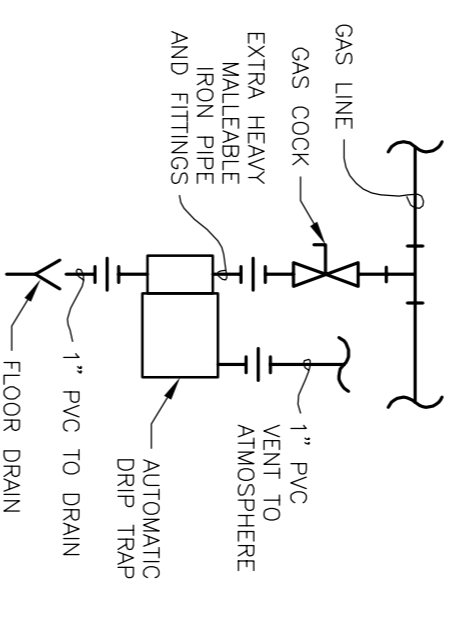
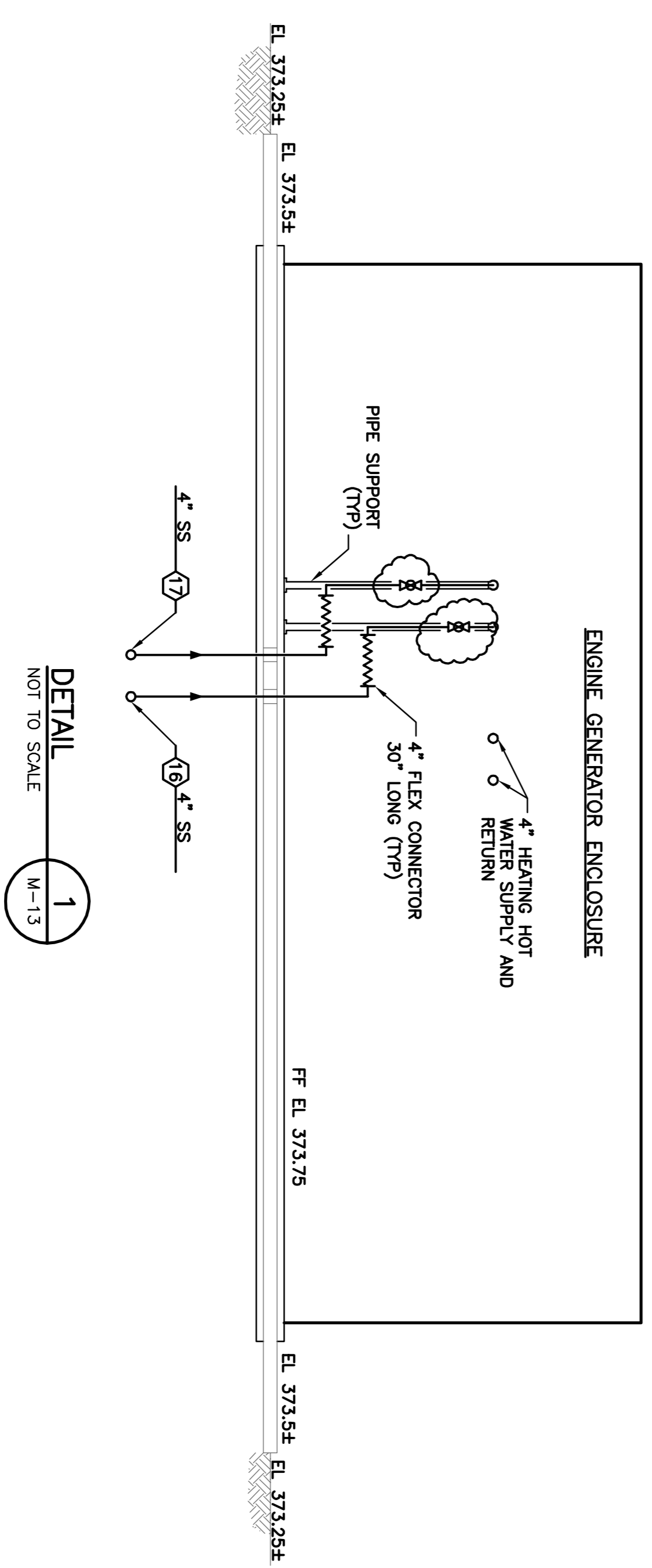


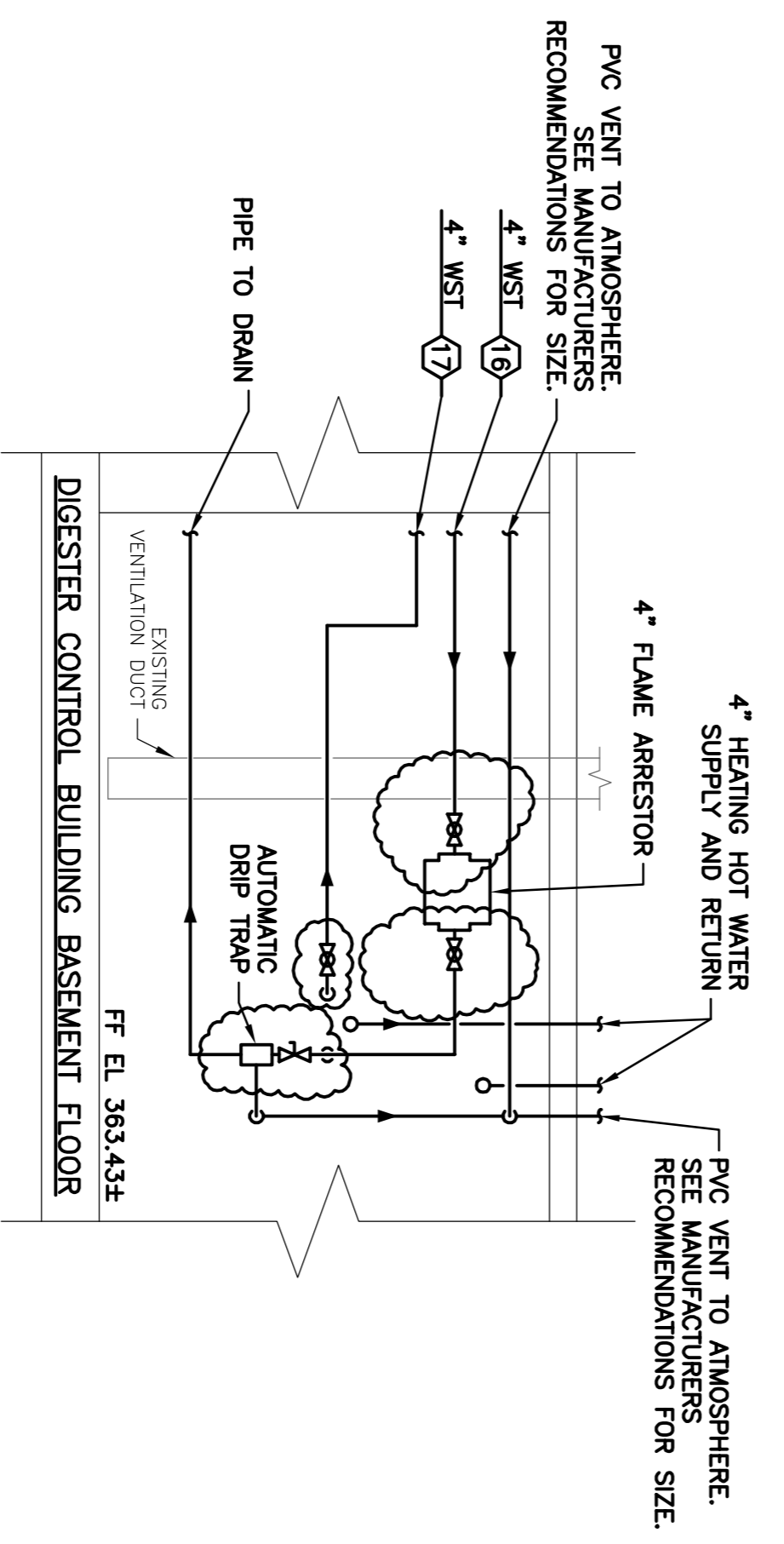
SECTION 1
1/4" = 1'-0"
M-13



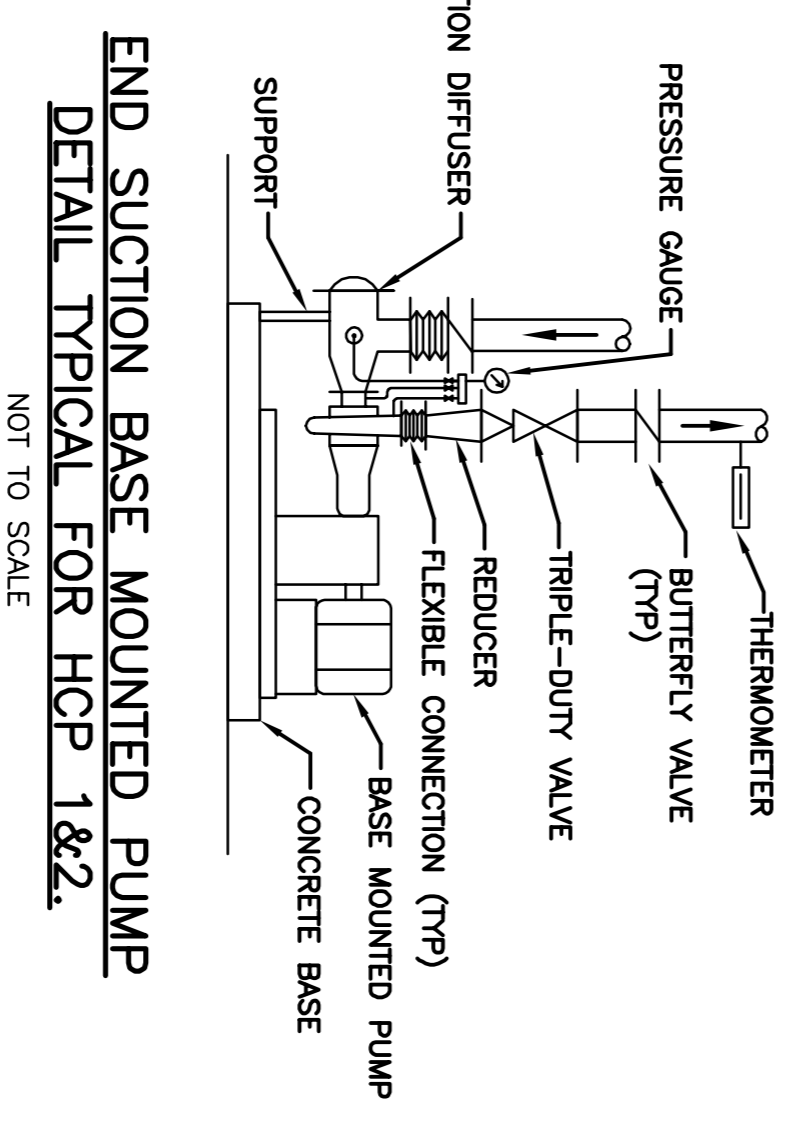
TYPICAL DRIP TRAP DETAIL
NOT TO SCALE



DETAIL 1
NOT TO SCALE
M-13



DETAIL 2
NOT TO SCALE
M-13



**END SUCTION BASE MOUNTED PUMP
DETAIL TYPICAL FOR HCP 1&2.**
NOT TO SCALE

PIPE LEGEND
19 BIO GAS
17 NATURAL GAS

RECORD DRAWINGS

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION AS DOCUMENTED BY ENGINEER. DATE: 2/10/2012, PER: GCH

