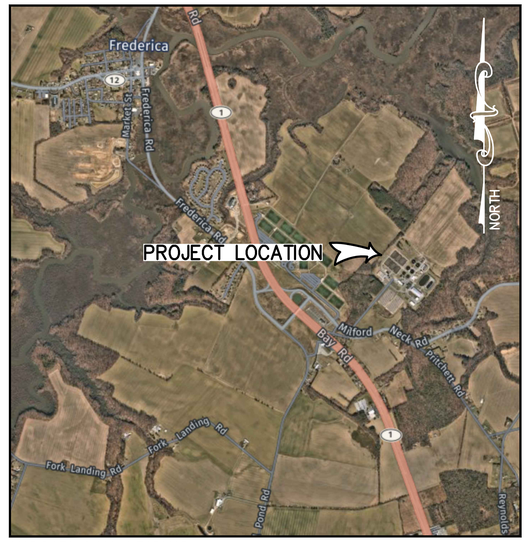
MAP DATA © 2023 NEARMAP

LOCATION MAP
SCALE: 1"=500'

KENT COUNTY REGIONAL RESOURCE RECOVERY FACILITY

BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
EQUIPMENT INSTALLATION AND RELATED WORK

OCTOBER 2025



MAP DATA © 2023 NEARMAP

VICINITY MAP
SCALE: 1"=2000'

1"=500' 500' 0 500' 1000'

1"=2,000' 2000' 1000' 0 2000' 4000'

ISSUED FOR BIDDING

RK&K
RUMMEL, KLEPPER & KAHL, LLP
700 EAST PRATT STREET, SUITE 500 • BALTIMORE, MARYLAND 21202 • 410.728.2900

ROBERT J. ANDRYSZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	
APPROVED DATE		SHEET NO.: 1 of 191	COVER SHEET
		PROJECT NO.: 50.1890.97-A	
ASSISTANT DIRECTOR OF ENGINEERING			OCTOBER 2025 G-01

\\rkd.rkk.com\fs\Cloud Projects\2019\19129_Biosolids\ACAD\Contract III\General\G-01 19129.dwg Oct 21, 2025 - 3:50pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:COVER SHEET

SHEET NO.	DRAWING NO.	DESCRIPTION
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6	G-06	PROJECT SITE PLAN, SURVEY CONTROL, SOIL BORINGS PLAN
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11	G-11	SCHEMATIC - DRYER BUILDING FLOOR AND EQUIPMENT DRAINS
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20	ESC-05	ADMINISTRATION BUILDING AREA ESC PLAN
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SHEET NO.	DRAWING NO.	DESCRIPTION
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SHEET NO.	DRAWING NO.	DESCRIPTION
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106	FP-01	FIRE PROTECTION NOTES, LEGEND & ABBREVIATIONS
107	FP-02	FIRE PUMP BUILDING PLAN, NOTES & SECTIONS
108	FP-03	DRYER BUILDING FIRE PROTECTION PLAN
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SHEET NO.	DRAWING NO.	DESCRIPTION
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160	PCS-6	MCC-DB CONTROL WIRING DIAGRAMS
161	PCS-7	MCC-DB CONTROL WIRING DIAGRAMS
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163	PCS-9	MCC-DB CONTROL WIRING DIAGRAMS
164	PCS-10	MCC-DB CONTROL WIRING DIAGRAMS
165	PCS-11	MCC-DB CONTROL WIRING DIAGRAMS
166	PCS-12	MCC-DB CONTROL WIRING DIAGRAMS
167	PCS-13	MCC-DB CONTROL WIRING DIAGRAMS
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169	PCS-15	MCC-S ONE-LINE DIAGRAM
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175	PCS-21	DRYER BUILDING PLC PANEL WIRING DIAGRAM
176	PCS-22	DRYER BUILDING PLC PANEL WIRING DIAGRAM
177	PCS-23	DRYER BUILDING PLC PANEL WIRING DIAGRAM
178	PCS-24	DRYER BUILDING PLC PANEL WIRING DIAGRAM
179	PCS-25	DRYER BUILDING PLC PANEL WIRING DIAGRAM
180	PCS-26	DRYER BUILDING PLC PANEL WIRING DIAGRAM
181	PCS-27	DRYER BUILDING PLC PANEL WIRING DIAGRAM
182	PCS-28	SOLIDS HANDLING BUILDING PLC PANEL
183	PCS-29	SOLIDS HANDLING BUILDING PLC PANEL WIRING DIAGRAM
184	PCS-30	SOLIDS HANDLING BUILDING PLC PANEL WIRING DIAGRAM
185	PCS-31	SOLIDS HANDLING BUILDING PLC PANEL WIRING DIAGRAM
186	PCS-32	SOLIDS HANDLING BUILDING PLC PANEL WIRING DIAGRAM
187	PCS-33	SOLIDS HANDLING BUILDING PLC PANEL WIRING DIAGRAM
188	PCS-34	SOLIDS HANDLING BUILDING PLC PANEL WIRING DIAGRAM
189	PCS-35	FILTRATE PUMP MONITORING PANEL
190	PCS-36	PLANT WATER PUMP MONITORING PANELS
191	PCS-37	INCLINED CAKE CONVEYOR DISCHARGE GATE CONTROL PANELS

ISSUED FOR BIDDING

RUMMEL, KLEPPER & KAHL, LLP
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ROBERT J. ANDRYSZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: NOT TO SCALE	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	
APPROVED DATE		SHEET NO.: 2 of 191	DRAWING INDEX
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 G-02

\\adurkk.com\Vs\Cloud\Projects\2019\19129_Biosolids\ACAD\Contract III\General\G-02 19129.dwg Oct 22, 2025 - 11:29am ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:G-02

PROJECT INTENT NOTES

1. KENT COUNTY IS IMPLEMENTING ITS BIOSOLIDS CAPACITY EXPANSION PROJECT UNDER MULTIPLE CONTRACTS, WITH THE OVERALL GOAL OF EACH CONTRACT BEING AS FOLLOWS:
   A. PRE–PROCUREMENT OF BELT FILTER PRESSES FROM BDP.
   B. PRE–PROCUREMENT OF THE BELT DRYER SYSTEM FROM ANDRITZ.
   C. CONTRACT 1 IS GENERALLY FOR UNDERGROUND UTILITY RELOCATION IN THE VICINITY OF THE DRYER BUILDING.
   D. CONTRACT 2 IS GENERALLY FOR THE CONSTRUCTION OF THE DRYER BUILDING STRUCTURE SHELL STORMWATER MANAGEMENT FACILITIES. THE DRYER BUILDING SHALL GENERALLY CONSIST OF A FOUNDATION, PRE–ENGINEERED METAL BUILDING, AND TWO MASONRY SERVICE BUILDINGS. THE DRYER BUILDING SHELL SHALL BE CONSTRUCTED TO BE FULLY ENCLOSED AND WEATHERTIGHT UPON COMPLETION.
   E. CONTRACT 3 IS GENERALLY FOR THE CONSTRUCTION OF SLUDGE PROCESS IMPROVEMENTS IN THE EXISTING SOLIDS HANDLING BUILDING, THE EXISTING SLUDGE PAVILION, AND THE NEW DRYER BUILDING TO PROVIDE A COMPLETE AND FUNCTIONAL SLUDGE PROCESSING.

GENERAL NOTES

1. EXISTING UTILITIES, STRUCTURES AND FEATURES ARE SHOWN IN ACCORDANCE WITH INFORMATION AVAILABLE AND ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CITY OR ENGINEER DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OF THE COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY ALL SUCH INFORMATION TO HIS SATISFACTION PRIOR TO BEGINNING WORK. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING EXISTING UTILITIES AND FOR THE IMMEDIATE REPAIR OF ALL DAMAGE TO EXISTING UTILITIES OR STRUCTURES DUE TO HIS NEGLIGENCE DURING CONSTRUCTION.

2. PRIOR TO ORDERING ANY NEW MATERIAL, THE CONTRACTOR SHALL TEST PIT AND DETERMINE THE LOCATION, ELEVATION, SIZE, MATERIAL, PIPE DIAMETER AND OUT–OF–ROUNDNESS OF THE EXISTING PIPE WHERE THE NEW PIPING WILL CONNECT. UPON DELIVERY OF REQUIRED AND PRIOR TO THE REMOVAL OF EXISTING PIPING, THE CONTRACTOR SHALL CONFIRM THAT ALL NEW MATERIAL FITS TOGETHER PROPERLY AND WILL FIT THE EXISTING PIPE PROPERLY.

3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1–800–257–7777 AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR'S NOTIFICATION SHALL INCLUDE: (a) THE NATURE OF THE WORK TO BE DONE; (b) LOCATION OF THE JOB AND CONTRACT NUMBER AND (c) TIME AND DATE WORK WILL BE STARTED. FURTHERMORE, THE CONTRACTOR IS ADVISED TO EXERCISE EXTREME CAUTION WHEN DIGGING ADJACENT TO AND/OR CROSSING EXISTING UTILITIES.

4. ALL WORK SHALL BE COORDINATED WITH TREATMENT PLANT OPERATIONS.

5. ALL EXISTING EQUIPMENT, VALVES AND HYDRANTS SHALL BE OPERATED BY WATER AND WASTEWATER MAINTENANCE DIVISION PERSONNEL ONLY.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKEOUT USING THE HORIZONTAL AND VERTICAL CONTROLS PROVIDED. VERTICAL CONTROLS AND ELEVATIONS SHOWN ON THE DRAWINGS.

7. PIPE ELEVATIONS SHOWN ON THESE DRAWINGS REFER TO INVERT ELEVATIONS UNLESS OTHERWISE NOTED.

8. EXISTING PAVING DISTURBED BY CONSTRUCTION SHALL BE REPAIRED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS.

9. THE CONTRACTOR SHALL CERTIFY TO KENT COUNTY CONSERVATION DISTRICT THAT ALL CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THE PLANS FOR EROSION AND SEDIMENT CONTROL AS SHOWN AND NOTED IN THE DOCUMENTS. FIELD CONDITIONS MAY WARRANT THE INSTALLATION OF SEDIMENT AND EROSION CONTROL MEASURES IN ADDITION TO THOSE SHOWN ON THESE PLANS.

10. THE CONTRACTOR SHALL NOTIFY THE WATER AND WASTEWATER MAINTENANCE DIVISION AT 302–744–2430 AT LEAST TWO (2) WEEKS PRIOR TO STARTUP OF CONSTRUCTION.

11. TRIMMING OF TREES WHERE AUTHORIZED BY THE ENGINEER FOR THE CONTRACTOR'S CONVENIENCE SHALL BE CONFINED TO THE AREA WITHIN THE LIMITS OF CONSTRUCTION AS SHOWN ON DRAWINGS AND SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF KENT COUNTY LEVY COURT.

12. THE CONTRACTOR IS TO INSURE THE EXISTING SANITARY LINES ARE CLEAN AND FUNCTIONING PRIOR TO MAKING NEW CONNECTIONS.

13. ALL CHANNELS IN SANITARY MANHOLES SHALL BE CONSTRUCTED TO CONFORM AS CLOSE AS POSSIBLE TO THE STANDARD CHANNEL CALLED FOR ON THE PROFILES.

14. THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, TOOLS, APPLIANCES, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETELY FINISH ALL WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND IN A MANNER APPROVED BY THE CITY.

15. THE CONTRACTOR MUST PROVIDE HIS OWN LABOR, EQUIPMENT, AND DEVICES TO DEWATER, FLUSH, WASH AND CLEAN THE WORK AREAS, EQUIPMENT, AND SHALL PROVIDE THE FACILITIES AND MEANS NECESSARY TO ASSURE AGAINST LEAKAGE OF WATER, FOAM, SEWAGE, GAS, SCUM, OR SLUDGE INTO THE WORK AREA.

16. THE CONTRACTOR IS NOTIFIED THAT PATHOGENS EXIST IN THE WASTEWATER FLOWS WHICH MAY BE HARMFUL TO HUMAN HEALTH. THE CONTRACTOR SHALL INCLUDE ALL SAFETY EQUIPMENT AND MATERIALS NECESSARY TO PROTECT WORKERS. ALL MEDICAL MONITORING SHALL BE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE INCLUDED IN THE BASE BID.

17. THE CONTRACTOR SHALL HAVE THOROUGH KNOWLEDGE OF THE SYSTEM BEING RENOVATED AND SHALL PROVIDE QUALIFIED AND LICENSED PERSONNEL TO OPERATE SYSTEMS IN ACCORDANCE WITH THE SPECIFIED COMMISSIONING REQUIREMENTS.

18. THE CONTRACT DRAWINGS AND SPECIFICATIONS ALONG WITH THE CITY STANDARD SPECIFICATIONS FOR CONSTRUCTION ARE COMPLEMENTARY. WHERE CONFLICTS ARISE, IT WILL BE ASSUMED THAT THE MORE DURABLE, HIGHER QUALITY (AS JUDGED SOLELY BY THE ENGINEER) MORE EXPENSIVE METHOD HAS BEEN ESTIMATED, UNLESS SUCH ALTERNATIVE HAS BEEN AGREED TO IN WRITING BY THE ENGINEER PRIOR TO SUBMISSION OF BIDS.

19. THE EQUIPMENT ARRANGEMENT SHOWN ON THE CONTRACT DRAWINGS IS BASED UPON THE BEST INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME OF THE DESIGN AND IS NOT INTENDED TO INDICATE EXACT DETAILS AND DIMENSIONS FOR SPECIFIC EQUIPMENT, UNLESS OTHERWISE SHOWN OR SPECIFIED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL THEREFORE ANTICIPATE THAT THE DESIGN OF FOUNDATIONS, SUPPORTS, PIPING, VALVES, PIPE SUPPORTS, COUPLINGS, EXPANSION JOINTS AND OTHER PUMP SYSTEM APPURTENANCES AND ACCESSORIES MAY REQUIRE REVISION TO ACCOMMODATE THE EQUIPMENT FURNISHED. THE CONTRACTOR SHALL MAKE THESE REVISIONS AT NO ADDITIONAL COSTS TO THE OWNER.

20. THE CONTRACTOR IS REQUIRED TO COORDINATE WITH PLANT OPERATIONS STAFF FOR ANY WORK REQUIRING PROCESS SHUTDOWNS AND/OR NO–FLOW SITUATIONS. THE CONTRACTOR MAY BE REQUIRED TO PERFORM THE WORK OUTSIDE OF NORMAL WORK HOURS. THIS SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.

ISSUED FOR BIDDING

RK&K
RUMMEL, KLEPPER & KAHL, LLP
700 EAST PRATT STREET, SUITE 500 • BALTIMORE, MARYLAND 21202 • 410.728.2900

ROBERT J. ANDRITSCH LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: NOT TO SCALE
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		DRAWN BY: RAD CHECKED BY: RJA SHEET NO.: 3 of 191 PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
GENERAL NOTES
OCTOBER 2025 G–03

I:\rkd.rkk.com\VA\Cloud\Projects\2019\19129_Biosolids\ACAD\Contract III\General\G–03 19129.dwg Oct 21, 2025 – 3:52pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:GENERAL NOTES

ABBREVIATIONS

ABAN.	ABANDON, ABANDONED
ABV.	ABOVE
ADPT	ADAPTER
&	AND
APPROX.	APPROXIMATELY
ASPH.	ASPHALT
AR., ARV	AIR RELEASE VALVE
@	AT
AVG	AVERAGE
ASSY	ASSEMBLY
B.	BEND
BL., ℄	BASELINE
BLD.	BUILDING
BF, B/F	BLIND FLANGE
B.M.	BENCH MARK
BV	BETWEEN
BFP	BELT FILTER PRESS
BTU	BRITISH THERMAL UNIT
C.	CONDUIT
C.C., C/C	CENTER TO CENTER
CEN., C/L ℄	CENTER, CENTERLINE
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
C.I.P.	CAST IRON PIPE
CISP	CAST IRON SOIL PIPE
C.J.	CONTROL JOINT, CONSTRUCTION JOINT
CLR.	CLEAR
C.O.	CLEANOUT
COMB.	COMBINATION
COMM.	COMMUNICATIONS
CONC.	CONCRETE
COND.	CONDENSATION
CON.	CONCENTRIC
CONN.	CONNECTION
COR.	CORNER
CONT., CONT'D	CONTINUED
CPLG.	COUPLING
CPT	
CV	CHECK VALVE
CY	CUBIC YARD
D	DRAIN
DB	DUCTBANK
DIA.,	DIAMETER
DIM.	DIMENSION
DN	DOWN
D.I.P.	DUCTILE IRON PIPE
DN.	DOWN, DOWNSPOUT
D.O.	
DIGEST S.	DIGESTED SLUDGE
DWG., DRWG.	DRAWING
E	EAST
EA.	EACH
E.F.	EACH FACE
EFF	EFFLUENT
ELB.	ELBOW
EL., ELEV.	ELEVATION
ELEC.	ELECTRIC
EQ.	EQUAL
EXIST., EX.	EXISTING
EXP.	EXPANSION
FIN. FL., F.F.	FINISHED FLOOR
FH	FIRE HYDRANT
FL., FLR.	FLOOR
FLG.	FLANGE
FM	FORCE MAIN, FLOW METER
FRP	FIBERGLASS REINFORCED PLASTIC
FT.	FEET
FW	FLUSHING WATER
G	GAS
GA.	GAUGE
GAL.	GALLON
GALV.	GALVANIZED
GND.	GROUND
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GTV	GATE VALVE

HB	HORIZONTAL BEND, HOSE BIB
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ.	HORIZONTAL
HP	HIGH POINT
HP	HORSE POWER
HR	HOUR
H.S.E.	
HVAC	HEATING VENTILATION AND AIR CONDITIONING
INF	INFLUENT
I	INLET
IN.	INCH
INV.	INVERT
JT.	JOINT
L.	LENGTH
LB	POUND
L.F.	LINEAR FEET
LP	LOW POINT
L.P.	LIGHT POLE
LT.	LIGHT
LOW	LIMIT OF WORK
MAC	MACADAM
MAX.	MAXIMUM
MCC	MOTOR CONTROL CENTER
M.H.	MANHOLE,
MIN.	MINIMUM
M.J.	MECHANICAL JOINT
MM	MILLIMETER
N	NORTH
NC	NORMALLY CLOSED
N.E.	NORTHEAST
N.I.C.	NOT IN CONTRACT
NO	NORMALLY OPEN
NO., #	NUMBER
NPT	NATIONAL PIPE THREAD
NPW	NON-POTABLE WATER
N.T.S.	NOT TO SCALE
N.W.	NORTHWEST
O.C., O/C	ON CENTER
OD.	OUTSIDE DIAMETER
OPNG.	OPENING
PC	POINT OF CURVATURE
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PE	PLAIN END
PROP.	PROPOSED
PS	PUMPING STATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
P.T.	POINT OF TANGENCY
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PW	POTABLE WATER
R.	RISER, REDUCER, RADIUS
RAS	RECYCLED ACTIVATED SLUDGE
RCP	REINFORCED CONCRETE PIPE
RECIRC.	RECIRCULATION
RED	REDUCER
REQD.	REQUIRED
REINF.	REINFORCEMENT
RPS	RECYCLED PUMPING STATION
RS	RAW SLUDGE, RECIRCULATION SUCTION
RSP	RECIRCULATION SLUDGE PUMP
R/W, R.O.W.	RIGHT OF WAY
S	SOUTH, SANITARY
SAN	SANITARY
SCE	STABILIZED CONSTRUCTION ENTRANCE
SCH.	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SE	SOUTHEAST
SPEC.	SPECIFICATIONS
SQ.	SQUARE
S.S.	STAINLESS STEEL
STA.	STATION
STL.	STEEL
STRUCT., STR.	STRUCTURAL
SWM	SEWER MANHOLE
SYS.	SYSTEM

T.	TEE
TC., T/C	TOP OF CURB, TOP OF COVER
TELE., TEL.	TELEPHONE
TEMP.	TEMPORARY
T/G	TOP OF GRATE
TH., THK.	THICK
T.P.	TEST PIT
TPS	THICKENED PRIMARY SLUDGE
TS	TOTAL SOLIDS
TSP	THICKENED SLUDGE PUMP
TRAV.	TRAVERSE
TYP.	TYPICAL
U.G.	UNDERGROUND
UV	ULTRAVIOLET
V.	VALVE
VAC	VACUUM
VB	VERTICAL BEND
V.C.,	VERTICAL CURVE,
VERT.	VERTICAL
VV	VALVE VAULT
WAS	WASTE ACTIVATED SLUDGE
W.	WEST, WATER
W/	WITH
WP	WORKING POINT
WV	WATER VALVE
XFMR.	TRANSFORMER

LEGEND–EXISTING

8" W.	WATER MAINS
WV	WATER VALVE VAULT
	WATER VALVE
	FIRE HYDRANT
18" D.	STORM DRAIN
SD	STORM DRAIN MANHOLE
	STORM DRAIN INLET (YARD)
	CURB INLET
8" S.	SEWER LINE
S	SEWER MANHOLE
C.O.	SEWER CLEANOUT
4" G	GAS MAIN
G	GAS MANHOLE
4–4" C.	ELECTRIC CONDUIT
E	ELECTRIC MANHOLE/HANDHOLE
EV	ELECTRIC VAULT
	WATER MAINS
	WATER VALVE
WV	WATER VALVE VAULT
	SANITARY SEWER
	SANITARY MANHOLE
L	LIGHTING
FO	FIBER OPTIC
PW	PLANT WATER
PWS	POLYMER WATER SUPPLY
	NOTE: EXISTING HAS BEEN SHOWN USING GRAY AND OR THIN BLACK LINES

	LIGHT POLE
	UTILITY POLE
T	TELEPHONE / TELEMETRY MANHOLE / HANDHOLE
MH	OTHER MANHOLES
	DECIDUOUS TREES
	TREELINE
X	CHAIN LINK FENCE
48	EXIST. CONTOURS (1' INTERVAL)
	ABANDONED UTILITY
E	CAP OR PLUG
E	ELECTRIC / TELEMETRY
	ELECTRIC MANHOLE/HANDHOLE
EV	ELECTRIC VAULT
6" D.	STORM DRAIN
SD	STORM DRAIN MANHOLE
	STORM DRAIN INLET (YARD)
	CURB INLET
ESF	ELECTRIC SECONDARY FEEDER
POT. W	POTABLE WATER
SFM	SANITARY FORCE MAIN
RAS	RETURN ACTIVATED SLUDGE
SL	DIGESTED SLUDGE
	ABANDONED LINE

NOTE: EXISTING HAS BEEN SHOWN USING GRAY AND OR THIN BLACK LINES

LEGEND–PROPOSED

	ISOLATION VALVE
	THREE WAY VALVE
	AIR RELEASE VALVE
	PRESSURE REDUCING VALVE
	STEAM INJECTOR
E	ELECTRIC CONTROL VALVE/ ACTUATOR
	FLOW ARROW
12	YARD PIPING STAKEOUT
A/C–2	INDICATES SECTION CUT; INDICATES DRAWING WHERE SECTION IS SHOWN
	PLUG VALVE
	CHECK VALVE
	BUTTERFLY VALVE
	VALVE WITH ROADWAY VALVE BOX
	KNIFE GATE VALVE
	CENTRIFUGAL PUMP
P	PRESSURE GAUGE
LOW	LIMITS OF WORK
PW	PROPOSED PIPING
	ELECTRICAL DUCTBANK
	CENTERLINE
E	CAP OR PLUG
	TO BE DEMOLISHED

NOTE: PROPOSED HAS BEEN SHOWN USING BOLD LINES

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ROBERT J. ANDRIOLA SEAL LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: NOT TO SCALE DRAWN BY: RAD CHECKED BY: RJA SHEET NO.: – of 191 PROJECT NO.: 50.1890.97–A
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SYMBOLS AND ABBREVIATIONS
SEPTEMBER 2025 G–04

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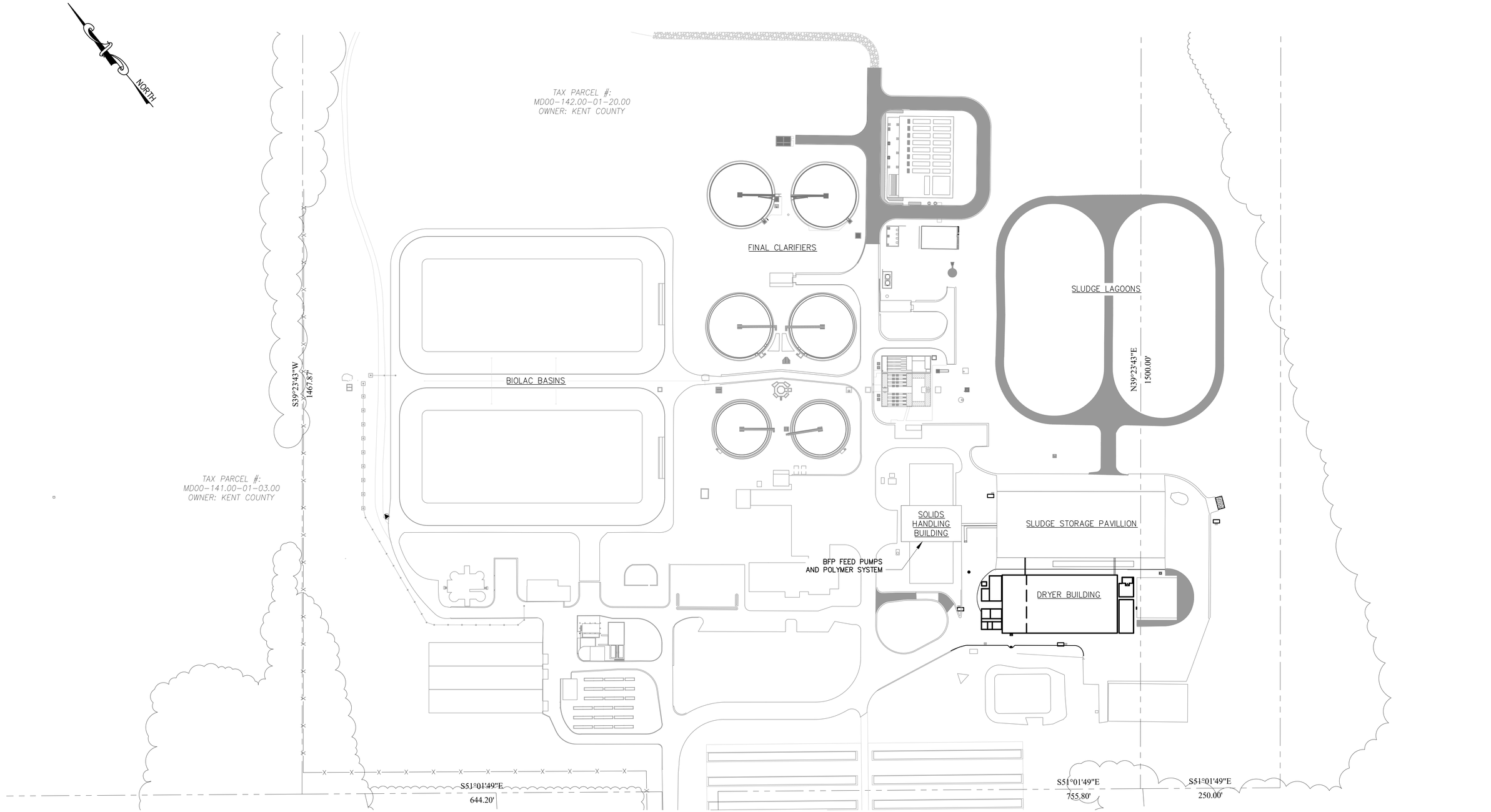

FACILITY PLAN

SCALE: 1"=80'

1"=80' 80' 40' 0 80' 160'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE

DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 1"=80'	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	WWTP SITE PLAN
APPROVED DATE		SHEET NO.: 5 of 191	
		PROJECT NO.: 50.1890.97-A	
ASSISTANT DIRECTOR OF ENGINEERING			OCTOBER 2025 G-05

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SURVEY TRAVERSE

POINT NO.	DESCRIPTION	ELEVATION	COORDINATES	
			NORTH	EAST
RKK1	EX. HORIZONTAL TRAVERSE	26.28'	361,489.70	650,062.86
RKK2	EX. HORIZONTAL TRAVERSE	26.84'	361,293.23	650,404.57
RKK3	EX. HORIZONTAL TRAVERSE	27.20'	361,186.46	650,312.62
CP7		43.30'	361,569.00	650,031.73

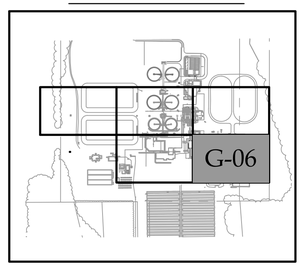
AEROBIC DIGESTER No. 4
AEROBIC DIGESTER No. 6
SOLIDS HANDLING BUILDING
OVERHEAD PIPING & WALKWAY
SOLIDS PROCESSING BUILDING
6" DCSB ABAND.
VAC TRUCK DUMP STATION
TRANSFORMER
DIESEL GENERATOR
GENERATOR
TRUCK SCALE
GAS SEPARATOR
DRAIN
AREA RESERVED FOR DRYER ROOM FANS
GAS METER BY CHESAPEAKE GAS
NORTH GARAGE
DRYER BUILDING
ODOR CONTROL PAD
INLET
CB
MH 2
4" DIP HWD ABAND.
FILTRATE AND CONDENSATE PUMP STATION
AREA RESERVED FOR NEW GAS METER TO SERVE DRYER BUILDING
BIO-RETENTION AREA
MAINTENANCE BUILDING
FLS #1
FLS #2
FLS #3
FLS #4
FLS #5
RKK1 26.28
RKK2 26.84
RKK3 27.20
P-01
P-02
BLD-B-01
BLD-B-02
BLD-B-03
BLD-B-04
BLD-CPT-01
BLD-CPT-02
BLD-CPT-03
BLD-CPT-04
SWM-01
SWM-02
CP7

NORTH

LEGEND

- BORING LOCATION
- CPT LOCATION

KEY PLAN



20' 10' 0 20' 40'
1"=20'

SURVEY PLAN
SCALE: 1"=20'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: 1"=20'
DRAWN BY: RAD
CHECKED BY: RJA
SHEET NO.: 6 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
PROJECT SITE PLAN, SURVEY CONTROL, SOIL BORINGS PLAN
OCTOBER 2025 G-06

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DESIGN CRITERIA

SLUDGE LOADING

SLUDGE LOADING (DESIGN AVERAGE)	17.18	DRY TONS PER DAY
SLUDGE LOADING (MAX MONTH)	23.10	DRY TONS PER DAY

POLYMER SYSTEM

POLYMER TYPE	EMULSION	
ASSUMED PERCENT ACTIVE	41%	
MAX SLUDGE FLOW RATE	666	GPM
AVG SLUDGE FLOW RATE	334	GPM
POLYMER SOLUTION CONCENTRATION	0.25%	
NO. OF NEAT POLYMER STORAGE TANKS	2	
NEAT POLYMER STORAGE TANK VOLUME (EACH)	4,000	GAL
NEAT POLYMER RECIRCULATION PUMP MOTOR SIZE	5	HP
NEAT POLYMER RECIRCULATION PUMP FLOW RANGE	5-50	GPM
NO. OF POLYMER BLENDING UNITS	2	
POLYMER BLENDING UNIT MOTOR	1	HP
NEAT POLYMER PUMP MOTOR SIZE	1/2	HP
NEAT POLYMER FLOW RANGE	1.5-30	GPH
DILUTION WATER RANGE	600-6000	GPH
NO. OF POLMYER AGING TANKS	2	
POLYMER AGING TANK VOLUME	1,500	GAL
NO. OF POLYMER SOLUTION PUMPS	8	
POLYMER SOLUTION PUMP MOTOR SIZE	1.5	HP
SOLUTION PUMP RANGE	1.25-12.5	GPM

LIQUID SLUDGE FEED SYSTEM

NUMBER OF PUMPS	4	(4 DUTY)
TYPE OF PUMP		PROGRESSIVE CAVITY
RATED CAPACITY, EACH PUMP	300	GPM
RATED HEAD, EACH PUMP	111	FT TDH
MOTOR SIZE	30	HP

DEWATERING SYSTEM

TYPE		BELT FILTER PRESS
SLUDGE TYPE	WAS	
NO. OF PRESSES	4	
SLUDGE FEED CONCENTRATION	1%	AVERAGE
SLUDGE FEED CONCENTRATION	0.8-1.5%	RANGE
HIGH DRY SOLIDS THROUGHPUT	1,000	LBS/HR
LOW DRY SOLIDS THROUGHPUT	500	LBS/HR
HYDRAULIC FEED RATE	200	GPM
MIN. CAKE SOLIDS (HIGH SLR)	16%	
MIN CAKE SOLIDS (LOW SLR)	17%	
SOLIDS CAPTURE	95%	
MAX. POLYMER CONSUMPTION	20	ACTIVE LBS/DRY TON
NO. OF BFP FEED PUMPS	5	
PERCENT SOLIDS (WAS)	0.8-1.5%	
DUTY POINT FLOW	200	GPM
TOTAL DYNAMIC HEAD	82-102	FT
BFP FEED PUMP MOTOR SIZE	25	HP
NUMBER OF SCREW CONVEYORS	7	
SCREW CONVEYOR CAPACITY	193	FT^3/HR OF CAKE
CAKE CONVEYORS CAPACITY	12,500	WET LBS/HR OF CAKE
INCLINE CONVEYORS CAPACITY	12,500	WET LBS/HR OF CAKE
TRANSFER CONVEYORS CAPACITY	12,500	WET LBS/HR OF CAKE
BYPASS CONVEYOR	25,500	WET LBS/HR OF CAKE

DRYER SYSTEM — PRE-PURCHASED BY KENT COUNTY BASED ON ANDRITZ PROPOSAL DATED OCTOBER 31, 2023

PERFORMANCE REQUIREMENTS

TYPE		BELT
NUMBER OF DRYER TRAINS	2	
SLUDGE TYPE		WASTE ACTIVATED SLUDGE
NORMAL OPERATION CYCLE, WITH ALL DRYERS IN SERVICE	120	HRS/WEEK
MAINTENANCE OPERATION CYCLE, WITH ONE DRYER OUT-OF-SERVICE	168	HRS/WEEK
DRY MASS LOAD TO DRYER, DRY, WITH ALL DRYERS IN SERVICE	2,860	LB/HR
DEWATERED CAKE FEED RATE, LB/HR @17% TS (RANGE 14-20%)	16,940	LB/HR
EVAPORATION RATE FOR DRYER SYSTEM, ALL DRYERS IN SERVICE	13,900	LB/HR
EVAPORATION EFFICIENCY, BTU/LB H2O EVAPORATED	< 1,550	BTU/LB
CAKE BIN STORAGE VOLUME	75	CY
FEED CAKE SOLIDS, AVERAGE TS	17	%
FEED CAKE SOLIDS, RANGE TS	14-20	%
DRIED BIOSOLIDS, TS AVERAGE	> 92	%
MINIMUM BULK DENSITY OF DRIED BIOSOLIDS	25	LBS/CF
GRANULE SIZE, < 0.5 MM	< 5	%
GRANULE SIZE, > 12 MM	< 5	%
PATHOGEN & VECTOR ATTRACTION REDUCTION		CLASS A PER 40 CFR PART 503 AND DNREC REQUIREMENTS
DRYER SYSTEM TURNDOWN, % OF CAKE FEED RATE, REDUCTION PER DRYER TRAIN	50	%

ODOR SCRUBBER SYSTEM

SYSTEM SERVED		DRYER AIR EXHAUST
TYPE		WET SCRUBBER

FILTRATE / CONDENSATE PUMP STATION

TYPE, VARIABLE SPEED		SUBMERSIBLE, CENTRIFUGAL
TOTAL CAPACITY	2,700	GPM
NUMBER OF PUMPS	3	(2 DUTY, 1STANDBY)
RATED CAPACITY, EACH PUMP	1,350	GPM
RATED HEAD, EACH PUMP	90	FT
MOTOR SIZE	50	HP

PLANT WATER PUMP STATION ADDITION

TYPE, CONSTANT SPEED		SUBMERSIBLE, CENTRIFUGAL
TOTAL CAPACITY	1,944	GPM
NUMBER OF PUMPS	3	(2 DUTY, 1STANDBY)
RATED CAPACITY, EACH PUMP	972	GPM
RATED HEAD, EACH PUMP	138	FT
MOTOR SIZE	52	HP

DRYER FIRE FIGHTING PUMPS

TYPE, VARIABLE SPEED		HORIZONTAL, CENTRIFUGAL
TOTAL CAPACITY	500	GPM
NUMBER OF PUMPS	3	(2 DUTY, 1STANDBY)
RATED CAPACITY, EACH PUMP	250	GPM
RATED HEAD, EACH PUMP	115	FT
MOTOR SIZE	20	HP

AREA CLASSIFICATIONS

ROOM NAME	AREA DESIGNATION: DRY LOCATION	WET LOCATION	HAZARDOUS LOCATION	NEC HAZARDOUS LOCATION CLASSIFICATION
SOLIDS HANDLING BUILDING				
POLYMER AREA		X		UNCLASSIFIED
SLUDGE SCREEN AREA		X		UNCLASSIFIED
BFP FEED PUMP ROOM		X		UNCLASSIFIED
BLOWER ROOM	X			UNCLASSIFIED
STAIR WELL	X			UNCLASSIFIED
ELECTRICAL ROOM/ UPPER LEVEL	X			UNCLASSIFIED
DRYER BUILDING				
DRYER ROOM - INTERIOR	X		X	CLASS 2, DIV. 2, GROUP G
DRYER ROOM - EXTERIOR ENVELOPE WITHIN 3-FT OF EXHAUST VENTS	X	X		CLASS 1, DIV. 2, GROUP D
DEWATERING ROOM		X		UNCLASSIFIED - REQUIRES MIN. VENTILATION OF 6 ACH
ODOR CONTROL AREA -ENVELOPE WITHIN 3-FT OF EXHAUST		X	X	CLASS 1, DIV. 2, GROUP D
CHEMICAL STORAGE AREA		X		NOTE: CORROSIVE CHEMICALS PRESENT (NOT AN NEC CLASSIFIED AREA)
ELECTRICAL AND SERVICE BUILDINGS	X			UNCLASSIFIED
PLANT WATER PUMPING STATION				
WET WELL		X		UNCLASSIFIED
VALVE VAULT		X		UNCLASSIFIED
FILTRATE/CONDENSATE PUMPING STATION				
WET WELL		X	X	CLASS 1, DIV. 1, GROUP D
VALVE VAULT		X	X	CLASS 1, DIV. 2, GROUP D

