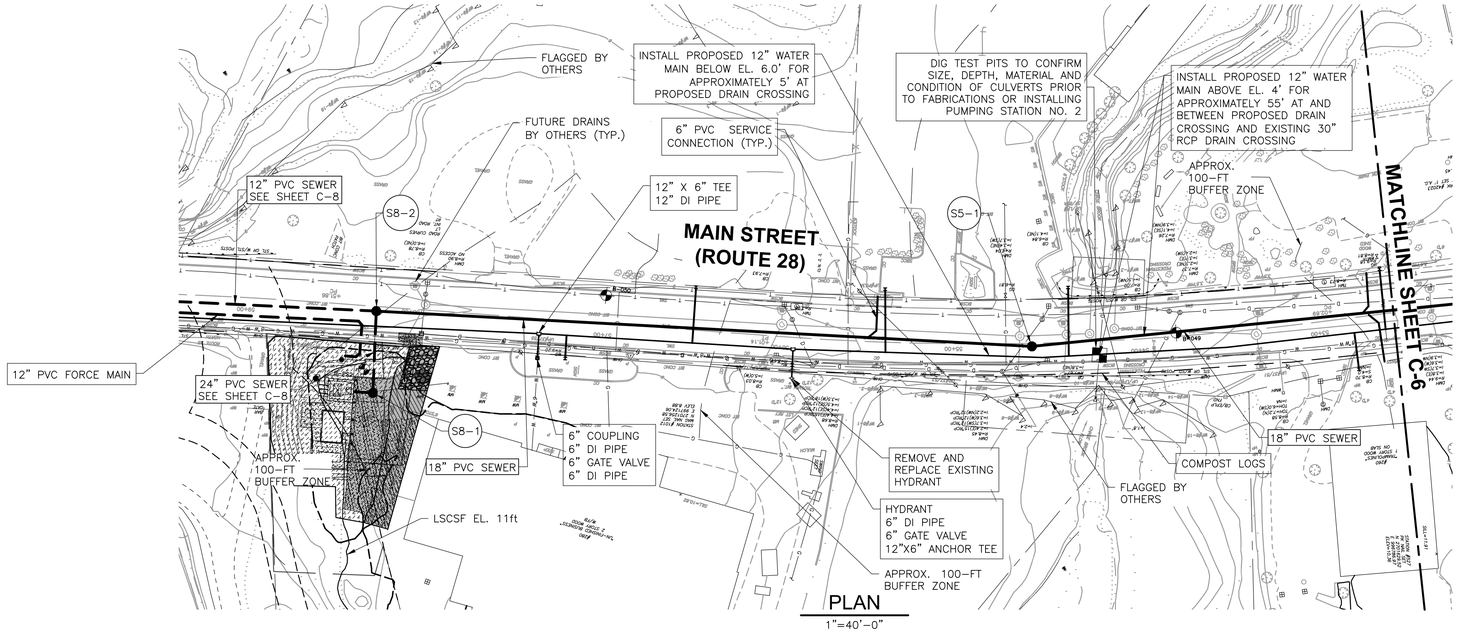

PLAN

1"=40'-0"

NOTES:

1. ALL EXISTING WATER MAINS ALONG PROPOSED WATER MAINS WITHIN ROUTE 28 SHALL BE ABANDONED IN PLACE UNLESS OTHERWISE NOTED ON THE DRAWINGS OR NEED TO BE REMOVED FOR INSTALLATION OF NEW WATER MAINS, OR AS DIRECTED BY THE ENGINEER.
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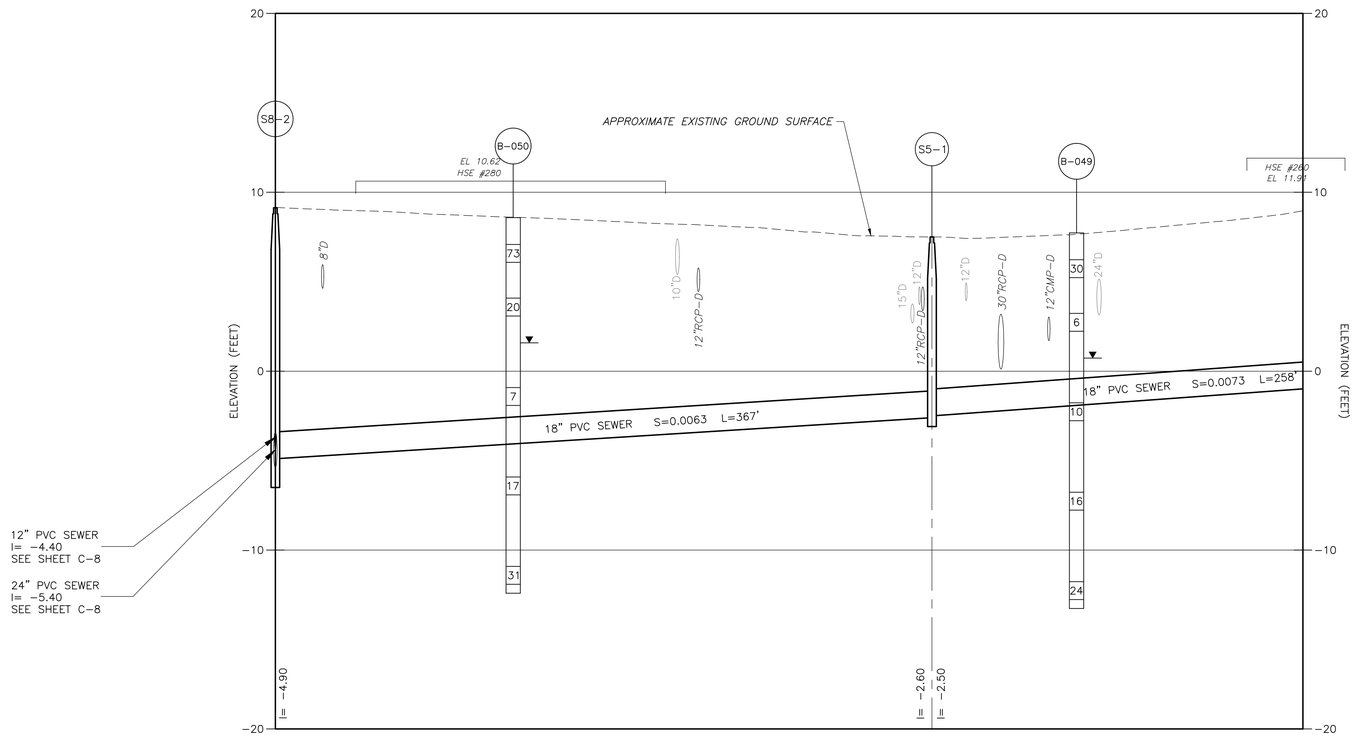
7. MANHOLES LOCATED BELOW ELEVATION 11 SHALL HAVE WATERTIGHT FRAMES AND COVERS.



PROFILE

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

NO WORK ALLOWED IN ROUTE 28 BETWEEN MEMORIAL DAY AND LABOR DAY

WORK SHOWN ON THIS SHEET INCLUDED IN ADD ALTERNATIVE 1

HOR. 1" = 40'
20 0 40
VERT. 1" = 4'
2 0 4

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 25074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:11:33-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MAIN STREET (ROUTE 28)

PROJECT NO. 1125-273132
FILE NAME: C005STPP
SHEET NO.
C-5

XREFs: [XGTWPP01_CBSPL001_608264_SV(EG)_608264_SV_CDMS6_2436_cstwp001_xsvpl001_2100056WS C3D2018_R3_608264_DU (Town Line to HCR_Berry)] Images: []
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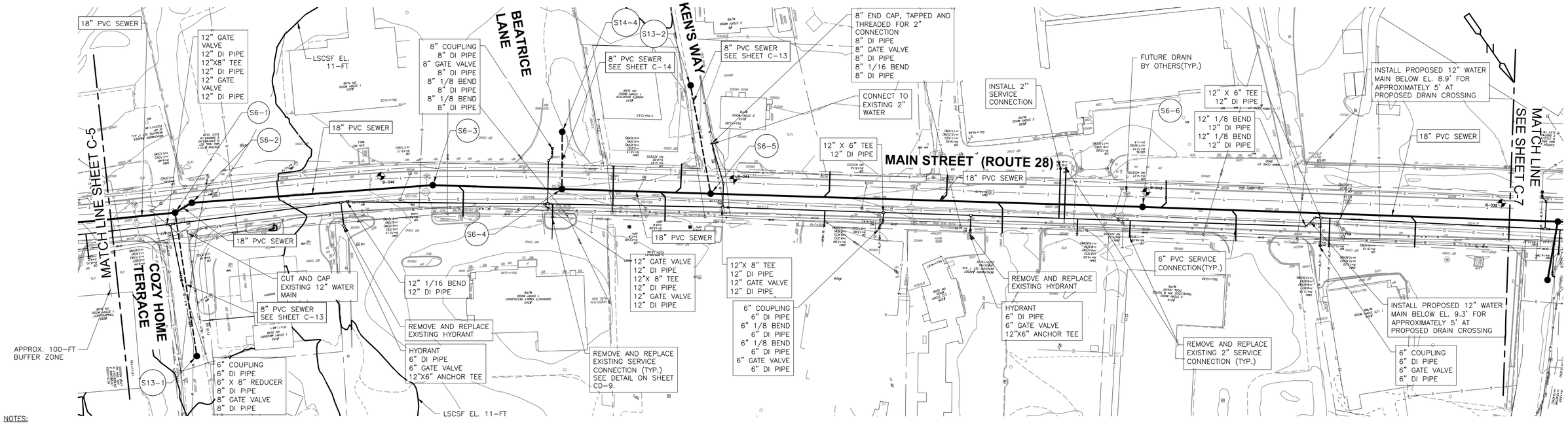

PLAN

1"=40'-0"

NOTES:

1. ALL EXISTING WATER MAINS ALONG PROPOSED WATER MAINS WITHIN ROUTE 28 SHALL BE ABANDONED IN PLACE UNLESS OTHERWISE NOTED ON THE DRAWINGS OR NEED TO BE REMOVED FOR INSTALLATION OF NEW WATER MAINS, OR AS DIRECTED BY THE ENGINEERLOCATION OF SERVICE CONNECTIONS ARE APPROXIMATE BASED ON EXISTING WATER SERVICE CONNECTION CARDS. CONTRACTOR MUST VERIFY SERVICE CONNECTION LOCATIONS IN THE FIELD.
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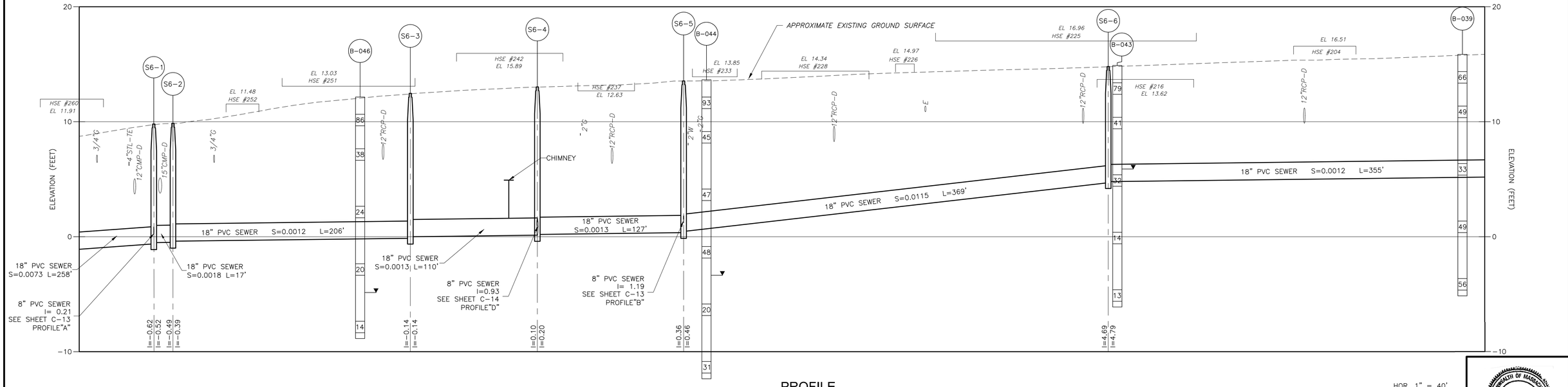
5. ALL BENDS, TEES, FITTINGS, VALVES, AND COUPLINGS SHALL HAVE RESTRAINED JOINTS. INSTALL CONCRETE THRUST BLOCKS AT ALL BENDS, TEES, END CAPS, AND FITTINGS AS SHOWN ON THE THRUST RESTRAINT AND CONCRETE THRUST BLOCK DETAILS SHEET.
6. ALL WATER SERVICES THAT CROSS THE NEW SEWER SHALL BE REPLACED FROM CORPORATION TO CURB STOP(TYP.)
7. MANHOLES LOCATED BELOW ELEVATION 11 SHALL HAVE WATERTIGHT FRAMES AND COVERS.



PROFILE

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

WORK SHOWN ON THIS SHEET INCLUDED IN ADD ALTERNATIVE 1

HOR. 1" = 40'
20 0 40
VERT. 1" = 4'
2 0 4

NO WORK ALLLOWED IN ROUTE 28 BETWEEN MEMORIAL DAY AND LABOR DAY

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 25074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:11:46-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MAIN STREET (ROUTE 28)

PROJECT NO. 1125-273132
FILE NAME: C006STPP
SHEET NO.
C-6

XREFs: [XGTWP001_cwtwp001_608264_SV(EG)_608264_SV_CDMS8_2436_cstwp001_xsvp001_21000509WS C3D2018_R3_608264_DU (Town Line to HCR_Berry)] Images: []
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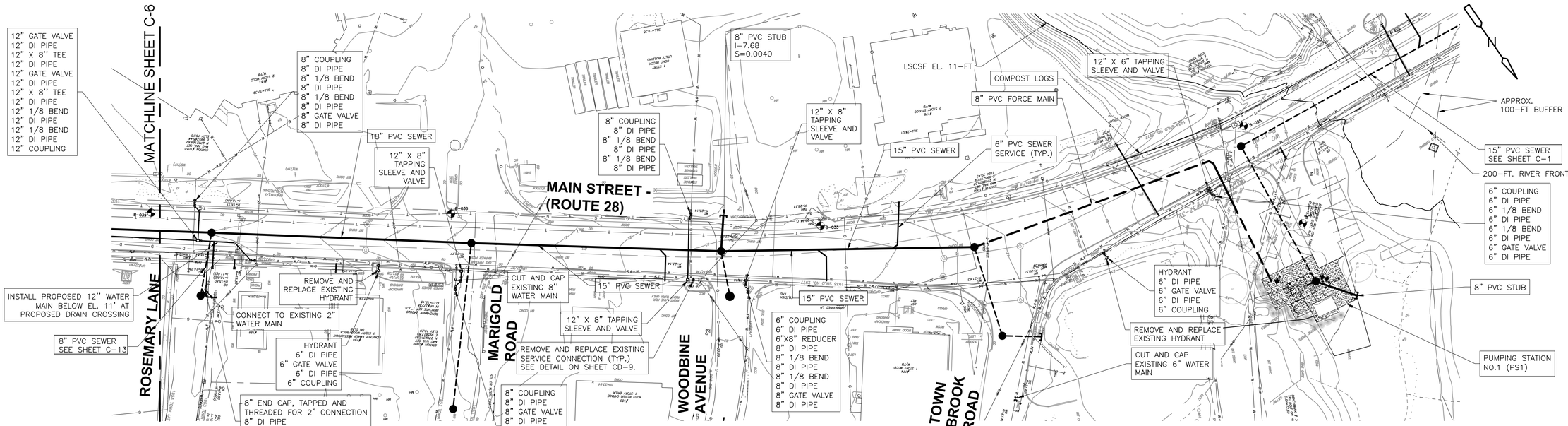
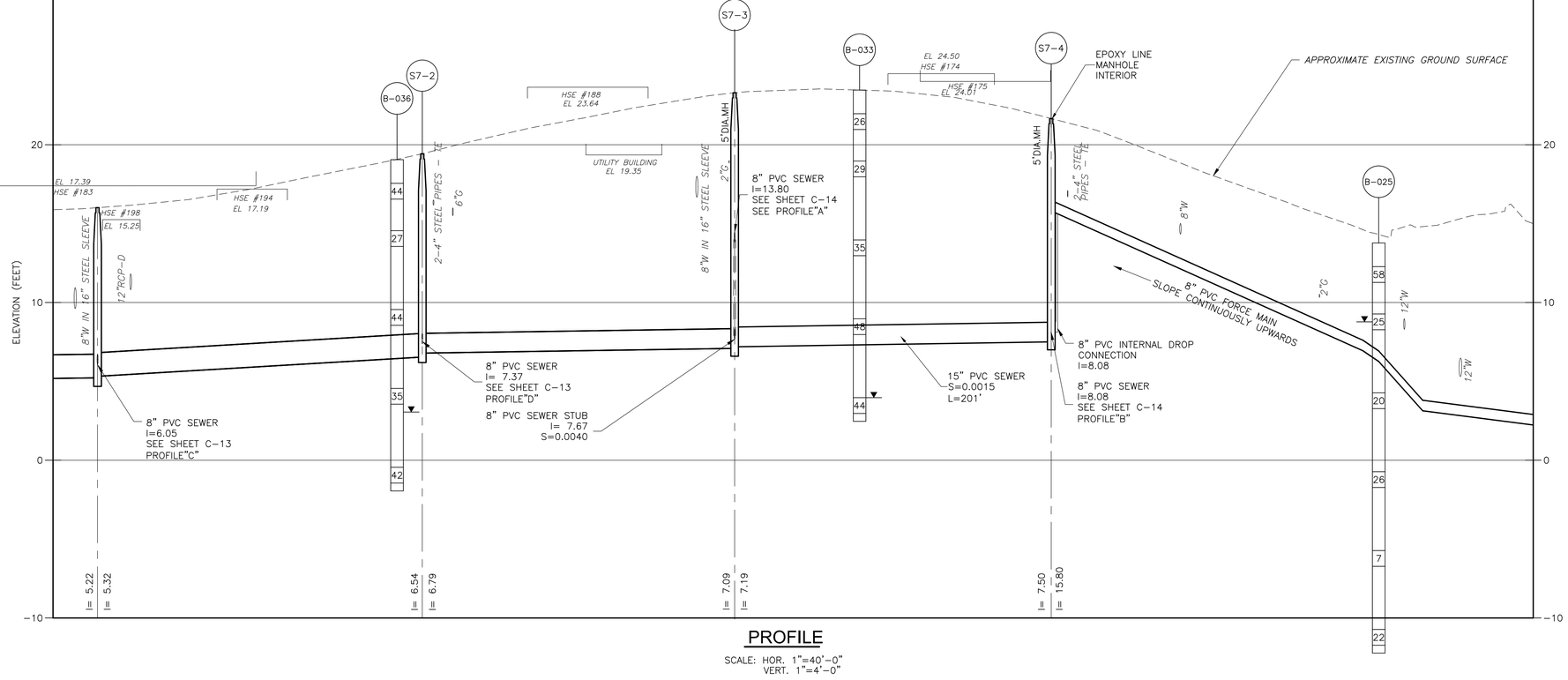


PLAN
1"=40'-0"



PROFILE
SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

NOTES:

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6. ALL WATER SERVICES THAT CROSS THE NEW SEWER SHALL BE REPLACED FROM CORPORATION TO CURB STOP (TYP.)

NO WORK ALLOWED IN ROUTE 28 BETWEEN MEMORIAL DAY AND LABOR DAY

WORK SHOWN ON THIS SHEET INCLUDED IN ADD ALTERNATIVE 1

HOR. 1" = 40'
20 0 40
VERT. 1" = 4'
2 0 4

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 25074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:11:58-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

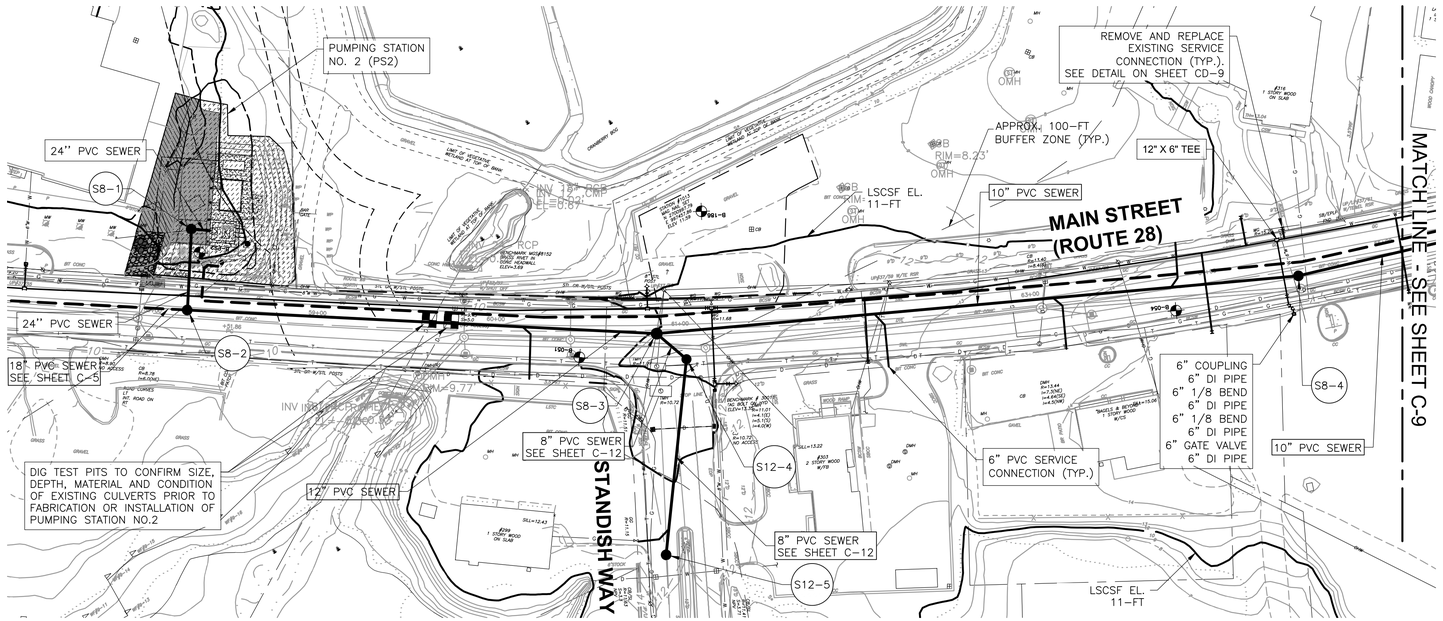
DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

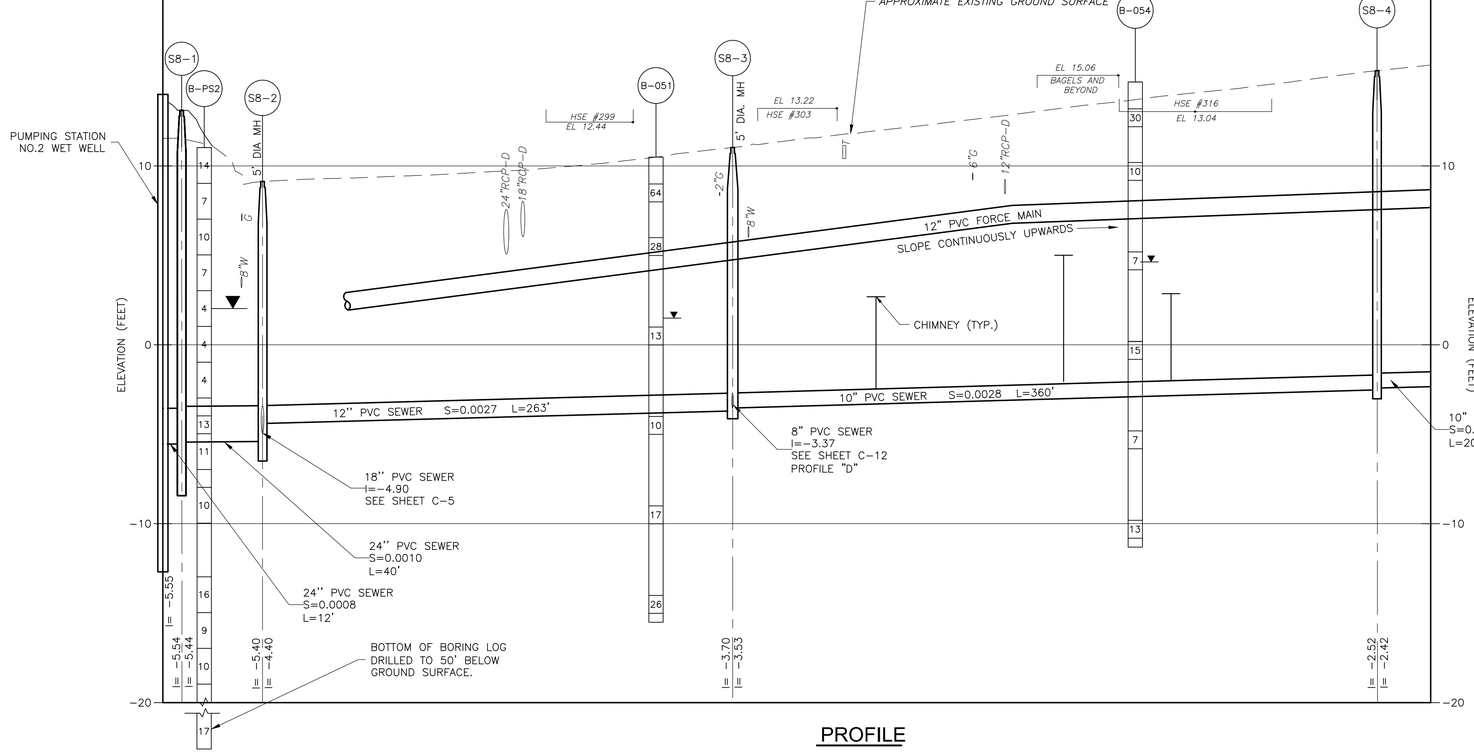
MAIN STREET (ROUTE 28)

PROJECT NO. 1125-273132
FILE NAME: C007STPP
SHEET NO.
C-7



PLAN

SCALE: 1"=40'-0"



PROFILE

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

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NO WORK ALLOWED IN ROUTE 28 BETWEEN MEMORIAL DAY AND LABOR DAY

HOR. 1" = 40'
20 0 40
VERT. 1" = 4'
2 0 4

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 25074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:12:12-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

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TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MAIN STREET (ROUTE 28)

PROJECT NO. 1125-273132
FILE NAME: CSTPL008
SHEET NO. C-8

XREFs: [XGTWP001_CBSPL001_rwtwp001_608264_SV(EG)_608264_SV_CDMS6_2436_cstwp001_cstwp003_2100059WS C3202018_R3_608264_DU (Town Line to HCR_Berry)] Images: []
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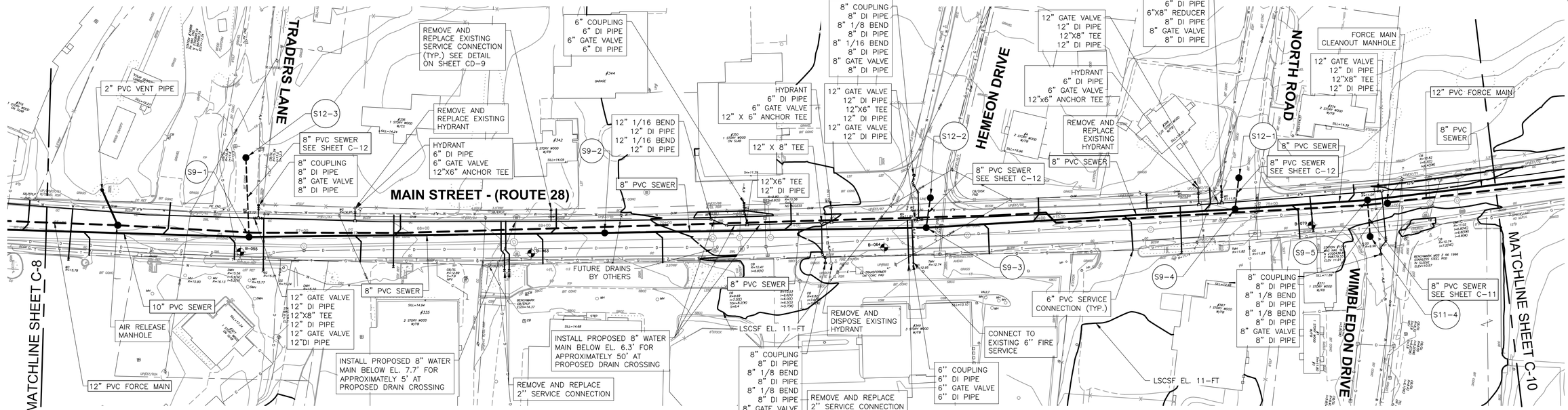
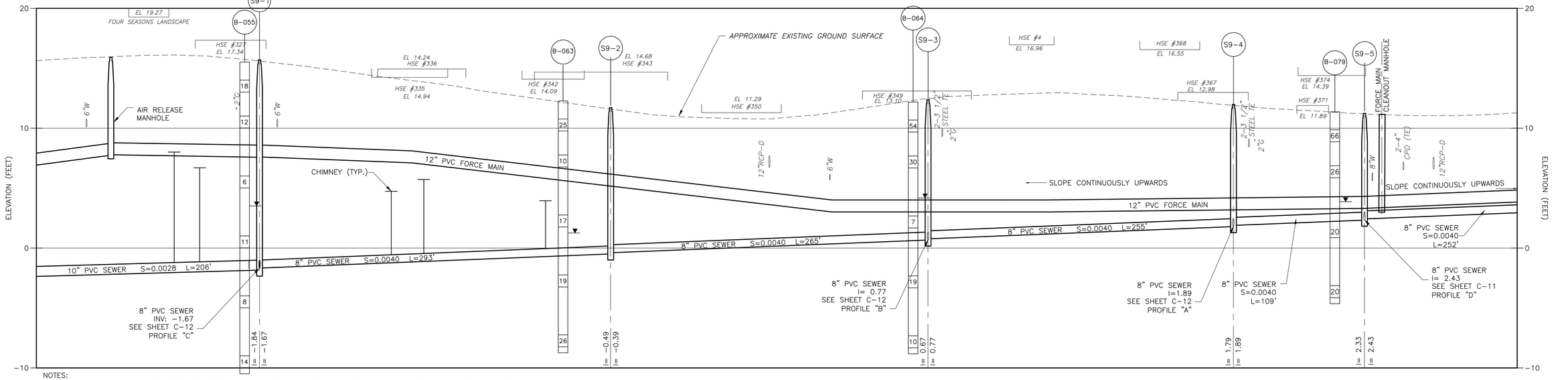


PLAN

1"=40'-0"



PROFILE

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

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NO WORK ALLOWED IN ROUTE 28 BETWEEN MEMORIAL DAY AND LABOR DAY

HOR. 1" = 40'
VERT. 1" = 4'

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 26074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:12:23-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
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CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

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Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MAIN STREET (ROUTE 28)

PROJECT NO. 1125-273132
FILE NAME: C009STPP
SHEET NO. C-9

XREFs: [XGTVP001, cwtvp001, 608264_SV(EG), 608264_SV, CDMS6_2436, cstwp001, xsvpl001, 2100059WS C3D2018_R3, 608264_DU (Town Line to HCR_Berry)] Images: []
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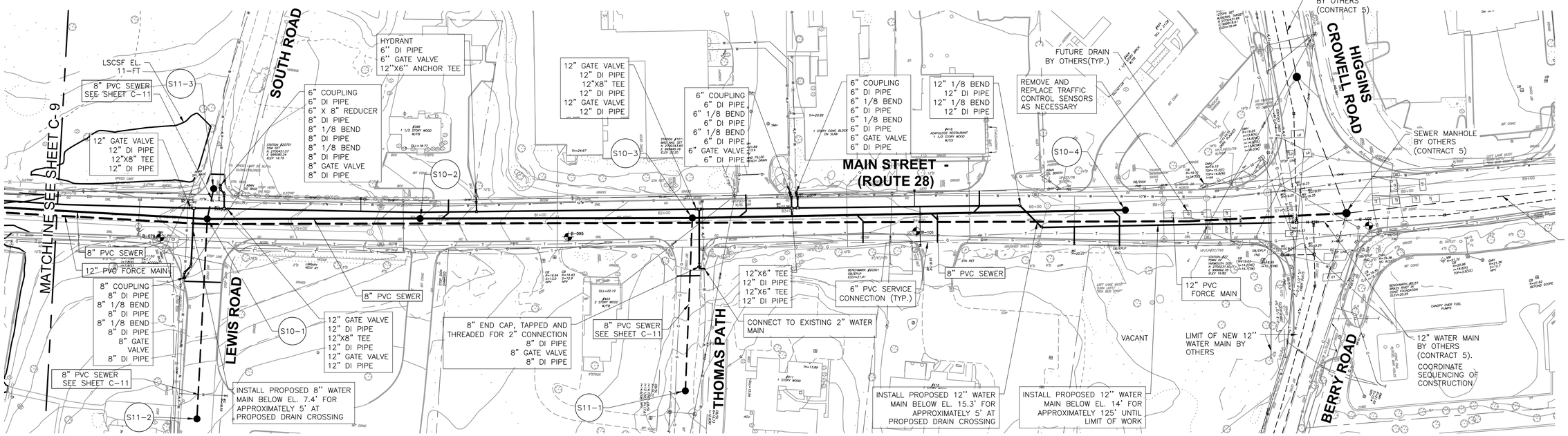
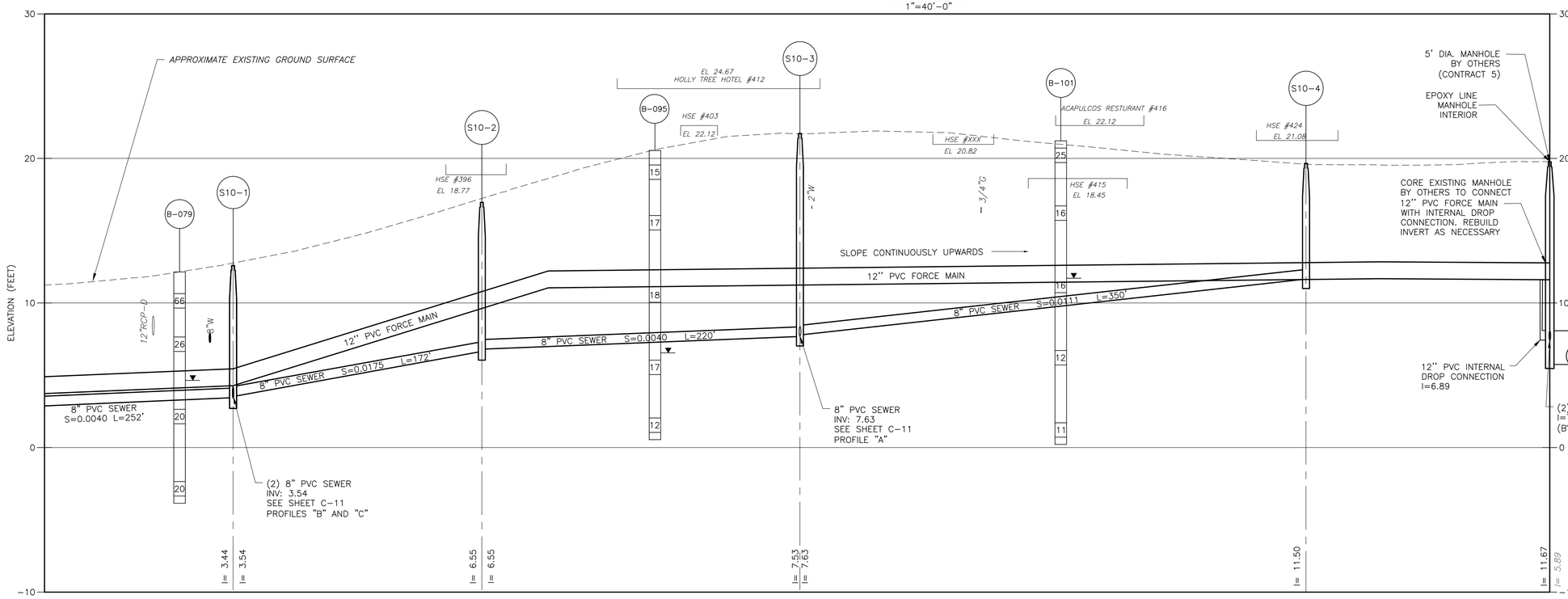


PLAN

1"=40'-0"



PROFILE

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

NOTES:

1. ALL EXISTING WATER MAINS ALONG PROPOSED WATER MAINS WITHIN ROUTE 28 SHALL BE ABANDONED IN PLACE UNLESS OTHERWISE NOTED ON THE DRAWINGS OR NEED TO BE REMOVED FOR INSTALLATION OF NEW WATER MAINS, OR AS DIRECTED BY THE ENGINEER.
2. LOCATION OF SERVICE CONNECTIONS ARE APPROXIMATE BASED ON EXISTING WATER SERVICE CONNECTION CARDS. CONTRACTOR MUST VERIFY SERVICE CONNECTION LOCATIONS IN THE FIELD.
3. EXISTING WATER MAIN ON ROUTE 28 SHALL REMAIN IN SERVICE UNTIL NEW WATER MAIN IS INSTALLED, TESTED, AND DISINFECTED AND ALL SERVICES ARE TRANSFERRED TO THE NEW WATER MAIN. THEN, EXISTING WATER MAIN SHALL BE ABANDONED WITH ENDS CUT AND PLUGGED, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
4. CONTRACTOR SHALL MAINTAIN 10 FEET OF HORIZONTAL SEPARATION BETWEEN NEW WATER MAIN AND SEWER MAIN, WHERE POSSIBLE.
5. ALL BENDS, TEES, FITTINGS, VALVES, AND COUPLINGS SHALL HAVE RESTRAINED JOINTS. INSTALL CONCRETE THRUST BLOCKS AT ALL BENDS, TEES, END CAPS, AND FITTINGS AS SHOWN ON THE THRUST RESTRAINT AND CONCRETE THRUST BLOCK DETAILS SHEET.
6. ALL WATER SERVICES THAT CROSS THE NEW SEWER SHALL BE REPLACED FROM CORPORATION TO CURB STOP (TYP.).

HOR. 1" = 40'
20 0 40
VERT. 1" = 4'
2 0 4

NO WORK ALLOWED IN ROUTE 28 BETWEEN MEMORIAL DAY AND LABOR DAY

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 26074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:12:34-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MAIN STREET (ROUTE 28)

PROJECT NO. 1125-273132
FILE NAME: C010STPP
SHEET NO. C-10

XREFs: [XGTWP001_608264_SV(EG), 608264_SV, CDMS6_2436, CBSPL001, cstwp001, xsvpl001, 2100059WS C3D2018_R3, 608264_DU (Town Line to HCR_Berry)] Images: []
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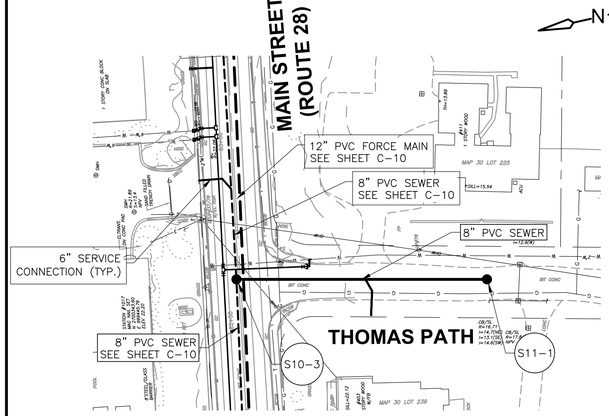

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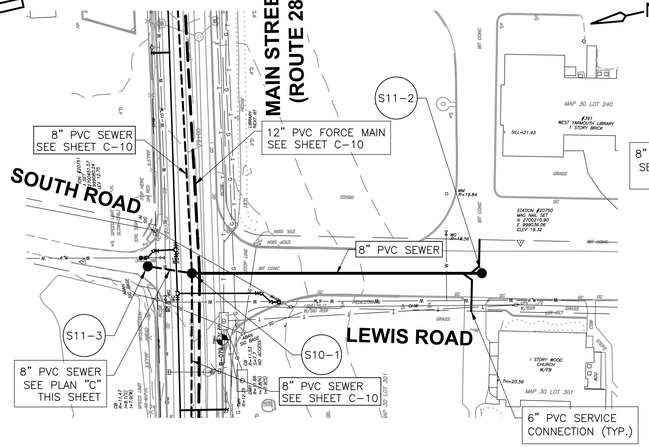

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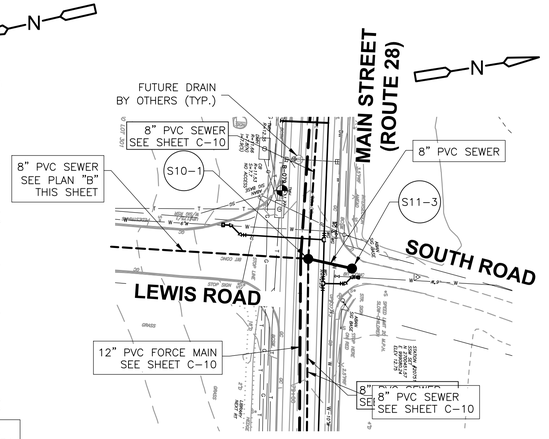

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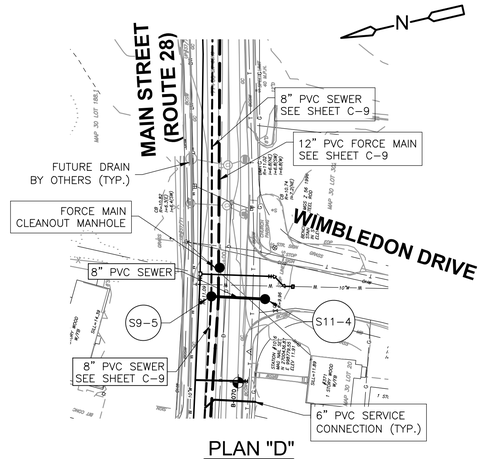

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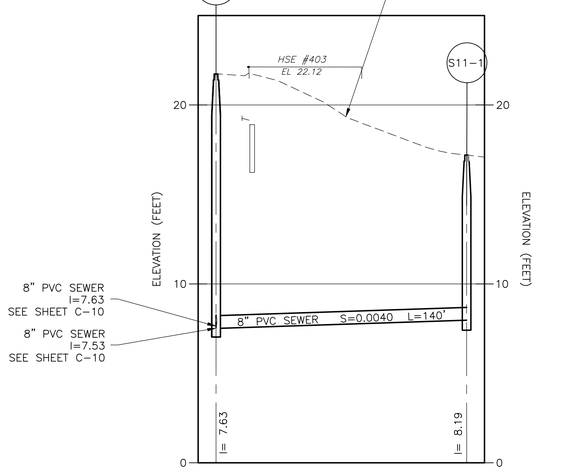

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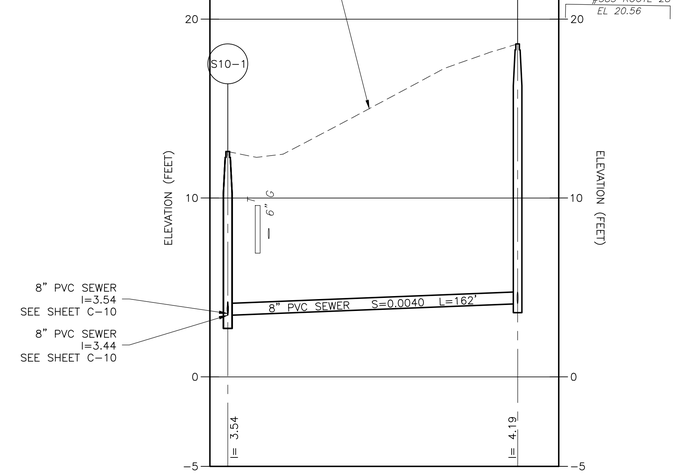
VERT. 1"=4'-0"



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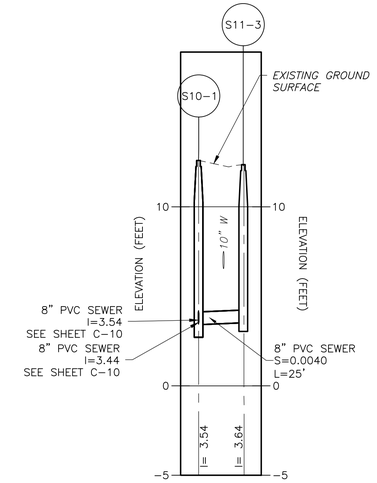

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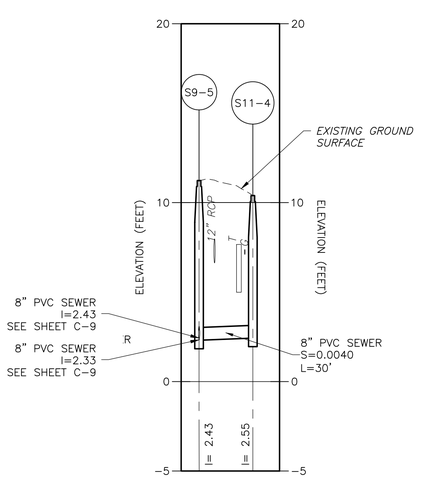

PROFILE "D"

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

HOR. 1" = 40'
20 0 40

VERT. 1" = 4'
2 0 4

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 26074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:12:49-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

THOMAS PATH, LEWIS ROAD, SOUTH ROAD
AND WIMBLEDON DRIVE

PROJECT NO. 1125-273132
FILE NAME: C011STPP

SHEET NO.
C-11

XREFs: [XGTWP001, CBSPL001, cwtwp001, 608264_SV(EG), 608264_SV, CDMS6_2436, cstwp001, xsvp001, 608264_DU (Town Line to HCR_Berry)] Images: []
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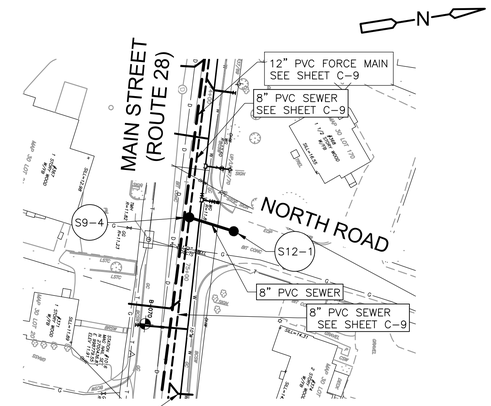

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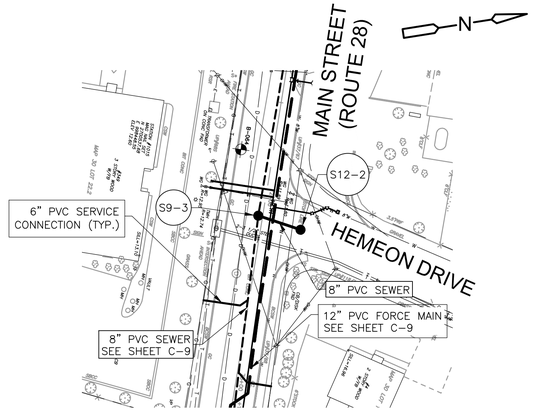

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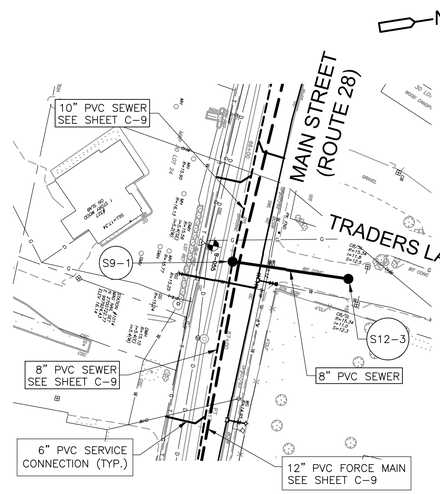

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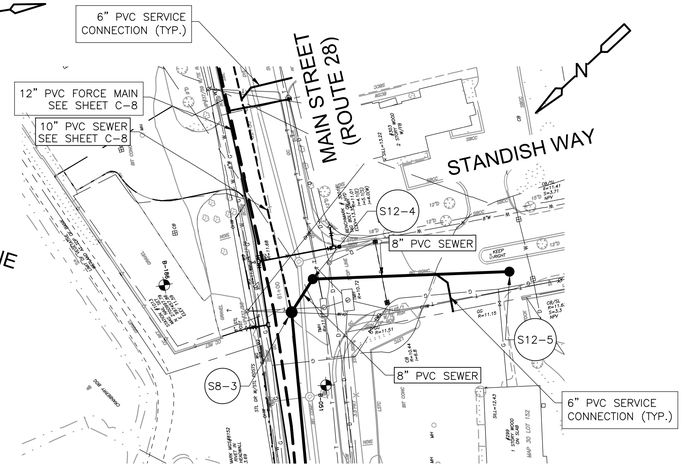

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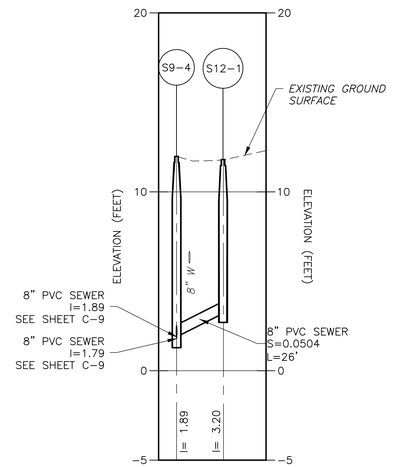

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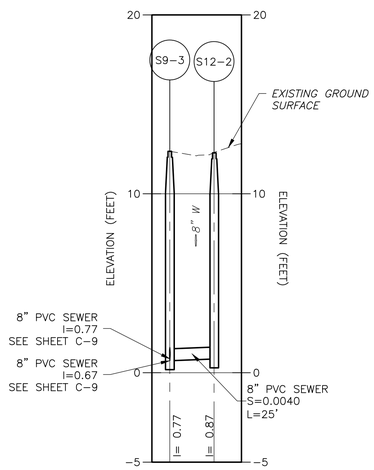
VERT. 1"=4'-0"



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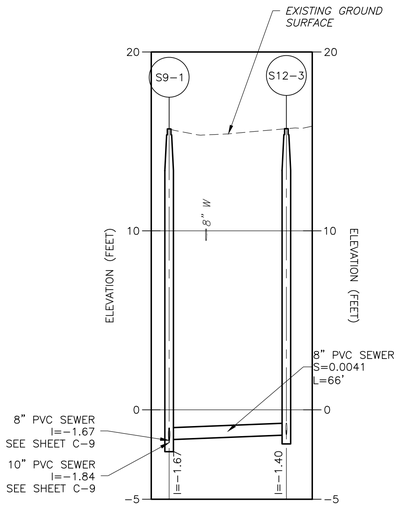

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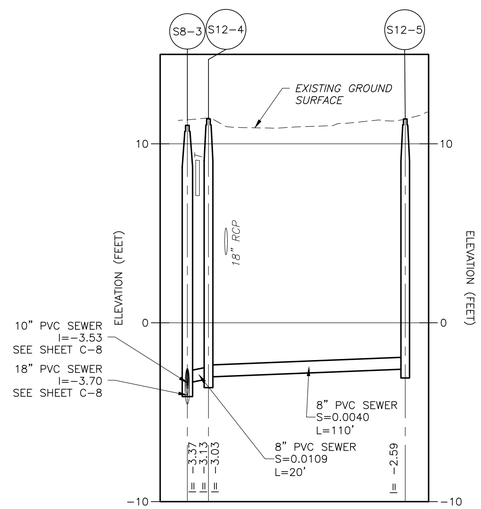

PROFILE "D"
SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

HOR. 1" = 40'
20 0 40

VERT. 1" = 4'
2 0 4

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 25074
REGISTERED
PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:13:08-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

NORTH ROAD, HEMEON DRIVE, TRADERS LANE AND STANDISH WAY

PROJECT NO. 1125-273132
FILE NAME: C012STPP
SHEET NO. C-12

XREFs: [XGTWP001_CBSPL001_cwtwp001_CDMSB_2436_cstwp001_608264_SV_608264_SV(EG)_xsvp001_608264_DU (Town Line to HCR_Berry)] Images: []
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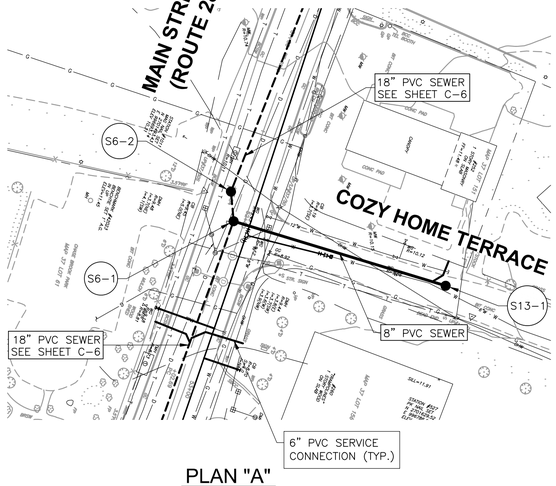

PLAN "A"
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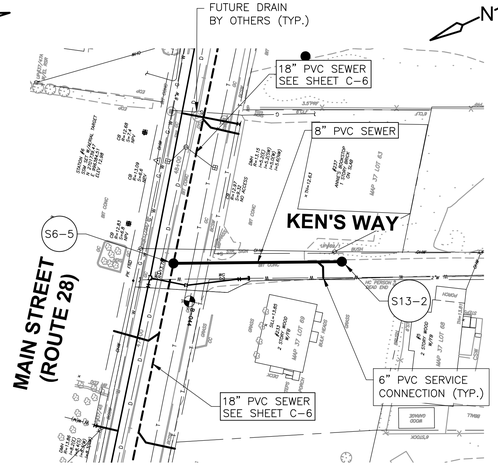

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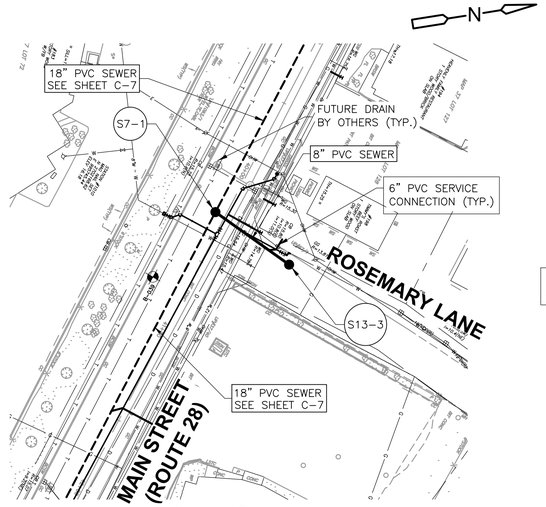

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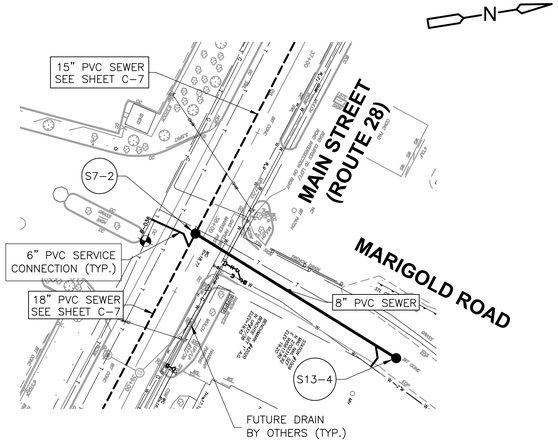

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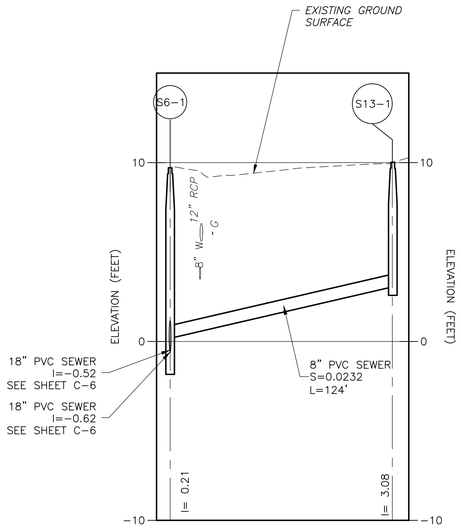

PROFILE "A"
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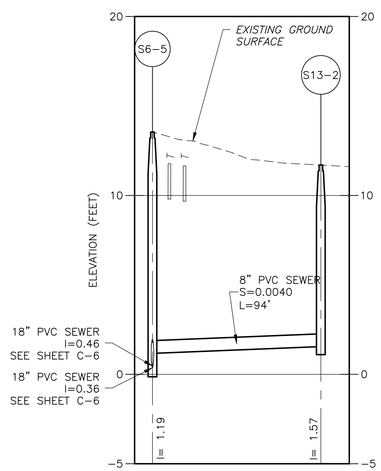
VERT. 1"=4'-0"



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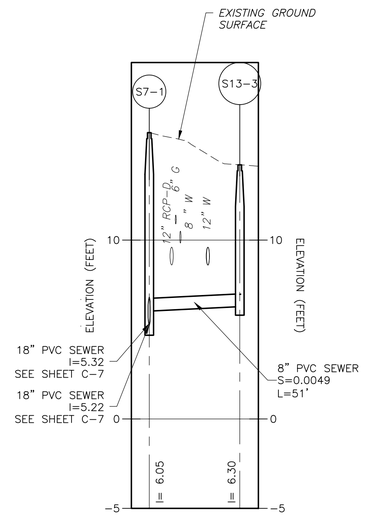

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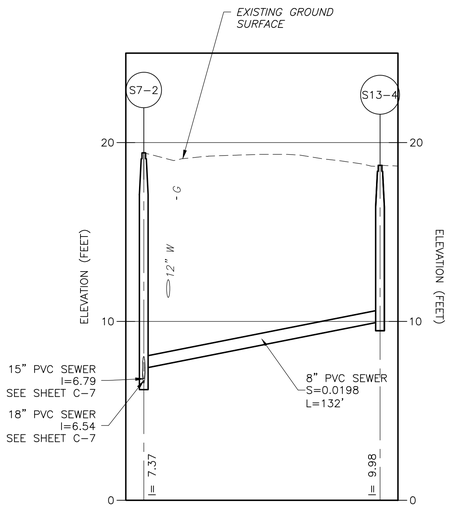

PROFILE "D"
SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

HOR. 1" = 40'
20 0 40

VERT. 1" = 4'
2 0 4

WORK SHOWN ON THIS SHEET
INCLUDED IN ADD ALTERNATE 1

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 25074
REGISTERED
PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:13:18-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

COZY HOME TERRACE, KEN'S WAY, ROSEMARY LANE AND MARIGOLD ROAD

PROJECT NO. 1125-273132
FILE NAME: C013STPP

SHEET NO.
C-13

XREFs: [XGTWP001, CBSPL001, cwtwp001, 608264_SV(EG), 608264_SV, CDMS6_2436, cstwp001, xsvpl001, 608264_DU (Town Line to HCR_Berry)] Images: []
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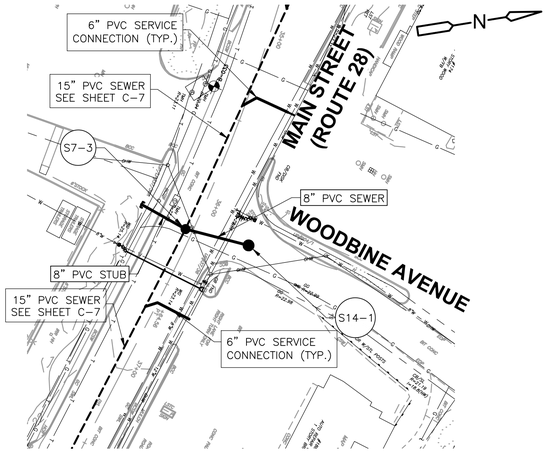

PLAN "A"

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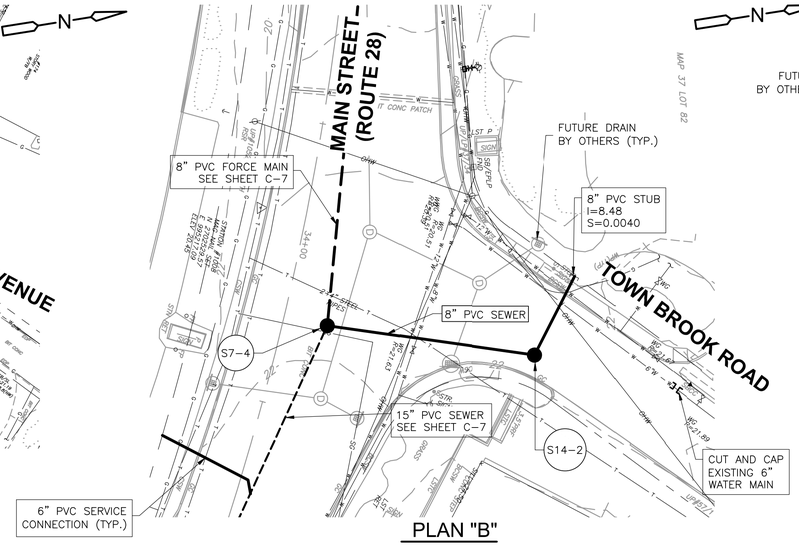

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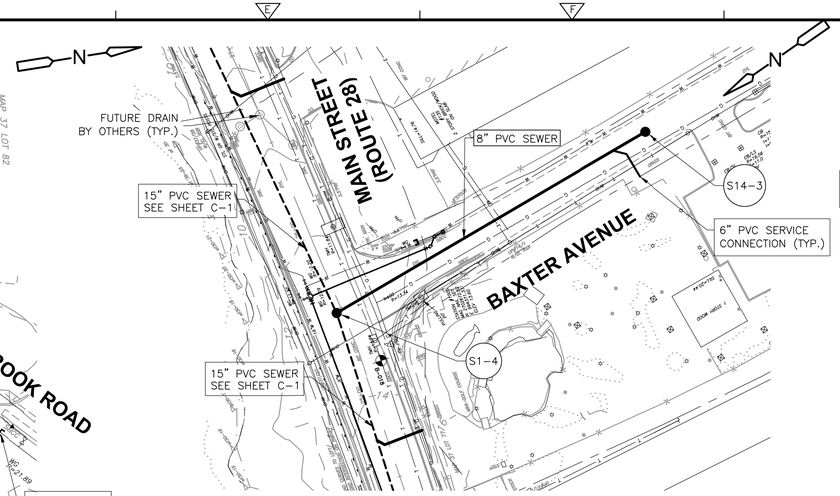

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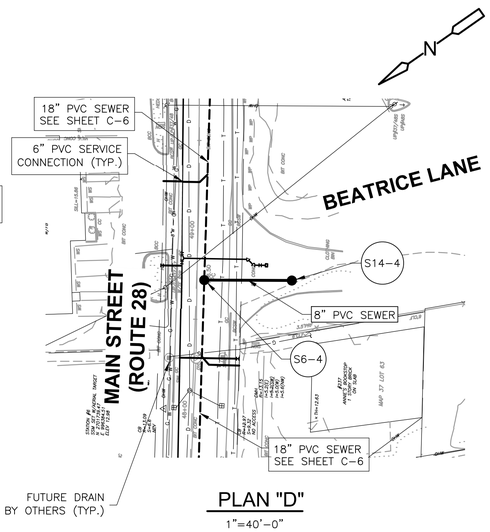

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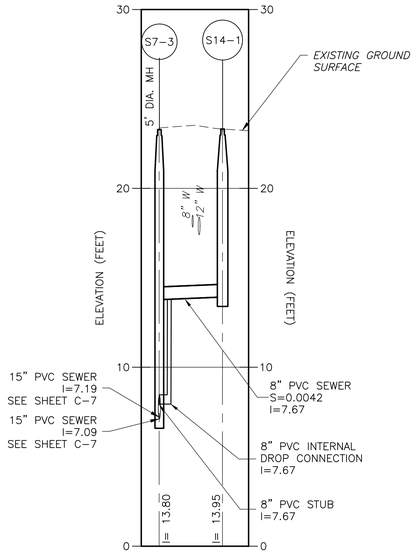
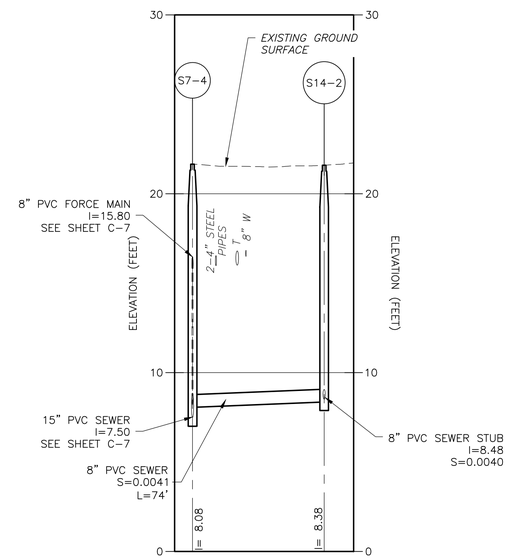


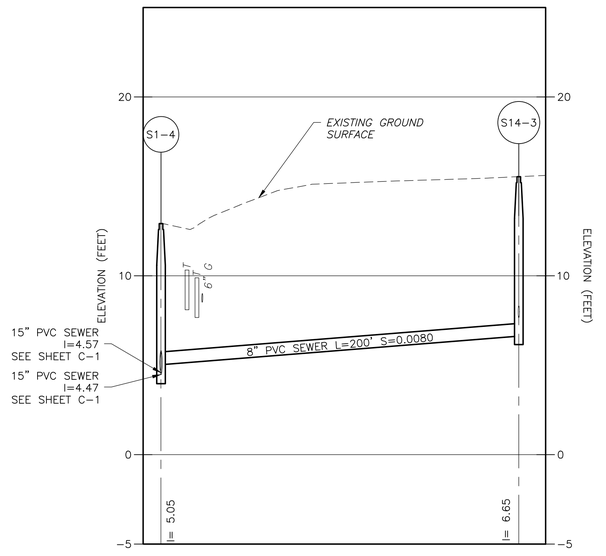
PROFILE "A"

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"



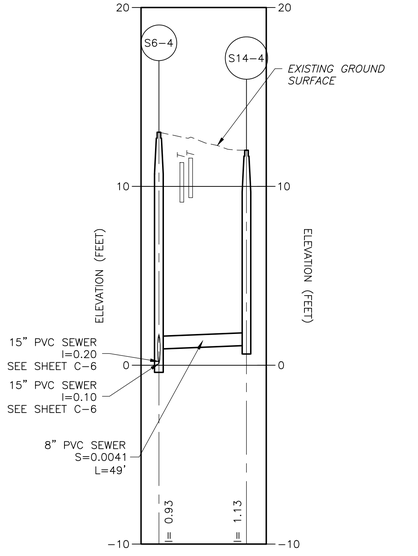
PROFILE "B"

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"



PROFILE "C"

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"



PROFILE "D"

SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

HOR. 1" = 40'
20 0 40

VERT. 1" = 4'
2 0 4

WORK SHOWN ON PLANS AND PROFILES "A", "B" AND "D" ON THIS SHEET INCLUDED IN ADD ALTERNATE 1. WORK SHOWN ON PLAN AND PROFILE "C" ON THIS SHEET INCLUDED IN ADD ALTERNATE 2.

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE, JR.
CIVIL
No. 26074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:13:29-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

WOODBINE AVENUE, TOWN BROOK ROAD, BAXTER AVENUE AND BEATRICE LANE

PROJECT NO. 1125-27132
FILE NAME: C014STPP
SHEET NO. C-14

XREFs: [XGTWP001_CBSPL001_cwtwp001_608264_SV(EG)_608264_SV_cstwp001_CDMS6_2436_xevpl001_608264_DU (Town Line to HCR_Berry)] Images: []
Last saved by: HAMILPLR/KARS Time: 11/18/2025 4:48:15 PM
pw:\\cdmsmith-acd2-pw.bentley.com:pw_pl\11125/27313/04 Design Services NM_30%\02 Civil\10 BIM_CADD\Contract 6 (PS 1 and 2)\C014STPP.dwg
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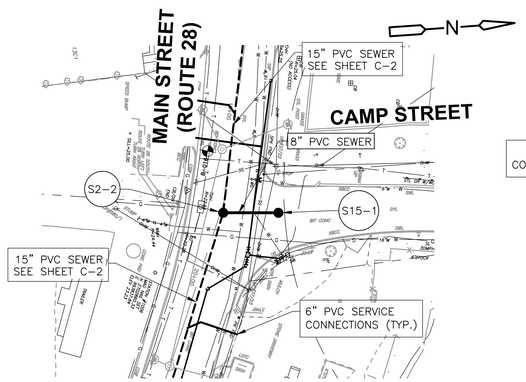
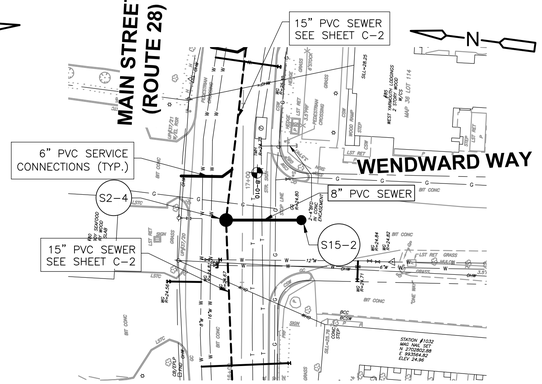


PLAN "A"
1"=40'-0"



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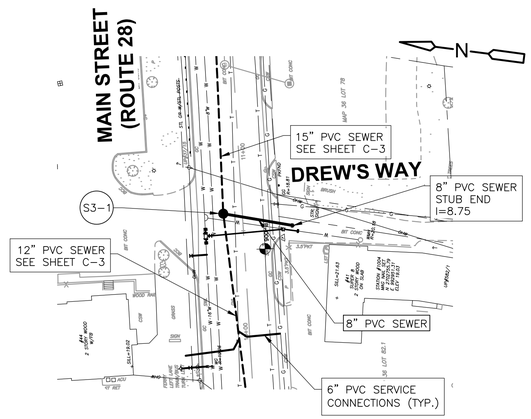
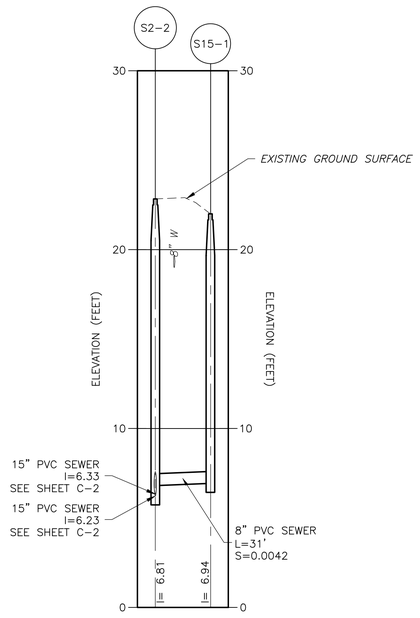
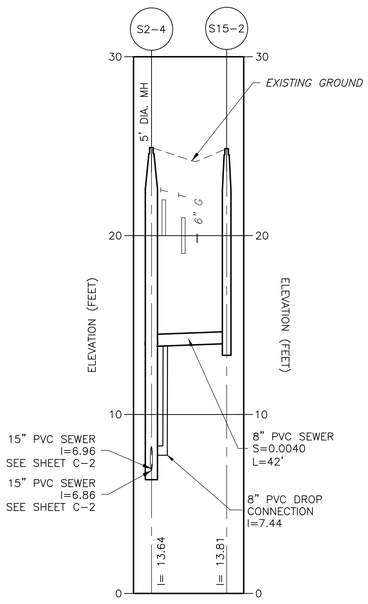
1"=40'-0"



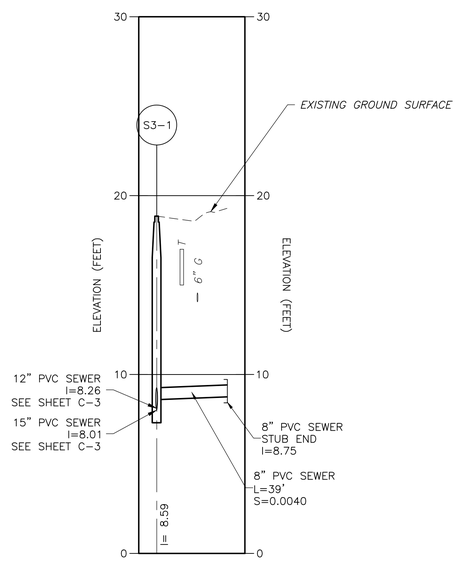
PLAN "C"
1"=40'-0"



PROFILE "A"
SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"



PROFILE "B"
SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"



PROFILE "C"
SCALE: HOR. 1"=40'-0"
VERT. 1"=4'-0"

HOR. 1" = 40'
20 0 40

VERT. 1" = 4'
2 0 4

WORK SHOWN ON THIS SHEET
INCLUDED IN ADD ALTERNATE 2

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 26074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:13:40-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

CAMP STREET, WENDWARD WAY AND DREW'S WAY

PROJECT NO. 1125-273132
FILE NAME: C015STPP
SHEET NO. C-15

XREFs: [XGTWP001, CBSPL001, cwtwp001, 608264_SV(EG), 608264_SV, cstwp001, CDMS6_2436, xevpl001, 608264_DU (Town Line to HCR_Berry)] Images: []
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100-FT BUFFER FROM MILL POND

200-FT RIVERFRONT AREA

100-FT BUFFER ZONE

LAND SUBJECT TO COASTAL STORM FLOWAGE (LSCSF) EL. 11 FT.

50-FT SETBACK

35-FT SETBACK

MAIN STREET - (ROUTE 28)

GRAVEL

GRASS

GRASS

BOULDER

BIT. CONC. DRIVE

DIRT

DWS

STOP

WATER

SBC&C

GC

CONC. WALK

GRASS

12" WATER

B-026

B-025

510
N: 2702582.890'
E: 995047.376'
ELEV 13.224'
MAG

STATION #1013
MASS STATE GRID
N: 2702715.33
E: 995246.64
ELEV=14.22

GENERAL NOTE:

1. WORK ASSOCIATED WITH PUMPING STATION NO.1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

1" = 10'
5 0 10

Michael P Guidice
2024.08.16 15:30:29-04'00'

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 22074
REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HEIL
DRAWN BY: Z. MILLER
SHEET CHK'D BY: J. HEIL
CROSS CHK'D BY: M. DODSON
APPROVED BY: M. GUIDICE
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1
EXISTING CONDITIONS PLAN

PROJECT NO. 1125-273132
FILE NAME: CD001EXPL.DWG
SHEET NO.
CD-1

XREFs: [CDMS_2436_CBSPL001, xvyl001, CEP000ST, 2100059WS C3D2018_R3, 608264_HD(XR01), 608264_HD(BRIDGE PROJ), 608264_SV, cstwp001, 608264_SV(EG), 2100059WS C3D2018, APSWP004, EW001ST, cstwp002, cstwp003, XGTWP001] Images: []
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LEGEND:

- PUMPING STATION NO. 1 LIMIT OF WORK
- LIMIT OF CLEARING AND GRUBBING
- TEMPORARY CONSTRUCTION ENTRANCE
- COMPOST SOCK

100-FT BUFFER FROM MILL POND

200-FT RIVERFRONT AREA

100-FT BUFFER ZONE

LAND SUBJECT TO COASTAL STORM FLOWAGE (LSCSF) EL. 11 FT.

50-FT SETBACK

35-FT SETBACK

COMPOST SOCK (B / CD-10)

PROTECT EXISTING MONITORING WELL

LIMIT OF COMPOST SOCK

STABILIZED CONSTRUCTION ENTRANCE (A / CD-10)

PROTECT EXISTING BIT. CONC.

LIMIT OF CLEARING AND GRUBBING

PUMPING STATION NO. 1 LIMIT OF WORK

LIMIT OF COMPOST SOCK

1" = 10'

5 0 10

GENERAL NOTE:

1. WORK ASSOCIATED WITH PUMPING STATION NO.1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

NOTES:

1. CLEAR, GRUB AND DISPOSE OF EXISTING VEGETATION AND WOODLAND ORGANIC MAT AND REMOVE AND DISPOSE OF EXISTING TREES, STUMPS AND ROOTS ONE FOOT BELOW LIMIT OF NEW WORK

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HEIL
DRAWN BY: Z. MILLER
SHEET CHK'D BY: J. HEIL
CROSS CHK'D BY: M. DODSON
APPROVED BY: M. GUIDICE
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1 SITE PREPARATION PLAN

Michael P Guidice
2024.08.16 15:30:46-04'00'

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 52074
REGISTERED PROFESSIONAL ENGINEER

PROJECT NO. 1125-273132
FILE NAME: CD002SPPL.DWG
SHEET NO. CD-2

XREFs: [CDMS_2436, CBSPL001, xsvp001, CEP000ST, 2100059WS C3D2018_R3, 608264_H0(XR01), 608264_H0(BRIDGE PROJ), 608264_SV, cstwp001, 608264_SV(EG), 2100059WS C3D2018, APSWP004, EW001ST, cstwp002, cstwp003, cwtwp001] Images: []
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LEGEND:

- PUMPING STATION NO. 1 LIMIT OF WORK
- LIMIT OF BITUMINOUS CONCRETE PAVEMENT
- LIMIT OF CRUSHED STONE SURFACING

1" = 10'

100-FT BUFFER FROM MILL POND

200-FT RIVERFRONT AREA

100-FT BUFFER ZONE

LAND SUBJECT TO COASTAL STORM FLOWAGE (LSCSF) EL. 11 FT.

50-FT SETBACK

35-FT SETBACK

MAIN STREET - (ROUTE 28)

15" PVC SEWER SEE SHEET C-1

S1-2

CORNER OF FOUNDATION N:2702750.35 E:995054.10

CORNER OF FOUNDATION N:2702739.66 E:995052.32

STEEL BOLLARD (TYP. OF 10) K CD-10

MONITORING WELL

1 QC

TEMPORARY EXCAVATION SUPPORT REFER TO SPECIFICATION 315000 FOR REQUIREMENTS

S1-1

8"-S-DI SEE MECHANICAL DRAWINGS FOR DETAILS

3"-D-PVC SEE MECHANICAL DRAWINGS FOR DETAILS

EXISTING GRAVEL

20' SETBACK

PUMPING STATION NO. 1 LIMIT OF WORK

CONTROL BUILDING WITH GENSET INSIDE

FFE 15.75

CORNER OF FOUNDATION N:2702747.62 E:995070.46

CORNER OF FOUNDATION N:2702736.93 E:995068.67

6"-V-PVC SEE MECHANICAL DRAWINGS FOR DETAILS

FUTURE ODOR CONTROL

E CD-10 CRUSHED STONE SURFACING

WET WELL

VALVE AND METER VAULT

POWER AND TELECOM HANDHOLD SEE ELECTRICAL DRAWINGS

2" GAS SERVICE SEE PLUMBING DRAWINGS

18 JV

3 AC

1 QC

SEE SHEET C-1 FOR WATER MAIN DETAILS

15" PVC SEWER SEE SHEET C-1

8" PVC FORCE MAIN SEE SHEET C-1

GENERAL NOTE:

1. WORK ASSOCIATED WITH PUMPING STATION NO.1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
DECIDUOUS TREES					
QC	3	QUERCUS COCCINEA	SCARLET OAK	2.5-3.0" CAL.	
ORNAMENTAL TREES					
AC	3	AMELANCHIER CANADENSIS	SHADBUSH	8' HT.	SINGLE STEM
EVERGREEN SHRUBS					
JV	18	JUNIPERUS VIRGINANA 'EMERALD SENTINEL'	EASTERN RED CEDAR	7' HT.	B&B

LANDSCAPE NOTES:

1. ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED AS SHOWN ON THE PLANS FOR FIELD REVIEW BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
3. NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND DRIVEWAY CONSTRUCTION HAS BEEN COMPLETED.
4. A 3-INCH DEEP SHREDDED PINE BARK SAUCER SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, AS SHOWN ON THE PLANS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
5. ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED, OR APPROVED BY THE OWNER'S REPRESENTATIVE.
6. FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND PLANT LABELS PRIOR TO BIDDING.
7. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE APPROVED IN WRITING BY THE ENGINEER.
8. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
9. ALL PLANT MATERIALS SHALL BE MAINTAINED AND GUARANTEED AS SPECIFIED.