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
BIOSOLIDS HANDLING IMPROVEMENTS PROJECT

**DIGESTER CONTROL HOUSE
CO-GENERATION
SECTIONS AND DETAILS**
MECHANICAL

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

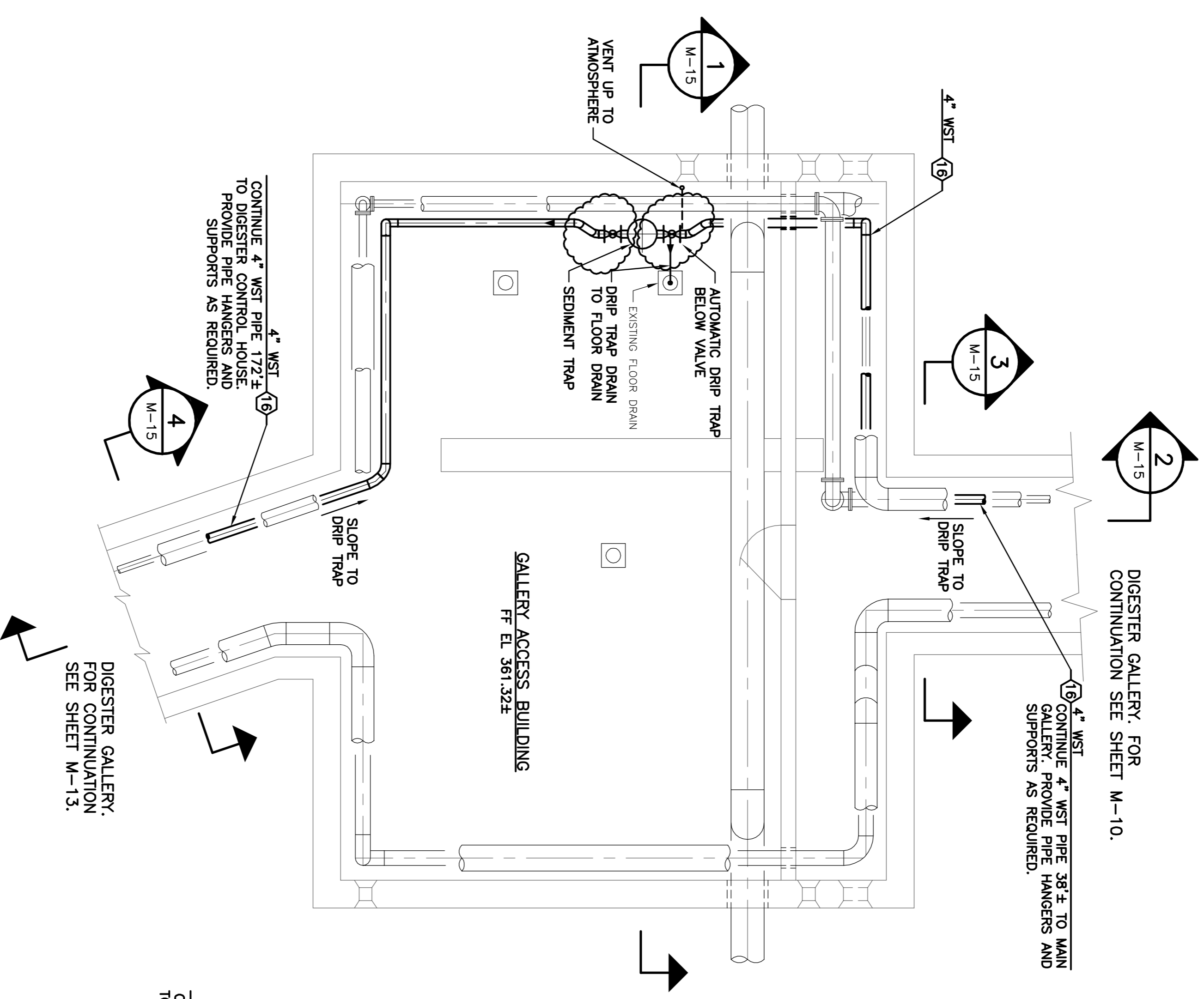
No.	Date	Revisions	Int.	In charge of
1	04/05	FOR REVIEW	NGH	---
2	07/05	ISSUED FOR APPROVAL	DBP	---
3	09/05	FOR CONSTRUCTION	SFB	---
4	09/06	REVISED VALUES ON DIGESTER PIPING	PKW/NGH	---

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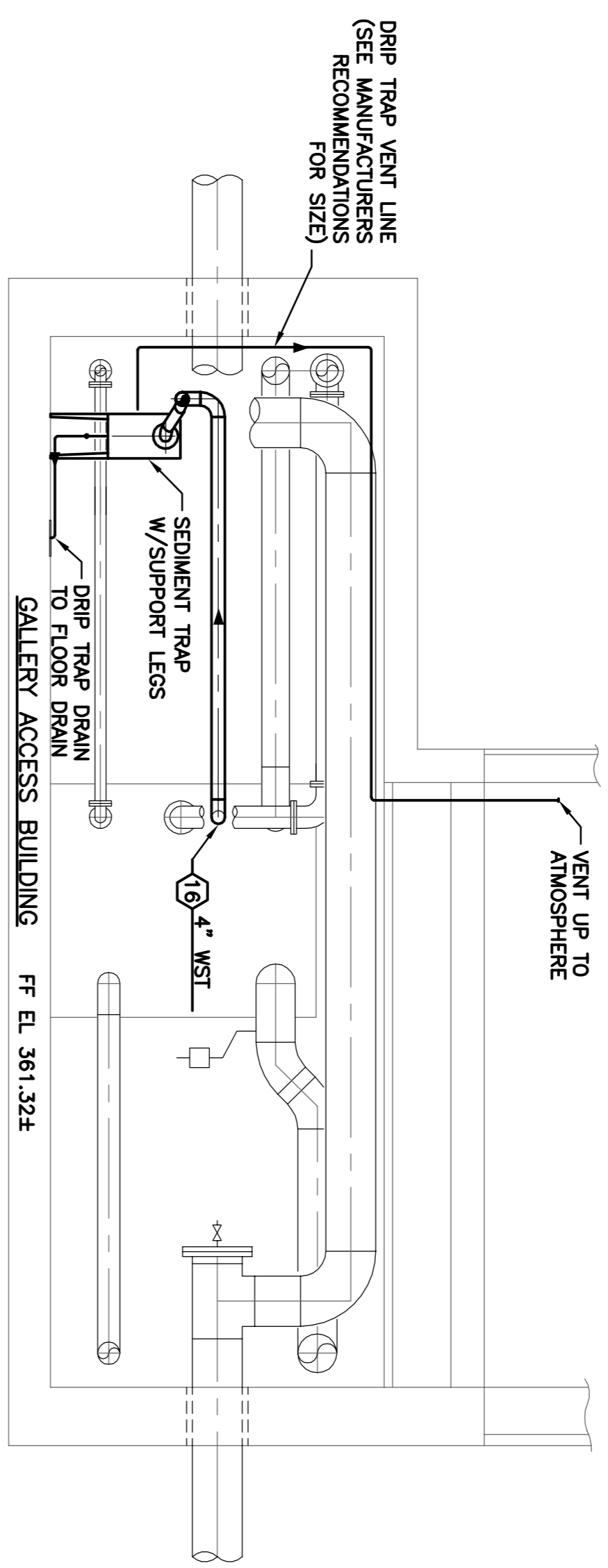


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Date: 09/05
M-14

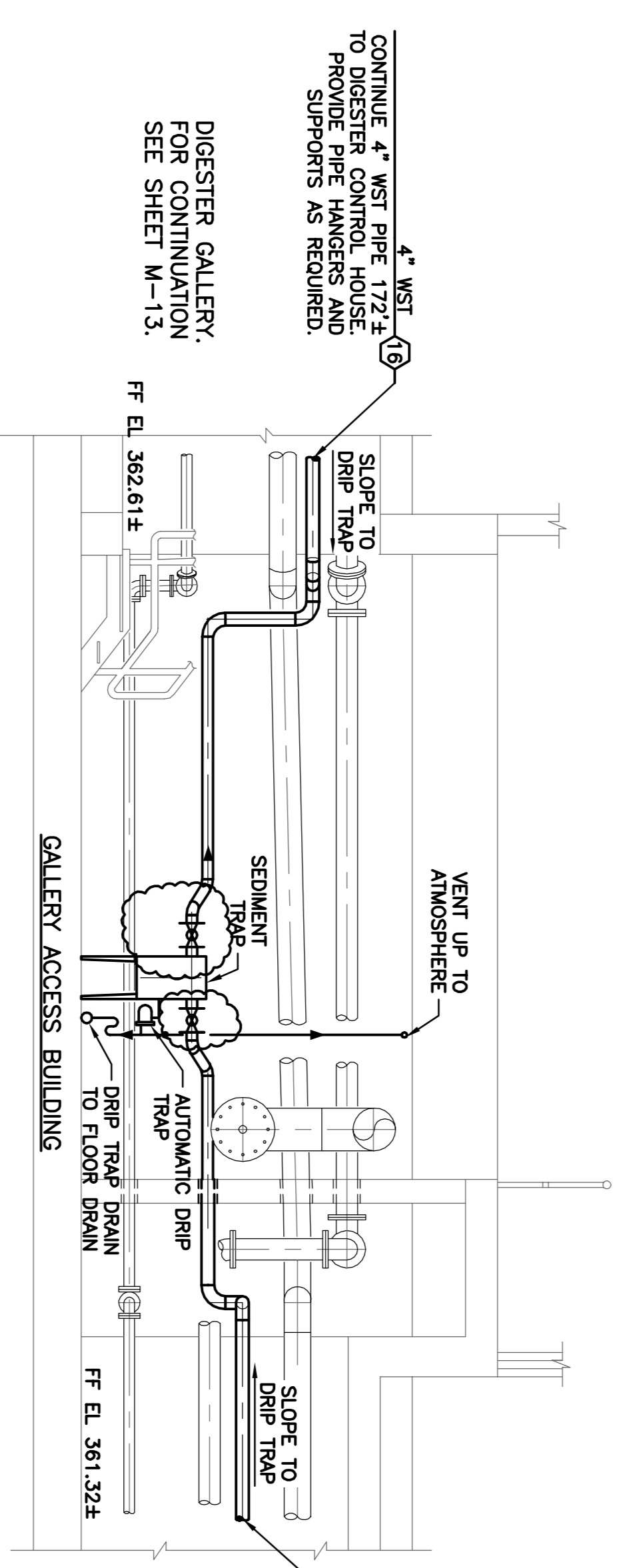
PIPE LEGEND
 (B) BIO GAS
 (7) NATURAL GAS