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REVISIONS NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: NOT TO SCALE
DRAWN BY: RAD
CHECKED BY: RJA
SHEET NO.: 7 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
PROCESS DESIGN CRITERIA AND AREA CLASSIFICATIONS
OCTOBER 2025 G-07

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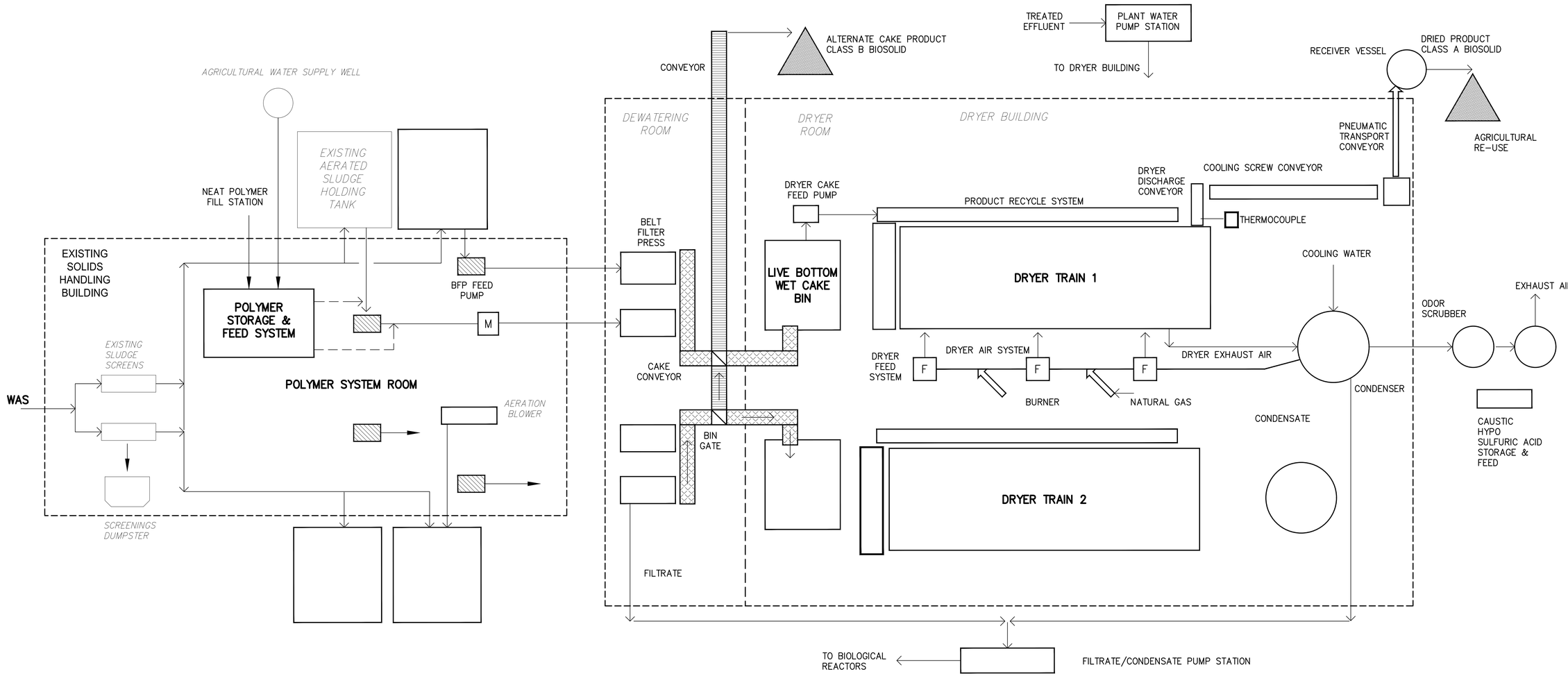

SLUDGE PROCESS SCHEMATIC

SCALE: NOT TO SCALE

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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

SCALE: NONE
DRAWN BY: DLJ
CHECKED BY: RJA
SHEET NO.: XX of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SCHEMATIC – NEW SOLIDS PROCESSING SYSTEM
OCTOBER 2025 G-08

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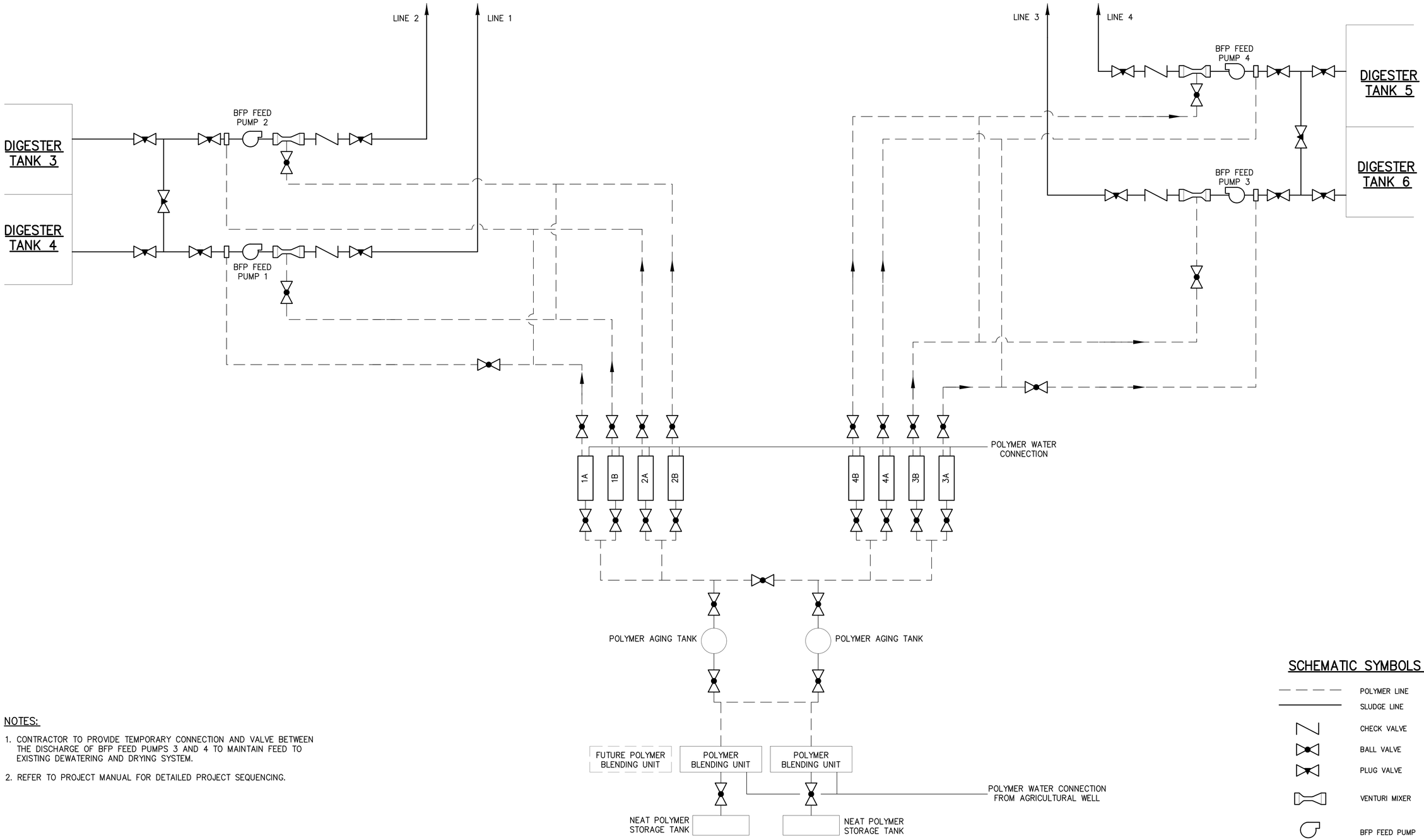

POLYMER SYSTEM SCHEMATIC

SCALE: NOT TO SCALE

NOTES:

1. CONTRACTOR TO PROVIDE TEMPORARY CONNECTION AND VALVE BETWEEN THE DISCHARGE OF BFP FEED PUMPS 3 AND 4 TO MAINTAIN FEED TO EXISTING DEWATERING AND DRYING SYSTEM.
2. REFER TO PROJECT MANUAL FOR DETAILED PROJECT SEQUENCING.

SCHEMATIC SYMBOLS LEGEND

- POLYMER LINE
- SLUDGE LINE
- CHECK VALVE
- BALL VALVE
- PLUG VALVE
- VENTURI MIXER
- BFP FEED PUMP
- XX — POLYMER FEED PUMP
- INJECTION RING

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS	APPROVED DATE — PROJECT MANAGER	SCALE: NONE	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING		CHECKED BY: RJA	SCHEMATIC – POLYMER SYSTEM
		SHEET NO.: 9 of 191	OCTOBER 2025 G–09
		PROJECT NO.: 50.1890.97–A	

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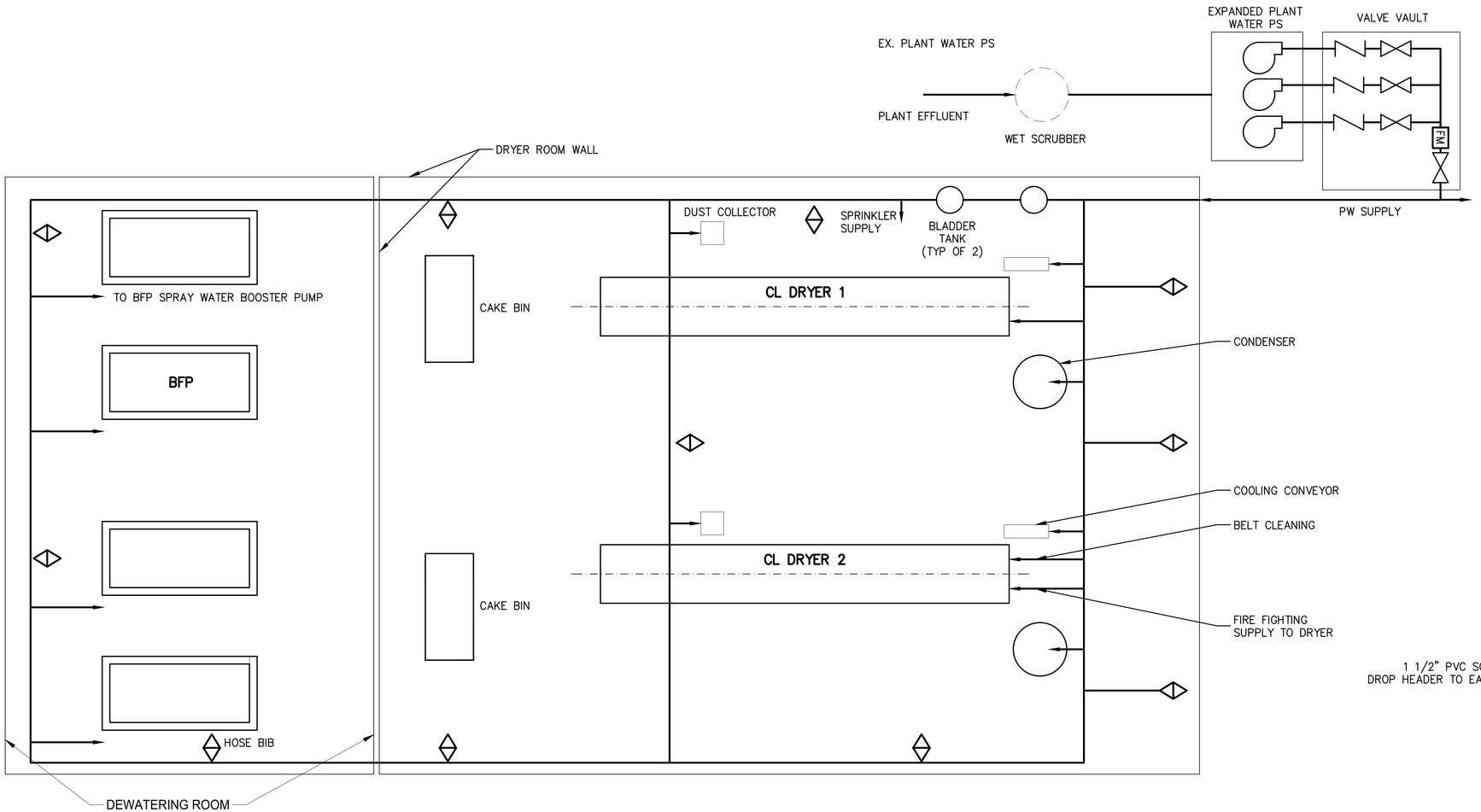
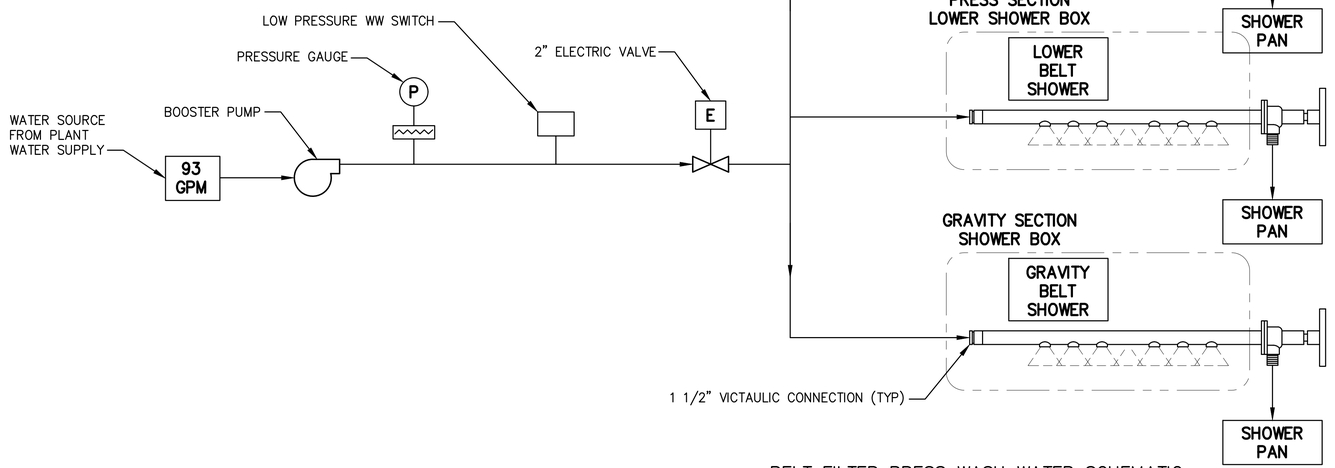


DRYER BUILDING PLANT WATER SUPPLY SCHEMATIC

SCALE: NOT TO SCALE



BELT FILTER PRESS WASH WATER SCHEMATIC

SCALE: NOT TO SCALE

PLANT WATER SUPPLY DEMAND							
		CASE 1		CASE 2		CASE 3	
DEMAND	FLOW PER UNIT (GPM)	NO. UNITS IN USE	TOTAL DEMAND (GPM)	NO. UNITS IN USE	TOTAL DEMAND (GPM)	NO. UNITS IN USE	TOTAL DEMAND (GPM)
DRYER AREA SCRUBBER	4	1	4	2	4	0	0
WET SCRUBBER AT PRODUCT RECEIVING AREA	4	1	4	2	4	0	0
CONDENSER	671	1	671	2	671	0	0
BELT CLEANING	26	1	13	2	52	0	0
COOLING SCREW	44	1	44	2	88	0	0
DRYER FIREFIGHTING	238	0	0	0	0	2	476
BFP SPRAY WATER (TO BOOSTER PUMP)	95	2	190	4	380	0	0
HOSE BIBS	10	1	10	1	10	0	0
SPRINKLER SYSTEM		0		0	0	1	760

ISSUED FOR BIDDING

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ROBERT J. ANDRYCZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

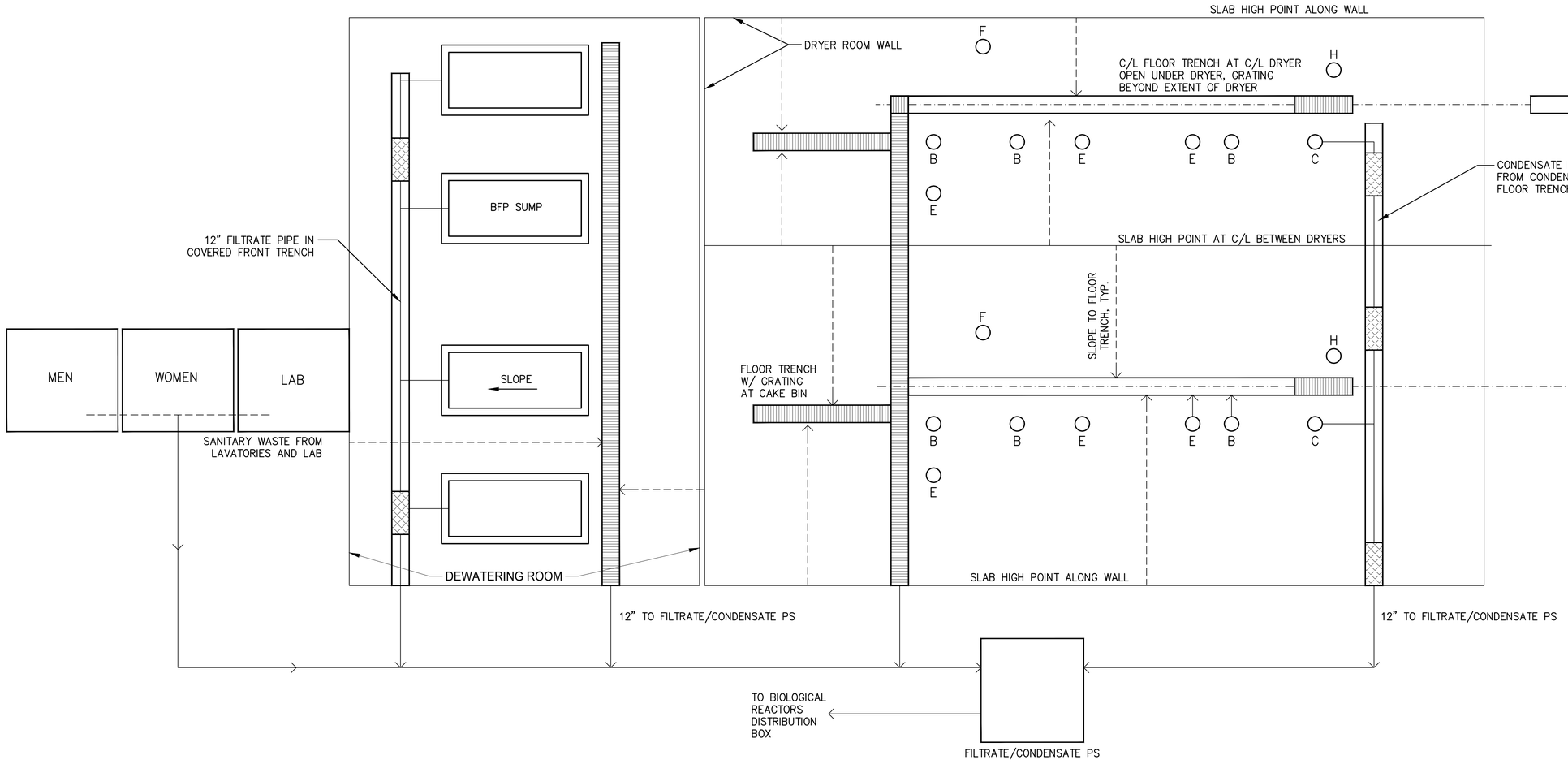
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: NONE	KENT COUNTY RRRF
		DRAWN BY: DLJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	SCHEMATIC – DRYER BUILDING PLANT WATER SUPPLY
APPROVED DATE		SHEET NO.: 10 of 191	OCTOBER 2025 G-10
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	

\\pdrive.com\Vol\Cloud\Projects\2019\19129_Biosolids\ACAD\Contract III\General\G-10 19129.dwg Oct 21, 2025 - 3:54pm ENV.CTB Plot Scale 1=1 Plot By: dixon Tab:G-10

ANDRITZ SYMBOL	FUNCTION	NOTES
A	FLOOR DRAIN FOR CAKE BIN AREA	FLOOR TRENCH W/GRATING
B	BELT DRYER WASHWATER DRAIN	
C	CONDENSER DRAIN	
D	ODOR SCRUBBER PURGE DRAIN	
E	FAN CASING FLOOR DRAIN	
F	DUST SCRUBBER DRAIN	
G	CONDENSER AREA FLOOR DRAIN	
H	COOLING CONVEYOR DRAIN	



DRYER BUILDING FLOOR AND EQUIPMENT DRAINS SCHEMATIC

SCALE: NOT TO SCALE

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE

DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: NONE	KENT COUNTY RRRF
		DRAWN BY: DLJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		CHECKED BY: RJA	SCHEMATIC – DRYER BUILDING FLOOR & EQUIPMENT DRAINS
		SHEET NO.: 11 of 191	
		PROJECT NO.: 50.1890.97–A	
		OCTOBER 2025	G–11

\\adc.rkk.com\VA\Cloud\Projects\2019\19129_Biosolids\ACAD\Contract III\General\G-11 19129.dwg Oct 21, 2025 - 3:55pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:SCHEMATIC – DRYER BUILDING FILTRATE

NOTES:

* PROVIDED BY BELT DRYER MANUFACTURER

FROM PLANT WATER

6" PW

K — 4" PW — TYPE I −15 TO 100 PSI PI — 3" — M — 2.5" — 4" DFF — TYPE I 0 TO 150 PSI PI — K

DRYER FIRE FIGHTING PUMP NO 3
DFF-P-3

DRYER FIRE FIGHTING PUMP NO 2
DFF-P-2

DRYER FIRE FIGHTING PUMP NO 1
DFF-P-1

6" DFF

TYPE I 0 TO 150 PSI 60 PSI START 80 PSI STOP PIT

2" DFF

EXPANSION TANK
DFF-T-1

NC

1.5" D

316 SS MALE CAMLOCK

2-WAY FLUSH DRYER FIRE FIGHTING PUMP TEST CONNECTION

BF

*A86FL01.P1 PI — *A86FL01.Y1 P — *A86FL01.F1 FS

4" DFF — 3" DFF — NC FAIL OPEN — NC — 4" DFF

1" DFF

*A36EM01.Y21 S — 1" DFF — NC FAIL OPEN — 1" DFF — BELT DRYER TRAIN 1 CIRCULATING AIR DUCT FOR BURNER A36EM01

*A36EM02.Y21 S — 1" DFF — NC FAIL OPEN — 1" DFF — BELT DRYER TRAIN 1 CIRCULATING AIR DUCT FOR BURNER A36EM02

*B36EM02.Y21 S — 1" DFF — NC FAIL OPEN — 1" DFF — BELT DRYER TRAIN 2 CIRCULATING AIR DUCT FOR BURNER B36EM02

*B36EM01.Y21 S — 1" DFF — NC FAIL OPEN — 1" DFF — BELT DRYER TRAIN 2 CIRCULATING AIR DUCT FOR BURNER B36EM01

*B86FL01.P1 PI — *B86FL01.Y1 P — *B86FL01.F1 FS

4" DFF — 3" DFF — NC FAIL OPEN — NC — 4" DFF

3" DFF

1" DFF — NOZZLE (TYP)

BELT DRYER TRAIN 1
A32HP01

BELT DRYER TRAIN 2
B32HP01

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KEMEI DU LICENSE No. 14864 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

SCALE: NOT TO SCALE
DRAWN BY: DY
CHECKED BY: DY
SHEET NO.: 12 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
PROCESS FLOW DIAGRAM
DRYER FIRE FIGHTING PUMPS
OCTOBER 2025 G-12

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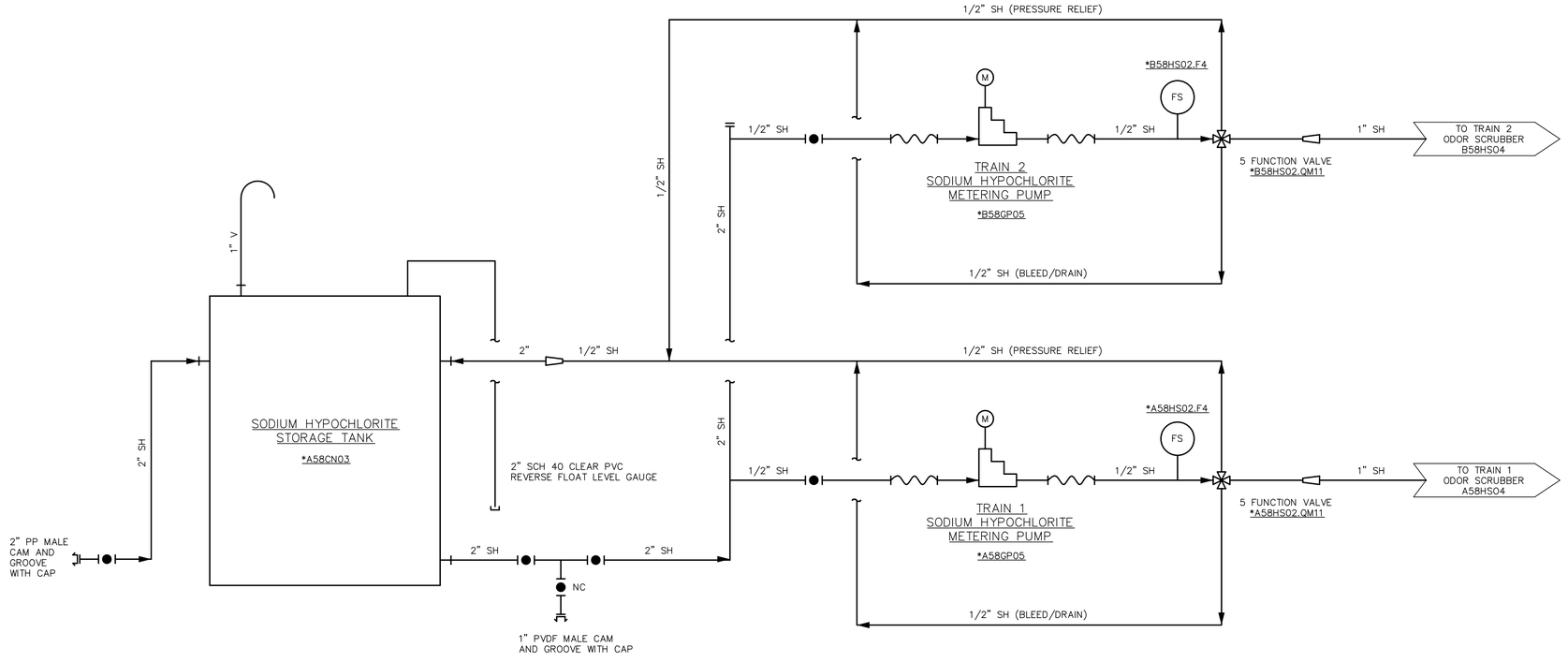
NOTES:

* PROVIDED BY BELT DRYER MANUFACTURER



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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: NOT TO SCALE
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		DRAWN BY: DY CHECKED BY: DY SHEET NO.: 13 of 191 PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
PROCESS FLOW DIAGRAM
SODIUM HYPOCHLORITE
OCTOBER 2025 G-13

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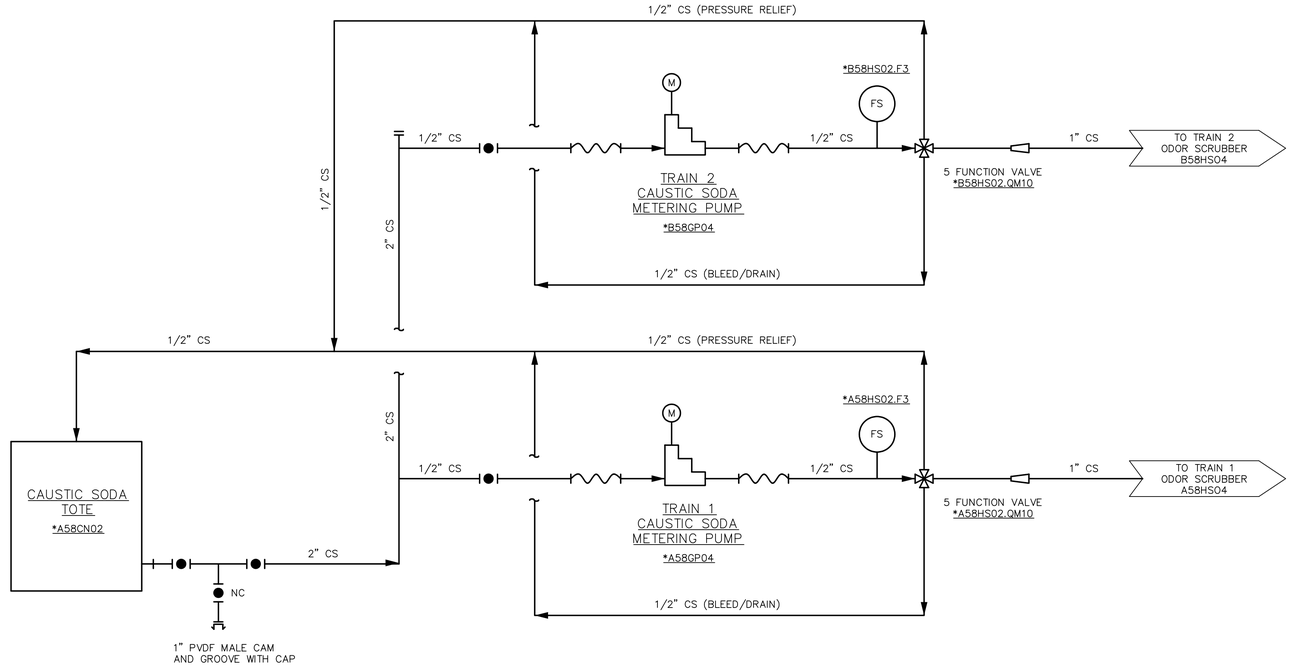

NOTES:

* PROVIDED BY BELT DRYER MANUFACTURER

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KEMEI DU LICENSE No. 14864 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: NOT TO SCALE	KENT COUNTY RRRF
		DRAWN BY: DY	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DY	PROCESS FLOW DIAGRAM CAUSTIC SODA & SULFURIC ACID
APPROVED DATE		SHEET NO.: 14 of 191	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 G-14

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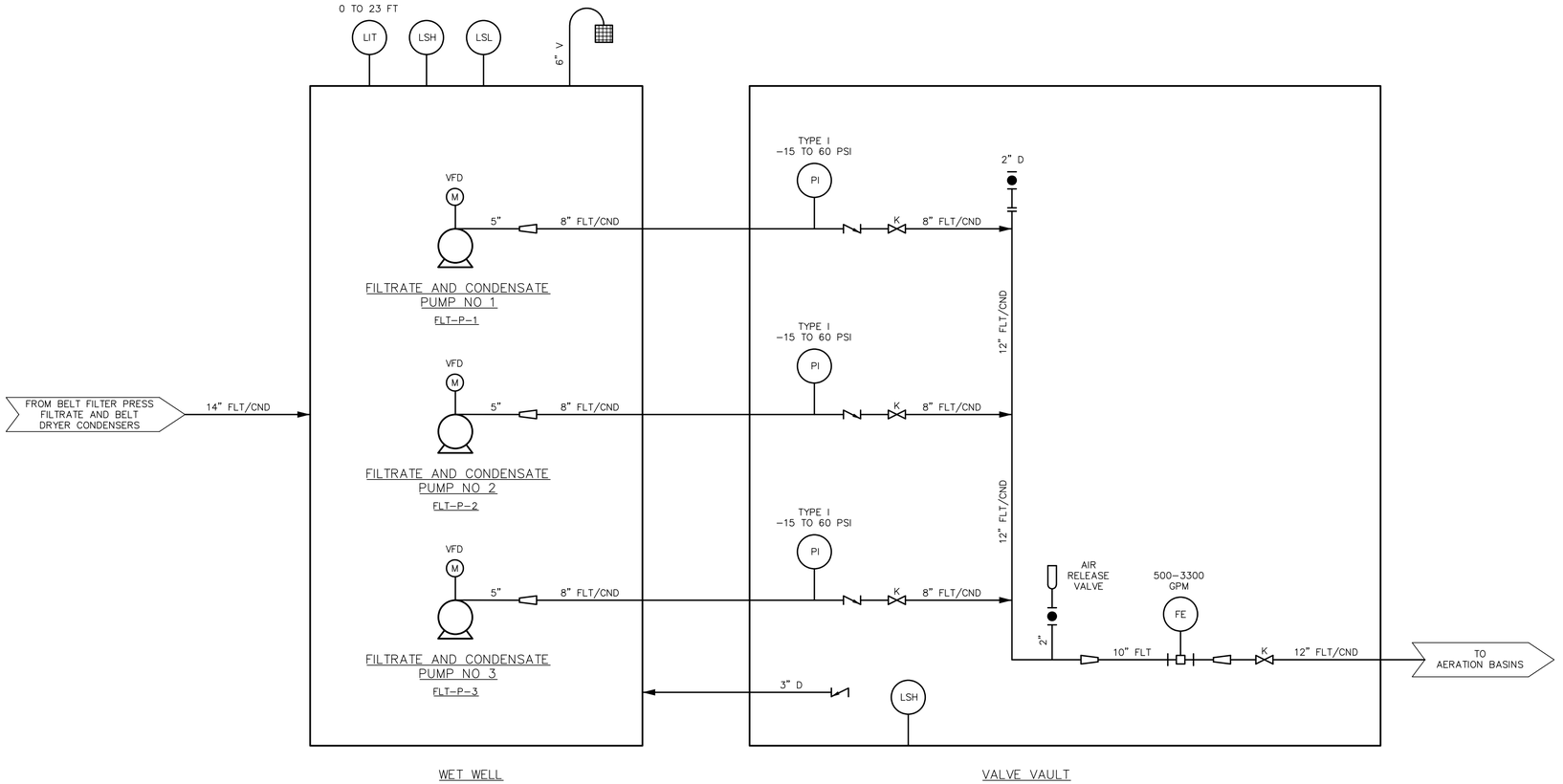

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: NOT TO SCALE	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: DY	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DY	PROCESS FLOW DIAGRAM
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 15 of 191	FILTRATE & CONDENSATE PUMPING STATION
		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 G-15

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MAP DATA © 2023 NEARMAP

LOCATION MAP
SCALE: 1"=500'

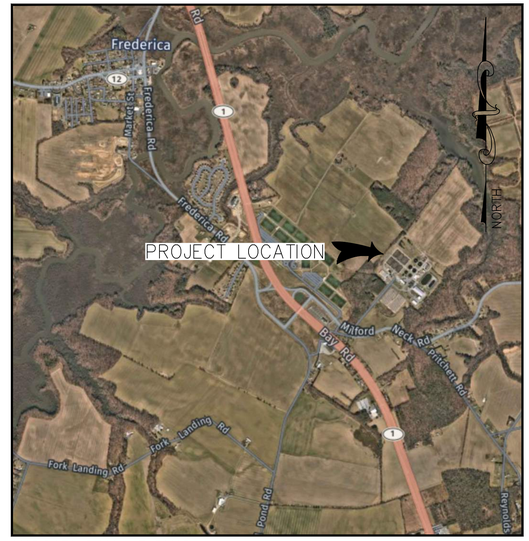
KENT COUNTY REGIONAL RESOURCE RECOVERY FACILITY

BIOSOLIDS CAPACITY EXPANSION PROJECT DRYER BUILDING STRUCTURE

MAP NUMBER: 5 00 14200 01 2000 000
ADDRESS: 139 MILFORD NECK RD, MILFORD, DE 19963
38.993109, -75.438202

JUNE 2025

TOTAL LIMIT OF DISTURBANCE = 2.60 AC
EXISTING IMPERVIOUS AREA = 0.82 AC
EXISTING PERVIOUS AREA = 1.78 AC
PROPOSED IMPERVIOUS AREA = 1.45 AC
PROPOSED PERVIOUS AREA = 1.15 AC



MAP DATA © 2023 NEARMAP

VICINITY MAP
SCALE: 1"=2000'

DRAWING INDEX

SHEET NO.	DRAWING NO.	DESCRIPTION
	GENERAL	
1	ESC-01	COVER SHEET AND DRAWING INDEX
	SOIL EROSION AND SEDIMENT CONTROL	
2	ESC-02	SEDIMENT CONTROL PLAN
3	ESC-03	SEDIMENT CONTROL PLAN
4	ESC-04	SEDIMENT CONTROL PLAN
5	ESC-05	SEDIMENT CONTROL PLAN
6	ESC-06	SEDIMENT CONTROL PLAN
7	ESC-07	SEDIMENT CONTROL NOTES
8	ESC-08	SEDIMENT CONTROL DETAILS
9	ESC-09	SEDIMENT CONTROL DETAILS
10	ESC-10	SEDIMENT CONTROL DETAILS

OWNER'S / DEVELOPER'S CERTIFICATION:

I, THE UNDERSIGNED, CERTIFY THAT ALL LAND CLEARING, CONSTRUCTION AND DEVELOPMENT SHALL BE DONE PURSUANT TO THE APPROVED STANDARD PLAN AND THAT RESPONSIBLE PERSONNEL (I.E. BLUE CARD HOLDER) INVOLVED IN THE LAND DISTURBANCE WILL HAVE A CERTIFICATION OF TRAINING PRIOR TO INITIATION OF THE PROJECT, AT A DNREC SPONSORED OR APPROVED TRAINING COURSE FOR THE CONTROL OF EROSION AND SEDIMENT DURING CONSTRUCTION. IN ADDITION, I GRANT THE DNREC SEDIMENT AND STORMWATER PROGRAM AND/OR THE RELEVANT DELEGATED AGENCY THE RIGHT TO CONDUCT ON-SITE REVIEWS.

