WELLS 2, 3, AND 4
WATER TREATMENT PLANT

TOWN OF SHARON, MA

PUBLIC WORKS SUPERINTENDENT
ERIC HOOPER, P.E.

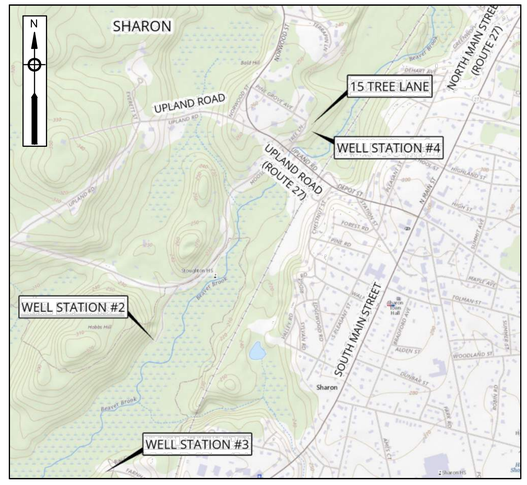
TOWN ENGINEER
PETER O'CAIN, P.E.

WATER DIVISION SUPERVISOR
ROBERT TERPSTRA

PUMP STATION MANAGER
BOB FISHER

OWNER'S PROJECT MANAGER
WESTON & SAMPSON

CONTRACT NO. 2025-101
APRIL 2024
FOR CONSTRUCTION



VICINITY MAP
1"= 1,000'

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS
ADAM S. DORAN
CIVIL
No. 51849
REGISTERED PROFESSIONAL ENGINEER
April 2024

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ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS
ALSTON W.C. POTTS, JR.
CIVIL
NO. 56074
REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

DRAWING INDEX

FOR CONSTRUCTION

Sheet No.

G-1

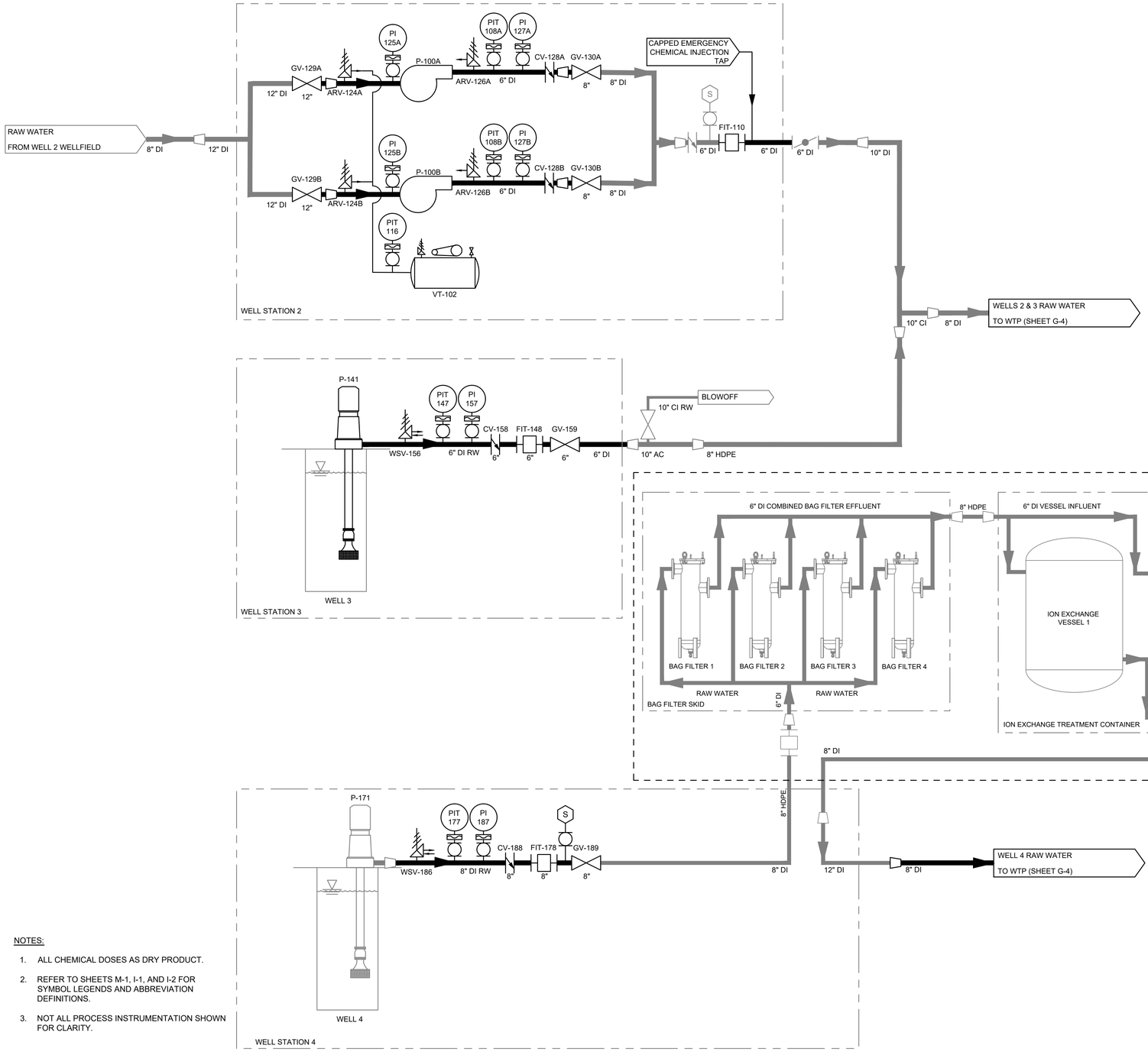
Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\01 General Sheets.dwg Plot Date: Apr 10,2024-3:18pm

GENERAL NOTES

1. BASEMAP INFORMATION FROM A SURVEY PERFORMED BY ZENITH LAND SURVEYORS, LLC IN 2022 AND 2023 SUPPLEMENTED BY RECORD INFORMATION PROVIDED BY THE TOWN OF SHARON DEPARTMENT OF PUBLIC WORKS WATER DIVISION. THE BASIS OF BEARING FOR ALL SURVEYS IS AN APPROXIMATED NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND THE HORIZONTAL DATUM USED IS THE NORTH AMERICAN DATUM OF 1983 (NAD83).
2. EXISTING GAS, ELECTRIC, TELEPHONE, AND CABLE/TELEVISION UTILITY INFORMATION SHOWN ON ALL SHEETS IS TAKEN FROM RECORD INFORMATION SUPPLIED BY THE UTILITY PROVIDER. IT IS NOTED THAT ADDITIONAL UTILITY PIPES, WIRES, AND STRUCTURES MAY EXIST.
3. WETLAND RESOURCE AREA DELINEATION FLAGGED BY ENVIRONMENTAL CONSULTING & RESTORATION, LLC ON APRIL 27, 2022 AND FIELD LOCATED BY ZENITH LAND SURVEYORS, LLC AS PART OF THE SITE SURVEY.
4. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR, EQUIPMENT, AND APPURTENANCES NECESSARY TO COMPLETE ALL THE WORK OF THIS CONTRACT, AS OUTLINED ON THESE PLANS, AND FURNISH A COMPLETE JOB, IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL GOVERNING AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL ELEVATIONS, DIMENSIONS, ANGLES, AND EXISTING CONDITIONS AT THE WORK SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
6. ALL DEMOLISHED MATERIALS SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED.
7. THE CONTRACTOR IS TO TAKE SPECIAL CARE NOT TO DAMAGE TREES, BUSHES, PLANTS, FLOWERS, STONEWALLS, FENCES, ETC. WITHIN THE CONSTRUCTION AREA UNLESS THEY ARE NOTED TO BE REMOVED. CONTRACTOR SHALL REPLACE ALL DAMAGED ITEMS AT NO COST TO OWNER.
8. THE CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF ALL CONSTRUCTION AND DEMOLITION MATERIALS, EQUIPMENT, AND OTHER DEBRIS AS A RESULT OF CONSTRUCTION WORK, AND SHALL RESTORE THE SITE TO A NEAT AND ORDERLY CONDITION.
9. THE CONTRACTOR SHALL INSTALL AND MAINTAIN TRAFFIC CONTROL DEVICES AS NECESSARY AND IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
10. THE CONTRACTOR IS RESPONSIBLE FOR SECURING SITE STORAGE AND LAYDOWN AREAS. THE LOCATION AND LIMITS OF ALL ON-SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO, THE TOWN OF SHARON. THE CONTRACTOR SHALL LIMIT THEIR ACTIVITIES TO THESE AREAS.
11. ELEVATIONS OF EXISTING STRUCTURES ARE BASED ON INFORMATION OBTAINED FROM AVAILABLE DRAWINGS AND RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL ELEVATIONS, DIMENSIONS, ANGLES AND EXISTING CONDITIONS AT THE WORK SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
12. ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO THE START OF WORK. CONTRACTOR SHALL NOTIFY DIG SAFE AT LEAST 72 HOURS IN ADVANCE, EXCLUDING WEEKENDS AND HOLIDAYS, PRIOR TO ANY EXCAVATION. TEST PITS TO LOCATE EXISTING UTILITIES MAY BE ORDERED BY THE ENGINEER.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPORT OF ALL UTILITIES AND STRUCTURES DURING CONSTRUCTION.
14. THE CONTRACTOR IS ADVISED TO TAKE ALL PRECAUTIONS AND MAKE ALL INVESTIGATIONS NECESSARY TO PERFORM THE WORK. THE OWNER WILL NOT CONSIDER CONTRACTOR'S UNFAMILIARITY WITH THE PROJECT OR SITE CONDITIONS AT THE TIME OF BID AS A BASIS FOR ADDITIONAL COMPENSATION.
15. ALL UTILITY SIZES, LOCATIONS, AND APPURTENANCES ARE SUBJECT TO THE APPROVAL AND/OR REVISION OF THE RESPECTIVE UTILITY HAVING JURISDICTION.
16. IN THOSE INSTANCES WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTIFICATION TO THE RESPECTIVE UTILITY COMPANY. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES.
17. INFORMATION SHOWN ON DETAIL DRAWINGS BUT NOT SHOWN ON FLOOR PLANS, AND VICE VERSA, SHALL MUTUALLY APPLY. IT IS NOT INTENDED TO SHOW EVERY OFFSET, FITTING, OR COMPONENT; HOWEVER, THE CONTRACTOR SHALL PROVIDE A COMPLETE INSTALLATION AS NECESSARY.
18. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERALLY THE LOCATION OF MATERIAL AND EQUIPMENT. THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, AND MATERIALS TO HAVE A COMPLETE AND FUNCTIONING SYSTEM.
19. FINAL LOCATION OF EQUIPMENT AND CONNECTION POINTS SHALL BE APPROVED BY THE ENGINEER AND SHALL BE DETERMINED IN THE FIELD WITH THE CONTRACTOR BEING RESPONSIBLE FOR DIMENSIONS THAT SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE.
20. THE CONTRACTOR SHALL MAKE ALL REQUIRED FIELD MEASUREMENTS TO VERIFY EXISTING AND CONTRACT INTERFACE DIMENSIONS, LOCATIONS, AND OTHER CONDITIONS.
21. ALL DIMENSIONS AND QUANTITIES SHALL BE DETERMINED OR VERIFIED BY THE CONTRACTOR.
22. DO NOT SCALE DRAWINGS UNLESS OTHERWISE NOTED. WRITTEN DIMENSION AND STATIONING SHALL PREVAIL. REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
23. THE TOWN OF SHARON REQUIRES ONE WEEK ADVANCED NOTICE TO PROVIDE UTILITY LOCATION SERVICES.
24. UNLESS SPECIFICALLY APPROVED BY THE ENGINEER OR OTHERWISE INDICATED, ALL WATER LINES INSTALLED UNDER THIS CONTRACT SHALL BE AT A DEPTH OF NO LESS THAT 5.0 FEET AS MEASURED FROM TOP OF PIPE TO FINISHED GRADE.
25. OPEN TRENCHES MUST BE BACK FILLED AT THE END OF THE WORKDAY OR COVERED WITH STEEL PLATES. NO EXCEPTIONS SHALL BE PERMITTED.
26. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IN KIND AT NO COST TO THE OWNER, TO THE SATISFACTION OF THE OWNER/ENGINEER.
27. THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY THE CONTRACTOR'S WORK, INCLUDING ON PRIVATE PROPERTY, TO ITS PRE-CONSTRUCTION CONDITION.
28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING ALL AREAS TO DRAIN.
29. THE LOCATION AND LIMITS OF ALL ON-SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO, THE TOWN OF SHARON. THE CONTRACTOR SHALL LIMIT THEIR ACTIVITIES TO THESE AREAS.
30. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATION AND ACTIVITIES OF THEIR FORCES WITH THE OWNER AND ENGINEER TO MINIMIZE INTERFERENCE WITH NORMAL OPERATIONS.
31. ADEQUATE PROTECTION OF PERSONS AND PROPERTY SHALL BE PROVIDED AT ALL TIMES. THE WORK SHALL BE EXECUTED IN SUCH A WAY AS TO AVOID HAZARD TO PERSONS AND PROPERTY. WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF LOCAL, STATE AND FEDERAL AUTHORITIES HAVING JURISDICTION OVER THE WORK.
32. PROVIDE ALL NECESSARY TEMPORARY PROTECTION AND BARRIERS TO SEGREGATE THE WORK AREA AND TO PREVENT DAMAGE TO ADJACENT AREAS, AS REQUIRED BY ALL JURISDICTION REGULATIONS.
33. PROVIDE PROPER PROTECTION AND BARRIERS BETWEEN THE WORK OF THIS CONTRACT AND EXISTING STRUCTURES TO REMAIN.
34. THE CONTRACTOR SHALL NOTE THAT, IN SOME CASES, ADJOINING SPACES MAY BE OCCUPIED DURING CONSTRUCTION. THE CONTRACTOR SHALL EXERCISE CAUTION TO AVOID UNNECESSARY DISTURBANCE TO OCCUPANTS.
35. AREAS FOR EACH CONTRACTOR'S INGRESS AND EGRESS TO SITE, OFFICES, PARKING AND EQUIPMENT STORAGE WILL BE DELINEATED AT THE PRE-CONSTRUCTION CONFERENCE. AT THE WELL STATION 4 AND WATER TREATMENT PLANT SITE, INGRESS AND EGRESS SHALL BE LIMITED TO TREE LANE; NO INGRESS OR EGRESS FROM PINE GROVE AVENUE SHALL BE ALLOWED.
36. THE CONTRACTOR SHALL BE REQUIRED TO FURNISH AND MAINTAIN A TELEPHONE NUMBER WHERE THE CONTRACTOR CAN BE REACHED 24 HOURS A DAY, 7 DAYS A WEEK, UNTIL THE PROJECT HAS REACHED SUBSTANTIAL COMPLETION.
37. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETE WORK ON THIS CONTRACT AS OUTLINED IN THE CONTRACT DOCUMENTS (PLANS AND SPECIFICATIONS) AND FURNISH A COMPLETE JOB, IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL GOVERNING AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
38. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED FOR THE EXECUTION OF THIS WORK AND SHALL OBTAIN NECESSARY APPROVAL FROM THE AUTHORITIES THAT HAVE JURISDICTION.
39. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HANDLING, STORAGE, RIGGING AND SETTING OF ALL EQUIPMENT AND MATERIALS. CRANES, LIFTS, HOISTS AND SCAFFOLDING OF ALL EQUIPMENT SHALL BE EMPLOYED AS REQUIRED TO COMPLETE THE INSTALLATION.
40. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE ADHERENCE TO ALL PROVISIONS AND REQUIREMENTS OF THE CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, THE CONTRACT DRAWINGS, THE CONTRACT GENERAL REQUIREMENTS, SPECIAL CONDITIONS AND TECHNICAL SPECIFICATIONS, AND TO ALL PERMITS APPENDED THERETO.
41. THE WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL BUILDING CODES, NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), AND ALL OTHER APPLICABLE STATE AND FEDERAL CODES.
42. ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE, THE COMMONWEALTH OF MASSACHUSETTS, AND THE TOWN OF SHARON BYLAWS AND ITS SUPPLEMENTS.
43. CONTRACTOR'S METHODS OF DEMOLITION SHALL BE APPROVED BY ENGINEER/OWNER PRIOR TO START OF WORK.
44. ALL EQUIPMENT AND HARDWARE SHALL BE NEW, UNLESS OTHERWISE NOTED.
45. INSTALL EQUIPMENT SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE, AND REPAIR. MINOR DEVIATIONS FROM THE DRAWINGS MAY BE MADE WITH THE APPROVAL OF THE ENGINEER TO ACCOMPLISH THIS, BUT CHANGES THAT INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER.
46. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
47. ANY ALTERATIONS REQUIRED ON THESE DRAWINGS DURING CONSTRUCTION SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION AND RECORDED ON THE AS-BUILT DRAWINGS.
48. HAZARDOUS WASTE ABATEMENT AT WELL STATIONS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE COORDINATED WITH ALL FILED SUB BIDDERS. THE GENERAL CONTRACTOR SHALL MAKE ARRANGEMENTS FOR LEGAL DISPOSAL OF ALL HAZARDOUS WASTE. REFER TO THE SPECIFICATIONS FOR THE HAZARDOUS WASTE REPORT.
49. VENTS AND DRAINS:
    A. INSTALL VENT AND DRAIN PIPING AND VALVES SO THERE IS NO INTERFERENCE WITH ACCESS TO OR OPERATION OF ANY EQUIPMENT, VALVES, PIPING, OR PANELS.
    B. PROVIDE ISOLATION VALVES FOR ALL VENTS AND DRAINS AS SPECIFIED AND INDICATED.
    C. LOCATE VALVES SO THAT THEY ARE ACCESSIBLE AND OPERABLE.
    D. PIPE ALL VENTS AND DRAINS SLOPED TO DRAIN TO THE NEAREST GUTTER, SUMP, TRENCH, DRAIN, OR AS INDICATED.
    E. WHERE PIPING RUNS ACROSS A FLOOR, INSTALL 2 INCHES MAXIMUM ABOVE FLOOR.
50. THE PROCESS FLOW DIAGRAMS ARE DIAGRAMMATIC IN NATURE AND DO NOT PURPORT TO SHOW ALL PIPING, VALVES, AND APPURTENANCES REQUIRED TO CONSTRUCT A COMPLETE SYSTEM.

SEQUENCE OF WORK

1. CONTRACTOR'S BID SHALL BE BASED UPON THE SHUTDOWN AND STARTUP PROCEDURES LISTED BELOW FOR WELLS 2, 3, AND 4. CONTRACTOR SHALL NOT BE ENTITLED TO ADDITIONAL COMPENSATION OR TIME EXTENSION TO ADHERE TO THE SHUTDOWNS OR WORK SEQUENCE AS DETAILED.
2. CONTRACTOR SHALL PROVIDE A DETAILED CONSTRUCTION SCHEDULE IN ACCORDANCE WITH 01311 PRIOR TO ANY WORK. CONTRACTOR SHALL PROVIDE A SEPARATE WELL 4 SHUTDOWN AND TIE-IN CONSTRUCTION SCHEDULE IN ACCORDANCE WITH DIVISION 1 REQUIREMENTS PRIOR TO ANY PHASE 3 WORK - NO EXCEPTIONS.
3. WELLS 3 AND 4 CANNOT BE TAKEN OFFLINE BETWEEN JUNE 1 AND OCTOBER 1 - NO EXCEPTIONS. WELL 2 SHALL BE AVAILABLE FOR CONTRACTOR USE FOR THE DURATION OF CONSTRUCTION.
4. WELL 4 SHALL REMAIN IN SERVICE YEAR-ROUND, UNINTERRUPTED BY THE CONTRACTOR'S ACTIVITIES, UNTIL THE WATER TREATMENT PLANT RECEIVES MADEP APPROVAL TO OPERATE AND AS OTHERWISE SPECIFIED.
    A. TO ALLOW WELL 4 TO REMAIN IN SERVICE, THE OWNER'S OPERATION OF WELL 4 INCLUDES, BUT IS NOT LIMITED TO, ROUTINE DAILY VISITS; EMERGENCY VISITS; PERIODIC CHEMICAL DELIVERIES; OPERATION OF THE WELL BUILDING, BOOSTER PUMP SHED, BAG FILTER SHED, ION EXCHANGE RESIN TRAILER, AND ASSOCIATED PIPING; USE OF THE SODIUM HYDROXIDE STORAGE BUILDING; OPERATION OF THE WELL PUMP, SCADA SYSTEM, INSTRUMENTATION, VALVES, CHEMICAL ADDITION EQUIPMENT, AND STANDBY GENERATORS; ROUTINE AND EMERGENCY MAINTENANCE; ANNUAL ION EXCHANGE RESIN REMOVAL AND REPLACEMENT; AND ALL OTHER ACTIVITIES REQUIRED TO NORMALLY OPERATE A GROUNDWATER PUBLIC WATER SUPPLY FACILITY.
5. PHASE 1: CONTRACTOR SHALL COMPLETE TO THE MAXIMUM EXTENT PRACTICAL, ALL WORK NOT REQUIRING A SHUTDOWN OF WELLS 3 AND 4. CONTRACTOR SHALL COMPLETE WELL 2 UPGRADES.
    A. THE CONTRACTOR SHALL PROVIDE TEMPORARY HEAT TO THE EXISTING WELL 4 BUILDINGS TO MAINTAIN THE SPACE AT 55°F DURING DEMOLITION AND TRANSFER OF THE GAS SERVICE, AS REQUIRED.
6. PHASE 2: THE OWNER SHALL SHUTDOWN WELLS 2 AND 3 AS DESCRIBED IN NOTE 3 AND UPON APPROVAL OF ENGINEER/OWNER. THE CONTRACTOR SHALL COMPLETE ALL WORK TO TIE WELLS 2 AND 3 INTO THE WATER TREATMENT PLANT; THE CONTRACTOR SHALL COORDINATE ITS WORK WITH THE WATER MAIN WORK ON TREE LANE TO BE COMPLETED BY OTHERS (REFER TO SHEET C-6). THE CONTRACTOR SHALL START UP AND TEST THE WATER TREATMENT PLANT WITH WELLS 2 AND 3. THE WATER TREATMENT PLANT SHALL RECEIVE MADEP APPROVAL TO OPERATE. REFER TO SECTION 01650 FOR PHASE 2 STARTUP AND TESTING REQUIREMENTS.
7. PHASE 3: THE OWNER SHALL SHUTDOWN WELL 4 AS DESCRIBED IN NOTE 3 AND UPON APPROVAL BY ENGINEER/OWNER. THE CONTRACTOR SHALL COMPLETE ALL MODIFICATION WORK REQUIRING A SHUTDOWN OF WELL 4 TO TIE WELL 4 INTO THE WATER TREATMENT PLANT. THE CONTRACTOR SHALL STARTUP AND TEST WELL 4 EQUIPMENT WITH RAW WATER AND ISOLATED FROM THE WTP. WELL 4 RAW WATER SHALL RUN INTO THE WTP ONLY AFTER APPROVAL FROM THE ENGINEER/OWNER. THE INTENT OF PHASE 3 IS TO MINIMIZE THE DURATION OF THE WELL 4 SHUTDOWN. REFER TO SECTION 01650 FOR PHASE 3 STARTUP AND TESTING REQUIREMENTS.
8. PHASE 4: FOLLOWING ACTIVATION OF WELL 4 INTO THE WTP AND FOLLOWING APPROVAL FROM THE ENGINEER/OWNER, THE CONTRACTOR SHALL COMPLETE THE REMAINDER OF THE WORK. WELL 4 SHALL REMAIN IN SERVICE AS A RAW WATER SUPPLY FOR THE WTP FOR THE DURATION OF PHASE 4.
9. THE PROPOSED WORK SHALL PROCEED SEQUENTIALLY, EACH PHASE SHALL BEGIN UPON COMPLETION OF THE PREVIOUS PHASE AND WITH ENGINEER/OWNER APPROVAL.



NOTES:

1. ALL CHEMICAL DOSES AS DRY PRODUCT.
2. REFER TO SHEETS M-1, I-1, AND I-2 FOR SYMBOL LEGENDS AND ABBREVIATION DEFINITIONS.
3. NOT ALL PROCESS INSTRUMENTATION SHOWN FOR CLARITY.

FLOW DESCRIPTION	FLOW (GPM)	NUMBER OF UNITS IN SERVICE (FORWARD FLOW)
NORMAL OPERATIONS (24 HOUR DAY)	1,195	1 - WELL 2 PUMP 1 - WELL 3 PUMP 1 - WELL 4 PUMP 3 - FE/MN REMOVAL FILTERS 3 - BAG FILTERS 3 - PFAS REMOVAL TRAINS 1 - PRE-FILTRATION NaOCl METERING PUMP 1 - KOH METERING PUMP 1 - NaHSO3 METERING MUMP 1 - POST-FILTRATION NaOCl METERING PUMP 1 - NaF METERING PUMP 2 - FINISHED WATER PUMPS 1 - RECYCLE PUMP
MAXIMUM (24 HOUR DAY)	1,285	

ENVIRONMENTAL PARTNERS — An Apex Company —

COMMONWEALTH OF MASSACHUSETTS — ALSTON W. BOTTS — CIVIL — NO. 56074 — REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

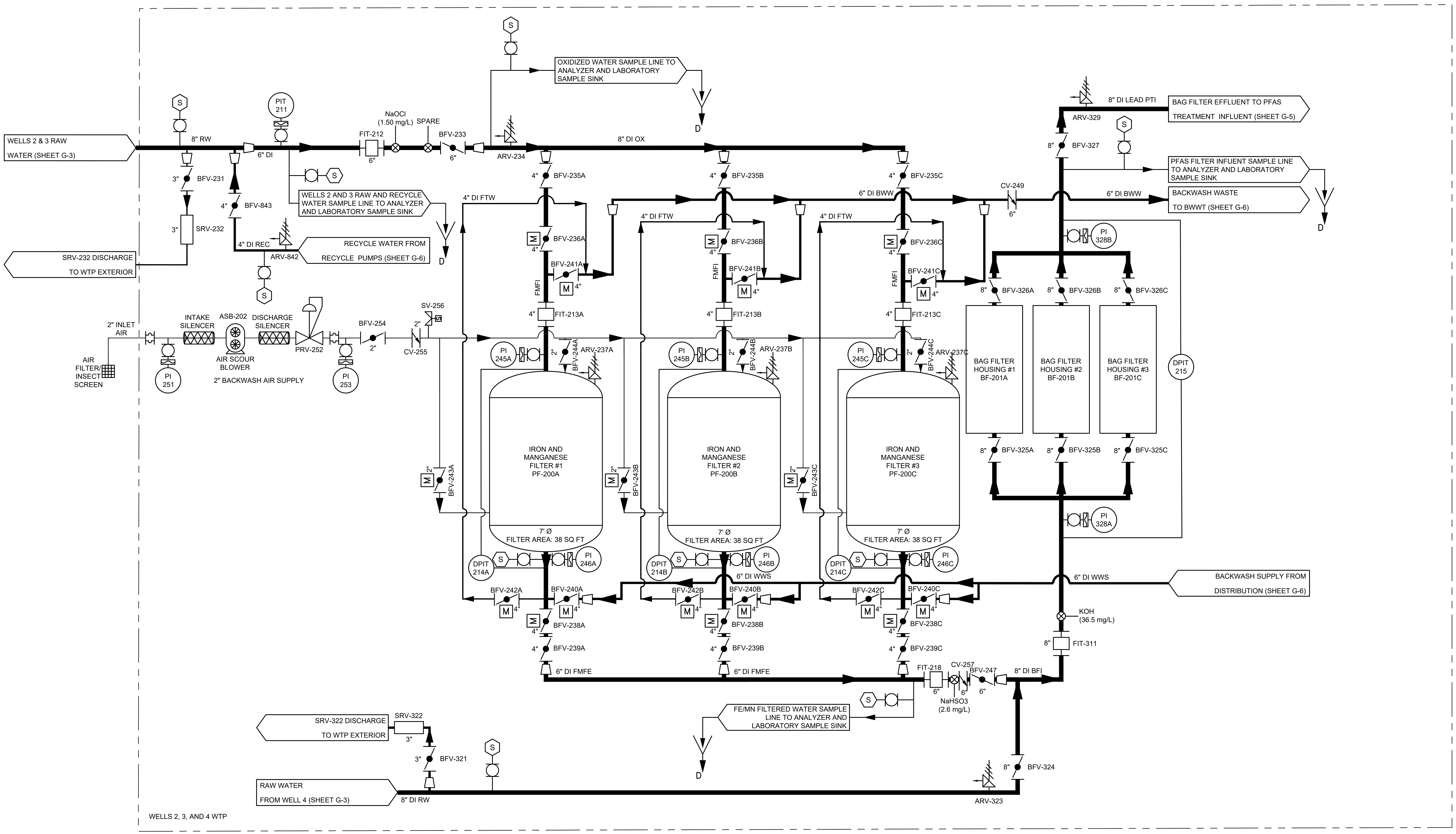
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS FLOW DIAGRAM I

FOR CONSTRUCTION

Sheet No. G-3

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\01 General Sheets.dwg Plot Date: Apr 11,2024-4:22pm



NOTES:

1. ALL CHEMICAL DOSES AS DRY PRODUCT.
2. REFER TO SHEETS M-1, I-1, AND I-2 FOR SYMBOL LEGENDS AND ABBREVIATION DEFINITIONS.
3. NOT ALL PROCESS INSTRUMENTATION SHOWN FOR CLARITY.

FLOW DESCRIPTION	FLOW (GPM)	NUMBER OF UNITS IN SERVICE (FORWARD FLOW)
NORMAL OPERATIONS (24 HOUR DAY)	1,195	1 - WELL 2 PUMP 1 - WELL 3 PUMP 1 - WELL 4 PUMP 3 - FE/MN REMOVAL FILTERS 3 - BAG FILTERS 3 - PFAS REMOVAL TRAINS 1 - PRE-FILTRATION NaOCl METERING PUMP 1 - KOH METERING PUMP 1 - NaHSO3 METERING MUMP 1 - POST-FILTRATION NaOCl METERING PUMP 1 - NaF METERING PUMP 2 - FINISHED WATER PUMPS 1 - RECYCLE PUMP
MAXIMUM (24 HOUR DAY)	1,285	

ENVIRONMENTAL PARTNERS
— An Apex Company —

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

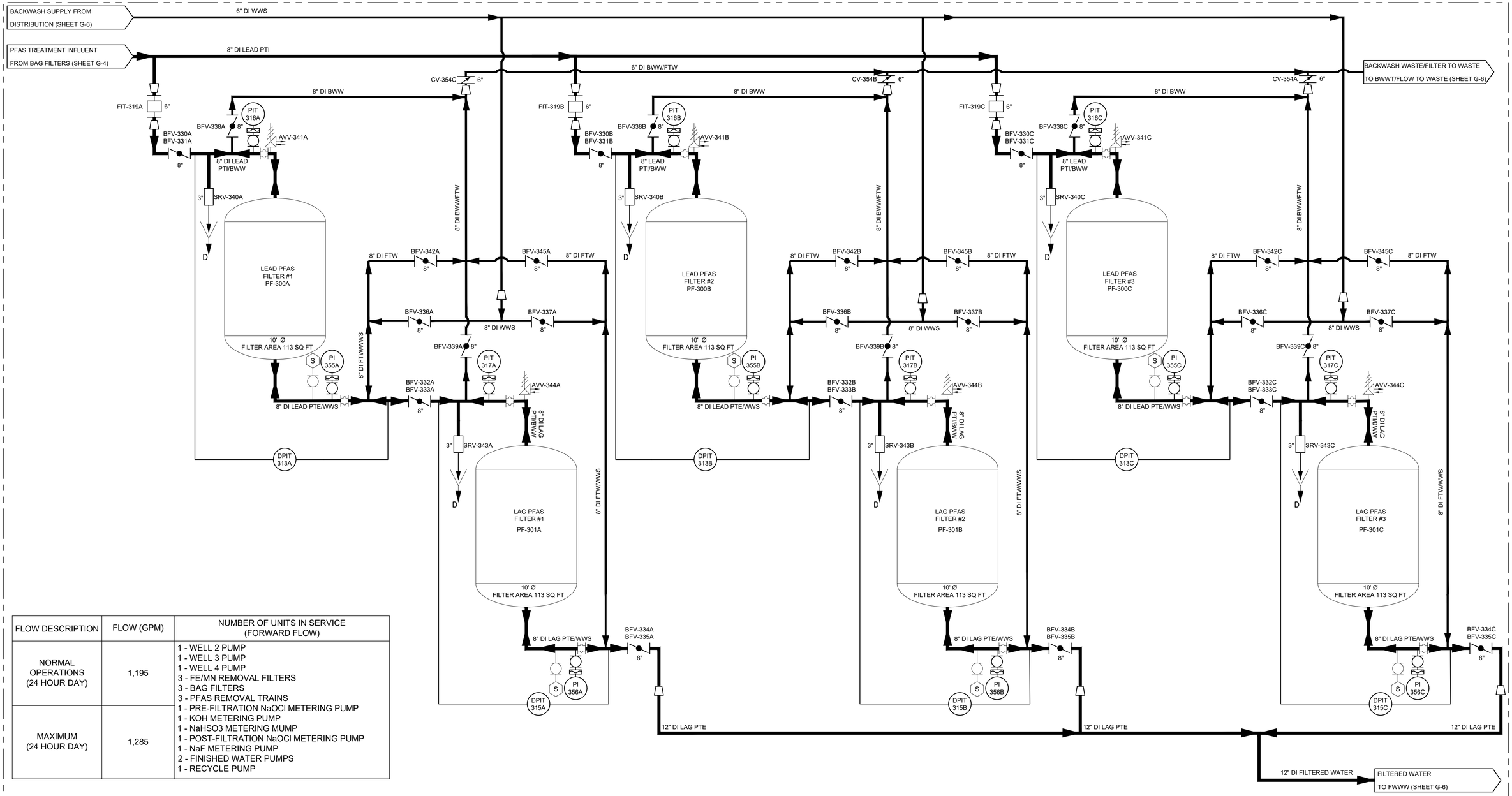
PROCESS FLOW DIAGRAM II

FOR CONSTRUCTION

Sheet No.

G-4

Drawing file: I:\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\01 General Sheets.dwg Plot Date: Apr 11,2024-2:14pm



FLOW DESCRIPTION	FLOW (GPM)	NUMBER OF UNITS IN SERVICE (FORWARD FLOW)
NORMAL OPERATIONS (24 HOUR DAY)	1,195	1 - WELL 2 PUMP 1 - WELL 3 PUMP 1 - WELL 4 PUMP 3 - FE/MN REMOVAL FILTERS 3 - BAG FILTERS 3 - PFAS REMOVAL TRAINS 1 - PRE-FILTRATION NaOCl METERING PUMP 1 - KOH METERING PUMP 1 - NaHSO3 METERING MUMP 1 - POST-FILTRATION NaOCl METERING PUMP 1 - NaF METERING PUMP 2 - FINISHED WATER PUMPS 1 - RECYCLE PUMP
MAXIMUM (24 HOUR DAY)	1,285	

WELLS 2, 3, AND 4 WTP

NOTES:

1. ALL CHEMICAL DOSES AS DRY PRODUCT.
2. REFER TO SHEETS M-1, I-1, AND I-2 FOR SYMBOL LEGENDS AND ABBREVIATION DEFINITIONS.
3. NOT ALL PROCESS INSTRUMENTATION SHOWN FOR CLARITY.

ENVIRONMENTAL PARTNERS — An Apex Company —

ALSTON W. SCOTT CIVIL NO. 56074 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

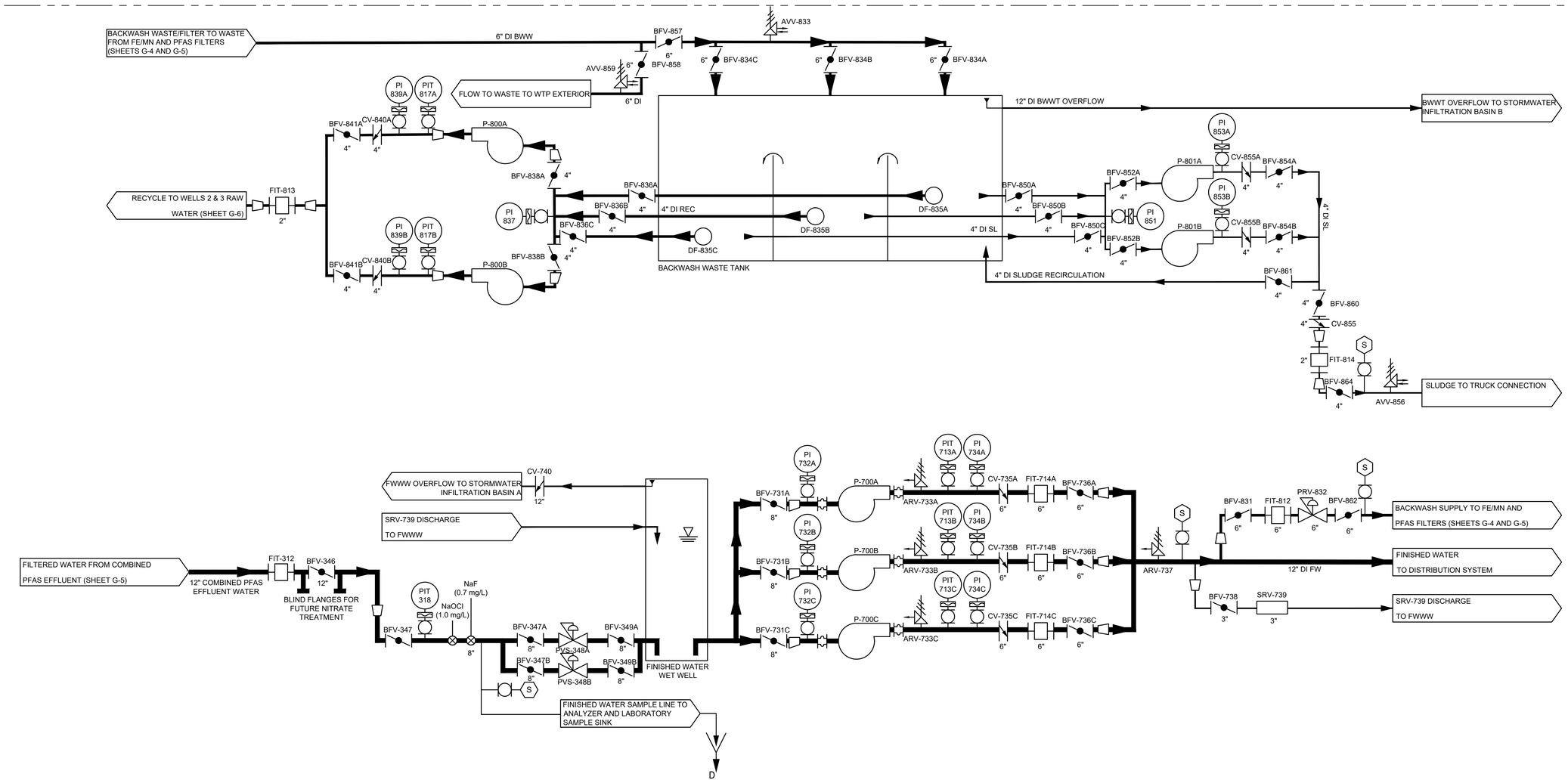
PROCESS FLOW DIAGRAM III

FOR CONSTRUCTION

Sheet No.

G-5

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\01 General\Sheets.dwg Plot Date: Apr 10,2024-3:21pm



FLOW DESCRIPTION	FLOW (GPM)	NUMBER OF UNITS IN SERVICE (FORWARD FLOW)
NORMAL OPERATIONS (24 HOUR DAY)	1,195	1 - WELL 2 PUMP 1 - WELL 3 PUMP 1 - WELL 4 PUMP 3 - FE/MN REMOVAL FILTERS 3 - BAG FILTERS 3 - PFAS REMOVAL TRAINS 1 - PRE-FILTRATION NaOCl METERING PUMP 1 - KOH METERING PUMP 1 - NaHSO3 METERING MUMP 1 - POST-FILTRATION NaOCl METERING PUMP 1 - NaF METERING PUMP 2 - FINISHED WATER PUMPS 1 - RECYCLE PUMP
MAXIMUM (24 HOUR DAY)	1,285	

NOTES:

1. ALL CHEMICAL DOSES AS DRY PRODUCT.
2. REFER TO SHEETS M-1, I-1, AND I-2 FOR SYMBOL LEGENDS AND ABBREVIATION DEFINITIONS.
3. NOT ALL PROCESS INSTRUMENTATION SHOWN FOR CLARITY.

ENVIRONMENTAL PARTNERS
— An Apex Company —

ALSTON W. GOFF NO. 56074 REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS FLOW DIAGRAM IV

FOR CONSTRUCTION

Sheet No.

G-6

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\01 General Sheets.dwg Plot Date: Apr 11,2024-2:17pm

LABEL LEGEND

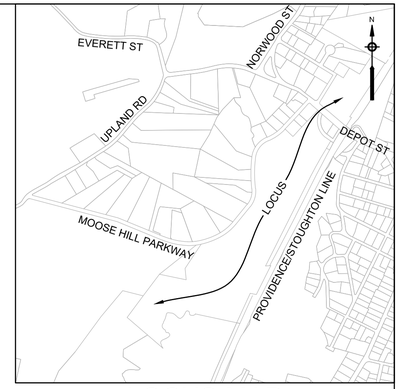
HYD	HYDRANT
UP	UTILITY POLE
DMH	DRAIN MANHOLE
CB	CATCH BASIN
CB/LP	CONCRETE BOUND W/ LEAD PLUG
SB/DH	STONE BOUND W/ DRILL HOLE
IP	IRON PIPE
VGC	VERTICAL GRANITE CURB
RET WALL	RETAINING WALL

LINETYPE LEGEND

- FZ FZ FZ — FLOOD ZONE
- WL WL WL — WETLAND LINE
- 210 — MAJOR CONTOUR
- 209 — MINOR CONTOUR
- TREELINE
- W W W — WATER LINE
- D D D — DRAIN LINE
- G G G — GAS LINE
- OHW OHW OHW — OVERHEAD WIRES
- RETAINING WALL

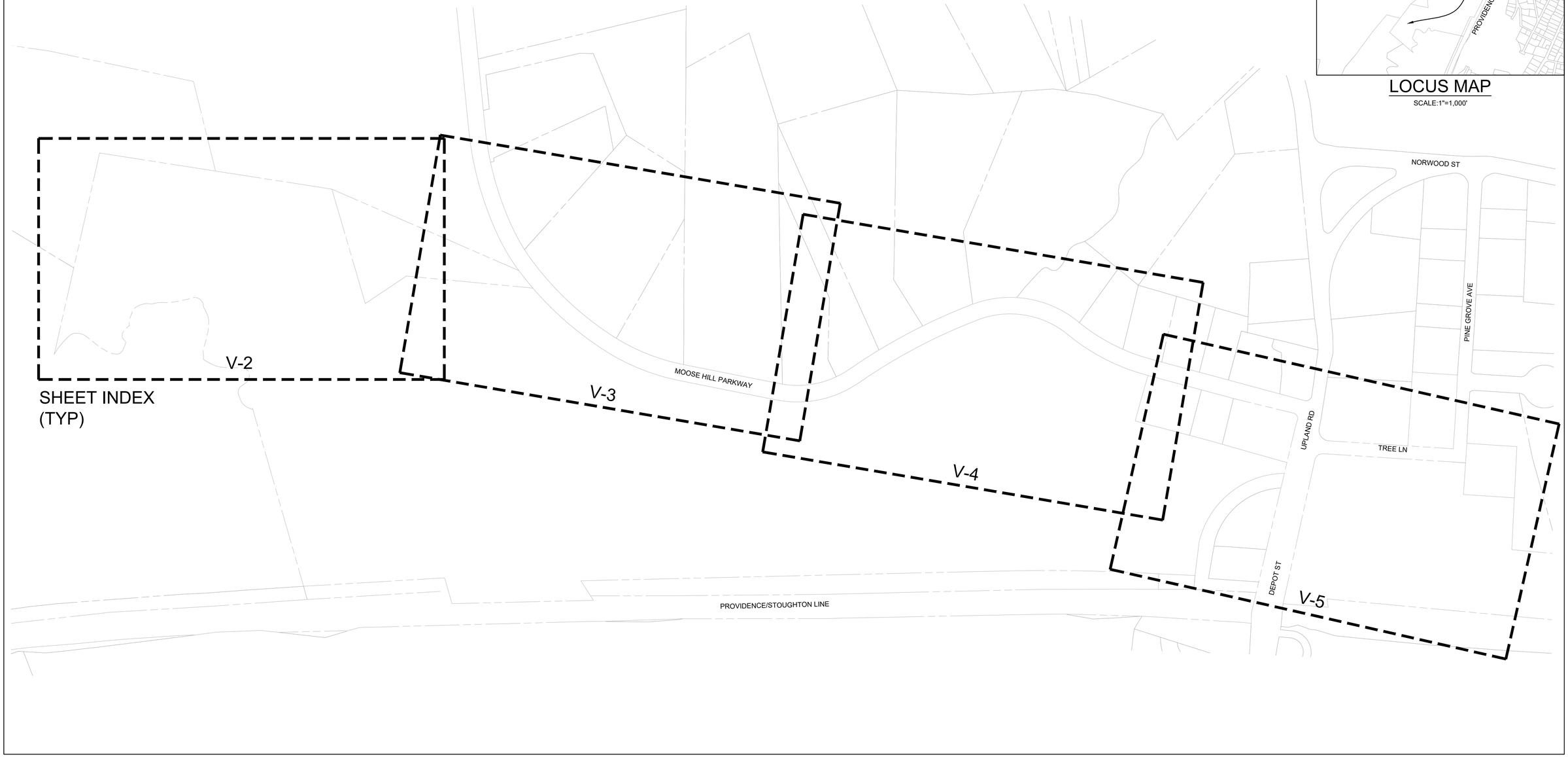
NOTES

1. EXISTING TOPOGRAPHY AND SITE CONDITIONS SHOWN ON THIS PLAN SET WERE TAKEN FROM LIDAR MAPPING PERFORMED BY EASTERN TOPOGRAPHICS AND SUPPLEMENTED BY INSTRUMENT SURVEY PERFORMED BY ZENITH LAND SURVEYORS BETWEEN APRIL 2022 AND AUGUST 2023.
   - 1.1. MASS GIS INFORMATION WAS USED TO SHOW THE ZONE I & II BOUNDARIES AS WELL AS THE FLOOD ZONE A BOUNDARY.
   - 1.2. FLOOD ZONE INFORMATION TAKEN FROM FLOOD INSURANCE RATE MAP (FIRM) NUMBERS 25021C0189E, 25021C0193E, 25021C0352E AND 25021C0356E, ALL REVISED JULY 17, 2012.
   - 1.3. WATER MAIN INFORMATION TAKEN FROM DIGSAFE MARKINGS AND TIE CARD PROVIDED BY THE TOWN.
   - 1.4. PLAN DATUM: HORIZONTAL - NAD83, VERTICAL - NAVD88
   - 1.5. ALL UNDERGROUND UTILITIES SHOULD BE CONSIDERED APPROXIMATE.
2. ALL PROPERTY LINES SHOWN ON THIS PLAN SET SHOULD BE CONSIDERED APPROXIMATE AND ARE NOT TO BE USED FOR BOUNDARY DETERMINATION ON THE GROUND.
   - 2.1. RIGHT OF WAY PROPERTY LINE INFORMATION WITHIN THE LIMIT OF SURVEY TAKEN FROM PLANS ON FILE AT THE NORFOLK COUNTY REGISTRY OF DEEDS.
   - 2.2. PROPERTY LINES SHOWN ON SHEET V5 FOR TREE LAND AND THE BEGINNING OF PINE GROVE AVENUE ARE TAKEN FROM A PLAN BY ZENITH LAND SURVEYORS, LLC DATED AUGUST 28, 2023 AND RECORDED AT THE NORFOLK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 724 PAGE 1.
   - 2.3. MASS GIS INFORMATION WAS USED TO SUPPLEMENT PROPERTY LINE INFORMATION ALONG MOOSE HILL PARKWAY AND UPLAND ROAD.



LOCUS MAP

SCALE:1"=1,000'



ENVIRONMENTAL PARTNERS
— An Apex Company —

ZLS
ZENITH LAND SURVEYORS, LLC
1162 ROCKDALE AVENUE
NEW BEDFORD, MA 02740
(508) 995-0100

10-13-23
COMMONWEALTH OF MASSACHUSETTS
WILLIAM JOSEPH McGOVERN
39692
PROFESSIONAL LAND SURVEYOR

MARK	DATE	DESCRIPTION

Scale	1" = 150'
Date	10-12-23
Job No.	245-2103
Designed by	N/A
Drawn by	TEM
Checked by	JR
Approved by	JR

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2 AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

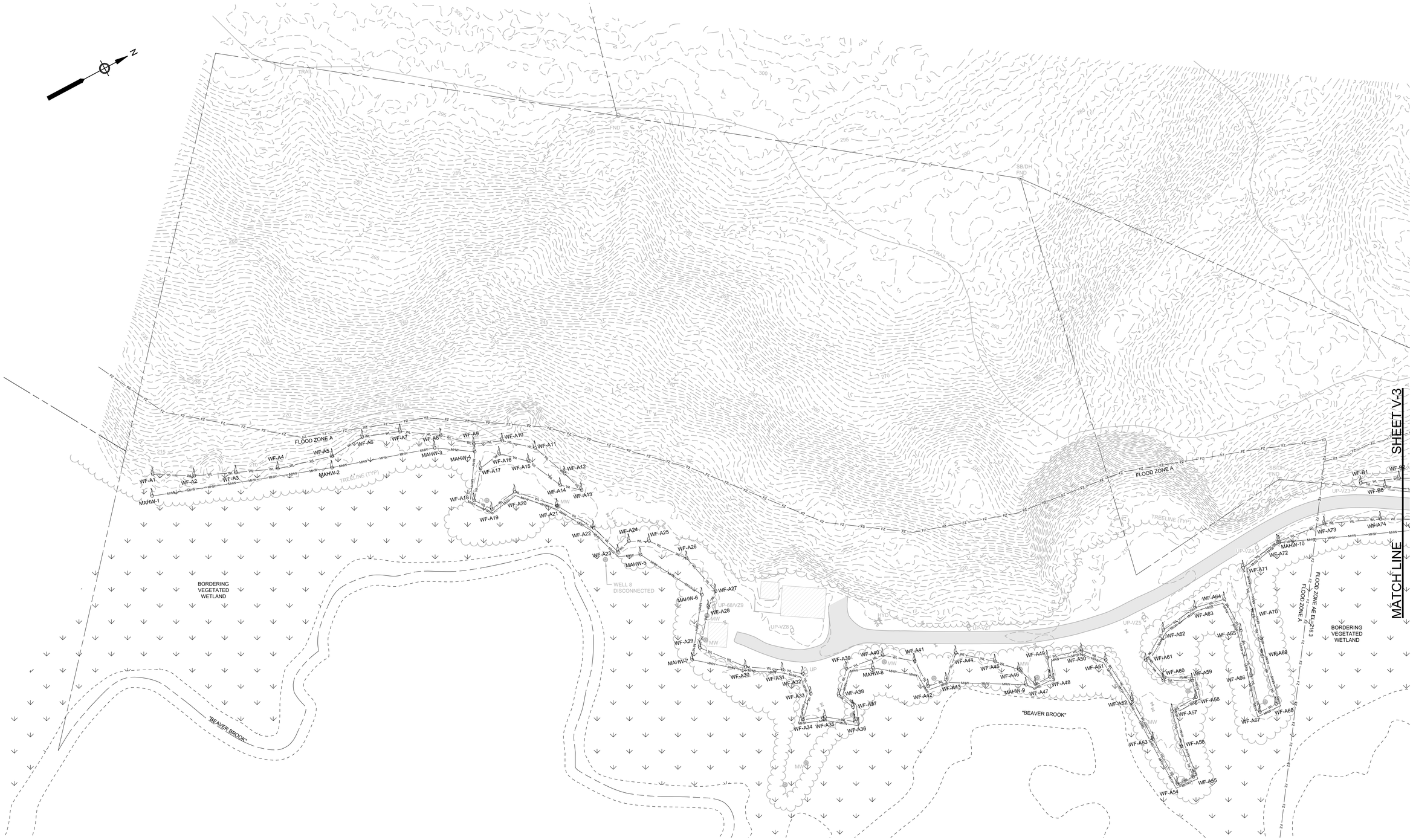
EXISTING CONDITIONS
LOCUS/KEY PLAN

SURVEY

Sheet No.

V-1

Drawing file: C:\Users\tmorris\AppData\Local\Temp\AcPublish_8821\Terry Signature - Moose Hill Parkway - Sharon.dwg Plot Date: Oct 13,2023-8:24am



			Scale	1" = 40'
			Date	10-12-23
			Job No.	245-2103
			Designed by	N/A
			Drawn by	TEM
			Checked by	JR
MARK	DATE	DESCRIPTION	Approved by	JR

ENVIRONMENTAL PARTNERS — An Apex Company —

ZLS ZENITH LAND SURVEYORS, LLC
1162 ROCKDALE AVENUE
NEW BEDFORD, MA 02740
(508) 995-0100

10-12-23
COMMONWEALTH OF MASSACHUSETTS
WILLIAM JOSEPH McGOVERN
39692
PROFESSIONAL LAND SURVEYOR

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WELLS 2 AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

EXISTING CONDITIONS

SURVEY

Sheet No.

V-2

Drawing file: C:\Users\tmorris\AppData\Local\Temp\AcPublish_892\Terry Signature - Moose Hill Parkway - Sharon.dwg Plot Date: Oct 13,2023-8:24am

ENVIRONMENTAL PARTNERS — An Apex Company —	10-12-23 WILLIAM JOSEPH McGOVERN 39692 COMMONWEALTH OF MASSACHUSETTS PROFESSIONAL LAND SURVEYOR		Scale	1" = 40'
ZLS ZENITH LAND SURVEYORS, LLC 1162 ROCKDALE AVENUE NEW BEDFORD, MA 02740 (508) 995-0100			Date	10-12-23
			Job No.	245-2103
			Designed by	N/A
			Drawn by	TEM
			Checked by	JR
	MARK	DATE DESCRIPTION	Approved by	JR

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2 AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

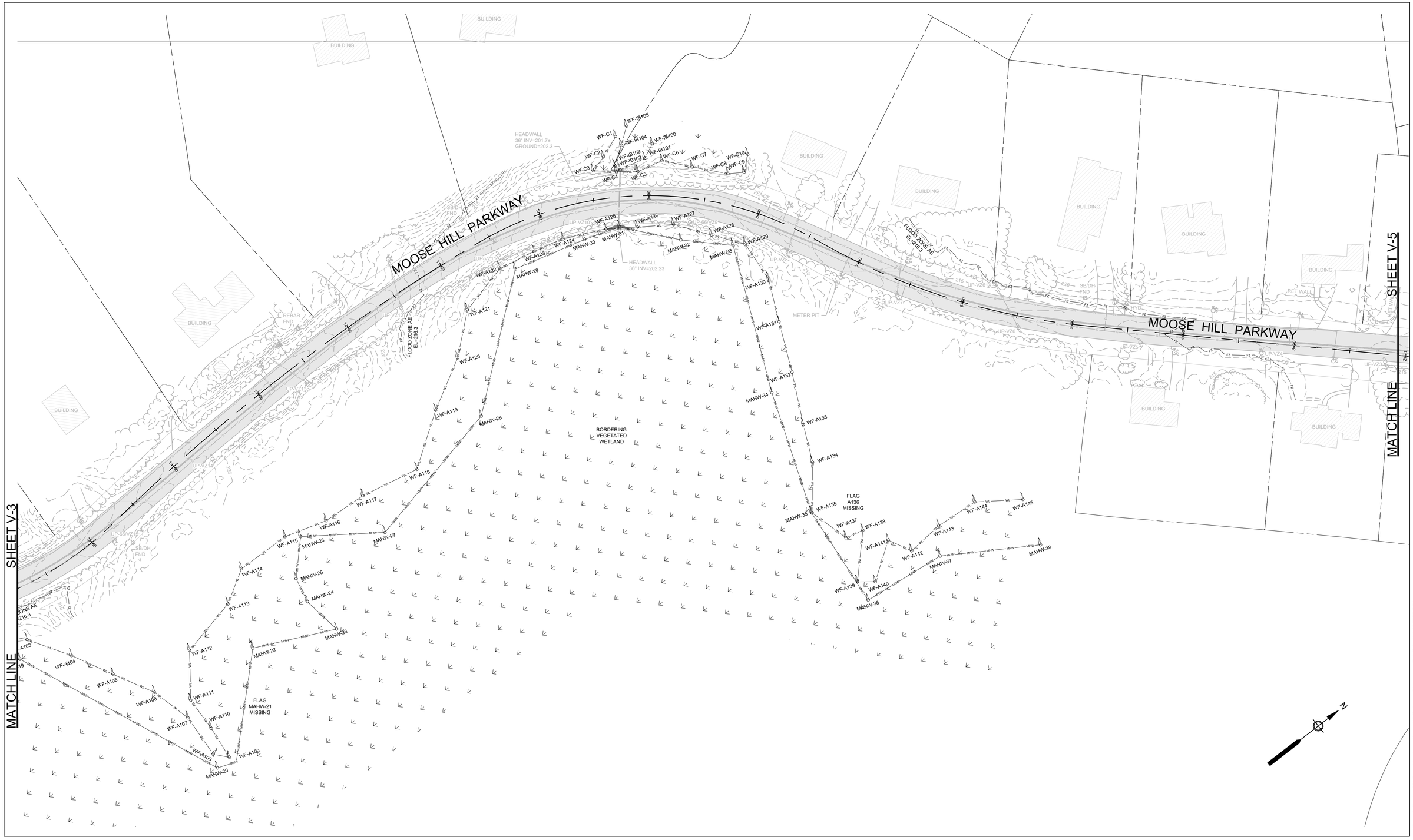
EXISTING CONDITIONS

SURVEY

Sheet No.

V-3

Drawing file: C:\Users\tmorris\AppData\Local\Temp\AcPublish_992\Terry Signature - Moose Hill Parkway - Sharon.dwg Plot Date: Oct 13,2023-8:24am



2nd PRECINCT 1740 · SHARON · 1765

ENVIRONMENTAL PARTNERS
— An Apex Company —

ZLS ZENITH LAND SURVEYORS, LLC
1162 ROCKDALE AVENUE
NEW BEDFORD, MA 02740
(508) 995-0100

10-12-23
WILLIAM JOSEPH McGOVERN 39692

MARK	DATE	DESCRIPTION

Scale	1" = 40'
Date	10-12-23
Job No.	245-2103
Designed by	N/A
Drawn by	TEM
Checked by	JR
Approved by	JR

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2 AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

EXISTING CONDITIONS

SURVEY

Sheet No.

V-4

Drawing file: C:\Users\tmorris\AppData\Local\Temp\AcPublish_892\Terry Signature - Moose Hill Parkway - Sharon.dwg Plot Date: Oct 13,2023-8:24am

Scale	1" = 40'
Date	10-12-23
Job No.	245-2103
Designed by	N/A
Drawn by	TEM
Checked by	JR
Approved by	JR

MARK | DATE | DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2 AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

EXISTING CONDITIONS

SURVEY

Sheet No.

V-5

ENVIRONMENTAL PARTNERS
— An Apex Company —

ZLS ZENITH LAND SURVEYORS, LLC
1162 ROCKDALE AVENUE
NEW BEDFORD, MA 02740
(508) 995-0100

10-13-23
COMMONWEALTH OF MASSACHUSETTS
WILLIAM JOSEPH McGOVERN
39692
PROFESSIONAL LAND SURVEYOR

GENERAL NOTES

1. BASEMAP INFORMATION FROM A SURVEY PERFORMED BY ZENITH LAND SURVEYORS, LLC BETWEEN APRIL 2022 AND AUGUST 2023 AND SUPPLEMENTED BY RECORD INFORMATION PROVIDED BY THE TOWN OF SHARON DEPARTMENT OF PUBLIC WORKS WATER DIVISION. THE BASIS OF BEARING FOR ALL SURVEYS IS AN APPROXIMATED NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND THE HORIZONTAL DATUM USED IS THE NORTH AMERICAN DATUM OF 1983 (NAD83).
2. EXISTING GAS, ELECTRIC, TELEPHONE, AND CABLE/TELEVISION UTILITY INFORMATION SHOWN ON ALL SHEETS IS TAKEN FROM RECORD INFORMATION SUPPLIED BY THE UTILITY PROVIDER. IT IS NOTED THAT ADDITIONAL UTILITY PIPES, WIRES, AND STRUCTURES MAY EXIST.
3. WETLAND RESOURCE AREA DELINEATION FLAGGED BY ENVIRONMENTAL CONSULTING & RESTORATION, LLC ON APRIL 27, 2022 AND FIELD LOCATED BY ZENITH LAND SURVEYORS, LLC AS PART OF THE SITE SURVEY.
4. BASEMAP INFORMATION FOR WELL STATION 3, SHOWN ON SHEET C-2, IS FROM MASSGIS, LIDAR, AND RECORD INFORMATION. NO FIELD SURVEY WAS PERFORMED AT THIS LOCATION.
5. THE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO DESCRIBE THE WORK TO BE COMPLETED, AND INDICATE THE GENERAL LOCATION OF MATERIALS AND EQUIPMENT, BUT DO NOT PURPORT TO COVER ALL DETAILS NEEDED FOR A COMPLETE SYSTEM. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DETAILS THAT MAY BE NECESSARY TO PROPERLY INSTALL, ADJUST AND PLACE INTO OPERATION THE INSTALLATION INCLUDING ALL COORDINATION WITH SUBCONTRACTORS, FILED SUB-BIDDERS, AND EQUIPMENT SUPPLIERS. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR PROVIDING A FULLY FUNCTIONAL SYSTEM.
6. CONSTRUCTION STAKING CONTROL: THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCHMARKS NECESSARY TO PERFORM THE WORK.
7. THE GENERAL CONTRACTOR SHALL NOT STORE ANY APPARATUS, MATERIALS, SUPPLIES, OR EQUIPMENT ON DRAINAGE STRUCTURES, PRIVATE PROPERTY OR WITHIN 100 FEET OF WETLANDS, UNLESS DIRECTED TO DO SO BY THE CONTRACT DOCUMENTS. WORK WITHIN THE 100-FOOT WETLAND BUFFER ZONE AND RIVERFRONT AREA SHALL BE LIMITED TO THE EXTENTS SHOWN ON THESE PLANS.
8. NORTH DIRECTION SHOWN IS APPROXIMATE.
9. ALL EXISTING UTILITY SHOWN ARE APPROXIMATE, THE GENERAL CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES. GENERAL CONTRACTOR SHALL NOTIFY DIG SAFE AT LEAST 72 HOURS IN ADVANCE, EXCLUDING WEEKENDS AND HOLIDAYS, PRIOR TO ANY EXCAVATION.
10. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPORT OF ALL UTILITIES AND STRUCTURES DURING CONSTRUCTION.
11. ALL EXISTING UTILITY LINES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE, UNLESS OTHERWISE NOTED. THE GENERAL CONTRACTOR, AT NO ADDITIONAL COST TO THE OWNER, SHALL REPAIR ANY EXISTING SEWERS, STORM DRAIN LINES, CULVERTS, OR OTHER UNDERGROUND UTILITIES DAMAGED DURING CONSTRUCTION.
12. "ABANDON" AND "REMOVE" SHALL MEAN TO REMOVE AND DISPOSE OF. "ABANDON-IN-PLACE" AND SHALL MEAN TO CUT, CAP, AND LEAVE IN PLACE.
13. ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO THE TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE GENERAL CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. INJURY TO ANY SUCH STRUCTURE CAUSED BY, OR RESULTING FROM, THE GENERAL CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE RESPECTIVE UTILITY AND THE TOWN. OPEN TRENCHES MUST BE BACK FILLED AT THE END OF THE WORKDAY OR COVERED WITH STEEL PLATES. NO EXCEPTIONS SHALL BE PERMITTED.
14. GENERAL CONTRACTOR SHALL REMOVE AND REPLACE, OR REPAIR, ALL CURBS, SIDE WALKS, PAVEMENT AND OTHER ITEMS DAMAGED BY CONSTRUCTION ACTIVITIES TO AT LEAST THEIR ORIGINAL CONDITION, AND TO THE SATISFACTION OF THE OWNER AND ENGINEER.
15. IF ENCOUNTERED, GENERAL CONTRACTOR SHALL HANDLE, STORE, REMOVE, TRANSPORT AND LEGALLY DISPOSE OF ANY ASBESTOS-CEMENT PIPE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS. ASBESTOS NOTIFICATION FORMS SHALL BE COMPLETED AND SUBMITTED TO THE APPROPRIATE AGENCY/AGENCIES.
16. THE GENERAL CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR WORK IN ROADWAYS (INCLUDING, BUT NOT LIMITED TO STREET OPENING PERMIT AND TRENCH PERMIT) AND FOR BLASTING. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONFORMING TO ALL PERMITS AS AN INTEGRAL PART OF THEIR WORK.
17. THE GENERAL CONTRACTOR SHALL HANDLE GROUNDWATER, WHERE ENCOUNTERED, IN AN APPROVED MANNER. DURING ANY DEWATERING, THE GENERAL CONTRACTOR SHALL USE STONE AROUND THE SUCTION END TO MINIMIZE DISCHARGE OF TRENCH MATERIALS. THE DISCHARGED WATER SHALL PASS THROUGH DEWATERING BAGS.
18. FINAL LOCATION OF EQUIPMENT AND CONNECTION POINTS SHALL BE APPROVED BY THE ENGINEER AND SHALL BE DETERMINED IN THE FIELD WITH THE GENERAL CONTRACTOR BEING RESPONSIBLE FOR DIMENSIONS THAT SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE.
19. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING ALL DISTURBED AREAS TO DRAIN.
20. ADEQUATE PROTECTION OF PERSONS AND PROPERTY SHALL BE PROVIDED AT ALL TIMES. THE WORK SHALL BE EXECUTED IN SUCH A WAY AS TO AVOID HAZARD TO PERSONS AND PROPERTY. WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF LOCAL, STATE AND FEDERAL REGULATIONS HAVING JURISDICTION OVER THE WORK.
21. THE GENERAL CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES OR HYDRANTS WHICH HOLD WATER IN THE SYSTEM. THE OWNER WILL, ON 24 HOURS NOTICE FROM THE CONTRACTOR, OPEN AND/OR CLOSE ANY VALVES OR HYDRANTS REQUIRED FOR DRAINING OR ADMITTING WATER TO THE VARIOUS SECTIONS OF THE WATER MAINS.
22. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE TOWN OF SHARON CONSERVATION COMMISSION ORDER OF CONDITIONS AND ANY PLANNING BOARD AND/OR ZONING BOARD APPROVALS.
23. THE GENERAL CONTRACTOR SHALL OBTAIN A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT AND SUBMIT A CONSTRUCTION PERIOD STORMWATER POLLUTION PREVENTION PLAN (SWPPP). REFER TO DRAFT SWPPP INCLUDED IN THE APPENDICES OF THE PROJECT SPECIFICATIONS.

GROUNDWATER AND SOIL OBSERVATIONS

1. BORINGS WERE CONDUCTED IN DECEMBER 2022 AND FEBRUARY 2023 BY NORTHERN DRILLING SERVICES AND OBSERVED BY EP. BORING LOCATIONS AND ELEVATIONS WERE COLLECTED USING A HAND-HELD GPS UNIT BY EP.
2. EXISTING SOILS ON THE SITE HAVE BEEN CLASSIFIED AS A MIX OF COARSE AND FINE SEDIMENT. THE COARSE SEDIMENT WAS CHARACTERIZED AS BROWN POORLY GRADED SAND OR GRAVEL, AND THE FINE SEDIMENT WAS CHARACTERIZED AS LIGHT BROWN SILT/SANDY SILT. BORING LOGS AND THE GEOTECHNICAL REPORT ARE INCLUDED IN THE APPENDICES OF THE PROJECT SPECIFICATIONS.
3. GROUNDWATER WAS OBSERVED IN THE B-2 MONITORING WELL FROM APRIL 18, 2023 THROUGH APRIL 26, 2023 USING A PRESSURE TRANSDUCER; GROUNDWATER ELEVATIONS RANGED FROM 197.9 TO 197.5 FEET. GROUNDWATER ELEVATIONS MAY VARY.

CONSERVATION NOTES

1. ALL SEDIMENTATION BARRIERS SHALL BE MAINTAINED IN GOOD REPAIR UNTIL ALL DISTURBED AREAS HAVE BEEN FULLY STABILIZED AS APPROVED BY THE ENGINEER/OWNER. THE GENERAL CONTRACTOR SHALL INSPECT EROSION CONTROLS ON A DAILY BASIS AND REMOVE ACCUMULATED SEDIMENTS AS NEEDED. THE ENGINEER/OWNER RESERVES THE RIGHT TO REQUIRE ADDITIONAL EROSION CONTROLS AND/OR DAMAGE PREVENTION CONTROLS AT NO ADDITIONAL COST TO THE OWNER.
2. A MASSDEP SIGN NOT LESS THAN TWO SQUARE FEET OR MORE THAN THREE SQUARE FEET IN SIZE SHALL BE POSTED AT THE ENTRANCE OF THE SITES (WATER TREATMENT PLANT AND WELL STATION 4; WELL STATION 2; WELL STATION 3; AND WELL STATION 1) IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. THE SIGN SHALL BEAR THE WORDS "MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION" [OR, "MASSDEP"] "FILE NUMBER: SE 280-0653". NO SITE WORK SHALL COMMENCE UNTIL THE FILE NUMBER SIGN IS DISPLAYED ON SITE.
3. THE CONTRACTOR SHALL FURNISH AND INSTALL SILT SACKS IN ALL CATCH BASINS ASSOCIATED WITH THE WORK AREA AND AS DIRECTED BY THE ENGINEER.
4. SILT SACKS AND OTHER EROSION AND SEDIMENT CONTROL MEASURES/DEVICES SHALL BE INSPECTED, CLEANED, REPLACED AND/OR REPAIRED AS NECESSARY, AND AFTER EACH SIGNIFICANT RAINFALL.
5. THE CONTRACTOR SHALL STOCKPILE SUFFICIENT SOIL EROSION AND SEDIMENT CONTROL MATERIALS ONSITE TO REPAIR ANY DAMAGED SOIL EROSION AND SEDIMENT CONTROLS.
6. THE CONSERVATION ADMINISTRATOR SHALL INSPECT ALL EROSION AND SEDIMENT CONTROLS PRIOR TO THE START OF ANY SITE WORK.
7. THE CONTRACTOR SHALL NOT DISCHARGE WATER FROM DEWATERING OPERATIONS DIRECTLY INTO A WETLAND, SURFACE WATER, OR ANY STORM SEWER.
8. GROUNDWATER FROM DEWATERING OPERATIONS SHALL BE TREATED TO REDUCE THE AMOUNT OF SEDIMENT CONTAINED IN THE WATER TO ALLOWABLE LEVELS.
9. ALL DEWATERING DISCHARGES SHALL ALSO INCLUDE ENERGY DISSIPATION TO PREVENT SCOURING.
10. PLANTINGS, AS SHOWN ON THE L-DRAWINGS, SHALL BE 80% SUCCESSFUL AT THE END OF 2 FULL GROWING SEASONS. THE GROWING SEASON SHALL BE DEFINED AS MAY 1ST THROUGH SEPTEMBER 30TH. THE FIRST FULL GROWING SEASON FOR PLANTS PUT IN AFTER MAY 1ST SHALL BE THE FOLLOWING YEAR.
11. REFER TO ORDER OF CONDITIONS IN APPENDIX F OF SPECIFICATIONS FOR REQUIREMENTS. CONTRACTOR IS REQUIRED TO COMPLY WITH ALL CONDITIONS.

TYPICAL ABBREVIATIONS

KEY	DESCRIPTION	KEY	DESCRIPTION	KEY	DESCRIPTION
AD	AREA DRAIN	INV. / I	INVERT	SMH	SEWER MANHOLE
APPROX.	APPROXIMATE	LF	LINEAR FOOT	STA.	STATION
ARCH.	ARCHITECTURAL	LOD	LIMIT OF DISTURBANCE	STM.	STORM
BC	BOTTOM CURB	LOW	LIMIT OF WORK	TBD	TO BE DETERMINED
BLDG.	BUILDING	LP	LOW POINT	TBR	TO BE REMOVED
BIT	BITUMINOUS	L.S.A.	LANDSCAPED AREA	TBR/R	TO BE REMOVED AND REPLACED
BM.	BENCHMARK	MAX.	MAXIMUM	TC	TOP CURB
BOT	BOTTOM	ME	MEET EXISTING	STM.	STORM
BW	BOTTOM OF WALL GRADE	MEP	MECHANICAL, ELECTRICAL, PLUMBING	TBD	TO BE DETERMINED
CB / CBN	CATCH BASIN	MIN.	MINIMUM	TBR	TO BE REMOVED
CLDI	CEMENT LINED DUCTILE IRON	No. / #	NUMBER	TBR/R	TO BE REMOVED AND REPLACED
CONC.	CONCRETE	NTS	NOT TO SCALE	TC	TOP CURB
DI	DUCTILE IRON	O.C.	ON CENTER	TPF	TREE PROTECTION FENCE
DMH	DRAIN MANHOLE	OCS	OUTLET CONTROL STRUCTURE	TR	TOP OF RAMP
ELEV. / EL	ELEVATION	O.D.	OUTSIDE DIAMETER	TW	TOP OF WALL
EOP	EDGE OF PAVEMENT	PERF.	PERFORATED	TYP.	TYPICAL
EXIST.	EXISTING	PROP.	PROPOSED	UGS	UNDERGROUND SYSTEM
FDC	FIRE DEPARTMENT CONNECTION	PVC	POLYVINYL CHLORIDE PIPE	UNG.	UNDERGROUND
FES	FLARED END STRUCTURE	R	RADIUS	VC	VITRIFIED CLAY
FFE	FINISHED FLOOR ELEVATION	RCP	REINFORCED CONCRETE PIPE	VGC	VERTICAL GRANITE CURB
FG	FINISHED GRADE	RDG	RIDGE LINE	V.I.F.	VERIFY IN FIELD
GC	GENERAL CONTRACTOR	RE	RIM ELEVATION	W.	WIDE
GSF	GROSS SQUARE FEET	RET	RETAINING	WF	WETLAND FLAG
GW	GROUNDWATER	R.O.W.	RIGHT OF WAY	WQU	WATER QUALITY UNIT
HDPE	HIGH DENSITY POLYETHYLENE PIPE	RR	RAILROAD	°	DEGREE
HMA	HOT MIX ASPHALT	S	SLOPE	Ø / DIA.	DIAMETER
HP	HIGH POINT	SAN.	SANITARY	±	PLUS OR MINUS
HT	HEIGHT	SF	SQUARE FEET		
HYD	HYDRANT	SGC	SLOPED GRANITE CURB		

LEGEND

EXISTING — DESCRIPTION

- 1' MINOR CONTOUR
- 5' MAJOR CONTOUR
- PROPERTY LINES
- LIMIT OF ZBA ABUTTERS (SIDE/FRONT YARD) BUFFER ZONE
- LIMIT OF WPA ZONE I
- LIMIT OF FLOOD ZONE (FZ)
- MEAN HIGH WATER (MHW)
- LIMIT OF WETLAND (WL)
- 100' RIVERFRONT AREA (100)
- 200' RIVERFRONT AREA (200)
- 100' WETLAND BUFFER (100)
- 75' WETLAND BUFFER (75)
- 50' NO DISTURB BUFFER (50)
- WETLAND
- EDGE OF PAVEMENT
- CHAIN LINK FENCE
- STONE WALL
- EDGE OF VEGETATION
- GRAVEL
- WATER MAIN (W)
- ELECTRIC OVERHEAD WIRES (OHW)
- ELECTRIC UNDERGROUND (E)
- DRAIN PIPE (D)
- GAS MAIN (G)
- HYDRANT
- GATE VALVE
- WATER SERVICE (WSO)
- UTILITY POLE
- GUY WIRE ANCHOR
- GUY WIRE
- CATCH BASIN
- DRAIN MANHOLE (D)
- GAS SERVICE (GSO)
- BOULDER
- EVERGREEN TREE
- DECIDUOUS TREE
- STREET SIGN
- BOLLARD
- MAILBOX
- BENCHMARK
- WETLAND FLAG (WF**)
- TEST PIT (TP#*)
- DEEP HOLE OBSERVATION (DH#*)
- BORING HOLE (B**)

PROPOSED — DESCRIPTION

- 1' CONTOUR (112)
- SPOT GRADE (XXX.X)
- EDGE OF PAVEMENT
- CAPE COD BERM
- CHAIN LINK FENCE (X)
- STEEL GUARDRAIL
- CONSTRUCTION FENCE
- FILTER SOCK WITH SILT FENCE
- FILTER SOCK
- LIMIT OF CLEARING
- DEMOLITION
- GRAVEL / CRUSHED STONE
- RIP RAP
- BITUMINOUS CONCRETE
- FULL DEPTH RECLAMATION
- CONCRETE
- POLYETHYLENE "V-BIO" ENCASED FINISHED WATER MAIN (FW)
- POLYETHYLENE "V-BIO" ENCASED RAW WATER MAIN (RW)
- FIRE PROTECTION WATER MAIN (FP)
- DRAIN PIPE (D)
- SANITARY WASTE PIPE (S)
- GAS MAIN (G)
- UNDERGROUND ELECTRIC (E)
- UNDERGROUND COMMUNICATIONS (E/I)
- HYDRANT
- GATE VALVE
- TAPPING SLEEVE AND VALVE
- REDUCER
- COUPLING / SOLID SLEEVE
- CAP
- CURB STOP (WSO)
- GRAVITY PIPE CLEAN OUT
- DRAIN MANHOLE/WATER QUALITY UNIT (D)
- SANITARY WASTE FRAME AND COVER (S)
- HAND HOLE (H)
- BOLLARD
- EXPLORATORY EXCAVATION
- FEATURE COORDINATES MARKER

Scale	N.T.S.		FOR CONSTRUCTION
Date	APRIL 2024		
Job No.	245-2103		
Designed by	JDH		
Drawn by	JDH		
Checked by	MEPA		
Approved by	ASK		

MARK | DATE | DESCRIPTION

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

ENVIRONMENTAL PARTNERS — An Apex Company

COMMONWEALTH OF MASSACHUSETTS MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER — April 2024

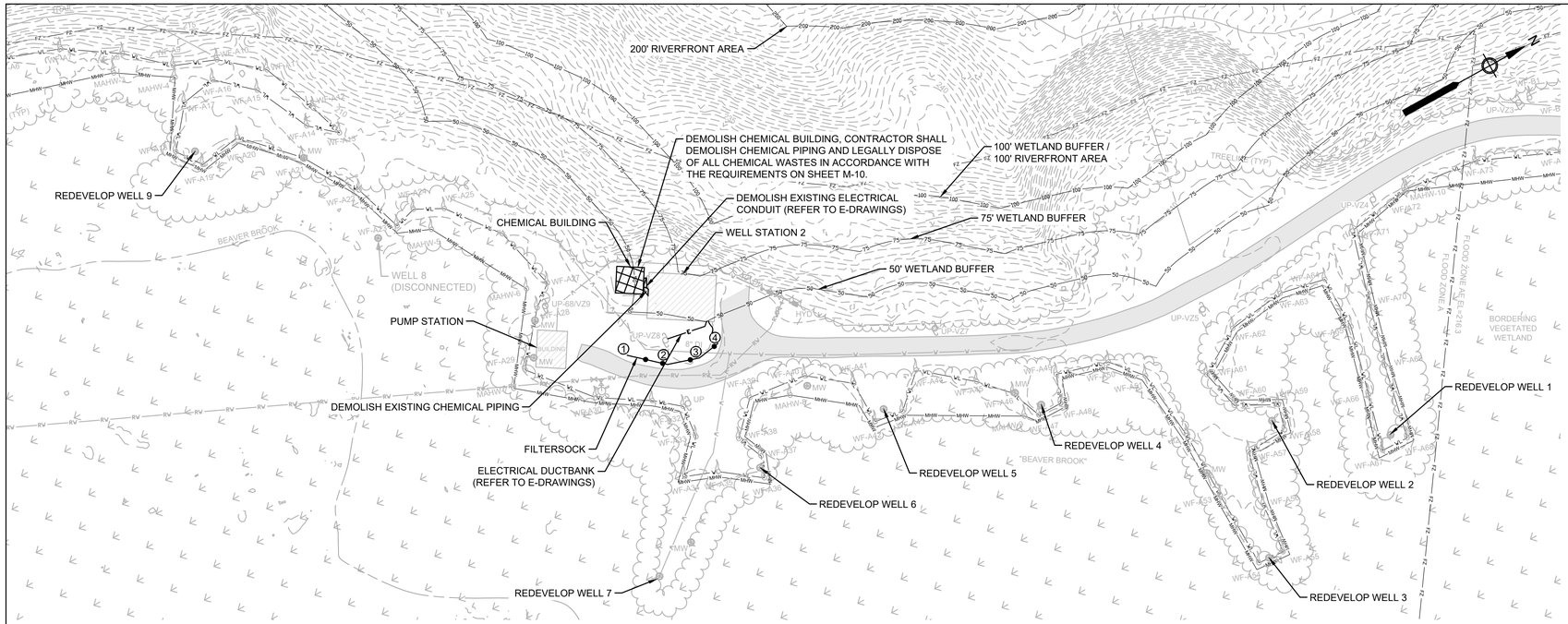
2nd PRECINCT 1740 SHARON 1765

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

CIVIL GENERAL NOTES AND LEGEND

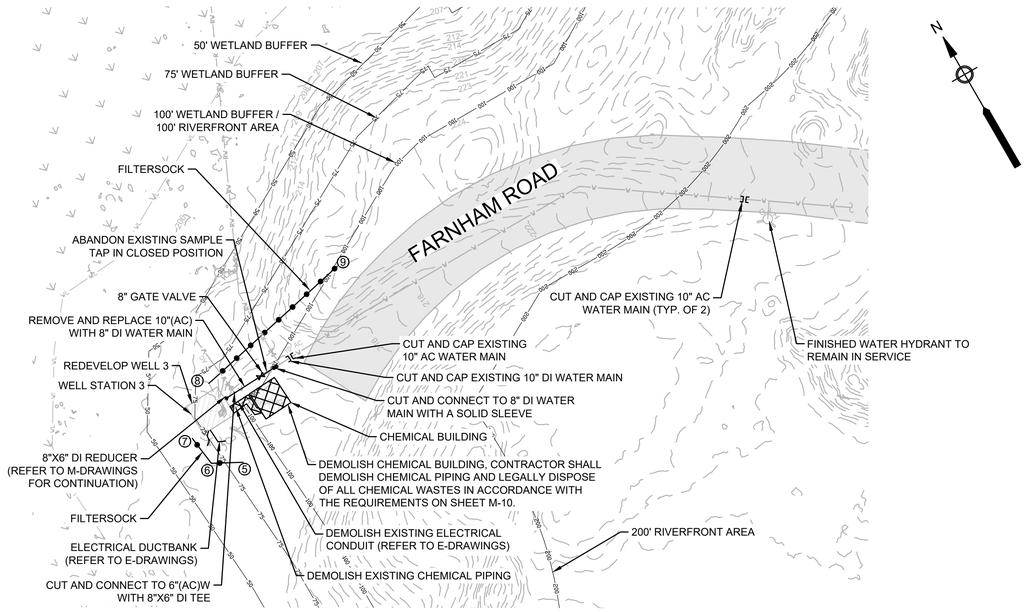
Sheet No. C-1

Drawing file: I:\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.1 Civil Sheets.dwg Plot Date: Apr 11,2024-2:20pm



WELL STATION 2 SITE PLAN

SCALE: 1"=40'



WELL STATION 3 SITE PLAN

SCALE: 1"=40'

FEATURE COORDINATES (NAD83)

DESCRIPTION	NORTHING (FT)	EASTING (FT)
FILTER SOCK 1	2868516.51	739700.06
FILTER SOCK 2	2868534.09	739715.92
FILTER SOCK 3	2868551.88	739721.56
FILTER SOCK 4	2868565.11	739719.52
FILTER SOCK 5	2866864.02	738953.61
FILTER SOCK 6	2866871.89	738938.82
FILTER SOCK 7	2866888.30	738936.68
FILTER SOCK 8	2866909.09	738958.77
FILTER SOCK 9	2866928.76	739048.38

NOTES:

1. THE AREA SHOWN ON THIS PLAN IS LOCATED WITHIN THE ZONE II WATER SUPPLY PROTECTION AREA.
2. FILTER SOCK SHALL BE INSTALLED WITHIN THE 100-FOOT WETLAND BUFFER ZONE AND AS SHOWN.
3. REFER TO APPENDIX K FOR HAZARDOUS BUILDING MATERIALS SURVEY REPORT.
4. REFER TO WORK SEQUENCE, SHEET G-2 FOR DEMOLITION SEQUENCE. CONTRACTOR SHALL SUBMIT AN EXTERIOR UTILITY SEQUENCING PLAN FOR REVIEW AND APPROVAL BY ENGINEER/OWNER.,
5. REFER TO THE UTILITY LIMITS OF WORK TABLE, SHEET C-6, FOR GENERAL CONTRACTOR AND FILED SUB-BID CONTRACTORS' SCOPE OF WORK.

ENVIRONMENTAL PARTNERS — An Apex Company

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
April 2024

MARK	DATE	DESCRIPTION

Scale	1" = 40'
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH
Drawn by	JDH
Checked by	MEPA
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

WELL STATION 2 AND WELL STATION 3 SITE PLANS

FOR CONSTRUCTION

Sheet No.

C-2

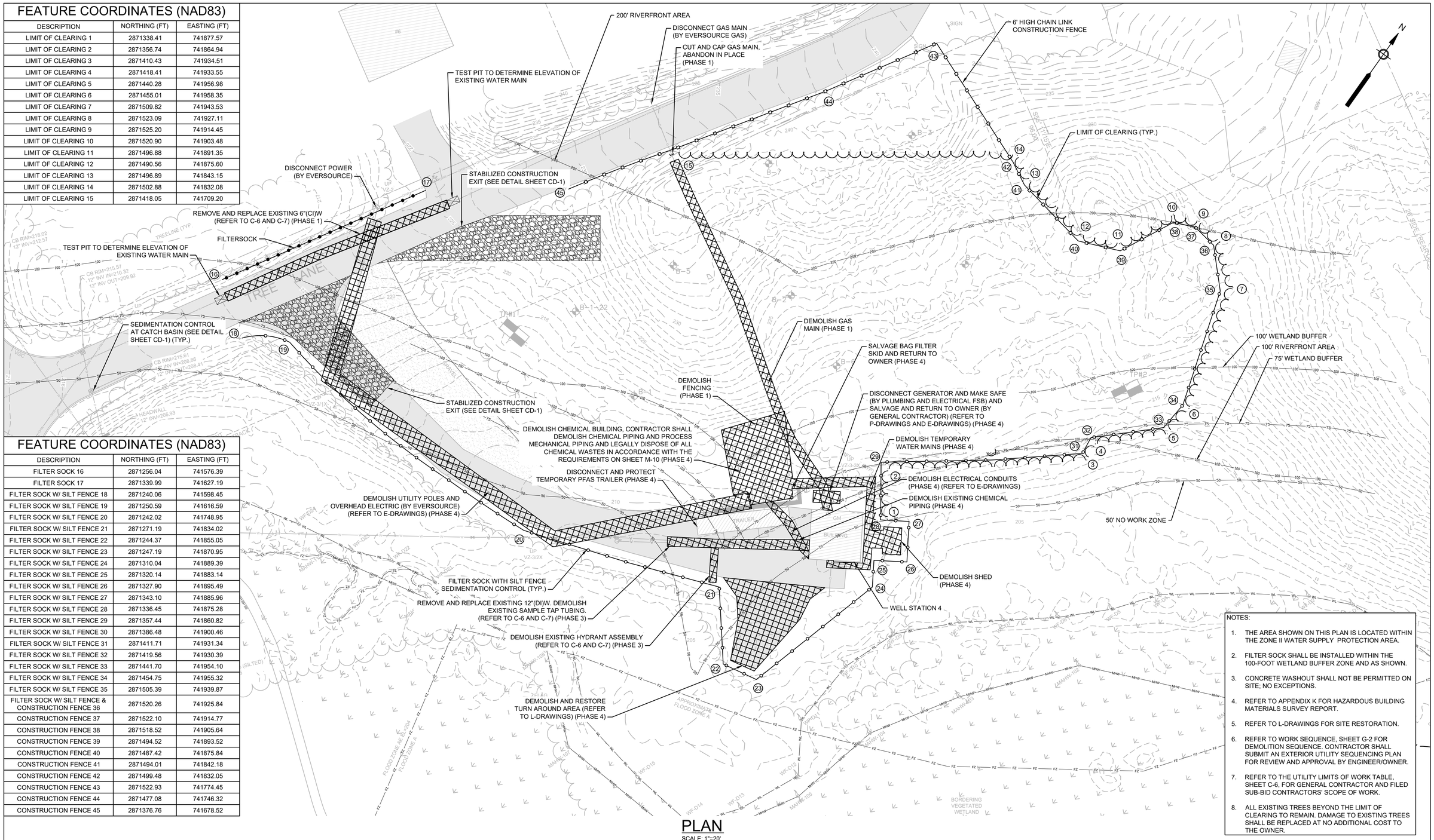
Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.1 Civil Sheets.dwg Plot Date: Apr 11 2024-2:15pm

FEATURE COORDINATES (NAD83)

DESCRIPTION	NORTHING (FT)	EASTING (FT)
LIMIT OF CLEARING 1	2871338.41	741877.57
LIMIT OF CLEARING 2	2871356.74	741864.94
LIMIT OF CLEARING 3	2871410.43	741934.51
LIMIT OF CLEARING 4	2871418.41	741933.55
LIMIT OF CLEARING 5	2871440.28	741956.98
LIMIT OF CLEARING 6	2871455.01	741958.35
LIMIT OF CLEARING 7	2871509.82	741943.53
LIMIT OF CLEARING 8	2871523.09	741927.11
LIMIT OF CLEARING 9	2871525.20	741914.45
LIMIT OF CLEARING 10	2871520.90	741903.48
LIMIT OF CLEARING 11	2871496.88	741891.35
LIMIT OF CLEARING 12	2871490.56	741875.60
LIMIT OF CLEARING 13	2871496.89	741843.15
LIMIT OF CLEARING 14	2871502.88	741832.08
LIMIT OF CLEARING 15	2871418.05	741709.20

FEATURE COORDINATES (NAD83)

DESCRIPTION	NORTHING (FT)	EASTING (FT)
FILTER SOCK 16	2871256.04	741576.39
FILTER SOCK 17	2871339.99	741627.19
FILTER SOCK W/ SILT FENCE 18	2871240.06	741598.45
FILTER SOCK W/ SILT FENCE 19	2871250.59	741616.59
FILTER SOCK W/ SILT FENCE 20	2871242.02	741748.95
FILTER SOCK W/ SILT FENCE 21	2871271.19	741834.02
FILTER SOCK W/ SILT FENCE 22	2871244.37	741855.05
FILTER SOCK W/ SILT FENCE 23	2871247.19	741870.95
FILTER SOCK W/ SILT FENCE 24	2871310.04	741889.39
FILTER SOCK W/ SILT FENCE 25	2871320.14	741883.14
FILTER SOCK W/ SILT FENCE 26	2871327.90	741895.49
FILTER SOCK W/ SILT FENCE 27	2871343.10	741885.96
FILTER SOCK W/ SILT FENCE 28	2871336.45	741875.28
FILTER SOCK W/ SILT FENCE 29	2871357.44	741860.82
FILTER SOCK W/ SILT FENCE 30	2871386.48	741900.46
FILTER SOCK W/ SILT FENCE 31	2871411.71	741931.34
FILTER SOCK W/ SILT FENCE 32	2871419.56	741930.39
FILTER SOCK W/ SILT FENCE 33	2871441.70	741954.10
FILTER SOCK W/ SILT FENCE 34	2871454.75	741955.32
FILTER SOCK W/ SILT FENCE 35	2871505.39	741939.87
FILTER SOCK W/ SILT FENCE & CONSTRUCTION FENCE 36	2871520.26	741925.84
CONSTRUCTION FENCE 37	2871522.10	741914.77
CONSTRUCTION FENCE 38	2871518.52	741905.64
CONSTRUCTION FENCE 39	2871494.52	741893.52
CONSTRUCTION FENCE 40	2871487.42	741875.84
CONSTRUCTION FENCE 41	2871494.01	741842.18
CONSTRUCTION FENCE 42	2871499.48	741832.05
CONSTRUCTION FENCE 43	2871522.93	741774.45
CONSTRUCTION FENCE 44	2871477.08	741746.32
CONSTRUCTION FENCE 45	2871376.76	741678.52



PLAN

SCALE: 1"=20'

NOTES:

1. THE AREA SHOWN ON THIS PLAN IS LOCATED WITHIN THE ZONE II WATER SUPPLY PROTECTION AREA.
2. FILTER SOCK SHALL BE INSTALLED WITHIN THE 100-FOOT WETLAND BUFFER ZONE AND AS SHOWN.
3. CONCRETE WASHOUT SHALL NOT BE PERMITTED ON SITE; NO EXCEPTIONS.
4. REFER TO APPENDIX K FOR HAZARDOUS BUILDING MATERIALS SURVEY REPORT.
5. REFER TO L-DRAWINGS FOR SITE RESTORATION.
6. REFER TO WORK SEQUENCE, SHEET G-2 FOR DEMOLITION SEQUENCE. CONTRACTOR SHALL SUBMIT AN EXTERIOR UTILITY SEQUENCING PLAN FOR REVIEW AND APPROVAL BY ENGINEER/OWNER.
7. REFER TO THE UTILITY LIMITS OF WORK TABLE, SHEET C-6, FOR GENERAL CONTRACTOR AND FILED SUB-BID CONTRACTORS' SCOPE OF WORK.
8. ALL EXISTING TREES BEYOND THE LIMIT OF CLEARING TO REMAIN. DAMAGE TO EXISTING TREES SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS
MARIA E. PROULX
CIVIL
No. 56048
REGISTERED PROFESSIONAL ENGINEER
April 2024

MARK	DATE	DESCRIPTION

Scale	1" = 20'
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH
Drawn by	SBS/JDH
Checked by	MEPA
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

CIVIL WATER TREATMENT PLANT
DEMOLITION, SEDIMENT AND EROSION CONTROL PLAN

FOR CONSTRUCTION

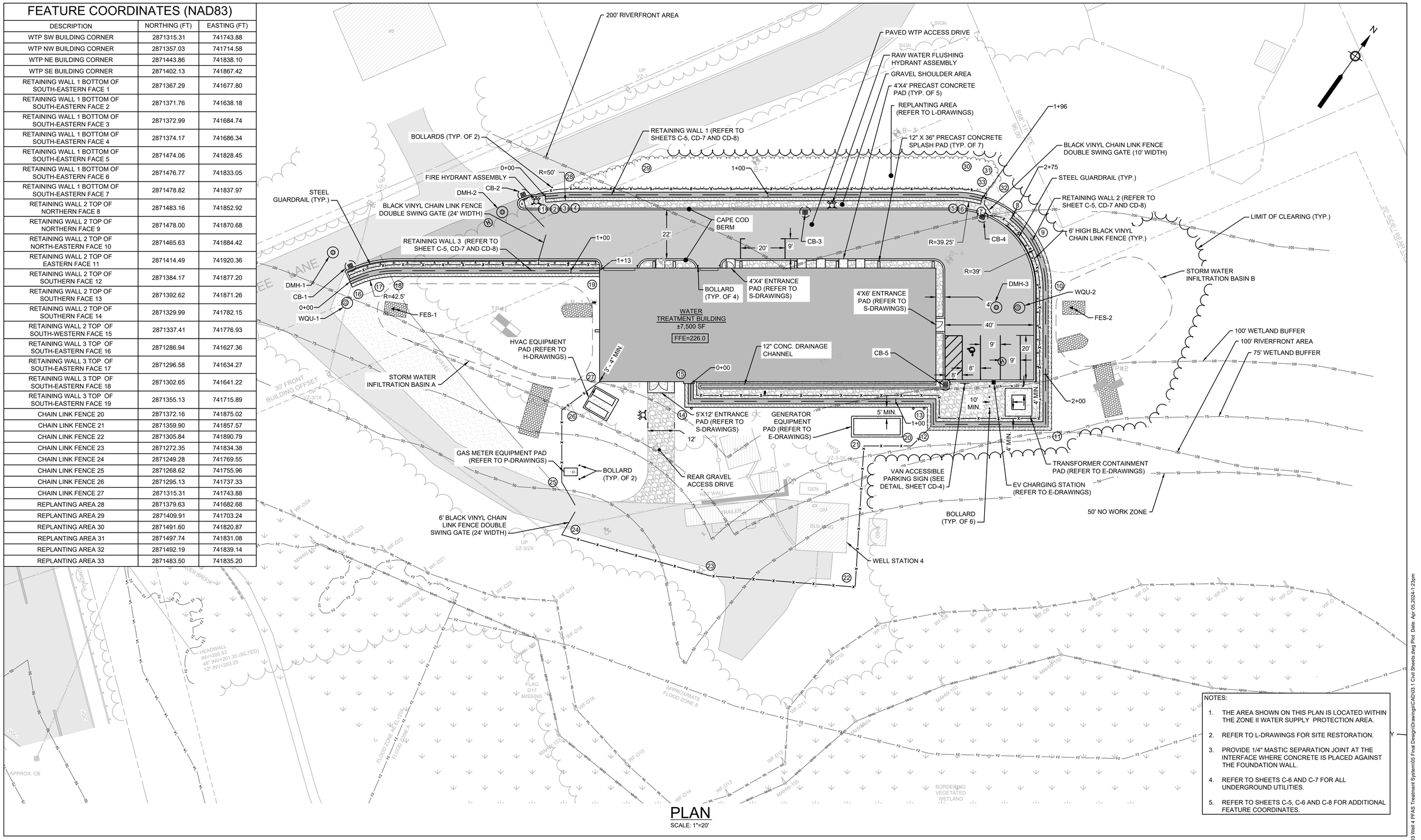
Sheet No.

C-3

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.1 Civil Sheets.dwg Plot Date: Apr 11,2024-3:25pm

FEATURE COORDINATES (NAD83)

DESCRIPTION	NORTHING (FT)	EASTING (FT)
WTP SW BUILDING CORNER	2871315.31	741743.88
WTP NW BUILDING CORNER	2871357.03	741714.58
WTP NE BUILDING CORNER	2871443.86	741838.10
WTP SE BUILDING CORNER	2871402.13	741867.42
RETAINING WALL 1 BOTTOM OF SOUTH-EASTERN FACE 1	2871367.29	741677.80
RETAINING WALL 1 BOTTOM OF SOUTH-EASTERN FACE 2	2871371.76	741638.18
RETAINING WALL 1 BOTTOM OF SOUTH-EASTERN FACE 3	2871372.99	741684.74
RETAINING WALL 1 BOTTOM OF SOUTH-EASTERN FACE 4	2871374.17	741686.34
RETAINING WALL 1 BOTTOM OF SOUTH-EASTERN FACE 5	2871474.06	741828.45
RETAINING WALL 1 BOTTOM OF SOUTH-EASTERN FACE 6	2871476.77	741833.05
RETAINING WALL 1 BOTTOM OF SOUTH-EASTERN FACE 7	2871478.82	741837.97
RETAINING WALL 2 TOP OF NORTHERN FACE 8	2871483.16	741852.92
RETAINING WALL 2 TOP OF NORTHERN FACE 9	2871478.00	741870.68
RETAINING WALL 2 TOP OF NORTH-EASTERN FACE 10	2871465.63	741884.42
RETAINING WALL 2 TOP OF EASTERN FACE 11	2871414.49	741920.36
RETAINING WALL 2 TOP OF SOUTHERN FACE 12	2871384.17	741877.20
RETAINING WALL 2 TOP OF SOUTHERN FACE 13	2871392.62	741871.26
RETAINING WALL 2 TOP OF SOUTHERN FACE 14	2871329.99	741782.15
RETAINING WALL 2 TOP OF SOUTH-WESTERN FACE 15	2871337.41	741776.93
RETAINING WALL 3 TOP OF SOUTH-EASTERN FACE 16	2871286.94	741627.36
RETAINING WALL 3 TOP OF SOUTH-EASTERN FACE 17	2871296.58	741634.27
RETAINING WALL 3 TOP OF SOUTH-EASTERN FACE 18	2871302.65	741641.22
RETAINING WALL 3 TOP OF SOUTH-EASTERN FACE 19	2871355.13	741715.89
CHAIN LINK FENCE 20	2871372.16	741875.02
CHAIN LINK FENCE 21	2871359.90	741857.57
CHAIN LINK FENCE 22	2871305.84	741890.79
CHAIN LINK FENCE 23	2871272.35	741834.38
CHAIN LINK FENCE 24	2871249.28	741769.55
CHAIN LINK FENCE 25	2871268.62	741755.96
CHAIN LINK FENCE 26	2871295.13	741737.33
CHAIN LINK FENCE 27	2871315.31	741743.88
REPLANTING AREA 28	2871379.63	741682.68
REPLANTING AREA 29	2871409.91	741703.24
REPLANTING AREA 30	2871491.60	741820.87
REPLANTING AREA 31	2871497.74	741831.08
REPLANTING AREA 32	2871492.19	741839.14
REPLANTING AREA 33	2871483.50	741835.20



PLAN

SCALE: 1"=20'

NOTES:

1. THE AREA SHOWN ON THIS PLAN IS LOCATED WITHIN THE ZONE II WATER SUPPLY PROTECTION AREA.
2. REFER TO L-DRAWINGS FOR SITE RESTORATION.
3. PROVIDE 1/4" MASTIC SEPARATION JOINT AT THE INTERFACE WHERE CONCRETE IS PLACED AGAINST THE FOUNDATION WALL.
4. REFER TO SHEETS C-6 AND C-7 FOR ALL UNDERGROUND UTILITIES.
5. REFER TO SHEETS C-5, C-6 AND C-8 FOR ADDITIONAL FEATURE COORDINATES.

ENVIRONMENTAL PARTNERS
— An Apex Company —

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER
April 2024

MARK	DATE	DESCRIPTION

Scale	1" = 20'
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH
Drawn by	SBS/JDH
Checked by	MEPA
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

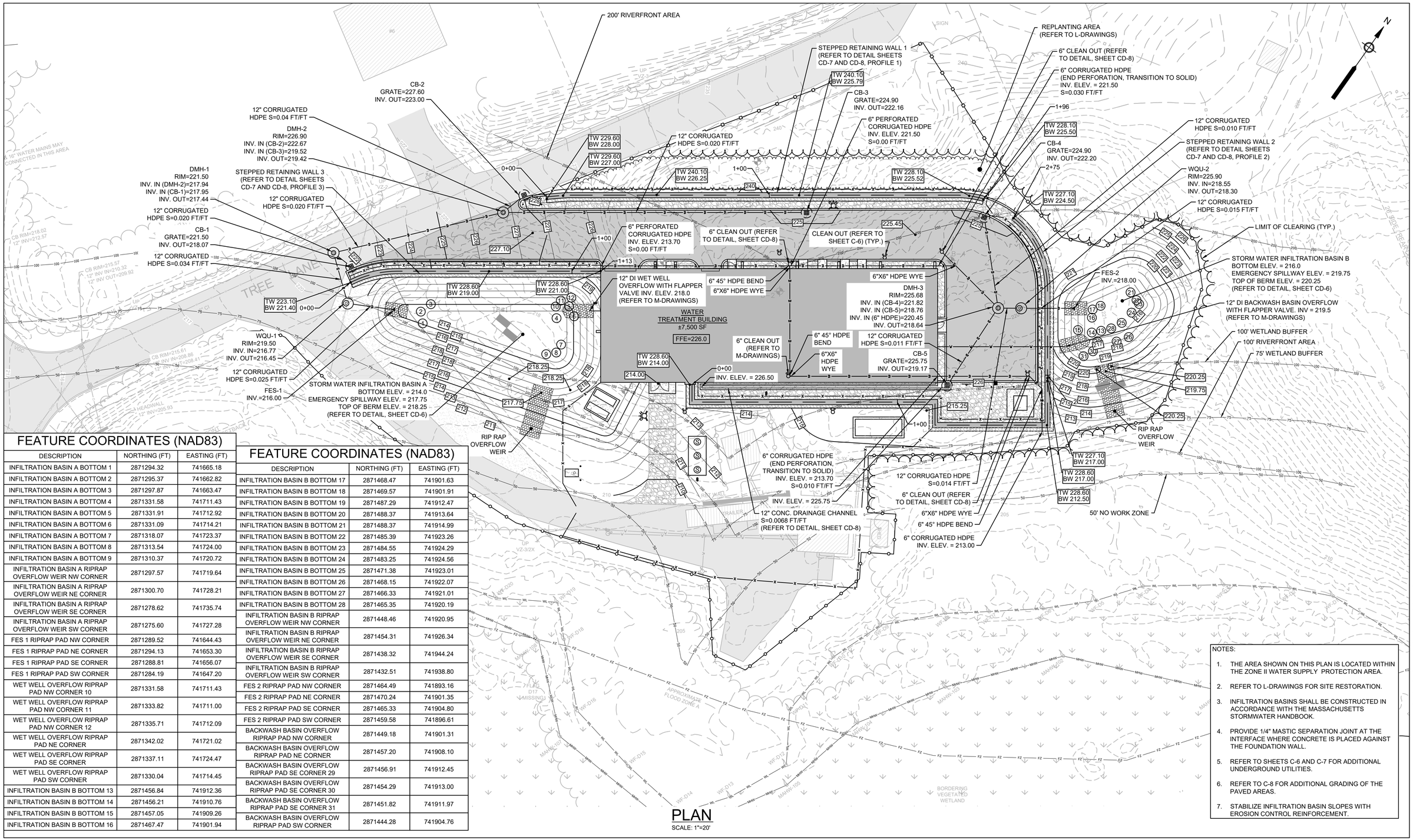
CIVIL WATER TREATMENT PLANT LAYOUT PLAN

FOR CONSTRUCTION

Sheet No.

C-4

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.1 Civil Sheets.dwg Plot Date: Apr 05,2024-1:23pm



FEATURE COORDINATES (NAD83)

DESCRIPTION	NORTHING (FT)	EASTING (FT)
INFILTRATION BASIN A BOTTOM 1	2871294.32	741665.18
INFILTRATION BASIN A BOTTOM 2	2871295.37	741662.82
INFILTRATION BASIN A BOTTOM 3	2871297.87	741663.47
INFILTRATION BASIN A BOTTOM 4	2871331.58	741711.43
INFILTRATION BASIN A BOTTOM 5	2871331.91	741712.92
INFILTRATION BASIN A BOTTOM 6	2871331.09	741714.21
INFILTRATION BASIN A BOTTOM 7	2871318.07	741723.37
INFILTRATION BASIN A BOTTOM 8	2871313.54	741724.00
INFILTRATION BASIN A BOTTOM 9	2871310.37	741720.72
INFILTRATION BASIN A RIPRAP OVERFLOW WEIR NW CORNER	2871297.57	741719.64
INFILTRATION BASIN A RIPRAP OVERFLOW WEIR NE CORNER	2871300.70	741728.21
INFILTRATION BASIN A RIPRAP OVERFLOW WEIR SE CORNER	2871278.62	741735.74
INFILTRATION BASIN A RIPRAP OVERFLOW WEIR SW CORNER	2871275.60	741727.28
FES 1 RIPRAP PAD NW CORNER	2871289.52	741644.43
FES 1 RIPRAP PAD NE CORNER	2871294.13	741653.30
FES 1 RIPRAP PAD SE CORNER	2871288.81	741656.07
FES 1 RIPRAP PAD SW CORNER	2871284.19	741647.20
WET WELL OVERFLOW RIPRAP PAD NW CORNER 10	2871331.58	741711.43
WET WELL OVERFLOW RIPRAP PAD NW CORNER 11	2871333.82	741711.00
WET WELL OVERFLOW RIPRAP PAD NW CORNER 12	2871335.71	741712.09
WET WELL OVERFLOW RIPRAP PAD NE CORNER	2871342.02	741721.02
WET WELL OVERFLOW RIPRAP PAD SE CORNER	2871337.11	741724.47
WET WELL OVERFLOW RIPRAP PAD SW CORNER	2871330.04	741714.45
INFILTRATION BASIN B BOTTOM 13	2871456.84	741912.36
INFILTRATION BASIN B BOTTOM 14	2871456.21	741910.76
INFILTRATION BASIN B BOTTOM 15	2871457.05	741909.26
INFILTRATION BASIN B BOTTOM 16	2871467.47	741901.94

FEATURE COORDINATES (NAD83)

DESCRIPTION	NORTHING (FT)	EASTING (FT)
INFILTRATION BASIN B BOTTOM 17	2871468.47	741901.63
INFILTRATION BASIN B BOTTOM 18	2871469.57	741901.91
INFILTRATION BASIN B BOTTOM 19	2871487.29	741912.47
INFILTRATION BASIN B BOTTOM 20	2871488.37	741913.64
INFILTRATION BASIN B BOTTOM 21	2871488.37	741914.99
INFILTRATION BASIN B BOTTOM 22	2871485.39	741923.26
INFILTRATION BASIN B BOTTOM 23	2871484.55	741924.29
INFILTRATION BASIN B BOTTOM 24	2871483.25	741924.56
INFILTRATION BASIN B BOTTOM 25	2871471.38	741923.01
INFILTRATION BASIN B BOTTOM 26	2871468.15	741922.07
INFILTRATION BASIN B BOTTOM 27	2871466.33	741921.01
INFILTRATION BASIN B BOTTOM 28	2871465.35	741920.19
INFILTRATION BASIN B RIPRAP OVERFLOW WEIR NW CORNER	2871448.46	741920.95
INFILTRATION BASIN B RIPRAP OVERFLOW WEIR NE CORNER	2871454.31	741926.34
INFILTRATION BASIN B RIPRAP OVERFLOW WEIR SE CORNER	2871438.32	741944.24
INFILTRATION BASIN B RIPRAP OVERFLOW WEIR SW CORNER	2871432.51	741938.80
FES 2 RIPRAP PAD NW CORNER	2871464.49	741893.16
FES 2 RIPRAP PAD NE CORNER	2871470.24	741901.35
FES 2 RIPRAP PAD SE CORNER	2871465.33	741904.80
FES 2 RIPRAP PAD SW CORNER	2871459.58	741896.61
BACKWASH BASIN OVERFLOW RIPRAP PAD NW CORNER	2871449.18	741901.31
BACKWASH BASIN OVERFLOW RIPRAP PAD NE CORNER	2871457.20	741908.10
BACKWASH BASIN OVERFLOW RIPRAP PAD SE CORNER 29	2871456.91	741912.45
BACKWASH BASIN OVERFLOW RIPRAP PAD SE CORNER 30	2871454.29	741913.00
BACKWASH BASIN OVERFLOW RIPRAP PAD SE CORNER 31	2871451.82	741911.97
BACKWASH BASIN OVERFLOW RIPRAP PAD SW CORNER	2871444.28	741904.76

PLAN

SCALE: 1"=20'

NOTES:

1. THE AREA SHOWN ON THIS PLAN IS LOCATED WITHIN THE ZONE II WATER SUPPLY PROTECTION AREA.
2. REFER TO L-DRAWINGS FOR SITE RESTORATION.
3. INFILTRATION BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MASSACHUSETTS STORMWATER HANDBOOK.
4. PROVIDE 1/4" MASTIC SEPARATION JOINT AT THE INTERFACE WHERE CONCRETE IS PLACED AGAINST THE FOUNDATION WALL.
5. REFER TO SHEETS C-6 AND C-7 FOR ADDITIONAL UNDERGROUND UTILITIES.
6. REFER TO C-8 FOR ADDITIONAL GRADING OF THE PAVED AREAS.
7. STABILIZE INFILTRATION BASIN SLOPES WITH EROSION CONTROL REINFORCEMENT.

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS
MARIA E. PROULX
CIVIL
No. 56048
REGISTERED PROFESSIONAL ENGINEER
April 2024

MARK	DATE	DESCRIPTION

Scale	1" = 20'
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH
Drawn by	SBS/JDH
Checked by	MEPA
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

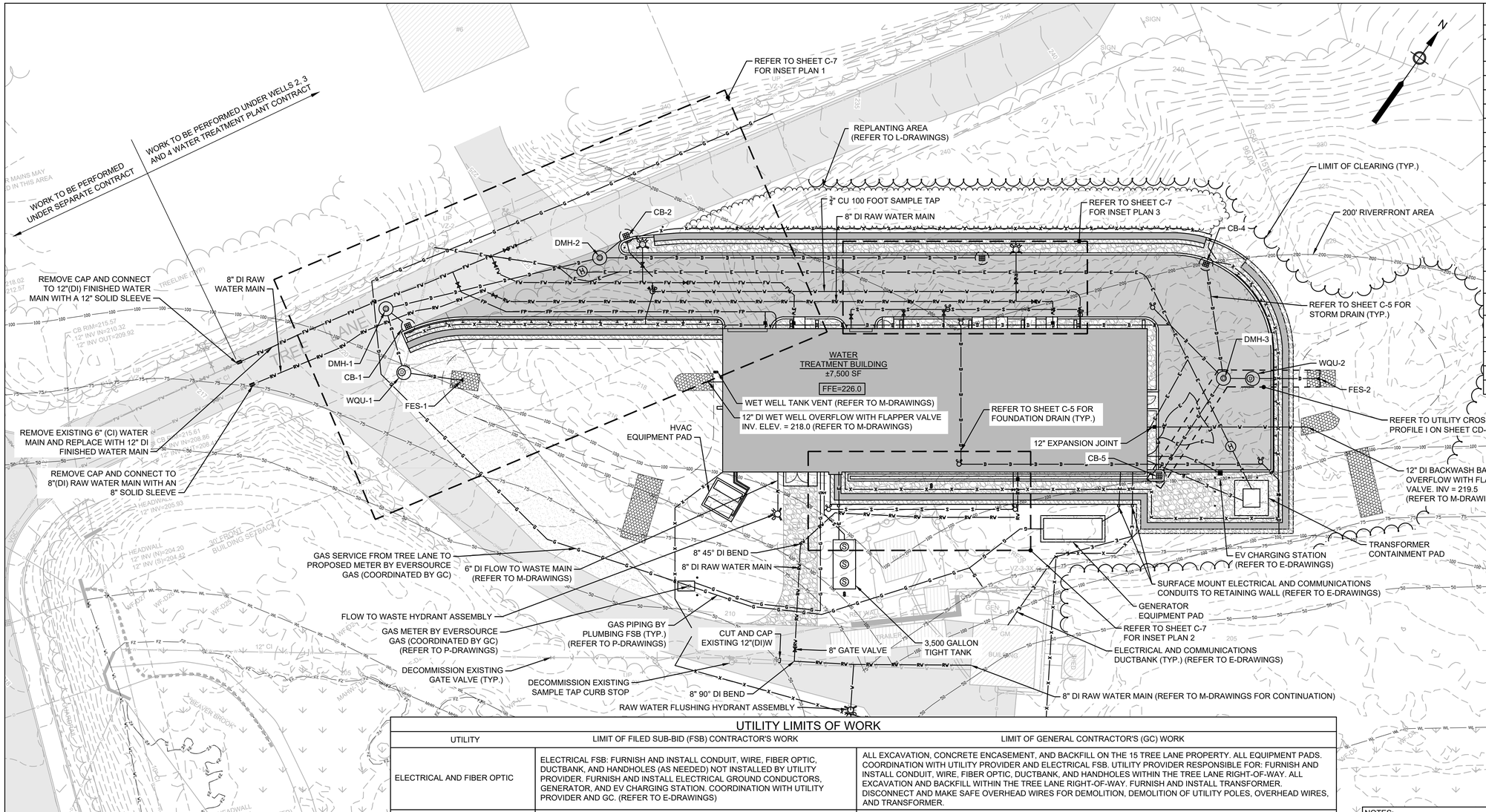
CIVIL WATER TREATMENT PLANT
GRADING AND DRAINAGE PLAN

FOR CONSTRUCTION

Sheet No.

C-5

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.1 Civil Sheets.dwg Plot Date: Apr 05,2024-1:22pm



FEATURE COORDINATES (NAD83)

DESCRIPTION	NORTHING (FT)	EASTING (FT)
HVAC EQUIPMENT PAD NW CORNER	2871312.60	741743.46
HVAC EQUIPMENT PAD NE CORNER	2871313.68	741755.58
HVAC EQUIPMENT PAD SE CORNER	2871302.55	741756.53
HVAC EQUIPMENT PAD SW CORNER	2871301.47	741744.45
TIGHT TANK NW CORNER	2871318.19	741789.89
TIGHT TANK NE CORNER	2871322.78	741796.43
TIGHT TANK SE CORNER	2871308.47	741806.49
TIGHT TANK SW CORNER	2871303.87	741799.95
GENERATOR EQUIPMENT PAD NW CORNER	2871367.42	741846.72
GENERATOR EQUIPMENT PAD NE CORNER	2871379.43	741863.80
GENERATOR EQUIPMENT PAD SE CORNER	2871373.38	741868.05
GENERATOR EQUIPMENT PAD SW CORNER	2871361.37	741850.97
TRANSFORMER CONTAINMENT PAD NW CORNER	2871417.56	741894.57
TRANSFORMER CONTAINMENT PAD NE CORNER	2871424.46	741904.39
TRANSFORMER CONTAINMENT PAD SE CORNER	2871414.23	741911.58
TRANSFORMER CONTAINMENT PAD SW CORNER	2871407.33	741901.76
GAS METER NW CORNER	2871274.40	741753.12
GAS METER NE CORNER	2871277.85	741758.03
GAS METER SE CORNER	2871274.99	741760.04
GAS METER SW CORNER	2871271.54	741755.13

UTILITY LIMITS OF WORK

UTILITY	LIMIT OF FILED SUB-BID (FSB) CONTRACTOR'S WORK	LIMIT OF GENERAL CONTRACTOR'S (GC) WORK
ELECTRICAL AND FIBER OPTIC	ELECTRICAL FSB: FURNISH AND INSTALL CONDUIT, WIRE, FIBER OPTIC, DUCTBANK, AND HANDHOLES (AS NEEDED) NOT INSTALLED BY UTILITY PROVIDER. FURNISH AND INSTALL ELECTRICAL GROUND CONDUCTORS, GENERATOR, AND EV CHARGING STATION. COORDINATION WITH UTILITY PROVIDER AND GC. (REFER TO E-DRAWINGS)	ALL EXCAVATION, CONCRETE ENCASEMENT, AND BACKFILL ON THE 15 TREE LANE PROPERTY. ALL EQUIPMENT PADS. COORDINATION WITH UTILITY PROVIDER AND ELECTRICAL FSB. UTILITY PROVIDER RESPONSIBLE FOR: FURNISH AND INSTALL CONDUIT, WIRE, FIBER OPTIC, DUCTBANK, AND HANDHOLES WITHIN THE TREE LANE RIGHT-OF-WAY. ALL EXCAVATION AND BACKFILL WITHIN THE TREE LANE RIGHT-OF-WAY. FURNISH AND INSTALL TRANSFORMER. DISCONNECT AND MAKE SAFE OVERHEAD WIRES FOR DEMOLITION, DEMOLITION OF UTILITY POLES, OVERHEAD WIRES, AND TRANSFORMER.
GAS	PLUMBING FSB: DISCONNECT AND MAKE SAFE GAS SERVICE TO BE ABANDONED. FURNISH AND INSTALL ABOVE- AND BELOW-GRADE GAS PIPING NOT INSTALLED BY UTILITY PROVIDER. COORDINATION WITH UTILITY PROVIDER AND GC. (REFER TO P-DRAWINGS)	ALL EXCAVATION AND BACKFILL ON THE 15 TREE LANE PROPERTY. ALL EQUIPMENT PADS. CUT AND CAP ABANDONED GAS MAIN AND DEMOLITION OF ABANDONED GAS MAIN. COORDINATION WITH UTILITY PROVIDER AND PLUBMING FSB. UTILITY PROVIDER RESPONSIBLE FOR: DISCONNECT AND MAKE SAFE GAS MAIN TO BE ABANDONED. DEMOLISH EXISTING GAS METER. FURNISH AND INSTALL ABOVE- AND BELOW-GRADE GAS SERVICE PIPING WITHIN THE TREE LANE RIGHT-OF-WAY AND UP TO THE GAS METER ON THE 15 TREE LANE PROPERTY. ALL EXCAVATION AND BACKFILL WITHIN THE TREE LANE RIGHT-OF-WAY. FURNISH AND INSTALL METER.
PLANT SERVICE WATER	PLUMBING FSB: FURNISH AND INSTALL PIPING WITHIN 10 FEET OF THE WTP BUILDING. (REFER TO P-DRAWINGS)	FURNISH AND INSTALL PIPING FROM CORPORATION STOP TO WITHIN 10 FEET OF THE WTP BUILDING. ALL EXCAVATION AND BACKFILL.
SANITARY WASTE LINE	PLUMBING FSB: FURNISH AND INSTALL PIPING WITHIN 10 FEET OF THE WTP BUILDING. (REFER TO P-DRAWINGS)	FURNISH AND INSTALL PIPING AND APPURTENANCES FROM TIGHT TANK TO WITHIN 10 FEET OF THE WTP BUILDING. FURNISH AND INSTALL TIGHT TANK AND APPURTENANCES. ALL EXCAVATION AND BACKFILL.
RAW AND FINISHED WATER MAINS, FLOW TO WASTE WATER MAIN, 100-FOOT SAMPLE TAP, SAMPLE SINK WASTE, DRAINAGE, BACKWASH BASIN OVERFLOW AND VENT, WET WELL OVERFLOW AND VENT	NOT APPLICABLE, ALL WORK BY GENERAL CONTRACTOR.	FURNISH AND INSTALL ALL PIPING AND APPURTENANCES, ALL EXCAVATION AND BACKFILL. (REFER TO C-DRAWINGS AND M-DRAWINGS)
FIRE PROTECTION	FIRE PROTECTION FSB: FURNISH AND INSTALL PIPING WITHIN 10 FEET OF THE WTP BUILDING. FURNISH AND INSTALL ALL INTERIOR PIPING AND APPURTENANCES. (REFER TO FP-DRAWINGS)	FURNISH AND INSTALL EXTERIOR, UNDERGROUND PIPING AND APPURTENANCES TO WITHIN 10 FEET OF THE WTP BUILDING. ALL EXCAVATION AND BACKFILL.
HVAC	HVAC FSB: FURNISH AND INSTALL ALL PIPING, PIPE SUPPORTS, DUCTWORK AND EQUIPMENT. (REFER TO H-DRAWINGS)	ALL EQUIPMENT PADS AND SPLASH PADS.

NOTES:

1. SANITARY WASTE PIPING WITHIN ZONE II WATER SUPPLY PROTECTION AREA (1,000 FT. OF A PUBLIC WATER SUPPLY) SHALL BE OF WATER TIGHT CONSTRUCTION. ONLY HARD CONNECTIONS SHALL BE ALLOWED. NO FERNCO OR FLEXIBLE RUBBER CONNECTIONS SHALL BE ALLOWED; MECHANICAL JOINTS ARE REQUIRED. ALL WORK SHOWN ON THIS SHEET IS WITHIN ZONE II.
2. WATER MAINS INSTALLED WITHIN 5 FT. OF GAS MAINS SHALL BE FULLY ENCASED BY POLYETHYLENE WRAP.
3. REFER TO THE UTILITY LIMITS OF WORK TABLE FOR GENERAL CONTRACTOR AND FILED SUB-BID CONTRACTORS' SCOPE OF WORK.
4. REFER TO M-DRAWINGS FOR CONTINUATION OF 100-FOOT SAMPLE TAP, RAW WATER, FINISHED WATER, BACKWASH BASIN OVERFLOW, WET WELL OVERFLOW, FLOW TO WASTE, SAMPLE SINK WASTE, AND TANK VENTS.
5. REFER TO SHEET CD-9, CD-10 AND CD-11 FOR UTILITY CROSSING PROFILES.
6. REFER TO WORK SEQUENCE, SHEET G-2 FOR WATER MAIN TIE-IN SEQUENCE. CONTRACTOR SHALL SUBMIT AN EXTERIOR UTILITY SEQUENCING PLAN FOR REVIEW AND APPROVAL BY ENGINEER/OWNER.
7. THE WORK TO BE COMPLETED UNDER THIS CONTRACT SHALL BE COORDINATED WITH THE WORK TO BE COMPLETED UNDER SEPARATE CONTRACT BY THE WATER MAIN CONTRACT #2024-10 CONTRACTOR.

PLAN

SCALE: 1"=20'

ENVIRONMENTAL PARTNERS — An Apex Company —

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
April 2024

MARK	DATE	DESCRIPTION

Scale	1" = 20'
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH
Drawn by	SBS/JDH
Checked by	MEPA
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

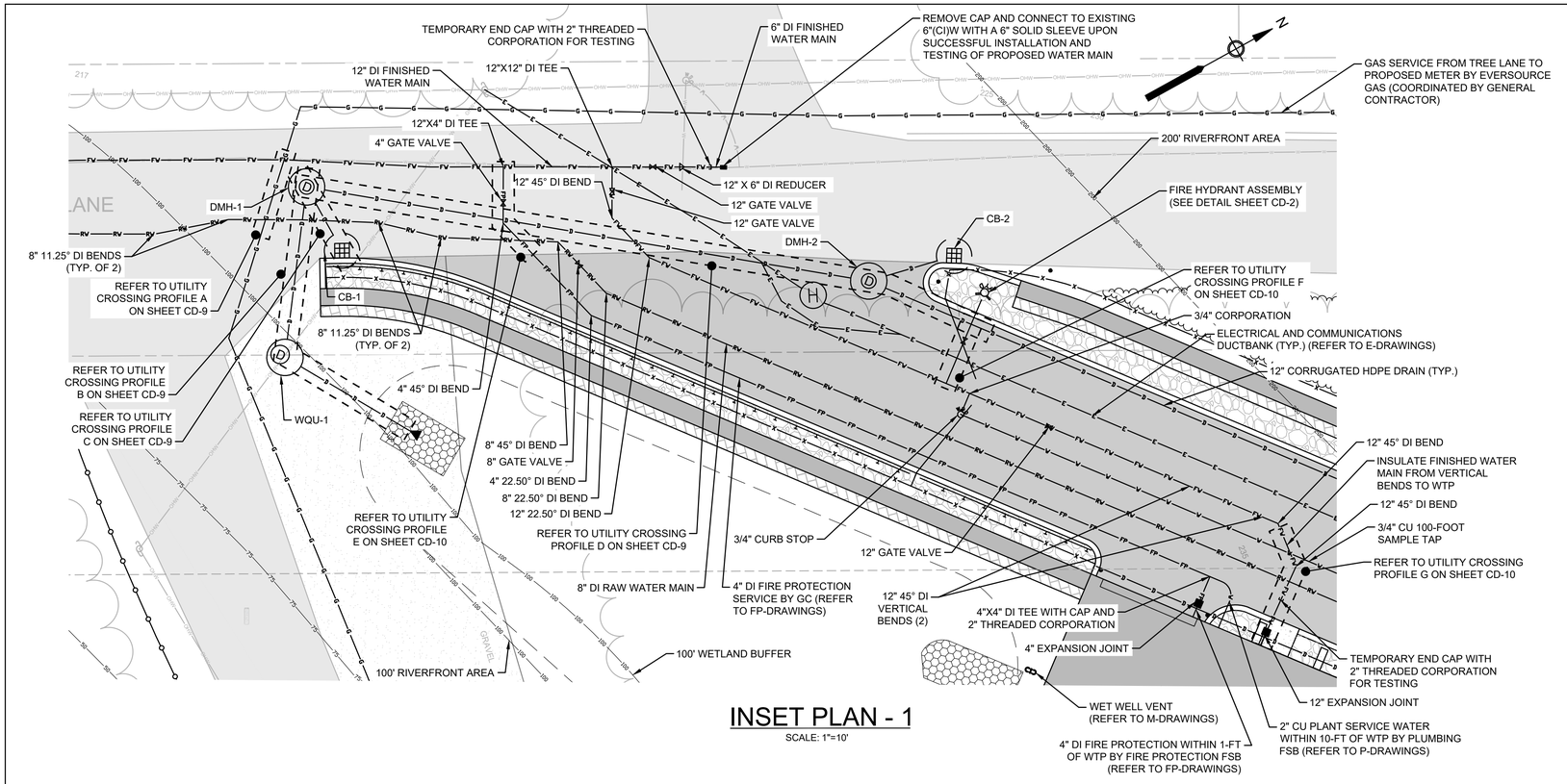
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

CIVIL WATER TREATMENT PLANT UTILITIES PLAN I

FOR CONSTRUCTION

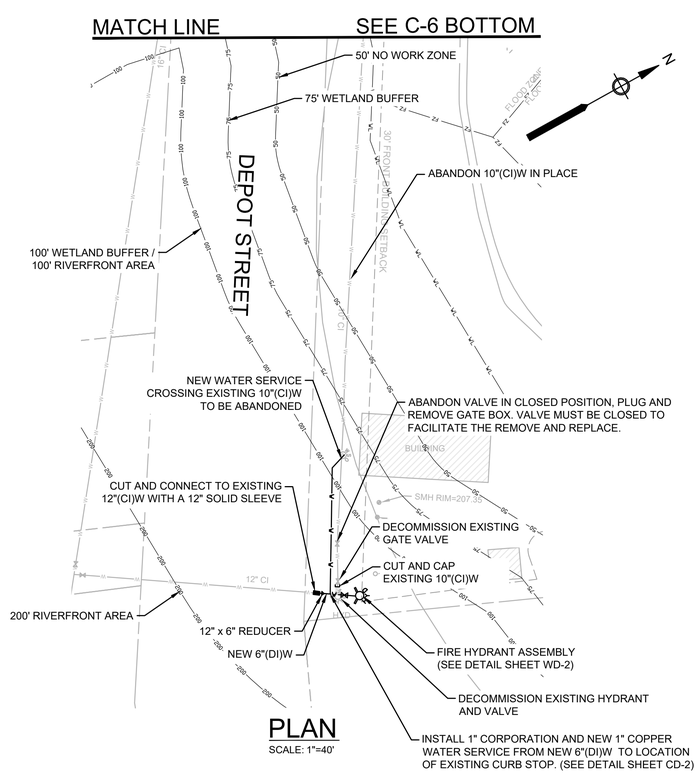
Sheet No. C-6

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.1 Civil Sheets.dwg Plot Date: Apr 11,2024-3:28pm



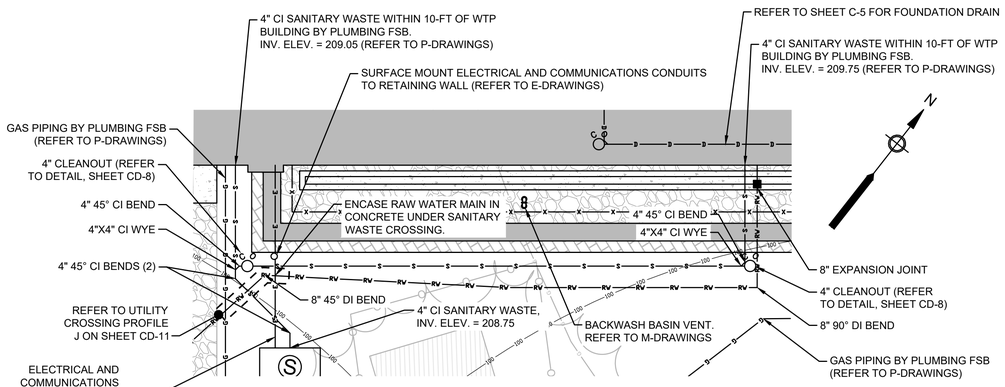
INSET PLAN - 1

SCALE: 1"=10'



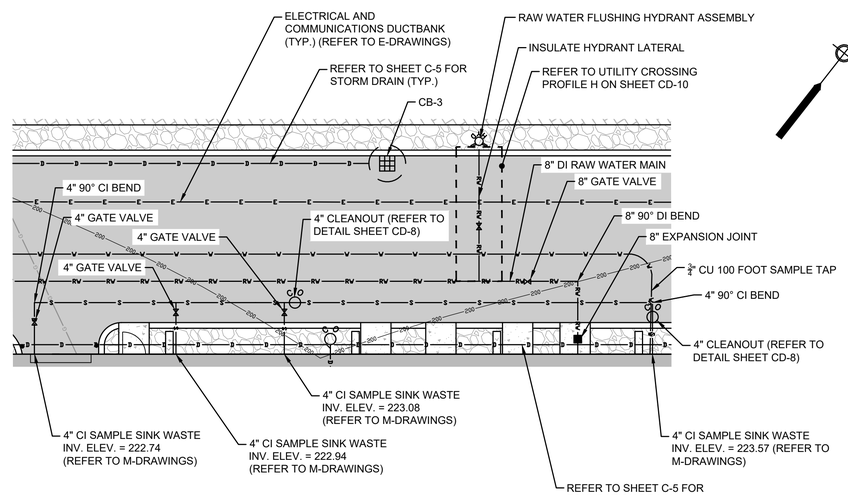
PLAN

SCALE: 1"=40'



INSET PLAN - 2

SCALE: 1"=10'



INSET PLAN - 3

SCALE: 1"=10'

NOTES:

1. SANITARY WASTE PIPING WITHIN ZONE II WATER SUPPLY PROTECTION AREA (1,000 FT. OF A PUBLIC WATER SUPPLY) SHALL BE OF WATER TIGHT CONSTRUCTION. ONLY HARD CONNECTIONS SHALL BE ALLOWED. NO FERNCO OR FLEXIBLE RUBBER CONNECTIONS SHALL BE ALLOWED; MECHANICAL JOINTS ARE REQUIRED. ALL WORK SHOWN ON THIS SHEET IS WITHIN ZONE II.
2. WATER MAINS INSTALLED WITHIN 5 FT. OF GAS MAINS SHALL BE FULLY ENCASED BY POLYETHYLENE WRAP.
3. REFER TO THE UTILITY LIMITS OF WORK TABLE FOR GENERAL CONTRACTOR AND FILED SUB-BID CONTRACTORS' SCOPE OF WORK.
4. REFER TO M-DRAWINGS FOR CONTINUATION OF 100-FOOT SAMPLE TAP, RAW WATER, FINISHED WATER, BACKWASH BASIN OVERFLOW, WET WELL OVERFLOW, FLOW TO WASTE, SAMPLE SINK WASTE, AND TANK VENTS.
5. REFER TO SHEET CD-9, CD-10 AND CD-11 FOR UTILITY CROSSING PROFILES.
6. REFER TO WORK SEQUENCE, SHEET G-2 FOR WATER MAIN TIE-IN SEQUENCE. CONTRACTOR SHALL SUBMIT AN EXTERIOR UTILITY SEQUENCING PLAN FOR REVIEW AND APPROVAL BY ENGINEER/OWNER.
7. THE WORK TO BE COMPLETED UNDER THIS CONTRACT SHALL BE COORDINATED WITH THE WORK TO BE COMPLETED BY THE WATER MAIN CONTRACTOR. IT IS ESSENTIAL THAT ALL PARTIES INTERESTED COOPERATE TO THE END THAT THE ENTIRE PROJECT WILL BE BROUGHT TO A SUCCESSFUL COMPLETION AS RAPIDLY AS POSSIBLE, BUT THE OWNER CANNOT GUARANTEE THAT NO INTERFERENCE OR DELAY WILL BE CAUSED THEREBY. INTERFERENCE OR DELAY RESULTING FROM SUCH COOPERATION SHALL NOT BE THE BASIS OF CLAIMS AGAINST THE OWNER.
8. REFER TO SHEET C-6 FOR UTILITY LIMITS OF WORK TABLE.

ENVIRONMENTAL PARTNERS
An Apex Company

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER
April 2024

MARK	DATE	DESCRIPTION

Scale	AS NOTED
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH
Drawn by	SBS/JDH
Checked by	MEPA
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

CIVIL WATER TREATMENT PLANT UTILITIES PLAN II

FOR CONSTRUCTION

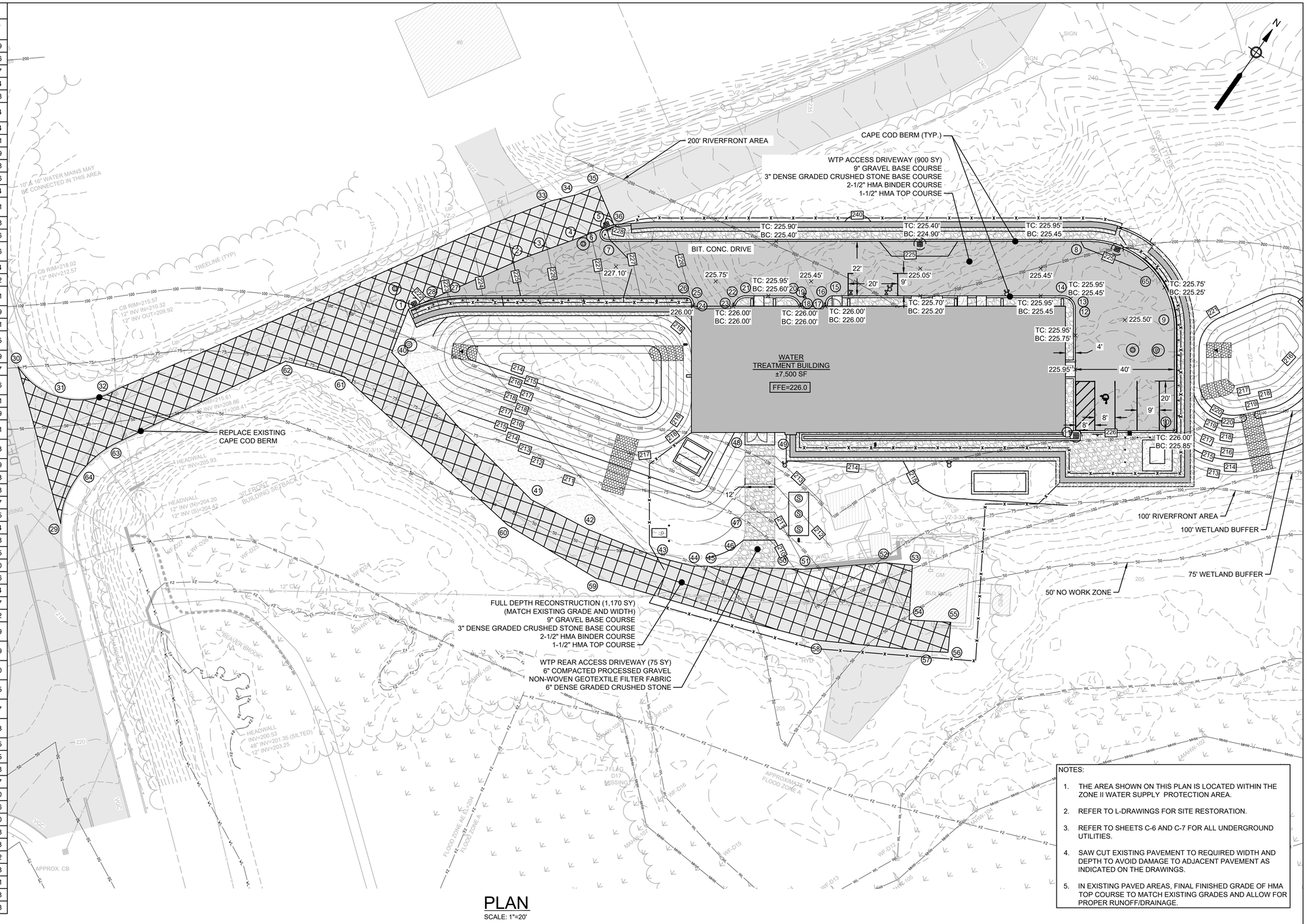
Sheet No.

C-7

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.1 Civil Sheets.dwg Plot: Date: Apr 11,2024-3:31pm

FEATURE COORDINATES (NAD83)

DESCRIPTION	NORTHING (FT)	EASTING (FT)
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 1	2871290.28	741621.79
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 2	2871334.89	741648.56
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 3	2871342.32	741653.77
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 4	2871353.82	741661.84
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 5	2871362.56	741667.68
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT - MID POINT OF CURVE 6	2871359.06	741668.04
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 7	2871358.78	741671.54
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 8	2871470.45	741830.41
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 9	2871461.91	741879.19
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 10	2871428.05	741902.98
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 11	2871405.05	741870.26
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 12	2871445.48	741841.84
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT - MID POINT OF CURVE 13	2871447.53	741838.61
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 14	2871446.70	741834.88
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 15	2871393.10	741758.66
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT - MID POINT OF CURVE 16	2871390.86	741757.66
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 17	2871388.17	741758.84
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 18	2871382.39	741750.62
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT - MID POINT OF CURVE 19	2871383.86	741747.51
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 20	2871382.97	741744.19
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 21	2871372.93	741729.91
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT - MID POINT OF CURVE 22	2871370.12	741728.05
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 23	2871366.77	741728.39
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 24	2871357.47	741715.17
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT MID POINT OF CURVE 25	2871359.66	741712.56
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 26	2871359.22	741710.41
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT 27	2871307.96	741637.49
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT - MID POINT OF CURVE 28	2871301.01	741629.51
WTP ACCESS DRIVEWAY EDGE OF PAVEMENT - MID POINT OF CURVE 65	2871475.66	741859.73
FULL DEPTH RECONSTRUCTION 29	2871138.77	741556.69
FULL DEPTH RECONSTRUCTION 30	2871180.73	741506.13
FULL DEPTH RECONSTRUCTION 31	2871181.97	741530.83
FULL DEPTH RECONSTRUCTION 32	2871194.07	741542.97
FULL DEPTH RECONSTRUCTION 33	2871359.28	741643.85
FULL DEPTH RECONSTRUCTION 34	2871367.29	741650.84
FULL DEPTH RECONSTRUCTION 35	2871374.90	741655.58
FULL DEPTH RECONSTRUCTION 36	2871365.98	741669.95
FULL DEPTH RECONSTRUCTION 40	2871272.15	741626.30
FULL DEPTH RECONSTRUCTION 41	2871255.95	741706.56
FULL DEPTH RECONSTRUCTION 42	2871259.26	741731.94
FULL DEPTH RECONSTRUCTION 43	2871265.78	741760.27
FULL DEPTH RECONSTRUCTION 44	2871271.46	741775.12
WTP REAR ACCESS DRIVEWAY EDGE OF GRAVEL 45	2871275.23	741780.79
WTP REAR ACCESS DRIVEWAY EDGE OF GRAVEL - MID POINT OF CURVE 46	2871284.40	741786.49
WTP REAR ACCESS DRIVEWAY EDGE OF GRAVEL 47	2871295.10	741784.50
WTP REAR ACCESS DRIVEWAY EDGE OF GRAVEL 48	2871323.67	741764.45
WTP REAR ACCESS DRIVEWAY EDGE OF GRAVEL 49	2871330.57	741774.27
WTP REAR ACCESS DRIVEWAY EDGE OF GRAVEL 50	2871289.80	741802.93
FULL DEPTH RECONSTRUCTION 51	2871296.41	741812.95
FULL DEPTH RECONSTRUCTION 52	2871317.15	741837.85
FULL DEPTH RECONSTRUCTION 53	2871322.72	741847.68
FULL DEPTH RECONSTRUCTION 54	2871303.98	741859.27
FULL DEPTH RECONSTRUCTION 55	2871312.84	741873.60
FULL DEPTH RECONSTRUCTION 56	2871302.27	741879.66
FULL DEPTH RECONSTRUCTION 57	2871297.72	741872.40
FULL DEPTH RECONSTRUCTION 58	2871275.64	741833.18
FULL DEPTH RECONSTRUCTION 59	2871245.01	741746.13
FULL DEPTH RECONSTRUCTION 60	2871242.10	741704.62
FULL DEPTH RECONSTRUCTION 61	2871253.15	741616.28
FULL DEPTH RECONSTRUCTION 62	2871244.62	741593.31
FULL DEPTH RECONSTRUCTION 63	2871176.89	741555.58
FULL DEPTH RECONSTRUCTION 64	2871160.43	741551.38



NOTES:

1. THE AREA SHOWN ON THIS PLAN IS LOCATED WITHIN THE ZONE II WATER SUPPLY PROTECTION AREA.
2. REFER TO L-DRAWINGS FOR SITE RESTORATION.
3. REFER TO SHEETS C-6 AND C-7 FOR ALL UNDERGROUND UTILITIES.
4. SAW CUT EXISTING PAVEMENT TO REQUIRED WIDTH AND DEPTH TO AVOID DAMAGE TO ADJACENT PAVEMENT AS INDICATED ON THE DRAWINGS.
5. IN EXISTING PAVED AREAS, FINAL FINISHED GRADE OF HMA TOP COURSE TO MATCH EXISTING GRADES AND ALLOW FOR PROPER RUNOFF/DRAINAGE.

PLAN

SCALE: 1"=20'

ENVIRONMENTAL PARTNERS
— An Apex Company —

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
April 2024

MARK	DATE	DESCRIPTION

Scale	1" = 20'
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH
Drawn by	SBS/JDH
Checked by	MEPA
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

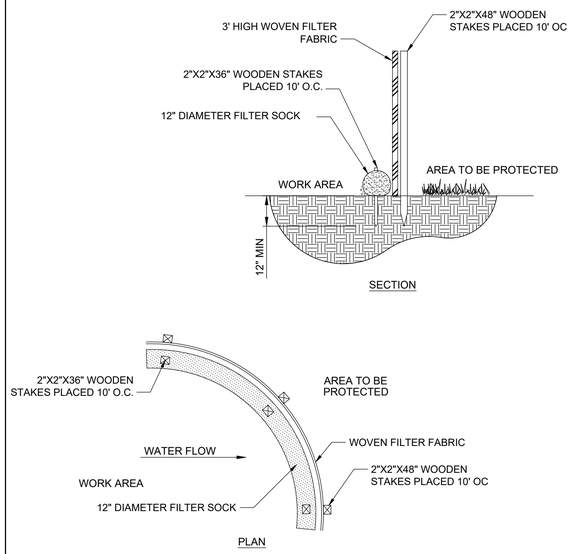
CIVIL WATER TREATMENT PLANT PAVING PLAN

FOR CONSTRUCTION

Sheet No.

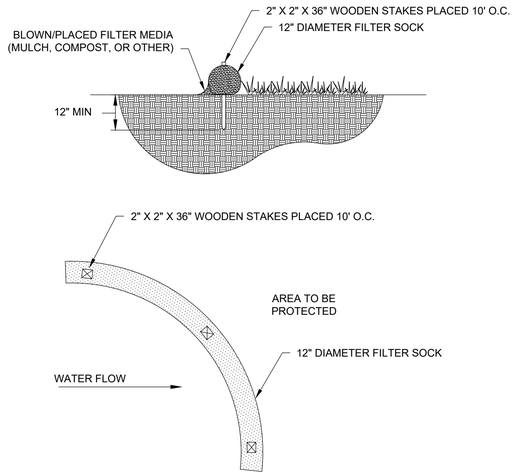
C-8

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.1 Civil Sheets.dwg Plot Date: Apr 05,2024-1:15pm



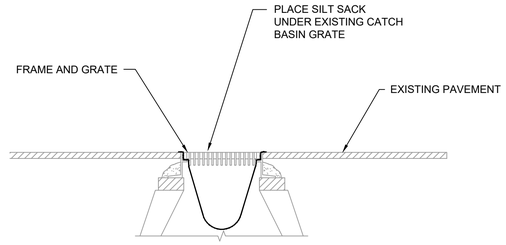
12" DIAMETER FILTER SOCK WITH SILT FENCE

SCALE: N.T.S.



12" DIAMETER FILTER SOCK

SCALE: N.T.S.

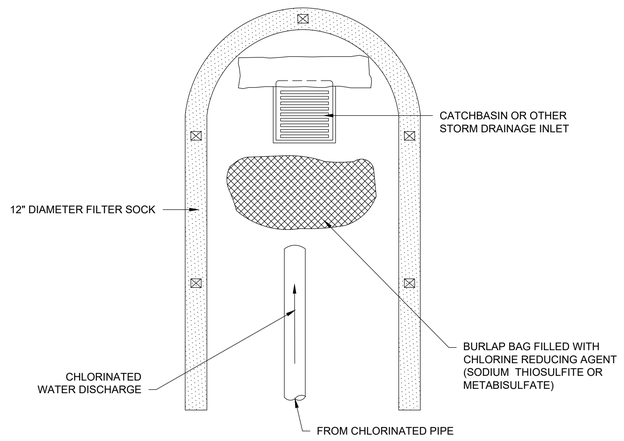


NOTES:

1. SILT SACKS SHALL BE INSPECTED WEEKLY AND ACCUMULATED SILT REMOVED TO ALLOW CATCH BASIN TO FUNCTION PROPERLY.
2. SILT SACK AS MANUFACTURED BY ACF ENVIRONMENTAL OR APPROVED EQUAL.

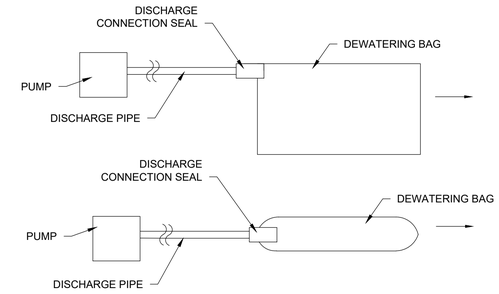
SEDIMENTATION CONTROL AT CATCH BASINS SILT SACKS

SCALE: N.T.S.



DECHLORINATION DETAIL

SCALE: N.T.S.

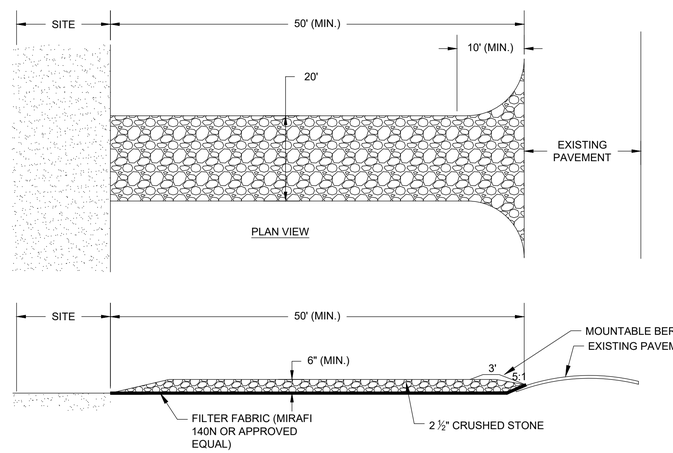


NOTES:

1. DEWATERING BAG SIZE AND QUANTITY SHALL BE AS NEEDED TO ADEQUATELY FILTER ALL PUMP EFFLUENT FROM DEWATERING ACTIVITIES. CONTRACTOR SHALL PROVIDE A REDUNDANT BAG ON SITE AT ALL TIMES.
2. EACH BAG SHALL HANDLE A 2", 3", OR 4" DISCHARGE HOSE.
3. DISCHARGE HOSES CAN BE PLACED ALONG ANY EDGE BY MAKING A SMALL INCISION INTO THE FABRIC, INSERTING THE HOSE, AND THEN CLAMPING THE FABRIC TO THE HOSE VIA WIRE, TIES, CLAMP, ROPE OR SIMILAR TO CREATE A GOOD SEAL.
4. CONTRACTOR SHALL AVOID DISCHARGING MULTIPLE PIPES INTO ONE BAG.

DEWATERING BAGS

SCALE: N.T.S.



NOTES:

1. STABILIZED CONSTRUCTION ENTRANCE SHALL NOT EXTEND OFF THE PROPERTY
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO REAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED.
3. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED OR AS DIRECTED BY ENGINEER/OWNER/TOWN.
4. MANUFACTURED COMPOSITE TRACKING PADS MADE OF ULTRA-HIGH-MOLECULAR-WEIGHT POLYETHYLENE (UHMWPE) MAY BE USED IN PLACE OF CRUSHED STONE AND FILTER FABRIC. PADS SHALL BE FODS TCM MODEL #1100 OR ENGINEER APPROVED EQUAL.

STABILIZED CONSTRUCTION EXIT

SCALE: N.T.S.

ENVIRONMENTAL PARTNERS — An Apex Company —

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS
April 2024

MARK	DATE	DESCRIPTION

Scale	NTS
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH/MEPA
Drawn by	JDH/MEPA
Checked by	MEPA
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

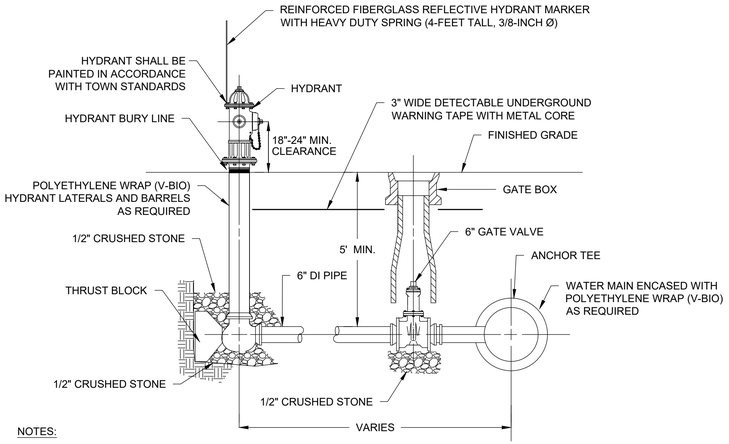
CIVIL CONSTRUCTION DETAILS I

FOR CONSTRUCTION

Sheet No.

CD-1

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.2 Civil Detail Sheets.dwg Plot Date: Apr 11,2024-2:25pm

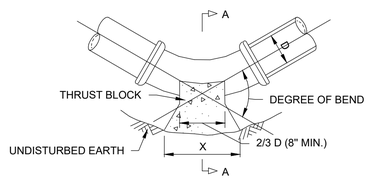


NOTES:

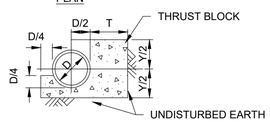
1. CONFIRM HYDRANT LOCATION WITH OWNER PRIOR TO EXCAVATION.
2. ALL HYDRANT, VALVE, AND TEE JOINTS SHALL HAVE RESTRAINED MECHANICAL JOINTS.
3. DEPTH OF HYDRANT BURY SHALL SUIT INSTALLED DEPTH OF COVER OVER WATER MAIN. INSTALL RISERS AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
4. FIRE HYDRANTS SHALL BE PAINTED BY PAINTING FSB IN ACCORDANCE WITH THE TOWN'S STANDARD COLORS:
   - FINISHED WATER HYDRANTS SHALL BE PAINTED YELLOW BODY WITH RED BONNET AND CAPS.
   - RAW WATER AND FLOW TO WASTE HYDRANTS SHALL BE PAINTED GREEN.
5. EACH RAW WATER AND FLOW TO WASTE HYDRANT SHALL BE PROVIDED WITH WEATHER RESISTANT METALLIC SIGN - "NON POTABLE - NOT FOR FIRE PROTECTION". REFER TO SPECIFICATION SECTION 02550 FOR ADDITIONAL REQUIREMENTS. COORDINATE SIGN SIZE, LANGUAGE, AND FINAL LOCATION WITH TOWN OF SHARON FIRE DEPARTMENT.
6. HYDRANTS SHALL OPEN RIGHT (CLOCKWISE TO OPEN).

HYDRANT ASSEMBLY DETAIL

SCALE: N.T.S.



PLAN



SECTION A-A

NOTES:

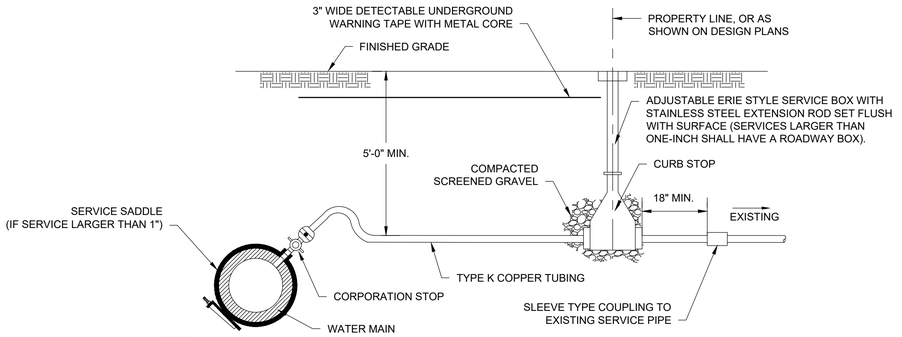
1. ALL CONCRETE SHALL BE 3000 P.S.I. @ 28 DAYS (CLASS "A" CONCRETE)
2. DIMENSIONS SHOWN ARE MINIMUM AND ARE BASED UPON SOIL PRESSURE OF 1500 P.S.F. AND TOTAL PRESSURE OF 250 P.S.I. TOTAL PRESSURE IS WORKING PRESSURE PLUS SURGE PRESSURE.
3. THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.

TABLE OF DIMENSIONS

DIMENSION	90° BEND						45° BEND						22 1/2° BEND						11 1/4° BEND					
D (in.)	4	6	8	10	12	14	4	6	8	10	12	14	4	6	8	10	12	14	4	6	8	10	12	14
X (in.)	35	35	50	56	72	80	24	24	35	45	51	60	28	28	30	32	37	42	12	12	19	21	27	33
Y (in.)	20	20	24	32	35	40	16	16	19	21	27	33	13	13	13	16	19	22	8	8	9	12	13	16
T (in.)	11	11	14	16	19	22	11	11	14	16	19	22	11	11	13	16	19	22	11	11	13	16	19	22

CONCRETE THRUST BLOCK DETAIL AT BEND

SCALE: N.T.S.

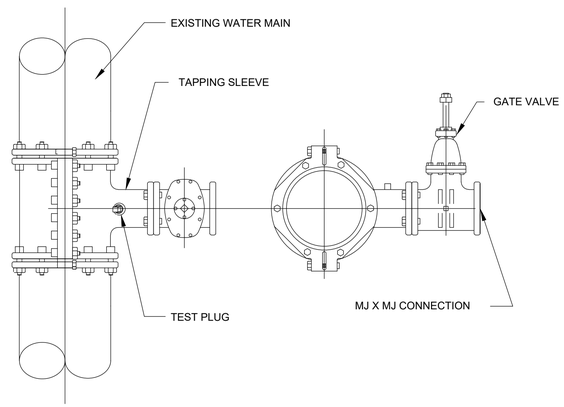


NOTES:

1. ALL EXISTING SERVICES SHALL BE CLOSED AT THE CORPORATION AND EXISTING SERVICE TUBING SHALL BE ABANDONED IN PLACE.
2. ALL SERVICE TUBING SHALL BE TYPE K COPPER.
3. ALL JOINTS SHALL BE COMPRESSION TYPE.
4. COPPER WIRE SERVICE LINE SHALL BE BACKFILLED WITH SAND BY HAND TO 12" ABOVE TUBING AND SHALL HAVE A SAND BEDDING OF 6".
5. CORPORATION STOPS LARGER THAN ONE INCH SHALL HAVE A SADDLE.
6. WATER SERVICES SHALL BE INSULATED IN AREAS WHERE CONNECTION TO EXISTING WATER SERVICE IS LESS THAN 4 FEET.
7. COMPACTED-SCREENED GRAVEL SHALL BE PLACED BELOW THE CURB STOP.
8. ALL WATER SERVICE PLUMBING MATERIALS SHALL BE "LEAD FREE" IN ACCORDANCE WITH SECTION 1417 OF THE SAFE DRINKING WATER ACT AND SECTION 9 OF NSF STANDARD 61.
9. SERVICE BOX SHALL BE MANUFACTURED IN NORTH AMERICA.

TYPICAL SERVICE TRANSFER DUCTILE IRON WATER MAINS

SCALE: N.T.S.



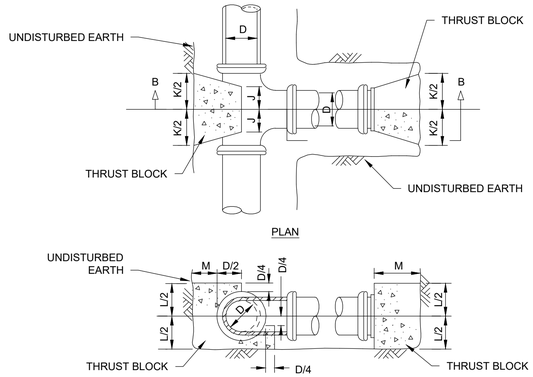
PLAN SECTION

NOTES:

1. TAPS PERFORMED ON WATER MAINS SHALL USE A FULL BODY, CORROSION RESISTANT, HIGH STRENGTH STAINLESS STEEL WITH HIGH PRESSURE CEILING, TAPPING SLEEVE.

TAPPING SLEEVE AND GATE VALVE

SCALE: N.T.S.



PLAN

NOTES: SECTION B-B

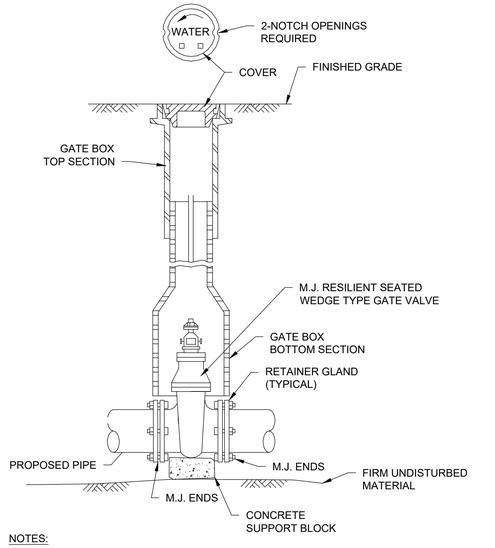
1. ALL CONCRETE SHALL BE 3000 PSI @ 28 DAYS (CLASS 'A' CONCRETE).
2. DIMENSIONS SHOWN ARE MINIMUM AND ARE BASED UPON SOIL PRESSURE OF 1500 PSF AND TOTAL PRESSURE OF 250 PSI. TOTAL PRESSURE IS WORKING PRESSURE PLUS SURGE PRESSURE.
3. THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.

TABLE OF DIMENSIONS

D (in)	4	6	8	10	12	14
J (in)	6	6	7	9	10	12
K (in)	16	16	20	26	32	36
L (in)	16	16	21	24	29	34
M (in)	11	11	14	16	19	22

CONCRETE THRUST BLOCK DETAIL AT TEE / PLUG/CAP

SCALE: N.T.S.



NOTES:

1. ALL GATE VALVE AND VALVE BOXES SHALL BE MANUFACTURED IN NORTH AMERICA.
2. GATE VALVES SHALL OPEN LEFT (COUNTERCLOCKWISE TO OPEN).

GATE VALVE AND VALVE BOX DETAIL

SCALE: N.T.S.

ENVIRONMENTAL PARTNERS — An Apex Company —

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS
April 2024

MARK	DATE	DESCRIPTION

Scale	NTS
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH/MEPA
Drawn by	JDH/MEPA
Checked by	MEPA
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

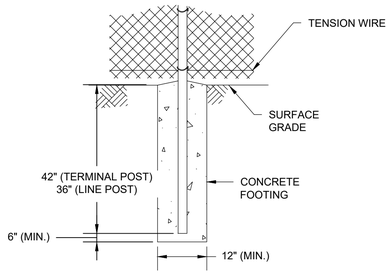
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

CIVIL CONSTRUCTION DETAILS II

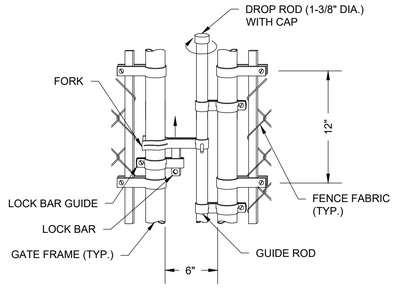
FOR CONSTRUCTION

Sheet No.

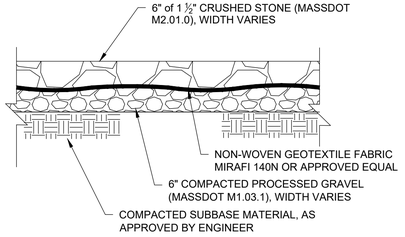
CD-2



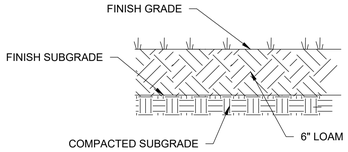
FENCE FOOTING DETAIL
SCALE: N.T.S.



DROP ROD ASSEMBLY DETAIL
SCALE: N.T.S.



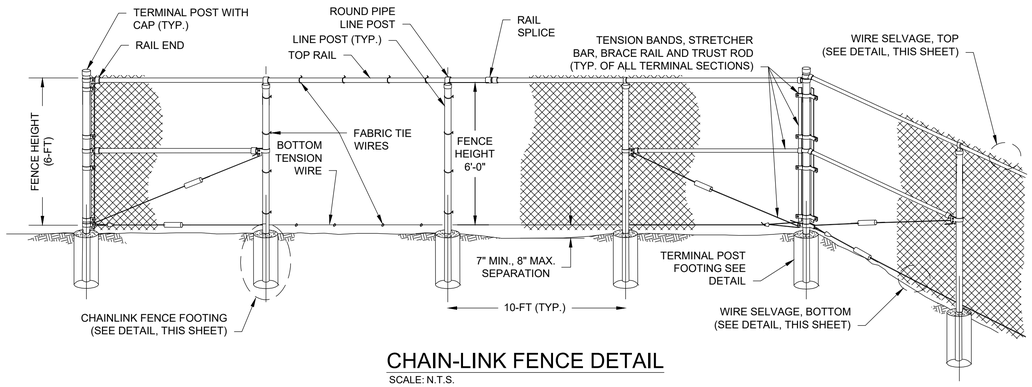
GRAVEL SHOULDER AREA DETAIL
SCALE: N.T.S.



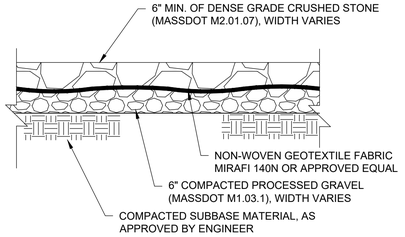
NOTE:

1. INSTALL CURLEX CL EROSION CONTROL BLANKET AS MANUFACTURED BY AMERICAN EXCELSIOR COMPANY (OR APPROVED EQUAL) ON ALL LOAM AND SEEDED SLOPES 3:1 OR STEEPER.
2. REFER TO L-DRAWINGS FOR SEED MIX.

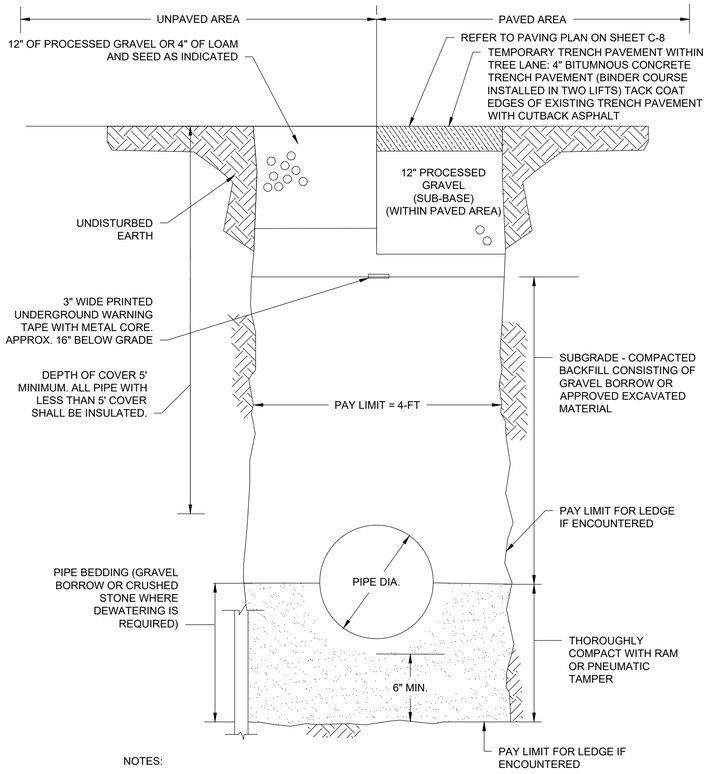
LOAM AND SEED (DISTURBED AREAS)
SCALE: N.T.S.



CHAIN-LINK FENCE DETAIL
SCALE: N.T.S.



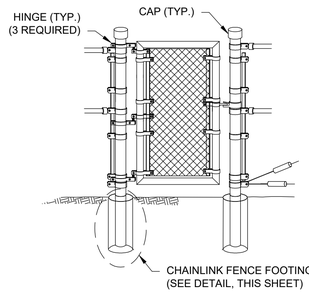
GRAVEL DRIVEWAY DETAIL
SCALE: N.T.S.



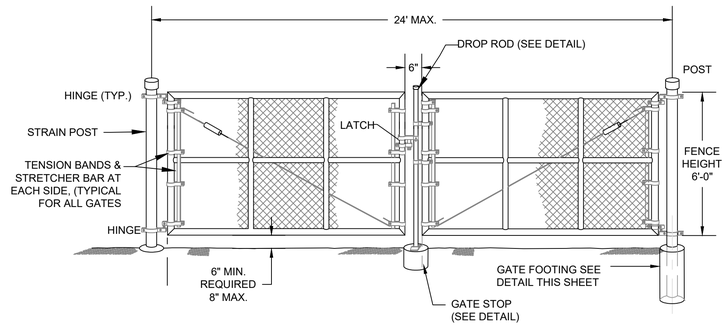
NOTES:

1. PAVEMENT INSTALLED BEYOND PAYMENT LINE MUST BE PRE-APPROVED BY THE ENGINEER.
2. THE FINISHED SURFACE OF THE MIXTURE, AFTER COMPACTION, SHALL BE TRUE TO THE ESTABLISHED LINE AND GRADE OF THE EXISTING PAVEMENT.
3. TRENCH PAVEMENT SHALL BE MACHINE LAID UTILIZING A SIDEWALK BOX SPREADER OR EQUAL; NO HAND WORK IS ALLOWED.
4. COMPACTION TESTING SHALL BE PERFORMED EVERY 200' FOR THE LENGTH OF THE PROJECT. ACCEPTABLE COMPACTION TEST RESULT MUST BE REVIEWED AND APPROVED BY THE ENGINEER.

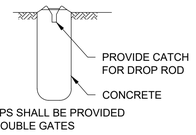
TYPICAL WATER MAIN TRENCH DETAIL
SCALE: N.T.S.



4-FT WIDE PEDESTRIAN GATE
SCALE: N.T.S.

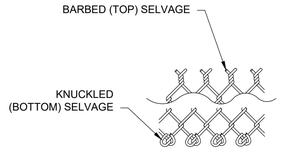


DOUBLE SWING GATE DETAIL
SCALE: N.T.S.



GATE STOPS SHALL BE PROVIDED FOR ALL DOUBLE GATES

GATE STOP DETAIL
SCALE: N.T.S.



WIRE SELVAGE DETAIL
SCALE: N.T.S.

			Scale	NTS
			Date	APRIL 2024
			Job No.	245-2103
			Designed by	JDH/MEPA
			Drawn by	JDH/MEPA
			Checked by	MEPA
MARK	DATE	DESCRIPTION	Approved by	ASK

ENVIRONMENTAL PARTNERS — An Apex Company

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER — COMMONWEALTH OF MASSACHUSETTS
April 2024

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

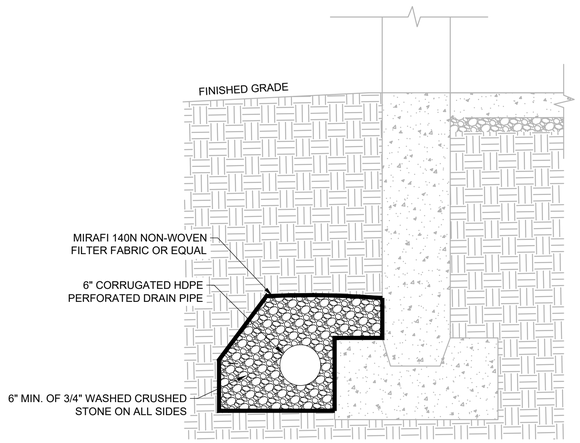
CIVIL CONSTRUCTION DETAILS III

FOR CONSTRUCTION

Sheet No.

CD-3

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.2 Civil Detail Sheets.dwg Plot Date: Apr 09,2024-2:18pm

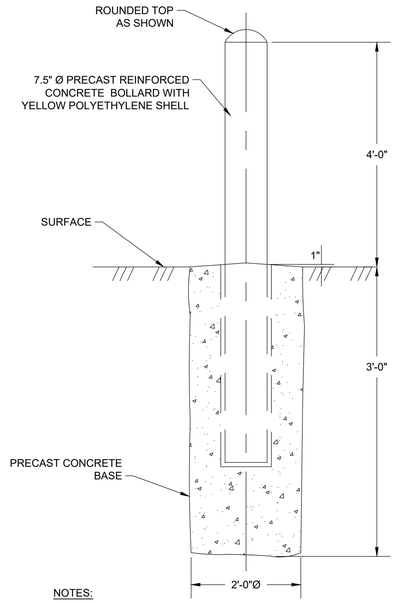


NOTES:

1. REFER TO A- AND S- DRAWINGS FOR ADDITIONAL REQUIREMENTS.

FOUNDATION DRAIN DETAIL

SCALE: N.T.S.

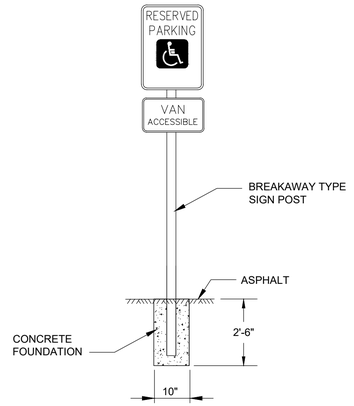


NOTES:

1. CONCRETE STRENGTH SHALL BE 5,000 PSI AFTER 28 DAYS.
2. STEEL REINFORCEMENT SHALL MEET ASTM A615, GRADE 60, MINIMUM COVER 2".
3. POLYETHYLENE SHELL SHALL BE UV RESISTANT.

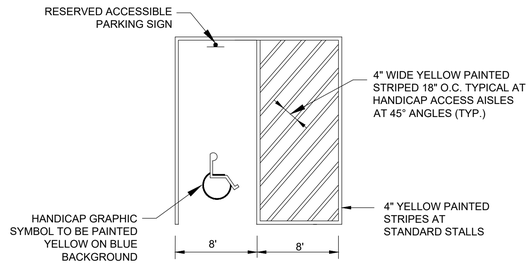
BOLLARD DETAIL

SCALE: N.T.S.



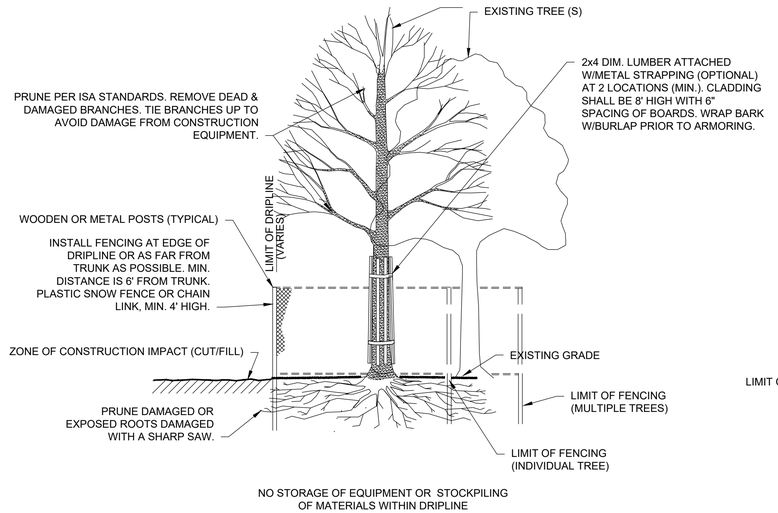
VAN ACCESSIBLE PARKING SIGN

SCALE: N.T.S.



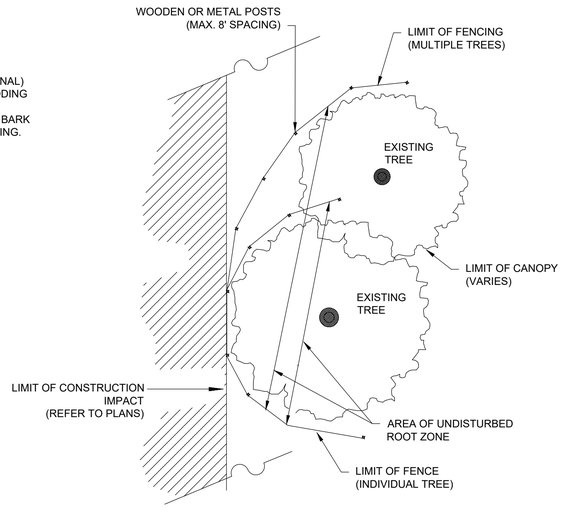
ACCESSIBLE PARKING SPACE

SCALE: N.T.S.

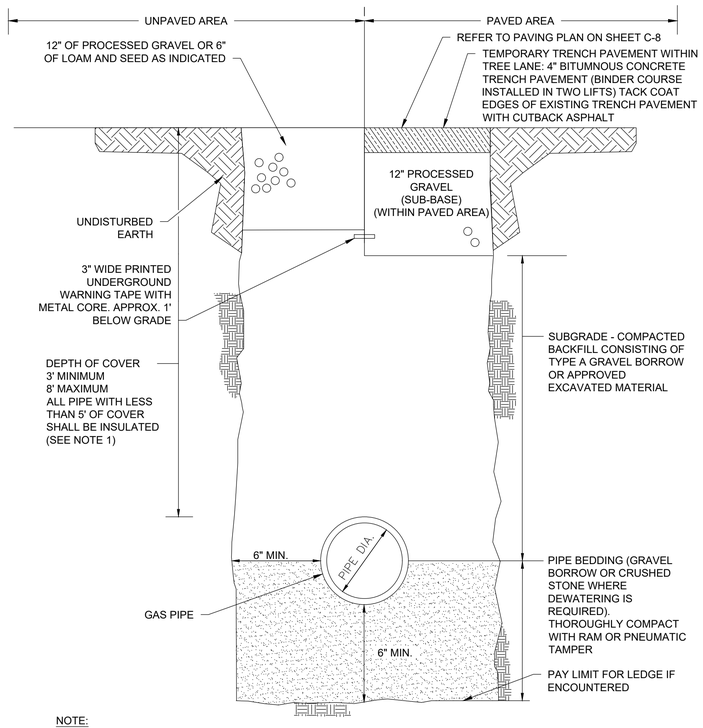


TREE PROTECTION DETAIL

SCALE: N.T.S.



PLAN VIEW



NOTE:

1. GAS PIPING SHALL BE PROVIDED WITH MIN. 36" OF COVER. GAS PIPING WITHIN PAVED AREAS SHALL BE PROVIDED WITH A PIPE SLEEVE AS DEEMED NECESSARY BY THE NATURAL GAS COMPANY.
2. REFER TO SHEET CD-5 FOR TYPICAL GRAVITY UTILITY TRENCH DETAIL FOR ALL GRAVITY UTILITIES.

TYPICAL PRESSURE UTILITY TRENCH DETAIL

SCALE: N.T.S.

ENVIRONMENTAL PARTNERS
— An Apex Company —

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
April 2024

MARK	DATE	DESCRIPTION

Scale	NTS
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH/MEPA
Drawn by	JDH/MEPA
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Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

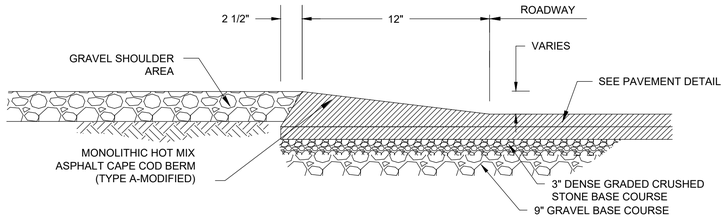
CIVIL CONSTRUCTION DETAILS IV

FOR CONSTRUCTION

Sheet No.

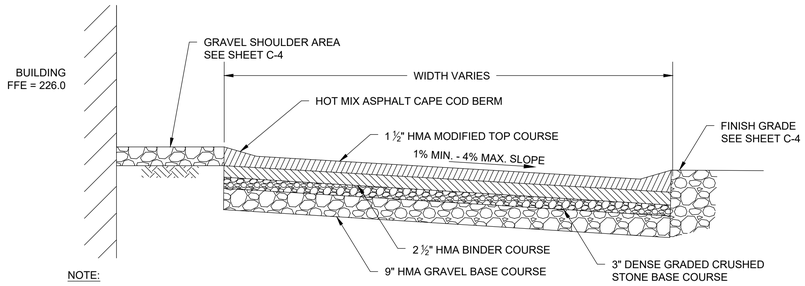
CD-4

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.2 Civil Detail Sheets.dwg Plot Date: Apr 09,2024-2:19pm



HOT MIX ASPHALT CAPE COD BERM DETAIL

SCALE: N.T.S.

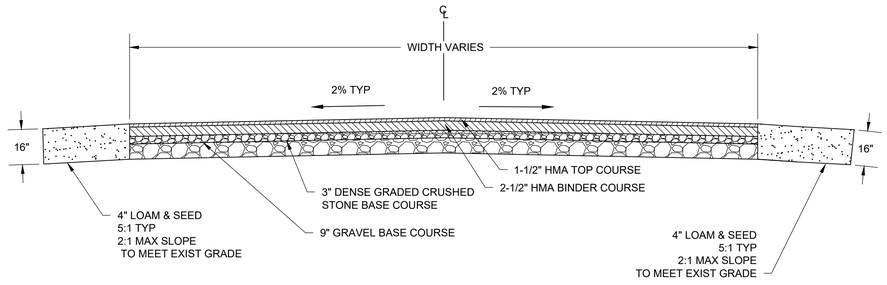


NOTE:

1. CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION TO THE OVERHEAD DOORS, AS SHOWN ON SHEET C-4.

SUPERELEVATED PAVEMENT DETAIL - WTP ACCESS DRIVEWAY

SCALE: N.T.S.