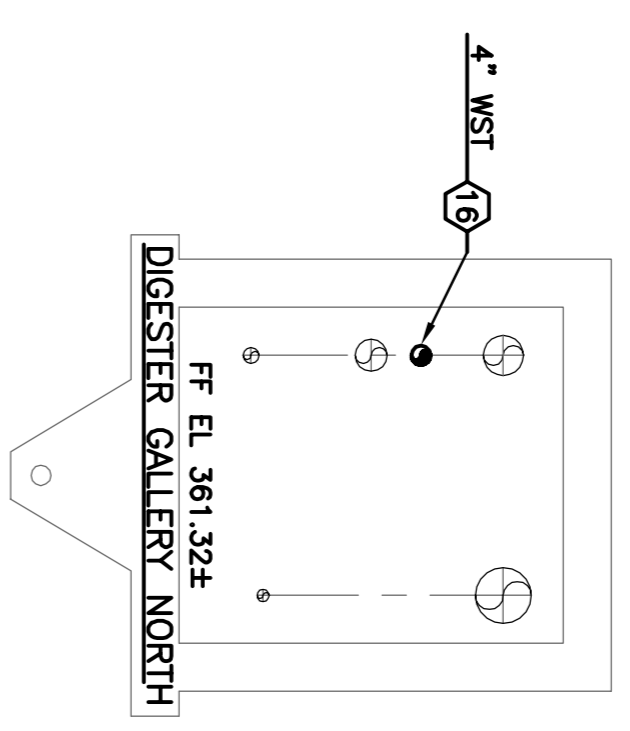
GALLERY ACCESS BUILDING PLAN
 SCALE: 1/4"=1'-0"



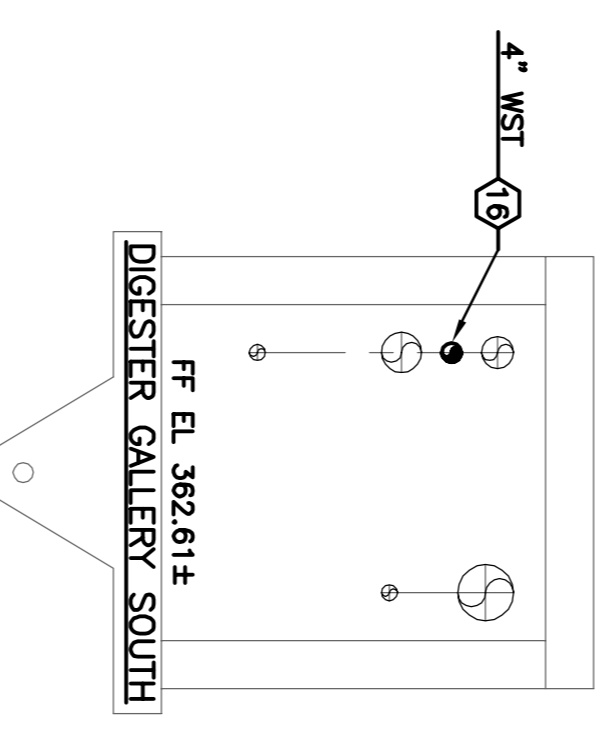
SECTION 1
 SCALE: 1/4"=1'-0"



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



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



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

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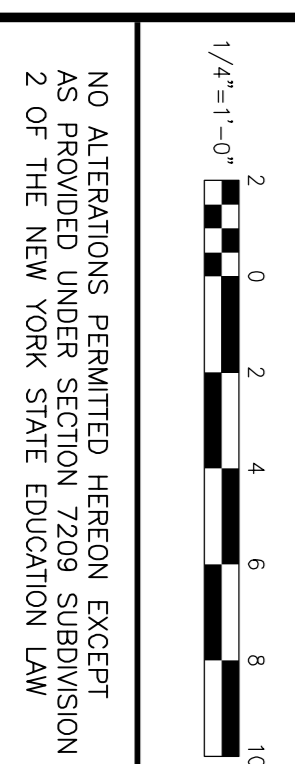
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 METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
 BIOSOLIDS HANDLING IMPROVEMENTS PROJECT

CO-GENERATION
 GALLERY ACCESS BUILDING
 PLAN AND SECTIONS
 MECHANICAL

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
 SYRACUSE, NEW YORK

In charge of: NGH
 Designed by: SFB
 Drawn by: SFB
 Checked by: PKW/NGH

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4	09/06	REVISED VALVES ON DIGESTER GAS PIPING	



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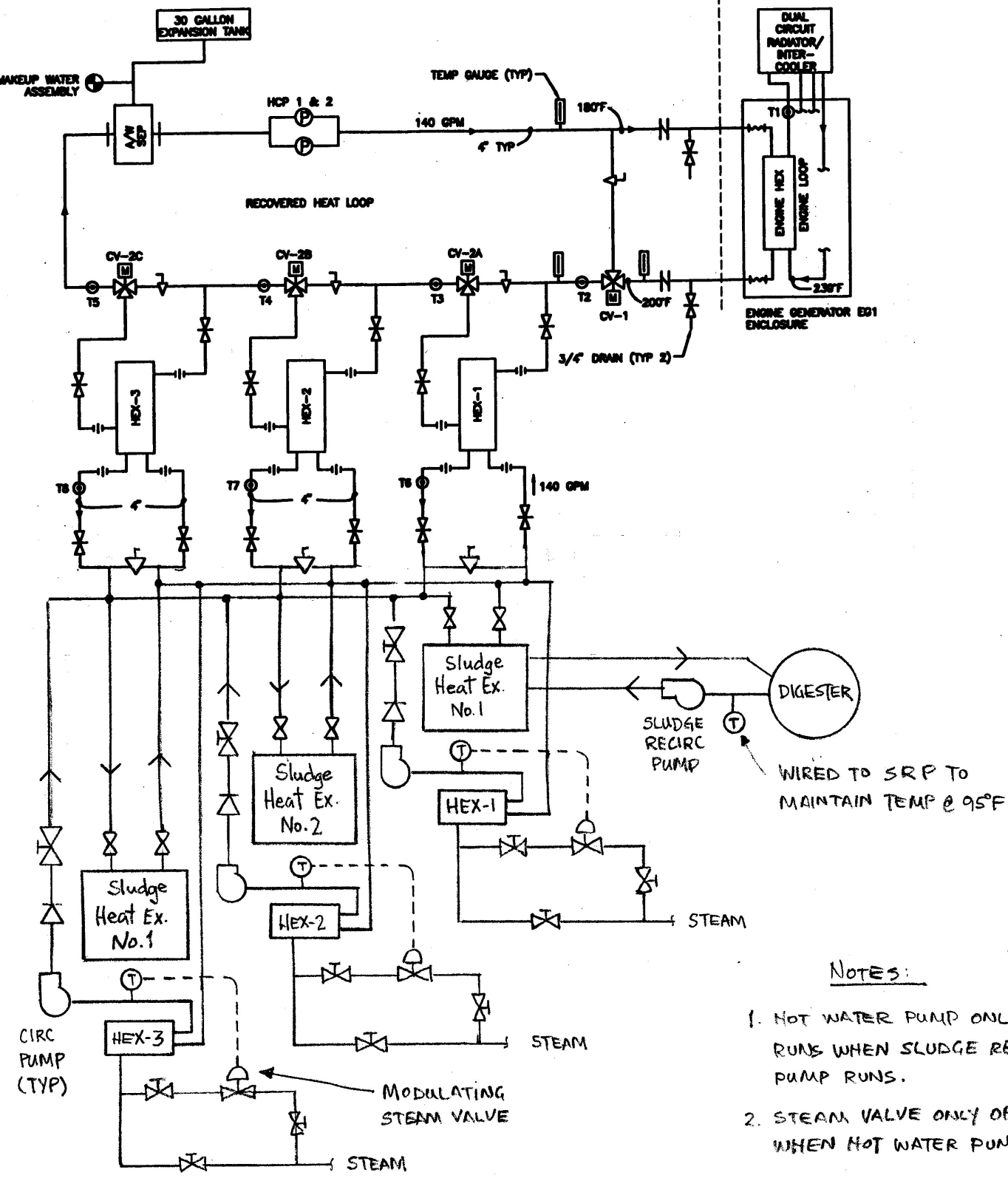