ANDREW RIGGI - KENT COUNTY July 7, 2025
OWNER'S / DEVELOPER DATE

555 BAY ROAD, DOVER DE 19901
ADDRESS

Andrew Riggi 302-943-2929
SIGNATURE TELEPHONE NUMBER

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE COMPLIES WITH THE APPLICABLE STATE AND LOCAL REGULATIONS AND ORDINANCES.

APPROVED
With Conditions
KENT CONSERVATION DISTRICT

Review By _____ Date _____
Approved By Cullen Baker Date 7/10/2025

1"=500' 500' 0 500' 1000'

1"=2,000' 2000' 1000' 0 2000' 4000'

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ROBERT J. ANDRIULLI LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
		DRAWN BY: JKZ	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: JK	COVER SHEET AND DRAWING INDEX
APPROVED DATE		SHEET NO.: 1 of 10	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: XXXXXXX	JUNE 2025 ESC-01

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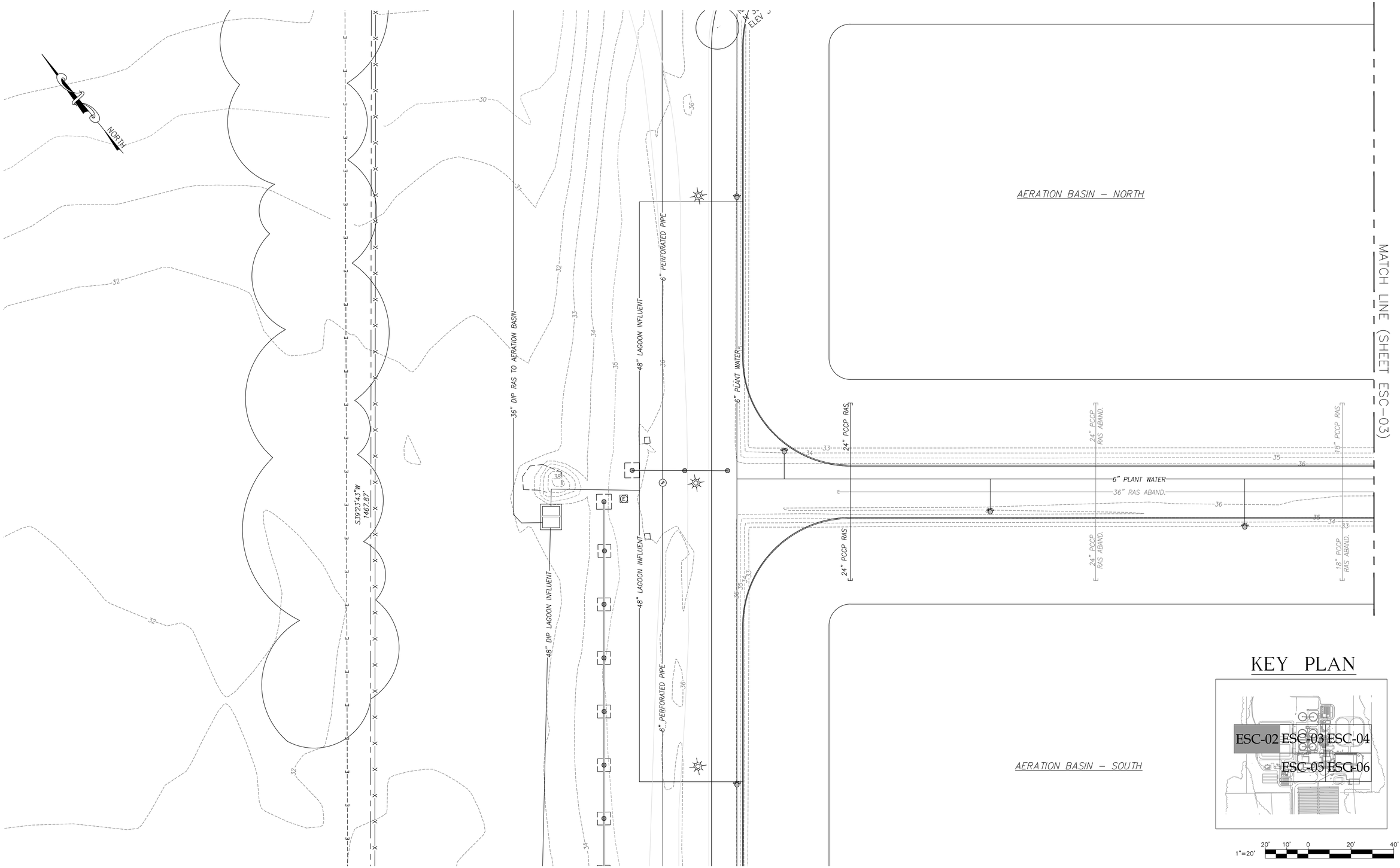

KEY PLAN

1"=20' 20' 10' 0 20' 40'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: JKZ	BIOSOLIDS CAPACITY EXPANSION PROJECT
APPROVED DATE		CHECKED BY: JK	BIOLACS LAGOONS INFLUENT AREA ESC PLAN
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 2 of 10	JUNE 2025 ESC-02
		PROJECT NO.: XXXXXXX	

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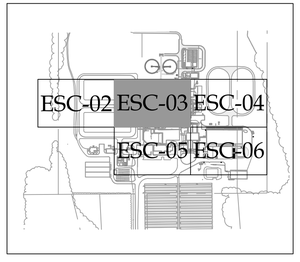
MATCH LINE (SHEET ESC-02)

MATCH LINE (SHEET ESC-04)

MATCH LINE (SHEET ESC-05)

NORTH

KEY PLAN



1"=20' 20' 10' 0 20' 40'

RECYCLE PUMPING STATION 2
WET WELL
TRANSFORMER T-2
DIESEL GENERATOR
ELECTRIC MANHOLE MH-D
ELECTRIC MANHOLE MH-C
ELECTRIC MANHOLE
FERRIC CHLORIDE STORAGE
DECHLORINATION BUILDING
ELECTRIC HANDHOLE UVC-C
UVC POWER CENTER
EH UVC-D
UV DISINFECTION TANK C
UV DISINFECTION TANK B
UV DISINFECTION TANK A
UV CONTROL BUILDING
STORM MH
ELEC. JUNC. BOX
SWITCHBOARD
FILTRATE/CONDENSATE PS FORCE MAIN
CONNECT TO EXISTING 12" FILTRATE LINE WITH TAPPING SLEEVE
MP-2

16" DIP RAS TO AERATION BASIN
16" RAS ABAND.
36" RAS
36" RAS ABAND.
6" DIP PLANT WATER
6" PLANT WATER
8" ABANDONED SCUM LINE
8" DIP ABANDONED SCUM LINE
6" DIP ABANDONED SCUM DISCHARGE
6" ABANDONED SMD
6" DIP SD
12" SD
6" DIP PW
2" DR 11 HDPE Pot W
6" C900 PVC PW
2" SAN. FM
3" SCH 80 PVC Pot W
6" PERFORATED ACP
12" DIP FILTRATE TO AERATION BASINS
48" DIP BASIN EFFLUENT
48" PCCP BASIN EFFLUENT
54" PCCP ABANDONED BASIN INFLUENT

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 1"=20'	KENT COUNTY RRRF
		DRAWN BY: JKZ	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: JK	
APPROVED DATE		SHEET NO.: 3 of 10	CLARIFIER AREA ESC PLAN
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: XXXXXXX	
			JUNE 2025 ESC-03

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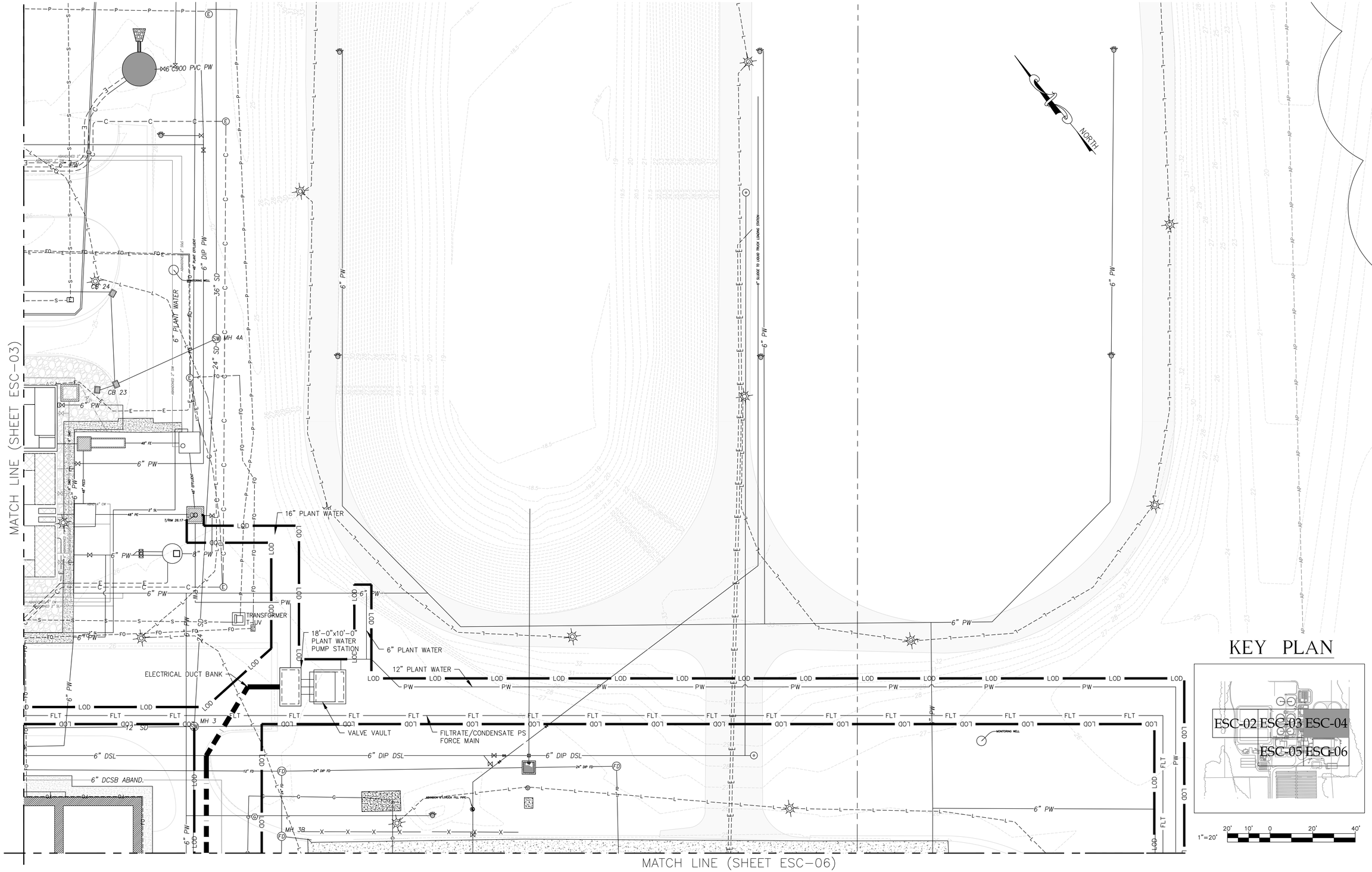

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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 1"=20'	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: JKZ	BIOSOLIDS CAPACITY EXPANSION PROJECT
APPROVED DATE		CHECKED BY: JK	SLUDGE LAGOON AREA ESC PLAN
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 4 of 10	
		PROJECT NO.: XXXXXXX	
		JUNE 2025	ESC-04

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MATCH LINE (SHEET ESC-03)

MATCH LINE (SHEET ESC-06)

NORTH

EXISTING INFLUENT SAMPLING & FLOW MEASURING STRUCTURE

EXISTING OBSERVATION TOWER

EXISTING VALVE & METER VAULT

EXISTING OBSERVATION TOWER

6" PLANT WATER

6" FILTRATE

6" DSL

4" WAS

2" AIR LINE

ABANDONED ½" NTFL

6" ABANDONED SMD

ABANDONED FM

12" San D

2" Pot W

12" SD

12" OUT 22.70

T/RIM 27.71

MH 2B

12" IN 22.91

12" IN 22.80

MH 19

MH 10

8" San D

MH 9

4" PW

6" PW

2" SPD

8" Pot W

2" Pot W

3" Pot W

9" PW

4" HEAT EXCHANGE LINE

MH 8

MH 7

8" San D

1½" Pot W

EXISTING ADMINISTRATION BUILDING

2" PW

4" PW

6" SMD

4" SMD ABANDON

36" RCCP PLANT RECYCLE

IFLUENT

PRIMARY SWITCH GEAR

ELECTRIC MANHOLE MH-A

TRANSFORMER PSA

6" PW

4" SMD ABANDON

EXISTING SEPTAGE RECEIVING & SCUM HANDLING BUILDING

6" SD

4" SD

48" BI

48" PLANT INFLUENT

48" PLANT INFLUENT

GENERATOR

6" PW

EXISTING HEADWORKS BUILDING

T/WALL SCREENING BUILDING = 40.67

ELECTRIC MANHOLE

12" SD

6" PW

12" SD

JENF FM

EXISTING FERRIC CHLORIDE STORAGE

1" Pot W

EXISTING SOLAR DRYER MECHANICAL BUILDING

CB 14

IP-2

12" SD

IP-2

SCE

48" PLANT INFLUENT

PROPOSED LAYDOWN AREA

CONCRETE WASHOUT SEE DETAIL ON SHEET ESC-08

CW

CB 12

12" SD

CB-11

CB-10

IP-2

3" Pot W

2" Pot W

ELECTRICAL DUCT BANK

4" SMW FM

2" PW

ELECTRIC MANHOLE MH-E

CB 9

2" Pot W

ELECTRIC MANHOLE

LOD

SF

SS

FO

AP

AS

UUF

P

S

W

E

KEY PLAN

ESC-02 ESC-03 ESC-04

ESC-05 ESC-06

1"=20' 20' 10' 0 20' 40'

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700 EAST PRATT STREET, SUITE 500 • BALTIMORE, MARYLAND 21202 • 410.728.2900

ROBERT J. ANDRYKOWSKI JR. No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 1" = 20'	KENT COUNTY RRRF
		DRAWN BY: JKZ	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: JK	ADMINISTRATION BUILDING AREA ESC PLAN
APPROVED DATE		SHEET NO.: 5 of 10	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: XXXXXXX	JUNE 2025 ESC-05

\\rkd.rkk.com\fs\Cloud Projects\2019\19129_Biosolids\ES_SWM\SGD\CADD\Plans\ESC-05 19129.dwg Jun 11, 2025 - 12:28pm ENV.CTB Plot Scale 1=1 Plot By: jzekley Tab:ESC-05

MATCH LINE (SHEET ESC-04)

MATCH LINE (SHEET ESC-05)

EXISTING AEROBIC DIGESTER No. 4

EXISTING AEROBIC DIGESTER No. 6

EXISTING SOLIDS HANDLING BUILDING

EXISTING SOLIDS PROCESSING BUILDING

NOTE: TRENCH DRAINS DISCHARGE TO PLANT PROCESS, NOT STORMWATER.

OVERHEAD PIPING & WALKWAY

OVERHEAD 6" SLUDGE ON EX. PIPE BRIDGE TO BFP ROOM

ELECTRICAL DUCT BANK (TYP)

DIESEL GENERATOR

PEMB DOWNSPOUTS TO BURIED DRAIN PIPE

VAC TRUCK DUMP STATION

REMOVE AND REINSTALL EXISTING RIPRAP

NORTH

GRIT SEPARATOR

12" PLANT WATER

PROPOSED DRYER BUILDING

AREA RESERVED FOR DRYER ROOM FANS

ODOR CONTROL PAD

EXISTING NORTH GARAGE

GAS METER BY CHESAPEAKE GAS

3" POT. W-SCH 80 PVC

14" GAS

FILTRATE/CONDENSATE PS FORCE MAIN

FUTURE ELECTRICAL AND COMMUNICATIONS TO FILTRATE AND CONDENSATE PUMP STATION

NEW EDGE OF ROAD

CONDENSATE CAPPED

FILTRATE AND CONDENSATE UMP STATION

BURIED VALVE VAULT

MANHOLE EMH-1

MANHOLE EMH-2

ROAD LIGHTING CIRCUIT

AREA RESERVED FOR NEW GAS METER TO SERVE DRYER BUILDING

3" POTABLE WATER

4" PVC SAN. FM SCH 80 PVC

3" DIP POT. W

3" POT. W DIP

6" DIP PW

EXISTING BIO-RETENTION AREA

EXISTING MAINTENANCE BUILDING

COMMUNICATIONS HAND HOLE

3" POLYMER WATER SUPPLY

FLS #1

FLS #2

FLS #3

FLS #5

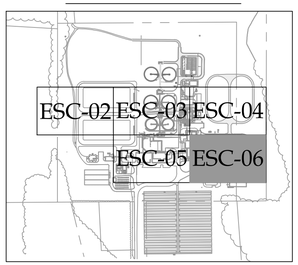
FLS #6

IP-2

CB 18

MH 2

KEY PLAN



1"=20' 20' 10' 0 20' 40'

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ASSISTANT DIRECTOR OF ENGINEERING	

SCALE: 1"=20'
DRAWN BY: JKZ
CHECKED BY: JK
SHEET NO.: 6 of 10
PROJECT NO.: XXXXXXX

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
DRYER BUILDING STRUCTURE ESC PLAN
JUNE 2025 ESC-06

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1. THE KENT CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING FIVE (5) DAYS PRIOR TO COMMENCING WITH CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.

2. REVIEW AND/OR APPROVAL OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE SEDIMENT AND STORMWATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE PPROVED PLAN.

3. IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORMWATER CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY DNREC OR THE DELEGATED AGENCY.

4. FOLLOWING SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED FOR ALL PERIMETER SEDIMENT CONTROLS, SOIL STOCKPILES, AND ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE WITHIN 14 CALENDAR DAYS UNLESS MORE RESTRICTIVE FEDERAL REQUIREMENTS APPLY.

5. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

6. AT ANY TIME A DEWATERING OPERATION IS USED, IT SHALL BE PREVIOUSLY APPROVED BY THE AGENCY CONSTRUCTION SITE REVIEWER FOR A NON-EROSIVE POINT OF DISCHARGE, AND A DEWATERING PERMIT SHALL BE APPROVED BY THE DNREC WELL PERMITTING BRANCH.

7. APPROVED PLANS REMAIN VALID FOR 5 YEARS FROM THE DATE OF APPROVAL.

8. POST CONSTRUCTION VERIFICATION DOCUMENTS SHALL BE SUBMITTED TO KENT CONSERVATION DISTRICT WITHIN 60-DAYS OF STORMWATER MANAGEMENT FACILITY COMPLETION.

9. APPROVAL OF A SEDIMENT AND STORMWATER PLAN DOES NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORMWATER RUNOFF. THE OWNER/DEVELOPER IS RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS, ETC., NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE LAWS.

10. THE NOTICE OF INTENT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER A NDPES GENERAL PERMIT FOR THIS PROJECT IS #7692. THE PERMITTEE OF RECORD SHALL NOT BE RELIEVED OF THEIR RESPONSIBILITIES UNTIL A NOTICE OF TERMINATION HAS BEEN PROCESSED BY THE KENT CONSERVATION DISTRICT .

11. THE OWNER SHALL BE FAMILIAR WITH AND COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION GENERAL PERMIT.

12. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LADEN RUNOFF OR WIND FROM LEAVING THE SITE. PERIMETER CONTROLS SHALL BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENT FROM LEAVING THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR ALTER MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY CONSTRUCTION SITE REVIEWER.

13. BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHOULD CALL MISS UTILITY AT 811 OR 1-800-282-8555 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO HAVE ALL EXISTING UTILITIES MARKED ONSITE.

14. BEST AVAILABLE TECHNOLOGY (BAT) SHALL BE EMPLOYED TO MANAGE TURBID DISCHARGES IN ACCORDANCE WITH REQUIREMENTS OF 7. DEL C. CH 60, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION, SECTION 9.1.02, KNOWN AS SPECIAL CONDITIONS FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES, AND DNREC POLICIES, PROCEDURES, AND GUIDANCE.

15. DOCUMENTATION OF SOIL TESTING AND MATERIALS USED FOR TEMPORARY OR PERMANENT STABILIZATION INCLUDING BUT NOT LIMITED TO SOIL TEST RESULTS, SEED TAGS, SOIL AMENDMENT TAGS, ETC. SHALL BE PROVIDED TO THE KENT CONSERVATION DISTRICT TO VERIFY THAT THE PERMANENT OR TEMPORARY STABILIZATION HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLAN.

16. THE KENT CONSERVATION DISTRICT MAY REQUIRE ADDITIONAL SOIL TESTING AND REAPPLICATION OF PERMANENT OR TEMPORARY STABILIZATION IN ACCORDANCE WITH THE SPECIFICATIONS IN THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, OR ALTERNATIVE MEASURES THAT PROVIDE FUNCTIONAL EQUIVALENCY.

17. WHEN DIRECTED BY THE KENT CONSERVATION DISTRICT, THE OWNER SHALL ACQUIRE THE SERVICES OF A THIRD PARTY CERTIFIED CONSTRUCTION REVIEWER (CCR) TO PERFORM WEEKLY CONSTRUCTION REVIEWS. SEDIMENT AND STORMWATER MANAGEMENT PLANS APPROVED BY THE KENT CONSERVATION DISTRICT SHALL HAVE A THIRD PARTY CCR.

GENERAL SEQUENCE OF CONSTRUCTION

1. NOTIFY THE KENT CONSERVATION DISTRICT IN WRITING AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.

2. PRIOR TO ANY CLEARING, INSTALLATION OF SEDIMENT CONTROL MEASURES OR GRADING, A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED AND CONDUCTED WITH THE AGENCY CONSTRUCTION SITE REVIEWER FOR EACH CONTRACT. THE OWNER, CONTRACTOR AND THIRD PARTY CERTIFIED CONSTRUCTION REVIEWER (CCR) ARE REQUIRED TO BE IN ATTENDANCE AT THE PRE-CONSTRUCTION MEETING; THE DESIGNER IS RECOMMENDED TO ATTEND.

3. AS A FIRST ORDER OF WORK, THE CONTRACTOR SHALL INSTALL STAGING AREA AND PERIMETER CONTROLS AS SHOWN ON THE PLANS. ALL PERIMETER CONTROLS ARE TO BE REVIEWED BY THE AGENCY CONSTRUCTION SITE REVIEWER AND APPROVED PRIOR TO PROCEEDING WITH FURTHER SITE DISTURBANCE OR CONSTRUCTION.

4. ALL EXCAVATED MATERIAL SHALL BE HAULED OFFSITE. NO STOCKPILING SHALL OCCUR ONSITE.

5. THE CONTRACTOR SHALL BEGIN REMOVING THE EXISTING VEGETATION AND LEAVES TO THE LIMIT OF DISTURBANCE. THE CONTRACTOR SHALL EXCAVATE ONLY AS MUCH OF THE AREA AS CAN BE CONSTRUCTED AND STABILIZED BY THE END OF THE WORK DAY.

6. ALL UTILITY WORK IS TO BE STABILIZED BY THE END OF EACH WORK DAY.

7. REMOVE EXISTING PAVEMENT, SIDEWALK AND CURB AS REQUIRED WITHIN THE WORK AREA AND ROUGH GRADE TO PROPOSED SUBGRADE.

8. CONSTRUCT DRYER BUILDING STRUCTURE, AS SHOWN ON PLANS.

9. FINAL GRADE AND CONSTRUCT CURB, SIDEWALK, AND PAVEMENT PATCHING, AS SHOWN ON PLANS.

10. UPON COMPLETION OF THE DRYER BUILDING, THE CONTRACTOR SHALL FINALIZE CONSTRUCTION OF CURB, SIDEWALK, CURB RAMPS AND PAVEMENT PATCHING WITHIN THE LIMIT OF DISTURBANCE.

11. UPON COMPLETION OF ALL WORK, THE CONTRACTOR SHALL RESTORE THE CONSTRUCTION STAGING AREA TO THE ORIGINAL GRADES. THE AREA SHALL BE STABILIZED WITH TOPSOIL, PERMANENT SEED MIX TYPE 6 AND MULCH.

12. REMOVE ALL SEDIMENT CONTROL DEVICES AFTER APPROVAL BY KENT CONSERVATION DISTRICT..

13. TOTAL LAND DISTURBANCE PROPOSED BY THIS PLAN IS 2.60 ACRES.

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NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: N/A	KENT COUNTY RRRF
		DRAWN BY: JKZ	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: JK	
APPROVED DATE		SHEET NO.: 7 of 10	SEDIMENT CONTROL NOTES
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: XXXXXXX	
		JUNE 2025	ESC-07

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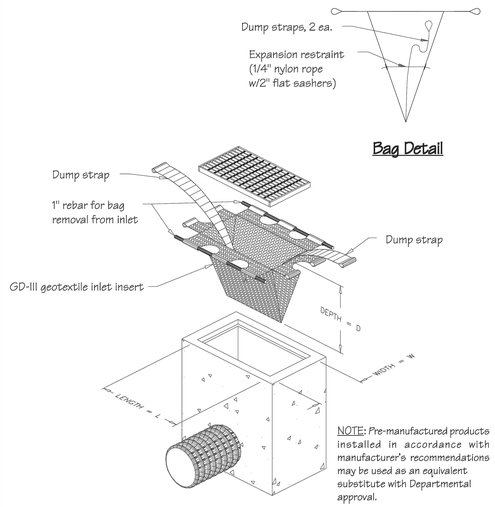
Standard Detail & Specifications

Inlet Protection - Type 2



Source:	Symbol:	Detail No.
Adapted from ACF Products, Inc.	IP-2	DE-ESC-3.1.5.2 Sheet 1 of 2 Effective July 2023

Standard Detail & Specifications

Inlet Protection - Type 2

Notes:

1. This practice shall only be used in situations in which Inlet Protection - Type 1 cannot be used due to site constraints. These include, but are not limited to partially completed parking areas, streets, roads, etc.
2. It may be necessary to transition from Type 1 to Type 2 Inlet Protection as construction proceeds.
3. For areas where there is a concern for oil run-off or spills, insert shall meet one of the above specifications with an oil-absorbant pillow or shall be made completely from an oil-absorbant material with a woven pillow.

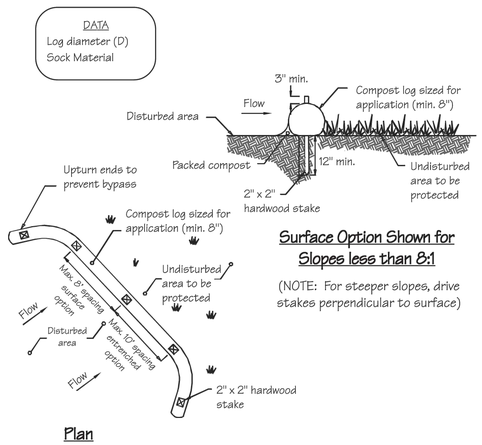
Materials:

The geotextile inlet insert shall meet or exceed the specifications of Type GD-III geotextile in accordance with Appendix A-3 of the Delaware Erosion & Sediment Control Handbook.

Source:	Symbol:	Detail No.
Adapted from ACF Products, Inc.	IP-2	DE-ESC-3.1.5.2 Sheet 2 of 2 Effective July 2023

Standard Detail & Specifications

Compost Filter Log



NOTE: Manufacturer's recommendations supersede any installation details shown for this practice

Source:	Symbol:	Detail No.
Adapted from MD Stds & Specs for ESC & Filtrexx™ International	CFL	DE-ESC-3.1.7 Sheet 1 of 2 Effective July 2023

Standard Detail & Specifications

Compost Filter Log

Construction Notes:

1. Prior to installation, clear bedding area of obstructions including rocks or debris larger than 1 inch and fill in any sharp depression areas.
2. If socks are prepared on-site, fill the sock fabric using a pneumatic blower so that the logs are rigid and do not deform. Terminate at the desired length.
3. For trenched applications, excavate 2 to 4 inches below grade along the width and length of the compost filter log.
4. Install the compost filter logs perpendicular to the flow direction and parallel to the slope with the beginning and end of the installation pointing up the slope a minimum of 1 foot elevation difference. On sites where this is not possible, upturn at a minimum length of 10' at a 30 degree angle to prevent runoff bypass.
5. For untrenched applications, blow or hand pack soil, mulch, or compost on the upslope side of the log, filling the bottom void area.
6. Stake the filled log every 10 feet maximum through the center of the sock for trenched applications, or every 8 feet for untrenched. The stake shall be a 2" by 2" hardwood. It should extend 12" below grade and protrude at least 3" above the top of the sock. If located on a slope greater than 8:1, the stake shall be angled downslope at a 45 degree angle to prevent the force of the water from dislodging to log.
7. When the length of the compost filter log needed exceeds the available compost filter sock length, the next sock shall be overlapped a minimum of 12" before being filled, and a stake placed through both socks at the overlap.
8. Remove accumulated sediment when it has reached half of the effective height of the log.
9. Inspect weekly and after rain event. If sock is degrading or the sock is failing, vegetate to secure the compost, replace the log, or reinforce with an additional log. If the log has been crushed due to construction equipment, it can be "fluffed" back to its effective height. If the effective height can no longer be restored, the log shall be replaced or reinforced with an additional compost filter log.

Source:	Symbol:	Detail No.
Adapted from MD Stds & Specs for ESC & Filtrexx™ International	CFL	DE-ESC-3.1.7 Sheet 2 of 2 Effective July 2023

Standard Detail & Specifications

Dust Control

Temporary Methods:

1. Mulches - See **DE-ESC-3.4.5**, Standard Detail and Specifications for Mulching.
2. Vegetative cover - See **DE-ESC-3.4.3**, Std. Detail and Specifications for Vegetative Stabilization.
3. Adhesives - Use on mineral soils only (not effective on muck soils). Keep traffic off these areas. The following table may be used for general guidance.

Type of Emulsion	Water Dilution	Type of Nozzle	Apply Gal/Ac.
Latex emulsion	12.5:1	Fine spray	235
Resin-in-water emulsion	4.1	Fine spray	300
Acrylic emulsion (non-traffic)	7:1	Coarse spray	450
Acrylic emulsion (traffic)	3.5:1	Coarse spray	350

4. Tillage - For emergency temporary treatment, scarify the soil surface to prevent or reduce the amount of blowing dust until a more appropriate solution can be implemented. Begin the tillage operation on the windward side of the site using a chisel-type plow for best results.
5. Sprinkling - Sprinkle site with water until the surface is moist . Repeat as needed.
6. Calcium Chloride - Apply as flakes or granular material with a spreader at a rate that will keep the soil surface moist. Re-apply as necessary.
7. Barriers - Place barriers such as solid board fences, snow fences, hay bales, etc. at right angles to the prevailing air currents at intervals of approx. 10X their height.

Permanent Methods:

1. Vegetative cover - See **DE-ESC-3.4.3**, Std. Detail and Specifications for Vegetative Stabilization.
2. Stone - Apply layer of crushed stone or coarse gravel to protect soil surface.

Source:	Symbol:	Detail No.
Adapted from VA ESC Handbook		DE-ESC-3.4.8 Sheet 1 of 1 Effective July 2023

Standard Detail & Specifications

Mulching

1. Materials and Amounts

a. *Straw* - Straw shall be unrotted small grain straw applied at the rate of 1-1/2 to 2 tons per acre, or 70 to 90 pounds (two bales) per 1,000 square feet. Mulch materials shall be relatively free of weeds and shall be free of noxious weeds such as; thistles, Johnsongrass, and quackgrass. Spread mulch uniformly by hand or mechanically. For uniform distribution of hand spread mulch, divide area into approximately 1,000 square feet sections and place 70-90 pounds (two bales) of mulch in each section.

b. *Wood chips* - Apply at the rate of approximately 6 tons per acre or 275 pounds per 1,000 square feet when available and when feasible. These are particularly well suited for utility and road rights-of-way. If wood chips are used, increase the application rate of nitrogen fertilizer by 20 pounds of N per acre (200 pounds of 10-10-10 or 66 pounds of 30-0-0 per acre).

c. *Hydraulically applied mulch* -The following conditions apply to hydraulically applied mulch:

i. Definitions:

a. Wood fiber mulch shall consist of specially prepared wood that has been processed to a uniform state, is packaged for sale as a hydraulic mulch for use with hydraulic seeding equipment, and consists of a minimum of 70% virgin or recycled wood fiber combined with 30% paper fiber and additives.

b. Blended fiber mulch shall consist of any hydraulic mulch that contains greater than 30% paper fiber. The paper component must consist of specially prepared paper that has been processed to a uniform fibrous state and is packaged for sale as a hydraulic mulch for use with hydraulic seeding equipment.

c. A bonded fiber matrix (BFM) consists of long strand, specially prepared wood fibers that have been processed to a uniform state held together by a water resistant bonding agent. BFMs shall contain no paper (cellulose) mulch but may contain small percentages of synthetic fibers to enhance performance.

d. Refer to **Figure 3.4.5a** for conditions and limitations of use for each of the above categories of hydraulic mulch.

ii. All components of the hydraulically applied mulches shall be pre-packaged by the manufacturer to assure material performance. Field mixing of the mulch components is acceptable, but must be done per manufacturers recommendations to ensure the proper results.

iii. Hydraulic mulches shall be applied with a viable seed and at manufacturer's recommended rates. Increased rates may be necessary based on site conditions.

iv. Hydraulically applied mulches and additives shall be mixed according to manufacturers recommendations.

iv. Materials within this category shall only be used when hydraulically applied mulch has been specified for use on the approved Sediment and Stormwater Plan, or supplemental approval from the plan approval agency has been obtained in writing for a specific area.

Source:	Symbol:	Detail No.
Delaware ESC Handbook & Filtrexx™ International		DE-ESC-3.4.5 Sheet 1 of 3 Effective July 2023

Standard Detail & Specifications

Mulching

v. Application:

a. Apply product to geotechnically stable slopes that have been designed and constructed to divert runoff away from the face of the slope.

b. Do not apply to saturated soils, or if precipitation is anticipated within 24-48 hours.

c. During the spring (March 1 to May 31) and fall (September 1 to November 30) seasons, hydraulic mulches may be applied in a one-step process where all components are mixed together in single-tank loads. It is recommended that the product be applied from opposing directions to achieve optimum soil coverage.

d. During the summer (June 1 to August 31) and winter (December 1 to February 28) seasons, the following two-step process is required:

Step One– Mix and apply seed and soil amendments with a small amount of mulch for visual metering.

Step Two – Mix and apply mulch at manufacturers recommended rates over freshly seeded surfaces. Apply from opposing directions to achieve optimum soil coverage.

e. Minimum curing temperature is 40° F (4° C). The best results and more rapid curing are achieved at temperatures exceeding 60° F (15° C). Curing times may be accelerated in high temperature, low humidity conditions on dry soils.

vi. Recommended application rates are for informational purposes only. Conformance with this standard and specification shall be performance-based and requires **100% soil coverage**. Any areas with bare soil showing shall be top dressed until full coverage is achieved.

d. *Compost blanket (CB)* - Loosely applied with a pneumatic blower so that a 1" compost blanket uniformly covers the **soil with 100% coverage**. This application can be used with seed to promote germination by applying the approved seed mix directly into the loosely blown compost. The compost blanket performs best on slopes less than 2:1 and requires no mulch anchoring.

2. Anchoring mulch - Mulch must be anchored immediately to minimize loss by wind or water. This may be done by one of the following methods, depending upon size of area, erosion hazard, and cost.

a. *Crimping* - A crimper is a tractor drawn implement designed to punch and anchor mulch into the top two (2) inches of soil. This practice affords maximum erosion control but is limited to flatter slopes where equipment can operate safely. On sloping land, crimping should be done on the contour whenever possible.

b. *Tracking* - Tracking is the process of cutting mulch (usually straw) into the soil using a bulldozer or other equipment that runs on cleated tracks. Tracking is used primarily on slopes 3:1 or steeper and should be done up and down the slope with cleat marks running across the slope.

c. *Liquid mulch binders* - Applications of liquid mulch binders should be heavier at edges, in valleys, and at crests of banks and other areas where the mulch will be moved by wind or water. All other areas should have a uniform application of binder. The use of synthetic binders is the preferred method of mulch binding and should be applied at the rates recommended by the manufacturer.

d. *Paper fiber* - The fiber binder shall be applied at a net dry weight of 750 lbs/ac. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons.

e. *Nettings* - Biodegradable nettings may be used to secure straw mulch. Install and secure according to the manufacturer's recommendations. Photodegradable or synthetic nettings are not acceptable.

Source:	Symbol:	Detail No.
Delaware ESC Handbook & Filtrexx™ International		DE-ESC-3.4.5 Sheet 2 of 3 Effective July 2023

Standard Detail & Specifications

Mulching

MULCHING MATERIAL SELECTION GUIDE

Percent Slope	Type of Mulch / App. Rate*	Dec. 1 to Feb. 28(29)	March 1 to May 31	June 1 to Aug. 31	Sept. 1 to Nov. 30
Less than 2%	Blended Fiber @ 2000 lbs/ac. minimum	xxxxxxxxxxxxxx	OK (1" acc.)	xxxxxxxxxxxxxx	OK (1" acc.)
	Wood Fiber @ 2000 lbs/ac. min.	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
	BFM @ 3000-3500 lbs/ac. min		OK	OK	OK
	Straw @ 2 Tons/ac. Min.		OK	OK	OK
	Stabilization Matting**		OK	OK	OK
	1" Compost Blanket (CB)		OK	OK	OK
2% to 5.9%	Wood Fiber @ 2000 lbs/ac. min.	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
	BFM @ 3000-3500 lbs/ac. min		OK	OK	OK
	Straw @ 2 Tons/ac. min.		OK	OK	OK
	Stabilization Matting**		OK	OK	OK
	1" Compost Blanket (CB)		OK	OK	OK
6% to 10.9%	Wood Fiber @ 2000-2500 lbs/ac. min.	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
	BFM @ 3000-3500 lbs/ac. min		OK	OK	OK
	Straw @ 2 Tons/ac. min.		OK	OK	OK
	Stabilization Matting**		OK	OK	OK
	1" Compost Blanket (CB)		OK	OK	OK
11% to 24.9%	Wood Fiber @ 2500-3000 lbs/ac. min.	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
	BFM @ 3500-4000 lbs/ac. min.		OK	OK	OK
	Straw @ 2 Tons/ac. min.**		OK	OK	OK
	Stabilization Matting**		OK	OK	OK
	1" Compost Blanket (CB)		OK	OK	OK
25% to 33%	Wood Fiber @ 2500-3000 lbs/ac. min.	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
	BFM @ 4000 lbs/ac. min.		OK	OK	OK
	Straw @ 2 Tons/ac. min.		OK	OK	OK
	Stabilization Matting**		OK	OK	OK
	1" Compost Blanket (CB)		OK	OK	OK
33% and up	BFM @ 4000-4500 lbs/ac. min.	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
	Straw @ 2 Tons/ac. min.**		OK	OK	OK
	Stabilization Matting**		OK	OK	OK
	1" Compost Blanket (CB)		2:1 Max.	2:1 Max.	2:1 Max.