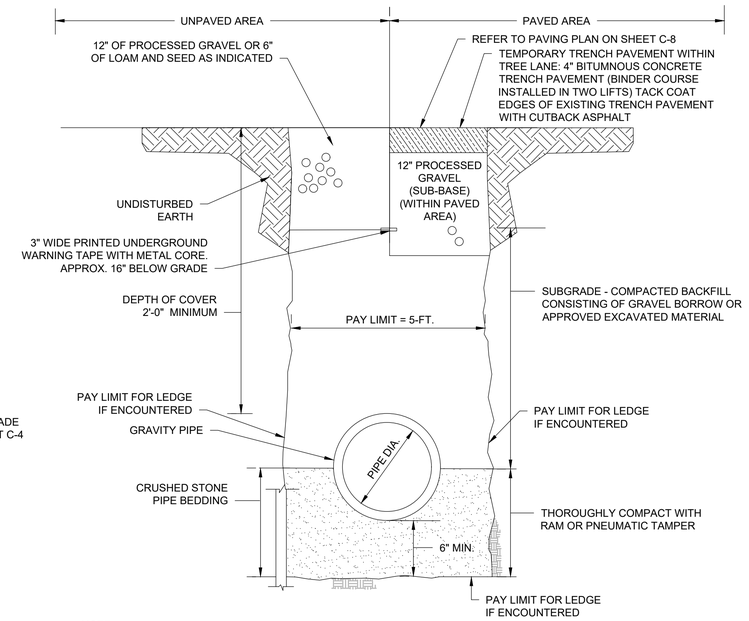


NOTES:

1. EXCAVATE AND REMOVE EXISTING MATERIAL TO A MINIMUM DEPTH OF 16 INCHES TO MEET FINISHED GRADES.
2. ROUGH AND FINE GRADE AS REQUIRED TO MEET FINISHED GRADES.
3. COMPACT SUB-BASE TO A MINIMUM OF 95% OF THE MATERIAL'S MAXIMUM DRY DENSITY AS DETERMINED IN THE LABORATORY USING MODIFIED PROCTOR ASTM D1557.
4. PROVIDE 9" GRAVEL BASE COURSE TOPPED WITH 3" DENSE GRADED CRUSHED STONE BASE COURSE.
5. PROVIDE 2-1/2" (COMPACTED THICKNESS) OF HMA BINDER COURSE IN 1 LIFT.
6. PROVIDE 1-1/2" (COMPACTED THICKNESS) OF HMA TOP COURSE IN 1 LIFT.
7. IN EXISTING PAVED AREAS, FINAL FINISHED GRADE OF HMA TOP COURSE TO MATCH EXISTING GRADES AND ALLOW FOR PROPER RUNOFF/DRAINAGE.
8. IN AREAS WHERE PAVEMENT DID NOT PREVIOUSLY EXIST, FINAL FINISHED GRADE OF HMA TOP COURSE TO MATCH PROPOSED GRADING.
9. REFER TO SHEET C-8 FOR ADDITIONAL PAVING REQUIREMENTS.

TYPICAL PAVEMENT PROFILE

SCALE: N.T.S.

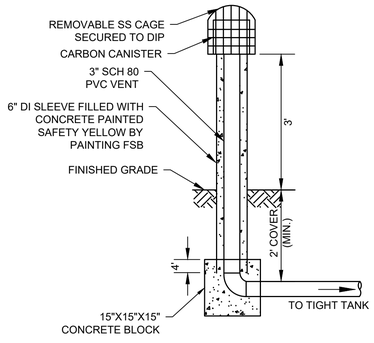


NOTE:

1. ALL GRAVITY PIPES SHALL BE PROVIDED WITH A MINIMUM OF 2'-0" OF COVER. THE SAND BEDDING AND COVER SHALL EXTEND TO THE TOP OF THE PIPE AT A MINIMUM IN ACCORDANCE WITH DIPRA'S "TRUCK LOADS ON PIPE BURIED AT SHALLOW DEPTHS" TYPE 5 TRENCH.

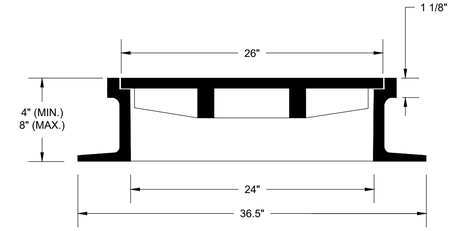
TYPICAL GRAVITY UTILITY TRENCH DETAIL

SCALE: N.T.S.



TIGHT TANK VENT RISER DETAIL

SCALE: N.T.S.

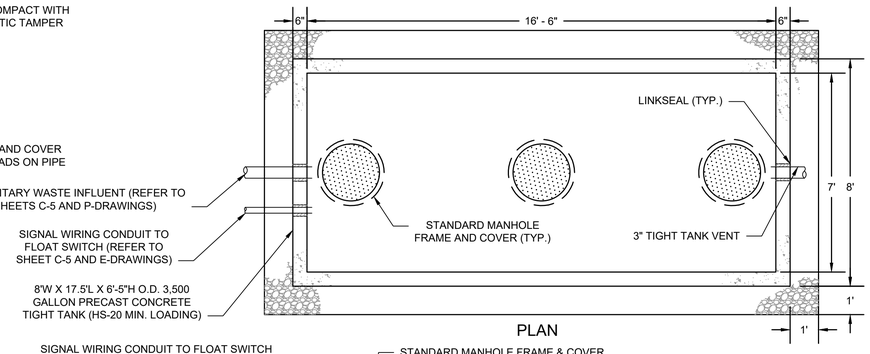


NOTES:

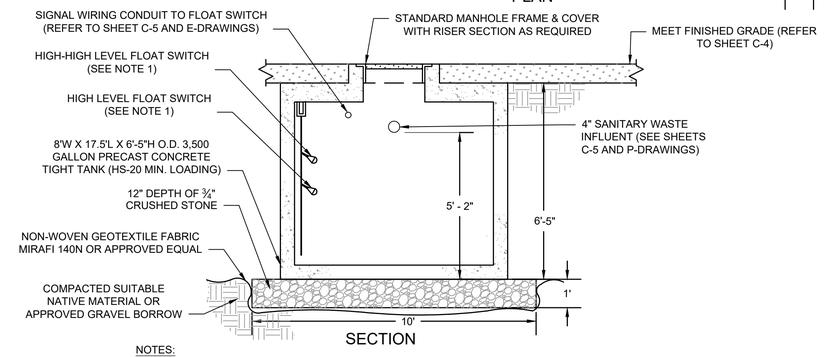
1. FRAME AND COVER SHALL BE EXTRA HEAVY DUTY, 24 INCH DIAMETER, MODEL 2110A AND 2114Z, AS MANUFACTURED BY EJ OR APPROVED EQUAL.
2. EACH COVER SHALL READ SEWER OR DRAIN IN 3" LETTERING.
3. FRAME AND COVER SHALL BE SET IN FULL BED OF MORTAR.
4. FRAME HEIGHT TO BE DETERMINED BY CONTRACTOR.

STANDARD MANHOLE FRAME AND COVER

SCALE: N.T.S.



PLAN



SECTION

NOTES:

1. LOCATE HIGH LEVEL FLOAT AT THREE-FIFTHS CAPACITY. LOCATE HIGH-HIGH LEVEL FLOAT SWITCH AT FOUR-FIFTHS CAPACITY. FLOAT SWITCHES SHALL INITIATE AN AUDIBLE AND VISUAL ALARM TO THE MAIN CONTROL PANEL.
2. CONTRACTOR TO EMPTY TIGHT TANKS AS NECESSARY THROUGHOUT THE DURATION OF CONSTRUCTION THROUGH SUBSTANTIAL COMPLETION AND CONSTRUCTION OF THE BUILDING.
3. THE TOWN OF SHARON BOARD OF HEALTH AGENT FOR ENGINEERING MUST INSPECT THE TIGHT TANK PRIOR TO ANY BACKFILLING AND MUST BE PRESENT FOR ALARM TESTING. THE GENERAL CONTRACTOR SHALL NOTIFY THE TOWN OF SHARON BOARD OF HEALTH AT LEAST 72 HOURS IN ADVANCE OF BACKFILLING AND TESTING.

PRECAST CONCRETE TIGHT TANK

SCALE: N.T.S.

ENVIRONMENTAL PARTNERS — An Apex Company —

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS
April 2024

MARK	DATE	DESCRIPTION

Scale	NTS
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH/MEPA
Drawn by	JDH/MEPA
Checked by	MEPA
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

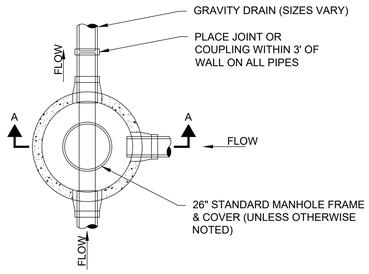
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

CIVIL CONSTRUCTION DETAILS V

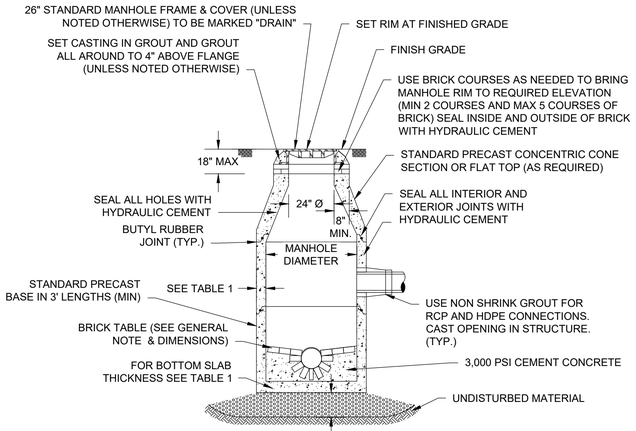
FOR CONSTRUCTION

Sheet No.

CD-5



PLAN



SECTION A-A

TABLE 1

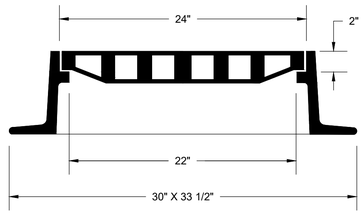
MH DIA.	SIDE WALL MIN. THICKNESS	BOTTOM WALL MIN. THICKNESS
4'	5"	6"
5'	6"	8"
6'	6"	8"

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION.
2. GEOTEXTILE FABRIC SHALL BE INSTALLED AROUND TRENCH LIMITES TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" FOR 12"-24"; 6" FOR 30"-60".
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. CONCRETE CAP MAY BE REQUIRED TO PREVENT FLOTATION FOR PIPE IN GROUNDWATER. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 36" MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

TYPICAL DRAIN MANHOLE

SCALE: N.T.S.

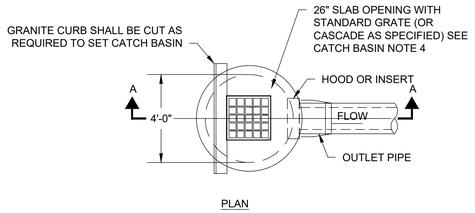


NOTES:

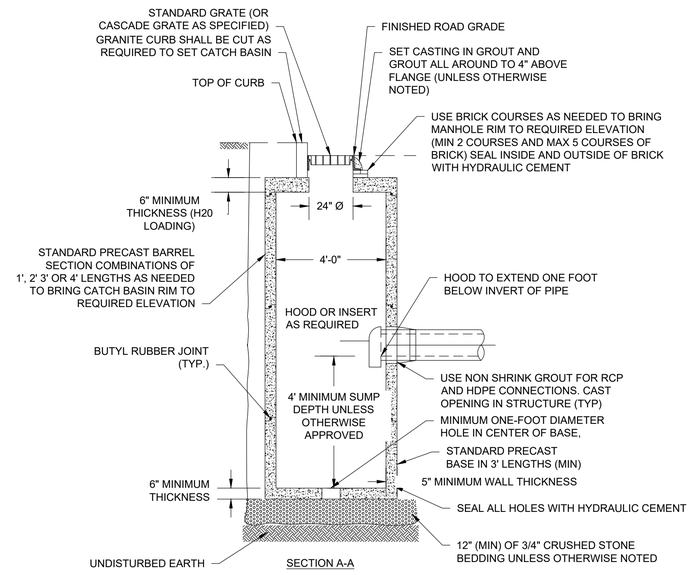
1. FRAME AND GRATE SHALL BE EJ, OR APPROVED EQUAL.
2. FRAME AND GRATE SHALL BE SET IN FULL BED OF MORTAR ON A MINIMUM OF TWO COURSES OF BRICK.
3. FRAME HEIGHT TO BE DETERMINED BY CONTRACTOR.

STANDARD CATCH BASIN FRAME AND GRATE

SCALE: N.T.S.



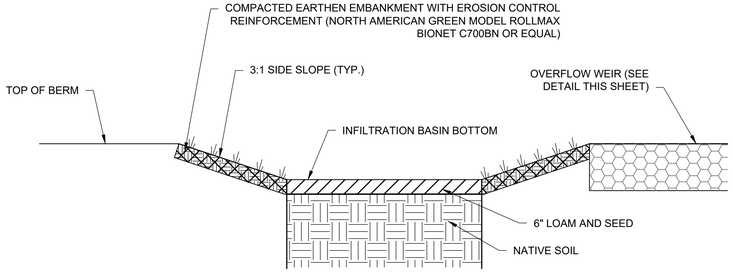
PLAN



SECTION A-A

TYPICAL CATCH BASIN

SCALE: N.T.S.

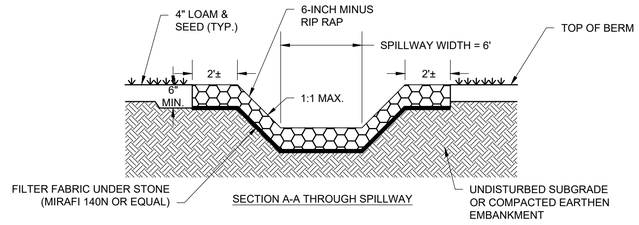


NOTES:

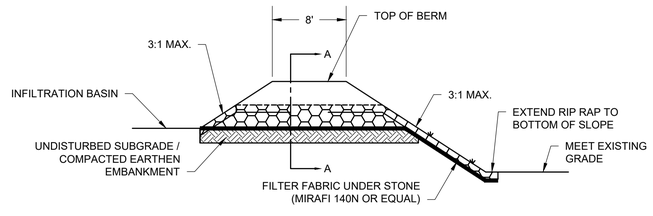
1. PROVIDE TOPSOIL IN ACCORDANCE WITH SECTION 02920..
2. REFER TO L-DRAWINGS FOR SEED MIX REQUIREMENTS FOR SIDE SLOPES AND BASIN BOTTOM.
3. DIRECT STORMWATER RUNOFF TO CONSTRUCTION PERIOD BMPs UNTIL SITE STABILIZATION. STORMWATER MAY BE DIRECTED TO THE STORM WATER INFILTRATION BASINS ONLY ONCE THE CHANNEL AND THE CONTRIBUTING DRAINAGE AREA HAVE BEEN FULLY STABILIZED.
4. DURING CONSTRUCTION AVOID EXCESSIVELY COMPACTING SOILS AROUND THE INFILTRATION BASIN AND ACCUMULATING SILT AROUND THE DRAIN FIELD. TO AVOID COMPACTION OF THE PARENT MATERIAL, WORK FROM THE EDGE OF PROPOSED INFILTRATION BASIN AND COMPACT WITH MINIMAL PRESSURE UNTIL THE DESIRED ELEVATION IS REACHED.
5. INFILTRATION BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MASSACHUSETTS STORMWATER HANDBOOK.

TYPICAL STORM WATER INFILTRATION BASIN DETAIL

SCALE: N.T.S.



SECTION A-A THROUGH SPILLWAY

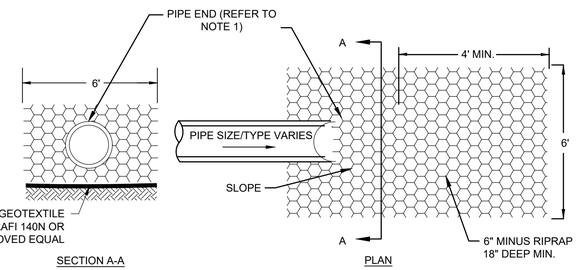


NOTES:

1. FILTER FABRIC SHALL BE INSTALLED AND FASTENED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. SEAMS SHALL OVERLAP 12 TO 18 INCHES.
2. REFER TO SHEET C-5 FOR ELEVATIONS AND FEATURE COORDINATES.

INFILTRATION BASIN RIPRAP OVERFLOW WEIR

SCALE: N.T.S.



SECTION A-A PLAN

NOTES:

1. 12" CORRUGATED HDPE DRAINAGE PIPE: FURNISH AND INSTALL HDPE FLARED END SECTION. 12" DI BACKWASH BASIN OVERFLOW AND 12" DI WET WELL OVERFLOW: FURNISH AND INSTALL FLAPPER VALVE.

RIPRAP PAD AT PIPE END

SCALE: N.T.S.

ENVIRONMENTAL PARTNERS — An Apex Company —

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
April 2024

MARK	DATE	DESCRIPTION

Scale	NTS
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH/MEPA
Drawn by	JDH/MEPA
Checked by	MEPA
Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

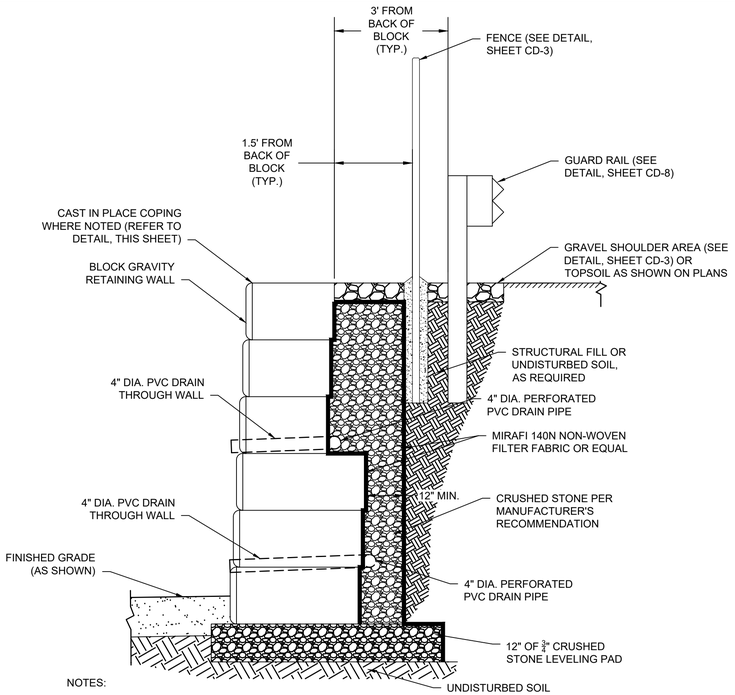
CIVIL CONSTRUCTION DETAILS VI

FOR CONSTRUCTION

Sheet No.

CD-6

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.2 Civil Detail Sheets.dwg Plot Date: Apr 09,2024-2:25pm

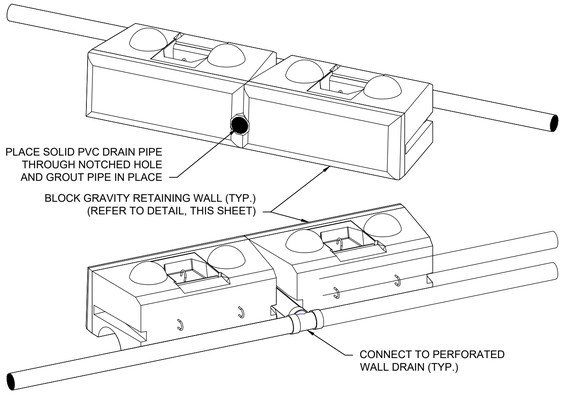


NOTES:

1. BASIS OF DESIGN: REDI-ROCK RETAINING BLOCKS.
2. GRAVITY RETAINING WALL TO BE DESIGNED BY CONTRACTOR'S VENDOR. ADDITIONAL EXCAVATION OR MATERIAL NEEDED TO ACCOMMODATE A RETAINING WALL SYSTEM, OTHER THAN THE BASIS OF DESIGN, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
3. PVC DRAIN PIPE SHALL BE INSTALLED AT 10-FEET ON CENTER MINIMUM. MINIMUM SLOPE SHALL BE 0.005 FT/FT.
4. FOR SURFACE MOUNTED FEATURES, DRILL AND EPOXY OR GROUT ANCHOR BOLTS A MINIMUM OF 6" FROM EDGE OF BLOCK.
5. COORDINATE GRAVITY RETAINING WALL WITH CHAIN LINK FENCE AND GUARDRAIL INSTALLATION.

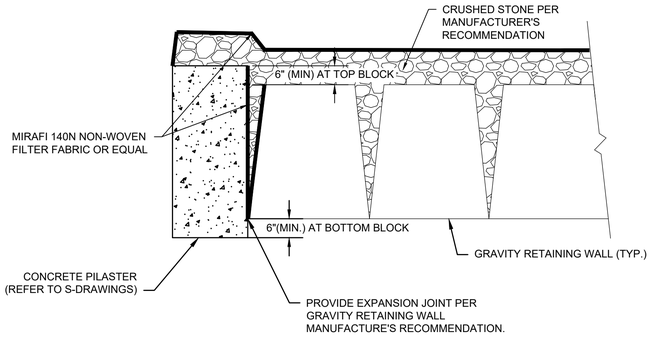
RETAINING WALL DETAIL

HORIZONTAL SCALE: 1"=2'
VERTICAL SCALE: 1"=2'



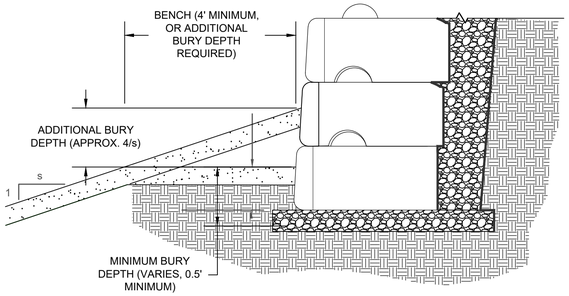
RETAINING WALL WEEP HOLE DETAIL

SCALE: N.T.S.



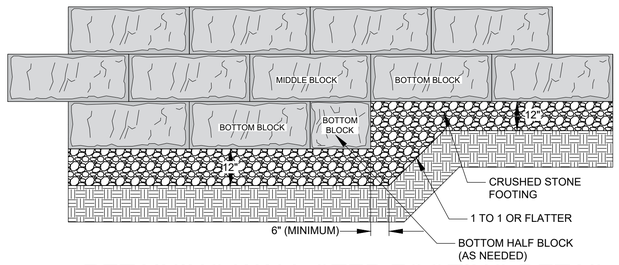
RETAINING WALL AT CONCRETE PILASTER DETAIL

SCALE: N.T.S.



RETAINING WALL TOESLOPE DETAIL

SCALE: N.T.S.



RETAINING WALL STEP FOOTING DETAIL

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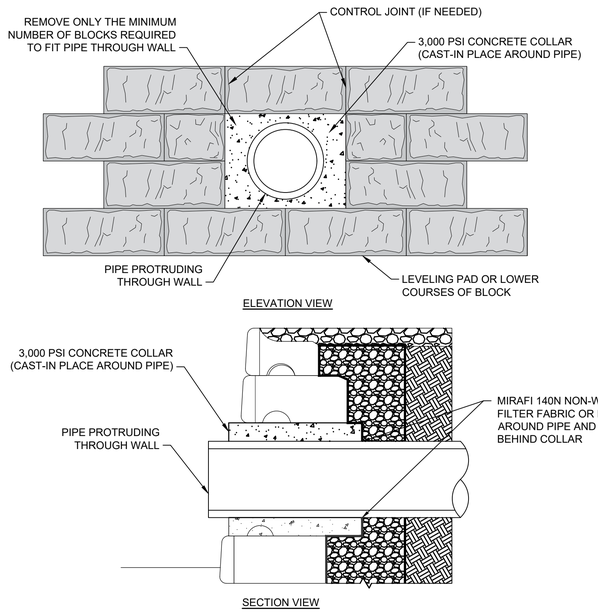
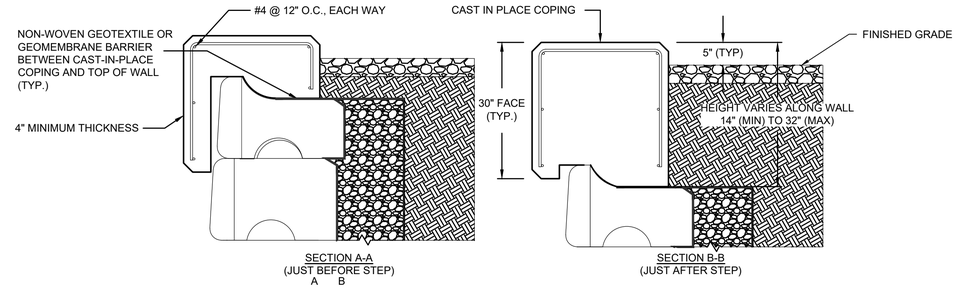
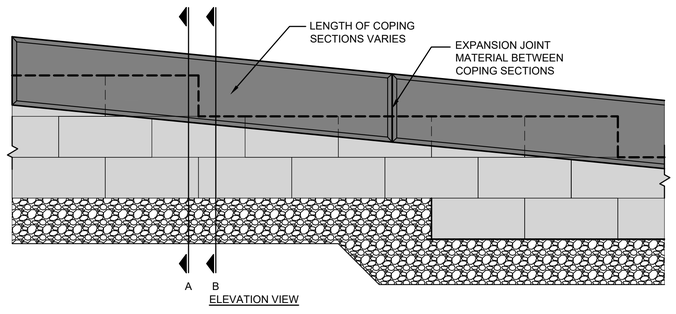


PIPE PERPENDICULAR THROUGH RETAINING WALL DETAIL

SCALE: N.T.S.





RETAINING WALL CAST-IN-PLACE COPING DETAIL

SCALE: N.T.S.

ENVIRONMENTAL PARTNERS — An Apex Company

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER — COMMONWEALTH OF MASSACHUSETTS — April 2024

MARK	DATE	DESCRIPTION

Scale	NTS
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH/MEPA
Drawn by	JDH/MEPA
Checked by	MEPA
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

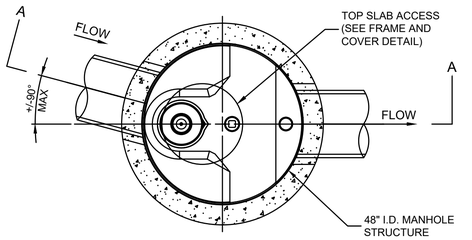
CIVIL CONSTRUCTION DETAILS VII

FOR CONSTRUCTION

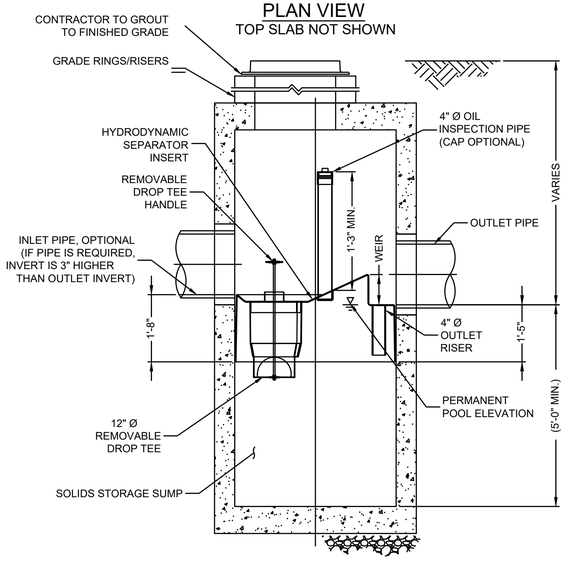
Sheet No.

CD-7

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.2 Civil Detail Sheets.dwg Plot Date: Apr 11,2024-2:37pm

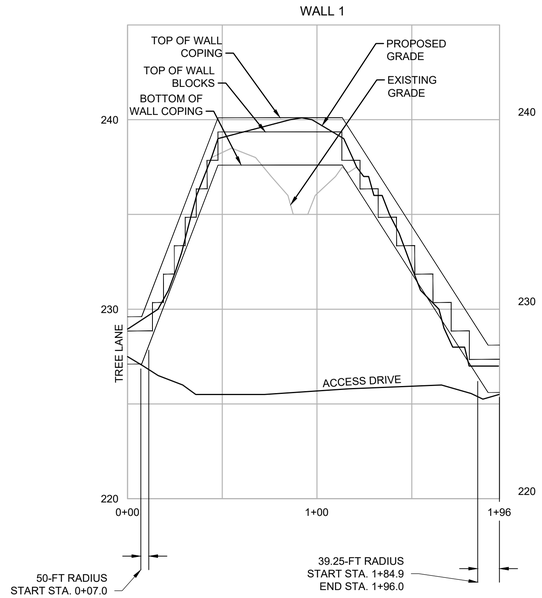


PLAN VIEW
TOP SLAB NOT SHOWN

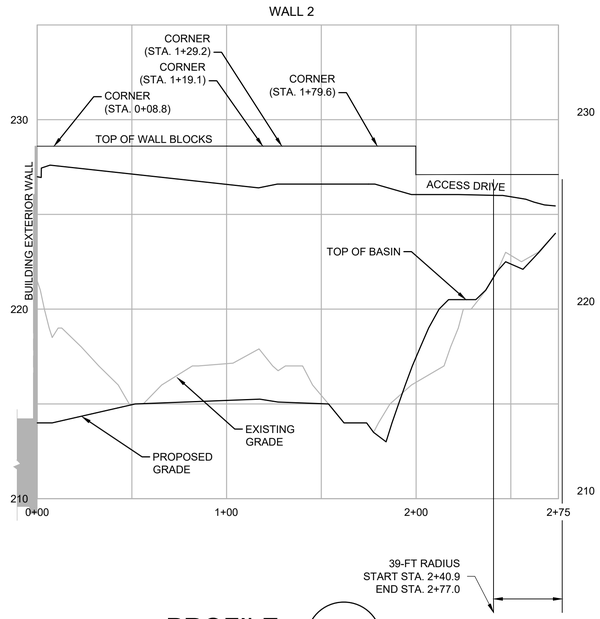


SECTION A-A

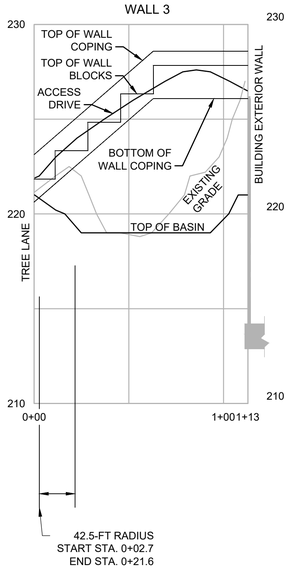
HYDRODYNAMIC SEPARATOR DETAIL
SCALE: N.T.S.



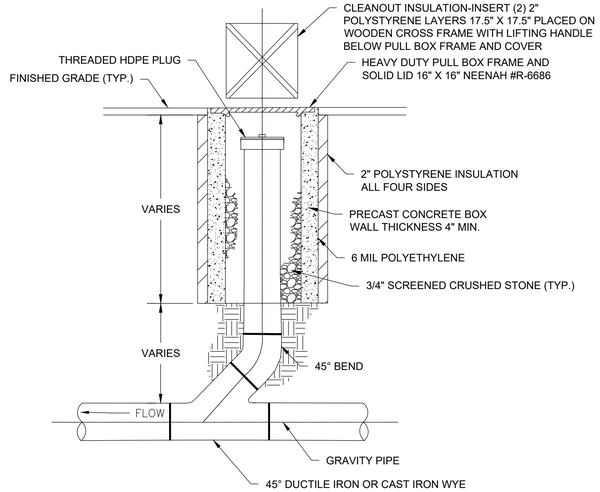
PROFILE 1
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4' (V)
C-5



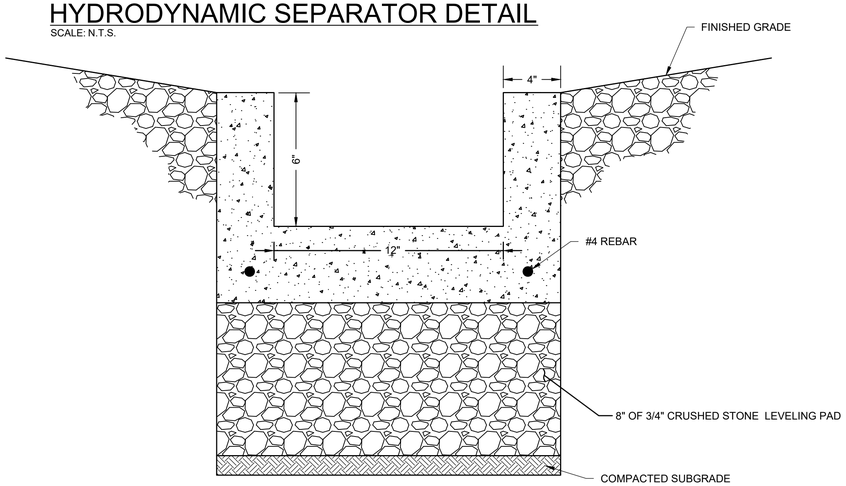
PROFILE 2
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4' (V)
C-5



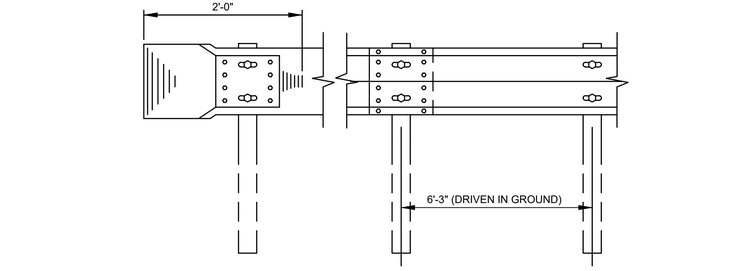
PROFILE 3
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4' (V)
C-5



GRAVITY PIPE CLEANOUT DETAIL
SCALE: N.T.S.



CONCRETE DRAINAGE CHANNEL DETAIL
SCALE: N.T.S.



NOTES:

1. GUARD RAIL SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST MASSDOT, HIGHWAY DIVISION CONSTRUCTION DETAILS. CONTRACTOR'S BID PRICE SHALL INCLUDE THIS REQUIREMENT.
2. GUARD RAIL TO BE INSTALLED A MINIMUM OF 24" FROM THE EDGE OF ROADWAY.
3. GUARD RAIL POSTS INSTALLED IN THE GROUND SHALL BE DRIVEN TO A MINIMUM DEPTH OF FIVE FEET BELOW THE GROUND SURFACE.
4. THE UNDERSIDE OF THE GUARD RAIL SHALL BE SET A MINIMUM OF 8" ABOVE THE FINISHED ROAD SURFACE.

MHD STEEL HIGHWAY GUARD RAIL DETAIL
SCALE: N.T.S.

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS
MARIA E. PROULX
CIVIL
No. 56048
REGISTERED PROFESSIONAL ENGINEER
April 2024

MARK	DATE	DESCRIPTION

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Drawn by	JDH/MEPA
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Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

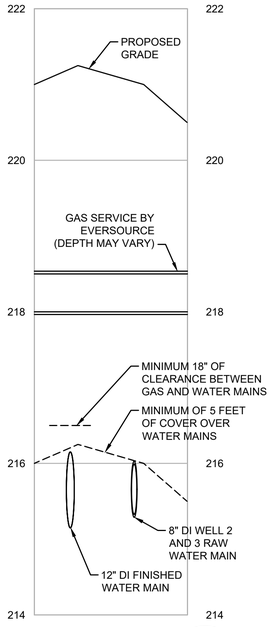
CIVIL CONSTRUCTION DETAILS VIII

FOR CONSTRUCTION

Sheet No.

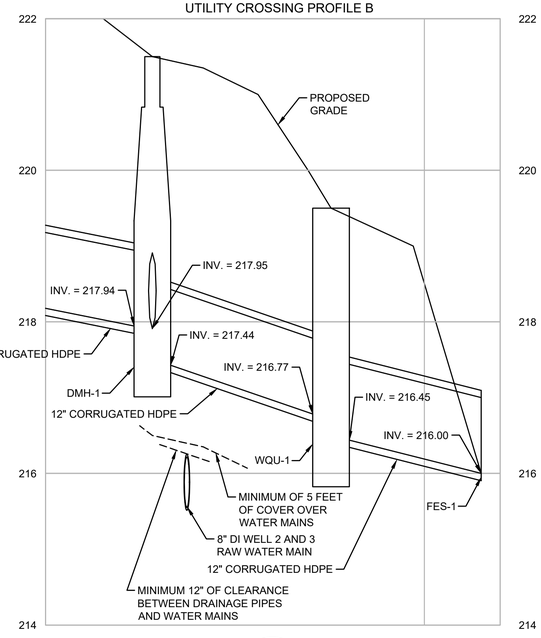
CD-8

UTILITY CROSSING PROFILE A



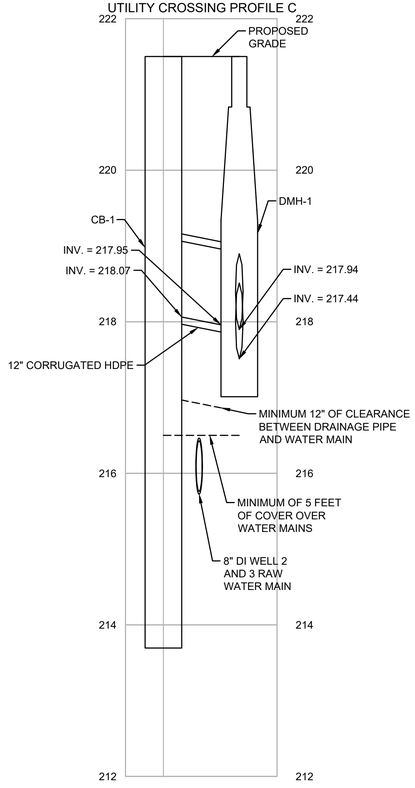
PROFILE A
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1' (V)
C-7

UTILITY CROSSING PROFILE B



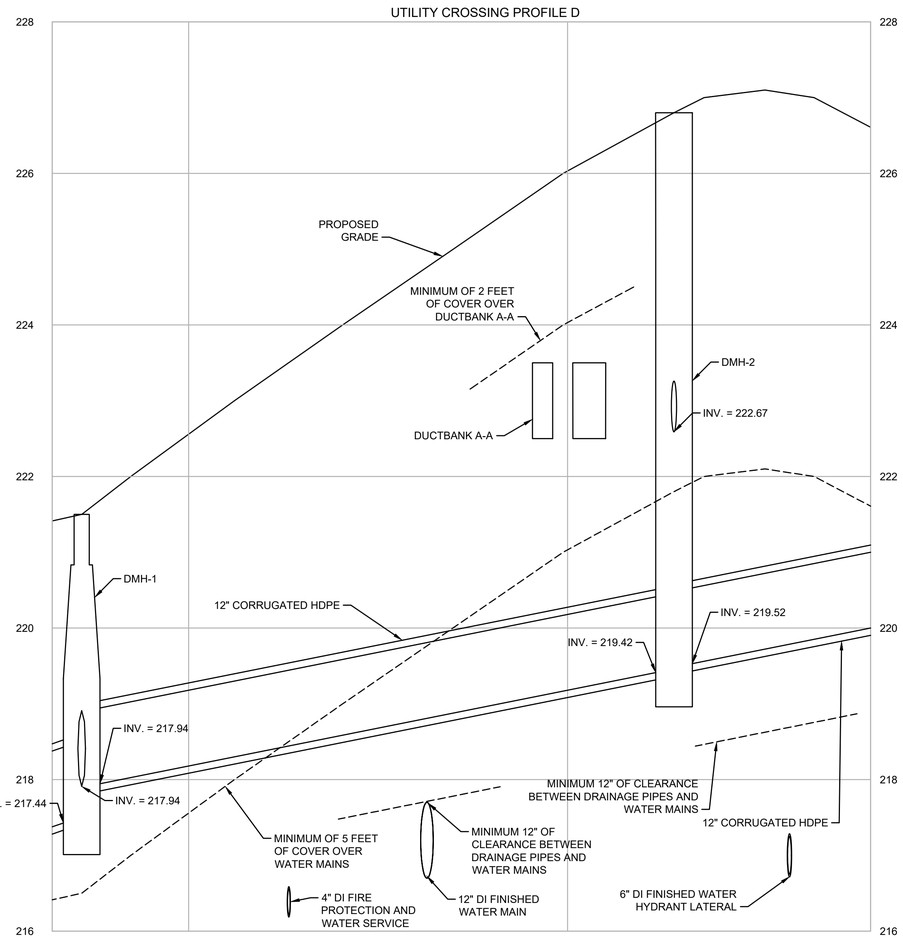
PROFILE B
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1' (V)
C-7

UTILITY CROSSING PROFILE C



PROFILE C
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1' (V)
C-7

UTILITY CROSSING PROFILE D



PROFILE D
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1' (V)
C-7

NOTES:

1. SANITARY WASTE PIPING WITHIN ZONE II WATER SUPPLY PROTECTION AREA (1,000 FT. OF A PUBLIC WATER SUPPLY) SHALL BE OF WATER TIGHT CONSTRUCTION. ONLY HARD CONNECTIONS SHALL BE ALLOWED. NO FERNCO OR FLEXIBLE RUBBER CONNECTIONS SHALL BE ALLOWED; MECHANICAL JOINTS ARE REQUIRED. ALL WORK SHOWN ON SHEET C-5 IS WITHIN ZONE II.
2. WATER MAINS INSTALLED WITHIN 5 FT. OF GAS MAINS SHALL BE FULLY ENCASED BY POLYETHYLENE WRAP.
3. REFER TO THE UTILITY LIMITS OF WORK TABLE FOR GENERAL CONTRACTOR AND FILED SUB-BID CONTRACTORS' SCOPE OF WORK.
4. REFER TO SHEET C-6 AND C-7 FOR ADDITIONAL REQUIREMENTS.

ENVIRONMENTAL PARTNERS
— An Apex Company —

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
April 2024

MARK	DATE	DESCRIPTION

Scale	AS NOTED
Date	APRIL 2024
Job No.	245-2103
Designed by	JDH
Drawn by	JDH
Checked by	MEPA
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

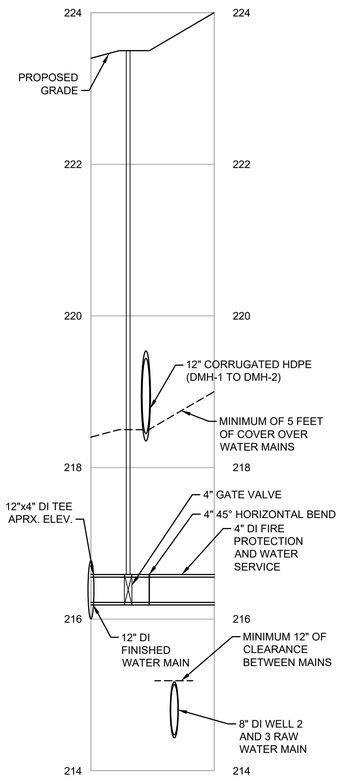
CIVIL CONSTRUCTION DETAILS IX

FOR CONSTRUCTION

Sheet No.
CD-9

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.2 Civil Detail Sheets.dwg Plot Date: Apr 09,2024-2:28pm

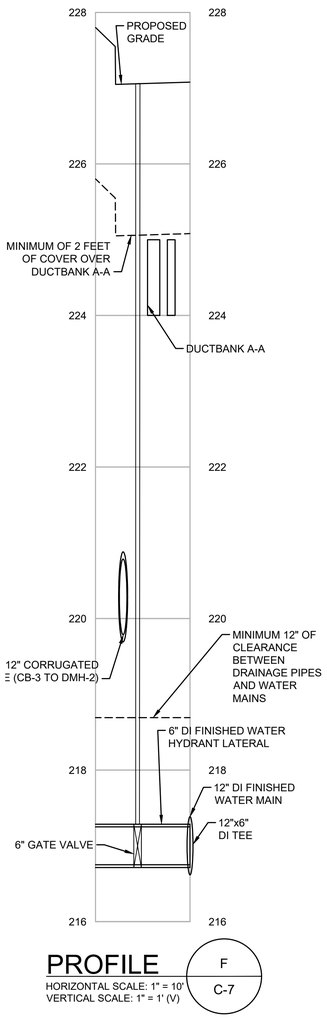
UTILITY CROSSING PROFILE E



PROFILE E — C-7

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1' (V)

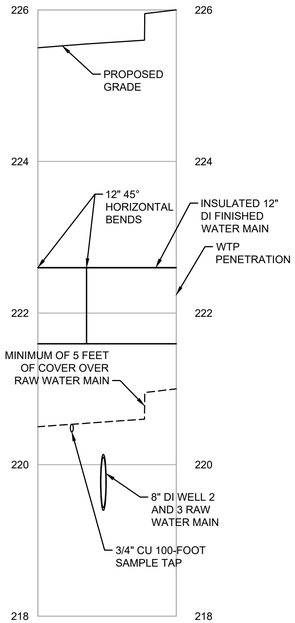
UTILITY CROSSING PROFILE F



PROFILE F — C-7

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1' (V)

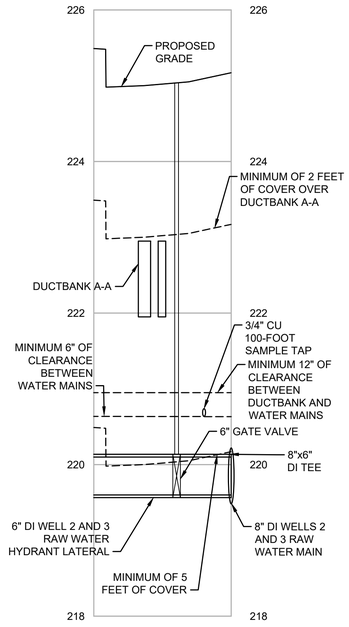
UTILITY CROSSING PROFILE G



PROFILE G — C-7

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1' (V)

UTILITY CROSSING PROFILE H



PROFILE H — C-6

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1' (V)

NOTES:

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ENVIRONMENTAL PARTNERS
— An Apex Company —

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
April 2024

MARK	DATE	DESCRIPTION

Scale	AS NOTED
Date	APRIL 2024
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Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

CIVIL CONSTRUCTION DETAILS X

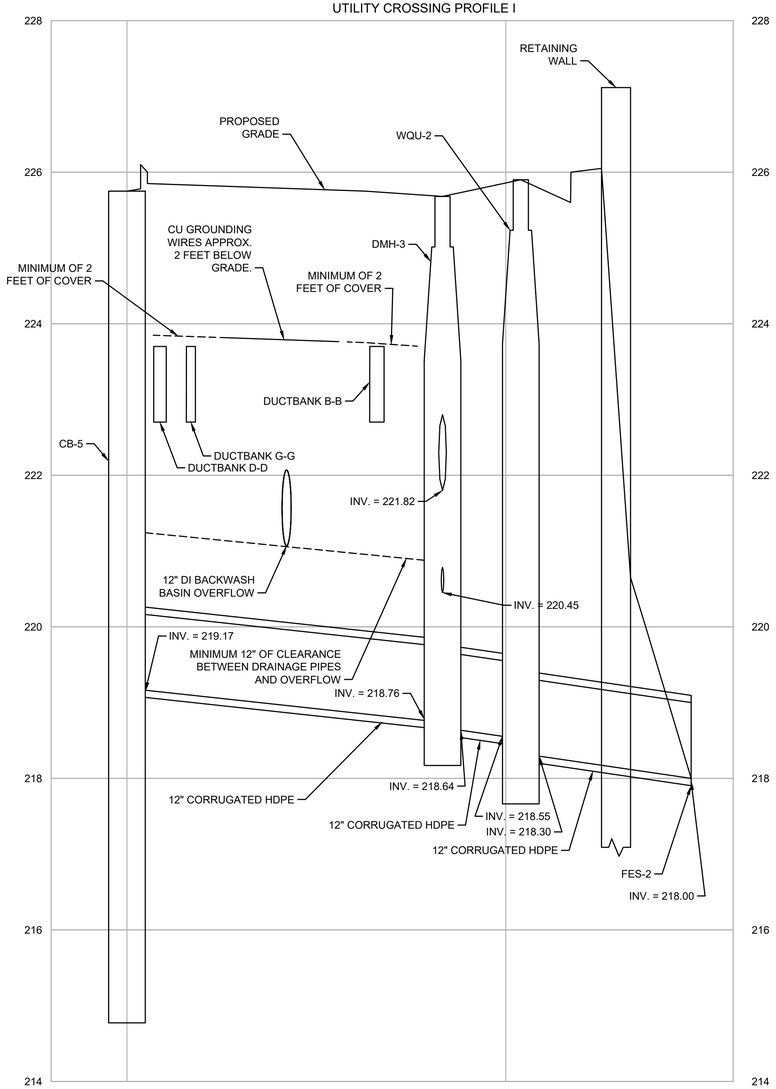
FOR CONSTRUCTION

Sheet No.

CD-10

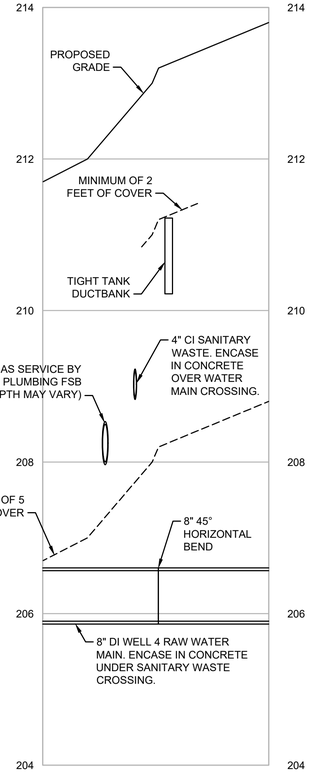
Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.2 Civil Detail Sheets.dwg Plot Date: Apr 09,2024-2:28pm

UTILITY CROSSING PROFILE I



PROFILE (I / C-6)
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1' (V)

UTILITY CROSSING PROFILE J



PROFILE (J / C-7)
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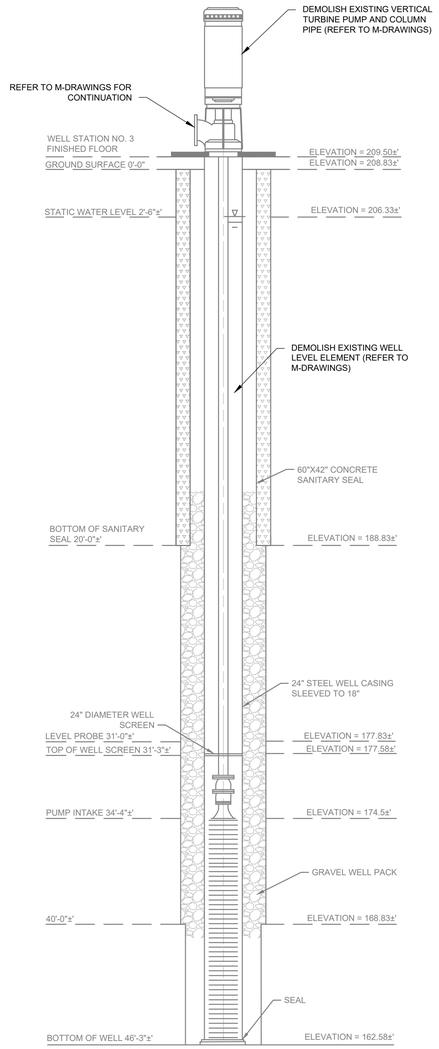
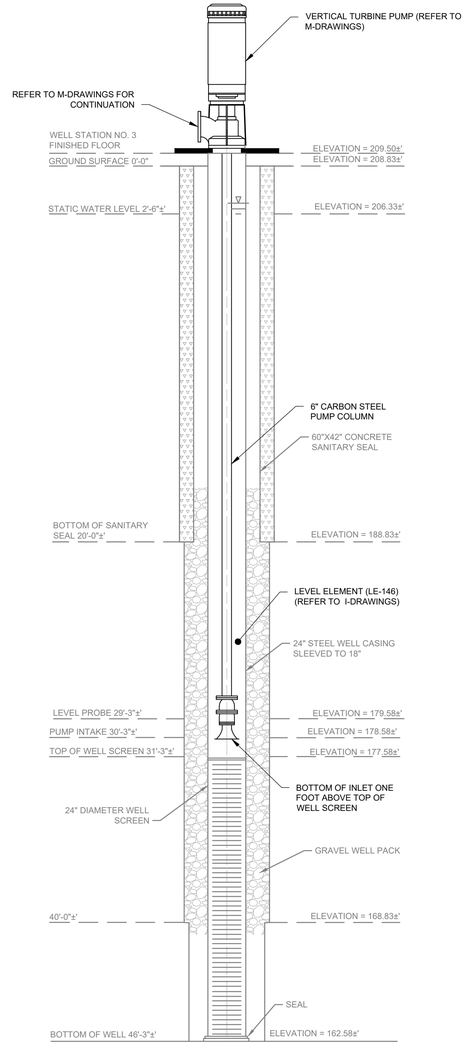
VERTICAL SCALE: 1" = 1' (V)



WELL 3 EXISTING WELL SECTION

SCALE: 1"= 4'



WELL 3 PROPOSED WELL SECTION

SCALE: 1"= 4'

NOTES:

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ENVIRONMENTAL PARTNERS — An Apex Company

MARIA E. PROULX CIVIL No. 56048 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
April 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

CIVIL CONSTRUCTION DETAILS XI

FOR CONSTRUCTION

Sheet No.

CD-11

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03.2 Civil Detail Sheets.dwg Plot Date: Apr 11,2024-2:39pm

PLANTING NOTES

1. FURNISH AND INSTALL PLANTS AS SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR QUANTITY OF SHRUBS GRAPHICALLY SHOWN ON PLANS. IF THERE IS A DISCREPANCY BETWEEN PLANT LIST QUANTITIES AND GRAPHICS, THE GRAPHIC SHALL TAKE PRECEDENCE.
2. PRIOR TO THE START OF EXCAVATION FOR THE PROJECT BOTH ON AND OFF THE SITE, THE CONTRACTOR SHALL NOTIFY DIGSAFE AND BE PROVIDED A DIGSAFE NUMBER INDICATING THAT EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED.
3. CONTRACTOR SHALL BEGIN 90 DAY MAINTENANCE PERIOD IMMEDIATELY UPON PLANTING AND WILL CONTINUE UNTIL FINAL ACCEPTANCE.
4. CONTRACTOR SHALL VERIFY TREE REMOVALS WITH LANDSCAPE ARCHITECT/ENGINEER PRIOR TO CONSTRUCTION START.
5. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATIONS, STRUCTURES, AND PLANTING BEDS.
6. MAXIMUM SLOPE WITHIN DISTURBED AREAS SHALL NOT EXCEED 3:1, UNLESS OTHERWISE NOTED.
7. PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISH GRADE AS TO ORIGINAL GRADES BEFORE DIGGING.
8. PLANT MATERIALS SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY "THE AMERICAN STANDARD FOR NURSERY STOCK", PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
9. PLANTS TO BE BALLED IN BURLAP OR CONTAINERIZED.
10. MULCH FOR PLANTED AREAS TO BE AGED PINE BARK: PARTIALLY DECOMPOSED, DARK BROWN IN COLOR AND FREE OF WOOD CHIPS THICKER THAN 1/4 INCH.
11. PLANTING SOIL MIX: LOAM THOROUGHLY INCORPORATED WITH ROTTED MANURE PROPORTIONED 5 C.Y. TO 1 C.Y. OR EQUIVALENT. USE OF PEAT MOSS IS PROHIBITED.
12. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE PLANT MATERIALS FOR ONE (1) FULL YEAR FROM DATE OF ACCEPTANCE. REQUEST THE LANDSCAPE ARCHITECT/ENGINEER PROVIDE A WRITTEN LETTER OF ACCEPTANCE UPON COMPLETION OF EACH PHASE.
13. PLANT MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT/ENGINEER, AT THE NURSERY, AND AT THE SITE.
14. LANDSCAPE ARCHITECT/ENGINEER TO FLAG TREES TO BE TRANSPLANTED PRIOR TO CONSTRUCTION START.
15. AREAS OF THE SITE WHICH HAVE BEEN DISTURBED AND NOT OTHERWISE DEVELOPED SHALL RECEIVE LOAM AND SEED WITH 'LOW MAINTENANCE GRASS MIX – BUFFALO GRASS' PER SHEET L2 AND THE SPECIFICATIONS.
16. SCREENED IMAGES SHOW EXISTING CONDITIONS. WHERE EXISTING CONDITIONS LIE UNDER OR ARE IMPINGED UPON BY PROPOSED BUILDINGS AND/OR SITE ELEMENTS, THE EXISTING CONDITION WILL BE REMOVED, ABANDONED AND/OR CAPPED OR DEMOLISHED AS REQUIRED.
17. THERE SHALL BE NO SUBSTITUTION OF PLANT SPECIES WITHOUT AUTHORIZATION BY THE LANDSCAPE ARCHITECT/ENGINEER.
18. NO PLANTING SHALL BE INSTALLED BEFORE ACCEPTANCE OF ROUGH GRADING.
19. PLANTS TO BE THOROUGHLY WATERED AFTER INSTALLATION, AT LEAST TWICE WITHIN THE FIRST 24 HOURS.

PLANTING SCHEDULE

PLANT TYPE	QTY.	COMMON NAME	LATIN NAME	SIZE	NOTES
Trees					
	3	**Shadblow Serviceberry**	Amelanchier canadensis	7/8"	B&B, symmetrical
	4	**Pink Flowering Dogwood**	Cornus florida var. rubra	7/8"	B&B, symmetrical
Conifers					
	5	**American Holly**	Ilex opaca		
	7	**Canadian Hemlock 4/5'**	Tsuga canadensis 4/5'	4/5'	B&B, symmetrical
	6	**Eastern Red Cedar**	Juniperus virginiana	7/8"	B&B, symmetrical
	8	**Pitch Pine**	Pinus rigida	7/8"	B&B, symmetrical
	10	**Pitch Pine 4/5'**	Pinus rigida 4/5'	4/5'	B&B, symmetrical
	7	**White Fir**	Abies concolor	7/8"	B&B, symmetrical
Shrubs					
	9	**Arrowwood Viburnum**	Viburnum dentatum	10 Gal.	Container
	8	**Black Chokeberry**	Aronia melanocarpa	7 Gal.	Container
	7	**Elder**	Sambucus canadensis	10 Gal.	Container
	8	**Henry's Garnet Sweetspire**	Itea virginica 'Henry's Garnet'	5 Gal.	Container
	3	**Highbush Blueberry**	Vaccinium corymbosum	5 Gal.	Container
	8	**Mapleleaf Viburnum**	Viburnum acerifolium	10 Gal.	Container
	12	**Mountain Laurel**	Kalmia latifolia	7 Gal.	Container
	29	**Roseum Elegans Rhododendron**	Rhododendron 'Roseum Elegans'	10 Gal.	B&B
	5	**Vanilla Spice Sumersweet**	Clethra alnifolia 'Caleb'	7 Gal.	Container

ERNST SEEDS

Ernst Conservation Seeds
8884 Mercer Pike
Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

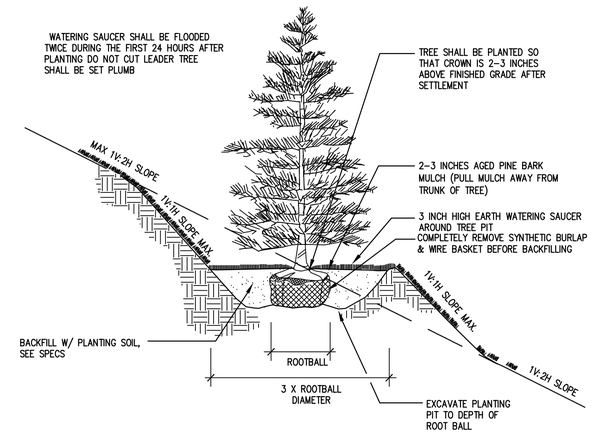
Date: October 31, 2023

Retention Basin Wildlife Mix - ERNMX-127

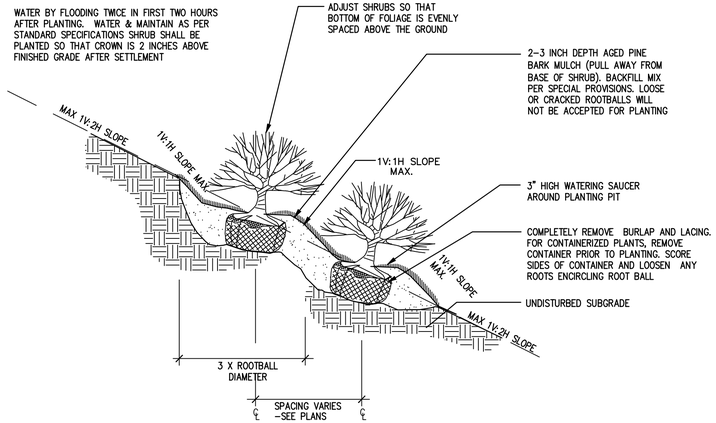
	Botanical Name	Common Name
30.00 %	*Panicum clandestinum, Tioga*	Deertongue, Tioga
29.50 %	*Carex vulpinoidea, PA Ecotype*	Fox Sedge, PA Ecotype
20.50 %	*Elymus virginicus, Madison-NY Ecotype*	Virginia Wildrye, Madison-NY Ecotype
7.00 %	*Carex lurida, PA Ecotype*	Lurid Sedge, PA Ecotype
7.00 %	*Carex scoparia, PA Ecotype*	Blunt Broom Sedge, PA Ecotype
3.20 %	*Verbena hastata, PA Ecotype*	Blue Vervain, PA Ecotype
1.50 %	*Juncus effusus*	Soft Rush
0.50 %	*Asclepias incarnata, PA Ecotype*	Swamp Milkweed, PA Ecotype
0.20 %	*Scirpus cyperinus, PA Ecotype*	Woolgrass, PA Ecotype
0.10 %	*Aster lanceolatus*	Lance Leaved Aster
0.10 %	*Aster novae-angliae, PA Ecotype*	New England Aster, PA Ecotype
0.10 %	*Aster puniceus, PA Ecotype*	Purplestem Aster, PA Ecotype
0.10 %	*Lobelia siphilitica, PA Ecotype*	Great Blue Lobelia, PA Ecotype
0.10 %	*Mimulus ringens, PA Ecotype*	Square Stemmed Monkeyflower, PA Ecotype
0.10 %	*Scirpus atrovirens, PA Ecotype*	Green Bulrush, PA Ecotype

Retention Basin Floor Mix - Low Maintenance - ERNMX-126

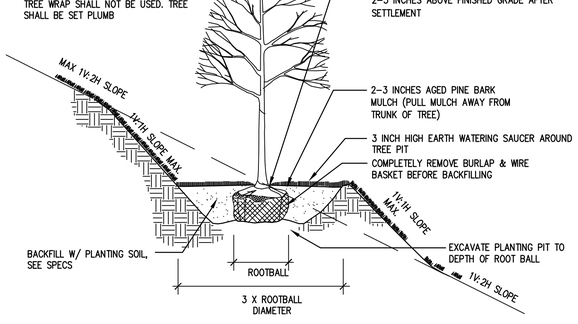
	Botanical Name	Common Name
20.00 %	*Panicum clandestinum, Tioga*	Deertongue, Tioga
20.00 %	*Puccinellia distans, Fults*	Alkaligrass, Fults
18.00 %	*Elymus virginicus, Madison-NY Ecotype*	Virginia Wildrye, Madison-NY Ecotype
15.00 %	*Agrostis stolonifera, 'Penncross'*	Creeping Bentgrass, 'Penncross'
15.00 %	*Poa palustris*	Fowl Bluegrass
10.00 %	*Carex vulpinoidea, PA Ecotype*	Fox Sedge, PA Ecotype
1.00 %	*Carex scoparia, PA Ecotype*	Blunt Broom Sedge, PA Ecotype
1.00 %	*Juncus effusus*	Soft Rush



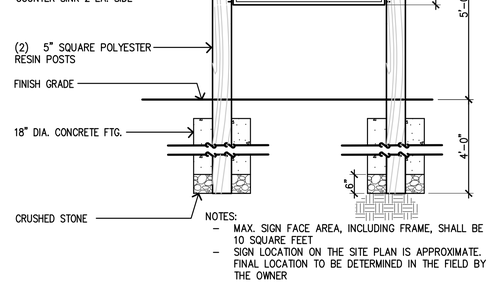
1 EVERGREEN TREE PLANTING (SLOPE)
NOT TO SCALE



2 CONTAINERIZED SHRUB PLANTING (SLOPE)
NOT TO SCALE



3 DECIDUOUS TREE PLANTING (SLOPE)
NOT TO SCALE



4 SIGN
SCALE: 1/2"=1'-0"

ENVIRONMENTAL PARTNERS — An Apex Company —
Radner Design Associates, Inc.

MARK	DATE	DESCRIPTION

Scale	NTS
Date	APRIL 2024
Job No.	RDA 23-17
Designed by	
Drawn by	KC
Checked by	MR
Approved by	

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PLANTING NOTES, DETAILS AND SCHEDULE

FOR CONSTRUCTION

Sheet No.
L-1

200' RIVERFRONT AREA

SIGN, SEE 4/L-1

7'-0"

15'-0"

6 - Eastern Red Cedar
4 - Pink Flowering Dogwood
7 - White Fir
8 - Pitch Pine
7 - Elder
8 - Black Chokeberry
6 - Arrowwood Viburnum
10 - Pitch Pine 4/5'

12 - Mountain Laurel
20 - Roseum Elegans Rhododendron
7 - Canadian Hemlock 4/5'
9 - Roseum Elegans Rhododendron

UNDERSTORY PLANTINGS TO BE LOCATED IN FIELD, IN BETWEEN EXISTING TREES AND OTHER VEGETATION

PROPERTY LINE

PROPOSED TREE LINE

100' WETLAND BUFFER
100' RIVERFRONT AREA
75' WETLAND BUFFER

3 - Arrowwood Viburnum
3 - Highbush Blueberry

4" DEEP LAYER OF CRUSHED STONE

EXISTING TREE LINE

5 - Vanilla Spice® Summersweet
8 - Henry's Garnet Sweetspire
5 - Redosier Dogwood
3 - Shadblow Serviceberry
5 - American Holly

50' NO WORK ZONE

WETLANDS

20' SIDE / REA

LEGEND:

ERNST CONSERVATION SEEDS: RETENTION BASIN WILDLIFE MIX - ERNMX 127 or approved equal

ERNST CONSERVATION SEEDS: RETENTION BASIN FLOOR MIX - LOW MAINTENANCE - ERNMX 126 or approved equal

LOW MAINTENANCE GRASS MIX - BUFFALO GRASS MIX or approved equal

ENVIRONMENTAL PARTNERS
An Apex Company

Radner Design Associates, Inc.

MARK	DATE	DESCRIPTION

Scale	1"=20'-0"
Date	APRIL 2024
Job No.	RDA 23-17
Designed by	
Drawn by	KC
Checked by	MR
Approved by	

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PLANTING PLAN

FOR CONSTRUCTION

Sheet No.

L-2

GENERAL PROJECT INFORMATION:

GENERAL NOTES:

1. ALL WORK SHALL BE IN COMPLIANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS (TYP.).
2. SEE SHEET S-X FOR DESIGN LOADS AND METAL BUILDING SYSTEM REQUIREMENTS (TYP.).
3. SEE STRUCTURAL DRAWINGS FOR CONCRETE FOOTINGS, FOUNDATIONS, SLABS, AND EQUIPMENT PADS (TYP.).
4. MECHANICAL, ELECTRICAL, HVAC, PLUMBING, FIRE PROTECTION, AND INSTRUMENTATION ITEMS ARE ILLUSTRATED FOR REFERENCE ONLY; COORDINATE WITH APPROPRIATE DISCIPLINES (TYP.).
5. SEE MECHANICAL, ELECTRICAL, HVAC, PLUMBING, FIRE PROTECTION, AND INSTRUMENTATION DRAWINGS FOR ITEMS ATTACHED TO OR PENETRATING THROUGH FLOORS, CEILINGS, ROOF, & WALLS (TYP.).
6. VERIFY ALL EXISTING CONDITIONS IN THE FIELD; DISCREPANCIES NOTED BY THE CONTRACTOR MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER / OWNER PRIOR TO RECEIPT OF BIDS (TYP.).
7. ALL DETAILS ARE PROTOTYPICAL; LOCATIONS NOT DETAILED SHALL BE CONSTRUCTED IN A SIMILAR MANNER (TYP.).
8. SEE SHEET A-1 FOR CODE SUMMARY, SEE SHEET A-2 FOR ABBREVIATIONS (TYP.).

CODE SUMMARY:

GENERAL DESCRIPTION:

THE NEW WATER TREATMENT PLANT IS GENERALLY A SINGLE STORY 51' X 151' PRE-ENGINEERED METAL BUILDING, BUILT ON A CAST-IN-PLACE CONCRETE BASE STRUCTURE. THE METAL BUILDING IS CONSTRUCTED OF A STEEL PRIMARY STRUCTURE (COLUMNS AND BEAMS) WITH SECONDARY STEEL GIRTS AND PURLINS AND IS CLAD IN INSULATED TONGUE-AND-GROOVE METAL WALL AND ROOF PANELS. A PARTIAL CAST-IN-PLACE CONCRETE LOWER LEVEL, COMPRISED OF A PIPE GALLERY, THREE BACKWASH WASTE BASINS, AND A FINISHED WATER WET WELL, IS BUILT INTO THE SLOPING SITE.

THE MAIN FLOOR LEVEL INCLUDES A FULL-HEIGHT OPEN PROCESS AREA AND AN AREA OF INDIVIDUALLY ENCLOSED SPACES HOUSING CONTROL AND OPERATIONS FUNCTIONS. THE PROCESS AREA INCLUDES SPACES FOR FE/MN REMOVAL, PFAS REMOVAL, FUTURE NITRATE REMOVAL, AND RECESSED CHEMICAL CONTAINMENT AREAS. CONTROL AND OPERATIONS SPACES ARE ENCLOSED BY INTERIOR CMU WALLS AND PRECAST CONCRETE PLANK CEILINGS AND INCLUDE THE CONTROL ROOM, ELECTRICAL ROOM, MECHANICAL ROOM, STORAGE CLOSET, SINGLE-USER TOILET, AND AN ENTRANCE/ACCESS CORRIDOR.

ABOVE THE CONTROL AND OPERATIONS SPACES IS AN UPPER LEVEL MEZZANINE THAT PRIMARILY ACCOMMODATES HVAC EQUIPMENT BUT IS ALSO AVAILABLE FOR GENERAL STORAGE. A SUSPENDED EQUIPMENT PLATFORM AT THE OPPOSITE END OF THE BUILDING SUPPORTS LARGE HVAC DEHUMIDIFICATION EQUIPMENT.

THE ROOF STRUCTURE IS DESIGNED TO SUPPORT PHOTOVOLTAIC SOLAR ARRAYS, AND THE BUILDING IS FULLY SPRINKLERED.

APPLICABLE CODES (MODEL CODE BASIS):

BUILDING	780 CMR: MASSACHUSETTS STATE BUILDING CODE, 9TH EDITION (2015 INTERNATIONAL BUILDING CODE)
FIRE PREVENTION	527 CMR: MASSACHUSETTS FIRE PREVENTION REGULATIONS (2015 NFPA M.G.L. CHAPTER 148 SECTION 26G: SPRINKLER PROTECTION
ACCESSIBILITY	521 CMR: MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS; AMERICANS WITH DISABILITIES ACT
ELECTRICAL	527 CMR 12.00: MASSACHUSETTS ELECTRICAL CODE (2023 NATIONAL ELECTRICAL CODE)
MECHANICAL	2015 INTERNATIONAL MECHANICAL CODE (IMC)
PLUMBING	248 CMR: MASSACHUSETTS PLUMBING CODE
ENERGY CONSERVATION	2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 225 CMR 23: STRETCH ENERGY CODE

USE AND OCCUPANCY CLASSIFICATION:

AS SUMMARIZED IN THE FOLLOWING TABLE, THE BUILDING WILL CONTAIN CORROSIVE CHEMICALS ABOVE THE EXEMPT LIMITS IN IBC TABLE 307.1(2). THE BUILDING WILL THEREFORE BY CLASSIFIED AS A **USE GROUP H-4 (HIGH-HAZARD, HEALTH) OCCUPANCY**.

CHEMICAL NAME	BUILDING CODE CLASSIFICATION	PROPOSED STORAGE QUANTITY	BUILDING CODE EXEMPT STORAGE LIMIT
POTASSIUM HYDROXIDE (KOH) - 45%	CORROSIVE	3,330 GALLONS	1,000 GALLONS (W/ SPRINKLERS)
SODIUM HYPOCHLORITE (NaOCl) - 12.5%	CORROSIVE	1,000 GALLONS	1,000 GALLONS (W/ SPRINKLERS)
SODIUM BISULFITE (NaHSO3) - 38%	NOT CLASSIFIED	1,200 GALLONS	N/A
SODIUM FLUORIDE LIQUID (NaF) - 4%	NOT CLASSIFIED	55 GALLONS	N/A
SODIUM FLUORIDE SOLID (NaF)	NOT CLASSIFIED	700 POUNDS	N/A

SINCE THE BUILDING WILL UTILIZE HAZARDOUS MATERIALS, THE FOLLOWING ADDITIONAL PROTECTION FEATURES ARE PROVIDED:

VENTILATION (IBC 414.3): ROOMS WHERE CORROSIVE MISTS, FUMES, OR VAPORS MAY BE EMITTED DUE TO THE USE, HANDLING, OR STORAGE OF CORROSIVE MATERIAL MUST BE PROVIDED WITH A MECHANICAL VENTILATION SYSTEM IN ACCORANCE WITH THE INTERNATIONAL MECHANICAL CODE. IF MECHANICAL VENTILATION IS REQUIRED, A MANUAL SHUTOFF CONTROL FOR THE SYSTEM MUST BE PROVIDED OUTSIDE THE ROOM ADJACENT TO THE ENTRANCE DOOR. IF REQUIRED, THE VENTILATION SYSTEM MUST ALSO HAVE STANDBY OR EMERGENCY POWER, UNLESS AN APPROVED FAIL-SAFE ENGINEERED SYSTEM IS INSTALLED (IBC 414.5.4).

SPILL CONTROL (IBC 414.5.3): SPILL CONTROL IS REQUIRED IN ACCORDANCE WITH THE INTERNATIONAL FIRE CODE (IFC). THE IFC REQUIRES SPILL CONTAINMENT IN ROOMS STORING HAZARDOUS MATERIALS IN INDIVIDUAL VESSELS LARGER THAN 55 GALLONS OR IN WHICH THE AGGREGATE CAPACITY OF VESSELS EXCEEDS 1,000 GALLONS (IFC 5004.2.1). THE CONTAINMENT SYSTEM MUST BE CAPABLE OF CONTAINING A SPILL FROM THE LARGEST SINGLE STORAGE VESSEL PLUS 20 MINUTES OF SPRINKLER WATER IN THE AREA IN WHICH THE STORAGE VESSEL IS LOCATED (IFC 5004.2.2.3).

EMERGENCY ALARMS (IBC 415.5): A MANUAL EMERGENCY ALARM SYSTEM MUST BE PROVIDED OUTSIDE THE AREA WHERE HAZARDOUS MATERIALS ARE STORED TO ACTIVATE AN ALARM THROUGHOUT THE BUILDING IN AN EMERGENCY SITUATION (NON-FIRE).

MINIMUM CONSTRUCTION TYPE:

TYPE VB (COMBUSTIBLE, UNPROTECTED)

HEIGHT AND AREA LIMITATIONS:

USE GROUP H-4 / CONSTRUCTION TYPE VB	HEIGHT	AREA
TABULAR VALUE (IBC TABLES 504.3, 504.4, 506.2)	60 FT (3 ST.)	19,500 SF
FRONTAGE INCREASE (IBC SECTION 506.3, 100% OPEN PERIMETER, 20 FT)	- -	NOT REQ'D.
TOTAL ALLOWED	60 FT (3 ST.)	19,500 SF
ACTUAL	<60 FT (1 ST.)*	7,410 SF

[NOTE*: THE LOWER LEVEL PIPE GALLERY IS CONSIDERED A BASEMENT SINCE THE ELEVATION OF THE FIRST FLOOR IS NOT MORE THAN SIX FEET ABOVE AVERAGE GRADE OR MORE THAN TWELVE FEET ABOVE FINISHED GRADE AT ANY ONE POINT (IBC 202). THE UPPER LEVEL IS CLASSIFIED AS A MEZZANINE IN ACCORDANCE WITH IBC SECTION 505 SINCE IT IS LESS THAN 1/3 THE AREA OF THE ROOM BELOW AND IS THEREFORE NOT CONSIDERED A STORY ABOVE GRADE (IBC 505.2).]

FIRE RATINGS:

BUILDING ELEMENT (IBC TABLE 601) - CONSTRUCTION TYPE VB	RATING IN HOURS
PRIMARY STRUCTURAL FRAME	0
EXTERIOR BEARING WALLS, INCLUDING COLUMNS ALONG EXTERIOR WALL	0
EXTERIOR NON-BEARING WALLS (IBC TABLE 602)	0
INTERIOR BEARING WALLS	0
FLOOR CONSTRUCTION	0
ROOF CONSTRUCTION	0

INTERIOR FINISHES:

IBC TABLE 803.11	USE GROUP H-4 (W/ SPRINKLERS)
CORRIDORS	CLASS B
ROOMS & ENCLOSED SPACES	CLASS C

MEANS OF EGRESS (OCCUPANT LOAD, IBC TABLE 1004.1.2):

SPACE	AREA	OCCUPANT LOAD FACTOR	OCCUPANT LOAD
WATER TREATMENT & UTILITY SPACES (EQUIPMENT / STORAGE)	[SEE A-29]	300 GSF / PERSON	30
CONTROL ROOM	[SEE A-29]	100 GSF / PERSON	5
MEZZANINE	[SEE A-29]	300 GSF / PERSON	6
		BUILDING TOTAL =	41

MINIMUM NUMBER OF EXITS (IBC TABLE 1006.3.1): THE PROPOSED BUILDING WILL HAVE TWO EXTERIOR DOORS LOCATED AT OPPOSITE ENDS OF THE BUILDING THAT PROVIDE ADEQUATE MEANS OF EGRESS. [SEE A-29]

MAXIMUM TRAVEL DISTANCE (IBC TABLES 1006.2.1 & 1017.2): THE MAXIMUM COMMON PATH OF TRAVEL IN USE GROUP H-4 IS 75 FEET, AND THE MAXIMUM OVERALL TRAVEL IS 175 FEET. THE ACTUAL MAXIMUM COMMON PATH OF TRAVEL DISTANCE IS LESS THAN 75 FEET AND THE MAXIMUM OVERALL TRAVEL DISTANCE IS LESS THAN 175 FEET. [SEE A-29]

PANIC HARDWARE (IBC 1010.1.10): ALL EGRESS DOORS SERVING USE GROUP H AREAS REQUIRE PANIC HARDWARE AND MUST SWING IN THE DIRECTION OF EGRESS.

REQUIRED FIRE PROTECTION SYSTEMS:

NFPA 13 SPRINKLER SYSTEM (780 CMR TABLE 903.2)
FIRE ALARM SYSTEM (780 CMR 903.4.2)
AUTOMATIC FIRE DETECTION SYSTEM (780 CMR 415.3)
FIRE EXTINGUISHERS (780 CMR 906.1)

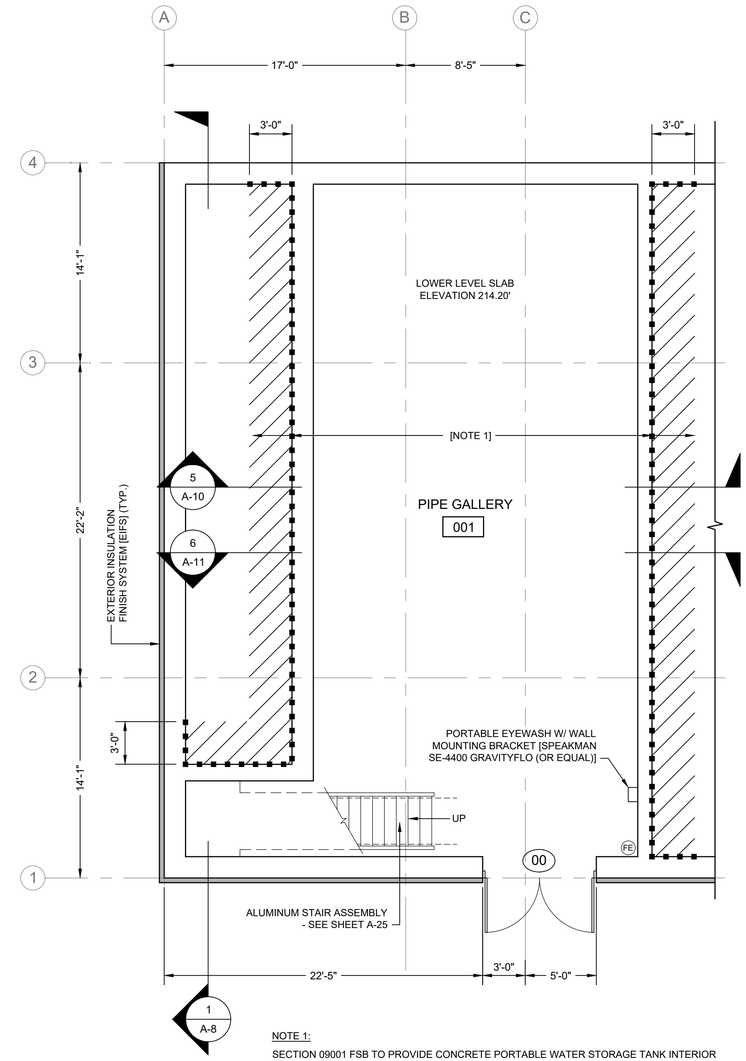
ACCESSIBILITY FOR PERSONS WITH DISABILITIES:

MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS: ONLY PORTIONS OF A BUILDING WHERE A GOOD OR SERVICE IS OFFERED TO THE PUBLIC AND INTO WHICH A MEMBER OF THE PUBLIC MAY ENTER ARE REQUIRED TO COMPLY WITH THE REGULATIONS OF THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (521 CMR SECTION 11.1).

AMERICANS WITH DISABILITIES ACT: THE ADA GUIDELINES ARE NOT ENFORCED BY THE COMMONWEALTH OF MASSACHUSETTS, THEY CAN ONLY BE ENFORCED THROUGH A CIVIL LAWSUIT OR COMPLAINT FILED WITH THE U.S. DEPARTMENT OF JUSTICE. THE ADA DOES REQUIRE THAT EMPLOYEE WORK SPACES ARE DESIGNED TO ALLOW EMPLOYEES TO APPROACH, ENTER, AND EXIT THE WORK AREA (ADA SECTION 203.9). HOWEVER, THE WORK AREAS ARE NOT REQUIRED BE PROVIDED WITH ACCESSIBLE FEATURES (I.E. WORK SINKS, SHELVES, ETC.). SPACES FREQUENTED ONLY BY SERVICE PERSONNEL FOR MAINTENANCE, REPAIR, OR OCCASIONAL MONITORING OF EQUIPMENT SHALL NOT BE REQUIRED TO COMPLY WITH THESE REQUIREMENTS OR TO BE ON AN ACCESSIBLE ROUTE (ADA SECTION 203.5).

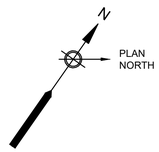
ENERGY CONSERVATION:

BUILDING ENVELOPE ELEMENT (IECC TABLES C402.1.4., C402.4)	CLIMATE ZONE 5A
ROOF - METAL BUILDINGS	U-0.035
WALLS, ABOVE GRADE - METAL BUILDINGS	U-0.050
WALLS, ABOVE GRADE - MASS WALLS	U-0.090
WALLS, BELOW GRADE	C-0.119
SLAB ON GRADE FLOORS - UNHEATED	F-0.52
OPAQUE DOORS - SWINGING	U-0.37
OPAQUE DOORS - GARAGE	U-0.31
FIXED FENESTRATION	U-0.30 SHGC 0.38
OPERABLE FENESTRATION	U-0.32 SHGC 0.33



NOTE 1:

SECTION 09001 FSB TO PROVIDE CONCRETE PORTABLE WATER STORAGE TANK INTERIOR LINING SYSTEM (SEE SEC. 09001) AT VERTICAL WALLS & OUT 3'-0" AT CONCRETE FLOORS AS INDICATED. SECTION 07001 FSB TO SEAL ALL CONSTRUCTION JOINTS WITH FLEXIBLE NSF 600 URETHANE SEALANT AFTER LINING SYSTEM APPLICATION.



PART. LOWER LEVEL PLAN

SCALE: 3/16"=1'-0"

ENVIRONMENTAL PARTNERS — An Apex Company —

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MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
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Designed by	JK
Drawn by	EZ
Checked by	JK
Approved by	JK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

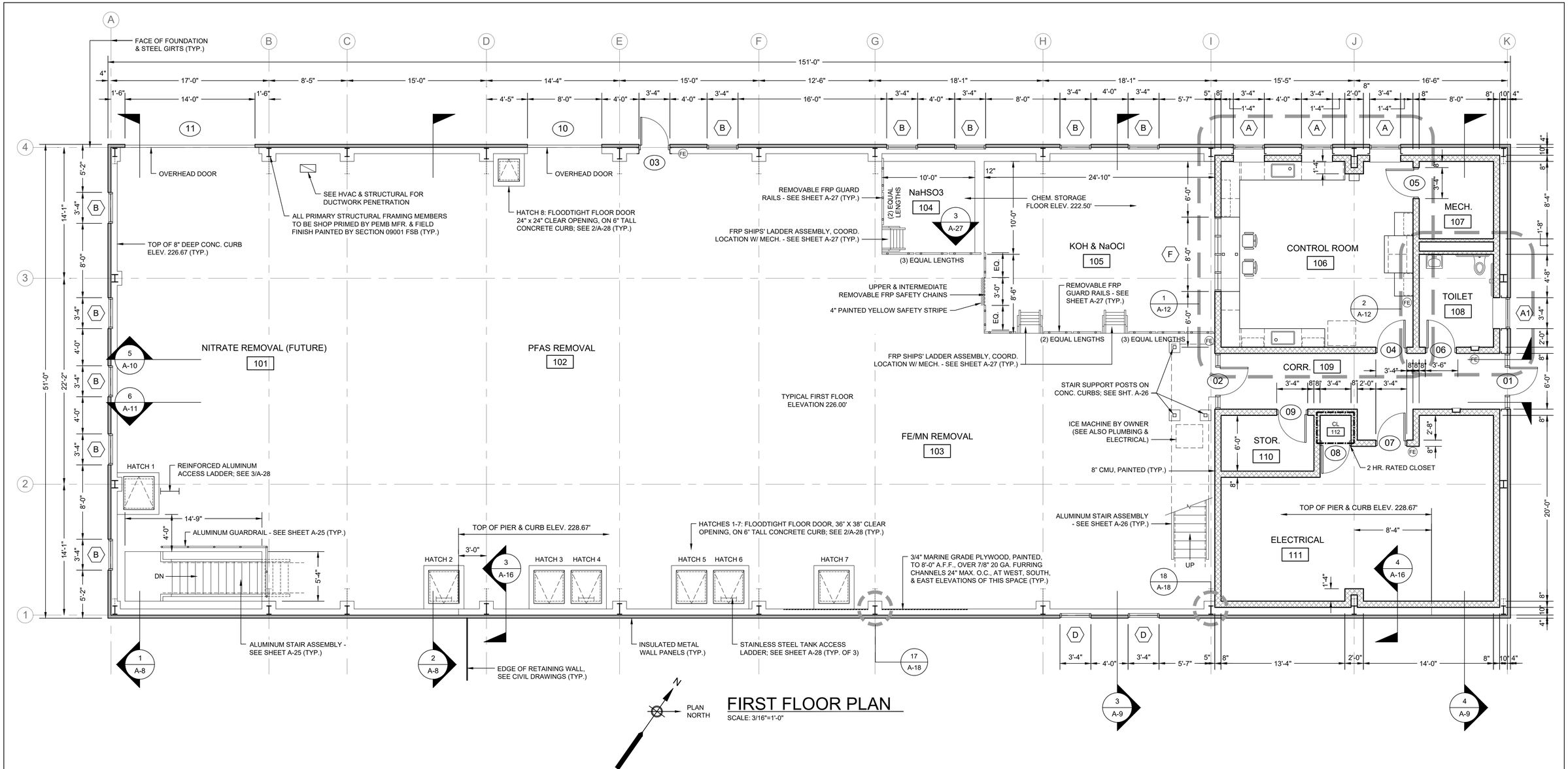
GENERAL PROJECT INFORMATION; PARTIAL LOWER LEVEL PLAN

FOR CONSTRUCTION

Sheet No.

A-1

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31 2024-6:28pm



FIRST FLOOR PLAN

SCALE: 3/16"=1'-0"

ABBREVIATIONS:

ACT	ACOUSTICAL CEILING TILES	COORD.	COORDINATE	EL/ELEV	ELEVATION	FSPA	FIBERGLASS-SANDWICH-PANEL ASSEMBLIES	HVAC	HEATING, VENTILATING, AIR CONDITIONING	O.C./OC	ON CENTER	SIM.	SIMILAR
A.F.F.	ABOVE FINISHED FLOOR	D	DEEP / DEPTH	EX/EXIST	EXISTING					OPP.	OPPOSITE	STRUCT	STRUCTURAL
ALUM	ALUMINUM	DN	DOWN	EXT.	EXTERIOR	FTG	FOOTING	L	LONG / LENGTH	PEMB	PRE-ENGINEERED METAL BUILDING	TYP.	TYPICAL
AVB	AIR/VAPOR BARRIER	DS	DOWNSPOUT	FF & E	FURNITURE, FIXTURES, & EQUIPMENT	GA.	GAUGE	MAX.	MAXIMUM			U.O.N.	UNLESS OTHERWISE NOTED
BOT/BOTT	BOTTOM	EA	EACH			GALV.	GALVANIZED	MECH	MECHANICAL	P.T.	PRESSURE TREATED	V	VENT
C.I.	CONTINUOUS INSULATION	EF	EXHAUST FAN	FIN	FINISHED	GEN.	GENERAL	MFR.	MANUFACTURER	PTD.	PAINTED	VERT.	VERTICAL
CMU	CONCRETE MASONRY UNIT	EIFS	EXTERIOR INSULATION FINISH SYSTEM	FRP	FIBERGLASS REINFORCED POLYESTER	H	HIGH / HEIGHT	MIN.	MINIMUM	PV	PHOTO VOLTAIC	V.I.F./VIF	VERIFY IN FIELD
CONC	CONCRETE					HM	HOLLOW METAL	M.O.	MASONRY OPENING	RCP	REFLECTED CEILING PLAN	W	WIDE / WIDTH
CONT	CONTINUOUS	ELEC	ELECTRICAL	FSB	FILED SUB-BID	HORIZ.	HORIZONTAL	MTL	METAL	SEC.	SECTION	W/	WITH
						H.P.	HIGH POINT	NIC	NOT IN CONTRACT	SF	SQUARE FEET	WD	WOOD
								NOM.	MONINAL				

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Checked by	JK
Approved by	JK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

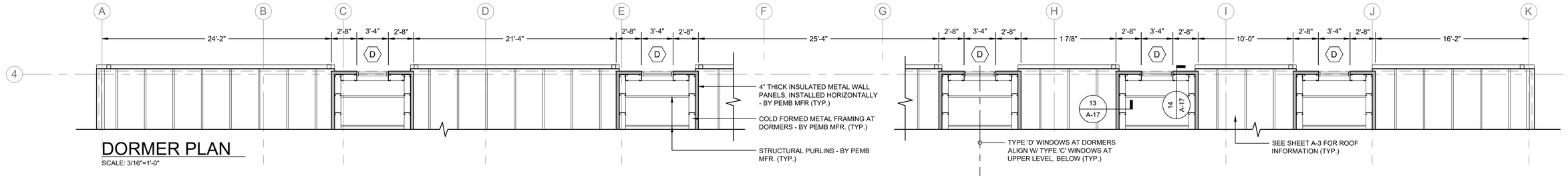
FIRST FLOOR PLAN; ABBREVIATIONS

FOR CONSTRUCTION

Sheet No.

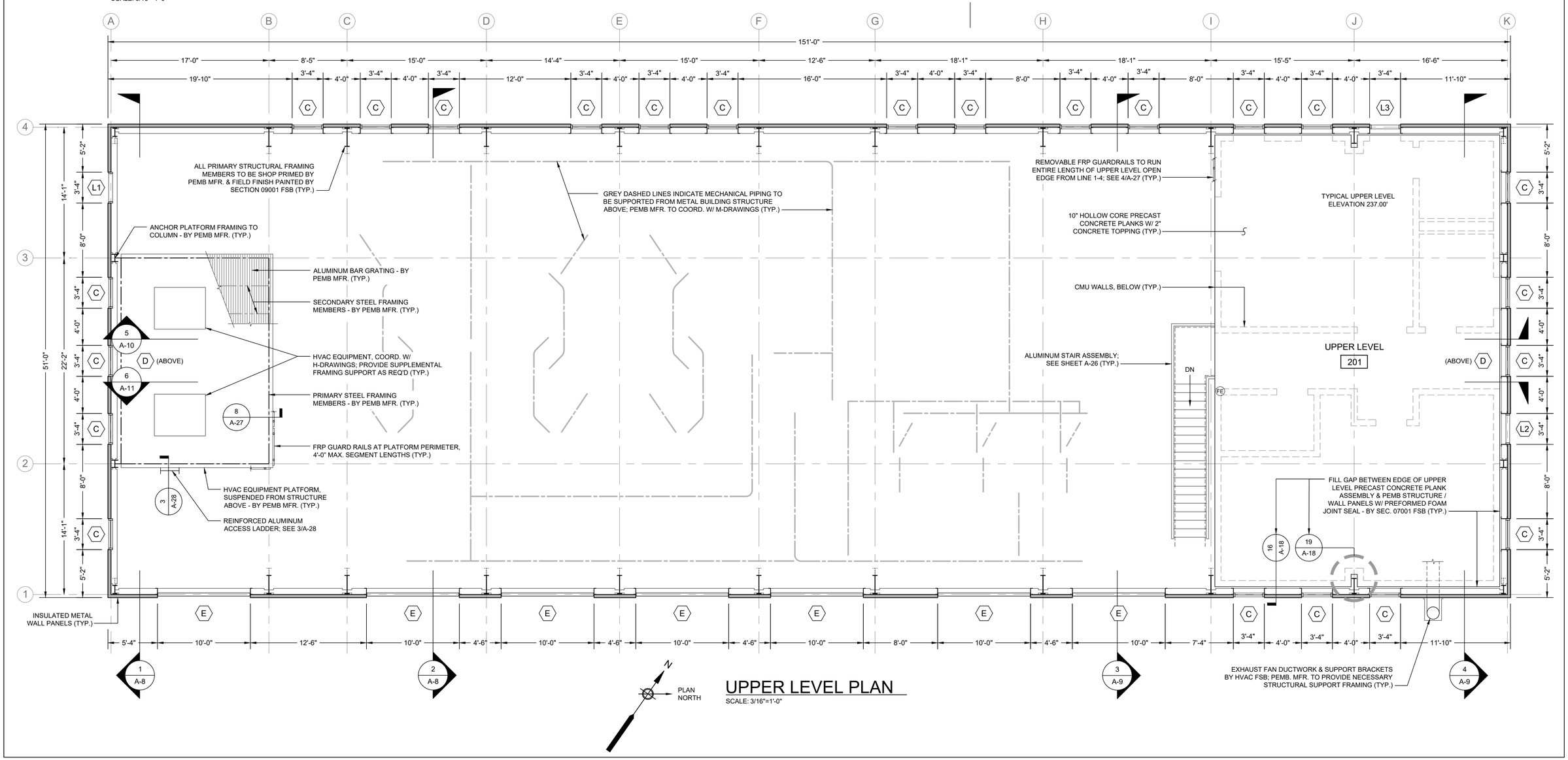
A-2

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot: Date: Mar 31, 2024-6:30pm



DORMER PLAN

SCALE: 3/16"=1'-0"



UPPER LEVEL PLAN

SCALE: 3/16"=1'-0"

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REGISTERED ARCHITECT — COMMONWEALTH OF MASSACHUSETTS — NO. 30126 — CAMBRIDGE, MASS.

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

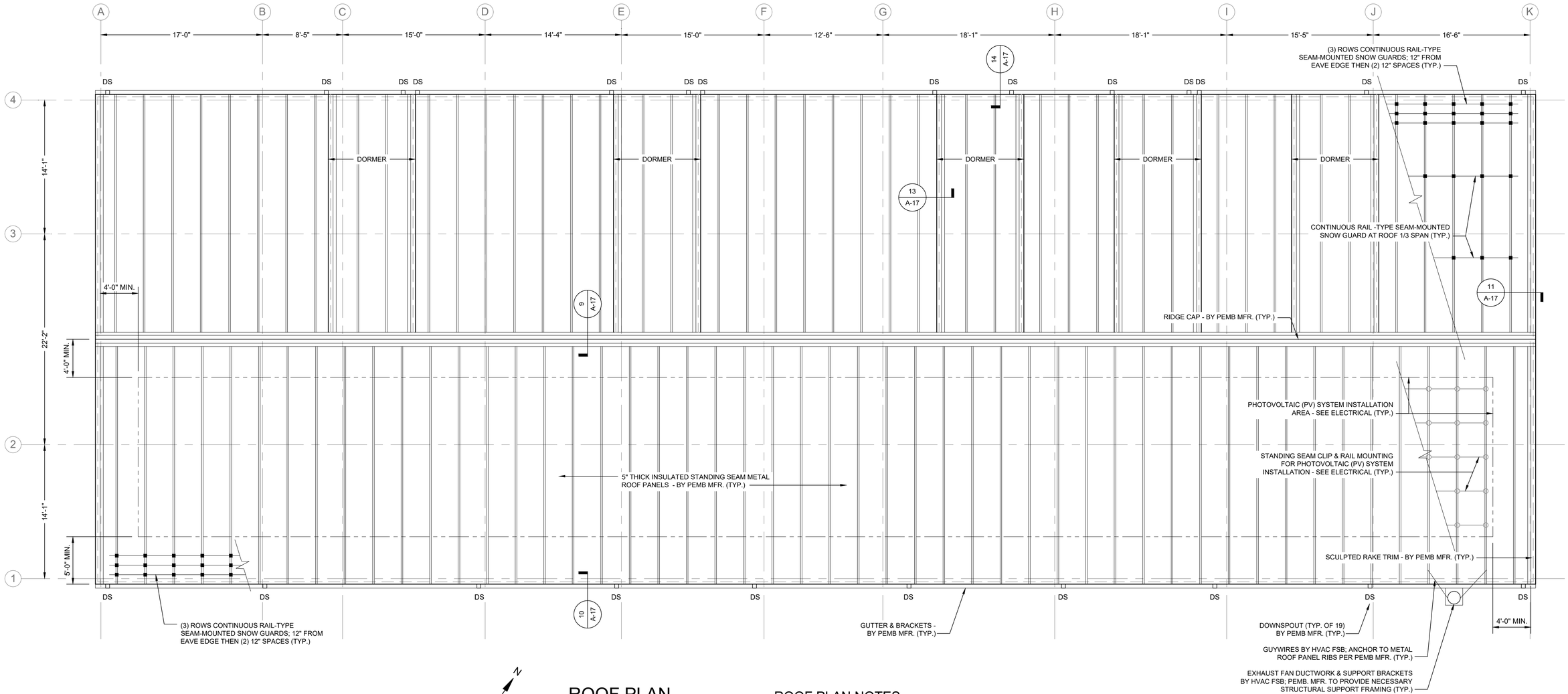
UPPER LEVEL PLAN; DORMER PLAN

FOR CONSTRUCTION

Sheet No.

A-3

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Apr 11,2024-12:33pm



SYMBOL LEGEND

- BUILDING / WALL SECTION (1 / A-X)
- DETAIL (1 / A-X)
- ELEVATION (1 / A-X, A-X, 1)
- WINDOW / LOUVER TYPE (A)
- DOOR / FRAME NUMBER (01)
- FIRE EXTINGUISHER (FE)

PROVIDE PORTABLE MULTIPURPOSE DRY-CHEMICAL TYPE FIRE EXTINGUISHERS: UL-RATED 2-A:10-B:C, 5-LB. NOMINAL CAPACITY, WITH MONOAMMONIUM PHOSPHATE-BASED DRY CHEMICAL IN ENAMELED-STEEL CONTAINER. PROVIDE MANUFACTURER'S STANDARD STEEL MOUNTING BRACKETS, DESIGNED TO SECURE FIRE EXTINGUISHERS TO WALL OR STRUCTURE, OF SIZES REQUIRED FOR TYPES AND CAPACITIES OF FIRE EXTINGUISHERS INDICATED, WITH PLATED OR BAKED-ENAMEL FINISH. PROVIDE IDENTIFICATION LETTERING COMPLYING WITH AUTHORITIES HAVING JURISDICTION FOR LETTER STYLE, SIZE, SPACING, AND LOCATION. LOCATE FIRE EXTINGUISHERS AS INDICATED; VERIFY IN FIELD WITH ENGINEER.

PLAN NORTH

ROOF PLAN

SCALE: 3/16"=1'-0"

ROOF PLAN NOTES:

1. TYPICAL ROOF SLOPE = 4:12 UNLESS NOTED OTHERWISE. ROOF SLOPE AT DORMERS = 1:12. (TYP.)
2. ALL GUTTERS TO BE SUPPORTED AS PER METAL BUILDING MANUFACTURER. METAL BUILDING MANUFACTURER TO SIZE GUTTERS AND DOWNSPOUTS IN ACCORDANCE WITH BUILDING CODE REQUIREMENTS. (TYP.)
3. ROOF PENETRATIONS TO BE CUT AND FLASHED BY METAL BUILDING MANUFACTURER. PROVIDE ROOF FLASHING AT ALL PENETRATIONS INCLUDING BUT NOT LIMITED TO VENT STACKS, FLUES, AND EXHAUST FANS. REVIEW PLUMBING, HVAC, MECHANICAL, AND ELECTRICAL DRAWINGS FOR CONSTRUCTION NOT INDICATED ON THIS DRAWING. [SEE ALSO ROOF PLAN NOTE 9.] (TYP.)
4. PROVIDE CRICKETS AT ALL ROOFTOP EQUIPMENT AND PENETRATIONS TO CREATE ADEQUATE ROOF DRAINAGE. [SEE ALSO ROOF PLAN NOTE 9.] (TYP.)
5. SUPPLEMENTAL FRAMING AND CURBS FOR ALL ROOFTOP EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE METAL BUILDING MANUFACTURER. [SEE ALSO ROOF PLAN NOTE 9.] (TYP.)
6. THE PEMB MFR. IS RESPONSIBLE FOR CONDUCTING ALL ENGINEERING AND PROVIDING A SOLAR READY STRUCTURE CAPABLE OF ACCOMMODATING THE INSTALLATION OF A PHOTOVOLTAIC SYSTEM IN ACCORDANCE WITH THE MA BUILDING CODE. SEE ALSO ELECTRICAL. (TYP.)
7. THE PEMB MFR. IS RESPONSIBLE FOR PROVIDING STRUCTURAL SUPPORT & WEATHERTIGHT PENETRATIONS FOR ALL ITEMS MOUNTED TO OR PENETRATING THROUGH THE ROOF, WHETHER OR NOT ILLUSTRATED; REFER TO STRUCTURAL, MECHANICAL, HVAC, PLUMBING, FIRE PROTECTION, & ELECTRICAL DRAWINGS. [SEE ALSO ROOF PLAN NOTE 9.] (TYP.)
8. SNOW GUARDS SHOWN FOR TYPICAL ROOF AREAS ARE ALSO REQUIRED AT DORMERS. (TYP.)
9. IT IS THE INTENTION OF THIS PROJECT THAT THERE WILL BE NO PENETRATIONS THROUGH INSULATED METAL ROOF PANELS WITH THE EXCEPTION OF CONDUIT PENETRATIONS ASSOCIATED WITH THE PHOTOVOLTAIC (PV) SYSTEM. SEE ELECTRICAL FOR QUANTITY & LOCATIONS. SEE 12/A-17 FOR TYPICAL FLASHING DETAIL. (TYP.)

ENVIRONMENTAL PARTNERS — An Apex Company —

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Drawn by	EZ
Checked by	JK
Approved by	JK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ROOF PLAN; SYMBOL LEGEND

FOR CONSTRUCTION

Sheet No.

A-4

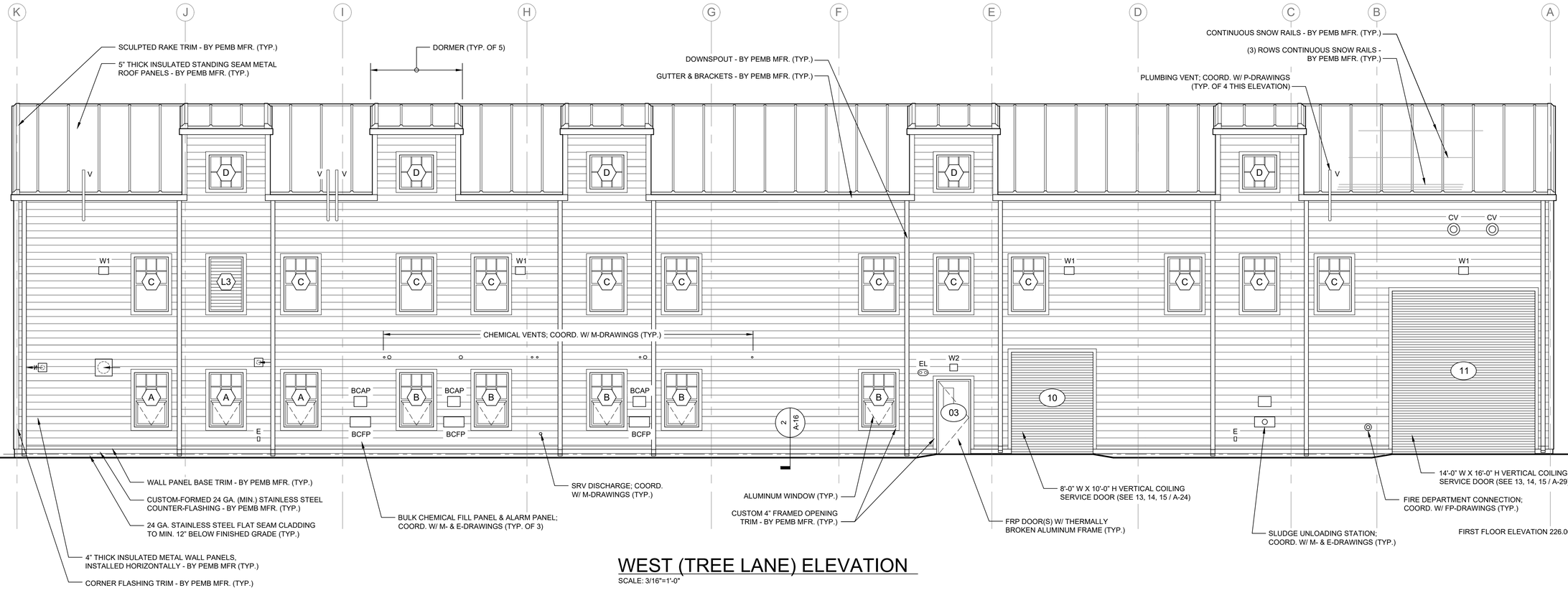
Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31, 2024-6:31pm

TYPICAL EXT. ELEVATION NOTES:

1. PEMB MFR. TO PROVIDE STRUCTURAL SUPPORT & WEATHERTIGHT PENETRATIONS FOR ALL ITEMS MOUNTED TO OR PENETRATING THROUGH BUILDING ENVELOPE, WHETHER OR NOT ILLUSTRATED IN EXTERIOR ELEVATIONS OR FLOOR PLANS; REFER TO STRUCTURAL, MECHANICAL, HVAC, PLUMBING, FIRE PROTECTION, & ELECTRICAL DRAWINGS. (TYP.)
2. OWNER & ENGINEER WILL MAKE ALL FINAL EXTERIOR FINISH SELECTIONS (E.G. - METAL & ROOF PANELS, METAL BUILDING TRIM, DOORS & WINDOWS) ON SITE BASED ON MATERIAL SAMPLES (& MOCK-UPS) PROVIDED BY THE CONTRACTOR. (TYP.)
3. ILLUSTRATE WALL PANEL EXPANSION JOINT LOCATIONS & DETAILS IN SHOP DRAWINGS & CONFIRM WITH ENGINEER PRIOR TO CONSTRUCTION. LOCATE VERTICAL (EXPANSION) WALL PANEL JOINTS TO BE CONCEALED BEHIND DOWNSPOUTS AT WEST & EAST ELEVATIONS. LOCATE VERTICAL (EXPANSION) WALL PANEL JOINTS AT OR NEAR COLUMN LINES 2 & 3 AT NORTH & SOUTH ELEVATIONS. (TYP.)
4. PROVIDE MOCKUP OF TYPICAL EXTERIOR WALL CONSTRUCTION, INCLUDING INSULATED METAL WALL PANELS, METAL BUILDING TRIM & FLASHING, FLASHING, WEEPS, AND CONTROL JOINT (TYP.)

SYMBOL LEGEND

- A (THRU) D — ALUMINUM WINDOW
- E — FIBERGLASS - SANDWICH PANEL ASSEMBLY
- L# — FIXED ALUM. LOUVER - COORD. W/ HVAC FSB
- W1 W2 — EXTERIOR LIGHTING FIXTURE - COORD. W/ ELECTRICAL FSB
- EL — EMERGENCY LIGHT - COORD. W/ ELECTRICAL FSB
- E — ELECTRICAL RECEPTACLE - COORD. W/ ELECTRICAL FSB
- FA — FIRE ALARM BEACON - COORD. W/ ELECTRICAL FSB
- K — KEY DEPOSITORY - COORD. W/ ELECTRICAL FSB
- WH — WALL HYDRANT - COORD. W/ PLUMBING FSB
- CV — CONCENTRIC VENT - COORD. W/ HVAC FSB
- EF — EXHAUST FAN - COORD. W/ HVAC FSB
- INTAKE PENETRATION & WALL CAP - COORD. W/ HVAC FSB
- EXHAUST PENETRATION & WALL CAP - COORD. W/ PLUMBING FSB



WEST (TREE LANE) ELEVATION

SCALE: 3/16"=1'-0"

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

EXTERIOR ELEVATIONS I (WEST)

FOR CONSTRUCTION

Sheet No.

A-5

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-6:31pm

TYPICAL EXT. ELEVATION NOTES:

1. PEMB MFR. TO PROVIDE STRUCTURAL SUPPORT & WEATHERTIGHT PENETRATIONS FOR ALL ITEMS MOUNTED TO OR PENETRATING THROUGH BUILDING ENVELOPE, WHETHER OR NOT ILLUSTRATED IN EXTERIOR ELEVATIONS OR FLOOR PLANS; REFER TO STRUCTURAL, MECHANICAL, HVAC, PLUMBING, FIRE PROTECTION, & ELECTRICAL DRAWINGS. (TYP.)
2. OWNER & ENGINEER WILL MAKE ALL FINAL EXTERIOR FINISH SELECTIONS (E.G. - METAL & ROOF PANELS, METAL BUILDING TRIM, DOORS & WINDOWS) ON SITE BASED ON MATERIAL SAMPLES (& MOCK-UPS) PROVIDED BY THE CONTRACTOR. (TYP.)
3. ILLUSTRATE WALL PANEL EXPANSION JOINT LOCATIONS & DETAILS IN SHOP DRAWINGS & CONFIRM WITH ENGINEER PRIOR TO CONSTRUCTION. LOCATE VERTICAL (EXPANSION) WALL PANEL JOINTS TO BE CONCEALED BEHIND DOWNSPOUTS AT WEST & EAST ELEVATIONS. LOCATE VERTICAL (EXPANSION) WALL PANEL JOINTS AT OR NEAR COLUMN LINES 2 & 3 AT NORTH & SOUTH ELEVATIONS. (TYP.)
4. PROVIDE MOCKUP OF TYPICAL EXTERIOR WALL CONSTRUCTION, INCLUDING INSULATED METAL WALL PANELS, METAL BUILDING TRIM & FLASHING, FLASHING, WEEPS, AND CONTROL JOINT (TYP.)

SYMBOL LEGEND

- A (THRU) D — ALUMINUM WINDOW
- E — FIBERGLASS - SANDWICH PANEL ASSEMBLY
- L# — FIXED ALUM. LOUVER - COORD. W/ HVAC FSB
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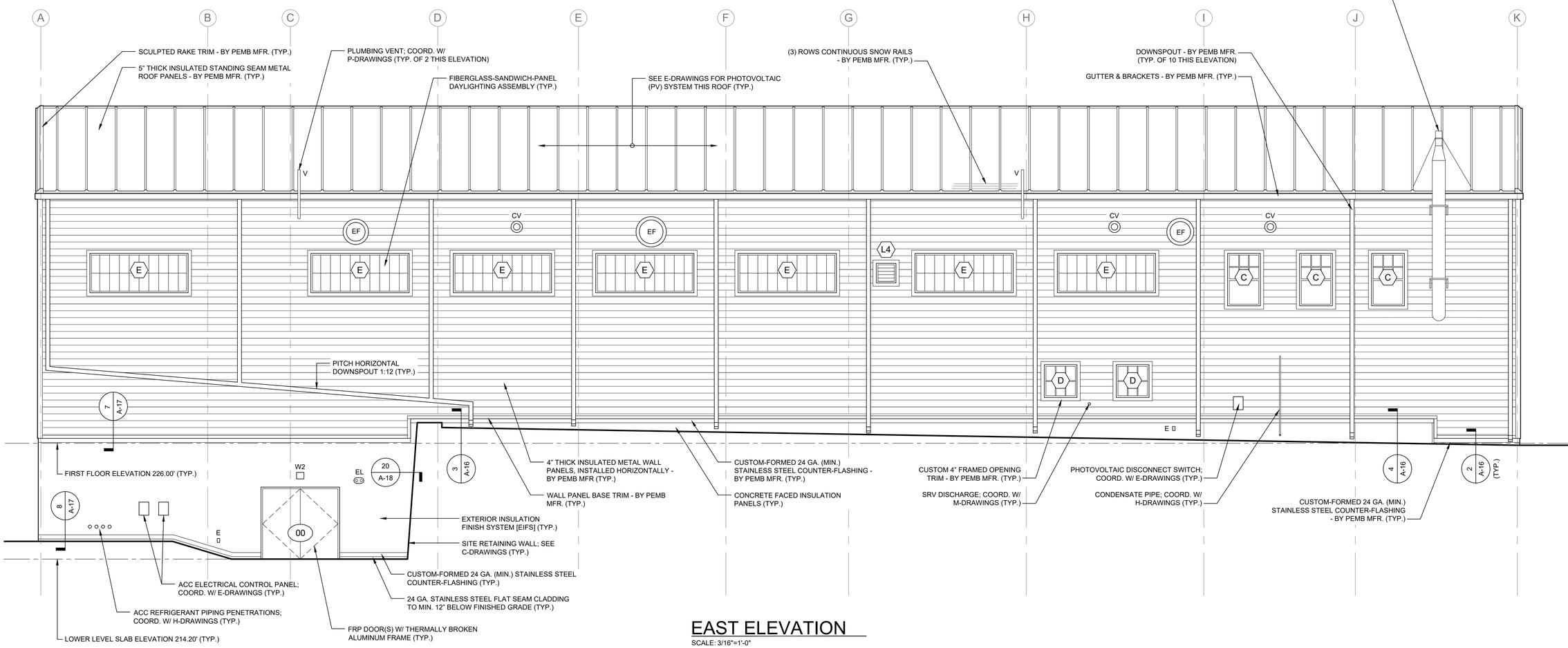
- EL — EMERGENCY LIGHT - COORD. W/ ELECTRICAL FSB
- E — ELECTRICAL RECEPTACLE - COORD. W/ ELECTRICAL FSB
- FA — FIRE ALARM BEACON - COORD. W/ ELECTRICAL FSB
- K — KEY DEPOSITORY - COORD. W/ ELECTRICAL FSB
- WH — WALL HYDRANT - COORD. W/ PLUMBING FSB
- CV — CONCENTRIC VENT - COORD. W/ HVAC FSB
- EF — EXHAUST FAN - COORD. W/ HVAC FSB
- INTAKE PENETRATION & WALL CAP - COORD. W/ HVAC FSB
- EXHAUST PENETRATION & WALL CAP - COORD. W/ PLUMBING FSB



EAST ELEVATION

SCALE: 3/16"=1'-0"

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			Date	APRIL 2024
			Job No.	245-2103
			Designed by	JK
			Drawn by	EZ
			Checked by	JK
			Approved by	JK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

EXTERIOR ELEVATIONS II (EAST)

FOR CONSTRUCTION

Sheet No. A-6

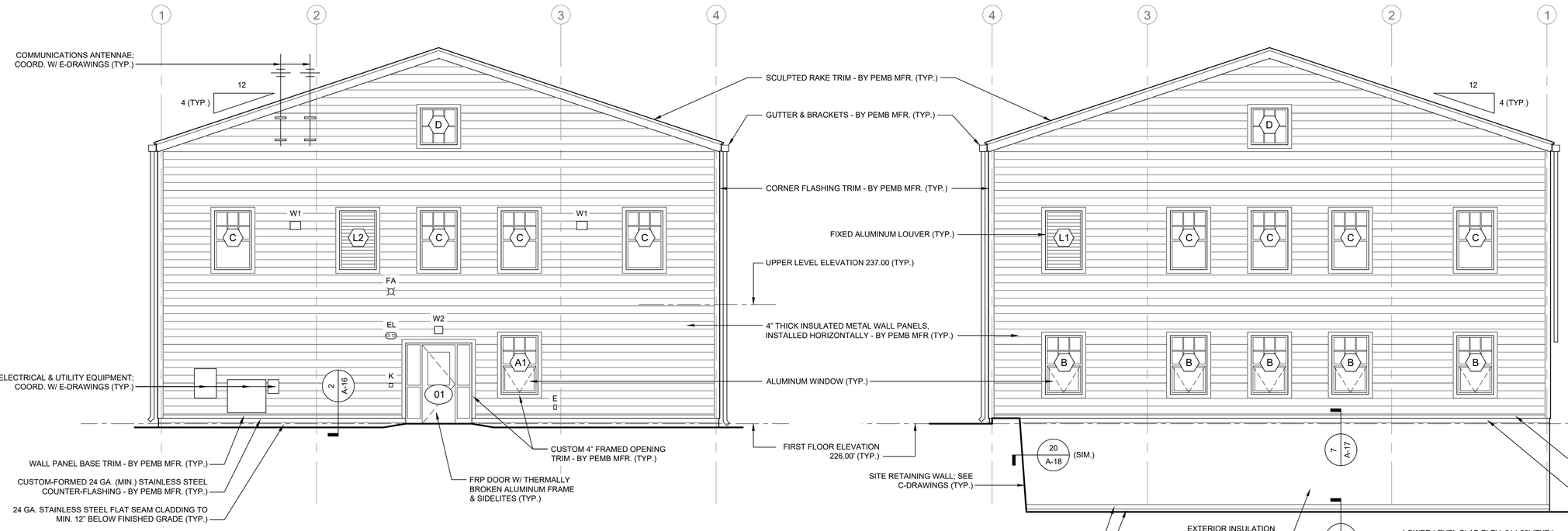
Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-6:32pm

TYPICAL EXT. ELEVATION NOTES:

1. PEMB MFR. TO PROVIDE STRUCTURAL SUPPORT & WEATHERTIGHT PENETRATIONS FOR ALL ITEMS MOUNTED TO OR PENETRATING THROUGH BUILDING ENVELOPE, WHETHER OR NOT ILLUSTRATED IN EXTERIOR ELEVATIONS OR FLOOR PLANS; REFER TO STRUCTURAL, MECHANICAL, HVAC, PLUMBING, FIRE PROTECTION, & ELECTRICAL DRAWINGS. (TYP.)
2. OWNER & ENGINEER WILL MAKE ALL FINAL EXTERIOR FINISH SELECTIONS (E.G. - METAL & ROOF PANELS, METAL BUILDING TRIM, DOORS & WINDOWS) ON SITE BASED ON MATERIAL SAMPLES (& MOCK-UPS) PROVIDED BY THE CONTRACTOR. (TYP.)
3. ILLUSTRATE WALL PANEL EXPANSION JOINT LOCATIONS & DETAILS IN SHOP DRAWINGS & CONFIRM WITH ENGINEER PRIOR TO CONSTRUCTION. LOCATE VERTICAL (EXPANSION) WALL PANEL JOINTS TO BE CONCEALED BEHIND DOWNSPOUTS AT WEST & EAST ELEVATIONS. LOCATE VERTICAL (EXPANSION) WALL PANEL JOINTS AT OR NEAR COLUMN LINES 2 & 3 AT NORTH & SOUTH ELEVATIONS. (TYP.)
4. PROVIDE MOCKUP OF TYPICAL EXTERIOR WALL CONSTRUCTION, INCLUDING INSULATED METAL WALL PANELS, METAL BUILDING TRIM & FLASHING, FLASHING, WEEPS, AND CONTROL JOINT (TYP.)

SYMBOL LEGEND

- A (THRU) D — ALUMINUM WINDOW
- E — FIBERGLASS - SANDWICH PANEL ASSEMBLY
- L# — FIXED ALUM. LOUVER - COORD. W/ HVAC FSB
- W1 W2 — EXTERIOR LIGHTING FIXTURE - COORD. W/ ELECTRICAL FSB
- EL — EMERGENCY LIGHT - COORD. W/ ELECTRICAL FSB
- E — ELECTRICAL RECEPTACLE - COORD. W/ ELECTRICAL FSB
- FA — FIRE ALARM BEACON - COORD. W/ ELECTRICAL FSB
- K — KEY DEPOSITORY - COORD. W/ ELECTRICAL FSB
- WH — WALL HYDRANT - COORD. W/ PLUMBING FSB
- CV — CONCENTRIC VENT - COORD. W/ HVAC FSB
- EF — EXHAUST FAN - COORD. W/ HVAC FSB
- INTAKE PENETRATION & WALL CAP - COORD. W/ HVAC FSB
- EXHAUST PENETRATION & WALL CAP - COORD. W/ PLUMBING FSB



NORTH ELEVATION
SCALE: 3/16"=1'-0"

SOUTH ELEVATION
SCALE: 3/16"=1'-0"

MARK	DATE	DESCRIPTION

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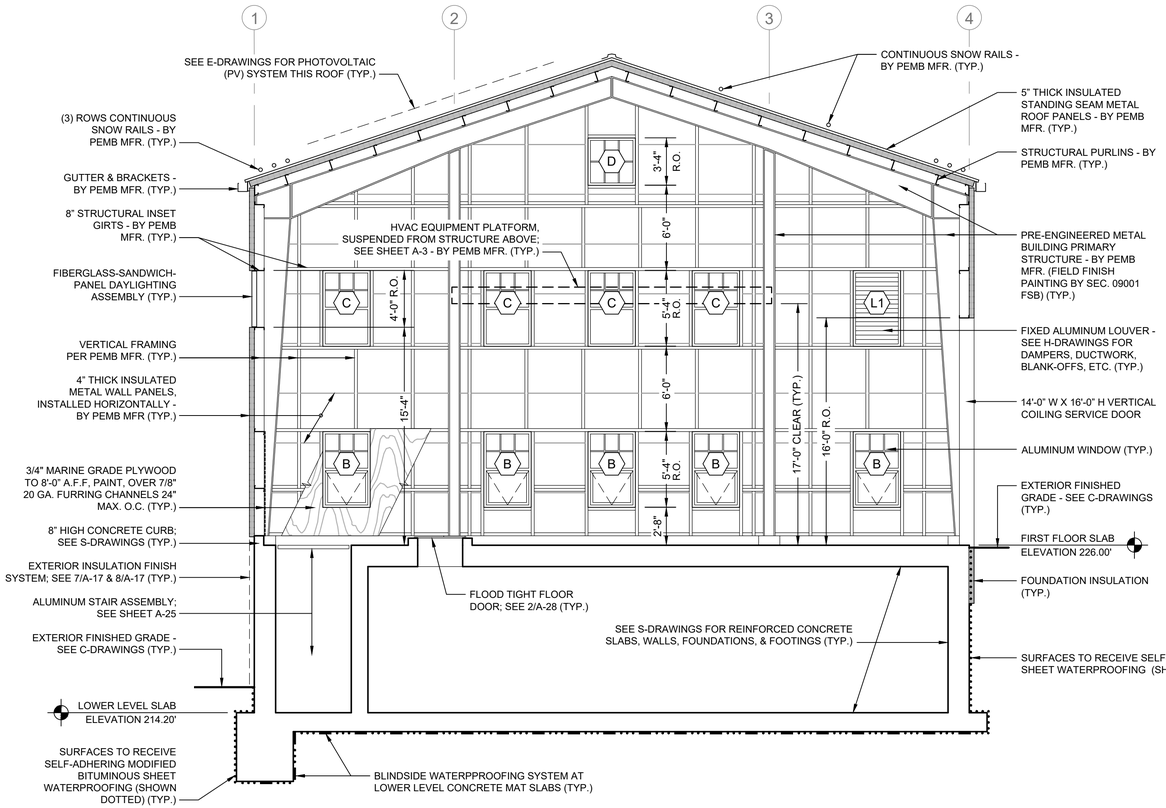
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

EXTERIOR ELEVATIONS III (NORTH & SOUTH)

FOR CONSTRUCTION

Sheet No. A-7

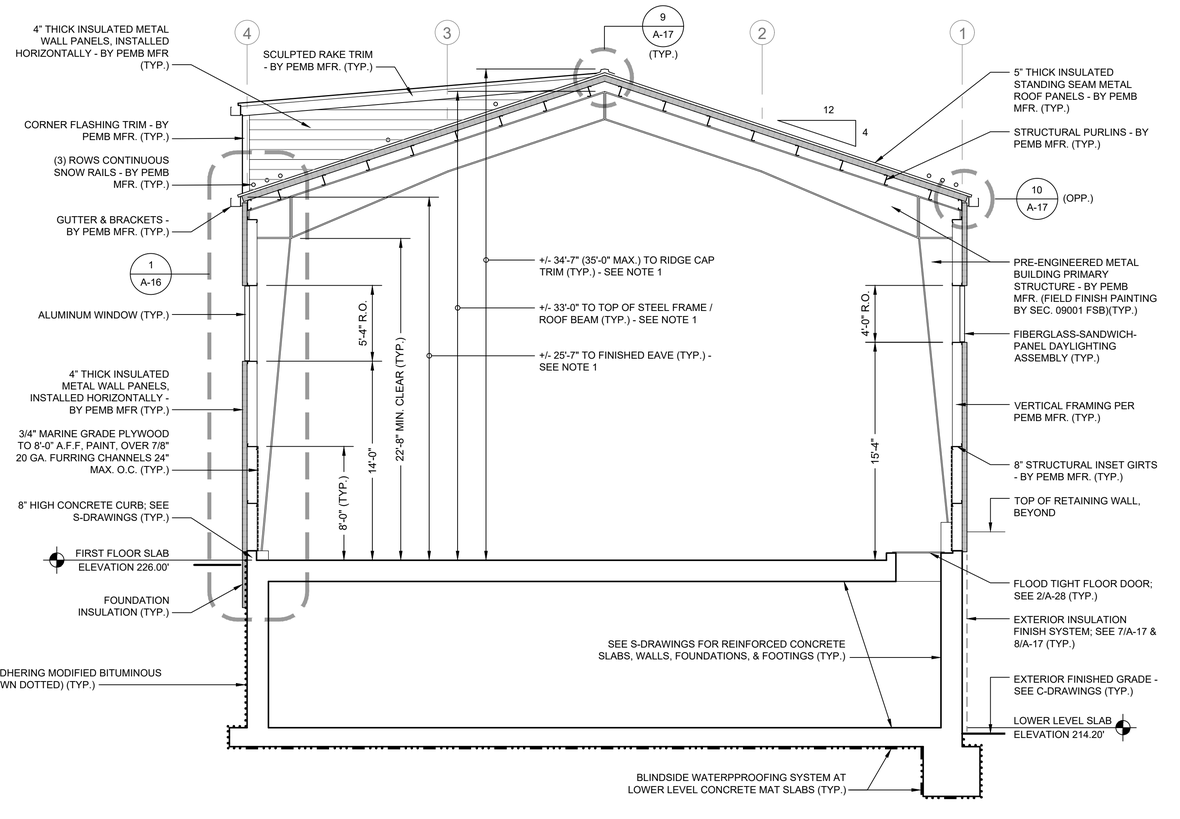
Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-6:32pm



BUILDING SECTION 1

SCALE:3/16"=1'-0"

A-2



BUILDING SECTION 2

SCALE:3/16"=1'-0"

A-2

NOTES:

1. TO BE CONFIRMED BY PEMB MANUFACTURER.

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

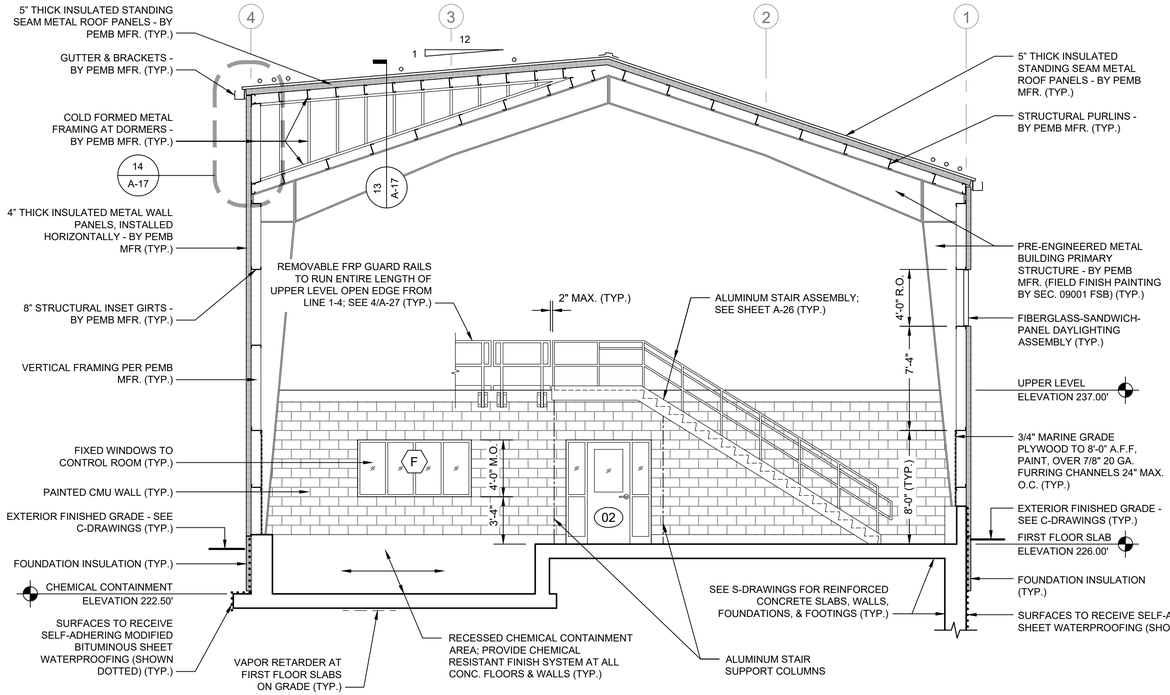
BUILDING SECTIONS I

FOR CONSTRUCTION

Sheet No.

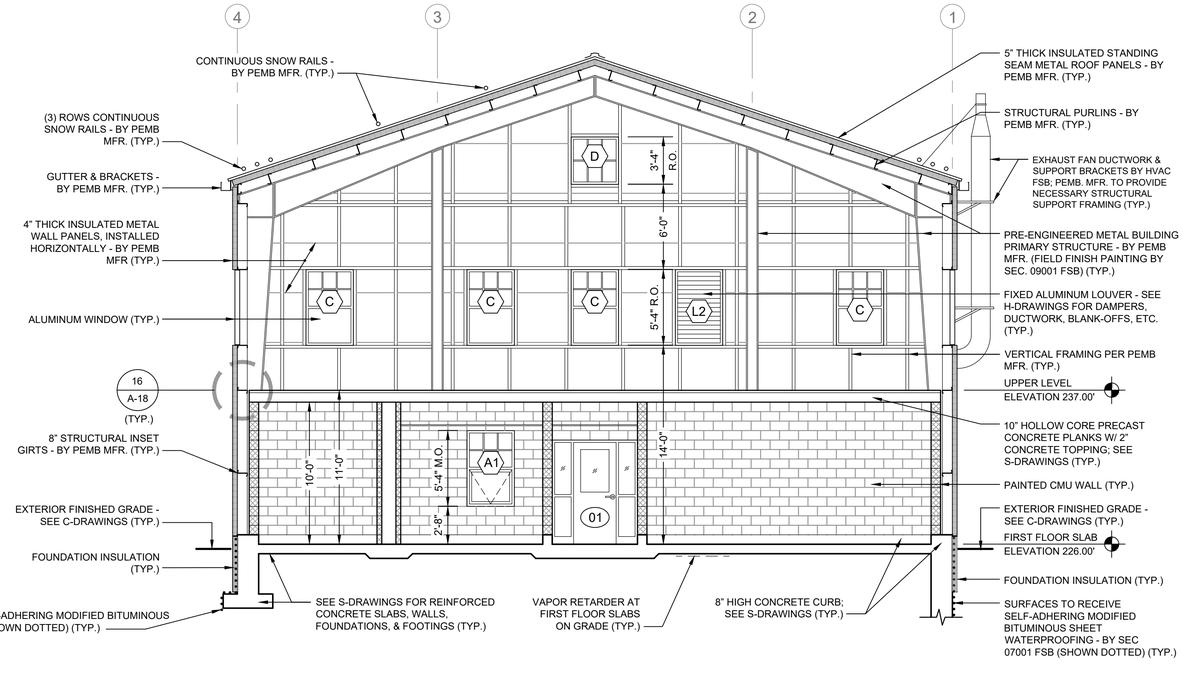
A-8

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31 2024-8:33pm



BUILDING SECTION 3

SCALE:3/16"=1'-0"



BUILDING SECTION 4

SCALE:3/16"=1'-0"

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REGISTERED ARCHITECT COMMONWEALTH OF MASSACHUSETTS — NO. 031726 CAMBRIDGE, MASS.

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

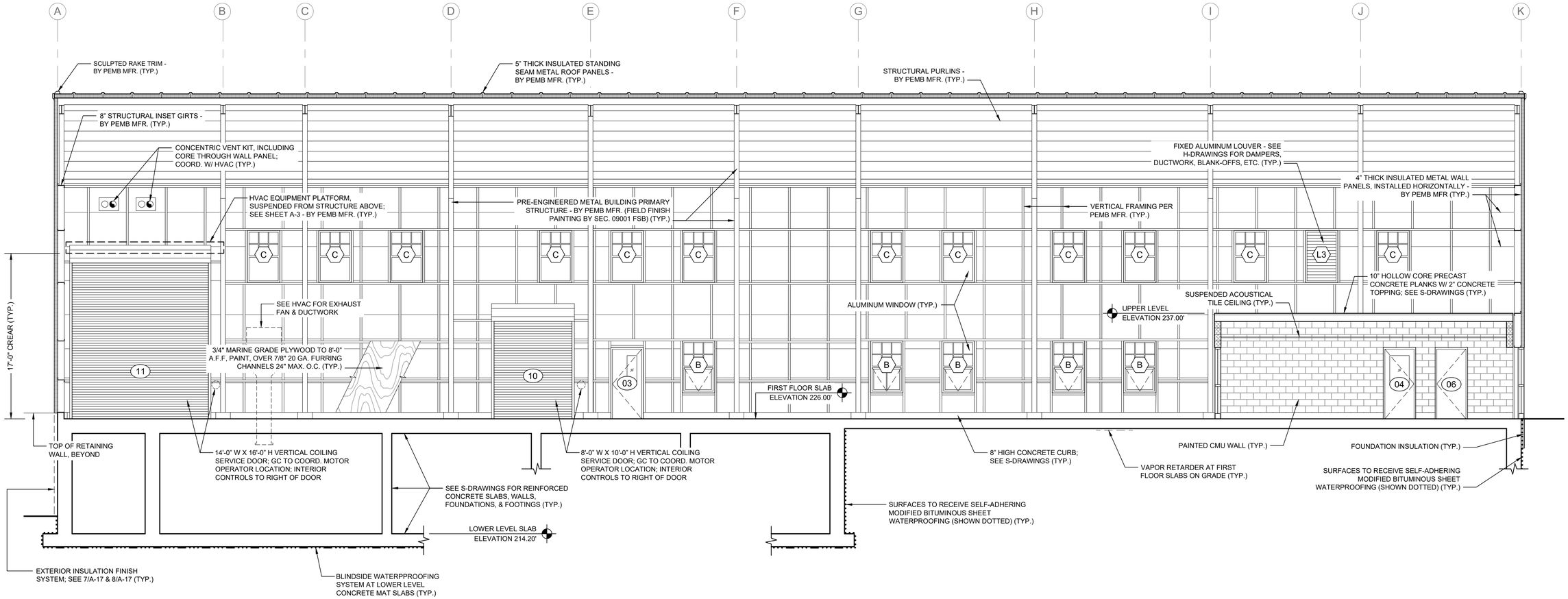
BUILDING SECTIONS II

FOR CONSTRUCTION

Sheet No.

A-9

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Apr 11,2024-12:32pm



BUILDING SECTION

SCALE:3/16"=1'-0"

5 / A-2

			Scale	AS SHOWN
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			Drawn by	EZ
			Checked by	JK
MARK	DATE	DESCRIPTION	Approved by	JK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

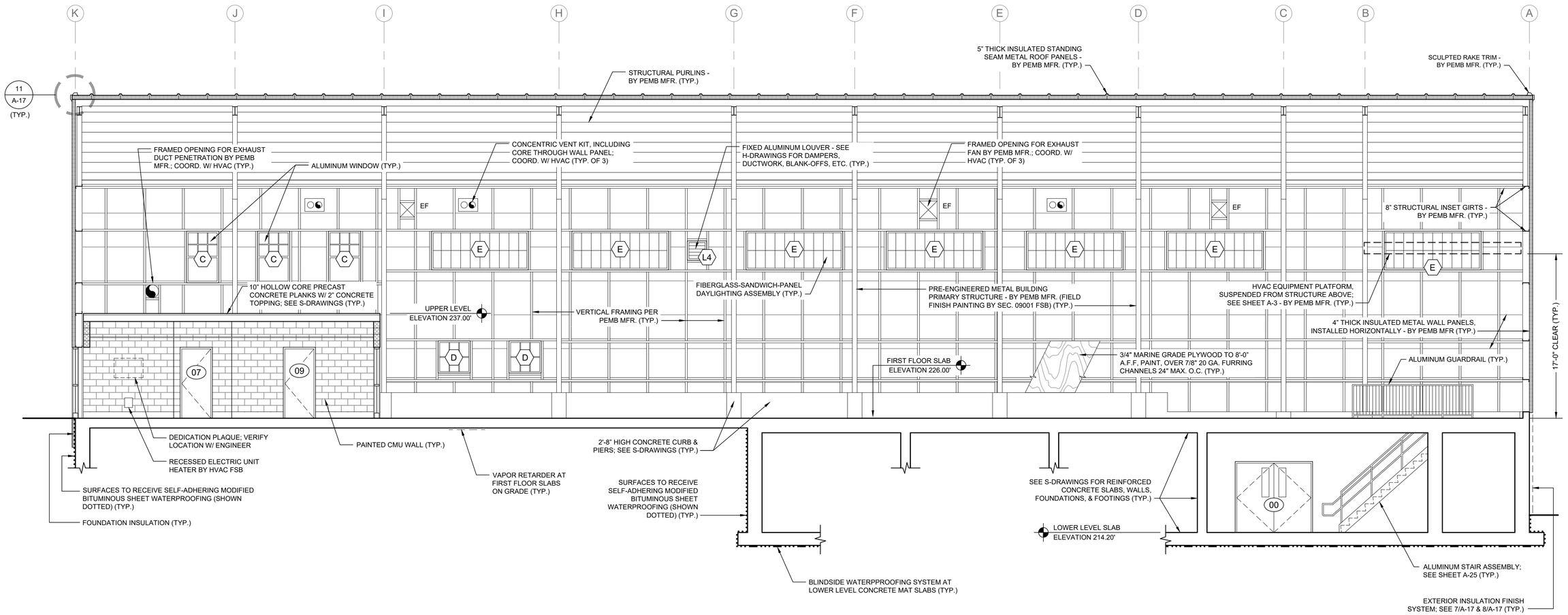
BUILDING SECTIONS III

FOR CONSTRUCTION

Sheet No.

A-10

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-6:34pm



BUILDING SECTION

SCALE:3/16"=1'-0"

6
A-2

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

BUILDING SECTIONS IV

FOR CONSTRUCTION

Sheet No.

A-11

Drawing file: I:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-6:35pm

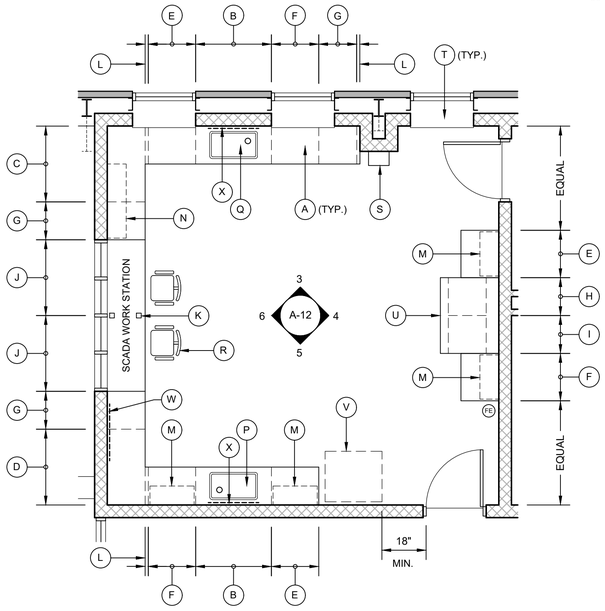
FF&E NOTES:

1. LABORATORY / CONTROL ROOM CASEWORK INCLUDES:
   - A. WOOD BASE CABINETS WITH DOORS, DRAWERS, AND ADJUSTABLE SHELVES.
   - B. WOOD WALL MOUNTED CABINETS WITH WOOD-FRAMED GLASS DOORS AND ADJUSTABLE SHELVES.
   - C. ALL BASE CABINETS ARE TO BE PROVIDED WITH MOLDED EPOXY RESIN COUNTERTOPS AND BACKSPLASHES (TYP.).
   - D. EPOXY RESIN DROP-IN SINKS.
   - E. FINISHED ENDS AT BASE & WALL CABINETS.

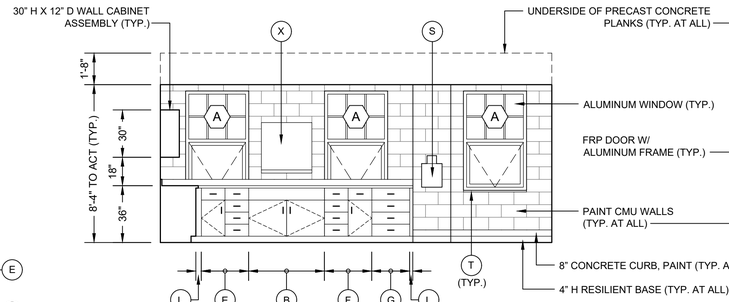
2. FF&E SCHEDULE: BASIS-OF-DESIGN CASEWORK MODEL NUMBERS [IN BRACKETS] REFER TO KEWAUNEE SCIENTIFIC CORPORATION SIGNATURE SERIES STYLE-5 PRODUCTS UNLESS OTHERWISE NOTED (TYP.).

A	24" DEEP EPOXY RESIN COUNTERTOP WITH BACKSPLASH (TYP.)
B	48" W SINK BASE [G00W362248]
C	48" W BLIND CORNER BASE CABINET [G13W362248]
D	48" W BLIND CORNER BASE CABINET [G12W362248]
E	30" W CUPBOARD & DRAWER BASE CABINET [E43W362230L]
F	30" W CUPBOARD & DRAWER BASE CABINET [E43W362230]
G	24" W DRAWER BASE CABINET [D30W362224]
H	24" W ACID STORAGE FUME HOOD BASE CABINET [G80W362224L]; COORD. W/ HVAC FSB
I	24" W BASE STORAGE FUME HOOD BASE CABINET [G80W362224]; COORD. W/ HVAC FSB
J	48" W SITTING HEIGHT ADJUSTABLE APRON W/ DRAWER [A01W052248A]
K	LEG ASSEMBLY PER CASEWORK MANUFACTURER
L	+/- 2" W (VIF) FACE & TOE FILLER
M	30" W WALL CABINET [W20W301230]
N	48" W WALL CABINET [W20W301248]
O	[NOT USED]
P	EPOXY RESIN DROP-IN LAB SINK [1005-DI-SL]
Q	EPOXY RESIN DROP-IN SAMPLE SINK [1005-DI-SL]
R	ADJUSTABLE HEIGHT WORK CHAIR (TYP. OF 2) [F-4943-00 (OR EQUAL BY BIOFIT, FISHER SCIENTIFIC)]
S	PORTABLE EYEWASH W/ WALL MOUNTING BRACKET [SPEAKMAN SE-4400 GRAVITYFLO (OR EQUAL)]
T	PROVIDE EPOXY RESIN COUNTERTOP AT WINDOW STOOLS (TYP.)
U	48" W FUME HOOD BY HVAC FSB
V	REFRIGERATOR BY OWNER
W	SCADA MONITOR THIS AREA
X	32" WIDE X 30" HIGH EPOXY RESIN PEGBOARD W/ DRIP TROUGH [X-020017]

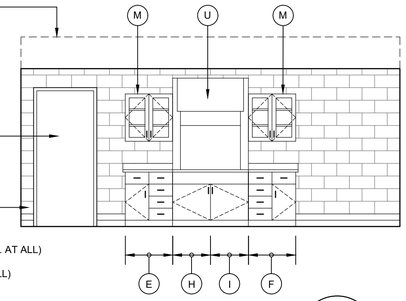
3. COORDINATE WITH M-DRAWINGS, H-DRAWINGS, P-DRAWINGS, E-DRAWINGS, FP-DRAWINGS, & I-DRAWINGS (TYP.).
4. VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD; SUBMIT SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES PRIOR TO FABRICATION (TYP.).
5. PROVIDE THREE (3) ANTI-FATIGUE MATS, 3'-0" X 5'-0" X 5/8" THICK [BASIS OF DESIGN: ULINE SUPERFOAM MODEL H-5133 (OR EQUAL BY AMERICAN FLOOR MATS, NO TRAX)].
6. PROVIDE FOUR (4) DESK TOP CABLE GROMMETS AT SCADA WORK STATION (TYP.)



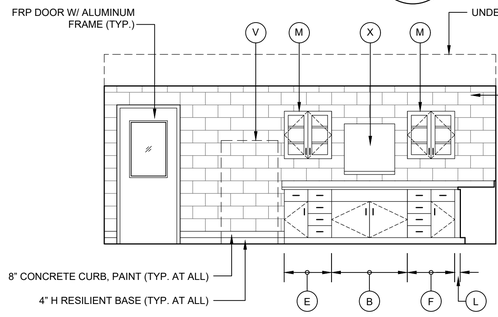
ENLARGED CONTROL ROOM PLAN — 1 / A-2
SCALE: 1/4"=1'-0"



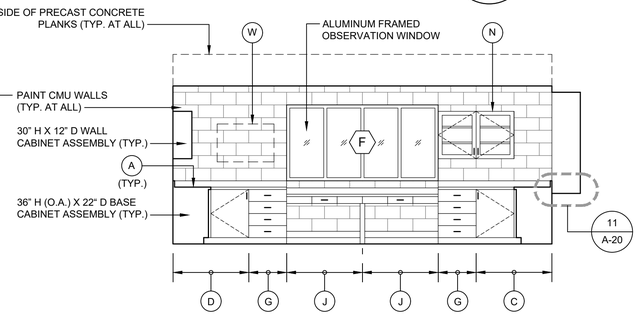
INTERIOR ELEV. — 3 / A-12
SCALE: 1/4"=1'-0"



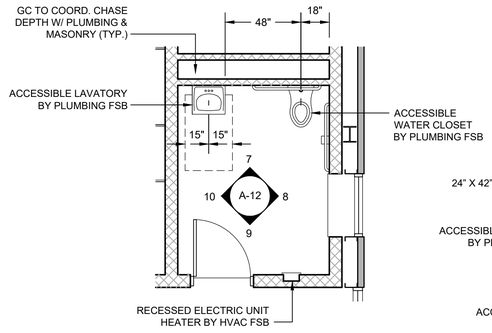
INTERIOR ELEV. — 4 / A-12
SCALE: 1/4"=1'-0"



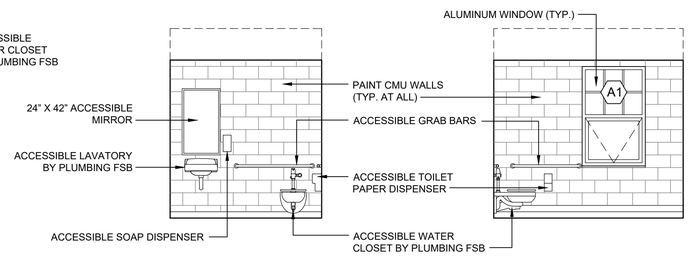
INTERIOR ELEV. — 5 / A-12
SCALE: 1/4"=1'-0"



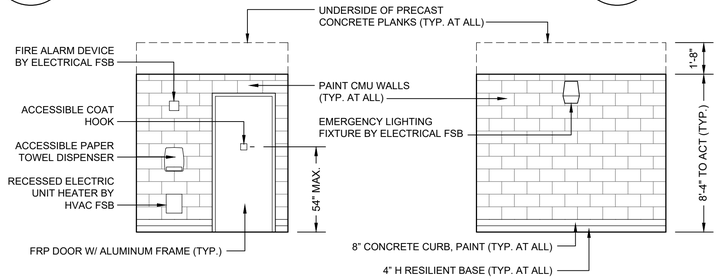
INTERIOR ELEV. — 6 / A-12
SCALE: 1/4"=1'-0"



ENLARGED TOILET PLAN — 2 / A-2
SCALE: 1/4"=1'-0"



INTERIOR ELEV. — 7 / A-12
SCALE: 1/4"=1'-0"



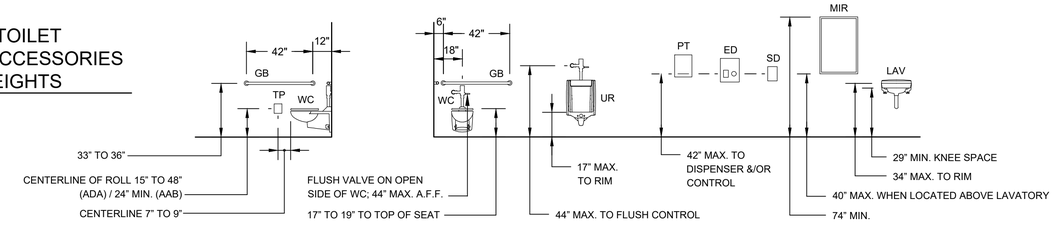
INTERIOR ELEV. — 8 / A-12
SCALE: 1/4"=1'-0"

INTERIOR ELEV. — 9 / A-12
SCALE: 1/4"=1'-0"

INTERIOR ELEV. — 10 / A-12
SCALE: 1/4"=1'-0"

ACCESSIBLE TOILET FIXTURES & ACCESSORIES MOUNTING HEIGHTS

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



FIXTURE LEGEND:

ED	ELECTRIC DRYER
GB	GRAB BAR
LAV	LAVATORY
MIR	MIRROR
PT	PAPER TOWEL DISPENSER
SD	SOAP DISPENSER
TP	TOILET PAPER DISPENSER
UR	URINAL
WC	WATER CLOSET

[NOTE: SEE P-DRAWINGS FOR PLUMBING FIXTURES (TYP.)]

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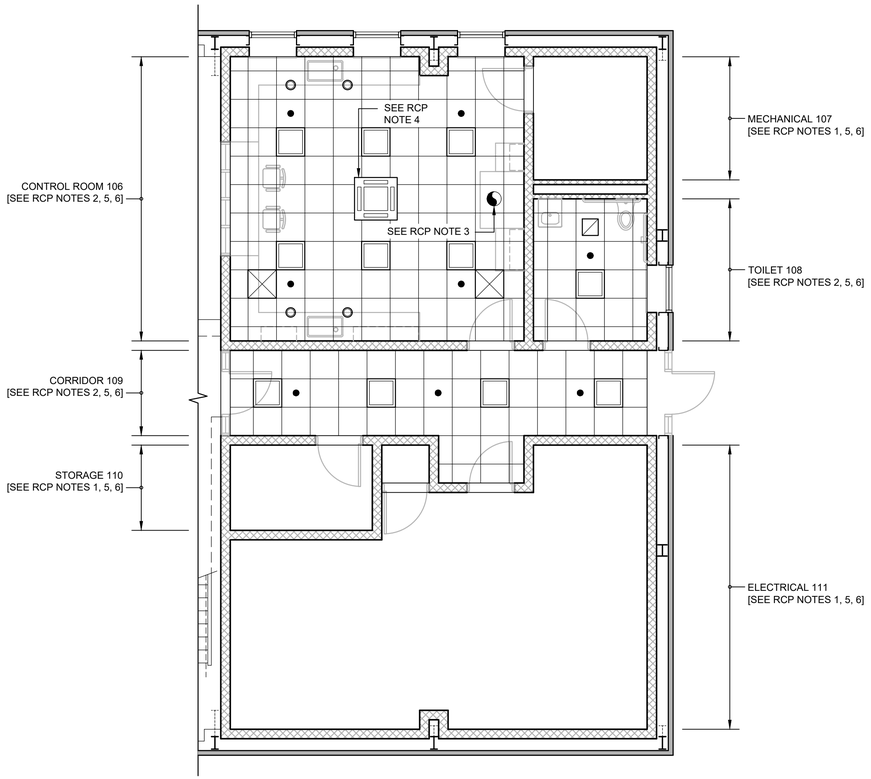
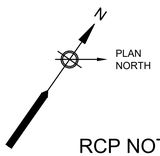
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ENLARGED FLOOR PLANS; INTERIOR ELEVATIONS

FOR CONSTRUCTION

Sheet No. A-12





PARTIAL FIRST FLOOR REFLECTED CEILING PLAN (RCP)

SCALE: 3/16"=1'-0"

ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	BASE	FLOOR	NORTH WALL	WEST WALL	EAST WALL	SOUTH WALL	CEILING	HEIGHT	REMARKS
001	PIPE GALLERY	CONC.	CONC. (SLR)	CONC.	CONC.	CONC.	CONC.	CONC.	11'-9 1/2"	
101	NITRATE REMOVAL (FUTURE)	CONC. (SLR)	CONC. (SLR)	- -	MTL. WALL PANEL M.G. PLY. (PTD)	MTL. WALL PANEL M.G. PLY. (PTD)	MTL. WALL PANEL M.G. PLY. (PTD)	MTL. ROOF PANELS	VARIES	
102	PFAS REMOVAL	CONC. (SLR)	CONC. (SLR)	- -	MTL. WALL PANEL M.G. PLY. (PTD)	MTL. WALL PANEL M.G. PLY. (PTD)	- -	MTL. ROOF PANELS	VARIES	
103	FE / MN REMOVAL	CONC. (SLR)	CONC. (CRFF)	CMU (PTD)	- -	MTL. WALL PANEL M.G. PLY. (PTD)	- -	MTL. ROOF PANELS	VARIES	
104	NaHSO3 STORAGE	CONC. (CRWF)	CONC. (CRFF)	CONC. (CRWF)	CONC. (CRWF) M.G. PLY. (PTD) MTL. WALL PANELS	CONC. (CRWF)	CONC. (CRWF)	MTL. ROOF PANELS	VARIES	
105	KOH & NaOCI STORAGE	CONC. (CRWF)	CONC. (CRFF)	CONC. (CRWF) CMU (PTD)	CONC. (CRWF) M.G. PLY. (PTD) MTL. WALL PANELS	CONC. (CRWF)	CONC. (CRWF)	MTL. ROOF PANELS	VARIES	
106	CONTROL ROOM	CONC. (PTD) RES. BASE	CONC. (RESIN.)	CMU (PTD)	CMU (PTD)	CMU (PTD)	CMU (PTD)	ACT	8'-4"	
107	MECHANICAL	CONC. (SLR)	CONC. (SLR)	CMU	CMU	CMU	CMU	CONC.	10'-0"	
108	TOILET	CONC. (PTD) RES. BASE	CONC. (RESIN.)	CMU (PTD)	CMU (PTD)	CMU (PTD)	CMU (PTD)	ACT	8'-4"	
109	CORRIDOR	CONC. (PTD) RES. BASE	CONC. (RESIN.)	CMU (PTD)	CMU (PTD)	CMU (PTD)	CMU (PTD)	ACT	8'-4"	
110	STORAGE	CONC. (SLR)	CONC. (SLR)	CMU	CMU	CMU	CMU	CONC.	10'-0"	
111	ELECTRICAL	CONC. (SLR)	CONC. (SLR)	CMU	CMU	CMU	CMU	CONC.	10'-0"	
112	CLOSET	CONC. (SLR)	CONC. (SLR)	CMU	CMU	CMU	CMU	CONC.	10'-0"	2 HR. RATED
201	UPPER LEVEL	- -	CONC.	MTL. WALL PANELS	MTL. WALL PANELS	MTL. WALL PANELS	- -	MTL. ROOF PANELS	VARIES	

FINISH SCHEDULE NOTES:

1. CONCRETE FLOOR HARDENER / SEALER (SLR) IS BY SECTION 03300 (TYP.).
2. ALL PAINTING (PTD) AND CHEMICAL RESISTANT FLOOR & WALL FINISHES (CRFF, CRWF) IS THE RESPONSIBILITY OF THE PAINTING FSB UNLESS OTHERWISE NOTED (TYP.).
3. RESINOUS FLOORING IS THE WORK OF SECTION 09671 (TYP.).
4. TRANSITIONS BETWEEN FLOOR FINISHES SHALL OCCUR UNDER THE CENTERLINE OF CLOSED DOOR LEAVES (TYP.).
5. MARINE GRADE PLYWOOD (M.G. PLY.) EXTENDS TO 8'-0" A.F.F. (TYP.).

ABBREVIATIONS:

ACT:	ACOUSTICAL CEILING TILES
A.F.F.:	ABOVE FINISHED FLOOR
CMU:	CONCRETE MASONRY UNITS
CONC:	CONCRETE
CRFF:	CHEMICAL RESISTANT FLOOR FINISH
CRWF:	CHEMICAL RESISTANT WALL FINISH
ES:	EXPOSED STRUCTURE
M.G. PLY.:	MARINE GRADE PLYWOOD
MTL:	METAL
PTD:	PAINTED
RES.:	RESILIENT (BASE)
RESIN.:	RESINOUS FLOORING
SLR:	SEALER [SEE NOTE 1]

RCP NOTES:

1. PRE-CAST CONCRETE PLANK CEILING STRUCTURE; FINISHED CEILING HEIGHT 10'-0" A.F.F. (TYP.).
2. 2 x 2 SUSPENDED ACOUSTICAL PANEL CEILING SYSTEM; FINISHED CEILING HEIGHT 8'-4" A.F.F.; (UNDERSIDE OF PRE-CAST CONCRETE CEILING STRUCTURE ABOVE, 10'-0" A.F.F.) (TYP.).
3. FUME HOOD EXHAUST DUCT; COORDINATE WITH HVAC FSB (TYP.).
4. CEILING MOUNTED CASSETTE MINI SPLIT HEAT PUMP; COORDINATE WITH HVAC FSB (TYP.).
5. SEE ALSO HVAC, PLUMBING, FIRE PROTECTION, ELECTRICAL, AND OTHER DRAWINGS FOR OTHER ITEMS MOUNTED TO OR PENETRATING THROUGH CEILINGS (TYP.).
6. VERIFY AND COORDINATE FINAL LOCATIONS IN THE FIELD WITH ENGINEER (TYP.).

RCP LEGEND

	RECESSED LIGHTING FIXTURE	S	SMOKE DETECTOR
	RESESSED DOWNLIGHT	H	HEAT DETECTOR
	SURFACE MOUNTED LIGHTING FIXTURE	CO	CARBON MONOXIDE DETECTOR
	SUPPLY DIFFUSER	A	ANTENNA (INTERIOR)
	EXHAUST GRILLE		CONCEALED SPRINKLER HEAD
EF	EXHAUST FAN		

ENVIRONMENTAL PARTNERS — An Apex Company —

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PARTIAL REFLECTED CEILING PLAN; ROOM FINISH SCHEDULE

FOR CONSTRUCTION

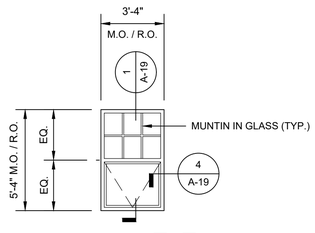
Sheet No.

A-13

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-6:36pm

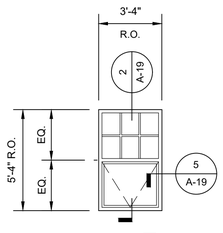
WINDOW / LOUVER SCHEDULE

TYPE	QTY.	M.O. / R.O.		DESCRIPTION	MAT'L.	FINISH	COLOR	GLAZING	REMARKS
		WIDTH	HEIGHT						
A	3	3'-4"	5'-4"	ALUMINUM FIXED / HOPPER	ALUMINUM	FF	TBS	TYPE B	
A1	1	3'-4"	5'-4"	ALUMINUM FIXED / HOPPER	ALUMINUM	FF	TBS	TYPE C	
B	10	3'-4"	5'-4"	ALUMINUM FIXED / HOPPER	ALUMINUM	FF	TBS	TYPE B	
C	23	3'-4"	5'-4"	ALUMINUM FIXED	ALUMINUM	FF	TBS	TYPE B	
D	4	3'-4"	3'-4"	ALUMINUM FIXED	ALUMINUM	FF	TBS	TYPE B	
E	7	10'-0"	4'-0"	FIBERGLASS-SANDWICH-PANEL ASSEMBLY		FF	TBS	(SEE SPECS)	
F	1	- -	- -	- -	- -	- -	- -	- -	SEE STOREFRONT FRAME TYPE F7
L1	1	3'-4"	5'-4"	FIXED ALUMINUM LOUVER	ALUMINUM	FF	TBS	- -	
L2	1	3'-4"	5'-4"	FIXED ALUMINUM LOUVER	ALUMINUM	FF	TBS	- -	
L3	1	3'-4"	5'-4"	FIXED ALUMINUM LOUVER	ALUMINUM	FF	TBS	- -	
L4	1	2'-0"	2'-0"	FIXED ALUMINUM LOUVER	ALUMINUM	FF	TBS	- -	



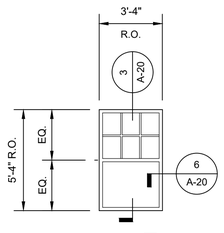
TYPES A A1

ALUMINUM FIXED / HOPPER



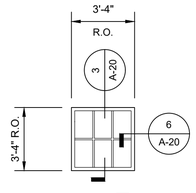
TYPE B

ALUMINUM FIXED / HOPPER



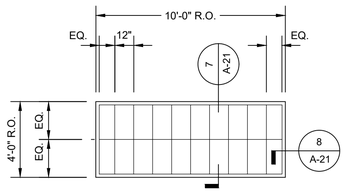
TYPE C

ALUMINUM FIXED



TYPE D

ALUMINUM FIXED

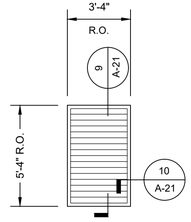


TYPE E

FIBERGLASS-SANDWICH-PANEL ASSEMBLY W/ 'SHOJI' GRID PATTERN

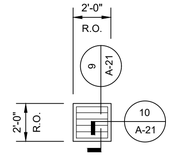
TYPE F

SEE STOREFRONT FRAME TYPE F7 (SEE SHEET A-15)



TYPES L1 L2 L3

FIXED ALUMINUM LOUVER



TYPE L4

FIXED ALUMINUM LOUVER

WINDOW / LOUVER ELEVATIONS

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

TYPICAL WINDOW NOTES:

1. PROVIDE FIXED ALUMINUM WINDOWS, INCLUDING BUT NOT LIMITED TO FACTORY GLAZING.
2. PROVIDE FIBERGLASS-SANDWICH-PANEL ASSEMBLIES, INCLUDING ALUMINUM FRAMES, FASTENERS, AND ACCESSORIES, WHERE INDICATED.
3. PROVIDE ALL HOPPER WINDOWS WITH POLE OPERATED CAM HANDLES & POLE RINGS. PROVIDE SIX POLES.
4. REFER TO PLANS AND ELEVATIONS FOR WINDOW OPENING LOCATIONS. VERIFY ALL CONFIGURATIONS AND DIMENSIONS IN THE FIELD.
5. PROVIDE BLINDS AT WINDOW TYPES A & A1. COORDINATE INSTALLATION WITH WINDOW DETAILS.
6. FILL ALL VOIDS AT EXTERIOR WINDOW FRAMES WITH MINERAL WOOL INSULATION.
7. SEALANTS ASSOCIATED WITH THE WINDOW INSTALLATION SHALL BE BY THE INSTALLING CONTRACTOR.
8. CONFIRM AND COORDINATE FIXED ALUMINUM LOUVER SIZES WITH HVAC FSB.
9. THE METAL WINDOW FILED SUB-CONTRACTOR (SEC. 08001) IS RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FRP FLUSH DOORS (SEC. 08161), ALUMINUM-FRAMED ENTRANCES (SEC. 08410), ALUMINUM WINDOWS (SEC. 08513), DOOR HARDWARE (SEC. 08710), GLAZING (SEC. 08800), AND FIBERGLASS-SANDWICH-PANEL ASSEMBLIES (SEC. 08950).
10. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL WORK ASSOCIATED WITH OVERHEAD COILING DOORS (SEC. 08331, OTHER THAN ELECTRICAL), FLOOR DOORS (SEC. 08348), AND FIXED LOUVERS (SEC. 100200, OTHER THAN HVAC).

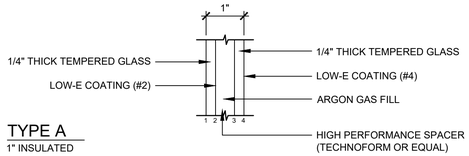
ABBREVIATIONS:

ALUM.:	ALUMINUM
FF:	FACTORY FINISH
FRP:	FIBERGLASS-REINFORCED POLYESTER
GL#:	GLAZING TYPE
M.O.:	MASONRY OPENING
OHD:	OVERHEAD DOOR
R.O.:	ROUGH OPENING
TBS:	TO BE SELECTED

TYPICAL GLAZING TYPES:

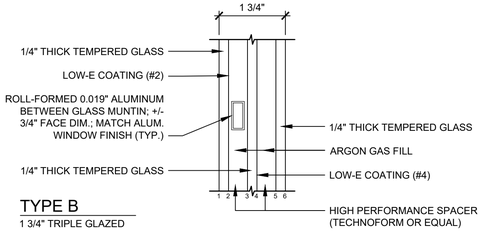
SCALE: N.T.S.

EXTERIOR INTERIOR



TYPE A

1" INSULATED



TYPE B

1 3/4" TRIPLE GLAZED

TYPE C

1 3/4" TRIPLE GLAZED (OBSCURE)

SIMILAR TO TYPE B; PROVIDE OBSCURE (PRIVACY) GLAZING ACCEPTABLE TO ENGINEER AT INNER LITE(S).

NOTE: SPECIFIC REQUIREMENTS FOR LOW-E COATINGS AND GAS FILLED CAVITIES ARE TO BE DETERMINED BY THE CONTRACTOR & FENESTRATION SYSTEM MANUFACTURER(S) AS REQUIRED TO MEET THE OVERALL SPECIFIED & CODE MANDATED U-FACTOR & SHGC FOR FIXED FENESTRATION, OPERABLE FENESTRATION, & SWINGING DOORS (TYP.).

ENVIRONMENTAL PARTNERS — An Apex Company —

CGKV Architects, Inc.

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	JK
Drawn by	EZ
Checked by	JK
Approved by	JK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

WINDOW / LOUVER SCHEDULE AND ELEVATIONS

FOR CONSTRUCTION

Sheet No.

A-14

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-6:37pm

DOOR / FRAME SCHEDULE

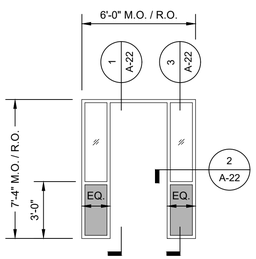
DOOR OPENING NO.	FRAME							LEAF												DOOR OPENING NO.
	TYPE	M.O./R.O. WIDTH	M.O./R.O. HEIGHT	DEPTH	MATERIAL	FINISH	COLOR	TYPE	QTY.	WIDTH	HEIGHT	MATERIAL	THICK.	FINISH	COLOR	HARDWARE	GLAZING	SIGNAGE	REMARKS	
00	F6	8'-0"	7'-4"	6"	ALUM.	FF	TBS	D3	2	4'-0"	7'-2"	FRP	1-3/4"	FF	TBS	SET #2	- -			00
01	F1	6'-0"	7'-4"	6"	ALUM.	FF	TBS	D4	1	3'-0"	7'-2"	FRP	1-3/4"	FF	TBS	SET #1	TYPE A			01
02	F2	6'-0"	7'-4"	6"	ALUM.	FF	TBS	D4	1	3'-0"	7'-2"	FRP	1-3/4"	FF	TBS	SET #3	TYPE A			02
03	F4	3'-4"	7'-4"	6"	ALUM.	FF	TBS	D1	1	3'-0"	7'-2"	FRP	1-3/4"	FF	TBS	SET #1	TYPE A			03
04	F5	3'-4"	7'-4"	6"	ALUM.	FF	TBS	D4	1	3'-0"	7'-2"	FRP	1-3/4"	FF	TBS	SET #5	TYPE A	CONTROL ROOM		04
05	F5	3'-4"	7'-4"	6"	ALUM.	FF	TBS	D2	1	3'-0"	7'-2"	FRP	1-3/4"	FF	TBS	SET #5	- -	MECHANICAL		05
06	F5	3'-4"	7'-4"	6"	ALUM.	FF	TBS	D2	1	3'-0"	7'-2"	FRP	1-3/4"	FF	TBS	SET #6	- -	TOILET (ACCESSIBLE)		06
07	F5	3'-4"	7'-4"	6"	ALUM.	FF	TBS	D2	1	3'-0"	7'-2"	FRP	1-3/4"	FF	TBS	SET #4	- -	ELECTRICAL		07
08	F5	3'-4"	7'-4"	6"	ALUM.	FF	TBS	D2	1	3'-0"	7'-2"	FRP	1-3/4"	FF	TBS	SET #7	- -		90 MINUTE FIRE RATED	08
09	F5	3'-4"	7'-4"	6"	ALUM.	FF	TBS	D2	1	3'-0"	7'-2"	FRP	1-3/4"	F F	TBS	SET #5	- -	STORAGE		09
- -	F7	8'-0"	4'-0"	6"	ALUM.	FF	TBS	- -	- -	- -	- -	- -	- -	- -	- -	- -	TYPE A		FIXED LITE WINDOW TYPE F	- -
10	OHD	14'-0"	16'-0"			FF	TBS	OHD	1	14'-0"	16'-0"	STL		FF	TBS	- -	- -			10
11	OHD	8'-0"	10'-0"			FF	TBS	OHD	1	8'-0"	10'-0"	STL		FF	TBS	- -	- -			11

TYPICAL DOOR / FRAME NOTES:

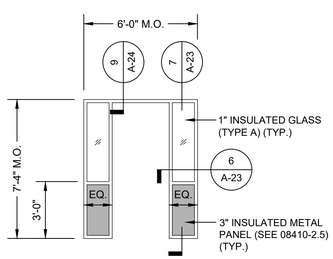
1. PROVIDE NEW THERMALLY BROKEN ALUMINUM STOREFRONT SYSTEM FRAMES. PREPARE AND REINFORCE FRAMES FOR SPECIFIED HARDWARE. FRAMES SHALL BE FACTORY FINISHED.
2. PROVIDE FRP / ALUMINUM HYBRID FLUSH DOORS. PROVIDE FACTORY GLAZING (1" TEMPERED INSULATED GLASS) WHERE INDICATED. PREPARE AND REINFORCE DOORS FOR SPECIFIED HARDWARE.
3. SEE SHEET A-14 FOR GLAZING TYPES.
4. REFER TO PLANS AND ELEVATIONS FOR DOOR / FRAME OPENING LOCATIONS. VERIFY ALL CONFIGURATIONS AND DIMENSIONS IN THE FIELD.
5. FILL ALL VOIDS AT DOOR FRAMES WITH MINERAL WOOL INSULATION.
6. SEALANTS CONCEALED AS PART OF THE DOOR / FRAME INSTALLATION SHALL BE BY THE INSTALLING CONTRACTOR.
7. SUBMIT PROPOSED FRAME ANCHORING AS PART OF SHOP DRAWING SUBMITTAL.
8. THE METAL WINDOW FILED SUB-CONTRACTOR (SEC. 08001) IS RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FRP FLUSH DOORS (SEC. 08161), ALUMINUM-FRAMED ENTRANCES (SEC. 08410), ALUMINUM WINDOWS (SEC. 08513), DOOR HARDWARE (SEC. 08710), GLAZING (SEC. 08800), AND FIBERGLASS-SANDWICH-PANEL ASSEMBLIES (SEC. 08950).
9. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL WORK ASSOCIATED WITH OVERHEAD COILING DOORS (SEC. 08331, OTHER THAN ELECTRICAL), FLOOR DOORS (SEC. 08348), AND FIXED LOUVERS (SEC. 100200, OTHER THAN HVAC).

ABBREVIATIONS:

ALUM.:	ALUMINUM	M.O.:	MASONRY OPENING
FF:	FACTORY FINISH	OHD:	OVERHEAD DOOR
FRP:	FIBERGLASS-REINFORCED POLYESTER	R.O.:	ROUGH OPENING
		TBS:	TO BE SELECTED



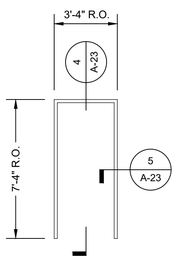
TYPE F1



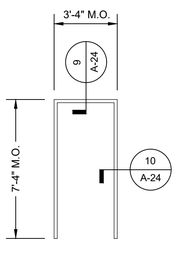
TYPE F2

[NOT USED]

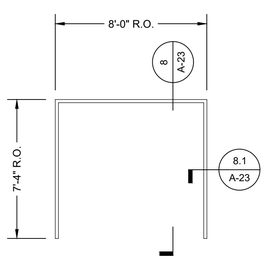
TYPE F3



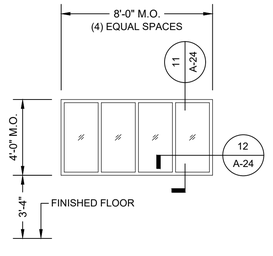
TYPE F4



TYPE F5



TYPE F6

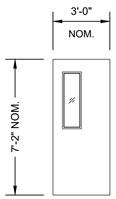


TYPE F7

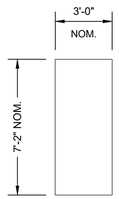
[FIXED LITE WINDOW TYPE F]

FRAME ELEVATIONS

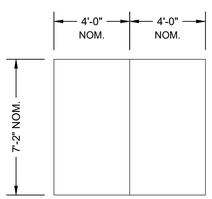
SCALE: 1/4"=1'-0"



TYPE D1



TYPE D2



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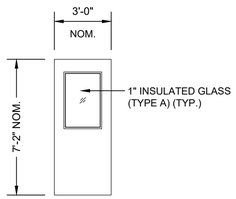


TYPE D4

DOOR ELEVATIONS

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

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	JK
Drawn by	EZ
Checked by	JK
Approved by	JK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

ENVIRONMENTAL PARTNERS — An Apex Company —

CGKV Architects, Inc.

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

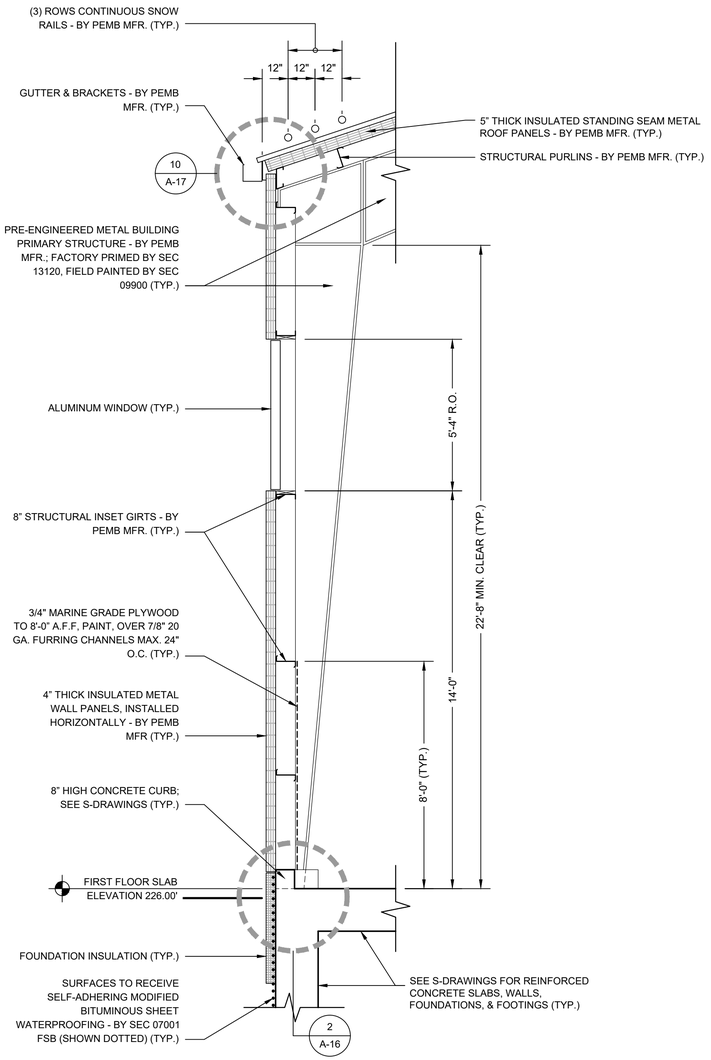
DOOR / FRAME SCHEDULE AND ELEVATIONS

FOR CONSTRUCTION

Sheet No.

A-15

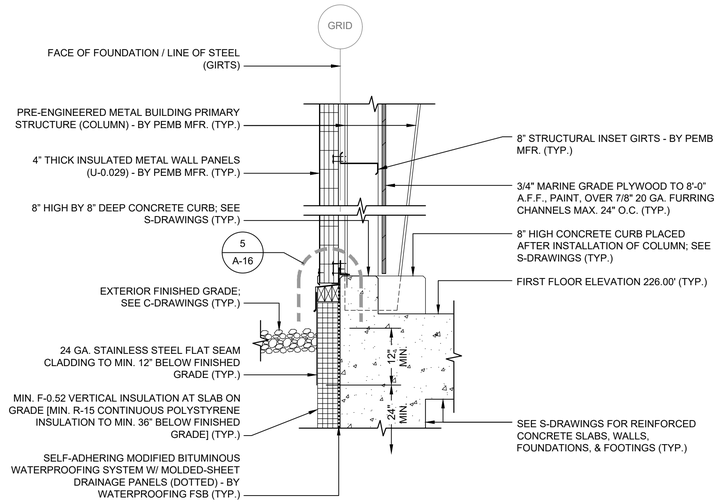
Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-6:37pm



TYPICAL EXTERIOR WALL SECTION

SCALE: 3/8"=1'-0"

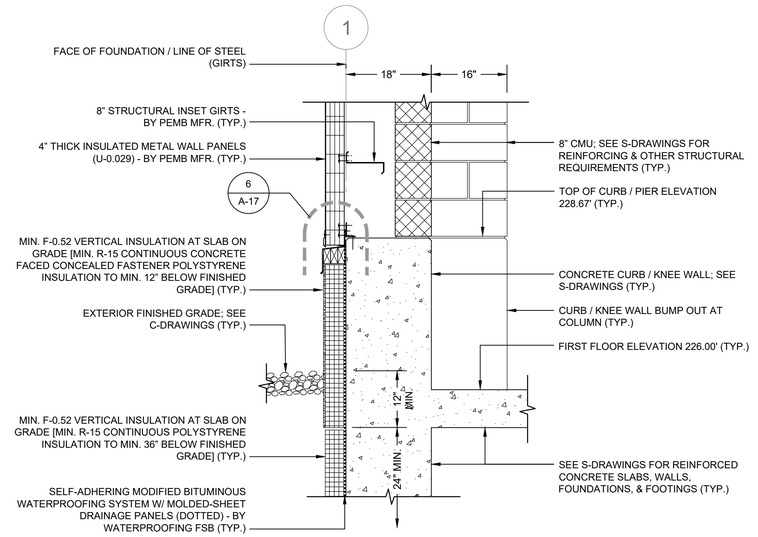
1 / A-8



EXTERIOR WALL SECTION

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

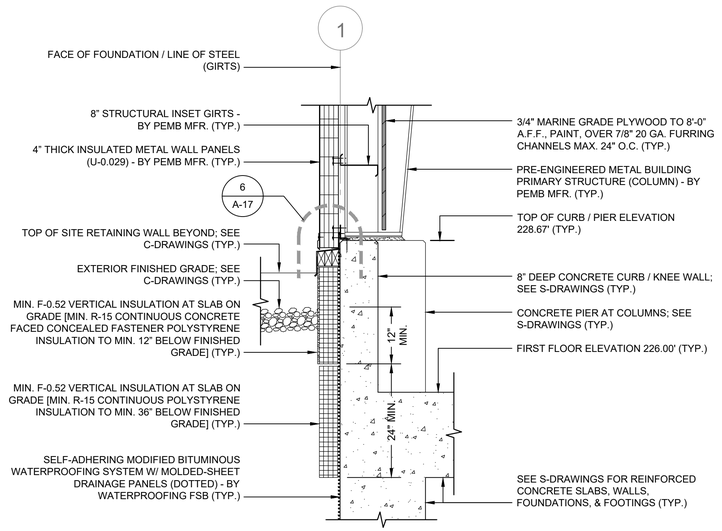
2 / A-5



EXTERIOR WALL SECTION

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

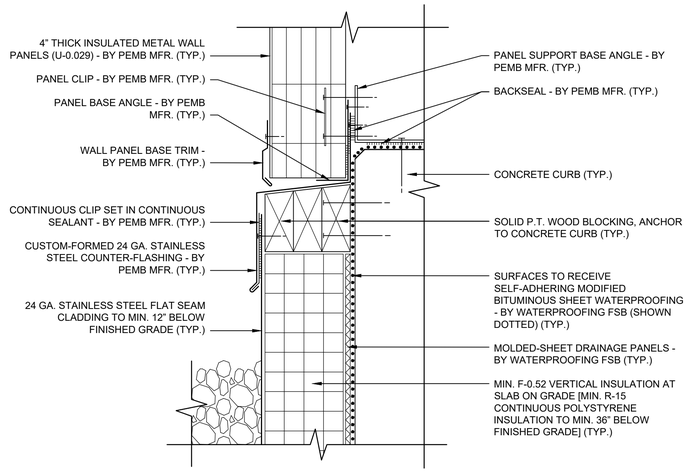
4 / A-2 / A-6



EXTERIOR WALL SECTION

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

3 / A-2 / A-6



WALL TRANSITION DETAIL

SCALE: 3"=1'-0"

5 / A-16

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	JK
Drawn by	EZ
Checked by	JK
Approved by	JK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

ENVIRONMENTAL PARTNERS — An Apex Company —

CGKV Architects, Inc.

