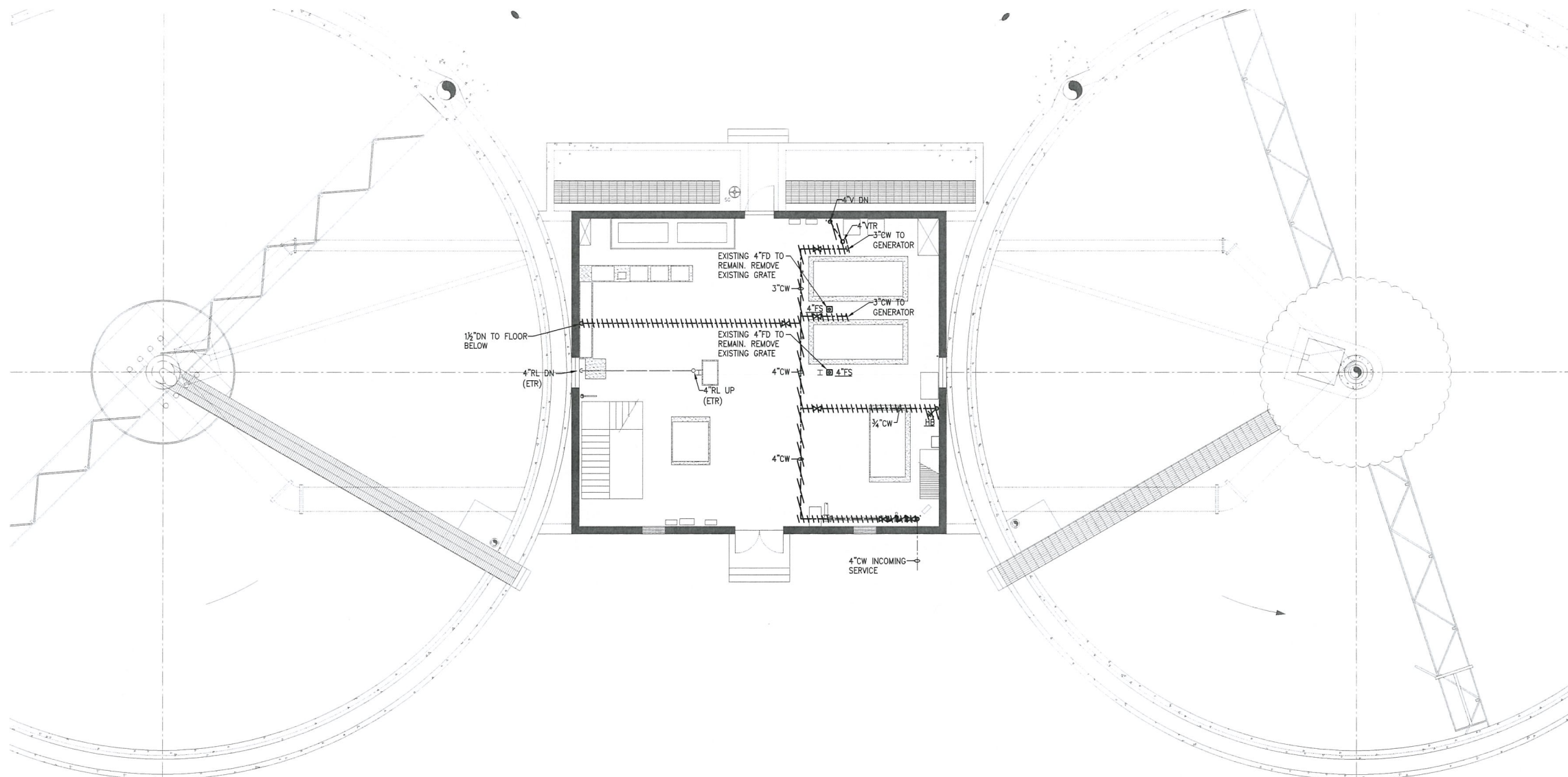
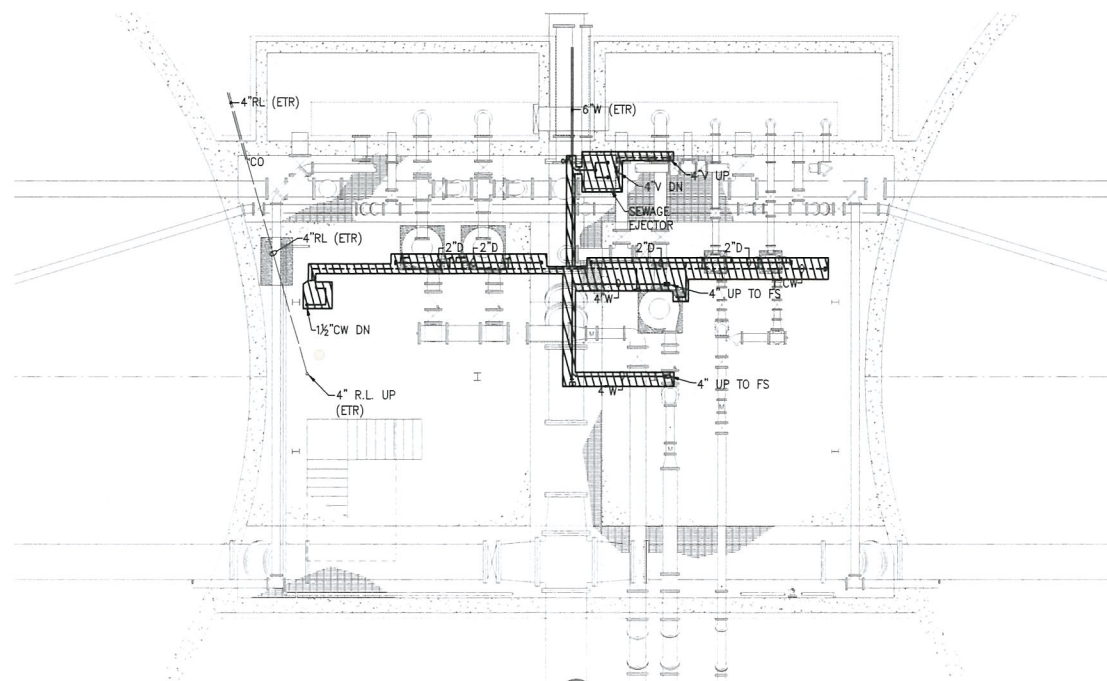


5/27/2020 9:56 AM W:\YEAR - 2018\18009-00 - TAUNTON WWTF UPGRADES\PLUMBING DEPARTMENT\18009-00 PLUMBING FINAL CLARIFIERS & SECONDARY SLUDGE PS DWG (BETA STB BW STB)



UPPER LEVEL PLAN
SCALE: 1/8" = 1'-0"



LOWER LEVEL PLAN
SCALE: 1/8" = 1'-0"

PHASE 2
WORK

PREPARED BY



REGISTERED PROFESSIONAL

NOT FOR
CONSTRUCTION
(CONCEPTUAL)

SUBCONSULTANT



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150 Grossman Drive, Suite 309
Braintree, Massachusetts 02184
617-328-9215
web: www.sar.com

PROJECT

Taunton Wastewater
Treatment Facility
Improvements

Taunton, MA

TITLE

Plumbing Demolition
Final Clarifiers No.
1 & 2 Plan & Sludge
Pump Station No.1
Plan

NO. REVISIONS DATE

DRAWN BY: RLB
DESIGNED BY: RLB
CHECKED BY: JL
ISSUE DATE: 04/15/2020
BETA JOB NO.: 6050

SCALE

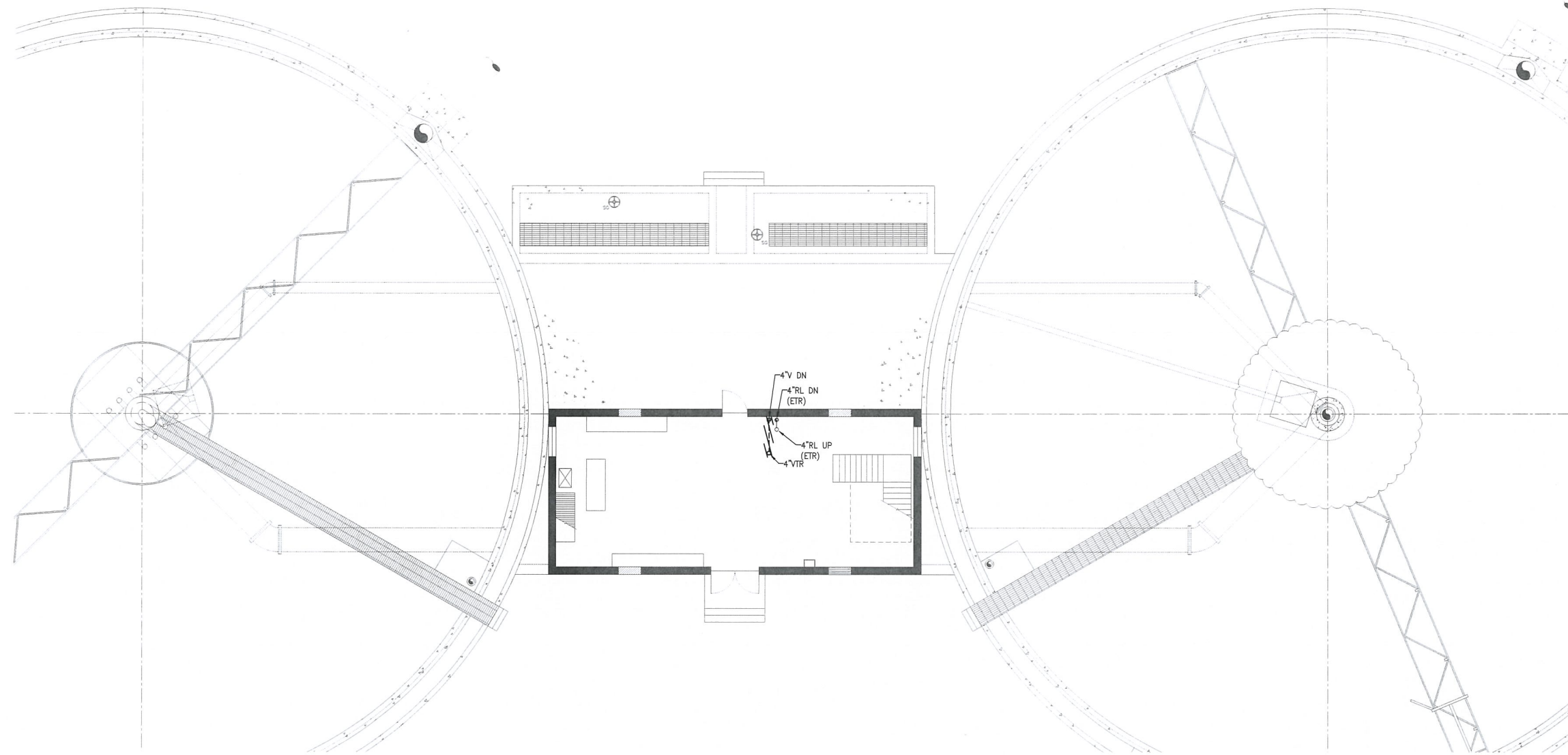
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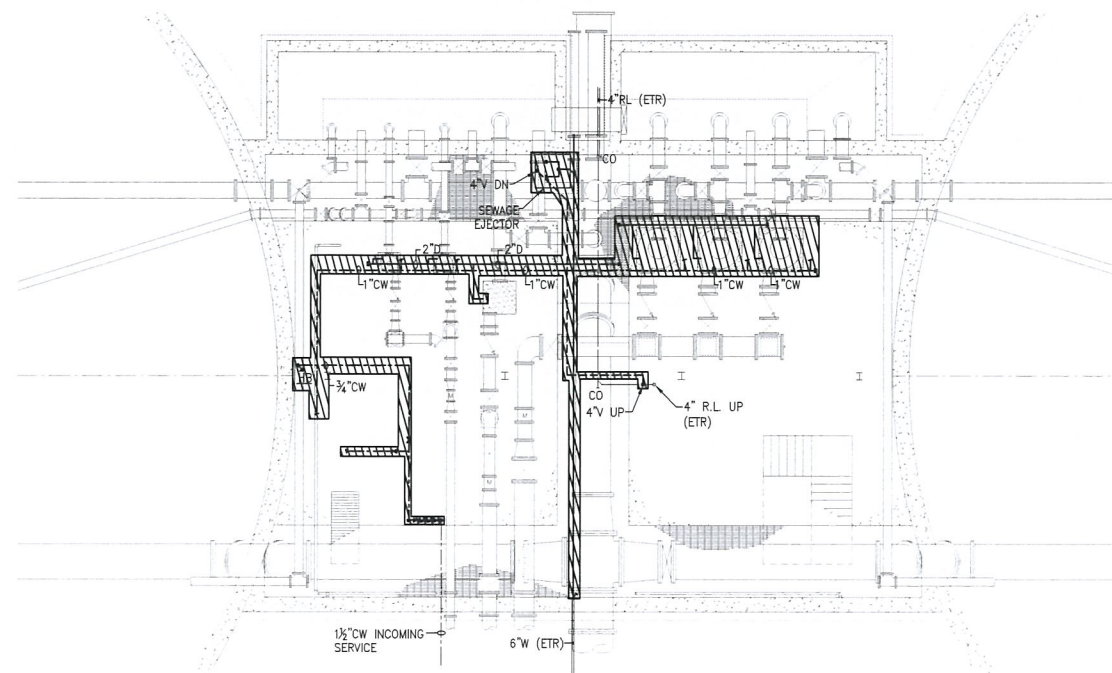
SHEET NO.