* Note: Manufacturers Recommended Rates for informational purposes only. Performance standard requires 100% soil coverage.
** Note: Stabilization Matting must be installed in accordance with Figure 3.4.5a of the Delaware ESC Handbook.
***Note: Straw applied on slopes greater than 33% must be netted (this does not apply to topsoil stockpiles).
OK = Acceptable to use during this time period.
xxxxx = Acceptable to use during this time period.
All application rates are minimums

Source:	Symbol:	Detail No.
Delaware ESC Handbook & Filtrexx™ International		DE-ESC-3.4.5 Sheet 3 of 3 Effective July 2023

RK&K
RUMMEL, KLEPPER & KAHL, LLP
700 EAST PRATT STREET, SUITE 500 • BALTIMORE, MARYLAND 21202 • 410.728.2900

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER
APPROVED DATE	
ASSISTANT DIRECTOR OF ENGINEERING	

SCALE: N/A
DRAWN BY: JKZ
CHECKED BY: JK
SHEET NO.: 8 of 10
PROJECT NO.: XXXXXXX

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
SEDIMENT CONTROL DETAILS 1
JUNE 2025 ESC-08

\\rkdirk.com\fs\Cloud Projects\2019\191129_Biosolids\ES_SWM\SGD\CADD\Plans\NOTES & DETAILS.dwg Jun 11, 2025 - 12:30pm ENV.CTB Plot Scale 1=1 Plot By: jzelley Tab:ESC-08

Standard Detail & Specifications

Construction Site Pollution Prevention

Delaware NPDES Discharge Permit
General Permit for Discharge of Stormwater from Construction Activities

((Project Name))

((NOI Permit Number))

((Agency Plan Approval ID))

((Contact Name & Number for Additional Site Information))

((Contact Name & Number to Obtain Copy of Approved Plan))

If you observe indicators of stormwater pollutants
in the discharge or in the receiving waterbody, call the
DNREC Spill Notification 24 HR Hotline at

1-800-662-8802

Example Construction General Permit (CGP) Signage

NOTES:
1. Minimum sign size 2' x 2'
2. Minimum text size 1"
3. Sign must be posted at a safe, publicly accessible location close to construction site
4. Sign must be visible from the public road nearest the active construction site
5. Signs posted within a DelDOT or other public road right-of-way (ROW) must be in accordance with all local and/or State requirements in regards to safety, location, orientation, etc.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.6.1** Sheet 1 of 4 Effective July 2023

Standard Detail & Specifications

Construction Site Pollution Prevention

Notes:

The Construction Site Pollution Prevention Plan includes the following elements:

1. **Material Inventory**

   Document the storage and use of the following materials:
   a. Concrete
   b. Detergents
   c. Paints (enamel and latex)
   d. Cleaning solvents
   e. Pesticides
   f. Wood scraps
   g. Fertilizers
   h. Petroleum based products

2. **Good housekeeping practices**
   a. Store only enough product required to do the job.
   b. Store all materials in a neat, orderly manner in their original labeled containers and covered.
   c. Do not mix different substances.
   d. When possible, use all of a product prior to disposal of the container.
   e. Manufacturers' instructions for disposal should be strictly adhered to.
   f. Designate someone to inspect all BMPs daily.

3. **Waste management practices**
   a. Collect and store all waste materials in securely lidded dumpsters in a location that does not drain to a waterbody.
   b. Salvage and/or recycle waste materials whenever possible.
   c. The dumpsters shall be emptied a minimum of twice per week, or more if necessary. The licensed trash hauler is responsible for cleaning out dumpsters.

Source:	Symbol:	Detail No.
Adapted from USEPA Pub. 840-B-92-002		**DE-ESC-3.6.1** Sheet 2 of 4 Effective July 2023

Standard Detail & Specifications

Construction Site Pollution Prevention

Notes (cont.)

   d. Dispose of all trash in accordance with all applicable Delaware laws.
   e. Littering is strictly prohibited. Trash cans should be placed at all lunch spots and recycle bins should be placed near the construction trailer.
   f. If fertilizer bags can not be stored in a weather-proof location, they should be kept on a pallet and covered with plastic sheeting which is overlapped and anchored.

4. **Equipment maintenance practices**
   a. If possible, equipment should be taken to off-site commercial facilities for washing and maintenance.
   b. If performed on-site, wash vehicles with high-pressure water spray without detergents in an area contained by an impervious berm.
   c. Use drip pans for all equipment maintenance.
   d. Inspect equipment for leaks on a daily basis.
   e. Direct washout from concrete trucks into a temporary pit for hardening and proper disposal.
   f. Equip fuel nozzles with automatic shut-off valves.
   g. Dispose of all used products such as oil, antifreeze, solvents and tires in accordance with manufacturers' recommendations and local, state and federal laws and regulations.

5. **Spill prevention practices**
   a. Identify potential spill areas and contain them in covered areas with no connection to the storm drain system.
   b. Post warning signs in hazardous material storage areas.
   c. Perform preventive maintenance on all tanks, valves, pumps, pipes and other equipment as necessary.
   d. Prioritize low or non-toxic substances for use.

Source:	Symbol:	Detail No.
Adapted from USEPA Pub. 840-B-92-002		**DE-ESC-3.6.1** Sheet 3 of 4 Effective July 2023

Standard Detail & Specifications

Construction Site Pollution Prevention

Notes (cont.)

   e. Prominently post contact information for reporting spills through the DNREC 24-Hour Toll Free Number.

6. **Education**
   a. Include Best Management Practices (BMPs) for construction site pollution control as part of regular progress meetings.
   b. Information regarding waste management, equipment maintenance and spill prevention should be prominently posted in the construction trailer.

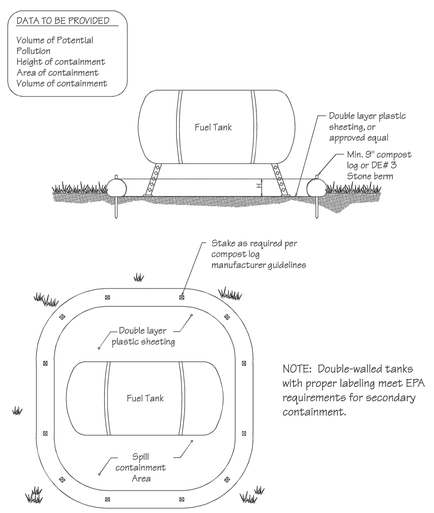
CONTACT INFORMATION

DNREC 24-Hour Toll Free Number	**800-662-8802**
DNREC Solid & Hazardous Waste Management Section	**302-739-9403**

Source:	Symbol:	Detail No.
Adapted from USEPA Pub. 840-B-92-002		**DE-ESC-3.6.1** Sheet 4 of 4 Effective July 2023

Standard Detail & Specifications

Fueling & Spill Control



NOTE: Double-walled tanks with proper labeling meet EPA requirements for secondary containment.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.6.4** Sheet 1 of 2 Effective July 2023

Standard Detail & Specifications

Fueling & Spill Control

Pollution Prevention – Fueling & Spill Control

1. Fueling should only take place in signed designated areas, away from downstream drainage facilities and watercourses.
2. Fueling must be with nozzles equipped with automatic shut-off to control drips. Do not top off.
3. Protect the areas where equipment or vehicles are being repaired, maintained, fueled or parked from storm water run-on and runoff.
4. Use barriers such as berms to prevent storm water run-on and runoff, and to contain spills.
5. Place a "Fueling Area" sign next to each fueling area.
6. Store hazardous materials such as fuel, solvents, oil and chemicals in secondary containment.
7. Inspect vehicles and equipment for leaks on each day of use. Repair fluid and oil leaks immediately.
8. Absorbent spill clean-up materials and spill kits must be available in fueling areas and on fuel trucks.
9. If fueling is to take place at night, make sure the fueling area is sufficiently illuminated.
10. Properly dispose of used oil, fluids, lubricants and spill clean-up materials.

CLEAN UP SPILLS

1. If it is safe to do so, immediately contain and clean up any chemical and/or hazardous material spills.
2. Properly dispose of used oil, fluids, lubricants and spill clean-up materials.
3. Do not bury spills or wash them down with water.

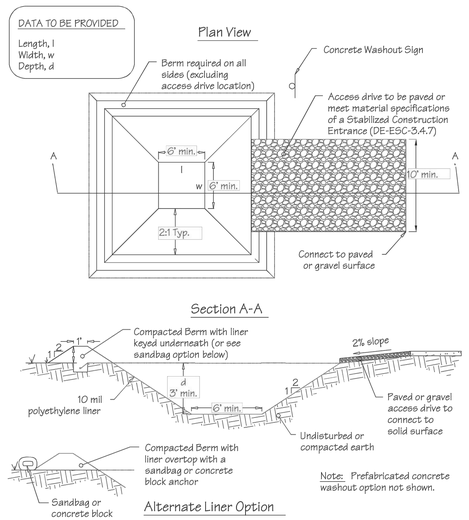
LEAKS AND DRIPS

1. Use drip pans or absorbent pads at all times. Place under and around leaky equipment.
2. Do not allow oil, grease, fuel or chemicals to drip onto the ground.
3. Have spill kits and clean up material on-site.
4. Repair leaky equipment promptly or remove problem vehicles and equipment from the site. Clean up contaminated soil immediately.
5. Store contaminated waste in sealed containers constructed of suitable material. Label these containers properly.
6. Clean up all spills and leaks. Promptly dispose of waste and spent clean up materials.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.6.4** Sheet 2 of 2 Effective July 2023

Standard Detail & Specifications

Concrete Washout



Source:	Symbol:	Detail No.
Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	CW	**DE-ESC-3.6.2** Sheet 1 of 2 Effective July 2023

Standard Detail & Specifications

Concrete Washout

Construction Notes:

1. Locate washout area a minimum of 50 feet from open channels, stormdrain inlets, wetlands or waterbodies.
2. Locate washout area so that it is accessible to concrete equipment (service with a minimum 10 foot wide gravel accessway), but so it is not in a highly active construction area causing accidental damage.
3. Minimum dimensions for prefabricated units are 4 feet by 4 feet by 1 foot deep with a minimum 4mil polyethylene plastic liner. Minimum dimensions for constructed concrete washout areas are 6 feet by 6 feet by 3 feet deep, with a minimum 10mil polyethylene liner, 2:1 side slopes, and a 1 foot high by 1 foot wide compacted fill berm.
4. The liner must be free of tears or holes and placed over smooth surfaces to prevent puncturing. For excavated washouts, anchor the liner underneath the berm or overtop with sandbags or concrete blocks to hold in place.
5. Provide a sign designating the washout area, and for large construction sites, provide signs throughout directing traffic to its location.
6. Allow washed out concrete mixture to harden through evaporation of the wastewater. Once the facility has reached 75 percent of its capacity, remove the hardened concrete by reusing the broken aggregate onsite, recycling, or disposing of offsite. The hardened material can be buried on site with minimum of 1 foot of clean, compacted fill.
7. Apply a new liner before reusing the station for additional washouts after maintenance has occurred.

Source:	Symbol:	Detail No.
Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	CW	**DE-ESC-3.6.2** Sheet 2 of 2 Effective July 2023

RUMMEL, KLEPPER & KAHL, LLP
700 EAST PRATT STREET, SUITE 500 • BALTIMORE, MARYLAND 21202 • 410.728.2900

ROBERT J. LANDON CLEARY No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER
APPROVED DATE	
ASSISTANT DIRECTOR OF ENGINEERING	

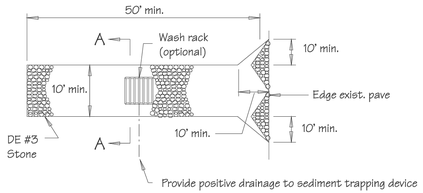
SCALE: N/A
DRAWN BY: JKZ
CHECKED BY: JK
SHEET NO.: 9 of 10
PROJECT NO.: XXXXXXX

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
SEDIMENT CONTROL DETAILS 2
JUNE 2025 ESC-09

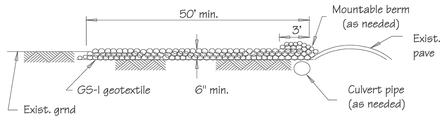
\\del.rkk.com\e\Cloud Projects\2019\19129_Biosolids\ES_SWM\SCD\CADD\Plans\NOTES & DETAILS.dwg Jun 11, 2025 - 12:31pm ENV.CTB Plot Scale 1=1 Plot By: jpekley Tab:ESC-09

Standard Detail & Specifications

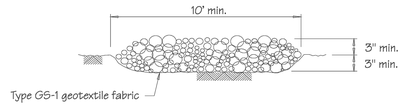
Stabilized Construction Entrance



Plan



Profile

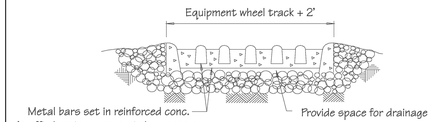


Section A-A (Std.)

Source:	Symbol:	Detail No.
Adapted from VA ESC Handbook	SCE	**DE-ESC-3.4.7** Sheet 1 of 2 Effective July 2023

Standard Detail & Specifications

Stabilized Construction Entrance



Section A-A (Opt.)

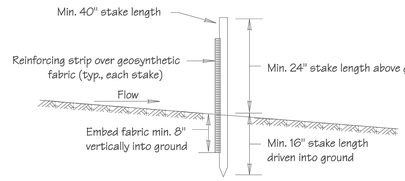
Construction Notes:

1. Stone size - Use DE #3 stone.
2. Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness - Not less than size (6) inches.
4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Geotextile - Type GS-I; placed over the entire area prior to placing of stone.
6. Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing - Vehicle wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Inspection - Periodic inspection and needed maintenance shall be provided after each rain.

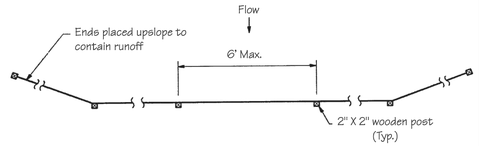
Source:	Symbol:	Detail No.
Adapted from VA ESC Handbook	SCE	**DE-ESC-3.4.7** Sheet 2 of 2 Effective July 2023

Standard Detail & Specifications

Silt Fence



Section



DATA
Max. controlled slope

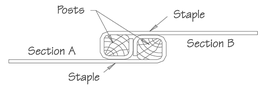
Plan

Source:	Symbol:	Detail No.
Adapted from MD Stds. & Specs. for ESC	SF	**DE-ESC-3.1.2.1** Sheet 1 of 2 Effective July 2023

Standard Detail & Specifications

Silt Fence

Construction Detail



Method for joining continuous sections

Top

Construction Notes:

1. Geosynthetic fabric to be fastened securely to fence posts with wire ties or staples.
2. When two sections of filter cloth adjoin each other they shall be overlapped by six inches and folded.
3. Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.

Materials:

1. Stakes: Steel (either T or U) or 2" x 2" hardwood
2. Geosynthetic Fabric: Type GD-I
3. Reinforcing strip: Wooden lath or plastic strip

Source:	Symbol:	Detail No.
Adapted from MD Stds. & Specs. for ESC	SF	**DE-ESC-3.1.2.1** Sheet 2 of 2 Effective July 2023

Standard Detail & Specifications

Vegetative Stabilization

TEMPORARY SEEDING BY RATES, DEPTHS AND DATES

Mix #	Species[6]	Seeding Rate		Optimum Seeding Dates [1] O = Optimum Planting Period; A = Acceptable Planting Period							Planting Depth[3]
				Coastal Plain			Piedmont			All	
	Certified Seed	lb/Ac [2]	lb/1000 sq.ft.	2/1-4/30	[2] 5/1-8/14	8/15-10/31	3/1-4/30	[2]5/1-7/31	8/1-10/31	10/31-2/1	
1	Barley	125	4	O	A	O	O	A	O		1-2 inches 2-3" sandy soils
2	Oats	125	4	O	A	A	O	A	A		1-2 inches 2-3" sandy soils
3	Rye	125	4	O	A	O	O	A	O	A	1-2 inches 2-3" sandy soils
4	Perennial Ryegrass	125	4	O	A	O	O	A	O		0.5 inches 1-2" sandy soils
5	Annual Ryegrass	125	4	O	A	O	O	A	O	A	0.5 inches 1-2" sandy soils
6	Winter Wheat	125	4	O	A	O	O	A	O	A	1-2 inches 2-3" sandy soils
7	Foxtail Millet	30 PLS	0.7		O			O			0.5 inches 1-2" sandy soils
8	Pearl Millet	20 PLS	0.5		O			O			0.5 inches 1-2" sandy soils

1. Winter seeding requires 3 tons per acre of straw mulch for proper stabilization.
2. May be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.
3. Applicable on slopes 3:1 or less.
4. Use varieties currently recommended for Delaware. Contact a County Extension Office for information.
5. Warm season grasses such as Millet may be used between 5/1 and 9/1 if desired. Seed at 3-5 lbs. per acre. Good on low fertility and acid areas. Seed after frost through summer at a depth of 0.5".

NOTE: Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.4.3** Sheet 1 of 4 Effective July 2023

Standard Detail & Specifications

Vegetative Stabilization

PERMANENT SEEDING AND SEEDING DATES

Seeding Mixtures		Seeding Rate[1]		Optimum Seeding Dates [2] O = Optimum Planting Period A = Acceptable Planting Period							Remarks
Mix No.	Certified Seed[3]			Coastal Plain			Piedmont			All[4]	
	Well Drained Soils	lb/Ac	lb/1000 sq.ft.	2/1-4/30	5/1-8/14	8/15-10/31	3/1-4/30	5/1-7/31	8/1-10/31	10/31-2/1	
1	Tall Fescue Canada Wild Rye	140 10	3.2 0.23	A	O	A	A	O	A	Add: 100 lbs./ac. Winter Rye	Good erosion control mix Tolerant of low fertility soils Good for droughty sites
2	Deertongue Sheep Fescue White Clover	30 30 10	0.69 0.69 0.35	A	O	A	A	O	A	Add 100 lbs./ac. Winter Rye	Good erosion control mix Tolerant of low fertility soils Legume that fixes atmospheric N into soil
3	Tall Fescue (Turf-type) **or** Strong Creeping Red Fescue **or** Perennial Ryegrass **plus** Flatpea[5]	50 50 50 15	1.15 1.15 1.15 0.34	O	A[4]	O	O	A[4]	O	Add 100 lbs./ac. Winter Rye	Good erosion control mix Tall Fescue for droughty conditions. Creeping Red Fescue for heavy shade. Flatpea to suppress woody vegetation.
4	Strong Creeping Red Fescue Kentucky Bluegrass Perennial Ryegrass **or** Redtop **plus** White Clover[5]	100 70 15 5 3	2.3 1.61 0.35 0.11 0.07	O	A[4]	O	O	A[4]	O	Add 100 lbs./ac. Winter Rye	Suitable waterway mix. Canada Bluegrass more drought tolerant. Use Redtop for increased drought tolerance.
5	Switchgrass[6,7] **or** Coastal Panicgrass Big Bluestem Little Bluestem Indian Grass	10 10 5 5 5	0.23 0.23 0.11 0.11 0.1		O			O			Native warm-season mixture. Tolerant of low fertility soils. Drought tolerant. Poor shade tolerance. N fertilizer discouraged - weeds
6	Tall Fescue (turf-type) (Blend of 3 cultivars)	150	3.5	O	A[4]	O	O	A[4]	O		Managed filter strip for nutrient uptake.
7	Tall Fescue Ky. Bluegrass (Blend) Perennial Ryegrass	150 20 20	3.5 0.46 0.46	O	A[4]	O	O	A[4]	O		Three cultivars of Kentucky Bluegrass. Traffic tolerant.
8	Big Bluestem[7] Indian Grass[7] Little Bluestem[7] Creeping Red Fescue **plus one of:** Partridge Pea Bush Clover Wild Indigo Showy Tick-Trefoil	10 10 8 30 5 3 3 2	0.23 0.23 0.18 0.69 0.11 0.07 0.07 0.05	O	A[4]		O	A[4]			All species are native. Indian Grass and Bluestem have fluffy seeds. Plant with a specialized native seed drill. Creeping Red Fescue will provide erosion protection while the warm season grasses get established.

NOTE: Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.4.3** Sheet 2 of 4 Effective July 2023

Standard Detail & Specifications

Vegetative Stabilization

PERMANENT SEEDING AND SEEDING DATES (cont.)

Seeding Mixtures		Seeding Rate[1]		Optimum Seeding Dates [2] O = Optimum Planting Period A = Acceptable Planting Period							Remarks
Mix No.	Certified Seed[3]			Coastal Plain			Piedmont			All[4]	
	Poorly Drained Soils	lb/Ac	lb/1000 sq.ft.	2/1-4/30	5/1-8/14	8/15-10/31	3/1-4/30	5/1-7/31	8/1-10/31	10/31-2/1	
9	Redtop Creeping Bentgrass Sheep Fescue Rough Bluegrass	75 35 30 45	1.72 0.8 0.69 1	O	A[4]	O	O	A[4]	O	Add 100 lbs./ac. Winter Rye	Quick stabilization of disturbed sites and waterways
10	Switchgrass[6]	10	0.23	A		O	A		O		Good erosion control, wildlife cover and wetland revegetation.
	Residential Lawns										
11	Tall Fescue Perennial Ryegrass Kentucky Bluegrass Blend	100 25 30	2.3 0.57 0.69	O	A[4]	O	O	A[4]	O		High value, high maintenance, light traffic, irrigation necessary. Well drained soils, full sun.
12	Tall Fescue Perennial Ryegrass Sheep Fescue	100 25 25	2.3 0.57 0.57	O	A[4]	O	O	A[4]	O		Moderate value, low maintenance, traffic tolerant
13	Creeping Red Fescue Chewings Fescue Rough Bluegrass Kentucky Bluegrass	50 50 20 20	1.15 1.15 0.4 0.4	O	A[4]	O	O	A[4]	O		Shade tolerant, moderate traffic tolerance, moderate maintenance.
14	Creeping Red Fescue Rough Bluegrass or Chewings Fescue	50 90	1.15 2.1	O	A[4]	O	O	A[4]	O		Shade tolerant, moisture tolerant.
15	K-31 Tall Fescue	150	3.5	O	A[4]	O	O	A[4]	O		Monoculture, but performs well alone in lawns. Discouraged.

1. When hydroseeding is the chosen method of application, the total rate of seed should be increased by 25%.
2. Winter seeding requires 3 tons per acre of straw mulch. Planting dates listed above are average for Delaware. These dates may require adjustment to reflect local conditions.
3. All seed shall meet the minimum purity and minimum germination percentages recommended by the Delaware Department of Agriculture. The maximum % of weed seeds shall be in accordance with Chapter 15, Title 3 of the Delaware Code.
4. Turf-type species may be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.
5. It is recommended that all leguminous seed be inoculated.
6. Warm season grass mix and Switchgrass cannot be mowed more than 4 times per year.
7. Warm season grasses require a soil temperature of at least 50 degrees in order to germinate and will remain dormant until then.

NOTE: Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.4.3** Sheet 3 of 4 Effective July 2023

Standard Detail & Specifications

Vegetative Stabilization

Construction Notes:

1. Site Preparation
   a. Prior to seeding, install needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, grassed waterways, and sediment basins.
   b. Final grading and shaping is not necessary for temporary seedings.
2. Seedbed Preparation

   It is important to prepare a good seedbed to ensure the success of establishing vegetation. The seedbed should be well prepared, loose, uniform, and free of large clods, rocks, and other objectionable material. The soil surface should not be compacted or crusted.
3. Soil Amendments
   a. Lime - Apply liming materials based on the recommendations of a **soil test** in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply dolomitic limestone at the rate of 1 to 2 tons per acre. Apply limestone uniformly and incorporate into the top 4 to 6 inches of soil.
   b. Fertilizer - Apply fertilizer based on the recommendations of a **soil test** in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply a formulation of 10-10-10 at the rate of 600 pounds per acre. Apply fertilizer uniformly and incorporate into the top 4 to 6 inches of soils.
4. Seeding
   a. For **temporary stabilization**, select a mixture from **Sheet 1** . For a **permanent stabilization**, select a mixture from **Sheet 2** or **Sheet 3** depending on the conditions. Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.
   b. Apply seed uniformly with a broadcast seeder, drill, cultipacker seeder or hydroseeder. All seed will be applied at the recommended rate and planting depth.
   c. Seed that has been broadcast should be covered by raking or dragging and then lightly tamped into place using a roller or cultipacker. If hydroseeding is used and the seed and fertilizer is mixed, they will be mixed on site and the seeding shall be done immediately and without interruption.
5. Mulching

   All mulching shall be done in accordance with detail **DE-ESC-3.4.5**.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.4.3** Sheet 4 of 4 Effective July 2023

RK&K
RUMMEL, KLEPPER & KAHL, LLP
700 EAST PRATT STREET, SUITE 500 • BALTIMORE, MARYLAND 21202 • 410.728.2900

ROBERT J. ANDRYSZAK No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: N/A DRAWN BY: JKZ CHECKED BY: JK SHEET NO.: 10 of 10 PROJECT NO.: XXXXXXX	KENT COUNTY RRRF BIOSOLIDS CAPACITY EXPANSION PROJECT SEDIMENT CONTROL DETAILS 3
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING			JUNE 2025 ESC–10

\\rkdfrk.com\fs\Cloud Projects\2019\191129_Biosolids\ES_SWM\SCD\CADD\Plans\NOTES & DETAILS.dwg Jun 11, 2025 - 12:31pm ENV.CTB Plot Scale 1=1 Plot By: jzalesy Tab:ESC-10

NOTE:

1. THIS SHEET FOR REFERENCE ONLY. NO NEW WORK SHOWN.

AERATION BASIN – NORTH

AERATION BASIN – SOUTH

MATCH LINE (SHEET C-2)

NORTH

S39°23'43"W 1467.87'

36" DIP RAS TO AERATION BASIN

48" LAGOON INFLUENT

6" PERFORATED PIPE

6" PLANT WATER

24" PCCP RAS

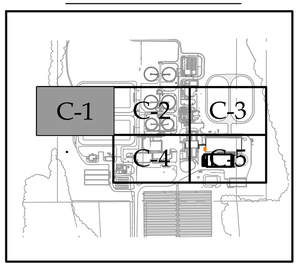
24" PCCP RAS ABAND.

18" PCCP RAS ABAND.

36" RAS ABAND.

48" DIP LAGOON INFLUENT

KEY PLAN



1"=20' 20' 10' 0 20' 40'

BIOLAC SITE PLAN

SCALE: 1"=20'

ISSUED FOR BIDDING

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ROBERT J. ANDRIOSAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: RJA	BIOLAC LAGOONS INFLUENT AREA SITE PLAN
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 26 of 191	OCTOBER 2025 C-01
		PROJECT NO.: 50.1890.97-A	

\\adc.rkk.com\Vol\Cloud\Projects\2019\19129_Biosolids\ACAD\Contract 3\Civil\C-01 19129.dwg Oct 21, 2025 - 4:02pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:BIOLAC LAGOONS

NOTES:

1 ALL BURIED LINES SHALL BE INSTALLED WITH DETECTOR WARNING TAPE.

2. ALL NON-METALLIC LINES SHALL BE INSTALLED WITH 12 GAUGE TRACER WIRE.

NORTH

MATCH LINE (SHEET C-1)

MATCH LINE (SHEET C-3)

MATCH LINE (SHEET C-4)

RECYCLE PUMPING STATION 2

WET WELL

FERRIC CHLORIDE STORAGE

DECHLORINATION BUILDING

UVC POWER CENTER

UV DISINFECTION TANK C

UV DISINFECTION TANK B

UV DISINFECTION TANK A

UV CONTROL BUILDING

DIESEL GENERATOR

STORM MH

ELECTRIC HANDHOLE UVC-C

EH UVC-D

12" FILTRATE/CONDENSATE PUMP STATION FORCE MAIN

CONNECT TO EXISTING 12" FILTRATE LINE WITH 12" TEE

12" BURIED PLUG VALVE

16" DIP RAS TO AEROATION BASIN

6" C900 PVC PW

2" SAN. FM

6" DIP PW

6" DIP SD

6" DIP ABANDONED SCUM DISCHARGE

12" SD

8" ABANDONED SCUM LINE

8" DIP ABANDONED SCUM LINE

6" PLANT WATER

8" PLANT WATER

36" RAS

36" RAS ABAND.

6" DIP PLANT WATER

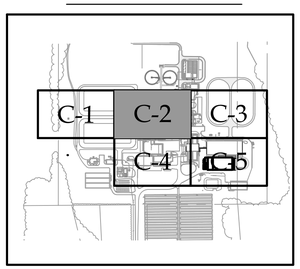
6" PERFORATED ACP

8" ABANDONED SMD

SWITCHGEAR

TRANSFORMER

KEY PLAN



1"=20' 20' 10' 0 20' 40'

ISSUED FOR BIDDING

CLARIFIER SITE PLAN

SCALE: 1"=20'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

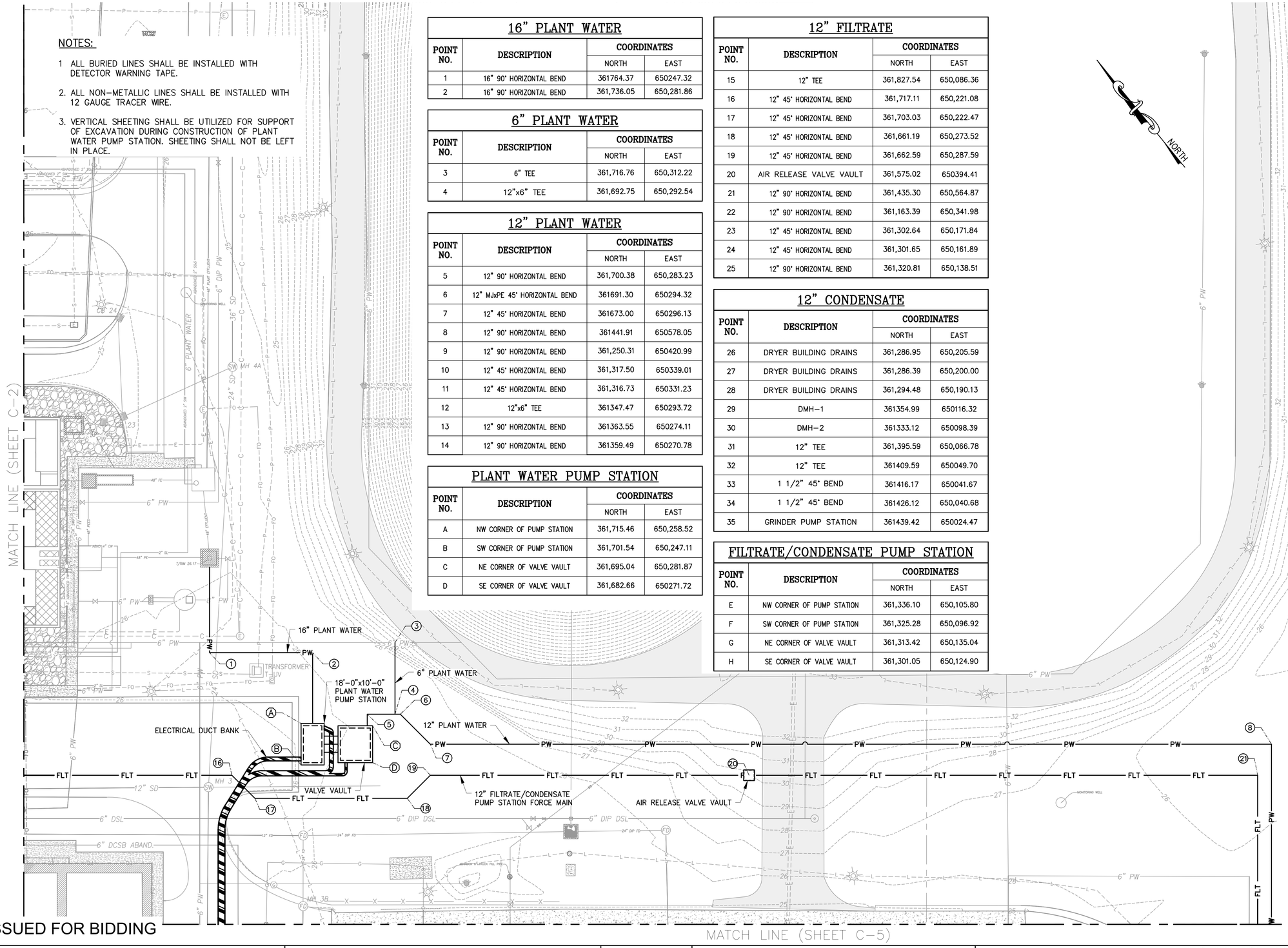
SCALE: 1"=20'
DRAWN BY: RAD
CHECKED BY: RJA
SHEET NO.: 27 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
CLARIFIER AREA SITE PLAN
OCTOBER 2025 C-02

\\rkd.rkk.com\ds\Cloud Projects\50190\19129_Biosolids\ACAD\Contract III\Civil\C-02 19129.dwg Oct 21, 2025 - 3:54pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:CLARIFIER AREA

NOTES:

1. ALL BURIED LINES SHALL BE INSTALLED WITH DETECTOR WARNING TAPE.
2. ALL NON-METALLIC LINES SHALL BE INSTALLED WITH 12 GAUGE TRACER WIRE.
3. VERTICAL SHEETING SHALL BE UTILIZED FOR SUPPORT OF EXCAVATION DURING CONSTRUCTION OF PLANT WATER PUMP STATION. SHEETING SHALL NOT BE LEFT IN PLACE.



