

WELLS 2, 3, AND 4 WATER TREATMENT PLANT

TOWN OF SHARON, MA

PUBLIC WORKS SUPERINTENDENT
ERIC HOOPER, P.E.

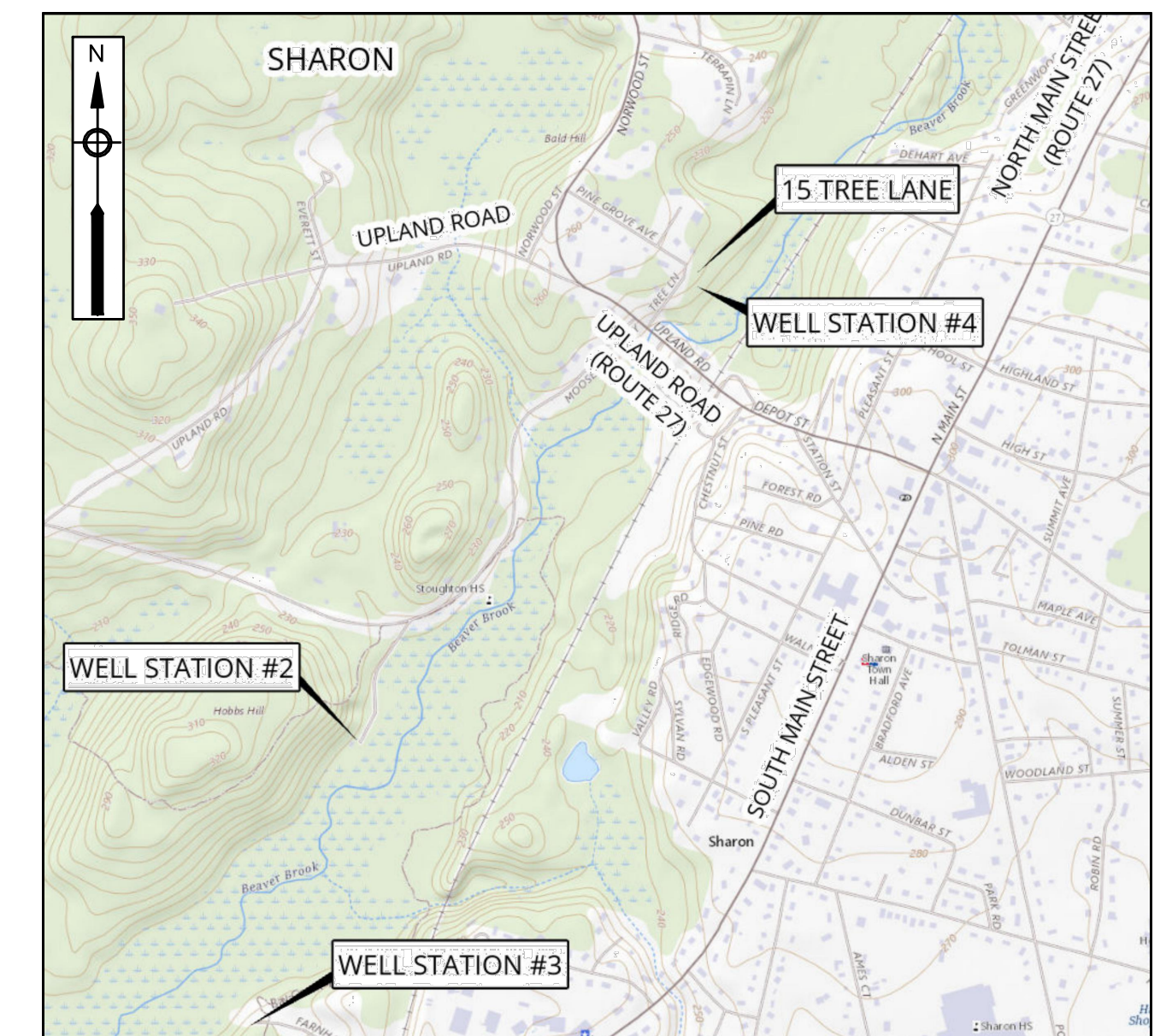
TOWN ENGINEER
PETER O'CAIN, P.E.

WATER DIVISION SUPERVISOR
ROBERT TERPSTRA

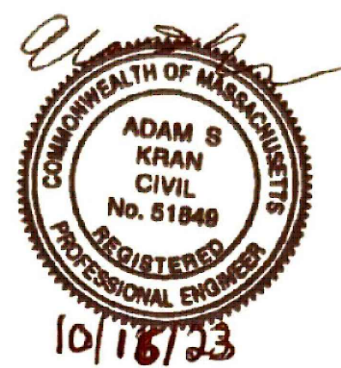
JOB NO. 245-2103
OCTOBER 2023
FOR PERMITTING



ENVIRONMENTAL
 **PARTNERS**
— An Apex Company —



VICINITY MAP
1"= 1,000'



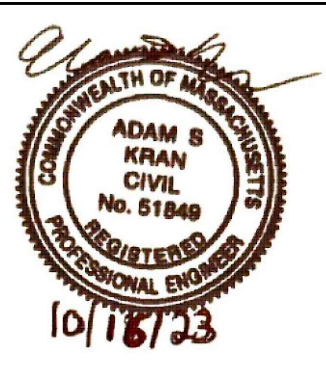


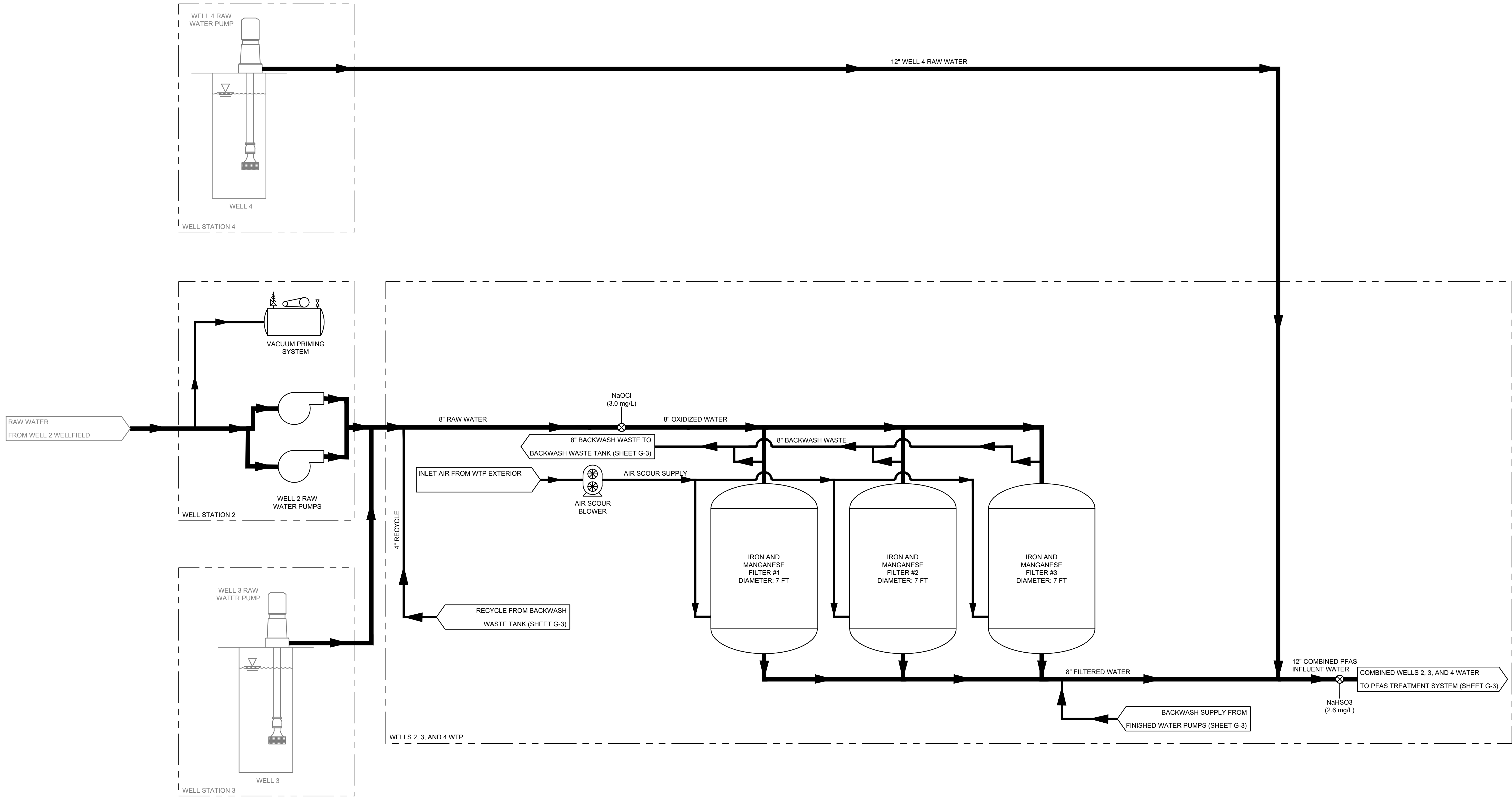
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GENERAL NOTES

- 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).
- 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.
- 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.
- 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.
- 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.
- ALL DEMOLISHED MATERIALS SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED.
- 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.
- 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.
- THE CONTRACTOR SHALL INSTALL AND MAINTAIN TRAFFIC CONTROL DEVICES AS NECESSARY AND IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPORT OF ALL UTILITIES AND STRUCTURES DURING CONSTRUCTION.
- 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.
- ALL UTILITY SIZES, LOCATIONS, AND APPURTENANCES ARE SUBJECT TO THE APPROVAL AND/OR REVISION OF THE RESPECTIVE UTILITY HAVING JURISDICTION.
- 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.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL MAKE ALL REQUIRED FIELD MEASUREMENTS TO VERIFY EXISTING AND CONTRACT INTERFACE DIMENSIONS, LOCATIONS, AND OTHER CONDITIONS.
- ALL DIMENSIONS AND QUANTITIES SHALL BE DETERMINED OR VERIFIED BY THE CONTRACTOR.
- DO NOT SCALE DRAWINGS UNLESS OTHERWISE NOTED. WRITTEN DIMENSION AND STATIONING SHALL PREVAIL. REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- THE TOWN OF SHARON REQUIRES ONE WEEK ADVANCED NOTICE TO PROVIDE UTILITY LOCATION SERVICES.
- UNLESS SPECIFICALLY APPROVED BY THE ENGINEER OR OTHERWISE INDICATED, ALL WATER LINES INSTALLED UNDER THIS CONTRACT SHALL BE AT A DEPTH OF NO LESS THAN 5.0 FEET AS MEASURED FROM TOP OF PIPE TO FINISHED GRADE.
- OPEN TRENCHES MUST BE BACK FILLED AT THE END OF THE WORKDAY OR COVERED WITH STEEL PLATES. NO EXCEPTIONS SHALL BE PERMITTED.
- 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.
- THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY THE CONTRACTOR'S WORK, INCLUDING ON PRIVATE PROPERTY, TO ITS PRE-CONSTRUCTION CONDITION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING ALL AREAS TO DRAIN.
- 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.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATION AND ACTIVITIES OF THEIR FORCES WITH THE OWNER AND ENGINEER TO MINIMIZE INTERFERENCE WITH NORMAL OPERATIONS.
- 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.
- 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.
- PROVIDE PROPER PROTECTION AND BARRIERS BETWEEN THE WORK OF THIS CONTRACT AND EXISTING STRUCTURES TO REMAIN.
- 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.
- AREAS FOR EACH CONTRACTOR'S INGRESS AND EGRESS TO SITE, OFFICES, PARKING AND EQUIPMENT STORAGE WILL BE DELINEATED AT THE PRE-CONSTRUCTION CONFERENCE.
- 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.
- 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.
- 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.
- 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.
- 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.
- THE WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL BUILDING CODES, NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), AND ALL OTHER APPLICABLE STATE AND FEDERAL CODES.
- 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.
- CONTRACTOR'S METHODS OF DEMOLITION SHALL BE APPROVED BY ENGINEER/OWNER PRIOR TO START OF WORK.
- ALL EQUIPMENT AND HARDWARE SHALL BE NEW, UNLESS OTHERWISE NOTED.
- 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.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
- ANY ALTERATIONS REQUIRED ON THESE DRAWINGS DURING CONSTRUCTION SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION AND RECORDED ON THE AS-BUILT DRAWINGS.
- 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.
- VENTS AND DRAINS:
 - INSTALL VENT AND DRAIN PIPING AND VALVES SO THERE IS NO INTERFERENCE WITH ACCESS TO OR OPERATION OF ANY EQUIPMENT, VALVES, PIPING, OR PANELS.
 - PROVIDE ISOLATION VALVES FOR ALL VENTS AND DRAINS AS SPECIFIED AND INDICATED.
 - LOCATE VALVES SO THAT THEY ARE ACCESSIBLE AND OPERABLE.
 - PIPE ALL VENTS AND DRAINS SLOPED TO DRAIN TO THE NEAREST GUTTER, SUMP, TRENCH, DRAIN, OR AS INDICATED.
 - WHERE PIPING RUNS ACROSS A FLOOR, INSTALL 2 INCHES MAXIMUM ABOVE FLOOR.
- 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.

	 <p>— An Apex Company —</p>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>MARK</td> <td>DATE</td> <td>DESCRIPTION</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	MARK	DATE	DESCRIPTION													<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Scale</td> <td>N.T.S.</td> </tr> <tr> <td>Date</td> <td>OCTOBER 2023</td> </tr> <tr> <td>Job No.</td> <td>245-2103</td> </tr> <tr> <td>Designed by</td> <td>AWCP</td> </tr> <tr> <td>Drawn by</td> <td>SLV</td> </tr> <tr> <td>Checked by</td> <td>EAK</td> </tr> <tr> <td>Approved by</td> <td>ASK</td> </tr> </table>	Scale	N.T.S.	Date	OCTOBER 2023	Job No.	245-2103	Designed by	AWCP	Drawn by	SLV	Checked by	EAK	Approved by	ASK	<p>THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING</p>	<p>WELLS 2, 3, AND 4 WATER TREATMENT PLANT TOWN OF SHARON, MA</p> <p>DRAWING INDEX AND GENERAL NOTES</p>	<p>FOR PERMITTING</p> <p>Sheet No.</p> <p style="font-size: 2em;">G-1</p>
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NOTES:
 1. ALL CHEMICAL DOSES AS DRY PRODUCT.



ENVIRONMENTAL PARTNERS
 — An Apex Company —

MARK	DATE	DESCRIPTION

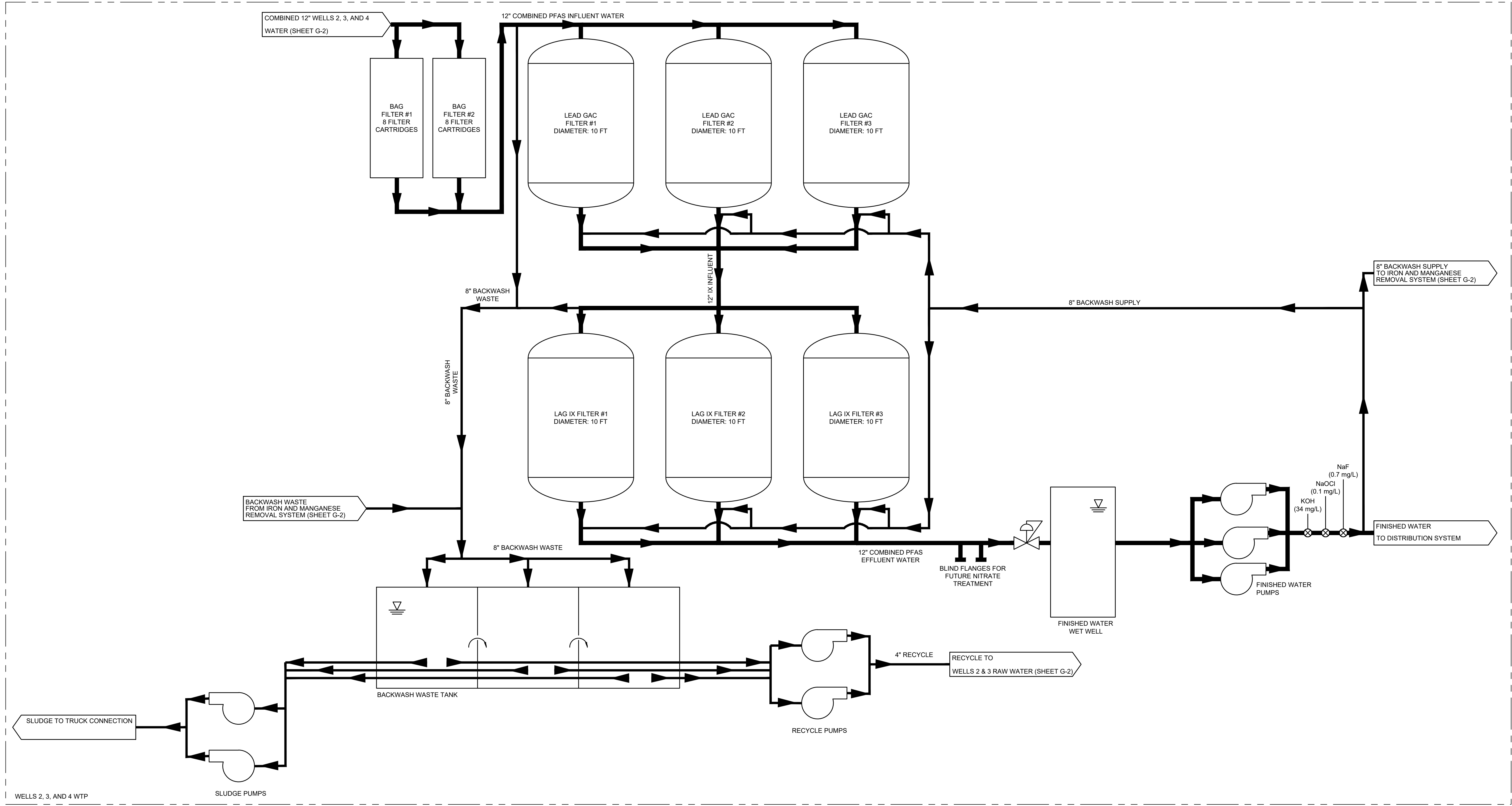
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Date	SEPTEMBER 2023
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THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

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

PROCESS FLOW DIAGRAM I

50% DESIGN
 Sheet No.
G-2



NOTES:
 1. ALL CHEMICAL DOSES AS DRY PRODUCT.



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

PROCESS FLOW DIAGRAM II

50% DESIGN
 Sheet No.
G-3

LABEL LEGEND

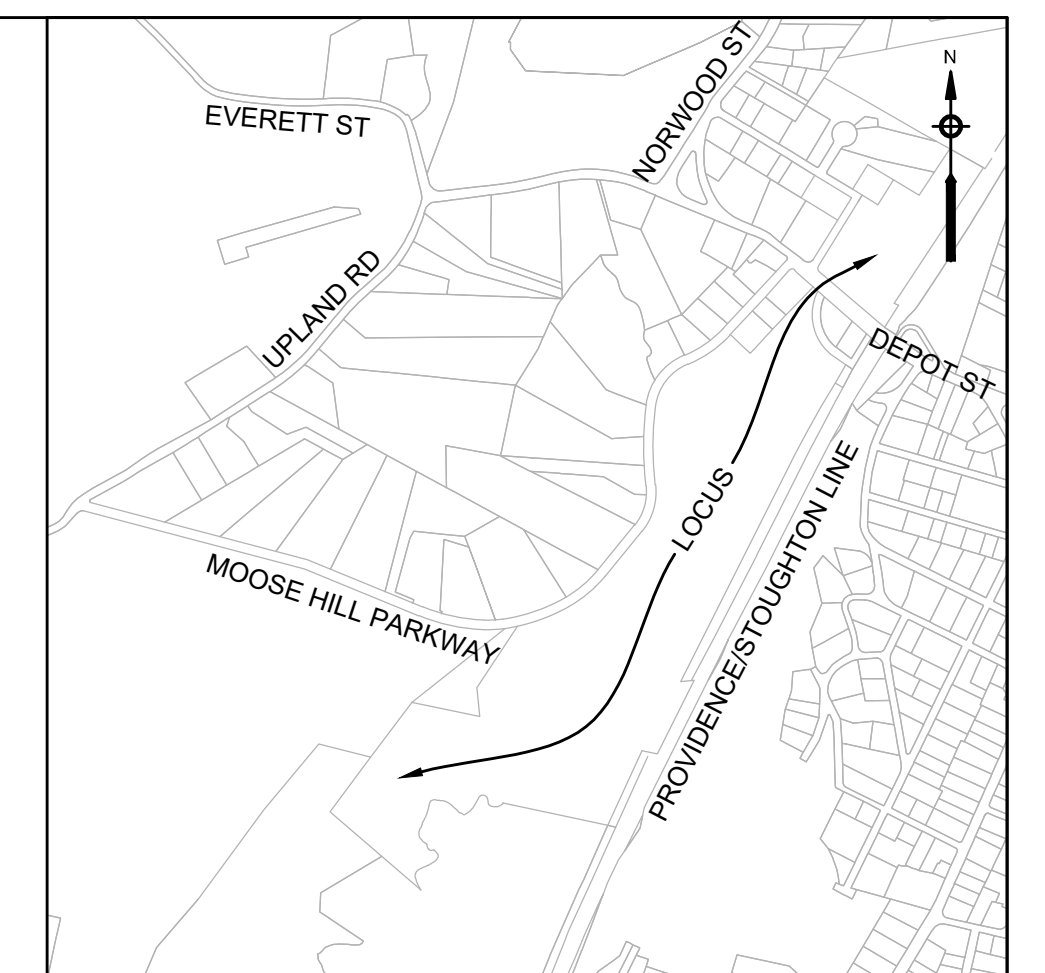
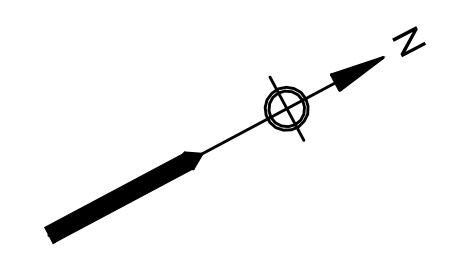
HYD	HYDRANT
UP	UTILITY POLE
DMH	DRAIN MANHOLE
CB	CATCH BASIN
CB/LP	CONCRETE BOUND W/ LEAD PLUG
SB/DH	STONE BOUND W/ DRILL HOLE
IP	IRON PIPE
VGC	VERTICAL GRANITE CURB
RET WALL	RETAINING WALL

LINETYPE LEGEND

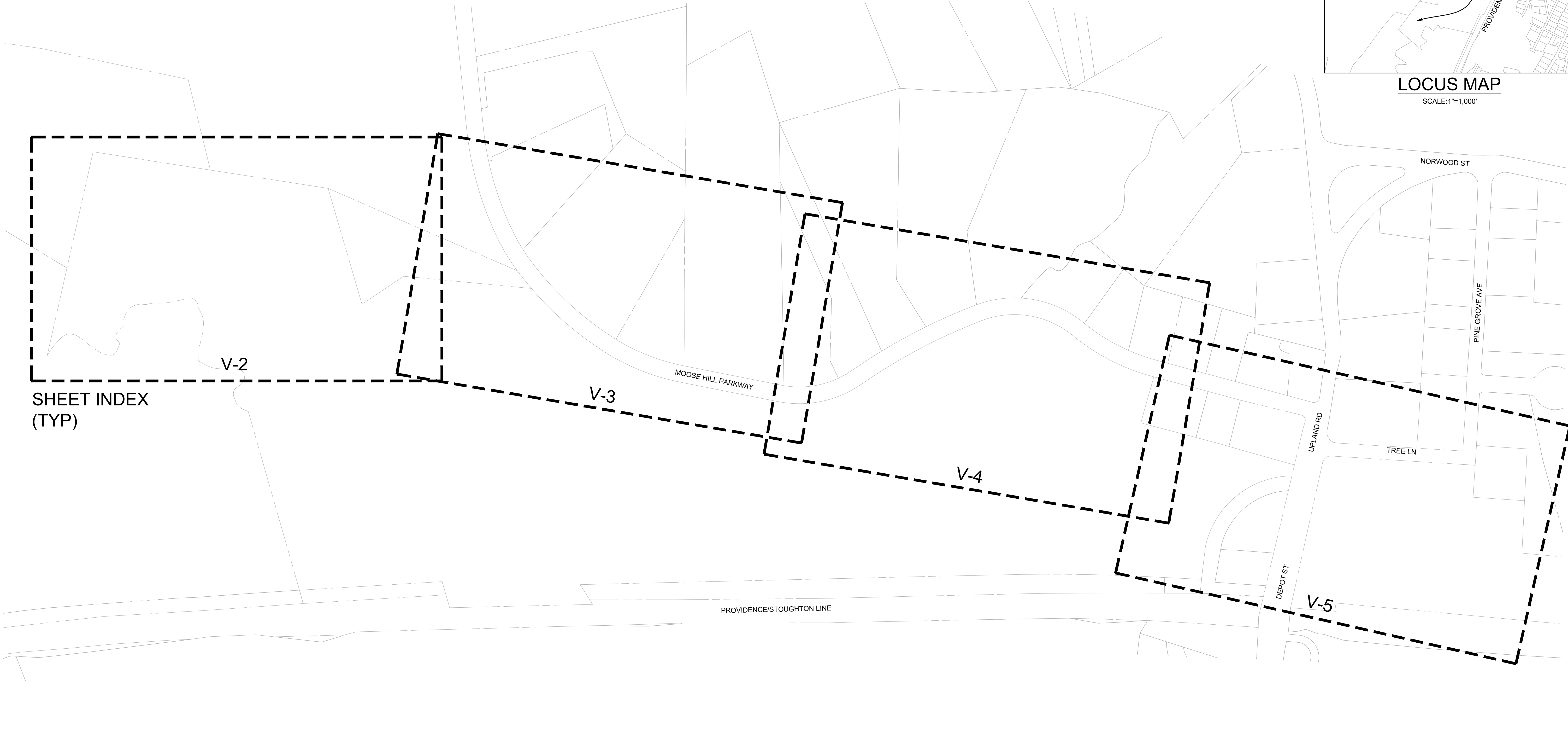
	FZ	FZ	FZ	FLOOD ZONE
	WL	WL	WL	WETLAND LINE
	- - - 210 - - -			MAJOR CONTOUR
	- - - 209 - - -			MINOR CONTOUR
				TREELINE
				WATER LINE
				DRAIN LINE
				GAS LINE
				OVERHEAD WIRES
				RETAINING WALL

NOTES

- 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.
 - MASS GIS INFORMATION WAS USED TO SHOW THE ZONE I & II BOUNDARIES AS WELL AS THE FLOOD ZONE A BOUNDARY.
 - FLOOD ZONE INFORMATION TAKEN FROM FLOOD INSURANCE RATE MAP (FIRM) NUMBERS 25021C0189E, 25021C0193E, 25021C0352E AND 25021C0356E, ALL REVISED JULY 17, 2012.
 - WATER MAIN INFORMATION TAKEN FROM DIGSAFE MARKINGS AND TIE CARD PROVIDED BY THE TOWN.
 - PLAN DATUM: HORIZONTAL - NAD83, VERTICAL - NAVD88
 - ALL UNDERGROUND UTILITIES SHOULD BE CONSIDERED APPROXIMATE.
- ALL PROPERTY LINES SHOWN ON THIS PLAN SET SHOULD BE CONSIDERED APPROXIMATE AND ARE NOT TO BE USED FOR BOUNDARY DETERMINATION ON THE GROUND.
 - RIGHT OF WAY PROPERTY LINE INFORMATION WITHIN THE LIMIT OF SURVEY TAKEN FROM PLANS ON FILE AT THE NORFOLK COUNTY REGISTRY OF DEEDS.
 - 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.
 - MASS GIS INFORMATION WAS USED TO SUPPLEMENT PROPERTY LINE INFORMATION ALONG MOOSE HILL PARKWAY AND UPLAND ROAD.

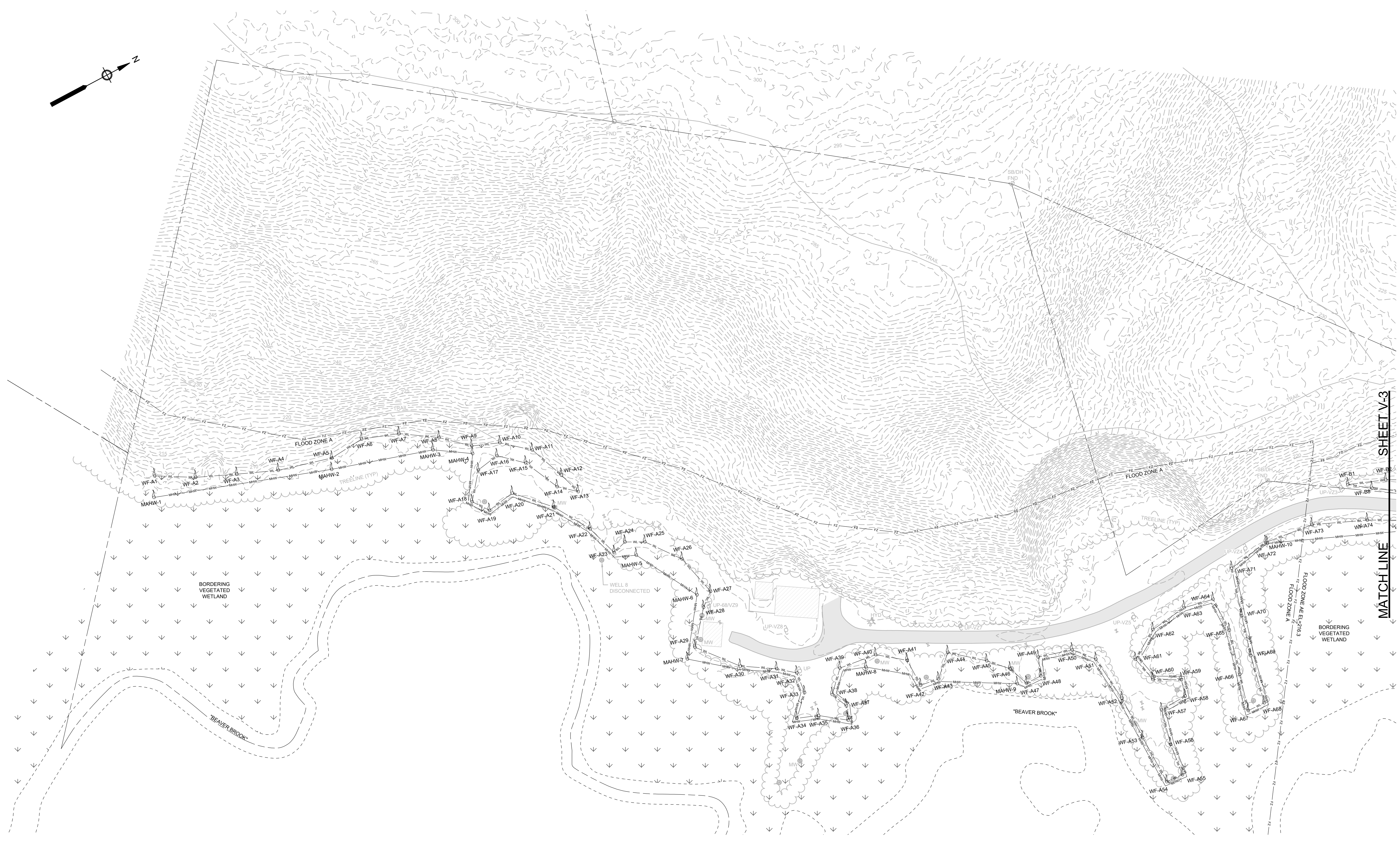
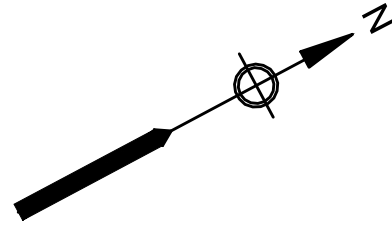


LOCUS MAP
SCALE: 1"=1,000'



	ENVIRONMENTAL PARTNERS — An Apex Company — ZLS ZENITH LAND SURVEYORS, LLC 1162 ROCKDALE AVENUE NEW BEDFORD, MA 02740 (508) 995-0100						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.
			MARK DATE DESCRIPTION	V-1						

Drawing file: C:\Users\jmcormac\AppData\Local\Temp\AcadPublish_892Terry_Signature - Moose Hill Parkway - Sharon.dwg Plot Date: Oct 13, 2023 8:24am



MATCHLINE SHEET V-3




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
PROFESSIONAL LAND SURVEYOR



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

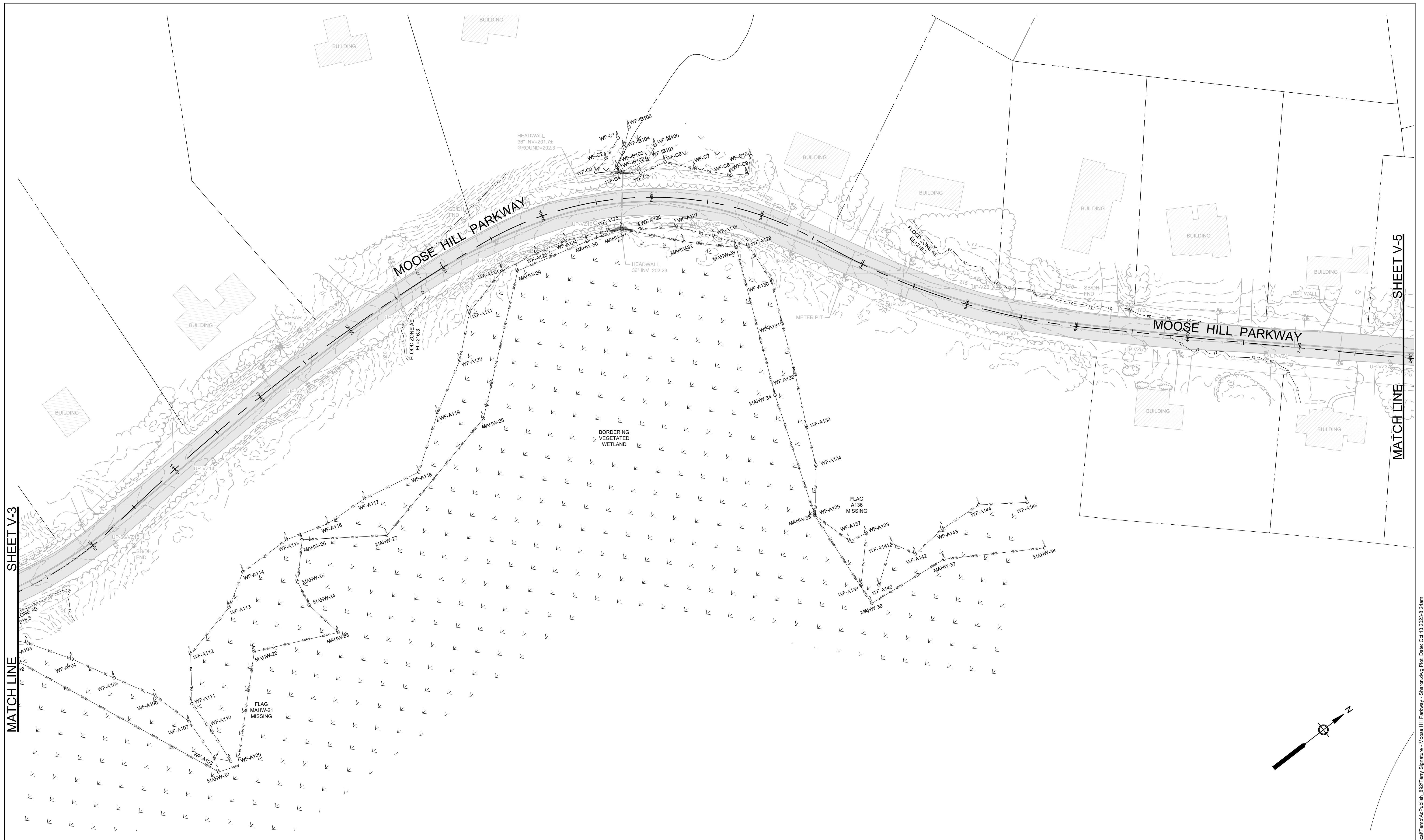
WELLS 2 AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

EXISTING CONDITIONS

SURVEY

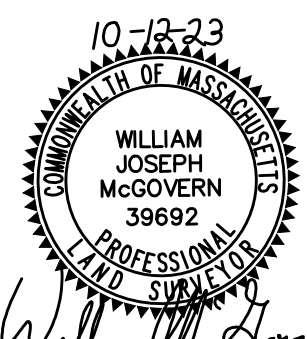
Sheet No.
V-2

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ENVIRONMENTAL PARTNERS
— An Apex Company —

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1162 ROCKDALE AVENUE
NEW BEDFORD, MA 02740
(508) 995-0100



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\jmcgovern\AppData\Local\Temp\AcadP\dts\Local\Temp\AcadP\Public\882Terry\Signature - Moose Hill Parkway - Sharon.dwg Plot Date: Oct 13, 2023 8:24am

GENERAL NOTES

- BASEMAP INFORMATION FROM A SURVEY PERFORMED BY ZENITH LAND SURVEYORS, LLC IN JUNE 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).
- 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.
- 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.
- 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.
- CONSTRUCTION STAKING CONTROL: THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCHMARKS NECESSARY TO PERFORM THE WORK.
- 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.
- NORTH DIRECTION SHOWN IS APPROXIMATE.
- 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.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPORT OF ALL UTILITIES AND STRUCTURES DURING CONSTRUCTION.
- 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.
- "ABANDON" AND "REMOVE" SHALL MEAN TO REMOVE AND DISPOSE OF. "ABANDON-IN-PLACE" AND SHALL MEAN TO CUT, CAP, AND LEAVE IN PLACE.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING ALL DISTURBED AREAS TO DRAIN.
- 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.
- 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.
- 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.
- WORK WITHIN THE 75-FOOT "NO WORK" BUFFER ZONE SHALL BE LIMITED TO THE EXTENTS SHOWN ON THESE PLANS. NO STOCKPILES OR EQUIPMENT SHALL BE STORED WITHIN THE 100-FOOT BUFFER ZONES.
- THE GENERAL CONTRACTOR SHALL OBTAIN A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT AND SUBMIT A CONSTRUCTION PERIOD STORMWATER POLLUTION PREVENTION PLAN (SWPPP).

GROUNDWATER AND SOIL OBSERVATIONS

- BORINGS WERE CONDUCTED IN FEBRUARY 2023 BY NORTHERN DRILLING SERVICES AND OBSERVED BY EP. BORING LOCATIONS AND ELEVATIONS WERE COLLECTED USING A HAND-HELD GPS UNIT BY EP.
- 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.
- 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.

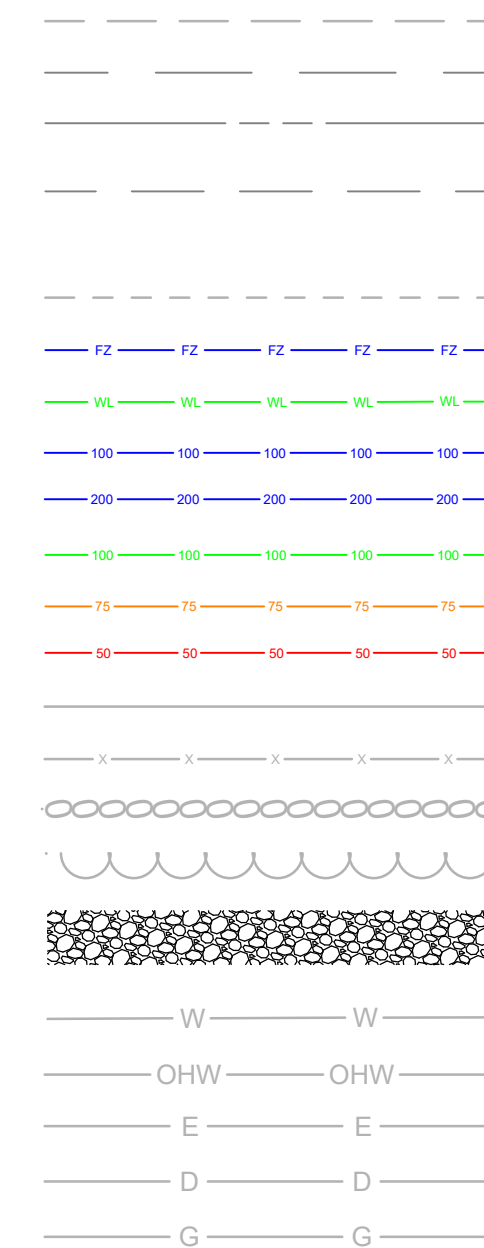
CONSERVATION NOTES

- 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.
- 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 SITE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. THE SIGN SHALL BEAR THE WORDS "MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION" [OR, "MASSDEP"] "FILE NUMBER: *FILE NUMBER*".

TYPICAL ABBREVIATIONS

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

EXISTING

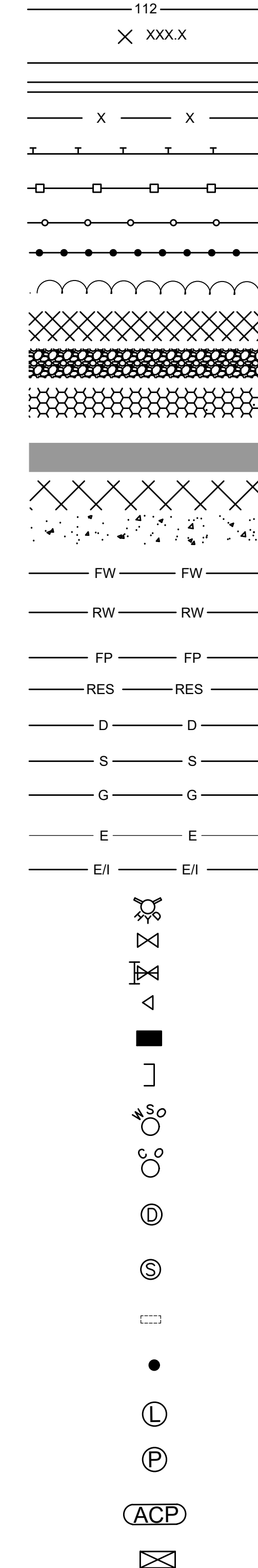


DESCRIPTION

- 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
- LIMIT OF WETLAND
- 100' RIVERFRONT AREA
- 200' RIVERFRONT AREA
- 100' WETLAND BUFFER
- 75' WETLAND BUFFER
- 50' NO DISTURB BUFFER
- EDGE OF PAVEMENT
- CHAIN LINK FENCE
- STONE WALL
- EDGE OF VEGETATION
- GRAVEL
- WATER MAIN
- ELECTRIC OVERHEAD WIRES
- ELECTRIC UNDERGROUND
- DRAIN PIPE
- GAS MAIN
- HYDRANT
- GATE VALVE
- WATER SERVICE
- UTILITY POLE
- GUY WIRE ANCHOR
- GUY WIRE
- CATCH BASIN
- DRAIN MANHOLE
- GAS SERVICE
- BOULDER
- EVERGREEN TREE
- DECIDUOUS TREE
- STREET SIGN
- BOLLARD
- MAILBOX
- BENCHMARK
- WETLAND FLAG
- TEST PIT
- DEEP HOLE OBSERVATION
- BORING HOLE

LEGEND

PROPOSED

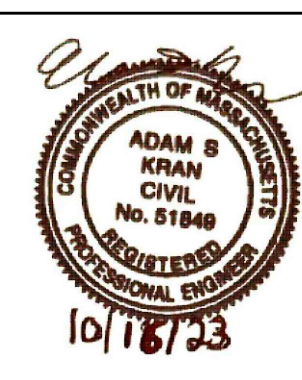


DESCRIPTION

- 1' CONTOUR
- SPOT GRADE
- EDGE OF PAVEMENT
- CAPE COD BERM
- CHAIN LINK FENCE
- STEEL GUARDRAIL
- ORANGE 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
- POLYETHYLENE "V-BIO" ENCASED RAW WATER MAIN
- FIRE PROTECTION WATER MAIN
- RESIDUAL DISCHARGE PIPING
- DRAIN PIPE
- SANITARY WASTE PIPE
- GAS MAIN
- UNDERGROUND ELECTRIC
- UNDERGROUND COMMUNICATIONS
- HYDRANT
- GATE VALVE
- TAPPING SLEEVE AND VALVE
- REDUCER
- COUPLING / SOLID SLEEVE
- CAP
- CURB STOP
- GRAVITY PIPE CLEAN OUT
- DRYWELL
- SEPTIC MANHOLE
- HAND HOLE
- BOLLARD
- LOADING DOCK SPACE
- PARKING SPACE
- ACCESSIBLE CAR PARKING SPACE
- EXPLORATORY EXCAVATION



ENVIRONMENTAL PARTNERS
— An Apex Company —



MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	OCTOBER 2023
Job No.	245-2103
Designed by	JDH
Drawn by	JDH
Checked by	EAK
Approved by	ASK

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

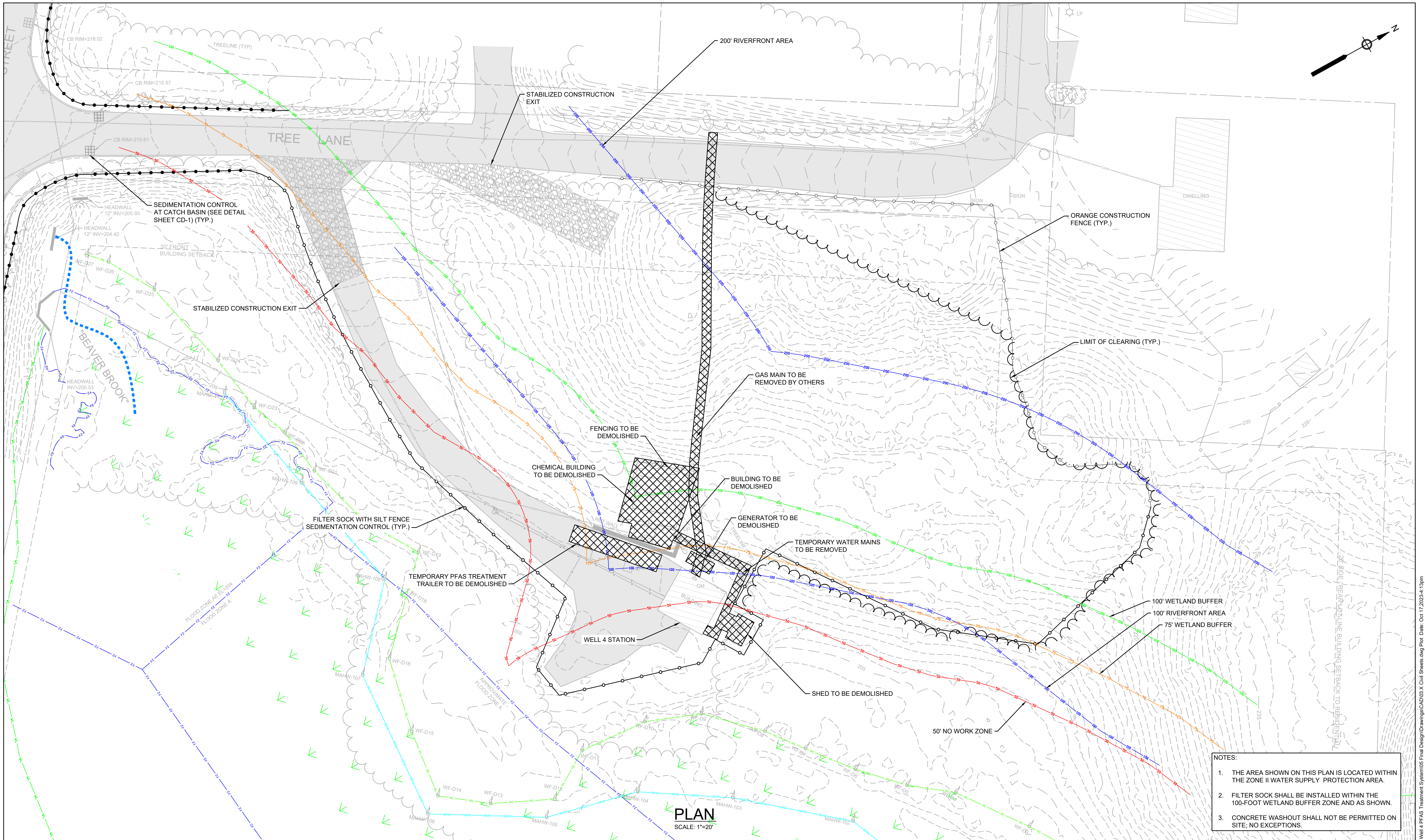
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

CIVIL GENERAL NOTES AND LEGEND

FOR PERMITTING

Sheet No.

C-1

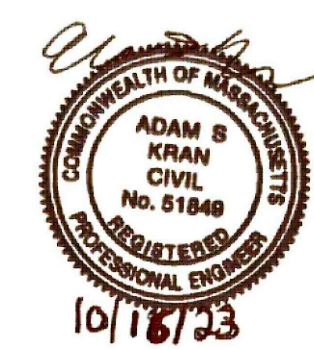


- NOTES:**
1. THE AREA SHOWN ON THIS PLAN IS LOCATED WITHIN THE ZONE II WATER SUPPLY PROTECTION AREA.
 2. FILTER SOCK SHALL BE INSTALLED WITHIN THE 100-FOOT WETLAND BUFFER ZONE AND AS SHOWN.
 3. CONCRETE WASHOUT SHALL NOT BE PERMITTED ON SITE; NO EXCEPTIONS.

PLAN
SCALE: 1"=20'



ENVIRONMENTAL PARTNERS
— An Apex Company —



MARK	DATE	DESCRIPTION

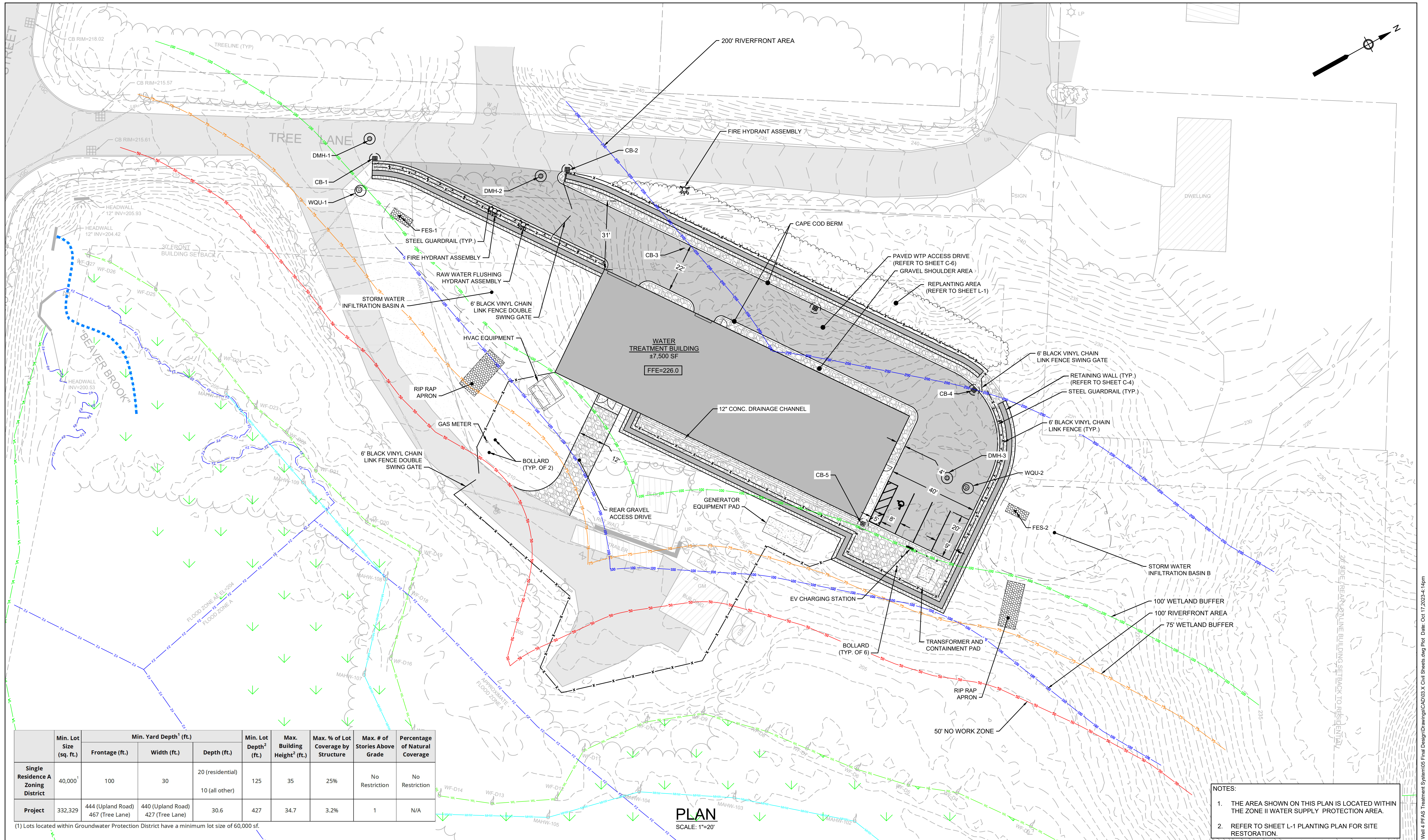
Scale	1" = 20'
Date	OCTOBER 2023
Job No.	245-2103
Designed by	JDH
Drawn by	SBS/JDH
Checked by	SFP
Approved by	ASK

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

**CIVIL WATER TREATMENT PLANT
DEMOLITION, SEDIMENT AND EROSION CONTROL PLAN**

FOR PERMITTING
Sheet No.
C-2



	Min. Lot Size (sq. ft.)	Min. Yard Depth ¹ (ft.)			Min. Lot Depth ² (ft.)	Max. Building Height ² (ft.)	Max. % of Lot Coverage by Structure	Max. # of Stories Above Grade	Percentage of Natural Coverage
		Frontage (ft.)	Width (ft.)	Depth (ft.)					
Single Residence A Zoning District	40,000 ¹	100	30	20 (residential) 10 (all other)	125	35	25%	No Restriction	No Restriction
Project	332,329	444 (Upland Road) 467 (Tree Lane)	440 (Upland Road) 427 (Tree Lane)	30.6	427	34.7	3.2%	1	N/A

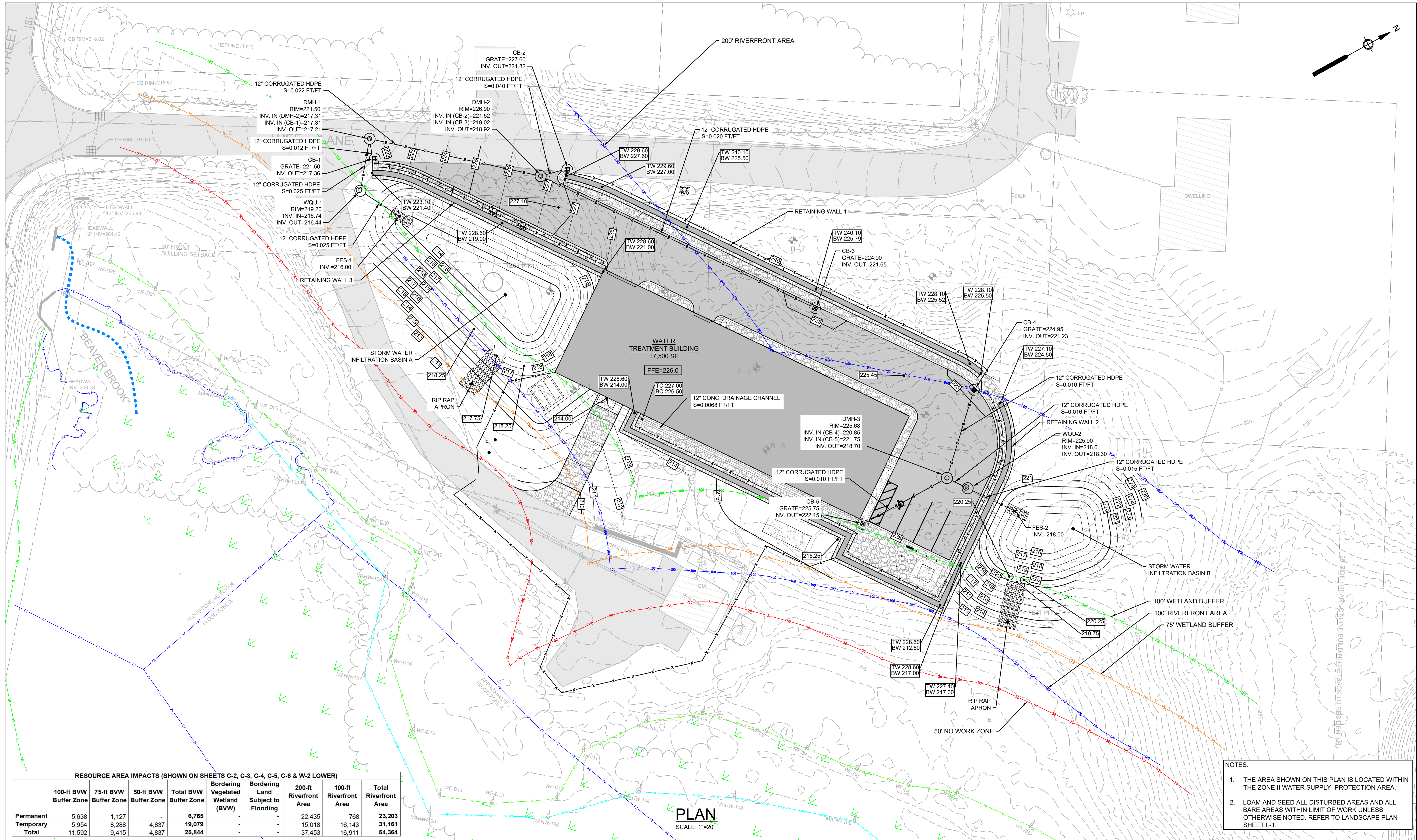
(1) Lots located within Groundwater Protection District have a minimum lot size of 60,000 sf.

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 SHEET L-1 PLANTING PLAN FOR SITE RESTORATION.

			Scale	1" = 20'	<p>THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING</p>	<p>WELLS 2, 3, AND 4 WATER TREATMENT PLANT TOWN OF SHARON, MA</p> <p>CIVIL WATER TREATMENT PLANT LAYOUT PLAN</p>	FOR PERMITTING
			MARK	DATE			DESCRIPTION
			Date	OCTOBER 2023			<p style="font-size: 2em; font-weight: bold;">C-3</p>
			Job No.	245-2103			
			Designed by	JDH			
			Drawn by	SBS/JDH			
			Checked by	SFP			
			Approved by	ASK			

Drawing file: I:\Sharon, MA, 245245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\03 Civil Sheets.dwg Plot Date: Oct 17, 2023 4:14pm



RESOURCE AREA IMPACTS (SHOWN ON SHEETS C-2, C-3, C-4, C-5, C-6 & W-2 LOWER)

	100-ft BVV Buffer Zone	75-ft BVV Buffer Zone	50-ft BVV Buffer Zone	Total BVV Buffer Zone	Bordering Vegetated Wetland (BVV)	Bordering Land Subject to Flooding	200-ft Riverfront Area	100-ft Riverfront Area	Total Riverfront Area
Permanent	5,638	1,127	-	6,765	-	-	22,435	768	23,203
Temporary	5,954	8,288	4,837	19,079	-	-	15,018	16,143	31,161
Total	11,592	9,415	4,837	25,844	-	-	37,453	16,911	54,364

- NOTES:**
1. THE AREA SHOWN ON THIS PLAN IS LOCATED WITHIN THE ZONE II WATER SUPPLY PROTECTION AREA.
 2. LOAM AND SEED ALL DISTURBED AREAS AND ALL BARE AREAS WITHIN LIMIT OF WORK UNLESS OTHERWISE NOTED. REFER TO LANDSCAPE PLAN SHEET L-1.



MARK	DATE	DESCRIPTION

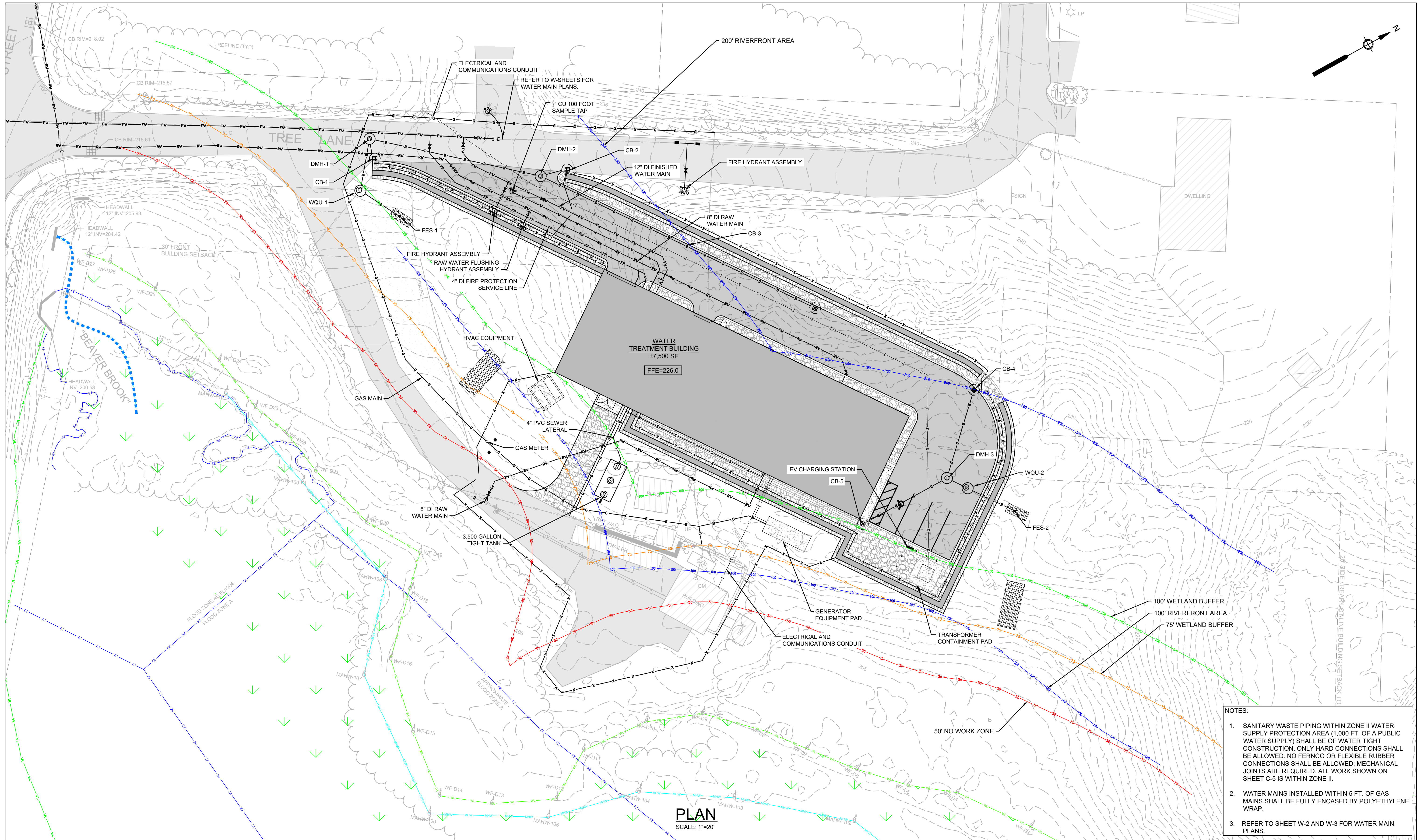
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Job No.	245-2103
Designed by	JDH
Drawn by	SBS/JDH
Checked by	SFP
Approved by	ASK

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

**CIVIL WATER TREATMENT PLANT
GRADING AND DRAINAGE PLAN**

FOR PERMITTING
Sheet No.
C-4

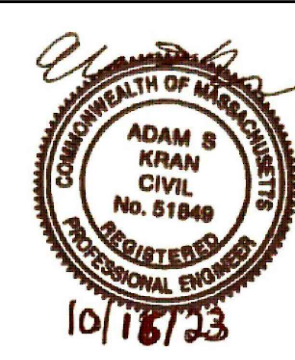


- NOTES:**
- SANITARY WASTE PIPING WITHIN ZONE II WATER SUPPLY PROTECTION AREA (1,000 FT. OF A PUBLIC WATER SUPPLY) SHALL BE OF WATER TIGHT CONSTRUCTION. ONLY HARD CONNECTIONS SHALL BE ALLOWED. NO FERNCO OR FLEXIBLE RUBBER CONNECTIONS SHALL BE ALLOWED; MECHANICAL JOINTS ARE REQUIRED. ALL WORK SHOWN ON SHEET C-5 IS WITHIN ZONE II.
 - WATER MAINS INSTALLED WITHIN 5 FT. OF GAS MAINS SHALL BE FULLY ENCASED BY POLYETHYLENE WRAP.
 - REFER TO SHEET W-2 AND W-3 FOR WATER MAIN PLANS.

PLAN
SCALE: 1"=20'



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— An Apex Company —



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Designed by	JDH
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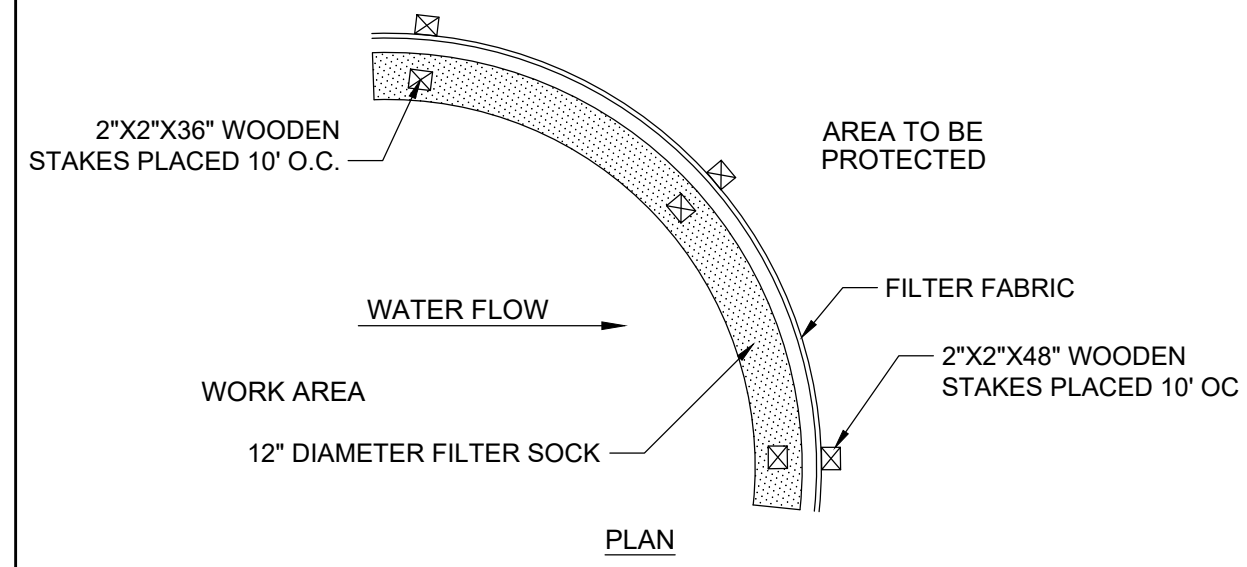
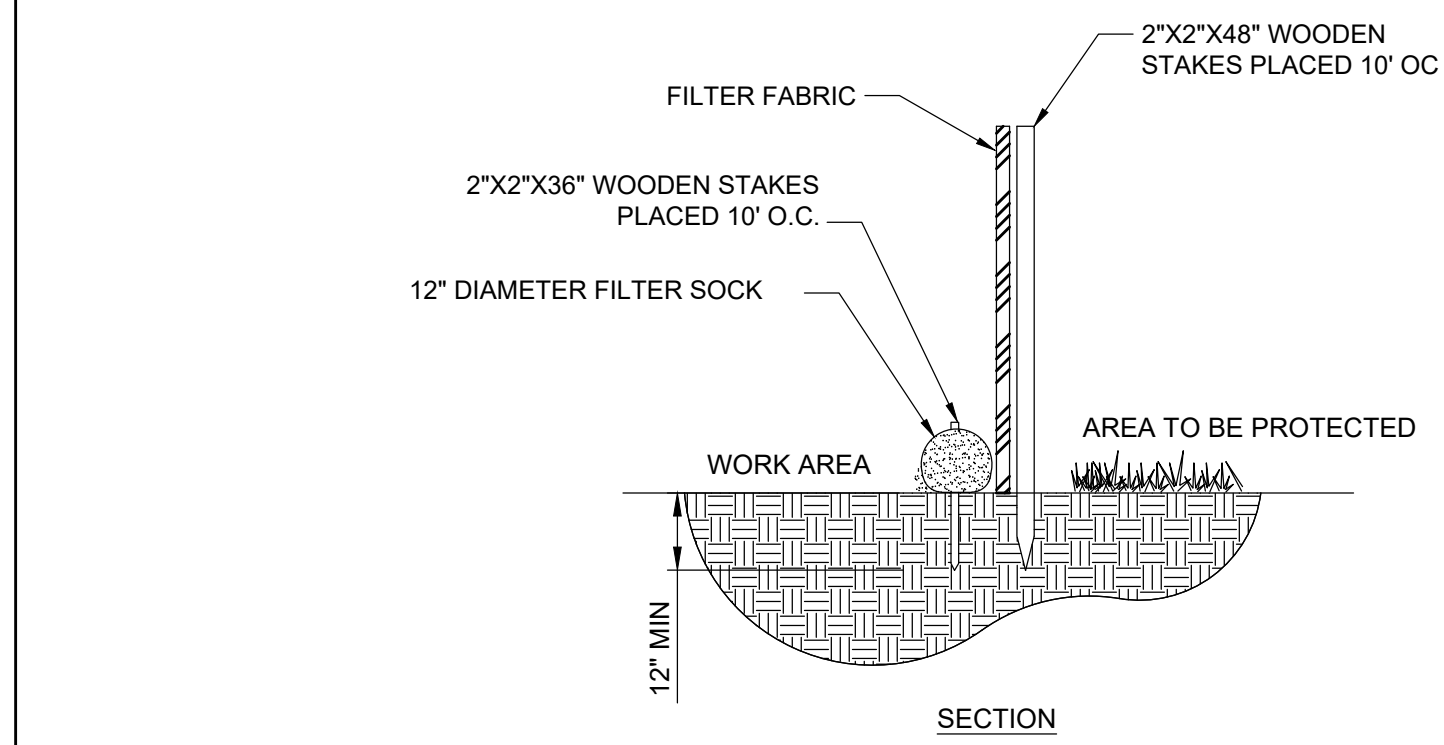
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**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

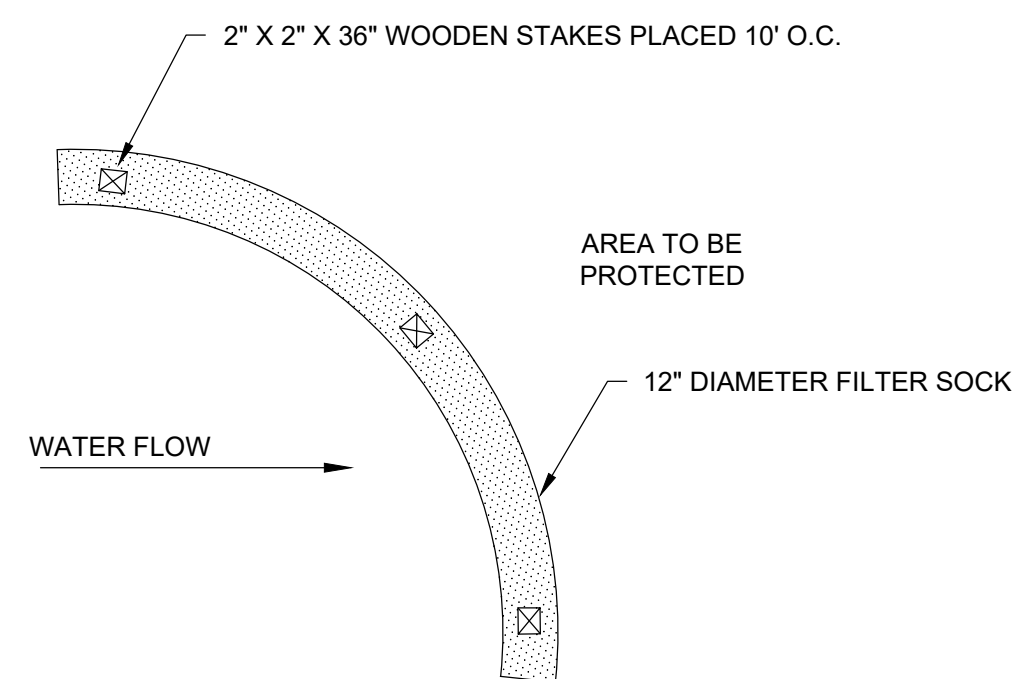
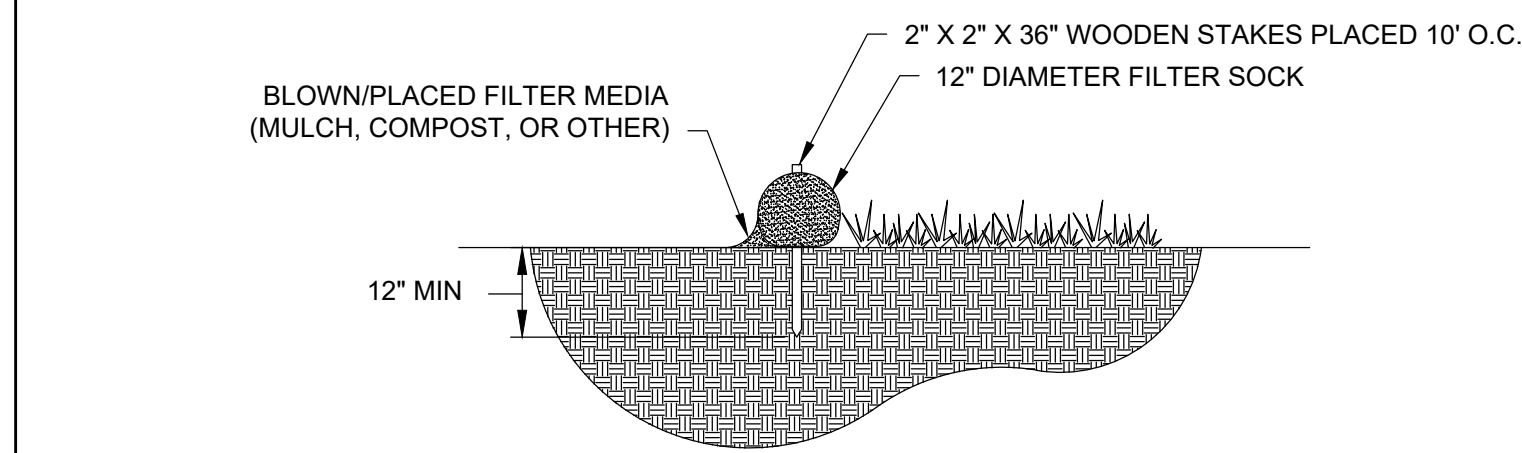
CIVIL WATER TREATMENT PLANT UTILITIES PLAN

FOR PERMITTING
Sheet No.

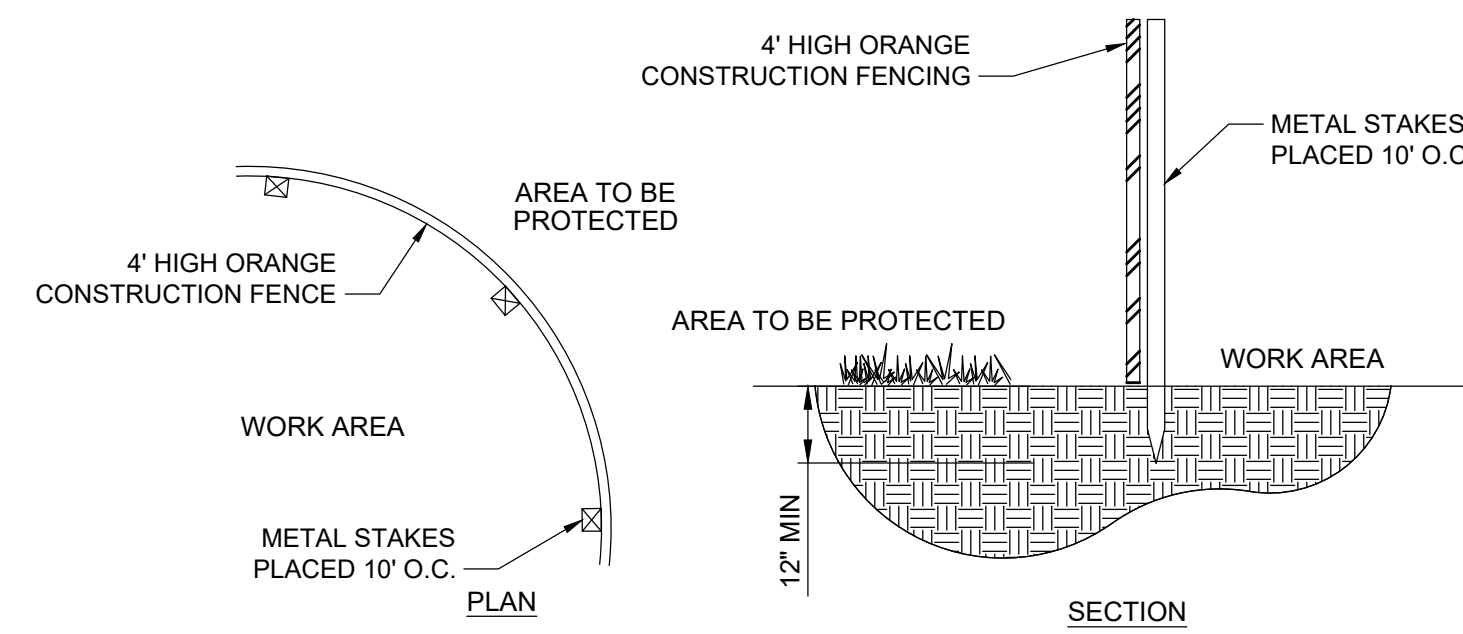
C-5



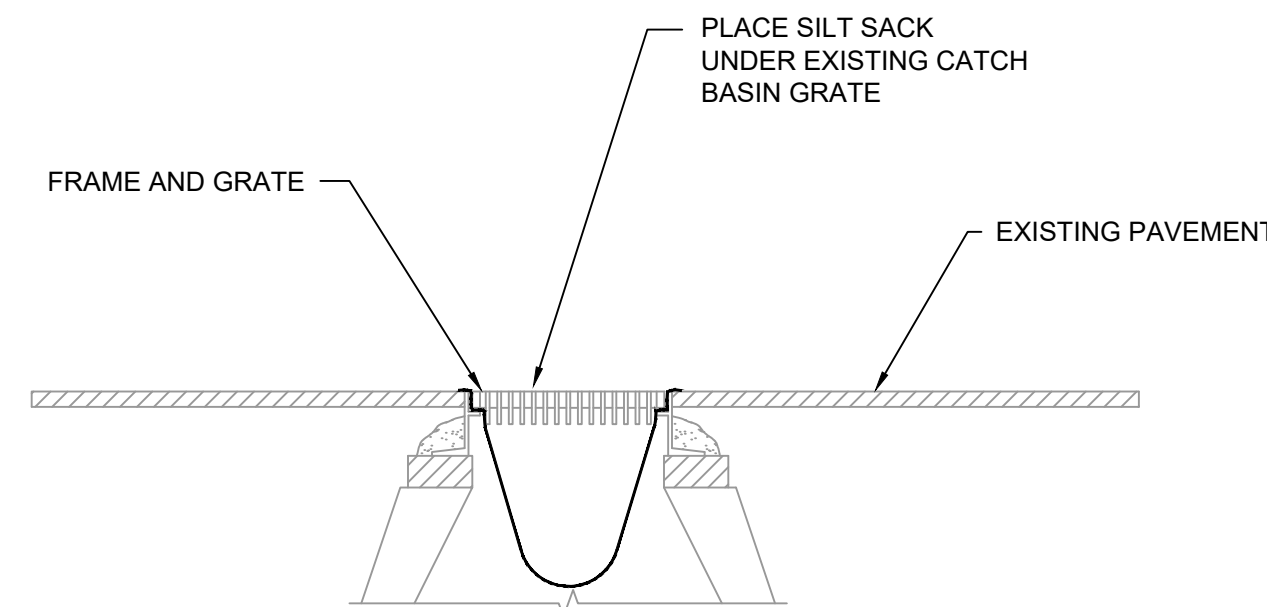
12" DIAMETER FILTER SOCK WITH SILT FENCE
SCALE: N.T.S.



12" DIAMETER FILTER SOCK
SCALE: N.T.S.

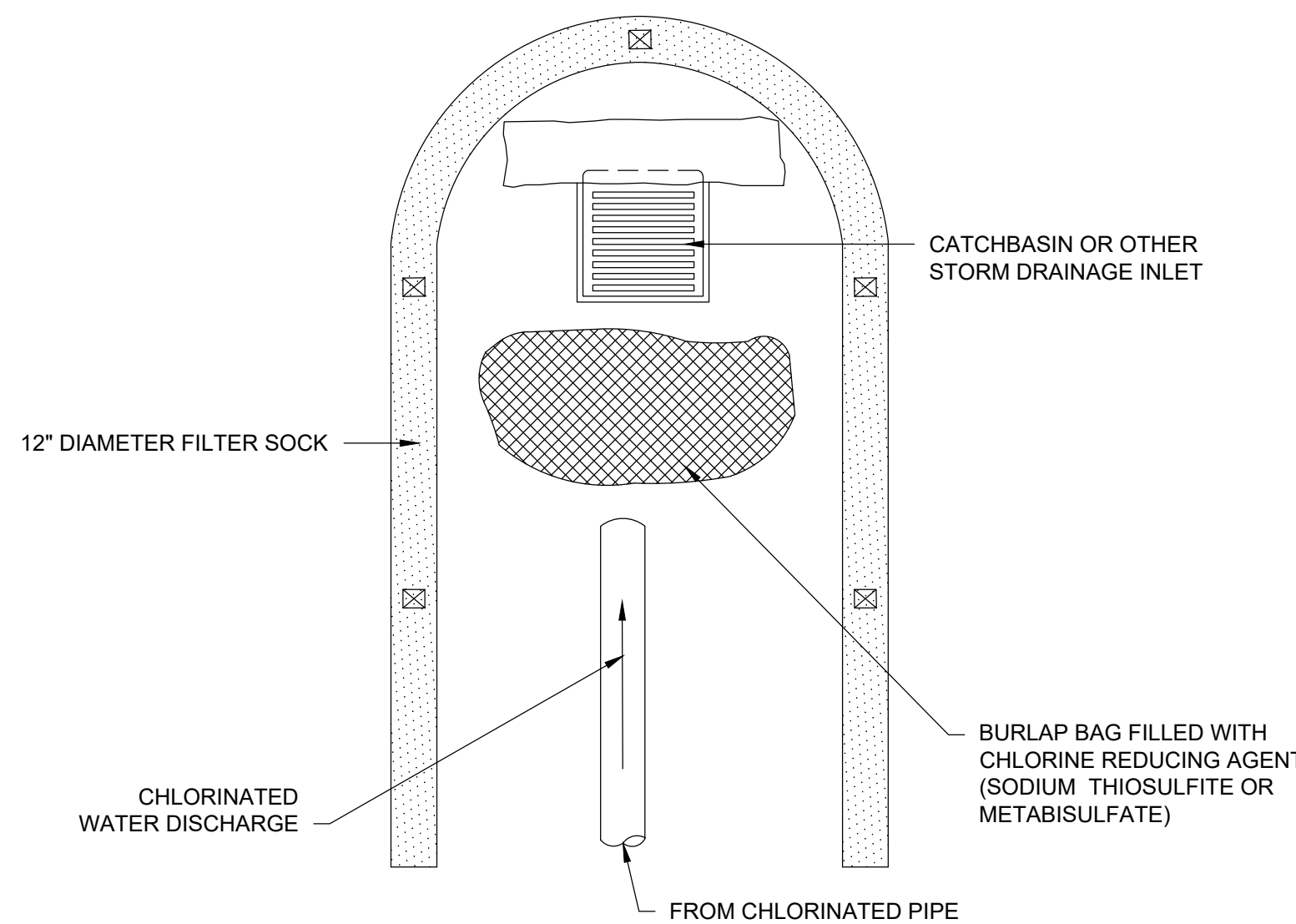


ORANGE CONSTRUCTION FENCE
SCALE: N.T.S.

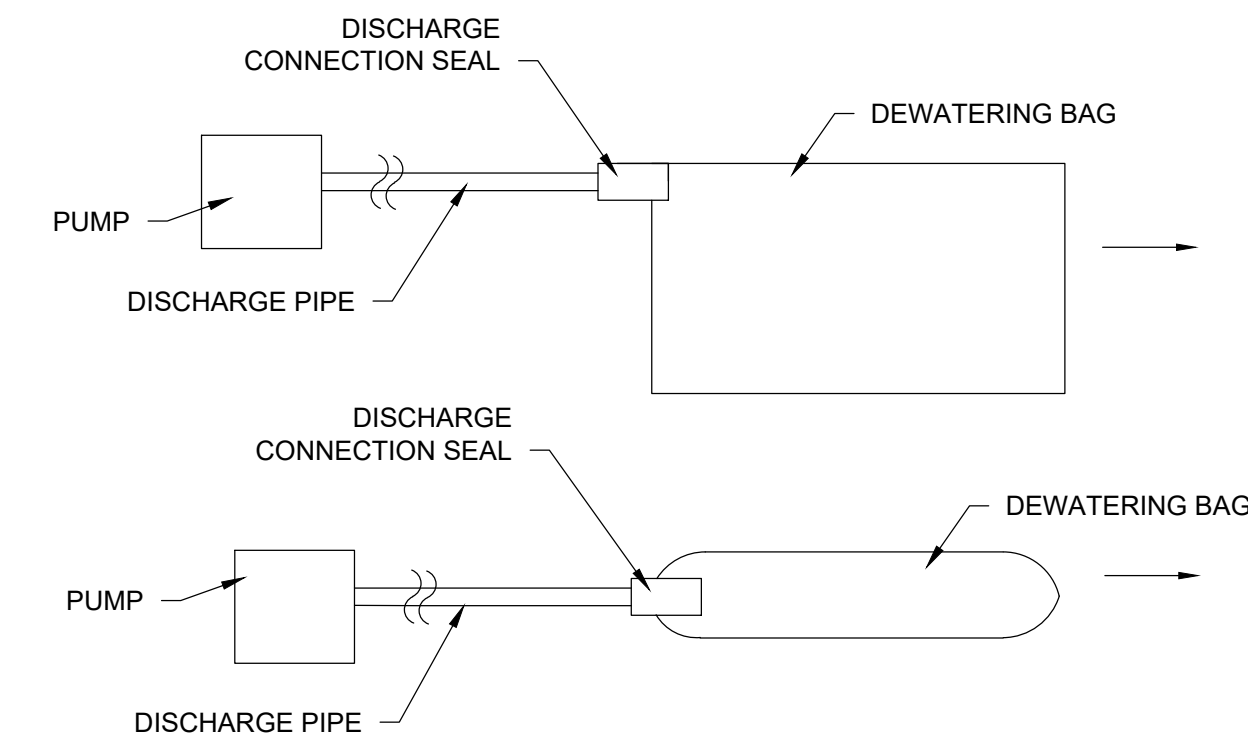


- NOTES:**
1. SILT SACKS SHALL BE INSPECTED WEEKLY AND ACCUMULATED SILT REMOVED TO ALLOW CATCH BASIN TO FUNCTION PROPERLY.
 2. SILT SACK AS MANUFACTURED BY ACF ENVIRONMENTAL OR APPROVED EQUAL.

SEDIMENTATION CONTROL AT CATCH BASINS SILT SACKS
SCALE: N.T.S.

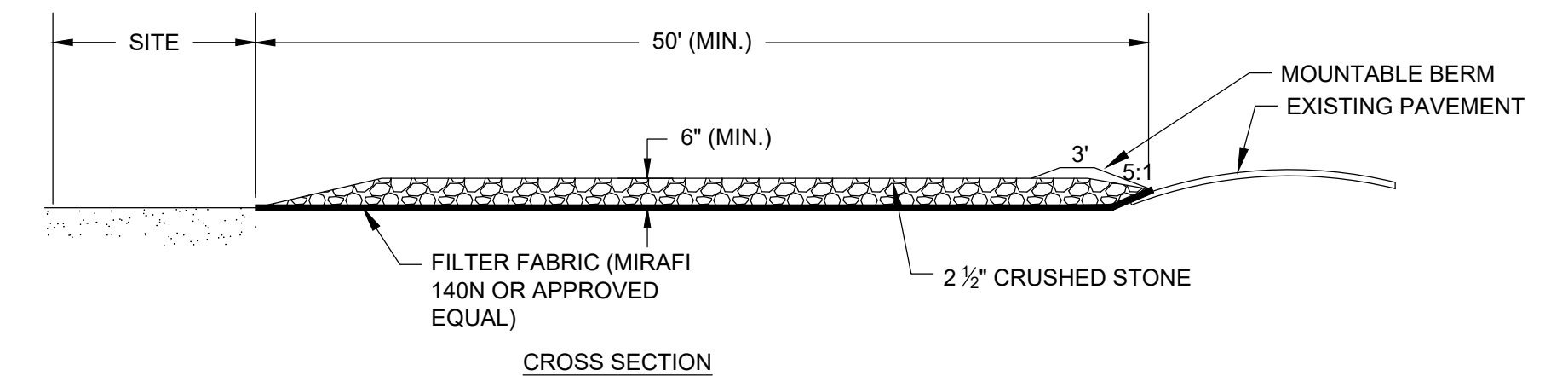
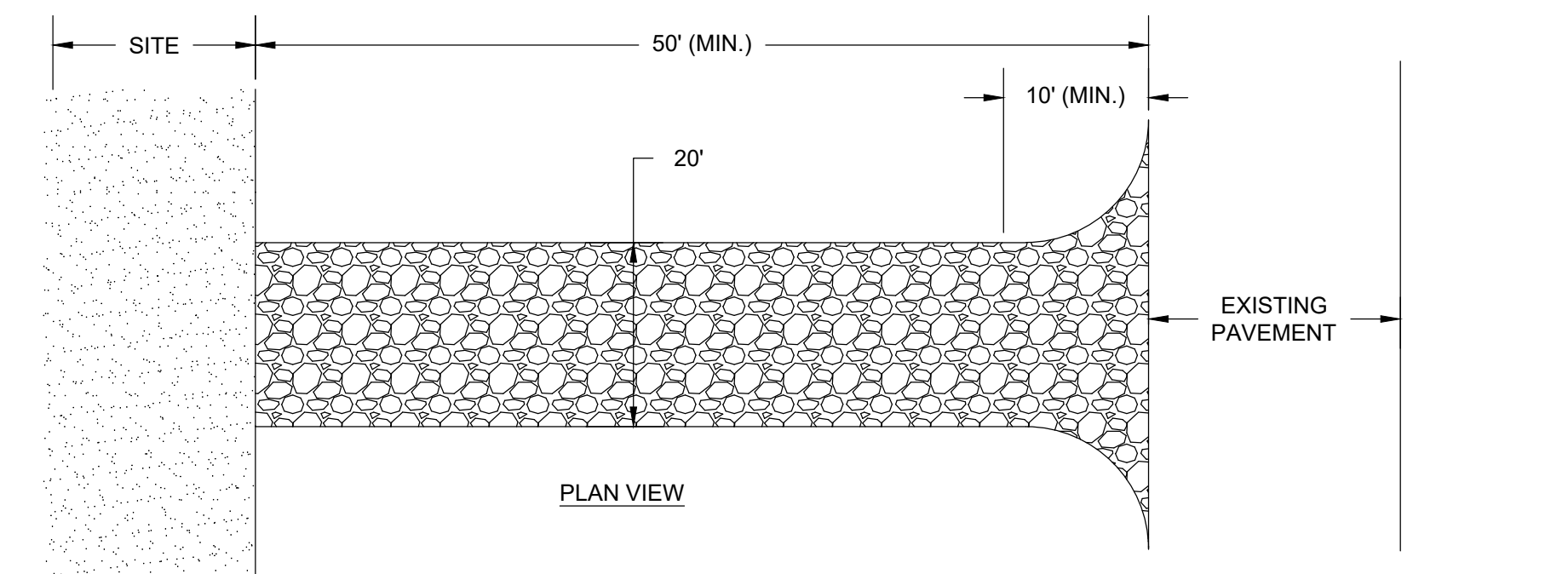


DECHLORINATION DETAIL
SCALE: N.T.S.



- 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.

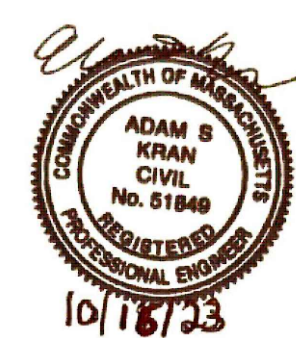


- NOTES:**
1. STABILIZED CONSTRUCTION ENTRANCE SHALL NOT EXTEND OFF THE PROPERTY
 2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR 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 —



MARK	DATE	DESCRIPTION

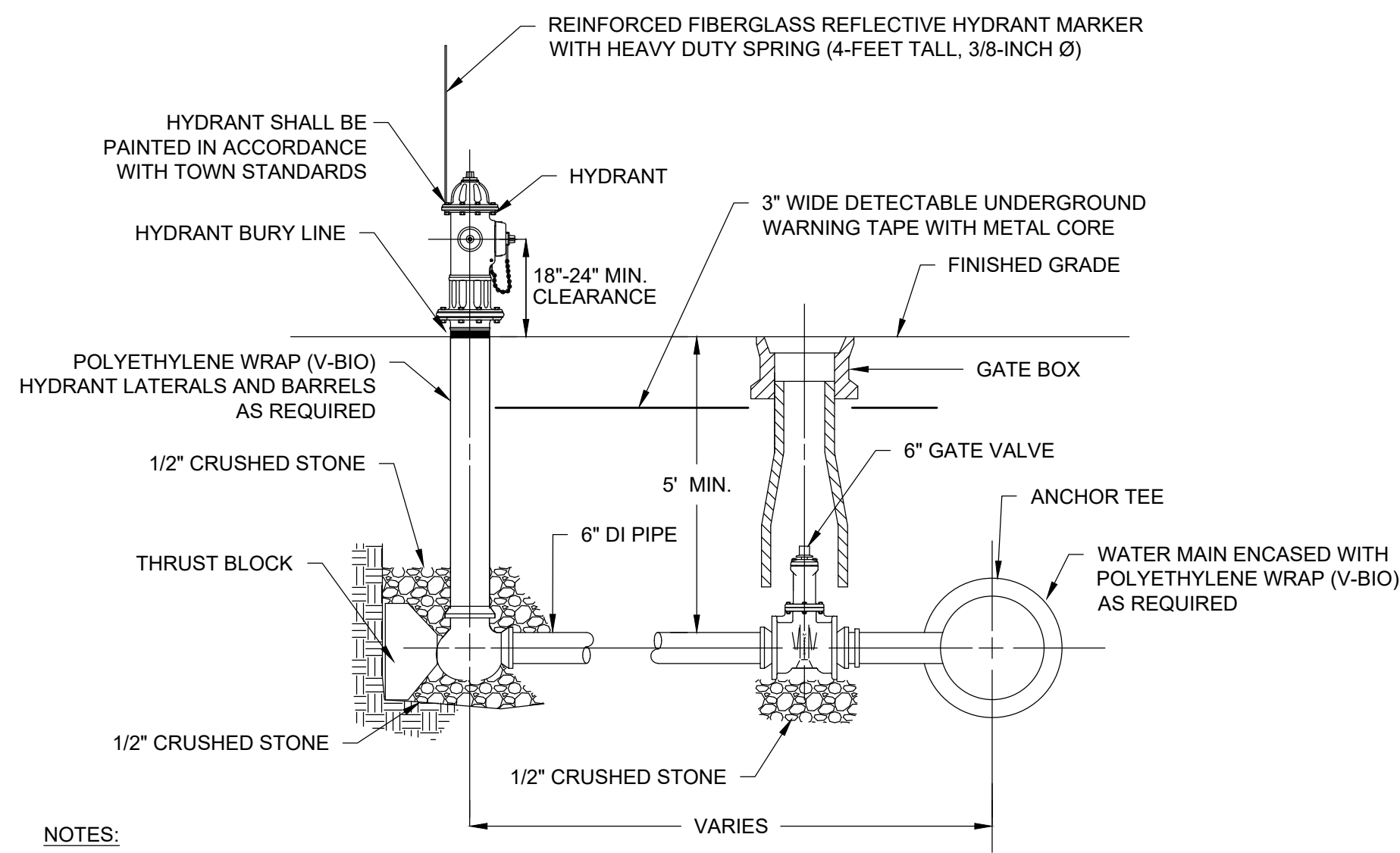
Scale	NTS
Date	OCTOBER 2023
Job No.	245-2103
Designed by	JDH
Drawn by	MEPA
Checked by	AWCP
Approved by	ASK

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

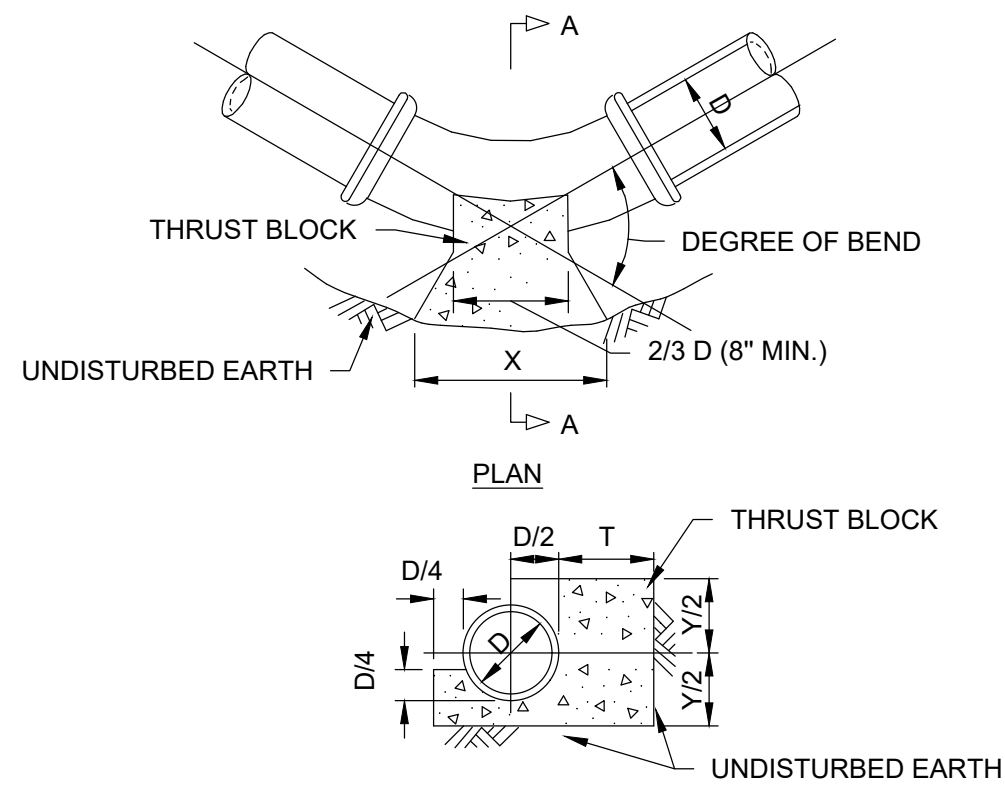
CIVIL CONSTRUCTION DETAILS I

FOR PERMITTING
Sheet No.
CD-1



- NOTES:**
- CONFIRM HYDRANT LOCATION WITH OWNER PRIOR TO EXCAVATION.
 - ALL HYDRANT, VALVE, AND TEE JOINTS SHALL HAVE RESTRAINED MECHANICAL JOINTS.
 - DEPTH OF HYDRANT BURY SHALL SUIT INSTALLED DEPTH OF COVER OVER WATER MAIN. INSTALL RISERS AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
 - 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 HYDRANTS SHALL BE PAINTED GREEN.
 - OXIDIZED WATER HYDRANTS SHALL BE PAINTED LIGHT BLUE.
 - EACH RAW WATER AND OXIDIZED WATER 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.

HYDRANT ASSEMBLY DETAIL
SCALE: N.T.S.

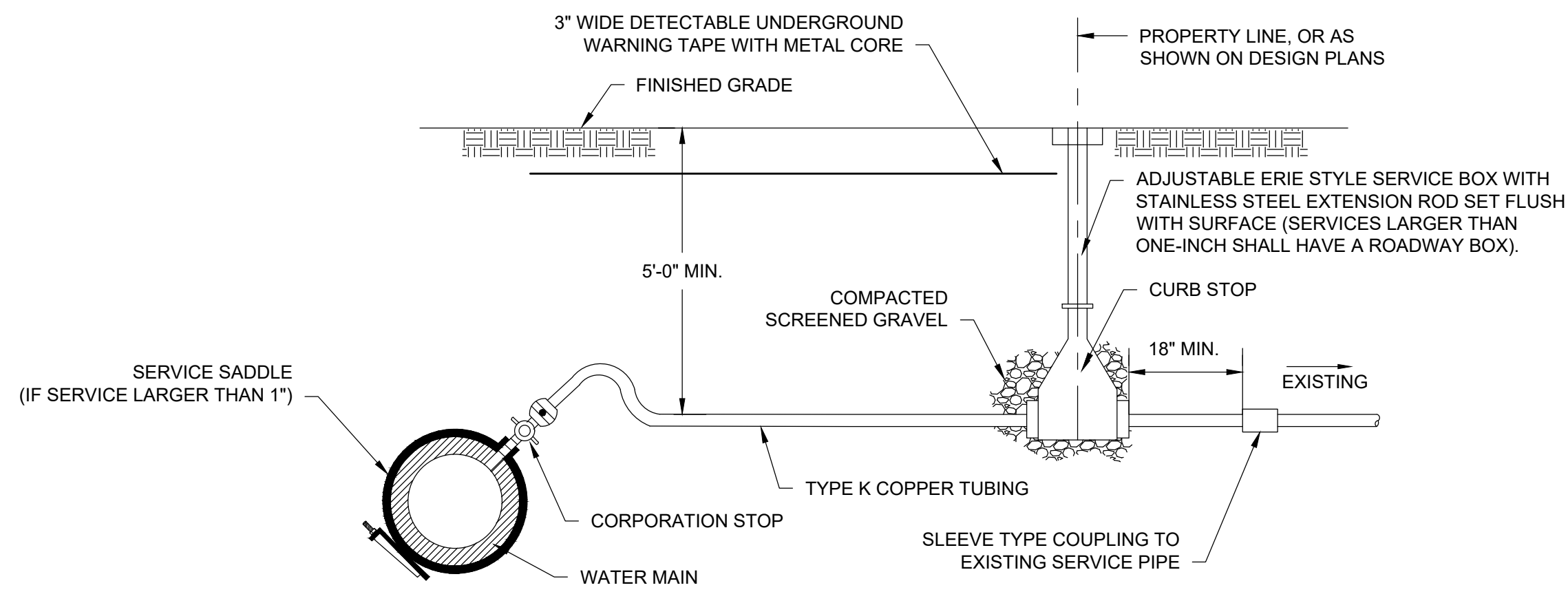


- NOTES:**
- ALL CONCRETE SHALL BE 3000 P.S.I. @ 28 DAYS (CLASS "A" CONCRETE)
 - DIMENSIONS SHOWN ARE MINIMUM AND ARE BASED UPON SOIL PRESSURE OF 1500 P.S.F. AND TOTAL PRESSURE OF 250 P.S.I. TOTAL PRESSURE IS WORKING PRESSURE PLUS SURGE PRESSURE.
 - THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.

TABLE OF DIMENSIONS

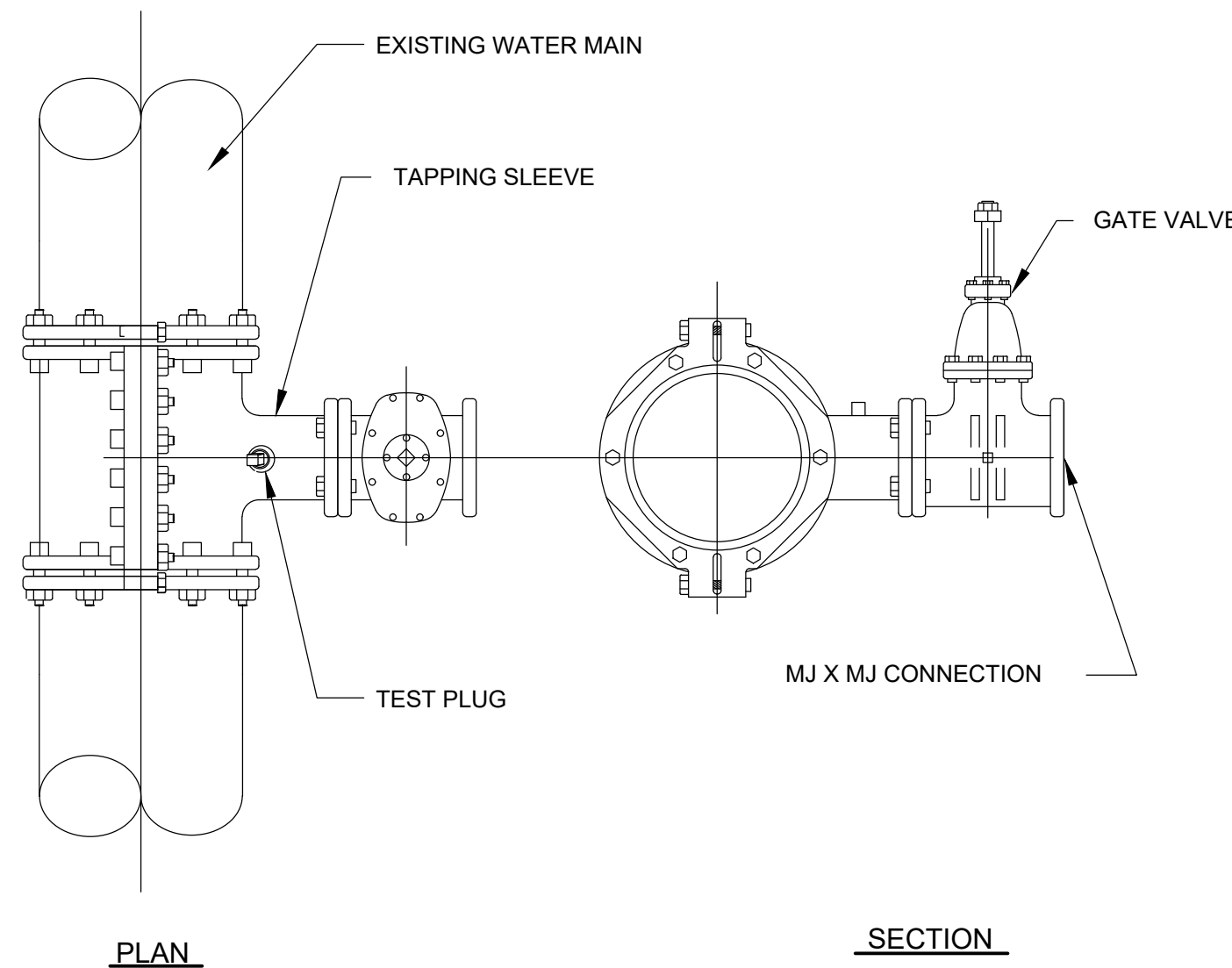
DIMENSION	90° BEND				45° BEND				22 1/2° BEND				11 1/4° BEND											
	D (in.)	X (in.)	Y (in.)	T (in.)	D (in.)	X (in.)	Y (in.)	T (in.)	D (in.)	X (in.)	Y (in.)	T (in.)	D (in.)	X (in.)	Y (in.)	T (in.)								
D (in.)	4	6	8	10	4	6	8	10	4	6	8	10	4	6	8	10	12	14						
X (in.)	35	35	50	56	72	80	24	24	35	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.



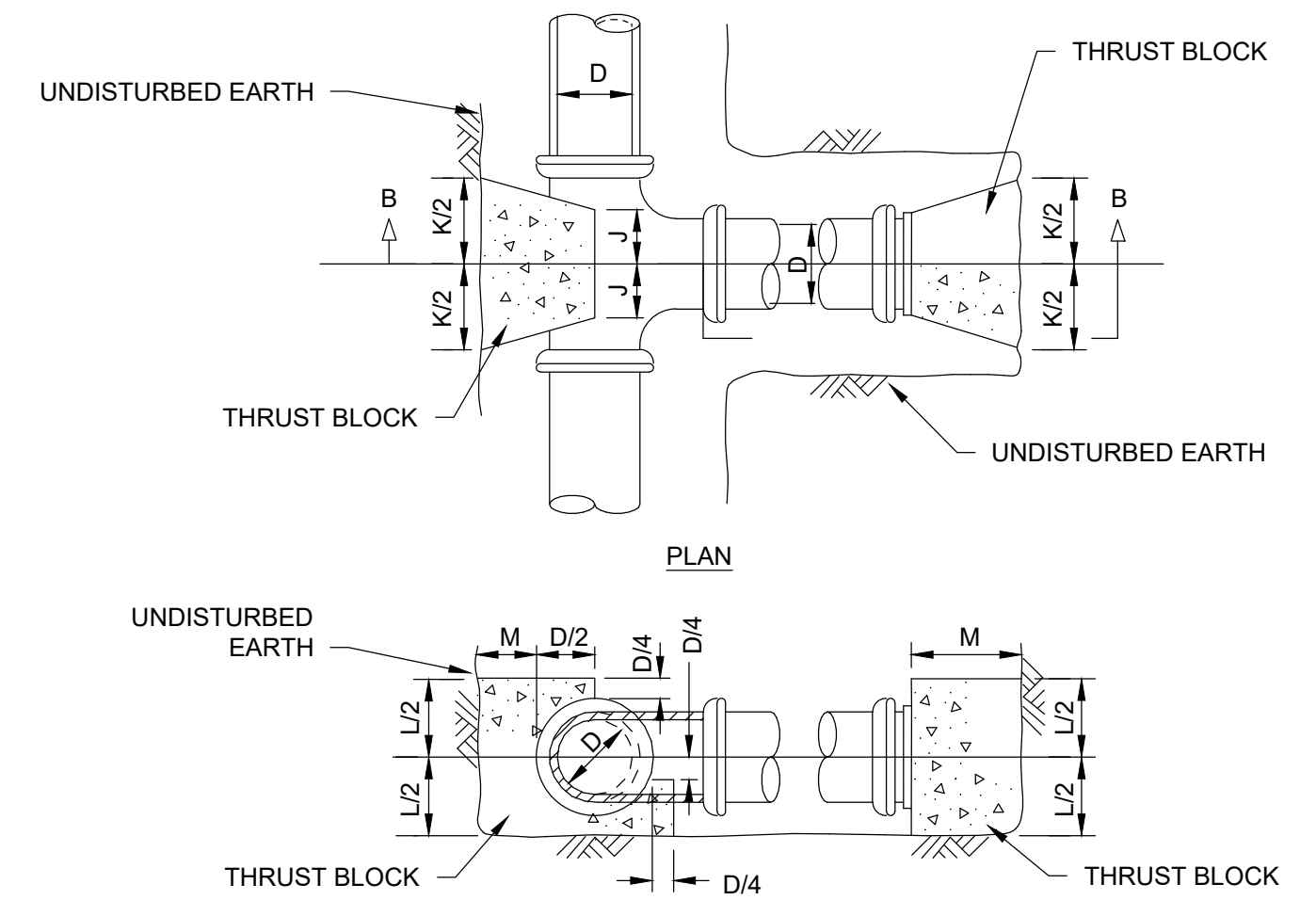
- NOTES:**
- ALL EXISTING SERVICES SHALL BE CLOSED AT THE CORPORATION AND EXISTING SERVICE TUBING SHALL BE ABANDONED IN PLACE.
 - ALL SERVICE TUBING SHALL BE TYPE K COPPER.
 - ALL JOINTS SHALL BE COMPRESSION TYPE.
 - COPPER WIRE SERVICE LINE SHALL BE BACKFILLED WITH SAND BY HAND TO 12" ABOVE TUBING AND SHALL HAVE A SAND BEDDING OF 6".
 - CORPORATION STOPS LARGER THAN ONE INCH SHALL HAVE A SADDLE.
 - WATER SERVICES SHALL BE INSULATED IN AREAS WHERE CONNECTION TO EXISTING WATER SERVICE IS LESS THAN 4 FEET.
 - COMPACTED-SCREENED GRAVEL SHALL BE PLACED BELOW THE CURB STOP.
 - 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.
 - SERVICE BOX SHALL BE MANUFACTURED IN NORTH AMERICA.

**TYPICAL SERVICE TRANSFER
DUCTILE IRON WATER MAINS**
SCALE: N.T.S.



- NOTES:**
- 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.

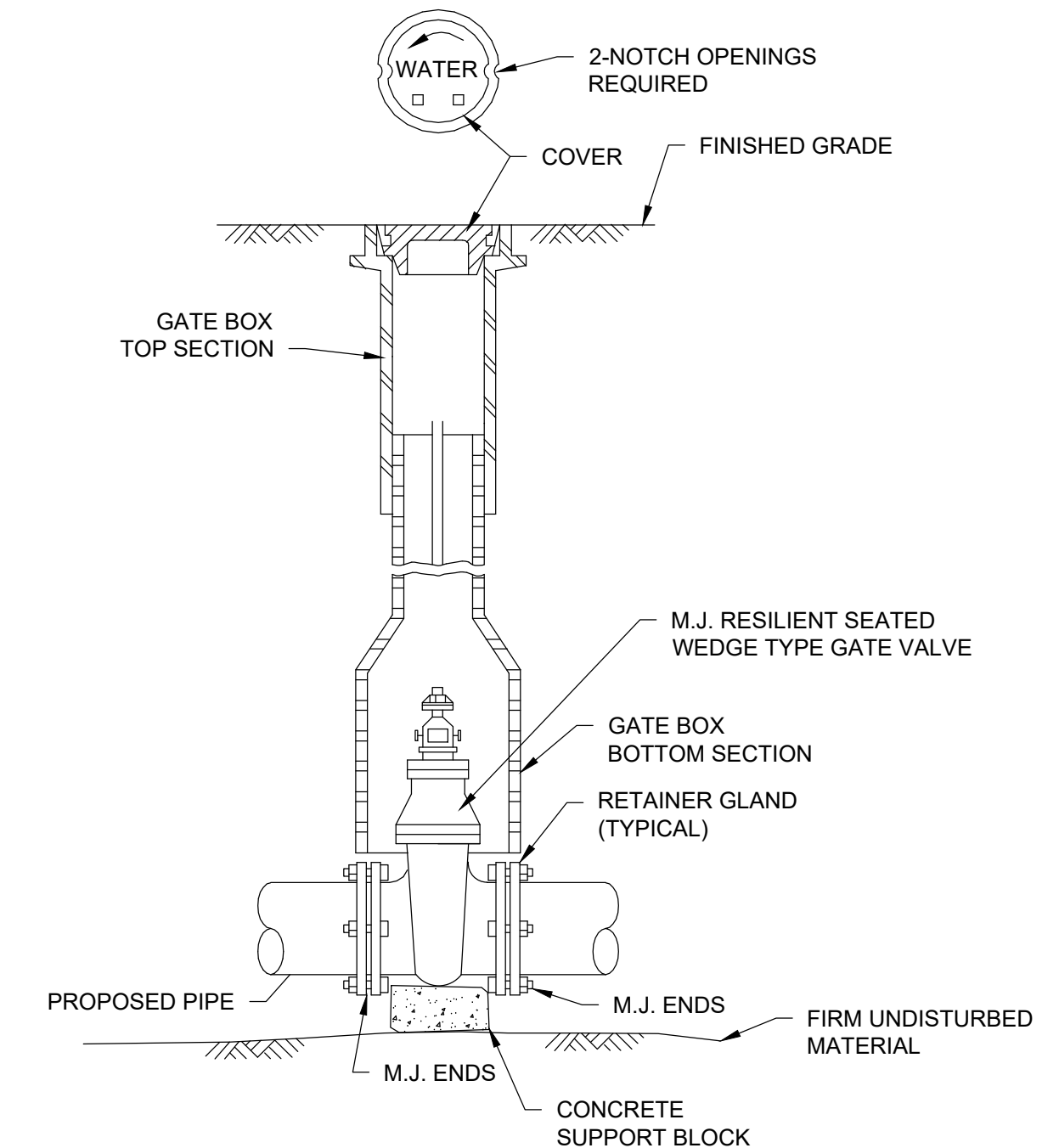


- NOTES:**
- ALL CONCRETE SHALL BE 3000 PSI @ 28 DAYS (CLASS 'A' CONCRETE).
 - DIMENSIONS SHOWN ARE MINIMUM AND ARE BASED UPON SOIL PRESSURE OF 1500 PSF AND TOTAL PRESSURE OF 250 PSI. TOTAL PRESSURE IS WORKING PRESSURE PLUS SURGE PRESSURE.
 - THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.

TABLE OF DIMENSIONS

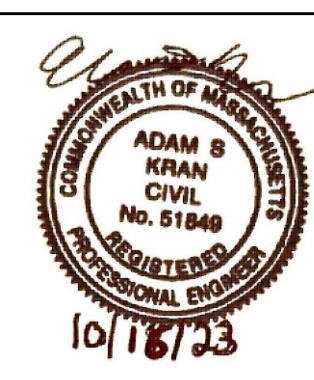
D (in)	4	6	8	10	12	14
J (in)	6	6	7	9	10	12
K (in)	16	16	20	26	32	36
L (in)	16	16	21	24	29	34
M (in)	11	11	14	16	19	22

**CONCRETE THRUST BLOCK
DETAIL AT TEE / PLUG/CAP**
SCALE: N.T.S.



- NOTES:**
- ALL GATE VALVE AND VALVE BOXES SHALL BE MANUFACTURED IN NORTH AMERICA.

GATE VALVE AND VALVE BOX DETAIL
SCALE: N.T.S.



MARK	DATE	DESCRIPTION

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Designed by	JDH
Drawn by	MEPA
Checked by	AWCP
Approved by	ASK

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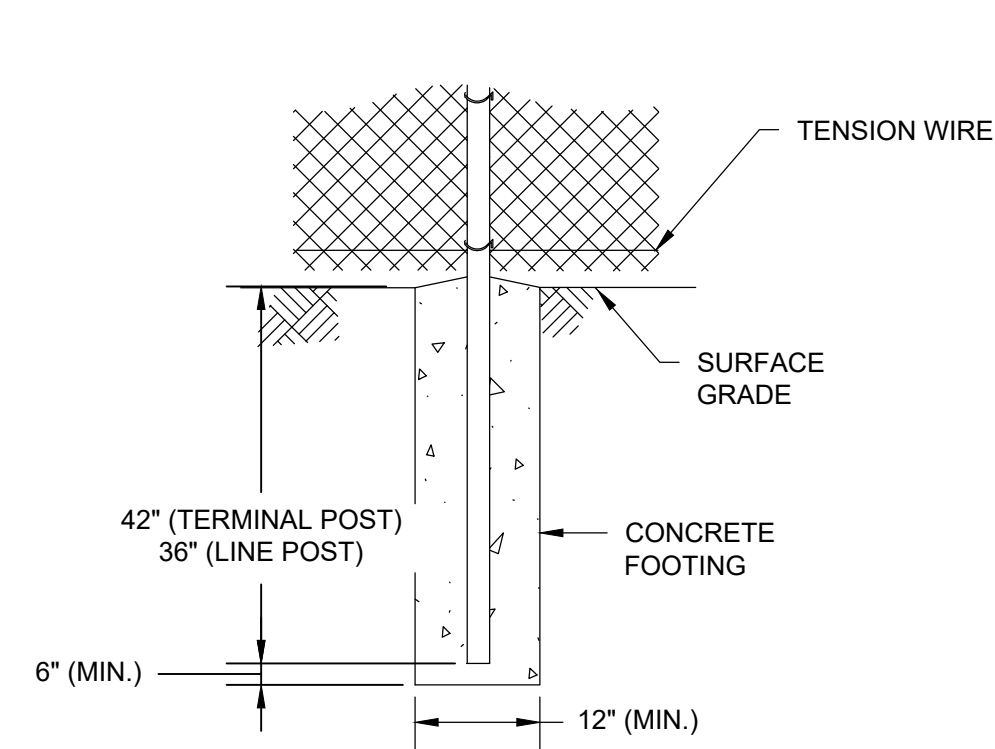
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

CIVIL CONSTRUCTION DETAILS II

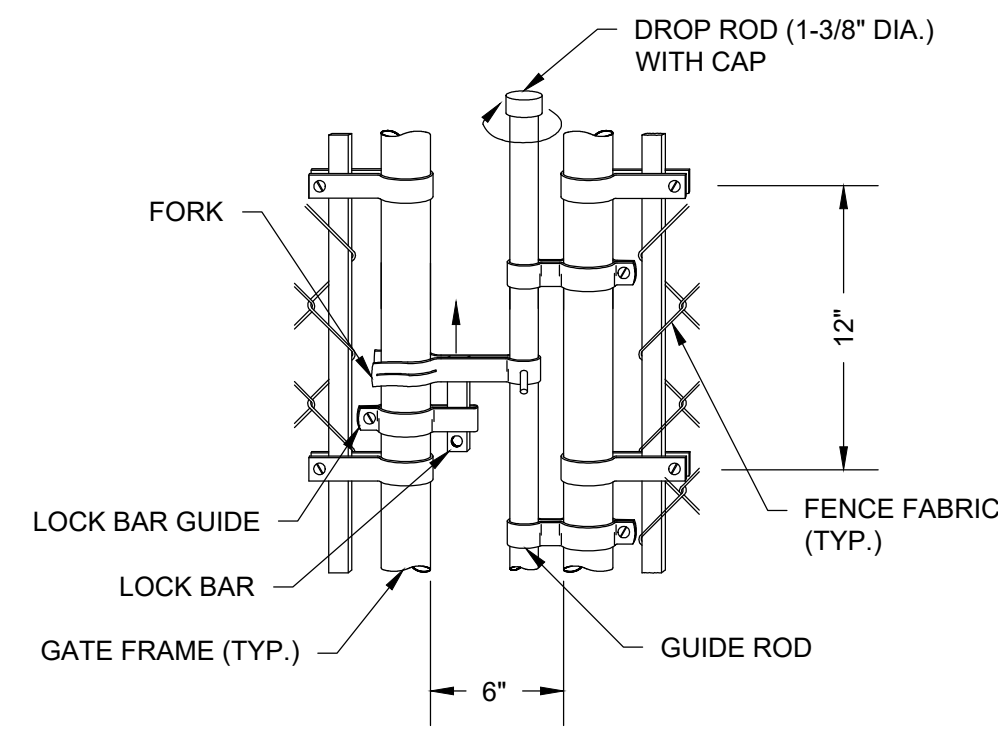
FOR PERMITTING

Sheet No.

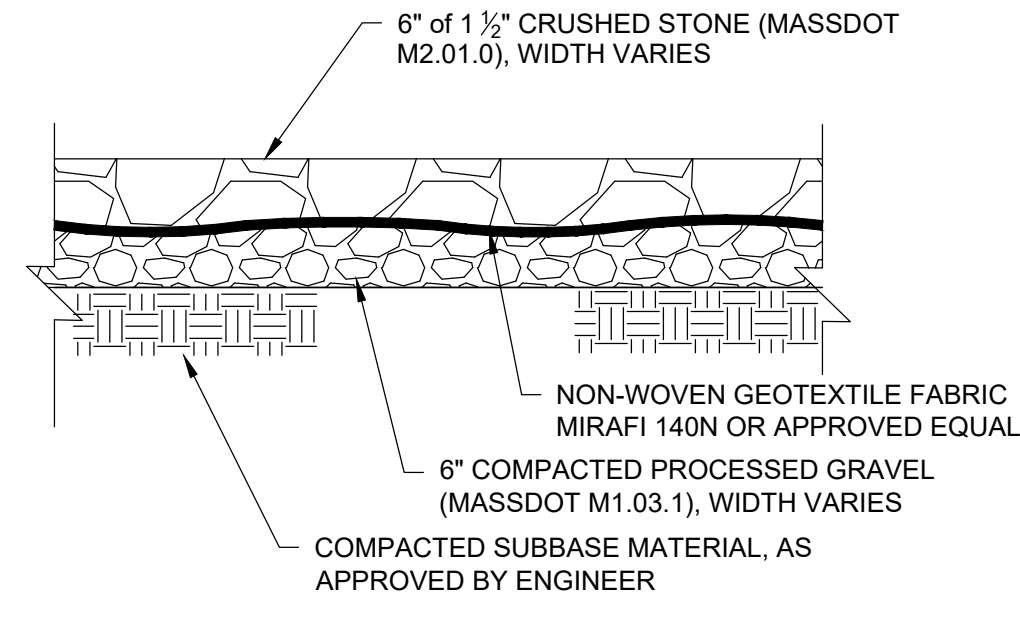
CD-2



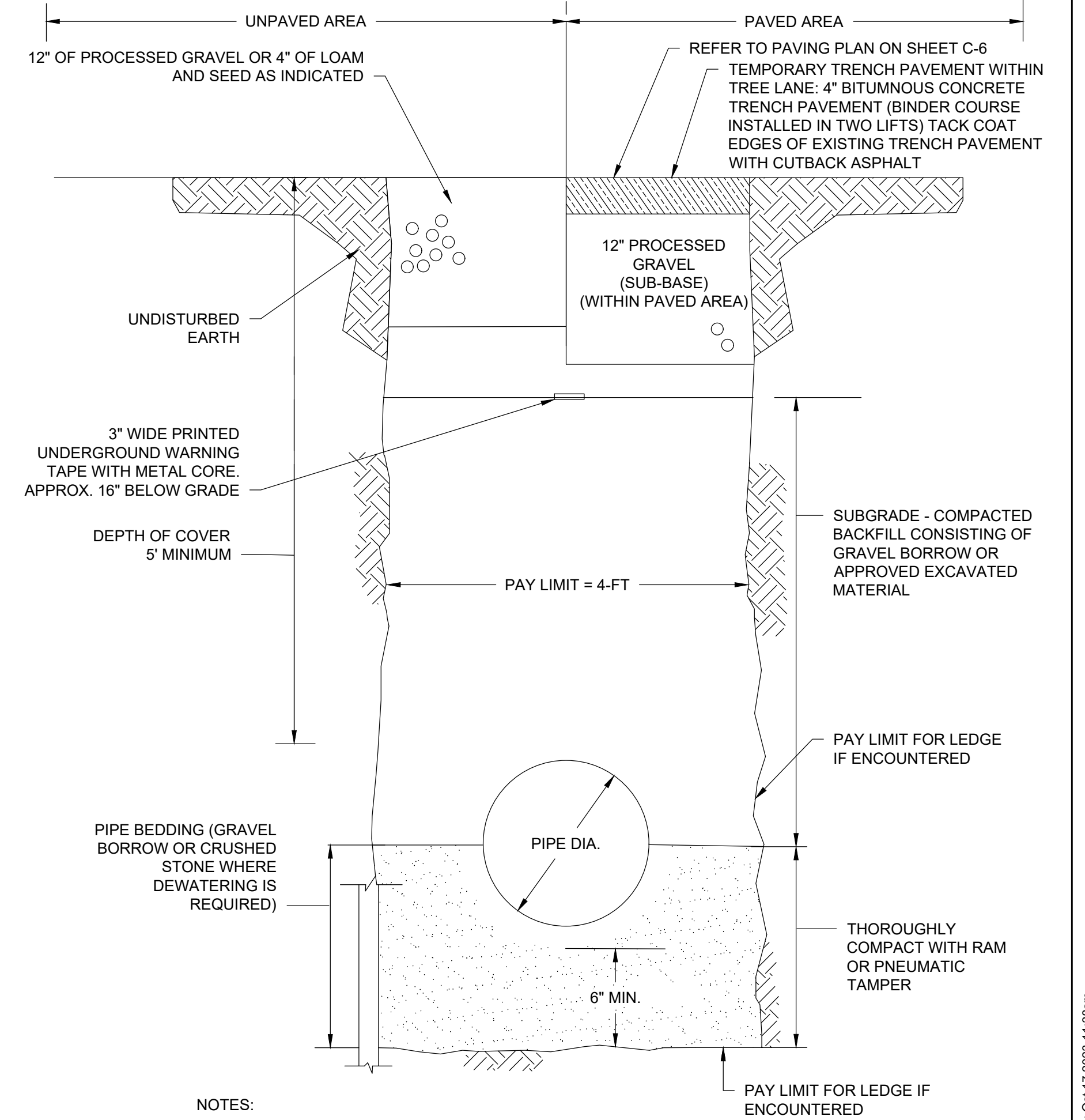
FENCE FOOTING DETAIL
SCALE: N.T.S.