P-4.1

5/29/2020 9:56 AM W:\YEAR - 2018\18009 00 - TAUNTON WMTF UPGRADES\PLUMBING DEPARTMENT\18009 00 PLUMBING FINAL CLARIFIERS & SECONDARY SLUDGE PS DWG (BETA STB BW STB)



UPPER LEVEL PLAN
SCALE: 1/8" = 1'-0"



LOWER LEVEL PLAN
SCALE: 1/8" = 1'-0"

*Phase 2
Work*

PREPARED BY



REGISTERED PROFESSIONAL

NOT FOR
CONSTRUCTION
(CONCEPTUAL)

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PROJECT

Taunton Wastewater
Treatment Facility
Improvements

Taunton, MA

TITLE

Plumbing
Demolition Final
Clarifiers No.
3 & 4 Plan &
Sludge Pump
Station No.2
Plan

NO. REVISIONS DATE

DRAWN BY: RLB

DESIGNED BY: RLB

CHECKED BY: JL

ISSUE DATE: 04/15/2020

BETA JOB NO.: 6050

SCALE

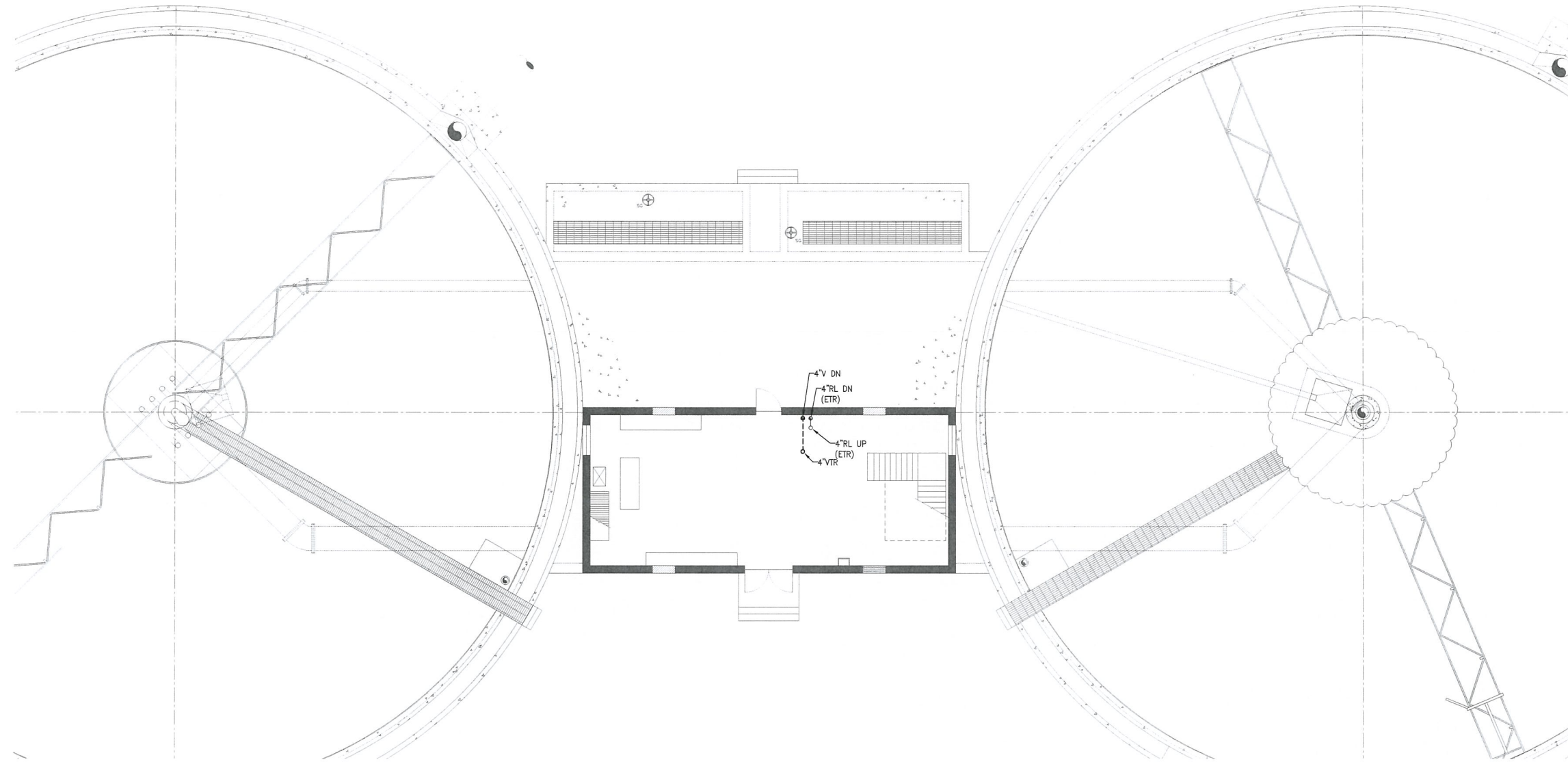
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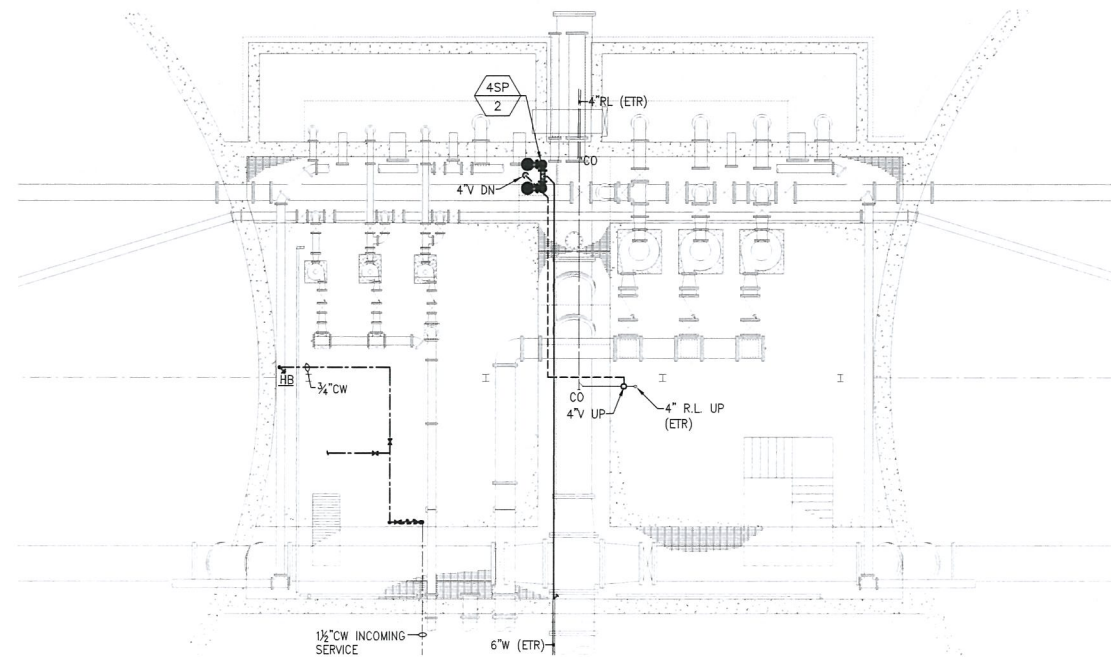
SHEET NO.

P-4.3

5/20/2020 9:46 AM W:\YEAR - 2018\18009 00 - TAUNTON WWTF UPGRADES\PLUMBING DEPARTMENT\18009 00 PLUMBING FINAL CLARIFIERS & SECONDARY SLUDGE PS DWG (BETA STB.BW STB)



UPPER LEVEL PLAN
SCALE: 1/8" = 1'-0"



LOWER LEVEL PLAN
SCALE: 1/8" = 1'-0"

*Phase 2
Work*

PREPARED BY



REGISTERED PROFESSIONAL

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CONSTRUCTION
(CONCEPTUAL)