ISSUED FOR BIDDING

16" PLANT WATER

POINT NO.	DESCRIPTION	COORDINATES	
		NORTH	EAST
1	16" 90° HORIZONTAL BEND	361764.37	650247.32
2	16" 90° HORIZONTAL BEND	361,736.05	650,281.86

6" PLANT WATER

POINT NO.	DESCRIPTION	COORDINATES	
		NORTH	EAST
3	6" TEE	361,716.76	650,312.22
4	12"x6" TEE	361,692.75	650,292.54

12" PLANT WATER

POINT NO.	DESCRIPTION	COORDINATES	
		NORTH	EAST
5	12" 90° HORIZONTAL BEND	361,700.38	650,283.23
6	12" MJxPE 45° HORIZONTAL BEND	361691.30	650294.32
7	12" 45° HORIZONTAL BEND	361673.00	650296.13
8	12" 90° HORIZONTAL BEND	361441.91	650578.05
9	12" 90° HORIZONTAL BEND	361,250.31	650420.99
10	12" 45° HORIZONTAL BEND	361,317.50	650339.01
11	12" 45° HORIZONTAL BEND	361,316.73	650331.23
12	12"x6" TEE	361347.47	650293.72
13	12" 90° HORIZONTAL BEND	361363.55	650274.11
14	12" 90° HORIZONTAL BEND	361359.49	650270.78

PLANT WATER PUMP STATION

POINT NO.	DESCRIPTION	COORDINATES	
		NORTH	EAST
A	NW CORNER OF PUMP STATION	361,715.46	650,258.52
B	SW CORNER OF PUMP STATION	361,701.54	650,247.11
C	NE CORNER OF VALVE VAULT	361,695.04	650,281.87
D	SE CORNER OF VALVE VAULT	361,682.66	650271.72

12" FILTRATE

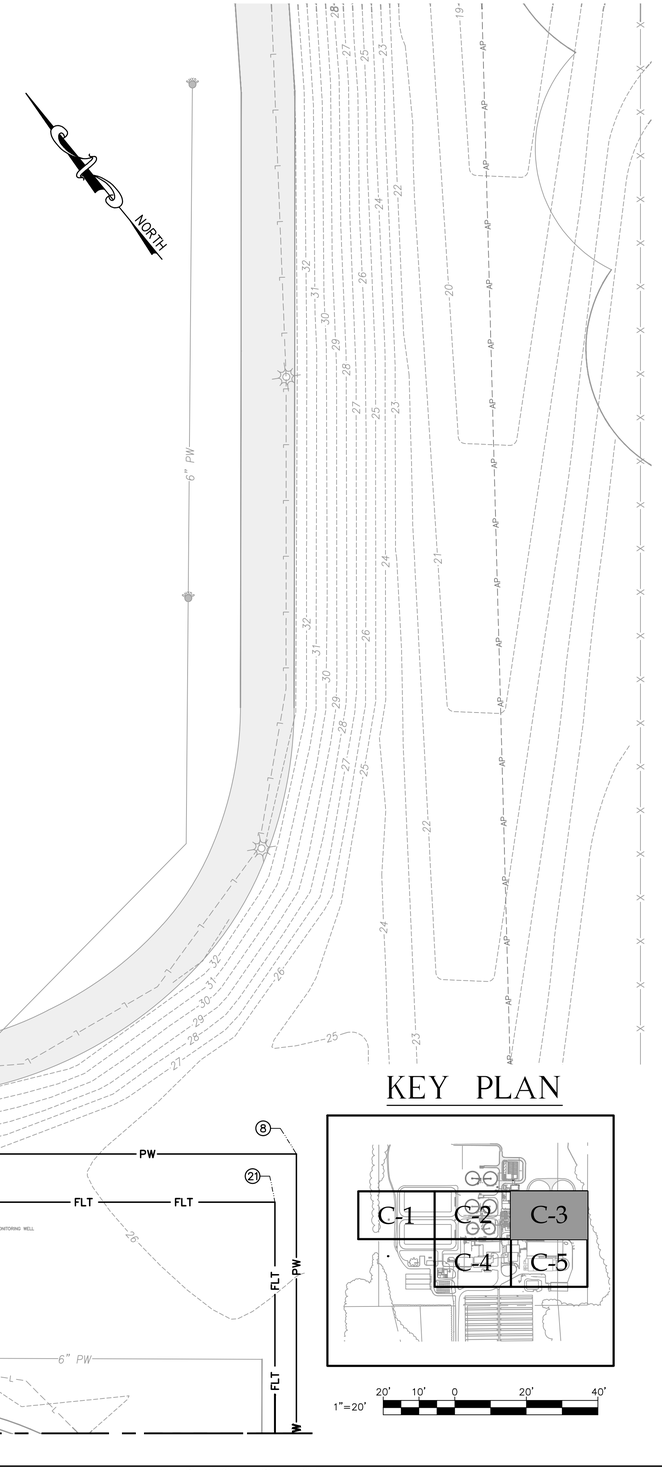
POINT NO.	DESCRIPTION	COORDINATES	
		NORTH	EAST
15	12" TEE	361,827.54	650,086.36
16	12" 45° HORIZONTAL BEND	361,717.11	650,221.08
17	12" 45° HORIZONTAL BEND	361,703.03	650,222.47
18	12" 45° HORIZONTAL BEND	361,661.19	650,273.52
19	12" 45° HORIZONTAL BEND	361,662.59	650,287.59
20	AIR RELEASE VALVE VAULT	361,575.02	650394.41
21	12" 90° HORIZONTAL BEND	361,435.30	650,564.87
22	12" 90° HORIZONTAL BEND	361,163.39	650,341.98
23	12" 45° HORIZONTAL BEND	361,302.64	650,171.84
24	12" 45° HORIZONTAL BEND	361,301.65	650,161.89
25	12" 90° HORIZONTAL BEND	361,320.81	650,138.51

12" CONDENSATE

POINT NO.	DESCRIPTION	COORDINATES	
		NORTH	EAST
26	DRYER BUILDING DRAINS	361,286.95	650,205.59
27	DRYER BUILDING DRAINS	361,286.39	650,200.00
28	DRYER BUILDING DRAINS	361,294.48	650,190.13
29	DMH-1	361354.99	650116.32
30	DMH-2	361333.12	650098.39
31	12" TEE	361,395.59	650,066.78
32	12" TEE	361409.59	650049.70
33	1 1/2" 45° BEND	361416.17	650041.67
34	1 1/2" 45° BEND	361426.12	650,040.68
35	GRINDER PUMP STATION	361439.42	650024.47

FILTRATE/CONDENSATE PUMP STATION

POINT NO.	DESCRIPTION	COORDINATES	
		NORTH	EAST
E	NW CORNER OF PUMP STATION	361,336.10	650,105.80
F	SW CORNER OF PUMP STATION	361,325.28	650,096.92
G	NE CORNER OF VALVE VAULT	361,313.42	650,135.04
H	SE CORNER OF VALVE VAULT	361,301.05	650,124.90



KEY PLAN

1"=20' (20' 10' 0 20' 40')

MATCH LINE (SHEET C-5)

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 1"=20'	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	SLUDGE LAGOON AREA SITE PLAN
APPROVED DATE		SHEET NO.: 28 of 191	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 C-03

\\rkd.rkk.com\Jobs\Cloud Projects\2019\19129_Biosolids\ACAD\Contract III\Civil\C-03 19129.dwg Oct 22, 2025 - 1:52pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab: SLUDGE LAGOON AREA

MATCH LINE (SHEET C-2)

MATCH LINE (SHEET C-5)

NORTH

INFLUENT SAMPLING & FLOW MEASURING STRUCTURE

RECYCLE PUMPING STATION 1

VALVE IN METER VAULT

OBSERVATION TOWER

ABANDONED SMD

ABANDONED ½" NTFL

6" DSL

4" WAS

2" AIR LINE

AEROBIC D No.

AEROBIC D No.

CB 5

CB 4

12" San D

MH 10

8" San D

MH 9

4" PW

6" PW

2" Pot W

12" SD

12" OUT 22.70

T/RIM 27.71

MH 2B

12" IN 22.91

12" IN 22.80

MH 19

6" PLANT WATER

8" SMD

8" SMD ABANDON

36" PCCP PLANT RECYCLE

4" HEAT EXCHANGE LINE

3" Pot W

6" PW

MH 7

MH 8

8" San D

1½" Pot W

2" PW

INFLUENT

PRIMARY SWITCH GEAR

ELECTRIC MANHOLE MH-A

ADMINISTRATION BUILDING

6" PW

TRANSFORMER PSA

8" SMD ABANDON

CB 12

CB-11

12" SD

4" SD

48" BI

48" PLANT INFLUENT

CB-10

ELECTRICAL DUCT BANK

HEADWORKS BUILDING

T/WALL SCREENING BUILDING = 40.00

SEPTAGE RECEIVING & SCUM HANDLING BUILDING

GENERATOR

6" PW

ELECTRIC MANHOLE

2" POT.

ELECTRIC MANHOLE MH-E

CB 9

JENT FM

FERRIC CHLORIDE STORAGE

12" SD

CB 14

12" SD

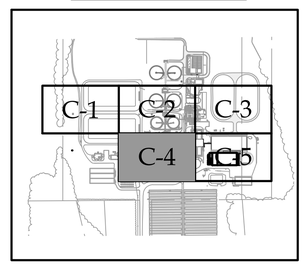
ELECTRIC MANHOLE

1" Pot W

48" PLANT INFLUENT

SOLAR DRYER MECHANICAL BUILDING

KEY PLAN



ISSUED FOR BIDDING

ADMINISTRATION BUILDING SITE PLAN

SCALE: 1"=20'

1"=20' 20' 10' 0 20' 40'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

SCALE: 1"=20'
DRAWN BY: RAD
CHECKED BY: RJA
SHEET NO.: 29 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
ADMINISTRATION BUILDING AREA SITE PLAN
OCTOBER 2025 C-04

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MATCH LINE (SHEET C-3)

MATCH LINE (SHEET C-4)

AEROBIC DIGESTER No. 4

AEROBIC DIGESTER No. 6

DIESEL GENERATOR

SOLIDS HANDLING BUILDING

SOLIDS PROCESSING BUILDING

DRYER BUILDING

VAC TRUCK DUMP STATION

FIRE PUMP BUILDING

GRIT SEPARATOR

NORTH GARAGE

MAINTENANCE BUILDING

FOR CONTINUATION OF PWS SEE DRAWING PM-01

BRIDGE ACCESS STAIRS

OVERHEAD PIPING & WALKWAY

OVERHEAD 6" SLUDGE ON EX. PIPE BRIDGE TO BFP ROOM

ELECTRICAL DUCT BANK (TYP)

EX. GAS PIPING

OVERHEAD CAKE CONVEYOR TO SLUDGE STORAGE PAVILION

OVERHEAD PNEUMATIC CONVEYORS TO SLUDGE STORAGE PAVILION

12" GATE VALVE

6" GATE VALVE

6" PLANT WATER TO FIRE PUMP BUILDING

12" PLANT WATER

COMMUNICATIONS HAND HOLE

POWER FEED TO RADIO SHACK

SEE NOTE 1

OUTSIDE OF PEMB GIRT

ELECTRICAL DUCT BANK

ODOR CONTROL PAD

GAS METER BY CHESAPEAKE GAS

MANHOLE EMH-1

MANHOLE EMH-2

CB/18

BURIED VALVE VAULT

AG WELL

NEW EDGE OF ROAD

AREA RESERVED FOR GAS METER FOR DRYER BUILDING

FILTRATE AND CONDENSATE PUMP STATION

SEE DRAWING C-06 FOR NEW YARD PIPING IN THIS AREA SEE DRAWING C-07 FOR NEW GRADING IN THIS AREA

CONTRACTOR TO REINSTALL RIPRAP APRON FOLLOWING BURIED PIPE INSTALLATION

12"x16" CONNECTION TO EX. 16" FILTRATE

16" FILTRATE/CONDENSATE PUMP STATION FORCE MAIN

4" GAS

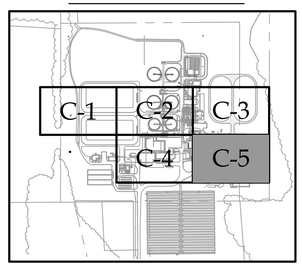
ROAD LIGHTING CIRCUIT

NORTH

NOTES:

1. CONTRACTOR TO INSTALL GRAVEL IN AREAS BETWEEN DRYER BUILDING AND PROPOSED CURBS. GAPS BETWEEN DRYER BUILDING, FIRE PROTECTION BUILDING, AND ODOR CONTROL SLABS TO BE FILLED WITH GRAVEL.

KEY PLAN



1"=20' 20' 10' 0 20' 40'

ISSUED FOR BIDDING

DRYER BUILDING SITE PLAN

SCALE: 1"=20'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

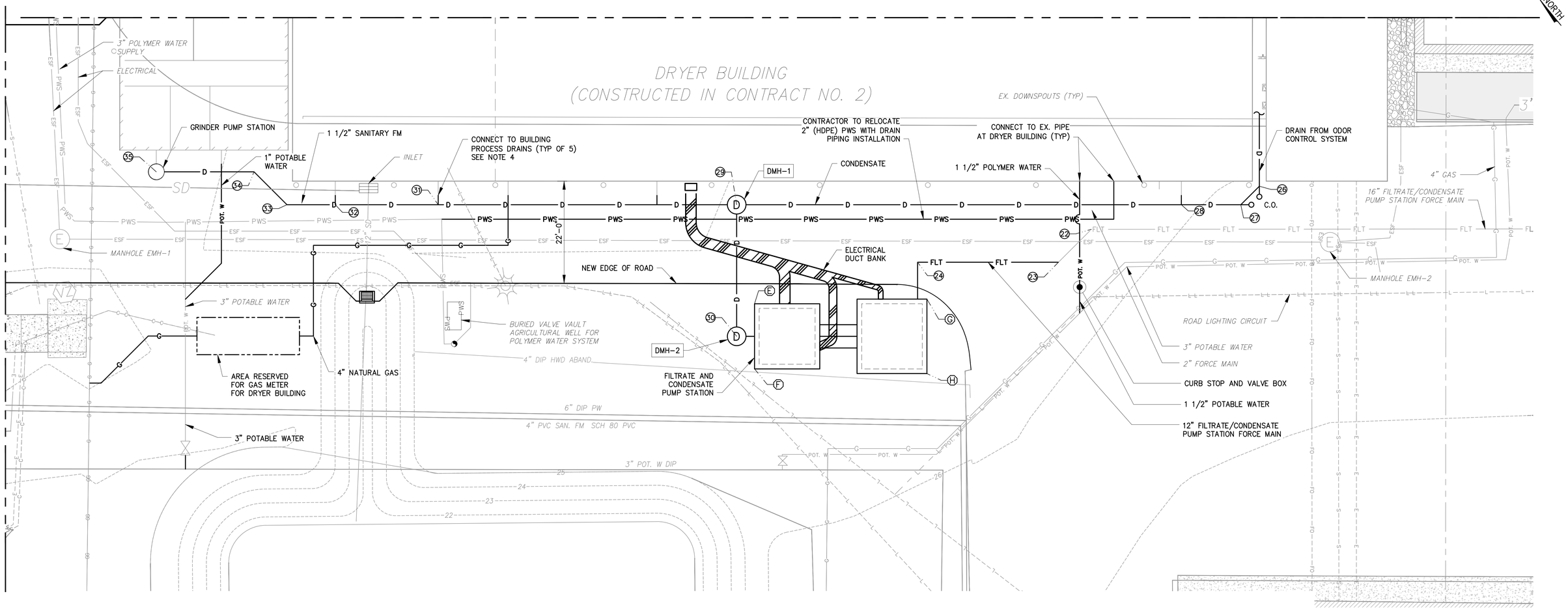
KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: 1"=20'
DRAWN BY: RAD
CHECKED BY: RJA
SHEET NO.: 30 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER BUILDING AREA
GENERAL PLAN
OCTOBER 2025 C-05

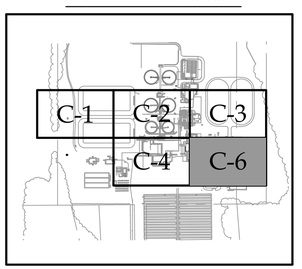
\\pet-kk.com\Vol\Cloud\Projects\2019\19129_Biosolids\ACAD\Contract III\Civil\C-05 19129.dwg Oct 21, 2025 - 3:51pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:DRYER BUILDING AREA PIPING PLAN



ENLARGED DRYER BUILDING AREA PIPING PLAN

SCALE: 1"=10'

KEY PLAN



1"=10' 10' 5' 0 10' 20'

NOTE:

1. FOR EXISTING AND NEW GRADING IN THIS AREA, SEE SHEET C-07.
2. ALL BURIED LINES SHALL BE INSTALLED WITH DETECTOR WARNING TAPE.
3. ALL NON-METALLIC LINES SHALL BE INSTALLED WITH 12 GAUGE TRACER WIRE.
4. SEE PLUMBING PLANS FOR P-TRAP REQUIREMENTS AT GRAVITY PROCESS DRAINS.
5. VERTICAL SHEETING SHALL BE USED FOR SUPPORT OF EXCAVATION FOR THE CONSTRUCTION OF THE FILTRATE AND CONDENSATE PUMP STATION. SHEETING SHALL NOT BE LEFT IN PLACE.

ISSUED FOR BIDDING

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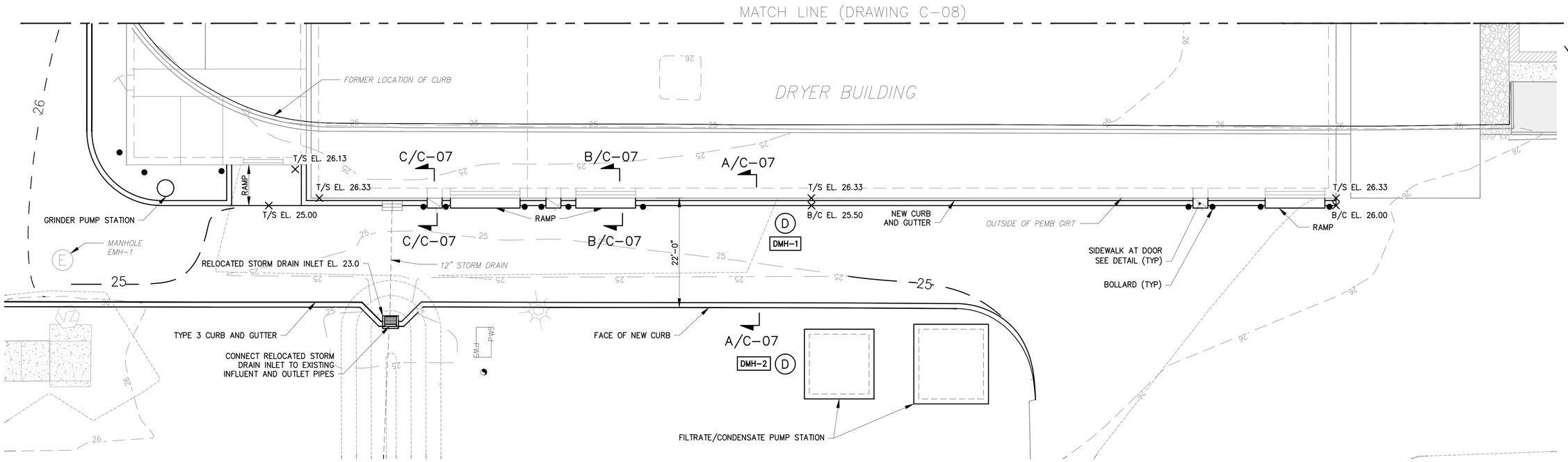
REVISIONS			
NO.	DESCRIPTION	BY	DATE

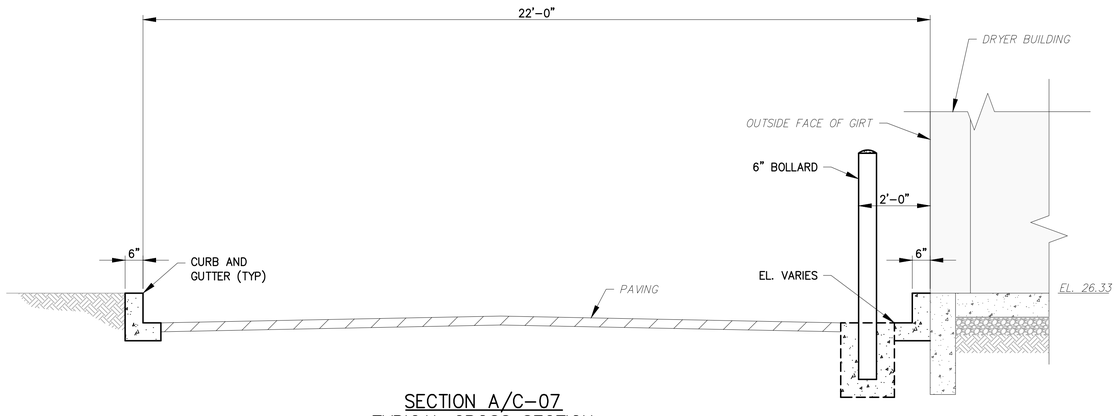
KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 1"=10'	KENT COUNTY RRRF
		DRAWN BY: DLJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	DRYER BUILDING AREA ENLARGED SITE PLAN
APPROVED DATE		SHEET NO.: 31 of 191	OCTOBER 2025 C-06
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	

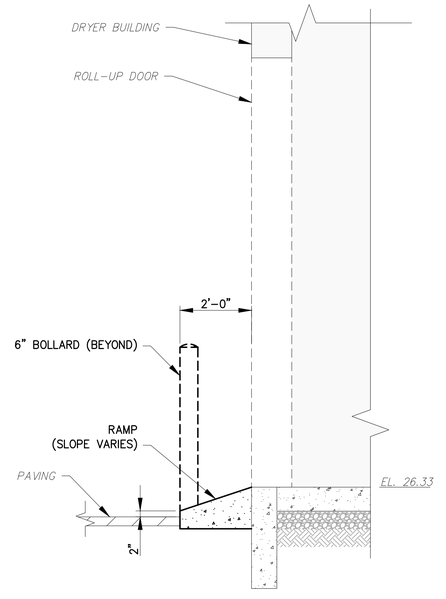
\\rkdnfs4.com\Vs\Cloud Projects\2019\19129_Biosolids\ACAD\Contract III\Civil\C-06 19129.dwg Oct 21, 2025 - 3:56pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:ENLARGED DRYER BUILDING AREA SITE PLAN



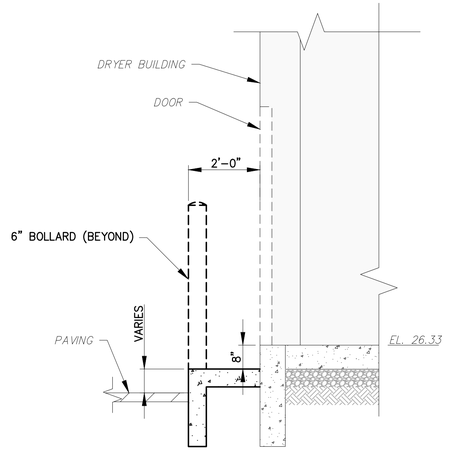
GRADING PLAN AT DRYER BUILDING
SCALE: 1"=10'



SECTION A/C-07
TYPICAL CROSS SECTION
SCALE: 1/2"=1'-0"

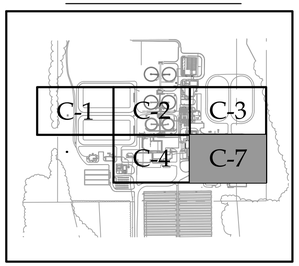


SECTION B/C-07
RAMP DETAIL AT ROLL-UP DOORS #19, #21, #23
SCALE: 1/2"=1'-0"



SECTION C/C-07
SIDEWALK DETAIL AT DOORS #20, #22, #24
SCALE: 1/2"=1'-0"

KEY PLAN



1"=10' 10' 5' 0 10' 20'

½"=1'-0" 12" 0 1' 2' 3' 4' 5'

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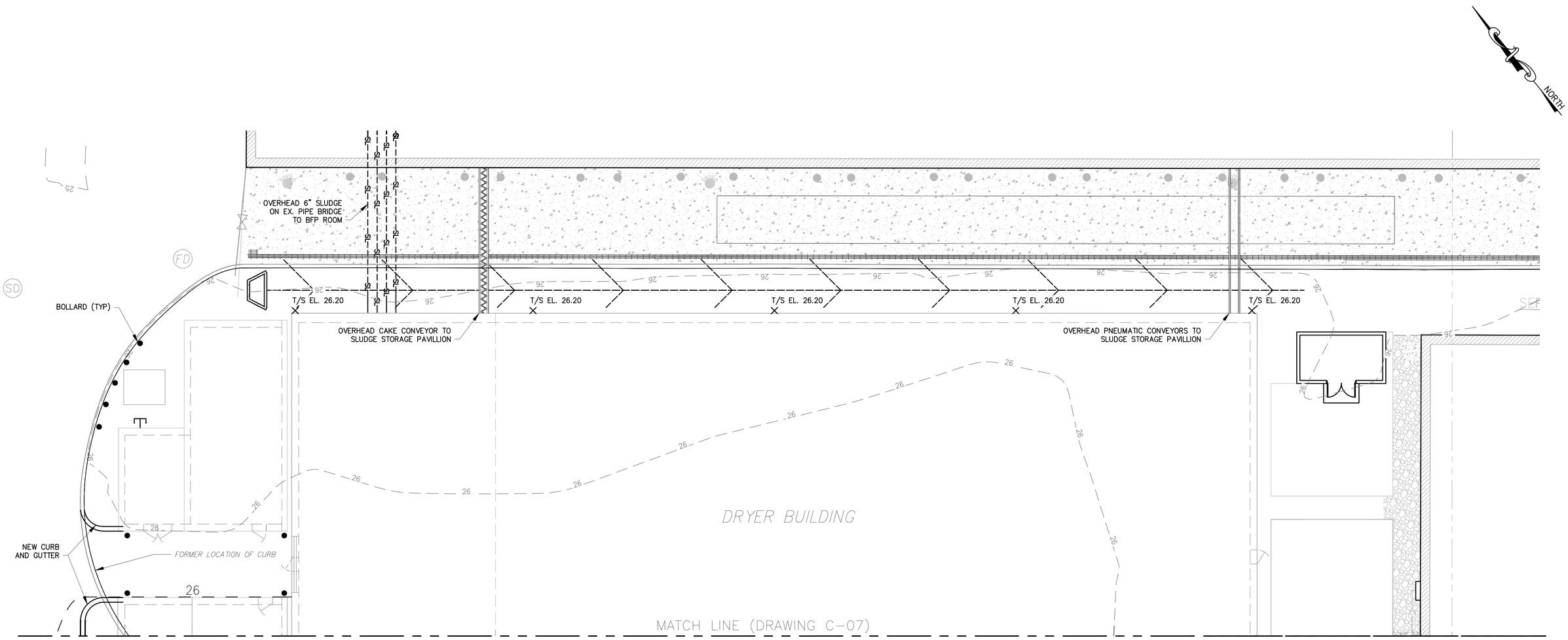
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: 1"=10'	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
		CHECKED BY: RJA	DRYER BUILDING AREA GRADING PLAN 1
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 32 of 191	
		PROJECT NO.: 50.1890.97-A	
		OCTOBER 2025	C-07

\\adc-rkk.com\VA\Cloud\Projects\2019\19129_Biosolids\ACAD\Contract 3\Civil\C-07 19129.dwg Oct 21, 2025 - 3:53pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:ENLARGED DRYER BUILDING AREA GRADING PLAN

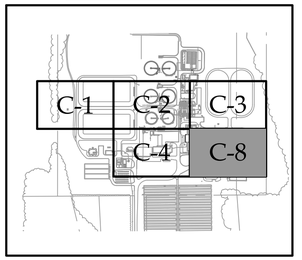


DRYER BUILDING GRADING PLAN
SCALE: 1"=10'

NOTE:

1. [13] DENOTES PEMB DOOR AND ITS NUMBER IN CONTRACT 2.

KEY PLAN



1"=10' 10' 5' 0 10' 20'

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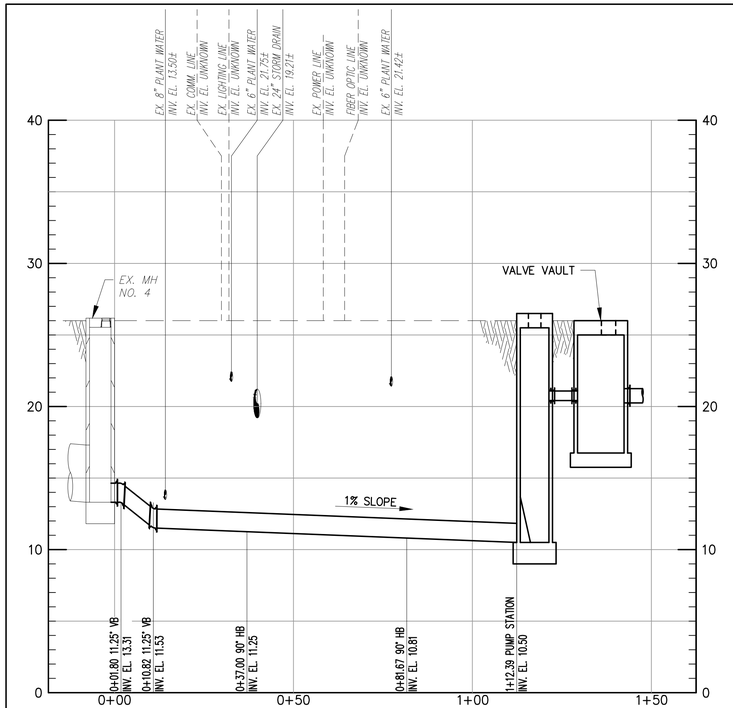
ROBERT J. ANDRYSZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

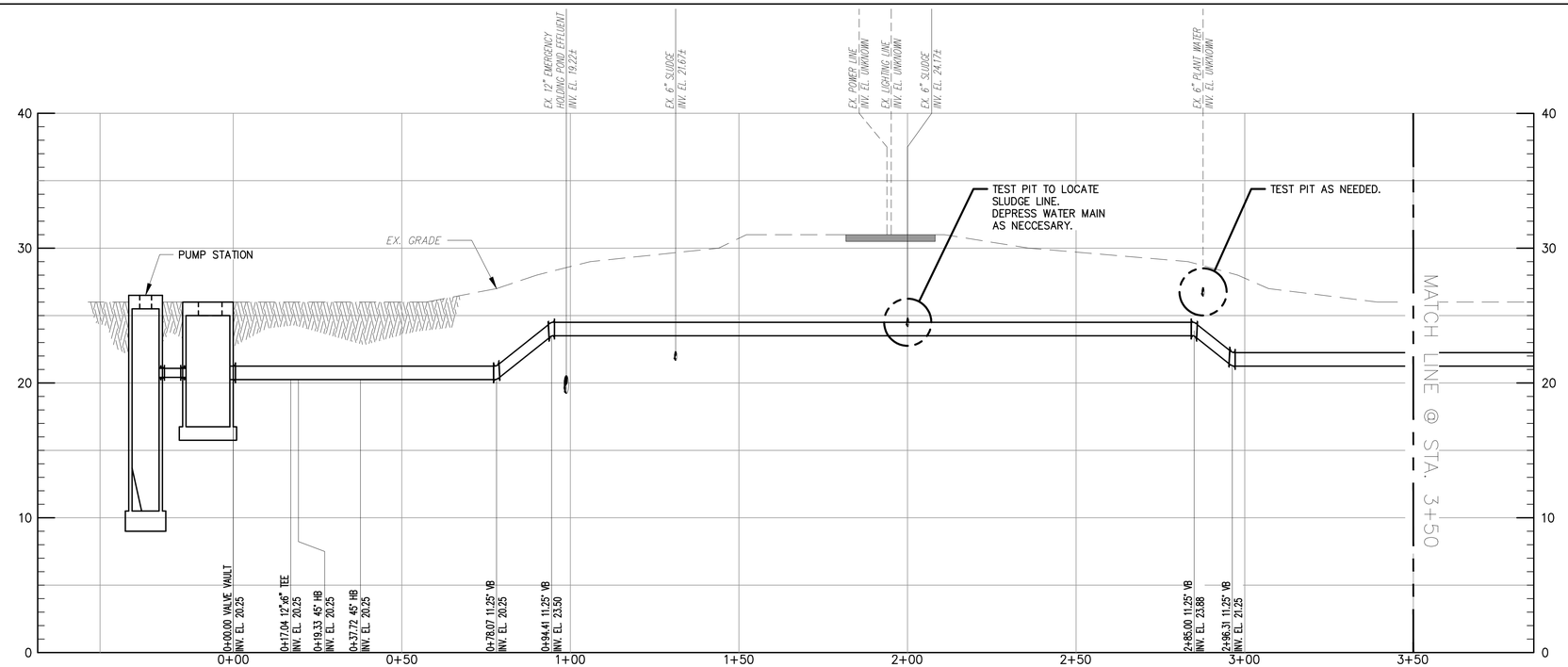
APPROVED DATE	APPROVED DATE	SCALE: 1"=10'	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	DRYER BUILDING AREA GRADING PLAN 2
APPROVED DATE		SHEET NO.: 33 of 191	OCTOBER 2025 C-08
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	

\\adcrkk.com\fs\Cloud Projects\2019\19129_Biosolids\MCAD\Contract III\Civil\C-08 19129.dwg Oct 21, 2025 - 3:51pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:ENLARGED DRYER BUILDING AREA GRADING PLAN



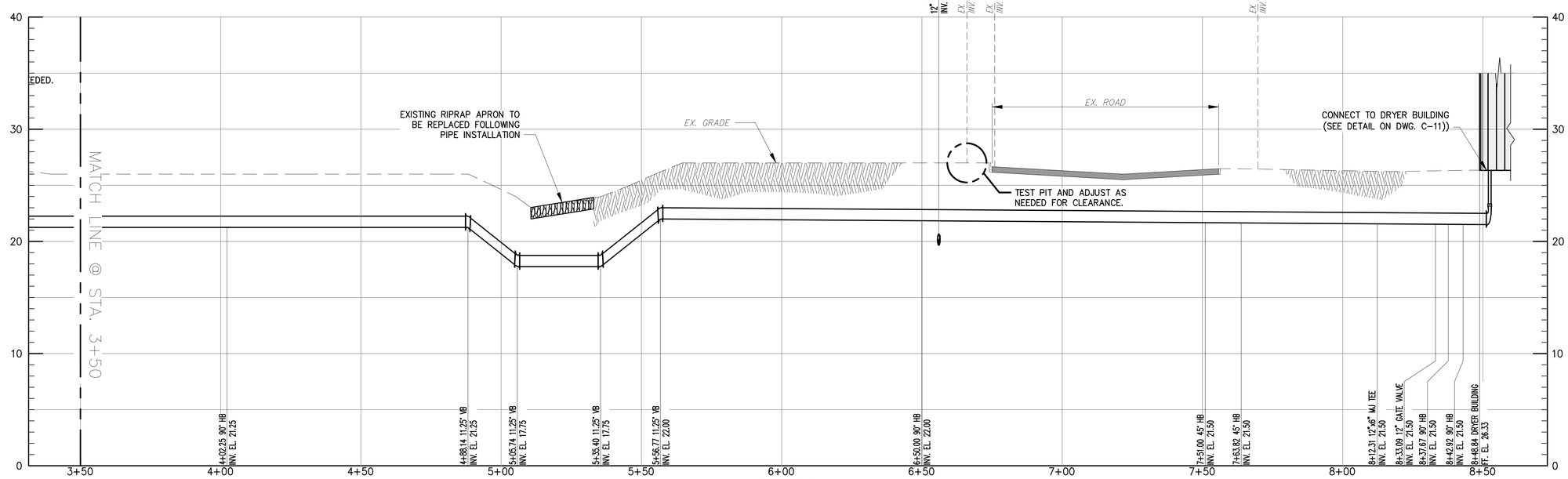
16" PLANT WATER

SCALE: HORIZ. 1"=20'/VERT. 1"=5'



12" PLANT WATER

SCALE: HORIZ. 1"=20'/VERT. 1"=5'

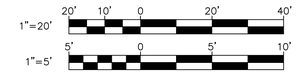


12" PLANT WATER (CONT'D)

SCALE: HORIZ. 1"=20'/VERT. 1"=5'

NOTES:

1. TEST PITTING IS REQUIRED FOR LOCATING EXISTING ELECTRICAL AND COMMUNICATIONS DUCT BANKS AND OTHER UTILITIES WHERE DEPTHS ARE UNKNOWN AND NOT SHOWN ON THE PROFILES. SUBMIT RESULTS OF TEST PITTING AS A SUBMITTAL.
2. SEE SHEET PM-14 FOR CONTINUATION OF 12" PLANT WATER LINE INTO DRYER BUILDING.
3. ALL BURIED LINES SHALL BE INSTALLED WITH DETECTOR WARNING TAPE.
4. ALL NON-METALLIC LINES SHALL BE INSTALLED WITH 12 GAUGE TRACER WIRE.
5. ALL BURIED PIPE SHALL HAVE A MINIMUM OF 3'-6" OF COVER.



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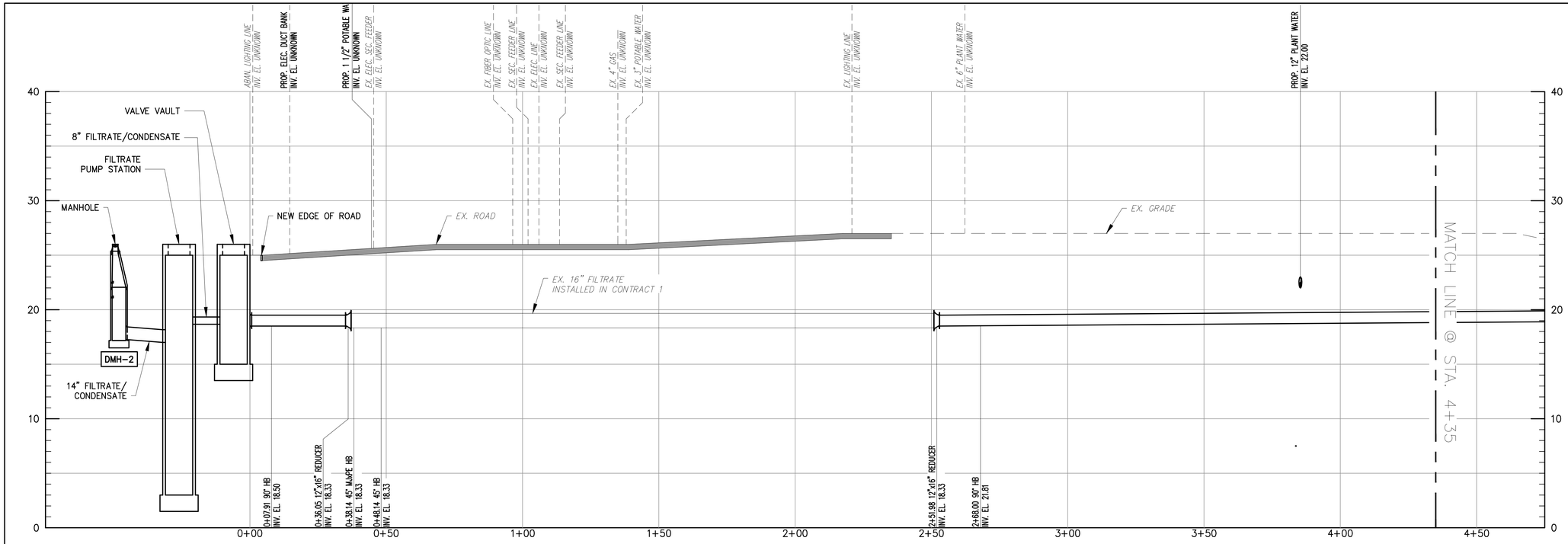
ROBERT J. ANDRYCHAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

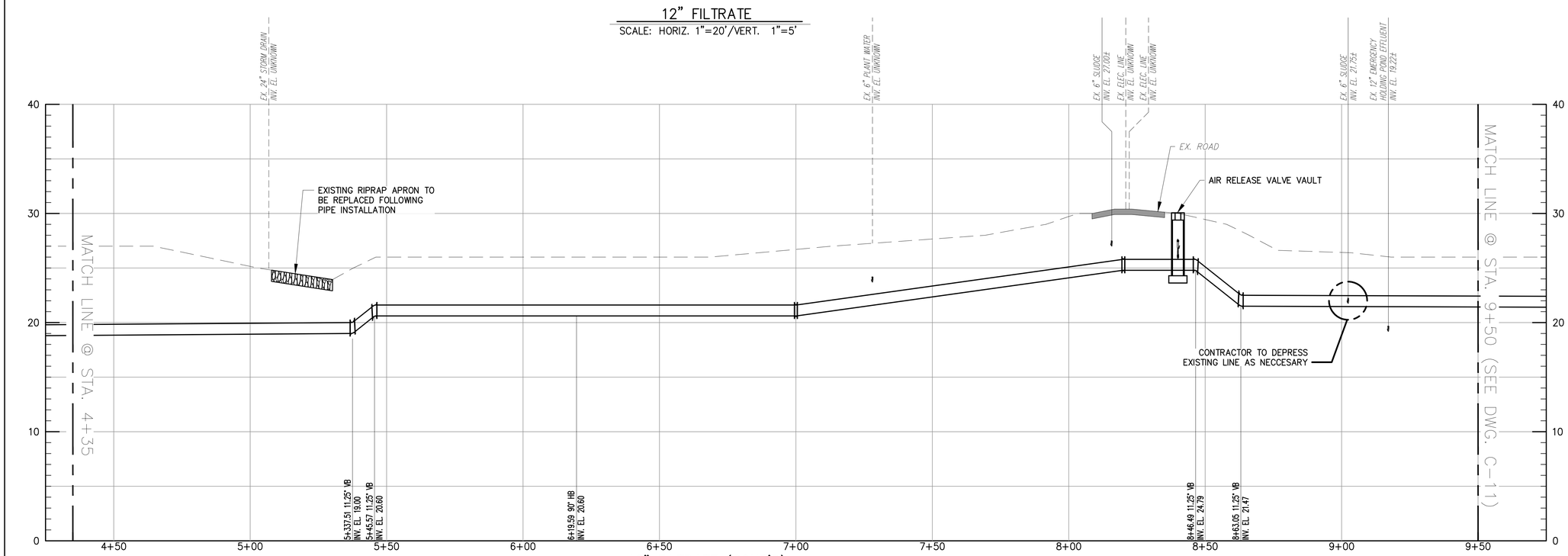
APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	
APPROVED DATE		SHEET NO.: 34 of 191	PIPE PROFILES 1
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 C-09

\\rkk.com\Vol\Cloud-Projects\2019\19129_Biosolids\CAD\Contract 1\Civil\C-09 19129.dwg Oct 21, 2025 - 4:10pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:PIPE PROFILES



12" FILTRATE

SCALE: HORIZ. 1"=20'/VERT. 1"=5'



12" FILTRATE (CONT'D)

SCALE: HORIZ. 1"=20'/VERT. 1"=5'

ISSUED FOR BIDDING

NOTES:

1. TEST PITTING IS REQUIRED FOR LOCATING EXISTING ELECTRICAL AND COMMUNICATIONS DUCT BANKS AND OTHER UTILITIES WHERE DEPTHS ARE UNKNOWN AND NOT SHOWN ON THE PROFILES. SUBMIT RESULTS OF TEST PITTING AS A SUBMITTAL.
2. ALL BURIED LINES SHALL BE INSTALLED WITH DETECTOR WARNING TAPE.
3. ALL NON METALLIC LINES SHALL BE INSTALLED WITH 12 GAUGE TRACER WIRE.