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

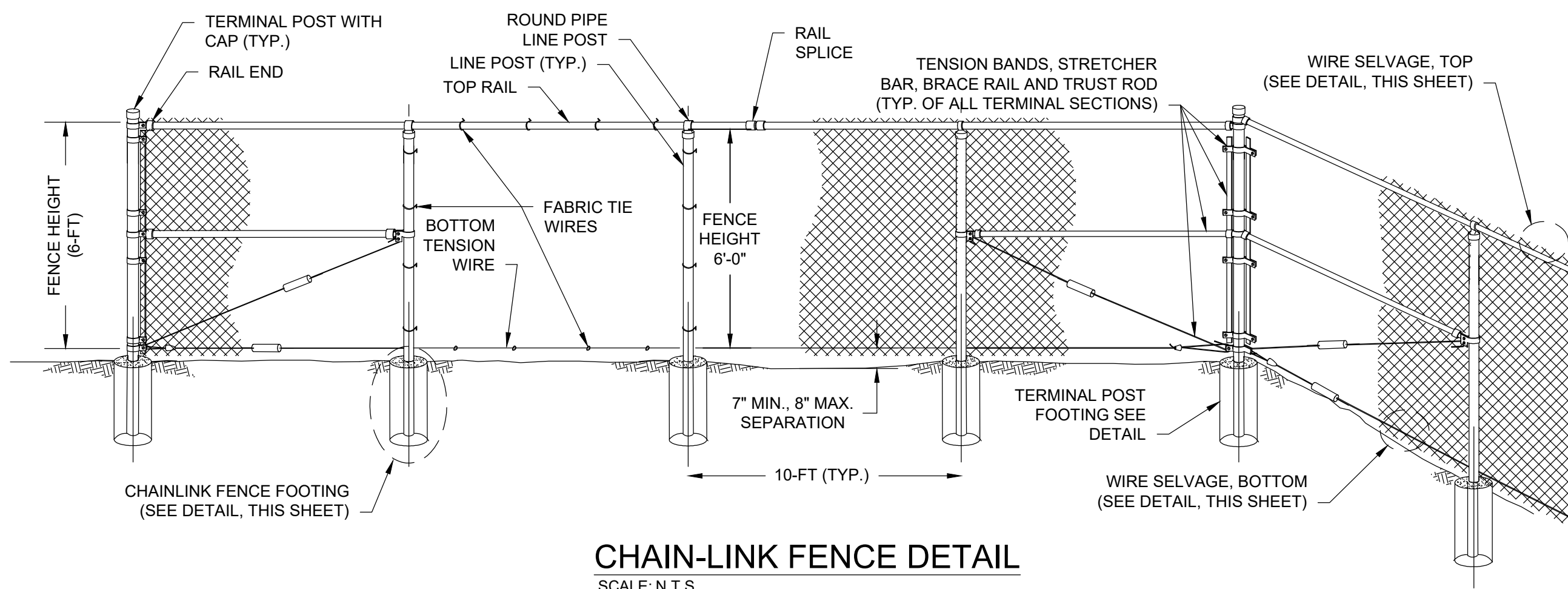


GRAVEL SHOULDER AREA DETAIL
SCALE: N.T.S.

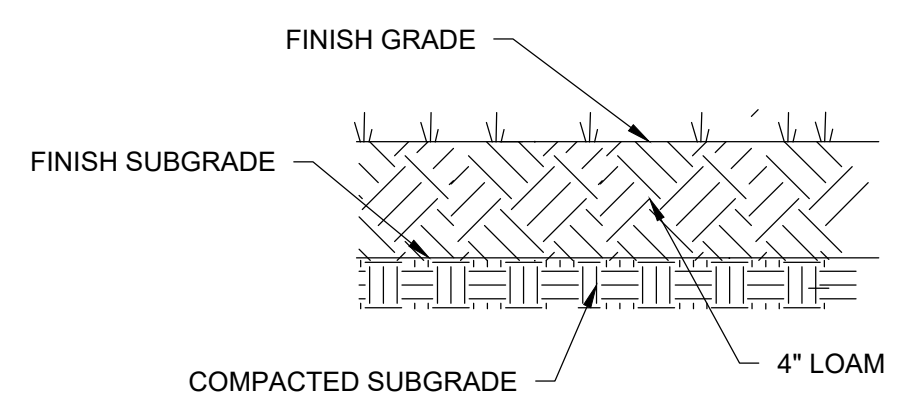


- NOTES:
- PAVEMENT INSTALLED BEYOND PAYMENT LINE MUST BE PRE-APPROVED BY THE ENGINEER.
 - THE FINISHED SURFACE OF THE MIXTURE, AFTER COMPACTION, SHALL BE TRUE TO THE ESTABLISHED LINE AND GRADE OF THE EXISTING PAVEMENT.
 - TRENCH PAVEMENT SHALL BE MACHINE LAID UTILIZING A SIDEWALK BOX SPREADER OR EQUAL; NO HAND WORK IS ALLOWED.
 - 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.

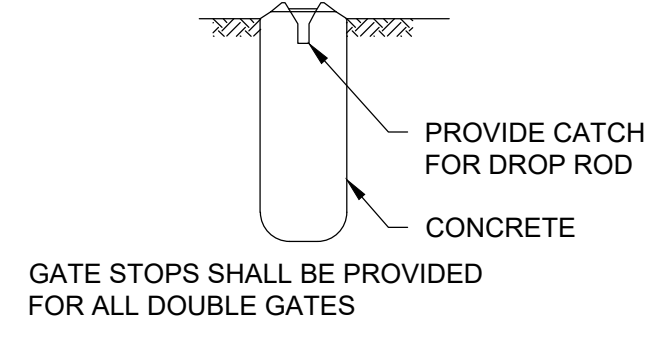


CHAIN-LINK FENCE DETAIL
SCALE: N.T.S.

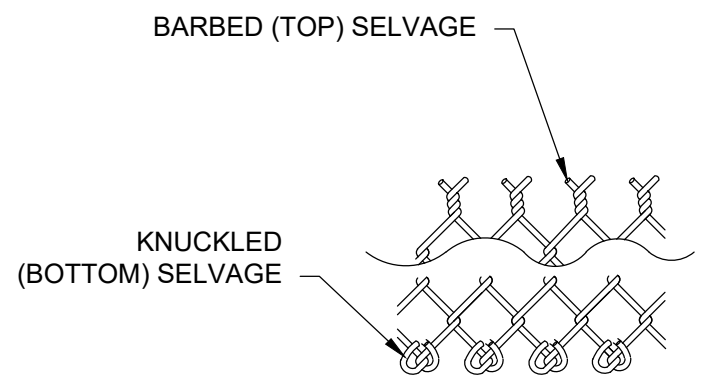


- NOTE:
- INSTALL CURLEX CL EROSION CONTROL BLANKET AS MANUFACTURED BY AMERICAN EXCELSIOR COMPANY (OR APPROVED EQUAL) ON ALL LOAM AND SEED SLOPES 3:1 OR STEEPER.
 - REFER TO SHEET L-1 FOR SEED MIX.

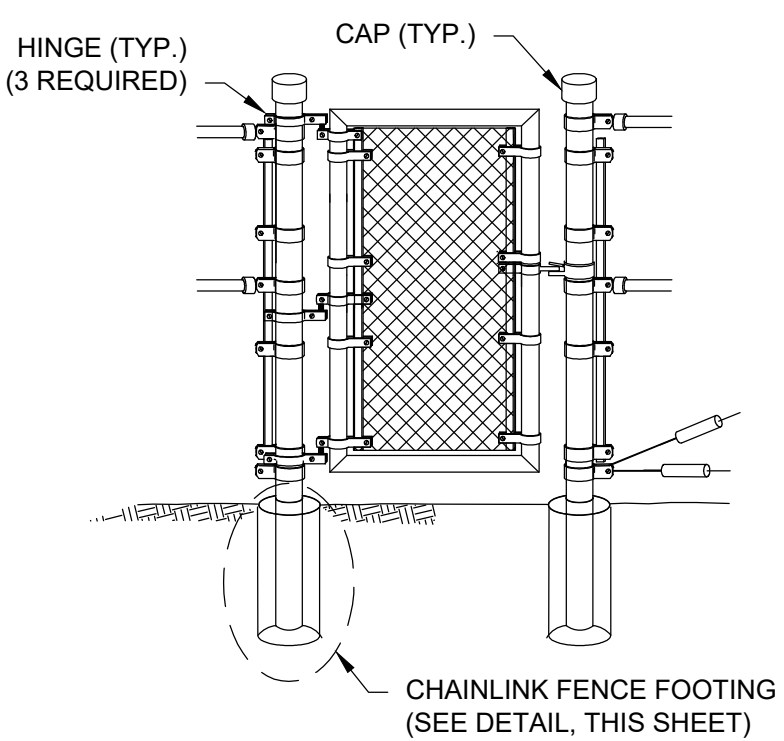
LOAM AND SEED (DISTURBED AREAS)
SCALE: N.T.S.



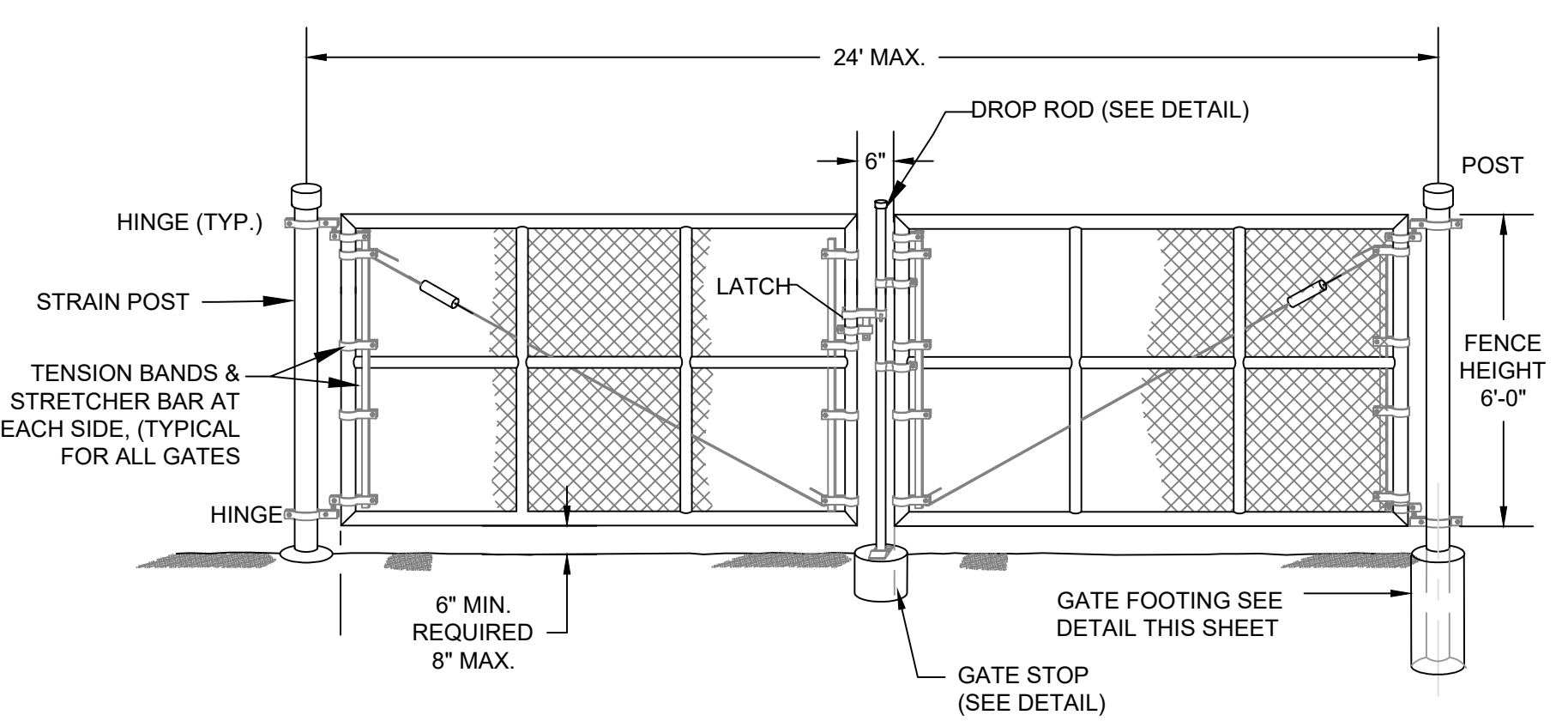
GATE STOP DETAIL
SCALE: N.T.S.



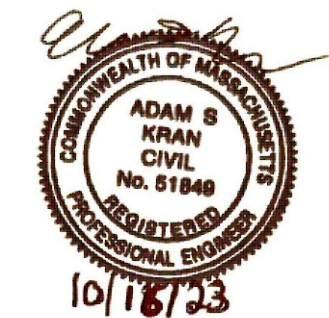
WIRE SELVAGE DETAIL
SCALE: N.T.S.



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



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



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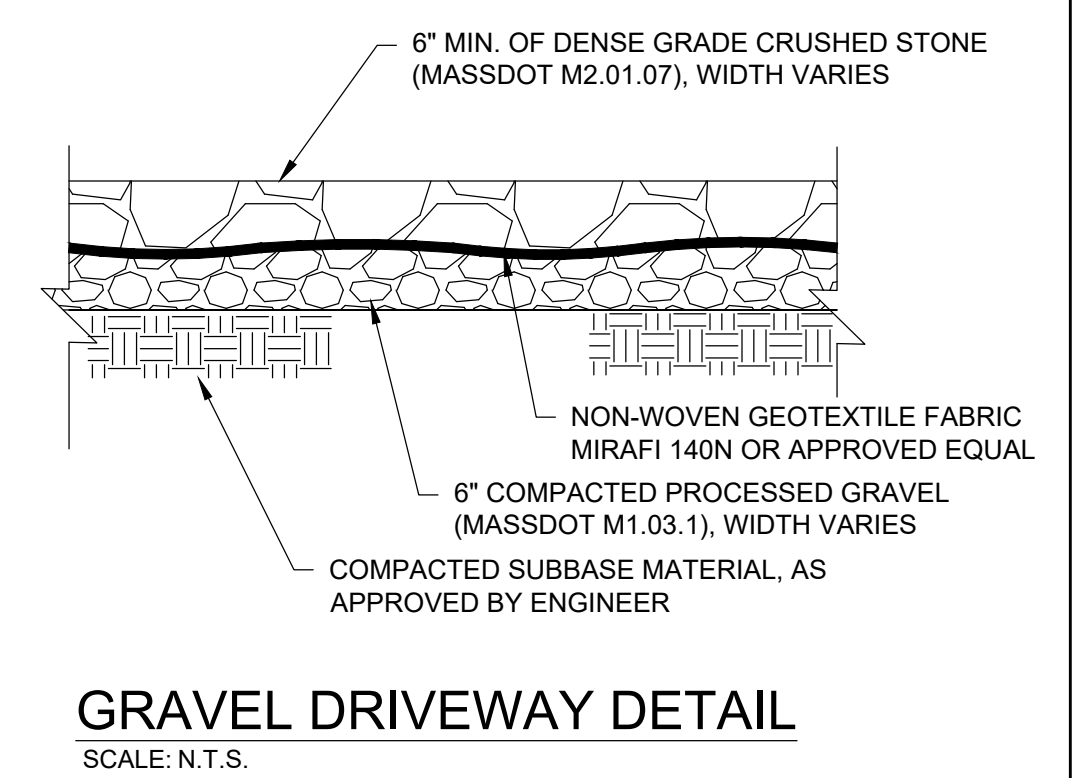
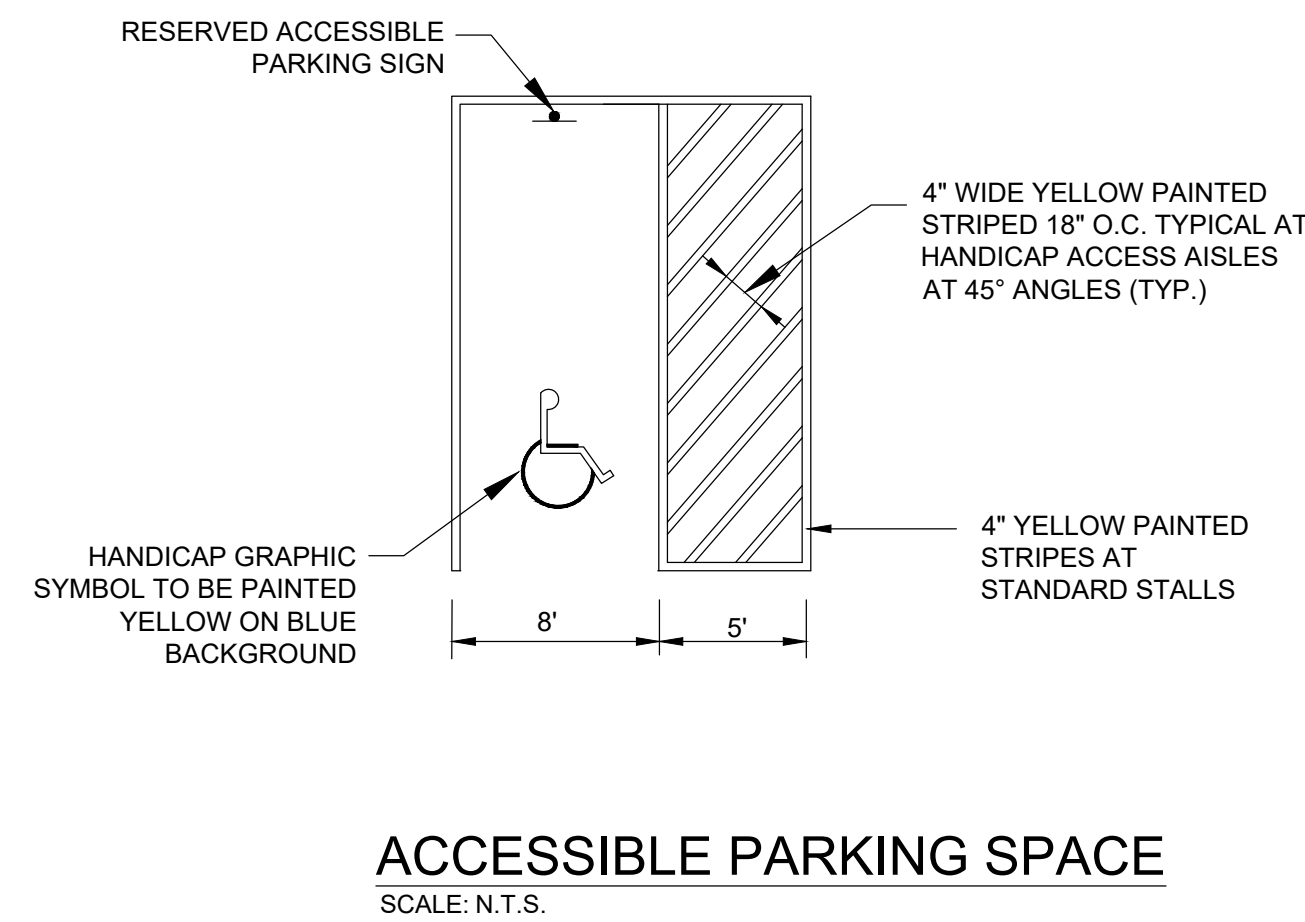
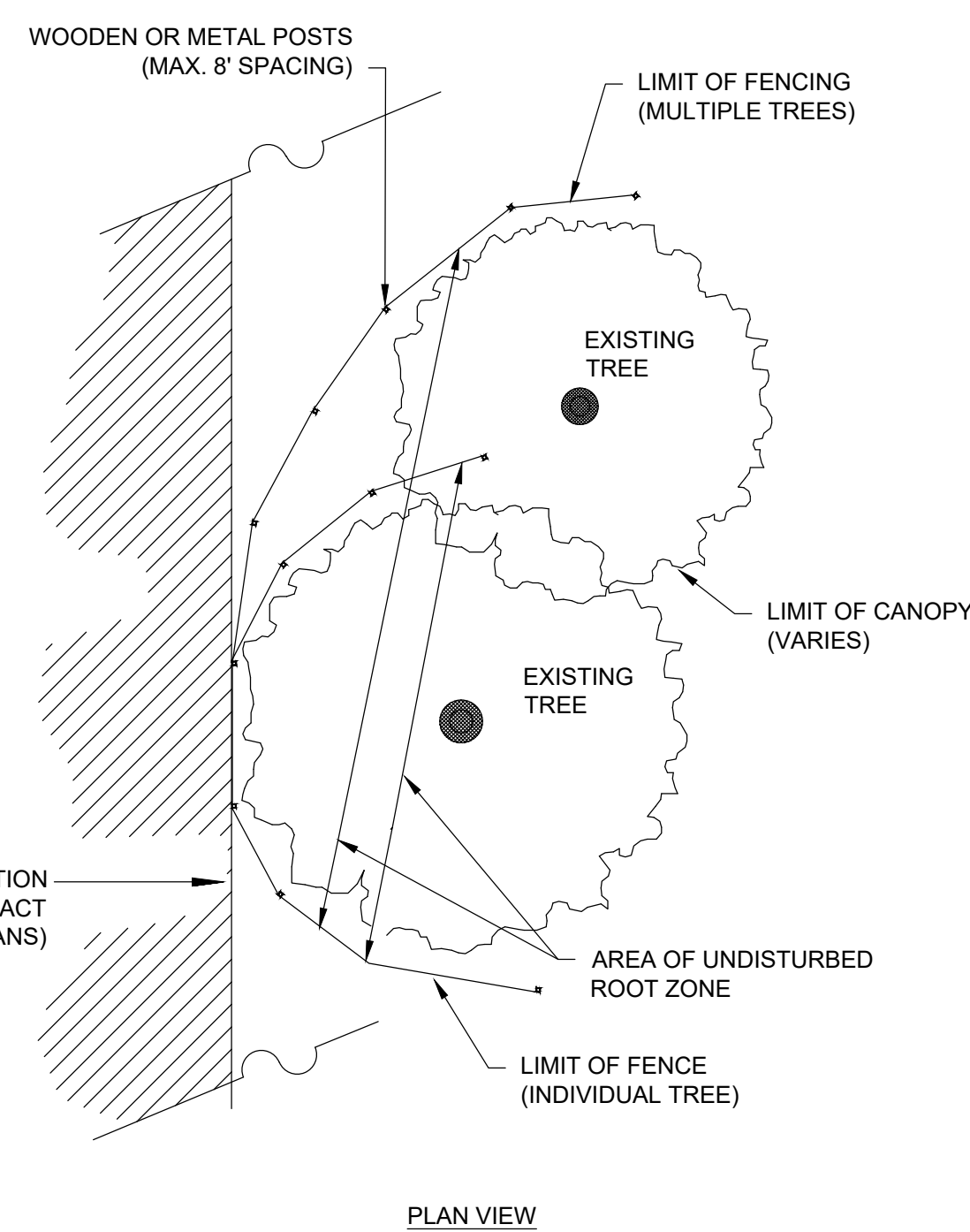
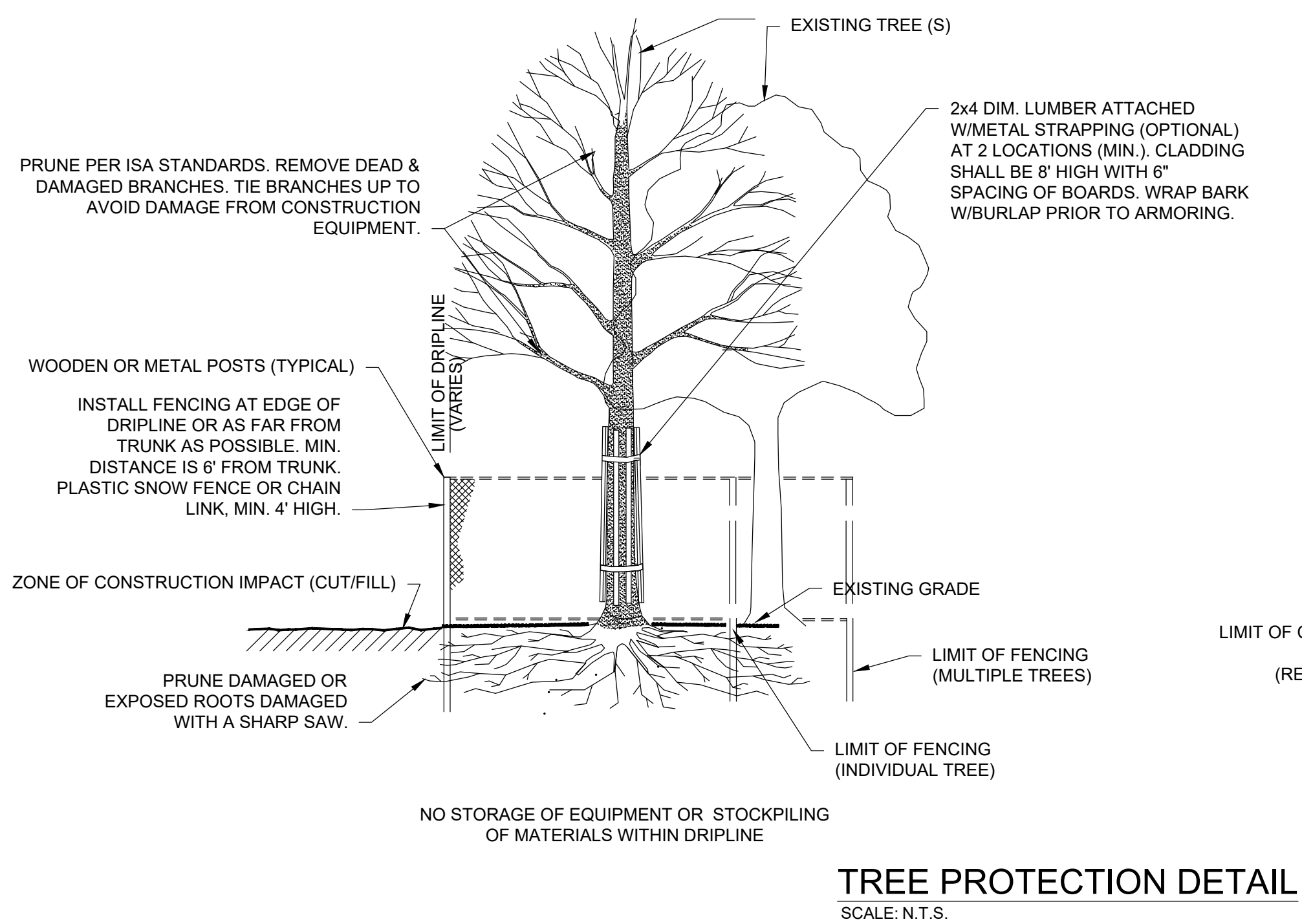
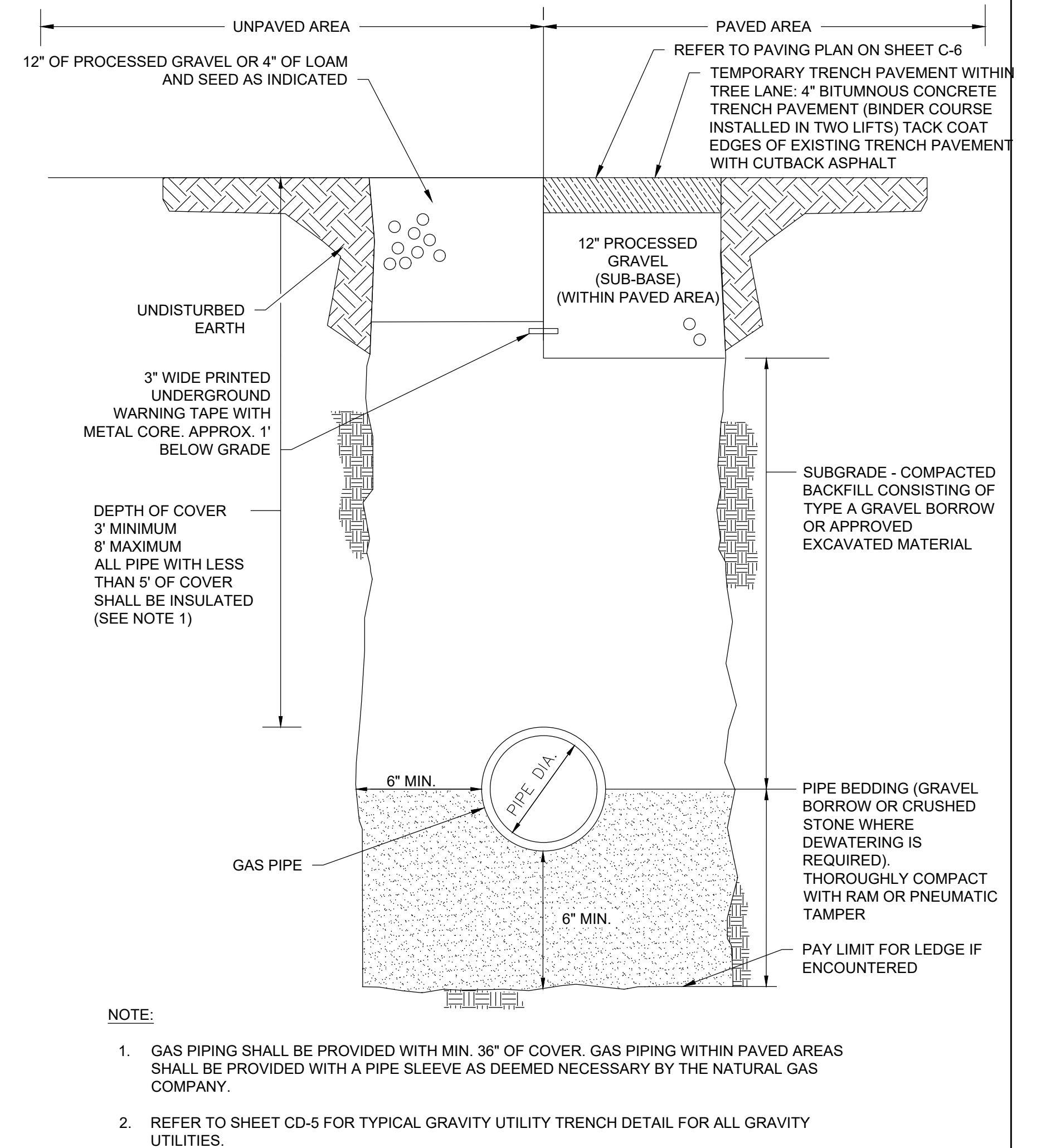
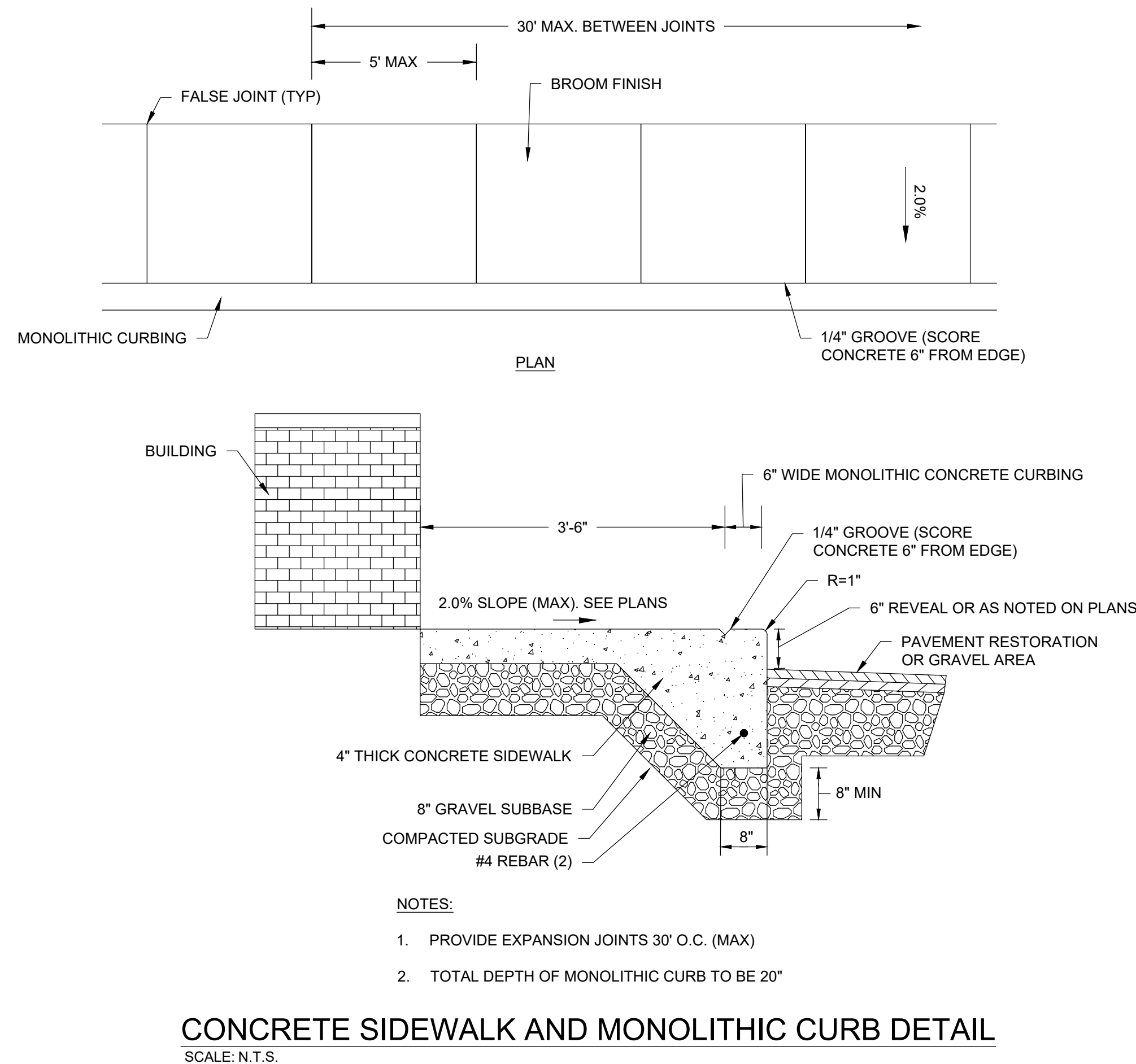
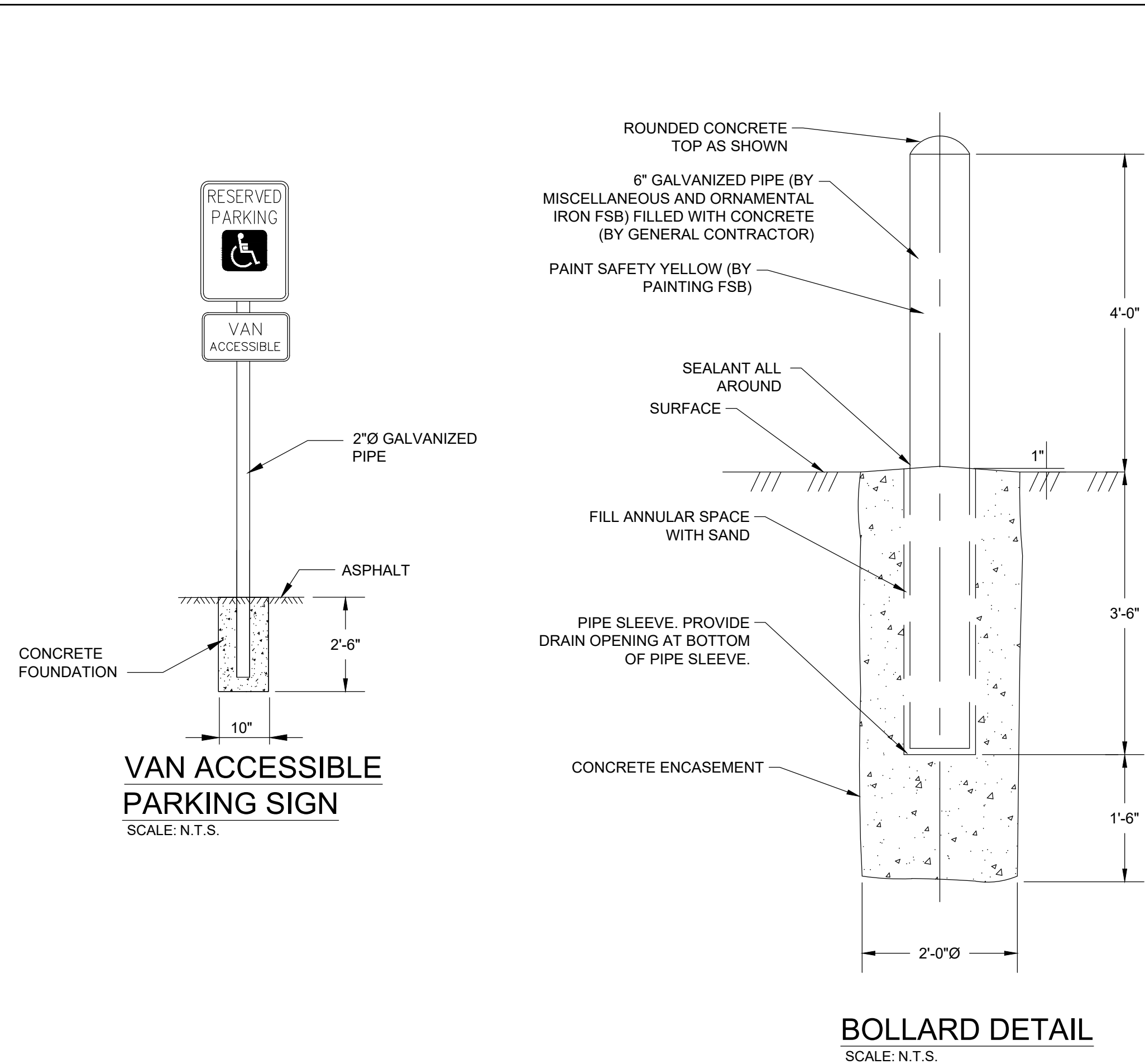
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

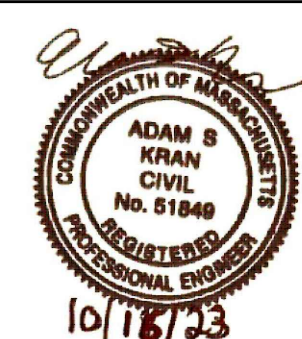
CIVIL CONSTRUCTION DETAILS III

FOR PERMITTING
Sheet No.

CD-3



ENVIRONMENTAL PARTNERS
— An Apex Company —



MARK	DATE	DESCRIPTION

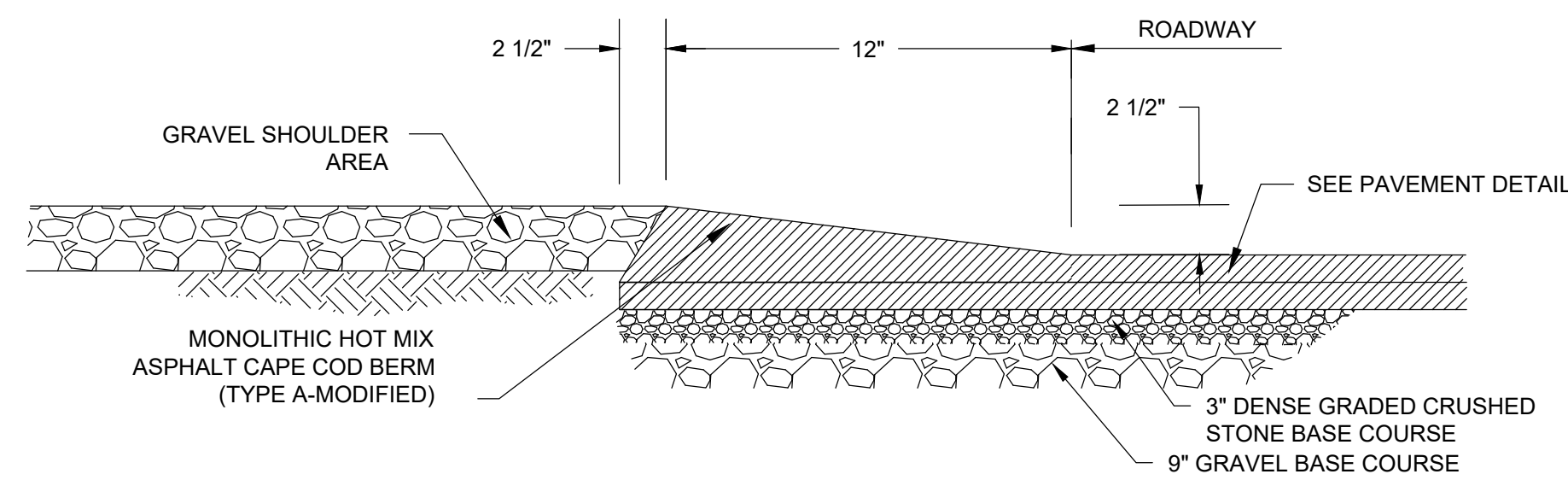
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TOWN OF SHARON, MA

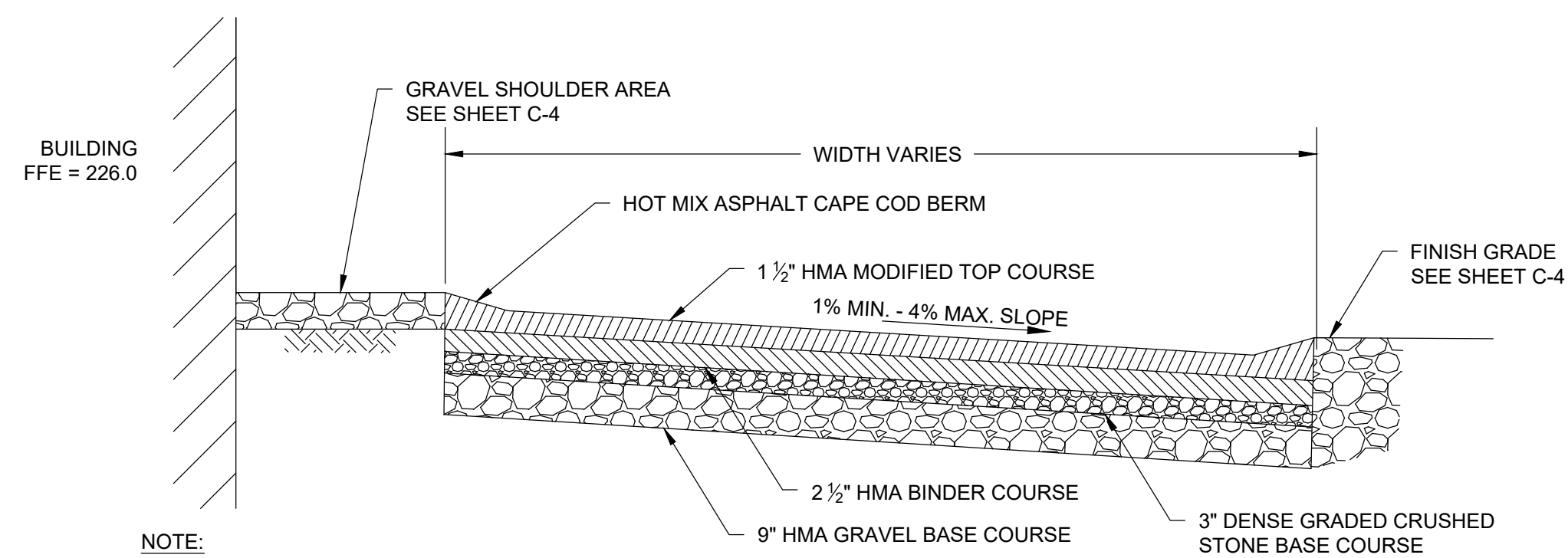
CIVIL CONSTRUCTION DETAILS IV

FOR PERMITTING
Sheet No.
CD-4



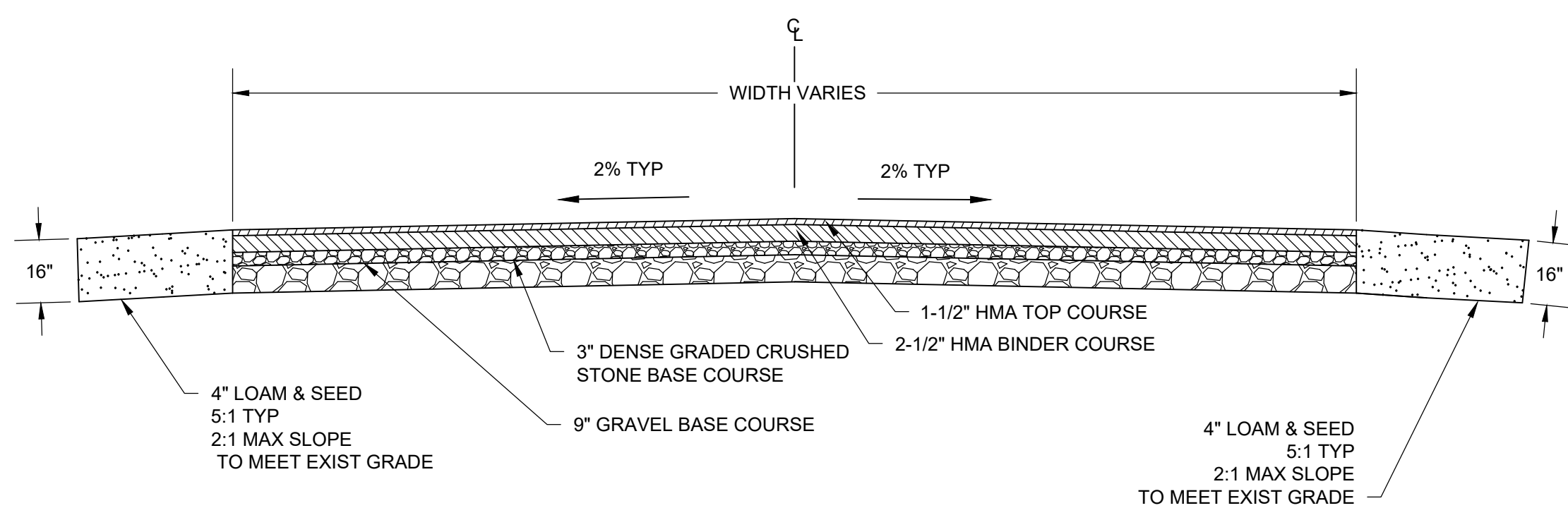
HOT MIX ASPHALT CAPE COD BERM DETAIL

SCALE: N.T.S.



SUPERELEVATED PAVEMENT DETAIL - WTP ACCESS DRIVEWAY

SCALE: N.T.S.

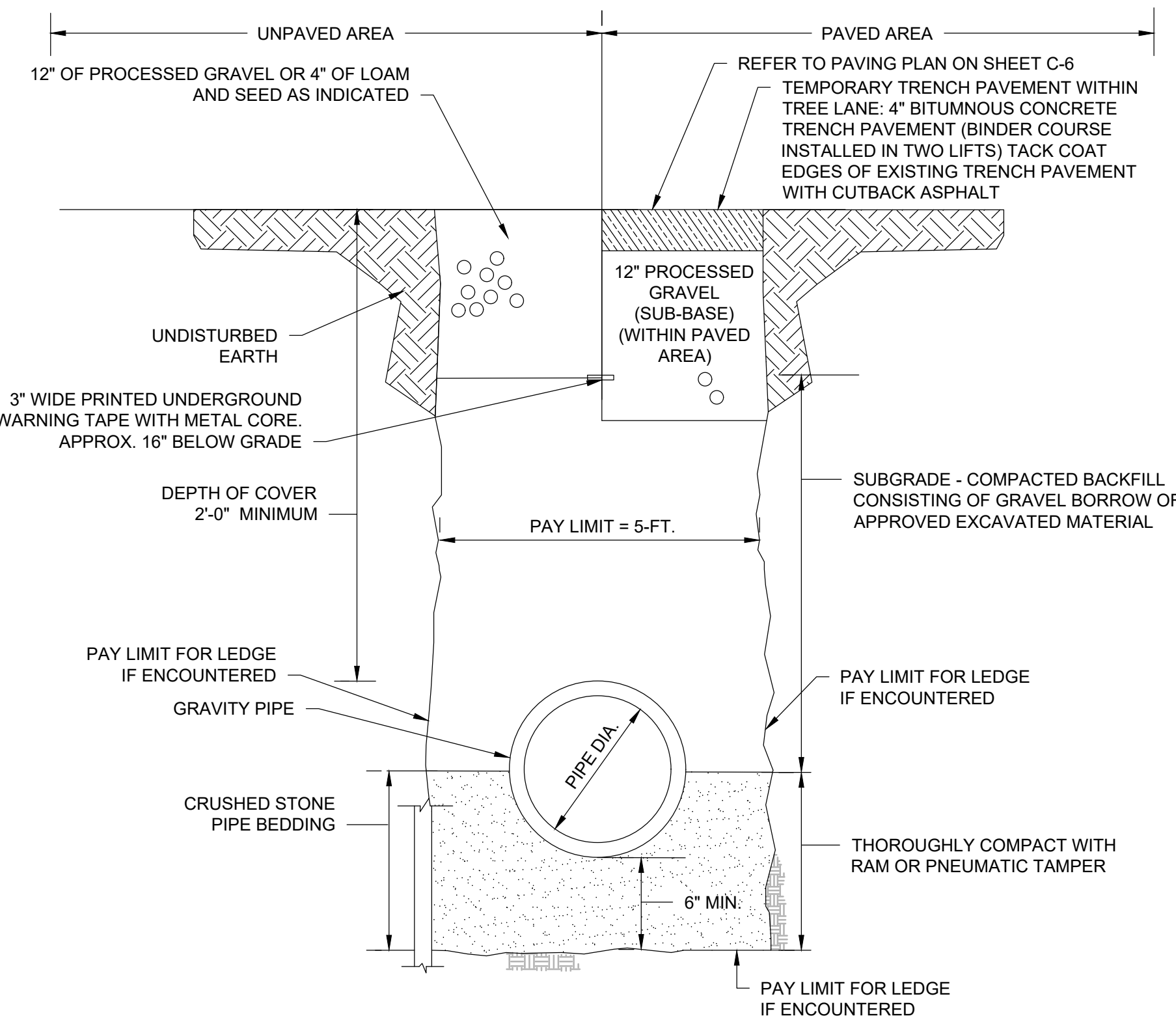


TYPICAL PAVEMENT PROFILE

SCALE: N.T.S.

NOTES:

- PULVERIZE EXISTING MATERIAL TO A MINIMUM DEPTH OF 16 INCHES. REMOVE EXCESS MATERIAL TO MEET FINISHED GRADES.
- ROUGH AND FINE GRADE AS REQUIRED TO MEET FINISHED GRADES.
- 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.
- PROVIDE 9" GRAVEL BASE COURSE TOPPED WITH 3" DENSE GRADED CRUSHED STONE BASE COURSE.
- PROVIDE 2-1/2" (COMPACTED THICKNESS) OF HMA BINDER COURSE IN 1 LIFT.
- PROVIDE 1-1/2" (COMPACTED THICKNESS) OF HMA TOP COURSE IN 1 LIFT.
- IN EXISTING PAVED AREAS, FINAL FINISHED GRADE OF HMA TOP COURSE TO MATCH EXISTING GRADES AND ALLOW FOR PROPER RUNOFF/DRAINAGE.
- IN AREAS WHERE PAVEMENT DID NOT PREVIOUSLY EXIST, FINAL FINISHED GRADE OF HMA TOP COURSE TO MATCH PROPOSED GRADING.
- REFER TO SHEET C-6 FOR ADDITIONAL PAVING REQUIREMENTS.

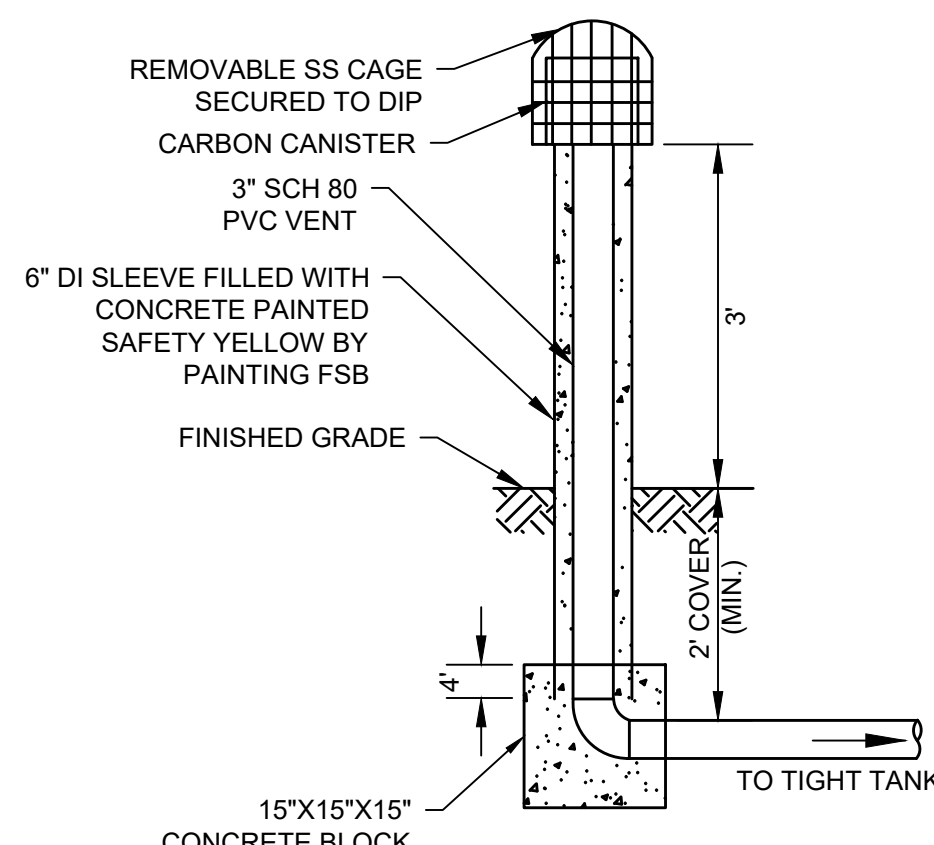


TYPICAL GRAVITY UTILITY TRENCH DETAIL

SCALE: N.T.S.

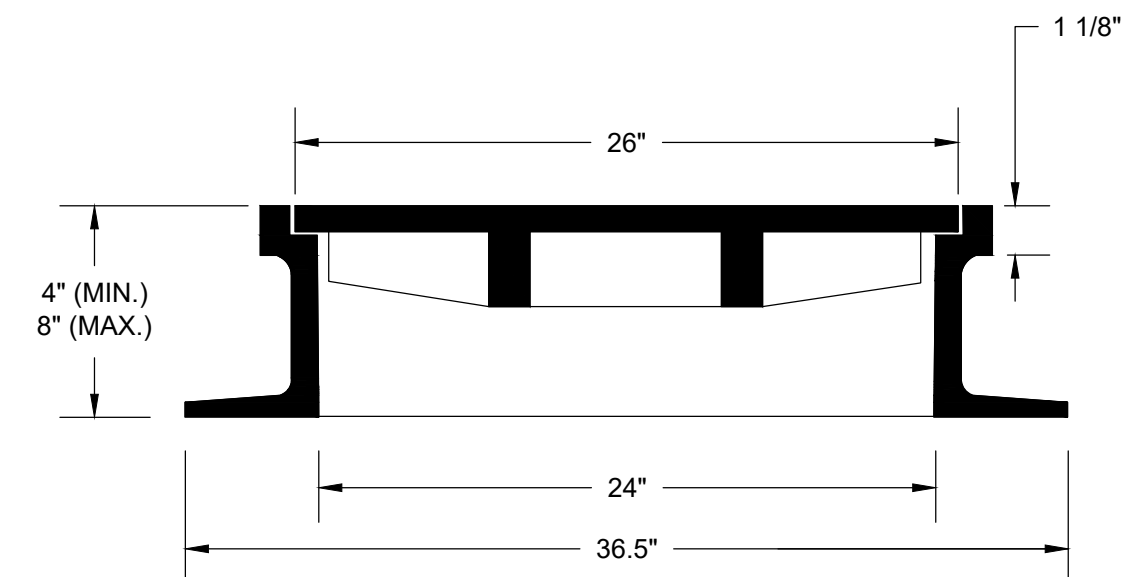
NOTE:

- 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.



TIGHT TANK VENT RISER DETAIL

SCALE: N.T.S.

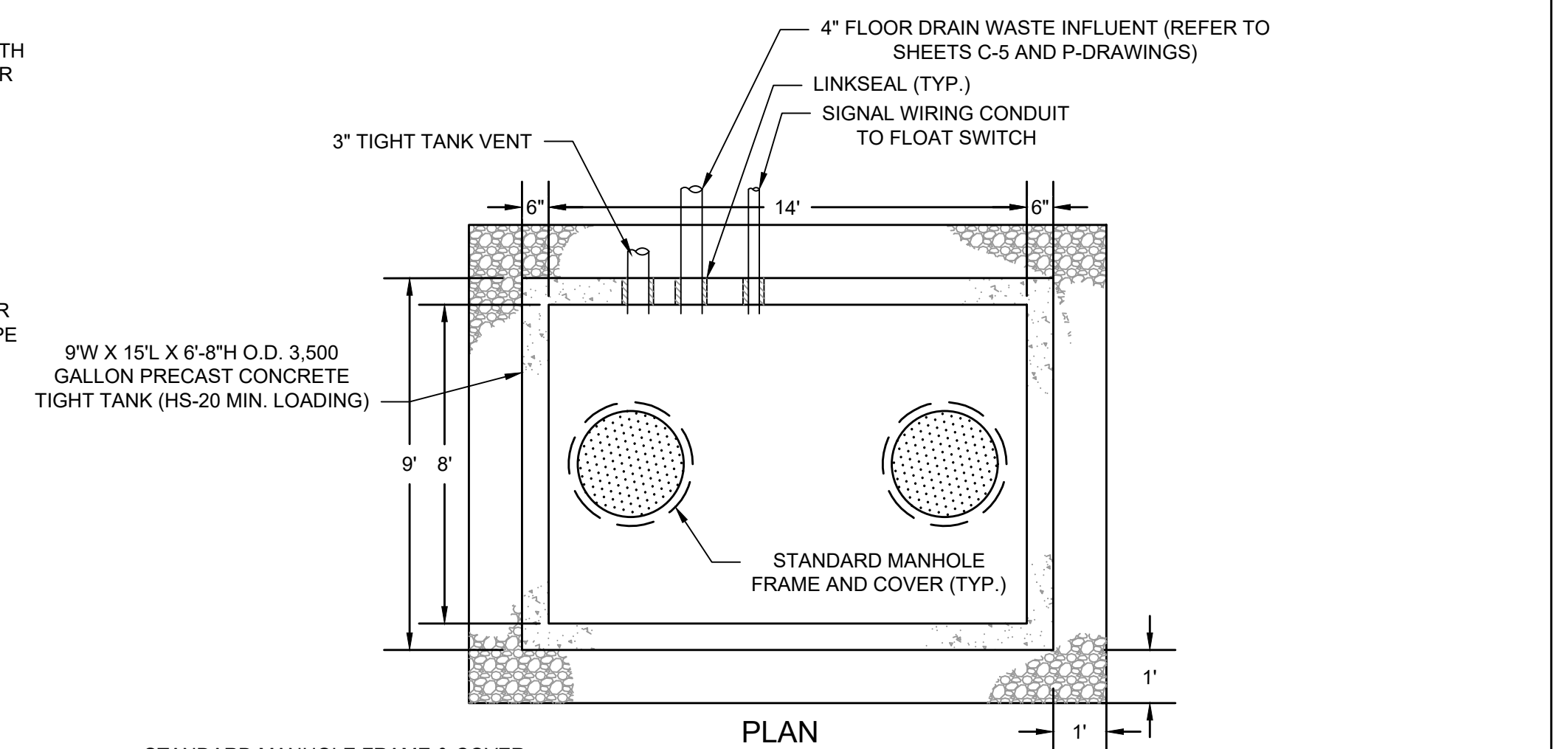


STANDARD MANHOLE FRAME AND COVER

SCALE: N.T.S.

NOTES:

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



STANDARD MANHOLE FRAME & COVER WITH RISER SECTION AS REQUIRED

9'W X 15'L X 6'-8"H O.D. 3,500 GALLON PRECAST CONCRETE TIGHT TANK (HS-20 MIN. LOADING)

NON-WOVEN GEOTEXTILE FABRIC MIRAFI 140N OR APPROVED EQUAL

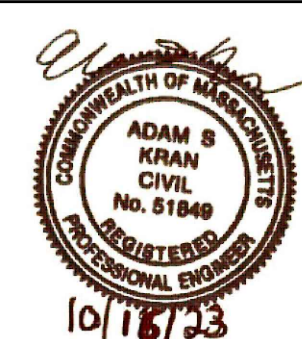
COMPACTED SUITABLE NATIVE MATERIAL OR APPROVED GRAVEL BORROW

NOTES:

- 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 EACH WELL STATION'S VESSEL CONTROL PANEL.
- CONTRACTOR TO EMPTY TIGHT TANKS AS NECESSARY THROUGHOUT THE DURATION OF CONSTRUCTION THROUGH SUBSTANTIAL COMPLETION AND CONSTRUCTION OF THE BUILDING.

PRECAST CONCRETE TIGHT TANK

SCALE: N.T.S.



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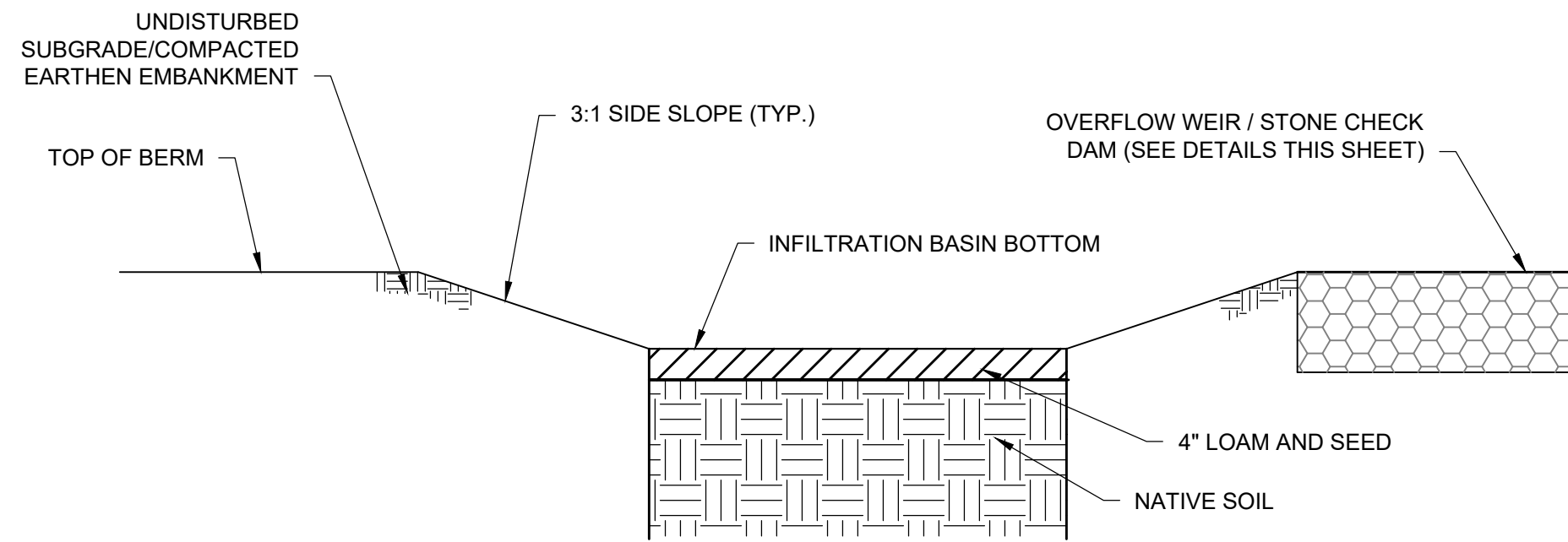
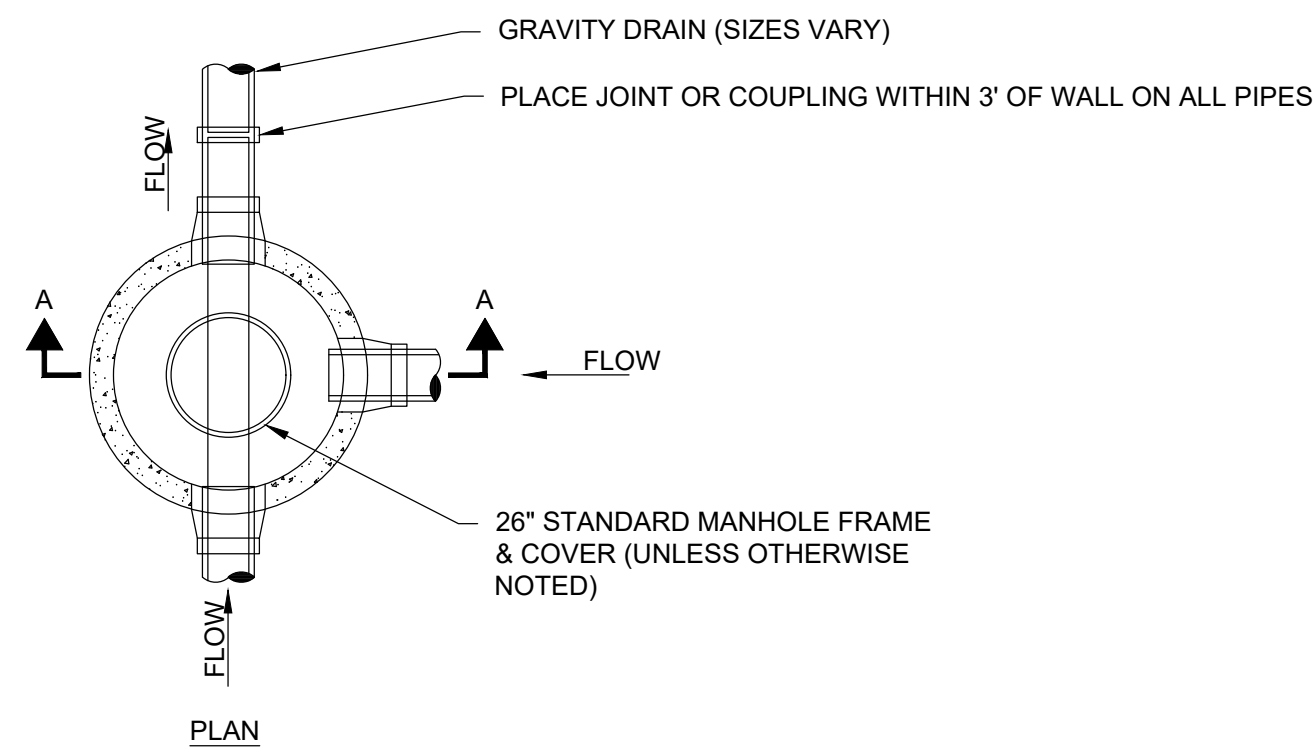
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

CIVIL CONSTRUCTION DETAILS V

FOR PERMITTING

Sheet No.

CD-5

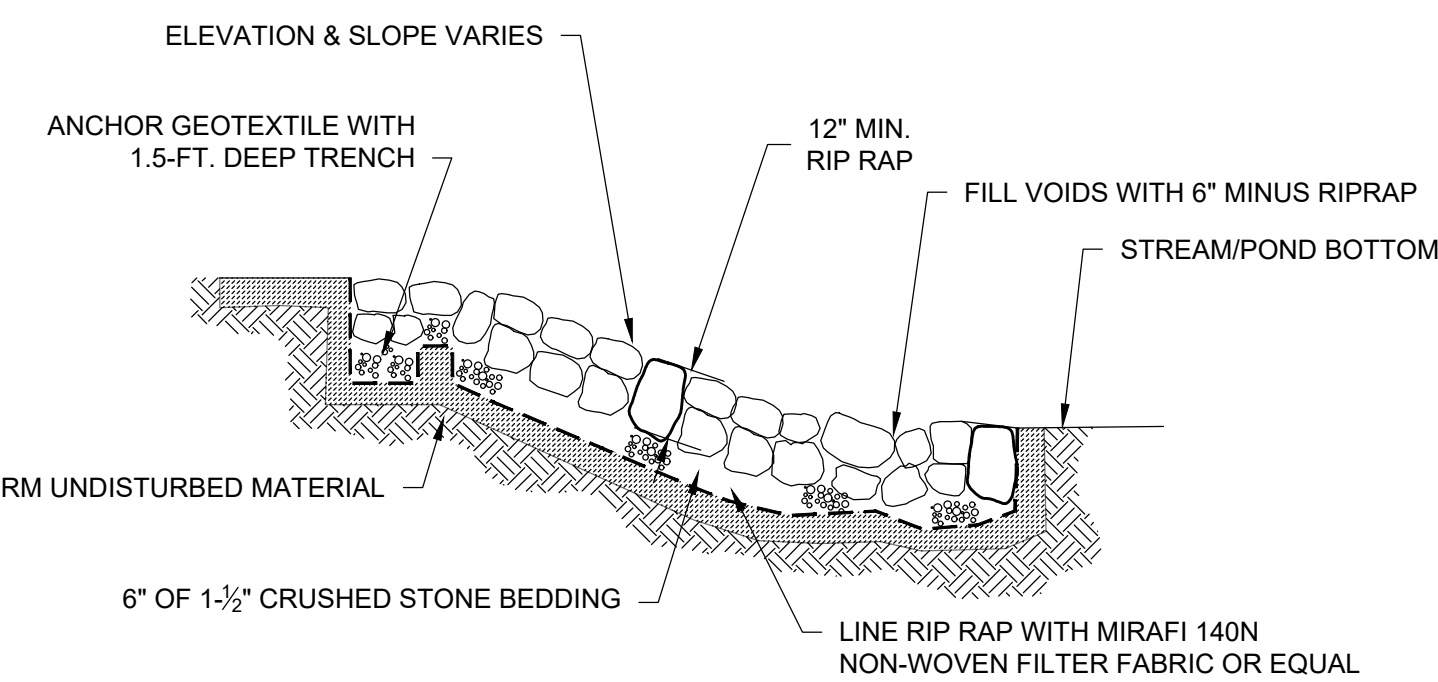


NOTES:

1. SOIL MIX SHALL BE SANDY LOAM, LOAMY SAND, OR LOAM TEXTURE.
2. REFER TO SHEET L-1 PLANTING PLAN 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.

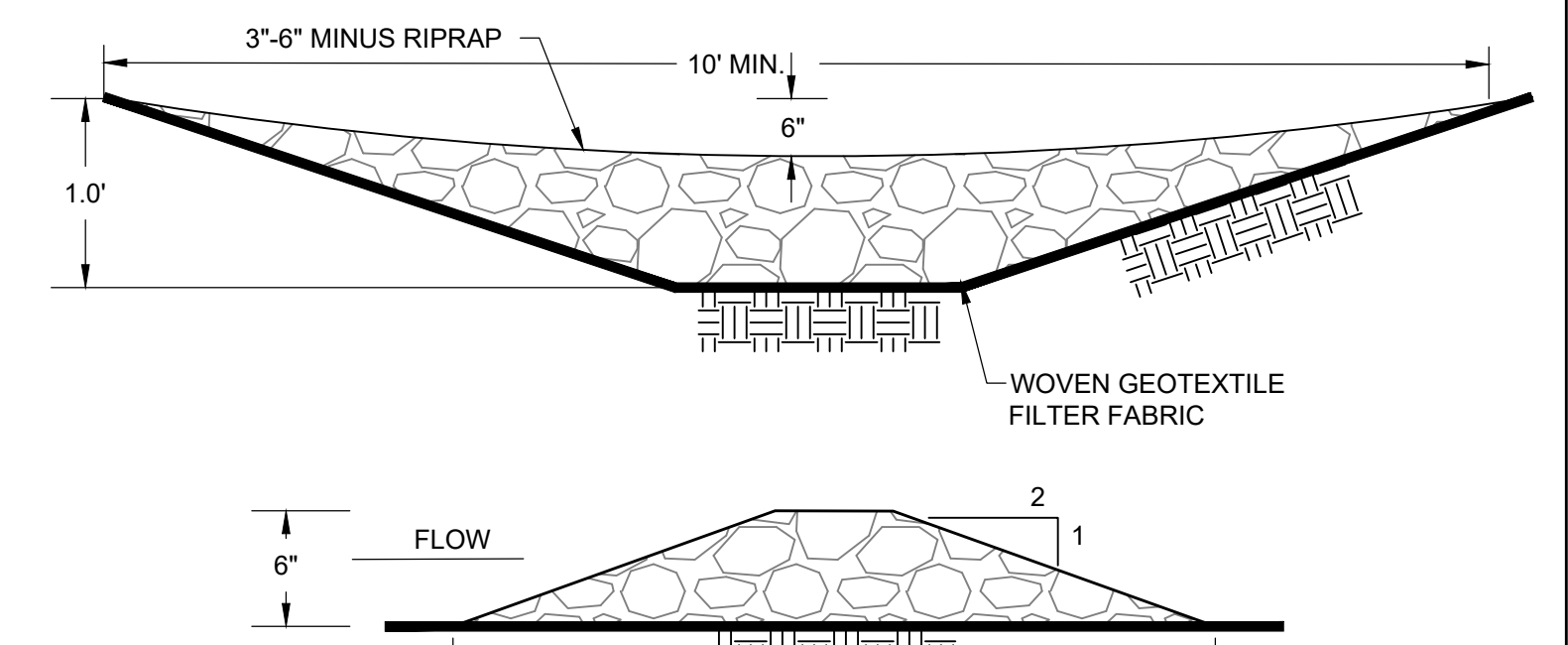
TYPICAL STORM WATER INFILTRATION BASIN DETAIL

SCALE: N.T.S.



NOTES:

1. RIPRAP SHALL CONFORM TO MASS DOT STANDARD SPECIFICATION M2.02.3.



NOTES:

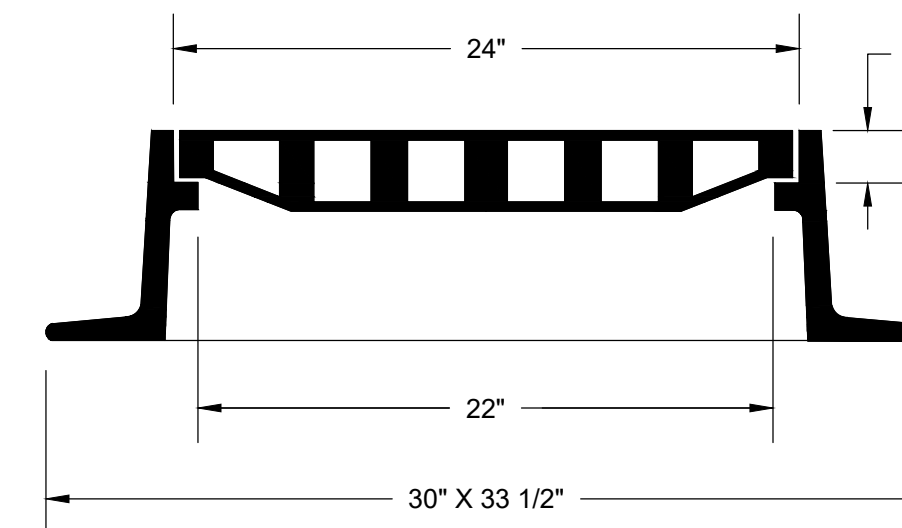
1. FILTER FABRIC SHALL BE INSTALLED AND FASTENED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. SEAMS SHALL OVERLAP 12 TO 18 INCHES.
2. REFER TO SHEET C-4 FOR ELEVATIONS.

TYPICAL RIPRAP OVERFLOW WEIR DETAIL

SCALE: N.T.S.

RIPRAP DETAIL

SCALE: N.T.S.

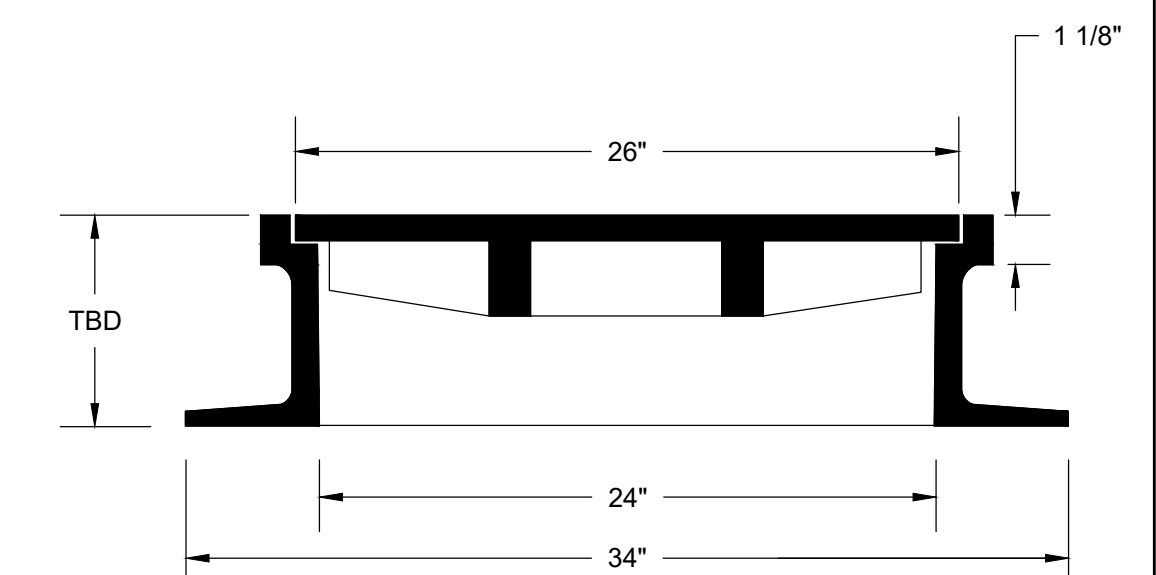


NOTES:

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.



NOTES:

1. FRAME AND COVER SHALL BE EJ, OR APPROVED EQUAL.
2. EACH COVER SHALL READ 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 DRAIN MANHOLE FRAME AND COVER

SCALE: N.T.S.

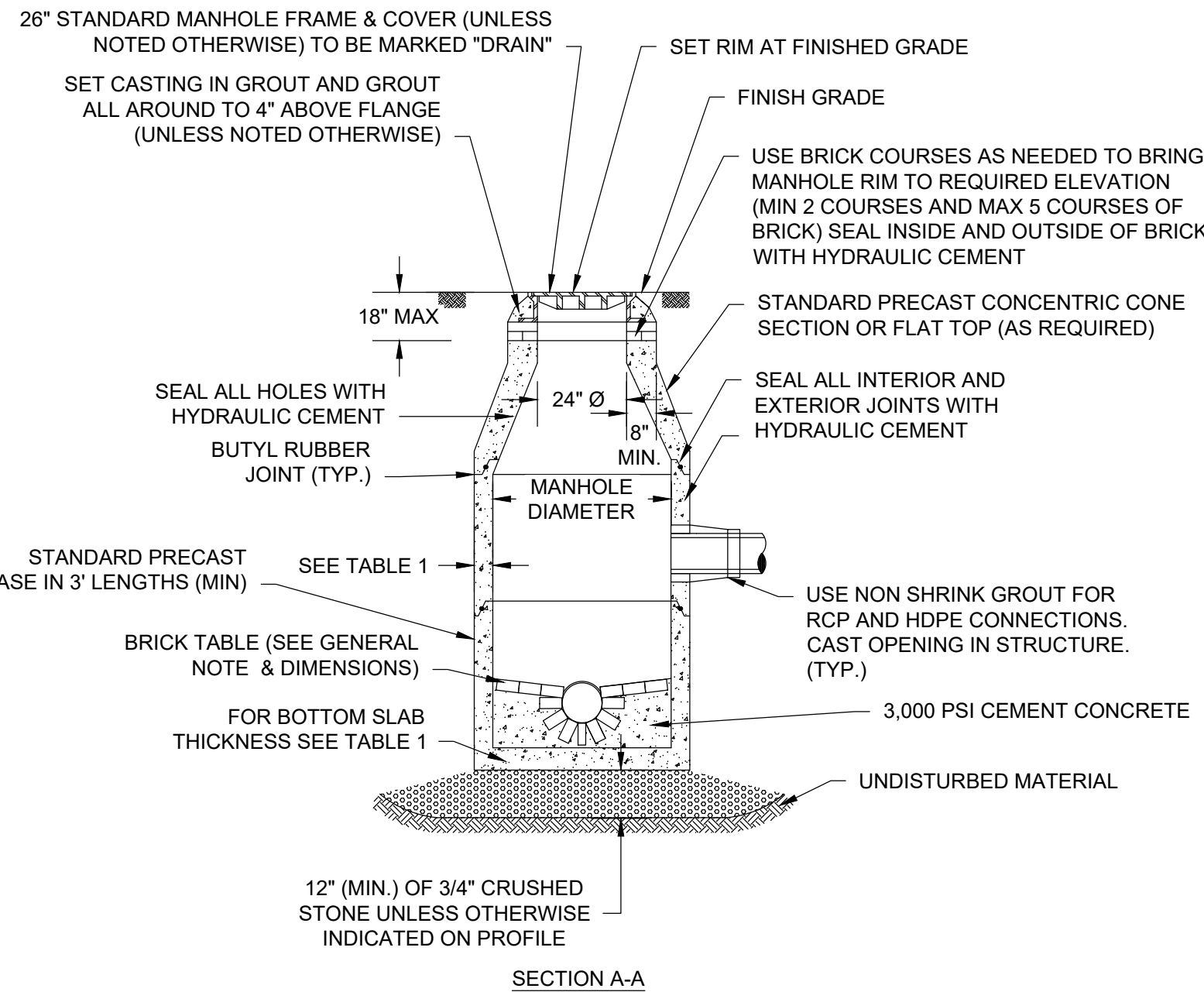


TABLE 1

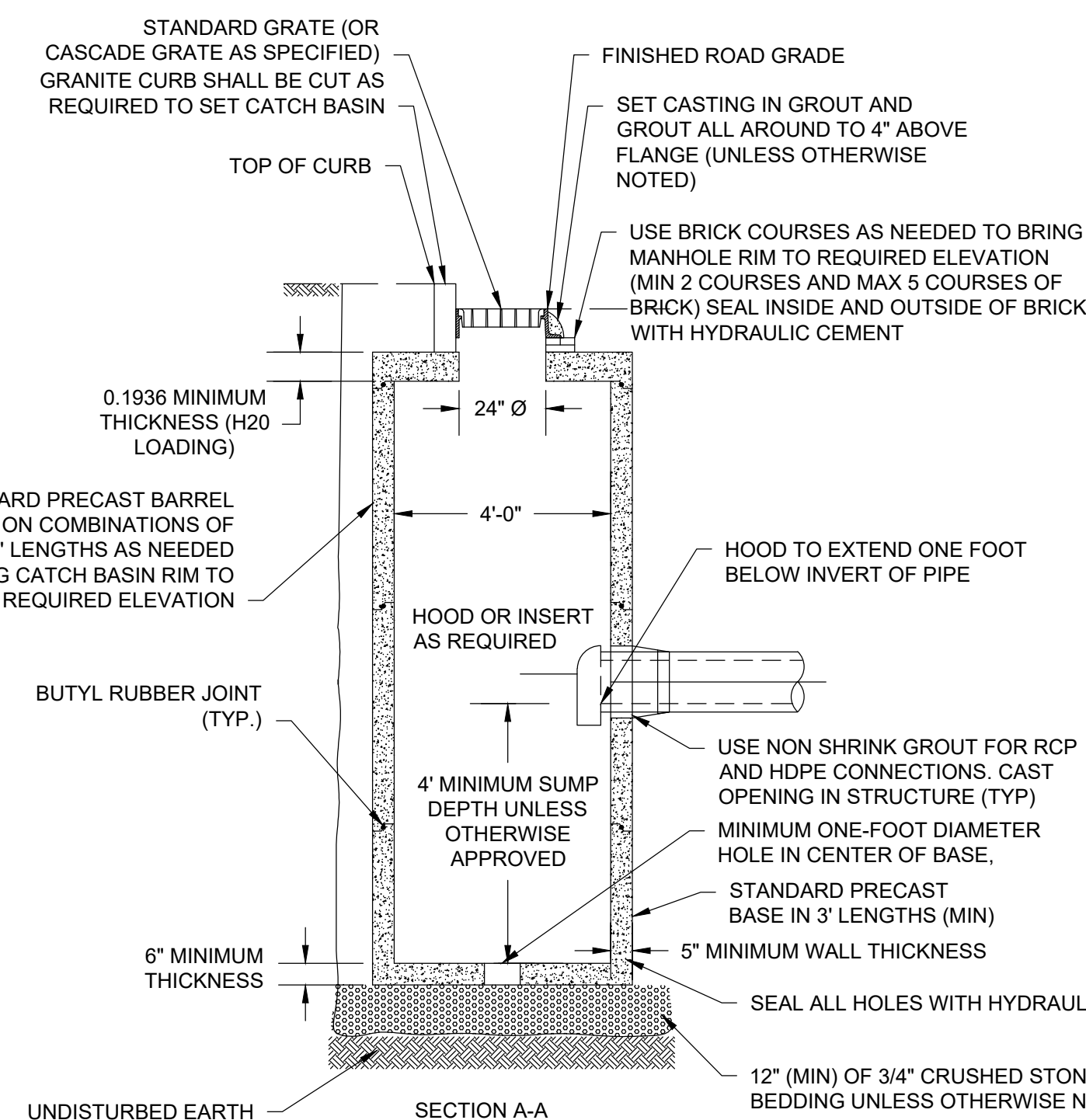
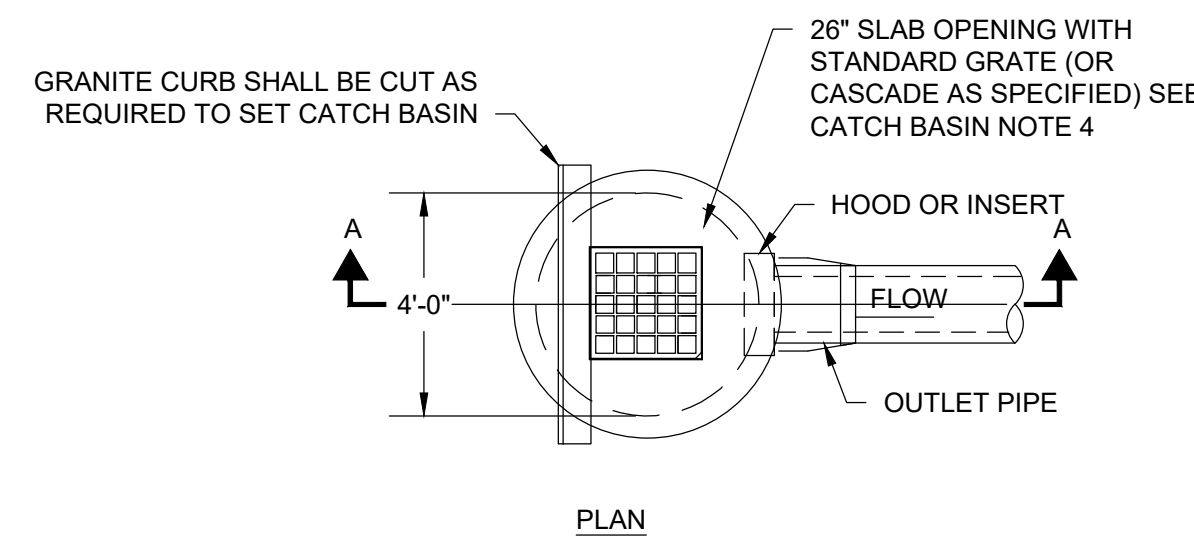
MH DIA.	SIDE WALL MIN. THICKNESS	BOTTOM WALL MIN. THICKNESS
4'	5"	6"
5'	6"	8"
6'	6"	8"

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 EDITION.
2. GEOTEXTILE FABRIC SHALL BE INSTALLED AROUND TRENCH LIMITS 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.

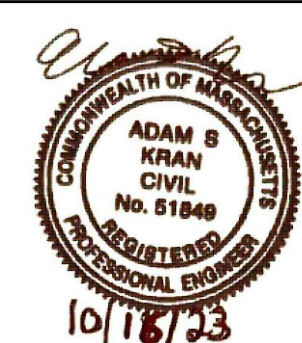


TYPICAL CATCH BASIN

SCALE: N.T.S.



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Scale	NTS
Date	OCTOBER 2023
Job No.	245-2103
Designed by	JDH
Drawn by	MEPA
Checked by	AWCP
Approved by	ASK

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

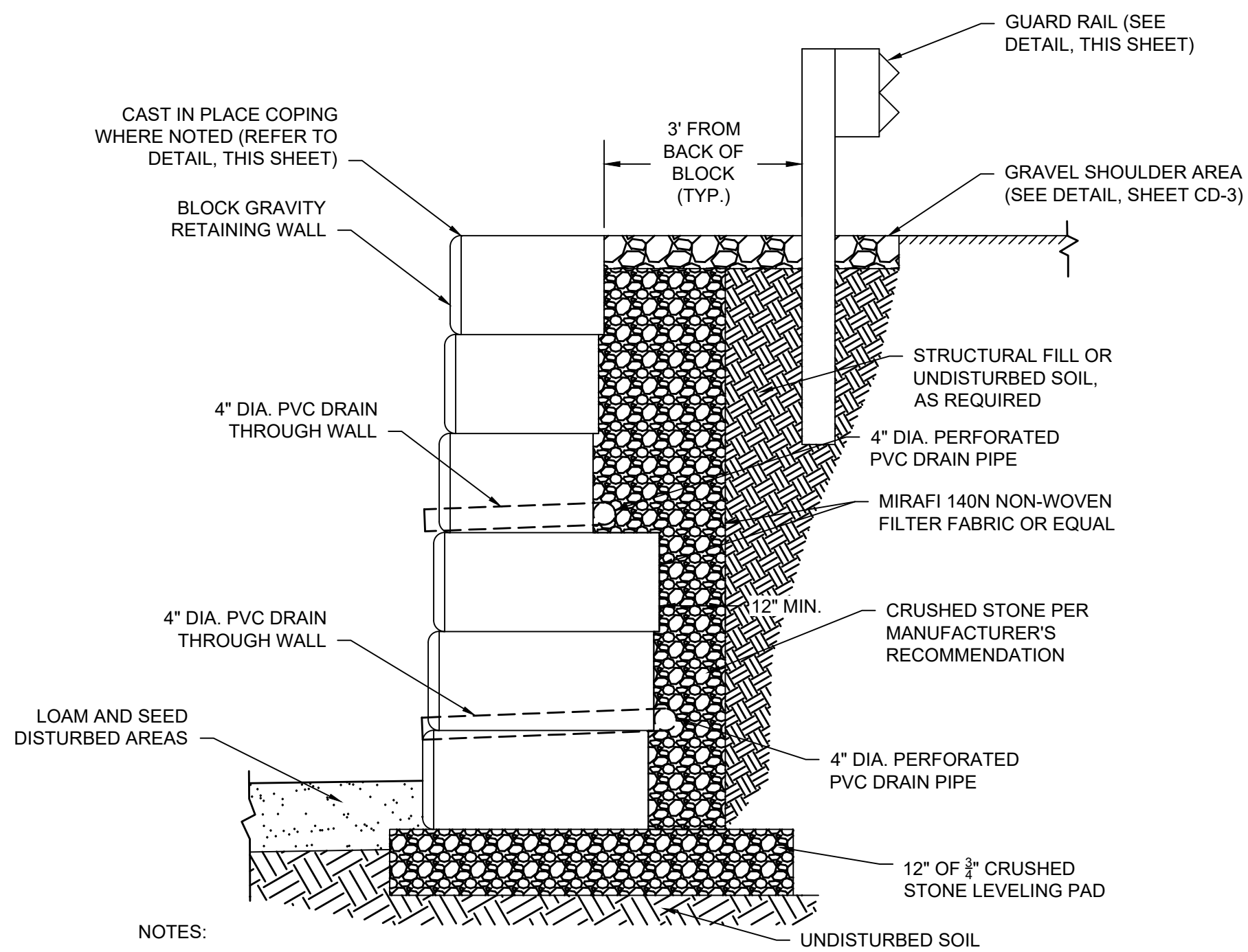
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

CIVIL CONSTRUCTION DETAILS VI

FOR PERMITTING

Sheet No.

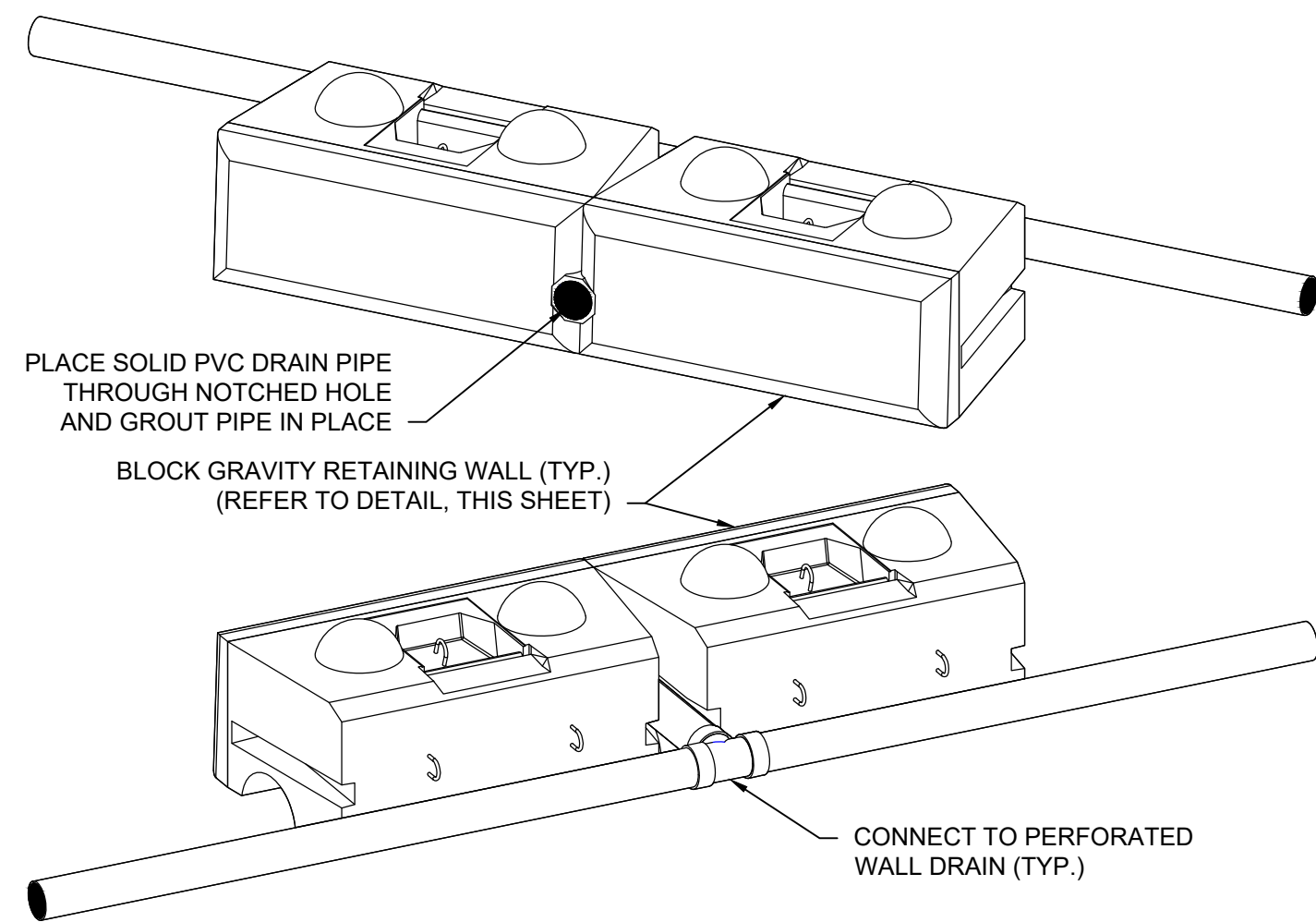
CD-6



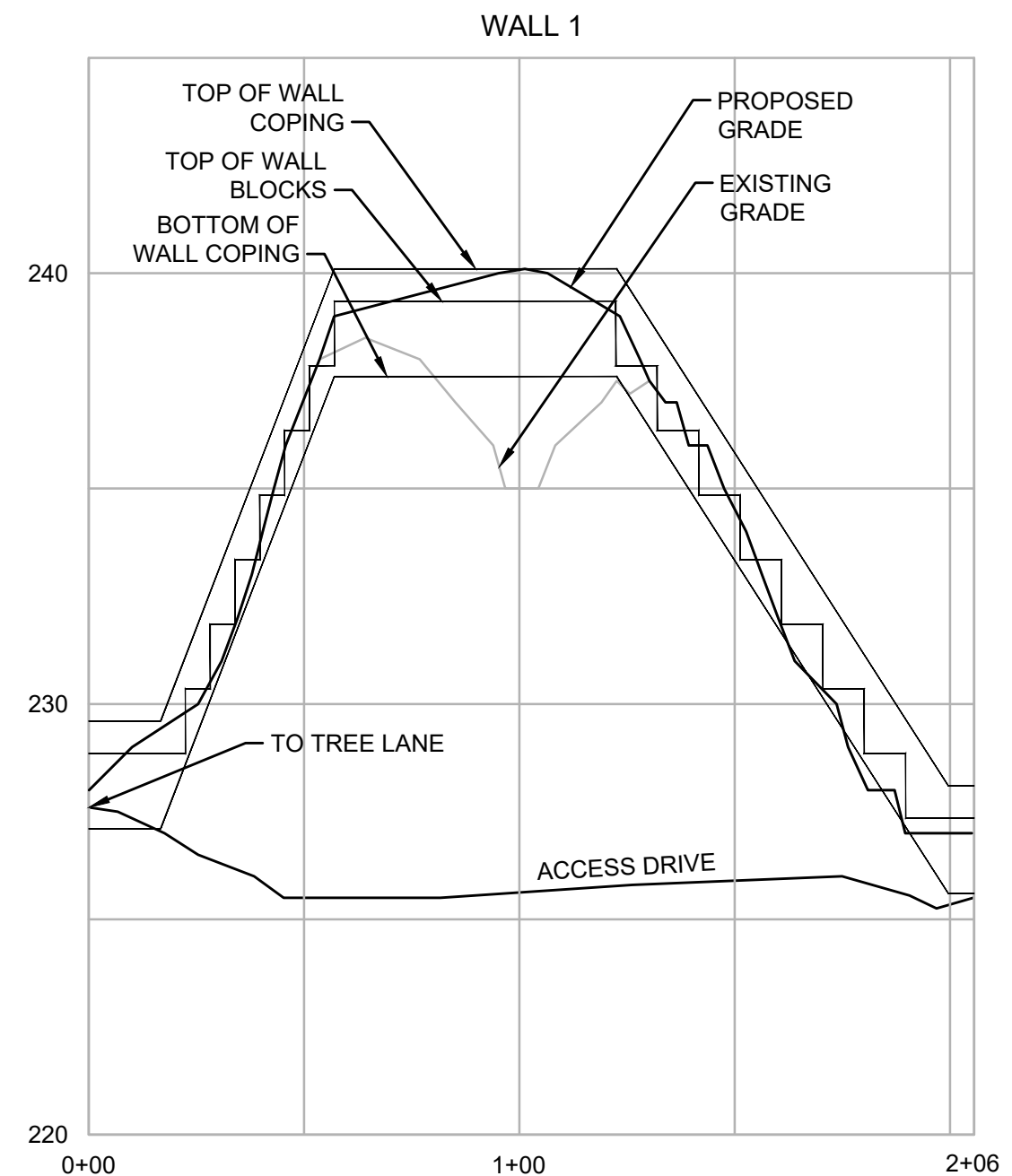
NOTES:

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.

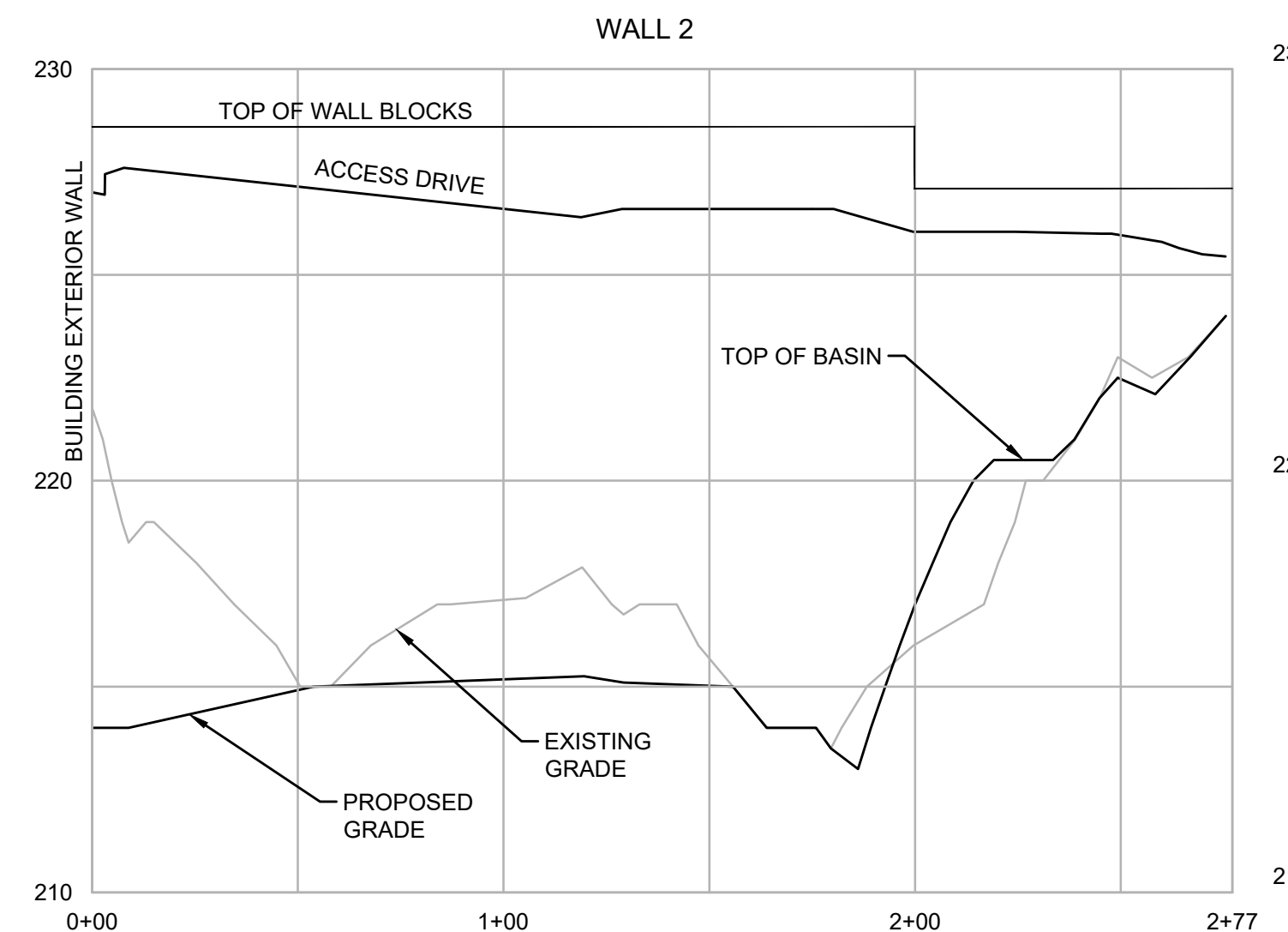
RETAINING WALL DETAIL
HORIZONTAL SCALE: 1"=2'
VERTICAL SCALE: 1"=2'



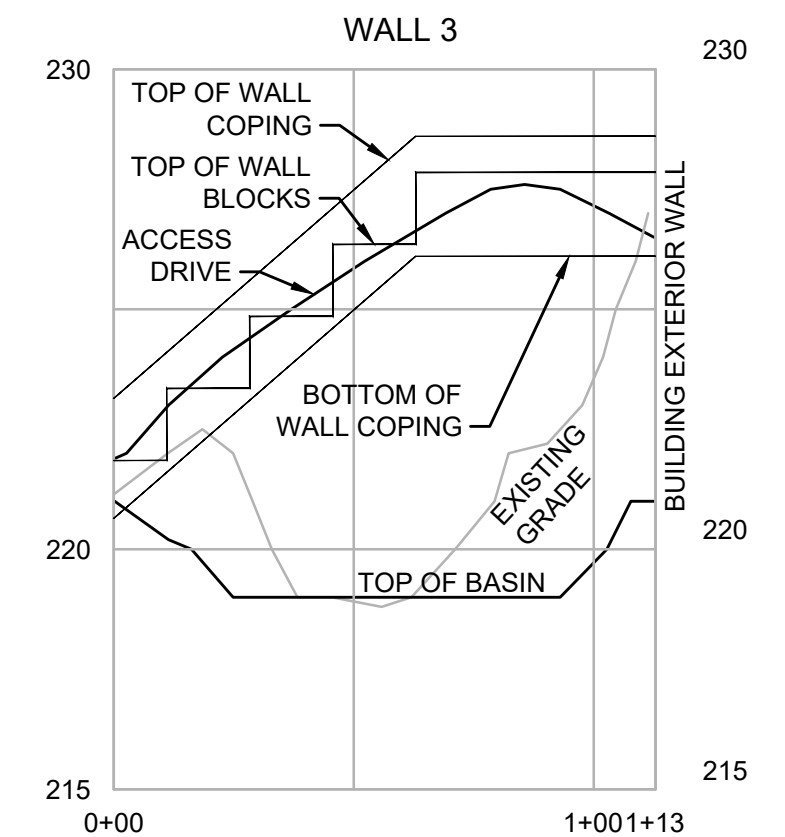
RETAINING WALL WEEP HOLE DETAIL
SCALE: N.T.S.



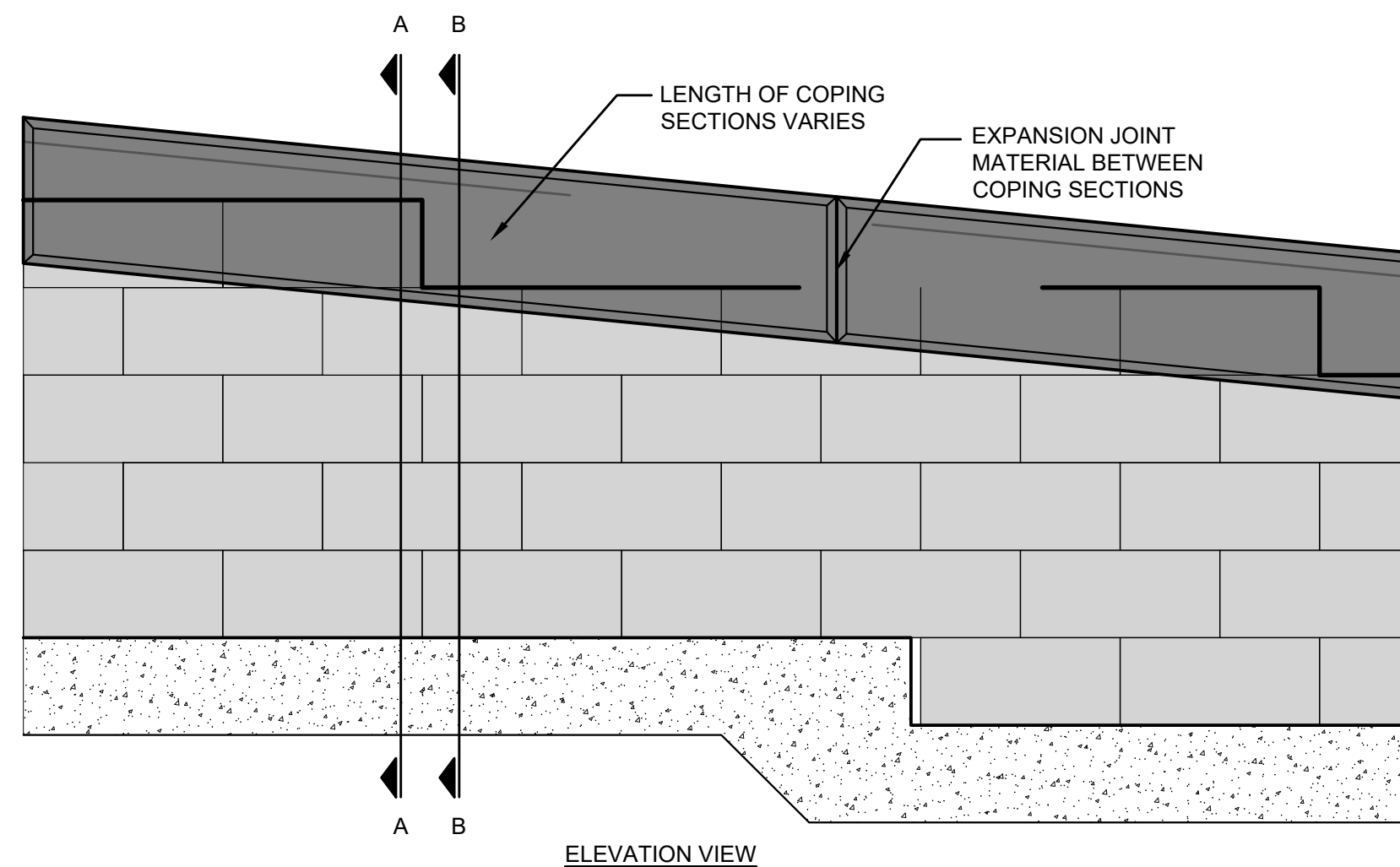
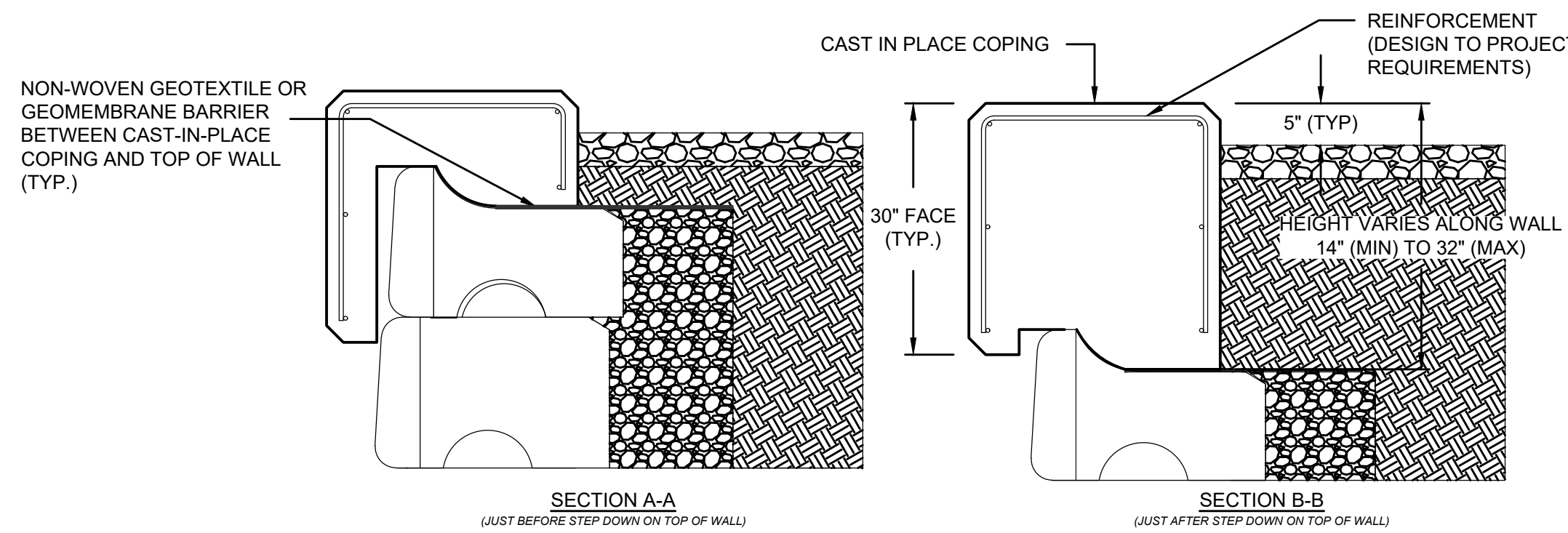
PROFILE
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4' (V)



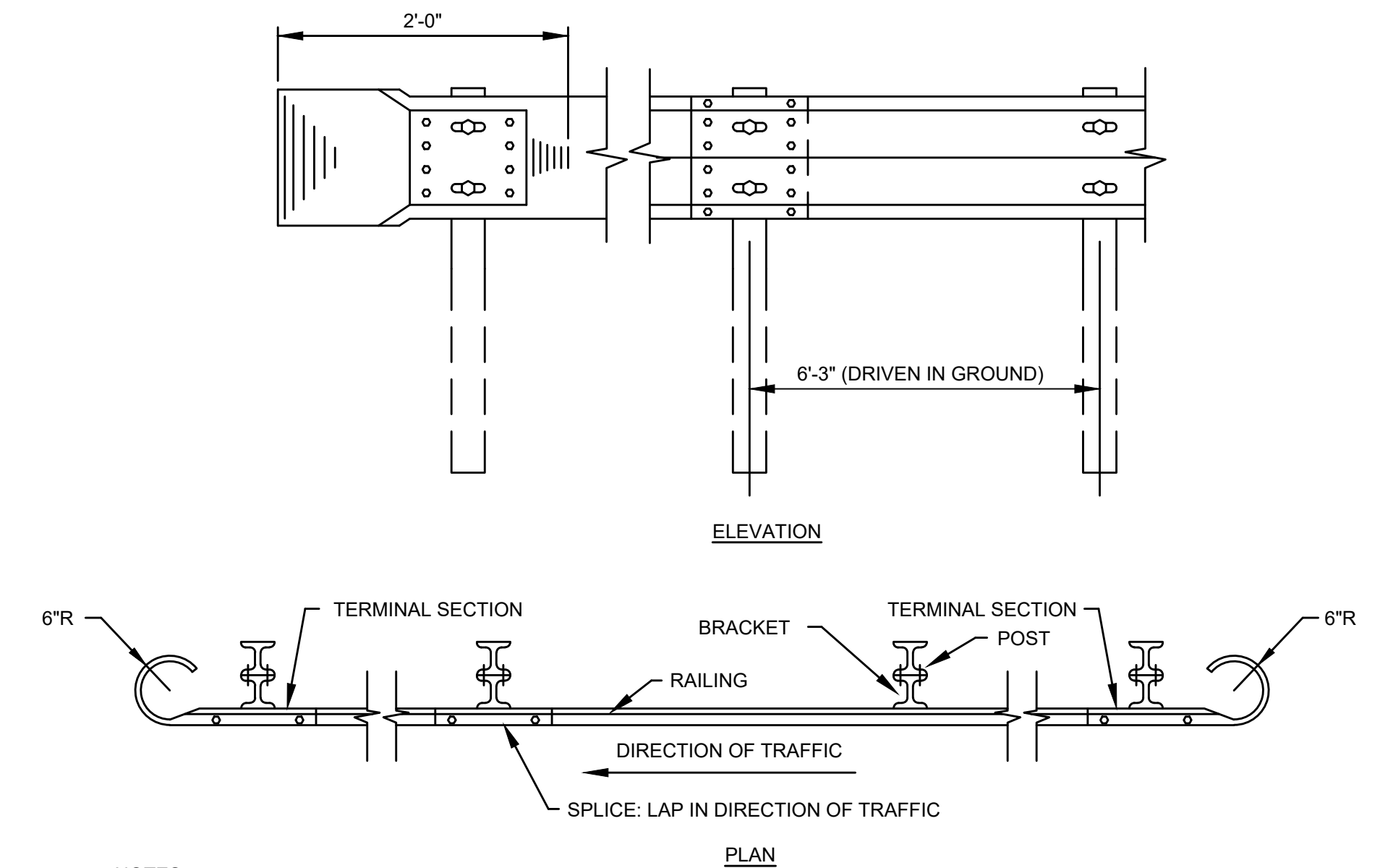
PROFILE
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4' (V)



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



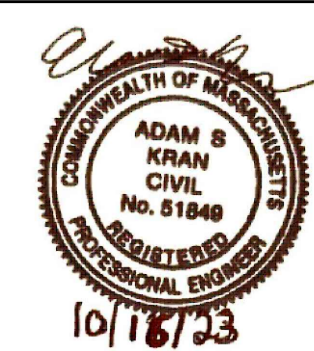
CAST-IN-PLACE COPING DETAIL
SCALE: N.T.S.



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.



MARK	DATE	DESCRIPTION

Scale	NTS
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Job No.	245-2103
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Approved by	ASK

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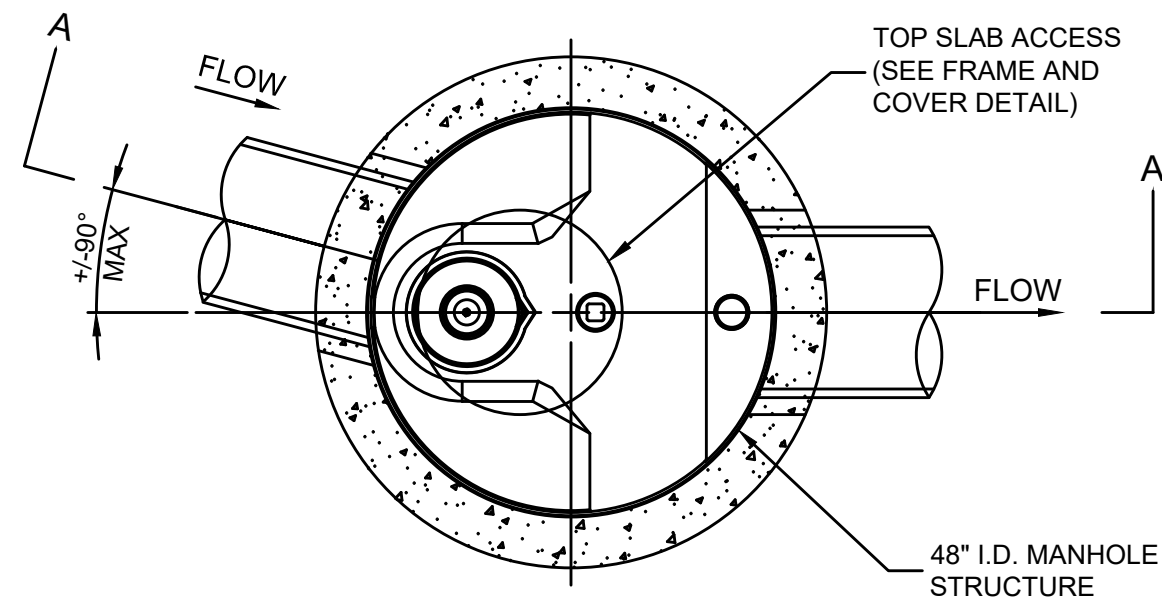
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

CIVIL CONSTRUCTION DETAILS VII

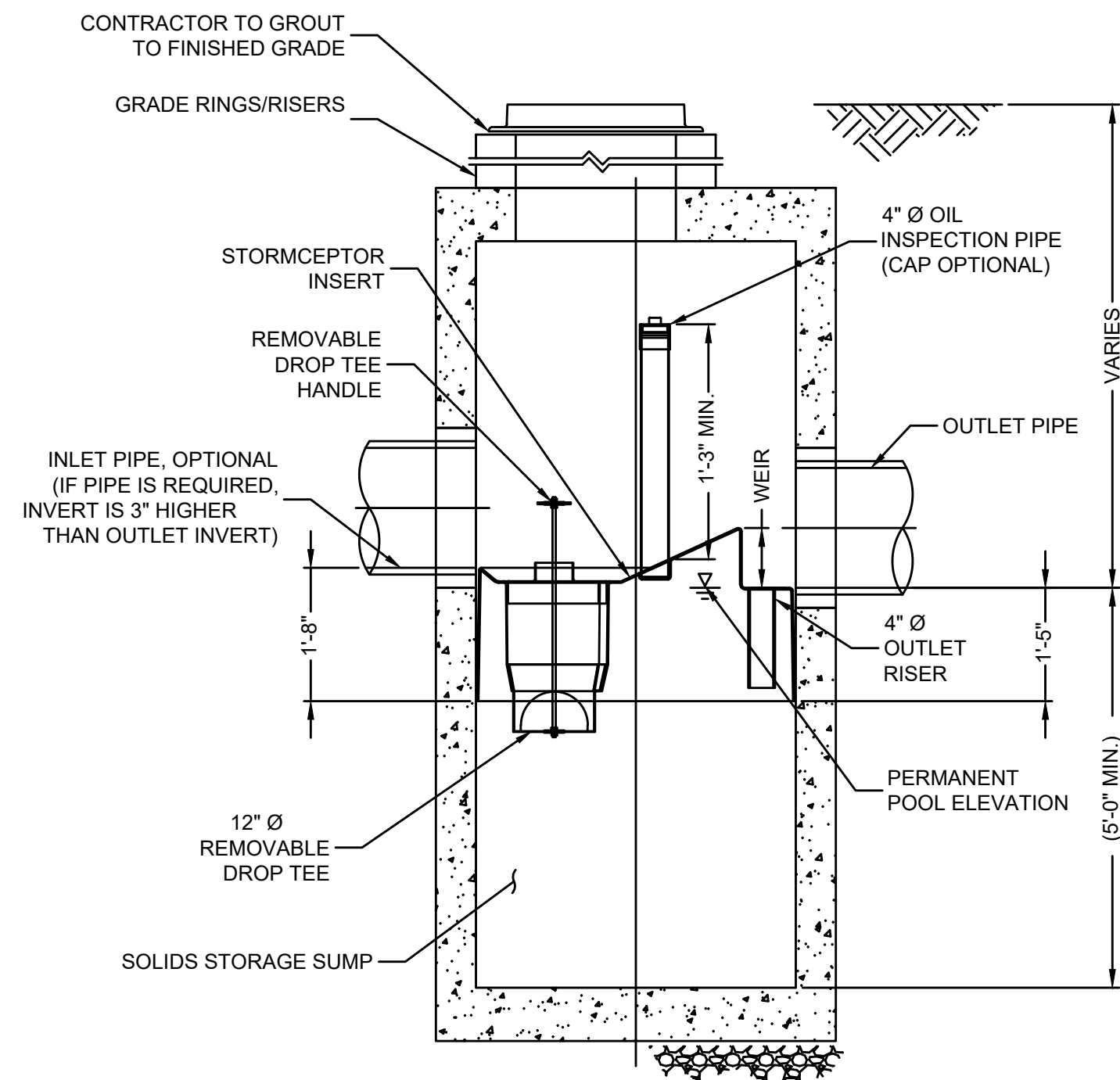
FOR PERMITTING

Sheet No.

CD-7

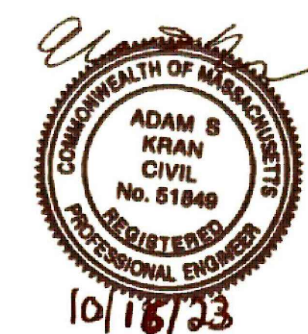


PLAN VIEW
TOP SLAB NOT SHOWN



SECTION A-A

HYDRODYNAMIC SEPARATOR DETAIL
SCALE: N.T.S.



MARK	DATE	DESCRIPTION

Scale	NTS
Date	OCTOBER 2023
Job No.	245-2103
Designed by	JDH
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Checked by	AWCP
Approved by	ASK

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

CIVIL CONSTRUCTION DETAILS VIII

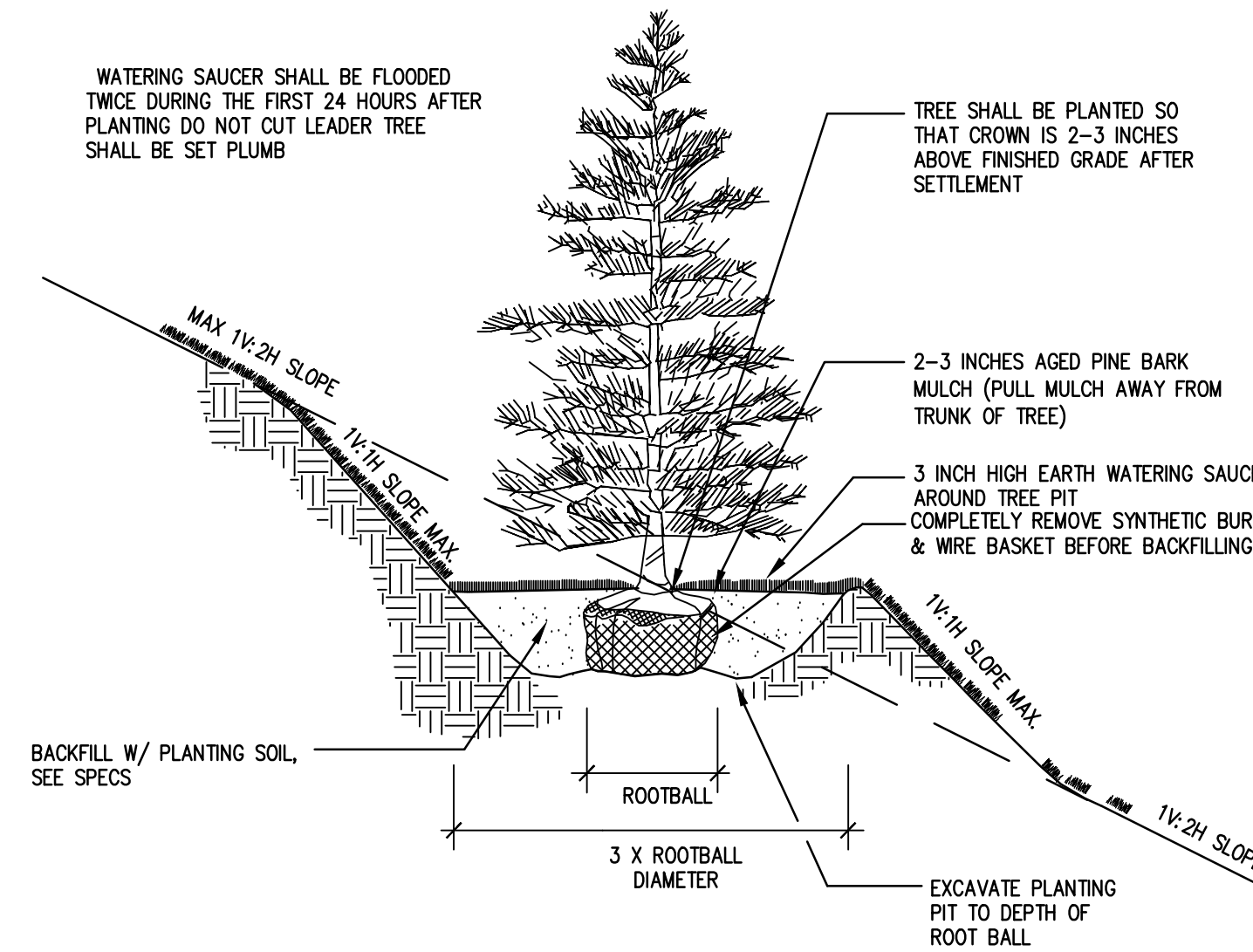
FOR PERMITTING

Sheet No.