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

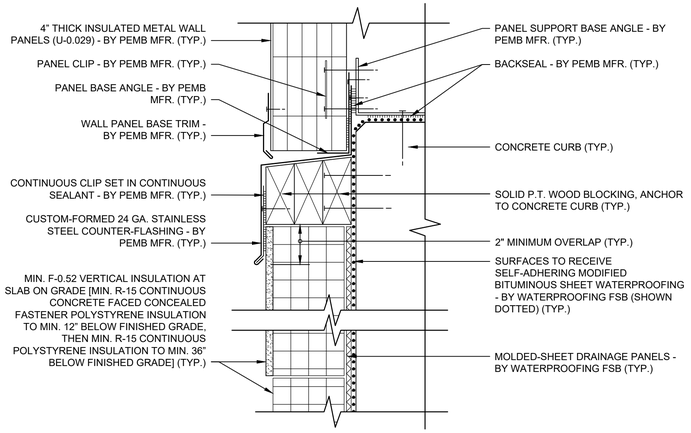
SECTIONS AND DETAILS I

FOR CONSTRUCTION

Sheet No.

A-16

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31 2024-8:38pm

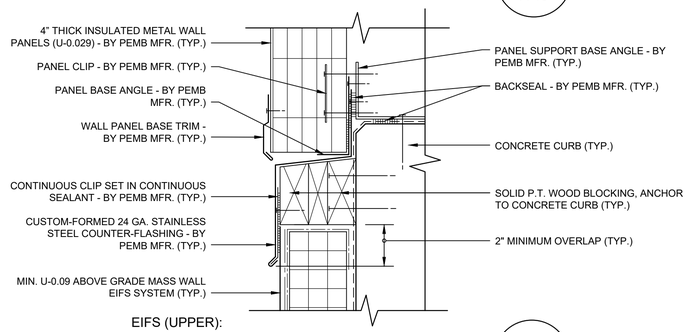


CONCRETE FACED INSULATION:

WALL TRANSITION DETAIL

SCALE: 3"=1'-0"

6 / A-16

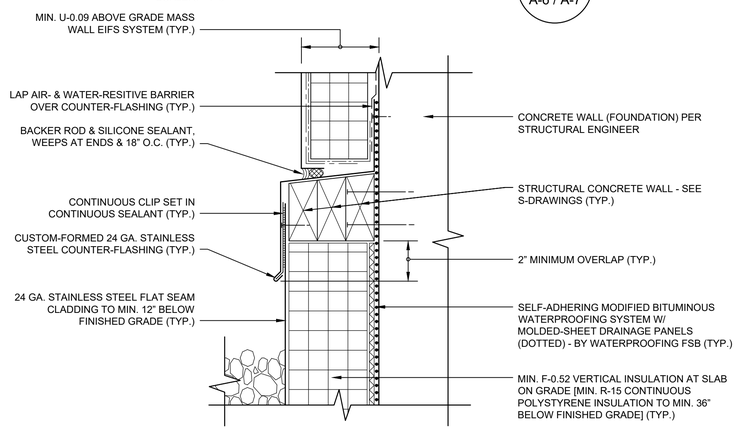


EIFS (UPPER):

WALL TRANSITION DETAIL

SCALE: 3"=1'-0"

7 / A-6 / A-7

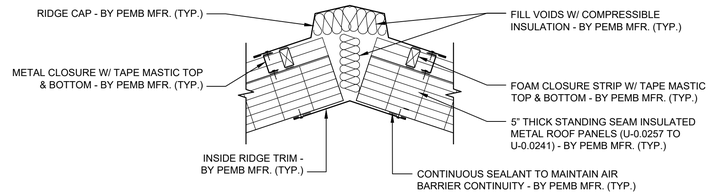


EIFS (LOWER):

WALL TRANSITION DETAIL

SCALE: 3"=1'-0"

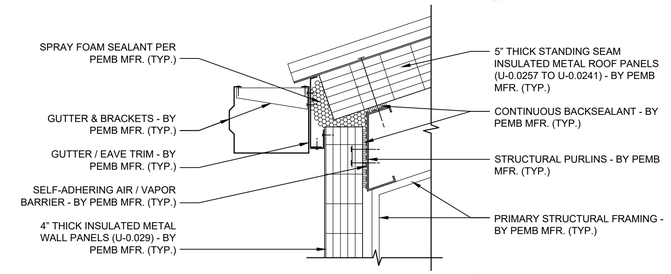
8 / A-6 / A-7



TYPICAL RIDGE DETAIL

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

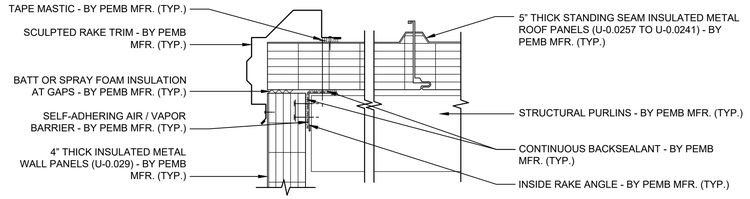
9 / A-4 / A-8



TYPICAL EAVE DETAIL

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

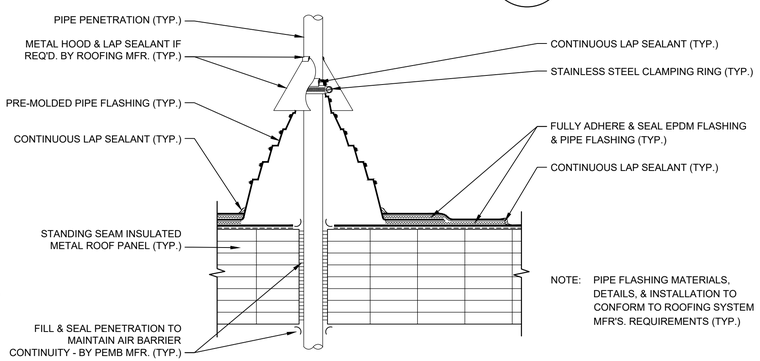
10 / A-4 / A-8



TYPICAL RAKE DETAIL

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

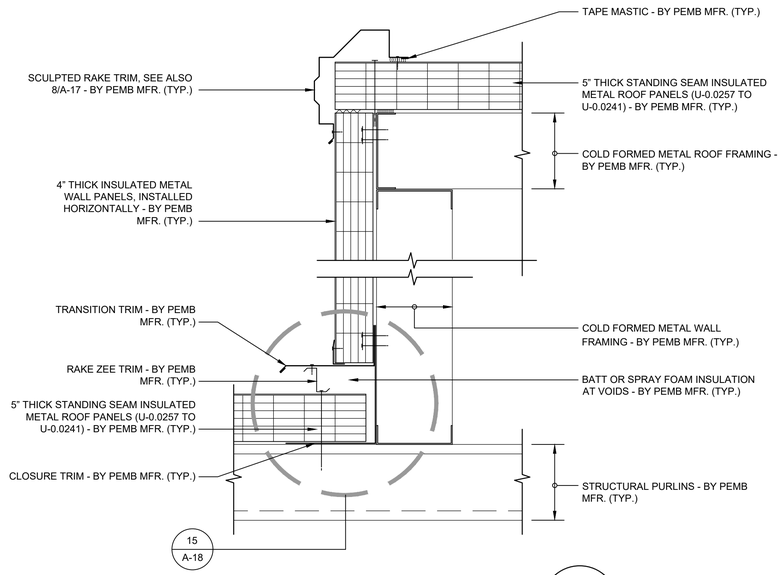
11 / A-4 / A-11



PIPE FLASHING DETAIL

SCALE: 3"=1'-0"

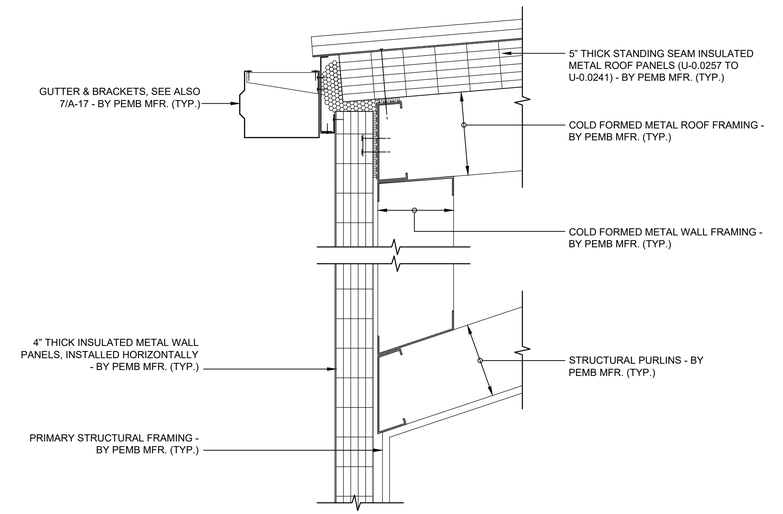
12 / A-4



DORMER SECTION

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

13 / A-18



DORMER SECTION

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

14 / A-3

ENVIRONMENTAL PARTNERS — An Apex Company —

CGKV Architects, Inc.

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	JK
Drawn by	EZ
Checked by	JK
Approved by	JK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

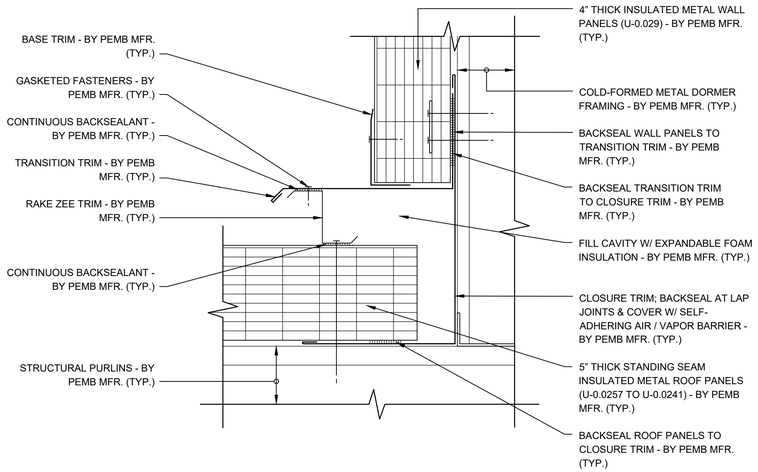
SECTIONS AND DETAILS II

FOR CONSTRUCTION

Sheet No.

A-17

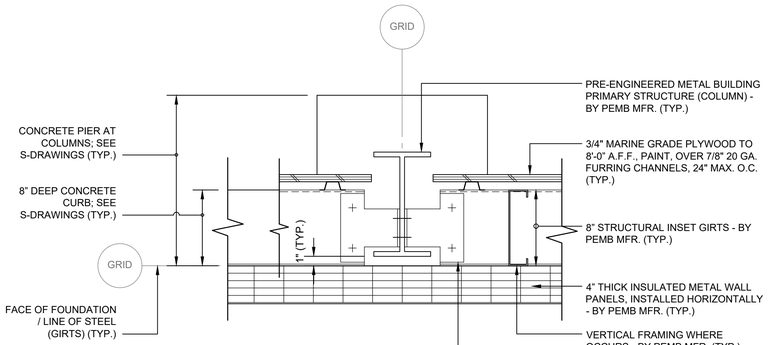
Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-8:38pm



DORMER DETAIL

SCALE: 3"=1'-0"

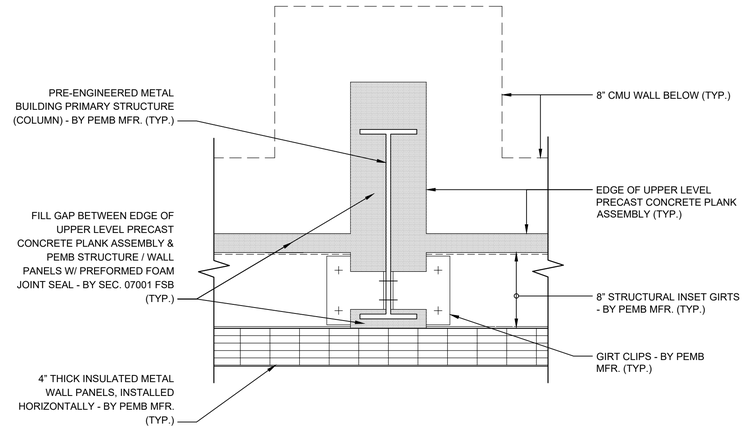
15 / A-17



PLAN DETAIL

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

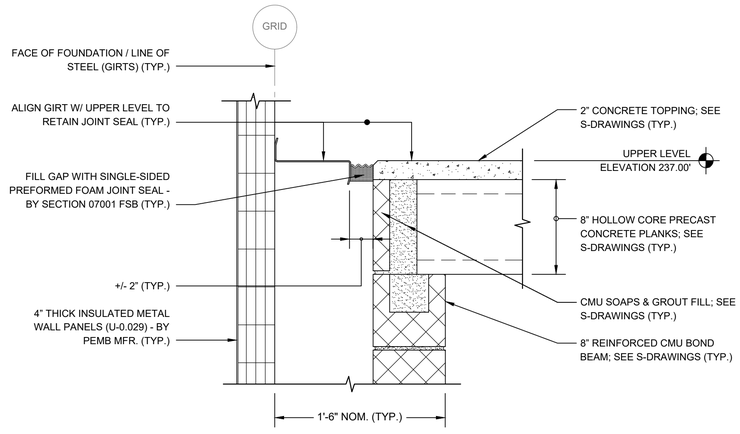
17 / A-2



PLAN DETAIL

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

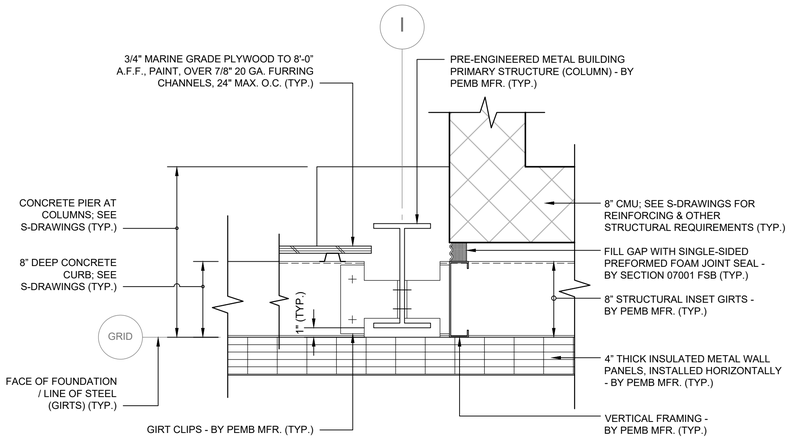
19 / A-3



DETAIL

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

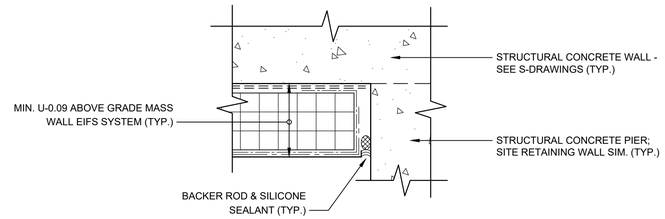
16 / A-9



PLAN DETAIL

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

18 / A-2



PLAN DETAIL

SCALE: 3"=1'-0"

20 / A-6

ENVIRONMENTAL PARTNERS — An Apex Company

CGKV Architects, Inc.

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
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Drawn by	EZ
Checked by	JK
Approved by	JK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

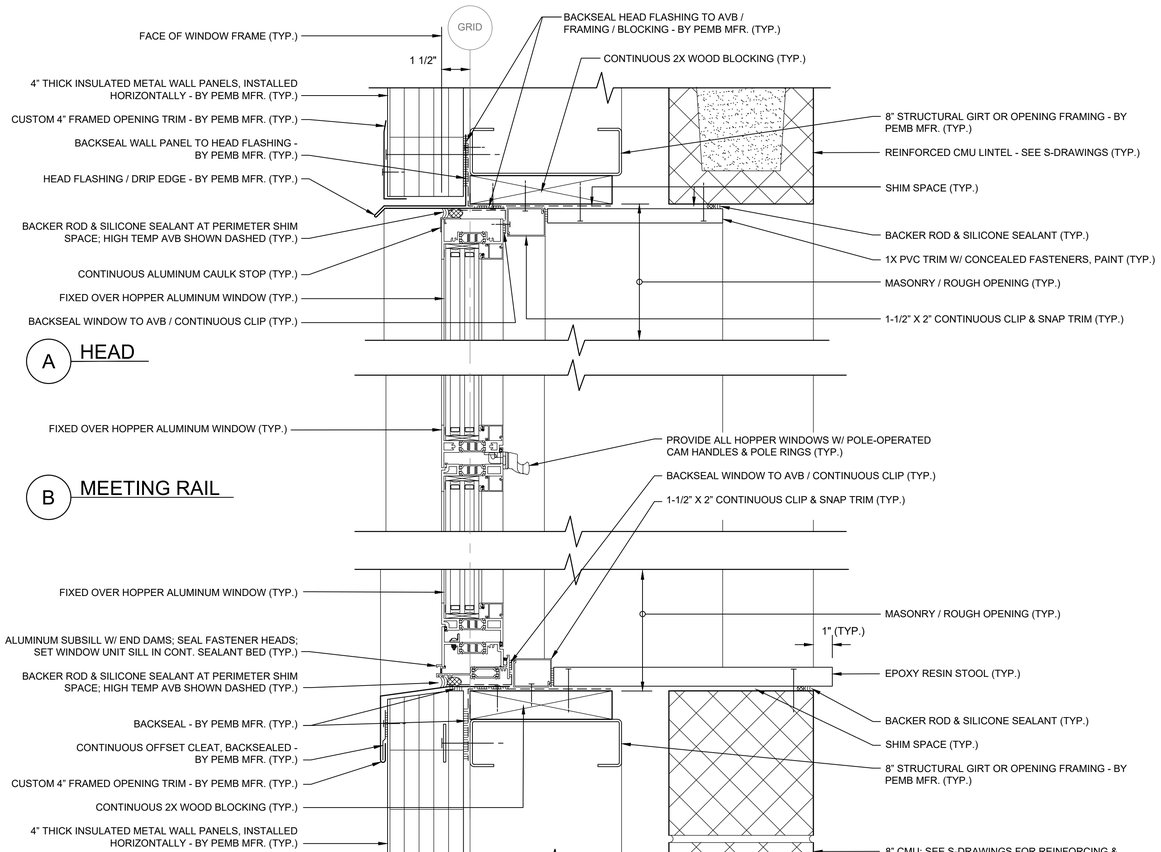
SECTIONS AND DETAILS III

FOR CONSTRUCTION

Sheet No.

A-18

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31 2024-8:39pm

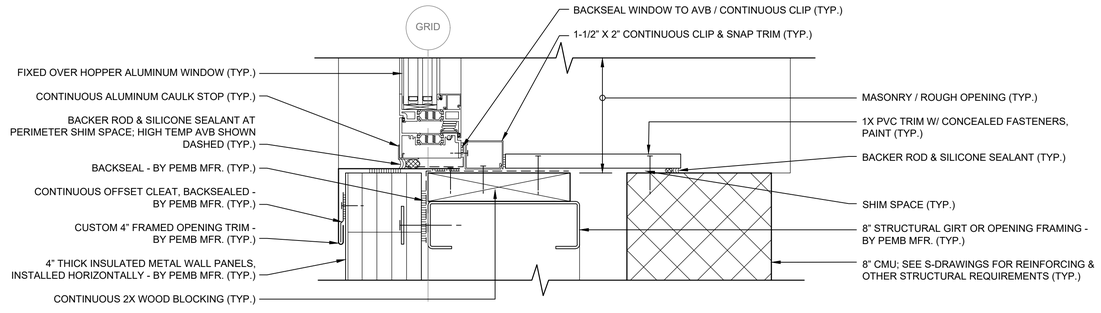


TYPES A & A1:

WINDOW DETAILS - SECTION

SCALE: 3"=1'-0"

1 / A-14



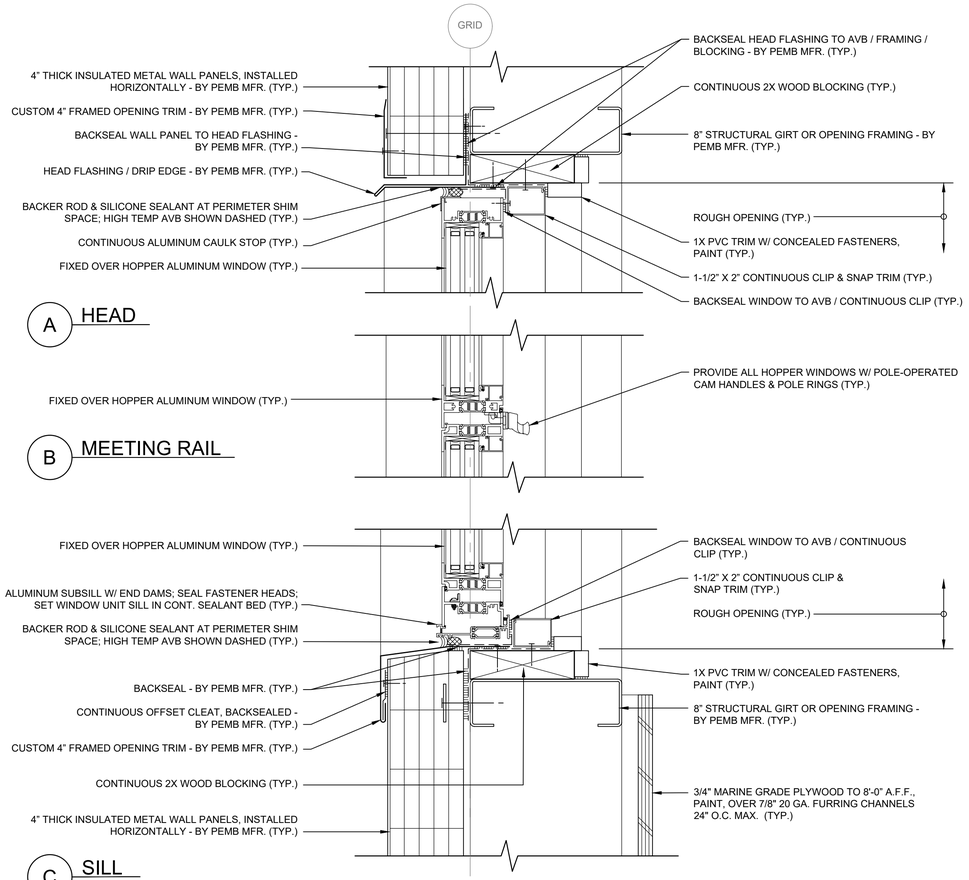
TYPES A & A1:

WINDOW DETAIL - JAMB

SCALE: 3"=1'-0"

4 / A-14

TYPICAL EXTERIOR OPENINGS NOTE: SEE PROTOTYPICAL EXTERIOR OPENING DETAIL 12/A-20 FOR GENERAL SEQUENCE & RESPONSIBILITIES FOR MAINTAINING WATER & AIR BARRIER CONTINUITY AT EXTERIOR OPENINGS.

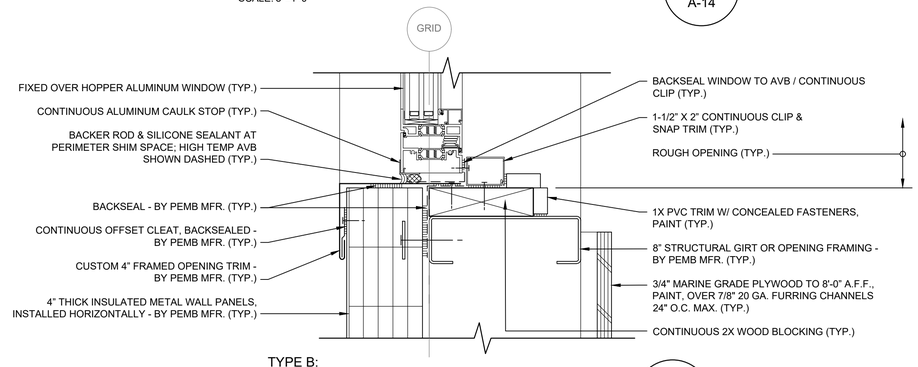


TYPE B:

WINDOW DETAILS - SECTION

SCALE: 3"=1'-0"

2 / A-14



TYPE B:

WINDOW DETAILS - JAMB

SCALE: 3"=1'-0"

5 / A-14

ENVIRONMENTAL PARTNERS — An Apex Company —

CGKV Architects, Inc.

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

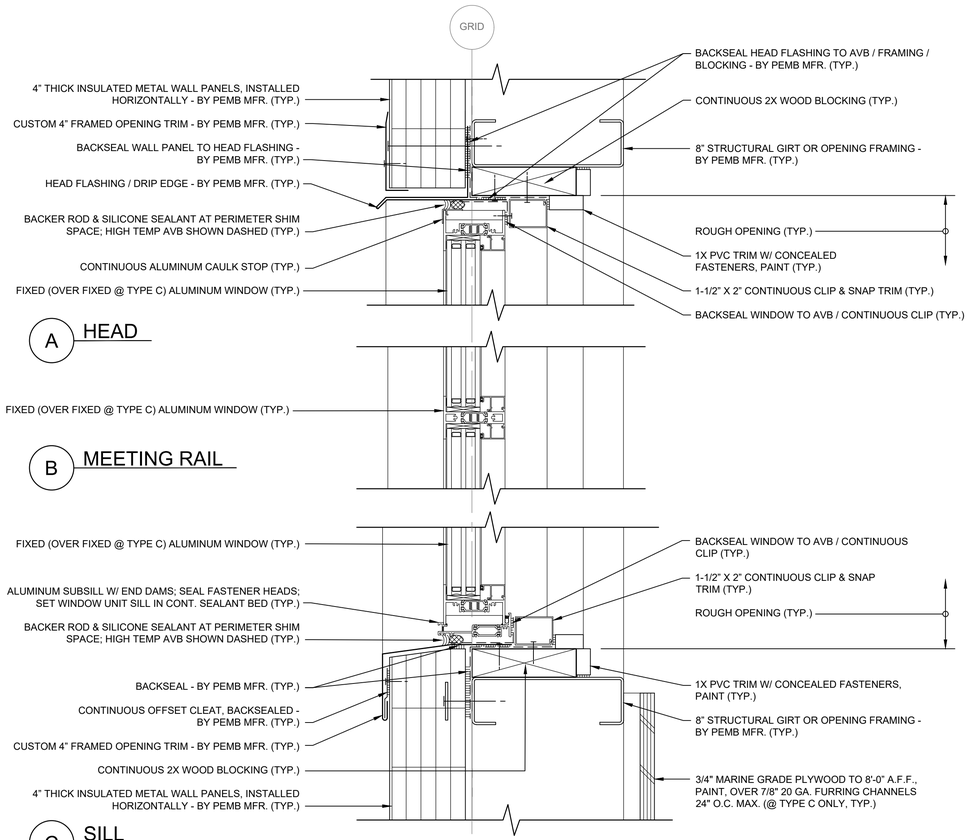
OPENING DETAILS I

FOR CONSTRUCTION

Sheet No.

A-19

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-8:38pm

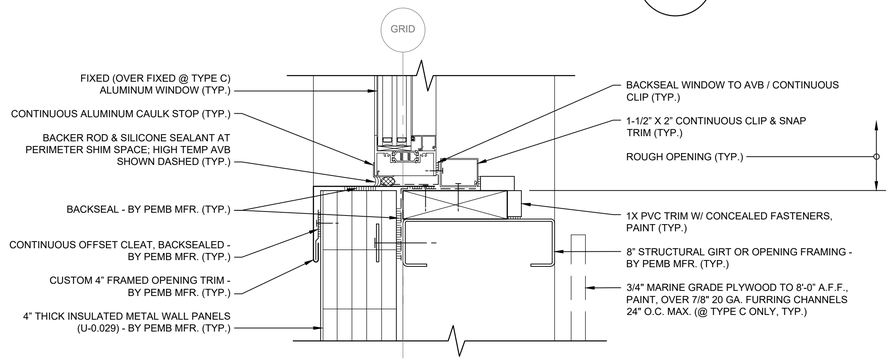


TYPES C & D:

WINDOW DETAILS - SECTION

SCALE: 3"=1'-0"

3 / A-14

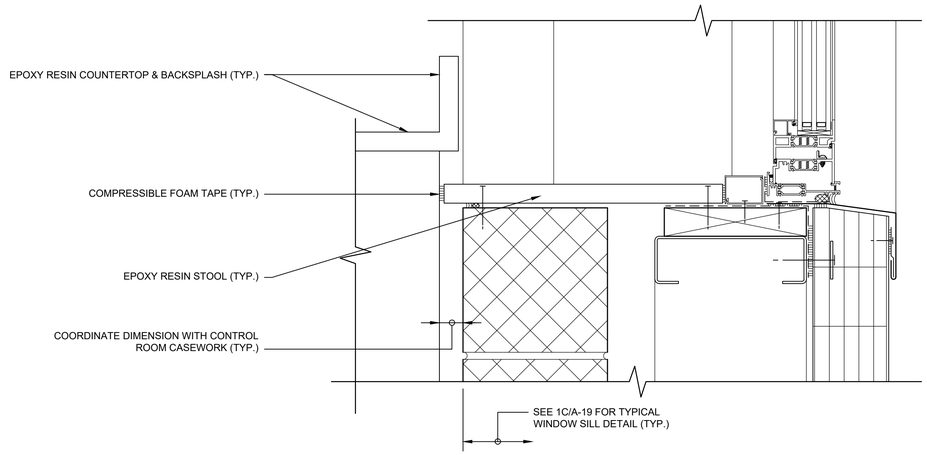


TYPES C & D:

WINDOW DETAILS - JAMB

SCALE: 3"=1'-0"

6 / A-14

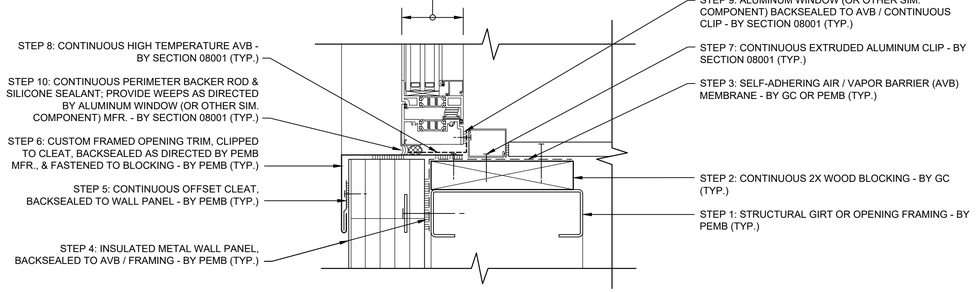


CONTROL ROOM:

WINDOW DETAILS - SILL

SCALE: 3"=1'-0"

11 / A-12



NOTE: THIS PROTOTYPICAL DETAIL IS INTENDED TO ILLUSTRATE THE GENERAL SEQUENCE & RESPONSIBILITIES FOR MAINTAINING WATER & AIR BARRIER CONTINUITY AT EXTERIOR OPENINGS.

[JAMB; HEAD & SILL SIMILAR]

PROTOTYPICAL EXTERIOR OPENING DETAIL

SCALE: 3"=1'-0"

12 / A-19

ENVIRONMENTAL PARTNERS — An Apex Company —

CGKV Architects, Inc.

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Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
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Drawn by	EZ
Checked by	JK
Approved by	JK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

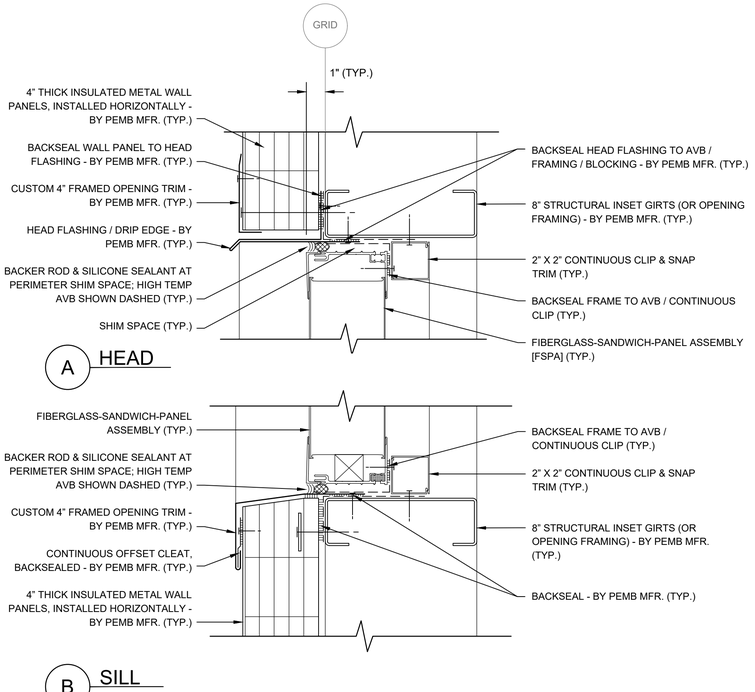
OPENING DETAILS II

FOR CONSTRUCTION

Sheet No.

A-20

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-6:40pm



A HEAD

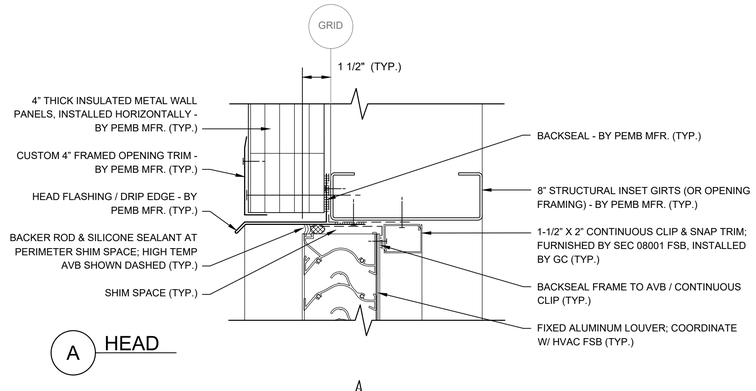
B SILL

TYPE E:

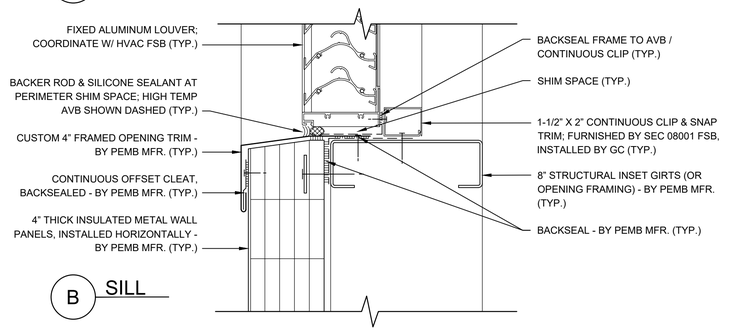
WINDOW DETAILS - SECTION

SCALE: 3"=1'-0"

7 / A-14



A HEAD

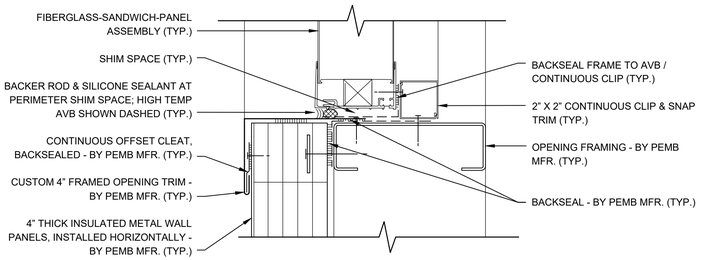


B SILL

LOUVER DETAILS - SECTION

SCALE: 3"=1'-0"

9 / A-14

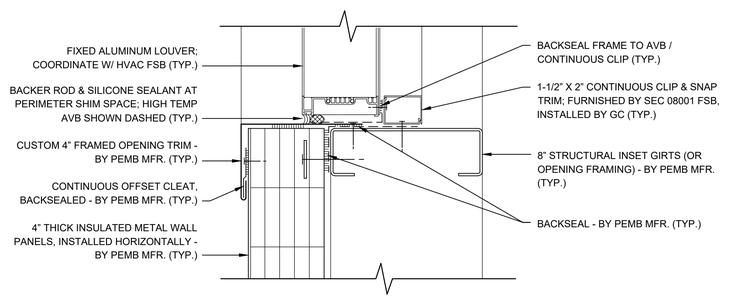


TYPE E:

WINDOW DETAILS - JAMB

SCALE: 3"=1'-0"

8 / A-14



LOUVER DETAILS - JAMB

SCALE: 3"=1'-0"

10 / A-14

ENVIRONMENTAL PARTNERS — An Apex Company —

CGKV Architects, Inc.

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	JK
Drawn by	EZ
Checked by	JK
Approved by	JK

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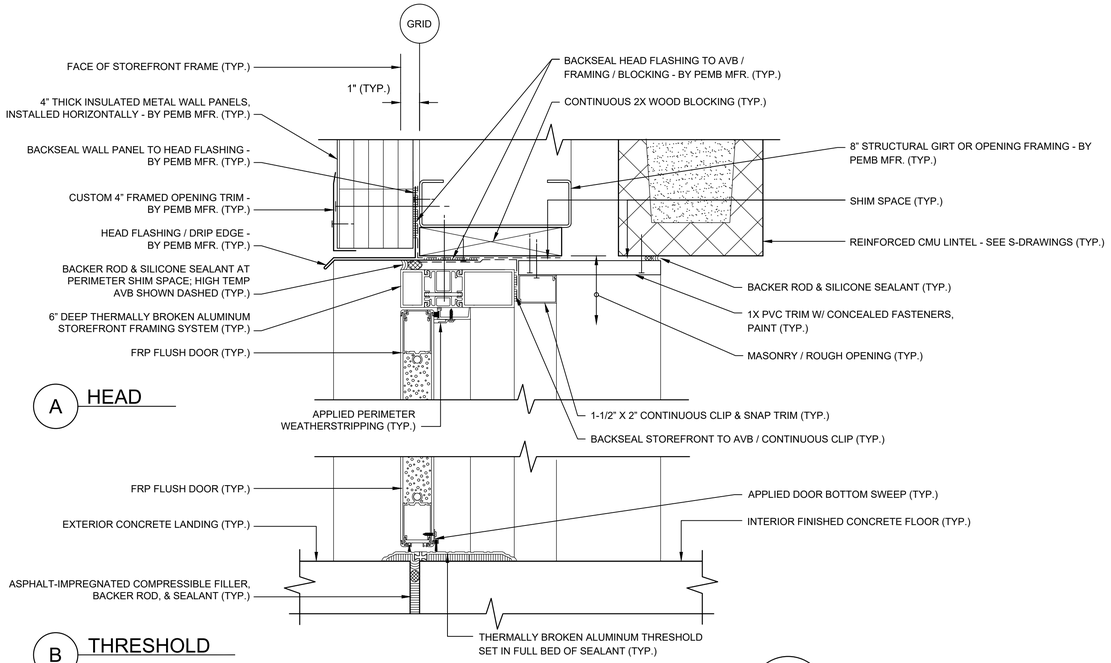
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

OPENING DETAILS III

FOR CONSTRUCTION

Sheet No.

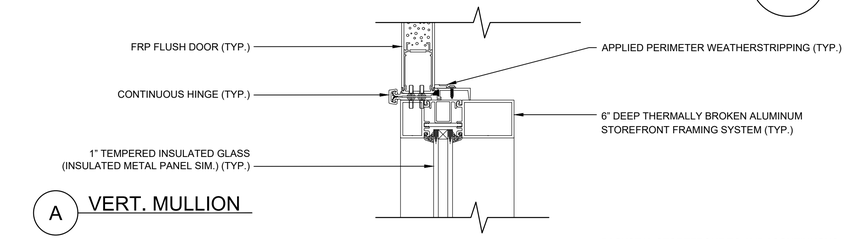
A-21



VERT. DETAILS - FRAME TYPE F1

SCALE: 3"=1'-0"

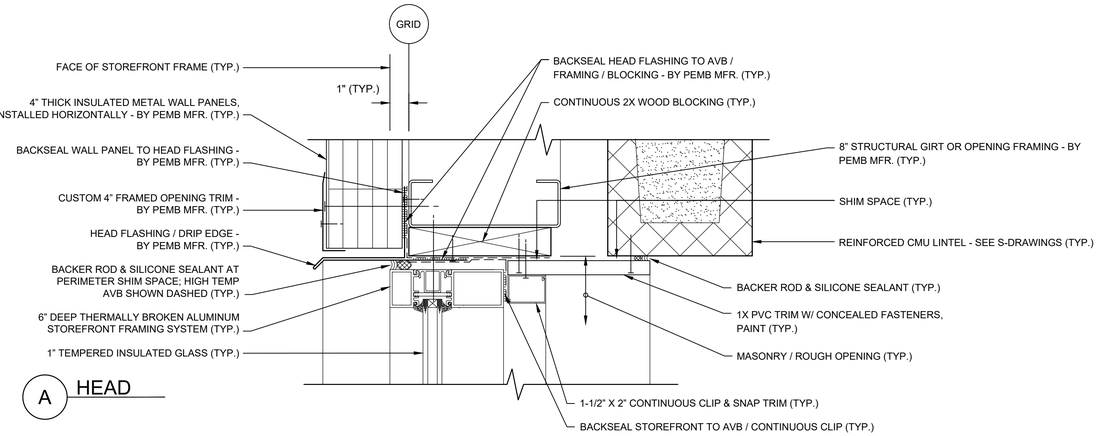
1 / A-15

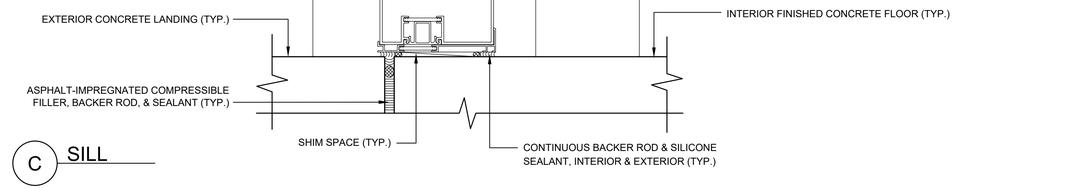


HORIZ. DETAILS - FRAME TYPE F1

SCALE: 3"=1'-0"

2 / A-15





VERT. DETAILS (SIDELITE) - FRAME TYPE F1

SCALE: 3"=1'-0"

3 / A-15

ENVIRONMENTAL PARTNERS
— An Apex Company —
CGKV Architects, Inc.

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

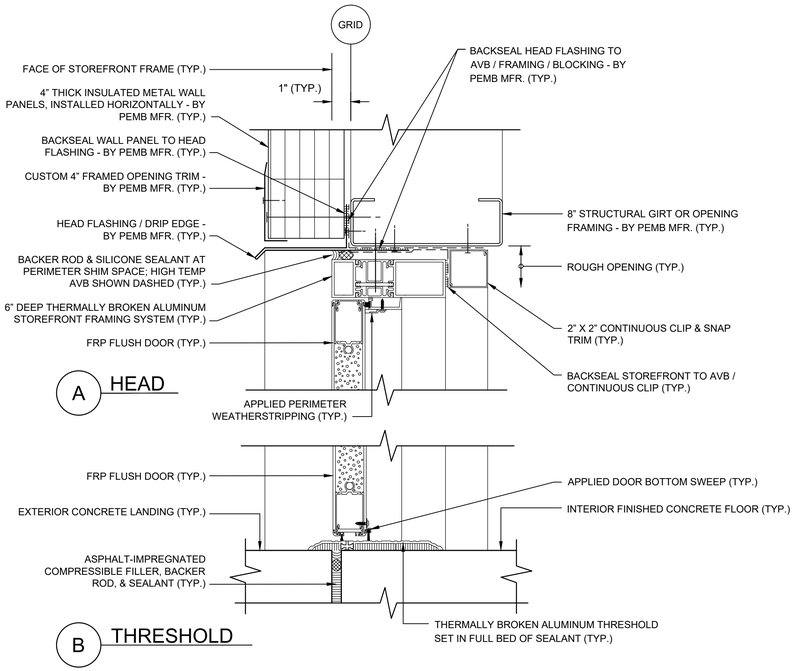
OPENING DETAILS IV

FOR CONSTRUCTION

Sheet No.

A-22

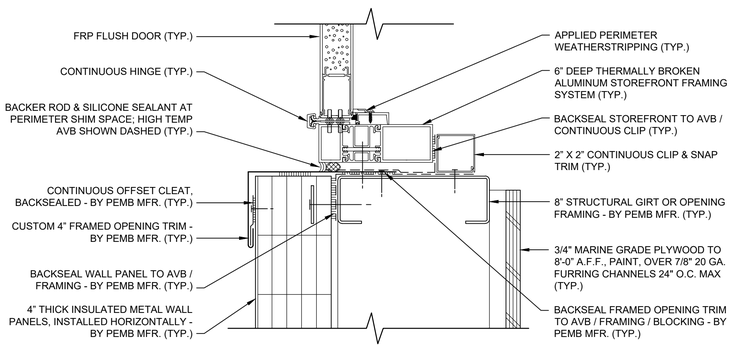
Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-8:41pm



VERT. DETAILS - FRAME TYPE F4

SCALE: 3"=1'-0"

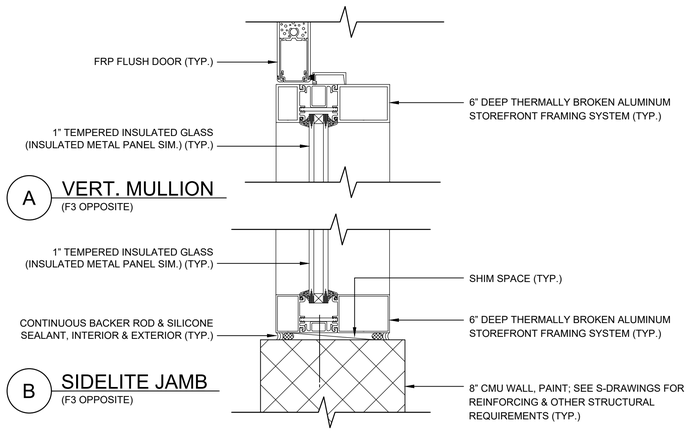
4 / A-15



JAMB DETAIL - FRAME TYPE F4

SCALE: 3"=1'-0"

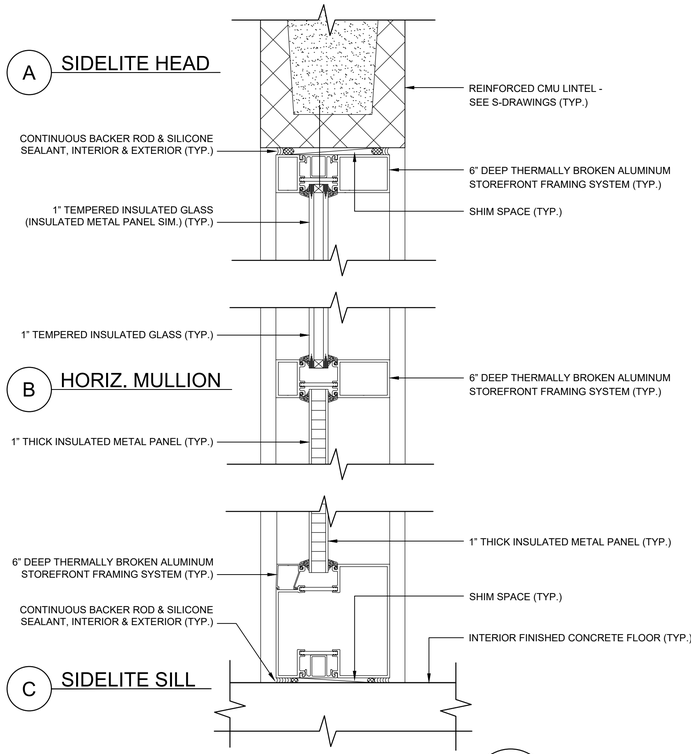
5 / A-15



HORIZ. DETAILS - FRAME TYPE F2

SCALE: 3"=1'-0"

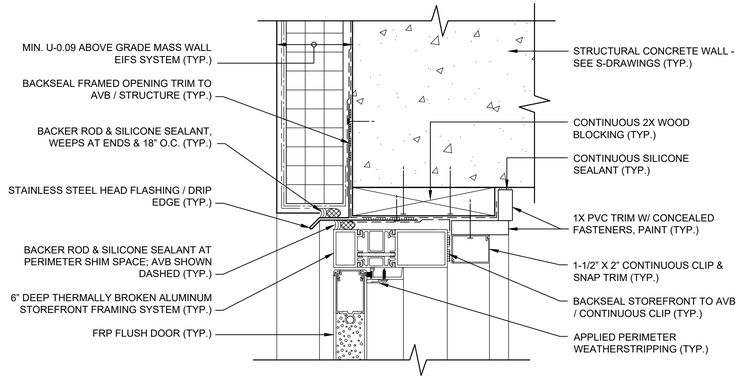
6 / A-15



VERT. DETAILS - FRAME TYPE F2

SCALE: 3"=1'-0"

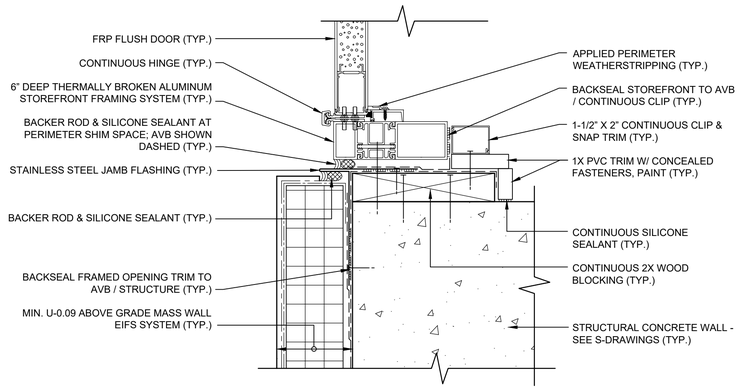
7 / A-15



HEAD DETAIL - FRAME TYPE F6

SCALE: 3"=1'-0"

8 / A-15



JAMB DETAIL - FRAME TYPE F6

SCALE: 3"=1'-0"

8.1 / A-15

ENVIRONMENTAL PARTNERS — An Apex Company —
CGKV Architects, Inc.

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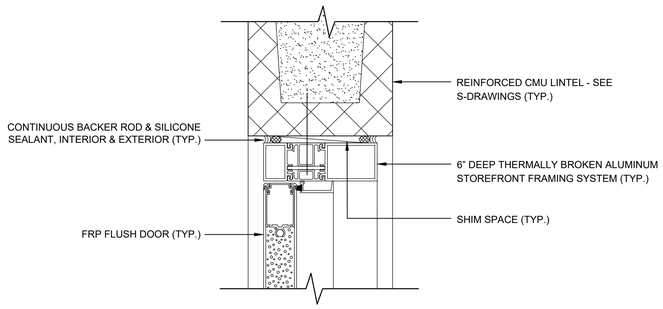
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

OPENING DETAILS V

FOR CONSTRUCTION

Sheet No.

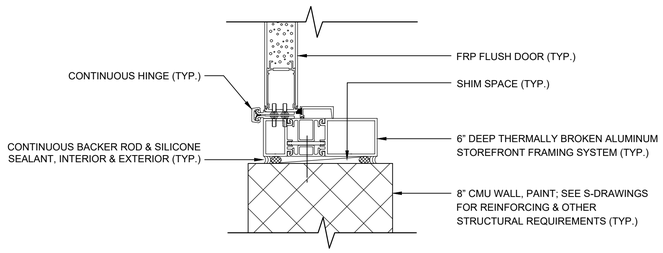
A-23



HEAD DETAIL - FRAME TYPES F2, F5

SCALE: 3"=1'-0"

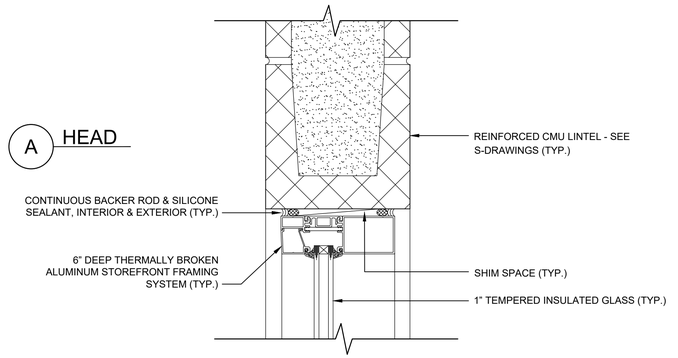
9 / A-15



JAMB DETAIL - FRAME TYPE F5

SCALE: 3"=1'-0"

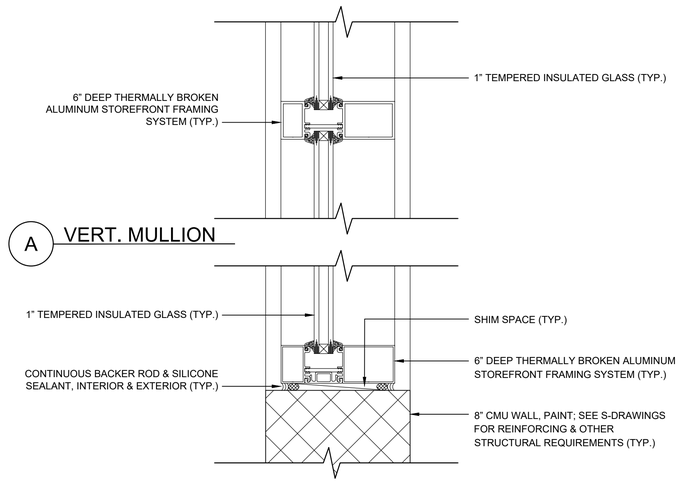
10 / A-15



VERT. DETAILS - FRAME TYPE F7

SCALE: 3"=1'-0"

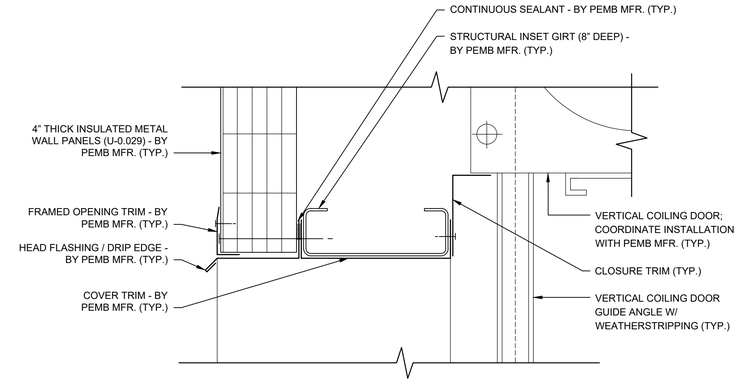
11 / A-15



HORIZ. DETAILS - FRAME TYPE F7

SCALE: 3"=1'-0"

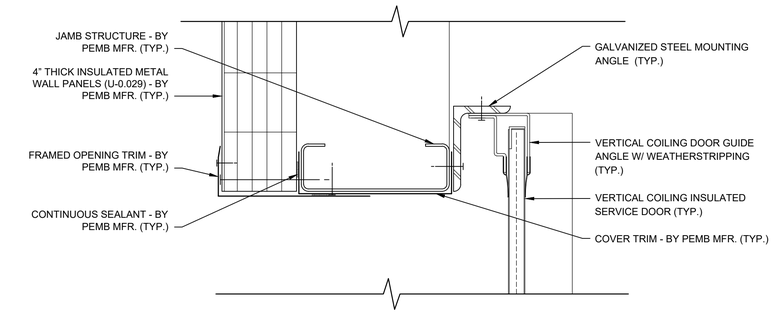
12 / A-15



COILING DOOR HEAD

SCALE: 3"=1'-0"

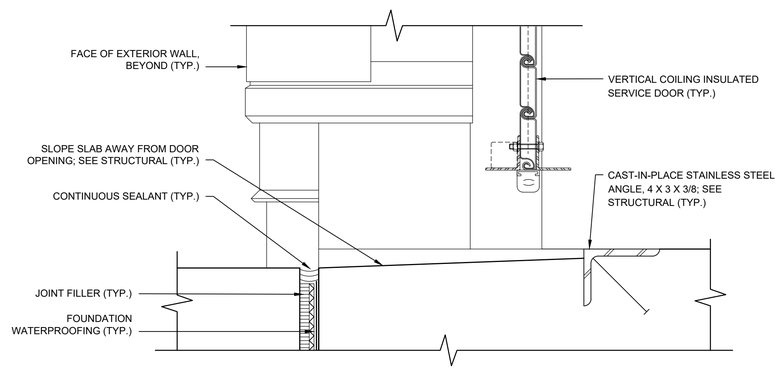
13 / A-5



COILING DOOR JAMB

SCALE: 3"=1'-0"

14 / A-5



COILING DOOR THRESHOLD

SCALE: 3"=1'-0"

15 / A-5

ENVIRONMENTAL PARTNERS — An Apex Company —

CGKV Architects, Inc.

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

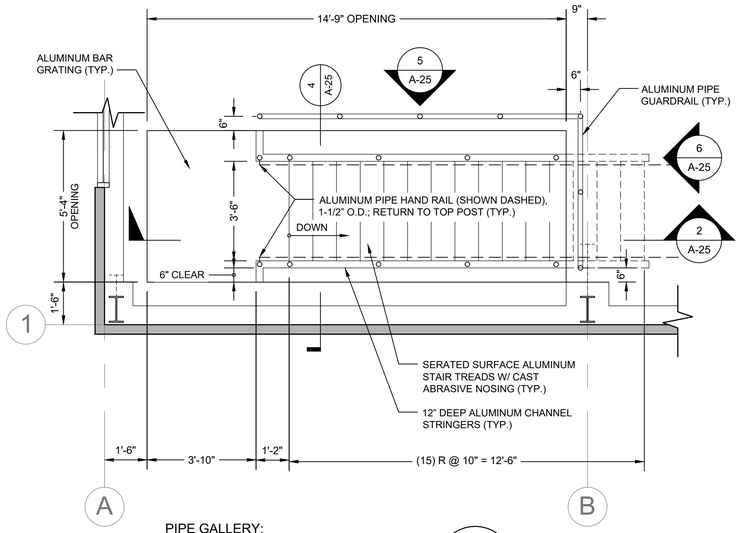
OPENING DETAILS VI

FOR CONSTRUCTION

Sheet No.

A-24

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31, 2024-8:42pm



PIPE GALLERY:

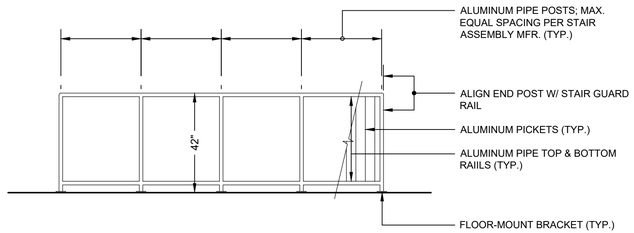
PLAN AT STAIR

1 / A-25

SCALE: 3/8"=1'-0"

ALUMINUM ASSEMBLIES NOTES:

1. DETAILED DESIGN & ENGINEERING FOR ALUMINUM PLATFORMS, STAIRS, GUARD RAILS, HAND RAILS, AND OTHER ALUMINUM ASSEMBLIES AND COMPONENTS SHALL BE BY THE ALUMINUM ASSEMBLY MANUFACTURER; SUBMIT SHOP DRAWINGS FOR REVIEW. (TYP.).
2. ALL ALUMINUM ASSEMBLIES SHALL BE FULLY COMPLIANT WITH OSHA & 780 CMR REQUIREMENTS. (TYP.).
3. COORDINATE LAYOUT AND DIMENSIONS WITH BUILDING STRUCTURE AND MECHANICAL PROCESS EQUIPMENT. VERIFY ALL CONDITIONS IN THE FIELD. (TYP.)
4. SECURELY ANCHOR ALL COLUMNS / POSTS, STRINGERS, AND GUARD RAIL / HAND RAIL BRACKETS. (TYP.)

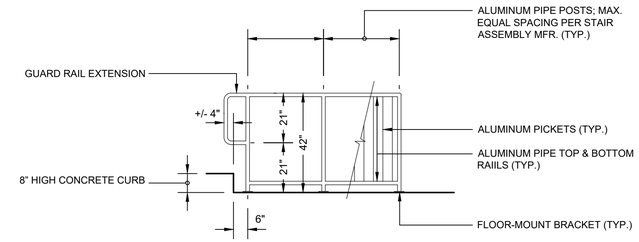


GUARD RAIL ELEV.

5 / A-25

SCALE: 3/8"=1'-0"

NOTE: SEE DETAIL 1/A-28 (TYP.)

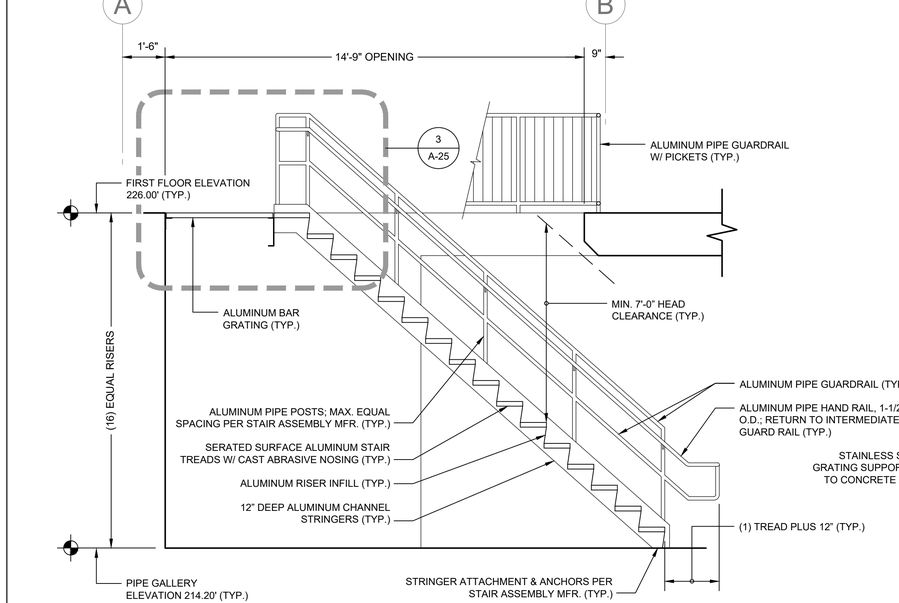


GUARD RAIL ELEV.

6 / A-25

SCALE: 3/8"=1'-0"

NOTE: SEE DETAIL 1/A-28 (TYP.)

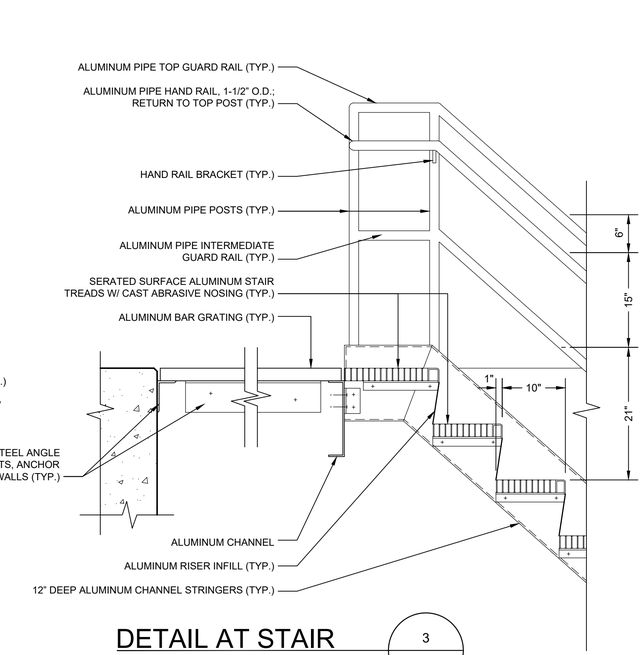


PIPE GALLERY:

SECTION AT STAIR

2 / A-25

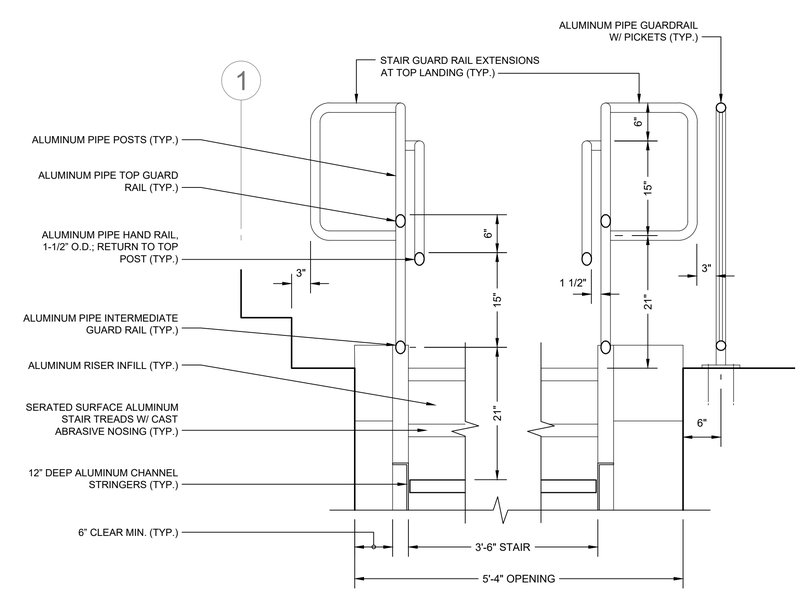
SCALE: 3/8"=1'-0"



DETAIL AT STAIR

3 / A-25

SCALE: 1"=1'-0"



DETAIL AT STAIR

4 / A-25

SCALE: 1"=1'-0"

ENVIRONMENTAL PARTNERS — An Apex Company —

CGKV Architects, Inc.

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	JK
Drawn by	EZ
Checked by	JK
Approved by	JK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

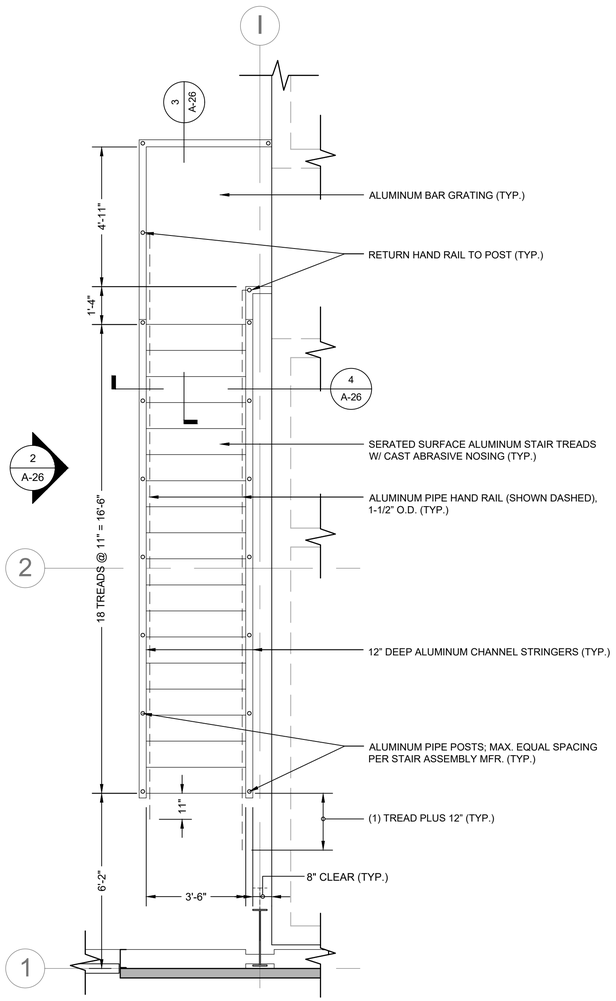
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ALUMINUM STAIRS TO PIPE GALLERY

FOR CONSTRUCTION

Sheet No. A-25

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-8:42pm

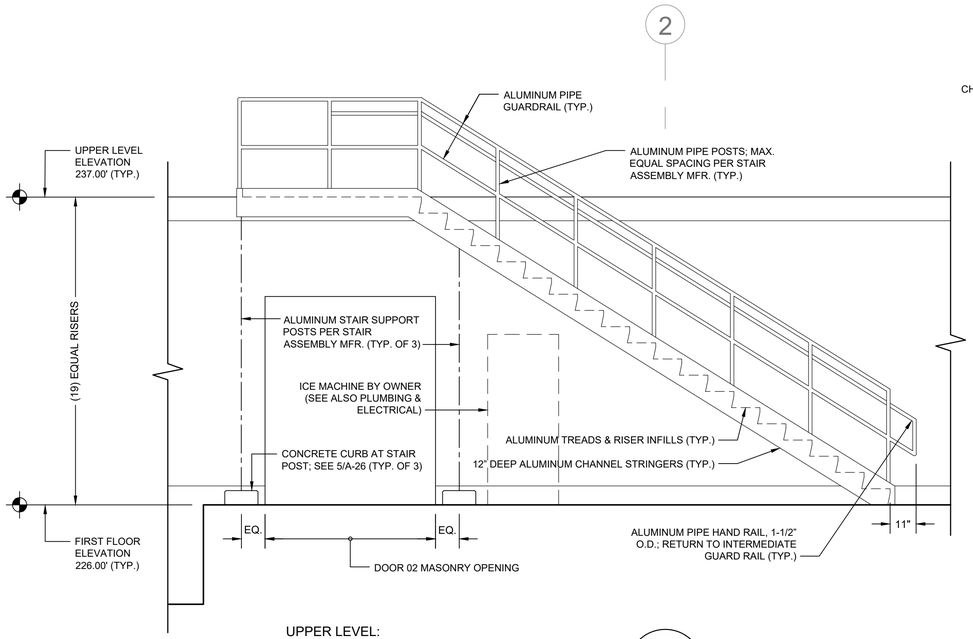


UPPER LEVEL:

PLAN AT STAIR

SCALE: 3/8"=1'-0"

1 / A-26



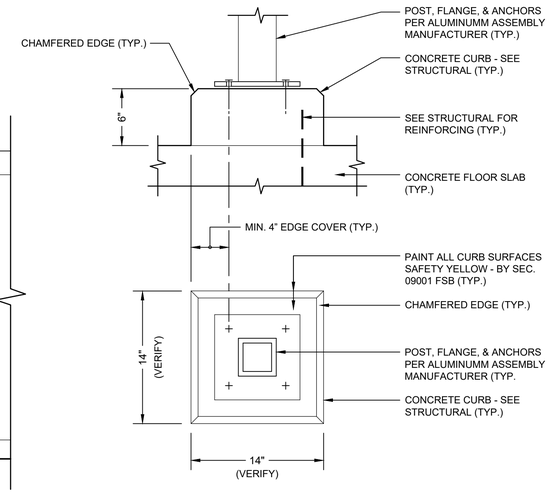
UPPER LEVEL:

ELEVATION AT STAIR

SCALE: 3/8"=1'-0"

2 / A-26

SECTION



PLAN

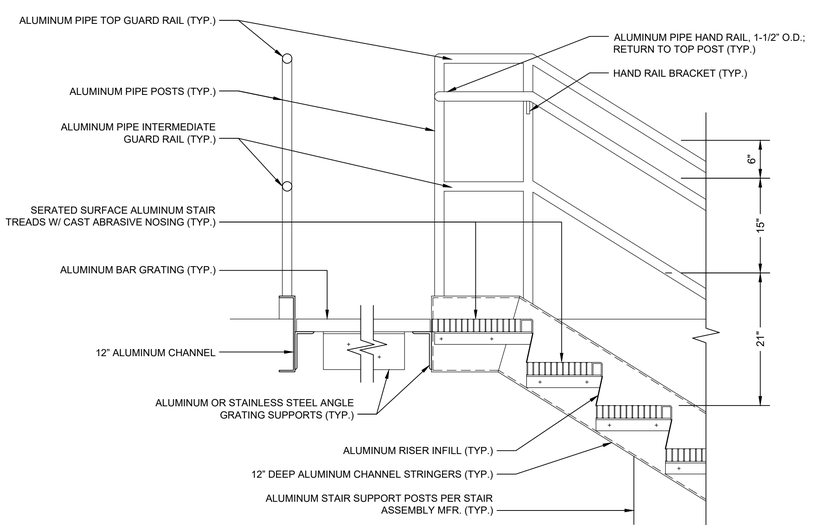
POST CURB DETAIL

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

5 / A-26

ALUMINUM ASSEMBLIES NOTES:

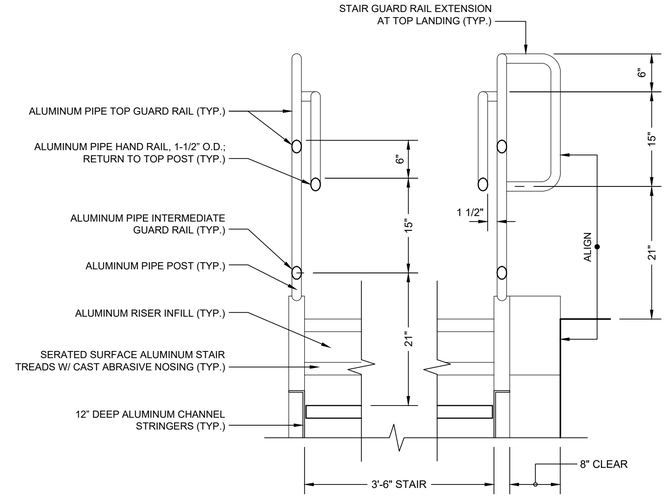
1. DETAILED DESIGN & ENGINEERING FOR ALUMINUM PLATFORMS, STAIRS, GUARD RAILS, HAND RAILS, AND OTHER ALUMINUM ASSEMBLIES AND COMPONENTS SHALL BE BY THE ALUMINUM ASSEMBLY MANUFACTURER; SUBMIT SHOP DRAWINGS FOR REVIEW. (TYP.).
2. ALL ALUMINUM ASSEMBLIES SHALL BE FULLY COMPLIANT WITH OSHA & 780 CMR REQUIREMENTS. (TYP.).
3. COORDINATE LAYOUT AND DIMENSIONS WITH BUILDING STRUCTURE AND MECHANICAL PROCESS EQUIPMENT. VERIFY ALL CONDITIONS IN THE FIELD. (TYP.)
4. SECURELY ANCHOR ALL COLUMNS / POSTS, STRINGERS, AND GUARD RAIL / HAND RAIL BRACKETS. (TYP.)



DETAIL AT STAIR

SCALE: 1"=1'-0"

3 / A-26



DETAIL AT STAIR

SCALE: 1"=1'-0"

4 / A-26

ENVIRONMENTAL PARTNERS — An Apex Company —

CGKV Architects, Inc.

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	JK
Drawn by	EZ
Checked by	JK
Approved by	JK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

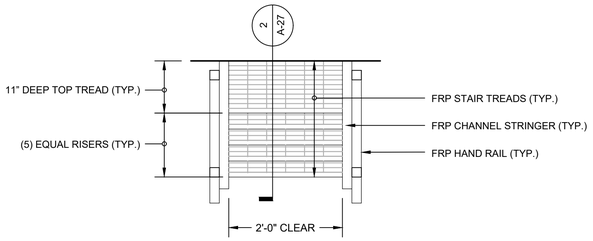
ALUMINUM STAIRS TO UPPER LEVEL

FOR CONSTRUCTION

Sheet No.

A-26

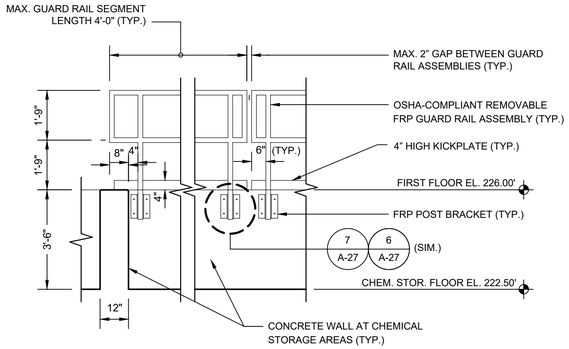
Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-8:43pm



PLAN AT SHIPS' LADDER

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

1 / A-27

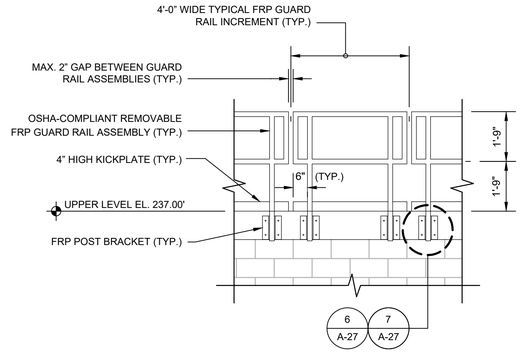


CHEMICAL STORAGE AREAS:

GUARD RAIL ELEVATION

SCALE: 3/8"=1'-0"

3 / A-27

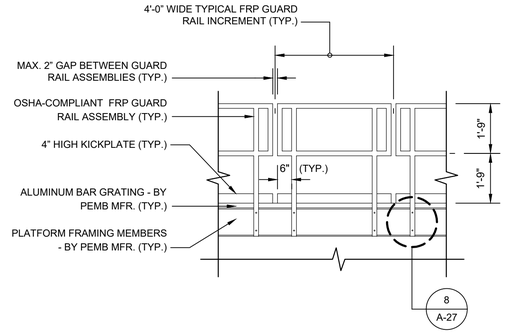


UPPER LEVEL:

GUARD RAIL ELEVATION

SCALE: 3/8"=1'-0"

4 / A-27

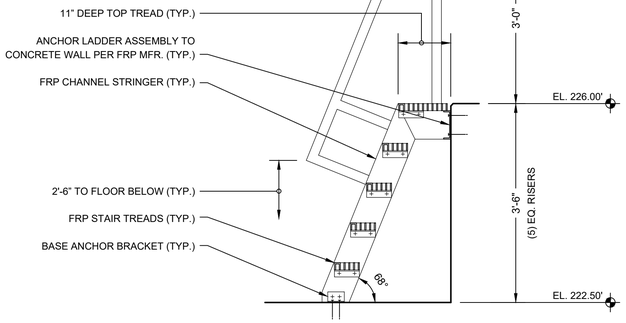


EQUIPMENT PLATFORM:

GUARD RAIL ELEVATION

SCALE: 3/8"=1'-0"

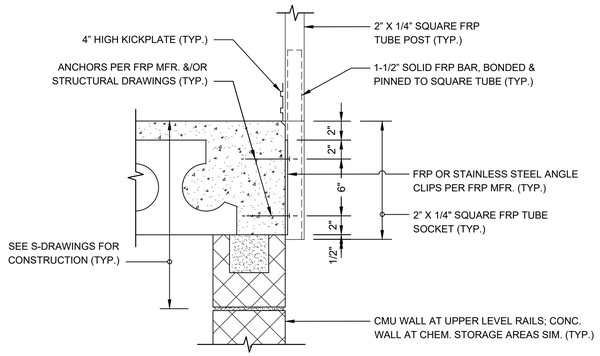
5 / A-27



SECTION AT SHIPS' LADDER

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

2 / A-27

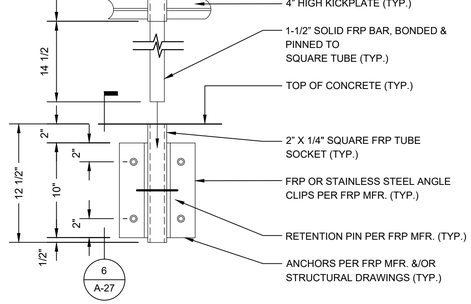


(REMOVABLE)

GUARD RAIL DETAIL

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

6 / A-27

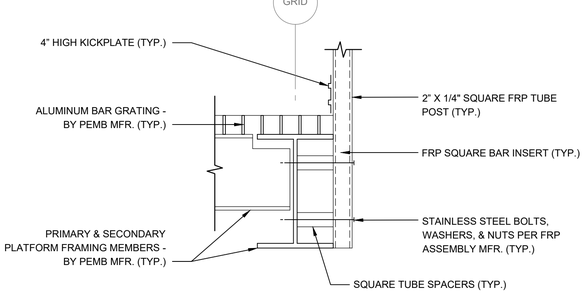


(REMOVABLE)

GUARD RAIL DETAIL

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

7 / A-27



(EQUIP. PLATFORM)

GUARD RAIL DETAIL

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

8 / A-27

FRP ASSEMBLIES NOTES:

1. DETAILED DESIGN & ENGINEERING FOR FRP PLATFORMS, STAIRS, SHIPS' LADDERS, GUARD RAILS, HAND RAILS, AND OTHER FRP ASSEMBLIES AND COMPONENTS SHALL BE BY THE FRP ASSEMBLY MANUFACTURER; SUBMIT SHOP DRAWINGS FOR REVIEW. (TYP.).
2. ALL FRP ASSEMBLIES SHALL BE FULLY COMPLIANT WITH OSHA & 780 CMR REQUIREMENTS. (TYP.).
3. COORDINATE LAYOUT AND DIMENSIONS WITH BUILDING STRUCTURE AND MECHANICAL PROCESS EQUIPMENT. VERIFY ALL CONDITIONS IN THE FIELD. (TYP.)
4. SECURELY ANCHOR ALL COLUMNS / POSTS, STRINGERS, AND GUARD RAIL / HAND RAIL BRACKETS. (TYP.)
5. ALL GUARD RAILS (EXCEPT AT STAIRS) SHALL BE REMOVABLE. (TYP.)
6. DO NOT MOUNT ITEMS TO REMOVABLE FRP GUARD RAILS, INCLUDING BUT NOT LIMITED TO EQUIPMENT, CONDUIT, PIPING, & CONTROLS. (TYP.)

ENVIRONMENTAL PARTNERS — An Apex Company —

CGKV Architects, Inc.

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Drawn by	EZ
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Approved by	JK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

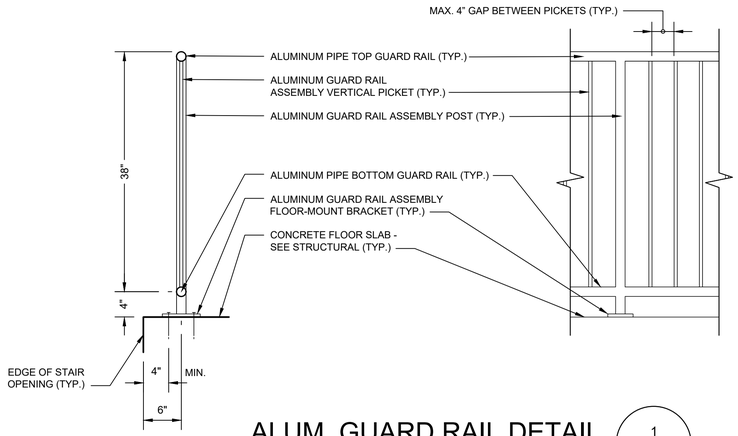
FRP ASSEMBLIES

FOR CONSTRUCTION

Sheet No.

A-27

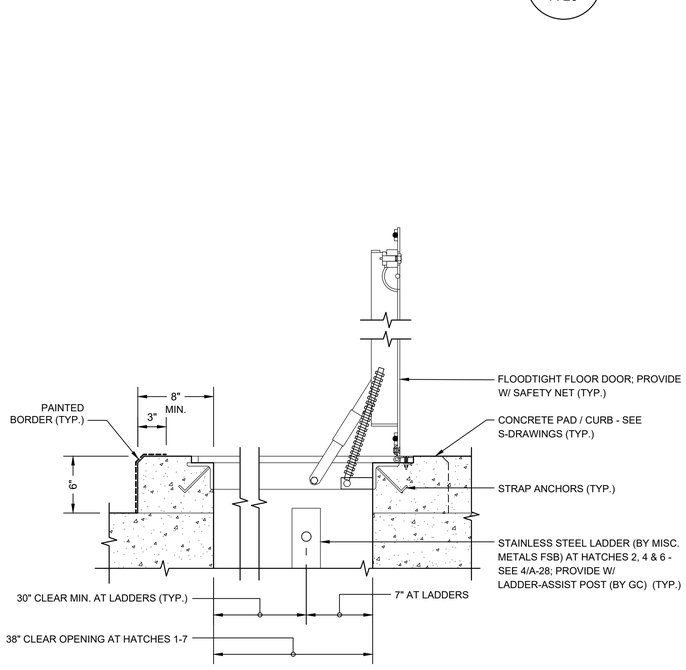
Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-8:43pm



ALUM. GUARD RAIL DETAIL

SCALE: 1"=1'-0"

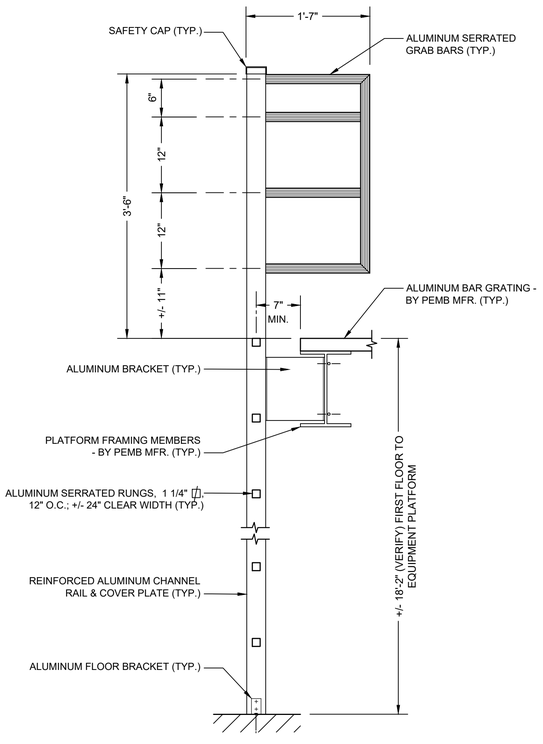
1
A-26



FLOOR DOOR DETAIL

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

2
A-2

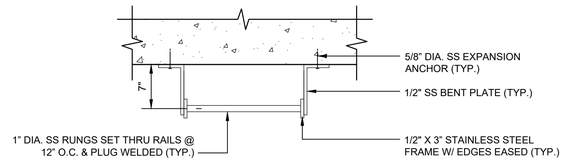


NOTE: STRUCTURAL ENGINEERING OF ALL MEMBERS, FASTENERS, & INSERTS TO BE PROVIDED BY ALUMINUM LADDER MANUFACTURER (TYP.)

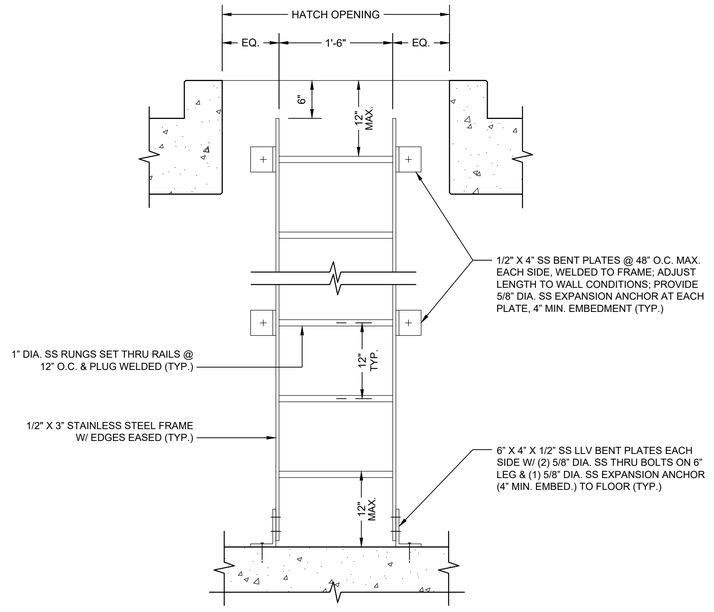
ALUMINUM LADDER

SCALE: 1"=1'-0"

3
A-2



PLAN



ELEVATION

NOTE: ALL STAINLESS STEEL [SS] TO BE TYPE 304.

STAINLESS STEEL LADDER

SCALE: 1=1'-0"

4
A-2

ENVIRONMENTAL PARTNERS
— An Apex Company —

CGKV Architects, Inc.

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
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Job No.	245-2103
Designed by	JK
Drawn by	EZ
Checked by	JK
Approved by	JK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

MISCELLANEOUS DETAILS

FOR CONSTRUCTION

Sheet No.

A-28

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31, 2024-8:44pm

SIGNAGE SCHEDULE

TYPE	QTY.	TEXT
A. ADA-COMPLIANT ROOM IDENTIFICATION SIGNS (10140-2.1 & 10140-2.2)  SIZE: 8" x 4"	1	CONTROL ROOM
	1	PROCESS AREA
	1	MECHANICAL ROOM
	1	ELECTRICAL ROOM
	1	STORAGE
	1	PIPE GALLERY
		LOCATION(S): MOUNT WITH DOUBLE-SIDED ADHESIVE TAPE ON WALL AT LATCH SIDE OF DOOR TO SPACE IDENTIFIED, IN ACCORDANCE WITH ADA & AS DIRECTED BY ENGINEER.
 SIZE: 8" x 8"	1	RESTROOM [+ ADA PICTOGRAM]
		LOCATION(S): MOUNT WITH DOUBLE-SIDED ADHESIVE TAPE ON WALL AT LATCH SIDE OF DOOR TO TOILET ROOM 108, IN ACCORDANCE WITH ADA & AS DIRECTED BY ENGINEER.
B. CHEMICAL IDENTIFICATION (10140-2.3 & 10140-2.4)  SIZE: 10" x 7"	2	SODIUM HYPOCHLORITE NaOCl UN NO. 1791
	2	POTASSIUM HYDROXIDE KOH UN NO. 1814
	2	SODIUM BISULFITE NaHSO3 UN NO. 3260
		LOCATION(S): MECHANICALLY MOUNT (1) OF EACH SIGN ON FRP RAILINGS, AS DIRECTED BY ENGINEER. MECHANICALLY MOUNT (1) OF EACH SIGN ON EXTERIOR CHEMICAL FILL CABINETS, AS DIRECTED BY ENGINEER.
	2	SODIUM FLUORIDE NaF UN NO. 1690
		LOCATION(S): MECHANICALLY MOUNT AS DIRECTED BY ENGINEER.
C. NFPA HAZARDOUS MATERIALS SIGNS (10140-2.4)  SIZE: 16" x 16"	3	[COORDINATE TEXT REQUIREMENTS WITH ENGINEER]
		LOCATION(S): MECHANICALLY MOUNT ON EXTERIOR WALL ABOVE CHEMICAL FILL CABINETS, AS DIRECTED BY ENGINEER.
D. GENERAL SAFETY SIGNS (10140-2.3)  SIZE: 14" x 10"	8	DANGER: CONFINED SPACE BELOW, AUTHORIZED PERSONNEL ONLY
		LOCATION(S): MECHANICALLY MOUNT ON INTERIOR WALL IN VICINITY OF EACH FLOOR DOOR, AS DIRECTED BY ENGINEER.
 SIZE: 14" x 10"	1	NOTICE: UPPER LEVEL LOAD CAPACITY 250 PSF MAX.
		LOCATION(S): MECHANICALLY MOUNT ON INTERIOR WALL AT BASE OF STAIR TO UPPER LEVEL, AS DIRECTED BY ENGINEER.
 SIZE: 14" x 10"	1	NOTICE: EQUIPMENT PLATFORM LOAD CAPACITY 125 PSF MAX.
		LOCATION(S): MECHANICALLY MOUNT ON INTERIOR WALL AT LADDER TO PLATFORM, AS DIRECTED BY ENGINEER.
 SIZE: 14" x 10"	2	EMERGENCY SHOWER AND EYEWASH
		LOCATION(S): MECHANICALLY MOUNT ON OR NEAR EMERGENCY SHOWER, AS DIRECTED BY ENGINEER.

TYPE	QTY.	TEXT
E. PROJECT SIGN (01620-1.3-A) SIZE: 96" x 48"	1	[SEE 01620-1.3-A-3]
		LOCATION(S): AS DIRECTED BY ENGINEER.
F. MASSDEP FILE NO. SIGN (01620-2.2-B)	3	MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION FILE NUMBER SE280-0653
		LOCATION(S): SITE ENTRANCE(S), AS DIRECTED BY ENGINEER.
G. BIPARTISEAN INFRASTRUCTURE LAW (BIL) PROJECT SIGN (01620-1.2-A-3)  SIZE: 72" x 48"	1	
		LOCATION(S): AS DIRECTED BY ENGINEER.
H. RAW WATER HYDRANT SIGNS (02550-2.1-B)	2	NON-POTABLE - NOT FOR FIRE PROTECTION
		LOCATION(S): EACH RAW WATER HYDRANT, AS DIRECTED BY ENGINEER.
FLOW TO WASTE WATER HYDRANT SIGNS (02550-2.1-B)	1	NON-POTABLE - NOT FOR FIRE PROTECTION
		LOCATION(S): POLE MOUNTED AT HYDRANT, AS DIRECTED BY ENGINEER.
I. ENTRANCE GATE SIGN (02550-2.1-C)	1	DAVID M. MASCIARELLI WATER TREATMENT PLANT - 15 TREE LANE
		LOCATION(S): AS DIRECTED BY ENGINEER.
J. ADA PARKING SIGN (SEE DIVISION 02) 	1	SEE SHEET CD-4 FOR DETAILS
		LOCATION(S): POLE MOUNTED IN FRONT OF ADA PARKING SPACE, IN ACCORDANCE WITH ADA & AS DIRECTED BY ENGINEER.
K. DEDICATION PLAQUE (01620-2.3)	1	[SEE 01620-2.3]
		LOCATION(S): MECHANICALLY MOUNT ON INTERIOR WALL, AS DIRECTED BY ENGINEER.

SIGNAGE SCHEDULE NOTES:

01 SIGNAGE ILLUSTRATED IN THE SCHEDULE IS INTENDED TO ILLUSTRATE THE GENERAL DESIGN INTENTION. SUBMIT PRODUCT DATA, SHOP DRAWINGS, LAYOUT PLAN, AND SAMPLES PER SECTION 10140-1.3 AND ELSEWHERE AS SPECIFIED. (TYP.)

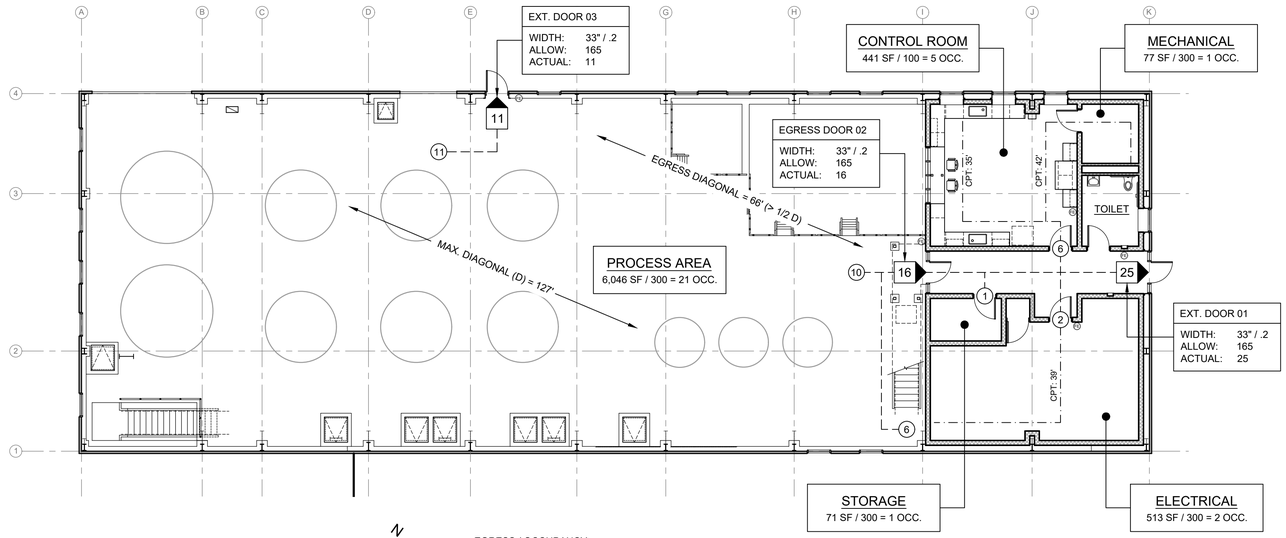
02 SIGNAGE COLORS SHALL BE SELECTED BY THE OWNER AND ENGINEER FROM MANUFACTURER'S FULL RANGE. (TYP.)

03 REVIEW DRAWINGS AND SPECIFICATIONS FOR REQUIREMENTS FOR STAINLESS STEEL PIPE LABELS, INSULATED PIPE LABELS, AND EQUIPMENT LABELS SPECIFIED UNDER SECTION 10140-2.5. (TYP.)

04 REVIEW ALL OTHER DRAWINGS AND SPECIFICATIONS FOR TEMPORARY AND PERMANENT SIGNAGE OR LABELS INCLUDED IN AND/OR PROVIDED BY THOSE DISCIPLINES. [EXAMPLE: FIRESTOPPING IDENTIFICATION LABELS INCLUDED UNDER SECTION 07841-3.4.] (TYP.)

05 ALL CHEMICAL TANKS SHALL BE PROVIDED WITH LABELS PER MASSDEP REQUIREMENTS. (TYP.)

06 VERIFY ALL INSTALLATION LOCATIONS AND MOUNTING REQUIREMENTS IN THE FIELD WITH THE ENGINEER. (TYP.)

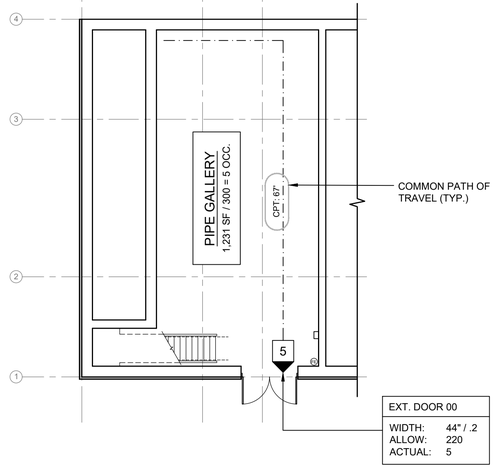


N
PLAN NORTH

EGRESS / OCCUPANCY:

FIRST FLOOR PLAN

SCALE: 3/32"=1'-0"

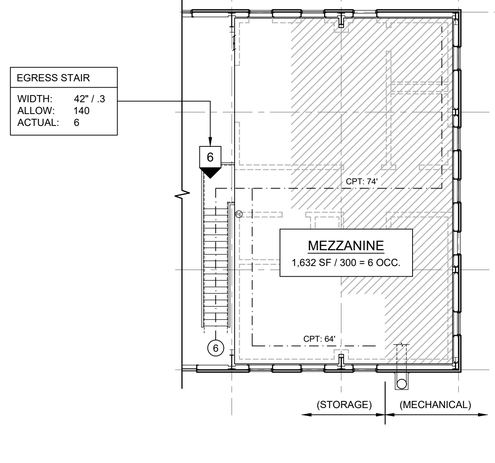


PLAN NORTH

EGRESS / OCCUPANCY:

PART. LOWER LEVEL PLAN

SCALE: 3/32"=1'-0"



PLAN NORTH

EGRESS / OCCUPANCY:

PART. UPPER LEVEL PLAN

SCALE: 3/32"=1'-0"

ENVIRONMENTAL PARTNERS — An Apex Company —

CGKV Architects, Inc.

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
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Designed by	JK
Drawn by	EZ
Checked by	JK
Approved by	JK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

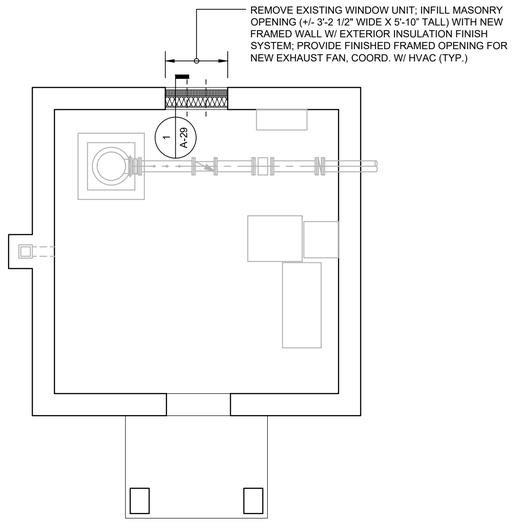
SIGNAGE SCHEDULE; EGRESS / OCCUPANCY PLANS

FOR CONSTRUCTION

Sheet No.

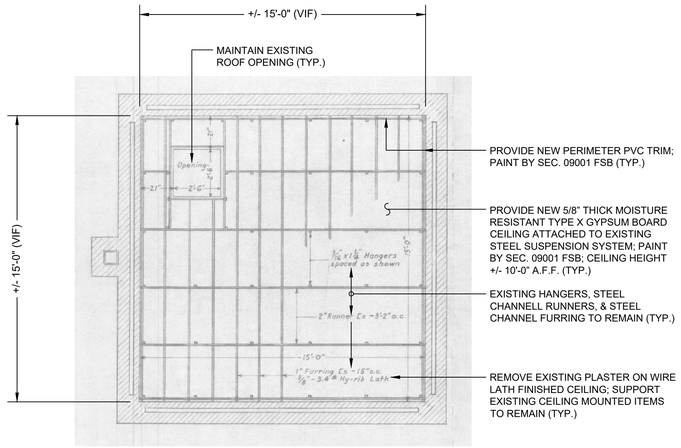
A-29

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-8:45pm



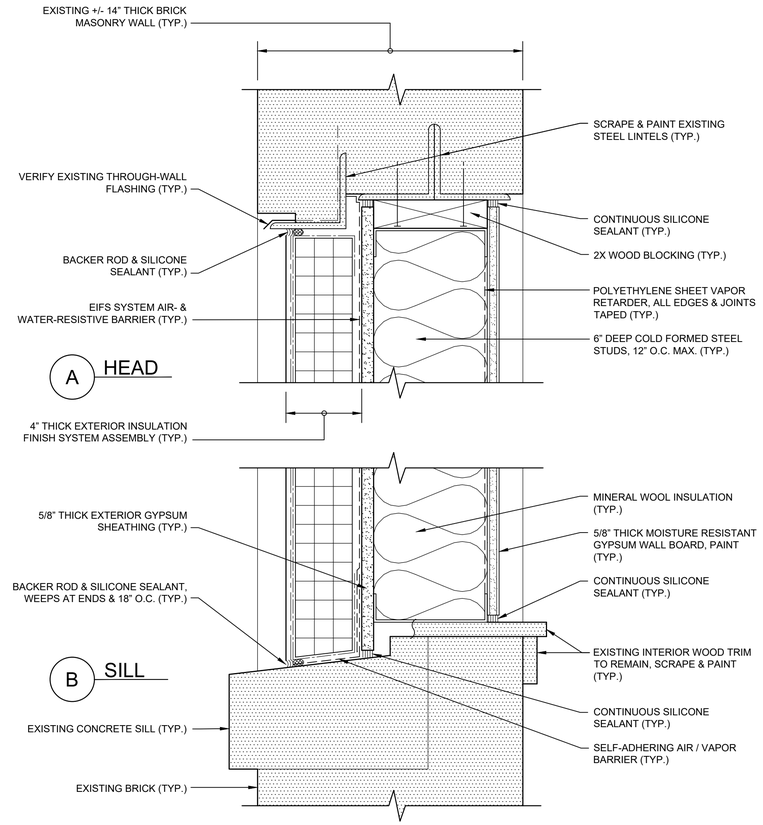
WELL STATION 3 FLOOR PLAN

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



WELL STATION 3 RCP

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



WINDOW INFILL DETAIL

SCALE: 3"=1'-0"

1 / A-29

			Scale	AS SHOWN
			Date	APRIL 2024
			Job No.	245-2103
			Designed by	JK
			Drawn by	EZ
			Checked by	JK
MARK	DATE	DESCRIPTION	Approved by	JK

ENVIRONMENTAL PARTNERS — An Apex Company —

CGKV Architects, Inc.

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

WELL STATIONS 3 & 4 ARCHITECTURAL IMPROVEMENTS

FOR CONSTRUCTION

Sheet No.

A-30

Drawing file: F:\Projects\Sharon Water Treatment Project\Drawings\A-plan_elev_sect.dwg Plot Date: Mar 31,2024-6:46pm

GENERAL NOTES

A. GENERAL

1. ALL WORK SHALL CONFORM TO THE 9th EDITION MASSACHUSETTS BUILDING CODE 780 CMR (INTERNATIONAL BUILDING CODE [IBC] 2015 WITH AMENDMENTS) AND ITS APPLICABLE REFERENCED STANDARDS (HEREIN REFERRED TO AS THE *BUILDING CODE*).
2. ALL REFERENCES TO THE CONTRACTOR IN THIS SET OF DRAWINGS REFER TO THE GENERAL CONTRACTOR, CONSTRUCTION MANAGER, AND OTHER PARTY OR PARTIES RESPONSIBLE FOR THE EXECUTION OF THE PROJECT.
3. ALL REFERENCES TO A PROFESSIONAL ENGINEER, STRUCTURAL ENGINEER, AND GEOTECHNICAL ENGINEER IN THIS SET OF DRAWINGS REFERS TO A PROFESSIONAL ENGINEER COMPETENT IN THE RESPECTIVE FIELD OF DESIGN WHO IS REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AS THEY RELATE TO NEW CONSTRUCTION. REPORT ALL OBSERVATIONS AND ANY DISCREPANCIES TO THE ARCHITECT/ENGINEER OF RECORD AS A REQUEST FOR INFORMATION (RFI) BEFORE PROCEEDING WITH WORK.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE FOR A SAFE AND EFFICIENT METHOD OF SHORING AND BRACING THE STRUCTURE DURING ALL CONSTRUCTION PHASES. ALL SHORING AND BRACING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER. SUBMIT AN OUTLINE OF PROPOSED PROCEDURE AND ITS IMPACT ON THE BUILDING STRUCTURE FOR RECORD TO THE ARCHITECT/ENGINEER OF RECORD BEFORE PROCEEDING WITH WORK.
6. THE EVALUATION OF THE STRUCTURE TO SAFELY SUPPORT ANY AND ALL CONSTRUCTION LOADING (E.G. EQUIPMENT LOADS, TEMPORARY LOADS FROM DEBRIS AND MATERIAL STORAGE) IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. THE DESIGN TEAM HAS DESIGNED THE STRUCTURE FOR THE PERMANENT DEAD LOADS AND UNIFORM LIVE LOADS INDICATED ON THE STRUCTURAL DRAWINGS ACCORDING TO THE REQUIREMENTS OF THE BUILDING CODE. THE CONTRACTOR SHALL ENGAGE A STRUCTURAL ENGINEER TO EVALUATE PROPOSED CONSTRUCTION LOADING AND TO DESIGN ALL TEMPORARY BRACING AND SHORING SYSTEMS THAT MAY BE REQUIRED DUE TO THE CONTRACTOR'S MEANS AND METHODS AND SEQUENCE OF CONSTRUCTION.
7. WHERE DETAILS FOR SPECIFIC CONDITIONS ARE NOT SHOWN ON THESE DRAWINGS, USE DETAILS FOR THE MOST NEARLY SIMILAR CONDITIONS SHOWN ON THE STRUCTURAL DRAWINGS AS DETERMINED BY THE STRUCTURAL ENGINEER OF RECORD. REPORT ANY COORDINATION ISSUES IMMEDIATELY AS AN RFI FOR REVIEW.
8. COORDINATE WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR LOCATIONS AND DIMENSIONS OF CHASES, OPENINGS, BEAM PENETRATIONS, AND OTHER INFORMATION THAT IMPACTS STRUCTURE AND FOUNDATIONS THAT IS NOT SHOWN ON THESE DRAWINGS. INCLUDE ADDITIONAL FRAMING AND REINFORCEMENT FOR SUCH WORK PER THE TYPICAL STRUCTURAL DETAILS ON THESE DRAWINGS IN BASE CONTRACT. CONTRACTOR TO SUBMIT INTERFERENCE DRAWINGS TO ENSURE THAT THERE ARE NO CONFLICTS BETWEEN TRADES TO ENGINEER.
9. ALL WORK SHALL BE MONITORED AND INSPECTED BY AN INDEPENDENT TESTING AND INSPECTIONS AGENCY HIRED BY THE OWNER TO CARRY OUT ALL REQUIRED TESTING AND INSPECTION WORK IN CONFORMANCE WITH THE PROJECT STATEMENT OF SPECIAL INSPECTIONS. SUBMIT ALL TESTING AND INSPECTION REPORTS IN PDF FORMAT TO THE ARCHITECT/ENGINEER OF RECORD FOR REVIEW.
10. STRUCTURAL MEMBERS SHALL NOT BE MODIFIED WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER OF RECORD. ANY ANTICIPATED MODIFICATIONS TO THE CONSTRUCTION DOCUMENTS MUST BE SUBMITTED TO THE ARCHITECT/ENGINEER OF RECORD AS AN RFI FOR REVIEW AND COMMENT. IN THE EVENT OF A CONSTRUCTION OR FABRICATION ERROR, THE CONTRACTOR SHALL PREPARE A SKETCH AND CALCULATIONS, PREPARED BY A STRUCTURAL ENGINEER, DOCUMENTING THE PROPOSED CORRECTIVE ACTION AND SUBMIT IT TO THE ARCHITECT/ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO PERFORMING ANY CORRECTIVE WORK. ODEH ENGINEERS. CANNOT CERTIFY ANY UNAUTHORIZED DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS.
11. PRIOR TO REQUESTING A SITE VISIT BY ODEH ENGINEERS FOR OBSERVATION OF A COMPLETED STAGE OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A STATEMENT TO THE ARCHITECT/ENGINEER OF RECORD THAT ALL WORK HAS BEEN COMPLETED IN CONFORMANCE WITH THE STRUCTURAL CONTRACT DRAWINGS AND SHOP DRAWINGS WITHOUT EXCEPTION, OR HAS BEEN PERFORMED WITH FORMAL WRITTEN EXCEPTIONS ORIGINATING FROM OR AUTHORIZED BY ODEH ENGINEERS.
12. PRIOR TO RELEASE OF THE FINAL PROJECT CERTIFICATION TO THE BUILDING OFFICIAL, ODEH ENGINEERS REQUIRES A LETTER FROM THE CONTRACTOR'S PROJECT EXECUTIVE IN RESPONSIBLE CHARGE STATING THAT ALL WORK INDICATED ON THE STRUCTURAL DRAWINGS HAS BEEN PERFORMED WITHOUT EXCEPTION OR WAS PERFORMED WITH FORMAL WRITTEN EXCEPTIONS ORIGINATING FROM OR AUTHORIZED BY ODEH ENGINEERS. IN ADDITION, ODEH ENGINEERS REQUIRES A LETTER FROM THE PRINCIPAL OF THE TESTING AND INSPECTIONS AGENCY CERTIFYING THAT ALL TESTING AND INSPECTIONS WORK HAS BEEN COMPLETED IN CONFORMANCE WITH THE PROJECT STATEMENT OF SPECIAL INSPECTIONS AND THAT ALL STRUCTURAL NONCONFORMANCE CONDITIONS FOUND HAVE BEEN BROUGHT INTO CONFORMANCE WITH THE PROJECT STRUCTURAL REQUIREMENTS PRIOR TO PROJECT COMPLETION.
13. THE TRADE CONTRACTORS SHALL SUBMIT SHOP AND ERECTION DRAWINGS AS WELL AS PRODUCT DATA (COLLECTIVELY KNOWN HEREIN AS "SHOP DRAWINGS") FOR REVIEW PRIOR TO PROCEEDING WITH FABRICATION AND/OR CONSTRUCTION.
    a. THE SHOP DRAWINGS SHALL BE PREPARED IN ACCORDANCE WITH THE LATEST EDITION OF THE CODE OF STANDARD PRACTICE FOR EACH RESPECTIVE TRADE IN CONJUNCTION WITH ADDITIONAL SHOP DRAWING REQUIREMENTS INDICATED ON THESE DRAWINGS.
    b. ALL SHOP DRAWINGS SHALL BE FULLY DEVELOPED BY THE TRADE CONTRACTORS OR BY AGENTS OF THE CONTRACTORS. CAD FILES, PHOTOCOPIES, OR OTHER REPRODUCTIONS OF THE CONTRACT DRAWINGS IN WHOLE OR IN PART SHALL NOT BE USED BY THE TRADE CONTRACTORS OR THEIR AGENTS FOR THE PREPARATION AND DEVELOPMENT OF SHOP DRAWINGS WITHOUT THE EXPRESSED WRITTEN CONSENT OF ODEH ENGINEERS.
    c. ALL SUBMITTALS SHALL BE IN UNLOCKED PDF FORMAT WITH SEARCHABLE TEXT.
14. ALL 3D VIEWS INCLUDED ON THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. THE 3D VIEWS ONLY SHOW BASIC STRUCTURAL ELEMENTS; THEY DO NOT INCLUDE DETAILS SUCH AS EXTERIOR RAMPS AND STAIRS, SLAB AND ROOF PITCHES, OR SPECIFIC STRUCTURAL DETAILS. REFER TO ALL PLANS, DETAIL SHEETS, AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION. DO NOT SCALE OFF OF THESE DRAWINGS.
15. DO NOT SCALE OFF OF THESE DRAWINGS.
16. THESE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE SPECIFICATIONS. IN ALL CASES OF CONFLICT, INFORMATION INDICATED ON THE STRUCTURAL DRAWINGS AND INCLUDED IN THE STRUCTURAL GENERAL NOTES SHALL GOVERN.
17. THIS 90% DESIGN SET OF DRAWINGS IS BEING PROVIDED FOR MAJOR STRUCTURAL FRAMING AND FOUNDATION COORDINATION PURPOSES ONLY. THESE DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION OR BIDDING PURPOSES. WHILE THESE DRAWINGS CAN BE USED TO OBTAIN A GENERAL UNDERSTANDING OF THE STRUCTURAL SYSTEMS INVOLVED, OMISSIONS AND INCONSISTENCIES BETWEEN SHEETS AND BETWEEN DIFFERENT TRADES WILL EXIST.
18. THIS STRUCTURAL DRAWING SET IS BASED ON ARCHITECTURAL FILES RECEIVED ON 11/24/2023.

B. SPECIAL INSPECTIONS

1. UNLESS WAIVED BY THE BUILDING OFFICIAL, A *SPECIAL INSPECTIONS PROGRAM* SHALL BE ESTABLISHED BY THE OWNER AND COORDINATED WITH THE CONTRACTOR AS REQUIRED BY CHAPTER 17 OF THE *BUILDING CODE*. THE *SPECIAL INSPECTIONS PROGRAM* SHALL BE MANAGED BY A *SPECIAL INSPECTIONS COORDINATOR* (ALSO REFERRED TO AS THE *SPECIAL INSPECTOR*), WHO SHALL BE HIRED BY THE OWNER.
2. THE *SPECIAL INSPECTIONS PROGRAM* SHALL NOT RELIEVE THE CONTRACTOR OF QUALITY ASSURANCE AND TESTING REQUIREMENTS OF THE *BUILDING CODE* AS WELL AS ADDITIONAL TESTING AND INSPECTION REQUIREMENTS IN THE CONTRACT DOCUMENTS, WHICH SHALL BE SUPPLEMENTARY TO THE *SPECIAL INSPECTIONS PROGRAM*.
3. *SPECIAL INSPECTIONS* SHALL BE PERFORMED FOR ALL STRUCTURAL SYSTEMS INDICATED IN THE STRUCTURAL *STATEMENT OF SPECIAL INSPECTIONS* ISSUED BY ODEH ENGINEERS. REFER TO THE STRUCTURAL *STATEMENT OF SPECIAL INSPECTIONS* FOR SPECIFIC TESTING AND INSPECTION REQUIREMENTS.
4. ALL WORK FOR WHICH *SPECIAL INSPECTIONS* IS REQUIRED SHALL REMAIN ACCESSIBLE AND EXPOSED FOR *SPECIAL INSPECTIONS* PURPOSES UNTIL COMPLETION OF THE REQUIRED *SPECIAL INSPECTIONS PROGRAM*. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE INSPECTIONS TO ALLOW FOR ALL TESTS AND INSPECTIONS TO TAKE PLACE AT THE FREQUENCY INDICATED IN THE STATEMENT OF SPECIAL INSPECTIONS.
5. ALL NONCONFORMANCE ITEMS IDENTIFIED BY THE TESTING AND INSPECTION AGENCY AS PART OF THE *SPECIAL INSPECTIONS PROGRAM* MUST BE REINSPECTED ONCE THE REQUIRED REMEDIAL WORK IS COMPLETED IN ORDER TO CONFIRM THAT THE COMPLETED CONSTRUCTION CONFORMS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. REINSPECTION AND/OR RETESTING WORK MUST BE DOCUMENTED BY THE TESTING AND INSPECTION AGENCY IN A FIELD REPORT AND MUST BE SUBMITTED TO THE *SPECIAL INSPECTIONS COORDINATOR* AND DESIGN TEAM FOR RECORD. ALL SUPPLEMENTAL AND FOLLOW-UP REPORTS SUBMITTED BY THE TESTING AND INSPECTION AGENCY MUST CLEARLY CROSS-REFERENCE THE ORIGINAL REPORT FROM WHICH THE NONCONFORMANCE ITEM ORIGINATED.
6. THE CONTRACTOR SHALL ARRANGE A PRECONSTRUCTION MEETING WITH THE *SPECIAL INSPECTIONS COORDINATOR*, TESTING AND INSPECTIONS AGENCIES, DESIGN TEAM, AND SUBCONTRACTORS TO REVIEW THE *SPECIAL INSPECTIONS PROGRAM* AND IDENTIFY ALL PARTICIPANTS' ROLES AND RESPONSIBILITIES.

C. ENGINEERING REQUIREMENTS FOR THE CONTRACTOR

1. THE DESIGN OF ALL ENGINEERED SYSTEMS NOTED IN THIS SECTION, INCLUDING CONNECTIONS OF EACH SYSTEM TO THE MAIN BUILDING STRUCTURE, ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL ENGINEERED SYSTEMS SHALL CONFORM TO THE *BUILDING CODE* AND SHALL BE PERFORMED BY AN INDEPENDENT STRUCTURAL ENGINEER ENGAGED BY THE CONTRACTOR.
2. THE FOLLOWING ENGINEERED SYSTEMS ARE REQUIRED AS PART OF THE STRUCTURAL SYSTEMS SPECIFIED ON THIS PROJECT. CALCULATIONS AND SHOP DRAWINGS, BOTH SIGNED AND STAMPED BY A STRUCTURAL ENGINEER, ARE REQUIRED TO BE SUBMITTED TO THE ARCHITECT AND ENGINEER OF RECORD FOR REVIEW FOR EACH RESPECTIVE ENGINEERED SYSTEM BELOW. ALL SHOP DRAWINGS SHALL INDICATE THE MAGNITUDE, DIRECTION, AND LOCATION OF LOADS IMPOSED ON THE STRUCTURE FROM CONNECTIONS OF THE RESPECTIVE SYSTEMS TO THE MAIN BUILDING STRUCTURE. REFER TO THE RESPECTIVE GENERAL NOTES SECTIONS INCLUDED IN THE STRUCTURAL DOCUMENTS FOR DETAILED ENGINEERING REQUIREMENTS FOR EACH OF THE STRUCTURAL SYSTEMS SPECIFIED FOR USE.
    A. *PANELIZED FACADE SYSTEMS.*
    B. *STRUCTURAL STEEL CONNECTIONS.*
    C. *COLD-FORMED METAL FRAMING.*
    D. *METAL STAIR STRUCTURES.*
    E. *HANDRAILS AND GUARDRAILS.*
    F. *PRE-FABRICATED COMPONENTS AND BUILDING SYSTEMS.*

    STAIR STRUCTURES - STAIRS AND LANDINGS SHALL BE SUPPORTED ON THICKENED SLABS AT SLABS-ON-GRADE. COORDINATE ALL STAIR DETAILS WITH ARCHITECTURAL DRAWINGS. *HANDRAILS AND GUARDRAILS* - HANDRAILS AND GUARDRAILS MAY BE SUPPORTED FROM BUILDING FRAMING ELEMENTS, UNLESS NOTED OTHERWISE. COORDINATE ALL HANDRAIL AND GUARDRAIL DETAILS WITH THE ARCHITECTURAL DRAWINGS.
3. IN ADDITION TO THE STRUCTURAL SYSTEMS LISTED ABOVE, THE FOLLOWING ENGINEERED SYSTEMS ARE REQUIRED FOR THIS PROJECT. CALCULATIONS AND SHOP DRAWINGS, BOTH SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER, ARE REQUIRED TO BE SUBMITTED FOR RECORD ONLY TO THE ARCHITECT AND ENGINEER FOR EACH RESPECTIVE ENGINEERED SYSTEM BELOW.
    A. *GEOTECHNICAL SCOPE* - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENGAGING A GEOTECHNICAL ENGINEER TO DESIGN AND OVERSEE THE FOLLOWING, AS APPLICABLE:
        1. SUPPORT OF EXCAVATION (SOE).
        2. SUBGRADE PREPARATION.
    B. *CONCRETE SHORING AND FORMWORK* - SHORING AND FORMWORK SHALL BE DESIGNED SUCH THAT ALL TRANSFER BEAMS/GIRDERS ARE SHORED TO THE GROUND UNTIL ALL DEAD LOAD IS APPLIED TO THE TRANSFER BEAM/GIRDER.
    C. *SAFETY TIE-OFF SYSTEMS* - ALL SAFETY TIE-OFF SYSTEMS SHALL BE DESIGNED FOR THE RESPECTIVE MAXIMUM ANTICIPATED LOADS ACTING ON THE ELEMENTS. SAFETY TIE-OFF SYSTEMS SHALL BE ATTACHED TO BUILDING FRAMING ELEMENTS ONLY AT LOCATIONS APPROVED BY THE PRE-ENGINEERED METAL BUILDING DESIGNER.

D. FOUNDATIONS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "DIG SAFE" AS WELL AS ALL APPROPRIATE AGENCIES AND MUNICIPALITIES TO AVOID DAMAGE TO UNDERGROUND UTILITIES PRIOR TO THE START OF ANY SITE WORK.
2. THE GEOTECHNICAL REPORT, PREPARED BY ENVIRONMENTAL PARTNERS OF QUINCY, MA ON JULY 31, 2023 (HEREIN KNOWN AS "GEOTECHNICAL REPORT") SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE START OF WORK. ALL RECOMMENDATIONS IN THE GEOTECHNICAL REPORT MUST BE STRICTLY FOLLOWED AND BE INCLUDED IN THE PROJECT BASE CONTRACT.
3. DEPTHS AND QUANTITIES OF MATERIAL REMOVAL AND REPLACEMENT SHALL BE BASED UPON THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT. THIS INCLUDES ALL REMOVAL OF UNSUITABLE SOILS, COMPACTION OF EXISTING SOILS, SPECIFICATIONS AND PLACEMENT OF ENGINEERED FILL, AND ANY ADDITIONAL REQUIREMENTS. THE CONTRACTOR SHALL INCLUDE PROVISIONS IN BASE CONTRACT FOR REMOVAL OF ALL UNSUITABLE MATERIALS AND REPLACEMENT WITH COMPACTED ENGINEERED FILL (AND/OR CRUSHED STONE AS INDICATED IN THE DRAWINGS AND SPECIFICATIONS) UP TO BOTTOM OF FOUNDATIONS AND SLABS. IN ADDITION, THE CONTRACTOR SHALL MAKE PROVISIONS FOR DEWATERING ALL GROUNDWATER DURING EXCAVATIONS OF FOUNDATIONS.
4. THE CONTRACTOR SHALL PROVIDE CONTINUOUS CONTROL OF THE SURFACE AND SUBSURFACE WATER DURING CONSTRUCTION SUCH THAT FOUNDATION WORK IS DONE IN THE DRY AND ON UNDISTURBED SUBGRADE MATERIAL AS APPLICABLE.
5. ALL FOUNDATIONS AND SLABS SHALL BEAR ON VIRGIN SOIL, COMPACTED ENGINEERED FILL, OR COMPACTED CRUSHED STONE WITH A MINIMUM BEARING CAPACITY OF 2500 PSF AS RECOMMENDED IN THE GEOTECHNICAL REPORT. UNLESS OTHERWISE RECOMMENDED IN THE GEOTECHNICAL REPORT, PROVIDE A MINIMUM 6" LAYER OF CRUSHED STONE BENEATH ALL SLABS AND FOOTINGS.
6. BOTTOMS OF ALL EXTERIOR FOUNDATION ELEMENTS SHALL BE A MINIMUM OF 4'-0" BELOW FINISH GRADE.
7. FOUNDATION ELEMENTS SHALL BE STEPPED AT A MAXIMUM SLOPE OF 2 HORIZONTAL TO 1 VERTICAL, UNLESS NOTED OTHERWISE IN THE GEOTECHNICAL REPORT. (SEE TYPICAL DETAILS).
8. FOUNDATION ELEMENTS SHALL BE DROPPED AS REQUIRED AT UTILITY LOCATIONS. LOCATIONS ARE NOT SHOWN ON STRUCTURAL DRAWINGS AND CONTRACTOR SHALL COORDINATE ALL UTILITY LOCATIONS AND INTERACTION WITH FOUNDATIONS.
9. DURING BACKFILL OPERATIONS OF ALL FOUNDATION WALLS, THE FILL ON EITHER SIDE OF THE WALL SHALL NOT EXCEED A 2'-0" DIFFERENTIAL, UNLESS THE WALL IS DESIGNED FOR RETAINING ACTION.
10. ALL RETAINING WALLS SHALL NOT BE BACKFILLED UNTIL THE CONCRETE HAS ACHIEVED ITS SPECIFIED 28-DAY COMPRESSIVE STRENGTH (f'c). REFER TO THE "CONCRETE" SECTION OF THE GENERAL NOTES FOR CONCRETE STRENGTH REQUIREMENTS.

E. PREFABRICATED METAL BUILDING SYSTEMS

1. THE METAL BUILDING STRUCTURAL SYSTEMS SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL PRIMARY, SECONDARY, AND SUPPLEMENTAL FRAMING.
2. FOR FRAMED OPENINGS AND OTHER INFORMATION NOT SHOWN ON STRUCTURAL DRAWINGS, REFER TO ARCHITECTURAL DRAWINGS.
3. FOR ROOF-TOP, ROOF SUSPENDED, AND WALL-HUNG HVAC UNITS AND SUSPENDED MECHANICAL EQUIPMENT, REFER TO MECHANICAL DRAWINGS.
4. THE METAL BUILDING SYSTEMS SHALL INCLUDE FRAMED OPENINGS FOR PERSONNEL DOORS, WINDOWS, OVERHEAD DOORS, HVAC DUCTWORK & EQUIPMENT, TRANSLUCENT PANELS, AND LOUVERS.
5. THE METAL BUILDINGS SHALL BE ERECTED IN STRICT CONFORMANCE WITH THE BUILDING MANUFACTURER'S ERECTION DRAWINGS AND INSTALLATION INSTRUCTIONS.
6. THE METAL BUILDING SYSTEMS MANUFACTURER SHALL SUBMIT ANCHOR BOLT PLANS AND DETAILS, COLUMN BASE DETAILS, AND INTERFACE LOADS TO THE ENGINEER FOR APPROVAL. ANCHOR BOLTS SHALL BE GALVANIZED HEADED BOLTS OF THREADED ROD WITH NUT.
7. THE CONTRACTOR SHALL FURNISH ALL ANCHOR BOLTS FOR THE METAL BUILDING SYSTEMS. THE ANCHOR BOLT LAYOUT, QUANTITY, SIZE, AND PROJECTION SHALL BE IN ACCORDANCE WITH THE METAL BUILDINGS MANUFACTURER'S APPROVED ANCHOR BOLT PLANS. THE ANCHOR BOLT DETAILS AND EMBEDMENT LENGTH SHALL BE IN ACCORDANCE WITH THE STRUCTURAL DRAWINGS.
8. ALL WORK SHALL CONFORM WITH APPROVED SUBMITTAL DOCUMENTS. NO MODIFICATIONS TO THE METAL BUILDING SYSTEM SHALL BE MADE WITHOUT AUTHORIZATION BY THE METAL BUILDING SYSTEMS MANUFACTURER AND APPROVAL OF THE ENGINEER.
9. THE METAL BUILDING FOUNDATIONS HAVE BEEN DESIGNED AND DETAILED TO ACCOMMODATE THE TYPICAL REQUIREMENTS OF METAL BUILDING SYSTEMS MANUFACTURERS. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL ANY REQUIRED MODIFICATIONS TO ACCOMMODATE ANY SPECIFIC REQUIREMENTS OF THE APPROVED MANUFACTURER. THE COST OF SUCH MODIFICATIONS SHALL BE BORNE BY THE CONTRACTOR.
10. METAL BUILDING DEFLECTIONS SHALL BE LIMITED TO THOSE IN THE DESIGN LOADING AND CRITERIA SECTION, WITH THE EXCEPTION OF THE FOLLOWING:
    a. METAL BUILDING DRIFT:
        1. WIND (50-YEAR) H/200
11. ALL PRIMARY, SECONDARY AND SUPPLEMENTAL FRAMING SHALL HAVE A SHOP APPLIED COAT OF PRIMER APPLIED UNLESS NOTED OTHERWISE. PRIMER SHALL MATCH THE ADJACENT EXISTING METAL BUILDING IN COLOR, ALTERNATIVE COLORS MAY ONLY BE USED IF AUTHORIZED BY THE ARCHITECT.
12. METAL BUILDING FRAME MEMBERS SHALL BE DESIGNED FOR A PINNED CONNECTION AT THE FOUNDATION INTERFACE.
13. THE METAL BUILDING SYSTEM SHALL INCLUDE ROOF CURBS, SUPPLEMENTAL FRAMING AND/OR SPECIAL PURLIN AND GIRT DESIGNS TO ACCOMMODATE LOCATIONS, DETAILS, AND CONCENTRATED DEAD LOADS OF ALL ROOF-TOP, ROOF-SUSPENDED AND WALL-HUNG EQUIPMENT. THE CONTRACTOR SHALL COORDINATE ALL EQUIPMENT LOCATIONS, ATTACHMENT REQUIREMENTS, AND ACTUAL WEIGHTS WITH THE METAL BUILDING MANUFACTURER, THE CONTRACTOR (OR THE INSTALLING SUBCONTRACTOR) SHALL PROVIDE HANGERS AND SUPPORTS FOR EQUIPMENT INSTALLATION. HANGERS AND SUPPORTS SHALL COMPLY WITH THE METAL BUILDING SYSTEM RECOMMENDATIONS AND SUGGESTED DETAILS.
14. SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS FOR REVIEW (SEE SECTION REGARDING *ENGINEERING REQUIREMENTS FOR CONTRACTOR*).
15. ALLOW FOR 2 INCHES OF CLEAR DISTANCE BETWEEN ALL METAL BUILDING ELEMENTS AND CMU AND/OR HOLLOW CORE PLANK ELEMENTS.
16. ALL PROCESS PIPES THAT ARE AT A MINIMUM ELEVATION OF 7'-0" ABOVE THE FIRST FLOOR ARE TO BE SUPPORTED BY THE PEMB. COORDINATE WITH THE ARCHITECTURAL AND MECHANICAL PROCESS DRAWINGS.
17. STRUCTURAL MEZZANINE/HVAC EQUIPMENT PLATFORM TO BE SUSPENDED FROM AND DESIGNED BY THE PEMB MANUFACTURER, COORDINATE EXTENTS AND REQUIREMENTS WITH THE ARCHITECTURAL AND MECHANICAL PROCESS DRAWINGS.

ABBREVIATIONS & SYMBOLS LEGEND

SECTION DESIGNATION, SECTION APPEARS ON SAME SHEET
- INDICATES SECTION OR DETAIL
SECTION DESIGNATION
- INDICATES SECTION OR DETAIL
S#.## SHEET NUMBER WHERE SECTION APPEARS
0'-0" - INDICATES T.O. NEW CONCRETE FOUNDATION WALL/PIER OR CMU WALL ELEVATION.
[0'-0"] - INDICATES BOTTOM OF NEW CONCRETE FOOTING ELEVATION.
- INDICATES STEP IN CONCRETE FOOTING - SEE FOUNDATION DETAILS.
0'-0" - INDICATES FINISH CONCRETE SLAB ELEVATION.
- INDICATES SQUARE HSS STEEL COLUMN.
- INDICATES RECTANGULAR HSS STEEL COLUMN.
- INDICATES COLUMN GRID.
- INDICATES STRUCTURAL STEEL MOMENT FRAME CONNECTION.
- INDICATES STRUCTURAL STEEL CANTILEVER MOMENT CONNECTION.
- INDICATES STRUCTURAL STEEL PARTIALLY RESTRAINED CONNECTION.
- INDICATES STRUCTURAL STEEL EMBED PLATE CONNECTION.
- INDICATES CONCRETE MASONRY UNIT (CMU). SECTION VIEW
- INDICATES BRICK VENEER SECTION VIEW
F1 - INDICATES CONCRETE FOOTING. SEE SCHEDULE.
P1 - INDICATES CONCRETE PIER. SEE SCHEDULE.
(SJ) - INDICATES SAWCUT CONTROL JOINT.

STRUCTURAL WALL TYPES: (COORD. ALL LOCATIONS w/ARCH.)

C# - INDICATES CONCRETE WALL TYPE C#. (PLAN VIEW)
M# - INDICATES CMU WALL TYPE W#. SEE CMU WALL REINFORCEMENT SCHEDULE. (PLAN VIEW)
- INDICATES CMU LINTEL BEAM. SEE CMU LINTEL SCHEDULE. (PLAN VIEW)
V# - INDICATES WOOD STUD WALL TYPE W#. (PLAN VIEW)

ABBREVIATIONS:

A/E	ARCHITECT/ENGINEER
ADDN'L	ADDITIONAL
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
A.F.F.	ABOVE FINISH FLOOR
ARCH.	ARCHITECT, ARCHITECTURAL
B	BOTTOM
BF	BRACED FRAME
B.L.	BUILDING LINE
B.O.	BOTTOM OF
BLDG	BUILDING
C.L.	CENTER LINE
C.J.	CONSTRUCTION JOINT
CMU	CONCRETE MASONRY UNIT
CONC.	CONCRETE
CONN.	CONNECTION
CONT.	CONTINUOUS
CONT'D	CONTINUED
COORD.	COORDINATE
DIM.	DIMENSION
DN	DOWN
DWG	DRAWING
E.F.	EACH FACE
E.W.	EACH WAY
EXP.	EXPANSION
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
E.O.D.	EDGE OF DECK
E.O.S.	EDGE OF SLAB
EXT.	EXTERIOR
FDN	FOUNDATION
FIN.	FINISH
FTG	FOOTING
GA.	GAUGE
GALV.	GALVANIZED
HCP	HOLLOW-CORE CONCRETE PLANK
H.P.	HIGH POINT
HORIZ.	HORIZONTAL
HSS	HOLLOW STRUCTURAL SECTION
I.F.	INSIDE FACE (REINFORCING)
K	KIP, KIPS (1 KIP = 1000 LBS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
LB, LBS	POUND, POUNDS
LFH	LONG FACE HORIZONTAL (TUBES)
LFV	LONG FACE VERTICAL (TUBES)
LLH	LONG LEG HORIZONTAL (L-ANGLES)
LLV	LONG LEG VERTICAL (L-ANGLES)
L.P.	LOW POINT
L.W.	LIGHT-WEIGHT
MAX.	MAXIMUM
MECH.	MECHANICAL
MIN.	MINIMUM
MF	MOMENT FRAME
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.F.	OUTSIDE FACE (REINFORCING)
O.H.	OPPOSITE HAND
OE	ODEH ENGINEERS
OPN'G	OPENING
PCP	PRECAST CONCRETE PLANK
P.E.	PROFESSIONAL ENGINEER
PL.	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
P.T.	PRESERVATIVE TREATED (WOOD)
REINF.	REINFORCED, REINFORCEMENT, ETC.
REQ'D	REQUIRED
RTU	ROOF TOP UNIT
SIM.	SIMILAR
SIP	STRUCTURAL INSULATED PANEL
SJ	SAWCUT (CONTROL) JOINT
SOG	SLAB-ON-GRADE
SPECS	SPECIFICATIONS
SS	STAINLESS STEEL
STL	STEEL
T	TOP (FRAMING OR REINFORCING)
T	TON, TONS (1 TON = 2000 LBS)
TSF	TONS PER SQUARE FOOT
T&B	TOP AND BOTTOM
T.O.	TOP OF
T.O.W.	TOP OF WALL
T.O.S.	TOP OF STEEL
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
V.I.F.	VERIFY IN FIELD
w/	WITH
WF	WIDE FLANGE
WT	WEIGHT
W.W.F.	WELDED WIRE FABRIC
@	AT
#	POUND, POUNDS

STRUCTURAL DRAWING LIST

S-1	GENERAL NOTES I
S-2	GENERAL NOTES II
S-3	LOADING AND DESIGN CRITERIA
S-4	STRUCTURAL FOUNDATION PLAN
S-5	STRUCTURAL GROUND FLOOR SLAB PLAN
S-6	CONCRETE CURB AND PAD PLAN
S-7	STRUCTURAL UPPER LEVEL FRAMING PLAN
S-8	STRUCTURAL BUILDING SECTIONS I
S-9	STRUCTURAL BUILDING SECTIONS II
S-10	STRUCTURAL TYPICAL FOUNDATION DETAILS I
S-11	STRUCTURAL TYPICAL FOUNDATION DETAILS II
S-12	STRUCTURAL TYPICAL FOUNDATION DETAILS III
S-13	STRUCTURAL FOUNDATION SECTIONS I
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S-16	TYPICAL MASONRY DETAILS

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DAVID J. ODEH STRUCTURAL No. 42755 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	AS INDICATED
Date	APRIL 2024
Job No.	245-2103
Designed by	JDZ/KLM
Drawn by	JDZ/KLM
Checked by	DJO
Approved by	DJO

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

GENERAL NOTES I

FOR CONSTRUCTION

Sheet No.
S-1

GENERAL NOTES

F. CONCRETE

1. ALL CONCRETE WORK SHALL BE IN CONFORMANCE WITH THE *BUILDING CODE* AND ACI 318, 301 AND 350 REQUIREMENTS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, PROPORTIONING OF CONCRETE MIX, CONCRETE TESTING, PLACEMENT OF CONCRETE, AND CURING PROCEDURES.
2. SEE TABLE BELOW FOR ALL MIX TYPES. WHERE CONCRETE STRENGTH IS NOT SPECIFICIED, PROVIDE A MINIMUM COMPRESSIVE STRENGTH, f'_c OF 4,000PSI.
3. ALL REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING MATERIAL SPECIFICATIONS:
   a. REINFORCING BARS: ASTM A615 (F_y=60 KSI, MIN.)
   b. WELDED WIRE REINFORCEMENT: ASTM A1064 (F_y=60 KSI, MIN.)
   c. REINFORCING BARS TO BE WELDED: ASTM A615 OR ASTM A706 (F_y=60 KSI, MIN.)
   d. EPOXY-COATED REINFORCING BARS: ASTM A775 OR ASTM A934
   e. EPOXY-COATED WELDED WIRE REINFORCEMENT: ASTM A884
4. ALL STIRRUPS AND TIES SHALL BE CLOSED TYPE AND ALL HOOKS SHALL BE STANDARD 90° TYPE, UNLESS OTHERWISE NOTED.
5. ALL CONCRETE IN THE TANK AREAS SHALL BE EPOXY-COATED.
6. PROVIDE AN APPROVED CRYSTALLINE-BASED PERMEABILITY-REDUCING ADMIXTURE IN CONCRETE WALLS & SLABS IN TANK AREAS.
7. WHERE NO REINFORCEMENT IS INDICATED FOR CONCRETE SLABS AND WALLS, PROVIDE A MINIMUM #4 @ 12" O.C. CONTINUOUS EACH WAY, TOP AND BOTTOM (OR EACH FACE OF WALL).
8. PROVIDE CORNER BARS AT ALL CORNERS AND INTERSECTIONS MATCHING HORIZONTAL REINFORCEMENT WITH 2'-6" MINIMUM LAPS.
9. PROVIDE A MINIMUM OF 1-#5 SUPPORT BAR AT ALL STIRRUP BENDS WHERE PRIMARY BARS DO NOT EXIST.
10. PROVIDE MATCHING DOWELS FOR ALL VERTICAL REINFORCING BARS AT CMU WALLS. DOWEL DIAMETER SHALL MATCH VERTICAL REINFORCING BAR DIAMETER. DOWEL LENGTH SHALL BE 96 BAR DIAMETERS MINIMUM WITH 48 BAR DIAMETER MIN. EMBEDMENT AND 48 BAR DIAMETER MIN. LAP (U.N.O.).
11. SET AND TIE ALL REINFORCEMENT, ANCHOR BOLTS, AND CAST-IN AND EMBEDDED ITEMS PRIOR TO PLACING CONCRETE. SETTING OF DOWELS AND REINFORCEMENT INTO WET CONCRETE SHALL NOT BE ALLOWED.
12. REINFORCING LAP SPLICES SHALL BE IN ACCORDANCE WITH ACI-318 FOR TENSION LAP SPLICES, CLASS B, UNLESS NOTED OTHERWISE. SEE DRAWINGS FOR SPECIAL LAP SPLICE INSTRUCTIONS AT FOUNDATION WALLS AND GRADE BEAM/PILE CAP INTERSECTIONS.
13. IN SLABS AND BEAMS, LAP SPLICE CONTINUOUS BOTTOM REINFORCEMENT ONLY AT SUPPORT LOCATIONS AND CONTINUOUS TOP REINFORCEMENT ONLY AT CENTERS OF SPANS, UNLESS NOTED OTHERWISE. PROVIDE STANDARD HOOK FOR TOP BARS AT ALL DISCONTINUOUS ENDS AND SUPPORTS.
14. DETAILING OF REINFORCEMENT SHALL BE ACCORDING TO THE LATEST EDITION OF THE ACI 315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES". PROVIDE BAR SUPPORTS, SPACERS, AND ACCESSORIES RECOMMENDED IN THE LATEST EDITION OF THE ACI DETAILING MANUAL, PUBLICATION SP-66. ALL ACCESSORIES IN CONTACT WITH EXPOSED SURFACES SHALL BE PLASTIC-COATED. PROVIDE SCHEDULE OF ALL ACCESSORIES WITH SHOP DRAWINGS FOR REVIEW.
15. CONCRETE SHALL MEET THE FOLLOWING MINIMUM PERCENTAGES OF ITS 28 DAY COMPRESSIVE STRENGTH (f'_c) PRIOR TO REMOVING FORMS AND/OR SHORES:
   a. ALL CONCRETE EXCEPT AS NOTED BELOW 40%
   b. BEAM BOTTOMS (IF SHORED) 70%
   c. FLOOR SYSTEMS 80%
   d. PROVIDE ADDITIONAL CYLINDERS AS NECESSARY IF FORMS ARE TO BE REMOVED PRIOR TO RECEIVING THE 7 DAY AND/OR 28 DAY BREAK RESULTS.
16. UNLESS NOTED OTHERWISE, PROVIDE REINFORCEMENT COVER PER THE TABLE AT THE END OF THIS SECTION.
17. ALL CONCRETE SHALL BE PLACED WITHOUT HORIZONTAL CONSTRUCTION JOINTS, EXCEPT WHERE SPECIFICALLY INDICATED. UNLESS NOTED OTHERWISE VERTICAL CONSTRUCTION JOINTS AND STOPS IN THE CONCRETE WORK SHALL BE MADE AT MIDSPAN. ALL REINFORCEMENT SHALL BE CONTINUOUS THROUGH VERTICAL CONSTRUCTION JOINTS. ADDITIONAL REQUIREMENTS REGARDING CONSTRUCTION JOINTS AT SPECIFIC LOCATIONS ARE INDICATED ELSEWHERE ON THE STRUCTURAL DRAWINGS ON PLANS, ELEVATIONS, SECTIONS AND DETAILS.
18. MAXIMUM STRAIGHT LENGTH OF CONCRETE WALL BETWEEN CONSTRUCTION JOINTS SHALL BE 60 FEET.
19. PROVIDE VERTICAL CONTROL JOINTS AT A MAXIMUM SPACING OF 20 FEET O.C. FOR ALL CONTINUOUS WALLS WITH MORE THAN 12" PROJECTION ABOVE FINISH GRADE.
20. NOT ALL OPENINGS AND PENETRATIONS THROUGH CONCRETE WALLS AND SLABS ARE SHOWN ON THE STRUCTURAL DRAWINGS. REINFORCE AROUND PENETRATIONS THROUGH CONCRETE WALLS AND SLABS PER THE TYPICAL DETAILS. UNLESS NOTED OTHERWISE NO PENETRATIONS SHALL BE MADE THROUGH PIERS. COORDINATE ALL OPENING LOCATIONS WITH ARCHITECT AND OTHER TRADES.
21. PROVIDE SAWCUT JOINTS IN ALL SLABS ON GRADE USING AN EARLY-ENTRY SAW WITHIN 4 HOURS OF PLACEMENT. PROVIDE SAWCUTS @ 10'-0" O.C. MAX., UNLESS NOTED OTHERWISE.
22. PLACE ALL SLABS PER ACI 301 AND ACI 302.1 SPECIFICATIONS. UNLESS NOTED OTHERWISE, PROVIDE THE FOLLOWING MINIMUM FLOOR FLATNESS AND LEVELNESS:
   a. SLABS ON GRADE:
      1. OVERALL FLOOR FLATNESS FF = 35
      2. LOCAL FLOOR FLATNESS FF_L = 25
      3. OVERALL FLOOR LEVELNESS FL = 25
      4. LOCAL FLOOR LEVELNESS FL_L = 17
      INDIVIDUAL SECTIONAL BOUNDARIES FOR LOCAL MEASUREMENTS SHALL BE SET AT CONSTRUCTION AND CONTROL JOINT LOCATIONS. IN THE ABSENCE OF CONSTRUCTION AND CONTROL JOINTS, BOUNDARIES SHALL BE COLUMN LINES AND HALF-COLUMN LINES OR 10'-0" WIDE SEGMENTS, WHICHEVER IS LESS.
   b. ELEVATED SLABS:
      1. OVERALL FLOOR FLATNESS, FF = 35
      2. LOCAL FLOOR FLATNESS, FF_L = 25
      INDIVIDUAL SECTIONAL BOUNDARIES FOR LOCAL MEASUREMENTS SHALL BE COLUMN LINES AND HALF-COLUMN LINES OR 10'-0" WIDE SEGMENTS, WHICHEVER IS LESS.
23. WHERE NECESSARY DUE TO CONGESTION OF REINFORCEMENT, CONTRACTOR SHALL PROVIDE TYPE 1 MECHANICAL BAR COUPLERS AND BAR TERMINATORS IN LIEU OF LAP SPLICES AND HOOKED ENDS PER ACI REQUIREMENTS. THE CONTRACTOR SHALL INCLUDE THE COST OF SUCH MECHANICAL ACCESSORIES IN BASE CONTRACT. ALL MECHANICAL SPLICES SHALL CONFORM TO ALL ACI TYPE 1 REQUIREMENTS INCLUDING TENSION DEVELOPMENT CAPACITY OF 1.25F_Y OF THE BARS.
24. ALL CONCRETE TEST CYLINDERS FOR CONCRETE COMPRESSIVE TESTING SHALL BE PREPARED PER ACI REQUIREMENTS AND APPLICABLE ASTM STANDARDS.
25. ALL CONCRETE MIX DURATION TIMES SHALL BE LESS THAN 90 MINUTES.
26. ALL CONCRETE MUST BE PLACED FROM A HEIGHT NOT GREATER THAN 4'-0" ABOVE ITS FINAL POSITION.
27. COORDINATE THE LOCATION, QUANTITY, AND DIMENSIONS OF EMBEDDED ITEMS AND HARDWARE WITH THE ARCHITECT AND WITH RESPECTIVE SYSTEMS MANUFACTURERS (E.G. ELEVATORS AND CURTAIN WALL SYSTEMS).
28. SUBMIT PROPOSED MIX DESIGN OF EACH CONCRETE TYPE AND REINFORCING SHOP DRAWINGS FOR REVIEW.
29. ALL EDGES OF CONCRETE EXPOSED TO VIEW SHALL HAVE A 3/4" CHAMFER, U.N.O.
30. ALL INFORMATION PERTAINING TO SUBGRADE TANK LEAK TESTING SHALL BE COORDINATED WITH "SPECIFICATION SECTION 01063 - MISCELLANEOUS REQUIREMENTS," BY OTHERS.

CONCRETE MIX TABLE

USE	28-DAY[1] STRENGTH (f'_c)	MAXIMUM DRY DENSITY (PCF)	MAXIMUM [2] AGGREGATE SIZE (IN.)	MAXIMUM[3] W/CM RATIO	AIR CONTENT[4] (%)	EXPOSURE CLASS[5] F	S	W	C	ADDITIONAL COMMENTS / REQUIREMENTS
REINFORCED CONCRETE WALLS	5000 PSI	145 PCF (N.W.)	3/4"	0.45	6%	2	0	0	0	
SPREAD FOUNDATIONS AND MATS	5000 PSI	145 PCF (N.W.)	3/4"	0.45	6%	2	0	0	0	
MILD-STEEL REINFORCED BEAMS AND SLABS	5000 PSI	145 PCF (N.W.)	3/4"	N/A	N/A	0	0	0	0	
EXTERIOR SLABS ON GRADE	5000 PSI	145 PCF (N.W.)	3/4"	0.4	6%	3	0	0	2	
INTERIOR SLABS ON GRADE	5000 PSI	145 PCF (N.W.)	3/4"	N/A	N/A	0	0	0	0	
ALL OTHER CONCRETE	4000 PSI	145 PCF (N.W.)	3/4"	N/A	N/A	0	0	0	0	

1. ALL COMPRESSIVE STRENGTHS SHALL BE 28 DAY COMPRESSIVE STRENGTHS, UNLESS SPECIFIED OTHERWISE IN THE SPECIFICATIONS
2. CONTRACTOR MAY ELECT TO USE A SMALLER AGGREGATE SIZE, AS REQUIRED FOR PUMPABILITY OR PLACEMENT OF CONCRETE.
3. MAXIMUM WATER TO CEMENTITIOUS MATERIAL RATIO INCLUDES THE TOTAL CEMENTITIOUS MATERIAL CONTENT. WHERE SLABS ARE EXPOSED TO VEHICULAR TRAFFIC OR WEATHER , THE LESSER W/CM RATIO SHALL GOVERN.
4. AIR CONTENT SHALL BE WITHIN ± 1.5% OF SPECIFIED VALUE
   A. DO NOT USE AN AIR-ENTRAINING ADMIXTURE OR ALLOW TOTAL AIR CONTENT TO EXCEED 3% FOR CONCRETE USED IN TROWEL-FINISHED FLOORS.
   B. FOR f'_c EXCEEDING 5000 PSI, AIR CONTENT MAY BE REDUCED BY 1%
   C. AIR CONTENT SHOWN REPRESENTS THE AIR CONTENT REQUIRED FOR STRUCTURAL EXPOSURE CLASS ONLY. PROVIDE AIR ENTRAINMENT FOR FIRE RATING OR DENSITY AS REQUIRED.
5. SEE ACI 318 FOR ADDITIONAL REQUIREMENTS FOR EXPOSURE CLASS
6. SLUMP SHALL BE 4" AND WITHIN ± 1" OF SPECIFIED VALUE. SLUMP MAY BE INCREASED WHERE ADMIXTURES ARE USED, YET SHALL BE LIMITED TO 9". SLUMP SHALL BE TAKEN AT POINT OF PLACEMENT FOR RECORD OF MIX CONSISTENCY.
7. SEE ACI 318 FOR ADDITIONAL REQUIREMENTS FOR EXPOSURE CLASS

MINIMUM REINFORCEMENT COVER

CONCRETE EXPOSURE	MEMBER	REINFORCEMENT	MINIMUM COVER[1]
CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND[2]	ALL	ALL	3 INCHES
EXPOSED TO WEATHER, IN CONTACT WITH GROUND, AT TANKS	ALL	#6 AND GREATER	2 INCHES
		#5 BAR, W31 OR D31 WIRE, AND SMALLER	1-1/2 INCHES
NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	SLABS, JOISTS, AND WALLS	#14 & #18 BARS	1-1/2 INCHES
		#11 BAR AND SMALLER	3/4 INCH
	BEAMS, COLUMNS, PEDESTALS, AND TENSION TIES	PRIMARY REINFORCEMENT, STIRRUPS, TIES, SPIRALS, AND HOOPS	1-1/2 INCHES

NOTES:
1. MINIMUM COVER IS INDICATED IN THIS TABLE. SEE STRUCTURAL DETAILS FOR LOCATIONS WHERE GREATER COVER IS REQUIRED.
2. SEE TYPICAL DETAILS FOR COVER REQUIREMENTS AT SLABS ON GRADE.

CONCRETE:	**f'c = 5000 psi**
	NORMAL WEIGHT
REINFORCEMENT:	**GRADE 60**

REQUIRED TENSION LAP SPLICE LENGTHS

BAR SIZE	LAP CLASS	ALL UNCOATED TOP BARS C*>db	ALL UNCOATED TOP BARS OTHER	ALL UNCOATED OTHER BARS C*>db	ALL UNCOATED OTHER BARS OTHER	EPOXY** TOP BARS C*>db	EPOXY** TOP BARS OTHER	EPOXY** OTHER BARS C*>db	EPOXY** OTHER BARS OTHER	ALL EPOXY TOP BARS C*>db	ALL EPOXY TOP BARS OTHER	ALL EPOXY OTHER BARS C*>db	ALL EPOXY OTHER BARS OTHER
#3	A	1'-5"	2'-1"	1'-1"	1'-8"	1'-10"	2'-9"	1'-8"	2'-5"	1'-8"	2'-6"	1'-4"	1'-11"
	B	1'-10"	2'-9"	1'-5"	2'-1"	2'-5"	3'-7"	2'-1"	3'-2"	2'-2"	3'-3"	1'-8"	2'-6"
#4	A	1'-11"	2'-10"	1'-5"	2'-2"	2'-5"	3'-8"	2'-2"	3'-3"	2'-3"	3'-4"	1'-9"	2'-7"
	B	2'-5"	3'-8"	1'-11"	2'-10"	3'-2"	4'-9"	2'-10"	4'-2"	2'-11"	4'-4"	2'-3"	3'-4"
#5	A	2'-4"	3'-6"	1'-10"	2'-8"	3'-1"	4'-7"	2'-8"	4'-0"	2'-10"	4'-2"	2'-2"	3'-3"
	B	3'-0"	4'-6"	2'-4"	3'-6"	3'-11"	5'-11"	3'-6"	5'-3"	3'-8"	5'-5"	2'-10"	4'-2"
#6	A	2'-10"	4'-2"	2'-2"	3'-3"	3'-8"	5'-5"	3'-3"	4'-10"	3'-4"	5'-0"	2'-7"	3'-10"
	B	3'-8"	5'-5"	2'-10"	4'-2"	4'-9"	7'-1"	4'-2"	6'-3"	4'-4"	6'-6"	3'-4"	5'-0"
#8	A	4'-8"	6'-11"	3'-7"	5'-4"	6'-1"	9'-1"	5'-4"	8'-0"	5'-7"	8'-4"	4'-3"	6'-5"
	B	6'-0"	9'-0"	4'-8"	6'-11"	7'-10"	11'-9"	6'-11"	10'-5"	7'-3"	10'-10"	5'-7"	8'-4"
#9 - #11	NOT USED												

BAR SPLICE AND DEVELOPMENT NOTES:

1. TOP BARS ARE HORIZONTAL BARS WITH 12" OR MORE OF CONCRETE CAST IN THE MEMBER BELOW THE BAR.
2. EPOXY** - EPOXY-COATED BARS WITH COVER LESS THAN 3db OR CLEAR SPACING LESS THAN 6db
3. TENSION DEVELOPMENT LENGTH SHALL BE THE SAME AS THE CLASS A LAP SPLICE LENGTH AS INDICATED IN THE TABLE ABOVE
4. C* - INDICATES BARS MEETING OR EXCEEDING MINIMUM CONCRETE CLEAR COVER (Cc) AND BAR CLEAR SPACING (Cs).MINIMUM COVER AND SPACING REQUIREMENTS ARE AS FOLLOWS, WHERE (db) REPRESENTS THE DIAMETER OF THE LARGEST BAR IN THE SPLICE:
   A. FOR BARS IN BEAMS AND COLUMNS WHICH ARE ENCLOSED BY TRANSVERSE TIES OR STIRRUPS:
      - MIN CLEAR COVER (Cc) = 1 * db
      - MIN CLEAR SPACING (Cs) = 1 * db
   B. FOR ALL OTHER BARS:
      - MIN CLEAR COVER (Cc) = 1 * db
      - MIN CLEAR SPACING (Cs) = 2 * db

G. PRECAST CONCRETE

1. ALL PRECAST CONCRETE ELEMENTS SHALL CONFORM TO THE *BUILDING CODE* AS WELL AS ALL APPLICABLE AMERICAN CONCRETE INSTITUTE (ACI) AND PRESTRESSED CONCRETE INSTITUTE (PCI) SPECIFICATIONS AND REQUIREMENTS.
2. PRECAST CONCRETE PLANK ELEMENTS SHALL BE DESIGNED FOR THE FOLLOWING LOADS AT THE SPECIFIED SLAB THICKNESS AND SPANS:
   a. PRECAST CONCRETE SLAB SELF-WEIGHT.
   b. SUPERIMPOSED DEAD LOAD OF 20 PSF.
   c. 2" THICK NORMAL-WEIGHT CONCRETE TOPPING (25 PSF).
   d. LIVE LOADS INDICATED ON THE LOADING PLANS.
3. WHERE CONCRETE TOPPING IS INDICATED:
   a. USE CONCRETE WITH f'_c = 4000 PSI AND A MAXIMUM SLUMP OF 3 INCHES.
   b. REINFORCE TOPPING WITH 6x6-W1.4xW1.4 WWF, IN FLAT SHEETS, PLACED AT MID-DEPTH. MAXIMUM AGGREGATE SIZE SHALL BE 3/8" FOR WIRE-REINFORCED SLABS.
   c. PRIOR TO PLACING TOPPING, THE FOLLOWING PREPARATIONS TO THE SURFACE OF THE PRECAST CONCRETE SLABS MUST BE PERFORMED:
      1. SURFACE MUST BE THOROUGHLY CLEANED OF DEBRIS BY POWER-WASHING.
      2. SURFACE MUST BE SATURATED, BUT ALL STANDING WATER MUST BE REMOVED.
      3. A SAND AND CEMENT GROUT MUST BE SCRUBBED INTO THE SLAB SURFACE AHEAD OF PLACEMENT PER ACI REQUIREMENTS.
   d. TOPPING SLABS MUST BE PROPERLY CURED IN CONFORMANCE WITH ALL ACI AND PCI REQUIREMENTS. CONTRACTOR SHALL SUBMIT PROPOSED CURING METHOD FOR REVIEW.
   e. PROVIDE CONTROL JOINTS IN THE TOPPING SLAB AT A SPACING NOT TO EXCEED 25 FT. x 25 FT., UNLESS NOTED OTHERWISE, WITH CONTROL JOINTS LOCATED OVER ALL SUPPORTING BEAMS AND BEARING WALLS.
4. PROVIDE BEARING STRIPS ON ALL SIDES AND ENDS OF PRECAST CONCRETE ELEMENTS BEARING ON MASONRY OR CONCRETE WALLS.
5. PROVIDE WELD PLATES AT A SPACING NOT TO EXCEED 4'-0" O.C. (MINIMUM OF 2) WHERE PRECAST ELEMENTS BEAR ON STEEL.
6. ALL OPENINGS THROUGH PRECAST ELEMENTS MUST BE COORDINATED WITH AND DESIGNED BY THE PRECAST CONCRETE SLAB DESIGNER. ALL OPENINGS LARGER THAN 12"x12" (OR 12" IN DIAMETER) MUST FORMED OR PRECUT IN THE PRECAST ELEMENTS PRIOR TO SHIPMENT TO THE PROJECT SITE. ALL FIELD PENETRATIONS MADE THROUGH PRECAST ELEMENTS SHALL BE LOCATED TO AVOID THE PRESTRESSING STRANDS, AND SHALL BE APPROVED BY THE PRECAST DESIGNER PRIOR TO CREATING THE OPENING.
7. PRECAST CONCRETE SLAB BOX-OUTS FOR COLUMNS, BRACING, BEAMS, ETC. SHALL BE INFILLED WITH MINIMUM 4000 PSI NON-SHRINK GROUT.
8. PROVIDE WEEP HOLES AT PRECAST CONCRETE HOLLOW-CORE SLAB CORES, TYPICAL.
9. GROUT ALL PRECAST KEYS AND END JOINTS WITH MINIMUM 4000 PSI GROUT. PROVIDE REINFORCEMENT IN KEYS AS SPECIFIED ON THESE DRAWINGS.
10. SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS FOR REVIEW (SEE SECTION REGARDING *ENGINEERING REQUIREMENTS FOR CONTRACTOR*). THE PRECAST CONCRETE SLAB FABRICATOR SHALL PROVIDE PRECAST SLAB UNITS WITH FIRE RATINGS CONFORMING TO ARCHITECTURAL REQUIREMENTS. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR FIRE RESISTANCE RATING REQUIREMENTS.

H. STRUCTURAL MASONRY

1. ALL MASONRY WORK SHALL CONFORM TO THE *BUILDING CODE* AS WELL AS THE BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES (TMS 402/ACI 530/ASCE 5, AND TMS 602/ACI 530.1/ASCE 6) AND COMPANION COMMENTARIES AS WELL AS THE STANDARDS OF THE NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA). THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, ERECTION, GROUT PLACEMENT, CURING, AND WEATHER PROTECTION.
2. THIS SECTION APPLIES TO STRUCTURAL MASONRY CONSTRUCTION. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR OTHER MASONRY CONSTRUCTION TYPES.
3. ALL CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C-90 WITH THE STRENGTH OF UNITS AND MORTAR BEING SUCH THAT THE (f'_m) VALUES INDICATED ARE SATISFIED.
4. ALL MORTAR SHALL CONFORM TO ASTM C-270, TYPE (M) OR (S). ALL GROUT SHALL CONFORM TO ASTM C-476. MINIMUM COMPRESSIVE STRENGTH OF GROUT SHALL BE f'_c = 3000 PSI, U.N.O.
5. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE MASONRY SHALL BE f'm=1500 PSI, UNLESS NOTED OTHERWISE.
6. ALL REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING MATERIAL SPECIFICATIONS:
   a. REINFORCING BARS: ASTM A615 (F_y=60 KSI, MIN.)
   b. WIRE JOINT REINFORCEMENT: ASTM A951 (F_y=70 KSI, MIN.)
   c. REINFORCING BARS TO BE WELDED: ASTM A615 AND A706 (Fy=60 KSI, MIN.)
7. PROVIDE GALVANIZED "LADDER TYPE" STANDARD WEIGHT (9 GA.) HORIZONTAL JOINT REINFORCEMENT AT 16" O.C. VERTICALLY, UNLESS NOTED OTHERWISE.
8. MINIMUM CMU WALL REINFORCEMENT SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

MINIMUM CMU WALL REINFORCEMENT

TYPE	VERT. REINF.	HORIZ. REINF.	COMMENTS
8" WALLS	#5 @ 48" O.C.	(2) #5 @ 4'-0" O.C.	

COMPRESSIVE STRENGTH OF MASONRY BASED ON STRENGTH OF UNITS AND MORTAR TYPE

NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS, (PSI) — TYPE M OR S MORTAR	NET AREA COMPRESSIVE STRENGTH OF MASONRY, f'_m, (PSI)
1900	1900
2000	2000
3250	2500
4500	3000

NOTE: TYPE N AND TYPE O MORTAR NOT PERMITTED FOR USE IN STRUCTURAL MASONRY.

9. PROVIDE ADDITIONAL CONTINUOUS BOND BEAMS, REINFORCED AS SPECIFIED ABOVE, AT ALL FLOOR LEVELS, COURSES TO RECEIVE CAST-IN OR POST-INSTALLED ANCHORS, TOPS OF ALL CMU WALLS, AND AT MID-HEIGHT BETWEEN EACH FLOOR LEVEL. BOND BEAM VERTICAL SPACING SHALL NOT EXCEED 8'-0" O.C., U.N.O.
10. PROVIDE ADDITIONAL VERTICAL REINFORCEMENT AT JAMBS OF ALL WALL OPENINGS, ENDS OF WALL, AND STEEL BEAM OR ANGLE BEARING LOCATIONS. MINIMUM REINFORCEMENT SHALL BE (2) VERTICAL BARS TO MATCH WALL REINFORCEMENT, U.N.O. (SEE TYPICAL DETAILS).
11. PROVIDE STANDARD LAP SPLICES FOR VERTICAL AND HORIZONTAL REINFORCEMENT, WITH A SPLICE LENGTH NOT LESS THAN (48) BAR DIAMETERS. PROVIDE MECHANICAL COUPLERS, CAPABLE OF DEVELOPING 150% OF THE TENSILE STRENGTH OF THE REINFORCING BAR, FOR #7 AND LARGER VERTICAL REINFORCING BARS TO MINIMIZE CONGESTION OF REINFORCEMENT WHERE MINIMUM REINFORCEMENT COVER CANNOT BE MAINTAINED.
12. PROVIDE MATCHING DOWELS INTO FOUNDATION WALLS AT ALL VERTICAL REINFORCEMENT LOCATIONS - SEE TYPICAL DETAILS.
13. ALL BOND BEAMS, REINFORCED CELLS, AND CELLS BELOW GRADE SHALL BE GROUTED SOLID.
14. PROVIDE VERTICAL CONTROL JOINTS IN ALL CMU WALLS AT STEEL COLUMN LOCATIONS TYPICALLY, AND AT A SPACING NOT TO EXCEED 40'-0" O.C. COORDINATE ALL CONTROL JOINT LOCATIONS WITH THE ARCHITECT.
15. SEE STRUCTURAL DRAWINGS FOR MASONRY LINTEL SCHEDULE AND NOTES.
16. SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR REVIEW.

2nd PRECINCT 1740 · SHARON · 1765

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Date: 2024.04.02 12:53:04-04'00'

COMMONWEALTH OF MASSACHUSETTS
DAVID J. ODEH
STRUCTURAL
No. 42755
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	AS INDICATED
Date	APRIL 2024
Job No.	245-2103
Designed by	JDZ/KLM
Drawn by	JDZ/KLM
Checked by	DJO
Approved by	DJO

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

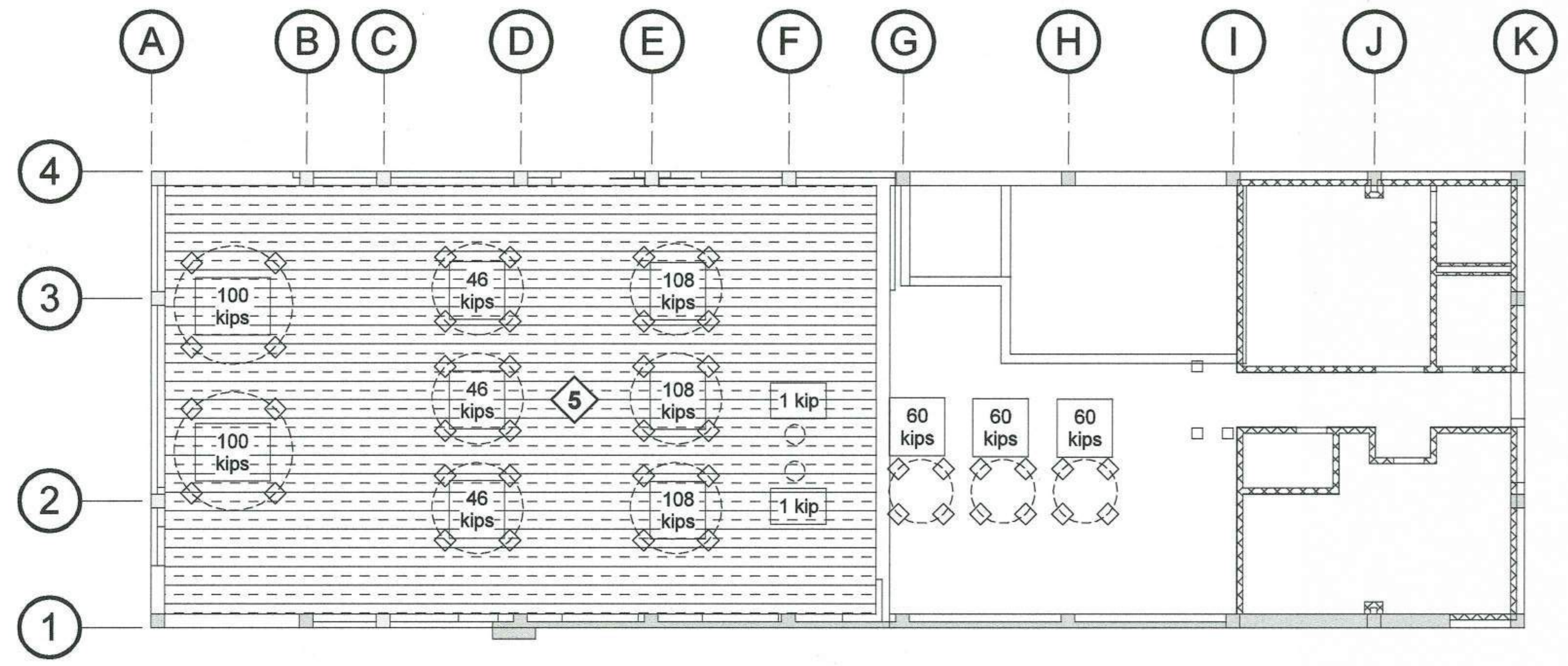
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

GENERAL NOTES II

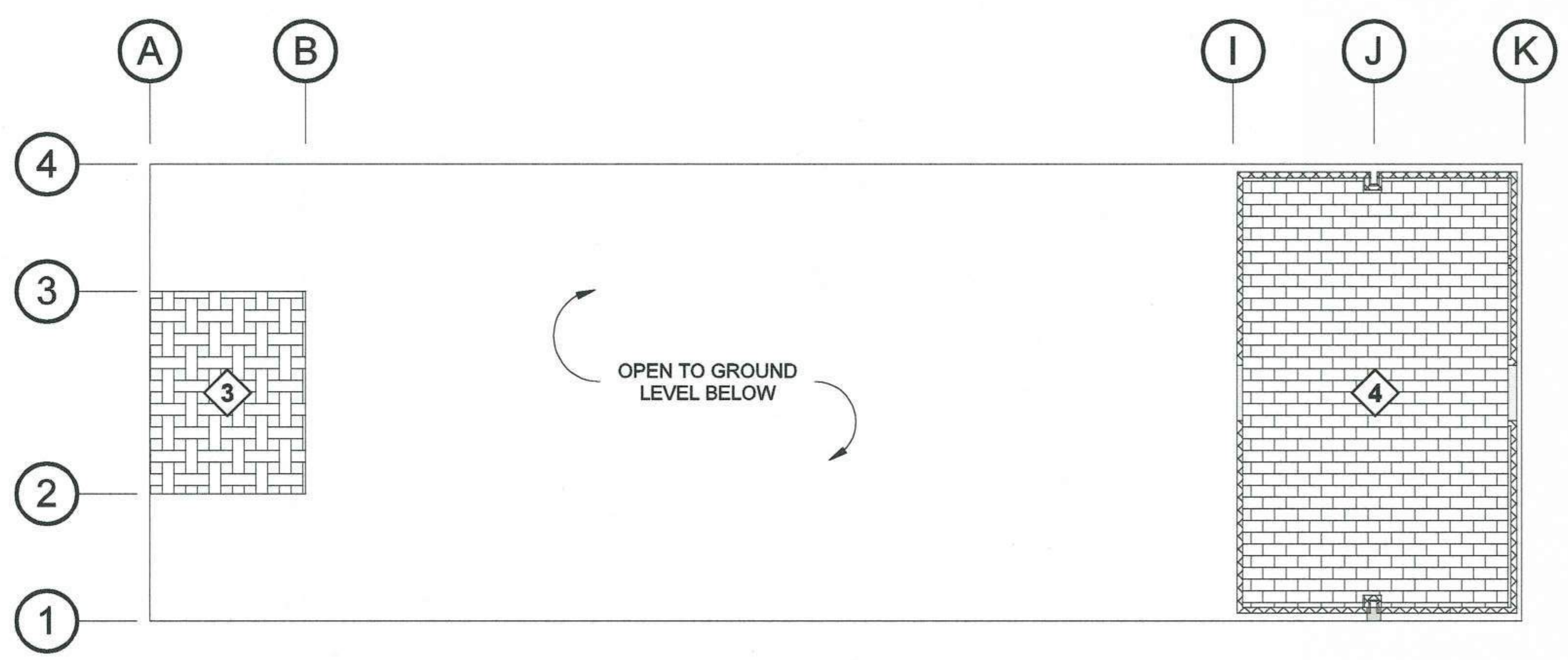
FOR CONSTRUCTION

Sheet No.

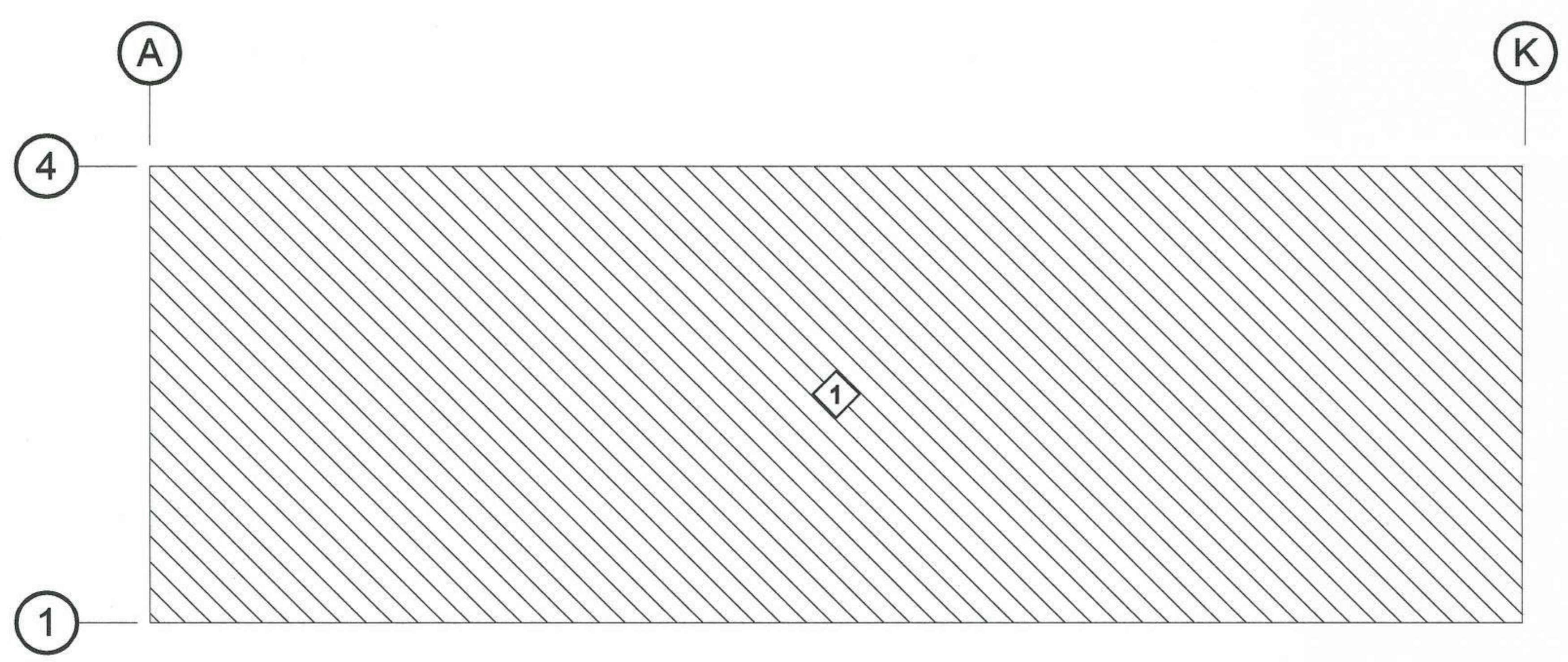
S-2



2 LOADING PLAN - GROUND LEVEL
SCALE: 1/16" = 1'-0"



3 LOADING PLAN - UPPER LEVEL
SCALE: 1/16" = 1'-0"



6 LOADING PLAN - ROOF
SCALE: 1/16" = 1'-0"

LOADING PLAN SCHEDULE

KEY	1	2	3	4	5
USE	TYPICAL ROOF	SNOW DRIFT	MECHANICAL PLATFORM	LIGHT STORAGE/ MECHANICAL	PROCESS AREA/EQUIPMENT
LL	-	-	125 PSF	250 PSF	250 PSF
SL	35 PSF	80 PSF	-	-	-
SDL	20 PSF	20 PSF	35 PSF	20 PSF	60 PSF
ADD'L	-	-	-	-	-

LOADING PLAN NOTES

1. ALL LOADS PROVIDED ON THE LOADING PLANS AND IN THE LOADING PLAN NOTES ARE UNFACTORED SERVICE LOADS AND ARE DEFINED AS FOLLOWS:
   A. LL - INDICATES FLOOR LIVE LOAD
   B. SL - INDICATES SNOW LOAD
   C. SDL - INDICATES SUPERIMPOSED DEAD LOAD. LOADS ARE APPLIED IN ADDITION TO FRAMING AND SLAB SELF-WEIGHTS.
2. ROOFTOP EQUIPMENT SIZES, WEIGHTS, AND LOCATIONS MUST BE FULLY COORDINATED WITH THE FINAL EQUIPMENT SELECTED.
3. SOLAR-READY ROOF: SEE DESIGN LOADS & CRITERIA FOR INFORMATION REGARDING SOLAR-READINESS AND ARRAY.
4. PRE-ENGINEERED METAL BUILDING DESIGN SHALL INCLUDE LOADS RELATED TO PIPING AND MECHANICAL EQUIPMENT SUSPENDED FROM METAL BUILDING STRUCTURE, WITH A MINIMUM COLLATERAL LOAD OF 20 PSF. COORDINATE WITH ARCHITECT, MEP/FP, AND PROCESS DESIGN DRAWINGS.