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PROJECT

Taunton Wastewater
Treatment Facility
Improvements

Taunton, MA

TITLE

Plumbing Final
Clarifiers No.
3 & 4 Plan &
Sludge Pump
Station No.2
Plan

NO. REVISIONS DATE

DRAWN BY: RLB

DESIGNED BY: RLB

CHECKED BY: JL

ISSUE DATE: 04/15/2020

BETA JOB NO.: 6050

SCALE

NONE

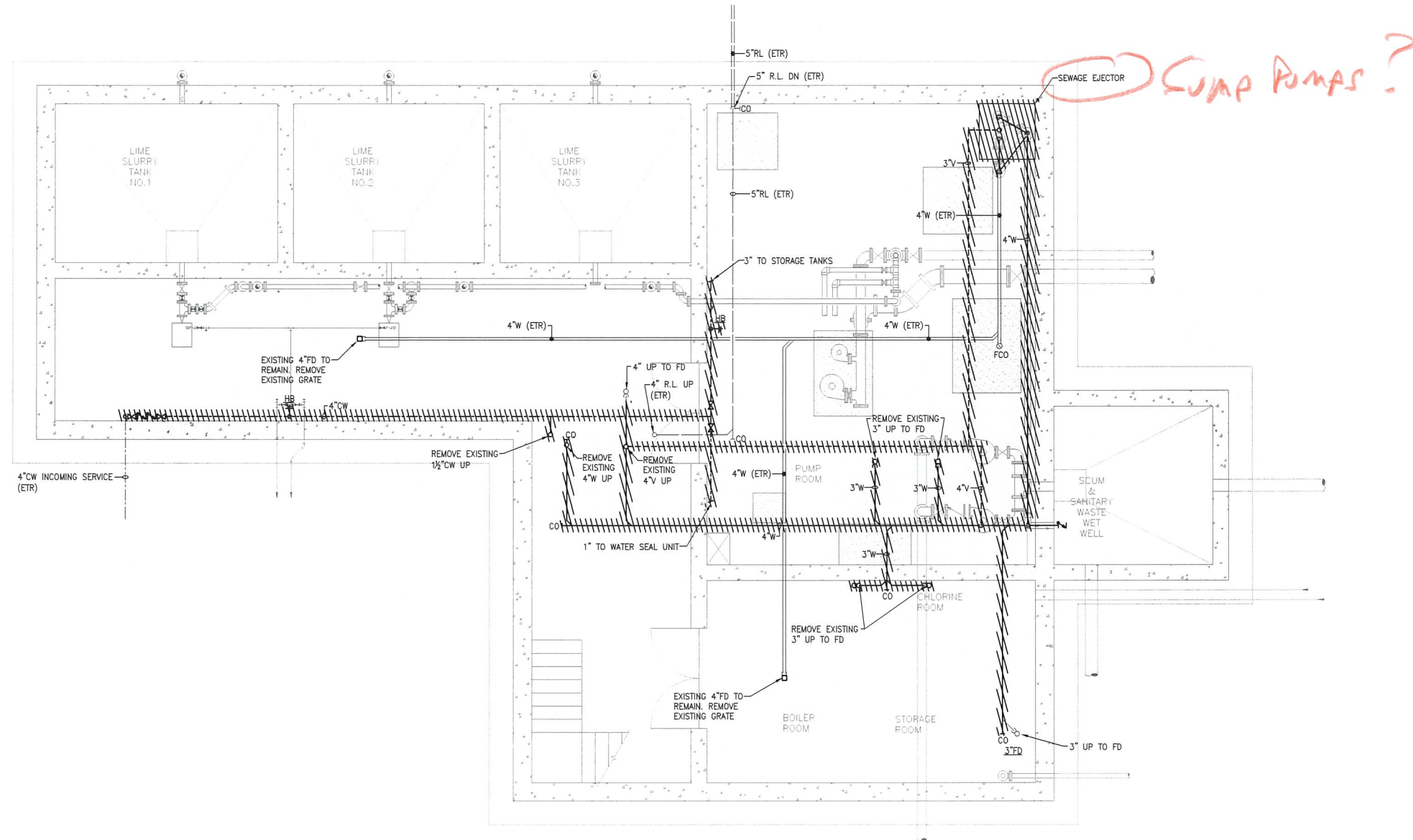
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For Review Only

SHEET NO.

P-4.4

5/20/2020 9:54 AM - 01/15/2020 11:00 AM - 01/15/2020 11:00 AM - TAUNTON WWTF UPGRADES/PLUMBING DEPARTMENT\18009-00-PLUMBING-CHEMICAL-HANDLING-BUILDING-DWG (BETA STB BW STB)



SEWAGE EJECTOR *SUMP PUMPS?*

BASEMENT - PLAN

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

PREPARED BY



REGISTERED PROFESSIONAL

NOT FOR CONSTRUCTION (CONCEPTUAL)

SUBCONSULTANT



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PROJECT

Taunton Wastewater Treatment Facility Improvements

Taunton, MA

TITLE

**Plumbing Demolition
Chemical Handling
Building
Basement Plan**

NO. REVISIONS DATE

DRAWN BY:	RLB
DESIGNED BY:	RLB
CHECKED BY:	JL
ISSUE DATE:	04/15/2020
BETA JOB NO.:	6050

SCALE

AS SHOWN

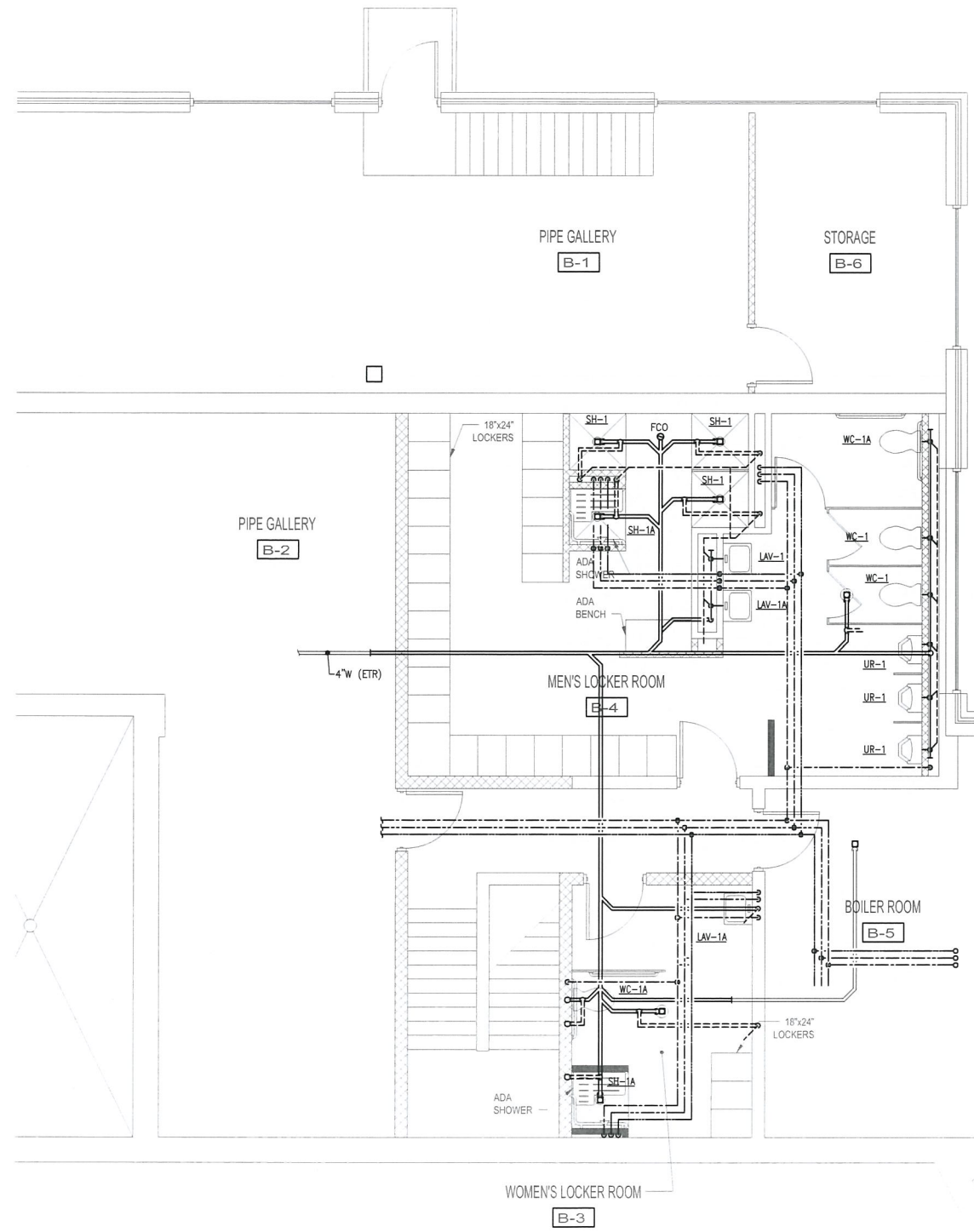
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For Review Only

SHEET NO.

P-5.1

5/29/2020 10:07 AM W:\YEAR - 2018\18009-00 - TAUNTON\WTF UPGRADES\PLUMBING\DEPARTMENT\18009-00\PLUMBING CONTROL-ADMIN BUILDING DWG (BETA STB BW STB)



COORDINATE w/
ARCHITECTURAL DWGS.
- NEW LAYOUT -

BASEMENT FLOOR - PLAN
SCALE: 1/8" = 1'-0"

PREPARED BY



REGISTERED PROFESSIONAL

NOT FOR
CONSTRUCTION
(CONCEPTUAL)

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PROJECT

**Taunton Wastewater
Treatment Facility
Improvements**

Taunton, MA

TITLE

**Plumbing Control &
Admin. Building
Basement Plan**

NO. REVISIONS DATE

DRAWN BY: RLB

DESIGNED BY: RLB

CHECKED BY: JL

ISSUE DATE: 04/15/2020

BETA JOB NO.: 6050

SCALE

AS SHOWN

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SHEET NO.

P-9.3

5/27/2020 8:38 AM 10 W/EAR - 201818000-00 - TAUNTON WASTE UPGRADING HVAC DEPARTMENT 11/09/09 00 HVAC LEGEND SCHEDULE AND DETAILS DWG (BETA STB BY STB)