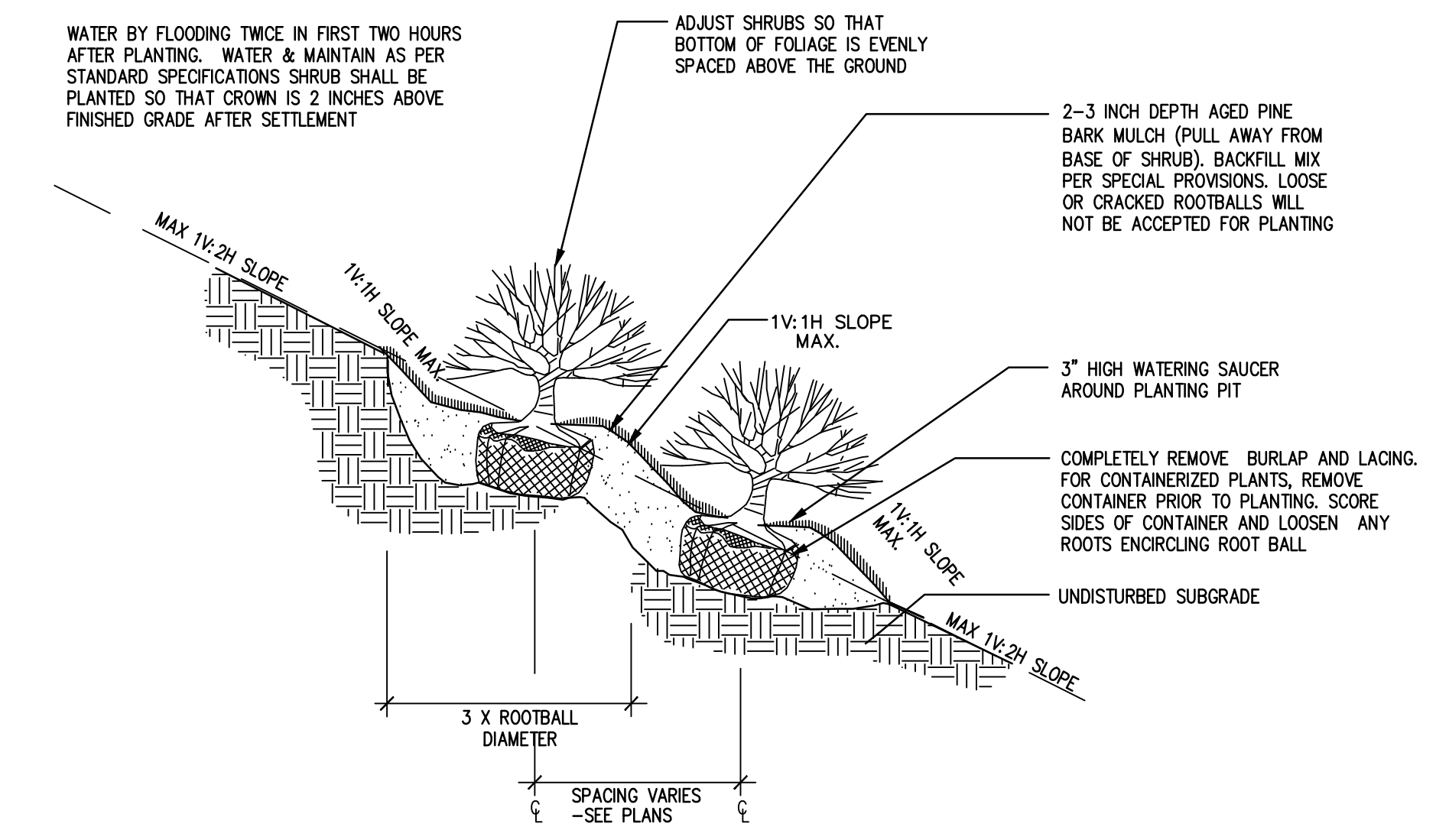
CD-8

PLANTING NOTES

- 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.
- PRIOR TO THE START OF EXCAVATION FOR THE PROJECT BOTH ON AND OF THE SITE, THE CONTRACTOR SHALL NOTIFY DIGSAFE AND BE PROVIDED A DIGSAFE NUMBER INDICATING THAT EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED.
- CONTRACTOR SHALL BEGIN 90 DAY MAINTENANCE PERIOD IMMEDIATELY UPON PLANTING AND WILL CONTINUE UNTIL FINAL ACCEPTANCE.
- CONTRACTOR SHALL VERIFY TREE REMOVALS WITH LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION START.
- CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATIONS, STRUCTURES, AND PLANTING BEDS.
- MAXIMUM SLOPE WITHIN DISTURBED AREAS SHALL NOT EXCEED 3:1, UNLESS OTHERWISE NOTED.
- PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISH GRADE AS TO ORIGINAL GRADES BEFORE DIGGING.
- PLANT MATERIALS SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY "THE AMERICAN STANDARD FOR NURSERY STOCK", PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
- PLANTS TO BE BALLED IN BURLAP OR CONTAINERIZED.
- 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.
- 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.
- THE LANDSCAPE CONTRACTOR SHALL GUARANTEE PLANT MATERIALS FOR ONE (1) FULL YEAR FROM DATE OF ACCEPTANCE. REQUEST THE LANDSCAPE ARCHITECT PROVIDE A WRITTEN LETTER OF ACCEPTANCE UPON COMPLETION OF EACH PHASE.
- PLANT MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT, AT THE NURSERY, AND AT THE SITE.
- LANDSCAPE ARCHITECT TO FLAG TREES TO BE TRANSPLANTED PRIOR TO CONSTRUCTION START.
- AREAS OF THE SITE WHICH HAVE BEEN DISTURBED AND NOT OTHERWISE DEVELOPED SHALL BE LOAMED WITH TOPSOIL TO A MINIMUM DEPTH OF 6", AND SEEDED WITH A MIX CONSISTING OF 40% PERENNIAL RYE GRASS; 30% CHEWINGS FESCUE; 30% KENTUCKY BLUEGRASS.
- 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.
- THERE SHALL BE NO SUBSTITUTION OF PLANT SPECIES WITHOUT AUTHORIZATION BY THE LANDSCAPE ARCHITECT.
- NO PLANTING SHALL BE INSTALLED BEFORE ACCEPTANCE OF ROUGH GRADING.
- PLANTS TO BE THOROUGHLY WATERED AFTER INSTALLATION, AT LEAST TWICE WITHIN THE FIRST 24 HOURS.

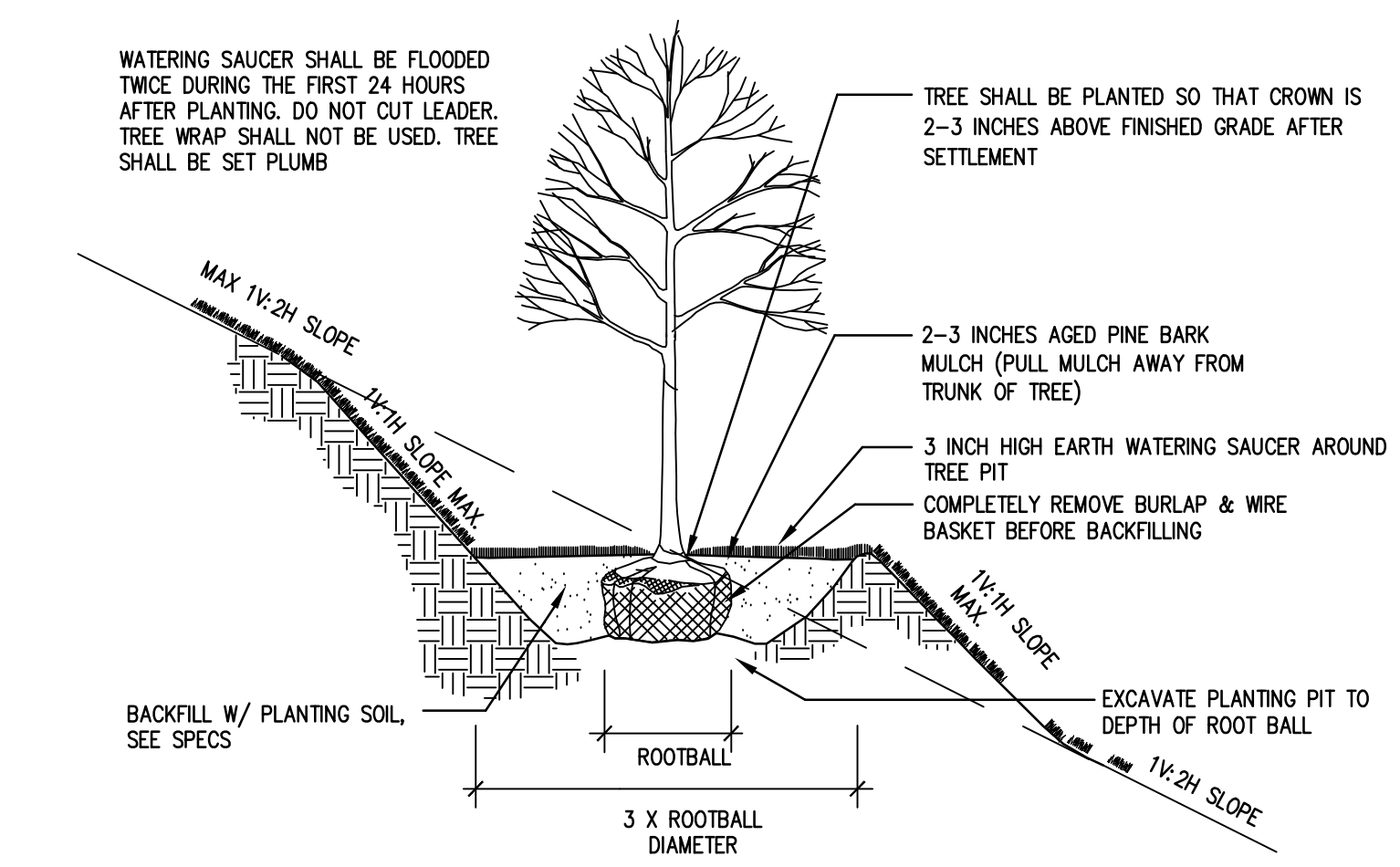


○ EVERGREEN TREE PLANTING (SLOPE)
NOT TO SCALE



○ CONTAINERIZED SHRUB PLANTING (SLOPE) DETAIL
NOT TO SCALE

PLANTING SCHEDULE					
PLANT TYPE	QTY.	COMMON NAME	LATIN NAME	SIZE	NOTES
Trees					
	4	Pink Flowering Dogwood	Cornus florida var. rubra	7/8'	B&B, symmetrical
Conifers					
	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					
	6	Arrowwood Viburnum	Viburnum dentatum	10 Gal.	Container
	8	Black Chokeberry	Aronia melanocarpa	7 Gal.	Container
	7	Elder	Sambucus canadensis	10 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



○ DECIDUOUS TREE PLANTING (SLOPE)
NOT TO SCALE



MARK	DATE	DESCRIPTION

Scale	NTS
Date	OCTOBER 2023
Job No.	23-17
Designed by	
Drawn by	KC
Checked by	MR
Approved by	

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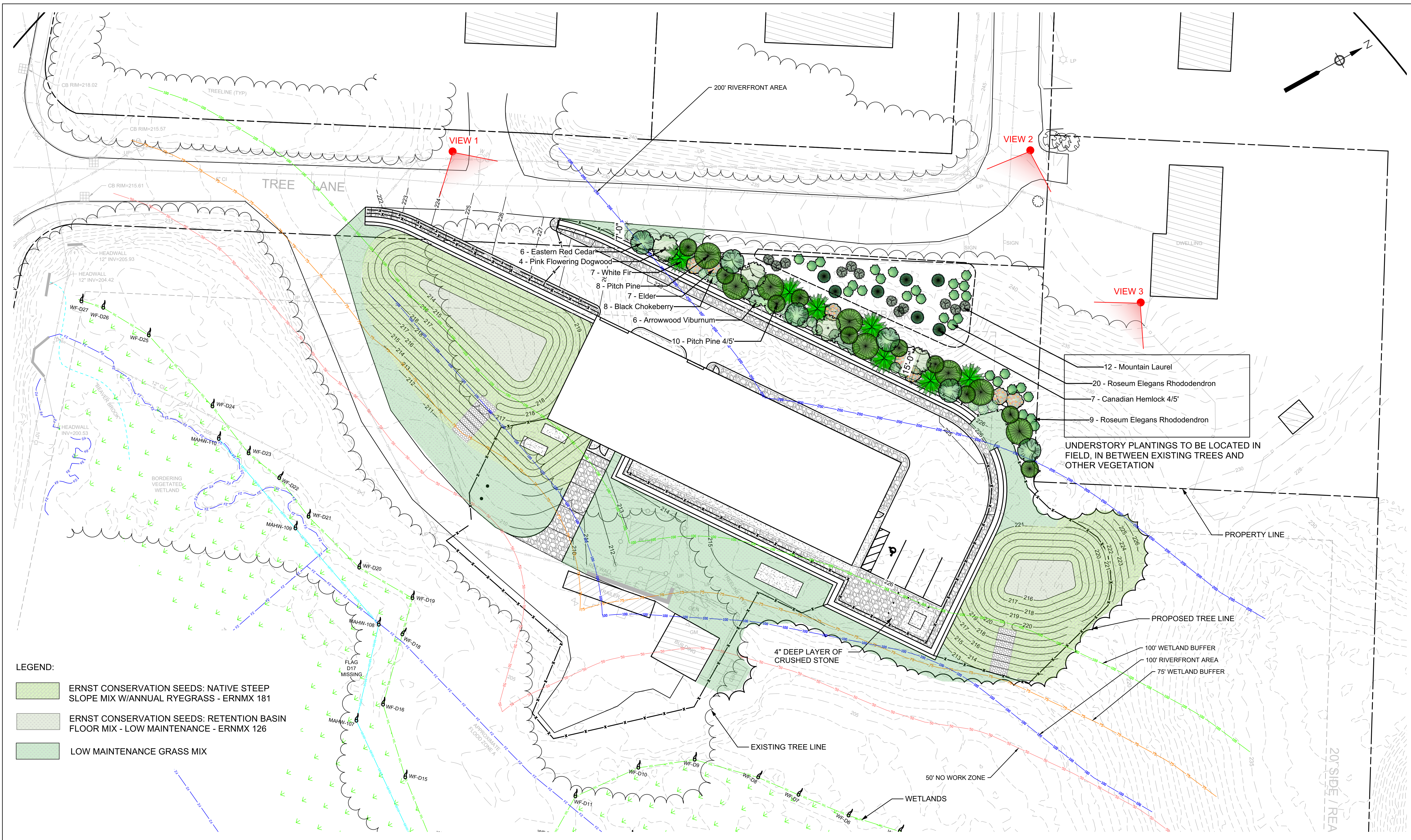
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA




PLANTING NOTES, DETAILS AND SCHEDULE

FOR PERMITTING

Sheet No.

L-0



- LEGEND:**
-  ERNST CONSERVATION SEEDS: NATIVE STEEP SLOPE MIX W/ANNUAL RYEGRASS - ERNMX 181
 -  ERNST CONSERVATION SEEDS: RETENTION BASIN FLOOR MIX - LOW MAINTENANCE - ERNMX 126
 -  LOW MAINTENANCE GRASS MIX



MARK	DATE	DESCRIPTION

Scale	1"=20'-0"
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Job No.	23-17
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PLANTING PLAN

FOR PERMITTING
Sheet No.
L-1

TREES



Canadian Hemlock
Tsuga canadensis

N ● H40'-70' x W25'-35'



Eastern Red Cedar
Juniperus virginiana

N ● H30'-65' x W8'-25'



Pitch Pine
Pinus rigida

N ● H40'-60' x W30'-50'



Pink Flowering Dogwood
Cornus florida var. rubra

N H15'-30' x W15'-30'



White Fir
Abies concolor

N ● H40'-70' x W20'-30'

SHRUBS



American Elder
Sambucus canadensis

N H5'-12' x W6'-10'



American Elder - Flower
Sambucus canadensis



American Elder - Fruit
Sambucus canadensis



Mountain Laurel
Kalmia latifolia

N ● H5'-15' x W5'-15'



Black Chokeberry
Aronia melanocarpa

N H3'-6' x W3'-6'



Black Chokeberry - Fruit
Aronia melanocarpa



Black Chokeberry - Fall Color
Aronia melanocarpa



Roseum Elegans Rhododendron
Rhododendron catawbiense
'Roseum Elegans'

● H6'-8' x W6'-8'



Arrowwood Viburnum
Viburnum dentatum

N H6'-10' x W6'-10'



Arrowwood Viburnum - Fruit
Viburnum dentatum



Arrowwood Viburnum - Fall Color
Viburnum dentatum

LEGEND:

- N NATIVE
- EVERGREEN

MIXES



LOW MAINTENANCE GRASS MIX



ERNST CONSERVATION SEEDS: NATIVE STEEP SLOPE MIX
W/ ANNUAL RYEGRASS - ERNMX 181



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



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Job No.	23-17
Designed by	
Drawn by	KC
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Approved by	

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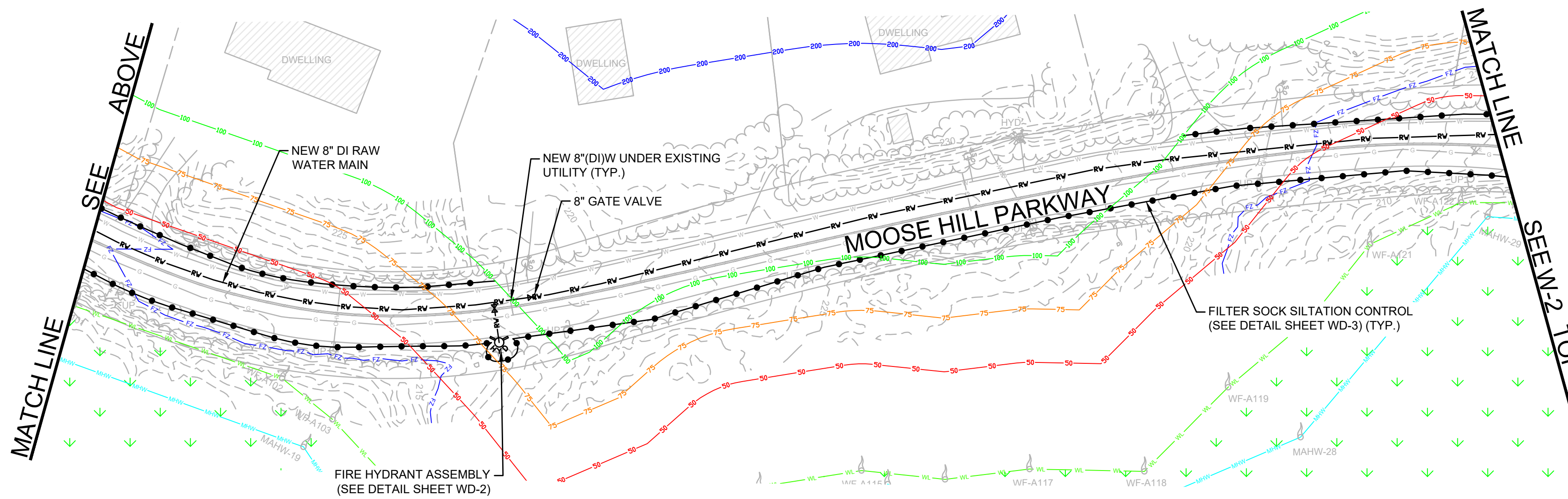
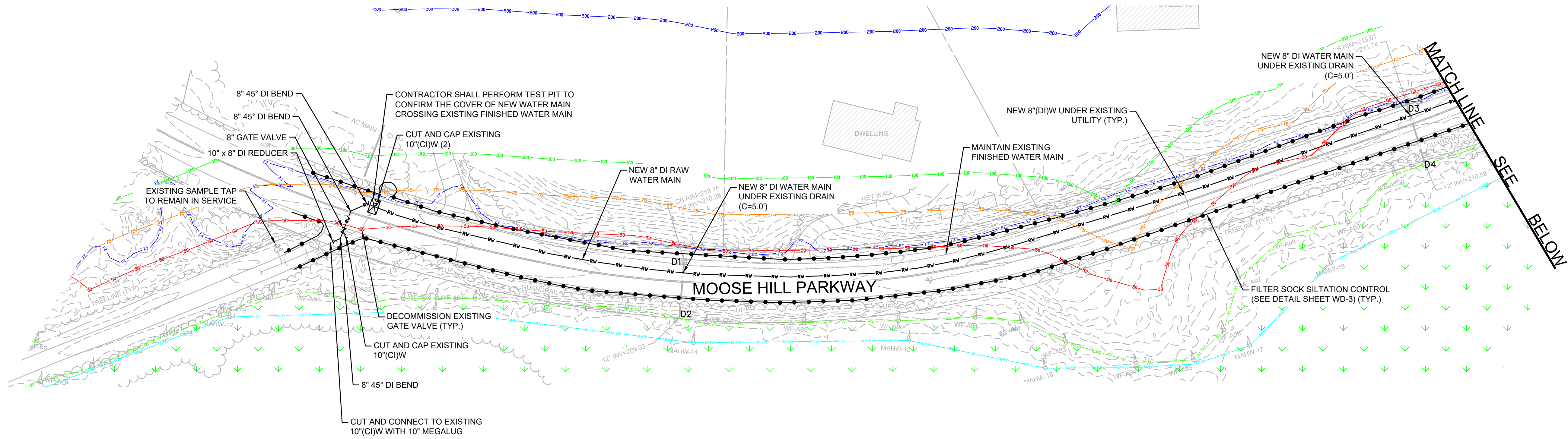
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PLANTING PALETTE

FOR PERMITTING

Sheet No.

L-2



NOTE:
1. THE AREA SHOWN IN THIS VIEWPORT IS WITHIN THE ZONE II WETLAND PROTECTION AREA (WPA).

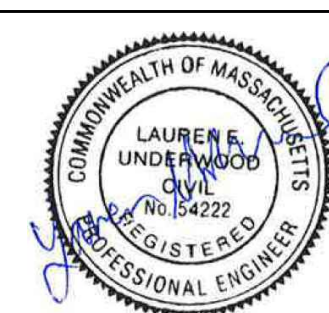
PLAN
SCALE: 1"=40'

RESOURCE AREA IMPACTS (SHOWN ON SHEET W-1 UPPER and W-1 LOWER)									
	100-ft BVW Buffer Zone	75-ft BVW Buffer Zone	50-ft BVW Buffer Zone	Total BVW Buffer Zone	Bordering Vegetated Wetland (BVW)	Bordering Land Subject to Flooding	200-ft Riverfront Area	100-ft Riverfront Area	Total Riverfront Area
Permanent	-	-	-	-	-	-	-	-	-
Temporary	500	1,332	2,872	4,704	-	3,636	1,248	4,636	5,884
Total	500	1,332	2,872	4,704	-	3,636	1,248	4,636	5,884

MOOSE HILL PARKWAY DRAINAGE DEPTH TO INVERT	
D1	= INV. 2.8' 12"(UNK.)D
D2	= INV. 4.0' 12"(UNK.)D
D3	= INV. 3.9' 12"(UNK.)D
D4	= INV. 5.0' 12"(UNK.)D



ENVIRONMENTAL PARTNERS
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10/16/23 MARK DATE DESCRIPTION

Scale	1" = 40'
Date	OCTOBER 2023
Job No.	245-2103
Designed by	SBS
Drawn by	SBS
Checked by	LEU
Approved by	ASK

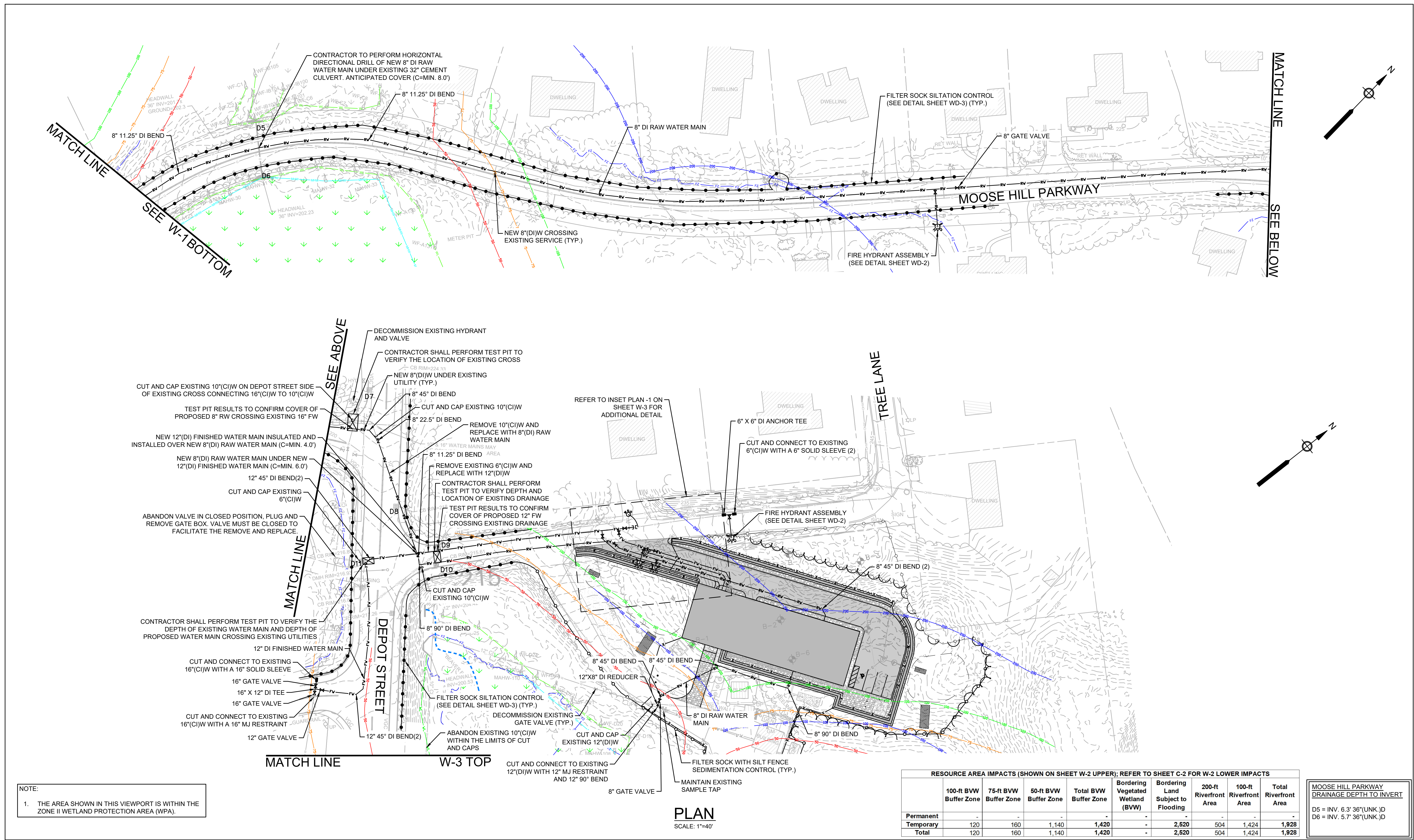
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

WATER MAIN PLAN I

FOR PERMITTING
Sheet No.

W-1



NOTE:
 1. THE AREA SHOWN IN THIS VIEWPORT IS WITHIN THE ZONE II WETLAND PROTECTION AREA (WPA).

RESOURCE AREA IMPACTS (SHOWN ON SHEET W-2 UPPER); REFER TO SHEET C-2 FOR W-2 LOWER IMPACTS									
	100-ft BVW Buffer Zone	75-ft BVW Buffer Zone	50-ft BVW Buffer Zone	Total BVW Buffer Zone	Bordering Vegetated Wetland (BVW)	Bordering Land Subject to Flooding	200-ft Riverfront Area	100-ft Riverfront Area	Total Riverfront Area
Permanent	-	-	-	-	-	-	-	-	-
Temporary	120	160	1,140	1,420	-	2,520	504	1,424	1,928
Total	120	160	1,140	1,420	-	2,520	504	1,424	1,928

MOOSE HILL PARKWAY DRAINAGE DEPTH TO INVERT
 D5 = INV. 6.3' 36"(UNK.)
 D6 = INV. 5.7' 36"(UNK.)

PLAN
 SCALE: 1"=40'



MARK	DATE	DESCRIPTION

Scale	1" = 40'
Date	OCTOBER 2023
Job No.	245-2103
Designed by	SBS
Drawn by	SBS
Checked by	LEU/DNP
Approved by	ASK

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

FOR PERMITTING

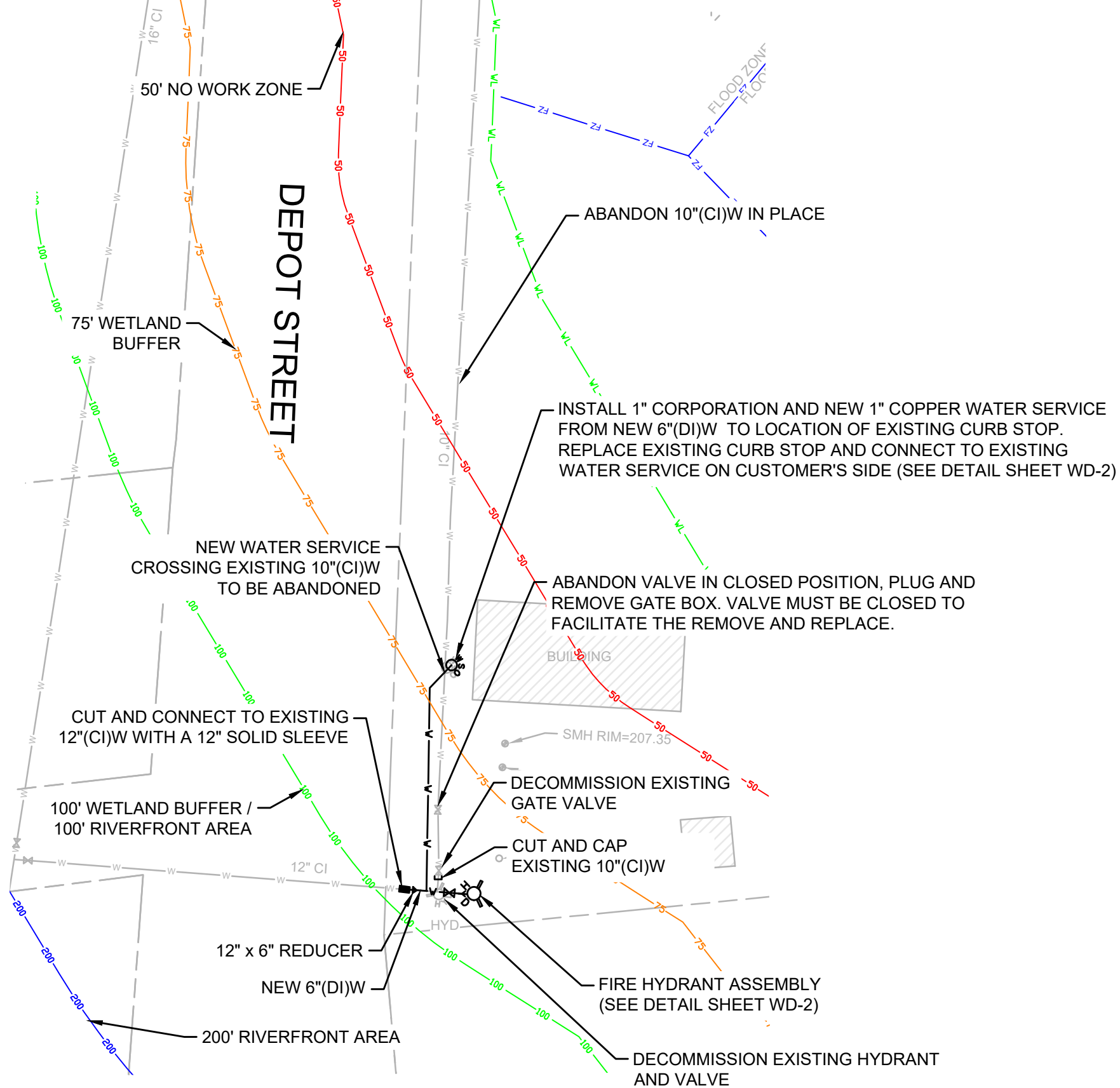
Sheet No.

W-2

WATER MAIN PLAN II

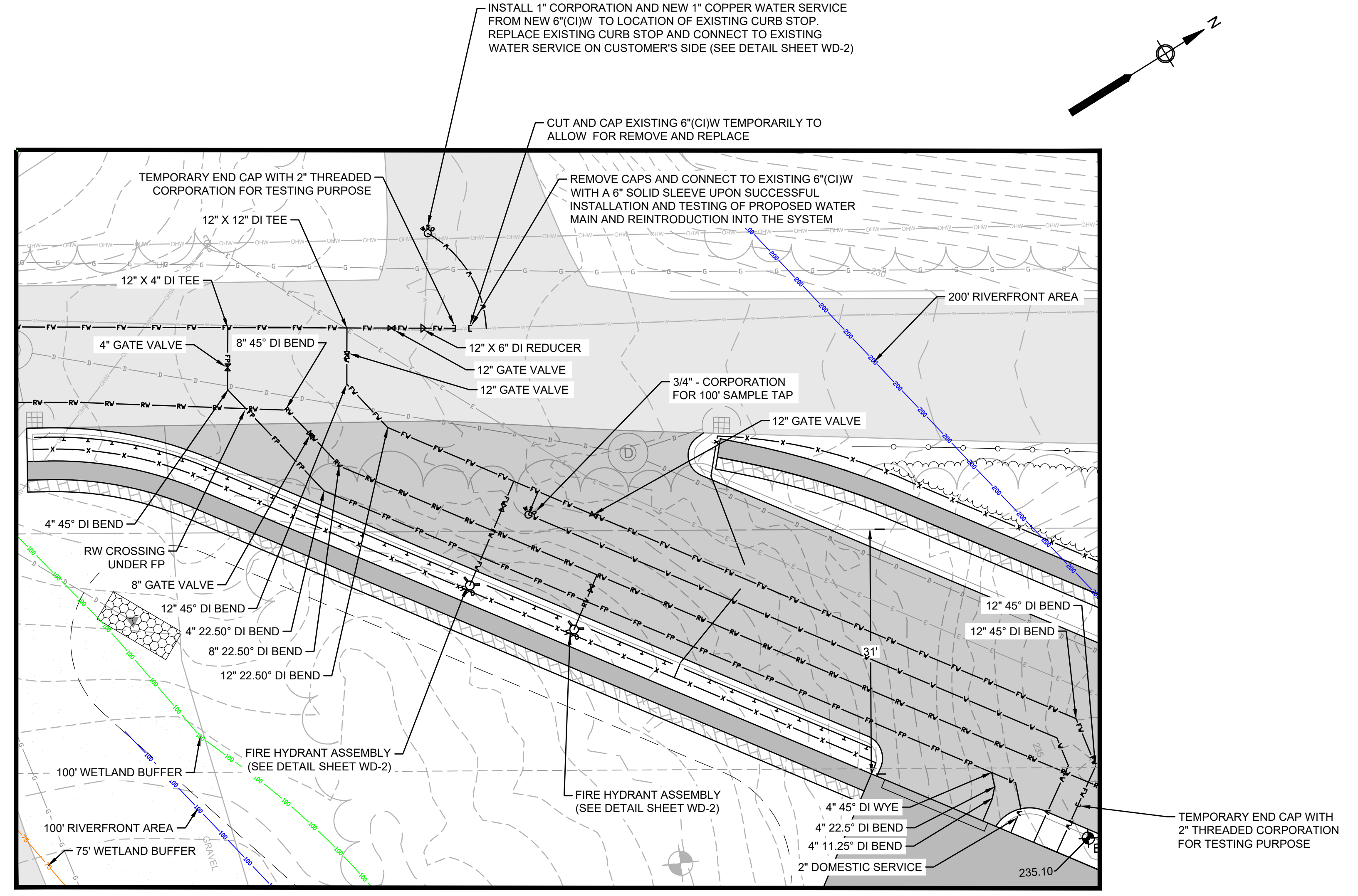
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MATCH LINE SEE W-2 BOTTOM



PLAN
SCALE: 1"=40'

NOTE:
1. THE AREA SHOWN IN THIS VIEWPORT IS WITHIN THE ZONE II WETLAND PROTECTION AREA (WPA).



INSET PLAN -1
SCALE: 1"=10'

RESOURCE AREA IMPACTS (SHOWN ON SHEET W-3)									
	100-ft BVW Buffer Zone	75-ft BVW Buffer Zone	50-ft BVW Buffer Zone	Total BVW Buffer Zone	Bordering Vegetated Wetland (BVW)	Bordering Land Subject to Flooding	200-ft Riverfront Area	100-ft Riverfront Area	Total Riverfront Area
Permanent	-	-	-	-	-	-	-	-	-
Temporary	84	15	-	99	-	-	-	99	99
Total	84	15	-	99	-	-	-	99	99



10/16/23 MARK DATE DESCRIPTION

Scale	1" = 40'
Date	OCTOBER 2023
Job No.	245-2103
Designed by	SBS
Drawn by	SBS
Checked by	LEU
Approved by	ASK

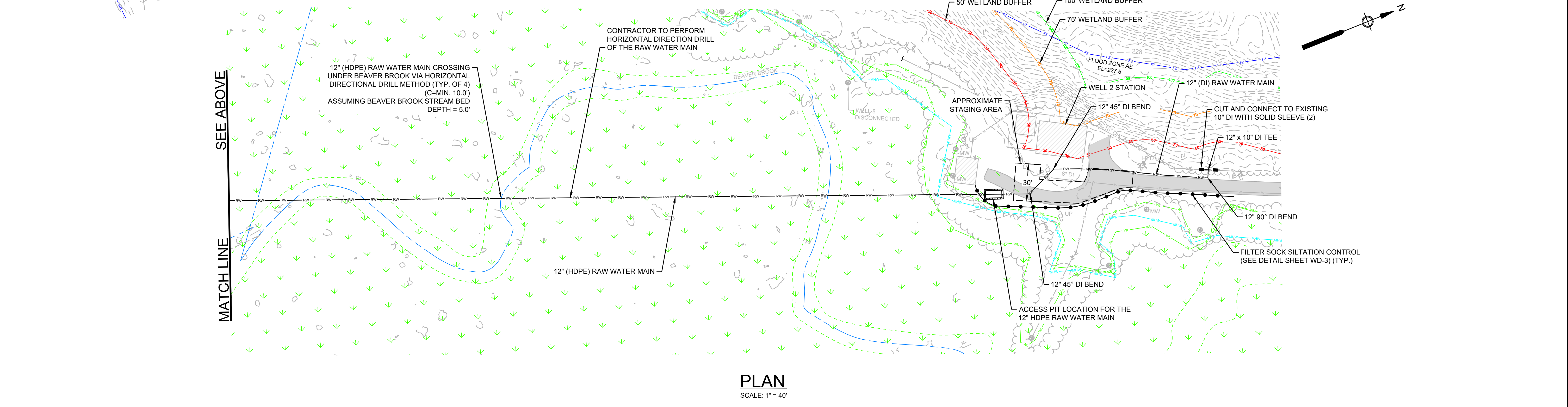
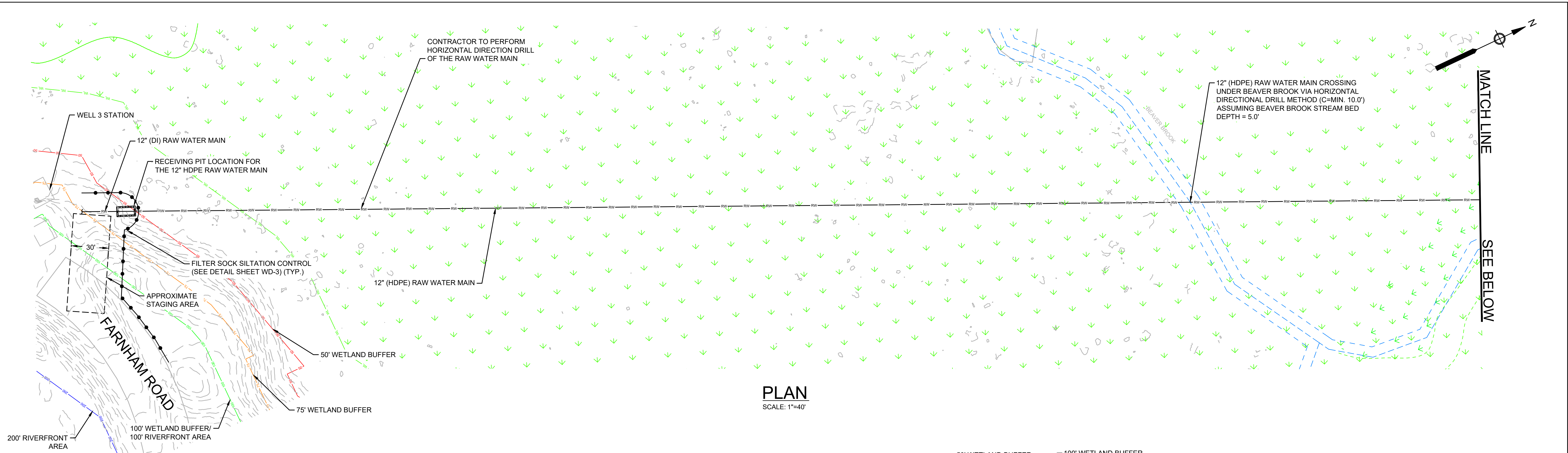
THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

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

WATER MAIN PLAN III

FOR PERMITTING
Sheet No.

W-3



RESOURCE AREA IMPACTS (SHOWN ON SHEET W-4 UPPER AND W-4 LOWER)									
	100-ft BVW Buffer Zone	75-ft BVW Buffer Zone	50-ft BVW Buffer Zone	Total BVW Buffer Zone	Bordering Vegetated Wetland (BVW)	Bordering Land Subject to Flooding	200-ft Riverfront Area	100-ft Riverfront Area	Total Riverfront Area
Permanent	-	-	-	-	-	-	-	-	-
Temporary	848	434	2,929	4,211	-	4,211	1,376	4,211	5,587
Total	848	434	2,929	4,211	-	4,211	1,376	4,211	5,587



ENVIRONMENTAL PARTNERS
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MARK	DATE	DESCRIPTION

Scale	1" = 40'
Date	OCTOBER 2023
Job No.	245-2103
Designed by	SBS
Drawn by	SBS
Checked by	LEU
Approved by	ASK

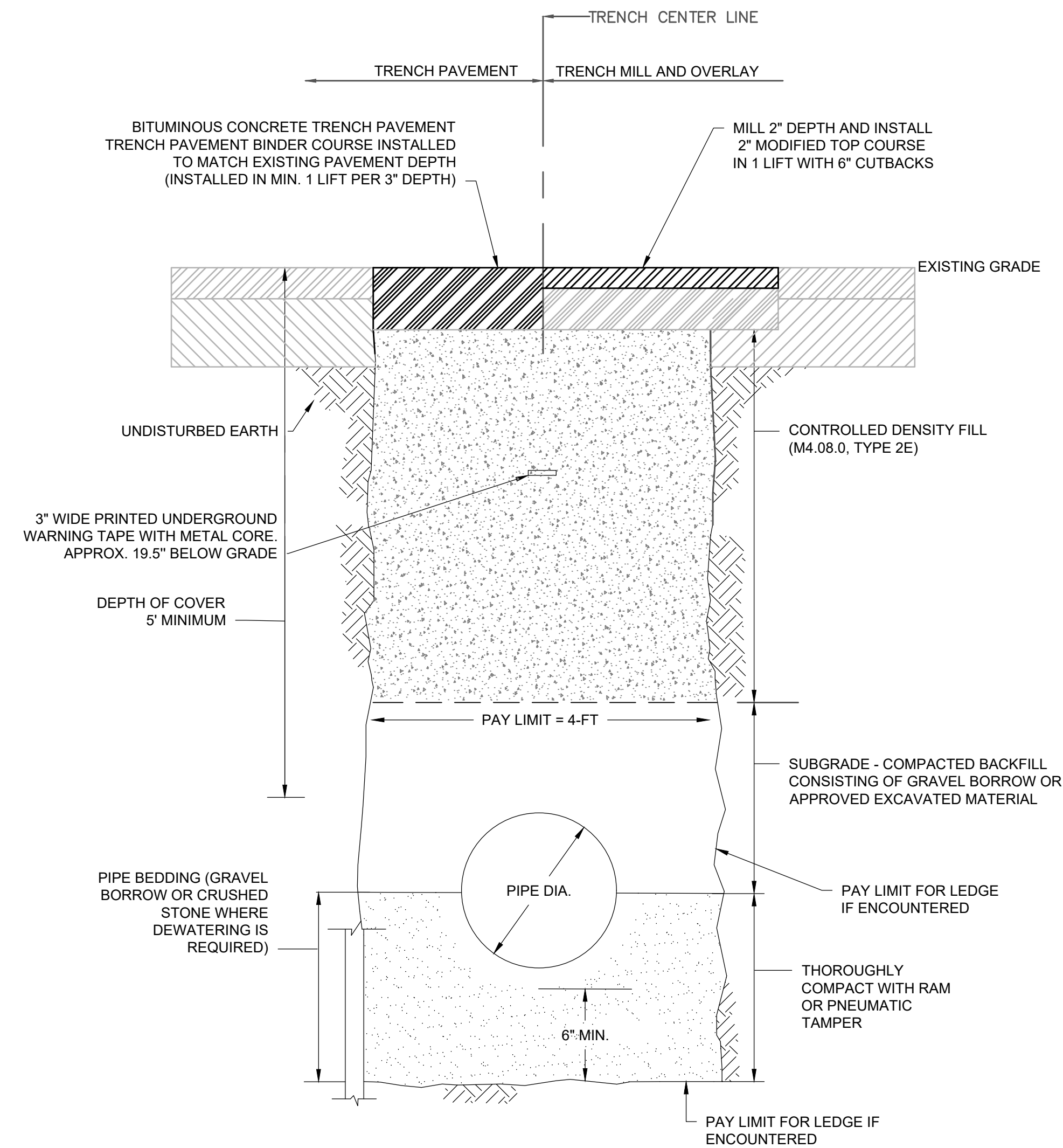
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**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

**WELL 2 AND 3 HORIZONTAL DIRECTIONAL DRILL
PLAN**

FOR PERMITTING
Sheet No.
W-4

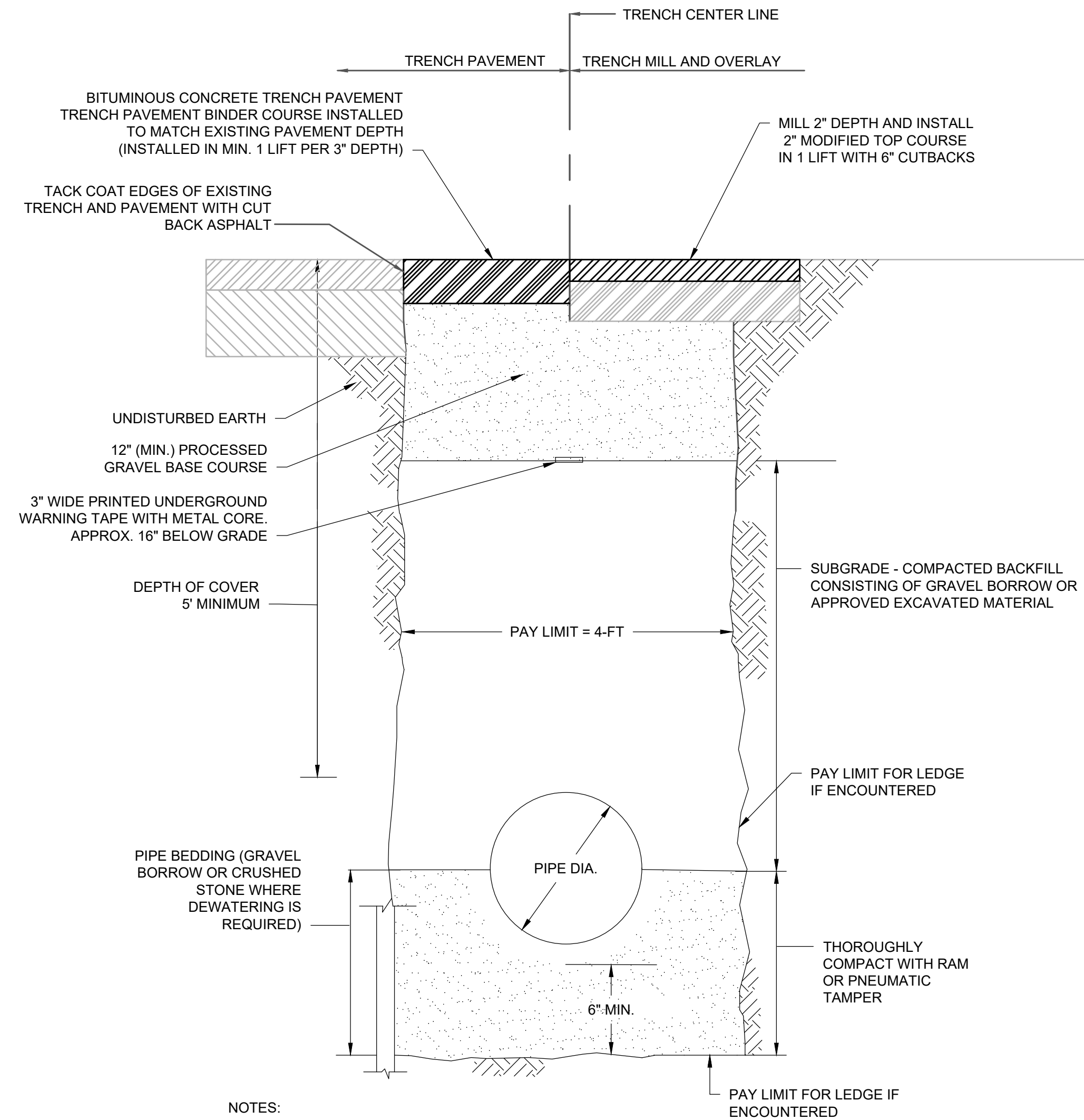
Drawing file: I:\Sharon, MA, 245245-2103 Well 4 PFAS Treatment System\05 Final Design\InfilWater Main\HDD\CD\Well 3 Site.dwg Plot Date: Oct 17, 2023 11:50am



NOTES:

- PAVEMENT INSTALLED BEYOND PAYMENT LINE MUST BE PRE-APPROVED BY THE ENGINEER.
- THE FINISHED SURFACE OF THE TRENCH PAVEMENT, AFTER COMPACTION, SHALL BE TRUE TO THE ESTABLISHED LINE AND GRADE OF THE EXISTING PAVEMENT.
- TRENCH PAVEMENT SHALL BE MACHINE LAID UTILIZING A SIDEWALK BOX SPREADER OR EQUAL; NO HAND WORK IS ALLOWED.
- 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.

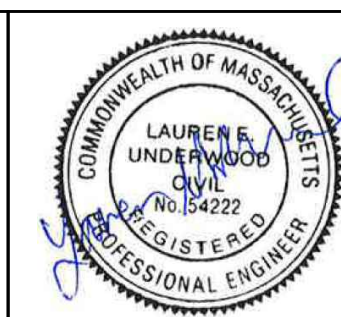
**UPLAND ROAD/DEPOT STREET
TRENCH DETAIL**
SCALE: N.T.S.



NOTES:

- PAVEMENT INSTALLED BEYOND PAYMENT LINE MUST BE PRE-APPROVED BY THE ENGINEER.
- THE FINISHED SURFACE OF THE MIXTURE, AFTER COMPACTION, SHALL BE TRUE TO THE ESTABLISHED LINE AND GRADE OF THE EXISTING PAVEMENT.
- TRENCH PAVEMENT SHALL BE MACHINE LAID UTILIZING A SIDEWALK BOX SPREADER OR EQUAL; NO HAND WORK IS ALLOWED.
- 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 TRENCH DETAIL
SCALE: N.T.S.



10/16/23

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	OCTOBER 2023
Job No.	245-2103
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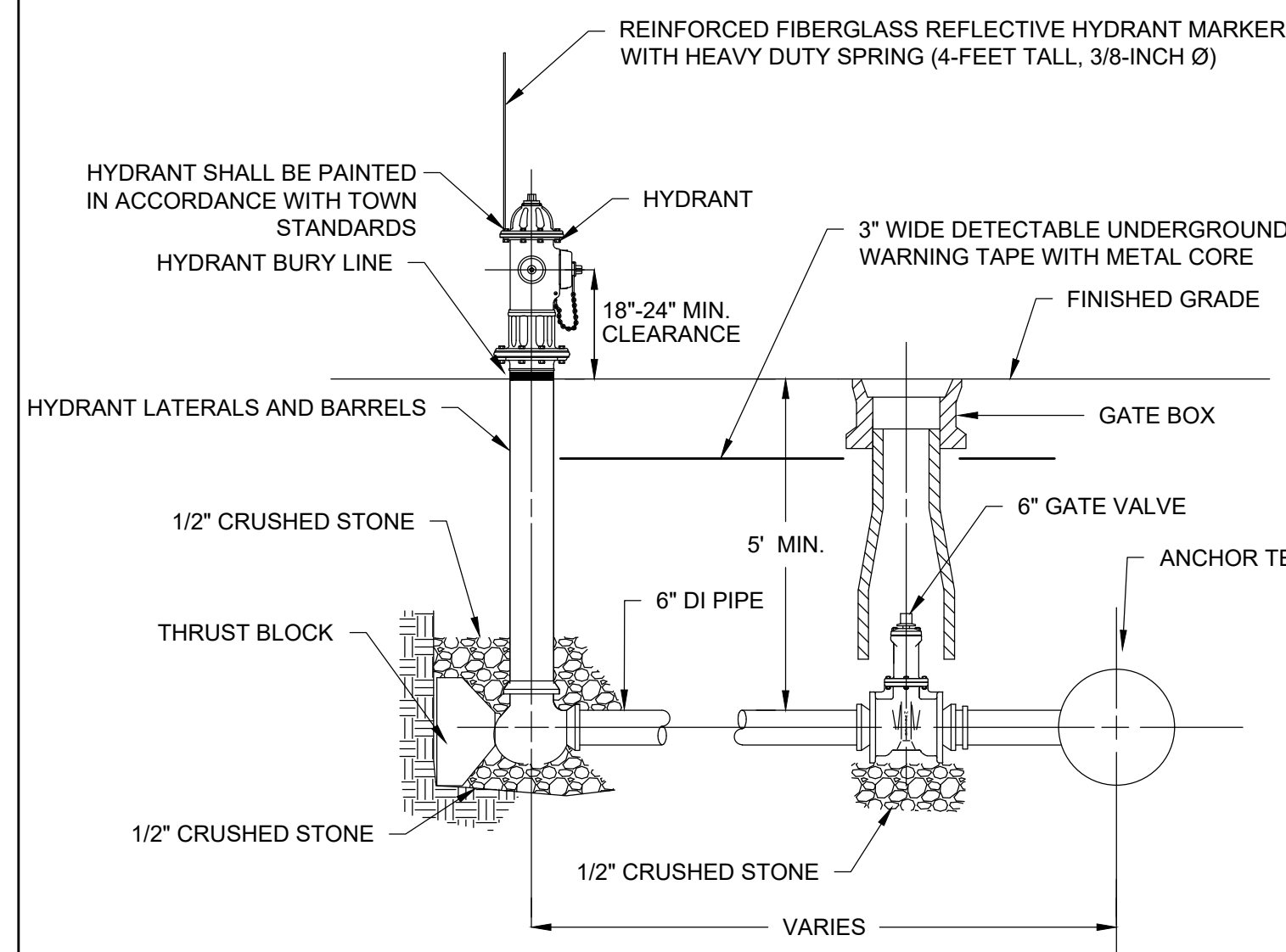
THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

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

WATER MAIN DETAILS I

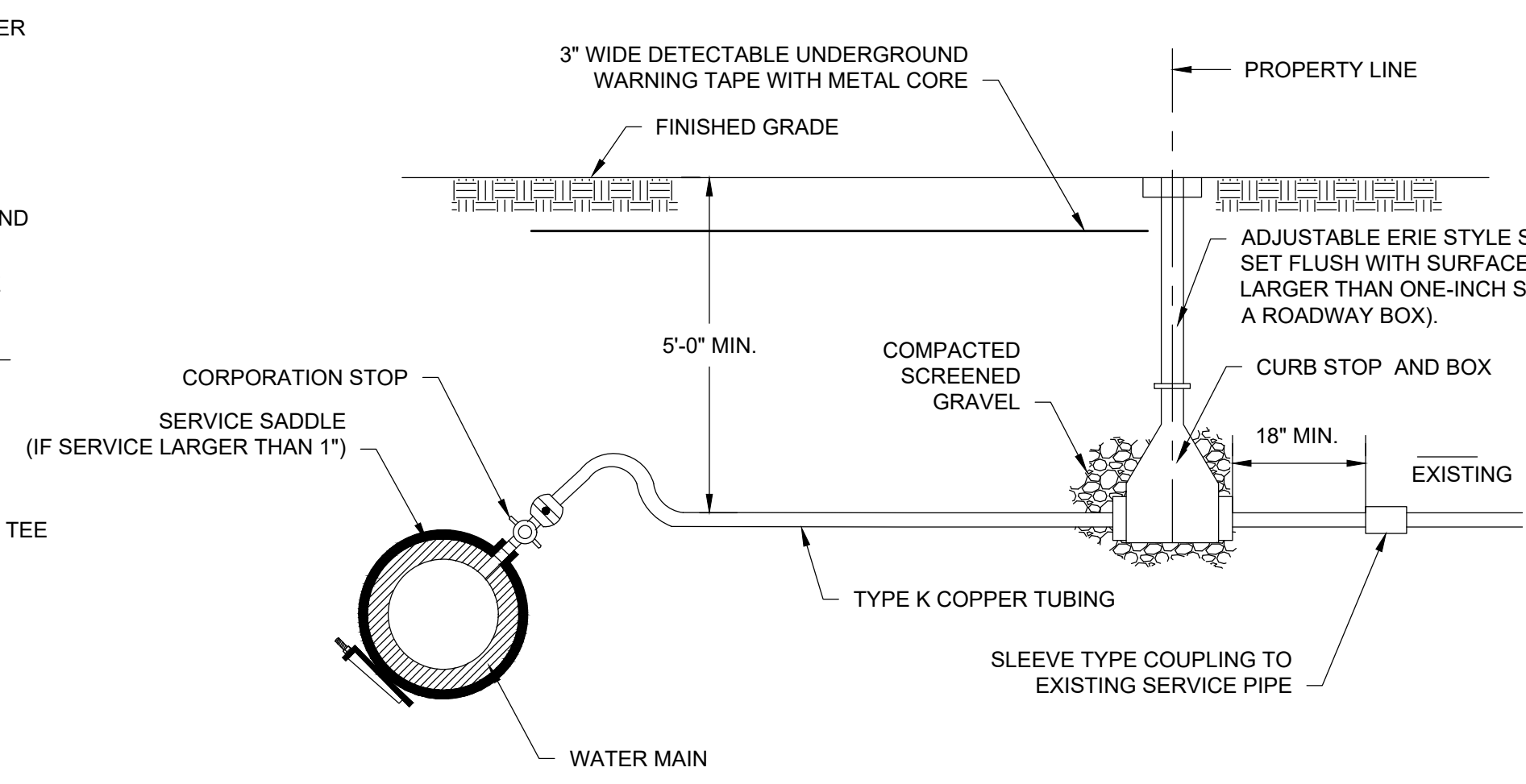
FOR PERMITTING
Sheet No.

WD-1



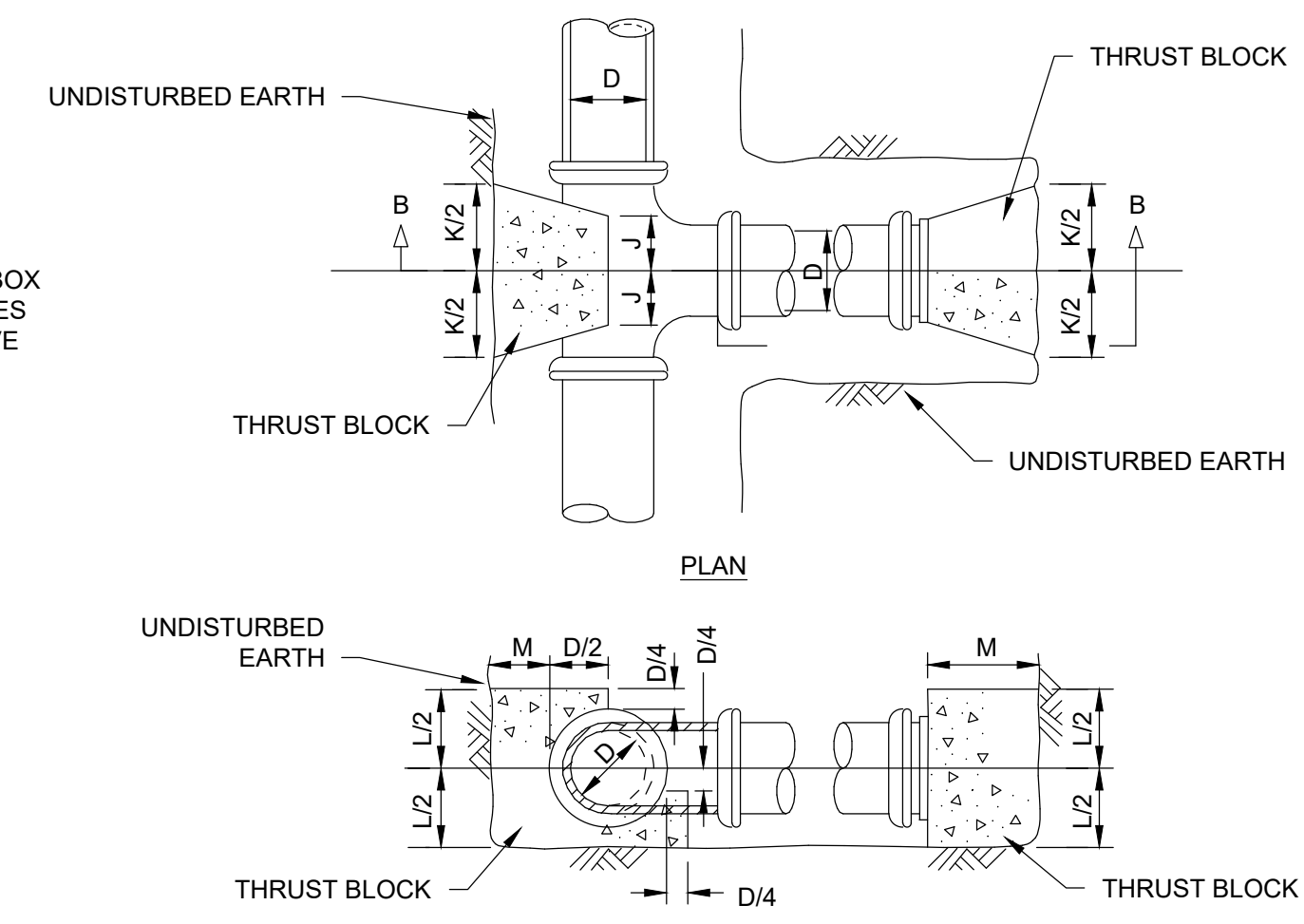
- NOTES:**
- CONFIRM HYDRANT LOCATION WITH OWNER PRIOR TO EXCAVATION.
 - ALL HYDRANT, VALVE, AND TEE JOINTS SHALL HAVE RESTRAINED MECHANICAL JOINTS.
 - DEPTH OF HYDRANT BURY SHALL SUIT INSTALLED DEPTH OF COVER OVER WATER MAIN. INSTALL RISERS AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.

HYDRANT ASSEMBLY DETAIL
SCALE: N.T.S.



- NOTES:**
- ALL SERVICE TUBING SHALL BE TYPE K COPPER.
 - ALL JOINTS SHALL BE COMPRESSION TYPE.
 - COPPER WIRE SERVICE LINE SHALL BE BACKFILLED WITH SAND BY HAND TO 12" ABOVE TUBING AND SHALL HAVE A SAND BEDDING OF 6".
 - CORPORATION STOPS LARGER THAN ONE INCH SHALL HAVE A SADDLE.
 - WATER SERVICES SHALL BE INSULATED IN AREAS WHERE CONNECTION TO EXISTING WATER SERVICE IS LESS THAN 4 FEET.
 - 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.

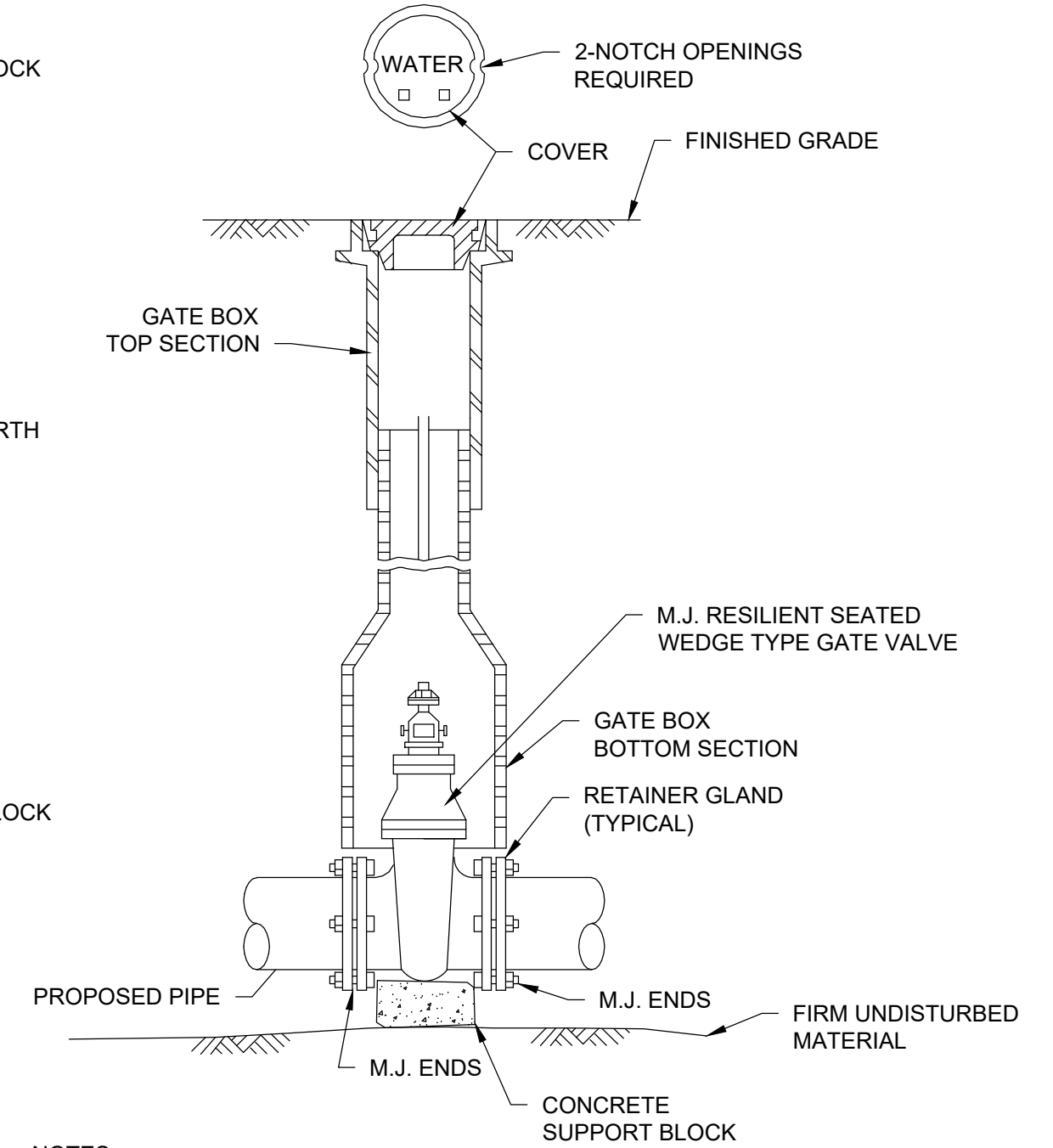
TYPICAL SERVICE TRANSFER DUCTILE IRON WATER MAINS
SCALE: N.T.S.



- NOTES:**
- ALL CONCRETE SHALL BE 3000 PSI @ 28 DAYS (CLASS 'A' CONCRETE).
 - 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.
 - THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.

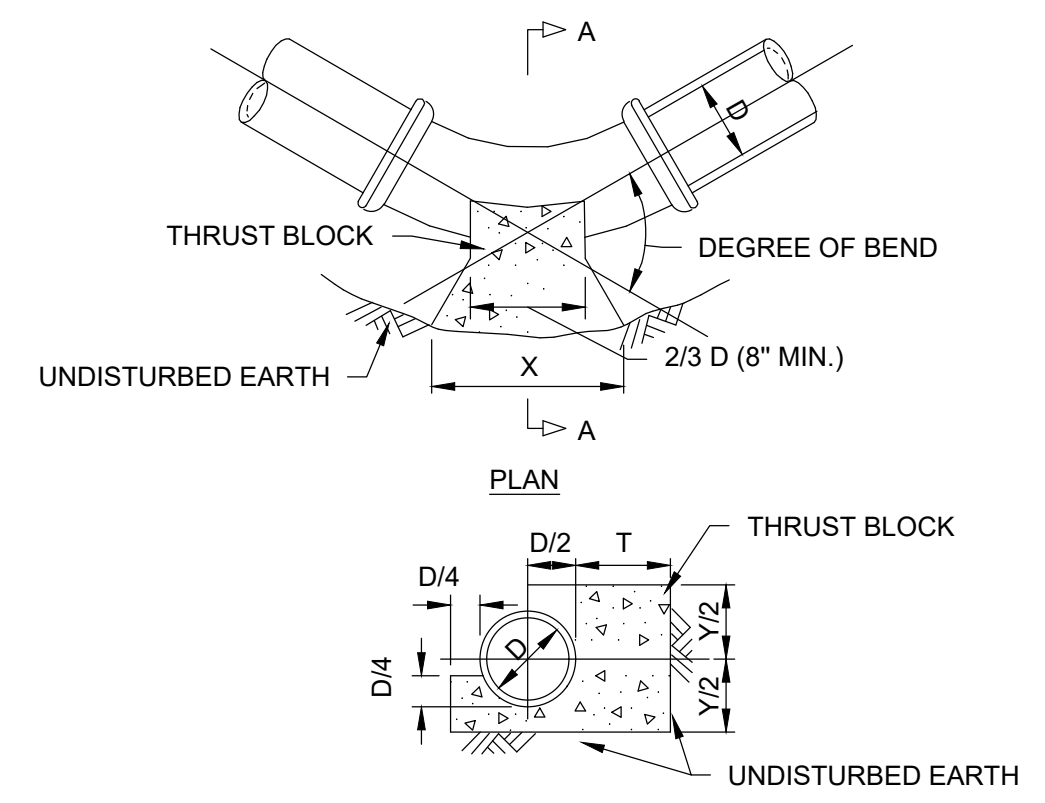
TABLE OF DIMENSIONS						
D (in)	4	6	8	10	12	14
J (in)	6	6	7	9	10	12
K (in)	16	16	20	26	32	36
L (in)	16	16	21	24	29	34
M (in)	11	11	14	16	19	22

CONCRETE THRUST BLOCK DETAIL AT TEE / PLUG/CAP
SCALE: N.T.S.



- NOTES:**
- ALL GATE VALVE AND VALVE BOXES SHALL BE MANUFACTURED IN NORTH AMERICA.

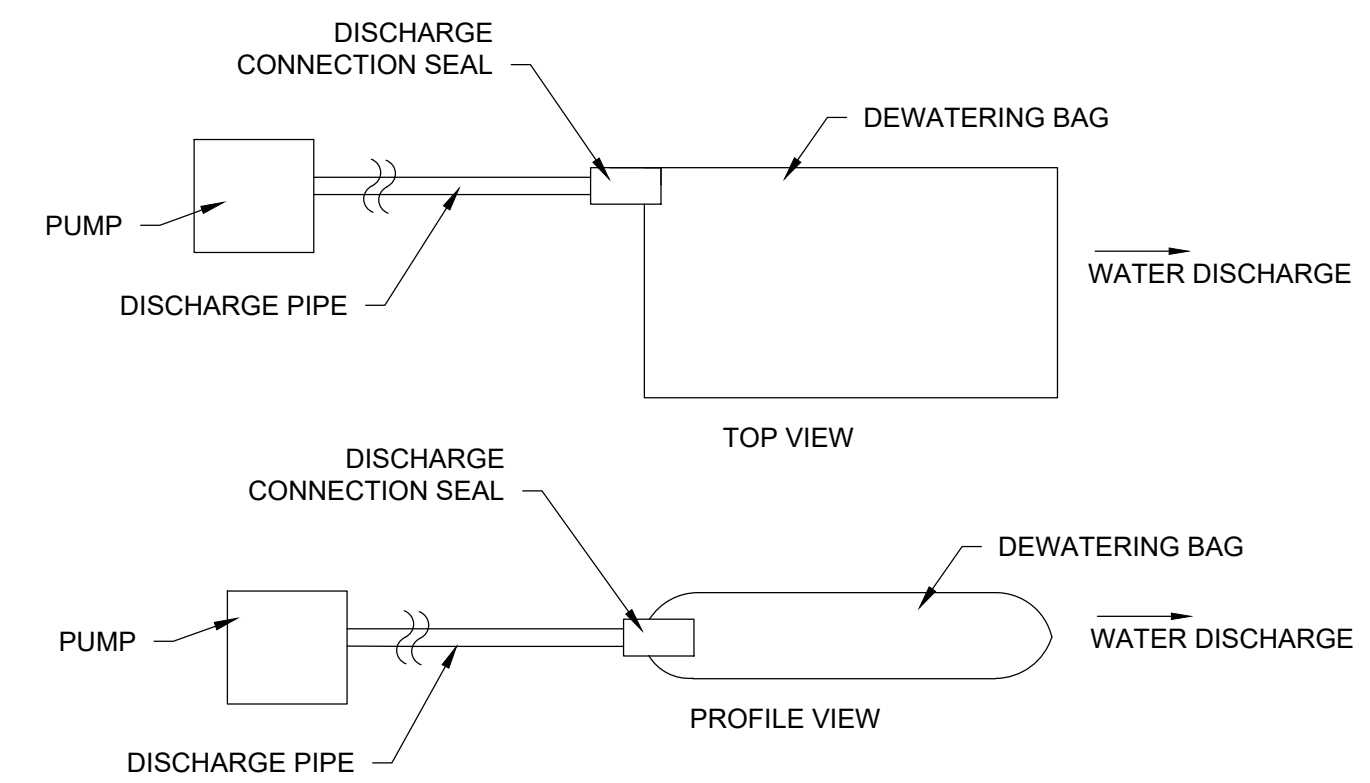
GATE VALVE AND VALVE BOX DETAIL
SCALE: N.T.S.



- NOTES:**
- ALL CONCRETE SHALL BE 3000 P.S.I. @ 28 DAYS (CLASS "A" CONCRETE)
 - 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.
 - THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.

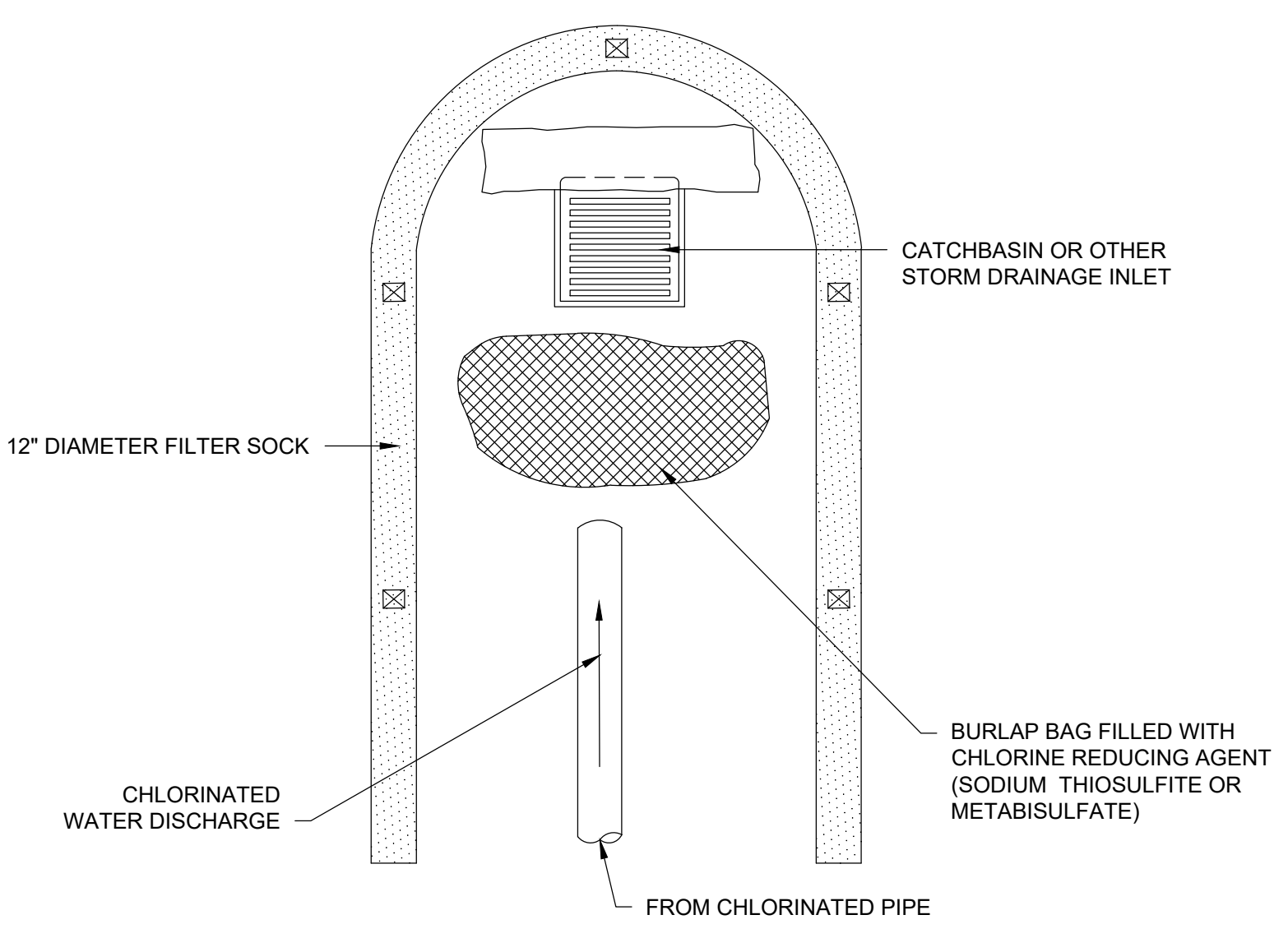
DIMENSION	90° BEND				45° BEND				22 1/2° BEND				11 1/4° BEND				
	D (in.)	X (in.)	Y (in.)	T (in.)	D (in.)	X (in.)	Y (in.)	T (in.)	D (in.)	X (in.)	Y (in.)	T (in.)	D (in.)	X (in.)	Y (in.)	T (in.)	
D (in.)	4	6	8	10	4	6	8	10	4	6	8	10	4	6	8	10	14
X (in.)	35	35	50	56	72	80	24	24	35	45	51	60	28	28	30	32	37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

CONCRETE THRUST BLOCK DETAIL AT BEND
SCALE: N.T.S.

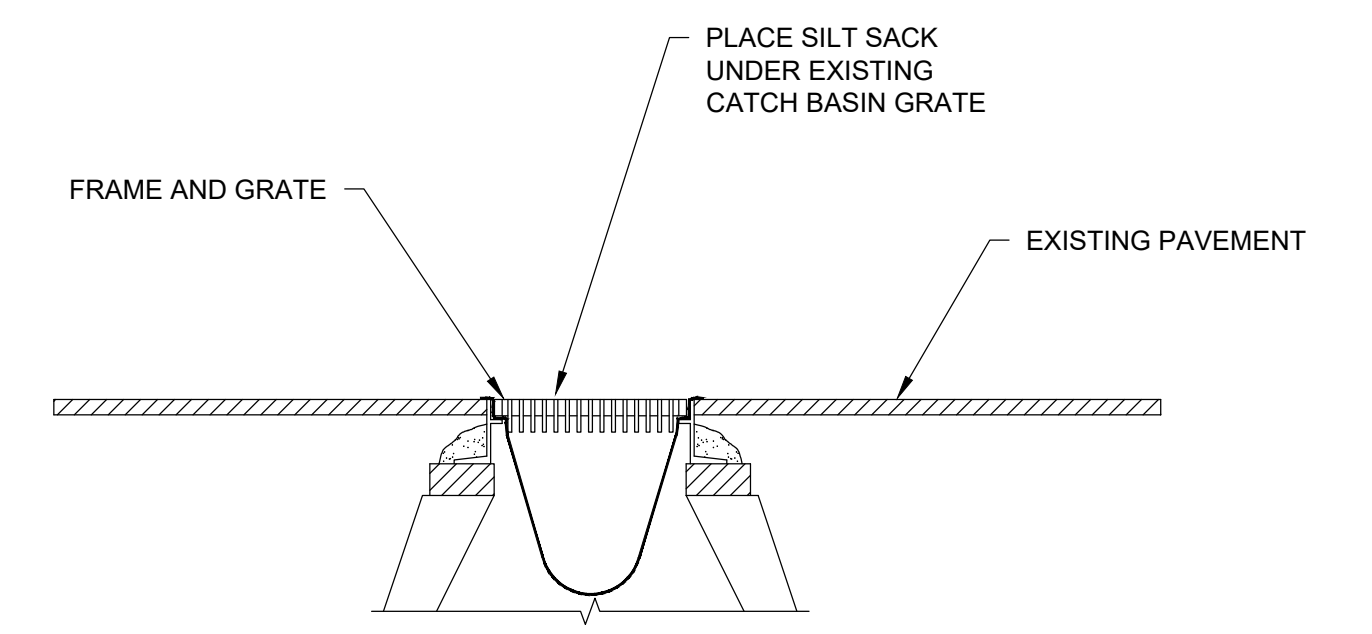


- NOTES:**
- DEWATERING BAG SIZE AND QUANTITY SHALL BE AS NEEDED TO ADEQUATELY FILTER ALL PUMP EFFLUENT FROM DEWATERING ACTIVITIES. CONTRACTOR SHALL PROVIDE A REDUNDANT BAG ON SITE AT ALL TIMES.
 - EACH BAG SHALL HANDLE A 2", 3", OR 4" DISCHARGE HOSE.
 - DISCHARGE HOSES CAN BE PLACED ALONG ANY EDGE BY 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.
 - CONTRACTOR SHALL AVOID DISCHARGING MULTIPLE PIPES INTO ONE BAG.

DEWATERING BAGS
SCALE: N.T.S.



DECLORINATION DETAIL
SCALE: N.T.S.



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

SEDIMENTATION CONTROL AT CATCH BASINS SILT SACKS
SCALE: N.T.S.



10/16/23

MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	OCTOBER 2023
Job No.	245-2103
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Approved by	ASK

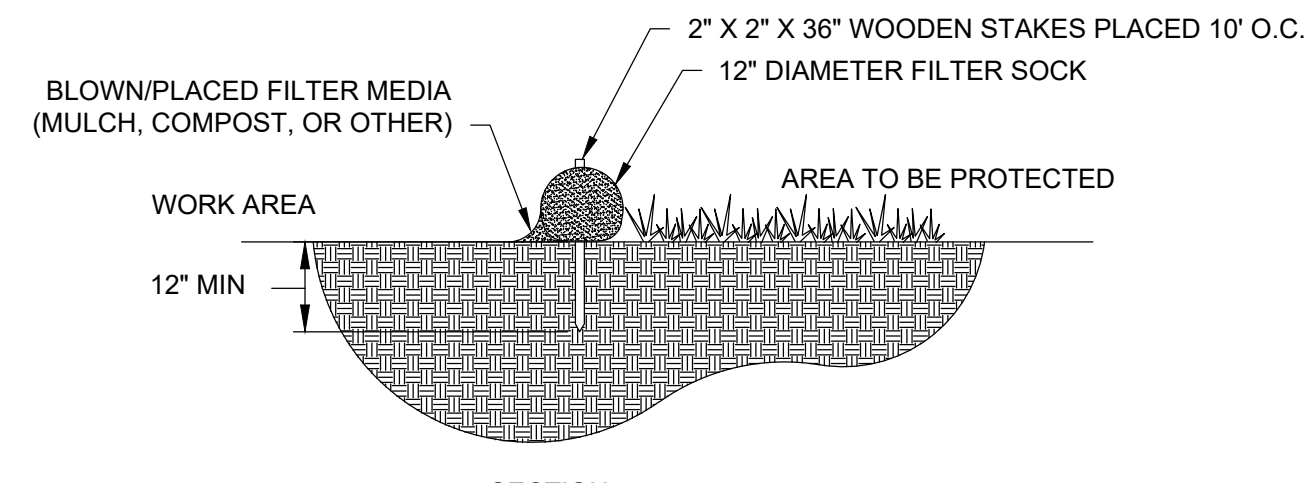
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

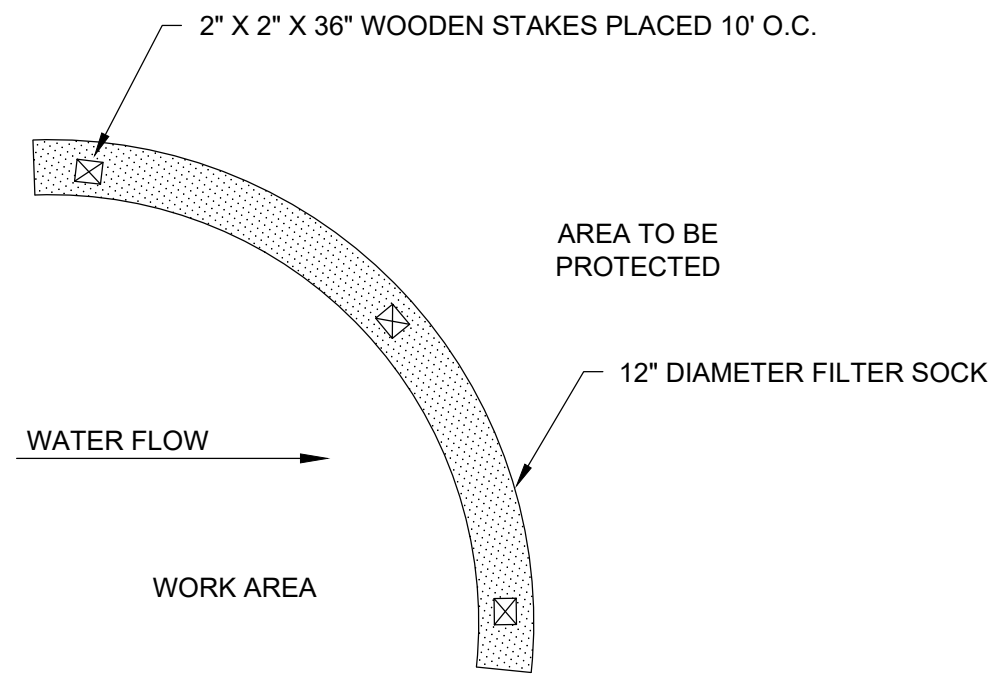
WATER MAIN DETAILS II

FOR PERMITTING
Sheet No.
WD-2

Drawing file: I:\Sharon, MA\245245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CAD\04.X Well 4 PFAS.dwg Plot Date: Oct 17, 2023 11:48am



SECTION



PLAN

12" DIAMETER FILTER SOCK

SCALE: N.T.S.



10/16/23

MARK	DATE	DESCRIPTION

Scale	N.T.S.
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

WATER MAIN DETAILS III

FOR PERMITTING
Sheet No.
WD-3

GENERAL PROJECT INFORMATION:

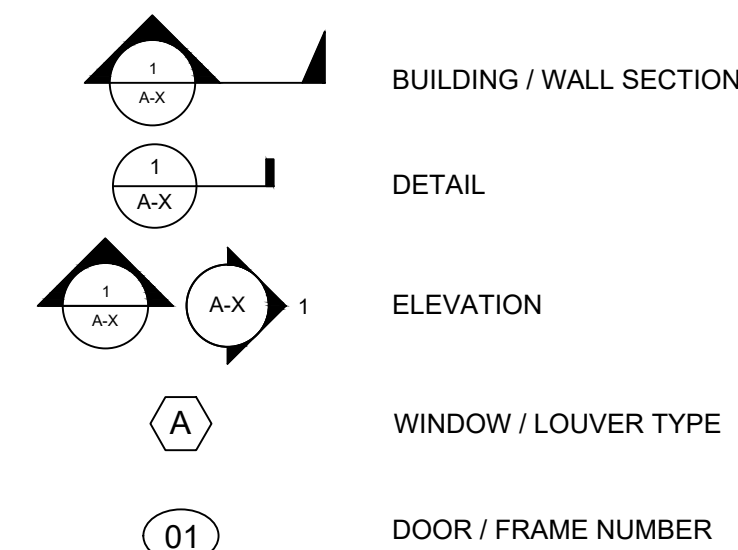
GENERAL NOTES:

- ALL WORK SHALL BE IN COMPLIANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS (TYP.).
- SEE SHEET S-X FOR DESIGN LOADS AND METAL BUILDING SYSTEM REQUIREMENTS (TYP.).
- SEE STRUCTURAL DRAWINGS FOR CONCRETE FOOTINGS, FOUNDATIONS, SLABS, AND EQUIPMENT PADS (TYP.).
- MECHANICAL, ELECTRICAL, HVAC, PLUMBING, FIRE PROTECTION, AND INSTRUMENTATION ITEMS ARE ILLUSTRATED FOR REFERENCE ONLY; COORDINATE WITH APPROPRIATE DISCIPLINES (TYP.).
- SEE MECHANICAL, ELECTRICAL, HVAC, PLUMBING, FIRE PROTECTION, AND INSTRUMENTATION DRAWINGS FOR ITEMS ATTACHED TO OR PENETRATING THROUGH FLOORS, CEILINGS, ROOF, & WALLS (TYP.).
- 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.).
- ALL DETAILS ARE PROTOTYPICAL; LOCATIONS NOT DETAILED SHALL BE CONSTRUCTED IN A SIMILAR MANNER (TYP.).
- SEE SHEET A-X FOR CODE SUMMARY, SEE SHEET A-1 FOR ABBREVIATIONS (TYP.).
- ALL MASONRY WORK IS THE RESPONSIBILITY OF THE MASONRY FILED SUB-BIDDER UNLESS OTHERWISE NOTED (TYP.).
- ALL WATERPROOFING, DAMP-PROOFING, AND CAULKING WORK IS THE RESPONSIBILITY OF THE WATERPROOFING, DAMP-PROOFING, AND CAULKING FILED SUB-BIDDER UNLESS OTHERWISE NOTED (TYP.).
- ALL PAINTING WORK IS THE RESPONSIBILITY OF THE PAINTING FILED SUB-BIDDER UNLESS OTHERWISE NOTED (TYP.).

ABBREVIATIONS:

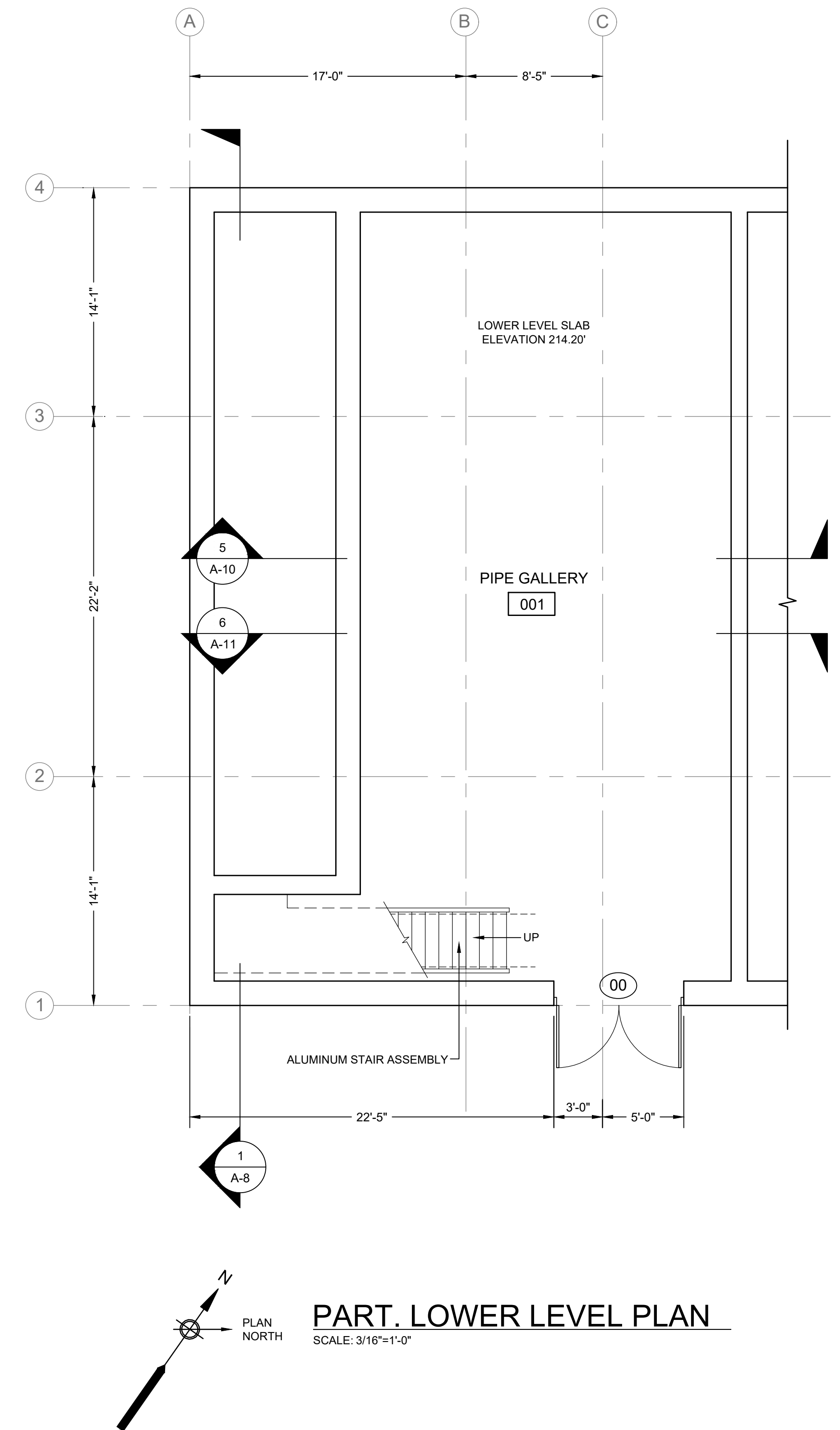
ACT	ACOUSTICAL CEILING TILES	FSB	FILED SUB-BID	PEMB	PRE-ENGINEERED METAL BUILDING
A.F.F.	ABOVE FINISHED FLOOR	FSPA	FIBERGLASS-SANDWICH-PANEL ASSEMBLIES	P.T.	PRESSURE TREATED
ALUM	ALUMINUM	FTG	FOOTING	PV	PHOTO VOLTIC
BOT/BOTT	BOTTOM	GA.	GALUGE	RCP	REFLECTED CEILING PLAN
C.I.	CONTINUOUS INSULATION	GALV.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

SYMBOL LEGEND



= FIRE EXTINGUISHER

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.



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Scale	AS SHOWN	
Date	SEPTEMBER 2023	
Job No.	245-2103	
Designed by	JK	
Drawn by	EZ	
Checked by		
Approved by		
MARK	DATE	DESCRIPTION

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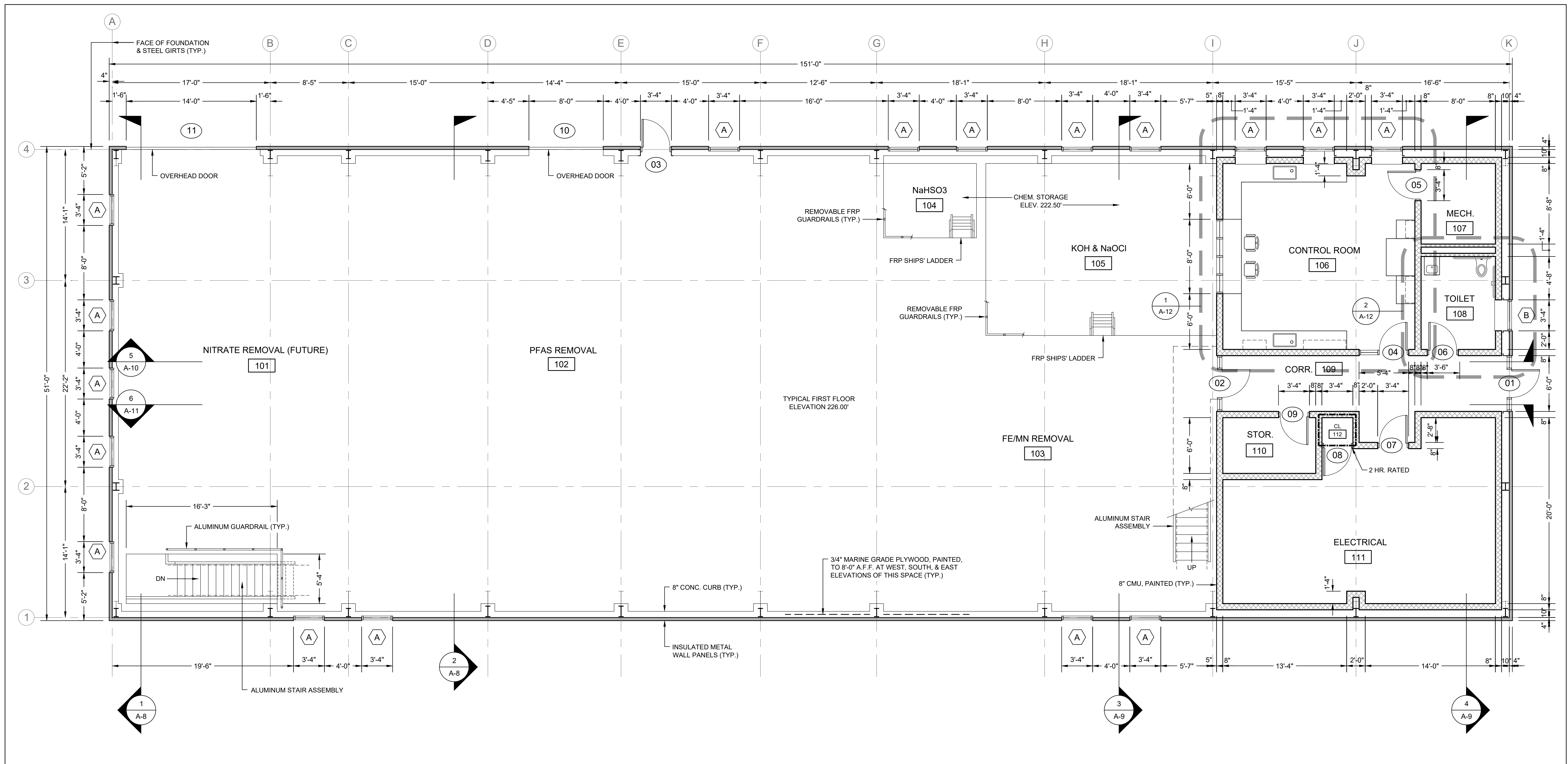
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

GENERAL PROJECT INFORMATION; PARTIAL LOWER LEVEL PLAN

50% DESIGN

Sheet No.

A-1



PLAN NORTH

FIRST FLOOR PLAN

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



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MARK	DATE	DESCRIPTION

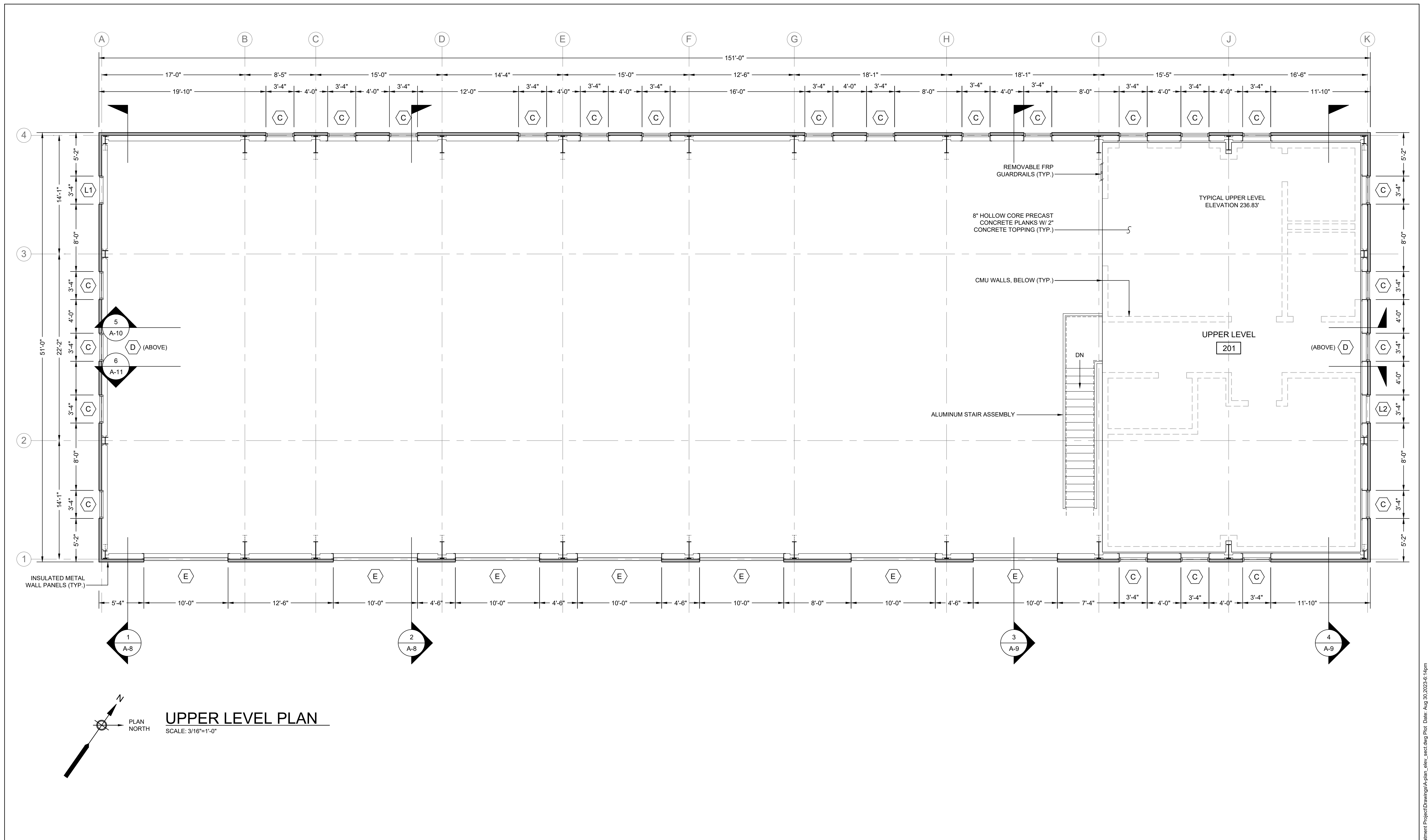
Scale	AS SHOWN
Date	SEPTEMBER 2023
Job No.	245-2103
Designed by	JK
Drawn by	EZ
Checked by	
Approved by	

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

FIRST FLOOR PLAN

50% DESIGN
 Sheet No. **A-2**



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



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MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	SEPTEMBER 2023
Job No.	245-2103
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Drawn by	EZ
Checked by	
Approved by	

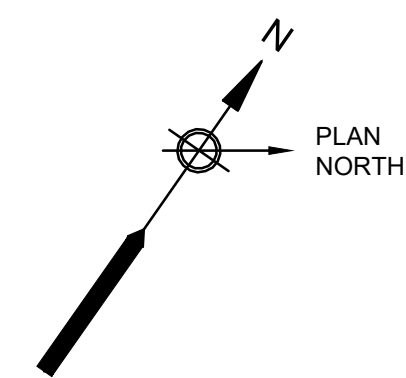
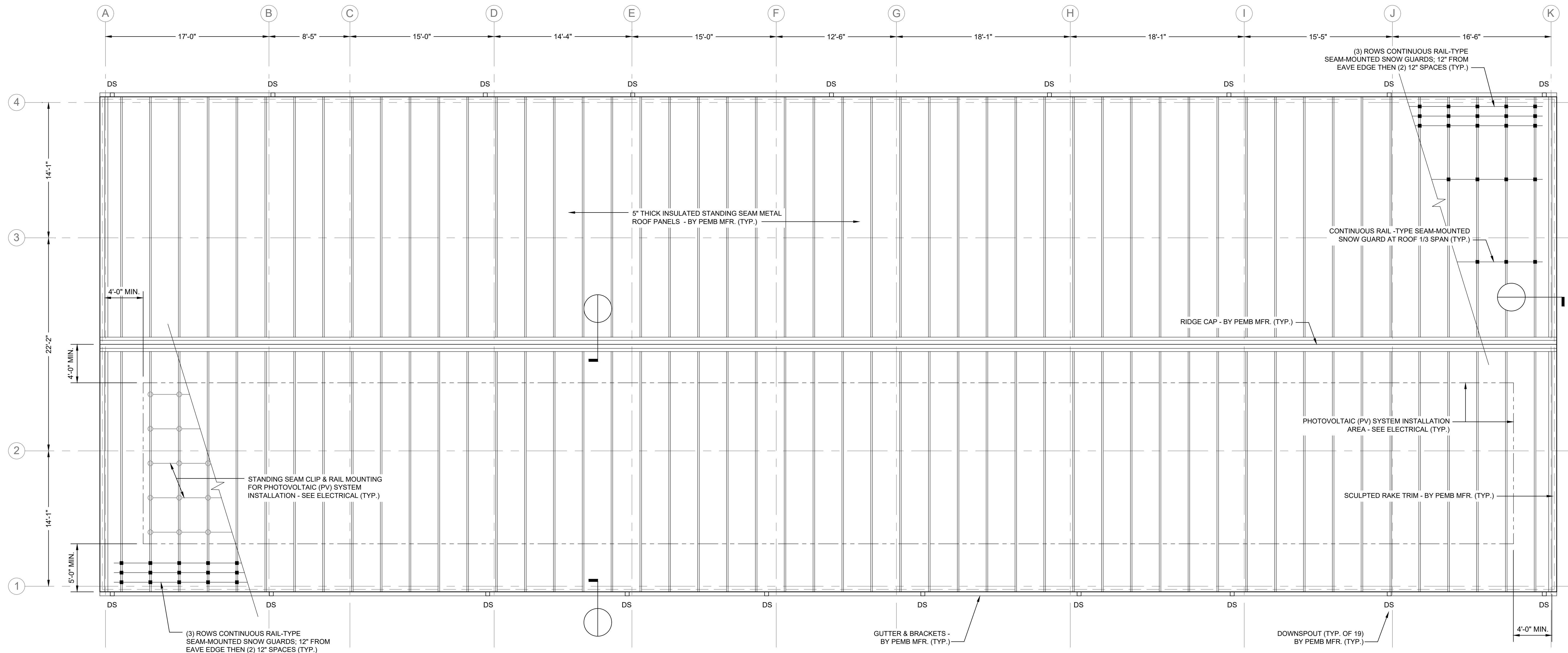
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

UPPER LEVEL PLAN

50% DESIGN
Sheet No.
A-3

Drawing file: F:\Projects\Sharon Water Treatment\ProjectDrawings\A-plan_elev_sect.dwg Plot Date: Aug 30 2023 6:14pm



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

ROOF PLAN NOTES:

1. ROOF SLOPE = 4:12 UNLESS NOTED OTHERWISE. (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. (TYP.)
4. PROVIDE CRICKETS AT ALL ROOFTOP EQUIPMENT AND PENETRATIONS TO CREATE ADEQUATE ROOF DRAINAGE. (TYP.)
5. SUPPLEMENTAL FRAMING AND CURBS FOR ALL ROOFTOP EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE METAL BUILDING MANUFACTURER. (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. (TYP.)



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Scale	AS SHOWN	
Date	SEPTEMBER 2023	
Job No.	245-2103	
Designed by	JK	
Drawn by	EZ	
Checked by		
Approved by		
MARK	DATE	DESCRIPTION

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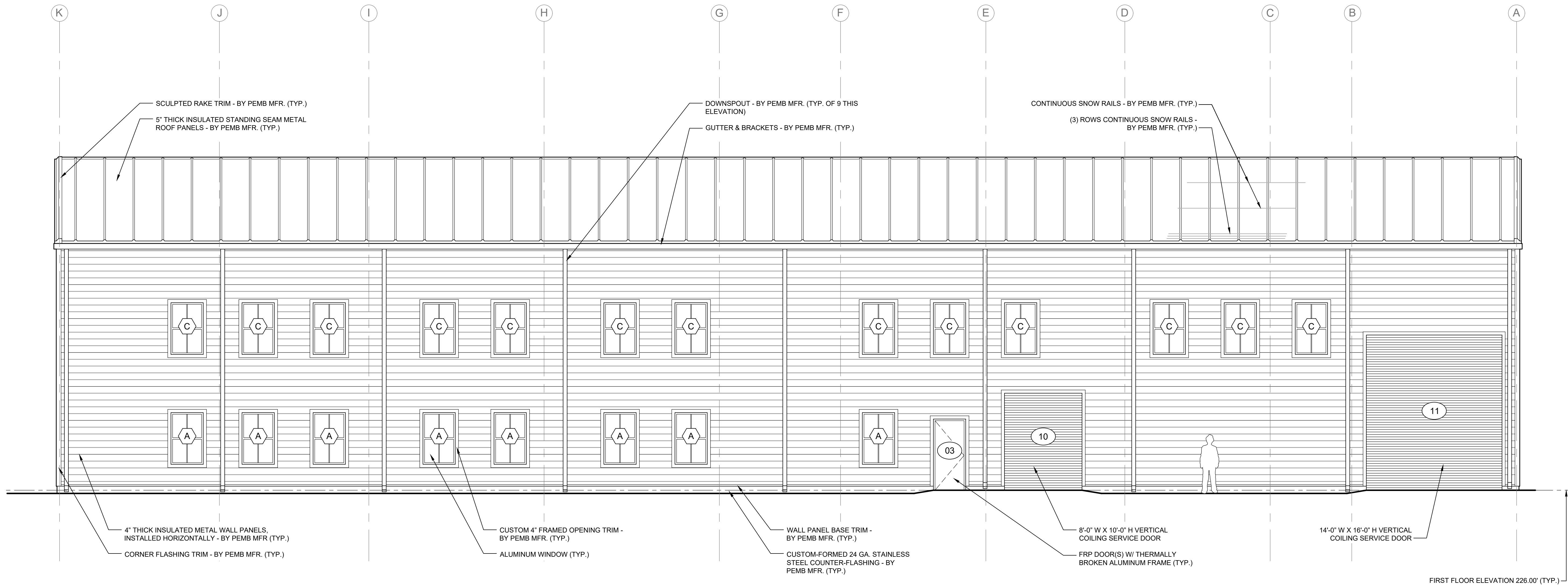
**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

ROOF PLAN

50% DESIGN

Sheet No.

A-4



WEST (TREE LANE) ELEVATION

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



ENVIRONMENTAL PARTNERS
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MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	SEPTEMBER 2023
Job No.	245-2103
Designed by	JK
Drawn by	EZ
Checked by	
Approved by	

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

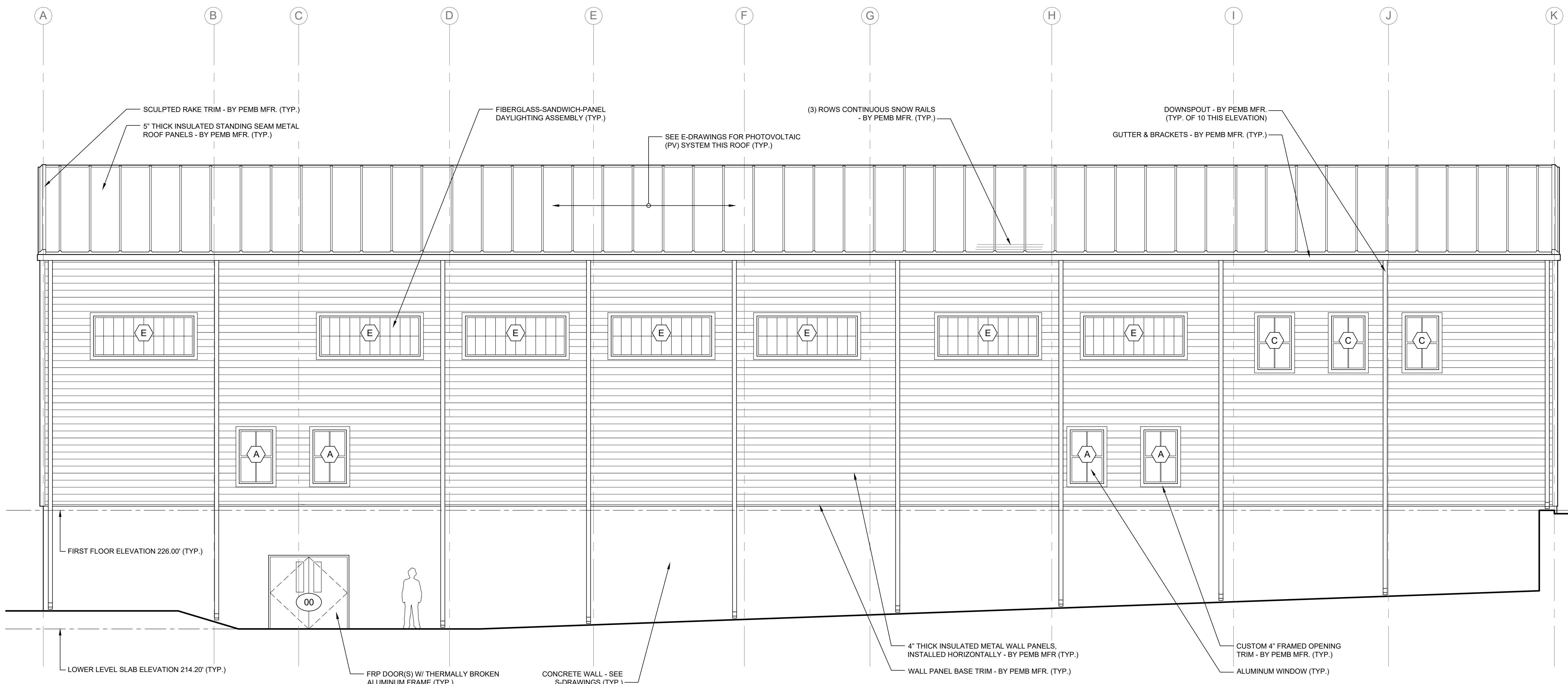
**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

EXTERIOR ELEVATIONS I (WEST)

50% DESIGN

Sheet No.

A-5



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



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

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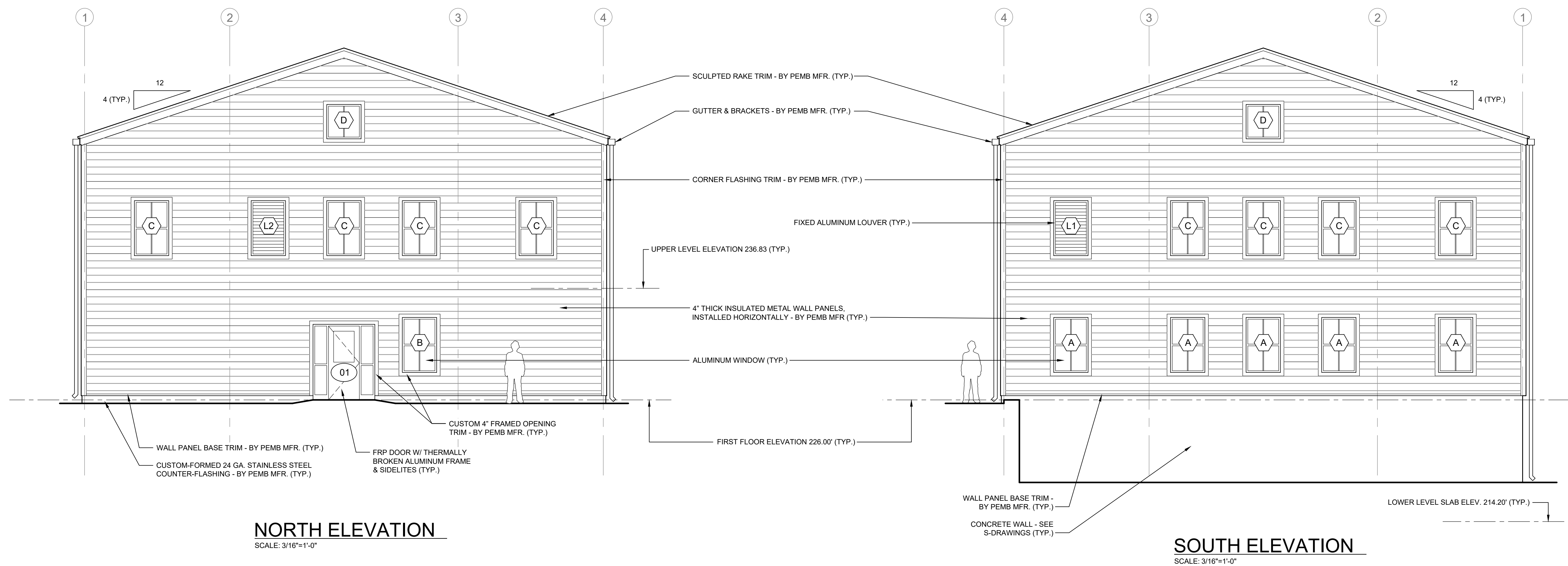
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

EXTERIOR ELEVATIONS II (EAST)

50% DESIGN
Sheet No.

A-6

Drawing file: F:\Projects\Sharon Water Treatment\ProjectDrawings\A-plan_elev_sect.dwg Plot Date: Aug 30 2023 6:15pm



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

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



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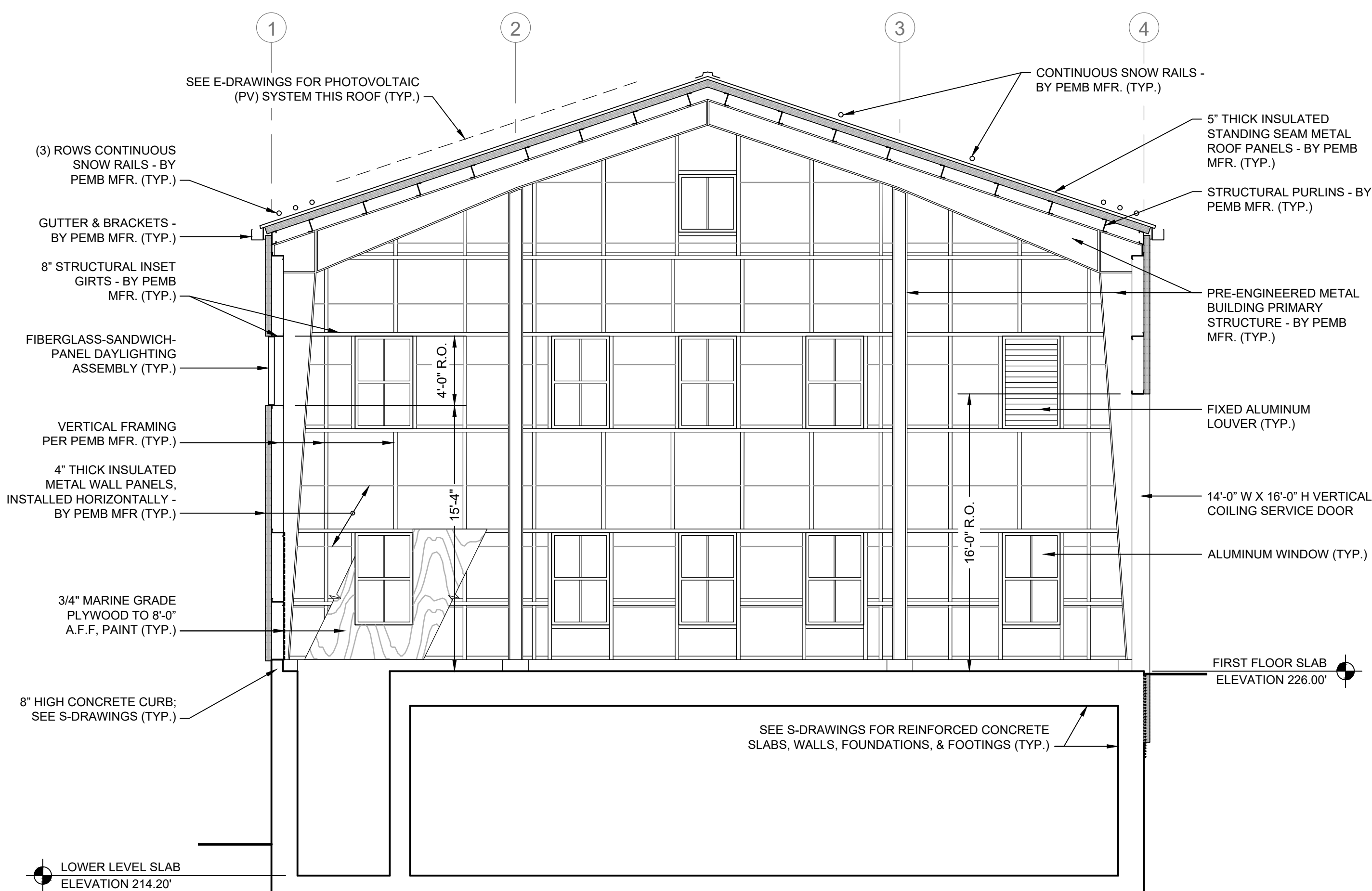
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

EXTERIOR ELEVATIONS III (NORTH & SOUTH)

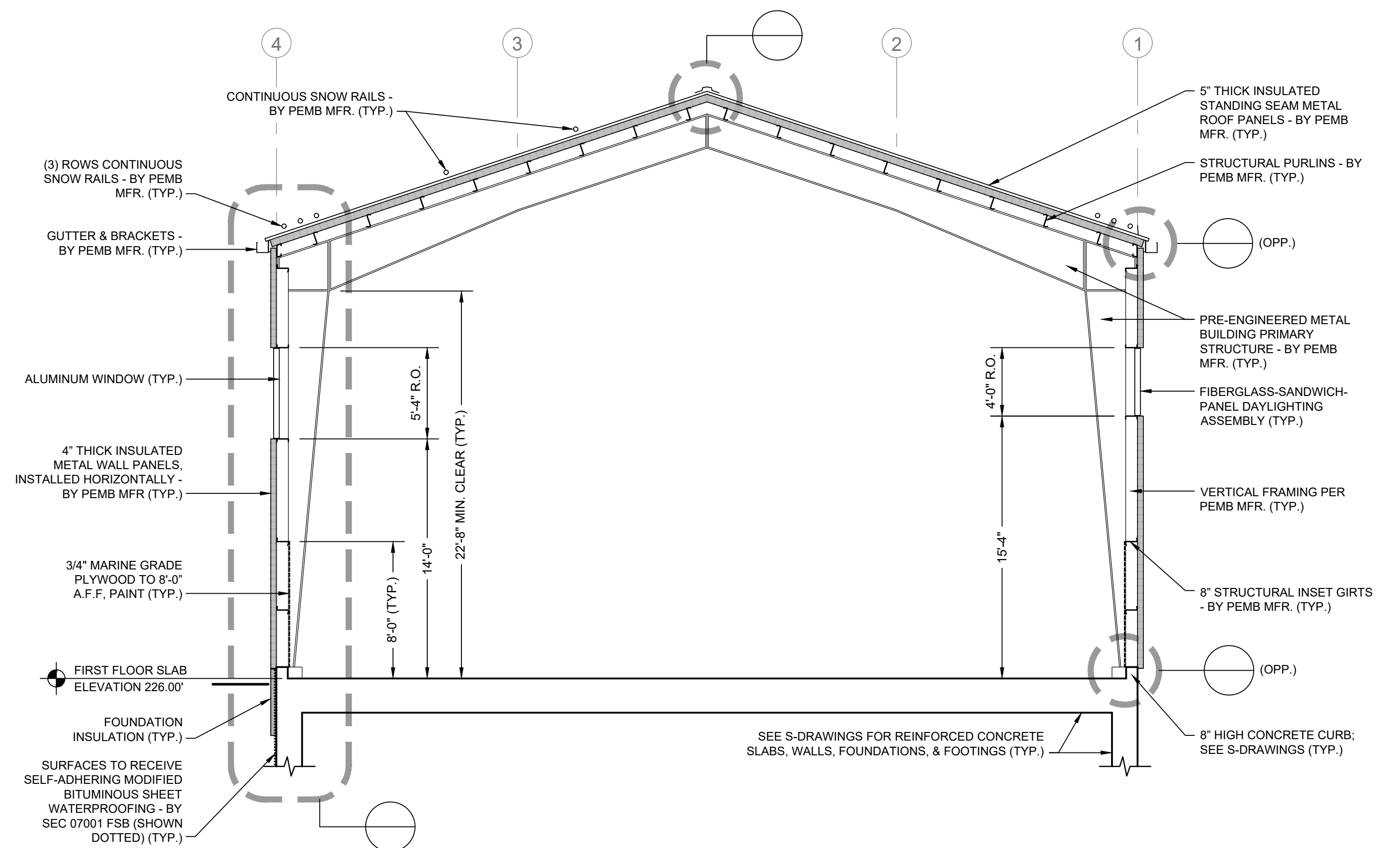
50% DESIGN

Sheet No.