Michael P Guidice
2024.08.16 15:30:57-04'00'

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 26074
REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HEIL
DRAWN BY: Z. MILLER
SHEET CHK'D BY: J. HEIL
CROSS CHK'D BY: M. DODSON
APPROVED BY: M. GUIDICE
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1 SITE IMPROVEMENTS PLAN

PROJECT NO. 1125-273132
FILE NAME: CD003LMPL.DWG

SHEET NO.
CD-3

XREFs: [2100059WS C3D2018, CBSPL001, CEP000ST, xsvpl001, CDMS_2436, 2100059WS C3D2018_R3, cwtwp001, 608264_HD(BRIDGE PROJ), 608264_HD(XR01), 608264_HD(BRIDGE PROJ), 608264_SV, 608264_SV(EG), CBSPL000, APSWP004, EW002ST, cstwp001, cstwp002, cstwp003, 2100059 EASE-2025] Images: []
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1" = 10'
5 0 10

MAIN STREET - (ROUTE 28)

#280
"SHED BUSINESS"
TORY WOOD
W/FB

STORAGE TRAILER
LSCSF (EL. 11)
100-FT BUFFER ZONE
50-FT BUFFER ZONE
35-FT NO DISTURB ZONE
CONC. PAD
BIT. CONC.
EOP
GRAVEL
CSW
CC
STEP
6"STOCK
6"W(R)
8"W
15"RCP
12"RCP
8"CIP
4 MTD
16"BFD
24"RCP
18"RCP
5"CMP
10"D MULTITRUNK
10"D CLUSTER
10"D TWIN
RUSH GRACE
GRASS
CB R=8.88 S=6.6 (NO ACCESS)
CB R=8.78 I=6.0(NE)
DMH R=8.90 NO ACCESS
CB R=9.42 S=9.10 (NO ACCESS)
LSCSF (EL. 11) STATION#28 MAG. NAIL FND N 2701159.36 E 997242.63 ELEV=9.59
STATION#33 SPIKE SET N 2701111.55 E 997348.29 ELEV=5.92
BENCHMARK MGS#8152 BRASS RIVET IN CONC HEADWALL ELEV=3.69
LIMIT OF VEGETATIVE WETLAND AT TOP OF BANK
STL GR W/ STL POSTS
CONC HWL
MW
WP
MHO
OHW
BCW
GC
TE(M)
TE
S
253.69'
130.13'
NB51°44'54"W
33'±
58+00
59+00
60+00
+51.86 PC

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HEIL
DRAWN BY: M . CARLSON
SHEET CHK'D BY: J. HEIL
CROSS CHK'D BY: W. HOTZ
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 2
EXISTING CONDITIONS PLAN

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 42604
REGISTERED PROFESSIONAL ENGINEER
Michael P Guidice
2025.11.18 13:14:31-05'00'

PROJECT NO. 1125-273132
FILE NAME: CD006LMPL.DWG
SHEET NO.
CD-4

XREFs: [210005WS C3D2018_CBSPL001, CEP000ST_xsvpl001, CDMS_2436, 210005WS C3D2018_R3, cwtwp001, 608264_HD(XR01), 608264_HD(BRIDGE PROJ), 608264_SV, 608264_SV(EG), CBSPL000, APSWP004, EW002ST, cstwp001, cstwp002, cstwp003, 2100059 EASE-2025] Images: []
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LEGEND:

- LIMIT OF CLEAR AND GRUB
- LIMIT OF FULL DEPTH PAVEMENT DEMOLITION

1" = 10'
5 0 10

LIMIT OF COMPOST SOCK
100-FT BUFFER ZONE
50-FT BUFFER ZONE
35-FT NO DISTURB ZONE
LSCSF (EL. 11)
B / CD-10 COMPOST SOCK
CLEAR AND GRUB
FULL DEPTH PAVEMENT REMOVAL
PROTECT EXISTING CONCRETE PAD
PROTECT EXISTING UTILITY
PROTECT EXISTING UTILITY
PERMANENT EASEMENT
TEMPORARY EASEMENT
200-FT RIVERFRONT AREA
A / CD-10 STABILIZED CONSTRUCTION ENTRANCE
LIMIT OF COMPOST SOCK
CATCH BASIN SEDIMENT FILTER
LSCSF (EL. 11)
PROTECT EXISTING UTILITY
PROTECT EXISTING PUSH BRACE
REMOVE EXISTING TREE
EXISTING LEACHING FIELD TO BE ABANDONED AND REMOVED
PROTECT EXISTING UTILITY POLE

N/F
MELLO-WILSON CRANBERRY CORP.
L.C.C. NO. 32595-E
L.C.C. NO. 32595-H
CERT. NO. 116601
DOC. NO. 476548
OFF ROUTE 28
MAP/LOT 38/4

LIMIT OF VEGETATIVE WETLAND AT TOP OF BANK

BENCHMARK: BRASS RIVET
EL=3.66'
BENCHMARK BRASS RIVET IN CONC HEADWALL ELEV=3.69

STATION#28 MAG. NAIL FND N 2701159.36 E 997242.63 ELEV=9.59

STATION#33 SPIKE SET N 2701111.55 E 997348.29 ELEV=5.92

MAIN STREET - (ROUTE 28)

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HEIL
DRAWN BY: M. CARLSON
SHEET CHK'D BY: J. HEIL
CROSS CHK'D BY: W. HOTZ
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 2
SITE PREPARATION PLAN

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 25974
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:15:00-05'00'

PROJECT NO. 1125-273132
FILE NAME: CD005SPPL.DWG

SHEET NO.
CD-5

XREFs: [2100059WS C3D2018, CBSPL001, CEP000ST, xsvpl001, CDMS_2436, 2100059WS C3D2018_R3, cwtwp001, 608264_HD(BRIDGE PROJ), 608264_HD(XR01), 608264_SV, 608264_SV(EG), CBSPL000, APSWP004, EW002ST, cstwp001, cstwp002, cstwp003, 2100059 EASE-2025] Images: []
Last saved by: CARLSONMR Time: 11/14/2025 2:59:35 PM
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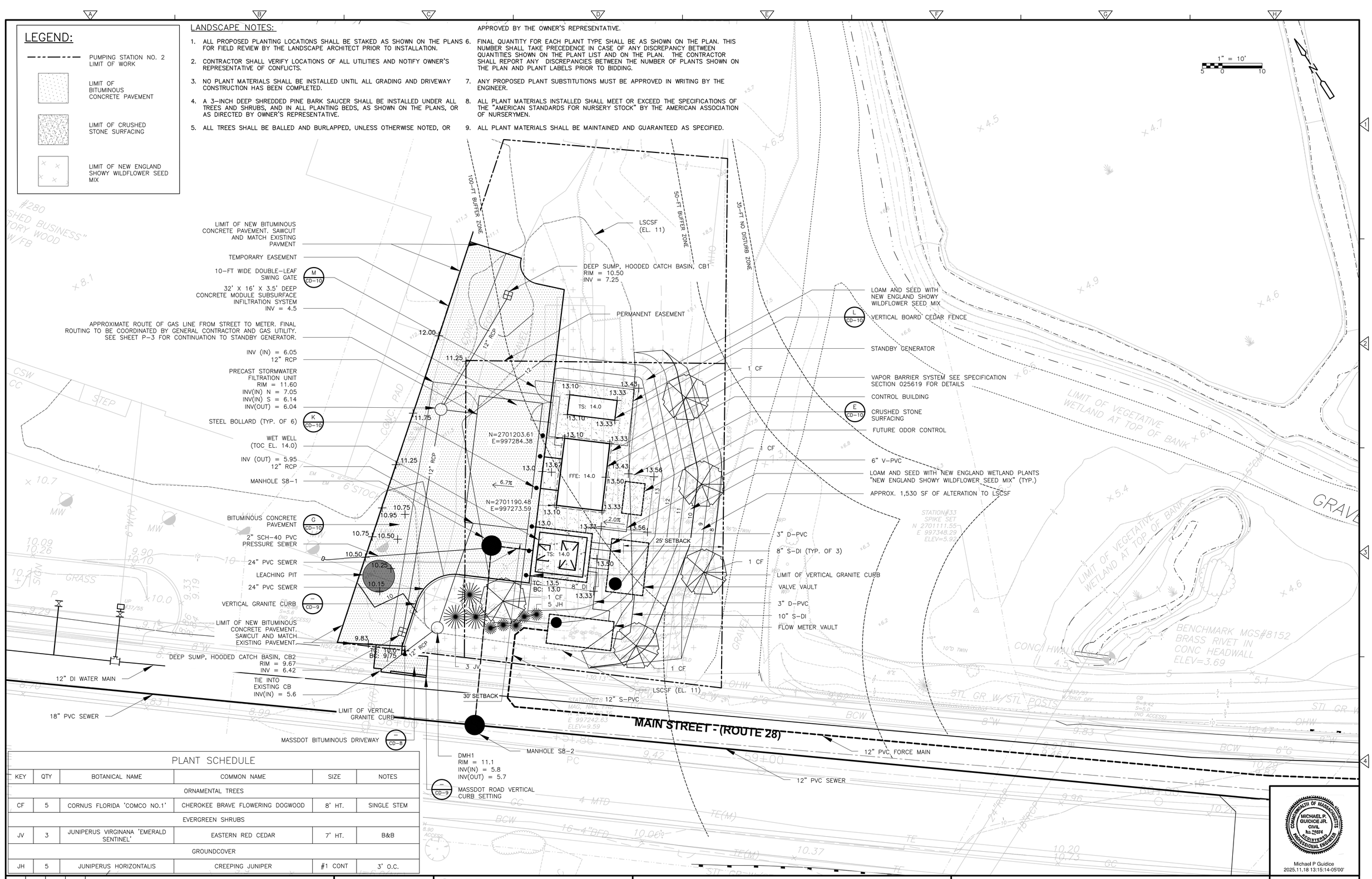
LEGEND:

- PUMPING STATION NO. 2 LIMIT OF WORK
- LIMIT OF BITUMINOUS CONCRETE PAVEMENT
- LIMIT OF CRUSHED STONE SURFACING
- LIMIT OF NEW ENGLAND SHOWY WILDFLOWER SEED MIX

LANDSCAPE NOTES:

1. ALL PROPOSED PLANTING LOCATIONS SHALL BE STAKED AS SHOWN ON THE PLANS FOR FIELD REVIEW BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
3. NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND DRIVEWAY CONSTRUCTION HAS BEEN COMPLETED.
4. A 3-INCH DEEP SHREDDED PINE BARK SAUCER SHALL BE INSTALLED UNDER ALL TREES AND SHRUBS, AND IN ALL PLANTING BEDS, AS SHOWN ON THE PLANS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
5. ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED, OR APPROVED BY THE OWNER'S REPRESENTATIVE.
6. FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS SHOWN ON THE PLAN. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND PLANT LABELS PRIOR TO BIDDING.
7. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE APPROVED IN WRITING BY THE ENGINEER.
8. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
9. ALL PLANT MATERIALS SHALL BE MAINTAINED AND GUARANTEED AS SPECIFIED.



PLANT SCHEDULE

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
		ORNAMENTAL TREES			
CF	5	CORNUS FLORIDA 'COMCO NO.1'	CHEROKEE BRAVE FLOWERING DOGWOOD	8' HT.	SINGLE STEM
		EVERGREEN SHRUBS			
JV	3	JUNIPERUS VIRGINANA 'EMERALD SENTINEL'	EASTERN RED CEDAR	7' HT.	B&B
		GROUNDCOVER			
JH	5	JUNIPERUS HORIZONTALIS	CREEPING JUNIPER	#1 CONT	3' O.C.

REV. NO.	DATE	DRWN	CHKD	REMARKS

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SHEET CHK'D BY: J. HEIL
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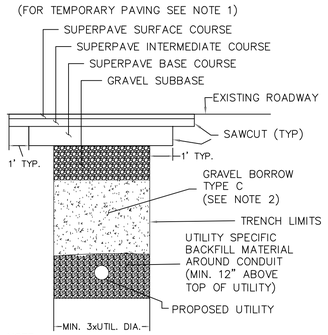
TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 2
SITE IMPROVEMENTS PLAN

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 42904
REGISTERED PROFESSIONAL ENGINEER
Michael P Guidice
2025.11.18 13:15:14-05'00'

PROJECT NO. 1125-273132
FILE NAME: CD006LMPL.DWG
SHEET NO.
CD-6



PAVEMENT NOTES*

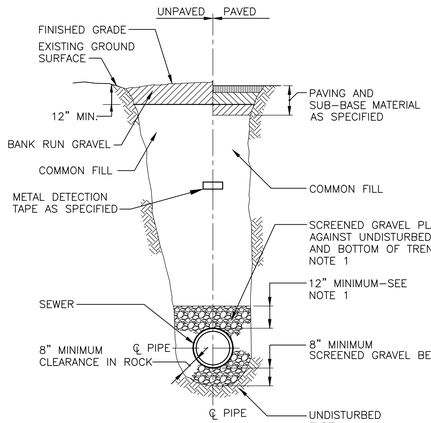
PAVEMENT MIX DEPTH SHALL MATCH OR EXCEED THE EXISTING DEPTH OF HMA.

- 1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC–12.5)
- 2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC–19.0)
- 3.5" SUPERPAVE BASE COURSE 37.5 (SBC – 37.5)
- MINIMUM 12" GRAVEL SUB–BASE: (MAXIMUM 3" AGGREGATE SIZE)

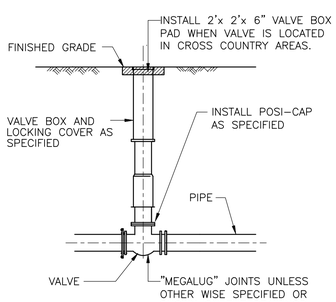
ALL HOT MIX ASPHALT SHALL BE PRODUCED WITH A WARM MIX ADDITIVE

NOTE:
1. IF A TEMPORARY PATCH IS TO BE USED, BACKFILL THE TRENCH TO THE ELEVATION OF THE ADJOINING SUBGRADE, THEN GRAVEL SHALL BE PLACED AND COMPACTED TO WITHIN 3 1/2" OF THE FINISHED GRADE. THE LAST 3 1/2" SHALL BE HOT MIX ASPHALT PLACED IN TWO LAYERS: 1 1/2" SURFACE COURSE OVER 2" INTERMEDIATE COURSE.
2. USE MATERIAL WHICH MEETS THE SPECIFICATION FOR GRAVEL BORROW TYPE C (M1.03.0 TYPE C), PLACED AND COMPACTED IN LAYERS NO GREATER THAN 6" TO BACKFILL THE TRENCH..
3. THE EXPOSED EDGES OF ALL LONGITUDINAL AND TRANSVERSE SAW CUT JOINTS SHALL BE TREATED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALANT MEETING MASSDOT SPECIFICATIONS.
4. GREEN METAL FOIL MARKING TAPE SHALL BE PLACED 18" OVER THE PIPE (METAL MARKING TAPE/WIRE SHALL BE USED FOR NON–METALLIC CONDUIT.)
5. FOR ROADS WITH AN EXISTING CEMENT CONCRETE BASE, A REINFORCED, HIGH EARLY STRENGTH CEMENT CONCRETE BASE SHALL BE CAST IN PLACE TO MEET THE EXISTING PAVEMENT. SPECIFIC JOINT DETAILS WITH THE EXISTING PAVEMENT SHALL BE APPROVED DEPENDENT ON THE EXISTING SITE CONDITIONS.
6. ALL TRENCH DIMENSIONS SHALL BE IN ACCORDANCE WITH SUB–SECTION 140.08 OF THE MASSDOT STANDARDS AND SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
7. SIC 19.0 MAY BE SUBSITUTED FOR SBC–37.5.

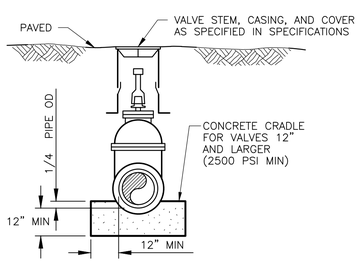
MASSDOT ROAD TRENCH DETAIL
NTS



TYPICAL TRENCH DETAIL FOR SEWER PIPE
NTS

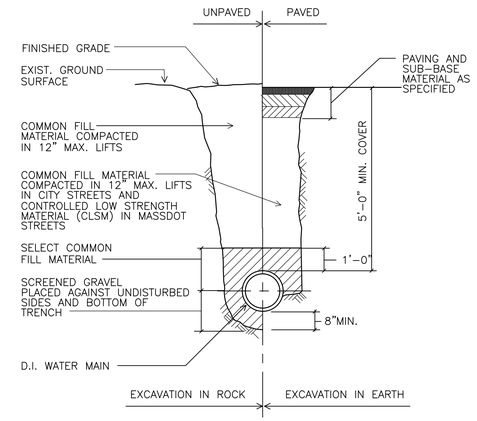


TYPICAL GATE VALVE AND BOX DETAIL
NTS

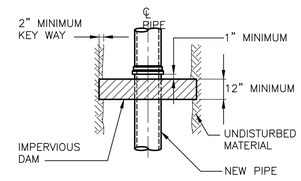


NOTE:
1. ALL VALVES SHALL BE FIELD TESTED AS SPECIFIED PRIOR TO CONSTRUCTION.

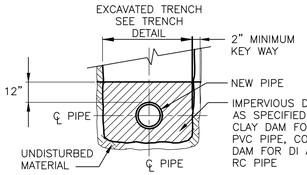
VERTICAL GATE VALVE INSTALLATION DETAIL
NTS



TYPICAL TRENCH DETAIL
FOR D.I. WATER MAIN OR FORCE MAIN
NTS



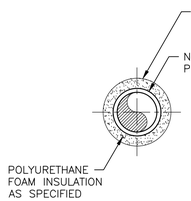
PLAN



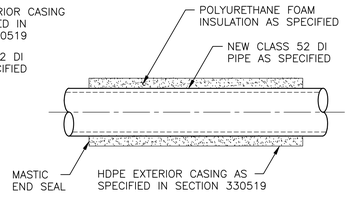
SECTION

NOTE: FOR PIPES OTHER THAN PVC, TOP OF DAM TO BE AT MID–DIAMETER OF PIPE.

PIPE TRENCH DAM DETAIL
NTS



SECTION

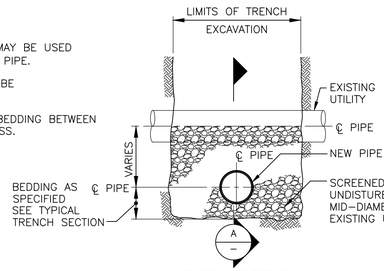


PLAN

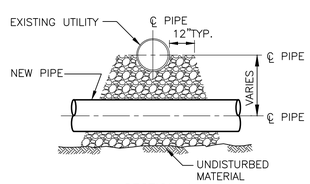
NOTE:
1. INSTALL PIPE INSULATION AT ALL LOCATIONS WHERE NEW WATER MAIN WILL BE BURIED WITH LESS THAN 4 FEET OF COVER. CONTRACTOR SHALL DETERMINE DEPTHS AT ALL UTILITY CROSSINGS WITH TEST PITS PRIOR TO BEGINNING WATER MAIN INSTALLATION.

TYPICAL PIPE INSULATION
NTS

NOTE:
1. FOR PIPES OTHER THAN PVC, SELECT COMMON FILL MAY BE USED FROM MID–DIAMETER OF PIPE TO 12" ABOVE TOP OF PIPE.
2. TRENCHES LOCATED ON THE ROAD SHOULDER SHALL BE THE SAME AS IN STREET EXCEPT FOR PAVING.
3. PROVIDE AT LEAST ONE IMPERVIOUS DAM IN GRAVEL BEDDING BETWEEN EACH MANHOLE OR EVERY 300 FT., WHICHEVER IS LESS.



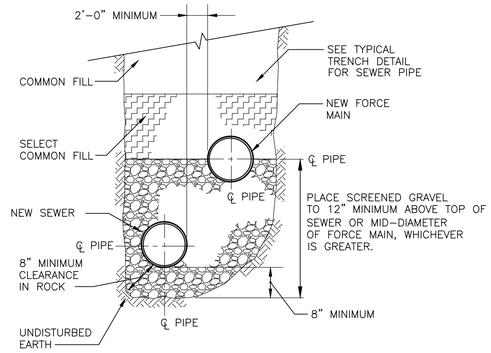
TYPICAL SECTION



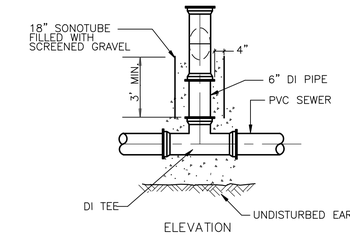
SECTION A–A

NOTE:
1. WHERE NEW WATER MAIN CROSSES UNDER SEWER, BOTH PIPES SHALL BE ENCASED IN CONCRETE FOR A MINIMUM OF 10 FEET ON EITHER SIDE OF THE RESPECTIVE CENTERLINES.

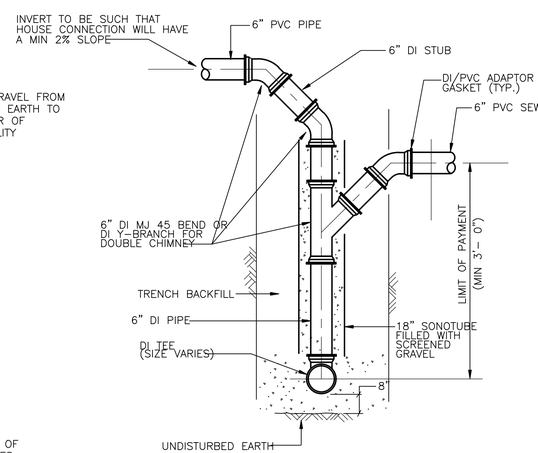
EXISTING UTILITY CROSSING DETAIL
NTS



COMMON TRENCH FOR SEWER AND FORCE MAIN
NTS

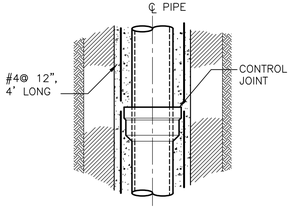


ELEVATION



SECTION

DI CHIMNEY DETAIL
NTS



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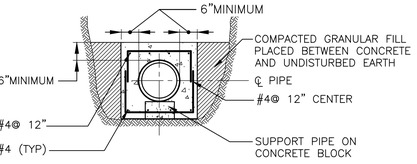
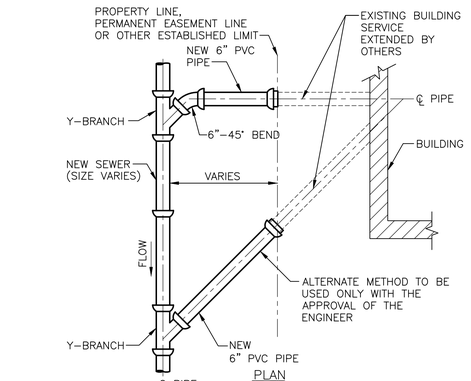


SECTION

NOTE:
1. WHERE NEW WATER MAIN CROSSES UNDER SEWER OR IS BURIED WITH LESS THAN 3 FT OF COVER, CONCRETE ENCASEMENT OF SEWER SHALL EXTEND A MINIMUM OF TEN (10 FT) ON EACH SIDE OF INTERSECTION WITH WATER MAIN UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
2. CONTROL JOINTS SHALL COINCIDE WITH PIPE JOINTS. MAXIMUM DISTANCE BETWEEN CONTROL JOINTS SHALL BE 24'± 2.
3. REINFORCING STEEL TO BE USED ONLY WHEN DEPTH OF COVER TO TOP OF SURFACE OF CONCRETE IS 5'–0" OR LESS.

CONCRETE ENCASEMENT DETAIL
NTS



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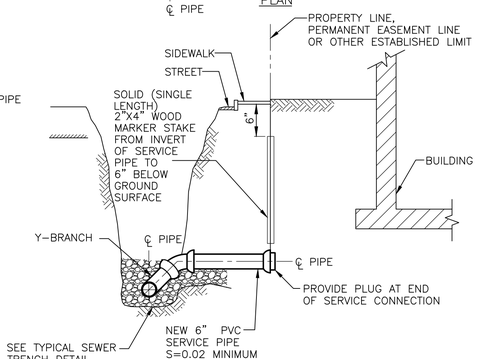

SECTION

SEWER SERVICE CONNECTION DETAIL
NTS

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 22074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:15:27-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

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TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MISCELLANEOUS DETAILS I

PROJECT NO. 1125–2731.32
FILE NAME: CD07STDT.DWG
SHEET NO. CD-7

XREFs: [CDMS_2436] Images: []
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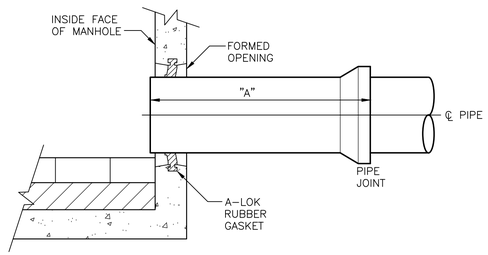
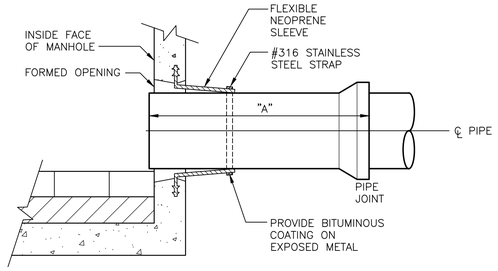
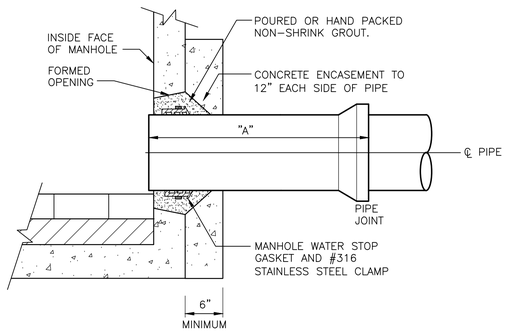


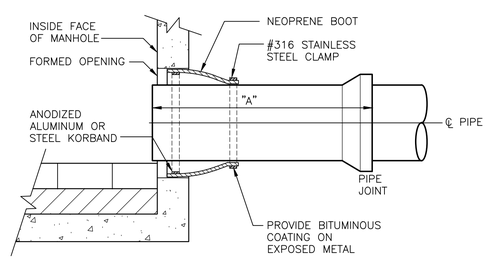
A–LOK SYSTEM



FLEXIBLE SLEEVE



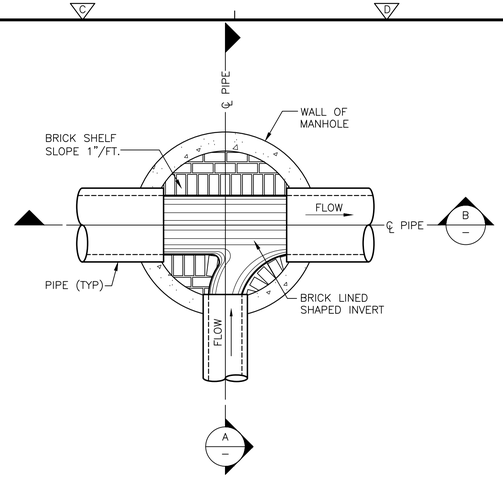
CONCRETE ENCASEMENT



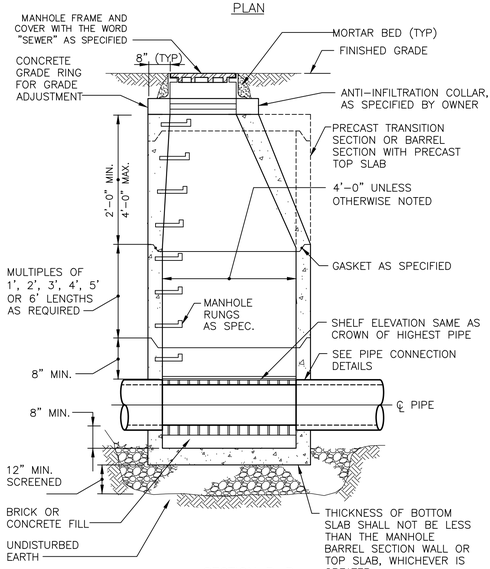
KOR–N–SEAL BOOT

MAXIMUM STUB LENGTH	
PIPE MATERIAL	"A" (MAX.)
RC	4'–0"
PVC	3'–3"
DI	4'–6"

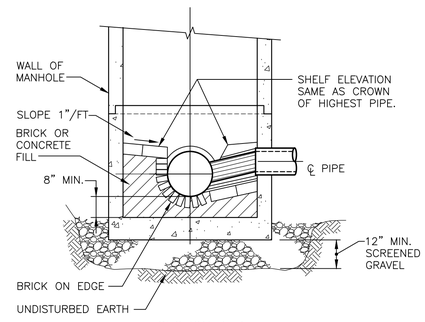
PIPE CONNECTION DETAILS
NTS



PLAN

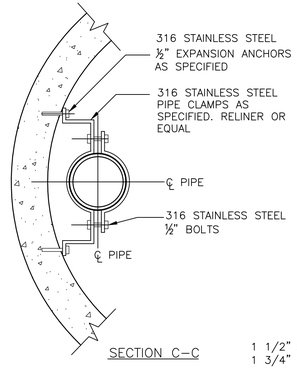


SECTION B–B



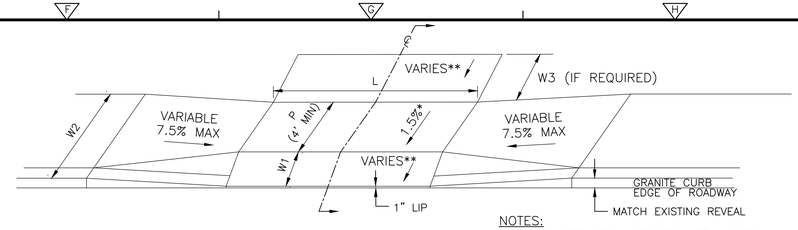
SECTION A–A

TYPICAL PRECAST SEWER MANHOLE
NTS

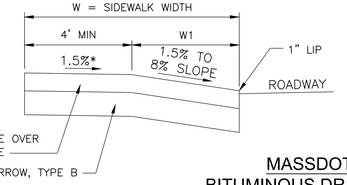


SECTION C–C

PVC DROP CONNECTION ANCHOR DETAIL
NTS

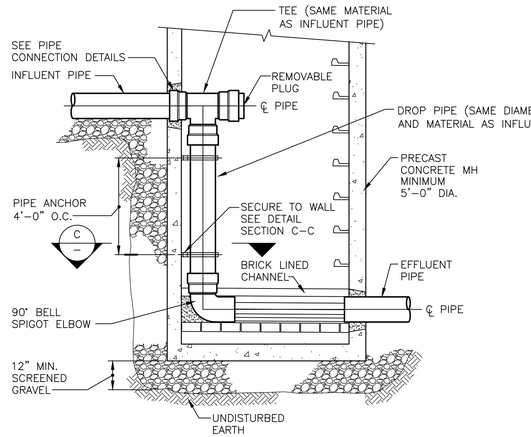


NOTES:
- * CONSTRUCTION TOLERANCE ±0.5%
- SEE CONSTRUCTION STANDARD E 107.7.0
- ** 1.5% MIN TO 8.0 % MAX
- REPLACE BITUMINOUS DRIVEWAY TO WIDTH OF TRENCH



SECTION A-A

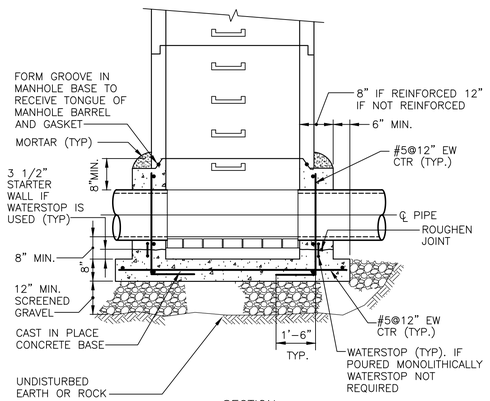
MASSDOT BITUMINOUS DRIVEWAY
NTS



NOTE: MINIMUM 5'–0" DIA. MANHOLES SHALL BE USED AT ALL DROP MANHOLE LOCATIONS.

SECTION

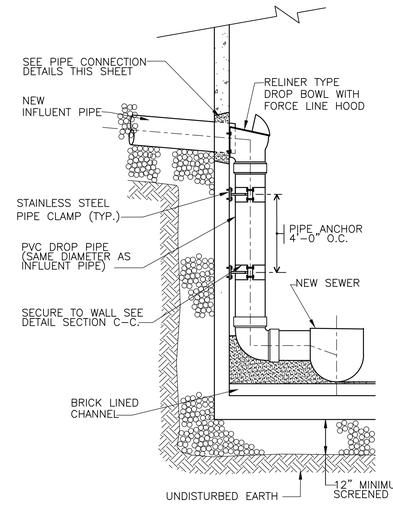
PVC DROP CONNECTION (INTERNAL) FOR FORCE MAIN CONNECTIONS
NTS



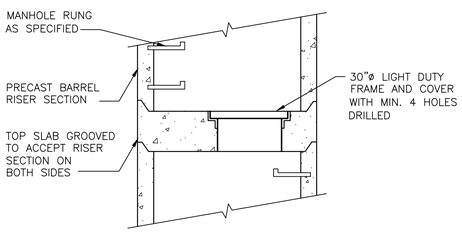
SECTION

TYPICAL PRECAST MANHOLE WITH CAST–IN–PLACE BASE
NTS

FOR ALL OTHER REQUIREMENTS OTHER THAN CAST–IN–PLACE BASE, SEE TYPICAL PRECAST SEWER MANHOLE DETAIL.



PVC DROP BOWL CONNECTION (INTERNAL) FOR GRAVITY CONNECTIONS
NTS



INTERMEDIATE LANDING FOR PRECAST MANHOLES
(FOR USE WITH DEEP MANHOLES)
NTS

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 42604
REGISTERED PROFESSIONAL ENGINEER
Michael P Guidice
2025.11.18 13:15:39-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MISCELLANEOUS DETAILS II

PROJECT NO. 1125–273132
FILE NAME: CD08STDT.DWG
SHEET NO.
CD-8

XREFs: [CD08STDT.dwg]
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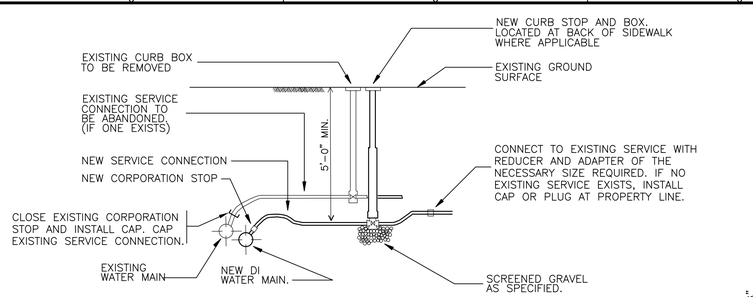
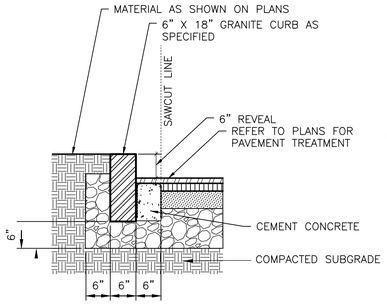


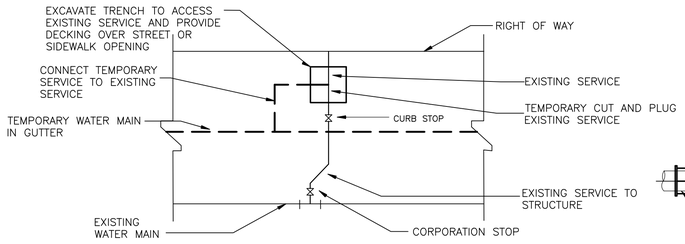
NEW SERVICE CONNECTION DETAIL

NTS



GRANITE CURB

N.T.S.

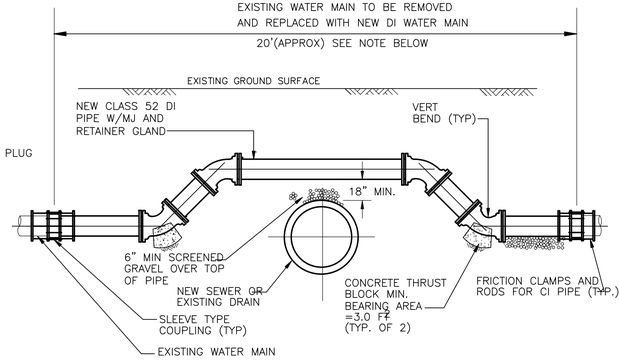


NOTE:

1. CONTRACTOR SHALL CONNECT TEMPORARY SERVICE TO EXISTING HOUSE SILL COCK WITH WRITTEN APPROVAL FROM ENGINEER.

TYPICAL DETAIL OF TEMPORARY SERVICE CONNECTION

N.T.S.

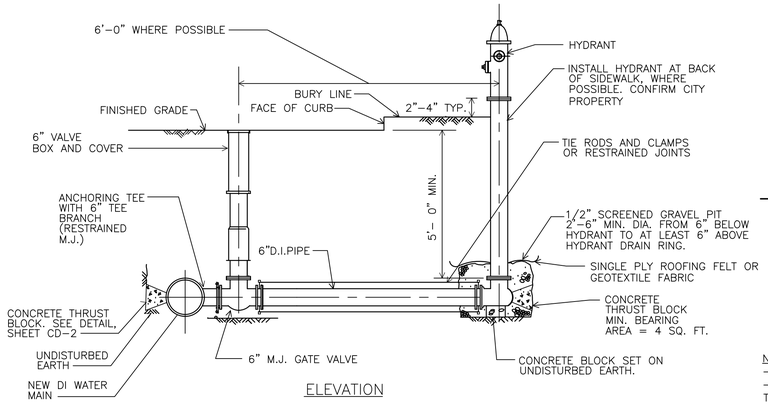


NOTES:

1. EXACT LIMITS OF NEW WATER MAIN TO BE DETERMINED IN THE FIELD.
2. SCREENED GRAVEL TO BE PLACED FROM MID DIA. OF WATER MAIN TO MID DIA. OF NEW SEWER OR EXISTING DRAIN.
3. D.I. PIPE SHALL BE CLASS 52 ALL JOINTS RESTRAINED.
4. D.I. PIPE SHALL BE INSULATED WHEN LESS THAN 4-FEET OF COVER.

WATER MAIN RELOCATION

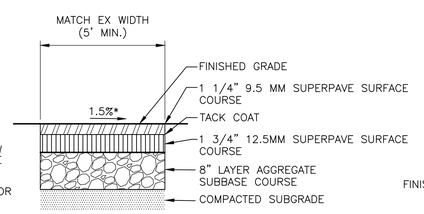
NTS



ELEVATION

STANDARD HYDRANT CONNECTION

NTS

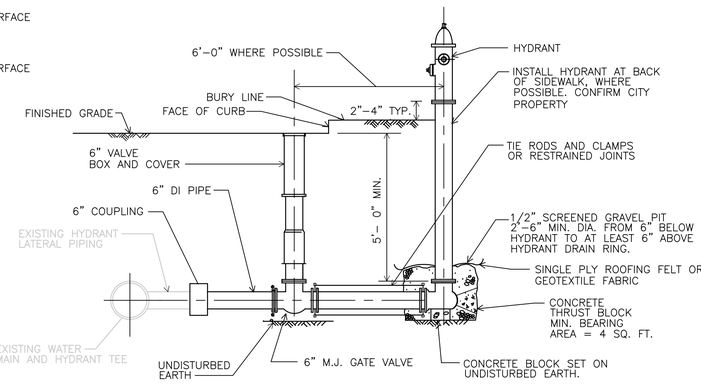


MASSDOT BITUMINOUS WALKWAY

NTS

NOTES:

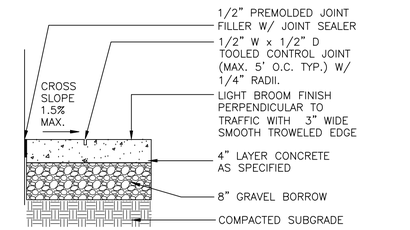
- * CONSTRUCTION TOLERANCE ±0.5%
- REPLACE BITUMINOUS WALKWAY TO WIDTH OF TRENCH



ELEVATION

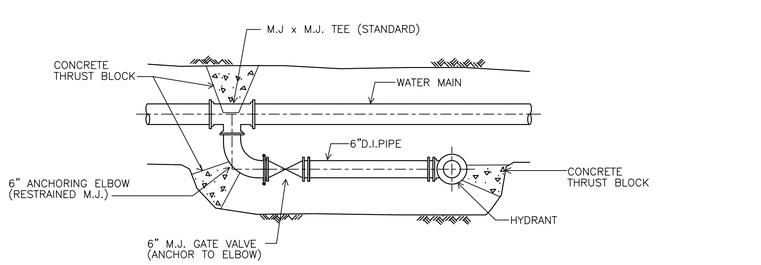
ALTERNATE HYDRANT CONNECTION TO EXISTING HYDRANT LATERAL PIPING

NTS

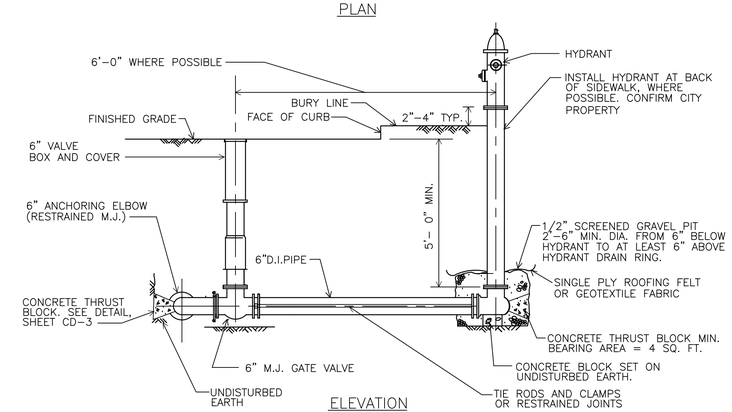


MASSDOT CONCRETE WALKWAY

NTS



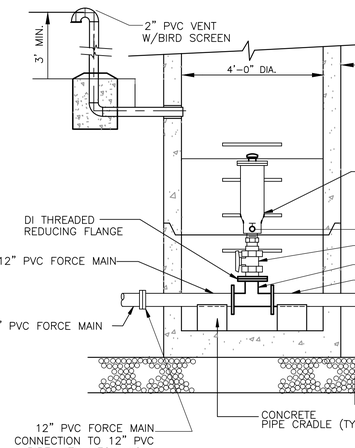
PLAN



ELEVATION

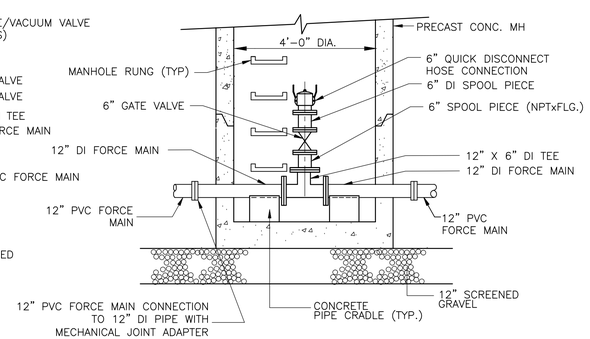
ALTERNATE HYDRANT CONNECTION

NTS



AIR RELEASE/VACUUM VALVE MANHOLE

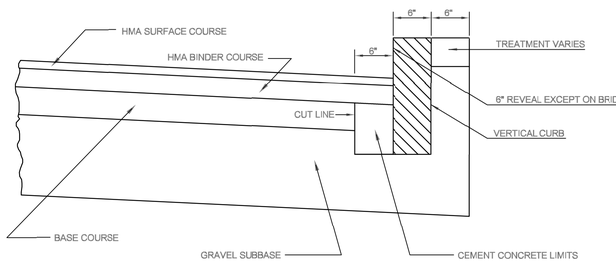
NTS



FORCE MAIN CLEANOUT MANHOLE DETAIL

NTS

NOTE: AIR RELEASE AND CLEANOUT MANHOLES SHALL BE FLAT TOP MANHOLES.



NOTES:

1. THIS PROCEDURE IS APPLICABLE ONLY IF CURB IS TO BE SET AFTER BASE COURSE IS IN PLACE PRIOR TO BINDER AND TOP PLACEMENT.
2. CUT NEAT LINE 6" FROM CURB LINE AND REMOVE BASE AND GRAVEL. REPLACE WITH CEMENT CONCRETE.
3. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED; ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT TO BE USED AS A SUBSTITUTE.

MASSDOT ROADVERTICAL CURB SETTING

NTS

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 27074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:15:51-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MISCELLANEOUS DETAILS III

PROJECT NO. 1125-273132
FILE NAME: CD09STDT.DWG
SHEET NO.
CD-9

XREFs: [CDMS_2436] Images: []
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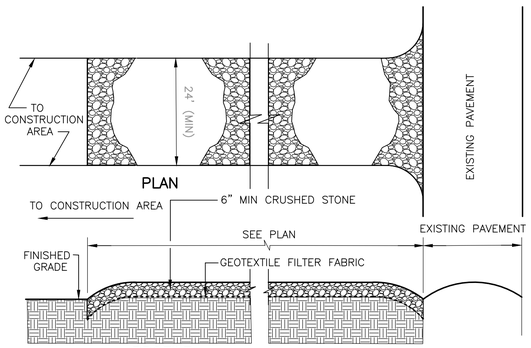


NOTE:

1.) PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND EXISTING GRAVEL ROAD.

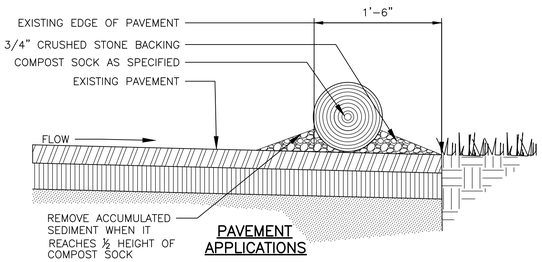
2.) LIMITS OF STABILIZED CONSTRUCTION ENTRANCE SHALL BE AS APPROVED BY THE ENGINEER.

3.) THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO EXISTING GRAVEL ROAD. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDING STONE TO THE LENGTH OF THE ENTRANCE.

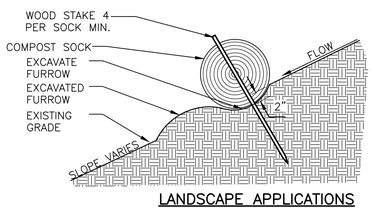
4.) REPAIR AND CLEAN MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO EXISTING GRAVEL ROAD SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.

STABILIZED CONSTRUCTION ENTRANCE

DETAIL A / CD-10
NOT TO SCALE



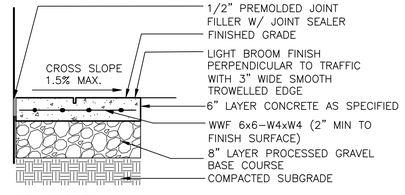
PAVEMENT APPLICATIONS



LANDSCAPE APPLICATIONS

COMPOST SOCK

DETAIL B / CD-10
NOT TO SCALE

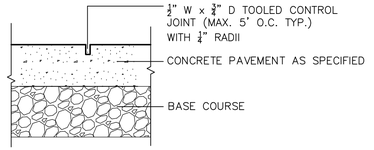


CONCRETE WALKWAY

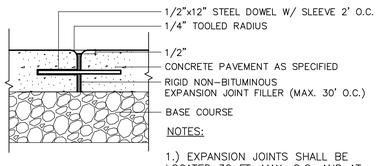
DETAIL C / CD-10
NOT TO SCALE

NOTE:
1. SURFACE SHALL BE BROOM FINISH. FINISH SURFACE SHALL BE SLOPED FOR POSITIVE DRAINAGE SHALL SLOPE AWAY FROM STRUCTURES.

3. EXPANSION JOINTS SHALL NOT EXCEED 30' O.C. AND SHALL BE PLACED AT ALL BUILDING ABUTMENTS. CONTRACTION JOINTS SHALL NOT EXCEED 5' O.C.



CONTROL JOINT



EXPANSION JOINT

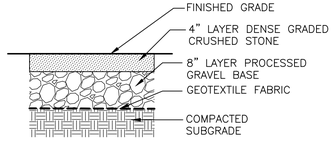
NOTES:

1.) EXPANSION JOINTS SHALL BE LOCATED 30 FT. MAX. O.C. AND AT THE END OF EACH DAYS POUR.

2.) LOCATE DOWELS MIN. 3–FT. O.C. WHERE CONC. IS PLACED UNDER DOORWAY THRESHOLDS

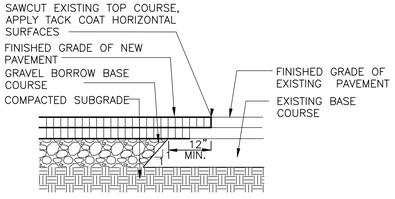
CONCRETE WALKWAY JOINTS

DETAIL D / CD-10
NOT TO SCALE



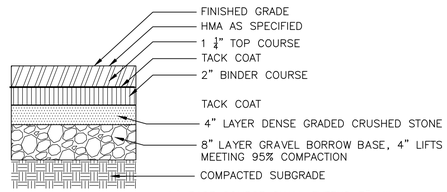
CRUSHED STONE SURFACING

DETAIL E / CD-10
NOT TO SCALE



PAVEMENT MATCH

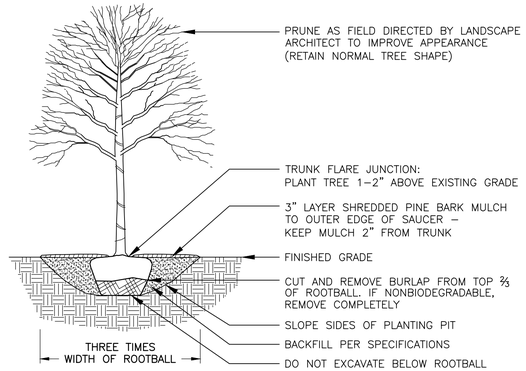
DETAIL F / CD-10
NOT TO SCALE



1.) BASE COURSE SHALL EXTEND 3" MIN. BEYOND EDGE OF PAVEMENT.

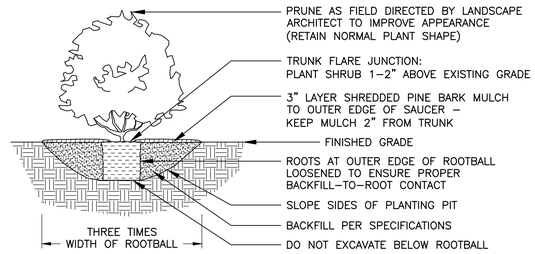
BITUMINOUS CONCRETE PAVEMENT – ROADWAYS

DETAIL G / CD-10
NOT TO SCALE



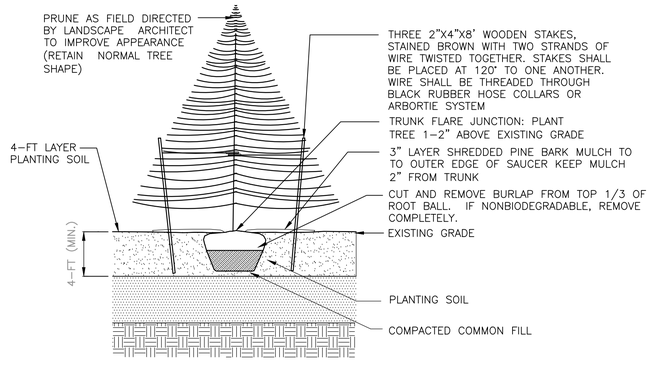
DECIDUOUS TREE PLANTING

DETAIL H / CD-10
NOT TO SCALE



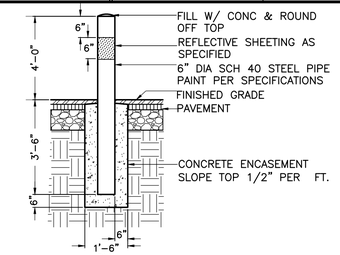
SHRUB PLANTING

DETAIL I / CD-10
NOT TO SCALE



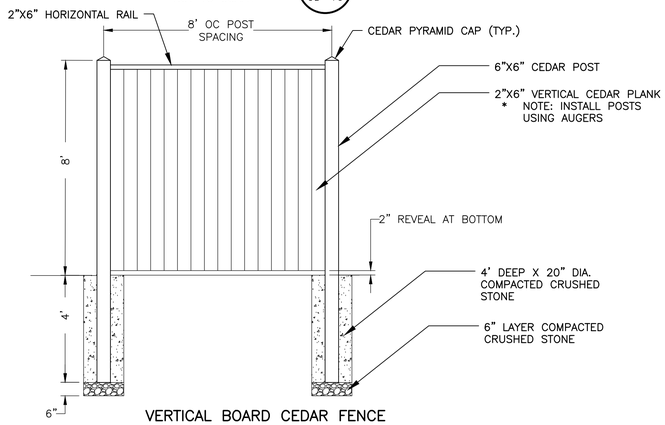
EVERGREEN TREE PLANTING

DETAIL J / CD-10
NOT TO SCALE



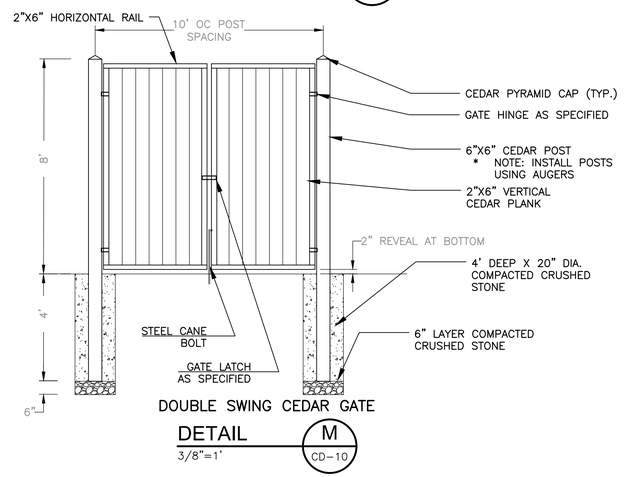
STEEL BOLLARD

DETAIL K / CD-10
NOT TO SCALE



VERTICAL BOARD CEDAR FENCE

DETAIL L / CD-10
3/8"=1'



DOUBLE SWING CEDAR GATE

DETAIL M / CD-10
3/8"=1'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HEIL
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MISCELLANEOUS DETAILS IV

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE, JR.
CIVIL
No. 52074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:16:02-05'00'

PROJECT NO. 1125–273132
FILE NAME: CD10STDT.DWG

SHEET NO.
CD-10

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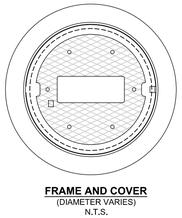
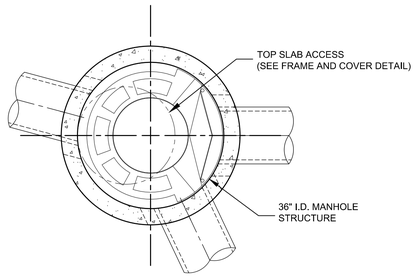
3' WIDE PEDESTRIAN GATE

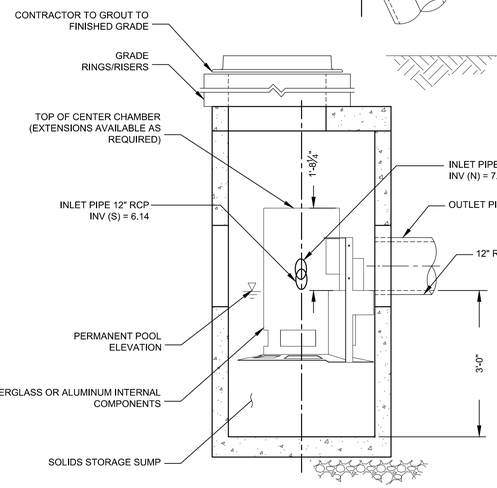
DETAIL A / CD-11

NTS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

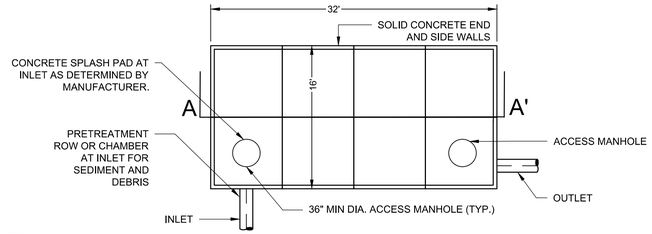




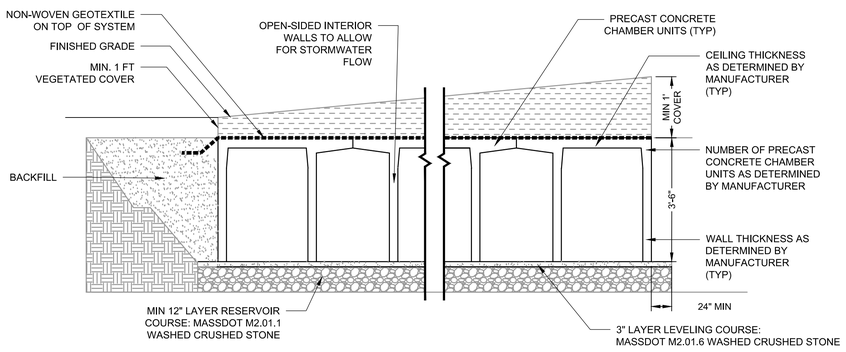
PRECAST STORMWATER FILTRATION UNIT

DETAIL D / CD-11

NTS



PLAN

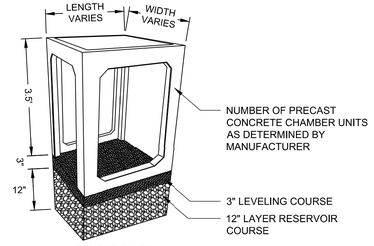


SECTION A-A'

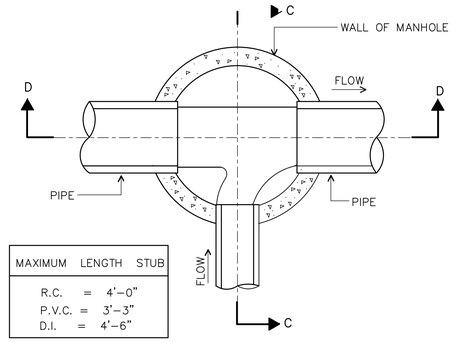
PRECAST SUBSURFACE INFILTRATION SYSTEM

DETAIL B / CD-11

NTS

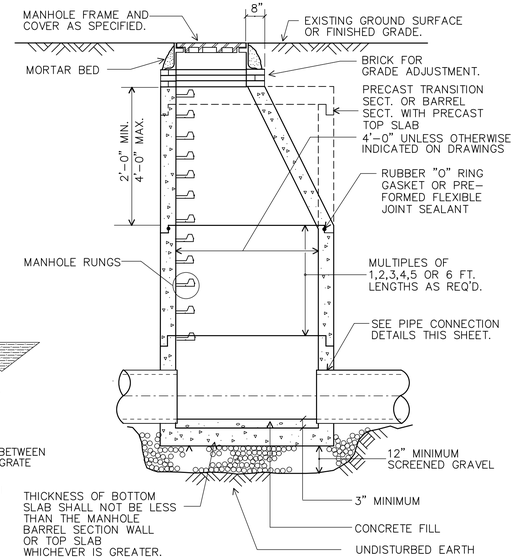


ISOMETRIC VIEW

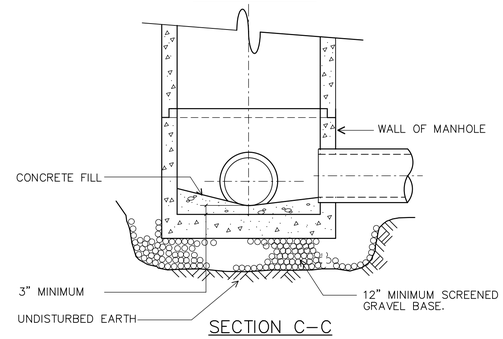


MAXIMUM LENGTH STUB	
R.C.	= 4'-0"
P.V.C.	= 3'-3"
D.I.	= 4'-6"

PLAN



SECTION D-D



SECTION C-C

TYPICAL PRECAST DRAIN MANHOLE

DETAIL C / CD-11

NTS

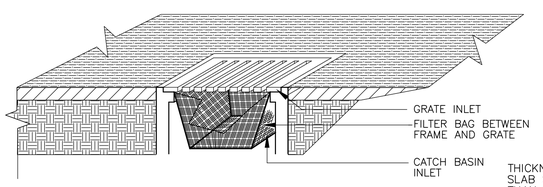
CATCH BASIN WITH CURB INLET

CATCH BASIN MUNICIPAL STANDARD

INLET PROTECTION DETAILS

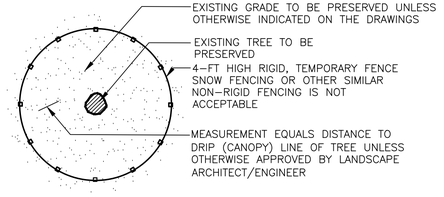
N.T.S.

NOTE: GEOTEXTILE FABRIC USED SHALL CONFORM TO REQUIREMENTS OF AASHOTO M 288 FOR THE INTENDED APPLICATION. SEDIMENT SHALL BE REMOVED ONCE DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT. REFER TO SPECIFICATIONS.



CATCH BASIN FILTER

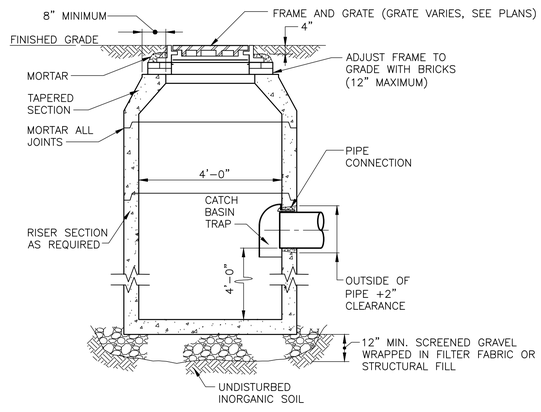
NTS



TREE PROTECTION FENCE

NTS

NOTES:
1. FENCING SHALL BE INSTALLED AROUND PERIMETER OF ALL EXISTING TREES TO BE PRESERVED WITHIN THE LIMIT OF WORK.
2. FENCING MAY BE REMOVED TEMPORARILY, ONLY AS REQUIRED TO PERFORM THE WORK SHOWN ON THE DRAWINGS.
3. FENCING SHALL REMAIN IN PLACE & BE MAINTAINED THROUGHOUT CONSTRUCTION AND THEN REMOVED COMPLETELY.



PRECAST CONCRETE CATCH BASIN

DETAIL E / CD-11

NOT TO SCALE

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HEIL
DRAWN BY: M. CARLSON
SHEET CHK'D BY: J. HEIL
CROSS CHK'D BY: W. HOTZ
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

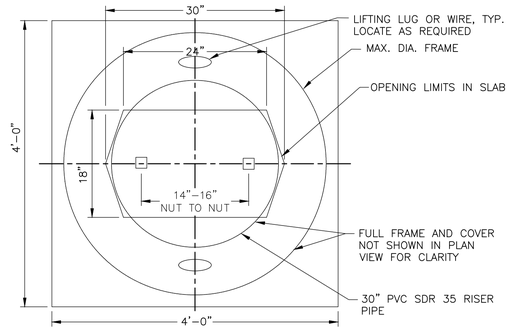
MISCELLANEOUS DETAILS V

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 22074
REGISTERED PROFESSIONAL ENGINEER

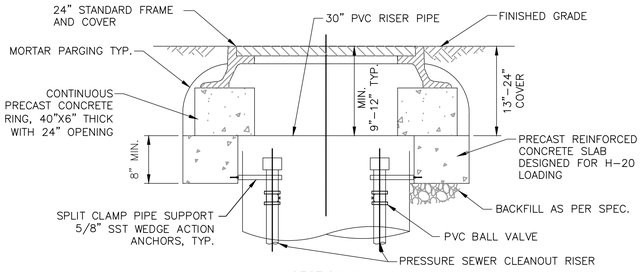
Michael P Guidice
2025.11.18 13:16:13-05'00'

PROJECT NO. 1125-273132
FILE NAME: CD11STDT.DWG

SHEET NO.
CD-11

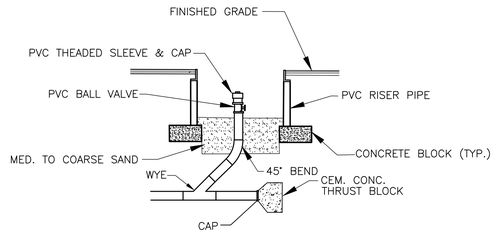


PLAN



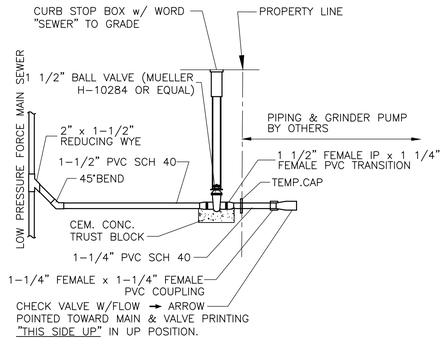
SECTION 1

FRAME & COVER, VALVE RISER AND PRECAST REINFORCED CONCRETE SLAB FOR CLEANOUT/FLUSHING STRUCTURE



CLEAN OUT & FLUSHING STRUCTURE

NOT TO SCALE



LOW PRESURE SEWER CURB STOP

NOT TO SCALE

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DATE: NOVEMBER 2025

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TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MISCELLANEOUS DETAILS VI

COMMONWEALTH OF MASSACHUSETTS
MICHAEL P. GUIDICE JR.
CIVIL
No. 25074
REGISTERED PROFESSIONAL ENGINEER

Michael P Guidice
2025.11.18 13:16:24-05'00'

PROJECT NO. 1125-273132
FILE NAME: CD12STDT.DWG

SHEET NO.
CD-12

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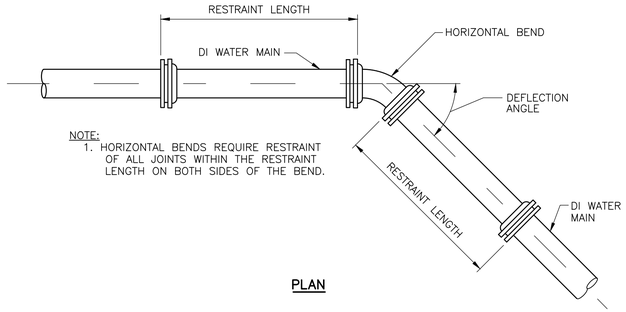
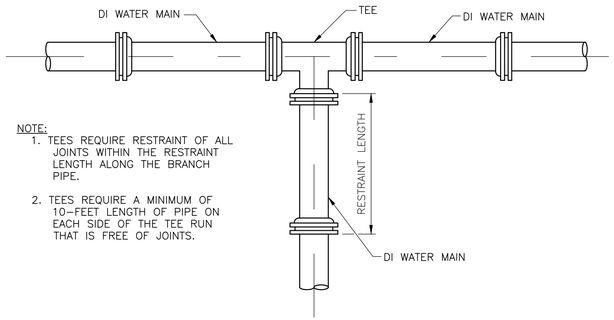


NOTE:
1. HORIZONTAL BENDS REQUIRE RESTRAINT OF ALL JOINTS WITHIN THE RESTRAINT LENGTH ON BOTH SIDES OF THE BEND.

PLAN

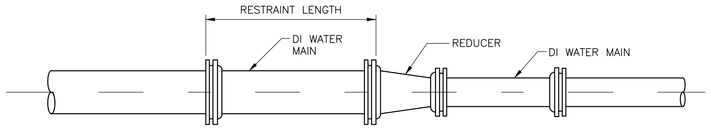
DETAIL FOR HORIZONTAL BENDS
NTS



NOTE:
1. TEES REQUIRE RESTRAINT OF ALL JOINTS WITHIN THE RESTRAINT LENGTH ALONG THE BRANCH PIPE.
2. TEES REQUIRE A MINIMUM OF 10-FEET LENGTH OF PIPE ON EACH SIDE OF THE TEE RUN THAT IS FREE OF JOINTS.

PLAN

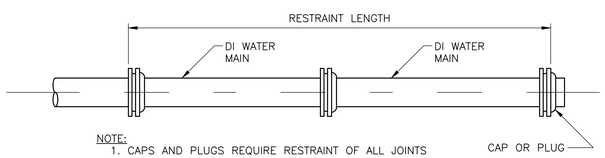
DETAIL FOR TEES
NTS



NOTE:
1. REDUCERS REQUIRE RESTRAINT OF ALL JOINTS WITHIN THE RESTRAINT LENGTH EXTENDING FROM THE REDUCER ALONG THE SIDE OF THE LARGER PIPE.

PLAN

DETAIL FOR REDUCERS
NTS



NOTE:
1. CAPS AND PLUGS REQUIRE RESTRAINT OF ALL JOINTS WITHIN THE RESTRAINT LENGTH EXTENDING FROM THE CAP OR PLUG.

PLAN

DETAIL FOR CAPS AND PLUGS
NTS

RESTRAINED JOINT LENGTH FOR DI PIPE DETAILS
NTS

RESTRAINT LENGTH VALUES FOR DUCTILE IRON HORIZONTAL BENDS

PIPE DIAMETER (INCHES)	BEND ANGLE (DEGREES)	RESTRAINT LENGTH FOR BARE PIPE (FEET)	RESTRAINT LENGTH FOR POLY-WRAPPED PIPE (FEET)
	11.25	2.6	3.3
	22.5	5.3	6.6
4	45	11.1	13.8
	11.25	3.8	4.7
	22.5	7.6	9.4
6	45	15.8	19.6
	11.25	4.9	6.0
	22.5	9.8	12.2
8	45	20.5	25.3
	11.25	5.9	7.3
	22.5	11.9	14.7
10	45	24.8	30.7
	11.25	6.9	8.6
	22.5	14.0	17.3
12	45	29.1	36.0
	11.25	8.9	11
	22.5	18.0	22.2
16	45	37.4	46.3

RESTRAINT LENGTH VALUES FOR DUCTILE IRON TEES

PIPE DIAMETER (INCHES)	BRANCH DIAMETER (INCHES)	RESTRAINT LENGTH FOR BARE PIPE (FEET)	RESTRAINT LENGTH FOR POLY-WRAPPED PIPE (FEET)
4	4	36.1	51.6
	4	33.6	48.0
6	6	53.8	76.8
	4	30.9	44.1
	6	51.9	74.1
8	8	71.4	102.0
	4	28.2	40.3
	6	50.1	71.5
	8	70.0	100.0
10	10	87.9	125.5
	4	25.5	36.4
	6	48.1	68.8
	8	68.6	98.0
	10	86.7	123.8
12	12	104.4	149.1
	4	19.6	28
	6	44.1	63
	8	65.5	93.6
	10	84.2	120.4
	12	102.3	146.2
16	16	136.4	194.8

RESTRAINT LENGTH VALUES FOR DUCTILE IRON REDUCERS

LARGE PIPE DIAMETER (INCHES)	SMALL PIPE DIAMETER (INCHES)	RESTRAINT LENGTH FOR BARE PIPE (FEET)	RESTRAINT LENGTH FOR POLY-WRAPPED PIPE (FEET)
6	4	30.6	43.7
	4	55.3	79.1
8	6	32	46
	4	76	109
	6	57	82
10	8	31	45
	4	96	136
	6	80	114
	8	58	83
12	10	32	46
	4	131.3	187.5
	6	119.7	171.1
	8	103.6	148.1
	10	84.3	120.4
16	12	60.3	86.2

RESTRAINT LENGTH VALUES FOR DUCTILE IRON CAPS AND PLUGS

PIPE DIAMETER (INCHES)	RESTRAINT LENGTH FOR BARE PIPE (FEET)	RESTRAINT LENGTH FOR POLY-WRAPPED PIPE (FEET)
4	41.6	59.5
6	59.3	84.7
8	77.0	110.0
10	93.5	133.6
12	110.0	157.2
16	142.1	203

THRUST BLOCK BEARING AREAS FOR DUCTILE IRON HORIZONTAL BENDS

PIPE DIAMETER (INCHES)	BEND ANGLE (DEGREES)	BEARING AREA (SQUARE FEET)
	11.25	0.3
	22.5	0.5
4	45	1
	11.25	0.5
	22.5	1.1
6	45	2.1
	11.25	0.9
	22.5	1.9
8	45	3.7
	11.25	1.4
	22.5	2.8
10	45	5.6
	11.25	2
	22.5	4
12	45	7.9
	11.25	3.5
	22.5	7.0
16	45	13.6

THRUST BLOCK BEARING AREAS FOR DUCTILE IRON

PIPE DIAMETER (INCHES)	BRANCH DIAMETER (INCHES)	BEARING AREA (SQUARE FEET)
4	4	1.4
	4	1.4
6	6	2.8
	4	1.4
	6	2.8
8	8	4.8
	4	1.4
	6	2.8
	8	4.8
10	10	7.3
	4	1.4
	6	2.8
	8	4.8
	10	7.3
12	12	10.3
	4	1.4
	6	2.8
	8	4.8
	10	7.3
	12	10.3
16	16	17.8

THRUST BLOCK BEARING AREAS FOR DUCTILE IRON

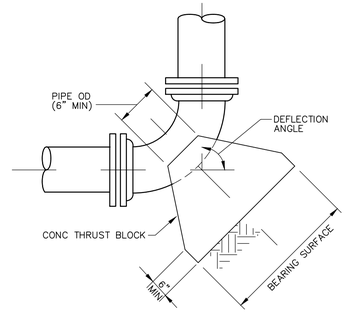
LARGE PIPE DIAMETER (INCHES)	SMALL PIPE DIAMETER (INCHES)	BEARING AREA (SQUARE FEET)
6	4	1.4
	4	3.5
8	6	2
	4	5.9
	6	4.5
10	8	2.4
	4	8.9
	6	7.5
	8	5.4
12	10	3
	4	16.5
	6	15
	8	13
	10	10.6
16	12	7.6

THRUST BLOCK BEARING AREAS FOR DUCTILE IRON

PIPE DIAMETER (INCHES)	BEARING AREA (SQUARE FEET)
4	1.4
6	2.8
8	4.8
10	7.3
12	10.3
16	17.8

NOTE:

RESTRAINT LENGTHS DETERMINED USING DIPRA THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE, SEVENTH EDITION, WITH THE FOLLOWING DESIGN CRITERIA/ASSUMPTIONS:
A. LAYING CONDITIONS: TYPE 2
B. SOIL DESIGNATION: SILT 1
C. DEPTH OF COVER: 5'
D. DESIGN PRESSURE: 150 PSI
E. SAFETY FACTOR: 1.5
F. RUN LENGTH: 10'



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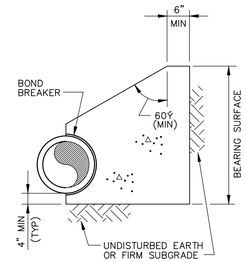
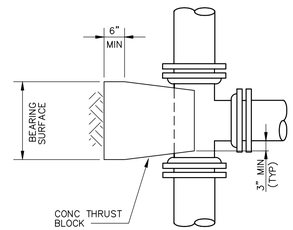
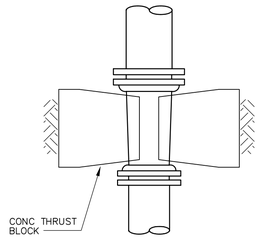


SECTION

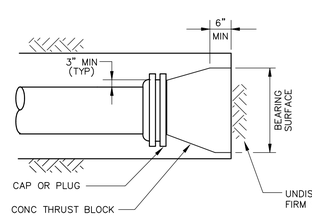
DETAIL FOR HORIZONTAL BENDS



DETAIL FOR TEES



DETAIL FOR REDUCERS



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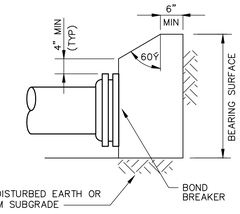

ELEVATION

DETAIL FOR CAPS OR PLUGS

CONCRETE THRUST BLOCK DETAILS
NTS

NOTE:

1. BEARING SURFACE, WHERE POSSIBLE, SHOULD BE PLACED AGAINST UNDISTURBED SOIL. WHERE THIS IS NOT POSSIBLE, THE FILL BETWEEN THE BEARING SURFACE AND UNDISTURBED SOIL MUST BE COMPACTED TO AT LEASE 90% STANDARD PROCTOR DENSITY.
2. THRUST BLOCK HEIGHT SHOULD BE EQUAL TO OR LESS THAN ONE-HALF THE TOTAL DEPTH TO THE BOTTOM OF THE BLOCK, BUT NOT LESS THAN THE PIPE DIAMETER.
3. THRUST BLOCK HEIGHT SHOULD BE SELECTED SUCH THAT THE BLOCK WIDTH VARIES BETWEEN ONE AND TWO TIMES THE BLOCK HEIGHT.
4. CONCRETE FOR THRUST BLOCKS SHALL HAVE A MINIMUM DENSITY OF 120 POUNDS PER CUBIC FOOT AND COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS.
5. BEARING AREA FOR THRUST BLOCKS SHOWN IN THESE TABLES IS FOR TOTAL BEARING AREA.

MICHAEL P. GUIDICE JR. CIVIL No. 22074 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
Michael P Guidice
2025.11.18 13:16:35-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. HERMAN
DRAWN BY: A. VINOD
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. HERMAN
APPROVED BY: M. GUIDICE
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
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Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

THRUST RESTRAINT AND CONCRETE THRUST BLOCK DETAILS

PROJECT NO. 1125-273132
FILE NAME: CD13STDT.DWG
SHEET NO. CD-13

XREFs: [CDMS_2436] Images: []
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TRAFFIC MANAGEMENT NOTES:

STANDARD GENERAL:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
6. MAINTAIN ACCESS TO ABUTTING PROPERTIES TO THE MAXIMUM EXTENT POSSIBLE. CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.
7. THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
8. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
9. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
10. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
11. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
12. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
13. CONTRACTOR SHALL COORDINATE WITH THE TOWN & MASSDOT REGARDING SIGNAL OPERATIONS WITHIN THE CONSTRUCTION ZONES.