GENERAL NOTES	
1.	HVAC WORK IS INDICATED DIAGRAMMATICALLY. EXACT LOCATIONS OF ALL COMPONENTS ARE TO BE DETERMINED IN THE FIELD AND BY THE ACTUAL BUILDING CONDITIONS. EXISTING 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 ARCHITECT.
2.	ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES BEFORE ANY INSTALLATION IS MADE.
3.	ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH STATE CODES, MANUFACTURER'S APPROVED PUBLISHED LITERATURE, AND AUTHORITIES HAVING JURISDICTION.
4.	INSTALLATION OF EQUIPMENT SHALL PERMIT ACCESSIBILITY FOR SERVICE AND/ OR REPLACEMENT.
5.	ALL CEILING MOUNTED EQUIPMENT SHALL BE INSTALLED IN SUCH A WAY THAT LIGHTS, PIPING, AND DUCTWORK DO NOT BLOCK ACCESS TO UNITS AND RELATED ACCESSORIES.
6.	HVAC CONTRACTOR SHALL COORDINATE ALL WALL, CEILING, FLOOR, ROOF AND BEAM PENETRATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER.
7.	ALL DUCT SIZES SHOWN ARE NET INSIDE CLEAR DIMENSIONS.
8.	PROVIDE VOLUME DAMPERS AT EVERY MAIN BRANCH TAKE-OFF AND AS INDICATED AND IN SUCH OTHER LOCATIONS WHERE REQUIRED TO PROPERLY BALANCE THE SYSTEM. DO NOT INSTALL VOLUME DAMPERS IN NECKS OF DIFFUSERS OR AT DISCHARGE OR INLET GRILLES IN DUCTWORK.
9.	PROVIDE INSTRUMENT TEST HOLES WITH CAPS IN AIR DISTRIBUTION SYSTEMS AS REQUIRED TO BALANCE SYSTEM.
10.	HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SHEETMETAL TRANSITIONS AT AIR TERMINAL UNITS, FANS, COILS, AND OTHER SIMILAR HVAC EQUIPMENT.
11.	ALL OPEN ENDED DUCTS IN THE CEILING PLENUM SHALL BE UNOBSTRUCTED FOR A MINIMUM DISTANCE OF 24" FROM THE OPENING TO ALLOW FREE AIR FLOW AND SHALL HAVE 3/4" WIRE MESH SCREENING.
12.	ALL TRANSFER DUCTS SHALL BE INTERNALLY LINED.
13.	ALL MISCELLANEOUS STRUCTURAL SUPPORTS REQUIRED FOR HVAC EQUIPMENT INSTALLATION SHALL BE PROVIDED BY HVAC SUBCONTRACTOR.
14.	EXACT LOCATION OF CEILING DIFFUSERS, GRILLES AND REGISTERS TO BE DETERMINED BY ARCHITECTURAL REFLECTED CEILING PLAN.
15.	INSTALL ALL PIPING BELOW DUCTWORK UNLESS CLEARANCE CONDITION REQUIRES PIPING TO BE ABOVE.
16.	EXACT ELEVATION FOR SIDE WALL DIFFUSERS, REGISTERS AND GRILLES SHALL BE APPROVED BY THE ARCHITECT BEFORE INSTALLATION.
17.	UNLESS OTHERWISE NOTED, ALL PIPING RUNOUTS SHALL BE 3/4"
18.	ALL EXPOSED EQUIPMENT (REGISTERS, UNIT HEATERS, ETC.) SHALL HAVE COLORS SELECTED BY THE ARCHITECT, UNLESS NOTED OTHERWISE.
19.	HVAC SUBCONTRACTOR SHALL BLANK OFF AND INSULATE ALL UNUSED LOUVER AREA.
20.	PITCH AIR INTAKE PLENUMS AND PROVIDE DRAIN TO NEAREST FLOOR DRAIN.
21.	ALL REGISTERS, GRILLES AND DIFFUSERS LOCATED IN WALLS NEAR FLOOR SHALL BE HEAVY-DUTY TYPE DESIGNED TO WITHSTAND RUDDGED IMPACT. REFER TO SCHEDULE. THE SECTION OF DUCTWORK BEHIND THE AIR DEVICE SHALL BE PAINTED FLAT BLACK.
22.	EXACT LOCATION OF THERMOSTAT TO BE COORDINATED WITH FINAL LOCATION OF WALL MOUNTED ARCHITECTURAL AND ELECTRICAL EQUIPMENT.
23.	ALL MAIN BRANCH PIPES FROM RISERS SHALL HAVE ISOLATION VALVES NEAR SHAFTS. PROVIDE SHUT-OFF VALVES AT EACH SUPPLY BRANCH AND COMBINATION BALANCING SHUT-OFF VALVE AT EACH RETURN BRANCH.
24.	PROVIDE FLEXIBLE CONNECTOR ON INTAKES AND DISCHARGES OF ALL AIR HANDLING UNITS.
25.	REFRIGERATION PIPING SIZED BY UNIT MANUFACTURER. SUBMIT CALCULATIONS TO ENGINEER FOR APPROVAL.
26.	DUCT MOUNTED SMOKE DETECTOR - FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR. INSTALLED BY THE HVAC CONTRACTOR.
27.	ROOF OPENINGS SHALL BE SIZED FROM APPROVED SHOP DRAWINGS.
28.	ALL FLOOR MOUNTED MECHANICAL EQUIPMENT, BOILERS, PUMPS, AIR HANDLERS, ETC. SHALL HAVE A CONCRETE PAD 4" HIGH AND 6" BEYOND EQUIPMENT FOOT PRINT ON ALL FOUR SIDES. CONCRETE PADS SHALL BE SIZE FROM APPROVED SHOP DRAWINGS.
29.	ALL DAMPER MOTORS SHALL BE 24 VOLT.
30.	PROVIDE DUCT MOUNTED SMOKE DAMPERS AT ALL SMOKE BARRIERS, REFER TO ARCH. DRAWINGS FOR LOCATION. SMOKE DAMPERS SHALL BE CLOSED AND ASSOCIATED EXH. FAN OR AHU SHALL BE SHUT-DOWN UPON DETECTION OF SMOKE AS SENSED BY AREA SMOKE DETECTORS. DAMPERS SHALL BE RUSKIN TYPE SD 60 OR EQUAL.

DEMOLITION NOTES	
1.	EXISTING WORK INDICATED TO BE DEMOLISHED SHALL BE REMOVED AND DISPOSED OF.
2.	 DEMOLITION

ABBREVIATIONS	
ACD	AUTOMATIC CONTROL DAMPER
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHAP	AS HIGH AS POSSIBLE
AP	ACCESS PANEL
ARCH	ARCHITECT
ATC	AUTOMATIC TEMPERATURE CONTROL
BD	BACKDRAFT DAMPER
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BOD	BOTTOM OF DUCT
CAF	CAPACITY
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CO	CLEANOUT
CONT	CONTROLLER
CP	CUT AND CAP
DIA	DIAMETER
DB	DRY BULB TEMPERATURE
DC	DUST COLLECTOR
DDC	DIRECT DIGITAL CONTROL
DN	DOWN
DWG	DRAWING
DX	DIRECT EXPANSION COOLING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EBB	ELECTRIC BASEBOARD RADIATION
ECH	ELECTRIC CABINET HEATER
ECOH	AIR-SIDE ECONOMIZER
EF	EXHAUST FAN
EFF	EFFICIENCY
ELV	ELEVATION
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
ETR	EXISTING TO REMAIN
EWI	ENTERING WATER TEMPERATURE
EXH	EXHAUST
FA	FREE AREA
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FT	FEET
FR	FINNED TUBE RADIATION
GAL	GALLONS
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GF	GLYCOL FEED
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HGRH	HOT GAS REHEAT
HW	HOT WATER
HZ	HERTZ
IN	INCHES
KE	KITCHEN EXHAUST
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LD	LINEAR DIFFUSER
LF	LEAVING WATER TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSANDS OF BTUs 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
OB	OPPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
POS	PROVIDED UNDER OTHER SECTIONS
PSI	POUNDS PER SQUARE INCH (GAUGE)
PD	PRESSURE DROP
PRV	PRESSURE REDUCING VALVE
PG	PROPYLENE GLYCOL
R	RETURN
RA	RETURN AIR
RB	REBALANCE
RF	RETURN/EXHAUST FAN
RG	RETURN GRILLE
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
S	SUPPLY
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SF	SQUARE FEET, SUPPLY FAN
SP	STATIC PRESSURE
SR	SUPPLY REGISTER
SS	STAINLESS STEEL
STL	STEEL
TYP	TYPICAL
UC	UNDERCUT DOOR
V	VOLTS
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
W/	WITH
W/O	WITHOUT
WB	WET BULB TEMPERATURE
WG	WATER GAUGE
WMS	WIRE MESH SCREEN

PIPING LEGEND	
—CD—	CONDENSATE DRAIN
—HWS—	HOT WATER SUPPLY
—HWR—	HOT WATER RETURN
—RL—	REFRIGERANT LIQUID
—RS—	REFRIGERANT SUCTION

EQUIPMENT TAG SYMBOLS & ABBREVIATIONS	
	EQUIPMENT NOT REQUIRING ELECTRICAL SERVICE
	EQUIPMENT REQUIRING ELECTRICAL SERVICE
	FINNED TUBE RADIATION
	AIR COOLED CONDENSING UNIT
	AIR HANDLING UNIT
	AIR FILTER
	AIR SEPARATOR
	BOILER
	COOLING COIL
	CHILLER
	CABINET UNIT HEATER
	CONNECTOR
	EXHAUST FAN
	ENERGY RECOVERY VENTILATOR
	EXPANSION TANK
	ELECTRIC UNIT HEATER
	FAN COIL UNIT
	FLOW MEASURING STATION
	FIN-TUBE RADIATION
	HEATING COIL
	HEAT PUMP
	HEAT RECOVERY UNIT
	HEATING AND VENTILATING UNIT
	INTAKE ROOF VENT
	MAKEUP AIR UNIT
	PUMP
	RETURN/EXHAUST FAN
	RETURN FAN
	ROOFTOP UNIT
	SOUND ATTENUATOR
	SUPPLY FAN
	TERMINAL UNIT
	UNIT HEATER
	UNIT VENTILATOR
	VARIABLE AIR VOLUME UNIT
	REBALANCE EXISTING CFM TO INDICATED AMOUNTED



INSTRUMENTATION	
	LOCAL PRESSURE GAUGE W/SHUTOFF AND SNUBBER
	DIFFERENTIAL PRESSURE GAUGE W/SHUTOFFS AND SNUBBERS
	LOCAL TEMPERATURE INDICATION
	HEATING ONLY THERMOSTAT
	COOLING ONLY THERMOSTAT
	HEATING/COOLING THERMOSTAT
	TEMPERATURE TRANSMITTER
	PRESSURE TRANSMITTER
	SMOKE DETECTOR
	HEAT DETECTOR
	FLOW TRANSMITTER
	STATIC PRESSURE SENSOR
	HUMIDITY SENSOR OR HUMIDISTAT
	CARBON DIOXIDE DETECTOR
	CARBON MONOXIDE DETECTOR
	OCCUPANCY SENSOR
	PRESSURE SENSOR SWITCH

VALVES AND ACCESSORIES	
	GATE VALVE
	BALL VALVE
	BALL VALVE WITH HOSE BIBB, CAP & CHAIN
	BUTTERFLY VALVE
	GLOBE VALVE
	PRESSURE REDUCING VALVE (SELF-CONTAINED)
	BACKPRESSURE REGULATOR (SELF-CONTAINED)
	CHECK VALVE (SWING TYPE)
	CHECK VALVE (SILENT TYPE)
	STRAINER W/BALL VALVE, HOSE BIBB & CAP (GATE VALVE FOR STEAM)
	ANGLE VALVE
	BUTTERFLY VALVE, TWO POSITION ACTUATOR
	BALL VALVE, TWO POSITION ACTUATOR
	SOLENOID VALVE
	TWO-WAY AUTOMATIC CONTROL VALVE, MODULATING ACTUATOR
	TWO-WAY AUTOMATIC CONTROL VALVE, TWO POSITION ACTUATOR
	THREE-WAY AUTOMATIC CONTROL VALVE, MODULATING ACTUATOR
	THREE-WAY AUTOMATIC CONTROL VALVE, TWO POSITION ACTUATOR
	AUTOMATIC FLOW CONTROL VALVE (PRESSURE INDEPENDENT)
	COMBINATION FLOWMETER/SHUT OFF/BALANCING VALVE
	FLOW SWITCH
	FLOW METER
	SAFETY RELIEF VALVE
	UNION OR FLANGE (SEE SPEC)
	BLIND FLANGE
	END CAP
	VACUUM BREAKER
	PRESSURE/TEMPERATURE WELL
	AUTOMATIC AIR VENT WITH ISOLATION VALVE
	MANUAL AIR VENT
	REDUCER (ECCENTRIC-FLAT ON BOTTOM OR FLAT ON TOP)
	REDUCER (CONCENTRIC)
	FLEXIBLE CONNECTION
	EXPANSION JOINT
	PIPE GUIDE
	ANCHOR
	RISE (SINGLE LINE - PLAN VIEW)
	DROP (SINGLE LINE - PLAN VIEW)
	TOP TAKEOFF
	BOTTOM TAKEOFF
	PIPE BREAK (SINGLE LINE)
	DIRT LEG
	CLEAN-OUT FOR CONDENSATE DRAIN
	RISE (DOUBLE LINE - PLAN VIEW)
	DROP (DOUBLE LINE - PLAN VIEW)
	PIPE BREAK (DOUBLE LINE)
	DIRECTION OF FLOW IN PIPE
	PITCH PIPE UP IN DIRECTION OF FLOW
	PITCH PIPE DOWN IN DIRECTION OF FLOW
	FINNED TUBE WITH NO ENCLOSURE
	FINNED TUBE WITH WITH ENCLOSURE

FLOW DIAGRAM EQUIPMENT SYMBOLS	
	CENTRIFUGAL PUMP
	POSITIVE DISPLACEMENT PUMP
	FILTER (WATER SERVICE)
	SUCTION DIFFUSER W/STRAINER
	H = HEATING COIL C = COOLING COIL RH = REHEAT COIL PH = PREHEAT COIL DX = DIRECT EXPANSION COIL
	EXPANSION TANK
	AIR SEPARATOR