File Number: 00662
 Date: 09/05

M-15

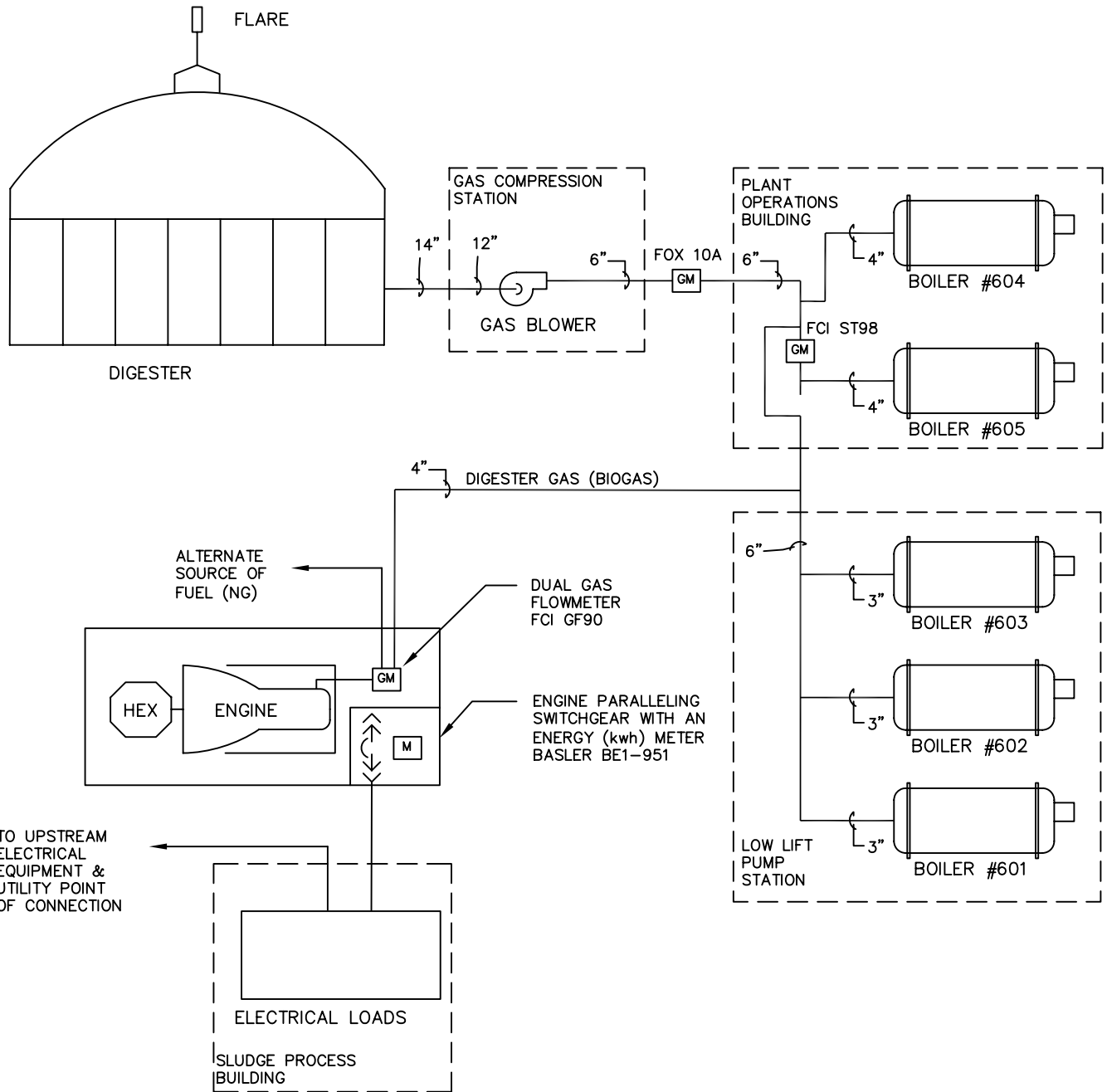
IN DIGESTER CONTROL HOUSE BASEMENT

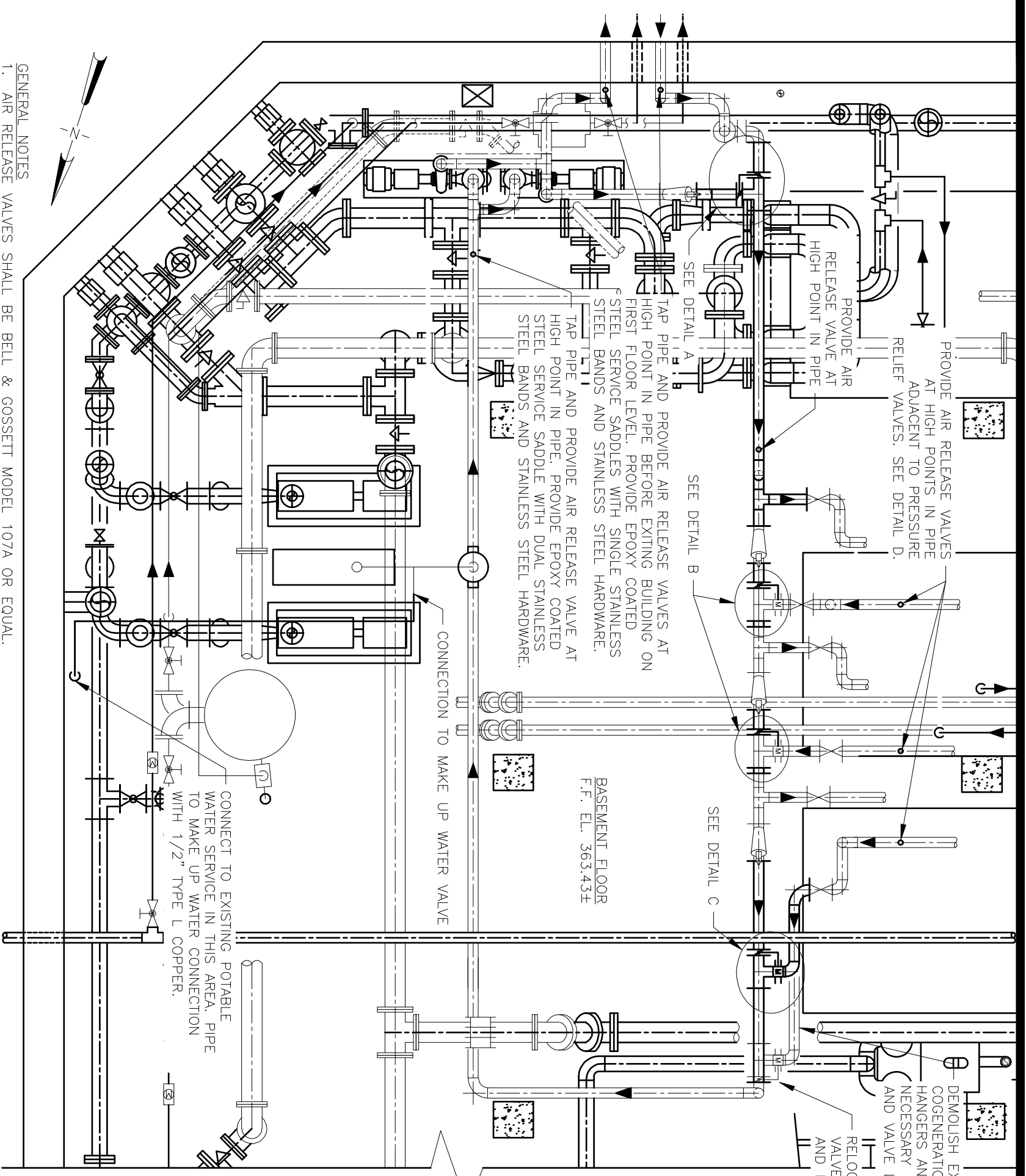
OUTSIDE



NOTES:

1. HOT WATER PUMP ONLY RUNS WHEN SLUDGE RECIRC PUMP RUNS.
2. STEAM VALVE ONLY OPEN WHEN HOT WATER PUMP
3. IF HOT WATER CIRC PUMP "ON" AND IF TEMP ON T INLET SIDE OF CV-2A 1 ABOVE 180°F, CV-2A WILL AND MAINTAIN TEMP @ AS SENSED BY T6.

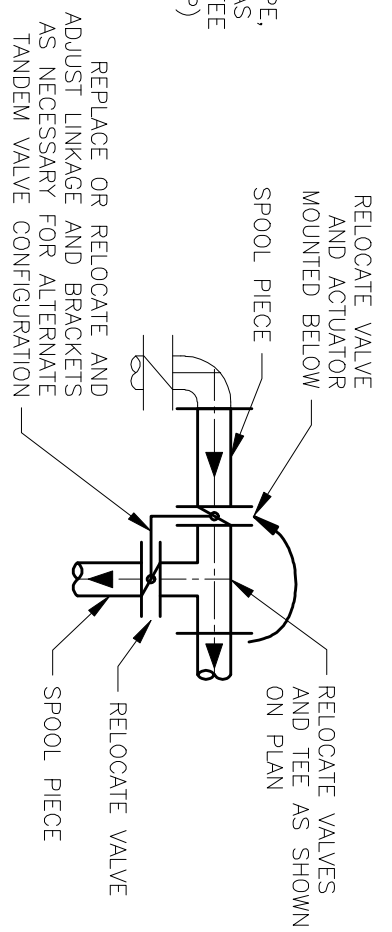




- GENERAL NOTES**
1. AIR RELEASE VALVES SHALL BE BELL & GOSSETT MODEL 107A OR EQUAL.
 2. NEW AND RELOCATED PIPING HANGERS SHALL BE TYPE 316 STAINLESS STEEL, ANVL FIGURE 300 CLEVIS HANGERS OR EQUAL INSTALLED AT MAXIMUM 10 FOOT INTERVALS. MOUNTING HARDWARE SHALL BE TYPE 316 STAINLESS STEEL. PROVIDE INSERTS FOR SUSPENDING HANGERS FROM CONCRETE SLABS AND BEAMS.
 3. PROVIDE GLASS FIBER INSULATION WITH PVC JACKETS ON ALL NEW COGENERATION HEAT PIPING INSTALLED UNDER PROPOSED WORK. INSULATION SHALL BE MANVILLE MICRO-LOK OR EQUAL. PVC JACKET SHALL BE MANVILLE ZESTON OR EQUAL.
 4. CONTRACTOR IS RESPONSIBLE FOR EXTENDING CONDUIT AND WIRING AS NECESSARY FOR THE RELOCATION OF ACTUATORS. ALL ELECTRICAL WORK SHALL BE NEC CLASS 1, DIVISION 2 AND SUITABLE FOR HAZARDOUS CLASSIFIED AREAS.
 5. NEW COGENERATION HEAT PIPING SHALL BE SCHEDULE 40 WELDED STEEL, ASTM A53 OR A120. FITTINGS SHALL BE 150-LB MALLEABLE IRON, ANSI B16.3. NO WELDING SHALL BE DONE WITHIN THE DIGESTER CONTROL HOUSE. THE CONTRACTOR SHALL INSTALL NEW PIPE AS SHOWN IN THE DRAWINGS BACK TO THE CLOSEST FLANGED CONNECTION.
 6. CONTRACTOR SHALL REMOVE EXISTING PIPING, FITTINGS AND VALVES AS NECESSARY FOR THE INSTALLATION OF PROPOSED WORK.
 7. PAINT NEW PIPING WITH SERIES 6-COLOR TMEME-CRYL OR EQUAL. PROVIDE MINIMUM 2.0 MILS THICK PRIME COAT AND MINIMUM 2.0 MIL THICK FINISH COAT.

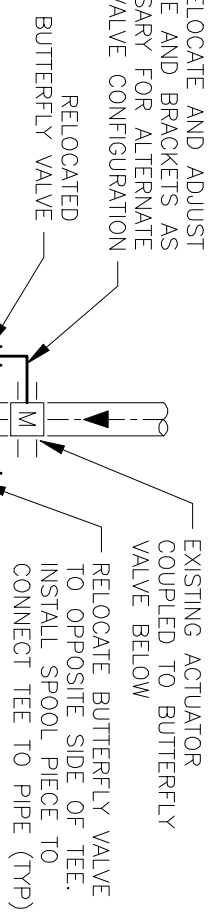
DEMOLISH EXISTING COGENERATION HEATING PIPE, HANGERS AND SUPPORTS AS NECESSARY FOR REVISED TEE AND VALVE LOCATIONS (TYP)

RELOCATE VALVES, TEE AND LINKAGE



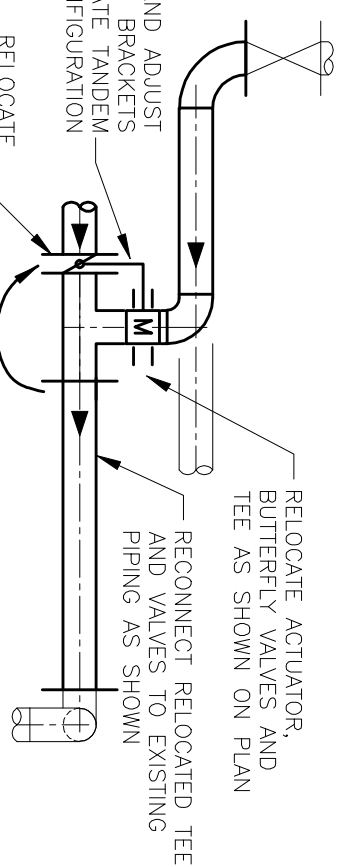
DETAIL A - REVISED TANDEM VALVE CONFIGURATION

RELOCATE AND ADJUST LINKAGE AND BRACKETS AS NECESSARY FOR ALTERNATE TANDEM VALVE CONFIGURATION

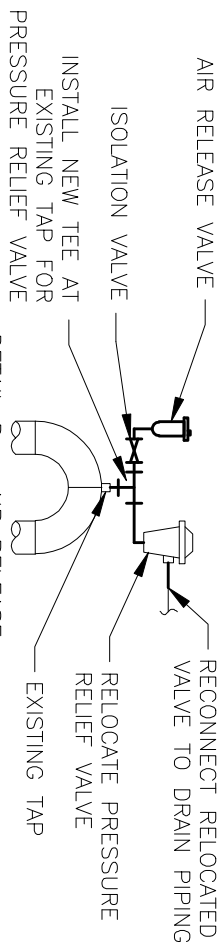


DETAIL B - REVISED TANDEM VALVE CONFIGURATION

RELOCATE AND ADJUST LINKAGE AND BRACKETS FOR ALTERNATE TANDEM VALVE CONFIGURATION



DETAIL C - REVISED TANDEM VALVE CONFIGURATION



DETAIL D - AIR RELEASE VALVE SCHEMATIC

CONNECT TO EXISTING POTABLE WATER SERVICE IN THIS AREA. PIPE TO MAKE UP WATER CONNECTION WITH 1/2" TYPE L COPPER.