PROJECT SPECIFIC GENERAL:

1. THE TRAFFIC MANAGEMENT PLANS CONTAINED HEREIN ARE GIVEN AS A GUIDE FOR TYPICAL WORK ZONE TRAFFIC CONTROL APPLICATIONS FOR THE TYPES OF WORK ANTICIPATED FOR THIS PROJECT. THEY ARE NOT INTENDED TO COVER ALL POSSIBLE CONSTRUCTION OPERATIONS WHICH THE CONTRACTOR MAY CHOOSE TO EMPLOY. WORK ZONE TRAFFIC CONTROL FOR OTHER CONSTRUCTION OPERATIONS OR OTHER TRAFFIC SITUATIONS IF APPLICABLE SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D. AND MASSDOT STANDARDS. THE CONTRACTOR SHALL SUBMIT ALTERNATE TRAFFIC CONTROL PLANS FOR APPROVAL WHEN NECESSARY.
2. WORK WITHIN THE TRAVELED WAY SHALL BE RESTRICTED TO 9AM TO 3PM MON. THROUGH FRI. OR AS OTHERWISE PERMITTED BY THE TOWN OF YARMOUTH AND MASSDOT UNLESS OTHERWISE APPROVED
3. LANE RESTRICTIONS MAY NOT REMAIN DURING NON-WORKING HOURS. AFTER EACH WORKING DAY, TRAFFIC CONTROL DEVICES THAT ARE NOT REQUIRED SHALL BE MOVED OFF THE ROADWAY AND PLACED SO AS NOT TO IMPEDE PEDESTRIAN AREAS, ABUTTER ACCESS OR CAUSE CONFUSION TO MOTORISTS.
4. NIGHT WORK OPERATIONS (IF ALLOWED) SHALL INCLUDE PROPERLY LIT & PLACED LUMINAIRES MEETING THE REQUIREMENTS OF THE MUTCD AND MASSDOT.
5. ALL WORK ZONE AREAS SHALL BE PROTECTED APPROPRIATELY. ALL EXPOSED TRENCHES SHOULD BE STEEL PLATED OR BACKFILLED WHEN NO WORK IS UNDERWAY/PERFORMED AND APPROPRIATELY SIGNED.
6. ALL TEMPORARY SETUPS SHALL BE ADA/AAB COMPLIANT AND SHALL ACCOMMODATE PEDESTRIANS AND BICYCLISTS.
7. DETOURS PROVIDED FOR TURNS LIMITED BY THE WORK AREA. ONE LANE SHALL BE KEPT OPEN ON ROUTE 28 AT ALL TIMES. ALL OTHER DETOURS SHALL BE SUBMITTED TO THE ENGINEER AND TOWN FOR APPROVAL.

CONSTRUCTION SIGNING:

1. THE FIRST CONSTRUCTION SIGN IN A SERIES ON EACH APPROACH TO THE PROJECT SHALL BE FLUORESCENT ORANGE, HIGH PERFORMANCE (OR HIGH DENSITY) SHEETING. FLAGS MAY BE MOUNTED WITH THE FIRST SIGN.
2. ALL CONSTRUCTION SIGNS SHALL BE BLACK LEGEND ON A REFLECTORIZED ORANGE BACKGROUND UNLESS OTHERWISE NOTED AND SHALL CONFORM TO THE MUTCD.
3. EXISTING GUIDE SIGNS SHALL BE TEMPORARILY RESET AS REQUIRED BY THE ENGINEER.
4. ALL SIGNS, INCLUDING EXISTING, THAT ARE NOT REPRESENTATIVE OF ACTUAL WORK CONDITIONS SHALL BE EITHER COVERED OR REMOVED WHEN NOT APPLICABLE.
5. IF USED, W20-4 AND W20-5 SIGNS SHALL BE TAKEN DOWN OR COVERED AT THE CLOSE OF EACH WORK DAY.
6. USE W20-8 SIGNS ONLY WHILE POLICE ARE DIRECTING TRAFFIC. THEY SHALL BE TAKEN DOWN OR COVERED AT THE CLOSE OF EACH WORK DAY.
7. SIGNS MUST BE PROFESSIONALLY LETTERED. NO HANDWRITTEN, PAINTED, OR OTHERWISE MODIFIED SIGNS SHALL BE ALLOWED.
8. WHERE LANE SHIFTS, WORK ZONES, OR OTHER CONSTRUCTION ACTIVITIES INFRINGE UPON ON-STREET PARKING AREAS, THE CONTRACTOR SHALL INSTALL TEMPORARY 'NO PARKING/TOW AWAY ZONE' SIGNS (R8-3/R7-201) AS APPROPRIATE AT LEAST 24 HOURS IN ADVANCE. THE R8-3/R7-201 SIGNS SHALL BE TAKEN DOWN OR COVERED AT THE CLOSE OF EACH DAY UNLESS PARKING RESTRICTIONS ARE PERMITTED TO REMAIN OVERNIGHT AS REQUIRED BY THE ENGINEER.
9. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL CONFORM TO THE MOST RECENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AS AMENDED AND SHOULD BE PLACED ON THE SHOULDER OF THE ROADWAY OR IF PRACTICAL SET WELL AWAY FROM THE TRAVEL LANE. MESSAGE SIGNS SHOULD BE PROTECTED WITH RETROREFLECTIVE TEMPORARY TRAFFIC CONTROL DEVICES WHEN PLACED WITHIN THE AVAILABLE CLEAR ZONE OR ELSE SHIELDED WITH A BARRIER OR CRASH CUSHION. THE LOCATION AND USE OF THE PCMS SHALL BE DETERMINED DURING THE PRE-CONSTRUCTION MEETING OR AS DIRECTED BY THE ENGINEER IN THE FIELD.

GRADE DIFFERENCES:

1. WHERE THERE IS A LONGITUDINAL DIFFERENCE IN ELEVATION BETWEEN THE EXISTING PAVEMENT AND COLD PLANED OR NEW PAVEMENT, THE CONTRACTOR SHALL PATCH A TEMPORARY HOT MIX ASPHALT WEDGE WITH A 12:1 (OR FLATTER) SLOPE FOR SMOOTH TRANSITION. SEE DETAIL ON TM-2.
2. CROSS-SECTIONAL GRADE DIFFERENCES IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF REFLECTORIZED DRUMS.
3. CROSS-SECTIONAL GRADE DIFFERENCES IN EXCESS OF 4" DURING NON-WORKING HOURS SHALL BE PROTECTED BY BACKFILLING WITH A WEDGE OF EARTHWORK TO BE COMPACTED AT 4:1 SLOPE AND WILL ALSO REQUIRE DELINEATION BY USE OF DRUMS.
4. A MINIMUM SLOPE OF 4:1 MUST BE MAINTAINED AFTER WORKING HOURS DURING SUBBASE AND BASE COURSE INSTALLATION ALONG EDGE OF THE TRAVELWAY. A MINIMUM SLOPE OF 8:1 MUST BE MAINTAINED ON ALL ABUTTED ACCESS DRIVES AND A MINIMUM SLOPE OF 12:1 MUST BE MAINTAINED ON ALL SIDEWALKS.

PAVEMENT MARKINGS:

1. PAVEMENT MARKINGS WHICH ARE NO LONGER APPLICABLE SHALL BE REMOVED. APPLY TEMPORARY MARKINGS WHERE SHOWN ON THE TRAFFIC MANAGEMENT PLANS AND AS REQUIRED BY THE ENGINEER.
2. EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROLS SHALL BE REMOVED, AS REQUIRED BY THE ENGINEER FOR THE FULL DURATION OF THE PHASE IN PROGRESS. TEMPORARY PAINTED SHALL BE USED AS NECESSARY FOR ALL PHASES OF CONSTRUCTION.
3. PAVEMENT MARKINGS SHOWN ON STANDARD SETUPS ARE FOR ILLUSTRATIVE PURPOSES ONLY. ROADS IN THE PROJECT AREA MAY NOT BE MARKED.

TRAFFIC CONTROL SETUP PROCEDURES:

THE CONTRACTOR SHALL FOLLOW THESE PROCEDURES FOR THE SETUP OF TRAFFIC CONTROL:

1. USE A MOBILE TRUCK WITH A FLASHING ARROW PANEL SET TO CAUTION MODE AS A SHADOW VEHICLE BEHIND WORKERS OR WORK VEHICLES.
2. INSTALL TRAFFIC CONTROL SIGNS ON THE SIDE OF THE ROADWAY.
3. EITHER POLICE DETAIL OR FLAGGER SHALL BE PRESENT AT THE BEGINNING OF THE SETUP WHILE TRAFFIC CONTROL DEVICES ARE BEING INSTALLED AS REQUIRED BY SPECIFIC DETAILS ON TM-3.
4. SETUP TRAFFIC CONTROL DEVICES IN ROADWAY INCLUDING, BUT NOT LIMITED TO: TRAFFIC CONES, DRUMS, AND ARROW PANELS.

PORTABLE CHANGEABLE MESSAGE SIGNS LEGEND:

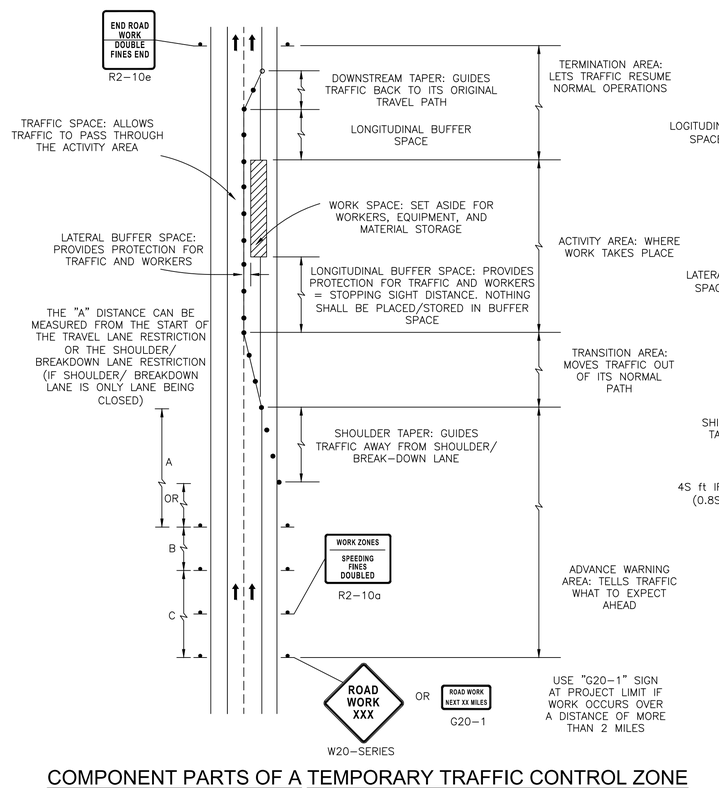
THE SUGGESTED MESSAGE 2 WEEKS IN ADVANCE:

① XX ST ROAD WORK

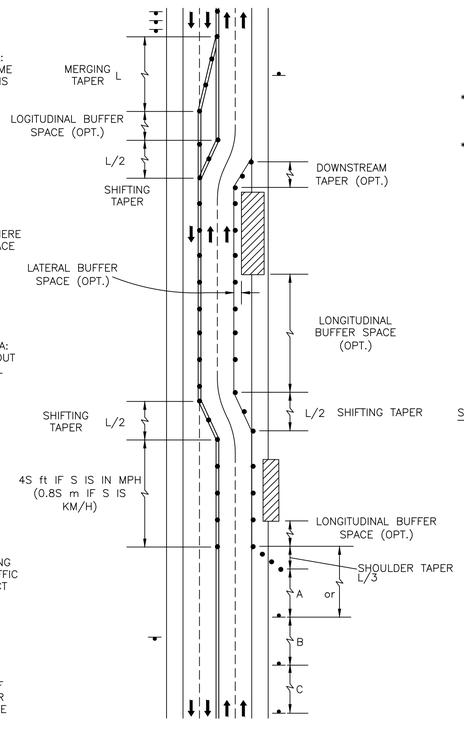
② BEGINS X/XX/XX

LEGEND:

- CHANNELIZING DEVICE
- (P) POLICE DETAIL
- F FLAGGER DETAIL
- TYPE III BARRICADE
- OR PORTABLE CHANGEABLE MESSAGE SIGN
- WORK ZONE
- DIRECTION OF TRAFFIC
- IMPACT ATTENUATOR
- MEDIAN BARRIER
- MEDIAN BARRIER WITH WARNING LIGHTS
- WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAFFIC OR PEDESTRIAN SIGNAL
- SIGN
- LUMINAIRE



COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL ZONE



TYPES OF TAPERS AND BUFFER SPACES

FORMULAS FOR DETERMINING TAPER LENGTHS

SPEED LIMIT (S)	TAPER LENGTH (L) FEET
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	$L = WS$

WHERE: L = TAPER LENGTH IN FEET

W = WIDTH OF OFFSET IN FEET

S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICAPATED OPERATING SPEED IN MPH

Source: Table 6C-4 MUTCD LATEST EDITION

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

TYPE OF TAPER	TAPER LENGTH (L)
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FT MIN. 100 FT MAX.
DOWNSTREAM TAPER	50 FT MIN. 100 FT MAX. PER LANE

Source: Table 6C-3 MUTCD LATEST EDITION

SUGGESTED WORK ZONE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS **		
	A	B	C
LOW SPEED LOCAL OR LOW VOLUME ROADWAYS*	100	100	100
HIGH SPEED LOCAL OR LOW VOLUME ROADWAYS*	350	350	350
MOST OTHER ROADWAYS*	500	500	500
FREEWAYS AND EXPRESSWAYS*	1,000	1,500	2,640

* MOST OTHER ROADWAYS: ROUTE 28, MAIN STREET, IYANNOUGH ROAD, CAMP STREET, BAXTER AVENUE, TOWN BROOK ROAD, AND LEWIS ROAD.
LOCAL OR LOW VOLUME ROADWAYS (LOW SPEED): ALL OTHER ROADS

** DISTANCES ARE SHOWN IN FEET. THE COLUMN HEADINGS A, B, AND C ARE THE DIMENSIONS SHOWN IN THE DETAIL/ TYPICAL SETUP FIGURES. THE A DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN. THE B DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGNS. THE C DIMENSION IS THE DISTANCE BETWEEN THE SECOND AND THIRD SIGNS. (THE "THIRD" SIGN IS THE FIRST ONE TYPICALLY ENCOUNTERED BY A DRIVER APPROACHING A TEMPORARY TRAFFIC CONTROL (TTC) ZONE.)

THE "THIRD" SIGN ABOVE IS TYPICALLY REFERRED TO AS AN "ADVANCE WARNING" SIGN ON THE TTCP SETUPS. THESE ADVANCE WARNING SIGNS ARE LOCATED PRIOR TO THE PROJECT LIMITS ON ALL APPROACHES (i.e. THE W20-1 SERIES (ROAD WORK XX FT) SIGNS), AND USUALLY REMAIN FOR THE DURATION OF THE PROJECT. ADDITIONAL SIGNS (i.e. "RIGHT LANE CLOSED 1 MILE" AND "LEFT LANE CLOSED 1 MILE") HAVE BEEN SHOWN IN SOME FIGURES AS EXAMPLES OF REINFORCEMENT SIGN PLACEMENT BUT ARE USED IN RARE OCCASIONS.

THE FIRST AND SECOND WARNING SIGNS ABOVE ARE REFERRED TO AS THE OPERATIONAL (DAY-TO-DAY) WORK ZONE SIGNS AND MAY BE MOVED DEPENDING ON WHERE THE SPECIFIC ROADWAY WORK FOR THAT DAY IS LOCATED.

R2-10a SIGNS SHALL BE PLACED BETWEEN THE SECOND AND THIRD SIGNS AS DESCRIBED ABOVE.

R2-10a, R2-10e, AND W20-1 SERIES SIGNS ARE TO BE INCLUDED ON ALL DETAILS/TYPICAL SETUPS.

Source: Table 6C-1 MUTCD LATEST EDITION

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

SPEED* (mph)	DISTANCE (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

*POSTED SPEED, OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED

THESE VALUES MAY BE USED TO DETERMINE THE LENGTH OF LONGITUDINAL BUFFER SPACES.

THE DISTANCES IN THE ABOVE CHART REPRESENT THE MINIMAL VALUES FOR BUFFER SPACING.

Source: Table 6C-2 MUTCD LATEST EDITION

COMMONWEALTH OF MASSACHUSETTS
WILLIAM G STERRITT
No. 56226
PROFESSIONAL ENGINEER

William Sterritt
2025.11.18 20:56:12-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: R. HALZACK
DRAWN BY: R. HALZACK
SHEET CHK'D BY: W. STERRITT
CROSS CHK'D BY: S. HARLEY
APPROVED BY: W. STERRITT
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

TRAFFIC MANAGEMENT PLANS
STANDARD NOTES

PROJECT NO. 1125-273132
FILE NAME: T002TMDT
SHEET NO.
TM-1

XREFs: [CDMS_2436, xsvpl001, TEP0001, cstwp001, cstwp002, cstwp003, cwtwp001] Images: []
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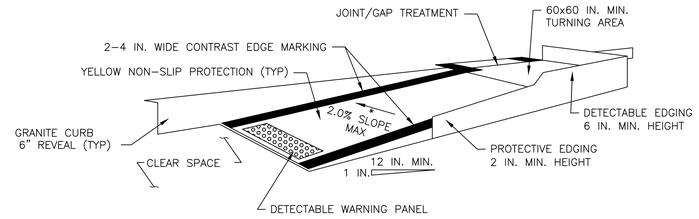
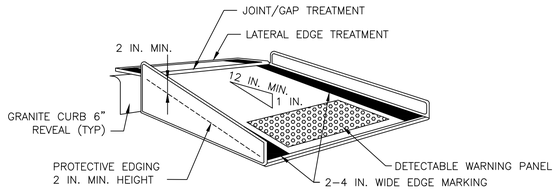
NOTES:

1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON–SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
5. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS–SLOPE.
6. CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.



TEMPORARY CURB RAMP – PARALLEL TO CURB



TEMPORARY CURB RAMP – PERPENDICULAR TO CURB

PED-1 TEMPORARY CURB RAMP - TYPE 1

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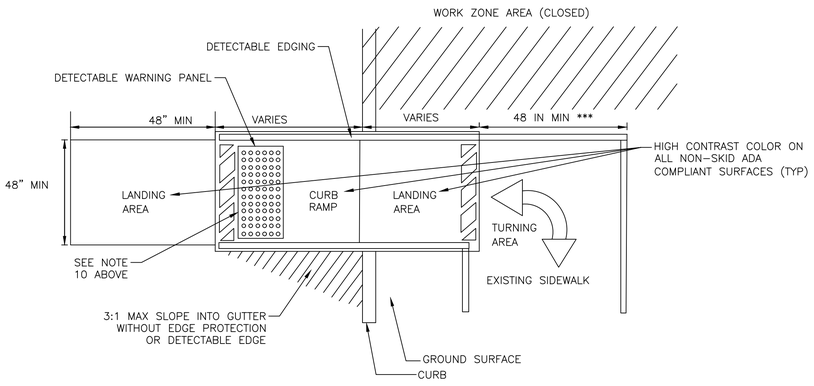
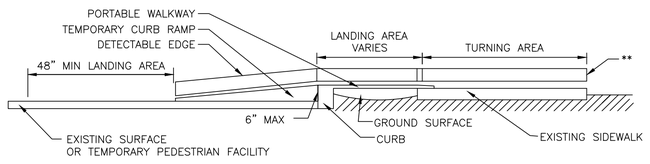


PLAN

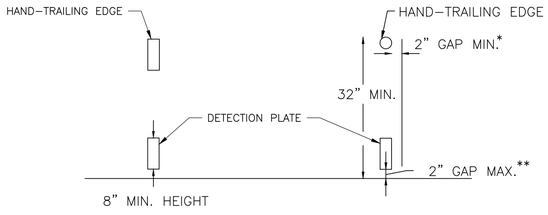


SECTION

PED-2 TEMPORARY CURB RAMP - TYPE 2

N.T.S.

* LANDING AREA USED TO OVERLAP NON–ADA COMPLIANT SURFACES.
** DETECTABLE EDGE REMOVED IF A CONTINUOUS SIDEWALK
*** 60 IN. IF AN OBSTRUCTION IS AT BACK OF SIDEWALK



CROSS SECTION VIEW

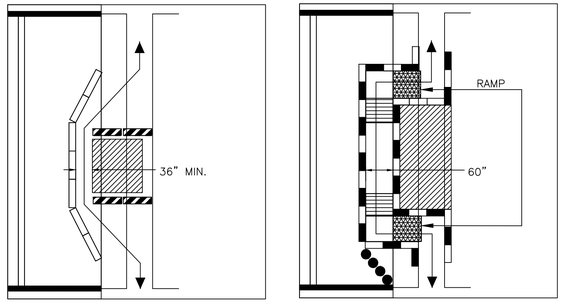
PEDESTRIAN CHANNELIZING DEVICE

N.T.S.

NOTES:

* THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND–TRAILING EDGE AND ITS SUPPORT.

** A MAXIMUM 2 INCH GAP BETWEEN THE BOTTOM OF THE BOTTOM RAIL AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.



- WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A TTC ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED AND THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
- A PEDESTRIAN CHANNELIZING DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ACROSS THE FULL WIDTH OF THE CLOSED SIDEWALK.
- WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT (SEE TEMPORARY CURB RAMP DETAILS).
- THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
- THE PROTECTIVE REQUIREMENTS OF A TTC SITUATION HAVE PRIORITY IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN THIS SITUATION SHOULD BE BASED ON ENGINEERING JUDGMENT.
- AUDIBLE INFORMATION DEVICES SHOULD BE CONSIDERED WHERE MIDBLOCK CLOSINGS AND CHANGED CROSSWALK AREAS CAUSE INADEQUATE COMMUNICATION TO BE PROVIDED TO PEDESTRIANS WHO HAVE VISUAL DISABILITIES.

AUDIBLE DEVICES

FOR LONG TERM SIDEWALK CLOSURES (AT A MINIMUM OVERNIGHT) A FORM OF SPEECH MESSAGING FOR PEDESTRIANS WITH VISUAL DISABILITIES SHALL BE PROVIDED. AUDIBLE INFORMATION DEVICES SUCH AS DETECTABLE BARRIERS OR BARRICADES AND OTHER PASSIVE PEDESTRIAN ACTIVATION (MOTION ACTIVATED) DEVICES SHOULD BE CONSIDERED FOR THESE CASES. THESE AUDIBLE DEVICES CAN BE MOUNTABLE OR STAND ALONE.

PED-3

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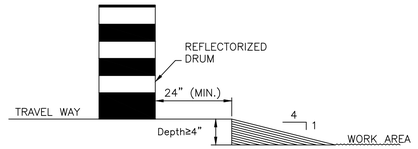

LATERAL DROP–OFF DETAIL

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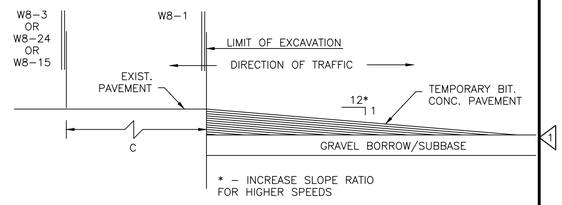

LONGITUDINAL DROP–OFF DETAIL

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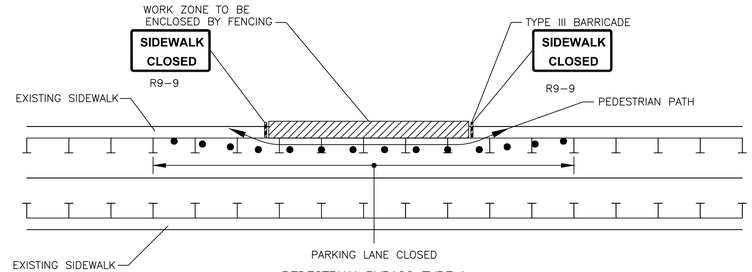
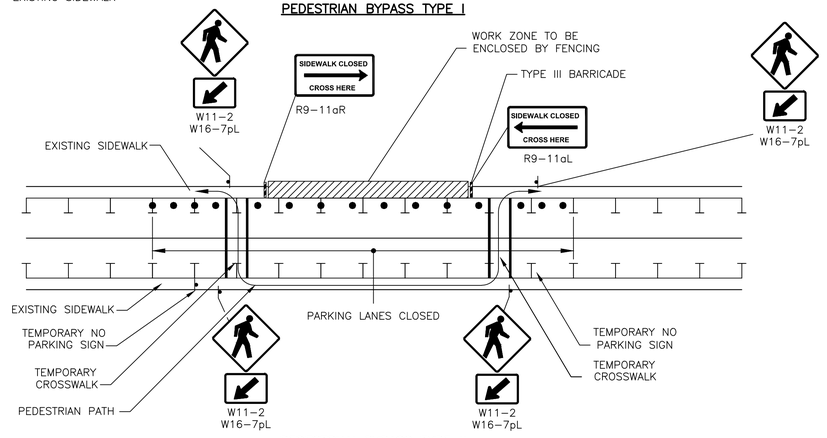


PEDESTRIAN BYPASS TYPE I



PEDESTRIAN BYPASS TYPE II

NOTES

1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
2. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN. VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHOULD BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS TYPE II, AND AS DIRECTED BY THE ENGINEER. TEMPORARY CURB RAMPS WILL BE REQUIRED AT ALL TEMPORARY CROSSWALK LOCATIONS.
5. BYPASS IS TO BE USED IN CONJUCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE ENGINEER.
6. THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THIS WALKWAY EXCEEDS 200 FEET THEN A 5 FOOT X 5 FOOT PASSING ZONE. (FOR SHORT TERM SETUPS < 10 HOURS, THIS CONDITION MAY BE WAIVED. A NOTE WOULD NEED TO BE INCLUDED IN THE TTCP THAT STATES HOW THE CONTRACTOR SHOULD ADDRESS THIS ISSUE.)

PEDESTRIAN BYPASS

N.T.S.

COMMONWEALTH OF MASSACHUSETTS
WILLIAM G STERRITT
No. 56226
PROFESSIONAL ENGINEER

William Sterritt
2025.11.18 20:56:30-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: R. HALZACK
DRAWN BY: R. HALZACK
SHEET CHK'D BY: W. STERRITT
CROSS CHK'D BY: S. HARLEY
APPROVED BY: W. STERRITT
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

TRAFFIC MANAGEMENT PLANS
STANDARD SETUPS

PROJECT NO. 1125–273132
FILE NAME: T002TMDT
SHEET NO.
TM-2

XREFs: [C1–CDMS_2436_CDMS_2436_TEP0001_XGTWP001, cstwp001, cstwp002, cstwp003, cwtwp001, 608264_SV, CBSPL000, CSTPL062, CBSPL001, 608264_H0(XR01), 608264_H0(XR01), 608264_H0(XR01), 608264_HD(BRIDGE PROJ), xsvpl001, C001STPP] Images: []
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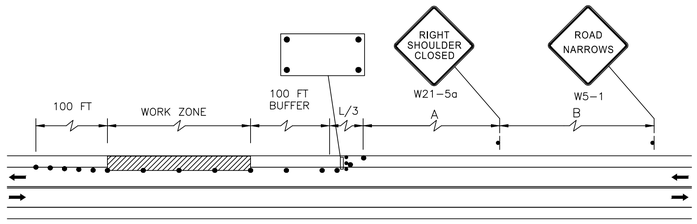
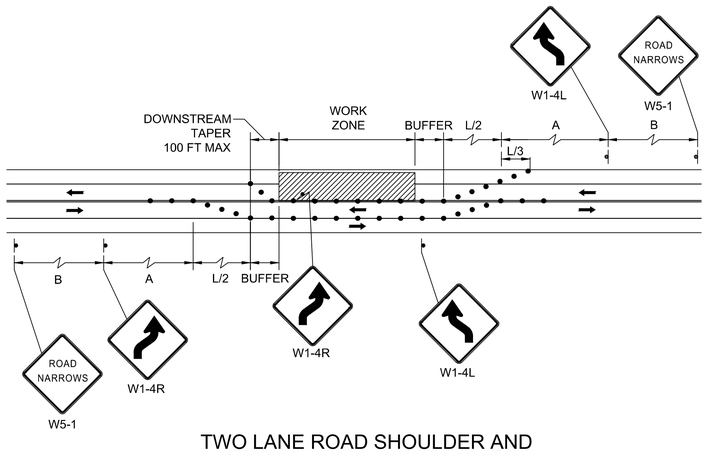


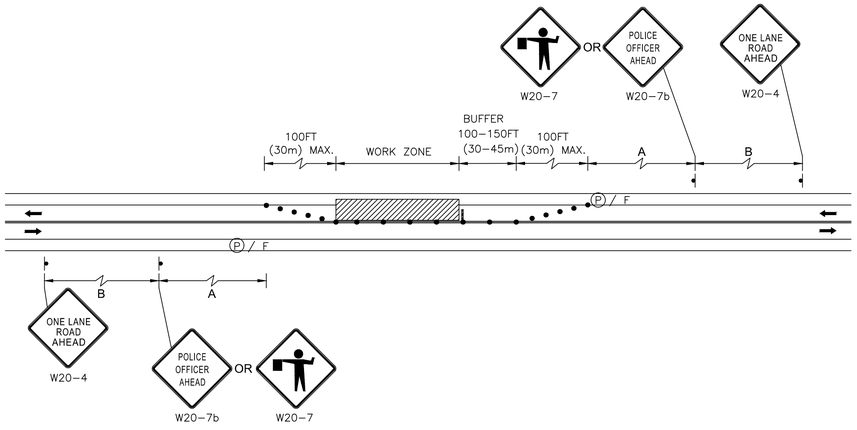
TWO LANE ROAD SHOULDER CLOSED

N.T.S.



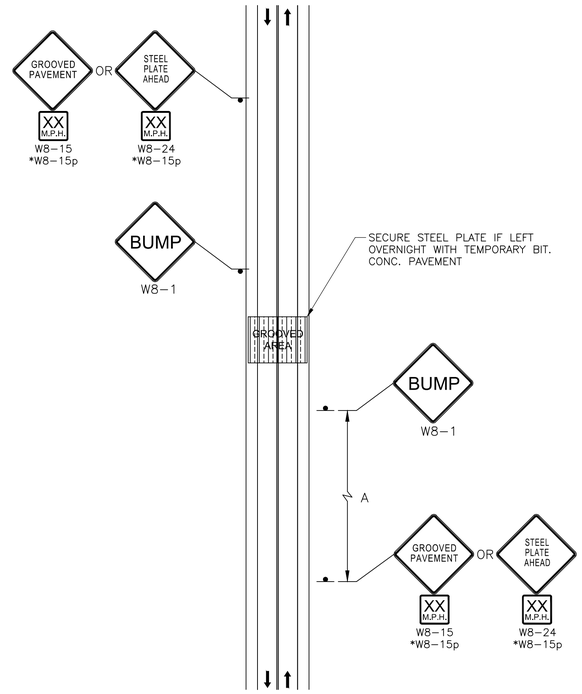
TWO LANE ROAD SHOULDER AND TRAVEL LANE CLOSED

N.T.S.



TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC

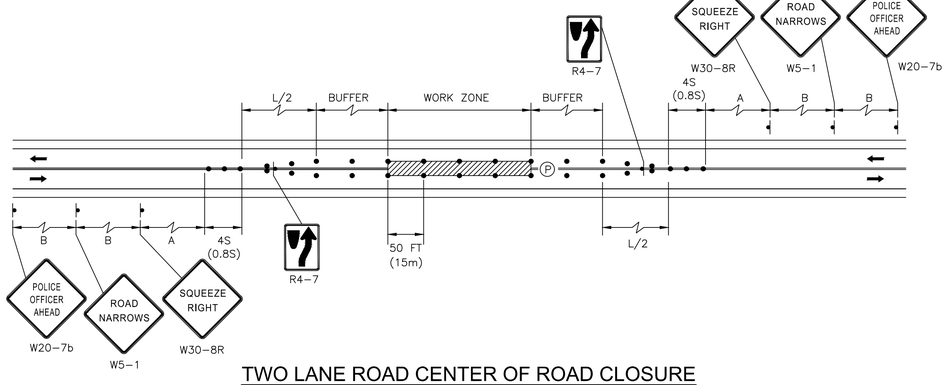
N.T.S.



*FOR SYMBOL SEE MUTCD LATEST EDITION FIGURE 6F-4

SCARIFIED PAVEMENT / STEEL PLATE

N.T.S.



TWO LANE ROAD CENTER OF ROAD CLOSURE

N.T.S.

GUIDELINE FOR CHANNELIZATION

MINIMUM NUMBER OF CHANNELIZING DEVICES NEEDED									
TAPER LENGTH (ft.)	20 MPH			35 MPH			45 MPH		
	TAPER	BUFFER AREA	WORK AREA	TAPER	BUFFER AREA	WORK AREA	TAPER	BUFFER AREA	WORK AREA
100	5	3	ONE DRUM EVERY 20' (MAX.)	5	3	ONE DRUM EVERY 35' (MAX.)	5	3	ONE DRUM EVERY 45' (MAX.)
150	8	4		6	3		6	3	
200	10	5		7	4		6	4	
250	12	6		9	5		7	4	
300	15	7		10	5		8	4	
350	18	9		11	6		9	5	
400	20	10		13	7		10	6	
450	22	11		14	7		11	6	
500	25	12		16	8		13	7	
550	27	13		17	8		14	7	
600	30	15		19	10		15	9	
650	32	16		20	10		16	9	

NOTE: MINIMUM SPACING OF DRUMS MAY VARY AND SHALL BE DETERMINED IN THE FIELD.

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: R. HALZACK
DRAWN BY: R. HALZACK
SHEET CHK'D BY: W. STERRITT
CROSS CHK'D BY: S. HARLEY
APPROVED BY: W. STERRITT
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

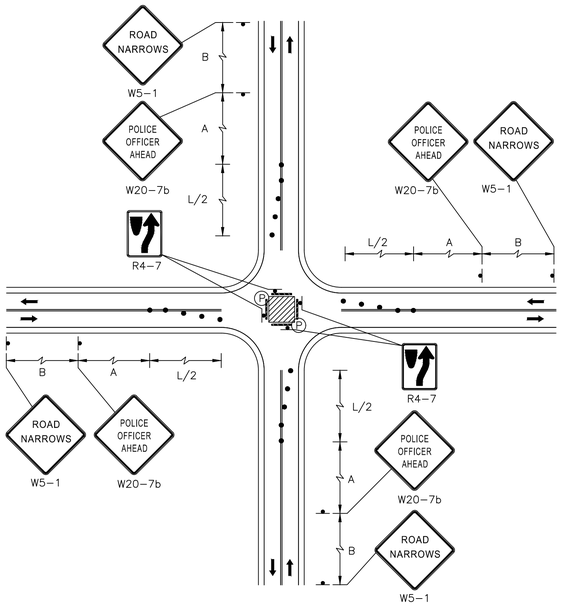
TRAFFIC MANAGEMENT PLANS
STANDARD SETUPS

COMMONWEALTH OF MASSACHUSETTS
WILLIAM G STERRITT
No. 56226
PROFESSIONAL ENGINEER

William Sterritt
2025.11.18 20:57:13-05'00'

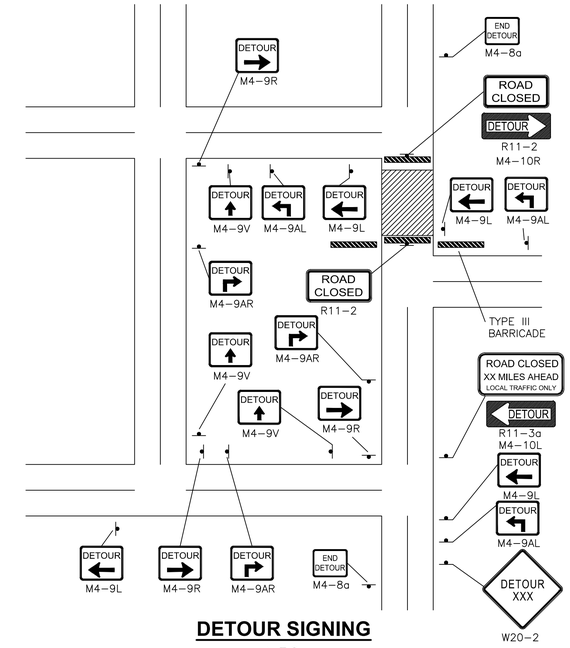
PROJECT NO. 1125-273132
FILE NAME: TO02TMDT

SHEET NO.
TM-3



SINGLE LANE APPROACH CENTER CLOSURE

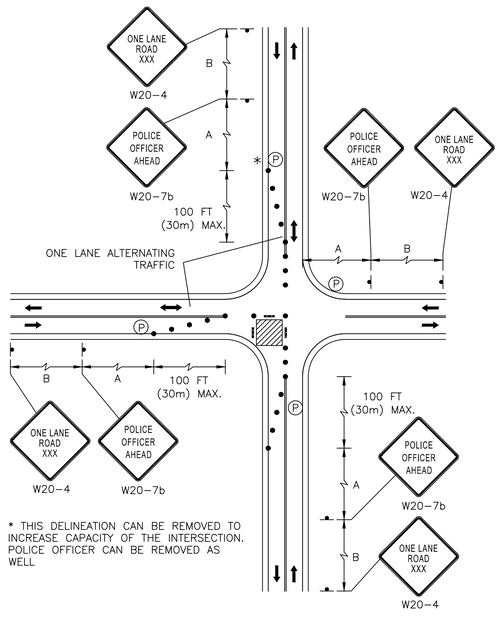
N.T.S.



DETOUR SIGNING

N.T.S.

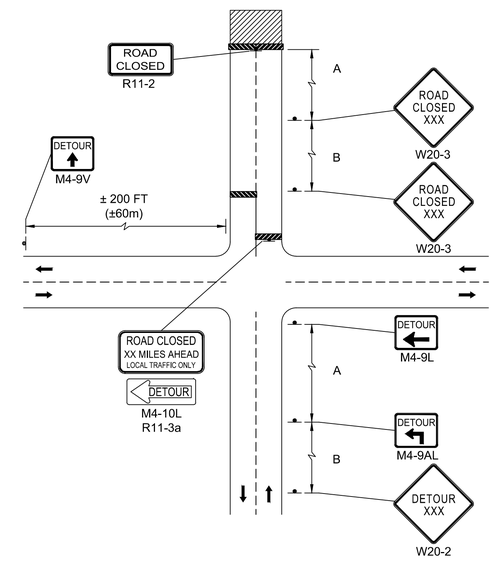
NOTE: SIGNAGE SHOWN FOR ONE DIRECTION OF TRAVEL, SIGNAGE MUST BE PROVIDED FOR TRAFFIC APPROACHING THE DETOUR FROM BOTH DIRECTIONS OF TRAVEL.



* THIS DELINEATION CAN BE REMOVED TO INCREASE CAPACITY OF THE INTERSECTION. POLICE OFFICER CAN BE REMOVED AS WELL

SINGLE LANE APPROACH ONE QUADRANT CLOSURE

N.T.S.



DETOUR ADVANCE SIGNING

N.T.S.

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APPROVED BY: W. STERRITT
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

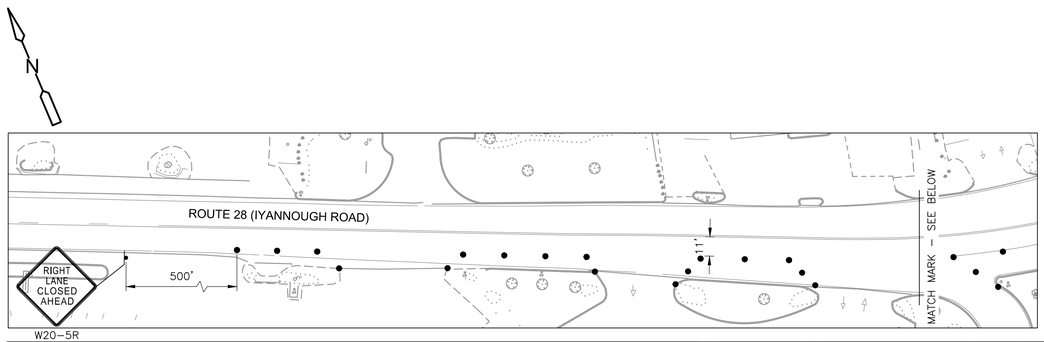
TRAFFIC MANAGEMENT PLANS
STANDARD SETUPS

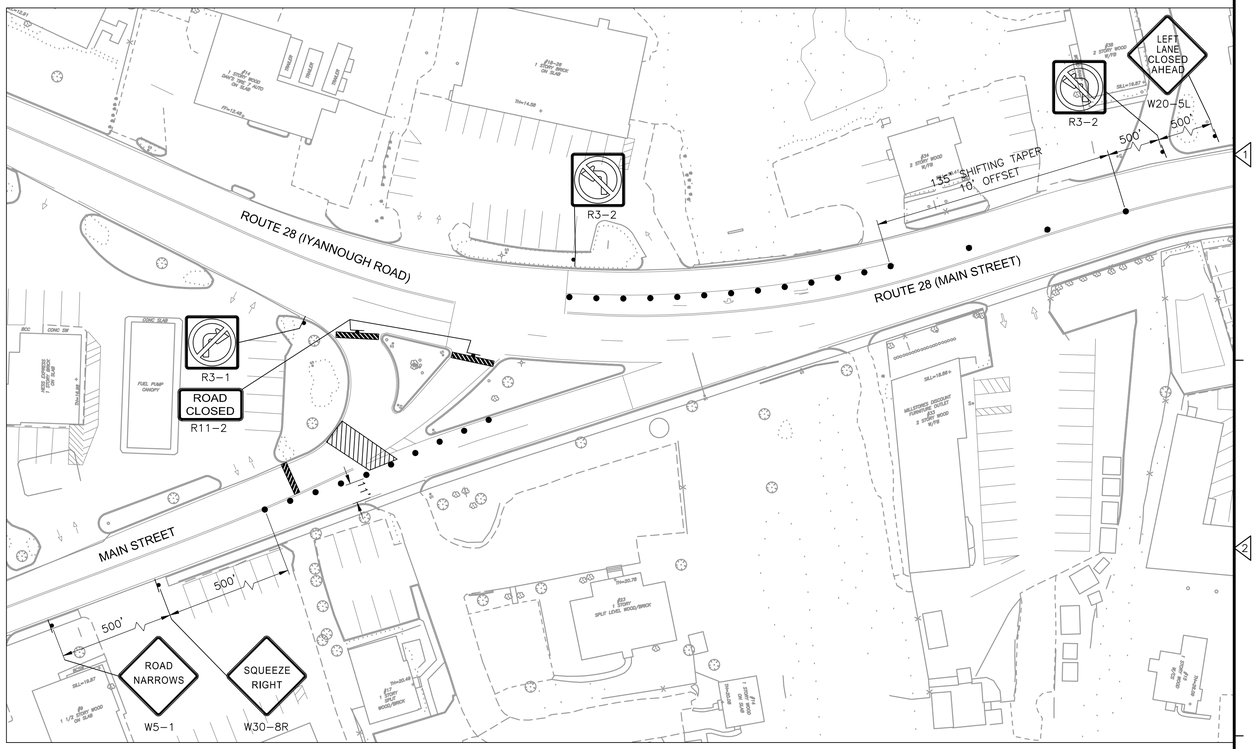
COMMONWEALTH OF MASSACHUSETTS
WILLIAM G STERRITT
No. 56226
PROFESSIONAL ENGINEER

William Sterritt
2025.11.18 20:57:25-05'00'

PROJECT NO. 1125-273132
FILE NAME: T002TMDT

SHEET NO.
TM-4

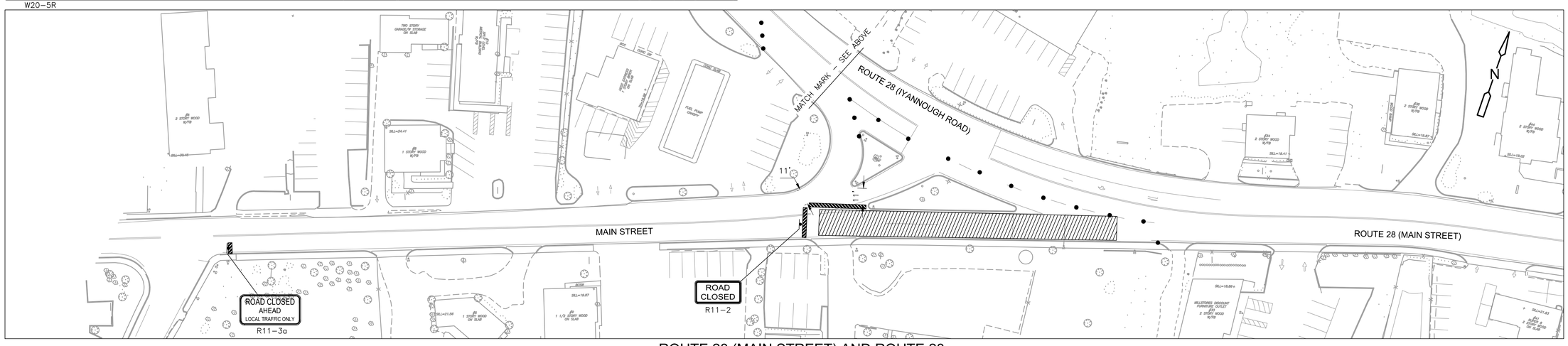




ROUTE 28 (MAIN STREET) AND ROUTE 28 WESTERN CLOSURE PLAN

SCALE - 1" = 40'

NOTES:
1) SEE DETOUR PLAN ON TM-6 FOR MAIN STREET.
2) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 2.



ROUTE 28 (MAIN STREET) AND ROUTE 28 CENTER CLOSURE PLAN

SCALE - 1" = 40'

NOTES:
1) SEE DETOUR PLAN ON TM-6 FOR MAIN STREET.
2) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 2.

COMMONWEALTH OF MASSACHUSETTS
WILLIAM G STERRITT
No. 56226
PROFESSIONAL ENGINEER

William Sterritt
2025.11.18 20:57:36-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: R. HALZACK
DRAWN BY: R. HALZACK
SHEET CHK'D BY: W. STERRITT
CROSS CHK'D BY: S. HARLEY
APPROVED BY: W. STERRITT
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

TRAFFIC MANAGEMENT PLANS

PROJECT NO. 1125-273132
FILE NAME: T002TMDT
SHEET NO.
TM-5

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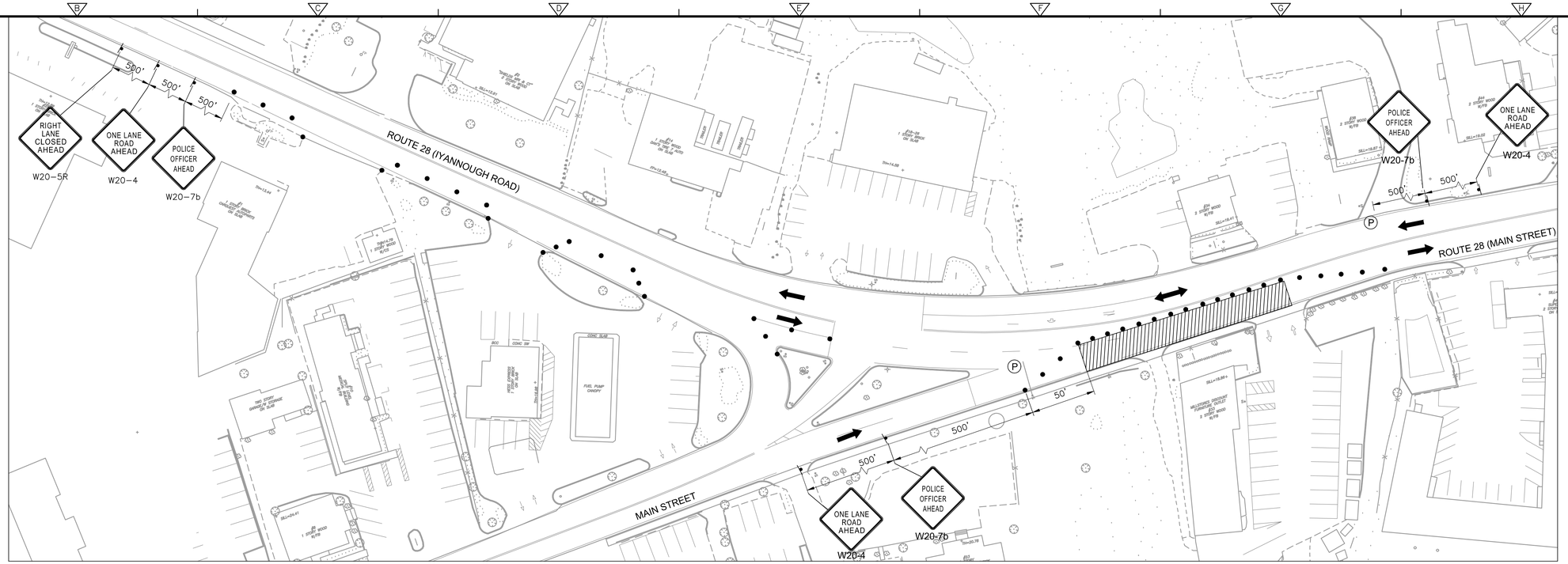
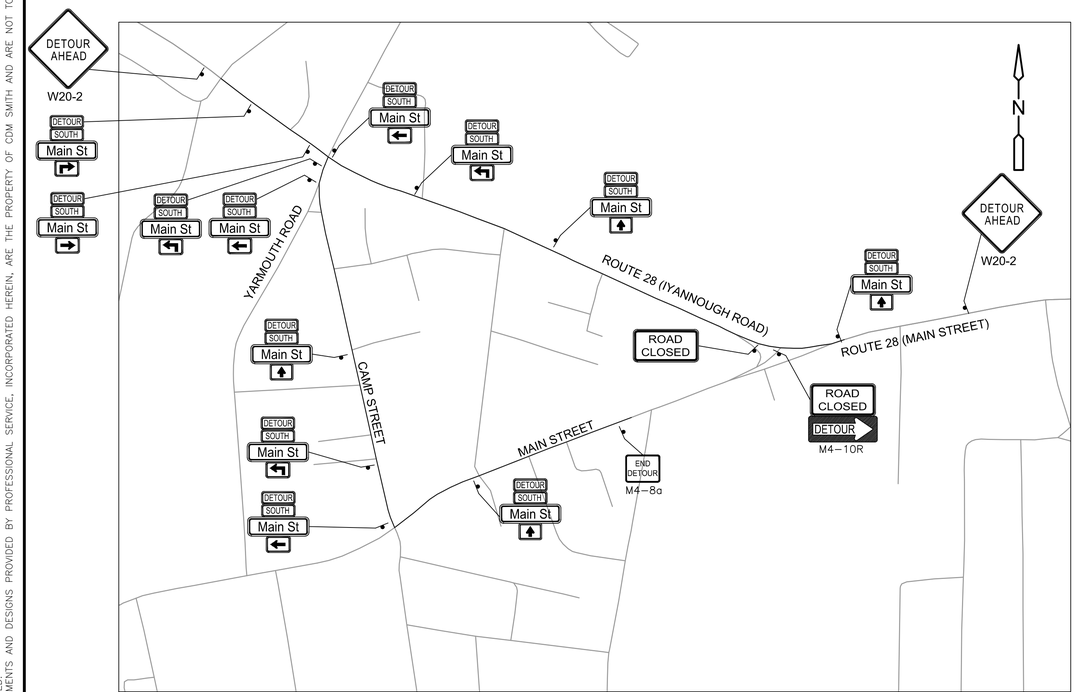


NOTES:
1) DEACTIVATE EXISTING TRAFFIC SIGNAL DURING THIS CONSTRUCTION PHASE.
2) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 2.

ROUTE 28 (MAIN STREET) AND ROUTE 28 EASTERN CLOSURE PLAN

SCALE - 1" = 40'



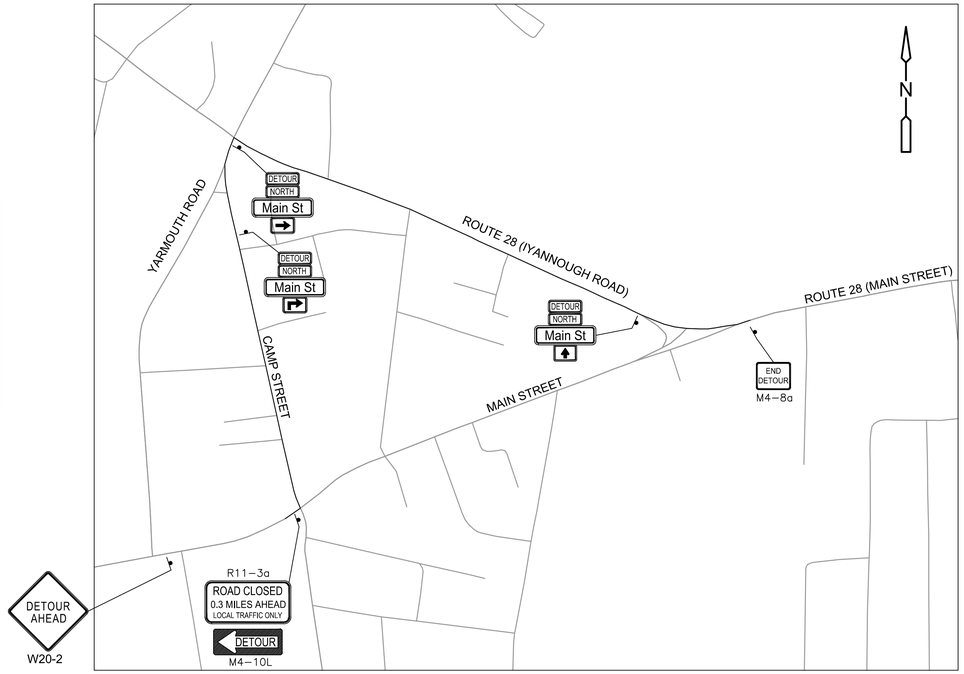
NOTES:
1) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 2.

ROUTE 28 (MAIN STREET) AND ROUTE 28 WESTERN CLOSURE DETOUR

SCALE - 1" = 300'

LEGEND

DETOUR	M4-8
NORTH	M3-1
SOUTH	M3-3
1A	M1-5
	M5-1R
	M5-1L
	M6-1R
	M6-1L
	M6-2R
	M6-2L
	M6-3



NOTES:
1) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 2.

ROUTE 28 (MAIN STREET) AND ROUTE 28 CENTER CLOSURE DETOUR

SCALE - 1" = 40'

COMMONWEALTH OF MASSACHUSETTS
WILLIAM G STERRITT
No. 56226
PROFESSIONAL ENGINEER

William Sterritt
2025.11.18 20:57:55-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

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APPROVED BY: W. STERRITT
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

TRAFFIC MANAGEMENT PLANS

PROJECT NO. 1125-273132
FILE NAME: T002TMDT
SHEET NO.
TM-6

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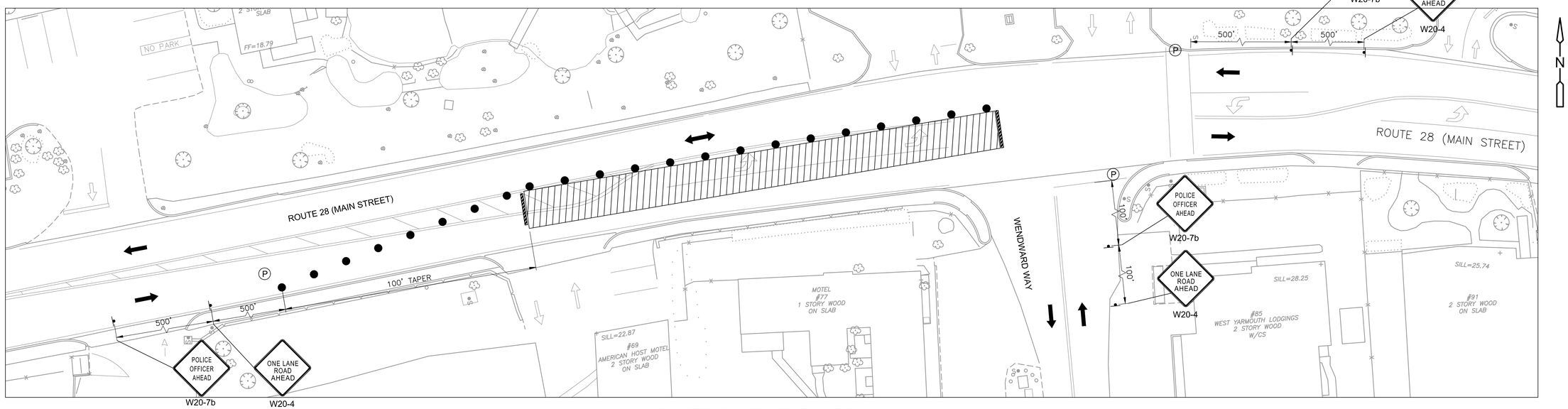
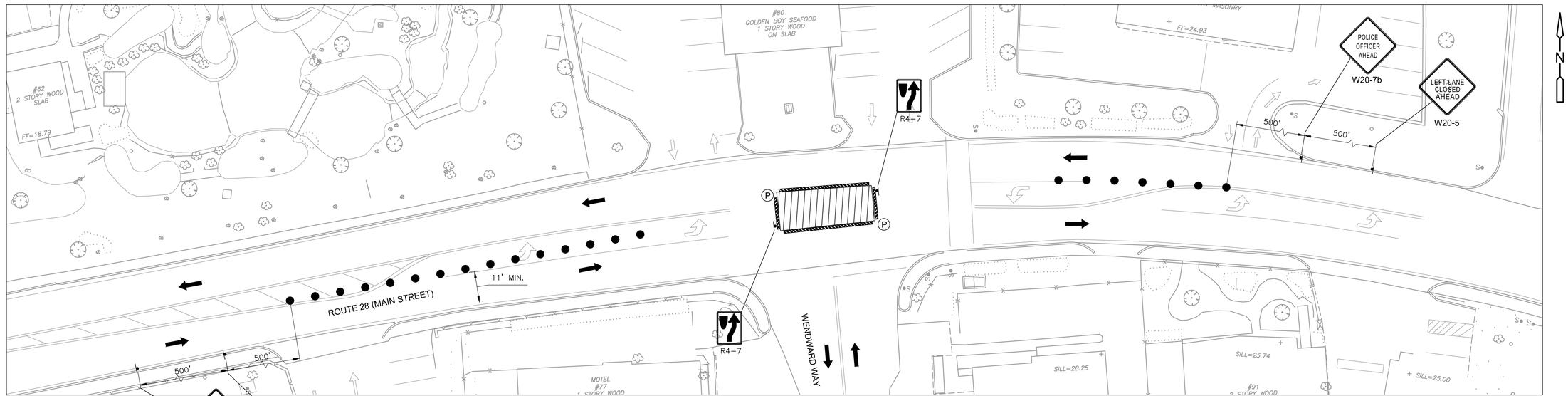


ROUTE 28 AND WENDWARD WAY
WESTERN CLOSURE PLAN

SCALE - 1" = 40'

NOTES:
1) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 2.



ROUTE 28 AND WENDWARD WAY
CENTER CLOSURE PLAN

SCALE - 1" = 40'

NOTES:
1) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 2.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: R. HALZACK
DRAWN BY: R. HALZACK
SHEET CHK'D BY: W. STERRITT
CROSS CHK'D BY: S. HARLEY
APPROVED BY: W. STERRITT
DATE: NOVEMBER 2025

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3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
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TRAFFIC MANAGEMENT PLANS

COMMONWEALTH OF MASSACHUSETTS
WILLIAM G STERRITT
No. 56226
PROFESSIONAL ENGINEER
William Sterritt
2025.11.18 20:58:44-05'00'

PROJECT NO. 1125-273132
FILE NAME: T002TMDT
SHEET NO.
TM-7

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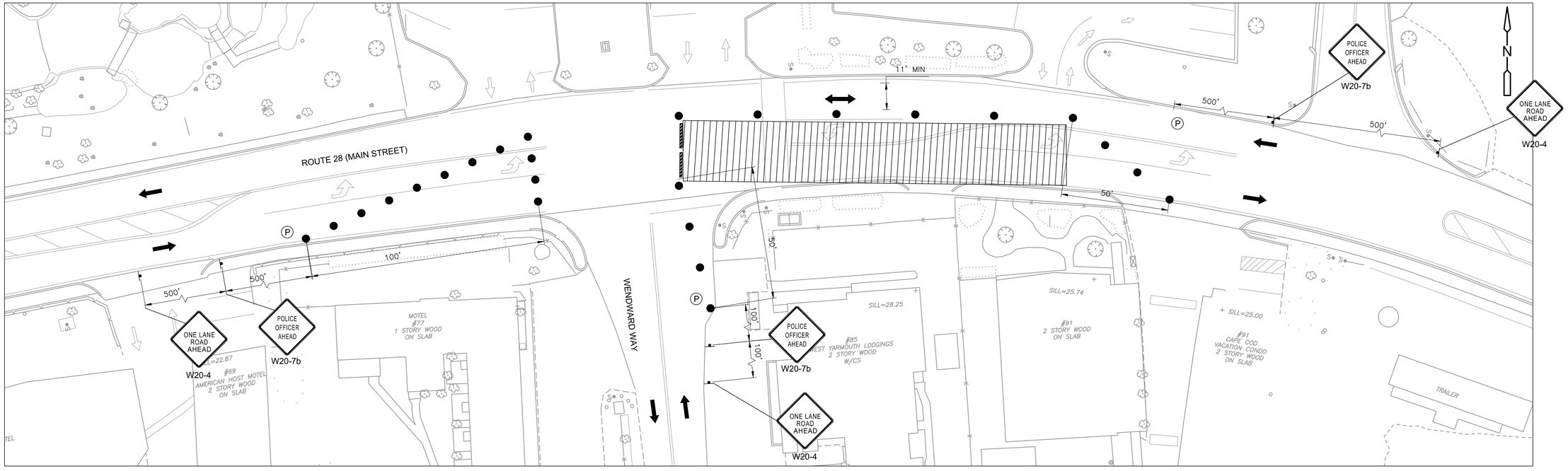

ROUTE 28 AND WENDWARD WAY
EASTERN CLOSURE PLAN

SCALE - 1" = 40'

NOTES:
1) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 2.

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WILLIAM G STERRITT
No. 56226
PROFESSIONAL ENGINEER

William Sterritt
2025.11.18 20:58:55-05'00'

PROJECT NO. 1125-273132
FILE NAME: T002TMDT

SHEET NO.
TM-8

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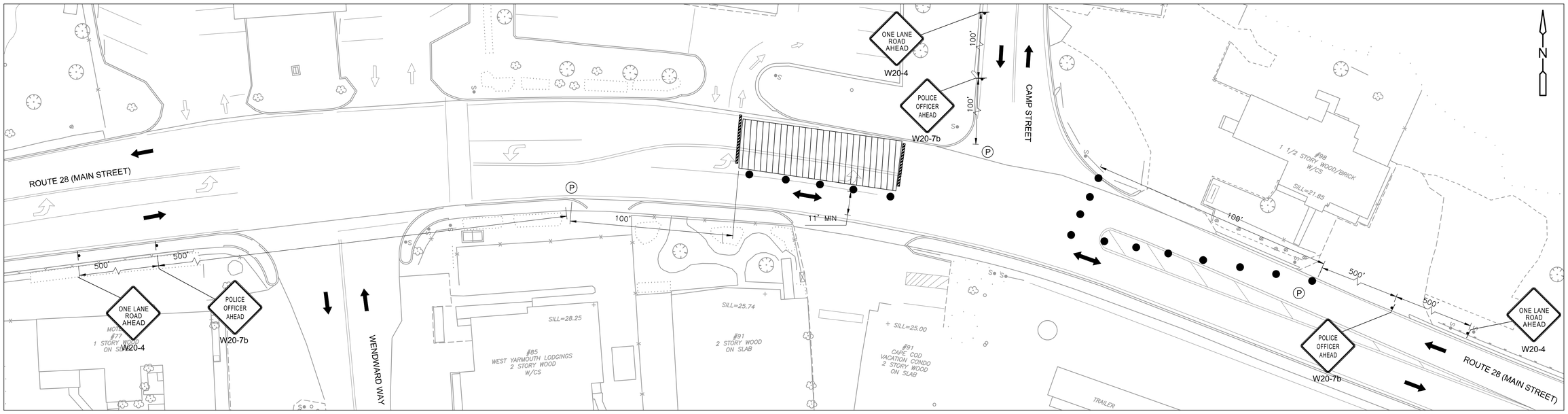

ROUTE 28 AND CAMP STREET
WESTERN CLOSURE PLAN

SCALE - 1" = 40'

NOTES:
1) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 2.

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3 Davol Square, Building A, Suite A-425
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WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

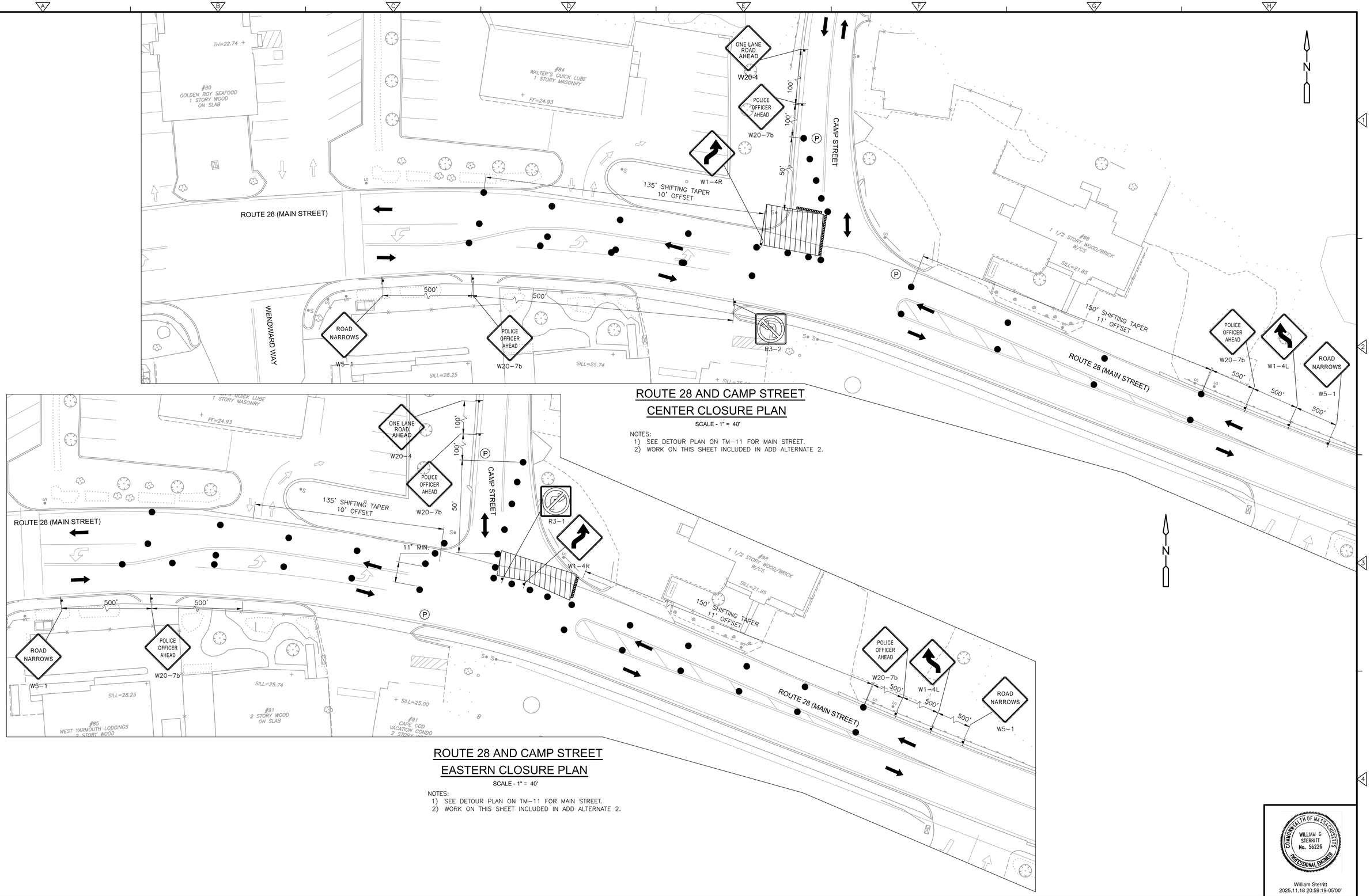
TRAFFIC MANAGEMENT PLANS

COMMONWEALTH OF MASSACHUSETTS
WILLIAM G STERRITT
No. 56226
PROFESSIONAL ENGINEER

William Sterritt
2025.11.18 20:59:09-05'00'

PROJECT NO. 1125-273132
FILE NAME: T002TMDT

SHEET NO.
TM-9



ROUTE 28 AND CAMP STREET
CENTER CLOSURE PLAN

SCALE - 1" = 40'

NOTES:
1) SEE DETOUR PLAN ON TM-11 FOR MAIN STREET.
2) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 2.

ROUTE 28 AND CAMP STREET
EASTERN CLOSURE PLAN

SCALE - 1" = 40'

NOTES:
1) SEE DETOUR PLAN ON TM-11 FOR MAIN STREET.
2) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 2.

XREFs: [CDMS_2436_xsvp001, TEP0000T, cstwp001, cstwp002, cstwp003, cwtwp001] Images: []
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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: R. HALZACK
DRAWN BY: R. HALZACK
SHEET CHK'D BY: W. STERRITT
CROSS CHK'D BY: S. HARLEY
APPROVED BY: W. STERRITT
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

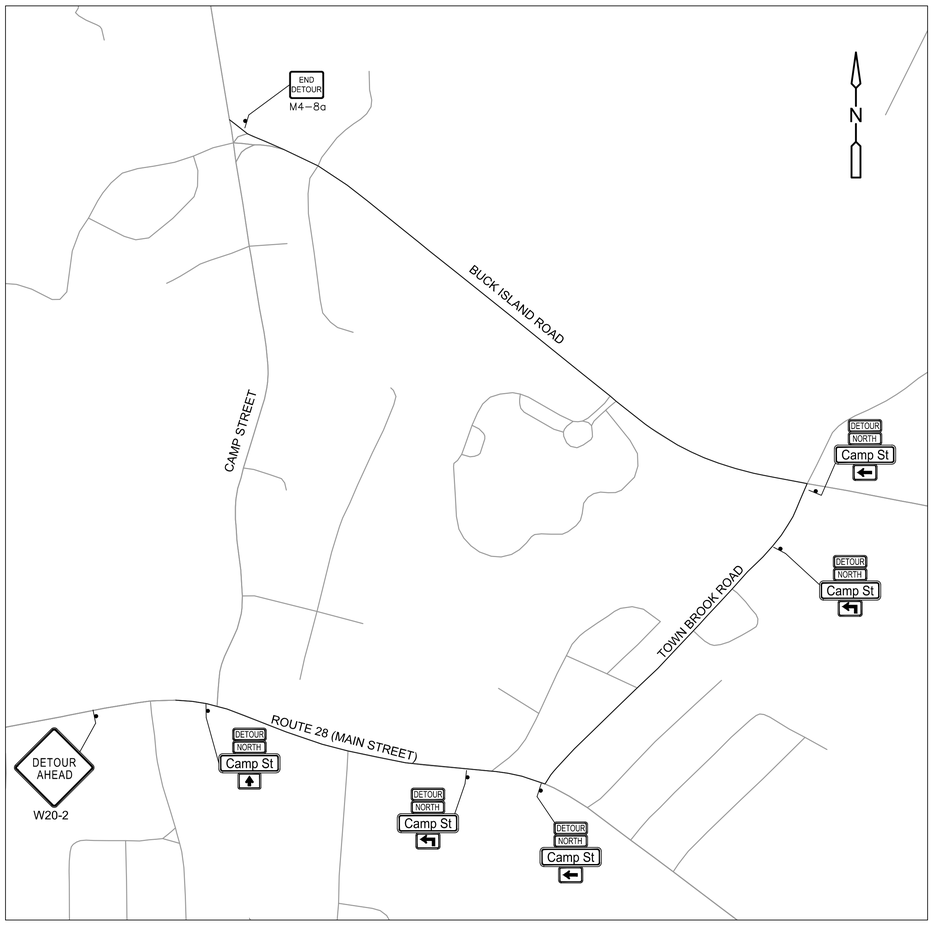
TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

TRAFFIC MANAGEMENT PLANS

COMMONWEALTH OF MASSACHUSETTS
WILLIAM C STERRITT
No. 56226
PROFESSIONAL ENGINEER
William Sterritt
2025.11.18 20:59:19-05'00'

PROJECT NO. 1125-273132
FILE NAME: T002TMDT

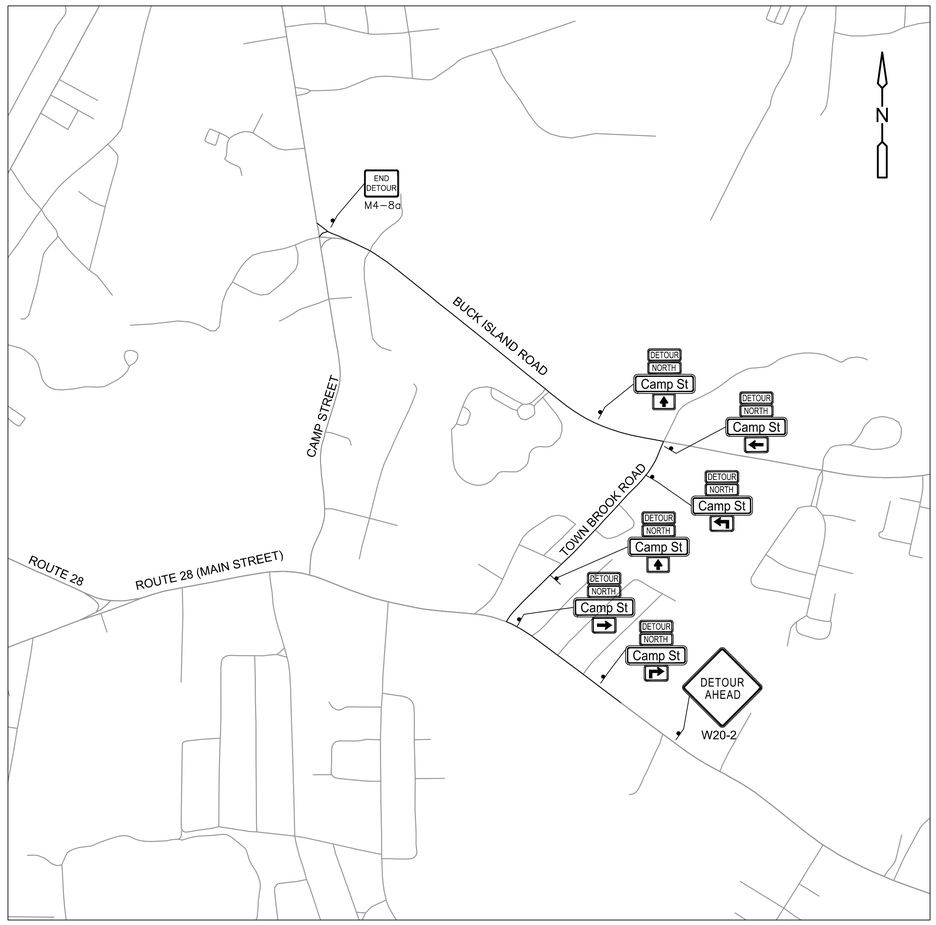
SHEET NO.
TM-10



ROUTE 28 AND CAMP STREET
CENTER CLOSURE PLAN
SCALE - 1" = 300'

LEGEND

DETOUR	M4-8
NORTH	M3-1
SOUTH	M3-3
1A	M1-5
	M5-1R
	M5-1L
	M6-1R
	M6-1L
	M6-2R
	M6-2L
	M6-3



ROUTE 28 AND CAMP STREET
EASTERN CLOSURE PLAN
SCALE - 1" = 500'

NOTES:
1) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 2.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: R. HALZACK
DRAWN BY: R. HALZACK
SHEET CHK'D BY: W. STERRITT
CROSS CHK'D BY: S. HARLEY
APPROVED BY: W. STERRITT
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

TRAFFIC MANAGEMENT PLANS

COMMONWEALTH OF MASSACHUSETTS
WILLIAM G STERRITT
No. 56226
PROFESSIONAL ENGINEER
William Sterritt
2025.11.18 20:59:36-05'00'

PROJECT NO. 1125–273132
FILE NAME: T002TMDT

SHEET NO.
TM-11

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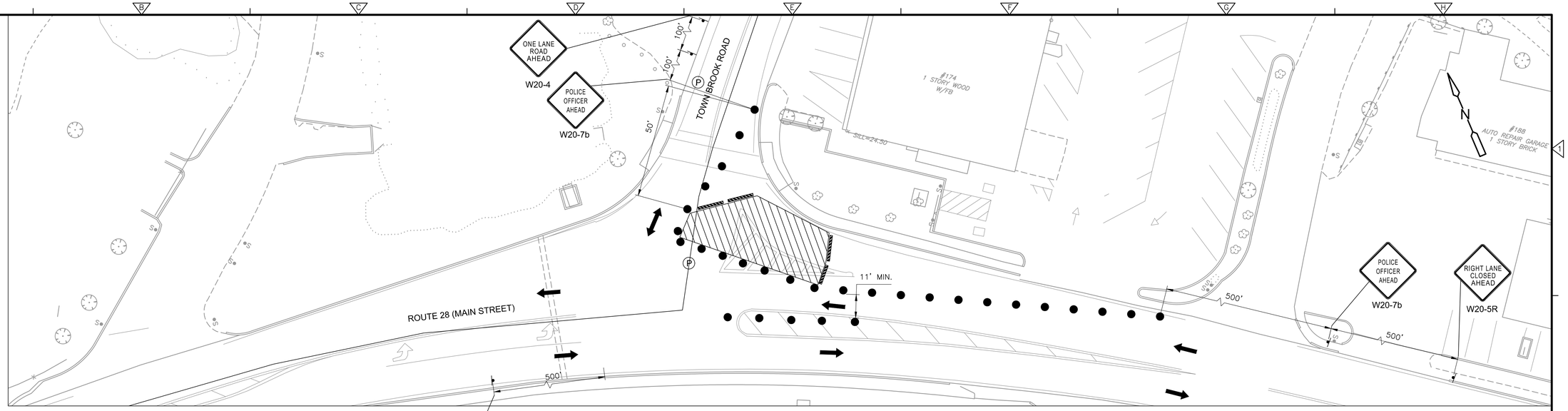
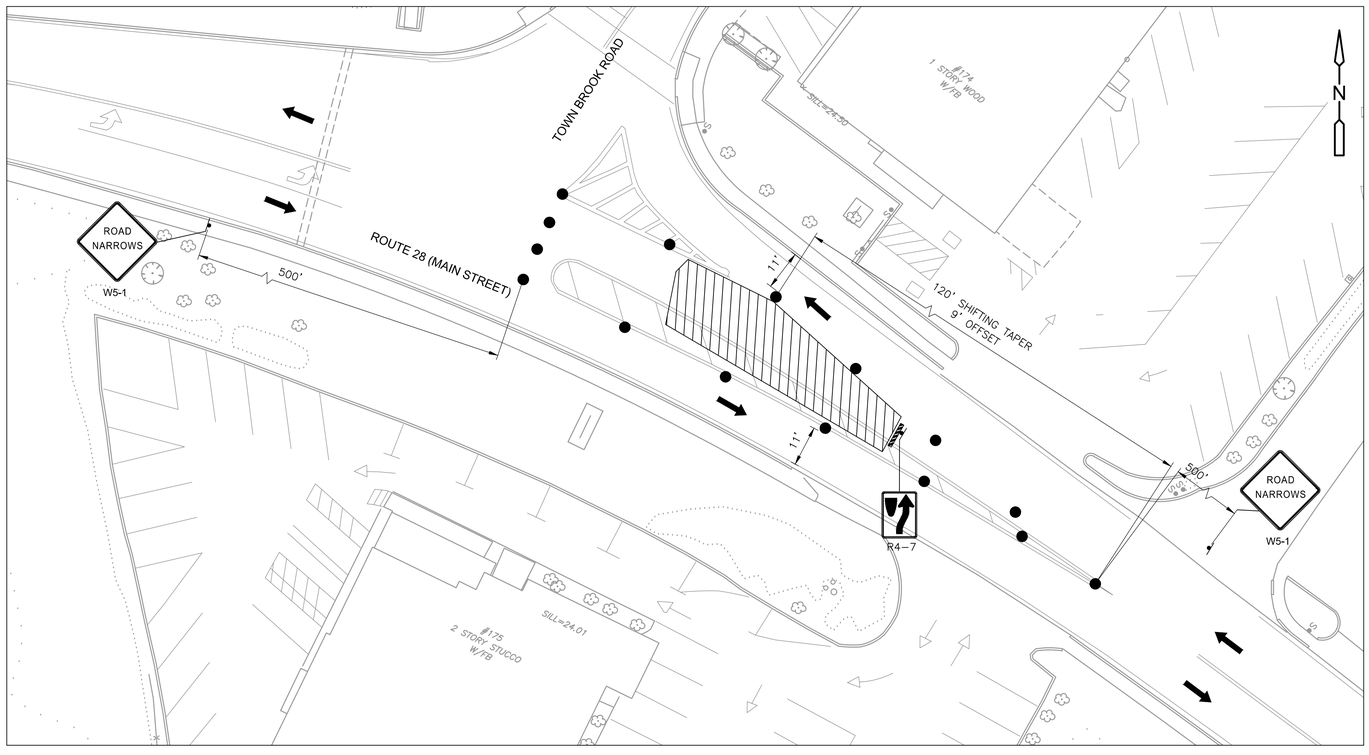


ROUTE 28 AND TOWN BROOK ROAD
WESTERN CLOSURE PLAN

SCALE - 1" = 40'

NOTES:
1) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 1.