A-7



BUILDING SECTION 1
SCALE: 3/16"=1'-0"
A-2



BUILDING SECTION 2
SCALE: 3/16"=1'-0"
A-2



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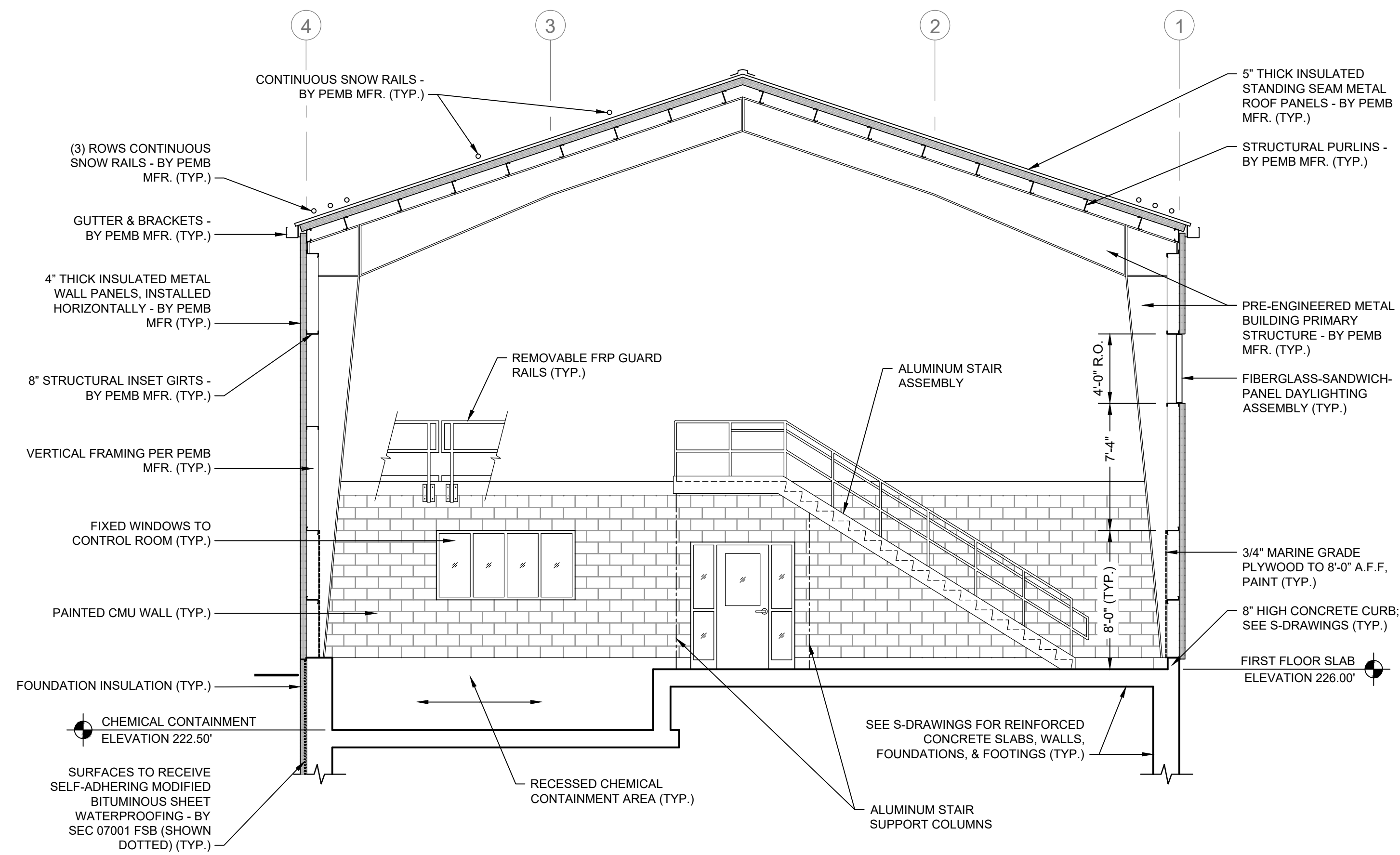
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

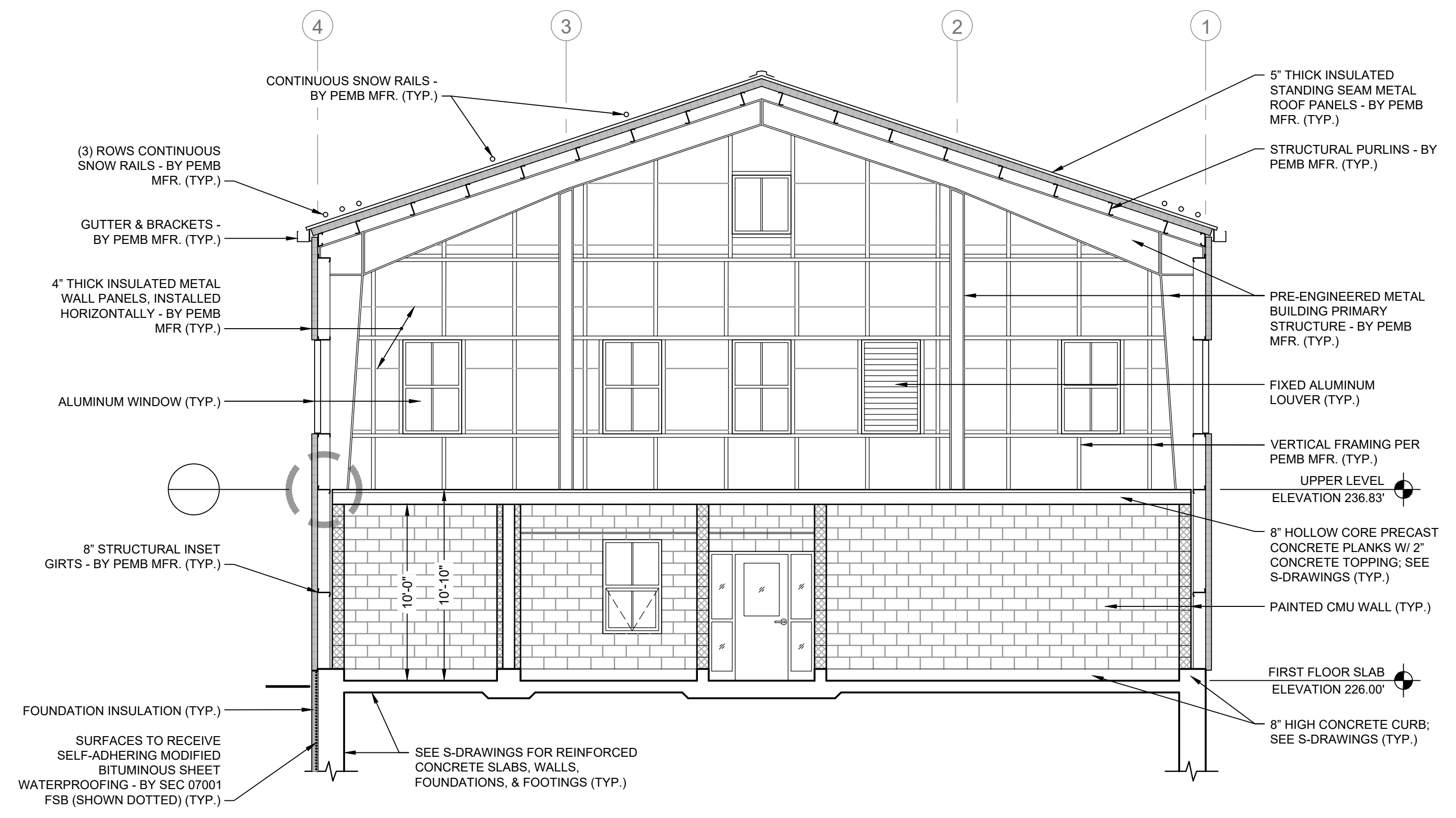
BUILDING SECTIONS I

50% DESIGN
Sheet No.

A-8



BUILDING SECTION 3
SCALE: 3/16"=1'-0"
A-2



BUILDING SECTION 4
SCALE: 3/16"=1'-0"
A-2



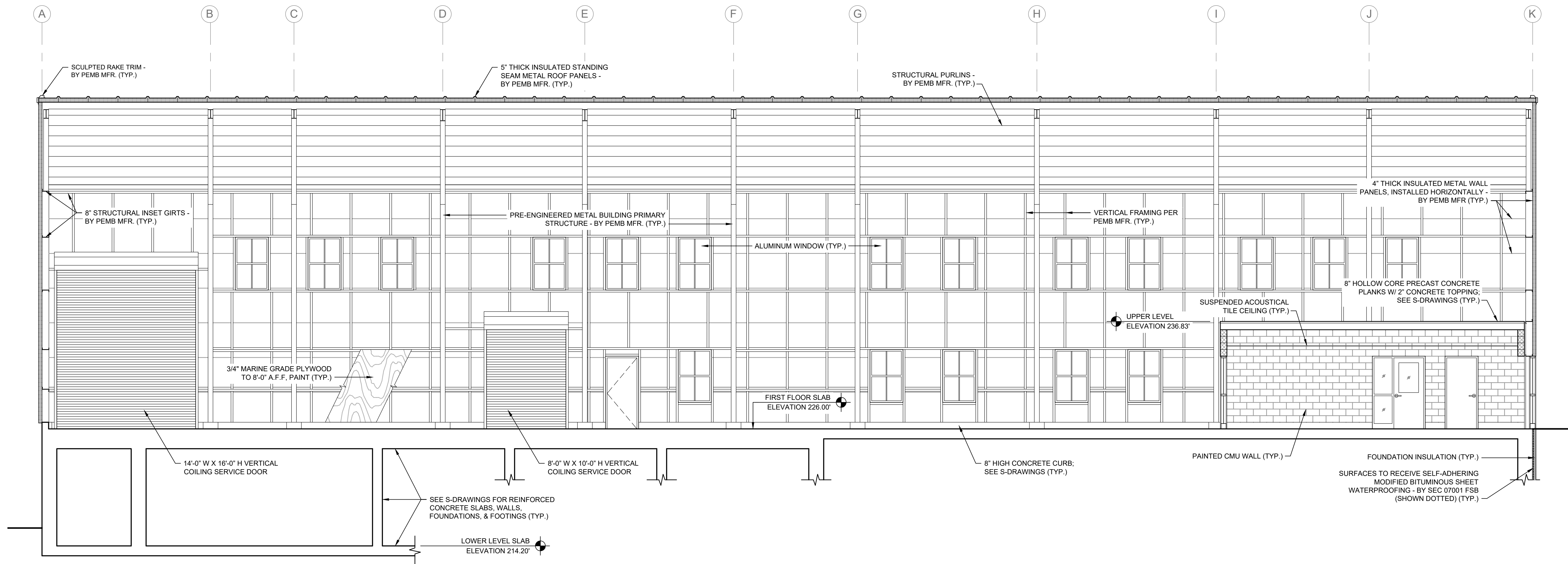
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Approved by		
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA
BUILDING SECTIONS II

50% DESIGN
Sheet No.
A-9



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

5
A-2



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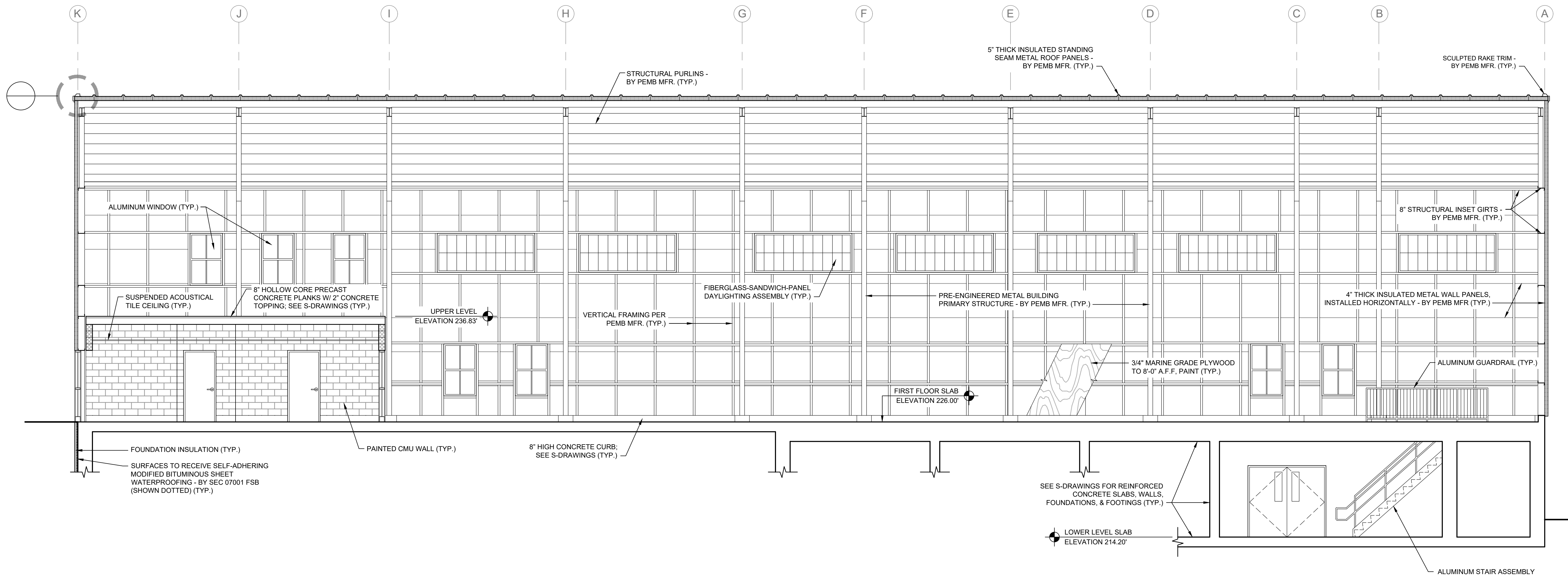
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**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

BUILDING SECTIONS III

50% DESIGN
Sheet No.

A-10



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

6
A-2



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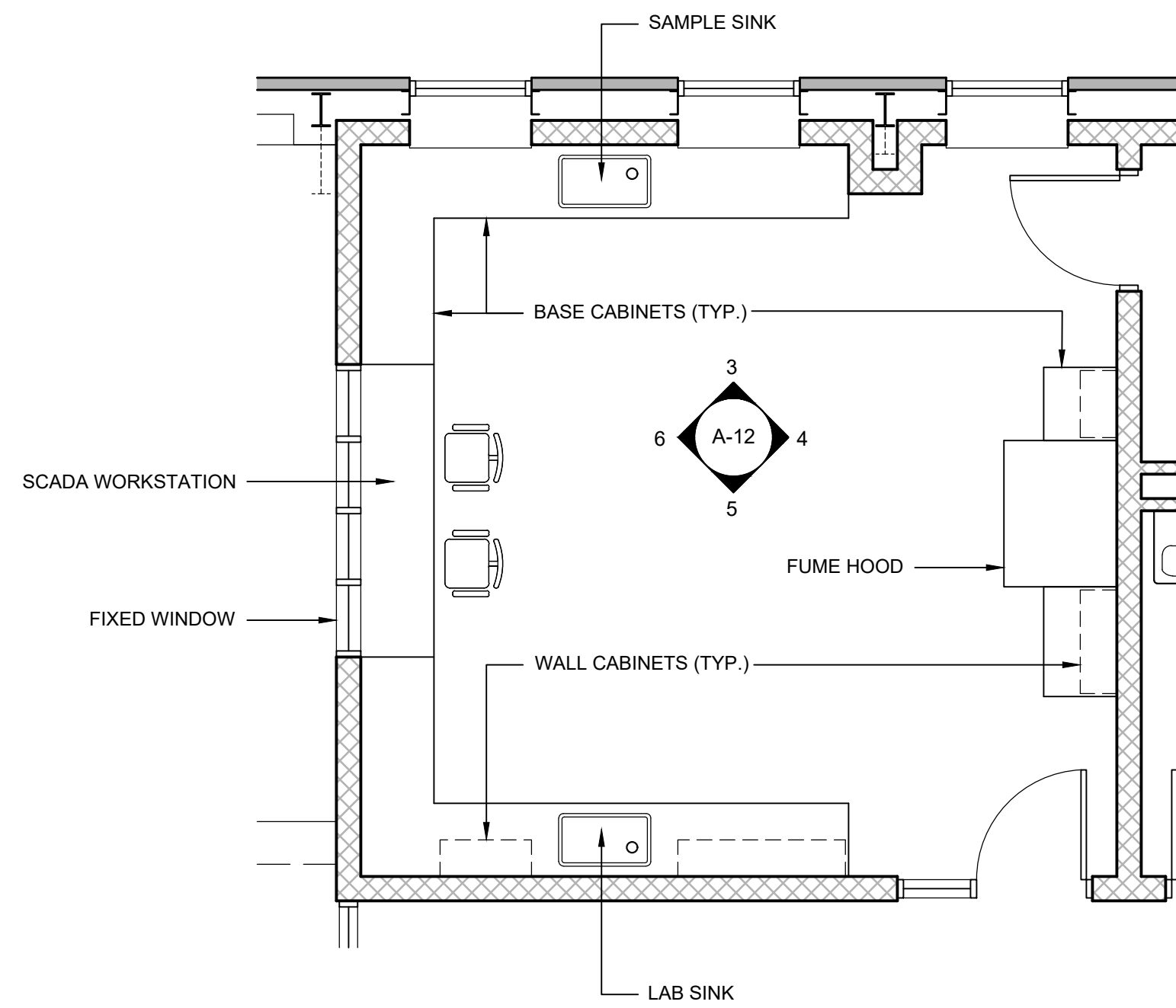
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**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

BUILDING SECTIONS IV

50% DESIGN
Sheet No.

A-11



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

1
A-2

[PLACEHOLDER - NOT INCLUDED
IN THE 50% DESIGN SET]

INTERIOR ELEV.

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

3
A-12

[PLACEHOLDER - NOT INCLUDED
IN THE 50% DESIGN SET]

INTERIOR ELEV.

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

4
A-12

[PLACEHOLDER - NOT INCLUDED
IN THE 50% DESIGN SET]

INTERIOR ELEV.

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

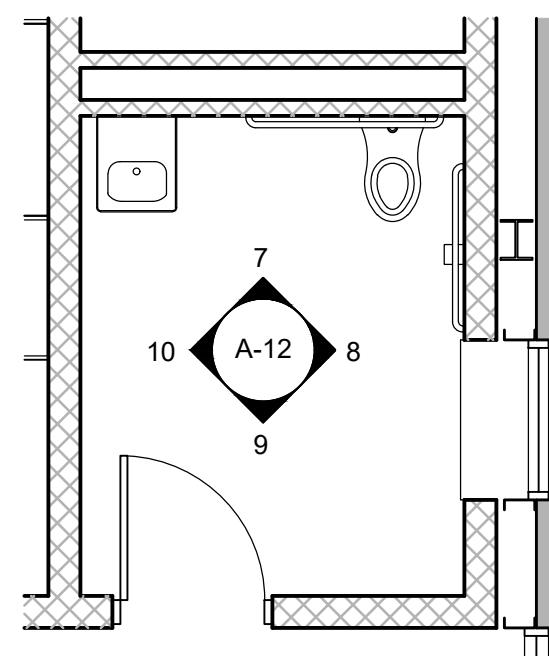
5
A-12

[PLACEHOLDER - NOT INCLUDED
IN THE 50% DESIGN SET]

INTERIOR ELEV.

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

6
A-12



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

2
A-2

[PLACEHOLDER - NOT INCLUDED
IN THE 50% DESIGN SET]

[PLACEHOLDER - NOT INCLUDED
IN THE 50% DESIGN SET]

[PLACEHOLDER - NOT INCLUDED
IN THE 50% DESIGN SET]

[PLACEHOLDER - NOT INCLUDED
IN THE 50% DESIGN SET]

INTERIOR ELEV.

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

7
A-12

INTERIOR ELEV.

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

8
A-12

INTERIOR ELEV.

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

9
A-12

INTERIOR ELEV.

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

10
A-12



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

ENLARGED FLOOR PLANS; INTERIOR ELEVATIONS

50% DESIGN

Sheet No.

A-12

ROOM FINISH SCHEDULE

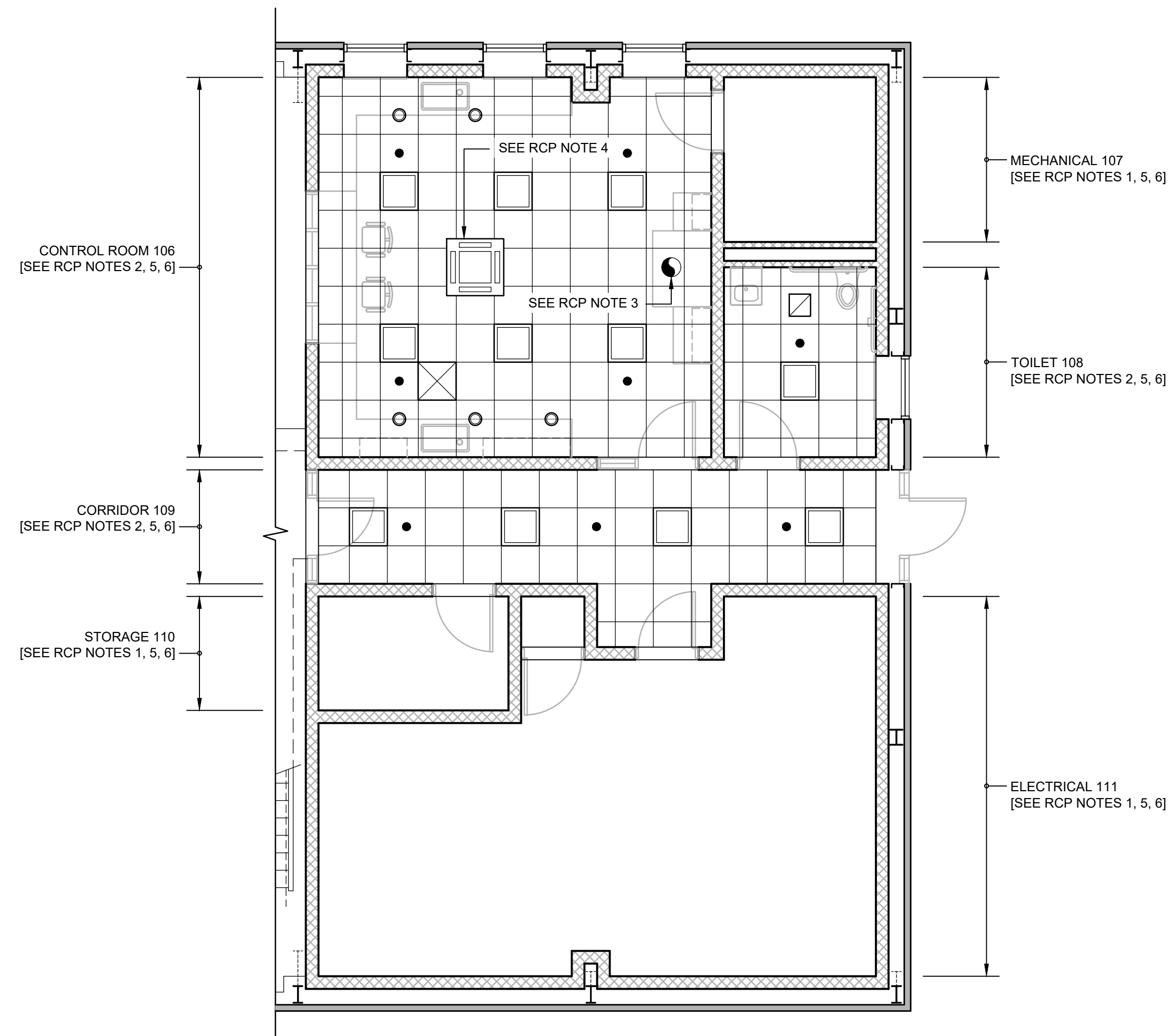
ROOM NO.	ROOM NAME	BASE	FLOOR	NORTH WALL	WEST WALL	EAST WALL	SOUTH WALL	CEILING	HEIGHT	REMARKS
001	PIPE GALLERY	CONC.	CONC. (SLR)	CONC.	CONC.	CONC.	CONC.	CONC.	11'-9 1/2"	
101	NITRATE REMOVAL (FUTURE)	CONC. (SLR)	CONC. (SLR)	--	MTL. WALL PANEL M.G. PLY. (PTD)	MTL. WALL PANEL M.G. PLY. (PTD)	MTL. WALL 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. (SLR)	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. (SLR)	CMU (PTD)	CMU (PTD)	CMU (PTD)	CMU (PTD)	ACT	8'-4"	
109	CORRIDOR	CONC. (PTD) RES. BASE	CONC. (SLR)	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. MARINE GRADE PLYWOOD (M.G. PLY.) EXTENDS TO 8'-0" A.F.F. (TYP.).

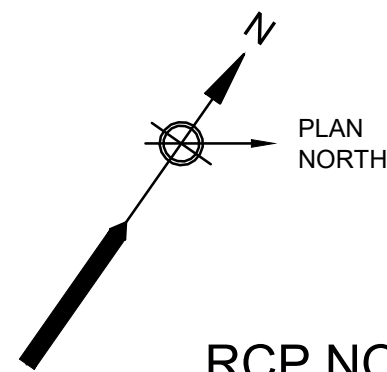
ABBREVIATIONS:

- 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)
SLR: SEALER [SEE NOTE 1]



PARTIAL FIRST FLOOR REFLECTED CEILING PLAN (RCP)

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



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 | | SMOKE DETECTOR |
| | RECESSED DOWNLIGHT | | HEAT DETECTOR |
| | SURFACE MOUNTED LIGHTING FIXTURE | | CARBON MONOXIDE DETECTOR |
| | SUPPLY DIFFUSER | | ANTENNA (INTERIOR) |
| | EXHAUST GRILLE | | CONCEALED SPRINKLER HEAD |
| | EXHAUST FAN | | |



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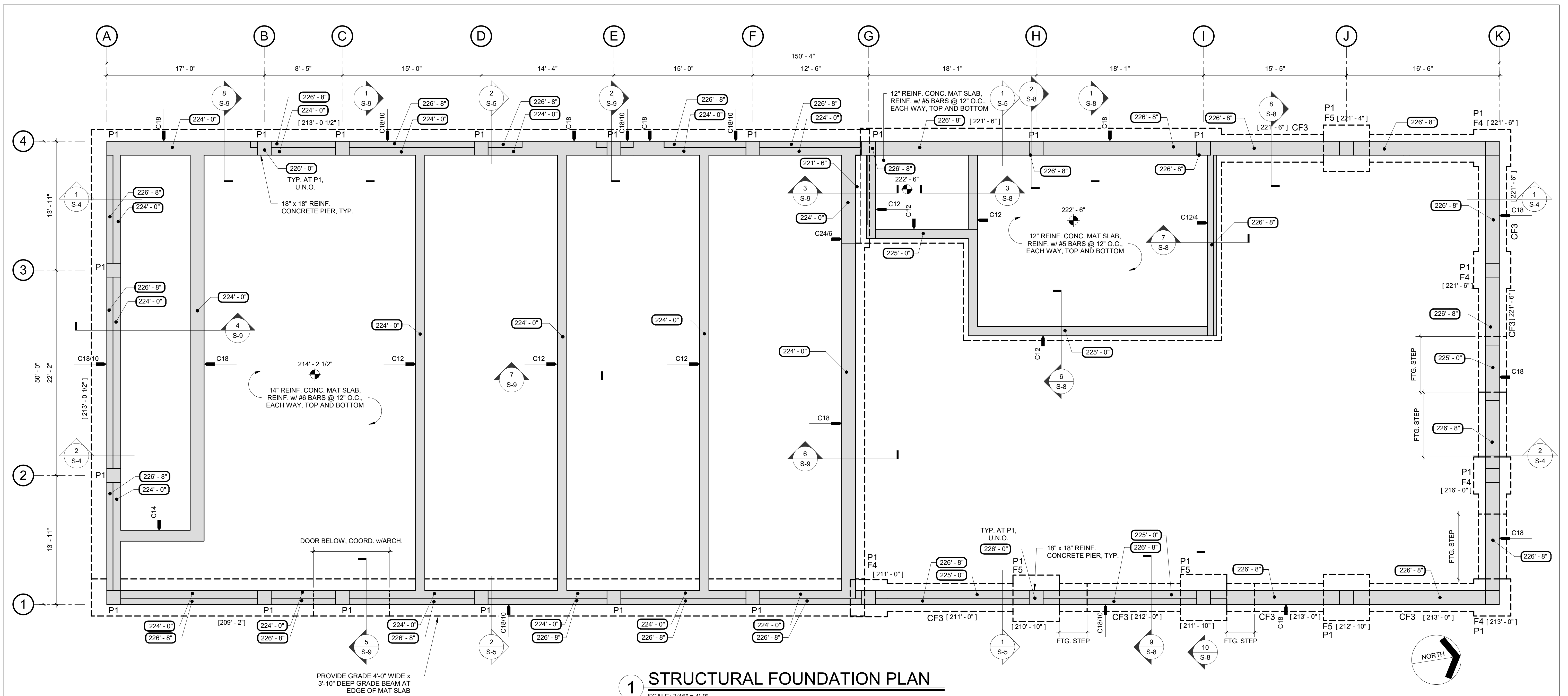
**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

PARTIAL REFLECTED CEILING PLAN; ROOM FINISH SCHEDULE

50% DESIGN

Sheet No.

A-13



1 STRUCTURAL FOUNDATION PLAN

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

NOTES:

- COORDINATE ALL WORK (INCLUDING FLOOR ELEVATIONS, DIMENSIONS, FINISH DETAILS, PENETRATIONS, ETC.) WITH THE ARCHITECTURAL DRAWINGS.
- ### - INDICATES TOP OF NEW CONCRETE FOUNDATION WALL.
- [###-###] - INDICATES BOTTOM OF NEW CONCRETE FOOTING ELEVATION
- BOTTOM OF ALL NEW EXTERIOR FOOTINGS SHALL BE LOCATED A MINIMUM OF ###' BELOW FINISH GRADE.
- ###-### - INDICATES FLOOR ELEVATION (TYP., U.N.O.).
- # - 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.).
- F# - INDICATES NEW CONCRETE FOOTING TYPE. SEE "FOOTING SCHEDULE" ON THIS SHEET.
- P# - INDICATES NEW CONCRETE PIER TYPE. SEE "PIER SCHEDULE" ON 4/S-7
- TOP OF PIER ELEVATION IS 8" BELOW TOP OF SLAB, UNLESS NOTED OTHERWISE.
- CW# - INDICATES NEW WALL MARK. SEE "WALL SCHEDULE" ON THIS SHEET.

FOOTING SCHEDULE

MARK	SIZE			REINFORCEMENT	
	W (WIDTH)	L (LENGTH)	D (DEPTH)	BOTTOM BARS (LONG DIR.)	BOTTOM BARS (SHORT DIR.)
CF3	3'-0"	<varies>		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
C12	12" CONCRETE WALL	T.B.D.
C12/4	12" CONCRETE WALL w/4" SHELF	T.B.D.
C14	14" CONCRETE WALL	T.B.D.
C16C	16" CONCRETE CURB	T.B.D.
C18	18" CONCRETE WALL	T.B.D.
C18/10	18" CONCRETE WALL w/10" SHELF	T.B.D.
C24/6	24" CONCRETE WALL w/6" SHELF	T.B.D.
M4	4" CMU WALL	T.B.D.
M8	8" CMU WALL	SEE GENERAL NOTES



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structural engineers
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North Providence, RI 02904
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Fax: 401.724.1981
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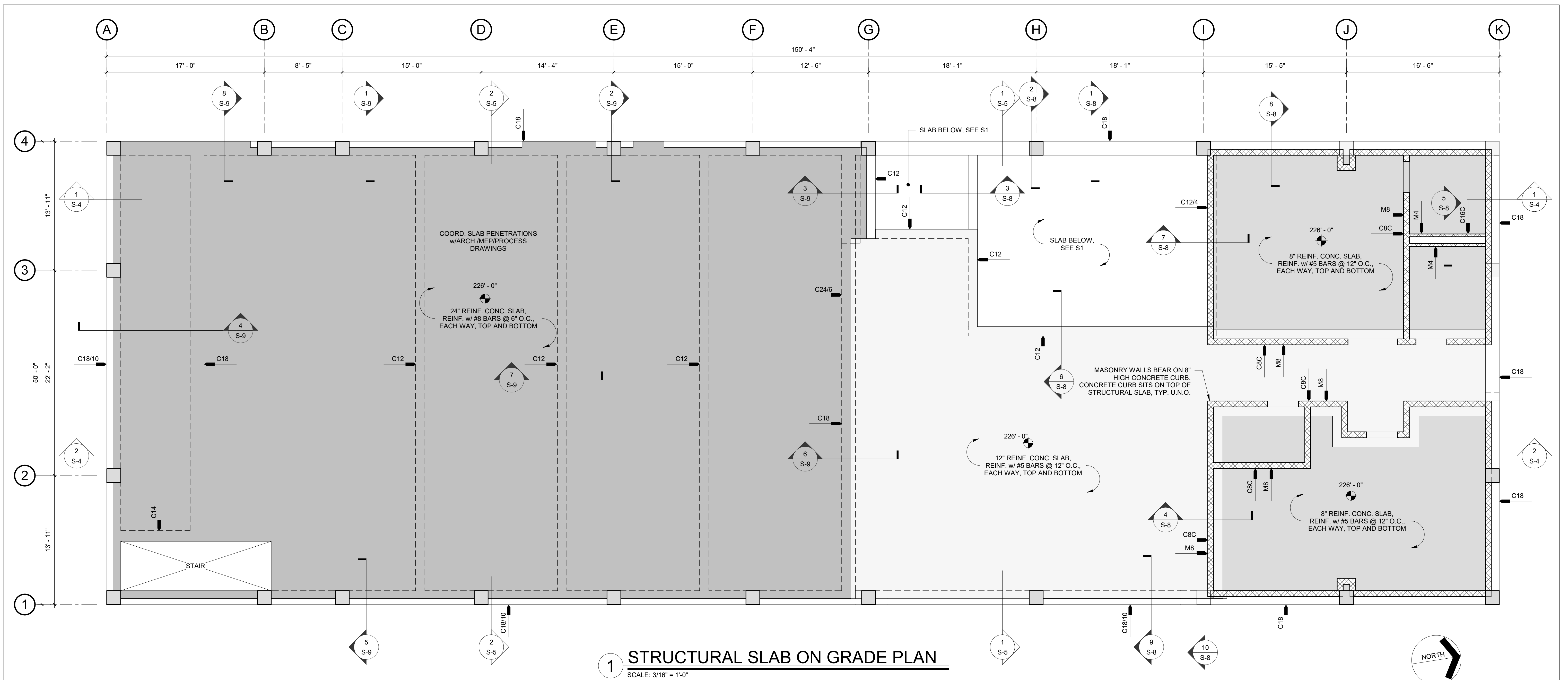
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

STRUCTURAL FOUNDATION PLAN

50% DESIGN
Sheet No.

S-1



1 STRUCTURAL SLAB ON GRADE PLAN
 SCALE: 3/16" = 1'-0"

- NOTES:**
- COORDINATE ALL WORK (INCLUDING FLOOR ELEVATIONS, DIMENSIONS, FINISH DETAILS, PENETRATIONS, ETC.) WITH THE ARCHITECTURAL DRAWINGS.
 - ###-## - INDICATES TOP OF NEW CONCRETE FOUNDATION WALL.
 - [##-##] - INDICATES BOTTOM OF NEW CONCRETE FOOTING ELEVATION
 - BOTTOM OF ALL NEW EXTERIOR FOOTINGS SHALL BE LOCATED A MINIMUM OF ##-## BELOW FINISH GRADE.
 - ##'-##" - INDICATES FLOOR ELEVATION (TYP., U.N.O.).
 - # - 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.).
 - F# - INDICATES NEW CONCRETE FOOTING TYPE. SEE "FOOTING SCHEDULE" ON THIS SHEET.
 - P# - INDICATES NEW CONCRETE PIER TYPE. SEE "PIER SCHEDULE" ON 4/S-7
 - TOP OF PIER ELEVATION IS 8" BELOW TOP OF SLAB, UNLESS NOTED OTHERWISE.
 - CW# - INDICATES NEW WALL MARK. SEE "WALL SCHEDULE" ON THIS SHEET.

WALL SCHEDULE		
MARK	DESCRIPTION	REINFORCEMENT (U.N.O.)
C8C	8" CONCRETE CURB	SEE TYPICAL DETAILS
C12	12" CONCRETE WALL	T.B.D.
C12/4	12" CONCRETE WALL w/4" SHELF	T.B.D.
C14	14" CONCRETE WALL	T.B.D.
C16C	16" CONCRETE CURB	T.B.D.
C18	18" CONCRETE WALL	T.B.D.
C18/10	18" CONCRETE WALL w/10" SHELF	T.B.D.
C24/6	24" CONCRETE WALL w/6" SHELF	T.B.D.
M4	4" CMU WALL	T.B.D.
M8	8" CMU WALL	SEE GENERAL NOTES



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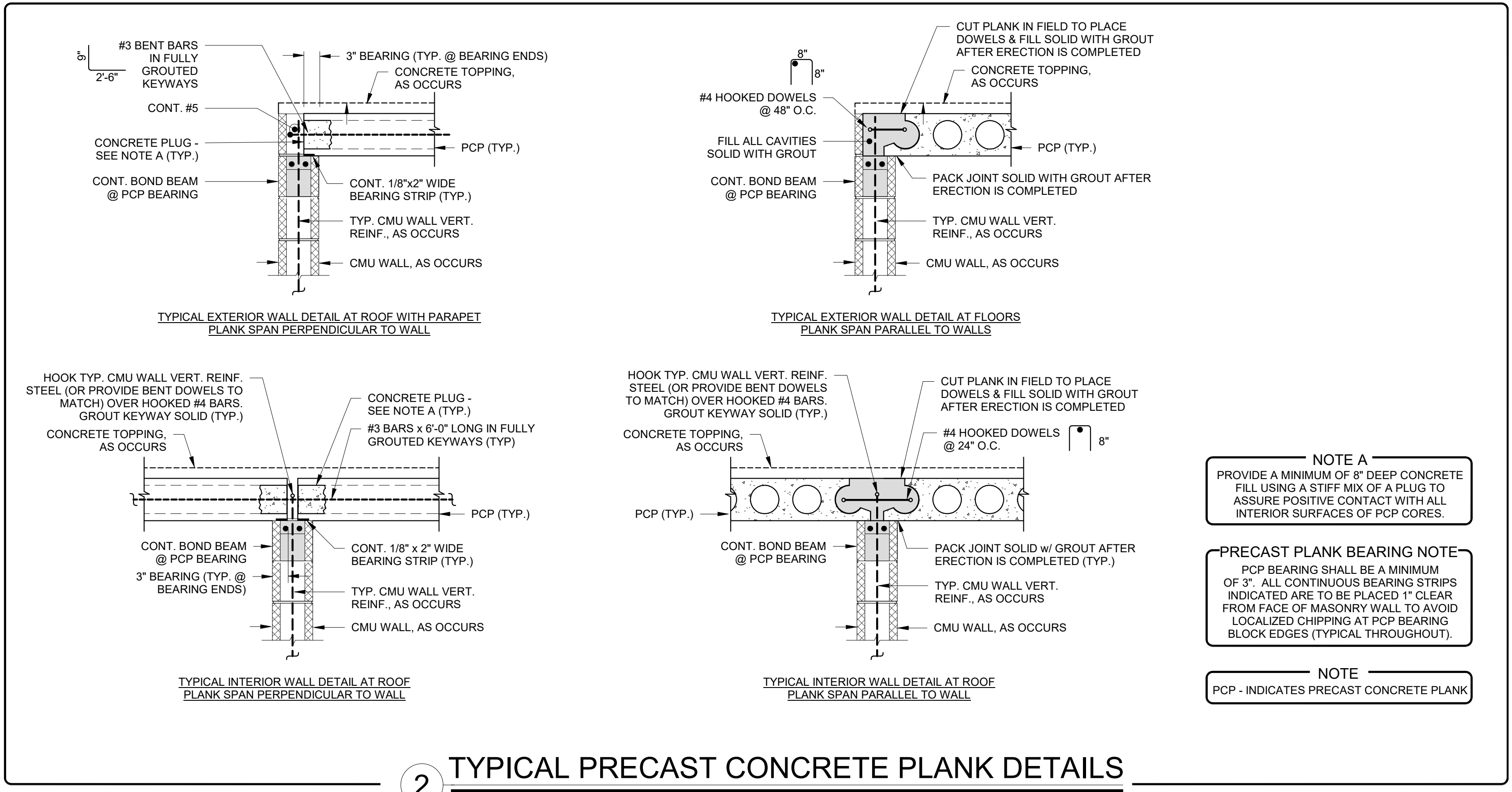
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
 TOWN OF SHARON, MA

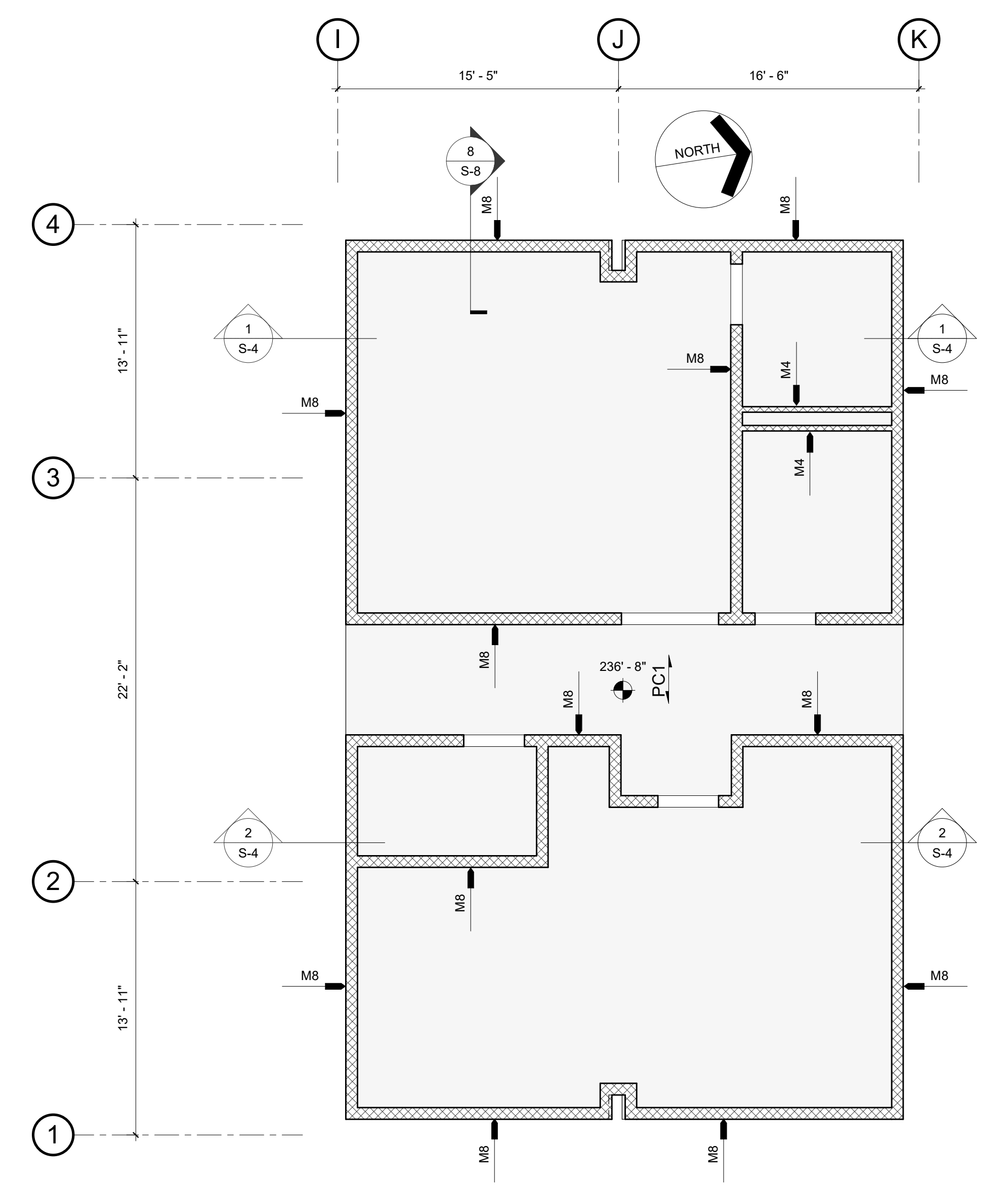
STRUCTURAL GROUND FLOOR SLAB PLAN

50% DESIGN
 Sheet No.

S-2



2 TYPICAL PRECAST CONCRETE PLANK DETAILS
NO SCALE



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

- NOTES:**
- COORDINATE ALL WORK (INCLUDING FLOOR ELEVATIONS, DIMENSIONS, FINISH DETAILS, PENETRATIONS, SEQUENCING, ETC.) WITH THE ARCHITECTURAL DRAWINGS.
 - ###-### - INDICATES T.O. FLOOR ELEVATION (TYP., U.N.O.).
 - PC1 - INDICATES 10" PRECAST CONCRETE PLANK w/ 2" TOPPING SLAB. SEE TYPICAL DETAILS.
 - W# - INDICATES NEW WALL MARK. SEE "WALL SCHEDULE" ON THIS SHEET.
 - - INDICATES CMU LINTEL LOCATION. SEE LINTEL SCHEDULE.
 - # - 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.).

WALL SCHEDULE		
MARK	DESCRIPTION	REINFORCEMENT (U.N.O.)
C8C	8" CONCRETE CURB	SEE TYPICAL DETAILS
C12	12" CONCRETE WALL	T.B.D.
C12/4	12" CONCRETE WALL w/4" SHELF	T.B.D.
C14	14" CONCRETE WALL	T.B.D.
C16C	16" CONCRETE CURB	T.B.D.
C18	18" CONCRETE WALL	T.B.D.
C18/10	18" CONCRETE WALL w/10" SHELF	T.B.D.
C24/6	24" CONCRETE WALL w/6" SHELF	T.B.D.
M4	4" CMU WALL	T.B.D.
M8	8" CMU WALL	SEE GENERAL NOTES



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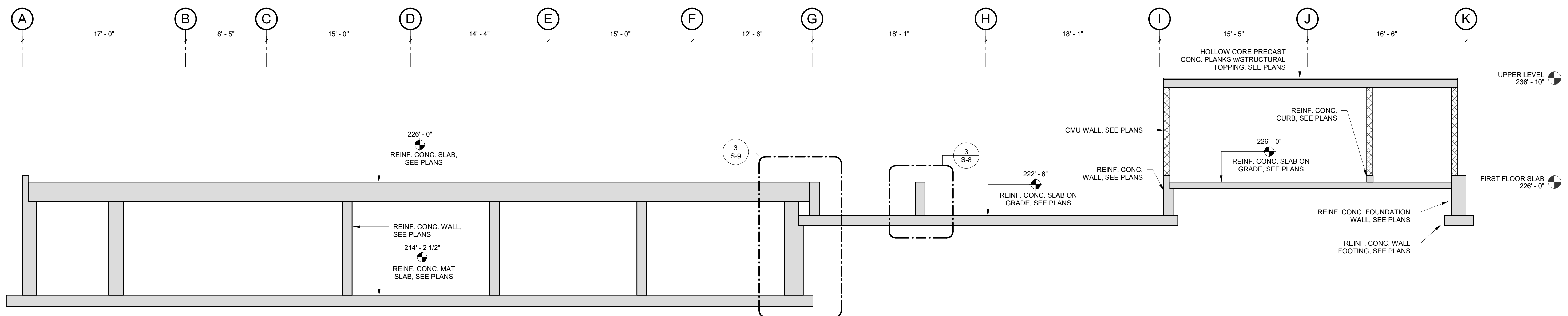
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TOWN OF SHARON, MA

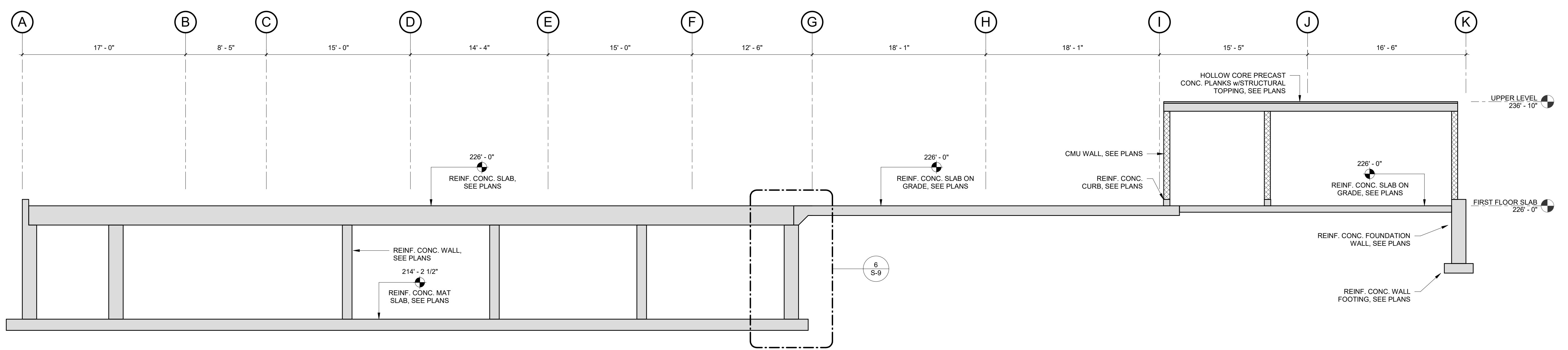
STRUCTURAL UPPER LEVEL FRAMING PLAN

50% DESIGN
Sheet No.

S-3



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



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



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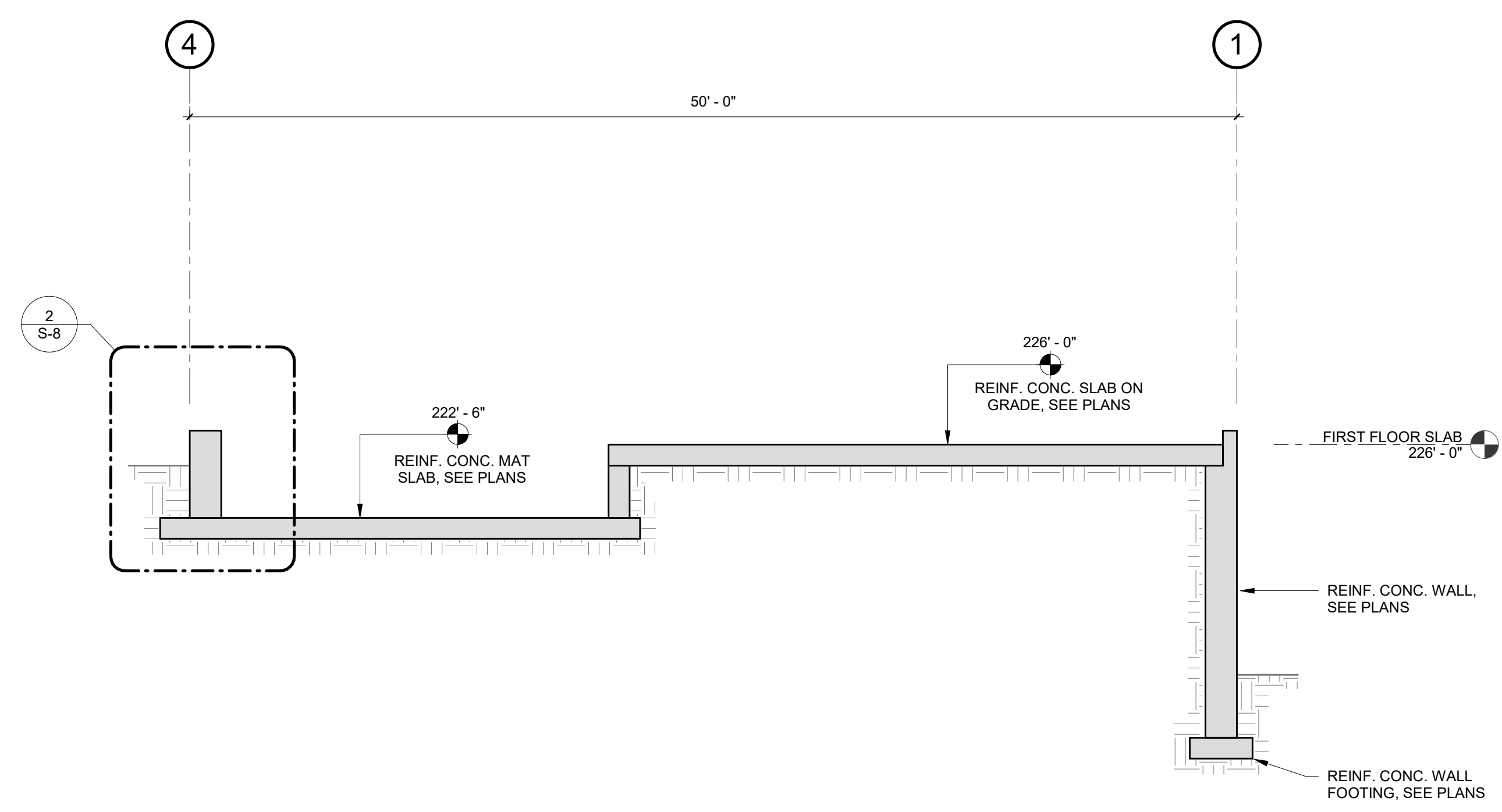
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

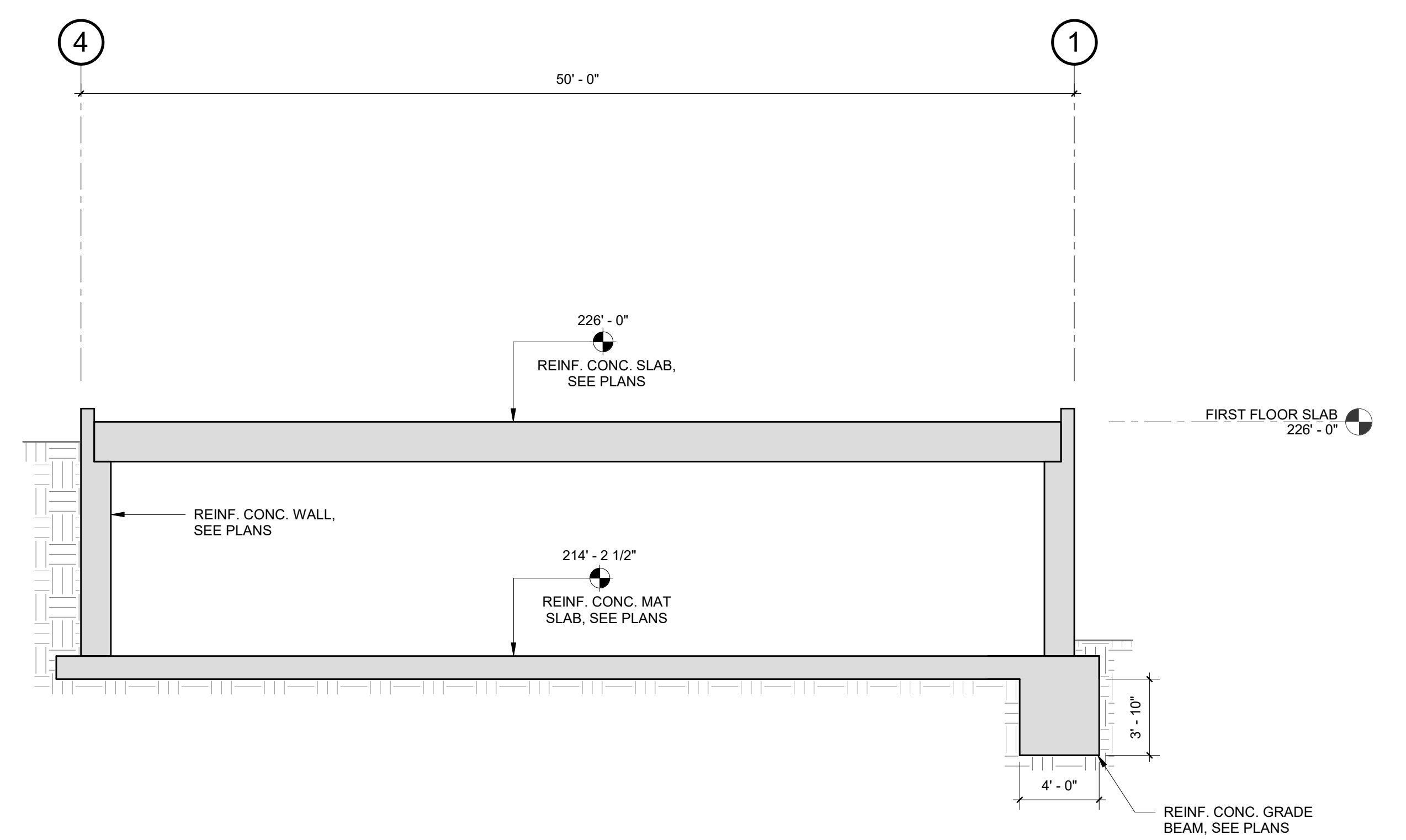
STRUCTURAL BUILDING SECTIONS I

50% DESIGN
Sheet No.

S-4



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



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



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odeh engineers
structural engineers
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North Providence, RI 02904
Phone: 401.724.1771
Fax: 401.724.1981
www.odehengineers.com

MARK	DATE	DESCRIPTION

Scale	3/16" = 1'-0"
Date	SEPTEMBER 2023
Job No.	245-2103
Designed by	JDZ/KLM
Drawn by	JDZ/KLM
Checked by	DJO
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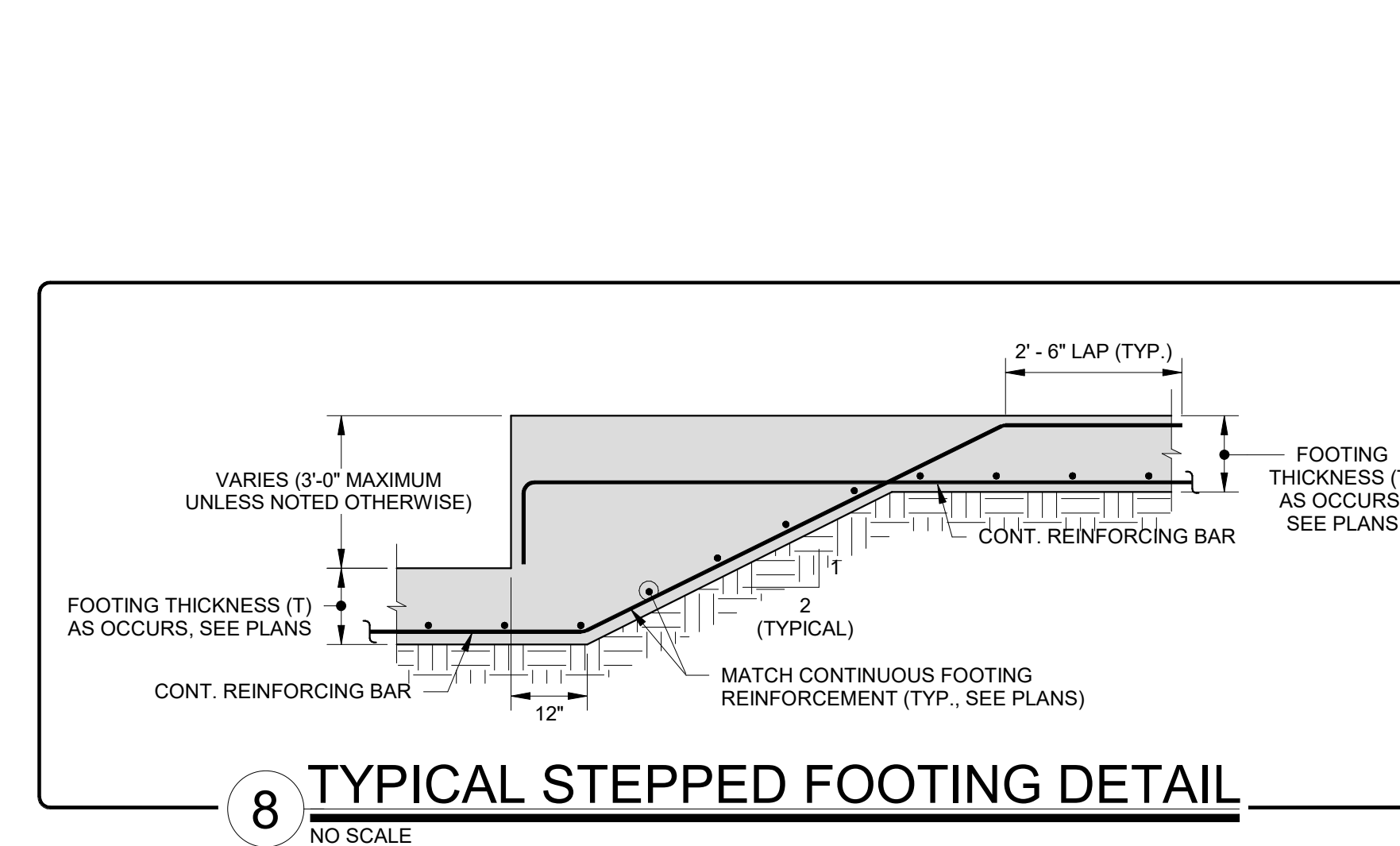
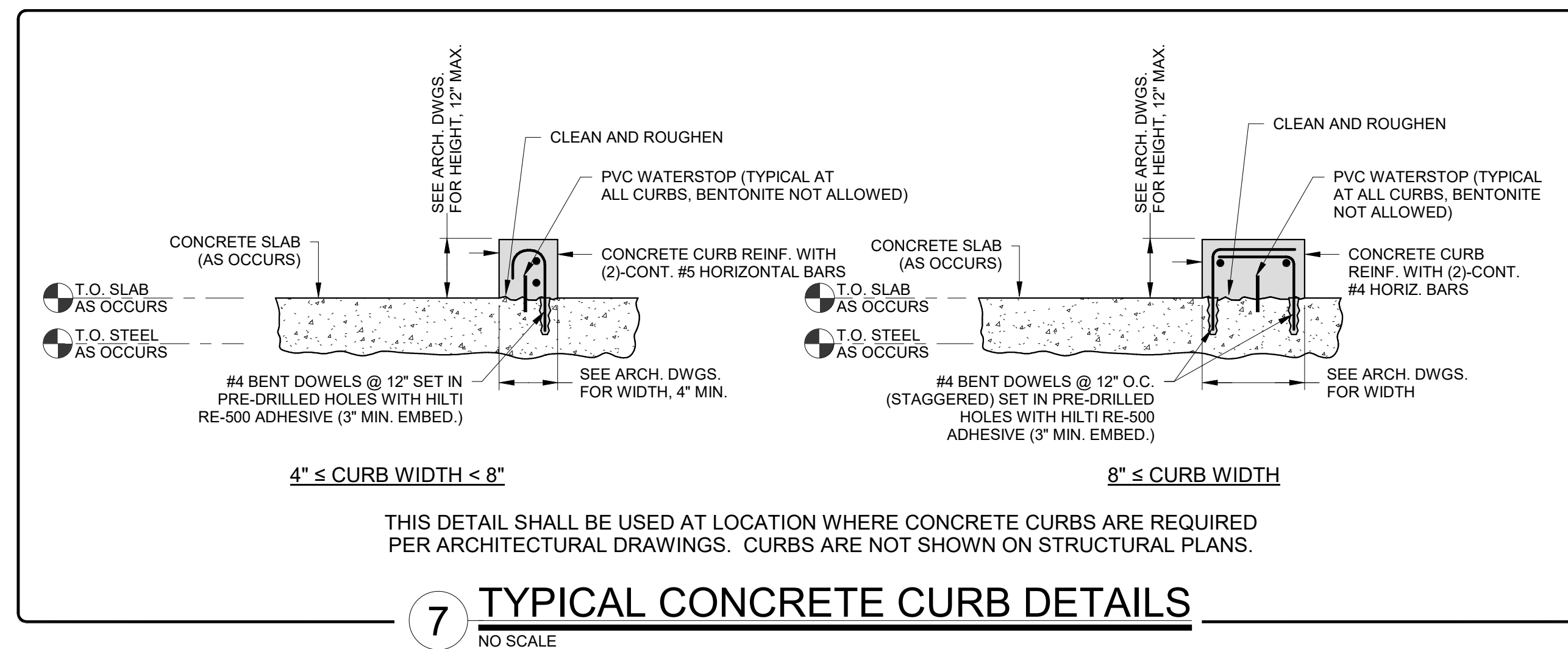
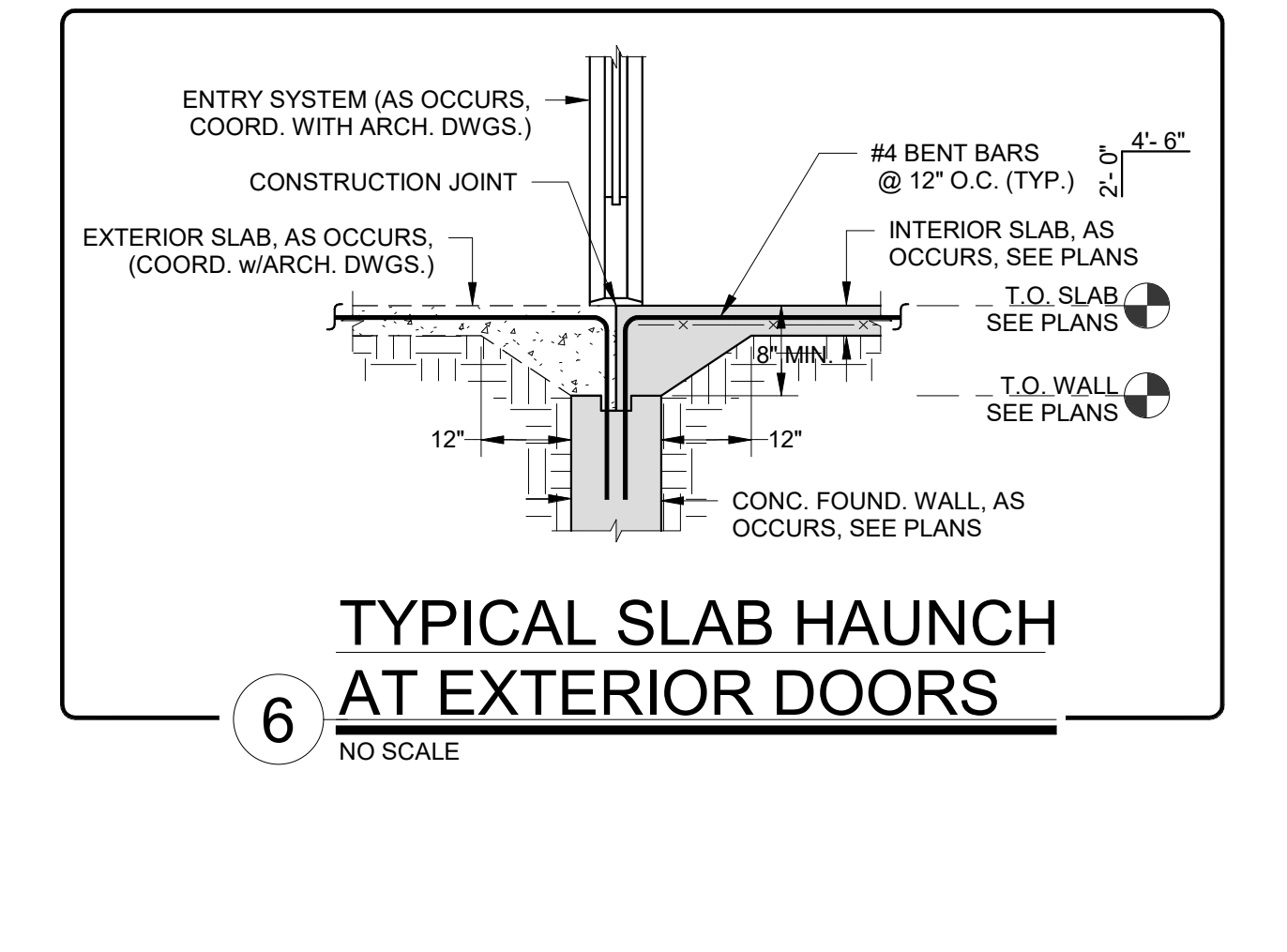
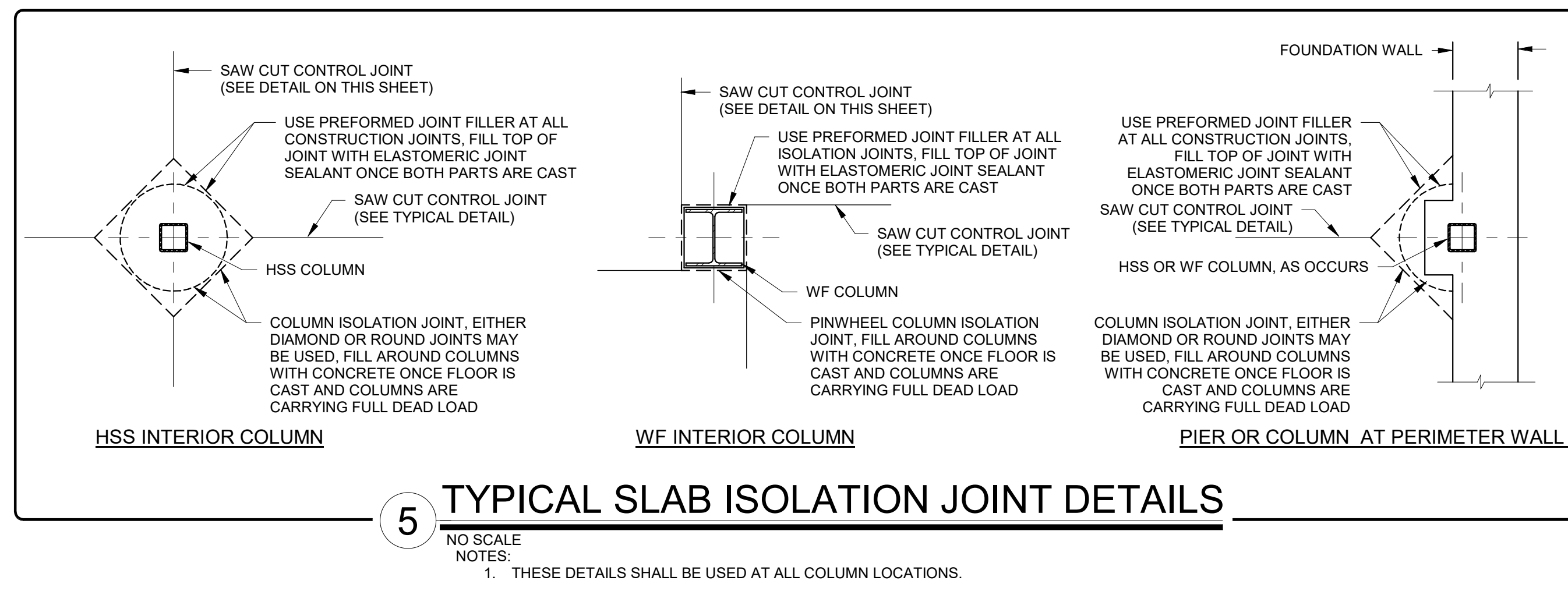
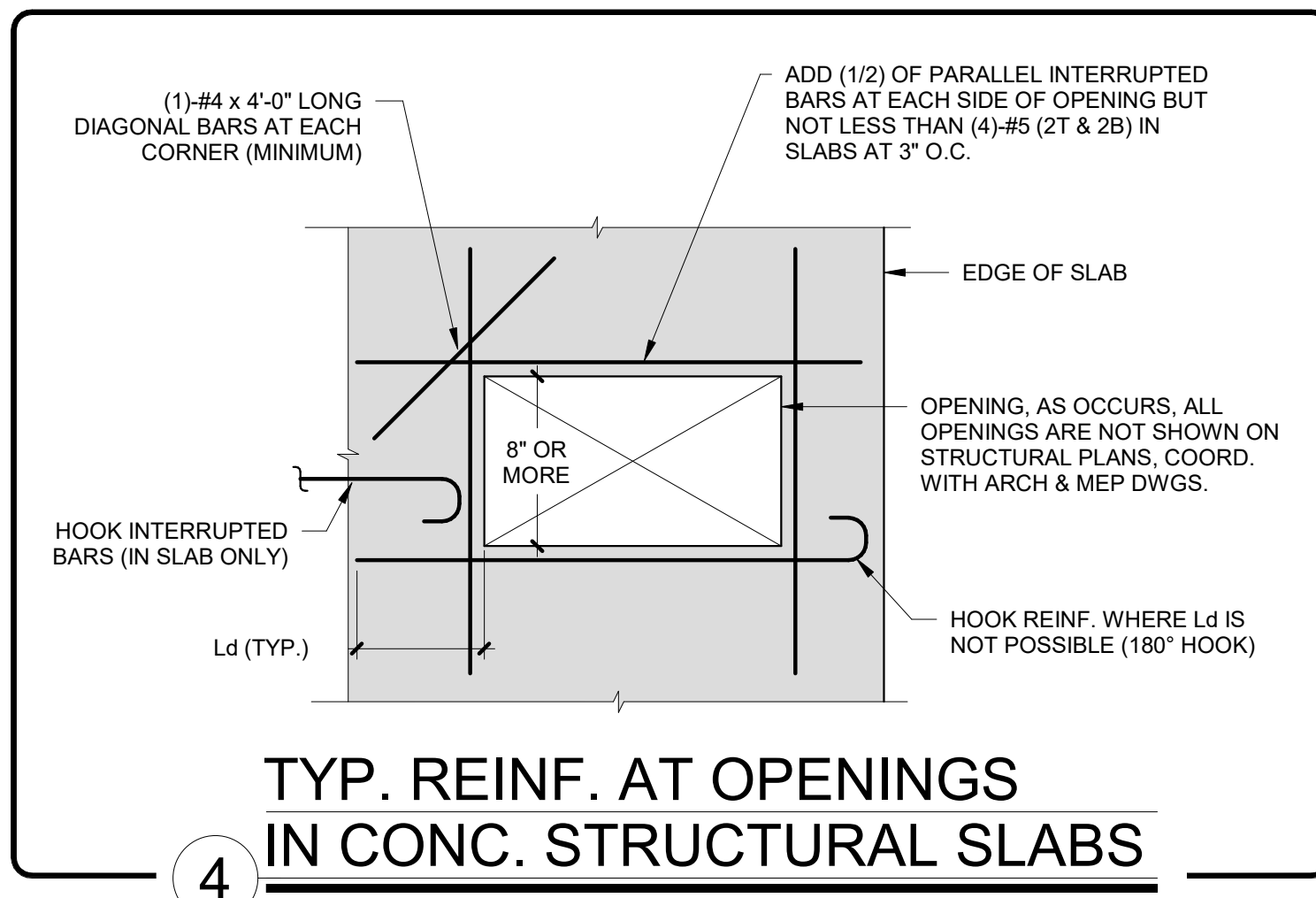
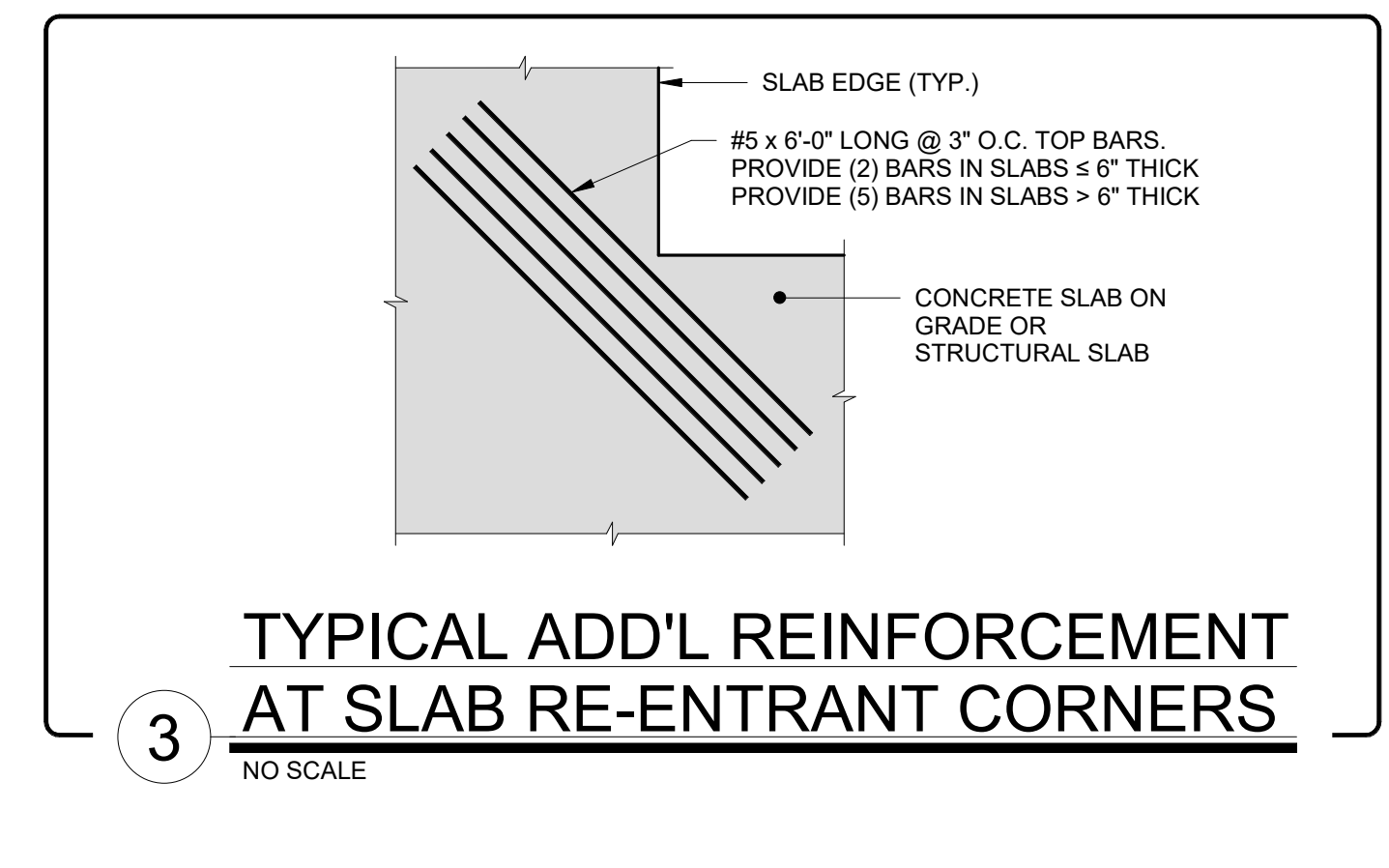
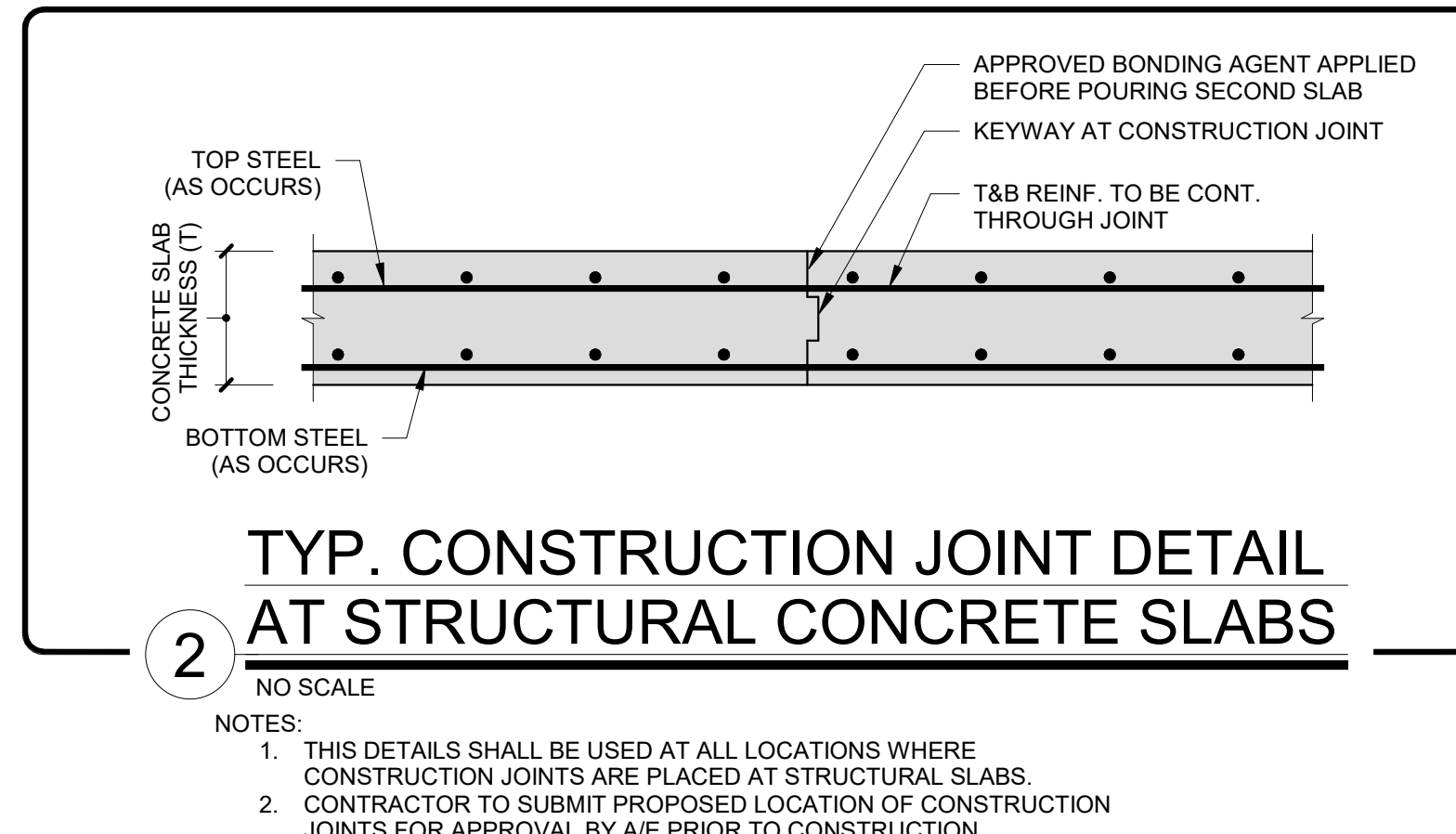
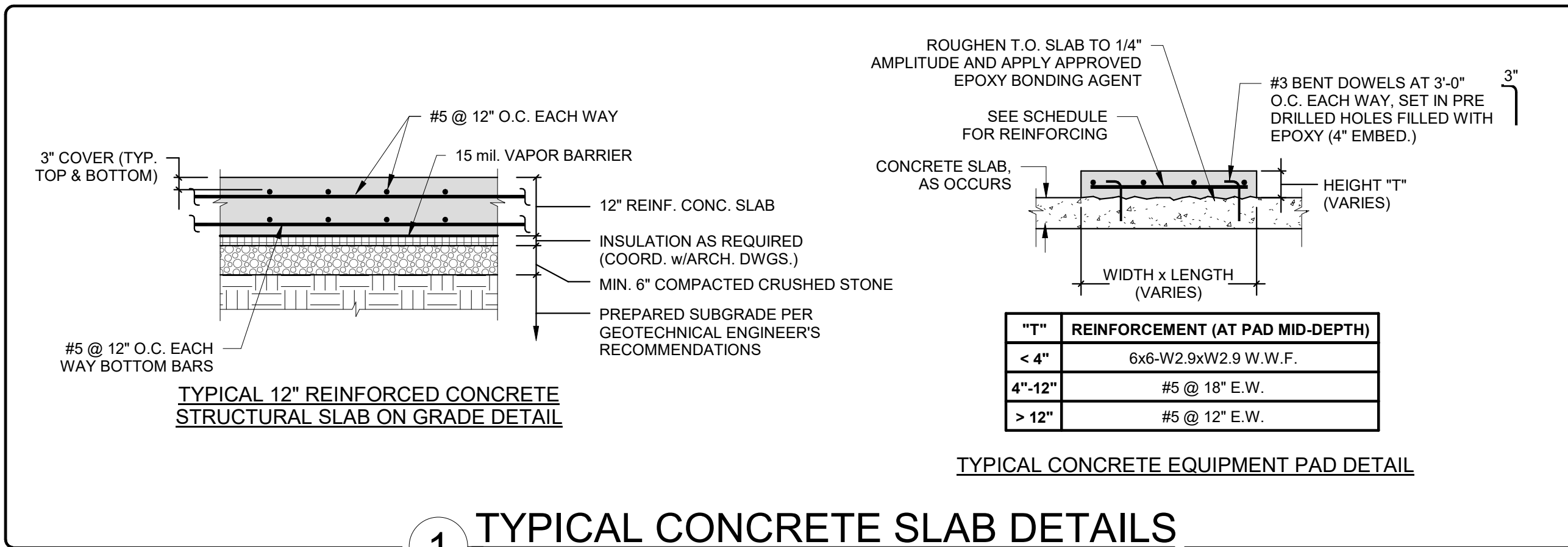
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

STRUCTURAL BUILDING SECTIONS II

50% DESIGN
Sheet No.

S-5



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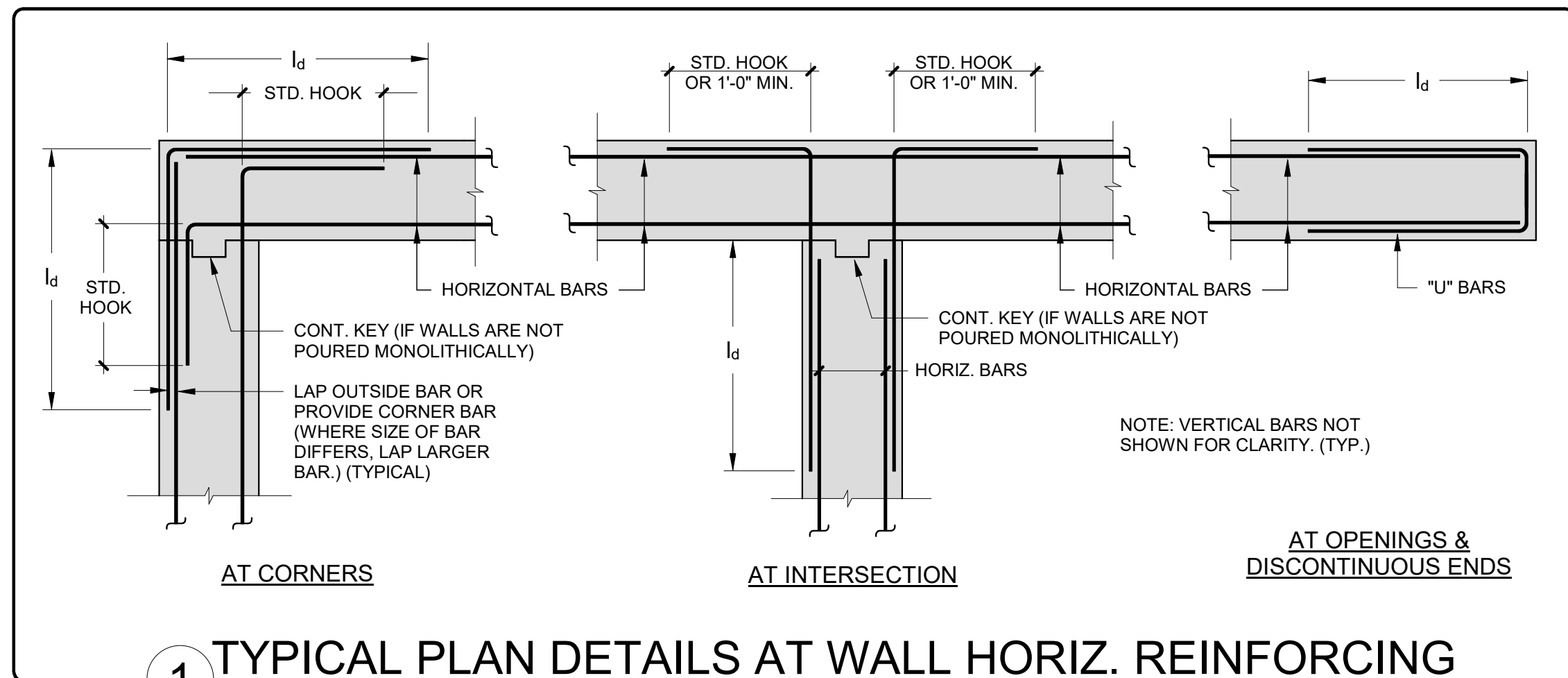
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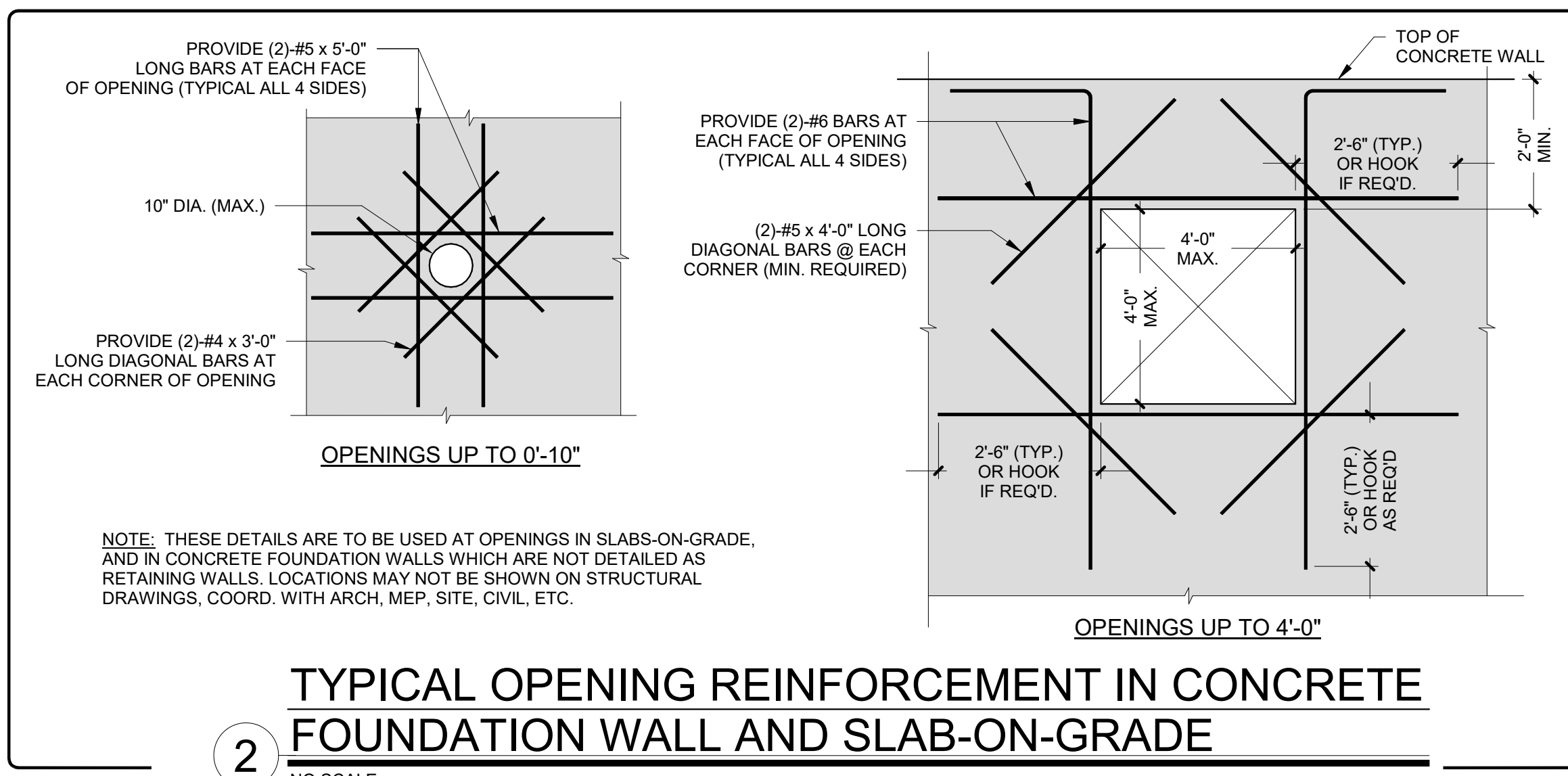
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
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STRUCTURAL TYPICAL FOUNDATION DETAILS I

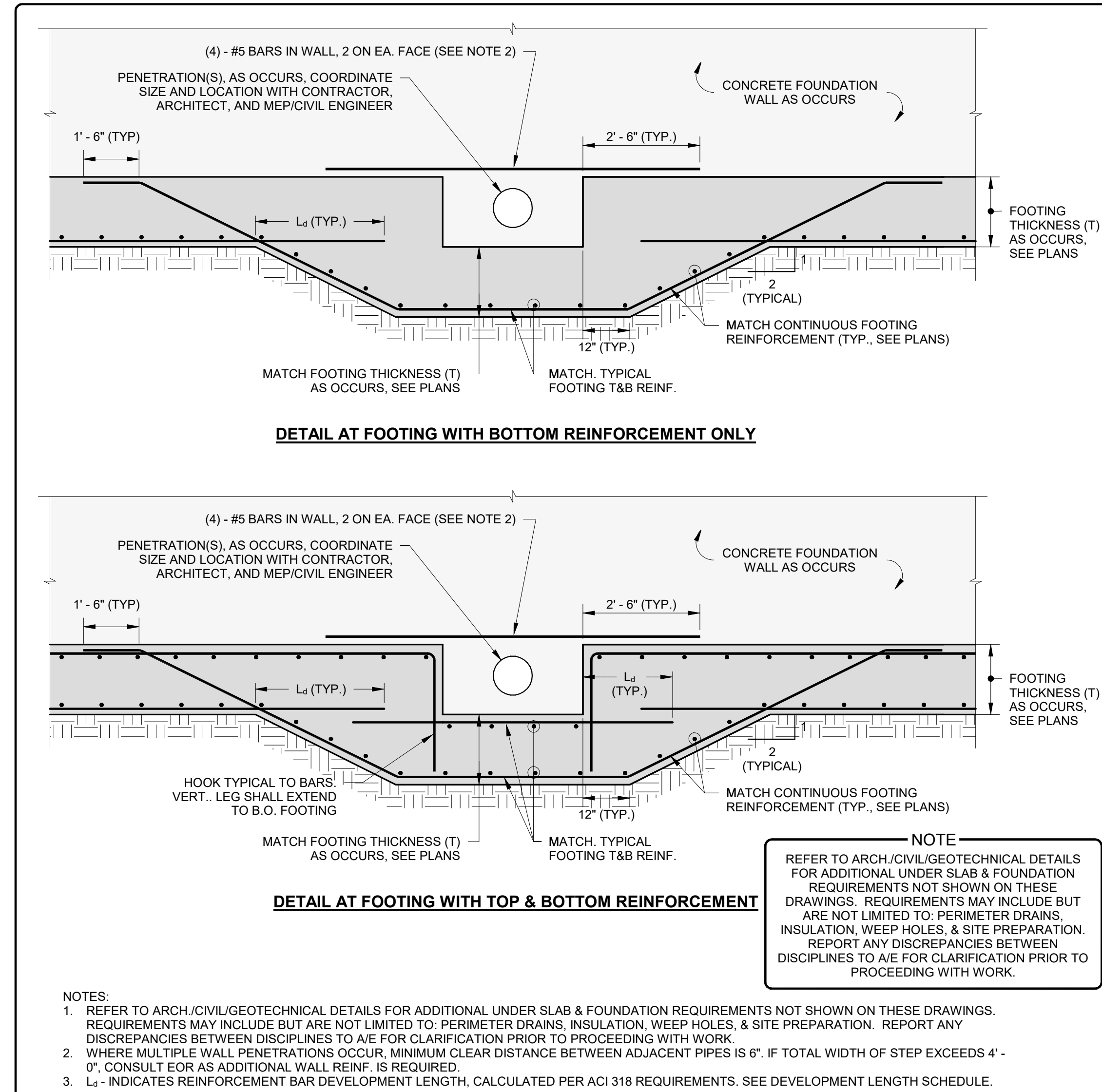
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S-6



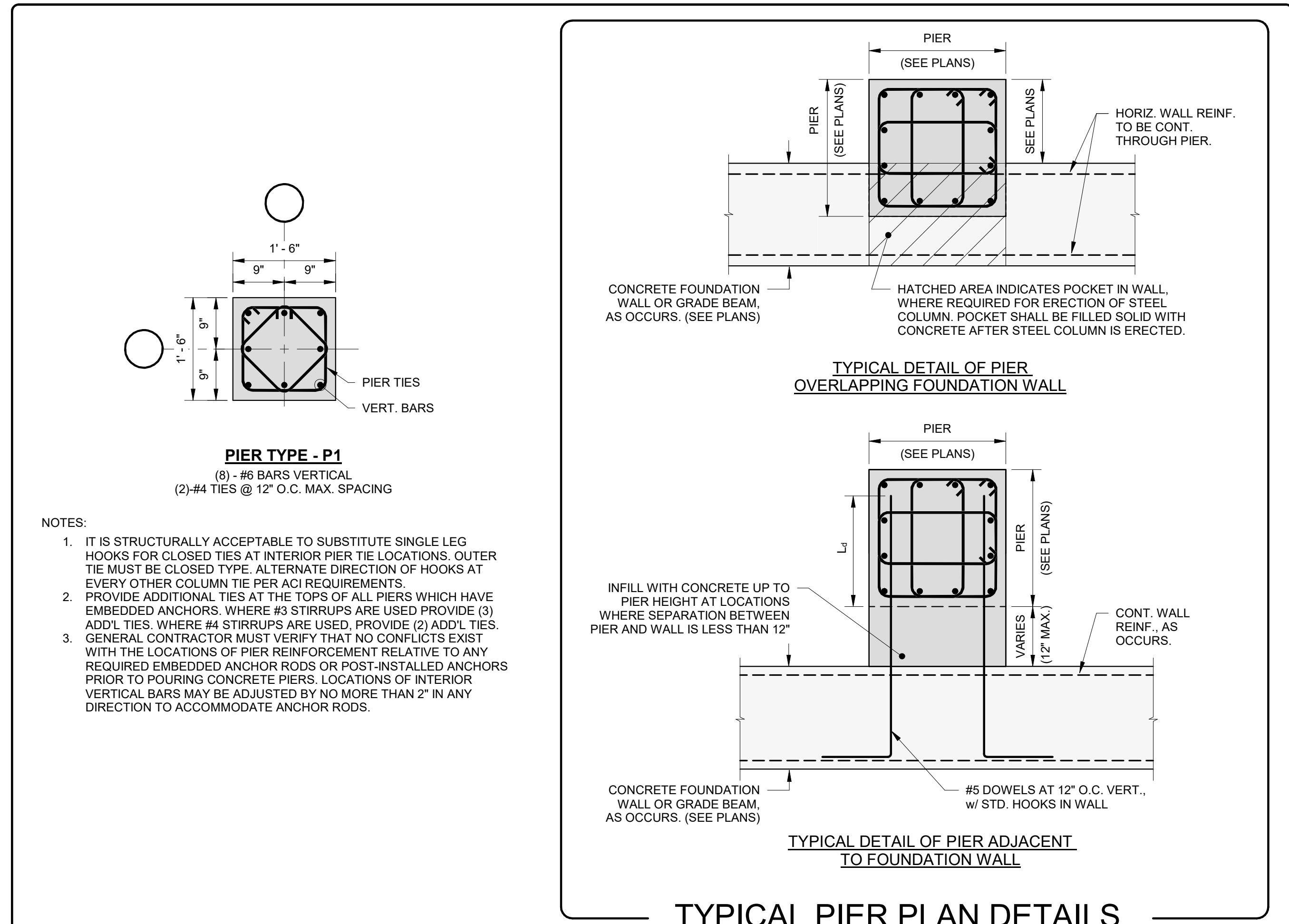
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2 TYPICAL OPENING REINFORCEMENT IN CONCRETE FOUNDATION WALL AND SLAB-ON-GRADE
NO SCALE



3 TYPICAL FOUNDATION ELEVATION DETAILS AT MEP PENETRATIONS
NO SCALE



4 TYPICAL CONCRETE PIER DETAILS
NO SCALE



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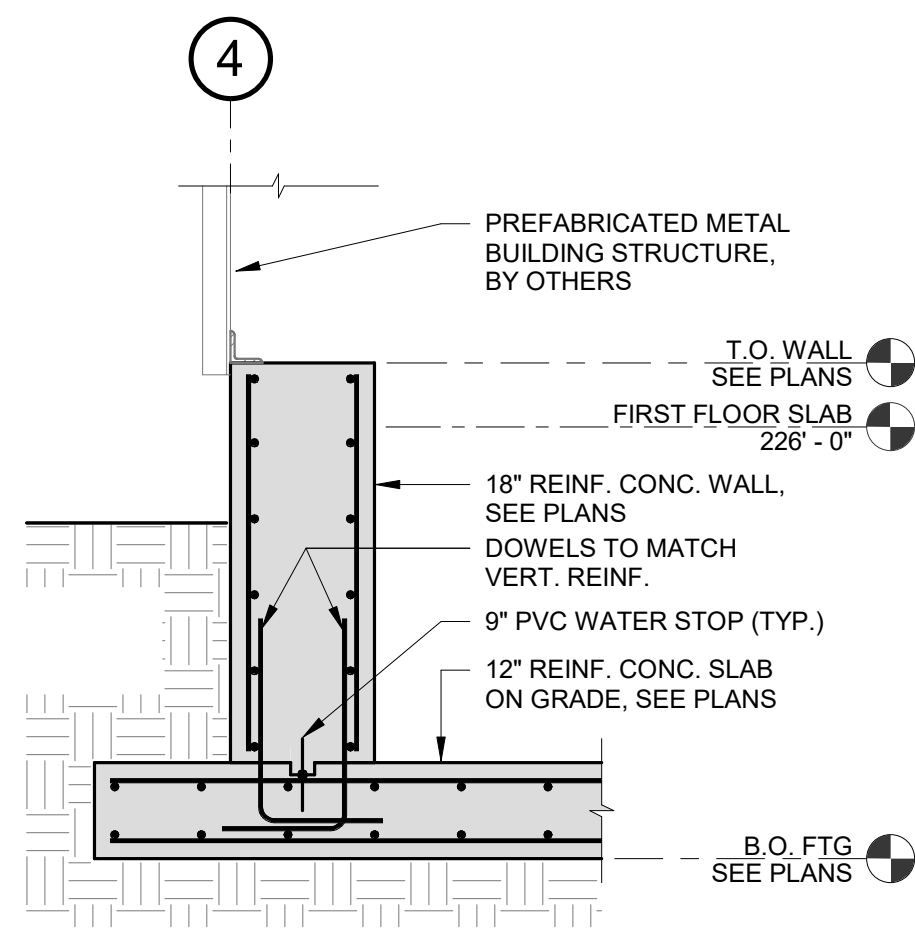
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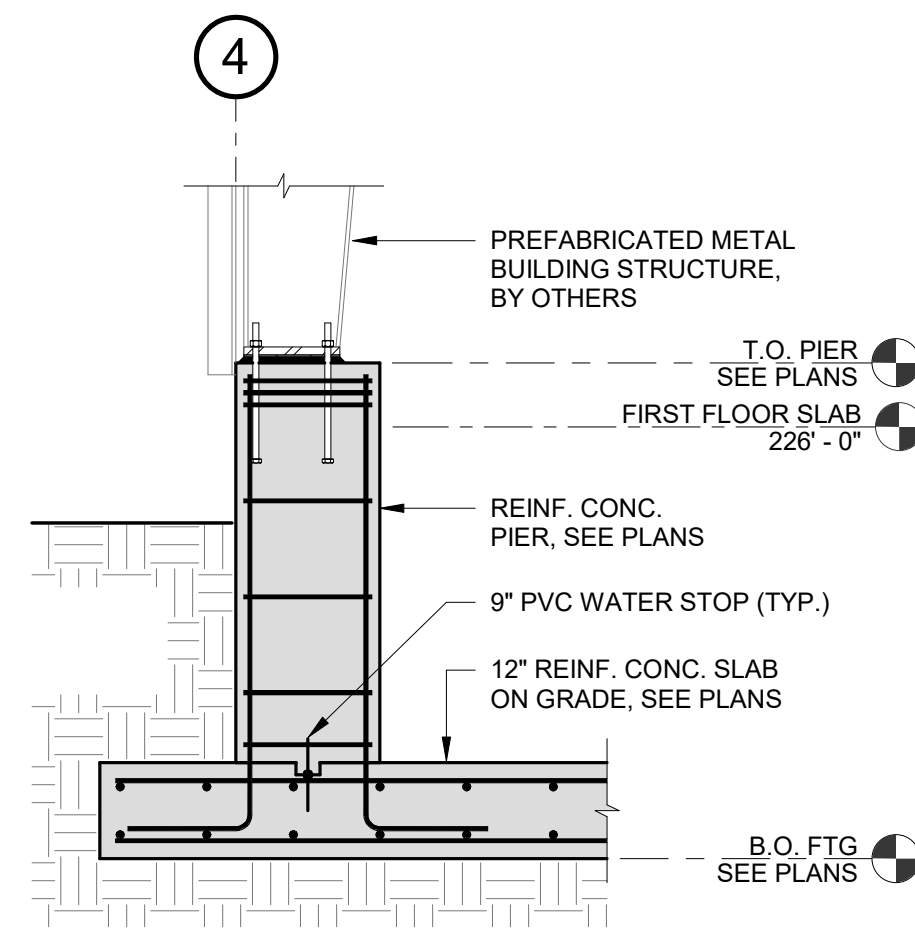
STRUCTURAL TYPICAL FOUNDATION DETAILS II

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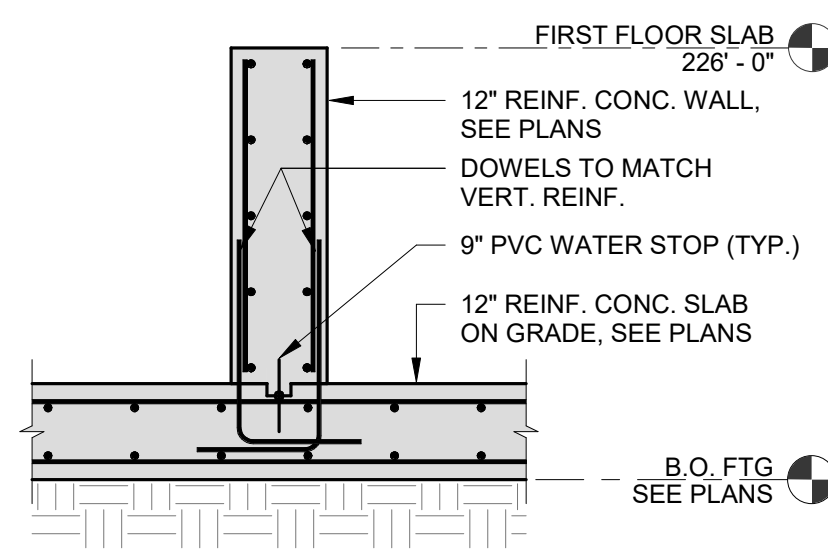
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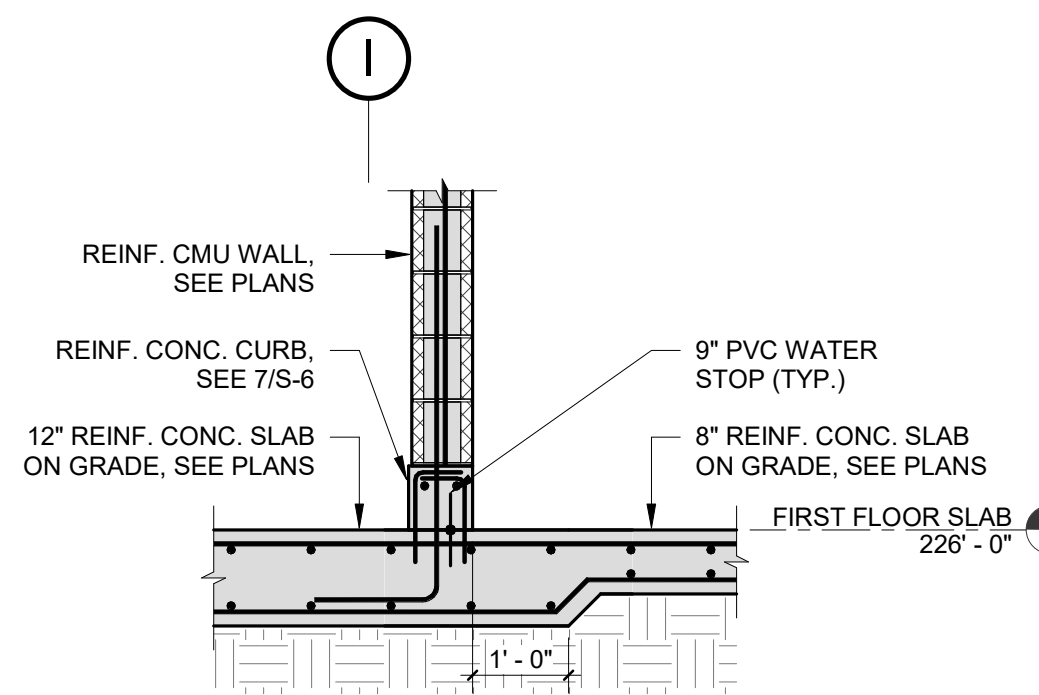
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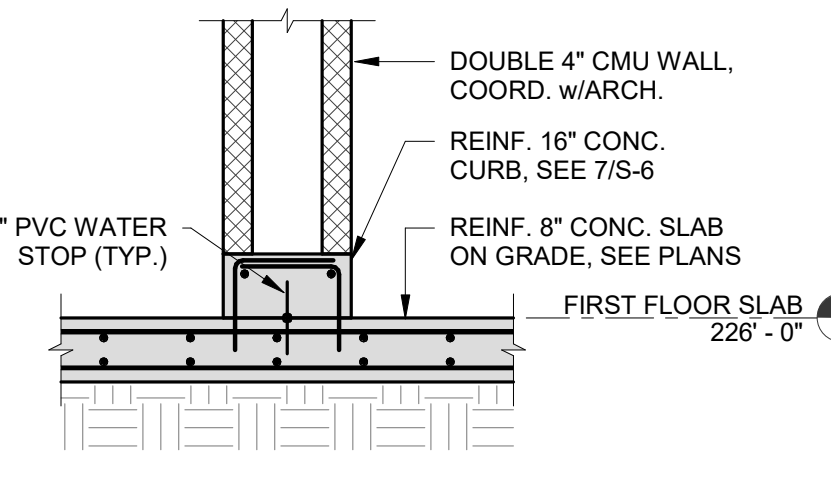
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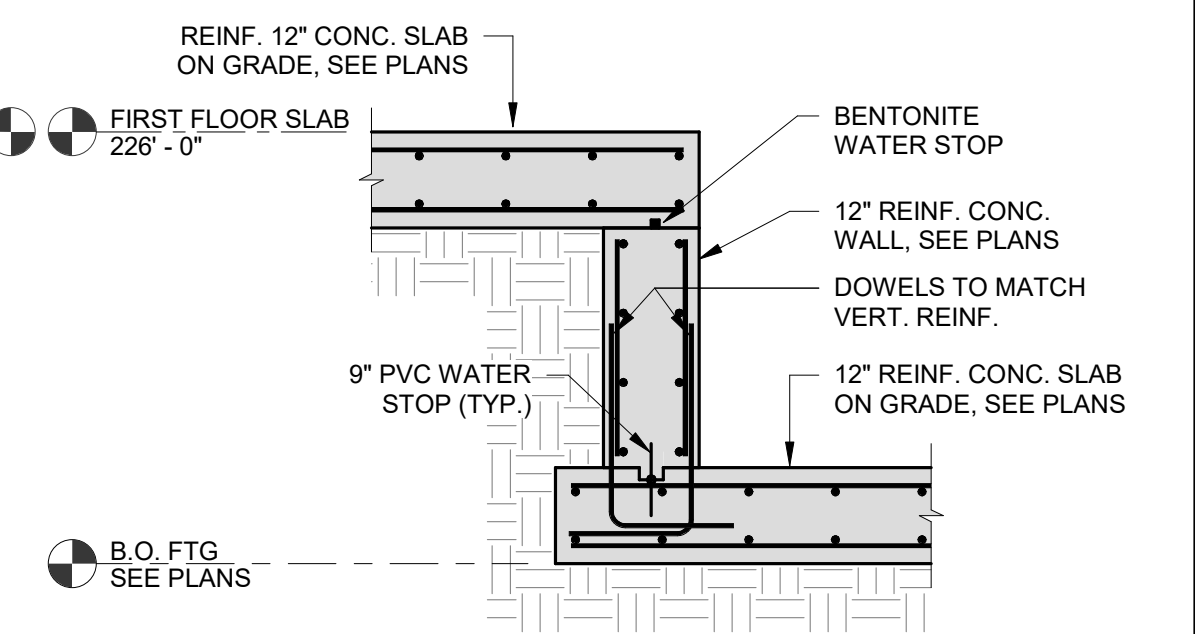
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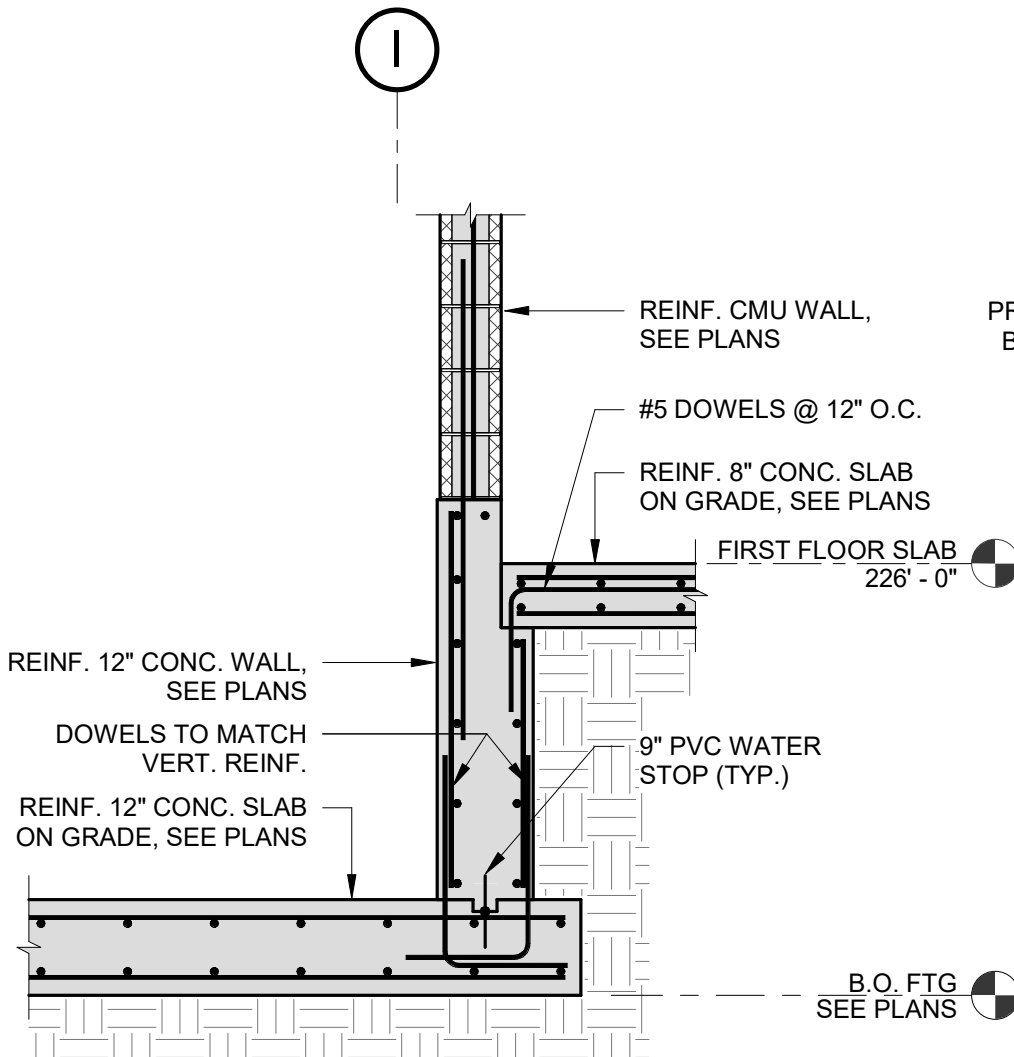
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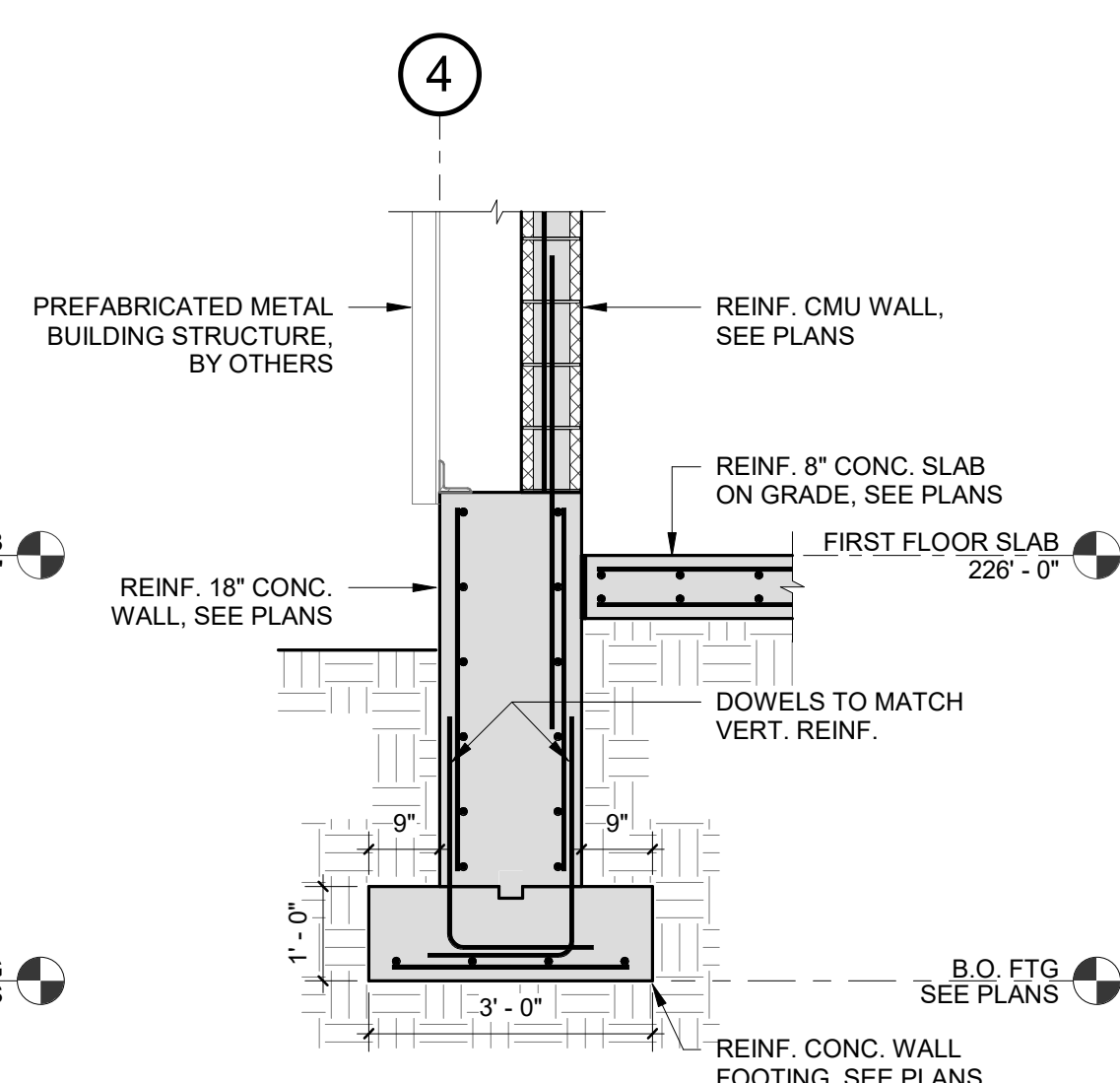
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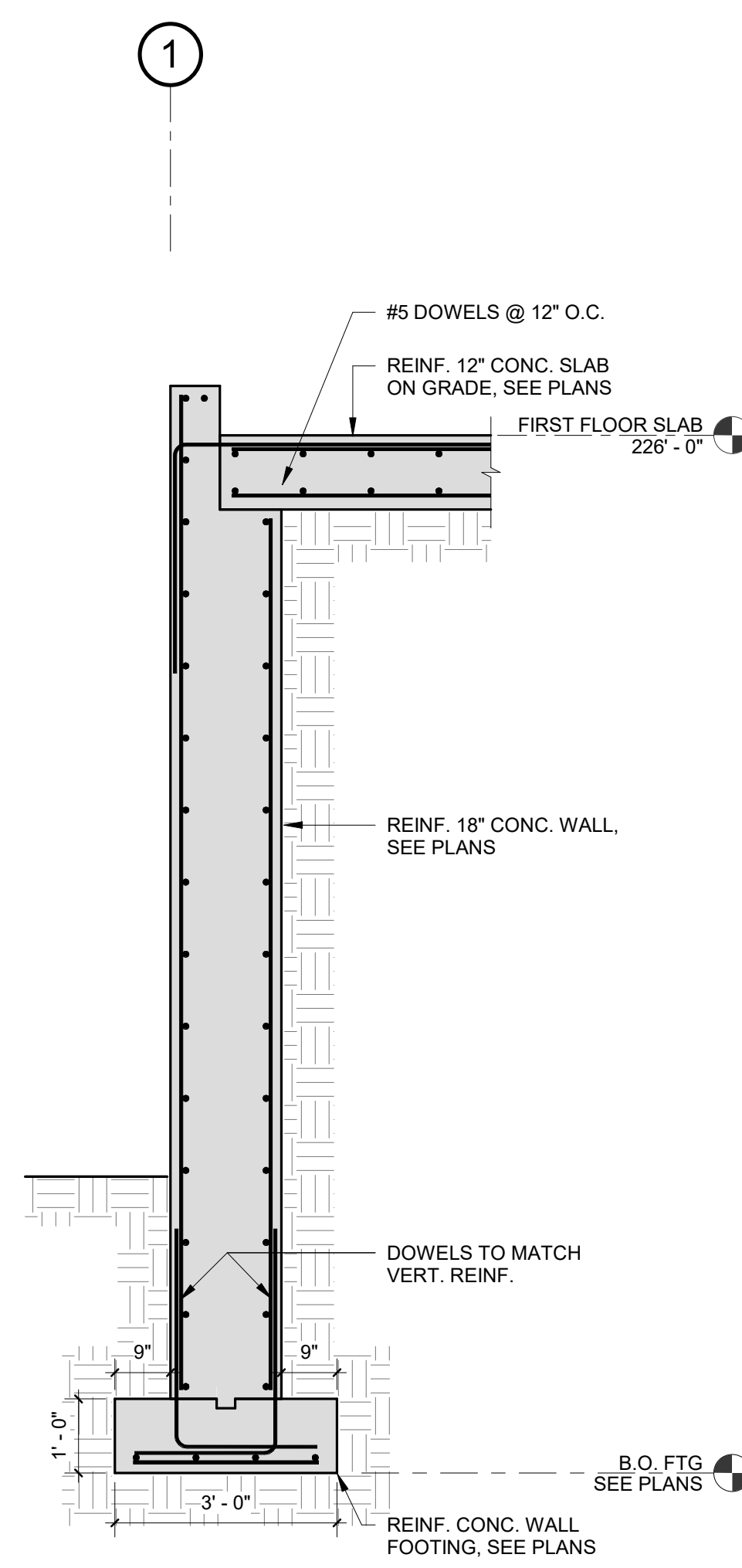
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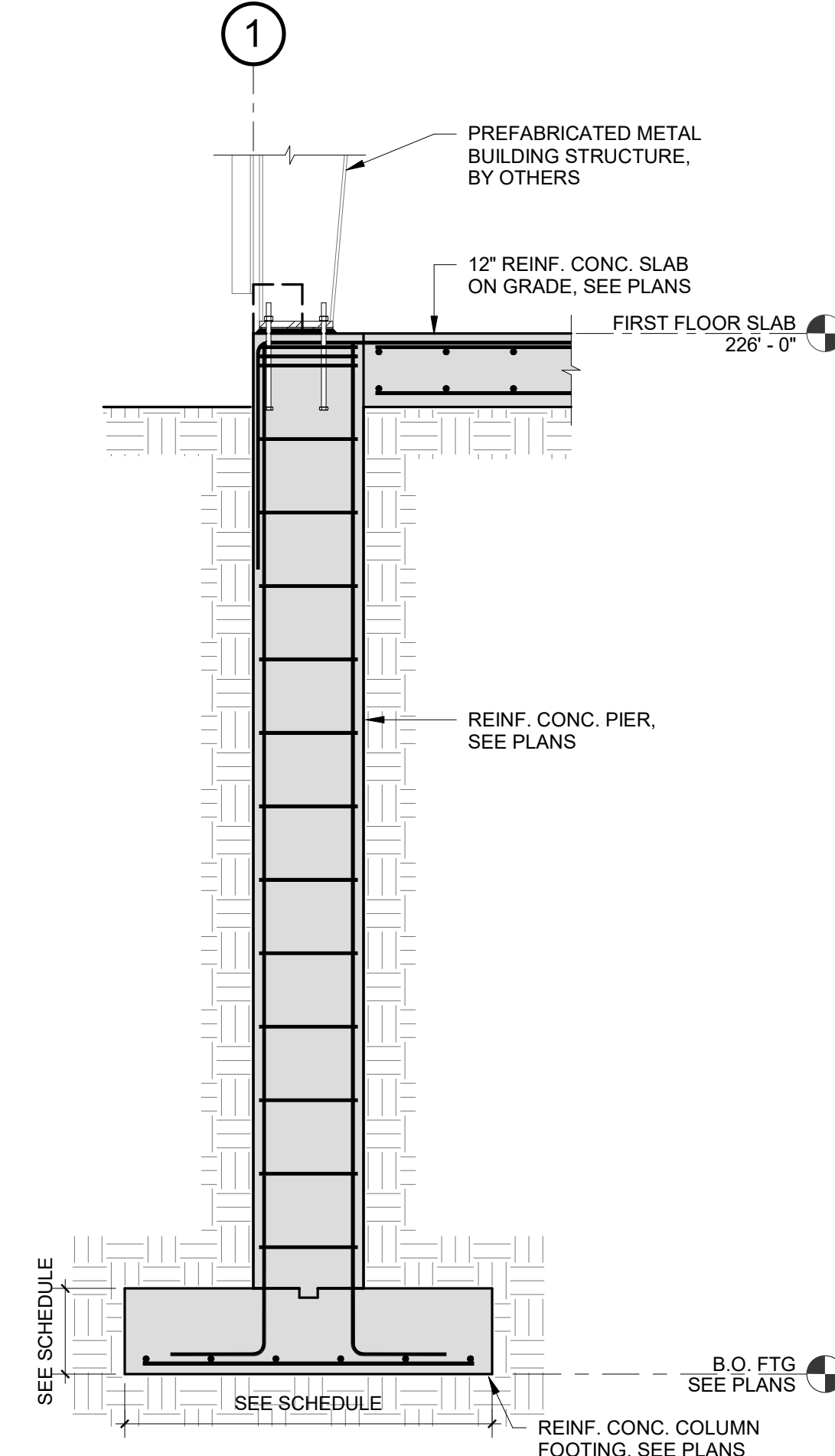
7 SECTION
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8 SECTION
SCALE: 1/2" = 1'-0"



9 SECTION
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10 SECTION
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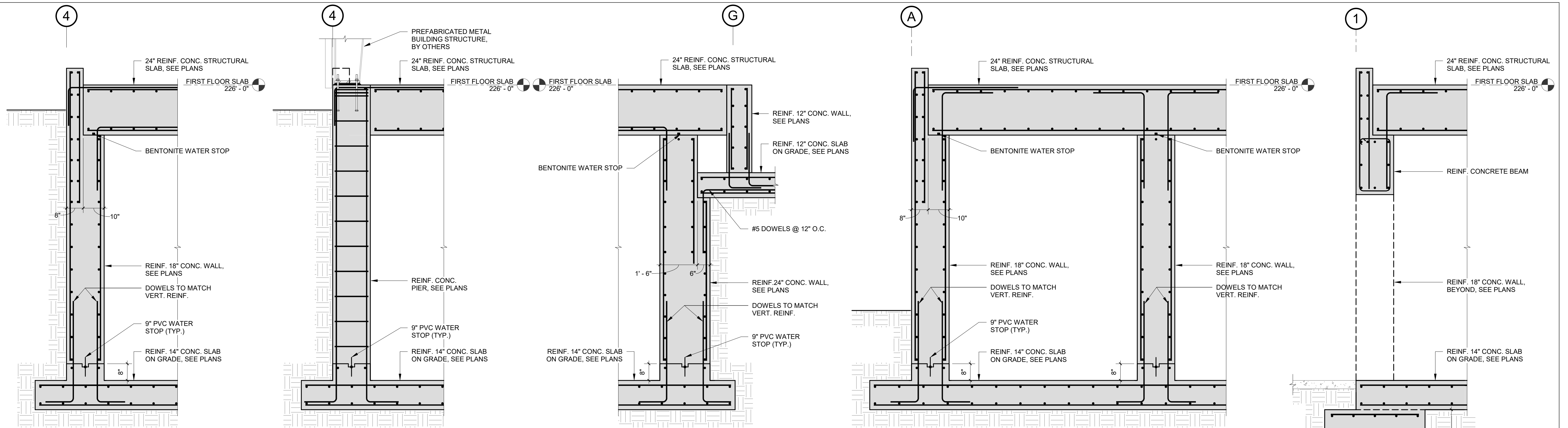
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STRUCTURAL FOUNDATION SECTIONS I

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Sheet No.