DUCTWORK LEGEND/SYMBOLS	
	RECTANGULAR DUCTWORK - FIRST DIMENSION IS SIDE SHOWN (IN.) FREE AREA
	ROUND DUCT DIAMETER (IN.)
	SUPPLY/OUTSIDE AIR DUCTWORK UP
	SUPPLY/OUTSIDE AIR DUCTWORK DOWN
	RETURN/EXHAUST AIR DUCTWORK UP
	RETURN/EXHAUST AIR DUCTWORK DOWN
	FLEXIBLE CONNECTION
	CHANGE OF ELEVATION IN DIRECTION OF AIRFLOW (R)RISE,(D)DROP
	RECTANGULAR DUCT TRANSITION
	RECTANGULAR TO SINGLE LINE TRANSITION
	RECTANGULAR TO ROUND TRANSITION
	MITERED ELBOW W/ TURNING VANES
	SUPPLY AIR DIFFUSER BELOW DUCT
	RETURN OR EXHAUST REGISTER BELOW DUCT
	SUPPLY AIR DIFFUSER (SQUARE OR RECTANGULAR)
	SUPPLY AIR DIFFUSER (LINEAR)
	RETURN AIR GRILLE OR REGISTER
	MANUAL VOLUME DAMPER
	SELF-CLOSING FIRE DAMPER W/ACCESS DOOR
	SMOKE DAMPER W/ACCESS DOOR
	AUTOMATIC CONTROL DAMPER
	COMBINATION SMOKE/FIRE DAMPER W/ACCESS DOOR
	SUPPLY AIR BLOW DIRECTION
	EXHAUST / RETURN / OR INTAKE
	DIFFUSER/REGISTER TAG
	TYPE-BLOW (CD-1 = CEILING DIFFUSER)
	CFM
	SIZE
	INLINE CENTRIFUGAL FAN
	ROOF FAN OR VENT
	TERMINAL UNIT (COOLING ONLY)
	TERMINAL UNIT (HEATING/COOLING)
	EXHAUST FAN (SHOWN ON ROOF PLAN)
	EXHAUST FAN (SHOWN ON FLOOR PLAN)

SINGLE LINE DUCTWORK	
	DUCTWORK
	SUPPLY/OUTSIDE AIR DUCTWORK UP
	SUPPLY/OUTSIDE AIR DUCTWORK DOWN
	RETURN/EXHAUST AIR DUCTWORK UP
	RETURN/EXHAUST AIR DUCTWORK DOWN
	RECTANGULAR DUCTWORK W/ ACOUSTICAL LINING
	FLEXIBLE CONNECTION
	DUCT TRANSITION
	90° TAKE OFF
	90° ELBOW
	BULLHEAD SPLIT SUPPLY/RETURN

PREPARED BY		
		
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REGISTERED PROFESSIONAL		
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SUBCONSULTANT		
		
Mechanical/Electrical Engineers 150 Grossman Drive, Suite 309 Braintree, Massachusetts 02184 617 328-9215 web: www.sar.com		
PROJECT		
Taunton Wastewater Treatment Facility Improvements		
Taunton, MA		
TITLE		
Hvac Legend and General Notes		
NO.	REVISIONS	DATE
DRAWN BY:		RLB
DESIGNED BY:		RHB
CHECKED BY:		RHB
ISSUE DATE:		04/15/2020
BETA JOB NO.:		6050
SCALE		
NONE		
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION		
For Review Only		
SHEET NO.		
H-0.1		

ENERGY RECOVERY UNIT SCHEDULE (PART 1)

TAG NO.	BUILDING	SUPPLY AIR PERFORMANCE							EXHAUST AIR NORMAL PERFORMANCE					DX COOLING COIL							HOT WATER HEATING COIL							ELECTRIC HEATER DATA					ELECTRICAL DATA													
		SUPPLY IN CFM	MIN. OA IN CFM	ESP (IN WC)	TSP (IN WC)	FAN RPM	OPERATING POWER HP	MOTOR SIZE HP	EXH./RET. OUT CFM	E.S.P. IN (W.C.)	TOTAL SP IN (W.C.)	FAN RPM	OPERATING POWER HP	MOTOR SIZE HP	REFRIG TYPE	TOTAL MBH	SENSIBLE MBH	ROWS	EAT (DB °F)	EAT (WB °F)	LAT (DB °F)	LAT (WB °F)	CAPACITY (MBH)	GPM	EAT (DB °F)	LAT (DB °F)	EWT (DB °F)	LWT (DB °F)	% GLYCOL	WPD (FT)	APD (IN WC)	KW	ENT. °F	LVG. °F	AMPS	CONTROL	V	PHASE	HZ	MCA	MOCP	V	PHASE	HZ		
2ERV-1	PIPE GALLERY BUILDING	13,050	13,050	1.3	3.792	2227	(2) 7.13	(2) 7.5	13,050	1.3	3.218	2406	(2) 8.74	(2) 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	451.7	48.6	39.7	71.7	180	160	40% P.G.	10.7	0.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	48.2	60	480	3	60
2ERV-2	PIPE GALLERY BUILDING	12,450	12,450	1.3	3.62	2151	(2) 6.43	(2) 7.5	12,450	1.3	3.095	2323	(2) 7.88	(2) 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	439.1	47.2	40.4	72.9	180	160	40% P.G.	10.2	0.057	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	48.2	60	480	3	60		
4ERV-1	FINAL CLARIFIER 1 & 2 PUMP STATION	9,560	9,560	1.3	2.926	2296	(2) 3.98	(2) 5	9,560	1.3	2.549	1931	(2) 4.549	(2) 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	28.8	35	480	3	60
4ERV-2	FINAL CLARIFIER 3 & 4 PUMP STATION	7,500	7,500	1.3	3.428	1816	(1) 6.78	(1) 7.5	7,500	1.3	3.039	2013	(1) 9.12	(1) 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	26.0	35	480	3	60	
5ERV-1	CHEMICAL HANDLING BUILDING	2,825	950	1.0	2.452	1662	(1) 1.76	(1) 3	950	1.0	1.606	1699	(1) 0.53	(1) 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12.1	15	480	3	60		
9ERV-1	ADMINISTRATION BUILDING	3,200	3,200	1.5	3.408	1935	(1) 2.79	(1) 3	3,200	1.5	2.809	3297	(1) 3.41	(1) 5	R-410a	192.9	114.4	6	80.9	68.5	48.4	48.3	168.5	18.1	45.9	94.5	180	160	40% P.G.	1.3	0.133	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12.4	15	480	3	60	
9ERV-2	OLD BLOWER BUILDING	3,600	500	1.0	2.734	1876	(1) 2.48	(1) 3	3,600	1.0	1.441	1494	(1) 0.33	(1) 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12.1	15	480	3	60		

NIC
NIC

NIC

Phase 2

ENERGY RECOVERY UNIT SCHEDULE (PART 2)

TAG NO.	ENERGY RECOVERY WHEEL PERFORMANCE										SUPPLY FAN SOUND POWER BY OCTAVE BAND										WEIGHT LBS	SUPPLY FILTER	OUTDOOR FILTER	EXHAUST FILTER	MANUFACTURER MODEL NUMBER	REMARKS												
	WINTER CONDITIONS DESIGN					SUMMER CONDITIONS DESIGN					SOUND POWER BY OCTAVE BAND					EXHAUST NORMAL FAN SOUND POWER BY OCTAVE BAND																						
	OUTDOOR		INDOOR			OUTDOOR		INDOOR			63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	LWA	DBA							SONES	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	LWA	DBA	SONES
	DB °F	WB °F	DB °F	WB °F	RH%	DB °F	WB °F	DB °F	WB °F	RH%	Hz	Hz	Hz	Hz	Hz	Hz	Hz	dB	dB	dB							Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	dB	dB	dB	
2ERV-1	7.4	5.3	46.7	50	90.8	76.2	80.7	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,157	-	-	-	GREENHECK RVE-120-74-30H	①②③④⑤⑥⑦	
2ERV-2	7.4	5.3	46.7	50	90.8	76.2	80.7	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,157	-	-	-	GREENHECK RVE-120-74-30H	①②③④⑤⑥⑦	
4ERV-1	7.4	5.3	46.7	50	90.8	76.2	80.7	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,202	-	-	-	GREENHECK RVE-120-74-30H	①②③④⑤⑥⑦	
4ERV-2	7.4	5.3	46.7	50	90.8	76.2	80.7	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,521	-	-	-	GREENHECK RVE-85-58-30H	①②③④⑤⑥⑦	
5ERV-1	7.4	5.3	63.5	50	90.8	76.2	80.7	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,386	-	-	-	GREENHECK RVE-40-30-30L	①②③④⑤⑥⑦	
9ERV-1	7.4	5.3	63.5	50	90.8	76.2	80.7	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,525	-	-	-	GREENHECK RVE-40-36-30H	①②③④⑤⑥⑦	
9ERV-2	7.4	5.3	63.5	50	90.8	76.2	80.7	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,386	-	-	-	GREENHECK RVE-40-30-30L	①②③④⑤⑥⑦	

① BASE RAILS ② LOW LEAKAGE DAMPERS ③ RECIRC. DAMPER ④ FACTORY SUPPLY & EXHAUST FAN VFD ⑤ ENERGY BYPASS WHEEL DAMPER ⑥ FACTORY MOUNTED DISCONNECT ⑦ SINGLE POINT POWER CONNECTION

EXHAUST FAN SCHEDULE

TAG NO.	BUILDING	CFM	ESP (IN WC)	SPEED (RPM)		DRIVE	ELECTRICAL DATA				MANUFACTURER & MODEL #	REMARKS
				FAN	MOTOR		HP	V	PH	HZ		
5EF-1	CHEMICAL HANDLING BUILDING	450	0.45	1353	1725	DIRECT	1/4	120	1	60	GREENHECK SE1-12-432-VG	

PREPARED BY



REGISTERED PROFESSIONAL

NOT FOR CONSTRUCTION (CONCEPTUAL)

SUBCONSULTANT



PROJECT

Taunton Wastewater Treatment Facility Improvements

Taunton, MA

TITLE

Hvac Schedules

NO. REVISIONS DATE

DRAWN BY: RLB
DESIGNED BY: RHB
CHECKED BY: RHB
ISSUE DATE: 04/15/2020
BETA JOB NO.: 6050

SCALE

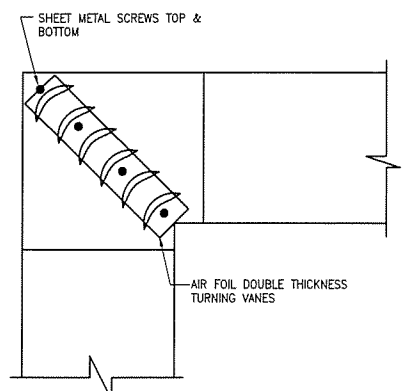
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For Review Only

SHEET NO.