ROUTE 28 AND TOWN BROOK ROAD
EASTERN CLOSURE PLAN

SCALE - 1" = 40'

NOTES:
1) WORK ON THIS SHEET INCLUDED IN ADD ALTERNATE 1.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: R. HALZACK
DRAWN BY: R. HALZACK
SHEET CHK'D BY: W. STERRITT
CROSS CHK'D BY: S. HARLEY
APPROVED BY: W. STERRITT
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
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TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

TRAFFIC MANAGEMENT PLANS

COMMONWEALTH OF MASSACHUSETTS
WILLIAM G STERRITT
No. 56226
PROFESSIONAL ENGINEER

William Sterritt
2025.11.18 20:59:47-05'00'

PROJECT NO. 1125-273132
FILE NAME: T002TMDT

SHEET NO.
TM-12

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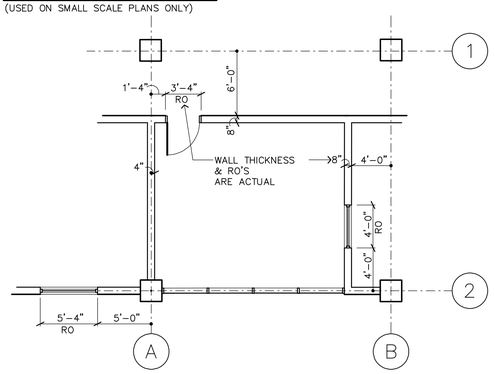
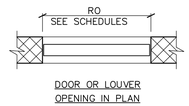
DIMENSIONING SYSTEM
(USED ON SMALL SCALE PLANS ONLY)

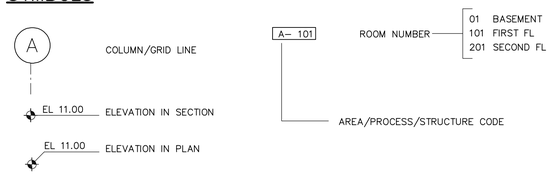


GENERAL NOTE:
WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

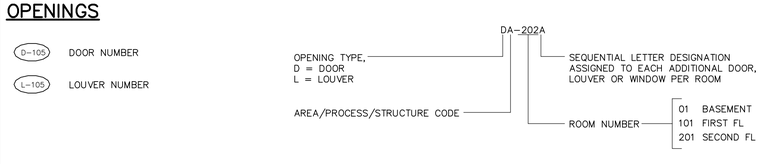


DOOR OR LOUVER OPENING IN PLAN

SYMBOLS



OPENINGS



ABBREVIATIONS

&	AND	FRP	FIBERGLASS REINFORCED PLASTIC	RD	ROOF DRAIN
<	ANGLE	FXD	FIXED	RECT	RECEPTACLE
@	AT	GA	GAGE	REF	ROOF EXHAUST FAN
AB	ANCHOR BOLT	GALV	GALVANIZED	REINF	REINFORCE (D, ING)
ABV	ABOVE	GL	GLASS	REQD	REQUIRED
ACMU	ACOUSTICAL MASONRY UNIT	GLB	GLASS BLOCK	REV	REVISION
ACT	ACOUSTICAL TILE	GRTG	GRATING	RF	ROOF FAN
ADH	ADHESIVE	GYP	GYPSUM	RFG	ROOFING
AFF	ABOVE FINISHED FLOOR	HD	HEAVY DUTY	RGH	ROUGH
AL	ALUMINUM	HDWD	HARDWOOD	RJ	RUSTIFICATION JOINT
ANOD	ANODIZE	HDWR	HARDWARE	RL	RAIN LEADER
ASSY	ASSEMBLY	HGR	HANGER	RLG	RAILING
BD	BOARD	HGT	HEIGHT	RM	ROOM
BEV	BEVEL (ED)	HM	HOLLOW METAL	RO	ROUGH OPENING
BLDG	BUILDING	HOR	HORIZONTAL	RT	RUBBER TILE
BLK	BLOCK	HP	HIGH POINT	RWL	RAIN WATER LEADER
BLKG	BLOCKING	HR	HANDRAIL	S	STEEL S-SHAPE DESIGNATION
BRG	BEARING	IN	INCH	SAT	SUSPENDED ACOUSTICAL TILE
BRK	BRICK	INSUL	INSULATION	SB	SEAMLESS BASE
BRS	BRASS	JC	JANITOR'S CLOSET	SCHED	SCHEDULE
BRZ	BRONZE	JT	JOINT	SCRN	SCREEN(ED)
BS	BOTH SIDES	JT FLR	JOINT FILLER	SECT	SECTION
C TO C	CENTER TO CENTER	L	LINE OR STRUCTURAL ANGLE DESIGNATION	SF	SEAMLESS FLOORING
CAB	CABINET	LAB	LABORATORY	SGFT	STRUCTURAL GLAZED FACING TILE
CARP	CARPET	LAD	LADDER	SHT	SHEET
CEM	CEMENT	LAM	LAMINATED	SIM	SIMILAR
CF	COMPRESSIBLE FILLER	LAV	LAVATORY	SK	SINK
CGFB	CEMENTITIOUS GLASS FIBER BOARD	LKR	LOCKER	SLNT	SEALANT
CH	CONCRETE HARDENER	LNTL	LINTEL	SPEC	SPECIFICATION, SPECIFIED
CHAM	CHAMFER	LP	LIGHT POLE	SST	STAINLESS STEEL
CHAN	CHANNEL	LP	LOW POINT	STD	STANDARD
CIP	CAST IN PLACE	LT	LIGHT (S)	STL	STEEL
CJ	CONSTRUCTION JOINT	MAS	MASONRY	STOR	STORAGE
CL or ℄	CENTERLINE	MATL	MATERIAL	STRUC	STRUCTURE (S, URAL)
CLG	CEILING	MAX	MAXIMUM	STWY	STAIRWAY
CLKG	CAULKING	MEMB	MEMBRANE	SUPT	SUPERINTENDENT
CMU	CONCRETE MASONRY UNITS	MFR	MANUFACTURER	SUSP	SUSPENDED
COL	COLUMN	MIN	MINIMUM	T	TREAD(S)
COMP	COMPRESSIBLE	MISC	MISCELLANEOUS	T&G	TONGUE AND GROOVE
CONC	CONCRETE	MO	MASONRY OPENING	TEMP	TEMPERATURE
CONT	CONTINUOUS	MR	MOISTURE RESISTANT	TEMP	TEMPERED
CRS	COURSE (S)	MTD	MOUNTED	TEMP	TEMPORARY
CT	CERAMIC TILE	MTG	MOUNTING	TER	TERRAZZO
DET	DETAIL	MTL	METAL	TERB	TERRAZZO BASE
DF	DRINKING FOUNTAIN	NIC	NOT IN CONTRACT	THK	THICK(NESS)
DIA	DIAMETER	NOM	NOMINAL	THR	THRESHOLD
DIAG	DIAGONAL	NTS	NOT TO SCALE	TKBD	TACKBOARD
DIM	DIMENSION	OC	ON CENTER OR ODOR CONTROL	TOI	TOILET
DISP	DISPENSER	OFF	OFFICE	TOPG	TOPPING
DN	DOWN	OPNG	OPENING	TOS	TOP OF STEEL
DP	DAMPROOFING	OPP HD	OPPOSITE HAND	TS	STRUCTURAL TUBING (STEEL UNLESS NOTED)
DR	DRAIN	OV	OVER	TSL	TOP OF SLAB
DWG	DRAWING	OVHD	OVERHEAD	TWF	THROUGH WALL FLASHING
EA	EACH	PERIM	PERIMETER	TYP	TYPICAL
EL	ELEVATION	PL	PLATE	UC	UNDERCUT
ELEV	ELEVATOR	PL	PROPERTY LINE	UR	URINAL
EQ	EQUAL (LY)	PLK	PLANK	VB	VAPOR BARRIER
EQPT	EQUIPMENT	PLYWD	PLYWOOD	VCT	VINYL COMPOSITION TILE
EWC	ELECTRIC WATER COOLER	PM	PRESSED METAL	VERT	VERTICAL
EXP	EXPANSION	PR	PAIR	VTR	VENT THRU ROOF
EXP	EXPOSED	PR	PRETREATED WATER SYSTEM, PAIR	W	WIDE
EXP JT	EXPANSION JOINT	PRCST	PRECAST	W/	WITH
EXST	EXISTING	PREFAB	PRE-FABRICATED	W/A	WHERE APPLICABLE
FD	FLOOR DRAIN	PREST	PRESSURE TREATED	W/O	WITHOUT
FE	FIRE EXTINGUISHER	PRMLD	PREMOLDED	WC	WATER CLOSET
FF	FACTORY FINISH	PSF	POUNDS PER SQUARE FOOT	WD	WIDTH
FGL	FIBERGLASS	PSI	POUNDS PER SQUARE INCH	WD	WOOD
FIN	FINISH(ED)	PTD	PAINTED	WDW	WINDOW
FL	FLASHING	QT	QUARRY TILE	WF	WIDE FLANGE
FL	FLOOR	QTB	QUARRY TILE BASE	WPG	WATERPROOFING
FLG	FLOORING	R	RISER(S)	WT	STEEL TEE-SHAPE DESIGNATION
FLR	FILLER	R+S	BACKER ROD & SEALANT	WWF	WELDED WIRE FABRIC
FR	FRAME	RB	RUBBER BASE		

DOOR SCHEDULE

BLDG	DOOR NUMBER	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOORS TYPE	DOORS MAT'L	DOORS FIN	FRAMES TYPE	FRAMES MAT'L	FRAMES FIN	DETAILS ON A–1 U.O.N. HEAD	JAMB	JAMB	THRES–HOLD	UL LABEL	HARD–WARE	NOTE NO	NOTES
CONTROL BLDG 1	D–101	3'–0"	7'–0"	E	FRP	–	A	FRP	–	D	E	E	F	–	1	–	
CONTROL BLDG 2	D–101	3'–0"	7'–0"	E	FRP	–	A	FRP	–	D	E	E	F	–	1	–	

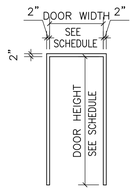
LOUVER SCHEDULE

BLDG	LOUVER NUMBER	ROUGH OPN'G WIDTH	ROUGH OPN'G HEIGHT	TYPE	MAT'L	FIN	DETAILS ON A–1 U.O.N. HEAD	JAMB	JAMB	SILL	NOTE NO	NOTES
CONTROL BLDG 1	L–100A	5'–6"	6'–0"	L1	ALUM	ANOD	A	B	B	C	–	1. CONNECTED TO GENERATOR
CONTROL BLDG 1	L–101A	8'–0"	6'–0"	L1	ALUM	ANOD	A	B	B	C	1	

FINISH SCHEDULE

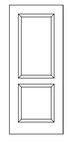
BLDG	ROOM NUMBER	ROOM NAME	FLOORS MAT'L	FLOORS FIN	WALLS DETAILS ON A–1 BASE	WALLS MAT'L	WALLS FIN	CEILINGS MAT'L	CEILINGS FIN	CEILINGS HEIGHT	NOTE NO	NOTES
CONTROL BLDG 1	A–101	GENERATOR ROOM	CONC	HARD	G	FRP	FF	FRP	FF	9'–0"	–	
CONTROL BLDG 2	A–101	CONTROL ROOM	CONC	HARD	G	FRP	FF	FRP	FF	9'–0"	–	

FRAME TYPES



A

DOOR TYPES



E EMBOSSED

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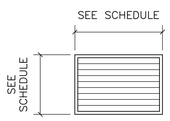

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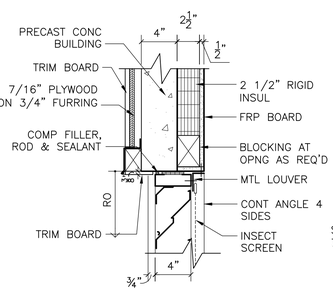
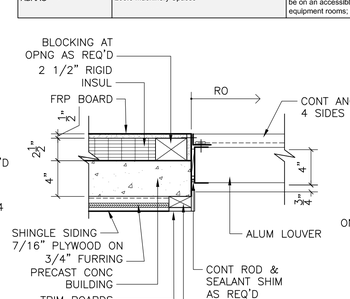
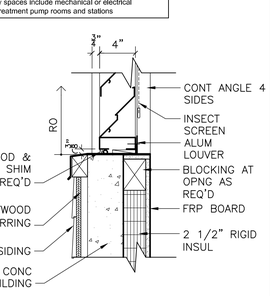


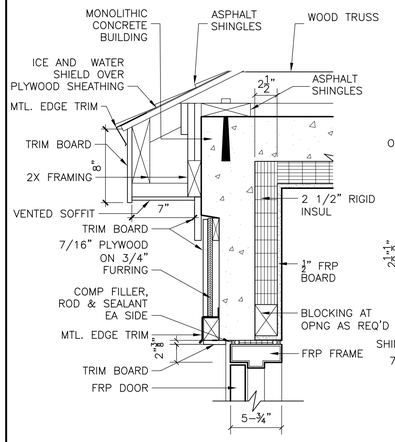
LOUVER HEAD DETAIL A, 1–1/2"= 1'–0"



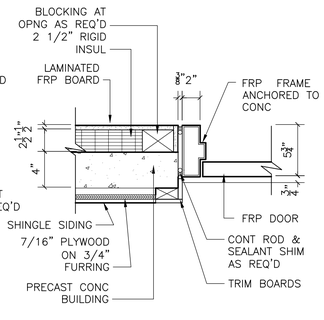
LOUVER JAMB DETAIL B, 1–1/2"= 1'–0"



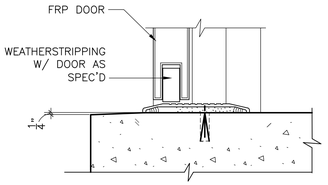
LOUVER SILL DETAIL C, 1–1/2"= 1'–0"



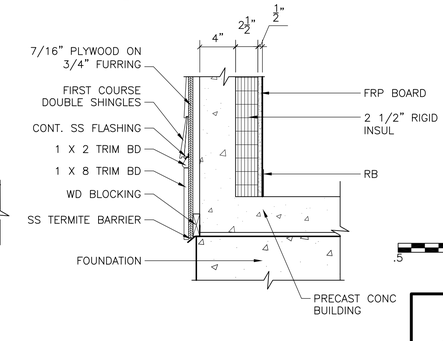
DOOR HEAD DETAIL D, 1–1/2"= 1'–0"



DOOR JAMB DETAIL E, 1–1/2"= 1'–0"



EXTERIOR DOOR THRESHOLD DETAIL F, 1–1/2"= 1'–0"



BASE DETAIL DETAIL G, 1–1/2"= 1'–0"

Building Code Summary			
Owner:	Town of Yarmouth, MA	**Date:**	June, 2025
Project Name:	Wastewater Collection and Water Resource Recovery Facilities	**Location:**	Yarmouth, MA
Project No:	1125-273132	**Architect of Record:**	CDM Smith
Building Name:	Pump Station 1 and Pump Station 2		
Applicable Ordinances, Codes, and Standard			
Existing Building Code	Pump Station 1 - 780 CMR Ninth Edition (2015 IBC with Massachusetts Amendments)		
	Pump Station 2 - 780 CMR Tenth Edition (2021 IBC with Massachusetts Amendments)		
Fire / Life Safety Code	Pump Station 1 - 527 CMR 1.00 Massachusetts Comprehensive Fire Safety Code (NFPA 1 - 2015 Edition with Massachusetts Amendments)		
	Pump Station 2 - 527 CMR 1.00 Massachusetts Comprehensive Fire Safety Code (NFPA 1 - 2021 Edition with Massachusetts Amendments)		
Accessibility Code	521 CMR Architectural Access Regulations / (see accessibility ADAAG 2010)		
Energy Code	Pump Station 1 - 2015 IECC with Massachusetts Amendments		
	Pump Station 2 - 2021 IECC with Massachusetts Amendments		
Other	MGL 148 26G/NFPA 110		
Use and Occupancy Classification			
Mixed Use (y/n)	*See Section 508*	NO	
Section 312	Utility and Miscellaneous	Group U	Non-Occupied Building
General Building Heights and Areas			
Table 503	Allowable Height and Building Areas	Allowable	Proposed
	Building Height in Feet	55 feet	14 feet
	Building Height in Stories	2 Stories	1 Story
	Building Area in Square Feet	8500 SF	196 Gross
Section 504.2	Height - Automatic Sprinkler Increase	NO	
Section 505.2 & 505.3	Mezzanines or Equipment Platforms	NO	
Section 506	Area Modifications	NO	
506.3	Automatic Sprinkler System Increase	NO	
Types of Construction			
602.2	Construction Classification	Type II B (Non-Combustible, Unprotected)	
Table 601	Fire Resistance Rating Requirements for Building Elements		
	Building Element	Req'd Rating	Remarks
	Primary Structural Frame	0	
	Bearing Walls Exterior	0	
	Bearing Walls Interior	0	
	Non Bearing Exterior Walls and Partitions	*See Table 602*	
	Non Bearing Interior Walls and Partitions	0	
	Floor Construction & Assoc Secondary Members	0	
	Roof Construction & Assoc Secondary Members	0	
Table 602	Fire Resistance Rating Requirements for Exterior Walls based on Fire Separation Distance		
	Fire Separation Distance (feet)	Req'd Rating (hours)	Proposed (hours)
	X < 5	1	NA
	5 ≤ X < 10	1	NA
	10 ≤ X < 30	0	NA
	X ≥ 30	0	NA
Fire Protection Systems			
Section 903.2	Automatic Sprinkler Systems	Not Required/ Not Provided	
Section 906	Portable Fire Extinguishers	*As required by the Fire Code and NFPA*	
Section 907	Fire Alarm and Detection Systems	*As required by the Fire Code and NFPA*	
Accessibility			
Chapter 11	1103.2.9 Equipment spaces	Equipment Spaces frequented by personnel only, not required to comply	
ADAAG	203.5 Machinery Spaces	Spaces frequented only by service personnel for maintenance, repair, or occassional monitoring of equipment shall not be required to comply with these requirements or to be on an accessible route. Machinery spaces include mechanical or electrical equipment rooms; water or sewage treatment pump rooms and stations	

REGISTERED ARCHITECT BARRY L. GIORGI No. 4646 BOSTON, MA COMMONWEALTH OF MASSACHUSETTS

Barry L Giorgi
2025.11.18 11:14:05-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: B. GIORGI
DRAWN BY: AADHITHYA SV
SHEET CHK'D BY: B. GIORGI
CROSS CHK'D BY: W. HOTZ JR.
APPROVED BY: B. GIORGI
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

LEGEND, ABBREVIATIONS, SCHEDULES AND DETAILS

PROJECT NO. 1125–273132
FILE NAME: AGEDT100
SHEET NO. A-1

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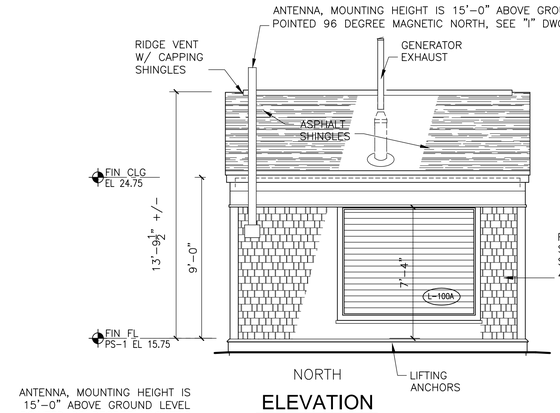
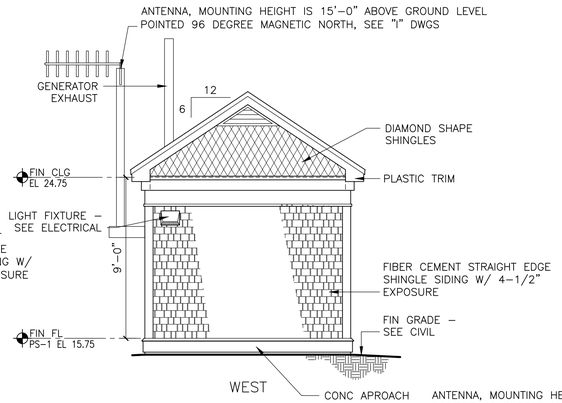


NORTH

ELEVATION

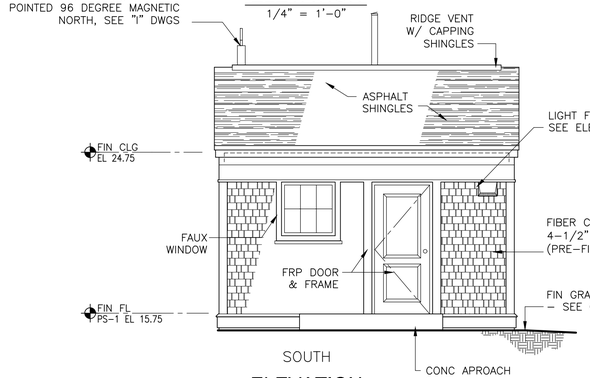
1/4" = 1'-0"



WEST

ELEVATION

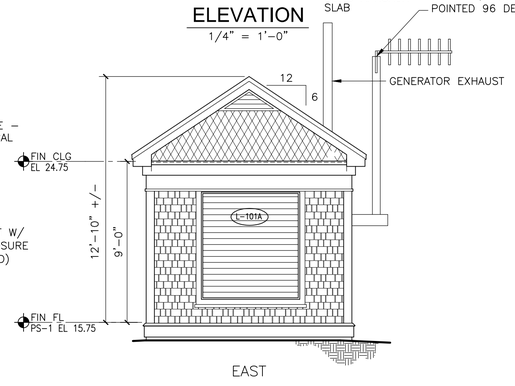
1/4" = 1'-0"



SOUTH

ELEVATION

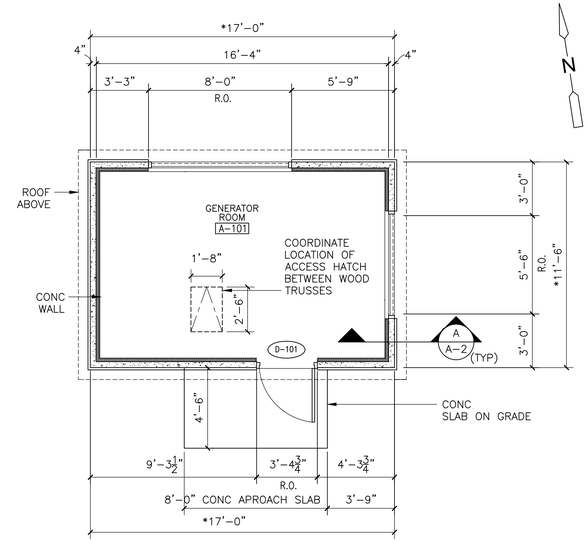
1/4" = 1'-0"



EAST

ELEVATION

1/4" = 1'-0"

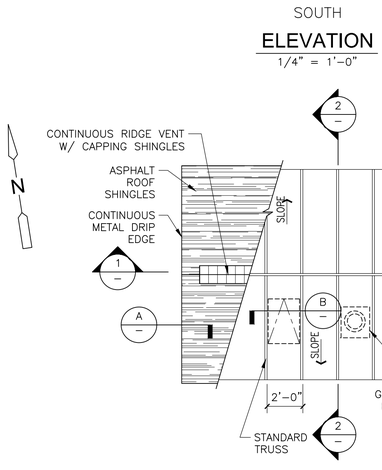


CONTROL BUILDING

PLAN

1/4" = 1'-0"

*NOTE:
DIMENSIONS ARE TO FACE OF PRECAST CONCRETE BUILDING. DIMENSIONS DO NOT INCLUDE EXTERIOR FINISH.



ROOF / FRAMING PLAN

PLAN

1/4" = 1'-0"

NOTE: 2 x 6 PLATE CONNECTED TO CONCRETE ROOF WITH 1/2" DIA. x 5" LG. WEDGE ANCHORS 1'-0" FROM EACH END OF PLATE AND 4'-0" MAX. O.C. BOTTOM OF TRUSS TO BE ANCHORED TOP PLATE PER REQUIREMENTS OF THE MASSACHUSETTS STATE BUILDING CODE @ INSTALLATION (BY CONTRACTOR) COORDINATE ANCHORS WITH TRUSS LAYOUT

FRAMING

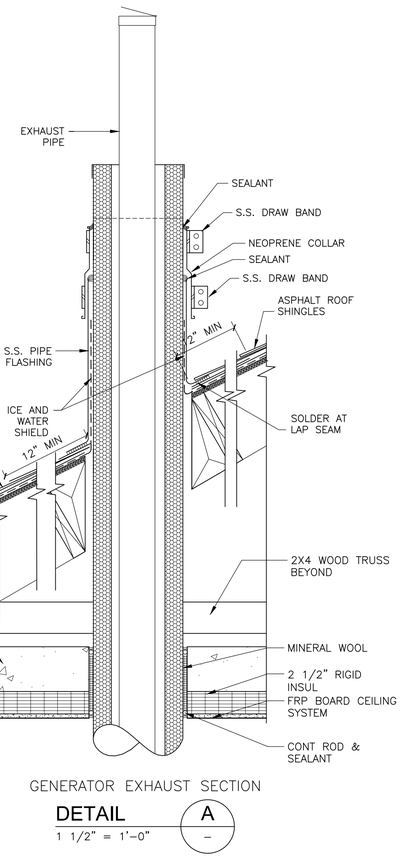
SECTION 1

1/4" = 1'-0"

FRAMING

SECTION 2

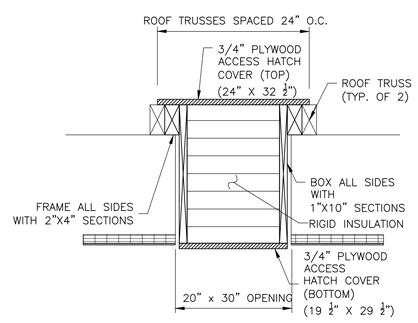
1/4" = 1'-0"



GENERATOR EXHAUST SECTION

DETAIL A

1 1/2" = 1'-0"



ATTIC ACCESS HATCH

DETAIL B

NTS

GENERAL NOTE:
WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

1 1/2" = 1'- 0"
.5 0 .5 1
1/4" = 1'- 0"
2 1 0 2 4

REGISTERED ARCHITECT BARRY L. GIORGI No. 4646 BOSTON, MA COMMONWEALTH OF MASSACHUSETTS

Barry L Giorgi
2024.08.16 14:12:35-04'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: B. GIORGI
DRAWN BY: C. CHAHANOVICH
SHEET CHK'D BY: B. GIORGI
CROSS CHK'D BY: W. HOTZ JR.
APPROVED BY: B. GIORGI
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1
CONTROL BUILDING
PLANS, ELEVATIONS AND DETAILS

PROJECT NO. 1125-273132
FILE NAME: APSPL106

SHEET NO.
A-2

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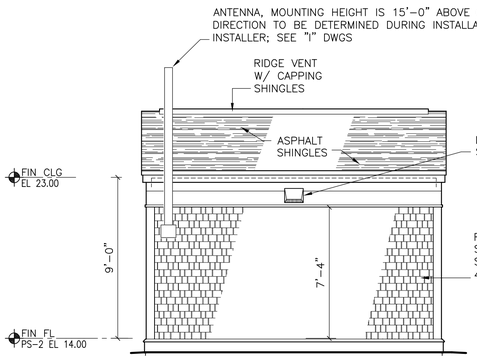
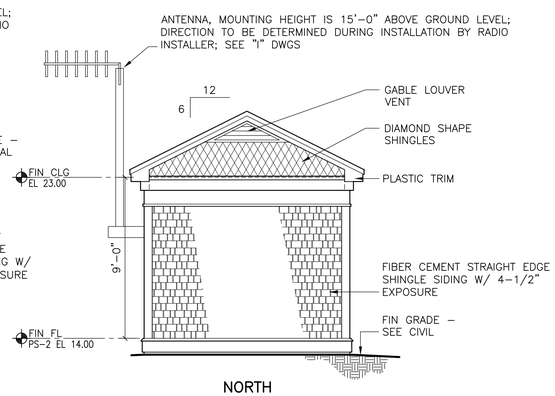


WEST

ELEVATION

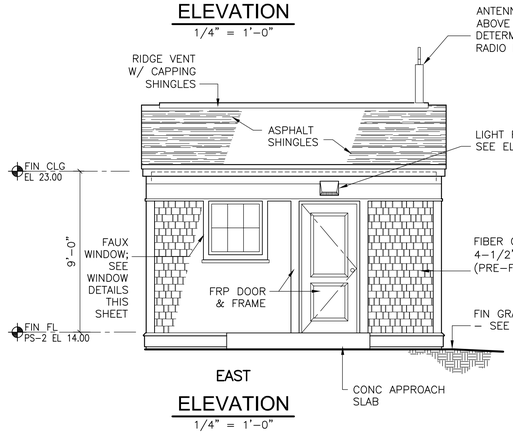
1/4" = 1'-0"



NORTH

ELEVATION

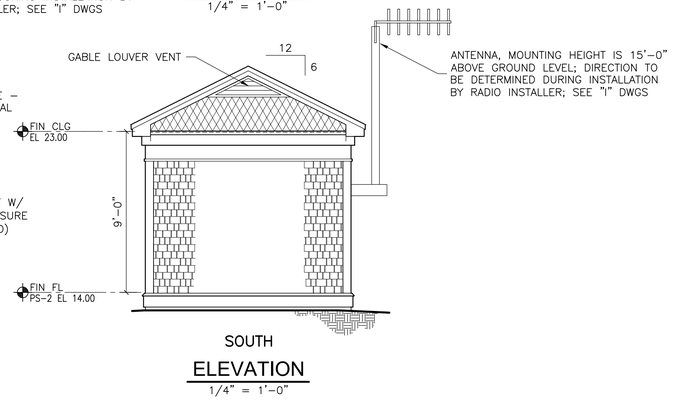
1/4" = 1'-0"



EAST

ELEVATION

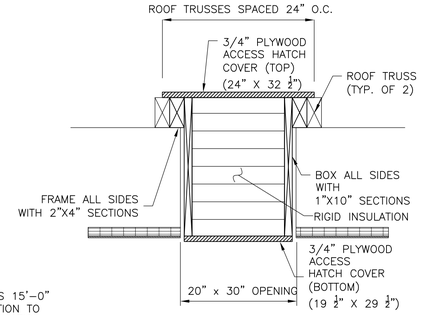
1/4" = 1'-0"



SOUTH

ELEVATION

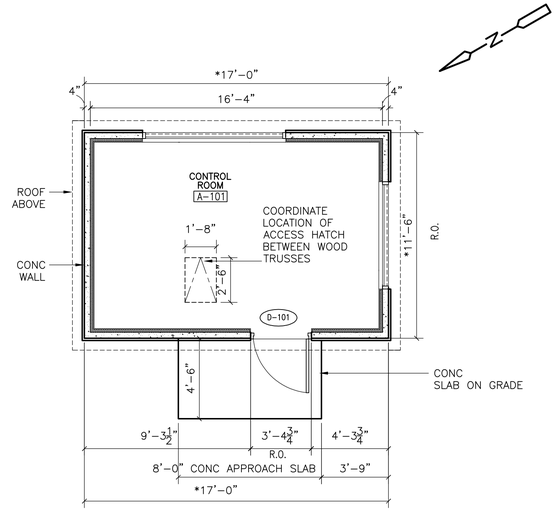
1/4" = 1'-0"



ATTIC ACCESS HATCH

DETAIL C

NTS

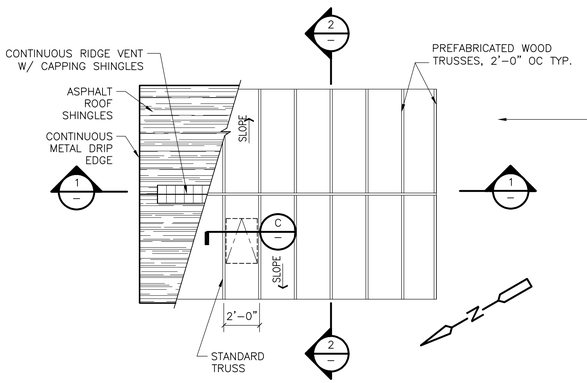


CONTROL BUILDING

PLAN

1/4" = 1'-0"

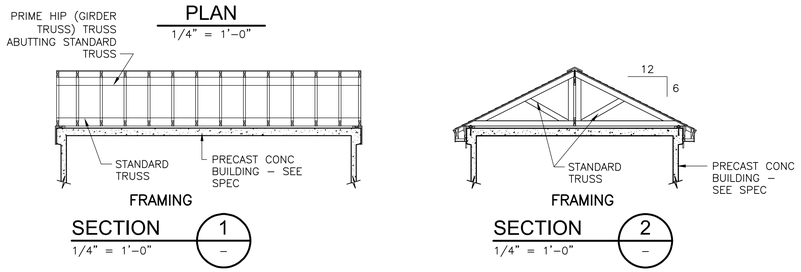
*NOTE:
DIMENSIONS ARE TO FACE OF PRECAST CONCRETE BUILDING. DIMENSIONS DO NOT INCLUDE EXTERIOR FINISH.



ROOF / FRAMING PLAN

PLAN

1/4" = 1'-0"



FRAMING

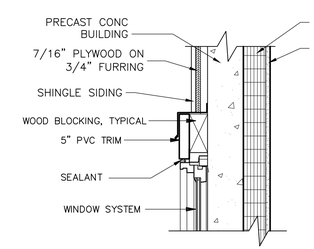
SECTION 1

1/4" = 1'-0"

FRAMING

SECTION 2

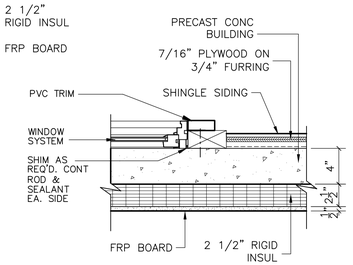
1/4" = 1'-0"



WINDOW HEAD

DETAIL H

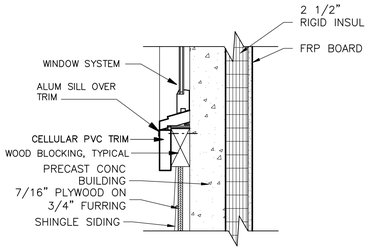
1-1/2"= 1'-0"



WINDOW JAMB

DETAIL I

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



WINDOW SILL

DETAIL J

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

1/4" = 1'- 0"

2 1 0 2 4

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: B. GIORGI
DRAWN BY: C. CHAHANOVICH
SHEET CHK'D BY: B. GIORGI
CROSS CHK'D BY: W. HOTZ JR.
APPROVED BY: B. GIORGI
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

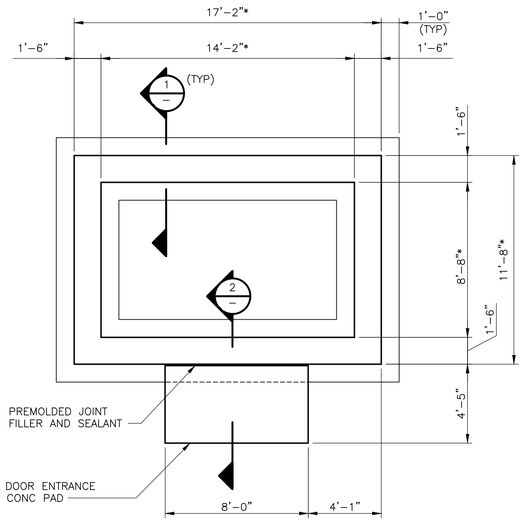
PUMPING STATION NO. 2
CONTROL BUILDING
PLANS, ELEVATIONS AND DETAILS

REGISTERED ARCHITECT BARRY L. GIORGI No. 4646 BOSTON, MA COMMONWEALTH OF MASSACHUSETTS

Barry L Giorgi
2025.11.18 11:14:29-05'00'

PROJECT NO. 1125-273132
FILE NAME: APSPL106

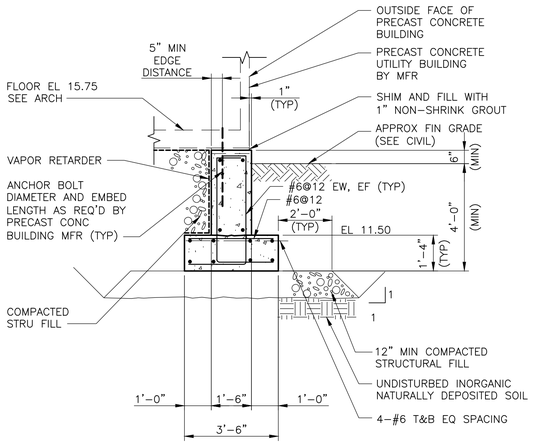
SHEET NO.
A-3



CONTROL BUILDING FOUNDATION

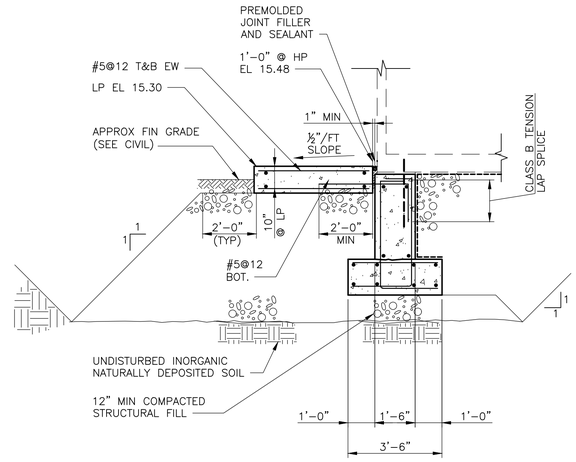
PLAN

1/4" = 1'-0"



TYPICAL WALL SECTION

SECTION 1 — 3/8" = 1'-0"



NOTE: SEE SECTION 1 FOR INFORMATION NOT SHOWN.

ENTRANCE PAD

SECTION 2 — 3/8" = 1'-0"

GENERAL NOTE:

1. WORK ASSOCIATED WITH PUMPING STATION NO.1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO.2 IS SELECTED

FOUNDATION NOTES:

1. * INDICATES DIMENSIONS AND/OR INFORMATION TO BE COORDINATED WITH THE MANUFACTURER OF THE APPROVED EQUIPMENT AND/OR BUILDING PRIOR TO FABRICATION AND CONSTRUCTION.
2. PRECAST BUILDING FOUNDATION SHALL NOT BE FABRICATED OR CONSTRUCTED UNTIL APPROVED SUBMITTAL OF THE BUILDING ANCHORAGE LOCATIONS AND FOUNDATION REACTIONS HAVE BEEN REVIEWED AND ADJUSTMENTS TO THE FOUNDATION DESIGN HAVE BEEN COMPLETED, IF REQUIRED, BY THE ENGINEER.
3. FOR FOUNDATION LOCATION AND ORIENTATION SEE CIVIL AND HVAC DRAWINGS, UNLESS OTHERWISE INDICATED.

GEOTECHNICAL NOTE:

1. MAXIMUM GROSS ALLOWABLE BEARING PRESSURE 3000 PSF

1/4" = 1'- 0"
2 1 0 2 4

3/8" = 1'- 0"
2 0 2 4

XREFs: [SWPPS04, CDMS_2436] Images: []
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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. AVERIN
DRAWN BY: A. AVERIN
SHEET CHK'D BY: M.K. BIJU
CROSS CHK'D BY: W. HOTZ JR.
APPROVED BY: D.L. HARRIS
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

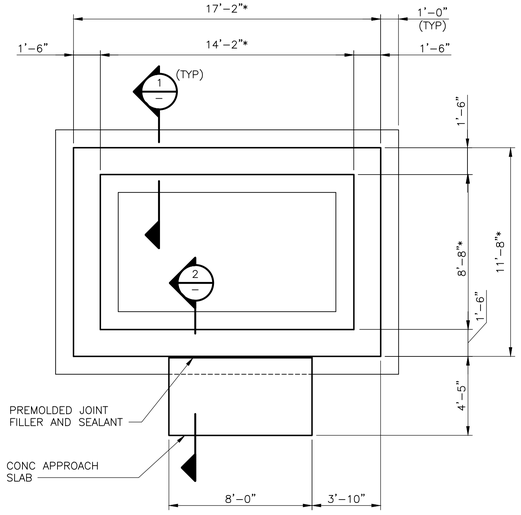
PUMPING STATION NO. 1
PLANS AND SECTIONS

2024.08.16 14:19:42-04'00'
Daniel L Harris

COMMONWEALTH OF MASSACHUSETTS
DANIEL L. HARRIS
STRUCTURAL
No. 33066
REGISTERED PROFESSIONAL ENGINEER

PROJECT NO. 1125-273132
FILE NAME: S0012PSPL.dwg

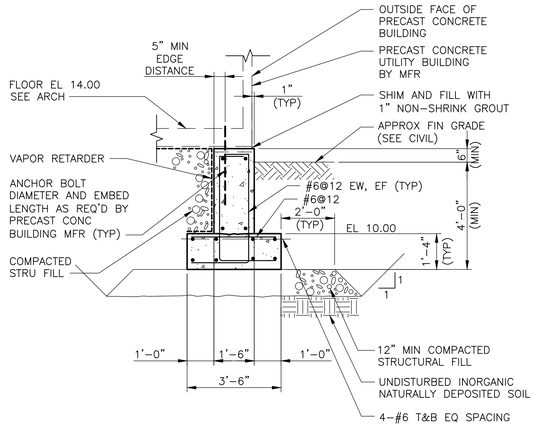
SHEET NO.
S-1



CONTROL BUILDING FOUNDATION

PLAN

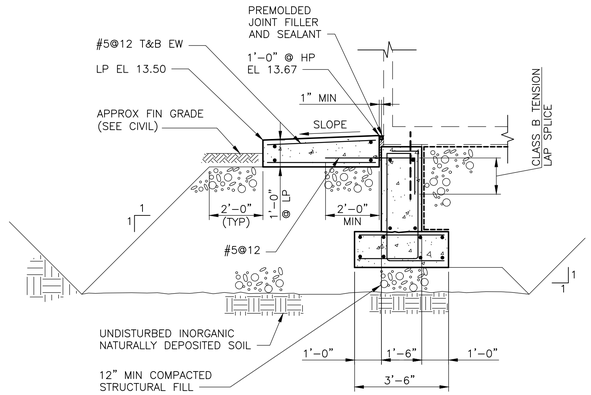
1/4" = 1'-0"



TYPICAL WALL SECTION

SECTION 1 –

3/8" = 1'-0"

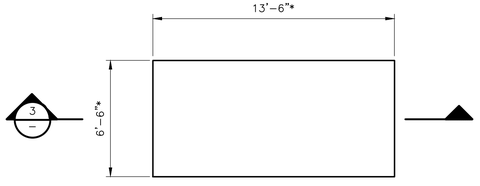


NOTE: SEE SECTION 1 FOR INFORMATION NOT SHOWN.

APPROACH SLAB

SECTION 2 –

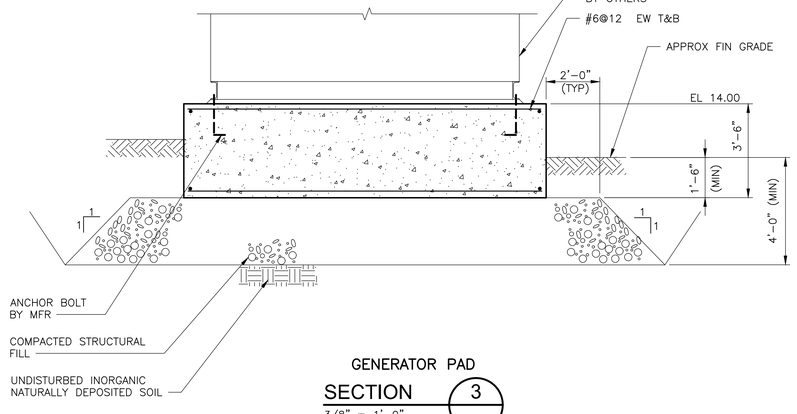
3/8" = 1'-0"



GENERATOR PAD

PLAN

1/4" = 1'-0"



GENERATOR PAD

SECTION 3 –

3/8" = 1'-0"

GENERAL NOTE:

1. BUILDING CODE: MASSACHUSETTS STATE BUILDING CODE 10TH EDITION.

FOUNDATION NOTES:

1. * INDICATES DIMENSIONS AND/OR INFORMATION TO BE COORDINATED WITH THE MANUFACTURER OF THE APPROVED EQUIPMENT AND/OR BUILDING PRIOR TO FABRICATION AND CONSTRUCTION.
2. PRECAST BUILDING FOUNDATION SHALL NOT BE FABRICATED OR CONSTRUCTED UNTIL APPROVED SUBMITTAL OF THE BUILDING ANCHORAGE LOCATIONS AND FOUNDATION REACTIONS/LOADINGS HAVE BEEN REVIEWED AND ADJUSTMENTS TO THE FOUNDATION DESIGN HAVE BEEN COMPLETED, IF REQUIRED, BY THE ENGINEER.
3. GENERATOR FOUNDATION SHALL NOT BE FABRICATED OR CONSTRUCTED UNTIL THE EQUIPMENT LOADS AND DIMENSIONS HAVE BEEN SUBMITTED AND ADJUSTMENTS TO THE FOUNDATION IF REQUIRED, HAVE BEEN COMPLETED BY THE ENGINEER
4. FOR FOUNDATION LOCATION AND ORIENTATION SEE CIVIL AND HVAC DRAWINGS, UNLESS OTHERWISE INDICATED.

GEOTECHNICAL NOTE:

1. MAXIMUM GROSS ALLOWABLE BEARING PRESSURE 3000 PSF

1/4" = 1'- 0"

2 1 0 2 4

3/8" = 1'- 0"

2 0 2 4

COMMONWEALTH OF MASSACHUSETTS
DANIEL L. HARRIS
STRUCTURAL
No. 33008
REGISTERED
PROFESSIONAL ENGINEER

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. AVERIN
DRAWN BY: A. AVERIN
SHEET CHK'D BY: M.K. BIJU
CROSS CHK'D BY: W. HOTZ JR.
APPROVED BY: D.L. HARRIS
DATE: NOVEMBER 2025

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3 Davol Square, Building A, Suite A-425
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Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 2
PLANS AND SECTIONS

PROJECT NO. 1125-273132
FILE NAME: S0012PSPL.dwg
SHEET NO.
S-2

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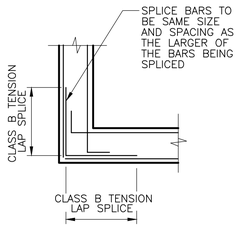
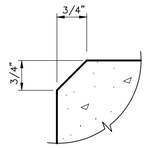


CORNER

WALL REINFORCEMENT DETAIL

DETAIL A

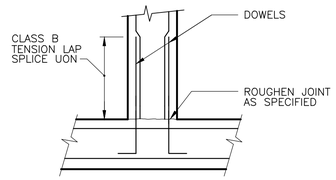
NTS –



CHAMFER

DETAIL B

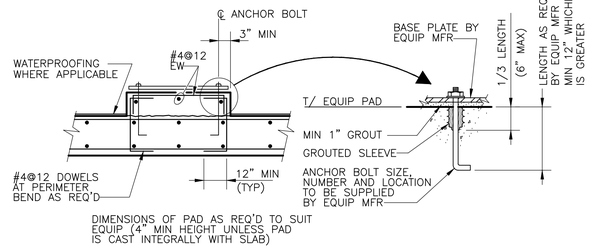
NTS –



WALL CONSTRUCTION JOINT AT SLAB

DETAIL C

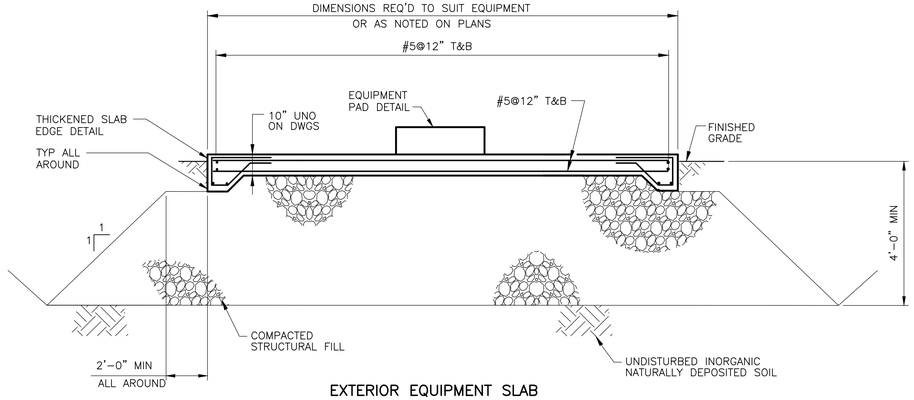
NTS –



EQUIPMENT PAD

DETAIL D

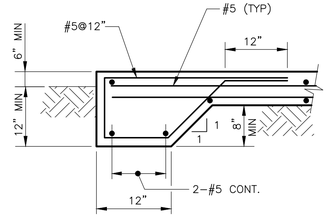
NTS –



EXTERIOR EQUIPMENT SLAB

DETAIL E

NTS –



THICKENED SLAB EDGE

DETAIL F

NTS –

GENERAL NOTES:

1. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL, HEATING AND VENTILATING, PLUMBING DRAWINGS, SHOP DRAWINGS AND SPECIFICATIONS.
2. SEE CIVIL, ARCHITECTURAL, MECHANICAL, HEATING AND VENTILATING, PLUMBING, AND ELECTRICAL DRAWINGS FOR REGLETS, PIPE SLEEVES, CONDUITS OR OTHER ITEMS TO BE EMBEDDED OR PASSED THROUGH THE CONCRETE.
3. WHEN BACKFILLING AROUND STRUCTURES, BRING UP BACKFILL UNIFORMLY AROUND STRUCTURE UNLESS INDICATED OTHERWISE. CONTROL BACKFILL LEVELS AROUND THE ENTIRE PERIMETER OF THE STRUCTURE SUCH THAT THE GRADE DIFFERENTIAL DOES NOT EXCEED 1'-6".

CAST IN PLACE CONCRETE NOTES:

1. REINFORCED CONCRETE SHALL COMPLY WITH ACI 318.
2. MINIMUM CONCRETE STRENGTH AT 28 DAYS:
   STRUCTURAL CONCRETE f'c = 4000 psi
   ELECTRICAL RACEWAY ENCASEMENT f'c = 2500 psi
3. REINFORCING STEEL SHALL BE NEW STEEL CONFORMING TO ASTM SPECIFICATION A615 GRADE 60.
4. REINFORCING STEEL FABRICATION SHALL BE IN COMPLIANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE.
5. DETERMINE CLEAR CONCRETE COVER BASED ON EXPOSURE TO THE ENVIRONMENT. REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR CONCRETE COVER UNLESS OTHERWISE NOTED:

   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3 IN.
   CONCRETE SURFACES IN CONTACT WITH SOIL, WATER, OR EXPOSED TO WEATHER:

   WALLS AND TOP AND BOTTOM OF SLABS: 2 IN.

6. SPLICED BARS SHALL HAVE A MINIMUM LAP OF CLASS B TENSION LAP SPLICE UNLESS OTHERWISE NOTED.
7. CONSTRUCTION JOINTS SHALL NOT BE PLACED AT LOCATIONS OTHER THAN THOSE SHOWN ON THE DRAWINGS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.
8. SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE AS REQUIRED BY THE EQUIPMENT MANUFACTURER.
9. ALL EXPOSED CORNERS OF CONCRETE TO HAVE 3/4" MINIMUM CHAMFER UNLESS OTHERWISE NOTED.
10. REINFORCING BARS TO EXTEND 12 BAR DIAMETERS BUT NOT LESS THAN 12" BEYOND BEND UNLESS OTHERWISE NOTED.

CLASS B TENSION LAP SPLICE LENGTHS IN WALLS AND SLABS (INCHES)

BAR SIZE	BLACK STEEL f'c=4000 psi	
	TOP BARS	OTHER BARS
3	16	16
4	20	16
5	29	23
6	40	31
7	65	50
7*	43	33
8	81	62
8*	49	37
9*	60	46
10*	74	57

TENSION DEVELOPMENT LENGTHS IN WALLS AND SLABS (INCHES)

BAR SIZE	BLACK STEEL f'c=4000 psi	
	TOP BARS	OTHER BARS
3	12	12
4	15	12
5	23	17
6	31	24
7	50	38
7*	33	25
8	62	48
8*	37	29
9*	46	36
10*	57	44

NOTES:

1. MINIMUM BAR SPACING= 6" INCHES ON CENTER.
2. MINIMUM CONCRETE COVER = 1", EXCEPT AS NOTED BY * .
   * INDICATES MINIMUM CONCRETE COVER= 2".
3. A TOP BAR IS A HORIZONTAL BAR WHERE MORE THAN 12" OF FRESH CONCRETE IS CAST DIRECTLY BELOW THE BAR. WHERE HORIZONTAL WALL REINFORCEMENT IS UNIFORMLY SPACED IN A VERTICAL PLANE AT 12" MAXIMUM SPACING, LENGTHS MAY BE AS FOR "OTHER BARS".

LAP SPLICE AND DEVELOPMENT LENGTHS BLACK REINFORCING STEEL

COMMONWEALTH OF MASSACHUSETTS
DANIEL L. HARRIS
STRUCTURAL
No. 33008
REGISTERED
PROFESSIONAL ENGINEER

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: A. AVERIN
DRAWN BY: A. AVERIN
SHEET CHK'D BY: M.K. BIJU
CROSS CHK'D BY: W. HOTZ JR.
APPROVED BY: D.L. HARRIS
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

GENERAL NOTES AND STANDARD DETAILS

PROJECT NO. 1125-273132
FILE NAME: S003STDT.dwg
SHEET NO. S-3

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SCHEDULE OF SPECIAL INSPECTIONS

NOTES:

1. THIS DRAWING IS PROVIDED TO OUTLINE THE MINIMUM LEVEL OF SPECIAL INSPECTIONS DURING CONSTRUCTION TO ENSURE CONFORMANCE TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. A STATEMENT OF SPECIAL INSPECTIONS WILL BE PREPARED BY A REGISTERED DESIGN PROFESSIONAL AND SUBMITTED WITH THE BUILDING PERMIT APPLICATION.
2. SPECIAL INSPECTIONS WILL BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE (IBC) AND CHAPTER 17 OF THE MASSACHUSETTS STATE BUILDING CODE (MSBC).
3. IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE AND CHAPTER 17 OF THE MASSACHUSETTS STATE BUILDING CODE (MSBC), THE OWNER WILL PROVIDE AN APPROVED AGENCY OR AGENCIES, INDEPENDENT FROM THE CONTRACTOR AND EMPLOYING QUALIFIED PERSONNEL TO PERFORM SPECIAL INSPECTIONS IDENTIFIED IN THE STATEMENT OF SPECIAL INSPECTIONS. THE APPROVED AGENCY WILL FURNISH INSPECTION REPORTS TO THE DP, RC AND BUILDING OFFICIAL.
4. SPECIAL INSPECTIONS SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR QUALITY CONTROL OF THE WORK OR FOR CONFORMANCE TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. DETECTION, OR FAILURE TO DETECT, DEFECTS IN THE WORK SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO CORRECT ALL DEFECTS IN THE WORK, WHETHER DETECTED OR NOT, AND OF RESPONSIBILITY FOR CONFORMANCE TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
5. REMOVE AND REPLACE, OR REPAIR, DEFECTS IN THE WORK AND WORK NOT IN CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL BEAR THE COSTS FOR THE INSPECTION OF ANY REPLACED OR REPAIRED PORTIONS OF THE WORK.
6. CONTRACTOR SHALL COOPERATE WITH SPECIAL INSPECTIONS BY PROVIDING SUFFICIENT NOTICE FOR THE SCHEDULING OF PERSONNEL AND BY ALLOWING FREE AND SAFE ACCESS TO THE WORK FOR OBSERVATION, VERIFICATION, SAMPLING AND INSPECTION. PROVIDE AND PERMIT THE USE OF LADDERS, SCAFFOLDING, INCIDENTAL EQUIPMENT, AND SAFETY EQUIPMENT AS MAY BE REQUIRED TO CONDUCT SPECIAL INSPECTIONS. ALL SUCH PROVISIONS FOR FREE AND SAFE ACCESS AND EQUIPMENT SHALL BE SAFE, IN GOOD WORKING CONDITION, AND ERECTED, MAINTAINED, AND HANDLED BY QUALIFIED PERSONNEL.
7. SPECIAL INSPECTIONS DO NOT APPLY TO CONTRACTOR'S EQUIPMENT, TEMPORARY STRUCTURES USED FOR CONSTRUCTION, MEANS AND METHODS OF CONSTRUCTION, OR SITE SAFETY. CONTRACTOR SHALL REMAIN RESPONSIBLE FOR ADEQUACY AND SAFETY OF EQUIPMENT, TEMPORARY STRUCTURES USED FOR CONSTRUCTION, MEANS AND METHODS OF CONSTRUCTION AND SITE SAFETY.

TABLE 1 – REQUIRED VERIFICATION AND INSPECTION OF SOILS (IBC, TABLE 1705.6)

VERIFICATION AND INSPECTION	IBC REFERENCE	INSPECTION FREQUENCY		REFERENCE STANDARD	REMARKS
		CONTINUOUS	PERIODIC		
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	1705.6		X	CONTRACT DOCUMENTS AND GEOTECHNICAL REPORT	REFER TO THE FOLLOWING TABLES FOR ADDITIONAL RELATED SPECIAL INSPECTIONS
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL			X		
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS			X		
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL		X			
PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY			X		

TABLE 2 – REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION (IBC, TABLE 1705.3)

VERIFICATION AND INSPECTION	IBC REFERENCE	INSPECTION FREQUENCY		REFERENCE STANDARD
		CONTINUOUS	PERIODIC	
INSPECT REINFORCEMENT AND VERIFY PLACEMENT	1705.3 1908.4		X	ACI 318: CHAPTER 20, SECTIONS 25.2–25.3, 26.6.1–26.6.3
INSPECTION OF BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE	1705.3		X	ACI 318: SECTION 17.8.2
VERIFYING USE OF REQUIRED DESIGN MIX	1705.3 1904.1 1904.2 1908.2 1908.3		X	ACI 318: CHAPTER 19, SECTIONS 26.4.3–26.4.4
PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	1705.3 1908.10	X		ASTM C172, ASTM C31 ACI 318: SECTIONS 26.5, 26.12
INSPECT CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	1705.3 1908.6 1908.7 1908.8	X		ACI 318: SECTION 26.5
VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	1705.3 1908.9		X	ACI 318: SECTIONS 26.5.3–26.5.5
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED, SHORING AND RESHORING	1705.3 1903.2		X	ACI 318: SECTION 26.11.1.2(b)
REQUIRED VERIFICATION AND INSPECTION OF POST INSTALLED CONCRETE ANCHORS				
INSPECTION OF MECHANICAL ANCHORS INSTALLED IN HARDENED CONCRETE (EXPANSION ANCHORS)	1705.3 1901.3		X	ACI 318: SECTION 17.8.2 PER ICC TEST REPORT FOR EXPANSION ANCHORING SYSTEM
VERIFICATION AND INSPECTION OF ADHESIVE ANCHORS AND DOWELS INSTALLED IN HARDENED CONCRETE, ANCHOR PRODUCT NAME, TYPE, DIMENSIONS, HOLE DIMENSIONS, COMPLIANCE WITH DRILL BIT REQUIREMENTS, HOLE PREPARATION AND SURFACE ROUGHNESS, CLEANLINESS OF THE HOLE AND ANCHOR/ADHESIVE INSTALLATION, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE	1705.3 1703.4.2	X		ACI 318: SECTION 17.8.2 PER ICC TEST REPORT FOR EXPANSION ANCHORING SYSTEM

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DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

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SPECIAL INSPECTION

COMMONWEALTH OF MASSACHUSETTS
DANIEL L. HARRIS
STRUCTURAL
No. 33008
REGISTERED
PROFESSIONAL ENGINEER

PROJECT NO. 1125-273132
FILE NAME: S004STDT.dwg

SHEET NO.
S-4

MECHANICAL PIPING GENERAL ABBREVIATIONS:

A	AB	ANCHOR BOLT
	ABND	ABANDONED
	AC	ALTERNATING CURRENT
	ADH	ADHESIVE
	AFF	ABOVE FINISHED FLOOR
	AG	ABOVE GRADE
	AHS	AIR HOSE STATION
	ALT	ALTERNATE
	ALY	ALLOY
	AMT	AMOUNT
	ANOD	ANODIZED
	AP	ACCESS PANEL
	APPROX	APPROXIMATE
	AR	ACID RESISTANT PIPING
	ARCH	ARCHITECTURAL
	ARD	ACID RESISTANT DRAIN
	ARRGT	ARRANGEMENT
	ASSY	ASSEMBLY
	AT	AIR TIGHT
	AUTO	AUTOMATIC
	AUX	AUXILLIARY
	AVG	AVERAGE
	AWG	AMERICAN WIRE GAUGE
B	B	BEND
	B&B	BELL AND BELL
	B&F	BELL AND FLANGE
	B&S	BELL AND SPIGOT, GENERIC
	BC	BOLT CIRCLE
	BET	BETWEEN
	BFV	BUTTERFLY VALVE
	B FLG	BLIND FLANGE
	BHP	BRAKE HORSE POWER
	BIT	BITUMINOUS
	BLDG	BUILDING
	BM	BENCH MARK
	BOT	BOTTOM
	BRG	BEARING
	BRK	BRICK
	BT	BENT
	BV	BALL VALVE
C	C TO C	CENTER TO CENTER
	CAJ	CAULKED JOINT
	CAT	CATALOG
	CB	CATCH BASIN
	CEM	CEMENT
	CENT	CENTRIFUGAL
	CF	CENTRIFUGE
	CFM	CUBIC FEET PER MINUTE
	CFS	CUBIC FEET PER SECOND
	CHAM	CHAMFER
	CHEM	CHEMICAL
	CHKD	CHECKERED
	CIR	CIRCLE
	℄	CENTER LINE
	CLG	CEILING
	CLKG	CAULKING
	CLR	CLEARANCE
	CMU	CONCRETE MASONRY UNIT
	CO	CLEAN OUT
	COL	COLUMN
	COMP	COMPANION
	CONC	CONCRETE
	CONN	CONNECTION
	CONST	CONSTRUCTION
	CONT	CONTINUOUS, CONTINUE
	CONTR	CONTRACTOR OR CONTRACT
	COR	CORRUGATED
	CORR	CORRIDOR
	CPLG	COUPLING
	CRE	CORROSION RESISTANT
	CRS	COURSES
	CSK	COUNTER SINK
	CSTG	CASTING
	CTR	CENTER
	CV	CHECK VALVE
D	DBL	DOUBLE
	DEMO	DEMOLITION
	DEPT	DEPARTMENT
	DIA	DIAMETER
	DIAG	DIAGONAL
	DIAP	DIAPHRAGM
	DIM	DIMENSION
	DIR	DIRECTION
	DISCH	DISCHARGE
	DIST	DISTANCE
	DN	DOWN
	DWG	DRAWING
E	E	EAST
	E TO E	END TO END
	EA	EACH
	ECC	ECCENTRIC
	EF	EACH FACE
	ELEC	ELECTRICAL
	ELEV	ELEVATION
	ELL	ELBOW
	EMERG	EMERGENCY
	ENG	ENGINEER
	EQ	EQUAL
	EQUIP	EQUIPMENT
	EW	EACH WAY
	EWU	EYE WASH UNIT
	EXH	EXHAUST
	EXIST	EXISTING
	EXP	EXPANSION
	EXP JT	EXPANSION JOINT
	EXT	EXTERNAL
F	F	FARENHEIT
	FA	FLANGE ADAPTER
	FAB	FABRICATED
	FC	FLEXIBLE COUPLING OR CONNECTION
	FD	FLOOR DRAIN
	FDN	FOUNDATION
	FH	FIRE HYDRANT
	FIN	FINISHED
	FIN GR	FINISHED GRADE
	FL	FLUSH
	FLR	FLOOR
	FLG	FLANGE
	FLGD	FLANGED
	FLV	FLAP VALVE
	FM	FORCE MAIN
	FPM	FEET PER MINUTE
	FPS	FEET PER SECOND
	FV	FOOT VALVE
G	G	GROUND
	GA	GAUGE, GAGE
	GAL	GALLON
	GALV	GALVANIZE, GALVANIZED (HOT DIPPED)
	GLV	GLOBE VALVE
	GPM	GALLONS PER MINUTE
	GR	GRADE
	GRTG	GRATING
	GV	GATE VALVE
	GVL	GRAVEL
H	H	HIGH
	HB	HOSE BIBB
	HD	HEAVY DUTY
	HDR	HEADER
	HDW	HARDWARE
	HEV	HOSE END VALVE
	HGL	HYDRAULIC GRADE LINE
	HGR	HANGER
	HGT	HEIGHT
	HH	HANDHOLE
	HORIZ	HORIZONTAL
	HP	HORSEPOWER
	HPT	HIGH POINT
	HR	HOUR
	HRL	HANDRAIL
	HS	HIGH STRENGTH
	HVAC	HEATING, VENTILATING AND AIR CONDITIONING
	HVY	HEAVY
	HWL	HIGH WATER LEVEL
	HYD	HYDRAULIC
	HZ	HERTZ
I	IC	INSPECTION CHAMBER
	ID	INTERNAL DIAMETER
	IF	INSIDE FACE
	IN	INCH
	INS	INSULATION, INSULATE
	INSTA	INSTANTANEOUS
	INSTR	INSTRUMENTATION, INSTRUMENT
	INT	INTERIOR
	INV	INVERT
	IPS	IRON PIPE SIZE
J	JT	JOINT
L	L	LITER
	LAB	LABORATORY
	LAT	LATERAL
	LB	POUND
	LG	LONG
	LH	LEFT HAND
	LLWL	LOW LOW WATER LEVEL
	LONG	LONGITUDINAL
	LPT	LOW POINT
	LR	LONG RADIUS
	LWL	LOW WATER LEVEL
M	M	MOTOR
	MAN	MANUAL
	MAS	MASONRY
	MATL	MATERIAL
	MAX	MAXIMUM
	MCC	MOTOR CONTROL CENTER
	MECH	MECHANICAL
	MED	MEDIUM
	MEZZ	MEZZANINE
	MFR	MANUFACTURER
	MGD	MILLION GALLONS PER DAY
	MH	MANHOLE
	MHS	METAL HOSE
	MHT	MEAN HIGH TIDE
	MHW	MEAN HIGH WATER
	MIN	MINIMUM
	MISC	MISCELLANEOUS
	MJ	MECHANICAL JOINT
	MLT	MEAN LOW TIDE
	MLW	MEAN LOW WATER
	MO	MASONRY OPENING
	MTD	MOUNTED
	MTL	METAL
N	N	NORTH
	NAT	NATURAL
	NC	AMERICAN NATIONAL COARSE THREAD
	NC	NORMALLY CLOSED
	NF	AMERICAN NATIONAL FINE THREAD
	NIC	NOT IN CONTRACT
	NO.	NUMBER
	NO	NORMALLY OPEN
	NOM	NOMINAL
	NPSF	AMERICAN NATIONAL STRAIGHT PIPE THREADS FOR DRY SEAL PRESSURE JOINTS
	NPT	AMERICAN NATIONAL TAPER PIPE THREAD
	NTS	NOT TO SCALE
	NV	NEEDLE VALVE
O	O TO O	OUT TO OUT
	OC	ON CENTER
	OD	OUTSIDE DIAMETER
	OED	OPEN END OR OPEN EQUIPMENT DRAIN
	OF	OUTSIDE FACE
	OFF	OFFICE
	OPNG	OPENING
	OPP	OPPOSITE
	OR	OUTSIDE RADIUS
	OS&Y	OUTSIDE STEM AND YOKE
	OVHD	OVERHEAD
P	P	PUMP, PUMPING
	P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
	PFP	PLATE AND FRAME PRESS
	PL	PLATE
	PLMG	PLUMBING
	PV	PLUG VALVE
	PLYWD	PLYWOOD
	PN	PNEUMATIC
	PPM	PARTS PER MILLION
	PR	PAIR
	PS	PUMPING STATION
	PSF	POUNDS PER SQ. FOOT
	PSI	POUNDS PER SQUARE INCH
	PTD	PAINTED
	PCHV	PINCH VALVE
Q	Q	FLOW
	QTY	QUANTITY
R	R	RISERS
	RAD	RADIUS
	RD	ROOF DRAIN
	RED	REDUCER
	REHAB	REHABILITATION
	REINF	REINFORCING
	REQD	REQUIRED
	RESIL	RESILIENT
	RGH	ROUGH
	RH	RIGHT HAND
	RLG	RAILING
	RM	ROOM
	RND	ROUND
	RO	ROUGH OPENING
	RPBP	REDUCED PRESSURE BACK FLOW PREVENTER
	RPM	REVOLUTION PER MINUTE
	RST	REINFORCING STEEL
	RUB	RUBBER
S	S	SOUTH
	SA	SHOCK ABSORBER
	SAN	SANITARY
	SCH	SCHEDULE
	SCR	SCREW
	SCRN	SCREEN, SCREENING
	SEC	SECONDARY
	SECT	SECTION
	SG	SLIDE GATE
	SHT	SHEET
	SHTG	SHEETING
	SIM	SIMILAR
	SLG	SLUICE GATE
	SLNT	SEALANT
	SLV	SLEEVE
	SM	SHEET METAL
	SMH	SEWER MANHOLE
	SP	STATIC PRESSURE
	SP	STAND PIPE
	SPEC	SPECIFICATION, SPECIFIED
	SPR	SPRINKLER
	SQ	SQUARE
	SR	SHORT RADIUS
	SS	STAINLESS STEEL
	SSK	SERVICE SINK
	STA	STATION
	STD	STANDARD
	STG	STORAGE
	STIFF	STIFFENER
	STL	STEEL, GENERAL
	STR	STRAIGHT
	STRUCT	STRUCTURE, STRUCTURAL
	SUB	SUBMERGED
	SUC	SUCTION
	SUPT	SUPERINTENDENT
	SURF	SURFACE
	SUSP	SUSPENDED
	SW	SOCKET WELDED
	SYM	SYMMETRICAL
T	T	TREADS
	T&B	TOP AND BOTTOM
	TDH	TOTAL DYNAMIC HEAD
	TEMP	TEMPERATURE
	TF	TOP FACE
	THK	THICK
	THRD	THREADED, THREAD
	TK	TANK
	TKD	TANK DRAIN
	TOS	TOP OF STEEL
	TPG	TOPPING
	TYP	TYPICAL
U	U/S	UNDERSIDE
	UG	UNDERGROUND
	UL	UNDERWRITERS LABORATORY
	UON	UNLESS OTHERWISE NOTED
V	V	VALVE
	V	VENT
	VAC	VACUUM
	VB	VALVE BOX
	VE	VIBRATION ELIMINATOR
	VERT	VERTICAL
	VF	VACUUM FILTER
	VOL	VOLUME
	VTR	VENT THROUGH ROOF
W	W	WEST
	W/	WITH
	W/A	WHERE APPLICABLE
	W/O	WITHOUT
	WC	WATER CLOSET
	WD	WOOD
	WGT	WEIGHT
	WH	WALL HYDRANT
	WHS	WASH HOSE STATION
	WL	WATER LEVEL
	WP	WEATHER PROOF
	WS	WATER SURFACE
	WS	WATER STOP
	WT	WATERTIGHT
	WWF	WELDED WIRE FABRIC
X	X HVY	EXTRA HEAVY
	X STR	EXTRA STRONG
	XP	EXPLOSION PROOF
Y	YH	YARD HYDRANT

FLOW DIAGRAM AND MECHANICAL PIPING DRAWING LEGEND:

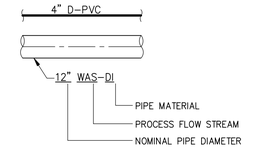
PROCESS FLOW STREAMS:

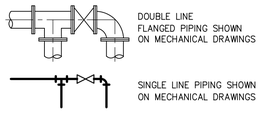
BYP	BYPASS
D	DRAIN
FM	FORCE MAIN
INF	INFLUENT
S	SEWAGE
SD	STORM DRAIN
V	VENT
WM	WATER MAIN

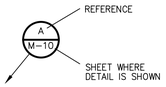
PIPE MATERIALS:

CI	CAST IRON
DI	DUCTILE IRON
CU	COPPER
CPVC	CHLORINATED POLYVINYLCHLORIDE
FRP	FIBERGLASS REINFORCED PLASTIC PIPE
GLDI	GLASS LINED DUCTILE IRON
GS	GALVANIZED STEEL PIPE
HDPE	HIGH DENSITY POLYETHYLENE
PVCS	POLYVINYL CHLORIDE SEWER PIPE
PVC	POLYVINYL CHLORIDE PRESSURE PIPE
PVCP	PERFORATED POLYVINYL CHLORIDE PIPE
POLYP	POLYPROPYLENE
RCP	REINFORCED CONCRETE PIPE
SS	STAINLESS STEEL
STL	BLACK STEEL PIPE OR CARBON STEEL PIPE

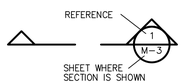
TYPICAL PIPE TAGS

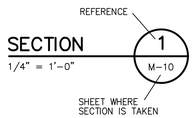






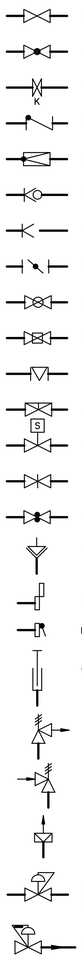
DETAIL SYMBOL





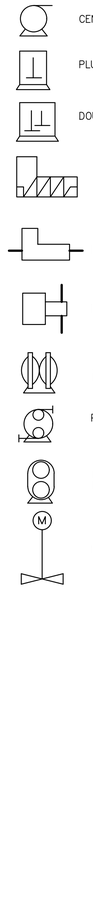
SECTION SYMBOLS

VALVE SYMBOLS

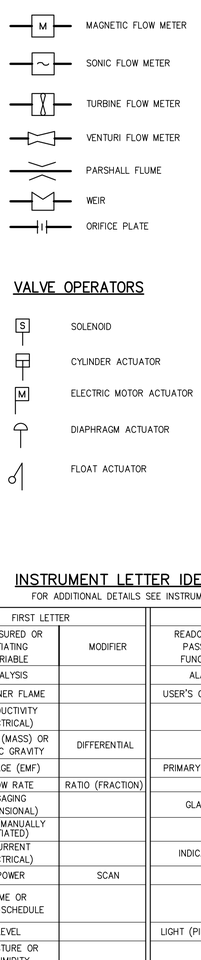


GENERAL EQUIPMENT SYMBOLS

PARTIAL LIST
ADDITIONAL SYMBOLS MAY BE
SHOWN ON THE FLOW DIAGRAMS



INSTRUMENTATION



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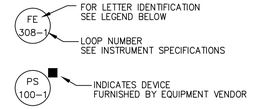


NOTE:
MECHANICAL DRAWINGS SHOW ONLY PRIMARY INSTRUMENT ELEMENTS. FOR ADDITIONAL DETAILS REFER TO INSTRUMENTATION SPECIFICATIONS.

VALVE OPERATORS

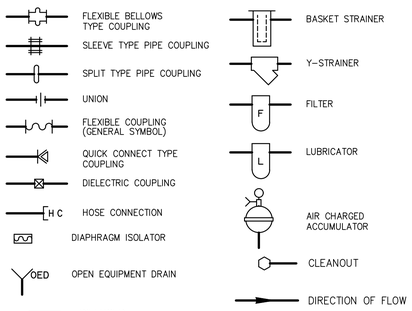
GATE SYMBOLS

INSTRUMENT LETTER IDENTIFICATION TABLE

FOR ADDITIONAL DETAILS SEE INSTRUMENTATION SPECIFICATIONS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER FLAME		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	GAGING (DIMENSIONAL)		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME–SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY				MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT	INTEGRATE OR TOTALIZE			
R	RADIOACTIVITY		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VISCOCITY			VALVE, DAMPER OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	USER'S CHOICE			RELAY OR COMPUTE	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

MISCELLANEOUS FITTINGS AND PIPING COMPONENTS



NOTE:
THIS IS A GENERAL LIST OF SYMBOLS AND ABBREVIATIONS.

NOT ALL ITEMS SHOWN HERE APPEAR ON THE CONTRACT DRAWINGS.

ADDITIONAL LEGENDS AND/OR ABBREVIATIONS MAY APPEAR IN THIS SET OF DRAWINGS TO INDICATE SPECIFIC CONDITIONS.