S-8



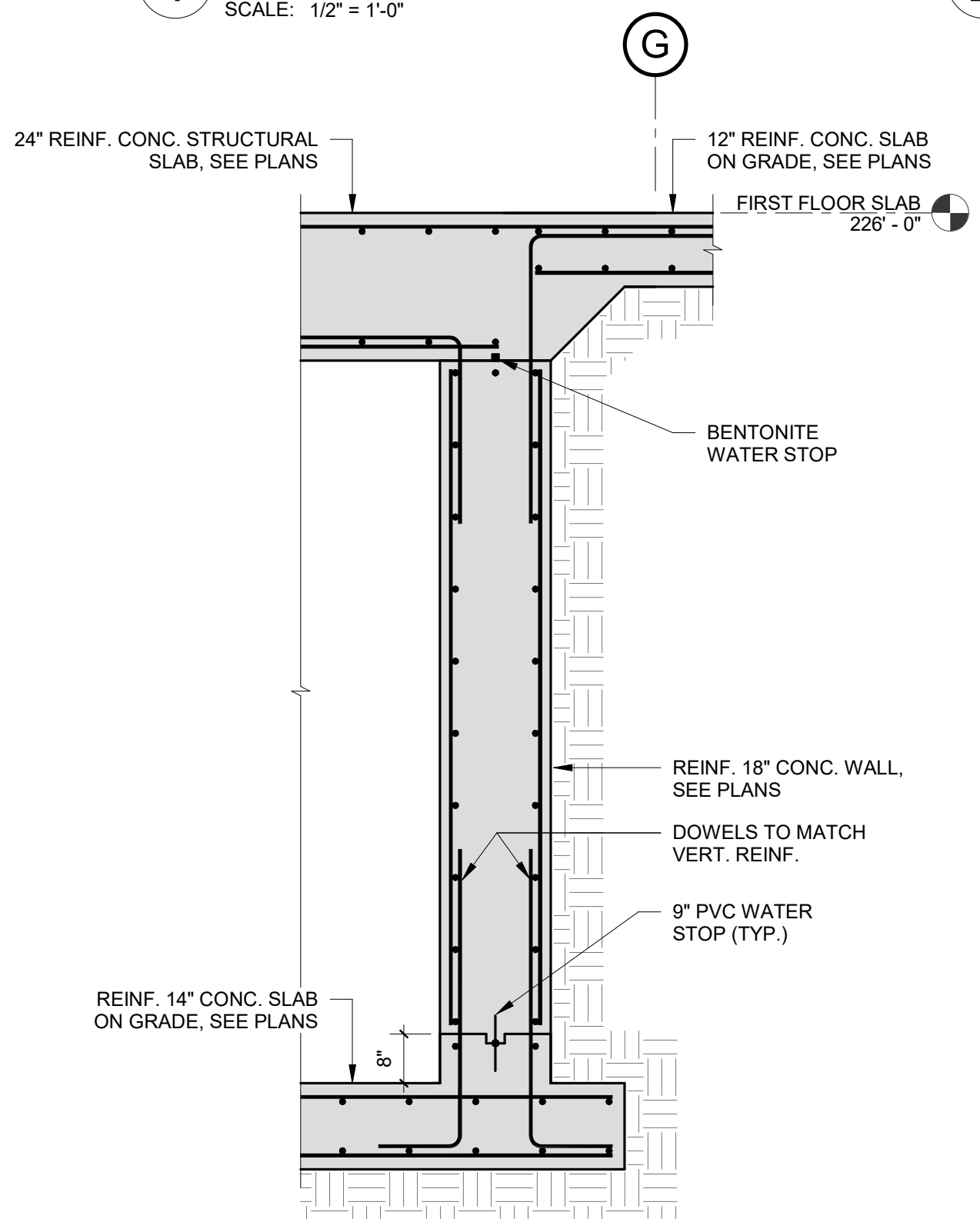
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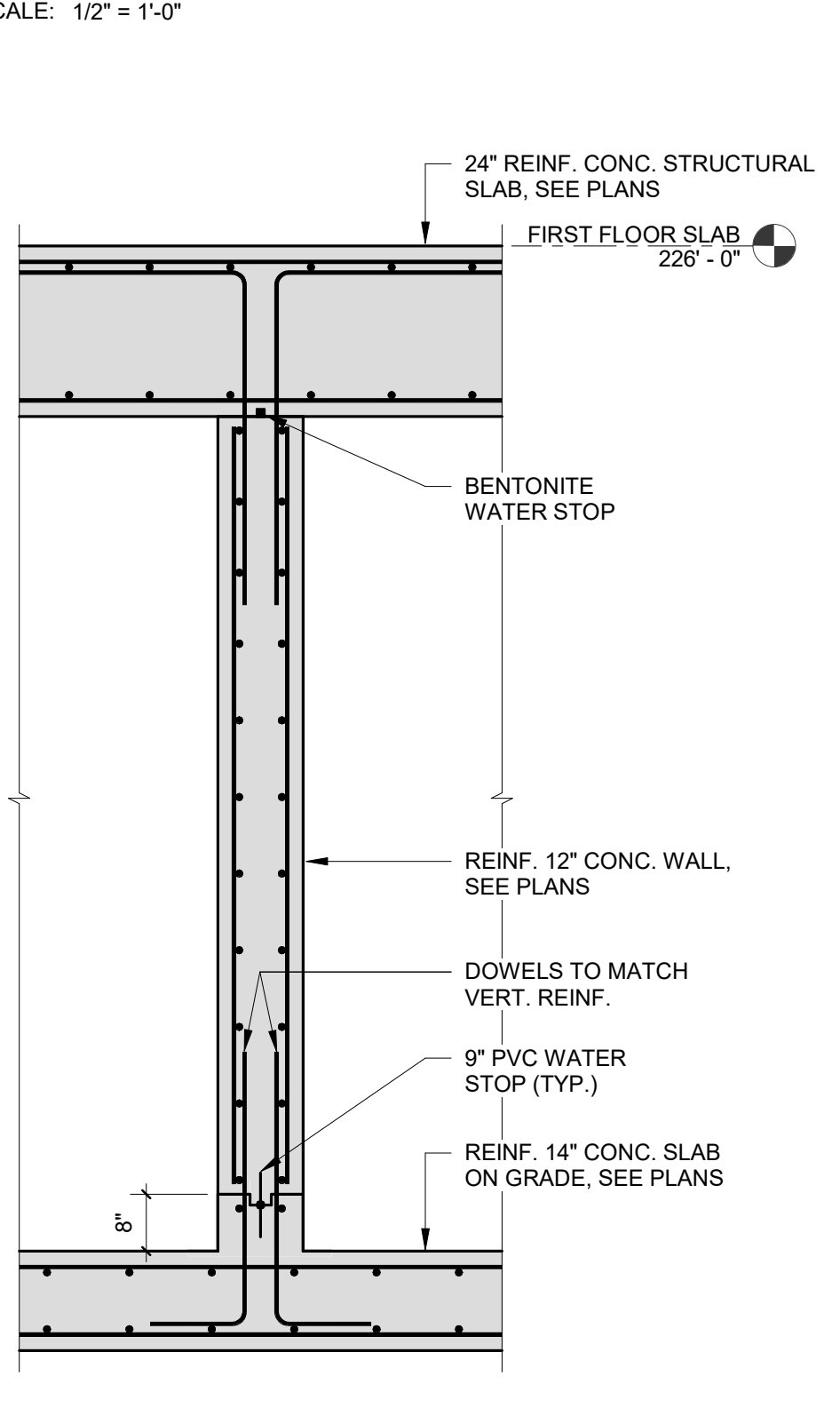
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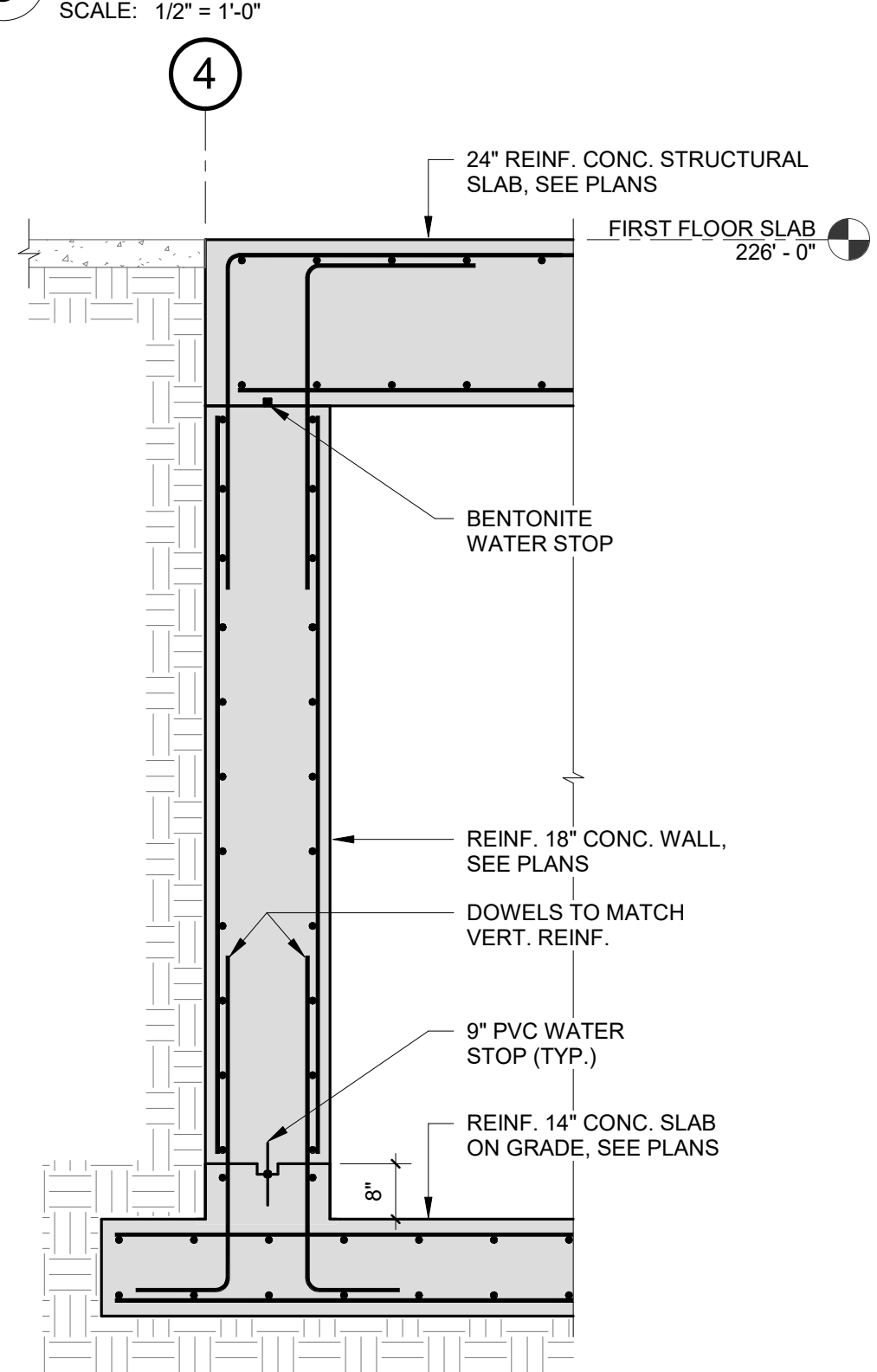
5 SECTION
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6 SECTION
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7 SECTION
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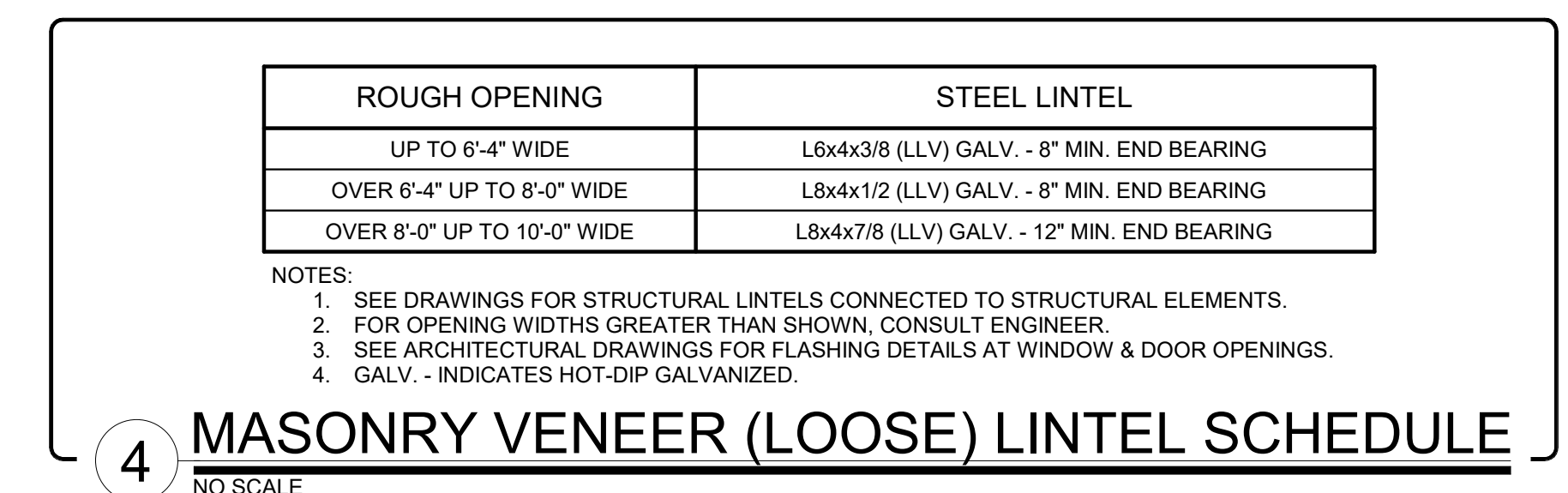
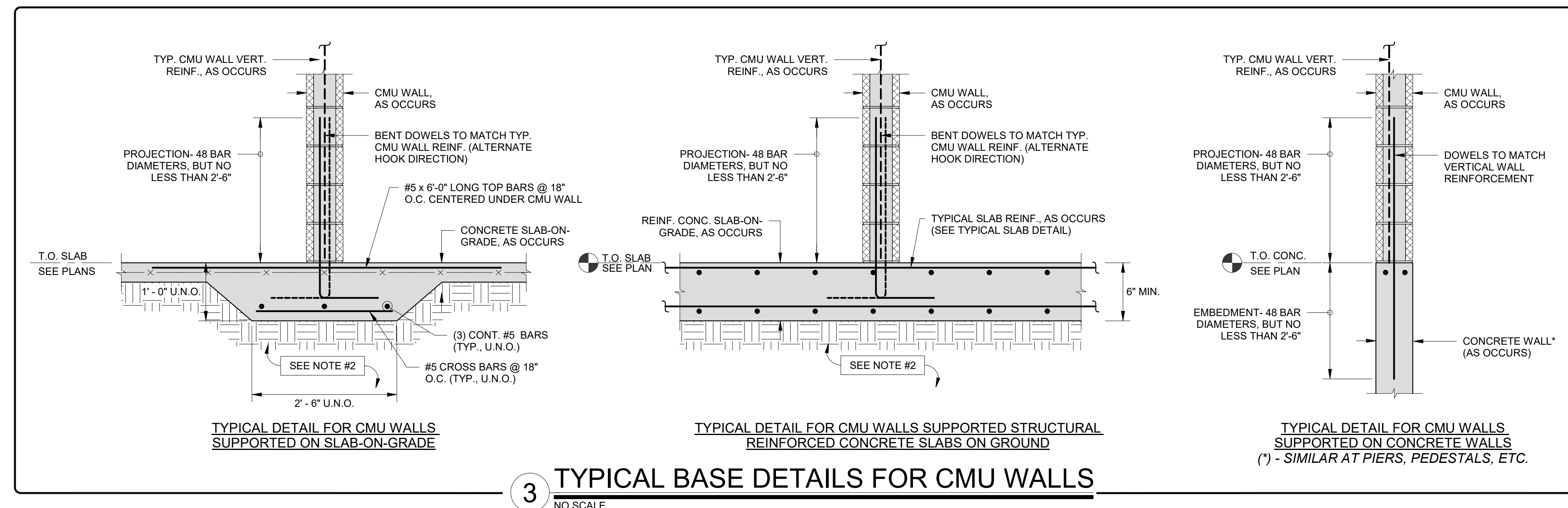
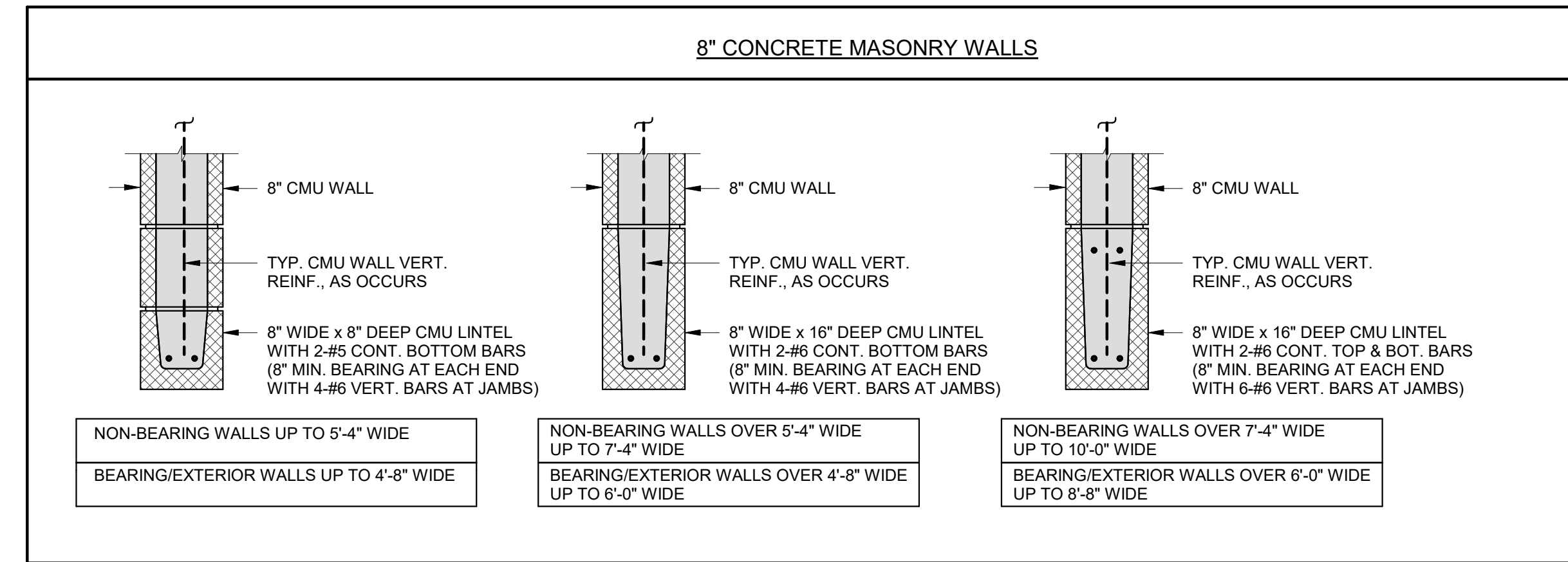
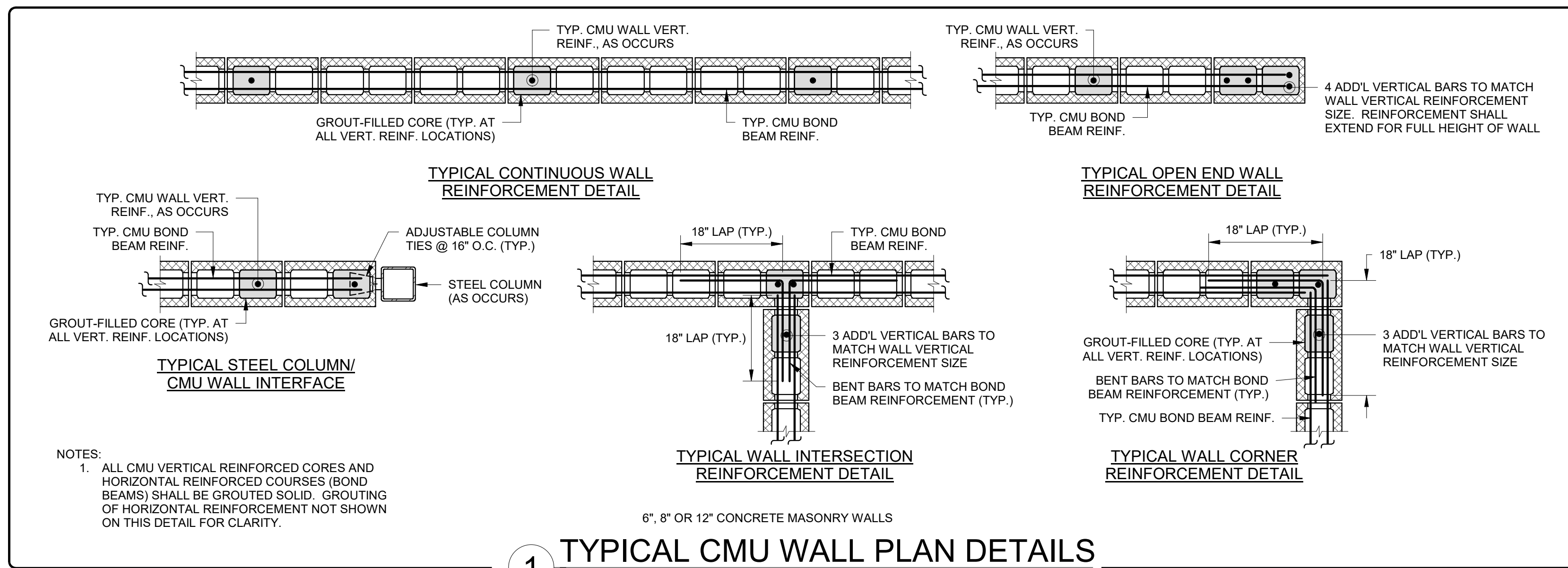
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STRUCTURAL FOUNDATION SECTIONS II

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Sheet No.

S-9



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MARK	DATE	DESCRIPTION

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

TYPICAL MASONRY DETAILS

50% DESIGN

Sheet No.

S-10

PROCESS MECHANICAL NOTES

- THE REQUIREMENTS INCLUDED IN THESE NOTES ARE SUPPLEMENTARY TO THE CONTRACT, GENERAL CONDITIONS, TECHNICAL REQUIREMENTS, AND OTHER REQUIREMENTS SPECIFIED HEREIN.
- 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.
- 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.
- COORDINATE THE WORK REQUIRED BY THESE DRAWINGS ("M" SERIES) WITH THE WORK REQUIRED BY OTHER DRAWINGS.
- PROVIDE FILLER FLANGES (OR OTHER ENGINEER APPROVED METHOD) TO LIMIT INTERFERENCE BETWEEN WAFER BUTTERFLY VALVES AND DUCTILE IRON PIPE LINING OR CAST IRON FITTINGS.
- 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.
- 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.
- ALL PIPE PENETRATIONS THROUGH INTERIOR AND EXTERIOR WALLS AND FLOORS SHALL BE SEALED WATERTIGHT.
- SMALL PIPING (SAMPLE, SERVICE WATER, 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.
- 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.
- ALL PIPING, VALVES, EQUIPMENT, ETC. SHALL BE LABELED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- 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.
- WHEN MAKING NEW CONNECTIONS TO EXISTING PIPING, THE CONTRACTOR MAY, AT ITS OPTION:
 - REPLACE PIPING BACK TO NEAREST FITTING.
 - USE SLEEVE COUPLING OR FLANGE ADAPTERS (RESTRAINED ON PRESSURE LINES).
- PROVIDE EXPANSION JOINTS WITH CONTROL RODS FOR ALL EXPOSED PIPING CROSSING STRUCTURAL EXPANSION JOINTS.
- ALL SLEEVE TYPE COUPLINGS ON PRESSURE PIPING SHALL BE HARNESSSED UNLESS OTHERWISE INDICATED. WHERE COUPLINGS ARE PROVIDED TO PROVIDE AXIAL FLEXIBILITY, PIPING MUST BE SECURELY RESTRAINED.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL PROVIDE RESTRAINT OF ALL EXPANSION JOINTS/FLEX CONNECTORS WITH TIE-RODS.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORING NEEDS FOR PASSAGE OF PIPING THROUGH SOLID CONCRETE WALLS, FLOORS, OR FOUNDATION WALLS AND DUCTWORK.
- THE CONTRACTOR SHALL PROVIDE BLIND FLANGES, PLUGS, ETC. AS REQUIRED.
- WALL PENETRATIONS TO BE FRAMED AND SEALED AS PER BUILDING MANUFACTURER'S STANDARD DETAILS AND SPECIFICATIONS.
- ALL PIPING UNDER CONCRETE SLABS OR STRUCTURES SHALL BE ENCASED IN CONCRETE, UNLESS OTHERWISE NOTED. REFER TO STRUCTURAL DRAWINGS.
- FOR FLANGED SYSTEMS PROVIDE FLEXIBLE CONNECTORS WHERE NECESSARY, AND AS APPROVED, TO FACILITATE PIPING INSTALLATION AND VALVE AND EQUIPMENT REMOVAL.
- PROVIDE ALL LIQUID PIPING 24" AND SMALLER WITH 3/4" LOW POINT DRAINS AND 3/4" HIGH POINT VENTS.

VALVES, COUPLING, & APPURTENANCES

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

LINE DESIGNATIONS

	PROPOSED
	EXISTING, OTHER DISCIPLINE OR OUT OF FUNCTION
	EXTERIOR PIPING OR NOT IN VIEW
	DEMOLITION
	FUTURE EQUIPMENT (NOT IN CONTRACT)
	SALVAGE

PIPE AND FITTINGS

DOUBLE LINE	SINGLE LINE	PIPE
		ELBOW (90)
		ELBOW (45)
		TEE
		WYE
		CROSS
		REDUCER (CONCENTRIC)
		REDUCER (ECCENTRIC)
		FLANGE
		PIPE END
		PIPE BREAK
		MECHANICAL JOINT
		WELDED
		SOCKET WELD
		SINGLE LINE (JOINING TECHNOLOGY VARIES)

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

PROCESS STREAM ABBREVIATIONS

ASB	AIR SCOUR BLOWER
BWW	BACKWASH WASTE
EWWS	EMERGENCY WASHWATER SUPPLY
DR	DRAIN
FCO	FLOOR CLEANOUT
FE	FILTER EFFLUENT
FI	FILTER INFLUENT
FW	FINISHED WATER
FTW	FILTER TO WASTE
IW	INCHES OF WATER
KOH	POTASSIUM HYDROXIDE
NaOCl	SODIUM HYPOCHLORITE
OW	OXIDIZED WATER
PACl	POLYALUMINUM CHLORIDE
RW	RAW WATER
V	VENT
WW	WASHWATER SUPPLY

PIPING AND TUBING MATERIALS

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



MARK	DATE	DESCRIPTION

Scale	N.T.S.
Date	SEPTEMBER 2023
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

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

PROCESS MECHANICAL GENERAL NOTES AND LEGEND

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

50% DESIGN

Sheet No.

M-1

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-XXX	WELL 2 RAW WATER PUMP 1	WELL STATION 2	VERTICAL IN-LINE	326	306	--	--	VARIABLE	50	3525	TEFC	480	60	3	
P-XXX	WELL 2 RAW WATER PUMP 2	WELL STATION 2	VERTICAL IN-LINE	326	306	--	--	VARIABLE	50	3525	TEFC	480	60	3	
P-XXX	WELL 3 RAW WATER PUMP	WELL STATION 3	VERTICAL IN-LINE	264	311	--	--	VARIABLE	40	1800	TEFC	480	60	3	
P-XXX	FINISHED WATER PUMP 1	PIPE GALLERY	VERTICAL IN-LINE	642	213	--	--	VARIABLE	60	3541	TEFC	480	60	3	
P-XXX	FINISHED WATER PUMP 2	PIPE GALLERY	VERTICAL IN-LINE	642	213	--	--	VARIABLE	60	3541	TEFC	480	60	3	
P-XXX	FINISHED WATER PUMP 3	PIPE GALLERY	VERTICAL IN-LINE	642	213	--	--	VARIABLE	60	3541	TEFC	480	60	3	
P-XXX	SLUDGE PUMP 1	PIPE GALLERY	END SUCTION	50	17	--	--	CONSTANT	1	870	TEFC	460	60	3	
P-XXX	SLUDGE PUMP 2	PIPE GALLERY	END SUCTION	50	17	--	--	CONSTANT	1	870	TEFC	460	60	3	
P-XXX	RECYCLE PUMP 1	PIPE GALLERY	VERTICAL IN-LINE	30	254	--	--	VARIABLE	5	3461	TEFC	460	60	3	
P-XXX	RECYCLE PUMP 2	PIPE GALLERY	VERTICAL IN-LINE	30	254	--	--	VARIABLE	5	3461	TEFC	460	60	3	

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-XXX	POST-FILTRATION KOH FEED PUMP 1	KOH STORAGE AREA	METERING PUMP	3.16	GPH (MIN)	8.6	GPH (MAX)	VARIABLE	--	120	60	1	
MP-XXX	POST-FILTRATION KOH FEED PUMP 2	KOH STORAGE AREA	METERING PUMP	3.16	GPH (MIN)	8.6	GPH (MAX)	VARIABLE	--	120	60	1	
MP-XXX	PRE-FILTRATION NaOCI FEED PUMP 1	NaOCI STORAGE AREA	METERING PUMP	0.43	GPH (MIN)	1.19	GPH (MAX)	VARIABLE	--	120	60	1	
MP-XXX	PRE-FILTRATION NaOCI FEED PUMP 2	NaOCI STORAGE AREA	METERING PUMP	0.43	GPH (MIN)	1.19	GPH (MAX)	VARIABLE	--	120	60	1	
MP-XXX	POST-FILTRATION NaOCI FEED PUMP 1	NaOCI STORAGE AREA	METERING PUMP	0.06	GPH (MIN)	0.16	GPH (MAX)	VARIABLE	--	120	60	1	
MP-XXX	POST-FILTRATION NaOCI FEED PUMP 2	NaOCI STORAGE AREA	METERING PUMP	0.06	GPH (MIN)	0.16	GPH (MAX)	VARIABLE	--	120	60	1	
MP-XXX	NaF FEED PUMP 1	NaF STORAGE AREA	METERING PUMP	1.37	GPH (MIN)	3.72	GPH (MAX)	VARIABLE	--	120	60	1	
MP-XXX	NaF FEED PUMP 2	NaF STORAGE AREA	METERING PUMP	1.37	GPH (MIN)	3.72	GPH (MAX)	VARIABLE	--	120	60	1	
MP-XXX	NaHSO3 FEED PUMP 1	NaHSO3 STORAGE AREA	METERING PUMP	0.005	GPH (MIN)	0.18	GPH (MAX)	VARIABLE	--	120	60	1	
MP-XXX	NaHSO3 FEED PUMP 2	NaHSO3 STORAGE AREA	METERING PUMP	0.005	GPH (MIN)	0.18	GPH (MAX)	VARIABLE	--	120	60	1	

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-XXX	POST-FILTRATION KOH TRANSFER PUMP	KOH STORAGE AREA	TRANSFER PUMP	50	GPM	7	FT TDH	CONSTANT	1	3450	TEFC	460	60	3	
TP-XXX	PRE-FILTRATION NaOCI TRANSFER PUMP	NaOCI STORAGE AREA	TRANSFER PUMP	20	GPM	7	FT TDH	CONSTANT	1	3450	TEFC	460	60	3	
TP-XXX	POST-FILTRATION NaOCI TRANSFER PUMP	NaOCI STORAGE AREA	TRANSFER PUMP	10	GPM	7	FT TDH	CONSTANT	1	3450	TEFC	460	60	3	

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-XXX	AIR SCOUR BLOWER	PROCESS AREA	ROTARY POSITIVE DISPLACEMENT	65	SCFM	5	PSIG	CONSTANT	5	1800	TEFC	480	60	3	

CHEMICAL FEED TANK SCHEDULE

TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	STORAGE VOLUME	MAX. DIAMETER (IN)
DT-XXX	POST-FILTRATION KOH DAY TANK	KOH STORAGE AREA	POLYETHYLENE	155	31"
BT-XXX	KOH BULK TANK	KOH STORAGE AREA	POLYETHYLENE	3,900	94"
DT-XXX	PRE-FILTRATION NaOCI DAY TANK	NaOCI STORAGE AREA	POLYETHYLENE	55	23"
DT-XXX	POST-FILTRATION NaOCI DAY TANK	NaOCI STORAGE AREA	POLYETHYLENE	55	23"
BT-XXX	NaOCI BULK TANK	NaOCI STORAGE AREA	POLYETHYLENE	325	56"
BT-XXX	NaHSO3 STORAGE TANK	NaHSO3 STORAGE AREA	POLYETHYLENE	325	48"



ENVIRONMENTAL PARTNERS
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Approved by	ASK

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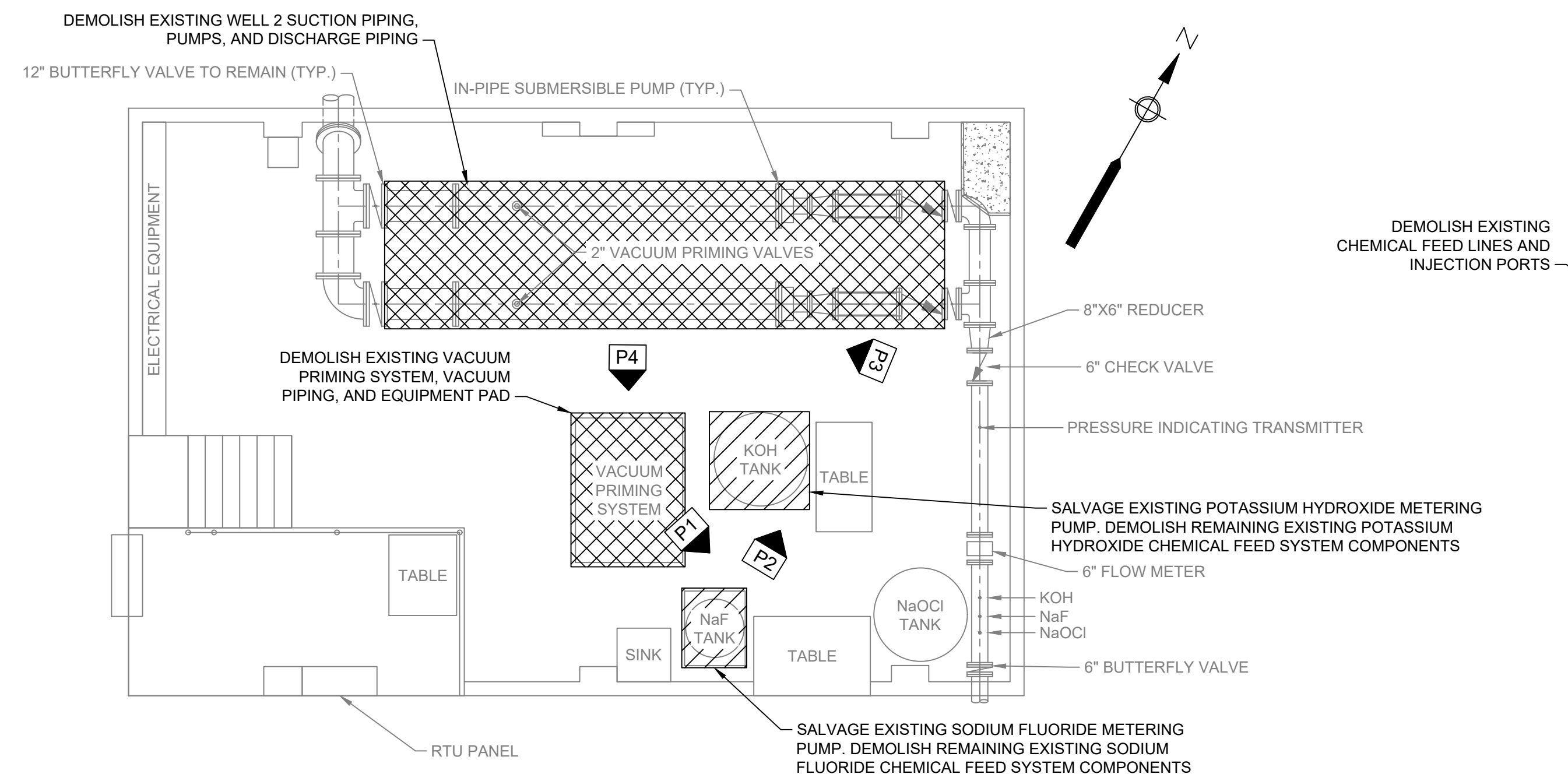
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL SCHEDULE I

50% DESIGN

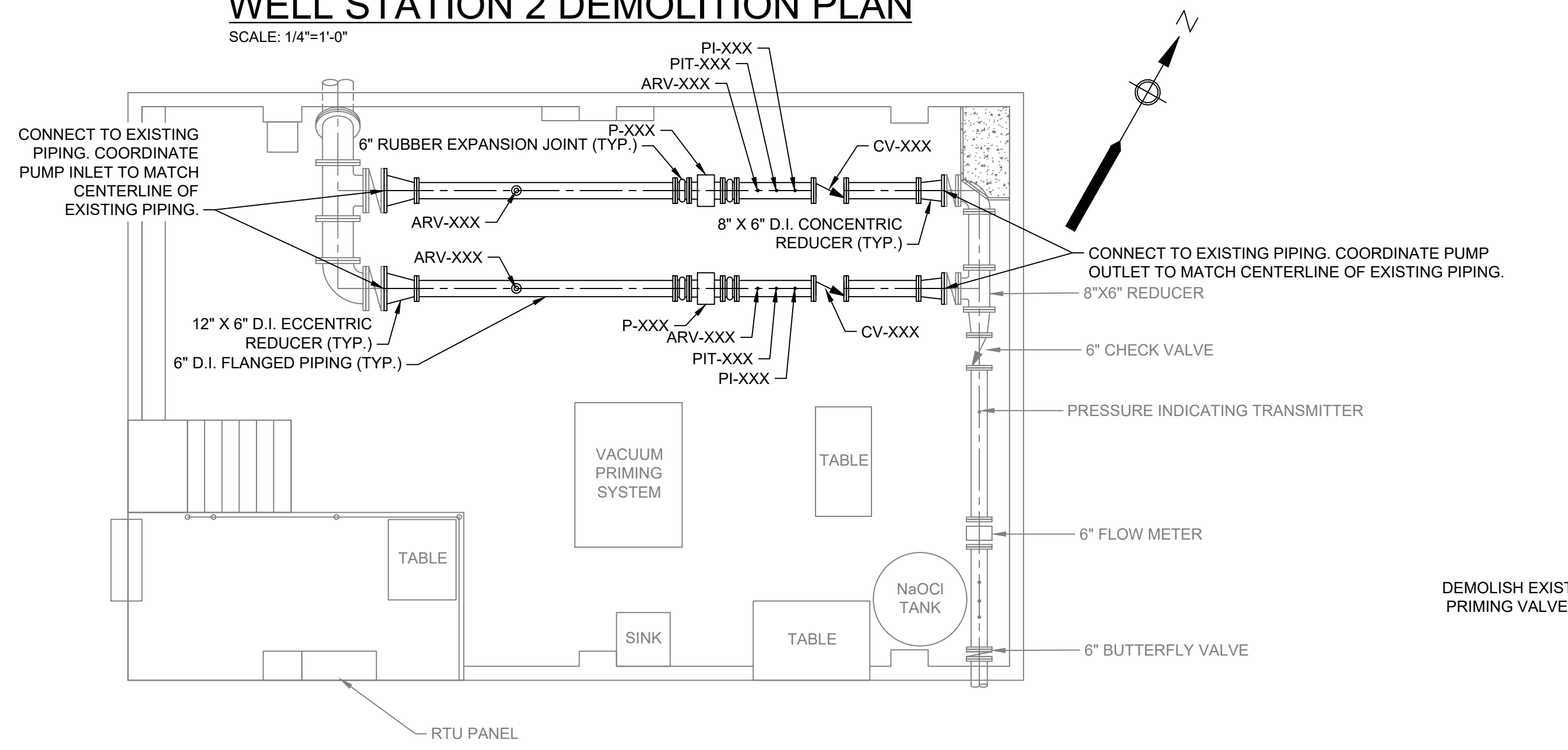
Sheet No.

M-2



WELL STATION 2 DEMOLITION PLAN

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



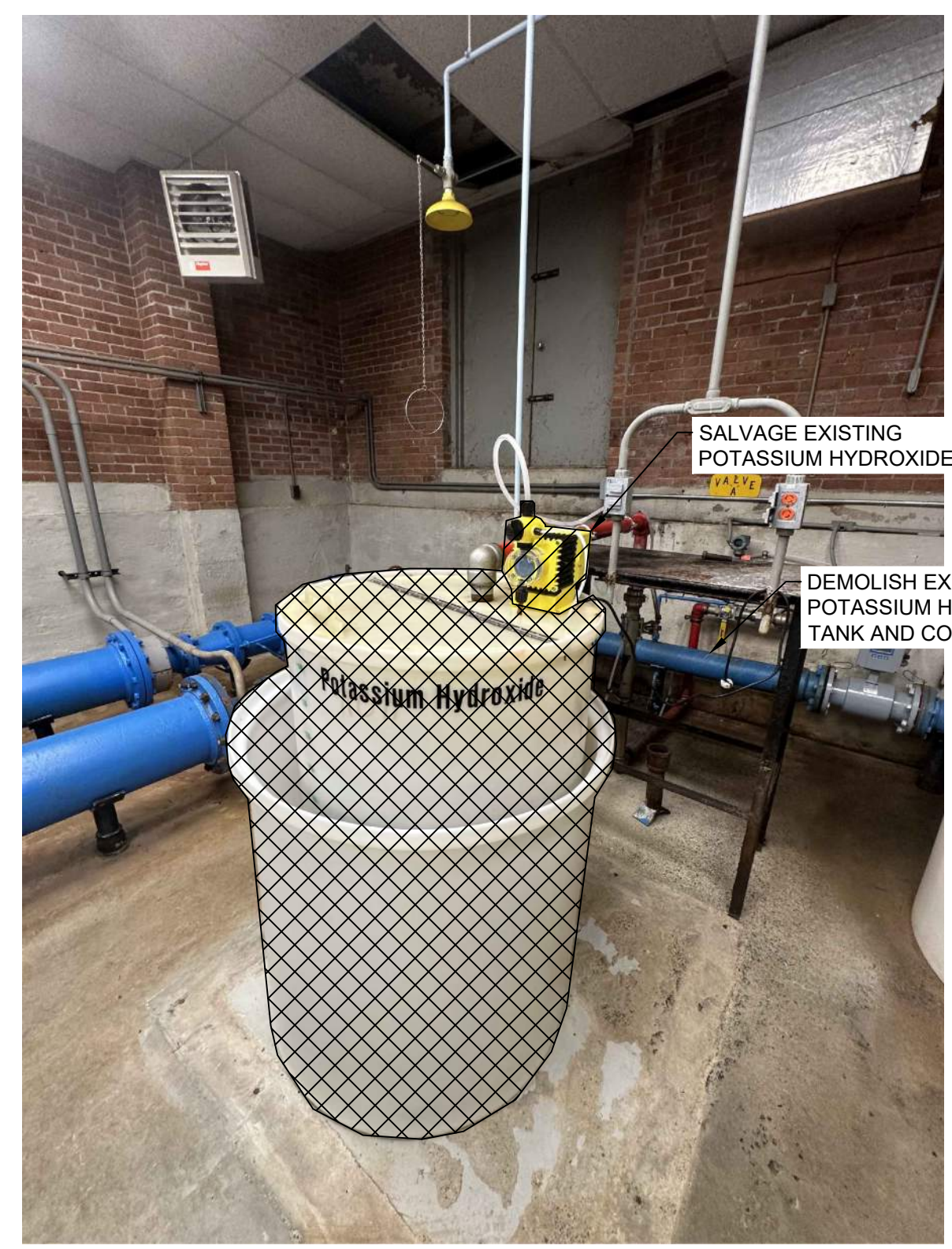
WELL STATION 2 MODIFICATIONS PLAN

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

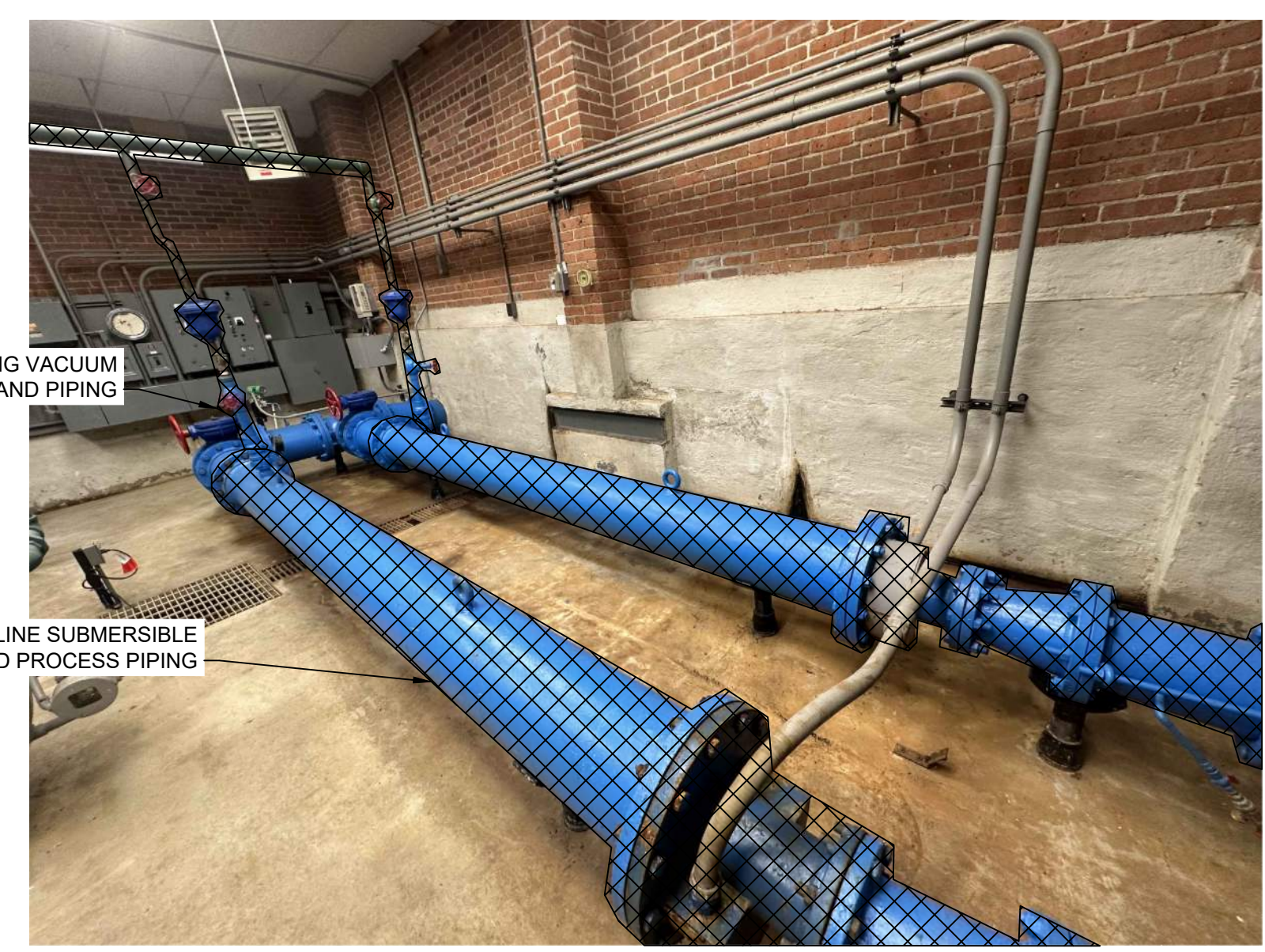
- NOTES:**
- REFER TO NOTES ON SHEET M-4 FOR ADDITIONAL DEMOLITION REQUIREMENTS.
 - REFER TO INSTRUMENTATION AND ELECTRICAL CONTRACT DOCUMENTS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
 - THE GENERAL CONTRACTOR SHALL COORDINATE THE SALVAGE OF EXISTING CHEMICAL FEED EQUIPMENT AND REMAINING CHEMICALS WITH THE ENGINEER/OWNER.
 - GENERAL CONTRACTOR SHALL LEGALLY DISPOSE OF POTASSIUM HYDROXIDE, SODIUM FLUORIDES, AND SODIUM HYDROCHLORITE SOLUTION (UP TO 50 GALLONS EACH).
 - 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.
 - ALL CONTRACTORS SHALL LEGALLY DISPOSE OF ALL EQUIPMENT NOT SALVAGED.



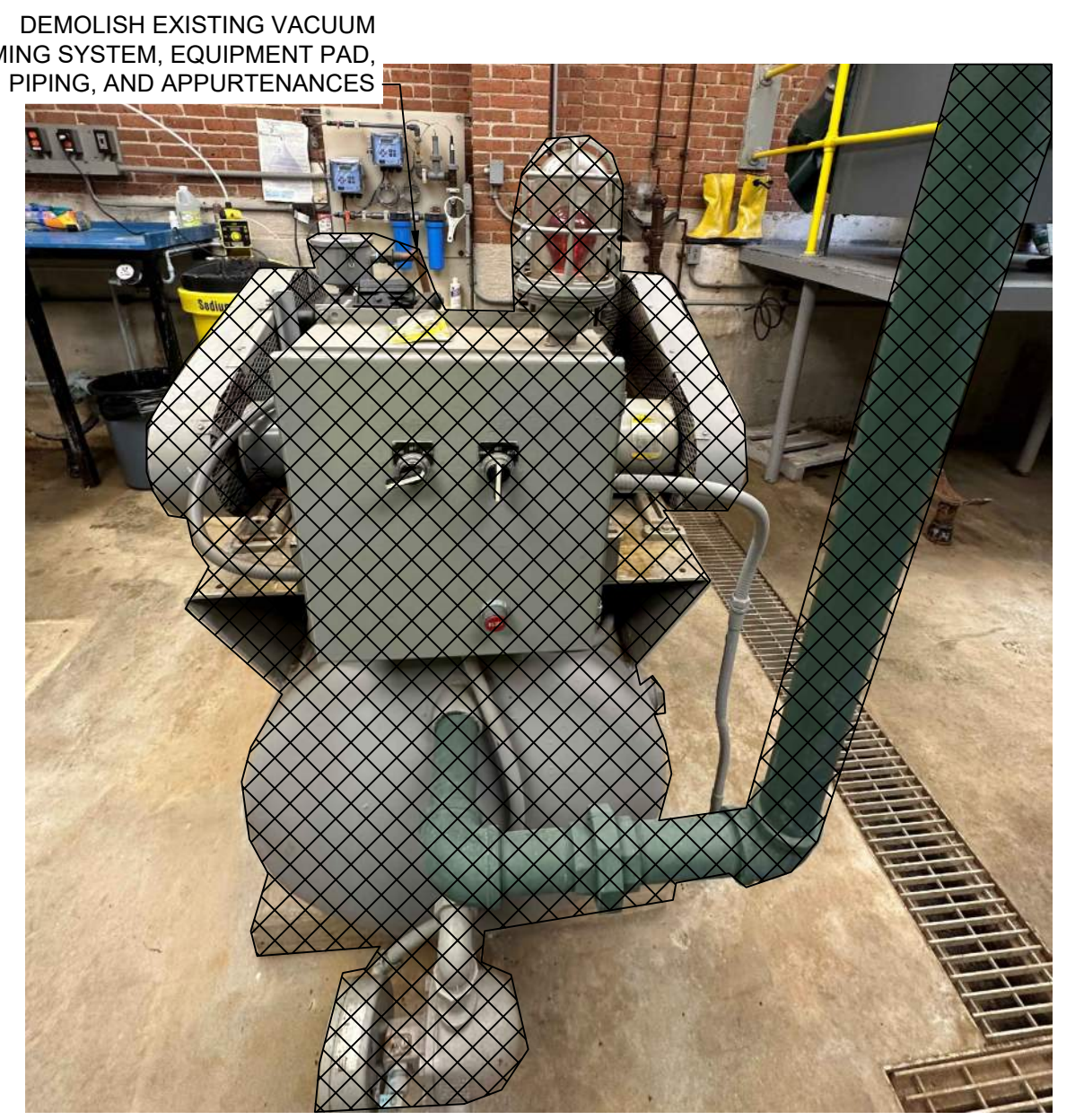
PICTURE 1 (P1) - WELL STATION 2 DEMOLITION
SCALE: N.T.S.



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.



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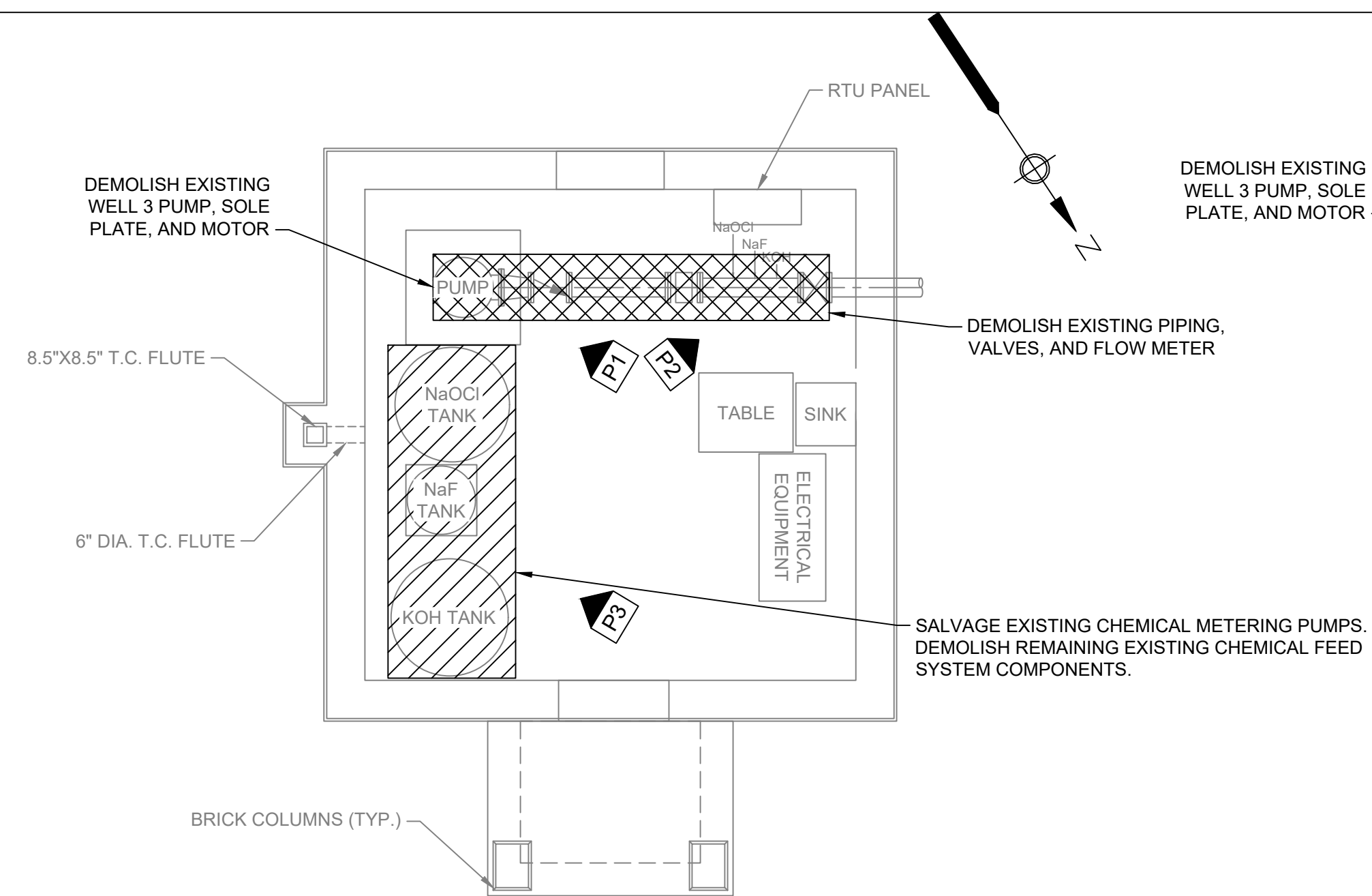
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL WELL 2 MODIFICATIONS

50% DESIGN
Sheet No.
M-3



WELL STATION 3 DEMOLITION PLAN

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



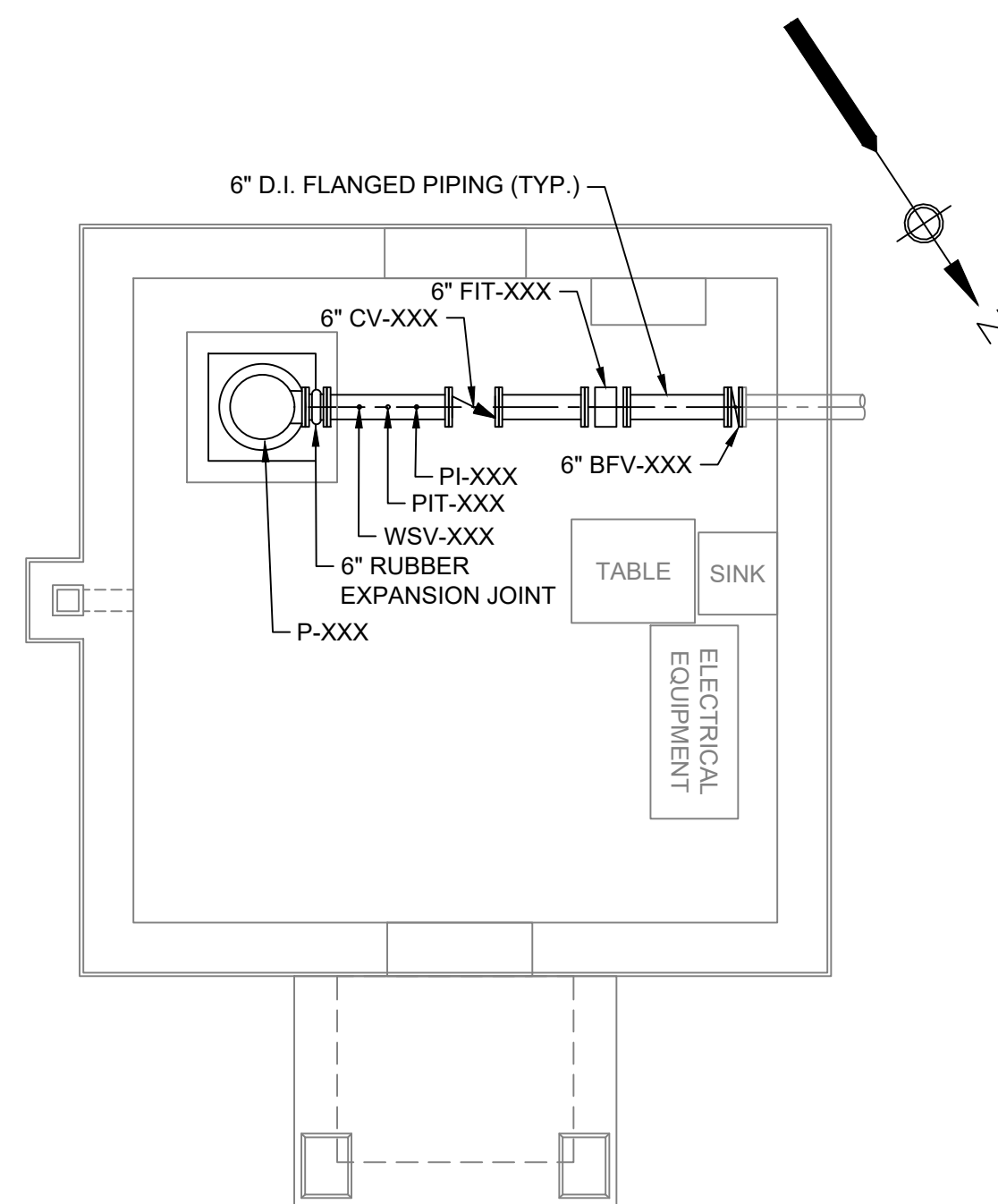
PICTURE 1 (P1) - WELL STATION 3 DEMOLITION

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:

- GENERAL CONTRACTOR SHALL COORDINATE THE SALVAGE OF EXISTING EQUIPMENT AND REMAINING CHEMICALS WITH THE ENGINEER/OWNER.
- ALL CONTRACTORS SHALL LEGALLY DISPOSE OF ALL EQUIPMENT NOT SALVAGED.
- GENERAL CONTRACTOR SHALL LEGALLY DISPOSE OF POTASSIUM HYDROXIDE, SODIUM FLUORIDE, AND SODIUM HYDROCHLORITE SOLUTION (UP TO 50 GALLONS EACH).
- ALL CHEMICAL INJECTION TAPS SHALL BE PLUGGED WITH THREADED COPPER CAP/PLUG.
- REFER TO INSTRUMENTATION AND ELECTRICAL CONTRACT DOCUMENTS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
- GENERAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL FSB TO DE-ENERGIZE AND MAKE SAFE ALL EQUIPMENT PRIOR TO DEMOLITION.
- GENERAL CONTRACTOR SHALL COORDINATE WITH THE PLUMBING FSB TO DISCONNECT ALL PIPING PRIOR TO DEMOLITION.
- ALL CHEMICAL PUMPS NOTED FOR DEMOLITION SHALL BE SALVAGED AND PROVIDED TO THE OWNER.
- 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.
- 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.
- 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.
- ALL CONTRACTORS' METHODS OF DEMOLITION SHALL BE APPROVED BY THE ENGINEER/OWNER PRIOR TO THE START OF WORK.
- EXISTING PIPING SYSTEMS TO BE REUSED SHALL BE PROPERLY CLEANED AND INSPECTED PRIOR TO REUSE ON PROJECT.
- 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.
- THE GENERAL CONTRACTOR SHALL REPAIR AND MODIFY THE EXISTING WELL PUMP CONCRETE PADS AS REQUIRED TO INSTALL THE NEW WELL PUMPS.
- 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.
- 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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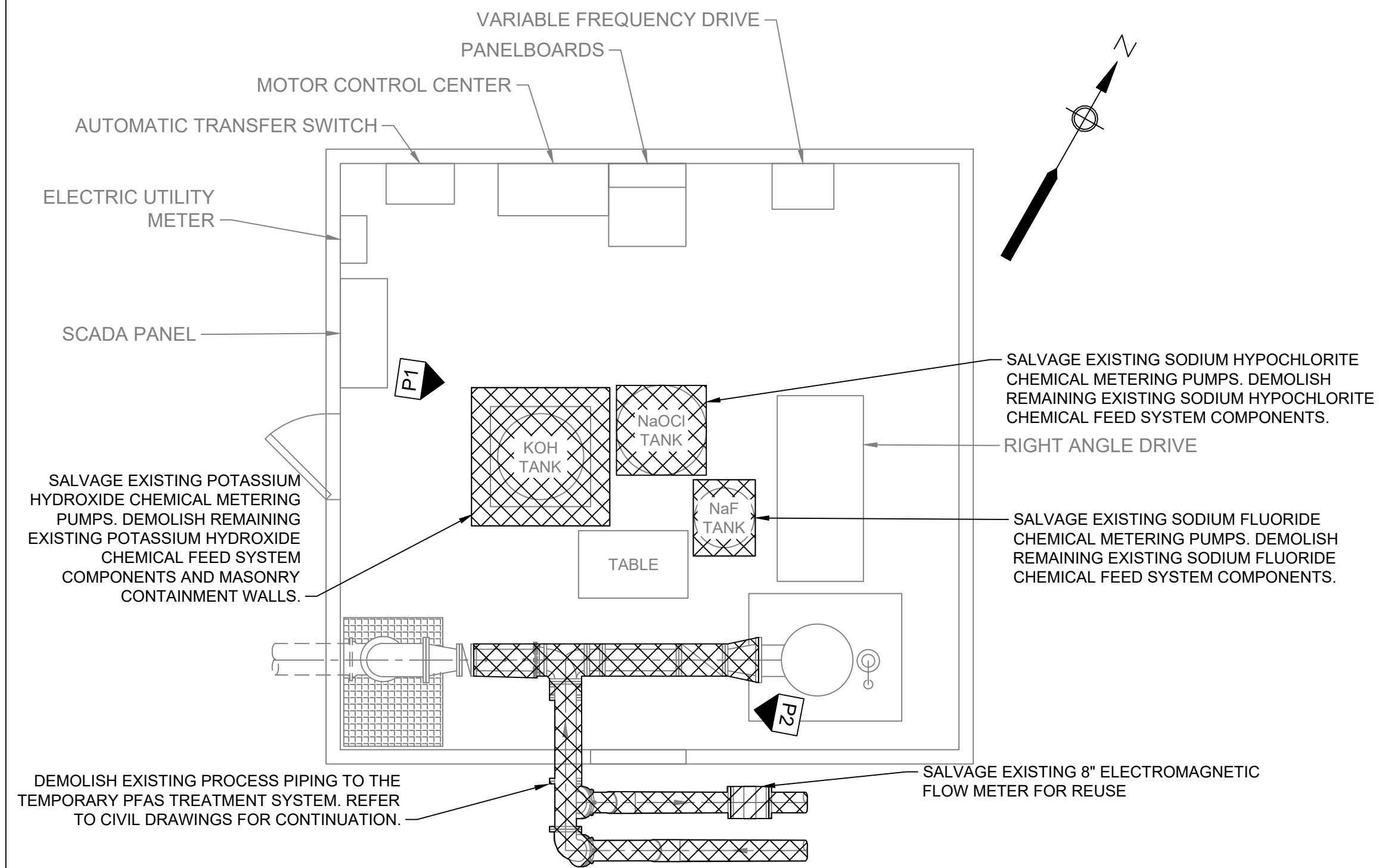
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL WELL 3 MODIFICATIONS

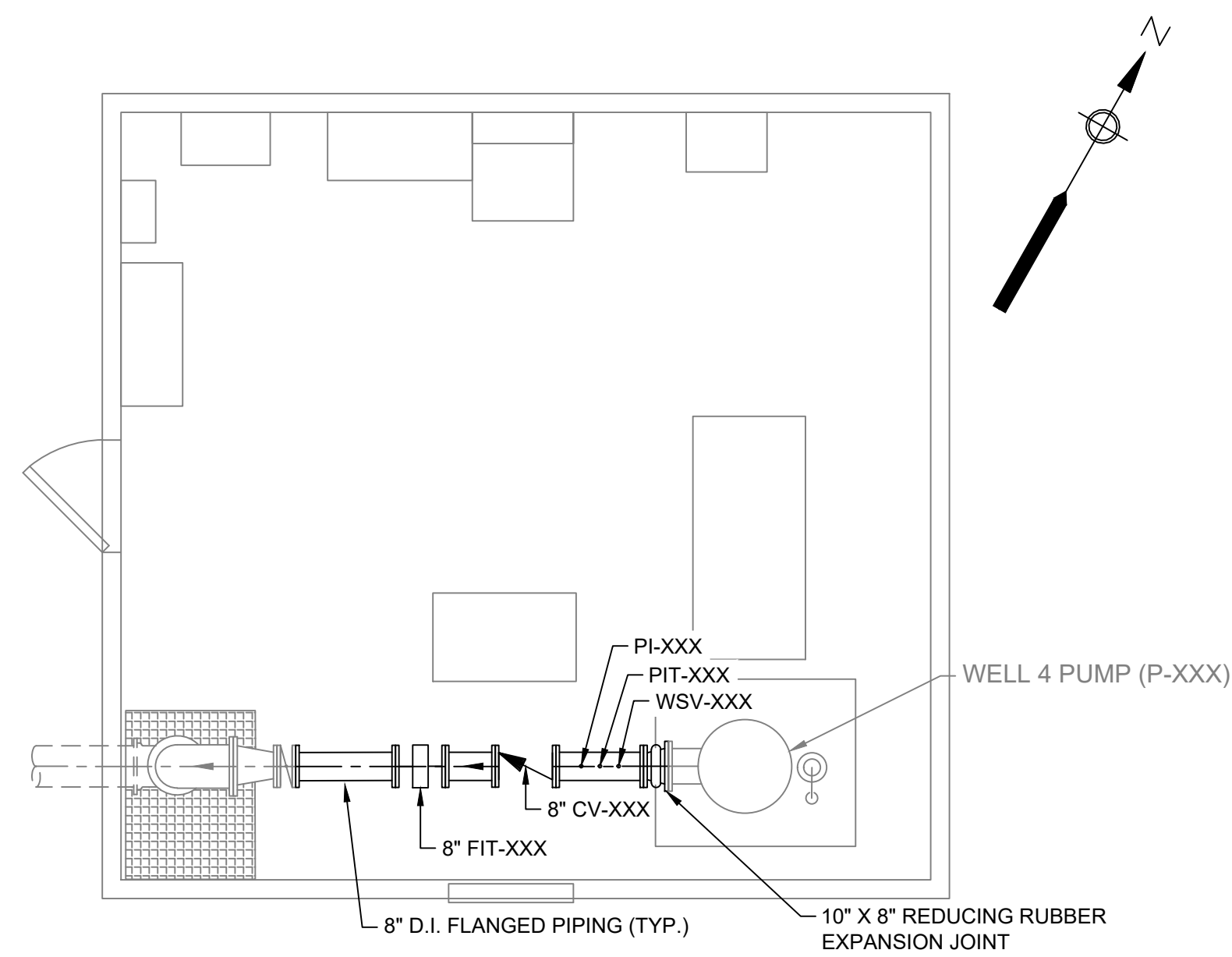
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M-4



WELL STATION 4 DEMOLITION PLAN

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



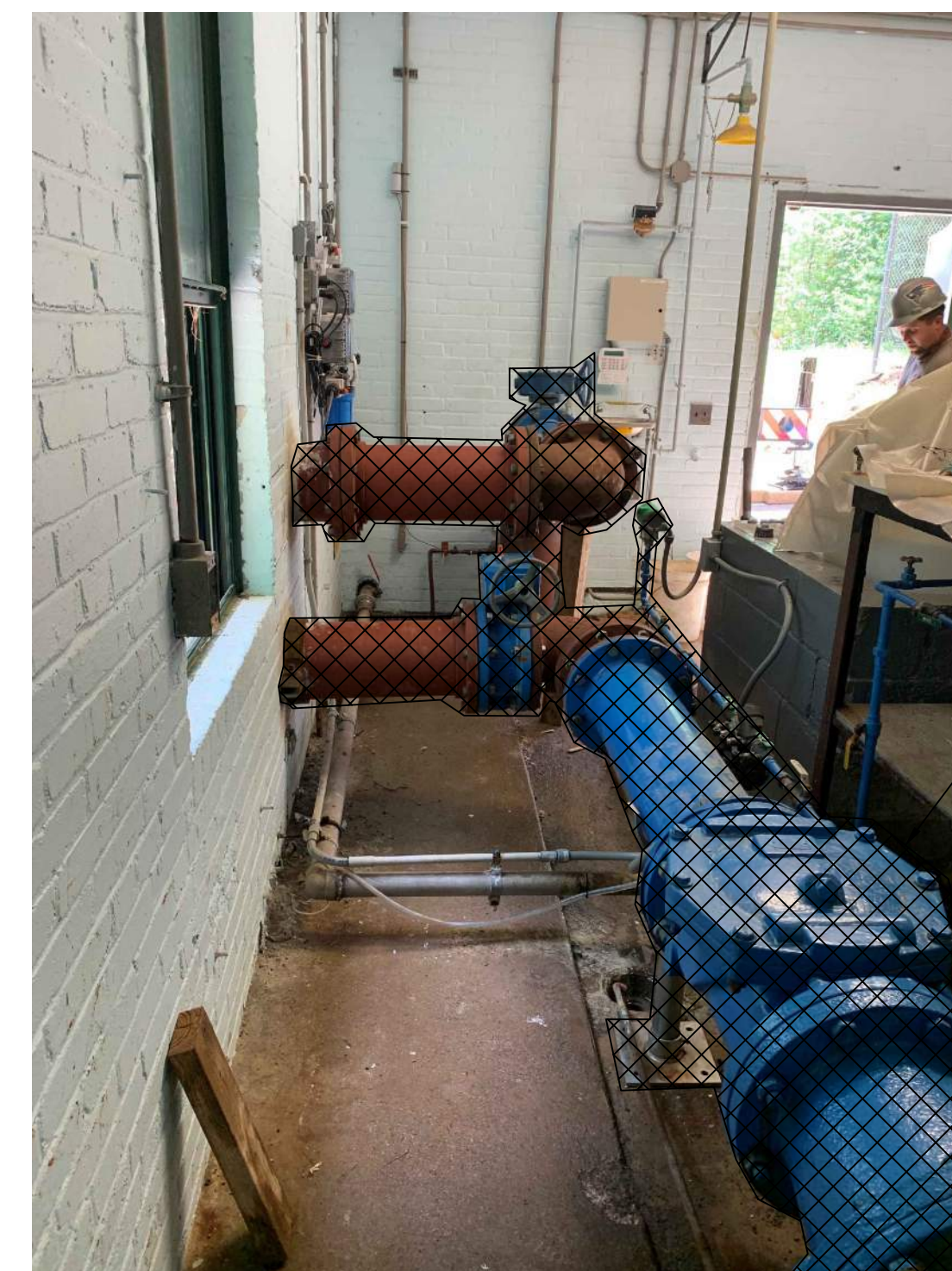
WELL STATION 4 MODIFICATIONS PLAN

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.

NOTES:

1. REFER TO NOTES ON SHEET M-4 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 FLUORIDES, 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.



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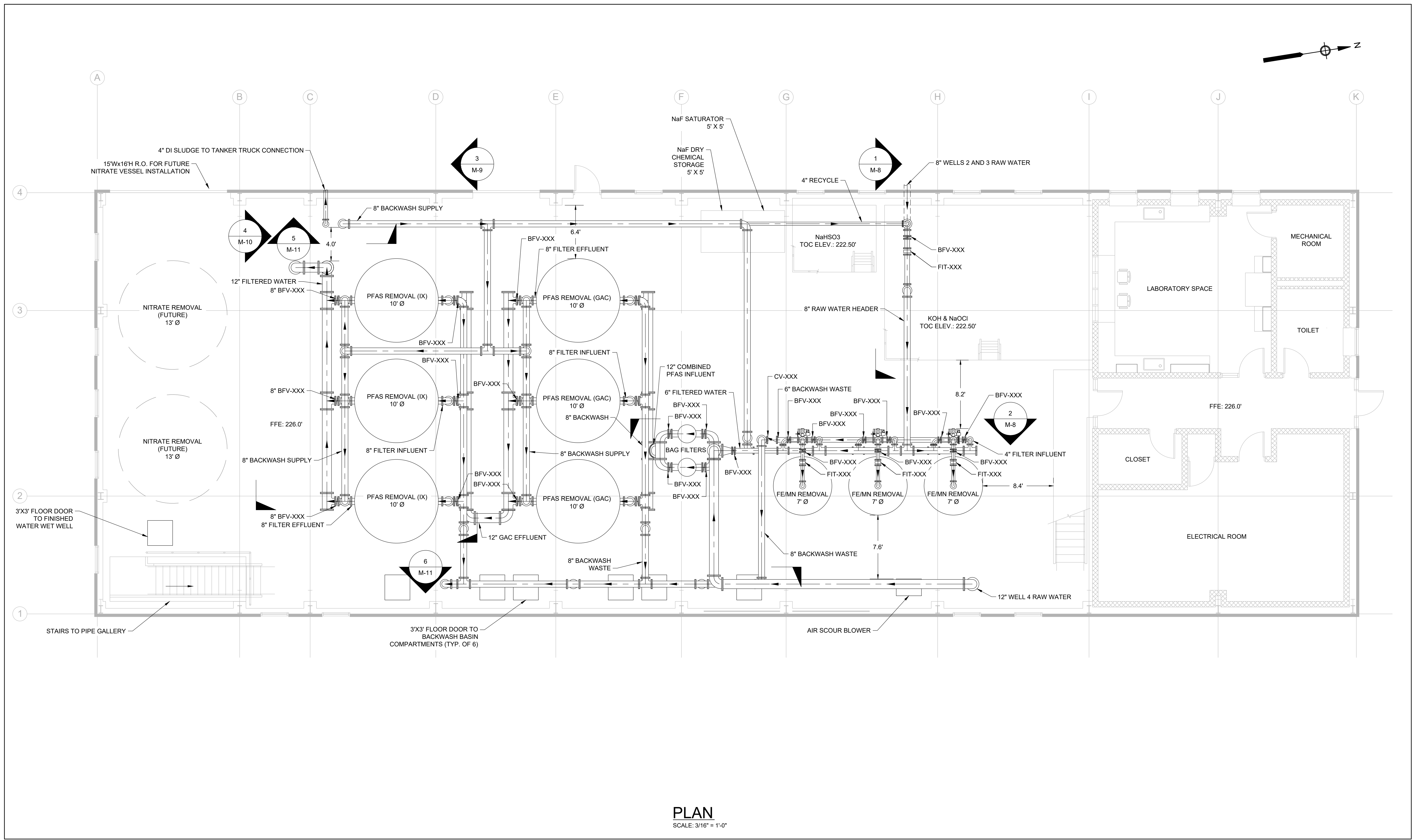
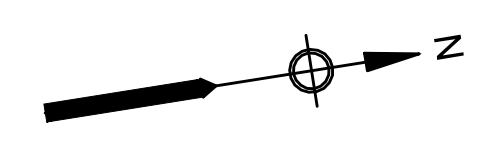
**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

PROCESS MECHANICAL WELL 4 MODIFICATIONS


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Sheet No.

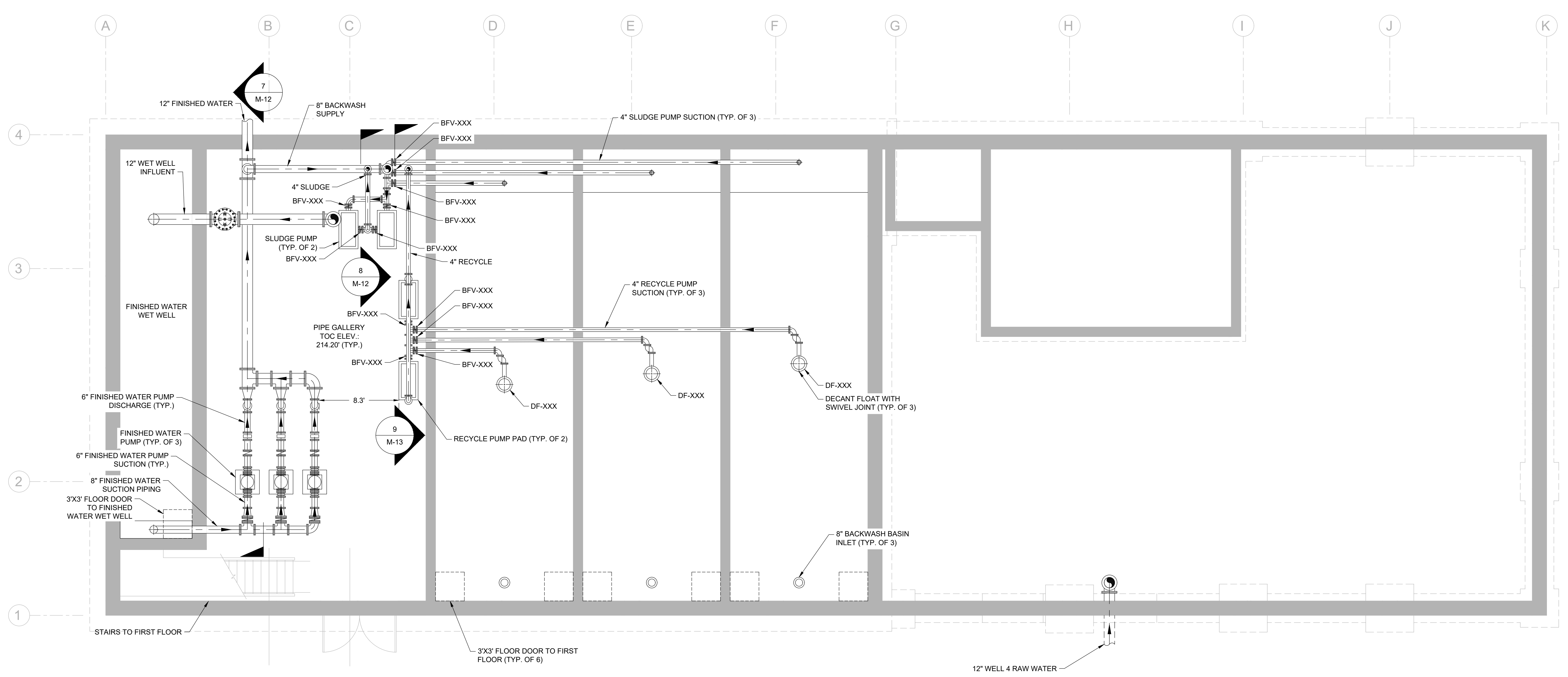
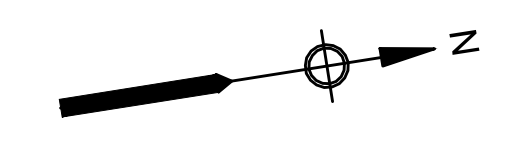
M-5



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

	ENVIRONMENTAL PARTNERS — An Apex Company —				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 FIRST FLOOR PLAN	50% DESIGN																											
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">MARK</th> <th style="width: 10%;">DATE</th> <th style="width: 80%;">DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	MARK	DATE			DESCRIPTION																<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Scale</td> <td>AS SHOWN</td> </tr> <tr> <td>Date</td> <td>SEPTEMBER 2023</td> </tr> <tr> <td>Job No.</td> <td>245-2103</td> </tr> <tr> <td>Designed by</td> <td>AWCP</td> </tr> <tr> <td>Drawn by</td> <td>SLV</td> </tr> <tr> <td>Checked by</td> <td>EAK</td> </tr> <tr> <td>Approved by</td> <td>ASK</td> </tr> </table>	Scale	AS SHOWN	Date	SEPTEMBER 2023	Job No.	245-2103	Designed by	AWCP	Drawn by	SLV	Checked by
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Drawing file: \\apex\local\offices\quincy\Projects\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CA\07.3 Mechanical Sheets.dwg Plot Date: Sep 01 2023 14:47:26



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



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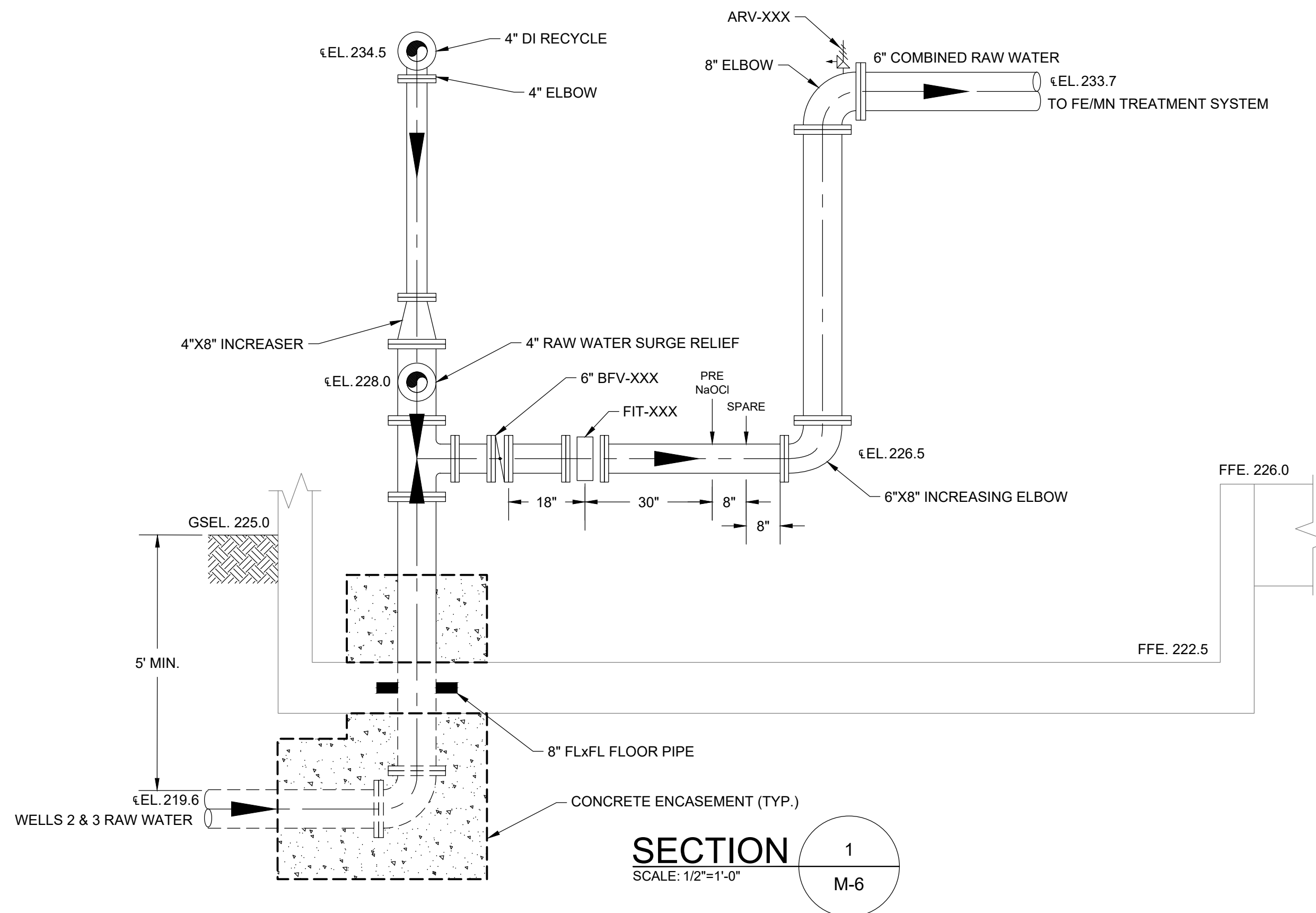
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

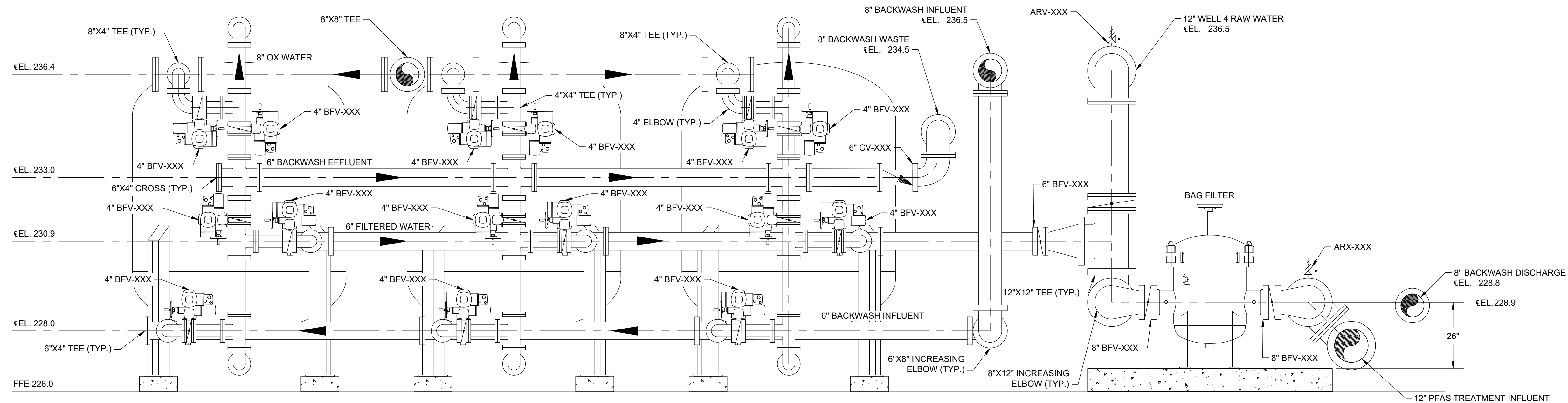
PROCESS MECHANICAL LOWER LEVEL PLAN

50% DESIGN
Sheet No.
M-7

Drawing file: \\apex\local\offices\Quincy\Projects\Sharon, MA\245\245-2103 Well 4 PFAS Treatment System\05 Final Design\Drawings\CA\07.3 Mechanical Sheets.dwg Plot Date: Aug 31 2023 - 12:48pm



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



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



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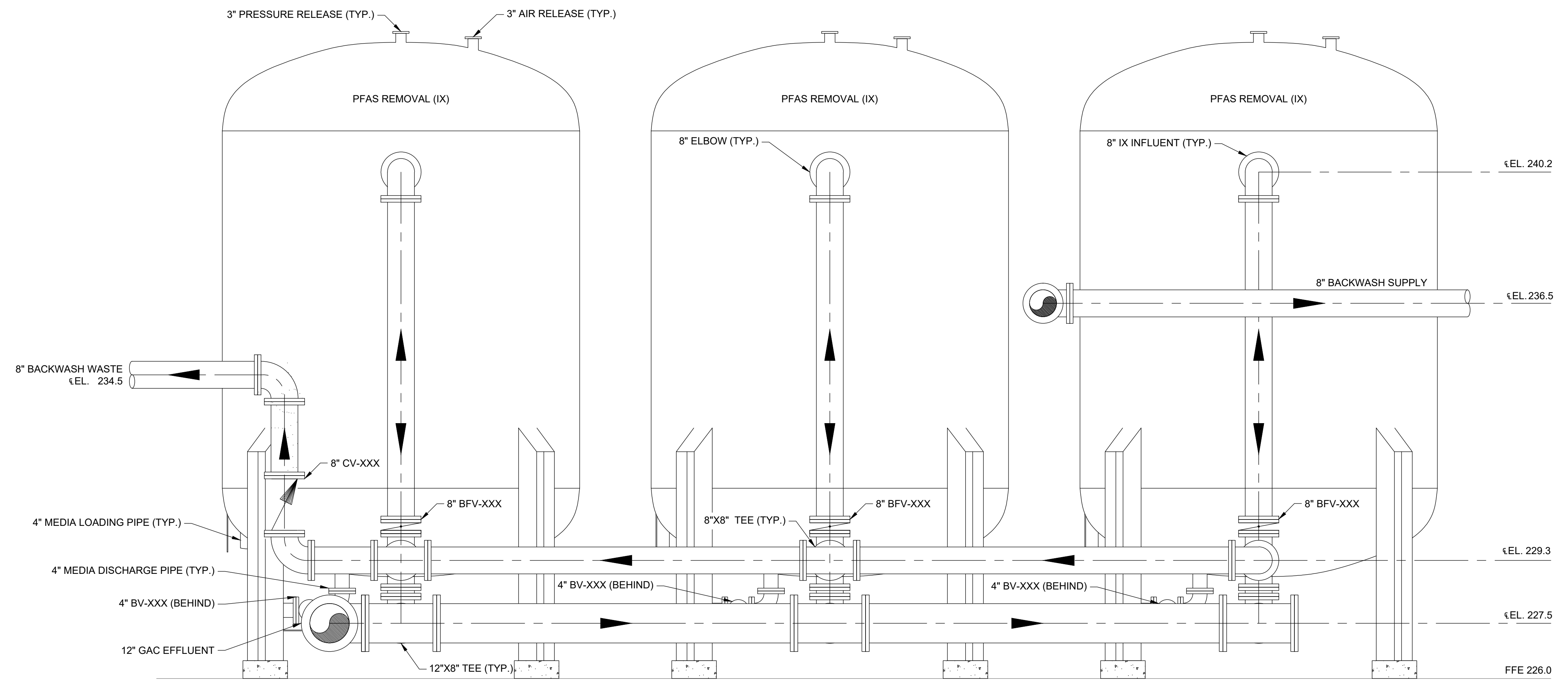
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL SECTIONS I

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M-8



SECTION 3
 SCALE: 1/2"=1'-0"
 M-6



ENVIRONMENTAL PARTNERS
 — An Apex Company —

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	SEPTEMBER 2023
Job No.	245-2103
Designed by	AWCP
Drawn by	SLV
Checked by	EAK
Approved by	ASK

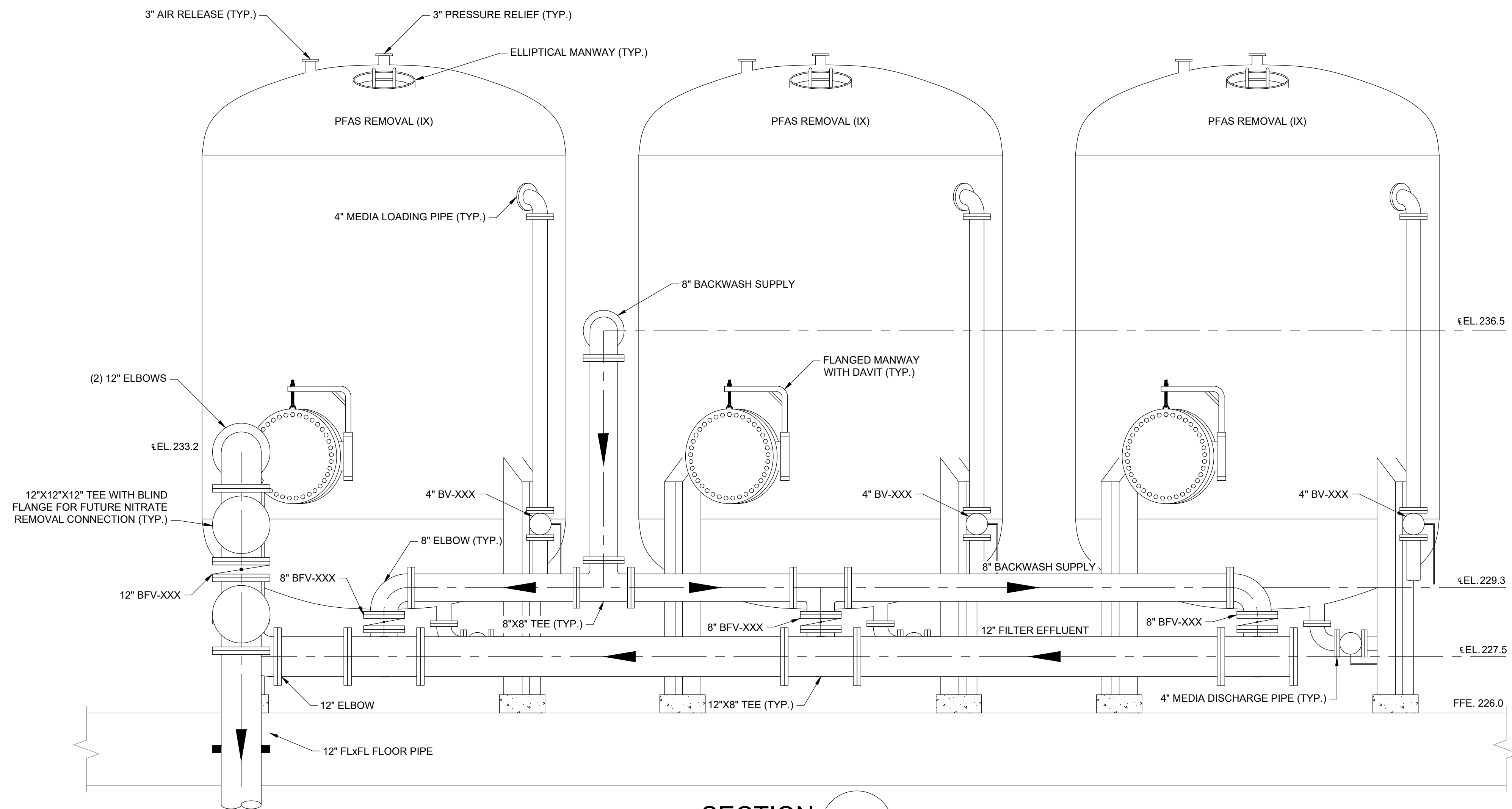
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
 TOWN OF SHARON, MA

PROCESS MECHANICAL SECTIONS II

50% DESIGN
 Sheet No.

M-9



SECTION 4
SCALE: 1/2"=1'-0" M-6



ENVIRONMENTAL PARTNERS
— An Apex Company —

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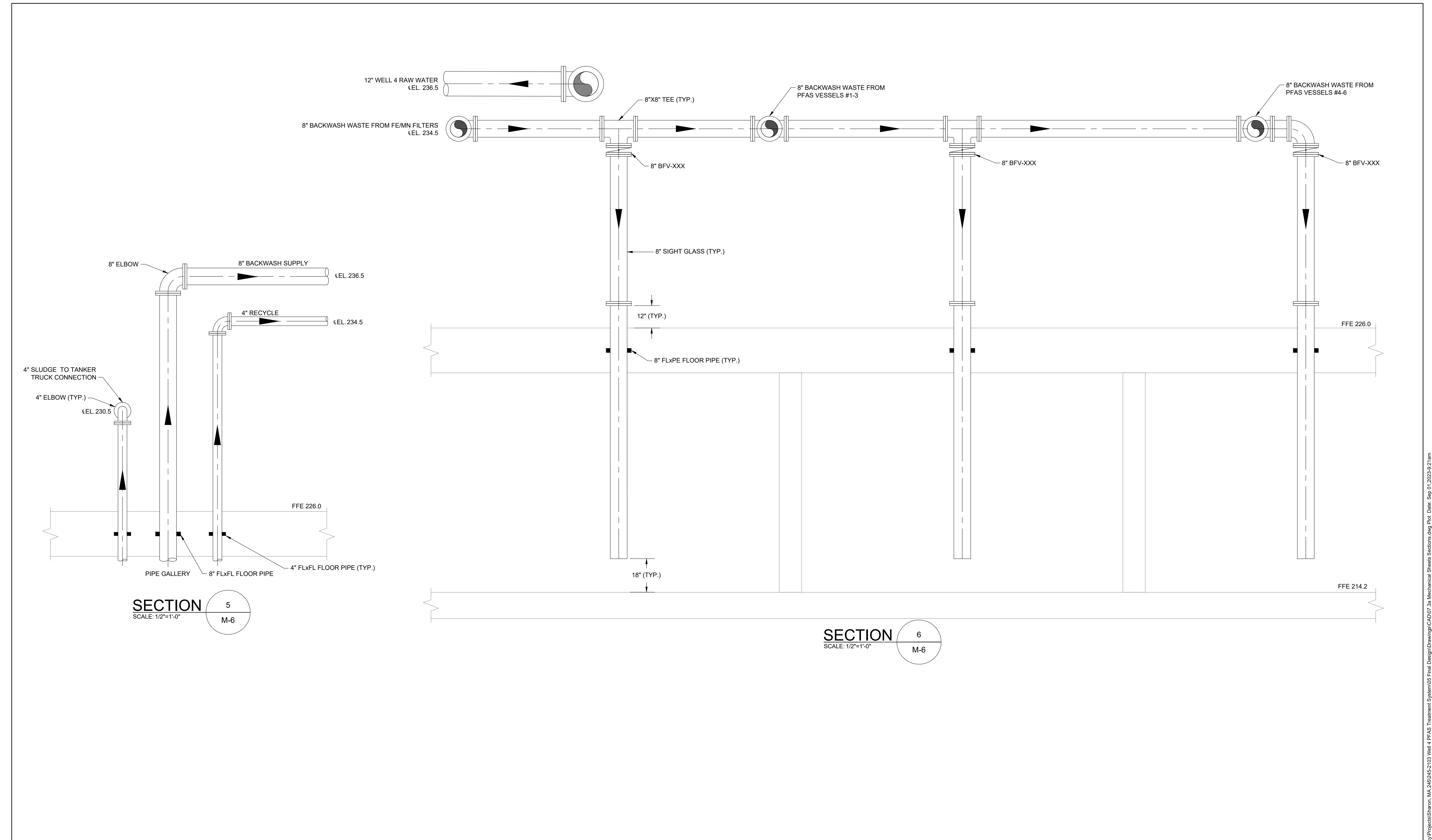
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PROCESS MECHANICAL SECTIONS III

50% DESIGN
Sheet No.

M-10



SECTION 5
SCALE: 1/2"=1'-0"
M-6

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



ENVIRONMENTAL PARTNERS
— An Apex Company —

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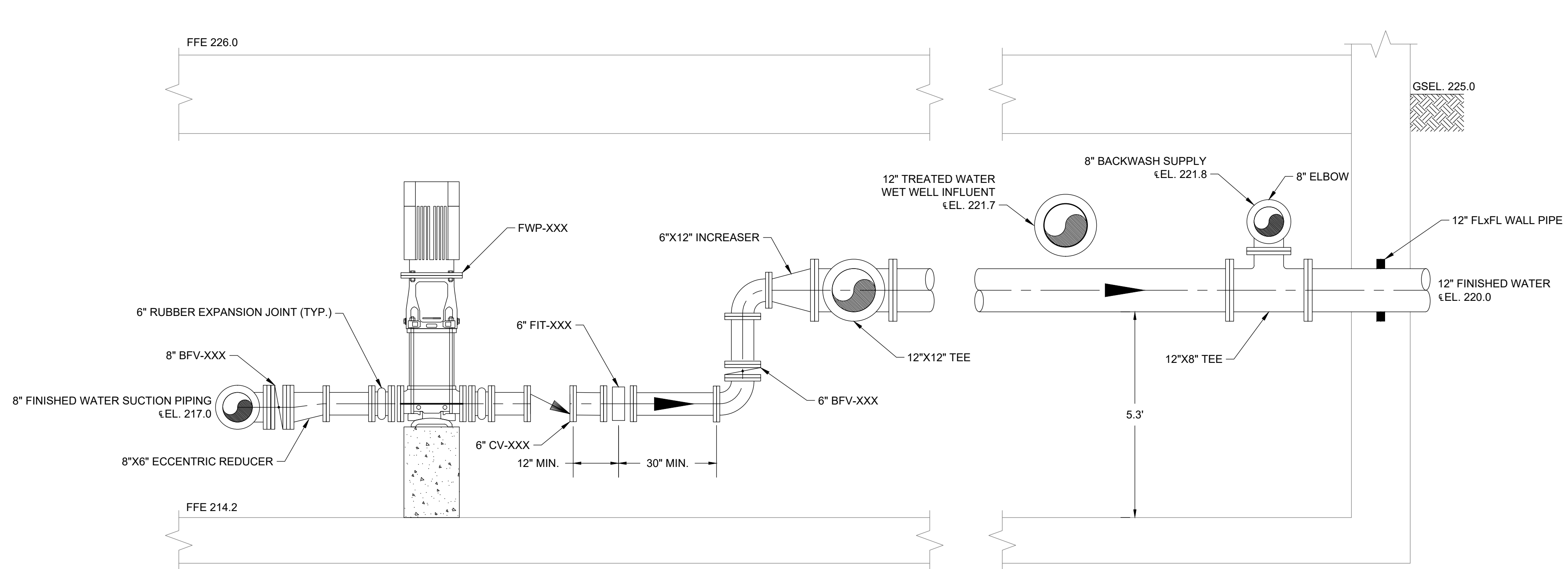
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TOWN OF SHARON, MA

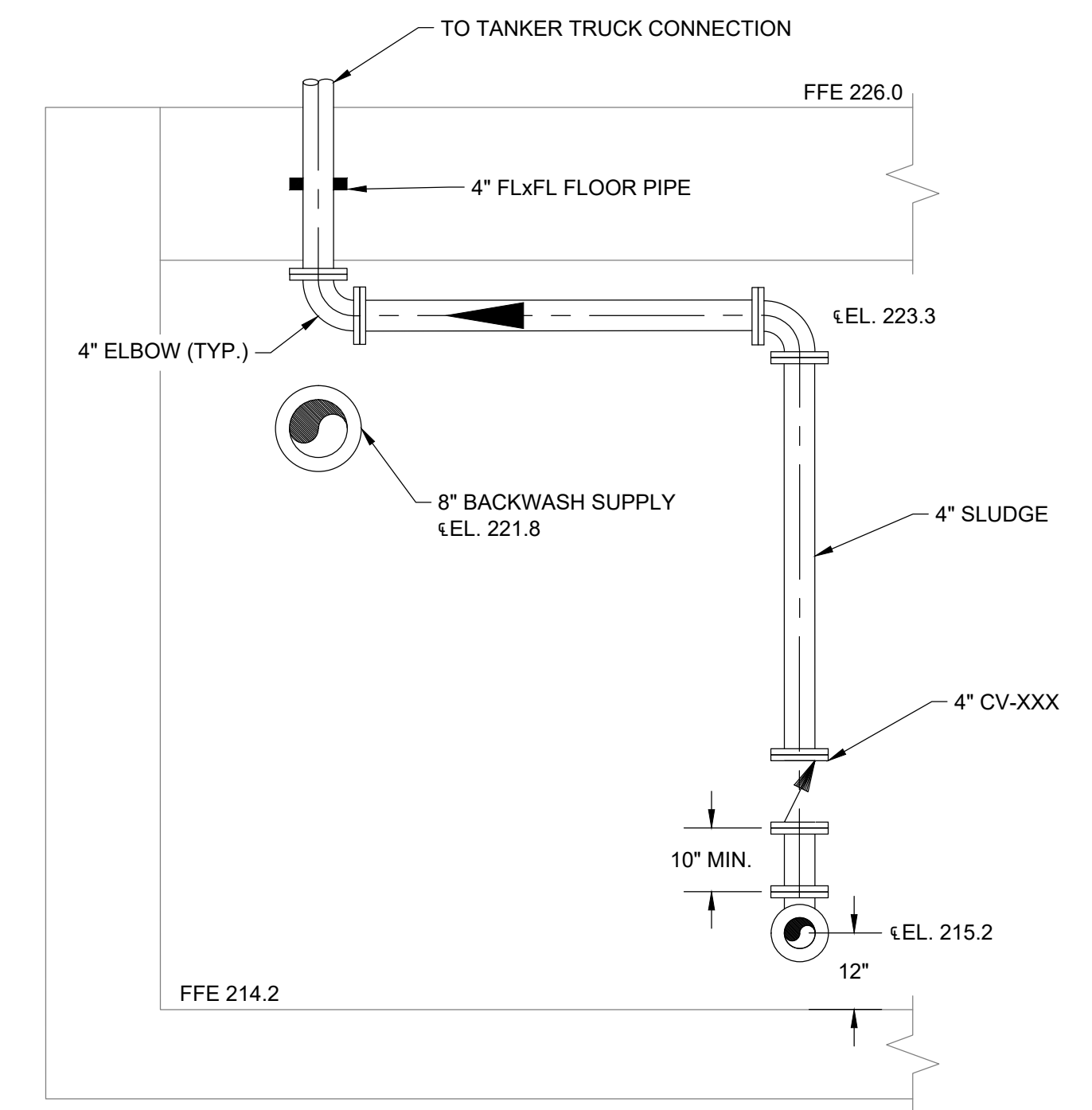
PROCESS MECHANICAL SECTIONS IV

50% DESIGN
Sheet No.

M-11



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



SECTION 8
SCALE: 1/2"=1'-0"
M-7



ENVIRONMENTAL PARTNERS
— An Apex Company —

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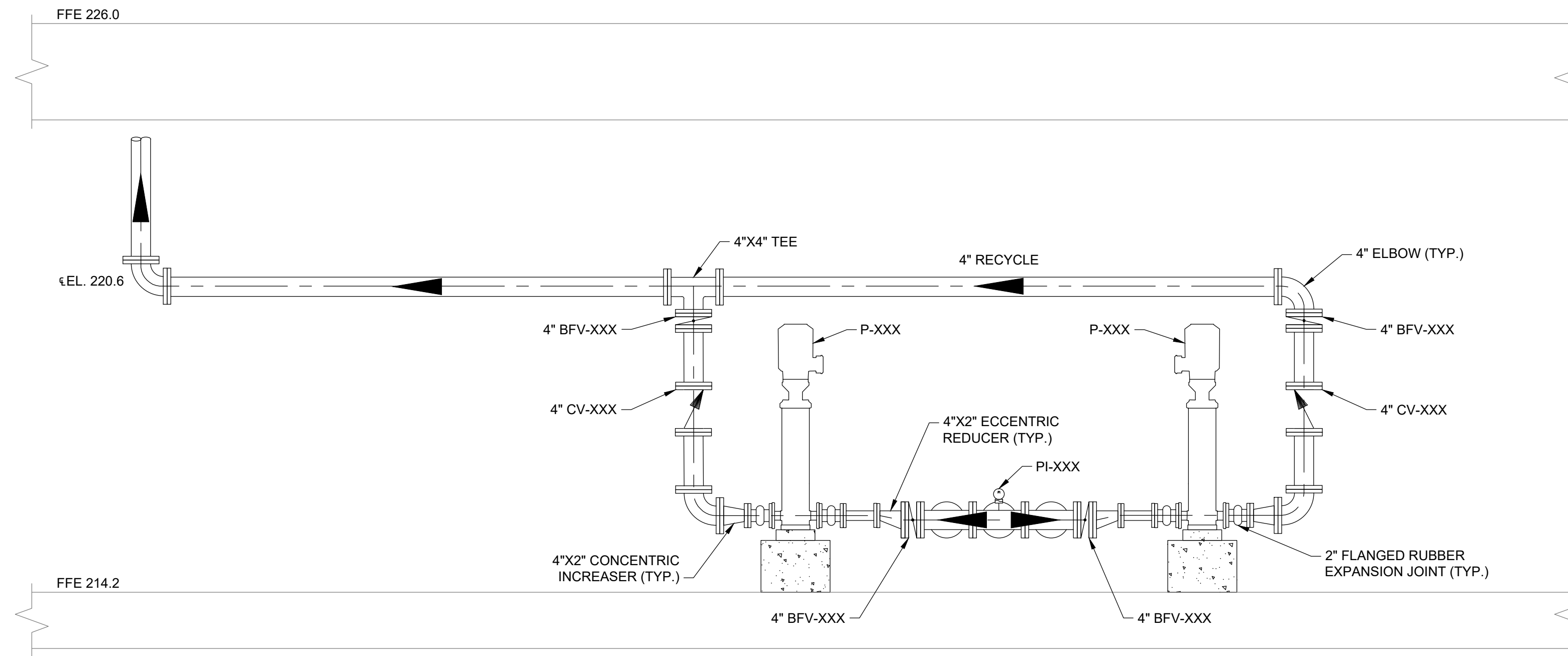
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TOWN OF SHARON, MA

PROCESS MECHANICAL SECTIONS V

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M-12



SECTION 9

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

M-7



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— An Apex Company —

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PROCESS MECHANICAL SECTIONS VI

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Sheet No.

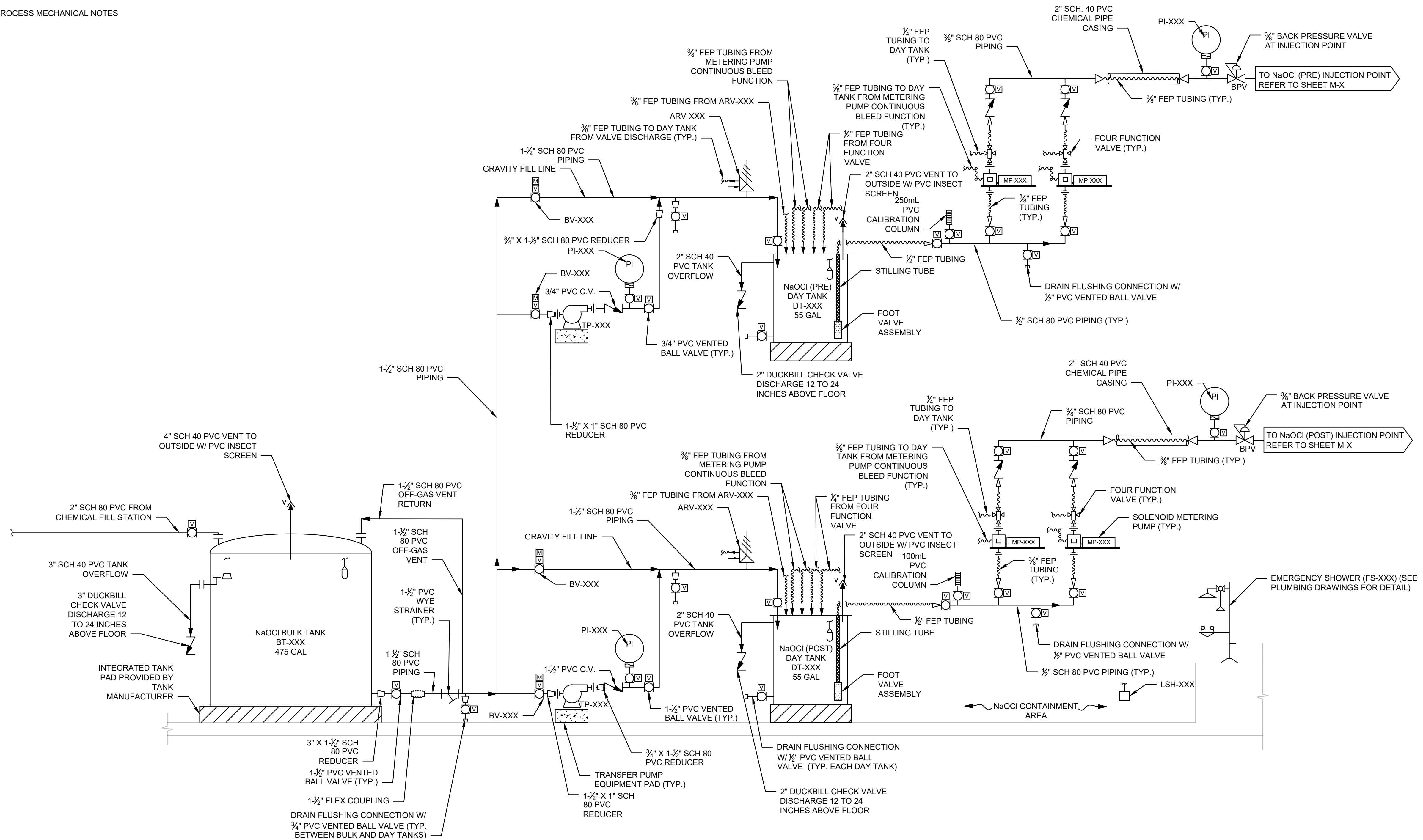
M-13

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%	3.0 mg/L	0.1 mg/L	1.77	0.98	0.63	42.4	23.5	15.2	0.16	0.09	0.06	3.8	2.1	1.4

NOTES:

- SEE SHEET M-XX FOR CHEMICAL FEED PROCESS MECHANICAL NOTES



ENVIRONMENTAL PARTNERS
— An Apex Company —

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Drawn by	SBS
Checked by	BJM/EAK
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**

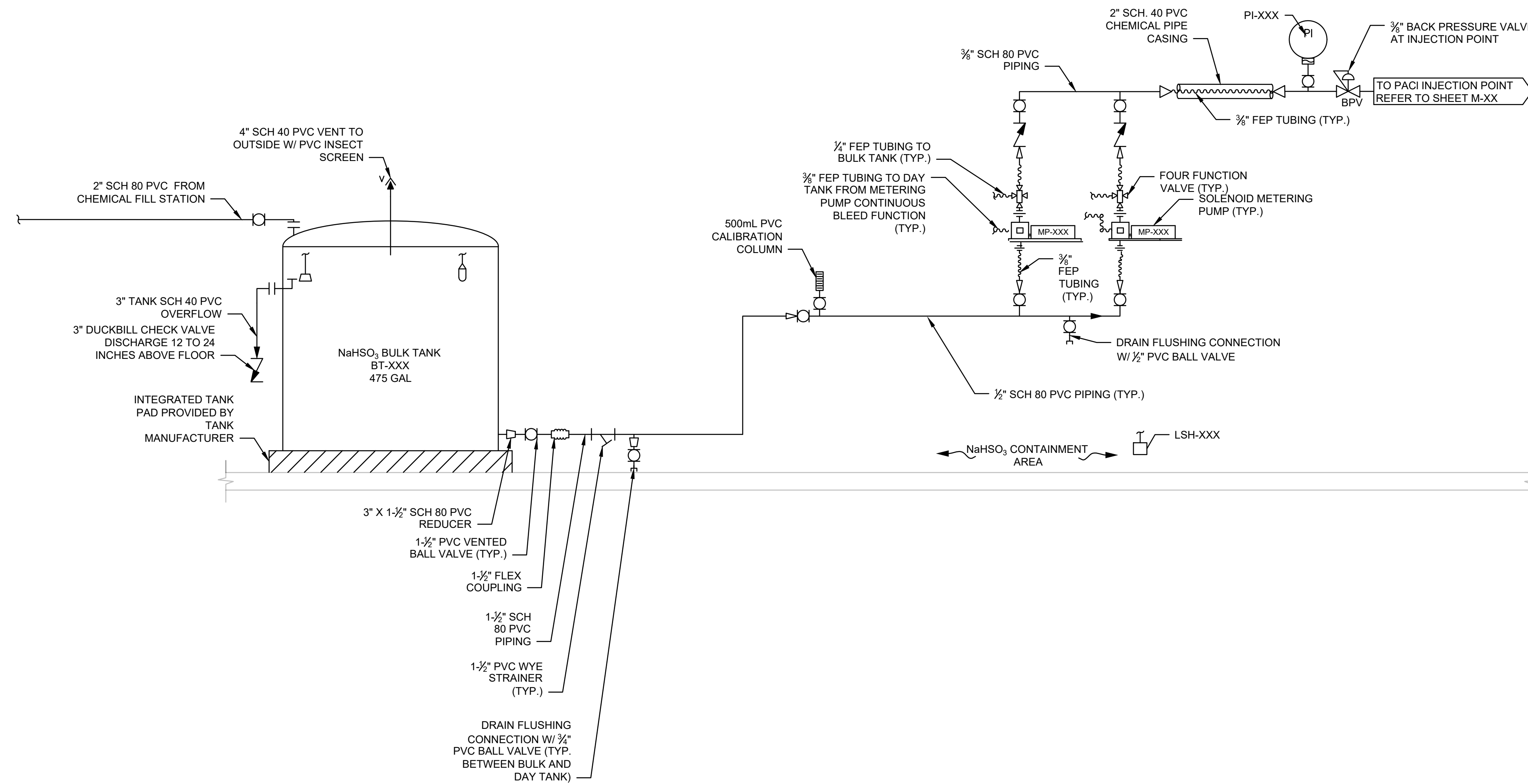
50% DESIGN
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M-14

SODIUM BISULFITE DOSING SCHEDULE

STRENGTH	DRY DOSE (AVERAGE)	FEED RATE (GPH)			DAILY USAGE (GPD)		
		MAX	AVG	MIN	MAX	AVG	MIN
30%	2.6 mg/L	0.49	0.17	0.01	11.7	4.0	0.1

NOTES:

- SEE SHEET M-X FOR CHEMICAL FEED PROCESS MECHANICAL NOTES



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— An Apex Company —

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TOWN OF SHARON, MA

PROCESS MECHANICAL
SODIUM BISULFITE
CHEMICAL FEED SCHEMATIC

50% DESIGN
Sheet No.