1"=20' 20' 10' 0 20' 40'

1"=5' 5' 0 5' 10'

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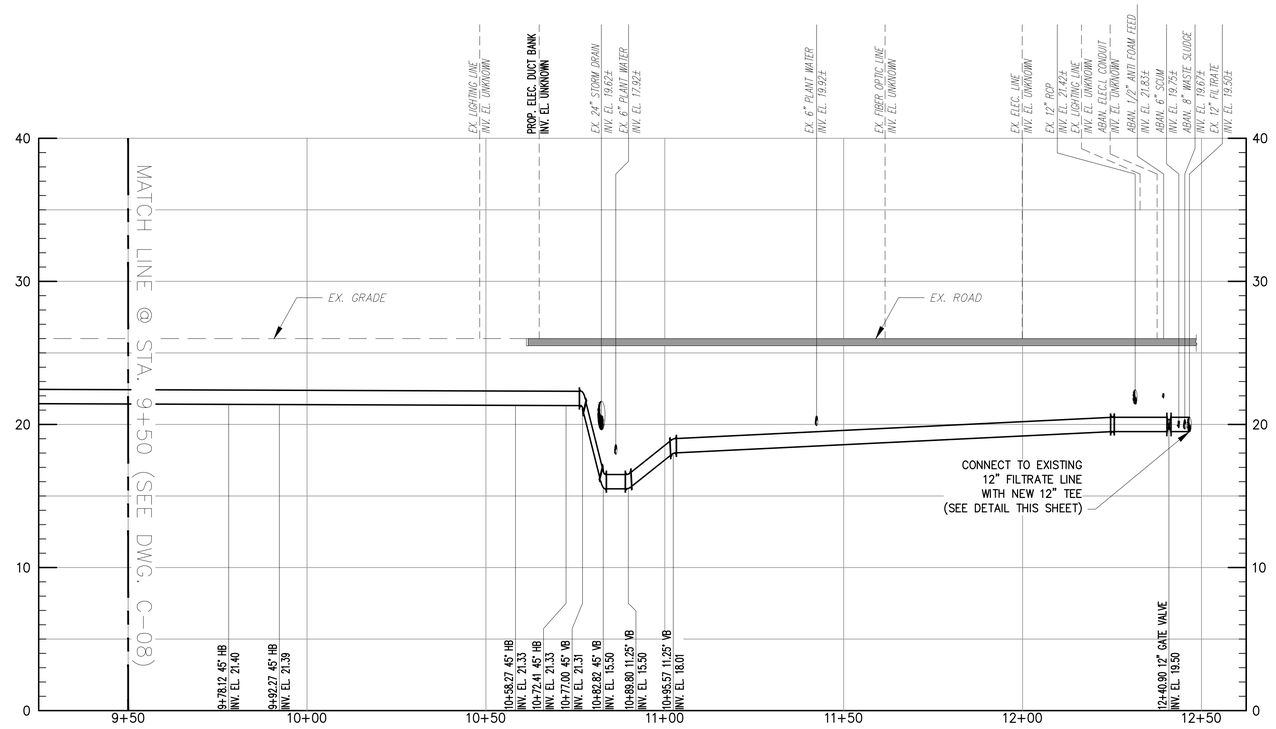
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

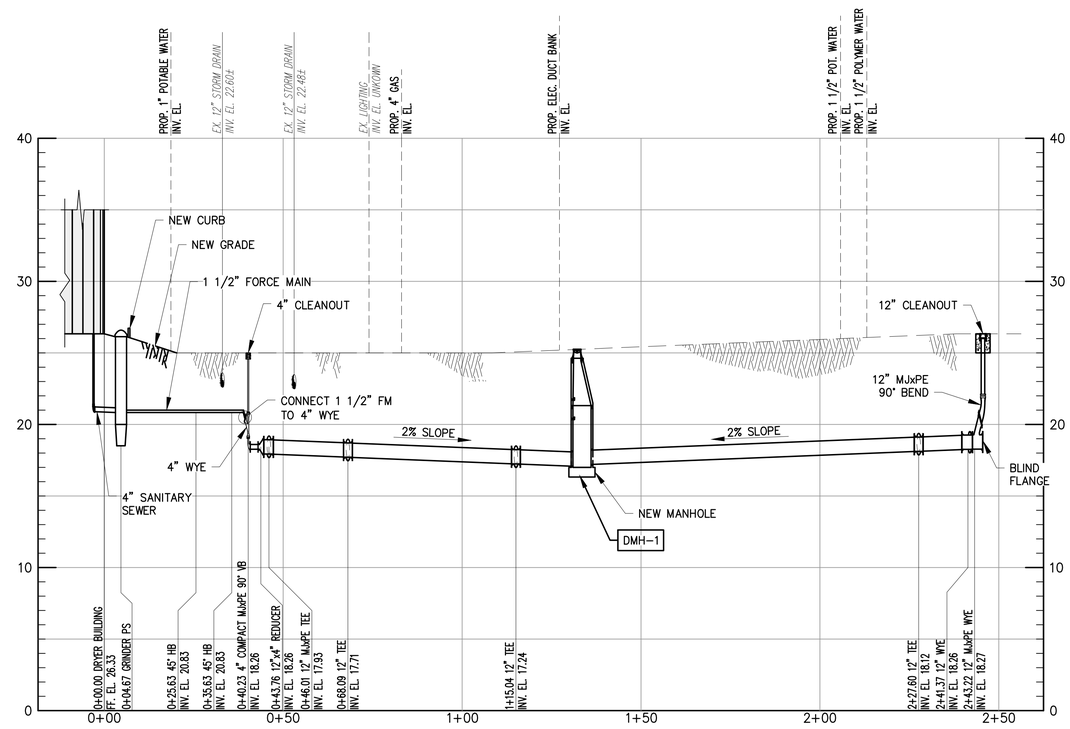
APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	
APPROVED DATE		SHEET NO.: 35 of 191	PIPE PROFILES 2
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	
			OCTOBER 2025 C-10

\\rkad.rkk.com\fs\Cloud Projects\2019\19129_Biosolids\ACAD\Contract III\Civil\C-10 19129.dwg Oct 21, 2025 - 4:12pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:YARD PIPING PROFILES



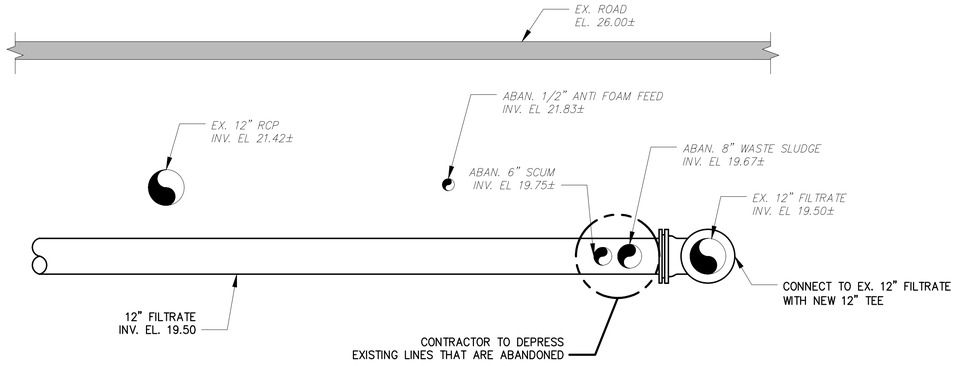
12" FILTRATE (CONT'D)

SCALE: HORIZ. 1"=20'/VERT. 1"=5'



12" CONDENSATE/DRAIN

SCALE: HORIZ. 1"=20'/VERT. 1"=5'

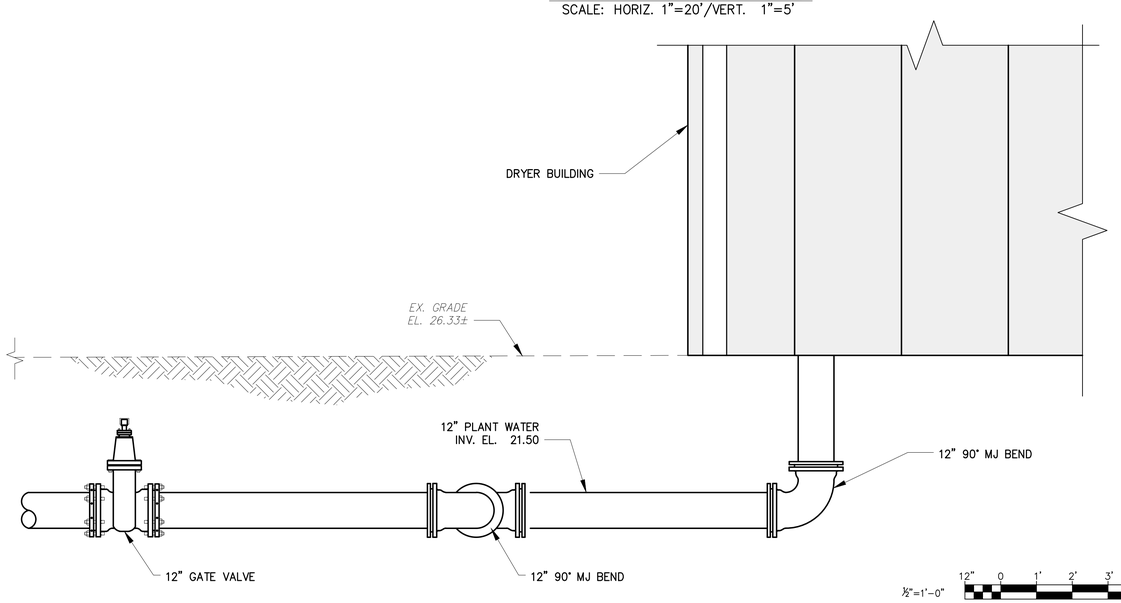


12" FILTRATE CONNECTION DETAIL

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

NOTES:

1. TEST PITTING IS REQUIRED FOR LOCATING EXISTING ELECTRICAL AND COMMUNICATIONS DUCT BANKS AND OTHER UTILITIES WHERE DEPTHS ARE UNKNOWN AND NOT SHOWN ON THE PROFILES.
2. ALL BURIED LINES SHALL BE INSTALLED WITH DETECTOR WARNING TAPE.
3. ALL NON METALLIC LINES SHALL BE INSTALLED WITH 12 GAUGE TRACER WIRE.



12" PLANT WATER CONNECTION DETAIL

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

12" 0 1' 2' 3' 4' 5" ½"=1'-0"

20' 10' 0 20' 40' 1"=20'

5' 0 5' 10' 1"=5'

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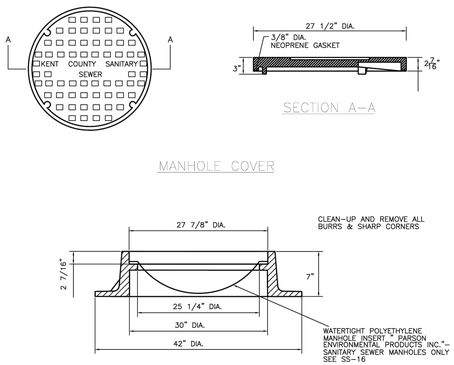
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: RJA	
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 36 of 191	PIPE PROFILES 3
		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 C-11

\\rkdfnk.com\fs\Cloud Projects\2019\19129_Biosolids\ACAD\Contract III\Civil\C-11 19129.dwg Oct 21, 2025 - 4:13pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab: YARD PIPING PROFILES

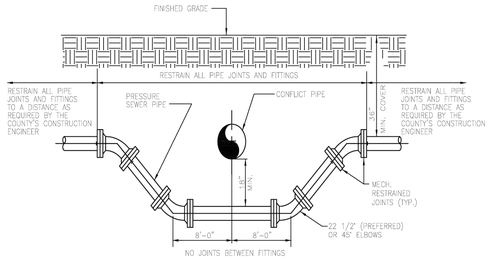


MANHOLE COVER

MANHOLE FRAME

NOTES:
1) OUTER FRAME & COVER, MACHINED ON THE BEARING SURFACE.
2) MATERIAL-GRAY IRON ASTM A-48, CLASS 35B; WEIGHT-APPROX. 400 LBS.
3) ALL CASTINGS ARE OF HEAVY DUTY AND SUITABLE FOR H-20 LOADING.
4) EAST JORDAN IRON WORKS, INC. MODEL 2080 WITH SOLID COVER OR EQUAL.
5) INCLUDE CEMENT MORTAR AFTER INSTALLATION

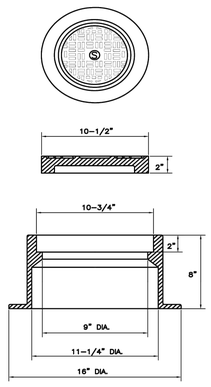
STANDARD MANHOLE FRAME AND COVER
SCALE: NOT TO SCALE



SECTION

NOTES:
1. THESE METHODS ARE TO BE USED WHEN INSUFFICIENT COVER EXISTS TO ALLOW PRESSURE PIPE TO CROSS ABOVE/BELOW CONFLICT PIPE WHILE MAINTAINING A MINIMUM VERTICAL SEPARATION OF 18" FROM WATER AND 12" FROM OTHER AND A MINIMUM COVER OF 36" TO FINISHED GRADE.
2. ALL PRESSURE SEWER PIPE JOINTS AND FITTINGS SHALL BE RESTRAINED.

PRESSURE SEWER PIPE CONFLICT DETAIL
SCALE: NOT TO SCALE

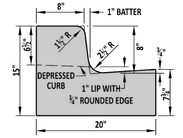


CLEANOUT FRAME & COVER
WT., FRAME & COVER - 85 LBS.

NOTES:
1) OUTER FRAME & COVER, MACHINED ON THE BEARING SURFACE.
2) MATERIAL-GRAY IRON ASTM A-48, CLASS 35B.
3) ALL CASTINGS ARE OF HEAVY DUTY AND SUITABLE FOR H-20 LOADING.
4) EAST JORDAN IRON WORKS, INC. MODEL 1565 WITH SOLID COVER OR EQUAL.

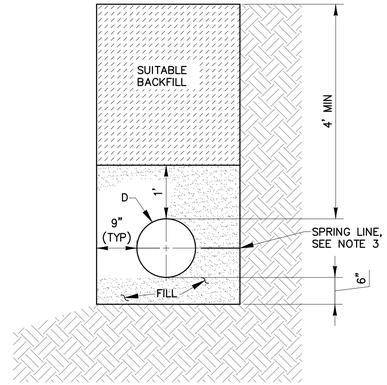
CLEANOUT FRAME & COVER DETAIL
NOT TO SCALE

STANDARD CLEANOUT FRAME AND COVER
SCALE: NOT TO SCALE



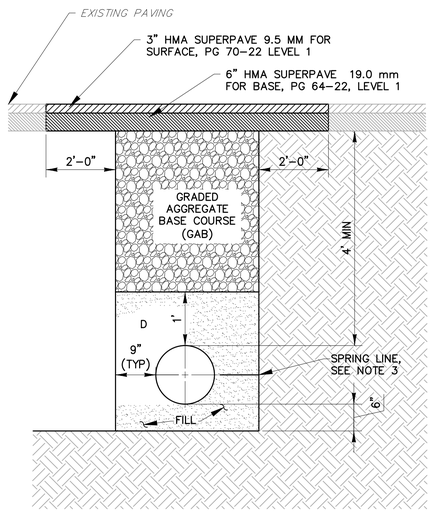
NOTES:
1. HMA - 4" TYPE B BASE COURSE
2. HMA - 2" TYPE C TOP COURSE
3. GABC - 8"

STANDARD CURB AND GUTTER
SCALE: NOT TO SCALE

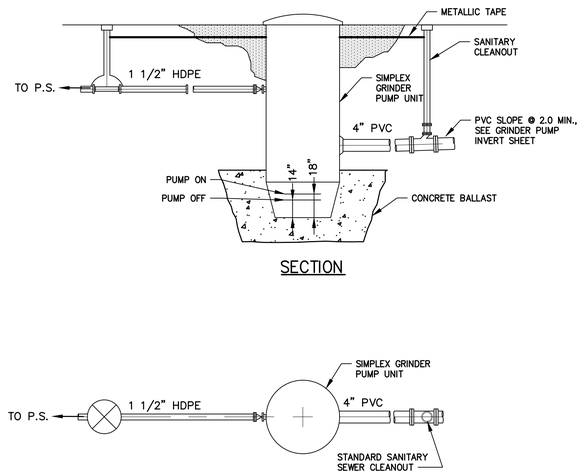


NOTES:
1. MINIMUM TRENCH WIDTH EQUALS 24", MAXIMUM TRENCH WIDTH EQUALS PIPE BARREL OD PLUS 18".
2. IN PAVED AREAS, 100% STONE BACKFILL SHALL BE USED IN PLACE OF SUITABLE BACKFILL.
3. CONTRACTOR SHALL PLACE FILL IN TWO LIFTS. LIFT ONE SHALL BE TO THE SPRING LINE OR CALCULATED LIFT HEIGHT THAT WILL NOT RESULT IN PIPE FLOTATION, WHICHEVER IS LESS. SECOND LIFT SHALL BE TO THE LIMITS SHOWN.

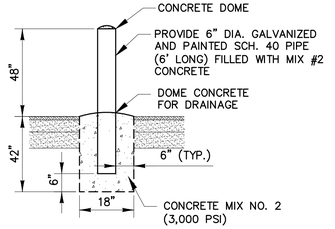
PIPE TRENCH DETAIL
SCALE: NOT TO SCALE



PIPE TRENCH DETAIL UNDER PAVEMENT
SCALE: NOT TO SCALE



SIMPLEX GRINDER PUMP CONNECTION
NOT TO SCALE



BOLLARD - DETAIL
SCALE: NOT TO SCALE

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

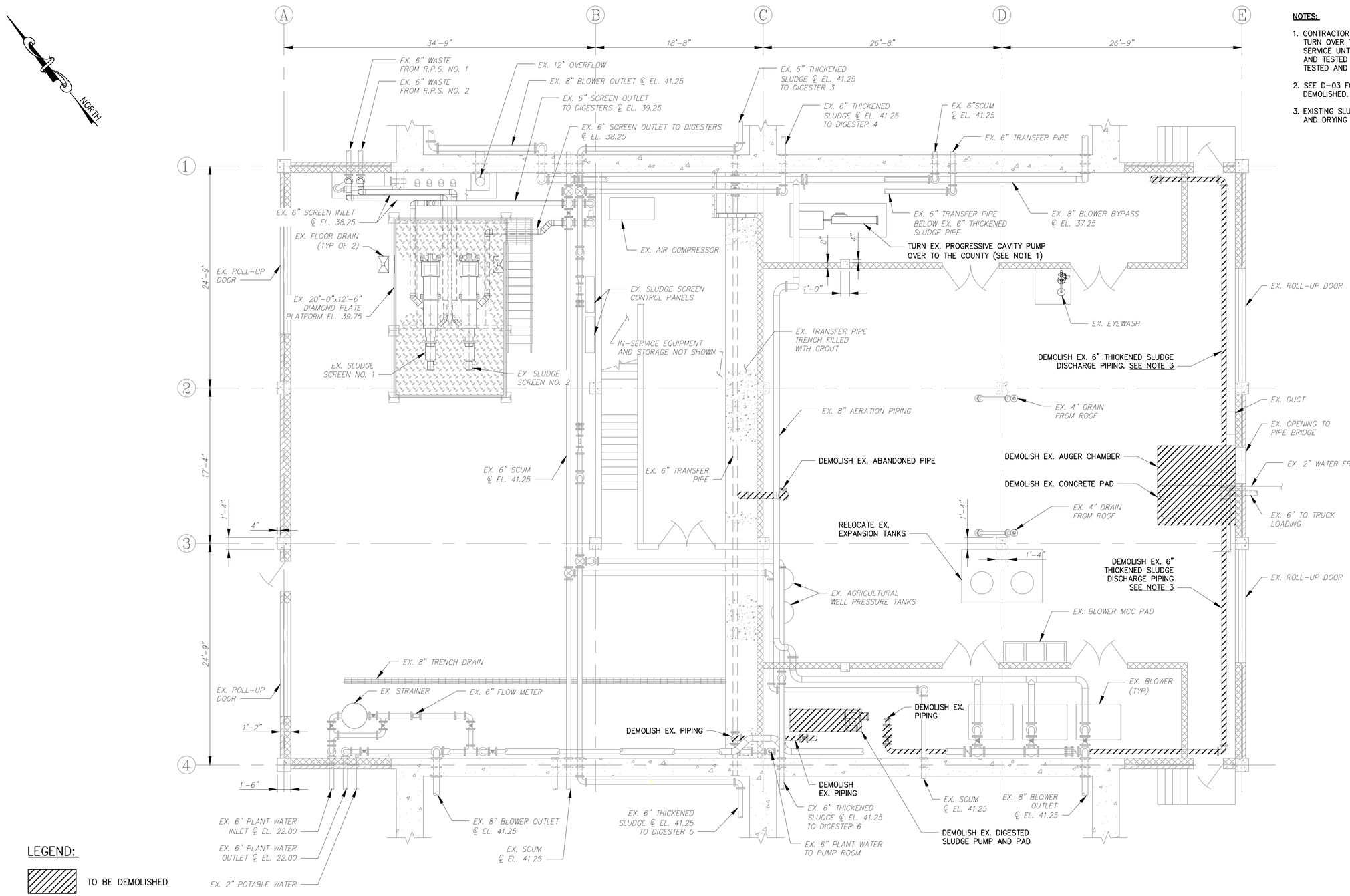
SCALE: AS NOTED
DRAWN BY: RAD
CHECKED BY: RJA
SHEET NO.: 37 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
CIVIL DETAILS
OCTOBER 2025 C-12

\\adc.rkk.com\fs\Cloud Projects\2019\19129_Biosolids\ACAD\Contract III\Civil\C-12 19129.dwg Oct 21, 2025 - 3:52pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:CIVIL DETAILS

NOTES:

1. CONTRACTOR TO UNINSTALL EXISTING PROGRESSIVE CAVITY PUMP AND TURN OVER TO THE COUNTY. EXISTING SLUDGE PUMP TO REMAIN IN SERVICE UNTIL BFP FEED PUMPS 1, 3, AND 4 HAVE BEEN INSTALLED AND TESTED AND NEW DEWATERING AND DRYING SYSTEM HAS BEEN TESTED AND COMMISSIONED.
2. SEE D-03 FOR DETAILS OF AUGER CHAMBER AND CONCRETE PAD TO BE DEMOLISHED.
3. EXISTING SLUDGE LINE TO REMAIN IN SERVICE UNTIL NEW DEWATERING AND DRYING SYSTEM HAS BEEN TESTED AND COMMISSIONED.



LEGEND:

TO BE DEMOLISHED

SOLIDS HANDLING BUILDING DEMOLITION

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

3/16"=1'-0" 4' 2' 0 4' 8' 12'

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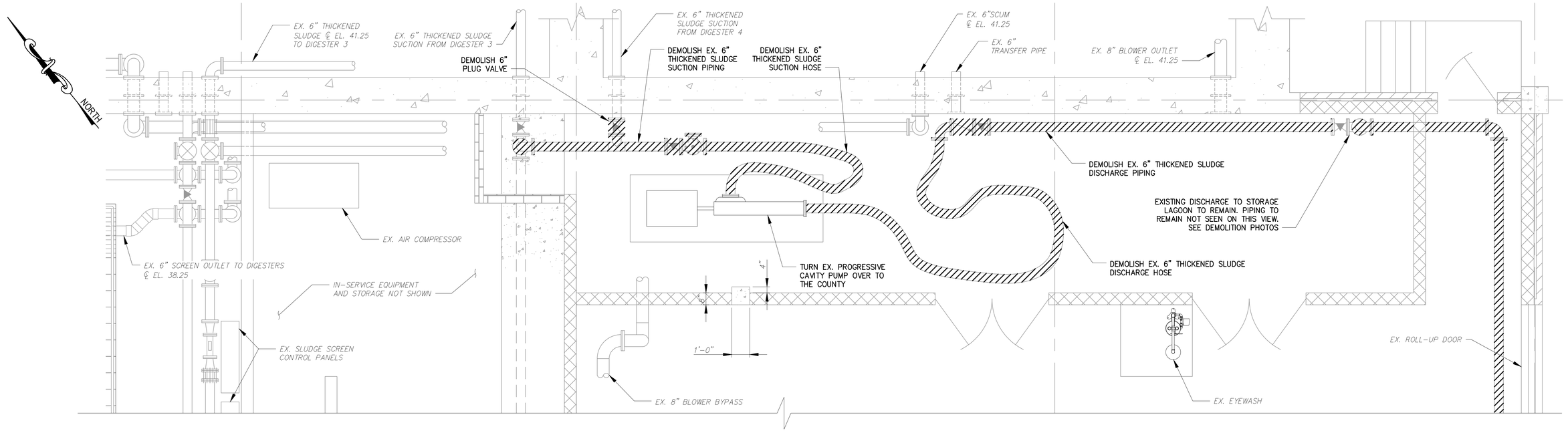
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 3/16"=1'-0"	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: RJA	SOLIDS HANDLING BUILDING DEMOLITION PLAN
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 38 of 191	OCTOBER 2025 D-01
		PROJECT NO.: 50.1890.97-A	

\\pal-kk.com\Vol\Cloud\Projects\2019\19123_Biosolids\ACAD\Contract III\Demolition\D-01 19123.dwg Oct 21, 2025 - 4:17pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab: SOLIDS

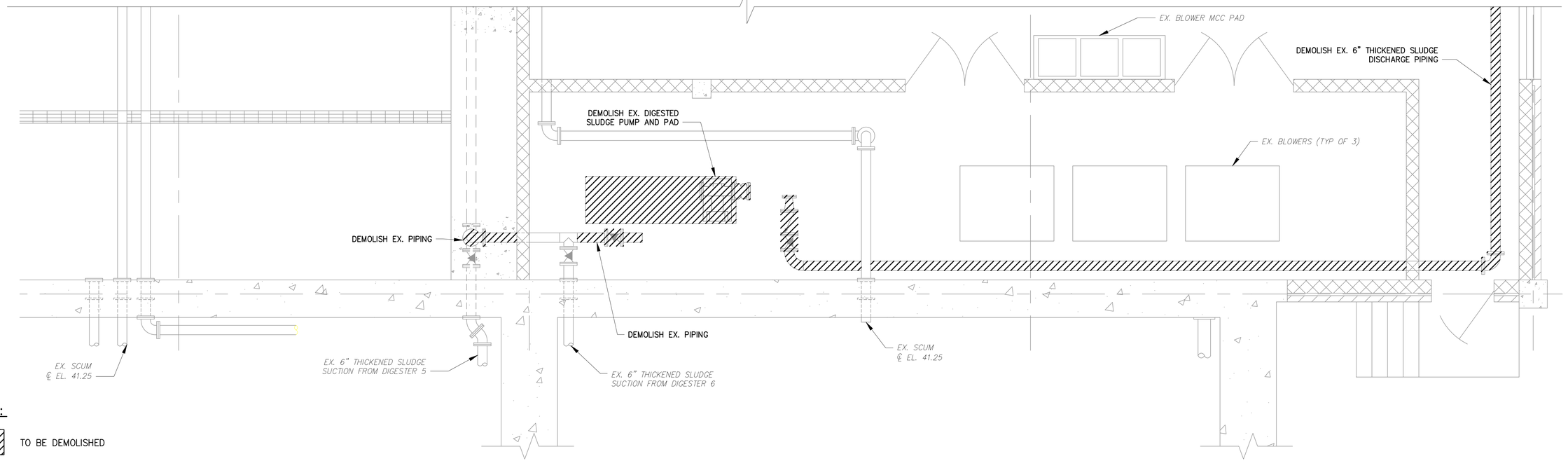


NORTHERN LEVEL LOWER PIPING

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

NOTE:

1. EXISTING SLUDGE LINE TO REMAIN IN SERVICE UNTIL NEW DEWATERING AND DRYING SYSTEM HAS BEEN TESTED AND COMMISSIONED.



LEGEND:

TO BE DEMOLISHED

SOUTHERN LEVEL LOWER PIPING

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

3/8"=1'-0" 24" 12" 0 2' 4' 6'

ISSUED FOR BIDDING

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

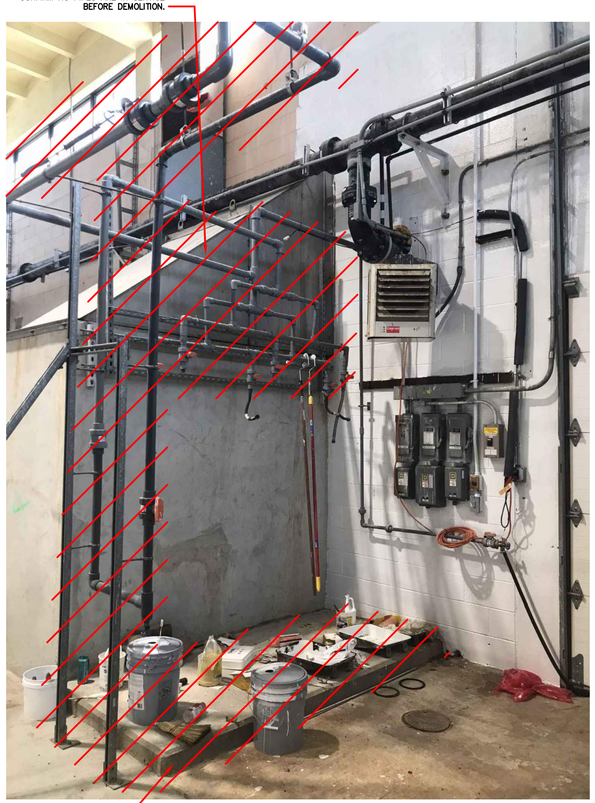
APPROVED DATE
DIRECTOR OF PUBLIC WORKS
APPROVED DATE
ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE
PROJECT MANAGER

SCALE: 3/8"=1'-0"
DRAWN BY: RAD
CHECKED BY: RJA
SHEET NO.: 39 of 191
PROJECT NO.: 50.1890.97-A

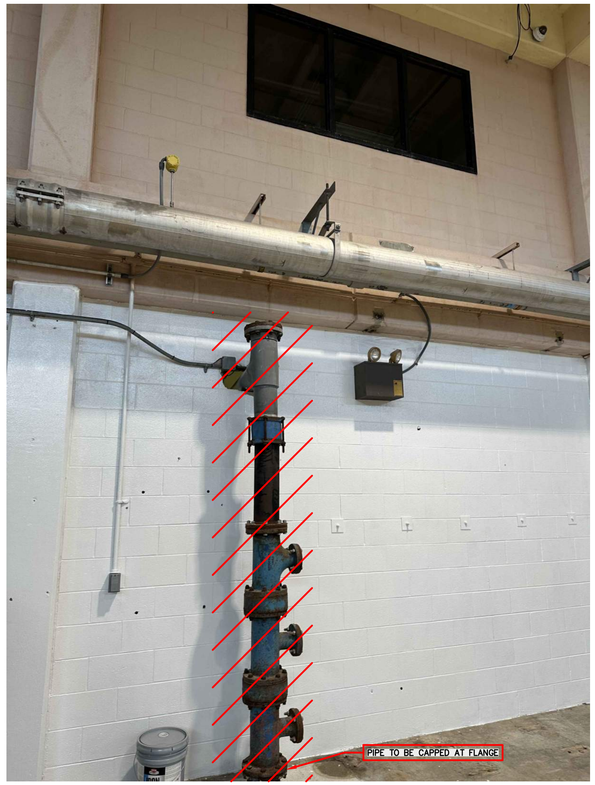
KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SOLIDS HANDLING BUILDING
LOWER LEVEL DEMOLITION PLAN
OCTOBER 2025 D-02

\\adirkk.com\ls\Cloud Projects\2019\19129_Biosolids\ACAD\Contract III\Demolition\D-02 19129.dwg Oct 21, 2025 - 4:18pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:SOLIDS HANDLING BUILDING LOWER LEVEL DEMOLITION PLAN

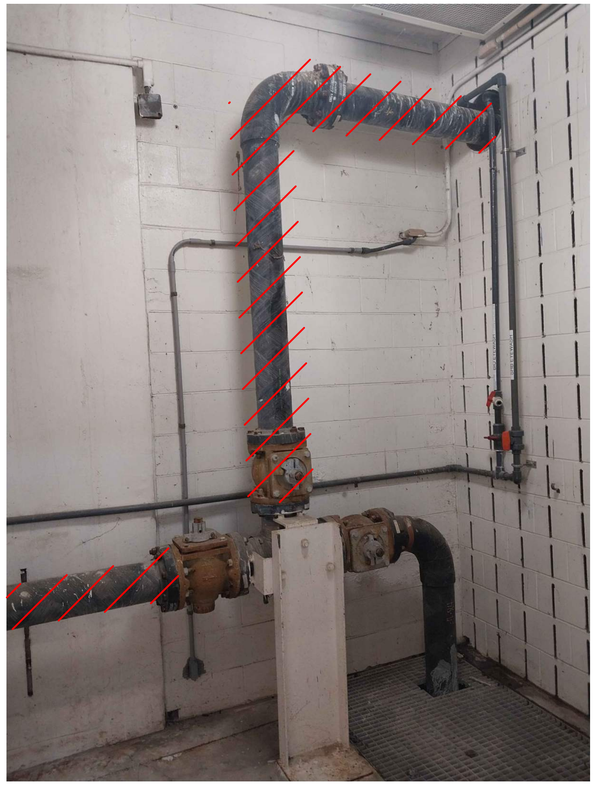
AUGER BOX AND PVC PIPING



PVC PIPING AND PAD



ABANDONED PIPE



SLUDGE PIPING

LEGEND:

TO BE DEMOLISHED

ISSUED FOR BIDDING

RK&K
RUMMEL, KLEPPER & KAHL, LLP
700 EAST PRATT STREET, SUITE 500 • BALTIMORE, MARYLAND 21202 • 410.728.2900

ROBERT J. ANDRYSZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

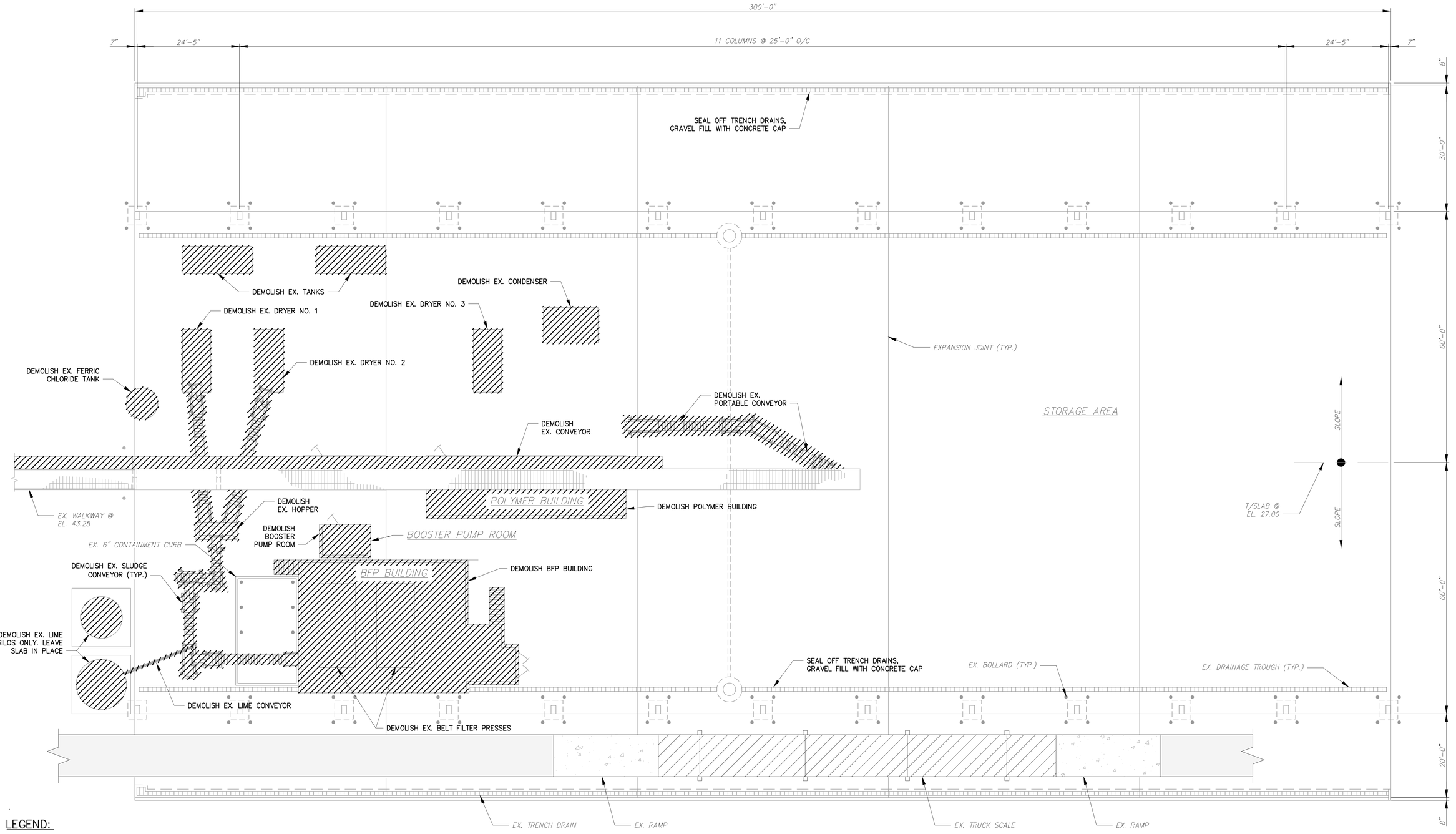
KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

SCALE: NOT TO SCALE
DRAWN BY: RAD
CHECKED BY: RJA
SHEET NO.: 40 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SOLIDS HANDLING BUILDING DEMOLITION PHOTOS
OCTOBER 2025 D-03

\\adcrkk.com\fs\Cloud\Projects\20191\19129_Biosolids\ACAD\Contract III\Demolition\D-03 19129.dwg Oct 21, 2025 - 3:53pm ENVCTB Plot Scale 1=1 Plot By: rdixon Tab:SOLIDS HANDLING BUILDING DEMOLITION PHOTOS



LEGEND:

TO BE DEMOLISHED

NOTE:

1. CONTRACTOR TO TURN OVER ANY EQUIPMENT TO BE DEMOLISHED TO KENT COUNTY RRRF IF INDICATED BY THE RRRF AT THE START OF CONSTRUCTION.