DESIGN LOADS AND CRITERIA

GENERAL	GENERAL DESIGN CRITERIA	BUILDING CODE		780 CMR (IBC 2015 WITH AMENDMENTS)	
		RISK CATEGORY		IV	*780 CMR, TABLE 1604.5*
		MUNICIPALITY		SHARON	*780 CMR, TABLE 1604.11*
LIVE LOADS *780 CMR, SECTION 1607*	GENERAL DESIGN CRITERIA	OCCUPANCY/USE		UNIFORM	CONCENTRATED
		FLOORS AND ROOFS		SEE LOADING PLANS	SEE LOADING PLANS[a]
		STAIRS AND EXITS		100 PSF	300 LBS.[b]
		HANDRAIL AND GUARDRAIL SYSTEMS[c]		50 LB./FT.	200 LBS.
		INTERMEDIATE RAILS AND PANEL FILLERS		-	50 LBS.[d]
	NOTES:	a. NOT APPLIED CONCURRENTLY WITH THE UNIFORM LIVE LOAD. b. THE CONCENTRATED LOAD ON STAIR TREADS SHALL BE APPLIED ON AN AREA OF 2 INCHES BY 2 INCHES. c. UNIFORM AND CONCENTRATED LIVE LOADS SHALL BE APPLIED IN ANY DIRECTION ALONG THE HANDRAIL OR TOP RAIL TO PRODUCE THE MAXIMUM LOAD EFFECT ON THE ELEMENT BEING CONSIDERED. d. APPLIED NORMAL TO THE SURFACE ON AN AREA NOT TO EXCEED 12"x12" (NOT CONCURRENT WITH TOP RAIL LOADS).			
ROOF LOADS *780 CMR, SECTION 1607*	GENERAL DESIGN CRITERIA	MINIMUM ROOF LIVE LOAD	L_r	20 PSF	*780 CMR, TABLE 1607.1*
		SOLAR-READY DEAD LOAD		15 PSF	*780 CMR, SECTION 1607.12.5*
	NOTES:	THE SOLAR-READY LOAD IS AN ADDITIONAL ROOF DEAD LOAD THAT IS THE ASSUMED DISTRIBUTED SELF-WEIGHT OF A BALLASTED SYSTEM, DESIGNED TO PREVENT ADDITIONAL SNOW DRIFT LOADING ON THE ROOF, TO BE INSTALLED AFTER PROJECT COMPLETION, . THE SOLAR ARRAY DESIGN ENGINEER SHALL BE RESPONSIBLE FOR ENSURING THAT THIS ASSUMED SYSTEM SELFWEIGHT AND SNOW LOADING IS NOT EXCEEDED, AND SHALL EVALUATE THE ROOF STRUCTURE FOR ALL LOADS APPLIED TO IT FROM THE SOLAR ARRAY SYSTEM.			
SNOW LOADS *780 CMR, SECTION 1608*	GENERAL DESIGN CRITERIA	GROUND SNOW LOAD	P_g	35 PSF	*780 CMR, TABLE 1604.11*
		SNOW EXPOSURE FACTOR	C_e	1.0	*ASCE 7-10, TABLE 7-2*
		THERMAL FACTOR	C_t	1.0	*ASCE 7-10, TABLE 7-3*
		SNOW LOAD IMPORTANCE FACTOR	I_s	1.2	*ASCE 7-10, TABLE 1.5-2*
		MINIMUM FLAT ROOF SNOW LOAD	$P_{f,min}$	35 PSF	*780 CMR, TABLE 1604.11*
		DESIGN FLAT ROOF SNOW LOAD[a]	P_f	35 PSF	*780 CMR, TABLE 1604.11*
	NOTES:	a. REGIONALLY INCREASED FOR DRIFTING EFFECTS. SEE LOADING PLANS.			
WIND LOADS *780 CMR, SECTION 1609*	GENERAL DESIGN CRITERIA	ULTIMATE DESIGN WIND SPEED	V_{ult}	142 MPH	*780 CMR, TABLE 1604.11*
		NOMINAL DESIGN WIND SPEED	V_{asd}	110 MPH	*780 CMR, TABLE 1609.3.1*
		WIND EXPOSURE CATEGORY		B	*780 CMR, SECTION 1609.4.3*
		TOPOGRAPHIC FACTOR	K_{zt}	1.0	*ASCE 7-10, FIGURE 26.8-1*
		GUST-EFFECT FACTOR	G	0.85	*ASCE 7-10, SECTION 26.9*
		ENCLOSURE CLASSIFICATION		ENCLOSED	*ASCE 7-10, SECTION 26.10*
		INTERNAL PRESSURE COEFFICIENT	GC_{pi}	±0.18	*ASCE 7-10, TABLE 26.11-1*
		DESIGN BUILDING DIMENSIONS: LENGTH/WIDTH	L/B	150 FT/50 FT	
		DESIGN BUILDING DIMENSIONS: MEAN ROOF HEIGHT	h	30 FT	
		DESIGN BUILDING DIMENSIONS: ROOF PITCH		1/4 IN/FT. (MIN.)	
		HURRICANE PRONE REGION		YES	*780 CMR, CHAPTER 2*
		WIND-BORNE DEBRIS REGION		NO	*780 CMR, CHAPTER 2*
	MAIN WIND FORCE-RESISTING SYSTEM (MWFRS)	ANALYSIS PROCEDURE		DIRECTIONAL PROCEDURE, PART 1	ASCE 7-10, CHAPTER 27
		WIND DIRECTIONALITY FACTOR	K_d	0.85	ASCE 7-10, TABLE 26.6-1
		VELOCITY PRESSURE COEFFICIENT	K_z	1.00	ASCE 7-10, TABLE 27.3-1
	COMPONENTS AND CLADDING *ASCE 7-10, CHAPTER 30*	COMPONENTS AND CLADDING CALCULATIONS ARE BY THE PRE-ENGINEERED METAL BUILDING DESIGNER.			
RAIN LOADS *780 CMR, SECTION 1611*	GENERAL DESIGN CRITERIA	BY PRE-ENGINEERED METAL BUILDING DESIGNER			
EARTHQUAKE LOADS *780 CMR, SECTION 1613*	GENERAL DESIGN CRITERIA	SEISMIC IMPORTANCE FACTOR	I_e	1.5	*ASCE 7-16, TABLE 1.5-2*
		MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETERS	S_s	0.191	*780 CMR, TABLE 1604.11*
			S_1	0.065	
		SITE CLASS		D	*GEOTECHNICAL REPORT*
		DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS	S_{ds}	0.204	*ASCE 7-10, SECTION 11.4.5*
			S_{d1}	0.104	
		SEISMIC DESIGN CATEGORY		C	*ASCE 7-10, SECTION 11.6*
	SEISMIC FORCE-RESISTING SYSTEM	BY PRE-ENGINEERED METAL BUILDING DESIGNER			
SERVICEABILITY CRITERIA *780 CMR, SECTION 1604.3*	FLOOR SYSTEMS (VERTICAL DEFLECTION)	LIVE LOADS			L/360 (1" MAX.)
		TOTAL LOADS			L/240
	ROOF SYSTEMS (VERTICAL DEFLECTION)	BY PRE-ENGINEERED METAL BUILDING DESIGNER			
	EXTERIOR WALL SYSTEMS (HORIZONTAL DEFLECTION)	BY PRE-ENGINEERED METAL BUILDING DESIGNER			
	BUILDING DRIFT (HORIZONTAL DEFLECTION)	BY PRE-ENGINEERED METAL BUILDING DESIGNER			

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www.odehengineers.com

COMMONWEALTH OF MASSACHUSETTS DAVID J. ODEH STRUCTURAL No. 42755 REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	AS INDICATED
Date	APRIL 2024
Job No.	245-2103
Designed by	JDZ/KLM
Drawn by	JDZ/KLM
Checked by	DJO
Approved by	DJO

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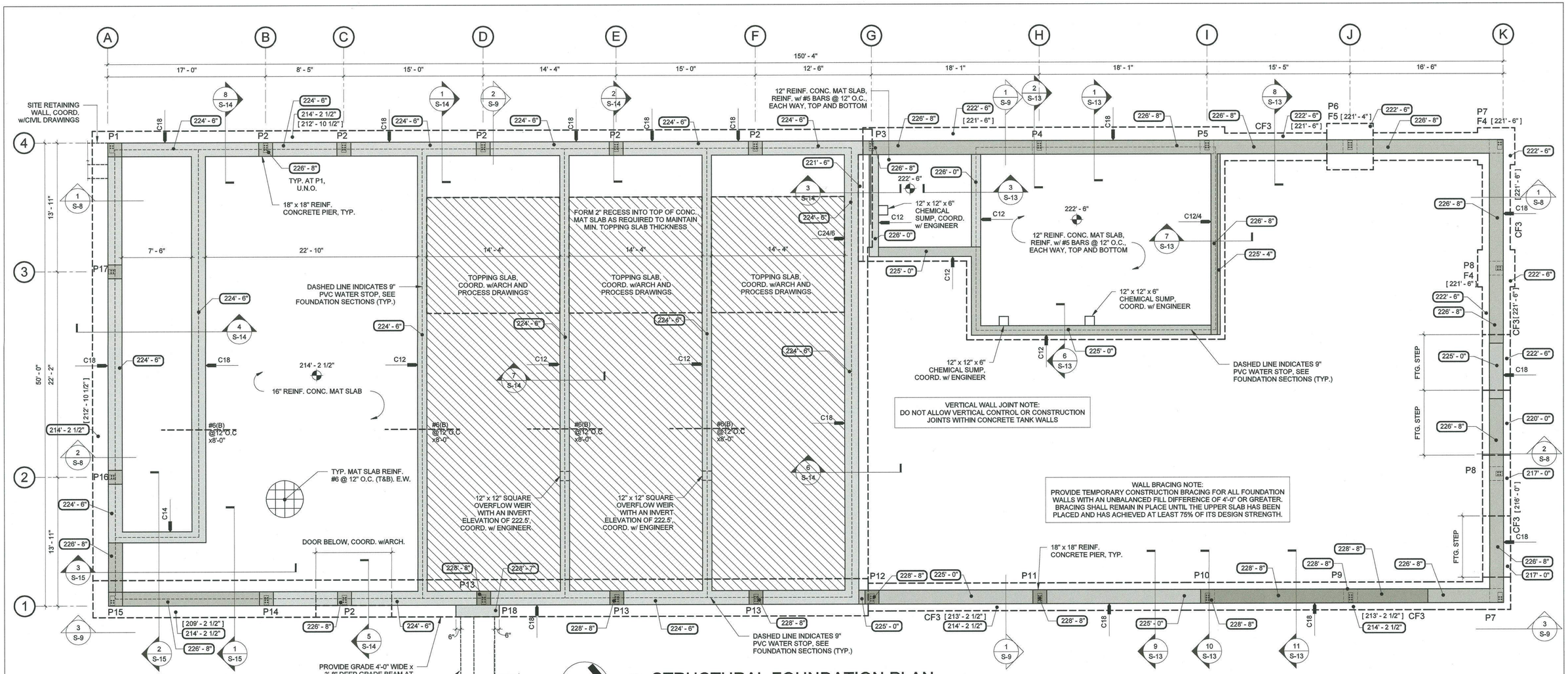
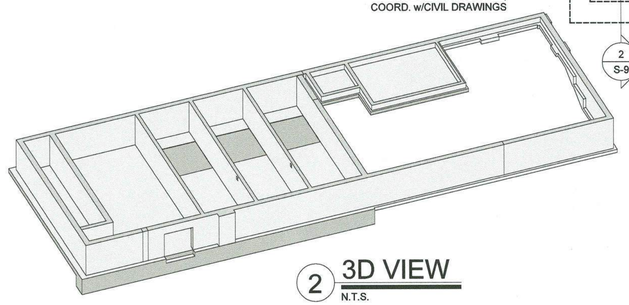
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

LOADING AND DESIGN CRITERIA

FOR CONSTRUCTION

Sheet No.
S-3





1 STRUCTURAL FOUNDATION PLAN

SCALE: 3/16" = 1'-0"

NOTES:

1. COORDINATE ALL WORK (INCLUDING FLOOR ELEVATIONS, DIMENSIONS, FINISH DETAILS, PENETRATIONS, ETC.) WITH THE ARCHITECTURAL DRAWINGS.
2. (##'-##") - INDICATES TOP OF NEW CONCRETE FOUNDATION WALL.
3. [##'-##"] - INDICATES BOTTOM OF NEW CONCRETE FOOTING ELEVATION
4. BOTTOM OF ALL NEW EXTERIOR FOOTINGS SHALL BE LOCATED A MINIMUM OF 4'-0" BELOW FINISH GRADE.
5. ##'-##" - INDICATES FLOOR ELEVATION (TYP., U.N.O.).
6. (#) - INDICATES NUMBER OF ADDITIONAL #6 VERT. CMU REINFORCEMENT IN GROUT FILLED CORES (2 PER CORE). PROVIDE MATCHING MASONRY DOWELS IN FOUNDATION WALLS (TYP., U.N.O.).
7. F# - INDICATES NEW CONCRETE FOOTING TYPE. SEE "FOOTING SCHEDULE" ON THIS SHEET.
8. P# - INDICATES NEW CONCRETE PIER TYPE. SEE S-12
9. CW# - INDICATES NEW WALL MARK. SEE "WALL SCHEDULE" ON THIS SHEET.
10. ALL REINFORCEMENT LOCATED IN LOWER TANK AREAS TO BE EPOXY COATED.
11. COORDINATE TROLLEY HOIST BEAM DIMENSIONS WITH HOIST MANUFACTURER'S REQUIREMENTS.

2 3D VIEW

N.T.S.

NOTE REGARDING SLAB AND WALL PENETRATIONS

TO AVOID DAMAGE TO SLAB REINFORCEMENT, ALL PENETRATIONS THROUGH THE SLABS AND WALLS SHOULD BE ACHIEVED THROUGH THE USE OF CAST-IN-PLACE SLEEVES WHEREVER POSSIBLE. IF PENETRATIONS MUST BE MADE INTO HARDENED CONCRETE, THE SLABS AND/OR WALLS SHALL BE SCANNED TO LOCATE REINFORCING STEEL PRIOR TO DRILLING OR CORING.

RECTANGULAR OPENINGS MUST BE FORMED AND CAST INTO THE SLABS TO AVOID OVERCUTTING AT CORNERS.

FOOTING SCHEDULE

MARK	SIZE W (WIDTH)	SIZE L (LENGTH)	SIZE D (DEPTH)	REINFORCEMENT BOTTOM BARS (LONG DIR.)	REINFORCEMENT BOTTOM BARS (SHORT DIR.)
CF3	3' - 0"	·CONT.·	1' - 0"	4 - #5	#5 @ 12" O.C.
F4	4' - 0"	4' - 0"	1' - 0"	5 - #5	5 - #5
F5	5' - 0"	5' - 0"	1' - 2"	6 - #5	6 - #5

WALL SCHEDULE

MARK	DESCRIPTION	REINFORCEMENT (U.N.O.)
C8C	8" CONCRETE CURB	SEE TYPICAL DETAILS
C10C	10" CONCRETE CURB	SEE TYPICAL DETAILS
C12	12" CONCRETE WALL	#6 BARS @ 12" O.C., EA. FACE, EA. WAY
C12/4	12" CONCRETE WALL w/4" SHELF	#6 BARS @ 12" O.C., EA. FACE, EA. WAY
C12C	12" CONCRETE CURB	SEE TYPICAL DETAILS
C14	14" CONCRETE WALL	#6 BARS @ 12" O.C., EA. FACE, EA. WAY
C18	18" CONCRETE WALL	#6 BARS @ 9" O.C., EA. FACE, EA. WAY
C24/6	24" CONCRETE WALL w/6" SHELF	#6 BARS @ 6" O.C., EA. FACE, EA. WAY
M4	4" CMU WALL	SEE GENERAL NOTES
M8	8" CMU WALL	SEE GENERAL NOTES
M8B	8" CMU BEARING WALL	SEE GENERAL NOTES

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Date: 2024.04.02 12:53:28-04'00'

COMMONWEALTH OF MASSACHUSETTS — DAVID J. ODEH — STRUCTURAL — No. 42755 — REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	AS INDICATED
Date	APRIL 2024
Job No.	245-2103
Designed by	JDZ/KLM
Drawn by	JDZ/KLM
Checked by	DJO
Approved by	DJO

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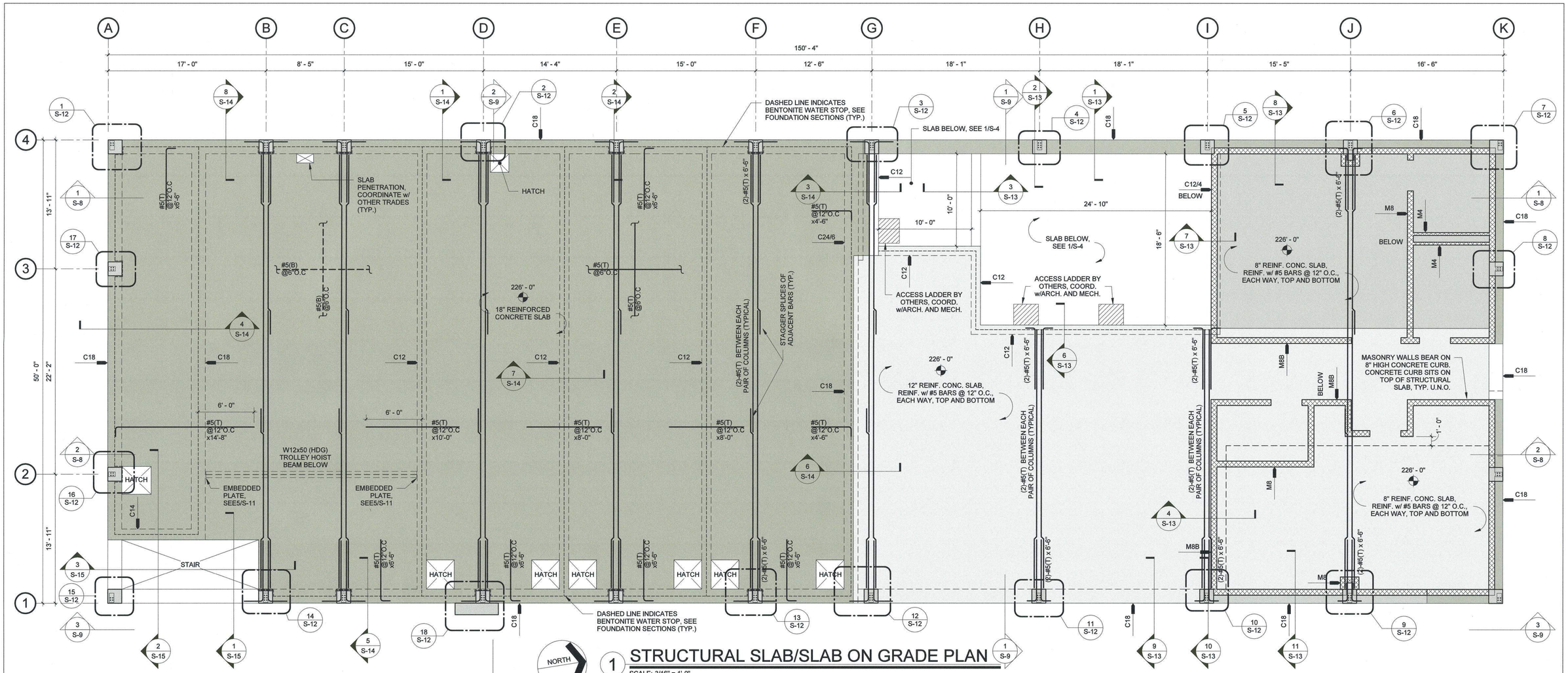
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

STRUCTURAL FOUNDATION PLAN

FOR CONSTRUCTION

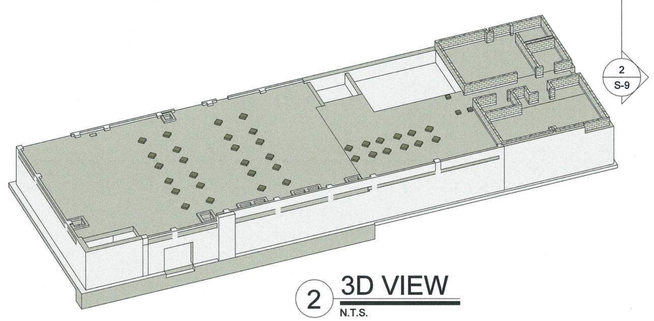
Sheet No.

S-4



1 STRUCTURAL SLAB/SLAB ON GRADE PLAN

SCALE: 3/16" = 1'-0"



2 3D VIEW

N.T.S.

NOTES:

1. COORDINATE ALL WORK (INCLUDING FLOOR ELEVATIONS, DIMENSIONS, FINISH DETAILS, PENETRATIONS, ETC.) WITH THE ARCHITECTURAL DRAWINGS.
2. (##'-##") - INDICATES TOP OF NEW CONCRETE FOUNDATION WALL.
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9. CW# - INDICATES NEW WALL MARK. SEE "WALL SCHEDULE" ON THIS SHEET.
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11. COORDINATE TROLLEY HOIST BEAM DIMENSIONS WITH HOIST MANUFACTURER'S REQUIREMENTS.

NOTE REGARDING SLAB AND WALL PENETRATIONS

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WALL SCHEDULE

MARK	DESCRIPTION	REINFORCEMENT (U.N.O.)
C8C	8" CONCRETE CURB	SEE TYPICAL DETAILS
C10C	10" CONCRETE CURB	SEE TYPICAL DETAILS
C12	12" CONCRETE WALL	#6 BARS @ 12" O.C., EA. FACE, EA. WAY
C12/4	12" CONCRETE WALL w/4" SHELF	#6 BARS @ 12" O.C., EA. FACE, EA. WAY
C12C	12" CONCRETE CURB	SEE TYPICAL DETAILS
C14	14" CONCRETE WALL	#6 BARS @ 12" O.C., EA. FACE, EA. WAY
C18	18" CONCRETE WALL	#6 BARS @ 9" O.C., EA. FACE, EA. WAY
C24/6	24" CONCRETE WALL w/6" SHELF	#6 BARS @ 6" O.C., EA. FACE, EA. WAY
M4	4" CMU WALL	SEE GENERAL NOTES
M8	8" CMU WALL	SEE GENERAL NOTES
M8B	8" CMU BEARING WALL	SEE GENERAL NOTES

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Date: 2024.04.02 12:53:40-04'00'

COMMONWEALTH OF MASSACHUSETTS
DAVID J. ODEH
STRUCTURAL
No. 42755
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	AS INDICATED
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Checked by	DJO
Approved by	DJO

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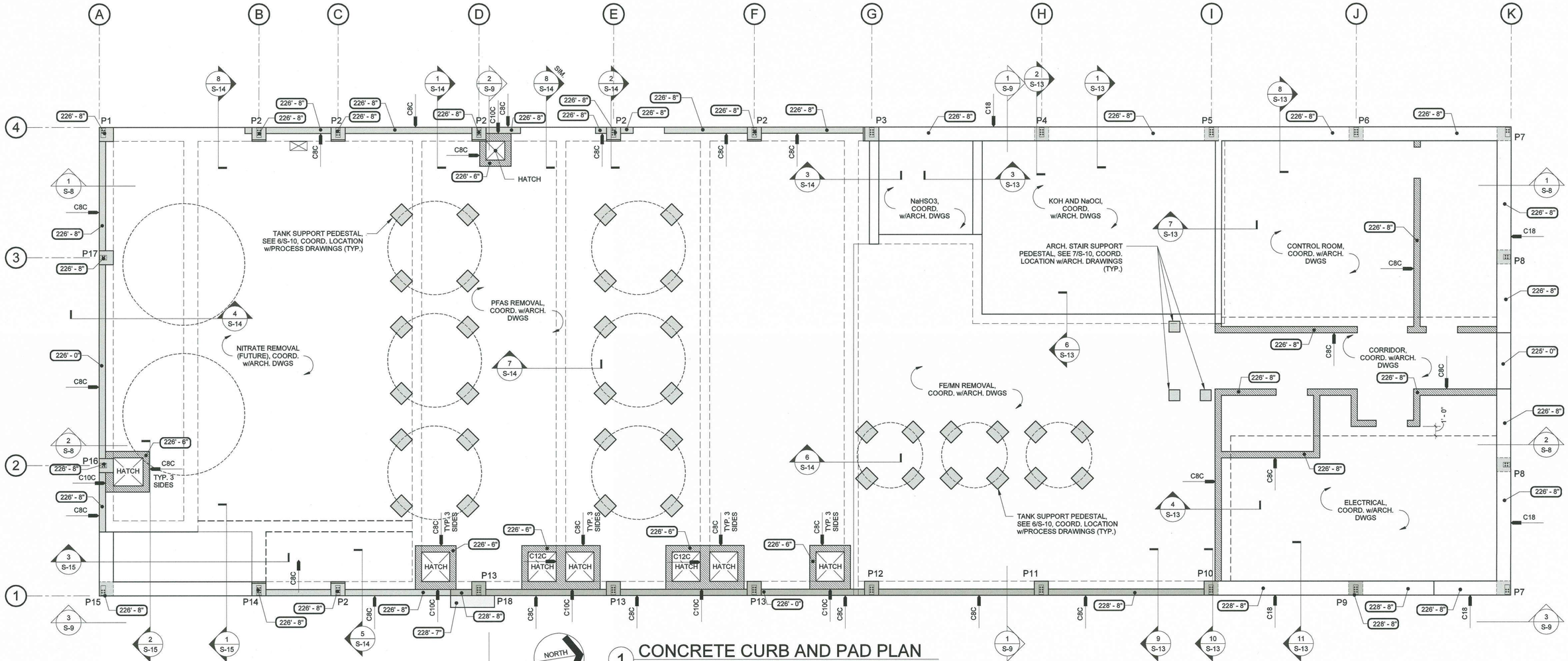
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

STRUCTURAL GROUND FLOOR SLAB PLAN

FOR CONSTRUCTION

Sheet No.

S-5



1 CONCRETE CURB AND PAD PLAN

SCALE: 3/16" = 1'-0"

NOTES:

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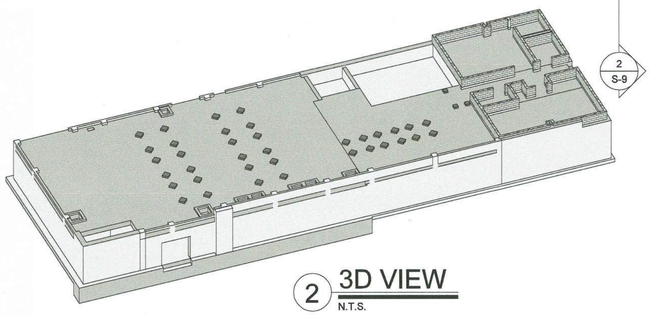

2 3D VIEW

N.T.S.

WALL SCHEDULE

MARK	DESCRIPTION	REINFORCEMENT (U.N.O.)
C8C	8" CONCRETE CURB	SEE TYPICAL DETAILS
C10C	10" CONCRETE CURB	SEE TYPICAL DETAILS
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M4	4" CMU WALL	SEE GENERAL NOTES
M8	8" CMU WALL	SEE GENERAL NOTES
M8B	8" CMU BEARING WALL	SEE GENERAL NOTES

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Digitally signed by David J.Odeh@pwsc.com
Date: 2024.04.02 12:53:51-04'00'

COMMONWEALTH OF MASSACHUSETTS
DAVID J. ODEH
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No. 42755
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

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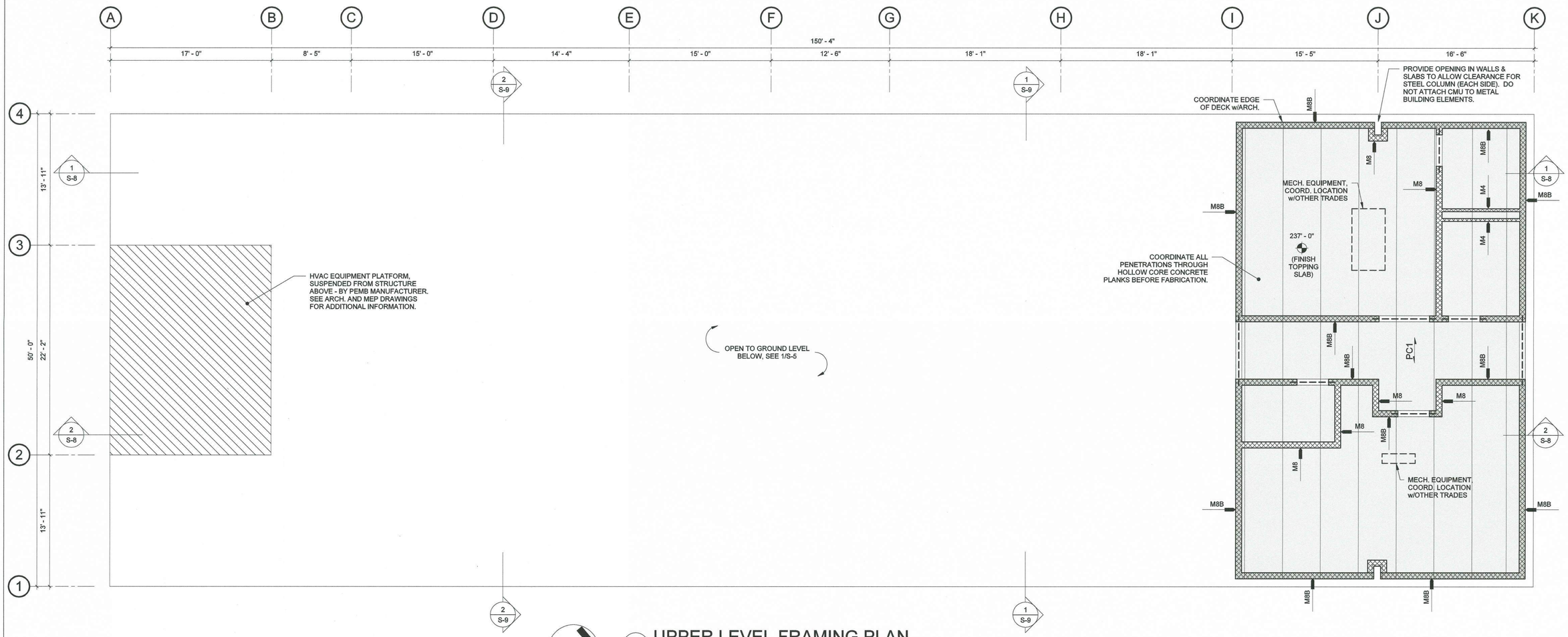
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

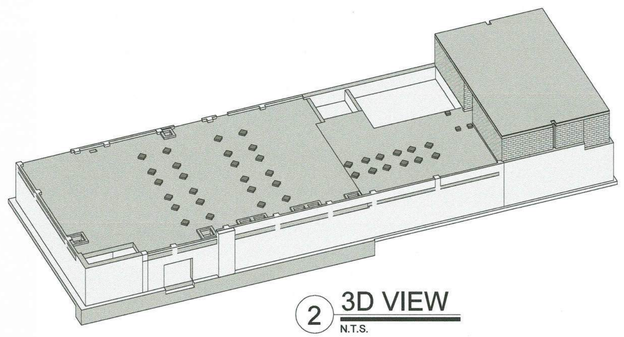
CONCRETE CURB AND PAD PLAN

FOR CONSTRUCTION

Sheet No.

S-6





2 3D VIEW
N.T.S.

NORTH

1 UPPER LEVEL FRAMING PLAN
SCALE: 3/16" = 1'-0"

NOTES:

1. COORDINATE ALL WORK (INCLUDING FLOOR ELEVATIONS, DIMENSIONS, FINISH DETAILS, PENETRATIONS, SEQUENCING, ETC.) WITH THE ARCHITECTURAL DRAWINGS.
2. ##'-##" - INDICATES T.O. FLOOR ELEVATION (TYP., U.N.O.).
3. PC1 - INDICATES 10" PRECAST CONCRETE PLANK w/ 2" TOPPING SLAB. SEE TYPICAL DETAILS.
4. W# - INDICATES NEW WALL MARK. SEE "WALL SCHEDULE" ON THIS SHEET.
5. - INDICATES CMU LINTEL LOCATION, SEE LINTEL SCHEDULE.
   - INDICATES CMU BEARING WALL, SEE PLANS.
   - INDICATES CMU NON-BEARING WALL, SEE PLANS.
6. (#) - INDICATES NUMBER OF ADDITIONAL #6 VERT. CMU REINFORCEMENT IN GROUT FILLED CORES (2 PER CORE). PROVIDE MATCHING MASONRY DOWELS IN FOUNDATION WALLS (TYP., U.N.O.).
7. DO NOT TIE CMU WALLS TO METAL BUILDING STRUCTURE.
8. RECTANGULAR OPENINGS SHALL BE CAST INTO PLANK TO AVOID OVERCUTTING. CONTRACTOR PLEASE COORDINATE BETWEEN TRADES.
9. SEE 6/S-16 FOR INFORMATION RELATED TO FORMING AND CORING OPENINGS INTO CONCRETE PLANKS.

WALL SCHEDULE

MARK	DESCRIPTION	REINFORCEMENT (U.N.O.)
C8C	8" CONCRETE CURB	SEE TYPICAL DETAILS
C10C	10" CONCRETE CURB	SEE TYPICAL DETAILS
C12	12" CONCRETE WALL	#6 BARS @ 12" O.C., EA. FACE, EA. WAY
C12/4	12" CONCRETE WALL w/4" SHELF	#6 BARS @ 12" O.C., EA. FACE, EA. WAY
C12C	12" CONCRETE CURB	SEE TYPICAL DETAILS
C14	14" CONCRETE WALL	#6 BARS @ 12" O.C., EA. FACE, EA. WAY
C18	18" CONCRETE WALL	#6 BARS @ 9" O.C., EA. FACE, EA. WAY
C24/6	24" CONCRETE WALL w/6" SHELF	#6 BARS @ 6" O.C., EA. FACE, EA. WAY
M4	4" CMU WALL	SEE GENERAL NOTES
M8	8" CMU WALL	SEE GENERAL NOTES
M8B	8" CMU BEARING WALL	SEE GENERAL NOTES

ENVIRONMENTAL PARTNERS
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odeh engineers structural engineers
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Fax: 401.724.1981
www.odehengineers.com

Digitally signed by David J. Odeh@swsp.com
Date: 2024.04.02 12:54:02-04'00'

DAVID J. ODEH STRUCTURAL No. 42755 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	AS INDICATED
Date	APRIL 2024
Job No.	245-2103
Designed by	JDZ/KLM
Drawn by	JDZ/KLM
Checked by	DJO
Approved by	DJO

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

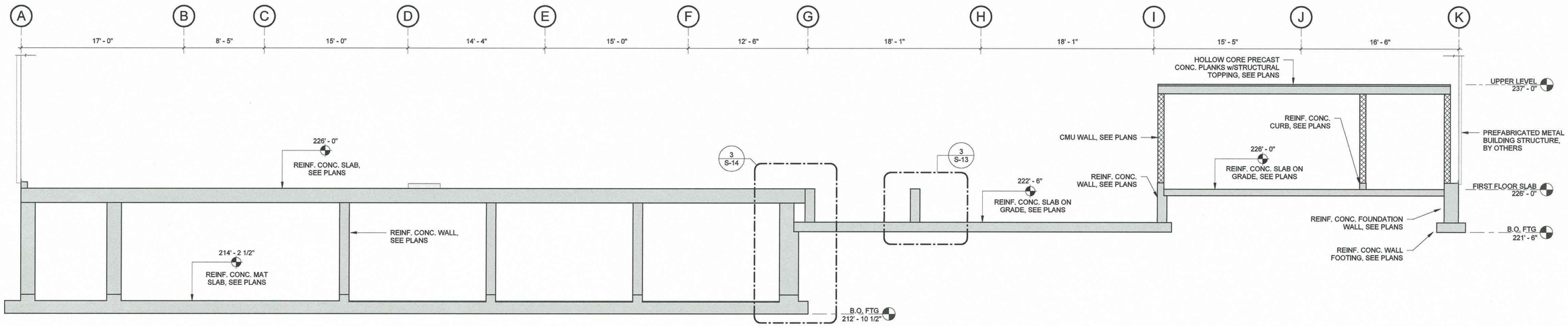
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

STRUCTURAL UPPER LEVEL FRAMING PLAN

FOR CONSTRUCTION

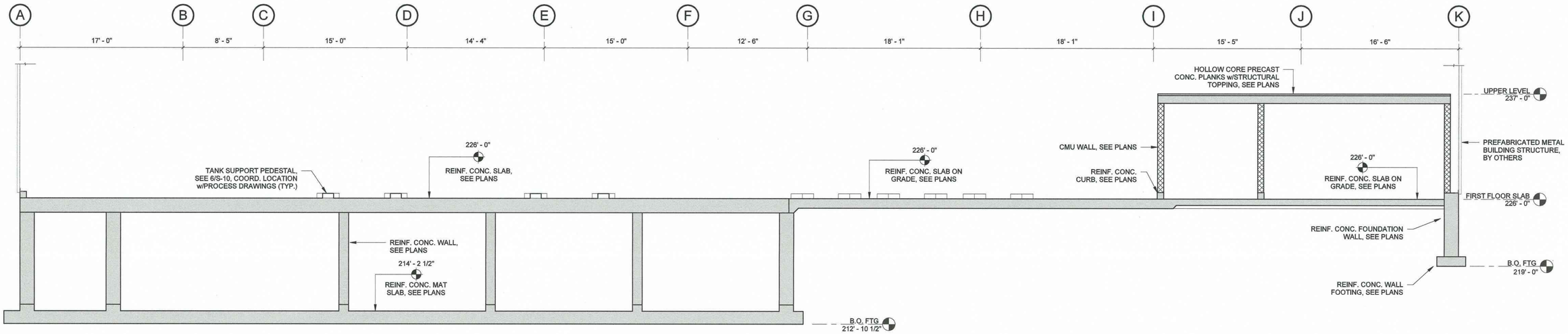
Sheet No.

S-7



1 SECTION

SCALE: 3/16" = 1'-0"



2 SECTION

SCALE: 3/16" = 1'-0"

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COMMONWEALTH OF MASSACHUSETTS
DAVID J. ODEH
STRUCTURAL
No. 42755
REGISTERED PROFESSIONAL ENGINEER

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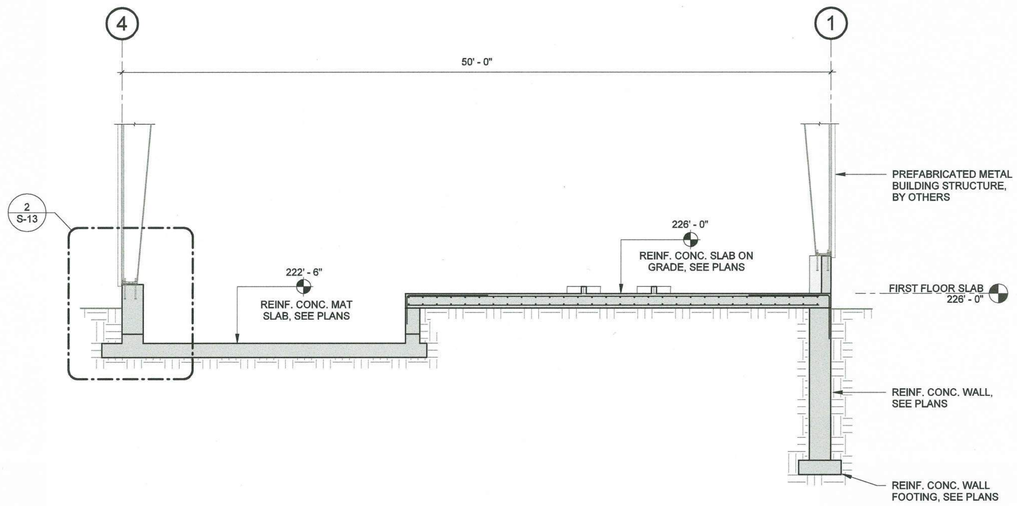
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

STRUCTURAL BUILDING SECTIONS I

FOR CONSTRUCTION

Sheet No.

S-8



1 SECTION
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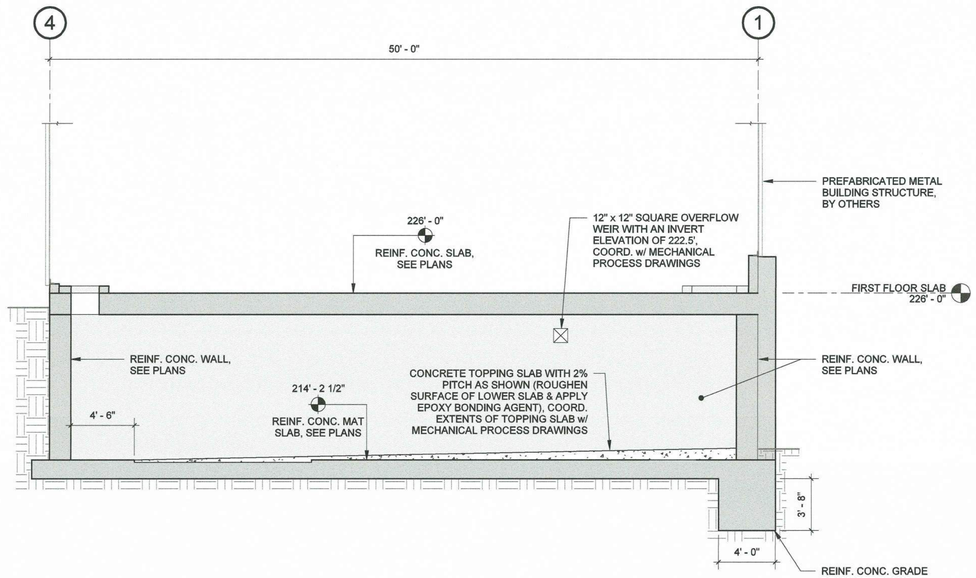

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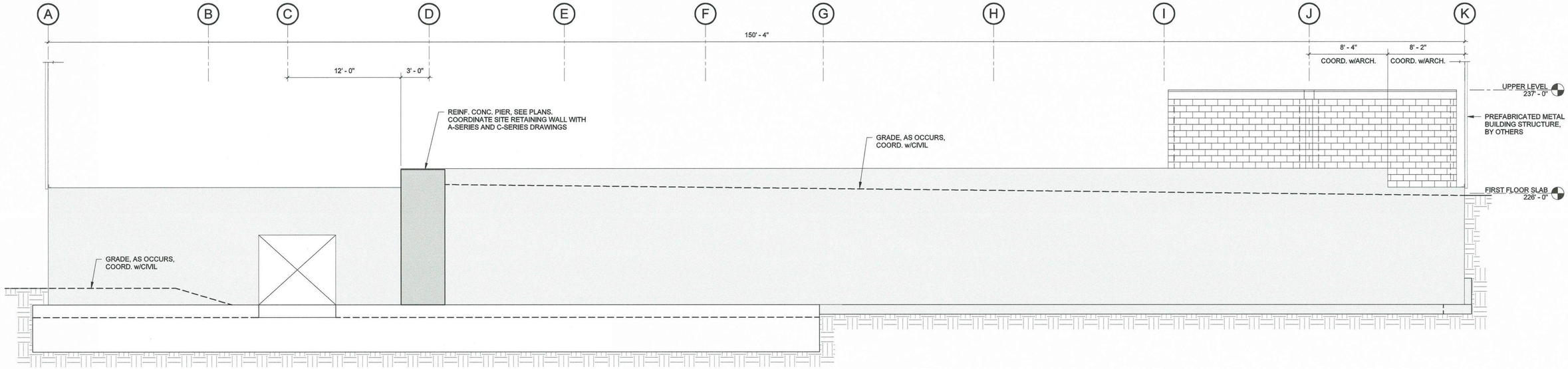

3 SECTION
SCALE: 3/16" = 1'-0"

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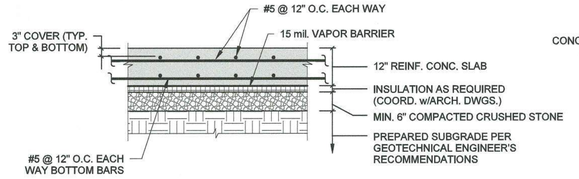
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

STRUCTURAL BUILDING SECTIONS II

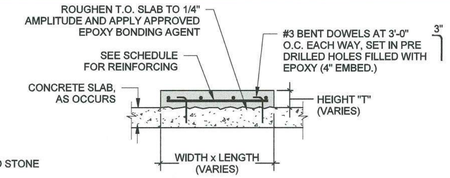
FOR CONSTRUCTION

Sheet No.

S-9



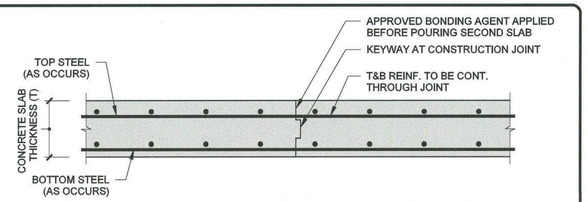
TYPICAL 12" REINFORCED CONCRETE STRUCTURAL SLAB ON GRADE DETAIL



"T"	REINFORCEMENT (AT PAD MID-DEPTH)
< 4"	6x6-W2.9xW2.9 W.W.F.
4"-12"	#5 @ 18" E.W.
> 12"	#5 @ 12" E.W.

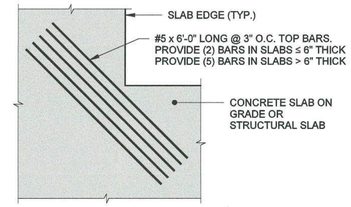
TYPICAL CONCRETE EQUIPMENT PAD DETAIL

1 TYPICAL CONCRETE SLAB DETAILS
NO SCALE

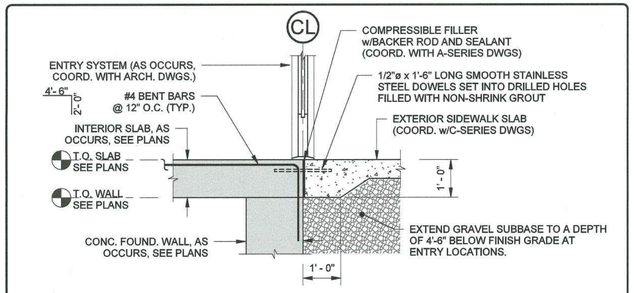


2 TYP. CONSTRUCTION JOINT DETAIL AT STRUCTURAL CONCRETE SLABS
NO SCALE

NOTES:
1. THIS DETAILS SHALL BE USED AT ALL LOCATIONS WHERE CONSTRUCTION JOINTS ARE PLACED AT STRUCTURAL SLABS.
2. CONTRACTOR TO SUBMIT PROPOSED LOCATION OF CONSTRUCTION JOINTS FOR APPROVAL BY A/E PRIOR TO CONSTRUCTION.

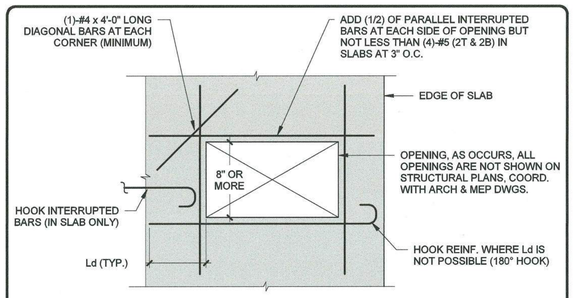


3 TYPICAL ADD'L REINFORCEMENT AT SLAB RE-ENTRANT CORNERS
NO SCALE

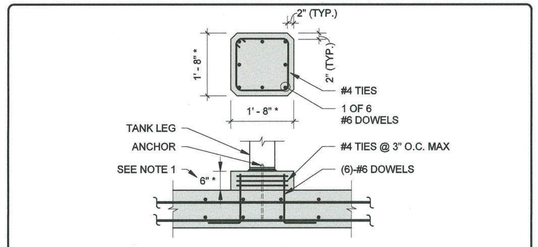


4 TYPICAL SLAB HAUNCH AT EXTERIOR DOORS
NO SCALE

NOTES:
1. COORDINATE DOOR LOCATIONS & DIMENSIONS WITH THE A-SERIES DRAWINGS.
2. COORDINATE SIDEWALK AND SUBBASE DETAILS WITH THE C-SERIES DRAWINGS.

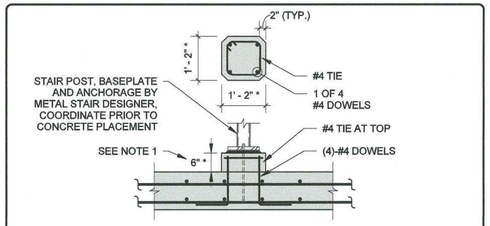


5 TYP. REINF. AT OPENINGS IN CONC. STRUCTURAL SLABS
NO SCALE



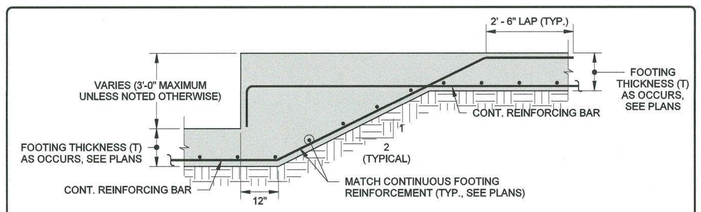
FILTER TANK PEDESTAL NOTES:
1. (*) ASTERISKS INDICATES FILTER TANK PEDESTAL DIMENSIONS TO BE COORDINATED AND VERIFIED WITH MECHANICAL DRAWINGS AND FILTER MANUFACTURER'S SUPPORT AND ANCHORING REQUIREMENTS

6 FILTER TANK PEDESTAL DETAIL
NO SCALE

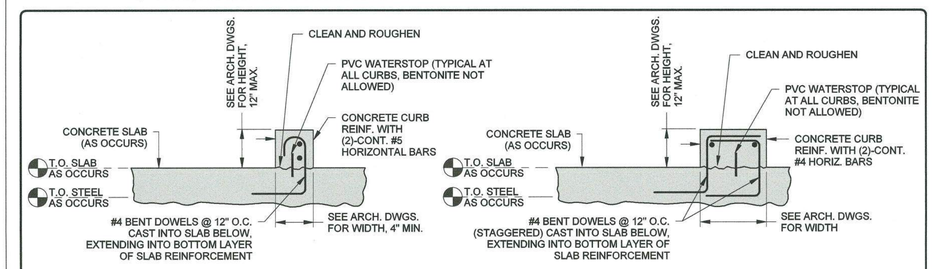


STAIR POST PEDESTAL NOTES:
1. (*) ASTERISKS INDICATES STAIR POST PEDESTAL DIMENSIONS TO BE COORDINATED AND VERIFIED WITH ARCHITECTURAL DRAWINGS AND STAIR MANUFACTURER'S SUPPORT AND ANCHORING REQUIREMENTS

7 STAIR POST PEDESTAL DETAIL
NO SCALE

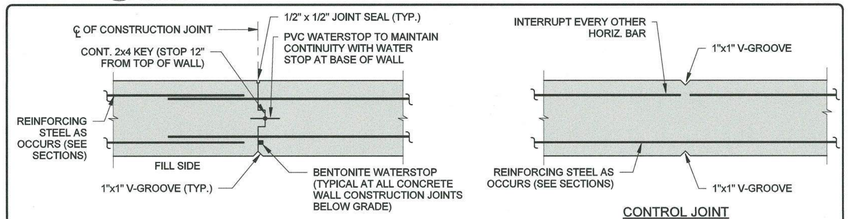


9 TYPICAL STEPPED FOOTING DETAIL
NO SCALE



THIS DETAIL SHALL BE USED AT LOCATION WHERE CONCRETE CURBS ARE REQUIRED PER ARCHITECTURAL DRAWINGS. CURBS ARE NOT SHOWN ON STRUCTURAL PLANS.

8 TYPICAL CONCRETE CURB DETAILS
NO SCALE



CONSTRUCTION JOINT

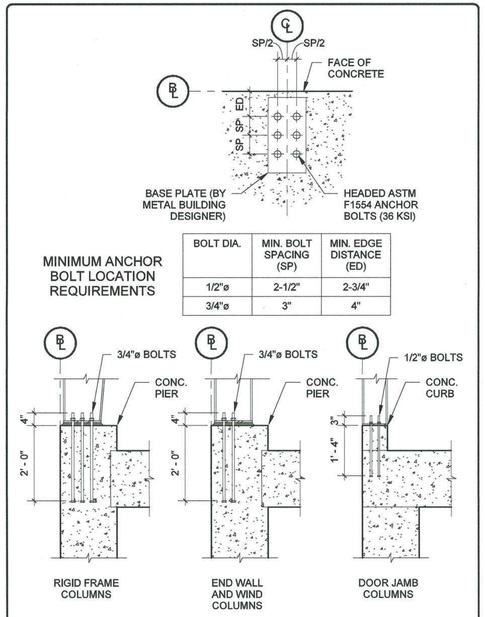
NOTE: MAXIMUM PLACEMENT BETWEEN WALL CONST. JOINTS (FOR CONT. WALLS) SHALL BE (60) FEET. CONSTRUCTION JOINTS SHALL NOT BE PROVIDED AT LIQUID CONTAINMENT, COORDINATE WITH A-SERIES AND M-SERIES DRAWINGS.

CONTROL JOINT

NOTE: PROVIDE CONTROL JOINTS @ 20'-0" O.C. MAX. @ ALL CONC. WALLS EXPOSED 12" OR GREATER ABOVE FINISH GRADE. CONTROL JOINTS SHALL NOT BE PROVIDED AT LIQUID CONTAINMENT, COORDINATE WITH A-SERIES AND M-SERIES DRAWINGS.

10 TYPICAL CONCRETE WALL JOINT DETAILS
NO SCALE

NOTES:
1. THESE DETAILS ARE PROVIDED FOR THE CASES AS STATED ABOVE AND, ADDITIONALLY, FOR CASES WHERE THE CONTRACTOR REQUESTS THESE DETAILS BE USED FOR EASE OF CONSTRUCTION.



MINIMUM ANCHOR BOLT LOCATION REQUIREMENTS

BOLT DIA.	MIN. BOLT SPACING (SP)	MIN. EDGE DISTANCE (ED)
1/2"ø	2-1/2"	2-3/4"
3/4"ø	3"	4"

11 PEMB ANCHOR BOLT DETAILS
NO SCALE

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COMMONWEALTH OF MASSACHUSETTS — DAVID J. ODEH — STRUCTURAL — No. 42755 — REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

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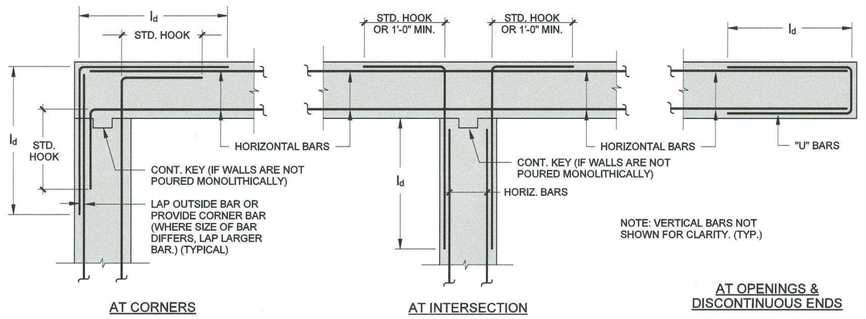
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

STRUCTURAL TYPICAL FOUNDATION DETAILS I

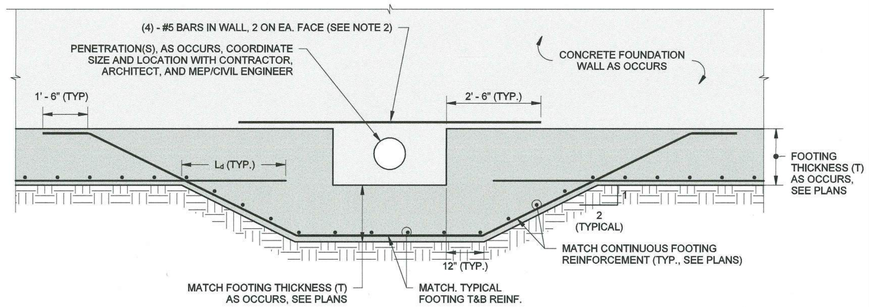
FOR CONSTRUCTION

Sheet No.
S-10

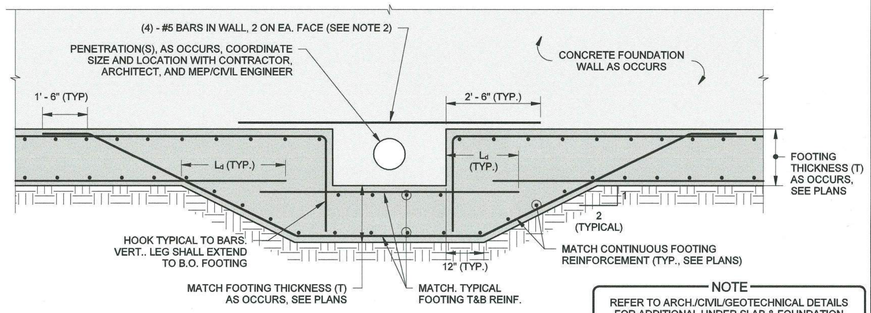


1 TYPICAL PLAN DETAILS AT WALL HORIZ. REINFORCING

NO SCALE



DETAIL AT FOOTING WITH BOTTOM REINFORCEMENT ONLY



DETAIL AT FOOTING WITH TOP & BOTTOM REINFORCEMENT

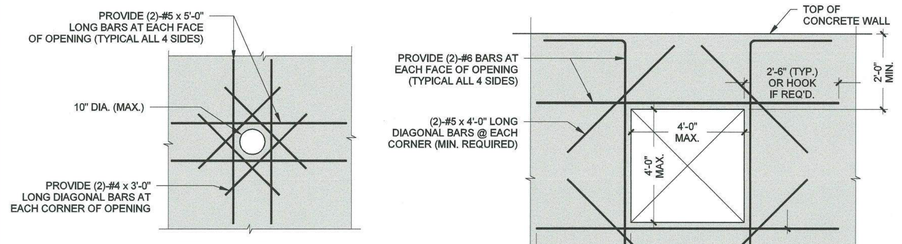
NOTE

REFER TO ARCH./CIVIL/GEOTECHNICAL DETAILS FOR ADDITIONAL UNDER SLAB & FOUNDATION REQUIREMENTS NOT SHOWN ON THESE DRAWINGS. REQUIREMENTS MAY INCLUDE BUT ARE NOT LIMITED TO: PERIMETER DRAINS, INSULATION, WEEP HOLES, & SITE PREPARATION. REPORT ANY DISCREPANCIES BETWEEN DISCIPLINES TO A/E FOR CLARIFICATION PRIOR TO PROCEEDING WITH WORK.

NOTES:
1. REFER TO ARCH./CIVIL/GEOTECHNICAL DETAILS FOR ADDITIONAL UNDER SLAB & FOUNDATION REQUIREMENTS NOT SHOWN ON THESE DRAWINGS. REQUIREMENTS MAY INCLUDE BUT ARE NOT LIMITED TO: PERIMETER DRAINS, INSULATION, WEEP HOLES, & SITE PREPARATION. REPORT ANY DISCREPANCIES BETWEEN DISCIPLINES TO A/E FOR CLARIFICATION PRIOR TO PROCEEDING WITH WORK.
2. WHERE MULTIPLE WALL PENETRATIONS OCCUR, MINIMUM CLEAR DISTANCE BETWEEN ADJACENT PIPES IS 6". IF TOTAL WIDTH OF STEP EXCEEDS 4' - 0", CONSULT EOR AS ADDITIONAL WALL REINF. IS REQUIRED.
3. L_d - INDICATES REINFORCEMENT BAR DEVELOPMENT LENGTH, CALCULATED PER ACI 318 REQUIREMENTS. SEE DEVELOPMENT LENGTH SCHEDULE.

4 TYPICAL FOUNDATION ELEVATION DETAILS AT MEP PENETRATIONS

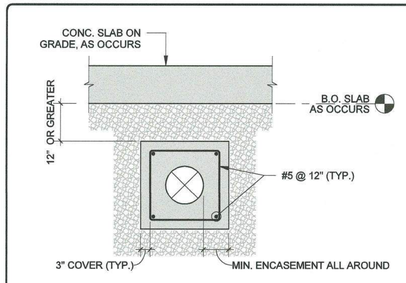
NO SCALE



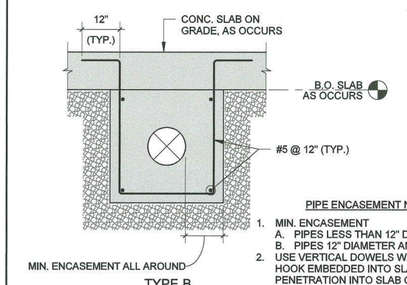
NOTE: THESE DETAILS ARE TO BE USED AT OPENINGS IN SLABS-ON-GRADE, AND IN CONCRETE FOUNDATION WALLS WHICH ARE NOT DETAILED AS RETAINING WALLS. LOCATIONS MAY NOT BE SHOWN ON STRUCTURAL DRAWINGS, COORD. WITH ARCH, MEP, SITE, CIVIL, ETC.

2 TYPICAL OPENING REINFORCEMENT IN CONCRETE FOUNDATION WALL AND SLAB-ON-GRADE

NO SCALE



TYPE A



TYPE B

PIPE ENCASEMENT NOTES:
1. MIN. ENCASEMENT
   A. PIPES LESS THAN 12" DIAMETER.....8"
   B. PIPES 12" DIAMETER AND GREATER...12"
2. USE VERTICAL DOWELS WITH STANDARD HOOK EMBEDDED INTO SLAB FOR PIPE PENETRATION INTO SLAB ON GRADE.
3. SEE MECH. DRAWINGS FOR LAYOUT OF PIPES REQUIRING ENCASEMENT

3 TYPICAL CONCRETE PIPE ENCASEMENT DETAIL

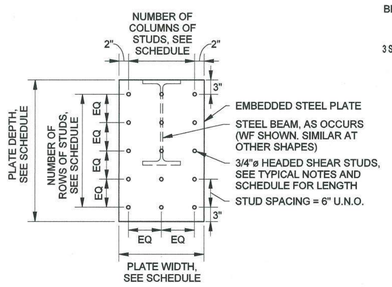
NO SCALE

TYPICAL EMBEDDED PLATE AND STUD SCHEDULE

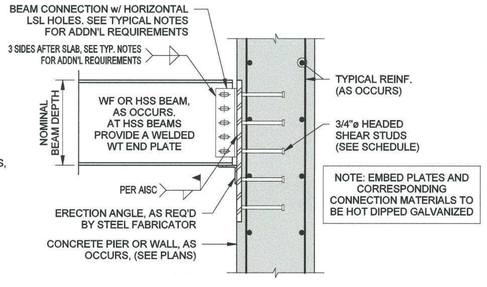
NOMINAL BEAM DEPTH	PLATE DIM'S (DEPTH x WIDTH)	PLATE THICKNESS	STUD CONFIGURATION
≤ 12"	1'-6" x 12"	1"	6 STUDS (3 ROWS x 2 COLUMNS)

NOTE: THIS SCHEDULE SHALL BE USED AT ALL LOCATIONS WHERE SPECIAL EMBEDDED PLATES ARE NOT SPECIFIED

TYPICAL NOTES:
1. THESE DETAILS SHALL BE USED AT ALL LOCATIONS WHERE STEEL BEAMS AND GIRDERS FRAME INTO CONCRETE WALLS, U.N.O.
2. STUDS SHALL BE ATTACHED TO EMBEDDED STEEL PLATE USING AUTHORIZED STUD WELDING MACHINE ONLY. ALL STUD WELDS SHALL BE FULLY INSPECTED.
3. ALIGN TOP OF EMBEDDED PLATE WITH T.O. STEEL ELEVATION U.N.O.
4. CONNECTIONS TO BEAMS SHALL HAVE BOLTS BE FINGER TIGHT UNTIL CONCRETE SLAB IS IN PLACE AND UP TO STRENGTH TO ALLOW FOR THERMAL EXPANSION/CONTRACTION, AFTER WHICH BOLTS SHALL BE FINISHED PER CONNECTION ENGINEER'S DESIGN. IF NO SLAB IS TO BE PLACED AND SPACE IS UNCONDITIONED, LEAVE FINGER TIGHT AND SPOIL THREADS.
5. UNLESS NOTED OTHERWISE HEADED SHEAR STUD LENGTHS ARE AS FOLLOWS:
   - CONCRETE WALLS WITH THICKNESS ≤ 12": 6" LONG SHEAR STUDS.
   - CONCRETE WALLS WITH THICKNESS > 12": 9" LONG SHEAR STUDS.

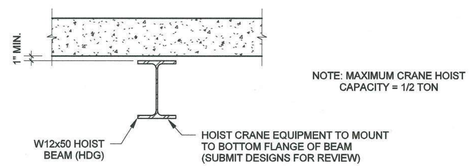


ELEVATION



SECTION

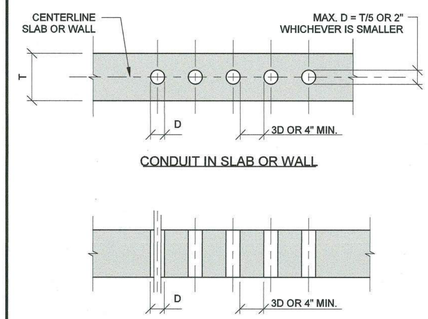
TYPICAL EMBEDDED PLATE REQUIREMENTS



TYPICAL BEAM SECTION

5 TYPICAL HOIST BEAM DETAILS

NO SCALE



CONDUIT IN SLAB OR WALL

PIPING THRU SLAB OR WALL

NOTES:
1. WHERE CLEAR DISTANCE BETWEEN SLEEVES IS IMPOSSIBLE THIS AREA SHALL BE TREATED AS A SLAB OPENING OR AS A WALL OPENING.

6 PIPING CONDUIT IN OR THRU SLAB OR WALL

NO SCALE

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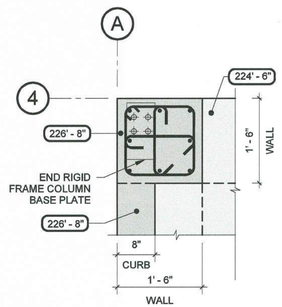
TOWN OF SHARON, MA

STRUCTURAL TYPICAL FOUNDATION DETAILS II

FOR CONSTRUCTION

Sheet No.

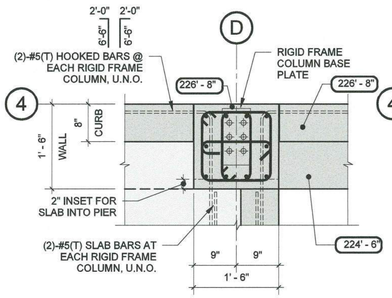
S-11



1 PLAN DETAIL - P1

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

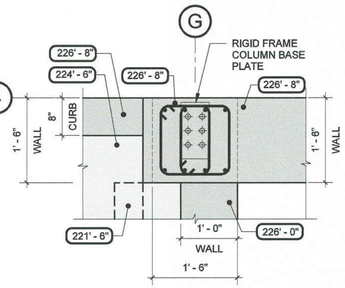
(8) - #6 BARS VERTICAL
(3)-#4 TIES @ 12" O.C. MAX. SPACING



2 PLAN DETAIL - P2

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

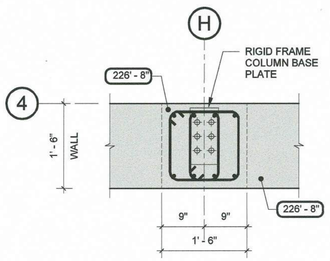
(10) - #6 BARS VERTICAL
(3)-#4 TIES @ 12" O.C. MAX. SPACING



3 PLAN DETAIL - P3

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

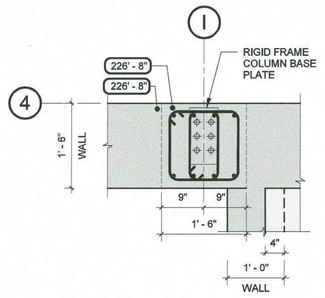
(8) - #6 BARS VERTICAL
(2)-#4 TIES @ 12" O.C. MAX. SPACING



4 PLAN DETAIL - P4

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

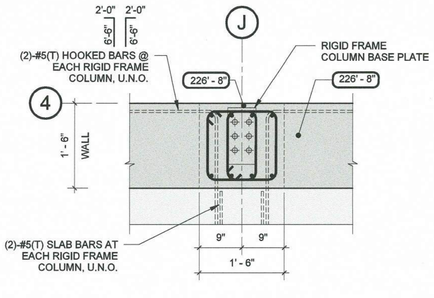
(8) - #6 BARS VERTICAL
(2)-#4 TIES @ 12" O.C. MAX. SPACING



5 PLAN DETAIL - P5

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

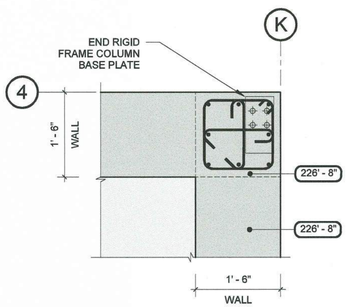
(8) - #6 BARS VERTICAL
(2)-#4 TIES @ 12" O.C. MAX. SPACING



6 PLAN DETAIL - P6

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

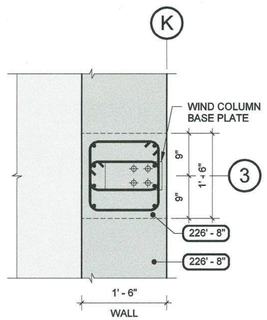
(8) - #6 BARS VERTICAL
(2)-#4 TIES @ 12" O.C. MAX. SPACING



7 PLAN DETAIL - P7

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

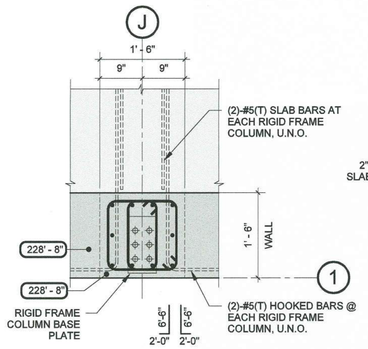
(8) - #6 BARS VERTICAL
(3)-#4 TIES @ 12" O.C. MAX. SPACING



8 PLAN DETAIL - P8

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

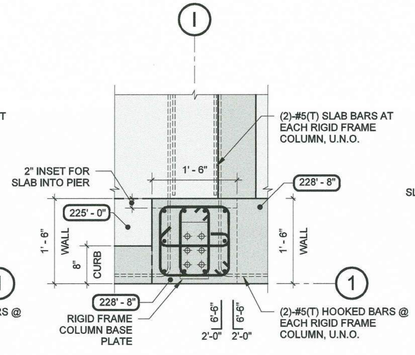
(8) - #6 BARS VERTICAL
(2)-#4 TIES @ 12" O.C. MAX. SPACING



9 PLAN DETAIL - P9

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

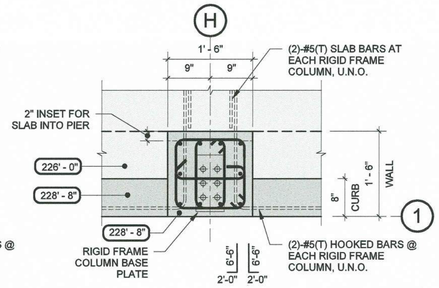
(8) - #6 BARS VERTICAL
(2)-#4 TIES @ 12" O.C. MAX. SPACING



10 PLAN DETAIL - P10

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

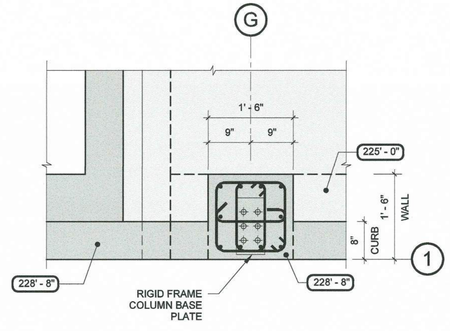
(10) - #6 BARS VERTICAL
(3)-#4 TIES @ 12" O.C. MAX. SPACING



11 PLAN DETAIL - P11

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

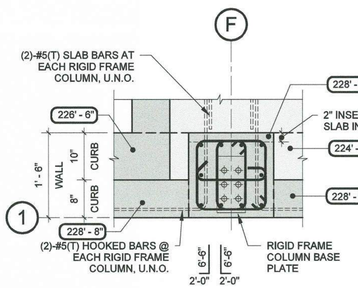
(10) - #6 BARS VERTICAL
(3)-#4 TIES @ 12" O.C. MAX. SPACING



12 PLAN DETAIL - P12

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

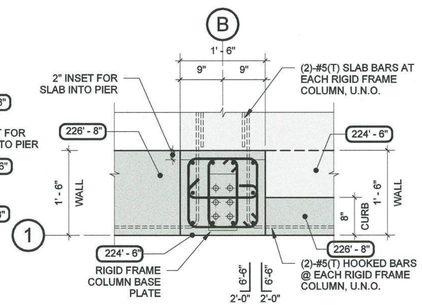
(10) - #6 BARS VERTICAL
(3)-#4 TIES @ 12" O.C. MAX. SPACING



13 PLAN DETAIL - P13

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

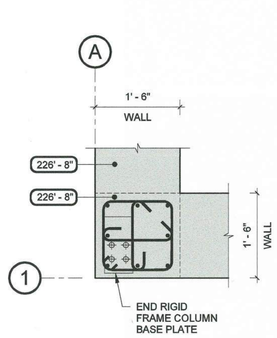
(10) - #6 BARS VERTICAL
(3)-#4 TIES @ 12" O.C. MAX. SPACING



14 PLAN DETAIL - P14

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

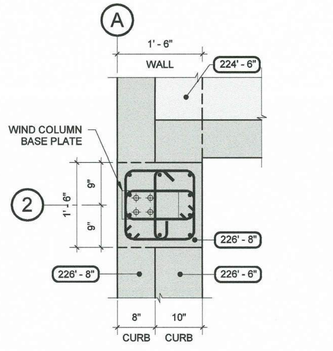
(10) - #6 BARS VERTICAL
(3)-#4 TIES @ 12" O.C. MAX. SPACING



15 PLAN DETAIL - P15

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

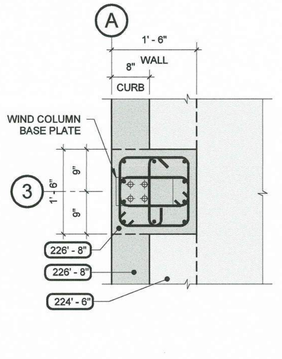
(8) - #6 BARS VERTICAL
(3)-#4 TIES @ 12" O.C. MAX. SPACING



16 PLAN DETAIL - P16

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

(10) - #6 BARS VERTICAL
(3)-#4 TIES @ 12" O.C. MAX. SPACING



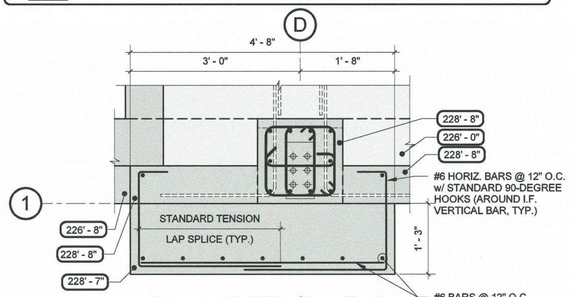
17 PLAN DETAIL - P17

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

(10) - #6 BARS VERTICAL
(3)-#4 TIES @ 12" O.C. MAX. SPACING

PIER NOTES

1. IT IS STRUCTURALLY ACCEPTABLE TO SUBSTITUTE SINGLE LEG HOOKS FOR CLOSED TIES AT INTERIOR PIER TIE LOCATIONS. OUTER TIE MUST BE CLOSED TYPE. ALTERNATE DIRECTION OF HOOKS AT EVERY OTHER COLUMN TIE PER ACI REQUIREMENTS.
2. PROVIDE (2) ADDITIONAL SETS OF TIES AT THE TOPS OF ALL PIERS WHICH HAVE EMBEDDED ANCHORS.
3. GENERAL CONTRACTOR MUST VERIFY THAT NO CONFLICTS EXIST WITH THE LOCATIONS OF PIER REINFORCEMENT RELATIVE TO ANY REQUIRED EMBEDDED ANCHOR RODS OR POST-INSTALLED ANCHORS PRIOR TO POURING CONCRETE PIERS. LOCATIONS OF INTERIOR VERTICAL BARS MAY BE ADJUSTED BY NO MORE THAN 2" IN ANY DIRECTION TO ACCOMMODATE ANCHOR RODS.
4. WALL REINFORCEMENT NOT SHOWN FOR CLARITY OF PIER REINFORCEMENT. HORIZONTAL WALL REINFORCEMENT TO BE CONTINUOUS THROUGH PIERS U.N.O.
5. AT PIERS WHERE TOP OF WALL AND TOP OF PIER ELEVATION ARE THE SAME, DASHED LINES ARE SHOWN FOR CLARITY TO INDICATE BOUNDARY OF PIER INTEGRATED IN WALL.
6. (##'-##") - INDICATES TOP OF NEW CONCRETE FOUNDATION WALL OR PIER.



18 PLAN DETAIL - P18

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

NOTE: NOT ALL WALL BARS ARE SHOWN FOR CLARITY OF ADDITIONAL REINFORCEMENT REQUIREMENTS AT THIS LOCATION

2ND PRECINCT 1740 SHARON 1765

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Digitally signed by David J. Odeh@yaho.com
Date: 2024.04.02 12:54:58-04'00'

COMMONWEALTH OF MASSACHUSETTS
DAVID J. ODEH
STRUCTURAL
No. 42755
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	AS INDICATED
Date	APRIL 2024
Job No.	245-2103
Designed by	JDZ/KLM
Drawn by	JDZ/KLM
Checked by	DJO
Approved by	DJO

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

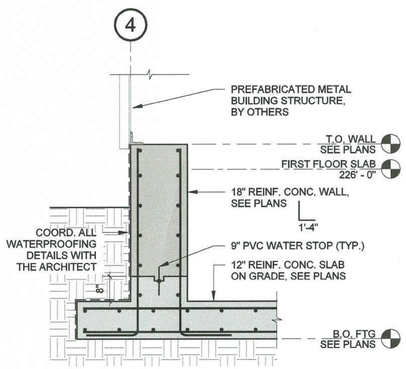
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

STRUCTURAL TYPICAL FOUNDATION DETAILS III

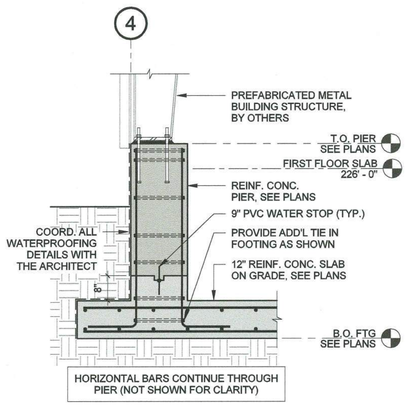
FOR CONSTRUCTION

Sheet No.

S-12



1 SECTION
SCALE: 1/2" = 1'-0"



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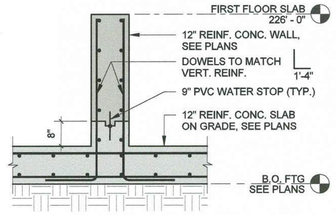
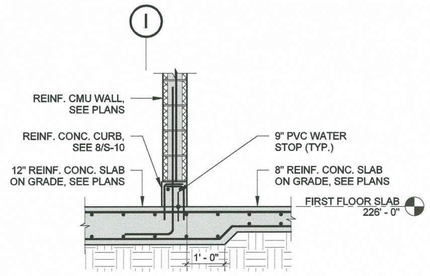
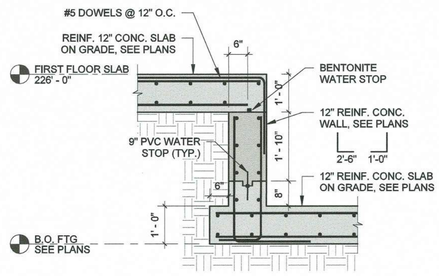


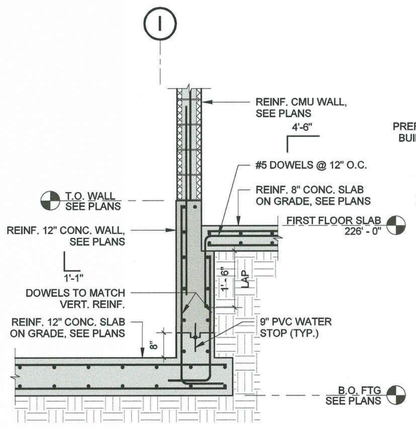
3 SECTION
SCALE: 1/2" = 1'-0"



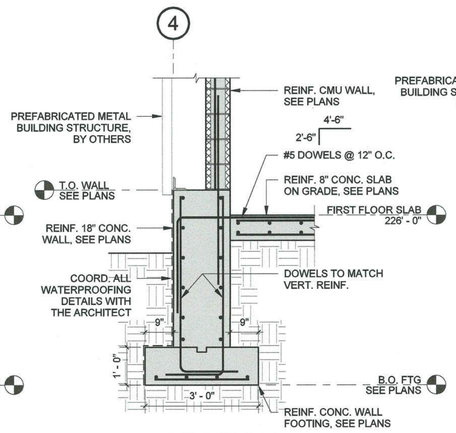
4 SECTION
SCALE: 1/2" = 1'-0"



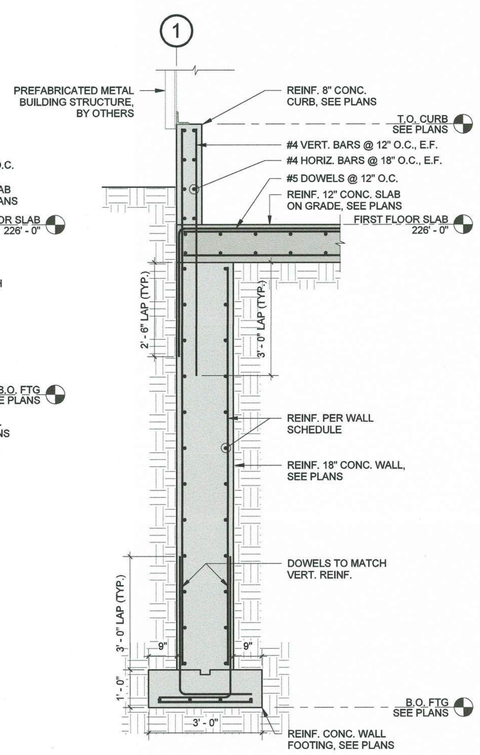
6 SECTION
SCALE: 1/2" = 1'-0"



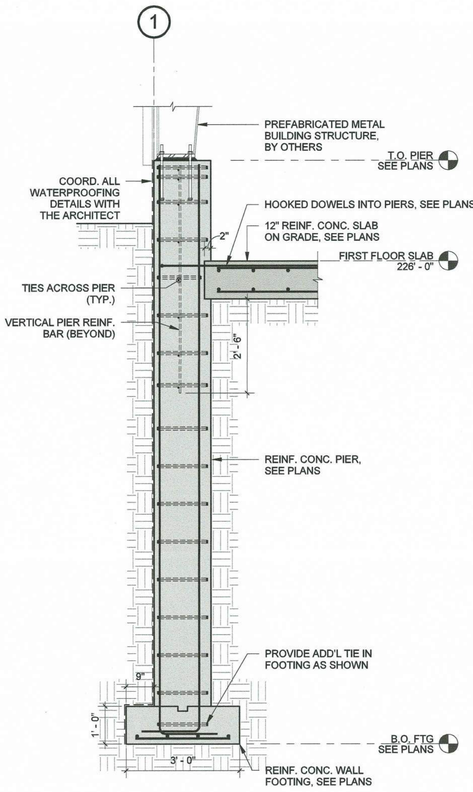
7 SECTION
SCALE: 1/2" = 1'-0"



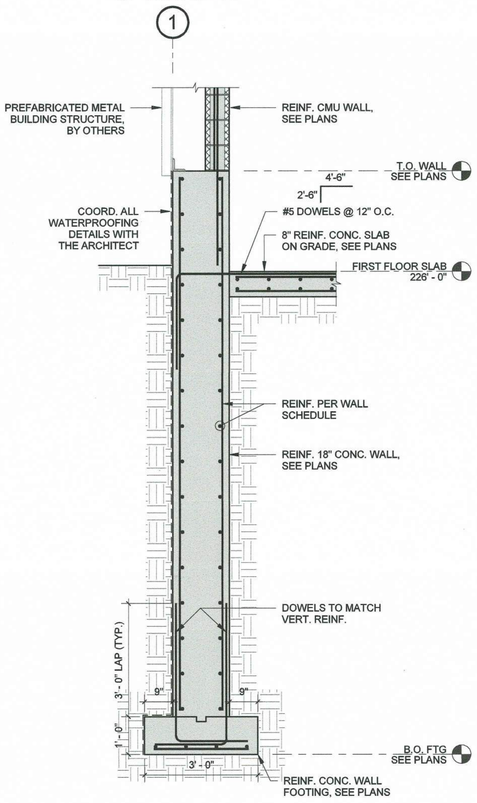
8 SECTION
SCALE: 1/2" = 1'-0"



9 SECTION
SCALE: 1/2" = 1'-0"



10 SECTION
SCALE: 1/2" = 1'-0"



11 SECTION
SCALE: 1/2" = 1'-0"

NOTE REGARDING DOWEL BAR SUBSTITUTES

DOWEL BAR SUBSTITUTES MAY BE USED IN ALL CASES WHERE HORIZONTAL BARS WILL PENETRATE FORMWORK AT THE CONTRACTOR'S OPTION.

NOTE REGARDING STRUCTURAL FILL BENEATH FOUNDATIONS

GEOTECHNICAL MEMORANDUM REQUIRES A MINIMUM OF 8" OF FREE DRAINING, WELL GRADED, NON-COHESIVE STRUCTURAL FILL BELOW FOUNDATION AND SLAB ON GRADE ELEMENTS. COORDINATE ALL REQUIREMENTS WITH THE GEOTECHNICAL REPORT. COORDINATE ALL WATERPROOFING DETAILS, INCLUDING MUD MATS AND MEMBRANE REQUIREMENTS, WITH THE A-SERIES DRAWINGS.

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odeh engineers structural engineers
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Digitally signed by David J. Odeh@bpmp.com
Date: 2024.04.02 12:55:09-04'00'

COMMONWEALTH OF MASSACHUSETTS
DAVID J. ODEH
STRUCTURAL
No. 42755
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	AS INDICATED
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Job No.	245-2103
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Drawn by	JDZ/KLM
Checked by	DJO
Approved by	DJO

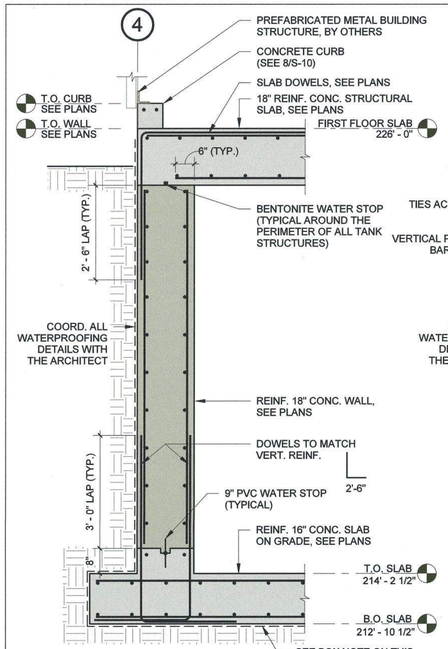
THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

STRUCTURAL FOUNDATION SECTIONS I

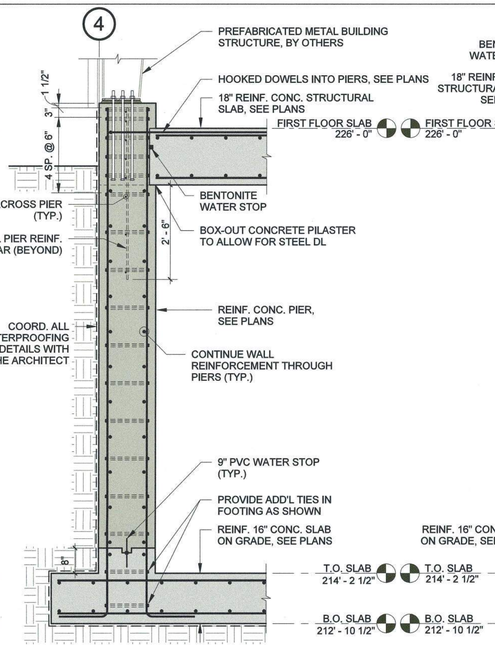
FOR CONSTRUCTION

Sheet No.
S-13



TYPICAL FOUNDATION SECTION AT HOLDING TANKS

1 SECTION
SCALE: 1/2" = 1'-0"



2 SECTION
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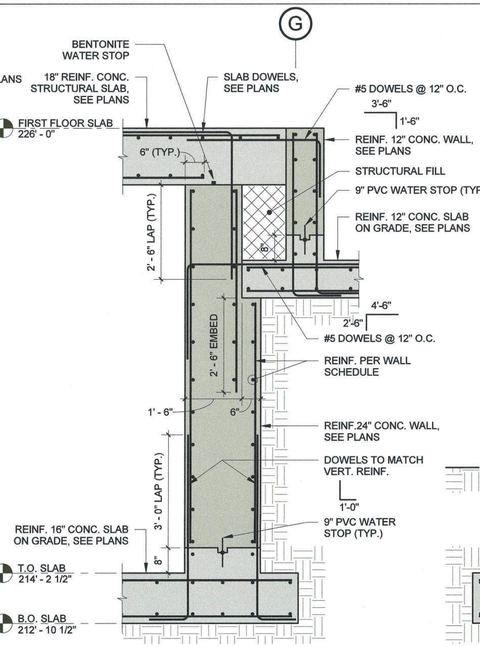

3 SECTION
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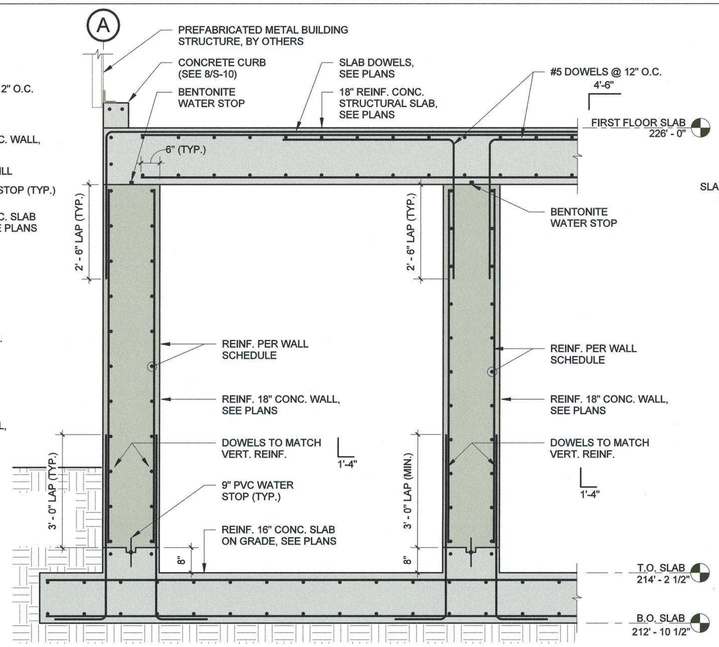
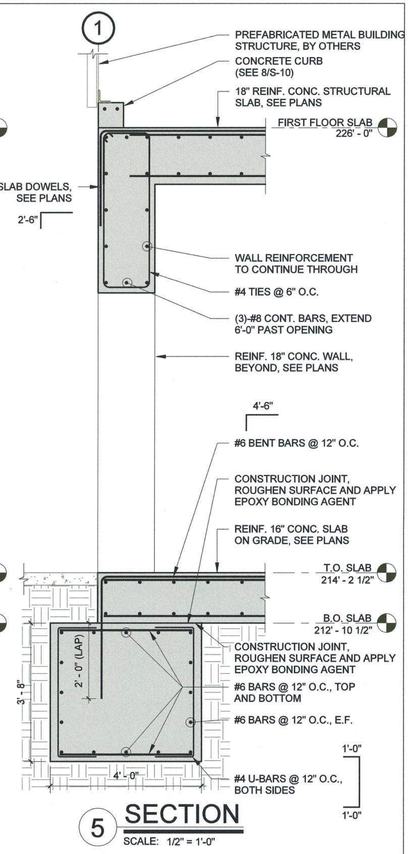
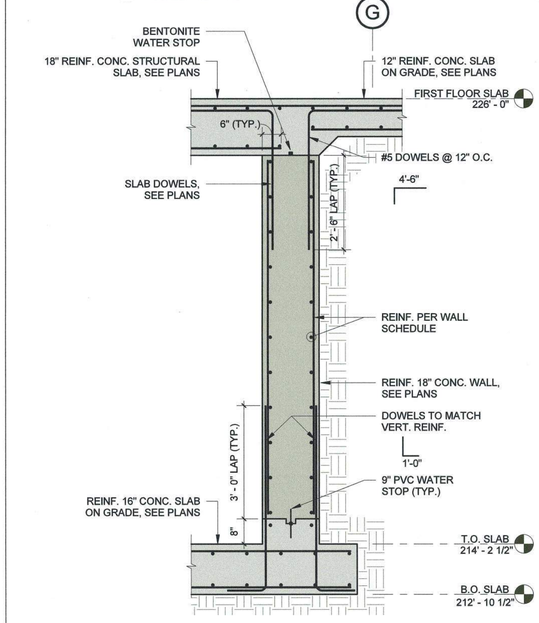


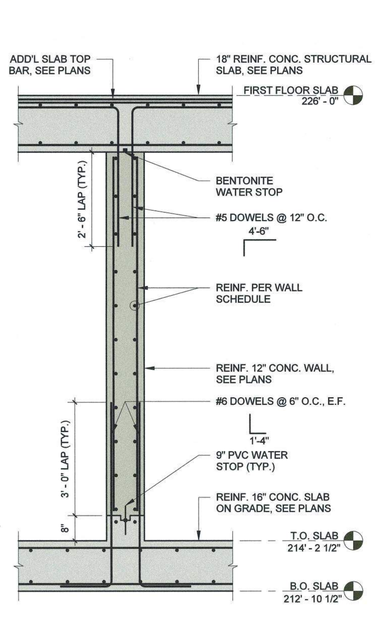
4 SECTION
SCALE: 1/2" = 1'-0"



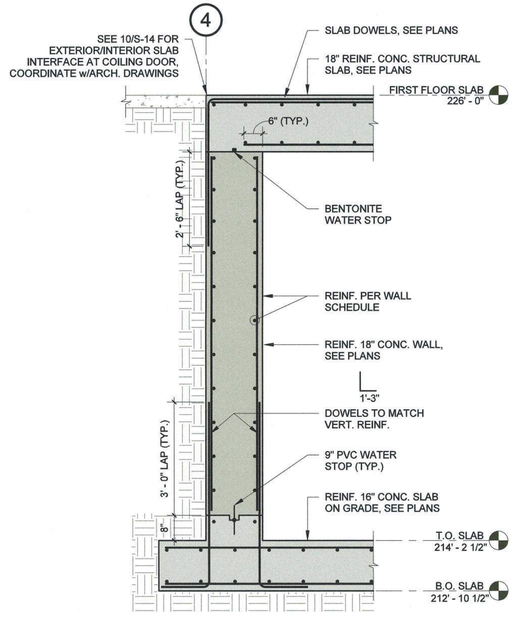
5 SECTION
SCALE: 1/2" = 1'-0"



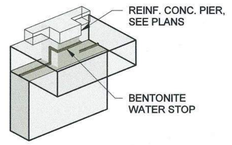
6 SECTION
SCALE: 1/2" = 1'-0"



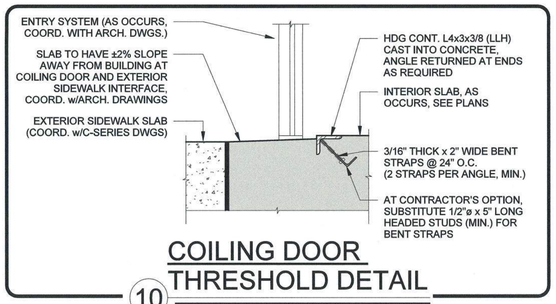
7 SECTION
SCALE: 1/2" = 1'-0"



8 SECTION
SCALE: 1/2" = 1'-0"



9 3D VIEW - WATER STOP AT COLUMNS
N.T.S.



10 COILING DOOR THRESHOLD DETAIL
NO SCALE

NOTES:
1. COORDINATE DOOR LOCATIONS & DIMENSIONS WITH THE A-SERIES DRAWINGS.
2. COORDINATE SIDEWALK AND SUBBASE DETAILS WITH THE C-SERIES DRAWINGS.
3. REINFORCEMENT TO BE ADJUSTED TO MAINTAIN MINIMUM COVER REQUIREMENTS
4. EPOXY COAT ALL TOP BARS AT COILING DOOR LOCATIONS

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Digitally signed by David J. Odeh@wsp.com
Date: 2024.04.02 12:55:20-04'00'

DAVID J. ODEH STRUCTURAL No. 42755 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

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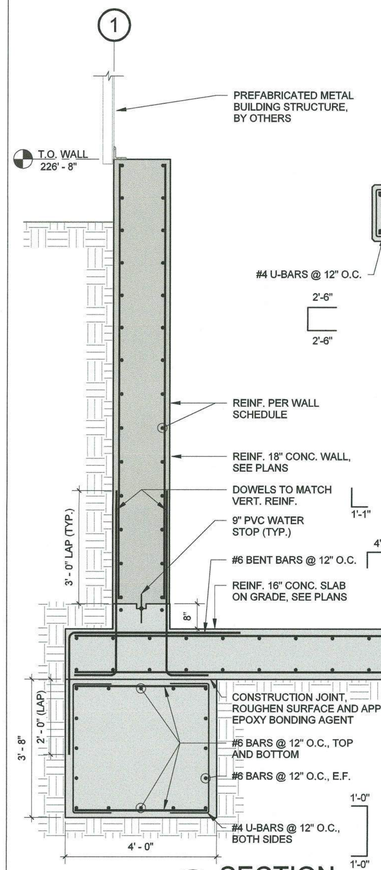
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

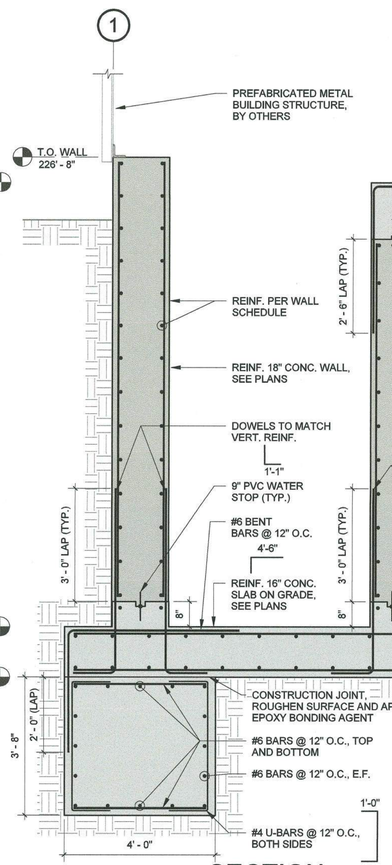
STRUCTURAL FOUNDATION SECTIONS II

FOR CONSTRUCTION

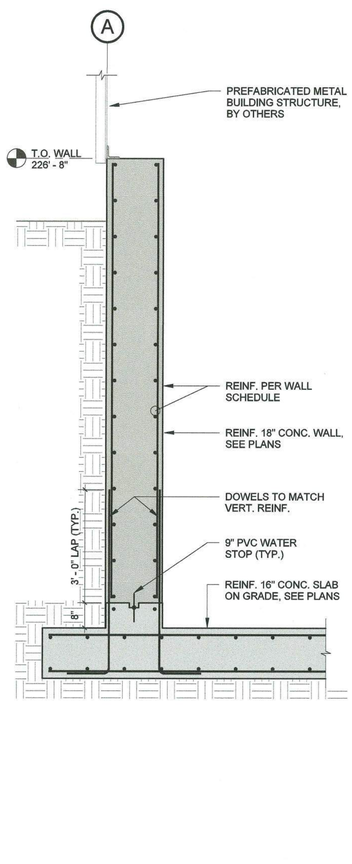
Sheet No.
S-14



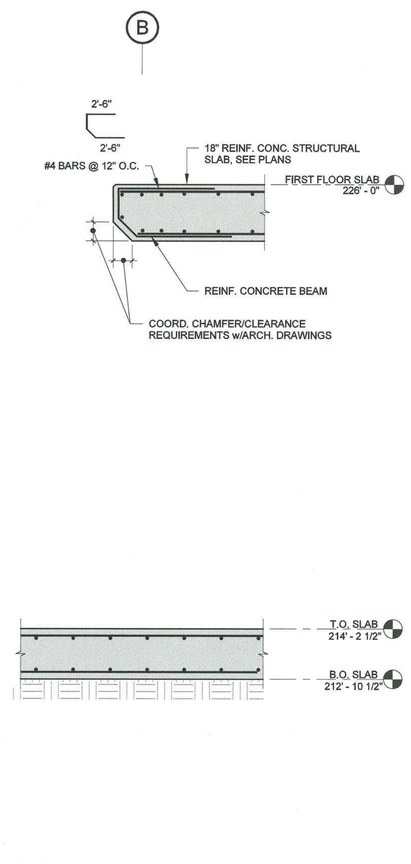
1 SECTION
SCALE: 1/2" = 1'-0"



2 SECTION
SCALE: 1/2" = 1'-0"



3 SECTION
SCALE: 1/2" = 1'-0"

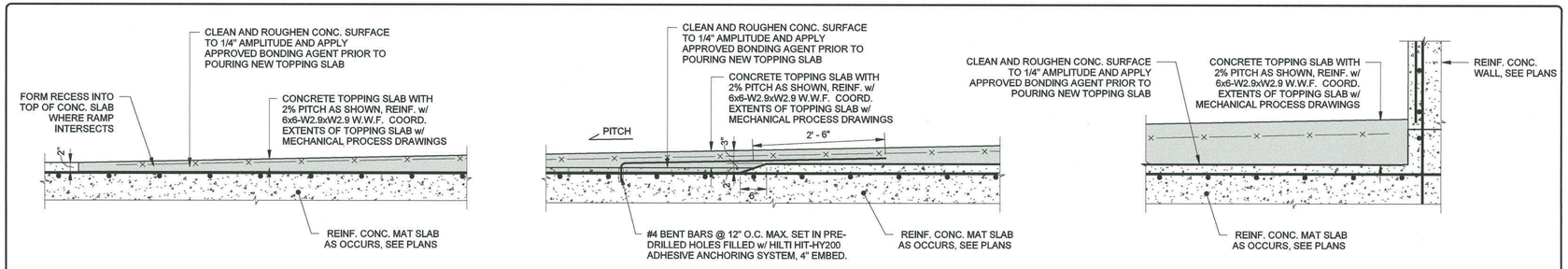


NOTE REGARDING DOWEL BAR SUBSTITUTES

DOWEL BAR SUBSTITUTES MAY BE USED IN ALL CASES WHERE HORIZONTAL BARS WILL PENETRATE FORMWORK AT THE CONTRACTOR'S OPTION.

NOTE REGARDING STRUCTURAL FILL BENEATH FOUNDATIONS

GEOTECHNICAL MEMORANDUM REQUIRES A MINIMUM OF 8" OF FREE DRAINING, WELL GRADED, NON-COHESIVE STRUCTURAL FILL BELOW FOUNDATION AND SLAB ON GRADE ELEMENTS. COORDINATE ALL REQUIREMENTS WITH THE GEOTECHNICAL REPORT. COORDINATE ALL WATERPROOFING DETAILS, INCLUDING MUD MATS AND MEMBRANE REQUIREMENTS, WITH THE A-SERIES DRAWINGS.



LONGITUDINAL SECTION

4 TYPICAL CONCRETE TOPPING SLAB ON CONCRETE MAT SLAB
NO SCALE

ENVIRONMENTAL PARTNERS
— An Apex Company —
odeh engineers structural engineers
1223 Mineral Spring Avenue
North Providence, RI 02904
Phone: 401.724.1771
Fax: 401.724.1981
www.odehengineers.com

Digitally signed by David J. Odeh@wpe.com
Date: 2024.04.02 12:55:33-04'00'

COMMONWEALTH OF MASSACHUSETTS
DAVID J. ODEH
STRUCTURAL
No. 42755
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	AS INDICATED
Date	APRIL 2024
Job No.	245-2103
Designed by	JDZ/KLM
Drawn by	JDZ/KLM
Checked by	DJO
Approved by	DJO

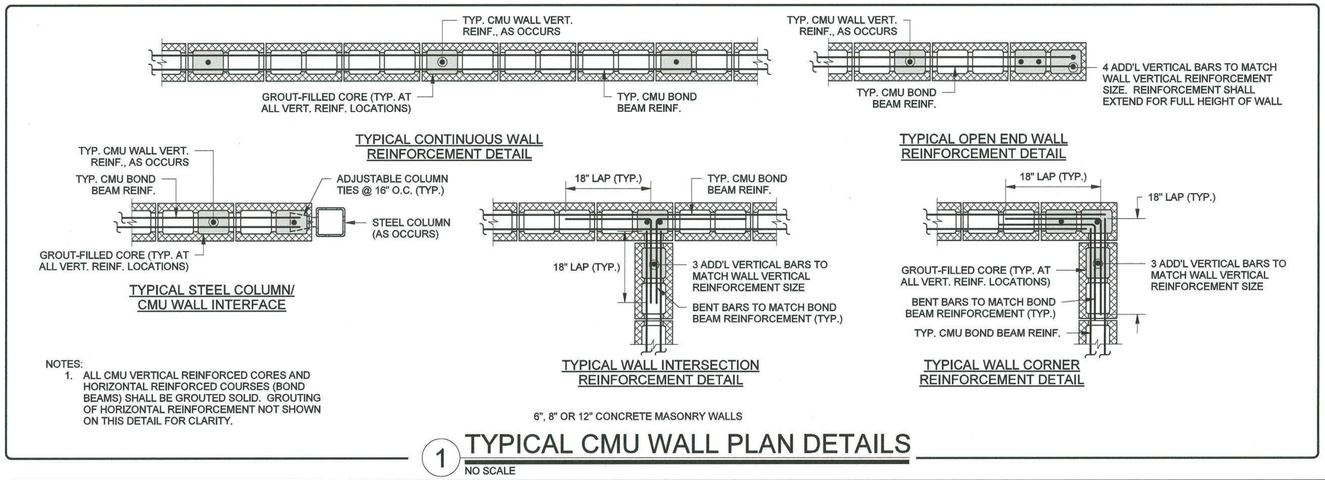
THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

STRUCTURAL FOUNDATION SECTIONS III

FOR CONSTRUCTION

Sheet No.
S-15

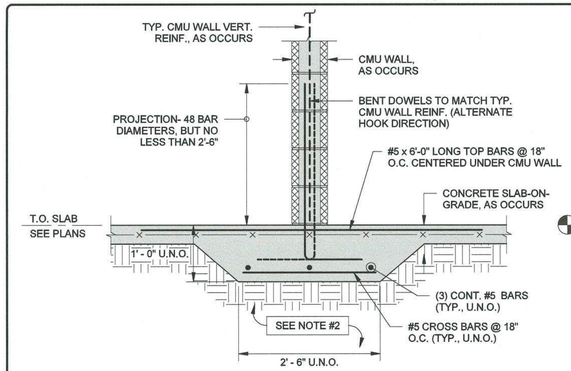


NOTES:
1. ALL CMU VERTICAL REINFORCED CORES AND HORIZONTAL REINFORCED COURSES (BOND BEAMS) SHALL BE GROUTED SOLID. GROUTING OF HORIZONTAL REINFORCEMENT NOT SHOWN ON THIS DETAIL FOR CLARITY.

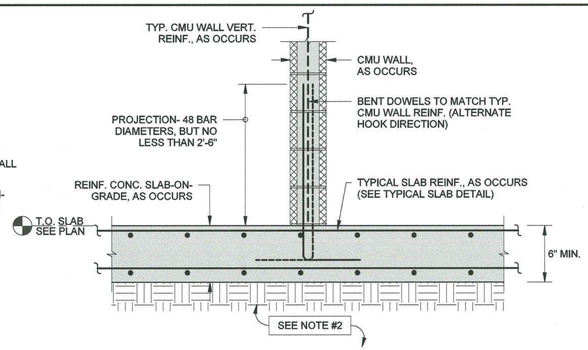
6", 8" OR 12" CONCRETE MASONRY WALLS

1 TYPICAL CMU WALL PLAN DETAILS

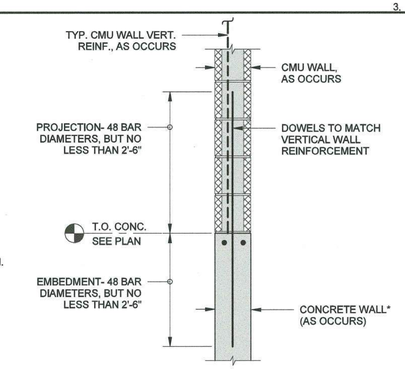
NO SCALE



TYPICAL DETAIL FOR CMU WALLS SUPPORTED ON SLAB-ON-GRADE



TYPICAL DETAIL FOR CMU WALLS SUPPORTED STRUCTURAL REINFORCED CONCRETE SLABS ON GROUND



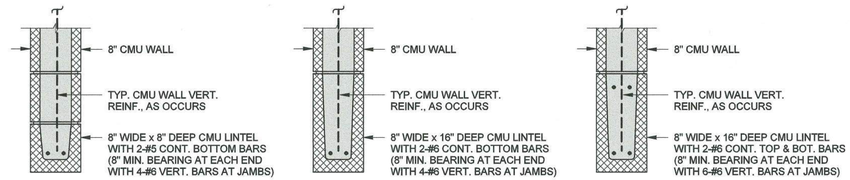
TYPICAL DETAIL FOR CMU WALLS SUPPORTED ON CONCRETE WALLS
(*) - SIMILAR AT PIERS, PEDESTALS, ETC.

3 TYPICAL BASE DETAILS FOR CMU WALLS

NO SCALE

NOTES:
1. THESE DETAILS ARE REQUIRED AT ALL CMU WALLS. NON-BEARING PARTITIONS MAY NOT BE SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR PARTITION LOCATIONS AND OTHER INFORMATION.
2. WHERE CMU WALLS BEAR ON SLABS ON GROUND, ENSURE THAT SOILS WITHIN 5 FEET OF WALL ARE COMPACTED TO 95% OF THE OPTIMUM DRY DENSITY (SUBMIT TEST RESULTS FOR REVIEW).

8" CONCRETE MASONRY WALLS



NON-BEARING WALLS UP TO 5'-4" WIDE	NON-BEARING WALLS OVER 5'-4" UP TO 7'-4" WIDE	NON-BEARING WALLS OVER 7'-4" UP TO 10'-0" WIDE
BEARING/EXTERIOR WALLS UP TO 4'-8" WIDE	BEARING/EXTERIOR WALLS OVER 4'-8" WIDE UP TO 6'-0" WIDE	BEARING/EXTERIOR WALLS OVER 6'-0" WIDE UP TO 8'-8" WIDE

2 CONCRETE MASONRY LINTEL SCHEDULE

NO SCALE

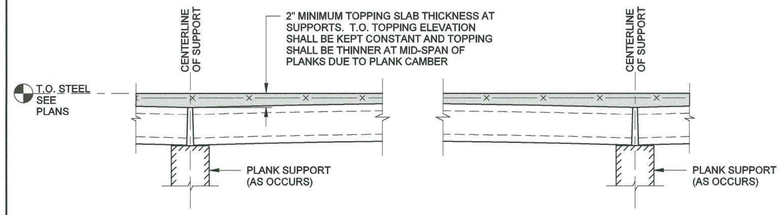
NOTES:
1. TYPICAL CMU LINTEL DETAILS SHALL BE USED AT ALL CONCRETE MASONRY WALL OPENINGS, EXCEPT WHERE SPECIALLY CONSTRUCTED LINTELS ARE INDICATED. SEE STRUCTURAL PLANS & SECTIONS FOR ALTERNATE CMU LINTEL REQUIREMENTS.
2. ALL REQUIRED CMU LINTELS ARE NOT INDICATED ON STRUCTURAL PLANS. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR COORDINATION OF CMU LINTEL REQUIREMENTS AT ALL WALL OPENINGS AND PENETRATIONS THROUGH BOTH BEARING/EXTERIOR AND NON-BEARING CONCRETE MASONRY WALLS.
3. FOR OPENING WIDTHS GREATER THAN SHOWN, CONSULT ENGINEER.

ROUGH OPENING	STEEL LINTEL
UP TO 6'-4" WIDE	L6x4x3/8 (LLV) GALV. - 8" MIN. END BEARING
OVER 6'-4" UP TO 8'-0" WIDE	L8x4x1/2 (LLV) GALV. - 8" MIN. END BEARING
OVER 8'-0" UP TO 10'-0" WIDE	L8x4x7/8 (LLV) GALV. - 12" MIN. END BEARING

NOTES:
1. SEE DRAWINGS FOR STRUCTURAL LINTELS CONNECTED TO STRUCTURAL ELEMENTS.
2. FOR OPENING WIDTHS GREATER THAN SHOWN, CONSULT ENGINEER.
3. SEE ARCHITECTURAL DRAWINGS FOR FLASHING DETAILS AT WINDOW & DOOR OPENINGS.
4. GALV. - INDICATES HOT-DIP GALVANIZED.

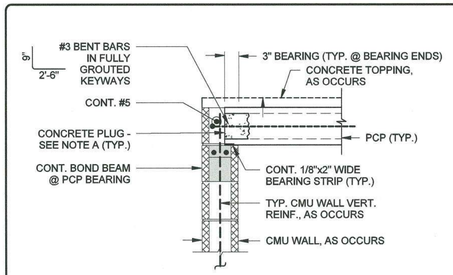
4 MASONRY VENEER (LOOSE) LINTEL SCHEDULE

NO SCALE

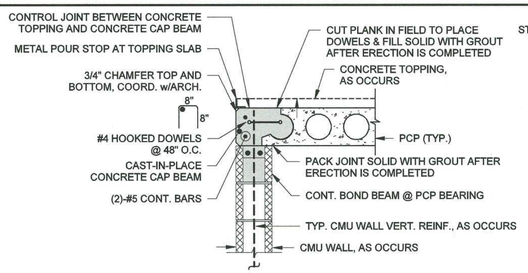


5 TYPICAL PRECAST CONCRETE PLANK FLOOR DETAIL

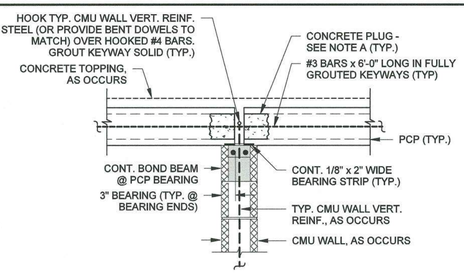
NO SCALE



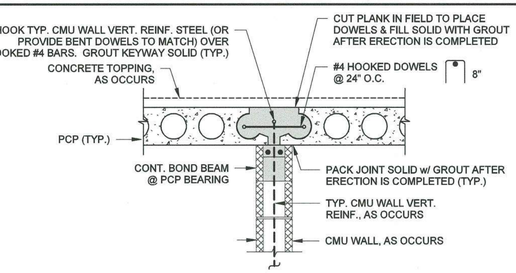
TYPICAL EXTERIOR WALL DETAIL AT ROOF WITH PARAPET
PLANK SPAN PERPENDICULAR TO WALL



TYPICAL EXTERIOR WALL DETAIL AT FLOORS
PLANK SPAN PARALLEL TO WALLS



TYPICAL INTERIOR WALL DETAIL AT ROOF
PLANK SPAN PERPENDICULAR TO WALL



TYPICAL INTERIOR WALL DETAIL AT ROOF
PLANK SPAN PARALLEL TO WALL

NOTE A
PROVIDE A MINIMUM OF 8" DEEP CONCRETE FILL USING A STIFF MIX OF A PLUG TO ASSURE POSITIVE CONTACT WITH ALL INTERIOR SURFACES OF PCP CORES.

PRECAST PLANK BEARING NOTE
PCP BEARING SHALL BE A MINIMUM OF 3". ALL CONTINUOUS BEARING STRIPS INDICATED ARE TO BE PLACED 1" CLEAR FROM FACE OF MASONRY WALL TO AVOID LOCALIZED CHIPPING AT PCP BEARING BLOCK EDGES (TYPICAL THROUGHOUT).

NOTE
PCP - INDICATES PRECAST CONCRETE PLANK

OPENINGS IN PRECAST CONCRETE PLANKS
ALL RECTANGULAR OPENINGS SHALL BE FORMED. ALL CIRCULAR OPENINGS SHALL BE CORED. CORING NEEDS TO BE WITHIN THE LIMITS OF THE PLANK MANUFACTURER'S STANDARD DETAILS. ALL CORES HAVE TO BE PLACED TO AVOID TENDONS.

6 TYPICAL PRECAST CONCRETE PLANK DETAILS

NO SCALE

ENVIRONMENTAL PARTNERS
— An Apex Company —
odeh engineers structural engineers
1223 Mineral Spring Avenue
North Providence, RI 02904
Phone: 401.724.1771
Fax: 401.724.1981
www.odehengineers.com

Digitally signed by: David J. Odeh@vanp.com
Date: 2024.04.02 12:55:44-04'00'

COMMONWEALTH OF MASSACHUSETTS
DAVID J. ODEH
STRUCTURAL
No. 42755
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	AS INDICATED
Date	APRIL 2024
Job No.	245-2103
Designed by	JDZ/KLM
Drawn by	JDZ/KLM
Checked by	DJO
Approved by	DJO

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

TYPICAL MASONRY DETAILS

FOR CONSTRUCTION

Sheet No.

S-16

PROCESS MECHANICAL NOTES

1. THE REQUIREMENTS INCLUDED IN THESE NOTES ARE SUPPLEMENTARY TO THE CONTRACT, GENERAL CONDITIONS, TECHNICAL REQUIREMENTS, AND OTHER REQUIREMENTS SPECIFIED HEREIN.
2. MOUNTING DETAILS PROVIDED ARE GENERIC FOR EQUIPMENT AND DEVICES OF VARIOUS MANUFACTURERS. THE INSTALLING CONTRACTOR MUST STRICTLY COMPLY WITH MANUFACTURER'S INSTRUCTION IN THE INSTALLATION OF THESE DEVICES. IF THERE ARE ANY ENGINEERING ISSUES THEY MUST BE REFERRED TO THE ENGINEER PRIOR TO INSTALLATION.
3. IT IS NOT THE INTENT OF THESE DRAWINGS TO PORTRAY EVERY DETAIL OF THE REQUIRED WORK. THE CONTRACTOR SHALL PROVIDE THE EQUIPMENT AND SYSTEMS COMPLETE SO THAT WHEN ASSEMBLED AND INSTALLED IN THE WORK, THEY SHALL OPERATE AND PERFORM AS DESCRIBED HEREIN.
4. COORDINATE THE WORK REQUIRED BY THESE DRAWINGS ("M" SERIES) WITH THE WORK REQUIRED BY OTHER DRAWINGS.
5. PROVIDE FILLER FLANGES (OR OTHER ENGINEER APPROVED METHOD) TO LIMIT INTERFERENCE BETWEEN WAFER BUTTERFLY VALVES AND DUCTILE IRON PIPE LINING OR CAST IRON FITTINGS.
6. THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES WHICH HOLD WATER IN THE DISTRIBUTION SYSTEM, UNLESS GRANTED APPROVAL TO DO SO BY THE TOWN OF SHARON.
7. ALL WALL AND FLOOR SLEEVES SHALL BE LARGE ENOUGH TO ACCOMMODATE FLANGES AS REQUIRED. FLOOR SLEEVES SHALL PROJECT AT LEAST 4-IN ABOVE FINISH FLOOR UNLESS OTHERWISE SHOWN. IF SLEEVES ARE TO BE SEALED, PROVIDE GROOVED COUPLING PIPING CONNECTION TO FACILITATE INSTALLATION AND REMOVAL OF PIPING.
8. ALL PIPE PENETRATIONS THROUGH INTERIOR AND EXTERIOR WALLS AND FLOORS SHALL BE SEALED WATERTIGHT.
9. SMALL PIPING (SAMPLE, SERVICE WATER, CHEMICAL FEED, ETC.) IS SHOWN DIAGRAMMATICALLY: FIELD-ROUTING SUBJECT TO APPROVAL OF THE ENGINEER. SMALL PIPE ROUTING MUST NOT INTERFERE WITH ACCESS TO OR OPERATION OF ANY OTHER PIPE, VALVE, EQUIPMENT, OR BUILDING SYSTEM.
10. ALL PROCESS EQUIPMENT, INCLUDING PUMPS, SHALL BE ISOLATED FROM PIPING LOADS AND DYNAMICS BY FLEXIBLE CONNECTORS IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS.
11. ALL PIPING, VALVES, EQUIPMENT, ETC. SHALL BE LABELED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE LOCATION FOR ALL WALL PENETRATIONS WITH THE VARIOUS TRADES. WALL PIPES AND WALL SLEEVES SHALL BE REQUIRED FOR ALL PIPE PENETRATIONS THROUGH CONCRETE WALLS WHETHER SHOWN ON THE DRAWINGS OR NOT. ALL WALL AND FLOOR SLEEVES SHALL BE LARGE ENOUGH TO ACCOMMODATE FLANGES, IF REQUIRED.
13. WHEN MAKING NEW CONNECTIONS TO EXISTING PIPING, THE CONTRACTOR MAY, AT ITS OPTION:
    A. REPLACE PIPING BACK TO NEAREST FITTING.
    B. USE SLEEVE COUPLING OR FLANGE ADAPTERS (RESTRAINED ON PRESSURE LINES).
14. PROVIDE EXPANSION JOINTS WITH CONTROL RODS FOR ALL EXPOSED PIPING CROSSING STRUCTURAL EXPANSION JOINTS.
15. ALL SLEEVE TYPE COUPLINGS ON PRESSURE PIPING SHALL BE HARNESSED UNLESS OTHERWISE INDICATED. WHERE COUPLINGS ARE PROVIDED TO PROVIDE AXIAL FLEXIBILITY, PIPING MUST BE SECURELY RESTRAINED.
16. MATERIALS AND WORKMANSHIP FURNISHED UNDER THIS CONTRACT SHALL BE A STANDARD, HIGH-GRADE QUALITY, AND OF THE BEST WORKMANSHIP AND DESIGN. ALL LIKE PARTS OF EQUIPMENT OF THE SAME SIZE OR CAPACITY SHALL BE INTERCHANGEABLE. SUITABLE PROVISION SHALL BE MADE FOR EASY ADJUSTMENT OR REPLACEMENT OF ALL PARTS REQUIRING ADJUSTMENT OR REPLACEMENT.
17. ALL MECHANICAL LAYOUTS ARE GENERALLY DIAGRAMMATIC AS SHOWN ON THESE DRAWINGS. THE WORK OF THE VARIOUS TRADES SHALL BE COORDINATED TO AVOID INTERFERENCE AND TO SECURE MAXIMUM HEAD ROOM. PARTICULAR ATTENTION IS DRAWN TO CONGESTED SPACES INSIDE AND OUTSIDE OF THE STRUCTURES. IF, IN THE INTEREST OF COORDINATION AND EXPEDIENCY, IT BECOMES NECESSARY TO DEVELOP "INTERFERENCE DRAWINGS" (DEFINED AS DRAWINGS EMBODYING THE WORK OF TRADES INVOLVED, ILLUSTRATING DETAILS OR CONSTRUCTION PROPOSED BY THE CONTRACTOR AND ARRANGEMENT OF ACTUAL EQUIPMENT AND APPARATUS PURCHASED), SUCH DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR AND SHALL BE COORDINATED WITH OTHER TRADES AT NO ADDITIONAL EXPENSE TO THE OWNER.
18. THE INSTALLATION OF FACILITIES AND APPURTENANT WORK SHALL BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF ALL FEDERAL, STATE, AND MUNICIPAL CODES AND REGULATIONS GOVERNING THE WORK. IN INSTANCES WHERE THE REQUIREMENT OF DRAWINGS AND SPECIFICATIONS ARE IN EXCESS OF THE REQUIREMENTS OF THE APPLICABLE CODES AND REGULATIONS, AND ARE PERMITTED THEREUNDER, THEN, IN SUCH INSTANCES, THE REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL GOVERN, UNLESS DIRECTED OTHERWISE IN WRITING BY THE ENGINEER.
19. UNLESS OTHERWISE SPECIFIED, NEAT BRASS PLATE, OR OTHERWISE SUITABLE MATERIAL, HAVING THE SERIAL NUMBER, THE MAKE, HORSEPOWER, CAPACITY, SPEED, AND OTHER PERTINENT DATA, AND ANY IMPORTANT OPERATING OR MAINTENANCE INSTRUCTIONS, PERMANENTLY AND CLEARLY MARKED ON THE PLATE, SHALL BE MOUNTED ON EACH ITEM OF EQUIPMENT. ALL IMPORTANT PARTS OF EQUIPMENT, AS DIRECTED BY ENGINEER/OWNER SHALL BE STAMPED FOR IDENTIFICATION AND LOCATION.
20. ALL NECESSARY ANCHOR BOLTS, NUTS, WASHERS, SETTING TEMPLATES, AND SUCH OTHER PARTS SHALL BE PROVIDED AS REQUIRED FOR THE PROPER INSTALLATION OF THE WORK, AND WHEREVER PRACTICABLE, THEY SHALL BE BUILT IN AS THE WORK PROGRESSES. THE PARTS SHALL BE OF THE MATERIALS SPECIFIED, AND WHERE NOT SPECIFIED OR INDICATED, THEY SHALL BE OF APPROVED TYPES AND MATERIALS FOR EACH APPLICATION. THE SETTING OF ANCHOR BOLTS BY DRILLING AND GROUTING WILL NOT BE PERMITTED.
21. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER, AS APPROVED, TRULY LEVEL AND PLUMB, AND SHALL BE PROVIDED COMPLETE WITH ALL NECESSARY PIPING, FITTINGS, VALVES, CONTROLS, WIRING, AND APPURTENANCES AND ACCESSORIES SO THE EQUIPMENT WILL BE LEFT COMPLETE AND IN SATISFACTORY OPERATION. PARTICULAR CARE SHALL BE TAKEN IN THE INSTALLATION OF PUMPS IN ORDER TO PREVENT A STRAIN ON THE PIPING OR PUMP FLANGES AND THE CONTRACTOR SHALL ENSURE THE CORRECT ALIGNMENT OF SHAFTS, COUPLINGS, AND BEARINGS.
22. ALL WEDGES, SHIMS, FILLING PIECES, KEYS, PACKING, GROUT, OR OTHER MATERIALS NECESSARY TO PROPERLY ALIGN, LEVEL, AND SECURE APPARATUS IN PLACE SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. ALL PARTS INTENDED TO BE PLUMB OR LEVEL MUST BE PROVEN EXACTLY SO. ANY GRINDING NECESSARY TO BRING PARTS TO PROPER BEARING AFTER ERECTION SHALL BE DONE AT THE EXPENSE OF THE CONTRACTOR.
23. THE CONTRACTOR SHALL PROVIDE ALL OPENINGS, CHANNELS, CHASES, ETC. AS REQUIRED TO COMPLETE THE WORK UNDER THIS CONTRACT, TOGETHER WITH THOSE REQUIRED BY OTHER CONTRACTORS.
24. EXISTING PROCESS SYSTEMS, PIPELINES, EQUIPMENT, AND APPURTENANCES ARE SHOWN ON THESE DRAWINGS FOR REFERENCE ONLY AND WERE OBTAINED FROM THE BEST AVAILABLE SOURCES. THE EXACT LOCATION AND ELEVATION OF THESE ITEMS SHALL BE INVESTIGATED AND FIELD VERIFIED BY THE CONTRACTOR. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.
25. CONTRACTOR SHALL PROVIDE RESTRAINT OF ALL EXPANSION JOINTS/FLEX CONNECTORS WITH TIE-RODS.
26. WHERE CONNECTION OF NEW PIPING SYSTEMS TO EXISTING PIPING SYSTEMS IS REQUIRED, CONTRACTOR SHALL PROVIDE MISCELLANEOUS FITTINGS, FILLER FLANGES, COUPLINGS, ETC. AS MAY BE REQUIRED TO COMPLETE THE WORK, WHETHER SHOWN ON THE DRAWINGS OR NOT. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPING DIMENSIONS.
27. CONTRACTOR SHALL SUBMIT PIPING LAYOUT DIAGRAMS TO THE ENGINEER FOR APPROVAL PRIOR TO ANY PIPING INSTALLATION. PIPING LAYOUT DIAGRAMS SHALL SHOW DIMENSIONS OF ALL VALVES, FITTINGS, PIPE RUNS, AND SUPPORTS.
28. ALL PIPING SYSTEMS AND EQUIPMENT SHALL BE ADEQUATELY AND SAFELY SUPPORTED. CONTRACTOR SHALL DESIGN, PROVIDE, AND INSTALL ALL SUPPORTS AS REQUIRED BY THE PIPING AND EQUIPMENT PROVIDED. AT A MINIMUM, ALL PIPING SYSTEMS SHALL BE SUPPORTED PER THE REQUIREMENTS OF MANUFACTURER'S STANDARDIZATION SOCIETY (MSS) SP-58 AND MSS SP-69. SUPPORT DESIGN SHALL ACCOMMODATE ALL STATIC AND OPERATIONAL CONDITIONS TO WHICH THE PIPING AND EQUIPMENT MAY BE SUBJECTED. SUPPORTS SHALL BE IN ADDITION TO THOSE SHOWN ON THE CONTRACT DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. PRESSURE TESTING OF PIPING SHALL NOT BE PERMITTED UNTIL INSTALLATION OF PIPE SUPPORTS AND/OR RESTRAINTS IS COMPLETE.
29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORING NEEDS FOR PASSAGE OF PIPING THROUGH SOLID CONCRETE WALLS, FLOORS, OR FOUNDATION WALLS AND DUCTWORK.
30. THE CONTRACTOR SHALL PROVIDE BLIND FLANGES, PLUGS, ETC. AS REQUIRED.
31. WALL PENETRATIONS TO BE FRAMED AND SEALED AS PER BUILDING MANUFACTURER'S STANDARD DETAILS AND SPECIFICATIONS.
32. ALL PIPING UNDER CONCRETE SLABS OR STRUCTURES SHALL BE ENCASED IN CONCRETE, UNLESS OTHERWISE NOTED, REFER TO STRUCTURAL DRAWINGS.
33. FOR FLANGED SYSTEMS PROVIDE FLEXIBLE CONNECTORS WHERE NECESSARY, AND AS APPROVED, TO FACILITATE PIPING INSTALLATION AND VALVE AND EQUIPMENT REMOVAL.
34. PROVIDE ALL LIQUID PIPING 24" AND SMALLER WITH 3/4" LOW POINT DRAINS AND 3/4" HIGH POINT VENTS.
35. CONTRACTOR SHALL INSTALL ELECTROMAGNETIC FLOW METERS WITH STRAIGHT LENGTHS OF UPSTREAM AND DOWNSTREAM PIPE EQUAL TO OR GREATER THAN (5) PIPE DIAMETERS AND (3) PIPE DIAMETERS, RESPECTIVELY, UNLESS OTHERWISE NOTED. STRAIGHT RUN LENGTHS SHALL BE MEASURED FROM THE CENTER OF THE ELECTROMAGNETIC FLOW METER TO THE NEAREST FITTING OR TAP.
36. CONTRACTOR SHALL INSTALL CHECK VALVES WITH STRAIGHT LENGTHS OF UPSTREAM AND DOWNSTREAM PIPE EQUAL TO OR GREATER THAN (2.5) PIPE DIAMETERS, UNLESS OTHERWISE NOTED. STRAIGHT RUN LENGTHS SHALL BE MEASURED FROM THE CHECK VALVE FLANGE TO THE NEAREST FITTING OR TAP.
37. CONTRACTOR SHALL FURNISH SCISSOR LIFT AND PORTABLE GANTRY CRANE IN ACCORDANCE WITH DIVISION 14.

PROCESS MECHANICAL LEGEND

VALVES, COUPLING, & APPURTENANCES

- BALL VALVE
- VENTED BALL VALVE
- BUTTERFLY VALVE
- ELECTRIC ACTUATED BUTTERFLY VALVE
- BALL CHECK VALVE
- CHECK VALVE
- NEEDLE VALVE
- SOLENOID VALVE
- SLEEVE TYPE COUPLING
- FLANGED COUPLING ADAPTER
- FLEX CONNECTOR/EXPANSION JOINT (RUBBER)
- CONE STRAINER
- QUICK CONNECT
- FLOW INDICATOR TRANSMITTER
- TURBINE FLOWMETER
- PRESSURE REDUCING VALVE
- BACK PRESSURE/PRESSURE SUSTAINING VALVE
- VACUUM BREAKER
- RELIEF VALVE
- WELL SERVICE VALVE/AIR VACUUM VALVE
- PRESSURE INDICATOR (LIQUID SERVICE)
- PRESSURE INDICATOR TRANSMITTER (LIQUID SERVICE)
- PRESSURE INDICATOR (AIR SERVICE)
- FLOW SWITCH
- SAMPLE TAP
- DIFFERENTIAL PRESSURE INDICATOR TRANSMITTER
- GATE VALVE
- REDUCER/INCREASER
- STRAINER
- UNION
- FLEXIBLE HOSE
- DIAPHRAGM METERING PUMP
- ROTAMETER
- DIAPHRAGM ISOLATOR (GAUGE GUARD)
- CALIBRATION COLUMN
- VENT
- VENT
- 4 FUNCTION VALVE
- EJECTOR
- DRAIN
- FLEX COUPLING (CHEMICAL SERVICE)
- FLOAT SWITCH
- FLOOD SWITCH
- ULTRASONIC LEVEL SENSOR
- ELECTRIC ACTUATOR
- SLIDE GATE
- VERTICAL TURBINE PUMP
- AIR FILTER/INSECT SCREEN
- POSITIVE DISPLACEMENT BLOWER
- FILTER SILENCER
- SUBMERSIBLE WELL PUMP
- SURGE RELIEF/PRESSURE SUSTAINING VALVE

PIPE AND FITTINGS

DOUBLE LINE	SINGLE LINE	
		PIPE
SIDE UP DOWN	SIDE UP DOWN	ELBOW (90)
SIDE UP DOWN	SIDE UP DOWN	ELBOW (45)
SIDE BRANCH DOWN BRANCH UP DOWN	SIDE HIGH UP LOW DOWN	TEE
		WYE
		CROSS
		REDUCER (CONCENTRIC)
		REDUCER (ECCENTRIC)
		FLANGE
		PIPE END
		PIPE BREAK

PIPE AND FITTING SYMBOLOGY SHOWN ABOVE IS FOR FLANGED DUCTILE IRON PIPE. SYMBOLOGY FOR OTHER PIPING SYSTEMS IS SIMILAR. END CONNECTIONS DENOTE JOINING TECHNOLOGY.

- MECHANICAL JOINT
- WELDED
- SOCKET WELD
- SINGLE LINE (JOINING TECHNOLOGY VARIES)

PROCESS STREAM ABBREVIATIONS

ASB	AIR SCOUR BLOWER
AS	AIR SCOUR SUPPLY
BF	BAG FILTER
BFI	BAG FILTER INFLUENT
BWW	BACKWASH WASTE
BWWT	BACKWASH WASTE TANK
DR	DRAIN
FCO	FLOOR CLEANOUT
FMFE	IRON & MANGANESE FILTER EFFLUENT
FMFI	IRON & MANGANESE FILTER INFLUENT
FW	FINISHED WATER
FTW	FILTER TO WASTE
FWWW	FINISHED WATER WET WELL
GAC	GRANULAR ACTIVATED CARBON
GSEL	GROUND SURFACE ELEVATION
IW	INCHES OF WATER
IX	ION EXCHANGE RESIN
KOH	POTASSIUM HYDROXIDE
MP	METERING PUMP
NaF	SODIUM FLUORIDE
NaHOS3	SODIUM BISULFITE
NaOCl	SODIUM HYPOCHLORITE
OX	OXIDIZED WATER
PTE	PFAS TREATMENT EFFLUENT
PF	PRESSURE FILTER
PTI	PFAS TREATMENT INFLUENT
REC	RECYCLE
RW	RAW WATER
SL	SLUDGE
V	VENT
WWS	WASHWATER SUPPLY

LINE DESIGNATIONS

- PROPOSED
- EXISTING, OTHER DISCIPLINE OR OUT OF FUNCTION
- EXTERIOR PIPING OR NOT IN VIEW
- DEMOLITION
- FUTURE EQUIPMENT (NOT IN CONTRACT)
- SALVAGE
- CONCRETE ENCASEMENT
- PRIMARY FLOW
- SECONDARY FLOW
- TERTIARY FLOW

PIPING AND TUBING MATERIALS

CI	CAST IRON	PE	POLYETHYLENE
CPVC	CHLORINATED POLYVINYL CHLORIDE	PVC	POLYVINYL CHLORIDE
CS	CARBON STEEL	PVDF	POLYVINYLIDENE FLUORIDE
CU	COPPER	PTEE	POLYTETRAFLUOROETHYLENE
DI	DUCTILE IRON	RCP	REINFORCED CONCRETE
FRP	FIBERGLASS REINFORCED PLASTIC	SS	STAINLESS STEEL
GALV	GALVANIZED STEEL	STL	STEEL
HDPE	HIGH DENSITY POLYETHYLENE		

ENVIRONMENTAL PARTNERS — An Apex Company

WALTON W. DOTY JR. CIVIL NO. 56074 COMMONWEALTH OF MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL GENERAL NOTES AND LEGEND

FOR CONSTRUCTION

Sheet No. M-1

Drawing file: I:\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.1 Mechanical Notes, Legend, and Schedule.dwg Plot Date: Apr 11,2024-2:22pm

PROCESS PUMP SCHEDULE

TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	RATING POINTS				DRIVE	MOTOR			POWER			REMARKS
				PT1 FLOW (GPM)	PT1 HEAD (FT)	PT2 FLOW (GPM)	PT2 HEAD (FT)		HP	RPM	ENCL.	VAC	Hz	PHASE	
P-100A	WELL 2 RAW WATER PUMP 1	WELL STATION 2	VERTICAL IN-LINE	326	256	200	134	VARIABLE	50	3525	TEFC	480	60	3	SHUTOFF HEAD = 430 FT; NAPSHa AT MAXIMUM FLOW = 326 GPM
P-100B	WELL 2 RAW WATER PUMP 2	WELL STATION 2	VERTICAL IN-LINE	326	256	200	134	VARIABLE	50	3525	TEFC	480	60	3	SHUTOFF HEAD = 430 FT; NAPSHa AT MAXIMUM FLOW = 326 GPM
P-101A	VACUUM PRIMING PUMP 1	WELL STATION 2	ROTARY VANE VACUUM	150 CF OF WATER DISPLACED, 10 FT OF LIFT				CONSTANT	0.9	--	TEFC	208	60	3	POWERED FROM VPC-FCP; FURNIHSED BY VACUUM PRIMING SYSTEMS SUPPLIER
P-101B	VACUUM PRIMING PUMP 2	WELL STATION 2	ROTARY VANE VACUUM	150 CF OF WATER DISPLACED, 10 FT OF LIFT				CONSTANT	0.9	--	TEFC	208	60	3	POWERED FROM VPC-FCP; FURNISHED BY VACUUM PRIMING SYSTEMS SUPPLIER
P-141	WELL 3 RAW WATER PUMP	WELL STATION 3	VERTICAL IN-LINE	264	311	160	169	VARIABLE	40	1800	TEFC	480	60	3	SHUTOFF HEAD = 465 FT
P-700A	FINISHED WATER PUMP 1	PIPE GALLERY	VERTICAL IN-LINE	700	222	347	155	VARIABLE	60	3541	TEFC	480	60	3	SHUTOFF HEAD = 315 FT
P-700B	FINISHED WATER PUMP 2	PIPE GALLERY	VERTICAL IN-LINE	700	222	347	155	VARIABLE	60	3541	TEFC	480	60	3	SHUTOFF HEAD = 315 FT
P-700C	FINISHED WATER PUMP 3	PIPE GALLERY	VERTICAL IN-LINE	700	222	347	155	VARIABLE	60	3541	TEFC	480	60	3	SHUTOFF HEAD = 315 FT
P-800A	RECYCLE PUMP 1	PIPE GALLERY	VERTICAL IN-LINE	30	180	13	173	VARIABLE	5	3461	TEFC	480	60	3	SHUTOFF HEAD = 367 FT
P-800B	RECYCLE PUMP 2	PIPE GALLERY	VERTICAL IN-LINE	30	180	13	173	VARIABLE	5	3461	TEFC	480	60	3	SHUTOFF HEAD = 367 FT
P-801A	SLUDGE PUMP 1	PIPE GALLERY	END SUCTION	50	24	--	--	CONSTANT	1.5	870	TEFC	480	60	3	SHUTOFF HEAD = 28 FT
P-801B	SLUDGE PUMP 2	PIPE GALLERY	END SUCTION	50	24	--	--	CONSTANT	1.5	870	TEFC	480	60	3	SHUTOFF HEAD = 28 FT

METERING PUMP SCHEDULE

TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	SIZING				DRIVE	POWER				REMARKS
				VALUE 1	UNIT 1	VALUE 2	UNIT 2		WATTS	VAC	Hz	PHASE	
MP-404	PRE-FILTRATION NaOCl FEED PUMP 1	NaOCl STORAGE AREA	METERING PUMP	0.43	GPH (MIN)	1.19	GPH (MAX)	VARIABLE	--	120	60	1	DEGASSING, ACRYLIC PVC HEAD AND FITTINGS, CERAMIC BALLS, PVDF/PTFE CHECK VALVE
MP-405	PRE-FILTRATION NaOCl FEED PUMP 2	NaOCl STORAGE AREA	METERING PUMP	0.43	GPH (MIN)	1.19	GPH (MAX)	VARIABLE	--	120	60	1	DEGASSING, ACRYLIC PVC HEAD AND FITTINGS, CERAMIC BALLS, PVDF/PTFE CHECK VALVE
MP-407	POST-FILTRATION NaOCl FEED PUMP 1	NaOCl STORAGE AREA	METERING PUMP	0.06	GPH (MIN)	0.16	GPH (MAX)	VARIABLE	--	120	60	1	DEGASSING, ACRYLIC PVC HEAD AND FITTINGS, CERAMIC BALLS, PVDF/PTFE CHECK VALVE
MP-408	POST-FILTRATION NaOCl FEED PUMP 2	NaOCl STORAGE AREA	METERING PUMP	0.06	GPH (MIN)	0.16	GPH (MAX)	VARIABLE	--	120	60	1	DEGASSING, ACRYLIC PVC HEAD AND FITTINGS, CERAMIC BALLS, PVDF/PTFE CHECK VALVE
MP-503	KOH FEED PUMP 1	KOH STORAGE AREA	METERING PUMP	3.16	GPH (MIN)	8.6	GPH (MAX)	VARIABLE	--	120	60	1	STD. LIQUID END, PVC HEAD AND FITTINGS, CERAMIC BALLS, PVDF/PTFE CHECK VALVE
MP-504	KOH FEED PUMP 2	KOH STORAGE AREA	METERING PUMP	3.16	GPH (MIN)	8.6	GPH (MAX)	VARIABLE	--	120	60	1	STD. LIQUID END, PVC HEAD AND FITTINGS, CERAMIC BALLS, PVDF/PTFE CHECK VALVE
MP-603	NaHSO3 FEED PUMP 1	NaHSO3 STORAGE AREA	METERING PUMP	0.005	GPH (MIN)	0.18	GPH (MAX)	VARIABLE	--	120	60	1	STD. LIQUID END, PVC HEAD AND FITTINGS, CERAMIC BALLS, PVDF/PTFE CHECK VALVE
MP-604	NaHSO3 FEED PUMP 2	NaHSO3 STORAGE AREA	METERING PUMP	0.005	GPH (MIN)	0.18	GPH (MAX)	VARIABLE	--	120	60	1	STD. LIQUID END, PVC HEAD AND FITTINGS, CERAMIC BALLS, PVDF/PTFE CHECK VALVE
MP-651	NAF FEED PUMP	NaF STORAGE AREA	METERING PUMP	1.37	GPH (MIN)	3.72	GPH (MAX)	VARIABLE	--	120	60	1	STD. LIQUID END, PVC HEAD AND FITTINGS, CERAMIC BALLS, PVDF/PTFE CHECK VALVE

TRANSFER PUMP SCHEDULE

TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	SIZING				DRIVE	MOTOR			VOLTAGE			REMARKS
				VALUE 1	UNIT 1	VALUE 2	UNIT 2		HP	RPM	ENCL.	VAC	Hz	PHASE	
TP-403	PRE-FILTRATION NaOCl TRANSFER PUMP	NaOCl STORAGE AREA	TRANSFER PUMP	27	GPM	14	FT TDH	CONSTANT	0.5	3450	TEFC	460	60	3	KYNAR HOUSING AND IMPELLER ASSEMBLY, VITON O-RINGS
TP-406	POST-FILTRATION NaOCl TRANSFER PUMP	NaOCl STORAGE AREA	TRANSFER PUMP	23	GPM	11	FT TDH	CONSTANT	0.5	3450	TEFC	460	60	3	KYNAR HOUSING AND IMPELLER ASSEMBLY, VITON O-RINGS
TP-502	KOH TRANSFER PUMP	KOH STORAGE AREA	TRANSFER PUMP	50	GPM	25	FT TDH	CONSTANT	1	3450	TEFC	460	60	3	POLYPROPYLENE HOUSING AND IMPELLER ASSEMBLY, VITON O-RINGS
TP-602	NaHSO3 TRANSFER PUMP	KOH STORAGE AREA	TRANSFER PUMP	20	GPM	20	FT TDH	CONSTANT	0.5	3450	TEFC	460	60	3	POLYPROPYLENE HOUSING AND IMPELLER ASSEMBLY, VITON O-RINGS

AIR SCOUR BLOWER SCHEDULE

TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	SIZING				DRIVE	MOTOR			POWER			REMARKS
				VALUE 1	UNIT 1	VALUE 2	UNIT 2		HP	RPM	ENCL.	VAC	HZ	PHASE	
ASB-202	AIR SCOUR BLOWER	PROCESS AREA	ROTARY POSITIVE DISPLACEMENT	31	SCFM	5	PSIG	CONSTANT	2	1800	TEFC	480	60	3	SEE NOTE 2

CHEMICAL FEED TANK SCHEDULE

TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	STORAGE VOLUME (GAL)	MAX. DIAMETER (IN)	REMARKS
BT-400	NaOCl BULK TANK	NaOCl STORAGE AREA	POLYETHYLENE	850	48	FURNISHED WITH INTEGRALLY MOLDED FLANGED OUTLET
DT-401	PRE-FILTRATION NaOCl DAY TANK	NaOCl STORAGE AREA	POLYETHYLENE	100	28	
DT-402	POST-FILTRATION NaOCl DAY TANK	NaOCl STORAGE AREA	POLYETHYLENE	50	22	
BT-500	KOH BULK TANK	KOH STORAGE AREA	POLYETHYLENE	3,000	85	FURNISHED WITH INTEGRALLY MOLDED FLANGED OUTLET
DT-501	KOH DAY TANK	KOH STORAGE AREA	POLYETHYLENE	330	46	
BT-600	NaHSO3 BULK TANK	NaHSO3 STORAGE AREA	POLYETHYLENE	1,150	64	FURNISHED WITH INTEGRALLY MOLDED FLANGED OUTLET
DT-601	NaHSO3 DAY TANK	NaHSO3 STORAGE AREA	POLYETHYLENE	50	22	
SAT-650	NaF SATURATOR TANK	NaF STORAGE AREA	POLYETHYLENE	55	38	

VACUUM RECEIVER TANK SCHEDULE

TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	STORAGE VOLUME (GAL)	MAX. DIAMETER (IN)	REMARKS
VT-102	VACUUM PRIMING SYSTEM VACUUM RECEIVER	WELL STATION 2	GALVANIZED STEEL	60	18.75	FURNISHED BY VACUUM PRIMING SYSTEM SUPPLIER

NOTES:

1. MANUAL BALL VALVES, ANALYZER SYSTEM VALVES, AND CHEMICAL SYSTEM VALVES NOT INCLUDED IN VALVE SCHEDULE.
2. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY FE/MN FILTER MANUFACTURER.
3. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY PFAS FILTER MANUFACTURER.
4. EXISTING VALVES TO REMAIN NOT INCLUDED IN SCHEDULE.

1740 · SHARON · 1765 · 2ND PRECINCT

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS
ALSTON W.G. POTTS
CIVIL
NO. 56074
REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL SCHEDULE I

FOR CONSTRUCTION

Sheet No.
M-2

Drawing file: I:\Sharon, MA.245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.1 Mechanical Notes, Legend, and Schedule.dwg Plot Date: Apr 10,2024-4:54pm

VALVE SCHEDULE I

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	APPLICATION	SIZE (INCHES)	SERVICE	ACTUATOR	VALVE POSITION	REMARKS
ARV-124A	WELL STATION 2 PUMP 1 SUCTION AIR RELEASE VALVE	WELL STATION 2	AIR RELEASE VALVE	WATER	1	PRIMING	--	--	
ARV-124B	WELL STATION 2 PUMP 2 SUCTION AIR RELEASE VALVE	WELL STATION 2	AIR RELEASE VALVE	WATER	1	PRIMING	--	--	
ARV-126A	WELL STATION 2 PUMP 1 DISCHARGE AIR RELEASE VALVE	WELL STATION 2	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	
ARV-126B	WELL STATION 2 PUMP 2 DISCHARGE AIR RELEASE VALVE	WELL STATION 2	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	
CV-128A	WELL STATION 2 PUMP 1 DISCHARGE CHECK VALVE	WELL STATION 2	SWING CHECK VALVE	WATER	6	CHECK	MANUAL	--	
CV-128B	WELL STATION 2 PUMP 2 DISCHARGE CHECK VALVE	WELL STATION 2	SWING CHECK VALVE	WATER	6	CHECK	MANUAL	--	
GV-129A	WELL STATION 2 PUMP 1 INFLUENT ISOLATION VALVE	WELL STATION 2	GATE VALVE	WATER	12	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
GV-129B	WELL STATION 2 PUMP 2 INFLUENT ISOLATION VALVE	WELL STATION 2	GATE VALVE	WATER	12	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
GV-130A	WELL STATION 2 PUMP 1 EFFLUENT ISOLATION VALVE	WELL STATION 2	GATE VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
GV-130B	WELL STATION 2 PUMP 2 EFFLUENT ISOLATION VALVE	WELL STATION 2	GATE VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
WSV-156	WELL STATION 3 WELL SERVICE VALVE	WELL STATION 3	WELL SERVICE VALVE	WATER	1	AIR RELEASE/VACUUM	--	--	
CV-158	WELL STATION 3 CHECK VALVE	WELL STATION 3	SWING CHECK VALVE	WATER	6	CHECK	MANUAL	--	
GV-159	WELL STATION 3 ISOLATION VALVE	WELL STATION 3	GATE VALVE	WATER	6	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
WSV-186	WELL STATION 4 WELL SERVICE VALVE	WELL STATION 4	WELL SERVICE VALVE	WATER	1	AIR RELEASE/VACUUM	--	--	
CV-188	WELL STATION 4 CHECK VALVE	WELL STATION 4	SWING CHECK VALVE	WATER	8	CHECK	MANUAL	--	
GV-189	WELL STATION 4 ISOLATION VALVE	WELL STATION 4	GATE VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-231	WELLS 2 & 3 RAW WATER SURGE RELIEF ISOLATION VALVE	NaOCl & KOH CONTAINMENT AREA	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
SRV-232	WELLS 2 & 3 RAW WATER SURGE RELIEF VALVE	NaOCl & KOH CONTAINMENT AREA	SURGE RELIEF VALVE	WATER	4	PRESSURE RELIEF	HYDRAULIC	NORMALLY CLOSED	GLOBE STYLE - RELIEF SET POINT 100 PSI
BFV-233	WELLS 2 & 3 RAW WATER ISOLATION VALVE	NaOCl & KOH CONTAINMENT AREA	BUTTERFLY VALVE	WATER	6	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
ARV-234	OXIDIZED WATER AIR RELEASE VALVE	FE/MN REMOVAL AREA	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	
BFV-235A	FE/MN FILTER 1 INFLUENT ISOLATION VALVE	FE/MN FILTER 1	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 2; CHAIN OPERATED
BFV-236A	FE/MN FILTER 1 INFLUENT CONTROL VALVE	FE/MN FILTER 1	BUTTERFLY VALVE	WATER	4	MODULATING	ELECTRIC	NORMALLY OPEN	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
ARV-237A	FE/MN FILTER 1 AIR RELEASE VALVE	FE/MN FILTER 1	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	SEE NOTE 2; FILTER AIR RELEASE VALVE TO BE SIZED BY FE/MN FILTER MANUFACTURER
BFV-238A	FE/MN FILTER 1 EFFLUENT CONTROL VALVE	FE/MN FILTER 1	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY OPEN	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-239A	FE/MN FILTER 1 EFFLUENT ISOLATION VALVE	FE/MN FILTER 1	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 2; WHEEL OPERATED
BFV-240A	FE/MN FILTER 1 BACKWASH SUPPLY CONTROL VALVE	FE/MN FILTER 1	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-241A	FE/MN FILTER 1 BACKWASH WASTE CONTROL VALVE	FE/MN FILTER 1	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-242A	FE/MN FILTER 1 FE/MN FILTER TO WASTE CONTROL VALVE	FE/MN FILTER 1	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-243A	FE/MN FILTER 1 AIR SCOUR CONTROL VALVE	FE/MN FILTER 1	BUTTERFLY VALVE	AIR	2	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-244A	FE/MN FILTER 1 AIR DRAINDOWN CONTROL VALVE	FE/MN FILTER 1	BUTTERFLY VALVE	AIR	2	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-235B	FE/MN FILTER 2 INFLUENT ISOLATION VALVE	FE/MN FILTER 2	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 2; CHAIN OPERATED
BFV-236B	FE/MN FILTER 2 INFLUENT CONTROL VALVE	FE/MN FILTER 2	BUTTERFLY VALVE	WATER	4	MODULATING	ELECTRIC	NORMALLY OPEN	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
ARV-237B	FE/MN FILTER 2 AIR RELEASE VALVE	FE/MN FILTER 2	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	SEE NOTE 2; FILTER AIR RELIEF VALVE TO BE SIZED BY FE/MN FILTER MANUFACTURER
BFV-238B	FE/MN FILTER 2 EFFLUENT CONTROL VALVE	FE/MN FILTER 2	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY OPEN	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-239B	FE/MN FILTER 2 EFFLUENT ISOLATION VALVE	FE/MN FILTER 2	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 2; WHEEL OPERATED
BFV-240B	FE/MN FILTER 2 BACKWASH SUPPLY CONTROL VALVE	FE/MN FILTER 2	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-241B	FE/MN FILTER 2 BACKWASH WASTE CONTROL VALVE	FE/MN FILTER 2	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH

NOTES:

1. MANUAL BALL VALVES, ANALYZER SYSTEM VALVES, AND CHEMICAL SYSTEM VALVES NOT INCLUDED IN VALVE SCHEDULE.
2. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY FE/MN FILTER MANUFACTURER.
3. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY PFAS FILTER MANUFACTURER.
4. EXISTING VALVES TO REMAIN NOT INCLUDED IN SCHEDULE.

VALVE SCHEDULE II

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	APPLICATION	SIZE (INCHES)	SERVICE	ACTUATOR	VALVE POSITION	REMARKS
BFV-242B	FE/MN FILTER 2 FE/MN FILTER TO WASTE CONTROL VALVE	FE/MN FILTER 2	BUTTERFLY VALVE	WATER	2	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-243B	FE/MN FILTER 2 AIR SCOUR CONTROL VALVE	FE/MN FILTER 2	BUTTERFLY VALVE	AIR	2	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-244B	FE/MN FILTER 1 AIR DRAINDOWN CONTROL VALVE	FE/MN FILTER 2	BUTTERFLY VALVE	AIR	2	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-235C	FE/MN FILTER 3 INFLUENT ISOLATION VALVE	FE/MN FILTER 3	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 2; CHAIN OPERATED
BFV-236C	FE/MN FILTER 3 INFLUENT CONTROL VALVE	FE/MN FILTER 3	BUTTERFLY VALVE	WATER	4	MODULATING	ELECTRIC	NORMALLY OPEN	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
ARV-237C	FE/MN FILTER 3 AIR RELEASE VALVE	FE/MN FILTER 3	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	SEE NOTE 2; FILTER AIR RELEASE VALVE TO BE SIZED BY FE/MN FILTER MANUFACTURER
BFV-238C	FE/MN FILTER 3 EFFLUENT CONTROL VALVE	FE/MN FILTER 3	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY OPEN	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-239C	FE/MN FILTER 3 EFFLUENT ISOLATION VALVE	FE/MN FILTER 3	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 2; WHEEL OPERATED
BFV-240C	FE/MN FILTER 3 BACKWASH SUPPLY CONTROL VALVE	FE/MN FILTER 3	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-241C	FE/MN FILTER 3 BACKWASH WASTE CONTROL VALVE	FE/MN FILTER 3	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-242C	FE/MN FILTER 3 FE/MN FILTER TO WASTE CONTROL VALVE	FE/MN FILTER 3	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-243C	FE/MN FILTER 3 AIR SCOUR CONTROL VALVE	FE/MN FILTER 3	BUTTERFLY VALVE	AIR	2	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-244C	FE/MN FILTER 3 AIR DRAINDOWN CONTROL VALVE	FE/MN FILTER 3	BUTTERFLY VALVE	AIR	2	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-247	COMBINED FE/ME EFFLUENT ISOLATION VALVE	FE/MN REMOVAL AREA	BUTTERFLY VALVE	WATER	6	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
CV-249	FE/MN FILTERS BACKWASH WASTE CHECK VALVE	FE/MN REMOVAL AREA	SWING CHECK VALVE	WATER	6	CHECK	MANUAL	--	
PRV-252	AIR SCOUR BLOWER PRESSURE RELIEF VALVE	FE/MN REMOVAL AREA	PRESSURE REDUCING VALVE	AIR	3	PRESSURE RELIEF	--	--	SEE NOTE 2; PRESSURE SETTING BY FE/MN FILTER MANUFACTURER, STAINLESS STEEL
BFV-254	AIR SCOUR BLOWER DISCHARGE ISOLATION VALVE	FE/MN REMOVAL AREA	BUTTERFLY VALVE	AIR	3	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 2; STAINLESS STEEL
CV-255	AIR SCOUR BLOWER CHECK VALVE	FE/MN REMOVAL AREA	WAFER CHECK VALVE	AIR	3	CHECK	MANUAL	--	SEE NOTE 2; STAINLESS STEEL
CV-257	COMBINED FE/ME EFFLUENT ISOLATION VALVE	FE/MN REMOVAL AREA	SWING CHECK VALVE	WATER	6	CHECK	MANUAL	--	
SV-256	AIR SCOUR BLOWER SOLENOID VALVE	FE/MN REMOVAL AREA	SOLENOID VALVE	AIR	3/8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	POWER: 24VDC
BFV-321	WELL 4 RAW WATER SURGE RELIEF ISOLATION VALVE	FE/MN REMOVAL AREA	BUTTERFLY VALVE	WATER	3	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
SRV-322	WELL 4 RAW WATER SURGE RELIEF VALVE	FE/MN REMOVAL AREA	SURGE RELIEF VALVE	WATER	3	PRESSURE RELIEF	HYDRAULIC	NORMALLY CLOSED	GLOBE STYLE - RELIEF SET POINT 100 PSI
ARV-323	WELL 4 RAW WATER AIR RELEASE VALVE	FE/MN REMOVAL AREA	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	
BFV-324	WELL 4 RAW WATER ISOLATION VALVE	FE/MN REMOVAL AREA	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-325A	BAG FILTER 1 INFLUENT CONTROL VALVE	FE/MN REMOVAL AREA	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-326A	BAG FILTER 1 EFFLUENT CONTROL VALVE	FE/MN REMOVAL AREA	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-325B	BAG FILTER 2 INFLUENT CONTROL VALVE	FE/MN REMOVAL AREA	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-326B	BAG FILTER 2 EFFLUENT CONTROL VALVE	FE/MN REMOVAL AREA	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-325C	BAG FILTER 3 INFLUENT CONTROL VALVE	FE/MN REMOVAL AREA	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-326C	BAG FILTER 3 EFFLUENT CONTROL VALVE	FE/MN REMOVAL AREA	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-327	COMBINED BAG FILTER EFFLUENT CONTROL VALVE	FE/MN REMOVAL AREA	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
ARV-329	COMBINED BAG FILTER EFFLUENT AIR RELEASE VALVE	PFAS REMOVAL AREA	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	
BFV-330A	PFAS LEAD FILTER 1 INFLUENT ISOLATION VALVE	PFAS LEAD FILTER 1	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-331A	PFAS LAG FILTER 1 INFLUENT ISOLATION VALVE	PFAS LAG FILTER 1	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-332A	PFAS LEAD FILTER 1 FILTER ISOLATION VALVE	PFAS LEAD FILTER 1	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-333A	PFAS LAG FILTER 1 ISOLATION VALVE	PFAS LAG FILTER 1	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-334A	PFAS LEAD FILTER 1 EFFLUENT ISOLATION VALVE	PFAS LEAD FILTER 1	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED

NOTES:

1. MANUAL BALL VALVES, ANALYZER SYSTEM VALVES, AND CHEMICAL SYSTEM VALVES NOT INCLUDED IN VALVE SCHEDULE.
2. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY FE/MN FILTER MANUFACTURER.
3. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY PFAS FILTER MANUFACTUER.
4. EXISTING VALVES TO REMAIN NOT INCLUDED IN SCHEDULE.

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS
ALSTON W. SCOTT
CIVIL
NO. 56074
REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL SCHEDULE III

FOR CONSTRUCTION

Sheet No.

M-4

Drawing file: I:\Sharon, MA.245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.1 Mechanical Notes, Legend, and Schedule.dwg Plot Date: Apr 10,2024--4:55pm

VALVE SCHEDULE III

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	APPLICATION	SIZE (INCHES)	SERVICE	ACTUATOR	VALVE POSITION	REMARKS
BFV-335A	PFAS LAG FILTER 1 EFFLUENT ISOLATION VALVE	PFAS LAG FILTER 1	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-336A	PFAS LEAD FILTER 1 BACKWASH SUPPLY ISOLATION VALVE	PFAS LEAD FILTER 1	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
BFV-337A	PFAS LAG FILTER 1 BACKWASH SUPPLY ISOLATION VALVE	PFAS LAG FILTER 1	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
BFV-338A	PFAS LEAD FILTER 1 BACKWASH WASTE ISOLATION VALVE	PFAS LEAD FILTER 1	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
BFV-339A	PFAS LAG FILTER 1 BACKWASH WASTE ISOLATION VALVE	PFAS LAG FILTER 1	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
SRV-340A	PFAS LEAD FILTER 1 SURGE RELIEF VALVE	PFAS LEAD FILTER 1	SURGE RELIEF VALVE	WATER	3	PRESSURE RELIEF	HYDRAULIC	NORMALLY CLOSED	SEE NOTE 3; SURGE RELIEF SET POINT BY PFAS FILTER MANUFACTURER
AVV-341A	PFAS LEAD FILTER 1 AIR VACUUM VALVE	PFAS LEAD FILTER 1	AIR VACUUM VALVE	WATER	1	AIR RELEASE	--	--	SEE NOTE 3; WHEEL OPERATED
BFV-342A	PFAS LEAD FILTER 1 FILTER TO WASTE ISOLATION VALVE	PFAS LEAD FILTER 1	BUTTERFLY VAVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
SRV-343A	PFAS LAG FILTER 1 SURGE RELIEF VALVE	PFAS LAG FILTER 1	SURGE RELIEF VALVE	WATER	3	PRESSURE RELIEF	HYDRAULIC	NORMALLY CLOSED	SEE NOTE 3; SURGE RELIEF SET POINT BY PFAS FILTER MANUFACTURER
AVV-344A	PFAS LAG FILTER 1 AIR VACUUM VALVE	PFAS LAG FILTER 1	AIR VACUUM VALVE	WATER	1	AIR RELEASE	--	--	SEE NOTE 3; FILTER AIR RELEASE VALVE TO BE SIZED BY PFAS FILTER MANUFACTURER
BFV-345A	PFAS LAG FILTER 1 FILTER TO WASTE ISOLATION VALVE	PFAS LAG FILTER 1	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
BFV-330B	PFAS LEAD FILTER 2 INFLUENT ISOLATION VALVE	PFAS LEAD FILTER 2	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-331B	PFAS LAG FILTER 2 INFLUENT ISOLATION VALVE	PFAS LAG FILTER 2	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-332B	PFAS LEAD FILTER 2 FILTER ISOLATION VALVE	PFAS LEAD FILTER 2	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-333B	PFAS LAG FILTER 2 ISOLATION VALVE	PFAS LAG FILTER 2	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-334B	PFAS LEAD FILTER 2 EFFLUENT ISOLATION VALVE	PFAS LEAD FILTER 2	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-335B	PFAS LAG FILTER 2 EFFLUENT ISOLATION VALVE	PFAS LAG FILTER 2	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-336B	PFAS LEAD FILTER 2 BACKWASH SUPPLY ISOLATION VALVE	PFAS LEAD FILTER 2	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
BFV-337B	PFAS LAG FILTER 2 BACKWASH SUPPLY ISOLATION VALVE	PFAS LAG FILTER 2	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
BFV-338B	PFAS LEAD FILTER 2 BACKWASH WASTE ISOLATION VALVE	PFAS LEAD FILTER 2	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
BFV-339B	PFAS LAG FILTER 2 BACKWASH WASTE ISOLATION VALVE	PFAS LAG FILTER 2	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
SRV-340B	PFAS LEAD FILTER 2 SURGE RELIEF VALVE	PFAS LEAD FILTER 2	SURGE RELIEF VALVE	WATER	3	PRESSURE RELIEF	HYDRAULIC	NORMALLY CLOSED	SEE NOTE 3; SURGE RELIEF SET POINT BY PFAS FILTER MANUFACTURER
AVV-341B	PFAS LEAD FILTER 2 AIR VACUUM VALVE	PFAS LEAD FILTER 2	AIR VACUUM VALVE	WATER	1	AIR RELEASE	--	--	SEE NOTE 3; WHEEL OPERATED
BFV-342B	PFAS LEAD FILTER 2 FILTER TO WASTE ISOLATION VALVE	PFAS LEAD FILTER 2	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
SRV-343B	PFAS LAG FILTER 2 SURGE RELIEF VALVE	PFAS LAG FILTER 2	SURGE RELIEF VALVE	WATER	3	PRESSURE RELIEF	HYDRAULIC	NORMALLY CLOSED	SEE NOTE 3; SURGE RELIEF SET POINT BY PFAS FILTER MANUFACTURER
AVV-344B	PFAS LAG FILTER 2 AIR VACUUM VALVE	PFAS LAG FILTER 2	AIR VACUUM VALVE	WATER	1	AIR RELEASE	--	--	SEE NOTE 3; FILTER AIR RELEASE VALVE TO BE SIZED BY PFAS FILTER MANUFACTURER
BFV-345B	PFAS LAG FILTER 2 FILTER TO WASTE ISOLATION VALVE	PFAS LAG FILTER 2	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
BFV-330C	PFAS LEAD FILTER 3 INFLUENT ISOLATION VALVE	PFAS LEAD FILTER 3	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-331C	PFAS LAG FILTER 3 INFLUENT ISOLATION VALVE	PFAS LAG FILTER 3	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-332C	PFAS LEAD FILTER 3 FILTER ISOLATION VALVE	PFAS LEAD FILTER 3	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-333C	PFAS LAG FILTER 3 ISOLATION VALVE	PFAS LAG FILTER 3	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-334C	PFAS LEAD FILTER 3 EFFLUENT ISOLATION VALVE	PFAS LEAD FILTER 3	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-335C	PFAS LAG FILTER 3 EFFLUENT ISOLATION VALVE	PFAS LAG FILTER 3	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	SEE NOTE 3; WHEEL OPERATED
BFV-336C	PFAS LEAD FILTER 3 BACKWASH SUPPLY ISOLATION VALVE	PFAS LEAD FILTER 3	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
BFV-337C	PFAS LAG FILTER 3 BACKWASH SUPPLY ISOLATION VALVE	PFAS LAG FILTER 3	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
BFV-338C	PFAS LEAD FILTER 3 BACKWASH WASTE ISOLATION VALVE	PFAS LEAD FILTER 3	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
BFV-339C	PFAS LAG FILTER 3 BACKWASH WASTE ISOLATION VALVE	PFAS LAG FILTER 3	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
SRV-340C	PFAS LEAD FILTER 3 SURGE RELIEF VALVE	PFAS LEAD FILTER 3	SURGE RELIEF VALVE	WATER	3	PRESSURE RELIEF	HYDRAULIC	NORMALLY CLOSED	SEE NOTE 3; SURGE RELIEF SET POINT BY PFAS FILTER MANUFACTURER
AVV-341C	PFAS LEAD FILTER 3 AIR VACUUM VALVE	PFAS LEAD FILTER 3	AIR VACUUM VALVE	WATER	1	AIR RELEASE	--	--	SEE NOTE 3; WHEEL OPERATED
BFV-342C	PFAS LEAD FILTER 3 FILTER TO WASTE ISOLATION VALVE	PFAS LEAD FILTER 3	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED
SRV-343C	PFAS LAG FILTER 3 SURGE RELIEF VALVE	PFAS LAG FILTER 3	SURGE RELIEF VALVE	WATER	3	PRESSURE RELIEF	HYDRAULIC	NORMALLY CLOSED	SEE NOTE 3; SURGE RELIEF SET POINT BY PFAS FILTER MANUFACTURER
AVV-344C	PFAS LAG FILTER 3 AIR VACUUM VALVE	PFAS LAG FILTER 3	AIR VACUUM VALVE	WATER	1	AIR RELEASE	--	--	SEE NOTE 3; FILTER AIR RELEASE VALVE TO BE SIZED BY PFAS FILTER MANUFACTURER
BFV-345C	PFAS LAG FILTER 3 FILTER TO WASTER ISOLATION VALVE	PFAS LAG FILTER 3	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; WHEEL OPERATED

NOTES:

1. MANUAL BALL VALVES, ANALYZER SYSTEM VALVES, AND CHEMICAL SYSTEM VALVES NOT INCLUDED IN VALVE SCHEDULE.
2. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY FE/MN FILTER MANUFACTURER.
3. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY PFAS FILTER MANUFACTURER.
4. EXISTING VALVES TO REMAIN NOT INCLUDED IN SCHEDULE.

ENVIRONMENTAL PARTNERS — An Apex Company

WILSTON W. GOFF, CIVIL, NO. 56074, COMMONWEALTH OF MASSACHUSETTS, REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL SCHEDULE IV

FOR CONSTRUCTION

Sheet No.

M-5

VALVE SCHEDULE IV

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	APPLICATION	SIZE (INCHES)	SERVICE	ACTUATOR	VALVE POSITION	REMARKS
BFV-347	PRESSURE SUSTAINING VALVE UPSTREAM ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-347A	PRESSURE SUSTAINING VALVE 1 UPSTREAM ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-347B	PRESSURE SUSTAINING VALVE 2 UPSTREAM ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	
PSV-348A	FILTERED WATER PRESSURE SUSTAINING VALVE 1	PIPE GALLERY	PRESSURE SUSTAINING VALVE	WATER	8	SUSTAIN UPSTREAM PRESSURE	HYDRAULIC	NORMALLY OPEN	GLOBE STYLE; POWER: 24 VDC; SUSTAIN SET POINT: 15-25 PSI
PSV-348B	FILTERED WATER PRESSURE SUSTAINING VALVE 2	PIPE GALLERY	PRESSURE SUSTAINING VALVE	WATER	8	SUSTAIN UPSTREAM PRESSURE	HYDRAULIC	NORMALLY CLOSED	GLOBE STYLE; POWER: 24 VDC; SUSTAIN SET POINT: 15-25 PSI
BFV-349A	PRESSURE SUSTAINING VALVE 1 DOWNSTREAM ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-349B	PRESSURE SUSTAINING VALVE 2 DOWNSTREAM ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	
BV-350A	PFAS LEAD FILTER 1 MEDIA LOADING VALVE	PFAS LEAD FILTER 1	BALL VALVE	MEDIA	4	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; STAINLESS STEEL
BV-351A	PFAS LEAD FILTER 1 MEDIA DISCHARGE VALVE	PFAS LEAD FILTER 1	BALL VALVE	MEDIA	4	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; STAINLESS STEEL
BV-352A	PFAS LAG FILTER 1 MEDIA LOADING VALVE	PFAS LAG FILTER 1	BALL VALVE	MEDIA	4	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; STAINLESS STEEL
BV-353A	PFAS LAG FILTER 1 MEDIA DISCHARGE VALVE	PFAS LAG FILTER 1	BALL VALVE	MEDIA	4	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; STAINLESS STEEL
CV-354A	PFAS TRAIN 1 BACKWASH WASTE CHECK VALVE	PFAS REMOVAL AREA	SWING CHECK VALVE	WATER	6	CHECK	MANUAL	--	
BV-350B	PFAS LEAD FILTER 2 MEDIA LOADING VALVE	PFAS LEAD FILTER 2	BALL VALVE	MEDIA	4	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; STAINLESS STEEL
BV-351B	PFAS LEAD FILTER 2 MEDIA DISCHARGE VALVE	PFAS LEAD FILTER 2	BALL VALVE	MEDIA	4	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; STAINLESS STEEL
BV-352B	PFAS LAG FILTER 2 MEDIA LOADING VALVE	PFAS LAG FILTER 2	BALL VALVE	MEDIA	4	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; STAINLESS STEEL
BV-353B	PFAS LAG FILTER 2 MEDIA DISCHARGE VALVE	PFAS LAG FILTER 2	BALL VALVE	MEDIA	4	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; STAINLESS STEEL
CV-354B	PFAS TRAIN 2 BACKWASH WASTE CHECK VALVE	PFAS REMOVAL AREA	SWING CHECK VALVE	WATER	6	CHECK	MANUAL	--	
BV-350C	PFAS LEAD FILTER 3 MEDIA LOADING VALVE	PFAS LEAD FILTER 3	BALL VALVE	MEDIA	4	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; STAINLESS STEEL
BV-351C	PFAS LEAD FILTER 3 MEDIA DISCHARGE VALVE	PFAS LEAD FILTER 3	BALL VALVE	MEDIA	4	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; STAINLESS STEEL
BV-352C	PFAS LAG FILTER 3 MEDIA LOADING VALVE	PFAS LAG FILTER 3	BALL VALVE	MEDIA	4	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; STAINLESS STEEL
BV-353C	PFAS LAG FILTER 3 MEDIA DISCHARGE VALVE	PFAS LAG FILTER 3	BALL VALVE	MEDIA	4	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	SEE NOTE 3; STAINLESS STEEL
CV-354C	PFAS TRAIN 3 BACKWASH WASTE CHECK VALVE	PFAS REMOVAL AREA	SWING CHECK VALVE	WATER	6	CHECK	MANUAL	--	
SV-680	NaF SATURATOR POTABLE REFILL SOLENOID VALVE	NaF CONTAINMENT AREA	SOLENOID VALVE	WATER	1	OPEN/CLOSE	ELECTRIC	NORMALLY CLOSED	
BFV-731A	FINISHED WATER PUMP 1 SUCTION ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	
ARV-733A	FINISHED WATER PUMP 1 DISCHARGE AIR RELEASE VALVE	PIPE GALLERY	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	
CV-735A	FINISHED WATER PUMP 1 DISCHARGE CHECK VALVE	PIPE GALLERY	SWING CHECK VALVE	WATER	6	CHECK	MANUAL	--	
BFV-736A	FINISHED WATER PUMP 1 DISCHARGE ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	6	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-731B	FINISHED WATER PUMP 2 SUCTION ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
ARV-733B	FINISHED WATER PUMP 2 DISCHARGE AIR RELEASE VALVE	PIPE GALLERY	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	
CV-735B	FINISHED WATER PUMP 2 DISCHARGE CHECK VALVE	PIPE GALLERY	SWING CHECK VALVE	WATER	6	CHECK	MANUAL	--	
BFV-736B	FINISHED WATER PUMP 2 DISCHARGE ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	6	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-731C	FINISHED WATER PUMP 3 SUCTION ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	8	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
ARV-733C	FINISHED WATER PUMP 3 DISCHARGE AIR RELEASE VALVE	PIPE GALLERY	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	
CV-735C	FINISHED WATER PUMP 3 DISCHARGE CHECK VALVE	PIPE GALLERY	SWING CHECK VALVE	WATER	3	CHECK	MANUAL	--	
BFV-736C	FINISHED WATER PUMP 3 DISCHARGE ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	3	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
ARV-737	FINISHED WATER AIR RELEASE VALVE	PIPE GALLERY	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	

NOTES:

1. MANUAL BALL VALVES, ANALYZER SYSTEM VALVES, AND CHEMICAL SYSTEM VALVES NOT INCLUDED IN VALVE SCHEDULE.
2. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY FE/MN FILTER MANUFACTURER.
3. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY PFAS FILTER MANUFACTURER.
4. EXISTING VALVES TO REMAIN NOT INCLUDED IN SCHEDULE.

VALVE SCHEDULE V

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	APPLICATION	SIZE (INCHES)	SERVICE	ACTUATOR	VALVE POSITION	REMARKS
BFV-738	FINISHED WATER SURGE RELIEF ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	3	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
SRV-739	FINISHED WATER SURGE RELIEF VALVE	PFAS REMOVAL AREA	SURGE RELIEF VALVE	WATER	3	PRESSURE RELIEF/SURGE ANTICIPATION	HYDRAULIC	NORMALLY CLOSED	GLOBE STYLE - RELIEF SET POINT 120 PSI; ANTICIPATION SET POINT 60 PSI
CV-740	WET WELL OVERFLOW CHECK VALVE	WTP EXTERIOR	FLAPPER CHECK VALVE	WATER	12	CHECK	MANUAL	NORMALLY OPEN	
BFV-831	BACKWASH SUPPLY ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	6	OPEN/CLOSE	MANUAL	NORMALLY OPEN	CHAIN OPERATED
PRV-832	BACKWASH SUPPLY CONTROL VALVE	PFAS REMOVAL AREA	PRESSURE REDUCING VALVE	WATER	6	MODULATING	HYDRAULIC	NORMALLY CLOSED	GLOBE STYLE; CONTROLLER POWER: 24 VDC; FLOW PACED: 100-950 GPM; INLET PRESSURE: 85-95 PSI; OUTLET PRESSURE: 0.2-4.0 PSI
AVV-833	BACKWASH WASTE AIR VACUUM VALVE	PFAS REMOVAL AREA	AIR VACUUM VALVE	WATER	1	AIR RELEASE/VACUUM	--	--	
BFV-834A	BACKWASH WASTE TANK ISOLATION VALVE 1	PFAS REMOVAL AREA	BUTTERFLY VALVE	WATER	6	OPEN/CLOSE	ELECTRIC	NORMALLY OPEN	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-834B	BACKWASH WASTE TANK ISOLATION VALVE 2	PFAS REMOVAL AREA	BUTTERFLY VALVE	WATER	6	OPEN/CLOSE	ELECTRIC	NORMALLY OPEN	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-834C	BACKWASH WASTE TANK ISOLATION VALVE 3	PFAS REMOVAL AREA	BUTTERFLY VALVE	WATER	6	OPEN/CLOSE	ELECTRIC	NORMALLY OPEN	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-836A	RECYCLE BACKWASH WASTE TANK ISOLATION VALVE 1	PIPE GALLERY	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY OPEN	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-836B	RECYCLE BACKWASH WASTE TANK ISOLATION VALVE 2	PIPE GALLERY	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY OPEN	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-836C	RECYCLE BACKWASH WASTE TANK ISOLATION VALVE 3	PIPE GALLERY	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	ELECTRIC	NORMALLY OPEN	SEE NOTE 2; POWER: 120VAC/60HZ/1PH
BFV-838A	RECYCLE PUMP 1 INFLUENT ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
CV-840A	RECYCLE PUMP 1 EFFLUENT CHECK VALVE	PIPE GALLERY	SILENT GLOBE CHECK VALVE	WATER	4	CHECK	MANUAL	--	
BFV-841A	RECYCLE PUMP 1 EFFLUENT ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-838B	RECYCLE PUMP 2 INFLUENT ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
CV-840B	RECYCLE PUMP 2 EFFLUENT CHECK VALVE	PIPE GALLERY	SILENT GLOBE CHECK VALVE	WATER	4	CHECK	MANUAL	--	
BFV-841B	RECYCLE PUMP 2 EFFLUENT ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
ARV-842	RECYCLE LINE AIR RELEASE VALVE	KOH & NaOCl CONTAINMENT AREA	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	
BFV-843	RECYCLE ISOLATION VALVE	NaOCl & KOH CONTAINMENT AREA	BUTTERFLY VALVE	WATER	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-850A	SLUDGE BACKWASH WASTE TANK ISOLATION VALVE 1	PIPE GALLERY	BUTTERFLY VALVE	SLUDGE	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-850B	SLUDGE BACKWASH WASTE TANK ISOLATION VALVE 2	PIPE GALLERY	BUTTERFLY VALVE	SLUDGE	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-850C	SLUDGE BACKWASH WASTE TANK ISOLATION VALVE 3	PIPE GALLERY	BUTTERFLY VALVE	SLUDGE	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-852A	SLUDGE PUMP 1 INFLUENT ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	SLUDGE	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-854A	SLUDGE PUMP 1 EFFLUENT ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	SLUDGE	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
CV-855A	SLUDGE PUMP 1 EFFLUENT CHECK VALVE	PIPE GALLERY	SILENT GLOBE CHECK VALVE	SLUDGE	4	CHECK	MANUAL	--	
BFV-852B	SLUDGE PUMP 2 INFLUENT ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	SLUDGE	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
BFV-854B	SLUDGE PUMP 2 EFFLUENT ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	SLUDGE	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	
CV-855B	SLUDGE PUMP 2 EFFLUENT CHECK VALVE	PIPE GALLERY	SILENT GLOBE CHECK VALVE	SLUDGE	4	CHECK	MANUAL	--	
CV-855	SLUDGE EFFLUENT CHECK VALVE	PIPE GALLERY	SILENT GLOBE CHECK VALVE	SLUDGE	4	CHECK	MANUAL	--	
AVV-856	SLUDGE EFFLUENT AIR VACUUM VALVE	PFAS REMOVAL AREA	AIR RELEASE/VACUUM VALVE	SLUDGE	1	AIR RELEASE/VACUUM	--	--	
BFV-857	PFAS BACKWASH WASTE TANKS ISOLATION VALVE	PFAS REMOVAL AREA	BUTTERFLY VALVE	WATER	6	OPEN/CLOSE	MANUAL	NORMALLY OPEN	CHAIN OPERATED
BFV-858	FLOW TO WASTE ISOLATION VALVE	PFAS REMOVAL AREA	BUTTERFLY VALVE	WATER	6	OPEN/CLOSE	MANUAL	NORMALLY OPEN	CHAIN OPERATED
AVV-859	FLOW TO WASTE AIR VACUUM VALVE	PFAS REMOVAL AREA	AIR VACUUM VALVE	WATER	1	AIR RELEASE/VACUUM	--	--	
BFV-860	SLUDGE PUMP ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	SLUDGE	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	CHAIN OPERATED
BFV-861	SLUDGE PUMP RECIRCULATION ISOLATION VALVE	PIPE GALLERY	BUTTERFLY VALVE	SLUDGE	4	OPEN/CLOSE	MANUAL	NORMALLY OPEN	CHAIN OPERATED
BFV-862	BACKWASH SUPPLY ISOLATION VALVE	PFAS REMOVAL AREA	BUTTERFLY VALVE	WATER	6	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	CHAIN OPERATED
ARV-863	BACKWASH SUPPLY AIR RELEASE VALVE	PFAS REMOVAL AREA	AIR RELEASE VALVE	WATER	1	AIR RELEASE	--	--	
BFV-864	SLUDGE TRUCK CONNECTION ISOLATION VALVE	PFAS REMOVAL AREA	BUTTERFLY VALVE	SLUDGE	4	OPEN/CLOSE	MANUAL	NORMALLY CLOSED	

NOTES:

1. MANUAL BALL VALVES, ANALYZER SYSTEM VALVES, AND CHEMICAL SYSTEM VALVES NOT INCLUDED IN VALVE SCHEDULE.
2. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY FE/MN FILTER MANUFACTURER.
3. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY PFAS FILTER MANUFACTURER.
4. EXISTING VALVES TO REMAIN NOT INCLUDED IN SCHEDULE.

ENVIRONMENTAL PARTNERS — An Apex Company

ALSTON W. DOTTS JR. NO. 56074 REGISTERED PROFESSIONAL ENGINEER — COMMONWEALTH OF MASSACHUSETTS

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL SCHEDULE VI

FOR CONSTRUCTION

Sheet No.