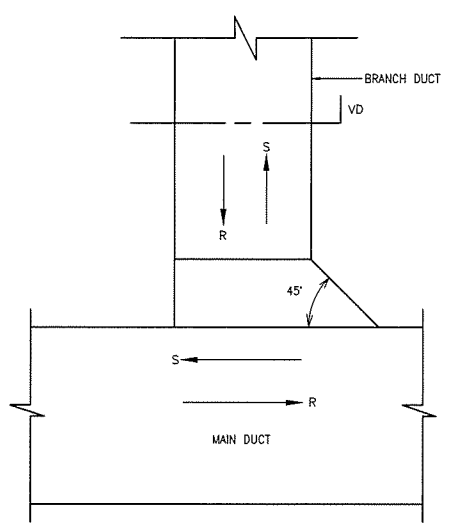
H-0.2

5/20/2020 8:38 AM W:\YEAR - 2018\180609 00 - TAUNTON WASTE UPGRADESHVAC DEPARTMENT\180609 00 HVAC LEGEND SCHEDULE AND DETAILS DWG (BETA STB BW STB)

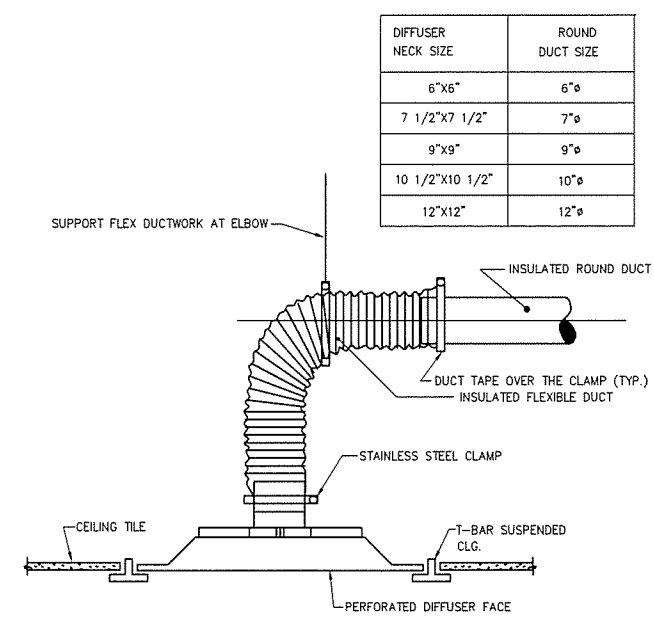


NOTE:
PROVIDE TURNING VANES IN ALL 90°
DUCT ELBOWS HAVING A CENTERLINE
RADIUS LESS THAN 1/2 TIMES THE DUCT
WIDTH.

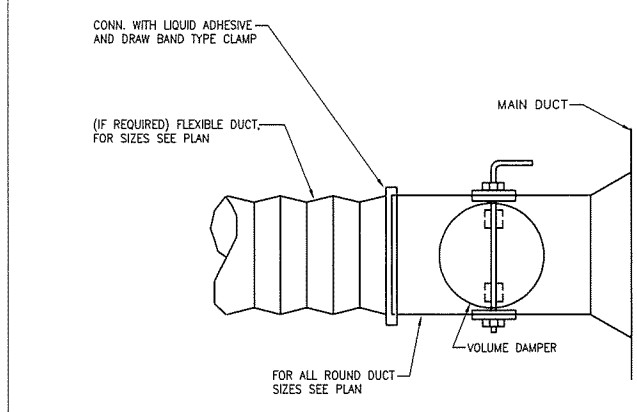
1 TYPICAL 90° DUCT ELBOW DETAIL
NO SCALE



2 BRANCH DUCT CONNECTION DETAIL
NO SCALE

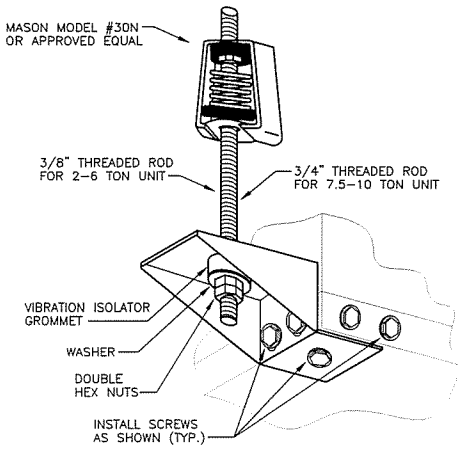


3 SUPPLY DIFFUSER CONNECTION DETAIL
NO SCALE

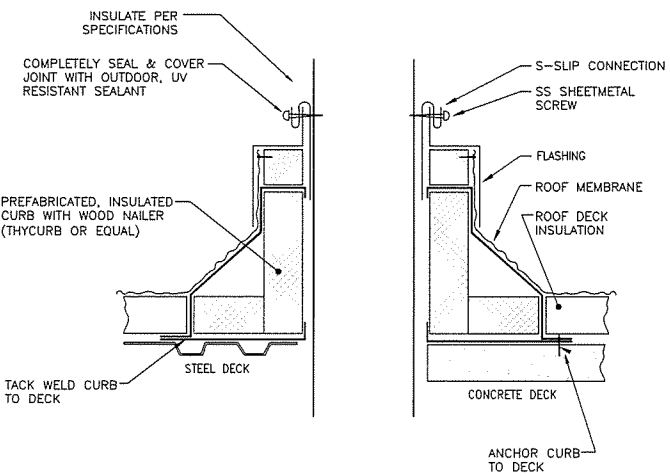


4 ROUND BRANCH DUCT TAKE-OFF DETAIL
NO SCALE

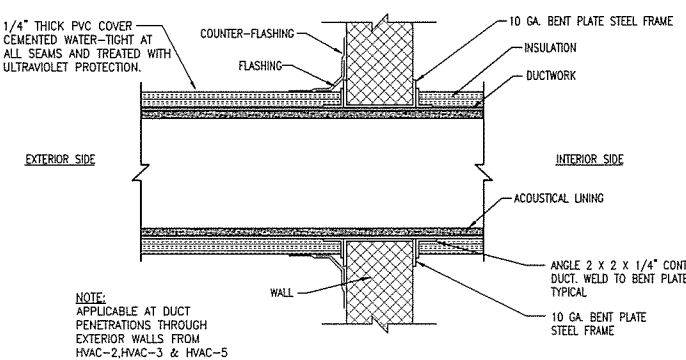
HD-017



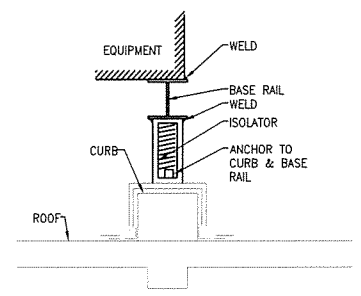
5 HORIZONTAL HEAT PUMP UNIT
HANGER KIT ASSEMBLY
NO SCALE



6 DUCT PENETRATION THRU ROOF DETAIL
NO SCALE



7 DUCT PENETRATION AT EXTERIOR WALL DETAIL
NO SCALE



8 ACCU MOUNTING DETAIL
NO SCALE

PREPARED BY



REGISTERED PROFESSIONAL

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CONSTRUCTION
(CONCEPTUAL)

SUBCONSULTANT



PROJECT

Taunton Wastewater
Treatment Facility
Improvements

Taunton, MA

TITLE

Hvac Details

NO. REVISIONS DATE

DRAWN BY:	RLB
DESIGNED BY:	RHB
CHECKED BY:	RHB
ISSUE DATE:	04/15/2020
BETA JOB NO.:	6050

SCALE

NONE

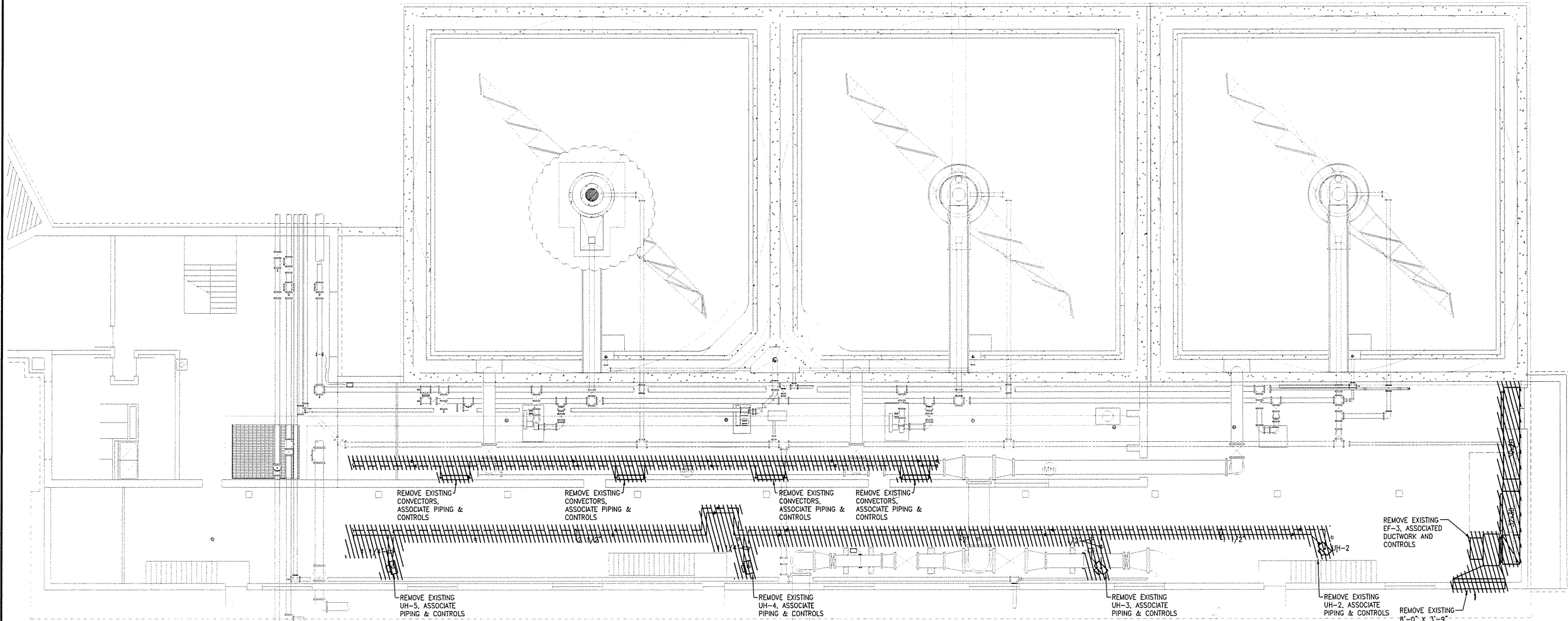
For Review Only

SHEET NO.

H-0.5

5/2/2020 8:30 AM 131116000 00 - TAUNTON WWTFF UPGRADES/HVAC DEPARTMENT/116000 00 HVAC LEGEND SCHEDULE AND DETAILS DWG (BETA STB BW STB)

5/29/2020 8:24 AM W:\YEAR - 2018\18009-00 - TAUNTON WWTF UPGRADES\HVAC DEPARTMENT\18009-00 HVAC PRIMARY CLARIFIERS & SLUDGE RS DWG (BETA STB BW STB)



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

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NOT FOR
CONSTRUCTION
(CONCEPTUAL)

SUBCONSULTANT



Mechanical/Electrical Engineers
159 Grossman Drive, Suite 309
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web: www.sar.com