MECHANICAL PIPING GENERAL NOTES:

1. PROCESS EQUIPMENT DIMENSIONS, LOCATIONS AND PIPING SYSTEM LAYOUTS ARE BASED ON EQUIPMENT SELECTED BY THE ENGINEER AND ALLOW FOR FUTURE EXPANSION OF THE FACILITIES.
   IF THE CONTRACTOR PROPOSES TO FURNISH EQUIPMENT THAT REQUIRES AN ARRANGEMENT OR SPACE DIFFERING FROM THAT INDICATED ON THE DRAWINGS OR SPECIFIED, THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER FOR APPROVAL DETAILED ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, INSTRUMENTATION, HVAC AND ELECTRICAL DRAWINGS AND EQUIPMENT LISTS SHOWING ALL NECESSARY CHANGES AND EMBODYING ALL FEATURES OF THE EQUIPMENT AND/OR PROCESS SYSTEM PROPOSED TO BE FURNISHED. SUCH CHANGES IF APPROVED BY THE ENGINEER SHALL BE AT NO EXTRA COST TO THE OWNER. THE CONTRACTOR SHALL ASSUME THE COST OF, AND THE RESPONSIBILITY FOR, SATISFACTORILY ACCOMPLISHING ALL THE NECESSARY CHANGES CORRESPONDING TO THE DIMENSIONS AND CHARACTERISTICS OF THE EQUIPMENT SUBMITTED AND APPROVED BY THE ENGINEER. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
2. SIZES OF EQUIPMENT FOUNDATIONS INDICATED ON THE DRAWINGS ARE APPROXIMATE. EXACT DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FOR THE EQUIPMENT FURNISHED. ALL FLOOR MOUNTED EQUIPMENT SHALL BE SET ON CONCRETE PADS CONFORMING TO DETAILS SHOWN ON THE STRUCTURAL AND/OR MECHANICAL DRAWINGS.
3. EXTERIOR PIPING IS SHOWN ON THE CIVIL DRAWINGS.
4. DIELECTRIC COUPLINGS, FLANGES OR UNIONS SHALL BE INSTALLED AT ALL CONNECTIONS OF COPPER PIPE TO OTHER TYPES OF METALLIC PIPING.
5. MECHANICAL PIPING DRAWINGS DO NOT SHOW ALL VALVES, GAUGES, SWITCHES, OPERATORS, DRAINS, VENTS, etc. REQUIRED FOR THE COMPLETE SYSTEM. CERTAIN SMALL DIAMETER PROCESS PIPING RUNS (3" AND SMALLER) MAY NOT BE SHOWN IN THEIR ENTIRETY. GENERALLY SMALL PIPING IS SHOWN DIAGRAMMATICALLY. FIELD ROUTE TO AVOID INTERFERENCES, SUBJECT TO THE APPROVAL OF THE ENGINEER. APPURTENANCES MAY BE OMITTED FOR THE SAKE OF CLARITY. THE CONTRACTOR SHALL FURNISH, INSTALL AND TEST ALL PIPING SYSTEMS AS INDICATED ON THE PROCESS FLOW SCHEMATICS AND/OR AS DEFINED IN THE SPECIFICATIONS TO PROVIDE THE COMPLETE SYSTEM.
6. UNLESS OTHERWISE SHOWN ON THE MECHANICAL DRAWINGS ALL FLOORSLAB, WALL AND TANK PENETRATIONS SHALL BE AS SHOWN ON THE PENETRATION DETAILS INCLUDED IN THE MECHANICAL CONSTRUCTION DETAILS. ABOVE GROUND EXTERIOR WALL AND ROOF PENETRATIONS SHALL BE AS SHOWN ON THE ARCHITECTURAL DRAWINGS. IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY SUBSTITUTE ALTERNATE METHODS PROVIDING THEY MEET INTENDED DESIGN REQUIREMENTS.
7. NOT ALL AND ONLY CERTAIN TYPES OF SUPPORTS ARE SHOWN ON THE MECHANICAL DRAWINGS. UNLESS OTHERWISE DETAILED ON THE DRAWINGS ALL PIPE SUPPORTS SHALL BE DESIGNED, FURNISHED AND INSTALLED BY THE CONTACTOR AS SPECIFIED AND TO THE APPROVAL OF ENGINEER. NOTE THAT ALL PIPING ADJACENT TO EQUIPMENT, VALVES, COUPLINGS, INSTRUMENT DEVICES AND OTHER APPURTENANCES SHALL BE PROPERLY SUPPORTED AND/OR ANCHORED ACCORDING TO MANUFACTURERS RECOMMENDATIONS.
8. ALL EQUIPMENT BASES AND PIPING HAVING DRAIN OUTLETS SHALL BE PIPED TO THE NEAREST OPEN END DRAIN (OED) OR TRENCH DRAIN USING GALVANIZED STEEL PIPE OF APPROPRIATE DIAMETER AS INDICATED ON THE DRAWINGS OR AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
9. UNLESS OTHERWISE SHOWN ALL PIPES UNDER CONCRETE SLABS SHALL BE ENCASED IN CONCRETE AS SHOWN ON THE STRUCTURAL DRAWINGS.
10. NOT ALL VALVE AND GATE OPERATORS ARE SHOWN (i.e. HANDWHEELS, CRANKS, CHAINWHEELS, MOTORS OR LEVERS). OPERATORS SHALL BE LOCATED TO ALLOW CONVENIENT OPENING AND CLOSING OF VALVES OR GATES. ORIENTATION OF OPERATORS SHALL BE TO APPROVAL OF ENGINEER. NO VALVE SHALL BE INSTALLED WITH THE OPERATING STEM IN THE VERTICAL DOWNWARD POSITION.
11. PIPING SHALL BE INSTALLED SO THAT ANY PIPE, LAYER OF PIPING OR EQUIPMENT CAN BE REMOVED WITHOUT DISTURBING REMAINING PIPES AND SUPPORTS.
12. THE NUMBER OF UNIONS AND OTHER TYPES OF DISMANTLING COUPLINGS SHOWN IS APPROXIMATE. THE CONTRACTOR SHALL PROVIDE UNIONS OR DISMANTLING COUPLINGS WHETHER THEY ARE SHOWN ON THE DRAWINGS OR NOT ON ALL PIPELINES WITH WELDED, THREADED OR SOLVENT CEMENTED JOINTS: AT ALL EQUIPMENT CONNECTIONS, AT A MINIMUM EVERY 50 FEET AND IN BRANCH LINES TO ALLOW CONVENIENT REMOVAL OF PIPING, EQUIPMENT AND APPURTENANCES.
13. FURNISH AND INSTALL ESCUTCHEON PLATES OF SUITABLE SIZE ON ALL PROCESS LINES PASSING THROUGH INTERIOR WALLS OF NON–PROCESS AREAS SUCH AS OFFICES, LABS, LOCKER ROOMS, TOILETS AND PUBLIC CORRIDORS. ESCUTCHEON PLATES SHALL BE INSTALLED ON THE INTERIOR SIDE OF THE NON–PROCESS ROOMS. EXTERIOR, ABOVE GROUND WALL PENETRATIONS SHALL BE SPLIT AND MADE OF 316 SS UNLESS OTHERWISE SHOWN ON THE ARCHITECTURAL DETAILS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD LOCATING AND TAGGING ALL PROCESS VALVES. PROCESS VALVE IDENTIFICATION SYSTEM SHALL BE AS DETAILED IN THE SPECIFICATIONS.
15. ALL PIPING ENCASED IN CONCRETE SHALL HAVE MECHANICAL JOINTS AT ALL STRUCTURAL EXPANSION JOINTS.
16. PORTIONS OF NONPROCESS PIPING (HVAC & PLUMBING) ARE SHOWN FOR CLARITY AND FOR COORDINATION BETWEEN DISCIPLINES. REFER TO APPROPRIATE DRAWINGS AND SPECIFICATIONS.
17. FOR PUMP SEAL WATER, VENT, DRAIN, PRESSURE GAGE, VALVING AND PIPING SEE MECHANICAL PROCESS DETAILS.
18. ALL PIPING AND PROCESS SYSTEMS SHALL BE CAPABLE OF BEING VENTED AND DRAINED. TYPICAL LOCATIONS ARE INDICATED BY (V) OR (D) ON THE DRAWINGS.
19. ALL DIMENSIONS MARKED WITH ✱ INDICATE CONTRACTOR TO COORDINATE DIMENSION WITH MANUFACTURER OF APPROVED EQUIPMENT.
20. ALL DIMENSIONS MARKED WITH ◐ INDICATE CONTRACTOR TO COORDINATE DIMENSION IN THE FIELD TO APPROVAL OF ENGINEER

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: W. HOTZ JR.
DRAWN BY: A. WELDON
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. DOHERTY
APPROVED BY: W. HOTZ JR.
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MECHANICAL LEGEND, SYMBOLS ABBREVIATIONS AND GENERAL NOTES

COMMONWEALTH OF MASSACHUSETTS
WILLIAM J. HOTZ JR.
ENVIRONMENTAL
No. 53732
REGISTERED
PROFESSIONAL ENGINEER

William J Hotz Jr
2025.11.18 11:52:02-05'00'

PROJECT NO. 1125–273132
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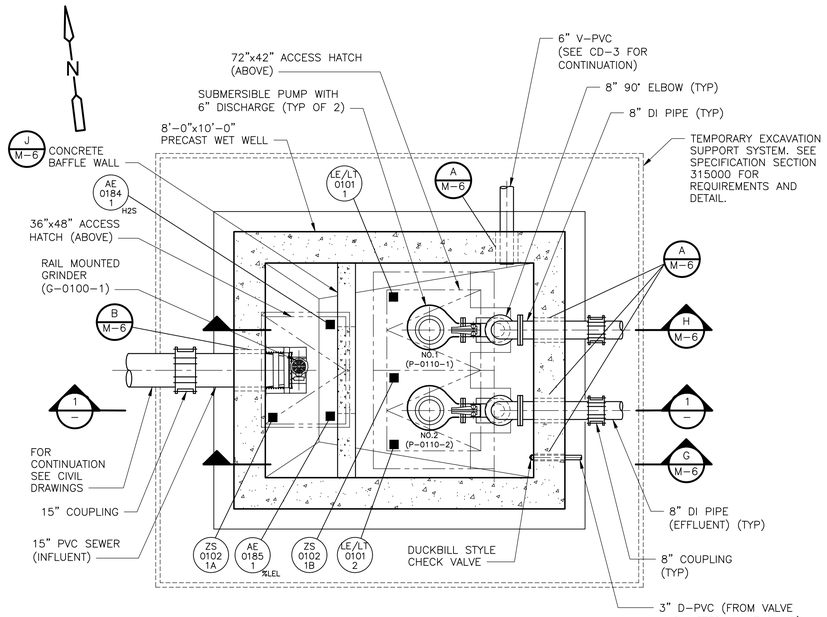
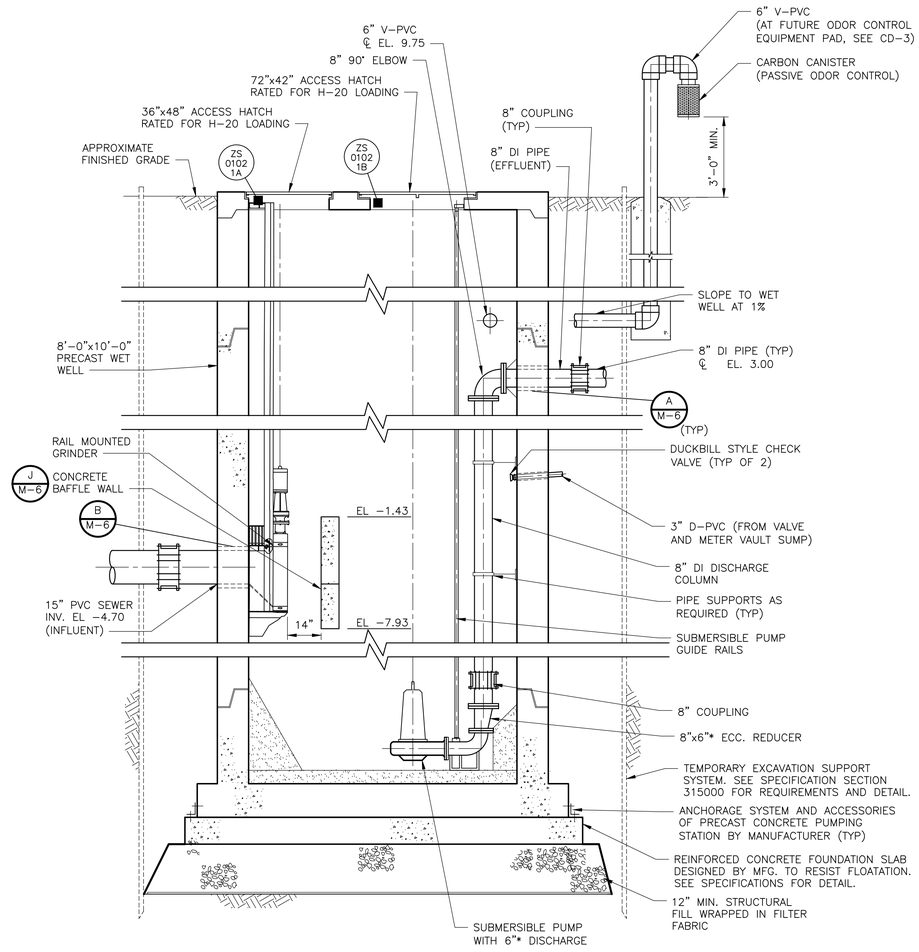
SHEET NO.
M-1



PLAN
3/8" = 1'-0"



SECTION 1/—
3/8" = 1'-0"

PUMPING STATION NO.1 TABLE

TOP OF STATION ELEVATION	15.33
INFLUENT PIPE	15" PVC SEWER INV. EL. -4.70
HIGH-HIGH ALARM ELEVATION	-4.25
PUMP ON LEVEL ELEVATION	-5.66
PUMP OFF LEVEL ELEVATION	-10.66
LOW-LOW LEVEL ALARM ELEVATION	-11.66
INVERT OF STRUCTURE ELEVATION	-13.33
BOTTOM OF STRUCTURE ELEVATION	-14.00
DISCHARGE PIPE, VALVES AND ALL FITTINGS	AS NOTED ON DRAWINGS
FORCE MAIN	8" PVC CL EL. 3.00 (APPROX.)

NOTES:

1. ELEVATIONS AND DIMENSIONS NOTED WITH * ARE SUBJECT TO CHANGE BASED ON CONTRACTORS SUBMITTED EQUIPMENT AND SHALL BE APPROVED BY THE ENGINEER.
2. CONFIRM ACCESS HATCH SIZE WITH PUMP MANUFACTURE FOR REMOVAL/MAINTENANCE
3. PIPE SUPPORTS ARE SHOWN FOR CONCEPTUAL PURPOSES ONLY AND SHALL BE DESIGNED BY THE MANUFACTURER.
4. MINIMUM SUBMERGENCE SHALL BE AS RECOMMENDED BY PUMP MANUFACTURER.
5. FOR EXCAVATION SUPPORT REQUIREMENTS, SEE SPECIFICATION SECTION 315000 FOR DETAIL.
6. WORK ASSOCIATED WITH PUMPING STATION NO.1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

3/8" = 1'- 0"
2 0 2 4

2024.08.16 14:50:26-04'00'
William J Hotz Jr

COMMONWEALTH OF MASSACHUSETTS
WILLIAM J. HOTZ JR.
ENVIRONMENTAL
No. 53732
REGISTERED
PROFESSIONAL ENGINEER

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: W. HOTZ JR.
DRAWN BY: A. WELDON
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. DOHERTY
APPROVED BY: W. HOTZ JR.
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO.1 WET WELL PLAN AND SECTION

PROJECT NO. 1125-273132
FILE NAME: M002PSPS.DWG
SHEET NO.
M-2

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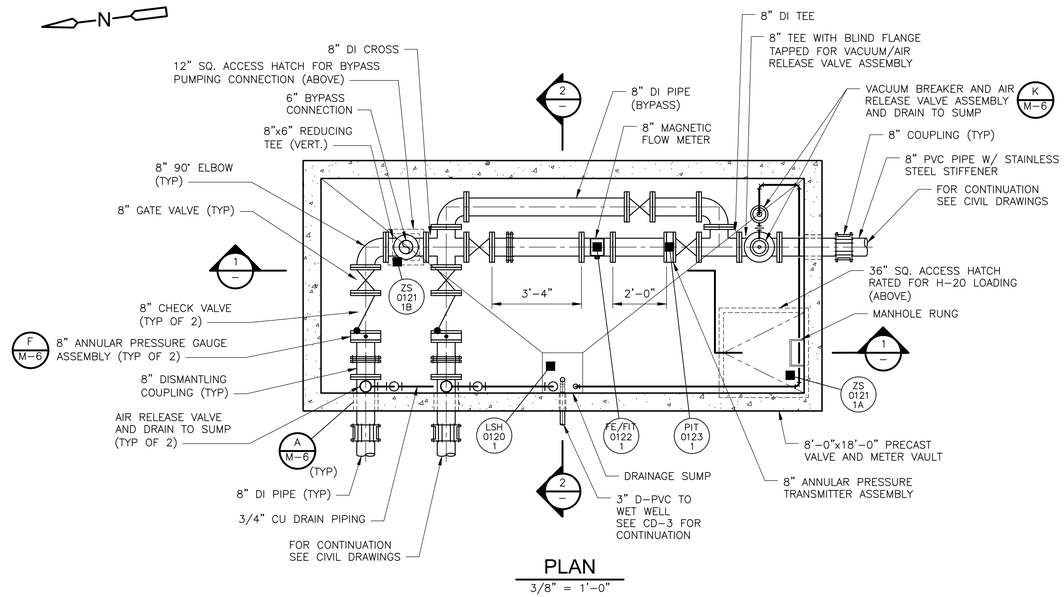
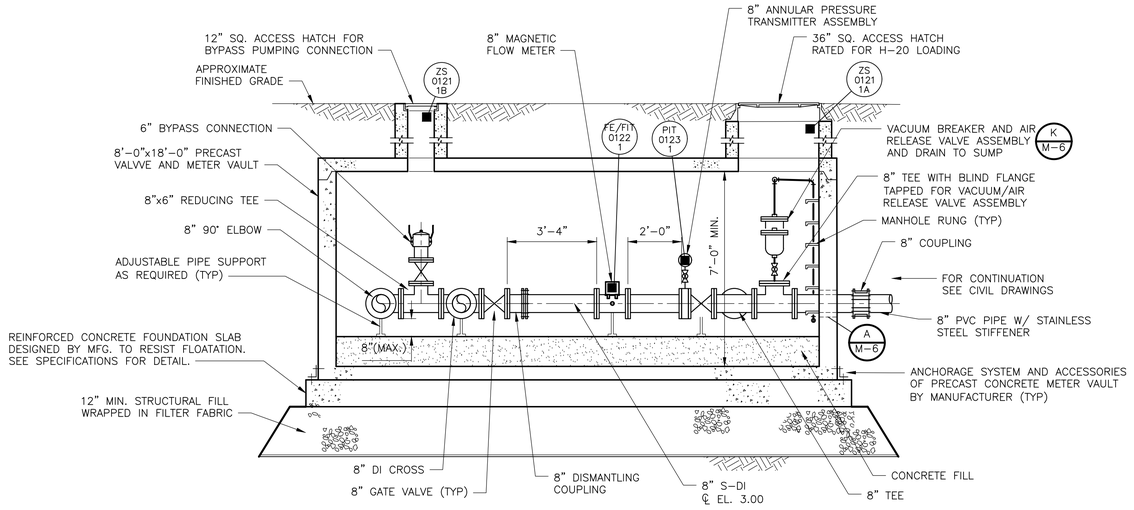
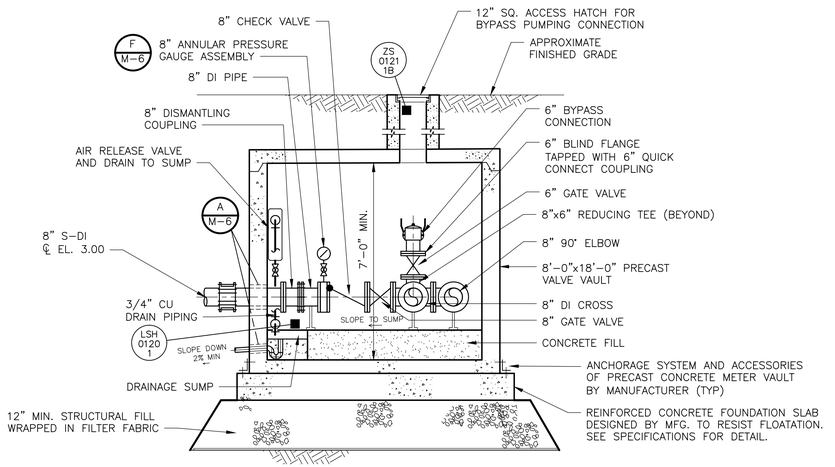


PLAN
3/8" = 1'-0"



SECTION 1
3/8" = 1'-0"



SECTION 2
3/8" = 1'-0"

NOTES:

1. WORK ASSOCIATED WITH PUMPING STATION NO.1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

3/8" = 1'- 0"
2 0 2 4

William J Hotz Jr
2024.08.16 14:51:05-04'00'

COMMONWEALTH OF MASSACHUSETTS
WILLIAM J. HOTZ JR.
No. 53732
ENVIRONMENTAL
REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: W. HOTZ JR.
DRAWN BY: A. WELDON
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APPROVED BY: W. HOTZ JR.
DATE: AUGUST 2024

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TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO.1 VALVE AND METER VAULT PLAN AND SECTIONS

PROJECT NO. 1125-273132
FILE NAME: M003PSPS.DWG
SHEET NO. M-3

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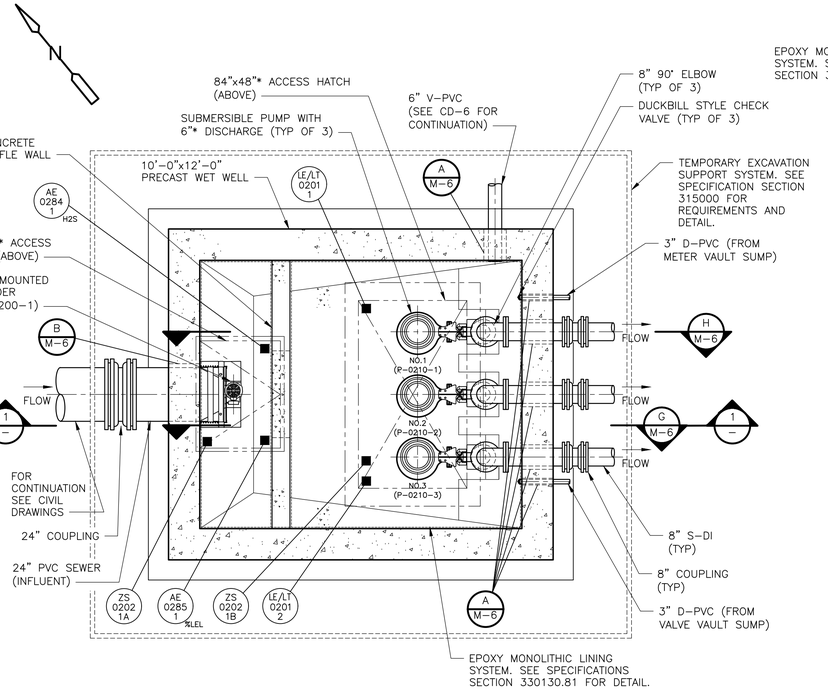
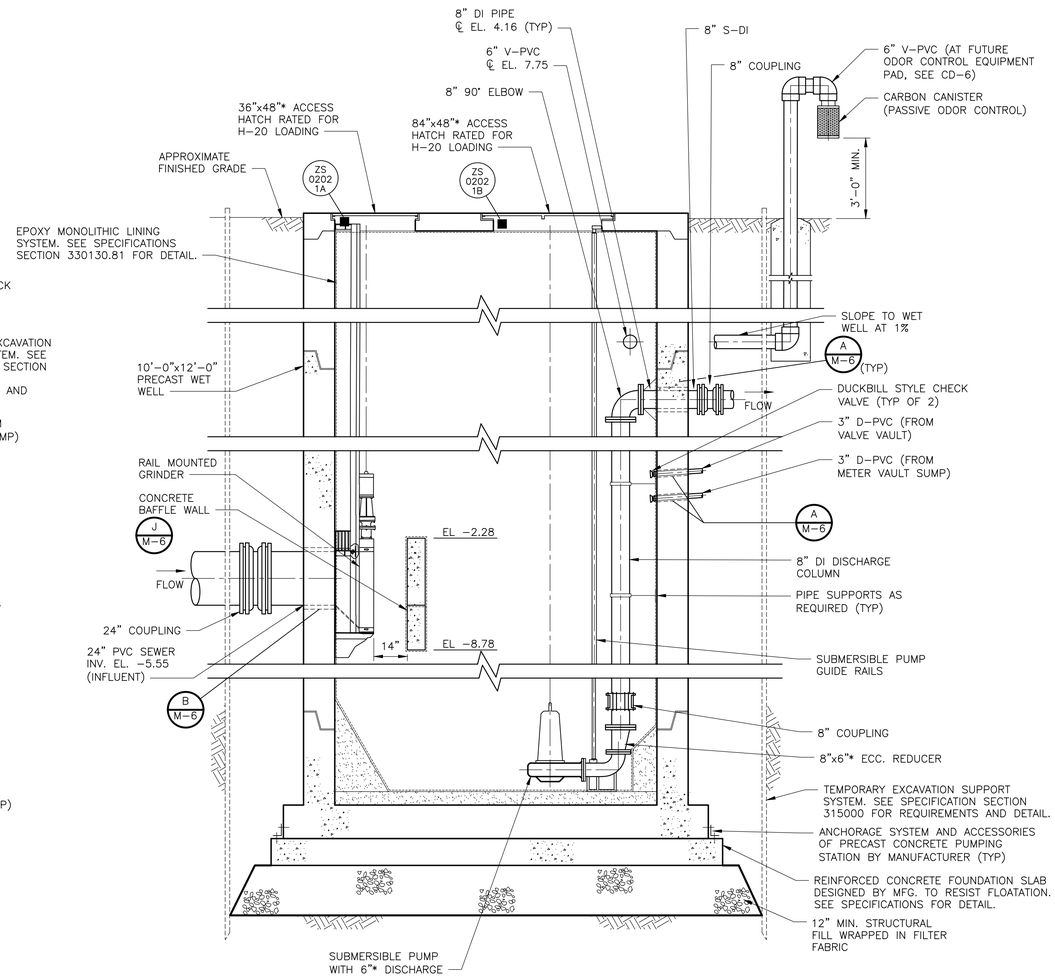


PLAN
3/8" = 1'-0"



SECTION 1
3/8" = 1'-0"

PUMPING STATION NO.2 TABLE

TOP OF STATION ELEVATION	14.00
INFLUENT PIPE	24" PVC SEWER INV. EL. -5.55
HIGH LEVEL ALARM ELEVATION	-4.25
LAG PUMP ON ELEVATION	-5.25
LEAD PUMP ON ELEVATION	-7.25
LAG PUMP OFF ELEVATION	-8.75
LEAD PUMP OFF ELEVATION	-11.75
LOW LEVEL ALARM ELEVATION	-12.75
INVERT OF STRUCTURE ELEVATION	-14.25
BOTTOM OF STRUCTURE ELEVATION	-15.50
DISCHARGE PIPE, VALVES AND ALL FITTINGS	AS NOTED ON DRAWINGS
FORCE MAIN	12" PVC CL EL. 4.16 (APPROX.)

NOTES:

1. ELEVATIONS AND DIMENSIONS NOTED WITH * ARE SUBJECT TO CHANGE BASED ON CONTRACTORS SUBMITTED EQUIPMENT AND SHALL BE APPROVED BY THE ENGINEER.
2. CONFIRM ACCESS HATCH SIZE WITH PUMP AND GRINDER MANUFACTURER FOR REMOVAL/MAINTENANCE.
3. PIPE SUPPORTS ARE SHOWN FOR CONCEPTUAL PURPOSES ONLY AND SHALL BE DESIGNED BY THE MANUFACTURER.
4. MINIMUM SUBMERGENCE SHALL BE AS RECOMMENDED BY PUMP MANUFACTURER.
5. FOR EXCAVATION SUPPORT REQUIREMENTS, SEE SPECIFICATION SECTION 315000 FOR DETAIL.

3/8" = 1'- 0"
2 0 2 4

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: W. HOTZ JR.
DRAWN BY: A. WELDON
SHEET CHK'D BY: M. GUIDICE
CROSS CHK'D BY: J. DOHERTY
APPROVED BY: W. HOTZ JR.
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

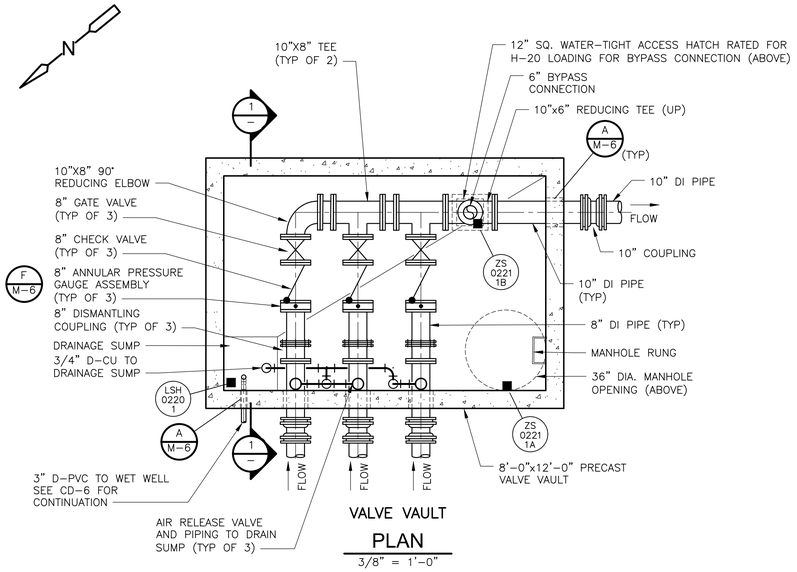
TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO.2
WET WELL
PLAN AND SECTION

COMMONWEALTH OF MASSACHUSETTS
WILLIAM J. HOTZ JR.
ENVIRONMENTAL
No. 53732
REGISTERED PROFESSIONAL ENGINEER

William J Hotz Jr
2025.11.18 11:52:30-05'00'

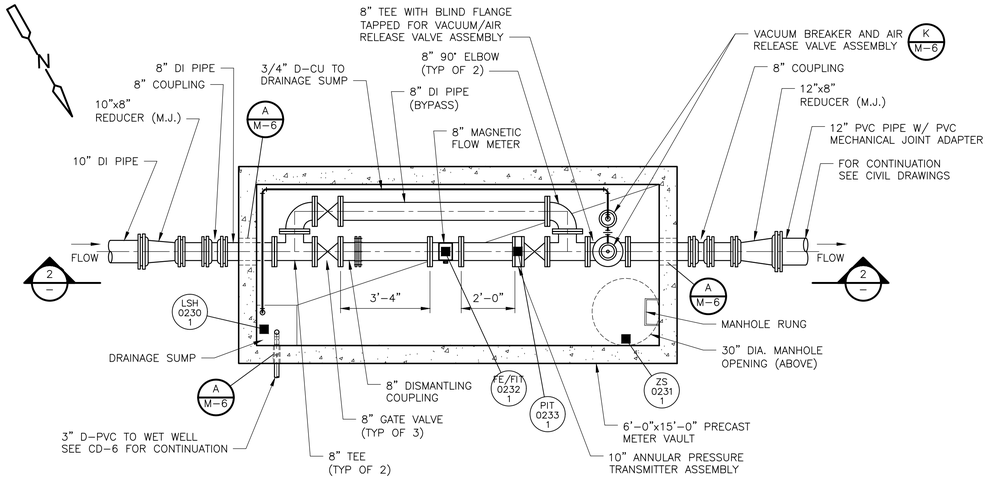
PROJECT NO. 1125-273132
FILE NAME: M004PSPS.DWG
SHEET NO.
M-4



VALVE VAULT

PLAN

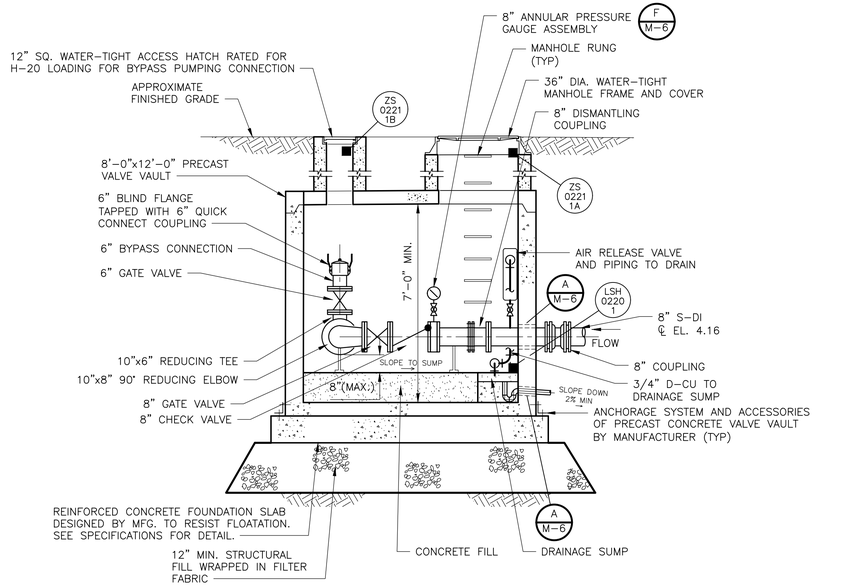
3/8" = 1'-0"



METER VAULT

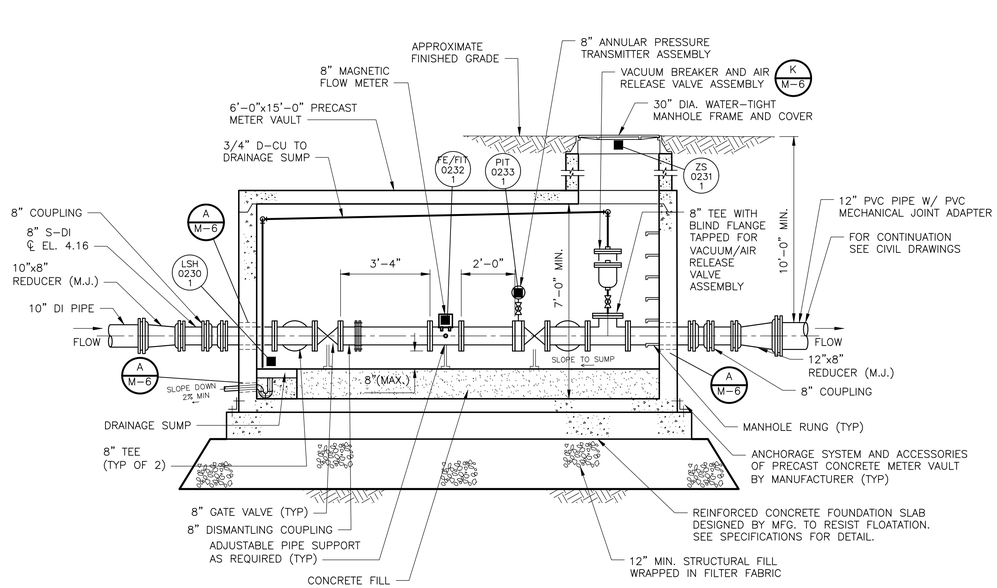
PLAN

3/8" = 1'-0"



SECTION 1

3/8" = 1'-0"



SECTION 2

3/8" = 1'-0"

3/8" = 1'- 0"

2 0 2 4

COMMONWEALTH OF MASSACHUSETTS
WILLIAM J. HOTZ JR.
ENVIRONMENTAL
No. 53732
REGISTERED PROFESSIONAL ENGINEER

William J Hotz Jr
2025.11.18 11:52:42-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

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PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO.2
VALVE VAULT AND METER VAULT
PLANS AND SECTIONS

PROJECT NO. 1125-273132
FILE NAME: M005PSPS.DWG
SHEET NO. M-5

XREFs: [CDMS_2436, MWPPS002] Images: []
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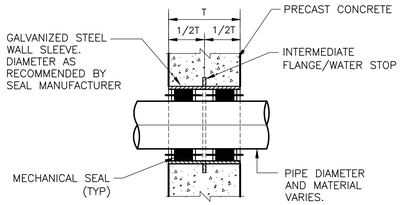
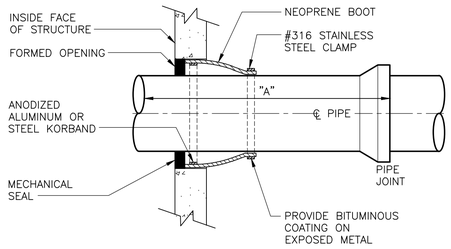


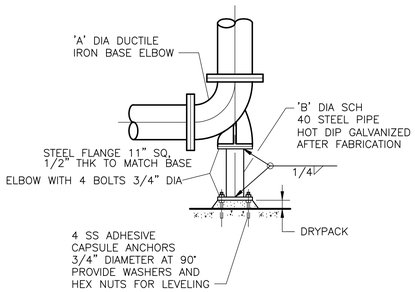
WALL SLEEVE WITH MECHANICAL SEALS FOR PRECAST CONCRETE WALLS

DETAIL A — NTS



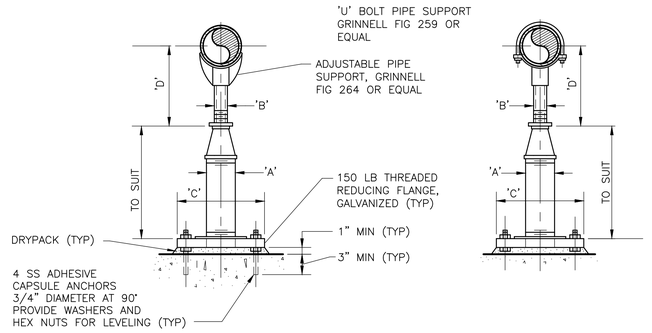
KOR–N–SEAL BOOT – PIPE CONNECTION

DETAIL B — NTS



BASE ELBOW SUPPORT

DETAIL C — NTS



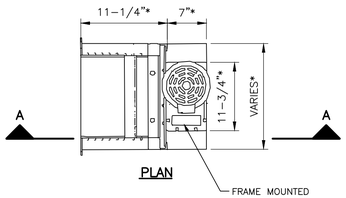
ADJUSTABLE PIPE SUPPORT APPROX DIMENSIONS IN INCHES					
PIPE SIZE	A	B	C	D MIN	D MAX
6	3	2	9	11	15
8	3	2	9	13	16
10	3	2	9	14	18
12	3	2	9	15	19

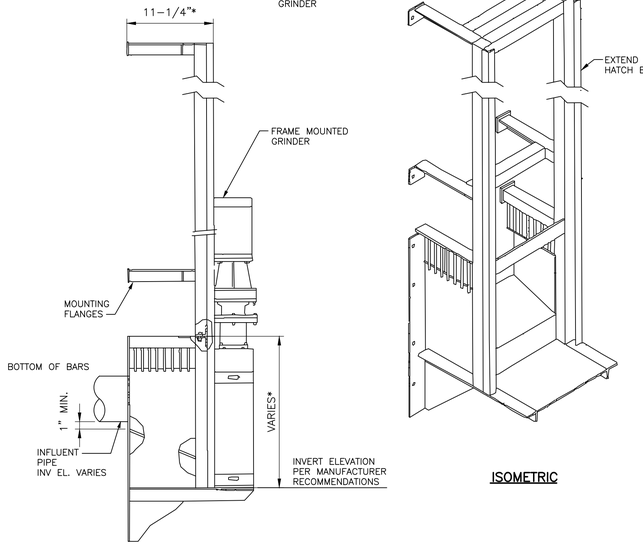
NOTES:

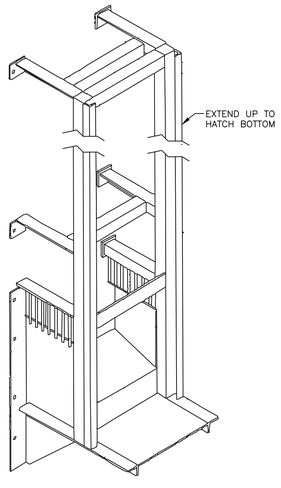
1. UNDER VALVES, METERS OR OTHER SPECIAL APPURTENANCES A FABRICATED SUPPORT PIECE MAY BE UTILIZED AS ACCEPTABLE TO ENGINEER

ADJUSTABLE PIPE SUPPORT

DETAIL D — NTS





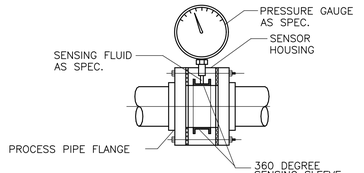


NOTES:

1. ELEVATIONS AND DIMENSIONS NOTED WITH * ARE SUBJECT TO CHANGE BASED ON CONTRACTORS SUBMITTED EQUIPMENT AND SHALL BE APPROVED BY THE ENGINEER.

WET WELL GRINDER FRAME AND LIFTING RAILS

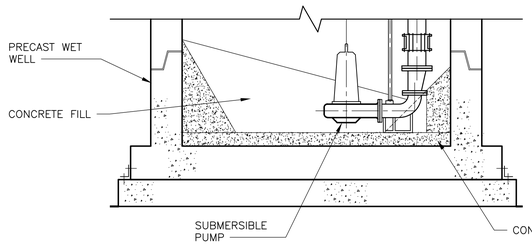
DETAIL E — NTS



NOTE: SENSORS 2" OR SMALLER SHALL BE THREADED

ANNULAR PRESSURE GAUGE SENSOR

DETAIL F — NTS

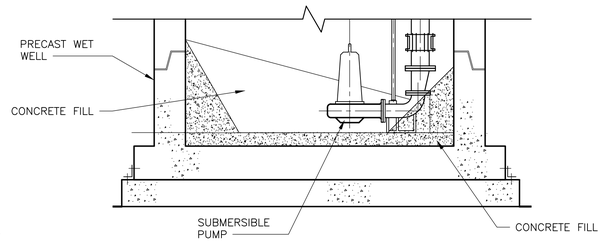


NOTE:

DIMENSIONS OF CONCRETE FILL TO BE FINALIZED WITH PUMP SUBMITTAL.

SUMP FLOOR SLOPE (AT PUMP)

DETAIL G — NTS

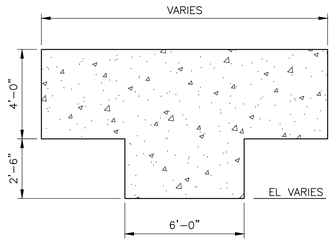


NOTE:

DIMENSIONS OF CONCRETE FILL TO BE FINALIZED WITH PUMP SUBMITTAL.

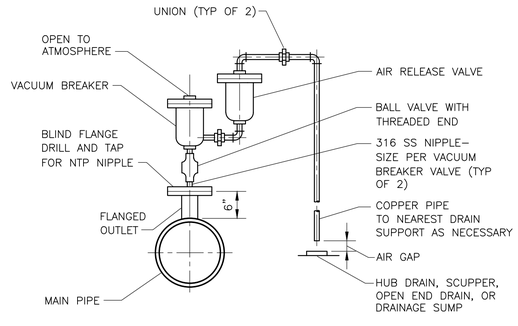
SUMP FLOOR SLOPE (BETWEEN PUMPS)

DETAIL H — NTS



CONCRETE BAFFLE

DETAIL J — NTS



VACUUM BREAKER AND AIR RELEASE VALVE ASSEMBLY

DETAIL K — NTS

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TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

MECHANICAL DETAILS

COMMONWEALTH OF MASSACHUSETTS — WILLIAM J. HOTZ JR. — ENVIRONMENTAL No. 53732 — REGISTERED PROFESSIONAL ENGINEER

William J Hotz Jr
2025.11.18 11:52:55-05'00'

PROJECT NO. 1125–273132
FILE NAME: M006STDT.DWG

SHEET NO.
M-6

GENERAL ABBREVIATIONS

A	AC	AIR CONDITIONER
	ACC	AIR COOLED CONDENSER
	ACU	AIR CONDITIONER UNIT
	AD	ACCESS DOOR
	AFF	ABOVE FINISHED FLOOR
	AG	ABOVE GRADE
	AGT	AVERAGE GLYCOL TEMPERATURE
	AHU	AIR HANDLING UNIT
	ALT	ALTITUDE
	AP	ACCESS PANEL
	AS	AIR SEPERATOR
	ATC	AUTOMATIC TEMPERATURE CONTRTROL
	AUTO	AUTOMATIC
	AUX	AUXILIARY
	AVG	AVERAGE
	AV	AUTOMATIC AIR RELEASE VENT
B	BHP	BRAKE HORSEPOWER
	B	BOILER
	BOT	BOTTOM
	BP	BOILER PUMP
	BTU	BRITISH THERMAL UNIT
	BOD	BOTTOM OF DUCT
	BOP	BOTTOM OF PIPE
	BOU	BOTTOM OF UNIT
C	C TO C	CENTER TO CENTER
	CCW	COUNTER CLOCKWISE
	CD	CONTROL DAMPER
	CENT	CENTRIFUGAL
	CFM	CUBIC FEET PER MINUTE
	CGP	CHILLED WTR GLYCOL PUMP
	CHIL	AIR COOLED CHILLER
	CGS	CHILLED GLYCOL SUPPLY
	CGR	CHILLED GLYCOL RETURN
	CL	CENTER LINE
	CLG	CEILING
	CLR	CLEAR
	COND	COMDENSATE DRAIN
	COP	CENTER OF PIPE
	CTR	CENTER
	CU	CONDENSING UNIT
	CH	CABINET HEATER
	CV	VALVE FLOW COEFFICIENT
	CW	CLOCKWISE
D	D	TO DRAIN (NEAREST)
	DG	DOOR GRILLE
	DB	DRY BULB/DEWATERING BUILDING
	dBA	DECIBELS
	DCP	DEHUMIDIFICATION CONTROL PANEL
	DH	DUCT HEATER
	DHC	DUCTED HEATING COIL
	DIA	DIAMETER
	DISCH	DISCHARGE
	DN	DOWN
	DP	DROP
	DWG	DRAWING
	DX	DIRECT EXPANSION COIL
E	EUH	ELECTRIC UNIT HEATER
	EA	EXHAUST AIR
	EAF	EXHAUST AIR FAN
	EAT	ENTERING AIR TEMPERATURE
	ECH	ELECTRIC CABINET HEATER
	EER	ENERGY EFFICIENCY RATIO
	EF	EXHAUST FAN
	ELEC	ELECTRICAL
	EL	ELEVATION
	EMERG	EMERGENCY
	ESP	EXTERNAL STATIC PRESSURE
	EXH	EXHAUST
	ET	EXPANSION TANK
	EWT	ENTERING WATER TEMPERATURE
F	F	FAHRENHEIT
	FBV	FLOW BALANCE & SHUTOFF VALVE
	FC	FAN COIL UNIT
	FD	FIRE DAMPER
	FG	FLOOR GRILLE
	FLR	FLOOR
	FLG	FLANGE
	FOB	FLAT ON BOTTOM
	FOT	FLAT ON TOP
	FPM	FEET PER MINUTE
	FD	FIRE DAMPER
	FS	FLOW SENSOR
	FT	FEET
	FTR	FIN-TUBE RADIATION
G	GPM	GALLONS PER MINUTE
	GV	GRAVITY VENTILATOR
H	HC	HEATING COIL
	H-O-A	HAND-OFF-AUTO
	HGS/R	HOT GLYCOL SUPPLY/RETURN
	HP	HORSEPOWER
	H&V	HEATING AND VENTILATING
	HVAC	HEATING, VENTILATING AND AIR CONDITIONING
	HWP	HOT WATER PUMP
	HZ	HERTZ
I	ID	INSIDE DIAMETER
	INS	INSULATE,INSULATION
	INSTR	INSTRUMENT(ATION)
	IPLV	INTEGRATED PART LOAD VALUE
K	KW	KILOWATT
L	LAT	LEAVING AIR TEMPERATURE
	LBS	POUNDS
	LWT	LEAVING WATER TEMPERATURE
	LVG	LEAVING
M	M	MOTOR
	MATL	MATERIAL
	MAU	MAKEUP AIR UNIT
	MAX	MAXIMUM
	MBH	THOUSAND BTU PER HOUR
	MCA	MINIMUM CIRCUIT AMPACITY
	MCC	MOTOR CONTROL CENTER
	MECH	MECHANICAL
	MFR	MANUFACTURER
	MIN	MINIMUM
	MISC	MISCELLANEOUS
	MOD	MOTORIZED DAMPER
	MTD	MOUNTED
N	N/A	NOT APPLICABLE
	NC	NORMALLY CLOSED
	NG	NATURAL GAS
	NO	NORMALLY OPEN
	NOM	NOMINAL
	NPLV	NON-STANDARD PART LOAD VALUE
	NPT	AMERICAN NATIONAL TAPER PIPE THREAD
	NTS	NOT TO SCALE
O	OA	OUTSIDE AIR
	OC	ON CENTER
	OCF	ODOR CONTROL FAN
	OD	OUTSIDE DIAMETER
	OED	OPEN ENDED DAMPER
	OPP	OPPOSITE
P	P	PUMP
	PD	PRESSURE DROP
	PG	PROPYLENE GLYCOL
	PLC	PROGRAMMABLE LOGIC CONTROL
	PSI	POUNDS PER SQUARE IN
	PSIA	PSI ABSOLUTE
	PSIG	PSI GUAGE
R	RA	RETURN AIR
	RAF	RETURN AIR FAN
	REG	REGISTER
	RF	ROOF FAN
	RH	RE-HEAT
	RPM	REVOLUTIONS PER MINUTE
	RED	REDUCER
	RTU	ROOF TOP UNIT
S	SA	SUPPLY AIR
	SF	SUPPLY FAN
	SCH	SCHEDULE
	SEER	SEASONAL ENERGY EFFICIENCY RATIO
	SP	STATIC PRESSURE
	SPEC	SPECIFICATION
	SS	STAINLESS STEEL
	STM	STEAM
T	TF	TRANSFER FAN
	TD	TEMPERATURE DIFFERENCE
	TEFC	TOTALLY ENCLOSED FAN COOLED
	TEMP	TEMPERATURE
	TEF	TOILET EXHAUST FAN
	TOS	TOP OF STEEL
	TR	TONNAGE OF REFRIGERATION
	TXV	THERMAL EXPANSION VALVE
	TYP	TYPICAL
U	U	HEAT TRANSFER COEFFICIENT
	UH	UNIT HEATER
	UL	UNDERWRITERS LABORATORY
V	V	VOLTS
	VAV	VARIABLE AIR VOLUME
	VEL	VELOCITY
	VFD	VARIABLE FREQUENCY DRIVE
W	W/	WITH
	W/O	WITHOUT
	WB	WET BULB
	WG	WALL GRILLE
	WH	WEATHER HOOD
	WMS	WIRE MESH SCREEN

SYMBOLS
DUCTWORK

BACKDRAFT DAMPER

MANUAL VOLUME DAMPER

FIRE DAMPER
▲ -1.5(1-1/2HR RATED)

DAMPER WITH ACTUATOR

DUCT SIZE- FIRST NUMBER IS SIDE SHOWN

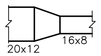
DUCT SECTION,POSITIVE PRESS. FIRST NUMBER IS TOP

DUCT SECTION,NEGATIVE PRESS. FIRST NUMBER IS TOP

DUCT SECTION,NEGATIVE PRESS. (EXHAUST) FIRST NUMBER IS TOP

FLEXIBLE CONNECTION

FLEXIBLE DUCT



TRANSITON

TURNING VANES

SIDE MOUNTED DEVICE

BOTTOM MOUNTED DEVICE

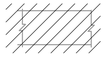
SUPPLY DUCT UP (POSITIVE PRESSURE SHOWN)

RETURN DUCT DOWN (NEGATIVE PRESSURE SHOWN)

DISCHARGE

SUCTION

SYMBOLS
GENERAL


DEMOLITION

CONNECT TO EXISTING

LIMIT OF REMOVAL

NEW LINEWORK

EXISTING LINEWORK

REGISTERS GRILLES AND DIFFUSERS

EG	EXHAUST GRILLE
ER	EXHAUST REGISTER
ED	EXHAUST DIFFUSER
RG	RETURN GRILLE
RR	RETURN REGISTER
SD	SUPPLY DIFFUSER
SG	SUPPLY GRILLE
SR	SUPPLY REGISTER
TG	TRANSFER GRILLE

SYMBOLS
PIPE FITTINGS

CAP

BOTTOM CONNECTION

TOP CONNECTION

ELBOW UP

ELBOW DOWN

REDUCER-CONCENTRIC

TEE

TEE UP

TEE DOWN

UNION-SCREWED

UNION-FLANGED

DRAIN VALVE

FLOW STREAM CODE

CA	COMBUSTION AIR INTAKE
CW	COLD WATER
D	DRAIN
HWS	HOT WATER SUPPLY (40% PG)
HWR	HOT WATER RETURN (40% PG)
MU	MAKE-UP WATER
P	PROTECTED WATER
RS	REFRIGERANT SUPPLY
RL	REFRIGERANT LIQUID
RG	REFRIGERANT-HOT GAS
S	SANITARY
VENT	FUME EXHAUST

PIPE MATERIAL CODES

CU	COPPER
GS	GALVANIZED STEEL
PVC	POLYVINYL CHLORIDE
SS	AL24-4C (CAT IV VENT PIPE)
STL	BLACK STEEL
TYPE	TYPE B VENT (CAT I VENT PIPE)

FIELD INSTRUMENT LEGEND

PLANS	(X)	ELEMENT/TRANSMITTER (SENSOR)
	[X]	SWITCH
	T	THERMOSTAT
	(M)	ELECTRIC MOTOR
	(A)	MODULATING ACTUATOR WITH END SWITCH
	[A]	TWO POSITION ACUTATOR WITH END SWITCH
		PARALLEL BLADE DAMPER
		OPPOSED BLADE DAMPER

GENERAL NOTES:

1. HVAC EQUIPMENT LOCATIONS, DUCTWORK, AND PIPING SYSTEM LAYOUTS ARE BASED ON EQUIPMENT SELECTED BY THE ENGINEER. IF THE CONTRACTOR PROPOSES TO FURNISH EQUIPMENT OF DIFFERENT SIZE, OR EQUIPMENT THAT REQUIRES AN ARRANGEMENT OR SPACE DIFFERING FROM THAT INDICATED ON THE DRAWINGS OR SPECIFIED, THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER FOR APPROVAL, DETAILED ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, INSTRUMENTATION, HVAC, AND ELECTRICAL DRAWINGS AND EQUIPMENT SPECIFICATION SHEETS. THE SUBMITTALS SHALL SHOW ALL NECESSARY CHANGES AND INDICATE ALL FEATURES OF THE EQUIPMENT THE CONTRACTOR PROPOSES. THE DRAWINGS SHALL INCLUDE BUT NOT BE LIMITED TO PLANS, SECTIONS, DETAILS, AND SCHEMATICS OF ALL APPURTENANCES REQUIRED. DEVIATIONS FROM THE EQUIPMENT SPECIFIED AND SHOWN ON THE CONSTRUCTION DRAWINGS AND IN THE SPECIFICATIONS SHALL BE CLEARLY INDICATED. CHANGES SHALL BE APPROVED BY THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK AND SHALL BE MADE AT NO EXTRA COST TO THE OWNER. THE CONTRACTOR SHALL ASSUME THE COST OF, AND THE RESPONSIBILITY FOR SATISFACTORY ACCOMPLISHING ALL OF THE CHANGES AND THE FINAL OPERATION OF THE EQUIPMENT IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.
2. PROVIDE DIELECTRIC COUPLINGS AT PIPING CONNECTIONS BETWEEN DISSIMILAR PIPING MATERIALS.
3. SOLDER CONTAINING LEAD IS NOT PERMITTED AND SHALL NOT BE BROUGHT ONTO THE CONSTRUCTION SITE.
4. HVAC PIPING AND DUCTWORK DRAWINGS DO NOT SHOW ALL DRAINS, VENTS, OFFSETS AND FITTINGS ETC. REQUIRED FOR THE COMPLETE SYSTEM. SUCH ITEMS SHALL BE PROVIDED AS CALLED FOR ON THE DETAILS AND IN THE SPECIFICATIONS.
5. SMALL PIPING IS SHOWN APPROXIMATELY TO SCALE BUT NOT EVERY FITTING AND OFFSET IS SHOWN. SOME VALVES AND APPURTENANCES MAY BE OMITTED FOR THE SAKE OF CLARITY. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SUCH ITEMS WHETHER SHOWN OR NOT SHOWN.
6. UNLESS SPECIFIC REQUIREMENTS ARE SHOWN ON THE DRAWINGS ALL FLOOR SLAB AND WALL PENETRATIONS SHALL BE AS SHOWN ON THE DETAILS. ABOVE GROUND EXTERIOR WALL AND ROOF PENETRATIONS SHALL BE AS SHOWN ON THE ARCHITECTURAL DRAWINGS. ALTERNATE DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THE ENGINEER'S APPROVAL SHALL BE RECEIVED PRIOR TO STARTING THE WORK.
7. ALL DUCTWORK SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE BUILDING WALLS AND FLOOR.
8. ALL PIPING SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO THE BUILDING WALLS AND FLOOR.
9. NOT ALL SUPPORTS ARE SHOWN ON THE DRAWINGS. UNLESS OTHERWISE DETAILED ON THE DRAWINGS ALL PIPE AND DUCT SUPPORTS SHALL BE DESIGNED, FURNISHED AND INSTALLED BY THE CONTRACTOR.
10. WHERE THE WORK IS A MODIFICATION OF EXISTING SYSTEMS OR STRUCTURES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMATION OF THE EXISTING DIMENSIONS, CONFIGURATION AND CONSTRUCTION OF EXISTING ELEMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE EXISTING ELEMENTS. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING THE WORK. ANY DEVIATIONS FROM THE DRAWINGS MUST BE PRESENTED PRIOR TO BID SUBMISSION FOR CLARIFICATION.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL MISCELLANEOUS CONTROL WIRING, HANGERS, CONDUITS, FITTINGS AND OTHER ACCESSORIES ASSOCIATED WITH DEMOLITION WORK.
12. THE CONTRACTOR SHALL PROVIDE A CONSTRUCTION SCHEDULE.
13. ALL WORK, INCLUDING BUILDING SERVICES AND UTILITY SHUTDOWNS, SHALL BE COORDINATED AND SCHEDULED WITH THE OWNER PRIOR TO BEGINNING CONSTRUCTION.
14. THE CONTRACTOR SHALL REMOVE CONSTRUCTION DEBRIS AND ALL OTHER DEBRIS MADE DURING THE WORK THEY HAVE COMPLETED, AT THE END OF EACH WORK DAY.
15. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY DAMAGED EQUIPMENT, CEILING, WALLS, ETC. WHICH HAVE BEEN DAMAGED BY THE WORK OF THIS PROJECT AT NO COST TO THE OWNER.
16. NOTED ELEVATIONS ARE GIVEN AS REFERENCE FOR THE INTENDED ROUTING OF SYSTEMS. THE CONTRACTOR SHALL COORDINATE THE EXACT ROUTING. ALL WORK SHALL BE INSTALLED WITH THE PROPER PITCH. COORDINATE WITH OTHER TRADES AND FIELD CONDITIONS TO AVOID INTERFERENCES.
17. COORDINATE ALL MOTOR SIZES, STARTERS, DISCONNECT SWITCHES, CONTROLS, ETC. WITH ELECTRICAL CONTRACTOR AND HVAC CONTROLS CONTRACTOR PRIOR TO THE RELEASE OF ANY EQUIPMENT.
18. CONTRACTOR SHALL PROVIDE HIGH POINT VENTS AND LOW POINT DRAINS AS REQUIRED IN FINAL ROUTING OF PIPING.
19. REFER TO GENERAL DRAWINGS FOR AREA CLASSIFICATIONS.
20. WORK ASSOCIATED WITH PUMPING STATION NO.1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

ATC SYSTEM NOTES.

1. SENSORS, TRANSMITTERS, SWITCHES, INSTRUMENTS, VALVES, ACTUATORS, EQUIPMENT, CONTROLLERS AND WIRING SHALL BE FURNISHED AND INSTALLED BY DIV. 23 UNLESS OTHERWISE INDICATED.
2. ALL THERMOSTATS SHALL BE MOUNTED IN LINE WITH CENTERLINE OF LIGHT SWITCH AT 48" A.F.F. UNLESS OTHERWISE NOTED. VERIFY MOUNTING HEIGHT IS 48" PRIOR TO BALANCING SYSTEMS. CONTRACTOR SHALL CALIBRATE ALL THERMOSTATS.
3. REFER TO ELECTRICAL DRAWINGS FOR AREA CLASSIFICATIONS.

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. DION
DRAWN BY: J. DION
SHEET CHK'D BY: D. FLAHERTY
CROSS CHK'D BY: W. HOTZ JR.
APPROVED BY: D. FLAHERTY
DATE: NOVEMBER 2025

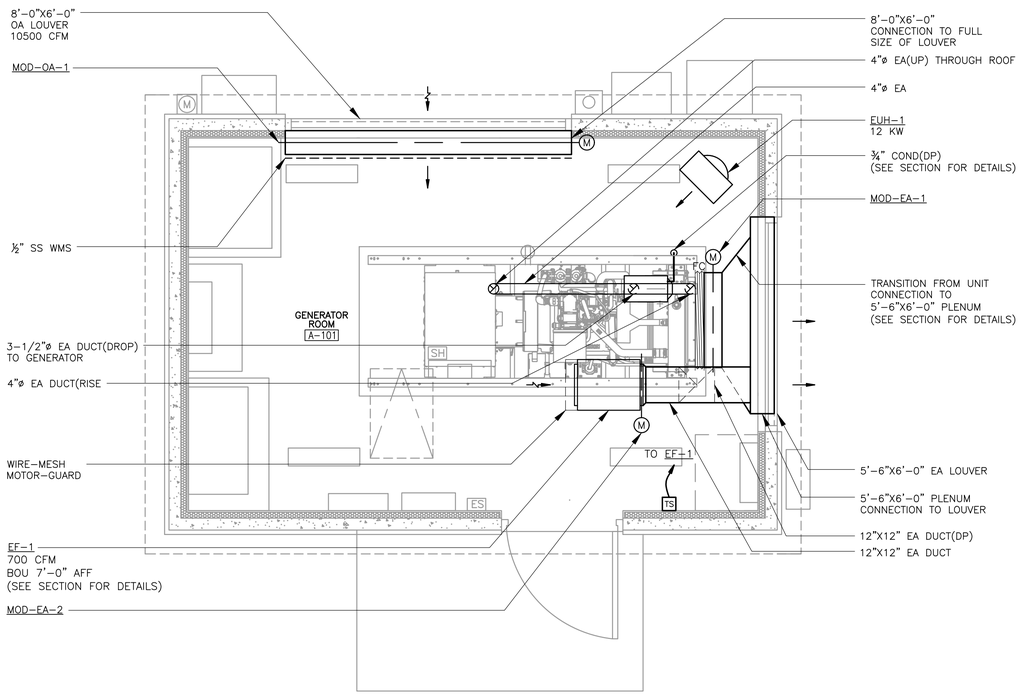
CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

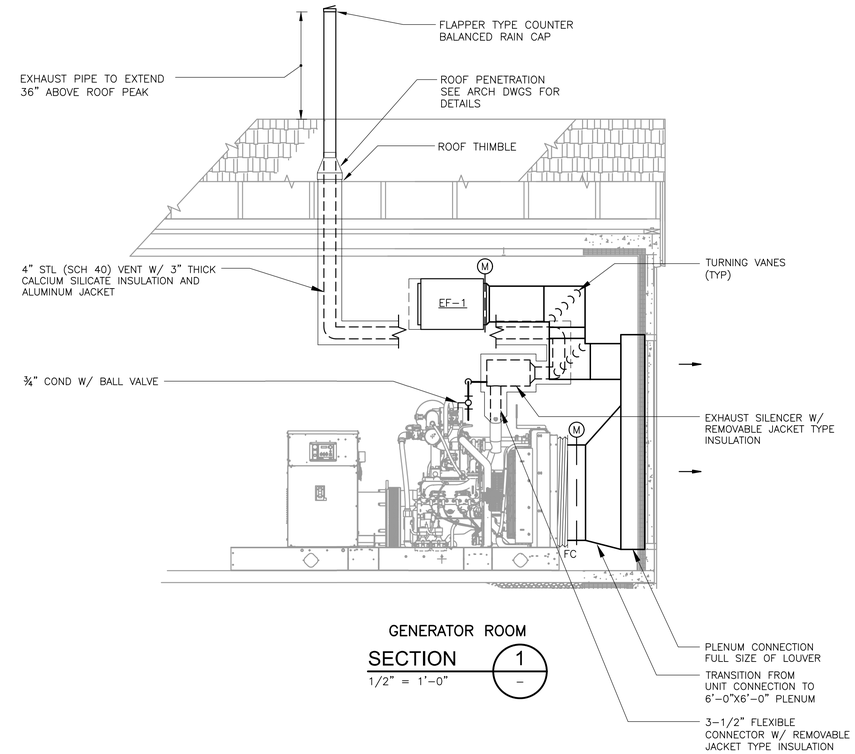
HVAC
LEGEND, SYMBOLS, ABBREVIATIONS AND NOTES

COMMONWEALTH OF MASSACHUSETTS
DANIEL M. FLAHERTY
MECHANICAL
No. 46834
REGISTERED PROFESSIONAL ENGINEER
Daniel M Flaherty
2025.11.18 11:30:37-05'00'

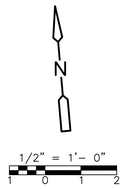
PROJECT NO. 1125-273132
FILE NAME: H001LGND.DWG
SHEET NO.
H-1



PLAN
1/2" = 1'-0"



GENERATOR ROOM
SECTION 1
1/2" = 1'-0"



GENERAL NOTES:

1. WORK ASSOCIATED WITH PUMPING STATION NO.1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. DION
DRAWN BY: J. DION
SHEET CHK'D BY: D. FLAHERTY
CROSS CHK'D BY: W. HOTZ JR.
APPROVED BY: D. FLAHERTY
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

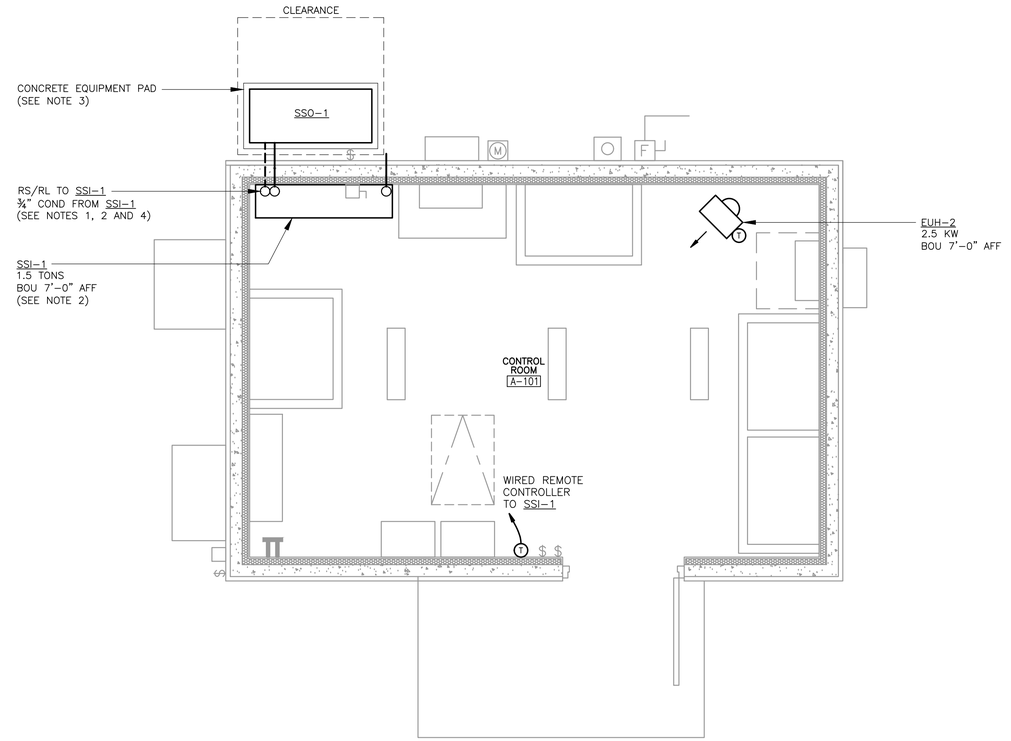
TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1
FLOOR PLAN

Daniel M Flaherty
2024.08.18 07:44:18-04'00'

COMMONWEALTH OF MASSACHUSETTS
DANIEL M. FLAHERTY
MECHANICAL
No. 46834
REGISTERED PROFESSIONAL ENGINEER

PROJECT NO. 1125-273132
FILE NAME: H002PSPL.DWG
SHEET NO. H-2



PLAN
1/2" = 1'-0"

NOTES:
1. THE RS, RL, AND COND PIPING TO SSI-1 SHALL PENETRATE THE CONTROL ROOM WALL LOW AND RISE VERTICALLY IN THE SPACE AS SHOWN. THE PIPING SHALL BE INSTALLED TIGHT TO THE CONTROL ROOM WALL.
2. COND FROM SSI-1 SHALL PENETRATE CONTROL ROOM 12" AFF AND DRAIN TO SPLASH BLOCK.
3. SSO-1 SHALL BE MOUNTED ON A CONCRETE PAD. PAD SHALL EXTEND 2" OR MORE IF REQUIRED BY MANUFACTURER AROUND THE UNIT FOOTPRINT. SEE STRUCTURAL DRAWINGS FOR PAD DETAILS.
4. RS AND RL PIPE SIZES SHALL BE AS PER THE MANUFACTURER'S REQUIREMENTS.

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

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. DION
DRAWN BY: J. DION
SHEET CHK'D BY: D. FLAHERTY
CROSS CHK'D BY: W. HOTZ JR.
APPROVED BY: D. FLAHERTY
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 2
FLOOR PLAN

COMMONWEALTH OF MASSACHUSETTS
DANIEL M. FLAHERTY
MECHANICAL
No. 46834
REGISTERED PROFESSIONAL ENGINEER

Daniel M Flaherty
2025.11.18 11:30:43-05'00'

PROJECT NO. 1125-273132
FILE NAME: H003PSPL.DWG

SHEET NO.
H-3

DAMPERS

TAG	SERVICE	UNIT SERVED	BLADE TYPE	BLADE ACTION	FRAME MATERIAL	BLADE MATERIAL	AXLE AND LINKAGE MATERIAL	DIMENSIONS		ACTUATOR				MFR	MODEL	NOTES
								WIDTH (IN)	HEIGHT (IN)	TYPE	VOLTAGE	NEMA ENCL	FAIL POSITION			
MOD-EA-1	OUTDOOR AIR	GEN	3V	OPPOSED	GALVANIZED STEEL	GALVANIZED STEEL	PLATED STEEL	32	32	2 POSITION	120V	4X	OPEN	GREENHECK	VCD-23	–
MOD-EA-2	OUTDOOR AIR	EF-1	3V	OPPOSED	GALVANIZED STEEL	GALVANIZED STEEL	PLATED STEEL	17	17	2 POSITION	120V	4X	CLOSED	GREENHECK	VCD-23	1
MOD-OA-1	OUTDOOR AIR	EF-1/GEN	3V	OPPOSED	GALVANIZED STEEL	GALVANIZED STEEL	PLATED STEEL	96	72	2 POSITION	120V	4X	OPEN	GREENHECK	VCD-23	–
SEE SPECIFICATION SECTION 230923.12																

1. PROVIDE W/ ASSOCIATED FAN

FANS SCHEDULE

UNIT	AREA SERVED	FAN TYPE	FAN DATA				MOTOR				V/P/HZ	MFR	MODEL	NOTES
			WHEEL TYPE	CFM	ESP (IN WG)	RPM	HP	RPM	MOTOR ENCLOSURE	DRIVE				
EF-1	GENERATOR RM	EXHAUST	INLINE	700	0.3	1140	1/6	1140	ODP	DIRECT	115/1/60	GREENHECK	SQ-120	1,2,3
SEE SPECIFICATION SECTION 233423.														

NOTES:
1. MOTOR ACCESS FROM INTERIOR OF BUILDING
2. PROVIDE W/ BACKDRAFT DAMPER
3. BLADE TYPE: BACKWARD INCLINED

SPLIT SYSTEM HEAT PUMP

UNIT	AREA SERVED	COOLING CAPACITY (MBH)	REFRIGERANT	INDOOR UNIT (SSI)				OUTDOOR UNIT (SSO)								MANUFACTURER	NOTES
				TYPE	CFM	WEIGHT (LBS)	MODEL	TYPE	V	P	HZ	MCA	FLA	MOCP	WEIGHT (LBS)	MODEL	
SSI-1/SSO-1	CONTROL RM	18	R454B	WALL	450	28	PKA-A18LA1	HORIZONTAL	208	1	60	11	0.5	28	99	PUY-A18NKA7-BS	MITSUBISHI	1,2,3,4,5
SEE SPECIFICATION SECTION 238126																		

NOTES
1. LOW AMBIENT COOLING KIT
2. WIRED REMOTE CONTROLLER
3. PROVIDE W/ 18" HIGH MOUNTING STAND
4. PROVIDE AMBIENT AND INDOOR CONDITIONS AT WHICH COOLING CAPACITY RATINGS SPECIFIED
5. PROVIDE W/ SEACOAST COATING OR A COATING OF EQUAL SPECIFICATIONS.

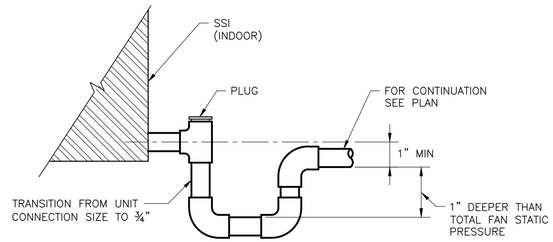
ELECTRIC UNIT HEATERS

UNIT	AREA SERVED	MTG. HEIGHT AFF (FT)	COIL		FAN		ELECTRICAL				WEIGHT	MFR	MODEL	NOTES
			CAPACITY (KW)	TEMP. RISE (F)	AIRFLOW (CFM)	THROW (FT)	V	P	HZ	FLA				
EUH-1	CONTROL RM	7	12	62	362	15	480	3	60	16	45	INDEECO	IUH	1
EUH-2	CONTROL RM	7	2.5	23	350	15	208	1	60	12.3	25	INDEECO	UHIR	1
SEE SPECIFICATION SECTION 238239.16														

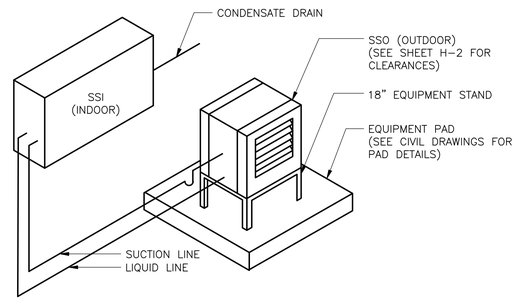
NOTES
1. PROVIDE DISCONNECT SWITCH AND UNIT MOUNTED RETURN AIR THERMOSTAT

GENERAL NOTES:

1. WORK ASSOCIATED WITH PUMPING STATION NO.1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

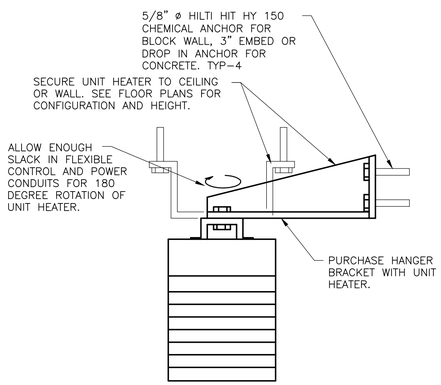


CONDENSATE TRAP
DETAIL A
NTS –

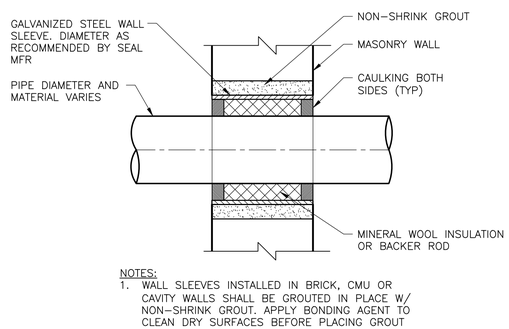


NOTES:
1. REFIGERANT PIPING LAYOUT AND SIZES ARE SHOWN FOR BIDDING PURPOSES ONLY. ACTUAL LAYOUT FOR SUBMITTAL AND CONSTRUCTION SHALL BE APPROVED BY THE EQUIPMENT MANUFACTURER.
2. REFER TO THE MANUFACTURER'S INSTALLATION MANUAL FOR REFRIGERANT PIPING, VALVES, AND APPURTENANCES.
3. PROVIDE SCHEDULE 40 SS PIPE SLEEVE FOR REFRIGERANT PIPING PENETRATIONS THROUGH WALLS. SEAL AROUND THE PIPING IN THE SLEEVE AT BOTH ENDS WITH WATERPROOF CAULKING.