M-7

Drawing file: i:\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.1 Mechanical Notes, Legend, and Schedule.dwg Plot Date: Apr 11,2024-12:55pm

PRESSURE GAUGE SCHEDULE I

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	RANGE	REMARKS
PI-125A	WELL STATION 2 PUMP 1 SUCTION PRESSURE GAUGE	WELL STATION 2	30 IN HG VACUUM - 15 PSI	
PI-125B	WELL STATION 2 PUMP 2 SUCTION PRESSURE GAUGE	WELL STATION 2	30 IN HG VACUUM - 15 PSI	
PI-127A	WELL STATION 2 PUMP 1 DISCHARGE PRESSURE GAUGE	WELL STATION 2	0 - 200 PSI	
PI-127B	WELL STATION 2 PUMP 2 DISCHARGE PRESSURE GAUGE	WELL STATION 2	0 - 200 PSI	
PI-157	WELL STATION 3 PRESSURE GAUGE	WELL STATION 3	0 - 200 PSI	
PI-187	WELL STATION 4 PRESSURE GAUGE	WELL STATION 4	0 - 200 PSI	
PI-244A	FE/MN FILTER 1 INFLUENT PRESSURE GAUGE	FE/MN FILTER 1	0 - 160 PSI	SEE NOTE 2; REMOTE MOUNTED DIAL
PI-245A	FE/MN FILTER 1 EFFLUENT PRESSURE GAUGE	FE/MN FILTER 1	0 - 160 PSI	SEE NOTE 2; REMOTE MOUNTED DIAL
PI-244B	FE/MN FILTER 2 INFLUENT PRESSURE GAUGE	FE/MN FILTER 2	0 - 160 PSI	SEE NOTE 2; REMOTE MOUNTED DIAL
PI-245B	FE/MN FILTER 2 EFFLUENT PRESSURE GAUGE	FE/MN FILTER 2	0 - 160 PSI	SEE NOTE 2; REMOTE MOUNTED DIAL
PI-244C	FE/MN FILTER 3 INFLUENT PRESSURE GAUGE	FE/MN FILTER 3	0 - 160 PSI	SEE NOTE 2; REMOTE MOUNTED DIAL
PI-245C	FE/MN FILTER 3 EFFLUENT PRESSURE GAUGE	FE/MN FILTER 3	0 - 160 PSI	SEE NOTE 2; REMOTE MOUNTED DIAL
PI-251	AIR SCOUR BLOWER INLET PRESSURE GAUGE	FE/MN REMOVAL AREA	20IW VACUUM - 10 PSI	SEE NOTE 2
PI-253	AIR SCOUR BLOWER OUTLET PRESSURE GAUGE	FE/MN REMOVAL AREA	0 - 15 PSI	SEE NOTE 2
PI-328A	BAG FILTER HEADER INFLUENT PRESSURE GAUGE	FE/MN REMOVAL AREA	0 - 160 PSI	SEE NOTE 3; REMOTE MOUNTED DIAL
PI-328B	BAG FILTER HEADER EFFLUENT PRESSURE GAUGE	FE/MN REMOVAL AREA	0 - 160 PSI	SEE NOTE 3; REMOTE MOUNTED DIAL
PI-355A	PFAS LEAD FILTER 1 EFFLUENT PRESSURE GAUGE	PFAS LEAD FILTER 1	0 - 100 PSI	SEE NOTE 3; REMOTE MOUNTED DIAL
PI-356A	PFAS LAG FILTER 1 EFFLUENT PRESSURE GAUGE	PFAS LAG FILTER 1	0 - 100 PSI	SEE NOTE 3; REMOTE MOUNTED DIAL
PI-355B	PFAS LEAD FILTER 2 EFFLUENT PRESSURE GAUGE	PFAS LEAD FILTER 2	0 - 100 PSI	SEE NOTE 3; REMOTE MOUNTED DIAL
PI-356B	PFAS LAG FILTER 2 EFFLUENT PRESSURE GAUGE	PFAS LAG FILTER 2	0 - 100 PSI	SEE NOTE 3; REMOTE MOUNTED DIAL
PI-355C	PFAS LEAD FILTER 3 EFFLUENT PRESSURE GAUGE	PFAS LEAD FILTER 3	0 - 100 PSI	SEE NOTE 3; REMOTE MOUNTED DIAL
PI-356C	PFAS LAG FILTER 2 EFFLUENT PRESSURE GAUGE	PFAS LAG FILTER 3	0 - 100 PSI	SEE NOTE 3; REMOTE MOUNTED DIAL
PI-433	NAOCL PRE-FILTRATION TRANSFER LINE PRESSURE GAUGE	KOH & NAOCL CONTAINMENT AREA	0 - 60 PSI	PROVIDE DIAPHRAGM SEALS
PI-435	NAOCL PRE-FILTRATION INJECTION LINE PRESSURE GAUGE	KOH & NAOCL CONTAINMENT AREA	0 - 160 PSI	PROVIDE DIAPHRAGM SEALS
PI-442	NAOCL POST-FILTRATION TRANSFER LINE PRESSURE GAUGE	KOH & NAOCL CONTAINMENT AREA	0 - 60 PSI	PROVIDE DIAPHRAGM SEALS
PI-444	NAOCL POST-FILTRATION INJECTION LINE PRESSURE GAUGE	KOH & NAOCL CONTAINMENT AREA	0 - 160 PSI	PROVIDE DIAPHRAGM SEALS
PI-533	KOH TRANSFER LINE PRESSURE GAUGE	KOH & NAOCL CONTAINMENT AREA	0 - 60 PSI	PROVIDE DIAPHRAGM SEALS
PI-535	KOH INJECTION LINE PRESSURE GAUGE	KOH & NAOCL CONTAINMENT AREA	0 - 160 PSI	PROVIDE DIAPHRAGM SEALS
PI-633	NAHSO3 TRANSFER LINE PRESSURE GAUGE	NAHSO3 CONTAINMENT AREA	0 - 60 PSI	PROVIDE DIAPHRAGM SEALS
PI-635	NAHSO3 INJECTION LINE PRESSURE GAUGE	NAHSO3 CONTAINMENT AREA	0 - 160 PSI	PROVIDE DIAPHRAGM SEALS

DECANTER SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	APPLICATION	SIZE (INCHES)	REMARKS
DF-835A	RECYCLE DECANTER 1	BACKWASH WASTE TANK	BACKWASH RECYCLE	4	SHALL BE SUITABLE FOR POTABLE WATER SERVICE
DF-835B	RECYCLE DECANTER 2	BACKWASH WASTE TANK	BACKWASH RECYCLE	4	SHALL BE SUITABLE FOR POTABLE WATER SERVICE
DF-835C	RECYCLE DECANTER 3	BACKWASH WASTE TANK	BACKWASH RECYCLE	4	SHALL BE SUITABLE FOR POTABLE WATER SERVICE

PRESSURE GAUGE SCHEDULE II

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	RANGE	REMARKS
PI-732A	FINISHED WATER PUMP 1 INFLUENT PRESSURE GAUGE	PIPE GALLERY	30 IN HG VACUUM - 15 PSI	
PI-734A	FINISHED WATER PUMP 1 EFFLUENT PRESSURE GAUGE	PIPE GALLERY	0 - 160 PSI	
PI-732B	FINISHED WATER PUMP 2 INFLUENT PRESSURE GAUGE	PIPE GALLERY	30 IN HG VACUUM - 15 PSI	
PI-734B	FINISHED WATER PUMP 2 EFFLUENT PRESSURE GAUGE	PIPE GALLERY	0 - 160 PSI	
PI-732C	FINISHED WATER PUMP 3 INFLUENT PRESSURE GAUGE	PIPE GALLERY	30 IN HG VACUUM - 15 PSI	
PI-734C	FINISHED WATER PUMP 3 EFFLUENT PRESSURE GAUGE	PIPE GALLERY	0 - 160 PSI	
PI-837	RECYCLE INFLUENT PRESSURE GAUGE	PIPE GALLERY	0 - 10 PSI	PROVIDE DIAPHRAGM SEALS
PI-839A	RECYCLE PUMP 1 EFFLUENT PRESSURE GAUGE	PIPE GALLERY	0 - 200 PSI	PROVIDE DIAPHRAGM SEALS
PI-839B	RECYCLE PUMP 2 EFFLUENT PRESSURE GAUGE	PIPE GALLERY	0 - 200 PSI	PROVIDE DIAPHRAGM SEALS
PI-851	SLUDGE INFLUENT PRESSURE GAUGE	PIPE GALLERY	0 - 10 PSI	PROVIDE DIAPHRAGM SEALS
PI-853A	SLUDGE PUMP 1 EFFLUENT PRESSURE GAUGE	PIPE GALLERY	0 - 60 PSI	PROVIDE DIAPHRAGM SEALS
PI-853B	SLUDGE PUMP 2 EFFLUENT PRESSURE GAUGE	PIPE GALLERY	0 - 60 PSI	PROVIDE DIAPHRAGM SEALS

FILTER SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	DIAMETER (FT)	REMARKS
PF-200A	FE/MN FILTER #1	FE/MN REMOVAL AREA	7	SEE NOTE 2
PF-200B	FE/MN FILTER #2	FE/MN REMOVAL AREA	7	SEE NOTE 2
PF-200C	FE/MN FILTER #3	FE/MN REMOVAL AREA	7	SEE NOTE 2
BF-201A	BAG FILTER #1	FE/MN REMOVAL AREA	--	SEE NOTE 3
BF-201B	BAG FILTER #2	FE/MN REMOVAL AREA	--	SEE NOTE 3
BF-201C	BAG FILTER #3	FE/MN REMOVAL AREA	--	SEE NOTE 3
PF-300A	LEAD PFAS FILTER #1	PFAS REMOVAL AREA	10	SEE NOTE 3; GAC MEDIA
PF-301A	LAG PFAS FILTER #1	PFAS REMOVAL AREA	10	SEE NOTE 3; IX MEDIA
PF-300B	LEAD PFAS FILTER #2	PFAS REMOVAL AREA	10	SEE NOTE 3; GAC MEDIA
PF-301B	LAG PFAS FILTER #2	PFAS REMOVAL AREA	10	SEE NOTE 3; IX MEDIA
PF-300C	LEAD PFAS FILTER #3	PFAS REMOVAL AREA	10	SEE NOTE 3; GAC MEDIA
PF-301C	LAG PFAS FILTER #3	PFAS REMOVAL AREA	10	SEE NOTE 3; IX MEDIA

NOTES:

1. MANUAL BALL VALVES, ANALYZER SYSTEM VALVES, AND CHEMICAL SYSTEM VALVES NOT INCLUDED IN VALVE SCHEDULE.
2. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY FE/MN FILTER MANUFACTURER.
3. VALVE/ACTUATOR/PRESSURE GAUGE/EQUIPMENT SHALL BE FURNISHED BY PFAS FILTER MANUFACTURER.
4. EXISTING VALVES TO REMAIN NOT INCLUDED IN SCHEDULE.

ENVIRONMENTAL PARTNERS — An Apex Company

COMMONWEALTH OF MASSACHUSETTS — ALSTON W. SCOTT — NO. 56074 — REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

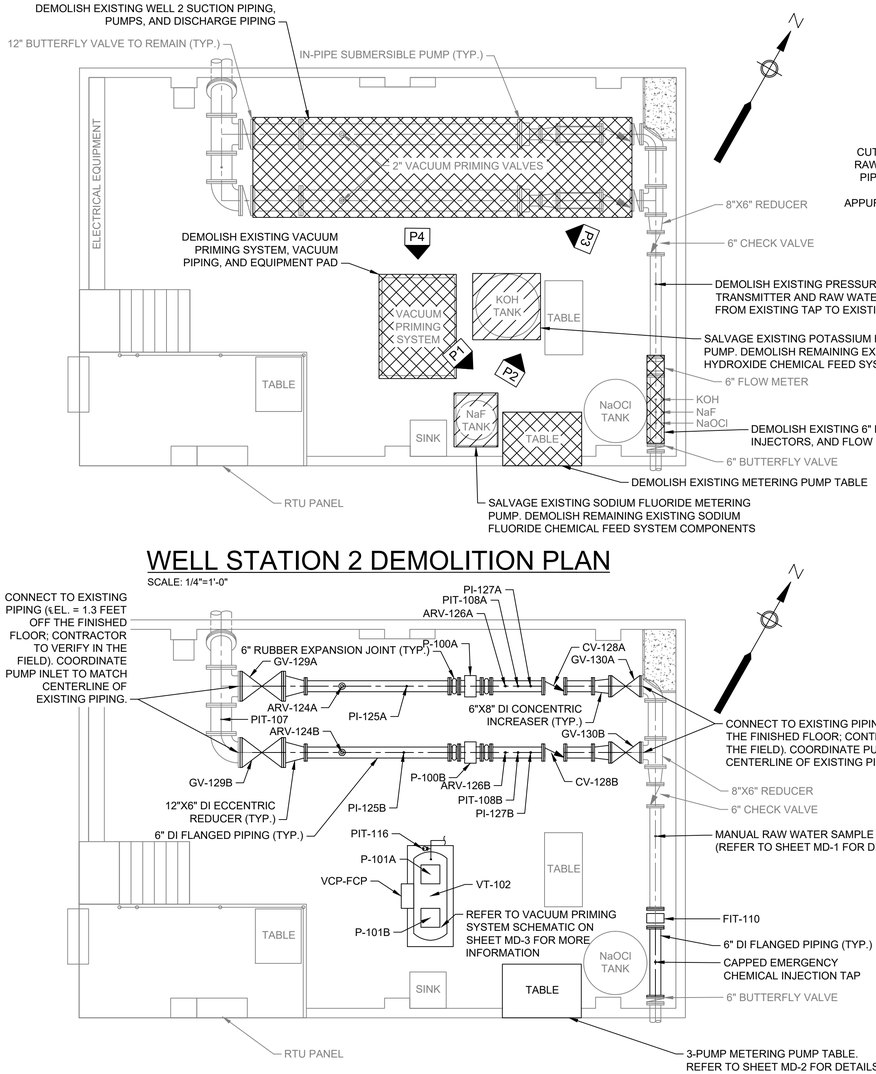
PROCESS MECHANICAL SCHEDULE VII

FOR CONSTRUCTION

Sheet No.

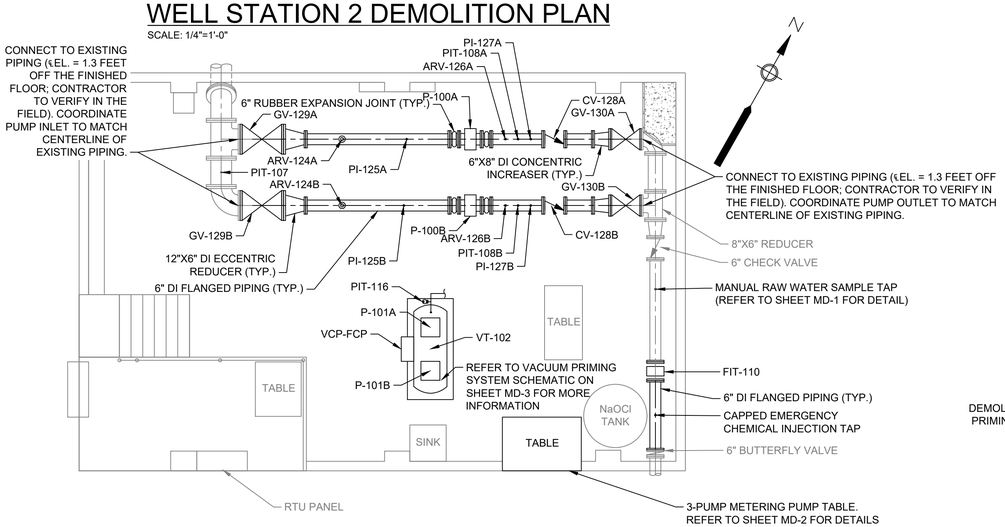
M-8

Drawing file: i:\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.1 Mechanical Notes, Legend, and Schedule.dwg Plot Date: Apr 11,2024-2:28pm



WELL STATION 2 DEMOLITION PLAN

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



WELL STATION 2 MODIFICATIONS PLAN

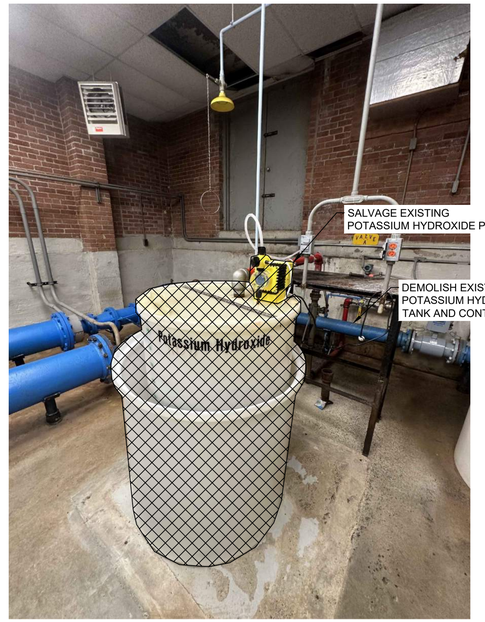
SCALE: 1/4"=1'-0"

NOTES:

1. REFER TO NOTES ON SHEET M-10 FOR ADDITIONAL DEMOLITION REQUIREMENTS.
2. REFER TO INSTRUMENTATION AND ELECTRICAL CONTRACT DOCUMENTS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
3. THE GENERAL CONTRACTOR SHALL COORDINATE THE SALVAGE OF EXISTING CHEMICAL FEED EQUIPMENT AND REMAINING CHEMICALS WITH THE ENGINEER/OWNER.
4. GENERAL CONTRACTOR SHALL LEGALLY DISPOSE OF POTASSIUM HYDROXIDE, SODIUM FLUORIDE, AND SODIUM HYDROCHLORITE SOLUTION (UP TO 50 GALLONS EACH).
5. GENERAL CONTRACTOR SHALL PATCH AND REPAIR ALL EXPOSED FLOOR, WALL, CEILING, AND ROOF PENETRATIONS FROM THE DEMOLITION OF PIPING, PIPE SUPPORTS, EQUIPMENT, PANELS, CONDUIT, AND ELECTRICAL SYSTEMS. ALL PATCHING AND REPAIR SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 01045 - CUTTING, CORING, AND PATCHING.
6. ALL CONTRACTORS SHALL LEGALLY DISPOSE OF ALL EQUIPMENT NOT SALVAGED.

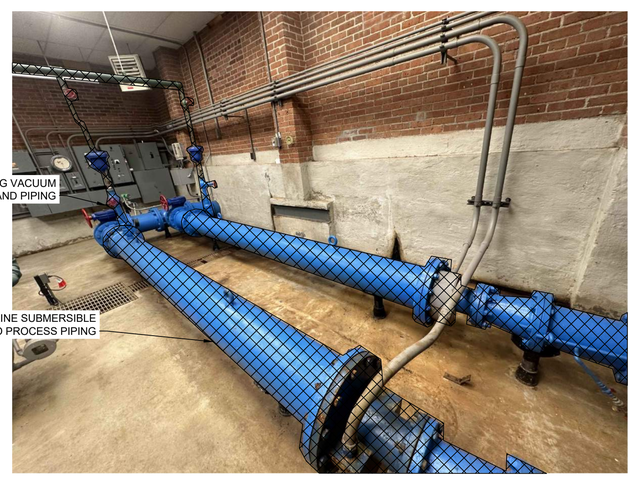
PICTURE 1 (P1) - WELL STATION 2 DEMOLITION

SCALE: N.T.S.



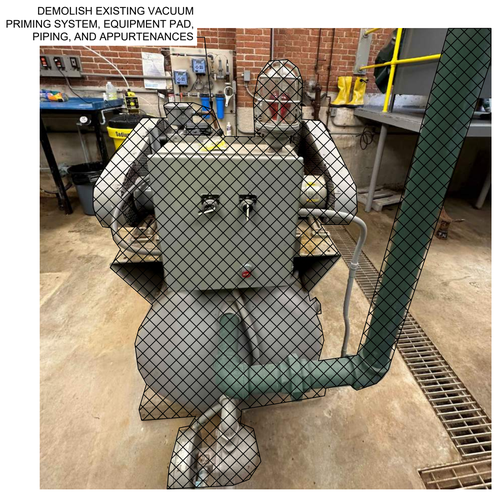
PICTURE 2 (P2) - WELL STATION 2 DEMOLITION

SCALE: N.T.S.



PICTURE 3 (P3) - WELL STATION 2 DEMOLITION

SCALE: N.T.S.



PICTURE 4 (P4) - WELL STATION 2 DEMOLITION

SCALE: N.T.S.

ENVIRONMENTAL PARTNERS — An Apex Company —

ALSTON W. GOETTE JR. CIVIL NO. 56074 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
APRIL 2024

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

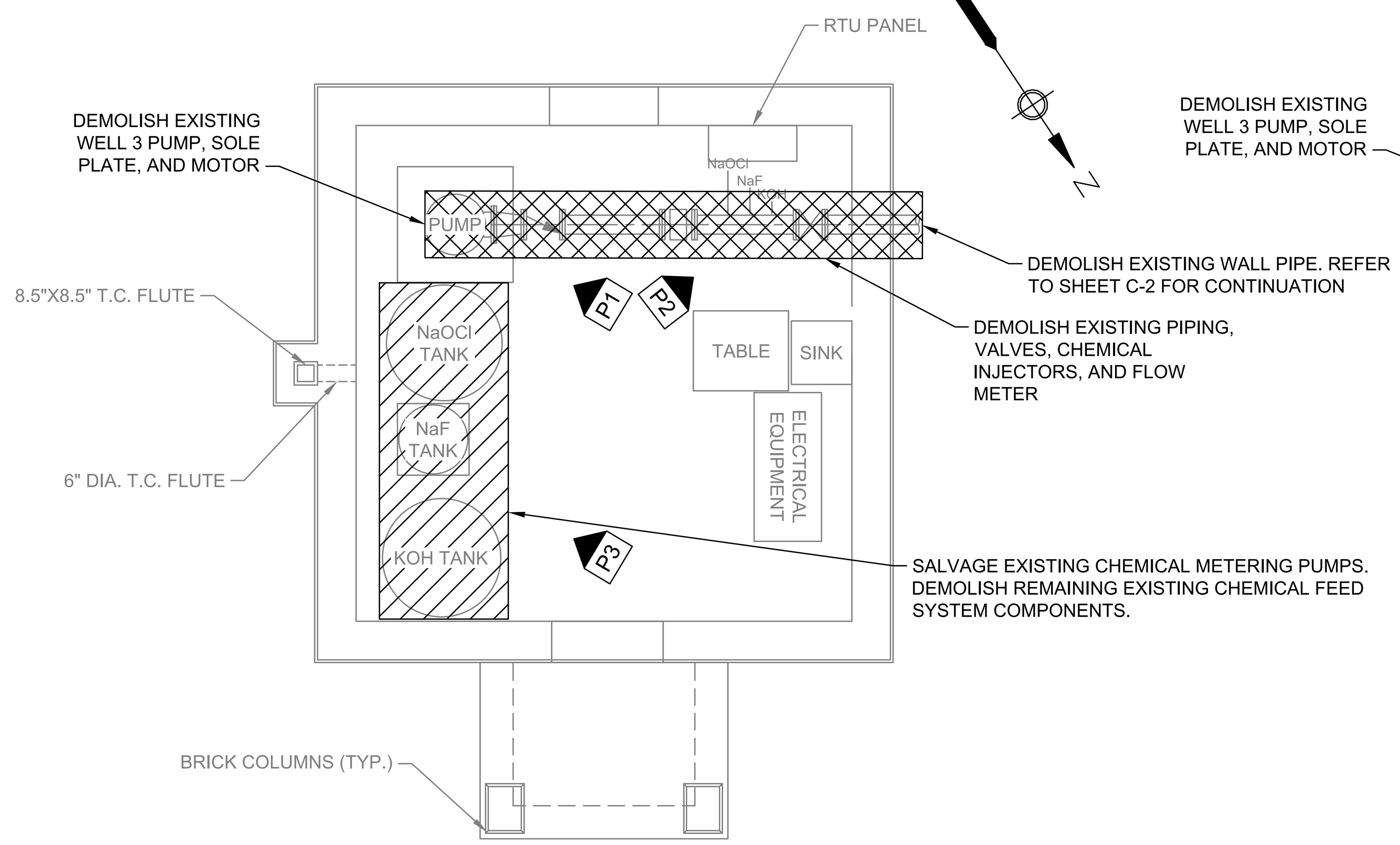
PROCESS MECHANICAL WELL STATION 2 MODIFICATIONS

FOR CONSTRUCTION

Sheet No.

M-9

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.2 Wells Modifications Plans.dwg Plot Date: Apr 10,2024-5:00pm

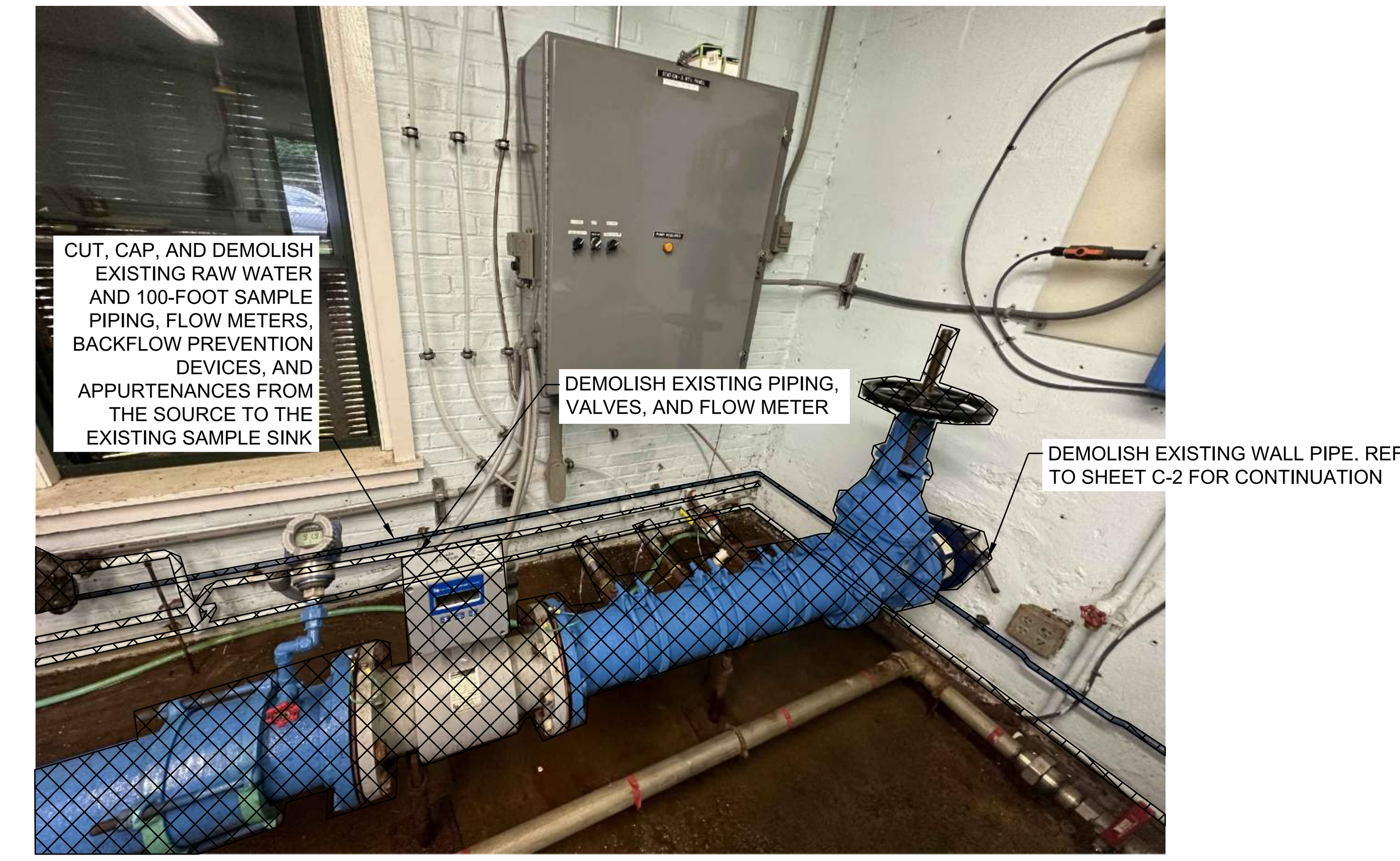


WELL STATION 3 DEMOLITION PLAN

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

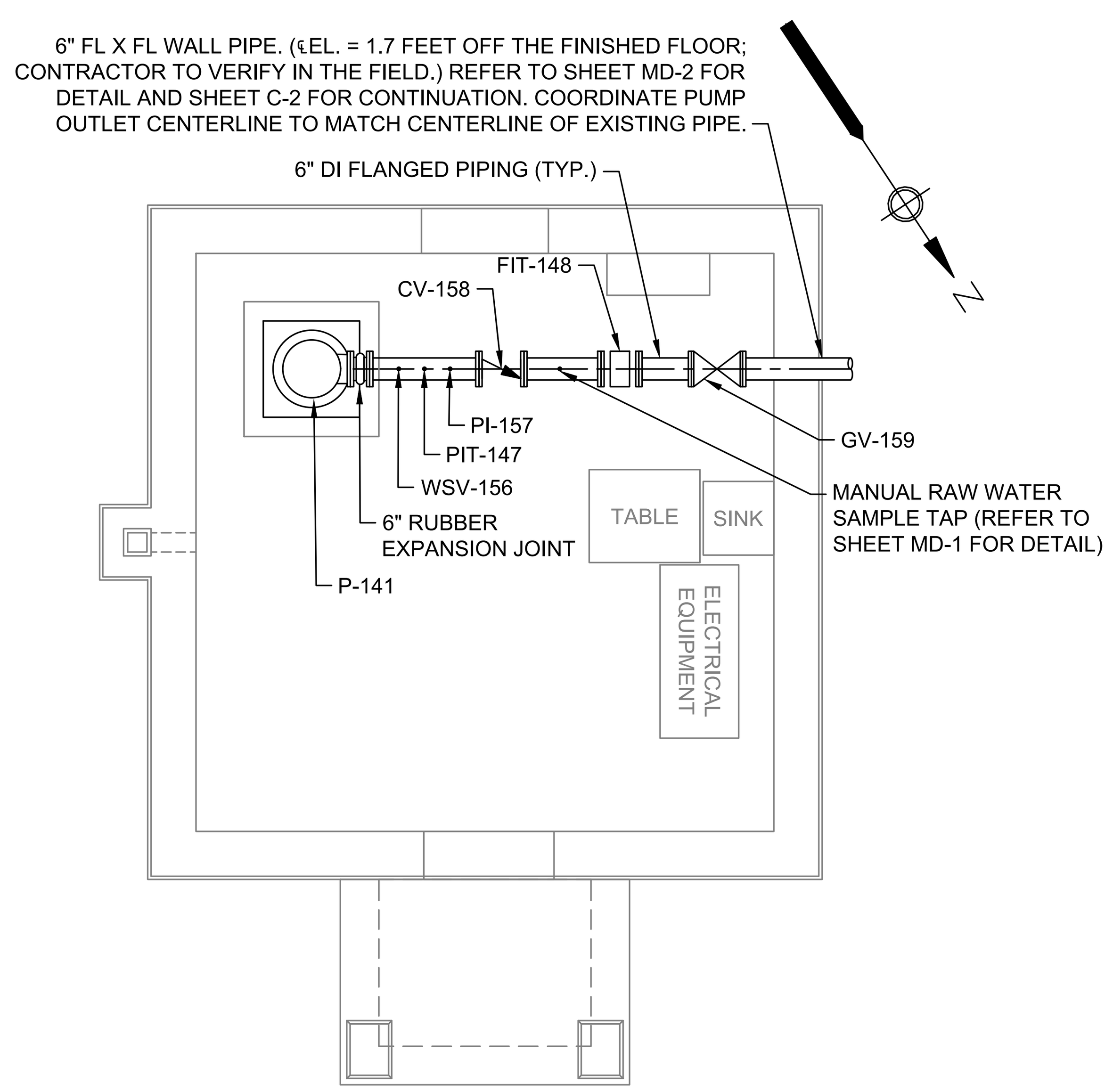
PICTURE 1 (P1) - WELL STATION 3 DEMOLITION

SCALE: N.T.S.



PICTURE 2 (P2) - WELL STATION 3 DEMOLITION

SCALE: N.T.S.

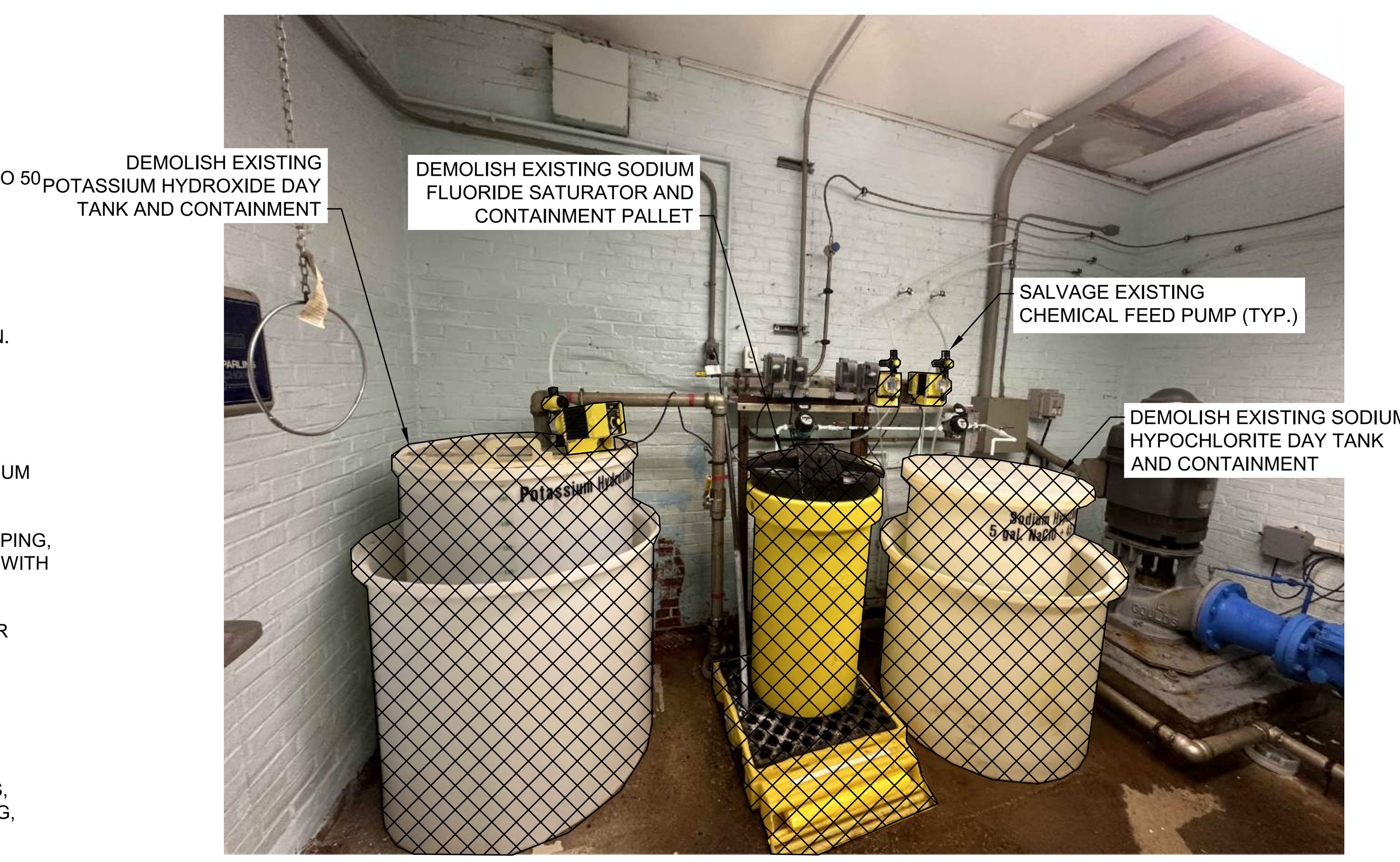


WELL STATION 3 MODIFICATION PLAN

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

NOTES:

1. GENERAL CONTRACTOR SHALL COORDINATE THE SALVAGE OF EXISTING EQUIPMENT AND REMAINING CHEMICALS WITH THE ENGINEER/OWNER.
2. ALL CONTRACTORS SHALL LEGALLY DISPOSE OF ALL EQUIPMENT NOT SALVAGED.
3. GENERAL CONTRACTOR SHALL LEGALLY DISPOSE OF POTASSIUM HYDROXIDE, SODIUM FLUORIDE, AND SODIUM HYDROCHLORITE SOLUTION (UP TO 50 GALLONS EACH).
4. ALL CHEMICAL INJECTION TAPS SHALL BE PLUGGED WITH THREADED COPPER CAP/PLUG.
5. REFER TO INSTRUMENTATION AND ELECTRICAL CONTRACT DOCUMENTS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
6. GENERAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL FSB TO DE-ENERGIZE AND MAKE SAFE ALL EQUIPMENT PRIOR TO DEMOLITION.
7. GENERAL CONTRACTOR SHALL COORDINATE WITH THE PLUMBING FSB TO DISCONNECT ALL PIPING PRIOR TO DEMOLITION.
8. ALL CHEMICAL PUMPS NOTED FOR DEMOLITION SHALL BE SALVAGED AND PROVIDED TO THE OWNER.
9. DEMOLITION OF PIPING AND VALVES SHALL INCLUDE ASSOCIATED PIPE SUPPORTS AND INSULATION. DEMOLISH ALL POTASSIUM HYDROXIDE, SODIUM FLUORIDE, AND SODIUM HYPOCHLORITE PIPING FROM FEED SYSTEMS TO INJECTION POINTS.
10. GENERAL CONTRACTOR SHALL PATCH AND REPAIR ALL EXPOSED FLOOR, WALL, CEILING, AND ROOF PENETRATIONS FROM THE DEMOLITION OF PIPING, PIPE SUPPORTS, EQUIPMENT, PANELS, CONDUIT, AND ELECTRICAL SYSTEMS. ALL PATCHING AND REPAIR SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 01045 - CUTTING, CORING, AND PATCHING.
11. THE GENERAL CONTRACTOR IS ADVISED THAT HAZARDOUS CHEMICALS MAY BE PRESENT IN PROPOSED AREAS OF WORK. GENERAL CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO ENSURE THE SAFETY OF PERSONNEL WORKING IN AND AROUND THESE AREAS.
12. ALL CONTRACTORS' METHODS OF DEMOLITION SHALL BE APPROVED BY THE ENGINEER/OWNER PRIOR TO THE START OF WORK.
13. EXISTING PIPING SYSTEMS TO BE REUSED SHALL BE PROPERLY CLEANED AND INSPECTED PRIOR TO REUSE ON PROJECT.
14. DEMOLITION OF EXISTING STRUCTURES, MECHANICAL SYSTEMS, OR PROCESS SYSTEMS IS GENERALLY SHOWN OR INDICATED ON THE DRAWINGS, UNLESS OTHERWISE INDICATED. THE DEMOLITION OF A STRUCTURE OR PROCESS SYSTEM MEANS THE DEMOLITION, REMOVAL, PROPER CLEANING, AND DISPOSAL OF THE ENTIRE UNIT, INCLUDING SUBSTRUCTURE, SUPERSTRUCTURE, AND APPURTENANCES OR CONTENTS OF THE STRUCTURE EQUIPMENT SYSTEM. PROCESS MECHANICAL DEMOLITION IN GENERAL SHALL CONSIST OF DISMANTLING, CLEANING, AND REMOVAL OF EXISTING PIPING, TANKS, BLOWERS, PUMPS, MOTORS, CONTROLS, DUCTWORK, EQUIPMENT, SUPPORT BRACKETS, ANCILLARY DEVICES AND OTHER APPURTENANCES AS INDICATED IN THE CONTRACT, OR REQUIRED FOR THE COMPLETION OF THE WORK.
15. THE GENERAL CONTRACTOR SHALL FIELD VERIFY THE BASE PLATE WITH THE EXISTING PUMP PAD. THE GENERAL CONTRACTOR SHALL REPAIR AND MODIFY THE EXISTING WELL PUMP CONCRETE PADS AS REQUIRED TO INSTALL THE NEW WELL PUMPS.
16. GENERAL CONTRACTOR SHALL PROTECT ALL EQUIPMENT, PIPING, AND VALVES FROM DAMAGE DURING DEMOLITION. ALL REPAIRS TO DAMAGED EQUIPMENT, PIPE, AND VALVES SHALL BE PERFORMED BY THE GENERAL CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
17. GENERAL CONTRACTOR SHALL USE FLANGED COUPLING ADAPTERS AS NEEDED TO ALIGN EXISTING AND PROPOSED PROCESS PIPING.



PICTURE 3 (P3) - WELL STATION 3 DEMOLITION

SCALE: N.T.S.

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COMMONWEALTH OF MASSACHUSETTS ALSTON W. ... CIVIL NO. 56074 REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

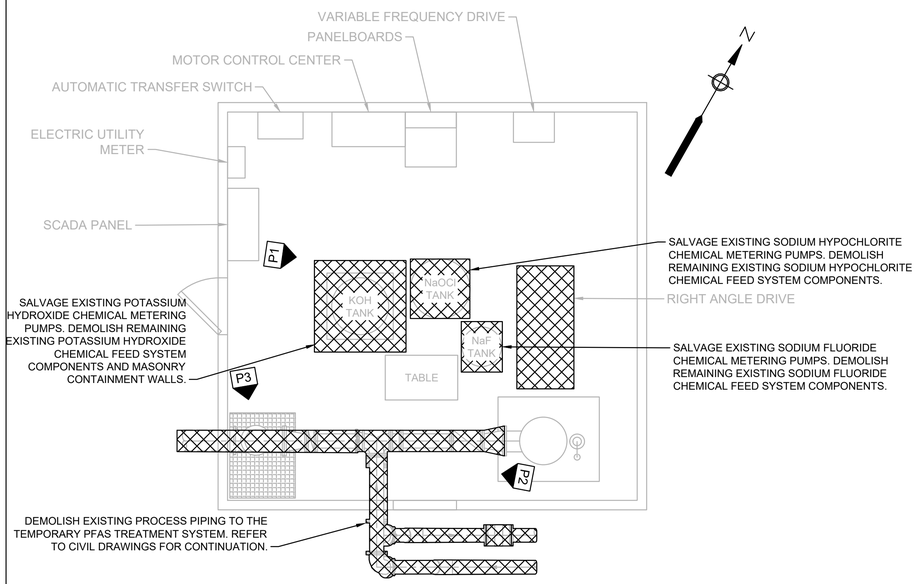
PROCESS MECHANICAL WELL STATION 3 MODIFICATIONS

FOR CONSTRUCTION

Sheet No.

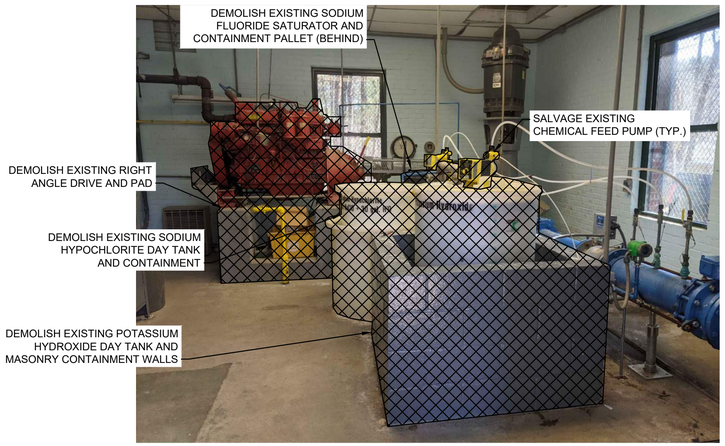
M-10

Drawing file: I:\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.2 Wells Modifications Plans.dwg Plot Date: Apr 10,2024-5:00pm



WELL STATION 4 DEMOLITION PLAN

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



PICTURE 1 (P1) - WELL STATION 4 DEMOLITION

SCALE: N.T.S.

PICTURE 2 (P2) - WELL STATION 4 DEMOLITION

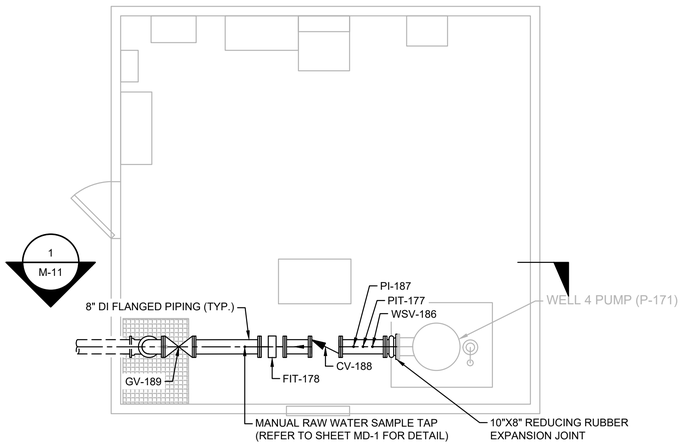
SCALE: N.T.S.

PICTURE 3 (P3) - WELL STATION 4 DEMOLITION

SCALE: N.T.S.

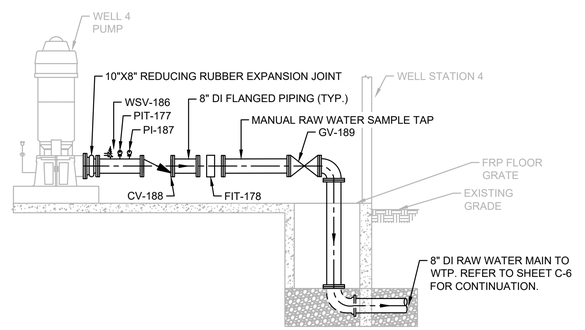
NOTES:

1. REFER TO NOTES ON SHEET M-10 FOR ADDITIONAL DEMOLITION REQUIREMENTS.
2. REFER TO INSTRUMENTATION AND ELECTRICAL CONTRACT DOCUMENTS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
3. THE GENERAL CONTRACTOR SHALL COORDINATE THE SALVAGE OF EXISTING CHEMICAL FEED EQUIPMENT AND REMAINING CHEMICALS WITH THE ENGINEER/OWNER.
4. GENERAL CONTRACTOR SHALL LEGALLY DISPOSE OF POTASSIUM HYDROXIDE, SODIUM FLUORIDE, AND SODIUM HYDROCHLORITE SOLUTION (UP TO 50 GALLONS EACH).
5. GENERAL CONTRACTOR SHALL PATCH AND REPAIR ALL EXPOSED FLOOR, WALL, CEILING, AND ROOF PENETRATIONS FROM THE DEMOLITION OF PIPING, PIPE SUPPORTS, EQUIPMENT, PANELS, CONDUIT, AND ELECTRICAL SYSTEMS. ALL PATCHING AND REPAIR SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 01045 - CUTTING, CORING, AND PATCHING.
6. ALL CONTRACTORS SHALL LEGALLY DISPOSE OF ALL EQUIPMENT NOT SALVAGED.



WELL STATION 4 MODIFICATIONS PLAN

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



SECTION 1/M-11

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

			Scale	N.T.S.
			Date	APRIL 2024
			Job No.	245-2103
			Designed by	AWCP
			Drawn by	SLV
			Checked by	EAK
MARK	DATE	DESCRIPTION	Approved by	ASK

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ALSTON W. SCOTT BRAL NO. 56074 REGISTERED PROFESSIONAL ENGINEER — APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL WELL STATION 4 MODIFICATIONS

FOR CONSTRUCTION

Sheet No. M-11

Drawing file: I:\Sharon, MA-245\245-2\03 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07-2 Wells Modifications Plans.dwg Plot Date: Apr 11,2024-4:38pm

PLAN
SCALE: 3/16"=1'-0"

PFAS FILTER LOCATIONS

TAG NO.	℄ DISTANCE FROM COLUMN C	℄ DISTANCE FROM COLUMN 3
PF-300A	36'-8½"	1'-8½"
PF-301A	36'-8½"	18'-9½"
PF-300B	21'-8½"	1'-8½"
PF-301B	21'-8½"	18'-9½"
PF-300C	5'-5½"	1'-8½"
PF-301C	5'-5½"	18'-9½"

FE/MN FILTER LOCATIONS

TAG NO.	℄ DISTANCE FROM COLUMN G	℄ DISTANCE FROM COLUMN 2
PF-200A	19'-11½"	1'-2½"
PF-200B	10'-11½"	1'-2½"
PF-200C	1'-11½"	1'-2½"

NOTES:

1. REFER TO M-27 FOR DETAILED CHEMICAL FEED ROOM LAYOUT AND ADDITIONAL CHEMICAL FEED PROCESS MECHANICAL NOTES AND REQUIREMENTS.
2. REFER TO M-29, M-30, M-31, AND M-32 FOR CHEMICAL FEED SCHEMATICS.
3. CONTRACTOR SHALL SUPPORT ALL PROCESS MECHANICAL PIPES IN ACCORDANCE WITH SPECIFICATION SECTION 11200. ALL PROCESS MECHANICAL PIPES >7-FEET ABOVE THE FINISHED FLOOR SHALL BE SUPPORTED FROM THE PRE-ENGINEERED METAL BUILDING (FIRST FLOOR) OR STRUCTURAL SLAB (LOWER LEVEL). REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
4. SAMPLE LINES, SAMPLE SINK DRAIN, AND ANALYZER BANK DRAIN SHALL BE BY GENERAL CONTRACTOR.
5. ASB-202 2" SS PIPE SHALL BE INSULATED UP TO 9 FEET ABOVE FINISH FLOOR ELEVATION.
6. CHEMICAL INJECTORS TO BE A MINIMUM OF 8 INCHES APART ON CENTER. ALL CHEMICAL INJECTION LOCATIONS SHALL BE PROVIDED WITH PERSONNEL PROTECTION PARTITIONS. REFER TO SHEET MD-1 FOR DETAIL.
7. ALL PIPING UNDER CONCRETE SLABS OR STRUCTURES SHALL BE ENCASED IN CONCRETE, UNLESS OTHERWISE NOTED. REFER TO STRUCTURAL DRAWINGS.
8. OVERHEAD NaHSO3 CHEMICAL LINES TO INJECTION POINT. CHEMICAL TUBING IN 1" SCH 40 PVC CASING PIPE. REFER TO SHEETS M-27 AND M-31 FOR ADDITIONAL INFORMATION.
9. OVERHEAD KOH CHEMICAL LINE TO INJECTION POINT. CHEMICAL TUBING IN 1" SCH 40 PVC CASING PIPE. REFER TO SHEETS M-27 AND M-30 FOR ADDITIONAL INFORMATION.
10. OVERHEAD NaOCl CHEMICAL LINES TO INJECTION POINTS. CHEMICAL TUBING IN 1" SCH 40 PVC CASING PIPE. REFER TO SHEETS M-27 AND M-29 FOR ADDITIONAL INFORMATION.
11. OVERHEAD NaF CHEMICAL LINE TO INJECTION POINT. CHEMICAL TUBING IN 1" SCH 40 PVC CASING PIPE. REFER TO SHEETS M-27 AND M-32 FOR ADDITIONAL INFORMATION.
12. OVERHEAD CHEMICAL INJECTION LINES SHALL BE INSTALLED WITH MIN. 8'-0" HEAD ROOM UNLESS OTHERWISE NOTED.

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS ALSTON W. COTTS CIVIL NO. 56074 REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

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Date	APRIL 2024
Job No.	245-2103
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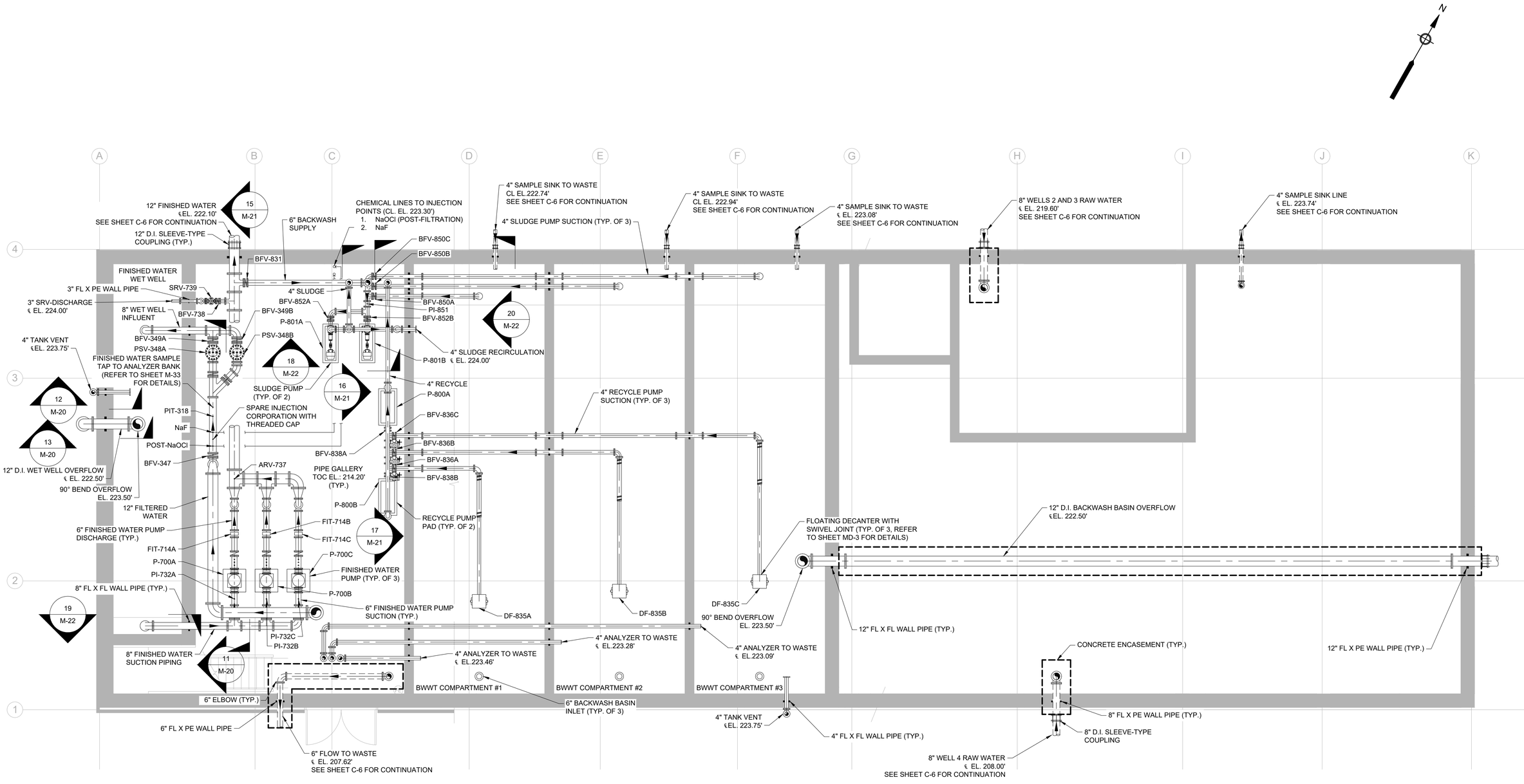
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL FIRST FLOOR PLAN

100% DESIGN

Sheet No.
M-12

Drawing file: I:\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07-3 Mechanical Sheets.dwg Plot Date: Apr 10,2024-5:04pm



PLAN

SCALE: 3/16"=1'-0"

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS — ALSTON W.G. POTTS, JR. — NO. 56074 — REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
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Checked by	EAK
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

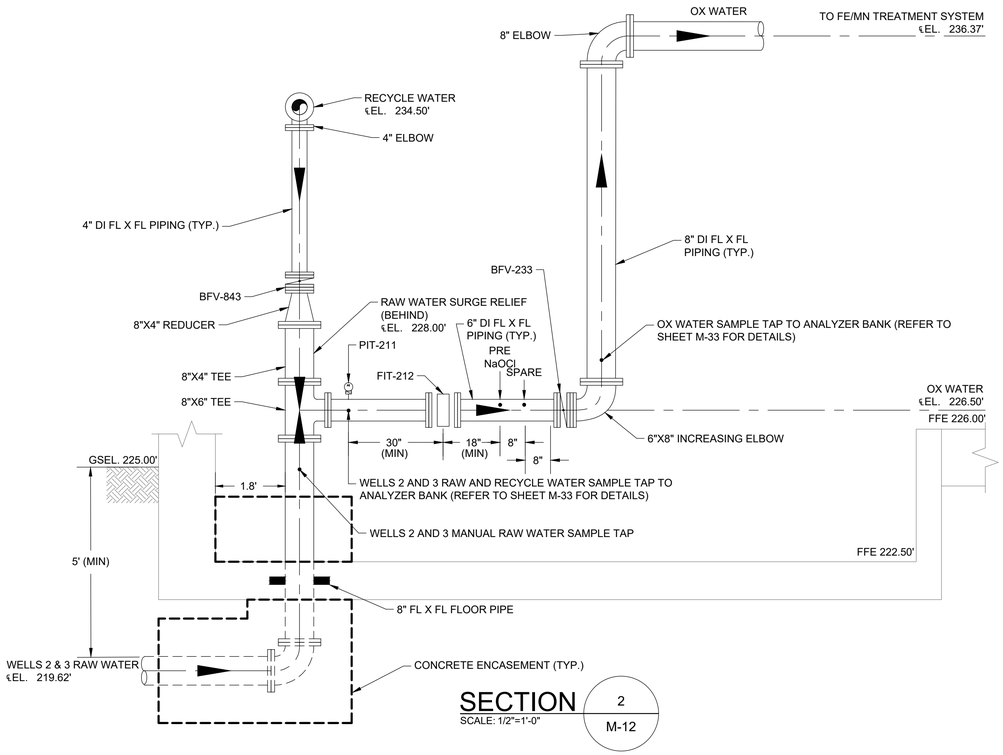
PROCESS MECHANICAL LOWER LEVEL PLAN

100% DESIGN

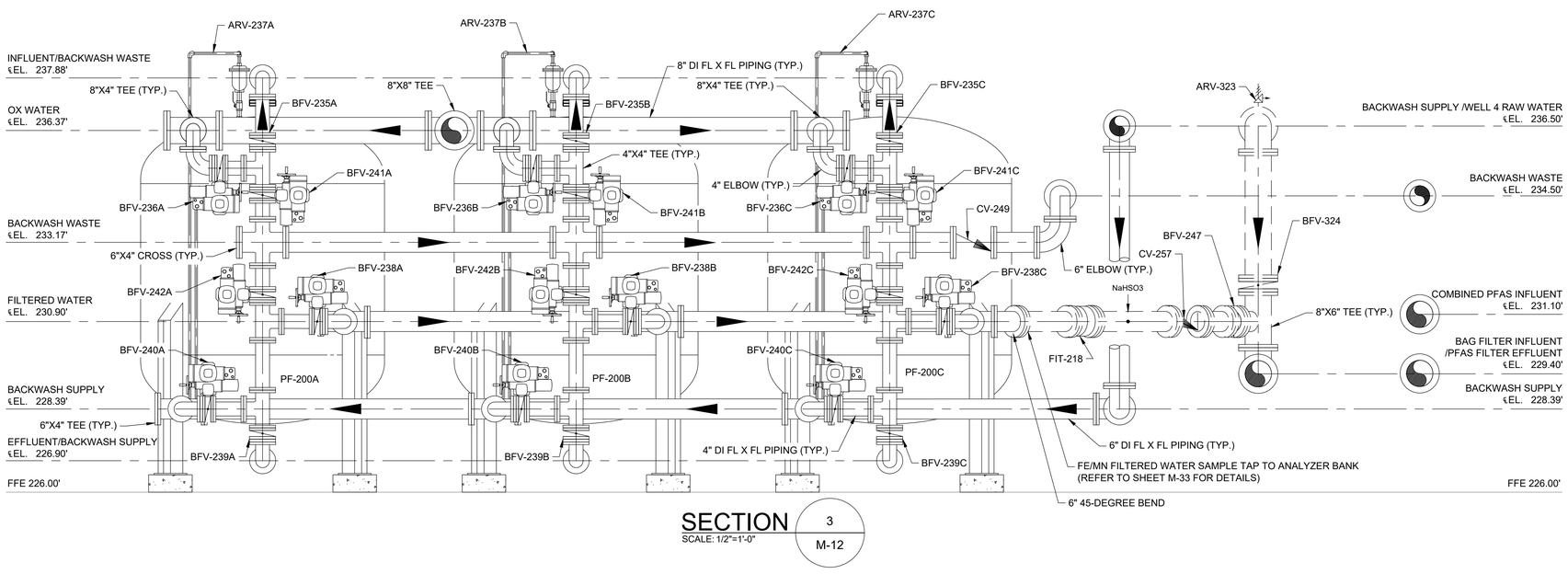
Sheet No.

M-13

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.3 Mechanical Sheets.dwg Plot Date: Apr 10,2024-5:04pm



SECTION 2
SCALE: 1/2"=1'-0"
M-12



SECTION 3
SCALE: 1/2"=1'-0"
M-12

ENVIRONMENTAL PARTNERS
— An Apex Company —

ALSTON W. GOFF JR. NO. 56074 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
APRIL 2024

MARK	DATE	DESCRIPTION

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Drawn by	SLV
Checked by	EAK
Approved by	ASK

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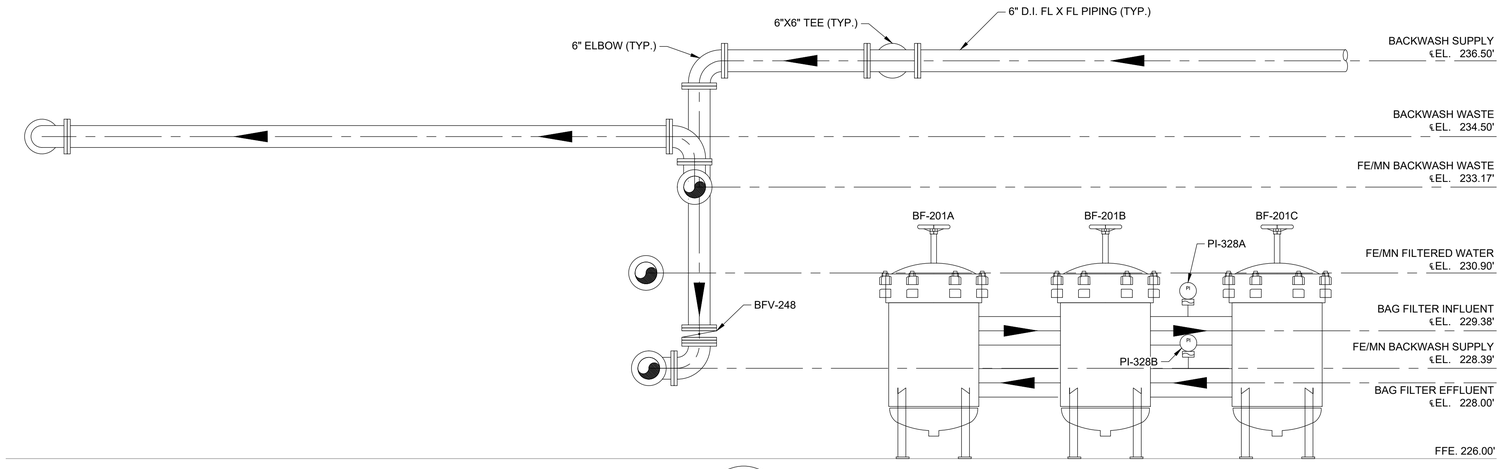
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL SECTIONS I

FOR CONSTRUCTION

Sheet No.
M-14

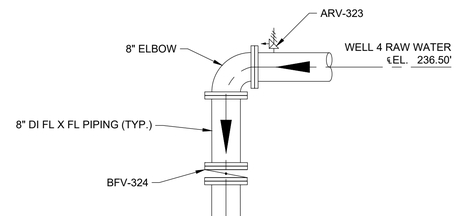
Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.3a Mechanical Sheets Sections.dwg Plot Date: Apr 10,2024-5:45pm

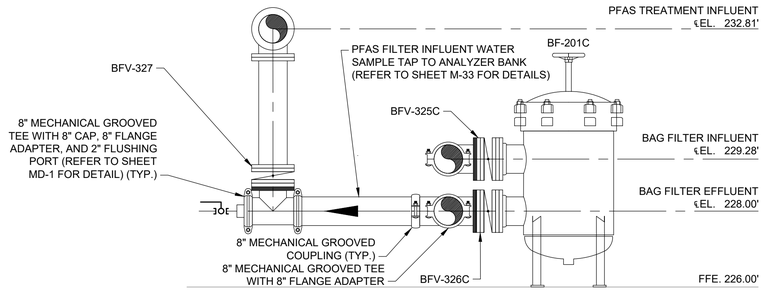


SECTION 4
SCALE: 1/2"=1'-0"

M-12

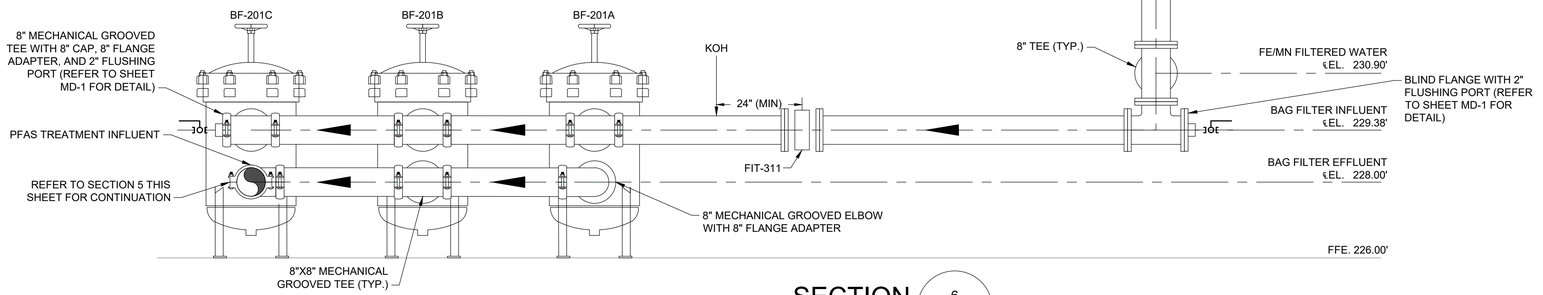
PFAS BACKWASH SUPPLY TO FILTER #1
℄EL. 236.50'





SECTION 5
SCALE: 1/2"=1'-0"

M-12



SECTION 6
SCALE: 1/2"=1'-0"

M-12

ENVIRONMENTAL PARTNERS
— An Apex Company —

ALSTON W. GIOTTO
EMAIL
NO. 56074
COMMONWEALTH OF MASSACHUSETTS
REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

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Date	APRIL 2024
Job No.	245-2103
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

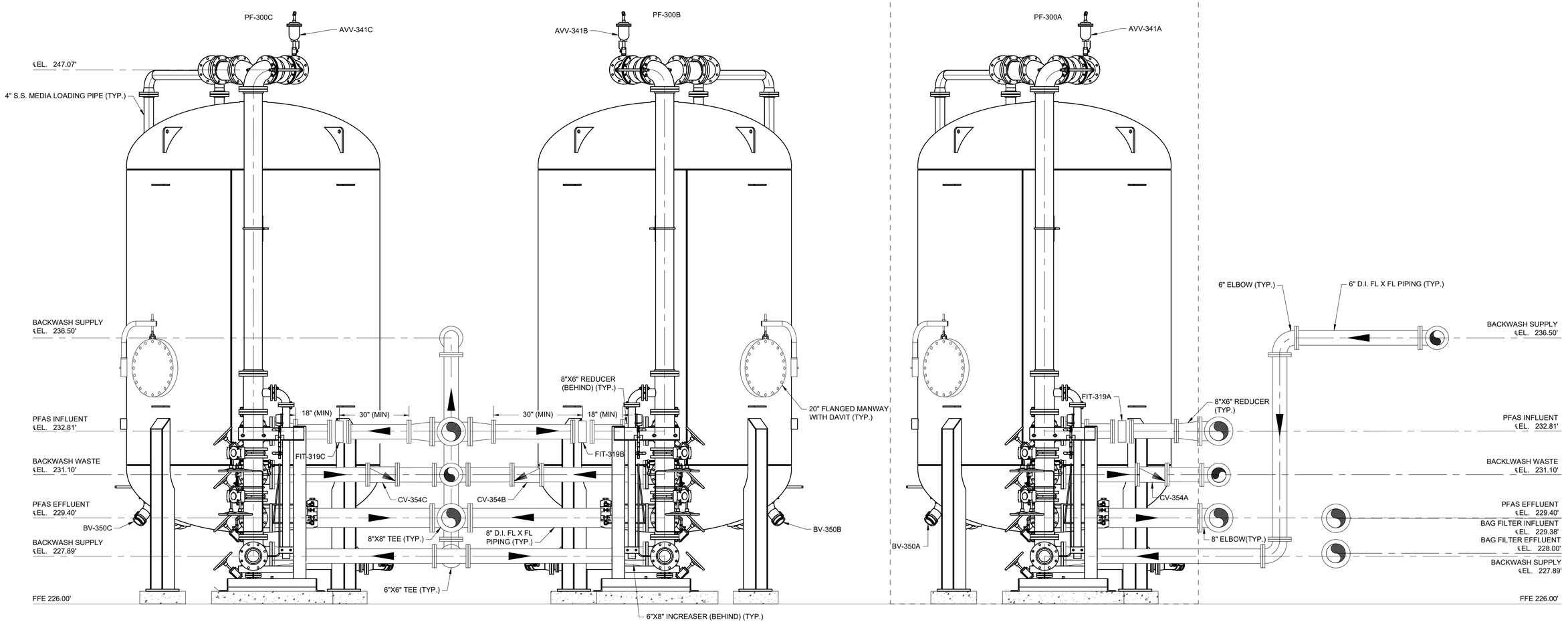
PROCESS MECHANICAL SECTIONS II

FOR CONSTRUCTION

Sheet No.

M-15

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.3a Mechanical Sheets Sections.dwg Plot Date: Apr 11,2024-2:39pm



SECTION 7 / M-12

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

ENVIRONMENTAL PARTNERS
— An Apex Company —

ALSTON W. SCOTT
CIVIL
NO. 56074
COMMONWEALTH OF MASSACHUSETTS
REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

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Date	APRIL 2024
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Checked by	EAK
Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

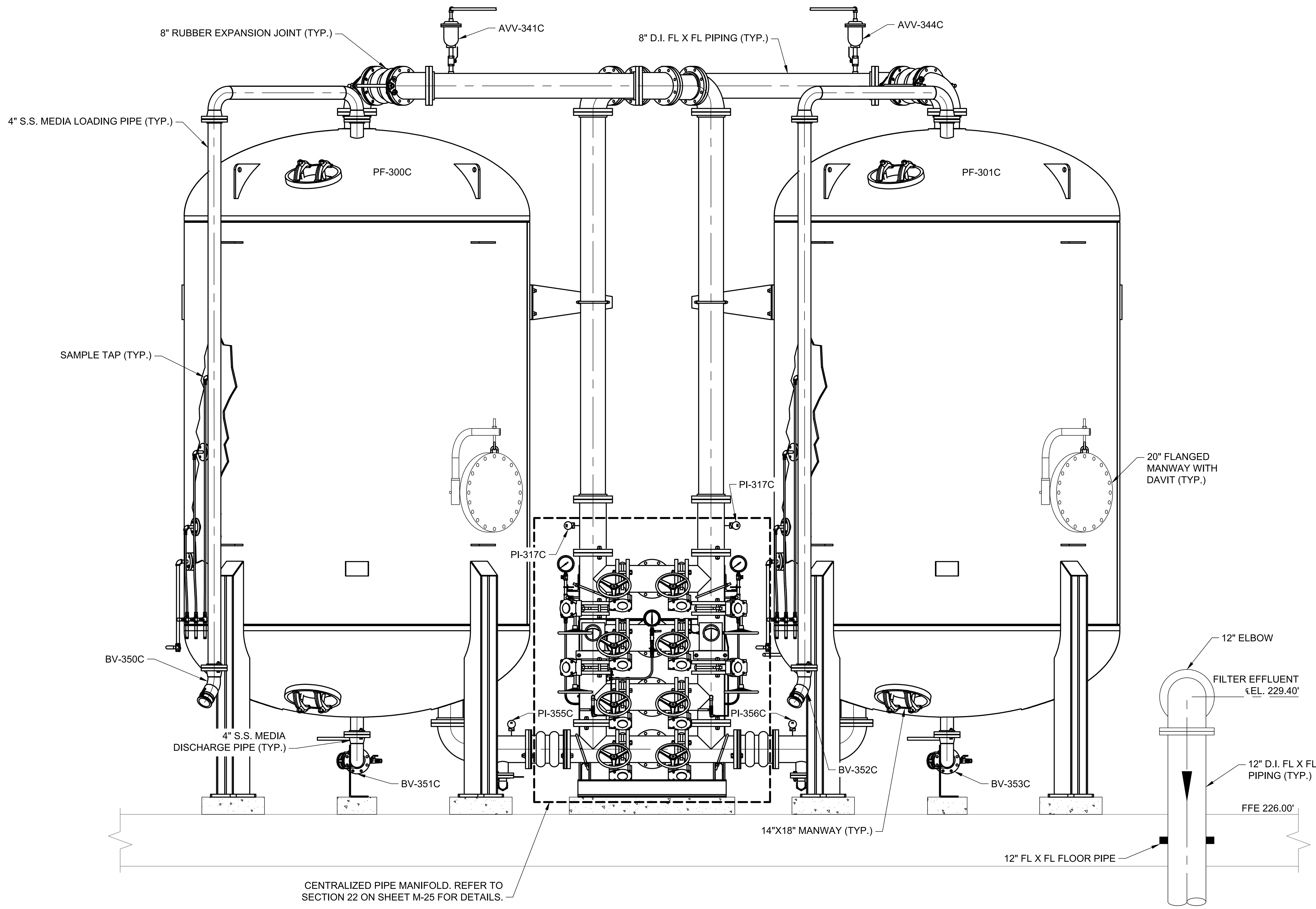
PROCESS MECHANICAL SECTIONS III

FOR CONSTRUCTION

Sheet No.

M-16

Drawing file: I:\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07-3a Mechanical Sheets Sections.dwg Plot Date: Apr 11,2024-1:49pm



SECTION 8 / M-12
SCALE: 1/2"=1'-0"

ENVIRONMENTAL PARTNERS — An Apex Company

COMMONWEALTH OF MASSACHUSETTS — ALSTON W. COTTS — CIVIL — NO. 56074 — REGISTERED PROFESSIONAL ENGINEER — APRIL 2024

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
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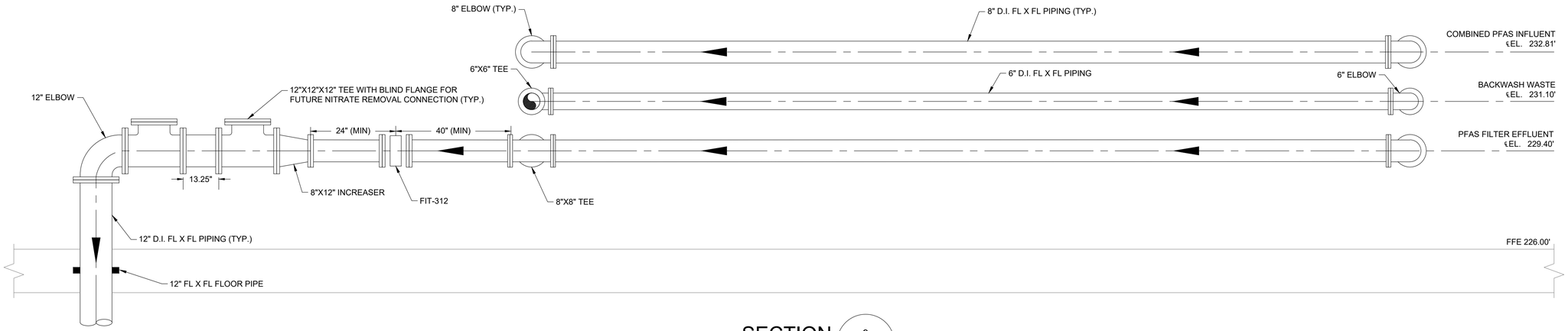
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL SECTIONS IV

FOR CONSTRUCTION

Sheet No.
M-17



SECTION 9/M-12
SCALE: 1/2"=1'-0"

ENVIRONMENTAL PARTNERS
— An Apex Company —

ALSTON W. GOITIA
CIVIL
NO. 56074
REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
APRIL 2024

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
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Checked by	EAK
Approved by	ASK

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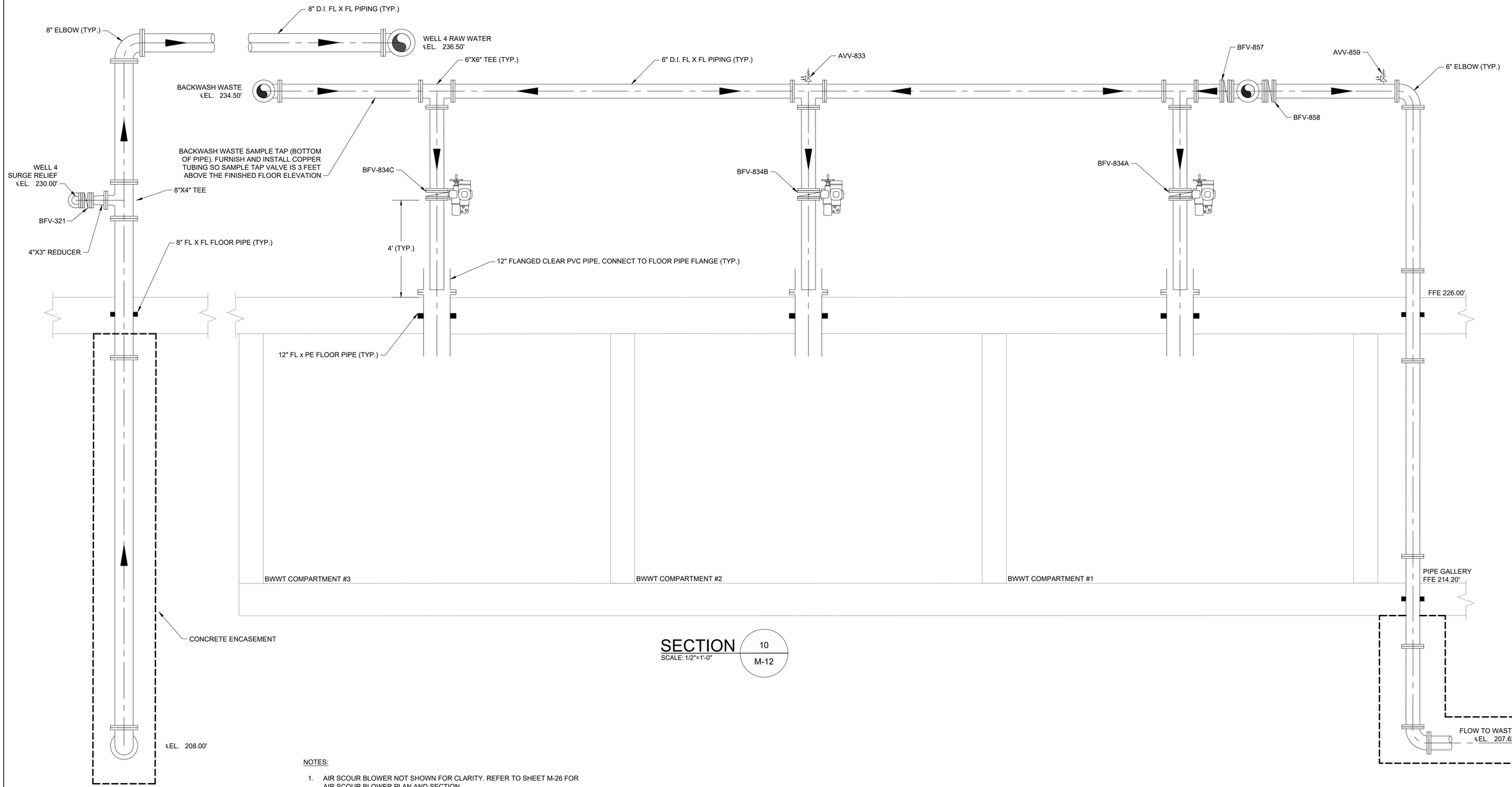
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL SECTIONS V

FOR CONSTRUCTION

Sheet No.
M-18

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.3a Mechanical Sheets Sections.dwg Plot: Date: Apr 10,2024-5:56pm



SECTION 10
SCALE: 1/2"=1'-0"
M-12

NOTES:

1. AIR SCOUR BLOWER NOT SHOWN FOR CLARITY. REFER TO SHEET M-26 FOR AIR SCOUR BLOWER PLAN AND SECTION.

ENVIRONMENTAL PARTNERS — An Apex Company —

COMMONWEALTH OF MASSACHUSETTS — ALSTON W. SCOTT — CIVIL — NO. 56074 — REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

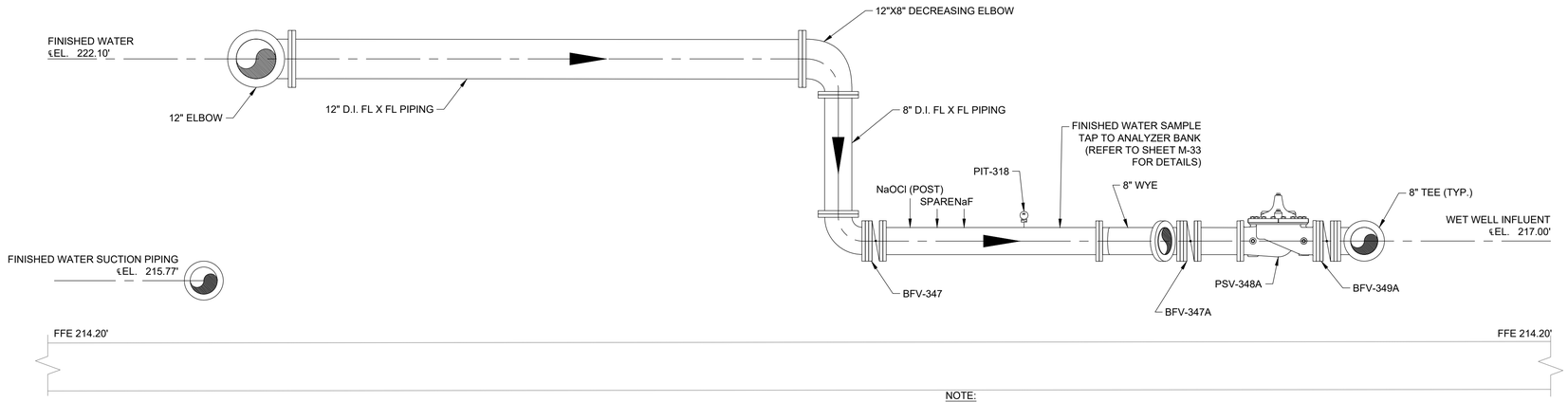
PROCESS MECHANICAL SECTIONS VI

FOR CONSTRUCTION

Sheet No.

M-19

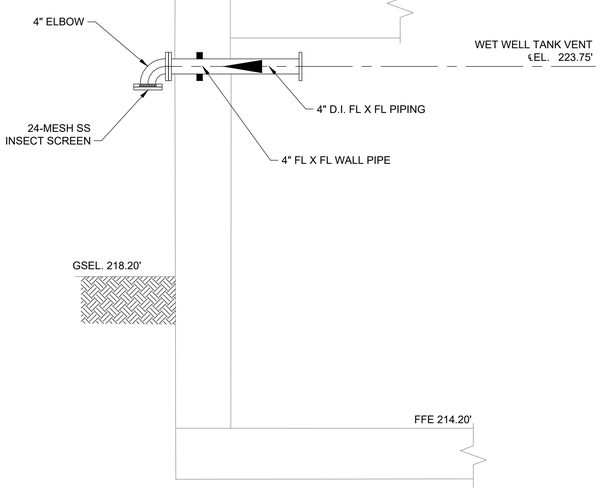
Drawing file: I:\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07-3a Mechanical Sheets Sections.dwg Plot Date: Apr 10,2024-5:51pm



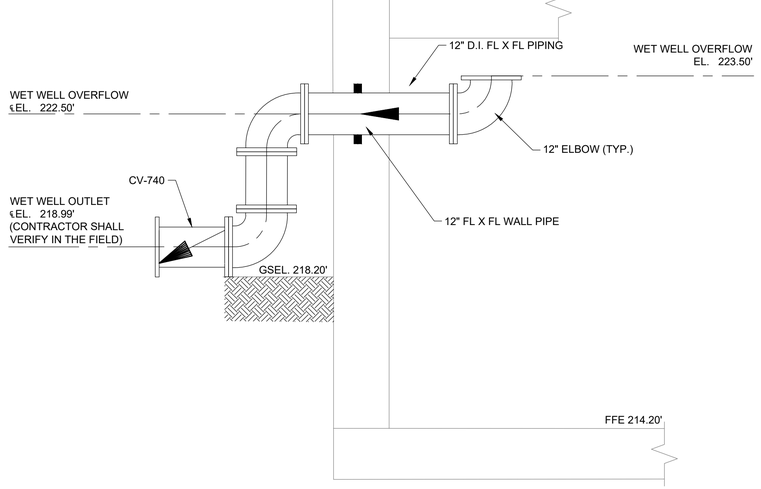
NOTE:

1. BFV-347B, PSV-348B, AND BFV-349B NOT SHOWN FOR CLARITY. REFER TO SHEET M-13 FOR LAYOUT

SECTION 11 / M-13
SCALE: 1/2"=1'-0"



SECTION 12 / M-13
SCALE: 1/2"=1'-0"



SECTION 13 / M-13
SCALE: 1/2"=1'-0"

ENVIRONMENTAL PARTNERS
— An Apex Company —

ALSTON W. SCOTT
CIVIL
NO. 56074
REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
APRIL 2024

MARK	DATE	DESCRIPTION

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Job No.	245-2103
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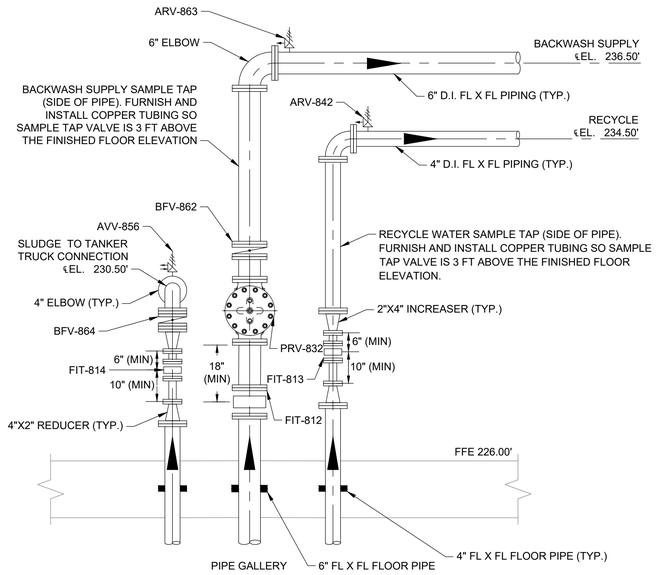
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL SECTIONS VII

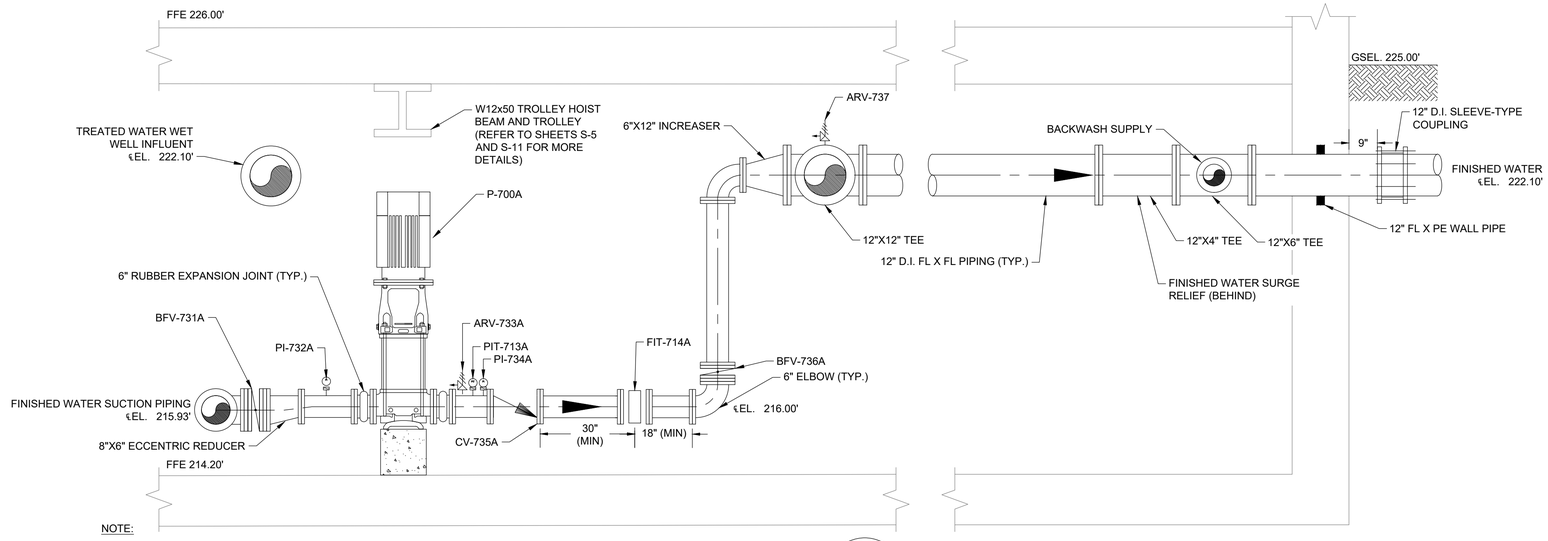
FOR CONSTRUCTION

Sheet No.
M-20

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07-3a Mechanical Sheets Sections.dwg Plot Date: Apr 10,2024-5:51pm



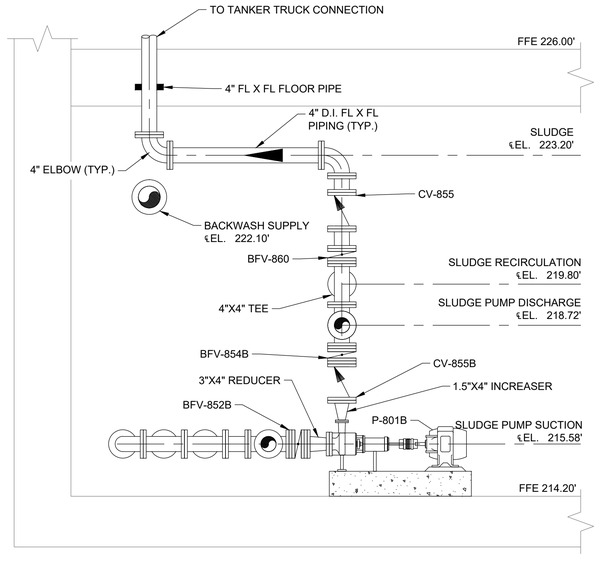
SECTION 14
SCALE: 1/2"=1'-0"
M-12



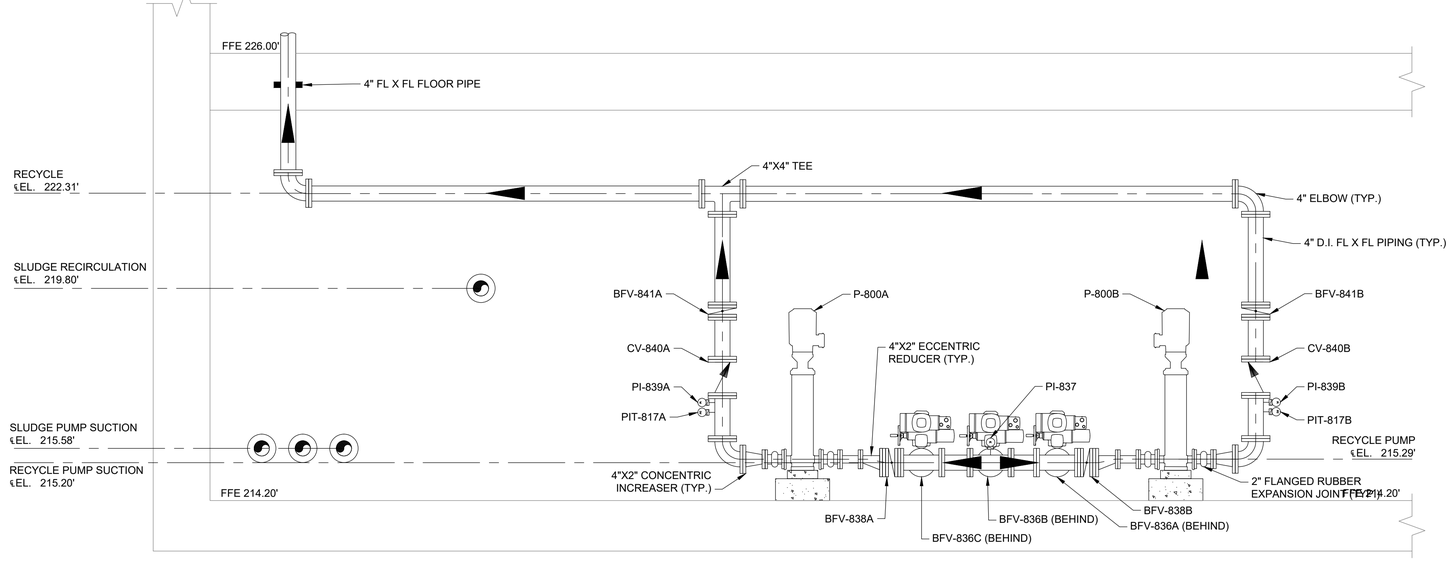
NOTE:

1. BFV-731B/C, PI-732B/C, P-700B/C, ARV-733B/C, PIT-713B/C, PI-734B/C, CV-735B/C, FIT-714B/C, AND BFV-736B/C NOT SHOWN FOR CLARITY. REFER TO SHEET M-13 FOR LAYOUT.
2. PROVIDE FINISHED WATER PUMP TROLLEY, HOIST, AND CHAIN IN ACCORDANCE WITH DIVISION 14. REFER TO STRUCTURAL DRAWINGS FOR LIFTING BEAM DETAILS.

SECTION 15
SCALE: 1/2"=1'-0"
M-13



SECTION 16
SCALE: 1/2"=1'-0"
M-13



SECTION 17
SCALE: 1/2"=1'-0"
M-13

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Date	APRIL 2024
Job No.	245-2103
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ENVIRONMENTAL PARTNERS — An Apex Company

COMMONWEALTH OF MASSACHUSETTS — ALSTON W. CROTTY — SEAL — NO. 56074 — REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

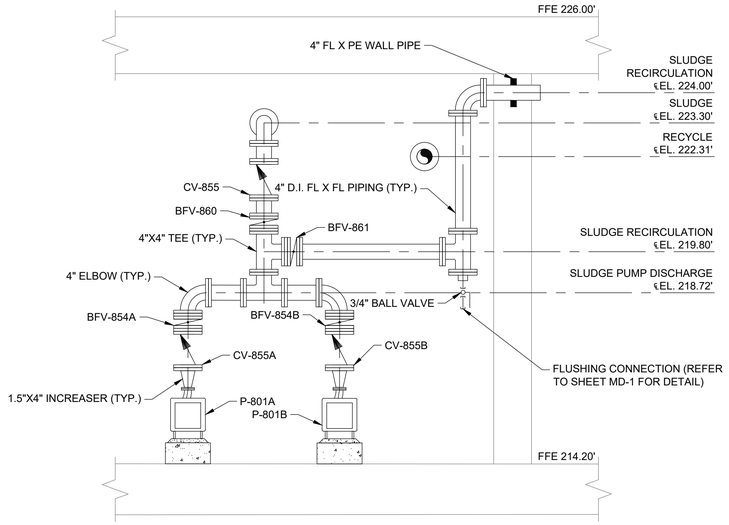
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL SECTIONS VIII

FOR CONSTRUCTION

Sheet No.
M-21

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.3a Mechanical Sheets Sections.dwg Plot Date: Apr 11,2024-4:33pm



SECTION 18 / M-13
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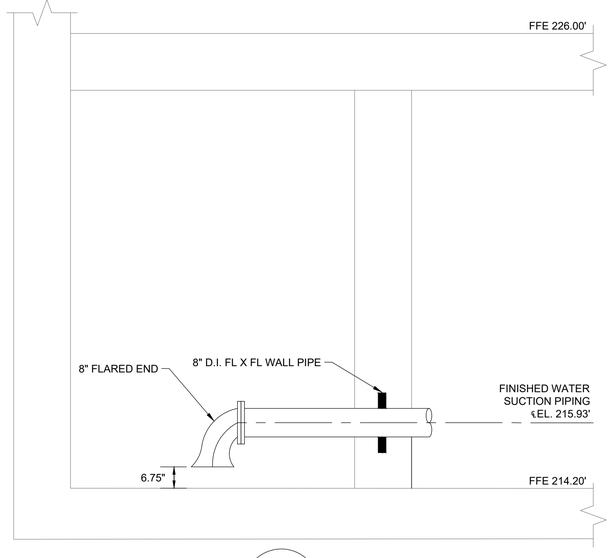

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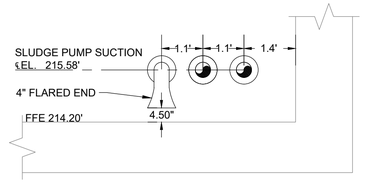

SECTION 20 / M-13
SCALE: 1/2"=1'-0"

ENVIRONMENTAL PARTNERS — An Apex Company

APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

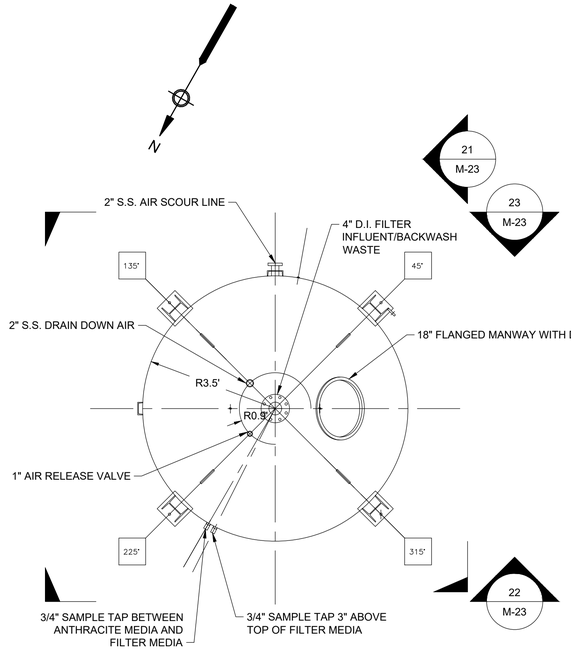
PROCESS MECHANICAL SECTIONS IX

FOR CONSTRUCTION

Sheet No.

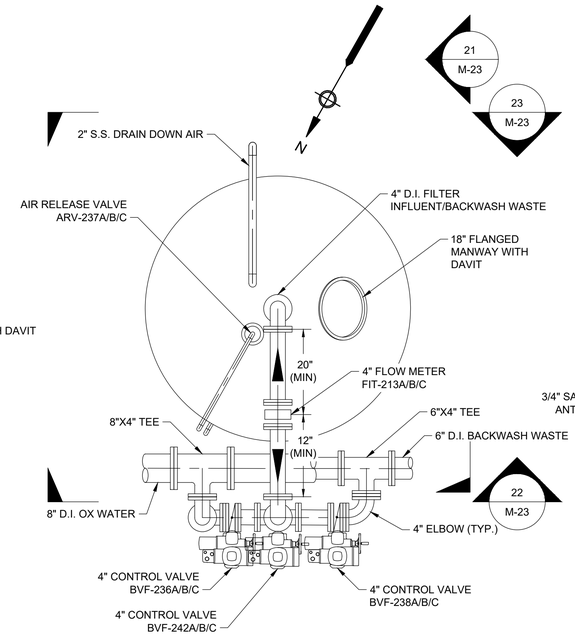
M-22

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.3a Mechanical Sheets Sections.dwg Plot Date: Apr 10,2024-5:53pm



TYPICAL FE/MN FILTER NOZZLE ARRANGEMENT PLAN

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



TYPICAL FE/MN FILTER PLAN - UPPER LEVEL

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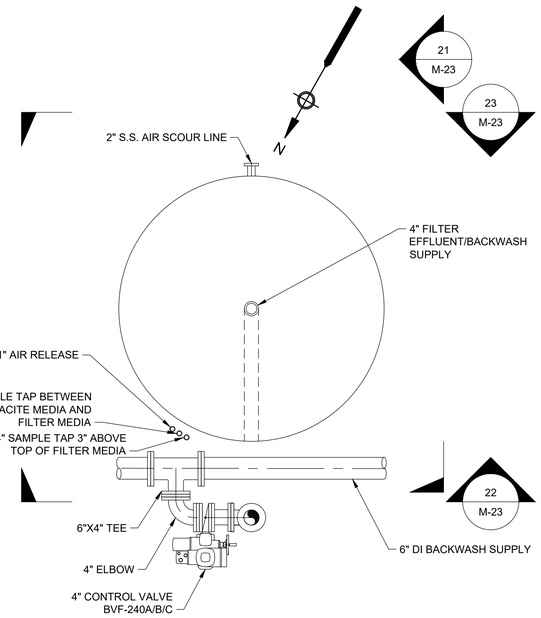

TYPICAL FE/MN FILTER PLAN - LOWER LEVEL

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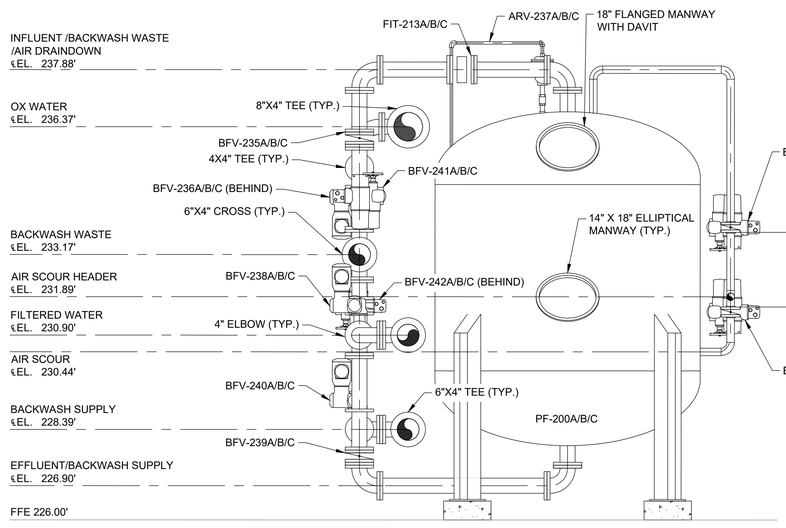
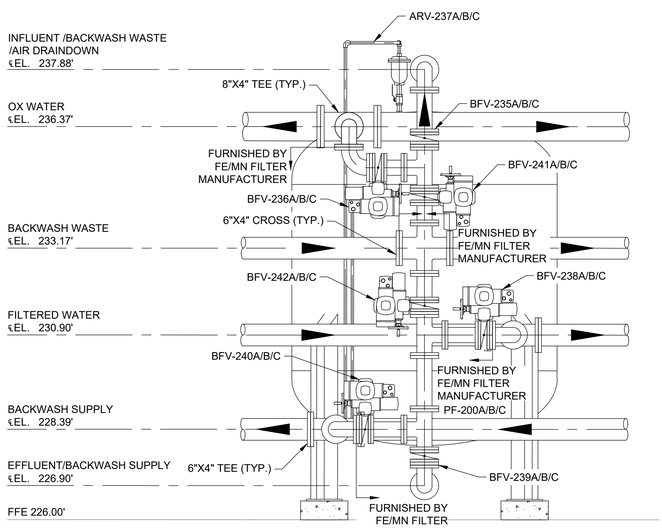


SECTION

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

21 M-23



SECTION

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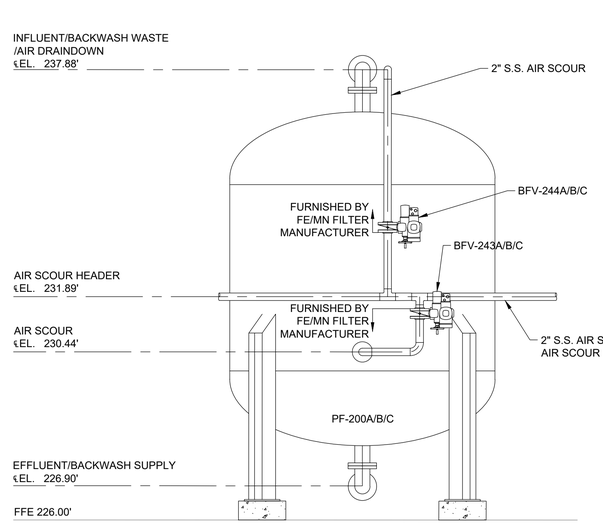
22 M-23



SECTION

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

23 M-23

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS — ALSTON W. GOFF — NO. 56074 — REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

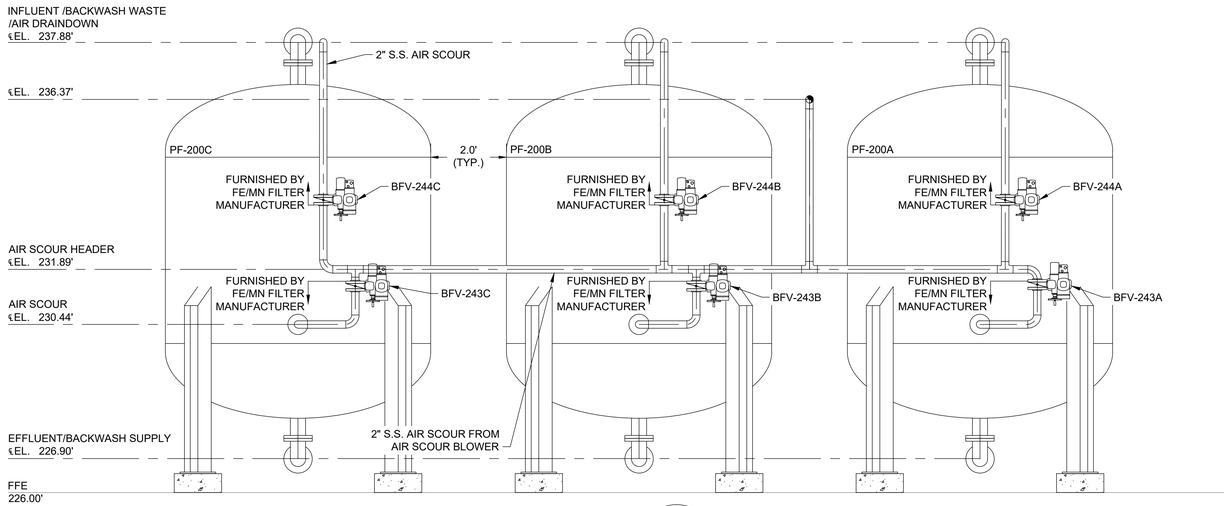
PROCESS MECHANICAL FE/MN PRESSURE FILTER PLANS AND SECTIONS I

FOR CONSTRUCTION

Sheet No.

M-23

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.3a Mechanical Sheets Sections.dwg Plot Date: Apr 10,2024-5:53pm



SECTION 24

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

M-12

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS
ALSTON W.C. POTTS, JR.
NO. 56074
REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

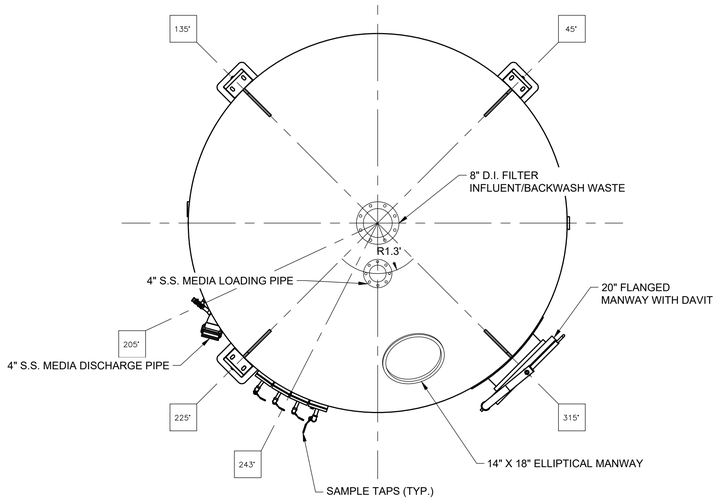
PROCESS MECHANICAL FE/MN PRESSURE FILTER
PLANS AND SECTIONS II

FOR CONSTRUCTION

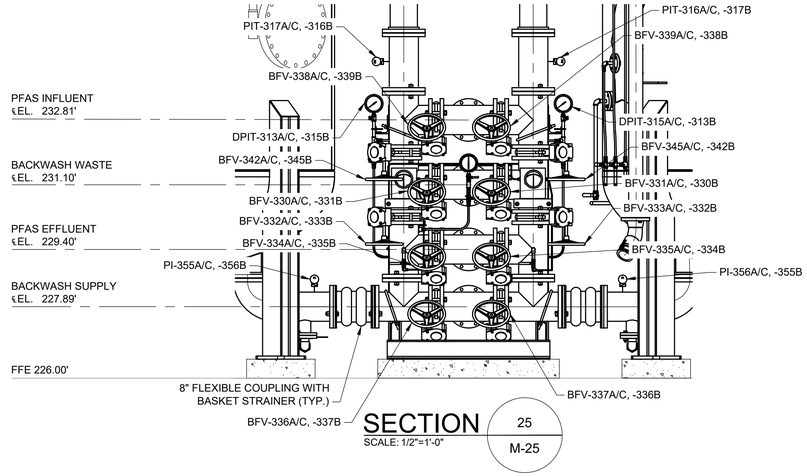
Sheet No.

M-24

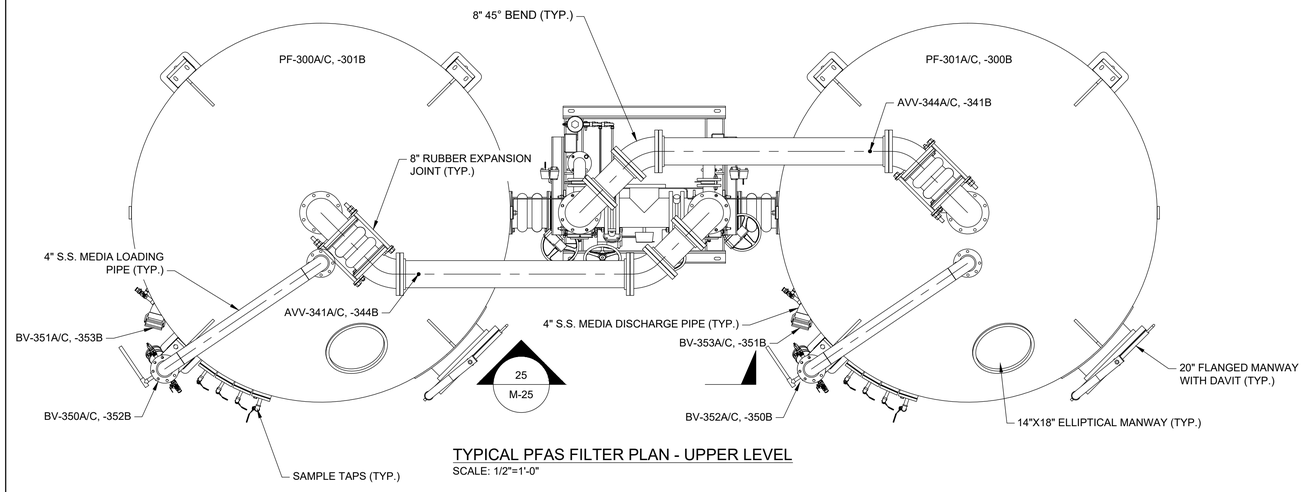
Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.3a Mechanical Sheets Sections.dwg Plot Date: Apr 10,2024-5:53pm



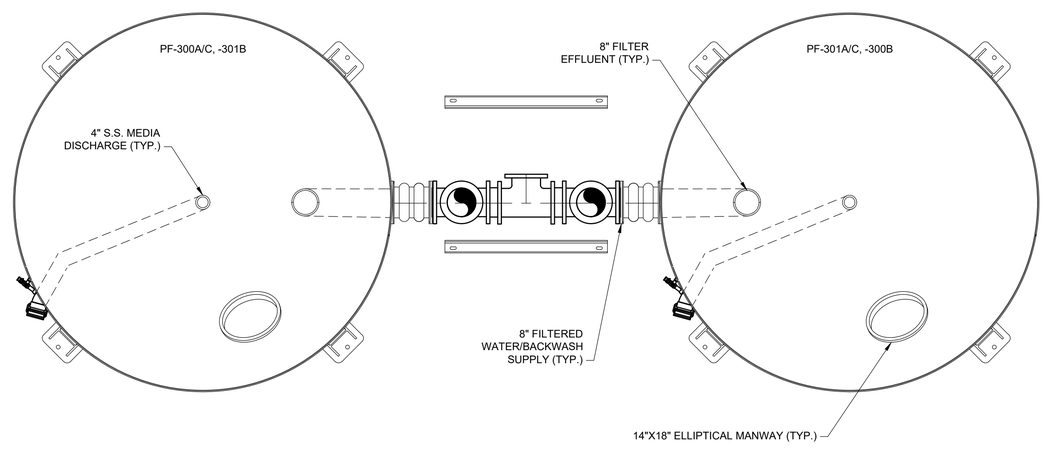
TYPICAL PFAS FILTER NOZZLE ARRANGEMENT PLAN
SCALE: 1/2"=1'-0"



SECTION
SCALE: 1/2"=1'-0"
25
M-25



TYPICAL PFAS FILTER PLAN - UPPER LEVEL
SCALE: 1/2"=1'-0"



TYPICAL PFAS FILTER PLAN - LOWER LEVEL
SCALE: 1/2"=1'-0"

NOTES:

1. OTHER PIPING NOT SHOWN FOR CLARITY.

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS
ALSTON W. GOFF
No. 56074
REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

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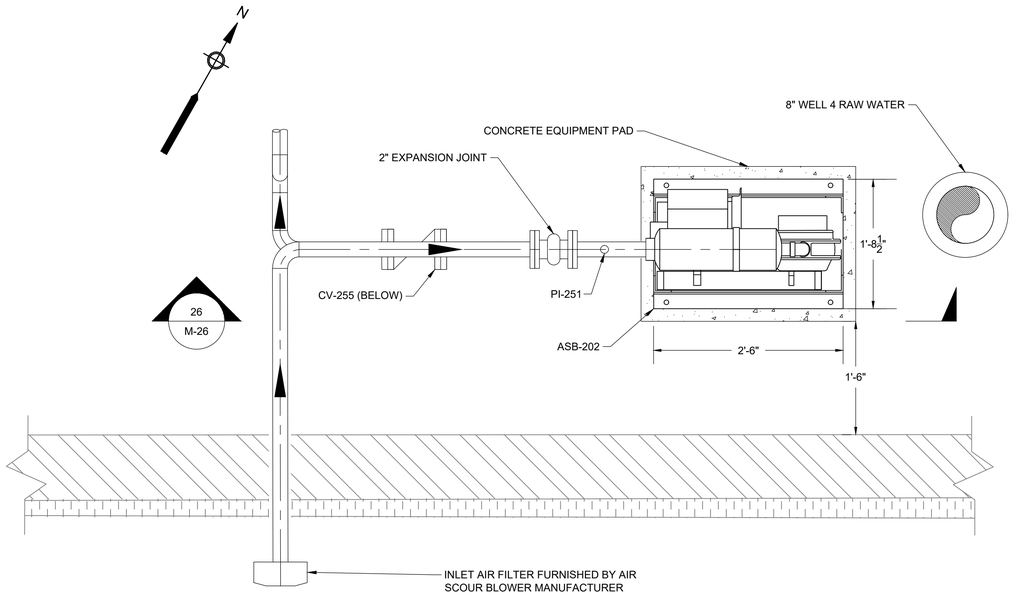
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL PFAS PRESSURE FILTER
PLANS AND SECTIONS

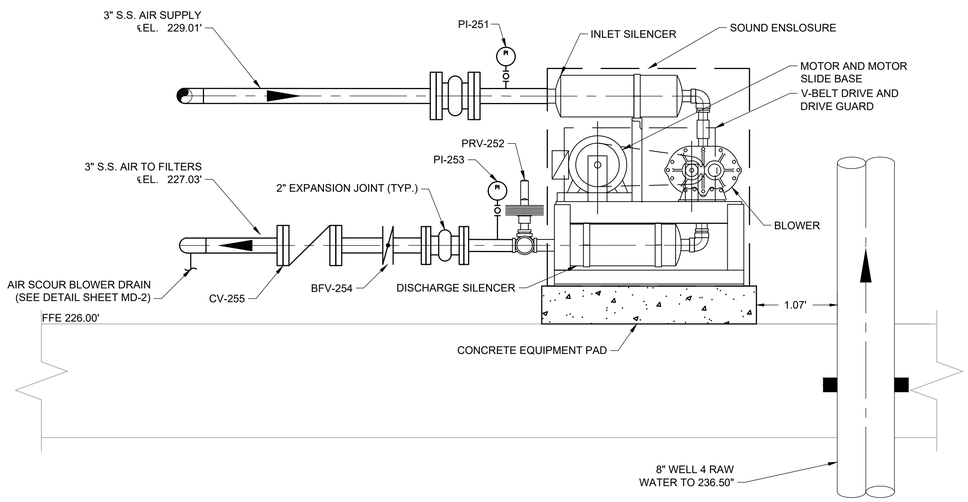
FOR CONSTRUCTION

Sheet No.
M-25

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.3a Mechanical Sheets Sections.dwg Plot Date: Apr 10,2024-5:54pm



AIR SCOUR BLOWER PLAN
SCALE: 1"=1'-0"



SECTION
SCALE: 1"=1'-0"

26
M-26

NOTES:

1. AIR SCOUR BLOWER DISCHARGE PIPE/FITTINGS SHALL BE INSULATED WITHIN 9 FEET OF FINISHED FLOOR.
2. AIR SCOUR SUPPLY LINE WALL PENETRATION TO BE FRAMED AND SEALED PER BUILDING MANUFACTURER'S STANDARD DETAIL AND SPECIFICATIONS.
3. ALL 2" AIR SCOUR BLOWER PIPING SHALL BE STAINLESS STEEL.
4. INSTALL CONDENSATE DRAIN (1/2" TAP AND S.S. BALL VALVE) AT ALL LOW POINTS AND CHANGES IN ELEVATION IN AIR PIPING.
5. AIR SCOUR BLOWER AND VALVES SHALL BE FURNISHED BY FE/MN FILTER MANUFACTURER.

ENVIRONMENTAL PARTNERS
— An Apex Company —

ALSTON W. GOFF JR. NO. 56074 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
APRIL 2024

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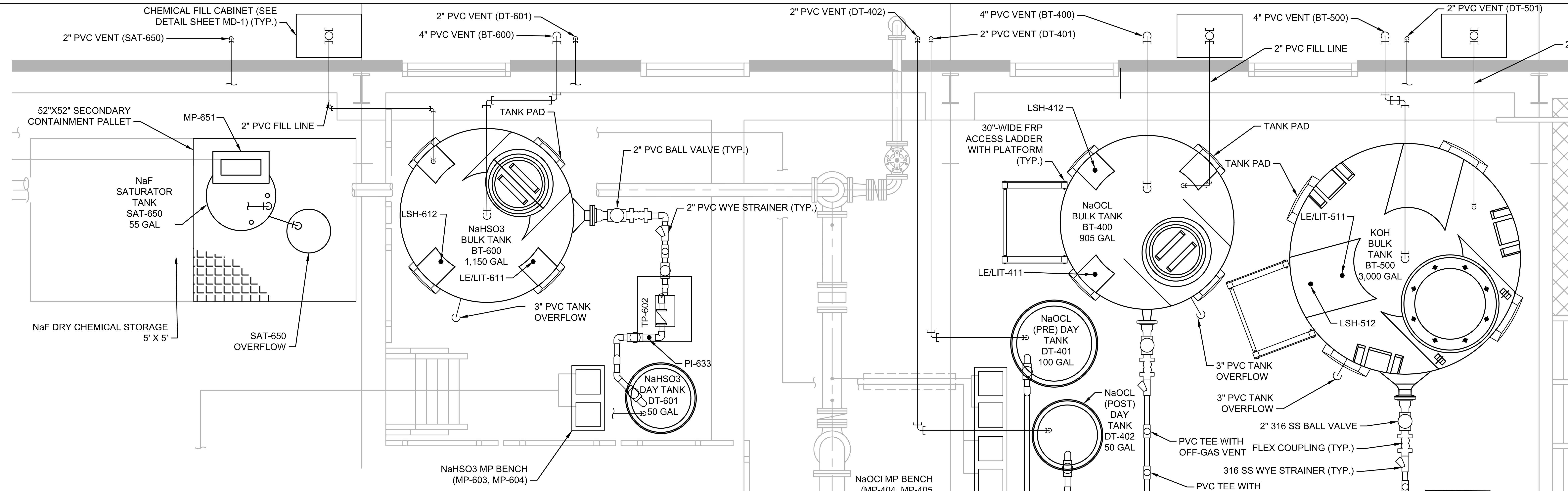
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

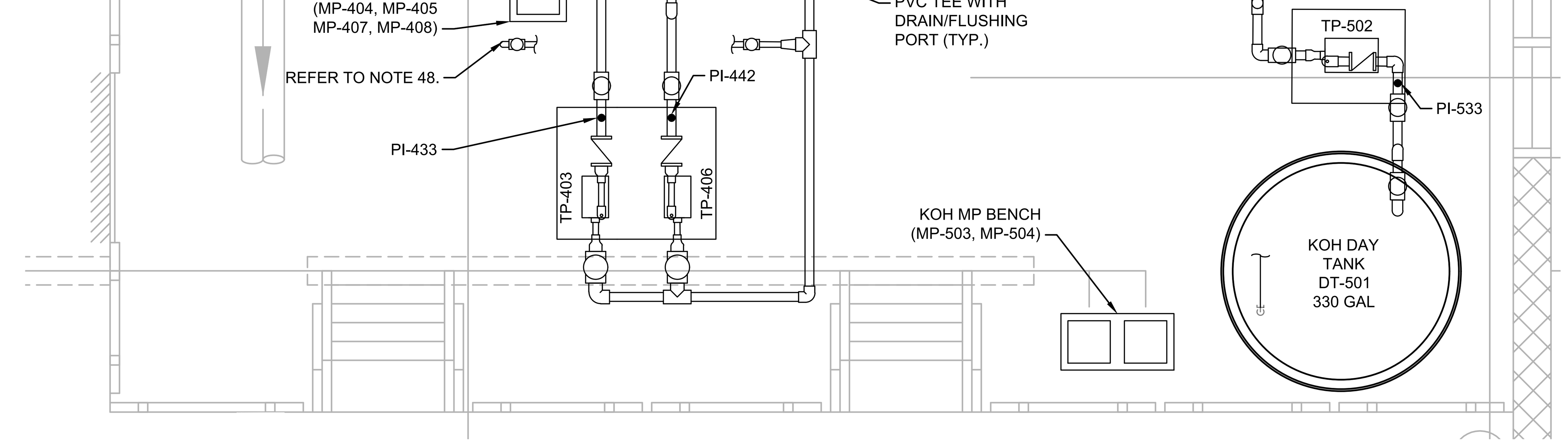
PROCESS MECHANICAL AIR SCOUR PLANS AND SECTIONS

FOR CONSTRUCTION

Sheet No.
M-26

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.3d Mechanical Sheets Sections.dwg Plot Date: Apr 10,2024-5:54pm





PLAN

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

CHEMICAL FEED PROCESS MECHANICAL NOTES

1. CONTRACTOR SHALL SUBMIT A CHEMICAL AREA LAYOUT PLAN INDICATING TANKS, PUMPS, AND EQUIPMENT PAD LOCATIONS FOR ENGINEER/OWNER APPROVAL PRIOR TO INSTALLATION - NO EXCEPTIONS. THIS PROCESS LAYOUT DOES NOT INCLUDE ALL PIPING AND VALVING REQUIRED TO PROVIDE FULLY FUNCTIONAL CHEMICAL FEED AND TRANSFER SYSTEMS. REFER TO THE NOTES ON THIS SHEET AND THE CHEMICAL SYSTEM SCHEMATICS FOR ADDITIONAL REQUIREMENTS.
2. ALL CHEMICAL FEED SYSTEMS SHALL COMPLY WITH THE CHEMICAL SAFETY AND CONTROL STRATEGY FOR CRITICAL CHEMICAL FEED SYSTEMS AS DESCRIBED IN SECTION 6.1.3 OF THE MASSDEP GUIDELINES FOR PUBLIC WATER SYSTEMS.
3. SODIUM HYPOCHLORITE SHALL MEET THE LATEST ISSUE OF ANSI/AWWA B300-18 (AWWA STANDARD FOR HYPOCHLORITES) AND NSF 60 SPECIFICATIONS.
4. POTASSIUM HYDROXIDE SHALL MEET THE LATEST ISSUE OF ANSI/AWWA B511-17 (AWWA STANDARD FOR POTASSIUM HYDROXIDE) AND NSF 60 SPECIFICATIONS.
5. SODIUM BISULFITE SHALL MEET THE LATEST ISSUE OF NSF 60 SPECIFICATIONS.
6. SODIUM FLUORIDE SHALL MEET THE LATEST ISSUE OF ANSI/AWWA B701-18 (AWWA STANDARD FOR SODIUM FLUORIDE) AND NSF 60 SPECIFICATIONS.
7. ALL WORK SHALL BE IN ACCORDANCE WITH MASSDEP CROSS CONNECTION REQUIREMENTS.
8. CONTAINMENT AREAS SHALL PROVIDE AT LEAST 110% SECONDARY CONTAINMENT PLUS VOLUME TO ACCOMMODATE FIRE SUPPRESSION VOLUMES BASED ON 0.15 GPM/SF FOR 20 MINUTES.
9. FINISH ALL EXPOSED FACES OF CONTAINMENT AREA WITH CHEMICAL PROTECTIVE COATING SYSTEM.
10. SOME PROCESS MECHANICAL PIPING NOT SHOWN FOR CLARITY. REFERENCE CHEMICAL FEED SCHEMATICS FOR ADDITIONAL PIPING DETAILS.
11. PIPE ROUTING IS TO BE DETERMINED IN THE FIELD EXCEPT AS SHOWN ON PIPING SCHEMATICS. PIPE ROUTING MUST NOT INTERFERE WITH ACCESS TO OPERATION OF ANY OTHER PIPE, VALVE, OR EQUIPMENT. PIPING SHALL NOT BE INSTALLED ABOVE ELECTRICAL EQUIPMENT AND CONTROL PANELS.
12. PIPING SHALL BE INSTALLED TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT APPLYING STRESS TO THE EQUIPMENT OR PIPING. NO SPLICING OF CHEMICAL TUBING SHALL BE ALLOWED.
13. ALL CHEMICAL FEED LINES, VENT LINES, AND PLANT WATER LINES SHALL BE SUPPORTED AS REQUIRED.
14. ALL CHEMICAL FEED LINES SHALL BE COLOR CODED, LABELED WITH CHEMICAL NAME, AND SHOW ARROW FOR DIRECTION OF FLOW. NaOCl CHEMICAL FEED LINES SHALL BE COLOR CODED YELLOW. KOH CHEMICAL FEED LINES SHALL BE COLOR CODED YELLOW WITH GREEN BANDS. NaHSO3 CHEMICAL FEED LINES SHALL BE COLOR CODED AND BANDED AS DIRECTED BY THE ENGINEER/OWNER. NaF CHEMICAL FEED LINES SHALL BE COLOR CODED LIGHT BLUE WITH RED BANDS.
15. PIPING AND EQUIPMENT SUPPORTS SHALL BE INSTALLED FOLLOWING MANUFACTURER'S RECOMMENDATIONS FOR THE INTENDED SERVICE. MATERIALS OF CONSTRUCTION SHALL BE COMPATIBLE WITH NaOCl, KOH, NaHSO3, AND/OR NaF.
16. STANDARD OPERATING PROCEDURES AND SDS SHEETS SHALL BE POSTED IN WATER TREATMENT PLANT FOLLOWING CONSTRUCTION AND ALL OTHER ACCESSORIES SHALL BE PROVIDED TO MEET OSHA STANDARDS.
17. PROVIDE A VENT FOR EACH CHEMICAL STORAGE TANK. VENT SHALL BE FITTED WITH A GOOSE NECK AND 24-MESH CORROSION RESISTANT INSECT SCREEN. VENT SHALL SLOPE BACK TOWARD TANK. BULK AND DAY CHEMICAL STORAGE TANK VENTS SHALL VENT INDIVIDUALLY TO THE EXTERIOR OF THE FACILITY. REFER TO INDIVIDUAL PIPING SCHEMATICS FOR SIZING.
18. PROVIDE TYPICAL WALL PENETRATION OR FRAME AND SEAL PER PEMB MANUFACTURER'S RECOMMENDATIONS AT ALL PROCESS MECHANICAL PIPING WALL PENETRATION LOCATIONS INCLUDING VENT PIPES AND CHEMICAL FILL PIPE. BUILDING ROOF PENETRATIONS NOT ALLOWED.
19. ALL EQUIPMENT REQUIRING VENTING TO ATMOSPHERE SHALL DISCHARGE ABOVE GRADE AND SHALL HAVE VENTS LOCATED AWAY FROM ANY BUILDING OPENINGS, AIR INTAKES, AND PARKING AREAS.
20. BULK TANKS AND DAY TANKS TO BE PROVIDED WITH GRADUATIONS VISIBLE FROM ADJACENT WALKWAYS.
21. BULK TANKS AND DAY TANKS SHALL BE PROVIDED WITH EMERGENCY OVERFLOW LINES TO SECONDARY CONTAINMENT AREA. REFER TO PIPING SCHEMATIC FOR SIZING. OVERFLOW CHECK VALVES SHALL BE DUCKBILL TYPE AND DISCHARGE 12-24 INCHES ABOVE CONTAINMENT AREA OVER A SPLASH PLATE. THE GENERAL CONTRACTOR SHALL PROVIDE AN UPWARD FACING ELBOW ON THE OVERFLOW PIPING INSIDE EACH CHEMICAL STORAGE TANK TO MAXIMIZE THE AVAILABLE CHEMICAL VOLUME.
22. PROVIDE LABELS FOR EACH TANK FURNISHED AND INSTALLED.
23. BULK TANK FILL LINE SHALL SLOPE TOWARD BULK TANK.
24. INSTALL AIR RELEASE VALVE AT HIGH POINT BETWEEN TRANSFER PUMP AND DAY TANK. AIR RELEASE VALVE VENT DISCHARGE SHALL BE PIPED INTO DAY TANK.
25. PVC WYE STRAINERS SHALL BE INSTALLED AT A MINIMUM OF 1'-0" OFF THE FINISHED FLOOR. REFER TO CHEMICAL FEED PIPING SCHEMATIC FOR SIZES.
26. SUCTION AND INLET REDUCERS/INCREASERS SHALL BE PROVIDED, AS REQUIRED, AT TRANSFER PUMP CONNECTIONS TO PROPOSED CHEMICAL PIPING SYSTEMS.
27. TRANSFER PUMP DISCHARGE PIPING TO DAY TANK SHALL HAVE A HIGH POINT ABOVE THE CORRESPONDING BULK STORAGE TANK.
28. THE SUCTION FEED LINES SHALL SLOPE UPWARDS FROM THE DAY TANKS TO THE METERING PUMP TO AVOID AIR-ENTRAPMENT.
29. METERING PUMP DISCHARGE PIPING SHALL SLOPE UPWARDS FROM METERING PUMPS TO CHEMICAL INJECTOR LOCATIONS.
30. PIPE UNIONS SHALL BE INSTALLED AT ALL PIPING CONNECTIONS TO AND FROM EQUIPMENT AND AS SHOWN ON PIPING SCHEMATIC.
31. LEVEL SWITCH - EACH DAY TANK AND EACH BULK TANK. REFER TO SHEET M-28 FOR BULK TANK NOZZLE ARRANGEMENT PLANS.
32. ULTRASONIC LEVEL SENSOR - EACH BULK TANK. REFER TO SHEET M-28 FOR BULK TANK NOZZLE ARRANGEMENT PLANS.
33. SODIUM HYPOCHLORITE VALVES SHALL BE VENTED BALL VALVE TYPE.
34. METERING PUMPS WILL BE RESET LOCALLY FOLLOWING SCADA ALARM INITIATED SHUTDOWN. REMOTE RESET IS NOT PERMITTED.
35. METERING PUMPS IN MANUAL MODE SHALL ACTIVATE LOCAL STROBE LIGHT VISUAL ALARM. SEE INSTRUMENTATION AND ELECTRICAL PLANS FOR DETAIL.
36. CHEMICAL USAGE SHALL BE MONITORED AND RECORDED BY SCADA SYSTEM AS NOTED ON INSTRUMENTATION PLANS.
37. CONTRACTOR SHALL PROVIDE NaOCl, KOH, NaHSO3, AND NaF FOR START-UP, CHECK-OUT, TESTING, AND AS REQUIRED BY THE SPECIFICATIONS. REMAINDER OF CHEMICAL SHALL BE PROVIDED TO OWNER.
38. PROVIDE THREE SETS OF THE FOLLOWING PER MATERIAL SAFETY DATA SHEETS (SDS) AND OSHA 29CFR1910: A PAIR OF RUBBER GLOVES, SPLASH GOGGLES, FACEMASK, AND AN APRON OR OTHER PROTECTIVE CLOTHING.
39. REFER TO PLUMBING PLANS FOR EMERGENCY EYEWASH AND SAFETY SHOWER DETAILS AND COORDINATION.
40. REFER TO INSTRUMENTATION PLANS FOR INSTRUMENTATION DETAILS.
41. REFER TO ELECTRICAL PLANS FOR EQUIPMENT POWER REQUIREMENTS.
42. TUBING CARRIER CONTAINMENT PIPE SHALL BE SCHEDULE 40 PVC SOLVENT WELD JOINTS. CONTRACTOR SHALL MAKE ALL CHANGES IN DIRECTION OF THE CARRIER PIPE BY BENDING THE PIPE (MIN 18" RADIUS) AND INSTALL "PULL BOXES" AT 15' INTERVALS ALONG THE ENTIRE LENGTH OF CONTAINMENT PIPING. PULL BOX SHALL INCLUDE TEE WITH THREADED CAP FOR ACCESS TO TUBING.
43. ALL CHEMICAL TUBING IN CARRIER PIPING AND IN CONTACT WITH CORNERS AND OTHER HARD SURFACES SHALL BE INSULATED TO PROTECT THE TUBING AGAINST WEAR AND TEAR. THE INSULATION MATERIAL SHALL BE COMPATIBLE WITH THE CHEMICAL SERVICE.
44. ALL CHEMICAL BULK FILL STATIONS, BULK AND DAY TANKS, CARRY PIPES, AND CHEMICAL INJECTION LOCATIONS SHALL BE LABELED IN ACCORDANCE WITH THE MASSDEP GUIDELINES FOR PUBLIC WATER SYSTEMS.
45. THE GENERAL CONTRACTOR SHALL STORE SPILL ABSORBENT ONSITE FOR ANY UNCONTROLLED DISCHARGES.
46. ALL PIPE ELEVATIONS ARE TO BE DETERMINED BY THE GENERAL CONTRACTOR AND APPROVED BY THE ENGINEER. INSTALL HORIZONTAL PIPE RUNS WITH MIN. 8'-0" HEAD ROOM CLEARANCE UNLESS OTHERWISE INDICATED.
47. INSTALL TRANSFER PUMPS ON PAD AT THE SAME HEIGHT AS STORAGE TANK PAD.
48. NaOCl FILL STATION. DISCHARGE SHALL BE INSTALLED WITH ENOUGH CLEARANCE FOR A 5-GAL CARBOY. REFER TO M-29 FOR MORE DETAILS. COORDINATE LAYOUT WITH OWNER/ENGINEER IN FIELD.
49. REFER TO PLUMBING PLANS FOR POTABLE WATER SERVICE DETAILS. COORDINATE FINAL PIPING LOCATION WITH THE PLUMBING CONTRACTOR WHEN CONNECTING TO PIPING TO BE INSTALLED BY THE PLUMBING CONTRACTOR.

ENVIRONMENTAL PARTNERS
— An Apex Company —

APRIL 2024

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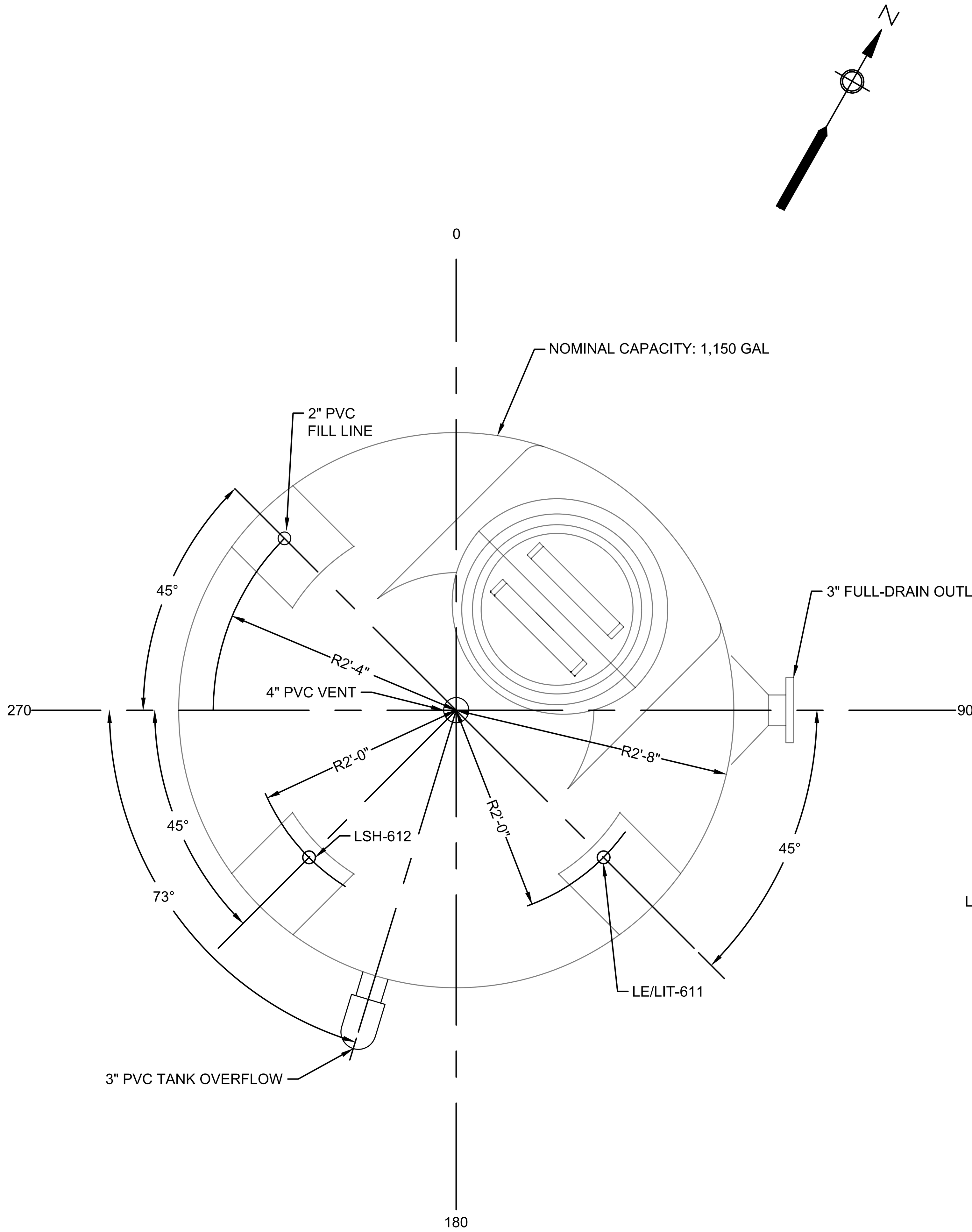
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL
CHEMICAL FEED LAYOUT PLAN

FOR CONSTRUCTION

Sheet No.
M-27

Drawing file: I:\Sharon, MA.245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.4 Chemical Feed Design.dwg Plot Date: Apr 03,2024-11:10am



NaHSO3 BULK TANK (BT-600) NOZZLE PLAN

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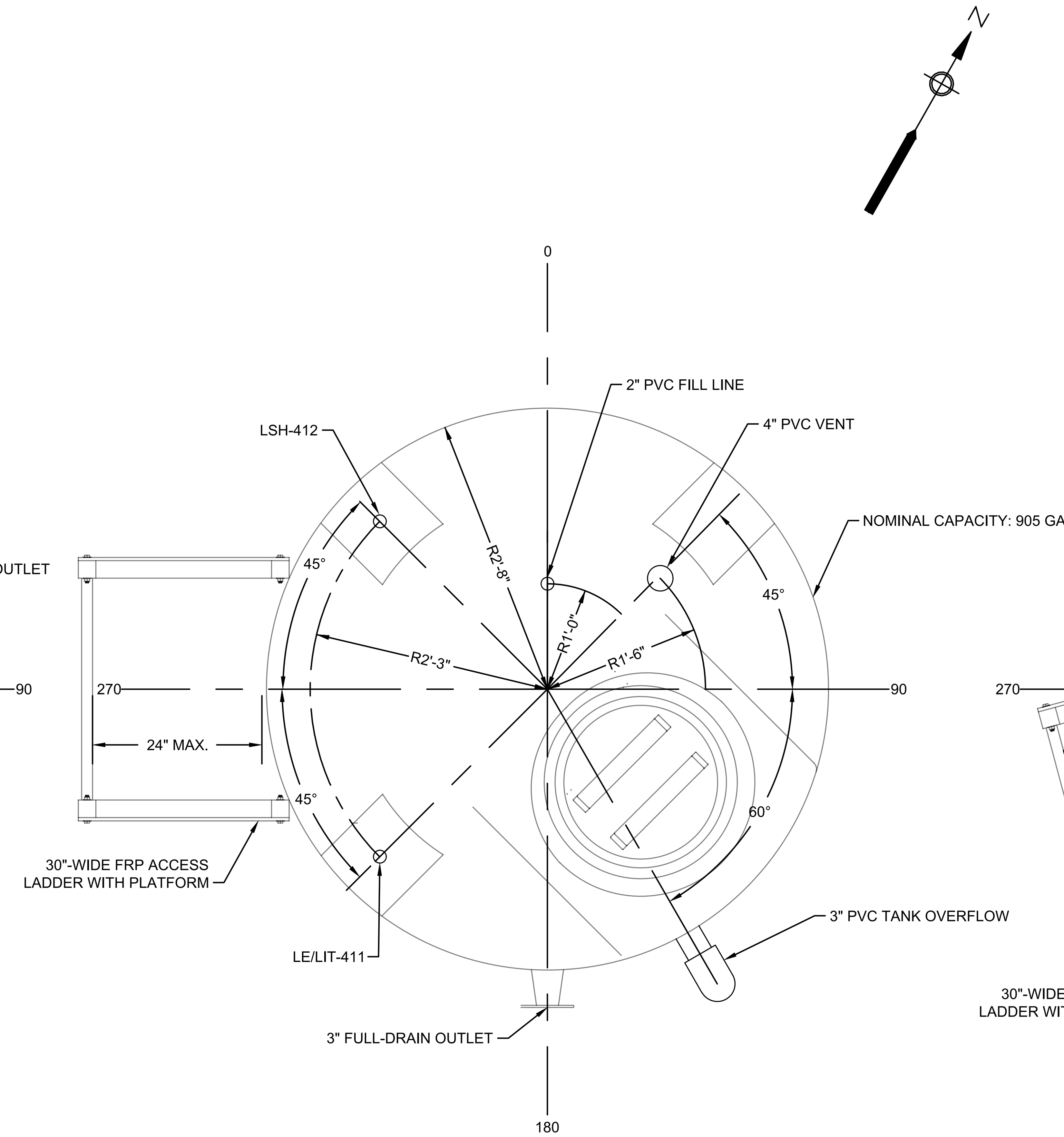
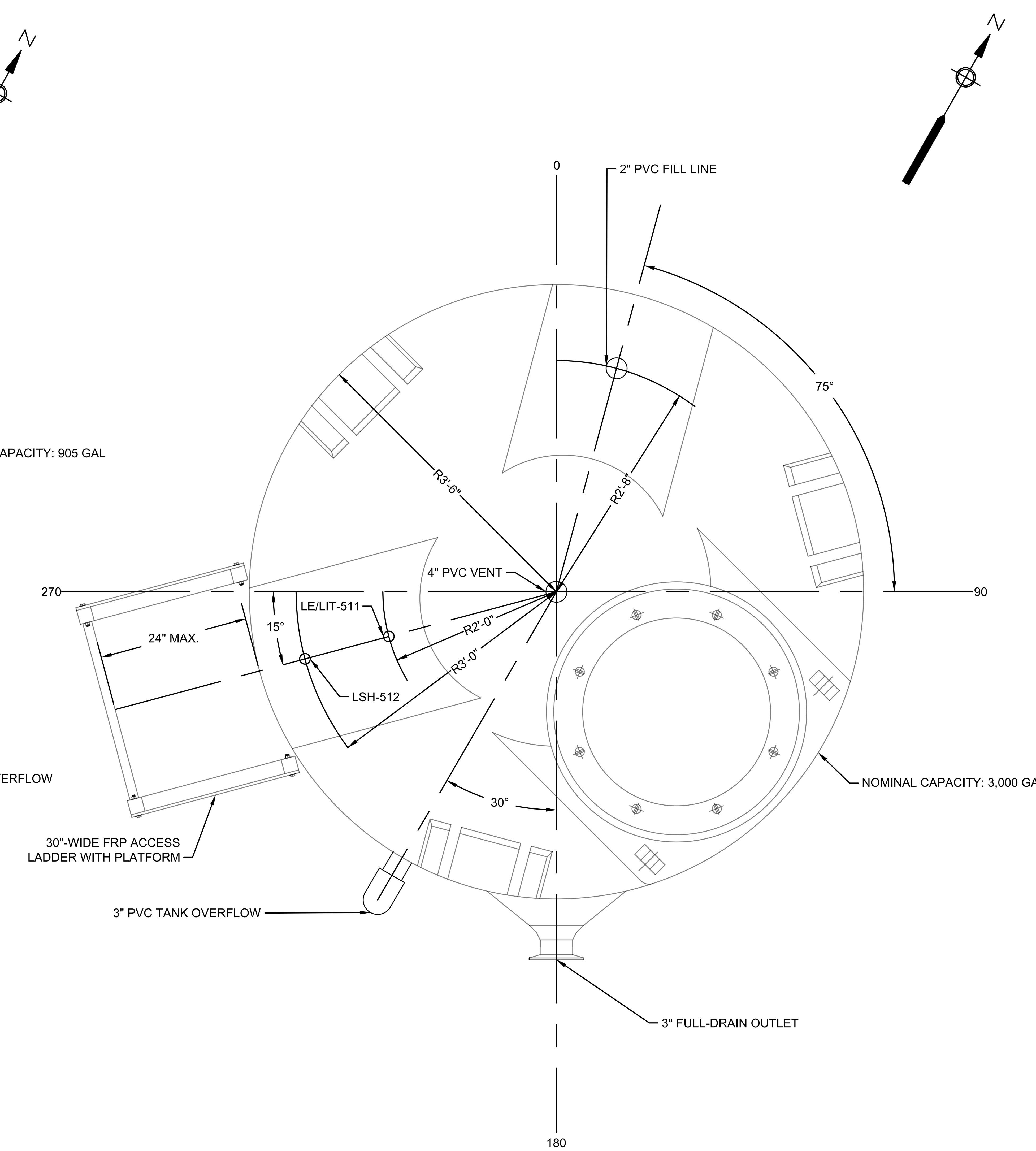


NaOCl BULK TANK (BT-500) NOZZLE PLAN

SCALE: 1"=1'-0"



KOH BULK TANK (BT-400) NOZZLE PLAN

SCALE: 1"=1'-0"

ENVIRONMENTAL PARTNERS — An Apex Company —

COMMONWEALTH OF MASSACHUSETTS · ALSTON W. COTTS · CIVIL · NO. 56074 · REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	TNS
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL

CHEMICAL STORAGE BULK TANK NOZZLE PLAN

FOR CONSTRUCTION

Sheet No.

M-28

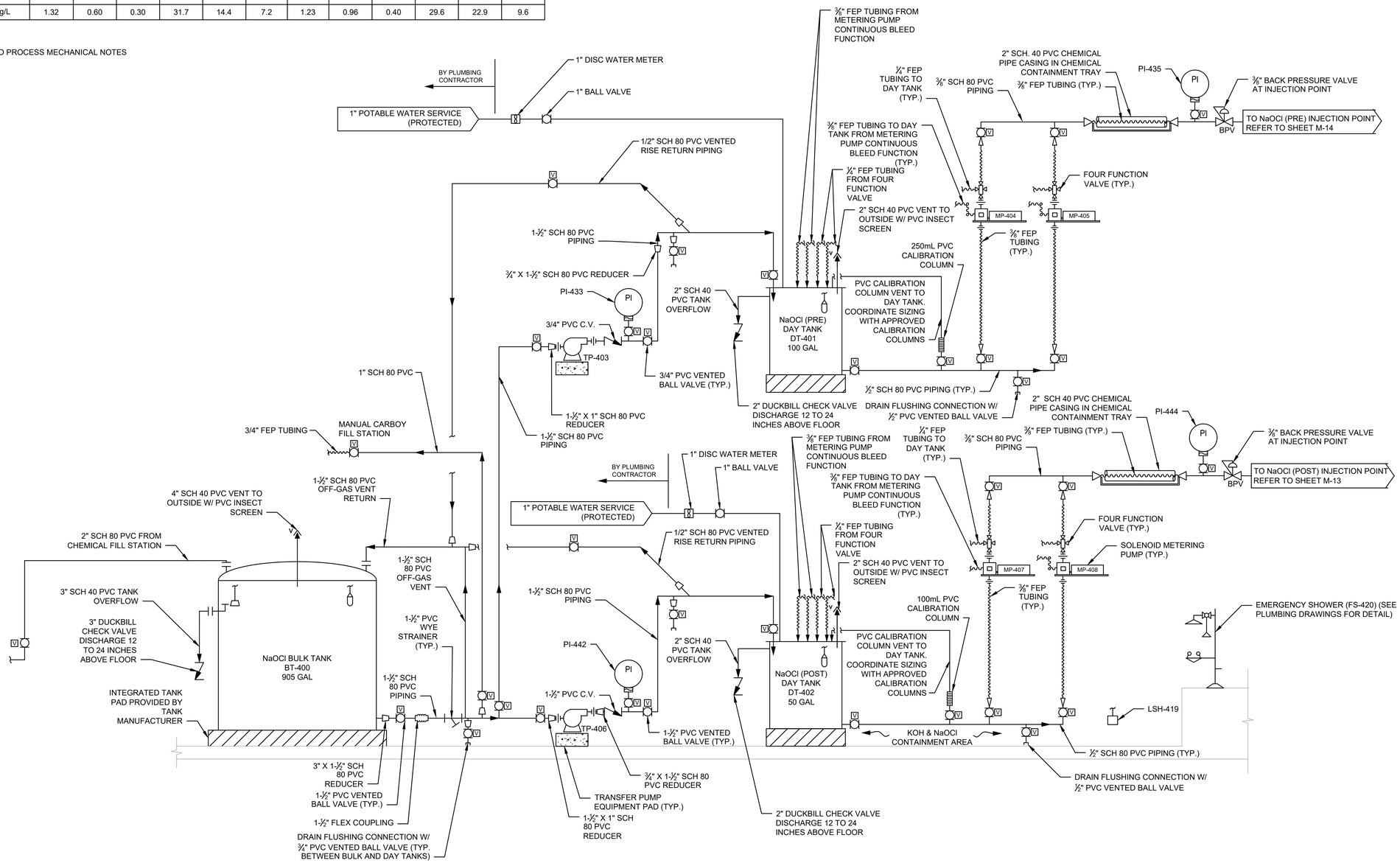
Drawing file: I:\Sharon, MA.245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.4 Chemical Feed Design.dwg Plot Date: Apr 03,2024-11:10am

SODIUM HYPOCHLORITE DOSING SCHEDULE

STRENGTH	PRE FILTRATION DRY DOSE (AVERAGE)	POST FILTRATION DRY DOSE (AVERAGE)	PRE-FILTRATION						POST-FILTRATION					
			FEED RATE (GPH)			DAILY USAGE (GPD)			FEED RATE (GPH)			DAILY USAGE (GPD)		
			MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN
6.25%	1.5 mg/L	1.0 mg/L	1.32	0.60	0.30	31.7	14.4	7.2	1.23	0.96	0.40	29.6	22.9	9.6

NOTES:

1. SEE SHEET M-27 FOR CHEMICAL FEED PROCESS MECHANICAL NOTES



ENVIRONMENTAL PARTNERS — An Apex Company

ALSTON W. BOTTS JR. CIVIL NO. 56074 COMMONWEALTH OF MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	TNS
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Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL
SODIUM HYPOCHLORITE
CHEMICAL FEED SCHEMATIC

FOR CONSTRUCTION

Sheet No.

M-29

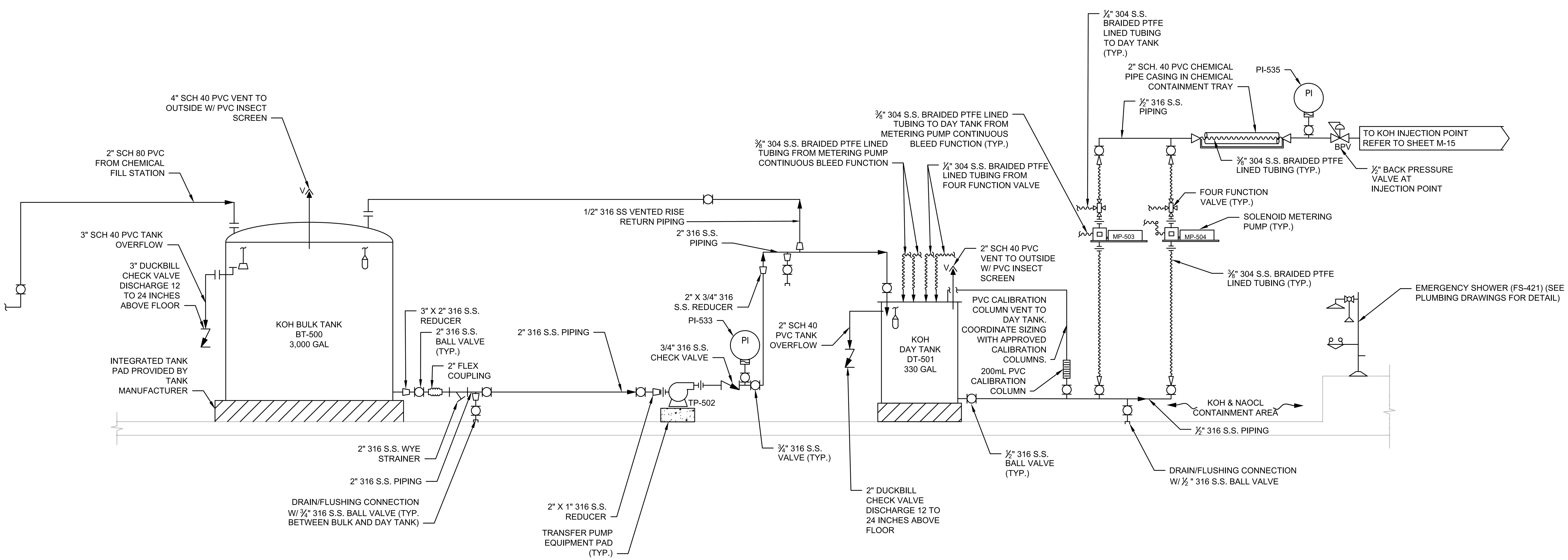
Drawing file: I:\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.4 Chemical Feed Design.dwg Plot Date: Apr 03,2024-11:11am

POTASSIUM HYDROXIDE DOSING SCHEDULE

STRENGTH	DRY DOSE (AVERAGE)	FEED RATE (GPH)			DAILY USAGE (GPD)		
		MAX	AVG	MIN	MAX	AVG	MIN
45%	36.5 mg/L	5.37	3.99	1.67	128.9	95.9	40.1

NOTES:

1. SEE SHEET M-27 FOR CHEMICAL FEED PROCESS MECHANICAL NOTES



Scale	N.T.S.	
Date	APRIL 2024	
Job No.	245-2103	
Designed by	AWCP	
Drawn by	TNS	
Checked by	EAK	
Approved by	ASK	

MARK	DATE	DESCRIPTION

ENVIRONMENTAL PARTNERS — An Apex Company —

COMMONWEALTH OF MASSACHUSETTS ALSTON W. C. POTTS CIVIL NO. 56074 REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL
POTASSIUM HYDROXIDE
CHEMICAL FEED SCHEMATIC

FOR CONSTRUCTION

Sheet No.

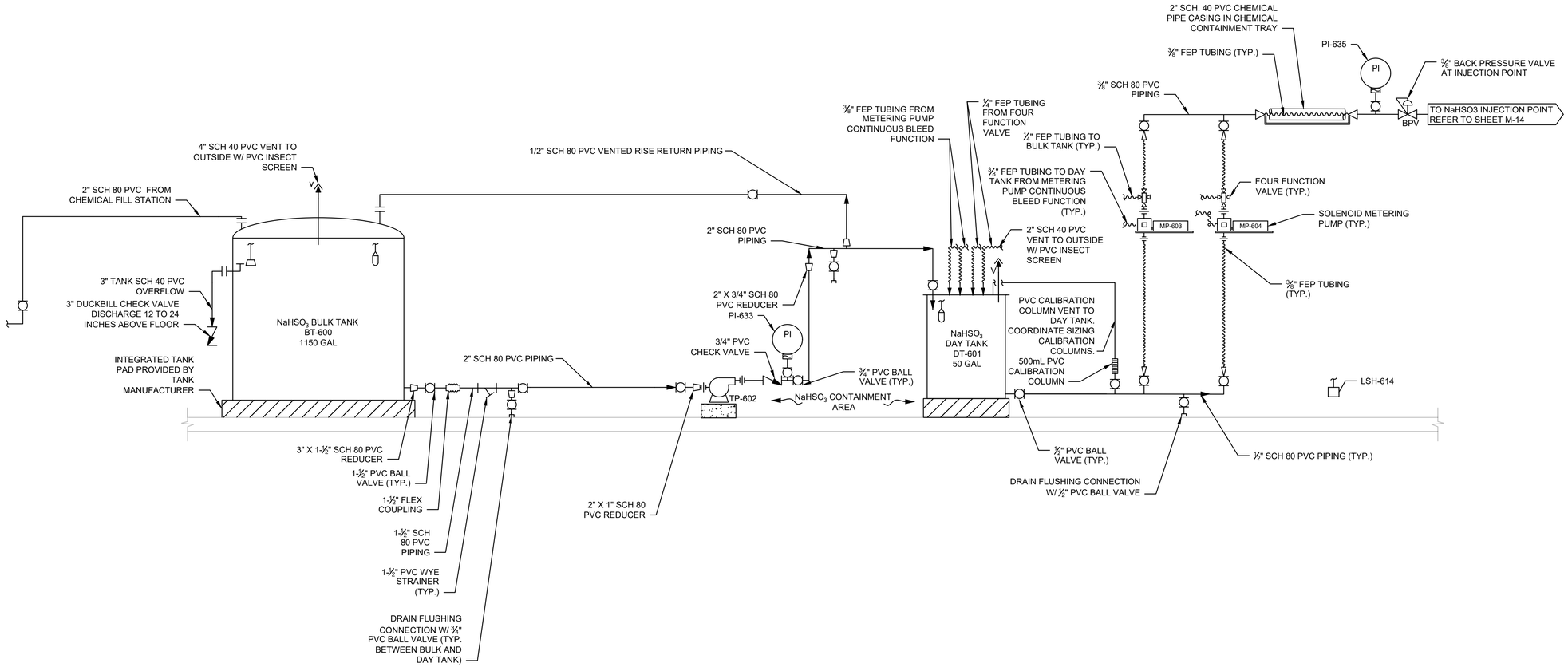
M-30

SODIUM BISULFITE DOSING SCHEDULE

STRENGTH	DRY DOSE (AVERAGE)	FEED RATE (GPH)			DAILY USAGE (GPD)		
		MAX	AVG	MIN	MAX	AVG	MIN
38%	2.6 mg/L	0.38	0.16	0.01	9.2	3.9	0.2

NOTES:

1. SEE SHEET M-27 FOR CHEMICAL FEED PROCESS MECHANICAL NOTES



				Scale	N.T.S.	
				Date	APRIL 2024	
				Job No.	245-2103	
				Designed by	AWCP	
				Drawn by	TNS	
				Checked by	EAK	
MARK	DATE	DESCRIPTION		Approved by	ASK	

ENVIRONMENTAL PARTNERS — An Apex Company

COMMONWEALTH OF MASSACHUSETTS — ALSTON W.C. COTTERELL — No. 56074 — REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL
SODIUM BISULFITE
CHEMICAL FEED SCHEMATIC

FOR CONSTRUCTION

Sheet No.

M-31

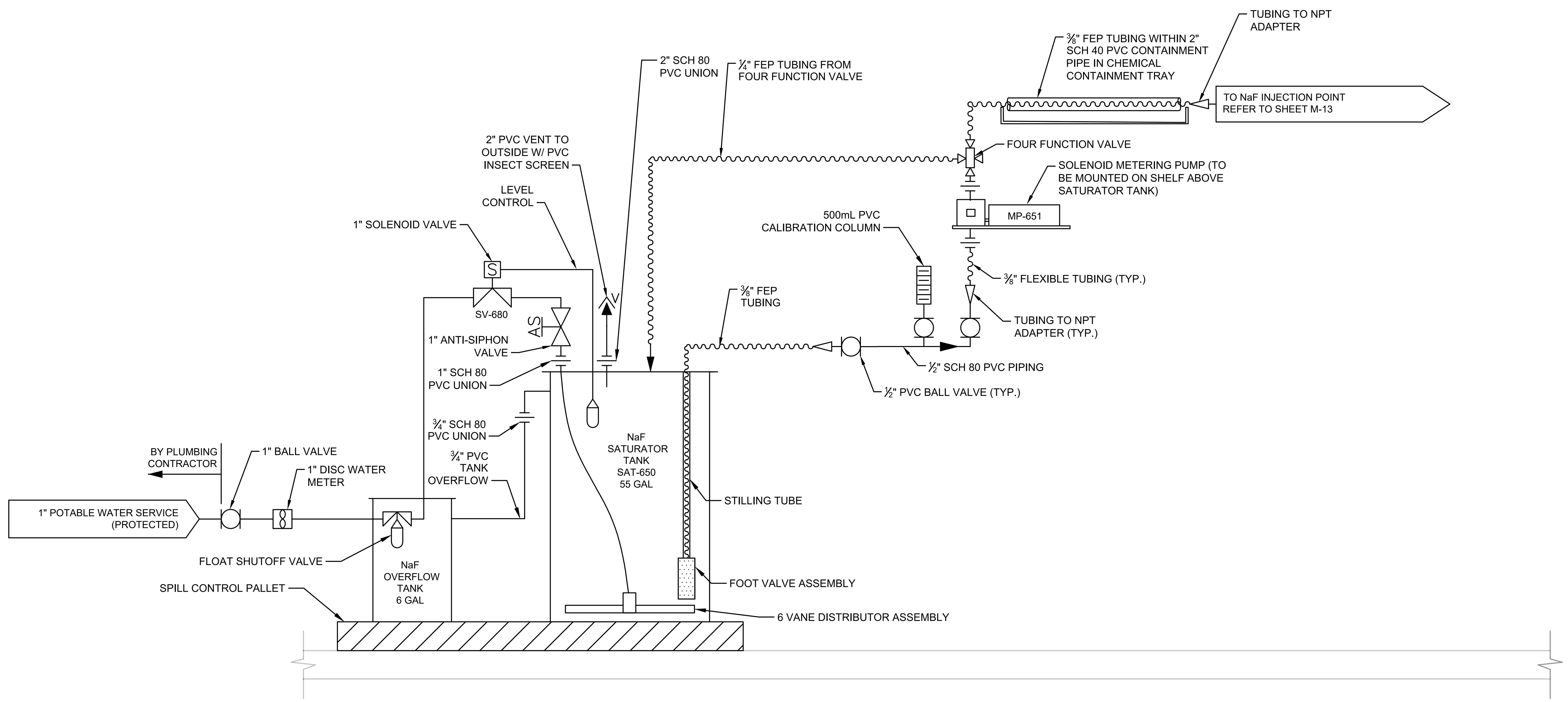
Drawing file: I:\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.4 Chemical Feed Design.dwg Plot Date: Apr 03,2024-11:11am

SODIUM FLUORIDE DOSING SCHEDULE

STRENGTH	DRY DOSE	FEED RATE (GPH)			DAILY USAGE (GPD)		
		MAX	AVG	MIN	MAX	AVG	MIN
4%	0.7 mg/L	3.72	2.77	1.16	89.3	66.4	27.8

NOTES:

1. SEE SHEET M-27 FOR CHEMICAL FEED PROCESS MECHANICAL NOTES



ENVIRONMENTAL PARTNERS — An Apex Company —

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
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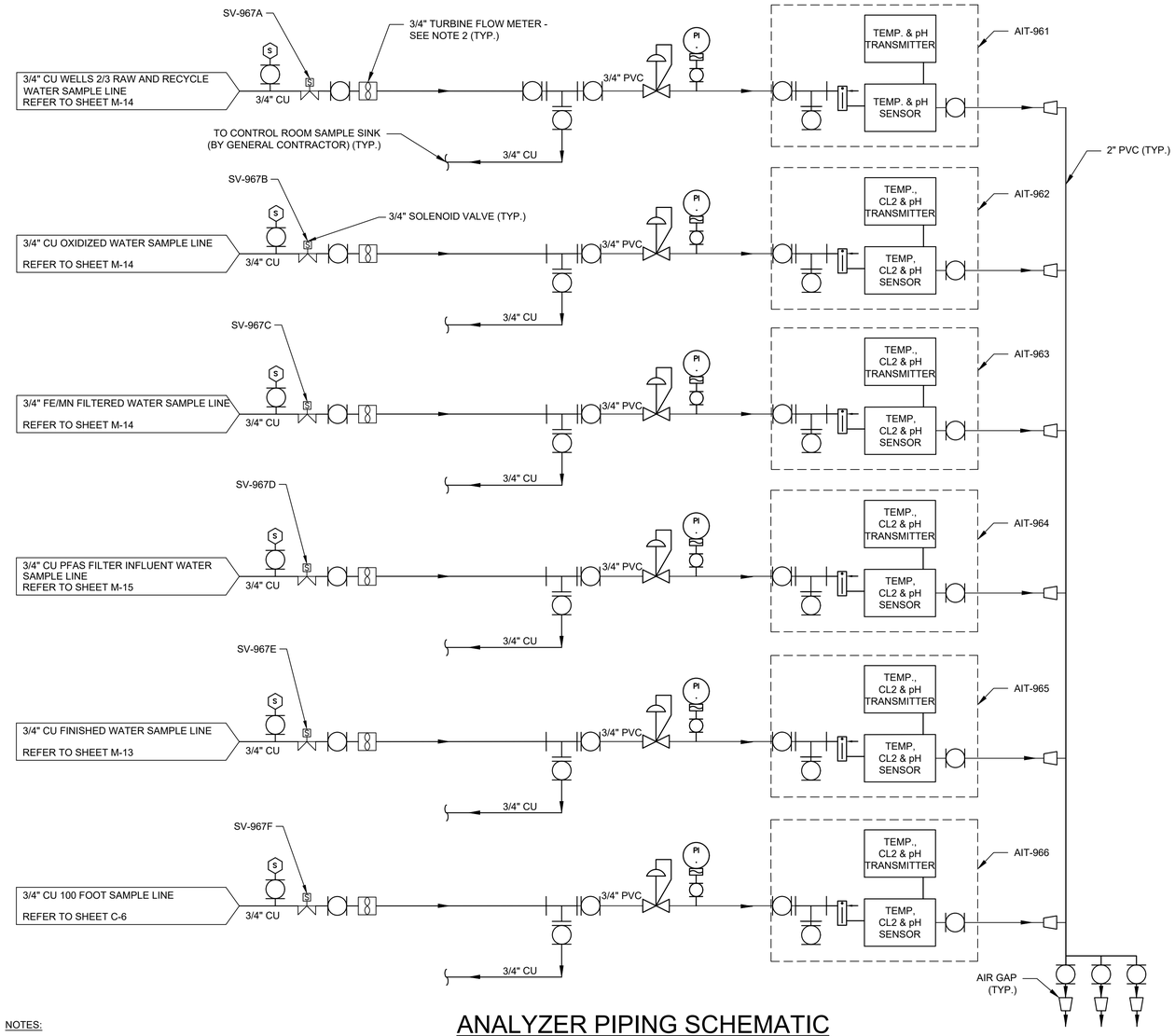
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL
SODIUM FLOURIDE
CHEMICAL FEED SCHEMATIC

FOR CONSTRUCTION

Sheet No.

M-32

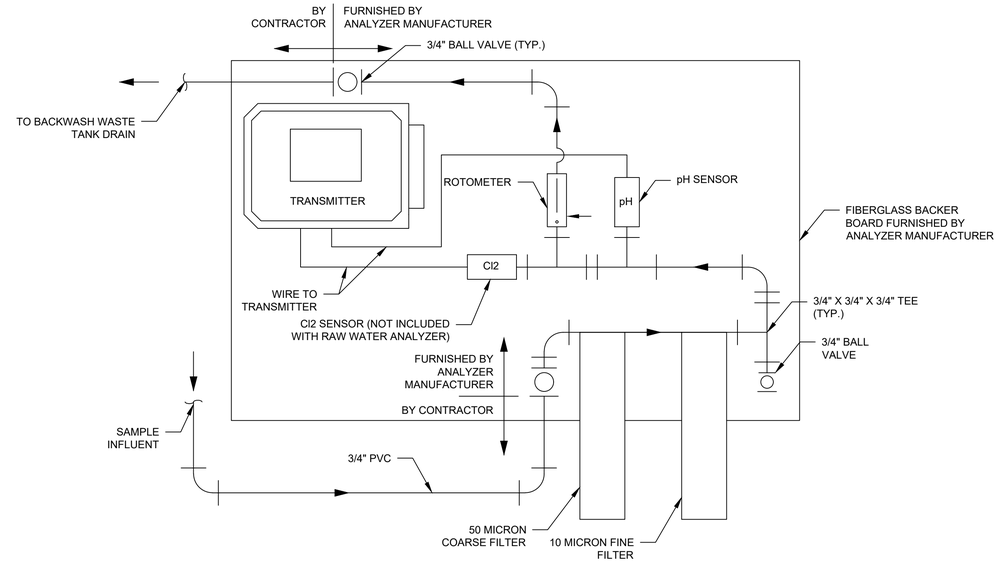


ANALYZER PIPING SCHEMATIC

SCALE: N.T.S.

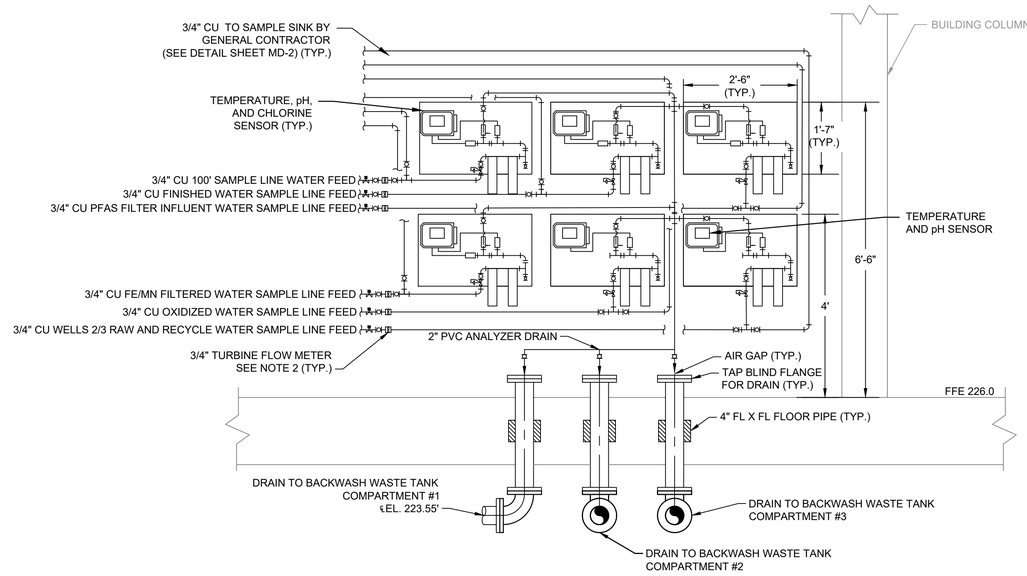
NOTES:

1. ALL SAMPLE TAPS TO ANALYZERS SHALL BE PROVIDED WITH THREADED CORPORATION.
2. TURBINE FLOW METERS SHALL BE FURNISHED BY THE TOWN AND INSTALLED BY THE CONTRACTOR.
3. REFER TO M-12 FOR CONTINUATION OF PIPING TO SAMPLE SINK.
4. MOUNT FIBERGLASS BACKER BOARD TO WALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
5. SEE ANALYZER PIPING SCHEMATIC THIS SHEET FOR VALVE LOCATION AND REQUIREMENTS.
6. ELECTRICAL AND INSTRUMENTATION CONNECTIONS NOT SHOWN. REFER TO ELECTRICAL DRAWINGS & INSTRUMENTATION DRAWINGS.
7. COPPER SAMPLE LINES/FITTINGS SHALL BE INSULATED FROM THE SAMPLE TAP TO THE ANALYZER BANK AND SAMPLE SINK.



TYPICAL pH AND CHLORINE ANALYZER SCHEMATIC

SCALE: N.T.S.



ANALYZER LAYOUT SCHEMATIC

SCALE: N.T.S.

ENVIRONMENTAL PARTNERS — An Apex Company —

ALSTON W. SCOTT JR. CIVIL NO. 56074 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	NOTED
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

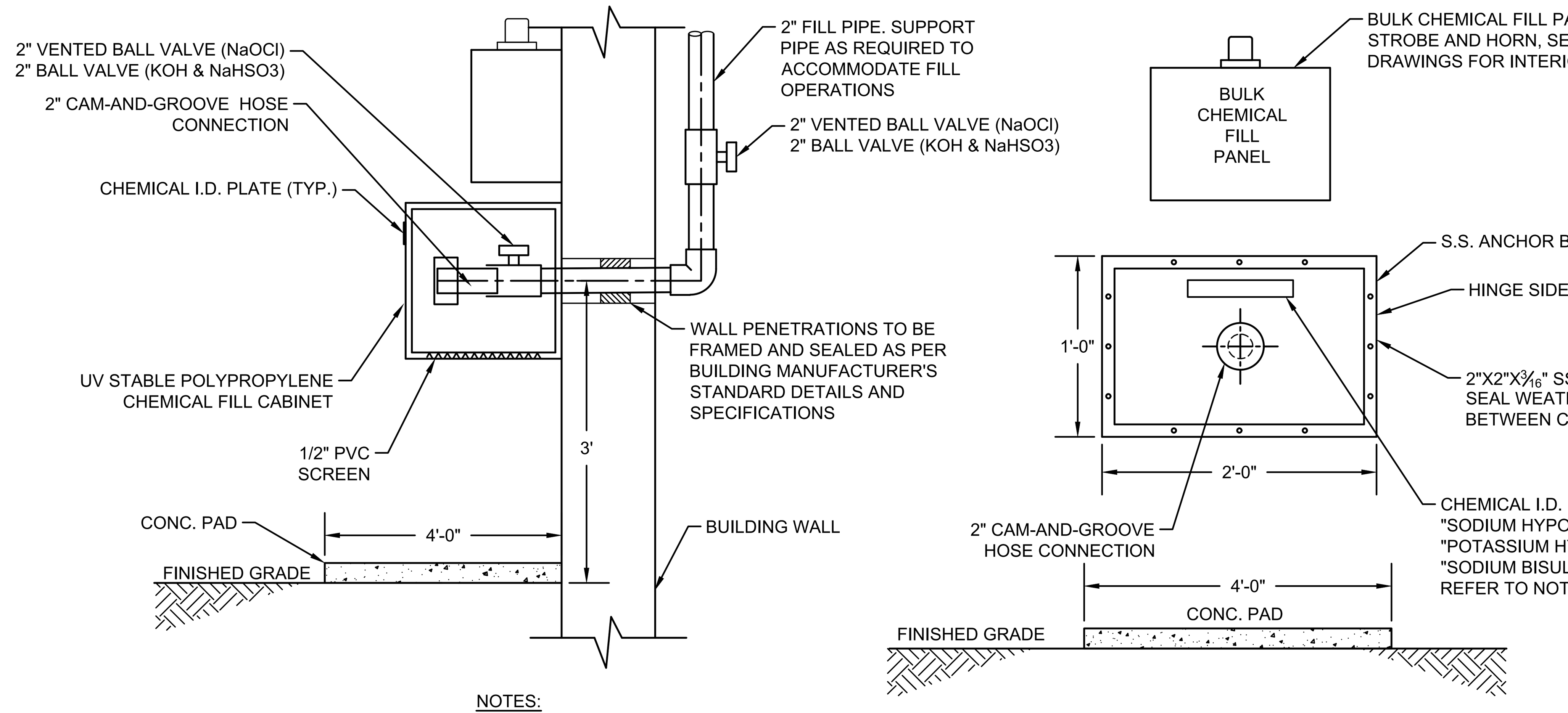
PROCESS MECHANICAL ANALYZER SCHEMATICS

100% DESIGN

Sheet No.

M-33

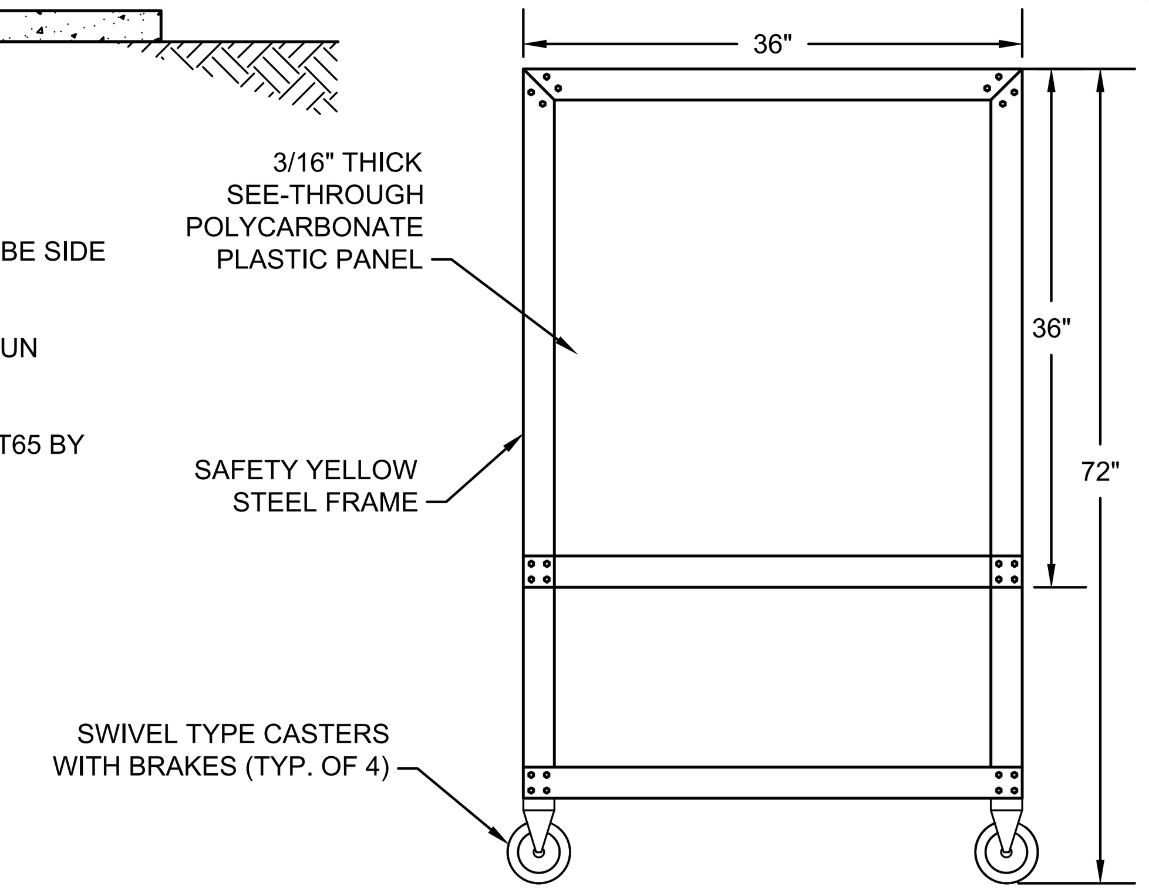
Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.5 Process Mechanical Details.dwg Plot Date: Apr 04,2024-11:24am



NOTES:

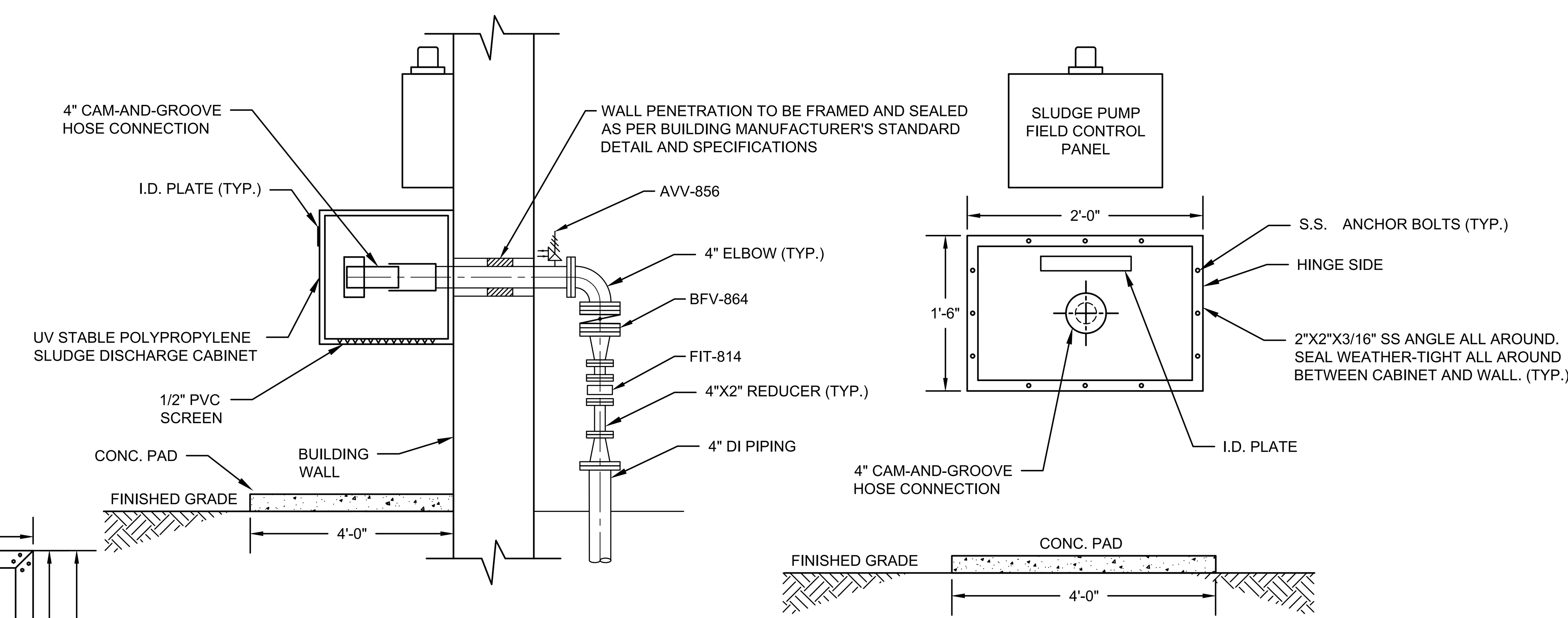
1. FILL STATION SHALL BE ABLE TO BE PAD LOCKED.
2. CHEMICAL FILL CABINET HINGES SHALL BE GRADE 304 STAINLESS STEEL. HINGES SHALL BE SIDE MOUNTED - NO EXCEPTIONS.
3. PROVIDE EXTERIOR SIGNAGE FOR EACH CHEMICAL INCLUDING CHEMICAL NAME, 4 DIGIT UN NUMBER, AND CHEMICAL FORMULA. PROVIDE NFPA DIAMOND SOS SIGNAGE.
4. PROVIDE HEAVY DUTY POLYPROPYLENE SORBENT CHEMICAL SPILL PILLOW MODEL 6314T65 BY McMASTER-CARR, OR APPROVED EQUAL, FOR EACH CHEMICAL FILL STATION.