PROJECT

Taunton Wastewater
Treatment Facility
Improvements

Taunton, MA

TITLE

Hvac Primary Clarifiers
Demolition Plan

NO. REVISIONS DATE

DRAWN BY:	RLB
DESIGNED BY:	RHB
CHECKED BY:	RHB
ISSUE DATE:	04/15/2020
BETA JOB NO.:	6050

SCALE

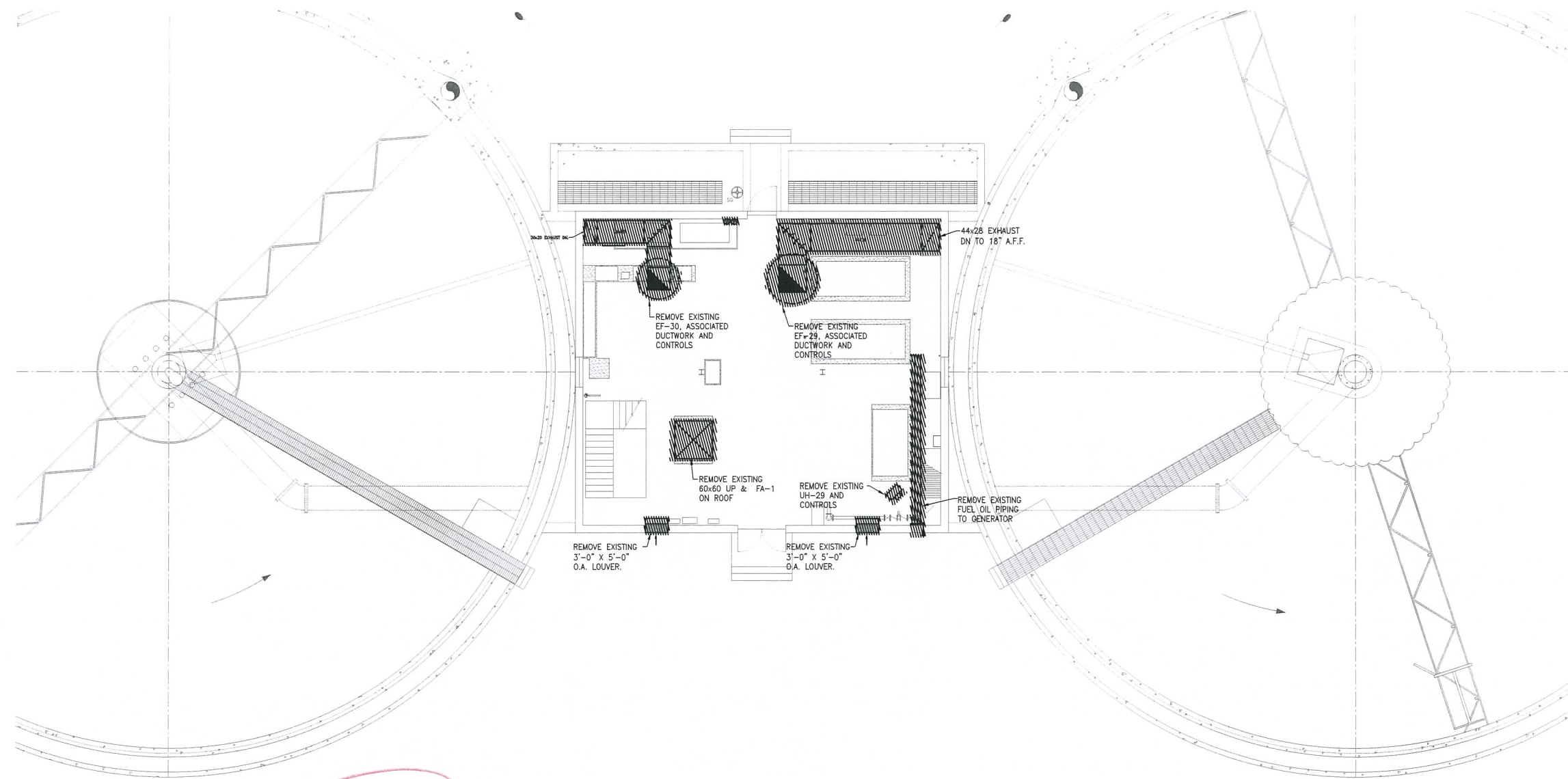
AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION
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SHEET NO.

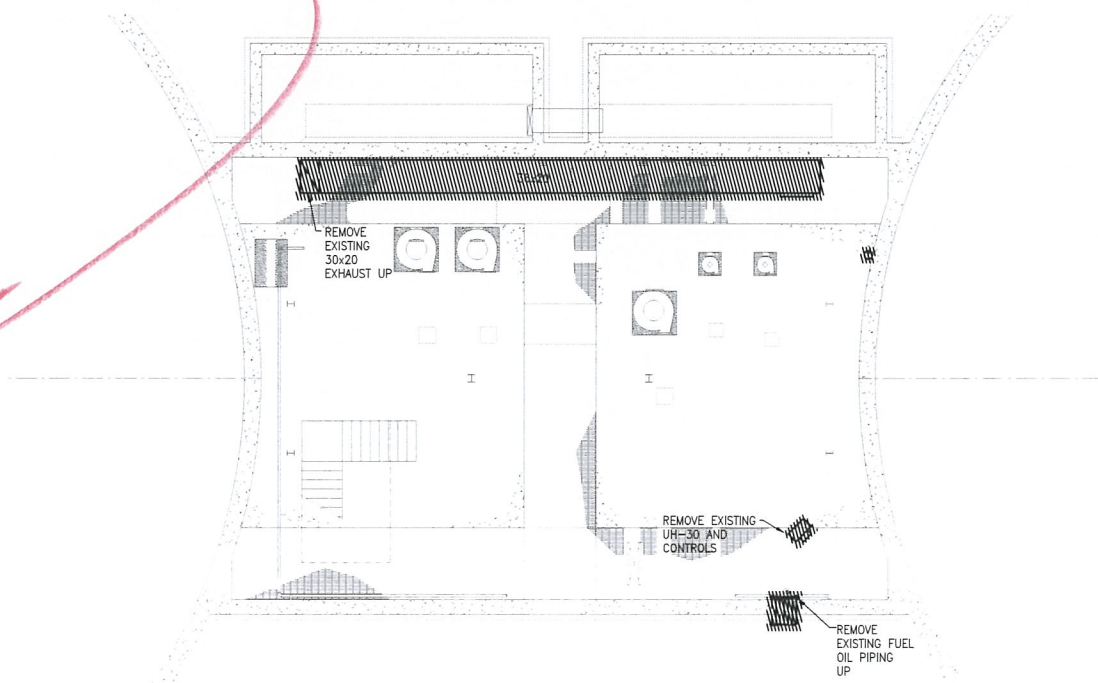
H-2.1

5/20/2020 9:27 AM W:\YEAR - 2018\18009 00 - TAUNTON WWTF UPGRADES\HVAC DEPARTMENT\18009 00 HVAC FINAL CLARIFIERS & SECONDARY SLUDGE PS DWG (BETA STB BW STB)



UPPER LEVEL PLAN
SCALE: 1/8"= 1'-0"

*NTIC
Phase 2*



LOWER LEVEL PLAN
SCALE: 1/8"= 1'-0"

PREPARED BY



REGISTERED PROFESSIONAL

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CONSTRUCTION
(CONCEPTUAL)

SUBCONSULTANT



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PROJECT

Taunton Wastewater
Treatment Facility
Improvements

Taunton, MA

TITLE

Hvac Demolition
Final Clarifiers No.
1 & 2 Plan & Sludge
Pump Station No.1
Plan

NO. REVISIONS DATE

DRAWN BY: RLB
DESIGNED BY: RHB
CHECKED BY: RHB
ISSUE DATE: 04/15/2020
BETA JOB NO.: 6050

SCALE

NONE

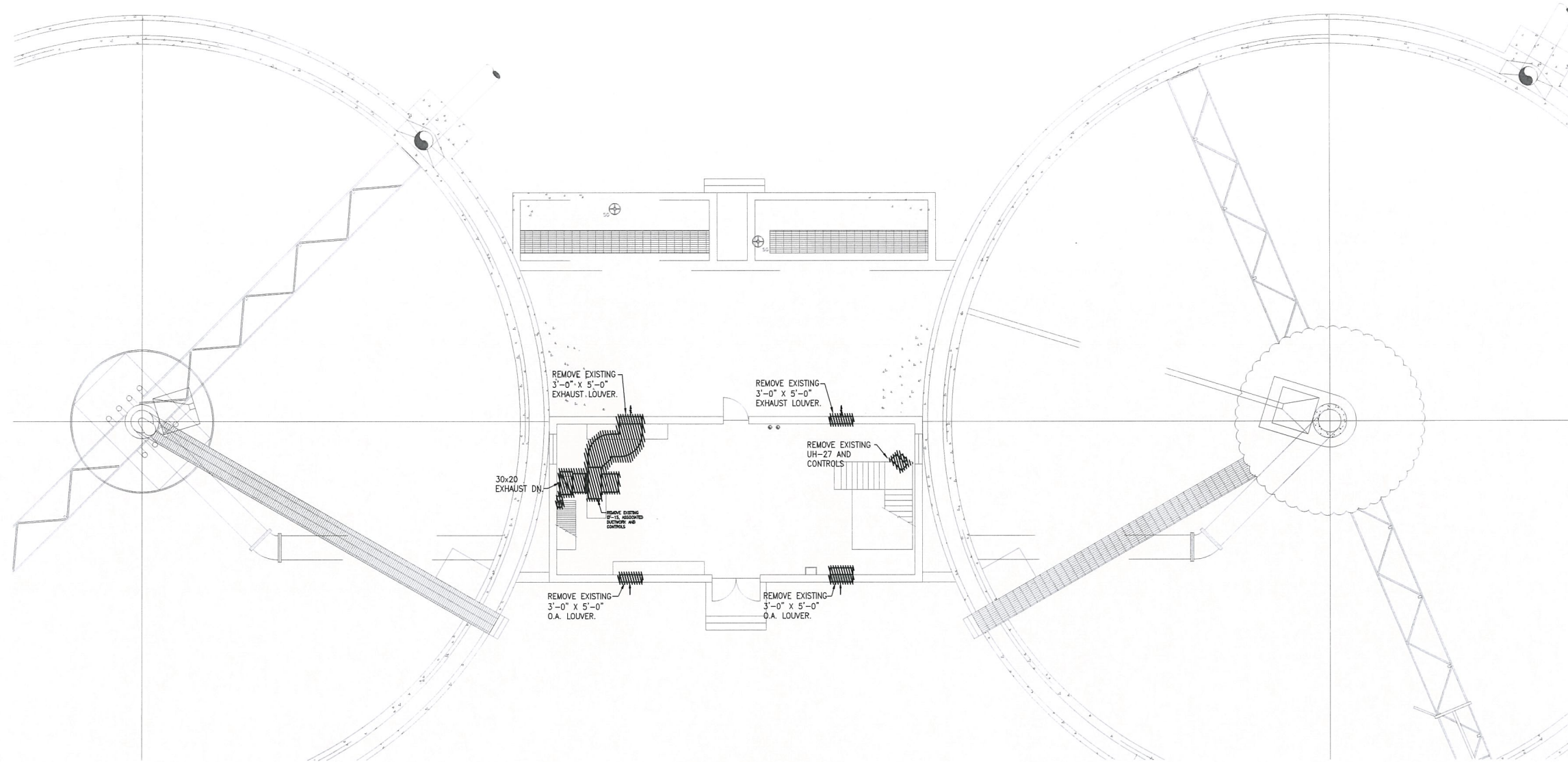
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For Review Only

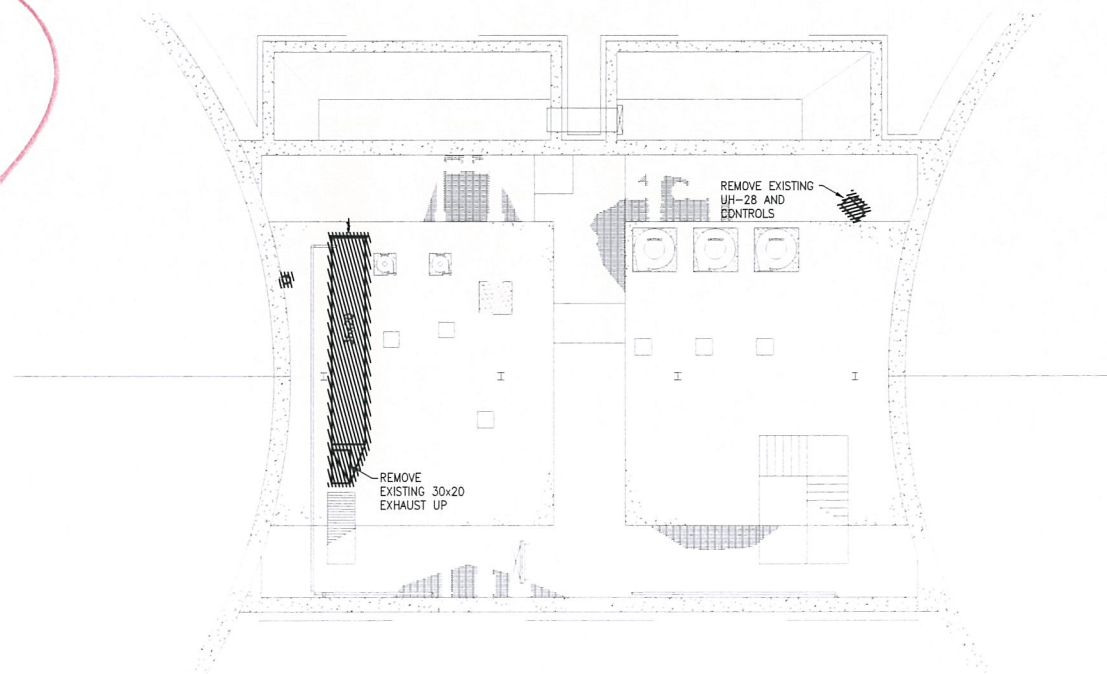
SHEET NO.