SPLIT SYSTEM
DETAIL B
NTS –

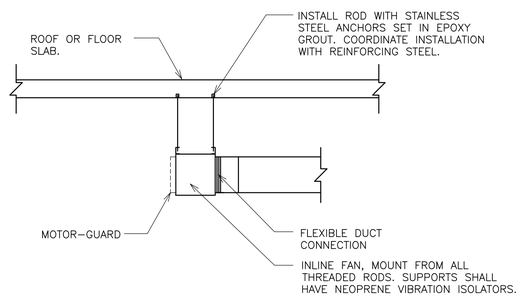


HORIZONTAL ELECTRIC UNIT HEATER
DETAIL C
NTS –

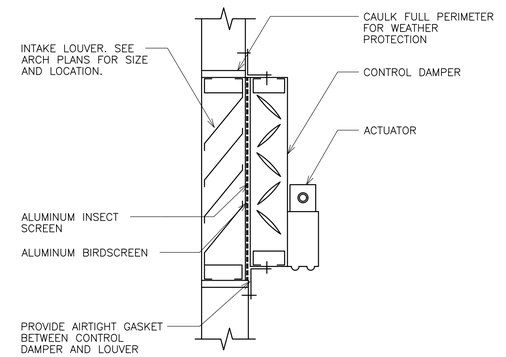


NOTES:
1. WALL SLEEVES INSTALLED IN BRICK, CMU OR CAVITY WALLS SHALL BE GROUTED IN PLACE W/ NON-SHRINK GROUT. APPLY BONDING AGENT TO CLEAN DRY SURFACES BEFORE PLACING GROUT

PIPE PENETRATION THROUGH CONCRETE WALL
DETAIL D
NTS –



INLINE EXHAUST FAN
DETAIL E
NTS –



LOUVER W/ MOTORIZED DAMPER MOUNTING
DETAIL F
NTS –

COMMONWEALTH OF MASSACHUSETTS
DANIEL M. FLAHERTY
MECHANICAL
No. 46834
REGISTERED PROFESSIONAL ENGINEER

Daniel M Flaherty
2025.11.18 11:30:49-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. DION
DRAWN BY: J. DION
SHEET CHK'D BY: D. FLAHERTY
CROSS CHK'D BY: W. HOTZ JR.
APPROVED BY: D. FLAHERTY
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

SCHEDULES AND DETAILS

PROJECT NO. 1125-273132
FILE NAME: H004SDDT.DWG
SHEET NO.
H-4

XREFs: [CDMS_2436] Images: []
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PLUMBING ABBREVIATIONS

(E)	EXISTING TO REMAIN
@	AT
AC	AIR COMPRESSOR
AD	AREA DRAIN, AIR DRYER
AFF	ABOVE FINISHED FLOOR
ANT	ACID NEUTRALIZATION TANK
ATF	AUTOMATIC TRANSMISSION FLUID
AV	AUTOMATIC AIR RELEASE VENT, ACID VENT
AW	ACID WASTE
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BOP	BOTTOM OF PIPE
BP	BOOSTER PUMP
BTM	BOTTOM
BWV	BACKWATER VALVE
CA	COMPRESSED AIR
CD	CAVITY DRAIN
CG	CHASSIS GREASE
CI	CAST IRON
CL	CENTERLINE
CN	CONDUCTOR NOZZLE
CO	CLEANOUT
COND	CONDENSATE DRAIN
CONT	CONTINUOUS/ CONTINUE
COP	CENTER OF PIPE
CP	CONTROL PANEL
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CUP SINK
CU FT	CUBIC FEET
CV	CHECK VALVE
CW	COLD WATER
DCO	DOUBLE CLEANOUT
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DI	DUCTILE IRON/ DEIONIZED
DIA	DIAMETER
DN	DOWN
DO	DIESEL OIL
DR	DRAIN/ DRYER
DW	DISHWASHER
DWG	DRAWING
DWV	DRAIN WASTE VENT
E	EMERGENCY WATER
ECO	EXTERIOR CLEANOUT
EFBS	EMERGENCY FACE BODY SPRAY
EFF	EFFICIENCY
EL	ELEVATION
EO	ENGINE OIL
ES	EMERGENCY SHOWER
ES/EW	EMERGENCY SHOWER AND EYEWASH
EWC	ELECTRIC WATER COOLER
EWST	EMERGENCY WATER STORAGE TANK
EWT	ENTERING WATER TEMPERATURE
EWU	EYEWASH UNIT
F	FAHRENHEIT
F/BS	FACE/ BODY SPRAY
FAS	FLOW ALARM SWITCH
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FHC	FIRE HOSE CABINET
FHV&C	FIRE HOSE VALVE AND CABINET
FIN	FINISHED
FL	FLOOR
FLA	FULL LOAD AMPS
FLEX	FLEX CONNECTION
FPM	FEET PER MINUTE
FS	FLOW SWITCH
FV	FIRE VALVE
G	GAS
GC	GENERAL CONTRACTOR
GO	GEAR OIL
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HEV	HOSE END VALVE
HP	HORSEPOWER
HS	HOSE STATION
HTHW	HIGH TEMPERATURE HOT WATER
HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HZ	HERTZ
I.E.	INVERT ELEVATION
ID	INSIDE DIAMETER
IM	ICE MAKER
INV	INVERT
IOS	INSTALLED BY OTHER SECTION
IPS	IRON PIPE SIZE
KS	KITCHEN SINK
KU	KITCHEN UNIT
kW	KILLOWATT
LAB	LABORATORY
LAV	LAVATORY

PLUMBING ABBREVIATIONS

LBV	LOCKABLE BALL VALVE
LCW	LAB COLD WATER
LHW	LAB HOT WATER
LRA	LOCKED ROTOR AMPS
LS	LAB SINK
LWT	LEAVING WATER TEMPERATURE
M	MOTOR
MAX	MAXIMUM
MB	MOP BASIN
MBH	THOUSAND BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONARY OPENING
MXV	MIXING VALVE
NC	NORMALLY CLOSED
NG	NATURAL GAS
NO	NORMALLY OPEN
NPW	NON-POTABLE WATER
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
OED	OPEN END OR OPEN EQUIPMENT DRAIN
ORD	OVERFLOW ROOF DRAIN
ORL	OVERFLOW RAIN LEADER
P	PROTECTED WATER
P&T	PRESSURE & TEMPERATURE
PC	PLUMBING CONTRACTOR
PD	PUMP DISCHARGE
PG	PRESSURE GAUGE
PH	POST HYDRANT/ PHASE
PHW	PROTECTED HOT WATER
PP	POLYPROPYLENE
PRV	PRESSURE REDUCING VALVE
PRW	PRESSURE WASTE
PSI	POUNDS PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAUGE
PVC	POLYVINYL CHLORIDE
PW	PLANT WATER/ POTABLE WATER
PWT	PROTECTED WATER
RCP	RECIRCULATION PUMP
RD	ROOF DRAIN
RH	RADIANT HEATER
RL	RAINLEADER
RLA	RUNNING LOAD AMPS
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE
RTU	ROOF TOP UNIT
RWC	ROOF WATER CONDUCTOR
S	SOIL
SB	SERVICE BASIN
SCO	SANITARY CLEAN OUT
SH	SHOWER
SHT	SHEET
SP	SPRINKLER
SQ	SQUARE
SS	STAINLESS STEEL/ SANITARY SEWER
SSK	SERVICE SINK
ST	SAND TRAP/ STORM
T	THERMOMETER
TD	TRENCH DRAIN
THK	THICKNESS
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
TW	TEPID WATER
TWH	TANKLESS WATER HEATER
TWR	TEPID WATER RETURN
TYP	TYPICAL
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
V	VENT
VAC	VACUUM
VB	VACUUM BREAKER
VE	VACUUM EXHAUST
VTR	VENT THROUGH ROOF
W	WASTE
W&V	WASTE & VENT
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WCO	WALL CLEANOUT
WF	WASH FOUNTAIN
WH	WALL HYDRANT/ WATER HEATER
WHA	WATER HAMMER ARRESTOR
WHS	WASH HOSE STATION
WM	WASHING MACHINE
WO	WASTE OIL
WOB	WASTE OIL BURNER
WWS	WINDSHIELD WASHER SOLVENT

PLUMBING SYMBOLS

- VENT
- FLOW ARROW
- G — GAS
- A — COMPRESSED AIR
- BALL VALVE
- CHECK VALVE
- PLUG VALVE
- STRAINER
- PRESSURE REDUCING VALVE
- SINGLE LINE PIPING REPRESENTATION SHOWN FOR 4" AND SMALLER PIPES
- EQUIPMENT PROVIDED UNDER PLUMBING SECTION
- EQUIPMENT PROVIDED BY OTHERS REQUIRING PLUMBING CONNECTION
- SS — SUPERVISORY SWITCH
- BOTTOM CONNECTION
- TOP CONNECTION
- ELBOW UP OR RISE

"UP" DENOTES PIPES WHICH PENETRATE THE FLOOR ABOVE.
"RISE" DENOTES PIPES WHICH DO NOT.

- ELBOW DN OR DROP

"DN" DENOTES PIPES WHICH PENETRATE THE FLOOR BELOW.
"DROP" DENOTES PIPES WHICH DO NOT.

- 45° DROP

NOTE:
THE TERMS "DN" "DROP" "UP" & "RISE" ARE USED TO INDICATE THE VERTICAL DIRECTION IN WHICH A PIPE LINE CONTINUES FROM THE IMAGINARY PLAN OF VIEW. THE TERMS HAVE NO RELEVANCE TO THE DIRECTION OF FLOW WITHIN THE PIPE LINE.

- CAP
- CLEANOUT
- REDUCER-CONCENTRIC
- REDUCER-ECCENTRIC STRAIGHT INVERT
- REDUCER-ECCENTRIC STRAIGHT CROWN
- TEE UP
- TEE DOWN
- PRESSURE GAGE AND COCK
- UNION - SCREWED
- GAS METER
- POINT WHERE NEW CONSTRUCTION CONNECTS TO EXISTING CONSTRUCTION
- POINT BETWEEN EXISTING CONSTUCTION TO REMAIN AND EXISTING CONSTRUCTION TO BE DEMOLISHED

GENERAL NOTES

1. EQUIPMENT AND PIPING SYSTEM LAYOUTS ARE DIAGRAMMATIC AND INTENDED TO SHOW PIPING AND DUCT BASIS OF DESIGN. IF THE CONTRACTOR PROPOSES TO FURNISH EQUIPMENT THAT REQUIRES AN ARRANGEMENT OR SPACE DIFFERING FROM THAT INDICATED ON THE DRAWINGS OR SPECIFIED, THEY SHALL PREPARE AND SUBMIT TO THE ENGINEER FOR APPROVAL, DETAILED ARCHITECTURAL, STRUCTURAL, PLUMBING, HVAC AND ELECTRICAL DRAWINGS AND EQUIPMENT LISTS SHOWING ALL NECESSARY CHANGES TO ALL DISCIPLINES AND EMBODYING ALL FEATURES OF THE EQUIPMENT HE PROPOSES TO FURNISH. THIS INFORMATION SHALL INCLUDE BUT NOT BE LIMITED TO PLANS, SECTIONS, DETAILS, AND SCHEMATICS OF ALL APPURTENANCES REQUIRED BY ALL DISCIPLINES. SUCH CHANGES IF APPROVED BY THE ENGINEER SHALL BE AT NO EXTRA COST TO THE OWNER. THE CONTRACTOR SHALL ASSUME THE COST OF, AND THE RESPONSIBILITY FOR SATISFACTORILY ACCOMPLISHING ALL THE NECESSARY CHANGES CORRESPONDING TO THE DIMENSIONS AND CHARACTERISTICS OF THE EQUIPMENT SUBMITTED INCLUDING CHANGES TO ALL OTHER TRADES TO SATISFACTION OF ENGINEER. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
2. ALL WORK, INCLUDING BUILDING SERVICES AND UTILITY SHUTDOWNS, SHALL BE COORDINATED AND SCHEDULED WITH THE OWNER.
3. CONTRACTOR SHALL REMOVE CONSTRUCTION DEBRIS AND ALL OTHER DEBRIS MADE DURING THE WORK THEY HAVE COMPLETED, AT THE END OF EACH WORK DAY.
4. ELEVATIONS ARE GIVEN AS REFERENCE FOR THE INTENDED ROUTING OF THE NEW WORK. THE PC SHALL COORDINATE THE EXACT ROUTING. ALL WORK SHALL BE INSTALLED WITH THE PROPER PITCH. COORDINATE WITH OTHER TRADES AND EXISTING CONDITIONS TO AVOID INTERFERENCES..
5. PLUMBING EQUIPMENT, PIPING, ETC. SHALL NOT BE LOCATED ABOVE ELECTRICAL PANELS OR IN ELECTRICAL ROOMS.
6. COORDINATE ALL MOTOR SIZES, STARTERS, DISCONNECT SWITCHES, CONTROLS, ETC. WITH ELECTRICAL PRIOR TO THE RELEASE OF ANY EQUIPMENT.
7. WHERE PIPING PENETRATES A RATED PARTITION THE CONTRACTOR SHALL MAINTAIN INTEGRITY OF THE PARTITIONS USING U.L. APPROVED SEALING METHODS TO MATCH THE PARTITION RATING.
8. PC SHALL PROVIDE HIGH POINT VENTS AND LOW POINT DRAINS AS REQUIRED IN FINAL ROUTING OF PIPING.
9. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
10. ALL PLUMBING PIPE, FITTINGS, FIXTURES AND EQUIPMENT CONNECTED TO OR PART OF THE PLUMBING SYSTEM SHALL RECEIVE AN APPROVAL CODE FROM THE ACCEPTED PLUMBING PRODUCTS ONLINE SYSTEM BY THE MASSACHUSETTS BOARDS OF REGISTRATION OF PLUMBERS AND GAS FITTERS IN ACCORDANCE WITH THE 12/8/2023 REVISION OF THE 2023 EDITION OF THE MASSACHUSETTS FUEL GAS AND PLUMBING CODE.
11. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

COMMONWEALTH OF MASSACHUSETTS
DANIEL M. FLAHERTY
MECHANICAL
No. 46834
REGISTERED PROFESSIONAL ENGINEER

Daniel M Flaherty
2025.11.18 11:31:13-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. DION
DRAWN BY: J. DION
SHEET CHK'D BY: D. FLAHERTY
CROSS CHK'D BY: W. HOTZ JR.
APPROVED BY: D. FLAHERTY
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PLUMBING
LEGEND, SYMBOLS, ABBREVIATIONS, AND NOTES

PROJECT NO. 1125-273132
FILE NAME: P001LGND.DWG
SHEET NO.
P-1

XREFs: [CDMS_2436] Images: []
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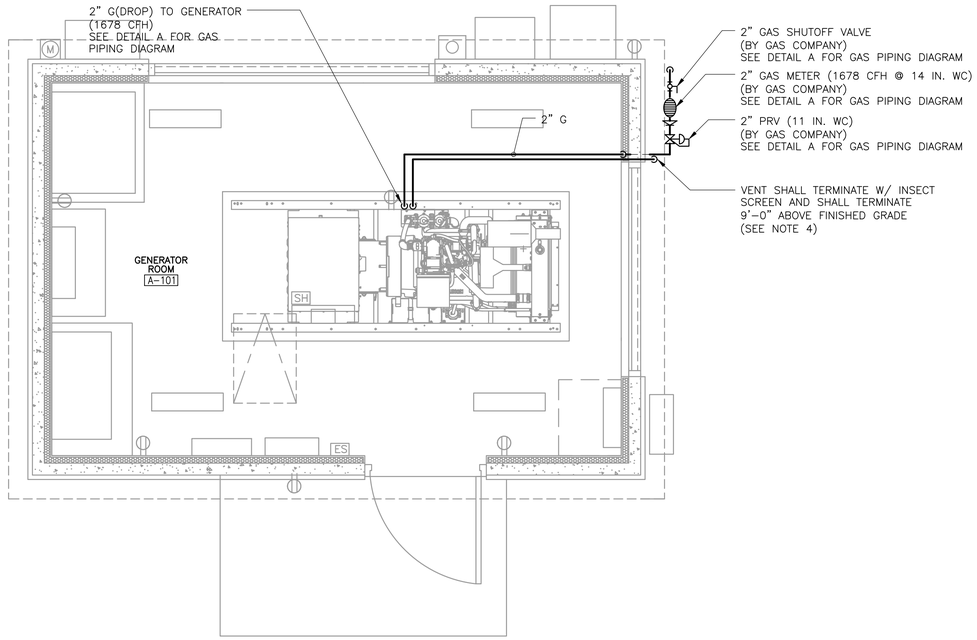
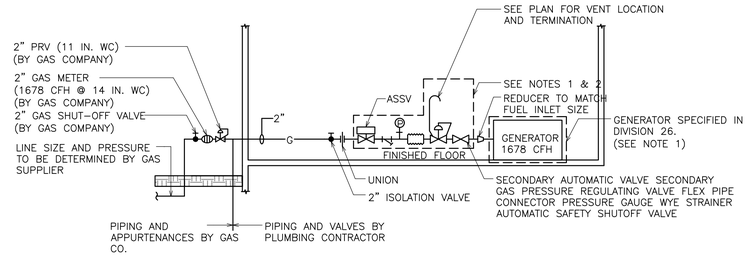


PLAN

1/2" = 1'-0"

NOTES:
1. REFER TO CIVIL DRAWINGS FOR SITE ORIENTATION OF THE BUILDING.
2. LOCATION OF GAS SERVICE TO BE COORDINATED WITH UTILITIES.
3. GAS PRESSURE REGULATING VALVE VENT SHALL BE SIZED IN ACCORDANCE WITH THE REGULATOR MANUFACTURER'S INSTRUCTIONS.
4. VENT PIPE SIZE SHALL BE PER GENERATOR MANUFACTURER'S REQUIREMENTS.



GAS PIPING DIAGRAM

DETAIL A

NTS

NOTES:
1. GENERATOR AND GAS TRAIN COMPONENTS SHALL BE APPROVED PRODUCTS BY THE MASSACHUSETTS BOARD OF PLUMBERS AND GAS FITTERS.
2. GAS TRAIN COMPONENTS SHALL BE PROVIDED BY THE GENERATOR MANUFACTURER AND INSTALLED BY THE PLUMBING CONTRACTOR.

GENERAL NOTES:

1. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

N

1/2" = 1'- 0"

1 0 1 2

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: J. DION
DRAWN BY: J. DION
SHEET CHK'D BY: D. FLAHERTY
CROSS CHK'D BY: W. HOTZ JR.
APPROVED BY: D. FLAHERTY
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

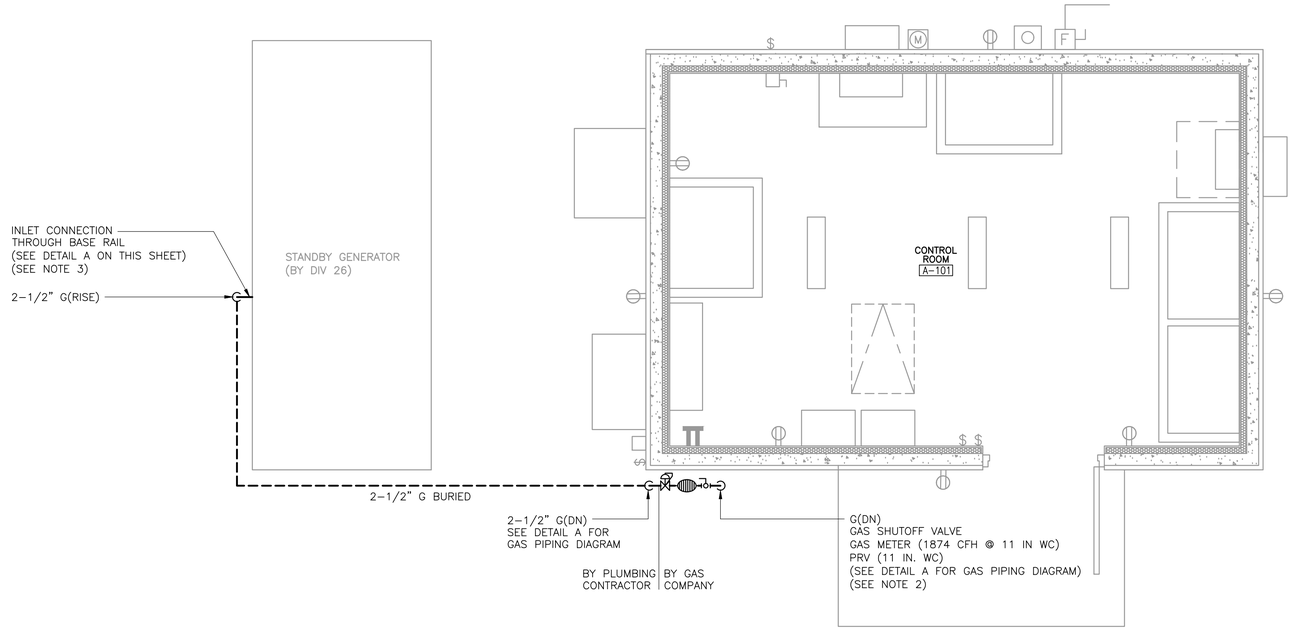
TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1
FLOOR PLAN AND GAS PIPING DIAGRAM

Daniel M Flaherty
2024.08.18 07:51:22-04'00'

COMMONWEALTH OF MASSACHUSETTS
DANIEL M. FLAHERTY
MECHANICAL
No. 46834
REGISTERED PROFESSIONAL ENGINEER

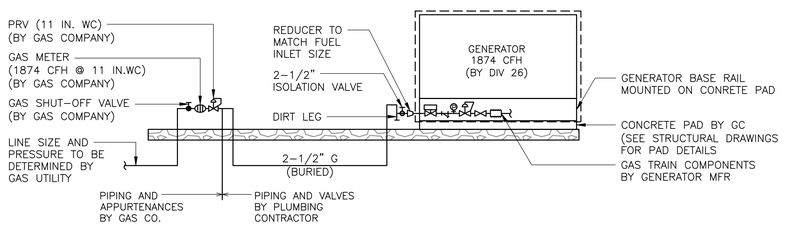
PROJECT NO. 1125-273132
FILE NAME: P002PSPL.DWG
SHEET NO. P-2



PLAN
1/2" = 1'-0"

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

NOTE:
1. REFER TO CIVIL DRAWINGS FOR SITE ORIENTATION OF THE BUILDING.
2. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE GAS UTILITY FOR THE EXACT LOCATION OF THE GAS SERVICE TO THE CONTROL BUILDING. LINE SIZE AND PRESSURE TO BE DETERMINED BY THE GAS UTILITY.
3. COORDINATE EXACT GAS CONNECTION LOCATION W/ GENERATOR MANUFACTURER.



GAS PIPING DIAGRAM
DETAIL A
NTS

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REV. NO.	DATE	DRWN	CHKD	REMARKS

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APPROVED BY: D. FLAHERTY
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
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TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 2
FLOOR PLAN AND GAS PIPING DIAGRAM

COMMONWEALTH OF MASSACHUSETTS
DANIEL M. FLAHERTY
MECHANICAL
No. 46834
REGISTERED PROFESSIONAL ENGINEER
Daniel M Flaherty
2025.11.18 11:31:37-05'00'

PROJECT NO. 1125-273132
FILE NAME: P003PSPL.DWG
SHEET NO.
P-3

GENERAL INSTRUMENT OR FUNCTION SYMBOLS

SHARED DISPLAY/ SHARED CONTROL				
PRIMARY CHOICE	SECONDARY CHOICE	COMPUTER SOFTWARE	DISCRETE	LOCATION AND ACCESSIBILITY
◯	◇	⬡	◯	FIELD MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
◯	◇	⬡	◯	PRIMARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
◯	◇	⬡	◯	PRIMARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE
◯	◇	⬡	◯	SECONDARY CONTROL PANEL MOUNTED AND NORMALLY OPERATOR ACCESSIBLE
◯	◇	⬡	◯	SECONDARY CONTROL PANEL MOUNTED AND NOT NORMALLY OPERATOR ACCESSIBLE

◯◯ INSTRUMENTS SHARING COMMON HOUSING

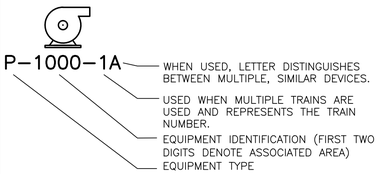
◯ PILOT LIGHT

INSTRUMENTATION FUNCTION CODE

	FIRST LETTERS		SUCCEEDING LETTERS		
	COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
	MEASURED/ INITIATING VARIABLE	VARIABLE MODIFIER	READOUT/PASSIVE FUNCTION	OUTPUT/ACTIVE FUNCTION	FUNCTION MODIFIER
A	ANALYSIS		ALARM (2)		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	COMMUNICATION			CONTROL	CLOSED
D	USER'S CHOICE	DIFFERENCE, DIFFERENTIAL			DEVIATION
E	VOLTAGE		SENSOR, PRIMARY ELEMENT		
F	FLOW, FLOW RATE	RATIO			FAULT
G	USER'S CHOICE		GLASS, GAUGE, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT		INDICATE (2)		
J	POWER		SCAN		
K	TIME, SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (2)		LOW
M	MOISTURE				MIDDLE, INTERMEDIATE
N	TORQUE		ENABLE (READY)	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE		
R	RADIATION		RECORD		RUN
S	SPEED, FREQUENCY	SAFETY		SWITCH (2)	STOP
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL, ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL, PROBE		WARNING
X	UNCLASSIFIED (1)	X-AXIS	ACCESSORY DEVICES, UNCLASSIFIED (1)	UNCLASSIFIED (1)	UNCLASSIFIED (1)
Y	EVENT, STATE, PRESENCE	Y-AXIS		AUXILIARY DEVICES	
Z	POSITION, DIMENSION	Z-AXIS, SAFETY INSTRUMENT SYSTEM		DRIVER, ACTUATOR, UNCLASSIFIED, FINAL CONTROL ELEMENT	

TABLE NOTES:
1. WHEN USED SYMBOL OR SIGNAL LINE IS ANNOTATED.
2. FUNCTION ALLOWS FOR MODIFIER (COLUMN 5).

EQUIPMENT TAG DESIGNATION



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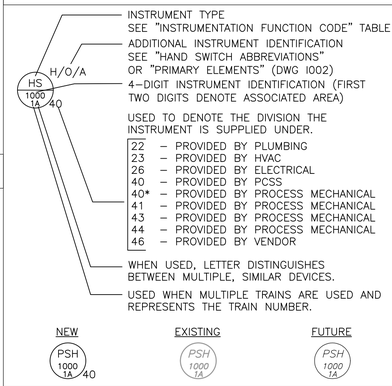

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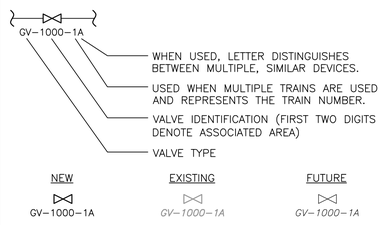
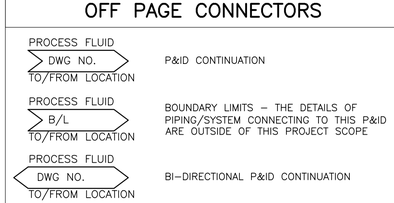
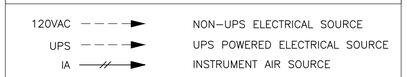


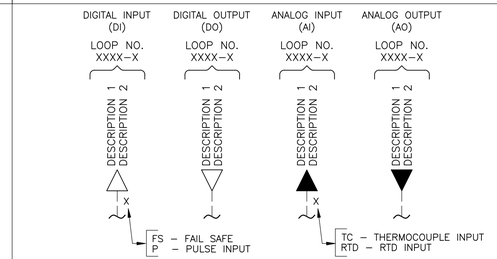
OFF PAGE CONNECTORS



ELECTRICAL / AIR SOURCES



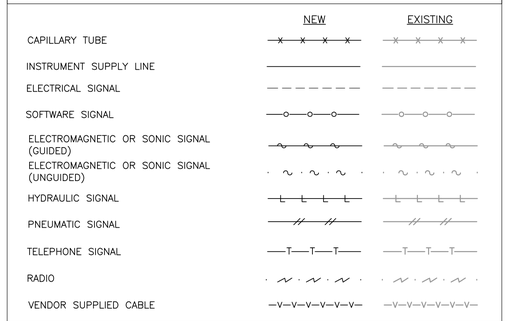
I/O SIGNALS



** MEASURED VARIABLE OR OUTPUT FUNCTION FROM "INSTRUMENTATION FUNCTION CODE" TABLE.

** FAIL SAFE - NORMALLY CLOSED CONTACT UNDER NORMAL PROCESS CONDITIONS.

INSTRUMENT LINE SYMBOLS



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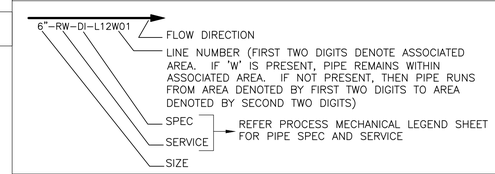
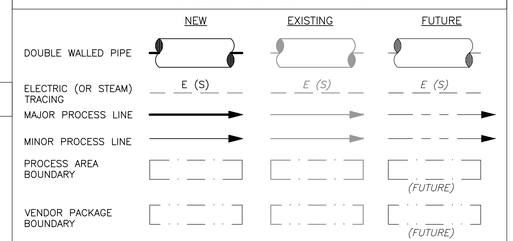
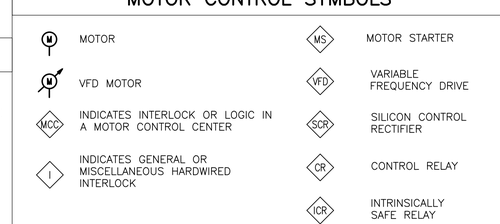


PROCESS LINES TYPES



MOTOR CONTROL SYMBOLS



GENERAL ABBREVIATIONS

AI	ANALOG IN
AO	ANALOG OUT
CCTV	CLOSED CIRCUIT TELEVISION
CPU	CENTRAL PROCESSING UNIT
DI	DIGITAL OR DISCRETE INPUT
DO	DIGITAL OUTPUT
DVR	DIGITAL VIDEO RECORDER
ES	ETHERNET SWITCH (UNMANAGED) OR ELECTRICAL SOURCE
ETM	ELAPSED TIME METER
FC	FAIL CLOSED
FO	FAIL OPEN OR FIBER OPTIC
FOCE	FIBER OPTIC COMMUNICATION ENCLOSURE
FOES	FIBER OPTIC ETHERNET SWITCH
FOPP	FIBER OPTIC PATCH PANEL
FW	FIREWALL
HIM	HUMAN INTERFACE MODULE
HMI	HUMAN MACHINE INTERFACE
I/O	INPUT/OUTPUT
ISP	INTERNET SERVICE PROVIDER
KVM	KEYBOARD VIDEO MONITOR
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LFR	LICENSED FREQUENCY RADIO
MC	MEDIA CONVERTER
MCC	MOTOR CONTROL CENTER
MES	MANAGED ETHERNET SWITCH
MS	MOTOR STARTER
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NVR	NETWORK VIDEO RECORDER
OED	OPEN EQUIPMENT DRAIN
OIT	OPERATOR INTERFACE TERMINAL
OWS	OPERATOR WORKSTATION
PLC	PROGRAMMABLE LOGIC CONTROLLER
PS	POWER SUPPLY
RAD	RADIO
RIO	REMOTE INPUT/OUTPUT
RT	RUN TIME
RTU	REMOTE TERMINAL UNIT
SPD	SURGE PROTECTION DEVICE
TC	THIN CLIENT
TKC	THICK CLIENT
UPS	UNINTERRUPTIBLE POWER SUPPLY
VFD	VARIABLE FREQUENCY DRIVE
VPN	VIRTUAL PRIVATE NETWORK

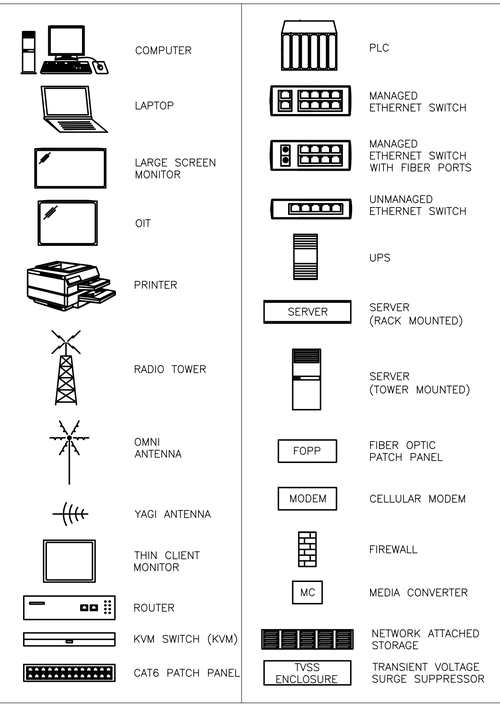
HAND SWITCH ABBREVIATIONS

A/O	- AUTO/OFF
A/M	- AUTO/MANUAL
C/L	- COMPUTER/LOCAL
C/M	- COMPUTER/MANUAL
E-STOP	- EMERGENCY STOP
F/R	- FORWARD/REVERSE
F/O/R	- FORWARD/OFF/REVERSE
F/S	- FAST/SLOW
F/O/S	- FAST/OFF/SLOW
H/O/A	- HAND/OFF/AUTO
H/O/R	- HAND/OFF/REMOTE
L/A	- LOCAL/AUTO
L/R	- LOCAL/REMOTE
L/L/S	- LEAD/LAG/STANDBY
L/O/A	- LOCAL/OFF/AUTO
L/O/R	- LOCAL/OFF/REMOTE
LO/S	- LOCKOUT/STOP
MBS	- MAINTENANCE BYPASS SWITCH
O/C	- OPEN/CLOSE
O/C/A	- OPEN/CLOSE/AUTO
O/C/R	- OPEN/CLOSE/REMOTE
O/O	- ON/OFF
O/O/A	- ON/OFF/AUTO
O/O/R	- ON/OFF/REMOTE
O/S/C	- OPEN/STOP/CLOSE
P/S/R	- PRIMARY/SECONDARY/REMOTE
R/S/L	- RAISE/STOP/LOWER
S/O/R	- START/OFF/RESET
S/S	- START/STOP

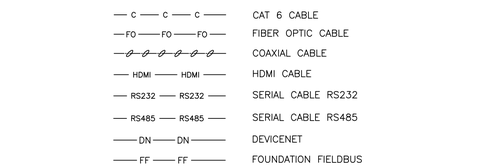
GENERAL NOTES

1. THIS LEGEND APPLIES TO P&IDS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.
2. IN GENERAL THIS LEGEND SHEET AND THE P&IDS ARE BASED ON THE INTERNATIONAL SOCIETY OF AUTOMATION (ISA) STANDARDS AND RECOMMENDED PRACTICES FOR INSTRUMENTATION AND CONTROL. SOME MODIFICATIONS, ADDITIONS AND ALTERATIONS HAVE BEEN MADE AS REQUIRED TO ACCOMMODATE PROJECT REQUIREMENTS.
3. SOME PROCESS ITEMS SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC., WHICH ARE NOT CRITICAL FOR AN UNDERSTANDING OF THE INSTRUMENTATION FUNCTIONS ARE NOT SHOWN ON THE P&IDS.
4. SEE ELECTRICAL AND MECHANICAL SHEETS AND SPECIFICATIONS FOR ADDITIONAL CONTROL AND INTERLOCK REQUIREMENTS.

SYSTEM ARCHITECTURE SYMBOLS



SYSTEM ARCHITECTURE LINETYPES



COMMONWEALTH OF MASSACHUSETTS
MOHAMED N. POPTANI
CONTROL SYSTEMS
No. 53773
REGISTERED PROFESSIONAL ENGINEER

Mohamed Poptani
2025.11.18 14:17:59-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: M. RICHARD
DRAWN BY: S. SILVESTER
SHEET CHK'D BY: M. POPTANI
CROSS CHK'D BY: W. HOTZ, JR
APPROVED BY: M. POPTANI
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

INSTRUMENTATION LEGEND I

PROJECT NO. 1125-273132
FILE NAME: I001SYMB.DWG
SHEET NO. I-1

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VALVE SYMBOLS

- BACKFLOW PREVENTER (BFP)
- BALL CHECK VALVE (BCV)
- BALL VALVE (BV)
- BUTTERFLY VALVE (BFV)
- CONE VALVE (CONV)
- DIAPHRAGM VALVE (DV)
- DOUBLE DISC CHECK VALVE (DDCV)
- DUCKBILL CHECK VALVE (DBCV)
- GATE VALVE (GV)
- GLOBE BODY SILENT CHECK VALVE (GBCV)
- GLOBE VALVE (GLV)
- KNIFE VALVE (KNV)
- MUD VALVE (MV)
- NEEDLE VALVE (NV)
- PINCH VALVE (PCHV)
- PLUG VALVE (PV)
- RUBBER FLAPPER CHECK VALVE (RFCV)
- RUPTURE DISC (RD)
- STOP CHECK VALVE (SCV)
- SWING CHECK VALVE (CV)
- TELESCOPIC VALVE (TV)
- V NOTCH BALL VALVE (VNBV)
- BACK PRESSURE REGULATING VALVE (BPV)
- DIFFERENTIAL PRESSURE REGULATING VALVE W/ EXTERIOR TAPS
- PRESSURE REGULATING VALVE (PREGV)
- SELF-CONTAINED DIFFERENTIAL PRESSURE REGULATING VALVE
- SELF-CONTAINED DIFFERENTIAL PRESSURE REGULATING VALVE (SOLENOID OPERATED)
- SOLENOID VALVE (SV)
- 3-WAY SOLENOID VALVE (SV)

- AIR RELEASE VALVE (ARV) OR PRESSURE RELIEF VALVE (PRV)
- AIR VACUUM VALVE (AVV)
- VACUUM BREAKER VALVE (VBV)
- COMBINATION AIR VALVE (CVV)

GATE SYMBOLS

- BULK HEAD GATE/STOP LOG
- CAST IRON SLIDE GATE (SG)
- BUTTERFLY GATE
- FABRICATED SLIDE GATE (SLG)
- FLAP GATE
- WEIR SLIDE GATE (WSG)

VALVE ACTUATORS

- DIAPHRAGM, PRESSURE-BALANCED
- DIAPHRAGM, SPRING OPPOSED
- SOLENOID
- ELECTROHYDRAULIC
- CYLINDER, SINGLE-ACTING OR DOUBLE ACTING, SPRING OPPOSED WITHOUT POSITIONER OR PILOT.
- EXAMPLE OF CYLINDER WITH POSITIONER
- ANY CYLINDER THAT IS ASSEMBLED WITH A PILOT SO THAT ASSEMBLY IS ACTUATED BY ONE CONTROLLED INPUT. PILOT MAY BE POSITIONER, SOLENOID VALVE, SIGNAL CONVERTER, etc.
- SYMBOLIZES MOTORIZED ACTUATOR WITH H/O/R SWITCH, OPEN/STOP/CLOSE PUSHBUTTONS AND STATUS LIGHT AS REQUIRED. REFER TO ACTUATOR SPECIFICATIONS 400557 FOR MORE DETAILED INFORMATION.
  - 46 – PROVIDED BY VENDOR
  - 40* – PROVIDED BY PROCESS MECHANICAL
- SYMBOLIZES MOTORIZED ACTUATOR WITH H/O/R SWITCH, STATUS LIGHT AND POSITION FEEDBACK AND CONTROL AS REQUIRED. REFER TO ACTUATOR SPECIFICATIONS 400557 FOR MORE DETAILED INFORMATION.
  - 46 – PROVIDED BY VENDOR
  - 40* – PROVIDED BY PROCESS MECHANICAL

PIPE LINE SYMBOLS

- PIPE UNION
- PIPE FLANGE
- CONTINUED PIPE
- BLIND FLANGE
- FLEXIBLE BELLOWS TYPE COUPLING
- FLEXIBLE COUPLING (GENERAL SYMBOL)
- QUICK CONNECT TYPE COUPLING
- END CAP
- HOSE CONNECTION
- REDUCER/ENLARGER
- ECCENTRIC REDUCER/ENLARGER
- THREADED DIAPHRAGM SEAL
- ANNULAR SEAL
- Y-STRAINER
- BASKET STRAINER
- HOSE BIB (HB)
- OPEN EQUIPMENT DRAIN
- DIFFUSER
- AIR FILTER
- EDUCTOR
- EJECTOR
- PULSATION DAMPENER

MISCELLANEOUS SYMBOLS

- PURGE OR FLUSHING DEVICE

PRIMARY ELEMENTS

FLOW INSTRUMENTS

- AVERAGING PITOT TUBE FLOW METER
- CORIOLIS FLOW METER
- FLUME FLOW METER (OPEN CHANNEL)
- MAGNETIC FLOW METER
- ORIFICE PLATE FLOW METER
- PITOT TUBE FLOW METER
- POSITIVE DISPLACEMENT FLOW METER
- ROTAMETER
- TARGET FLOW METER
- THERMAL MASS FLOW METER
- TURBINE OR PROPELLER FLOW METER
- ULTRASONIC FLOW METER (DOPPLER)
- ULTRASONIC FLOW METER (TRANSIT TIME)
- VENTURI FLOW METER
- INSERT VENTURI FLOW METER
- VORTEX FLOW METER
- WEIR
- GENERAL INSERTION FLOW METER
  - IM=INSERT MAG
- FLOW SWITCH
  - TD – THERMAL DISPERSION
  - V – VANE ACTUATED

LEVEL INSTRUMENTS

- RADAR LEVEL SENSOR (GUIDED WAVE)
- RADAR LEVEL SENSOR (NON CONTACT)
- SUBMERSIBLE HYDROSTATIC LEVEL SENSOR
- ULTRASONIC LEVEL SENSOR
- LASER LEVEL SENSOR
- BUBBLER SYSTEM
- CAPACITANCE LEVEL SENSOR
- MAGNETOSTRICTIVE LEVEL SENSOR
- DISPLACEMENT LEVEL SENSOR
- FLOAT SWITCH
- ULTRASONIC GAP SWITCH
- VIBRATING TUNING FORK LEVEL SWITCH
- CAPACITANCE LEVEL SWITCH
- PADDLE LEVEL SWITCH

PRESSURE INSTRUMENTS

- PRESSURE GAUGE
- PRESSURE DIFFERENTIAL GAUGE
- PRESSURE INDICATING TRANSMITTER
- PRESSURE DIFFERENTIAL TRANSMITTER
- PRESSURE SWITCH
- PRESSURE DIFFERENTIAL SWITCH

TEMPERATURE INSTRUMENTS

- TEMPERATURE GAUGE
- TEMPERATURE SENSOR
  - TC – THERMOCOUPLE
  - RTD – RESISTANCE TEMPERATURE DETECTOR
- TEMPERATURE SENSOR WITH THERMOWELL
- TEMPERATURE INDICATING TRANSMITTER
- TEMPERATURE SWITCH

TORQUE INSTRUMENTS

- TORQUE SENSOR
- TORQUE SWITCH

WEIGHT INSTRUMENTS

- WEIGHT ELEMENT (LOAD CELL)
- WEIGHT INDICATING TRANSMITTER

ANALYZER INSTRUMENTS

- GENERAL ANALYZER
  - ALK – ALKALINITY
  - CEMS – CONTINUOUS EMISSIONS MONITORING SYSTEM
  - COND – CONDUCTIVITY
  - CL2F – FREE CHLORINE RESIDUAL
  - CL2T – TOTAL CHLORINE RESIDUAL
  - CL2(G) – CHLORINE GAS
  - CO – CARBON MONOXIDE
  - CO2 – CARBON DIOXIDE
  - DEW – DEW POINT
  - DO – DISSOLVED OXYGEN
  - Fe – IRON
  - FL – FLUORIDE
  - H2S – HYDROGEN SULFIDE
  - LEL – % LOWER EXPLOSIVE LIMIT
  - Mn – MANGANESE
  - NH2CL – MONOCHLORAMINE
  - NH3 – DISSOLVED AMMONIA
  - NH3(G) – AMMONIA GAS
  - NO3 – NITRATE
  - N2 – NITROGEN
  - ORP – OXIDATION REDUCTION POTENTIAL
  - O2(G) – OXYGEN GAS
  - O3 – DISSOLVED OZONE
  - O3(G) – OZONE GAS
  - P – PHOSPHOROUS
  - PC – PARTICLE COUNTER
  - pH – HYDROGEN ION
  - pH/TEMP – pH/TEMPERATURE
  - SB – SLUDGE BLANKET
  - SC – STREAMING CURRENT
  - SDI – SILT DENSITY INDEX
  - SO2 – SULPHUR DIOXIDE
  - THM – TRIHALOMETHANES
  - TOC – TOTAL ORGANIC CARBON
  - TSS – TOTAL SUSPENDED SOLIDS
  - TURB – TURBIDITY
  - UVI – ULTRAVIOLET INTENSITY
  - UVT – ULTRAVIOLET TRANSMITTANCE
- SINGLE PARAMETER ANALYZER TRANSMITTER
- MULTI-PARAMETER ANALYZER TRANSMITTER

EQUIPMENT

- AIR COMPRESSOR
- AIR-OPERATED DIAPHRAGM PUMP
- CENTRIFUGAL BLOWER OR FAN
- CENTRIFUGAL PUMP
- DIAPHRAGM METERING PUMP
- INCLINED SCREW PUMP
- PERISTALTIC PUMP
- PISTON PUMP
- PLUNGER PUMP
- PROGRESSIVE CAVITY PUMP
- ROTARY BLOWER
- ROTARY LOBE COMPRESSOR
- ROTARY LOBE PUMP
- VERTICAL TURBINE PUMP
- SUBMERSIBLE PUMP
- GRINDER

COMMONWEALTH OF MASSACHUSETTS
MOHAMED N. POPTANI
CONTROL SYSTEMS
No. 53773
REGISTERED PROFESSIONAL ENGINEER

Mohamed Poptani
2025.11.18 14:18:20-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: M. RICHARD
DRAWN BY: S. SILVESTER
SHEET CHK'D BY: M. POPTANI
CROSS CHK'D BY: W. HOTZ, JR
APPROVED BY: M. POPTANI
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

INSTRUMENTATION LEGEND II

PROJECT NO. 1125-273132
FILE NAME: I002SYMB.DWG
SHEET NO. I-2

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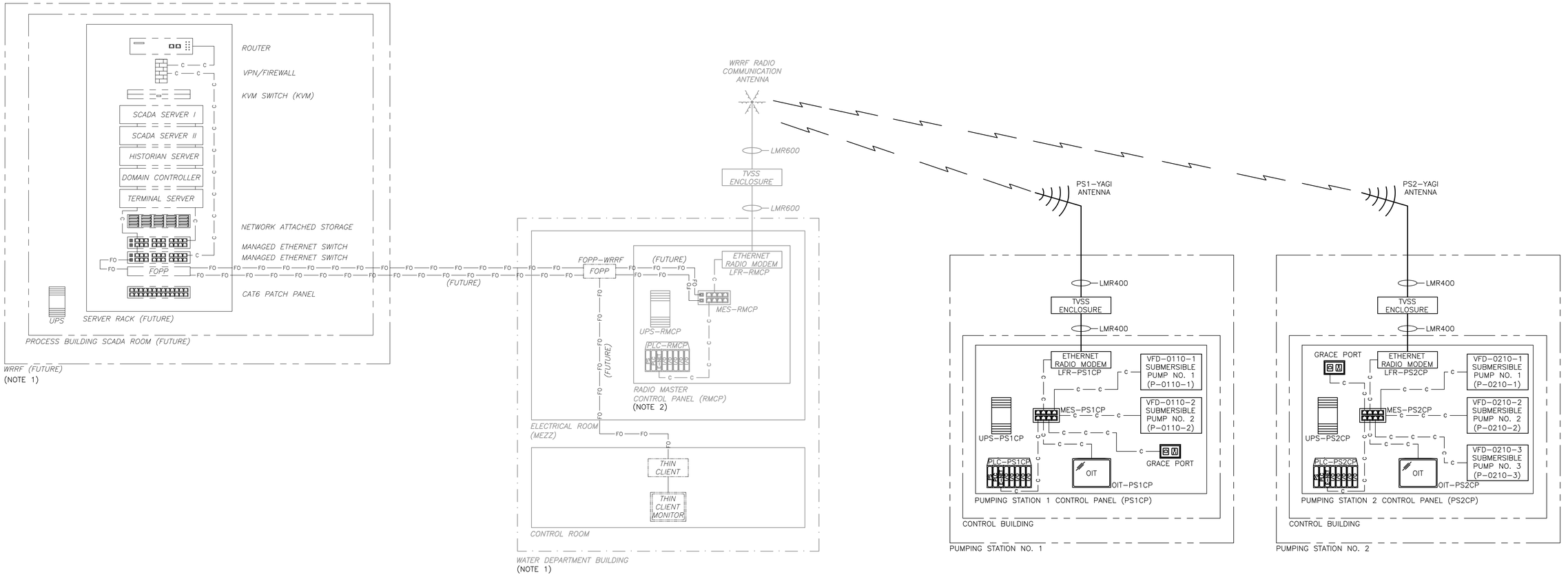

NOTES:

1. THE EQUIPMENT SHOWN INSIDE OF THE WRRF BUILDING AND THE WATER DEPARTMENT BUILDING ARE NOT PART OF THIS CONTRACT. THEY DO NOT FALL UNDER THIS PROJECT SCOPE'S AND ARE BEING SHOWN TO CLARIFY RADIO COMMUNICATIONS TO/FROM THE REMOTE PUMP STATION UNDER THIS CONTRACT.
2. RMCP PLC SHALL BE USED TO CONFIRM TELEMETRY COMMUNICATIONS DURING TESTING. REFER TO SPECIFICATION SECTION 406650 – RADIO TELEMETRY EQUIPMENT.

GENERAL NOTES:

1. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: M. RICHARD
DRAWN BY: S. SILVESTER
SHEET CHK'D BY: M. POPTANI
CROSS CHK'D BY: W. HOTZ, JR
APPROVED BY: M. POPTANI
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

CONTROL SYSTEM ARCHITECTURE

COMMONWEALTH OF MASSACHUSETTS
MOHAMED N. POPTANI
CONTROL SYSTEMS
No. 53773
REGISTERED PROFESSIONAL ENGINEER

Mohamed Poptani
2025.11.18 14:18:30-05'00'

PROJECT NO. 1125-273132
FILE NAME: I003ARCH.DWG

SHEET NO.
I-3

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LOOP NO. 0100–1: GRINDER IN REMOTE; GRINDER RUNNING; START/STOP; GRINDER FAULT (FS); GRINDER IN LOCAL

LOOP NO. 0101–0: LE/LT–0101–1 PV SELECTED LOCALLY; LE/LT–0101–2 PV SELECTED LOCALLY; LE/LT PV SELECTED REMOTELY

LOOP NO. 0101–1: LEVEL — LI 0101 1; LSLL 0101 1

LOOP NO. 0101–2: LEVEL — LI 0101 2; LSLL 0101 2

LOOP NOS. 0110–1A, 0110–2A: PUMP IN REMOTE; SPEED FEEDBACK; SPEED COMMAND; E–STOP; CURRENT; PUMP RUNNING; HIGH TEMPERATURE; LEAK DETECTION; VFD FAULT; START/STOP — ETHERNET/IP

LOOP NOS. 0110–1B, 0110–2B: PUMP IN REMOTE; SPEED FEEDBACK; SPEED COMMAND; E–STOP; CURRENT; PUMP RUNNING; HIGH TEMP; LEAK DETECTION; VFD FAULT; START/STOP (FS)

LOOP NO. 0102–1: WET WELL INTRUSION (FS)

LOOP NO. 0120–1: VALVE/METER VAULT FLOODING (FS)

LOOP NO. 0121–1: VALVE/METER VAULT INTRUSION (FS)

LOOP NO. 0123–1: DISCHARGE FLOW TOTALIZING PULSE (P); DISCHARGE FLOW; DISCHARGE PRESSURE — PI 0123 1

FI 0122 1

P/S/R — HS 0101

PS1CP

CONTROL BUILDING

LCP–0100–1
GRINDER LOCAL CONTROL PANEL
L/O/R — HS 0100 1A; PWR — JL 0100 1; START — HS 0100 1B; RUN — YLR 0100 1; OL — XLF 0100 1; MS; STOP/RESET — HS 0100 1C
(DIV. 46)

UPS → INTRINSIC SAFETY PANEL (ISP)

VFD–0110–1
READY YL 0110; RUNNING YLR 0110 1; STOPPED YLS 0110 1; VFD FAULT XLF 0110 1
SPEED SI 0110; H/O/R HS 0110; E–STOP HMS 0110 1; LEAK MLH 0110 1; HIGH TEMPERATURE TLH 0110 1; HIM; VFD
(DIV. 26)
(TYP. OF 2)

LOW LOW LEVEL CUTOFF
(TYP. OF 2)

INTRINSIC SAFETY PANEL (ISP)
(DIV. 40)

6"–VT–PVC WITH CARBON CANISTER

WET WELL JUNCTION BOX (ANALOG) (DIV. 26)
WET WELL JUNCTION BOX (DIGITAL) (DIV. 26)
ZS 0102 1A 28; ZS 0102 1B 28
LE/LT 0101 1 40; LE/LT 0101 2 40

15"–INF–PVC–L01W01
INFLUENT
B/L
FROM SEWER SYSTEM
15"–INF–PVC–L01W02
MANHOLE S11–1

G–0100–1
GRINDER

8"–S–DI–L01W04
8"–S–DI–L01W06

(NOTE 1)
6"x8"
TSH 0110 1 33; MSH 0110 1 33
TSH 0110 2 33; MSH 0110 2 33

P–0110–1
SUBMERSIBLE PUMP NO. 1

P–0110–2
SUBMERSIBLE PUMP NO. 2

DBCV–0100–1
3"–D–PVC–L01W14

WW–0100–1
PUMPING STATION NO. 1 WET WELL

ARV–0110–1; BV–0110–1; PG 0110 1 40
ARV–0110–2; BV–0110–2; PG 0110 2 40
CV–0110–1; GV–0110–1
CV–0110–2; GV–0110–2
8"–S–DI–L01W09
6"–BYP–DI–L01W11
GV–0100–1A
3/4"–D–CU–L01W15

VALVE AND METER VAULT JUNCTION BOX (DIGITAL) (DIV. 26)
VALVE AND METER VAULT JUNCTION BOX (ANALOG) (DIV. 26)
ZS 0121 1A 28; ZS 0121 1B 28
3/4"–D–CU–L01W16
ARV–0135–1
VBV–0134–1
PIT 0123 40
FIT 0122 M
FE 0122 1 40
120VAC
DI
PVC
SEWER FORCE MAIN
B/L
TO RT 28 GRAVITY SEWER
8"–S–PVC–L01W14
8"–S–DI–L01W13
GV–0100–2A
GV–0100–2B
8"–BYP–DI–L01W12
GV–0100–2C

UPS → LSH 0120 1 40

V–0100–1
VALVE AND METER VAULT

NOTES:

1. ELEVATIONS AND DIMENSIONS NOTED WITH * ARE SUBJECT TO CHANGE BASED ON CONTRACTORS SUBMITTED EQUIPMENT AND SHALL BE APPROVED BY THE ENGINEER.

GENERAL NOTES:

1. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: M. RICHARD
DRAWN BY: S. SILVESTER
SHEET CHK'D BY: M. POPTANI
CROSS CHK'D BY: W. HOTZ, JR
APPROVED BY: E. SILVERMAN
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1
PROCESS AND INSTRUMENTATION DIAGRAM

PROJECT NO. 1125–273132
FILE NAME: I004PIDI.DWG
SHEET NO. I-4

COMMONWEALTH OF MASSACHUSETTS
ERIC J. SILVERMAN
CONTROL SYSTEMS
NO. 41129
REGISTERED PROFESSIONAL ENGINEER
2024.08.16 15:53:26-04'00'
Eric Silverman

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LOOP NO. 0200–1: GRINDER IN REMOTE; GRINDER RUNNING; START/STOP; GRINDER FAULT (FS); GRINDER IN LOCAL

LOOP NO. 0201–0: LE/LT–0201–1 PV SELECTED LOCALLY; LE/LT–0201–2 PV SELECTED LOCALLY; LE/LT PV SELECTED REMOTELY

P/S/R HS 0201

LOOP NO. 0201–1: LEVEL — LI 0201 1; LSLL 0201 1

LOOP NO. 0201–2: LEVEL — LI 0201 2; LSLL 0201 2

LOOP NOS. 0210–1A, 0210–2A, 0210–3A: PUMP IN REMOTE; SPEED FEEDBACK; SPEED COMMAND; E–STOP; CURRENT; PUMP RUNNING; HIGH TEMPERATURE; LEAK DETECTION; VFD FAULT; START/STOP

ETHERNET/IP

LOOP NOS. 0210–1B, 0210–3B: PUMP IN REMOTE; SPEED FEEDBACK; SPEED COMMAND; E–STOP; CURRENT; PUMP RUNNING; HIGH TEMP (FS); LEAK DETECTION (FS); VFD FAULT (FS); START/STOP

LOOP NO. 0202–1: WET WELL INTRUSION (FS)

LOOP NO. 0220–1: VALVE VAULT FLOODING (FS)

LOOP NO. 0221–1: VALVE VAULT INTRUSION (FS)

LOOP NO. 0231–1: METER VAULT INTRUSION (FS)

LOOP NO. 0230–1: METER VAULT FLOODING (FS)

LOOP NO. 0232–1: DISCHARGE FLOW TOTALIZING PULSE (P); DISCHARGE FLOW — FI 0232 1

LOOP NO. 0233–1: DISCHARGE PRESSURE — PI 0233 1

PS2CP

LCP–0200–1
GRINDER LOCAL CONTROL PANEL
L/O/R HS 0200 1A; PWR JL 0200 1; START HS 0200 1B; RUN YLR 0200 1; OL XLF 0200 1; MS; STOP/RESET HS 0200 1C

UPS → INTRINSIC SAFETY PANEL (ISP)

VFD–0210–1
READY YL 0210 1; RUNNING YLR 0210 1; STOPPED YLS 0210 1; VFD FAULT XLF 0210 1
SPEED SI 0210; H/O/R HS 0210; E–STOP HMS 0210; LEAK MLH 0210 1; HIGH TEMPERATURE TLH 0210 1; HIM; VFD
(DIV. 26) (TYP. OF 3)

LOW LOW LEVEL CUTOFF (TYP. OF 2)

INTRINSIC SAFETY PANEL (ISP) (DIV. 40)

CONTROL BUILDING (DIV. 46)

24"–INF–PVC–L02W01 INFLUENT B/L FROM SEWER SYSTEM

24"–INF–PVC–L02W02

MANHOLE S5–1

G–0200–1
GRINDER

WET WELL JUNCTION BOX (ANALOG) (DIV. 26)
LE/LT 0201 1 40; LE/LT 0201 2 40

WET WELL JUNCTION BOX (DIGITAL) (DIV. 26)
ZS 0202 1A 28; ZS 0202 1B 28

6"–VT–PVC WITH CARBON CANISTER

8"–S–DI–L02W04

8"–S–DI–L02W07

8"–S–DI–L02W24

(NOTE 1)

6"x8"

TSH 0210 1 33; MSH 0210 1 33
TSH 0210 2 33; MSH 0210 2 33
TSH 0210 3 33; MSH 0210 3 33

P–0210–1 SUBMERSIBLE PUMP NO. 1
P–0210–2 SUBMERSIBLE PUMP NO. 2
P–0210–3 SUBMERSIBLE PUMP NO. 3

WW–0200–1
PUMPING STATION NO. 2
WET WELL

DBCV–0200–1
DBCV–0200–2

3"–D–PVC–L02W28
3"–D–PVC–L02W29

ARV–0210–1; ARV–0210–2; ARV–0210–3
BV–0210–1; BV–0210–2; BV–0210–3
PG 0210 1 40; PG 0210 2 40; PG 0210 3 40
CV–0210–1; CV–0210–2; CV–0210–3
GV–0210–1; GV–0210–2; GV–0210–3
3/4"–D–CU–L02W15
6"–BYP–DI–L02W11
10"–S–DI–L02W09
10"–S–DI–L02W25
GV–0200–1A

VALVE VAULT JUNCTION BOX (DIGITAL) (DIV. 26)
ZS 0221 1A 28; ZS 0221 1B 28
LSH 0220 1 40

V–0200–1
VALVE VAULT

METER VAULT JUNCTION BOX (DIGITAL) (DIV. 26)
ZS 0231 1 28

METER VAULT JUNCTION BOX (ANALOG) (DIV. 26)

3/4"–D–CU–L02W16
ARV–0235–1
VBV–0234–1
PIT 0233 1 40
FIT 0232
FE 0232 40
LSH 0230 1 40
8"–S–DI–L02W25
GV–0200–2A
GV–0200–2B
GV–0200–2C
8"–BYP–DI–L02W26
10"x8"
8"x12"
DI PVC SEWER FORCE MAIN B/L TO RT 28 GRAVITY SEWER
12"–S–PVC–L02W27

V–0200–2
METER VAULT

NOTES:

1. ELEVATIONS AND DIMENSIONS NOTED WITH * ARE SUBJECT TO CHANGE BASED ON CONTRACTORS SUBMITTED EQUIPMENT AND SHALL BE APPROVED BY THE ENGINEER.

COMMONWEALTH OF MASSACHUSETTS
MOHAMED N. POPTANI
CONTROL SYSTEMS
No. 53773
REGISTERED PROFESSIONAL ENGINEER

Mohamed Poptani
2025.11.18 14:19:32-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: M. RICHARD
DRAWN BY: S. SILVESTER
SHEET CHK'D BY: M. POPTANI
CROSS CHK'D BY: W. HOTZ, JR
APPROVED BY: M. POPTANI
DATE: NOVEMBER 2025

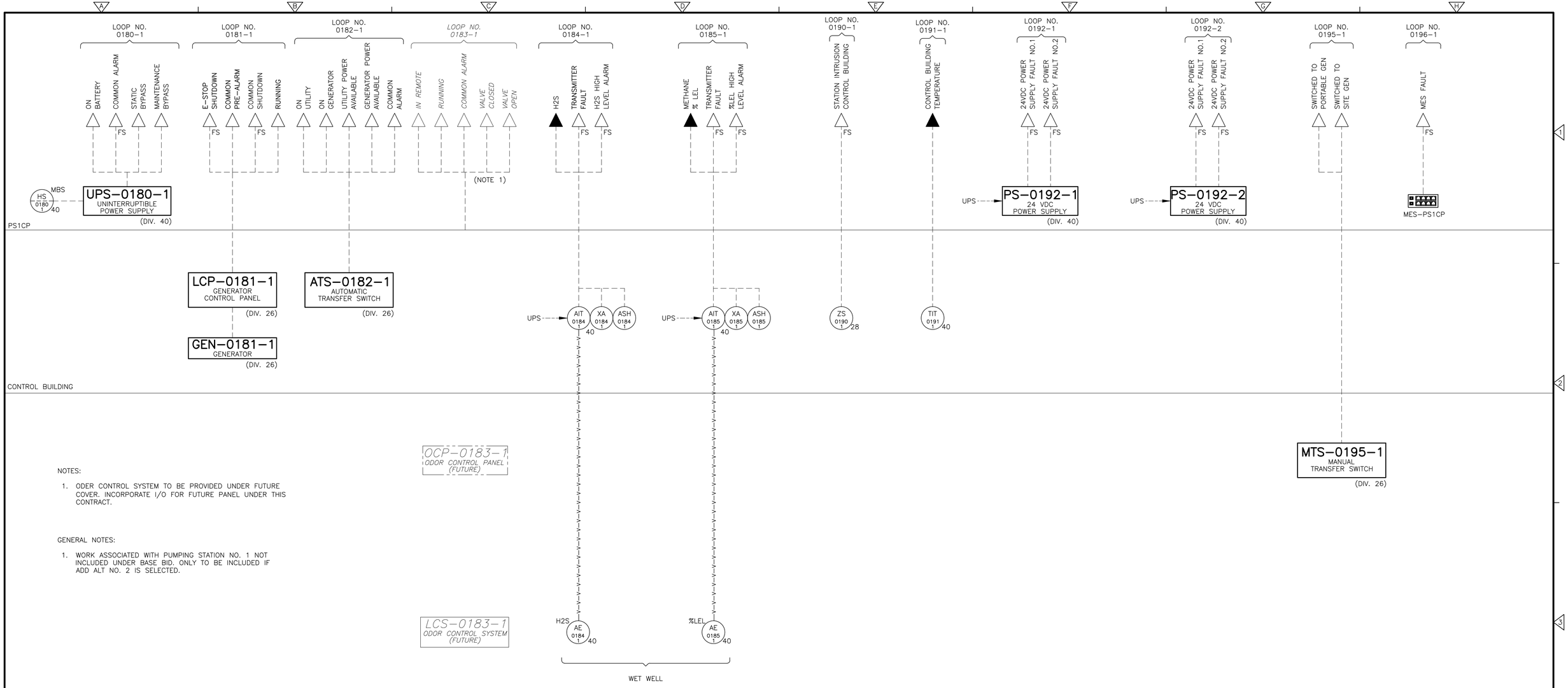
CDM Smith
3 David Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 2
PROCESS AND INSTRUMENTATION DIAGRAM

PROJECT NO. 1125–273132
FILE NAME: I005PIDI.DWG

SHEET NO.
I-5



NOTES:

1. ODER CONTROL SYSTEM TO BE PROVIDED UNDER FUTURE COVER. INCORPORATE I/O FOR FUTURE PANEL UNDER THIS CONTRACT.

GENERAL NOTES:

1. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

PUMPING STATION NO. 1

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: M. RICHARD
DRAWN BY: S. SILVESTER
SHEET CHK'D BY: M. POPTANI
CROSS CHK'D BY: W. HOTZ, JR
APPROVED BY: E. SILVERMAN
DATE: AUGUST 2024

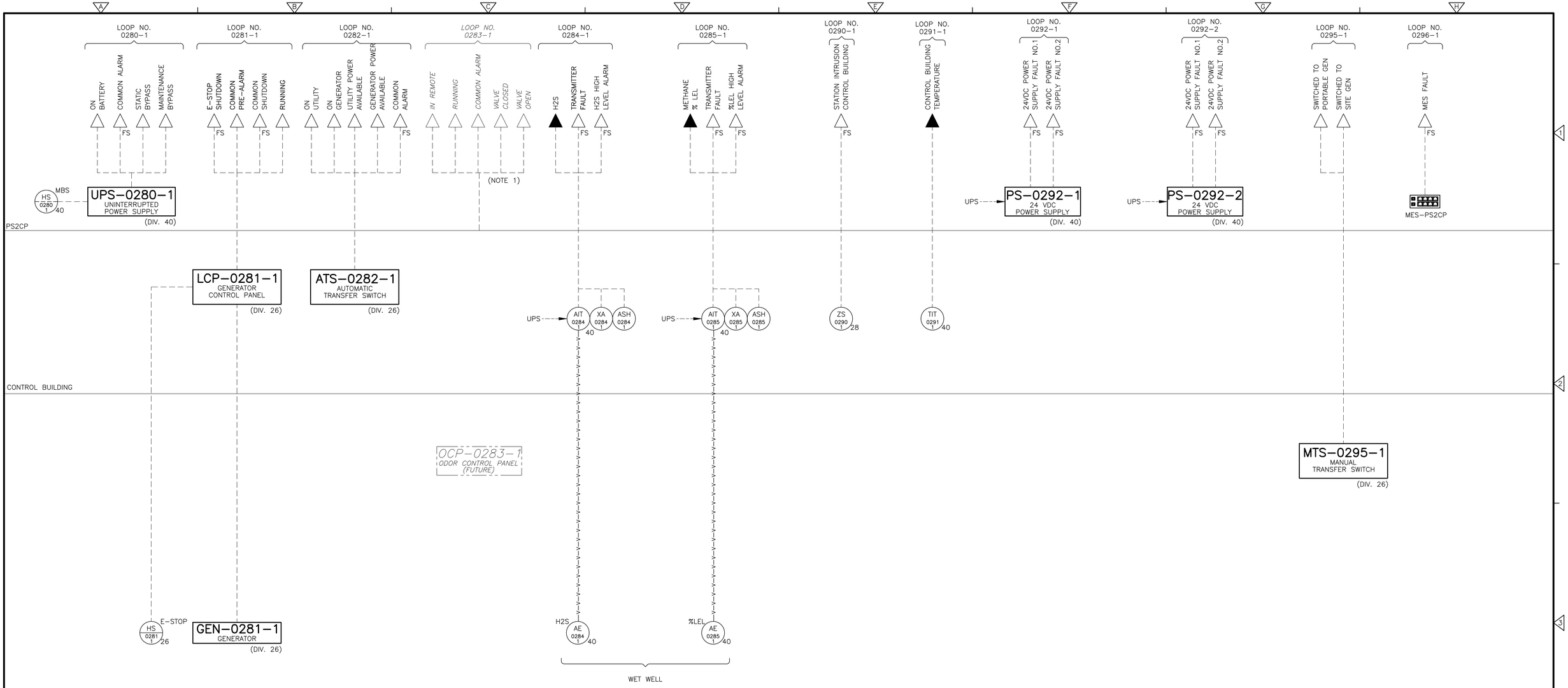
CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1
GAS DETECTION AND MISCELLANEOUS SYSTEMS
PROCESS AND INSTRUMENTATION DIAGRAM

Eric Silverman
2024.08.16 15:54:05-04'00'
COMMONWEALTH OF MASSACHUSETTS
ERIC J. SILVERMAN
CONTROL SYSTEMS
NO. 41129
REGISTERED PROFESSIONAL ENGINEER

PROJECT NO. 1125–273132
FILE NAME: I006PIDI.DWG
SHEET NO.
I-6



NOTES:

1. ODER CONTROL SYSTEM TO BE PROVIDED UNDER FUTURE COVER. INCORPORATE I/O FOR FUTURE PANEL UNDER THIS CONTRACT.

PUMPING STATION NO. 2

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: M. RICHARD
DRAWN BY: S. SILVESTER
SHEET CHK'D BY: M. POPTANI
CROSS CHK'D BY: W. HOTZ, JR
APPROVED BY: M. POPTANI
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

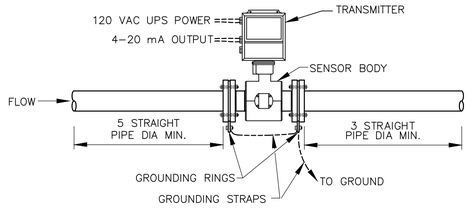
TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

COMMONWEALTH OF MASSACHUSETTS
MOHAMED N. POPTANI
CONTROL SYSTEMS
No. 53773
REGISTERED PROFESSIONAL ENGINEER

Mohamed Poptani
2025.11.18 14:19:56-05'00'

PUMPING STATION NO. 2
GAS DETECTION AND MISCELLANEOUS SYSTEMS PROCESS AND INSTRUMENTATION DIAGRAM

PROJECT NO. 1125-273132
FILE NAME: I007PIDI.DWG
SHEET NO.
I-7

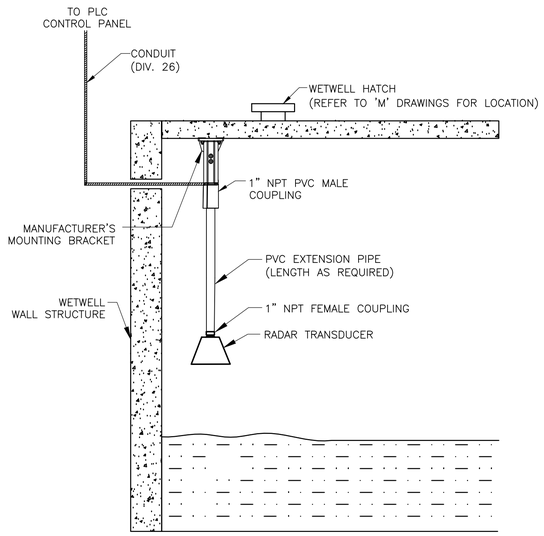


NOTES:

1. PROVIDE GROUNDING RING(S) AS RECOMMENDED BY MANUFACTURER.
2. PROVIDE SENSOR LINING TO PREVENT BUILDUP ON METER.

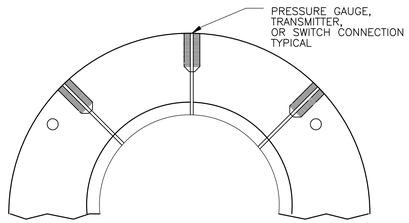
MAGNETIC FLOW METER
(INTEGRAL MOUNTED)

DETAIL A
NTS

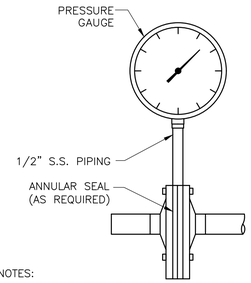


RADAR LEVEL TRANSMITTER

DETAIL B
NTS



TYPICAL ANNULAR SEAL

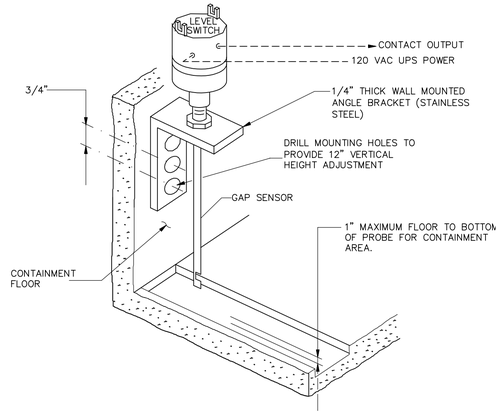


NOTES:

1. REFER TO MECHANICAL DETAILS AND MECHANICAL SPECIFICATIONS FOR PRESSURE RATING OF VALVES AND PIPE.
2. THIS IS THE STANDARD DETAIL, ALL PIPING AND VALVES SHALL BE COMPATIBLE TO PROCESS FLUID.

PRESSURE GAUGE
(WITH ANNULAR SEAL)

DETAIL C
NTS

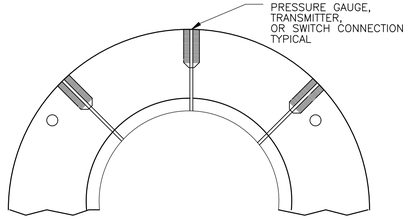


NOTES:

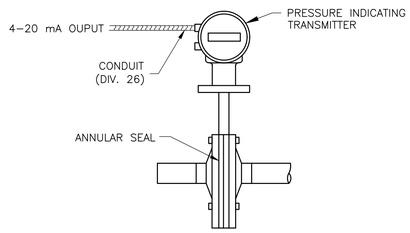
1. THE PROBE GAP SENSOR USED IN A SUMP, SHALL BE MOUNTED HALF WAY INTO THE SUMP.

ULTRASONIC GAP LEVEL SWITCH
(CONTAINMENT SUMP AREA INSTALLATION)

DETAIL D
NTS



TYPICAL ANNULAR SEAL

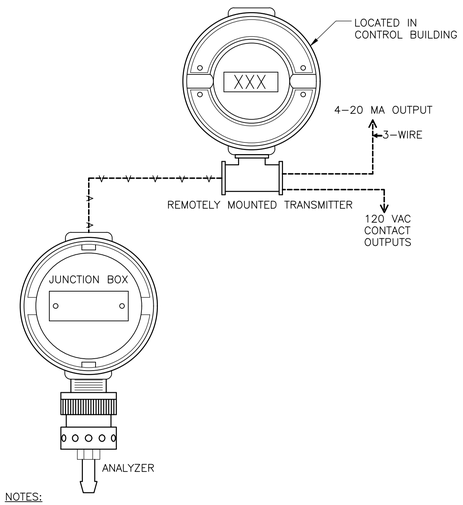


NOTES:

1. FOR PROPER OPERATION, EVACUATE THE AIR IN THE SECTION BETWEEN DIAPHRAGM AND THE PRESSURE DEVICE AND SEAL WITH OIL.
2. REFER TO MECHANICAL DETAILS AND MECHANICAL SPECIFICATIONS FOR PRESSURE RATING OF VALVES AND PIPE.
3. THIS IS THE STANDARD DETAIL, ALL PIPING AND VALVES SHALL BE COMPATIBLE TO PROCESS FLUID.

PRESSURE TRANSMITTER
(WITH ANNULAR SEAL)

DETAIL E
NTS

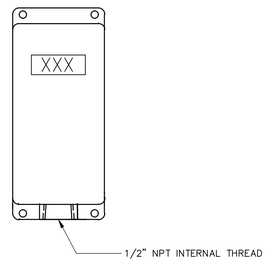


NOTES:

1. REFER TO ELECTRICAL DRAWINGS FOR AREA CLASSIFICATIONS. INSTRUMENTS, INSTALLATION HARDWARE, AND ELECTRICAL POWER AND SIGNAL COMPONENTS SHALL BE IN ACCORDANCE WITH THE HAZARDOUS RATING OF THE INSTALLATION LOCATION. ADDITIONAL SEALS/FITTINGS MAY BE REQUIRED.

% LEL, H2S, ANALYZER WITH
INTERNAL RELAYS

DETAIL F
NTS



NOTES:

1. TEMPERATURE TRANSMITTER SHALL BE WALL MOUNTED APPROXIMATELY 5FT ABOVE FLOOR LEVEL.

TEMPERATURE TRANSMITTER
(WALL MOUNTED)

DETAIL G
NTS

COMMONWEALTH OF MASSACHUSETTS
MOHAMED N. POPTANI
CONTROL SYSTEMS
No. 53773
REGISTERED PROFESSIONAL ENGINEER

Mohamed Poptani
2025.11.18 14:20:08-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: M. RICHARD
DRAWN BY: S. SILVESTER
SHEET CHK'D BY: M. POPTANI
CROSS CHK'D BY: W. HOTZ, JR
APPROVED BY: M. POPTANI
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

INSTALLATION DETAILS I

PROJECT NO. 1125-273132
FILE NAME: I008DETL.DWG
SHEET NO. I-8

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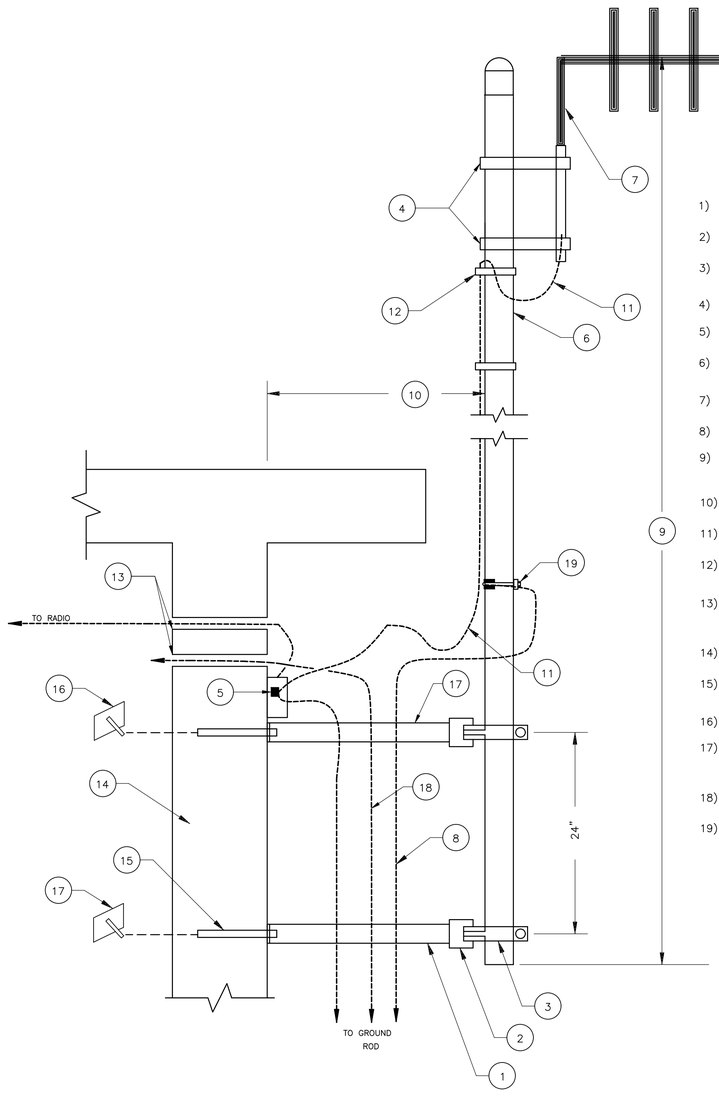

1) MAST MOUNTING WALL BRACKET. HOT DIP GALVANIZED.
2) MAST CLAMP MOUNTING CHANNEL. HOT DIP GALVANIZED.
3) MAST CLAMP. HOT DIP GALVANIZED.
4) ANTENNA PIPE MOUNTS
5) SURGE PROTECTOR (TVSS) INSTALLED IN JUNCTION BOX, REFER TO ELECTRICAL DRAWINGS.
6) ANTENNA MOUNTING MAST, 2" DIA. SCH. 40 STEEL HOT DIP GALVANIZED.
7) YAGI ANTENNA
8) COPPER GROUND WIRE.
9) MINIMUM ANTENNA HEIGHT REQUIREMENTS PER RADIO PATH STUDY. CUT EXCESS MAST LENGTH FROM BOTTOM.
10) MAST MOUNTING TO CLEAR ANY BUILDING ROOF OVERHANG.
11) ANTENNA CABLE. PROVIDE DRIP LOOP PRIOR TO ENTERING BUILDING.
12) ANTENNA CABLE CLAMPS. HOT DIP GALVANIZED. CLAMP CABLE TO MAST AT 2' INTERVALS.
13) WALL PENETRATION. CORE DRILL 2" DIA. THRU WALL. GROUT PVC PIPE INTO CENTER OF CORE DRILL AND PACK GROUT TO FILL. SEAL ANTENNA OR GROUND CABLE INTO PVC PIPE.
14) WALL OF BUILDING/STRUCTURE.
15) BRACKET ANCHOR BOLTS. HOT DIP GALVANIZED.
16) PLATE MOUNT AS REQUIRED.
17) WALL MOUNT ROHN PWM SERIES, ROHN WM SERIES, ROHN RN-WM SERIES, ROHN RN-DM SERIES, ROHN RN-MT SERIES, OR EQUAL.
18) BONDING CONDUCTOR
19) ANTENNA CABLE GROUNDING KIT.