CHEMICAL FILL STATION
SCALE: N.T.S.



PERSONNEL PROTECTION PANEL
SCALE: N.T.S.

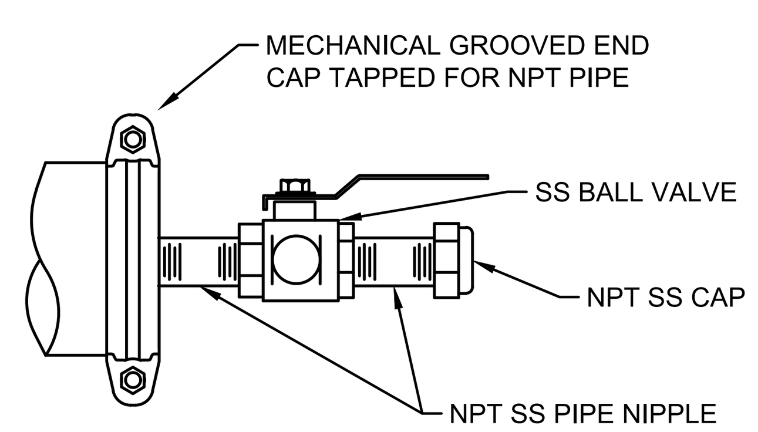
1. CONTRACTOR SHALL PROVIDE ONE PERSONNEL PROTECTION PANEL PER CHEMICAL INJECTION LOCATION (TOTAL OF 4).
2. PERSONNEL PROTECTION PANEL SHALL BE MODEL 7006N15 WITH CASTERS AS MANUFACTURED BY MCMASTER-CARR OR ENGINEER APPROVED EQUAL.



NOTES:

1. SLUDGE DISCHARGE CABINET SHALL BE ABLE TO BE PAD LOCKED.
2. SLUDGE DISCHARGE CABINET HINGES SHALL BE STAINLESS STEEL.
3. PROVIDE EXTERIOR SIGNAGE.
4. CONTRACTOR SHALL FURNISH 100 FT OF 4-INCH CAM-AND-GROOVE HOSE IN 20-FT SEGMENTS. HOSE SHALL BE NSF 61 CERTIFIED.

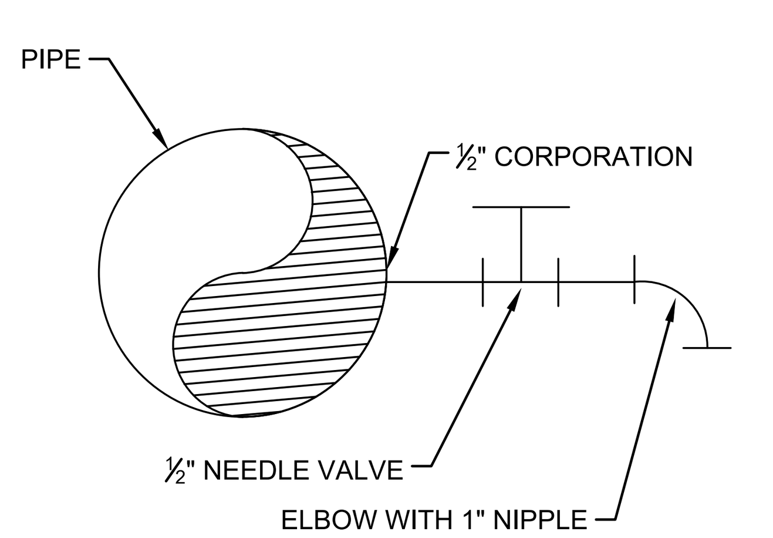
SLUDGE DISCHARGE STATION
SCALE: N.T.S.



NOTES:

1. FLUSHING TAP SIZE SHALL BE AS INDICATED ON M-SHEETS.

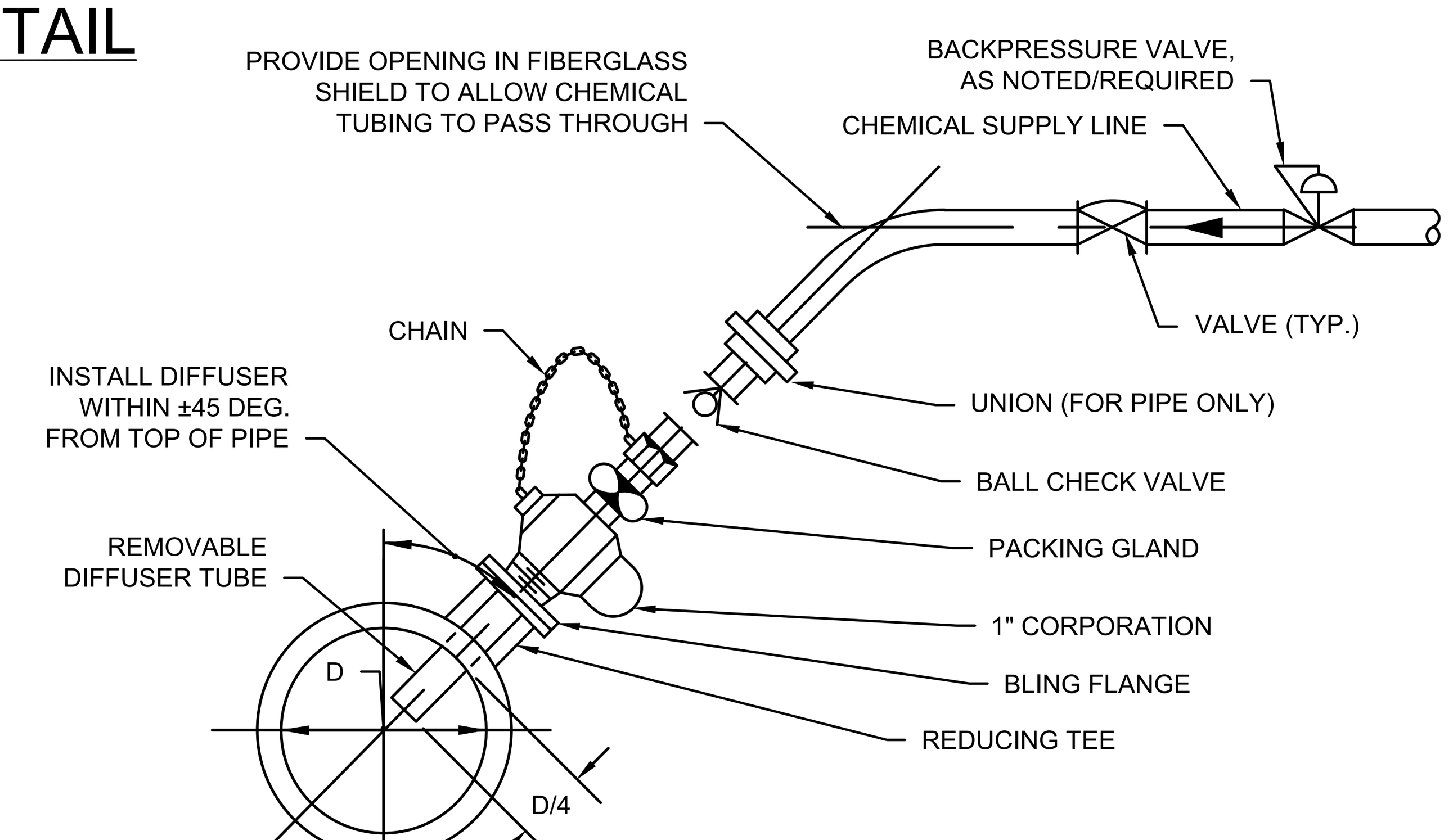
FLUSHING CONNECTION DETAIL
SCALE: N.T.S.



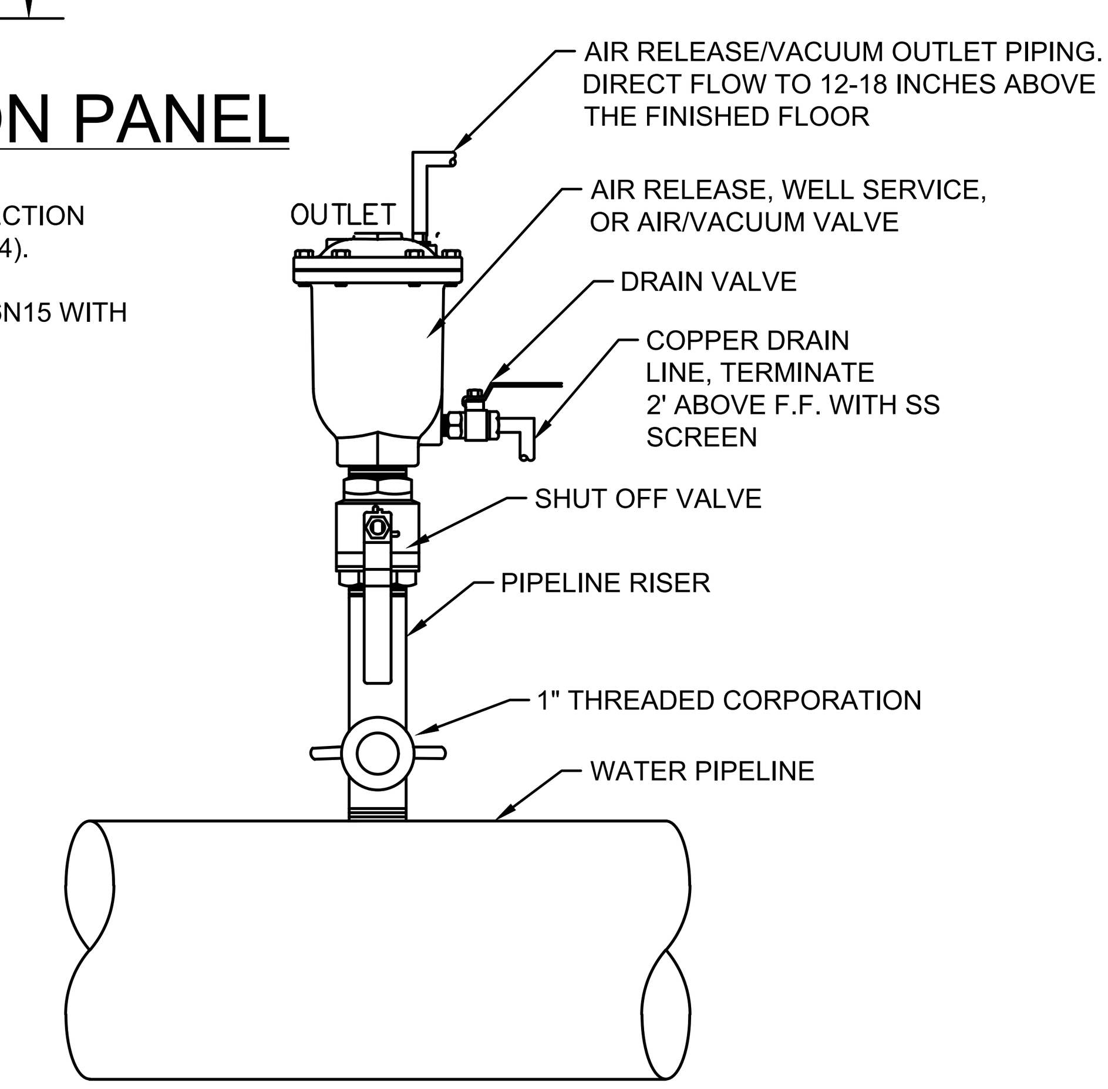
SAMPLE TAP
SCALE: N.T.S.

NOTES:

1. ALL SAMPLE TAPS WITHIN THE WATER TREATMENT PLANT OR WELL STATIONS SHALL BE A SMOOTH-NOSE STYLE. NO THREADS SHALL BE ON ANY SAMPLE TAP.



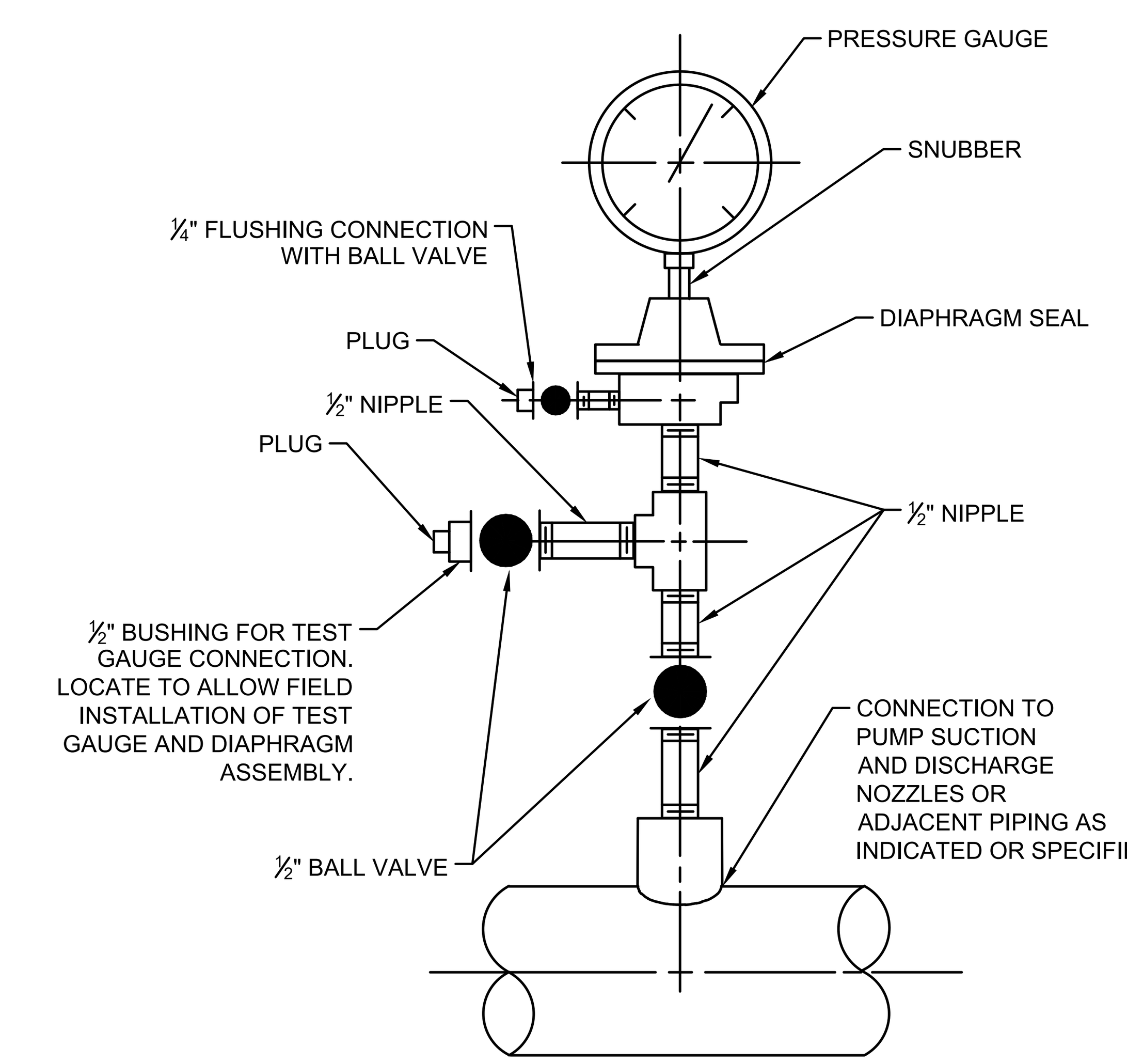
CHEMICAL INJECTION DETAIL
SCALE: N.T.S.



AIR RELEASE/VACUUM/ WELL SERVICE VALVE
SCALE: N.T.S.

NOTES:

1. THE CONTRACTOR SHALL ROUTE RISER PIPING AS REQUIRED TO AVOID INTERFERENCE WITH PIPING/EQUIPMENT. THE CONTRACTOR SHALL USE 45 DEGREE BENDS WHERE NEEDED. 90 DEGREE BENDS SHALL NOT BE PERMITTED.



PRESSURE GAUGE MOUNTING FOR LIQUID PIPING
SCALE: N.T.S.

Scale	NOTED	
Date	APRIL 2024	
Job No.	245-2103	
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APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

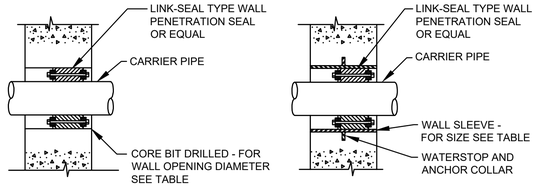
PROCESS MECHANICAL DETAILS I

100% DESIGN

Sheet No.

MD-1

Drawing file: I:\Sharon, MA.245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.5 Process Mechanical Details.dwg Plot Date: Apr 11,2024-3:34pm



EXISTING CONCRETE WALL
SCALE: NTS

NEW CONCRETE WALL
SCALE: NTS

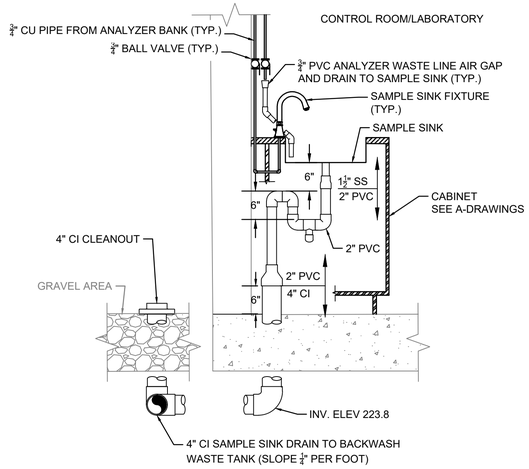
CARRIER PIPE NOMINAL SIZE	CARRIER PIPE O.D.	WALL SLEEVE SIZE	CORE DRILLED I.D.
2"	2.50"	4"	4"
4"	4.80"	8"	8"
6"	6.90"	10"	10"
8"	9.05"	12"	12"
10"	11.20"	14"	14"
12"	13.20"	16"	16"
24"	25.80"	30"	29"

NOTES:

1. SIZES SHOWN ARE FOR DUCTILE IRON PIPE, FOR OTHER MATERIALS AND PIPE SIZES CONSULT MANUFACTURER'S SPECIFICATIONS.
2. SOME APPLICATIONS MAY REQUIRE STANDARD WALL CASTINGS.
3. FOR WATER-TIGHT APPLICATIONS, PROVIDE NON-SHRINK GROUT ON EXTERIOR (NON-WATER SIDE) OF LINK-SEAL TYPE WALL PENETRATION.
4. WALL PENETRATION SHALL NOT BE SUBSTITUED FOR CAST IN PLACE WALL PIPES AS NOTED OR REQUIRED.

TYPICAL WALL PENETRATION

SCALE: N.T.S.

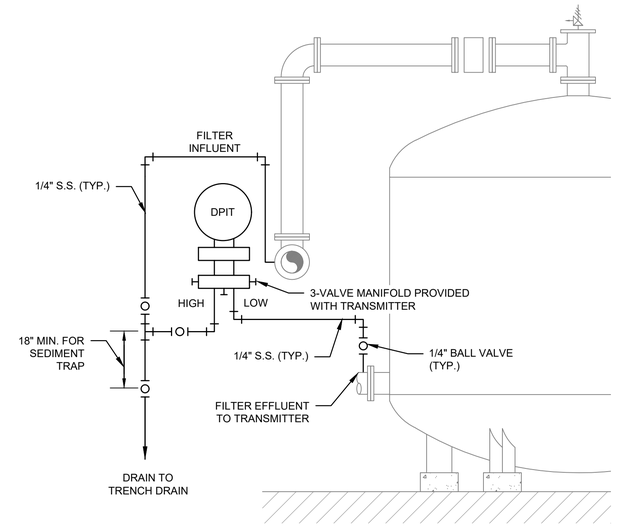


SAMPLE SINK DETAIL

SCALE: N.T.S.

NOTES:

1. CONTRACTOR SHALL PROVIDE ONE DEDICATED SAMPLE SINK FIXTURE FOR EACH SAMPLE LINE.
2. CONTRACTOR TO LABEL EACH SAMPLE LINE AND SAMPLE SINK FIXTURE ACCORDING TO TREATMENT PROCESS: "WELLS 2/3 RAW WATER", "FE/MN FILTERED WATER", "PFAS FILTER INFLUENT WATER", "FINISHED WATER", "100-FOOT SAMPLE TAP".
3. THE ORDER OF THE SAMPLE LINE FIXTURES (FACING SINK) FROM LEFT TO RIGHT SHALL BE: "WELLS 2/3 RAW WATER", "FE/MN FILTERED WATER", "PFAS FILTER INFLUENT WATER", "FINISHED WATER", "100-FOOT SAMPLE TAP".
4. COORDINATE FIXTURES, CABINET WORK, AND SINK BAY DIMENSIONS WITH A-DRAWINGS.
5. COORDINATE SAMPLE SINK DRAIN PIPING LOCATION WITH CIVIL DRAWINGS.

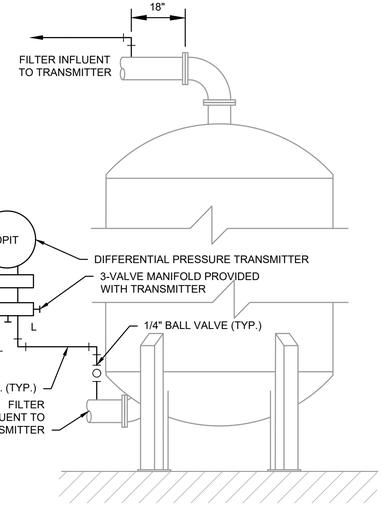


FE/MN DIFFERENTIAL PRESSURE TRANSMITTER

SCALE: N.T.S.

NOTES:

1. TAP PIPE WITH THREADED CORPORATION.
2. REFER TO SHEETS M-14, M-23, AND M-24 FOR ADDITION FILTER PIPING SECTIONS AND REQUIREMENTS.
3. MOUNT DPIT DISPLAY AT EYE LEVEL.

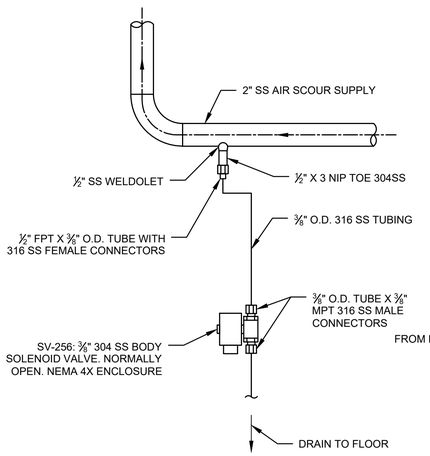


PFAS DIFFERENTIAL PRESSURE TRANSMITTER

SCALE: N.T.S.

NOTES:

1. TAP PIPE WITH THREADED CORPORATION.
2. REFER TO SHEETS M-16, M-17, AND M-25 FOR ADDITION FILTER PIPING SECTIONS AND REQUIREMENTS.
3. MOUNT DPIT DISPLAY AT EYE LEVEL.

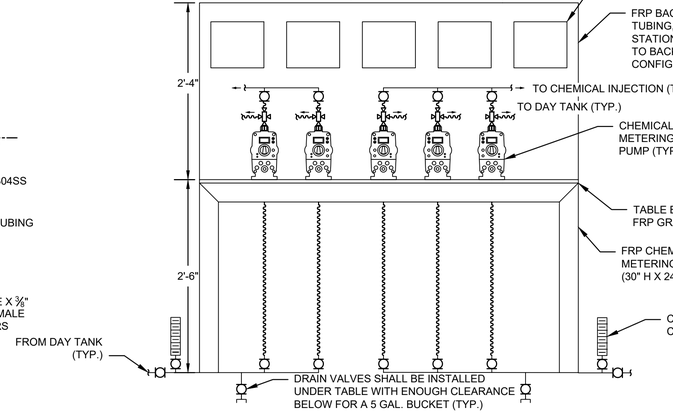


AIR SCOUR BLOWER DRAIN TUBING AND VALVE

SCALE: N.T.S.

NOTES:

1. PROVIDE CORP. GUARD ON EACH SIDE OF PIPING (TOTAL OF 2)

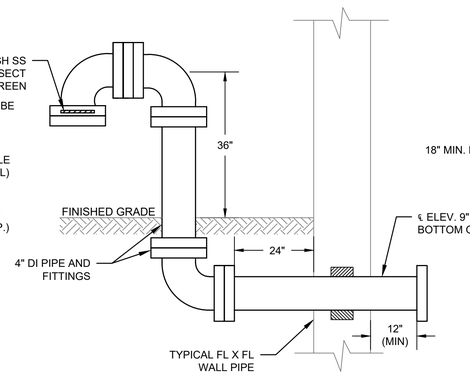


METERING PUMP TABLE

SCALE: N.T.S.

NOTES:

1. THE DETAIL ABOVE IS A GENERIC ARRANGEMENT FOR METERING PUMPS. REFER TO CHEMICAL FEED SCHEMATICS FOR SPECIFIC PIPING SIZE AND VALVE ARRANGEMENTS. (SHEETS M-29, M-30, & M-31).
2. CONTRACTOR TO LABEL EACH METERING PUMP WITH EQUIPMENT TAG NUMBERS AS NOTED ON THE CONTRACT DRAWINGS.
3. SODIUM HYPOCHLORITE VALVES SHALL BE VENTED TYPE.
4. PROVIDE A SUBMITTAL FOR THE METERING PUMP TABLE IN ACCORDANCE WITH SPECIFICATION SECTION 11241 - CHEMICAL MEETING PUMPS.



NOTES:

1. ELBOW ROTATED INTO VIEW FOR CLARITY.
2. VENT SHALL BE PAINTED SAFETY YELLOW BY PAINTING CONTRACTOR.

TANK VENT

SCALE: N.T.S.

MARK	DATE	DESCRIPTION

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Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

APRIL 2024

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ENVIRONMENTAL PARTNERS — An Apex Company —

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

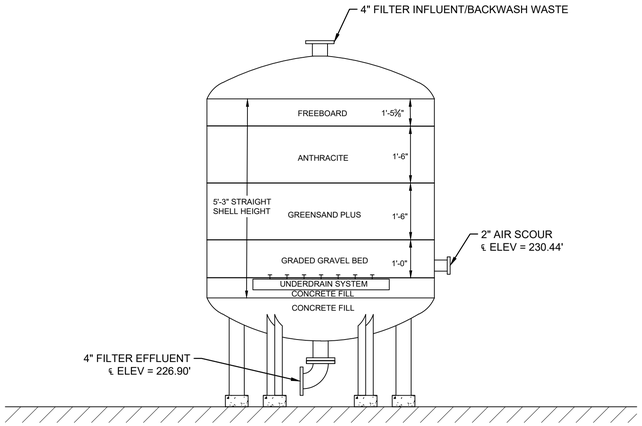
PROCESS MECHANICAL DETAILS II

100% DESIGN

Sheet No.

MD-2

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.5 Process Mechanical Details.dwg Plot Date: Apr 03,2024-11:18am

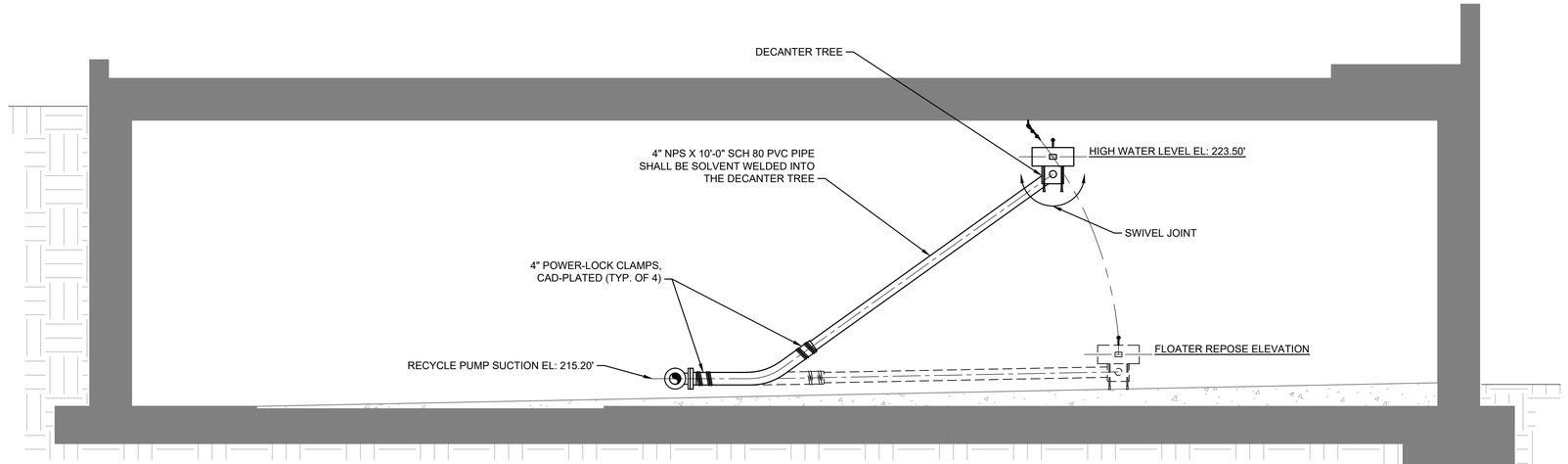


FE/MN PRESSURE FILTER MEDIA

SCALE: N.T.S.

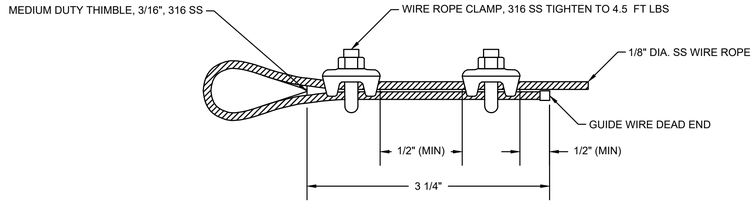
NOTES:

1. INLET DISTRIBUTOR SHALL BE LOCATED TO PROVIDE A MINIMUM 40% FREEBOARD ABOVE MEDIA OR AS RECOMMENDED BY FILTER MANUFACTURER.
2. UNDERDRAIN MANIFOLD IN CONCRETE FILL ACCORDING TO MANUFACTURER RECOMMENDATIONS.
3. REFER TO SHEETS M-14, M-23, AND M-24 FOR ADDITION FILTER PIPING SECTIONS AND REQUIREMENTS.
4. NOZZLE ELEVATIONS SHALL BE ADJUSTED (WITH ENGINEER'S APPROVAL) AS REQUIRED BY FILTER MANUFACTURER FOR COORDINATION OF UNDERDRAIN SYSTEM AND FILTER MEDIA.
5. PROVIDE SAMPLE TAP BETWEEN ANTHRACITE MEDIA AND FILTER MEDIA FOR ALL FILTERS IN ACCORDANCE WITH MASSDEP REQUIREMENTS. ALL SAMPLE TAP INLETS SHALL BE SCREENED TO PREVENT CLOGGING BY FILTER MEDIA.
6. PROVIDE SAMPLE TAP 3" ABOVE THE TOP OF THE MEDIA FOR ALL FILTERS FOR DRAINDOWN STARTUP AND ONGOING MAINTENANCE. ALL SAMPLE TAP INLETS SHALL BE SCREENED TO PREVENT CLOGGING BY FILTER MEDIA.



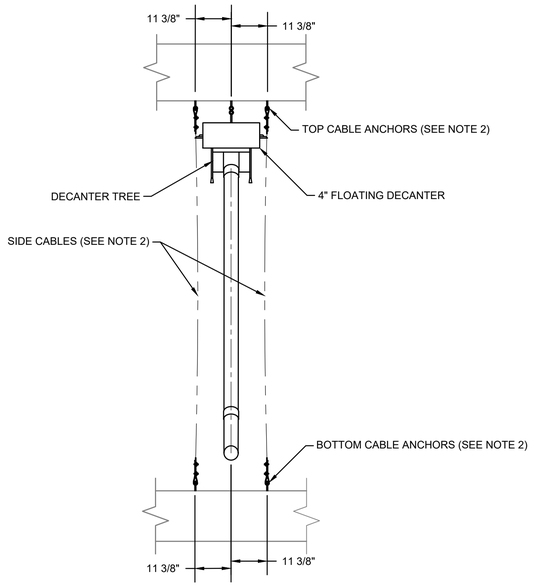
FLOATING DECANTER

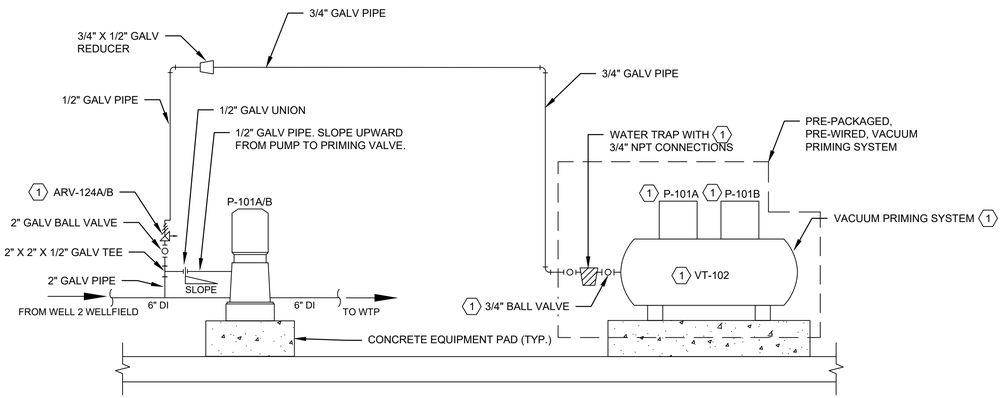
SCALE: N.T.S.



NOTES:

1. CONTRACTOR SHALL COORDINATE TOP AND BOTTOM CABLE ANCHOR REQUIREMENTS WITH THE DECANTER MANUFACTURER.
2. FLOATING DECANTER SYSTEM INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.
3. CONTRACTOR SHALL SEAL CONCRETE PENETRATIONS FOR CABLE ANCHORS WITH NSF 600 COMPLIANT PRODUCT.





VACUUM PRIMING SYSTEM SCHEMATIC

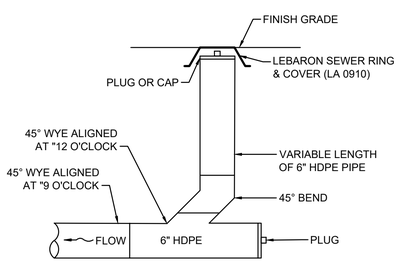
SCALE: N.T.S.

KEYNOTES:

1 FURNISHED BY VACUUM PRIMING SYSTEM SUPPLIER AND INSTALLED BY CONTRACTOR.

NOTES:

1. THE VACUUM PRIMING SYSTEM RECEIVER TANK SHALL BE PROVIDED WITH A SIGHT GAUGE, VACUUM RELEASE VALVE WITH SILENCER, AND MANUAL DRAIN VALVE. LISTED ITEMS NOT SHOWN FOR CLARITY.



INTERIOR FOUNDATION DRAIN CLEANOUT

SCALE: N.T.S.

ENVIRONMENTAL PARTNERS — An Apex Company —

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	NOTED
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

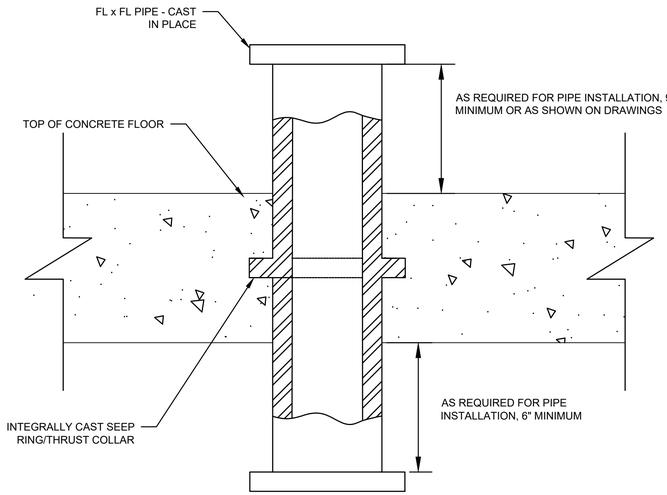
PROCESS MECHANICAL DETAILS III

100% DESIGN

Sheet No.

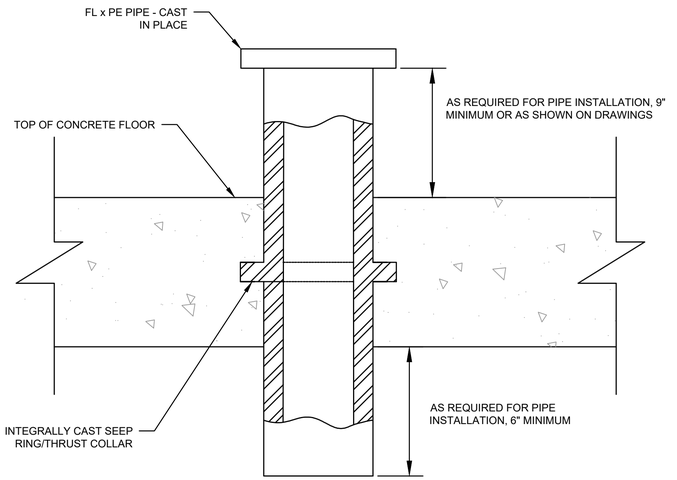
MD-3

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.5 Process Mechanical Details.dwg Plot Date: Apr 03,2024-11:18am



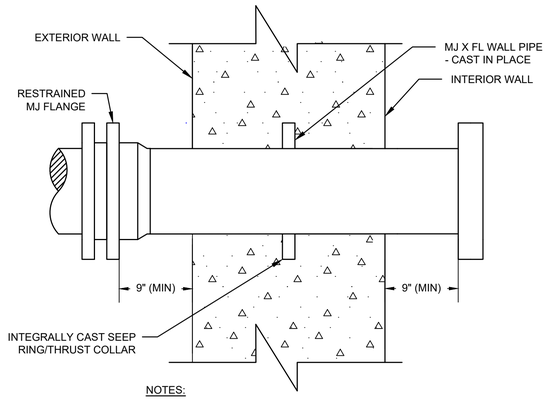
FL x FL FLOOR PIPE

SCALE: N.T.S.



PE X FL FLOOR PIPE

SCALE: N.T.S.

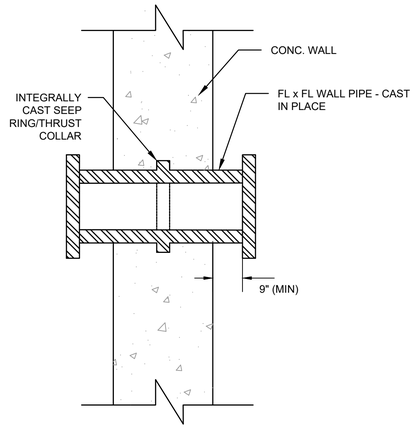


NOTES:

1. FLANGE BOLT HOLES SHALL BE DRILLED AND TAPPED FOR STUD BOLTS WHEN FLUSH FLANGE NOTED.

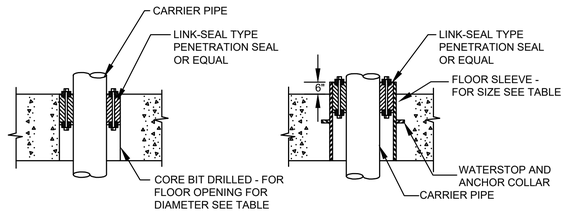
MJ x FL WALL PIPE

SCALE: N.T.S.



FL x FL WALL PIPE

SCALE: N.T.S.



EXISTING CONCRETE FLOOR
SCALE: NTS

NEW CONCRETE FLOOR
SCALE: NTS

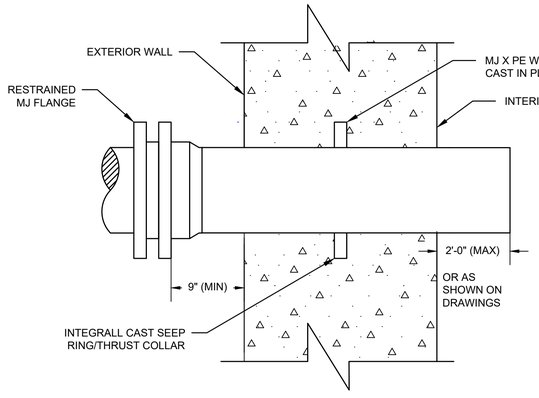
CARRIER PIPE NOMINAL SIZE	CARRIER PIPE O.D.	FLOOR SLEEVE SIZE	CORE DRILLED I.D.
1 1/2"	1.625"	3"	3"
2"	2.50"	4"	4"
4"	4.80"	8"	8"
6"	6.90"	10"	10"
8"	9.05"	12"	12"
10"	11.20"	14"	14"
12"	1.20"	16"	16"
24"	25.80"	30"	29"

NOTES:

1. SIZES SHOWN ARE FOR DUCTILE IRON PIPE, FOR OTHER MATERIALS AND PIPE SIZES CONSULT MANUFACTURER'S SPECIFICATIONS.
2. WALL PENETRATION SHALL NOT BE SUBSTITUED FOR CAST IN PLACE WALL PIPES AS NOTED OR REQUIRED.

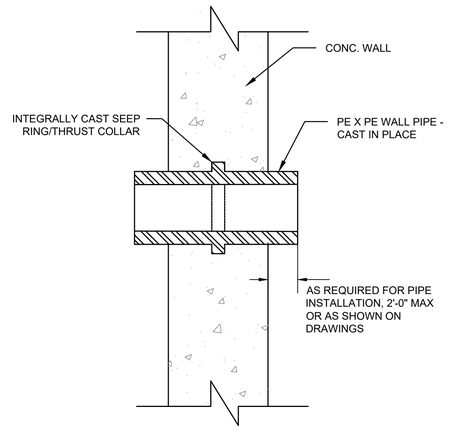
TYPICAL PIPE SLAB PENETRATION

SCALE: N.T.S.



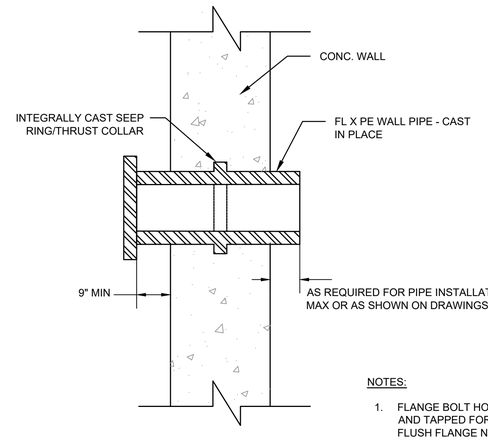
MJ x PE WALL PIPE

SCALE: N.T.S.



PE x PE WALL PIPE

SCALE: N.T.S.



NOTES:

1. FLANGE BOLT HOLES SHALL BE DRILLED AND TAPPED FOR STUD BOLTS WHEN FLUSH FLANGE NOTED. GENERAL CONTRACTOR SHALL NOT DRILL BOLT HOLES UNTIL CONCRETE REACHES SPECIFIED 28-DAY STRENGTH.

FL x PE WALL PIPE

SCALE: N.T.S.

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS
ALSTON W. SCOTT
CIVIL
NO. 56074
REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

Scale	NOTED
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Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL DETAILS IV

100% DESIGN

Sheet No.

MD-4

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\07.5 Process Mechanical Details.dwg Plot Date: Apr 03,2024-11:18am

GENERAL NOTES

1. HVAC WORK IS INDICATED DIAGRAMMATICALLY. EXACT LOCATIONS OF ALL COMPONENTS ARE TO BE DETERMINED IN THE FIELD AND BY THE ACTUAL BUILDING CONDITIONS. DUCTS, PIPING OR EQUIPMENT INTERFERING WITH OTHER INSTALLATIONS SHALL BE RELOCATED AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER. EXACT LOCATIONS MUST HAVE THE APPROVAL OF THE ENGINEER.
2. ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES BEFORE ANY INSTALLATION IS MADE.
3. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH STATE CODES, MANUFACTURER'S APPROVED PUBLISHED LITERATURE, AND AUTHORITIES HAVING JURISDICTION.
4. INSTALLATION OF EQUIPMENT SHALL PERMIT ACCESSIBILITY FOR SERVICE AND REPAIR OR REPLACEMENT.
5. ALL CEILING MOUNTED EQUIPMENT SHALL BE INSTALLED IN SUCH A WAY THAT LIGHTS, PIPING, AND DUCTWORK DO NOT BLOCK ACCESS TO UNITS AND RELATED ACCESSORIES.
6. HVAC CONTRACTOR SHALL COORDINATE ALL WALL, CEILING, FLOOR, ROOF AND BEAM PENETRATIONS WITH ENGINEER AND STRUCTURAL ENGINEER.
7. ALL DUCT SIZES SHOWN ARE NET INSIDE CLEAR DIMENSIONS.
8. PROVIDE INSTRUMENT TEST HOLES WITH CAPS IN AIR DISTRIBUTION SYSTEMS AS REQUIRED TO BALANCE SYSTEM.
9. HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SHEETMETAL TRANSITIONS AT FANS, COILS, AND OTHER SIMILAR HVAC EQUIPMENT.
10. ALL MISCELLANEOUS SUPPORTS REQUIRED FOR HVAC EQUIPMENT INSTALLATION SHALL BE PROVIDED BY HVAC SUBCONTRACTOR.
11. EXACT LOCATION OF THERMOSTAT TO BE COORDINATED WITH FINAL LOCATION OF WALL MOUNTED ARCHITECTURAL AND ELECTRICAL EQUIPMENT.
12. PROVIDE FLEXIBLE DUCT CONNECTIONS ON INTAKES AND DISCHARGES OF ALL AIR HANDLING UNITS.
13. ALL DUCT AND PIPE PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE SEALED WITH FIRE-STOP PENETRATION SEAL IN ACCORDANCE WITH UL 1479.
14. REFER TO STRUCTURAL DRAWING FOR PENETRATIONS THRU CONCRETE PLANKS.
15. HVAC CONTRACTOR IS RESPONSIBLE FOR DEVELOPING COORDINATION DRAWINGS. REFER TO SPECIFICATIONS FOR REQUIREMENTS.
16. REFRIGERANT PIPING SHOWN ON PLANS ARE FOR BIDDING PURPOSES ONLY. CONTRACTOR TO COORDINATE EXACT REFRIGERANT PIPING SIZES WITH MANUFACTURERS.

ABBREVIATIONS

AFG	ABOVE FINISH GROUND
ACD	AUTOMATIC CONTROL DAMPER
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
ARCH	ARCHITECT
ATC	AUTOMATIC TEMPERATURE CONTROL
BDD	BACKDRAFT DAMPER
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
BOD	BOTTOM OF DUCT
CAP	CAPACITY
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CO	CLEANOUT
CP	CONTROL PANEL
DIA	DIAMETER
DB	DRY BULB TEMPERATURE
DDC	DIRECT DIGITAL CONTROL
DN	DOWN
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EFF	EFFICIENCY
ELV	ELEVATION
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
FA	FREE AREA
FD	FIRE DAMPER
FFE	FINISH FLOOR ELEVATION
FLA	FULL LOAD AMPS
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FT	FEET
FTR	FINNED TUBE RADIATION
GAL	GALLONS
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HZ	HERTZ
IN	INCHES
KE	KITCHEN EXHAUST
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LD	LINEAR DIFFUSER
LF	LINEAR FEET
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSANDS OF BTU'S PER HOUR
MCC	MOTOR CONTROL CENTER
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OBD	OPPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER
Ø	PHASE
PD	PRESSURE DROP
PSI	POUNDS PER SQUARE INCH (GAUGE)
R	RETURN
RA	RETURN AIR
RG	RETURN GRILLE
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
S	SUPPLY
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SD	SMOKE DAMPER
SF	SQUARE FEET
SFD	SMOKE/FIRE DAMPER
SP	STATIC PRESSURE
SQ	SQUARE
SR	SUPPLY REGISTER
STL	STEEL
TYP	TYPICAL
UC	UNDERCUT DOOR
V	VOLTS
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VP	VANDAL PROOF
W/	WITH
W/O	WITHOUT
WB	WET BULB TEMPERATURE
WG	WATER GAUGE
WMS	WIRE MESH SCREEN

EQUIPMENT TAG SYMBOLS

EQUIPMENT NOT REQUIRING ELECTRIC SERVICE → TAG NO → SEE SCHEDULE FOR PERFORMANCE REQUIREMENTS ← TAG NO ← EQUIPMENT REQUIRING ELECTRIC SERVICE

ACC	AIR COOLED CONDENSER
DHU	DEHUMIDIFIER
EF	EXHAUST FAN
EUH	ELECTRIC UNIT HEATER
EWH	ELECTRIC WALL HEATER
MUA	MAKE UP AIR UNIT
GUH	GAS FIRED UNIT HEATER
HP	HEAT PUMP UNIT

INSTRUMENTATION

T	HEATING/COOLING THERMOSTAT
SD	DUCT SMOKE DETECTOR
S	SWITCH
S BG	SWITCH WITH BREAK GLASS
T	HP-1 PACKAGED CONTROLLER
H	HUMIDITY SENSOR
HT	DH PACKAGED CONTROLLER
S	REFRIGERATION MONITOR

LEGEND/SYMBOLS

12x10	RECTANGULAR DUCTWORK - FIRST DIMENSION IS SIDE SHOWN (IN.) FREE AREA
12Ø	ROUND DUCT DIAMETER (IN.)
	SUPPLY/OUTSIDE AIR DUCTWORK UP
	RETURN/EXHAUST AIR DUCTWORK UP
	FLEXIBLE CONNECTION
	ROUND DUCT UP
	RETURN AIR GRILLE OR REGISTER
MD	AUTOMATIC CONTROL DAMPER (MOTORIZED)
	SUPPLY AIR BLOW DIRECTION
	EXHAUST / RETURN / OR INTAKE
	DEMOLITION WORK
	EXISTING WORK (OUT-OF-FUNCTION)
	NEW WORK (IN-FUNCTION)
	VOLUME DAMPER
	CONNECT TO EXISTING

SEQUENCE OF OPERATION

A. CHEMICAL STORAGE AREA EF-2:
EF-2 SHALL RUN CONTINUOUSLY AND SHALL EXHAUST THE ENTIRE CHEMICAL STORAGE SPACE. WALL INLET LOUVER IL-1 DAMPER SHALL BE SET TO OPEN 100% WHEN FAN EF-2 IS RUNNING. WHEN A BREAK GLASS EMERGENCY SWITCH IS MOVED TO THE "OFF" POSITION, FAN EF-2 SHALL SHUT OFF AND THE INTAKE DAMPER (IL-1) SHALL CLOSE TO A 20% OPEN POSITION. SIGNAGE AT THE EF-2 FAN SWITCH SHALL NOTE "FAN EF-2 EMERGENCY STOP".

B. MECHANICAL ROOM EF-3
MECHANICAL ROOM EXHAUST FAN EF-3 SHALL BE STARTED AND STOPPED FROM A WALL MOUNTED THERMOSTAT. THE ASSOCIATED MOTORIZED DAMPER SHALL OPEN. A WALL CAP WITH GRAVITY DAMPER IN THE ROOM SHALL ALLOW MAKEUP AIR INTO THE ROOM TO REPLACE THE AIR EXHAUSTED.

C. FILTER ROOM REFRIGERATION EXHAUST FAN EF-5
FAN SHALL OPERATE AS FOLLOWS: THE EXHAUST FAN SHALL START AND THE ASSOCIATED IL-2 INLET DAMPER SHALL OPEN FULLY WHEN A WALL MOUNTED REFRIGERANT MONITOR ENTERS ALARM CONDITION. THE EXHAUST FAN, THE FAN AND INTAKE MOTORIZED DAMPERS SHALL OPEN AND THE FAN SHALL ENERGIZE. WHEN THE REFRIGERANT MONITOR IS OUT OF THE ALARM CONDITION, THE EXHAUST FAN SHALL STOP AND THE EXHAUST FAN MOTORIZED DAMPER SHALL CLOSE. THE INTAKE MOTORIZED DAMPER SHALL RETURN TO THE CLOSE

D. TOILET ROOM EXHAUST FAN EF-4
FAN SHALL BE STARTED AND STOPPED BY ROOM LIGHT SWITCH.

E. FUME HOOD EXHAUST FAN LEF-1 AND MUA-1
FUME HOOD EXHAUST FAN SHALL BE STARTED AND STOPPED FROM A MANUAL WALL SWITCH MOUNTED ON THE HOOD. WHEN THE EXHAUST FAN SWITCH IS IN THE "ON" POSITION, THE LAB HOOD EXHAUST CONTROL DAMPER ACTUATOR SHALL OPEN THE CONTROL DAMPER. A SASH POSITION SENSOR AND A SIDEWALL FACE VELOCITY SENSOR SHALL SEND SIGNALS TO A HOOD MANAGEMENT SYSTEM (HMS) CONTROL MOUNTED ON THE HOOD. THE HMS SHALL DISPLAY THE AIRFLOW VELOCITY IN FPM AND SHALL ALARM IF THE AIR VELOCITY DROPS BELOW 70 FPM. THE HMS SHALL BE WIRED TO THE LAB HOOD EXHAUST FAN VFD AND THE LAB HOOD EXHAUST FAN AIRFLOW SHALL BE BALANCED VIA THE HMS TO 1200 CFM. (+5%/-0%). THE MAKEUP AIR UNIT (MUA) SHALL START VIA AN INTERLOCK WHEN THE EXHAUST FAN MOTOR STARTS AND SHALL RUN AT AN AIRFLOW OF 1100 CFM. (+0%/-5%) WHEN THE EXHAUST FAN IS STOPPED, THE MUA UNIT FAN SHALL STOP AND THE LAB HOOD EXHAUST CONTROL DAMPER SHALL BE POWERED TO THE CLOSED POSITION. THE LAB HOOD EXHAUST CONTROL DAMPER ACTUATOR SHALL ALSO OPEN THE DAMPER BY A SPRING RETURN UPON LOSS OF ELECTRICAL POWER. THE MUA UNIT SHALL BE CONTROLLED BY A DISCHARGE AIR SENSOR MODULATING THE SUPPLY AIR TEMPERATURE TO MAINTAIN A SETPOINT OF 65 DEG F. (ADJUSTABLE)

F. FILTER ROOM GENERAL EXHAUST FAN EF-6
GENERAL VENTILATION EXHAUST FAN EF-6 SHALL BE STARTED AND STOPPED FROM THE FILTER ROOM WALL LIGHT SWITCHES.

G. PIPE GALLERY EXHAUST FAN EF-7
EXHAUST FAN EF-7 SHALL RUN CONTINUOUSLY.

H. FILTER ROOM DEHUMIDIFIER DHU-1/ACC-1 & DHU-2/ACC-2
THE DEHUMIDIFIER SHALL OPERATE BASED ON INTERNAL CONTROL SEQUENCES TO MAINTAIN A MAXIMUM SPACE TEMPERATURE OF 75 DEG F (ADJ) AT 40% RELATIVE HUMIDITY. DEWPOINT TEMPERATURE SHALL BE CONTINUOUSLY MAINTAINED AT 50 DEG F.UPON A RISE IN DRY BULB TEMPERATURE OVER THE SPACE SET POINT OF 75 DEG F(ADJ) THE UNIT SHALL SWITCH INTO COOLING MODE AND ENERGIZE THE REMOTE CONDENSING UNIT TO MAINTAIN DRY BULB SPACE TEMPERATURE.

SEQUENCE OF OPERATION

I. GAS FIRED UNIT HEATERS GUH-1 TO GUH-4
UNIT HEATER SHALL FIRE EITHER ON LOW STAGE OR HIGH STAGE AS DETERMINED BY THE WALL MOUNTED SPACE THERMOSTAT TO MAINTAIN A SPACE TEMPERATURE OF 65 DEG F. (ADJ)

J. ELECTRIC UNIT HEATERS EUH-1 TO EUH-6
EUH-1, EUH-2, EUH-3 & EUH-4 SHALL BE CYCLED TO MAINTAIN SETPOINT AS NOTED BELOW:

EUH-1,EUH-2 & EUH-3 SHALL BE CYCLED TO MAINTAIN A SETPOINT OF 68°F.

EUH-4 SHALL BE CYCLED TO MAINTAIN A SETPOINT OF 65°F.

EUH-5 & EUH-6 SHALL BE CYCLED TO MAINTAIN A SETPOINT OF 50°F.

ALL SETPOINTS SHALL BE ADJUSTABLE.

K. SPLIT SYSTEM HEAT PUMP HP-1/ACC-3 & HP-2/ACC-4
HEAT PUMP SHALL BE CONTROLLED BY A WALL MOUNTED TEMPERATURE CONTROLLER FURNISHED BY THE HEAT PUMP VENDOR. CONTROLLER SHALL SEQUENCE THE OUTDOOR UNIT AND INDOOR FAN COIL TO KEEP THE SPACE AT SETPOINT.

L. WELL STATION #3 EXHAUST FAN EF-8
EXHAUST FAN EF-8 SHALL BE STARTED AND STOPPED FROM A WALL MOUNTED THERMOSTAT. WHEN THE SPACE COOLING SETPOINT IS EXCESSED THE FAN MOTORIZED DAMPER SHALL OPEN AND THE FAN MOTOR SHALL START. WHEN THE SETPOINT IS SATISFIED OR UPON POWER FAILURE. THE FAN MOTOR SHALL STOP AND THE MOTORIZED DAMPER SHALL CLOSE.

ENVIRONMENTAL PARTNERS — An Apex Company —
SAR ENGINEERING, INC. Mechanical/Electrical Engineers 150 Grossman Drive, Suite 309 Braintree, Massachusetts 02184 617 221-9220 web: www.sar.com

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	RLB
Drawn by	RLB
Checked by	RHB
Approved by	MC

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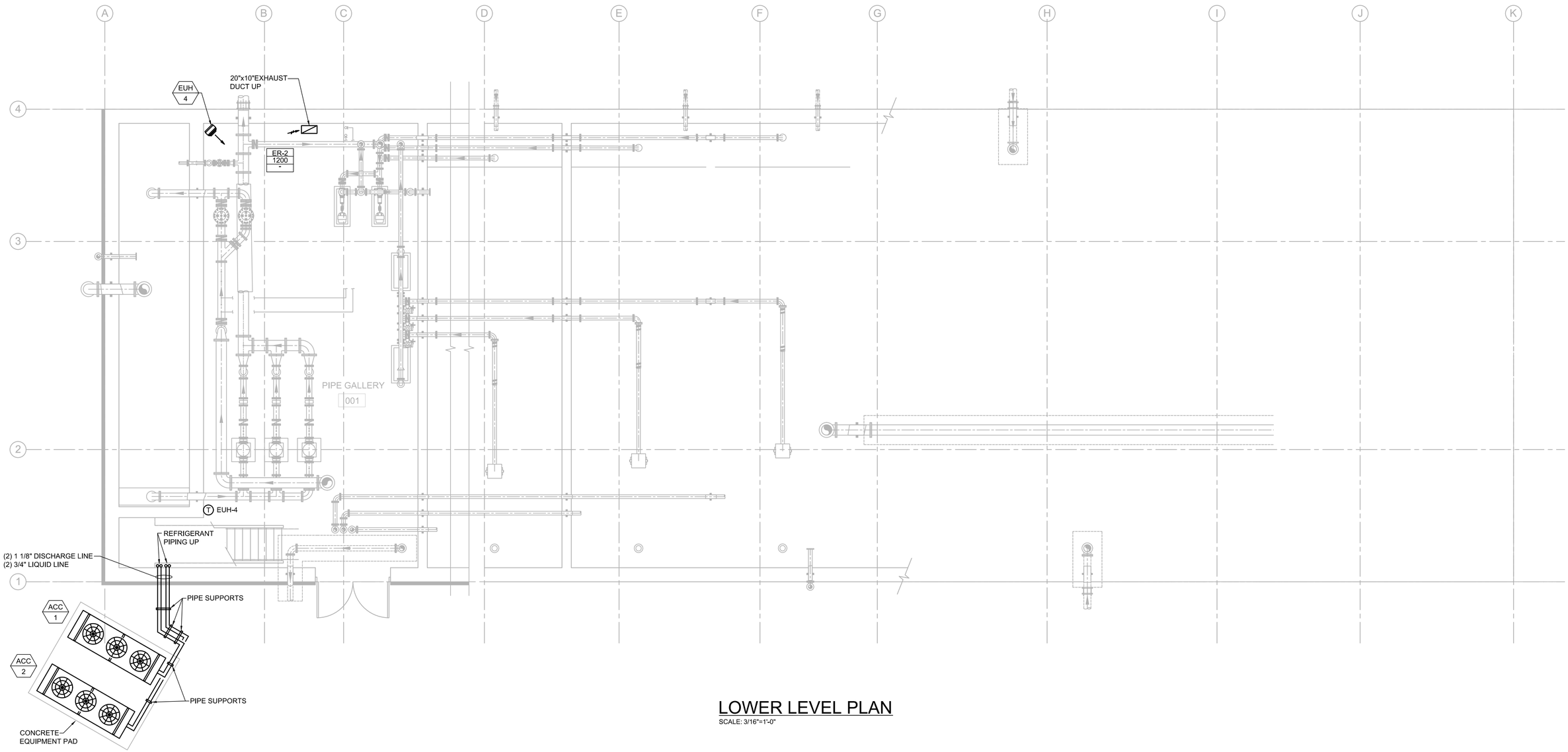
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

HVAC
LEGEND AND GENERAL NOTES

FOR CONSTRUCTION

Sheet No. H-1



LOWER LEVEL PLAN

SCALE: 3/16"=1'-0"

ENVIRONMENTAL PARTNERS
— An Apex Company —

SAR ENGINEERING, INC.
Mechanical/Electrical Engineers
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ROBERT L. BROWN MECHANICAL NO. 45035 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

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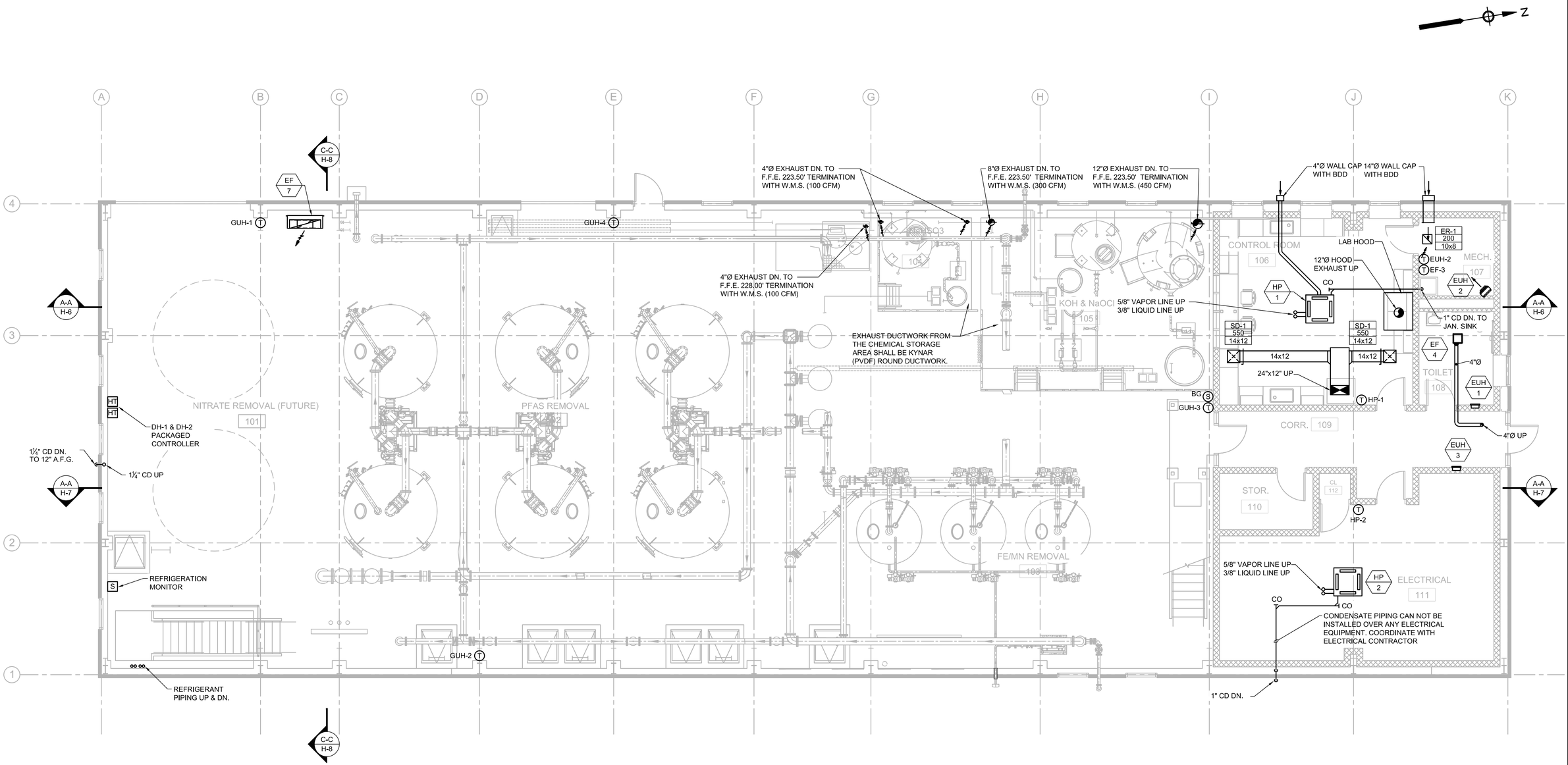
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

HVAC
LOWER LEVEL PLAN

FOR CONSTRUCTION

Sheet No.
H-2

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\HVAC Department\23006.00 Hvac Plans.dwg Plot Date: Mar 29,2024-9:07am



FIRST FLOOR PLAN

SCALE: 3/16"=1'-0"

ENVIRONMENTAL PARTNERS — An Apex Company —

SAR ENGINEERING, INC. — Mechanical/Electrical Engineers, 150 Grossman Drive, Suite 309, Braintree, Massachusetts 02184, 617 221-9220, web: www.sar.com

ROBERT BROWN MECHANICAL NO. 43305 REGISTERED PROFESSIONAL ENGINEER

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Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

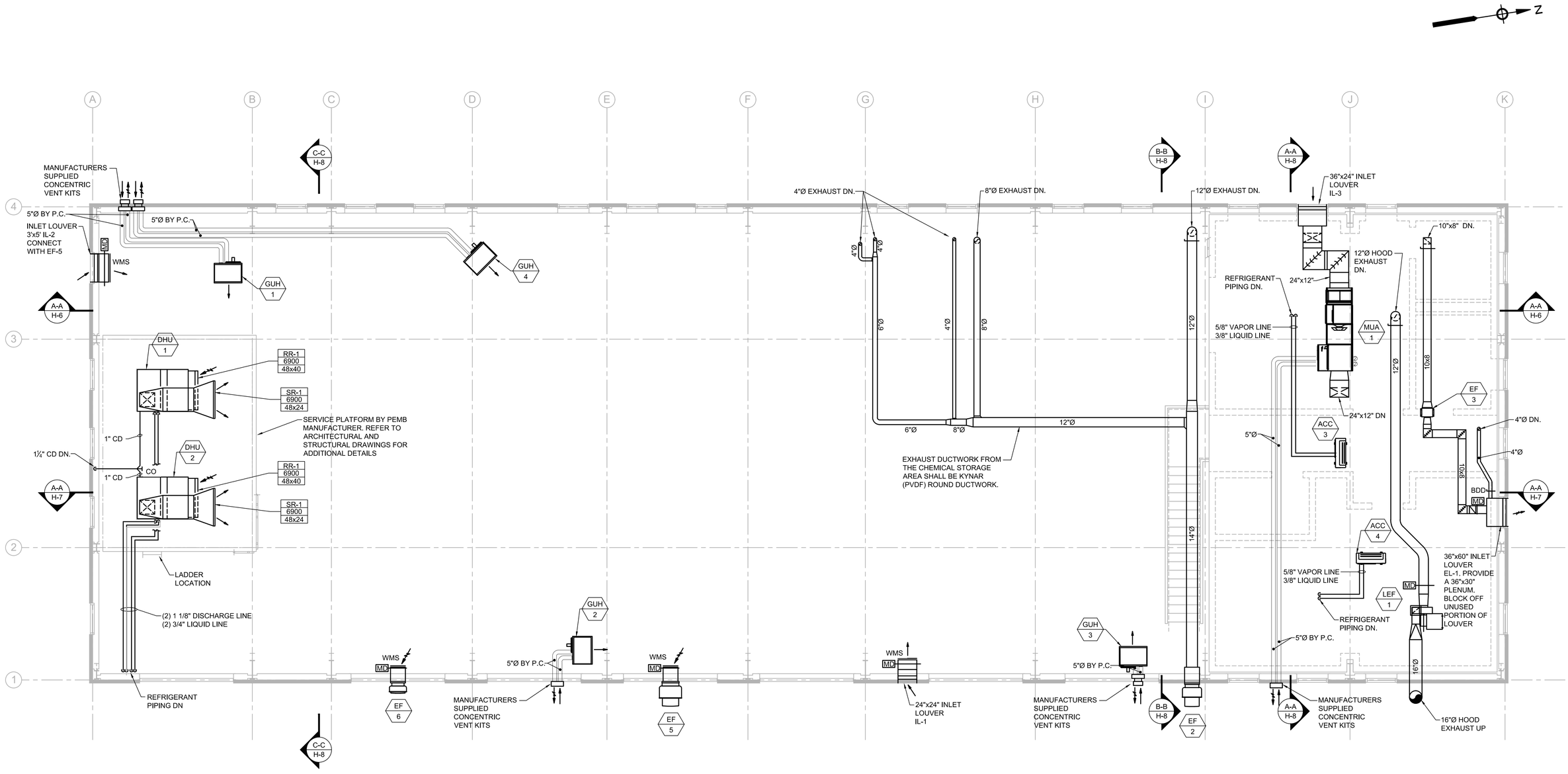
HVAC
FIRST FLOOR PLAN

FOR CONSTRUCTION

Sheet No.

H-3

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\HVAC Department\23006.00 Hvac Plans.dwg Plot Date: Mar 29,2024-9:07am



UPPER LEVEL PLAN

SCALE: 3/16"=1'-0"

ENVIRONMENTAL PARTNERS — An Apex Company —

SAR ENGINEERING, INC.
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ROBERT C. BORN — COMMONWEALTH OF MASSACHUSETTS — MECHANICAL — NO. 45335 — REGISTERED PROFESSIONAL ENGINEER

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

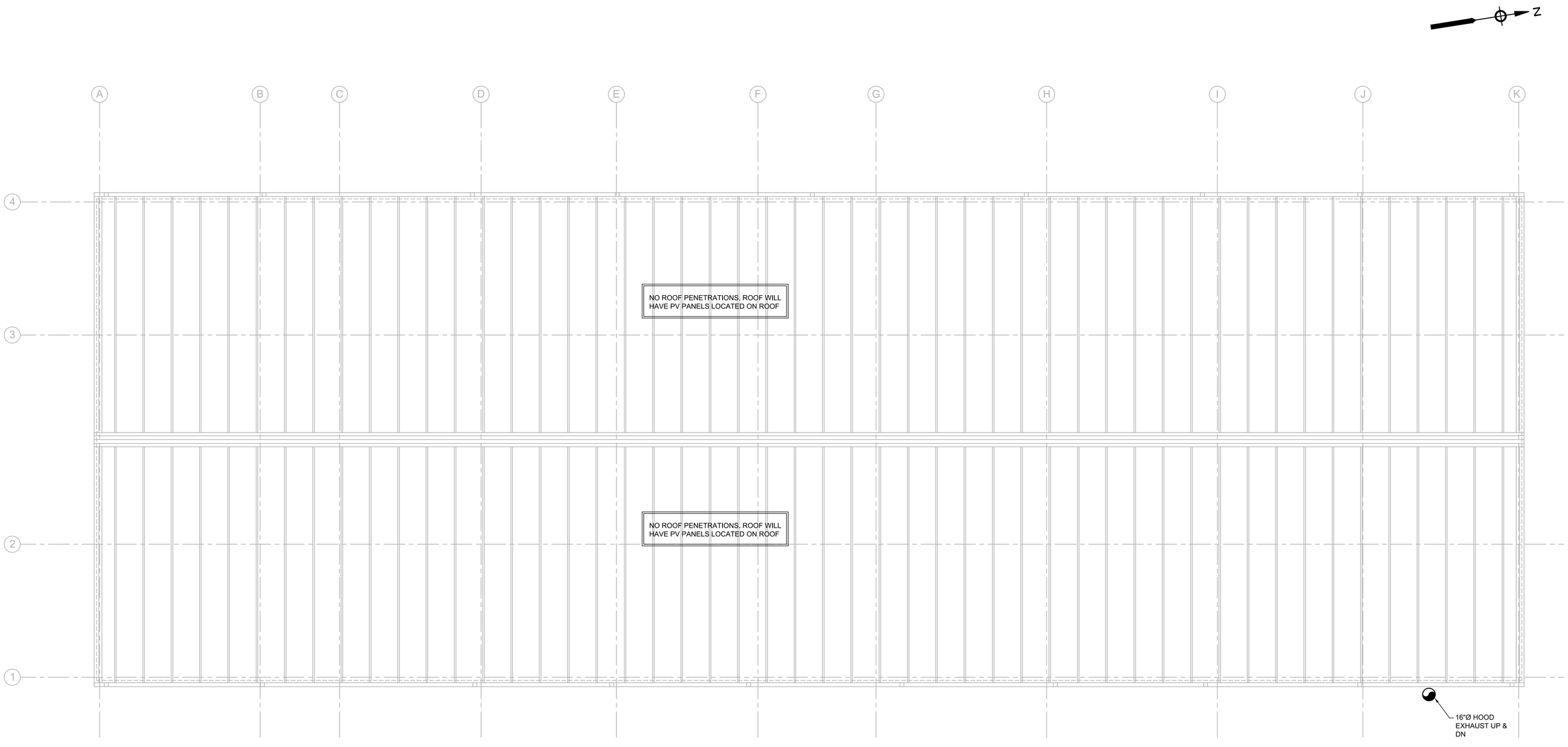
HVAC
MEZZANINE PLAN

FOR CONSTRUCTION

Sheet No.

H-4

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\HVAC Department\23006.00 Hvac Plans.dwg Plot Date: Mar 29,2024-9:07am



ROOF PLAN

SCALE: 3/16"=1'-0"

ENVIRONMENTAL PARTNERS
— An Apex Company —

SAR ENGINEERING, INC.
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150 Grossman Drive, Suite 309
Braintree, Massachusetts 02184
617 221-9220
web: www.sar.com

ROBERT L. BROWN MECHANICAL NO. 45335 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	RLB
Drawn by	RLB
Checked by	RHB
Approved by	MC

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

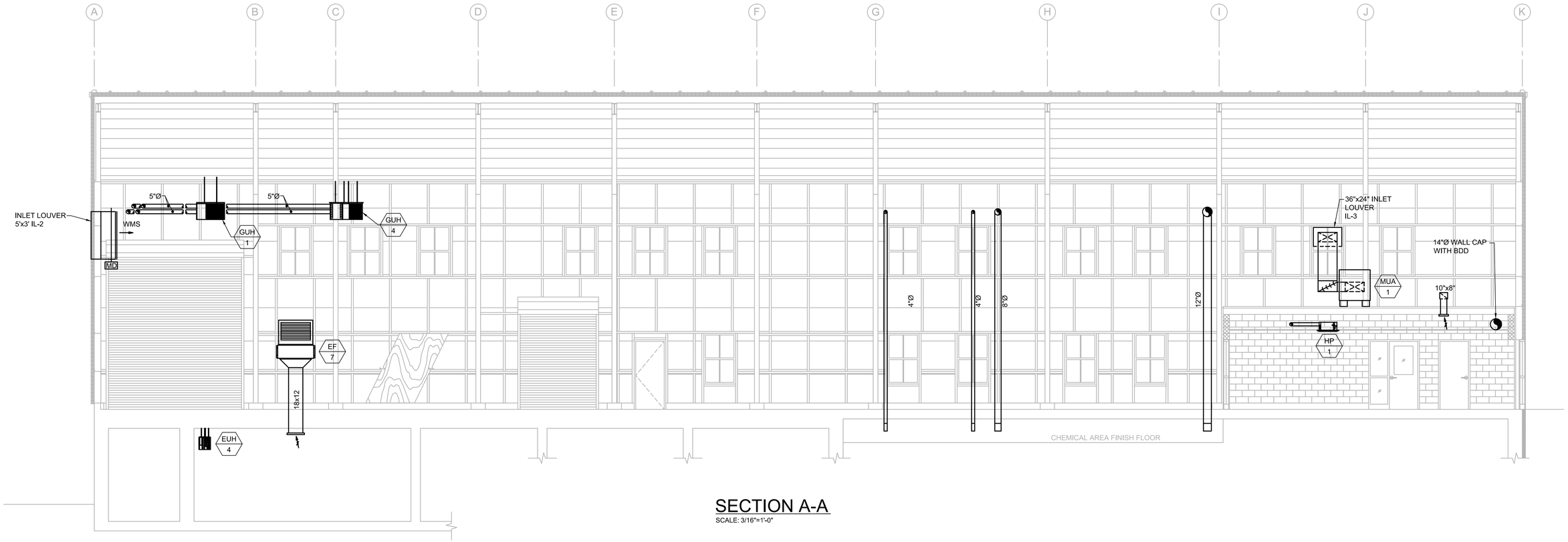
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

HVAC
ROOF PLAN

FOR CONSTRUCTION

Sheet No.
H-5

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\HVAC Department\23006.00 Hvac Plants.dwg Plot Date: Mar 29,2024-9:08am



SECTION A-A

SCALE: 3/16"=1'-0"

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ROBERT BROWN MECHANICAL NO. 43235 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

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Date	APRIL 2024
Job No.	245-2103
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Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

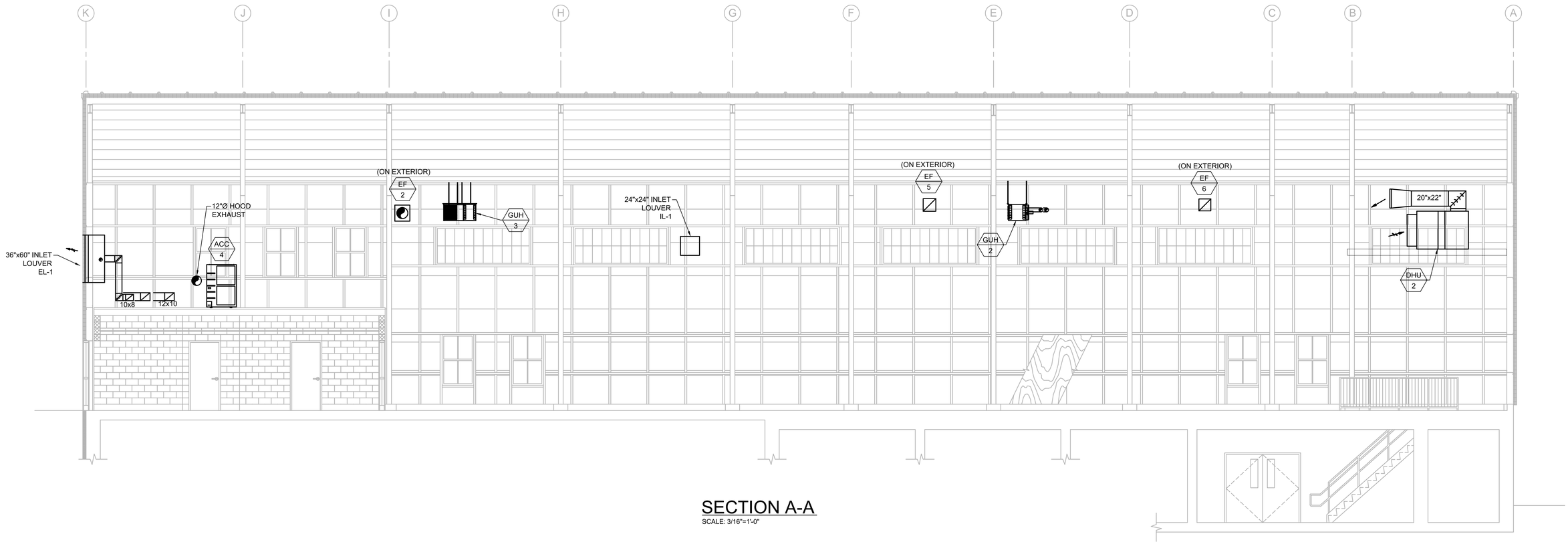
HVAC
SECTIONS I

FOR CONSTRUCTION

Sheet No.

H-6

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\HVAC Department\23006.00 Hvac Plans.dwg Plot Date: Mar 29,2024-9:08am



SECTION A-A

SCALE: 3/16"=1'-0"

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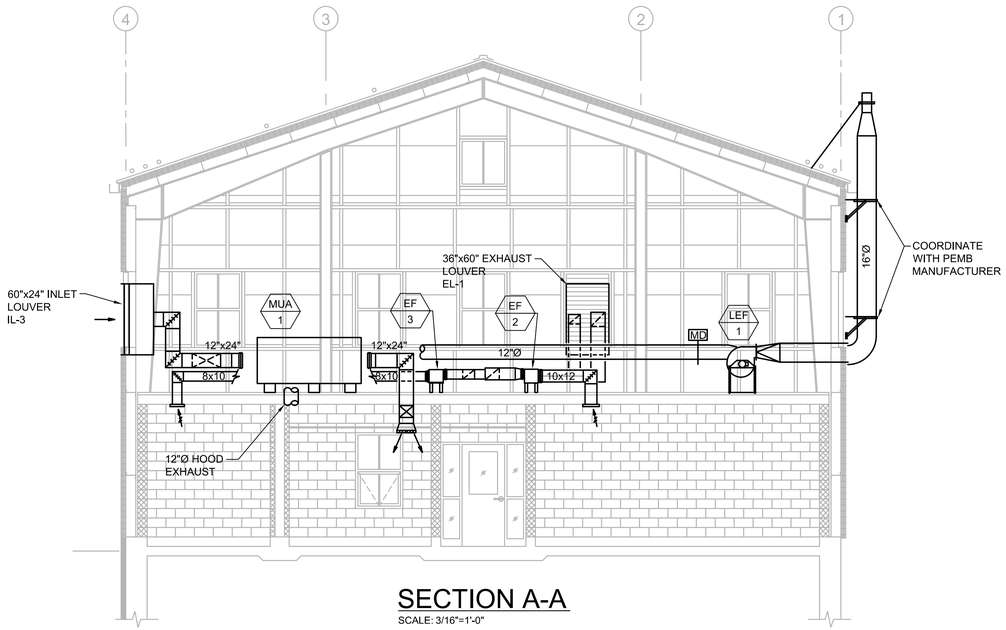
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

HVAC
SECTIONS II

FOR CONSTRUCTION

Sheet No.

H-7



SECTION A-A

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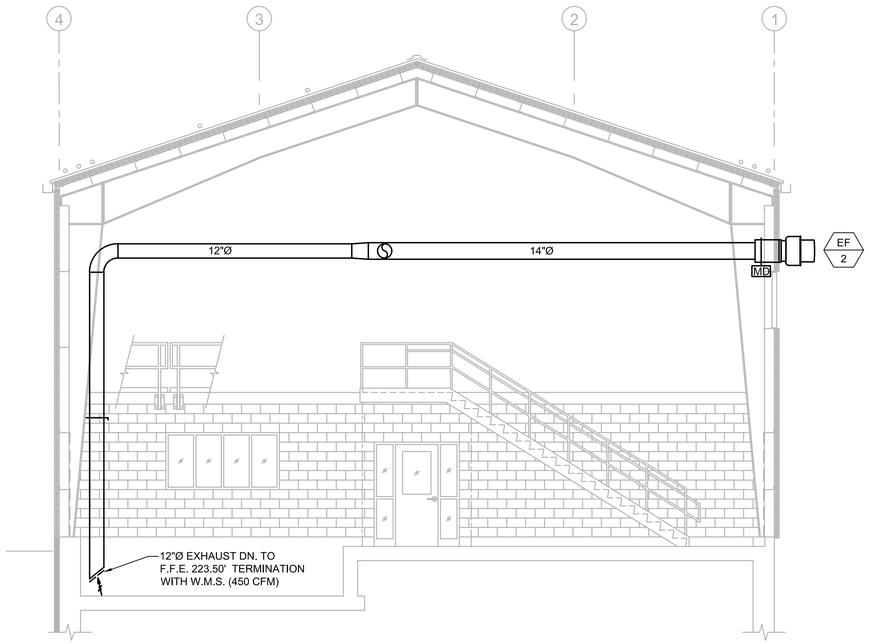

SECTION B-B

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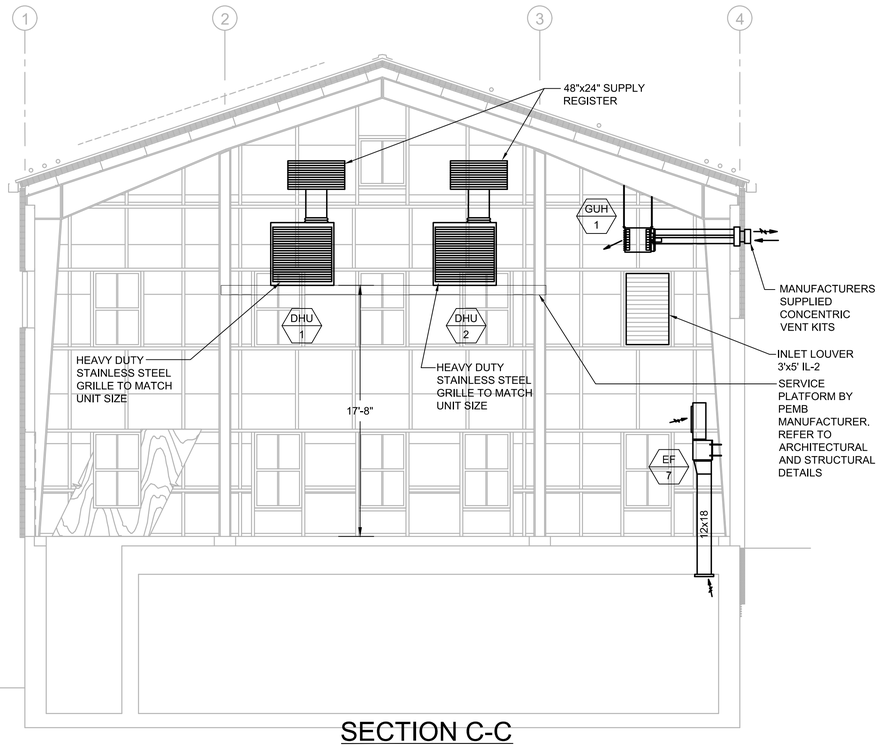

SECTION C-C

SCALE: 3/16"=1'-0"

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COMMONWEALTH OF MASSACHUSETTS
ROBERT L. BROWN
MECHANICAL
NO. 45935
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PROFESSIONAL ENGINEER

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

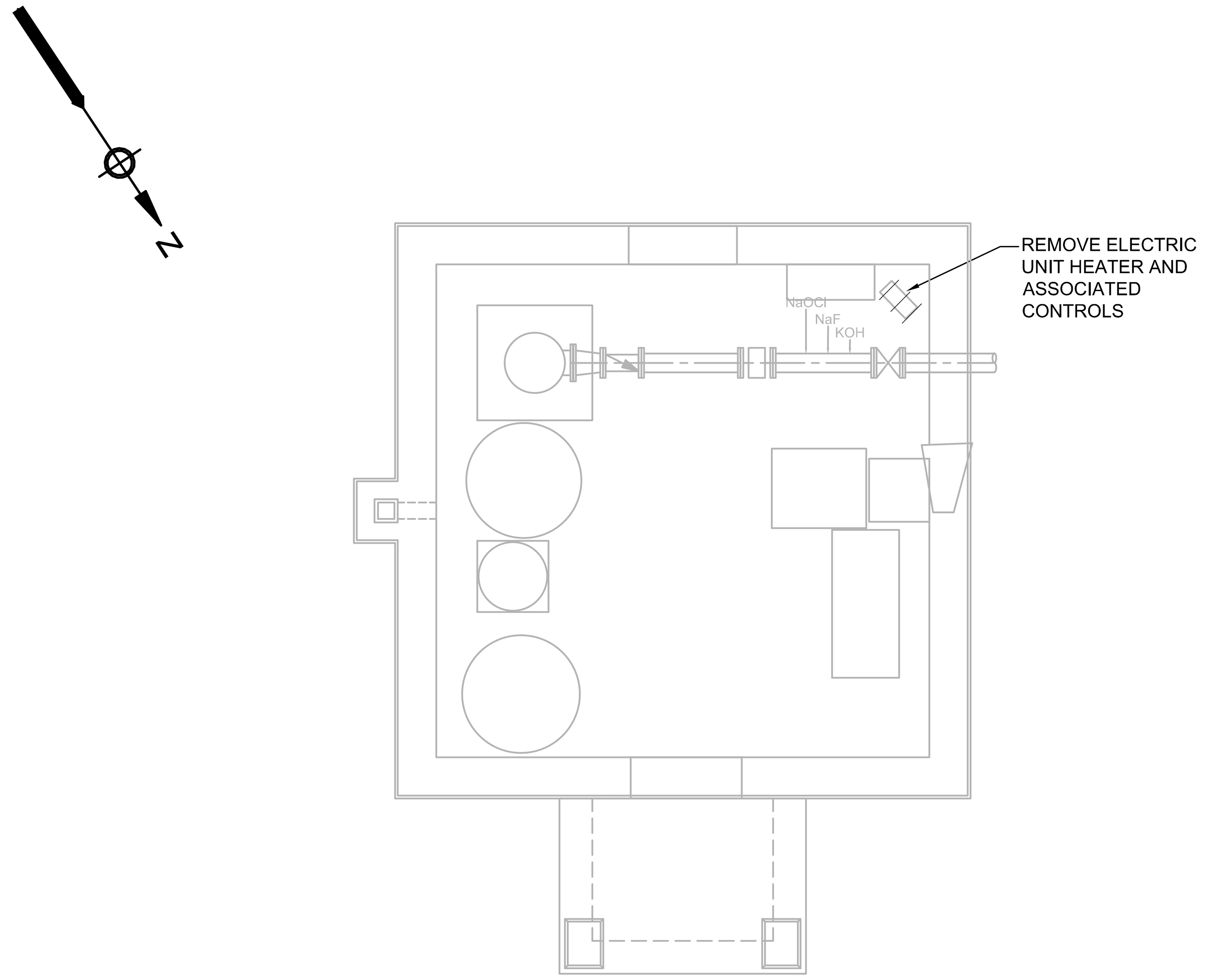
HVAC
SECTIONS III

FOR CONSTRUCTION

Sheet No.

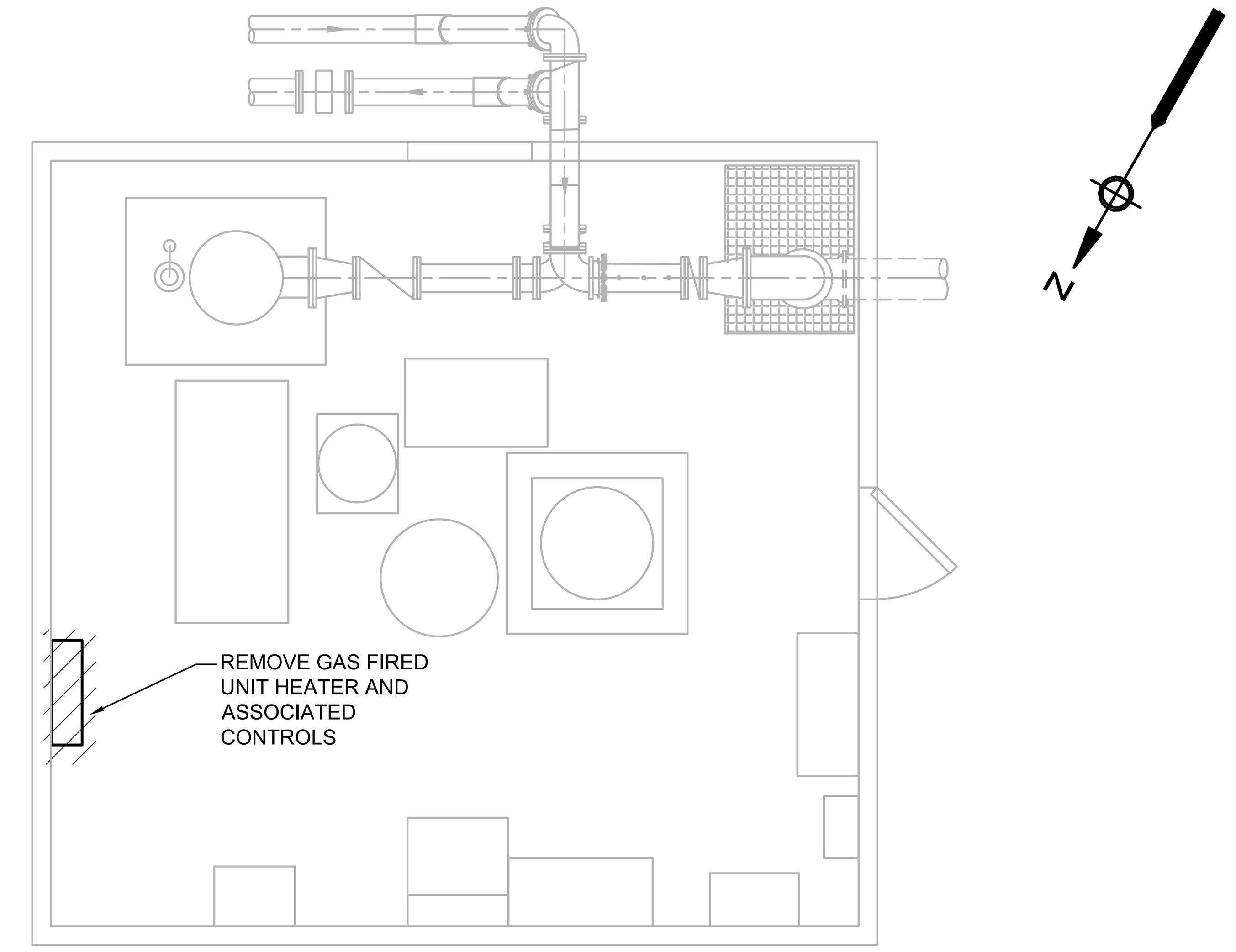
H-8

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\HVAC Department\23006.00 Hvac Plans.dwg Plot Date: Mar 29,2024-9:09am



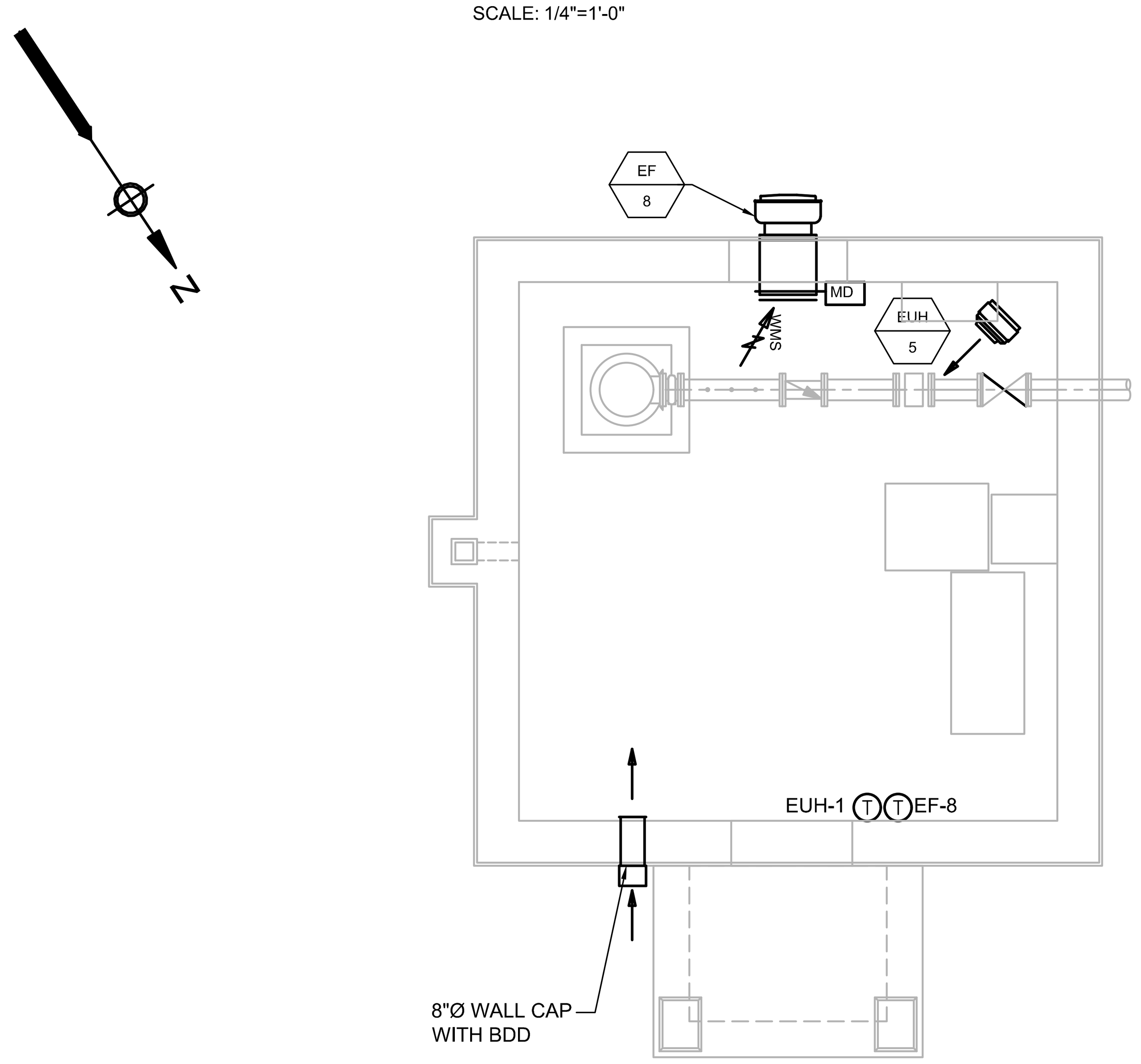
WELL #3 DEMOLITION PLAN

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



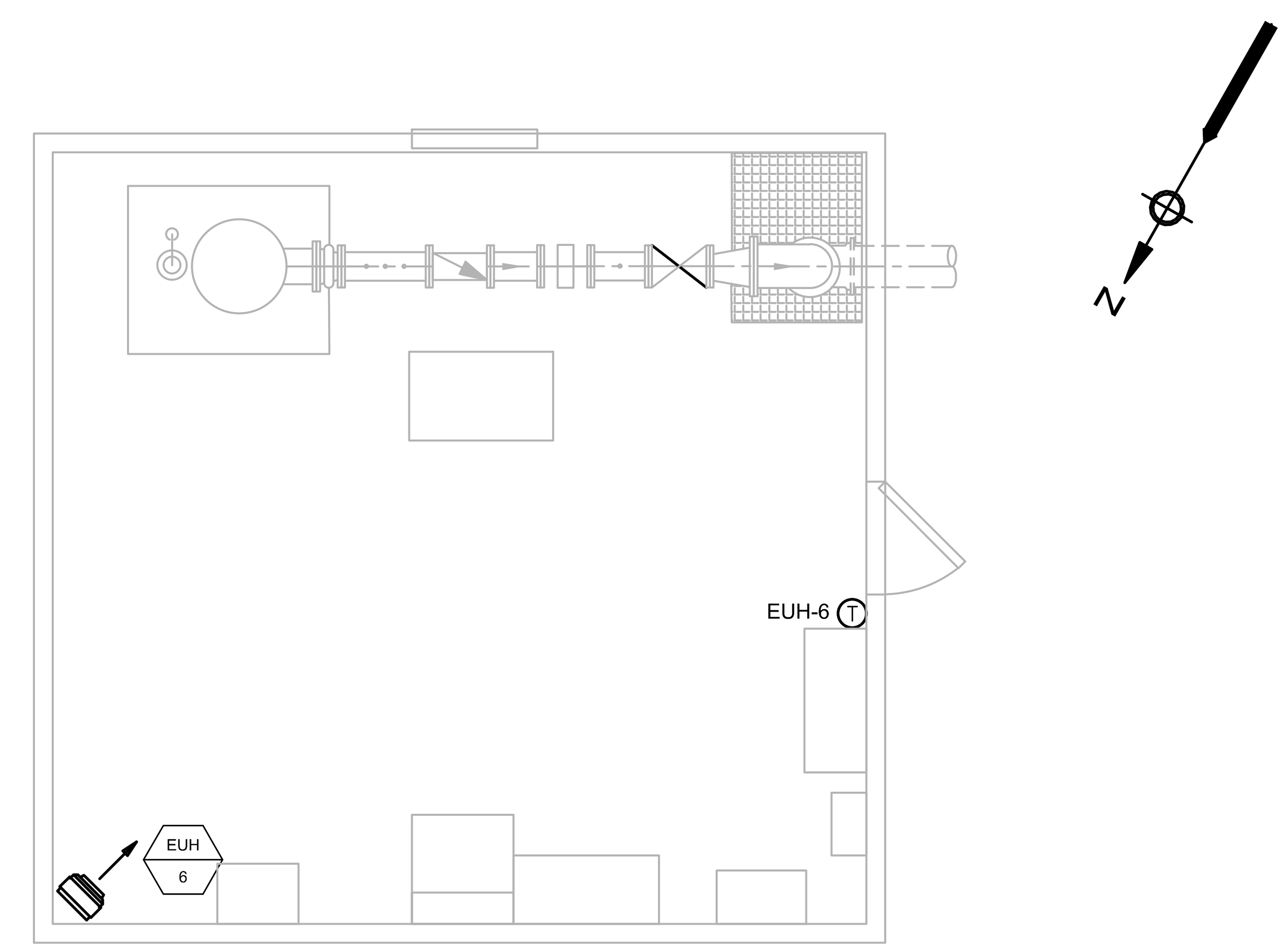
WELL #4 DEMOLITION PLAN

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



WELL #3 NEW WORK PLAN

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



WELL #4 NEW WORK PLAN

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

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

HVAC
WELL STATIONS PLANS

FOR CONSTRUCTION

Sheet No.
H-9

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\HVAC Department\23006.00 Hvac Plans.dwg Plot Date: Mar 29,2024-9:09am

DHU — DEHUMIDIFIER SCHEDULE

TAG NO.	MANUFACTURER MODEL NO. OR EQUAL	AREA SERVED	MOISTURE REMOVAL (LBS/HR)	SENSIBLE COOLING (MBH)	TOTAL COOLING (MBH)	AIRFLOW (CFM)	ELECTRICAL DATA				WEIGHT LBS	REMARKS
							MCA	MAX FUSE	VOLT	PHASE		
DHU-1	DESERT AIRE LW-15	FILTER ROOM	38.0	110	157	6,900	42	60	480	3	2,050	1 2
DHU-2	DESERT AIRE LW-15	FILTER ROOM	38.0	110	157	6,900	42	60	480	3	2,050	1 2

1. PROVIDE HUMIDITY AND TEMPERATURE CONTROLLER TYPICAL TO DESERT AIRE MODEL CA2500 AND R-407C REFRIGERANT.
2. MOISTURE REMOVAL IS AT 74°F DB AND 40%RH

UH — GAS UNIT HEATER SCHEDULE

TAG NO.	LOCATION	AIR				MOUNT HEIGHT (FT.)	GAS (NATURAL)		ELECTRICAL DATA			MANUFACTURER MODEL NUMBER	REMARKS
		CFM	HP	EAT (°F)	LAT (°F)		INPUT (MBH)	OUTPUT (MBH)	V	PH	HZ		
GUH-1	FILTER ROOM	2,200	1/4	50	93.5	20'-0"	125	103.75	120	1	60	STERLING XF-125	1 2 3
GUH-2	FILTER ROOM	2,200	1/4	50	93.5	20'-0"	125	103.75	120	1	60	STERLING XF-125	1 2 3
GUH-3	FILTER ROOM	2,200	1/4	50	93.5	20'-0"	125	103.75	120	1	60	STERLING XF-125	1 2 3
GUH-4	FILTER ROOM	2,200	1/4	50	93.5	20'-0"	125	103.75	120	1	60	STERLING XF-125	1 2 3

1. PROVIDE TWO STAGE GAS VALVE WITH INTERMITTENT PILOT CONTROL, 100% SHUTOFF WITH CONTINUOUS RETRY.
2. PROVIDE TWO STAGE ROOM MOUNTED THERMOSTAT WITH SUB BASE SWITCHING FOR SYSTEM AUTO/OFF AND FAN AUTO/ON.
3. PROVIDE WITH SIDEWALL TERMINATION KIT

MUA — MAKE-UP AIR UNIT SCHEDULE

TAG NO.	LOCATION	SUPPLY BLOWER			GAS (NATURAL)		ELECTRICAL DATA				WEIGHT LBS	MANUFACTURER MODEL NUMBER	REMARKS
		OA CFM	ESP (IN WC)	FAN HP	INPUT (MBH)	OUTPUT (MBH)	FLA	V	PH	HZ			
MUA-1	CONTROL ROOM	1,100	1.0	1/2	100.0	81.0	5.3	480	3	60	907	GREENHECK IGX-P109-H12-MF-C	1

EUH — ELECTRIC HEATER SCHEDULE

TAG NO.	LOCATION	CAPACITY	FAN DATA				MANUFACTURER MODEL NUMBER	REMARKS
		KW	CFM	V	PH	HZ		
EUH-1	TOILET ROOM	3.0	350	277	1	60	QMARK CWH3307F	
EUH-2	MECHANICAL ROOM	3.0	350	480	3	60	QMARK MUH0341	
EUH-3	CORRIDOR	3.0	350	277	1	60	QMARK CWH3307F	
EUH-4	PIPE GALLERY	3.0	350	480	3	60	QMARK MUH0341	
EUH-5	WELL STATION #3	5.0	350	480	3	60	QMARK MUH0541	
EUH-6	WELL STATION #4	7.5	650	480	3	60	QMARK MUH074	

DIFFUSER, REGISTER & GRILLE SCHEDULE

TAG NO.	MODULE SIZE (IN)	ROUND APAPTER SIZE (IN)	FLEX DUCT SIZE (IN)	SQUARE DUCT SIZE (IN)	SERVICE	CFM RANGE		MAX. NC LEVEL	MANUFACTURER & MODEL NO.	REMARKS
						MIN	MAX			
SD-1	24x24	15"	15"	N/A	SUPPLY	500	740	22	NAILOR RNS3	
ER-1	12x12	N/A	N/A	N/A	EXHAUST	140	245	25	NAILOR 6145H	
SR-1	48x24	N/A	N/A	N/A	SUPPLY	6000	7000	50	NAILOR 51D00-DH	
ER-1	48x40	N/A	N/A	N/A	EXHAUST	6000	7000	50	NAILOR 6700-HD	

ACC — REMOTE CONDENSER SCHEDULE

TAG NO.	MANUFACTURER MODEL NO. OR EQUAL	REFRIG TYPE	AMBIENT TEMP. (°F)	FANS		ELECTRICAL DATA				REMARKS
				QTY	CFM	MCA	MOPD	VOLTS	PHASE	
ACC-1	DESERT AIRE RC5S099	R-407C	95	1	10,259	8	15	480	3	1 2
ACC-2	DESERT AIRE RC5S099	R-407C	95	1	10,259	8	15	480	3	1 2

1. FURNISH WITH SUB COOLER
2. FURNISH WITH ORD VALVE

SPLIT-SYSTEM HEAT PUMP SCHEDULE

HP — FAN COIL UNIT

TAG	AREA SERVED	MFG'R. & MODEL NO.	TYPE UNIT	HEAT MBH	COOL MBH	CFM	ELEC. V/PH/HZ
HP-1	CONTROL ROOM	LG LCN188HV4	CEILING	18.5	18	424	VIA ACC-3
HP-2	ELEC ROOM	LG LCN369HV	CEILING	40	36	883	VIA ACC-4

ACC — OUTDOOR UNIT

TAG	LOCATION	MFG'R. & MODEL NO.	HEAT MBH	COOL MBH	ELEC. V/PH/HZ	MCA	MOP	REMARKS
ACC-3	UPPER LEVEL	LG LUU189HV	18.5	18	208/1/60	20	30	1
ACC-4	UPPER LEVEL	LG LUU360HHV	40	36	208/1/60	32	40	1

1. PROVIDE FRESH AIR INLET KIT

EF — FAN SCHEDULE

TAG NO.	SERVICE	FAN TYPE	CFM	ESP (IN WC)	SPEED (RPM)		ELECTRICAL DATA				MANUFACTURER & MODEL NUMBER	REMARKS
					FAN	MOTOR	HP	V	PH	HZ		
LEF-1	LAB HOOD	CENTRIFUGAL FRP FAN	1,200	3	2037	1770	3	480	3	60	GREENHECK 10-BCSW-FRP-4-I-30	1 2 3 4 5
EF-2	CHEMICAL STOR. AREA	UPBLAST WALL	1,050	1.0	1405	1725	1/2	120	1	60	GREENEHCK CUE-120-A	1 2 3
EF-3	MECH RM.	INLINE CABINET	200	0.65	1382	1725	49W	120	1	60	GREENHECK CSP-A390-VG	1 2 4
EF-4	TOILET ROOM	CEILING	74	0.506	880	-	17W	120	1	60	GREENHECK SP-AP0511W	4
EF-5	FILTER ROOM REF. EXHAUST	UPBLAST WALL	3,000	0.75	1290	1725	1	480	3	60	GREENHECK CUBE-160-10	1 2 4
EF-6	FILTER ROOM OCCUPIED	UPBLAST WALL	400	0.75	1712	1725	1/6	120	1	60	GREENHECK CUE-090-VG	1 4
EF-7	PIPE GALLERY	INLINE CABINET	1,200	0.35	753	1725	143W	120	1	60	GREENHECK 10W28D17 (VF)	1 4
EF-8	WELL STATION #3	UPBLAST WALL	275	0.50	1712	1725	1/10	120	1	60	GREENHECK CUE-090-VG	1 4

1. PROVIDE THERMAL OVERLOAD MOTOR AND STAINLESS STEEL BIRDSCREEN.
2. PROVIDE MOTOR COVER/BELT GUARD, TEFC FAN MOTOR, INLET FLEX DUCT CONNECTION, AND OUTLET WIRE MESH SCREEN.
3. HI-PRO POLYESTER COATING
4. ECM MOTOR
5. FRP CONSTRUCTION

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ROBERT C. BROWN, MECHANICAL, NO. 45935, COMMONWEALTH OF MASSACHUSETTS, REGISTERED PROFESSIONAL ENGINEER

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

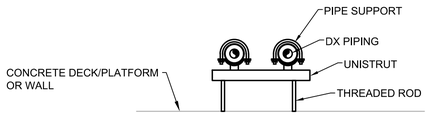
HVAC
SCHEDULES

FOR CONSTRUCTION

Sheet No.

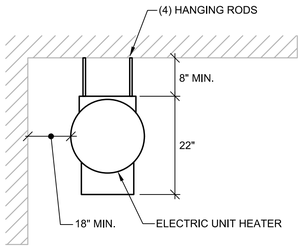
H-10

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\HVAC Department\23006.00 Hvac Plans.dwg Plot Date: Apr 01,2024-10:41am



DX PIPE SUPPORT DETAIL

SCALE: N.T.S.



ELEC UNIT HEATER MOUNTING DETAIL

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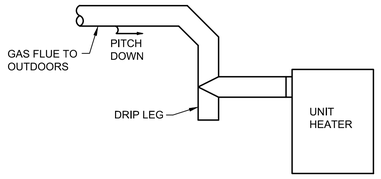

GAS VENT DETAIL

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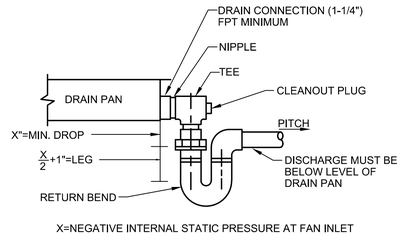


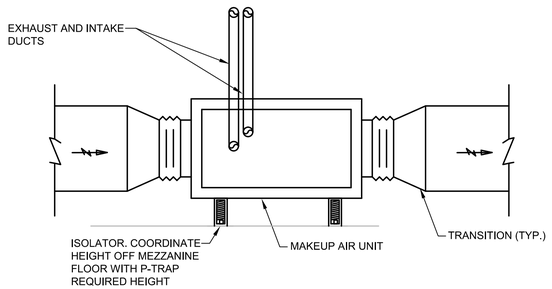
X=NEGATIVE INTERNAL STATIC PRESSURE AT FAN INLET

NOTES:

1. ALLOW SUFFICIENT SPACE BELOW DRAIN PAN FOR TRAP
2. PITCH DRAIN FOR PROPER RUN-OFF
3. MANUALLY, PRIME FILL TRAP BEFORE START-UP TO FORM INITIAL DRAIN SEAL
4. SUPPORT LENGTHY DRAIN LINES TO PREVENT SAG AND CONDENSATE OVERFLOW
5. PROVIDE CLEANOUT IN ANY CHANGE OF DIRECTION.

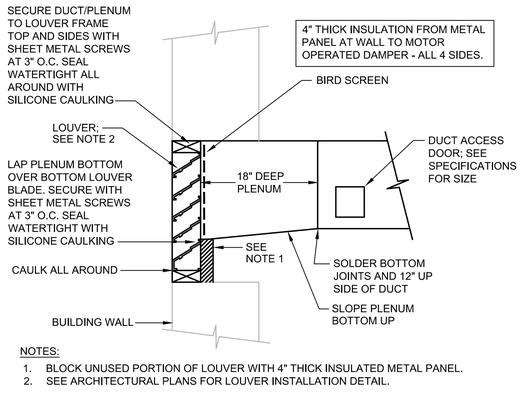
DRAIN PAN WATER SEAL PIPING DETAIL

SCALE: N.T.S.



MAKE-UP AIR UNIT DETAIL

SCALE: N.T.S.

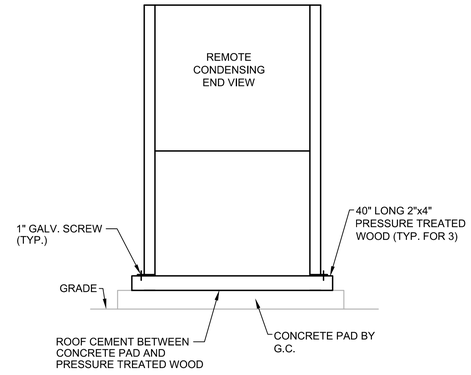


NOTES:

1. BLOCK UNUSED PORTION OF LOUVER WITH 4" THICK INSULATED METAL PANEL.
2. SEE ARCHITECTURAL PLANS FOR LOUVER INSTALLATION DETAIL.

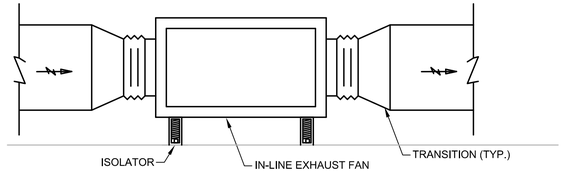
LOUVER/PLENUM CONNECTION DETAIL

SCALE: N.T.S.



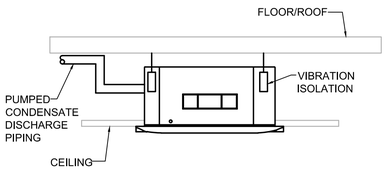
ACC-1 & ACC-2 MOUNTING DETAIL

SCALE: N.T.S.



IN-LINE EXHAUST FAN DETAIL

SCALE: N.T.S.



SPLIT-SYSTEM INDOOR UNIT INSTALLATION

SCALE: N.T.S.

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COMMONWEALTH OF MASSACHUSETTS
ROBERT L. BROWN
MECHANICAL
NO. 45395
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

HVAC
DETAILS I

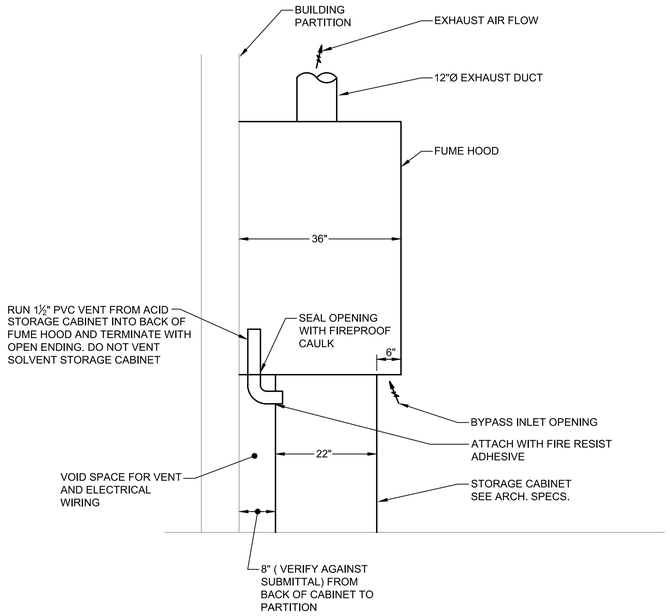
FOR CONSTRUCTION

Sheet No.

H-11

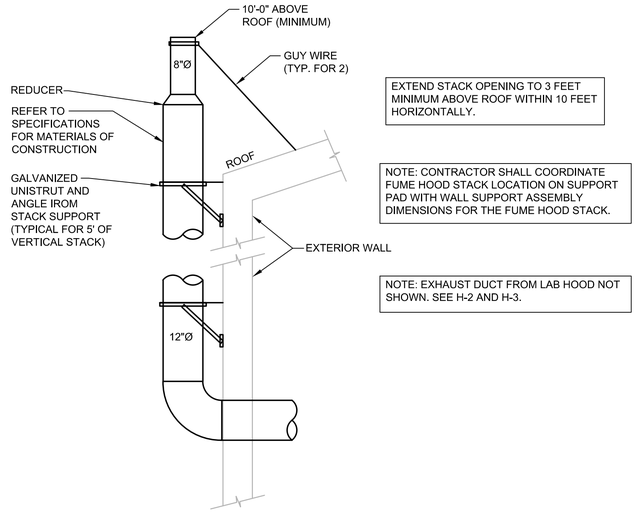
Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\HVAC Department\23006.00 Hvac Plans.dwg Plot Date: Mar 29,2024-9:10am

NOTE: COORDINATE WITH ARCH. DRAWINGS & SPECIFICATIONS.



FUME HOOD ELEVATION

SCALE: N.T.S.



LEF-1 EXHAUST FAN / STACK INSTALLATION

SCALE: N.T.S.

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

HVAC
DETAILS II

FOR CONSTRUCTION

Sheet No.

H-12

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\HVAC Department\23006.00 Hvac Plans.dwg Plot: Date: Mar 29,2024-9:10am

PLUMBING NOTES:

1. THE WORK COVERED CONSISTS OF FURNISHING ALL LABOR AND MATERIALS NECESSARY TO INSTALL, COMPLETE AND READY FOR CONTINUOUS OPERATION, THE PLUMBING SYSTEMS, APPARATUS AND EQUIPMENT FOR THIS PROJECT.
2. ALL EQUIPMENT AND MATERIALS FURNISHED UNDER THE PLUMBING SUB-CONTRACT, LABOR AND TESTING PERFORMED HEREIN SHALL BE IN COMPLETE ACCORDANCE WITH THE STATE BUILDING CODE, LOCAL FUEL GAS AND PLUMBING CODES, ALL LOCAL CODES AND REGULATIONS, NATIONAL FIRE PROTECTION ASSOCIATION, INSURANCE REGULATIONS AND REQUIREMENTS GOVERNING SUCH WORK.
3. CONTRACTOR SHALL ENSURE ALL PLUMBING PRODUCTS UTILIZED ON THIS PROJECT ARE APPROVED BY THE MA STATE BOARD OF PLUMBERS AND GAS FITTERS. CONTRACTOR SHALL ENSURE APPROVAL IS VALID DURING SHOP DRAWING REVIEW. AT THE TIME OF INSTALLATION AND AT THE TIME OF PUTTING INTO SERVICE.
4. ANY AND ALL PERMITS REQUIRED FOR INSTALLATION OF ANY MATERIAL SHALL BE OBTAINED AS PART OF THE WORK OF THE SPECIFICATION INCLUDING ALL FEES OR EXPENSES INCURRED.
5. WHERE WATER PIPING IS SHOWN DROPPING INTO PLUMBING CHASES WITH SIZES NOTED, THAT SIZE SHALL BE CARRIED FULL LENGTH THROUGH THE CHASE. REFER TO PLUMBING FIXTURE SCHEDULE ON THIS DRAWING FOR INDIVIDUAL FIXTURE CONNECTION SIZES.
6. UNLESS OTHERWISE NOTED, ALL HORIZONTAL DRAINAGE PIPING WHICH IS 3" OR LESS IN DIAMETER SHALL PITCH OF NOT LESS THAN 1/4" PER FOOT AND ALL HORIZONTAL DRAINAGE PIPING WHICH IS 4" OR LARGER IN DIAMETER SHALL PITCH OF NOT LESS THAN 1/8" PER FOOT.
7. ALL BELOW FLOOR PIPING THAT INTERSECTS A GRADE BEAM REQUIRES COORDINATION WITH STRUCTURAL. FOR STRUCTURAL DETAILS, REFER TO STRUCTURAL DRAWINGS.
8. PROVIDE ALL FLOOR CLEANOUTS WITH HUB AND SPIGOT; LEAD AND OAKUM JOINTS FROM CLEANOUT TO AND INCLUDING CONNECTION TO SANITARY OR STORM DRAIN.
9. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF ALL PLUMBING FIXTURES AND EQUIPMENT.
10. ALL BURIED DOMESTIC WATER PIPING, TEMPERED WATER PIPING OR AIR PIPING SHALL BE SOFT ROLLED "K" COPPER COIL AND BE PROTECTED WITH A HIGH DENSITY RUBBER INSULATION. FITTINGS SHALL NOT BE PERMITTED IN OR UNDER SLAB. PROVIDE SLAB PENETRATIONS WITH SLEEVE AND FIRE STOPPING.
11. INTERIOR PLUMBING AND HVAC EQUIPMENT REQUIRING A NATURAL GAS CONNECTION SHALL BE PROVIDED WITH AN EMERGENCY GAS RELIEF VENT AT EACH GAS TRAIN IN ACCORDANCE WITH THE MASSACHUSETTS FUEL GAS CODE AND AS INDICATED WITH THE FOLLOWING CHART:

CFH	AMOUT OF RELIEF VENTS REQUIRED	SIZE OF EACH RELIEF VENT		
		0' TO 40'	0' TO 100'	0' TO 200'
UNDER 1,000 CFH	1	3/4"	1"	1 1/4"
1,000 CFH TO 2,500 CFH	3	3/4"	1"	1 1/4"
2,500 CFH TO 12,500 CFH	3	3/4"	1"	1 1/4"
OVER 12,500 CFH	4	3/4"	1"	1 1/4"

12. MISCELLANEOUS DISCREPANCIES OR OMMISSIONS WHICH MIGHT APPEAR ON THE PLANS OR SPECIFICATIONS WILL NOT RELIEVE THE PLUMBING SUB-CONTRACTOR OF CODE COMPLIANCE.
13. ALL FLOOR DRAINS SHALL BE PROVIDED WITH A TRAP PRIMER CONNECTION. PLUMBING CONTRACTOR SHALL PROVIDE ALL ASSOCIATED EQUIPMENT NECESSARY TO PROVIDE A COMPLETE SYSTEM INCLUDING AN ELECTRONICALLY OPERATED PRIMING MANIFOLD AND ALL ASSOCIATED PIPING REQUIRED.
14. GAS FIRED EQUIPMENT - PROVIDE FULL SIZE OF VENT AND DRIP LEG IN ACCESSIBLE LOCATION. MAKE FINAL CONNECTION TO EQUIPMENT WITH NECESSARY REDUCER AND UNION CONNECTION. PC TO COORDINATE EXACT CONNECTION SIZE, LOAD, LOCATION, AND EQUIPMENT ACCESS NEEDS PRIOR TO GAS INSTALLATION.

PLUMBING FIXTURE SCHEDULE

DESIGNATION	FIXTURE DESCRIPTION	CONNECTION SIZE					REMARKS
		CW	HW	TW	S/W	V	
P-1	EMERGENCY EYEWASH/DRENCH HOSE UNIT	-	-	1-1/4"	-	-	GUARDIAN G5026 - SEE NOTE 1
P-2	WATER CLOSET - WALL HUNG	1"	-	-	4"	2"	SEE SPECIFICATION
P-3	LAVATORY	1/2"	1/2"	-	2"	2"	SEE SPECIFICATION
P-4	MOP SINK	3/4"	3/4"	-	3"	2"	SEE SPECIFICATION
P-5	ICE MACHINE COLD WATER CONNECTION BOX	1/2"	-	-	2"	2"	SEE SPECIFICATION
TMV	THERMOSTATIC MIXING VALVE	-	-	1-1/4"	-	-	LEONARD MODEL TM-800 - SEE NOTE 3
HB	HOSE BIBB	1/2"	-	-	-	-	INTEGRAL VACUUM BREAKER W/ VANDAL RESISTANT "T" HANDLE KEY - SEE NOTE 2
WH	WALL HYDRANT	1/2"	-	-	-	-	NON-FREEZE, QUARTER TURN, INTEGRAL VACUUM BREAKER W/ VANDAL RESISTANT "T" HANDLE KEY - SEE NOTE 2

NOTES:
1. PROVIDE FLOW SWITCH (TAG #FS-420) WITH SINGLE POLE, DOUBLE THROW CONTACTS, AND 20 GPM BALANCING REGULATOR (G6040).
2. MOUNT FIXTURE 4-0" AFF
3. PROVIDE DIAL THERMOMETER ON INLETS.
4. ALL EXPOSED VALVES, PIPING AND FITTINGS SHALL BE CHROME PLATED.
5. PLUMBING CONTRACTOR SHALL PROVIDE EACH CONNECTION TO EACH SINK OR PIECE OF EQUIPMENT WITH ITS OWN INDIVIDUAL SHUTOFF VALVE.

GAS FIRED TANKLESS WATER HEATER SCHEDULE

TAG NO.	MANUFACTURER AND MODEL NO.	MAX INPUT (MBH)	CONTINUOUS FLOW RATE (GPM) AT 70° RISE	FLUE SIZE (IN.)	OUTLET TEMP SETTING (° F)	REMARKS
TWH-1	NORITZ MODEL NC380	380	7.8	6	120	-

CIRCULATING PUMP SCHEDULE

DESIGNATION	LOCATION	MODEL	CAPACITY (GPM)	HEAD (FEET)	TYPE	ELECTRICAL REQUIREMENTS				REMARKS
						RPM	HP	VOLTS	PH	
RP-1	MECH ROOM	TACO 006B	2	6	INLINE	3250	1/40	115	1	-

* MANUFACTURERS NAMES AND MODEL NUMBERS ARE SHOWN ONLY TO REPRESENT TYPE, STYLE AND LEVEL OF QUALITY EXPECTED, REFER TO SPECIFICATIONS FOR ACCEPTABLE EQUAL MANUFACTURERS.

DRAIN SCHEDULE*

SYMBOL	TYPE	MANUFACTURER	MODEL	OUTLET	STRAINER	REMARKS
A	FD	MIFAB	F2100-C	CAULK	CAST IRON	DUCTILE IRON GRATE - MECH RMS
B	FD	MIFAB	F100-C-TS	CAULK	CAST IRON	DUCTILE IRON GRATE - FINISHED AREAS
C	FD	MIFAB	F1000-C-S	CAULK	CAST IRON	DUCTILE IRON GRATE - FILTER ROOMS
D	FD	MIFAB	FS1520-PB	CAULK	CAST IRON	FLOOR SINK FOR ICE MACHINE (P-5)

* ALL FLOOR DRAINS SHALL BE PROVIDED WITH AUTOMATIC TRAP PRIMERS. REFER TO DETAIL FOR PIPING ARRANGEMENT.

SHOCK ABSORBER SCHEDULE*

PDI RATING SYMBOL	A	B	C	D	E
PRECISION PLUMBING PRODUCTS	SC-500	SC-750	SC-1000	SC-1250	SC-1500
WATTS REGULATOR COMPANY	0750030	0750053	0750060	0750070	0750090
WADE	5-P	10-P	20-P	50-P	75-P

* MANUFACTURERS NAMES AND MODEL NUMBERS ARE SHOWN ONLY TO REPRESENT TYPE, STYLE AND LEVEL OF QUALITY EXPECTED, SIMILAR PRODUCTS BY OTHER MANUFACTURERS WILL BE ACCEPTABLE.

ELECTRIC WATER HEATER SCHEDULE

DESIGNATION	MANUFACTURER	MODEL	LOCATION	KW	VOLTS	PHASE	HZ.	REMARKS
EWH-1	EEMAX	EX4208T	MECH. RM.	4.1	208	1	60	-

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
		ABOVE FLOOR PIPING (INDICATED AS SINGLE LINEWORK)
		BELOW FLOOR PIPING (INDICATED AS DOUBLE LINEWORK)
		NEW WORK (INDICATED AS HEAVY LINEWORK)
	CW	COLD WATER
	HW	HOT WATER
	HWR	HOT WATER RECIRCULATION
NPCW	NPCW	NON-POTABLE COLD WATER
	S/W	SANITARY DRAINAGE (SOIL/WASTE)
	V	VENT
AW		ACID WASTE
AV		ACID VENT
	FLUE	FLUE EXHAUST
G	G	GAS (LIQUID PROPANE)
	UP	UP (PENETRATES LEVEL ABOVE)
		RISE (BUT DOES NOT PENETRATE LEVEL ABOVE)
	DN	DOWN (PENETRATES LEVEL BELOW)
	DP	DROP (BUT DOES NOT PENETRATE LEVEL BELOW)
		DIRECTION OF FLOW
.01		DIRECTION & DESIGNATION OF SLOPE (IN FT/FT)
		SHUTOFF VALVE
	BVA	BALANCING VALVE ASSEMBLY
	CV	CHECK VALVE
	DV	DRAIN VALVE WITH HOSE THREADS
		GAS SHUTOFF VALVE
	PG	PRESSURE GAUGE
	SA	SHOCK ABSORBER WITH SHUTOFF VALVE
	CO	CLEANOUT
	WCO	WALL CLEANOUT
	FCO	FLOOR CLEANOUT
	SCO	SEWER CLEANOUT
	FD	FLOOR DRAIN
	HB	HOSE BIBB
	WH	WALL HYDRANT
	NIPC	NOT IN PLUMBING CONTRACT
	PC	PLUMBING CONTRACTOR
	NO	NORMALLY OPEN
	NC	NORMALLY CLOSED
	INV	INVERT ELEVATION
	CFH	CUBIC FEET PER HOUR
	W&T	WASTE & TRAP
	VIV	VALVE IN VERTICAL
	OED	OPEN END DRAIN
	VTR	VENT THRU ROOF
	CC	CAPPED CONNECTION
	UN	UNION
	ST	STRAINER
	WTS	WATER TIGHT SLEEVE
	P-	PLUMBING FIXTURE DESIGNATION
	WM	WATER METER
	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
	TWH	TANKLESS WATER HEATER
	FFE	FINISHED FLOOR ELEVATION
	LPC	LIMIT PLUMBING CONTRACT
	TDL	TOTAL DEVELOPED LENGTH
		EMERGENCY EYEWASH/DRENCH HOSE UNIT

ENVIRONMENTAL PARTNERS
— An Apex Company —

SAR ENGINEERING, INC.
Mechanical/Electrical Engineers
150 Grossman Drive, Suite 309
Braintree, Massachusetts 02184
617 221-9220
web: www.sar.com

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	RLB
Drawn by	RLB
Checked by	JL
Approved by	MC

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PLUMBING
LEGEND, SCHEDULE AND GENERAL NOTES

FOR CONSTRUCTION

Sheet No.
P-1

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 Plumbing Plans.dwg Plot Date: Mar 29,2024-9:02am

LOWER LEVEL PLAN

SCALE: 3/16"=1'-0"

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MARK	DATE	DESCRIPTION

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Date	APRIL 2024
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Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

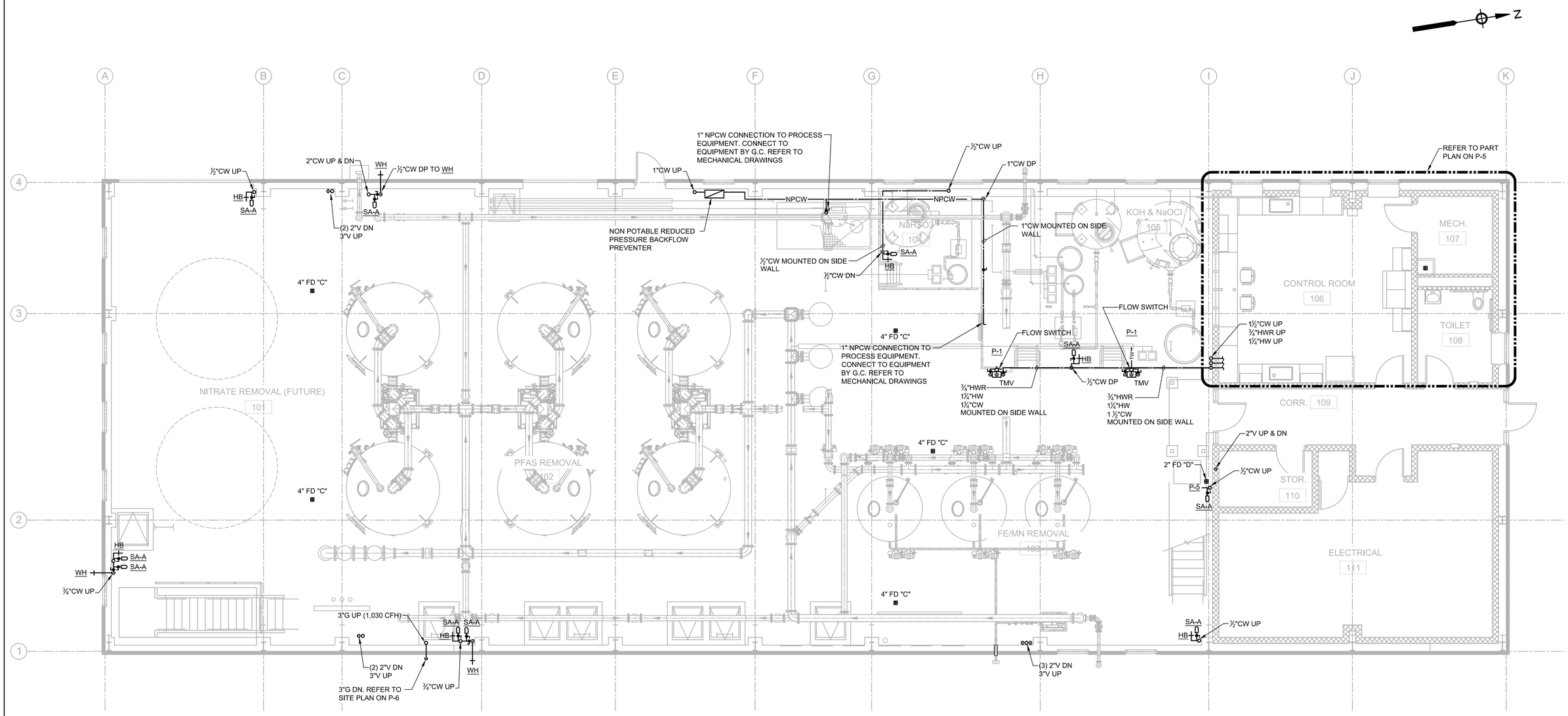
PLUMBING
LOWER LEVEL PLAN

FOR CONSTRUCTION

Sheet No.

P-2

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 Plumbing Plans.dwg Plot Date: Mar 29,2024-9:03am



FIRST FLOOR PLAN

SCALE: 3/16"=1'-0"

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Mechanical/Electrical Engineers
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JAMES A. LUCE PLUMBING No. 36200 REGISTERED

MARK	DATE	DESCRIPTION

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Date	APRIL 2024
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PLUMBING
FIRST FLOOR PLAN

FOR CONSTRUCTION

Sheet No.
P-3

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 Plumbing Plans.dwg Plot Date: Mar 29,2024-10:04am

UPPER LEVEL PLAN

SCALE: 3/16"=1'-0"

			Scale	AS SHOWN
			Date	APRIL 2024
			Job No.	245-2103
			Designed by	RLB
			Drawn by	RLB
			Checked by	JL
MARK	DATE	DESCRIPTION	Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

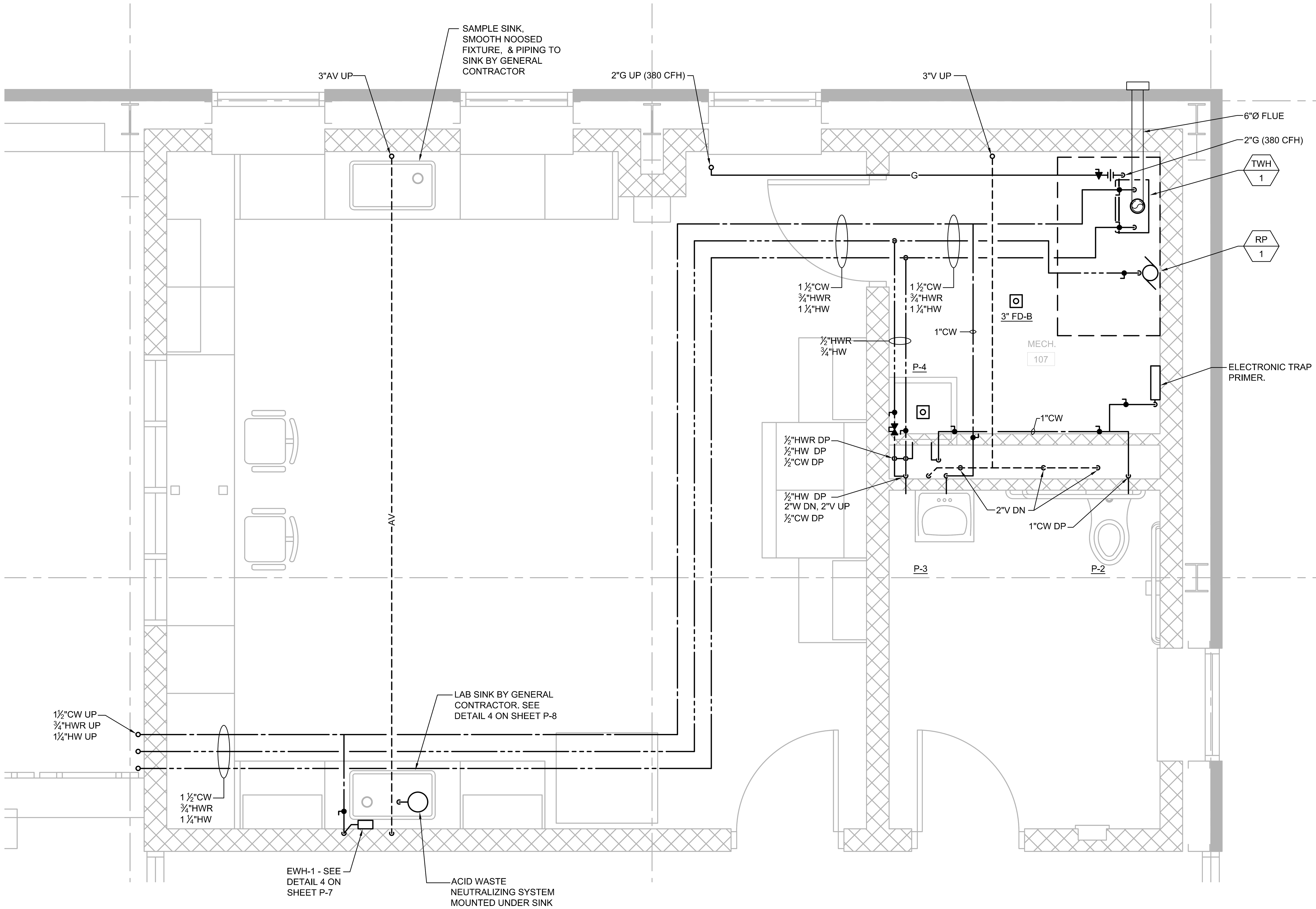
PLUMBING
MEZZANINE PLAN

FOR CONSTRUCTION

Sheet No.

P-4

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 Plumbing Plans.dwg Plot Date: Mar 29,2024-9:04am



PART PLAN

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

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Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	RLB
Drawn by	RLB
Checked by	JL
Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

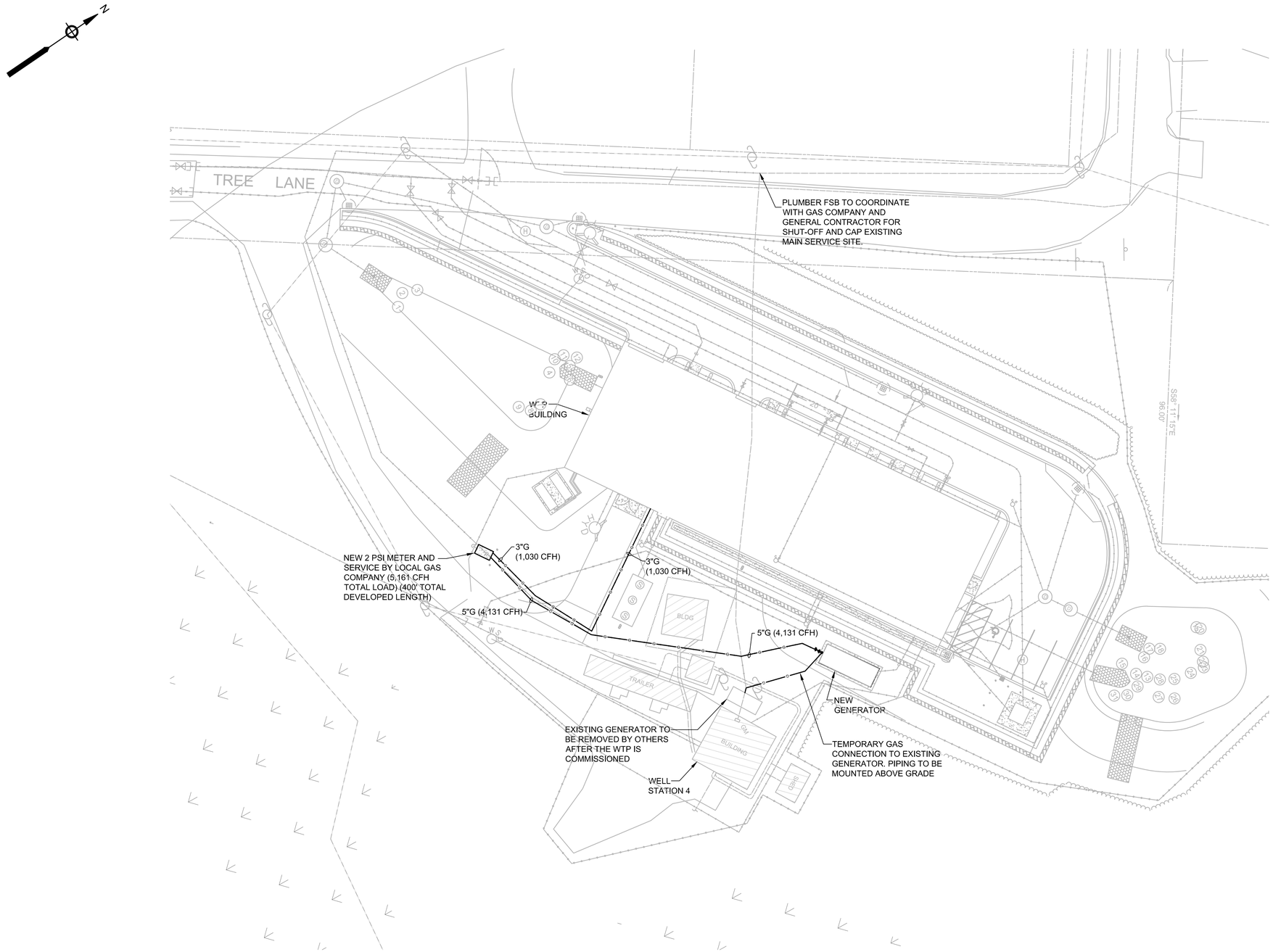
PLUMBING
PARTIAL PLAN

FOR CONSTRUCTION

Sheet No.

P-5

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 Plumbing Plans.dwg Plot Date: Mar 29,2024-9:04am



NOTES:

1. SALVAGE GENERATOR AND RETURN TO OWNER AT OWNER DETERMINED LOCATION WITHIN THE TOWN OF SHARON.

SITE PLAN

SCALE: 1"=20'-0"

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MARK	DATE	DESCRIPTION

Scale	1"=20'
Date	APRIL 2024
Job No.	245-2103
Designed by	RHB
Drawn by	RLB
Checked by	MC
Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

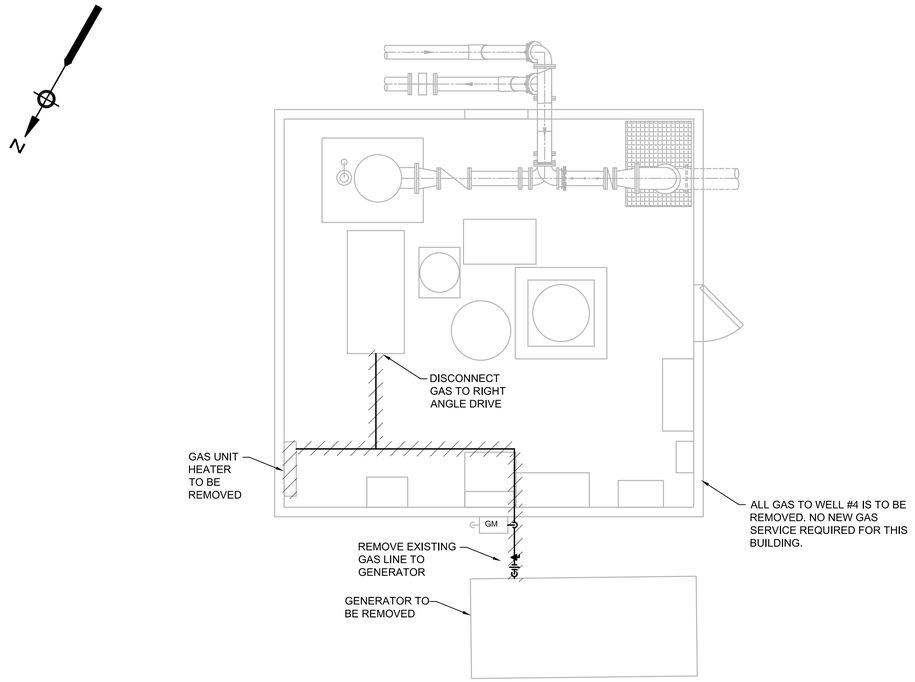
PLUMBING
WTP & WELL STATION 4 SITE PLAN

FOR CONSTRUCTION

Sheet No.

P-6

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 Plumbing Site Plan.dwg Plot Date: Mar 29,2024-9:01am



WELL #4 DEMOLITION PLAN

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

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JAMES A. LUCE PLUMBING No. 39890

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	RLB
Drawn by	RLB
Checked by	JL
Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PLUMBING
WELL STATION #4 PLAN

FOR CONSTRUCTION

Sheet No.

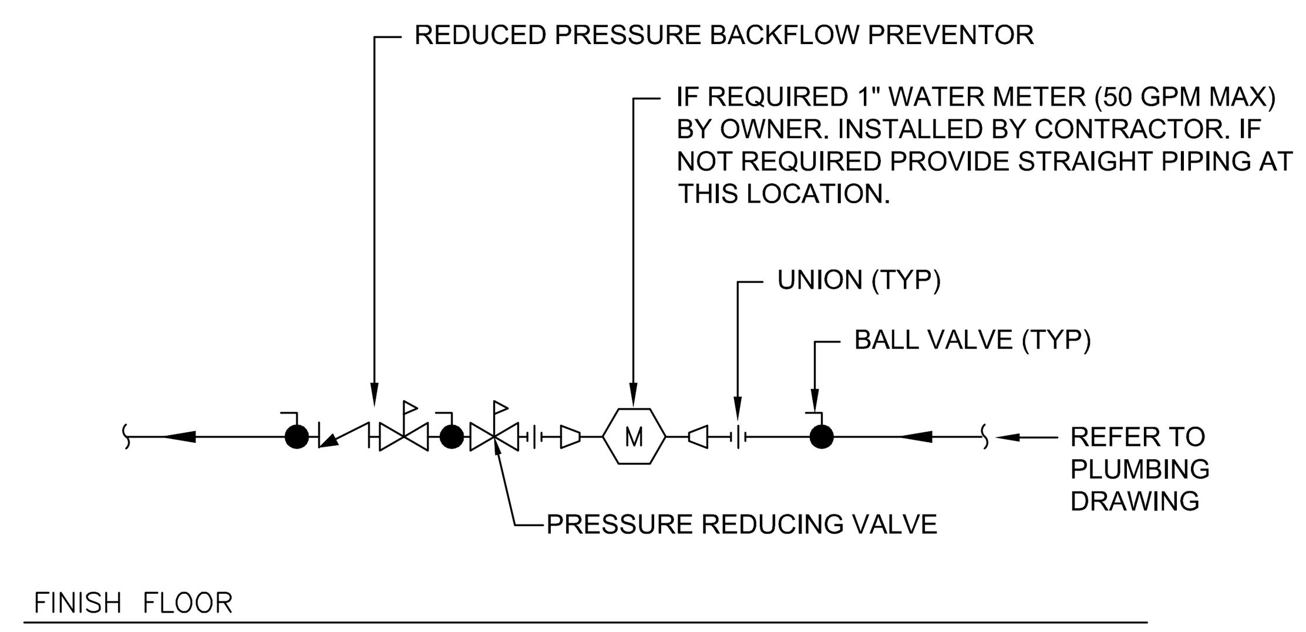
P-7

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 Plumbing Plans.dwg Plot: Date: Mar 29,2024-9:04am

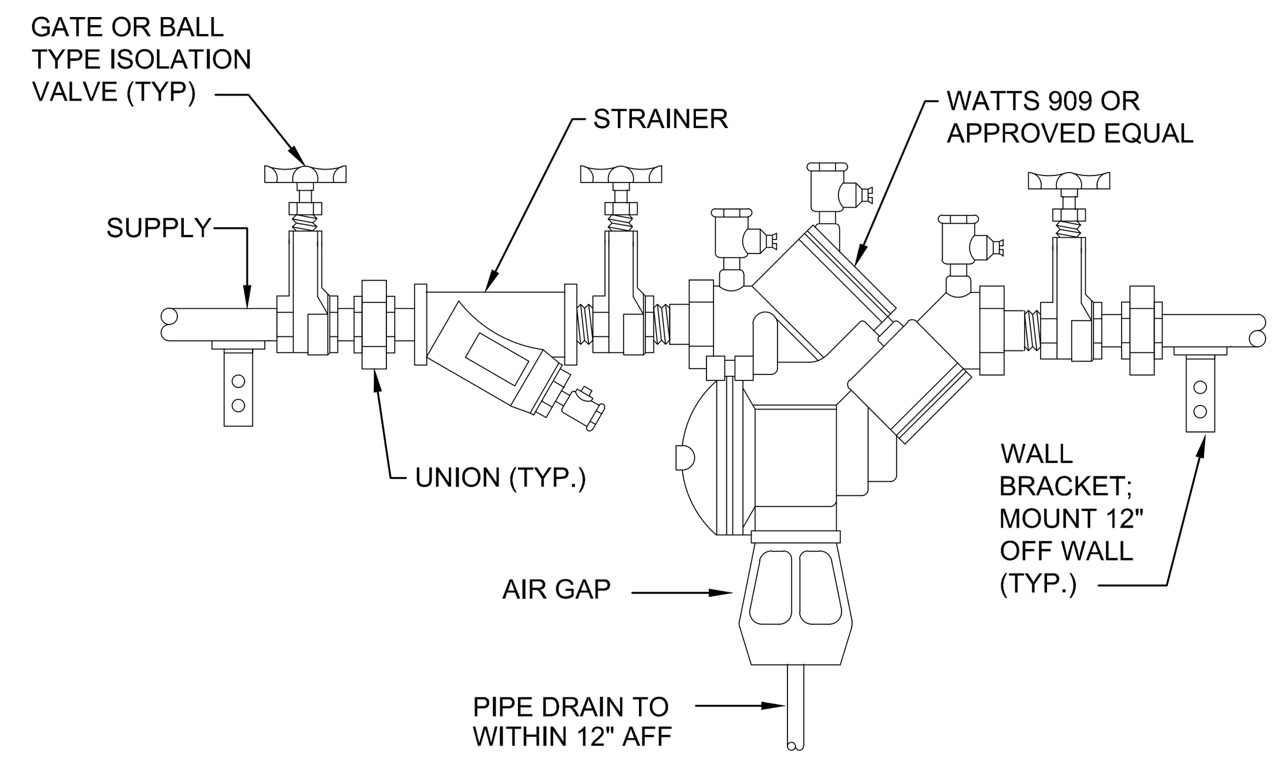
NOTES:

1. HANGER SHIELD IS TYPICAL FOR INSULATED PIPING
2. CORK, WOOD OR CALCIUM SILICATE INSERTS SHALL BE INSTALLED BETWEEN THE PIPE AND THE INSULATION SHIELD TO SUPPORT THE PIPE AND PREVENT THE PIPE INSULATION FROM BEING CRUSHED.

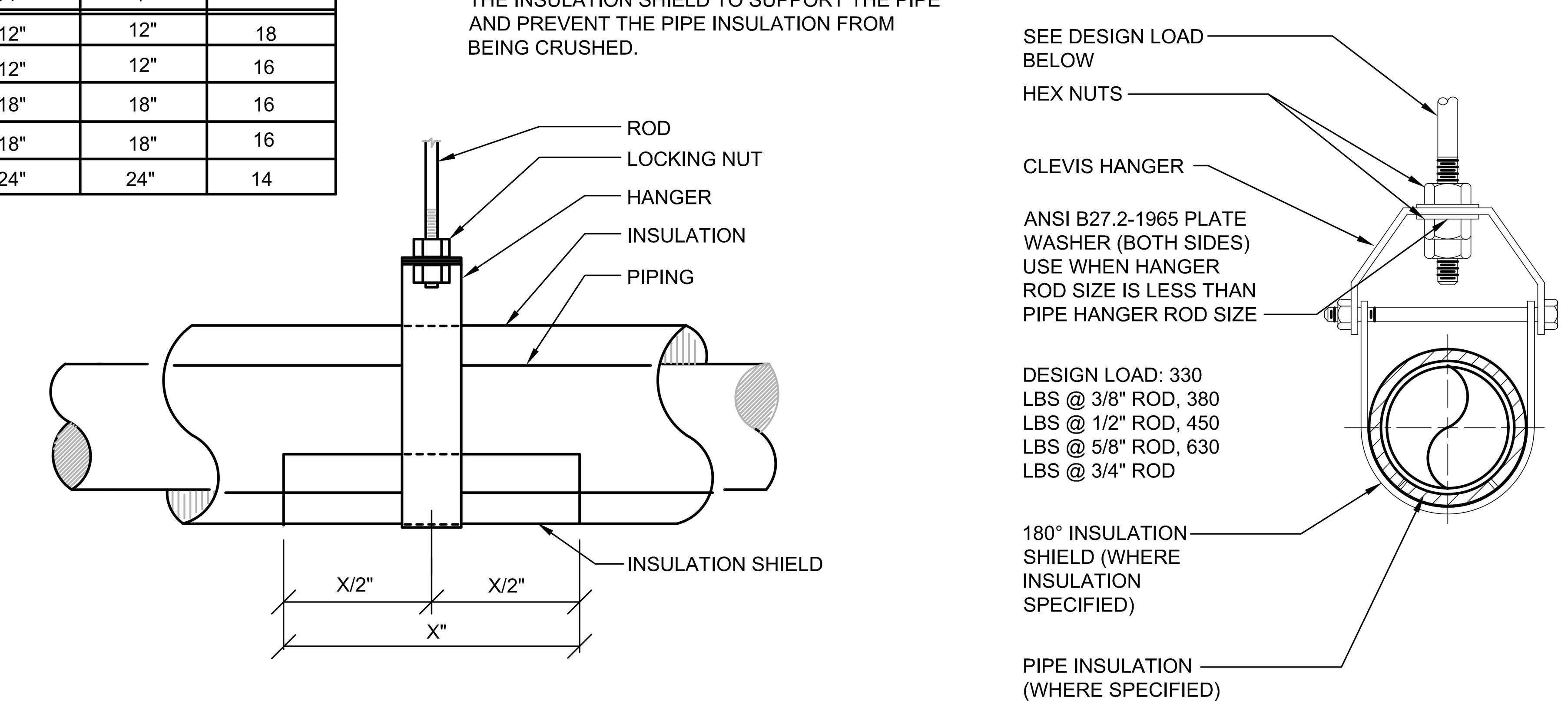
INSULATION SHIELD LENGTH (X")				
PIPE SIZE	INSULATION THICKNESS			GAUGE
	1/2""	3/4"	1"	
1/2" TO 3"	12"	12"	12"	18
4"	12"	12"	12"	16
5"	18"	18"	18"	16
6"	18"	18"	18"	16
8" TO 14"	24"	24"	24"	14



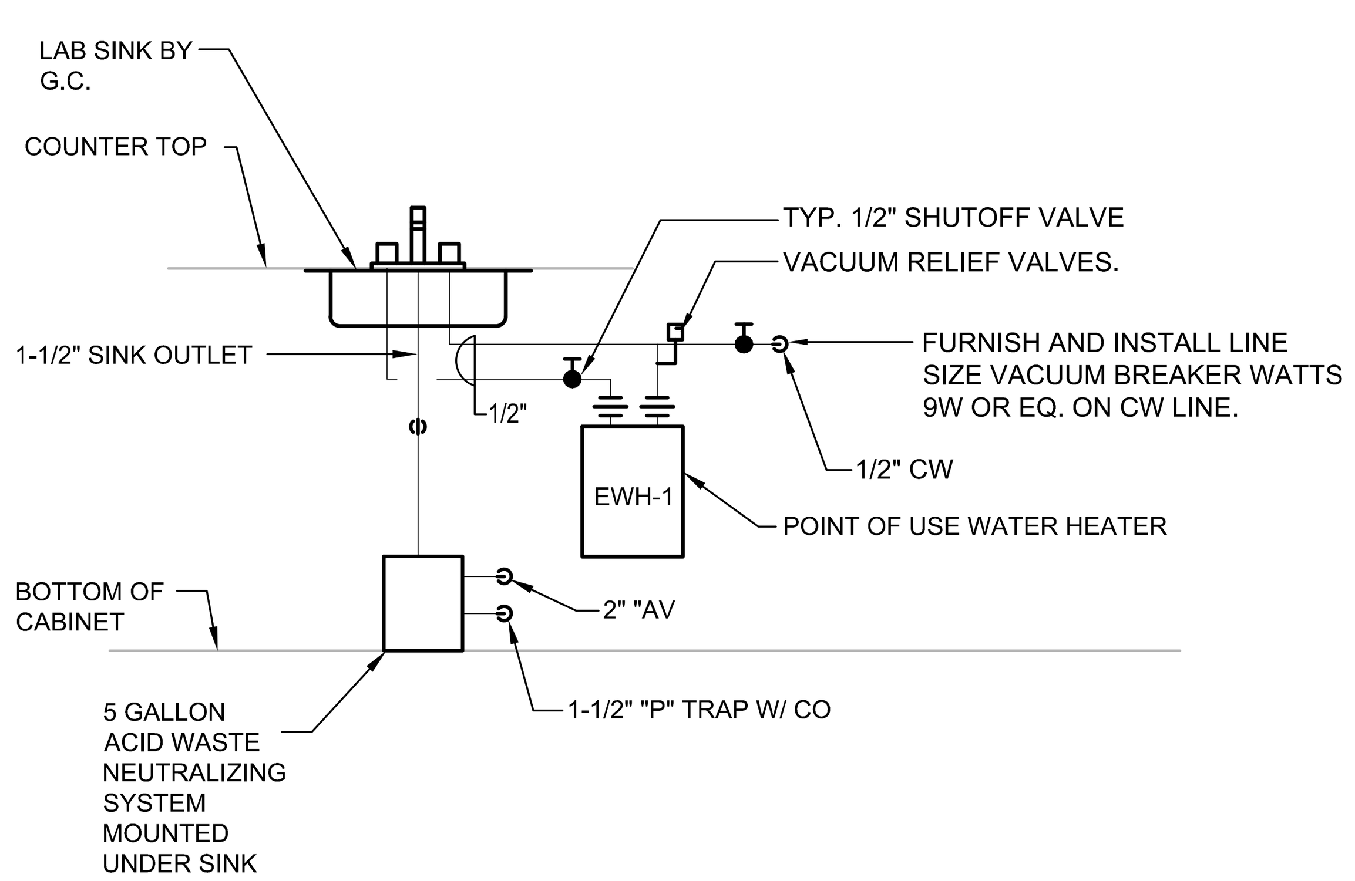
1 WATER METER ASSEMBLY DIAGRAM
SCALE: N.T.S.



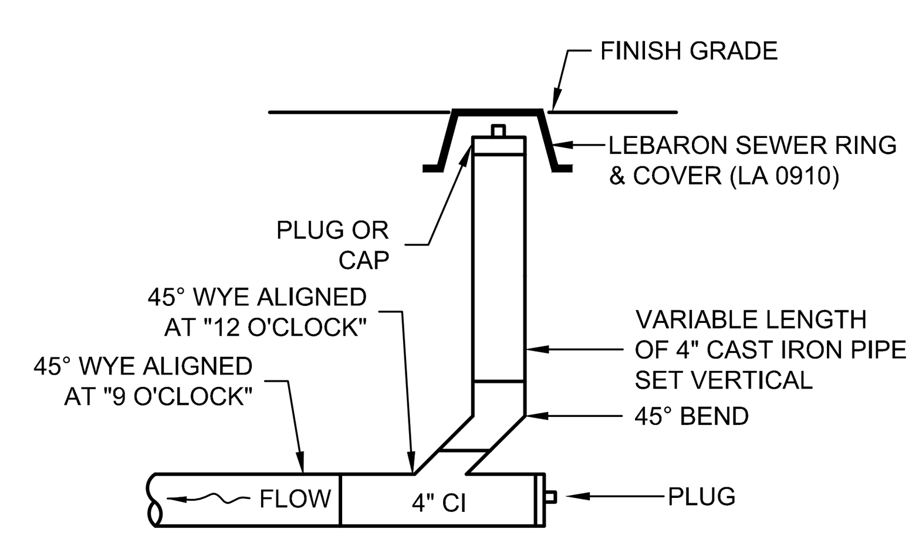
2 REDUCED PRESSURE BACKFLOW PREVENTER
SCALE: N.T.S.



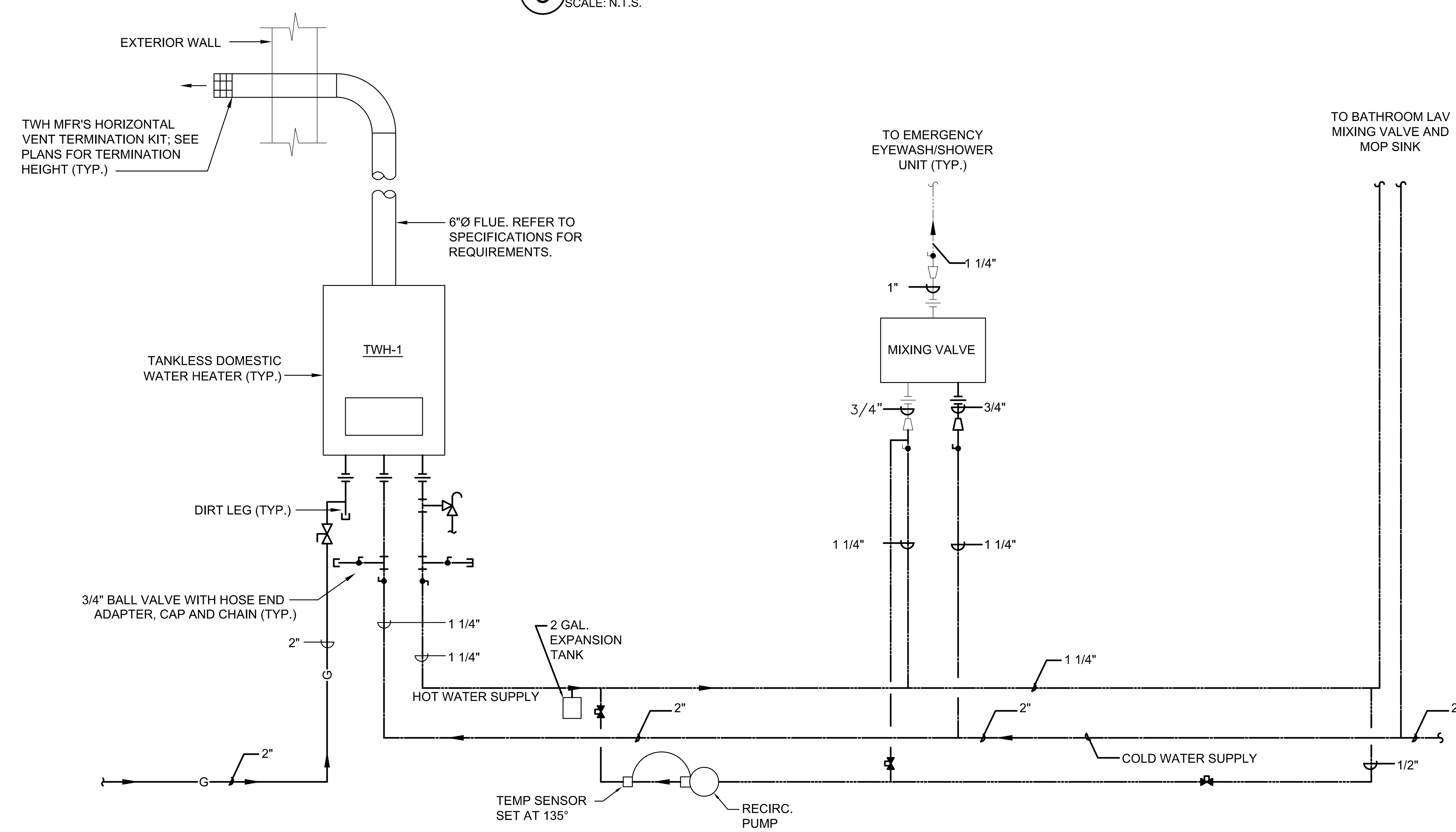
3 PIPE AND HANGER SHIELD DETAIL
SCALE: N.T.S.



4 LAB SINK & POINT-OF-USE WATER HEATER DETAIL
SCALE: N.T.S.



5 GRADE CLEANOUT DETAIL
SCALE: N.T.S.



6 TANKLESS GAS FIRE WATER HEATER DIAGRAM
SCALE: N.T.S.

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Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	RLB
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Checked by	JL
Approved by	MC

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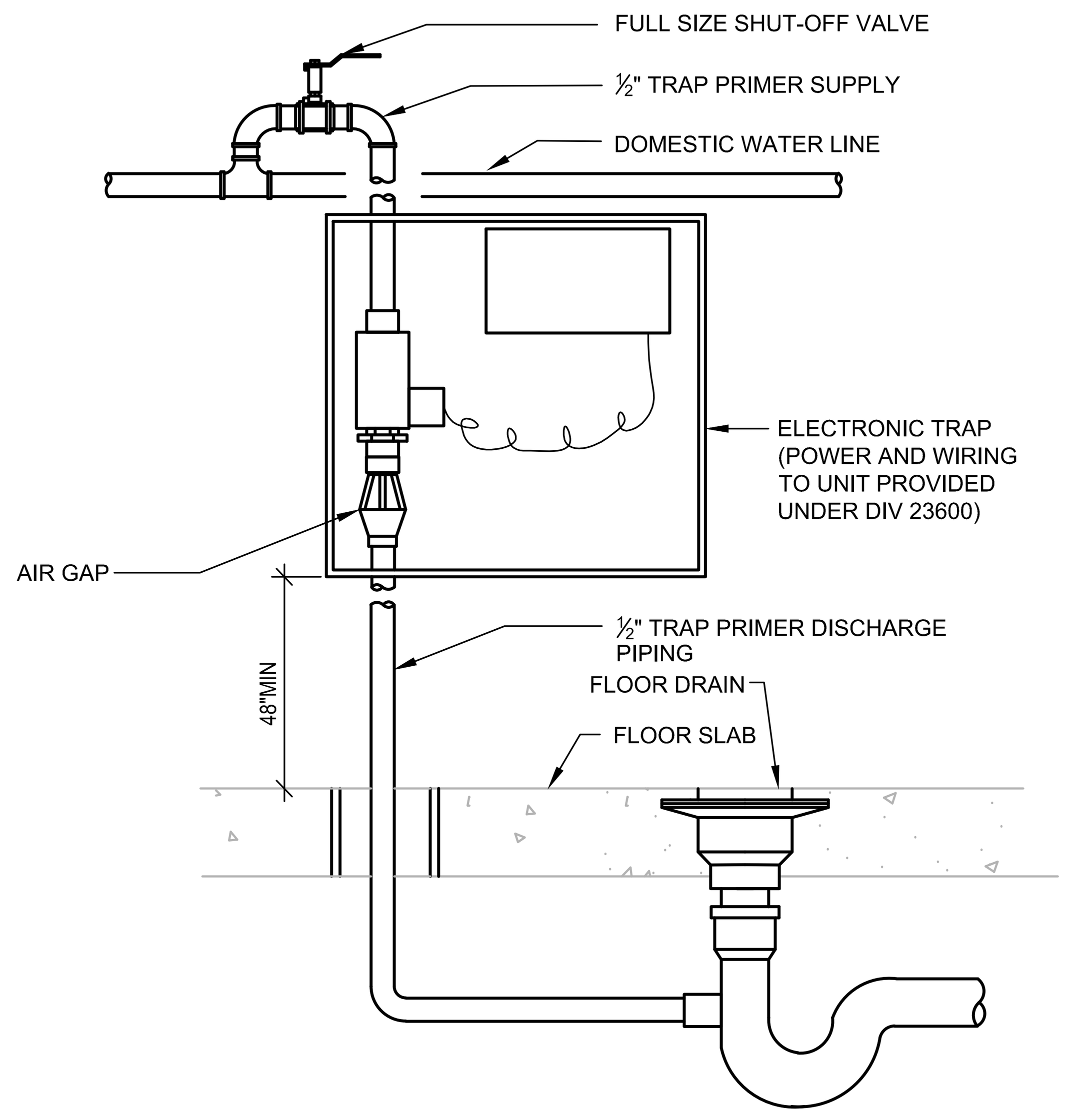
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PLUMBING
DETAILS I

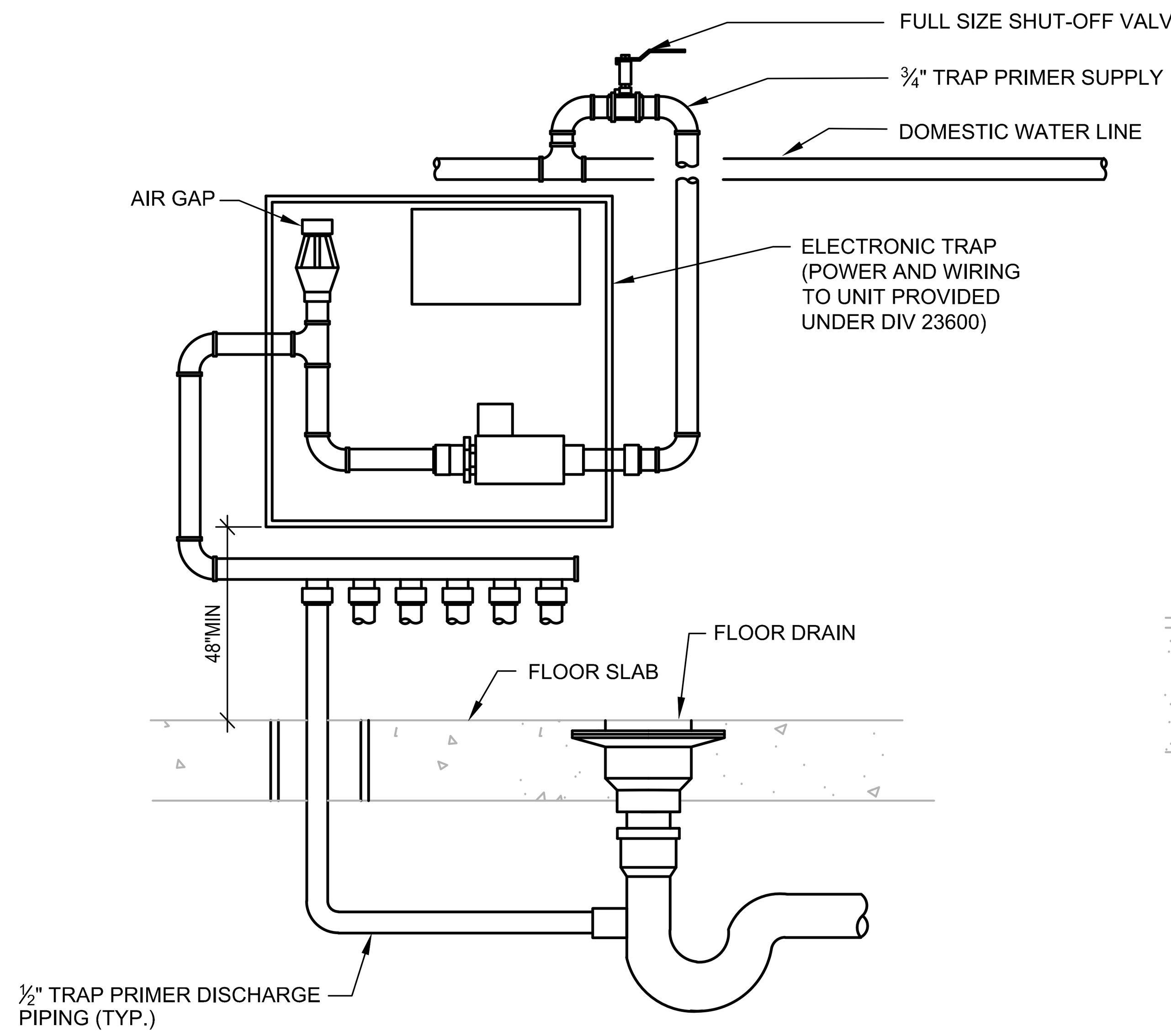
FOR CONSTRUCTION

Sheet No.
P-8

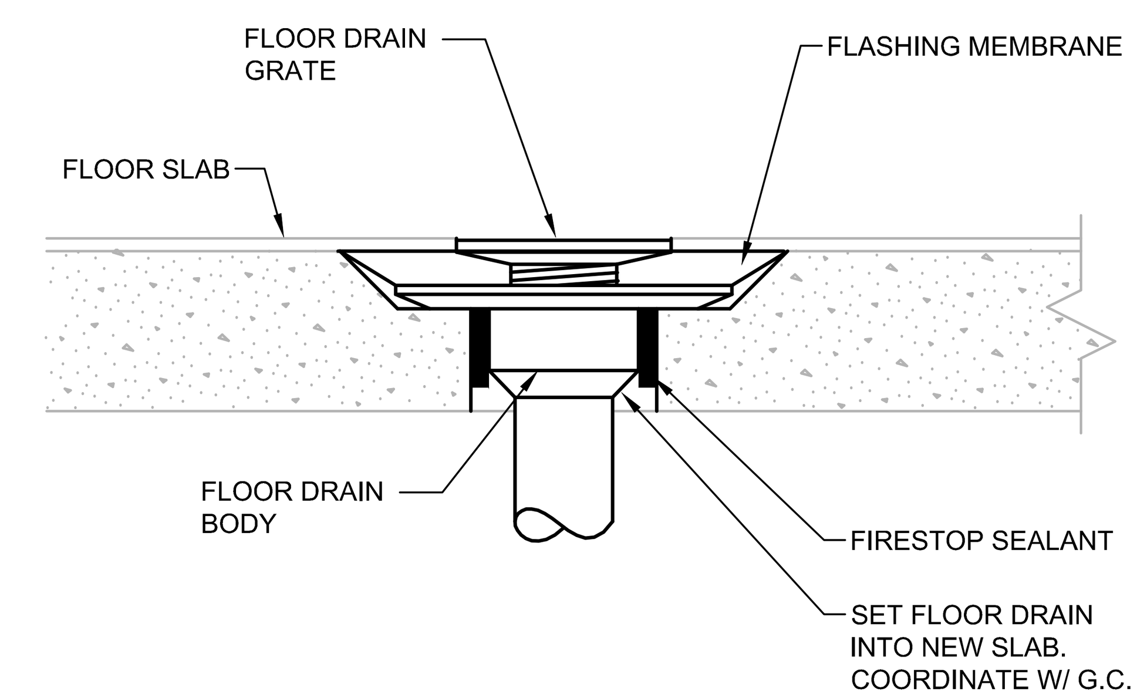
Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 Plumbing Plans.dwg Plot Date: Mar 29,2024-9:04am



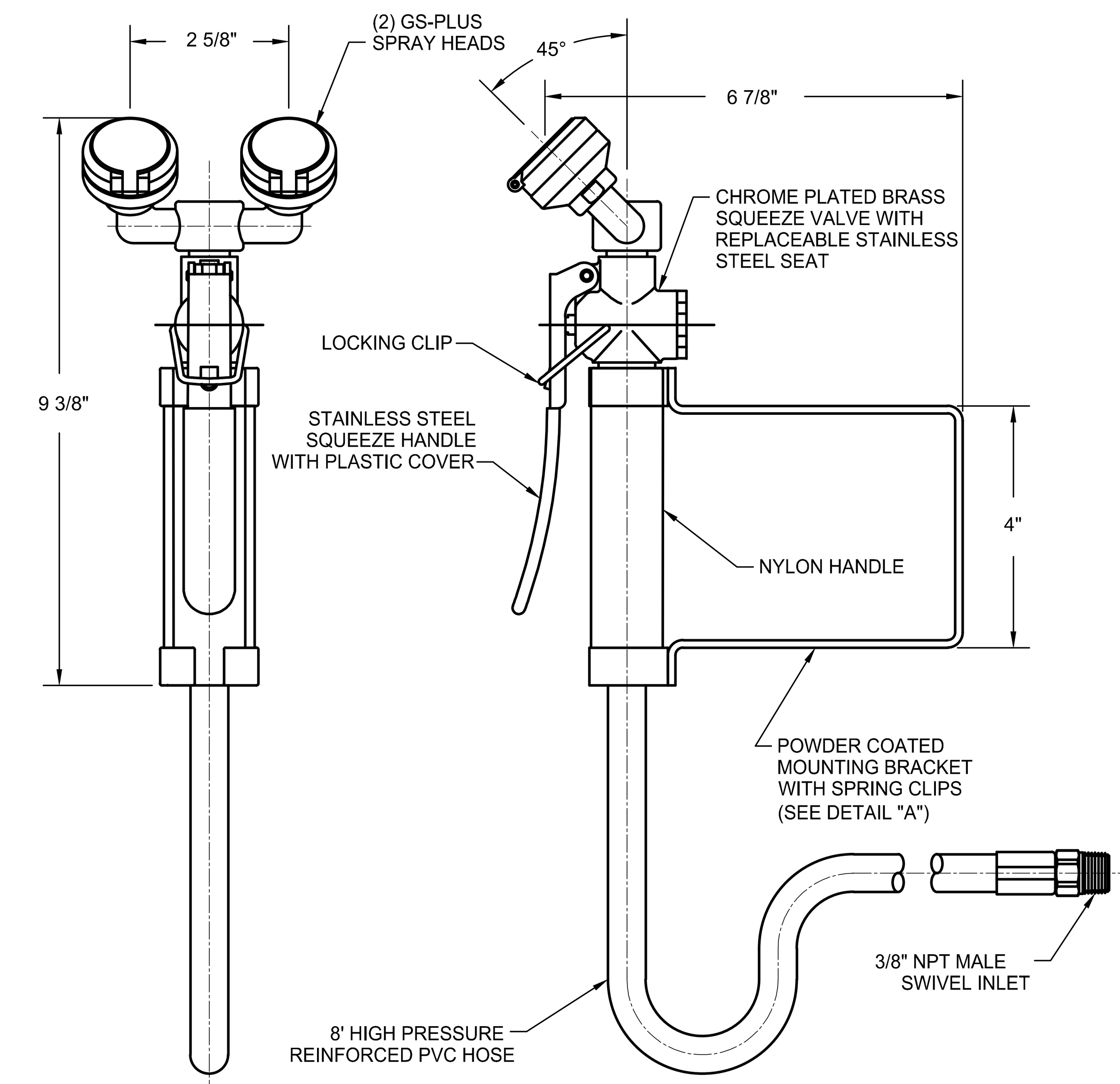
1 SINGLE TRAP PRIMER DETAIL
SCALE: N.T.S.