3/32"=1'-0" 8' 4' 0 8' 16' 24'

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ROBERT J. ANDRYSZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
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APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

SCALE: 3/32"=1'-0"
DRAWN BY: RAD
CHECKED BY: RJA
SHEET NO.: 41 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SLUDGE STORAGE PAVILLION
EQUIPMENT DEMOLITION PLAN
OCTOBER 2025 D-04

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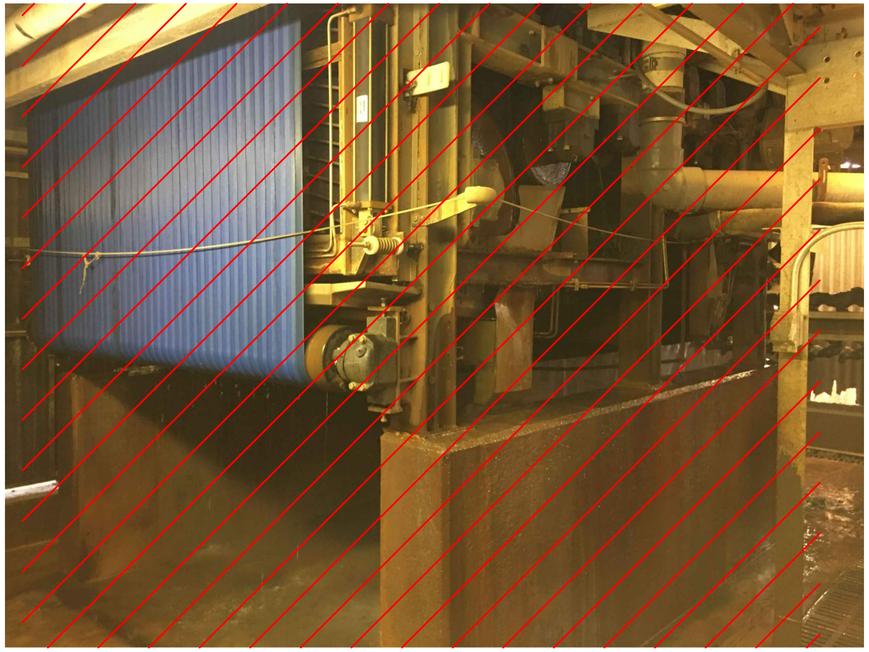
DRYER NO.1 AND NO.2

DRYER NO. 3

SLUDGE CONVEYORS AND BELT FILTER PRESS



BELT FILTER PRESS

LEGEND:

TO BE DEMOLISHED

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ROBERT J. ANDRYSZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: NOT TO SCALE	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	SLUDGE STORAGE PAVILLION EQUIPMENT DEMOLITION PHOTOS
APPROVED DATE		SHEET NO.: 42 of 191	OCTOBER 2025 D-05
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	

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NORTH

SOLIDS HANDLING BUILDING

DEMOLISH EX. CONVEYOR

FOR CONTINUATION SEE SHEET D-04

DEMOLISH EX. 6" SLUDGE PIPE MOUNTED BELOW PIPE BRIDGE.
PIPE BRIDGE TO REMAIN.

CAKE STORAGE PAVILLION

DEMOLISH EX. LIME SILOS ONLY. LEAVE SLAB IN PLACE

LIME SILOS

DEMOLISH EX. LIME SILOS ONLY. LEAVE SLAB IN PLACE

AEROBIC DIGESTER NO. 6

LEGEND:

TO BE DEMOLISHED

¼"=1'-0" 4' 2' 0 4' 8'

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ROBERT J. ANDRYSZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: 1/4"=1'-0"
DRAWN BY: RAD
CHECKED BY: RJA
SHEET NO.: 43 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
PIPE BRIDGE CONVEYOR AND SILOS DEMOLITION
OCTOBER 2025 D-06

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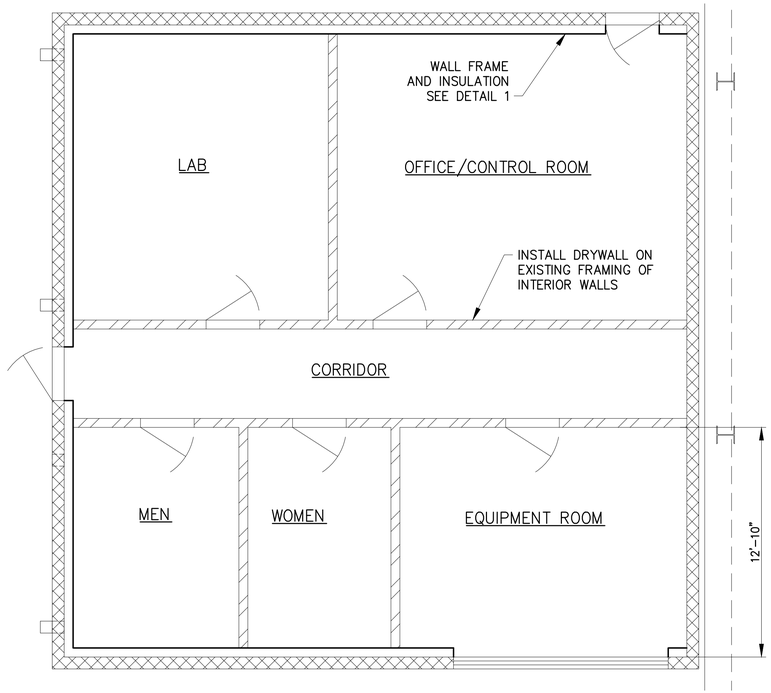
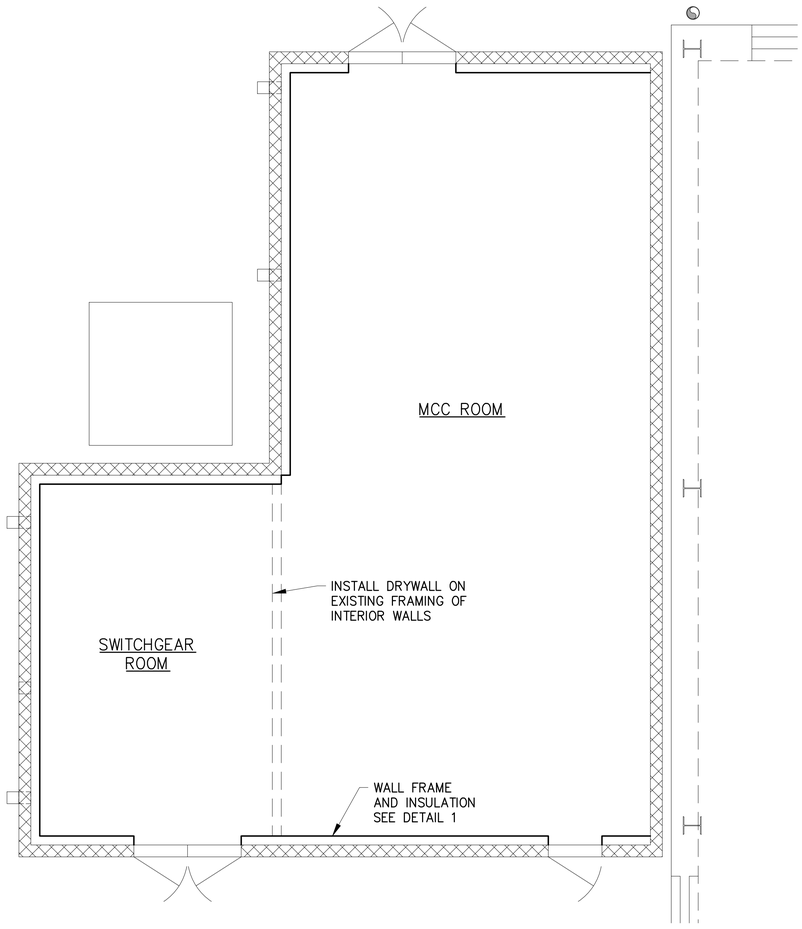


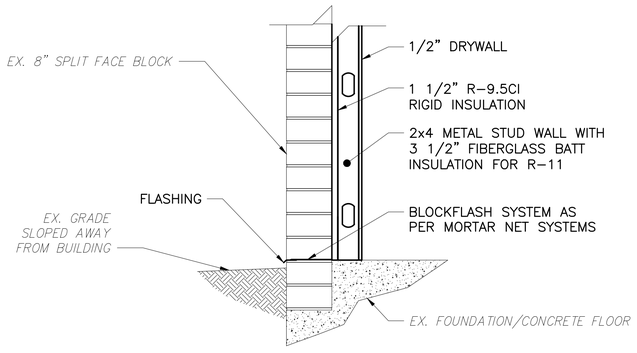
FRAMING PLAN – SERVICE BUILDING

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



FRAMING PLAN – ELECTRICAL BUILDING

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



NOTES:

1. PROVIDE LIQUID APPLIED VAPOR BARRIER ON INTERIOR FACE OF CMU WALL.
2. RIGID FOAM INSULATION BOARD SHALL BE ATTACHED TO THE WALL BY EITHER SPINDLES OR ADHESIVE.
3. PROVIDE WEEPHOLES AS SPECIFIED.
4. ADDITIONAL INSULATION MAY BE ADDED TO WALL CAVITY FOR HIGHER R-VALUES.
5. SEE STRUCTURAL FOR ADDITIONAL DETAILS.

1 DETAIL: 8-INCH SPLIT FACE CMU WALL

SCALE: 1" = 1'-0"

ROOM FINISH SCHEDULE

ROOM NAME	FLOOR	BASE	WALLS	CEILING	REMARKS
DRYER BUILDING ELECTRICAL ROOM	SEALED CONCRETE	---	CMU PAINTED	EXPOSED	
SWITCHGEAR ROOM	SEALED CONCRETE	---	CMU PAINTED	EXPOSED	
CONTROL ROOM	SEALED CONCRETE	---	CMU PAINTED	EXPOSED	
LABORATORY	EPOXY	RUBBER	CMU PAINTED	ACT	
MEN'S ROOM	EPOXY	RUBBER	CMU PAINTED	ACT	
WOMEN'S ROOM	EPOXY	RUBBER	CMU PAINTED	ACT	
EQUIPMENT ROOM	SEALED CONCRETE	---	CMU PAINTED	ACT	
CORRIDOR	EPOXY	RUBBER	CMU PAINTED	ACT	
DRYER ROOM	CONCRETE	---	PEMB STANDARD	EXPOSED	PAINT STRUCTURAL STEEL
DEWATERING ROOM	CONCRETE	---	PEMB STANDARD	EXPOSED	PAINT STRUCTURAL STEEL

ACT = ACOUSTICAL CEILING TILE

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

ISSUED FOR BIDDING

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ROBERT J. ANDRUSIAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE
DIRECTOR OF PUBLIC WORKS

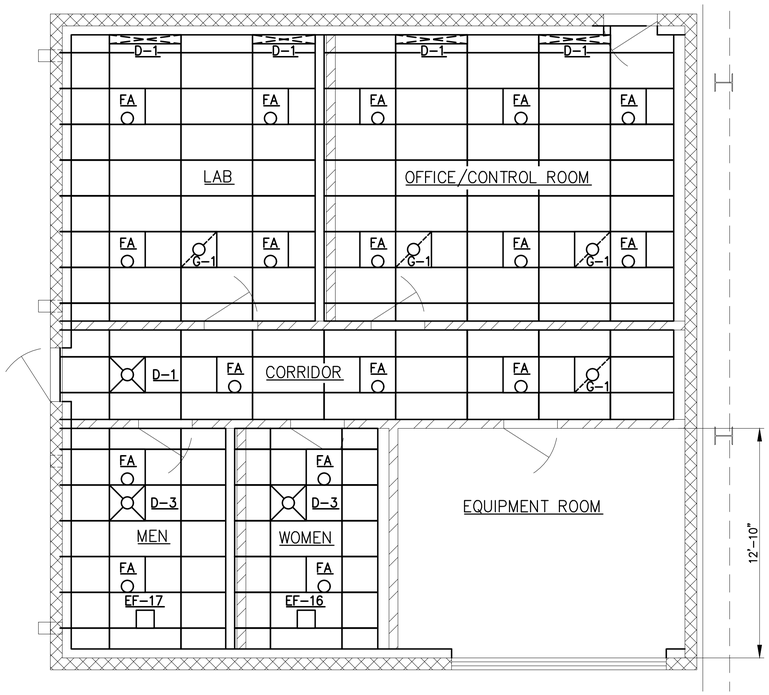
APPROVED DATE
PROJECT MANAGER

APPROVED DATE
ASSISTANT DIRECTOR OF ENGINEERING

SCALE: AS SHOWN
DRAWN BY: RAD
CHECKED BY: MLT
SHEET NO.: 44 of 191
PROJECT NO.: 50.1890.97-A

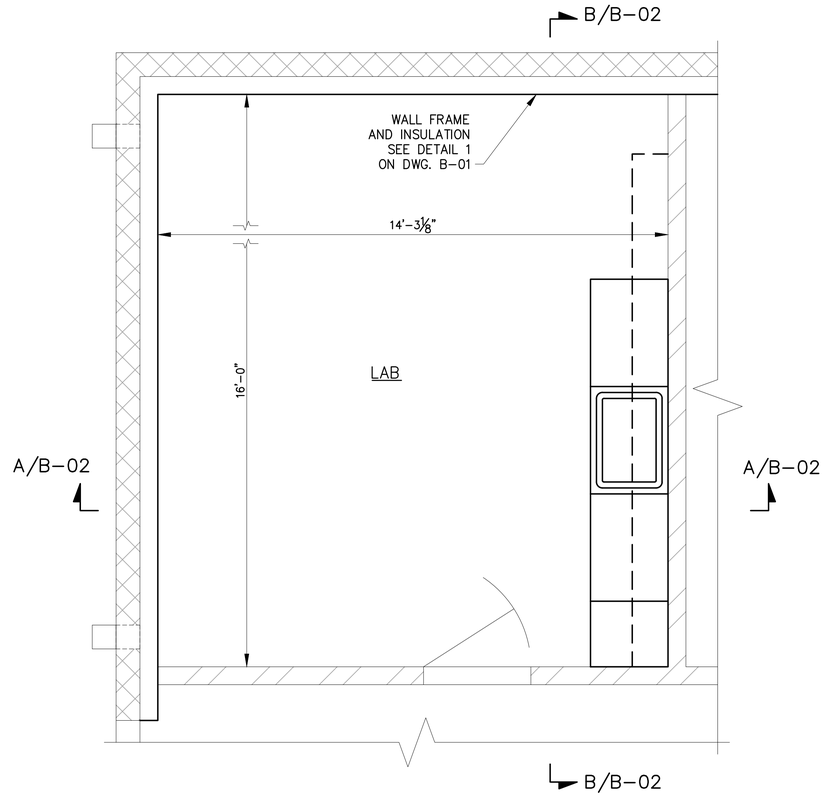
KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SERVICE BUILDING FRAMING PLANS
OCTOBER 2025 B-01

\\rkk.com\VA\Cloud\Projects\2019\19129_Biosolids\ACAD\Contract III\B-01 19129.dwg Oct 22, 2025 - 1:50pm ENVCTB Plot Scale 1=1 Plot By: rdixon Tab:FRAMING PLANS



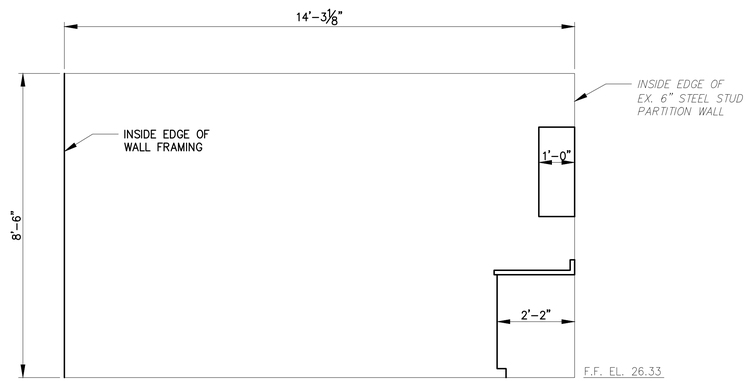
REFLECTED CEILING PLAN – SERVICE BUILDING

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



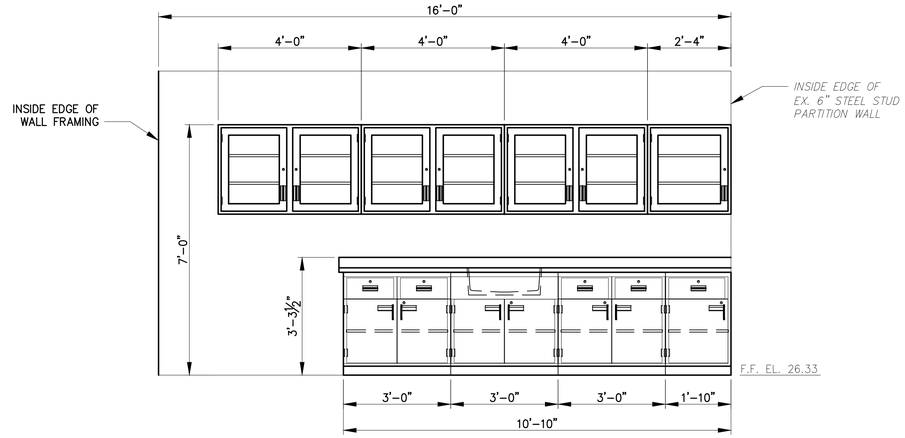
LAB LAYOUT

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



SECTION A/B-02

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



SECTION B/B-02

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

⅛"=1'-0" 4' 2' 0 4' 8'

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ROBERT J. ANDRYSZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: MLT	
APPROVED DATE		SHEET NO.: 45 of 191	REFLECTED CEILING PLAN
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 B-02

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GENERAL

1. ALL ELEVATIONS ARE REFERENCED TO MSL. SEE CIVIL DWG FOR FINISHED FLOOR ELEV. ALL ELEVATIONS SHOWN ON PLANS ARE REFERENCED TO THIS DATUM UNLESS NOTED.
2. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OR START OF CONSTRUCTION.
3. NO STRUCTURAL MEMBER SHALL BE CUT, NOTCHED OR OTHERWISE REDUCED IN STRENGTH WITHOUT THE PRIOR NOTIFICATION OF THE STRUCTURAL ENGINEER.
4. THE GENERAL CONTRACTOR SHALL COORDINATE ALL OTHER DISCIPLINES FOR ANY ITEMS WHICH AFFECT THE STRUCTURAL DRAWINGS.
5. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING, GUY WIRES, ETC., WHERE NECESSARY TO ADEQUATELY RESIST ALL CONSTRUCTION LOADS.

DESIGN CRITERIA

1. STRUCTURAL DESIGN SHALL BE IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE FOLLOWING CODE, STANDARDS AND SPECIFICATIONS:
   a. INTERNATIONAL BUILDING CODE (IBC) 2021
   b. ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
   c. ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
   d. ACI 350-06 CODE REQUIREMENTS FOR ENVIRONMENTAL CONCRETE STRUCTURES.
   e. TMS 402/602 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
   f. AISC 360-16 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS.
   g. AWS D1.1 STRUCTURAL WELDING CODE - STEEL.
   h. AA ADM-2015 ALUMINUM DESIGN MANUAL.
2. SUPERIMPOSED DESIGN LOADS:
   a. DEAD LOADS:
      FLOOR: 15 PSF
      ROOF: 15 PSF
   b. LIVE LOADS (MIN):
      ROOFS, NON-REDUCIBLE: 30 PSF
      GRATING: 100 PSF
      FLOOR: 250 PSF
      STAIRS & PLATFORMS: 100 PSF
   c. ASCE 7-16 RISK CATEGORY = III
   d. WIND LOADS:
      ULTIMATE DESIGN SPEED: 125 MPH
      NOMINAL DESIGN SPEED: 98 MPH
      EXPOSURE: C
      EDGE DISTANCE (A): 3.0 FEET
      WIND VELOCITY PRESSURE (C&C)
      ZONE 4: +22.7 PSF / -24.6 PSF
      ZONE 5: +22.7 PSF / -30.3 PSF
      INTERNAL PRESSURE COEFF.: ± 0.18
   e. EARTHQUAKE DESIGN DATA:
      SEISMIC IMPORTANCE FACTOR: IE=1.25
      MAPPED SPECTRAL RESPONSE ACCELERATION: SS=0.119
      MAPPED SPECTRAL RESPONSE ACCELERATION: S1=0.04
      DESIGN SPECTRAL RESPONSE ACCELERATION: SDS=0.127
      DESIGN SPECTRAL RESPONSE ACCELERATION: SD1=0.064
      SOIL SITE CLASSIFICATION: TYPE D
      SEISMIC DESIGN CATEGORY: B
      RESPONSE COEFFICIENT:
      FIRE PUMP BUIIDING BY MANUFACTURER
   f. SNOW LOADS:
      GROUND SNOW LOAD (PG): 25 PSF
      FLAT ROOF SNOW LOAD (PF): 17.3 PSF
      SNOW EXPOSURE FACTOR (CE): 0.9
      SNOW THERMAL FACTOR (CT): 1.0
      SNOW LOAD IMPORTANCE FACTOR (IS): 1.10
3. FOUNDATION: SPREAD & WALL FOOTINGS
   a. ASSUMED ALLOWABLE BEARING PRESSURE: 2,000 PSF (CONTRACTOR TO CONFIRM ASSUMPTION)
   b. ASSUMED INTERNAL ANGLE OF FRICTION: 30 DEGREES
   c. ASSUMED UNIT WEIGHT OF SOIL (ABOVE WATER TABLE): 125 PCF
   d. ASSUMED UNIT WEIGHT OF SOIL (BELOW WATER TABLE): 75 PCF
   e. ASSUMED AT REST EARTH PRESSURE COEFFICIENT: KO=0.50
   f. REFER TO GEOTECHNICAL REPORT PREPARED BY RKK AND DATED JUNE 7, 2024 FOR EARTHWORK REQUIREMENTS

CONCRETE

1. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE, HAVING A DESIGN COMPRESSIVE STRENGTH AT 28 DAYS AS FOLLOWS:
   a. FOOTINGS, PILE CAPS, GRADE BEAMS AND PIERS 4,500 PSI, NW
   b. SLAB ON GRADE 4,500 PSI, NW
2. NO CONCRETE SHALL BE PLACED UNTIL CONCRETE DESIGN MIXES HAVE BEEN SUBMITTED FOR EACH CLASS OF CONCRETE AND HAVE BEEN REVIEWED BY THE ENGINEER.
3. USE A WATER REDUCING ADMIXTURE IN ALL CONCRETE.
4. SLUMP SHALL BE AS REQUIRED BY ACI 302 - LATEST EDITION.
5. AIR ENTRAIN ALL FOUNDATIONS AND CONCRETE EXPOSED TO WEATHER 5% ±1%.
6. EXCAVATIONS SHALL BE KEPT FREE OF WATER. NO CONCRETE SHALL BE PLACED IN WATER.
7. ALL SLABS ON GRADE SHALL HAVE THICKENINGS, DEPRESSIONS, OPENINGS, ETC. AS SHOWN OR AS REQUIRED BY VARIOUS TRADES.
8. CHAMFER ALL EDGES OF BEAMS, COLUMNS, HAUNCHES, WALLS EQUIPMENT PADS AND SLABS EXPOSED TO VIEW 3/4" UNLESS OTHERWISE NOTED.
9. SLAB ON GRADE CONTRACTION JOINTS SHALL OCCUR AT ALL COLUMNS AND SHALL BE NO GREATER THAN 15 FEET APART FOR SLABS LESS THAN 8".
10. REINFORCING STEEL SHALL CONFORM TO ASTM A-615 GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064.
11. TERMINATE ALL DISCONTINUED TOP BARS WITH 90 DEGREE STANDARD HOOK UNLESS OTHERWISE NOTED.
12. PROVIDE THE FOLLOWING MINIMUM CONCRETE COVER UNLESS NOTED OTHERWISE:
   a. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
   b. CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND
      #5 BARS AND SMALLER 1 ½"
      #6 BARS AND LARGER 2"
   c. NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND
      SLAB, JOISTS, AND WALLS ¾"
      BEAMS, COLUMNS, PEDESTALS, AND TENSION TIES 1 ½"
   d. ENVIRONMENTAL CONCRETE STRUCTURES 3"
13. CONTINUOUS BOTTOM BARS SHALL BE SPLICED AT CENTERLINE OF SUPPORTS. CONTINUOUS TOP BARS SHALL BE SPLICED AT MIDSPAN.
14. AT CHANGES IN DIRECTION OF CONCRETE WALLS, STRIP FOOTINGS, BEAMS, TIE-BEAMS AND BOND BEAMS, PROVIDE CORNER BARS AT SAME SIZE AND SPACING AS HORIZONTAL STEEL.
15. REINFORCING BAR SUPPORTS AND SPACERS SHALL CONFORM TO ACI 315-(LATEST EDITION) DETAILING MANUAL.
16. SHOP DRAWINGS SHOWING ALL NECESSARY SECTIONS AND DETAILS FOR THE PROPER POSITIONING OF ALL REINFORCING STEEL SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW BEFORE FABRICATION OR PLACEMENT OF THE STEEL.
17. ALL WELDED WIRE FABRIC SHALL BE SPLICED SO THAT THE OVERLAP OF THE OUTERMOST CROSS WIRES OF EACH ADJOINING SHEET IS NOT LESS THAN THE SPACING OF THE CROSS WIRES PLUS TWO INCHES, UNLESS NOTED OTHERWISE. SEE SPECIFICATIONS FOR VAPOR AND WATERPROOFING MEMBRANES.

FOUNDATION

1. ALL FOUNDATIONS SHALL BEAR ON 6" OF #57 STONE OVER UNDISTURBED SOIL WITH AN ALLOWABLE BEARING CAPACITY SPECIFIED.
2. CONCRETE SHALL NOT BE POURED ON FROZEN GROUND.
3. PROVIDE SHEETING AS REQUIRED TO SUPPORT LATERAL LOADS DURING EXCAVATION. SEE GEOTECHNICAL REPORT FOR SOIL PROPERTIES.
4. FILL ALL VOIDS AND REPLACE DISTURBED SOIL WITH LEAN CONCRETE.
5. DO NOT BACKFILL AGAINST WALLS UNTIL TOP OF WALL IS EITHER TEMPORARILY BRACED OR SUPPORTING SLABS ARE IN PLACE AND HAVE OBTAINED REQUIRED STRENGTH. WHERE BACKFILL IS REQUIRED ON BOTH SIDES OF WALL, BACKFILL BOTH SIDES SIMULTANEOUSLY.
6. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS
2. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
   a. W-SHAPES: A992, FY = 50 KSI.
   b. CHANNELS, ANGLES, BARS & PLATES: A36, FY = 36 KSI.
   c. SQUARE AND RECTANGULAR HSS: A500, GRADE C, FY = 50 KSI.
   d. ROUND HSS: A500, GRADE C, FY = 46 KSI
   e. ROUND PIPE: A53, GRADE B, FY = 35 KSI.
3. BOLTS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
   a. HIGH STRENGTH BOLTS: ASTM F3125 GRADE 325
   b. STAINLESS STEEL HIGH STRENGTH BOLTS: (SS) F593
   c. ANCHOR BOLTS: ASTM F1554 GRADE 36
4. ALL BOLTS SHALL BE 3/4" DIAMETER, OPEN HOLES 13/16" DIAMETER, UNLESS OTHERWISE SHOWN OR NOTED.
5. WELDING SHALL BE IN ACCORDANCE WITH AWS STRUCTURAL WELDING CODE (AWS D1.1) AND SHALL BE PERFORMED BY CERTIFIED WELDERS. ALL WELDS SHALL BE MADE WITH AWS A5.1 E-70XX ELECTRODES.
6. ALL SHOP CONNECTIONS SHALL BE HIGH STRENGTH BOLTED OR WELDED.
7. ALL FIELD CONNECTIONS SHALL BE HIGH STRENGTH BOLTED EXCEPT WHERE DETAILS INDICATE WELDING.
8. NO PENETRATIONS ARE PERMITTED THROUGH STRUCTURAL STEEL MEMBERS UNLESS INDICATED ON STRUCTURAL DRAWINGS OR APPROVED BY ARCHITECT/ENGINEER.
9. APPROVAL OF THE ARCHITECT/ENGINEER SHALL BE MANDATORY FOR THE USE OF CUTTING TORCH IN THE FIELD.
10. ALL GROUT UNDER STEEL PLATES SHALL BE NON-SHRINK "PRE-MIX" TYPE AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI.
11. FOR ALL MISCELLANEOUS STEEL CONSTRUCTION NOT SHOWN ON STRUCTURAL DRAWINGS, SEE THE ARCHITECTURAL AND MECHANICAL DRAWINGS.
12. ALL STEEL & CONNECTIONS EXPOSED TO WEATHER SHALL BE HOT-DIPPED GALVANIZED ACCORDING TO ASTM A123.
13. ALL STEEL DESIGNATED AS "STAINLESS STEEL" SHALL BE IN ACCORDANCE WITH ASTM A276, TYPE 304.
14. REFER TO SPECIFICATIONS FOR PAINTING AND COATING REQUIREMENTS.
15. STEEL CONNECTIONS NOT DETAILED ON THE DRAWINGS SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER WORKING FOR THE FABRICATOR WHO SHALL SUBMIT CALCULATIONS USING LRFD LOADS AND PROCEDURES. BEAM CONNECTIONS SHALL DEVELOP THE FACTORED END REACTIONS LISTED BELOW UNLESS NOTED OTHERWISE ON PLANS. CONNECTIONS SHALL BE DESIGNED FOR SHEAR AND ECCENTRICITY CONSIDERING THAT THE CONNECTION IS AN EXTENSION OF THE BEAM OR GIRDER AND TAKING INTO ACCOUNT THE EFFECTS OF COPES AND REDUCED SECTIONS.
   W8, W10 15 KIPS
   W12 20 KIPS
   W14 25 KIPS
   W16 30 KIPS
   W18 35 KIPS
   W21 40 KIPS
   W24 50 KIPS

ALUMINUM STRUCTURAL SHAPES

1. ALUMINUM STRUCTURAL SHAPES SHALL BE ASTM B-308, 6061-T6.
2. ALLOWABLE TOLERANCES FOR MILLED ALUMINUM STANDARD STRUCTURAL SHAPES SHALL BE IN ACCORDANCE WITH ANSI H35.2. COMPLY WITH THE ALUMINUM DESIGN MANUAL (ADM-1) LATEST EDITION.
3. ALL RECTANGULAR CUTOUTS IN GRATING SHALL BE MADE TO THE NEXT BEARING BAR BEYOND THE PENETRATION WITH A CLEARANCE NOT TO EXCEED BEARING BAR SPACING.
4. USE GRATING CLAMPS TO SECURE GRATING TO SUPPORTING MEMBERS. GRATING CLAMPS TO BE A TYPE TO ALLOW FOR EASY REMOVAL OF GRATING.
5. ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL BE GIVEN A HEAVY COAT OF ALKALI RESISTANT BITUMINOUS PAINT OR OTHER COATING PROVIDING EQUIVALENT PROTECTION BEFORE INSTALLATION.
6. CONTRACTOR IS RESPONSIBLE FOR DESIGN OF ALL ALUMINUM STRUCTURES, INCLUDING HANDRAILS, WALKWAYS, GRATING AND STAIRS. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED PLANS. DESIGN SHALL BE IN ACCORDANCE WITH IBC.
7. ALUMINUM PLANK SHALL BE DIAMOND BACK PLANK BY MCNICHOLS OR APPROVED EQUAL. PLANKS SHALL BE 12" WIDE WITH A CAPACITY OF 150 PSF.

DELEGATED DESIGN

1. THE CONTRACTOR IS RESPONSIBLE FOR THE ENGINEERING OF THE FOLLOWING DELEGATED DESIGN ITEMS:
   a. HANDRAILS
   b. GRATING
   c. METAL STAIRS
   d. FIRE PUMP BUILDING
   e. STEEL CONNECTION DESIGN
   f. FORMWORK
   g. SHEETING & SHORING
2. DELEGATED DESIGN ITEMS SHALL BE DESIGNED TO ALL APPLICABLE BUILDING CODE STANDARDS INCLUDING STATE AND LOCAL CODES.
3. SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR THESE ITEMS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF DELAWARE.

STEEL JOISTS

1. OPEN WEB STEEL JOISTS SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE STEEL JOIST INSTITUTE STANDARD SPECIFICATIONS AND CODE OF STANDARD PRACTICE AND SHALL BE FABRICATED BY A SJI MEMBER COMPANY.
2. THE ENDS OF STEEL JOISTS SHALL EXTEND A MINIMUM DISTANCE OF 2-1/2 INCHES OVER STEEL SUPPORT AND 4 INCHES OVER ALL OTHER SUPPORTS. FASTEN ENDS BY BOLTING OR WELDING.
3. PROVIDE AND INSTALL HORIZONTAL AND/OR DIAGONAL BRIDGING AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH SJI'S RECOMMENDATIONS. ANCHORS AT EACH LINE OF BRIDGING SHALL BE PROVIDED. BRIDGING SHALL BE WELDED TO JOISTS AND BEAMS AS INDICATED. END BAYS OF EACH JOIST RUN SHALL HAVE BOTH HORIZONTAL AND DIAGONAL BRIDGING UNLESS NOTED OTHERWISE.
4. ALL BRIDGING SHALL BE IN PLACE AND ANCHORED BEFORE DECK INSTALLATION.
5. NO CONSTRUCTION LOADS SHALL BE PLACED ON THE JOISTS BEFORE THEY ARE PERMANENTLY FASTENED TO SUPPORTS AND ALL BRIDGING AND ANCHORS ARE COMPLETELY INSTALLED. ALL STRUT JOISTS CONNECTIONS (SHOWN AS S.J. ON PLANS) SHALL BE INSTALLED AFTER THE INITIAL BUILDING DEAD LOADS (SUCH AS ROOFING OR CONCRETE FLOORS) HAVE BEEN PLACED.
6. STEEL JOISTS SHALL BE INSPECTED IN THE FIELD BY AN INDEPENDENT TESTING AGENCY APPROVED BY THE ARCHITECT AND PAID FOR BY THE CONTRACTOR.
7. SHOP DRAWINGS SHOWING ALL OF THE SECTIONS AND DETAILS NECESSARY FOR THE PROPER PLACEMENT AND CONNECTION OF ALL STEEL JOISTS SHALL BE SUBMITTED TO THE ARCHITECT /ENGINEER FOR REVIEW AND COMMENT PRIOR TO FABRICATION AND ERECTION.
8. DESIGN JOISTS UNDER THE DIRECT SUPERVISION OF AN ENGINEER REGISTERED IN THE PROJECT'S JURISDICTION FOR LOADING REQUIRED BY THESE DOCUMENTS AND APPLICABLE CODES. SUBMIT CALCULATIONS AND SHOP DRAWINGS BEARING ENGINEER'S SEAL AND SIGNATURE.
9. FOR ROOF JOISTS RESISTING NET WIND UPLIFT, PROVIDE BRIDGING OF BOTTOM AT THE FIRST PANEL POINT FROM SUPPORTS. PROVIDE ADDITIONAL BRIDGING AS REQUIRED BY THE JOIST MANUFACTURER.
10. TOP AND BOTTOM CHORDS OF ALL JOISTS SHALL BE DESIGNED FOR LOCALIZED BENDING DUE TO A CONCENTRATED LOAD OF 200 POUNDS AT ANY LOCATION BETWEEN PANEL POINTS OR A UNIFORM LIVE LOAD OF 25 POUNDS PER LINEAR FOOT BETWEEN PANEL POINTS WITHOUT JOIST REINFORCING.
11. SUPPORT ROOF TOP UNITS AND OTHER SUSPENDED EQUIPMENT AND PIPING DIRECTLY FROM JOIST PANEL POINTS UNLESS TOP OR BOTTOM CHORD IS SPECIFICALLY DESIGNED FOR INTER PANEL LOADING OR ADDITIONAL REINFORCEMENT IS PROVIDED.