ANTENNA – PUMPING STATION INSTALLATION

DETAIL H
NTS –

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: M. RICHARD
DRAWN BY: S. SILVESTER
SHEET CHK'D BY: M. POPTANI
CROSS CHK'D BY: W. HOTZ, JR
APPROVED BY: M. POPTANI
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

INSTALLATION DETAILS II

COMMONWEALTH OF MASSACHUSETTS
MOHAMED N. POPTANI
CONTROL SYSTEMS
No. 53773
REGISTERED PROFESSIONAL ENGINEER

Mohamed Poptani
2025.11.18 14:20:17-05'00'

PROJECT NO. 1125-273132
FILE NAME: I009DETL.DWG

SHEET NO.
I-9

SCOPE OF WORK:

1. PROJECT PROVIDES NEW PUMP STATION NO.1 & 2 AT THE TOWN OF YARMOUTH, MASSACHUSETTS. MAJOR IMPROVEMENTS INCLUDE, BUT ARE NOT LIMITED TO:
   - 1.1. NEW ELECTRIC UTILITY SERVICE.
   - 1.2. NEW POWER DISTRIBUTION EQUIPMENT INCLUDING PANELBOARDS, TRANSFORMERS, DISCONNECT SWITCHES, AUTOMATIC TRANSFER SWITCHES, MANUAL TRANSFER SWITCHES, PORTABLE GENERATOR CONNECTIONS, VARIABLE FREQUENCY DRIVES.
   - 1.3. NEW INTERIOR AND EXTERIOR LIGHTING.
   - 1.4. NEW GAS-DRIVEN GENERATOR WITH WEATHER AND SOUND-ATTENUATING ENCLOSURE.
   - 1.5. NEW WET-WELL, VALVE-VAULT, METER-VAULT.
   - 1.6. NEW WET-WELL PUMPS.
     - 1.6.1. PUMPS SHALL BE A MAXIMUM OF 35HP FOR PUMP STATION NO. 1 AND 50HP FOR PUMP STATION NO. 2.
     - 1.6.2. PUMP STATION NO. 1 HAS UP TO TWO PUMPS THAT MAY RUN AT A TIME. PUMP STATION NO. 2 HAS UP TO TWO PUMPS THAT MAY RUN AT A TIME AND A THIRD PUMP FOR REDUNDANCY.
   - 1.7. NEW CONTROLS AND INSTRUMENTATION.
   - 1.8. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.
2. PROVIDE POWER SYSTEM STUDIES IN ACCORDANCE WITH SECTION 260573 "POWER SYSTEM STUDIES".
3. PROVIDE KNOCKOUTS FOR FUTURE SECURITY CARD READERS.
4. PROVIDE INTRUSION DETECTION TO ALL DOORS AND HATCHES.

GENERAL NOTES:

1. ELECTRICAL DRAWINGS ARE INTENDED TO SHOW THE GENERAL LAYOUT OF WORK TO BE INSTALLED UNDER THIS CONTRACT WITHOUT ATTEMPTING TO SHOW ALL DETAILS. FURNISH LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM AS SHOWN ON THE CONTRACT DOCUMENTS.
2. CONTRACTOR'S WORK SHALL INCLUDE COMPLETE TESTING OF EQUIPMENT AND WIRING INCLUDING MAKING MINOR CORRECTIONS, CHANGES, OR ADJUSTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND EQUIPMENT. WORKMANSHIP SHALL BE OF THE HIGHEST QUALITY; SUBSTANDARD WORK WILL BE REJECTED.
3. DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO MECHANICAL, STRUCTURAL DRAWINGS, AND APPROVED MANUFACTURER'S SHOP DRAWINGS FOR EXACT LOCATION OF EQUIPMENT. EXCEPT WHERE DIMENSIONS ARE SHOWN, LOCATIONS OF EQUIPMENT, FIXTURES, OUTLETS, AND SIMILAR DEVICES ARE APPROXIMATE.
4. WORK SHALL COMPLY WITH NEC AND LOCAL CODES.
5. DO NOT SPLICE CONDUCTORS EXCEPT AS NOTED.
6. POWER AND CONTROL CONDUITS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR WIRE SIZED PER TABLE 250.122 OF THE NEC UNLESS OTHERWISE NOTED (UON).
7. REPAIR, IN ACCORDANCE WITH SPECIFICATIONS, SIDEWALKS, WALLS, ROADWAYS, ETC. DISTURBED BY CONSTRUCTION ACTIVITIES WHETHER OR NOT SHOWN FOR REPAIR/REPAVING ON CIVIL DRAWINGS.
8. CONCEAL CONDUITS TO GREATEST EXTENT PRACTICABLE. CONDUITS RUN AT EXISTING STRUCTURES SHALL BE RUN EXPOSED.
9. WHERE LOCAL DISCONNECTS AND CONTROL PANELS ARE SHOWN ON PLAN VIEWS, LOCATIONS ARE APPROXIMATE. ADJUST LOCATION AS REQUIRED TO COMPLY WITH NEC ARTICLE 110 FOR WORKING CLEARANCES.

INTERPRETATION OF CONTRACT DOCUMENTS:

1. IN GENERAL, DRAWINGS DO NOT SHOW CONDUIT ROUTING. PLAN AND ROUTE CONDUITS IN COMPLIANCE WITH SPECIFICATIONS AND DRAWING DETAILS. COORDINATE INSTALLATION WITH OTHER TRADES AND ACTUAL SUPPLIED EQUIPMENT.
2. DUCTBANK ROUTING SHOWN ON ELECTRICAL SITE PLANS IS DIAGRAMMATIC IN NATURE AND MAY NOT INCLUDE INTERFERENCES THAT MAY BE PRESENT.
3. SEE ADDITIONAL NOTES ON ELECTRICAL LEGEND I SHEET.

ENCLOSURE TYPES:

PROVIDE THE FOLLOWING NEMA TYPE ELECTRICAL ENCLOSURES, UNLESS OTHERWISE NOTED:

1. NEMA 1 IN DRY, NON-PROCESS INDOOR LOCATIONS.
2. NEMA 4X 316 STAINLESS STEEL IN OUTDOOR LOCATIONS, ROOMS BELOW GRADE INCLUDING BASEMENTS AND BURIED VAULTS AND "DAMP" OR "WET" LOCATIONS SHOWN ON THE DRAWINGS.
3. NEMA 7 AND LISTED FOR THE SPECIFIC NATIONAL ELECTRICAL CODE HAZARDOUS AREA CLASSIFICATION AS SHOWN ON THE DRAWINGS.

MATERIALS AND EQUIPMENT:

1. PROVIDE NEW MATERIALS AND EQUIPMENT UNLESS SPECIFICALLY NOTED OTHERWISE.
2. ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE LISTED BY UNDERWRITER'S LABORATORIES, INC., AND SHALL BEAR APPROPRIATE UL LISTING MARK OR CLASSIFICATION MARKING. EQUIPMENT, MATERIALS, ETC. UTILIZED NOT BEARING A UL CERTIFICATION SHALL BE FIELD OR FACTORY UL CERTIFIED PRIOR TO EQUIPMENT ACCEPTANCE AND USE.
3. PROVIDE MAJOR ELECTRICAL EQUIPMENT BY A SINGLE MANUFACTURER: I.E. UNIT SUBSTATIONS, SWITCHGEAR, MOTOR CONTROL CENTERS, DISCONNECT SWITCHES, TRANSFORMERS, PANELBOARDS, ETC.

EQUIPMENT SIZE, HANDLING AND STORAGE:

1. COORDINATE WITH EQUIPMENT MANUFACTURER SHIPPING SPLITS TO PERMIT SAFE HANDLING AND PASSAGE OF EQUIPMENT TO FINAL INSTALLATION LOCATION.
2. COMPLY WITH MANUFACTURER'S INSTRUCTIONS FOR UPRIGHT EQUIPMENT ORIENTATION DURING TRANSPORTATION.
3. PROTECT EQUIPMENT FROM MECHANICAL INJURY, OR EXPOSURE TO MOISTURE, CHEMICALS, OR CORROSIVE GASES. DO NOT STORE ELECTRICAL EQUIPMENT OUTDOORS.
4. PROVIDE AND ENERGIZE TEMPORARY SPACE HEATERS IF REQUIRED TO CONTROL MOISTURE DURING STORAGE.

SERVICE AND METERING:

1. ELECTRIC POWER COMPANY SERVING THIS PROJECT IS EVERSOURCE. POWER COMPANY CONTACT IS BRIAN MELLO, TELEPHONE (508) 441-5832, EMAIL BRAIN.MELLO@EVERSOURCE.COM. COMPLY WITH POWER COMPANY STANDARDS.
2. PAY FOR FEES AND CHARGES AS REQUIRED FOR TEMPORARY/CONSTRUCTION POWER FOR CONTRACTOR'S USE.
3. PAY FEES AND CHARGES FOR PERMANENT SERVICE VIA BID ALLOWANCE AND SUBMIT POWER COMPANY INVOICES TO OWNER FOR SUBSTANTIATION.
4. POWER COMPANY WORK:
   - TERMINATE OVERHEAD SECONDARY CABLES.
   - PROVIDE METER(S) AND METER WIRING.
5. CONTRACTOR WORK:
   - ARRANGEMENTS WITH POWER COMPANY TO OBTAIN SERVICE, PAY POWER COMPANY FEES, AND PROVIDE LABOR AND MATERIALS REQUIRED FOR ELECTRICAL SERVICE.
   - PROVIDE SECONDARY UNDERGROUND CONDUITS AND CABLE FROM UTILITY OVERHEAD LINES TO SERVICE ENTRANCE EQUIPMENT.
   - INSTALL METER BASE ENCLOSURE.

DELEGATED DESIGN / PROFESSIONAL ENGINEERING SERVICES:

1. WHEN ENGINEERING SERVICES ARE SPECIFIED TO BE PROVIDED BY CONTRACTOR, CONTRACTOR SHALL RETAIN A LICENSED PROFESSIONAL ENGINEER TO PERFORM THE SERVICES. ENGINEER SHALL BE LICENSED AT THE TIME SERVICES ARE PERFORMED AND LICENSED IN THE STATE IN WHICH PROJECT IS LOCATED. IF THE STATE ISSUES DISCIPLINE SPECIFIC LICENSES, ENGINEER SHALL BE LICENSED IN THE APPLICABLE DISCIPLINE. ENGINEER SHALL BE EXPERIENCED IN THE TYPE OF WORK BEING PERFORMED.
2. ENGINEERING WORK SHALL BE DONE ACCORDING TO THE APPLICABLE REGULATIONS FOR PROFESSIONAL ENGINEERS TO INCLUDE SIGNING, SEALING AND DATING DOCUMENTS.

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: C. FONDUNGALLAH
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

ELECTRICAL
GENERAL NOTES

COMMONWEALTH OF MASSACHUSETTS
CELESTINE A FONDUNGALLAH
ELECTRICAL
No. 52324
REGISTERED PROFESSIONAL ENGINEER

CELESTINE A FONDUNGALLAH
2025.11.18 15:26:05-05'00'

PROJECT NO. 1125-273132
FILE NAME: E001NFNT.DWG

SHEET NO.
E-1

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
52 CS	——	MEDIUM VOLTAGE DRAWOUT TYPE POWER CIRCUIT BREAKER CS=CONTROL SWITCH
FRAME TRIP	CB	LOW VOLTAGE AIR OR MOLDED CASE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED.
SIZE # AMPS TYPE *		COMBINATION MOTOR CIRCUIT PROTECTOR AND MAGNETIC MOTOR STARTER, FULL VOLTAGE NON–REVERSING UNLESS OTHERWISE NOTED: ✱ FVR – FULL VOLTAGE REVERSING RVNR – REDUCED VOLTAGE NON–REVERSING RVAT – REDUCED VOLTAGE AUTOTRANSFORMER RVSS – REDUCED VOLTAGE SOLID STATE 2S1W – TWO SPEED, ONE WINDING 2S2W – TWO SPEED, TWO WINDING (DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)
✱		NON–FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE ✱ AMPERE RATING NOTED IF OTHER THAN 30A (DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)
✱	F	FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE, ✱ AMPERE RATING AND FUSE SIZE AS NOTED ✱ AMPERE RATING NOTED IF OTHER THAN 30A FUSE RATING (DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)
	P 2	MANUAL MOTOR STARTER WITH THERMAL OVERLOAD HEATER, 1 POLE UNLESS OTHERWISE NOTED "P" INDICATES WITH PILOT LIGHT "2" INDICATES TWO POLE (DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE)
	——	DRAWOUT TYPE EQUIPMENT OR DEVICE
	——	MEDIUM VOLTAGE CABLE TERMINATION
	——	MEDIUM VOLTAGE AIR INTERRUPTER SWITCH
✱	——	MEDIUM VOLTAGE FUSED AIR INTERRUPTER SWITCH ✱ FUSE RATING
	——	MEDIUM VOLTAGE FUSED MOTOR CONTROLLER
XFMR NO. 1 480V Δ KVA Y 120/208V 3P, 4W	T	TRANSFORMER, RATINGS AND CONNECTIONS AS NOTED. UNLESS OTHERWISE NOTED ON THE SINGLE LINE DIAGRAMS, ALL DRY TYPE TRANSFORMERS SERVICING ADMINISTRATIVE AND LABORATORY SPACES SHALL HAVE A K FACTOR OF 4. ISOLATION TRANSFORMERS SHALL HAVE A K–20 RATING
✱ A TO 5	——	CURRENT TRANSFORMER ✱ QUANTITY A = PRIMARY AMPERES
✱ V TO 120	——	POTENTIAL TRANSFORMER ✱ QUANTITY V = PRIMARY VOLTAGE
	G	GENERATOR, RATINGS AND CONNECTIONS AS NOTED
ATS N S 100A	——	AUTOMATIC OR MANUAL TRANSFER SWITCH NO.1 (ATS–1), (MTS–1) "N" INDICATES NORMAL OR PREFERRED SOURCE "S" INDICATES STANDBY OR ALTERNATE SOURCE 100A INDICATES CONTINUOUS CURRENT RATING
✱	✱	VARIABLE SPEED DRIVE CONTROLLER ✱ D.C. = D.C. DRIVE CONTROLLER SCR = SILICON CONTROLLED RECTIFIER VFD = VARIABLE FREQUENCY DRIVE
#KW	E	UNIT HEATER – ELECTRIC HEATING COIL AND FAN # – RATING
——	U	UNIT HEATER – GAS FIRED, STEAM OR WATER HEATING COIL AND FAN
5	M	MOTOR, NUMERAL INDICATES HORSEPOWER
VS VM ✱	——	VOLTMETER WITH SWITCH, 3 PHASE
AS AM ✱	——	AMMETER WITH SWITCH, 3 PHASE

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
✱	——	METER ✱ WM – WATTMETER WHM – WATTHOUR METER WHDM – WATTHOUR DEMAND METER WHDR – WATTHOUR DEMAND RECORDER PF – POWER FACTOR METER DMU – DIGITAL METERING UNIT TRANSDUCER AX – CURRENT TRANSDUCER WX – WATT TRANSDUCER WHX – WATTHOUR TRANSDUCER
✱	✱	RELAY, NO. AS INDICATED 25 – SYNCHRONISM CHECK RELAY 27 – UNDERVOLTAGE RELAY 32 – DIRECTIONAL POWER RELAY 38 – BEARING PROTECTIVE DEVICE 40 – LOSS OF EXCITATION RELAY 42 – RUNNING CONTACTOR/PILOT RELAY 46 – REVERSE PHASE/PHASE BALANCE/CURRENT RELAY 47 – PHASE SEQUENCE VOLTAGE RELAY 49 – MACHINE OR TRANSFORMER THERMAL RELAY 50/51 – INSTANTANEOUS/TIME OVERCURRENT RELAY 50G – INSTANTANEOUS GROUND 51 – TIME OVERCURRENT RELAY 51G – TIME OVERCURRENT RELAY, GROUNDING RESISTOR TYPE 51N – TIME OVERCURRENT RELAY, RESIDUAL TYPE 51V – TIME OVERCURRENT RELAY WITH VOLTAGE RESTRAINT 51X – AUXILIARY RELAY (TRIPS CB AND ALARMS) 59 – OVERVOLTAGE RELAY 60 – NEGATIVE SEQUENCE VOLTAGE RELAY 62 – TIME DELAY RELAY 63 – OVERPRESSURE RELAY 64 – GENERATOR FIELD GROUND RELAY 67 – AC DIRECTIONAL OVERCURRENT RELAY 74 – ALARM LATCHING RELAY 83 – AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY 86 – LOCKING–OUT RELAY 87 – DIFFERENTIAL PROTECTIVE RELAY B – SUFFIX INDICATES "BUS" G – SUFFIX INDICATES "GENERATOR" GF – GROUND FAULT ST – SHUNT TRIP T – SUFFIX INDICATES "TRANSFORMER" X – SUFFIX INDICATES "AUXILIARY"
✱	——	SPECIAL CAPACITOR ✱ SC – SURGE CAPACITOR PF – POWER FACTOR CORRECTION CAPACITOR
✱	——	TUNED POWER FACTOR CORRECTION CAPACITOR
	——	PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY CLOSED
	——	PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY OPEN
	ES	EMERGENCY STOP PUSHBUTTON WITH RED MUSHROOM HEAD OPERATOR (MAINTAINED CONTACT)
STOP START	PBL	START–STOP PUSHBUTTON CONTROL STATION (MOMENTARY CONTACT) WITH LOCKOUT DEVICE ON STOP
	PBM	START–STOP PUSHBUTTON CONTROL STATION, MAINTAINED CONTACT WITH LOCKOUT DEVICE ON STOP
OFF ON	S/S	OFF/ON SELECTOR SWITCH
L R (XO) (OX)	LR	LOCAL/REMOTE SELECTOR SWITCH
A B C✱ (XOO) (OXO) (OOX)	✱	3 POSITION SELECTOR SWITCH, MAINTAINED CONTACT O–OPEN X–CLOSED POSITION / TOP CONTACT / MIDDLE CONTACT / BOTTOM CONTACT A / X / O / O B / O / X / O C / O / O / X NAMEPLATE (A/B/C) HOA – HAND/OFF/AUTO HOR – HAND/OFF/REMOTE LOR – LOCAL/OFF/REMOTE RSL – RAISE/STOP/LOWER TOA – TEST/OFF/AUTO

GD/VF #	GD/VF #	GAS DETECTOR / VENTILATION FAILURE ALARM
		# INDICATES TYPE OF UNIT
		1=MASTER, 2=REMOTE

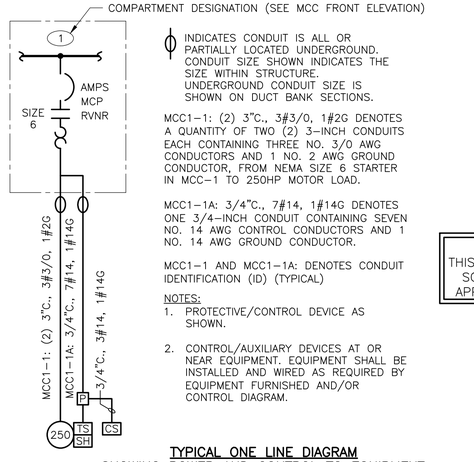
42 #	——	MOTOR STARTER COIL, NUMBER AS INDICATED TO DENOTE INTERLOCKING ONLY
CR #	——	CONTROL RELAY COIL, NUMBER AS INDICATED

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
✱	——	PILOT LIGHT, COLOR AS NOTED ✱ R – RED G – GREEN B – BLUE W – WHITE A – AMBER
✱	——	PILOT LIGHT, PUSH–TO–TEST TYPE, COLOR AS NOTED ABOVE.
✱ RANGE # SETPOINT		TIME DELAY RELAY RANGE AS NOTED SETPOINT AS NOTED # NUMBER AS INDICATED ✱ TDE – TIME DELAY AFTER ENERGIZATION ON DELAY TDD – TIME DELAY AFTER DE–ENERGIZATION OFF DELAY NOTC – NORMALLY OPEN, TIMED CLOSING WHEN ENERGIZED NCTO – NORMALLY CLOSED, TIMED OPENING WHEN ENERGIZED NOTO – NORMALLY OPEN, TIMED OPENING WHEN DE–ENERGIZED NCTC – NORMALLY CLOSED, TIMED CLOSING WHEN DE–ENERGIZED
✱ NOTC		
NCTO		
NOTO		
NCTC		
——	■ ✱ – ##	FIELD INSTRUMENT, TAG NO. AS INDICATED ✱ INDICATES INSTRUMENT TYPE DEFINED ON LOOP SHEETS OR P & ID ## INDICATES LOOP NO.
LS OR ■		LIQUID LEVEL (FLOAT) SWITCH NORMALLY OPEN, CLOSES ON RISING LEVEL NORMALLY CLOSED, OPENS ON RISING LEVEL
PS OR ■		PRESSURE OR VACUUM SWITCH NORMALLY OPEN, CLOSES ON RISING PRESSURE NORMALLY OPEN, CLOSES ON DROPPING PRESSURE NORMALLY CLOSED, OPENS ON RISING PRESSURE NORMALLY CLOSED, OPENS ON DROPPING PRESSURE
TS OR T OR ■		TEMPERATURE SWITCH OR THERMOSTAT NORMALLY OPEN, CLOSES ON RISING TEMPERATURE NORMALLY OPEN, CLOSES ON DROPPING TEMPERATURE NORMALLY CLOSED, OPENS ON RISING TEMPERATURE NORMALLY CLOSED, OPENS ON DROPPING TEMPERATURE
FS OR ■		FLOW SWITCH (AIR, WATER, ETC.) NORMALLY OPEN, CLOSES ON INCREASED FLOW NORMALLY CLOSED, OPENS ON INCREASED FLOW
ZS OR ■		POSITION (LIMIT) SWITCH NORMALLY OPEN NORMALLY OPEN – HELD CLOSED NORMALLY CLOSED NORMALLY CLOSED – HELD OPEN
WS OR ■		TORQUE SWITCH NORMALLY OPEN, CLOSES ON HIGH TORQUE NORMALLY CLOSED, OPENS ON HIGH TORQUE
#	——	UTILIZED IN CONJUNCTION WITH OTHER CONTROL SCHEMATIC SYMBOLS TO DEPICT THE PHYSICAL LOCATION OF THE DEVICE # REPRESENTS LOCATION SEE LOCATION LEGEND ON DRAWING
	——	CONDUCTORS OR CONDUITS CROSSING PATHS BUT NOT CONNECTED
	——	CONDUCTORS ELECTRICALLY CONNECTED
	S	SOLENOID VALVE

ONE LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
LA	——	LIGHTNING ARRESTER
		GROUND OR GROUND ROD
30A	——	FUSE, AMPERE RATING AS NOTED
	HTR	STRIP HEATER OR HEATING ELEMENT
	——	INDUCTOR
TG	TG	TACHOMETER GENERATOR
	——	CONTACT, NORMALLY OPEN (NO)
	——	CONTACT, NORMALLY CLOSED (NC)
	——	OVERLOAD RELAY HEATER
✱	——	✱ K = KEY INTERLOCK E = ELECTRICAL INTERLOCK
TB	——	TERMINAL OR TEST BLOCK
RTD	——	RESISTANCE TEMPERATURE DETECTOR
VE OR VE	——	VIBRATION DETECTOR
DM	DM	DAMPER MOTOR
ETM	——	ELAPSED TIME METER
M	M	MOTOR OPERATED VALVE OR GATE
	——	INDICATES LIMITS OF ELECTRICAL EQUIPMENT OR WIRING ENCLOSURE

EXISTING WORK | NEW WORK | FUTURE EXPANSION

EXISTING, NEW OR FUTURE CONDITION DESIGNATION



INDICATES CONDUIT IS ALL OR PARTIALLY LOCATED UNDERGROUND. CONDUIT SIZE SHOWN INDICATES THE SIZE WITHIN STRUCTURE. UNDERGROUND CONDUIT SIZE IS SHOWN ON DUCT BANK SECTIONS.

MCC1–1: (2) 3"C., 3#3/0, 1#2G DENOTES A QUANTITY OF TWO (2) 3–INCH CONDUITS EACH CONTAINING THREE NO. 3/0 AWG CONDUCTORS AND 1 NO. 2 AWG GROUND CONDUCTOR, FROM NEMA SIZE 6 STARTER IN MCC–1 TO 250HP MOTOR LOAD.

MCC1–1A: 3/4"C., 7#14, 1#14G DENOTES ONE 3/4–INCH CONDUIT CONTAINING SEVEN NO. 14 AWG CONTROL CONDUCTORS AND 1 NO. 14 AWG GROUND CONDUCTOR.

MCC1–1 AND MCC1–1A: DENOTES CONDUIT IDENTIFICATION (ID) (TYPICAL)

NOTES:
1. PROTECTIVE/CONTROL DEVICE AS SHOWN.
2. CONTROL/AUXILIARY DEVICES AT OR NEAR EQUIPMENT. EQUIPMENT SHALL BE INSTALLED AND WIRED AS REQUIRED BY EQUIPMENT FURNISHED AND/OR CONTROL DIAGRAM.

TYPICAL ONE LINE DIAGRAM SHOWING POWER AND CONTROL TO EQUIPMENT

NOTES:

1. IN GENERAL CONDUIT ROUTING FOR EQUIPMENT AND DEVICES IS NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING ALL CONDUITS WHICH SHALL INCLUDE CONDUITS SHOWN ON ONE–LINE AND RISER DIAGRAMS AND HOME–RUNS SHOWN ON PLAN DRAWINGS. REFER TO SPECIFICATIONS FOR MATERIALS AND INSTALLATION REQUIREMENTS.
2. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUITS REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS.
3. SWITCHGEAR, PANELBOARD AND MOTOR CONTROL CENTER COMPARTMENT DESIGNATIONS AS INDICATED BELOW:
   - BLANK: NOT INTENDED FOR USE. PLATE ONLY
   - SPACE: EQUIPPED WITH REQUIRED BUS AND HARDWARE FOR THE FUTURE ADDITION OF BREAKERS AND/OR STARTERS WITHIN THE SIZE AND RANGE SHOWN
   - SPARE: CONTAINS A COMPLETELY INSTALLED BREAKER AND/OR STARTER OF SIZE AND TYPE INDICATED FOR FUTURE USE.
4. INTERPRETATION OF ELECTRICAL DRAWINGS: CIRCUIT IDENTIFICATION, ROUTING, AND SIZES OF CONDUITS AND WIRES ARE SHOWN ON THE FOLLOWING DRAWINGS:

A. ONE LINE POWER DIAGRAMS: POWER, CONTROL AND SIGNAL WIRING REQUIREMENTS FOR ELECTRICAL DISTRIBUTION EQUIPMENT AND UTILIZATION EQUIPMENT POWERED FROM SWITCHGEAR, SWITCHBOARDS, MOTOR CONTROL CENTERS AND MAJOR POWER DISTRIBUTION PANELBOARDS ARE TYPICALLY SHOWN ON THE ONE LINE DIAGRAMS. THE PARAMETERS IDENTIFIED ON THE ONE LINE DIAGRAMS ARE: CIRCUIT IDENTIFICATION, CIRCUIT ORIGIN AND DESTINATION, CONDUIT SIZE, WIRE SIZE AND QUANTITY FOR COMPLETE CIRCUIT LENGTH, AND AUXILIARY DEVICES ASSOCIATED WITH THE CONTROL/PROTECTION OF THE POWERED EQUIPMENT, AND SIZE OF THE GROUNDING ELECTRODE CONDUCTORS.

B. INSTRUMENTATION AND CONTROL RISER DIAGRAMS: POWER, CONTROL, SIGNAL AND DATA HIGHWAY WIRING REQUIREMENTS FOR INSTRUMENTS AND CONTROL DEVICES CONTROLLED/MONITORED FROM INSTRUMENTATION AND CONTROL PANELS SUCH AS RTUS, PLCS, TERMINAL CABINETS, AND REMOTE I/O PANELS ARE TYPICALLY SHOWN ON THE INSTRUMENTATION AND CONTROL ONE LINE DIAGRAMS. THE PARAMETERS IDENTIFIED ON THE ONE LINE DIAGRAMS ARE: CIRCUIT IDENTIFICATION, CIRCUIT ORIGIN AND DESTINATION, CONDUIT SIZE, WIRE SIZE, QUANTITY AND TYPE FOR COMPLETE CIRCUIT LENGTH, AND AUXILIARY DEVICES ASSOCIATED WITH THE CONTROL/PROTECTION OF THE POWERED EQUIPMENT.

C. FLOOR PLANS: FOR DETERMINING THE LENGTH OF CIRCUITS LOCATED WITHIN STRUCTURES, FLOOR PLANS SHOW THE LOCATION OF ELECTRICAL DISTRIBUTION EQUIPMENT, CONTROL PANELS, UTILIZATION EQUIPMENT, INSTRUMENTS, ANCILLARY EQUIPMENT AND DEVICES AND THE ANTICIPATED PENETRATION LOCATIONS WHERE CONDUITS EXIT/ENTER THE STRUCTURE. HOMERUNS MAY ALSO BE SHOWN FROM MISCELLANEOUS EQUIPMENT NOT SHOWN ON A ONE LINE OR RISER DIAGRAM.

D. SITE PLANS: FOR DETERMINING THE LENGTH OF CIRCUITS EXTERIOR TO STRUCTURES AND TO IDENTIFY THE SPECIFIC REQUIREMENTS OF THE UNDERGROUND CONDUITS OR DUCT BANKS, SITE PLANS SHOW THE GENERAL ROUTING OF UNDERGROUND CONDUITS AND DUCT BANKS WITH SECTIONS INDICATING THE CONDUIT SIZE, ARRANGEMENT AND CIRCUIT ROUTING.

E. NOTE THAT CONDUIT SIZE WITHIN THE STRUCTURE IS INDICATED ON ONE–LINE DIAGRAM AND UNDERGROUND SIZE IS INDICATED ON DUCT BANK SECTIONS.

GENERAL NOTE
THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

COMMONWEALTH OF MASSACHUSETTS
CELESTINE A FONDUNGALLAH
ELECTRICAL
No. 52324
REGISTERED PROFESSIONAL ENGINEER

CELESTINE A FONDUNGALLAH
2025.11.18 15:25:56-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: C. FONDUNGALLAH
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

ELECTRICAL LEGEND I

PROJECT NO. 1125–273132
FILE NAME: E002NFLG.DWG
SHEET NO. E-2

XREFs: [CDMS_2436] Images: []
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SYMBOL	DESCRIPTION
A 3 b	LIGHTING FIXTURE "A" – FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE) "b" – CONTROLLED BY SWITCH "b" "3" – CIRCUIT NUMBER
A 3 b	LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
A 3 b	WALL MOUNTED TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
A 3 b OR A 3	CROSS HATCH INDICATES LIGHTING FIXTURE THAT IS UNSWITCHED AND SHALL REMAIN ON AT ALL TIMES. NOTATIONS SAME AS ABOVE.
A 3 b OR A 3 b	SHADED AREA INDICATES LIGHTING FIXTURE THAT IS EQUIPPED WITH EMERGENCY BACKUP POWER SOURCE. NOTATIONS SAME AS ABOVE.
A 3	POLE MOUNTED AREA TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
A 3	POLE MOUNTED ROADWAY TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE
EM 3 (*)	EMERGENCY LIGHTING BATTERY UNIT WITH TWO LAMP HEADS "EM" – FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE) "3" – SUPERVISORY CIRCUIT * – FIXTURE TAG #
R-2 BU-1(*)	REMOTE EMERGENCY ADJUSTABLE WALL LIGHTING FIXTURE WITH TWO LAMP HEADS "R-2" – FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE) * – HOME RUN TO BATTERY UNIT INDICATED. CONDUIT SHALL BE 3/4" AND CONTAIN (2) NO. 12 AWG BRANCH CIRCUIT CONDUCTORS AND (1) NO. 12 AWG GROUND CONDUCTOR UNLESS OTHERWISE INDICATED.
A 3	COMBINATION BATTERY UNIT AND EXIT SIGN. FILLED QUADRANT REPRESENTS FACE SIDE OF SIGN.
A 3	CEILING MOUNTED EXIT SIGN, NOTATIONS SAME AS ABOVE. WHEN USED, ARROW INDICATES DIRECTION OF EGRESS. FILLED QUADRANT REPRESENTS FACE SIDE OF SIGN. (DOUBLE FACE DOUBLE CHEVRONS SHOWN)
A 3	WALL MOUNTED EXIT SIGN, NOTATIONS SAME AS ABOVE. WHEN USED, ARROW INDICATES DIRECTION OF EGRESS. FILLED QUADRANT REPRESENTS FACE SIDE OF SIGN.
RH-3 E 3 BU-1(*)	REMOTE EMERGENCY CEILING LIGHTING FIXTURE. "RH-3" – FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE) "3" – SUPERVISORY CIRCUIT * – HOME RUN TO BATTERY UNIT INDICATED. CONDUIT SHALL BE 3/4" AND CONTAIN 2 NO. 12 AWG BRANCH CIRCUIT CONDUCTORS AND 1 NO. 12 AWG GROUND CONDUCTOR UNLESS OTHERWISE INDICATED.
	HOME RUN TO DESIGNATED EQUIPMENT. BRANCH CIRCUIT CONDUIT WITH 2 NO. 12 AWG BRANCH CIRCUIT CONDUCTORS AND 1 NO. 12 AWG GROUND CONDUCTOR UNLESS OTHERWISE NOTED. NUMBER OF ARROWS INDICATE NUMBER OF CIRCUITS. FOR MINIMUM SIZE CONDUIT PERMITTED REFER TO THE SPECIFICATIONS.
	CONDUIT CONCEALED IN WALL, IN SLAB ABOVE, OR ABOVE CEILING.
	CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND.
	CONDUIT RUN EXPOSED. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL.
	'X' INDICATES EXPLOSION PROOF CONDUIT SEAL FITTING.
	CONCRETE ENCASED DUCTBANK. WIDTH VARIES, SEE DUCTBANK SECTION/DETAILS FOR REQUIREMENTS AND WIDTH
	CONDUIT STUBBED OUT AND CAPPED
(2) 3"C., 3#3/0, 1#2G	DENOTES A QUANTITY OF TWO (2) 3-INCH CONDUITS EACH CONTAINING THREE NO. 3/0 AWG CONDUCTORS AND 1 NO. 2 AWG GROUND CONDUCTOR.
2-2/C#16 SH	DENOTES A QUANTITY OF TWO INSTRUMENT CABLES. EACH CABLE TO CONSIST OF TWO NO. 16 AWG CONDUCTORS TWISTED TOGETHER AND COVERED WITH A METALLIC SHIELD AND AN OVERALL PROTECTIVE JACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED.
2-3/C#16 SH	SAME AS ABOVE EXCEPT CABLE TO CONSIST OF THREE NO. 16 AWG CONDUCTORS TWISTED, SHIELDED AND COVERED WITH AN OVERALL PROTECTIVE JACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED.
(3) 4"C.	THREE 4-INCH CONDUITS
	FLEXIBLE METAL CONDUIT "WHIP" (3/4"C., 2#12, 1#12G UNLESS OTHERWISE NOTED) FOR LIQUID TIGHT MOTOR CONNECTIONS
	'X' INDICATES CONDUIT SEAL FITTING IN OTHER THAN CODE REQUIRED LOCATIONS.
	INDICATES MOTOR STARTER AND/OR MOTOR CONTROL EQUIPMENT WITHIN THE ENCLOSURE.

SYMBOL	DESCRIPTION
$a	SINGLE POLE SWITCH "a" INDICATES FIXTURES CONTROLLED.
$a 2	DOUBLE POLE SWITCH "a" INDICATES FIXTURES CONTROLLED.
$c 3	THREE WAY SWITCH "c" INDICATES FIXTURES CONTROLLED.
$a 4	FOUR WAY SWITCH "a" INDICATES FIXTURES CONTROLLED.
$a D	DIMMER SWITCH "a" INDICATES FIXTURES CONTROLLED
$OS	SINGLE POLE SWITCH "OS" INDICATES A PASSIVE INFRARED OCCUPANCY SENSOR
$OS 2	DOUBLE POLE SWITCH "OS" INDICATES PROGRAMMABLE OCCUPANCY SENSOR CAPABLE OF INBOARD/OUTBOARD SWITCHING
$DT	SINGLE POLE SWITCH "DT" INDICATES DUAL TECHNOLOGY PROGRAMMABLE OCCUPANCY SENSOR CAPABLE OF SENSING MOTION AND SOUND
C 3	LIGHTING CONTACTOR WITH NUMBER OF POLES AS INDICATED
TM	TIME SWITCH
	PUSH BUTTON STATION
TYPE A	INDICATES ALL LIGHTING FIXTURES WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE TYPE "A" UNLESS OTHERWISE NOTED. SEE LIGHTING FIXTURE SCHEDULE FOR TYPES
	LIGHTING PANELBOARD (LP-#) SHOWN ON PLAN PER ACTUAL PANEL DIMENSIONS
	POWER PANELBOARD (PP-#) OR DISTRIBUTION PANELBOARD (DP-#) SHOWN ON PLAN PER ACTUAL PANEL DIMENSIONS
	LIGHTING CONTACTOR PANELBOARD (LCP-#) SHOWN ON PLAN PER ACTUAL PANEL DIMENSIONS
* 4	DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W * GFCI – GROUND FAULT CIRCUIT INTERRUPTER TYPE WP – WEATHERPROOF XP – EXPLOSION PROOF T – TRANSIENT VOLTAGE SURGE SUPPRESSOR IC – ISOLATED GROUND 4 – CIRCUIT NUMBER
* 4	DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W MOUNTED ABOVE COUNTER-TOP OR 42" AFF * NOTATIONS SAME AS ABOVE
* 60 3 4W	SPECIAL PURPOSE RECEPTACLE * – VOLT RATING "3" – NUMBER OF POLES "60" – AMPERE RATING "4W" – 4 WIRES IN ADDITION TO GROUND
	MULTI-OUTLET ASSEMBLY, SYMBOL DENOTES RECEPTACLE TYPE
	FLUSH FLOOR OUTLET BOX WITH TYPE OUTLET INDICATED
	UNDER FLOOR DUCT SYSTEM WITH TYPE OUTLETS INDICATED
	THREE CELL UNDER FLOOR DUCT SYSTEM JUNCTION BOX
J OR J	JUNCTION BOX
P	PULL BOX
TC	TERMINAL CABINET
OS	OCCUPANCY SENSOR
PC	PHOTOCELL
ESA	EMERGENCY EYEWASH/SHOWER ALARM STATION WITH FLOW SWITCH(ES)
	INDICATED EQUIPMENT AND MATERIALS TO BE DEMOLISHED
	GROUND SYSTEM GRID OR LOOP, 36" BELOW FINISHED GRADE UNLESS OTHERWISE NOTED.
	EXOTHERMIC WELD CONNECTION
	3/4" x 10'-0" GROUND ROD. UNLESS SPECIFIED OTHERWISE.
	GROUND ROD TEST WELL STATION (SEE DETAIL SHEET FOR REQUIREMENTS)

SYMBOL	DESCRIPTION
	COMMUNICATION SYSTEMS
K	TELEPHONE OUTLET FOR DESK TYPE HANDSET K = KEY SYSTEM
K	TELEPHONE OUTLET FOR WALL TYPE HANDSET (MOUNT UP 4'-6") K = KEY SYSTEM
	PAGE/PARTY TELEPHONE OUTLET FOR DESK TYPE HANDSET
	PAGE/PARTY TELEPHONE OUTLET FOR WALL TYPE HANDSET, MOUNT UP 4'-6"
S H W	PAGING SPEAKER, WALL MOUNTED H = HORN TYPE W = WIDE ANGLE TYPE
S W	PAGING SPEAKER, WALL MOUNTED, BI-DIRECTIONAL, HORN TYPE W = WIDE ANGLE TYPE
S	PAGING SPEAKER, FLUSH MOUNTED CEILING TYPE
S	PAGING SPEAKER, SURFACE MOUNTED CEILING TYPE
VC	REMOTE WALL MOUNTED VOLUME CONTROL FOR CEILING SPEAKER, MOUNT UP 5'-0"
A	PAGING SPEAKER AMPLIFIER ASSEMBLY
TM	TELEPHONE CABINET OR BACKBOARD AS NOTED
P OR C	"C" – DATA INPUT/OUTPUT CABLE OUTLET "P" – PROCESS COMPUTER SYSTEM (CAT6 RJ-45 JACK)
GB	GAS DETECTION/VENTILATION FAILURE WEATHERPROOF DUAL-LITE BEACON MOUNT TOP OF DEVICE UP 6'-8" A.F.F.
HS G	GAS DETECTION/VENTILATION FAILURE HORN/STROBE MOUNT TOP OF DEVICE UP 6'-8" A.F.F.
G	GAS DETECTION/VENTILATION FAILURE HORN, MOUNT TOP OF DEVICE UP 6'-8" A.F.F.
G	GAS DETECTION/VENTILATION FAILURE STROBE, MOUNT TOP OF DEVICE UP 6'-8" A.F.F.
	SECURITY SYSTEMS
SACP	SECURITY ALARM CONTROL PANEL
DS	SECURITY ALARM DOOR SWITCH
K	SECURITY ALARM KEY PAD
R	SECURITY SYSTEM CARD ACCESS READER
WS	SECURITY ALARM WINDOW SWITCH
	SECURITY ALARM MOTION DETECTOR
HS	SECURITY ALARM HATCH SWITCH
CCTV	CLOSED CIRCUIT TV CAMERA
PTZ	PAN, TILT, ZOOM CAMERA LENS CONTROLS
GB	GLASS BREAK DETECTOR
	FIRE ALARM SYSTEMS
H 200 R	FIRE ALARM HEAT DETECTOR 135 FIXED TEMPERATURE UNLESS OTHERWISE NOTED. "200" – 200 FIXED TEMPERATURE "R" – FIXED TEMPERATURE RATE-OF-RISE TYPE
I	FIRE ALARM SMOKE DETECTOR PHOTOELECTRIC TYPE UNLESS OTHERWISE NOTED. "I" – IONIZATION TYPE.
D	FIRE ALARM DUCT SMOKE DETECTOR
FACP	FIRE ALARM CONTROL PANEL
FV	FIRE ALARM VENTILATION PANEL WITH GRAPHIC PANEL
FA	REMOTE FIRE ALARM ANNUNCIATOR PANEL
F	FIRE ALARM MASTER BOX
F	FIRE ALARM HORN, MOUNT UP 7'-6"
15 F	FIRE ALARM STROBE, MOUNT UP 6'-8" 15 = CANDELA RATING

SYMBOL	DESCRIPTION
15 F	FIRE ALARM HORN AND STROBE LIGHT COMBINATION, MOUNT UP 6'-8" 15 = CANDELA RATING
F	FIRE ALARM MANUAL PULL STATION, MOUNT UP 4'-0"
VSS	SPRINKLER VALVE SUPERVISORY SWITCH
SFS	SPRINKLER FLOW ALARM SWITCH
F	FIRE ALARM BELL
FB	WEATHERPROOF HI-INTENSITY FIRE ALARM STROBE LIGHT WITH HORN
PIR	PASSIVE INFRARED DETECTOR
R	SMOKE BEAM DETECTOR (RECEIVER)
T	SMOKE BEAM DETECTOR (TRANSMITTER)
	FIRE ALARM SMOKE DETECTOR REMOTE INDICATOR AND TEST SWITCH

ABBREVIATIONS	
A	AMPS
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AL	ALUMINUM
AIC	AMPERE INTERRUPTING CAPACITY
AMP	AMPERE
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CGD	COMBUSTIBLE GAS DETECTOR
CKT	CIRCUIT
CLB	CURRENT LIMITING BREAKER
CLF	CURRENT LIMITING FUSE
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CS	CONTROL SWITCH/CONTROL STATION
CT	CURRENT TRANSFORMER
CU	COPPER
CWS	CONDUIT WALL SEAL
DC	DIRECT CURRENT
DIA	DIAMETER
DMU	DIGITAL METERING UNIT
DN	DOWN
EC	EMPTY CONDUIT
ELEC	ELECTRICAL

ABBREVIATIONS (CONTINUED)	
ELEV	ELEVATION
EM	EMERGENCY
ENCL	ENCLOSURE OR ENCLOSED
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXISTING
FO	FIBER OPTIC
FU	FUSE
GCP	GENERATOR CONTROL PANEL
GEN	GENERATOR
G, GND	GROUND
GFI	GROUND FAULT INTERRUPTER
GRS	GALVANIZED RIGID STEEL
HACR	HEATING & AIR CONDITIONING RATED
HH	HANDHOLE
HT	HEIGHT
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HZ	HERTZ
ID	IDENTIFICATION
INSTR	INSTRUMENT
K	KILO (PREFIX)
kcmil	1000 CIRCULAR MILS
KVA	KILOVOLT AMPERES
KW	KILOWATTS
LA	LIGHTNING ARRESTER
LTG	LIGHTING
LP	LIGHTING PANEL
LV	LOW VOLTAGE
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE
N	NEUTRAL
NC	NORMALLY CLOSED
NO	NORMALLY OPEN OR NUMBER
NTS	NOT TO SCALE
OH	OVERHEAD
OL	OVERLOAD
PB	PULL BOX
PCP	PUMP CONTROL PANEL
PH	PHASE
PMH	POWER MANHOLE
PNL	PANEL OR PANELBOARD
PR	PAIR
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
RECPT	RECEPTACLE
REQD	REQUIRED
QTY	QUANTITY
SA	SURGE ARRESTER
SEC	SECONDS OR SECONDARY
SH	SHIELDED OR SPACE HEATER
SHH	SIGNAL HANDHOLE
SPD	SURGE PROTECTIVE DEVICE
SS	STAINLESS STEEL
SV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TIME TO CLOSE OR TRAY CABLE
TEL	TELEPHONE
TO	TIME TO OPEN
TS	TWISTED SHIELDED OR THERMAL SWITCH
TYP	TYPICAL
UG	UNDERGROUND
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VA	VOLT AMPS
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS, WIDTH, WITH, WIRE
WP	WEATHERPROOF
XP	EXPLOSION PROOF
XFMR	TRANSFORMER

A / E-4 — SHEET NO. WHERE DETAIL IS DRAWN

SYMBOL WHERE THERE IS A DETAIL

DETAIL A — 1/4" = 1'-0" — E-3 — SHEET NO. WHERE THERE IS A DETAIL

SYMBOL WHERE DETAIL IS DRAWN

DETAIL SYMBOL

1 / E-4 — SHEET NO. WHERE SECTION IS DRAWN

SYMBOL WHERE THERE IS A SECTION

SECTION 1 — 1/4" = 1'-0" — E-3 — SHEET NO. WHERE SECTION IS TAKEN

SYMBOL WHERE SECTION IS DRAWN

SECTION SYMBOL

GENERAL NOTE
THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

COMMONWEALTH OF MASSACHUSETTS — CELESTINE A. FONDUNGALLAH — ELECTRICAL — No. 52324 — REGISTERED PROFESSIONAL ENGINEER

CELESTINE A FONDUNGALLAH
2025.11.18 15:25:47-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: C. FONDUNGALLAH
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

ELECTRICAL LEGEND II

PROJECT NO. 1125-273132
FILE NAME: E003NFLG.DWG
SHEET NO. E-3

XREFs: [CDMS_2436] Images: []
Last saved by: PISTORINOJ Time: 11/14/2025 4:38:16 PM
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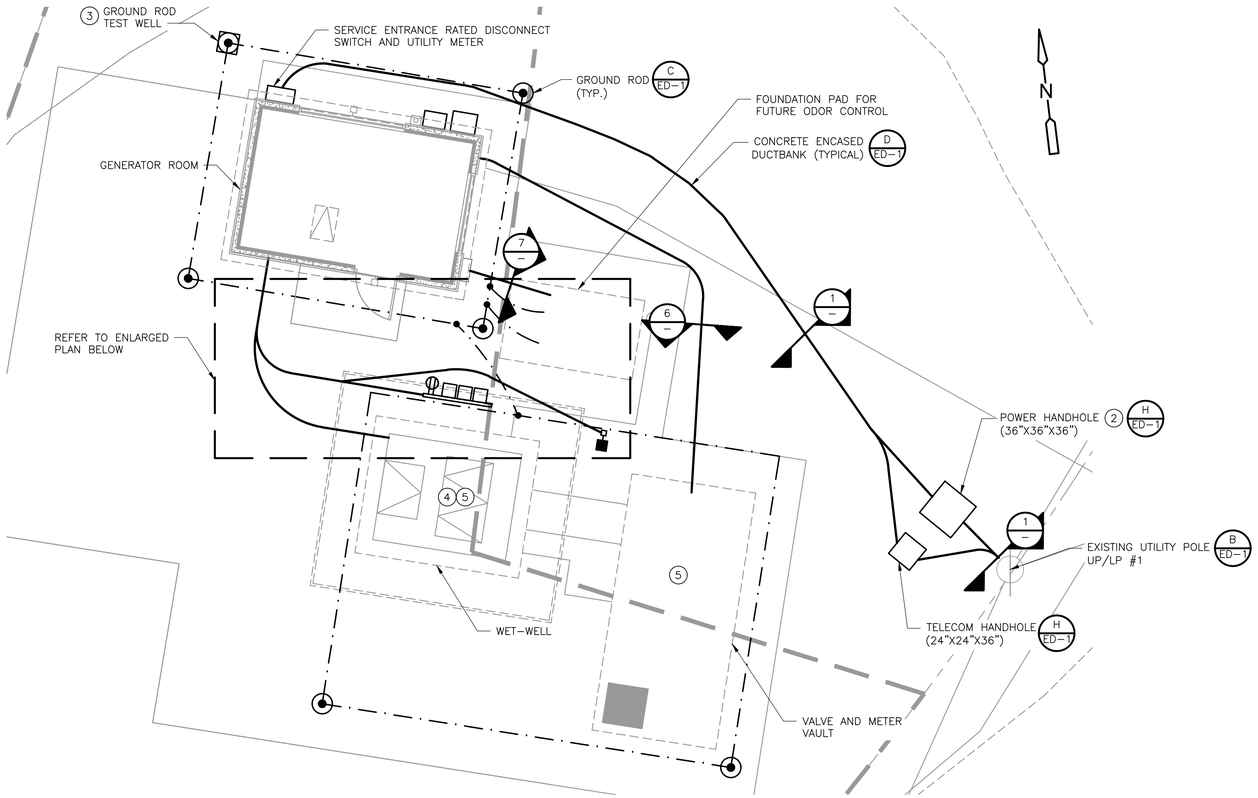
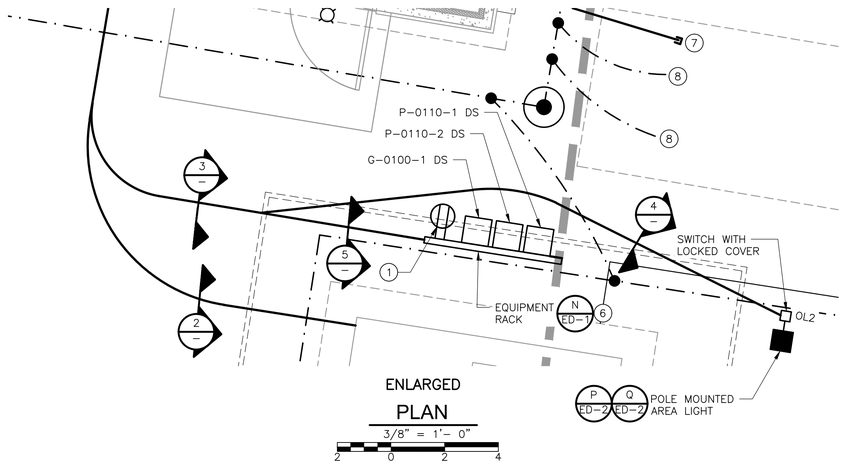


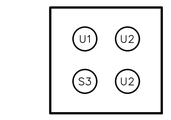
PUMPING STATION NO. 1 OVERALL ELECTRICAL SITE PLAN

3/16" = 1'-0"

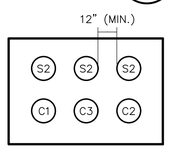


ENLARGED PLAN

3/8" = 1'-0"



SECTION 1 – NTS



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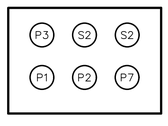

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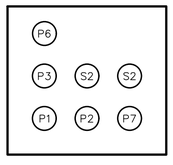
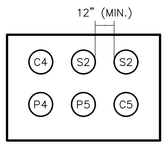
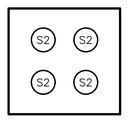


SECTION 3 – NTS



SECTION 6 – NTS

SECTION 4 – NTS



SECTION 7 – NTS

UNDERGROUND RACEWAY SCHEDULE

CONDUIT NO.	FROM	TO	VIA	RACEWAY SIZE	CONDUCTORS QTY	CONDUCTORS WIRE SIZE	REMARKS
C1	GENERATOR ROOM VFD-0110-1/2	SUBMERSIBLE PUMP P-0110-1/2	DIGITAL JBOX	2	REFER TO INSTRUMENTATION RISER DIAGRAM FOR WIRING REQUIREMENTS		TEMP / LEAK SENSORS
C2	CONTROL BUILDING ISP (LI-101-1/2), AIT-0184-1, AIT-0185-1	WET WELL LE/LT-0101-1/2, AE-0184-1, AE-0185-1	ANALOG JBOX	2	REFER TO INSTRUMENTATION RISER DIAGRAM FOR WIRING REQUIREMENTS		LEVEL SENSORS, GAS DETECTION
C3	GENERATOR ROOM ISP	WET WELL ZS-0102-1A/1B	DIGITAL JBOX	2	REFER TO INSTRUMENTATION RISER DIAGRAM FOR WIRING REQUIREMENTS		INTRUSION DETECTION SWITCHES
C4	GENERATOR ROOM SCADA PANEL PS1CP, ISP	VALVE AND METER VAULT ZS-0121-1A/1B, LSH-0120-1	DIGITAL JBOX	2	4 1	#14 #14G	INTRUSION DETECTION & LEVEL SWITCH
C5	GENERATOR ROOM ISP	VALVE AND METER VAULT PIT-0123-1, FE/FIT-0122-1	ANALOG JBOX	2	2 	2/C#16TS SH 	FLOW METER PRESSURE TRANSMITTER
P1	GENERATOR ROOM VFD-0110-1	SUBMERSIBLE PUMP P-0110-1 DS	DISCONNECT SWITCH & POWER PULLBOX	2	REFER TO ONE-LINE DIAGRAM FOR WIRING REQUIREMENTS		480V POWER TO SUBMERSIBLE PUMP NO. 1. DISCONNECT SWITCH (VFD CABLE)
P2	GENERATOR ROOM VFD-0110-2	SUBMERSIBLE PUMP P-0110-2 DS	DISCONNECT SWITCH & POWER PULLBOX	2	REFER TO ONE-LINE DIAGRAM FOR WIRING REQUIREMENTS		480V POWER TO SUBMERSIBLE PUMP NO. 2. DISCONNECT SWITCH (VFD CABLE)
P3	GENERATOR ROOM PS1-LP	EQUIPMENT RACK RECEPTACLE	–	2	REFER TO ONE-LINE DIAGRAM FOR WIRING REQUIREMENTS		RECEPTACLE POWER
P4	GENERATOR ROOM PS1CP UPS	VALVE AND METER VAULT	POWER PULLBOX	2	2 1	#12 #12G	UPS POWER
P5	GENERATOR ROOM PS1-LP & PS1CP UPS	VALVE AND METER VAULT	POWER PULLBOX	2	6 3	#10 #10G	UPS POWER, LIGHTING
P6	GENERATOR ROOM PS1-LP	POLE MOUNTED AREA LIGHT	–	2	REFER TO PANELBOARD SCHEDULE FOR WIRING REQUIREMENTS		AREA LIGHT POWER
P7	GENERATOR ROOM GRINDER CP LCP-0100-1	WET WELL GRINDER G-0100-1	DISCONNECT SWITCH & POWER PULL BOX	2	3 1	#10 #10G	480V POWER TO WET WELL GRINDER
S2	–	–	–	2	SPARE CONDUIT WITH PULL STRING AND CAP		
S3	–	–	–	3	SPARE CONDUIT WITH PULL STRING AND CAP		
U1	UTILITY RISER POLE	CONTROL BUILDING SERVICE DISCONNECT SWITCH	POWER HANDHOLE	3	REFER TO ONE-LINE DIAGRAM FOR WIRING REQUIREMENTS		480V INCOMING SERVICE. COORDINATE REQUIREMENTS WITH UTILITY.
U2	UTILITY RISER POLE	GENERATOR ROOM	TELECOM HANDHOLE	4	1 	PULL STRING 	SPARE

NOTES:

1. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

KEYED NOTES:

1. PROVIDE HEAVY-DUTY, NEMA 4X, GFCI 20A DUPLEX RECEPTACLE WITH 316SS WEATHERPROOF LOCKABLE WHILE-IN-USE COVER AND BOX. LOCATE RECEPTACLE AT EQUIPMENT RACK.
2. PROVIDE 40 FEET OF EXTRA CABLE AND COIL FOR UTILITY TERMINATION.
3. PROVIDE GROUND ROD TEST WELL FOR THE INSPECTION OF GROUND ROD AS PER NEC REQUIREMENTS. REFER TO SHEET ED-1 FOR DETAILS.
4. CONNECT EACH SUBMERSIBLE PUMP AND GRINDER TO GROUND LOOP. GROUND WIRE SHALL BE #4/0 BARE COPPER GROUND.
5. CONNECT HATCH, HATCH FRAME, LADDER, BOXES, AND OTHER METALLIC EQUIPMENT WITHIN THE VAULT OR WETWELL TO GROUND LOOP WITH #6 BARE COPPER GROUND.
6. EQUIPMENT RACK, DISCONNECT SWITCHES, AND RECEPTACLE SHALL NOT BE LOCATED IN A CLASSIFIED AREA UNLESS MOUNTED ABOVE 18".
7. CAP CONDUITS UNDERGROUND WITH WATERTIGHT SEAL. MARK LOCATION OF CONDUITS ON FINISHED SURFACE.
8. LEAVE #4/0 BARE COPPER GROUND WIRE UNDERGROUND FOR FUTURE CONNECTION. MARK LOCATION OF GROUND ON FINISHED SURFACE.

Bethany Charis-Molling 2024.08.16 14:08:03-04'00'

COMMONWEALTH OF MASSACHUSETTS – BETHANY LYNN CHARIS-MOLLING – ELECTRICAL NO. 54516 – REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUSIO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: B. CHARIS-MOLLING
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1 ELECTRICAL SITE PLAN

PROJECT NO. 1125-273132
FILE NAME: E004STPL.DWG
SHEET NO. E-4

XREFs: [CDMS_2436_CBSPL001_EW001ST_EW001PS_xsvp001_APSWP004] Images: []
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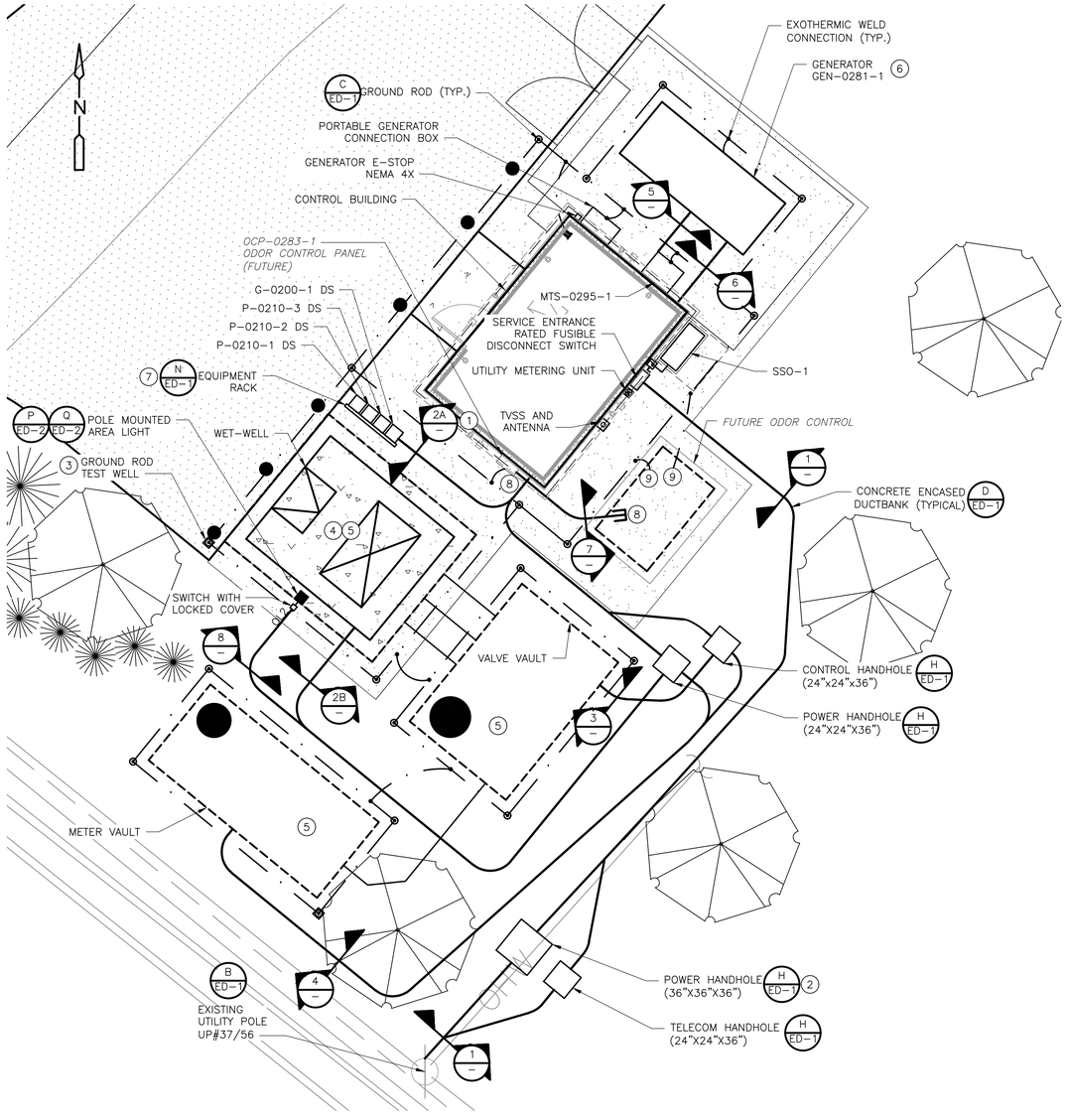
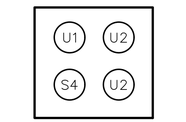


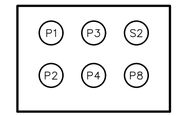
PUMPING STATION NO. 2 OVERALL ELECTRICAL SITE

PLAN

3/16" = 1'-0"



SECTION 1 – NTS



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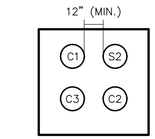

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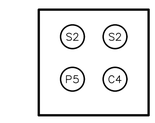
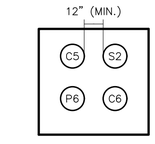


SECTION 3 – NTS



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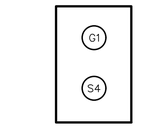

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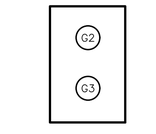
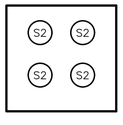


SECTION 6 – NTS



SECTION 7 – NTS

SECTION 8 – NTS

3/16" = 1'- 0"

4 0 4 8

UNDERGROUND RACEWAY SCHEDULE

CONDUIT NO.	FROM	TO	VIA	RACEWAY SIZE	CONDUCTORS QTY	CONDUCTORS WIRE SIZE	REMARKS
C1	CONTROL BUILDING VFD-P-0210-1/2/3	WET WELL PUMP P-0210-1/2/3	DIGITAL JBOX	2	REFER TO INSTRUMENTATION RISER DIAGRAM FOR WIRING REQUIREMENTS		TEMP / LEAK SENSORS
C2	CONTROL BUILDING ISP, AIT-0284-1, AIT-0285-1	WET WELL LE/LT-0201-1/2, AE-0284-1, AE-0285-1	ANALOG JBOX	2	REFER TO INSTRUMENTATION RISER DIAGRAM FOR WIRING REQUIREMENTS		LEVEL SENSORS, GAS DETECTION
C3	CONTROL BUILDING ISP	WET WELL ZS-0202-2A/2B	DIGITAL JBOX	2	REFER TO INSTRUMENTATION RISER DIAGRAM FOR WIRING REQUIREMENTS		INTRUSION DETECTION SWITCHES
C4	CONTROL BUILDING SCADA PANEL PS2CP, ISB PANEL	VALVE VAULT ZS-0221-1A/B, LSH-0220-1	DIGITAL JBOX	2	REFER TO INSTRUMENTATION RISER DIAGRAM FOR WIRING REQUIREMENTS		INTRUSION DETECTION & LEVEL SWITCH
C5	CONTROL BUILDING SCADA PANEL PS2CP, ISP	METER VAULT ZS-0231-1, LSH-0230-1	DIGITAL JBOX	2	REFER TO INSTRUMENTATION RISER DIAGRAM FOR WIRING REQUIREMENTS		INTRUSION DETECTION & LEVEL SWITCH
C6	CONTROL BUILDING ISP	METER VAULT PIT-0233-1, FE/FIT-0232-1	ANALOG JBOX	2	REFER TO INSTRUMENTATION RISER DIAGRAM FOR WIRING REQUIREMENTS		FLOW METER PRESSURE TRANSMITTER
G1	GENERATOR	MTS-1	–	4	REFER TO ONE-LINE DIAGRAM FOR WIRING REQUIREMENTS		480V GENERATOR POWER
G2	GENERATOR	CONTROL BUILDING GENERATOR CONTROL PANEL LCP-0281-1	–	2	REFER TO INSTRUMENTATION RISER DIAGRAM FOR WIRING REQUIREMENTS		GENERATOR SIGNALS
G3	GENERATOR	CONTROL BUILDING PS2-LP	–	2	REFER TO PANELBOARD SCHEDULE FOR WIRING REQUIREMENTS		GENERATOR 120V
P1	CONTROL BUILDING VFD-0210-1	SUBMERSIBLE PUMP P-0210-1 DS	DISCONNECT SWITCH & POWER PULLBOX	2	REFER TO ONE-LINE DIAGRAM FOR WIRING REQUIREMENTS		480V POWER TO SUBMERSIBLE PUMP NO. 1 DISCONNECT SWITCH (VFD CABLE)
P2	CONTROL BUILDING VFD-0210-2	SUBMERSIBLE PUMP P-0210-2 DS	DISCONNECT SWITCH & POWER PULLBOX	2	REFER TO ONE-LINE DIAGRAM FOR WIRING REQUIREMENTS		480V POWER TO SUBMERSIBLE PUMP NO. 2 DISCONNECT SWITCH (VFD CABLE)
P3	CONTROL BUILDING VFD-0210-3	SUBMERSIBLE PUMP P-0210-3 DS	DISCONNECT SWITCH & POWER PULLBOX	2	REFER TO ONE-LINE DIAGRAM FOR WIRING REQUIREMENTS		480V POWER TO SUBMERSIBLE PUMP NO. 3 DISCONNECT SWITCH (VFD CABLE)
P4	CONTROL BUILDING PS2-LP	EQUIPMENT RACK RECEPTACLE	–	2	REFER TO PANELBOARD SCHEDULE FOR WIRING REQUIREMENTS		RECEPTACLE POWER
P5	CONTROL BUILDING PS2-LP & PS2CP UPS	VALVE VAULT	POWER JBOX	2	REFER TO INSTRUMENTATION RISER DIAGRAM AND PANELBOARD SCHEDULE FOR WIRING REQUIREMENTS		UPS POWER, LIGHTING
P6	CONTROL BUILDING PS2-LP & PS2CP UPS	METER VAULT	POWER JBOX	2	REFER TO INSTRUMENTATION RISER DIAGRAM AND PANELBOARD SCHEDULE FOR WIRING REQUIREMENTS		UPS POWER, LIGHTING
P7	CONTROL BUILDING PS2-LP	POLE MOUNTED AREA LIGHT	–	2	REFER TO PANELBOARD SCHEDULE FOR WIRING REQUIREMENTS		AREA LIGHT POWER
P8	CONTROL BUILDING GRINDER CP LCP-0200-1	SUBMERSIBLE GRINDER G-0200-1	DISCONNECT SWITCH & POWER PULL BOX	2	REFER TO PANELBOARD SCHEDULE FOR WIRING REQUIREMENTS		480V POWER TO WET WELL GRINDER DISCONNECT SWITCH
S2	–	–	–	2	SPARE CONDUIT WITH PULL STRING AND CAP		
S4	–	–	–	4	SPARE CONDUIT WITH PULL STRING AND CAP		
U1	UTILITY RISER POLE	CONTROL BUILDING SERVICE DISCONNECT SWITCH	POWER HANDHOLE	4	REFER TO ONE-LINE DIAGRAM FOR WIRING REQUIREMENTS		480V INCOMING SERVICE. COORDINATE REQUIREMENTS WITH UTILITY.
U2	UTILITY RISER POLE	CONTROL BUILDING	TELECOM HANDHOLE	4	1	PULL STRING	SPARE

KEYED NOTES:

1. PROVIDE HEAVY-DUTY, NEMA 4X, GFCI 20A DUPLEX RECEPTACLE WITH 316SS WEATHERPROOF LOCKABLE WHILE-IN-USE COVER AND BOX.
2. PROVIDE 40 FEET OF EXTRA CABLE AND COIL FOR UTILITY TERMINATION.
3. PROVIDE GROUND ROD TEST WELL FOR THE INSPECTION OF GROUND ROD AS PER NEC REQUIREMENTS. REFER TO SHEET ED-1 FOR DETAILS.
4. CONNECT EACH SUBMERSIBLE PUMP AND GRINDER TO GROUND LOOP. GROUND WIRE SHALL BE #4/0 BARE COPPER GROUND.
5. CONNECT HATCH, HATCH FRAME, LADDER, BOXES, AND OTHER METALLIC EQUIPMENT WITHIN THE VAULT OR WETWELL TO GROUND LOOP WITH #6 BARE COPPER GROUND.
6. CONTRACTOR SHALL COORDINATE WITH VENDOR TO LOCATE POWER AND CONTROL CONDUIT STUB-UPS TO ACCOMODATE THE 150KW GENSET. VENDOR SHALL MODIFY GENSET AS REQUIRED.
7. EQUIPMENT RACK, DISCONNECT SWITCHES, AND RECEPTACLE SHALL NOT BE LOCATED IN A CLASSIFIED AREA.
8. CAP CONDUITS UNDERGROUND WITH WATERTIGHT SEAL. MARK LOCATION OF CONDUITS ON FINISHED SURFACE.
9. LEAVE #4/0 BARE COPPER GROUND WIRE UNDERGROUND FOR FUTURE CONNECTION. MARK LOCATION OF GROUND ON FINISHED SURFACE.

COMMONWEALTH OF MASSACHUSETTS
CELESTINE A. FONDUNGALLAH
ELECTRICAL
No. 32324
REGISTERED PROFESSIONAL ENGINEER

CELESTINE A FONDUNGALLAH
2025.11.18 15:25:39-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: C. FONDUNGALLAH
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 2
ELECTRICAL SITE PLAN

PROJECT NO. 1125-273132
FILE NAME: E005STPL.DWG
SHEET NO. E-5

XREFs: [CDMS_2436_xsvp1001, EW002ST_1, EW002PS, APSWP005, HWPPS200, CBSPL001] Images: []
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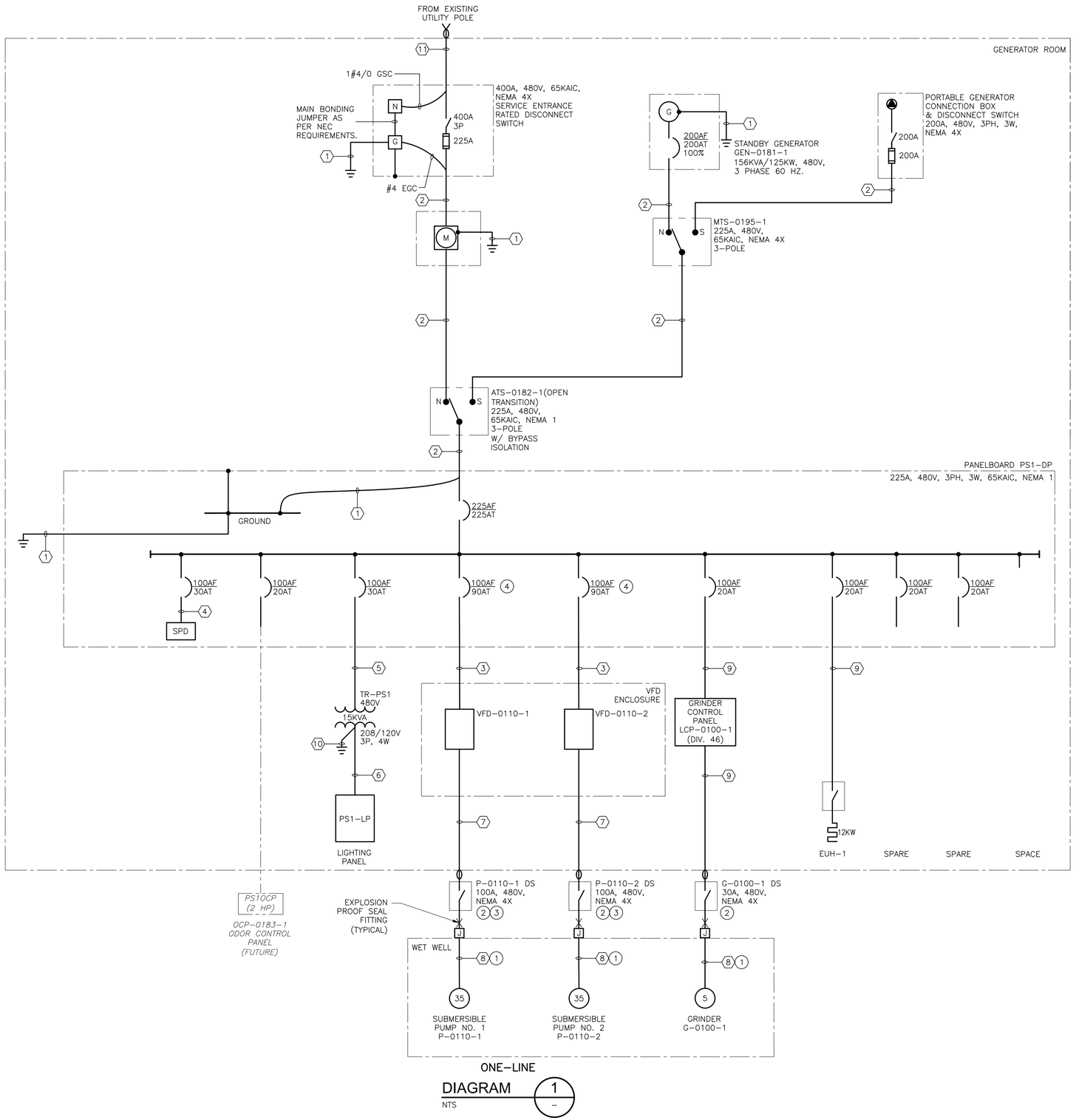

ONE-LINE DIAGRAM

NTS

PANELBOARD PS1-LP

60 AMP MAIN BREAKER; 100 AMP BUS RATING; 42 POLES; 208/120 VOLTS; 3 PHASE 4 WIRE 60 Hz.; 10 KA SHORT CIRCUIT RATING; ELECTRONIC GRADE: NO

LOCATION: PS1 - GENERATOR ROOM; ENCLOSURE RATING: NEMA 1 ,; MOUNTING: SURFACE

CIRCUIT NO.	DESCRIPTION	LOAD KVA PHASE A	LOAD KVA PHASE B	LOAD KVA PHASE C	BREAKER AMPS/ POLES	NOTES
1	LTG - GENERATOR ROOM	0.1			20 /1	7
3	LTG - VALVE & METER VAULT		0.04		20 /1	7
5	LTG - BUILDING EXTERIOR			0.02	20 /1	7
7	SPARE				20 /2	
9						
11	GENERATOR BLOCK HEATER			0.25	20 /1	7
13	SPARE				20 /1	
15	SPARE				20 /1	
17	SPARE				20 /1	
19	SPARE				20 /1	
21	SPARE				20 /1	
23	SPARE				20 /1	
25	SPARE				20 /1	
27	SPACE				/1	
29	SPACE				/1	
31	SPACE				/1	
33	SPACE				/1	
35	SPACE				/1	
37	SPACE				/1	
39	SPACE				/1	
41	SPACE				/1	
	TOTAL PHASE KVA THIS SIDE	0.1	0.04	0.27		

CIRCUIT NO.	DESCRIPTION	LOAD KVA PHASE A	LOAD KVA PHASE B	LOAD KVA PHASE C	BREAKER AMPS/ POLES	NOTES
2	RECP - GENERATOR ROOM	0.9			20 /1	7
4	RECP - EXTERIOR NEAR WET WELL		0.18		20 /1	7
6	GEN. JACKET WH RECEP.			1.88	20 /1	7
8	GEN. BATTERY CHARGER	0.25			20 /1	7
10	PS1CP		0.5		20 /1	7
12	GENERATOR CONTROL PANEL			0.5	20 /1	7
14	SPARE				20 /1	
16	EF-1		0.53		20 /1	7
18	POLE MOUNTED AREA LIGHT			0.19	20 /1	
20	SPARE				20 /1	
22	SPARE				20 /1	
24	SPARE				20 /1	
26	SPARE				20 /1	
28	SPACE				/1	
30	SPACE				/1	
32	SPACE				/1	
34	SPACE				/1	
36	SPACE				/1	
38	SPACE				/1	
40	SPACE				/1	
42	SPACE				/1	
	TOTAL PHASE KVA THIS SIDE	1.15	1.21	2.57		
	TOTAL KVA PER PHASE	1.25	1.25	2.84		
	TOTAL THREE PHASE KVA		5.34			

NOTES:

1. PROVIDE LOCKING HARDWARE
3. 30 ma GFI CIRCUIT BREAKER FOR EQUIPMENT PROTECTION ONLY (HEAT TRACE)
5. BRANCH CIRCUIT WIRING: 3/4"C, 3#12 & 1#12G
7. BRANCH CIRCUIT WIRING: 3/4"C, 2#12 & 1#12G

NOTES CONT.

2. 5 ma GROUND FAULT INTERRUPTER (GFI) CIRCUIT BREAKER
4. PROVIDE LOCKING HARDWARE & PAINT BREAKER HANDLE RED (FACP)
6. BRANCH CIRCUIT WIRING: 3/4"C, 3#10 & 1#10G
8. BRANCH CIRCUIT WIRING: 3/4"C, 2#10 & 1#10G

CONDUIT AND WIRE LEGEND

(NUMBERS REFERENCE THIS SHEET ONLY)

NO.	DESCRIPTION
1	3/4"C., 1#2GEC
2	2"C., 3#4/0, 1#4G
3	1-1/2"C., 3#2, 1#8G
4	PER MANUFACTURER
5	3/4"C., 3#10, 1#10G
6	1-1/2"C., 3#4, 1#4N, 1#6G
7	2"C, #4 VFD CABLE
8	2-1/2"C., VENDOR CABLE
9	3/4"C., 3#12, 1#12G
10	3/4"C., #6GEC
11	3"C., 3#4/0, 1#4/0GSC

NOTES:

1. REFER TO UNDERGROUND RACEWAY SCHEDULE ON SHEET E-4, FOR UNDERGROUND CONDUIT AND WIRE SIZE DETAILS NOT SHOWN ON THIS SHEET.
2. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

KEYED NOTES:

1. SUBMERSIBLE VENDOR CABLE SHALL BE PROVIDED WITH SUFFICIENT LENGTH TO EXTEND FROM THE MOTOR TO THE ASSOCIATED DISCONNECT SWITCH. DO NOT SPLICE VENDOR CABLES.
2. DISCONNECT SHALL BE LOCKABLE.
3. PROVIDE DISCONNECT WITH AUXILIARY CONTACT TO SHUTDOWN VFD PRIOR TO OPENING.
4. COORDINATE TRIP SIZE WITH FINAL VFD AND WET WELL PUMP SELECTIONS.