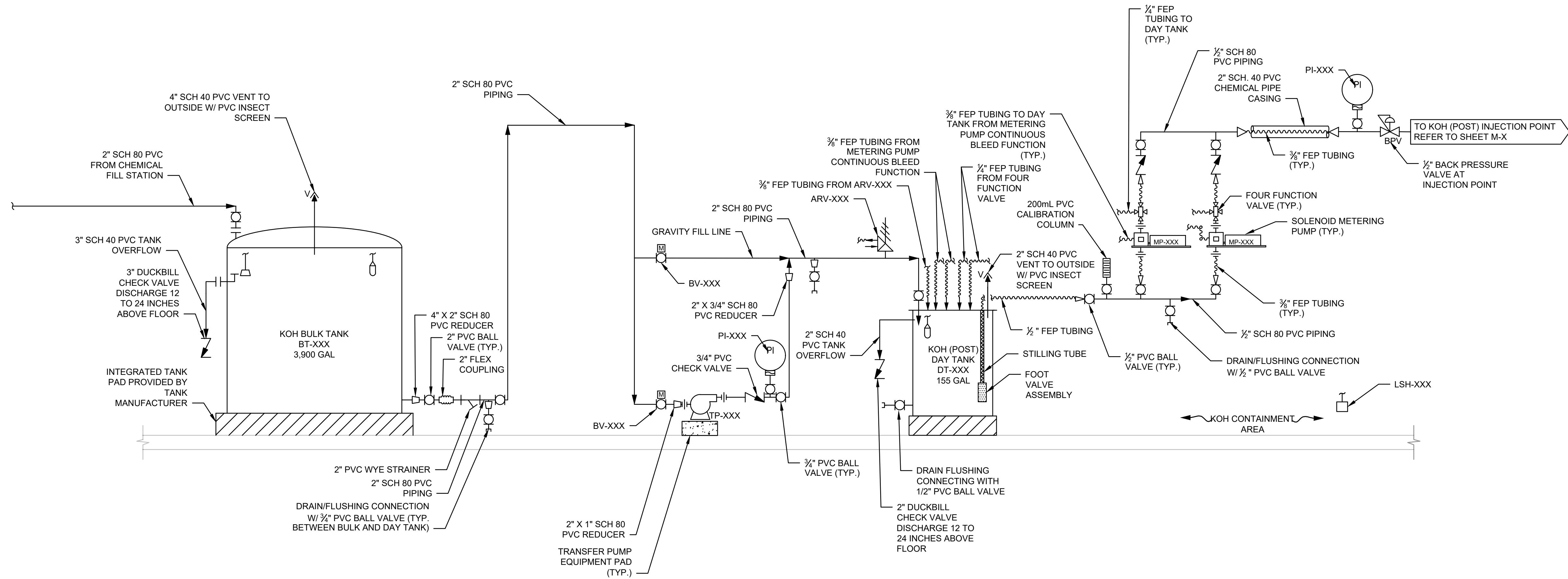
M-15

POTASSIUM HYDROXIDE DOSING SCHEDULE

STRENGTH	POST FILTRATION DRY DOSE (AVERAGE)	POST FILTRATION					
		FEED RATE (GPH)			DAILY USAGE (GPD)		
		MAX	AVG	MIN	MAX	AVG	MIN
45%	33.9 mg/L	8.60	4.67	3.16	206.3	114.2	75.8

NOTES:

- SEE SHEET M-XX FOR CHEMICAL FEED PROCESS MECHANICAL NOTES



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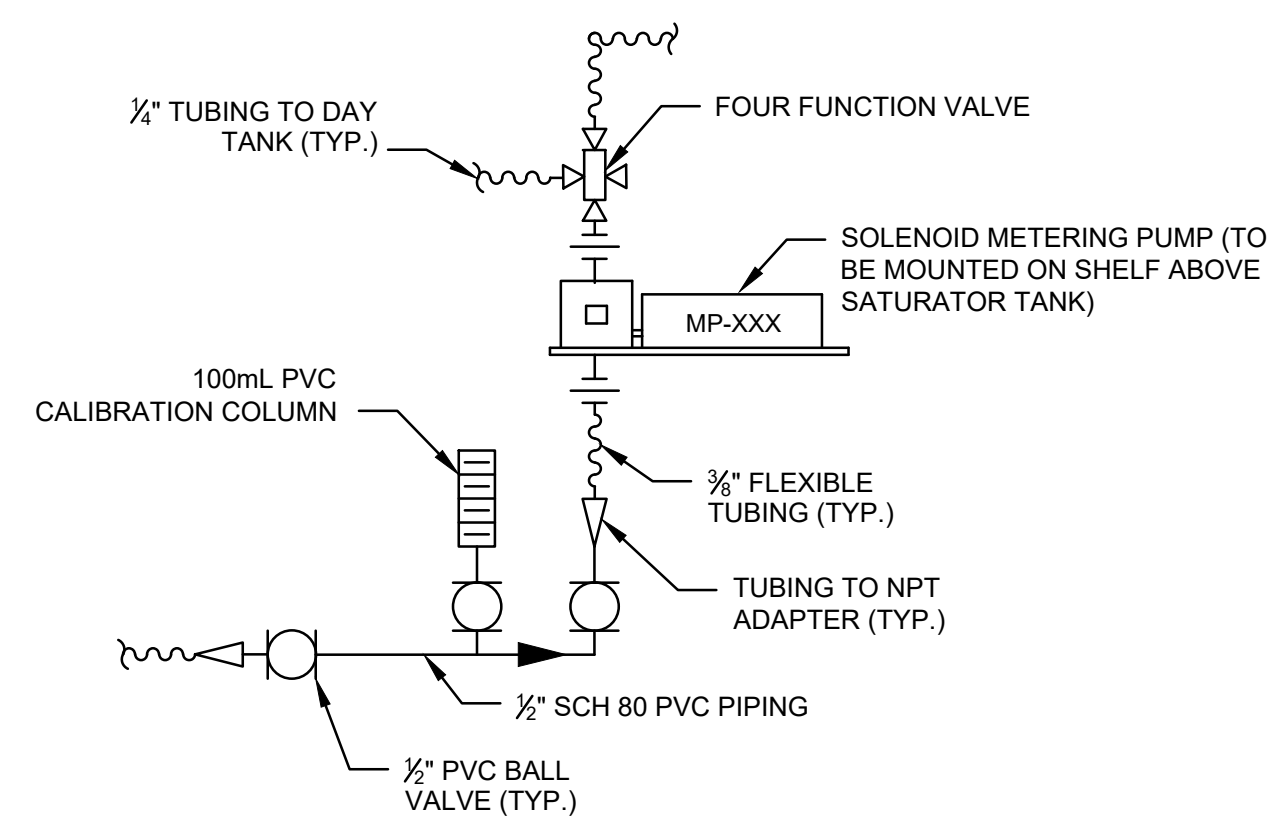
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PROCESS MECHANICAL
POTASSIUM HYDROXIDE
CHEMICAL FEED SCHEMATIC

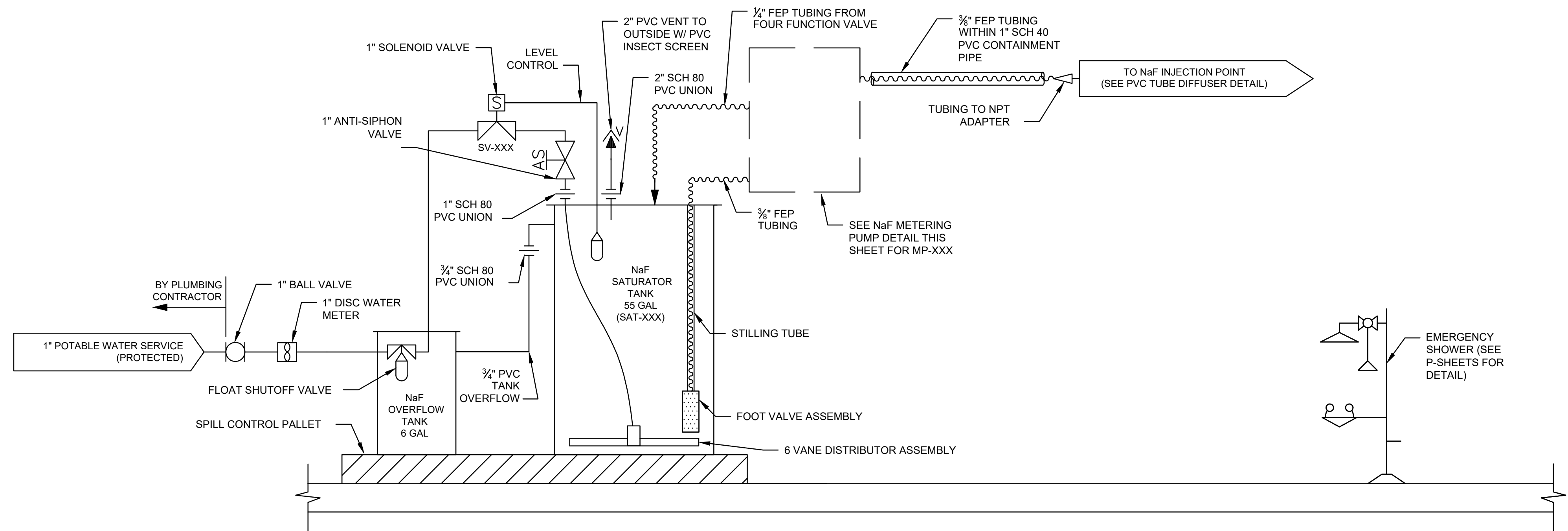
50% DESIGN
Sheet No.
M-16

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	2.06	1.37	89.3	49.4	32.8



**SODIUM FLUORIDE (NaF)
METERING PUMP DETAIL**



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— An Apex Company —

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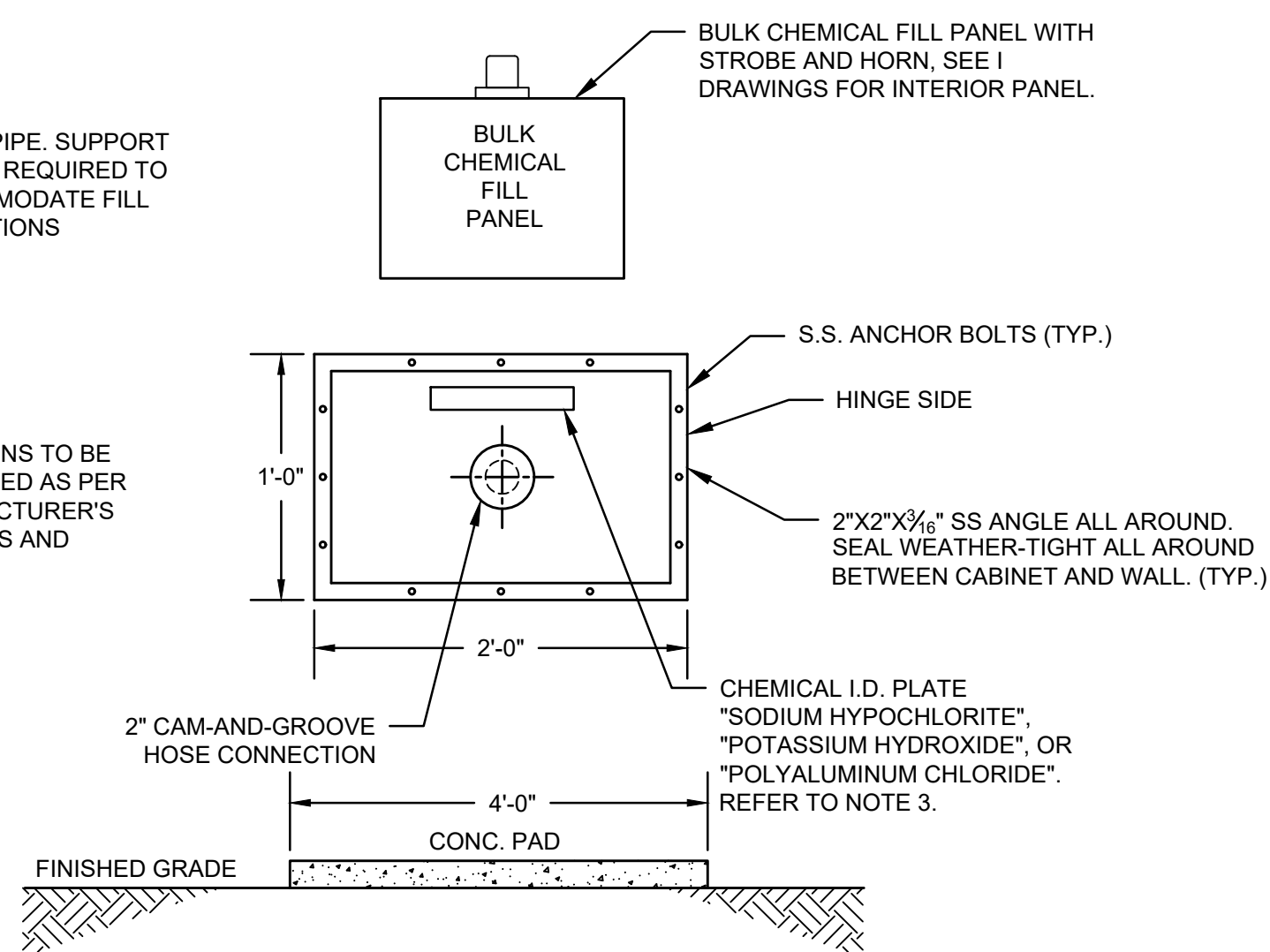
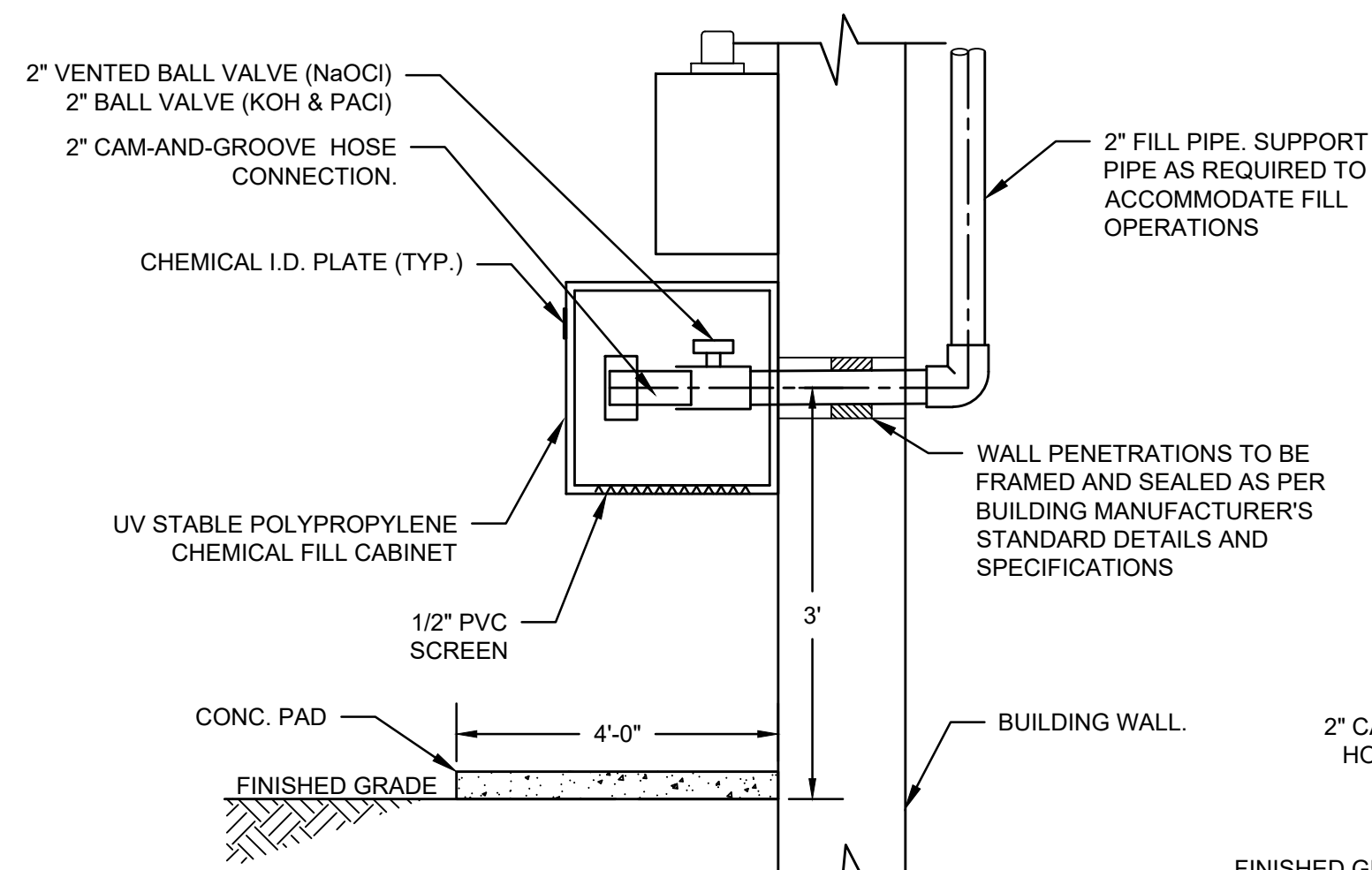
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PROCESS MECHANICAL
SODIUM FLUORIDE
CHEMICAL FEED SCHEMATIC

50% DESIGN
Sheet No.

M-17

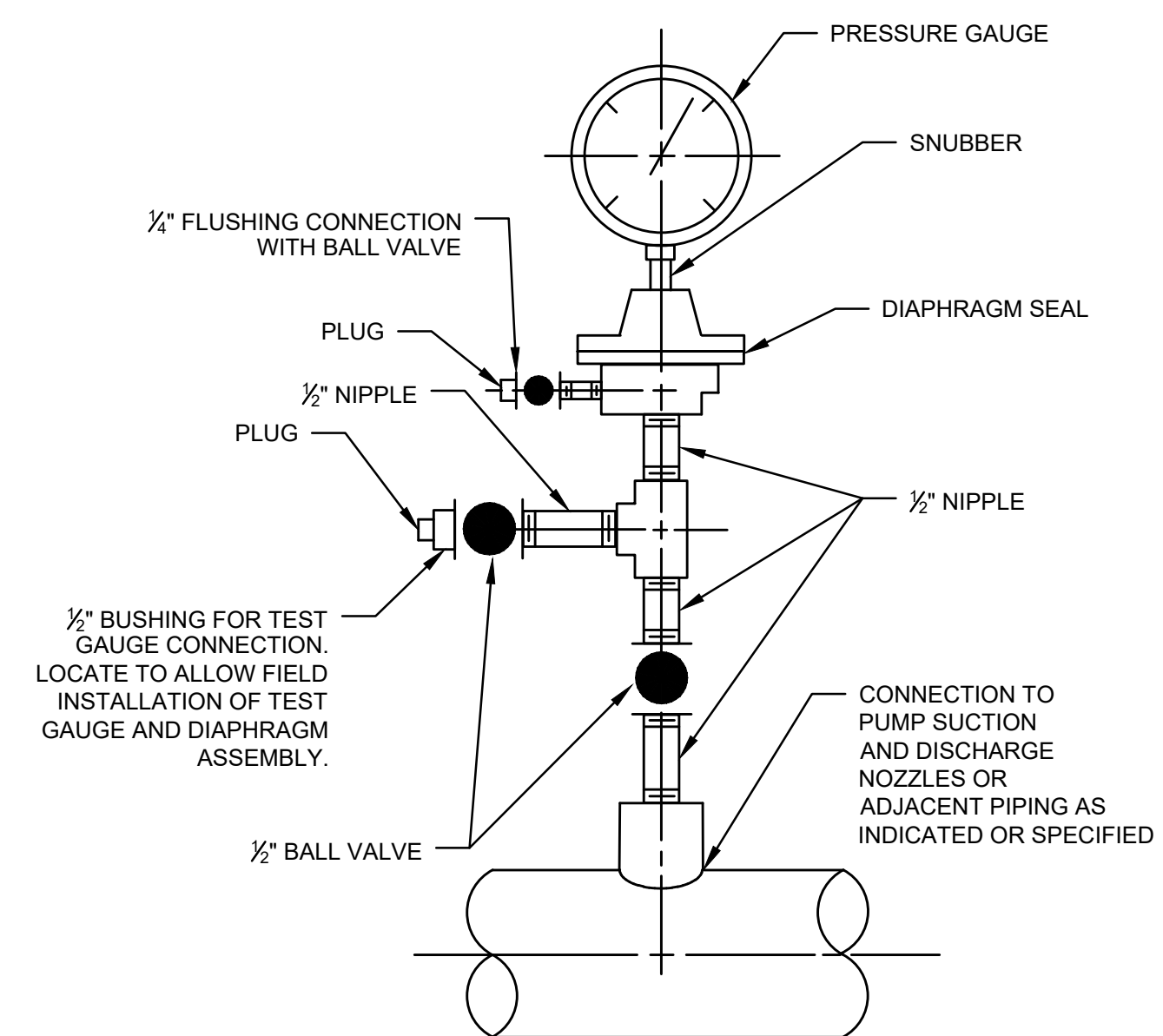


NOTES:

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.

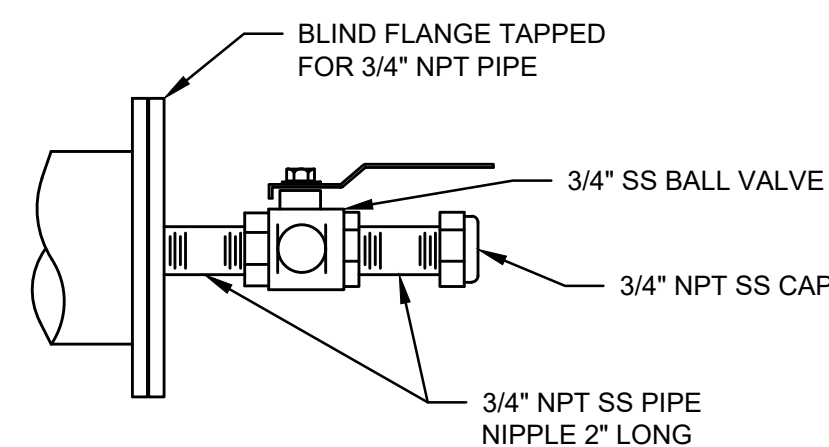
CHEMICAL FILL STATION

SCALE: N.T.S.



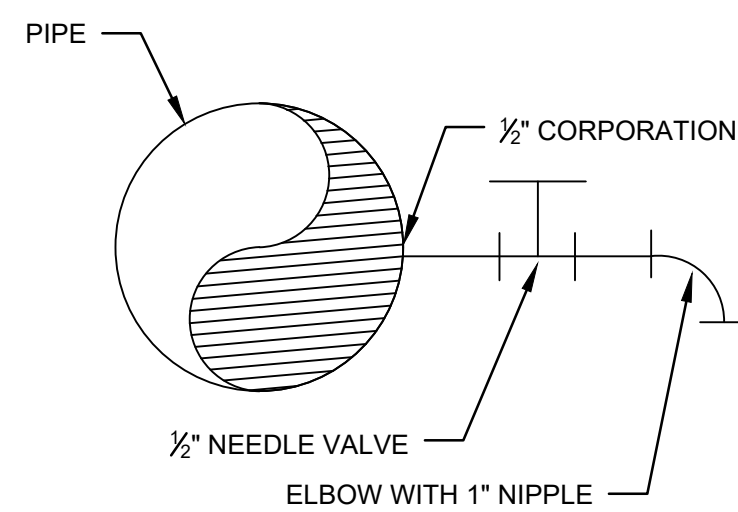
PRESSURE GAUGE MOUNTING FOR LIQUID PIPING

SCALE: N.T.S.



FLUSHING CONNECTION DETAIL

SCALE: N.T.S.

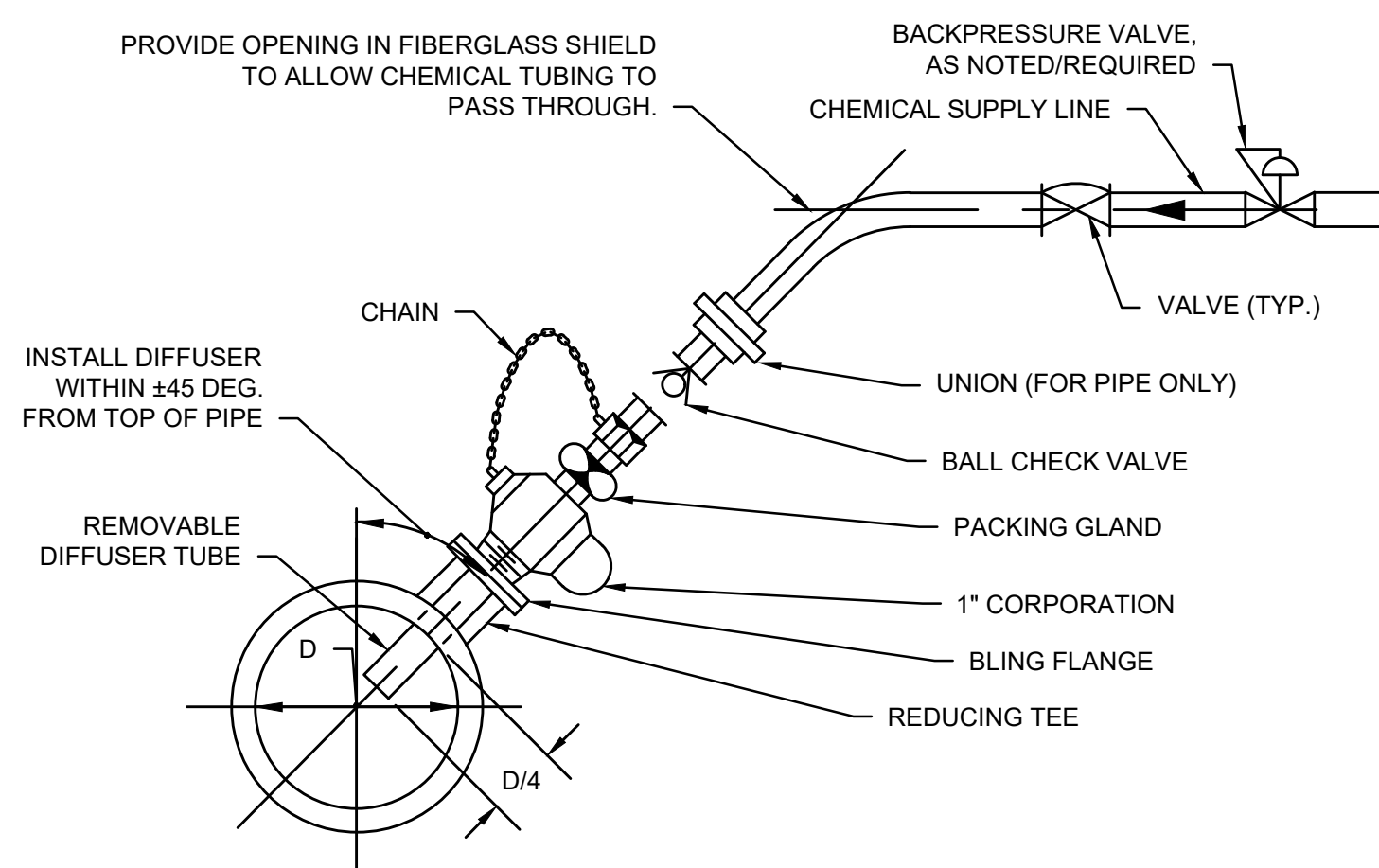


SAMPLE TAP

SCALE: N.T.S.

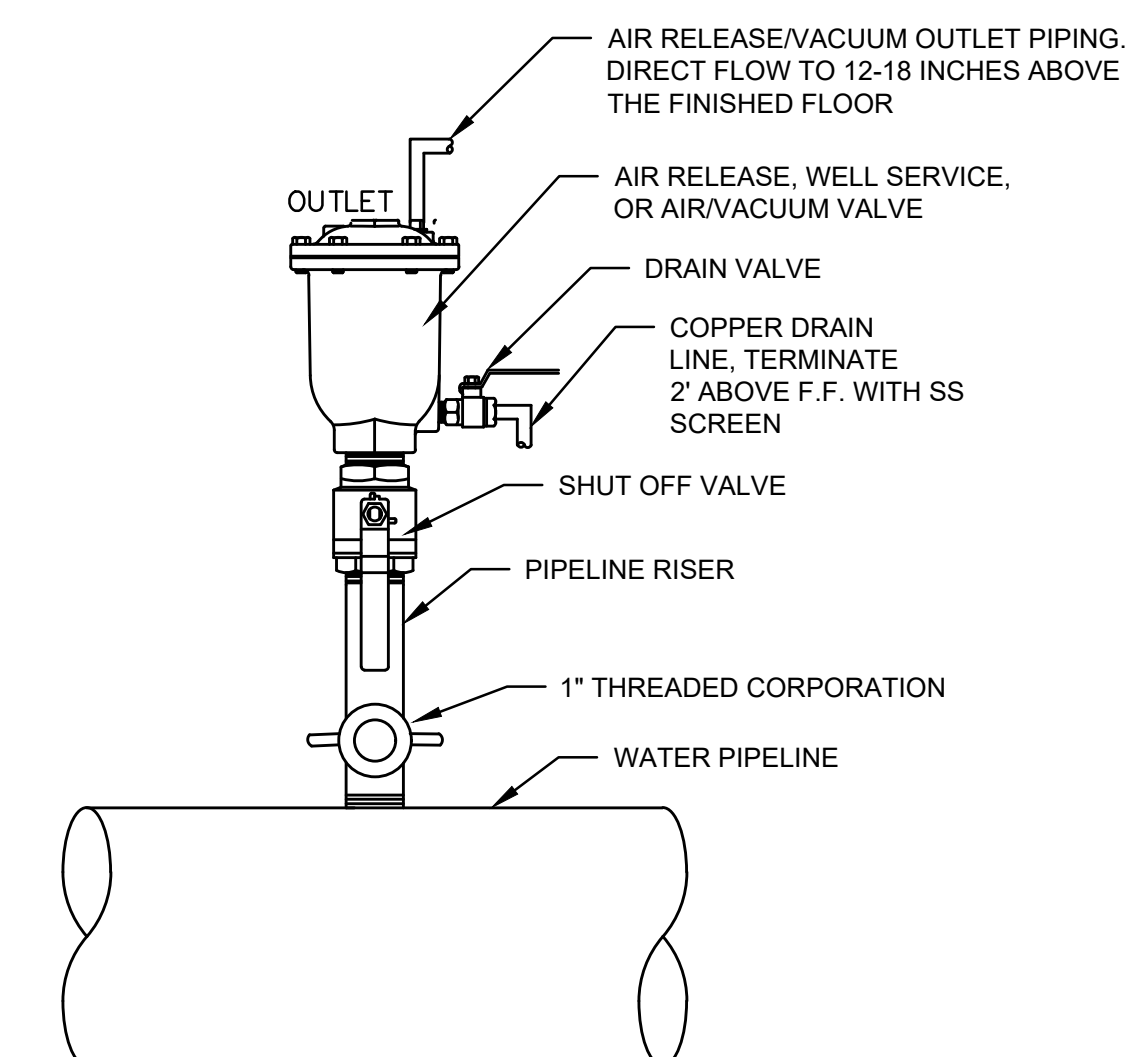
NOTES:

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. ROUTE COPPER DRAIN FROM ARV-XXX TO THE TRENCH DRAIN.
2. 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.



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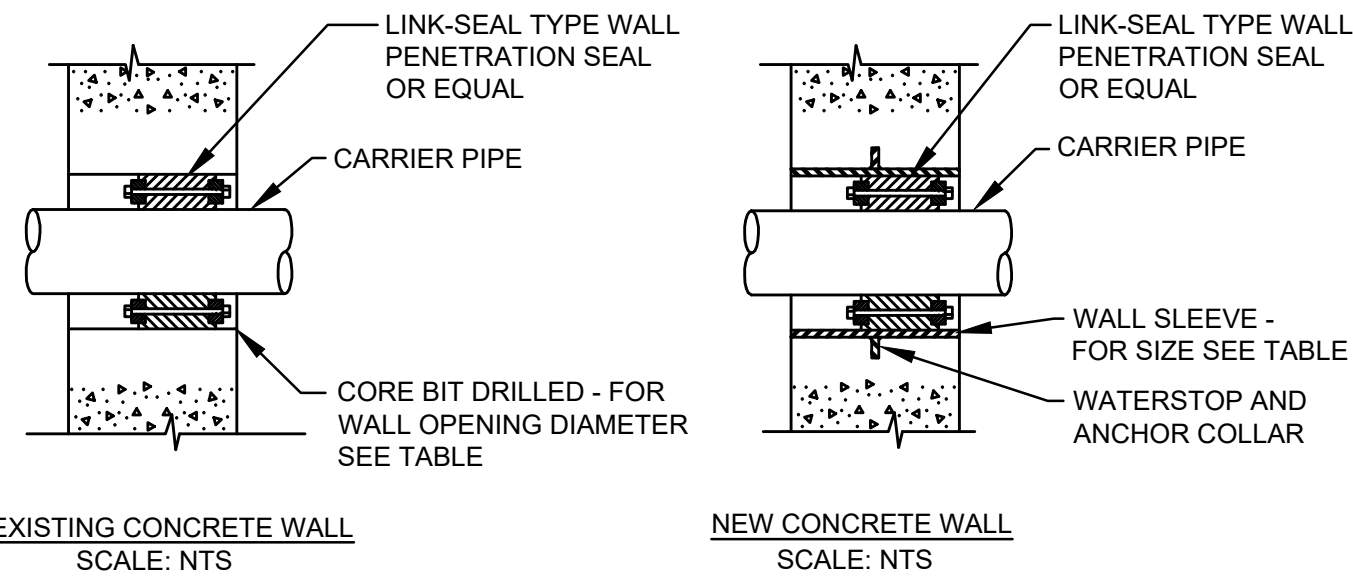
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**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

PROCESS MECHANICAL DETAILS I

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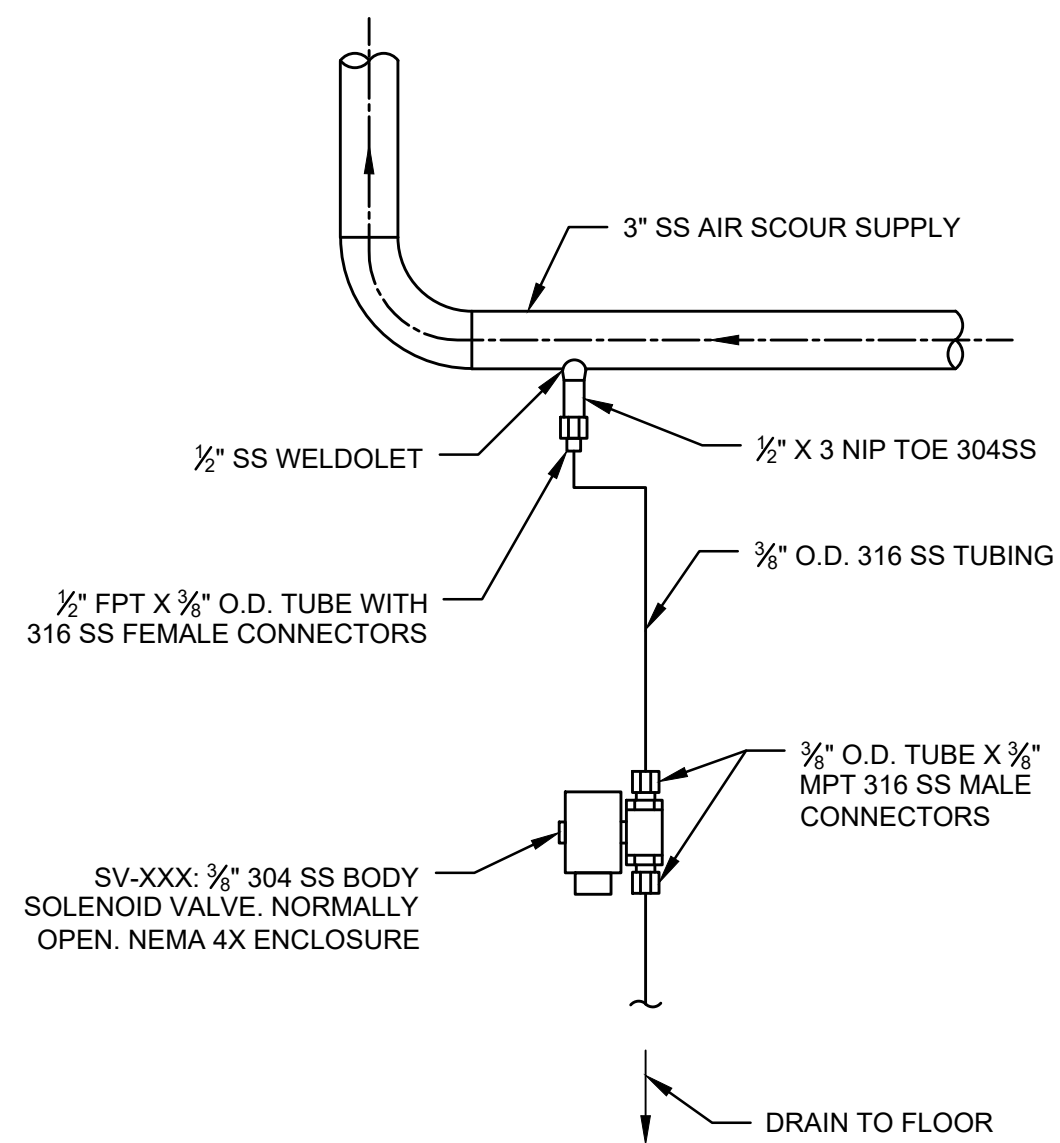
MD-1



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"

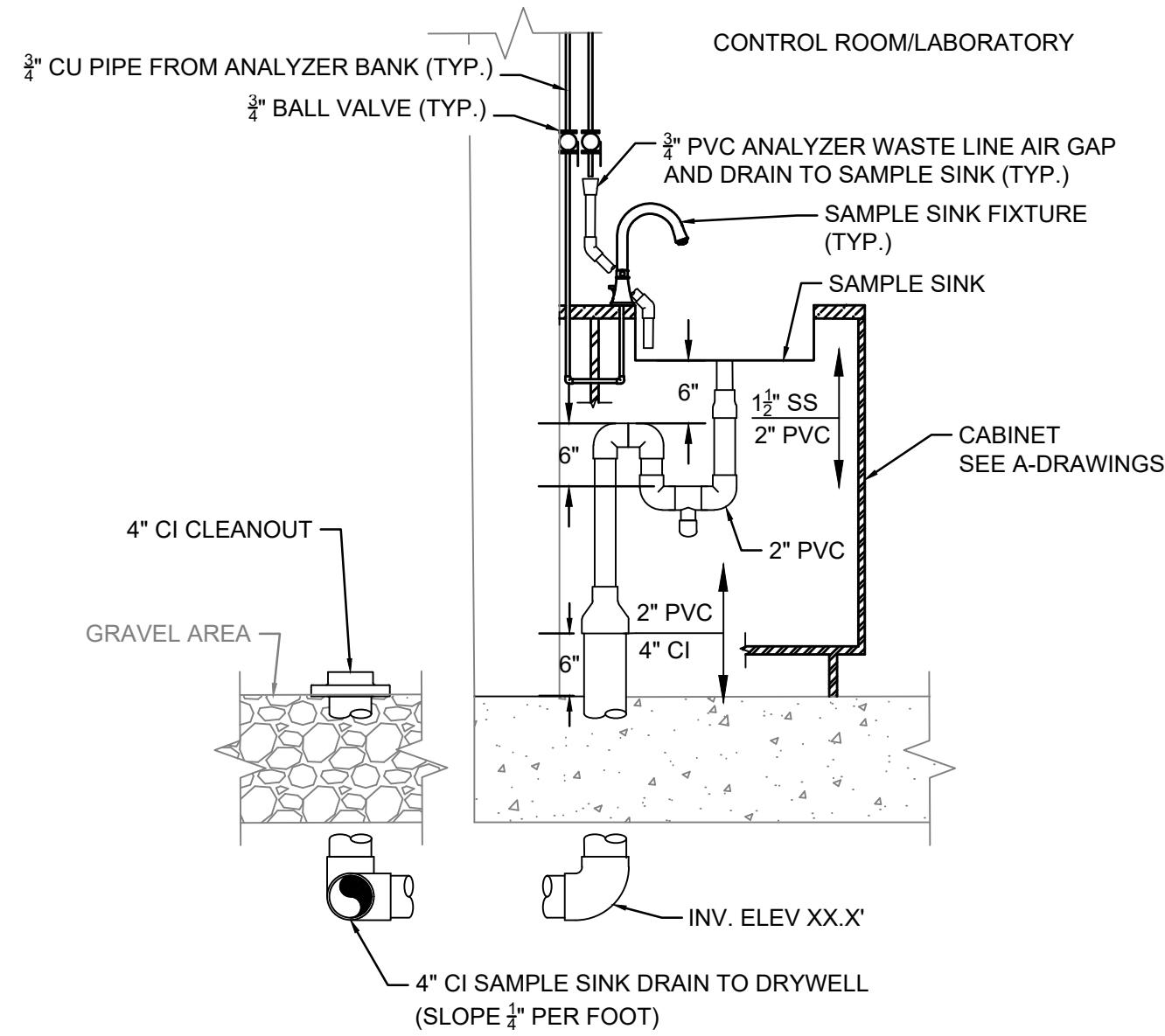
- NOTES:**
- SIZES SHOWN ARE FOR DUCTILE IRON PIPE, FOR OTHER MATERIALS AND PIPE SIZES CONSULT MANUFACTURER'S SPECIFICATIONS.
 - SOME APPLICATIONS MAY REQUIRE STANDARD WALL CASTINGS.
 - FOR WATER-TIGHT APPLICATIONS, PROVIDE NON-SHRINK GROUT ON EXTERIOR (NON-WATER SIDE) OF LINK-SEAL TYPE WALL PENETRATION.
 - WALL PENETRATION SHALL NOT BE SUBSTITUTED FOR CAST IN PLACE WALL PIPES AS NOTED OR REQUIRED.

TYPICAL WALL PENETRATION
SCALE: N.T.S.



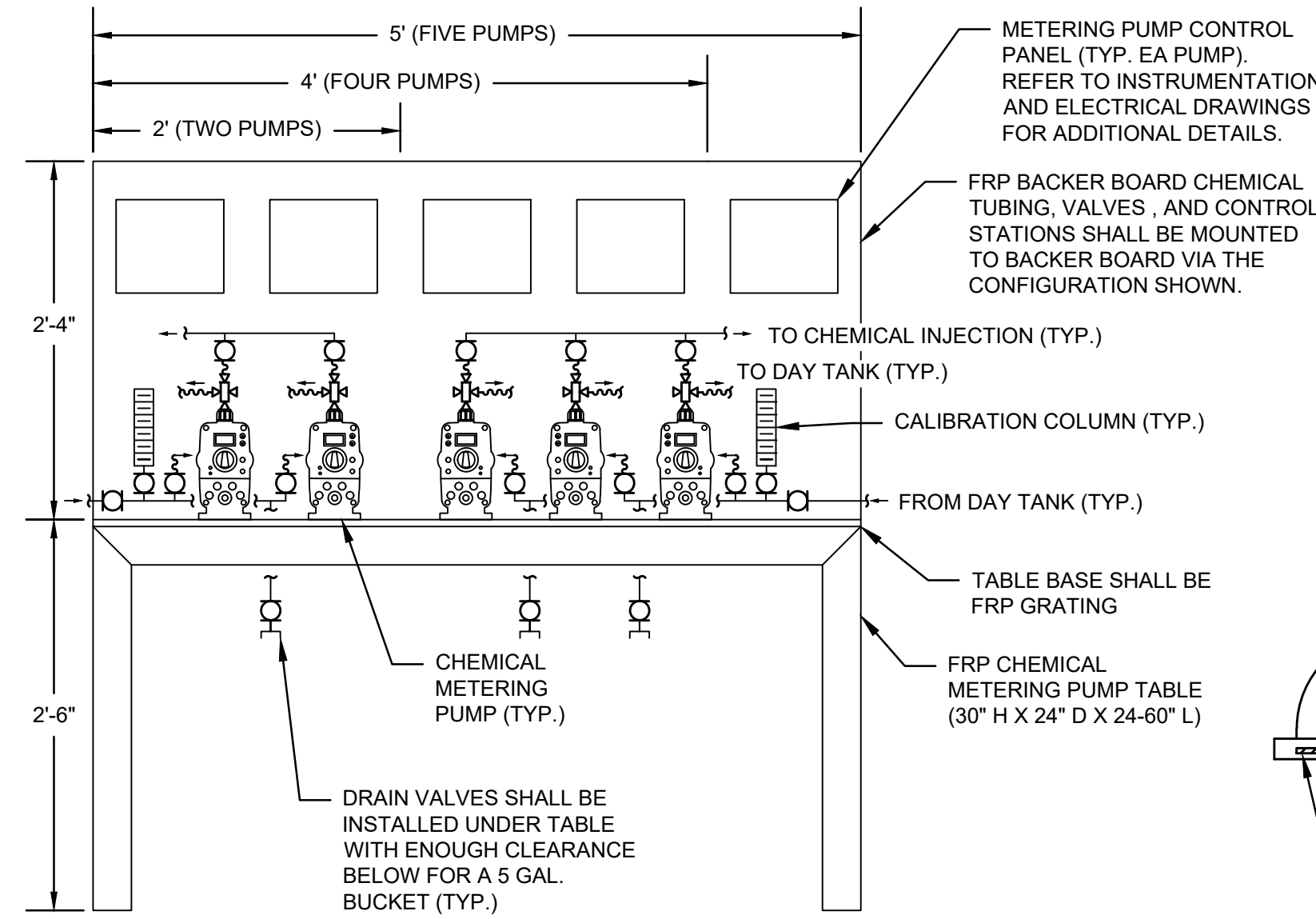
AIR SCOUR BLOWER DRAIN TUBING AND VALVE
SCALE: N.T.S.

- NOTES:**
- PROVIDE CORP. GUARD ON EACH SIDE OF PIPING (TOTAL OF 2)



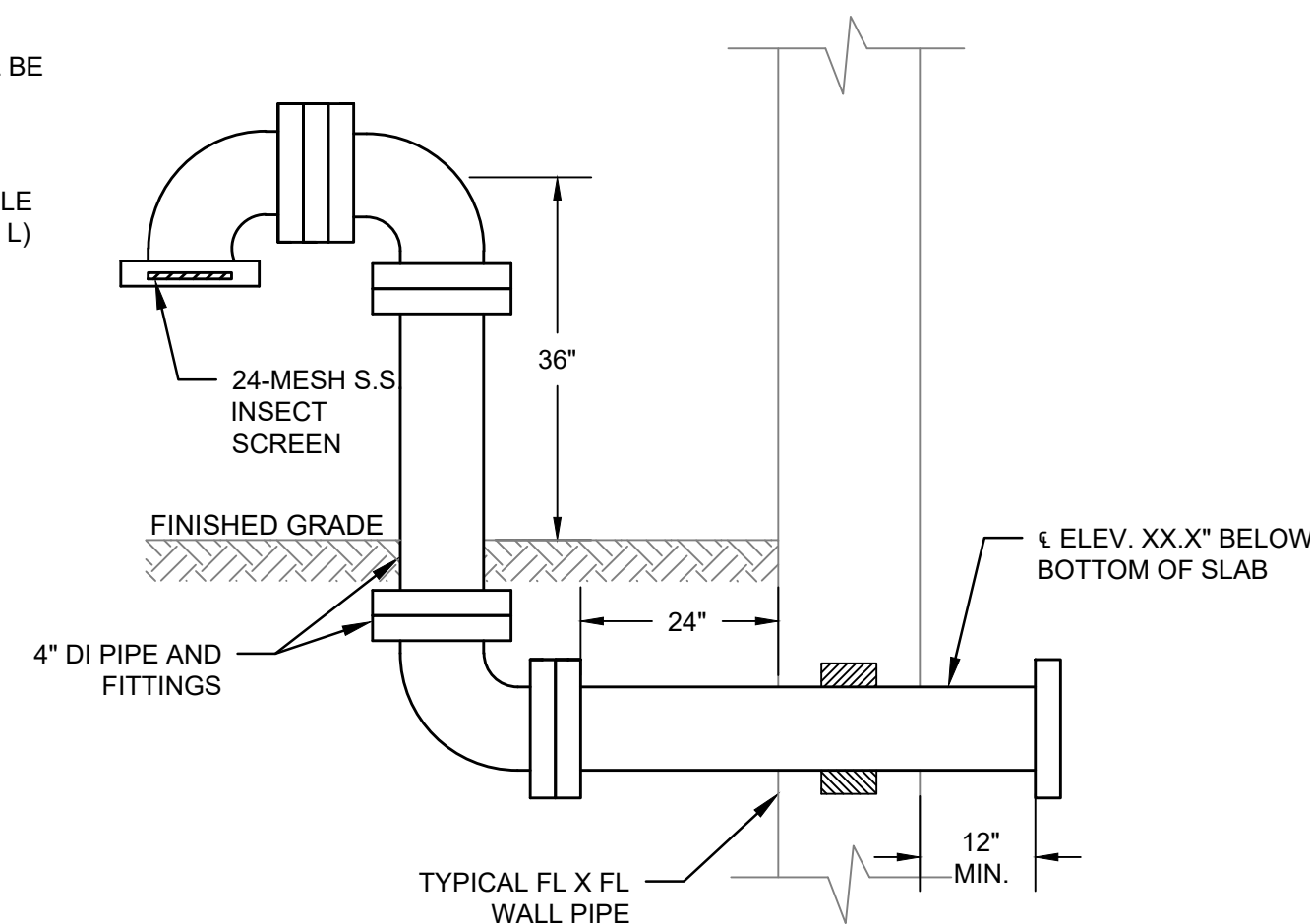
SAMPLE SINK DETAIL
SCALE: N.T.S.

- NOTES:**
- CONTRACTOR SHALL PROVIDE ONE DEDICATED SAMPLE SINK FIXTURE FOR EACH SAMPLE LINE.
 - CONTRACTOR TO LABEL EACH SAMPLE LINE AND SAMPLE SINK FIXTURE ACCORDING TO TREATMENT PROCESS: "RAW WATER", "OXIDIZED WATER", "FILTERED WATER", "FINISHED WATER".
 - THE ORDER OF THE SAMPLE LINE FIXTURES (FACING SINK) FROM LEFT TO RIGHT SHALL BE: "RAW WATER", "OXIDIZED WATER", "FILTERED WATER", "FINISHED WATER".
 - COORDINATE FIXTURES, CABINET WORK, AND SINK BAY DIMENSIONS WITH A-DRAWINGS.
 - COORDINATE SAMPLE SINK DRAIN PIPING LOCATION WITH CIVIL DRAWINGS.



METERING PUMP TABLE
SCALE: N.T.S.

- NOTES:**
- THE DETAIL ABOVE IS A GENERIC ARRANGEMENT FOR METERING PUMPS. REFER TO CHEMICAL FEED SCHEMATICS FOR SPECIFIC PIPING SIZE AND VALVE ARRANGEMENTS. (SHEETS M-XX, M-XX & M-XX)
 - CONTRACTOR TO LABEL EACH METERING PUMP WITH EQUIPMENT TAG NUMBERS AS NOTED ON THE CONTRACT DRAWINGS.
 - SODIUM HYPOCHLORITE VALVES SHALL BE VENTED TYPE.
 - PROVIDE A SUBMITTAL FOR THE METERING PUMP TABLE IN ACCORDANCE WITH SPECIFICATION SECTION 11241 - CHEMICAL MEETING PUMPS.



- NOTES:**
- ELBOW ROTATED INTO VIEW FOR CLARITY.
 - VENT SHALL BE PAINTED SAFETY YELLOW BY PAINTING CONTRACTOR.

TANK VENT
SCALE: N.T.S.



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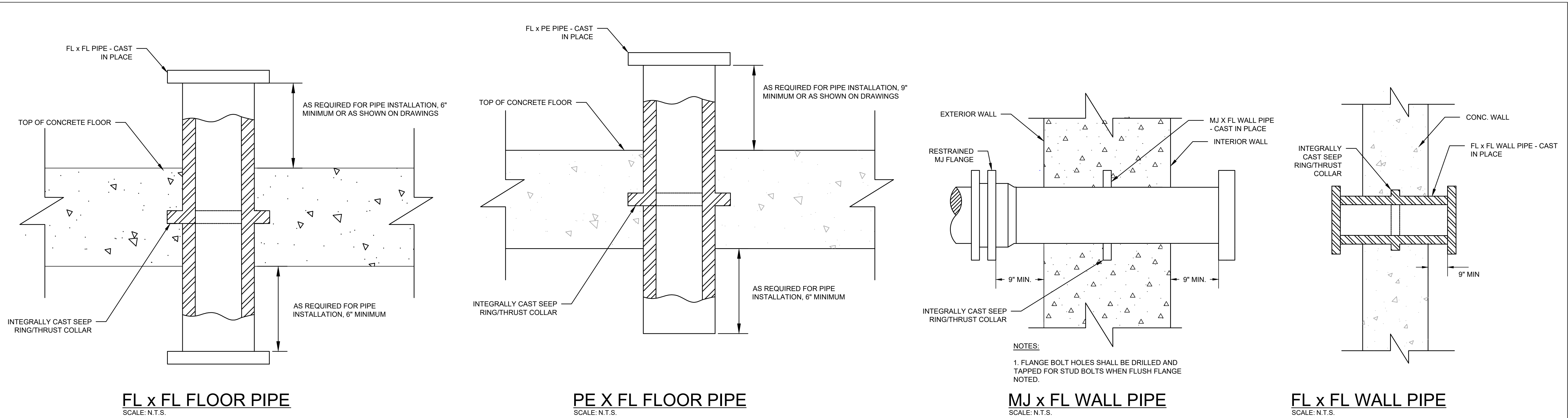
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TOWN OF SHARON, MA

PROCESS MECHANICAL DETAILS II

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MD-2

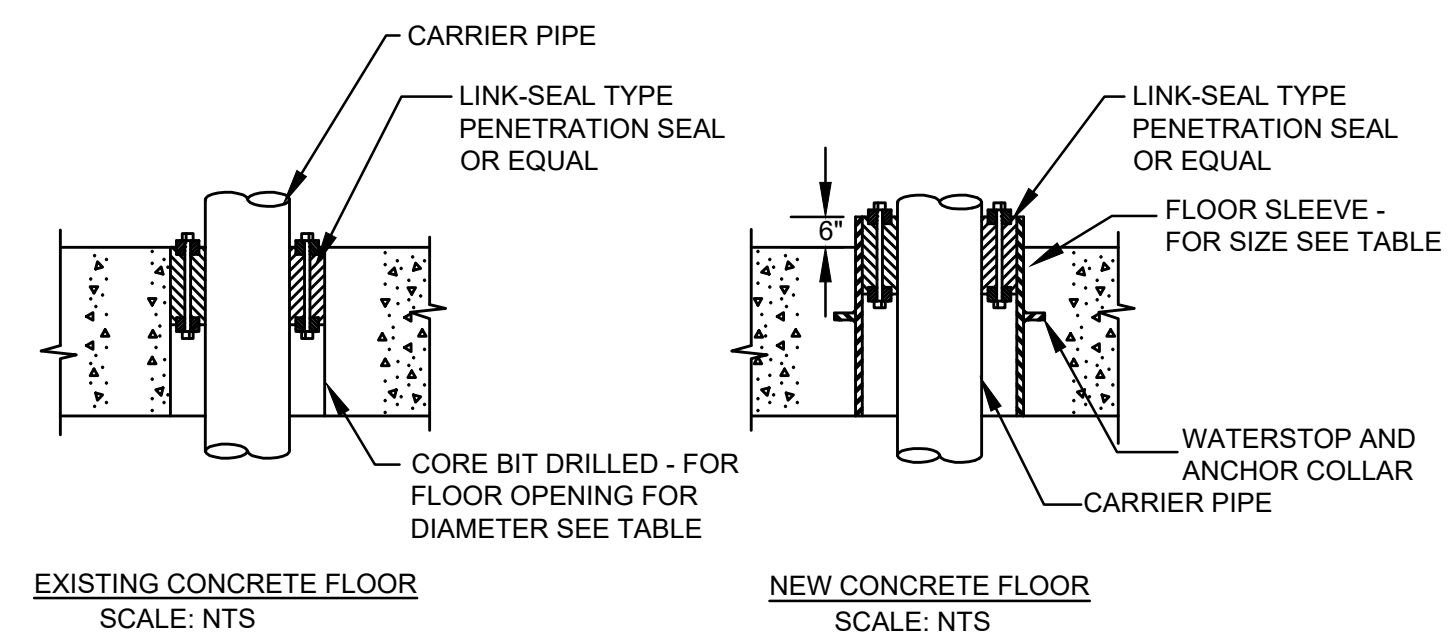


FL x FL FLOOR PIPE
SCALE: N.T.S.

PE x FL FLOOR PIPE
SCALE: N.T.S.

MJ x FL WALL PIPE
SCALE: N.T.S.

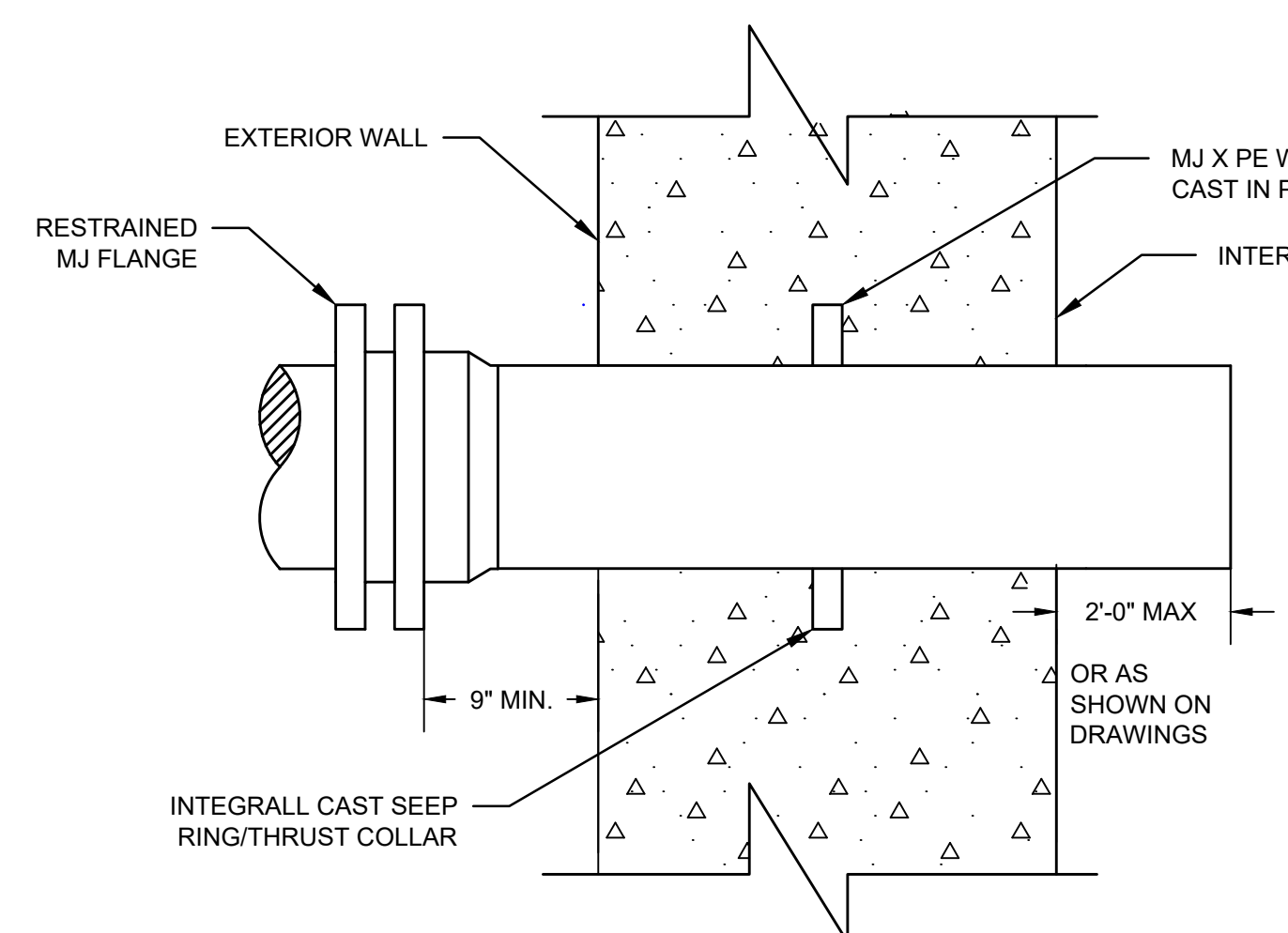
FL x FL WALL PIPE
SCALE: N.T.S.



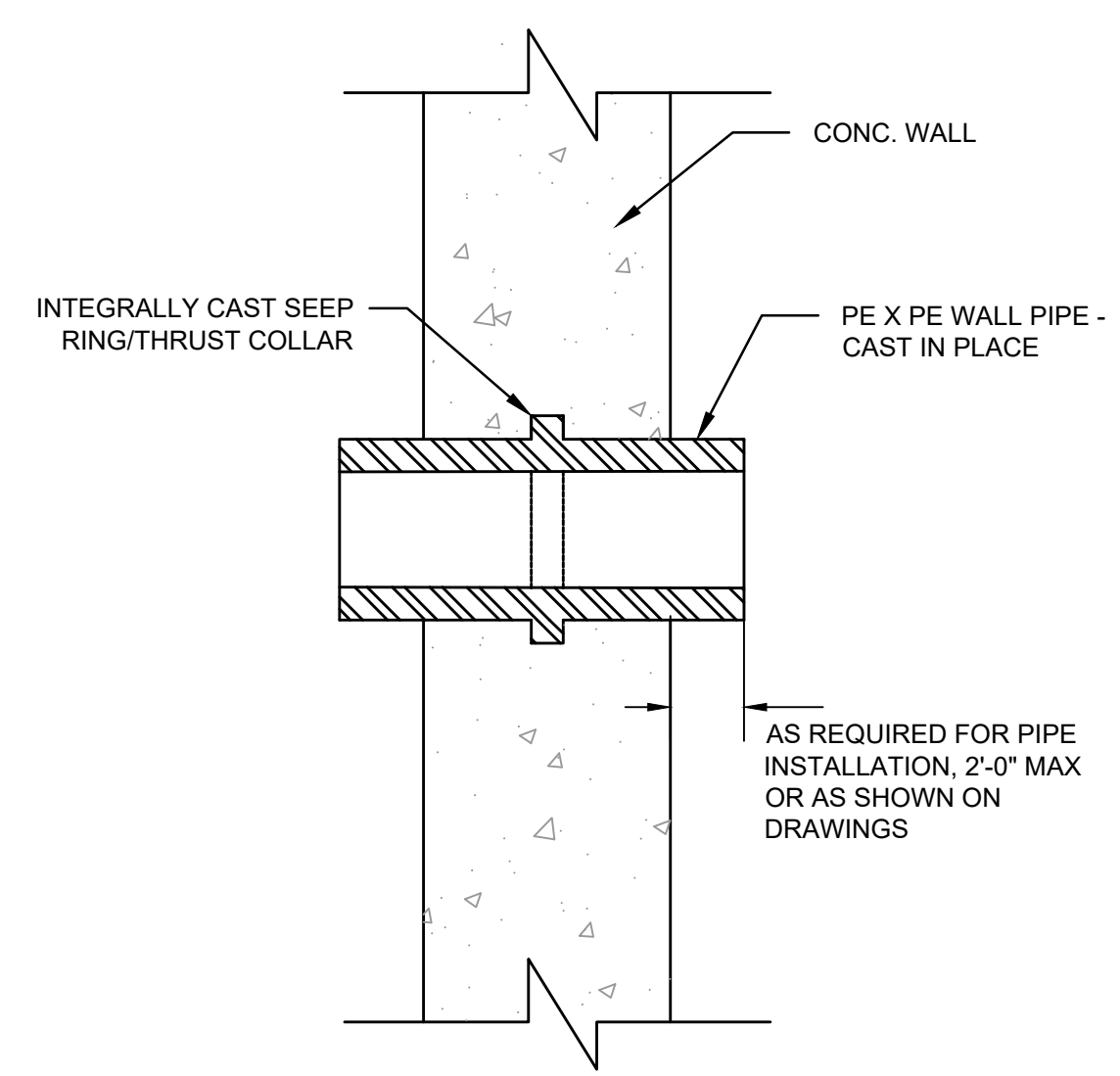
CARRIER PIPE NOMINAL SIZE	CARRIER PIPE O.D.	FLOOR SLEEVE SIZE	CORE DRILLED I.D.
1 1/2"	1.625"	3"	3"
2"	2.50"	4"	4"
4"	4.80"	8"	8"
6"	6.90"	10"	10"
8"	9.05"	12"	12"
10"	11.20"	14"	14"
12"	1.20"	16"	16"
24"	25.80"	30"	29"

- NOTES:**
- SIZES SHOWN ARE FOR DUCTILE IRON PIPE, FOR OTHER MATERIALS AND PIPE SIZES CONSULT MANUFACTURER'S SPECIFICATIONS.
 - WALL PENETRATION SHALL NOT BE SUBSTITUTED FOR CAST IN PLACE WALL PIPES AS NOTED OR REQUIRED.

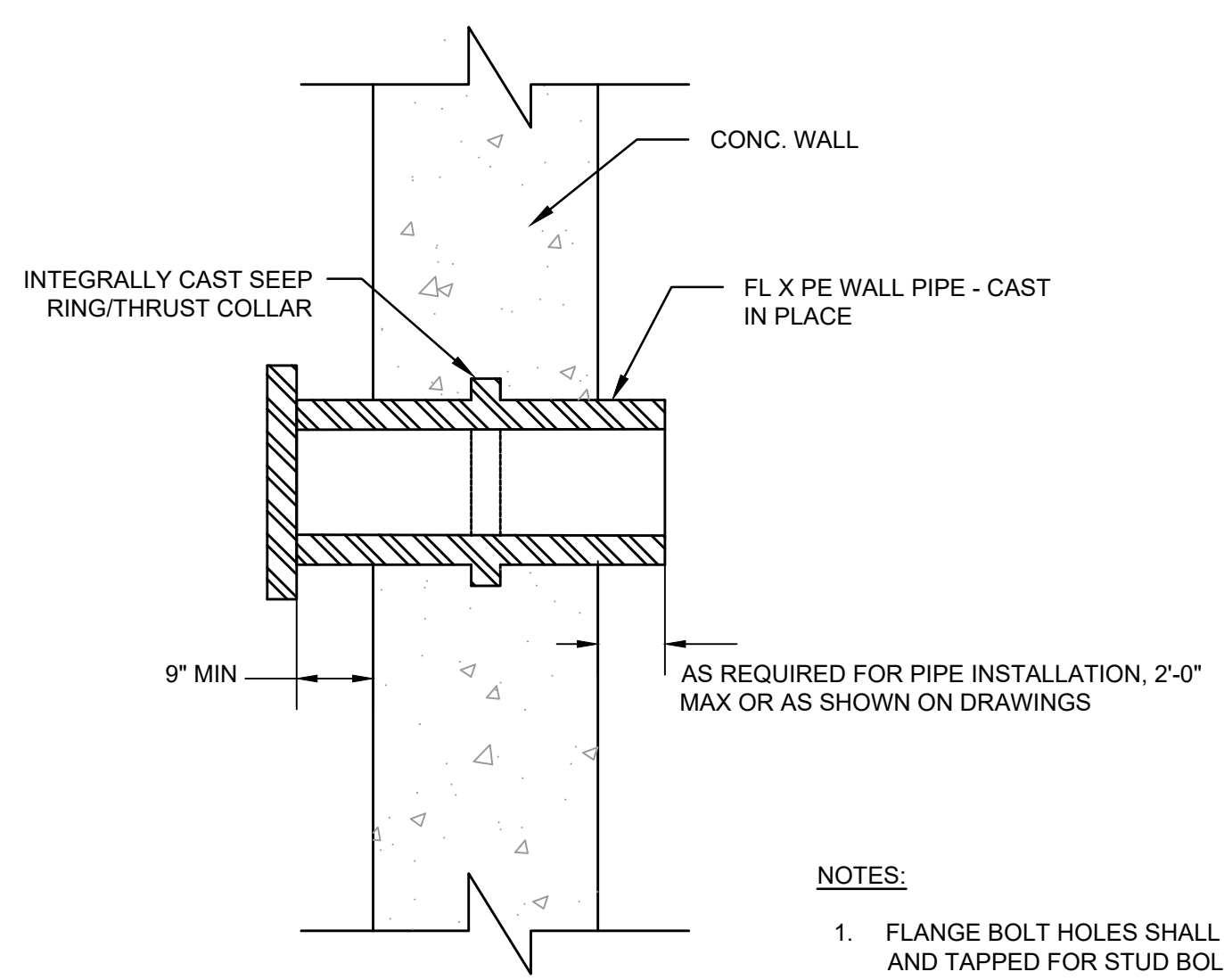
TYPICAL PIPE SLAB PENETRATION
SCALE: N.T.S.



MJ x PE WALL PIPE
SCALE: N.T.S.



PE x PE WALL PIPE
SCALE: N.T.S.



FL x PE WALL PIPE
SCALE: N.T.S.

- NOTES:**
- 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.



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PROCESS MECHANICAL DETAILS III

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MD-3

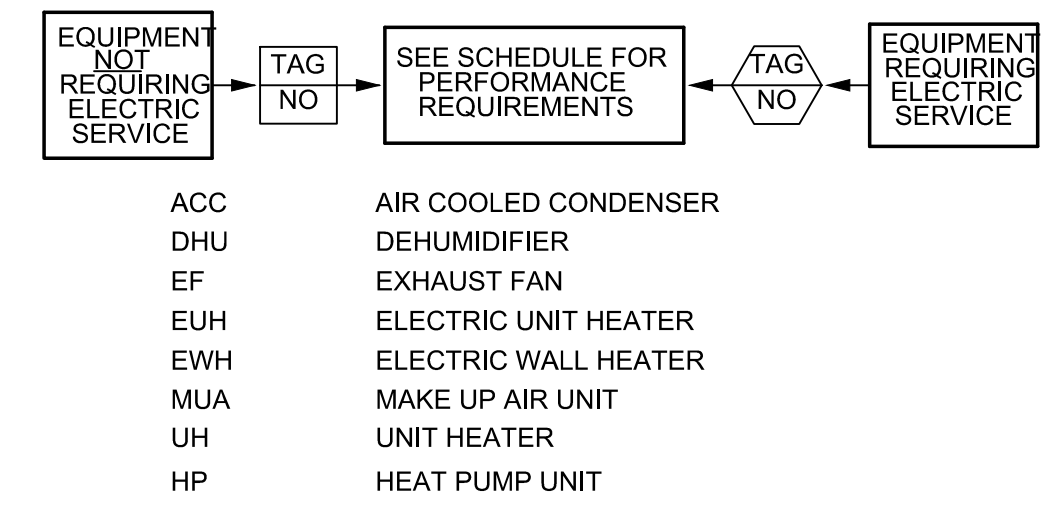
GENERAL NOTES

- 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.
- ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES BEFORE ANY INSTALLATION IS MADE.
- ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH STATE CODES, MANUFACTURER'S APPROVED PUBLISHED LITERATURE, AND AUTHORITIES HAVING JURISDICTION.
- INSTALLATION OF EQUIPMENT SHALL PERMIT ACCESSIBILITY FOR SERVICE AND REPAIR OR REPLACEMENT.
- 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.
- HVAC CONTRACTOR SHALL COORDINATE ALL WALL, CEILING, FLOOR, ROOF AND BEAM PENETRATIONS WITH ENGINEER AND STRUCTURAL ENGINEER.
- ALL DUCT SIZES SHOWN ARE NET INSIDE CLEAR DIMENSIONS.
- PROVIDE INSTRUMENT TEST HOLES WITH CAPS IN AIR DISTRIBUTION SYSTEMS AS REQUIRED TO BALANCE SYSTEM.
- HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SHEETMETAL TRANSITIONS AT FANS, COILS, AND OTHER SIMILAR HVAC EQUIPMENT.
- ALL MISCELLANEOUS SUPPORTS REQUIRED FOR HVAC EQUIPMENT INSTALLATION SHALL BE PROVIDED BY HVAC SUBCONTRACTOR.
- EXACT LOCATION OF THERMOSTAT TO BE COORDINATED WITH FINAL LOCATION OF WALL MOUNTED ARCHITECTURAL AND ELECTRICAL EQUIPMENT.
- PROVIDE FLEXIBLE DUCT CONNECTIONS ON INTAKES AND DISCHARGES OF ALL AIR HANDLING UNITS.
- COORDINATE DUCT MOUNTED SMOKE DETECTORS WITH ELECTRICAL CONTRACTOR SMOKE DETECTOR SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR, INSTALLED BY THE HVAC CONTRACTOR.
- ALL DUCT AND PIPE PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE SEALED WITH FIRE-STOP PENETRATION SEAL IN ACCORDANCE WITH UL 1479.
- REFER TO STRUCTURAL DRAWING FOR PENETRATIONS THRU CONCRETE PLANKS.
- HVAC CONTRACTOR IS RESPONSIBLE FOR DEVELOPING COORDINATION DRAWINGS. REFER TO SPECIFICATIONS FOR REQUIREMENTS.

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
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

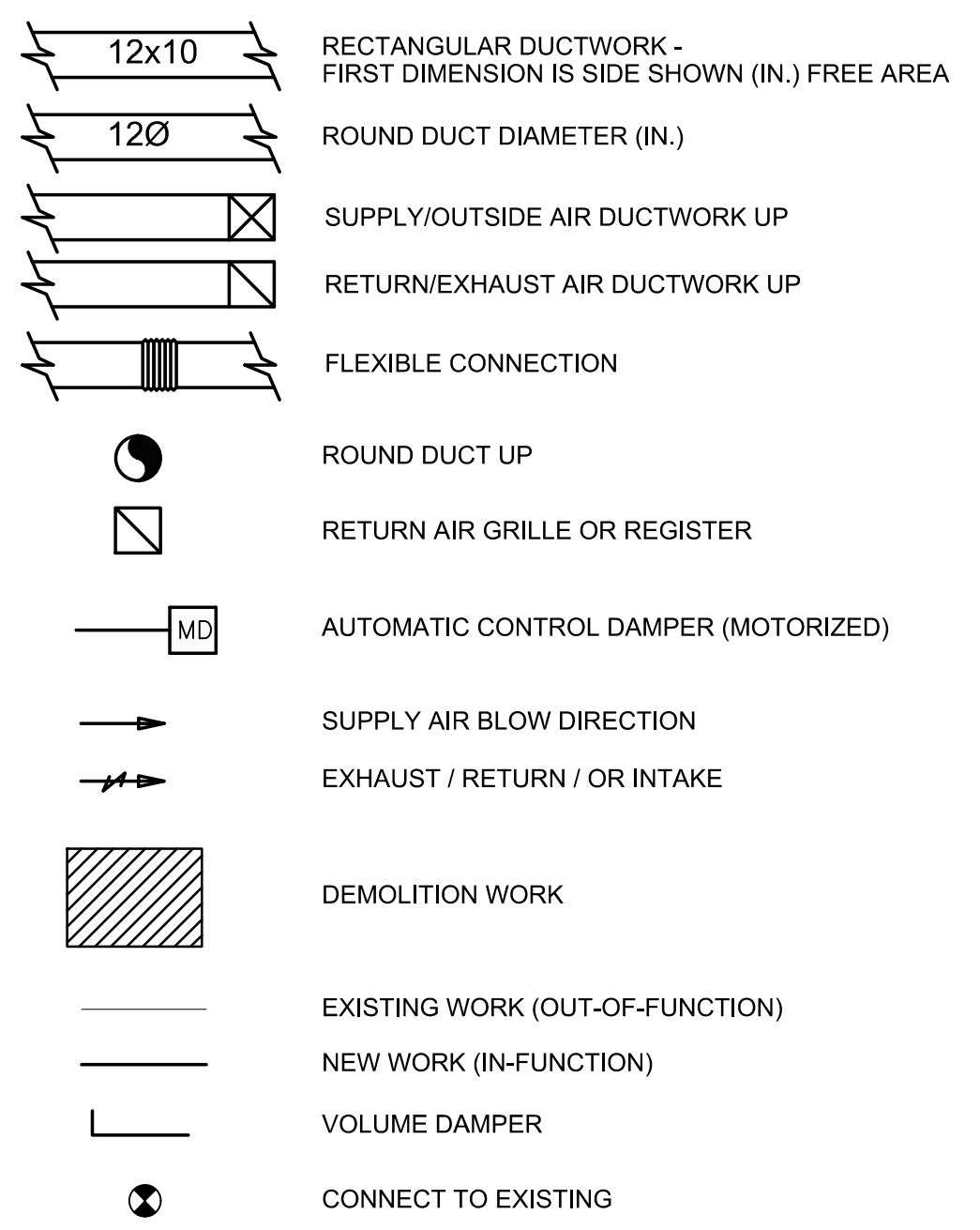
EQUIPMENT TAG SYMBOLS



INSTRUMENTATION

- Ⓚ HEATING/COOLING THERMOSTAT
- Ⓜ DUCT SMOKE DETECTOR
- Ⓢ SWITCH
- Ⓢ BG SWITCH WITH BREAK GLASS
- Ⓜ HP-1 PACKAGED CONTROLLER
- Ⓜ HUMIDITY SENSOR

LEGEND/SYMBOLS



SEQUENCE OF OPERATION

- CHEMICAL STORAGE AREA EF-1:**
EF-1 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-1 IS RUNNING. WHEN A BREAK GLASS EMERGENCY SWITCH IS MOVED TO THE "OFF" POSITION, FAN EF-1 SHALL BE SHUT OFF. THE INTAKE DAMPER SHALL CLOSE UNLESS OVERRIDDEN BY EF-5 STARTUP, AND FAN EF-6 SHALL BE LOCKED OUT. SIGNAGE AT THE EF-1 FAN SWITCH SHALL NOTE "FAN EF-1 EMERGENCY STOP".
- ELECTRICAL ROOM EF-2**
ELECTRICAL ROOM EXHAUST FAN EF-2 SHALL BE STARTED AND STOPPED FROM A WALL MOUNTED THERMOSTAT. A WALL CAP WITH A GRAVITY DAMPER IN THE ROOM SHALL ALLOW MAKEUP AIR INTO THE ROOM TO REPLACE THE AIR EXHAUSTED.
- MECHANICAL ROOM EF-3**
MECHANICAL ROOM EXHAUST FAN EF-3 SHALL BE STARTED AND STOPPED FROM A WALL MOUNTED THERMOSTAT. A WALL CAP WITH GRAVITY DAMPER IN THE ROOM SHALL ALLOW MAKEUP AIR INTO THE ROOM TO REPLACE THE AIR EXHAUSTED.
- 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 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
- TOILET ROOM EXHAUST FAN EF-4**
FAN SHALL BE STARTED AND STOPPED BY ROOM LIGHT SWITCH.
- FUME HOOD EXHAUST FAN LEF-1 AND MUA-1**
FUME HOOD EXHAUST FAN SHALL BE STARTED AND STOPPED FROM A MANUAL 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 SEND A SIGNAL TO THE FUME HOOD EXHAUST FAN MOTOR VFD WHICH WILL CONTROL THE FAN SPEED TO MAINTAIN A CONSTANT INLET VELOCITY OF 100 FPM THROUGH THE HOOD. FROM THE EXHAUST FAN MOTOR VFD, A BIASED SIGNAL SHALL BE SENT TO MUA-1 UNIT FAN MOTOR VFD. THE MUA UNIT SHALL START WHEN THE EXHAUST FAN MOTOR STARTS AND SHALL RUN AT A SPEED RESULTING IN A -10% DIFFERENTIAL AIRFLOW TO THE ROOM AND RESULTING IN A NEGATIVE PRESSURE IN THE LAB WHENEVER THE FANS ARE RUNNING. 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 BURNER SUPPLY AIR TEMPERATURE TO MAINTAIN A SETPOINT OF 70 DEG F. (ADJUSTABLE)
- FILTER ROOM GENERAL EXHAUST FAN EF-6**
GENERAL VENTILATION EXHAUST FAN EF-6 SHALL BE STARTED AND STOPPED FROM THE FILTER ROOM WALL LIGHT SWITCH. THE ASSOCIATED OUTDOOR AIR INTAKE DAMPER SHALL BE INTERLOCKED WITH THE FAN TO OPEN WHEN THE FAN STARTS. NOTE: IF THE BREAK GLASS SWITCH FOR EF-1 IS IN THE "OFF" POSITION, FAN EF-6 SHALL NOT START AND THE ASSOCIATED OUTDOOR AIR INTAKE DAMPER SHALL NOT OPEN. WHEN THE BREAK GLASS SWITCH IS RETURNED TO THE "ON" POSITION, THE REVERSE SHALL OCCUR.
- 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. UPON A DETECTION OF SMOKE VIA DUCT MOUNTED SMOKE DETECTORS, THE DHU SYSTEM SHALL DEENERGIZE AND A SIGNAL SHALL BE SENT TO THE FACP.

SEQUENCE OF OPERATION

- 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) UNIT HEATERS SHALL INCLUDE THE CAPABILITY TO RUN THE UNIT FAN FOR SUMMER VENTILATION WITH NO HEAT.
- ELECTRIC UNIT HEATERS EUH-1 TO EUH-4**
EUH-1, EUH-2, EUH-3 & EUH-4 SHALL BE CYCLED TO MAINTAIN A SETPOINT OF 50°F.
EUH-1 SHALL BE CYCLED TO MAINTAIN A SETPOINT OF 68°F.
EUH-4 SHALL BE CYCLED TO MAINTAIN A SETPOINT OF 65°F.
- 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.



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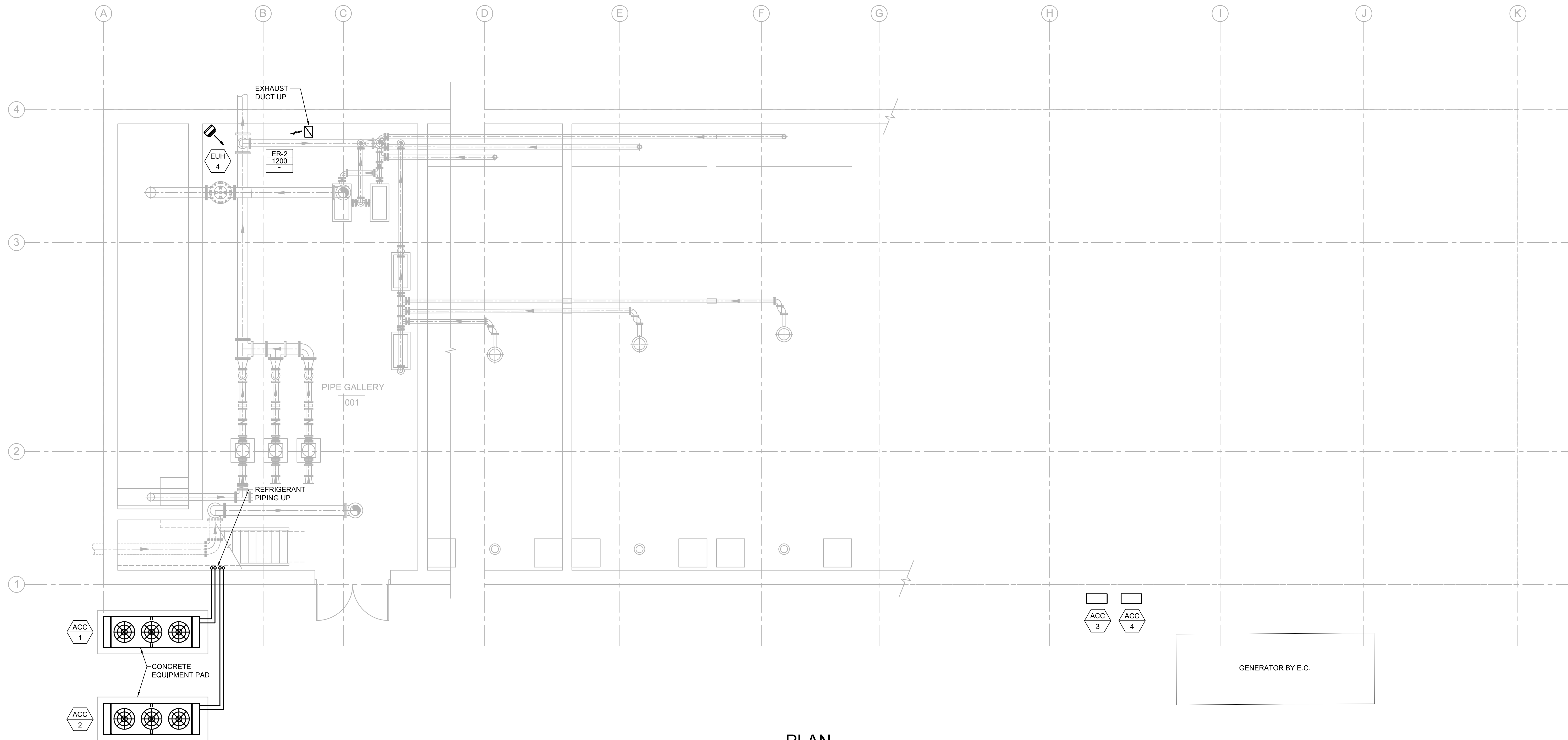
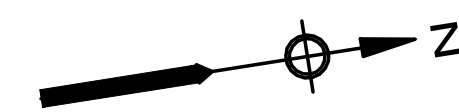
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**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

**HVAC
LEGEND AND GENERAL NOTES**

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Sheet No.

H-1



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



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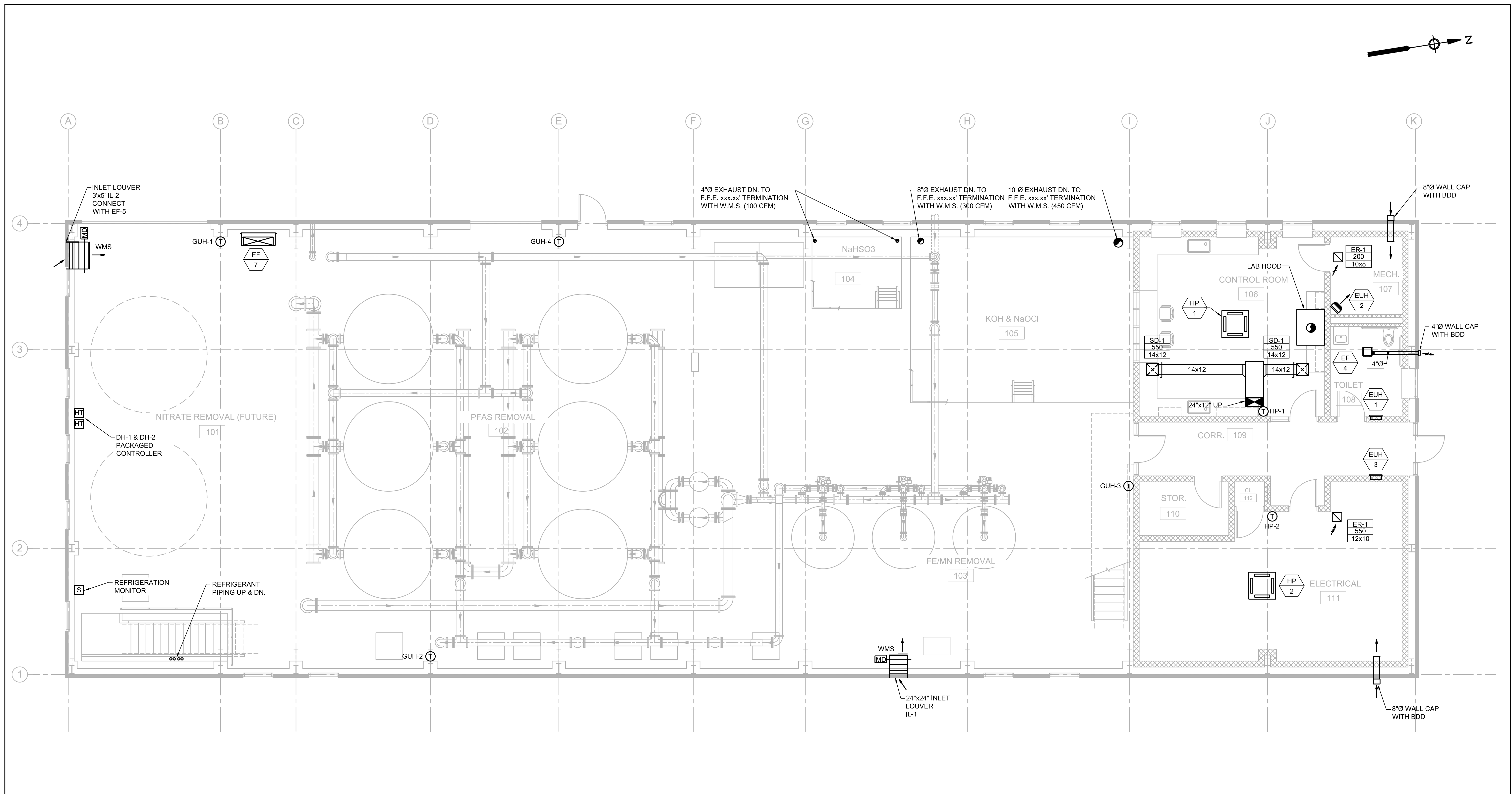
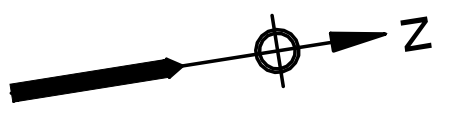
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
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HVAC
LOWER LEVEL PLAN

50% DESIGN

Sheet No.

H-2



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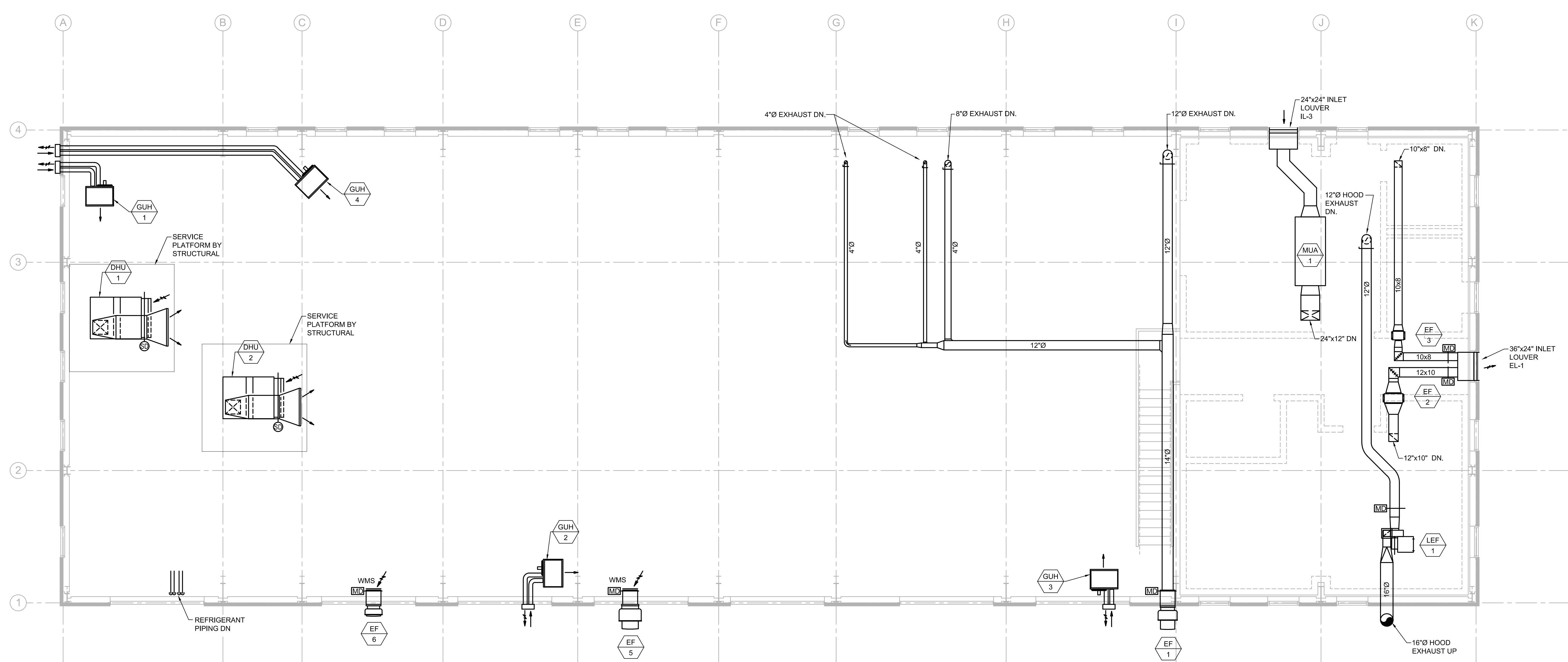
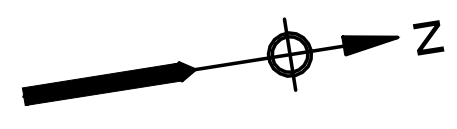
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

HVAC
FIRST FLOOR PLAN

50% DESIGN
Sheet No.

H-3

Drawing file: W:\Year - 2023\3006.00 - Sharon Water Treatment Plant\HVAC Department\23006.00 Hvac Plans.dwg Plot Date: Aug 31, 2023 - 10:30am



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



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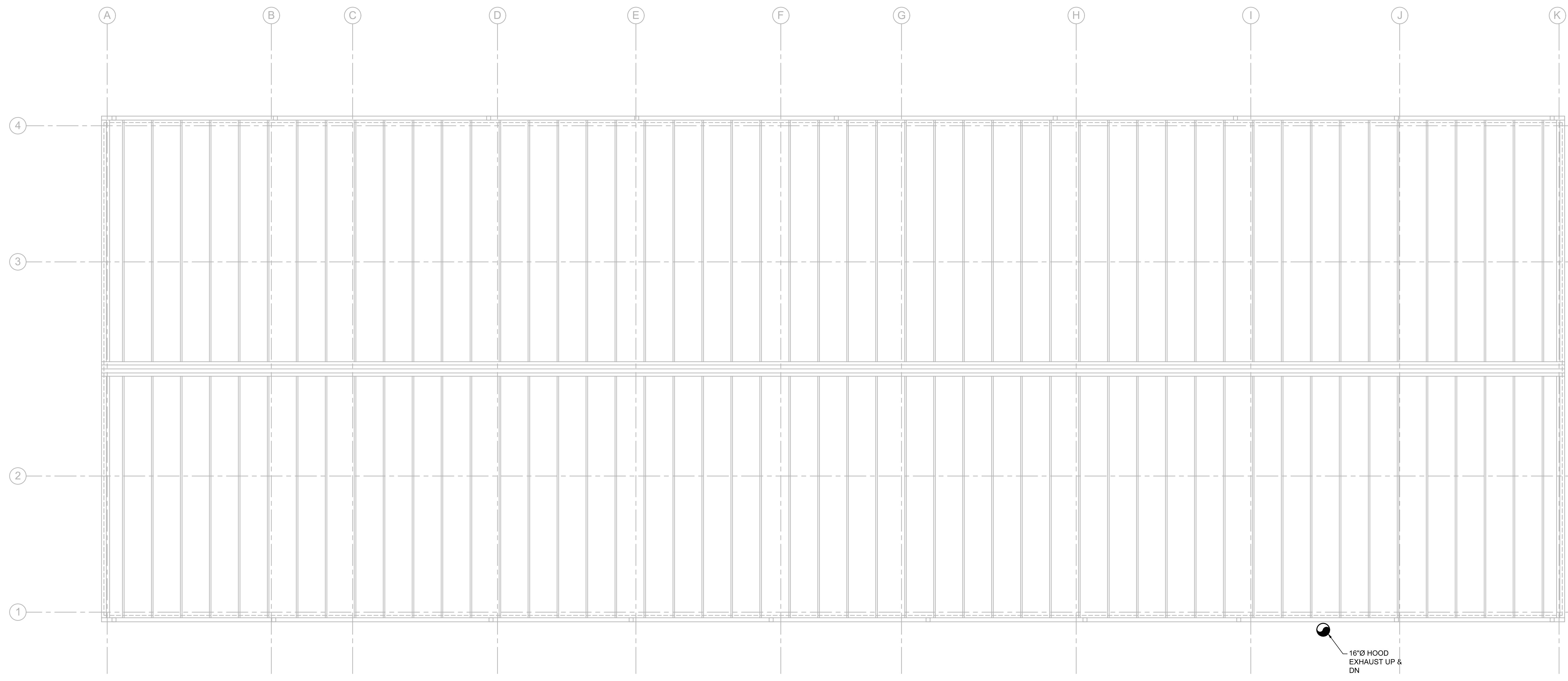
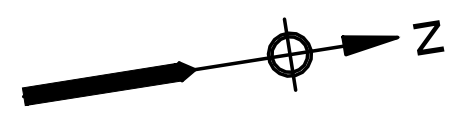
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**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

**HVAC
MEZZANINE PLAN**

50% DESIGN
Sheet No.

H-4



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



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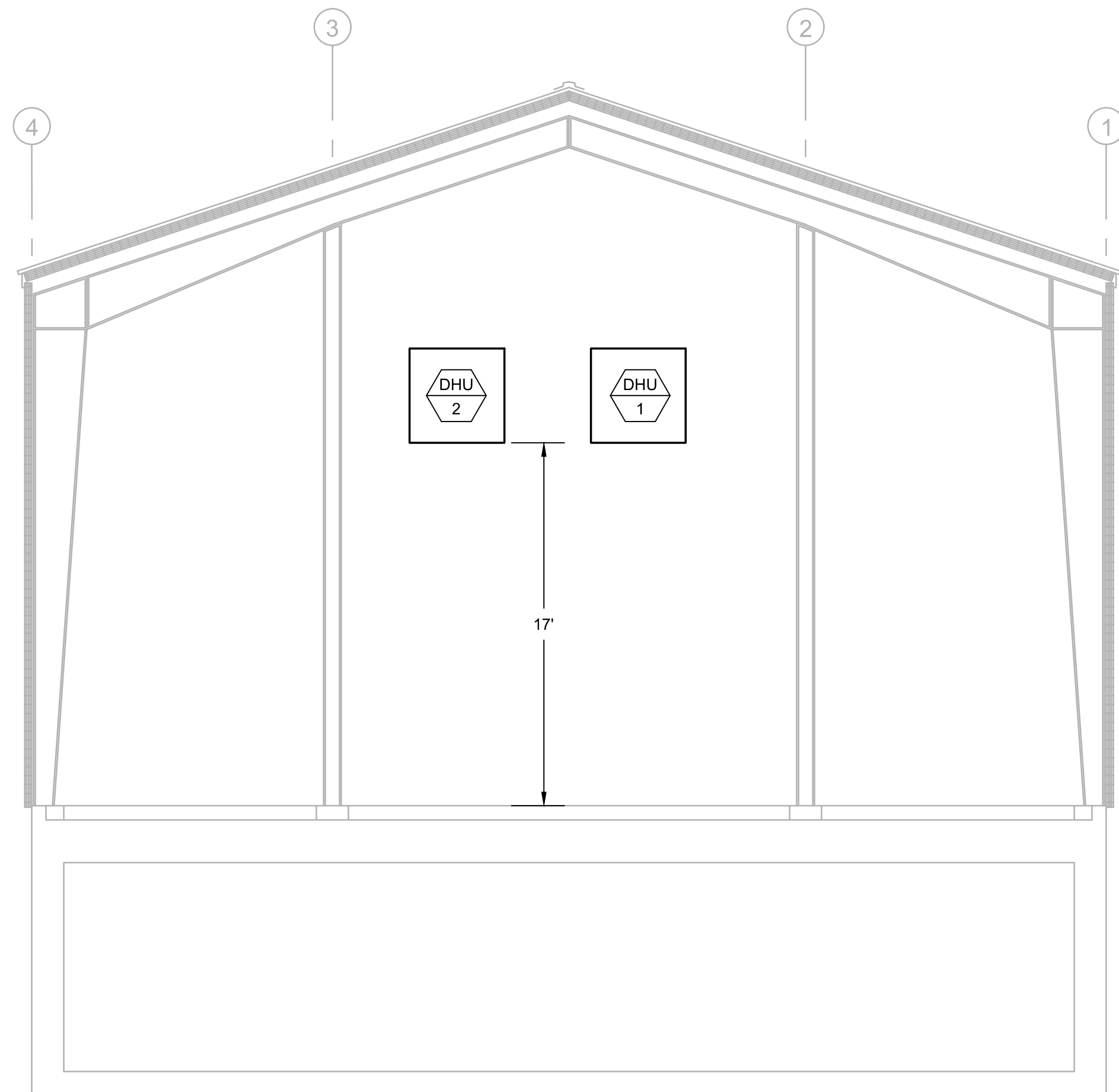
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

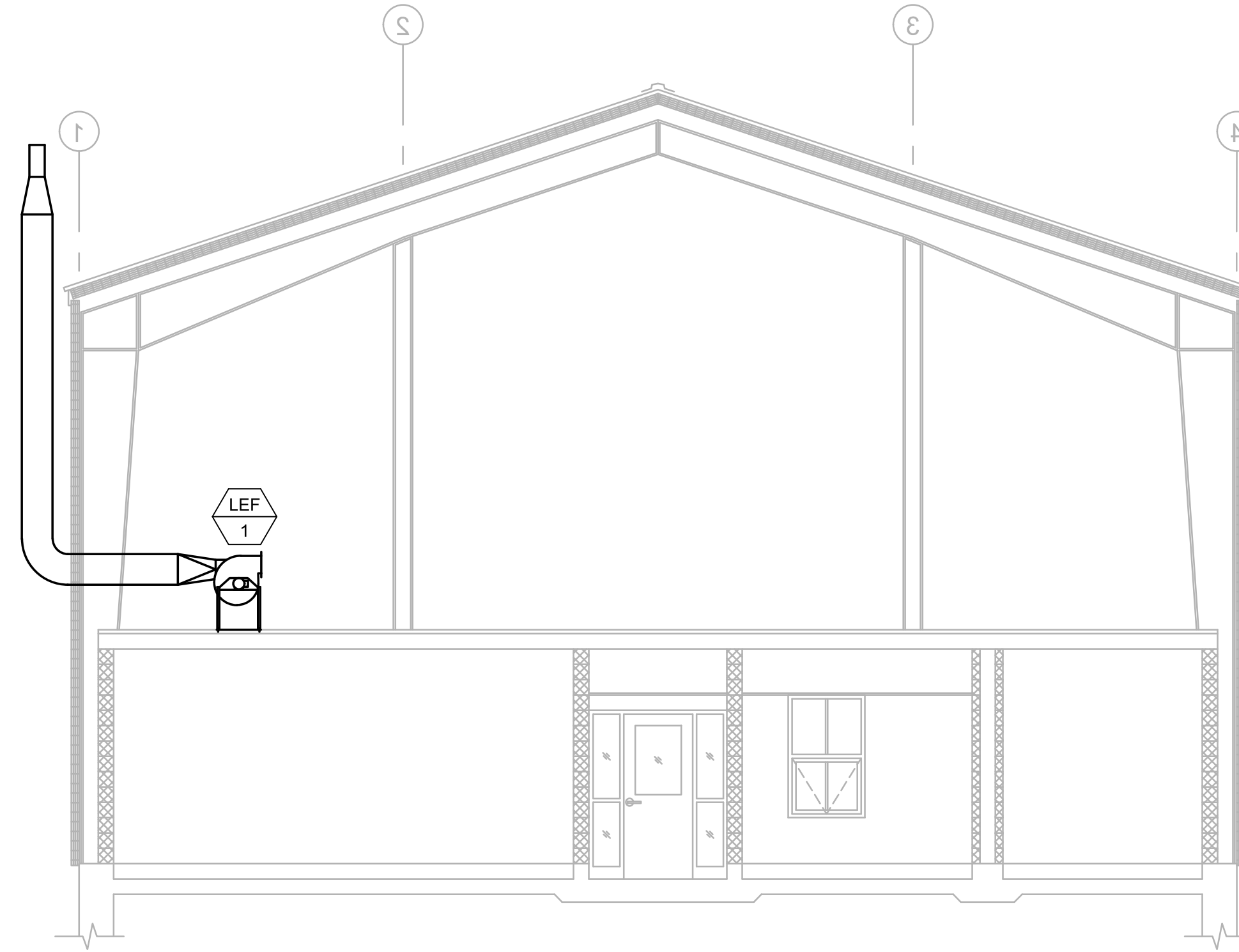
HVAC
ROOF PLAN

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Sheet No.

H-5



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



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



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

HVAC SECTIONS

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H-6

DHU DEHUMIDIFIER SCHEDULE													
TAG NO.	MANUFACTURER MODEL NO. OR EQUAL	AREA SERVED	TYPE	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	CEILING	38.0	110	157	6,900	42	60	480	3	2,050	①②
DHU-2	DESERT AIRE LW-15	FILTER ROOM	CEILING	38.0	110	157	6,900	42	60	480	3	2,050	①②

- 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	THROW (FT)	EAT (°F)	LAT (°F)		INPUT (MBH)	OUTPUT (MBH)	V	PH	HZ		
GUH-1	FILTER ROOM	2,200	1/4	-	50	110	-	125	103.75	120	1	60	STERLING XF-125	①②③
GUH-2	FILTER ROOM	2,200	1/4	-	50	110	-	125	103.75	120	1	60	STERLING XF-125	①②③
GUH-3	FILTER ROOM	2,200	1/4	-	50	110	-	125	103.75	120	1	60	STERLING XF-125	①②③
GUH-4	FILTER ROOM	2,200	1/4	-	50	110	-	125	103.75	120	1	60	STERLING XF-125	①②③

- 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/OFF.
- ③ PROVIDE WITH SIDEWALL TERMINATION KIT

MUA MAKE-UP AIR UNIT SCHEDULE													
TAG NO.	LOCATION	SUPPLY BLOWER			GAS (PROPANE)		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	150	121.5	5.3	480	3	60	607	MODINE DBS150	

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	

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 RCS5099	R-407C	95	1	10,259	8	15	480	3	①②
ACC-2	DESERT AIRE RCS5099	R-407C	95	1	10,259	8	15	480	3	①②

- ① FURNISH WITH SUB COOLER
- ② FURNISH WITH ORD VALVE

SPLIT-SYSTEM HEAT PUMP SCHEDULE															
HP FAN COIL UNIT								ACC OUTDOOR UNIT						REMARKS	
TAG	AREA SERVED	MFG'R. & MODEL NO.	TYPE UNIT	HEAT MBH	COOL MBH	CFM	ELEC. V/PH/HZ	TAG	LOCATION	MFG'R. & MODEL NO.	HEAT MBH	COOL MBH	ELEC. V/PH/HZ		MCAMOP
HP-1	CONTROL ROOM	LG LCN188HV4	CEILING	18.5	18	424	VIA ACC-3	ACC-3	UPPER LEVEL	LG LUU189HV	18.5	18	208/1/60	20 30	①
HP-2	ELEC ROOM	LG LCN369HV	CEILING	40	36	883	VIA ACC-4	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		
EF-1	CHEMICAL STOR. AREA	UPBLAST WALL	950	1.0	1405	1725	1/2	120	3	60	GREENHECK CUE-120-A	①②③
EF-2	ELECTRICAL ROOM	INLINE CABINET	550	0.65	1288	1725	135W	120	1	60	GREENHECK CSP-A700-VG	①②④
EF-3	MECH RM.	INLINE CABINET	200	0.65	1382	1725	49W	120	1	60	GREENHECK CSP-A390-VG	①②④
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	①②④
EF-6	FILTER ROOM OCCUPIED	UPBLAST WALL	400	0.75	1712	1725	1/6	120	1	60	GREENHECK CUE-090-VG	①④
EF-7	PIPE GALLERY	INLINE CABINET	1,200	0.35	753	1725	143W	120	1	60	GREENHECK 10W28D17 (VF)	①④
LEF-1	LAB HOOD	CENTRIFUGAL FRP FAN	1,100	3	2037	1770	3	480	3	60	GREENHECK 10-BCSW-FRP-4-I-30	①②③④⑤

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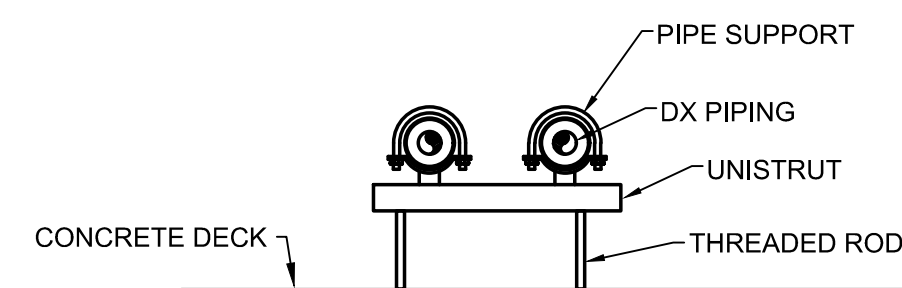
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

HVAC
SCHEDULES

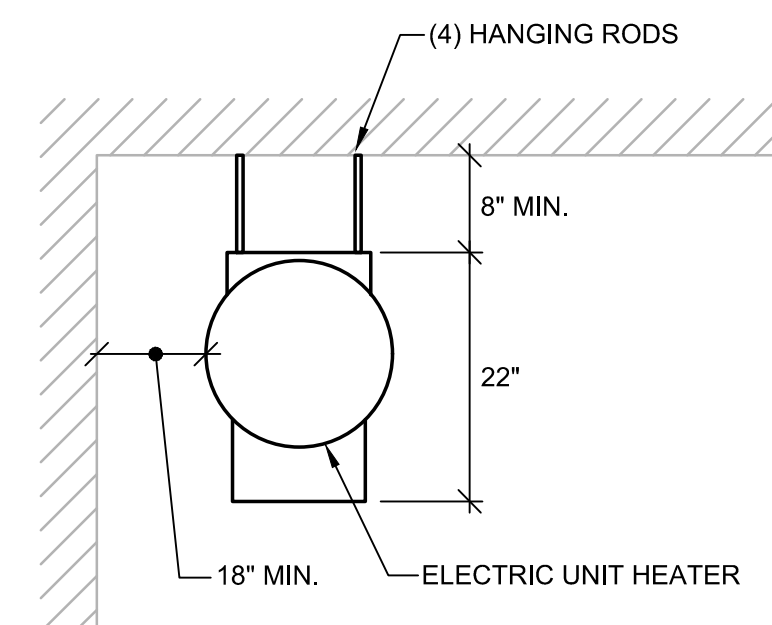
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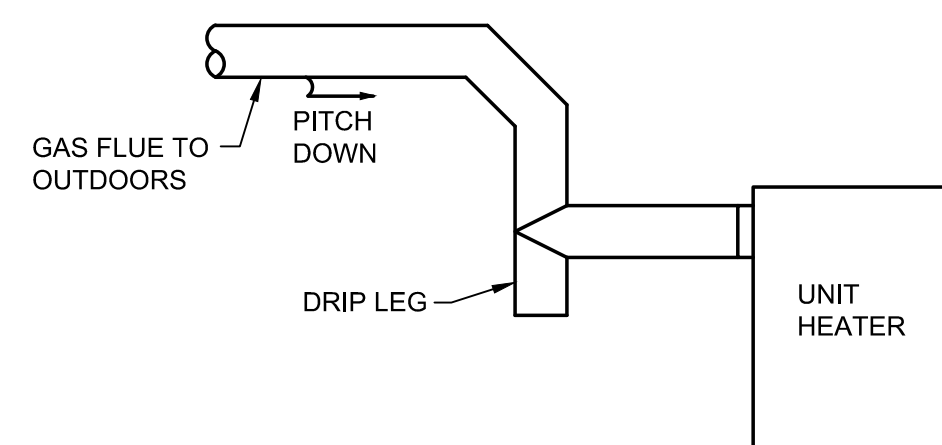
DX PIPE SUPPORT DETAIL

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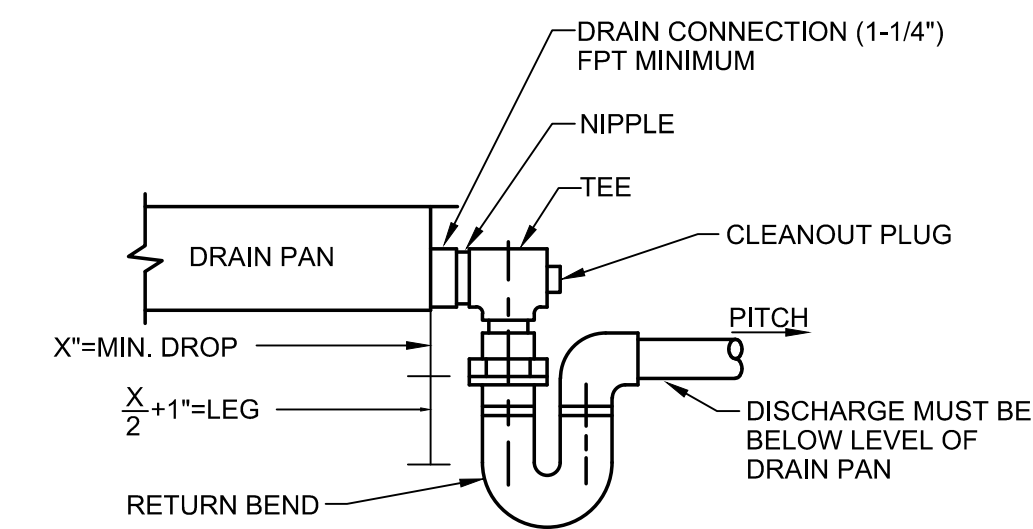
ELEC UNIT HEATER MOUNTING DETAIL

NO SCALE



GAS VENT DETAIL

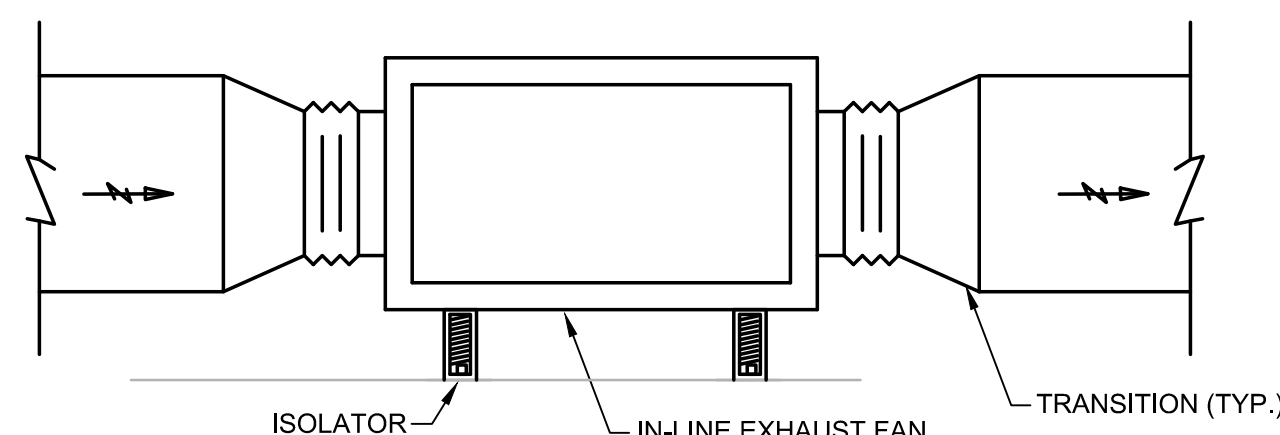
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DRAIN PAN WATER SEAL PIPING DETAIL

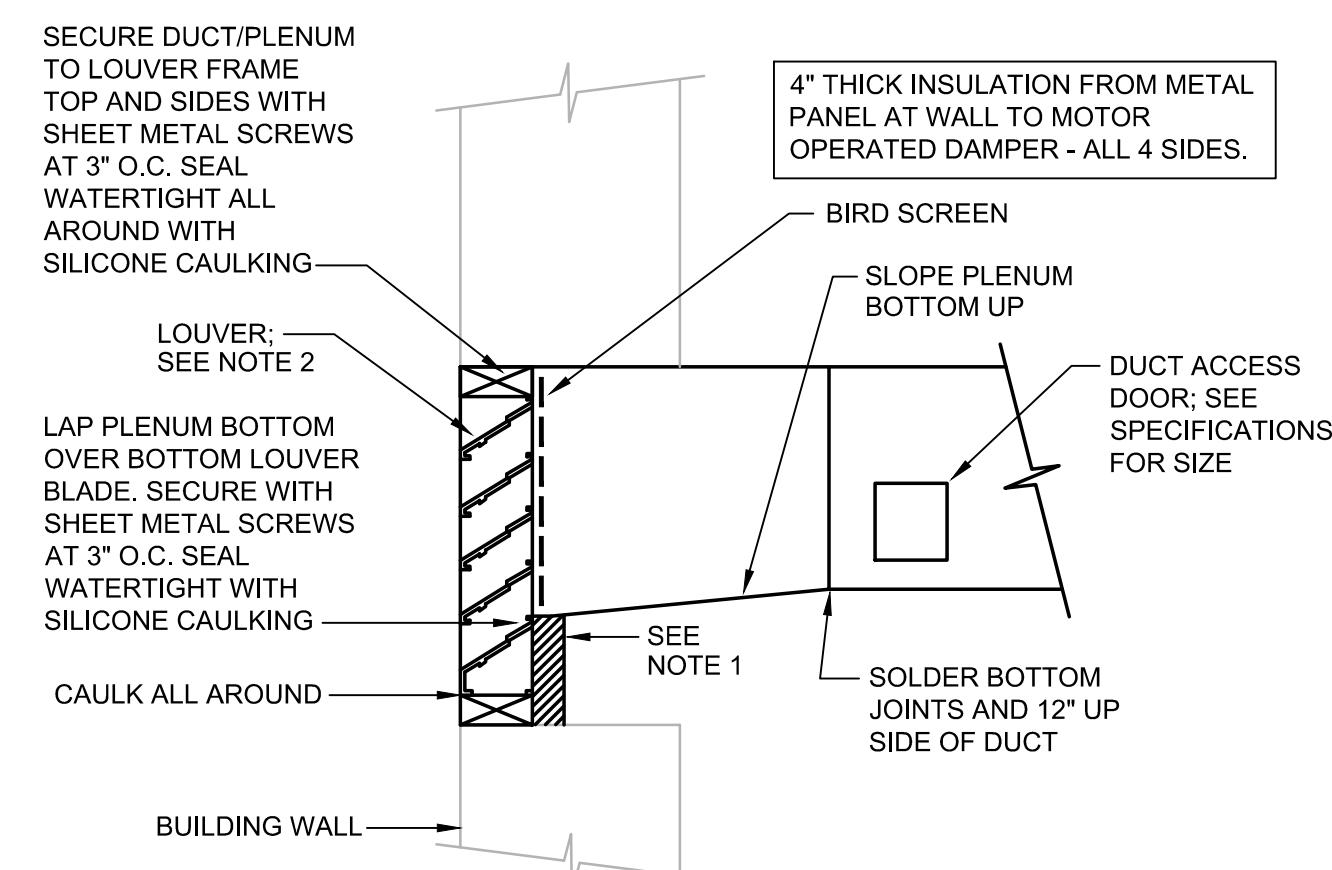
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- NOTES:
1. ALLOW SUFFICIENT SPACE BELOW DRAIN PAN FOR TRAP
 2. PITCH DRAIN FOR PROPER RUN-OFF
 3. MANUALLY PRIME FILL TRAP BEFORE START-UP TO FORM INITIAL DRAIN SEAL
 4. SUPPORT LENGTHY DRAIN LINES TO PREVENT SAG AND CONDENSATE OVERFLOW



MAKE-UP AIR UNIT DETAIL

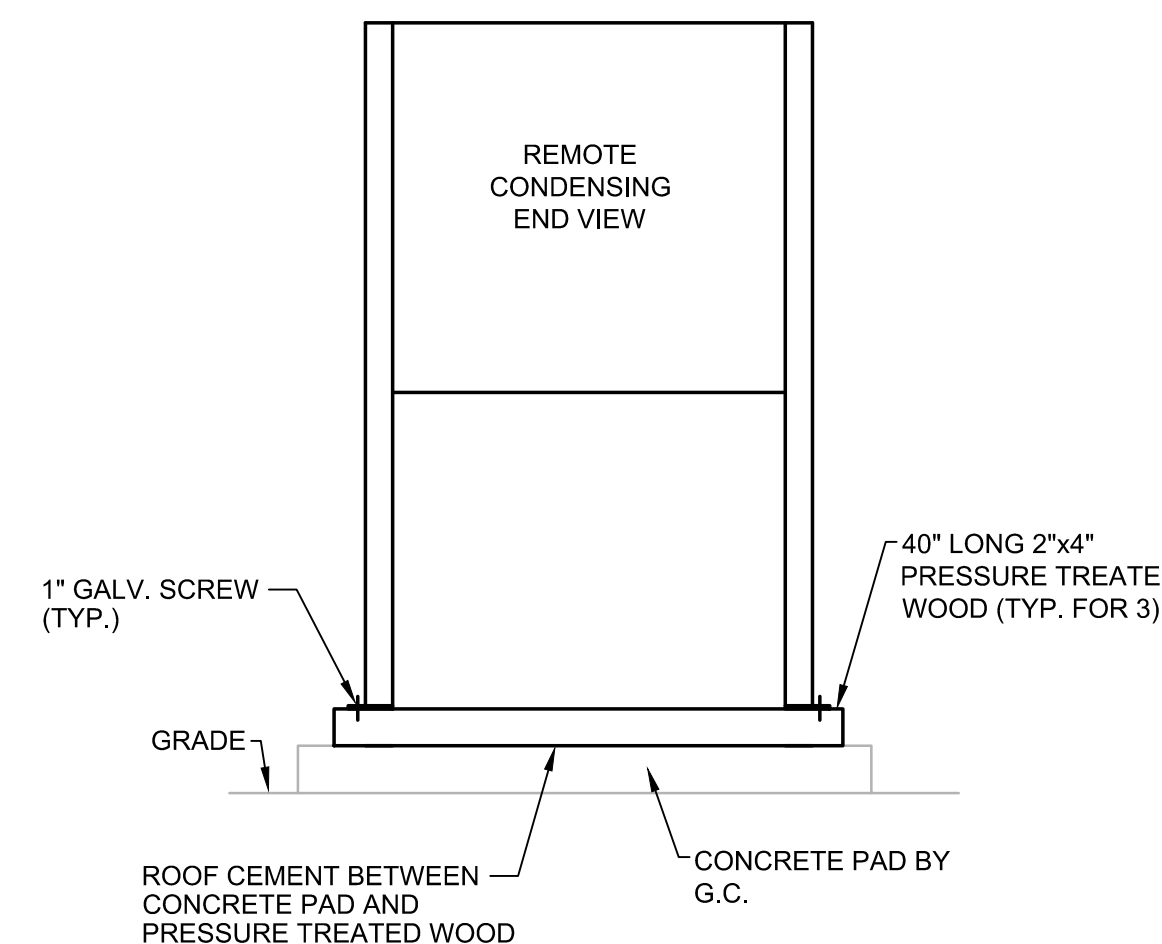
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LOUVER/PLENUM CONNECTION DETAIL

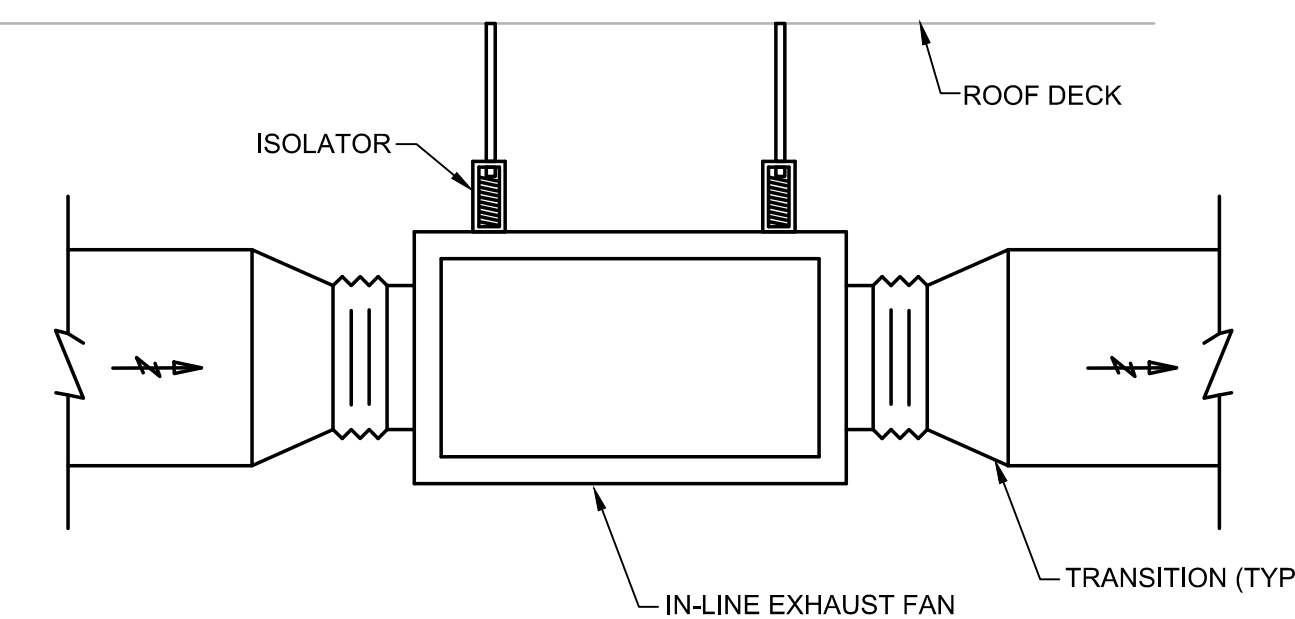
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- NOTES:
1. BLOCK UNUSED PORTION OF LOUVER WITH 4\"/>
 - 2. SEE ARCHITECTURAL PLANS FOR LOUVER INSTALLATION DETAIL.



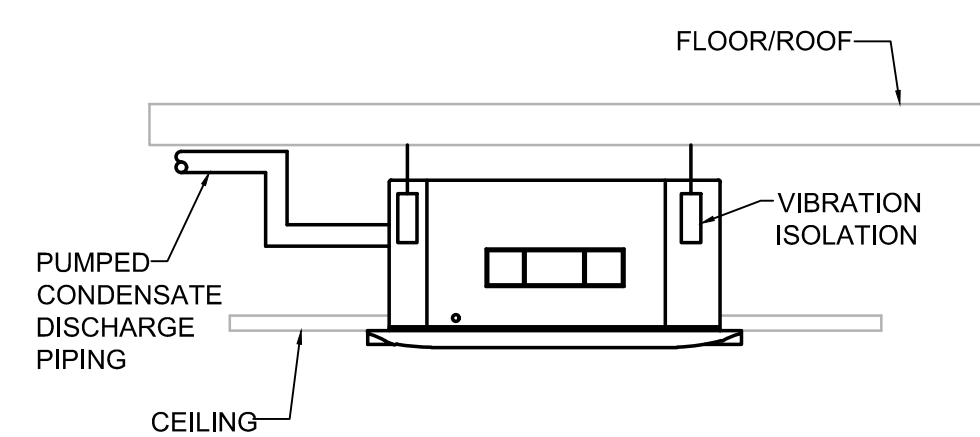
ACC MOUNTING DETAIL

NO SCALE



IN-LINE EXHAUST FAN DETAIL

NO SCALE



SPLIT-SYSTEM INDOOR UNIT INSTALLATION

NO SCALE



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Mechanical/Electrical Engineers
158 Greenman Drive, Suite 309
Braintree, Massachusetts 02184
617.221.9228
www.sar.com

MARK	DATE	DESCRIPTION

Scale	NONE
Date	SEPTEMBER 2023
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

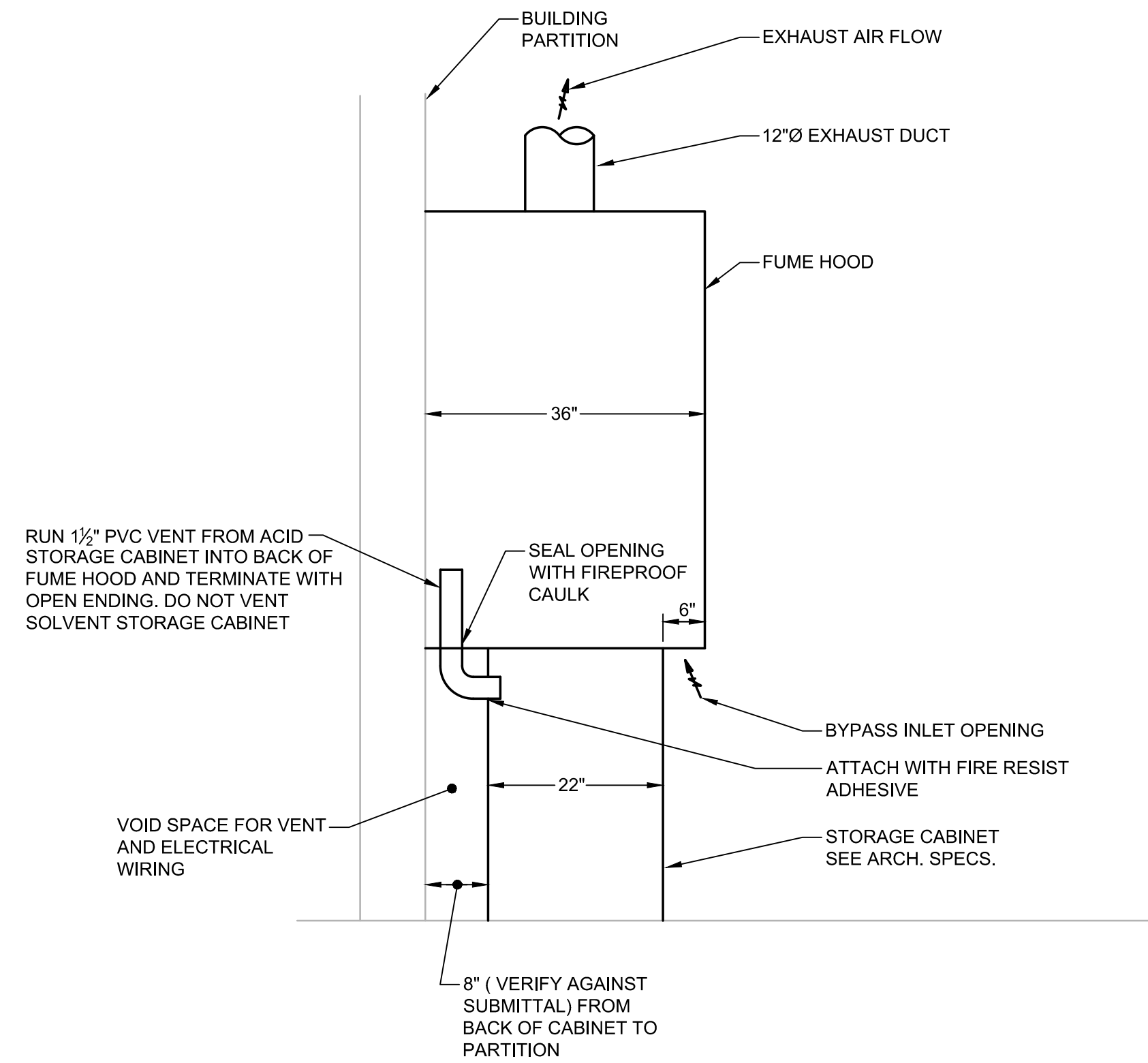
HVAC
DETAILS I

50% DESIGN

Sheet No.

H-8

NOTE: COORDINATE WITH ARCH. DRAWINGS & SPECIFICATIONS.



FUME HOOD ELEVATION

NO SCALE



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

HVAC
DETAILS II

50% DESIGN
Sheet No.

H-9

PLUMBING NOTES:

- 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.
- 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.
- 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.
- 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.
- 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.
- ALL BELOW FLOOR PIPING THAT INTERSECTS A GRADE BEAM REQUIRES COORDINATION WITH STRUCTURAL FOR STRUCTURAL DETAILS. REFER TO STRUCTURAL DRAWINGS.
- PROVIDE ALL FLOOR CLEANOUTS WITH HUB AND SPIGOT; LEAD AND OAKUM JOINTS FROM CLEANOUT TO AND INCLUDING CONNECTION TO SANITARY OR STORM DRAIN.
- REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF ALL PLUMBING FIXTURES AND EQUIPMENT.
- 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.
- 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	AMOUNT 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"

- MISCELLANEOUS DISCREPANCIES OR OMISSIONS WHICH MIGHT APPEAR ON THE PLANS OR SPECIFICATIONS WILL NOT RELIEVE THE PLUMBING SUB-CONTRACTOR OF CODE COMPLIANCE.
- ALL FLOOR DRAINS SHALL BE PROVIDED WITH A TRAP PRIMER CONNECTION. THIS CONTRACTOR SHALL PROVIDE ALL ASSOCIATED EQUIPMENT NECESSARY TO PROVIDE A COMPLETE SYSTEM INCLUDING AN ELECTRONICALLY OPERATED PRIMING MANIFOLD AND ALL ASSOCIATED PIPING REQUIRED.
- 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 SHOWER/EYEWASH	-	-	1-1/4"	-	-	GUARDIAN G1950 - SEE NOTE 1 - SEE NOTE 6
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	REFRIG. COLD WATER CONNECTION BOX	1/2"	-	-	-	-	SEE SPECIFICATION
TMV	THERMOSTATIC MIXING VALVE	-	-	1-1/4"	-	-	LAWLER MODEL 911E - 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:

- PROVIDE FLOW SWITCH (TAG #FS-XXX) WITH SINGLE POLE, DOUBLE THROW CONTACTS, AND 20 GPM BALANCING REGULATOR (G6040).
- MOUNT FIXTURE 4-0" AFF
- PROVIDE DIAL THERMOMETER ON INLETS.
- ALL EXPOSED VALVES, PIPING AND FITTINGS SHALL BE CHROME PLATED.
- PLUMBING CONTRACTOR SHALL PROVIDE EACH CONNECTION TO EACH SINK OR PIECE OF EQUIPMENT WITH ITS OWN INDIVIDUAL SHUTOFF VALVE.
- PROVIDE 90° ELBOW FOR EYEWASH DRAIN OUTLET TO DRAIN DIRECT ON FLOOR.