2 MULTI TRAP PRIMER DETAIL
SCALE: N.T.S.

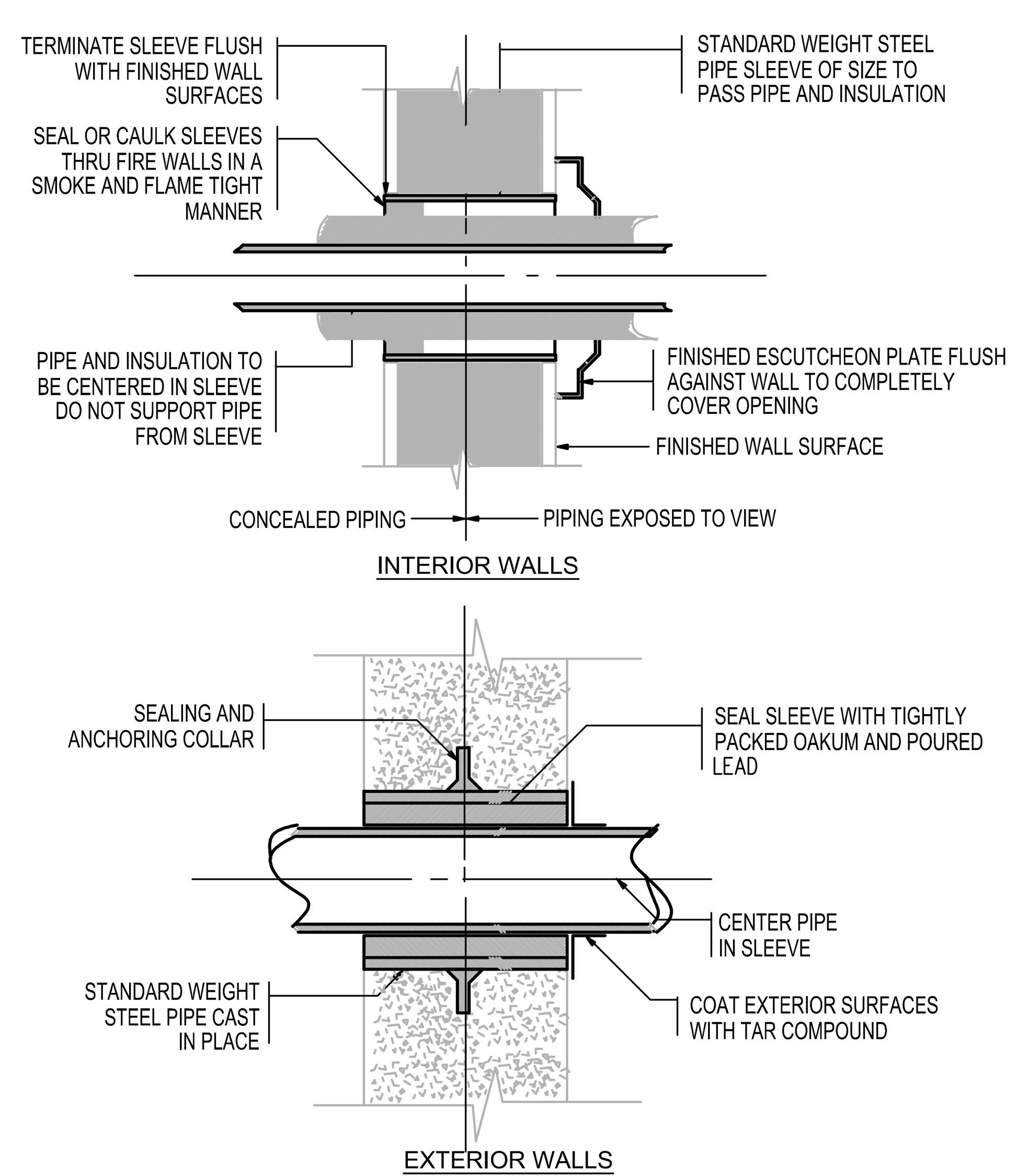


3 FLOOR DRAIN INSTALLATION
SCALE: N.T.S.

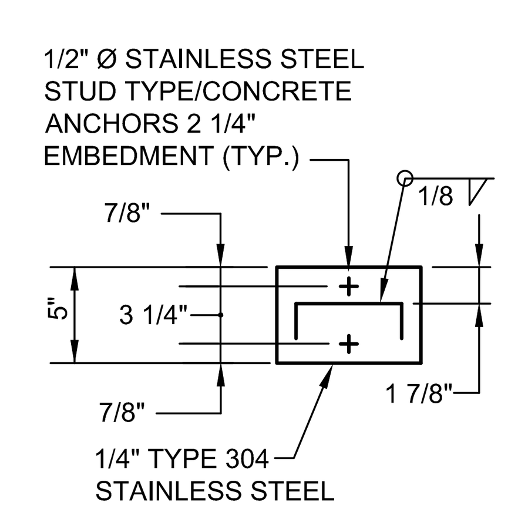


NOTES:
1. EACH GS-PLUS SPRAY HEAD HAS A "FLIP-TOP" DUST COVER, INTERNAL FLOW CONTROL AND FILTER TO REMOVE IMPURITIES FROM THE WATER FLOW.
2. HOSE SHOULD NOT BE USED IN APPLICATIONS WHERE WATER PRESSURE EXCEEDS 90 PSI. HOSE SHOULD BE INSPECTED PERIODICALLY FOR DETERIORATION.

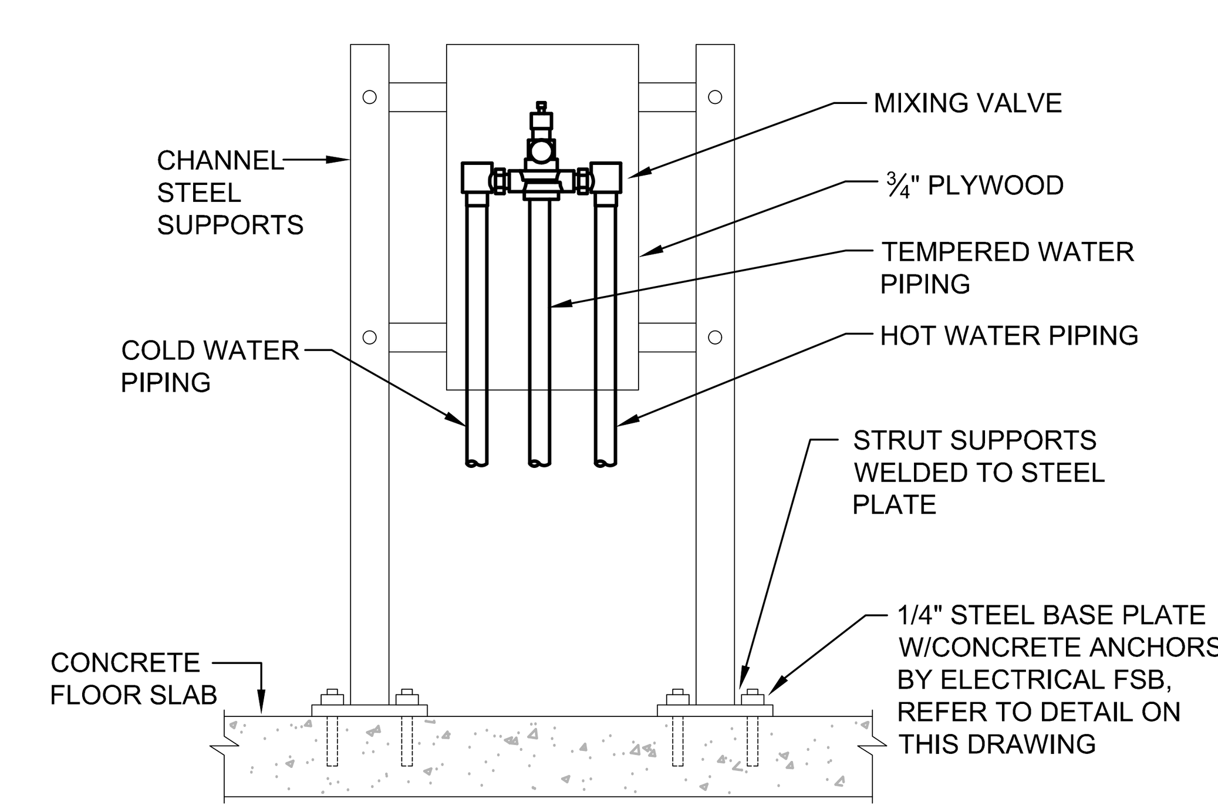
4 EYE WASH/DRENCH HOSE UNIT
SCALE: N.T.S.



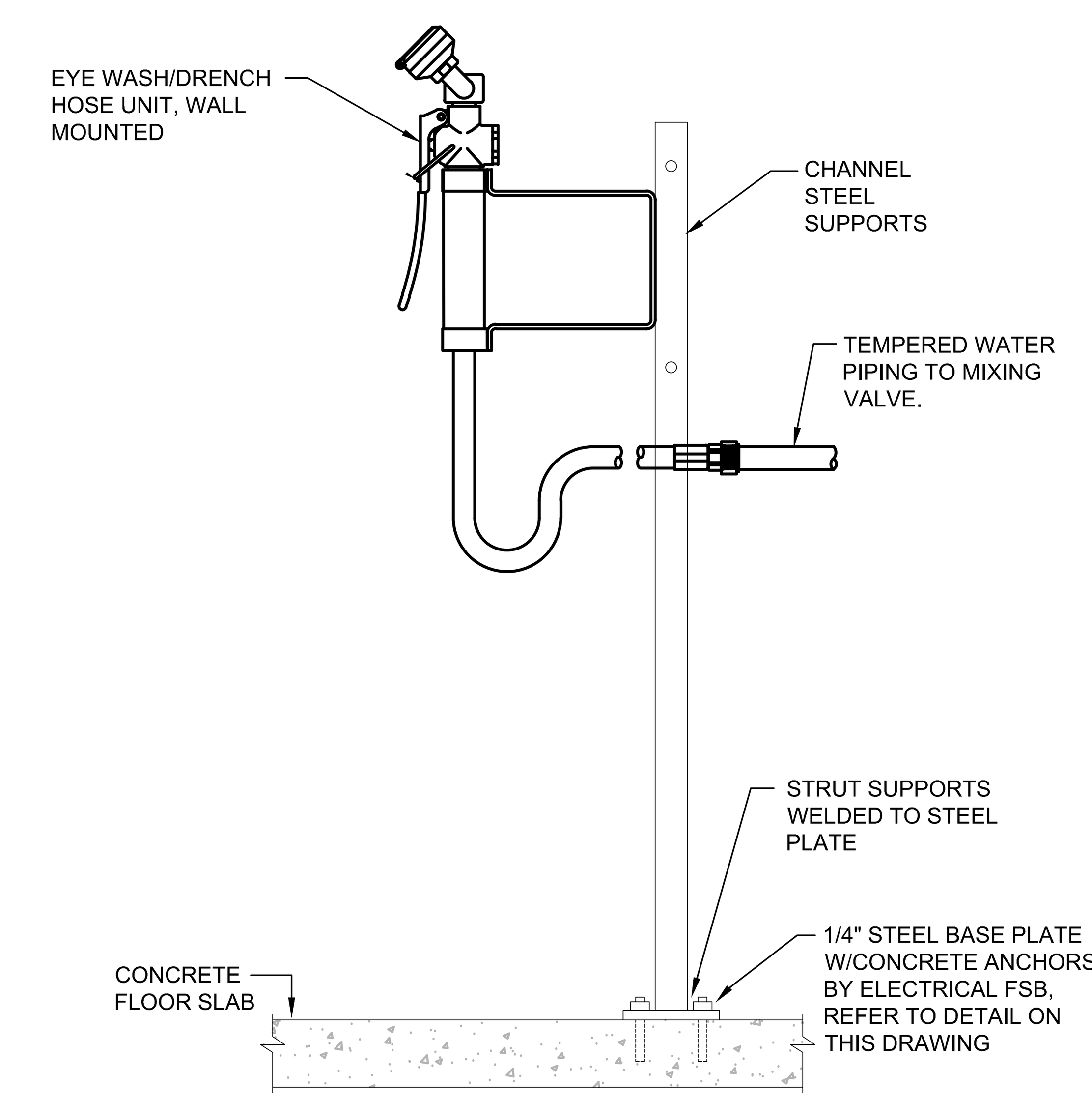
5 PIPING SLEEVE DETAIL
SCALE: N.T.S.



6 1/4" STEEL BASE PLATE DETAIL
SCALE: N.T.S.



7 STANCHION MOUNTING MIXING VALVE DETAIL
SCALE: N.T.S.



8 STANCHION MOUNTING EYE WASH/DRENCH HOSE UNIT
SCALE: N.T.S.

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MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	RLB
Drawn by	RLB
Checked by	JL
Approved by	MC

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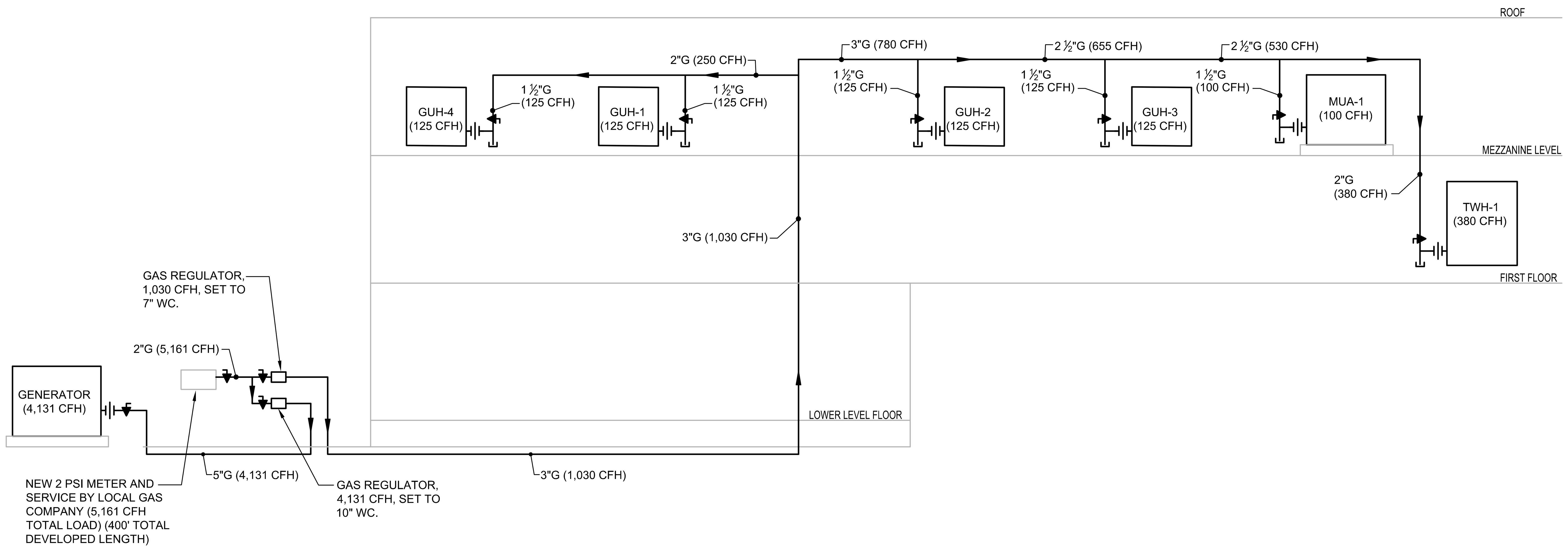
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PLUMBING
DETAILS II

FOR CONSTRUCTION

Sheet No.
P-9

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 Plumbing Plans.dwg Plot Date: Mar 29,2024-9:05am



1 WTP GAS PIPING RISER DIAGRAM
SCALE: N.T.S.

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PLUMBING
DETAILS III

FOR CONSTRUCTION

Sheet No.
P-10

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 Plumbing Plans.dwg Plot Date: Mar 29,2024-9:05am

FIRE PROTECTION NOTES

1. THE WORK COVERED CONSISTS OF FURNISHING ALL LABOR AND MATERIALS NECESSARY TO INSTALL, COMPLETE AND READY FOR CONTINUOUS OPERATION, THE FIRE PROTECTION SYSTEMS, APPARATUS AND EQUIPMENT FOR THIS PROJECT.
2. ALL EQUIPMENT AND MATERIALS FURNISHED UNDER THE FIRE PROTECTION FSB, LABOR AND TESTING PERFORMED HEREIN SHALL BE IN COMPLETE ACCORDANCE WITH THE STATE BUILDING CODE, ALL LOCAL CODES AND REGULATIONS, NATIONAL FIRE PROTECTION ASSOCIATION, INSURANCE REGULATIONS AND REQUIREMENTS GOVERNING SUCH WORK.
3. ANY AND ALL PERMITS REQUIRED FOR INSTALLATION OF ANY MATERIAL SHALL BE OBTAINED AS PART OF THE WORK OF THE SPECIFICATION, INCLUDING ALL FEES OR EXPENSES INCURRED.
4. IT IS THE INTENT OF THESE DOCUMENTS THAT THE ENTIRE BUILDING BE 100% SPRINKLED, INCLUDING ELECTRIC ROOMS.
5. PROVIDE A COMPLETE HYDRAULICALLY CALCULATED SPRINKLER SYSTEM THROUGHOUT THE BUILDING. ALL WORK SHALL BE IN STRICT CONFORMANCE WITH NFPA 13 (2013) AND INCLUDING ALL RULES AND REGULATIONS OF THE LOCAL FIRE DEPARTMENT.
6. SPRINKLERS, PIPING AND THEIR LAYOUT SHOWN ON THE DRAWINGS ARE SCHEMATIC AND ARE SHOWN ON THE DRAWINGS ONLY AS A GUIDE AND AID TO THE CONTRACTOR IN PREPARATION OF THE FABRICATION DRAWINGS. THE SPRINKLERS, PIPING AND THEIR LAYOUT ARE NOT INTENDED TO SHOW EVERY OFFSET AND FITTING. ADDITIONAL OFFSETS AND FITTINGS WILL BE REQUIRED TO BE INSTALLED WHEN COORDINATING WITH ALL TRADES TO AVOID WHERE CONFLICTS MAY OCCUR THAT MAY NOT BE INDICATED ON THE DRAWINGS, SUCH AS, BUT NOT LIMITED TO: BEAMS, COLUMNS, DUCTWORK, LIGHTING, OR PIPING. MODIFICATION TO THE SPRINKLER SPACING WILL BE ALLOWED AT NO COST TO THE PROJECT SUBJECT TO ARCHITECT'S/ENGINEER'S APPROVAL AND CONTINUED COMPLIANCE WITH NFPA 13 (2013).
7. THE FIRE PROTECTION CONTRACTOR SHALL PREPARE WORKING DRAWINGS OF THE SPRINKLER WORK AND OBTAIN APPROVALS FROM THE LOCAL FIRE DEPARTMENT PRIOR TO INSTALLATION.
8. ROUTING OF SPRINKLER MAINS, BRANCHES AND SPRINKLERS SHALL BE THOROUGHLY COORDINATED WITH OTHER TRADES AND THE BUILDING STRUCTURE PRIOR TO SUBMISSION OF COORDINATED SHOP DRAWINGS.
9. SPRINKLERS IN AREAS WITH NO FINISHED CEILING SHALL BE UPRIGHT TYPE, LOCATED AS HIGH AS POSSIBLE. SPRINKLERS SUBJECT TO POTENTIAL PHYSICAL DAMAGE SHALL BE INSTALLED WITH LISTED PROTECTIVE CAGES.
10. SPRINKLERS INSTALLED BELOW SLOPED CEILINGS OR ROOFS, SHALL BE INSTALLED IN STRICT ACCORDANCE TO NFPA 13 (2013) AND SPRINKLER MANUFACTURER'S INSTALLATION LISTING.
11. SPRINKLERS IN AREAS WITH FINISHED CEILING SHALL BE CONCEALED TYPE WITH FACTORY PAINTED COVER PLATES. COVER PLATE COLORS SHALL BE COORDINATED WITH ENGINEER FOR FINAL APPROVAL OF THE COLOR SELECTION.
12. SPRINKLERS SHALL BE LOCATED ABOVE AND BELOW ALL DUCTWORK GREATER THAN 4'-0" IN WIDTH.
13. MISCELLANEOUS DISCREPANCIES OR OMISSIONS WHICH MIGHT APPEAR ON THE DRAWINGS OR IN THE SPECIFICATIONS WILL NOT RELIEVE THE FIRE PROTECTION SUB-CONTRACTOR OF CODE COMPLIANCE.
14. SPRINKLER PIPING SHALL NOT BE INSTALLED TO PASS OVER ELECTRIC PANELS. PROVIDE SHEET METAL PROTECTIVE SHIELDS OVER ELECTRIC PANELS.
15. BACKFLOW PREVENTION DEVICES SHALL BE PROVIDED WITH A HOSE VALVE TEST HEADER ASSEMBLY PIPED TO EXTERIOR OR OTHER ACCEPTED MEANS THAT ALLOWS FOR FULL FLOW TESTING OF SYSTEM DEMAND IN ACCORDANCE WITH NFPA 13 (2013).
16. REFER TO DESIGN CRITERIA FOR SPRINKLER DENSITY AND AREA OF APPLICATION.
17. REFER TO ARCHITECTURAL SECTIONS AND ELEVATIONS FOR EXACT LOCATION OF EXTERIOR PENETRATIONS.

FIRE PROTECTION DESIGN CRITERIA

1. FIRE SUPPRESSION CRITERIA
   - A. THE FIRE PROTECTION FSB SHALL MAKE PROVISIONS FOR OBTAINING UPDATED HYDRANT FLOW TEST INFORMATION FOR THIS PROJECT. ANY FLOW TEST INFORMATION NOTED IN THE CONTRACT DOCUMENTS ARE CONSIDERED PRELIMINARY. A NEW FLOW TEST SHALL BE REQUIRED AT THIS CONTRACTOR'S EXPENSE.
   - B. THE FOLLOWING SPRINKLER DESIGN DENSITIES SHALL BE USED FOR SPRINKLER SYSTEM PIPE SIZING:

     ORDINARY HAZARD OCCUPANCIES GROUP 1

     DESIGNED FOR 0.15 GPM OVER THE MOST REMOTE 1500 SQUARE FEET. MAXIMUM SPACING OF 130 SQUARE FEET PER SPRINKLER, UNLESS NOTED OTHERWISE. INCLUDE 250 GPM FOR INSIDE HOSE STREAM ALLOWANCE AS PART OF THE CALCULATION. MAXIMUM VELOCITIES SHALL NOT EXCEED 20 FEET PER SECOND.
   - C. FIRE PROTECTION SIGNALING SYSTEMS CONTROL EQUIPMENT AND ANNUNCIATOR PANEL ARE SHOWN ON THE ELECTRICAL DRAWINGS.
   - D. THE SPRINKLER LAYOUT SHOWN ON THESE DRAWINGS SHALL BE HYDRAULICALLY CALCULATED. THE RESULTS OF THE HYDRAULIC CALCULATION SHALL SHOW THAT THERE IS SUFFICIENT PRESSURE TO OPERATE THE REQUIRED NUMBER OF SPRINKLERS AT THE MOST REMOTE DESIGN AREAS. PIPE SIZES AND NODE LOCATIONS HAVE BEEN SHOWN ON THE DRAWINGS TO INDICATE DESIGN INTENT.
   - E. THE SPRINKLER CONTRACTOR SHALL FOLLOW THE DESIGN CRITERIA INDICATED ON THE DRAWINGS, BUT WILL BE ALLOWED TO VARY THE PIPE SIZES TO ALLOW FOR COORDINATION AND MINOR CHANGES IN THE PREPARATION.
2. SEQUENCE OF OPERATION
   - A. WET SPRINKLER SYSTEM: THE WET PIPE SYSTEM EMPLOYS AUTOMATIC (CLOSED FUSIBLE LINK) SPRINKLERS ATTACHED TO PIPING CONTAINING WATER UNDER PRESSURE AT ALL TIMES. WHEN A FIRE OCCURS, INDIVIDUAL SPRINKLERS ARE ACTIVATED BY HEAT AND WATER FLOWS IMMEDIATELY. THE FLOW OF WATER RAISES THE ALARM CHECK VALVE CLAPPER FROM ITS SEAT, THIS ALLOWS WATER TO ENTER THE ALARM LINE. THE FLOW SWITCH ON THE ALARM LINE ACTIVATES A LOCAL AUDIBLE ALARM PROVIDING AN ELECTRIC SIGNAL, WHICH IS SENT TO THE FIRE ALARM CONTROL PANEL, THIS SIGNAL IS FORWARDED TO THE LOCAL FIRE DEPARTMENT. A FIRE DEPARTMENT CONNECTION IS CONNECTED TO THE SUPPLY SIDE OF THE SYSTEM FOR USE BY THE LOCAL FIRE DEPARTMENT PUMPER TRUCK.
3. TESTING CRITERIA FOR FINAL ACCEPTANCE
   - A. APPROVAL OF SPRINKLER SYSTEM: THE INSTALLING SPRINKLER CONTRACTOR SHALL:
     - a. NOTIFY THE AUTHORITY HAVING JURISDICTION AND OWNER'S REPRESENTATIVE OF THE TIME AND DATE TESTING WILL BE PERFORMED.
     - b. PERFORM ALL REQUIRED ACCEPTANCE REQUIREMENTS LISTED IN NFPA 13 (2013) HYDROSTATIC TESTS.
     - c. COMPLETE AND SIGN THE APPROPRIATE CONTRACTOR'S MATERIAL AND TEST CERTIFICATES.
   - B. COMPLETE AS-BUILT DRAWINGS AS SPECIFIED.

FIRE PROTECTION LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
		NEW WORK PIPING (INDICATED AS HEAVY LINE)
F	F	FIRE SERVICE BELOW GRADE OR BURIED
F	F	FIRE SERVICE MAIN
WS	WS	WET SPRINKLER PIPE
SD	SD	SPRINKLER DRAIN
FDC	FDC	FIRE DEPARTMENT CONNECTION PIPE
		PIPE TEE LOOKING UP
		PIPE TEE LOOKING DOWN
	UP	PIPE ELBOW UP
	DN/DROP	PIPE ELBOW DOWN OR DROP
	CONT	CONTINUATION
		FLOW IN DIRECTION OF ARROW
	UN	UNION
	PG	PRESSURE GAUGE WITH PETCOCK
	CV	CHECK VALVE
	GV	GATE VALVE
TS	TS	GATE VALVE WITH TAMPER SWITCH
	PRV	PRESSURE REDUCING/REGULATING VALVE
TS	OS&Y W/TS	OS & Y GATE VALVE WITH TAMPER SWITCH
TS	BV W/TS	BALL VALVE WITH TAMPER SWITCH
	VIV	VALVE IN VERTICAL
TS	VIV W/TS	VALVE IN VERTICAL WITH TAMPER SWITCH
	WACV	ALARM CHECK VALVE (WET SYSTEM)
	DACV	ALARM CHECK VALVE (DRY SYSTEM)
P	PIV W/TS	POST INDICATOR VALVE W/TAMPER SWITCH
	DCVA	HORIZONTAL DOUBLE CHECK VALVE ASSEMBLY
	WTS	WATER TIGHT SLEEVE
	DV	DRAIN VALVE WITH HOSE END
	FDV	FIRE DEPARTMENT VALVE
	SCF	SIAMESE CONNECTION (FLUSH)
	SCE	SIAMESE CONNECTION (EXPOSED)
	SZC	STORZ CONNECTION
		CONCEALED SPRINKLER
		PENDENT WET SPRINKLER
		UPRIGHT SPRINKLER
G		UPRIGHT SPRINKLER W/ PROTECTIVE GUARD

FIRE PROTECTION LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
#		NODE NUMBER
#		SPRINKLER NUMBER
NAS	NAS	NO AUTOMATIC SPRINKLERS
FP-1		DIAGRAM NO. & DWG. NO. REFERENCE
DC	DC	DRESSER COUPLING
	EB	ELECTRIC BELL
	AFF	ABOVE FINISHED FLOOR
	AFG	ABOVE FINISHED GRADE
	LFPC	LIMIT OF FIRE PROTECTION CONTRACT
	NFPC	NOT IN FIRE PROTECTION CONTRACT
	GC	GENERAL CONTRACTOR
	FPC	FIRE PROTECTION CONTRACTOR
	PC	PLUMBING CONTRACTOR
	EC	ELECTRICAL CONTRACTOR
	HVAC	HVAC CONTRACTOR
	FI	FURNISH & INSTALL
	CFOI	CONTRACTOR FURNISHED / OWNER INSTALLED
	OFCI	OWNER FURNISHED / CONTRACTOR INSTALLED
	FFE	FINISHED FLOOR ELEVATION
	WSE	WATER SERVICE ENTRANCE

NOTE- NOT ALL SYMBOLS APPEAR ON DRAWINGS

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

FIRE PROTECTION
LEGEND AND GENERAL NOTES

FOR CONSTRUCTION

Sheet No.

FP-1

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 FirePro Plans.dwg Plot Date: Mar 29,2024-8:50am

LOWER LEVEL PLAN

SCALE: 3/16"=1'-0"

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TOWN OF SHARON, MA

FIRE PROTECTION
LOWER LEVEL PLAN

FOR CONSTRUCTION

Sheet No.

FP-2

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 FirePro Plans.dwg Plot Date: Mar 29,2024-8:52am

FIRST FLOOR PLAN

SCALE: 3/16"=1'-0"

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

FIRE PROTECTION
FIRST FLOOR PLAN

FOR CONSTRUCTION

Sheet No.

FP-3

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 FirePro Plans.dwg Plot Date: Mar 29,2024-8:53am

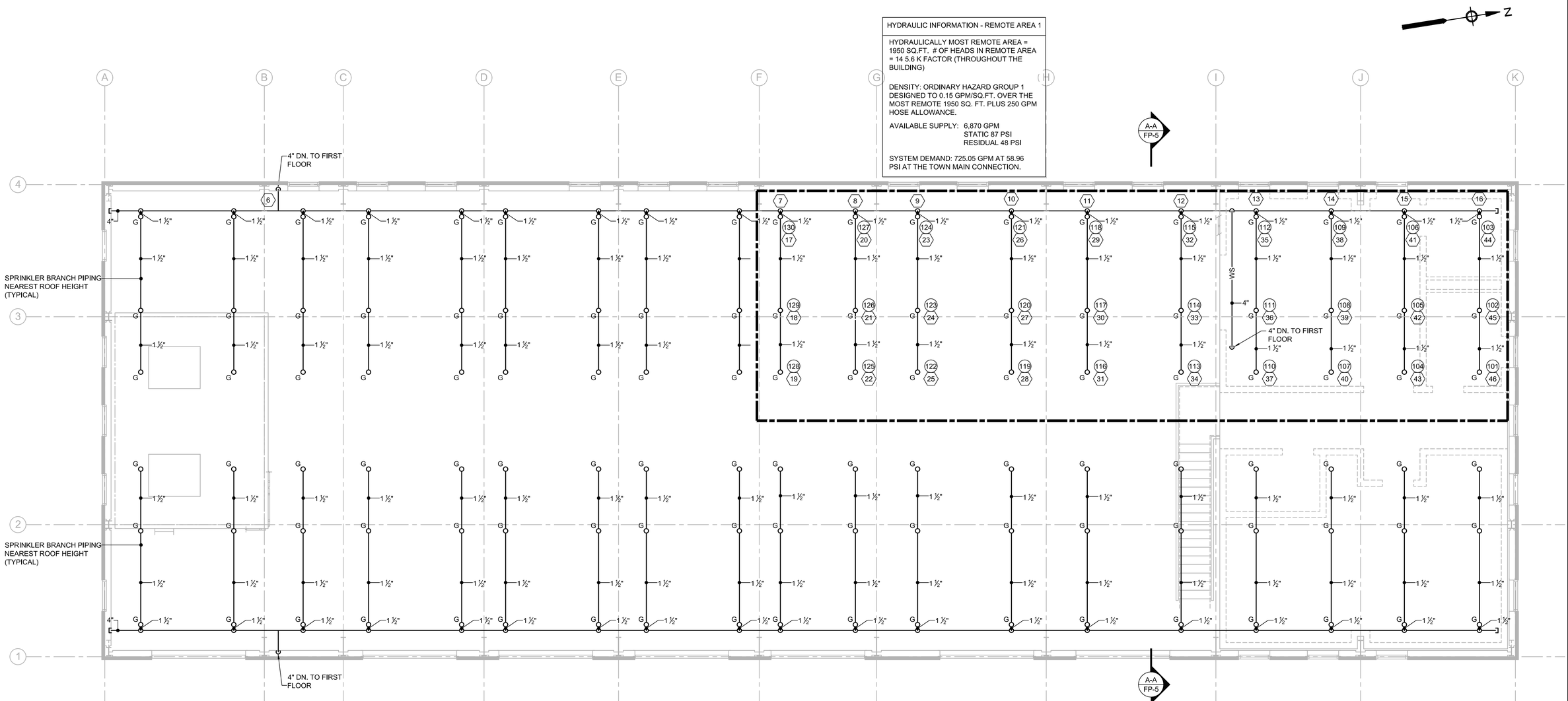
HYDRAULIC INFORMATION - REMOTE AREA 1

HYDRAULICALLY MOST REMOTE AREA = 1950 SQ.FT. # OF HEADS IN REMOTE AREA = 14 5.6 K FACTOR (THROUGHOUT THE BUILDING)

DENSITY: ORDINARY HAZARD GROUP 1 DESIGNED TO 0.15 GPM/SQ.FT. OVER THE MOST REMOTE 1950 SQ. FT. PLUS 250 GPM HOSE ALLOWANCE.

AVAILABLE SUPPLY: 6,870 GPM
STATIC 87 PSI
RESIDUAL 48 PSI

SYSTEM DEMAND: 725.05 GPM AT 58.96 PSI AT THE TOWN MAIN CONNECTION.



UPPER LEVEL PLAN

SCALE: 3/16"=1'-0"

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JAMES A. LUCE PLUMBING No. 33004 REGISTERED

MARK	DATE	DESCRIPTION

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

FIRE PROTECTION
MEZZANINE PLAN

FOR CONSTRUCTION

Sheet No.

FP-4

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Plumbing Department\23006.00 FirePro Plans.dwg Plot: Date: Mar 29,2024-8:53am

SECTION A-A

SCALE: 3/16"=1'-0"

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JAMES A. LUCE PLUMBING No. 39890

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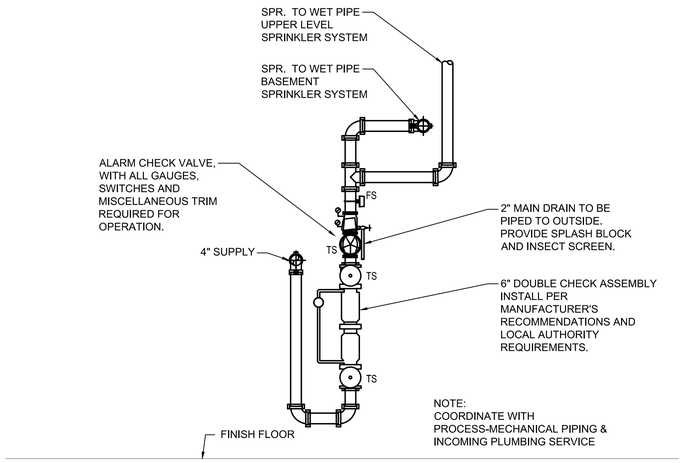
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

FIRE PROTECTION SECTIONS

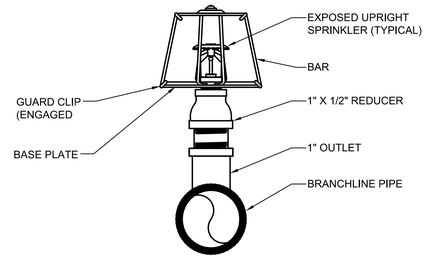
FOR CONSTRUCTION

Sheet No.

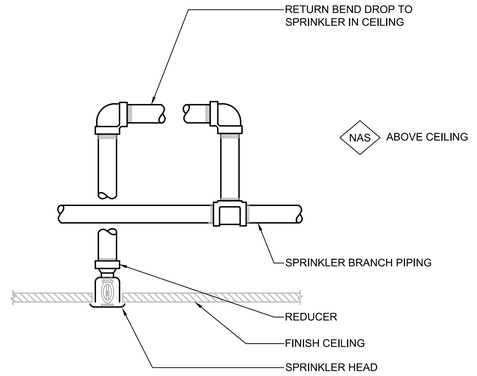
FP-5



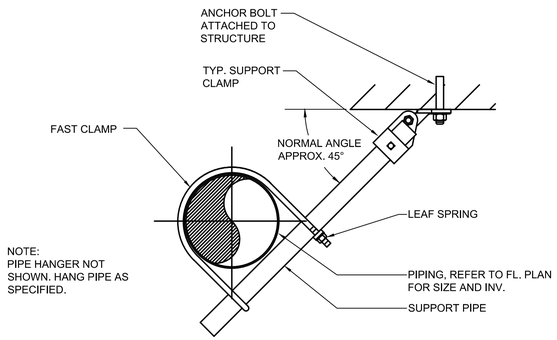
1 WET SPRINKLER RISER ASSEMBLY DIAGRAM
SCALE: N.T.S.



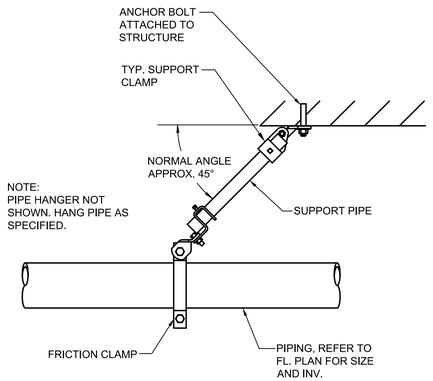
2 UPRIGHT SPRINKLER W/ GUARD
SCALE: N.T.S.



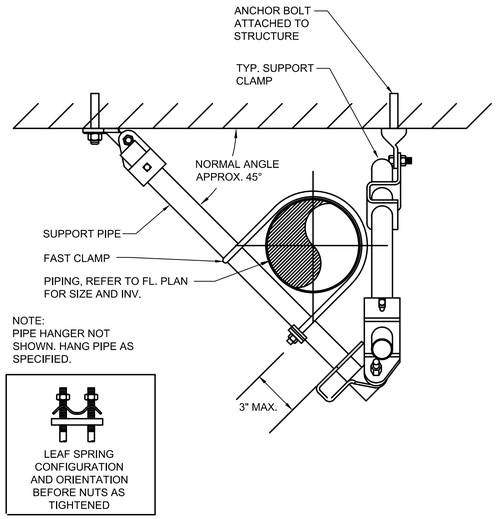
3 CONCEALED SPRINKLER DIAGRAM
SCALE: N.T.S.



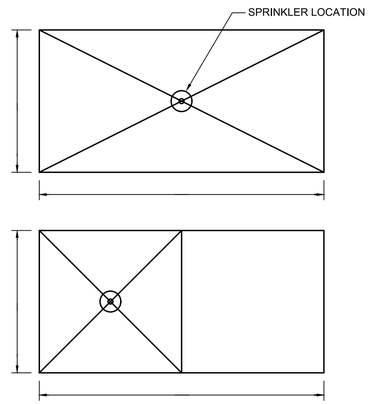
4 LATERAL SEISMIC BRACING DIAGRAM
SCALE: N.T.S.



5 LONGITUDINAL SEISMIC BRACING
SCALE: N.T.S.



6 4-WAY LONGITUDINAL SEISMIC BRACING
SCALE: N.T.S.



6 SPRINKLER LOCATION IN CEILING TILES
SCALE: N.T.S.

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TOWN OF SHARON, MA

FIRE PROTECTION DETAILS

FOR CONSTRUCTION

Sheet No.

FP-6

ELECTRICAL SYMBOLS

F1 / 1 a — LINEAR LIGHTING FIXTURES
"F1" INDICATES FIXTURE TYPE - TYPICAL FOR ALL FIXTURES
"1" INDICATES CIRCUIT NUMBER - TYPICAL FOR ALL FIXTURE
"a" INDICATES THE SWITCH CONTROL - TYPICAL FOR ALL FIXTURES

WALL MOUNTED LIGHTING FIXTURE.

SURFACE OR PENDANT MOUNTED FIXTURE.

EMERGENCY EXIT SIGN, DIRECTIONAL ARROW WHERE INDICATED

EMERGENCY LIGHTING BATTERY UNIT WITH TWO LIGHT HEADS

REMOTE EMERGENCY LIGHTING UNIT WITH TWO LIGHTING HEADS
PROVIDE 3/4", 2#10, 1#10GND TO NEAREST THE EMERGENCY LIGHTING BATTERY UNIT

S_a — SINGLE POLE SWITCH 120V, 20A
"a" INDICATES THE SWITCH CONTROL

S_2 — 2-POLE SWITCH 120V, 20A
1 POLE FOR ROOM LIGHT FIXTURES, 1-POLE FOR EXHAUST FAN CONTROL

S_{3a} — 3-WAY SWITCH 120V, 20A
"a" INDICATES THE SWITCH CONTROL

S_{4a} — 4-WAY SWITCH 120V, 20A
"a" INDICATES THE SWITCH CONTROL

S^{BG} — BREAK GLASS STATION

TC — DIGITAL TIME CLOCK SWITCH

TM — MECHANICAL TIMER SWITCH

OC — WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR/SWITCH

S — LOW VOLTAGE SWITCH

OC — CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR

MS — CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR

1 — DUPLEX RECEPTACLE, WEATHER-RESISTANT 120V, 20A
WITH WEATHERPROOF COVER
"1" INDICATES CIRCUIT NUMBER - TYPICAL FOR ALL RECEPTACLES

GFI — DUPLEX RECEPTACLE, 120V, 20A
"GFI" INDICATES GROUND FAULT INTERRUPT TYPE

WP — (2) DUPLEX (QUAD) RECEPTACLES, 120V, 20A
"WP" INDICATES WITH WEATHERPROOF COVER

TL — SIMPLEX RECEPTACLE, WEATHER-RESISTANT 120V, 20A
WITH WEATHERPROOF COVER
"TL" INDICATES TWIST LOCK TYPE

30 — UNFUSED DISCONNECT SWITCH, "30" INDICATES 30 AMP RATING,
PROVIDE 3-POLE, UNLESS OTHERWISE INDICATED.

F 20 — FUSED DISCONNECT SWITCH, "20" INDICATES 20 AMP FUSE RATING, PROVIDE
3-POLE UNLESS OTHERWISE INDICATED.

3-PHASE RECEPTACLE

CELLULAR ANTENNA

ELECTRICAL SYMBOLS

AR1 — ALARM RELAY, "AR1" REFERS TO RELAY NAME DESIGNATION

CR1 — CONTROL RELAY, "CR1" REFERS TO RELAY NAME DESIGNATION

M — MOTOR START RELAY

TR1 — TIMING RELAY, "TR1" REFERS TO RELAY NAME DESIGNATION

NORMALLY OPEN RELAY CONTACT

NORMALLY CLOSED RELAY CONTACT

OPERATOR PUSH BUTTON NORMALLY OPEN CONTACT

OPERATOR PUSH BUTTON NORMALLY CLOSED CONTACT

PRESSURE SWITCH - CLOSES ON HIGH PRESSURE

PRESSURE SWITCH - CLOSES ON LOW PRESSURE

FLOAT LEVEL SWITCH - CLOSES ON HIGH LEVEL

FLOAT LEVEL SWITCH - CLOSES ON LOW LEVEL

OS-XXXX / YYY — OPERATOR STATION (SUPPLIED BY DIV. 16 UNO), "XXXX" REFERS TO TAGNAME ID, "YYY" REFERS TO THE TYPE OF OPERATOR STATION

HS-XXXX — SPRING RETURN OPEN/CLOSE PUSHBUTTON, DUAL CONTACT FOR EACH POSITION (SUPPLIED BY DIV. 16 UNO), "XXXX" REFERS TO TAGNAME ID

XX-XXXX — UNLESS OTHERWISE NOTED INSTRUMENTATION OR PROCESS EQUIPMENT (SUPPLIED BY OTHER DIVISIONS) "XX-XXXX" REFERS TO TAGNAME ID

E — GENERATOR EMERGENCY STOP

MPCP — METERING PUMP CONTROL PANEL (SUPPLIED BY DIV. 13)

ISBP — INTRICATELY SAFE BARRIER PANEL (SUPPLIED BY DIV. 13)

0 — OCCUPIED/UNOCCUPIED SELECTOR SWITCH. (SUPPLIED BY DIV. 15)

T — THERMOSTAT (SUPPLIED BY DIV. 15)

C — HVAC EQUIPMENT CONTROLLER (SUPPLIED BY DIV. 15)

M — MOTOR OPERATED DAMPER (SUPPLIED BY DIV. 15)

WS — MANUAL WALL SWITCH (BY DIV. 15)

S — REFRIGERANT SENSOR (BY DIV. 15)

F / XKW — ELECTRIC UNIT HEATER WITH FAN, "X" INDICATES UNIT ELECTRIC COIL RATING (SUPPLIED BY DIV. 15)

CUH 1 / P11-LP (21) — EQUIPMENT CIRCUIT NUMBER DESIGNATION TO PANEL PP1-LP CIRCUIT #21,

A / A — UNDERGROUND DUCTBANK SECTION REFERENCE, "A" INDICATES THE REFERENCED DUCTBANK SECTION

ELECTRICAL SYMBOLS

UNDERGROUND CONDUIT DUCT BANK

PP1(1) — HOMERUN DESIGNATION TO PANEL PP1 CIRCUIT #1, WITH THE FOLLOWING CONDUIT/WIRES UNLESS OTHERWISE NOTED:
- 3/4"C WITH 2#12, 1#12GND FOR 20AMP SINGLE PHASE CIRCUITS.
- 3/4"C WITH 3#12, 1#12GND FOR 20AMP THREE PHASE CIRCUITS.
- 3/4"C WITH 2#10, 1#10GND FOR 30AMP SINGLE PHASE CIRCUITS.
- 3/4"C WITH 3#10, 1#10GND FOR 30AMP THREE PHASE CIRCUITS.
- 3/4"C WITH 2#8, 1#10GND FOR 40AMP & 50AMP SINGLE PHASE CIRCUITS.
- 3/4"C WITH 3#8, 1#10GND FOR 40AMP & 50AMP THREE PHASE CIRCUITS.

EYS TYPE CONDUIT SEAL, FILL WITH ELECTRICAL PUTTY SEAL FOR NON-NEMA 7 AREAS AND EXPLOSION PROOF PUTTY SEAL FOR NEMA 7 AREAS

SPD — SURGE PROTECTION DEVICE

UTILITY POLE

20/100 GFCI — MOLDED CASE CIRCUIT BREAKER, 3-POLE UNLESS OTHERWISE INDICATED, "20" INDICATES TRIP AMPERE RATING, "100" INDCATES FRAME SIZE, "GFCI" INDICATES CIRCUIT BREAKER TO HAVE GROUND FAULT CIRCUIT INTERRUPT

DRY TYPE TRANSFORMER

MCP / FVNR / SIZE X — WALL MOUNTED COMBINATION MOTOR STARTER WITH MOTOR CIRCUIT PROTECTOR, "FVNR" INDICATES TYPE OF MOTOR STARTER, "X" INDICATES THE NEMA SIZE OF THE MOTOR STARTER

MCP / FVNR / SIZE X — MOTOR STARTER WITH MOTOR CIRCUIT PROTECTOR, "FVNR" INDICATES TYPE OF MOTOR STARTER, "X" INDICATES THE NEMA SIZE OF THE MOTOR STARTER

VFD — ENCLOSED VARIABLE FREQUENCY DRIVE

Sm — MANUAL MOTOR STARTER 120V, 20A

J — JUNCTION BOX

H / E — CONCRETE HANDHOLE, "E" REPRESENTS ELECTRICAL HANDHOLE, "U" REPRENT UTILITY HANDHOLE, "C" REPRESENT COMMUNICATION HANDHOLE

H / E — ELECTRIC POLYMER CONCRETE HANDHOLE, "E" REPRESENTS ELECTRICAL HANDHOLE, "C" REPRESENT COMMUNICATION HANDHOLE

3/4"Ø X 10'-0" COPPER CLAD GROUND ROD

BUILDING GROUNDING SYSTEM

10 — MOTOR, "10" INDICATES HORSEPOWER RATING

XX — CABLE/CONDUIT DESIGNATION, "XX" REFERS CABLE CONDUIT REFERENCE, REFER TO CABLE/CONDUIT SCHEDULES.

FIRE ALARM SYSTEM SYMBOLS

F — MANUAL FIRE ALARM STATION

F — FIRE ALARM AUDIO/VISUAL DEVICE

F V — FIRE ALARM VISUAL ONLY DEVICE

FIRE ALARM BEACON

S — SMOKE DETECTOR

S D — DUCT SMOKE DETECTOR

RTS — REMOTE TEST STATION AND ALARM FOR DUCT SMOKE DETECTOR

H — HEAT DETECTOR, COMBINATION RATE-OF-RISE AND FIXED TEMPERATURE

C — CARBON MONOXIDE DETECTOR

M — INPUT MONITORING MODULE

R — RELAY CONTROL MODULE

FACP — FIRE ALARM CONTROL PANEL

FAA — FIRE ALARM ANNUNCIATOR PANEL

DACT — DIGITAL ALARM COMMUNICATOR TRANSMITTER, MOUNTED ABOVE FACP

E — RADIO MASTER BOX, MOUNTED ABOVE FACP

K — KEY DEPOSITORY - KNOX BOX

FS — FLOW SWITCH

TS — TAMPER SWITCH

B — 24V ELECTRIC SPRINKLER BELL, PROVIDED BY FIRE PROTECTION FSB, PROVIDE AND MOUNT IN WEATHERPROOF BACKBOX

BDA — BIDIRECTION RADIO AMPLIFIER

BDPS — BIDIRECTION RADIO POWER SUPPLY, MOUNTED BELOW OR NEXT TO BDA

A — BIDIRECTION RADIO INDOOR ANTENNA

BDA — BIDIRECTION RADIO OUTOOR ANTENNA

BDAA — BIDIRECTION RADIO AMPLIFIER ANNUNCIATOR

CELLULAR ANTENNA

CHEMICAL ALARM SYSTEM SYMBOLS

C — MANUAL CHEMICAL ALARM STATION

C — CHEMICAL ALARM AUDIO/VISUAL DEVICE

CACP — CHEMICAL ALARM CONTROL PANEL

TELE/DATA SYMBOLS

1T 2D — WALL MOUNTED DATA OUTLET, 2D INDICATES (2) CAT6 TERMINAL DATA CONNECTORS, 1T INDICATES (1) CAT6 TERMINAL TELEPHONE CONNECTOR

SECURITY SYMBOLS

KP — KEY PAD

DS — DOOR SWITCH

SACP — SECURITY ALARM CONTROL PANEL

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COMMONWEALTH OF MASSACHUSETTS — MICHAEL J. COTTER, ELECTRICAL, No. 40999, REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL LEGEND

FOR CONSTRUCTION

Sheet No. E-1

ABBREVIATIONS

(2)1"C, 3#8, #10GND	2, 1-INCH CONDUITS EACH CONDUIT CONTAINING 3-#8 AWG WIRES AND 1-#10 GROUND CONDUCTOR
3/4" CE	EMPTY CONDUIT WITH PULL STRING. NUMERAL DENOTES SIZE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AR	ALARM RELAY
ATS	AUTOMATIC TRANSFER SWITCH
CR	CONTROL RELAY
CP	CONTROL PANEL
DRG. DWG.	DRAWING
EAN	EXCEPT AS NOTED
EC	ELECTRICAL CONTRACTOR
EOV	ELECTRICALY OPERATED VALVE
ETM	ELAPSED TIME METER
FE	FLOW ELEMENT
FIT	FLOW INDICATOR TRANSMITTER
FS	FLOW SWITCH
FSB	FILE SUB-BID CONTRACTOR
FT	FLOW TRANSMITTER
FVNR	FULL VOLTAGE NON-REVERSING
GND, GRD	GROUNDING CONDUCTOR (EQUIPMENT)
HOA	HAND-OFF-AUTOMATIC
HO	HAND-OFF
HH	HANDHOLE
ISR	INTRINSICALLY SAFE RELAY
J OR JB	JUNCTION BOX
JPB	JOG PUSHBUTTON
LE	LEVEL ELEMENT
LIT	LEVEL INDICATOR TRANSMITTER
LL	LOW LEVEL
LS	LEVEL SWITCH
LSH	LEVEL SWITCH HIGH
LSL	LEVEL SWITCH LOW
LT	LEVEL TRANSMITTER
MC	MOTOR CONTROLLER (STARTER)
MCC	MOTOR CONTROL CENTER
MH	MANHOLE
MFR	MANUFACTURER
MOV	MOTOR OPERATED VALVE
MPCP	METERING PUMP CONTROL PANEL
MS	MOTION SENSOR
NTS	NOT TO SCALE
OEM	ORIGINAL EQUIPMENT MANUFACTURER SUPPLIED
OH	OVERHEAD
OL	MOTOR OVERLOAD HEATER
OS	OPERATOR STATION
PB	PUSHBUTTON CONTROL STATION MOMENTARY CONTACT TYPE, STOP START
PBE	PUSHBUTTON CONTROL STATION MAINTAINED EMERGENCY STOP TWIST TO RELEASE
PBL	PUSHBUTTON CONTROL STATION MOMENTARY TYPE START AND EMERGENCY STOP TWIST TO RELEASE
PBM	PUSHBUTTON CONTROL STATION MAINTAINED CONTACT TYPE, STOP START
PIT	PRESSURE INDICATOR TRANSMITTER
PL	PUSHBUTTON CONTROL STATION MOMENTARY TYPE WITH LOCK-OUT DEVICE, STOP
PS	PRESSURE SWITCH
PT	PRESSURE TRANSMITTER
PV	PHOTOVOLTAIC
RGS	RIGID GALVANIZED STEEL
RVNR	REDUCED VOLTAGE NON-REVERSING
SPD	SURGE SUPPRESSOR DEVICE
SOV	SOLENOID VALVE
S/S	SOFT STARTER
TB	TERMINAL BOX
TD	MOTOR TEMPERATURE DETECTOR
TR	TIMING RELAY
TS	TEMPERATURE SWITCH
TSH	TEMPERATURE SWITCH HIGH
TSL	TEMPERATURE SWITCH LOW
TSP	TWISTED SHEILDED PAIR
TSTW	TWO SPEED TWO WINDING
TYP	TYPICAL
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
VFD	VARIABLE FREQUENCY DRIVE
WP	WATER PROOF
WHM	WATT HOUR UTILITY METER
XFMR	TRANSFORMER
ZS	POSITION SWITCH

GENERAL NOTES

1. GENERAL CONTRACTOR TO PROVIDE CONCRETE HOUSEKEEPING AND MOUNTING PADS ON ALL FLOOR AND GRADE MOUNTED ELECTRICAL EQUIPMENT, THE FOLLOWING EQUIPMENT IS THE MINIMUM REQUIREMENT FOR PADS. ADDITIONAL PADS MAYBE REQUIRED BASED ON THE ELECTRICAL CONTRACTORS MOUNTING METHODS, ELECTRICAL FSB SHALL COORDINATE WITH GENERAL CONTRACTOR FOR ALL PAD SIZES AND LOCATIONS.
   - 1.1 UTILITY TRANSFORMER INCLUDING OIL CONTAINMENT CURB
   - 1.2 GENERATORS
   - 1.3 MAIN DISTRIBUTION BOARD
   - 1.4 MOTOR CONTROL CENTER
   - 1.5 DRY TYPE TRANSFORMERS
   - 1.6 FREE STANDING VFD, CONTROL, AND TERMINATION PANELS
   - 1.7 ELECTRIC VEHICLE CHARGING STATIONS
2. ALL CONDUIT AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND APPLICABLE LOCAL CODES.
3. BONDING JUMPERS, CONDUIT CLAMPS AND POINTS OF ATTACHMENT ARE NOT SHOWN ON DRAWINGS. SIZE BONDING JUMPERS IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. THE POINTS OF ATTACHMENT OF THE GROUND CLAMPS SHALL BE ACCESSIBLE LOCATIONS.
4. EQUIPMENT & CONDUIT INSTALLATIONS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. EXPOSED CONDUITS SHALL BE INSTALLED PARALLEL TO BEAMS AND WALLS.
5. CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTIONS TO MOTORS AND OTHER EQUIPMENT.
6. NO CONDUIT SMALLER THAN 3/4" PIPE SIZE NOR WIRE SMALLER THAN NO. 12 A.W.G. SHALL BE USED UNLESS OTHERWISE NOTED.
7. RECEPTACLES AND SWITCHES SHALL BE MOUNTED 45" AFF/AFG EXCEPT FOR RECEPTACLES IN THE CONTROL ROOM WHICH SHALL BE 18" UNDER DESKS AND OPEN WALL SPACE AND 6" ABOVE TOP OF COUNTERS. RECEPTACLES ASSOCIATED WITH TELE/COM RACK AND BACKBOARD SHALL BE MOUNTED 60"AFF. RECEPTACLES ASSOCIATED WITH REFRIGERATORS SHALL BE 45" AFF.
8. THE WIRING AND BLOCK DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL AND PROCESS 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.
9. CONDUITS SHALL NOT BE INSTALLED WITHIN SLAB STRUCTURE AND SHALL BE RUN UNDER THE SLAB.
10. CONDUITS SHALL NOT BE INSTALLED IN THE FINISHED WATER WET WELL OR BACKWASH WASTE TANK.

DEMOLITION NOTES

1. UNLESS OTHERWISE NOTED, ALL EXISTING ELECTRICAL SYSTEMS (POWER, LIGHTING, LOW VOLTAGE, CONTROLS, ETC) WITHIN HATCH MARKS AND ASSOCIATED EQUIPMENT IS TO BE DEMOLISHED OR SALVAGED. DISCONNECT AND DE-ENERGIZE THE EQUIPMENT. REMOVE THE EQUIPMENT TO BE DEMOLISHED OR SALVAGED PER SECTION 01900. ALL CONTROL DEVICES, CONDUIT, CABLING, BOXES, SUPPORTS, ETC, ASSOCIATED WITH THE DEMOLISHED EQUIPMENT SHALL BE REMOVED. THE CONDUIT AND CABLING SHALL BE REMOVED BACK TO SOURCE.
2. DISCONNECT AND REMOVE THE ELECTRICAL SERVICE BACK TO UTILITY POLE FOR WELL STATION 2, WELL STATION 3, AND WELL STATION 4.
3. NO DEVICE OR EQUIPMENT INDICATED FOR DEMOLITION WILL BE REUSED OR SALVAGED UNLESS SPECIFICALLY NOTED AS SUCH. ALL EQUIPMENT REMOVED SHALL BE REMOVED FROM SITE AND PROPERLY DISPOSED OF, PRIOR TO REMOVAL OF EQUIPMENT COORDINATE WITH OWNER FOR ANY EQUIPMENT THE OWNER WILL KEEP.
4. EXISTING EQUIPMENT INDICATED ON THE DEMOLITION PLANS ARE BASED ON SITE OBSERVATIONS AND IT IS NOT THE INTENTION OF THESE DRAWINGS TO SHOW ALL EQUIPMENT AND MATERIALS TO BE DISCONNECTED AND/OR REMOVED.
5. ALL UNDERGROUND CONDUIT SHALL BE CUT BELOW GRADE, CAPPED AND BACKFILLED WITH DIRT TO MATCH GRADE. ALL CONDUIT STUBBING UP FROM CONCRETE SLAB SHALL BE CUT AND CAPPED AND SLAB LEVEL.
6. THE DEMOLITION WORK AND EQUIPMENT REPLACEMENT IN WELL STATION #4 SHALL TAKE PLACE AS PART OF THE FINAL CONSTRUCTION PHASE OF THE PROJECT AFTER THE WATER TREATMENT PLANT HAS BEEN COMMISSIONED. COORDINATE WITH EVERSOURCE FOR DISCONNECTION OF SERVICES TO WELL STATION 4.

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COMMONWEALTH OF MASSACHUSETTS
MICHAEL J. COTTER
ELECTRICAL
No. 40999
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

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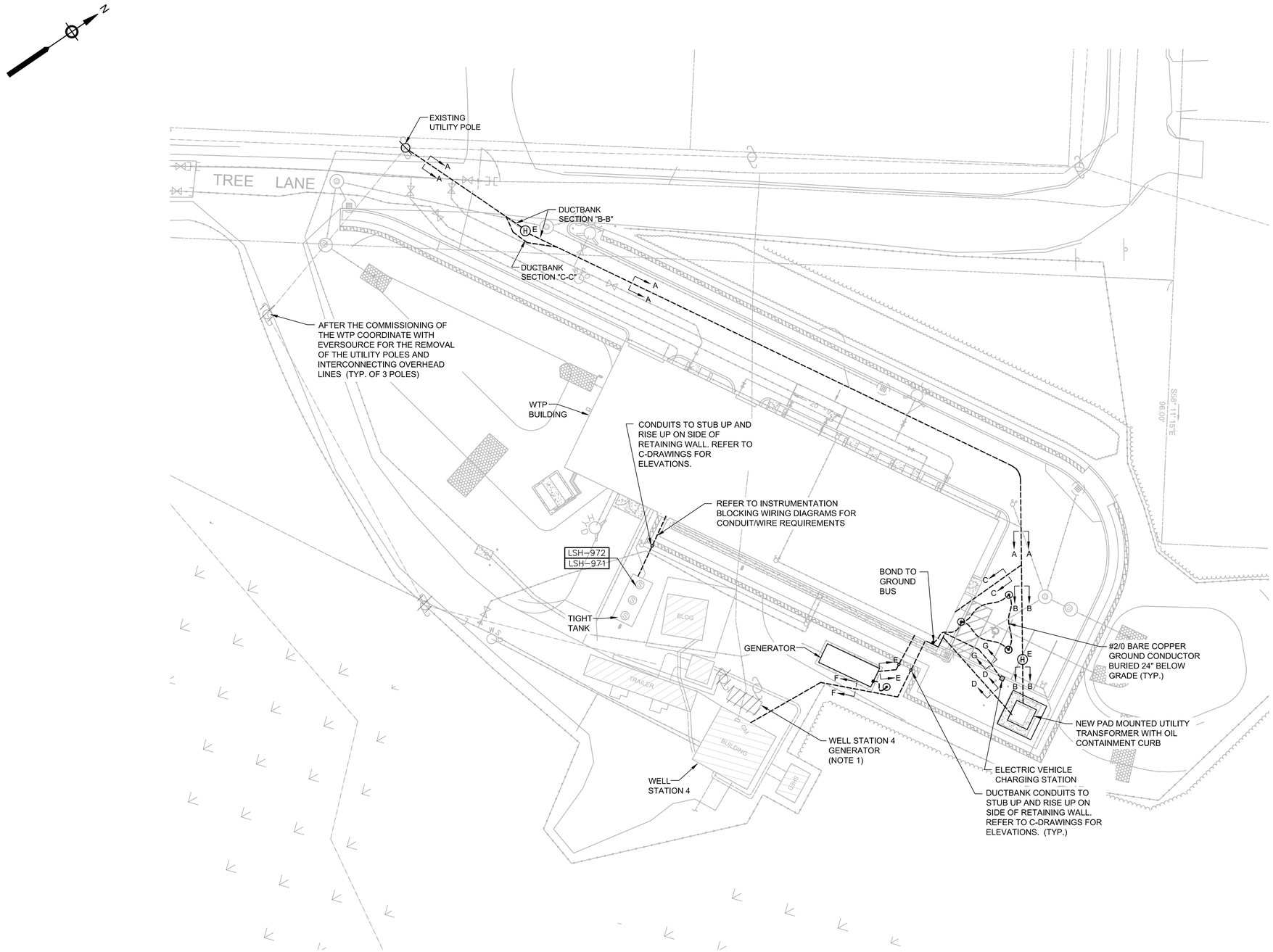
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
ABBREVIATIONS AND NOTES

FOR CONSTRUCTION

Sheet No.
E-2



SITE PLAN

SCALE: 1"=20'

NOTES:

1. SALVAGE EXISTING GENERATOR AND RETURN TO OWNER AT OWNER DETERMINED LOCATION WITHIN THE TOWN OF SHARON.

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COMMONWEALTH OF MASSACHUSETTS
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
WTP & WELL STATION 4 SITE PLAN

FOR CONSTRUCTION

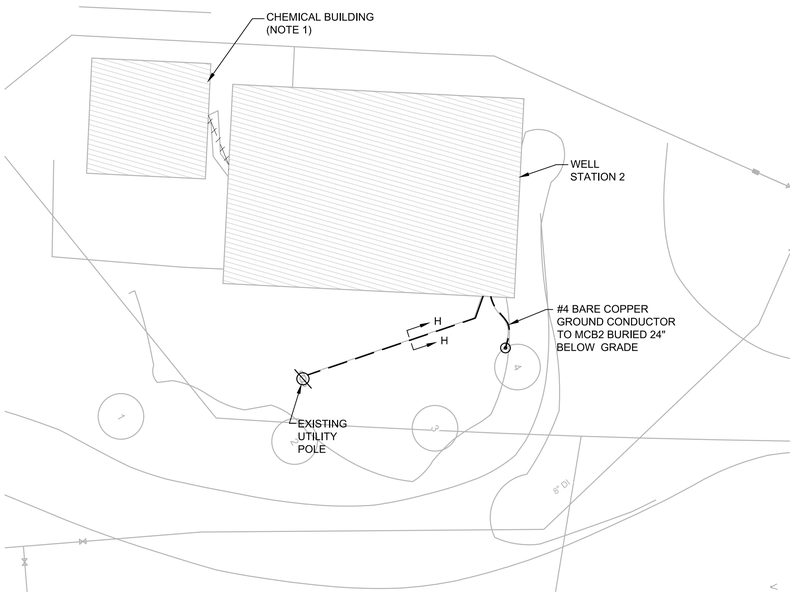
Sheet No.

E-3

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Site Plan.dwg Plot Date: Mar 29,2024-9:31am

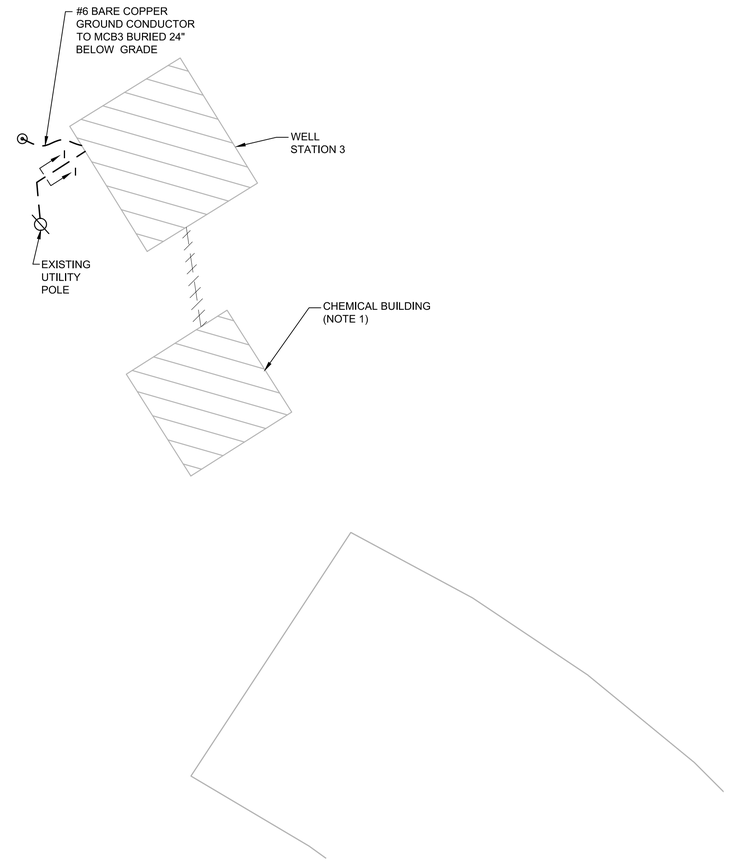
NOTES:

1. DISCONNECT AND REMOVE ALL FEEDERS AND WIRING TO THE CHEMICAL BUILDING.



WELL #2 SITE PLAN

SCALE: 1"=10'-0"



WELL #3 SITE PLAN

SCALE: 1"=10'-0"

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MICHAEL J. COTTER ELECTRICAL No. 40599 REGISTERED COMMONWEALTH OF MASSACHUSETTS PROFESSIONAL ENGINEER

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

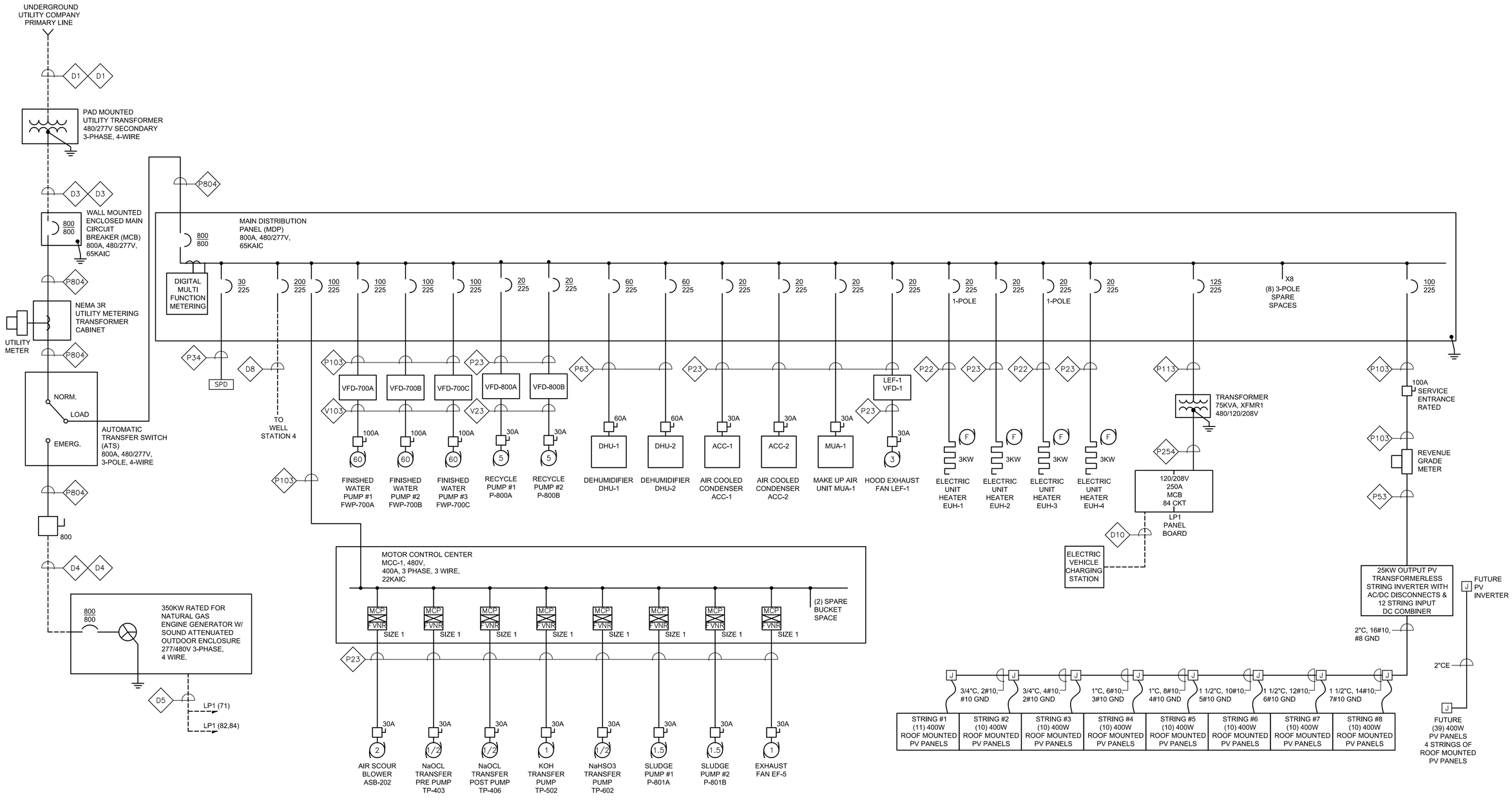
ELECTRICAL
WELL STATIONS 2 AND 3 SITE PLANS

FOR CONSTRUCTION

Sheet No.

E-4

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Site Plan.dwg Plot Date: Mar 29,2024-9:31am



WTP ONE LINE DIAGRAM

SCALE: N.T.S.

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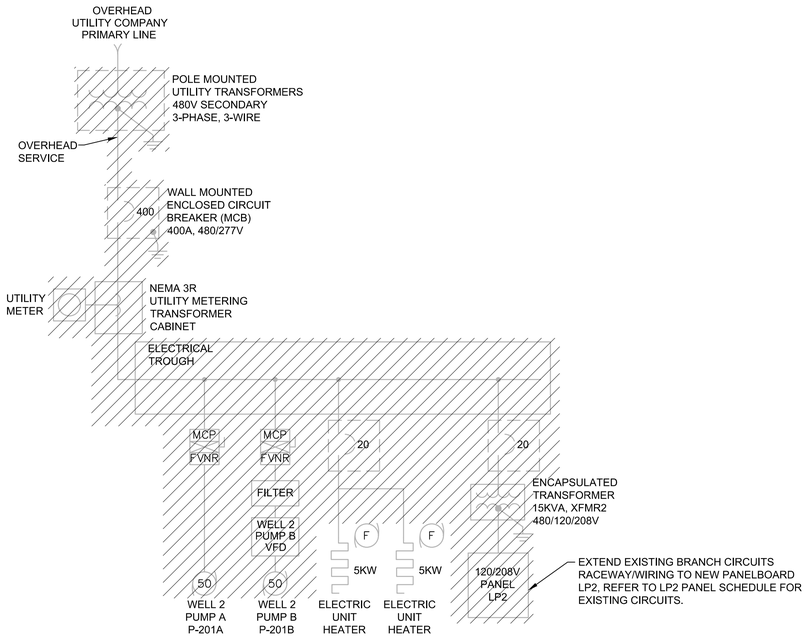
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
WTP ONE LINE DIAGRAM

FOR CONSTRUCTION

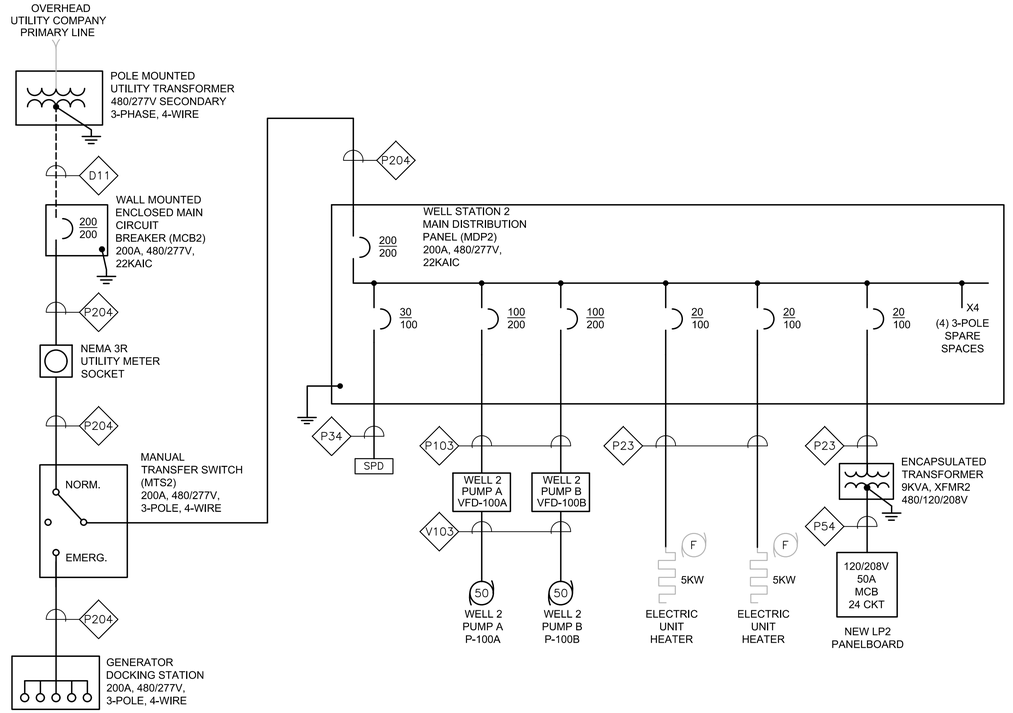
Sheet No.
E-5

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot: Date: Mar 29,2024-9:33am



WELL STATION 2 DEMOLITION ONE LINE DIAGRAM

SCALE: N.T.S.



WELL STATION 2 ONE LINE DIAGRAM

SCALE: N.T.S.

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COMMONWEALTH OF MASSACHUSETTS
MICHAEL J. COTTER
ELECTRICAL
No. 40959
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

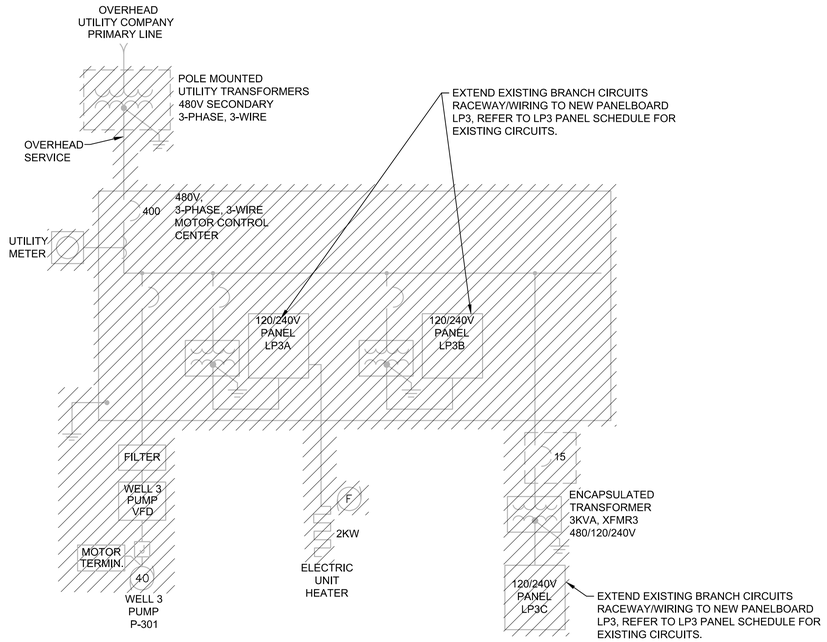
ELECTRICAL
WELL STATION 2 ONE LINE DIAGRAMS

FOR CONSTRUCTION

Sheet No.

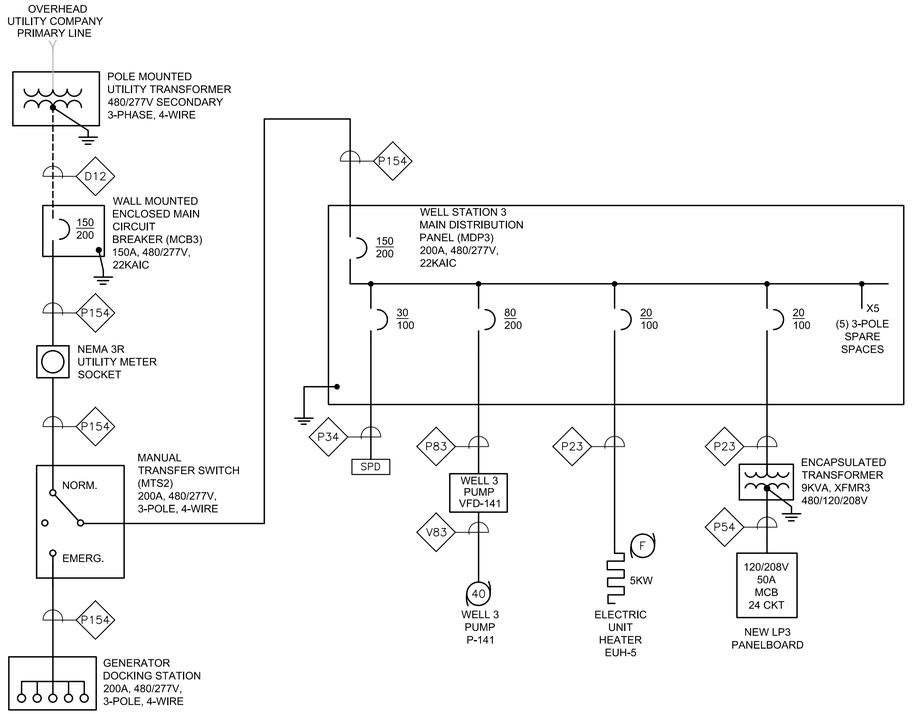
E-6

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plants.dwg Plot Date: Mar 29,2024-9:34am



WELL STATION 3 DEMOLITION ONE LINE DIAGRAM

SCALE: N.T.S.



WELL STATION 3 ONE LINE DIAGRAM

SCALE: N.T.S.

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

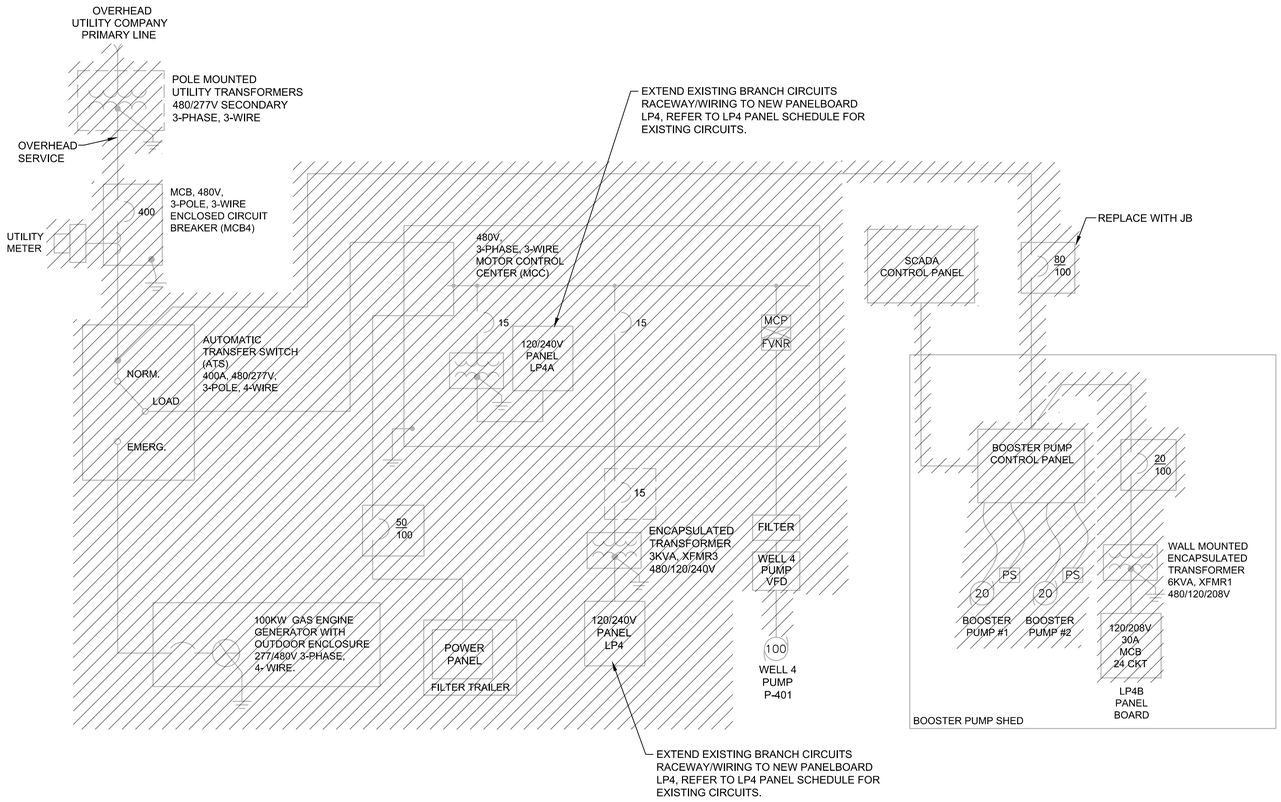
ELECTRICAL
WELL STATION 3 ONE LINE DIAGRAMS

FOR CONSTRUCTION

Sheet No.

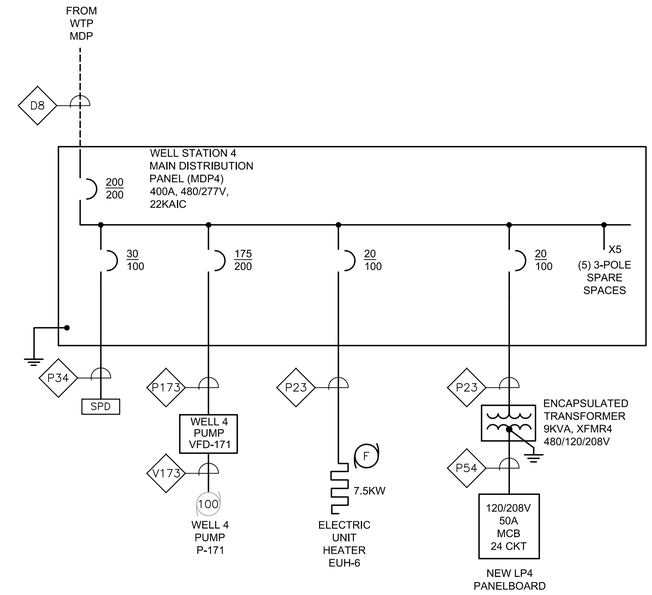
E-7

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot: Date: Mar 29,2024-9:35am



WELL STATION 4 DEMOLITION ONE LINE DIAGRAM

SCALE: N.T.S.



WELL STATION 4 ONE LINE DIAGRAM

SCALE: N.T.S.

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
WELL STATION 4 ONE LINE DIAGRAMS

FOR CONSTRUCTION

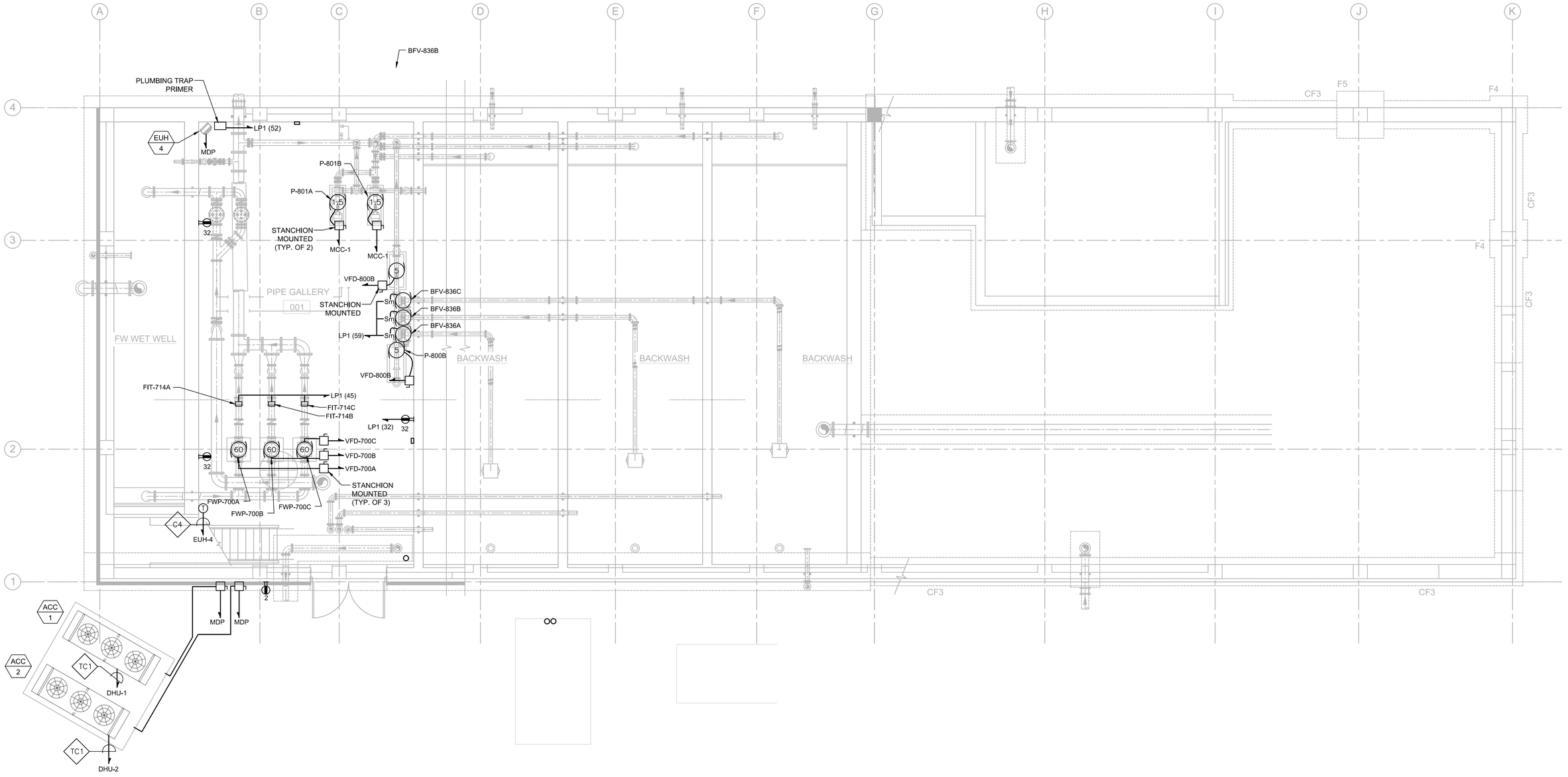
Sheet No.

E-8

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot: Date: Mar 29,2024-9:35am

NOTES:

1. REFER TO M-DRAWINGS, P-DRAWINGS, FP-DRAWINGS AND H-DRAWINGS FOR EQUIPMENT LOCATIONS.



LOWER LEVEL PLAN

SCALE: 3/16"=1'-0"

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COMMONWEALTH OF MASSACHUSETTS

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Checked by	MC
Approved by	MC

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
LOWER LEVEL POWER PLAN

FOR CONSTRUCTION

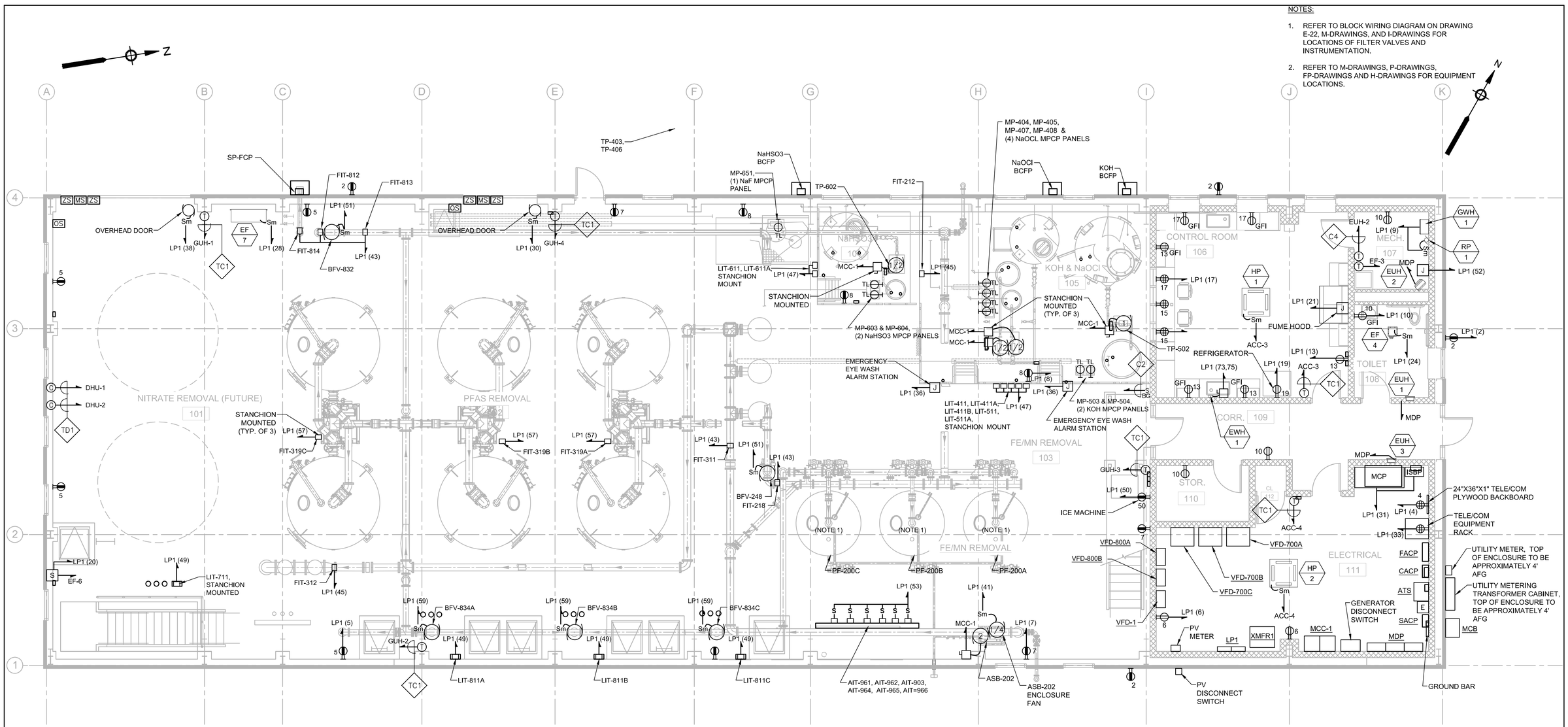
Sheet No.

E-9

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Mar 29,2024-9:35am

NOTES:

1. REFER TO BLOCK WIRING DIAGRAM ON DRAWING E-22, M-DRAWINGS, AND I-DRAWINGS FOR LOCATIONS OF FILTER VALVES AND INSTRUMENTATION.
2. REFER TO M-DRAWINGS, P-DRAWINGS, FP-DRAWINGS AND H-DRAWINGS FOR EQUIPMENT LOCATIONS.



FIRST FLOOR PLAN

SCALE: 3/16"=1'-0"

			Scale	AS SHOWN
			Date	APRIL 2024
			Job No.	245-2103
			Designed by	MC
			Drawn by	RLB
			Checked by	MC
MARK	DATE	DESCRIPTION	Approved by	MC

ENVIRONMENTAL PARTNERS — An Apex Company

SAR ENGINEERING, INC. — Mechanical/Electrical Engineers, 150 Grossman Drive, Suite 309, Braintree, Massachusetts 02184, 617 221-9220, web: www.sar.com

MICHAEL J. COTTER ELECTRICAL No. 40999 REGISTERED PROFESSIONAL ENGINEER — COMMONWEALTH OF MASSACHUSETTS

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
FIRST FLOOR POWER PLAN

FOR CONSTRUCTION

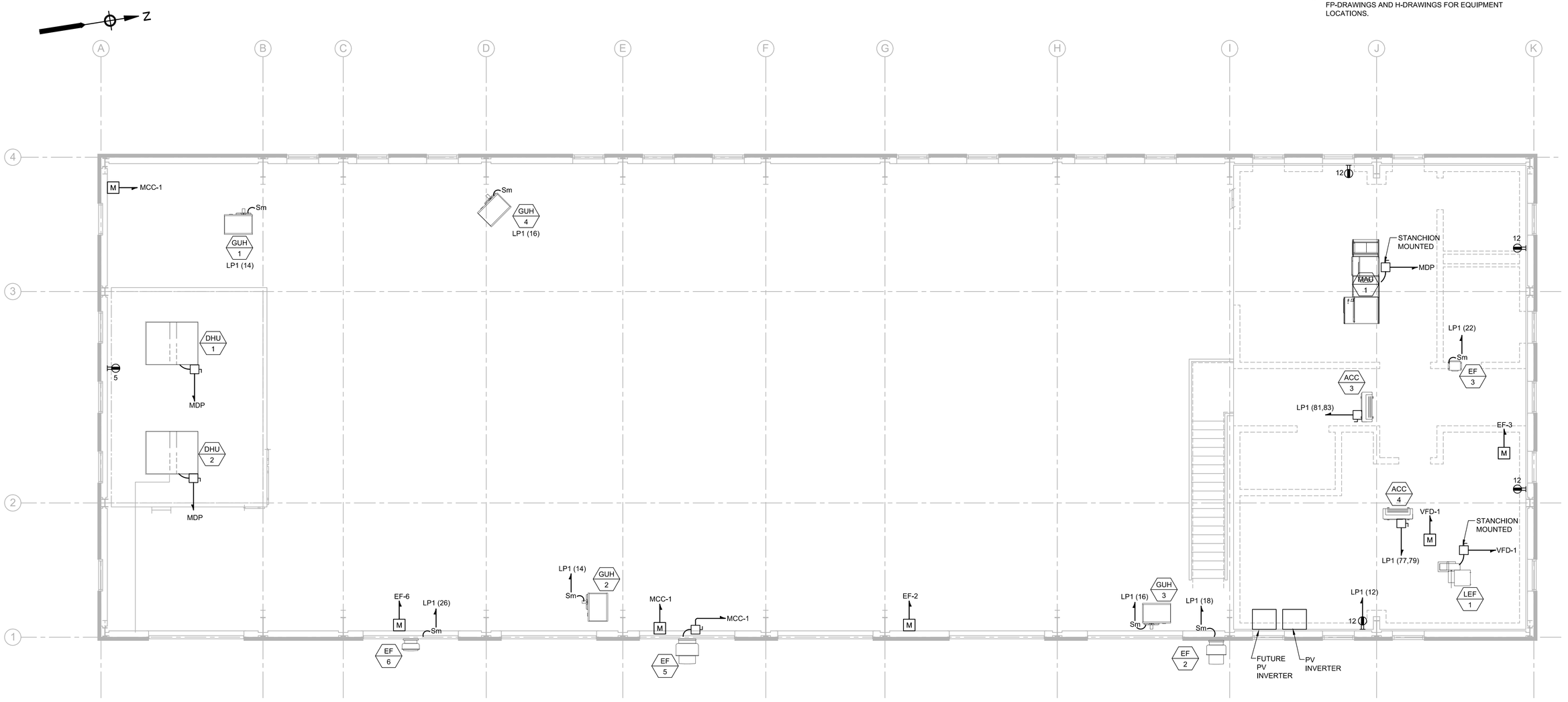
Sheet No.

E-10

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Mar 29,2024-9:38am

NOTES:

1. REFER TO M-DRAWINGS, P-DRAWINGS, FP-DRAWINGS AND H-DRAWINGS FOR EQUIPMENT LOCATIONS.



UPPER LEVEL PLAN

SCALE: 3/16"=1'-0"

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MICHAEL J. COTTER ELECTRICAL No. 40999 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
MEZZANINE POWER PLAN

FOR CONSTRUCTION

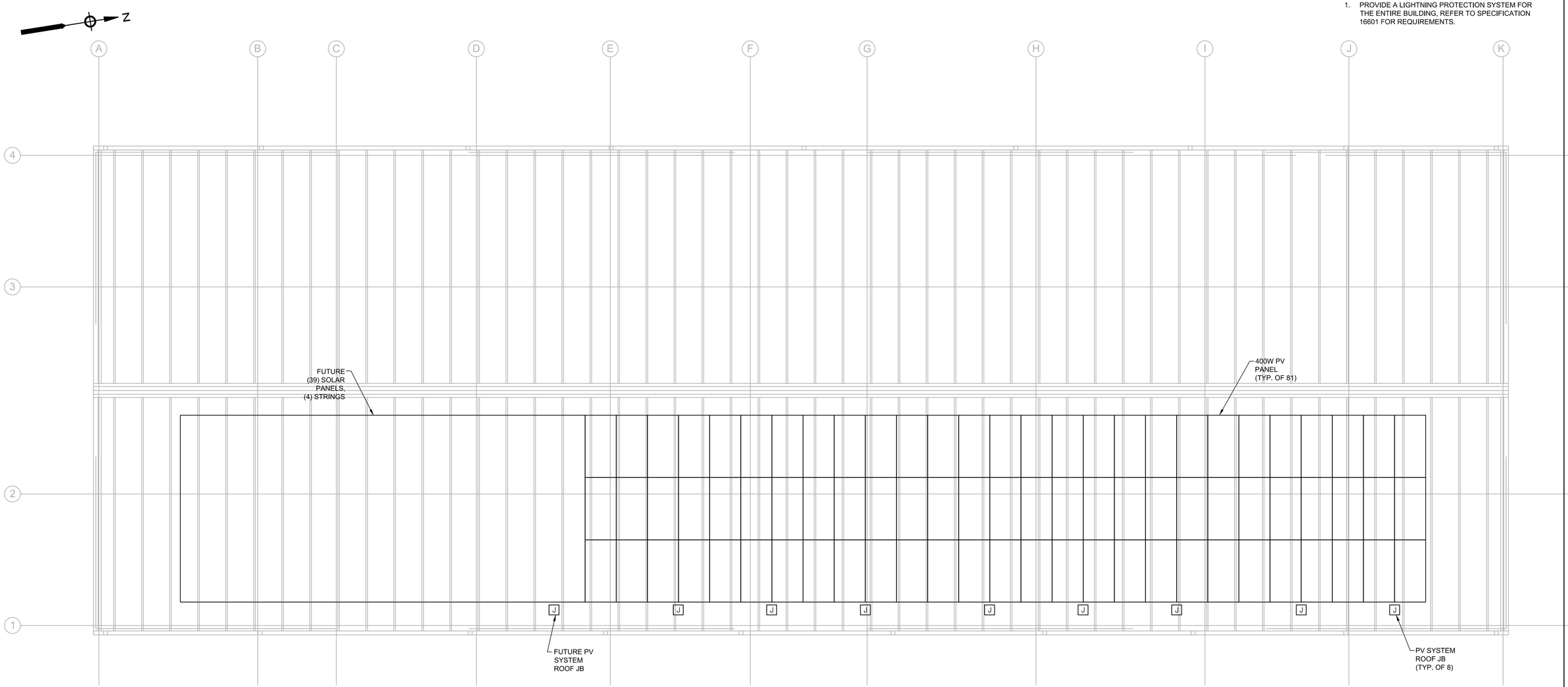
Sheet No.

E-11

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot: Date: Mar 29,2024-9:37am

NOTES:

1. PROVIDE A LIGHTNING PROTECTION SYSTEM FOR THE ENTIRE BUILDING, REFER TO SPECIFICATION 16601 FOR REQUIREMENTS.



ROOF PLAN

SCALE: 3/16"=1'-0"

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COMMONWEALTH OF MASSACHUSETTS
MICHAEL J. COTTER
ELECTRICAL
No. 40999
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

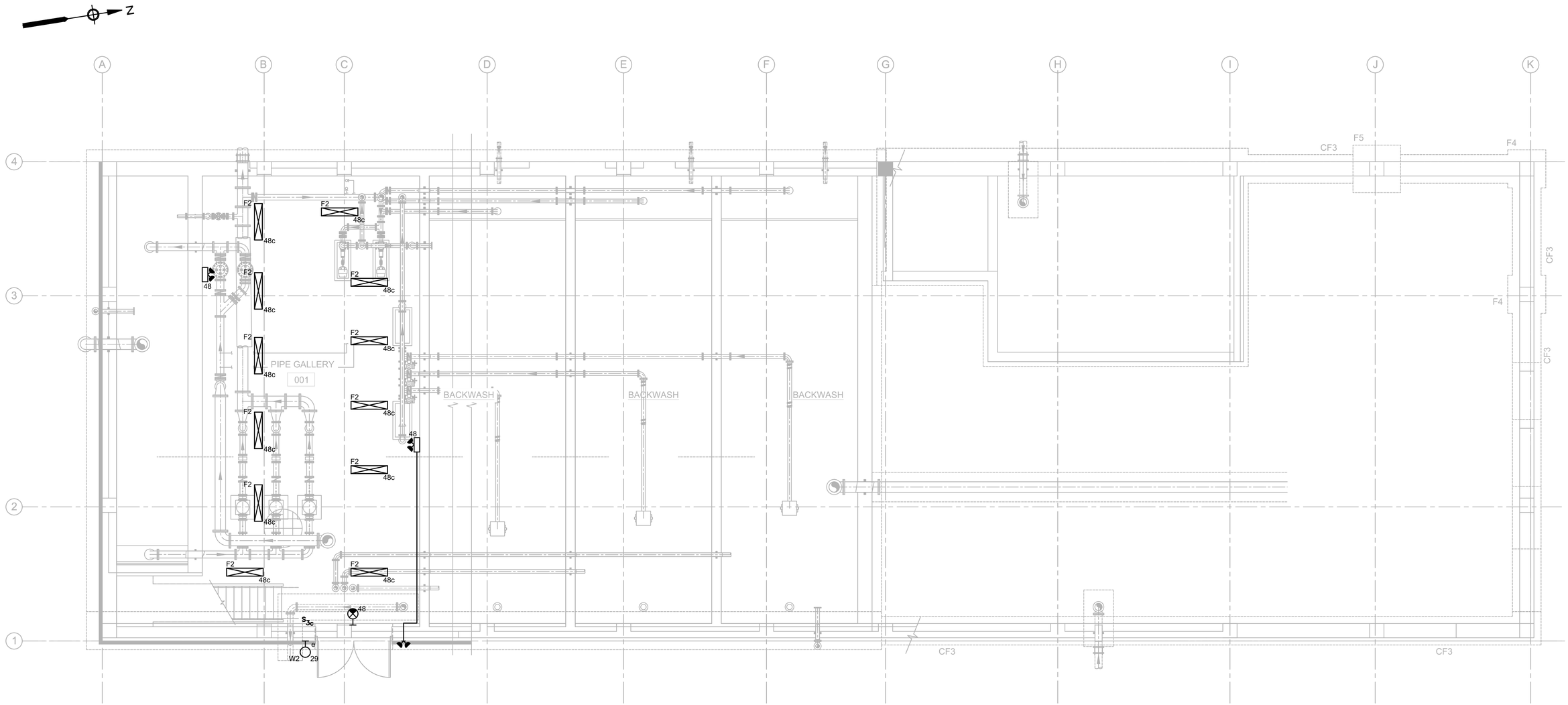
ELECTRICAL
ROOF PLAN

FOR CONSTRUCTION

Sheet No.

E-12

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Mar 29,2024-9:37am



LOWER LEVEL PLAN

SCALE: 3/16"=1'-0"

2nd PRECINCT 1740 • SHARON • 1765

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COMMONWEALTH OF MASSACHUSETTS
MICHAEL J. COTTER
ELECTRICAL
No. 40999
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

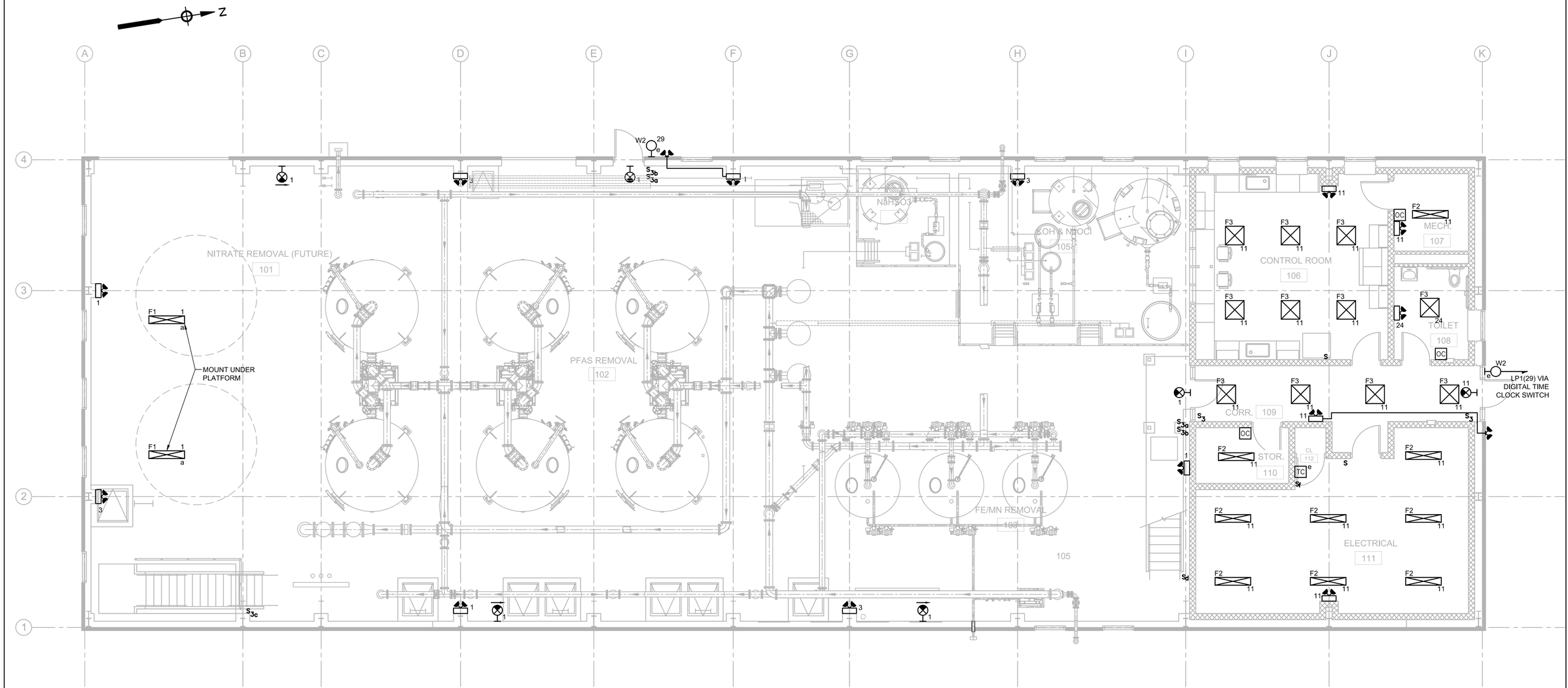
ELECTRICAL
LOWER LEVEL LIGHTING PLAN

FOR CONSTRUCTION

Sheet No.

E-13

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Mar 29,2024-9:38am



FIRST FLOOR PLAN

SCALE: 3/16"=1'-0"

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COMMONWEALTH OF MASSACHUSETTS
MICHAEL J. COTTER
ELECTRICAL
No. 40599
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

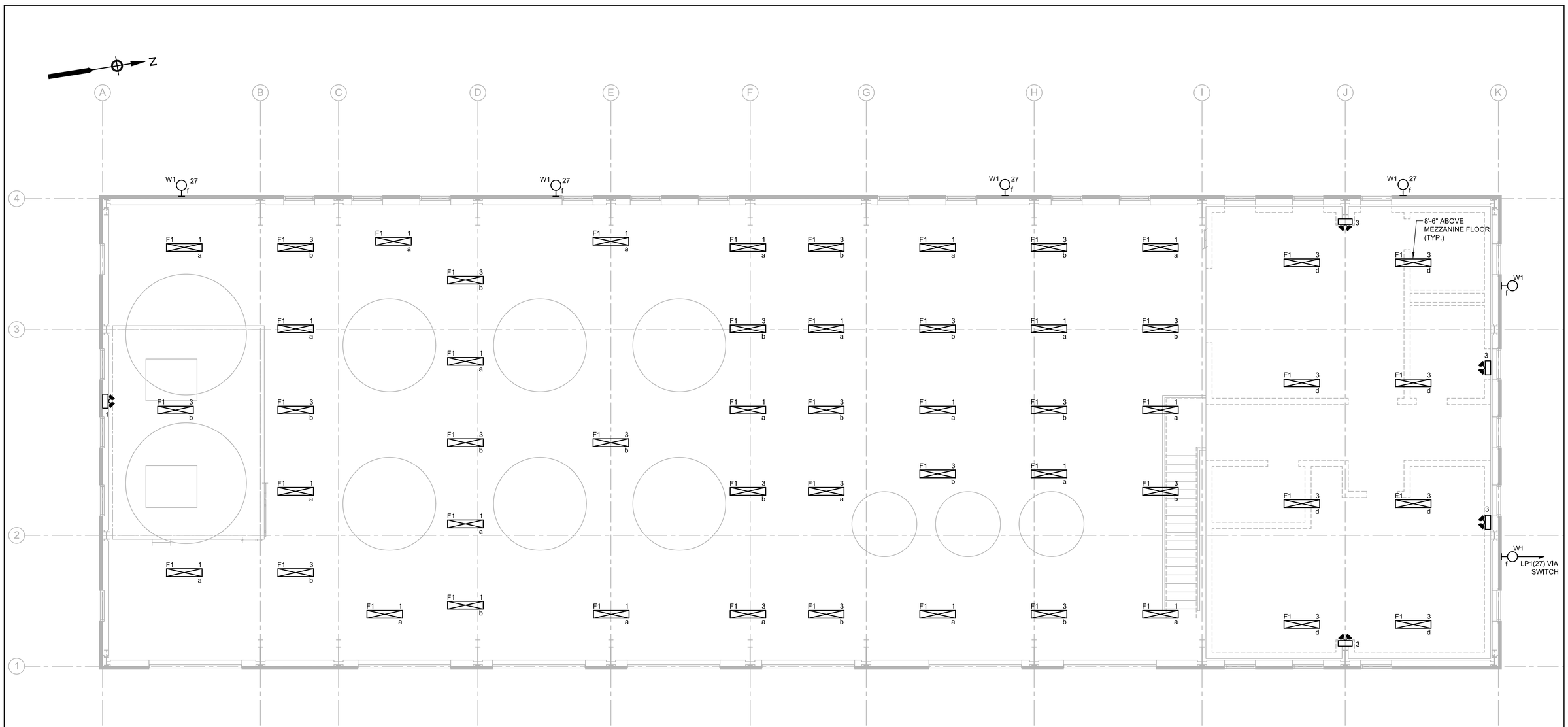
ELECTRICAL
FIRST FLOOR LIGHTING PLAN

FOR CONSTRUCTION

Sheet No.

E-14

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Mar 29,2024-9:38am



UPPER LEVEL PLAN

SCALE: 3/16"=1'-0"

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COMMONWEALTH OF MASSACHUSETTS
MICHAEL J. COTTER
ELECTRICAL
No. 40999
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
MEZZANINE LIGHTING PLAN

FOR CONSTRUCTION

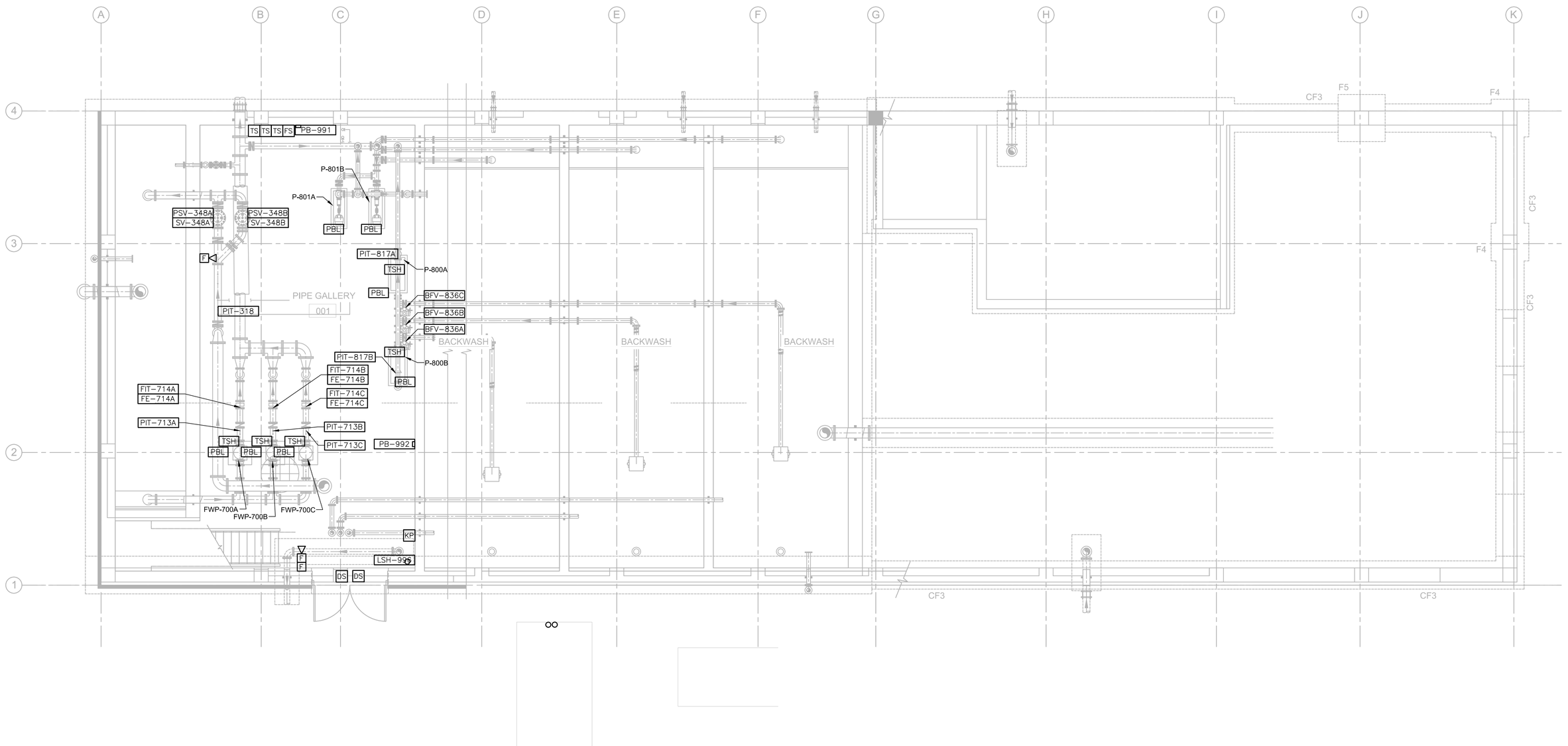
Sheet No.

E-15

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Mar 29,2024-9:38am

NOTES:

1. REFER FP-DRAWINGS FOR EQUIPMENT LOCATIONS



LOWER LEVEL PLAN

SCALE: 3/16"=1'-0"

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

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COMMONWEALTH OF MASSACHUSETTS
MICHAEL J. COTTER
ELECTRICAL
No. 40999
REGISTERED
PROFESSIONAL ENGINEER

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
LOWER LEVEL LOW VOLTAGE PLAN

FOR CONSTRUCTION

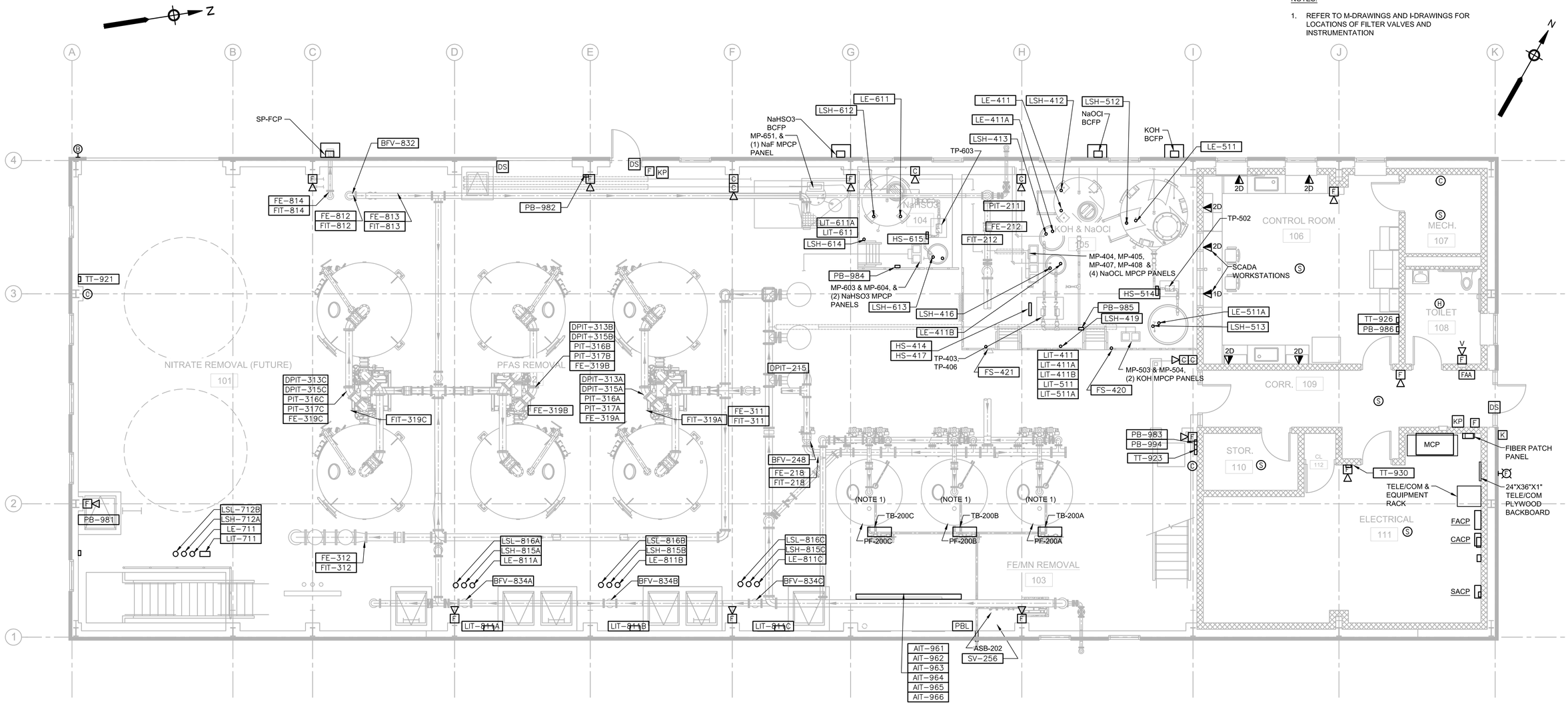
Sheet No.

E-16

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Mar 29,2024-9:39am

NOTES:

1. REFER TO M-DRAWINGS AND I-DRAWINGS FOR LOCATIONS OF FILTER VALVES AND INSTRUMENTATION



FIRST FLOOR PLAN

SCALE: 3/16"=1'-0"

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MICHAEL J. COTTER ELECTRICAL No. 40999 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

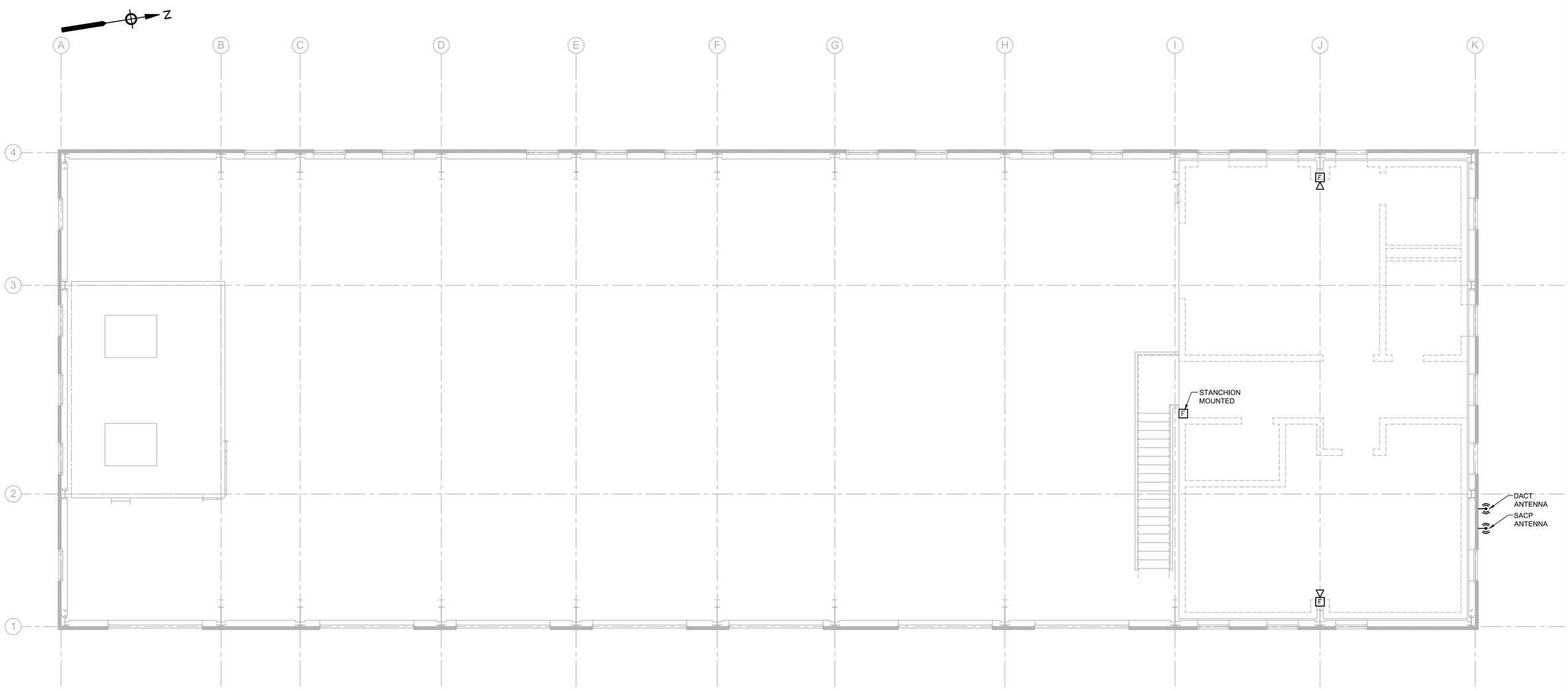
ELECTRICAL
FIRST FLOOR LOW VOLTAGE PLAN

FOR CONSTRUCTION

Sheet No.

E-17

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot: Date: Mar 29,2024-9:40am



UPPER LEVEL PLAN

SCALE: 3/16"=1'-0"

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COMMONWEALTH OF MASSACHUSETTS
MICHAEL J. COTTER
ELECTRICAL
No. 40990
REGISTERED
PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

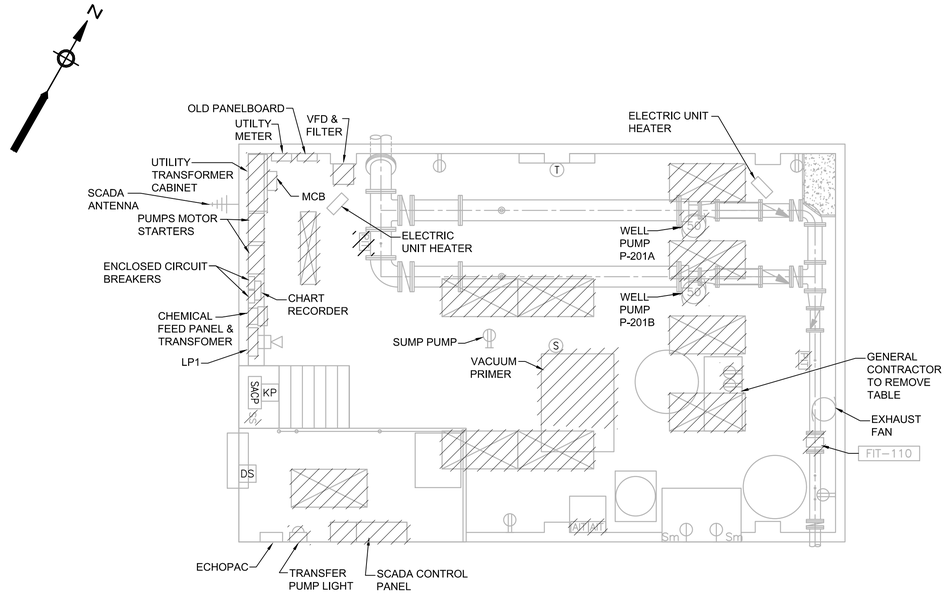
ELECTRICAL
MEZZANINE LOW VOLTAGE PLAN

FOR CONSTRUCTION

Sheet No.

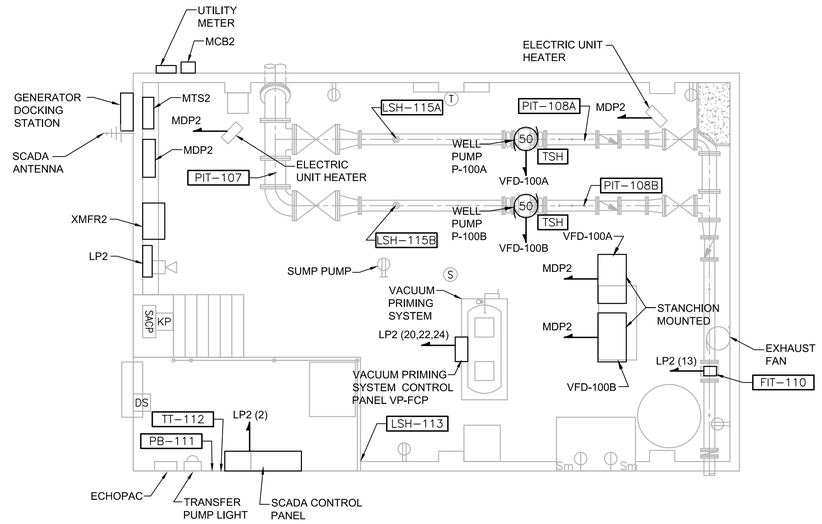
E-18

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Mar 29,2024-9:40am



WELL #2 DEMOLITION PLAN

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

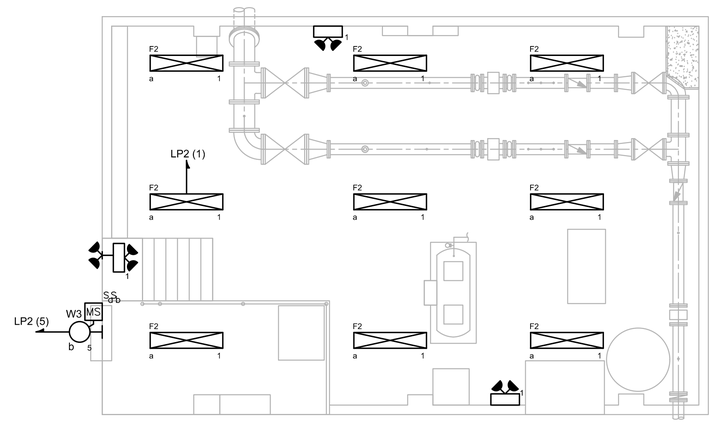


WELL #2 POWER PLAN

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

NOTES:

1. REFER TO I-DRAWINGS FOR LOCATIONS OF INSTRUMENTATION.
2. REFER TO M-DRAWINGS AND H-DRAWINGS FOR EQUIPMENT LOCATIONS.
3. PROVIDE A LIGHTNING PROTECTION SYSTEM FOR THE ENTIRE BUILDING. REFER TO SPECIFICATION 16601 FOR REQUIREMENTS.



WELL #2 LIGHTING PLAN

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

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MICHAEL J. COTTER ELECTRICAL No. 40999 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

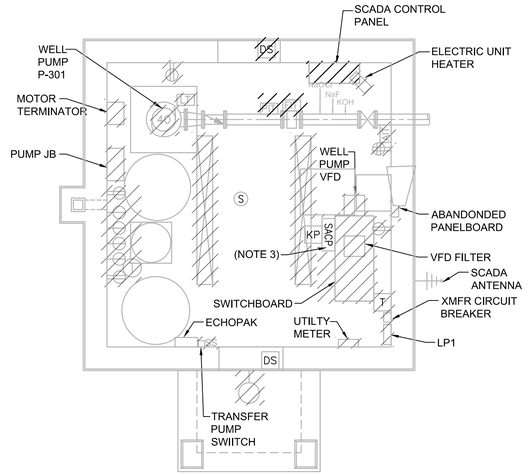
ELECTRICAL
WELL STATION #2 PLANS

FOR CONSTRUCTION

Sheet No.

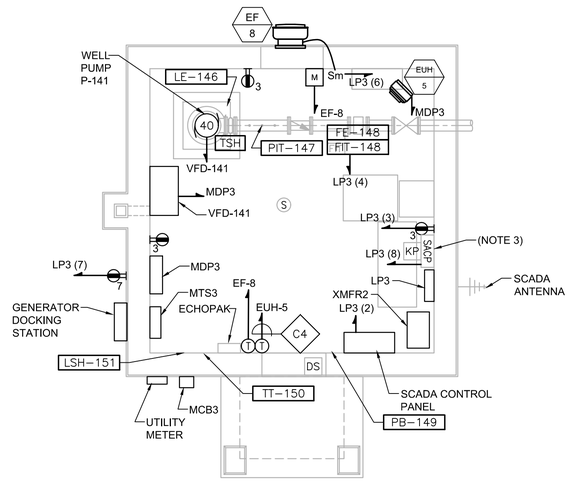
E-19

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plants.dwg Plot Date: Mar 29,2024-9:40am



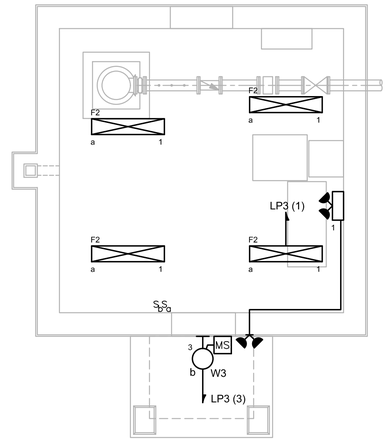
WELL #3 DEMOLITION PLAN

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



WELL #3 POWER PLAN

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



WELL #3 LIGHTING PLAN

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

NOTES:

1. REFER TO I-DRAWINGS FOR LOCATIONS OF INSTRUMENTATION.
2. REFER TO M-DRAWINGS AND H-DRAWINGS FOR EQUIPMENT LOCATIONS.
3. DISCONNECT, REMOVE, AND PROPERLY STORE SECURITY CONTROL PANEL AND KEY PAD. RE-INSTALL IN NEW LOCATION.
4. PROVIDE A LIGHTNING PROTECTION SYSTEM FOR THE ENTIRE BUILDING, REFER TO SPECIFICATION 16601 FOR REQUIREMENTS.

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MICHAEL J. COTTER ELECTRICAL No. 40959 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

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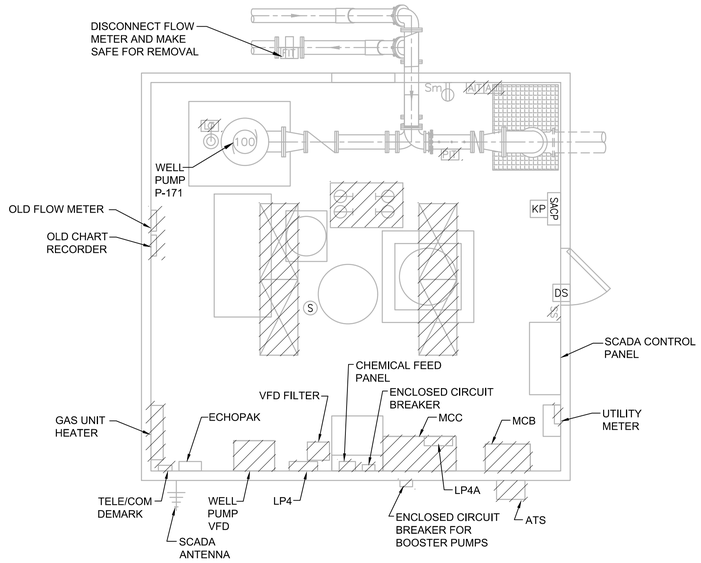
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
WELL #3 PLANS

FOR CONSTRUCTION

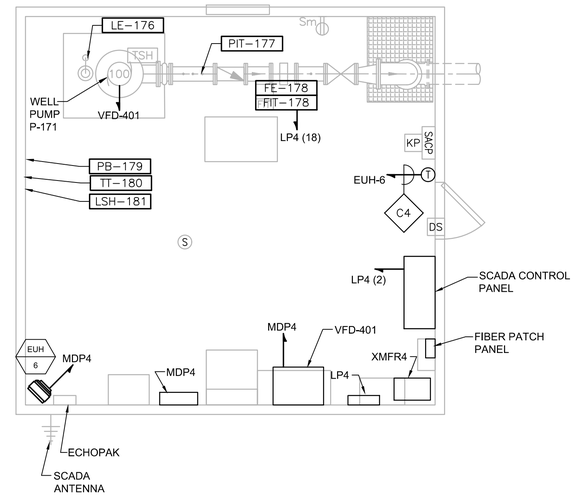
Sheet No.

E-20



WELL #4 DEMOLITION PLAN

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

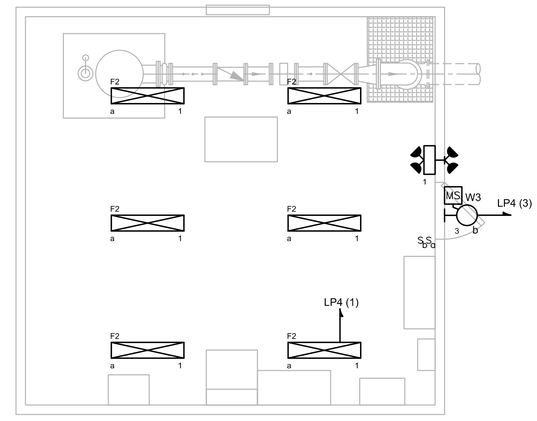


WELL #4 POWER PLAN

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

NOTES:

1. REFER TO I-DRAWINGS FOR LOCATIONS OF INSTRUMENTATION.
2. REFER TO M-DRAWINGS AND H-DRAWINGS FOR EQUIPMENT LOCATIONS.
3. PROVIDE A LIGHTNING PROTECTION SYSTEM FOR THE ENTIRE BUILDING. REFER TO SPECIFICATION 16601 FOR REQUIREMENTS.



WELL #4 LIGHTING PLAN

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

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MICHAEL J. COTTER ELECTRICAL No. 40999 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

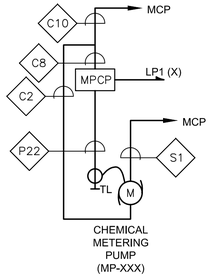
ELECTRICAL
WELL STATION #4 PLANS

FOR CONSTRUCTION

Sheet No.

E-21

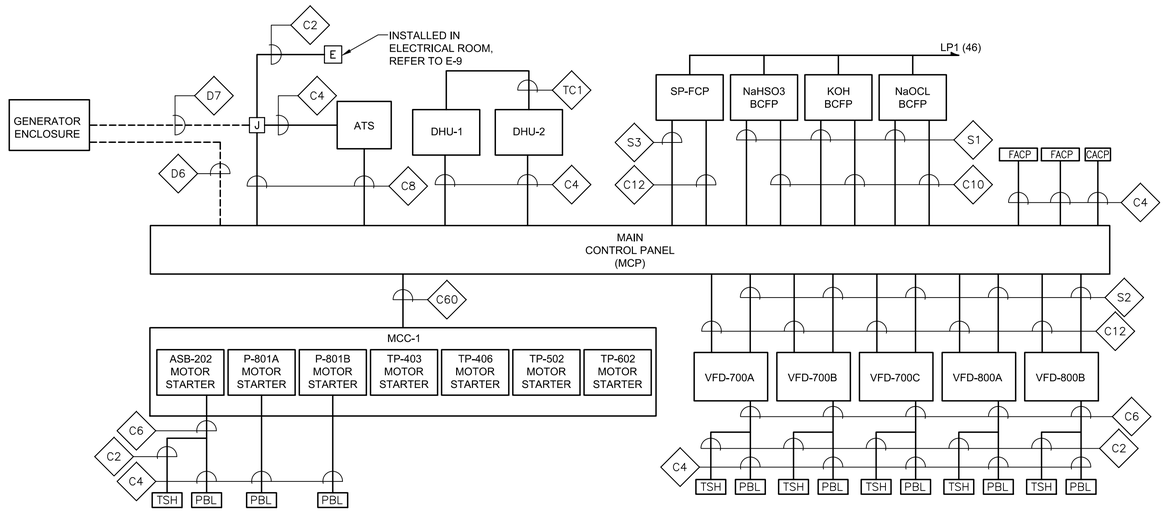
Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plants.dwg Plot: Date: Mar 29,2024-9:42am



TYPICAL FOR: MP-404 - LP1(40), MP-405 - LP1(42), MP-407 - LP1(44), MP-408 - LP1(40), MP-503 - LP1(42), MP-504 - LP1(44), MP-603 - LP1(40), MP-604 - LP1(42), MP-651 - LP1(44)

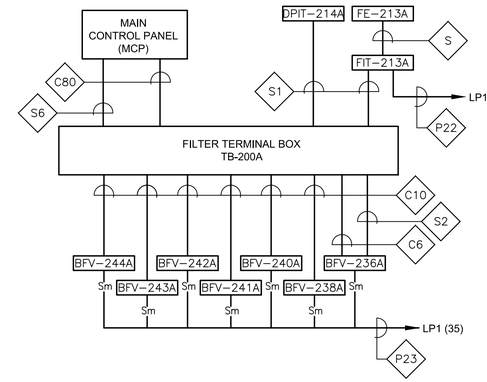
BLOCK WIRING DIAGRAM CHEMICAL METERING PUMPS

SCALE: N.T.S.



MAIN CONTROL PANEL BLOCK WIRING DIAGRAM

SCALE: N.T.S.



NOTES

1. FILTER TERMINAL BOX TB-200A IS TYPICAL FOR TB-200B, & TB-200C. TERMINAL BOXES TO BE NEMA 4X STAINLESS STEEL, 60"X30"X12"DP, WITH BACK PANEL AND TERMINAL BLOCKS FOR CONTROL WIRING TERMINATIONS. ALL HARDWARE TO BE STAINLESS STEEL.
2. REFER TO FILTER EQUIPMENT SCHEDULE FOR PRESSURE FILTER PF-200A, PF-200B, % PF-200C EQUIPMENT NAMES.

PRESSURE FILTER PF-200A BLOCK DIAGRAM

SCALE: N.T.S.

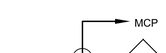
(TYPICAL FOR FILTER CELL PF-200A, PF-200B, PF-200C)

FILTER PF-200A									
EQUIP.	BFV-236A	BFV-238A	BFV-240A	BFV-241A	BFV-242A	BFV-243A	BFV-244A	FE/FIT-213A	DPIT-214A
CIRCUIT	LP1 (35)	LP1 (35)	LP1 (35)	LP1 (35)	LP1 (35)	LP1 (35)	LP1 (35)	LP1 (34)	-
FILTER PF-200B									
EQUIP.	BFV-236B	BFV-238B	BFV-240B	BFV-241B	BFV-242B	BFV-243B	BFV-244B	FE/FIT-213B	DPIT-214B
CIRCUIT	LP1 (37)	LP1 (37)	LP1 (37)	LP1 (37)	LP1 (37)	LP1 (37)	LP1 (37)	LP1 (34)	-
FILTER PF-200C									
EQUIP.	BFV-236C	BFV-238C	BFV-240C	BFV-241C	BFV-242C	BFV-243C	BFV-244C	FE/FIT-213C	DPIT-214C
CIRCUIT	LP1 (39)	LP1 (39)	LP1 (39)	LP1 (39)	LP1 (39)	LP1 (39)	LP1 (39)	LP1 (34)	-

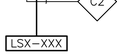
FILTER EQUIPMENT SCHEDULE

(FOR EXACT LOCATION OF EQUIPMENT - SEE M-DRAWINGS AND I- DRAWINGS)

TYPICAL FOR: DPIT-313A/DPIT-315A/PIT-316A/PIT-317A/FE-319A/FIT-319A, DPIT-313B/DPIT-315B/PIT-316B/PIT-317B/FE-319B/FIT-319B, DPIT-313C/DPIT-315C/PIT-316C/PIT-317C/FE-319C/FIT-319C

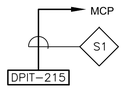


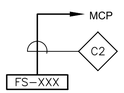
TYPICAL FOR: PIT-211, PIT-318, PIT-713A, PIT-713B, PIT-713C, PIT-817A, PIT-817B



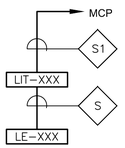
TYPICAL FOR: TT-921, TT-923, TT-926, TT-930

TYPICAL FOR: LSH-412, LSH-413 LSH-416 LSH-419. LSH-512, LSH-513, LSH-612, LSH-613, LSH-614, LSH-996

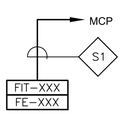




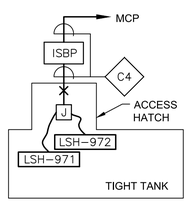
TYPICAL FOR: FS-420, FS-421

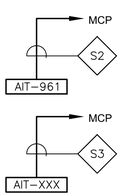


TYPICAL FOR: LE/LIT-411, LE/LIT-411A, LE/LIT-411B, LE/LIT-511, LE/LIT-511A, LE/LIT-611 LE/LIT-711, LE/LIT-811A, LE/LIT-811B, LE/LIT-811C



TYPICAL FOR: FE/FIT-212, FE/FIT-218, FE/FIT-311, FE/FIT-312, FE/FIT-714A, FE/FIT-714B, FE/FIT-714C, FE/FIT-812, FE/FIT-813, FE/FIT-814

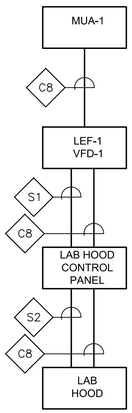




TYPICAL FOR: AIT-962, AIT-963 AIT-964, AIT-965, AIT-966

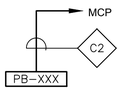
INSTRUMENTATION BLOCK WIRING DIAGRAM

SCALE: N.T.S.



CONTROL BLOCK WIRING DIAGRAM FUME HOOD

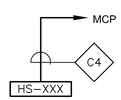
SCALE: N.T.S.



TYPICAL FOR: PB-981, PB-982, PB-983, PB-984, PB-985, PB-986, PB-991, PB-992, PB-994

MAN-DOWN/E-STOP PUSHBUTTONS BLOCK WIRING DIAGRAM

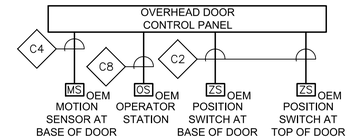
SCALE: N.T.S.



TYPICAL FOR: HS-414, HS-417, HS-514, HS-615

CHEMICAL TRANSFER PUMP HAND SWITCHES BLOCK WIRING DIAGRAM

SCALE: N.T.S.

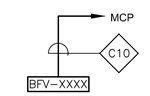


NOTES

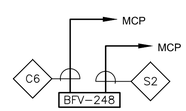
1. COORDINATE WITH ELECTRIC DOOR OPERATOR AS SPECIFIED IN SECTION 08331.

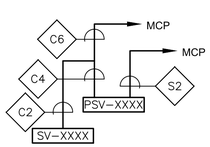
CONTROL BLOCK WIRING DIAGRAM OVERHEAD DOORS

SCALE: N.T.S.



TYPICAL FOR: BFV-832, BFV-834A, BFV-834B, BFV-834C, BFV-836A, BFV-836B, BFV-836C





TYPICAL FOR: PSV-348A/SV-348A, PSV-348B/SV-348B

VALVES BLOCK WIRING DIAGRAM

SCALE: N.T.S.

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COMMONWEALTH OF MASSACHUSETTS MICHAEL J. COTTER ELECTRICAL No. 40999 REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
WTP BLOCK WIRING DIAGRAMS

FOR CONSTRUCTION

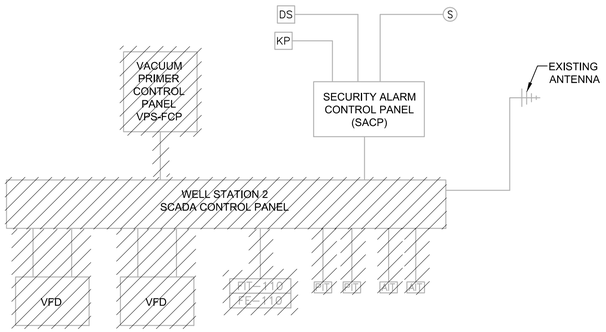
Sheet No.

E-22

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Apr 01,2024-10:39am

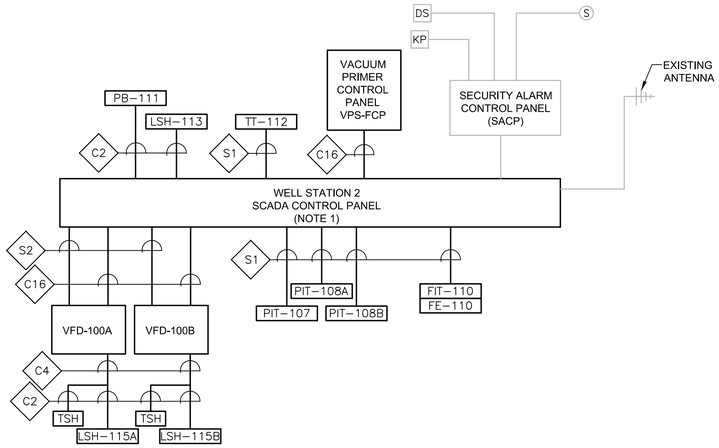
NOTES:

1. EXISTING SCADA CONTROL PANELS IN THE WELL STATIONS ARE BEING REPLACED WITH NEW SCADA CONTROL PANELS. WELLS 2 & 4 CONTROL PANELS WILL BE MOUNTED IN THE SAME LOCATOI AS TEH REMOVED CONTROL PANEL. THE CONDUIT/WIRE INTERCONNECTIONS INDICATED AS EXISTING (LIGHT GREY) AND NOT BEING DEMOLISHED SHALL BE DISCONNECTED FROM THE EXISTING SCADA CONTROL PANELS AND RECONNECTED TO THE NEW CONTROL PANELS. REFER TO THE I-DRAWINGS FOR THE INSTRUMENTATION TYPES AND QUANTITY OF INTERCONNECTIONS INTO THE SCADA CONTROL PANELS.



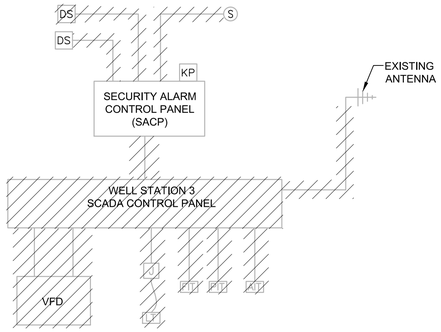
WELL STATION 2 DEMOLITION BLOCK WIRING DIAGRAM

SCALE: N.T.S.



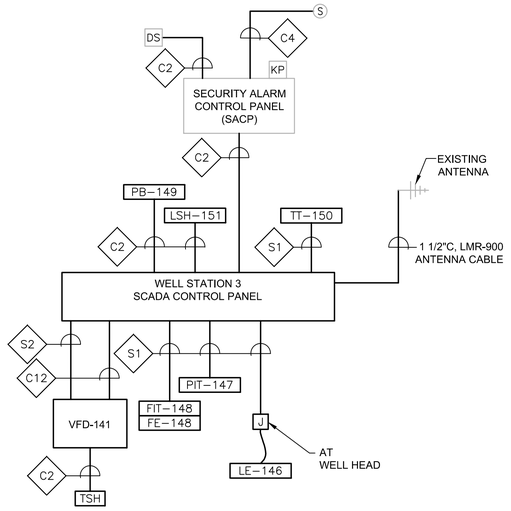
WELL STATION 2 BLOCK WIRING DIAGRAM

SCALE: N.T.S.



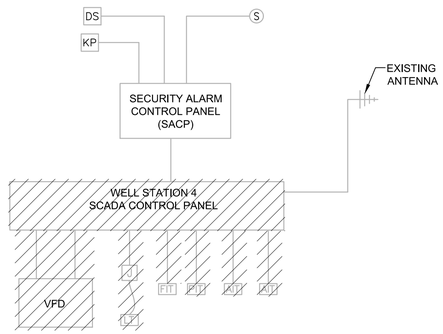
WELL STATION 3 DEMOLITION BLOCK WIRING DIAGRAM

SCALE: N.T.S.



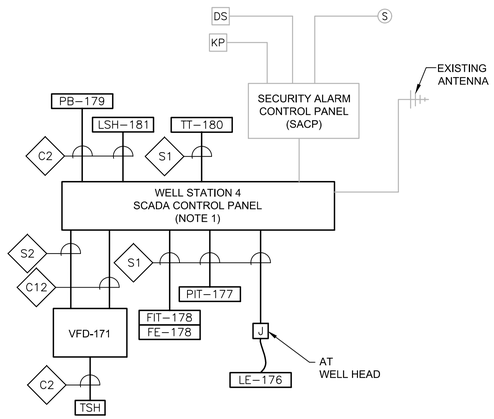
WELL STATION 3 BLOCK WIRING DIAGRAM

SCALE: N.T.S.



WELL STATION 4 BLOCK WIRING DIAGRAM

SCALE: N.T.S.



WELL STATION 4 BLOCK WIRING DIAGRAMS

SCALE: N.T.S.

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MICHAEL J. COTTER ELECTRICAL No. 40990 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

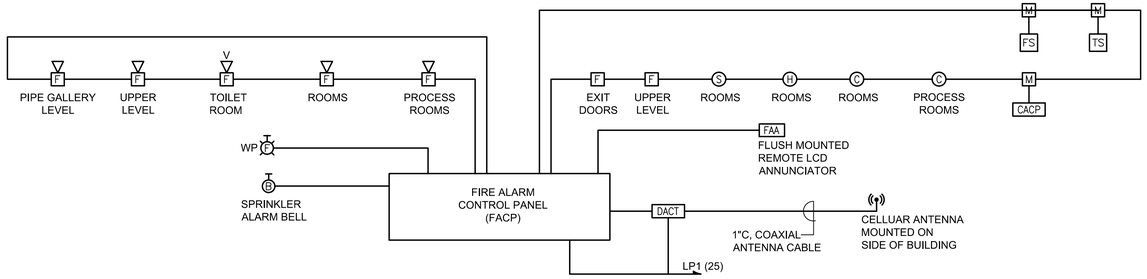
ELECTRICAL
WELL STATIONS BLOCK WIRING DIAGRAMS

FOR CONSTRUCTION

Sheet No.

E-23

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Mar 29,2024-9:43am

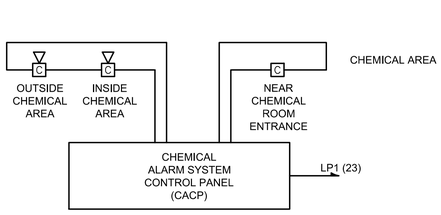


FIRE ALARM RISER DIAGRAM

SCALE: N.T.S.

FIRE ALARM NOTES:

1. RISER DIAGRAM ONLY REPRESENTS TYPE OF DEVICES WITHIN AN AREA AND DOES NOT REPRESENT ACTUAL QUANTITIES. REFER TO PLAN DRAWINGS FOR EXACT QUANTITIES AND LOCATIONS OF DEVICES.
2. FLOW AND TAMPER SWITCH LOCATIONS ON PLAN DRAWINGS ARE SHOWN FOR QUANTITY PURPOSES ONLY AND MAY NOT REPRESENT ACTUAL LOCATIONS. COORDINATE WITH FIRE PROTECTION SPRINKLER CONTRACTOR FOR EXACT LOCATIONS.
3. MINIMUM SIZE CONDUIT SHALL BE 3/4" UNLESS NOTED OTHERWISE.
4. SYSTEM CONDUIT/CABLING SHALL BE INSTALLED IN ACCORDANCE WITH EQUIPMENT SUPPLIERS APPROVED SHOP DRAWINGS AND WIRING DIAGRAMS.
5. PROVIDE RED COLORED CIRCUIT BREAKER HANDLE LOCK ON POWER CIRCUIT. HANDLE LOCK SHALL ALLOW THE CIRCUIT BREAKER TO TRIP, BUT PREVENT SWITCHING OF THE CIRCUIT BREAKER TO THE "OFF" POSITION.
6. REFER TO THE HVAC AND FIRE PROTECTION DRAWINGS FOR EXACT LOCATION OF ALL EQUIPMENT REQUIRING FIRE ALARM SYSTEM INTERFACE.
7. ALL COMPONENTS OF THE SYSTEM SHALL BE MOUNTED IN ACCORDANCE WITH ADA REQUIREMENTS.
8. THE FIRE ALARM SYSTEM SHALL BE ADDRESSABLE TYPE. CONTRACTOR TO PROVIDE THE NECESSARY INTERFACE MODULES FOR THE FIRE ALARM DEVICES THAT REQUIRES THEM.

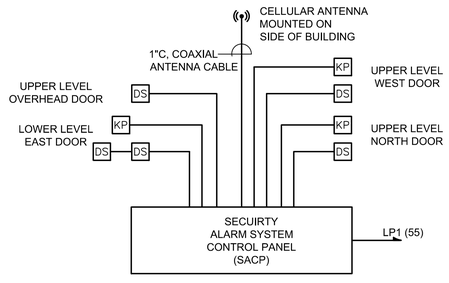


CHEMICAL ALARM RISER DIAGRAM

SCALE: N.T.S.

CHEMICAL ALARM NOTES:

1. RISER DIAGRAM ONLY REPRESENTS TYPE OF DEVICES WITHIN AN AREA AND DOES NOT REPRESENT ACTUAL QUANTITIES. REFER TO PLAN DRAWINGS FOR EXACT QUANTITIES AND LOCATIONS OF DEVICES.
2. MINIMUM SIZE CONDUIT SHALL BE 3/4" UNLESS NOTED OTHERWISE.
3. SYSTEM CONDUIT/CABLING SHALL BE INSTALLED IN ACCORDANCE WITH EQUIPMENT SUPPLIERS APPROVED SHOP DRAWINGS AND WIRING DIAGRAMS.
4. PROVIDE RED COLORED CIRCUIT BREAKER HANDLE LOCK ON POWER CIRCUIT. HANDLE LOCK SHALL ALLOW THE CIRCUIT BREAKER TO TRIP, BUT PREVENT SWITCHING OF THE CIRCUIT BREAKER TO THE "OFF" POSITION.
5. ALL COMPONENTS OF THE SYSTEM SHALL BE MOUNTED IN ACCORDANCE WITH ADA REQUIREMENTS.
6. THE CHEMICAL ALARM SYSTEM SHALL BE UL LISTED 4-ZONE CONVENTIONAL TYPE FIRE ALARM SYSTEM.

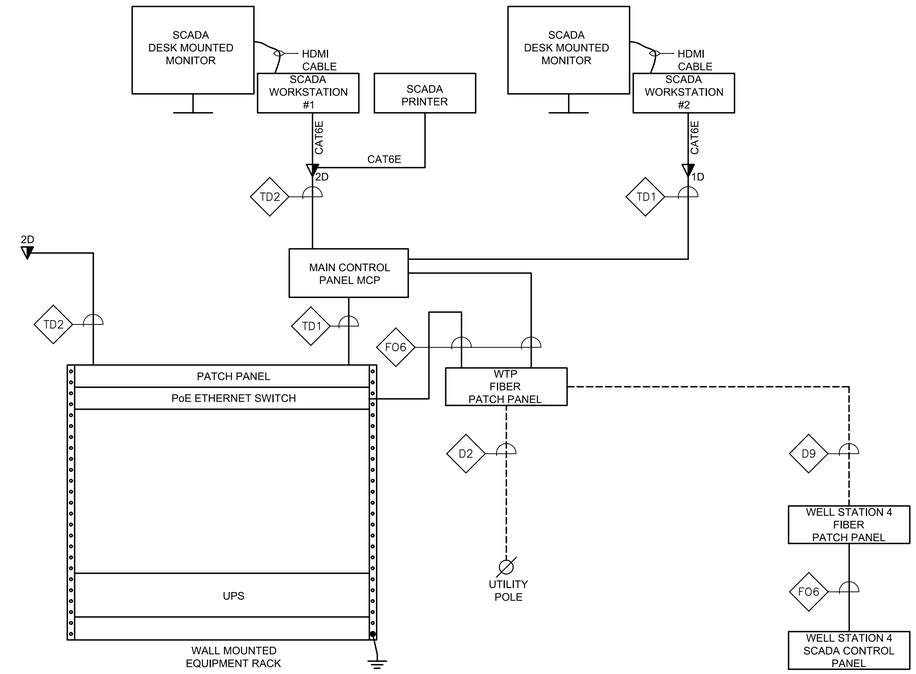


SECURITY ALARM RISER DIAGRAM

SCALE: N.T.S.

SECURITY ALARM NOTES:

1. MINIMUM SIZE CONDUIT SHALL BE 3/4" UNLESS NOTED OTHERWISE.
2. SYSTEM CONDUIT/CABLING SHALL BE INSTALLED IN ACCORDANCE WITH EQUIPMENT SUPPLIERS APPROVED SHOP DRAWINGS AND WIRING DIAGRAMS.
3. ALL COMPONENTS OF THE SYSTEM SHALL BE MOUNTED IN ACCORDANCE WITH ADA REQUIREMENTS.



WTP

WELL STATION 4

TELE/DATA RISER DIAGRAM

SCALE: N.T.S.

TELE/DATA NOTES:

1. RISER DIAGRAM ONLY REPRESENTS TYPE OF DEVICES AND DOES NOT REPRESENT ACTUAL QUANTITIES. REFER TO PLAN DRAWINGS QUANTITIES AND LOCATIONS OF DEVICES.
2. MINIMUM SIZE CONDUIT SHALL BE 1" UNLESS NOTED OTHERWISE.
3. MAIN CONTROL PANEL AND SCADA CONTROL PANELS ARE PROVIDED BY INSTRUMENTATION/CONTROLS SUB-CONTRACTOR. ELECTRICAL FSB TO PROVIDE ALL MOUNTING.
4. SCADA WORK STATION, SCADA MONITOR, AND SCADA PRINTER ARE PROVIDED BY INSTRUMENTATION/CONTROLS SUB-CONTRACTOR.

ENVIRONMENTAL PARTNERS — An Apex Company —

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MICHAEL J. COTTER ELECTRICAL No. 40998 REGISTERED PROFESSIONAL ENGINEER — COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

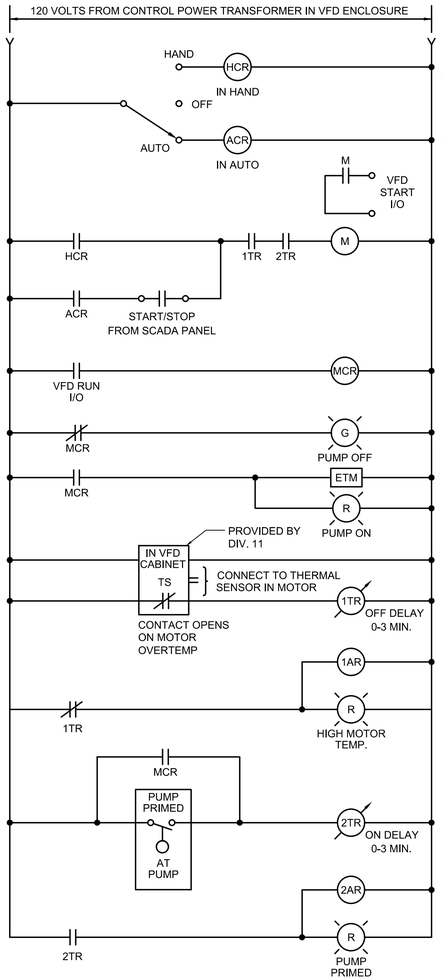
ELECTRICAL RISER DIAGRAMS

FOR CONSTRUCTION

Sheet No.

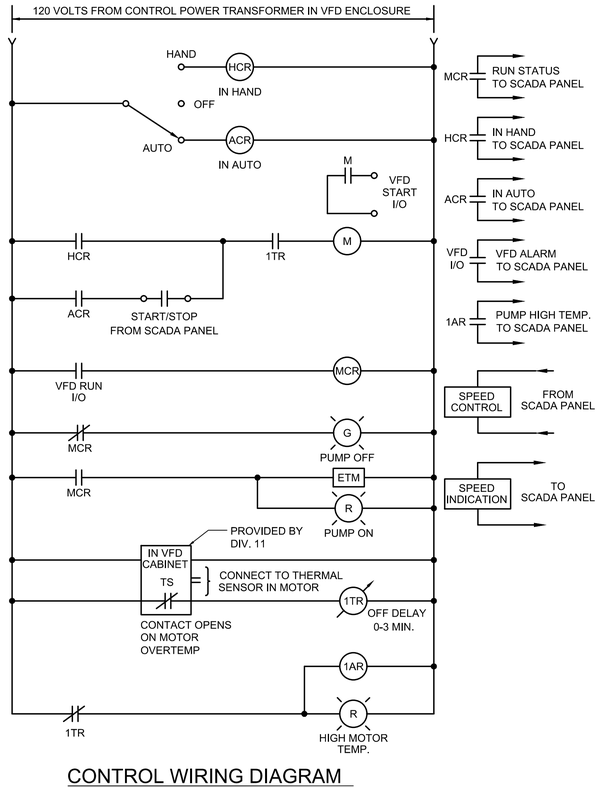
E-24

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Mar 29, 2024-9:43am



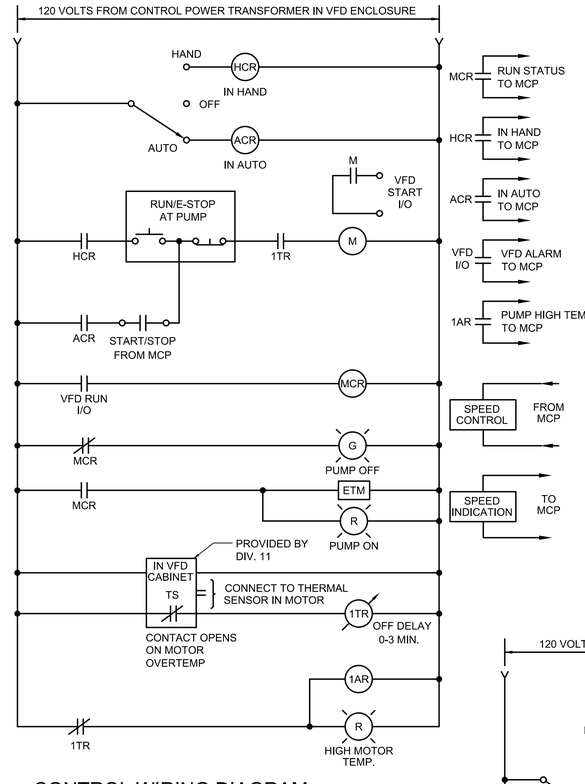
CONTROL WIRING DIAGRAM
WELL PUMPS P-100A & P-100B

SCALE: N.T.S.



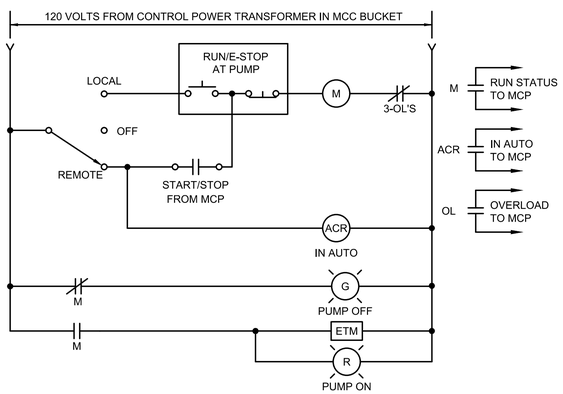
CONTROL WIRING DIAGRAM
WELL PUMPS P-141 & P-171

SCALE: N.T.S.



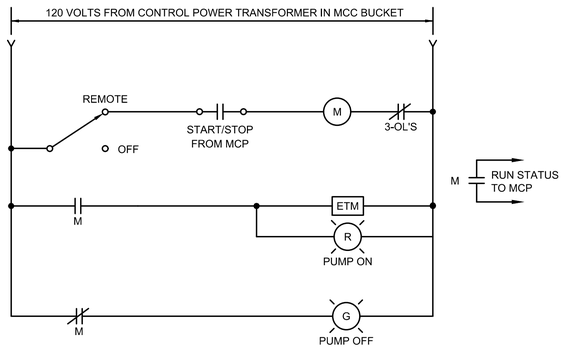
CONTROL WIRING DIAGRAM
FINISHED WATER PUMPS & RECYCLE PUMPS

SCALE: N.T.S.



CONTROL WIRING DIAGRAM
SLUDGE PUMPS

SCALE: N.T.S.



CONTROL WIRING DIAGRAM
CHEMICAL TRANSFER PUMPS

SCALE: N.T.S.

CONTROL WIRING DIAGRAM
AIR BLOWER

SCALE: N.T.S.

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Mechanical/Electrical Engineers
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Braintree, Massachusetts 02184
617 221-9220
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COMMONWEALTH OF MASSACHUSETTS
MICHAEL J. COTTER
ELECTRICAL
No. 40999
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
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Designed by	MC
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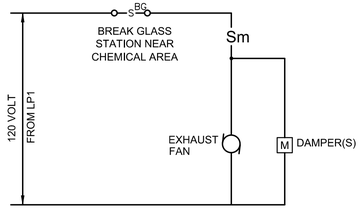
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
CONTROL WIRING DIAGRAMS I

FOR CONSTRUCTION

Sheet No.
E-25

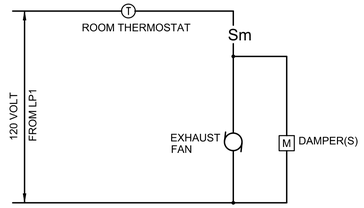
Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Mar 29,2024-9:43am



- PROVIDE ALL INTERCONNECTING CONDUIT/CABLE

EF-2 EXHAUST FAN WIRING DIAGRAM

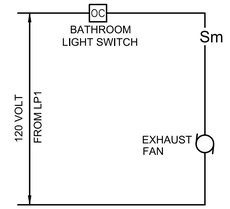
SCALE: N.T.S.



- PROVIDE ALL INTERCONNECTING CONDUIT/CABLE

EF-3 EXHAUST FAN WIRING DIAGRAM

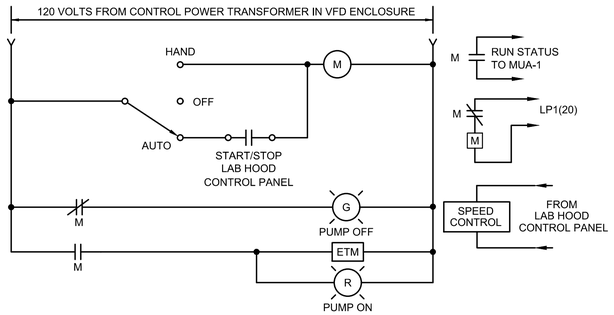
SCALE: N.T.S.



– PROVIDE ALL INTERCONNECTING CONDUIT/CABLE

EF-4 EXHAUST FAN WIRING DIAGRAM

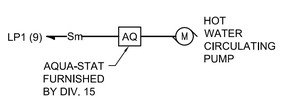
SCALE: N.T.S.



- PROVIDE ALL INTERCONNECTING CONDUIT/CABLE

CONTROL WIRING DIAGRAM EXHAUST FAN LEF-1

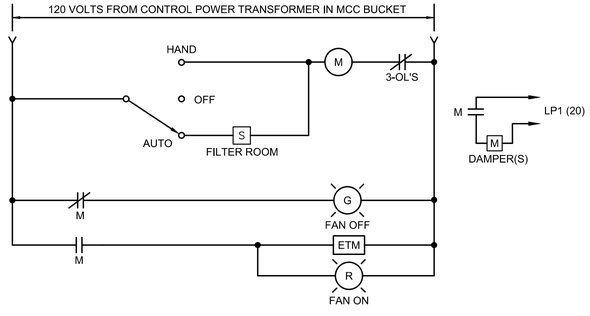
SCALE: N.T.S.



– PROVIDE ALL INTERCONNECTING CONDUIT/CABLE

CONTROL WIRING DIAGRAM DOMESTIC HOT WATER CIRCULATING PUMP

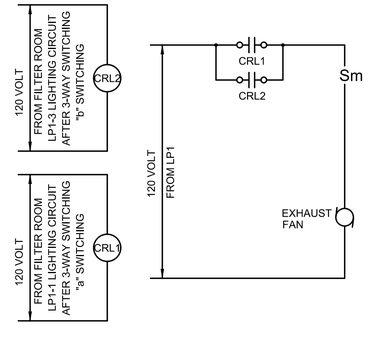
SCALE: N.T.S.



- PROVIDE ALL INTERCONNECTING CONDUIT/CABLE

CONTROL WIRING DIAGRAM EXHAUST FAN EF-5

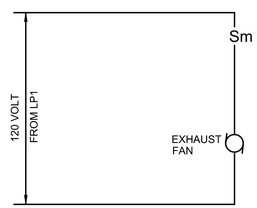
SCALE: N.T.S.



- PROVIDE ALL INTERCONNECTING CONDUIT/CABLE

EF-6 EXHAUST FAN WIRING DIAGRAM

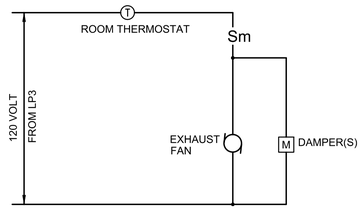
SCALE: N.T.S.



- PROVIDE ALL INTERCONNECTING CONDUIT/CABLE

EF-7 EXHAUST FAN WIRING DIAGRAM

SCALE: N.T.S.



- PROVIDE ALL INTERCONNECTING CONDUIT/CABLE

EF-8 EXHAUST FAN WIRING DIAGRAM

SCALE: N.T.S.

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MICHAEL J. COTTER ELECTRICAL No. 40999 REGISTERED PROFESSIONAL ENGINEER — COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
CONTROL WIRING DIAGRAMS II

FOR CONSTRUCTION

Sheet No.

E-26

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Apr 01,2024-10:40am

PANELBOARD SCHEDULE

NO. LP1 LOCATION: WTP ELECTRICAL ROOM

208/120 V, 3 PH, 4 W, 250 A MAINS 250 A SOLID NEUTRAL; 250 A MCB

22,000 AIC AT 120 V 250 GROUND BUS - A MLO SURFACE MOUNTING

	CIRCUIT	DESCRIPTION OF LOAD	LOAD (KVA) AØ	LOAD (KVA) BØ	LOAD (KVA) CØ	BREAKER TRIP	BREAKER POLE	BREAKER POLE	BREAKER TRIP	LOAD (KVA) AØ	LOAD (KVA) BØ	LOAD (KVA) CØ	DESCRIPTION OF LOAD	CIRCUIT	
	1	FILTER ROOM LIGHTING	1.20			20	1	1	20	0.80			EXTERIOR RECEPTACLES	2	*
	3	FILTER ROOM LIGHTING		1.30		20	1	1	20		0.40		TELE/DATA BACKBOARD	4	
*	5	FILTER ROOM RECEPTACLES			0.80	20	1	1	20			0.40	ELECTRIC ROOM RECEPTACLES	6	
*	7	FILTER ROOM RECEPTACLES	1.0			20	1	1	20	0.60			CHEM. ROOMS RECEPTACLES	8	*
	9	WATER HEATERS & RECIRC. PUMP		0.20		20	1	1	20		0.40		MECH & REST RM RECEPTACLES	10	
	11	ROOM LIGHTING			0.60	20	1	1	20			0.80	UPPER LEVEL RECEPTACLES	12	
	13	LAB RECEPTACLES	1.00			20	1	1	20	1.0			UH-1, UH-2,	14	
	15	LAB RECEPTACLES		0.80		20	1	1	20		1.0		UH-3,UH-4	16	
	17	LAB RECEPTACLES			0.80	20	1	1	20			1.20	EXHAUST FAN EF-2	18	
*	19	LAB REFRIG.	0.20			20	1	1	20	0.10			EF=5 REFRIGERATION MONITOR AND DAMPERS	20	
	21	FUME HOOD		1.00		20	1	1	20		0.10		EXHAUST FAN EF-3	22	
	23	CHEMICAL ALARM CONTROL PANEL (CACP)			0.50	20	1	1	20			0.10	EXHAUST FAN EF-4	24	
	25	FIRE ALARM CONTROL PANEL (FACP)	0.50			20	1	1	20	0.60			EXHAUST FAN EF-6	26	
	27	EXTERIOR LIGHTING		0.50		20	1	1	20		0.15		EXHAUST FAN EF-7	28	
	29	EXTERIOR LIGHTING			0.30	20	1	1	20			1.20	OVERHEAD DOOR	30	
	31	SCADA CONTROL PANEL	0.50			20	1	1	20	0.60			PIPE GALLERY RECEPTACLES	32	*
	33	TELE/COMM EQUIPMENT RACK		0.40		20	1	1	20		0.75		FILTERS FLOW METERS	34	
	35	FILTER 200A MOTORIZED VALVES			0.40	20	1	1	20			0.10	EMERGENCY EYE WASH	36	
	37	FILTER 200B MOTORIZED VALVES	0.40			20	1	1	20	1.20			OVERHEAD DOOR	38	
	39	FILTER 200C MOTORIZED VALVES		0.40		20	1	1	20		1.20		MP-404, MP-408, MP-603	40	
	41	ASB-202 ENCLOSURE FAN			0.70	20	1	1	30			1.20	MP-405, MP-503, MP-604	42	
	43	FLOW METERS	1.25			20	1	1	20	1.20			MP-407, MP-504, MP-651	44	
	45	FLOW METERS		1.25		20	1	1	20		0.30		CHEMICAL FILL PANELS	46	
	47	LEVEL TRANSMITTERS			1.40	20	1	1	20			1.0	LOWER LEVEL LIGHTING	48	
	49	LEVEL TRANSMITTERS	0.80			20	1	1	20	1.0			ICE MACHINE	50	*
	51	MOTORIZED VALVES		0.50		20	1	1	20		0.10		ELECTRONIC TRAP PRIMERS	52	*
	53	ANALYZERS			1.20	20	1	1	20			-	SPARE	54	
	55	SECURITY ALARM CONTROL PANEL	0.30			20	1	1	20	-			SPARE	56	
	57	FLOW METERS		0.75		20	1	1	20		-		SPARE	58	
	59	MOTORIZED VALVES			1.50	20	1	1	20			-	SPARE	60	
	61	SPARE	-			20	1	1	20	-			SPARE	62	
	63	SPARE		-		20	1	1	20		-		SPARE	64	
	65	SPARE			-	20	1	1	20			-	SPARE	66	
	67	SPARE	-			20	1	1	20	-			SPARE	68	
	69	SPARE		-		20	1	1	20		-		SPARE	70	
	71	GENERATOR BATTERY CHARGER & STATOR HEATER			1.00	20	1	1	20				SPARE	72	
	73	EWH-1	2.05			30	2	2	50	3.20			ELECTRIC VEHICLE CHARGING STATION	74	
	75			2.05							3.20			76	
	77	HP-2 & ACC-4			3.40	40	2	2	50			3.20	ELECTRIC VEHICLE CHARGING STATION	78	
	79		3.40							3.20				80	
	81	HP-1 & ACC-3		2.10		30	2	2	50		3.00		GENERATOR JACKET HEATER	82	
	83				2.10							3.00		84	
	SUB-TOTAL CONNECTED		12.6	11.3	14.7					13.5	10.6	12.2	SUB-TOTAL CONNECTED		

★ PROVIDE GFCI BREAKER

SUB-TOTAL CONNECTED	KVA AØ =	26.10
SUB-TOTAL CONNECTED	KVA BØ =	21.90
SUB-TOTAL CONNECTED	KVA CØ =	26.90
TOTAL CONNECTED	KVA =	74.90

ENVIRONMENTAL PARTNERS — An Apex Company —

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MICHAEL J. COTTER ELECTRICAL No. 40990 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
WTP PANELBOARD SCHEDULES

FOR CONSTRUCTION

Sheet No.