H-4.1

5/20/2020 8:28 AM W:\YEAR - 2018\18009-00 - TAUNTON WWTF UPGRADES\HVAC DEPARTMENT\18009-00 HVAC FINAL CLARIFIERS & SECONDARY SLUDGE PS DWG (BETA STB BW STB)



Phase 2



PREPARED BY



REGISTERED PROFESSIONAL

NOT FOR CONSTRUCTION (CONCEPTUAL)

SUBCONSULTANT



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PROJECT

Taunton Wastewater Treatment Facility Improvements

Taunton, MA

TITLE

Hvac Demolition
Final Clarifiers
No.
3 & 4 Plan &
Sludge Pump
Station No.2
Plan

NO. REVISIONS DATE

DRAWN BY:	RLB
DESIGNED BY:	RHB
CHECKED BY:	RHB
ISSUE DATE:	04/15/2020
BETA JOB NO.:	6050

SCALE

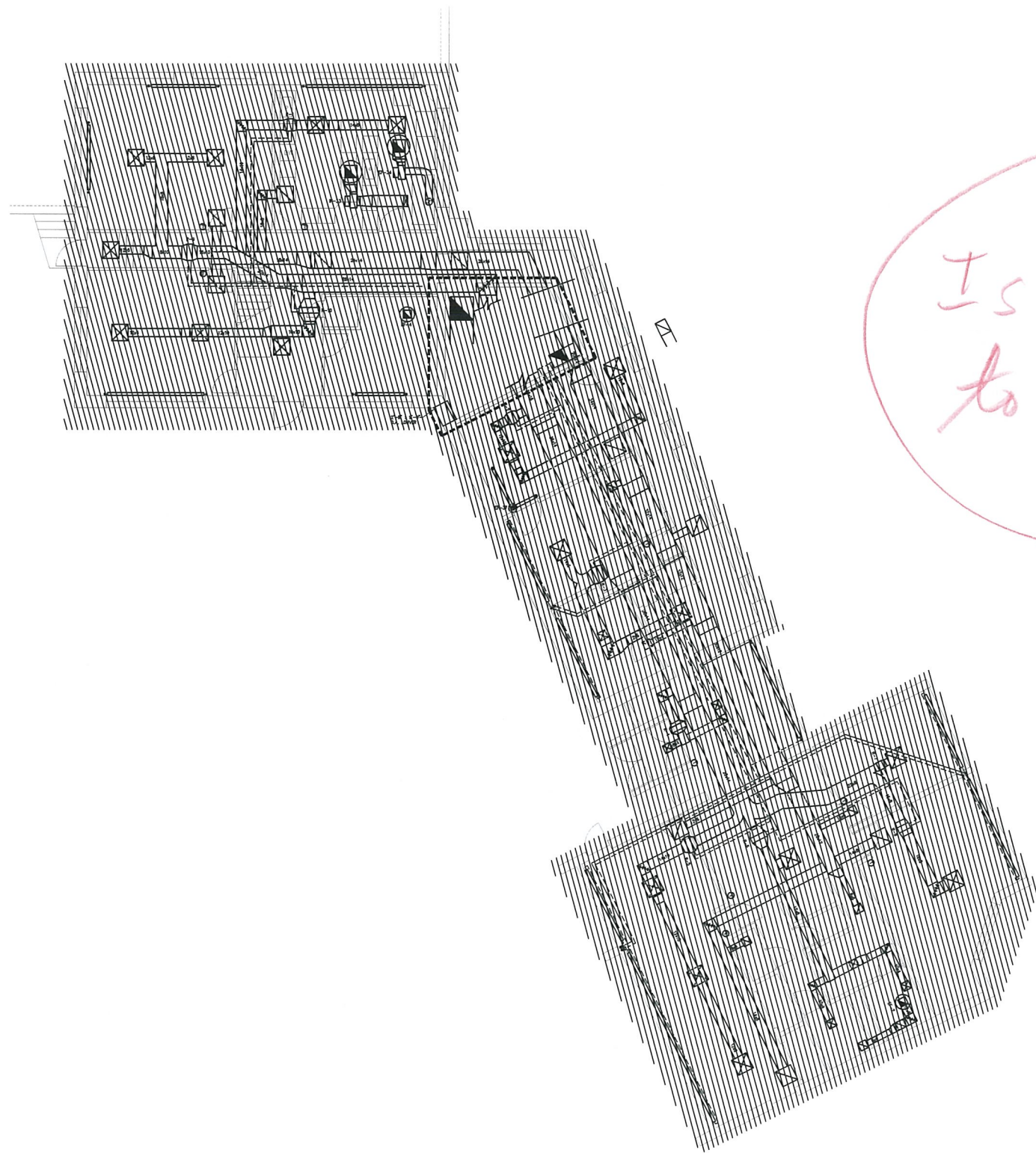
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SHEET NO.

H-4.3

5/20/2020 8:34 AM W:\YEAR - 2018\18009 00 - TAUNTON WWTF UPGRADES\HVAC DEPARTMENT\118009 00 HVAC CONTROL-ADMIN BUILDING DWG (BETA STB BW STB)



Is everything related to H&V being demolished?

FIRST FLOOR - PLAN
SCALE: 1/8" = 1'-0"

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PROJECT

Taunton Wastewater Treatment Facility Improvements

Taunton, MA

TITLE

Hvac Demolition Control & Admin. Building First Floor Plan

NO. REVISIONS DATE

DRAWN BY: RLB

DESIGNED BY: RHB

CHECKED BY: RHB

ISSUE DATE: 04/15/2020

BETA JOB NO.: 6050

SCALE

AS SHOWN

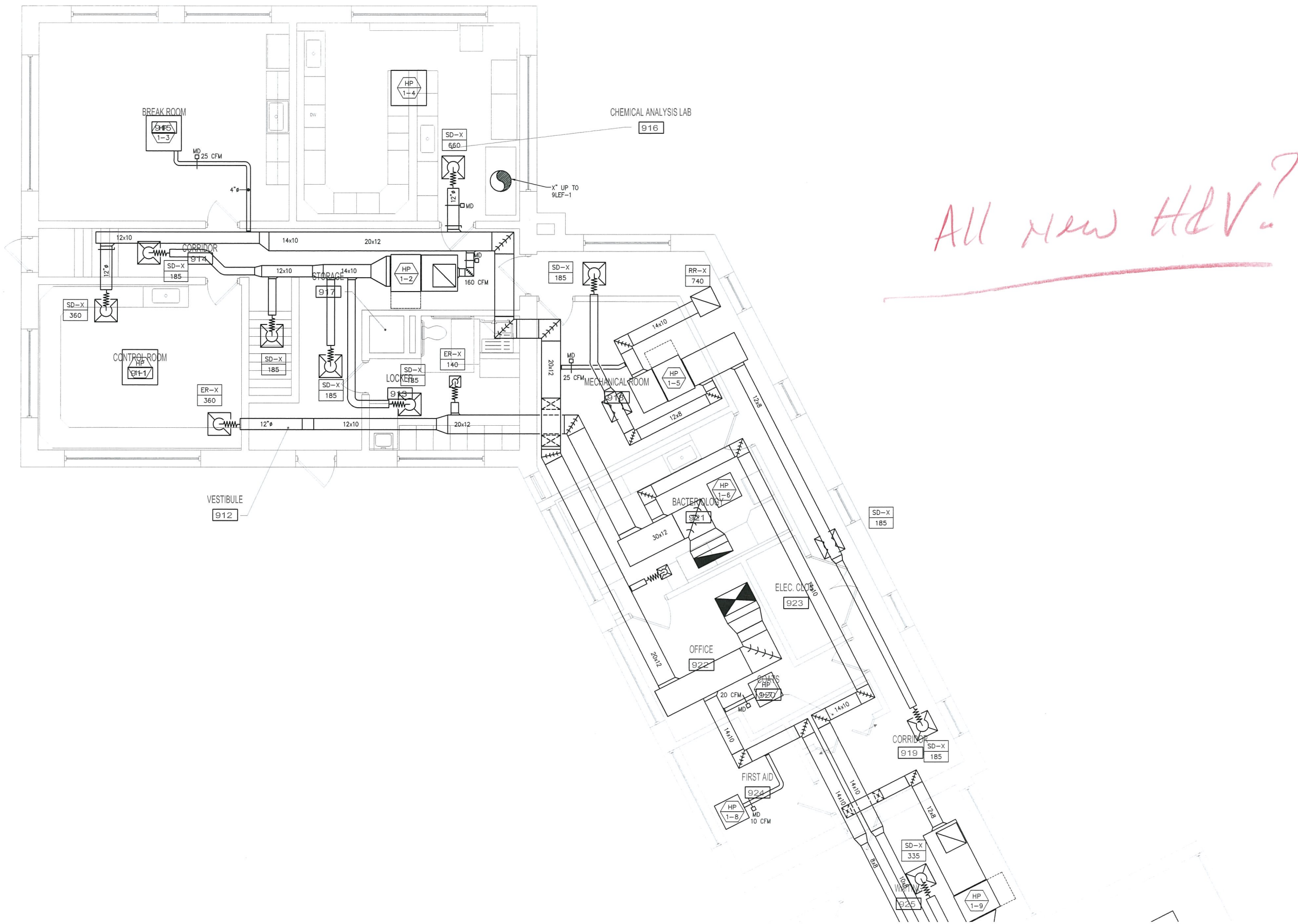
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SHEET NO.

H-9.2

5/29/2020 8:35 AM W:\YEAR - 2018\18009-00 - TAUNTON WWTF UPGRADES\HVAC DEPARTMENT\18009-00 HVAC CONTROL-ADMIN BUILDING DWG (BETA STB BW STB)



FIRST FLOOR - PLAN I
SCALE: 1/4" = 1'-0"

PREPARED BY



REGISTERED PROFESSIONAL

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CONSTRUCTION
(CONCEPTUAL)

SUBCONSULTANT



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PROJECT

Taunton Wastewater
Treatment Facility
Improvements

Taunton, MA

TITLE

Hvac Control &
Admin. Building First
Floor Ductwork Part
Plan

NO. REVISIONS DATE

DRAWN BY: RLB
DESIGNED BY: RHB
CHECKED BY: RHB
ISSUE DATE: 04/15/2020
BETA JOB NO.: 6050

SCALE

AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

For Review Only

SHEET NO.

H-9.4