CONNECTION TO MAKE UP WATER VALVE

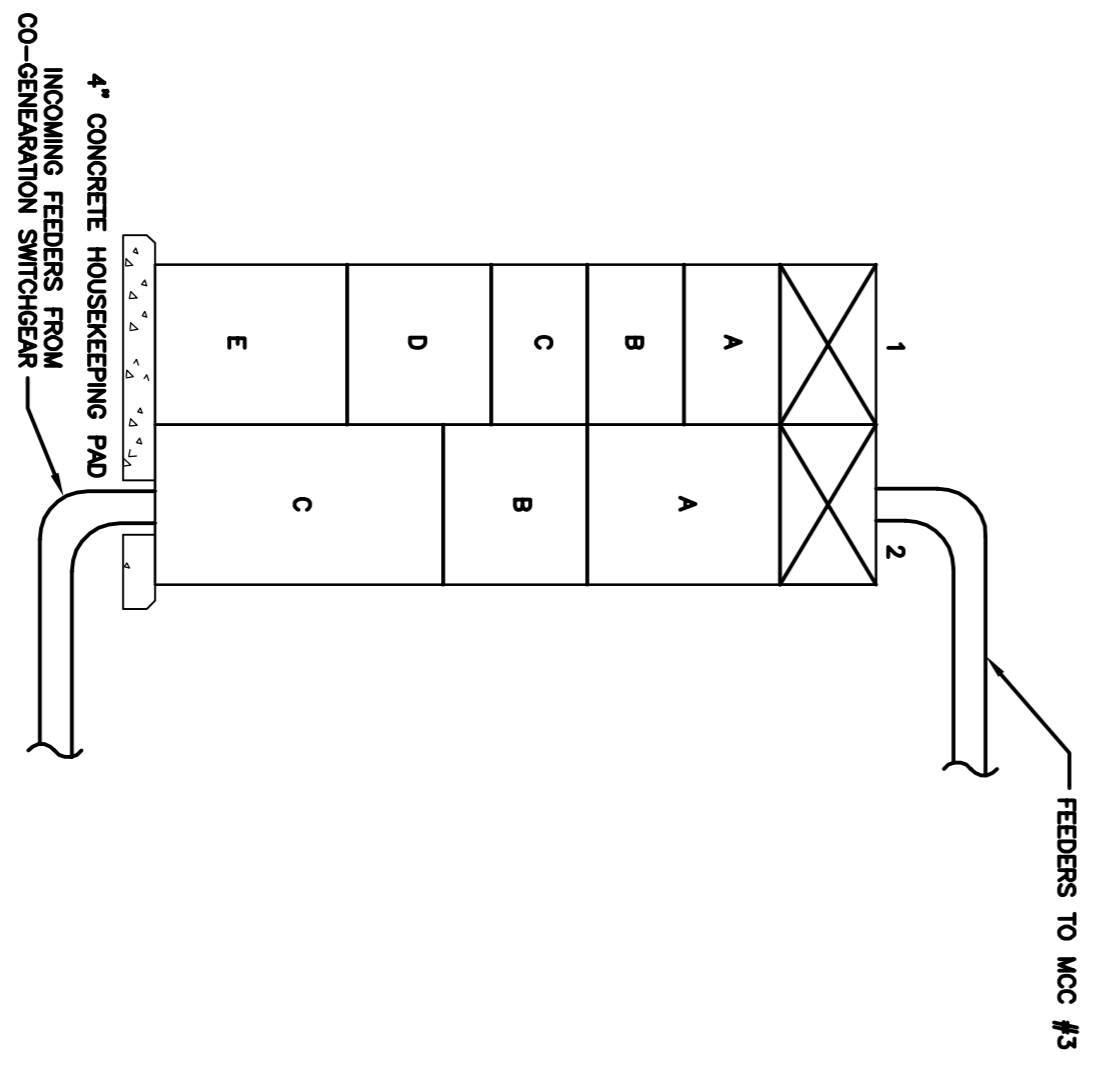
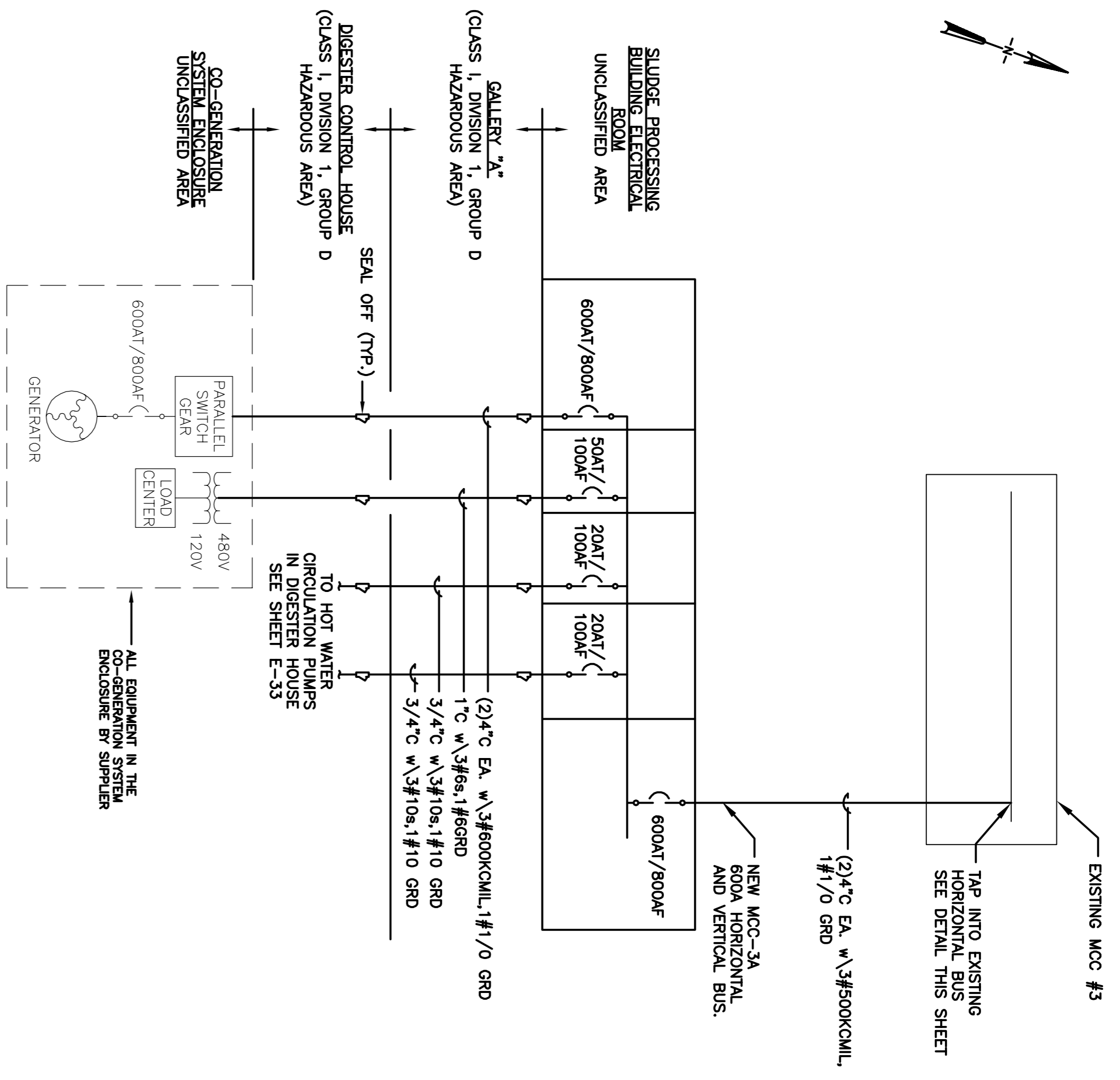
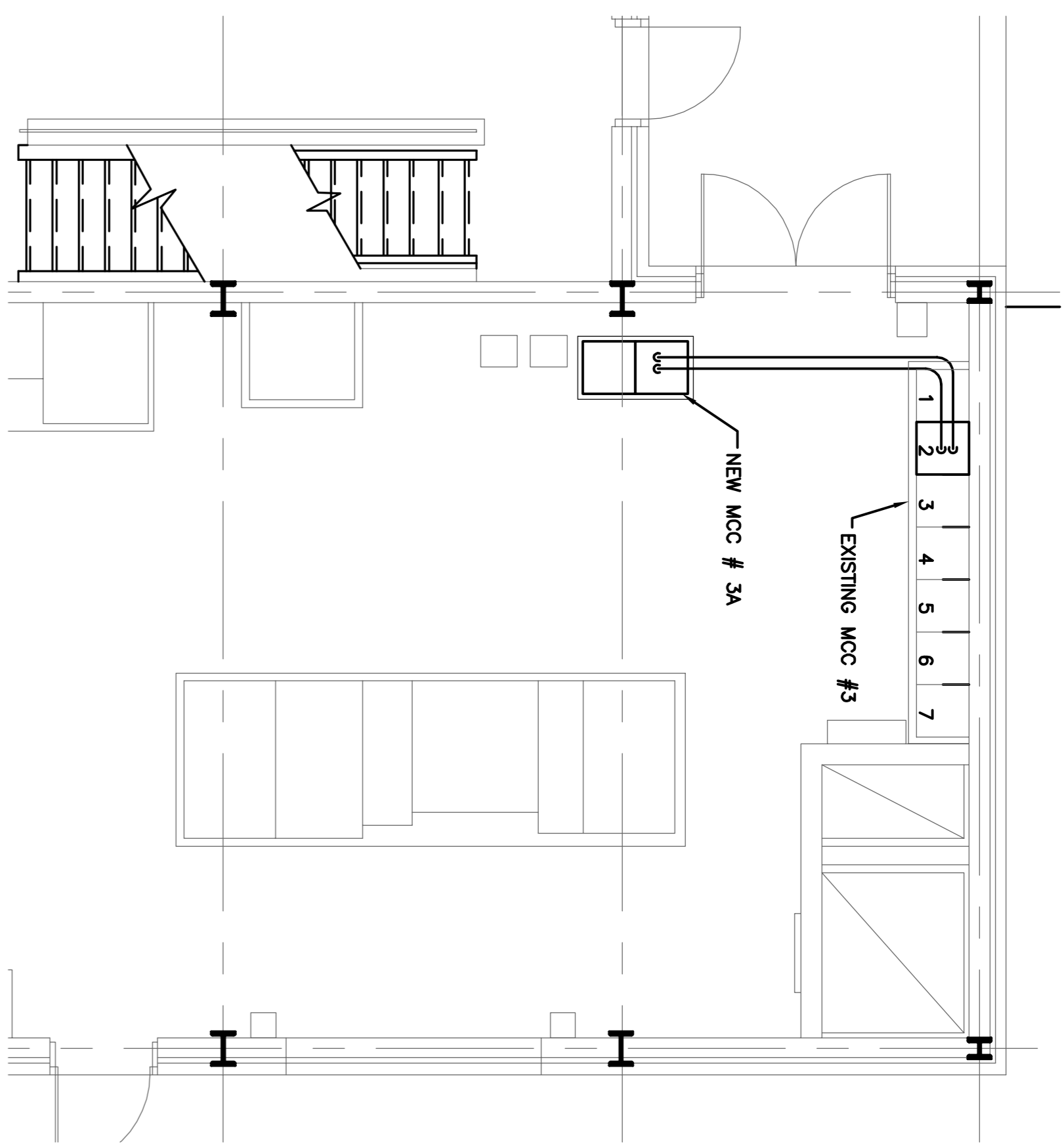
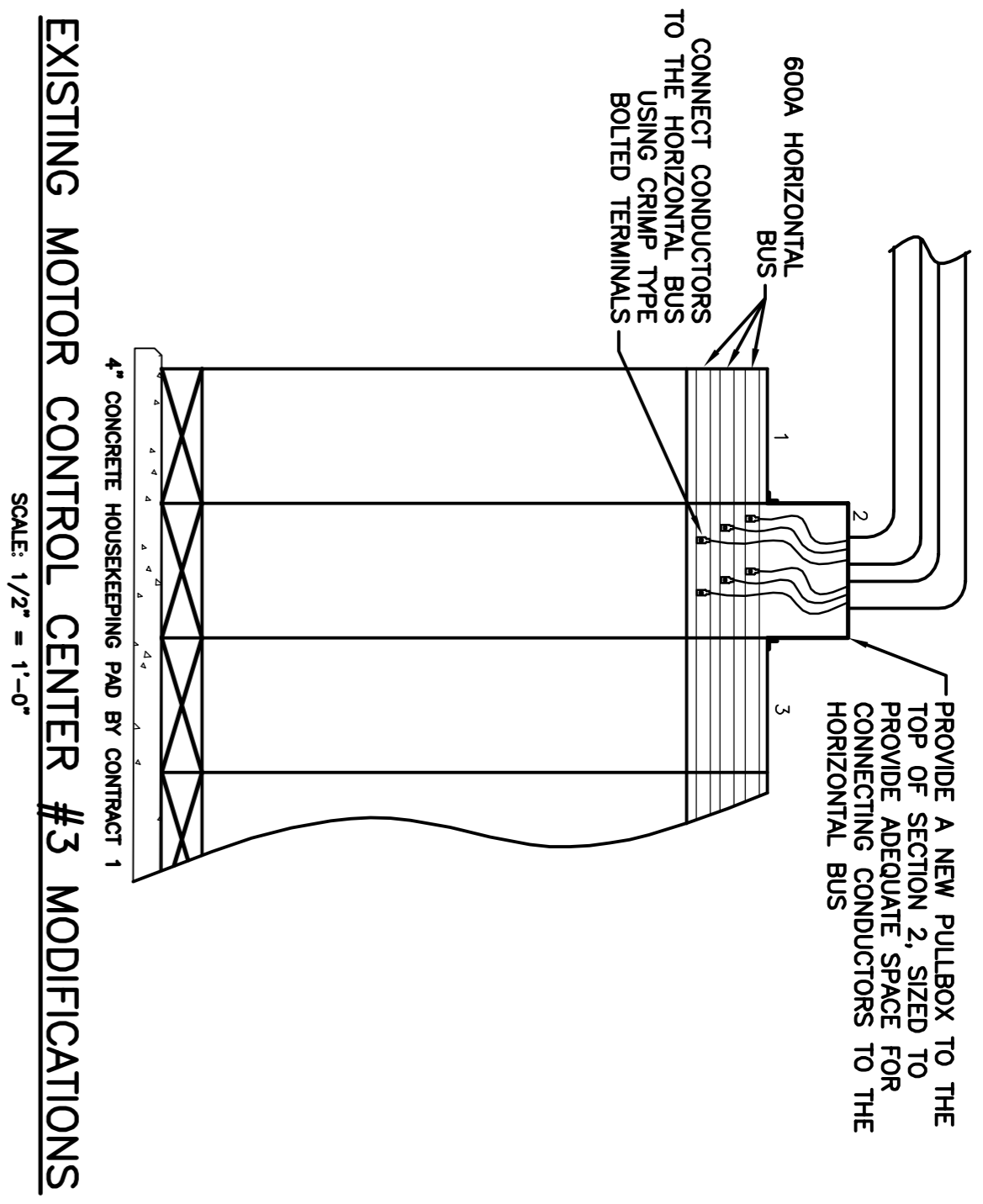
BASEMENT FLOOR
F.F. EL. 363.43±