E-27

PANELBOARD SCHEDULE

NO. LP2 LOCATION: WELL STATION 2

208/120 V, 3 PH, 4 W, 100 A MAINS — 100 A SOLID NEUTRAL; — 50 A MCB

10,000 AIC AT 120 V — 100 GROUND BUS — - A MLO — SURFACE MOUNTING

CIRCUIT	DESCRIPTION OF LOAD	LOAD (KVA) AØ	LOAD (KVA) BØ	LOAD (KVA) CØ	BREAKER TRIP	BREAKER POLE	BREAKER POLE	BREAKER TRIP	LOAD (KVA) AØ	LOAD (KVA) BØ	LOAD (KVA) CØ	DESCRIPTION OF LOAD	CIRCUIT
1	LIGHTING	0.28			20	1	1	20	0.50			SCADA CONTROL PANEL	2
* 3	EXISTING CIRCUIT - INTERIOR RECEPTACLES		0.80		20	1	1	20		0.50		EXISTING CIRCUIT - MISC.	4
5	EXTERIOR LIGHT			0.10	20	1	1	20			1.00	EXISTING CIRCUIT - PANEL BD	6
* 7	EXISTING CIRCUIT - EXTERIOR RECEPTACLES	0.40			20	1	1	20	0.25			EXISTING CIRCUIT - CHEM. FEED PUMP	8
* 9	EXISTING CIRCUIT - INTERIOR RECEPTACLES		0.40		20	1	1	20		0.25		EXISTING CIRCUIT - CHEM. FEED PUMP	10
11	EXISTING CIRCUIT - PACER OUT			0.50	20	1	1	20			0.75	EXISTING CIRCUIT - FAN	12
13	FLOW METER	0.25			20	1	1	20	0.25			EXISTING CIRCUIT - WATER WATCHMAN	14
15	EXISTING CIRCUIT - MISC.		0.50		20	1	1	20		0.50		EXISTING CIRCUIT - MISC.	16
17	SPARE			-	20	1	1	20			-	SPARE	18
19	SPARE	-			20	1	3	20	1.00				20
21	SUMP PUMP		0.75		20	1				1.00		VACUUM PRIMER	22
23				0.75							1.00		24
SUB-TOTAL CONNECTED		0.93	2.45	1.35					2.00	2.25	2.75	SUB-TOTAL CONNECTED	

★ PROVIDE GFCI BREAKER

SUB-TOTAL CONNECTED	KVA AØ =	2.93	
SUB-TOTAL CONNECTED	KVA BØ =	4.70	
SUB-TOTAL CONNECTED	KVA CØ =	4.10	
TOTAL CONNECTED	KVA =	11.73	

PANELBOARD SCHEDULE

NO. LP3 LOCATION: WELL STATION 3

208/120 V, 3 PH, 4 W, 100 A MAINS — 100 A SOLID NEUTRAL; — 50 A MCB

10,000 AIC AT 120 V — 100 GROUND BUS — - A MLO — SURFACE MOUNTING

CIRCUIT	DESCRIPTION OF LOAD	LOAD (KVA) AØ	LOAD (KVA) BØ	LOAD (KVA) CØ	BREAKER TRIP	BREAKER POLE	BREAKER POLE	BREAKER TRIP	LOAD (KVA) AØ	LOAD (KVA) BØ	LOAD (KVA) CØ	DESCRIPTION OF LOAD	CIRCUIT
1	LIGHTING	0.13			20	1	1	20	0.50			SCADA CONTROL PANEL	2
* 3	RECEPTACLES		0.60		20	1	1	20		0.25		FLOW METER	4
5	EXTERIOR LIGHT			0.01	20	1	1	20			0.10	EXHAUST FAN EF-8	6
* 7	EXTERIOR RECEPTACLE	0.20			20	1	1	20	0.50			SACP	8
9	LP3A EXISTING CIRCUIT - MISC.		0.50		20	1	1	20		0.50		LP3C EXISTING CIRCUIT - MISC.	10
11	LP3A EXISTING CIRCUIT - MISC.			0.50	20	1	1	20			0.50	LP3C EXISTING CIRCUIT - MISC.	12
13	LP3B EXISTING CIRCUIT - MISC.	0.50			20	1	1	20	-			SPARE	14
15	LP3B EXISTING CIRCUIT - MISC.		0.50		20	1	1	20		-		SPARE	16
17	SPARE			-	20	1	1	20			-	SPARE	18
19	SPARE	-			20	1	1	20	-			SPARE	20
21	SPARE		-		20	1	1	20		-		SPARE	22
23	SPARE			-	20	1	1	20			-	SPARE	24
SUB-TOTAL CONNECTED		1.0	1.6	0.51					1.0	0.75	0.60	SUB-TOTAL CONNECTED	

★ PROVIDE GFCI BREAKER

SUB-TOTAL CONNECTED	KVA AØ =	2.00	
SUB-TOTAL CONNECTED	KVA BØ =	2.35	
SUB-TOTAL CONNECTED	KVA CØ =	1.11	
TOTAL CONNECTED	KVA =	5.46	

PANELBOARD SCHEDULE

NO. LP4 LOCATION: WELL STATION 4

208/120 V, 3 PH, 4 W, 100 A MAINS — 100 A SOLID NEUTRAL; — 50 A MCB

10,000 AIC AT 120 V — 100 GROUND BUS — - A MLO — SURFACE MOUNTING

CIRCUIT	DESCRIPTION OF LOAD	LOAD (KVA) AØ	LOAD (KVA) BØ	LOAD (KVA) CØ	BREAKER TRIP	BREAKER POLE	BREAKER POLE	BREAKER TRIP	LOAD (KVA) AØ	LOAD (KVA) BØ	LOAD (KVA) CØ	DESCRIPTION OF LOAD	CIRCUIT
1	LIGHTING	0.19			20	1	1	20	0.50			SCADA CONTROL PANEL	2
* 3	LP4 EXISTING CIRCUIT - INTERIOR RECEPTACLES		0.80		20	1	1	20		0.25		LP4A EXISTING CIRCUIT - MISC.	4
5	EXTERIOR LIGHT			0.01	20	1	1	20			0.50	LP4A EXISTING CIRCUIT - MISC.	6
7	LP4 EXISTING CIRCUIT - MISC.	0.50			20	1	1	20	0.50			LP4A EXISTING CIRCUIT - MISC.	8
9	LP4 EXISTING CIRCUIT - MISC.		0.50		20	1	1	20		0.50		LP4A EXISTING CIRCUIT - MISC.	10
11	LP4 EXISTING CIRCUIT - MISC.			0.50	20	1	1	20			0.50	LP4A EXISTING CIRCUIT - MISC.	12
13	LP4 EXISTING CIRCUIT - MISC.	0.50			20	1	1	20	0.50			LP4A EXISTING CIRCUIT - MISC.	14
15	LP4 EXISTING CIRCUIT - MISC.		0.50		20	1	1	20		0.50		LP4A EXISTING CIRCUIT - MISC.	16 *
17	LP4 EXISTING CIRCUIT - MISC.			0.50	20	1	1	20			0.25	FLOW METER	18
* 19	LP4 EXISTING CIRCUIT - MISC.	0.50			20	1	1	20	-			SPARE	20
21	SPARE		-		20	1	1	20		-		SPARE	22
23	SPARE			-	20	1	1	20			-	SPARE	24
SUB-TOTAL CONNECTED		1.69	1.80	1.01					1.50	1.25	1.25	SUB-TOTAL CONNECTED	

★ PROVIDE GFCI BREAKER

SUB-TOTAL CONNECTED	KVA AØ =	3.19	
SUB-TOTAL CONNECTED	KVA BØ =	3.05	
SUB-TOTAL CONNECTED	KVA CØ =	2.26	
TOTAL CONNECTED	KVA =	8.50	

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COMMONWEALTH OF MASSACHUSETTS — MICHAEL J. COTTER ELECTRICAL No. 40999 REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
WELL STATIONS PANELBOARD SCHEDULES

FOR CONSTRUCTION

Sheet No. E-28

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot: Date: Mar 29,2024-9:45am

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER & CATALOG SERIES	LAMPS		VOLTS	WATTS	MOUNTING		REMARKS
			TYPE	LUMENS			TYPE	HEIGHT	
F1	48" LED ENCLOSED AND GASKETED INDUSTRIAL LIGHTING FIXTURE.	LITHONIA FEM-L48-6000LM-IMAFL-MVOLT-35K-80CRI	LED 3500K	6000lm	120	45	PENDANT	22'-0"ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED	
F2	48" LED ENCLOSED AND GASKETED INDUSTRIAL LIGHTING FIXTURE.	LITHONIA FEM-L48-4000LM-IMAFL-MVOLT-35K-80CRI	LED 3500K	4000lm	120	31	SURFACE		
F3	2'X2' RECESSED ALUMINUM LED LIGHTING FIXTURE	LITHONIA 2BLT2-33LHE-ADP-LP830	LED 3500K	3300lm	120	26	RECESSED		
F4	CONTEMPORARY SQUARE VANITY LED LIGHTING FIXTURE	TERON LIGHITNG VCY24-L12.0-120-TE350-35K	LED 3500K	2350lm	120	18	WALL		
W1	EXTERIOR BUILDING MOUNTED LED WALL PACK LIGHT FIXTURE DARK BRONZE. DARK SKY COMPLIANT	LITHONIA WDGE2-LED-P4 30K-80CRI-VF-PE	LED 3000K	4247lm	120	35	WALL	18'-0"ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED	INTEGRAL PHOTOCELL CONTROLLED
W2	EXTERIOR BUILDING MOUNTED LED MINI WALL PACK LIGHT FIXTURE DARK BRONZE. DARK SKY COMPLIANT	LITHONIA WDGE1-LED-P1-30K 80CRI-VF	LED 3000K	1161lm	120	10	WALL	8'-0"ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED	
W3	EXTERIOR BUILDING MOUNTED LED MINI WALL PACK LIGHT FIXTURE DARK BRONZE. DARK SKY COMPLIANT	LITHONIA WDGE1-LED-P1-30K 80CRI-VF-PE	LED 3000K	1161lm	120	10	WALL	8'-0"ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED	INTEGRAL PHOTOCELL AND REMOTE MOTION SENSOR CONTROLLED
	SELF CONTAINED EMERGENCY LIGHTING BATTERY UNIT NEMA 4 WITH TWO LIGHTING HEADS	REFER TO SPECIFICATIONS			120	8W	WALL		INSTALL 3/4"C, 2#12, 1#12GND TO REMOTE HEADS
	SEALED-BEAM WEATHERPROOF REMOTE LIGHTING FIXTURE WITH TWO LIGHTING HEADS	REFER TO SPECIFICATIONS			120	8W	WALL		
	EMERGENCY EXIT SIGN LED TYPE WITH BATTERY BACK-UP NEMA 4X	REFER TO SPECIFICATIONS			120		WALL		

LIGHTING FIXTURE SCHEDULES NOTES:

1. THE CATALOG NUMBERS LISTED ARE GIVEN AS A GUIDE TO THE DESIGN AND QUALITY OF FIXTURE DESIRED. EQUIVALENT DESIGNS, MATERIALS, DIMENSIONS, COEFFICIENT OF UTILIZATIONS AND EQUAL QUALITY FIXTURES OF OTHER MANUFACTURERS WILL BE ACCEPTABLE.

POWER CABLE/CONDUIT SCHEDULE

SYMBOL	CONDUIT SIZE	CONDUCTORS	GND
P22	3/4"	(2)#12	(1)#12
P23	3/4"	(3)#12	(1)#12
P26	3/4"	(6)#12	(1)#12
P32	3/4"	(2)#10	(1)#10
P33	3/4"	(3)#10	(1)#10
P34	3/4"	(4)#10	(1)#10
P53	3/4"	(3)#8	(1)#10
P54	3/4"	(4)#8	(1)#10
P63	1"	(3)#6	(1)#8
P64	1"	(4)#6	(1)#8
P83	1 1/4"	(3)#4	(1)#8
P84	1 1/4"	(4)#4	(1)#8
P103	1 1/2"	(3)#3	(1)#6
P104	1 1/2"	(4)#3	(1)#6
P113	1 1/2"	(3)#2	(1)#6
P114	1 1/2"	(4)#2	(1)#6
P133	2"	(3)#1	(1)#6
P134	2"	(4)#1	(1)#6
P153	2"	(3)#1/0	(1)#6
P154	2"	(4)#1/0	(1)#6
P173	2 1/2"	(3)#2/0	(1)#6
P174	2 1/2"	(4)#2/0	(1)#6
P204	2 1/2"	(4)#3/0	(1)#4
P804	(2)4"	(8)500KCMIL	(2)#1/0

VFD CABLE/CONDUIT SCHEDULE

SYMBOL	CONDUIT SIZE	CONDUCTORS	GND
V23	1"	(3)#12	(1)#12
V83	1 1/2"	(3)#4	(1)#8
V103	2"	(3)#3	(1)#6
V173	3"	(3)#2/0	(1)#6

TELE/DATA CABLE/CONDUIT SCHEDULE

SYMBOL	CONDUIT SIZE	CABLES
TD1	1"	1-CAT6E
TD2	1"	2-CAT6E
FO6	1"	6 STRAND FIBER OPTIC
FO12	2"	12 STRAND FIBER OPTIC

SIGNAL CABLE/CONDUIT SCHEDULE

SYMBOL	CONDUIT SIZE	CONDUCTORS
S	1"	OEM PROVIDED
S1	3/4"	1-2/C#16 TSP
S13	3/4"	1-3/C#16 TSP
S14	3/4"	1-4/C#16 TSP
S2	3/4"	2-2/C#16 TSP
S23	3/4"	2-3/C#16 TSP
S3	1"	3-2/C#16 TSP
S33	1"	3-3/C#16 TSP
S4	1"	4-2/C#16 TSP
S5	1"	5-2/C#16 TSP
S6	1 1/2"	6-2/C#16 TSP
S7	1 1/2"	7-2/C#16 TSP
S8	1 1/2"	8-2/C#16 TSP
S9	1 1/2"	9-2/C#16 TSP
S10	2"	10-2/C#16 TSP
TC1	3/4"	8/C#18

CONTROL CABLE/CONDUIT SCHEDULE

SYMBOL	CONDUIT SIZE	CONDUCTORS
C2	3/4"	2#14
C4	3/4"	4#14
C5	3/4"	5#14
C6	3/4"	6#14
C7	3/4"	7#14
C8	3/4"	8#14
C9	3/4"	9#14
C10	3/4"	10#14
C12	3/4"	12#14
C16	1"	16#14
C20	1"	20#14
C30	1 1/4"	30#14
C50	1 1/2"	50#14
C60	1 1/2"	60#14
C80	2"	80#14
C100	2 1/2"	100#14

NOTES:

1. CONDUIT AND CONDUCTOR SIZES ARE TO BE PER THE ABOVE SCHEDULES UNLESS OTHERWISE NOTED.
2. CONDUITS SHALL NOT BE INSTALLED WITHIN SLAB STRUCTURE AND SHALL BE RUN UNDER THE SLAB.
3. A "E" DESIGNATION IN FRONT OF THE SYMBOL INDICATES CONDUIT AND WIRE/CABLE ARE EXISTING TO REMAIN AND ARE TO BE DISCONNECTED FROM EXISTING PANELS AND RECONNECTED INTO NEW PANELS. (I.E. EC2 REPRESENTS EXISTING 3/4"C WITH 2/14 WIRES)

ENVIRONMENTAL PARTNERS
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COMMONWEALTH OF MASSACHUSETTS
MICHAEL J. COTTER
ELECTRICAL
No. 40999
REGISTERED
PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
SCHEDULES

FOR CONSTRUCTION

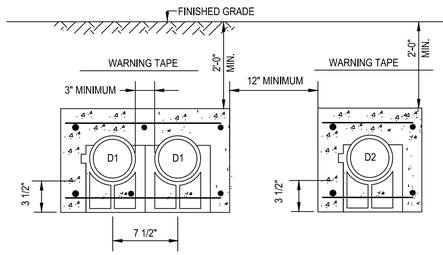
Sheet No.
E-29

DUCT / CABLE SCHEDULE

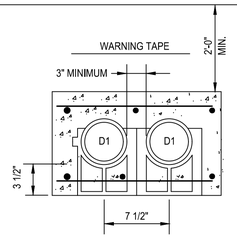
DUCT NO.	SIZE	CONDUCTORS	FROM	TO
D1	5"	PULL STRING FOR PRIMARY SERVICE	UTILITY POLE	UTILITY TRANSFORMER
D2	3"	PULL STRING FOR SERVICE PROVIDER	UTILITY POLE	STUB UP BELOW BELOW FIBER PATCH PANEL
D3	4"	(4) 500kcmiL	UTILITY TRANSFOMER	MCB
D4	4"	(4) 500kcmiL, #1/0 GND	GENERATOR	GENERATOR DISCONNECT SWITCH
D5	1"	(4) #12, #12GND, (2) #8, #10GND	LP1	GENERATOR AUXILLARY SYSTEMS.
D6	1"	(20) #14	GENERATOR	MAIN CONTROL PANEL
D7	1"	(6) #14	GENERATOR	ATS & EMERGENCY STOP
D8	3"	(4) #3/0, #4 GND	MDP	WELL STATION 4 - MDP4
D9	3"	12 STRAND FIBER OPTIC CABLE	WTF FIBER PATCH PANEL	WELL STATION 4 - FIBER PATCH PANEL
D10	2"	(5) #8, #10GND	LP1	ELECTRIC VEHICLE CHARGING STATION
D11	3"	(4) 3/0kcmiL, #4 GND	UTILITY POLE	WELL STATION 2 - MCB2
D12	2"	(4) 1/0kcmiL, #6 GND	UTILITY POLE	WELL STATION 3 - MCB3

DUCTBANK SECTION NOTES:

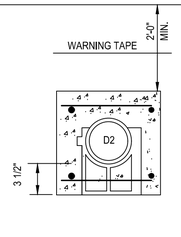
1. BACKFILL DUCT BANK IN LAYERS AND MANUALLY TAMP OR "PUDDLE" CONCRETE FILL. PROVIDE RED DUCT BANK MARKER TAPES, READING "CAUTION - ELECTRICAL LINES BELOW", OVER ENTIRE LENGTH OF DUCTLINE. LOCATE TAPES 12 INCHES BELOW GRADE, PROVIDE A TAPE FOR EVERY 12 INCHES OF WIDTH OF DUCTLINE.
2. A MINIMUM OF 12" SEPARATION SHALL BE KEPT BETWEEN DUCT BANK SECTIONS WITHIN SAME TRENCH.
3. TRENCHING, CONCRETE WORK, AND BACKFILLING SHALL BE PERFORMED BY GENERAL CONTRACTOR.
4. SINGLE ROW DUCTBANK HEIGHT IS NOT TO EXCEED 16" AND DOUBLE ROW DUCTBANK HEIGHT IS NOT TO EXCEED 24".



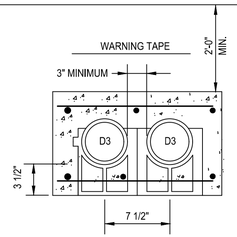
SECTION A-A



SECTION B-B



SECTION C-C



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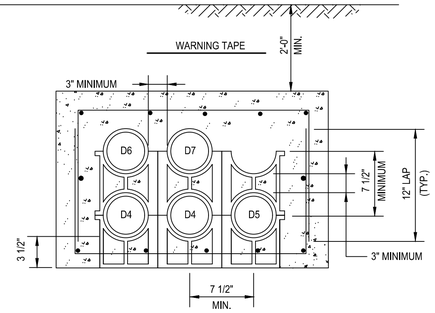
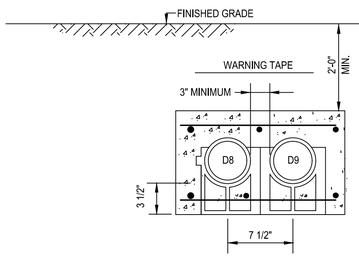
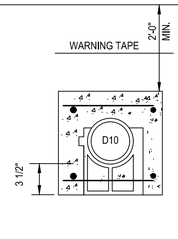


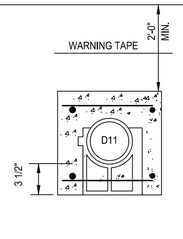
SECTION E-E



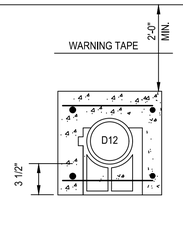
SECTION F-F



SECTION G-G



SECTION H-H



SECTION I-I

DUCTBANK SECTIONS

SCALE: N.T.S.

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COMMONWEALTH OF MASSACHUSETTS — MICHAEL J. COTTER — ELECTRICAL — No. 40959 — REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

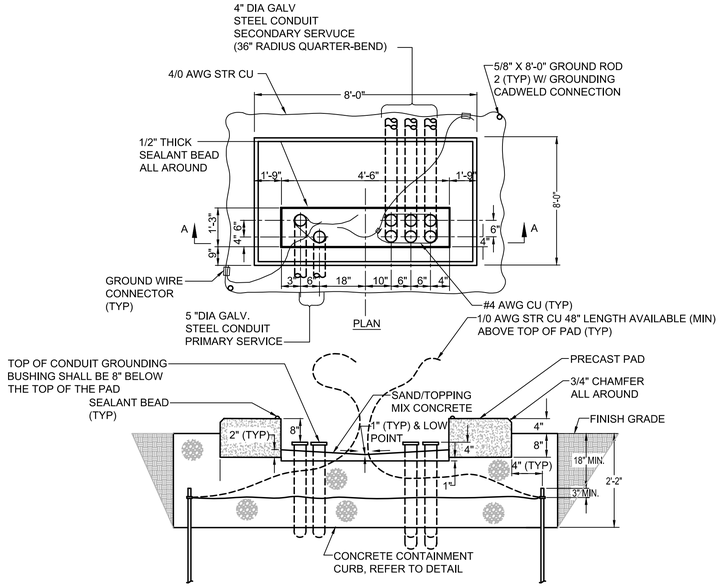
ELECTRICAL
DUCTBANK SECTIONS

FOR CONSTRUCTION

Sheet No.

E-30

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plants.dwg Plot Date: Mar 29,2024-9:46am



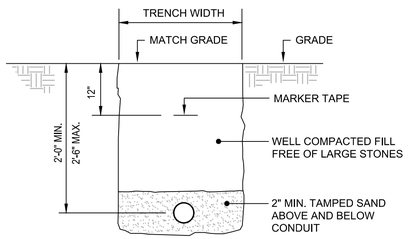
SECTION A-A

NOTES:

1. SEAL SECONDARY CONDUITS WITH EXPANDING FOAM AND GROUT PRIMARY AND SECONDARY CONDUIT OPENINGS ON PAD.
2. TRANSFORMER PAD TO BE IN ACCORDANCE WITH EVERSOURCE REQUIREMENTS
3. GENERAL CONTRACTOR TO PROVIDE AND INSTALL PRE-CAST TRANSFORMER PAD.

TRANSFORMER PAD

SCALE: N.T.S.

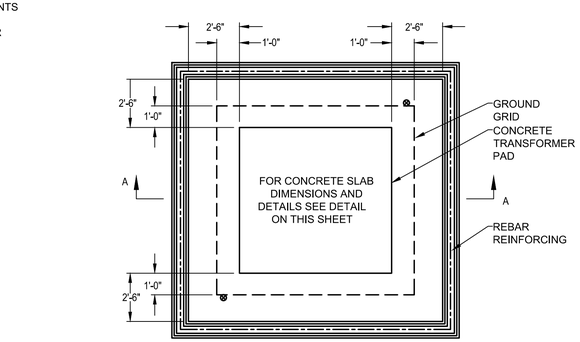


NOTES:

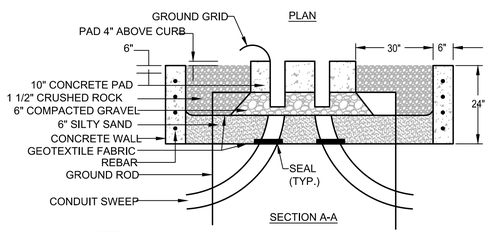
1. BACKFILL IN LAYERS AND MANUALLY TAMP. PROVIDE RED DUCT BANK MARKER TAPE, READING "CAUTION - ELECTRICAL LINES BELOW", OVER ENTIRE LENGTH OF DUCTLINE. LOCATE TAPE 12 INCHES BELOW GRADE. PROVIDE A TAPE FOR EVERY 12 INCHES OF WIDTH OF DUCTLINE.
2. TRENCHING AND BACKFILLING SHALL BE PERFORMED BY GENERAL CONTRACTOR.

SINGLE UNDERGROUND CONDUIT SECTION

SCALE: N.T.S.



PLAN



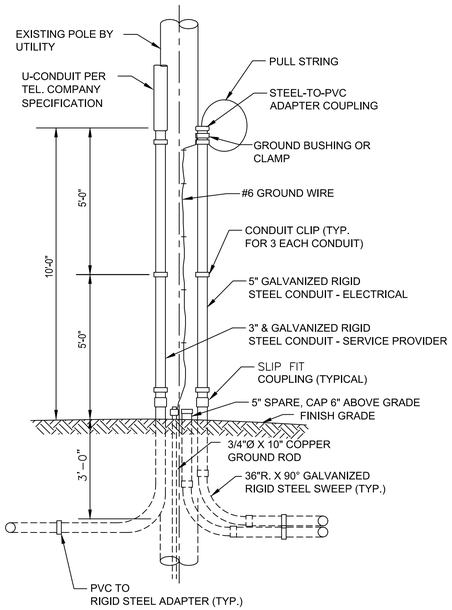
SECTION A-A

NOTES:

1. GENERAL CONTRACTOR TO PROVIDE AND INSTALL PRE-CAST OIL CONTAINMENT CURB.

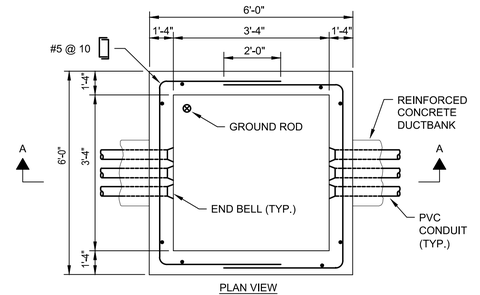
TRANSFORMER OIL CONTAINMENT CURB

SCALE: N.T.S.

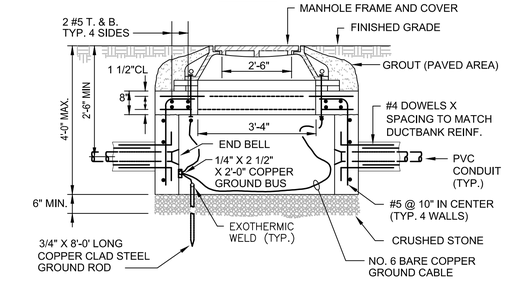


UTILITY POLE SERVICE RISER DETAIL

SCALE: N.T.S.



PLAN VIEW



SECTION A-A

NOTES:

1. CHIMNEY HEIGHT IS KEPT TO MINIMUM TO FACILITATE PLACING COMPLETED SPLICES IN HANDHOLE FROM ABOVE GRADE
2. CONCRETE PER SPECIFICATIONS WITH MINIMUM STRENGTH OF 5,000 PSI AT 28 DAYS
3. PROVIDE HANDHOLE FRAME, RING AND COVER.
4. REFER TO DUCTBANK SECTIONS FOR THE REQUIRED NUMBER OF CONDUIT ENTRANCES. PROVIDE CONDUIT ENTRY SPACE ON NON-USED SIDES FOR A MINIMUM (8) 4" FUTURE CONDUITS.
5. GENERAL CONTRACTOR TO PROVIDE AND INSTALL ALL UTILITY HANDHOLES. COORDINATE REQUIREMENTS WITH EVERSOURCE PRIOR TO INSTALATION.

UTILITY HANDHOLE DETAIL

SCALE: N.T.S.

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COMMONWEALTH OF MASSACHUSETTS
MICHAEL J. COTTER
ELECTRICAL
No. 40599
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

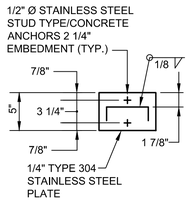
ELECTRICAL
SITE DETAILS

FOR CONSTRUCTION

Sheet No.

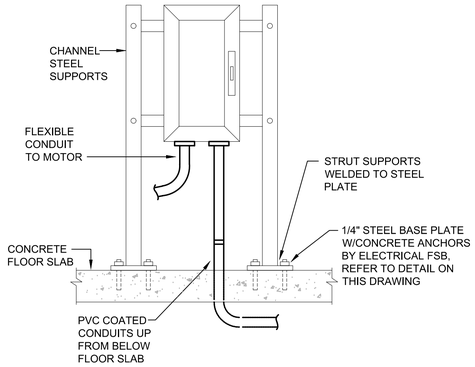
E-31

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Mar 29,2024-9:48am



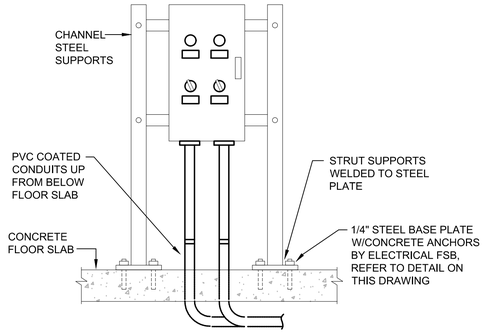
1/4" STEEL BASE PLATE DETAIL

SCALE: N.T.S.



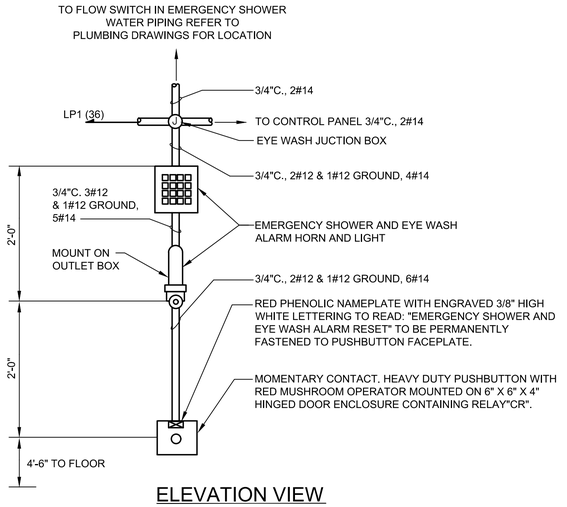
DISCONNECT SWITCH STANCHION MOUNTING DETAIL

SCALE: N.T.S.



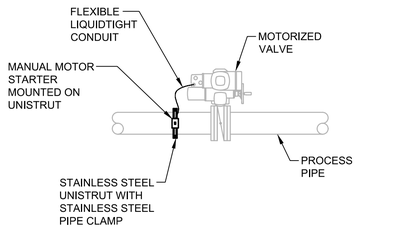
CONTROL PANEL AND JUNCTION BOX STANCHION MOUNTING DETAIL

SCALE: N.T.S.



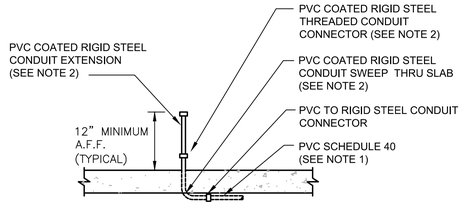
ELEVATION VIEW

SCALE: N.T.S.



MOTORIZED VALVE MANUAL MOTOR STARTER MOUNTING

SCALE: N.T.S.

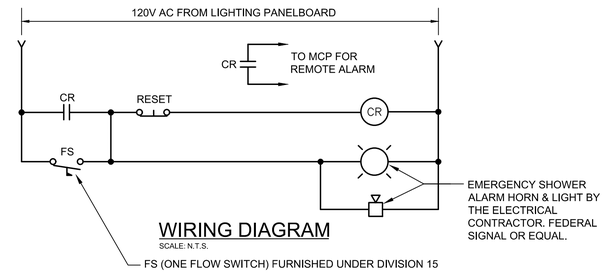


CONDUIT STUB-UP

SCALE: N.T.S.

NOTES:

1. ALL CONDUIT INSTALLED BELOW SLAB SHALL BE PVC SCHEDULE 40.
2. ALL PVC COATED RIGID STEEL CONDUIT WHICH HAS BEEN FIELD CUT OR DAMAGED SHALL BE SPRAYED OR PAINTED WITH A PVC COATING ACCEPTABLE FOR USE TO REPAIR OR SEAL PVC COATED RIGID STEEL CONDUIT. ONLY MANUFACTURER APPROVED PVC COATING SEALANT SHALL BE ACCEPTABLE.



WIRING DIAGRAM

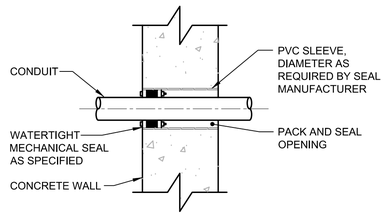
SCALE: N.T.S.

NOTE:

1. ALARM STATION TO BE MOUNTED OUTSIDE OF EACH CHEMICAL AREA WITH A EMERGENCY SHOWER. REFER TO PLAN DRAWINGS FOR EYEWASH JUNCTION BOX LOCATIONS.

EMERGENCY EYE WASH ALARM STATION

SCALE: N.T.S.



WATERTIGHT CONDUIT PENETRATION THROUGH NEW CONCRETE WALL

SCALE: N.T.S.

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COMMONWEALTH OF MASSACHUSETTS MICHAEL J. COTTER ELECTRICAL No. 40999 REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NONE
Date	APRIL 2024
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL DETAILS

FOR CONSTRUCTION

Sheet No.

E-32

Drawing file: W:\Year - 2023\23006.00 - Sharon Water Treatment Plant\Electrical Department\23006.00 Electrical Plans.dwg Plot Date: Mar 29,2024-9:47am

PROCESS AND INSTRUMENTATION ABBREVIATIONS

A/L/L	AUTO/LEAD/LAG	F	FAULT	KOH	POTASSIUM HYDROXIDE	O/S/C/A	OPEN/STOP/CLOSE/AUTOMATIC	SACP	SECURITY ALARM CONTROL PANEL
ATS	AUTOMATIC TRANSFER SWITCH	FACP	FIRE ALARM CONTROL PANEL	L/R	LOCAL/REMOTE	P	PUMP	SFB	SPEED FEEDBACK
AV	ACTUATED VALVE	F/O/R	FORWARD/OFF/REVERSE	L/O/R	LOCAL/OFF/REMOTE	PID	PROCESS & INSTRUMENTATION DIAGRAM	SP	SET POSITION
BCFP	BULK CHEMICAL FILL PANEL	F/R	FORWARD/REVERSE	M	MOTOR	PAC	POLYALUMINUM CHLORIDE	SSP	SPEED SET POINT
BWW/DR/FTW	BACKWASH WASTE/ DRAINDOWN/ FILTER TO WASTE	FIT	FLOW INDICATING TRANSMITTER	MCP	MAIN CONTROL PANEL	PIC	PANEL INTERFACE CONNECTOR	SV	SOLENOID VALVE
		FS	FLOW SWITCH	N/A	NORMAL/ALARM	PLC	PROGRAMMABLE LOGIC CONTROLLER	S/S	START/STOP
BWWEP	BACKWASH WASTE EMERGENCY PANEL	GEN	GENERATOR	NAOCL	SODIUM HYPOCHLORITE	POS	POSITION	TP	TELEMETRY PANEL
		GPCP	GENERATOR POWER CONTROL PANEL	OIT	OPERATOR INTERFACE TERMINAL	PS	PRESSURE SWITCH	TS	THERMISTOR
CACP	CHEMICAL ALARM CONTROL PANEL	H/A	HAND/AUTOMATIC	O/C	OPEN/CLOSE OR OPEN/CLOSED	PV	PILOT VALVE	VFD	VARIABLE FREQUENCY DRIVE
DHU	DEHUMIDIFIER	H/O/A	HAND/OFF/AUTOMATIC	O/C/R	OPEN/CLOSE/REMOTE	REC	RECYCLE	YL	EVENT ALARM LOW
DPIT	DIFFERENTIAL PRESSURE INDICATOR TRANSMITTER	I&C	INSTRUMENTATION & CONTROL	O/O	ON/OFF	RS	RUN STATUS	YLL	EVENT ALARM LOW LOW
		INF	INFLUENT	O/O/R	ON/OFF/RESET	RSL	REMOTE/STOP/LOCAL	YH	EVENT ALARM HIGH
EFF	EFFLUENT	INHG	INCHES OF MERCURY	O/S/C	OPEN/STOP/CLOSE	SA	SPEED ADJUST	YHH	EVENT ALARM HIGH HIGH
ESTP	EMERGENCY STOP	ISBP	INTRINSICALLY SAFE BARRIER PANEL					YNF	EVENT NO FLOW
								YM	EVENT IN MANUAL
								YS	EVENT STATUS

PLC I/O SUMMARY TABLE				
CONTROL PANEL NAME	DI	DO	AI	AO
WELL STATION 2 CONTROL PANEL	16	2	7	2
WELL STATION 3 CONTROL PANEL	9	1	5	1
WELL STATION 4 CONTROL PANEL	9	1	5	1
WTP MCP	171	61	84	25

NOTE:
1. REQUIRED SPARE I/O NOT INCLUDED IN I/O SUMMARY TABLE.

INSTRUMENTATION NOTES

1. ALL INSTRUMENTS SHALL BE MOUNTED, PIPED, AND CONNECTED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
2. WALL PENETRATIONS TO BE FRAMED AND SEALED PER PRE ENGINEERED METAL BUILDING MANUFACTURER'S STANDARD DETAILS AND SPECIFICATIONS.
3. GENERAL CONTRACTOR SHALL COORDINATE ALL DEMOLITION WITH THE ELECTRICAL CONTRACTOR. REFER TO E-DRAWINGS.
4. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY POWER AND SIGNAL WIRING WITH CONDUITS SHOWN ON ELECTRICAL SHEETS, MECHANICAL SHEETS, AND INSTRUMENTATION SHEETS BETWEEN POWER PANELS, PLC'S, CONTROL PANELS, AND FIELD INSTRUMENTS AS REQUIRED.
5. LOCATION OF PROCESS EQUIPMENT, MOTORS, VALVE, INSTRUMENTS, AND SIMILAR SHOWN ON THE DRAWINGS ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED IN FIELD.
6. REFER TO POWER PLANS FOR INSTRUMENTATION POWER REQUIREMENTS.
7. DURING ROUGH IN AND FINISHED STAGES OF CONSTRUCTION, THE GENERAL AND ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND KEEP CLEAN ALL ELECTRICAL EQUIPMENT, PANELS, FIXTURES, AND DEVICES AS WELL AS ALL EXISTING EQUIPMENT AND RELATED WORK AREAS.
8. THE CONTRACTOR SHALL PROVIDE ALL INFORMATION ABOUT EQUIPMENT WHICH THEY ARE FURNISHING TO THE ENGINEER/OWNER FOR REVIEW. THE CONTRACTOR SHALL PROVIDE ALL INSTRUMENTATION DETAILS AND SUPPORT COMPONENTS SO THAT THESE MAY BE BUILT INTO THE CONSTRUCTION IN A TIMELY MANNER.
9. ELECTRICAL CONTRACTOR AND/OR SUBCONTRACTOR TO OBTAIN ALL PERMITS AND INSPECTIONS.
10. REFER TO ELECTRICAL SHEETS FOR ADDITIONAL DETAILS FOR CONDUIT, DEVICE LOCATIONS, AND POWER CIRCUITS.
11. DRAWINGS SHOW A LAYOUT OF SCADA/INSTRUMENTATION SYSTEMS AND EQUIPMENT DIAGRAMMATICALLY. EXACT LOCATION OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE DETERMINED BY FIELD CONDITIONS AND DIRECTION BY ENGINEER AND OWNER. BY SUBMITTING A BID, CONTRACTOR WARRANTS THAT THEY VISITED THE SITE WHERE WORK IS TO BE PERFORMED, AND EXAMINED THE EXISTING CONDITIONS AND EXTENT OF LABOR AND MATERIALS TO BE PROVIDED. COORDINATION WITH ALL TRADES, UTILITIES, ETC. SHALL BE PROVIDED.
12. CONTRACTOR SHALL REVIEW THE INSTRUMENTATION PIDS, SPECIFICATION SECTION 13465 - SEQUENCE OF OPERATIONS, I&C INPUTS/OUTPUTS, AND INSTRUMENTATION SCHEDULES IN A COMBINED MANNER FOR A COMPLETE PROCESS REVIEW.
13. REQUIRED SPARES NOT INCLUDED IN I/O SUMMARY TABLE.
14. THE CONTRACTOR SHALL COORDINATE FINAL INSTRUMENT LOCATION WITH ENGINEER/OWNER PRIOR TO INSTALLATION.

ISA INSTRUMENT IDENTIFICATION TABLE

MEASURED OR INITIATING VARIABLE	FIRST LETTER MEAS. VARI.	SUCCEEDING LETTERS: SWITCH (HI, LO, OPEN, CLOSE)	PRIM. ELEM. (SENSOR)	INDICATOR	INDICATING CONTROLLER	CONTROL OR CONTR. (BLND)	RECORDER	INTEGRATOR (TOTALIZER)	TRANSMITTER (INDICATING)	TRANSMITTER	VALVE OR ACTUATOR	RELAY	SOURCE
ANALYSIS	A	ASL	AE	AI			AR		AIT	AT		AY	
BURNER, COMBUSTION	B		BE			BC						BY	
CONDUCTIVITY	C	CSH	CE	CI	CIC	CC	CR		CIT	CT		CY	
DENSITY	D	DSH	DE	DI	DIC	DC	DR		DIT	DT		DY	DX
VOLTAGE	E		EE	EI					EIT	ET		EY	
FLOW RATE	F	FSHL	FE	FI	FIC	FC	FR	FQ	FIT	FT	FV	FY	
USER'S CHOICE	G												
HAND	H	HS											
CURRENT (ELECTRICAL)	I	IS	IE	II	IIC	IC				IT		IY	
POWER	J	JSH	JE	JI	JIC	JC	JR	JQ				JY	
TIME, TIME SCHEDULE	K			KI	KIC	KC		KQ				KY	KS
LEVEL	L	LSH	LE	LI	LIC	LC	LR		LIT	LT	LV	LY	
HUMIDITY	M		ME	MI	MIC	MC	MR		MIT	MT		MY	
USER'S CHOICE	N												
USER'S CHOICE	O												
PRESSURE, VACUUM	P	PSH	PE	PI	PIC	PC	PR		PIT	PT	PV	PY	
QUANTITY	Q						QR						
RADIATION	R												
SPEED, FREQUENCY	S	SSL	SE	SI		SC			SIT	ST		SY	
TEMPERATURE	T	TSH	TE	TI	TIC	TC	TR		TIT	TT	TV	TY	
MULTIVARIABLE	U			UI			UR					UY	
MECHANICAL ANALYSIS	V												
WEIGHT, FORCE	W	WS	WE	WI	WIC		WR		WIT	WT			
VIBRATION	X		XE	XI								XY	
EVENT	Y	YS		YI			YR		YIT	YT		YY	
POSITION, DIMENSION	Z	ZSO	ZE	ZI			ZR		ZIT	ZT		ZY	

ENVIRONMENTAL PARTNERS — An Apex Company

ALSTON W. SCOTT 6MIL NO. 56074 REGISTERED PROFESSIONAL ENGINEER — COMMONWEALTH OF MASSACHUSETTS

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP/GPC
Drawn by	GPC
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL ABBREVIATIONS

100% DESIGN

Sheet No.

I-1

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.1 I&C Abbr_Legend_SCADA Schem_EquipSc.dwg Plot Date: Apr 11, 2024-4:13pm

INTERLOCK SCHEDULE I

INTERLOCK #	EVENT	ACTION
1	WELL 2 LO-LO SUCTION PRESSURE (PIT-107)	TURN OFF WELL 2 PUMPS (P-100A & P-100B)
2	WELL 2 PUMP #1 LOSS OF PRIME (LSL-115A)	TURN OFF WELL 2 PUMP #1 (P-100A)
3	WELL 2 PUMP #2 LOSS OF PRIME (LSL-115B)	TURN OFF WELL 2 PUMP #2 (P-100B)
4	WELL 2 PUMP #1 HI-HI DISCHARGE PRESSURE (PIT-108A)	TURN OFF WELL 2 PUMP #1 (P-100A)
5	WELL 2 PUMP #2 HI-HI DISCHARGE PRESSURE (PIT-108B)	TURN OFF WELL 2 PUMP #2 (P-100B)
6	NO FLOW- WELL 2 FLOW METER (FIT-110) (FLOW=0)	TURN OFF WELL 2 PUMPS (P-100A & P-100B)
7	WELL STATION 2 MCP EMERGENCY STOP (PB-117)	TURN OFF WELL 2 PUMPS (P-100A & P-100B)
8	WELL 3 LO-LO LEVEL (LE-146)	TURN OFF WELL 3 PUMP (P-141)
9	WELL 3 HI-HI DISCHARGE PRESSURE (PIT-147)	TURN OFF WELL 3 PUMP (P-141)
10	NO FLOW - WELL 3 FLOW METER (FIT-148) (FLOW=0)	TURN OFF WELL 3 PUMP (P-141)
11	WELL STATION 3 MCP EMERGENCY STOP (PB-152)	TURN OFF WELL 3 PUMP (P-141)
12	WELL 4 LO-LO LEVEL (LE-176)	TURN OFF WELL 4 PUMP (P-171)
13	WELL 4 HI-HI DISCHARGE PRESSURE (PIT-177)	TURN OFF WELL 4 PUMP (P-171)
14	NO FLOW - WELL 4 FLOW METER (FIT-178) (FLOW=0)	TURN OFF WELL 4 PUMP (P-171)
15	WELL STATION 4 MCP EMERGENCY STOP (PB-183)	TURN OFF WELL 4 PUMP (P-171)
16	ALL WELL PUMP RUN STATUSES=OFF (P-100A, P-100B, P-141, P-171)	TURN OFF PRE-FILTRATION NAOCL METERING PUMPS (MP-404, MP-405). TURN OFF POST-FILTRATION NAOCL METERING PUMPS (MP-407, MP-408). TURN OFF KOH METERING PUMPS (MP-503, MP-504). TURN OFF NaHSO3 METERING PUMPS (MP-603, MP-604). TURN OFF NaF METERING PUMP (MP-651)
17	NO FLOW- WTP COMBINED FE/MN INFLUENT FLOW METER (FIT-212) (FLOW=0)	TURN OFF PRE-FILTRATION SODIUM HYPOCHLORITE METERING PUMPS (MP-404 AND MP-405)
18	NO FLOW- WTP COMBINED FE/MN FILTER EFFLUENT FLOW METER (FIT-218) (FLOW=0)	TURN OFF PRE-FILTRATION SODIUM BISULFITE METERING PUMPS (MP-603 AND MP-604)
19	NO FLOW- WTP COMBINED PFAS TREATMENT INFLUENT FLOW METER (FIT-311) (FLOW=0)	TURN OFF POTASSIUM HYDROXIDE METERING PUMPS (MP-503 AND MP-504)
20	NO FLOW- WTP COMBINED PFAS TREATMENT EFFLUENT FLOW METER (FIT-312) (FLOW=0)	TURN OFF POST-FILTRATION SODIUM HYPOCHLORITE METERING PUMPS (MP-407 AND MP-408). TURN OFF SODIUM FLUORIDE METERING PUMP (MP-651)
21	HI-HI FINISHED WATER WELL LEVEL (LSH-712A)	TURN OFF WELL 2 PUMPS (P-100A & P-100B). TURN OFF WELL 3 PUMP (P-141). TURN OFF WELL 4 PUMP (P-171)
22	LO-LO FINISHED WATER WELL LEVEL (LSL-712B)	TURN OFF FINISHED WATER PUMPS (P-700A, P-700B & P-700C)
23	HI-HI FINISHED WATER PUMP #1 DISCHARGE PRESSURE (PIT-713A)	TURN OFF FINISHED WATER PUMP (P-700A)
24	HI-HI FINISHED WATER PUMP #2 DISCHARGE PRESSURE (PIT-713B)	TURN OFF FINISHED WATER PUMP (P-700B)
25	HI-HI FINISHED WATER PUMP #3 DISCHARGE PRESSURE (PIT-713C)	TURN OFF FINISHED WATER PUMP (P-700C)
26	NO FLOW- FINISHED WATER PUMP #1 FLOW METER (FIT-714A) (FLOW=0)	TURN OFF FINISHED WATER PUMP (P-700A)
27	NO FLOW- FINISHED WATER PUMP #2 FLOW METER (FIT-714B) (FLOW=0)	TURN OFF FINISHED WATER PUMP (P-700B)
28	NO FLOW- FINISHED WATER PUMP #3 FLOW METER (FIT-714C) (FLOW=0)	TURN OFF FINISHED WATER PUMP (P-700C)
29	NO FLOW- RECYCLE WATER FLOW METER (FIT-813) (FLOW=0)	TURN OFF RECYCLE PUMPS (P-800A & P-800B)
30	HI-HI RECYCLE WATER PUMP #1 DISCHARGE PRESSURE (PIT-817A)	TURN OFF RECYCLE PUMP (P-800A)
31	HI-HI RECYCLE WATER PUMP #2 DISCHARGE PRESSURE (PIT-817B)	TURN OFF RECYCLE PUMP (P-800B)
32	LO-LO BACKWASH WASTE TANK COMPARTMENT #1 LEVEL (LSL-816A)	TURN OFF RECYCLE PUMPS (P-800A & P-800B)
33	LO-LO BACKWASH WASTE TANK COMPARTMENT #2 LEVEL (LSL-816B)	TURN OFF RECYCLE PUMPS (P-800A & P-800B)
34	LO-LO BACKWASH WASTE TANK COMPARTMENT #3 LEVEL (LSL-816C)	TURN OFF RECYCLE PUMPS (P-800A & P-800B)
35	HIGH PRE-FILTRATION NAOCL DAY TANK LEVEL (LSH-413)	TURN OFF PRE-FILTRATION NAOCL TRANSFER PUMP (TP-403).

INTERLOCK SCHEDULE II

INTERLOCK #	EVENT	ACTION
36	PRE-FILTRATION NAOCL METERING PUMP #1 CONTROL PANEL EMERGENCY STOP (PB-404B)	TURN OFF PRE-FILTRATION NAOCL METERING PUMP #1 (MP-404)
37	PRE-FILTRATION NAOCL METERING PUMP #2 CONTROL PANEL EMERGENCY STOP (PB-405B)	TURN OFF PRE-FILTRATION NAOCL METERING PUMP #2 (MP-405)
38	HIGH POST-FILTRATION NAOCL DAY TANK LEVEL (LSH-416)	TURN OFF POST-FILTRATION NAOCL TRANSFER PUMP (TP-406).
39	POST-FILTRATION NAOCL METERING PUMP #1 CONTROL PANEL EMERGENCY STOP (PB-407B)	TURN OFF POST-FILTRATION NAOCL METERING PUMP #1 (MP-407)
40	POST-FILTRATION NAOCL METERING PUMP #2 CONTROL PANEL EMERGENCY STOP (PB-408B)	TURN OFF POST-FILTRATION NAOCL METERING PUMP #2 (MP-408)
41	HIGH KOH DAY TANK LEVEL (LSH-513)	TURN OFF KOH TRANSFER PUMP (TP-502).
42	KOH METERING PUMP #1 CONTROL PANEL EMERGENCY STOP (PB-503B)	TURN OFF KOH METERING PUMP #1 (MP-503)
43	KOH METERING PUMP #2 CONTROL PANEL EMERGENCY STOP (PB-504B)	TURN OFF KOH METERING PUMP #2 (MP-504)
44	HIGH NaHSO3 DAY TANK LEVEL (LSH-613)	TURN OFF NaHSO3TRANSFER PUMP (TP-602).
45	NaHSO3 METERING PUMP #1 CONTROL PANEL EMERGENCY STOP (PB-603B)	TURN OFF NaHSO3 METERING PUMP #1 (MP-603)
46	NaHSO3 METERING PUMP #2 CONTROL PANEL EMERGENCY STOP (PB-604B)	TURN OFF NaHSO3 METERING PUMP #2 (MP-604)
47	NaF METERING PUMP CONTROL PANEL EMERGENCY STOP (PB-651B)	TURN OFF NaF METERING PUMP (MP-651)
48	LO-LO OXIDIZED WATER Cl (AIT-962)	TURN OFF WELL 2 PUMPS (P-100A & P-100B), AND WELL 3 PUMP (P-141)
49	HI-HI OXIDIZED WATER Cl (AIT-962)	TURN OFF WELL 2 PUMPS (P-100A & P-100B), AND WELL 3 PUMP (P-141)
50	LO-LO PFAS FILTER INFLUENT WATER pH (AIT-964)	TURN OFF WELL 2 PUMPS (P-100A & P-100B), WELL 3 PUMP (P-141), AND WELL 4 PUMP (P-171)
51	HI-HI PFAS FILTER INFLUENT WATER pH (AIT-964)	TURN OFF WELL 2 PUMPS (P-100A & P-100B), WELL 3 PUMP (P-141), AND WELL 4 PUMP (P-171)
52	HI-HI PFAS FILTER INFLUENT WATER Cl (AIT-964)	TURN OFF WELL 2 PUMPS (P-100A & P-100B), AND WELL 3 PUMP (P-141)
53	LO-LO FINISHED WATER pH (AIT-965)	TURN OFF WELL 2 PUMPS (P-100A & P-100B), WELL 3 PUMP (P-141), WELL 4 PUMP (P-171), AND TURN OFF FINISHED WATER PUMPS (P-700A, P-700B, P-700C)
54	HI-HI FINISHED WATER pH (AIT-965)	TURN OFF WELL 2 PUMPS (P-100A & P-100B), WELL 3 PUMP (P-141), WELL 4 PUMP (P-171), AND TURN OFF FINISHED WATER PUMPS (P-700A, P-700B, P-700C)
55	LO-LO FINISHED WATER Cl (AIT-965)	TURN OFF WELL 2 PUMPS (P-100A & P-100B), WELL 3 PUMP (P-141), WELL 4 PUMP (P-171), AND TURN OFF FINISHED WATER PUMPS (P-700A, P-700B, P-700C)
56	HI-HI FINISHED WATER Cl (AIT-965)	TURN OFF WELL 2 PUMPS (P-100A & P-100B), WELL 3 PUMP (P-141), WELL 4 PUMP (P-171), AND TURN OFF FINISHED WATER PUMPS (P-700A, P-700B, P-700C)
57	WTP MCP EMERGENCY STOP (PB-993)	TURN OFF WELL PUMPS (P-100A, P-100B, P-141, P-171). TURN OFF FINISHED WATER PUMPS (P-700A, P-700B, P-700C). TURN OFF RECYCLE PUMPS (P-800A, P-800B). TURN OFF PRE-FILTRATION NAOCL METERING PUMPS (MP-404, MP-405). TURN OFF POST-FILTRATION NAOCL METERING PUMPS (MP-407, MP-408). TURN OFF KOH METERING PUMPS (MP-503, MP-504). TURN OFF NaHSO3 METERING PUMPS (MP-603, MP-604). TURN OFF NaF METERING PUMP (MP-651). TURN OFF AIR SCOUR BLOWER (ASB-202).
58	FE/MN FILTER AREA EMERGENCY STOP (PB-994)	TURN OFF WELL PUMPS (P-100A, P-100B, P-141, P-171). TURN OFF FINISHED WATER PUMPS (P-700A, P-700B, P-700C). TURN OFF RECYCLE PUMPS (P-800A, P-800B). TURN OFF PRE-FILTRATION NAOCL METERING PUMPS (MP-404, MP-405). TURN OFF POST-FILTRATION NAOCL METERING PUMPS (MP-407, MP-408). TURN OFF KOH METERING PUMPS (MP-503, MP-504). TURN OFF NaHSO3 METERING PUMPS (MP-603, MP-604). TURN OFF NaF METERING PUMP (MP-651). TURN OFF AIR SCOUR BLOWER (ASB-202).

ENVIRONMENTAL PARTNERS — An Apex Company —

COMMONWEALTH OF MASSACHUSETTS — ALSTON W. GOTTS — CIVIL — NO. 56074 — REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

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Designed by	GPC
Drawn by	GPC
Checked by	EAK
Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
INTERLOCK SCHEDULE

100% DESIGN

Sheet No.

I-2

VALVES

- BALL VALVE
- VENTED BALL VALVE
- BALL CHECK VALVE
- GATE VALVE
- GLOBE VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- NEEDLE VALVE
- DIAPHRAGM VALVE
- PLUG VALVE
- PINCH VALVE
- 3 WAY VALVE
- 4 WAY VALVE
- PRESSURE REDUCING VALVE
- BACK PRESSURE VALVE
- FIVE FUNCTION VALVE
- VACUUM BREAKER
- RELIEF VALVE
- WELL SERVICE VALVE
- SAMPLE

ACTUATORS

- SOLENOID
- PNEUMATIC
- CYLINDER
- MOTOR
- ELECTROPNUEMATIC
- ELECTRO HYDRAULIC

PIPING

- PRESSURE INDICATOR
- PRESSURE SWITCH
- AIR FILTER
- AIR REGULATOR
- AIR LUBRICATOR
- FILTER REGULATOR
- CHEMICAL SEAL
- RUPTURED DISC
- DRESSER COUPLING
- REDUCER
- ECCENTRIC REDUCER
- STRAINER
- UNION
- EXPANSION JOINT/FLEX CONNECTOR
- FLEXIBLE HOSE
- FLANGE
- HOSE CONNECTION
- QUICK DISCONNECT
- MAGNETIC FLOWMETER
- ULTRASONIC FLOWMETER
- TURBINE FLOWMETER
- ORIFICE FLOWMETER
- SITE FLOW INDICATOR
- FLUME
- VENTURI
- WEIR
- THERMAL DISPERSION FLOW METER
- INSULATION
- ELECTRIC TRACE INSULATION
- STREAM TRACE INSULATION
- CENTRIFUGAL
- DIAPHRAGM
- GEAR
- METERING
- PROGRESSIVE CAVITY
- VERTICAL TURBINE PUMP
- ROTARY BLOWER
- CENTRIFUGAL BLOWER
- MOTOR
- DOUBLE SUCTION
- SUBMERSIBLE
- CENTRIFUGAL SUCTION LIFT
- POSITIVE DISPLACEMENT BLOWER
- SILENCER
- PARTICULATE FILTER
- ROTAMETER
- SLIDE GATE

PUMPS, BLOWERS, TANKS AND EQUIPMENT

- SPLITTER BOX
- BAG FEEDER
- 55 GALLON DRUM
- FILTER PRESS
- AERATOR WITH SPARGER
- AIR COMPRESSOR?
- AIR DRYER
- AIR SEPARATOR
- DUPLEX STRAINER
- INSECT SCREEN
- LEVEL ELEMENT
- LEVEL ELEMENT (ULTRASONIC)
- ANALYTICAL ELEMENT
- RADIO COMMUNICATION
- DEMISTER
- EXPANSION TANK
- LEVEL SWITCH
- FLOOD SWITCH
- PULSATION DAMPENER
- HORN
- HEAT EXCHANGER
- SAFETY SHOWER
- SINGLE STRAINER
- DUST COLLECTOR
- CALIBRATION STANDPIPE
- STATIC MIXER
- VERTICAL MIXER W/ AFD
- SUBMERSIBLE MIXER
- INJECTOR
- PIPELINE FLASH REACTOR
- TRIM HEATER
- AMBIENT VAPORIZER
- SECURITY CAMERA
- VERTICAL TANK
- HORIZONTAL TANK
- DOME TANK
- CONE BOTTOM TANK
- WATER LEVEL
- PROP. AGITATOR
- TURBINE AGITATOR
- VENT
- VACUUM SWITCH
- EJECTOR
- DRAIN
- FLOW SWITCH
- HIGH PRESSURE CUTOUT SWITCH
- PRESSURE VESSEL

FLOWS AND LINES

- PRIMARY FLOW
- SECONDARY FLOW
- TERTIARY FLOW
- ELECTRICAL SIGNAL
- PLC
- CONTROL PANEL
- LOCATIONAL DIVIDE
- DATA COMMUNICATION

ANNOTATION

- PROCESS STREAM TO/FROM LOCATION REFER TO SHEET X — FLOW ARROW LEFT
- PROCESS STREAM TO/FROM LOCATION REFER TO SHEET X — FLOW ARROW RIGHT
- SLOPE — SLOPE RIGHT
- SLOPE — SLOPE LEFT
- DEMOLITION
- SALVAGE

INSTRUMENTATION AND ELECTRICAL

- FIELD MOUNTED INSTRUMENT TAG
- PANEL MOUNTED INSTRUMENT TAG (PROCESS CONTROL PANEL)
- PANEL MOUNTED INSTRUMENT TAG (FIELD CONTROL PANEL)
- SCADA SYSTEM SIGNAL TAG - A=ANALOG, D=DISCRETE
  I=INPUT, O=OUTPUT
  NAME
- INDICATING LIGHT: R - RED, Y - YELLOW
  G - GREEN, A - AMBER
- SCADA ALARM: L = LOW, H = HIGH
  NF = NO FLOW
- VARIABLE FREQUENCY DRIVE
- INTERLOCK
- ETHERNET SWITCH
- CONTROL PANEL OPERATOR INTERFACE TERMINAL
- HAND SWITCH
- PERSONNEL DOWN PUSH BUTTON

ENVIRONMENTAL PARTNERS
An Apex Company

ALSTON W. GOFF FINAL NO. 56074 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL LEGEND

100% DESIGN

Sheet No.
I-3

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.1 I&C Abbr_Legend_SCADA Schem_Equip\Sc-dwg Plot Date: Apr 09,2024-3:24pm

WELLS 2, 3, AND 4 WATER TREATMENT PLANT

ELECTRICAL ROOM

MAIN CONTROL PANEL

UPS

PLANT PLC

OIT TOUCHSCREEN

CAT-6E

ATS (2)

CAT-6E

MANAGED ETHERNET SWITCH

FIBER-OPTIC

FIBER PATCH PANEL

CAT-6E

5 FIREWALL

CAT-6E

PHOTOVOLTAIC SYSTEM (2)

ISBP

CHEMICAL ALARM CONTROL PANEL (CACP) (2)

FIRE ALARM CONTROL PANEL (FACP) (2)

SECURITY ACCESS CONROL PANEL (SACP) (2)

VFD CONTROLS (2)

- H/O/A (1)
- STATUS
- SPEED (1)

FIELD EQUIPMENT
- FINISHED WATER PUMPS
- RECYCLE PUMPS

IRON/MANGANESE TREATMENT FILTER
- VALVE ACTUATORS
- FLOW METERS
- DIFFERENTIAL PRESSURE TRANSMITTERS

PFAS TREATMENT FILTER
- DIFFERENTIAL PRESSURE TRANSMITTERS

INSTRUMENTATION
- FLOW METERS
- PRESSURE TRANSMITTERS
- CHEMICAL TANK LEVEL TRANSMITTERS
- CHEMICAL TANK FLOAT SWITCHES
- FLOAT/FLOOD SWITCHES
- FLOW SWITCHES (1)
- PERSONNEL DOWN SWITCHES
- FINISHED WATER WET WELL LEVEL TRANSMITTER
- BACKWASH WASTE TANK LEVEL TRANSMITTERS
- ANALYZERS
- TEMPERATURE TRANSMITTERS
- FIRE ALARM

INSTRUMENTATION
- TIGHT TANK FLOAT SWITCHES

SLUDGE PUMP FIELD CONTROL PANEL (SP-FCP)

CONTROL ROOM/LABORATORY

HMI SCADA PC WORKSTATION #1

CAT-6E

PRINTER

CAT-6E

HMI SCADA PC WORKSTATION #2

UPS

UPS

CAT-6E

CAT-6E

DEHUMIDIFIER CONTROL PANEL 1 (1)

DEHUMIDIFIER CONTROL PANEL 2 (1)

FIELD EQUIPMENT
- AIR SCOUR BLOWER
- PRESSURE SUSTAINING VALVE
- VALVE ACTUATORS
- CHEMICAL TRANSFER PUMPS

6 BACKWASH SUPPLY VALVE CONTROLLER

FIELD EQUIPMENT
- BACKWASH SUPPLY PRESSURE REDUCING VALVE

METERING PUMP CONTROL PANELS

FIELD EQUIPMENT
- CHEMICAL FEED PUMPS

FIELD EQUIPMENT
- SLUDGE PUMPS

FIBER-OPTIC

FROM WELL STATION 4 FIBER PATCH PANEL (SHEET I-5)

CAT-6E

INTERNET FROM VERIZON

GENERATOR (2)

LEGEND

- ROOM LINE
- CONTROL PANEL
- LOCATIONAL DIVIDE / BUILDING LINE
- FIELD/SIGNAL WIRING
- DATA / COMMUNICATION
- ELECTRICAL WIRING

KEYNOTES:

1. PROVIDED UNDER DIVISION 15
2. PROVIDED UNDER DIVISION 16
3. EXISTING SALVAGED AND REINSTALLED
4. PRE-WIRED FROM INSTRUMENT TO VPS-FCP BY VACUUM PRIMING SYSTEM SUPPLIER
5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

SCADA SYSTEM ARCHITECTURE NOTES:

1. COMMUNICATIONS: RADIO & FIBER OPTIC
2. PLC SYSTEM: ALLEN BRADLEY
3. SCADA SOFTWARE: iFix

2nd PRECINCT 1740 · SHARON · 1765

ENVIRONMENTAL PARTNERS — An Apex Company —

COMMONWEALTH OF MASSACHUSETTS ALSTON W. CROTTY CIVIL NO. 56074 REGISTERED PROFESSIONAL ENGINEER

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
WATER TREATMENT PLANT SCADA SCHEMATIC

100% DESIGN

Sheet No.

I-4

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.1 I&C Abbr_Legend_SCADA Schem_EquipSc.dwg Plot Date: Apr 11,2024-4:38pm

LEGEND

- ROOM LINE
- CONTROL PANEL
- LOCATIONAL DIVIDE / BUILDING LINE
- FIELD/SIGNAL WIRING
- DATA / COMMUNICATION
- ELECTRICAL WIRING

KEYNOTES:

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TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 2, 3, AND 4 SCADA SCHEMATICS

100% DESIGN

Sheet No.

I-5

Drawing file: I:\Sharon, MA.245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.1 I&C Abbr_Legend_SCADA Schem_EquipSc.dwg Plot Date: Apr 09,2024-3:25pm

ANALYZER SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
AIT-961	WELLS 2/3 RAW AND RECYCLE WATER pH & TEMPERATURE	PFAS REMOVAL AREA 102	pH & TEMPERATURE ANALYZER	120	60	1	AE-961 (pH & TEMPERATURE)
AIT-962	OXIDIZED WATER pH, TEMPERATURE, & CHLORINE	PFAS REMOVAL AREA 102	pH, TEMPERATURE, & CHLORINE ANALYZER	120	60	1	AE-962A (pH & TEMPERATURE) & AE-962B (CHLORINE)
AIT-963	FE/MN FILTERED WATER pH, TEMPERATURE, & CHLORINE	PFAS REMOVAL AREA 102	pH, TEMPERATURE, & CHLORINE ANALYZER	120	60	1	AE-963A (pH & TEMPERATURE) & AE-963B (CHLORINE)
AIT-964	PFAS INFLUENT pH, TEMPERATURE AND CHLORINE	PFAS REMOVAL AREA 102	pH, TEMPERATURE, & CHLORINE ANALYZER	120	60	1	AE-964A (pH & TEMPERATURE) & AE-964B (CHLORINE)
AIT-965	FINISHED WATER pH, TEMPERATURE, & CHLORINE	PFAS REMOVAL AREA 102	pH, TEMPERATURE, & CHLORINE ANALYZER	120	60	1	AE-965A (pH & TEMPERATURE) & AE-965B (CHLORINE)
AIT-966	100-FOOT SAMPLE TAP pH, TEMPERATURE, & CHLORINE	PFAS REMOVAL AREA 102	pH, TEMPERATURE, & CHLORINE ANALYZER	120	60	1	AE-966A (pH & TEMPERATURE) & AE-966B (CHLORINE)

PRESSURE TRANSMITTER SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
PIT-107	WELL 2 PUMP SUCTION PRESSURE INDICATING TRANSMITTER	WELL STATION 2	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 30 INHG-15 PSI
PIT-108A	WELL 2 PUMP 1 DISCHARGE PRESSURE INDICATING TRANSMITTER	WELL STATION 2	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-200 PSI
PIT-108B	WELL 2 PUMP 2 DISCHARGE PRESSURE INDICATING TRANSMITTER	WELL STATION 2	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-200 PSI
PIT-116 (4)	VACUUM PRIMING SYSTEM DISCHARGE PRESSURE INDICATING TRANSMITTER	WELL STATION 2 VACUUM PRIMING SYSTEM	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE -15-0 PSI
PIT-147	WELL 3 DISCHARGE PRESSURE INDICATING TRANSMITTER	WELL STATION 3	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-200 PSI
PIT-177	WELL 4 DISCHARGE PRESSURE INDICATING TRANSMITTER	WELL STATION 4	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-200 PSI
PIT-211	WTP INFLUENT PRESSURE INDICATING TRANSMITTER	KOH & NaOCl CONTAINMENT AREA	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-200 PSI
DPIT-214A	FE/MN FILTER #1 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	FE/MN FILTER #1	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE 0-30 PSI; PROVIDED BY FE/MN FILTER MANUFACTURER
DPIT-214B	FE/MN FILTER #2 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	FE/MN FILTER #2	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE 0-30 PSI; PROVIDED BY FE/MN FILTER MANUFACTURER
DPIT-214C	FE/MN FILTER #3 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	FE/MN FILTER #3	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE 0-30 PSI; PROVIDED BY FE/MN FILTER MANUFACTURER
DPIT-215	BAG FILTERS DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	BAG FILTERS	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE 0-30 PSI; PROVIDED BY BAG FILTER MANUFACTURER
DPIT-313A	PFAS LEAD FILTER #1 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	PFAS LEAD FILTER #1	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE 0-30 PSI; PROVIDED BY PFAS FILTER MANUFACTURER
DPIT-313B	PFAS LEAD FILTER #2 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	PFAS LEAD FILTER #2	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE 0-30 PSI; PROVIDED BY PFAS FILTER MANUFACTURER
DPIT-313C	PFAS LEAD FILTER #3 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	PFAS LEAD FILTER #3	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE 0-30 PSI; PROVIDED BY PFAS FILTER MANUFACTURER
DPIT-315A	PFAS LAG FILTER #1 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	PFAS LAG FILTER #1	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE 0-30 PSI; PROVIDED BY PFAS FILTER MANUFACTURER
DPIT-315B	PFAS LAG FILTER #2 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	PFAS LAG FILTER #2	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE 0-30 PSI; PROVIDED BY PFAS FILTER MANUFACTURER
DPIT-315C	PFAS LAG FILTER #3 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	PFAS LAG FILTER #3	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE 0-30 PSI; PROVIDED BY PFAS FILTER MANUFACTURER
PIT-316A	PFAS LEAD FILTER #1 PRESSURE INDICATING TRANSMITTER	PFAS LEAD FILTER #1	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-100 PSI
PIT-316B	PFAS LEAD FILTER #2 PRESSURE INDICATING TRANSMITTER	PFAS LEAD FILTER #2	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-100 PSI
PIT-316C	PFAS LEAD FILTER #3 PRESSURE INDICATING TRANSMITTER	PFAS LEAD FILTER #3	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-100 PSI
PIT-317A	PFAS LAG FILTER #1 PRESSURE INDICATING TRANSMITTER	PFAS LAG FILTER #1	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-100 PSI
PIT-317B	PFAS LAG FILTER #2 PRESSURE INDICATING TRANSMITTER	PFAS LAG FILTER #2	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-100 PSI
PIT-317C	PFAS LAG FILTER #3 PRESSURE INDICATING TRANSMITTER	PFAS LAG FILTER #3	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-100 PSI
PIT-318	FILTERED WATER PRESSURE INDICATING TRANSMITTER	PIPE GALLERY	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-200 PSI
PIT-713A	FINISHED WATER PRESSURE INDICATING TRANSMITTER	PIPE GALLERY	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-200 PSI
PIT-713B	FINISHED WATER PRESSURE INDICATING TRANSMITTER	PIPE GALLERY	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-200 PSI
PIT-713C	FINISHED WATER PRESSURE INDICATING TRANSMITTER	PIPE GALLERY	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-200 PSI
PIT-817A	RECYCLE WATER PRESSURE INDICATING TRANSMITTER	PIPE GALLERY	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-200 PSI
PIT-817B	RECYCLE WATER PRESSURE INDICATING TRANSMITTER	PIPE GALLERY	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0-200 PSI

FLOOD/FLOAT SWITCH LEVEL SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
LSH-113	WELL STATION 2 FLOOD SWITCH	WELL STATION 2	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-114 (4)	WELL STATION 2 VACUUM PRIMING SYSTEM HIGH-HIGH WATER LEVEL SWITCH	WELL STATION 2	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSL-115A	WELL 2 PUMP 1 VACUUM PRIMING SYSTEM PROOF OF PRIME SWITCH	WELL STATION 2	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSL-115B	WELL 2 PUMP 2 VACUUM PRIMING SYSTEM PROOF OF PRIME SWITCH	WELL STATION 2	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-151	WELL STATION 3 FLOOD SWITCH	WELL STATION 3	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-181	WELL STATION 4 FLOOD SWITCH	WELL STATION 4	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-412	NAOCL BULK TANK HI-HI LEVEL SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-413	PRE-FILTRATION NAOCL DAY TANK HIGH LEVEL SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-416	POST-FILTRATION NAOCL DAY TANK HIGH LEVEL SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-419	KOH & NAOCL CONTAINMENT AREA FLOOD LEVEL SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-512	KOH BULK TANK HI-HI LEVEL SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-513	KOH DAY TANK HIGH LEVEL SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-612	NAHSO3 BULK TANK HI-HI LEVEL SWITCH	NAHSO3 CHEMICAL ROOM ROOM 104	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-613	NAHSO3 DAY TANK HI-HI LEVEL SWITCH	NAHSO3 CHEMICAL ROOM ROOM 104	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-614	NAHSO3 CONTAINMENT AREA FLOOD LEVEL SWITCH	NAHSO3 CHEMICAL ROOM ROOM 104	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-652	NAF SATURATOR TANK FLOAT SWITCH	PFAS REMOVAL AREA 102	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-712A	FINISHED WATER WET WELL HI-HI LEVEL SWITCH	FINISHED WATER WET WELL	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSL-712B	FINISHED WATER WET WELL LO-LO LEVEL SWITCH	FINISHED WATER WET WELL	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-815A	BACKWASH WASTE TANK #1 HI-HI LEVEL SWITCH	BACKWASH WASTE TANK COMPARTMENT #1	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-815B	BACKWASH WASTE TANK #2 HI-HI LEVEL SWITCH	BACKWASH WASTE TANK COMPARTMENT #2	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-815C	BACKWASH WASTE TANK #3 HI-HI LEVEL SWITCH	BACKWASH WASTE TANK COMPARTMENT #3	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSL-816A	BACKWASH WASTE TANK #1 LO-LO LEVEL SWITCH	BACKWASH WASTE TANK COMPARTMENT #1	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSL-816B	BACKWASH WASTE TANK #2 LO-LO LEVEL SWITCH	BACKWASH WASTE TANK COMPARTMENT #2	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSL-816C	BACKWASH WASTE TANK #3 LO-LO LEVEL SWITCH	BACKWASH WASTE TANK COMPARTMENT #3	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-971	TIGHT TANK HI LEVEL SWITCH	TIGHT TANK	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-972	TIGHT TANK HI-HI LEVEL SWITCH	TIGHT TANK	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-996	PIPE GALLERY FLOOD SWITCH	PIPE GALLERY	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE

FLOW SWITCH SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
FS-420 (1)	SAFETY SHOWER- VANE TYPE	KOH & NAOCL CHEMICAL ROOM ROOM 105	FLOW INSTRUMENT	120	60	1	
FS-421 (1)	SAFETY SHOWER- VANE TYPE	KOH & NAOCL CHEMICAL ROOM ROOM 105	FLOW INSTRUMENT	120	60	1	

KEYNOTES:

1. PROVIDED UNDER DIVISION 15
2. PROVIDED UNDER DIVISION 16
3. EXISTING SALVAGED AND REINSTALLED
4. PRE-WIRED FROM INSTRUMENT TO VPS- FCP BY VACUUM PRIMING SYSTEM SUPPLIER
5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

TEMPERATURE TRANSMITTER SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
TT-112	ROOM TEMPERATURE TRANSMITTER	WELL STATION 2	TEMPERATURE INSTRUMENT	LOOP POWERED			MOUNT OFF FLOOR PER MANUFACTURER'S RECOMMENDATIONS
TT-150	ROOM TEMPERATURE TRANSMITTER	WELL STATION 3	TEMPERATURE INSTRUMENT	LOOP POWERED			MOUNT OFF FLOOR PER MANUFACTURER'S RECOMMENDATIONS
TT-180	ROOM TEMPERATURE TRANSMITTER	WELL STATION 4	TEMPERATURE INSTRUMENT	LOOP POWERED			MOUNT OFF FLOOR PER MANUFACTURER'S RECOMMENDATIONS
TT-921	ROOM TEMPERATURE TRANSMITTER	NITRATE REMOVAL AREA ROOM 101	TEMPERATURE INSTRUMENT	LOOP POWERED			MOUNT OFF FLOOR PER MANUFACTURER'S RECOMMENDATIONS
TT-923	ROOM TEMPERATURE TRANSMITTER	FE/MN REMOVAL AREA ROOM 103	TEMPERATURE INSTRUMENT	LOOP POWERED			MOUNT OFF FLOOR PER MANUFACTURER'S RECOMMENDATIONS
TT-926	ROOM TEMPERATURE TRANSMITTER	CONTROL ROOM ROOM 106	TEMPERATURE INSTRUMENT	LOOP POWERED			MOUNT OFF FLOOR PER MANUFACTURER'S RECOMMENDATIONS
TT-930	ROOM TEMPERATURE TRANSMITTER	ELECTRICAL ROOM ROOM 111	TEMPERATURE INSTRUMENT	LOOP POWERED			MOUNT OFF FLOOR PER MANUFACTURER'S RECOMMENDATIONS

PERSONNEL DOWN SWITCH SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
PB-111	WELL STATION 2 PERSONNEL DOWN SWITCH	WELL STATION 2	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-117	WELL STATION 2 CONTROL PANEL EMERGENCY ESTOP SWITCH	WELL STATION 2 CONTROL PANEL	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-149	WELL STATION 3 PERSONNEL DOWN SWITCH	WELL STATION 3	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-152	WELL STATION 3 CONTROL PANEL EMERGENCY ESTOP SWITCH	WELL STATION 3 CONTROL PANEL	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-179	WELL STATION 4 PERSONNEL DOWN SWITCH	WELL STATION 4	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-183	WELL STATION 4 CONTROL PANEL EMERGENCY ESTOP SWITCH	WELL STATION 4 CONTROL PANEL	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-981	WTP PERSONNEL DOWN SWITCH	NITRATE REMOVAL AREA ROOM 101	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-982	WTP PERSONNEL DOWN SWITCH	PFAS REMOVAL AREA ROOM 102	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-983	WTP PERSONNEL DOWN SWITCH	FE/MN REMOVAL AREA ROOM 103	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-984	WTP PERSONNEL DOWN SWITCH	NAHSO3 CHEMICAL ROOM ROOM 104	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED, CHEMICAL RESISTANT
PB-985	WTP PERSONNEL DOWN SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED, CHEMICAL RESISTANT
PB-986	WTP PERSONNEL DOWN SWITCH	CONTROL ROOM ROOM 106	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-991	WTP PERSONNEL DOWN SWITCH	PIPE GALLERY ROOM 001-WEST	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-992	WTP PERSONNEL DOWN SWITCH	PIPE GALLERY ROOM 001-EAST	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-993	MAIN CONTROL PANEL EMERGENCY ESTOP SWITCH	WTP MAIN CONTROL PANEL	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-994	EMERGENCY ESTOP SWITCH	FE/MN FILTER AREA ROOM 103	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED

TRANSFER PUMP SWITCH SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
HS-414 (2)	PRE-NAOCL TRANSFER PUMP TP-403 SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH
HS-417 (2)	POST-NAOCL TRANSFER PUMP TP-406 SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH
HS-514 (2)	KOH TRANSFER PUMP TP-502 SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH
HS-615 (2)	NAHSO3 TRANSFER PUMP TP-602 SWITCH	NAHSO3 CHEMICAL ROOM ROOM 104	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH

LEVEL TRANSDUCER SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
LE-146	WELL LEVEL	WELL 3	LEVEL INSTRUMENT	LOOP POWERED			FURNISH WITH 200-FT CABLE
LE-176	WELL LEVEL	WELL 4	LEVEL INSTRUMENT	LOOP POWERED			FURNISH WITH 200-FT CABLE

FLOW METER SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			NOMINAL METER SIZE (IN)	FLOW RANGE (GPM)	FLOW DIRECTION	REMARKS
				VAC	HZ	PHASE				
FIT-110	WELL 2 ELECTROMAGNETIC FLOW METER	WELL STATION 2	FLOW INSTRUMENT	120	60	1	6	0-300	MONODIRECTIONAL	
FIT-148	WELL 3 ELECTROMAGNETIC FLOW METER	WELL STATION 3	FLOW INSTRUMENT	120	60	1	6	0-300	MONODIRECTIONAL	
FIT-178	WELL 4 ELECTROMAGNETIC FLOW METER	WELL STATION 4	FLOW INSTRUMENT	120	60	1	8	0-750	MONODIRECTIONAL	
FIT-212	COMBINED FE/MN TREATMENT INFLUENT FLOW METER	KOH & NAOCL CHEMICAL ROOM ROOM 105	FLOW INSTRUMENT	120	60	1	6	0-750	MONODIRECTIONAL	
FIT-213A	FE/MN FILTER #1 ELECTROMAGNATIC FLOW METER	FE/MN REMOVAL FILTER #1	FLOW INSTRUMENT	120	60	1	4	0-500	BIDIRECTIONAL	FURNISHED BY FE/MN FILTER MANUFACTUREER
FIT-213B	FE/MN FILTER #2 ELECTROMAGNATIC FLOW METER	FE/MN REMOVAL FILTER #2	FLOW INSTRUMENT	120	60	1	4	0-500	BIDIRECTIONAL	FURNISHED BY FE/MN FILTER MANUFACTUREER
FIT-213C	FE/MN FILTER #3 ELECTROMAGNATIC FLOW METER	FE/MN REMOVAL FILTER #3	FLOW INSTRUMENT	120	60	1	4	0-500	BIDIRECTIONAL	FURNISHED BY FE/MN FILTER MANUFACTUREER
FIT-218	COMBINED FE/MN FILTER EFFLUENT ELECTROMAGNETIC FLOW METER	FE/MN REMOVAL AREA	FLOW INSTRUMENT	120	60	1	6	0-1350	MONODIRECTIONAL	
FIT-311	COMBINED PFAS TREATMENT INFLUENT ELECTROMAGNETIC FLOW METER	FE/MN REMOVAL AREA	FLOW INSTRUMENT	120	60	1	8	0-1350	MONODIRECTIONAL	
FIT-312	COMBINED PFAS TREATMENT EFFLUENT ELECTROMAGNETIC FLOW METER	PFAS REMOVAL AREA	FLOW INSTRUMENT	120	60	1	8	0-1350	MONODIRECTIONAL	
FIT-319A	PFAS TRAIN #1 INFLUENT ELECTROMAGNETIC FLOW METER	PFAS TRAIN #1	FLOW INSTRUMENT	120	60	1	6	0-650	MONODIRECTIONAL	REMOTE MOUNTED HEAD
FIT-319B	PFAS TRAIN #2 INFLUENT ELECTROMAGNETIC FLOW METER	PFAS TRAIN #2	FLOW INSTRUMENT	120	60	1	6	0-650	MONODIRECTIONAL	REMOTE MOUNTED HEAD
FIT-319C	PFAS TRAIN #3 INFLUENT ELECTROMAGNETIC FLOW METER	PFAS TRAIN #3	FLOW INSTRUMENT	120	60	1	6	0-650	MONODIRECTIONAL	REMOTE MOUNTED HEAD
FIT-714A	FINISHED WATER PUMP #1 ELECTROMAGNETIC FLOW METER	PIPE GALLERY	FLOW INSTRUMENT	120	60	1	6	0-700	MONODIRECTIONAL	
FIT-714B	FINISHED WATER PUMP #2 ELECTROMAGNETIC FLOW METER	PIPE GALLERY	FLOW INSTRUMENT	120	60	1	6	0-700	MONODIRECTIONAL	
FIT-714C	FINISHED WATER PUMP #3 ELECTROMAGNETIC FLOW METER	PIPE GALLERY	FLOW INSTRUMENT	120	60	1	6	0-700	MONODIRECTIONAL	
FIT-812	BACKWASH SUPPLY ELECTROMAGNETIC FLOW METER	PFAS REMOVAL AREA	FLOW INSTRUMENT	120	60	1	6	0-1200	MONODIRECTIONAL	
FIT-813	RECYCLE ELECTROMAGNETIC FLOW METER	PFAS REMOVAL AREA	FLOW INSTRUMENT	120	60	1	2	0-100	MONODIRECTIONAL	
FIT-814	SLUDGE ELECTROMAGNETIC FLOW METER	PFAS REMOVAL AREA	FLOW INSTRUMENT	120	60	1	2	0-100	MONODIRECTIONAL	

ULTRASONIC LEVEL SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
LE/LIT-411	NAOCL BULK TANK ULTRASONIC LEVEL TRANSMITTER	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	120	60	1	PROVIDED WITH CHEMICAL ISOLATORS
LE/LIT-411A	NAOCL PRE DAY TANK ULTRASONIC LEVEL TRANSMITTER	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	120	60	1	PROVIDED WITH CHEMICAL ISOLATORS
LE/LIT-411B	NAOCL POST DAY TANK ULTRASONIC LEVEL TRANSMITTER	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	120	60	1	PROVIDED WITH CHEMICAL ISOLATORS
LE/LIT-511	KOH BULK TANK ULTRASONIC LEVEL TRANSMITTER	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	120	60	1	PROVIDED WITH CHEMICAL ISOLATORS
LE/LIT-511A	KOH DAY TANK ULTRASONIC LEVEL TRANSMITTER	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	120	60	1	PROVIDED WITH CHEMICAL ISOLATORS
LE/LIT-611	NAHSO3 BULK TANK ULTRASONIC LEVEL TRANSMITTER	NAHSO3 CHEMICAL ROOM ROOM 104	LEVEL INSTRUMENT	120	60	1	PROVIDED WITH CHEMICAL ISOLATORS
LE/LIT-611A	NAHSO3 DAY TANK ULTRASONIC LEVEL TRANSMITTER	NAHSO3 CHEMICAL ROOM ROOM 104	LEVEL INSTRUMENT	120	60	1	PROVIDED WITH CHEMICAL ISOLATORS
LE/LIT-711	FINISHED WATER WET WELL ULTRASONIC LEVEL TRANSMITTER	PFAS REMOVAL AREA 102	LEVEL INSTRUMENT	120	60	1	
LE/LIT-811A	BACKWASH WASTE ULTRASONIC LEVEL TRANSMITTER	BACKWASH WASTE TANK COMPARTMENT #1	LEVEL INSTRUMENT	120	60	1	
LE/LIT-811B	BACKWASH WASTE ULTRASONIC LEVEL TRANSMITTER	BACKWASH WASTE TANK COMPARTMENT #2	LEVEL INSTRUMENT	120	60	1	
LE/LIT-811C	BACKWASH WASTE ULTRASONIC LEVEL TRANSMITTER	BACKWASH WASTE TANK COMPARTMENT #3	LEVEL INSTRUMENT	120	60	1	

KEYNOTES:

1. PROVIDED UNDER DIVISION 15
2. PROVIDED UNDER DIVISION 16
3. EXISTING SALVAGED AND REINSTALLED
4. PRE-WIRED FROM INSTRUMENT TO VPS-FCP BY VACUUM PRIMING SYSTEM SUPPLIER
5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

ENVIRONMENTAL PARTNERS — An Apex Company

COMMONWEALTH OF MASSACHUSETTS — ALSTON W. SCOTT — No. 56074 — REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP/GPC
Drawn by	GPC
Checked by	EAK
Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

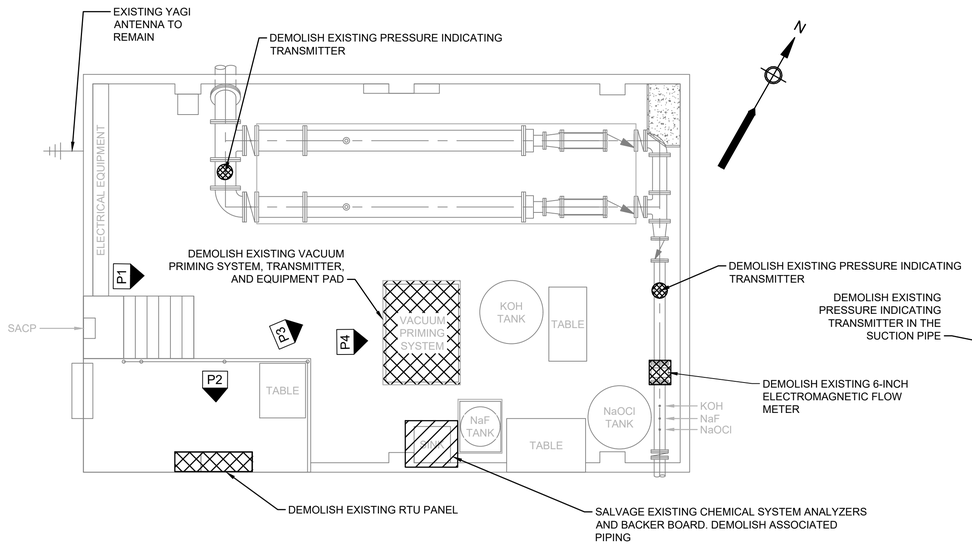
PROCESS AND INSTRUMENTATION CONTROL
EQUIPMENT SCHEDULE II

100% DESIGN

Sheet No.

I-7

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.1 I&C Abbr_Legend_SCADA Schem_EquipSc.dwg Plot Date: Apr 09,2024-3:26pm

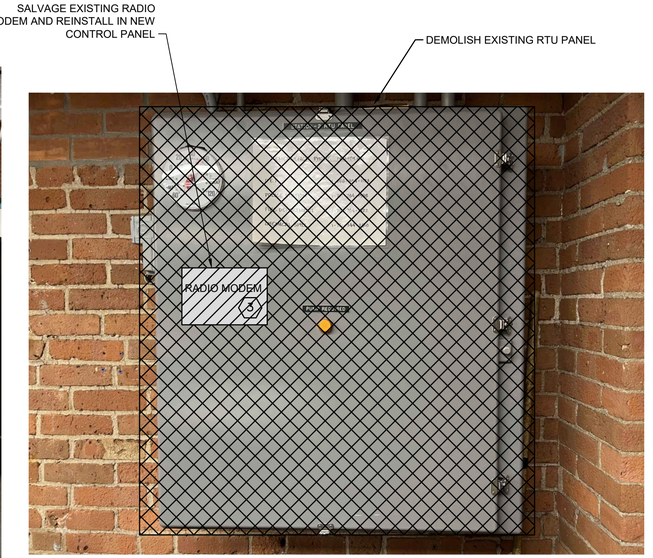


WELL STATION 2 DEMOLITION PLAN

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

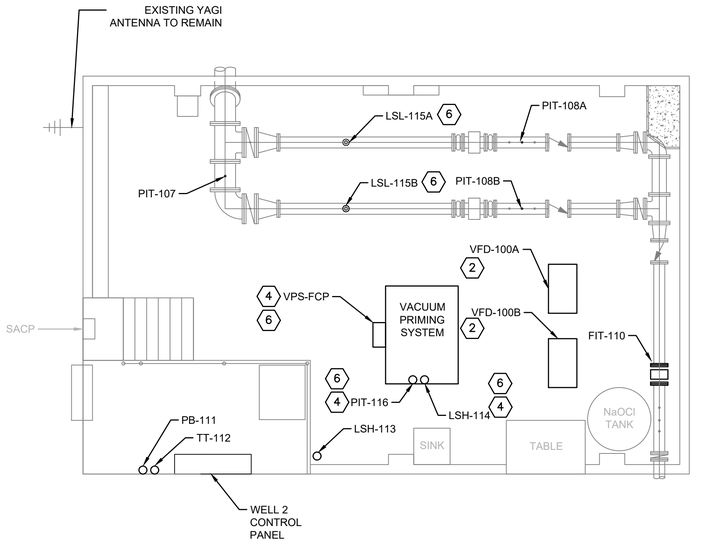
PICTURE 1 (P1) - WELL STATION 2 DEMOLITION

SCALE: N.T.S.



PICTURE 2 (P2) - WELL STATION 2 DEMOLITION

SCALE: N.T.S.



WELL STATION 2 MODIFICATION PLAN

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

KEYNOTES:

1. PROVIDED UNDER DIVISION 15
2. PROVIDED UNDER DIVISION 16
3. EXISTING SALVAGED AND REINSTALLED
4. PRE-WIRED FROM INSTRUMENT TO VPS-FCP BY VACUUM PRIMING SYSTEM SUPPLIER
5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

PICTURE 3 (P3) - WELL STATION 2 DEMOLITION

SCALE: N.T.S.

PICTURE 4 (P4) - WELL STATION 2 DEMOLITION

SCALE: N.T.S.

ENVIRONMENTAL PARTNERS — An Apex Company —

ALSTON W. SCOTT JR. CIVIL NO. 56074 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP/GPC
Drawn by	GPC
Checked by	EAK
Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

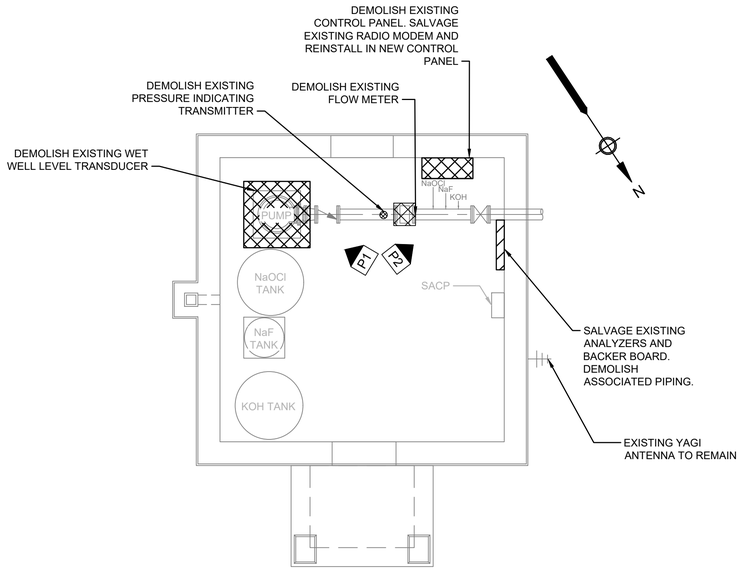
PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 2 MODIFICATIONS PLAN

100% DESIGN

Sheet No.

I-8

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.2 I&C Layout Plan_Well Station PID.dwg Plot Date: Apr 09,2024-3:27pm

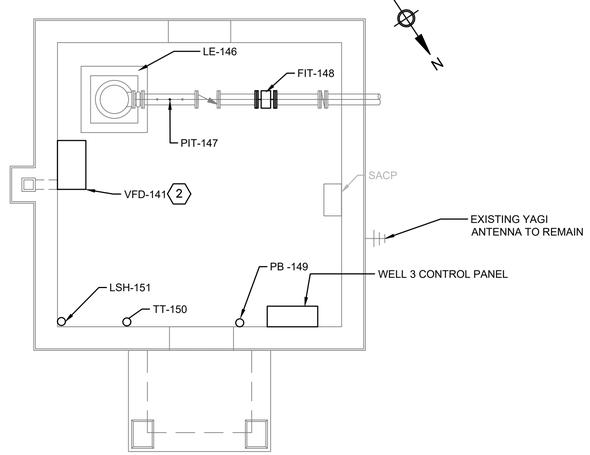


WELL STATION 3 DEMOLITION PLAN

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

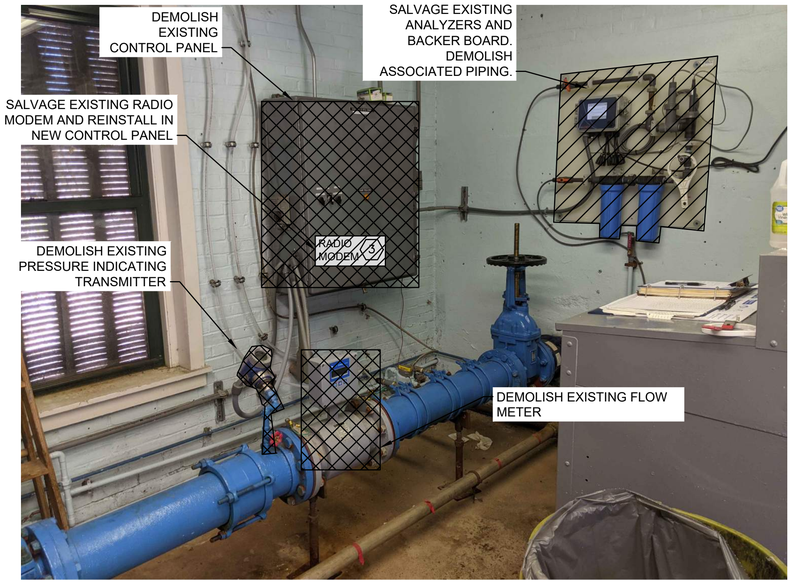
PICTURE 1 (P1) - WELL STATION 3 DEMOLITION

SCALE: N.T.S.



WELL STATION 3 MODIFICATION PLAN

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



PICTURE 2 (P2) - WELL STATION 3 DEMOLITION

SCALE: N.T.S.

KEYNOTES:

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5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS
ALSTON W. GOTTE
CIVIL
NO. 56074
REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

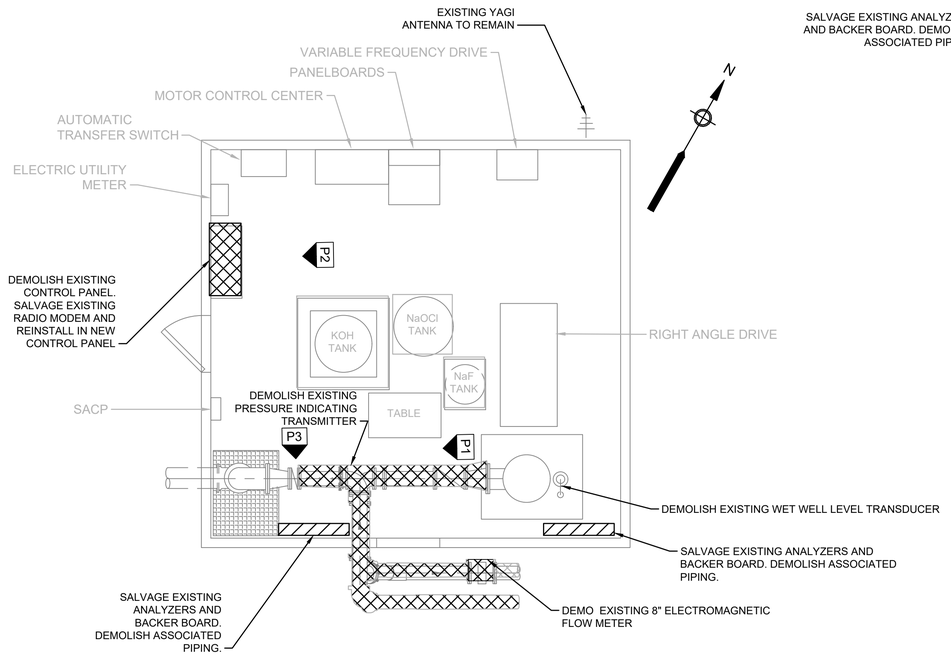
PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 3 MODIFICATIONS PLAN

100% DESIGN

Sheet No.

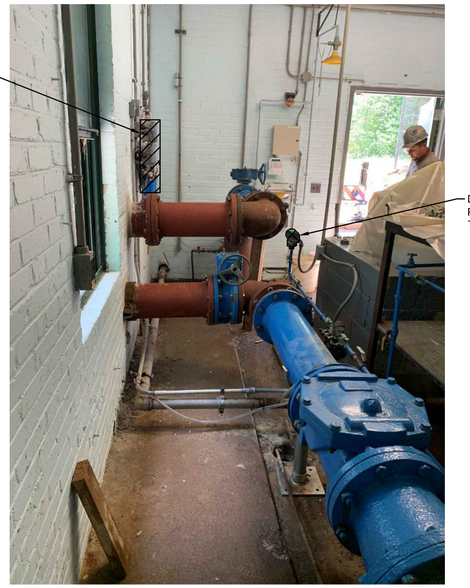
I-9

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.2 I&C Layout Plan_Well Station PID.dwg Plot Date: Apr 09,2024-3:28pm



WELL STATION 4 DEMOLITION PLAN

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

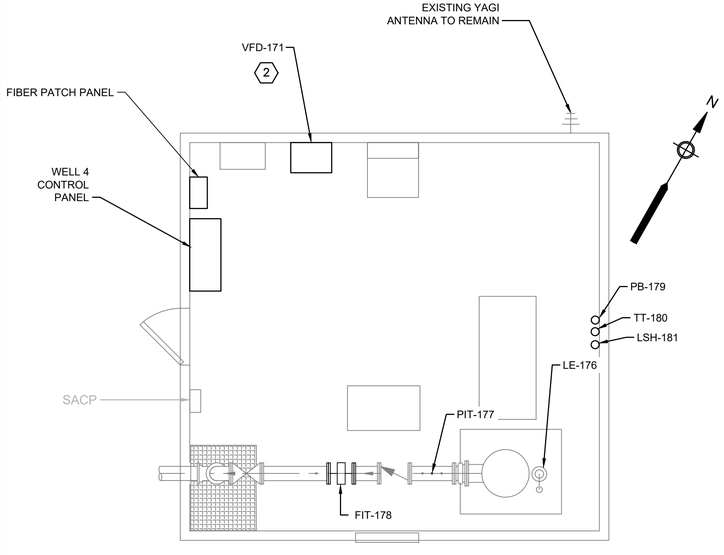


PICTURE 1 (P1) - WELL STATION 4 DEMOLITION

SCALE: N.T.S.

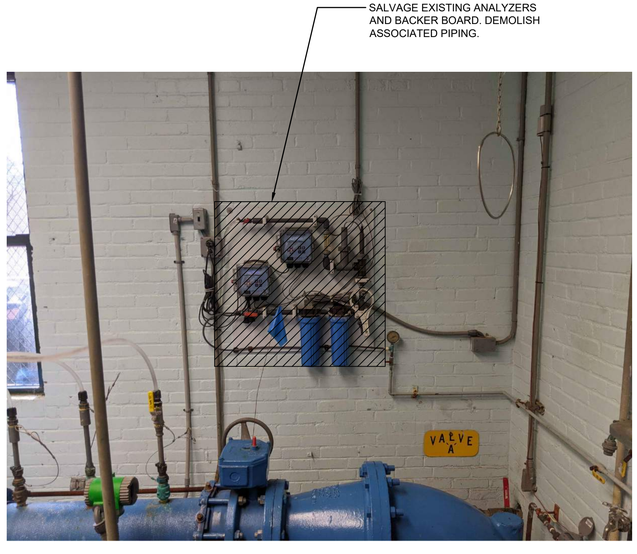
PICTURE 2 (P2) - WELL STATION 4 DEMOLITION

SCALE: N.T.S.



WELL STATION 4 MODIFICATION PLAN

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



PICTURE 3 (P3) - WELL STATION 4 DEMOLITION

SCALE: N.T.S.

KEYNOTES:

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5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

ENVIRONMENTAL PARTNERS — An Apex Company —

COMMONWEALTH OF MASSACHUSETTS — ALSTON W.C. COTTS JR. — NO. 56074 — REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

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Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

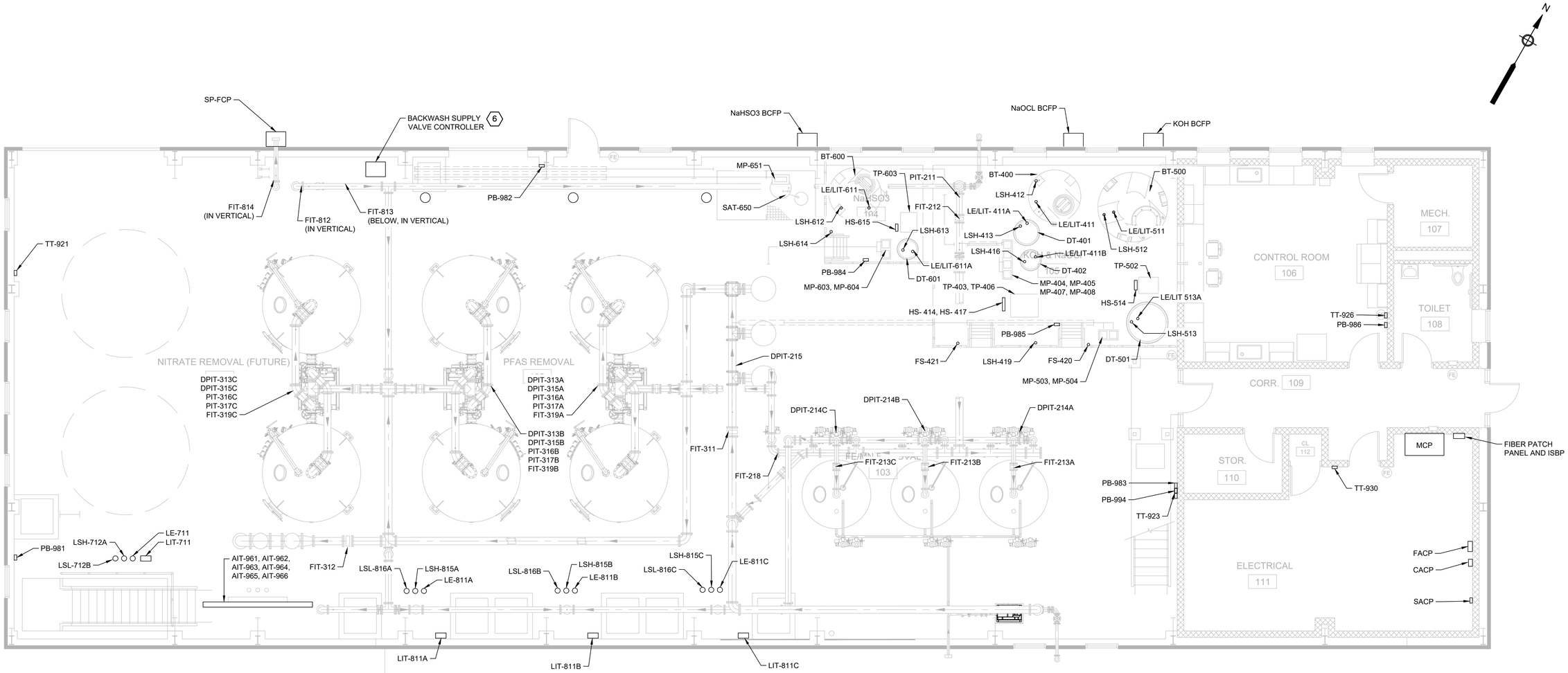
PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 4 MODIFICATIONS PLAN

100% DESIGN

Sheet No.

I-10

Drawing file: I:\Sharon, MA.245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12 2 &C Layout Plan_Well Station PID.dwg Plot Date: Apr 11,2024-5:08pm



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6. FURNISHED UNDER DIVISION 11

PLAN

SCALE: 3/16"=1'-0"

ENVIRONMENTAL PARTNERS — An Apex Company —

COMMONWEALTH OF MASSACHUSETTS — ALSTON W. CROTTY — ENGINEER — NO. 56074 — REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

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Drawn by	GPC
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Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

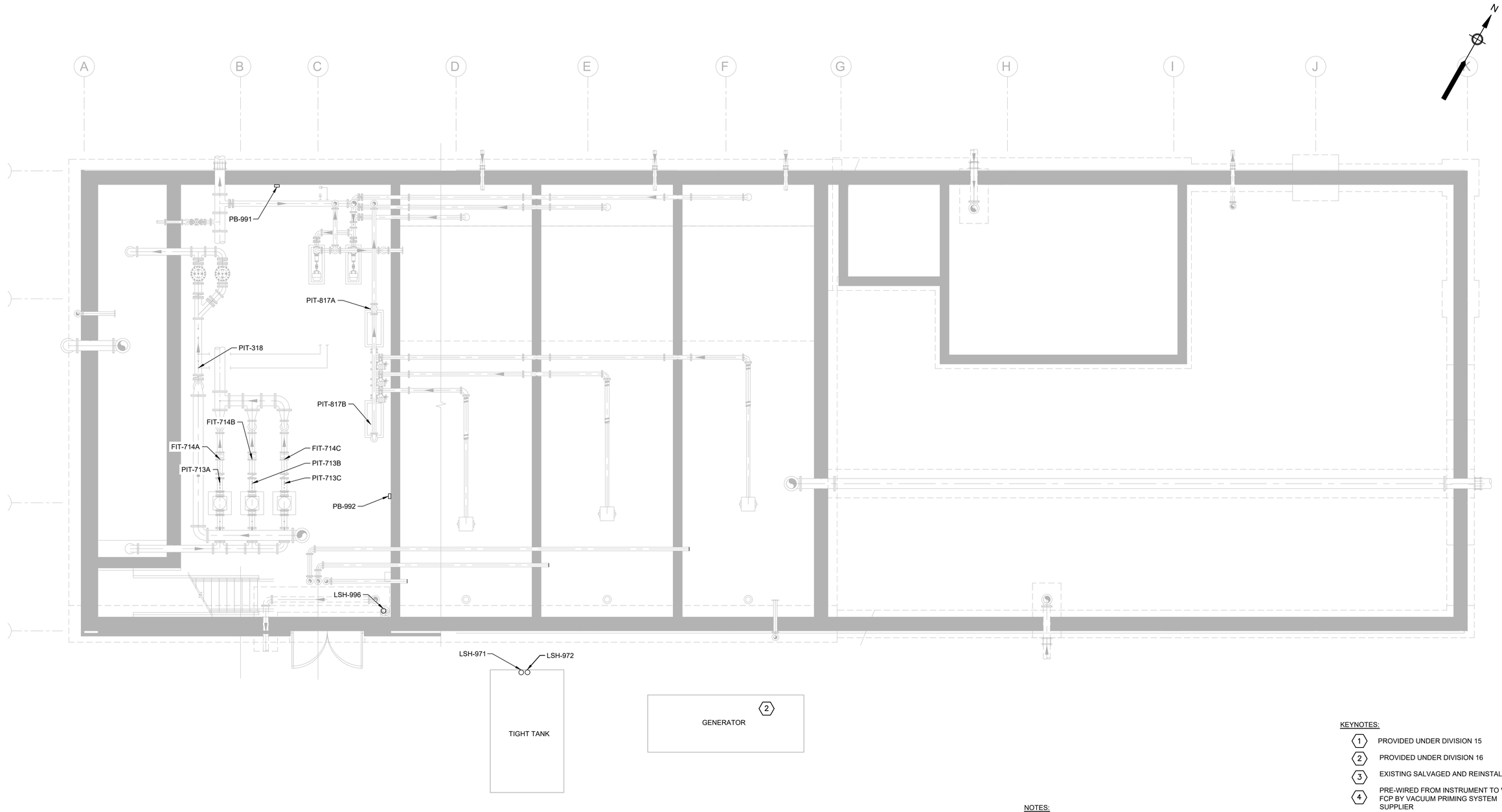
PROCESS AND INSTRUMENTATION CONTROL
WATER TREATMENT PLANT FIRST FLOOR LAYOUT PLAN

100% DESIGN

Sheet No.

I-11

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\ 12.2 I&C Layout Plan_Well Station PID.dwg Plot Date: Apr 11,2024-3:43pm



PLAN

SCALE: 3/16"=1'-0"

NOTES:

1. TIGHT TANK AND GENERATOR IS FOR REFERENCE ONLY, REFER TO C DRAWINGS FOR LOCATION

KEYNOTES:

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2. PROVIDED UNDER DIVISION 16
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5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

ENVIRONMENTAL PARTNERS
— An Apex Company —

ALSTON W. GOTTE, CIVIL, NO. 56074, COMMONWEALTH OF MASSACHUSETTS, REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	3/16"=1'-0"
Date	APRIL 2024
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Designed by	AWCP/GPC
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
WATER TREATMENT PLANT LOWER LEVEL LAYOUT PLAN

100% DESIGN

Sheet No.

I-12

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.2 I&C Layout Plan_Well Station PID.dwg Plot Date: Apr 09,2024-3:29pm

WELL STATION 2 CONTROL PANEL

PLC

TYP. P-100A VFD & P-100B VFD

YH YL TEMP AI
YH DI
YS DI
YLL YL PRESSURE AI
YS DI
YL INTRUSION DI
YL DI
VFD FAULT YS DI
S/S DO SSP AO
SFB AI
RS DI
AUTO DI
HAND DI
HIGH TEMP YS DI
YHH YH PRESSURE AI
YHH YH PRESSURE AI
YH YNF FLOW AI

ALARMS TO PLC:
1. VPS MAINTENANCE
2. P-101A FAULT
3. P-101B FAULT
4. VT-102 LOW VACUUM PRESSURE
5. VT-102 HIGH WATER LEVEL

SIGNALS TO PLC:
1. P-101A RUN STATUS
2. P-101B RUN STATUS
3. VT-102 VACUUM PRESSURE

RS-232 (3) RF RADIO — COAX — YAGI ANTENNA
OIT
YS FAULT DI
UPS
PB 117 ESTOP (1) 7
CAT-6E

CAT-6E

VACUUM PRIMING SYSTEM FIELD CONTROL PANEL (VPS-FCP) (4) (6)
HS 101C H/O/A
HS 101D H/O/A
PRE-PACKAGED VACUUM PRIMING SYSTEM

TO PLC

(2) P-100A VFD H/O/A
HS 100A
HS 100B (0–100%)

(2) P-100B VFD H/O/A
HS 100C
HS 100D (0–100%)

(6) LSL 115B (I) 3
(6) LSL 115A (I) 2
SACP (2)

TT 112
LSH 113
PB 111 PERSONNEL DOWN
PIT 107 (I) 1
PE 107

PI 125A
PI 125B
PI 127A
PI 127B
PIT 108A
PE 108A
PIT 108B
PE 108B

(I) 1 50 2 51 4 52 6 53 7 54 16 55 21 56 48 57 49 58

ARV-126A
ARV-126B

(5) ARV-124A
(5) ARV-124B

GV-129A
GV-129B
P-100A
P-100B
6" DI
CV-128A
CV-128B
GV-130A
GV-130B
8" DI

RAW WATER FROM WELLFIELD 2
8" DI
12" DI

(S) FIT 110 (I) 6
6"
6" DI

P-101A (4)
P-101B (4)
VT-102

PIT 116 (4) (6)
PE 116
LSH 114 (4) (6)

10" DI

RAW WATER TO WTP
REFER TO SHEET I-16

RAW WATER FROM WELL 3
REFER TO SHEET I-14

WELL STATION 2

KEYNOTES:
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5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

ENVIRONMENTAL PARTNERS — An Apex Company —

ALSTON W. GOTTE, CIVIL, NO. 56074, COMMONWEALTH OF MASSACHUSETTS, REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

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Approved by	ASK

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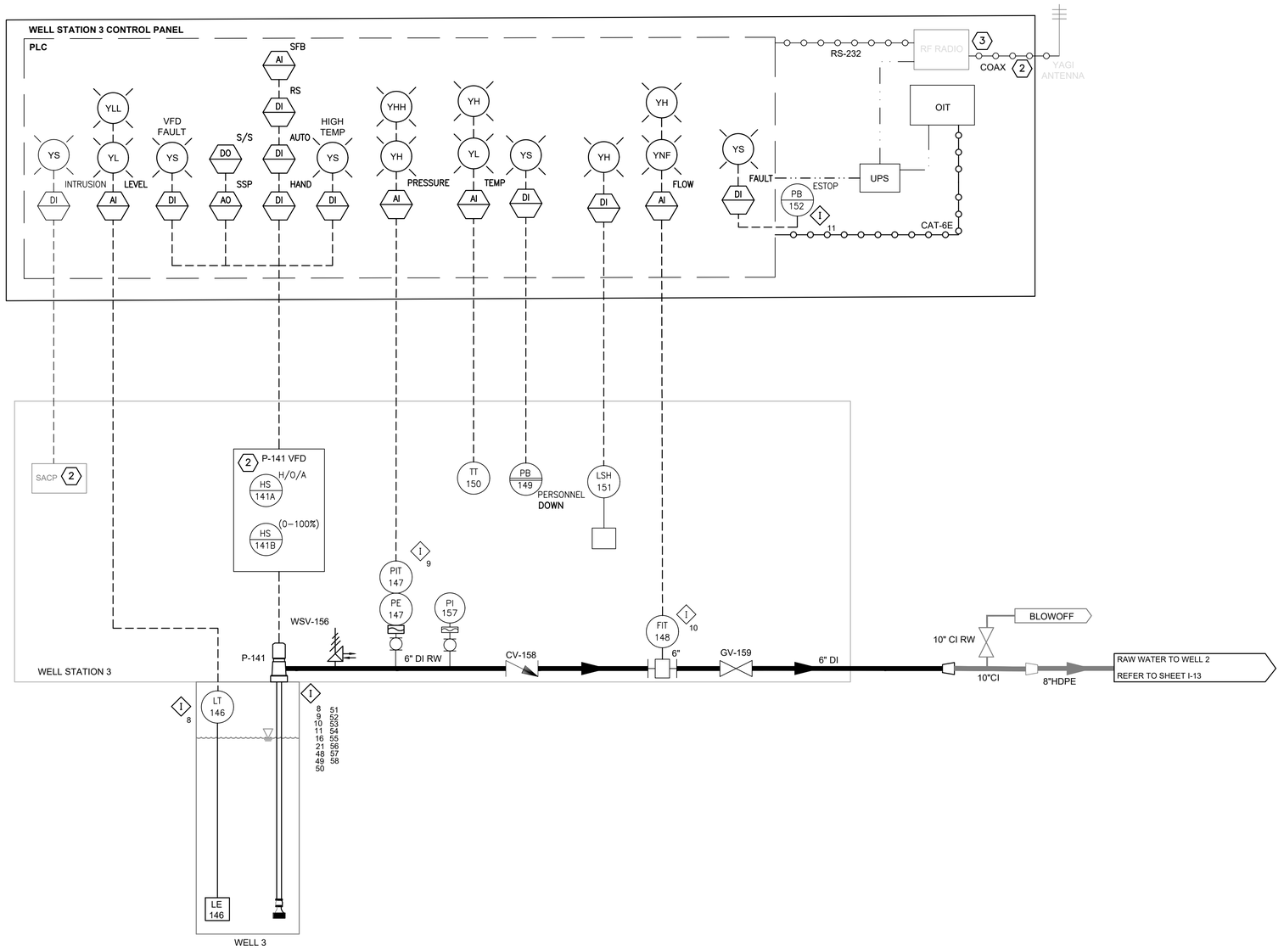
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 2 PID

100% DESIGN

Sheet No. I-13

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.2 I&C Layout Plan_Well Station PID.dwg Plot Date: Apr 09,2024-3:30pm



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ENVIRONMENTAL PARTNERS
— An Apex Company —

ALSTON W. GOTTE, CIVIL, NO. 56074, REGISTERED PROFESSIONAL ENGINEER, COMMONWEALTH OF MASSACHUSETTS
APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

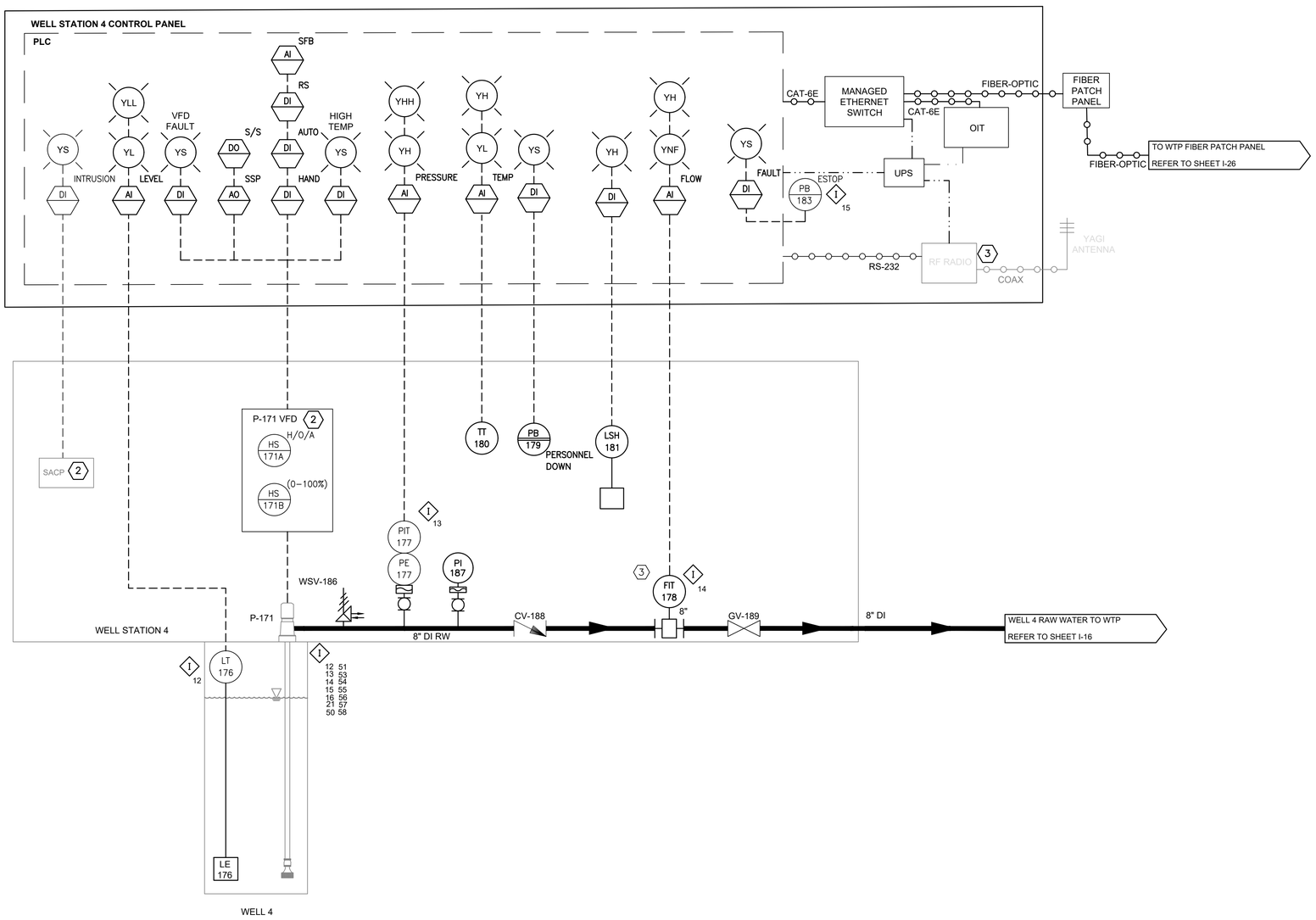
PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 3 PID

100% DESIGN

Sheet No.

I-14

Drawing file: I:\Sharon, MA-245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.2 I&C Layout Plan_Well Station PID.dwg Plot Date: Apr 11, 2024-3:52pm



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ENVIRONMENTAL PARTNERS
— An Apex Company —

ALSTON W. GOETTE — CIVIL — NO. 56074 — REGISTERED PROFESSIONAL ENGINEER — COMMONWEALTH OF MASSACHUSETTS
APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 4 PID

100% DESIGN

Sheet No.

I-15

KEYNOTES:

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ENVIRONMENTAL PARTNERS
— An Apex Company —

APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
WTP RAW WATER AND FE/MN PRESSURE FILTRATION PID

100% DESIGN

Sheet No. I-16

MAIN CONTROL PANEL

PLANT PLC

CONTINUES ON SHEET I-16

CONTINUES ON SHEET I-18

BACKWASH SUPPLY FROM DISTRIBUTION (SHEET I-18)

PFAS TREATMENT INFLUENT FROM BAG FILTERS (SHEET I-16)

BACKWASH WASTE TO BWWT (SHEET I-19)

8" DI WWS

8" DI LEAD PTI

6" DI BWW/FTW

8" DI BWW

8" DI LEAD PTI/BWW

8" DI LEAD PTE/WWS

8" DI LAG PTE/WWS

8" DI FTW

8" DI FTW/WWS

12" DI LAG PTE

12" DI FILTERED WATER

FILTERED WATER TO FWWW (SHEET I-18)

CV-354A

CV-354B

CV-354C

FIT 319A

FIT 319B

FIT 319C

PIT 316A

PE 316A

PIT 316B

PE 316B

PIT 316C

PE 316C

BFV-338A

BFV-338B

BFV-338C

AVV-341A

AVV-341B

AVV-341C

BFV-330A BFV-331A

BFV-330B BFV-331B

BFV-330C BFV-331C

SRV-340A

SRV-340B

SRV-340C

LEAD PFAS FILTER #1 PF-300A

LEAD PFAS FILTER #2 PF-300B

LEAD PFAS FILTER #3 PF-300C

BFV-342A

BFV-345A

BFV-342B

BFV-345B

BFV-342C

BFV-345C

BFV-336A

BFV-337A

BFV-336B

BFV-337B

BFV-336C

BFV-337C

PIT 317A

PE 317A

PIT 317B

PE 317B

PIT 317C

PE 317C

BFV-339A

BFV-339B

BFV-339C

PI 355A

PI 355B

PI 355C

AVV-344A

AVV-344B

AVV-344C

BFV-332A BFV-333A

BFV-332B BFV-333B

BFV-332C BFV-333C

SRV-343A

SRV-343B

SRV-343C

LAG PFAS FILTER #1 PF-301A

LAG PFAS FILTER #2 PF-301B

LAG PFAS FILTER #3 PF-301C

PI 356A

PI 356B

PI 356C

BFV-334A BFV-335A

BFV-334B BFV-335B

BFV-334C BFV-335C

DPIT 313A

DPIT 313B

DPIT 313C

DPIT 315A

DPIT 315B

DPIT 315C

FLOW

PRESSURE

YH

YL

AI

S

D

KEYNOTES:

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2. PROVIDED UNDER DIVISION 16
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NOTES:

1. PFAS VESSEL SAMPLE TAPS NOT SHOWN FOR CLARITY.
2. LEAD VESSEL IS GAC; LAG IS RESIN.

ENVIRONMENTAL PARTNERS — An Apex Company —

COMMONWEALTH OF MASSACHUSETTS — ALSTON W.C. POTTS — CIVIL — NO. 56074 — REGISTERED PROFESSIONAL ENGINEER

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

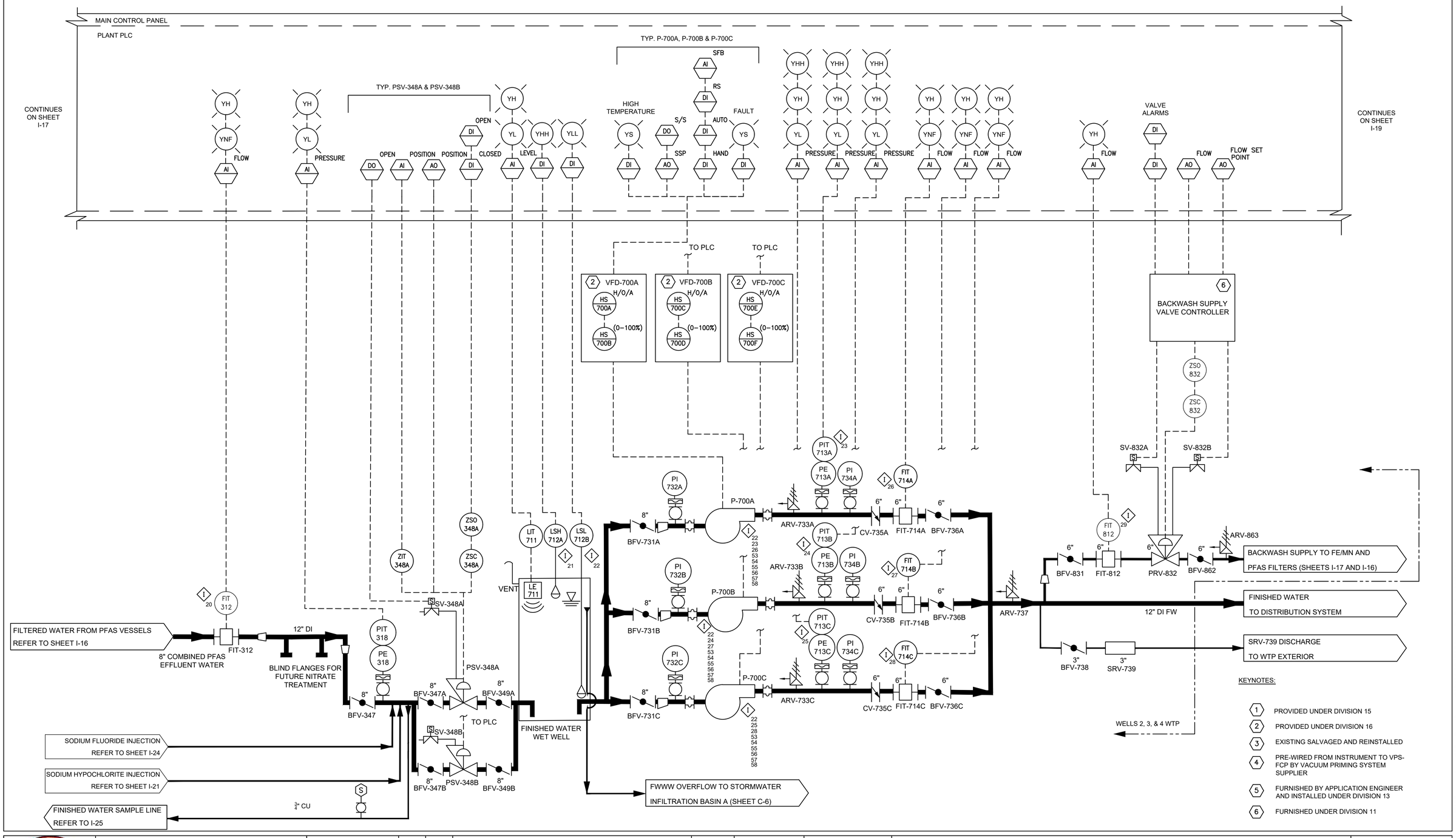
PROCESS AND INSTRUMENTATION CONTROL
WTP PFAS PRESSURE FILTRATION PID

100% DESIGN

Sheet No.

I-17

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.3 I&C WTP PID .dwg Plot Date: Apr 08,2024-3:33pm



ENVIRONMENTAL PARTNERS
— An Apex Company —

ALSTON W. SCOTT JR. CIVIL NO. 56074 COMMONWEALTH OF MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP/GPC
Drawn by	GPC
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
WTP WET WELL AND FINISHED WATER PUMPING PID

100% DESIGN

Sheet No.

I-18

Drawing file: I:\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.3.1&C WTP PID .dwg Plot Date: Apr 10,2024-4:50pm


MAIN CONTROL PANEL
PLANT PLC
CONTINUES ON SHEET I-18
CONTINUES ON SHEET I-20
TYP. BFV-836A, BFV-836B & BFV-836C
FAULT
FAIL TO CLOSE/OPEN
TYP. BFV-834A, BFV-834B & BFV-834C
TYP. P-801A & P-801B
HIGH TEMPERATURE
S/S
SSP
SFB
RS
AUTO
HAND
MODE
OPEN
CLOSE
FLOW
PRESSURE
LEVEL
OVERLOAD
ON/OFF
VFD-800A
VFD-800B
H/O/A
(0–100%)
SLUDGE PUMP FIELD CONTROL PANEL (SP-FCP)
LI-811A
LI-811B
LI-811C
H/O
FLOW TO WASTE TO WTP EXTERIOR
SLUDGE TO TRUCK CONNECTION
BACKWASH WASTE FROM FE/MN AND PFAS FILTERS REFER TO SHEETS I-16 & I-17
6" DI BWW
AVV-859
AVV-833
ARV-856
6" BFV-858
6" BFV-857
TO PLC
6" BFV-834C
6" BFV-834B
6" BFV-834A
4" DI SL
4" BFV-864
2"
CV-855
FIT 814
VENT
BACKWASH WASTE TANK
BWWT #3
BWWT #2
BWWT #1
DF-835A
DF-835B
DF-835C
4" DI REC
4" BFV-836A
4" BFV-836B
4" BFV-836C
4" BFV-838A
4" BFV-838B
P-800A
P-800B
CV-840A
CV-840B
BFV-841A
BFV-841B
FIT 813
FIT-813
RECYCLE TO WELLS 2 & 3 RAW WATER (SHEET I-16)
BWWT OVERFLOW TO STORMWATER INFILTRATION BASIN B (SHEET C-6)
P-801A
P-801B
BFV-850A
BFV-850B
BFV-850C
BFV-852A
BFV-852B
BFV-854A
BFV-854B
PI 853A
PI 853B
PI 851
PI 837
PIT 817A
PIT 817B
PE 817A
PE 817B
PI 839A
PI 839B
LIT 811C
LIT 811B
LIT 811A
LE 811C
LE 811B
LE 811A
LSH 815C
LSH 815B
LSH 815A
LSL 816C
LSL 816B
LSL 816A
ZSO 836C
ZSC 836C
ZSO 834C
ZSC 834C

KEYNOTES:

1. PROVIDED UNDER DIVISION 15
2. PROVIDED UNDER DIVISION 16
3. EXISTING SALVAGED AND REINSTALLED
4. PRE-WIRED FROM INSTRUMENT TO VPS-FCP BY VACUUM PRIMING SYSTEM SUPPLIER
5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

ENVIRONMENTAL PARTNERS
— An Apex Company —

APRIL 2024

MARK	DATE	DESCRIPTION

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

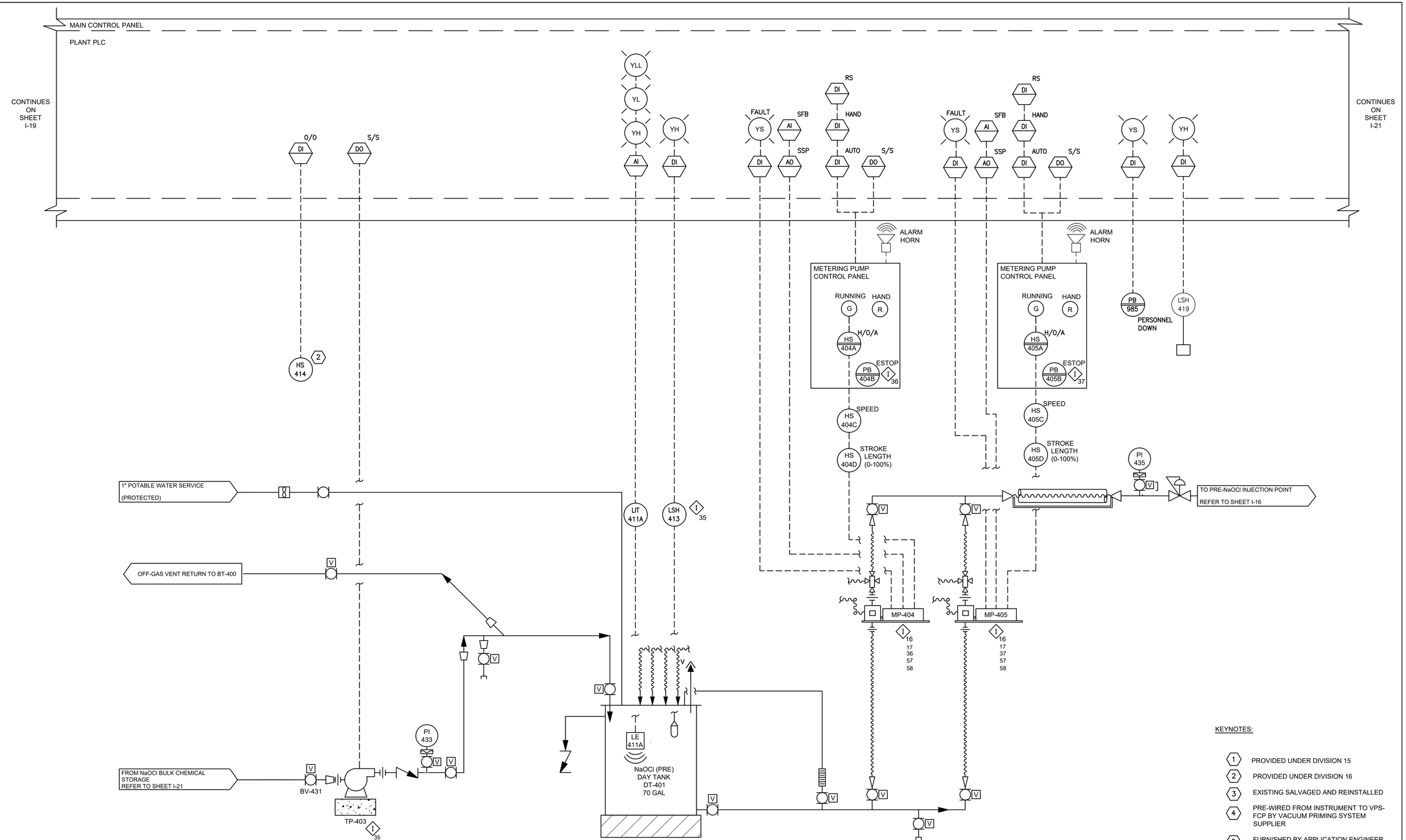
PROCESS AND INSTRUMENTATION CONTROL
WTP BACKWASH, RECYCLE, AND SLUDGE SYSTEM PID

100% DESIGN

Sheet No.

I-19

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.3 I&C WTP PID .dwg Plot Date: Apr 09,2024-3:33pm



KEYNOTES:

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2. PROVIDED UNDER DIVISION 16
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5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

ENVIRONMENTAL PARTNERS
— An Apex Company —

ALSTON W. CROTTY, CIVIL, NO. 56074, COMMONWEALTH OF MASSACHUSETTS, REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S
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Drawn by	AWCP/GPC
Checked by	EAK
Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
WTP SODIUM HYPOCHLORITE PRE-FILTRATION PID

100% DESIGN

Sheet No.

I-20

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.4 Chem Feed PID.dwg Plot Date: Apr 09,2024-3:10pm

MAIN CONTROL PANEL

PLANT PLC

CONTINUES ON SHEET I-20

CONTINUES ON SHEET I-22

AO DO YS DI DI — YLL YL YH YHH — AI DI — S/S DO — 0/0 DI — YLL YL YH YH — AI DI — FAULT YS SFB AI — DI AO — RS DI HAND DI AUTO S/S DI DO — FAULT YS SFB AI — DI AO — RS DI HAND DI AUTO S/S DI DO — YHH YS — DI DI

ALARM HORN

LI 421 | A | PB 422 EMERGENCY | PB 422A ALARM ACKN

NaOCl BCFP

HS 417 (2)

METERING PUMP CONTROL PANEL — RUNNING G, HAND R — H/O/A HS 407A — ESTOP PB 407B (I 39) — SPEED HS 407C — STROKE LENGTH HS 407D (0-100%)

METERING PUMP CONTROL PANEL — RUNNING G, HAND R — H/O/A HS 408A — ESTOP PB 408B (I 40) — SPEED HS 408C — STROKE LENGTH HS 408D (0-100%)

FS 420 (1)

LSH 419

PI 444

OFF-GAS VENT RETURN FROM DT-401

TO MANUAL CARBOY FILL STATION

LIT 411 | LSH 412

TO PRE-FILTRATION NaOCl
REFER TO SHEET I-20

1" POTABLE WATER SERVICE
(PROTECTED)

FROM NaOCl CHEMICAL FILL STATION

LIT 411B | LSH 416 (I 38)

TO POST-NaOCl INJECTION POINT
REFER TO SHEET I-18

LE 411

NaOCl BULK TANK
BT-400
905 GAL

PI 442

BV-440

TP-406 (I 38)

LE 411B

NaOCl (POST)
DAY TANK
DT-402
30 GAL

KOH AND NaOCl
CONTAINMENT AREA

MP-407 (I 16 20 39 57 58)

MP-408 (I 16 20 40 57 58)

KEYNOTES:

1. PROVIDED UNDER DIVISION 15
2. PROVIDED UNDER DIVISION 16
3. EXISTING SALVAGED AND REINSTALLED
4. PRE-WIRED FROM INSTRUMENT TO VPS-FCP BY VACUUM PRIMING SYSTEM SUPPLIER
5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

ENVIRONMENTAL PARTNERS — An Apex Company

ALSTON W. COTTE, CIVIL, NO. 56074, COMMONWEALTH OF MASSACHUSETTS, REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

MARK	DATE	DESCRIPTION

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Drawn by	AWCP/GPC
Checked by	EAK
Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
WTP SODIUM HYPOCHLORITE BULK TANK AND POST-FILTRATION PID

100% DESIGN

Sheet No.

I-21

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.4 Chem Feed PID.dwg Plot Date: Apr 09,2024-3:05pm

MAIN CONTROL PANEL

PLANT PLC

CONTINUES ON SHEET I-21

CONTINUES ON SHEET I-23

YLL, YL, YH, AI — LIT 511

YHH, DI — LSH 512

AO, DO, DI, DI — YS — LI 516, A, PB 517, PB 517A — EMERGENCY ALARM ACKN — ALARM HORN — KOH BCFP

DO — S/S — LSH 513

DI — O/O — HS 514 (2)

YH, DI — YLL, YL, YH, AI — LIT 511A

FAULT, YS, DI — SFB, AI, SSP, AO

RS, DI — HAND, DI — AUTO, S/S, DI, DO — ALARM HORN

METERING PUMP CONTROL PANEL

RUNNING G — HAND R

H/O/A HS 503A

ESTOP PB 503B (I 42)

SPEED HS 503C

STROKE LENGTH (0-100%) HS 503D

FAULT, YS, DI — SFB, AI, SSP, AO

RS, DI — HAND, DI — AUTO, S/S, DI, DO — ALARM HORN

METERING PUMP CONTROL PANEL

RUNNING G — HAND R

H/O/A HS 504A

ESTOP PB 504B (I 43)

SPEED HS 504C

STROKE LENGTH (0-100%) HS 504D

YS, DI — FS 421 (1)

PI 535

TO KOH INJECTION POINT

REFER TO SHEET I-16

LSH 513 (I 41) LIT 511A

MP-503 — I 16 19 42 57 58

MP-504 — I 16 19 43 57 58

FROM KOH CHEMICAL FILL STATION

LE 511

KOH BULK TANK BT-500 3,000 GAL

PI 533

BV-531

TP-502 (I 41)

LE 511A

KOH DAY TANK DT-501 230 GAL

KOH AND NaOCl CONTAINMENT AREA

KEYNOTES:

1. PROVIDED UNDER DIVISION 15
2. PROVIDED UNDER DIVISION 16
3. EXISTING SALVAGED AND REINSTALLED
4. PRE-WIRED FROM INSTRUMENT TO VPS-FCP BY VACUUM PRIMING SYSTEM SUPPLIER
5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

ENVIRONMENTAL PARTNERS — An Apex Company

ALSTON W. CROTTE JR. CIVIL NO. 56074 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S
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Drawn by	AWCP/GPC
Checked by	EAK
Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
WTP POTASSIUM HYDROXIDE PID

100% DESIGN

Sheet No.

I-22

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.4 Chem Feed PID.dwg Plot Date: Apr 09,2024-3:09pm


MAIN CONTROL PANEL
PLANT PLC
CONTINUES ON SHEET I-22
CONTINUES ON SHEET I-24
YLL
YL
YH
YHH
YS
FAULT
SFB
SSP
RS
HAND
AUTO
S/S
O/O
AO
DO
DI
AI
ALARM HORN
LI 611
A
PB 612
PB 612A
EMERGENCY
ALARM ACKN
NaHSO3 BCFP
HS 615
METERING PUMP CONTROL PANEL
GENERATOR
RUNNING
G
R
H/O/A
HS 603A
ESTOP
PB 603B
45
HS 604A
PB 604B
46
SPEED
HS 603C
HS 604C
STROKE LENGTH (0-100%)
HS 603D
HS 604D
PB 984
PERSONNEL DOWN
LSH 614
PI 635
TO NaHSO3 INJECTION POINT
REFER TO SHEET I-16
LIT 611
LSH 612
LSH 613
44
LIT 611A
FROM NaHSO3 CHEMICAL FILL STATION
LE 611
NaHSO3 BULK TANK
BT-600
1,150 GAL
PI 633
BV-631
TP-602
NaHSO3 CONTAINMENT AREA
LE 611A
NaHSO3 DAY TANK
DT-601
30 GAL
MP-603
MP-604
16 18 45 57 58
16 18 46 57 58
KEYNOTES:
1 PROVIDED UNDER DIVISION 15
2 PROVIDED UNDER DIVISION 16
3 EXISTING SALVAGED AND REINSTALLED
4 PRE-WIRED FROM INSTRUMENT TO VPS-FCP BY VACUUM PRIMING SYSTEM SUPPLIER
5 FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
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ENVIRONMENTAL PARTNERS
— An Apex Company —

APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
WTP SODIUM BISULFITE PID

100% DESIGN

Sheet No.

I-23

KEYNOTES:

1. PROVIDED UNDER DIVISION 15
2. PROVIDED UNDER DIVISION 16
3. EXISTING SALVAGED AND REINSTALLED
4. PRE-WIRED FROM INSTRUMENT TO VPS-FCP BY VACUUM PRIMING SYSTEM SUPPLIER
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ENVIRONMENTAL PARTNERS — An Apex Company —

APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
WTP SODIUM FLUORIDE PID

100% DESIGN

Sheet No.

I-24

Drawing file: I:\Sharon, MA.245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.4 Chem Feed PID.dwg Plot Date: Apr 09,2024-3:16pm

MAIN CONTROL PANEL
PLANT PLC
CONTINUES ON SHEET I-24
CONTINUES ON SHEET I-26
OPEN OPEN OPEN OPEN OPEN OPEN
DO DO DO DO DO DO
TEMP pH
AI AI
YH YL
YHH YH YL YLL
AIT 961
AE 961A
pH/TEMP
PI
AIT 962
AE 962A
AE 962B
pH/TEMP
Cl2
48 49
AIT 963
AE 963A
AE 963B
AIT 964
AE 964A
AE 964B
50 51
52
AIT 965
AE 965A
AE 965B
53 54
55 56
AIT 966
AE 966A
AE 966B
WELLS 2/3 RAW AND RECYCLE WATER SAMPLE LINE REFER TO SHEET I-16
OXIDIZED WATER SAMPLE LINE REFER TO SHEET I-16
FE/MN FILTERED WATER SAMPLE LINE REFER TO SHEET I-16
PFAS FILTER INFLUENT WATER SAMPLE LINE REFER TO SHEET I-16
FINISHED WATER SAMPLE LINE REFER TO SHEET I-18
100 FOOT SAMPLE LINE REFER TO SHEET C-5
SV-967A SV-967B SV-967C SV-967D SV-967E SV-967F
3/4" CU
3/4" PVC
PROCESS WASTE TO BACKWASH WASTE TANK REFER TO SHEET I-19
TO CONTROL ROOM SAMPLE SINK
KEYNOTES:
1 PROVIDED UNDER DIVISION 15
2 PROVIDED UNDER DIVISION 16
3 EXISTING SALVAGED AND REINSTALLED
4 PRE-WIRED FROM INSTRUMENT TO VPS-FCP BY VACUUM PRIMING SYSTEM SUPPLIER
5 FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6 FURNISHED UNDER DIVISION 11

ENVIRONMENTAL PARTNERS
— An Apex Company —

COMMONWEALTH OF MASSACHUSETTS
ALSTON W.C. POTTS
CIVIL
NO. 56074
REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

Scale	N.T.S
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
WTP ANALYZERS PID

100% DESIGN

Sheet No.

I-25

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.5 Analyzers & Misc PID.dwg Plot Date: Apr 09 2024-3:36pm


MAIN CONTROL PANEL
PLANT PLC
CONTINUES ON SHEET I-25
HUMIDITY
TEMP
FAULT
FIRE
SUPEVISORY
NORMAL POSITION
EMERGENCY POSITION
LOSS OF UTILITY
CHEMICAL ALARM
INTRUSION
FAIL
RUNNING
NOT IN AUTO
OVERLOAD
RS
AUTO
S/S
O/C
ESTOP
UPS
OIT
CAT-6E
MANAGED ETHERNET SWITCH
PHOTO-VOLTAIC SYSTEM
FIREWALL
POE ETHERNET SWITCH
HMI SCADA PC WORKSTATION
FIBER-PATCH PANEL
FIBER OPTIC
FROM WELL STATION 4 CONTROL PANEL REFER TO SHEET I-15
ISBP
LSH 971
LSH 972
TIGHT TANK
GENERATOR
PB 981
TT 921
PERSONNEL DOWN
DHU-1 (UPPER LEVEL ABOVE MECHANICAL ROOM)
DHU-2 (LOWER LEVEL BELOW MECHANICAL ROOM)
PB 982
PB 983
TT 923
PB 994
PB 986
TT 926
TT 930
FIRE ALARM CONTROL PANEL (FACP)
AUTOMATIC CONTROL SWITCH (ATS)
CHEMICAL ALARM SYSTEM CONTROL PANEL (CACP)
SACP
PB 991
PB 992
LSH 996
PB 993
NITRATE ROOM 101
PFAS REMOVAL AREA ROOM 102
FE/MN REMOVAL AREA ROOM 103
CONTROL ROOM 106
ELECTRICAL ROOM 111
PIPE GALLERY 001
HS 202
H/O/A
PI 251
PI 253
INTAKE SILENCER
ASB-202
3" INLET AIR
OUTSIDE AIR
AIR FILTER/ INSECT SCREEN
AIR SCOUR BLOWER
DISCHARGE SILENCER
PRV-252
BFV-254
CV-255
SV-256
3" BACKWASH AIR SUPPLY
BACKWASH AIR SUPPLY TO FILTERS REFER TO SHEET I-16
KEYNOTES:
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2 PROVIDED UNDER DIVISION 16
3 EXISTING SALVAGED AND REINSTALLED
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5 FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
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ENVIRONMENTAL PARTNERS
— An Apex Company —

APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

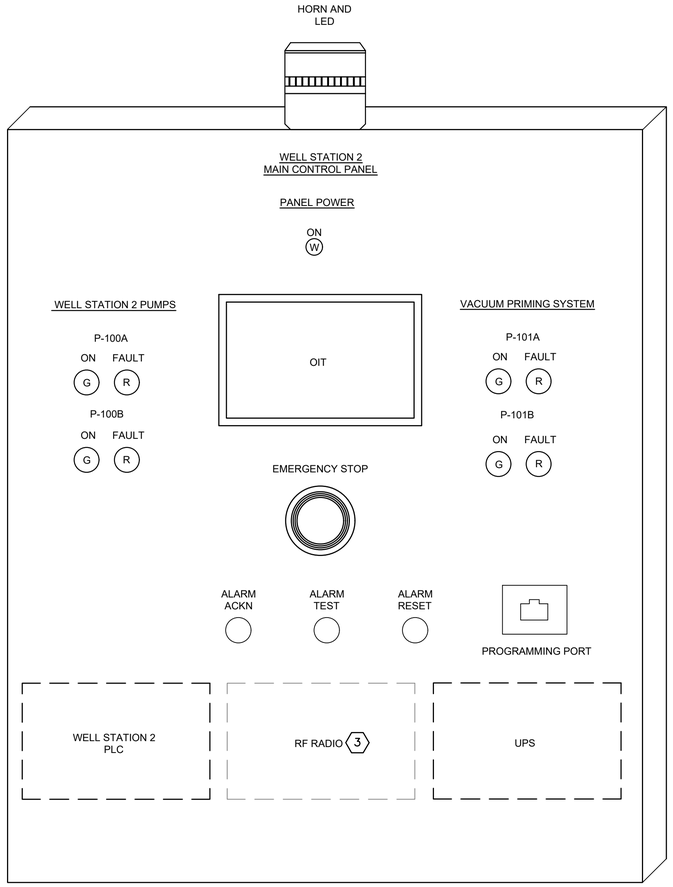
PROCESS AND INSTRUMENTATION CONTROL BUILDING SYSTEMS AND AIR SCOUR BLOWER PID

100% DESIGN

Sheet No.

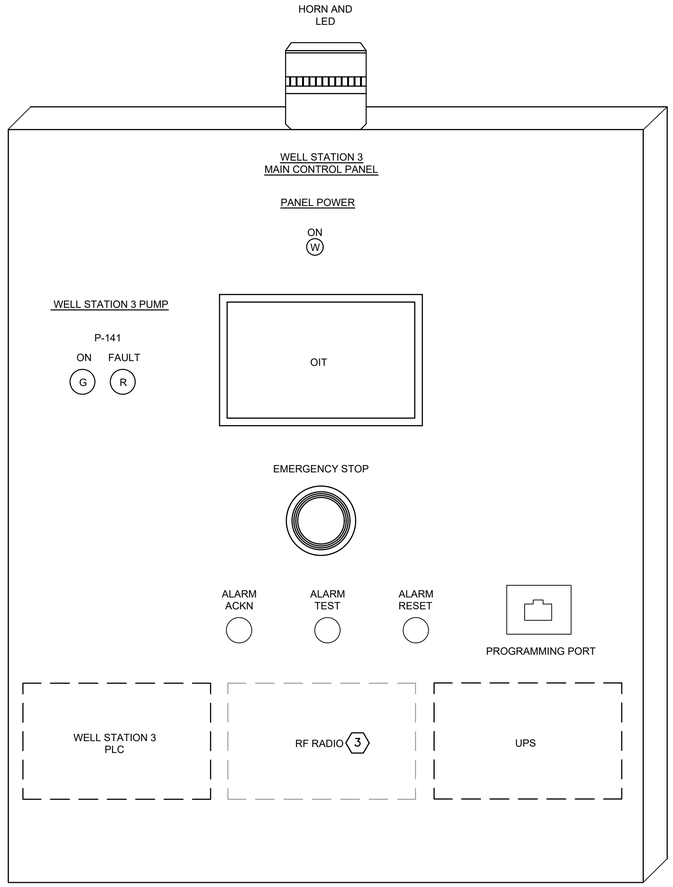
I-26

Drawing file: I:\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.3 I&C WTP PID .dwg Plot Date: Apr 09,2024-3:34pm



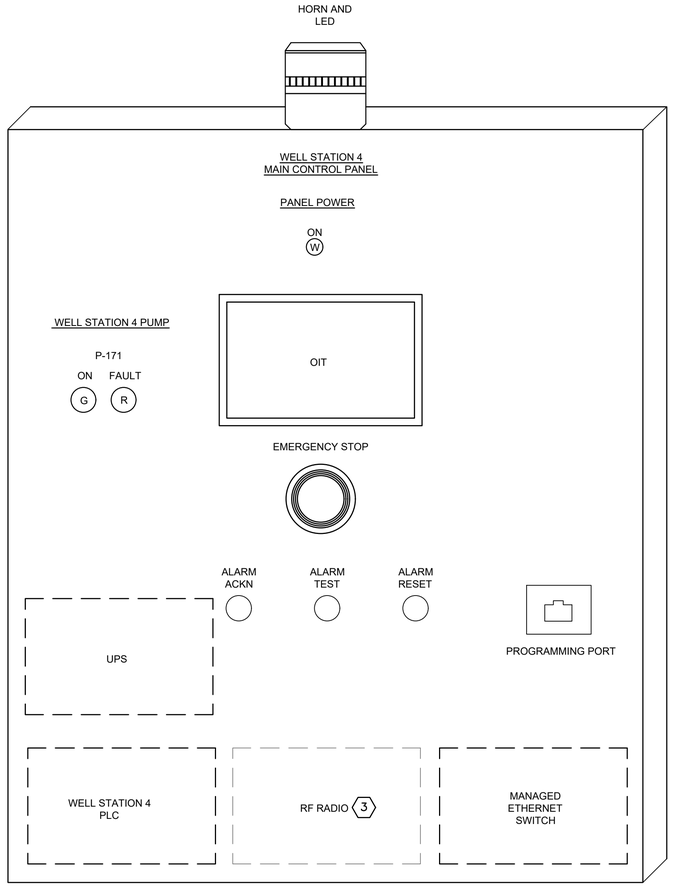
WELL STATION 2 CONTROL PANEL LAYOUT

SCALE: N.T.S.



WELL STATION 3 CONTROL PANEL LAYOUT

SCALE: N.T.S.



WELL STATION 4 CONTROL PANEL LAYOUT

SCALE: N.T.S.

KEYNOTES:

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3. EXISTING SALVAGED AND REINSTALLED
4. PRE-WIRED FROM INSTRUMENT TO VPS-FCP BY VACUUM PRIMING SYSTEM SUPPLIER
5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

ENVIRONMENTAL PARTNERS — An Apex Company —

COMMONWEALTH OF MASSACHUSETTS — ALSTON W. CROTTY — CIVIL — NO. 56074 — REGISTERED PROFESSIONAL ENGINEER

APRIL 2024

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

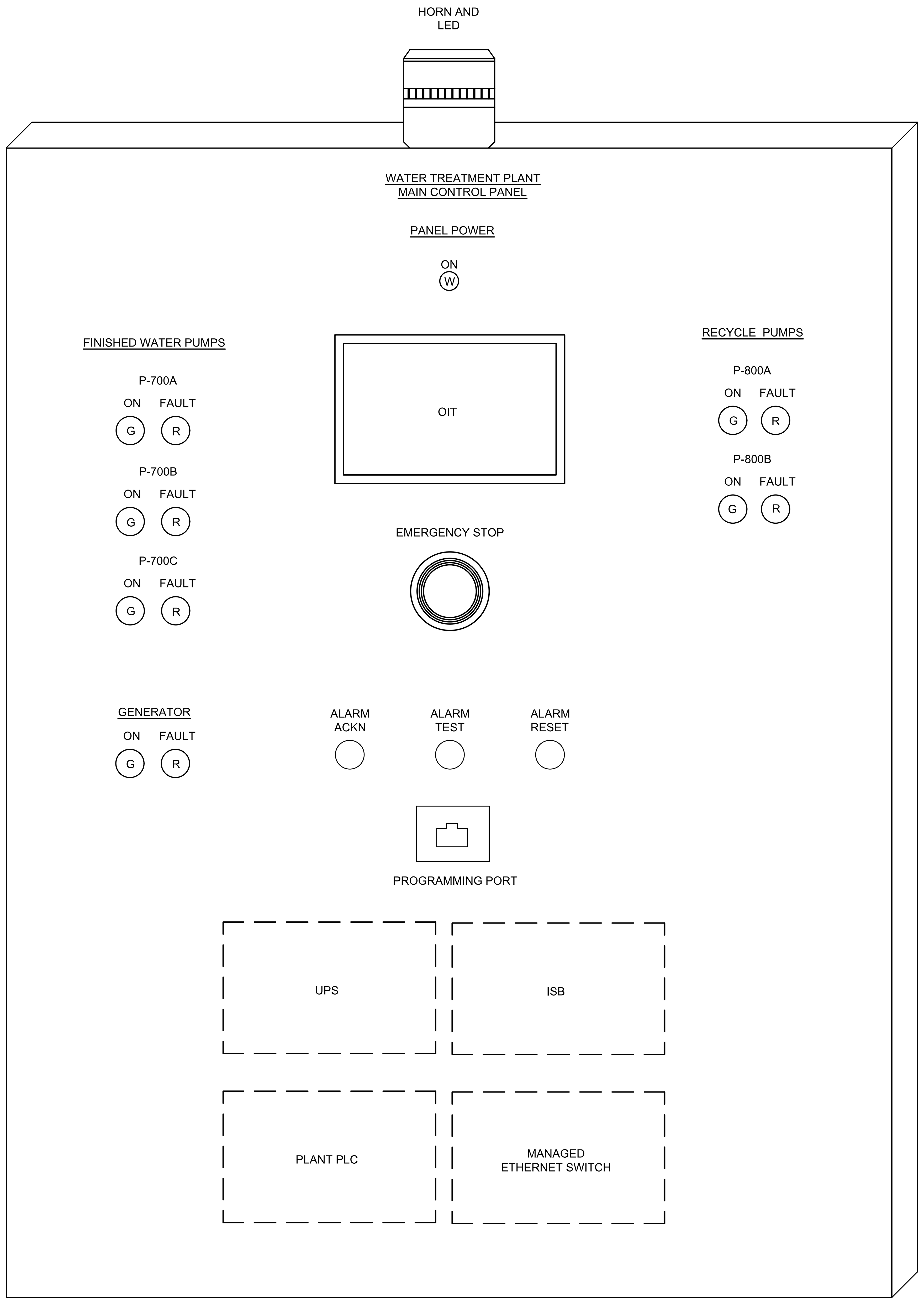
PROCESS AND INSTRUMENTATION CONTROL
CONTROL PANEL LAYOUTS I

100% DESIGN

Sheet No.

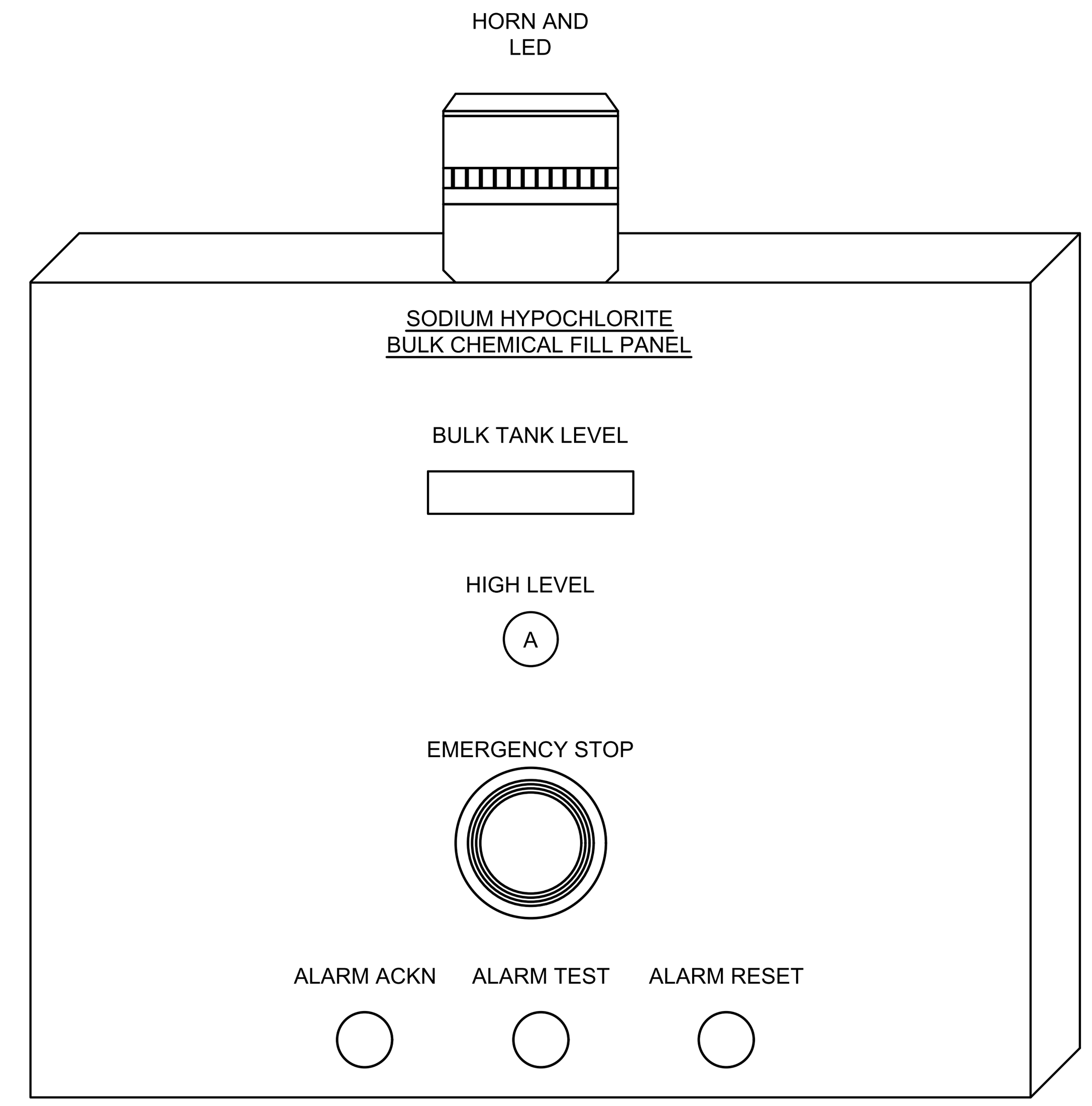
I-27

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.3 I&C WTP PID .dwg Plot Date: Apr 09,2024-3:34pm



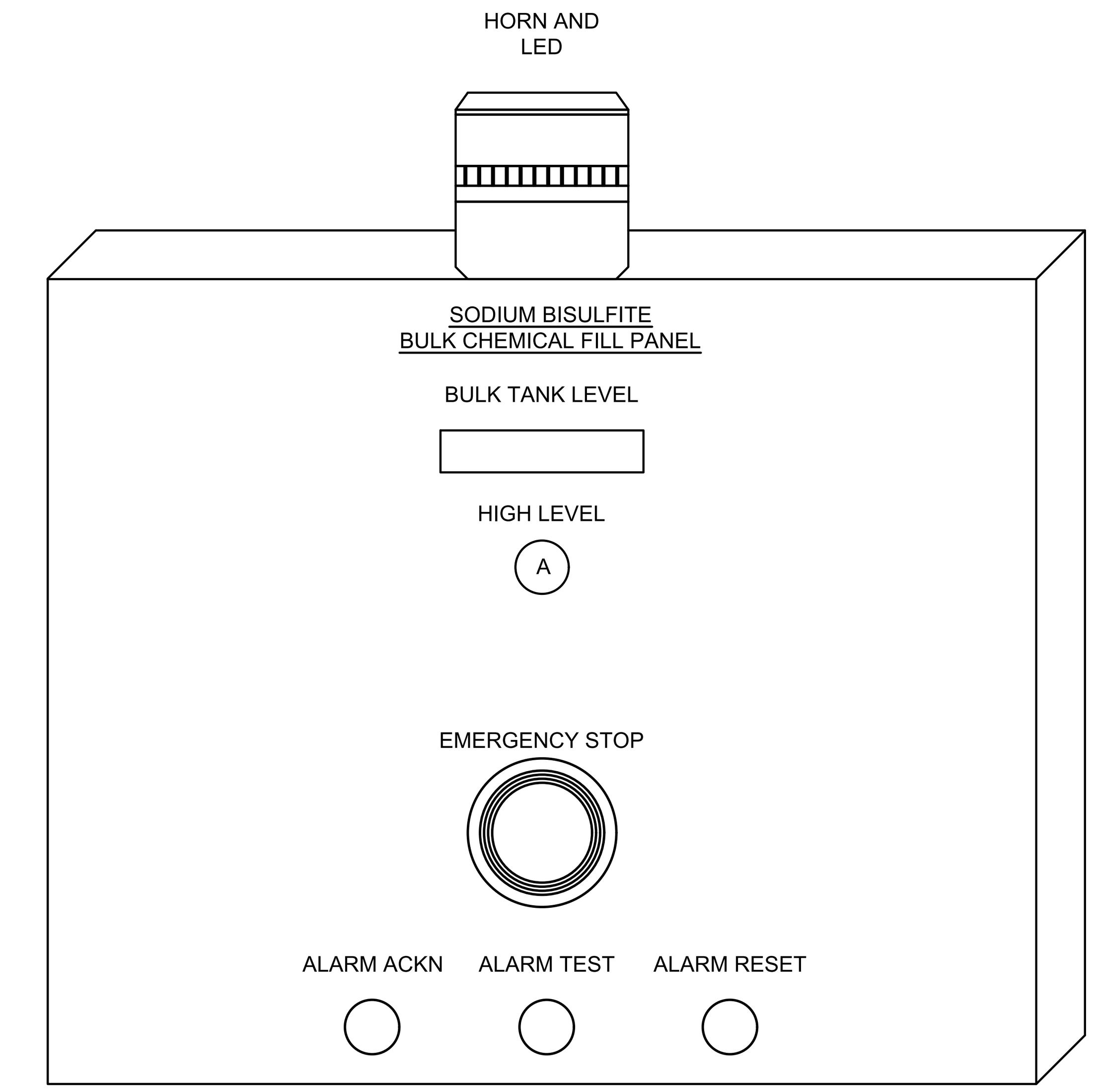
MAIN CONTROL PANEL LAYOUT

SCALE: N.T.S.



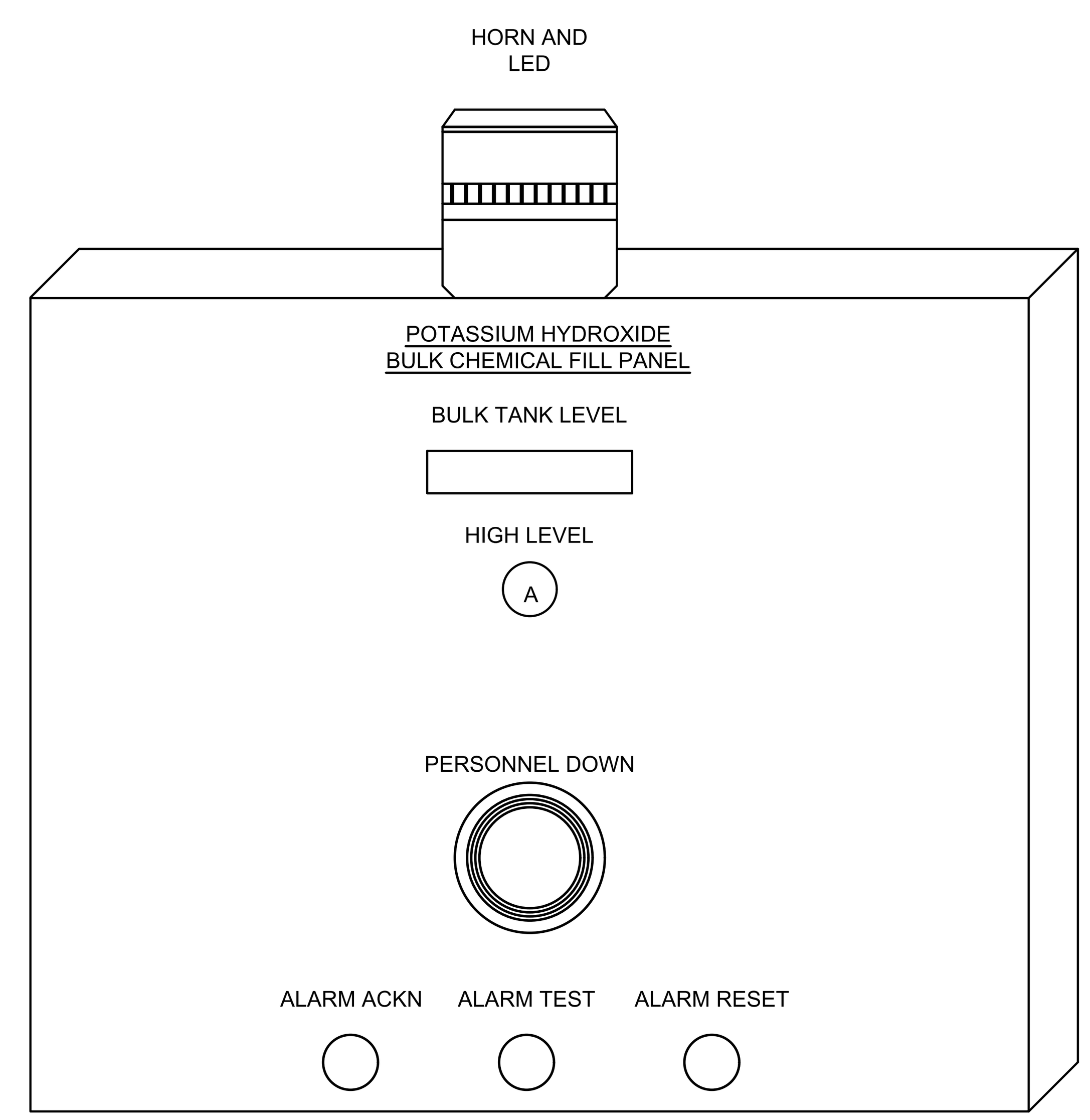
NaOCl BULK CHEMICAL FILL PANEL INTERIOR LAYOUT

SCALE: N.T.S.



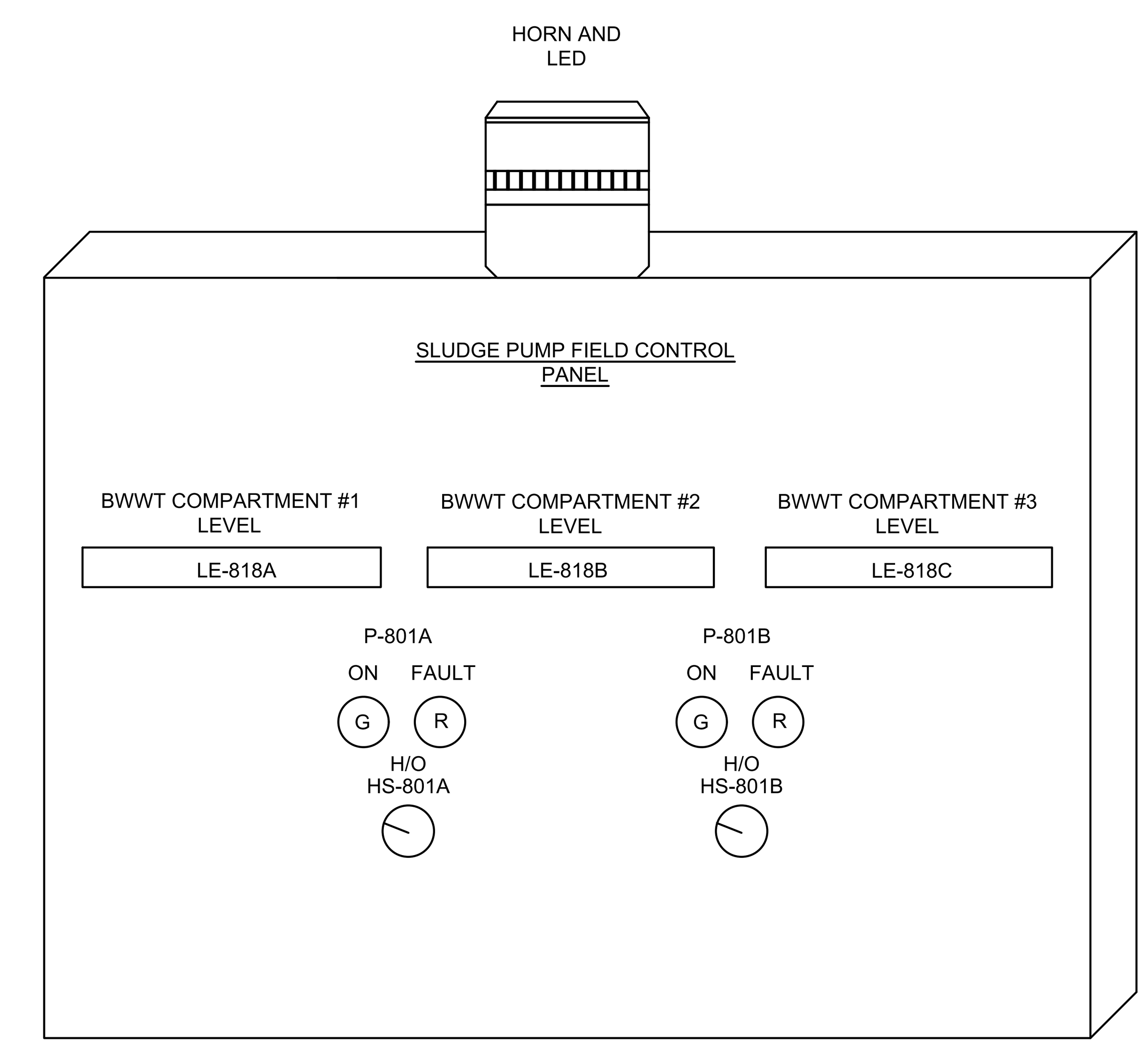
NaHSO3 BULK CHEMICAL FILL PANEL INTERIOR LAYOUT

SCALE: N.T.S.



KOH BULK CHEMICAL FILL PANEL INTERIOR LAYOUT

SCALE: N.T.S.



SLUDGE PUMP FIELD CONTROL PANEL LAYOUT

SCALE: N.T.S.

KEYNOTES:

1. PROVIDED UNDER DIVISION 15
2. PROVIDED UNDER DIVISION 16
3. EXISTING SALVAGED AND REINSTALLED
4. PRE-WIRED FROM INSTRUMENT TO VPS-FCP BY VACUUM PRIMING SYSTEM SUPPLIER
5. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13
6. FURNISHED UNDER DIVISION 11

NOTES:

1. BULK CHEMICAL FILL EXTERIOR PANELS AND THE SLUDGE PUMP FIELD CONTROL PANEL SHALL BE FURNISHED WITH CLEAR WINDOW VISION PANEL.

ENVIRONMENTAL PARTNERS
— An Apex Company —

APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP/GPC
Drawn by	GPC
Checked by	EAK
Approved by	ASK

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

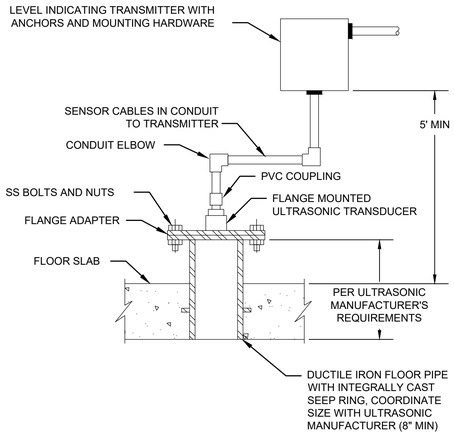
PROCESS AND INSTRUMENTATION CONTROL
CONTROL PANEL LAYOUTS II

100% DESIGN

Sheet No.

I-28

Drawing file: I:\Sharon, MA.245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.3 I&C WTP PID .dwg Plot Date: Apr 09,2024-3:35pm



NOTES:

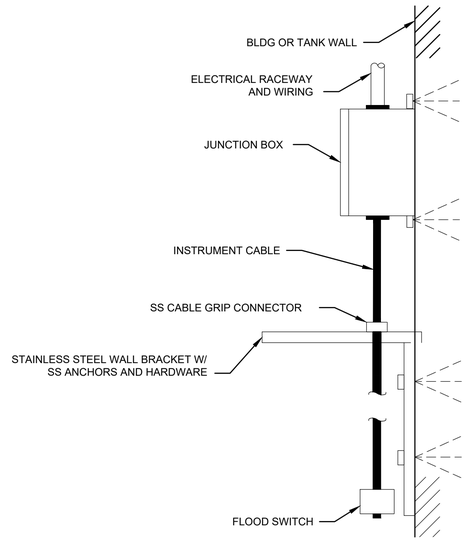
1. COAT FLOOR PIPE WITH SPECIFIED PAINT SYSTEM PRIOR TO CONCRETE PLACEMENT.
2. ULTRASONIC LEVEL SHALL BE SUITABLE FOR SUBMERSIBLE APPLICATIONS.
3. ELECTRICAL CONTRACTOR TO PROVIDE ALL DIVISION 16 DEVICES, EQUIPMENT, COMPONENTS, AND ANCILLARY ITEMS ASSOCIATED WITH POWER AND SIGNAL WIRING FOR I&C DEVICES.
4. THE MOUNTING DETAILS PROVIDED ARE GENERIC FOR ULTRASONIC LEVEL MEASURING DEVICES OF VARIOUS MANUFACTURERS. THE INSTALLING CONTRACTOR MUST STRICTLY COMPLY WITH MANUFACTURER'S INSTRUCTION IN THE INSTALLATION OF THESE DEVICES. IF THERE ARE ANY ENGINEERING ISSUES THEY MUST BE REFERRED TO THE ENGINEER PRIOR TO INSTALLATION.

ULTRASONIC TANK
SCALE: N.T.S.

NOTES:

1. THE MOUNTING DETAILS PROVIDED ARE GENERIC FOR LEVEL SWITCH DEVICES OF VARIOUS MANUFACTURERS. THE INSTALLING CONTRACTOR MUST STRICTLY COMPLY WITH MANUFACTURER'S INSTRUCTION IN THE INSTALLATION OF THESE DEVICES. IF THERE ARE ANY ENGINEERING ISSUES THEY MUST BE REFERRED TO THE ENGINEER PRIOR TO INSTALLATION.
2. ELECTRICAL CONTRACTOR TO PROVIDE ALL DIVISION 16 DEVICES, EQUIPMENT, COMPONENTS, AND ANCILLARY ITEMS ASSOCIATED WITH POWER AND SIGNAL WIRING FOR I&C DEVICES.

CHEMICAL TANK FLOAT SWITCH
SCALE: N.T.S.



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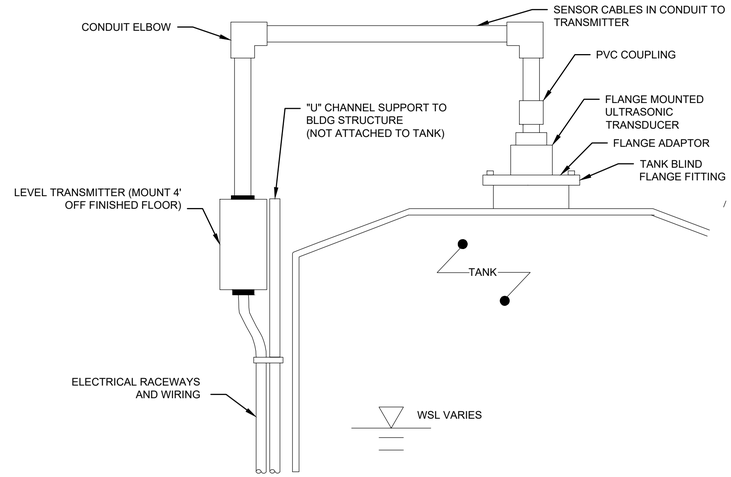
2. ELECTRICAL CONTRACTOR TO PROVIDE ALL DIVISION 16 DEVICES, EQUIPMENT, COMPONENTS, AND ANCILLARY ITEMS ASSOCIATED WITH POWER AND SIGNAL WIRING FOR I&C DEVICES.

FLOOD SWITCH
SCALE: N.T.S.



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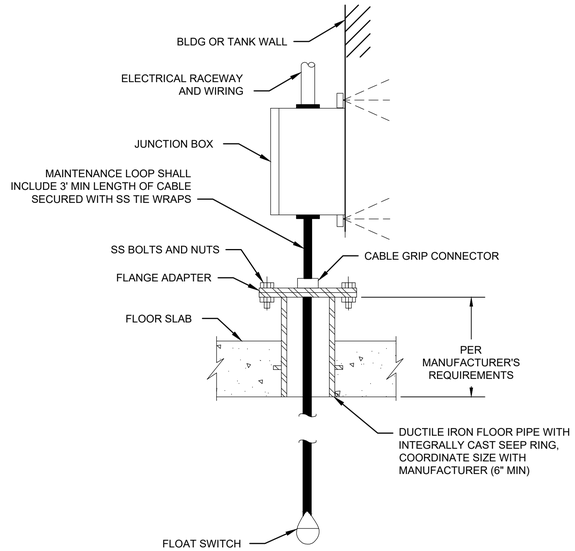
CHEMICAL TANK ULTRASONIC LEVEL
SCALE: N.T.S.



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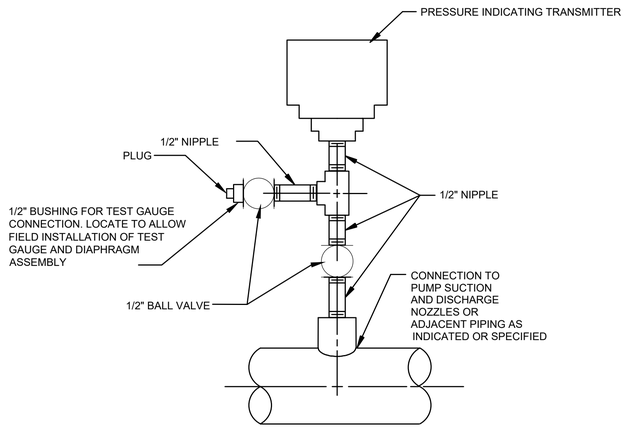
FLOAT SWITCH - TANK
SCALE: N.T.S.



NOTES:

1. ELECTRICAL CONTRACTOR TO PROVIDE ALL DIVISION 16 DEVICES, EQUIPMENT, COMPONENTS, AND ANCILLARY ITEMS ASSOCIATED WITH POWER AND SIGNAL WIRING FOR I&C DEVICES.

PRESSURE INDICATING TRANSMITTER MOUNTING
SCALE: N.T.S.

ENVIRONMENTAL PARTNERS — An Apex Company —

ALSTON W. GOTTE, CIVIL, NO. 56074, COMMONWEALTH OF MASSACHUSETTS, REGISTERED PROFESSIONAL ENGINEER
APRIL 2024

MARK	DATE	DESCRIPTION

Scale	N.T.S
Date	APRIL 2024
Job No.	245-2103
Designed by	AWCP/GPC
Drawn by	GPC
Checked by	EAK
Approved by	ASK

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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS AND INSTRUMENTATION CONTROL
INSTRUMENTATION DETAILS

100% DESIGN

Sheet No.
I-29

Drawing file: I:\Sharon, MA 245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\12.3 I&C WTP PhD .dwg Plot Date: Apr 09,2024-3:35pm