GAS FIRED TANKLESS WATER HEATER SCHEDULE

TAG NO.	MANUFACTURER AND MODEL NO.	MAX INPUT (MBH)	CONTINUOUS FLOW RATE (GPM) AT 80° RISE	FLUE SIZE (IN.)	OUTLET TEMP SETTING (° F)	REMARKS
TWH-1	NORITZ MODEL NC380	380	7.8	6	120	-

DRAIN SCHEDULE*

SYMBOL	TYPE	MANUFACTURER	MODEL	OUTLET	STRAINER	REMARKS
A	FD	MIFAB	F2100-C	CAULK	CAST IRON	DUCTILE IRON GRATE - MECH RMS
B	FD	J.R. SMITH	F100-C-TS	CAULK	CAST IRON	DUCTILE IRON GRATE - FINISHED AREAS
C	FD	J.R. SMITH	F1000-C-S	CAULK	CAST IRON	DUCTILE IRON GRATE - FILTER ROOMS

* 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.

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	NON-POTABLE COLD WATER
	SW	SANITARY DRAINAGE (SOIL/WASTE)
	V	VENT
	AW	ACID WASTE
	AV	ACID VENT
	FLUE	FLUE EXHAUST
	G	GAS (LIQUID PROPANE)
	UP	UP (PENETRATES LEVEL ABOVE)
	DN	DOWN (PENETRATES LEVEL BELOW)
	DP	DROP (BUT DOES NOT PENETRATE LEVEL BELOW)
		DIRECTION OF FLOW
		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
	RBPB	REDUCED PRESSURE BACKFLOW PREVENTER
	TWH	TANKLESS WATER HEATER
	FFE	FINISHED FLOOR ELEVATION
	LPC	LIMIT PLUMBING CONTRACT
	TDL	TOTAL DEVELOPED LENGTH
		EMERGENCY SHOWER/EYE WASH STATION
		EMERGENCY SHOWER STATION



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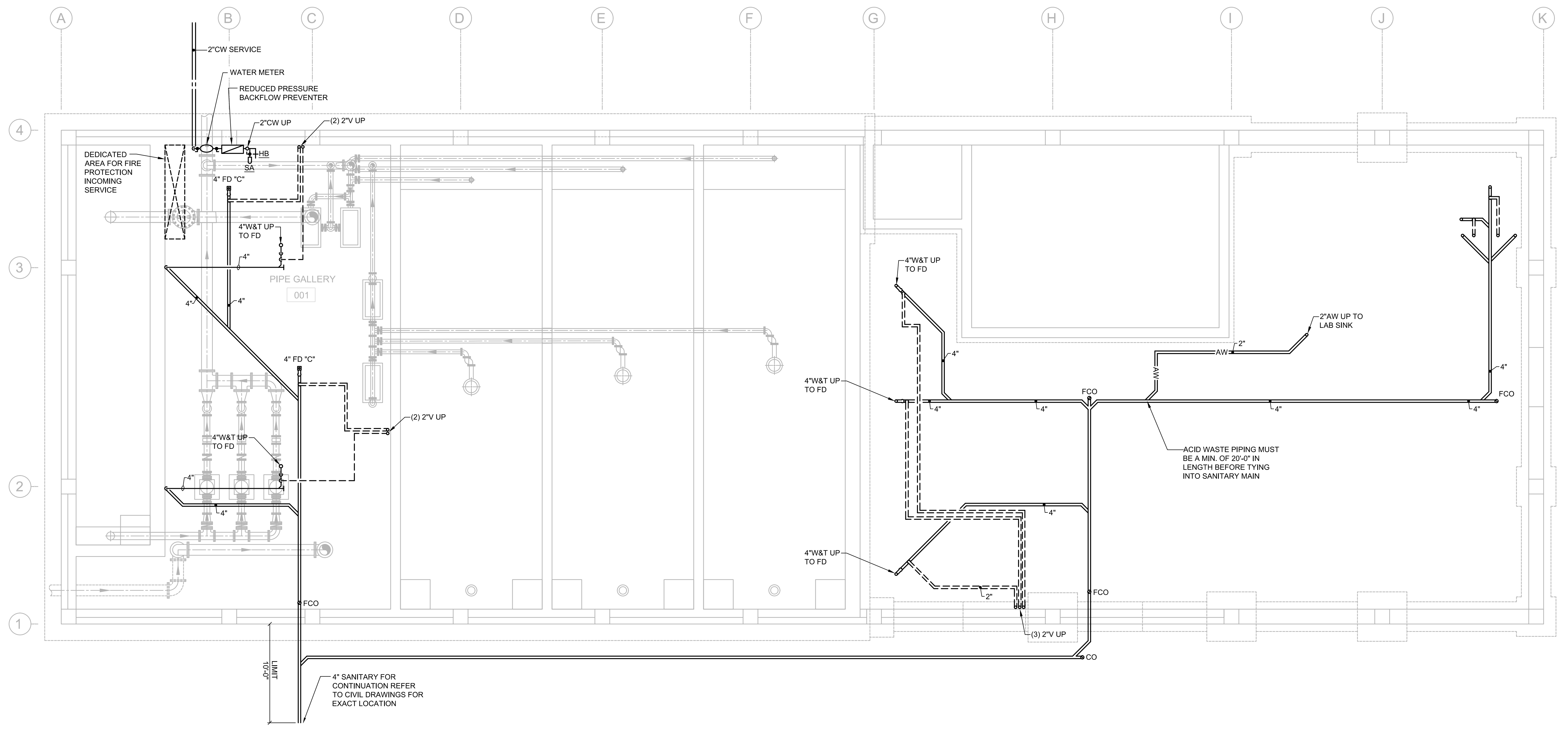
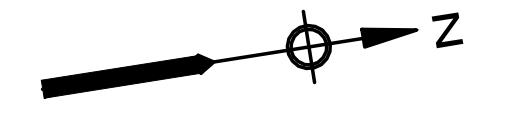
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PLUMBING
LEGEND, SCHEDULE AND GENERAL NOTES

50% DESIGN

Sheet No.

P-1



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



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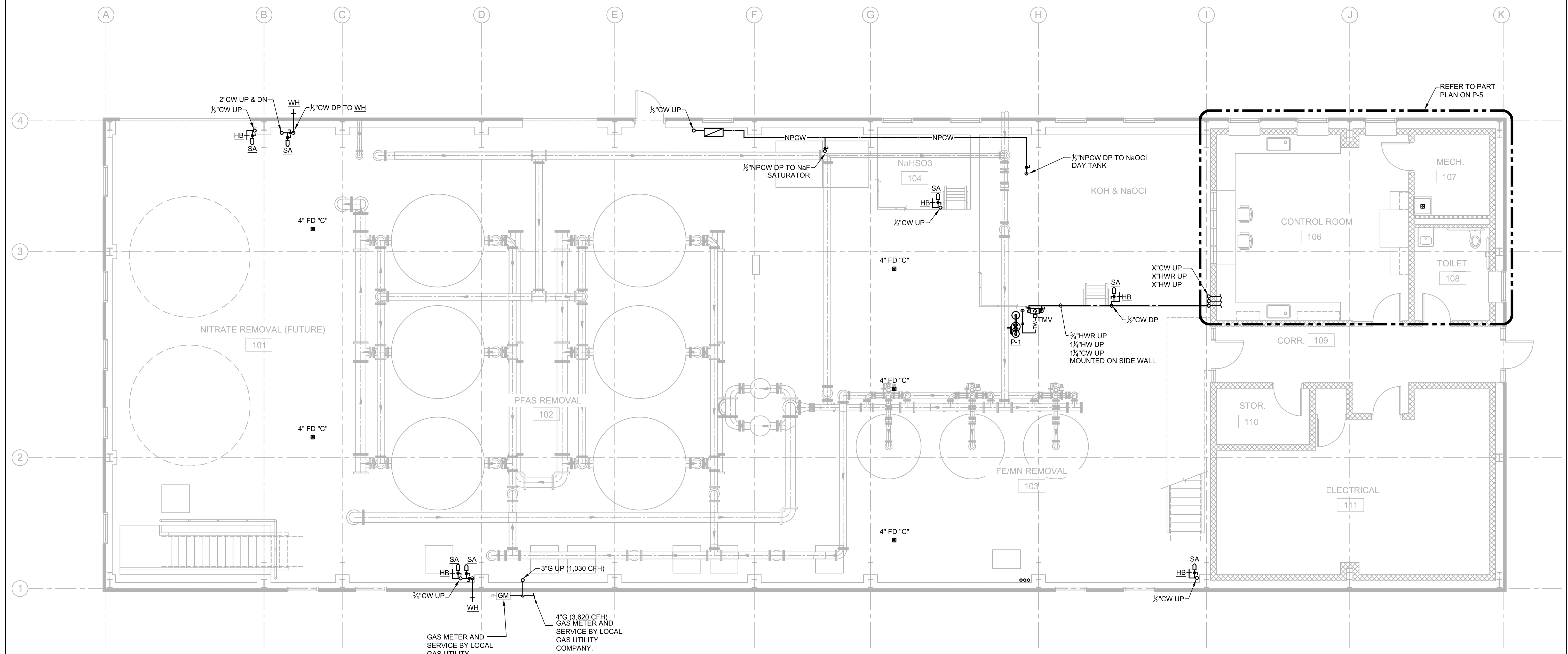
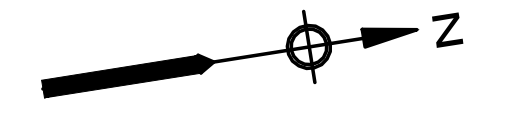
**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

**PLUMBING
LOWER LEVEL PLAN**

50% DESIGN
Sheet No.

P-2

Drawing file: W:\Year - 2023\2006.00 - Sharon Water Treatment Plant\Plumbing Department\2006.00 Plumbing Plans.dwg Plot Date: Aug 31, 2023 - 10:25am



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



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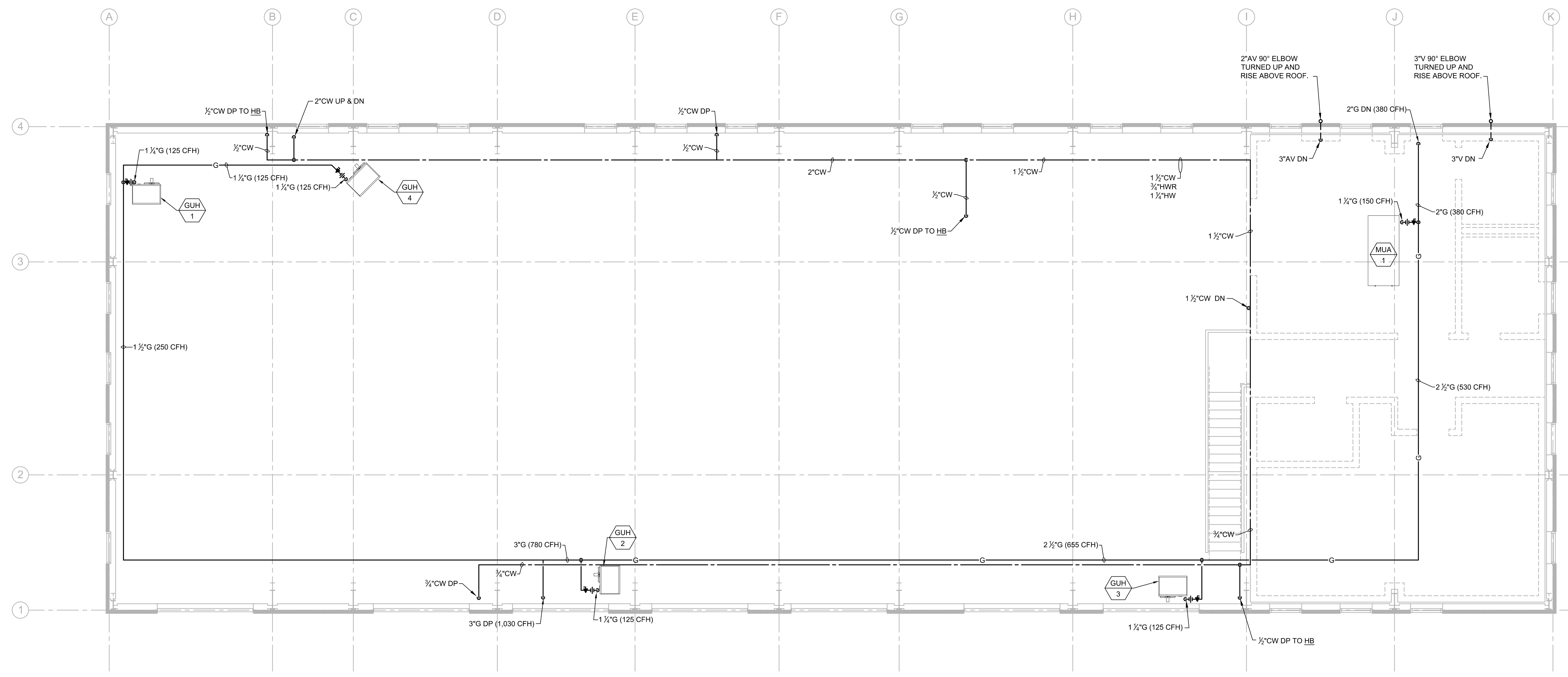
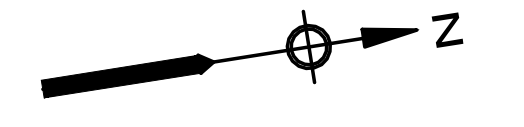
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PLUMBING
FIRST FLOOR PLAN

50% DESIGN
Sheet No.

P-3



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



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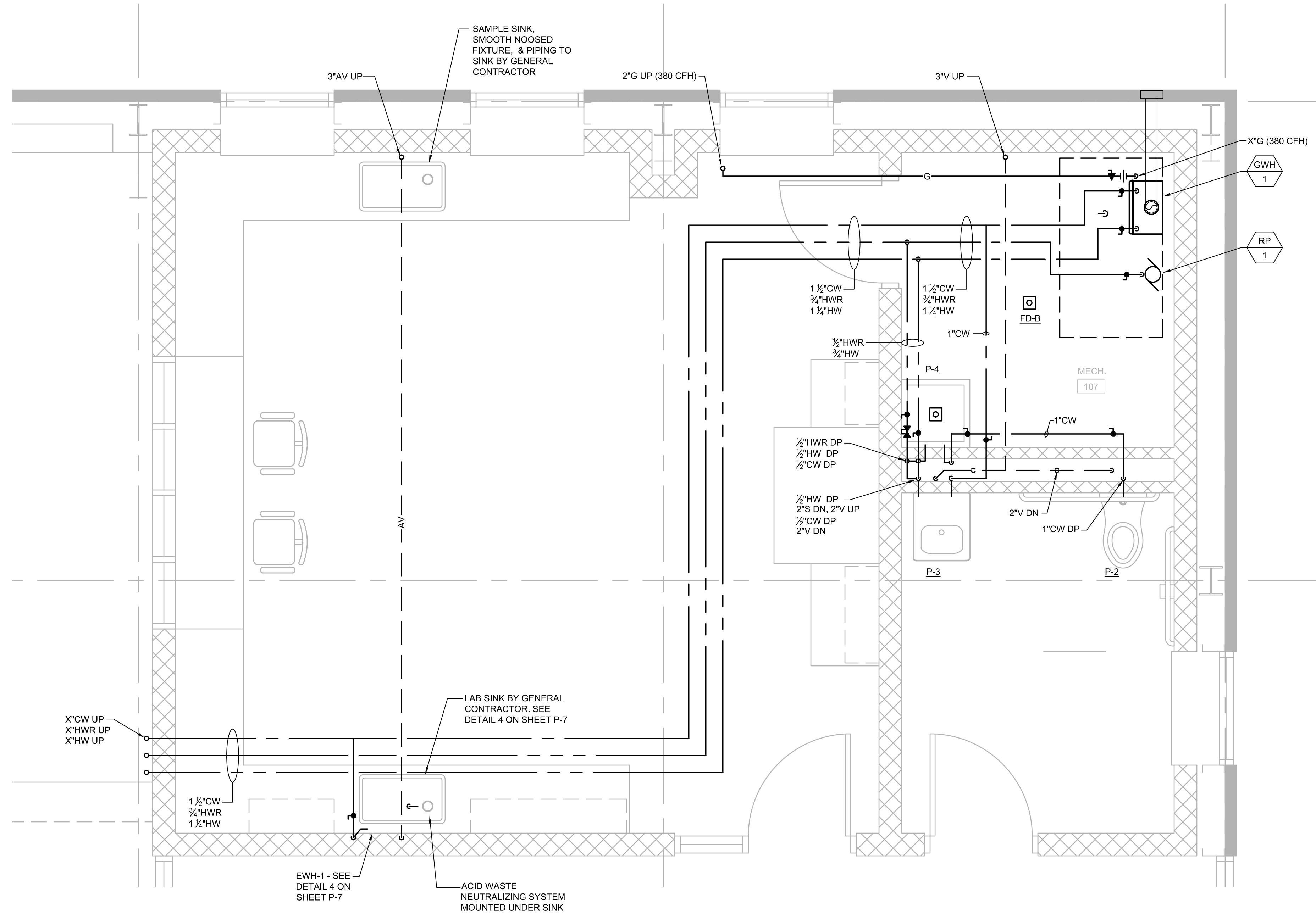
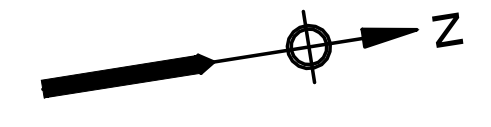
**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

**PLUMBING
MEZZANINE PLAN**

50% DESIGN
Sheet No.

P-4

Drawing file: W:\Year - 2023\2006.00 - Sharon Water Treatment Plant\Plumbing Department\2006.00 Plumbing Plans.dwg Plot Date: Aug 31, 2023 - 10:28am



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



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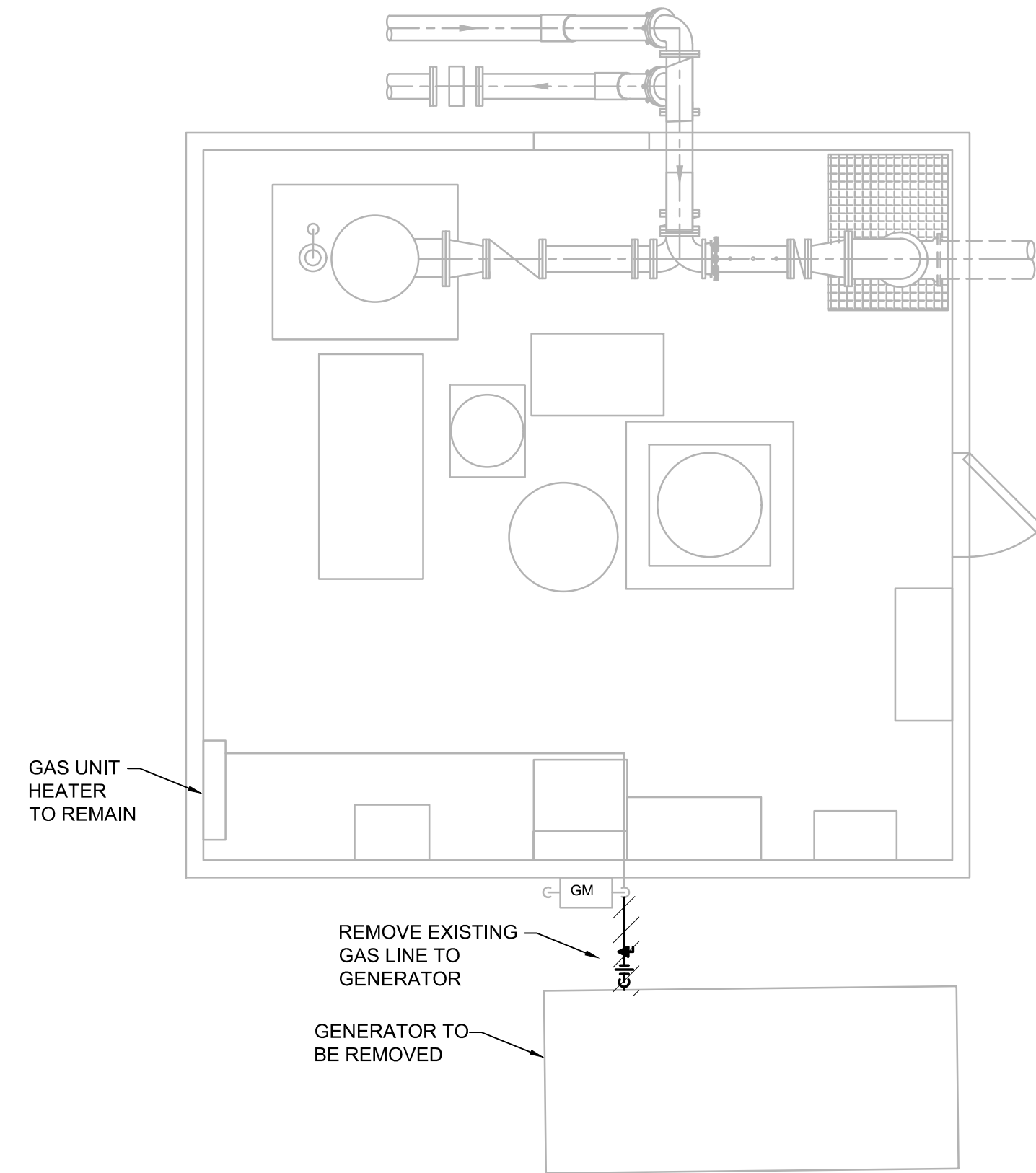
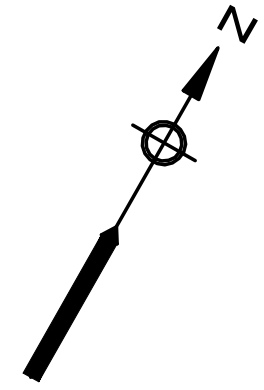
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TOWN OF SHARON, MA

PLUMBING
PARTIAL PLAN

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P-5



WELL #4 DEMOLITION PLAN

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



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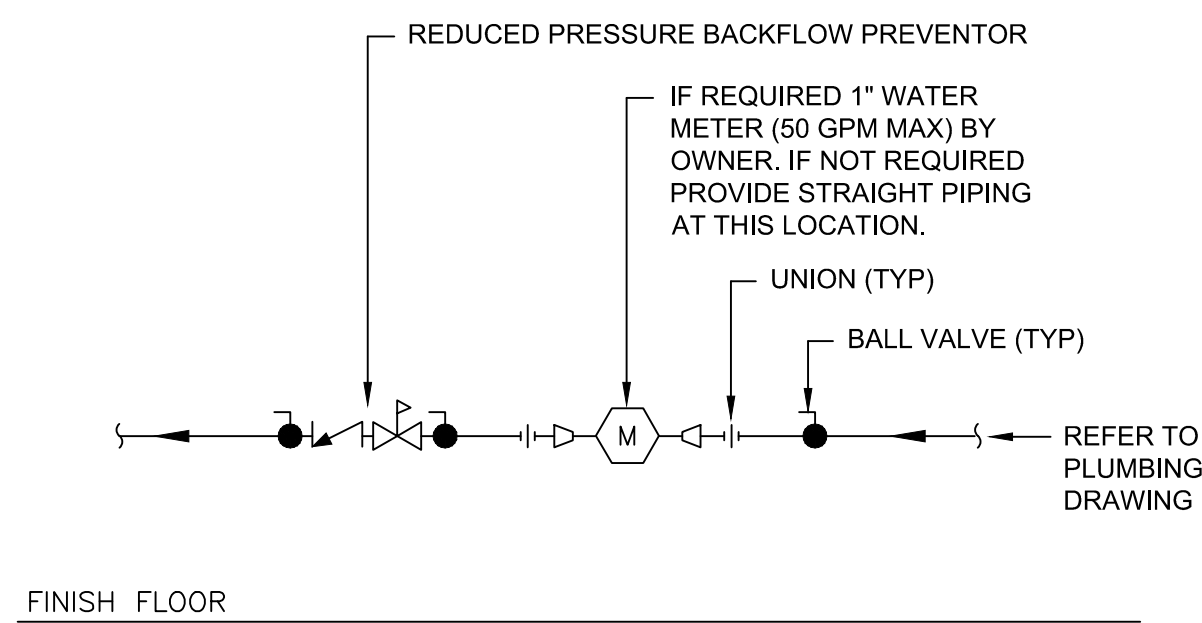
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

PLUMBING
WELL STATION #4 PLAN

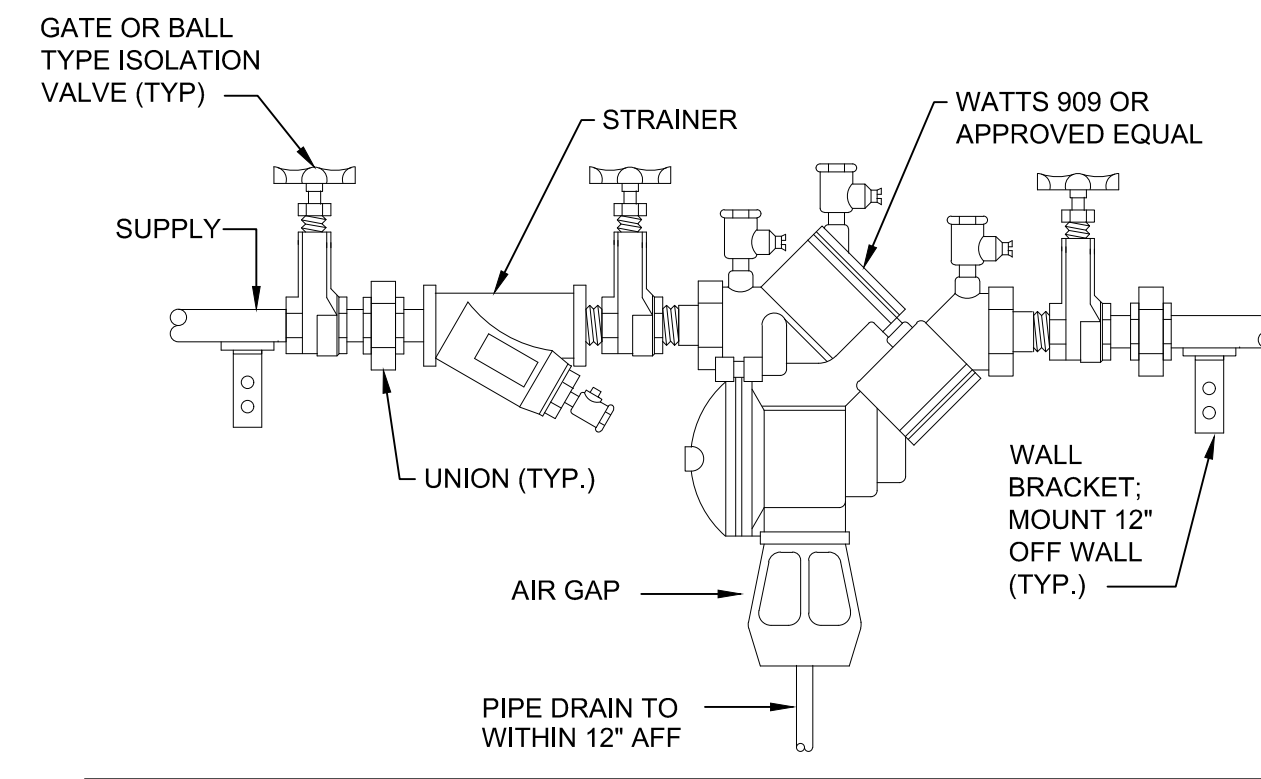
50% DESIGN

Sheet No.

P-6

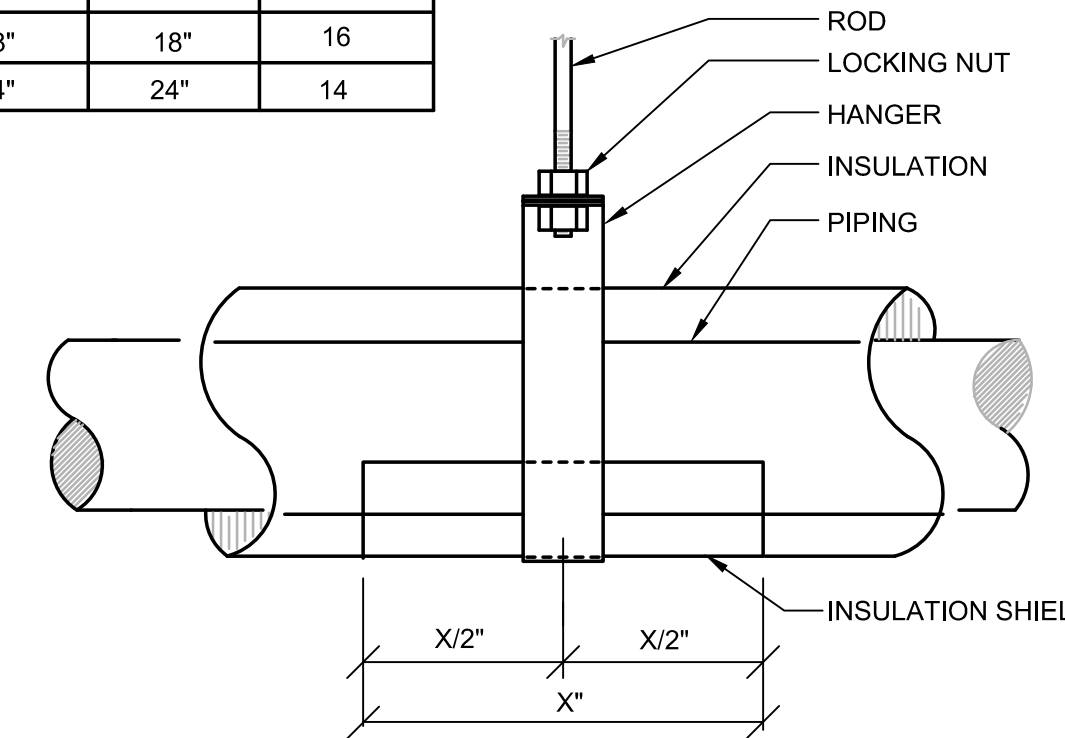


1 WATER METER ASSEMBLY DIAGRAM
SCALE: N.T.S.

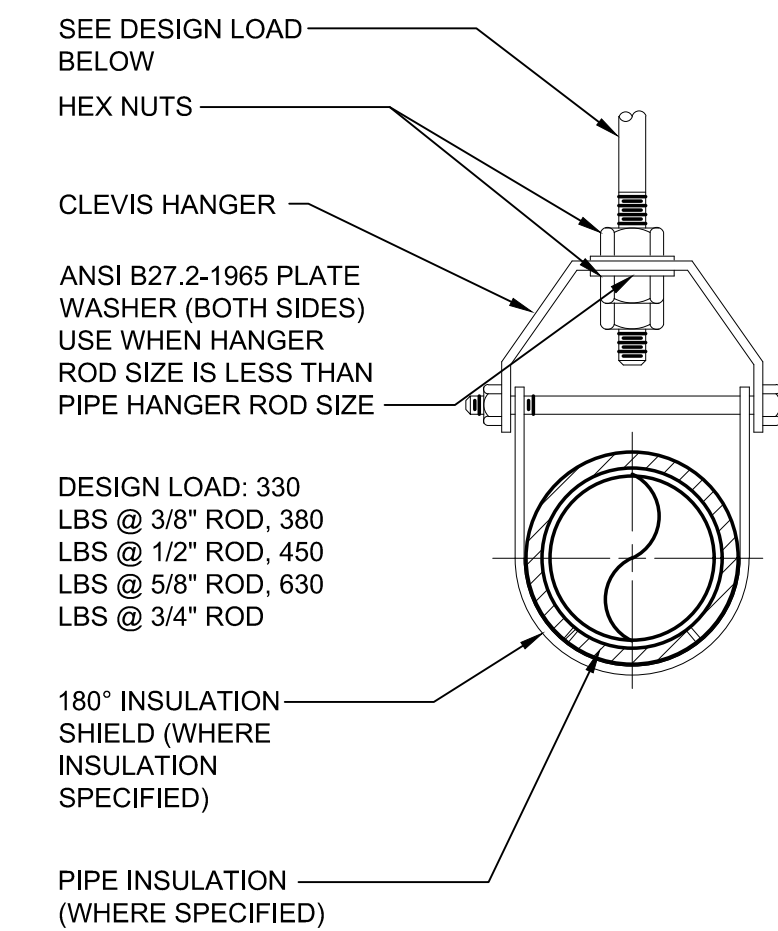


2 REDUCED PRESSURE BACKFLOW PREVENTER
SCALE: N.T.S.

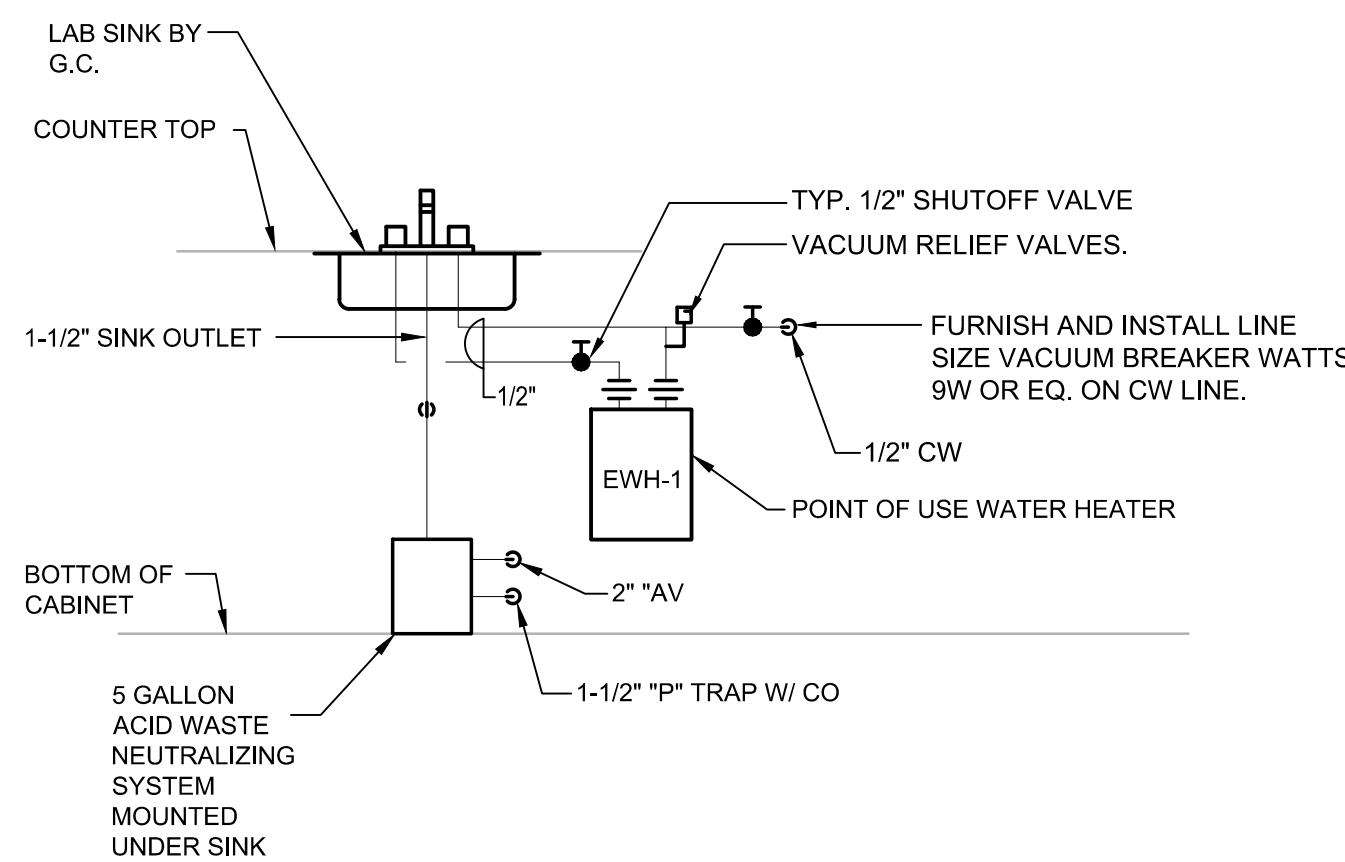
PIPE SIZE	INSULATION SHIELD LENGTH (X")			GAUGE
	1/2"	3/4"	1"	
1/2" TO 3"	12"	12"	12"	18
4"	12"	12"	12"	16
5"	18"	18"	18"	16
6"	18"	18"	18"	16
8" TO 14"	24"	24"	24"	14



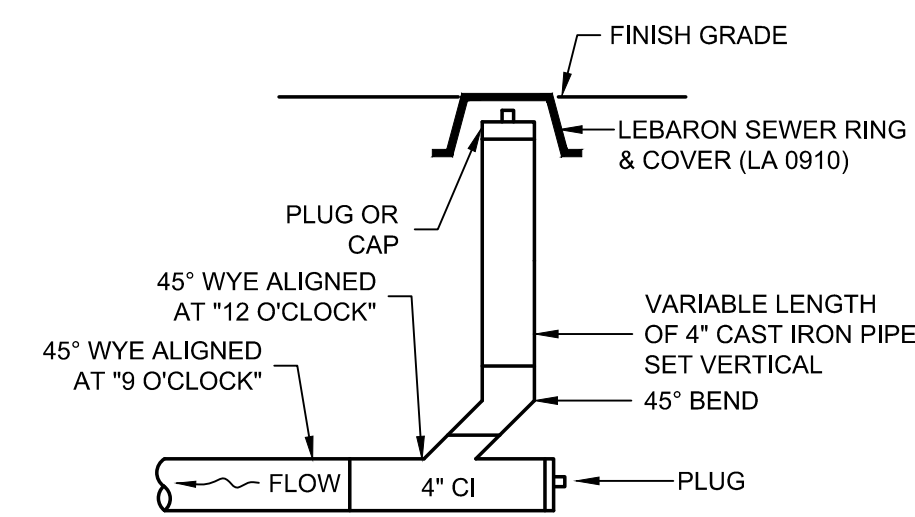
- NOTES:
- HANGER SHIELD IS TYPICAL FOR INSULATED PIPING
 - CORK, WOOD OR CALCIUM SILICATE INSERTS SHALL BE INSTALLED BETWEEN THE PIPE AND THE INSULATION SHIELD TO SUPPORT THE PIPE AND PREVENT THE PIPE INSULATION FROM BEING CRUSHED.



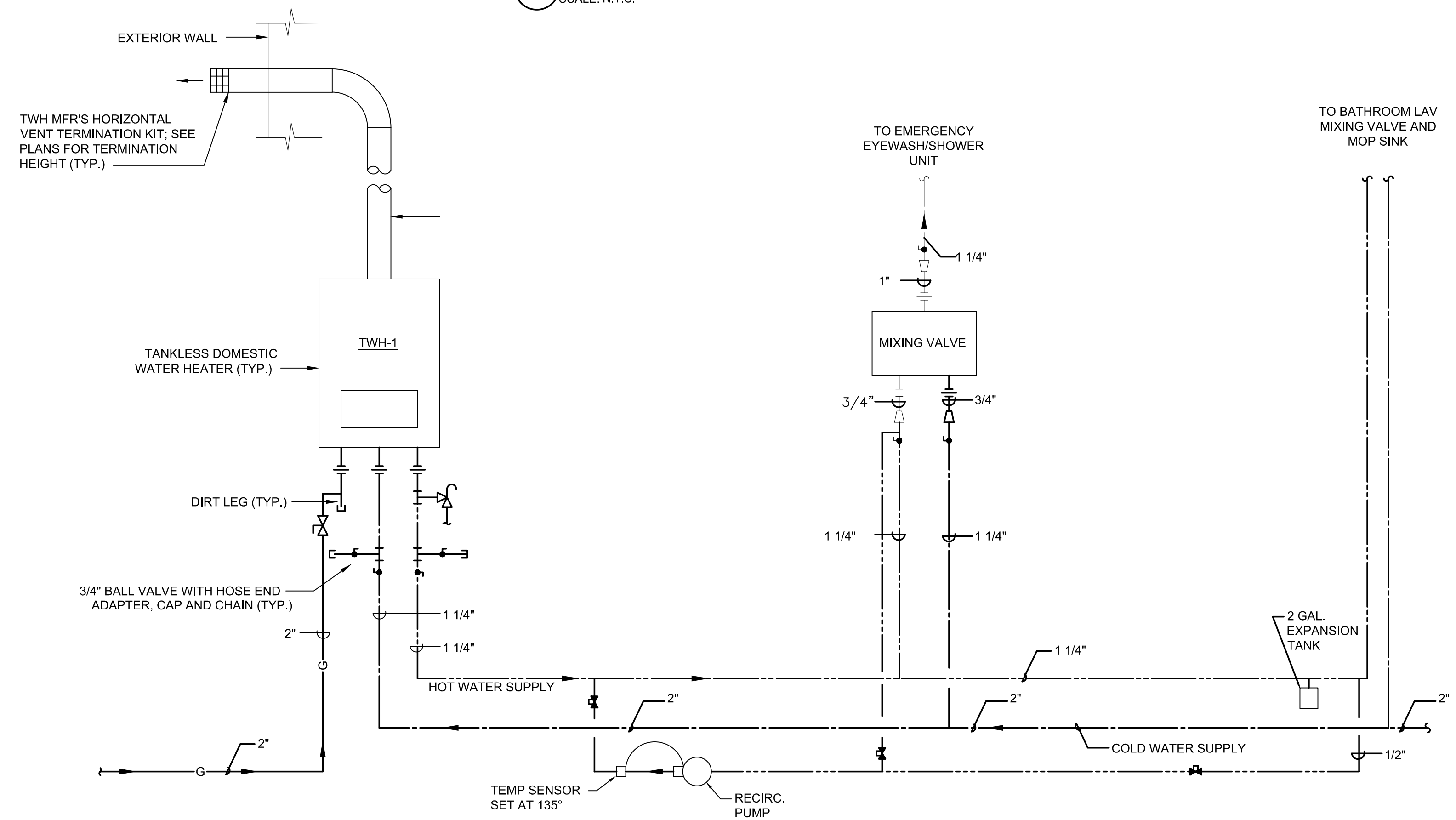
3 PIPE AND HANGER SHIELD DETAIL
SCALE: N.T.S.



4 LAB SINK & POINT-OF-USE WATER HEATER DETAIL
SCALE: N.T.S.



5 SEWER CLEANOUT DETAIL
SCALE: N.T.S.



6 TANKLESS GAS FIRE WATER HEATER DIAGRAM
SCALE: N.T.S.



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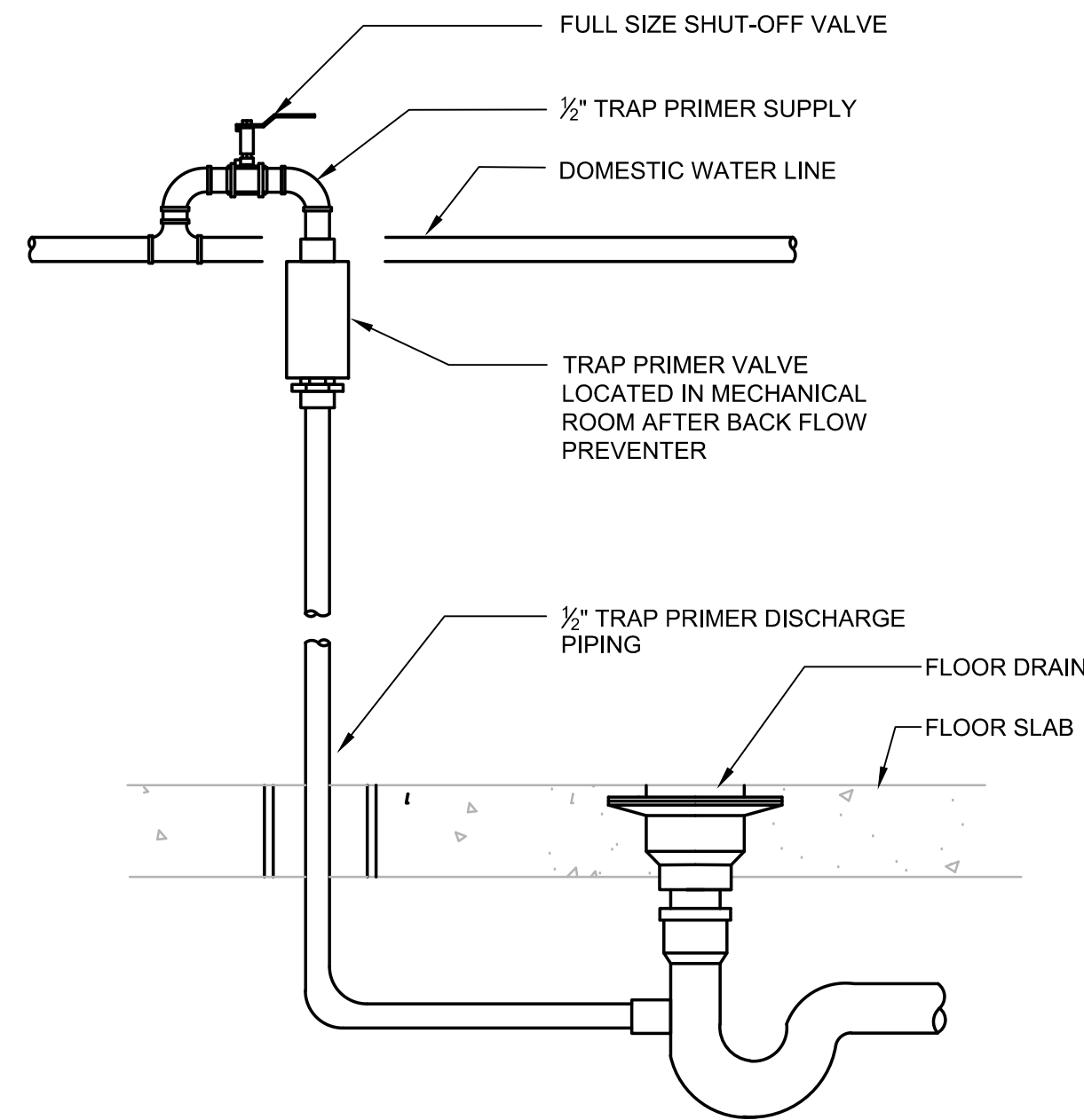
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PLUMBING
DETAILS I

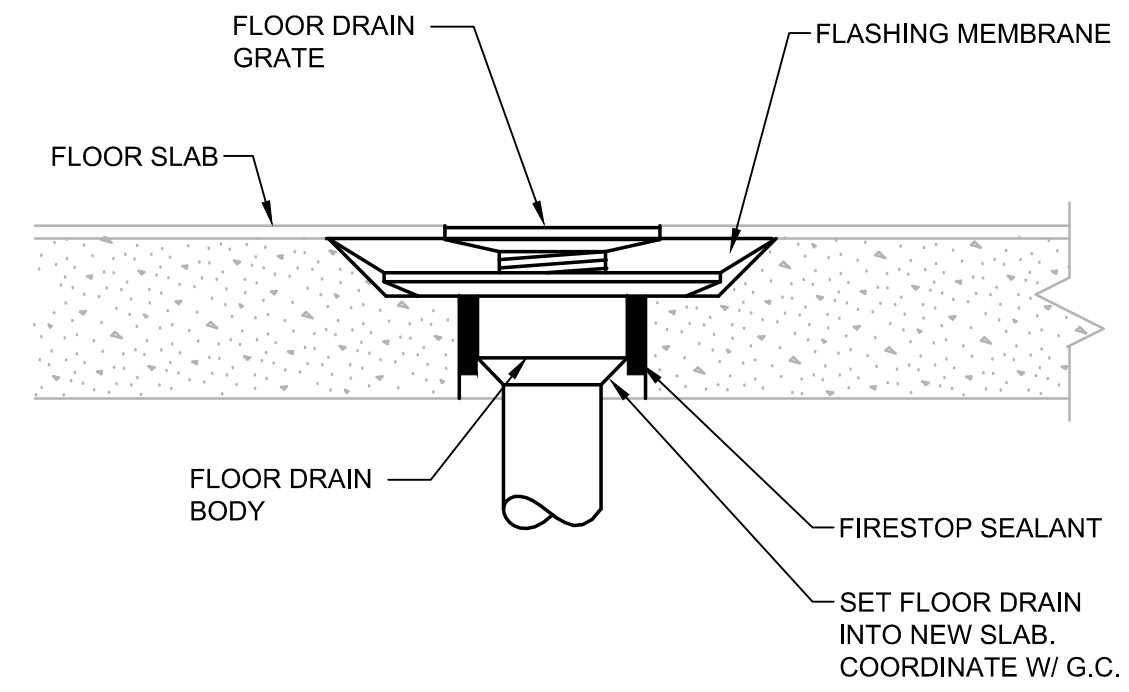
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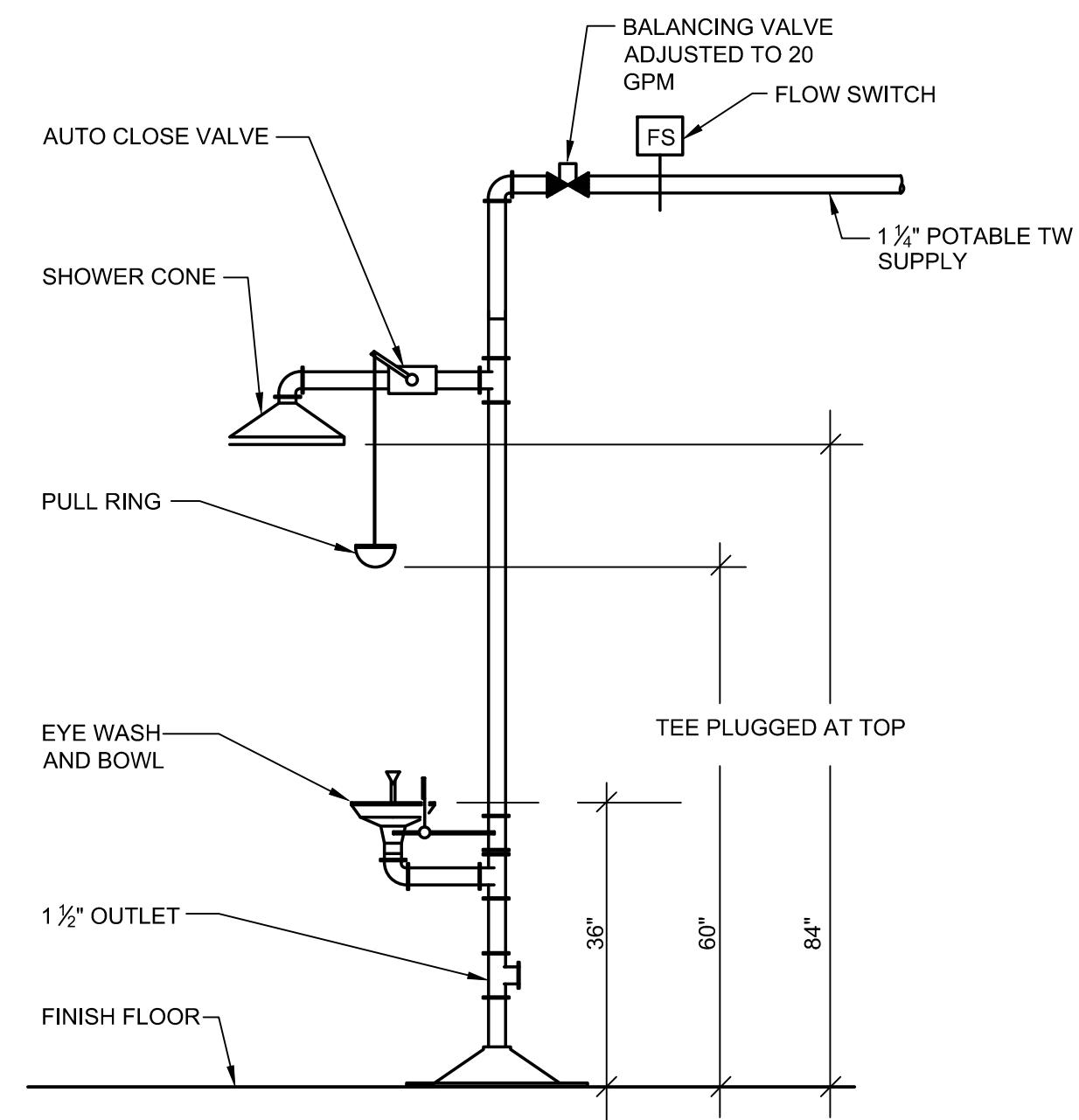
P-7



1 TRAP PRIMER DETAIL
SCALE: N.T.S.



2 FLOOR DRAIN INSTALLATION
SCALE: N.T.S.



3 EMERGENCY SHOWER & EYE WASH
SCALE: N.T.S.



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PLUMBING
DETAILS II

50% DESIGN
Sheet No.

P-8

FIRE PROTECTION NOTES

- 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.
- 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.
- 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.
- IT IS THE INTENT OF THESE DOCUMENTS THAT THE ENTIRE BUILDING BE 100% SPRINKLED, INCLUDING ELECTRIC ROOMS.
- 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.
- 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).
- THE FIRE PROTECTION CONTRACTOR SHALL PREPARE WORKING DRAWINGS OF THE SPRINKLER WORK AND OBTAIN APPROVALS FROM THE LOCAL FIRE DEPARTMENT PRIOR TO INSTALLATION.
- 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.
- 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.
- SPRINKLERS INSTALLED BELOW SLOPED CEILINGS OR ROOFS, SHALL BE INSTALLED IN STRICT ACCORDANCE TO NFPA 13 (2013) AND SPRINKLER MANUFACTURER'S INSTALLATION LISTING.
- 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.
- SPRINKLERS SHALL BE LOCATED ABOVE AND BELOW ALL DUCTWORK GREATER THAN 4'-0" IN WIDTH.
- 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.
- SPRINKLER PIPING SHALL NOT BE INSTALLED TO PASS OVER ELECTRIC PANELS. PROVIDE SHEET METAL PROTECTIVE SHIELDS OVER ELECTRIC PANELS.
- 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).
- REFER TO DESIGN CRITERIA FOR SPRINKLER DENSITY AND AREA OF APPLICATION.
- REFER TO ARCHITECTURAL SECTIONS AND ELEVATIONS FOR EXACT LOCATION OF EXTERIOR PENETRATIONS.

FIRE PROTECTION DESIGN CRITERIA

- FIRE SUPPRESSION CRITERIA**
 - 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.
 - 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.
 - FIRE PROTECTION SIGNALING SYSTEMS CONTROL EQUIPMENT AND ANNUNCIATOR PANEL ARE SHOWN ON THE ELECTRICAL DRAWINGS.
 - 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.
 - 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.
- SEQUENCE OF OPERATION**
 - 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.
- TESTING CRITERIA FOR FINAL ACCEPTANCE**
 - APPROVAL OF SPRINKLER SYSTEM: THE INSTALLING SPRINKLER CONTRACTOR SHALL:
 - NOTIFY THE AUTHORITY HAVING JURISDICTION AND OWNER'S REPRESENTATIVE OF THE TIME AND DATE TESTING WILL BE PERFORMED.
 - PERFORM ALL REQUIRED ACCEPTANCE REQUIREMENTS LISTED IN NFPA 13 (2013) HYDROSTATIC TESTS.
 - COMPLETE AND SIGN THE APPROPRIATE CONTRACTOR'S MATERIAL AND TEST CERTIFICATES.
 - COMPLETE AS-BUILT DRAWINGS AS SPECIFIED.

FIRE PROTECTION LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
		NEW WORK PIPING (INDICATED AS HEAVY LINE)
	F	FIRE SERVICE BELOW GRADE OR BURIED
	F	FIRE SERVICE MAIN
	WS	WET SPRINKLER PIPE
	SD	SPRINKLER DRAIN
	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	GATE VALVE WITH TAMPER SWITCH
	PRV	PRESSURE REDUCING/REGULATING VALVE
	OS&Y WTS	OS & Y GATE VALVE WITH TAMPER SWITCH
	BV W/TS	BALL VALVE WITH TAMPER SWITCH
	VIV	VALVE IN VERTICAL
	VIV W/TS	VALVE IN VERTICAL WITH TAMPER SWITCH
	WACV	ALARM CHECK VALVE (WET SYSTEM)
	DACV	ALARM CHECK VALVE (DRY SYSTEM)
	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	NO AUTOMATIC SPRINKLERS
		DIAGRAM NO. & DWG. NO. REFERENCE
	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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MARK	DATE	DESCRIPTION

Scale	NONE
Date	SEPTEMBER 2023
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

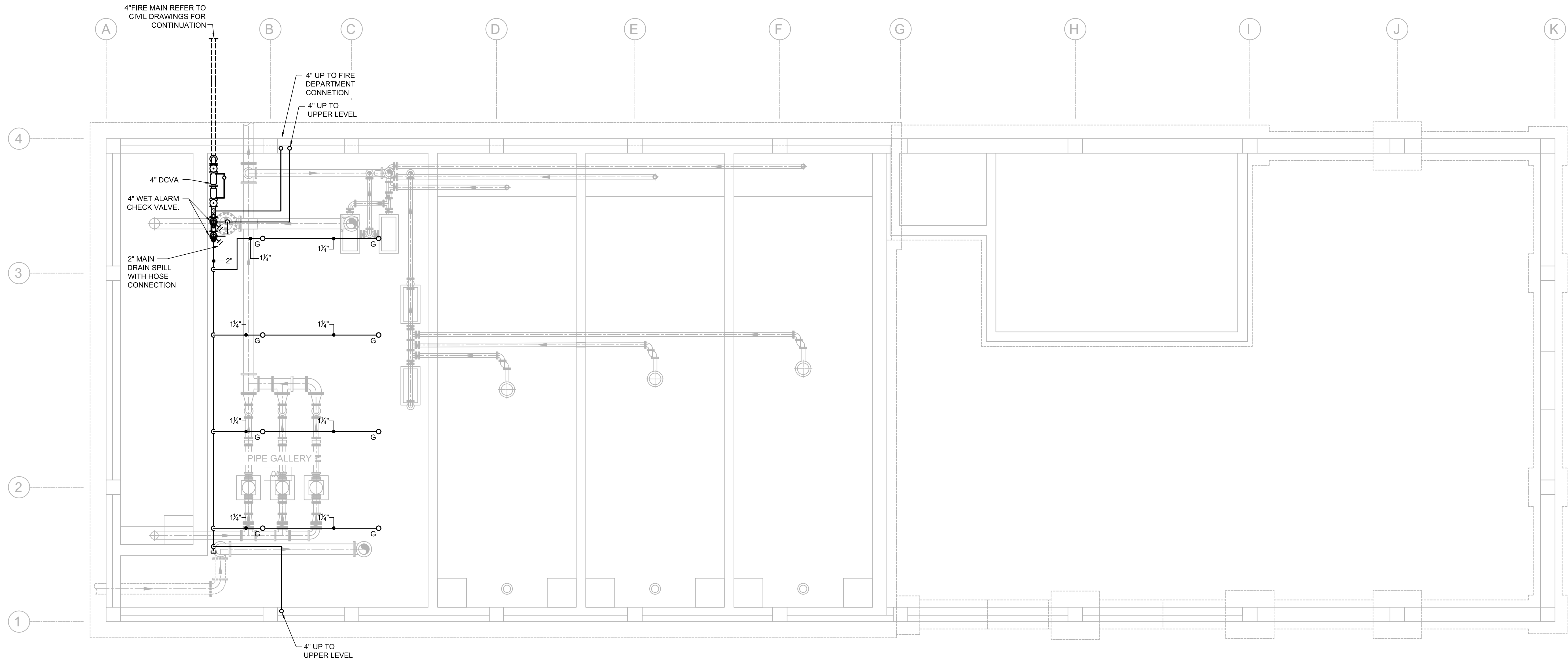
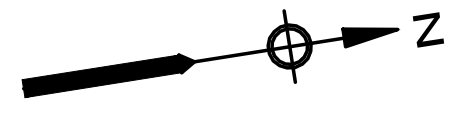
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

FIRE PROTECTION
LEGEND AND GENERAL NOTES

50% DESIGN

Sheet No.

FP-1



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



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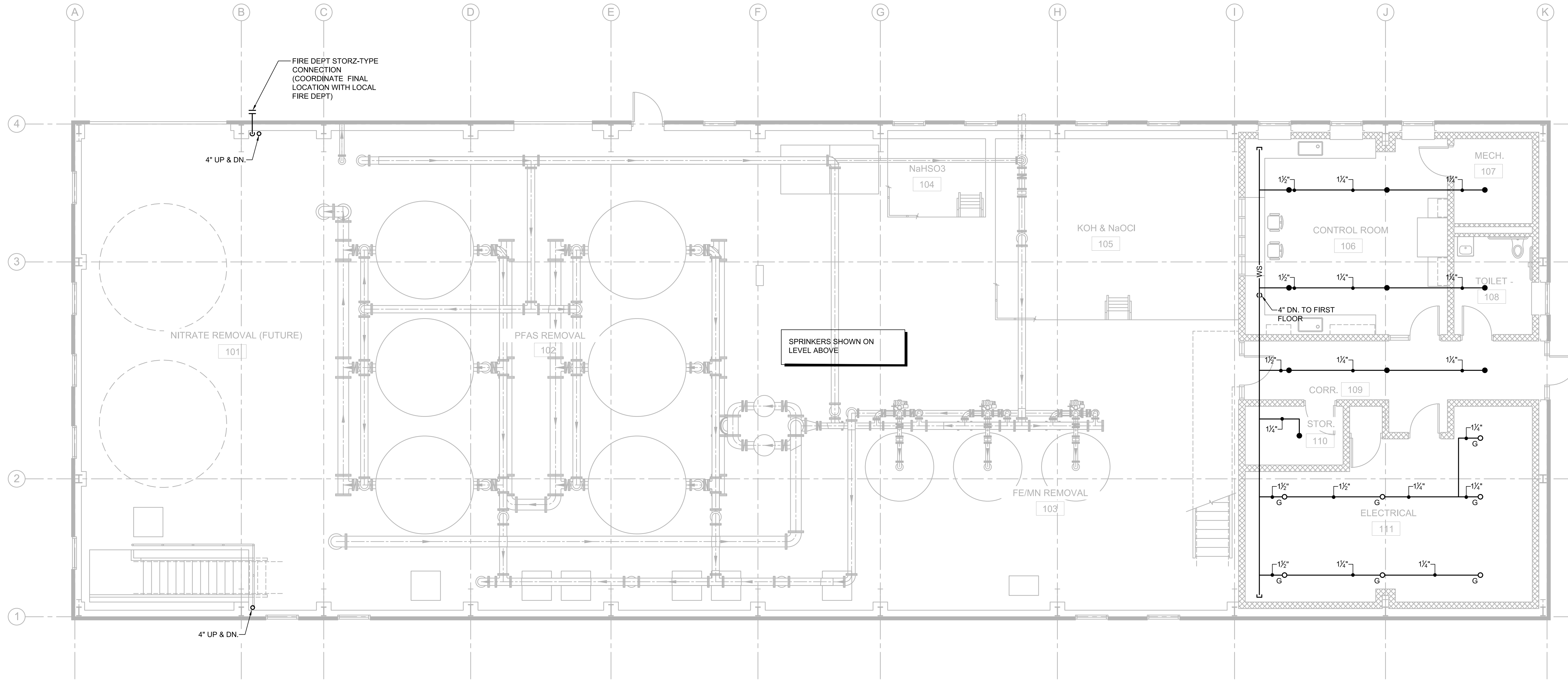
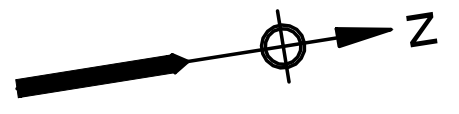
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

FIRE PROTECTION
LOWER LEVEL PLAN

50% DESIGN
Sheet No.

FP-2



PLAN

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

SPRINKERS SHOWN ON LEVEL ABOVE



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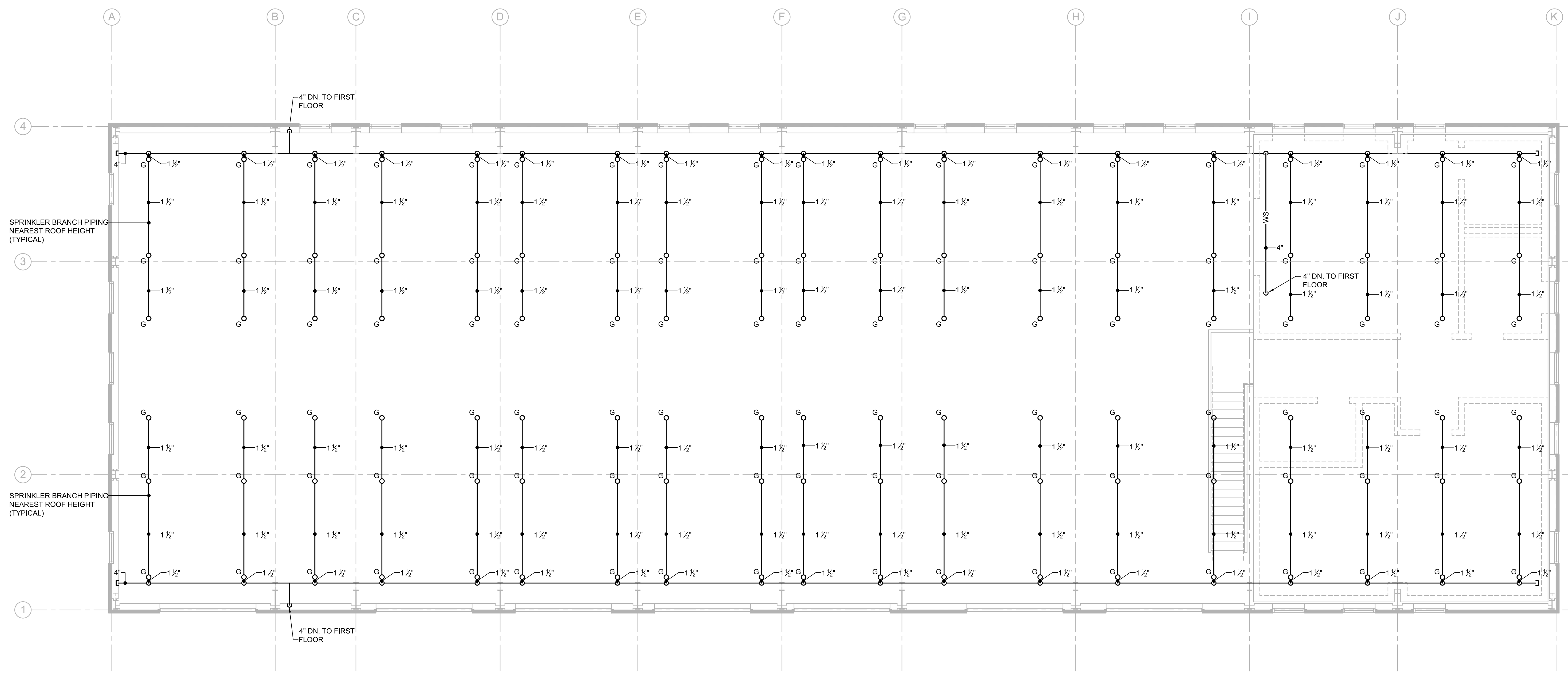
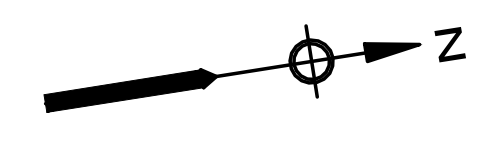
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

FIRE PROTECTION
FIRST FLOOR PLAN

50% DESIGN
Sheet No.

FP-3



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



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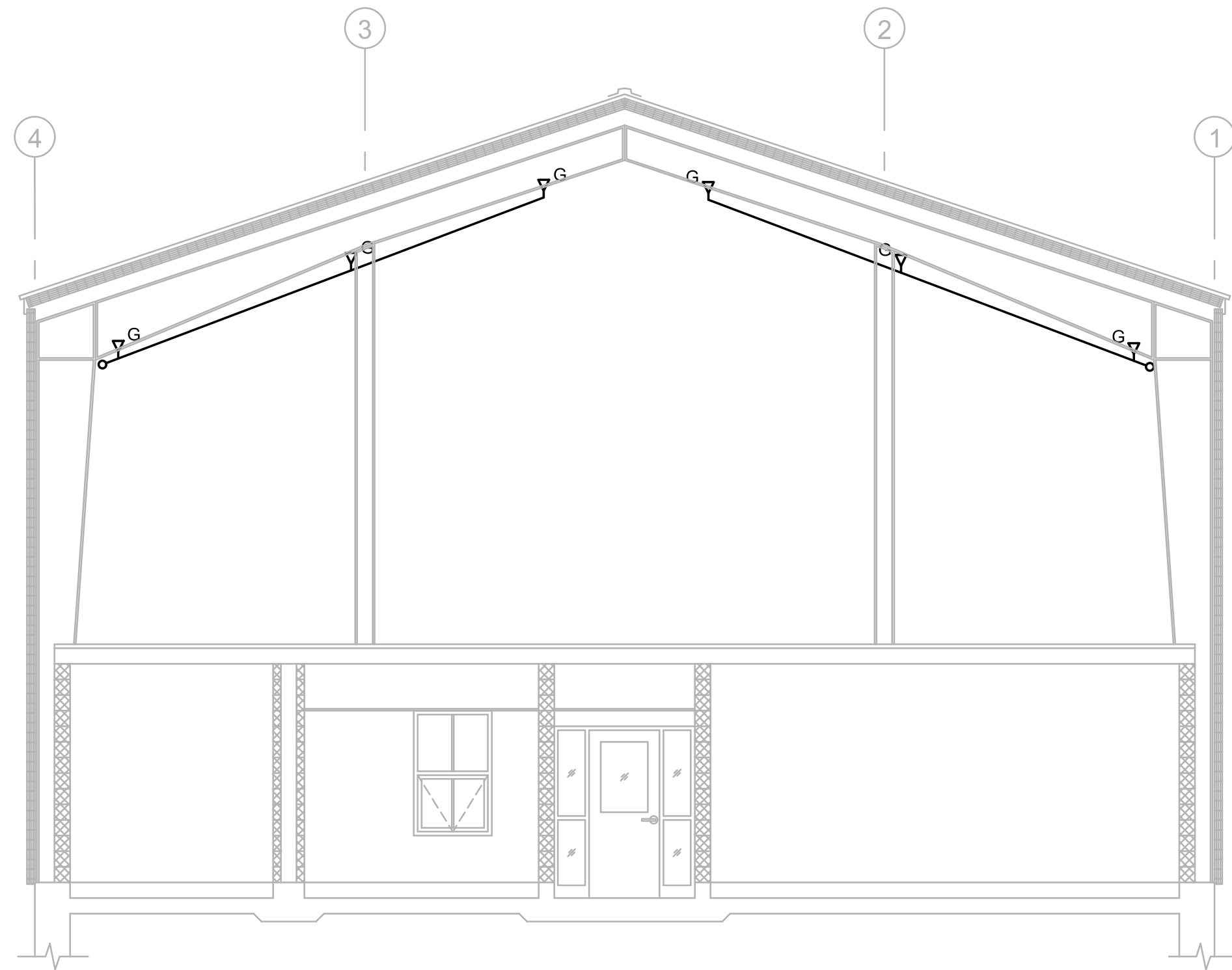
THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

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

**FIRE PROTECTION
MEZZANINE PLAN**

50% DESIGN
Sheet No.

FP-4



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



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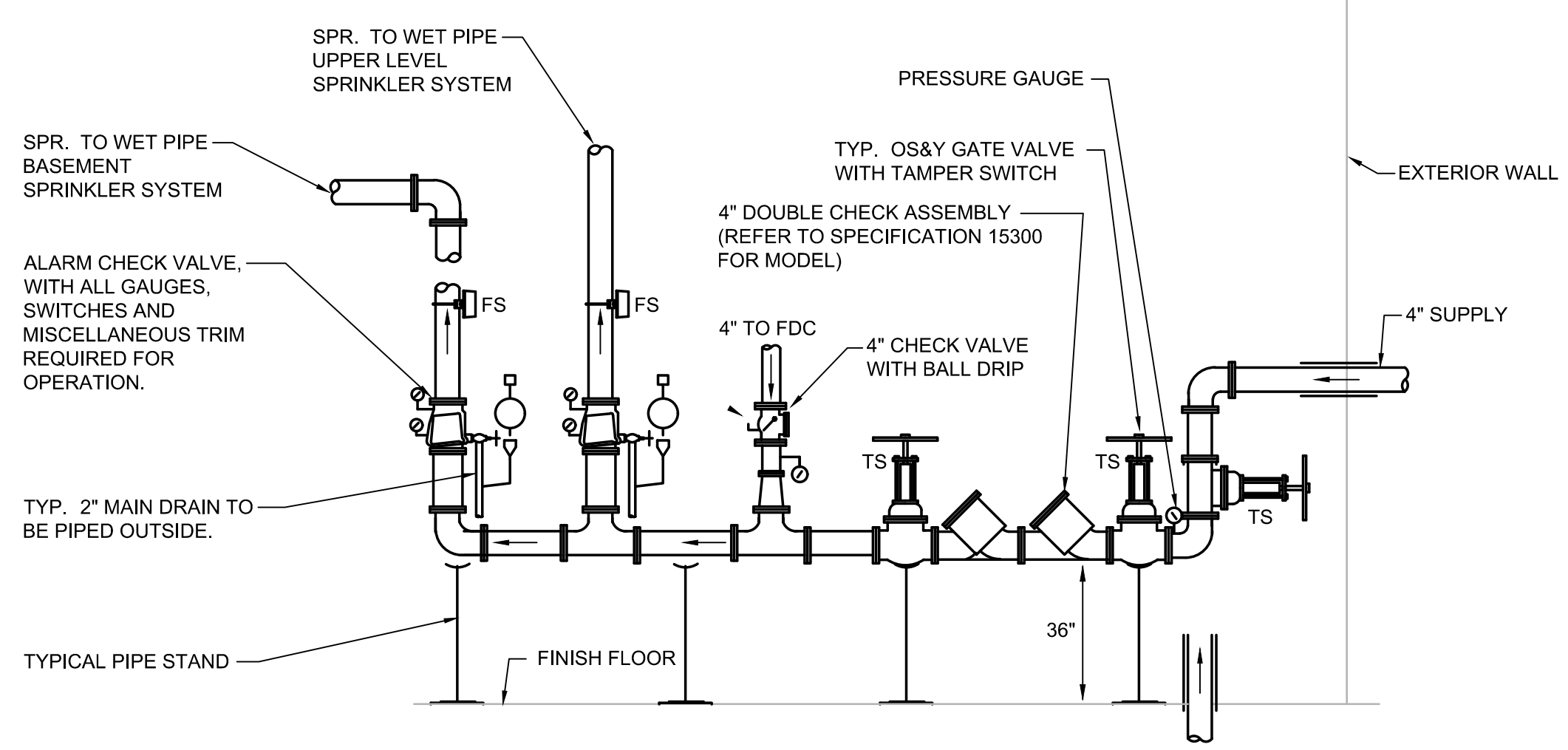
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

FIRE PROTECTION
SECTIONS

50% DESIGN

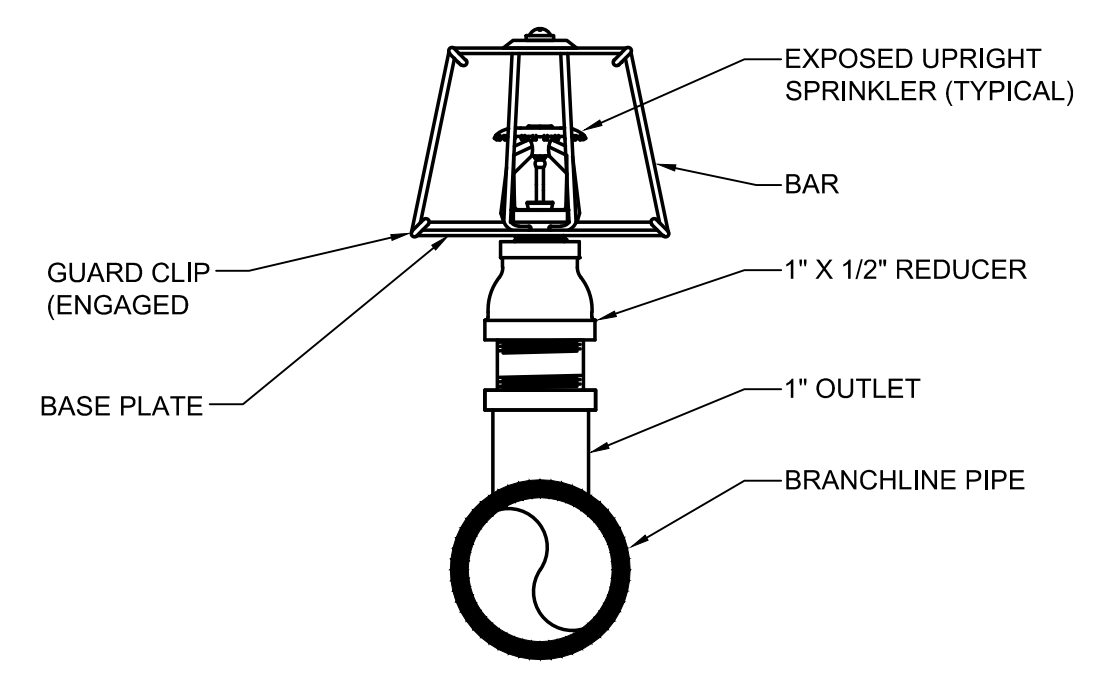
Sheet No.

FP-5

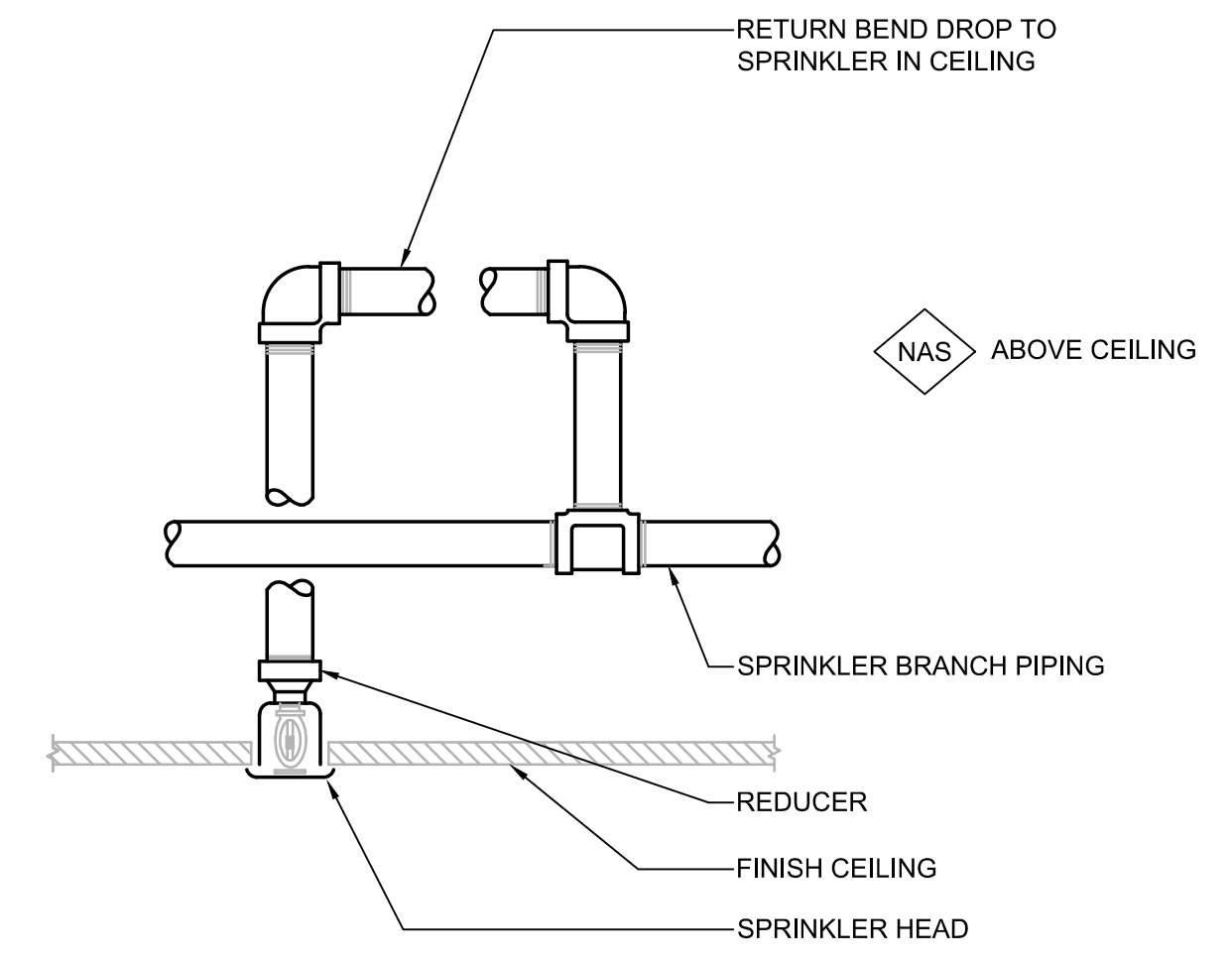


NOTES:
 PIPING AND EQUIPMENT SHALL BE INSTALLED SECURELY TO THE BUILDING STRUCTURE USING CLAMPS, RODS, STRUTS AND ACCESSORIES AS NEEDED TO ALLOW FULL ACCESS AND PROPER CLEARANCES FOR REPAIR AND MAINTENANCE.

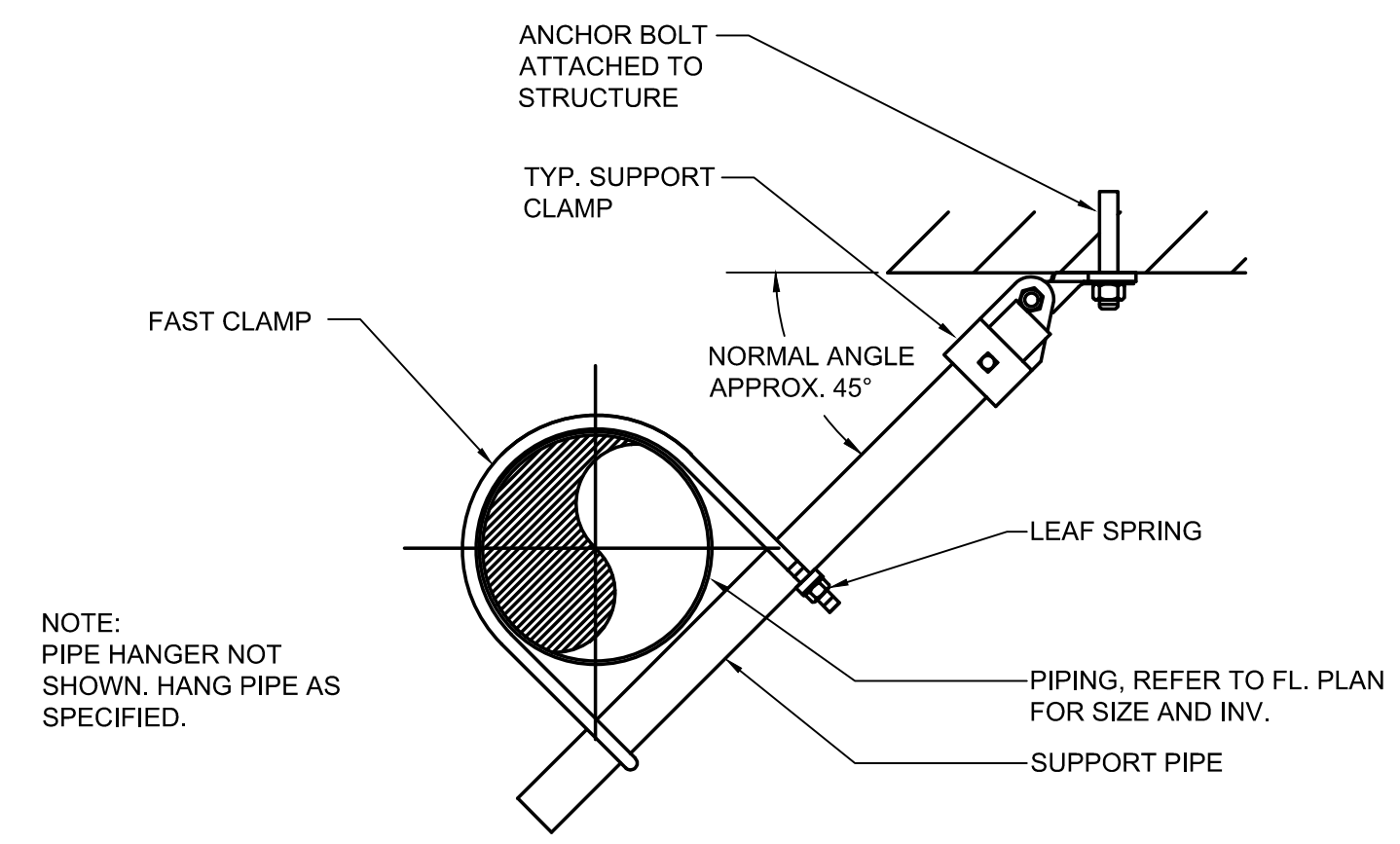
1 WET SPRINKLER RISER ASSEMBLY DIAGRAM
 SCALE: N.T.S.



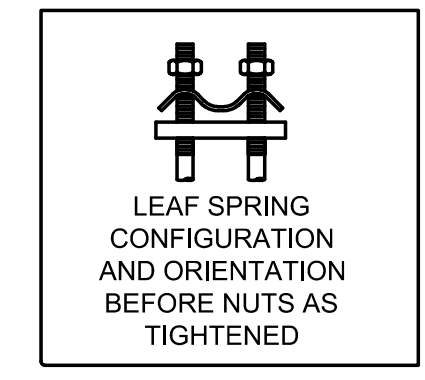
2 UPRIGHT SPRINKLER W/ GUARD
 SCALE: N.T.S.



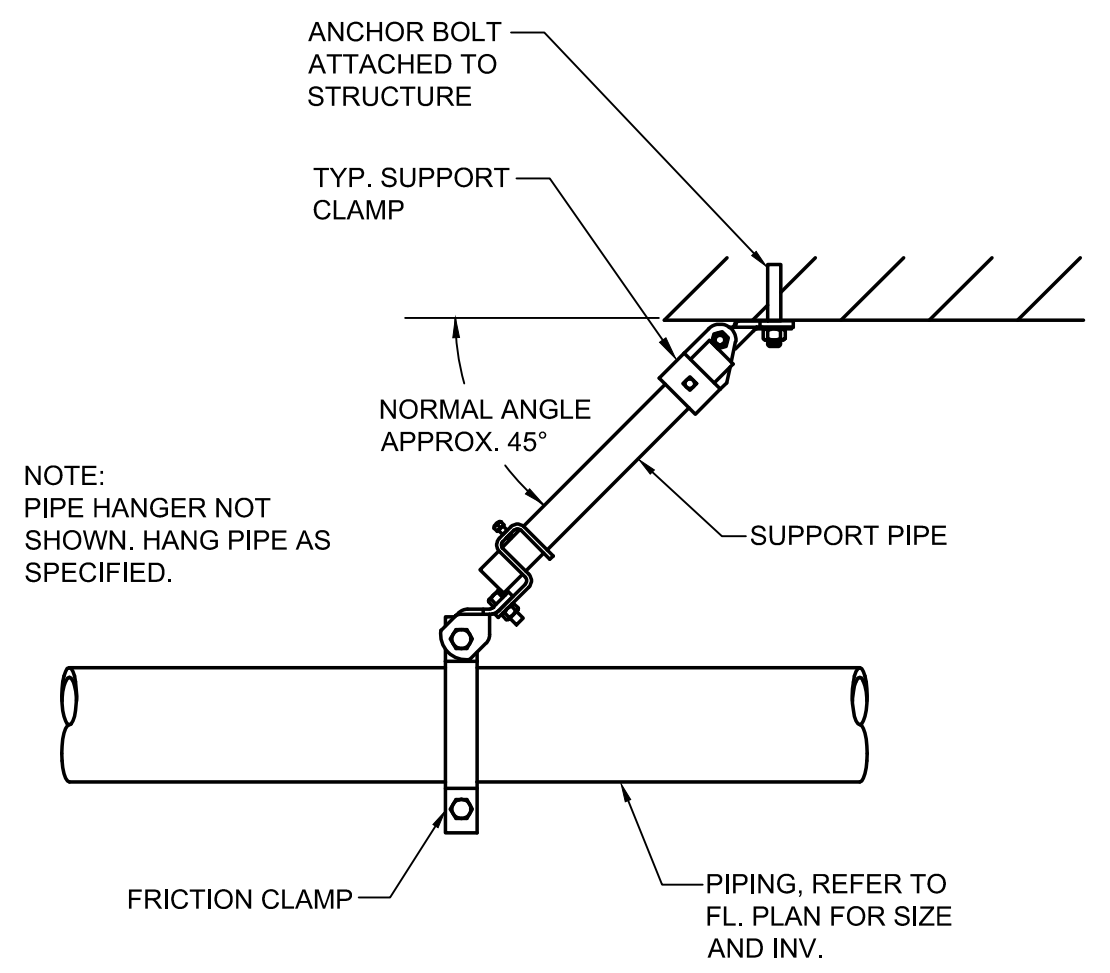
3 CONCEALED SPRINKLER DIAGRAM
 SCALE: N.T.S.



NOTE: PIPE HANGER NOT SHOWN. HANG PIPE AS SPECIFIED.

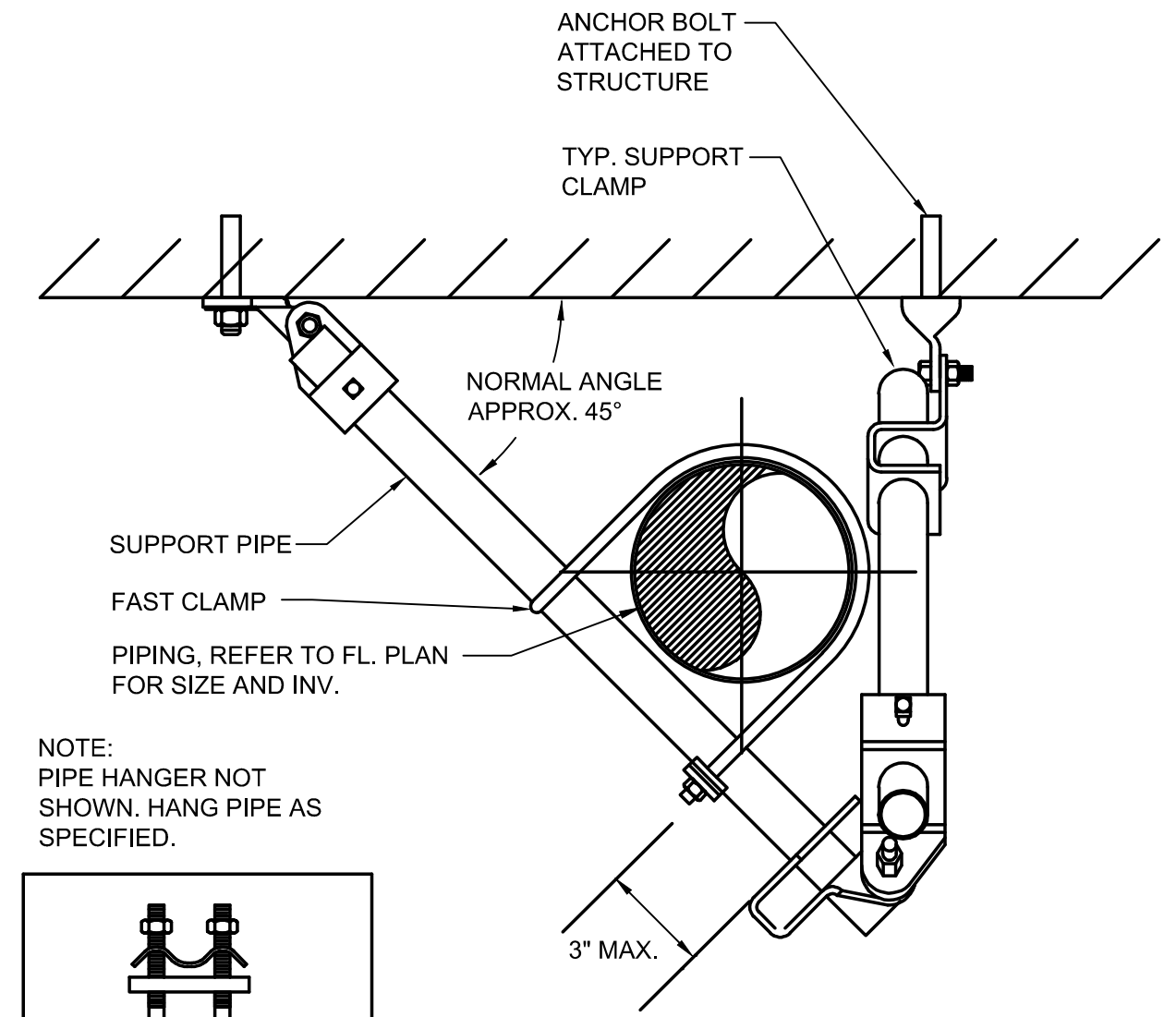


4 LATERAL SEISMIC BRACING DIAGRAM
 SCALE: N.T.S.

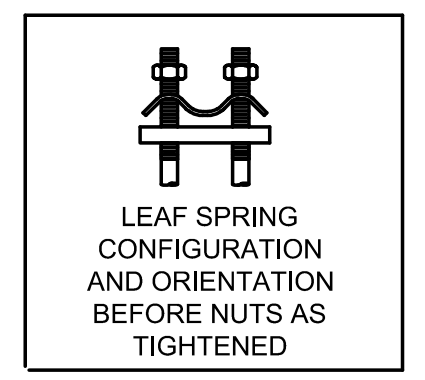


NOTE: PIPE HANGER NOT SHOWN. HANG PIPE AS SPECIFIED.

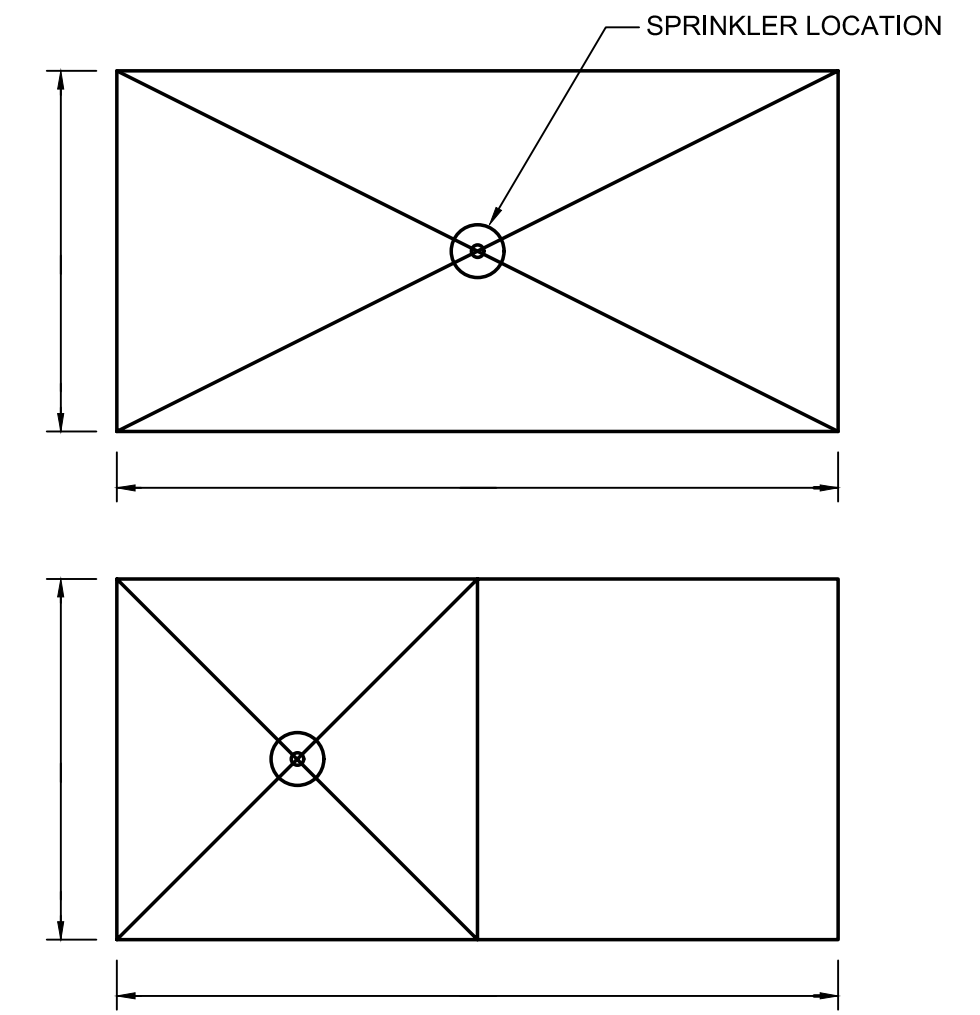
5 LONGITUDINAL SEISMIC BRACING
 SCALE: N.T.S.



NOTE: PIPE HANGER NOT SHOWN. HANG PIPE AS SPECIFIED.



6 4-WAY LONGITUDINAL SEISMIC BRACING
 SCALE: N.T.S.



6 SPRINKLER LOCATION IN CEILING TILES
 SCALE: N.T.S.



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

FIRE PROTECTION
 DETAILS

50% DESIGN
 Sheet No.

FP-6

Drawing file: W1 Year - 2023/23006.00 - Sharon Water Treatment Plant/Plumbing Department/23006.00 FirePro Plans.dwg Plot Date: Aug 31, 2023 - 10:14am

ELECTRICAL SYMBOLS

	LINEAR LIGHTING FIXTURES "F1" INDICATES FIXTURE TYPE - TYPICAL FOR ALL FIXTURES "1" INDICATES CIRCUIT NUMBER - TYPICAL FOR ALL FIXTURES "a" INDICATES THE SWITCH CONTROL - TYPICAL FOR ALL FIXTURES
	WALL MOUNTED LIGHTING FIXTURE.
	SURFACE OR PENDANT MOUNTED FIXTURE.
	EMERGENCY EXIT SIGN
	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
	SINGLE POLE SWITCH 120V, 20A "a" INDICATES THE SWITCH CONTROL
	2-POLE SWITCH 120V, 20A 1 POLE FOR ROOM LIGHT FIXTURES, 1-POLE FOR EXHAUST FAN CONTROL
	3-WAY SWITCH 120V, 20A "a" INDICATES THE SWITCH CONTROL
	4-WAY SWITCH 120V, 20A "a" INDICATES THE SWITCH CONTROL
	BREAK GLASS STATION
	DIGITAL TIME CLOCK SWITCH
	MECHANICAL TIMER SWITCH
	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR/SWITCH
	LOW VOLTAGE SWITCH
	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR
	DUPLEX RECEPTACLE, WEATHER-RESISTANT 120V, 20A WITH WEATHERPROOF COVER "1" INDICATES CIRCUIT NUMBER - TYPICAL FOR ALL RECEPTACLES
	DUPLEX RECEPTACLE 120V, 20A
	(2) DUPLEX (QUAD) RECEPTACLES, 120V, 20A "WP" INDICATES WITH WEATHERPROOF COVER
	SIMPLEX RECEPTACLE, WEATHER-RESISTANT 120V, 20A WITH WEATHERPROOF COVER "TL" INDICATES TWIST LOCK TYPE
	UNFUSED DISCONNECT SWITCH, "30" INDICATES 30 AMP RATING, PROVIDE 3-POLE, UNLESS OTHERWISE INDICATED.
	FUSED DISCONNECT SWITCH, "20" INDICATES 20 AMP FUSE RATING, PROVIDE 3-POLE UNLESS OTHERWISE INDICATED.
	3-PHASE RECEPTACLE

ELECTRICAL SYMBOLS

	ALARM RELAY, "AR1" REFERS TO RELAY NAME DESIGNATION
	CONTROL RELAY, "CR1" REFERS TO RELAY NAME DESIGNATION
	MOTOR START RELAY
	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 - CLOSSES ON HIGH PRESSURE
	PRESSURE SWITCH - CLOSSES ON LOW PRESSURE
	OPERATOR STATION (SUPPLIED BY OTHER DIV. 16 UNO), "XXXX" REFERS TO TAGNAME ID, "YYY" REFERS TO THE TYPE OF OPERATOR STATION
	SPRING RETURN OPEN/CLOSE PUSHBUTTON, DUAL CONTACT FOR EACH POSITION (SUPPLIED BY OTHER DIV. 16 UNO), "XXXX" REFERS TO TAGNAME ID
	UNLESS OTHERWISE NOTED INSTRUMENTATION OR PROCESS EQUIPMENT (SUPPLIED BY OTHER DIVISIONS) "XX-XXXX" REFERS TO TAGNAME ID
	GENERATOR EMERGENCY STOP
	METERING PUMP CONTROL PANEL (SUPPLIED BY DIV. 13)
	INTRICATELY SAFE BARRIER PANEL (SUPPLIED BY DIV. 13)
	OCCUPIED/UNOCCUPIED SELECTOR SWITCH. (SUPPLIED BY DIV. 15)
	THERMOSTAT (SUPPLIED BY DIV. 15)
	MOTOR OPERATED DAMPER (SUPPLIED BY DIV. 15)
	MANUAL WALL SWITCH (BY DIV. 15)
	REFRIGERANT SENSOR (BY DIV. 15)
	ELECTRIC UNIT HEATER, "X" INDICATES UNIT ELECTRIC COIL RATING (SUPPLIED BY DIV. 15)
	EQUIPMENT CIRCUIT NUMBER DESIGNATION TO PANEL PP1-LP CIRCUIT #21, P11-LP (21)
	UNDERGROUND DUCTBANK SECTION REFERENCE, "A" INDICATES THE REFERENCED DUCTBANK SECTION

ELECTRICAL SYMBOLS

	UNDERGROUND CONDUIT DUCT BANK
	HOMERUN DESIGNATION TO PANEL PP1 CIRCUIT #1, WITH THE FOLLOWING CONDUIT/WIRES UNLESS OTHERWISE NOTED: <ul style="list-style-type: none"> 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
	SURGE PROTECTION DEVICE
	UTILITY POLE
	MOLDED CASE CIRCUIT BREAKER, 3-POLE UNLESS OTHERWISE INDICATED, "20" INDICATES TRIP AMPERE RATING, "100" INDICATES FRAME SIZE, "GFCI" INDICATES CIRCUIT BREAKER TO HAVE GROUND FAULT CIRCUIT INTERRUPT
	DRY TYPE TRANSFORMER
	WALL MOUNTED COMBINATION MOTOR STARTER WITH MOTOR CIRCUIT PROTECTOR, "FVNR" INDICATES TYPE OF MOTOR STARTER
	MOTOR STARTER WITH MOTOR CIRCUIT PROTECTOR, "FVNR" INDICATES TYPE OF MOTOR STARTER
	ENCLOSED VARIABLE FREQUENCY DRIVE
	MANUAL MOTOR STARTER 120V, 20A
	JUNCTION BOX
	CONCRETE HANDHOLE, "E" REPRESENTS ELECTRICAL HANDHOLE, "U" REPRESENTS UTILITY HANDHOLE, "C" REPRESENT COMMUNICATION HANDHOLE
	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
	MOTOR, "10" INDICATES HORSEPOWER RATING
	CABLE/CONDUIT DESIGNATION, "XX" REFERS CABLE CONDUIT REFERENCE, REFER TO CABLE/CONDUIT SCHEDULES.

FIRE ALARM SYSTEM SYMBOLS

	MANUAL FIRE ALARM STATION
	FIRE ALARM AUDIO/VISUAL DEVICE
	FIRE ALARM VISUAL ONLY DEVICE
	FIRE ALARM BEACON
	SMOKE DETECTOR
	DUCT SMOKE DETECTOR
	REMOTE TEST STATION AND ALARM FOR DUCT SMOKE DETECTOR
	HEAT DETECTOR, COMBINATION RATE-OF-RISE AND FIXED TEMPERATURE
	CARBON MONOXIDE DETECTOR
	INPUT MONITORING MODULE
	RELAY CONTROL MODULE
	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUNCIATOR PANEL
	CELLULAR DIGITAL ALARM COMMUNICATOR TRANSMITTER, MOUNTED ABOVE FACP
	KEY DEPOSITORY - KNOX BOX
	FLOW SWITCH
	TAMPER SWITCH
	24V ELECTRIC SPRINKLER BELL, PROVIDED BY FIRE PROTECTION FSB, PROVIDE AND MOUNT IN WEATHERPROOF BACKBOX
	BIDIRECTION RADIO AMPLIFIER
	BIDIRECTION RADIO POWER SUPPLY, MOUNTED BELOW OR NEXT TO BDA
	BIDIRECTION RADIO INDOOR ANTENNA
	BIDIRECTION RADIO OUTDOOR ANTENNA
	BIDIRECTION RADIO AMPLIFIER ANNUNCIATOR

CHEMICAL ALARM SYSTEM SYMBOLS

	MANUAL CHEMICAL ALARM STATION
	CHEMICAL ALARM AUDIO/VISUAL DEVICE
	CHEMICAL ALARM CONTROL PANEL

TELE/DATA & CCTV SYMBOLS

	WALL MOUNTED DATA OUTLET, 2D INDICATES (2) CAT6 TERMINAL DATA CONNECTORS, 1T INDICATES (1) CAT6 TERMINAL TELEPHONE CONNECTOR
	CLOSED CIRCUIT TELEVISION CAMERA
	NETWORK SURVEILLANCE CCTV SERVER

ACCESS CONTROL SYMBOLS

	CARD READER WITH KEY PAD
	DOOR SWITCH
	ELECTRIC DOOR LOCK (PROVIDED BY DIV. 8)
	POWER SUPPLY (PROVIDED BY DIV. 8) - MOUNT ABOVE DOOR
	ACCESS CONTROL GATEWAY PANEL



Scale	NONE	
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
LEGEND

50% DESIGN
Sheet No.
E-1

Drawing file: W:\Year - 2023\2006.00 - Sharon Water Treatment Plant\Electrical Department\2006.00 - Electrical Plans.dwg Plot Date: Aug 31, 2023 - 10:47 am

ABBREVIATIONS

(2)1"C, 3#8, #10GND	2 1-INCH CONDUITS EACH CONDUIT CONTAINING 3-#8 AWG WIRES AND 1-#10 GROUND CONDUCTOR	PB	PUSHBUTTON CONTROL STATION MOMENTARY CONTACT TYPE, STOP START
3/4" CE	EMPTY CONDUIT WITH PULL STRING. NUMERAL DENOTES SIZE	PBE	PUSHBUTTON CONTROL STATION MAINTAINED EMERGENCY STOP TYPE, TWIST TO RELEASE
AFF	ABOVE FINISHED FLOOR	PBL	PUSHBUTTON CONTROL STATION MOMENTARY TYPE WITH LOCK-OUT DEVICE, STOP-START
AFG	ABOVE FINISHED GRADE	PBM	PUSHBUTTON CONTROL STATION MAINTAINED CONTACT TYPE, STOP START
AR	ALARM RELAY	PIT	PRESSURE INDICATOR TRANSMITTER
ATS	AUTOMATIC TRANSFER SWITCH	PL	PUSHBUTTON CONTROL STATION MOMENTARY TYPE WITH LOCK-OUT DEVICE, STOP
CR	CONTROL RELAY	PS	PRESSURE SWITCH
CP	CONTROL PANEL	PT	PRESSURE TRANSMITTER
DRG. DWG.	DRAWING	PV	PHOTOVOLTAIC
EAN	EXCEPT AS NOTED	RGS	RIGID GALVANIZED STEEL
EC	ELECTRICAL CONTRACTOR	RVNR	REDUCED VOLTAGE NON-REVERSING
EOV	ELECTRICALLY OPERATED VALVE	SPD	SURGE SUPPRESSOR DEVICE
ETM	ELAPSED TIME METER	SOV	SOLENOID VALVE
FE	FLOW ELEMENT	S/S	SOFT STARTER
FIT	FLOW INDICATOR TRANSMITTER	TB	TERMINAL BOX
FS	FLOW SWITCH	TD	MOTOR TEMPERATURE DETECTOR
FSB	FILE SUB-BID CONTRACTOR	TR	TIMING RELAY
FT	FLOW TRANSMITTER	TS	TEMPERATURE SWITCH
FVNR	FULL VOLTAGE NON-REVERSING	TSH	TEMPERATURE SWITCH HIGH
GND, GRD	GROUNDING CONDUCTOR (EQUIPMENT)	TSL	TEMPERATURE SWITCH LOW
HOA	HAND-OFF-AUTOMATIC	TSP	TWISTED SHEILDED PAIR
HH	HANDHOLE	TSTW	TWO SPEED TWO WINDING
ISR	INTRINSICALLY SAFE RELAY	TYP	TYPICAL
J OR JB	JUNCTION BOX	UG	UNDERGROUND
JPB	JOG PUSHBUTTON	UNO	UNLESS NOTED OTHERWISE
LE	LEVEL ELEMENT	VFD	VARIABLE FREQUENCY DRIVE
LIT	LEVEL INDICATOR TRANSMITTER	WP	WATER PROOF
LL	LOW LEVEL	WHM	WATT HOUR UTILITY METER
LS	LEVEL SWITCH	XFMR	TRANSFORMER
LT	LEVEL TRANSMITTER	ZS	POSITION SWITCH
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		

GENERAL NOTES

- 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.
 - UTILITY TRANSFORMER INCLUDING OIL CONTAINMENT CURB
 - GENERATORS
 - MAIN DISTRIBUTION BOARD
 - MOTOR CONTROL CENTER
 - DRY TYPE TRANSFORMERS
 - FREE STANDING VFD, CONTROL, AND TERMINATION PANELS
- ALL CONDUIT AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND APPLICABLE LOCAL CODES.
- 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.
- 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.
- CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTIONS TO MOTORS AND OTHER EQUIPMENT.
- NO CONDUIT SMALLER THAN 3/4" PIPE SIZE NOR WIRE SMALLER THAN NO. 12 A.W.G. SHALL BE USED UNLESS OTHERWISE NOTED.
- RECEPTACLES AND SWITCHES SHALL BE MOUNTED 45" AFF 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.
- 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.
- CONDUITS SHALL NOT BE INSTALLED WITHIN SLAB STRUCTURE AND SHALL BE RUN UNDER THE SLAB.
- CONDUITS SHALL NOT BE INSTALLED IN THE FINISHED WATER WET WELL OR BACKWASH WASTE TANK.

DEMOLITION NOTES

- 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.
- DISCONNECT AND REMOVE THE ELECTRICAL SERVICE BACK TO UTILITY POLE FOR WELL STATION 2, WELL STATION 3, AND WELL STATION 4.
- 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.
- 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.
- 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.
- 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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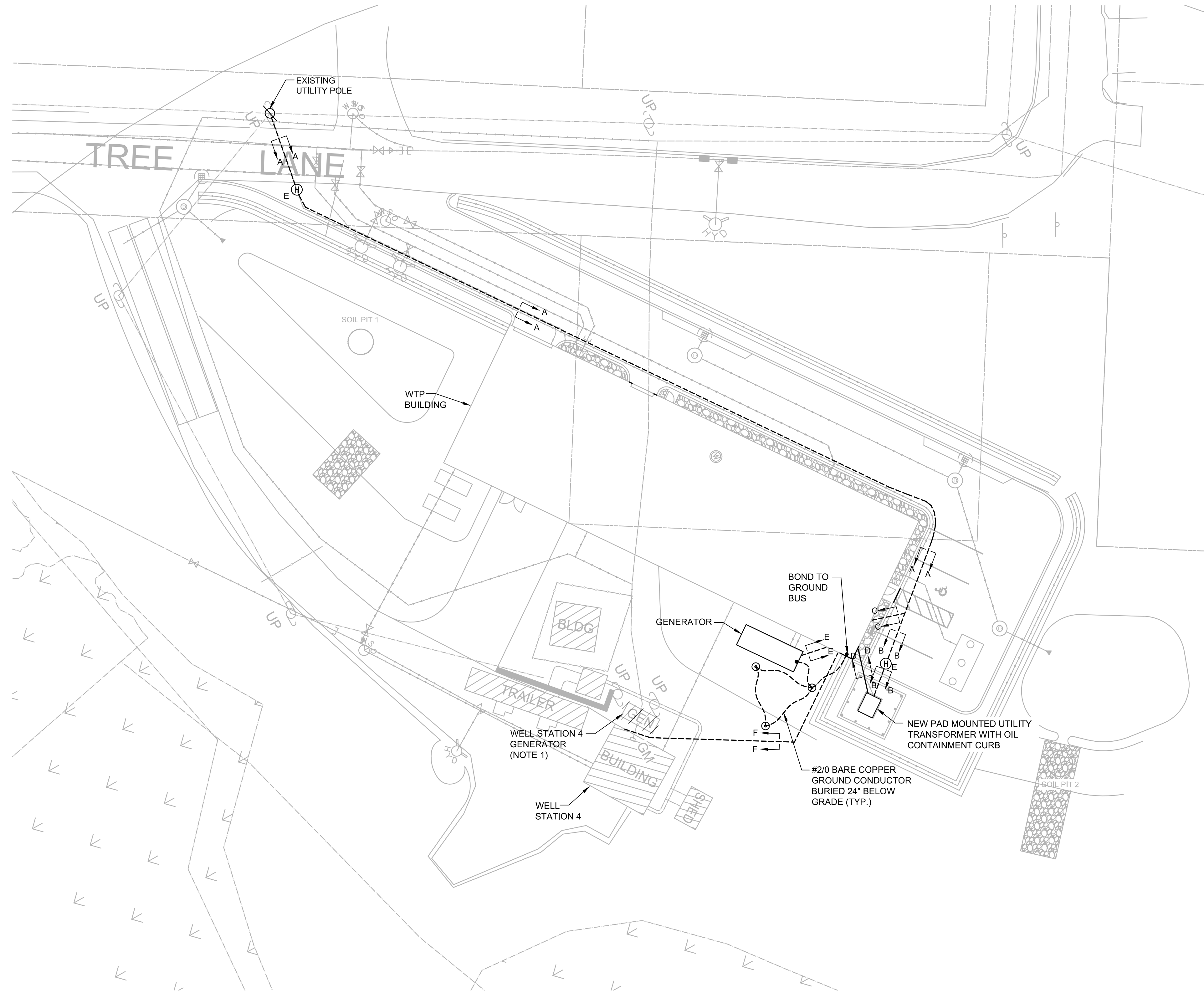
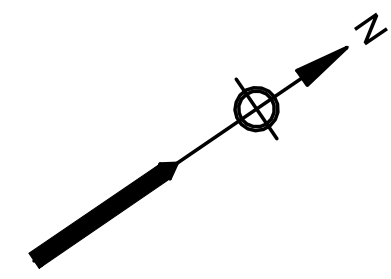
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TOWN OF SHARON, MA**

**ELECTRICAL
ABBREVIATIONS AND NOTES**

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E-2



NOTES:

1. SALVAGE GENERATOR AND RETURN TO OWNER AT OWNER DETERMINED LOCATION WITHIN THE TOWN OF SHARON.



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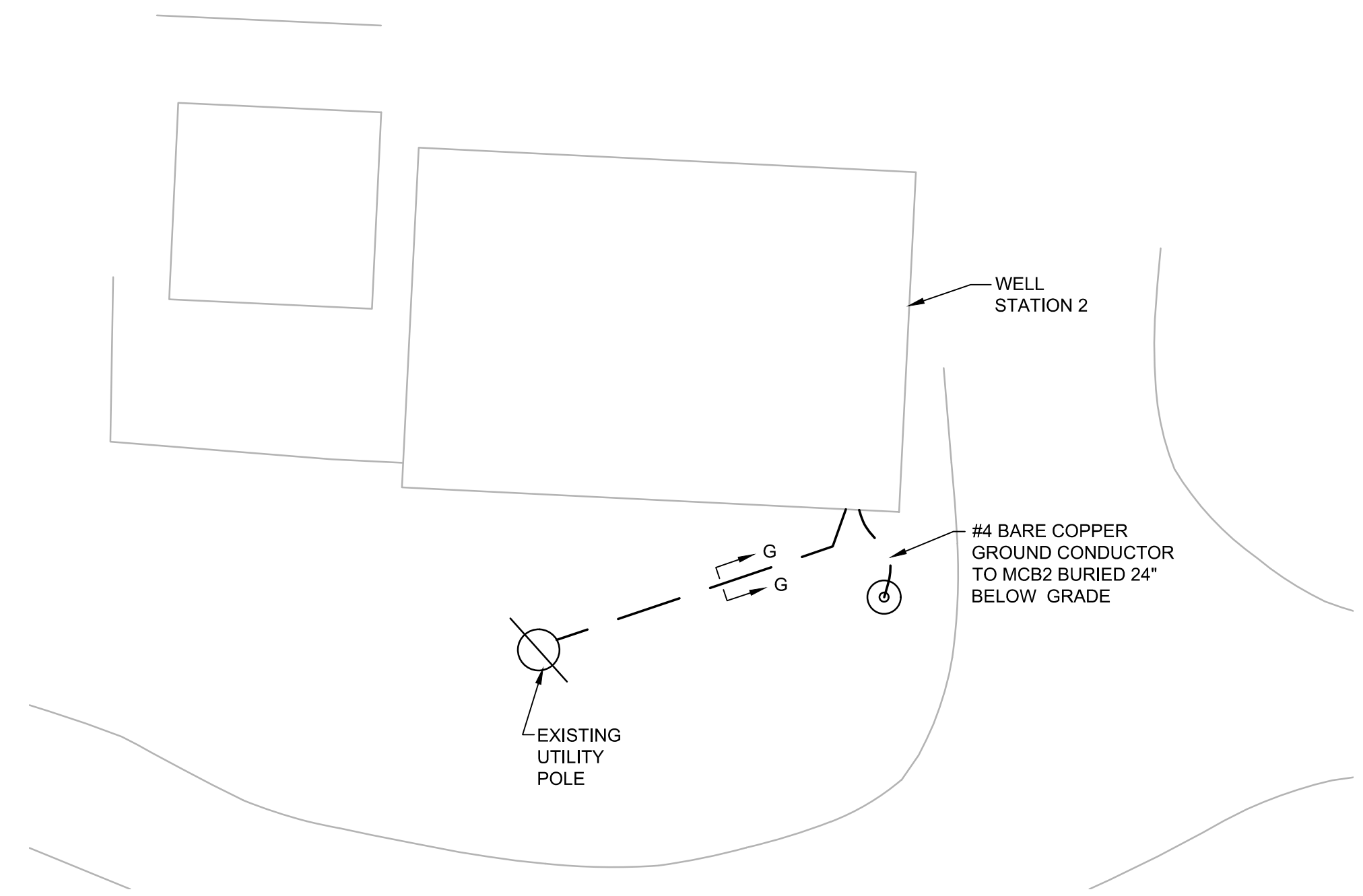
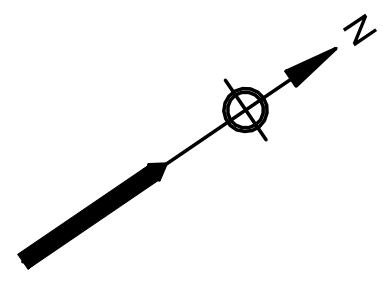
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**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

**ELECTRICAL
WTP & WELL STATION 4 SITE PLAN**

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E-3



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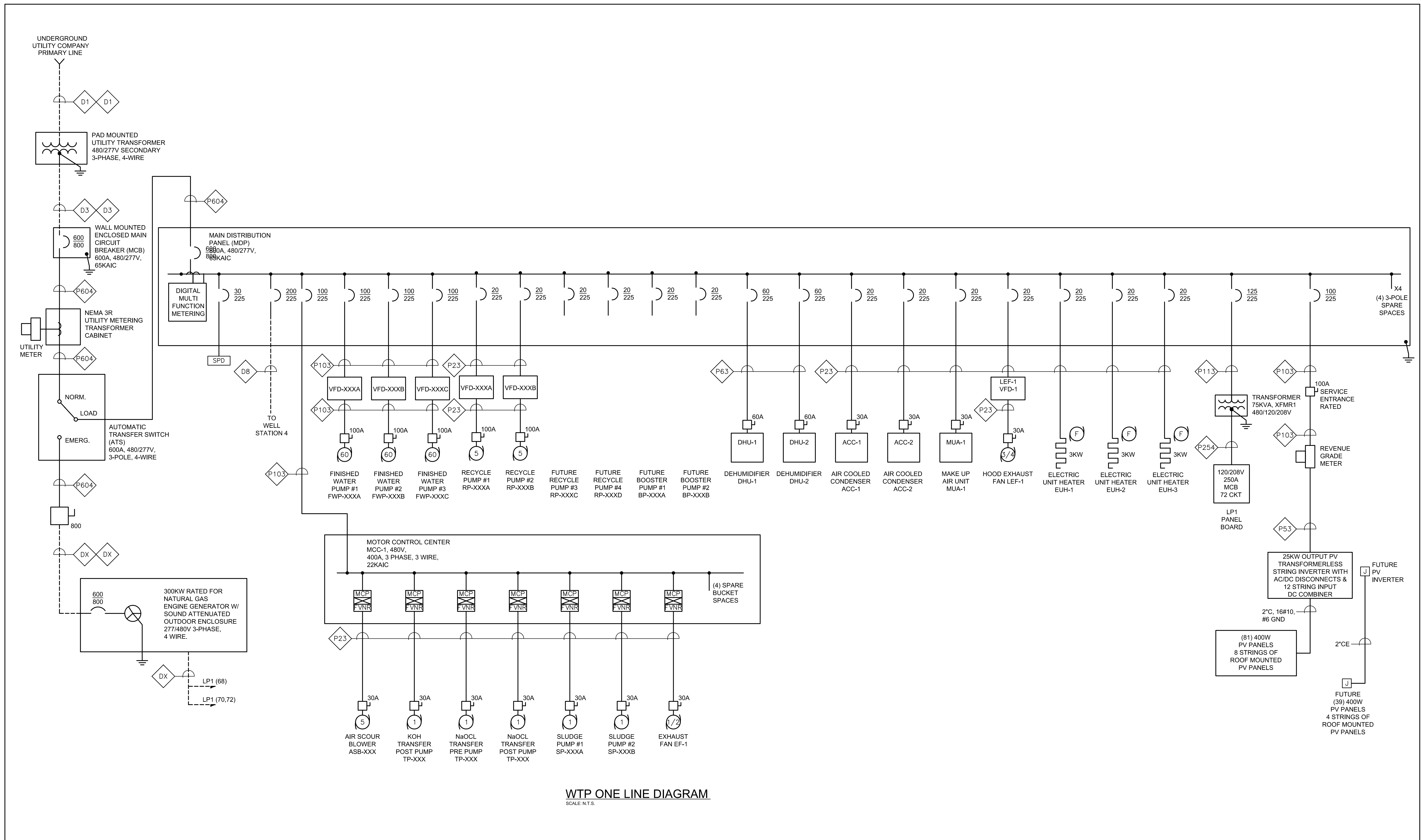
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**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

**ELECTRICAL
WELL STATION 2 SITE PLAN**

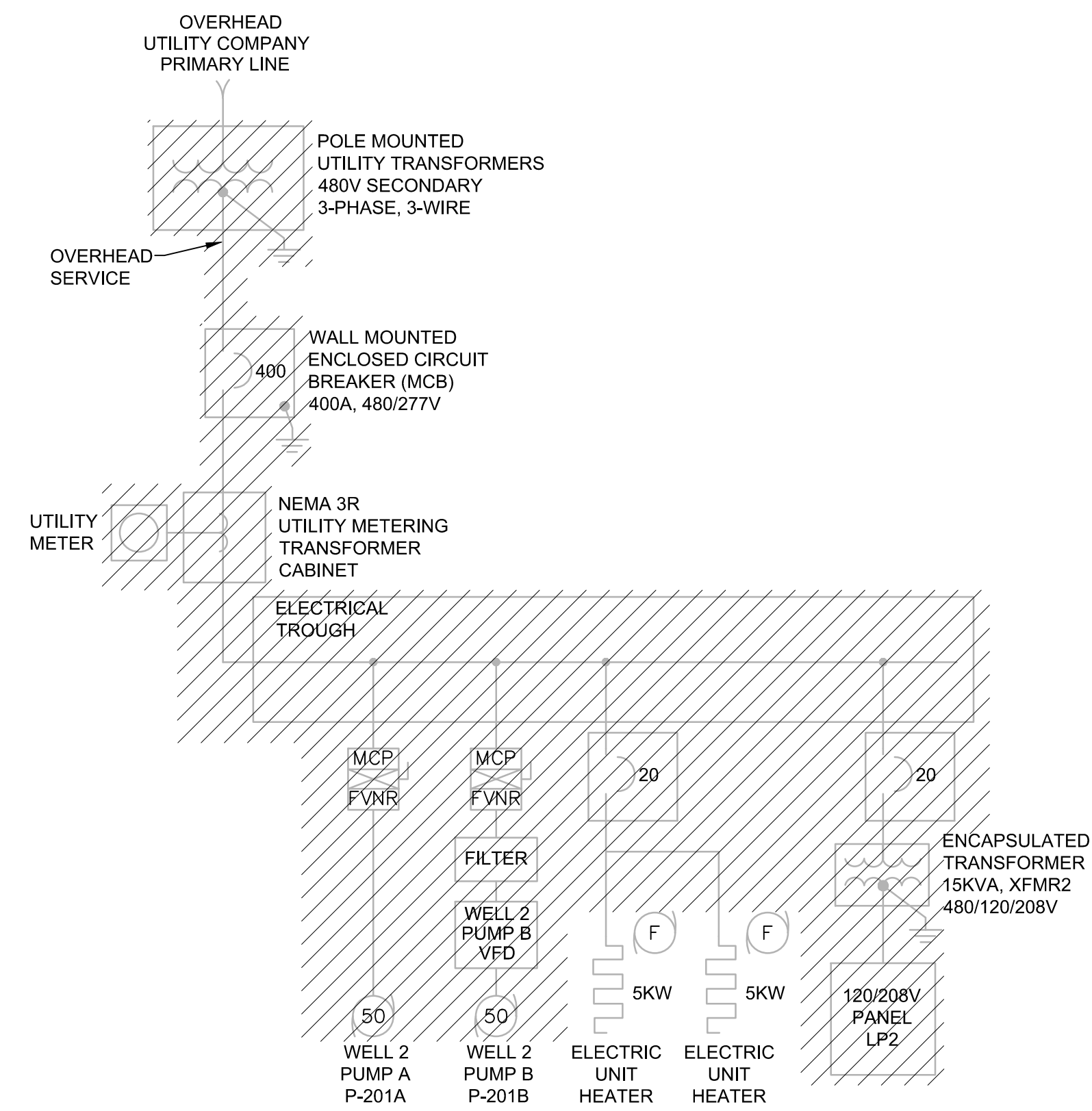
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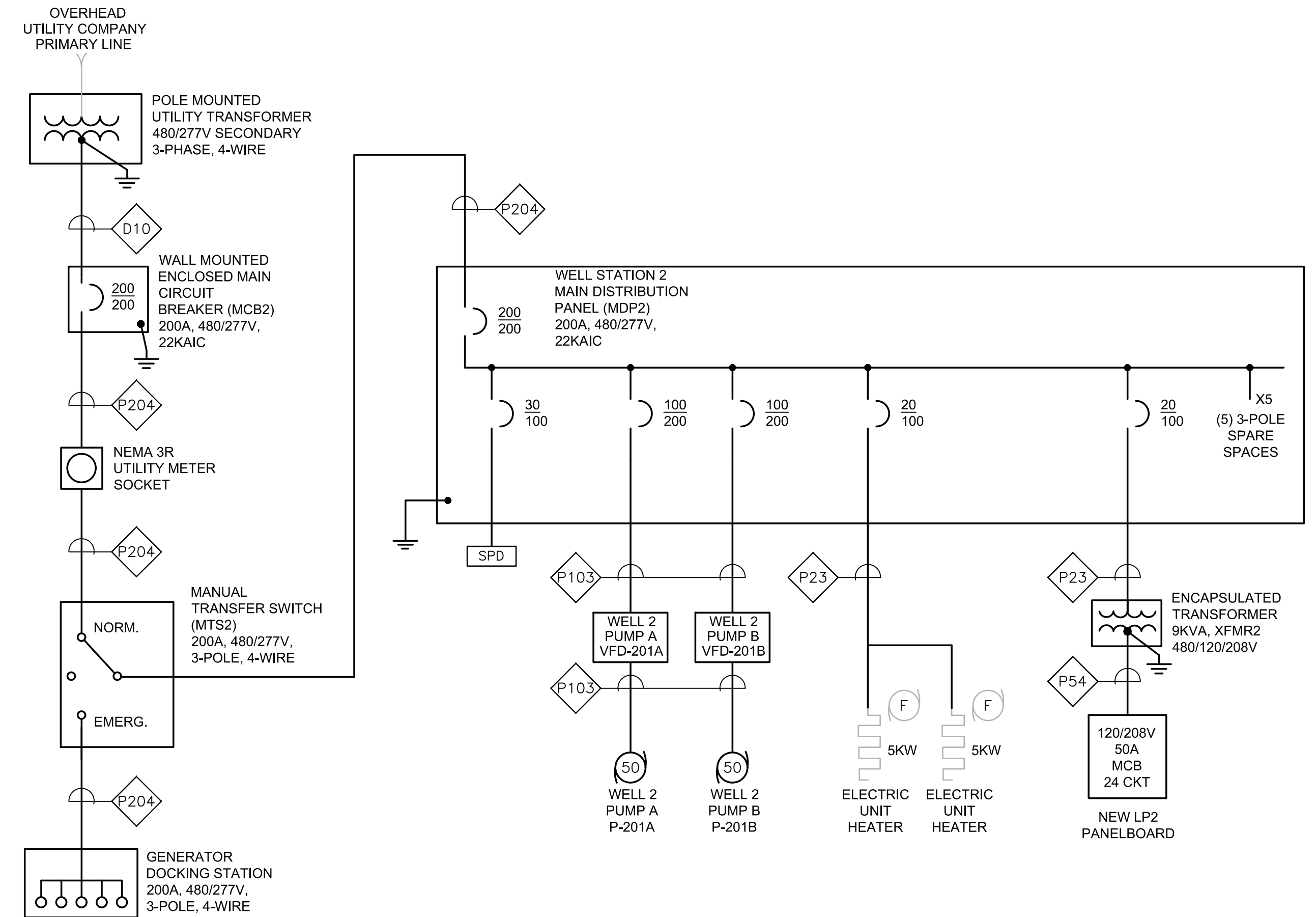
WTP ONE LINE DIAGRAM
SCALE: N.T.S.