Environmental Engineering Associates, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY DEPARTMENT OF WATER ENVIRONMENT PROTECTION
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT

COGENERATION HEAT LOOP MODIFICATIONS



COMPARTMENT NUMBER	EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	LOAD	CIRCUIT BREAKER / TRIP / FRAME / SIZE	STARTER	DOOR MOUNTED ACCESSORIES	FIELD MOUNTED DEVICES	SEE ELEVATED OR SCHEMATIC ON SHEET
2A	---	MAIN CIRCUIT BREAKER	---	600AT 800AF	---	N.P.	---	E-14
2C	---	CO-GENERATOR CIRCUIT BREAKER	---	600AT 800AF	---	N.P.	---	E-14
1A	---	LOAD CENTER FEEDER BREAKER	30 KVA	50AT 100AF	---	N.P.	SWITCHGEAR	E-14
1B	HCP-1	HOT WATER CIRCULATION PUMP #1	5 HP	20AT 100AF	---	N.P.	LOADCENTER	E-17
1C	HCP-2	HOT WATER CIRCULATION PUMP #2	5 HP	20AT 100AF	1 FVAR	N.P., 2-1Is	HOA SWITCH, D.S.	E-17
1D, 1E, 2B	---	SPACE	---	---	---	N.P.	---	---

NEW MOTOR CONTROL CENTER SECTION MCC-3A
SCALE: 1/2" = 1'-0"

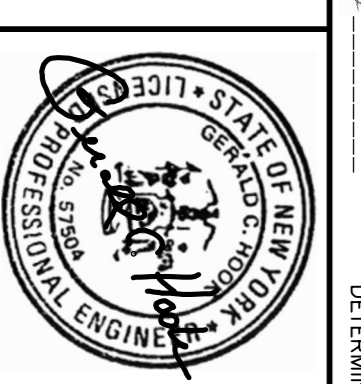
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In charge of: NGH
Designed by: BTN
Drawn by: BTN
Checked by: TWD

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BIOSOLIDS HANDLING IMPROVEMENTS PROJECT

SLUDGE PROCESS BLDG. ELEC. ROOM PLAN, MCC MODS., SCHED. & ONE-LINE ELECTRICAL

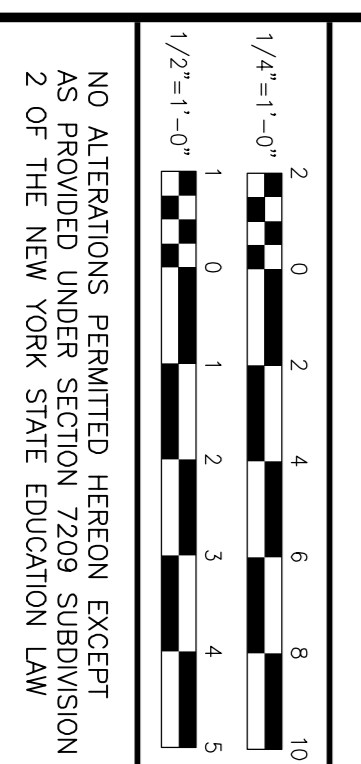


File Number: 00662
Date: 09/05
E-31

RECORD DRAWINGS

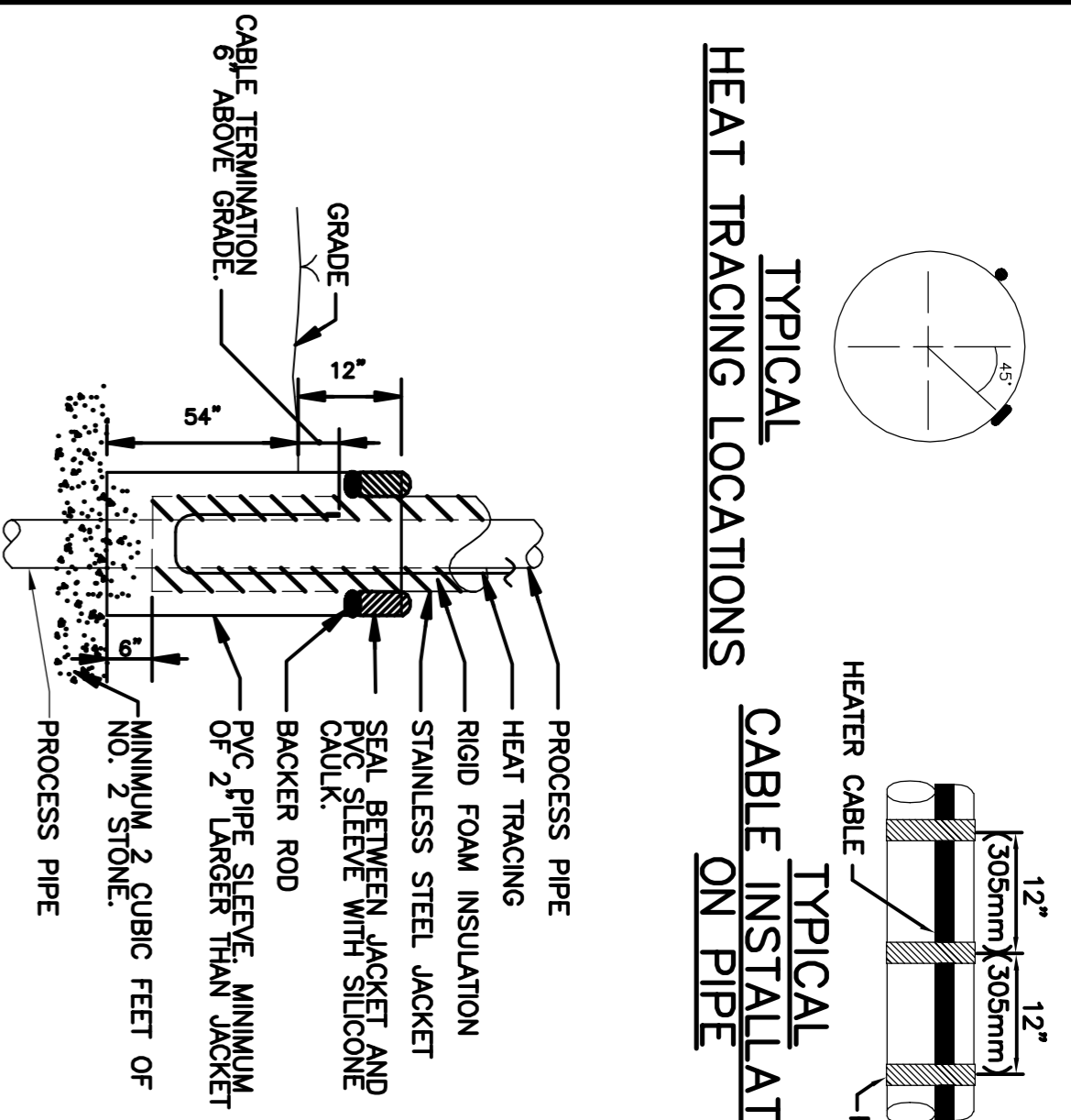
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THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. ANY CHANGES INTRODUCED DURING CONSTRUCTION ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