Bethany Charis-Molling
2024.08.16 14:08:12-04'00'

COMMONWEALTH OF MASSACHUSETTS
BETHANY LYNN CHARIS-MOLLING
ELECTRICAL
NO. 54516
REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: B. CHARIS-MOLLING
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1
ONE-LINE DIAGRAM

PROJECT NO. 1125-273132
FILE NAME: E006PSOL.DWG
SHEET NO. E-6

XREFs: [CDMS_2436] Images: []
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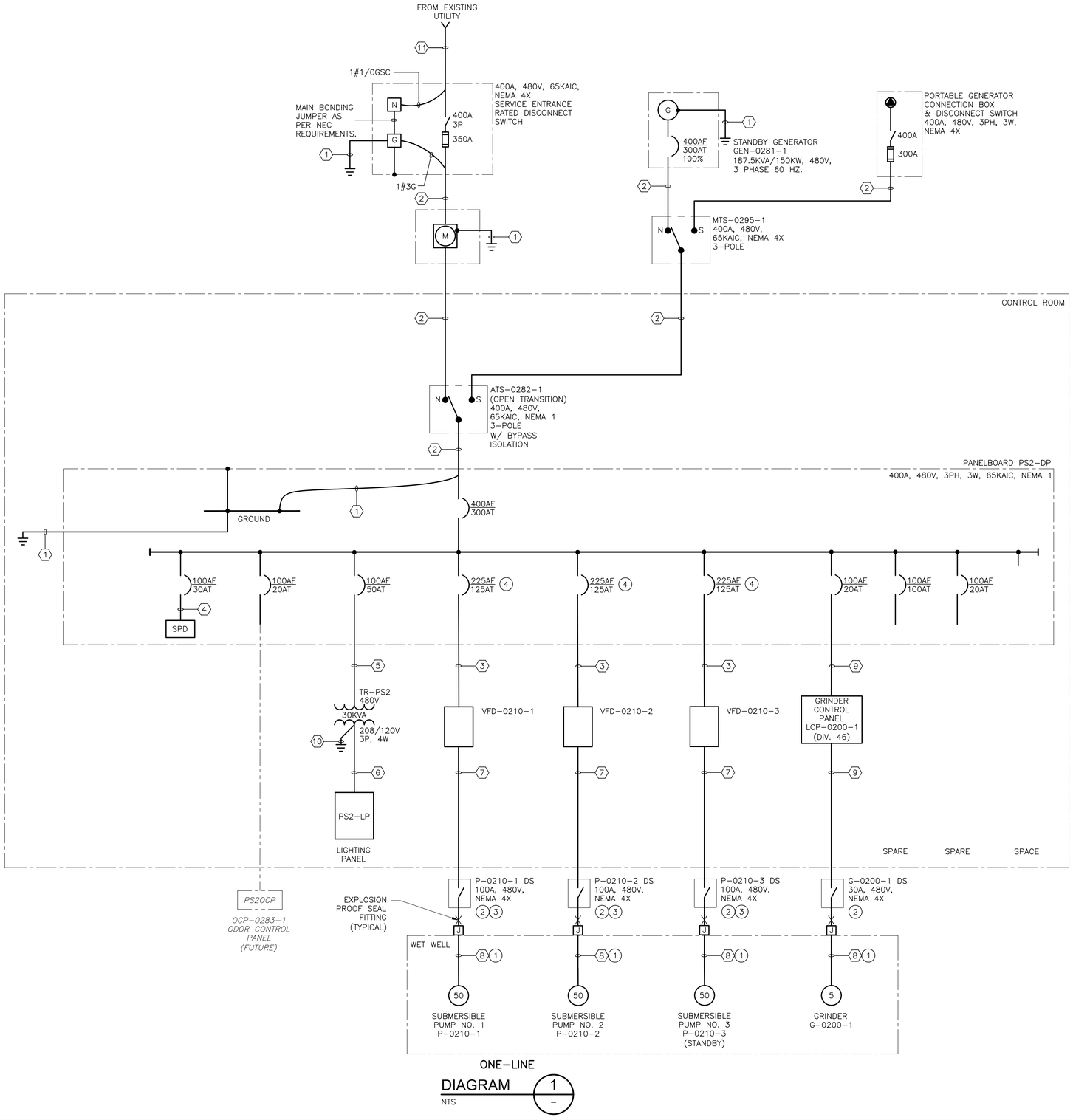

ONE-LINE DIAGRAM 1 – NTS

100 AMP MAIN BREAKER — **PANELBOARD PS2-LP** — LOCATION: **PS2 - CONTROL ROOM**
225 AMP BUS RATING — **42** POLES — **10** KA SHORT CIRCUIT RATING — ENCLOSURE RATING: **NEMA 1**
208/120 VOLTS — **3** PHASE **4** WIRE **60 Hz.** — ELECTRONIC GRADE: **NO** — MOUNTING: **SURFACE**

CIRCUIT NO.	DESCRIPTION	LOAD KVA PHASE A	LOAD KVA PHASE B	LOAD KVA PHASE C	BREAKER AMPS/ POLES	NOTES	CIRCUIT NO.	DESCRIPTION	LOAD KVA PHASE A	LOAD KVA PHASE B	LOAD KVA PHASE C	BREAKER AMPS/ POLES	NOTES
1	LTG - CONTROL ROOM	0.08			20 /1	7	2	RECP - CONTROL ROOM	0.9			20 /1	7
3	LTG - VALVE VAULT & METER VAULT		0.08		20 /1	7	4	RECP - EXTERIOR NEAR WET WELL		0.18		20 /1	7
5	LTG - BUILDING EXTERIOR			0.04	20 /1	7	6	GEN. JACKET WH RECEP.			1.88	20 /1	7
7	EUH-2	1.25			20 /2	5	8	SSO-1 (SSI-1)	1.3			20 /2	5,9
9			1.25				10			1.3			
11	GENERATOR BLOCK HEATER			0.25	20 /1	7	12	GEN. BATTERY CHARGER			0.25	20 /1	7
13	GENERATOR CONTROL PANEL	0.5			20 /1	7	14	PS2CP	0.5			20 /1	7
15	SPARE				20 /1		16	POLE MOUNTED AREA LIGHT		0.19		20 /1	7
17	SPARE				20 /1		18	SPARE				20 /1	
19	SPARE				20 /1		20	SPARE				20 /1	
21	SPARE				20 /1		22	SPARE				20 /1	
23	SPARE				20 /1		24	SPARE				20 /1	
25	SPARE				20 /1		26	SPARE				20 /1	
27	SPACE				/1		28	SPACE				/1	
29	SPACE				/1		30	SPACE				/1	
31	SPACE				/1		32	SPACE				/1	
33	SPACE				/1		34	SPACE				/1	
35	SPACE				/1		36	SPACE				/1	
37	SPACE				/1		38	SPACE				/1	
39	SPACE				/1		40	SPACE				/1	
41	SPACE				/1		42	SPACE				/1	
	TOTAL PHASE KVA THIS SIDE	1.83	1.33	0.29				TOTAL PHASE KVA THIS SIDE	2.7	1.67	2.13		
								TOTAL KVA PER PHASE	4.53	3	2.42		
								TOTAL THREE PHASE KVA		9.95			

NOTES:
1. PROVIDE LOCKING HARDWARE
3. 30 ma GFI CIRCUIT BREAKER FOR EQUIPMENT PROTECTION ONLY (HEAT TRACE)
5. BRANCH CIRCUIT WIRING: 3/4"C, 3#12 & 1#12G
7. BRANCH CIRCUIT WIRING: 3/4"C, 2#12 & 1#12G
9. PROVIDE BRANCH CIRCUIT WIRING FROM OUTDOOR UNIT TO INDOOR UNIT

NOTES CONT.:
2. 5 ma GROUND FAULT INTERRUPTER (GFI) CIRCUIT BREAKER
4. PROVIDE LOCKING HARDWARE & PAINT BREAKER HANDLE RED (FACP)
6. BRANCH CIRCUIT WIRING: 3/4"C, 3#10 & 1#10G
8. BRANCH CIRCUIT WIRING: 3/4"C, 2#10 & 1#10G
10.

CONDUIT AND WIRE LEGEND
(NUMBERS REFERENCE THIS SHEET ONLY)

NO.	DESCRIPTION
1	3/4"C., #1/0GEC
2	3-1/2"C., 3#500KCMIL, 1#3G
3	1-1/2"C., 3#1, 1#6G
4	PER MANUFACTURER
5	1"C., 3#6, 1#10G
6	1-1/2"C., 3#1/0, 1#1/0N, 1#4G
7	2"C., #3 VFD CABLE
8	2-1/2"C., VENDOR CABLE
9	3/4"C., 3#12, 1#12G
10	3/4"C., #6GEC
11	4"C., 3#500KCMIL, 1#1/0GSC

NOTES:
1. REFER TO UNDERGROUND RACEWAY SCHEDULE ON SHEET E-5, FOR UNDERGROUND CONDUIT AND WIRE SIZE DETAILS NOT SHOWN ON THIS SHEET.

KEYED NOTES:
1. SUBMERSIBLE VENDOR CABLE SHALL BE PROVIDED WITH SUFFICIENT LENGTH TO EXTEND FROM THE MOTOR TO THE ASSOCIATED DISCONNECT SWITCH. DO NOT SPLICE VENDOR CABLES.
2. DISCONNECT SHALL BE LOCKABLE.
3. PROVIDE DISCONNECT WITH AUXILIARY CONTACT TO SHUTDOWN VFD PRIOR TO OPENING.
4. COORDINATE TRIP SIZE WITH FINAL VFD AND WET WELL PUMP SELECTIONS.

COMMONWEALTH OF MASSACHUSETTS — CELESTINE A. FONDUNGALLAH — ELECTRICAL — No. 52324 — REGISTERED PROFESSIONAL ENGINEER
CELESTINE A FONDUNGALLAH
2025.11.18 15:25:31-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: C. FONDUNGALLAH
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 2
ONE-LINE DIAGRAM

PROJECT NO. 1125-273132
FILE NAME: E007PSOL.DWG
SHEET NO. E-7

XREFs: [CDMS_2436] Images: []
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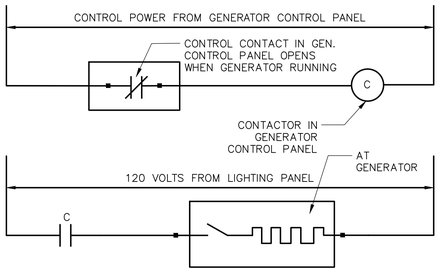
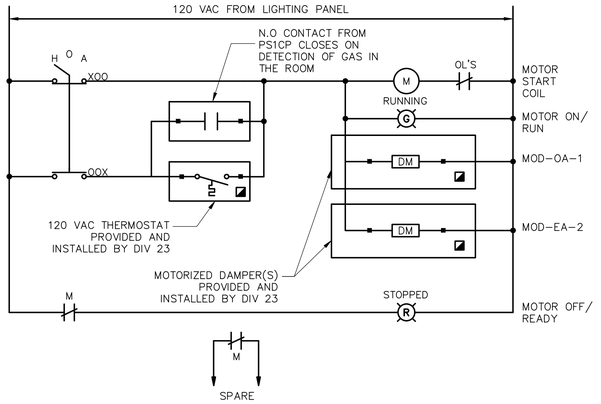


GENERATOR SPACE HEATER CONTROL WIRING

DIAGRAM 1

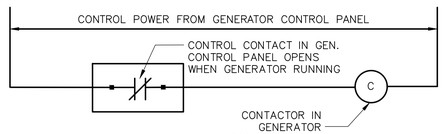
NTS

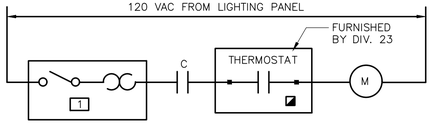


EXHAUST FAN NO. 1 (EF-1) CONTROL WIRING

DIAGRAM 3

NTS

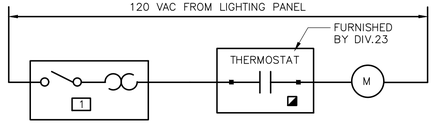




ELECTRIC UNIT HEATER NO. 1 (EUH-1) CONTROL WIRING

DIAGRAM 2

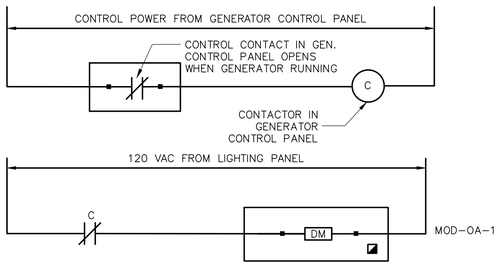
NTS



ELECTRIC UNIT HEATER NO. 2 (EUH-2) CONTROL WIRING

DIAGRAM 4

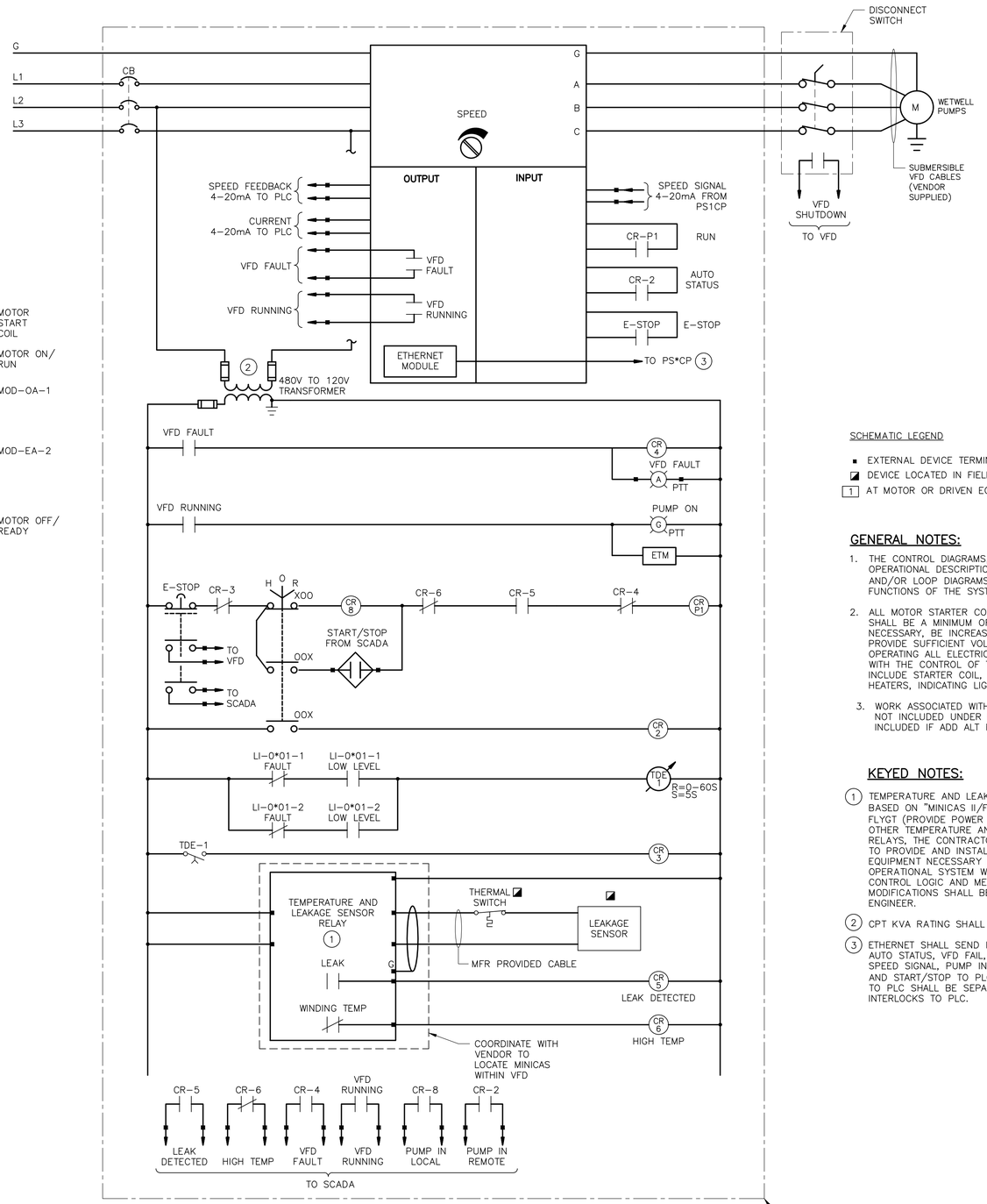
NTS



MOD-OA-1 CONTROL WIRING

DIAGRAM A

NTS



WET WELL SUBMERSIBLE PUMP SCHEMATIC

DIAGRAM 5

NTS

TYPICAL FOR:
VFD-0110-1
VFD-0110-2

SCHEMATIC LEGEND

- ▪ EXTERNAL DEVICE TERMINAL CONNECTIONS
- ◪ DEVICE LOCATED IN FIELD
- [1] AT MOTOR OR DRIVEN EQUIPMENT

GENERAL NOTES:

1. THE CONTROL DIAGRAMS, ALONG WITH ANY WRITTEN OPERATIONAL DESCRIPTIONS IN THE SPECIFICATIONS AND/OR LOOP DIAGRAMS, SHOW THE INTENDED FUNCTIONS OF THE SYSTEMS AND CIRCUITS.
2. ALL MOTOR STARTER CONTROL TRANSFORMERS SHALL BE A MINIMUM OF 100VA AND, IF NECESSARY, BE INCREASED IN SIZE SO AS TO PROVIDE SUFFICIENT VOLT-AMPERE CAPACITY FOR OPERATING ALL ELECTRICAL DEVICES ASSOCIATED WITH THE CONTROL OF THE MOTOR. THIS SHALL INCLUDE STARTER COIL, RELAYS, TIMERS, MOTOR HEATERS, INDICATING LIGHTS, ETC.
3. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

KEYED NOTES:

(1) TEMPERATURE AND LEAKAGE SENSOR RELAY IS BASED ON "MINICAS II/FUS" AS MANUFACTURED BY FLYGT (PROVIDE POWER SUPPLY IF NEEDED). FOR OTHER TEMPERATURE AND LEAKAGE SENSOR RELAYS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL ANY ADDITIONAL EQUIPMENT NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM WHICH PERFORMS THE SAME CONTROL LOGIC AND MEETS SPECIFICATIONS. THE MODIFICATIONS SHALL BE APPROVED BY THE ENGINEER.

(2) CPT KVA RATING SHALL BE SIZED BY CONTRACTOR.

(3) ETHERNET SHALL SEND LEAK DETECTION, HIGH TEMP, AUTO STATUS, VFD FAIL, VFD RUN, SPEED FEEDBACK, SPEED SIGNAL, PUMP IN REMOTE, PUMP IN LOCAL, AND START/STOP TO PLC. ETHERNET COMMUNICATION TO PLC SHALL BE SEPARATE FROM THE HARDWIRE INTERLOCKS TO PLC.

COMMONWEALTH OF MASSACHUSETTS
CELESTINE A. FONDUNGALLAH
ELECTRICAL
No. 52324
REGISTERED
PROFESSIONAL ENGINEER

CELESTINE A FONDUNGALLAH
2025.11.18 15:25:22-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: C. FONDUNGALLAH
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

CONTROL SCHEMATICS

PROJECT NO. 1125-273132
FILE NAME: E00BPSCD.DWG
SHEET NO. E-8

XREFs: [CDMS_2436] Images: []
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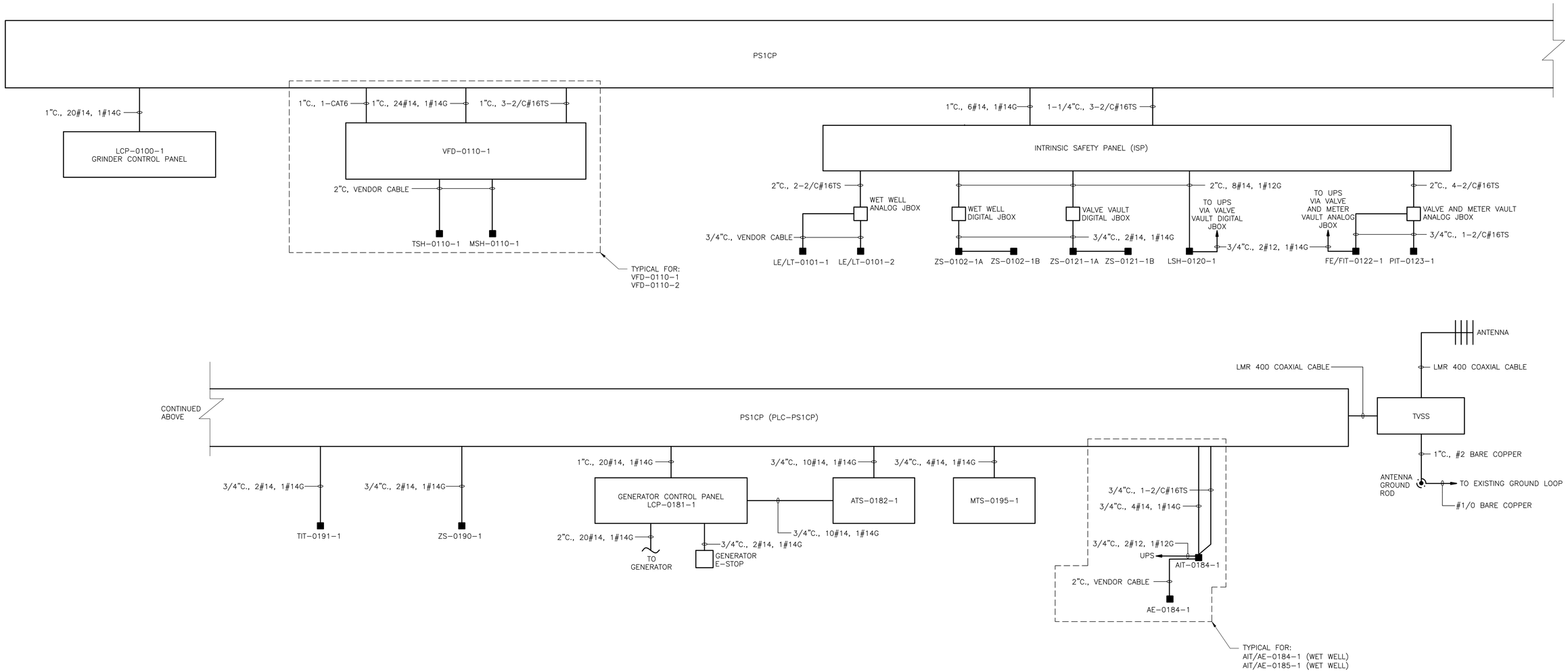

INSTRUMENTATION RISER DIAGRAM 1 / –
NTS

GENERAL NOTES:

1. REFER PLANS FOR FURTHER CONDUIT AND WIRE REQUIREMENTS.
2. WIRING SHALL BE COMBINED INTO CONDUITS SHOWN ON SHEET E–5 FOR UNDERGROUND DUCTBANKS. PROVIDE JUNCTION BOXES AS REQUIRED, SIZE JUNCTION BOXES PER NEC.
3. WIRING FOR ANALOG AND DIGITAL SIGNALS SHALL BE IN SEPARATE CONDUITS AND JUNCTION BOXES.
4. WET WELL, VALVE VAULT, AND METER VAULT JUNCTION BOXES NOT SHOWN ON DIAGRAMS FOR CLARITY, UNLESS JBOX USED TO CONNECT BETWEEN DIFFERENT CABLE TYPES.
5. ALL UPS POWER IS DERIVED FROM THE UPS WITHIN THE PS1CP.
6. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 SELECTED.

Bethany Charis-Molling
2024.08.16 14:08:30-04'00'

COMMONWEALTH OF MASSACHUSETTS
BETHANY LYNN CHARIS-MOLLING
ELECTRICAL
NO. 54516
REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DATE	DRWN	CHKD	REMARKS

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SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: B. CHARIS–MOLLING
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1
INSTRUMENTATION RISER DIAGRAM

PROJECT NO. 1125–273132
FILE NAME: E009PSRD.DWG
SHEET NO. E-9

XREFs: [CDMS_2436] Images: []
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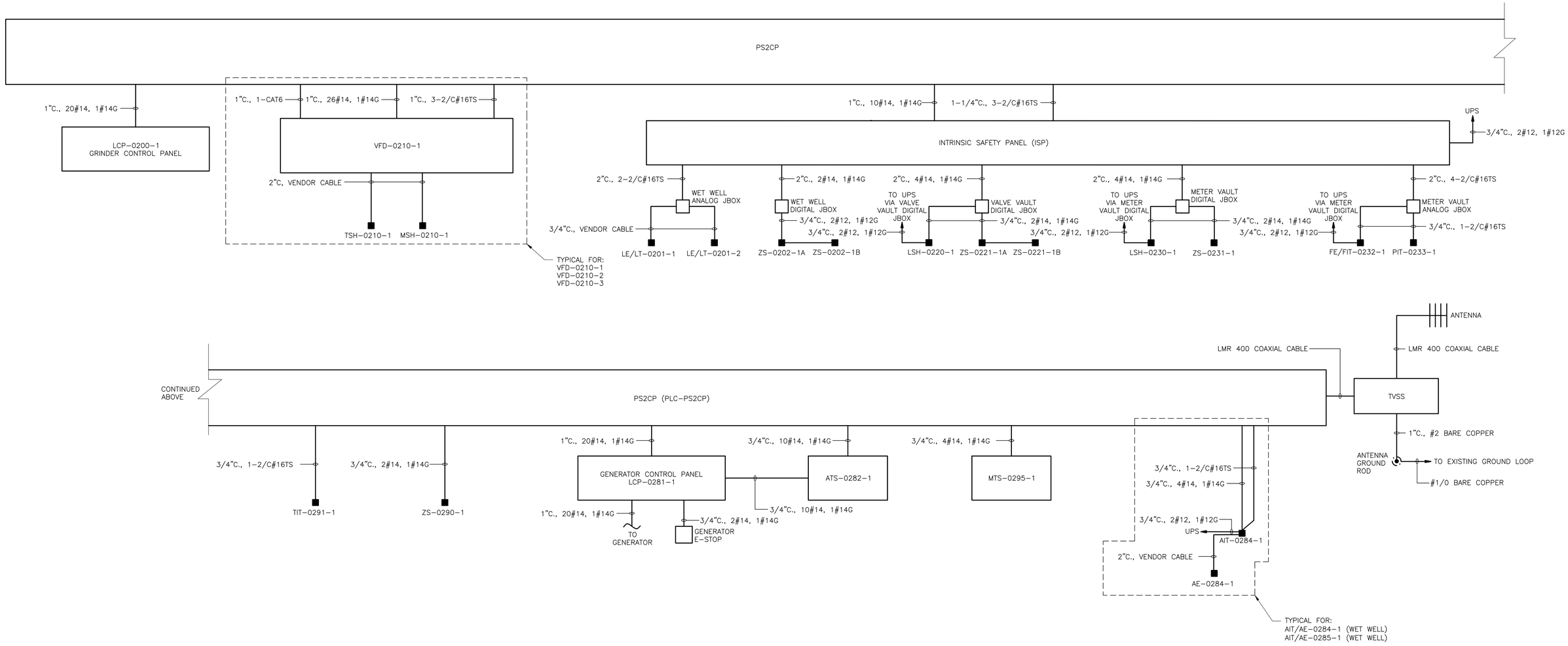

INSTRUMENTATION RISER DIAGRAM 1
NTS

GENERAL NOTES:

1. REFER PLANS FOR FURTHER CONDUIT AND WIRE REQUIREMENTS.
2. WIRING SHALL BE COMBINED INTO CONDUITS SHOWN ON SHEET E–13 FOR UNDERGROUND DUCTBANKS. PROVIDE JUNCTION BOXES AS REQUIRED, SIZE JUNCTION BOXES PER NEC.
3. WIRING FOR ANALOG AND DIGITAL SIGNALS SHALL BE IN SEPARATE CONDUITS AND JUNCTION BOXES.
4. WET WELL, VALVE VAULT, AND METER VAULT JUNCTION BOXES NOT SHOWN ON DIAGRAMS FOR CLARITY, UNLESS JBOX USED TO CONNECT BETWEEN DIFFERENT CABLE TYPES.
5. ALL UPS POWER IS DERIVED FROM THE UPS WITHIN THE PS2CP.

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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: C. FONDUNGALLAH
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

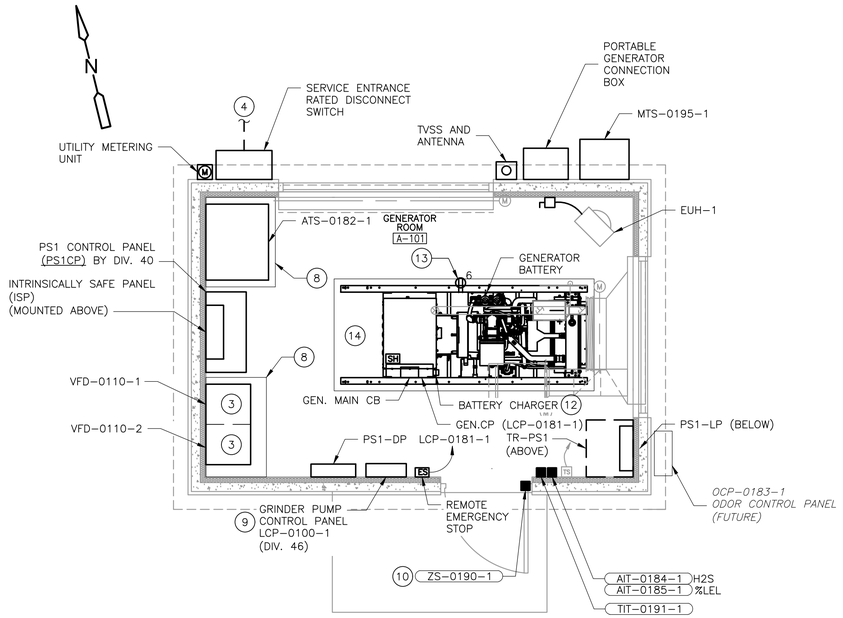
PUMPING STATION NO. 2
INSTRUMENTATION RISER DIAGRAM

COMMONWEALTH OF MASSACHUSETTS
CELESTINE A FONDUNGALLAH
ELECTRICAL
No. 53324
REGISTERED PROFESSIONAL ENGINEER

CELESTINE A FONDUNGALLAH
2025.11.18 15:25:14-05'00'

PROJECT NO. 1125–273132
FILE NAME: E010PSRD.DWG

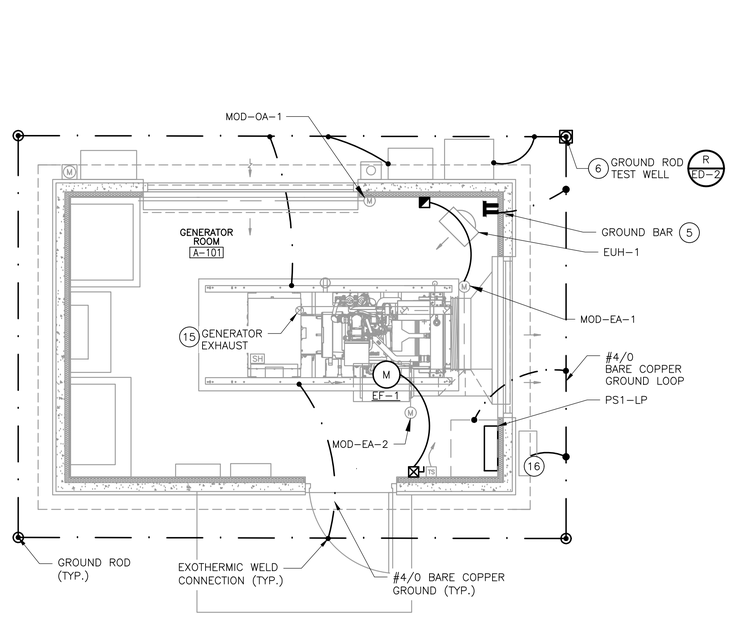
SHEET NO.
E-10



POWER

PLAN

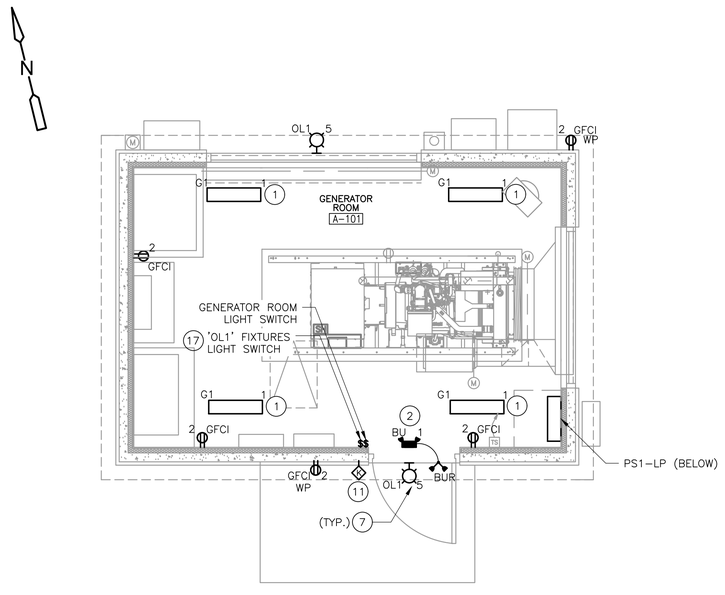
3/8" = 1'-0"



HVAC AND GROUNDING

PLAN

3/8" = 1'-0"



LIGHTING

PLAN

3/8" = 1'-0"

GENERAL NOTES:

1. ALL LIGHTING AND RECEPTACLE CIRCUITS SHALL BE WIRED BACK TO PANELBOARD PS1-LP LOCATED IN GENERATOR ROOM.
2. REFER TO SHEET G-4 FOR AREA CLASSIFICATIONS.
3. ALL BURIED GROUND CONDUCTORS CONNECTIONS SHALL BE EXOTHERMIC WELD OR IRREVERSIBLE COMPRESSION.
4. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

KEYED NOTES:

(1) SURFACE MOUNT THE BOTTOM OF LUMINAIRES 9'-0" AT A.F.F.

(2) WALL MOUNT FIXTURE 1'-0" ABOVE TOP OF DOOR.

(3) TWO VFDS SHALL BE LOCATED IN SINGLE ENCLOSURE.

(4) REFER TO ELECTRICAL SITE PLAN FOR UNDERGROUND CONDUIT AND WIRE.

(5) ALL METALLIC PARTS OF EQUIPMENTS AND PANELS LOCATED IN THE GENERATOR ROOM SHALL BE CONNECTED TO GROUND BAR WHICH IS EXOTHERMICALLY WELDED TO GROUNDING LOOP.

(6) PROVIDE GROUND ROD TEST WELL FOR THE INSPECTION OF GROUND ROD AS PER NEC REQUIREMENTS. REFER TO SHEET ED-1 FOR DETAILS.

(7) OUTDOOR LIGHTS ARE MOUNTED AT 8'-0" A.F.F, OR 1'-0" ABOVE DOOR FRAME.

(8) CONCRETE EQUIPMENT PAD BY DIVISION 03.

(9) VENDOR SUPPLIED, INSTALLED BY DIVISION 26.

(10) DOOR SWITCH WIRED TO PLC, REFER TO POWER PLAN FOR INSTRUMENT IDENTIFICATIONS. DOOR SWITCH SHALL BE PROVIDED UNDER DIVISION 28. DOOR SWITCHES SHALL BE COMPATIBLE WITH SECURITY SYSTEM AT MAIN FACILITY FOR FUTURE SECURITY UPGRADES.

(11) PROVIDE KNOCKOUT BOX FOR FUTURE CARD READER AND 3/4" CONDUIT FROM KNOCKOUT BOX TO INTERIOR OF BUILDING, PROVIDE PULL-STRING AND CAP CONDUIT.

(12) BATTERY CHARGER UNIT TO MAINTAIN THE ENGINE STARTING BATTERY. UNISTRUT MOUNT THE CHARGER UNIT NEAR THE GENERATOR AND PROVIDE 120V, 20A RATED BRANCH CIRCUIT FROM PS1-LP.

(13) PROVIDE DEDICATED 120V, 20A RATED DUPLEX RECEPTACLE FOR GENERATOR JACKET WATER HEATER PLUG-IN CONNECTION, FED FROM PANELBOARD PS1-LP. UNISTRUT MOUNT THE RECEPTACLE ALONG WITH BATTERY CHARGER UNIT NEAR THE GENERATOR.

(14) FIELD LOCATE THE SPACE HEATER FOR ALTERNATOR AND PROVIDE 120V, 20A RATED BRANCH CIRCUIT FROM PS1-LP.

(15) ODOR CONTROL AND GENERATOR EXHAUST PIPES EXTENDED ABOVE THE ROOF SHALL BE BONDED TO GROUNDING LOOP. PROVIDE 1"C., #2/0 DOWN CONDUCTOR FROM THE EXHAUST PIPE TO THE GROUNDING LOOP.

(16) LEAVE #4/0 BARE COPPER GROUND WIRE UNDERGROUND FOR FUTURE CONNECTION. MARK LOCATION OF GROUND ON FINISHED SURFACE.

(17) TIMER SWITCH WITH SETTINGS FOR UP TO 6 HOURS.

Bethany Charis-Molling
2024.08.16 14:08:37-04'00'

COMMONWEALTH OF MASSACHUSETTS
BETHANY LYNN CHARIS-MOLLING
ELECTRICAL NO. 54516
REGISTERED PROFESSIONAL ENGINEER

3/8" = 1'- 0"
2 0 2 4

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUSIO
DRAWN BY: N. DILUSIO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: B. CHARIS-MOLLING
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1
CONTROL BUILDING PLANS

PROJECT NO. 1125-273132
FILE NAME: E011PSPW.DWG

SHEET NO.
E-11

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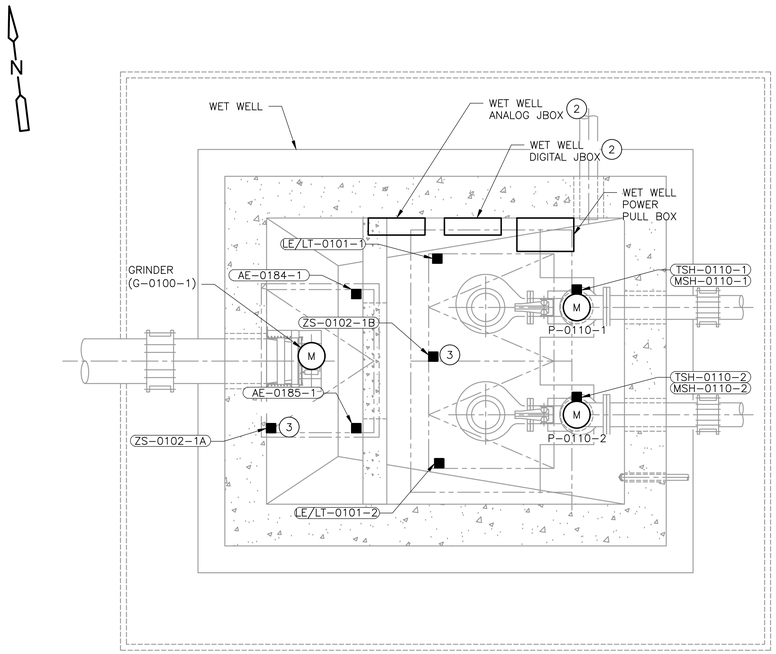
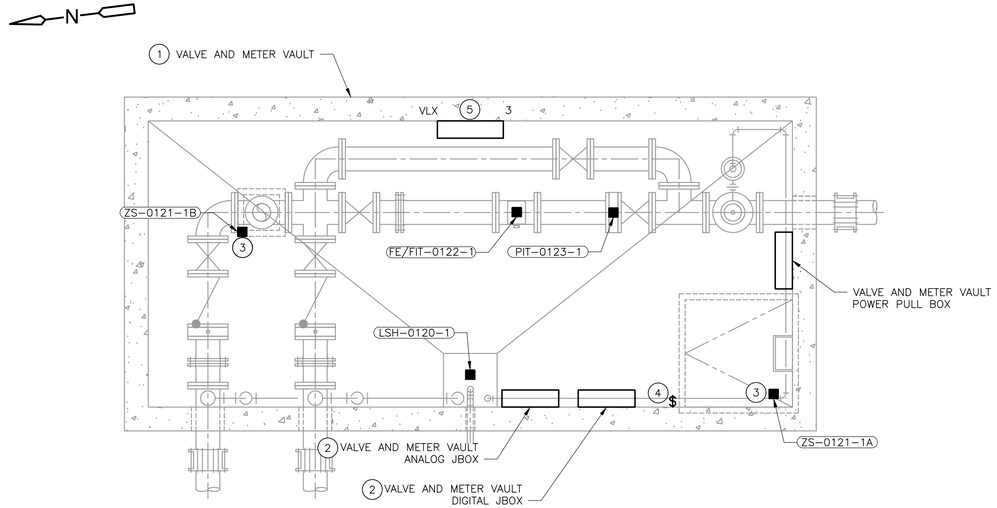


WET WELL

PLAN

1/2" = 1'-0"



VALVE AND METER VAULT

PLAN

1/2" = 1'-0"

GENERAL NOTES:

1. ALL LIGHTING AND RECEPTACLE CIRCUITS SHALL BE WIRED BACK TO PS1-LP LOCATED IN CONTROL ROOM.
2. REFER TO SHEET G-4 FOR AREA CLASSIFICATION. ALL EQUIPMENT AND INSTRUMENTS SHALL BE RATED FOR THE CLASSIFICATION OF THE AREA IN WHICH THEY ARE INSTALLED.
3. PROVIDE AND INSTALL 316 STAINLESS STEEL HOOK AND STRAIN RELIEF SUPPORTS (HUBBELL KELLEM GRIP OR EQUAL) FOR ALL WET WELL PUMP VENDOR CABLES, SIZE AS REQUIRED. SET HOOK UTILIZING ADHESIVE CAPSULE ANCHORS.
4. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

KEYED NOTES:

(1) DO NOT SPLICE LIGHTING BRANCH CIRCUITS WITHIN THE VAULT.

(2) DIGITAL AND ANALOG SIGNAL CABLES SHALL NOT BE SPLICED. UTILIZE TERMINAL BLOCKS AT JUNCTION BOXES TO CONNECT TO WIRES FROM CONTROL BUILDING TO INSTRUMENT DEVICES.

(3) PROVIDE HATCH SWITCHES NEAR THE ACCESS HATCH FOR ALARM TO ISB AND PLC. HATCH SWITCHES SHALL BE PROVIDED UNDER DIVISION 28.

(4) PROVIDE EXPLOSION-PROOF, WEATHER-PROOF, LIGHT SWITCH WITH TO CONTROL LIGHT FIXTURE IN VAULT.

(5) MOUNT LIGHT FIXTURE 1'-0" FROM TOP OF VAULT.

1/2" = 1'- 0"

1 0 1 2

Bethany Charis-Molling
2024.08.16 14:08:41-04'00'

COMMONWEALTH OF MASSACHUSETTS
BETHANY LYNN CHARIS-MOLLING
ELECTRICAL
NO. 54516
REGISTERED
PROFESSIONAL ENGINEER

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: B. CHARIS-MOLLING
DATE: AUGUST 2024

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 1
WET WELL, VALVE AND METER VAULT
PLANS

PROJECT NO. 1125-273132
FILE NAME: E012PSPW.DWG

SHEET NO.
E-12

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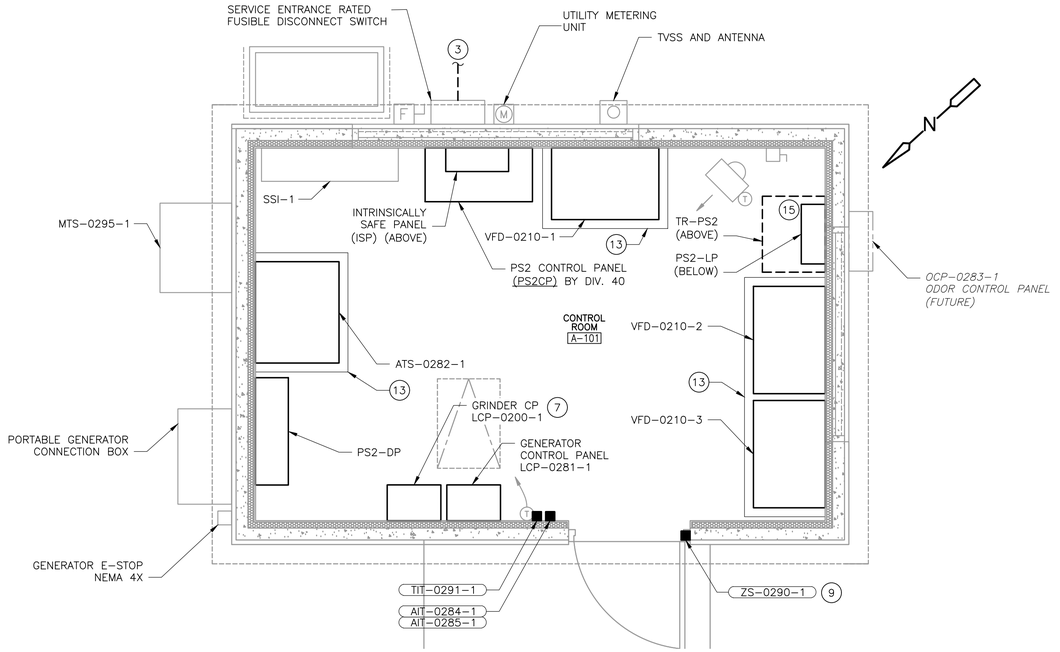
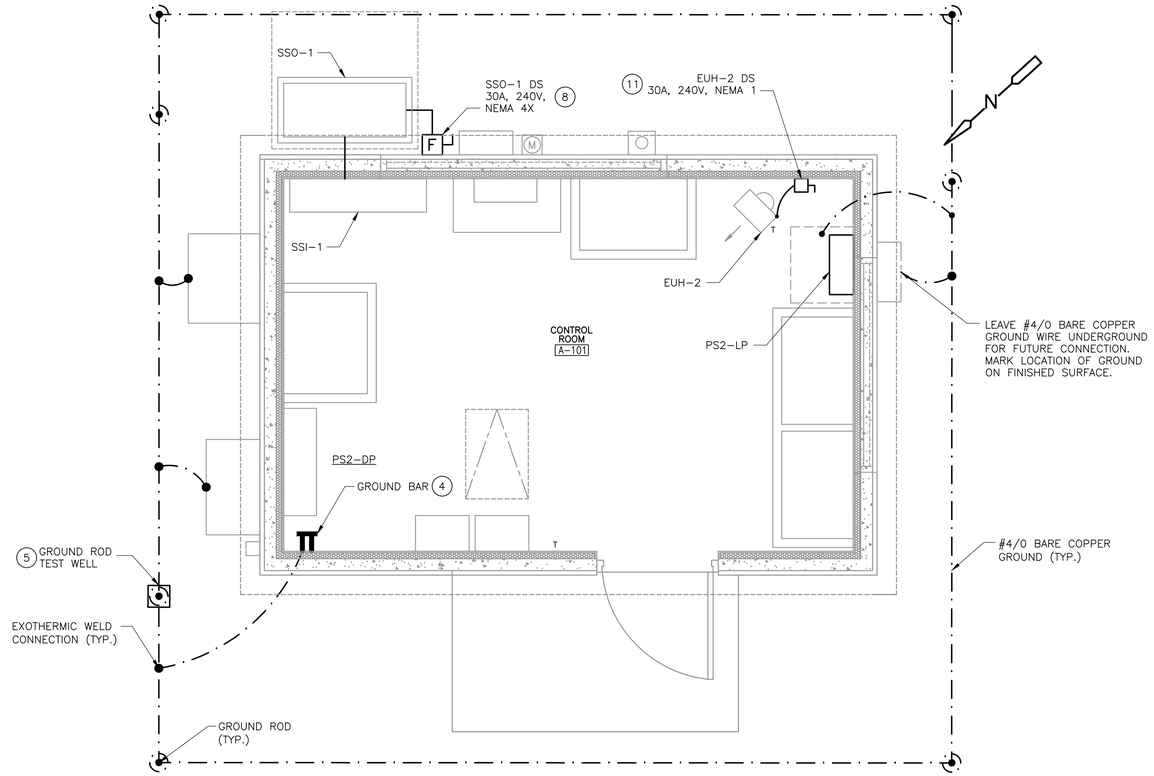


POWER

PLAN

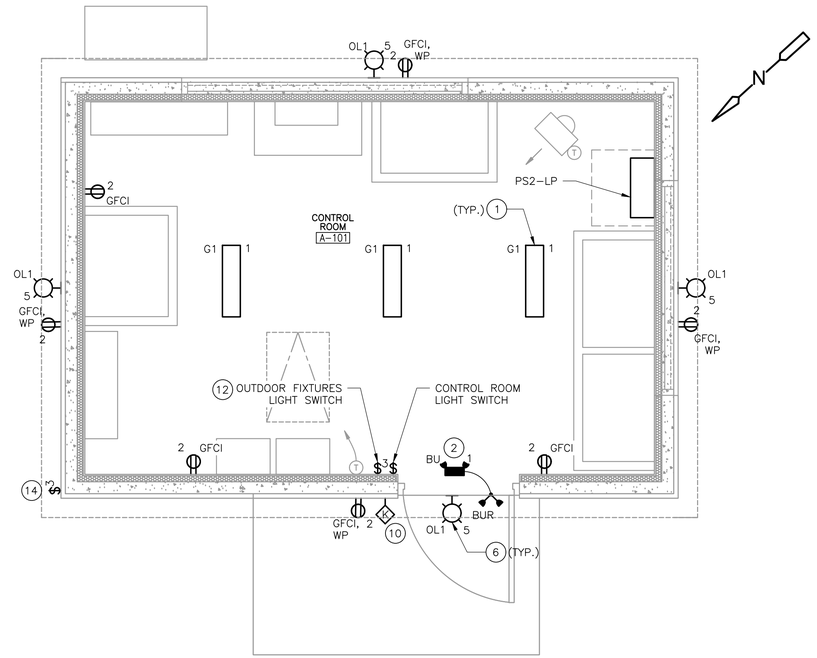
1/2" = 1'-0"



HVAC AND GROUNDING

PLAN

1/2" = 1'-0"



LIGHTING

PLAN

1/2" = 1'-0"

KEYED NOTES:

1. SURFACE MOUNT THE BOTTOM OF LUMINAIRES 9'-0" AT A.F.F.
2. WALL MOUNT FIXTURE 1'-0" ABOVE TOP OF DOOR. PROVIDE 3/4"C, 2#12, 1#12 TO REMOTE HEADS.
3. REFER ELECTRICAL SITE PLAN FOR UNDERGROUND CONDUIT AND WIRE.
4. ALL METALLIC PARTS OF EQUIPMENTS AND PANELS LOCATED IN THE ELECTRICAL ROOM SHALL BE CONNECTED TO GROUND BAR WHICH IS EXOTHERMICALLY WELDED TO GROUNDING LOOP.
5. PROVIDE GROUND ROD TEST WELL FOR THE INSPECTION OF GROUND ROD AS PER NEC REQUIREMENTS. REFER TO SHEET ED-1 FOR DETAILS.
6. OUTDOOR WALL PACK LIGHTS ARE MOUNTED AT 8'-0" A.F.F, OR 1'-0" ABOVE DOOR FRAME.
7. VENDOR SUPPLIED, INSTALLED ACCORDING TO DIVISION 26.
8. FUSE SIZE PER MANUFACTURER'S RECOMMENDATION.
9. DOOR SWITCH WIRED TO PLC, REFER TO POWER PLAN FOR INSTRUMENT IDENTIFICATIONS. DOOR SWITCH SHALL BE PROVIDED UNDER DIVISION 28. DOOR SWITCHES SHALL BE COMPATIBLE WITH SECURITY SYSTEM AT MAIN FACILITY FOR FUTURE SECURITY UPGRADES.
10. PROVIDE KNOCKOUT BOX FOR FUTURE CARD READER AND 3/4" CONDUIT FROM KNOCKOUT BOX TO INTERIOR OF BUILDING, PROVIDE PULL-STRING AND CAP CONDUIT.
11. DISCONNECT SUPPLIED BY HVAC CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR.
12. TIMER SWITCH WITH SETTINGS FOR UP TO 6 HOURS.
13. CONCRETE EQUIPMENT PAD.
14. PROVIDE WEATHER-PROOF NEMA 4X LIGHT SWITCH.
15. PROVIDE TRANSFORMER WORKING CLEARANCE PER NEC, FIELD COORDINATE UNIT HEATER INSTALLATION.

GENERAL NOTES:

1. ALL LIGHTING AND RECEPTACLE CIRCUITS SHALL BE WIRED BACK TO PANELBOARD PS2-LP LOCATED IN CONTROL ROOM.
2. REFER TO SHEET G-5 FOR AREA CLASSIFICATIONS.
3. ALL BURIED GROUND CONDUCTORS CONNECTIONS SHALL BE EXOTHERMIC WELD OR IRREVERSIBLE COMPRESSION.

1/2" = 1'- 0"

1 0 1 2

COMMONWEALTH OF MASSACHUSETTS
CELESTINE A FONDUNGALLAH
ELECTRICAL
No. 52324
REGISTERED PROFESSIONAL ENGINEER

CELESTINE A FONDUNGALLAH
2025.11.18 15:25:03-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: C. FONDUNGALLAH
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 2
CONTROL BUILDING PLANS

PROJECT NO. 1125-273132
FILE NAME: E013PSPW.DWG

SHEET NO.
E-13

XREFs: [APSWP004_EW002PS, CDMS_2436, HWPPS200, APSWP005] Images: []
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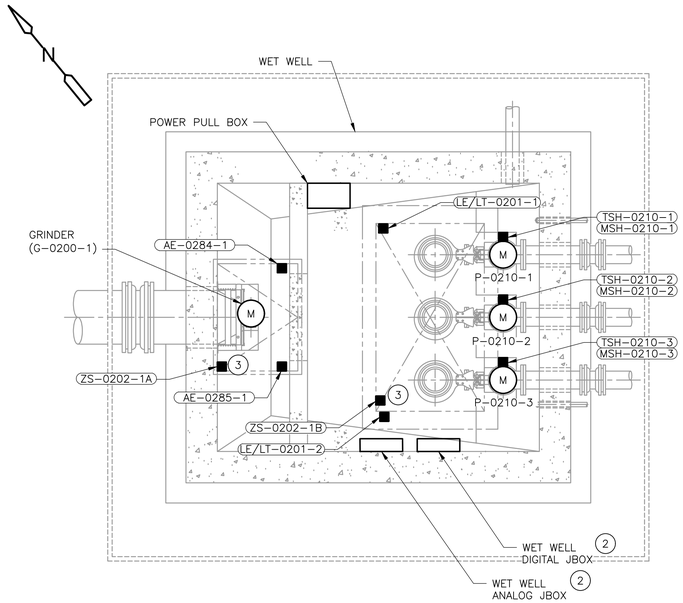
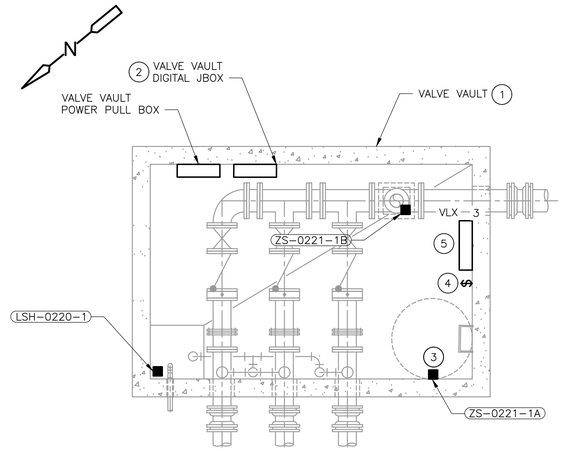


WET WELL

PLAN

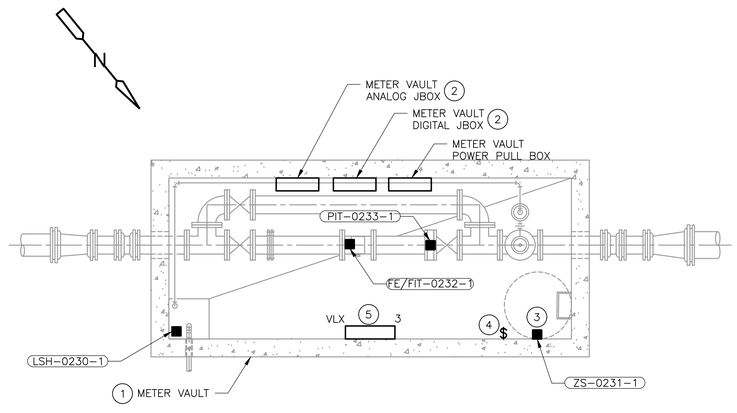
3/8" = 1'-0"



VALVE VAULT

PLAN

3/8" = 1'-0"



METER VAULT

PLAN

3/8" = 1'-0"

GENERAL NOTES:

1. ALL LIGHTING AND RECEPTACLE CIRCUITS SHALL BE WIRED BACK TO PS2-LP LOCATED IN CONTROL ROOM.
2. REFER TO SHEET G-5 FOR AREA CLASSIFICATION. ALL EQUIPMENT AND INSTRUMENTS SHALL BE RATED FOR THE CLASSIFICATION OF THE AREA IN WHICH THEY ARE INSTALLED.
3. PROVIDE AND INSTALL 316 STAINLESS STEEL HOOK AND STRAIN RELIEF SUPPORTS (HUBBELL KELLEM GRIP OR EQUAL) FOR ALL WET WELL PORT VENDOR CABLES, SIZE AS REQUIRED. SET HOOK UTILIZING ADHESIVE CAPSUL ANCHORS.

KEYED NOTES:

(1) DO NOT SPLICE LIGHTING BRANCH CIRCUITS WITHIN THE VAULTS AND WET WELL.

(2) DIGITAL AND ANALOG SIGNAL CABLES SHALL NOT BE SPLICED. UTILIZE TERMINAL BLOCKS AT JUNCTION BOXES TO CONNECT TO WIRES FROM CONTROL BUILDING TO INSTRUMENT DEVICES.

(3) PROVIDE HATCH SWITCHES NEAR THE ACCESS HATCH FOR ALARM TO ISB AND PLC. HATCH SWITCHES SHALL BE PROVIDED UNDER DIVISION 28.

(4) PROVIDE EXPLOSION-PROOF, WEATHER-PROOF, LIGHT SWITCH WITH TO CONTROL LIGHT FIXTURE IN VAULT.

(5) MOUNT LIGHT FIXTURE 1'-0" FROM TOP OF VAULT.

3/8" = 1'- 0"

2 0 2 4

COMMONWEALTH OF MASSACHUSETTS
CELESTINE A. FONDUNGALLAH
ELECTRICAL
No. 52324
REGISTERED PROFESSIONAL ENGINEER

CELESTINE A FONDUNGALLAH
2025.11.18 15:24:54-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

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DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
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APPROVED BY: C. FONDUNGALLAH
DATE: NOVEMBER 2025

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TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

PUMPING STATION NO. 2
WET WELL, VALVE VAULT AND METER VAULT PLANS

PROJECT NO. 1125-273132
FILE NAME: E014PSPW.DWG

SHEET NO.
E-14

XREFs: [CDMS_2436, MWPPS002] Images: []
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NOTES:

1. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

LIGHT FIXTURE SCHEDULE

TYPE	LOCATION	LIGHT SOURCE	MOUNTING	DESCRIPTION	ACCEPTABLE MANUFACTURERS & MODELS
G1	INDUSTRIAL DRY	LED	SURFACE/PENDANT	STRIP LED LIGHT FIXTURE, 24" LENGTH, STEEL CHANNEL, DIFFUSE LENS. L70 AT 100,000 HOURS, 140 LUMENS PER WATT. 4000K COLOR TEMPERATURE, 80 CRI, 3500 LUMENS. DAMP LOCATION RATED.	LITHONIA LIGHTING CLX-L24-3500LM-HEF-FDL-MVOLT-GZ1-40K-80CRI OR EQUAL
OL1	OUTDOOR	LED	WALL	ARCHITECTURAL WALL SCONCE, ALUMINUM HOUSING, THERMO-SET POWDER COAT FINISH. L70 AT 100,000 HOURS, 120 LUMENS PER WATT. 3000K COLOR TEMPERATURE, 80 CRI, 1300 LUMENS. WET LOCATION RATED, IP65 RATED. INTERNATIONAL DARK-SKY ASSOCIATION COMPLIANT & LABELED, 0-0-0 BUG RATING. INCLUDES PHOTOCELL SENSOR.	LITHONIA LIGHTING ARC1-LED-P1-30K-MVOLT-DDBXD OR EQUAL
OL2	OUTDOOR	LED	POLE MOUNTED	ESX1 LED AREA LIGHT FIXTURE 20" LENGTH. 4000K COLOR TEMPERATURE, 8000 TO 14000 LUMENS, 70 CRI. WET LOCATION AND IP66 RATED. INCLUDES PHOTOCELL SENSOR. PROVIDE WITH COMPATIBLE 15' POLE.	LITHONIA LIGHTING ESX1-LED-P4-40K-R3-MVOLT-UPA-BLS-DDBXD-M2 OR EQUAL
BU	INDUSTRIAL DRY	LED	WALL	UL924 LISTED EMERGENCY LIGHT WITH MINIMUM 90 MINUTES OF RUN TIME. INJECTION MOLDED COLOR STABLE. HIGH IMPACT THERMOPLASTIC MATERIAL WITH SEALED LITHIUM IRON PHOSPHATE BATTERY WITH 640 LUMEN LED EMERGENCY HEADS. SELF-DIAGNOSTICS AND REMOTE TEST. BATTERY SIZED FOR 'BUR' REMOTE HEADS.	LITHONIA LIGHTING CZQ4L-LTP-SDRT-HO OR EQUAL
BUR	OUTDOOR	LED	WALL	UL924 LISTED LED REMOTE TWIN-HEAD COMPATIBLE WITH 'BU' EMERGENCY UNIT ABOVE. DIE-CAST LAMP HEAD HOUSING WITH YOKE. 640 LUMEN OUTPUT, UL LISTED FOR WET LOCATIONS.	LITHONIA LIGHTING CZQRW-SP640L-DDBTXD-T
VLX	INDUSTRIAL HAZARDOUS CLASS 1, DIVISION 2	LED	WALL OR CEILING	LINEAR LED FIXTURE, 24" LENGTH. 5000K COLOR TEMPERATURE, 4200 LUMENS. STAINLESS STEEL HARDWARE. EXPLOSION PROOF, UL LISTED WET LOCATION AND CLASS 1, DIV 2 GROUP D, T6.	PHOENIX LIGHTING LFXB OR EQUAL

NOTE: FIXTURE FINISHES SHOWN FOR REFERENCE ONLY, COORDINATE FIXTURE FINISHES WITH ARCHITECT AND OWNER.

XREFs: [CDMS_2436] Images: []
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REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: C. FONDUNGALLAH
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

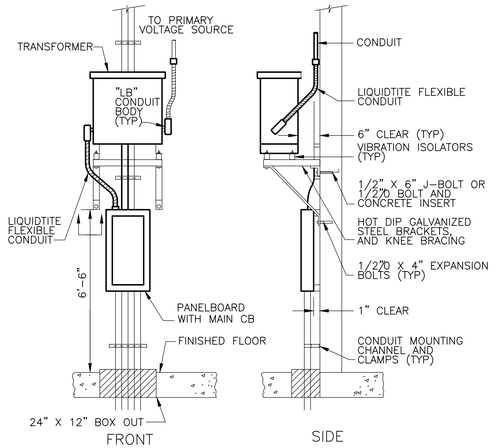
LIGHT FIXTURE SCHEDULE

COMMONWEALTH OF MASSACHUSETTS
CELESTINE A. FONDUNGALLAH
ELECTRICAL
No. 52324
REGISTERED
PROFESSIONAL ENGINEER

CELESTINE A FONDUNGALLAH
2025.11.18 15:24:42-05'00'

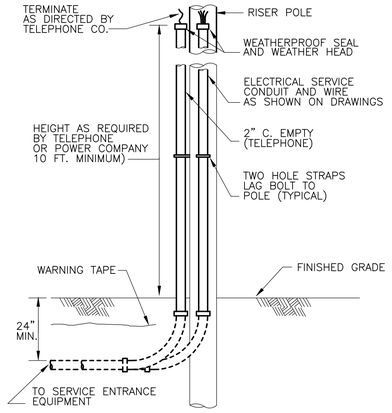
PROJECT NO. 1125-273132
FILE NAME: E015NFLF.DWG

SHEET NO.
E-15



WALL-MOUNTED TRANSFORMER AND PANELBOARD

DETAIL A — N.T.S.

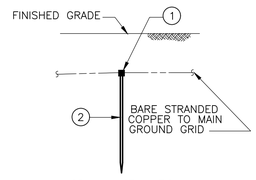


POWER COMPANY RISER POLE

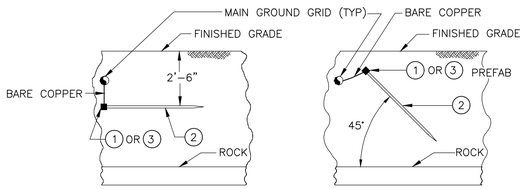
DETAIL B — N.T.S.

NOTE: DETAIL FOR REFERENCE ONLY, CONTRACTOR SHALL VERIFY UTILITY COMPANY REQUIREMENTS.

ITEM NUMBER	QUANTITY	DESCRIPTION	MANUFACTURER	CAT #
1	1	CADWELD CABLE TO ROD	CADWELD	TYPE GT
2	1	GROUND ROD, COPPER CLAD, 8 FT MIN.	ERITECH	
3	1	CADWELD CABLE TO ROD	CADWELD	TYPE GS



NORMAL INSTALLATION

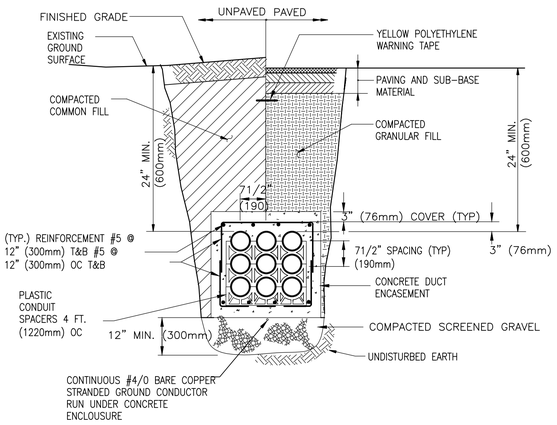


GROUND ROD INSTALLATIONS PER NEC

DETAIL C — N.T.S.

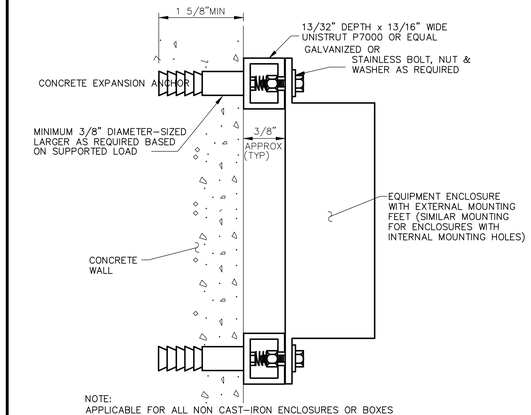
NOTES:

1. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.



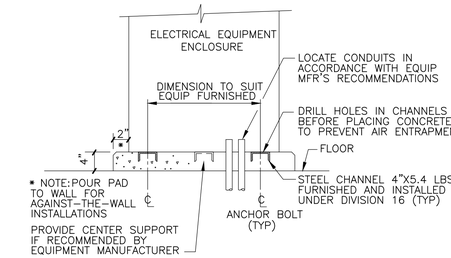
UNDERGROUND POWER DUCT BANK

DETAIL D — N.T.S.



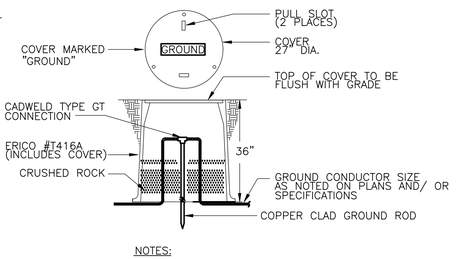
EQUIPMENT ENCLOSURE MOUNTING ON CONCRETE WALL

DETAIL E — N.T.S.



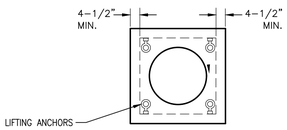
ELECTRICAL EQUIPMENT PAD

DETAIL E1 — N.T.S.

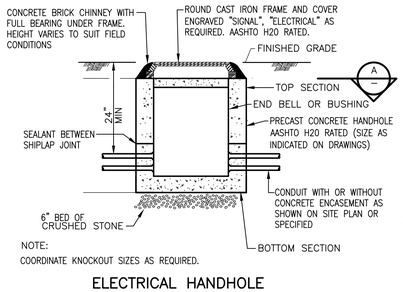


NOTES:

1. TO IMPROVE SYSTEM RESISTANCE, ERICO GEM MAY BE USED AS A BACKFILL MATERIAL IN AN AUGERED HOLE.



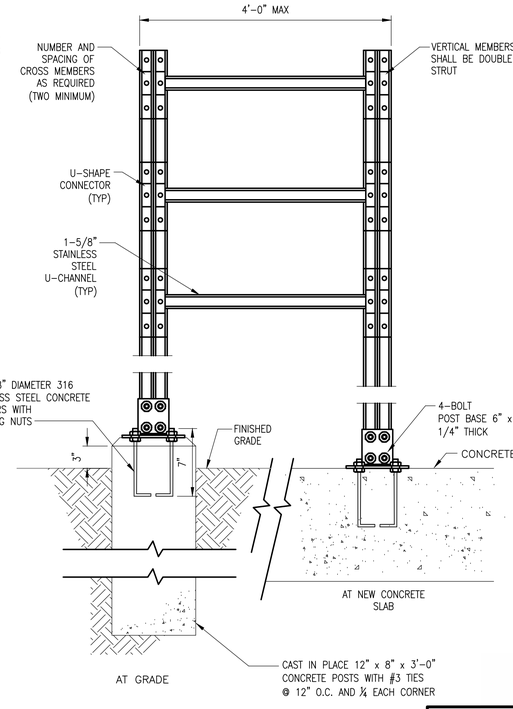
SECTION A



NOTE:
COORDINATE KNOCKOUT SIZES AS REQUIRED.

ELECTRICAL HANDHOLE

DETAIL H — N.T.S.

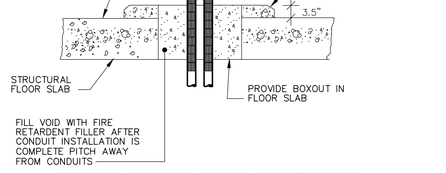


NOTES:

1. PROVIDE STAINLESS STEEL CHANNEL END-CAPS AND FITTINGS.

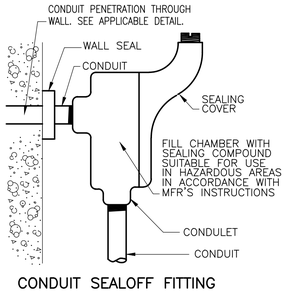
EQUIPMENT MOUNTING RACK

DETAIL N — N.T.S.



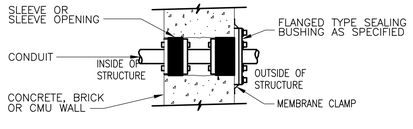
TYPICAL CONDUIT FLOOR PENETRATION

DETAIL F — N.T.S.



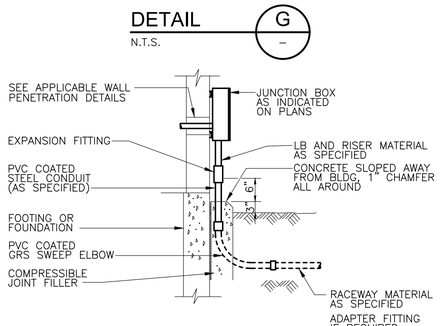
CONDUIT SEALOFF FITTING

DETAIL J — N.T.S.



CONDUIT PENETRATION THROUGH WALL

DETAIL K — N.T.S.

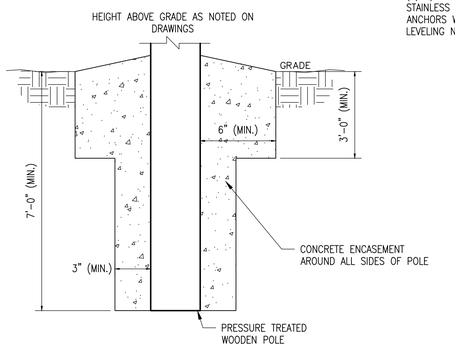


ABOVE GRADE CONDUIT PENETRATIONS THROUGH BUILDING OR STRUCTURES

DETAIL L — N.T.S.

GROUND ROD INSPECTION HOUSING

DETAIL G — N.T.S.



SELF-SUPPORTING WOODEN POLE

DETAIL M — N.T.S.

NOTE: POLE DETAIL FOR REFERENCE ONLY, POLE DESIGN BY ELECTRICAL CONTRACTOR.

CELESTINE A FONDUNGALLAH
2025.11.18 15:24:28-05'00'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: N. DILUISO
DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
APPROVED BY: C. FONDUNGALLAH
DATE: NOVEMBER 2025

CDM Smith
3 Davol Square, Building A, Suite A-425
Providence, RI 02903
Tel: (401) 751-5360

TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

ELECTRICAL DETAILS I

PROJECT NO. 1125-273132
FILE NAME: E016NFDT.DWG
SHEET NO. ED-1

XREFs: [CDMS_2436] Images: []
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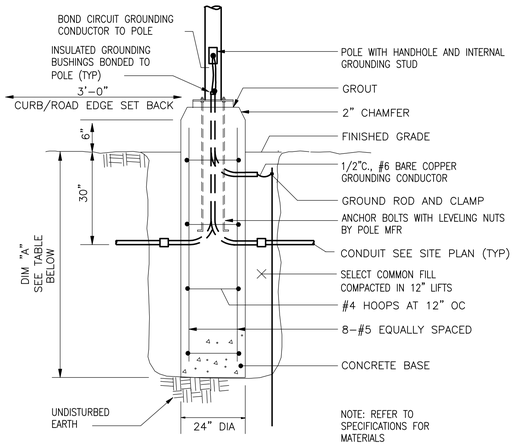
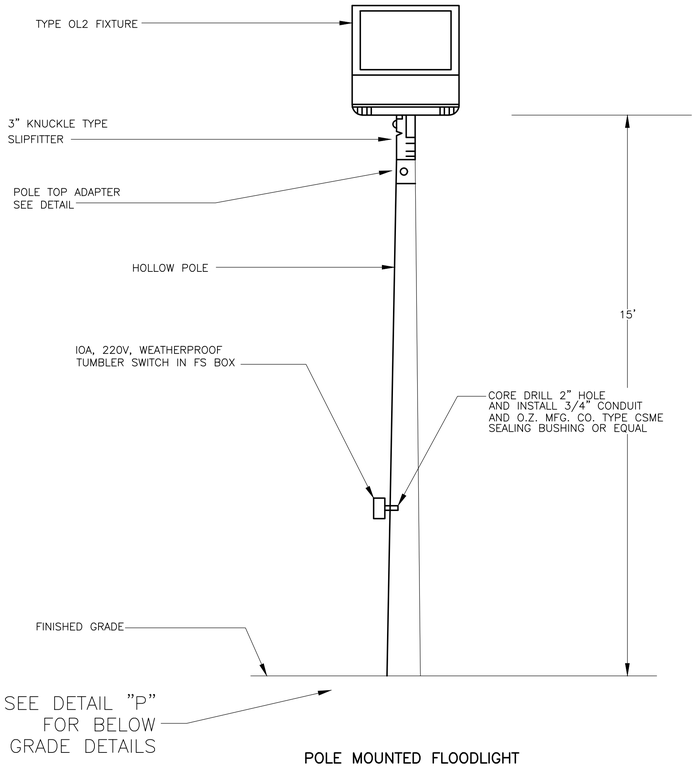


POLE HEIGHT	DIMENSION "A"
10'-0"	4'-6"
20'-0"	4'-6"

STANDARD LIGHTING BASE

DETAIL P

N.T.S.



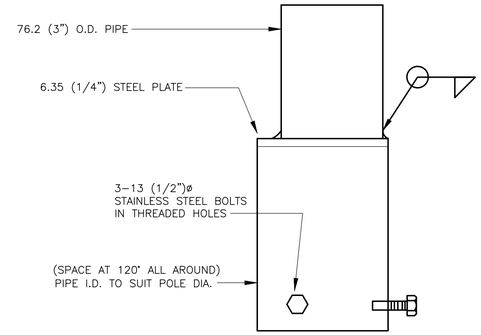
POLE MOUNTED FLOODLIGHT

NOTES:

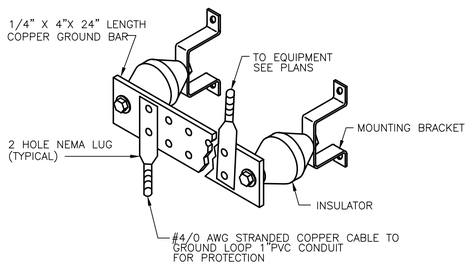
1. WORK ASSOCIATED WITH PUMPING STATION NO. 1 NOT INCLUDED UNDER BASE BID. ONLY TO BE INCLUDED IF ADD ALT NO. 2 IS SELECTED.

NOTES:

1. HOT DIP GALVANIZED ENTIRE SUPPORT ASSEMBLY AFTER FABRICATION BUT BEFORE THREADING BOLT HOLES.
2. GRIND POLE IF NECESSARY TO MOUNT SUPPORT ASSEMBLY.



POLE TOP ADAPTER



TYPICAL GROUND BAR

DETAIL R

N.T.S.

POLE MOUNTED FLOODLIGHT

DETAIL Q

N.T.S.

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REV. NO.	DATE	DRWN	CHKD	REMARKS

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DRAWN BY: N. DILUISO
SHEET CHK'D BY: G. WARD
CROSS CHK'D BY: W. HOTZ JR
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DATE: NOVEMBER 2025

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3 Davol Square, Building A, Suite A-425
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TOWN OF YARMOUTH, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
PHASE 1 - CONTRACT NO. 6
PROJECT NO. CWSRF 8349/6

ELECTRICAL DETAILS II

COMMONWEALTH OF MASSACHUSETTS
CELESTINE A FONDUNGALLAH
ELECTRICAL
No. 52324
REGISTERED PROFESSIONAL ENGINEER

CELESTINE A FONDUNGALLAH
2025.11.18 15:24:17-05'00'

PROJECT NO. 1125-273132
FILE NAME: E017NFDT.DWG

SHEET NO.
ED-2