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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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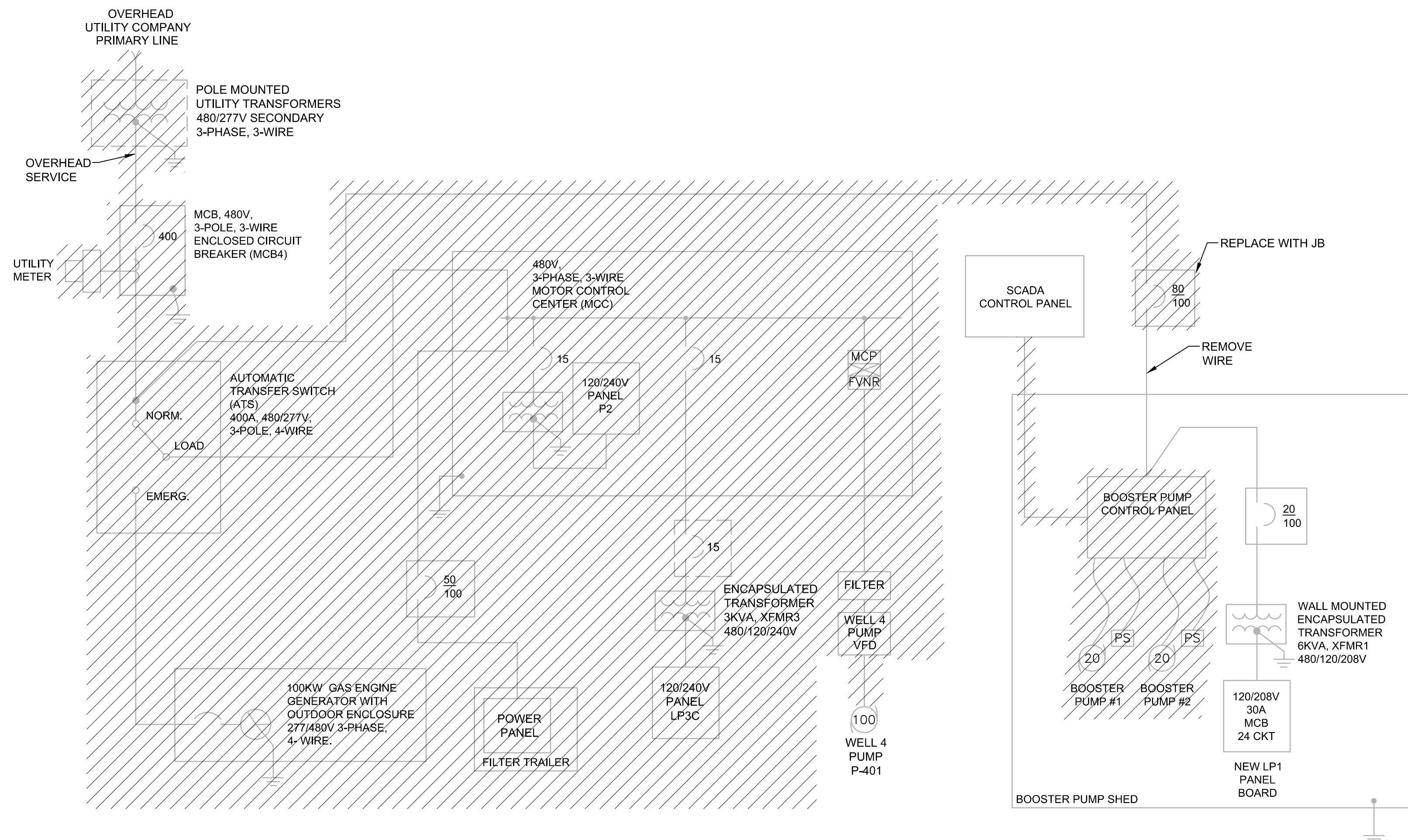
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TOWN OF SHARON, MA**

**ELECTRICAL
WELL STATION 2 ONE LINE DIAGRAMS**

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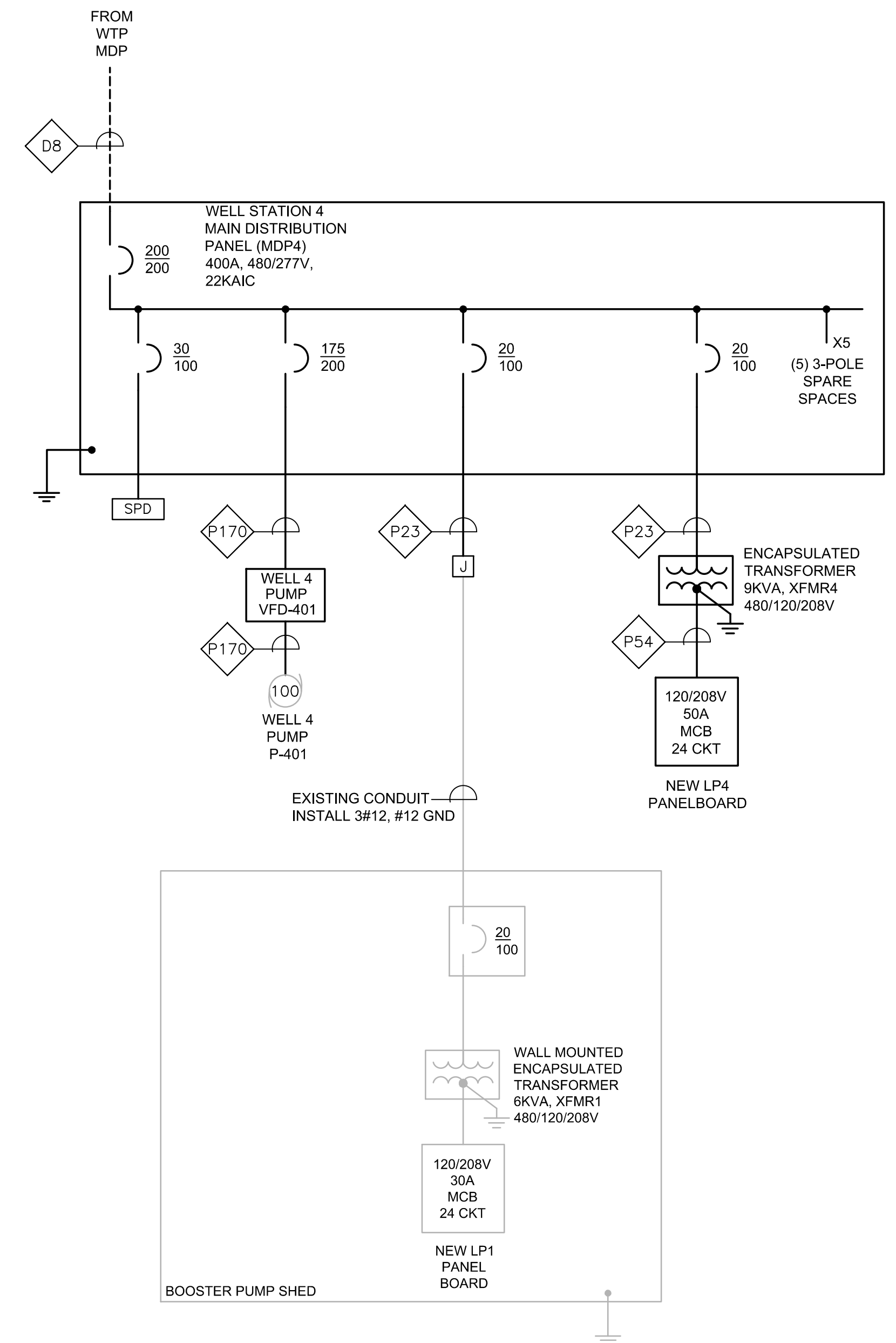
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WELL STATION 4 DEMOLITION ONE LINE DIAGRAM

SCALE: N.T.S.



WELL STATION 4 ONE LINE DIAGRAM

SCALE: N.T.S.



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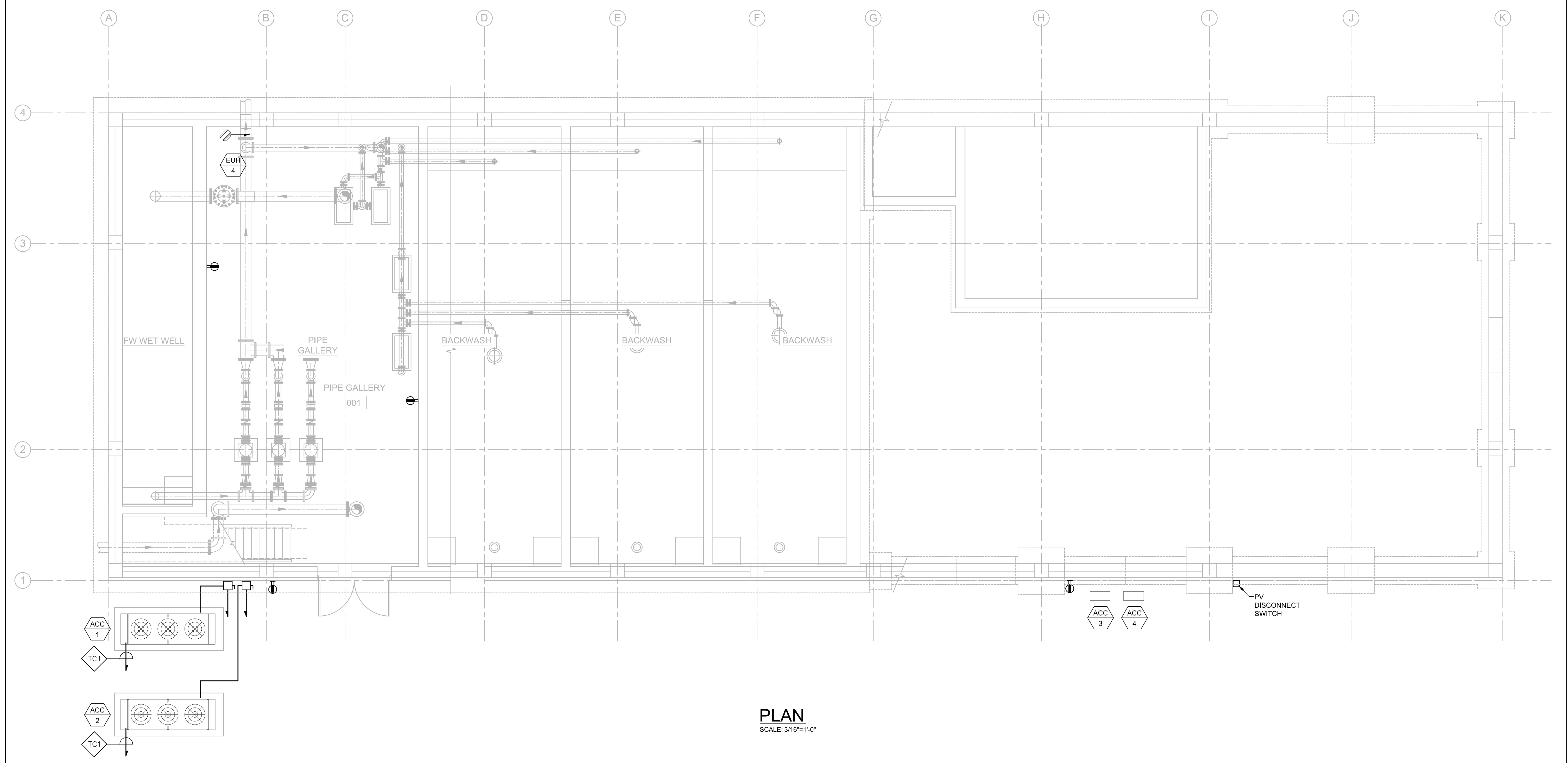
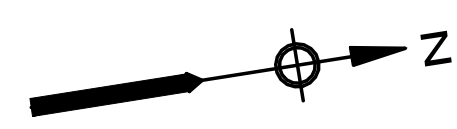
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WELL STATION 4 ONE LINE DIAGRAMS**

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PLAN
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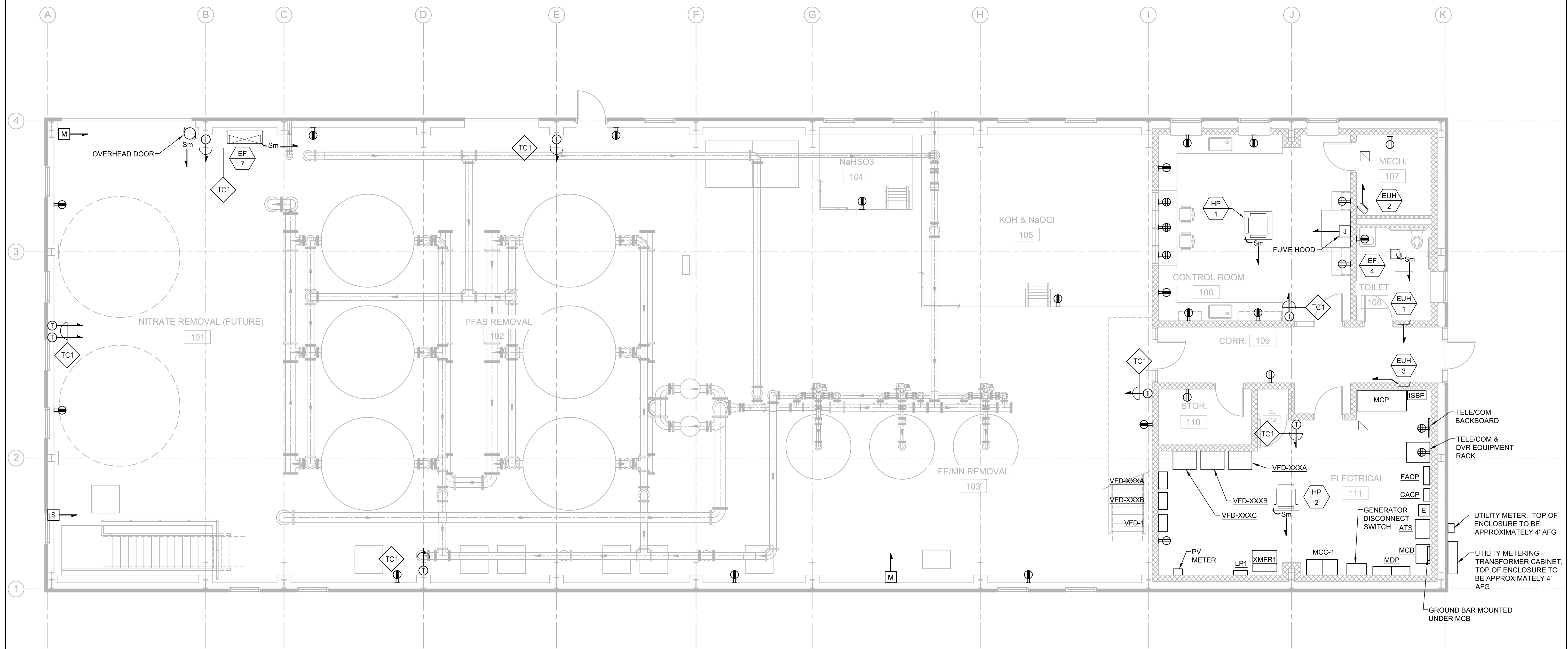
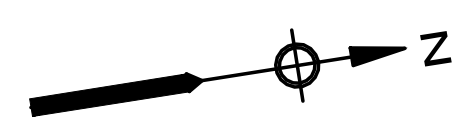
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TOWN OF SHARON, MA

ELECTRICAL
LOWER LEVEL POWER PLAN

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PLAN
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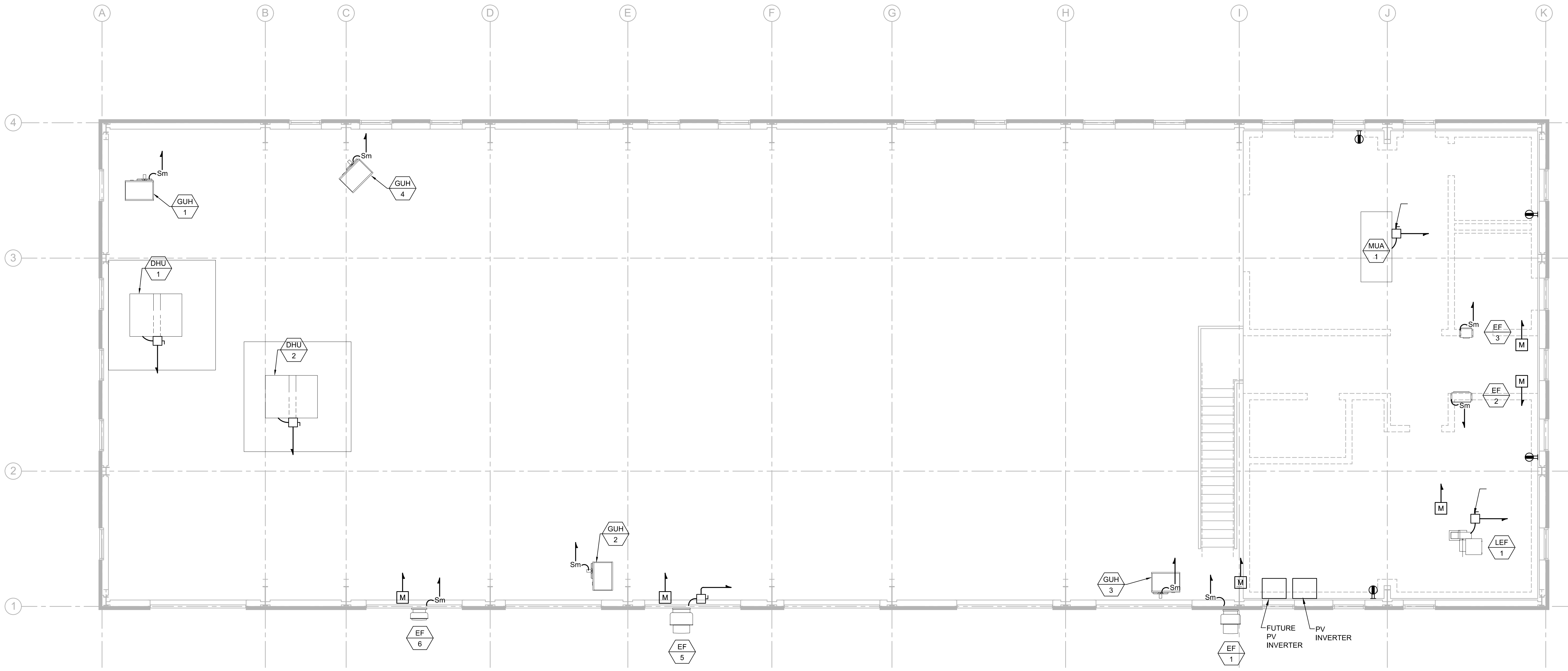
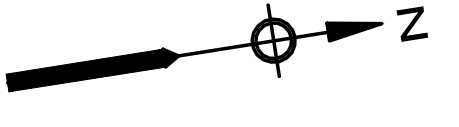
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TOWN OF SHARON, MA

ELECTRICAL
FIRST FLOOR POWER PLAN

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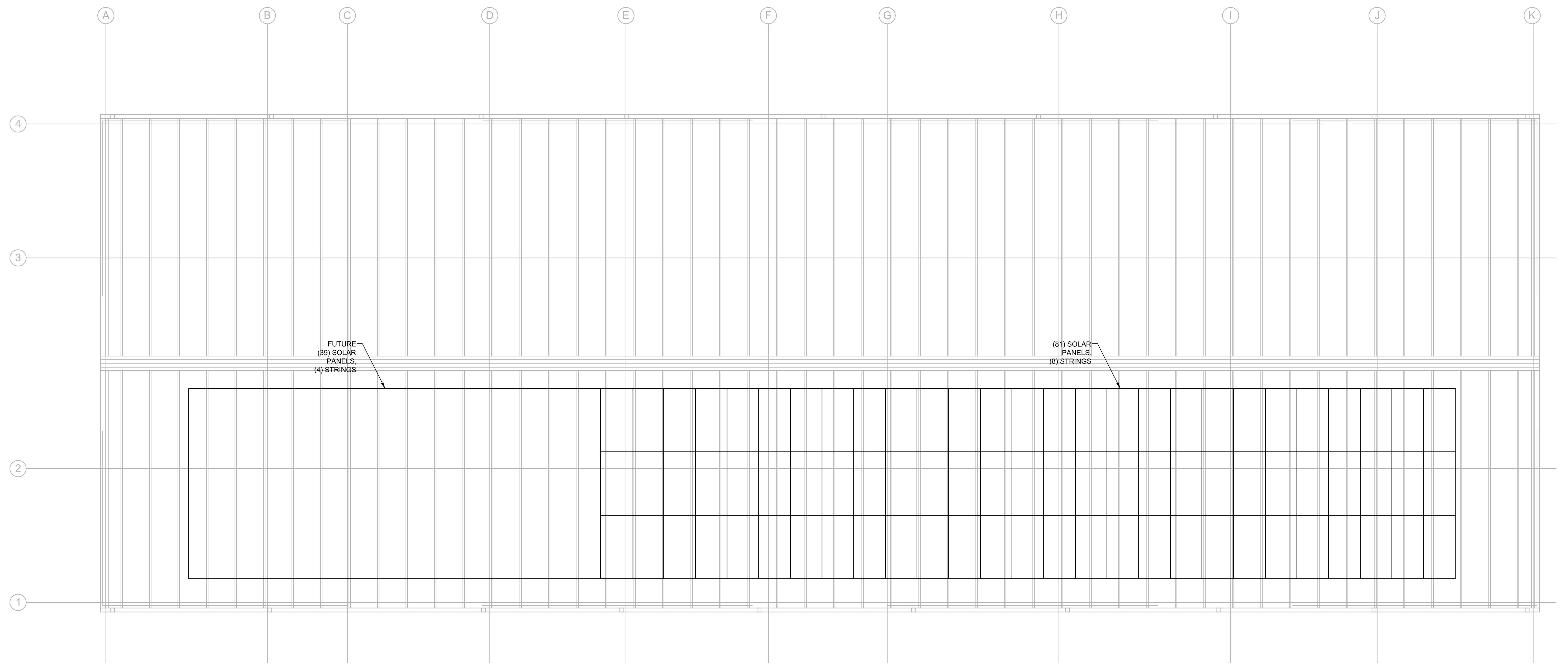
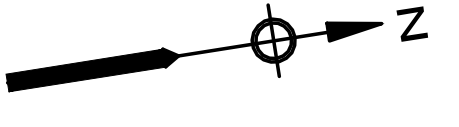
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TOWN OF SHARON, MA

ELECTRICAL MEZZANINE POWER PLAN

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PLAN
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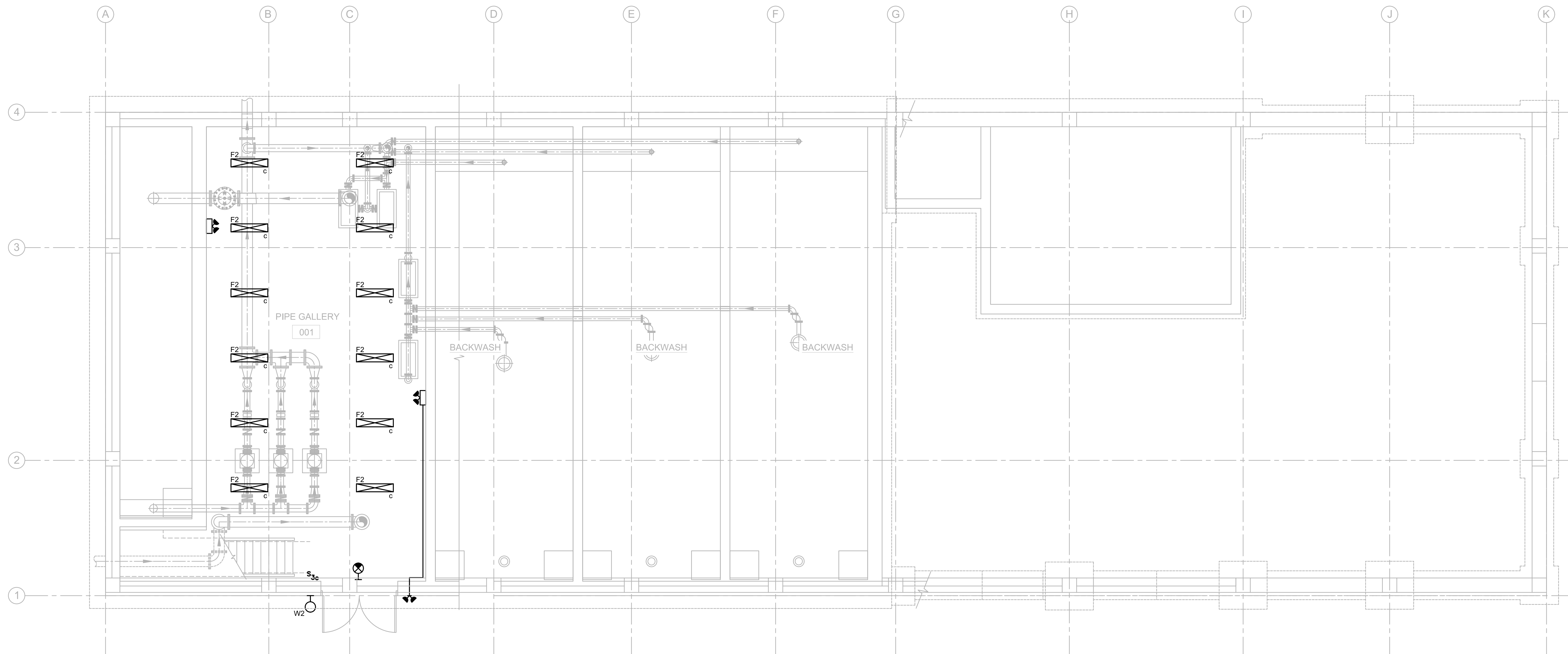
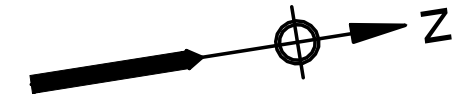
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TOWN OF SHARON, MA**

**ELECTRICAL
ROOF PLAN**

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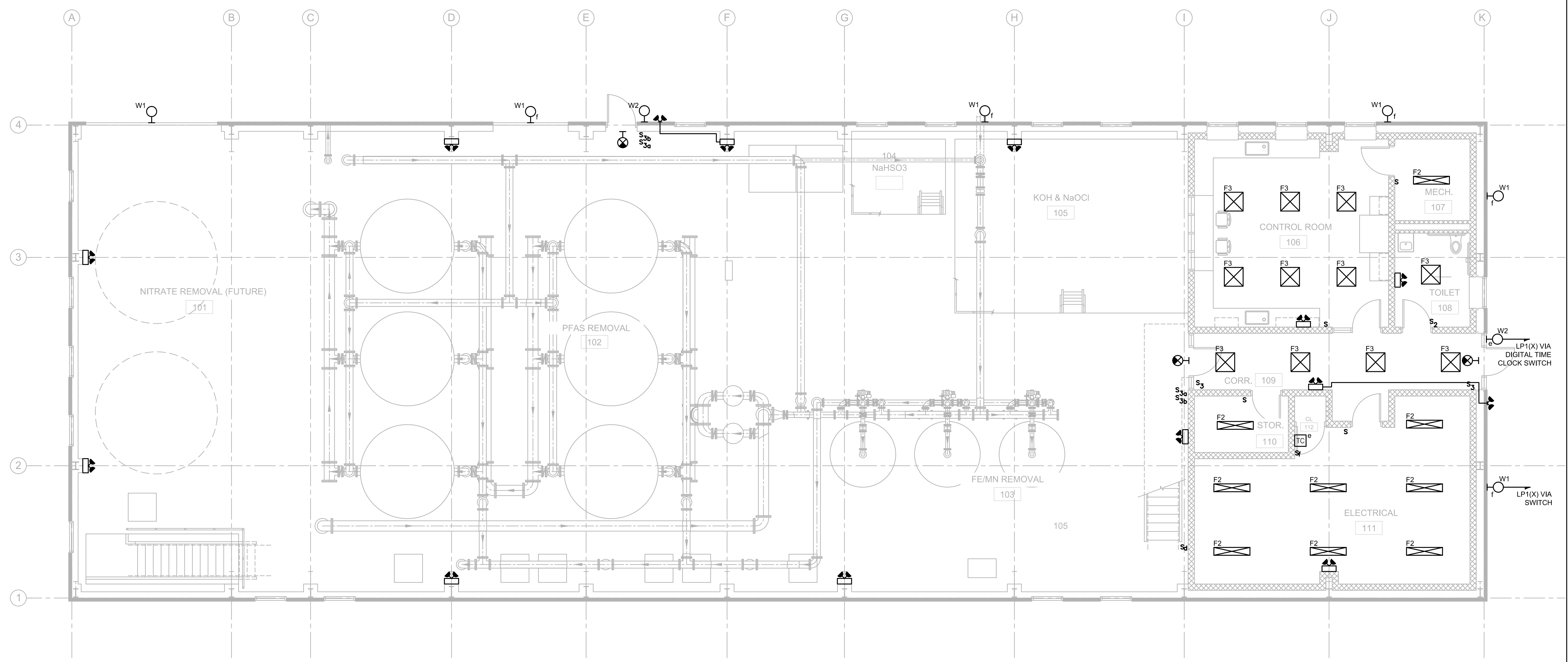
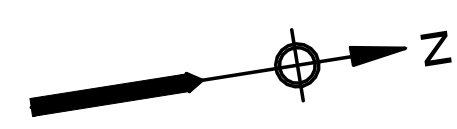
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**ELECTRICAL
LOWER LEVEL LIGHTING PLAN**

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E-12



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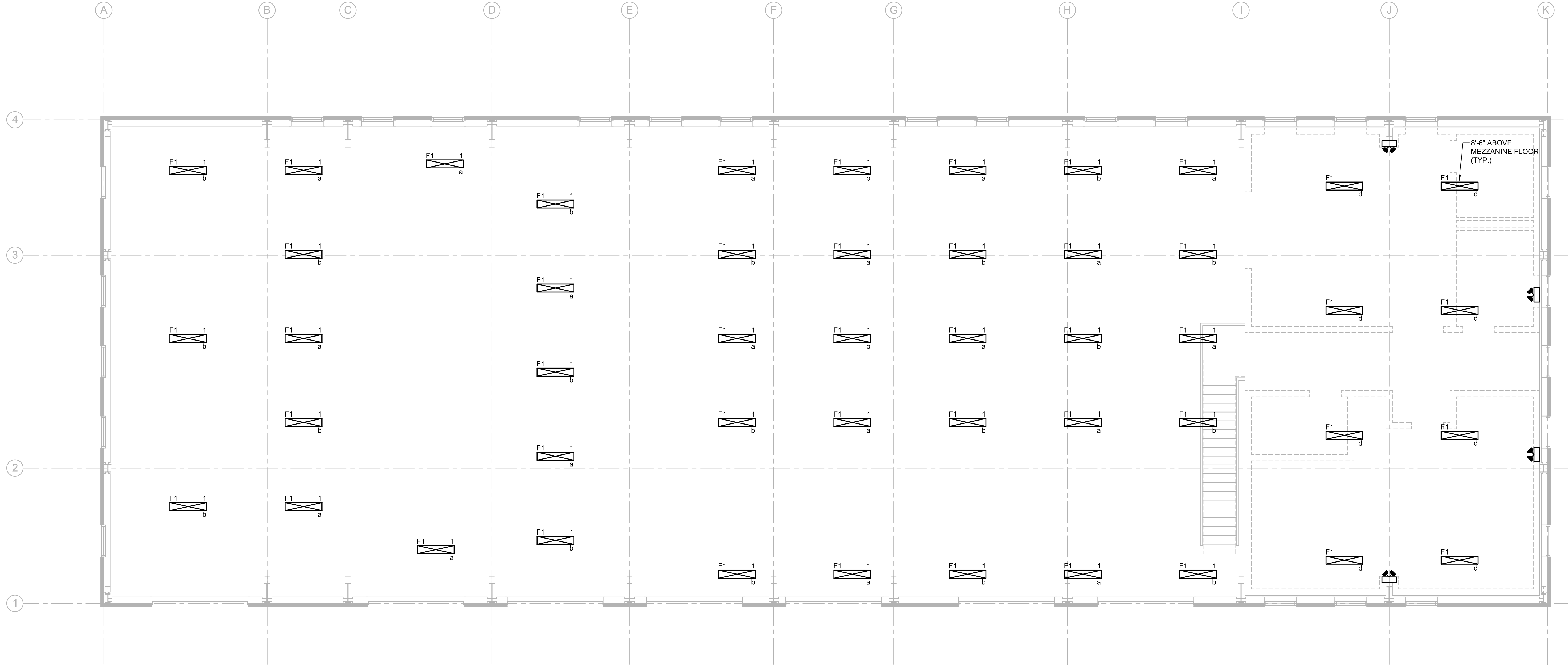
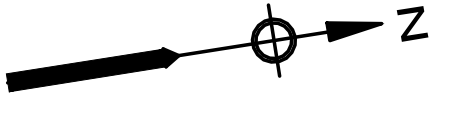
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ELECTRICAL
FIRST FLOOR LIGHTING PLAN

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E-13



PLAN
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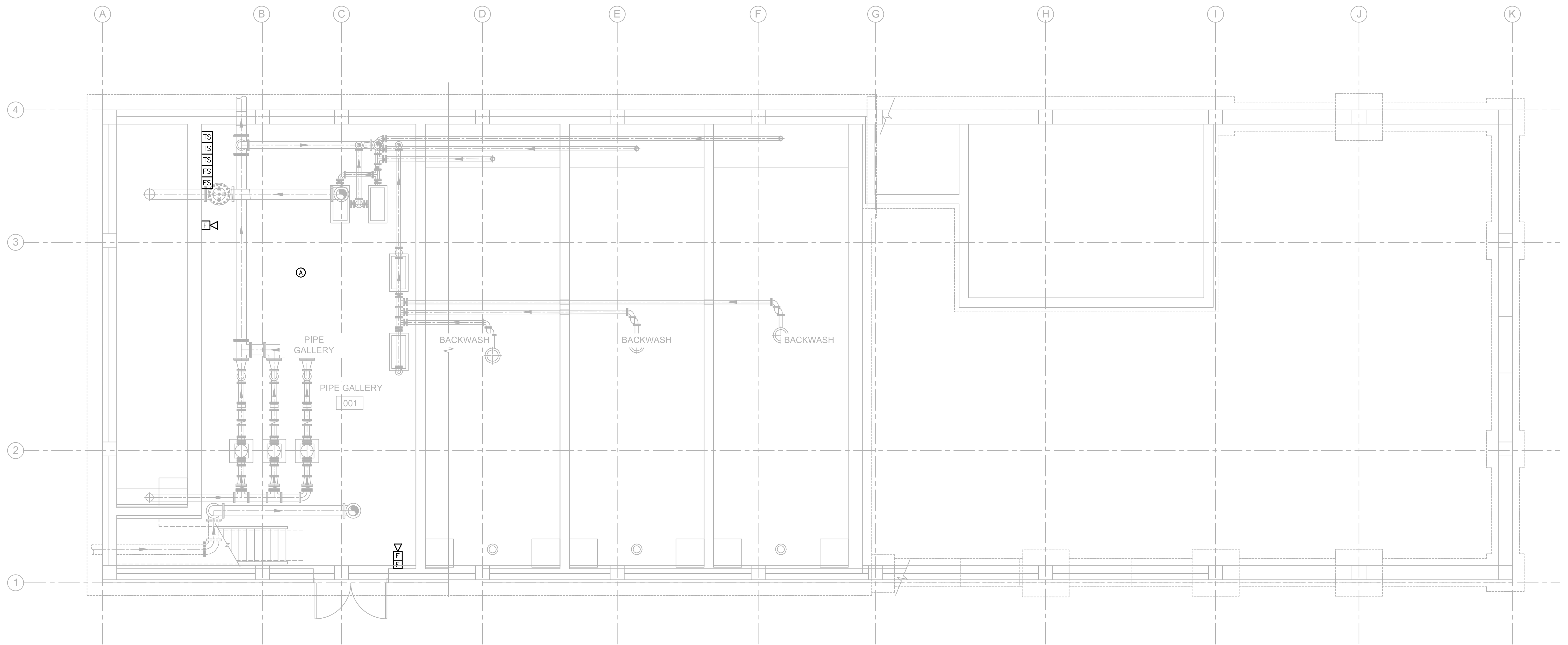
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TOWN OF SHARON, MA

ELECTRICAL MEZZANINE LIGHTING PLAN

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E-14



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



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Mechanical Electrical Engineers
150 Greenwood Drive, Suite 309
Braintree, Massachusetts 02184
617-521-9228
web: www.sar.com

MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	SEPTEMBER 2023
Job No.	245-2103
Designed by	MC
Drawn by	RLB
Checked by	MC
Approved by	MC

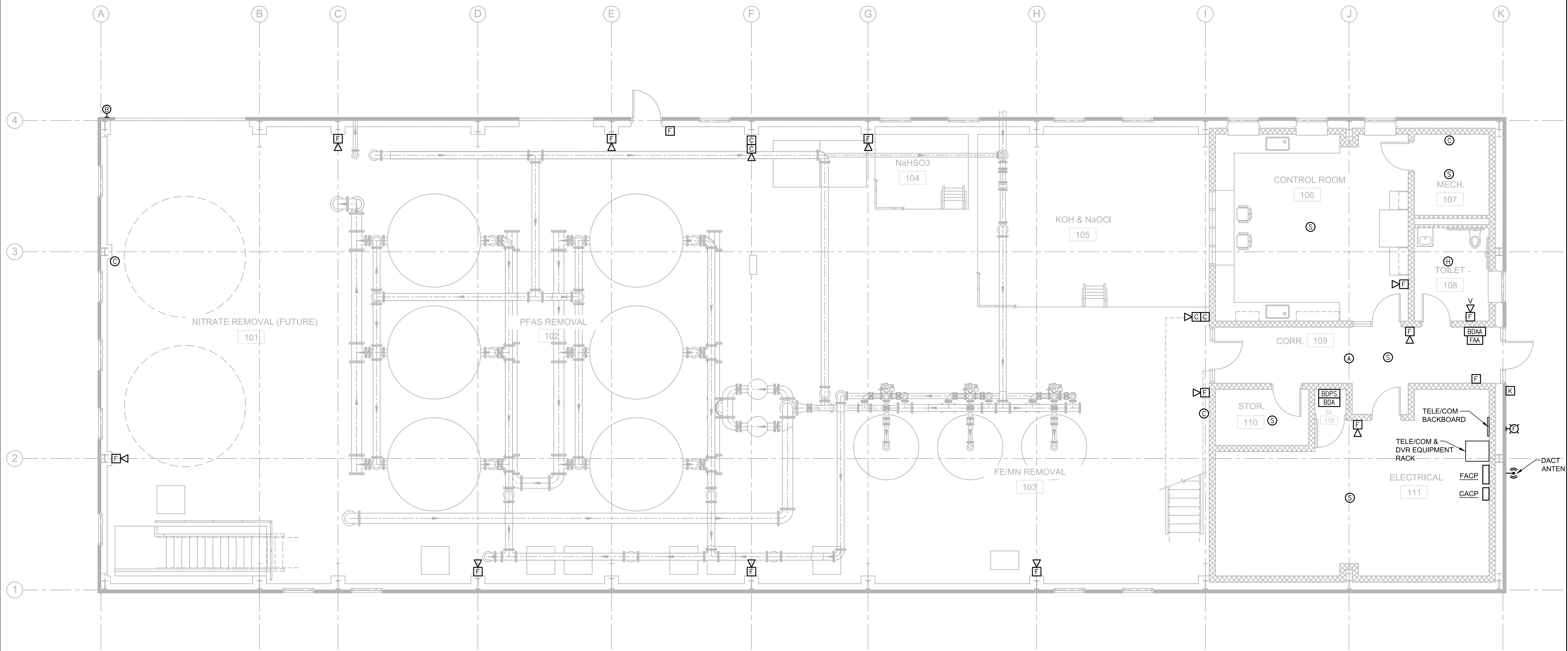
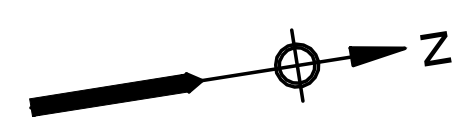
THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

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

ELECTRICAL
LOWER LEVEL LOW VOLTAGE PLAN

50% DESIGN
Sheet No.

E-15



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



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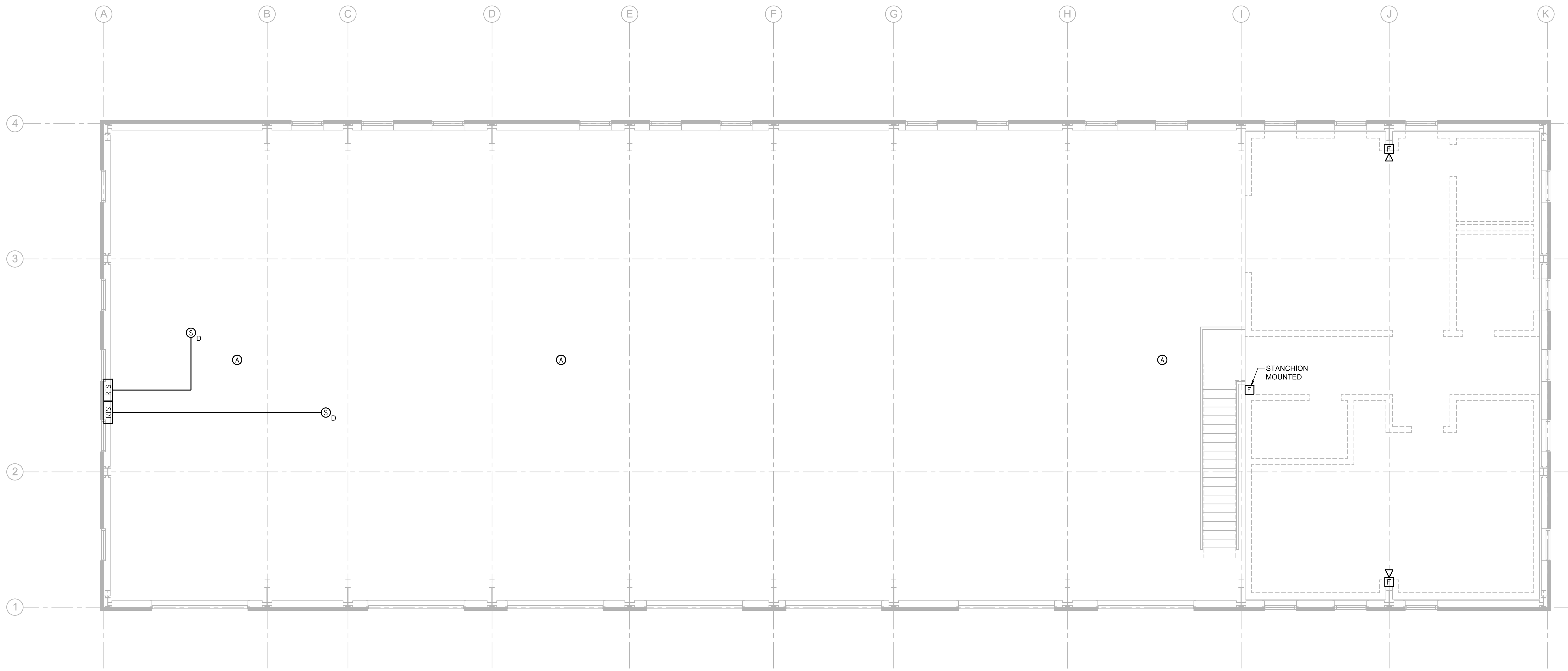
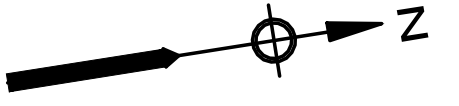
WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

ELECTRICAL
FIRST FLOOR LOW VOLTAGE PLAN

50% DESIGN
Sheet No.

E-16

Drawing file: W:\Year - 2023\2006.00 - Sharon Water Treatment Plant\Electrical Department\2006.00 Electrical Plans.dwg Plot Date: Aug 31, 2023-10:53 am



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



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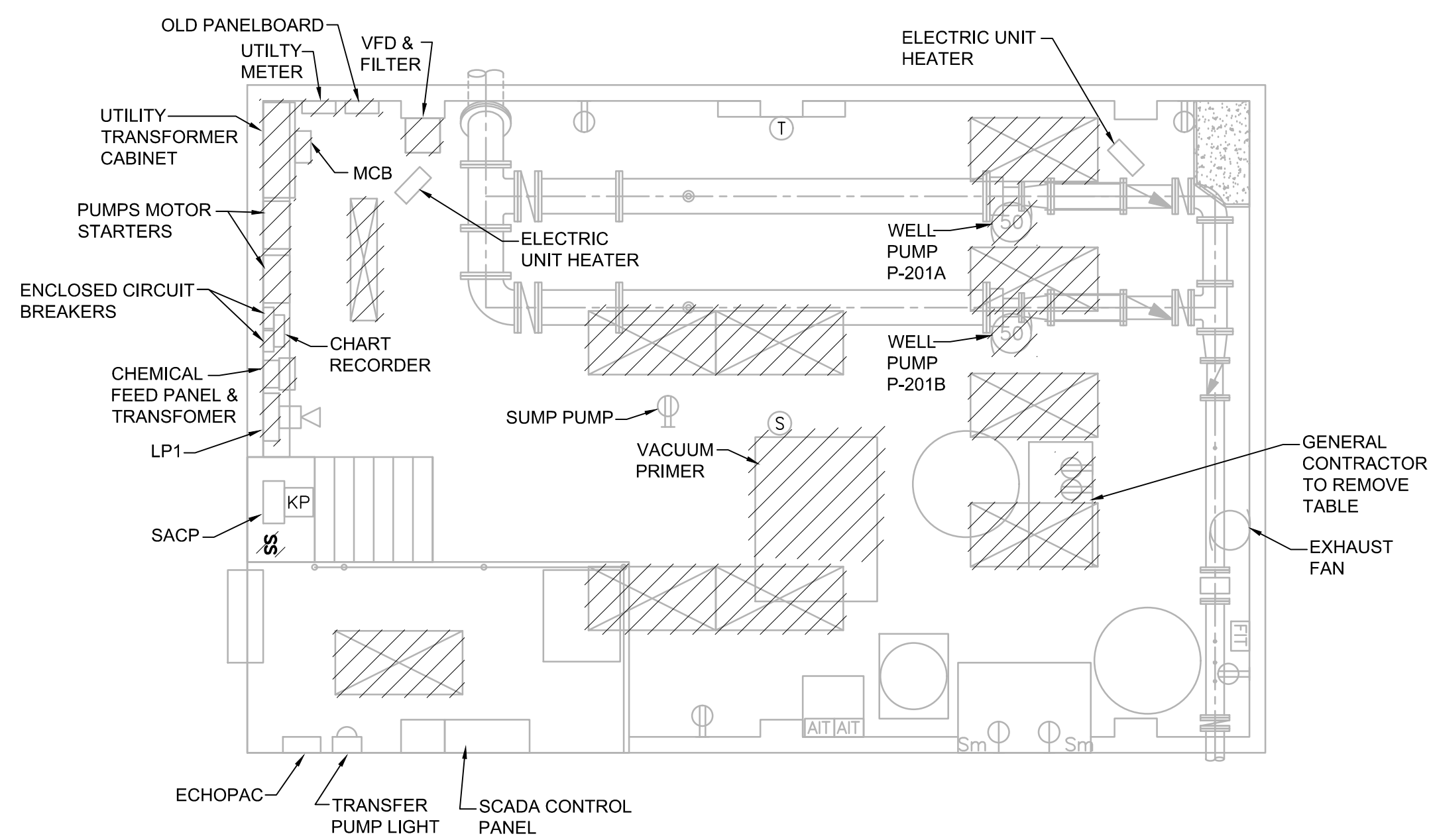
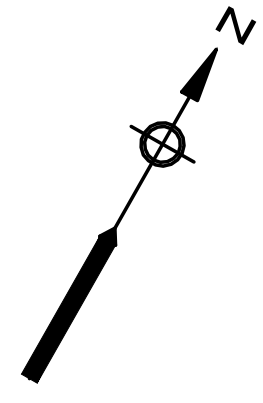
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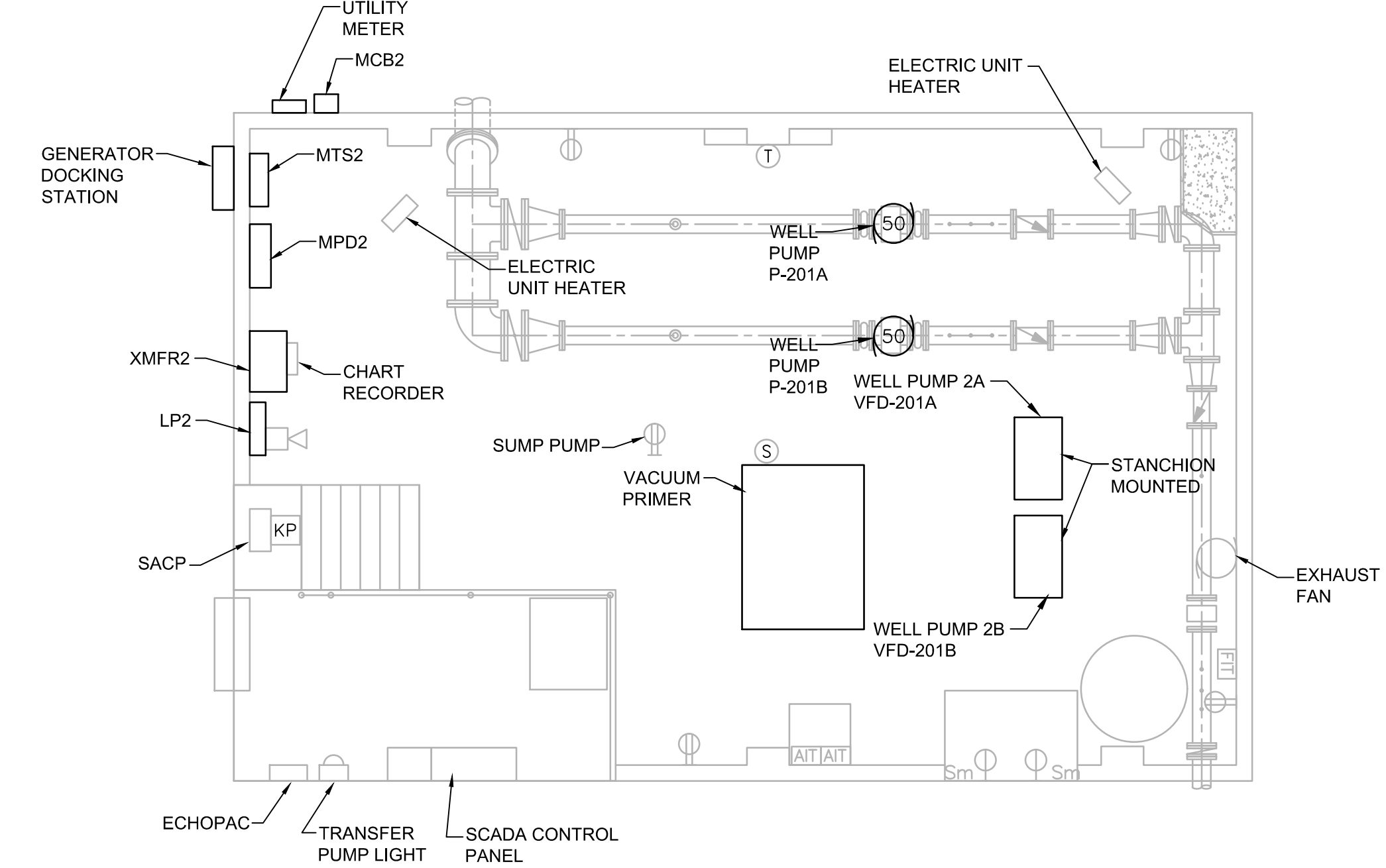
ELECTRICAL
MEZZANINE LOW VOLTAGE PLAN

50% DESIGN
Sheet No.

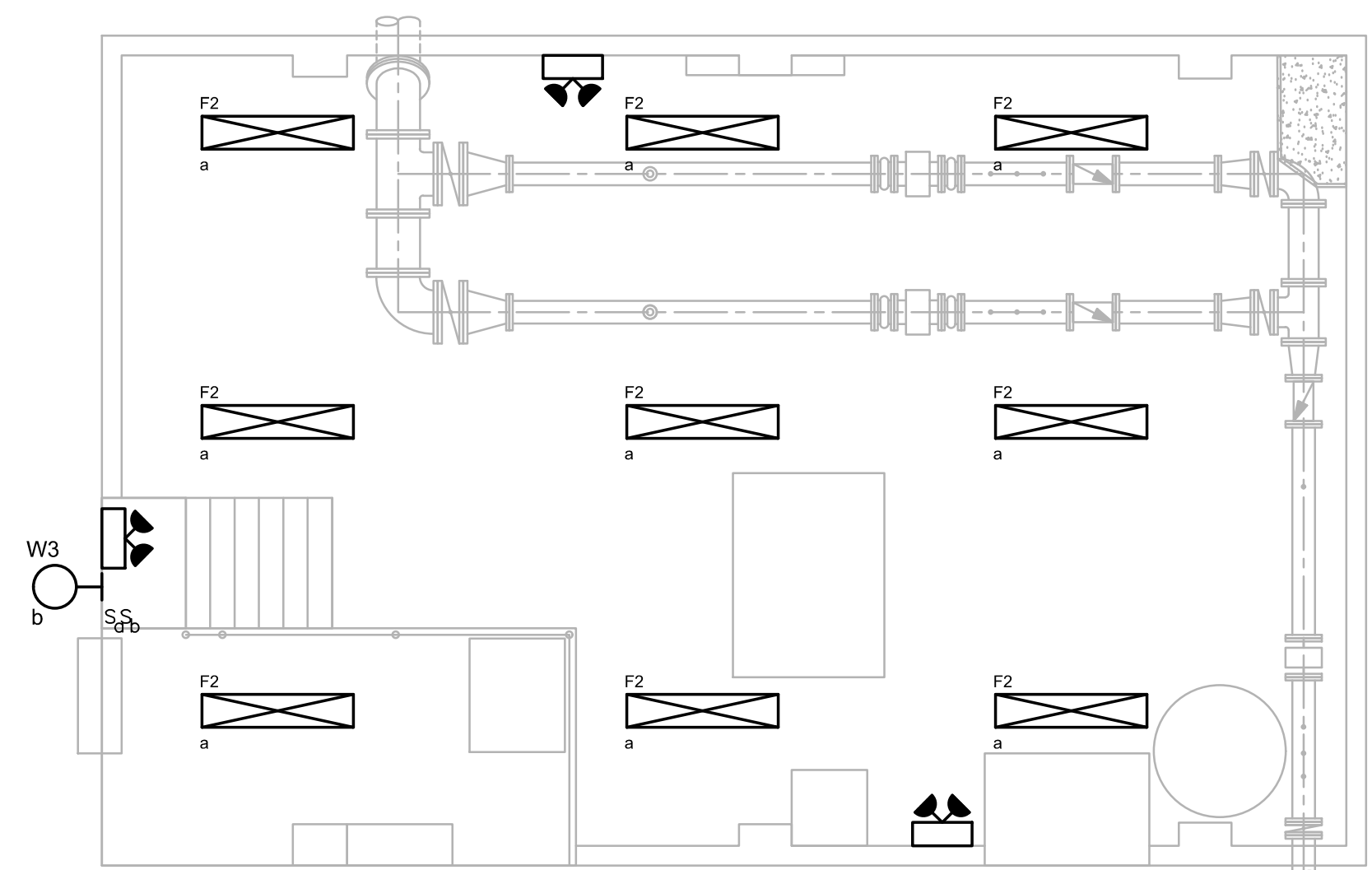
E-17



WELL #2 DEMOLITION PLAN
SCALE: 1/4"=1'-0"



WELL #2 POWER PLAN
SCALE: 1/4"=1'-0"



WELL #2 LIGHTING PLAN
SCALE: 1/4"=1'-0"



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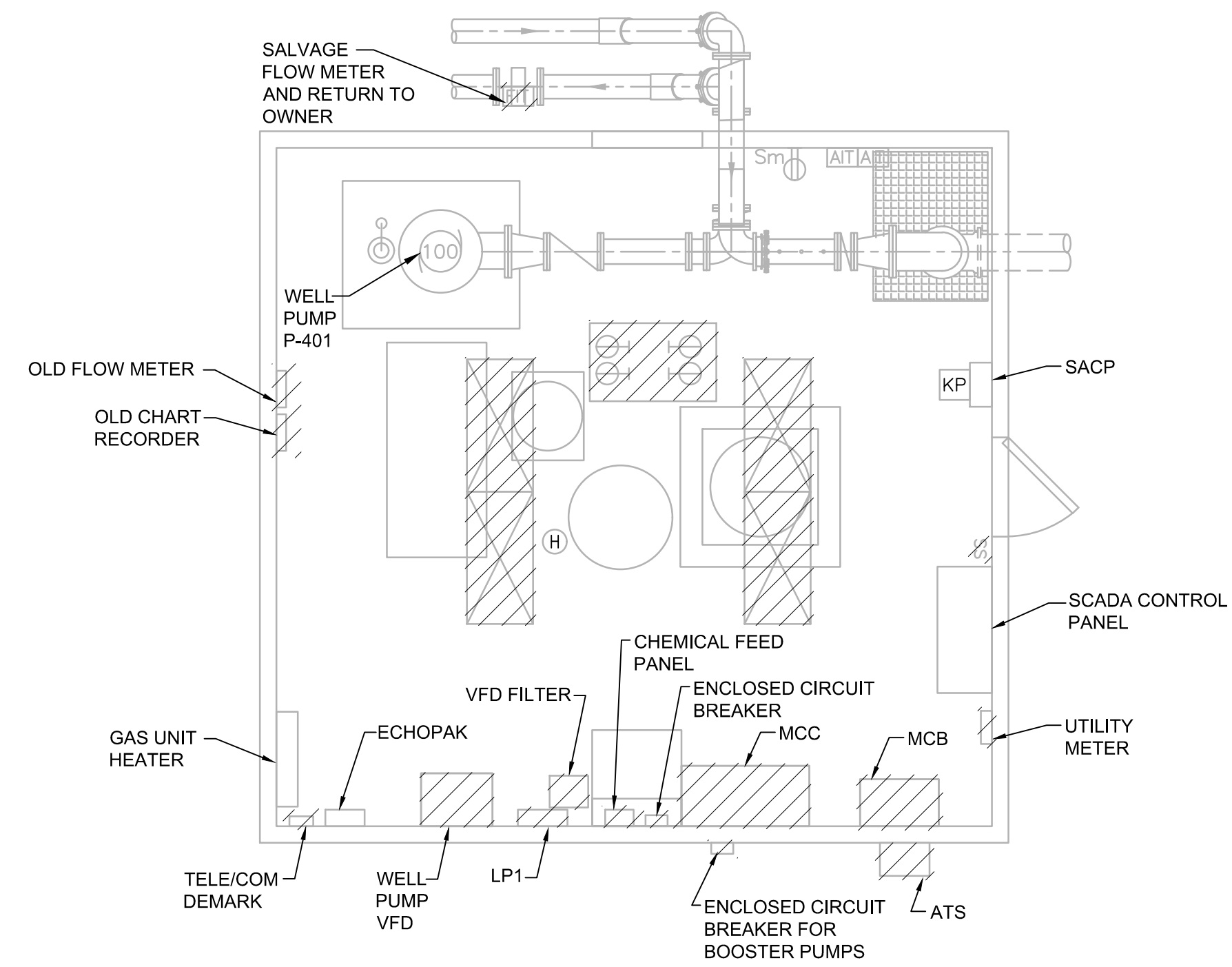
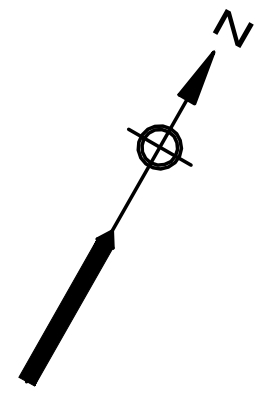
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WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA

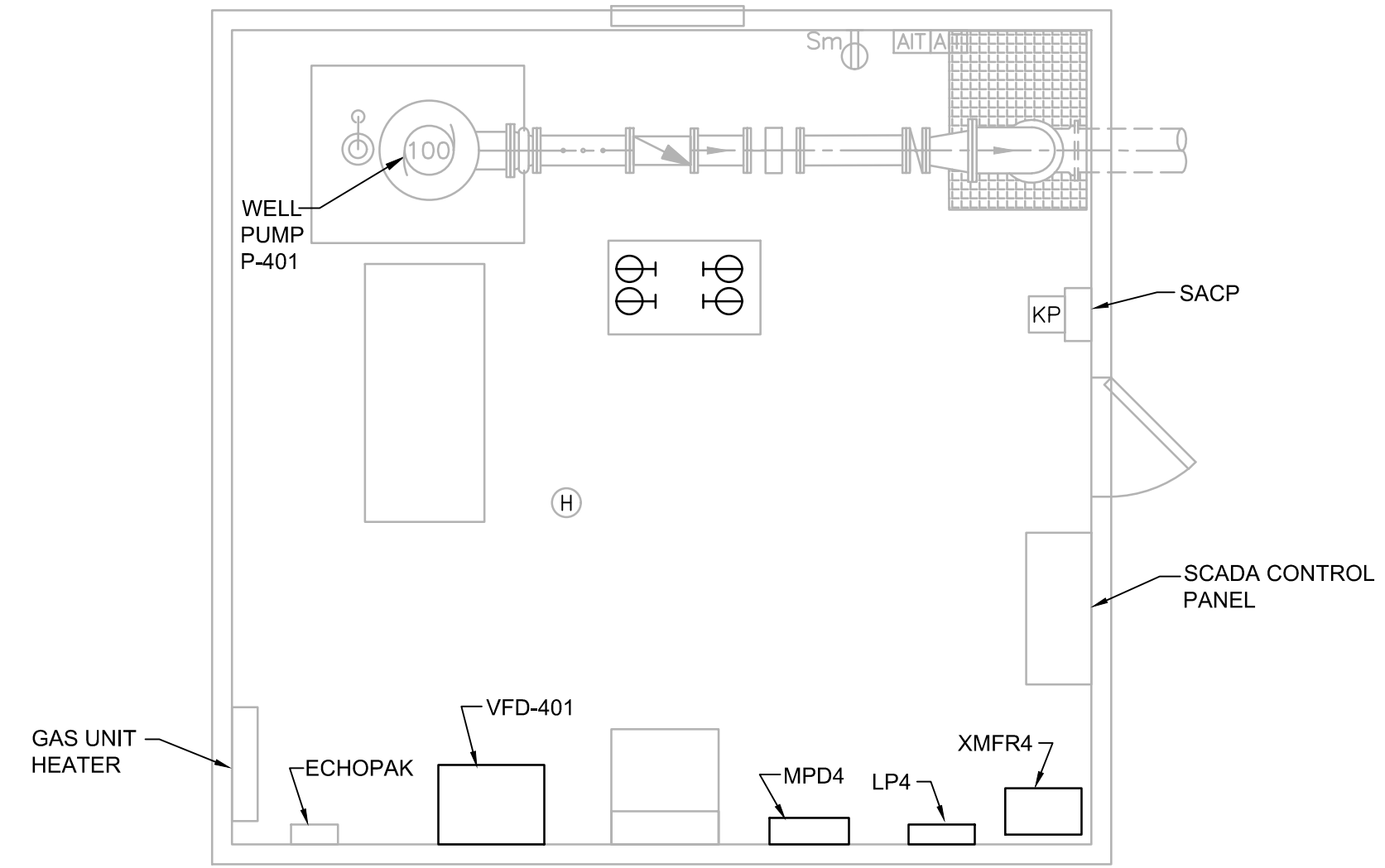
ELECTRICAL
WELL STATION #2 PLANS

50% DESIGN
Sheet No.

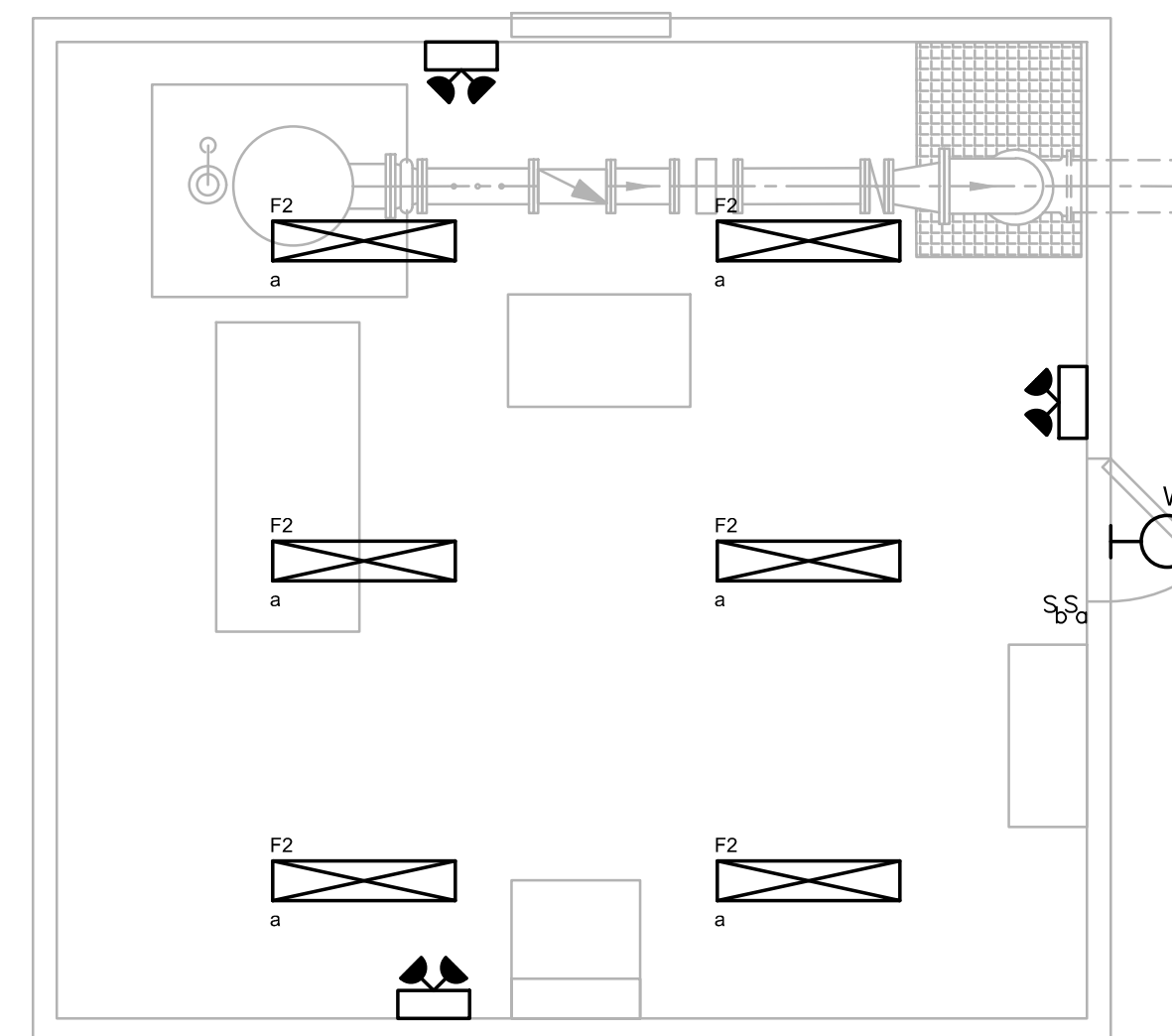
E-18



WELL #4 DEMOLITION PLAN
SCALE: 1/4"=1'-0"



WELL #4 POWER PLAN
SCALE: 1/4"=1'-0"



WELL #4 LIGHTING PLAN
SCALE: 1/4"=1'-0"



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TOWN OF SHARON, MA

ELECTRICAL
WELL STATION #4 PLANS

50% DESIGN
Sheet No.

E-19

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	16'-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 LIGHTING 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 PHOTOCCELL 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 PHOTOCCELL 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		

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
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
P604	(2)3"	(8)350KCMIL	(2)#1

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

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

- NOTES:
- CONDUIT AND CONDUCTOR SIZES ARE TO BE PER THE ABOVE SCHEDULES UNLESS OTHERWISE NOTED.
 - CONDUITS SHALL NOT BE INSTALLED WITHIN SLAB STRUCTURE AND SHALL BE RUN UNDER THE SLAB.
 - 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)

LIGHTING FIXTURE SCHEDULES NOTES:

- 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.



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TOWN OF SHARON, MA

ELECTRICAL
SCHEDULES

50% DESIGN

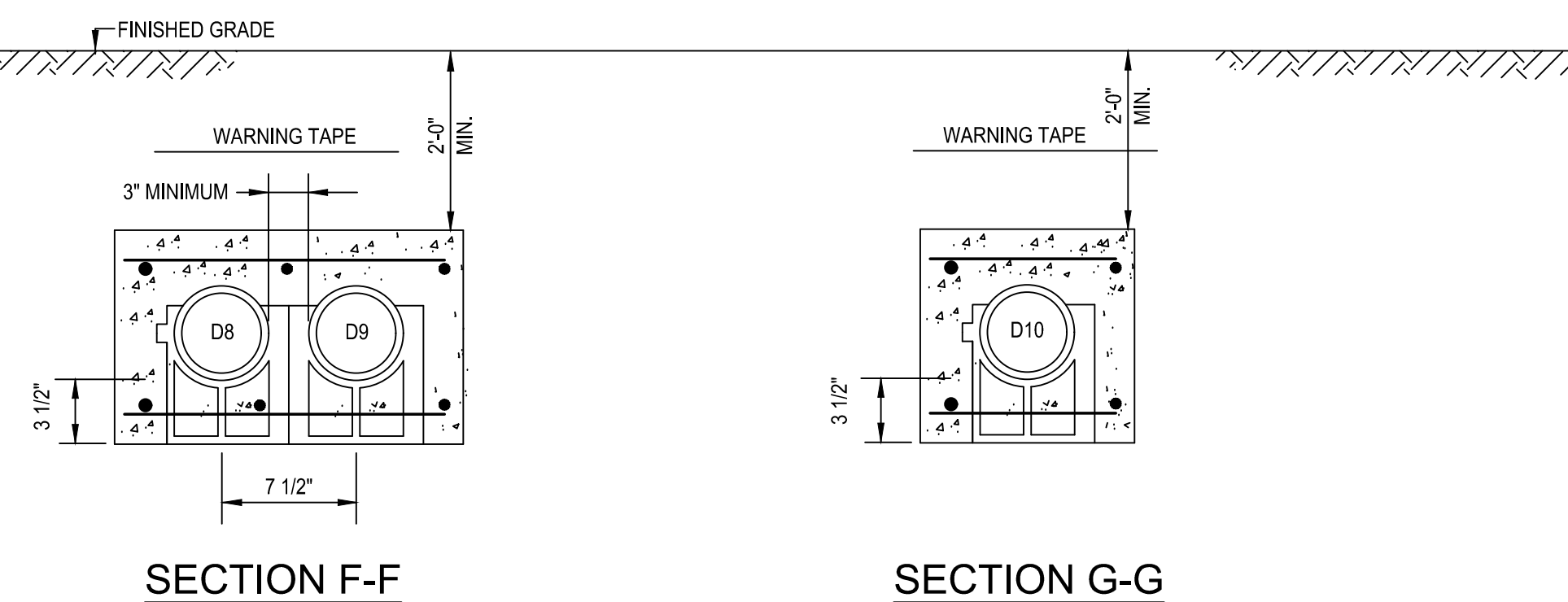
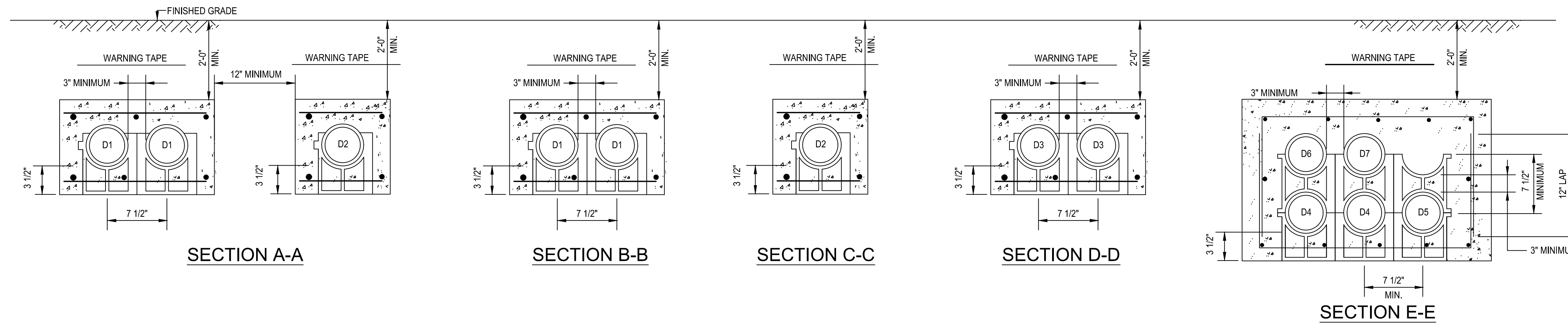
Sheet No.

E-20

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 FIBER PATCH PANEL
D3	4"	(4) 350kcmil, #1 GND	UTILITY TRANSFORMER	MCB
D4	4"	(4) 350kcmil, #1 GND	GENERATOR	GENERATOR DISCONNECT SWITCH
D5	1"	(4) #12, #12GND, (2) #8, #10GND	LP1	GENERATOR AUXILIARY 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	3"	(4) 3/0kcmil, #4 GND	UTILITY POLE	WELL STATION 2 - MCB2

DUCTBANK SECTION NOTES:

- 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.
- A MINIMUM OF 12" SEPARATION SHALL BE KEPT BETWEEN DUCT BANK SECTIONS WITHIN SAME TRENCH.
- TRENCHING, CONCRETE WORK, AND BACKFILLING SHALL BE PERFORMED BY GENERAL CONTRACTOR.
- SINGLE ROW DUCTBANK HEIGHT IS NOT TO EXCEED 16" AND DOUBLE ROW DUCTBANK HEIGHT IS NOT TO EXCEED 24".



DUCTBANK SECTIONS
NO SCALE



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TOWN OF SHARON, MA

ELECTRICAL
SITE DETAILS

50% DESIGN

Sheet No.

E-21

ISA INSTRUMENT IDENTIFICATION TABLE

SUCCEEDING LETTERS													
MEASURED OR INITIATING VARIABLE	FIRST LETTER MEAS. VAR.	SWITCH (H, L, O, OPEN, CLOSE)	PRIM. ELEM. (SENSOR)	INDICATOR	INDICATING CONTROLLER	CONTROL OR CONTR. (BLIND)	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	

PROCESS AND INSTRUMENTATION ABBREVIATIONS

<table border="0" style="width: 100%;"> <tr><td>A/L/L</td><td>AUTO/LEAD/LAG</td><td>F</td><td>FAULT</td><td>L/O/R</td><td>LOCAL/OFF/REMOTE</td><td>PIC</td><td>PANEL INTERFACE CONNECTOR</td></tr> <tr><td>ATS</td><td>AUTOMATIC TRANSFER SWITCH</td><td>FACP</td><td>FIRE ALARM CONTROL PANEL</td><td>M</td><td>MOTOR</td><td>PLC</td><td>PROGRAMMABLE LOGIC CONTROLLER</td></tr> <tr><td>AV</td><td>ACTUATED VALVE</td><td>F/O/R</td><td>FORWARD/OFF/REVERSE</td><td>MCP</td><td>MAIN CONTROL PANEL</td><td>POS</td><td>POSITION</td></tr> <tr><td>BCFP</td><td>BULK CHEMICAL FILL PANEL</td><td>F/R</td><td>FORWARD/REVERSE</td><td>N/A</td><td>NORMAL/ALARM</td><td>PS</td><td>PRESSURE SWITCH</td></tr> <tr><td>BWW/DR/FTW</td><td>BACKWASH WASTE/ DRAIN/DOWN/ FILTER TO WASTE</td><td>FIT</td><td>FLOW INDICATING TRANSMITTER</td><td>NAOCL</td><td>SODIUM HYPOCHLORITE</td><td>PV</td><td>PILOT VALVE</td></tr> <tr><td>BWWE/P</td><td>BACKWASH WASTE EMERGENCY GEN PANEL</td><td>GEN</td><td>GENERATOR</td><td>O/C</td><td>OPEN/CLOSE OR OPEN/CLOSED</td><td>RS</td><td>RUN STATUS</td></tr> <tr><td>CACP</td><td>CHEMICAL ALARM CONTROL PANEL</td><td>GPCP</td><td>GENERATOR POWER CONTROL PANEL</td><td>O/C/R</td><td>OPEN/CLOSE/REMOTE</td><td>RSL</td><td>REMOTE/STOP/LOCAL</td></tr> <tr><td>DH</td><td>DEHUMIDIFIER</td><td>H/A</td><td>HAND/AUTOMATIC</td><td>O/O</td><td>ON/OFF</td><td>SA</td><td>SPEED ADJUST</td></tr> <tr><td>DPIT</td><td>DIFFERENTIAL PRESSURE INDICATOR TRANSMITTER</td><td>H/O/A</td><td>HAND/OFF/AUTOMATIC</td><td>O/O/R</td><td>ON/OFF/RESET</td><td>SFB</td><td>SPEED FEEDBACK</td></tr> <tr><td>EFF</td><td>EFFLUENT</td><td>ISB</td><td>INTRINSICALLY SAFE BARRIER</td><td>O/S/C</td><td>OPEN/STOP/CLOSE</td><td>SP</td><td>SET POSITION</td></tr> <tr><td>ESTP</td><td>EMERGENCY STOP</td><td>INF</td><td>INFLUENT</td><td>O/S/C/A</td><td>OPEN/STOP/CLOSE/AUTOMATIC</td><td>SSP</td><td>SPEED SET POINT</td></tr> <tr><td></td><td></td><td>KOH</td><td>POTASSIUM HYDROXIDE</td><td>P</td><td>PUMP</td><td>SV</td><td>SOLENOID VALVE</td></tr> <tr><td></td><td></td><td>L/R</td><td>LOCAL/REMOTE</td><td>PAC</td><td>POLYALUMINUM CHLORIDE</td><td>S/S</td><td>START/STOP</td></tr> </table>	A/L/L	AUTO/LEAD/LAG	F	FAULT	L/O/R	LOCAL/OFF/REMOTE	PIC	PANEL INTERFACE CONNECTOR	ATS	AUTOMATIC TRANSFER SWITCH	FACP	FIRE ALARM CONTROL PANEL	M	MOTOR	PLC	PROGRAMMABLE LOGIC CONTROLLER	AV	ACTUATED VALVE	F/O/R	FORWARD/OFF/REVERSE	MCP	MAIN CONTROL PANEL	POS	POSITION	BCFP	BULK CHEMICAL FILL PANEL	F/R	FORWARD/REVERSE	N/A	NORMAL/ALARM	PS	PRESSURE SWITCH	BWW/DR/FTW	BACKWASH WASTE/ DRAIN/DOWN/ FILTER TO WASTE	FIT	FLOW INDICATING TRANSMITTER	NAOCL	SODIUM HYPOCHLORITE	PV	PILOT VALVE	BWWE/P	BACKWASH WASTE EMERGENCY GEN PANEL	GEN	GENERATOR	O/C	OPEN/CLOSE OR OPEN/CLOSED	RS	RUN STATUS	CACP	CHEMICAL ALARM CONTROL PANEL	GPCP	GENERATOR POWER CONTROL PANEL	O/C/R	OPEN/CLOSE/REMOTE	RSL	REMOTE/STOP/LOCAL	DH	DEHUMIDIFIER	H/A	HAND/AUTOMATIC	O/O	ON/OFF	SA	SPEED ADJUST	DPIT	DIFFERENTIAL PRESSURE INDICATOR TRANSMITTER	H/O/A	HAND/OFF/AUTOMATIC	O/O/R	ON/OFF/RESET	SFB	SPEED FEEDBACK	EFF	EFFLUENT	ISB	INTRINSICALLY SAFE BARRIER	O/S/C	OPEN/STOP/CLOSE	SP	SET POSITION	ESTP	EMERGENCY STOP	INF	INFLUENT	O/S/C/A	OPEN/STOP/CLOSE/AUTOMATIC	SSP	SPEED SET POINT			KOH	POTASSIUM HYDROXIDE	P	PUMP	SV	SOLENOID VALVE			L/R	LOCAL/REMOTE	PAC	POLYALUMINUM CHLORIDE	S/S	START/STOP	<table border="0" style="width: 100%;"> <tr><td>TP</td><td>TELEMETRY PANEL</td></tr> <tr><td>TS</td><td>THERMISTOR</td></tr> <tr><td>VFD</td><td>VARIABLE FREQUENCY DRIVE</td></tr> <tr><td>YL</td><td>EVENT ALARM LOW</td></tr> <tr><td>YLL</td><td>EVENT ALARM LOW LOW</td></tr> <tr><td>YH</td><td>EVENT ALARM HIGH</td></tr> <tr><td>YHH</td><td>EVENT ALARM HIGH HIGH</td></tr> <tr><td>YNF</td><td>EVENT NO FLOW</td></tr> <tr><td>YM</td><td>EVENT IN MANUAL</td></tr> <tr><td>YS</td><td>EVENT STATUS</td></tr> </table>	TP	TELEMETRY PANEL	TS	THERMISTOR	VFD	VARIABLE FREQUENCY DRIVE	YL	EVENT ALARM LOW	YLL	EVENT ALARM LOW LOW	YH	EVENT ALARM HIGH	YHH	EVENT ALARM HIGH HIGH	YNF	EVENT NO FLOW	YM	EVENT IN MANUAL	YS	EVENT STATUS
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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 HE/SHE IS FURNISHING TO THE ENGINEER/OWNER FOR REVIEW PURPOSES. 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 DIAGMAMMATICALLY. 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 HE/SHE HAS VISITED THE SITE WHERE WORK IS TO BE PERFORMED, AND HAS 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 P&IDS, SPECIFICATION SECTION 13465 - SEQUENCE OF OPERATIONS, I&C INPUTS/OUTPUTS, AND INSTRUMENTATION SCHEDULES IN A COMBINED MANNER FOR A COMPLETE PROCESS REVIEW.



ENVIRONMENTAL PARTNERS
— An Apex Company —

Scale	N.T.S				
Date	SEPTEMBER 2023				
Job No.	245-2103				
Designed by	BJM				
Drawn by	SBS				
Checked by	BJM/EAK				
Approved by	ASK				
MARK	DATE	DESCRIPTION			

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**

50% DESIGN

Sheet No.

1-1

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

ACTUATORS

- SOLENOID
- PNEUMATIC
- CYLINDER
- MOTOR

- ELECTROPNEUMATIC
- 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

PUMPS, BLOWERS, TANKS AND EQUIPMENT

- 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
- 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 DAMPENERS
- 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

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
- FLOW ARROW RIGHT
- SLOPE RIGHT
- 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
- INDICATING LIGHT: R - RED, Y - YELLOW, G - GREEN, A - AMBER
- SCADA ALARM: L = LOW, H = HIGH, NF = NO FLOW
- VARIABLE FREQUENCY DRIVE
- INTERLOCK
- MANAGED ETHERNET SWITCH
- CONTROL PANEL OPERATOR INTERFACE TERMINAL
- HAND SWITCH
- MAN DOWN PUSH BUTTON
- MANDOWN



ENVIRONMENTAL PARTNERS
— An Apex Company —

Scale	N.T.S
Date	SEPTEMBER 2023
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Drawn by	SBS
Checked by	BJM/EAK
Approved by	ASK

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

PROCESS AND INSTRUMENTATION CONTROL
LEGEND

50% DESIGN

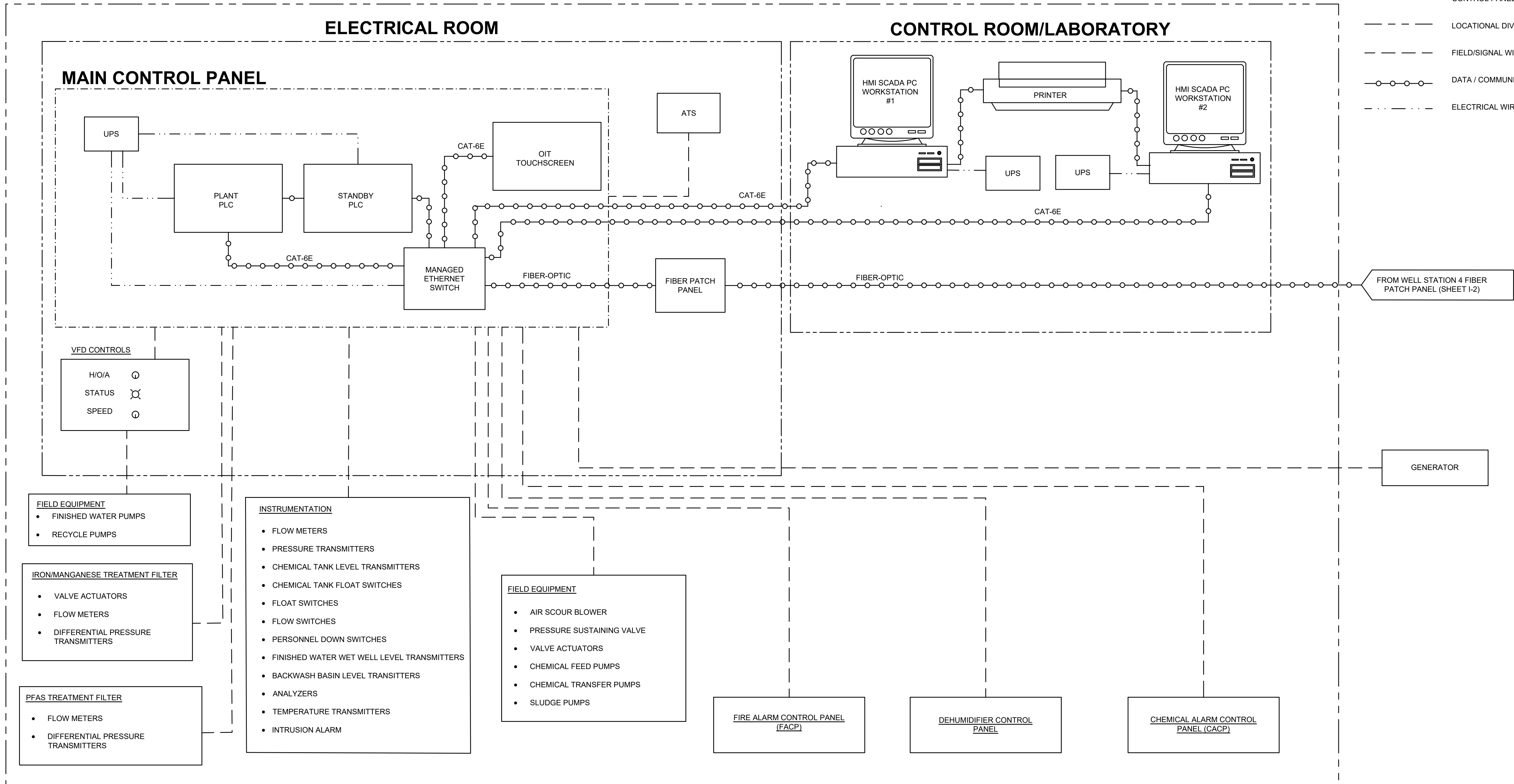
Sheet No.

1-2

WELLS 2, 3, AND 4 WATER TREATMENT PLANT

LEGEND

- ROOM LINE
- CONTROL PANEL
- LOCATIONAL DIVIDE / BUILDING LINE
- FIELD/SIGNAL WIRING
- DATA / COMMUNICATION
- ELECTRICAL WIRING



SCADA SYSTEM ARCHITECTURE NOTES:

1. COMMUNICATIONS: RADIO & FIBER OPTIC
2. PLC SYSTEM: ALLEN BRADLEY
3. SCADA SOFTWARE: iFix



ENVIRONMENTAL PARTNERS
— An Apex Company —

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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

50% DESIGN
Sheet No.

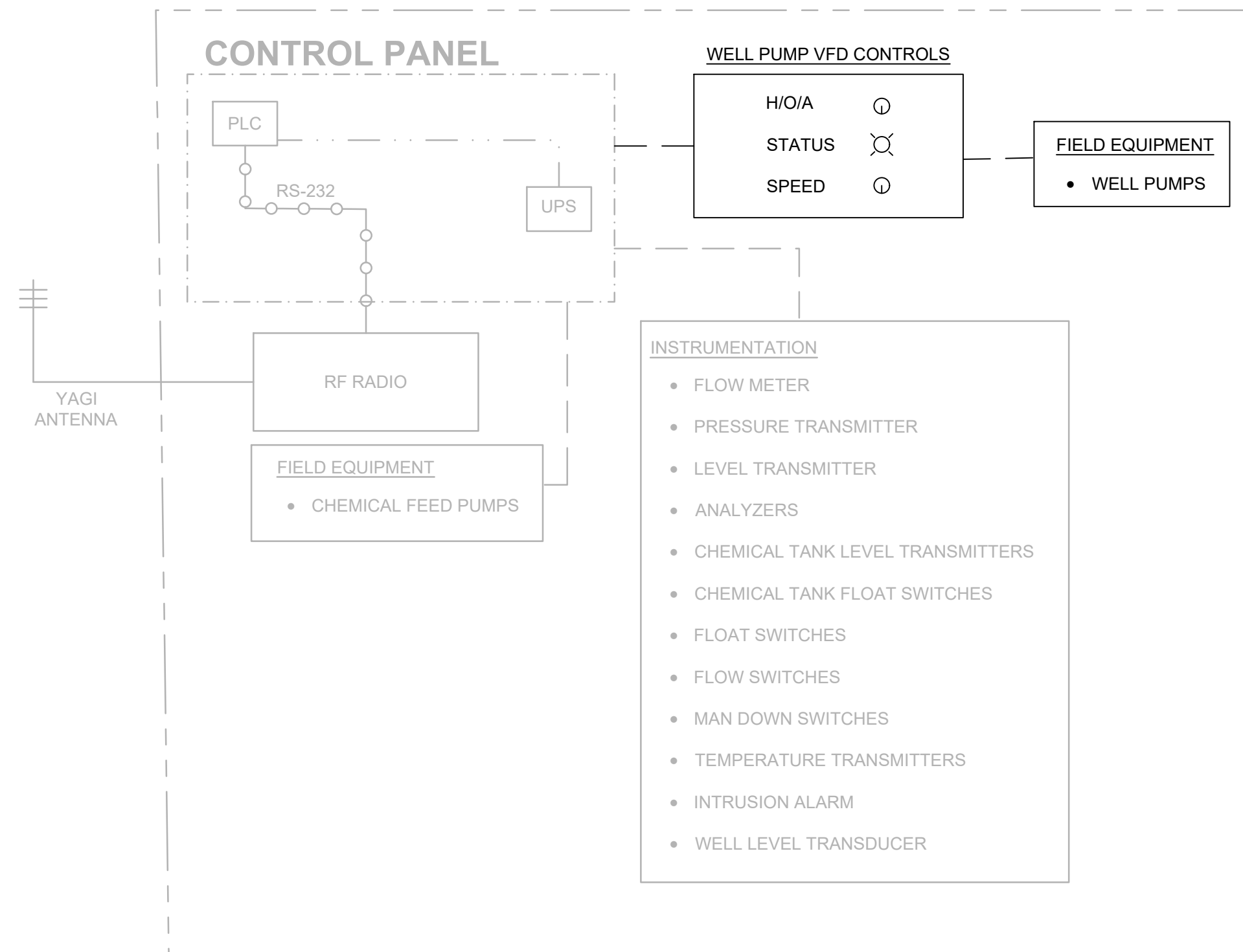
I-3

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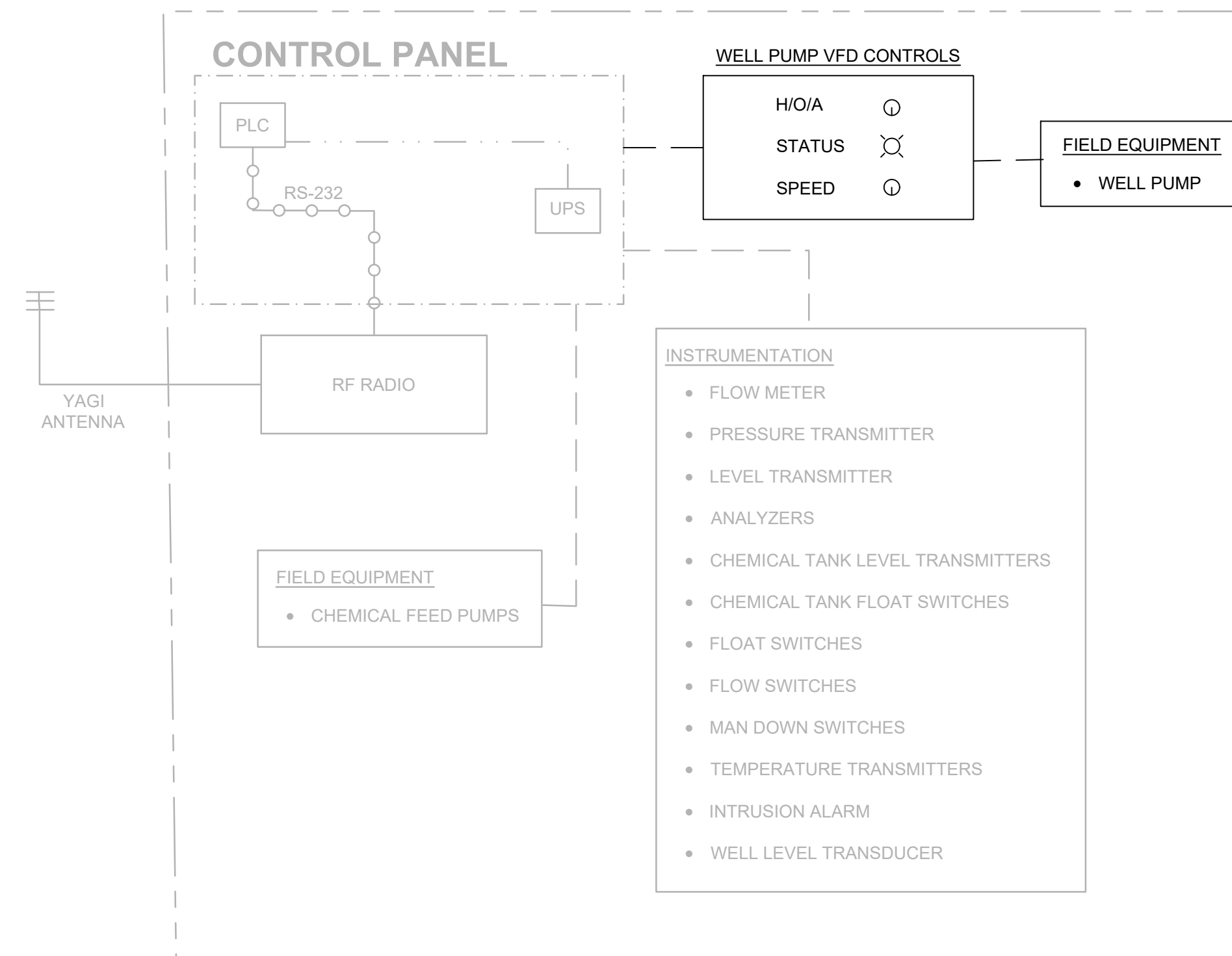
LEGEND

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- CONTROL PANEL
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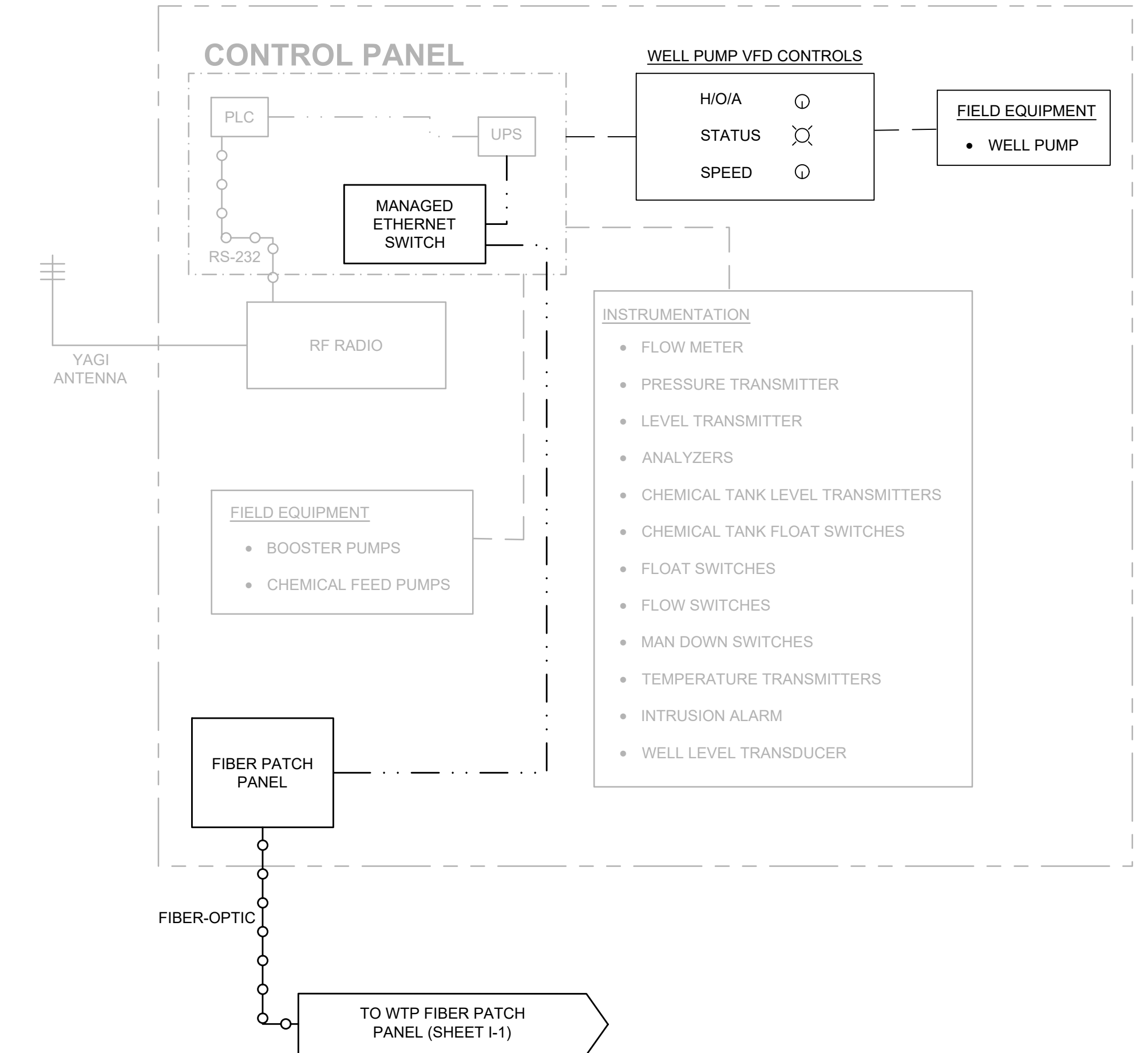
WELL 2 STATION



WELL 3 STATION



WELL 4 STATION



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

**PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 2, 3, AND 4 SCADA SCHEMATICS**

50% DESIGN
Sheet No.

I-4

ANALYZER SCHEDULE							
P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	pH	
AIT-XXX	RAW WATER pH & TEMPERATURE	PFAS REMOVAL AREA 102	pH & TEMPERATURE ANALYZER	120	60	1	AE-XXX (PH & TEMPERATURE)
AIT-XXX	OXIDIZED WATER pH, TEMPERATURE, & CHLORINE	PFAS REMOVAL AREA 102	pH, TEMPERATURE, & CHLORINE ANALYZER	120	60	1	AE-XXX (PH & TEMPERATURE) & AE-XXX (CHLORINE)
AIT-XXX	FILTERED WATER pH, TEMPERATURE, & CHLORINE	PFAS REMOVAL AREA 102	pH, TEMPERATURE, & CHLORINE ANALYZER	120	60	1	AE-XXX (PH & TEMPERATURE) & AE-XXX (CHLORINE)
AIT-XXX	IRON	PFAS REMOVAL AREA 102	IRON ANALYZER	120	60	1	AE-XXX (IRON)
AIT-XXX	MANGANESE	PFAS REMOVAL AREA 102	MANGANESE ANALYZER	120	60	1	AE-XXX (MANGANESE)
AIT-XXX	PFAS INFLUENT CHLORINE	PFAS REMOVAL AREA 102	CHLORINE ANALYZER	120	60	1	AE-XXX (CHLORINE)
AIT-XXX	FINISHED WATER PH, TEMPERATURE, & CHLORINE	PFAS REMOVAL AREA 102	MANGANESE ANALYZER	120	60	1	AE-XXX (PH & TEMPERATURE) & AE-XXX (CHLORINE)

ULTRASONIC LEVEL SCHEDULE							
P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	pH	
LIT-XXX	BACKWASH WASTE ULTRASONIC LEVEL TRANSMITTER	BACKWASH WASTE TANK COMPARTMENT #1	LEVEL INSTRUMENT	120	60	1	
LIT-XXX	BACKWASH WASTE ULTRASONIC LEVEL TRANSMITTER	BACKWASH WASTE TANK COMPARTMENT #2	LEVEL INSTRUMENT	120	60	1	
LIT-XXX	BACKWASH WASTE ULTRASONIC LEVEL TRANSMITTER	BACKWASH WASTE TANK COMPARTMENT #3	LEVEL INSTRUMENT	120	60	1	
LIT-XXX	KOH BULK TANK ULTRASONIC LEVEL TRANSMITTER	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	120	60	1	PROVIDED WITH CHEMICAL ISOLATORS
LIT-XXX	NAOCL BULK TANK ULTRASONIC LEVEL TRANSMITTER	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	120	60	1	PROVIDED WITH CHEMICAL ISOLATORS
LIT-XXX	NAHSO3 BULK TANK ULTRASONIC LEVEL TRANSMITTER	NAHSO3 CHEMICAL ROOM ROOM 104	LEVEL INSTRUMENT	120	60	1	PROVIDED WITH CHEMICAL ISOLATORS
LIT-XXX	FINISHED WATER WET WELL ULTRASONIC LEVEL TRANSMITTER	PFAS REMOVAL AREA 102	LEVEL INSTRUMENT	120	60	1	

FLOOD/FLOAT SWITCH LEVEL SCHEDULE							
P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	pH	
LSH-XXX	FE/MN REMOVAL AREA FLOOD SWITCH	FE/MN REMOVAL AREA ROOM 103	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE
LSH-XXX	PFAS REMOVAL AREA FLOOD SWITCH	PFAS REMOVAL AREA ROOM 102	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE
LSH-XXX	BACKWASH WASTE TANK HI-HI LEVEL SWITCH	BACKWASH WASTE TANK COMPARTMENT #1	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE
LSL-XXX	BACKWASH WASTE TANK LO-LO LEVEL SWITCH	BACKWASH WASTE TANK COMPARTMENT #1	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE
LSH-XXX	BACKWASH WASTE TANK HI-HI LEVEL SWITCH	BACKWASH WASTE TANK COMPARTMENT #2	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE
LSL-XXX	BACKWASH WASTE TANK LO-LO LEVEL SWITCH	BACKWASH WASTE TANK COMPARTMENT #2	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE
LSH-XXX	BACKWASH WASTE TANK HI-HI LEVEL SWITCH	BACKWASH WASTE TANK COMPARTMENT #3	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE
LSL-XXX	BACKWASH WASTE TANK LO-LO LEVEL SWITCH	BACKWASH WASTE TANK COMPARTMENT #3	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE
LSH-XXX	KOH BULK TANK HI-HI LEVEL SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE, CHEMICAL RESISTANT
LSH-XXX	POST-FILTRATION KOH DAY TANK HI-HI LEVEL SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE, CHEMICAL RESISTANT
LSH-XXX	NAOCL BULK TANK HI-HI LEVEL SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE, CHEMICAL RESISTANT
LSH-XXX	PRE-FILTRATION NAOCL DAY TANK HI-HI LEVEL SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE, CHEMICAL RESISTANT
LSH-XXX	POST-FILTRATION NAOCL DAY TANK HI-HI LEVEL SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE, CHEMICAL RESISTANT
LSH-XXX	KOH & NAOCL CONTAINMENT AREA FLOOD LEVEL SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE, CHEMICAL RESISTANT
LSH-XXX	NAHSO3 BULK TANK HI-HI LEVEL SWITCH	NAHSO3 CHEMICAL ROOM ROOM 104	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE, CHEMICAL RESISTANT
LSH-XXX	NAHSO3 CONTAINMENT AREA FLOOD LEVEL SWITCH	NAHSO3 CHEMICAL ROOM ROOM 104	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE, CHEMICAL RESISTANT
LSH-XXX	PIPE GALLERY FLOOD SWITCH	PIPE GALLERY	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE
LIT-XXX	FINISHED WATER WET WELL HI-HI LEVEL SWITCH	FINISHED WATER WET WELL	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE, CHEMICAL RESISTANT
LSH-XXX	TIGHT TANK HI LEVEL SWITCH	TIGHT TANK	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE, CHEMICAL RESISTANT
LSH-XXX	TIGHT TANK HI-HI LEVEL SWITCH	TIGHT TANK	LEVEL INSTRUMENT	LOOPED POWER			MERCURY FREE, CHEMICAL RESISTANT

WELL LEVEL TRANSDUCER SCHEDULE							
P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
LE-XXX	WELL LEVEL	WELL 2	LEVEL INSTRUMENT	LOOPED POWER			FURNISH WITH 200-FT CABLE
LE-XXX	WELL LEVEL	WELL 3	LEVEL INSTRUMENT	LOOPED POWER			FURNISH WITH 200-FT CABLE
LE-XXX	WELL LEVEL	WELL 4	LEVEL INSTRUMENT	LOOPED POWER			FURNISH WITH 200-FT CABLE

INTRUSION SWITCH SCHEDULE							
P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
YS-XXX	NORTH WALL SINGLE DOOR INTRUSION ALARM	WTP DOOR XX	MAGNETIC CONTACT SWITCH	LOOPED POWER			
YS-XXX	EAST WALL SINGLE DOOR INTRUSION ALARM	WTP DOOR XX	MAGNETIC CONTACT SWITCH	LOOPED POWER			
YS-XXX	WEST WALL SINGLE DOOR INTRUSION ALARM	WTP DOOR XX	MAGNETIC CONTACT SWITCH	LOOPED POWER			
YS-XXX	WEST WALL OVERHEAD DOOR INTRUSION ALARM	WTP DOOR XX	MAGNETIC CONTACT SWITCH	LOOPED POWER			
YS-XXX	WEST WALL OVERHEAD DOOR INTRUSION ALARM	WTP DOOR XX	MAGNETIC CONTACT SWITCH	LOOPED POWER			
YS-XXX	WELL STATION 3 DOOR INTRUSION ALARM	WTP DOOR XX	MAGNETIC CONTACT SWITCH	LOOPED POWER			
YS-XXX	WELL STATION 4 DOOR INTRUSION ALARM	WTP DOOR XX	MAGNETIC CONTACT SWITCH	LOOPED POWER			
YS-XXX	WELL STATION 5 DOOR INTRUSION ALARM	WTP DOOR XX	MAGNETIC CONTACT SWITCH	LOOPED POWER			

PRESSURE TRANSDUCER SCHEDULE							
P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
PIT-XXX	WELL 2 PRESSURE INDICATING TRANSMITTER	WELL 2 DISCHARGE	PRESSURE INSTRUMENT	LOOPED POWER			
PIT-XXX	WELL 3 PRESSURE INDICATING TRANSMITTER	WELL 3 DISCHARGE	PRESSURE INSTRUMENT	LOOPED POWER			
PIT-XXX	WELL 4 PRESSURE INDICATING TRANSMITTER	WELL 4 DISCHARGE	PRESSURE INSTRUMENT	LOOPED POWER			
PIT-XXX	WTP INFLUENT PRESSURE INDICATING TRANSMITTER	WELL 2 & 3 RAW WATER	PRESSURE INSTRUMENT	LOOPED POWER			
DPIT-XXX	FE/MN FILTER #1 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	FE/MN REMOVAL GAC FILTER #1	PRESSURE INSTRUMENT	LOOPED POWER			
DPIT-XXX	FE/MN FILTER #2 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	FE/MN REMOVAL GAC FILTER #2	PRESSURE INSTRUMENT	LOOPED POWER			
DPIT-XXX	FE/MN FILTER #3 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	FE/MN REMOVAL GAC FILTER #3	PRESSURE INSTRUMENT	LOOPED POWER			
PIT-XXX	FILTERED WATER PRESSURE INDICATING TRANSMITTER	FILTERED WATER	PRESSURE INSTRUMENT	LOOPED POWER			
DPIT-XXX	PFAS GAC FILTER #1 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	PFAS GAC FILTER #1	PRESSURE INSTRUMENT	LOOPED POWER			
DPIT-XXX	PFAS GAC FILTER #2 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	PFAS GAC FILTER #2	PRESSURE INSTRUMENT	LOOPED POWER			
DPIT-XXX	PFAS GAC FILTER #3 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	PFAS GAC FILTER #3	PRESSURE INSTRUMENT	LOOPED POWER			
DPIT-XXX	PFAS IX FILTER #1 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	PFAS IX FILTER #1	PRESSURE INSTRUMENT	LOOPED POWER			
DPIT-XXX	PFAS IX FILTER #2 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	PFAS IX FILTER #2	PRESSURE INSTRUMENT	LOOPED POWER			
DPIT-XXX	PFAS IX FILTER #3 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	PFAS IX FILTER #3	PRESSURE INSTRUMENT	LOOPED POWER			
PIT-XXX	FINISHED WATER PRESSURE INDICATING TRANSMITTER	FINISHED WATER PUMP #1 DISCHARGE	PRESSURE INSTRUMENT	LOOPED POWER			
PIT-XXX	FINISHED WATER PRESSURE INDICATING TRANSMITTER	FINISHED WATER PUMP #2 DISCHARGE	PRESSURE INSTRUMENT	LOOPED POWER			
PIT-XXX	FINISHED WATER PRESSURE INDICATING TRANSMITTER	FINISHED WATER PUMP #3 DISCHARGE	PRESSURE INSTRUMENT	LOOPED POWER			

- KEYNOTES:**
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 - ② FURNISHED AND INSTALLED UNDER DIVISION 16
 - ③ FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13



ENVIRONMENTAL PARTNERS
— An Apex Company —

Scale	N.T.S.
Date	SEPTEMBER 2023
Job No.	245-2103
Designed by	BJM
Drawn by	SBS
Checked by	BJM/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
EQUIPMENT SCHEDULE I

50% DESIGN
Sheet No.

1-5

TEMPERATURE TRANSMITTER SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
TT-XXX	ROOM TEMPERATURE TRANSMITTER	WELL STATION 2	TEMPERATURE INSTRUMENT	LOOPED POWER			MOUNT OFF FLOOR PER MANUFACTURERES RECOMMENDATIONS
TT-XXX	ROOM TEMPERATURE TRANSMITTER	WELL STATION 3	TEMPERATURE INSTRUMENT	LOOPED POWER			MOUNT OFF FLOOR PER MANUFACTURERES RECOMMENDATIONS
TT-XXX	ROOM TEMPERATURE TRANSMITTER	WELL STATION 4	TEMPERATURE INSTRUMENT	LOOPED POWER			MOUNT OFF FLOOR PER MANUFACTURERES RECOMMENDATIONS
TT-XXX	ROOM TEMPERATURE TRANSMITTER	NITRATE REMOVAL AREA ROOM 101	TEMPERATURE INSTRUMENT	LOOPED POWER			MOUNT OFF FLOOR PER MANUFACTURERES RECOMMENDATIONS
TT-XXX	ROOM TEMPERATURE TRANSMITTER	PFAS REMOVAL AREA ROOM 102	TEMPERATURE INSTRUMENT	LOOPED POWER			MOUNT OFF FLOOR PER MANUFACTURERES RECOMMENDATIONS
TT-XXX	ROOM TEMPERATURE TRANSMITTER	FE/MN REMOVAL AREA ROOM 103	TEMPERATURE INSTRUMENT	LOOPED POWER			MOUNT OFF FLOOR PER MANUFACTURERES RECOMMENDATIONS
TT-XXX	ROOM TEMPERATURE TRANSMITTER	NAHSO3 CHEMICAL ROOM ROOM 104	TEMPERATURE INSTRUMENT	LOOPED POWER			MOUNT OFF FLOOR PER MANUFACTURERES RECOMMENDATIONS
TT-XXX	ROOM TEMPERATURE TRANSMITTER	KOH & NAOCL CHEMICAL ROOM ROOM 105	TEMPERATURE INSTRUMENT	LOOPED POWER			MOUNT OFF FLOOR PER MANUFACTURERES RECOMMENDATIONS
TT-XXX	ROOM TEMPERATURE TRANSMITTER	CONTROL ROOM ROOM 106	TEMPERATURE INSTRUMENT	LOOPED POWER			MOUNT OFF FLOOR PER MANUFACTURERES RECOMMENDATIONS
TT-XXX	ROOM TEMPERATURE TRANSMITTER	MECHANICAL ROOM ROOM 107	TEMPERATURE INSTRUMENT	LOOPED POWER			MOUNT OFF FLOOR PER MANUFACTURERES RECOMMENDATIONS
TT-XXX	ROOM TEMPERATURE TRANSMITTER	CORRIDOR AREA ROOM 109	TEMPERATURE INSTRUMENT	LOOPED POWER			MOUNT OFF FLOOR PER MANUFACTURERES RECOMMENDATIONS
TT-XXX	ROOM TEMPERATURE TRANSMITTER	STORAGE ROOM ROOM 110	TEMPERATURE INSTRUMENT	LOOPED POWER			MOUNT OFF FLOOR PER MANUFACTURERES RECOMMENDATIONS
TT-XXX	ROOM TEMPERATURE TRANSMITTER	ELECTRICAL ROOM ROOM 111	TEMPERATURE INSTRUMENT	LOOPED POWER			MOUNT OFF FLOOR PER MANUFACTURERES RECOMMENDATIONS

TRANSFER PUMP SWITCH SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
HS-XXX	KOH TRANSFER PUMP TP-XXX SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	PUSH BUTTON	LOOPED POWER			SPRING LOADED SWITCH
HS-XXX	KOH GRAVITY TRANSFER SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	PUSH BUTTON	LOOPED POWER			SPRING LOADED SWITCH
HS-XXX	PRE-NAOCL TRANSFER PUMP TP-XXX SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	PUSH BUTTON	LOOPED POWER			SPRING LOADED SWITCH
HS-XXX	PRE-NAOCL GRAVITY TRANSFER SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	PUSH BUTTON	LOOPED POWER			SPRING LOADED SWITCH
HS-XXX	POST-NAOCL TRANSFER PUMP TP-XXX SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	PUSH BUTTON	LOOPED POWER			SPRING LOADED SWITCH
HS-XXX	POST-NAOCL GRAVITY TRANSFER SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	PUSH BUTTON	LOOPED POWER			SPRING LOADED SWITCH

FLOW SWITCH SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
FS-XXX (1)	SAFETY SHOWER	KOH & NAOCL CHEMICAL ROOM ROOM 105	PUSH BUTTON	LOOPED POWER			
FS-XXX (1)	SAFETY SHOWER	NAHSO3 CHEMICAL ROOM ROOM 104	PUSH BUTTON	LOOPED POWER			
FS-XXX (1)	SAFETY SHOWER	FE/MN REMOVAL AREA ROOM 103 (NEAR NAF CHEMICAL FEED SYSTEM)	PUSH BUTTON	LOOPED POWER			

PERSONNEL DOWN SWITCH SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
PB-XXX	PERSONNEL DOWN SWITCH	WELL STATION 2	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED
PB-XXX	PERSONNEL DOWN SWITCH	WELL STATION 3	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED
PB-XXX	PERSONNEL DOWN SWITCH	WELL STATION 4	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED
PB-XXX	PERSONNEL DOWN SWITCH	NITRATE REMOVAL AREA ROOM 101	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED
PB-XXX	PERSONNEL DOWN SWITCH	PFAS REMOVAL AREA ROOM 102	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED
PB-XXX	PERSONNEL DOWN SWITCH	FE/MN REMOVAL AREA ROOM 103	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED
PB-XXX	PERSONNEL DOWN SWITCH	NAHSO3 CHEMICAL ROOM ROOM 104	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED
PB-XXX	PERSONNEL DOWN SWITCH	KOH & NAOCL CHEMICAL ROOM ROOM 105	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED
PB-XXX	PERSONNEL DOWN SWITCH	CONTROL ROOM ROOM 106	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED
PB-XXX	PERSONNEL DOWN SWITCH	MECHANICAL ROOM ROOM 107	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED
PB-XXX	PERSONNEL DOWN SWITCH	CORRIDOR AREA ROOM 109	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED
PB-XXX	PERSONNEL DOWN SWITCH	STORAGE ROOM ROOM 110	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED
PB-XXX	PERSONNEL DOWN SWITCH	ELECTRICAL ROOM ROOM 111	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED
PB-XXX	PERSONNEL DOWN SWITCH	PIPE GALLERY ROOM 001	PUSH BUTTON	LOOPED POWER			NEMA 4 RATED

MOTION SENSOR SCHEDULE

P&ID TAG NO.	EQUIPMENT DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	HZ	PHASE	
YS-XXX	MOTION SENSOR	WELL STATION 2	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-XXX	MOTION SENSOR	WELL STATION 3	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-XXX	MOTION SENSOR	WELL STATION 4	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-XXX	MOTION SENSOR	NITRATE REMOVAL AREA ROOM 101	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-XXX	MOTION SENSOR	PFAS REMOVAL AREA ROOM 102	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-XXX	MOTION SENSOR	FE/MN REMOVAL AREA ROOM 103	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-XXX	MOTION SENSOR	CONTROL ROOM ROOM 106	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-XXX	MOTION SENSOR	CORRIDOR AREA ROOM 109	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-XXX	MOTION SENSOR	PIPE GALLERY ROOM 001	PASSIVE INFRARED, WALL MOUNTED	12 VDC			

KEYNOTES:

- (1) FURNISHED AND INSTALLED UNDER DIVISION 15
- (2) FURNISHED AND INSTALLED UNDER DIVISION 16
- (3) FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13



ENVIRONMENTAL PARTNERS
— An Apex Company —

Scale	N.T.S	
Date	SEPTEMBER 2023	
Job No.	245-2103	
Designed by	BJM	
Drawn by	SBS	
Checked by	BJM/EAK	
Approved by	ASK	
MARK	DATE	DESCRIPTION

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

**PROCESS AND INSTRUMENTATION CONTROL
EQUIPMENT SCHEDULE II**

50% DESIGN

Sheet No.

1-6

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-XXX	WELL 2 ELECTROMAGNETIC FLOW METER	WELL STATION 2	FLOW INSTRUMENT	120	60	1	6	226-326	MONODIRECTIONAL	
FIT-XXX	WELL 3 ELECTROMAGNETIC FLOW METER	WELL STATION 3	FLOW INSTRUMENT	120	60	1	6	183-264	MONODIRECTIONAL	
FIT-XXX	WELL 4 ELECTROMAGNETIC FLOW METER	WELL STATION 4	FLOW INSTRUMENT	120	60	1	8	480-694	MONODIRECTIONAL	
FIT-XXX	COMBINED FE/MN TREATMENT INFLUENT FLOW METER	KOH & NAOCL CHEMICAL ROOM ROOM 105	FLOW INSTRUMENT	120	60	1	8	264-620	MONODIRECTIONAL	
FIT-XXX	FE/MN FILTER #1 ELECTROMAGNETIC FLOW METER	FE/MN REMOVAL FILTER #1	FLOW INSTRUMENT	120	60	1	4	132-465	BIDIRECTIONAL	FURNISHED BY FILTER MANUFACTUREER
FIT-XXX	FE/MN FILTER #2 ELECTROMAGNETIC FLOW METER	FE/MN REMOVAL FILTER #2	FLOW INSTRUMENT	120	60	1	4	132-465	BIDIRECTIONAL	FURNISHED BY FILTER MANUFACTUREER
FIT-XXX	FE/MN FILTER #3 ELECTROMAGNETIC FLOW METER	FE/MN REMOVAL FILTER #3	FLOW INSTRUMENT	120	60	1	4	132-465	BIDIRECTIONAL	FURNISHED BY FILTER MANUFACTUREER
FIT-XXX	COMBINED PFAS TREATMENT INFLUENT FLOW METER	PFAS TREATMENT INFLUENT HEADER	FLOW INSTRUMENT	120	60	1	8	590-1285	MONODIRECTIONAL	
FIT-XXX	PFAS REMOVAL GAC FILTER #1 ELECTROMAGNETIC FLOW METER	PFAS GAC FILTER #1	FLOW INSTRUMENT	120	60	1	6	197-642	BIDIRECTIONAL	FURNISHED BY FILTER MANUFACTURER
FIT-XXX	PFAS REMOVAL GAC FILTER #2 ELECTROMAGNETIC FLOW METER	PFAS GAC FILTER #2	FLOW INSTRUMENT	120	60	1	6	197-642	BIDIRECTIONAL	FURNISHED BY FILTER MANUFACTURER
FIT-XXX	PFAS REMOVAL GAC FILTER #3 ELECTROMAGNETIC FLOW METER	PFAS GAC FILTER #3	FLOW INSTRUMENT	120	60	1	6	197-642	BIDIRECTIONAL	FURNISHED BY FILTER MANUFACTURER
FIT-XXX	PFAS REMOVAL IX FILTER #1 ELECTROMAGNETIC FLOW METER	PFAS IX FILTER #1	FLOW INSTRUMENT	120	60	1	6	197-642	BIDIRECTIONAL	FURNISHED BY FILTER MANUFACTURER
FIT-XXX	PFAS REMOVAL IX FILTER #2 ELECTROMAGNETIC FLOW METER	PFAS IX FILTER #2	FLOW INSTRUMENT	120	60	1	6	197-642	BIDIRECTIONAL	FURNISHED BY FILTER MANUFACTURER
FIT-XXX	PFAS REMOVAL IX FILTER #3 ELECTROMAGNETIC FLOW METER	PFAS IX FILTER #3	FLOW INSTRUMENT	120	60	1	6	197-642	BIDIRECTIONAL	FURNISHED BY FILTER MANUFACTURER
FIT-XXX	FINISHED WATER PUMP #1 ELECTROMAGNETIC FLOW METER	FINISHED WATER PUMP #1 DISCHARGE	FLOW INSTRUMENT	120	60	1	6	295-642	MONODIRECTIONAL	
FIT-XXX	FINISHED WATER PUMP #2 ELECTROMAGNETIC FLOW METER	FINISHED WATER PUMP #2 DISCHARGE	FLOW INSTRUMENT	120	60	1	6	295-642	MONODIRECTIONAL	
FIT-XXX	FINISHED WATER PUMP #3 ELECTROMAGNETIC FLOW METER	FINISHED WATER PUMP #3 DISCHARGE	FLOW INSTRUMENT	120	60	1	6	295-642	MONODIRECTIONAL	
FIT-XXX	BACKWASH SUPPLY ELECTROMAGNETIC FLOW METER	BACKWASH SUPPLY	FLOW INSTRUMENT	120	60	1	6	155-945	MONODIRECTIONAL	
FIT-XXX	RECYCLE ELECTROMAGNETIC FLOW METER	RECYCLE	FLOW INSTRUMENT	120	60	1	2	13-30	MONODIRECTIONAL	
FIT-XXX	SLUDGE ELECTROMAGNETIC FLOW METER	SLUDGE PUMP DISCHARGE	FLOW INSTRUMENT	120	60	1	2	50	MONODIRECTIONAL	

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ENVIRONMENTAL PARTNERS
— An Apex Company —

MARK	DATE	DESCRIPTION

Scale	N.T.S
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**WELLS 2, 3, AND 4 WATER TREATMENT PLANT
TOWN OF SHARON, MA**

**PROCESS AND INSTRUMENTATION CONTROL
EQUIPMENT SCHEDULE III**

50% DESIGN
Sheet No.

1-7