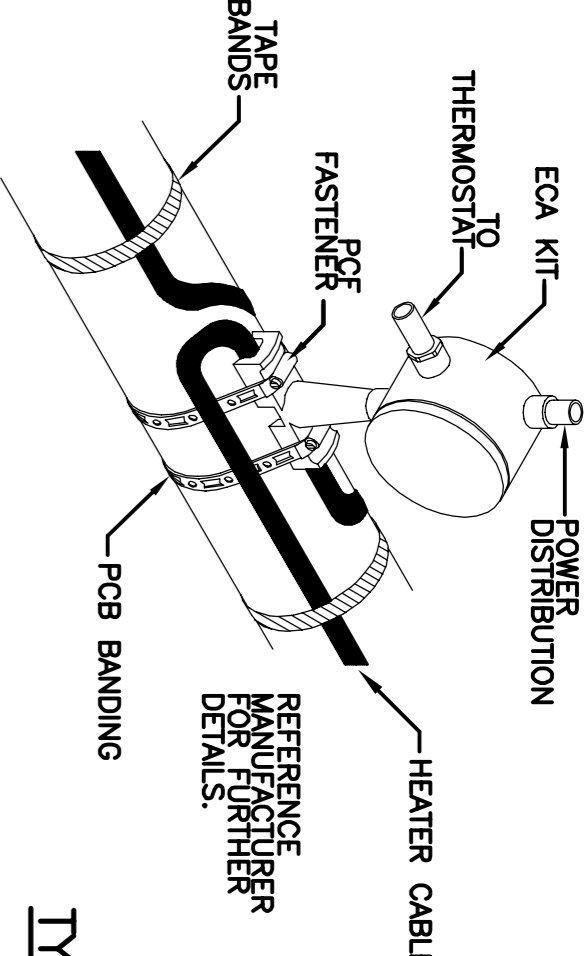


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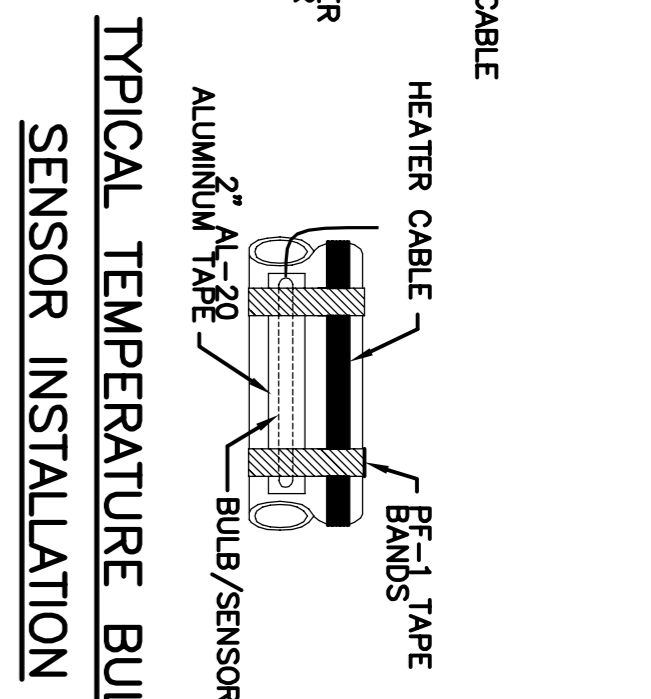
TYPICAL HEAT TRACING LOCATIONS



TYPICAL CABLE INSTALLATION ON PIPE

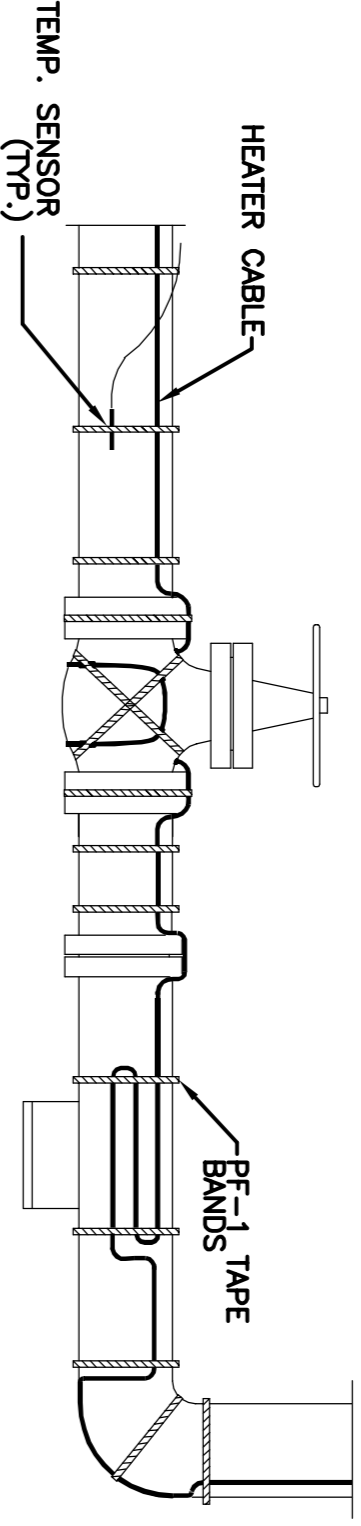


TYPICAL ECA KIT INSTALLATION



TYPICAL TEMPERATURE BULB/SENSOR INSTALLATION

PROTECTION OF PIPE INSULATION



TYPICAL HEAT TRACING CONFIGURATION

PROCESS PIPING HEAT TRACING SCHEDULE

HEAT TRACE CIRCUIT NO.	PIPE FUNCTION	FROM	TO	PIPE LENGTH (NOTE 2)	PIPE MAT. WATTAGE	1/8" VOLTAGE	POWER CONNECTION POINT	CONDUIT AND WIRE
1	HOT WATER SUPPLY PIPE	CO-GENERATOR SET	DIGESTER CONTROL HOUSE	4'	250 W	120 1PH	INSIDE DIGESTER CONTROL HOUSE	3/4" C w 2#12s, 1#12GRD
2	HOT WATER RETURN PIPE	CO-GENERATOR SET	DIGESTER CONTROL HOUSE	4'	250 W	120 1PH	INSIDE DIGESTER CONTROL HOUSE	3/4" C w 2#12s, 1#12GRD

- NOTES:**
1. THE PIPE LENGTHS SHOWN ARE PER THE DESIGN. THE ACTUAL PIPE LENGTHS MAY CHANGE DURING CONSTRUCTION. THE CONTRACTOR SHALL FIELD VERIFY ALL PIPING LENGTHS.
 2. CONDUCTOR SHALL BE OVERSIZED FOR LONG RUNS, SEE SPEC. SECTION 16055. CONDUIT SIZE SHALL BE ADJUSTED AS REQUIRED.
 3. POWER FOR HEAT TRACING SHALL BE FEED FROM THE CO-GENERATION SYSTEM LOADCENTER.

HEAT TRACING SPECIFICATIONS:

HEATING CABLE: MINERAL-INSULATED, COPPER-SHEATHED, SERIES RESISTANCE HEATING CABLE IN TWO #12 GAUGE CONDUCTOR CONFIGURATION, THIRD WIRE IN SHEATH FOR CONTINUITY MONITORING.
 CONTROL TYPE: LINEAR HEAT OUTPUT
 RATING: 120 V, 10 W/LINEAL FT.
 THERMOSTAT: NEMA 4, SPST SWITCH, SIX FOOT STAINLESS STEEL CAPILLARY SHIELDED TO ENABLE HEAT TRACING AT 40° ADJUSTABLE OUTSIDE AIR TEMPERATURE.
 RELAYS, TRANSFORMERS, SWITCHES, BOXES, CONDUIT, ALL WIRING, SUPPORTS AND ACCESSORIES FOR FULL OPERATION.
 MECHANICAL RELAY/ALARM LIGHT PANEL FOR CONTINUITY MONITORING OF HEATING CABLE CIRCUITS. PANEL SHALL INDICATE A FAULT IN THE CIRCUIT WITH BOTH AN AUDIO AND VISUAL ALARM.
 A FAULT CAN CONSIST OF LOSS OF POWER TO THE CABLE (AS IN A CIRCUIT BREAKER TRIPPING) OR A LACK OF CONTINUITY OF THE MONITORING CABLE (AS IN A SEVERING OF THE CABLE). PANEL SHALL HAVE A PUSH TO TEST BUTTON THAT WILL ILLUMINATE EACH LIGHT AND ACTIVATE THE AUDIO ALARM. PANEL SHALL HAVE AN ALARM ACKNOWLEDGMENT BUTTON TO SILENCE THE AUDIO ALARM, WITH THE VIDEO DISPLAY REMAINING ENGAGED UNTIL THE FAULT CONDITION IS CORRECTED.
 MANUFACTURER: CHROMLOX MI, THERMON OR EQUAL

RECORD DRAWINGS

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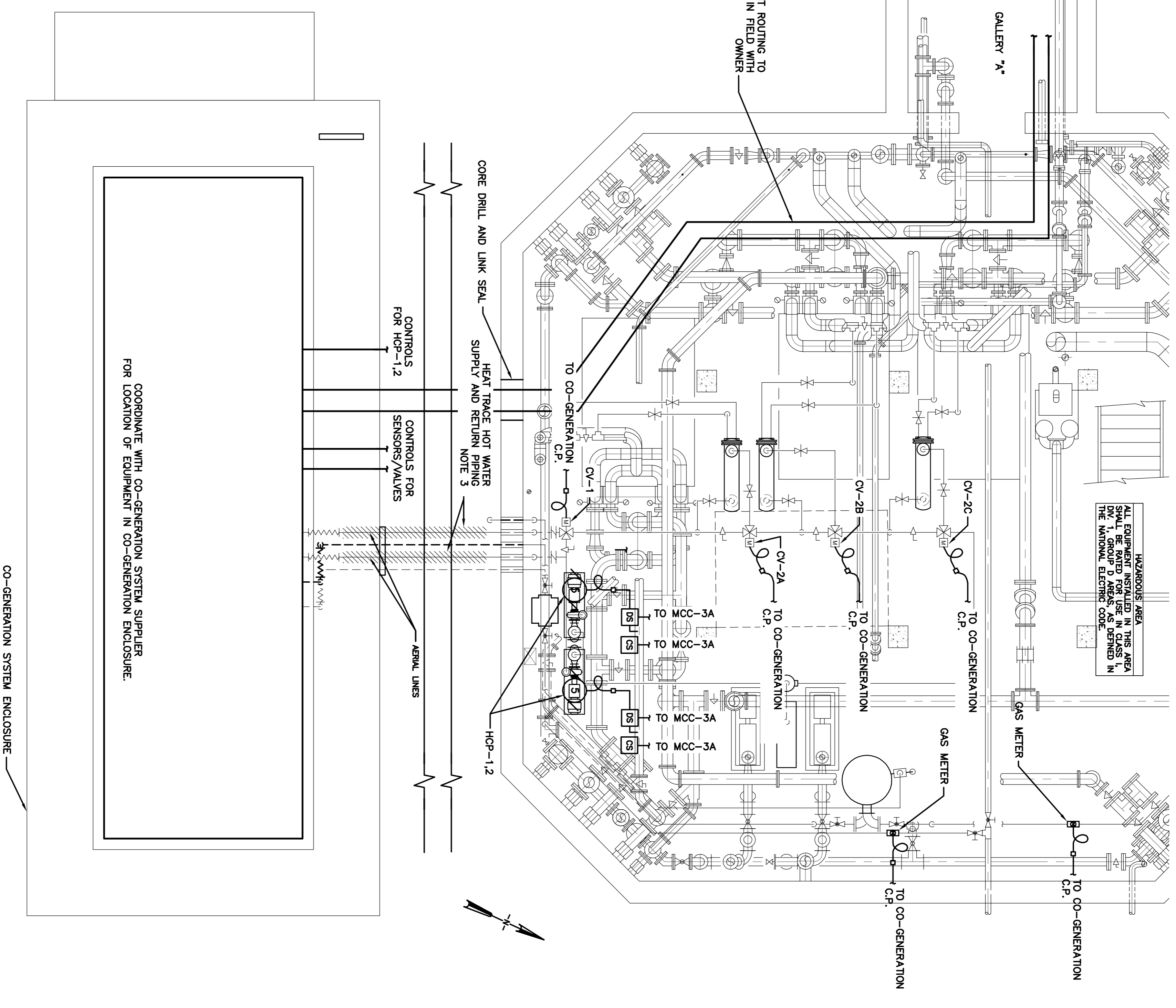
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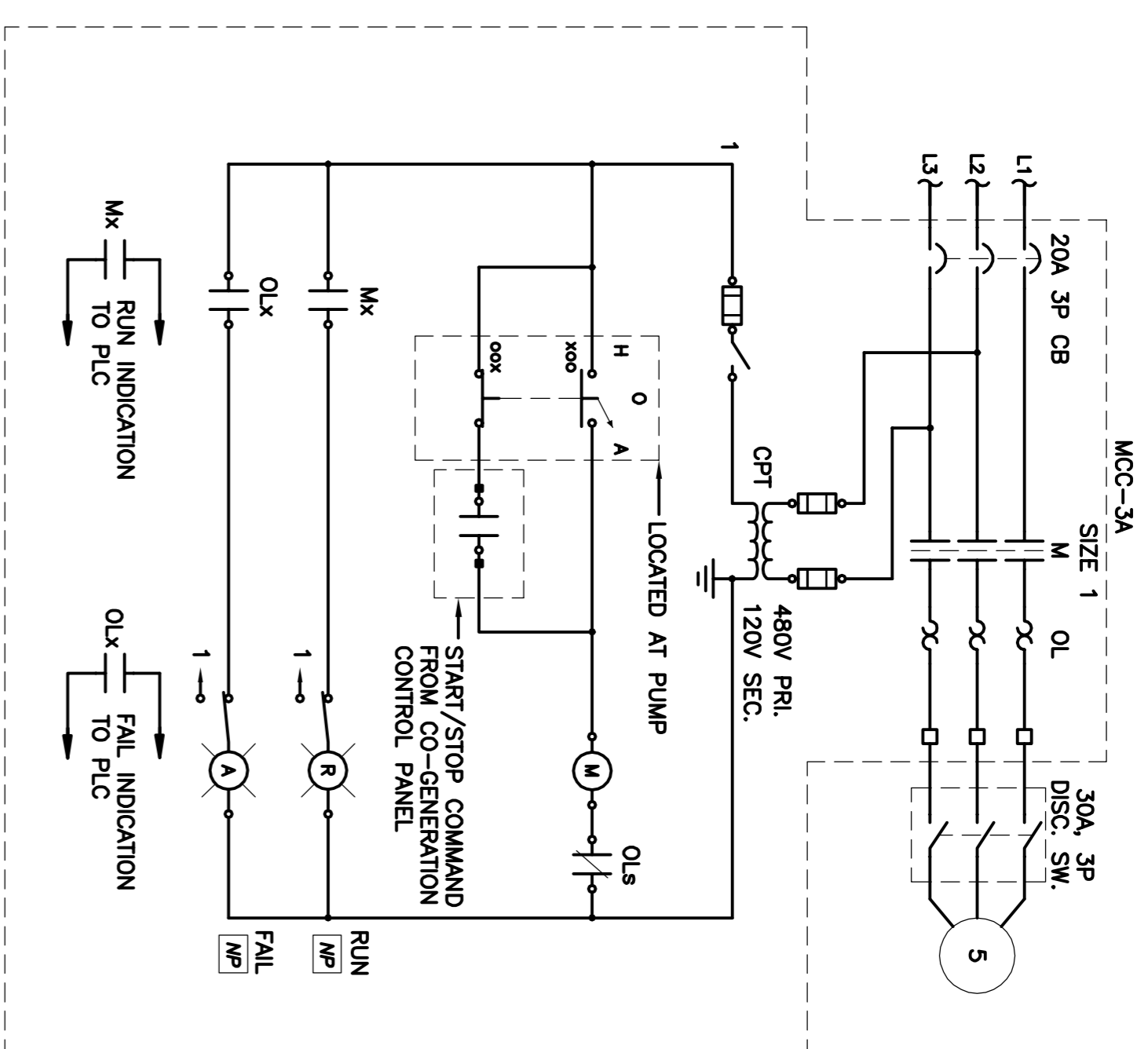
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 BIOSOLIDS HANDLING IMPROVEMENTS PROJECT
DIGESTER CTRL. HOUSE PLAN, CO-GEN ENCLOSURE PLAN, AND DETAILS
 ELECTRICAL

STATE OF NEW YORK
 PROFESSIONAL ENGINEER
 No. 10000
 Date: 09/05
E-33

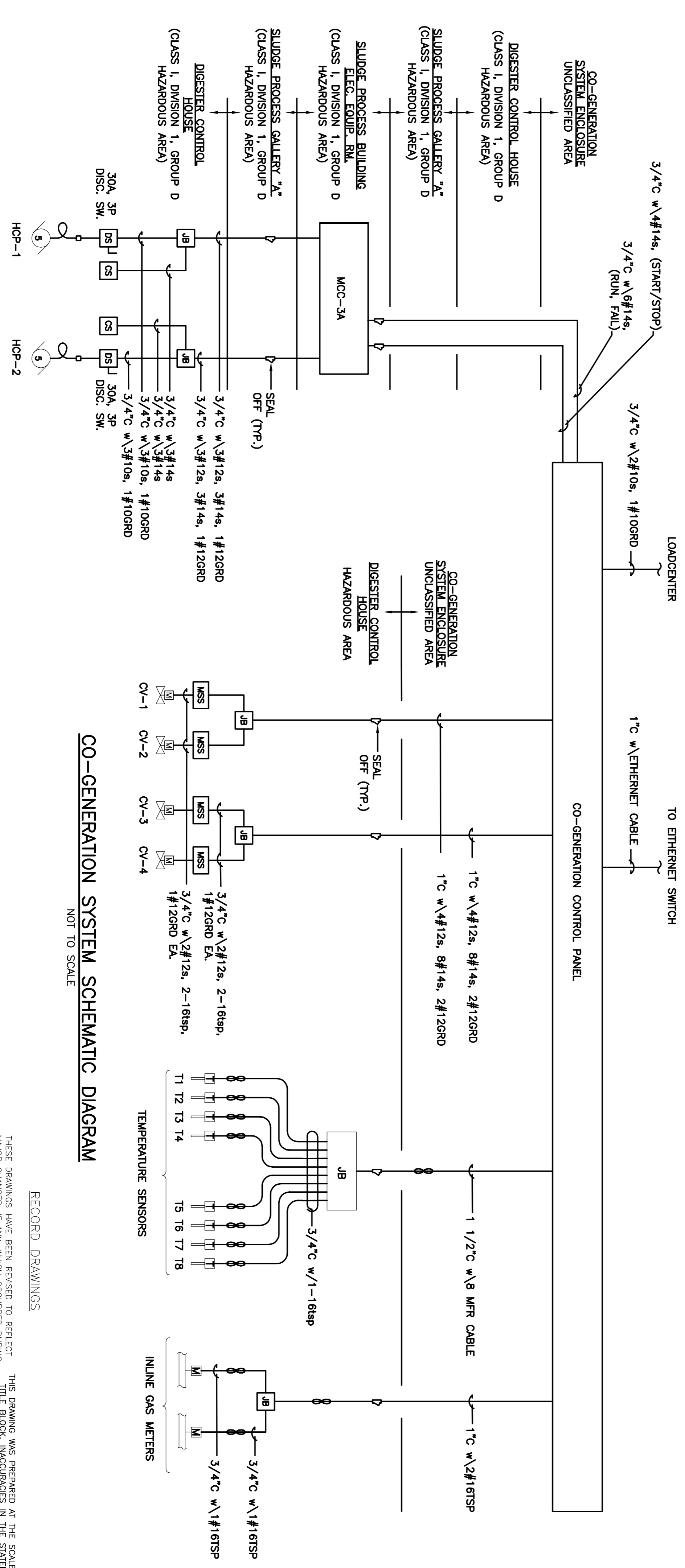
DIGESTER CONTROL HOUSE BASEMENT PLAN AND CO-GENERATION ENCLOSURE

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





HCP-1 ELEMENTARY DIAGRAM
TYPICAL FOR HCP-2



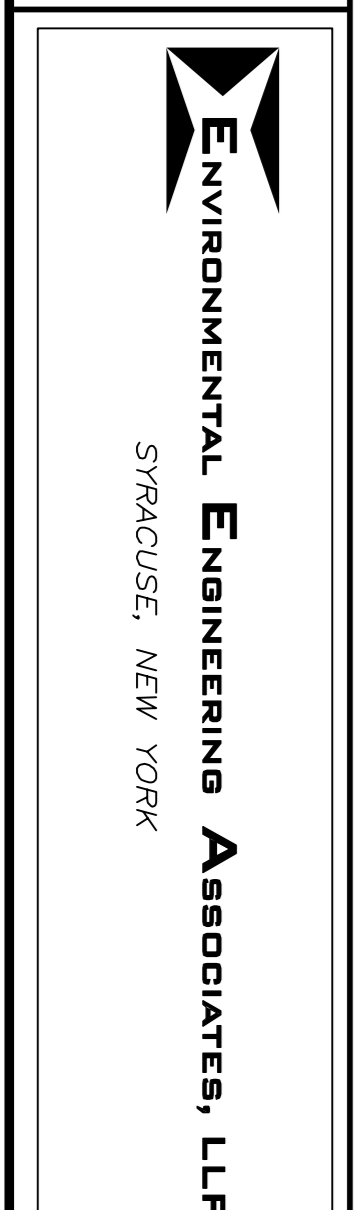
CO-GENERATION SYSTEM SCHEMATIC DIAGRAM
NOT TO SCALE

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ELEMENTARY SCHEMATICS AND CO-GENERATION SYSTEM DIAGRAMS
ELECTRICAL



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