SUBMISSIONS AND SHOP DRAWINGS

1. SUBMIT SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS SHOWN IN THE CONTRACT DOCUMENTS. SEE SPECIFICATIONS FOR REQUIRED SUBMITTALS.
2. BEFORE SUBMISSION OF SHOP DRAWINGS, THE CONTRACTOR SHALL HAVE DETERMINED AND VERIFIED ALL QUANTITIES, DIMENSIONS, SPECIFIED PERFORMANCE CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS AND SIMILAR DATA AND SHALL HAVE COORDINATED EACH SHOP DRAWING WITH OTHER SHOP DRAWINGS AND THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
3. PRIOR TO SUBMISSIONS, THE CONTRACTOR SHALL STAMP OR PROVIDE A SIMILAR WRITTEN INDICATION THAT THE CONTRACTOR HAS REVIEWED THE SUBMISSION AND IS SATISFIED THE CONTENTS ARE IN COMPLIANCE WITH THE CONTRACT DRAWINGS.
4. REPRINTS OF THE CONTRACT DRAWINGS WILL NOT BE ACCEPTED.
5. NO DIMENSIONAL INFORMATION MAY BE OBTAINED BY DIRECT SCALING OF THE DRAWINGS.

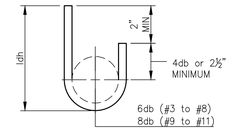
SPECIAL INSPECTION

1. OWNER SHALL ENGAGE AN INDEPENDENT SPECIAL INSPECTION AGENCY. CONTRACTOR SHALL NOTIFY INSPECTOR OF CONSTRUCTION PROGRESS AND PROVIDE ACCESS TO THE SITE AND WORK TO COMPLETE INSPECTIONS.
2. INSPECTION SHALL BE ACCORDING TO THE FOLLOWING IBC 2018 SECTIONS:
   a. SPECIAL INSPECTIONS 1704.2
   b. STEEL CONSTRUCTION 1705.2
   c. CONCRETE CONSTRUCTION 1705.3
   d. MASONRY CONSTRUCTION 1705.4
   e. WOOD CONSTRUCTION 1705.5
   f. SOILS 1705.6

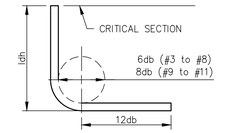
ABBREVIATIONS

∠	ANGLE
@	AT
℄	CENTERLINE
Ø	DIAMETER
℔	PLATE
ADD'L	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
ALUM	ALUMINUM
ARCH	ARCHITECTURAL
BOT	BOTTOM
BRG	BEARING
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CNTR JT	CONTRACTION JOINT
CSTR JT	CONSTRUCTION JOINT
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTINUOUS
COORD	COORDINATE
DIA	DIAMETER
DWG(S)	DRAWING(S)
EA	EACH
EE	EACH END
EF	EACH FACE
EL / ELEV	ELEVATION
EMBED	EMBED(MENT)
EQ	EQUAL
EX	EXISTING
EW	EACH WAY
EXP	EXPANSION
FF	FINISHED FLOOR
FTG	FOOTING
FV	FIELD VERIFY
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL SECTION
JT	JOINT
KSI	KIPS/SQUARE INCH
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
MANUF	MANUFACTURER
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
MISC	MISCELLANEOUS
NO.	NUMBER
OC	ON CENTER
PCF	POUNDS/CUBIC FOOT
PSF	POUNDS/SQUARE FOOT
PSI	POUNDS/SQUARE INCH
REINF	REINFORCEMENT
RTU	ROOF TOP UNIT
SCH	SCHEDULE
SF	SQUARE FOOT
SIM	SIMILAR
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
T&B	TOP & BOTTOM
TOS	TOP OF STEEL
TS	TUBE STEEL
TRANSV	TRANSVERSE
TYP	TYPICAL
T/.....	TOP OF .....
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/IN	WITHIN
W/O	WITHOUT
WWF	WELDED WIRE FABRIC

BAR SIZE	f'c = 3000 PSI			f'c = 4500 PSI			f'c = 5000 PSI		
	l_d	l_{dh}	LAP SPLICE	l_d	l_{dh}	LAP SPLICE	l_d	l_{dh}	LAP SPLICE
#3	16"	8"	21"	14"	7"	18"	13"	6"	17"
#4	22"	11"	29"	19"	10"	25"	17"	9"	22"
#5	27"	14"	36"	24"	12"	31"	21"	11"	28"
#6	33"	16"	43"	29"	14"	37"	26"	13"	33"
#7	48"	19"	62"	42"	17"	54"	37"	15"	48"
#8	55"	22"	71"	47"	19"	62"	42"	17"	55"
#9	62"	25"	80"	53"	21"	69"	48"	19"	62"
#10	69"	27"	89"	59"	24"	77"	53"	21"	69"
#11	75"	30"	98"	65"	26"	85"	58"	23"	76"



STANDARD 180° END HOOK



STANDARD 90° END HOOK

NOTES FOR DEVELOPMENT LENGTH OF STRAIGHT BARS (ld) AND LAP SPLICE LENGTHS:
1. MULTIPLY VALUES IN TABLE BY 1.33 FOR LIGHTWEIGHT CONCRETE.
2. MULTIPLY VALUES IN TABLE BY 1.5 FOR EPOXY COATED REINFORCEMENT.
3. MULTIPLY VALUES IN TABLE BY 1.3 FOR TOP BARS (BARS CAST WITH MORE THAN 12" OF CONCRETE BELOW THEM).
4. FOR BARS WITHOUT STIRRUPS, SPACING SHALL NOT BE LESS THAN 2*db AND COVER SHALL NOT BE LESS THAN db.
5. FOR BARS WITH STIRRUPS, SPACING SHALL NOT BE LESS THAN db AND COVER SHALL NOT BE LESS THAN db.
6. SPLICE FOR GRADE BEAM BOTTOM BARS SHALL OCCUR OVER PILE CAPS AND TOP BARS SHALL OCCUR AT MIDSPAN.

NOTES FOR DEVELOPMENT LENGTH OF BARS WITH STANDARD HOOKS (ldh):
1. MULTIPLY VALUES IN TABLE BY 0.8 FOR BARS WITH STIRRUPS MEETING ACI REQUIREMENTS.
2. MULTIPLY VALUES IN TABLE BY 0.7 FOR BARS WITH COVER MEETING ACI REQUIREMENTS.

1 / S-1 REINFORCEMENT LAP SPLICE AND STANDARD HOOK LENGTHS
SCALE: NONE

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ALBRECHT ENGINEERING INC
3500 BOSTON STREET
SUITE 329
BALTIMORE, MD 21224
410-522-5870

RK&K
RUMMEL, KLEPPER & KAHL, LLP
700 EAST PRATT STREET, SUITE 500 • BALTIMORE, MARYLAND 21202 • 410.728.2900

RACHEL A. CLAGER LICENSE No. 15289 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

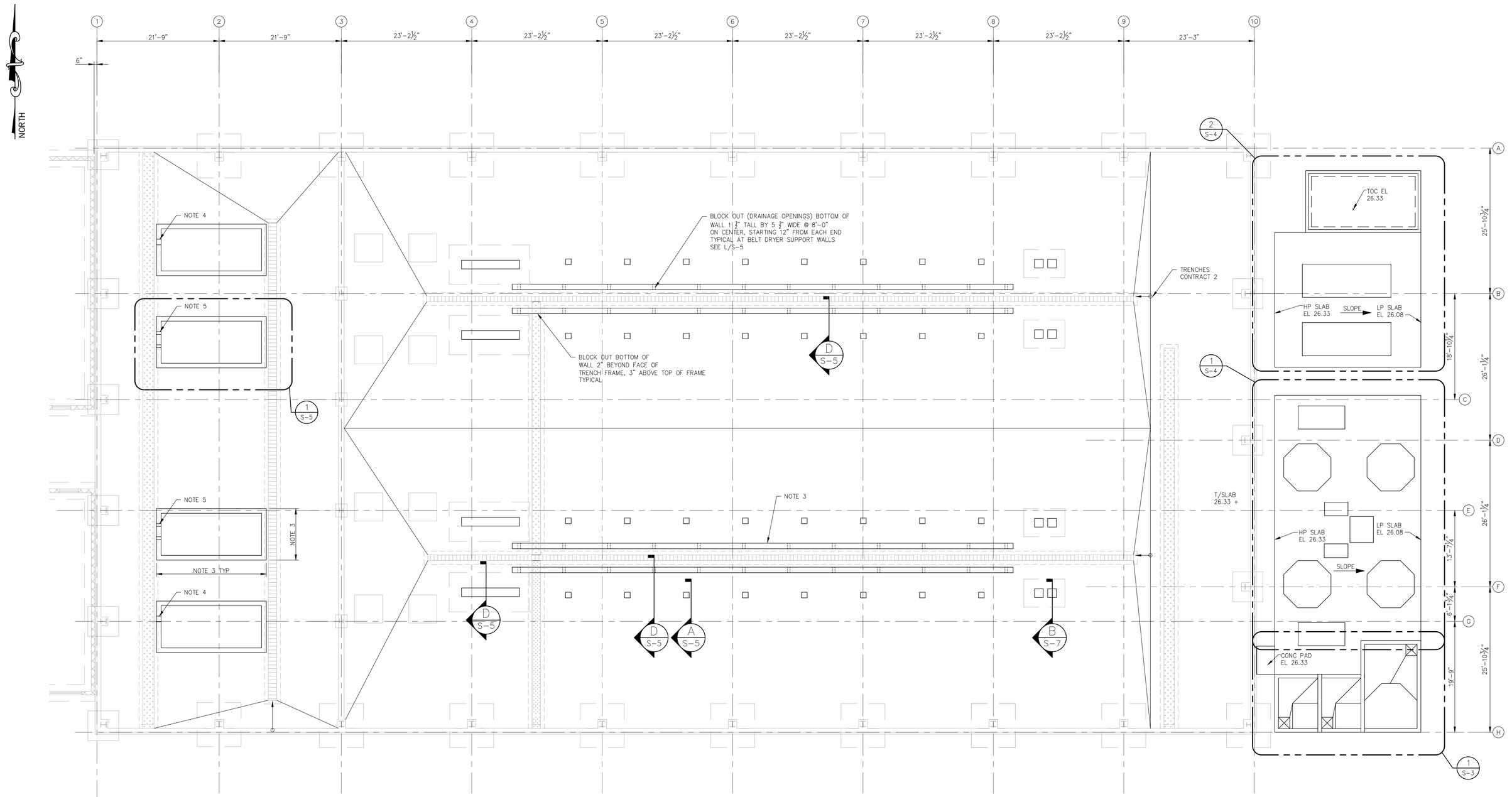
KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE
DIRECTOR OF PUBLIC WORKS
APPROVED DATE
ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE
PROJECT MANAGER

SCALE:
DRAWN BY:
CHECKED BY:
SHEET NO.: 46 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
GENERAL STRUCTURAL NOTES AND ABBREVIATIONS
DATE OCTOBER 2025 S-1

C:\Users\Mike.Pollard\Desktop\Temp\Mike.Pollard_Temp_Plot_Folder_1\Plot By Mike Pollard at 9:06:04 AM, Oct 09, 2025, Tab: S-1



1 S-2 DRYER ROOM EQUIPMENT SUPPORT PLAN

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

NOTE:
1. ALL WORK THESE PLANS IS CONTRACT 3, UNLESS NOTED OTHERWISE.
2. COORDINATE LENGTH AND WIDTH OF BELT FILTER PRESS WALLS WITH EQUIPMENT FURNISHED.
3. COORDINATE LOCATION OF BELT FILTER PRESS WITH EQUIPMENT PROVIDED.
4. INSTALL 12" DIAMETER PIPE THROUGH WALL.
5. INSTALL (2) 6" DIAMETER PIPES THROUGH WALL.
6. CONTRACTOR TO PROVIDE PEDESTALS, WALLS, AND HOUSEKEEPING PADS AS NECESSARY FOR ALL EQUIPMENT.
7. CONTRACTOR TO COORDINATE THE LOCATION OF EQUIPMENT SUPPORTS WITH EQUIPMENT FURNISHED.

CONTRACT 2:
TYPE A HELICAL PILE, INSTALL PLUMB
TYPE A HELICAL PILE, INSTALL 1H:4V
TYPE B HELICAL PILE, INSTALL 1H:3V

SOLID COVER
SLOTTED COVER

ISSUED FOR BIDDING

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3500 BOSTON STREET
SUITE 329
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410-522-5870

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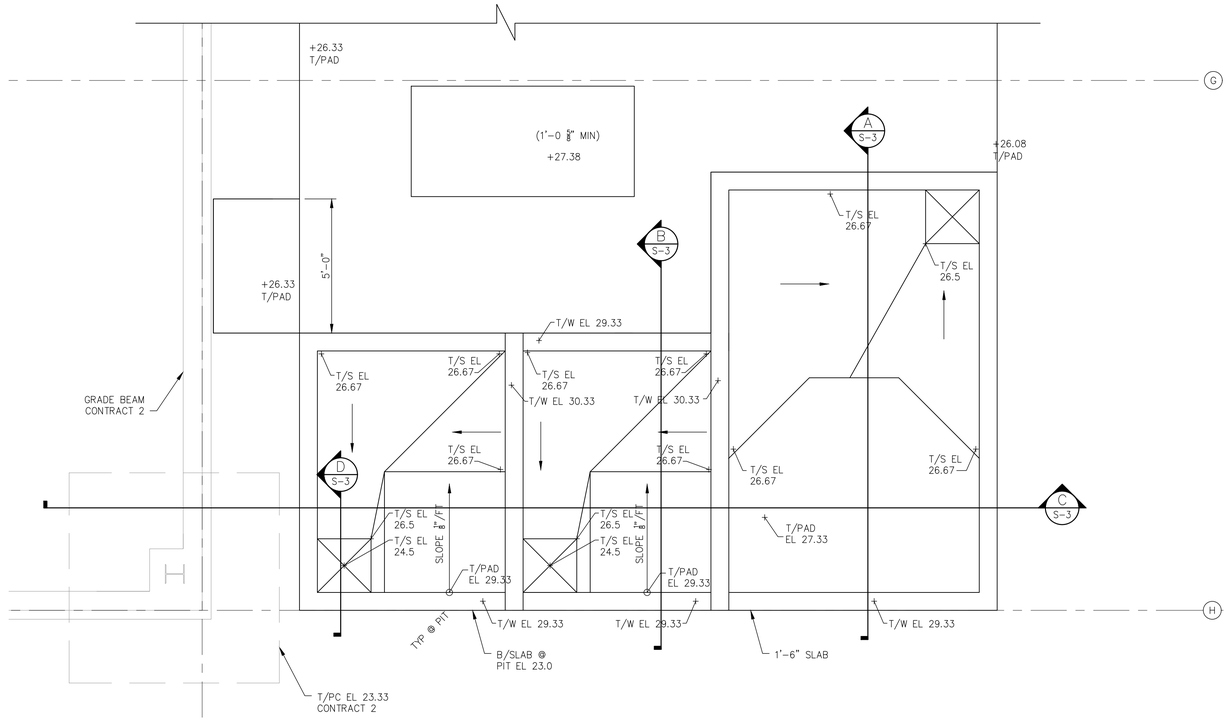
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

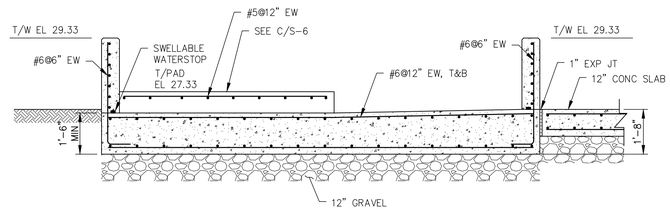
APPROVED DATE	APPROVED DATE	SCALE:	KENT COUNTY RRRF
		DRAWN BY:	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY:	CONTRACT 3
APPROVED DATE		SHEET NO.: 47 of 191	DRYER ROOM FOUNDATION PLAN
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	DATE OCTOBER 2025 S-2



1 S-3 PART PLAN CONTAINMENT AREA FOUNDATION

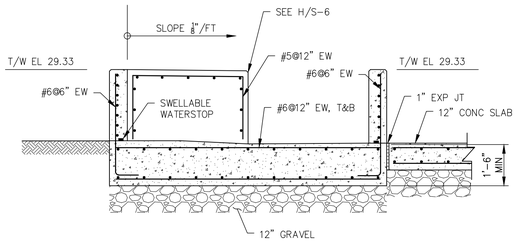
SCALE: 3/8"=1'-0"

NOTE:
1. ALL WORK THESE PLANS IS CONTRACT 3, UNLESS NOTED OTHERWISE.



A S-3 SECTION

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



B S-3 SECTION

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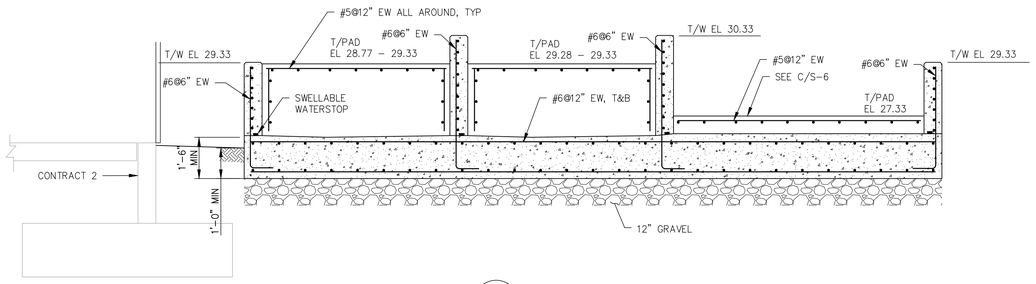
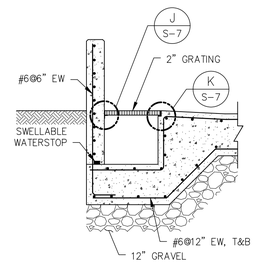


C S-3 SECTION

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



D S-3 SECTION

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

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3500 BOSTON STREET
SUITE 329
BALTIMORE, MD 21224
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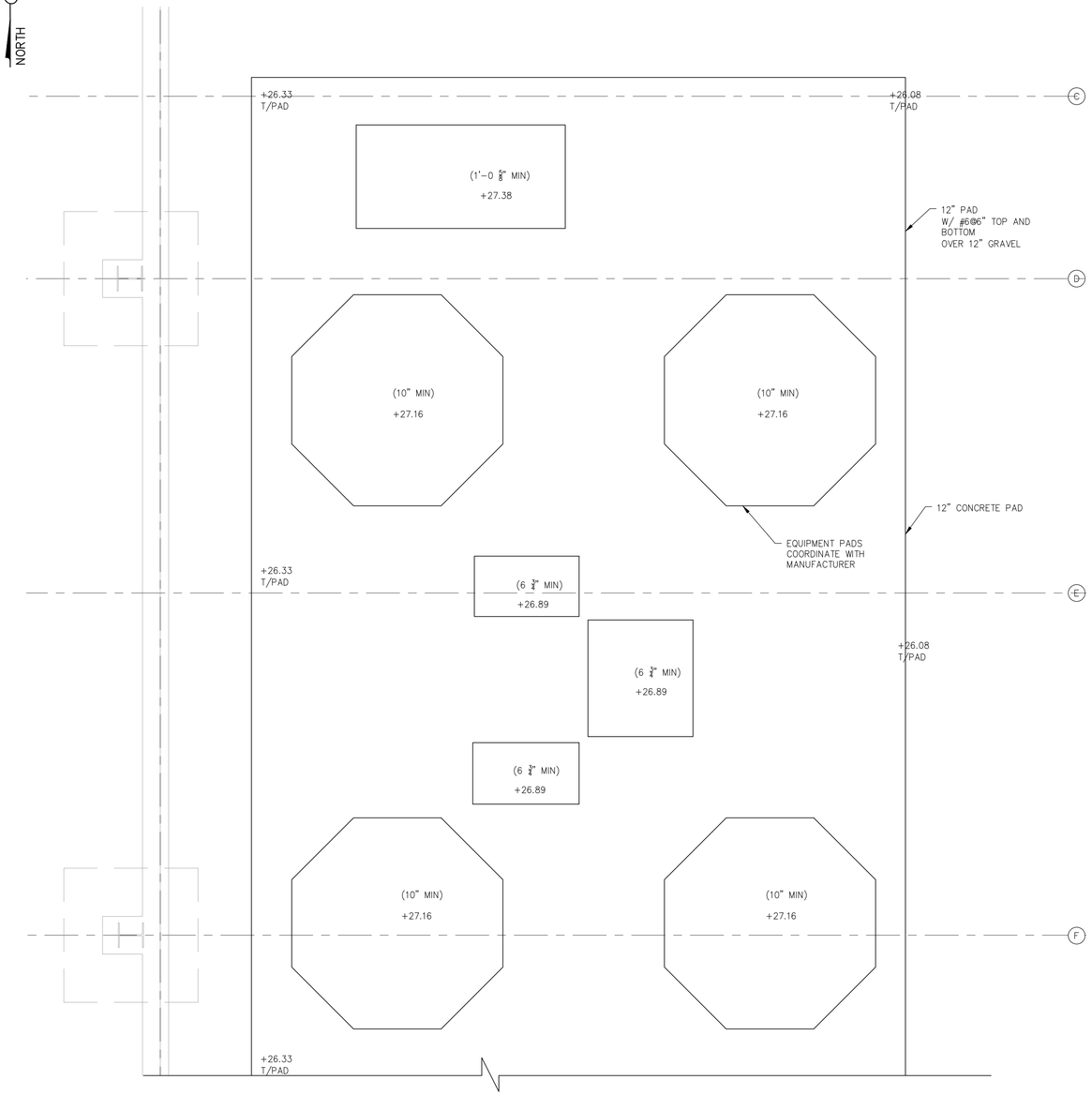
RACHEL A. CLAGER LICENSE No. 16289 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

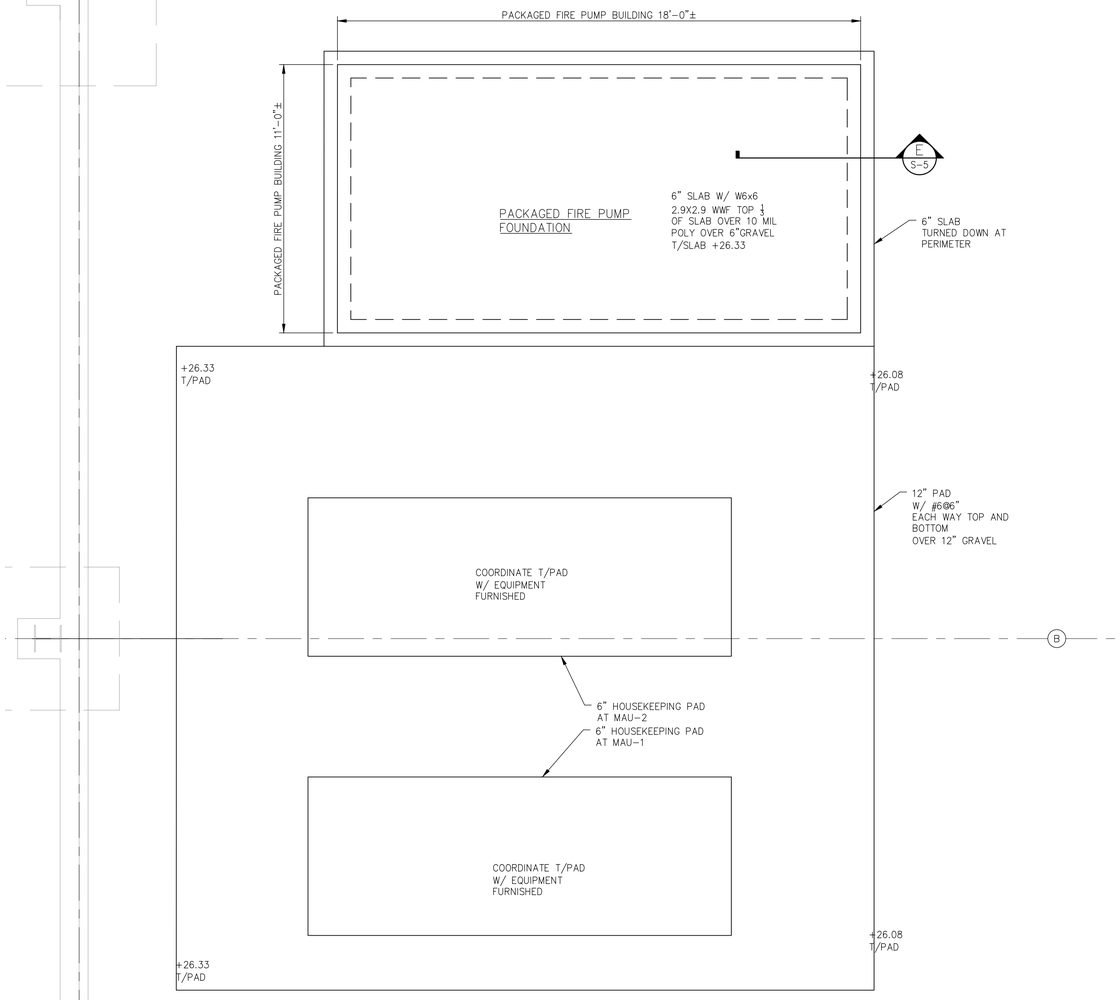
KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE:	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY:	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY:	PART PLAN
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 48of 191	CONTAINMENT AREA FOUNDATION
		PROJECT NO.: 50.1890.97-A	DATE OCTOBER 2025 S-3

NORTH



1 S-4 PART PLAN ODOR CONTROL PAD
SCALE: 3/8"=1'-0"



2 S-4 MAU AND FIRE PUMP CONTROL BUILDING PAD PLAN
SCALE: 3/8"=1'-0"

NOTE: CONTRACTOR TO COORDINATE PLACEMENT OF EQUIPMENT, INCLUDING HVAC AND ODOR CONTROL SYSTEMS, AND ASSOCIATED DUCTWORK, WITH WALL OPENINGS PRIOR TO PLACING CONCRETE.

ISSUED FOR BIDDING

ALBRECHT ENGINEERING INC
3500 BOSTON STREET
SUITE 329
BALTIMORE, MD 21224
410-522-5870

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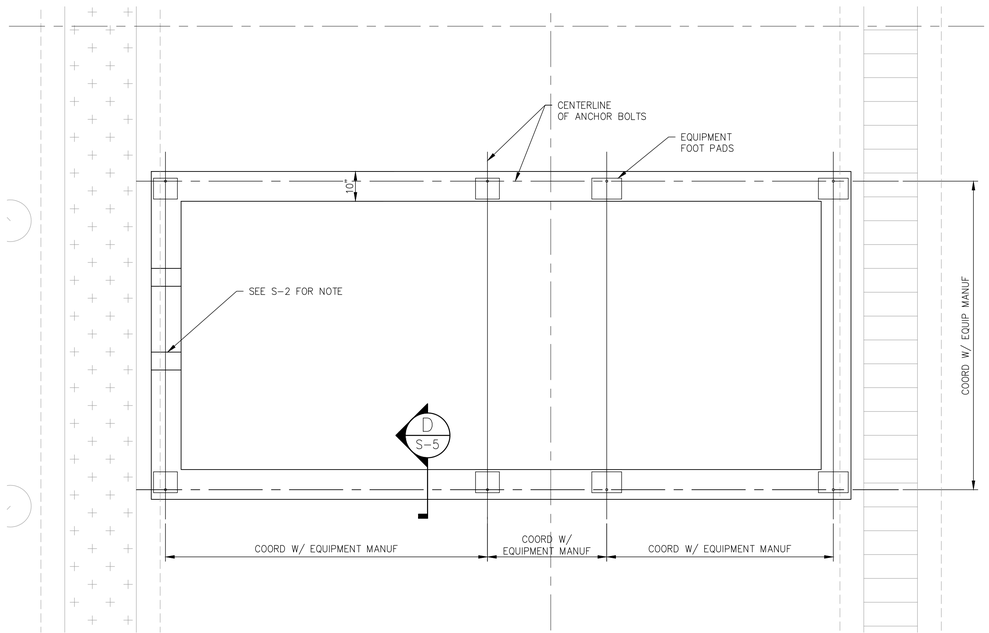
RACHEL A. GAGE LICENSE No. 16289 PROFESSIONAL ENGINEER DELAWARE

REVISIONS			
NO.	DESCRIPTION	BY	DATE

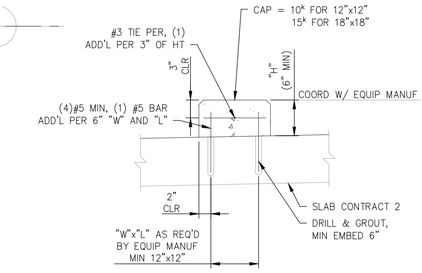
KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: DRAWN BY: CHECKED BY:
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 49 of 191 PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
PART PLAN ODOR CONTROL PAD AND MAU & FIRE PUMP CONTROL BLDG PAD S-4
DATE OCTOBER 2025



1 S-5 PART PLAN
BELT FILTER PRESS SUPPORT
SCALE: 3/8"=1'-0"



A S-5 SECTION
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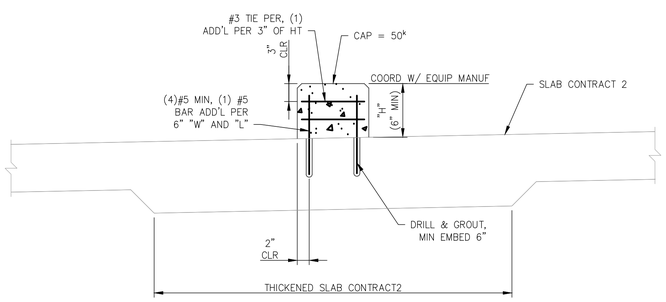

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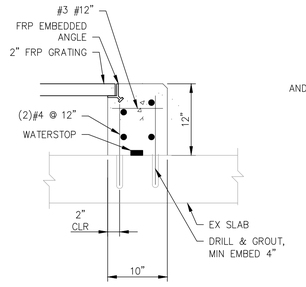

C S-5 SECTION
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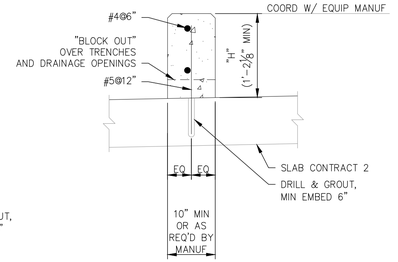

D S-5 SECTION
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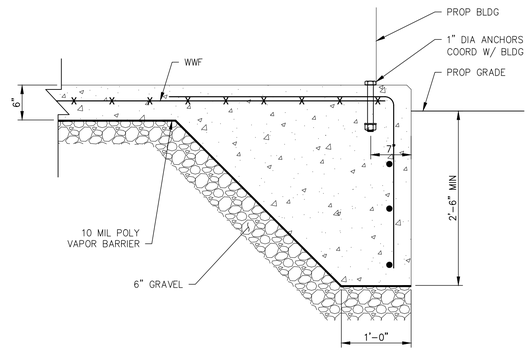

E S-5 SECTION
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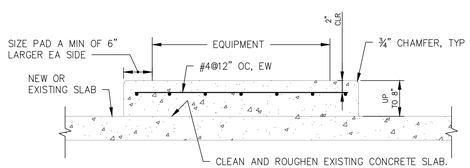

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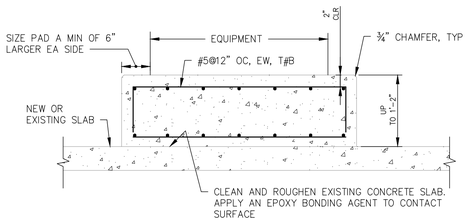

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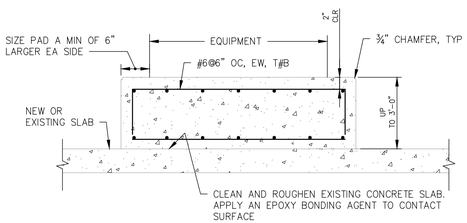
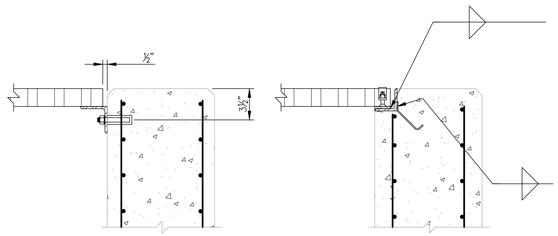
SCALE: 1"=1'-0"

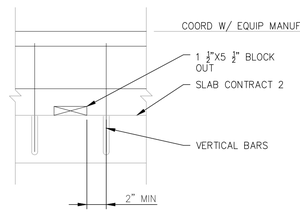


H S-5 SECTION
SCALE: 1"=1'-0"



J S-5 SECTION
SCALE: 1"=1'-0"

K S-5 SECTION
SCALE: 1"=1'-0"



L S-5 SECTION
SCALE: 1"=1'-0"

ISSUED FOR BIDDING

ALBRECHT ENGINEERING INC
3500 BOSTON STREET
SUITE 329
BALTIMORE, MD 21224
410-522-5870

RK&K
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700 EAST PRATT STREET, SUITE 500 • BALTIMORE, MARYLAND 21202 • 410.728.2900

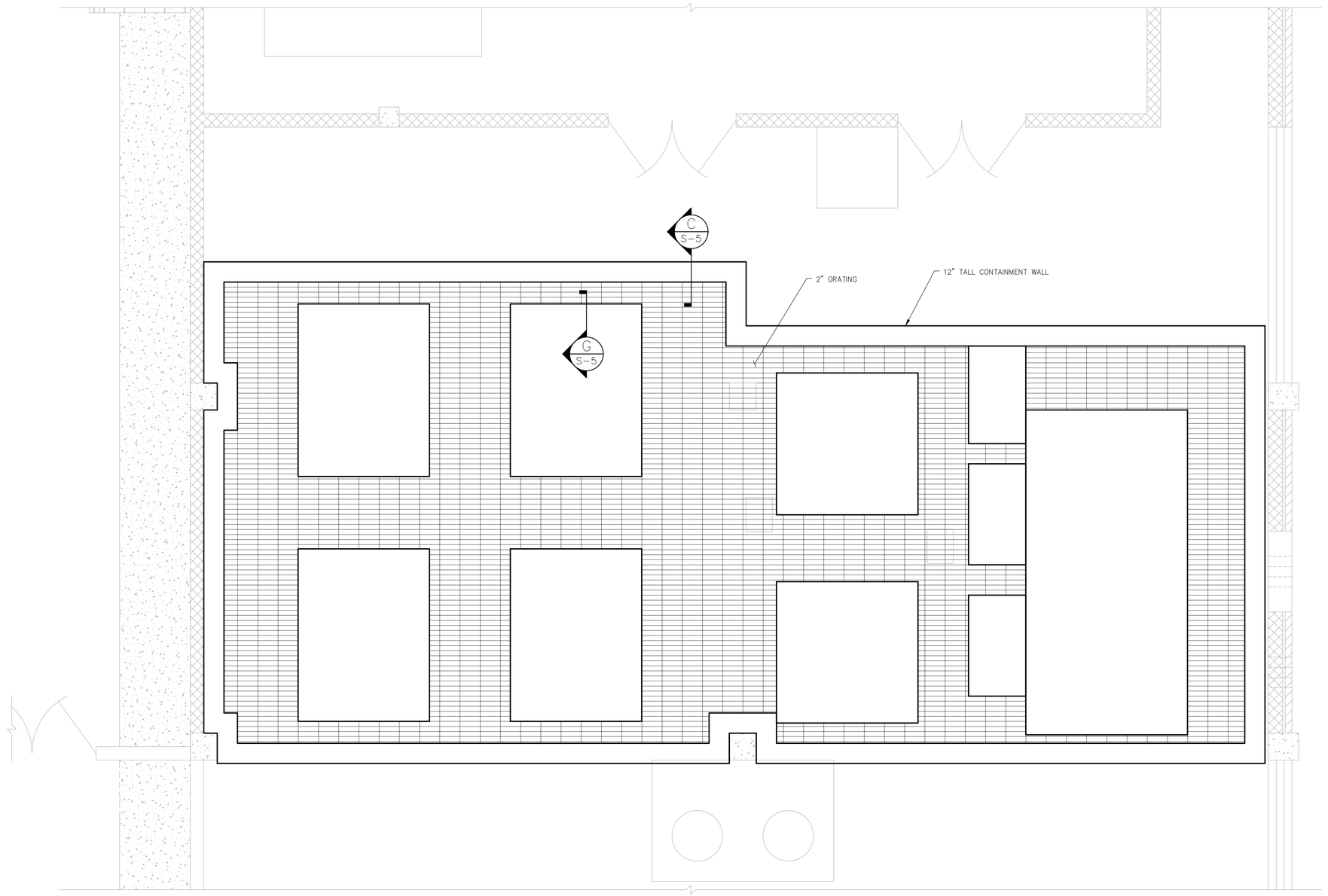
RACHEL A. GAGE LICENSED No. 16289 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE:	KENT COUNTY RRRF
		DRAWN BY:	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY:	CONTRACT 3
APPROVED DATE		SHEET NO.: 50of 191	PART PLAN
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	BELT FILTER PRESS SUPPORT
			DATE OCTOBER 2025 S-5

NORTH



ISSUED FOR BIDDING

1 / S-6 PART PLAN - GRATING SOLIDS HANDLING BUILDING
SCALE: 3/8"=1'-0"

ALBRECHT ENGINEERING INC
3500 BOSTON STREET
SUITE 329
BALTIMORE, MD 21224
410-522-5870

RK&K
RUMMEL, KLEPPER & KAHL, LLP
700 EAST PRATT STREET, SUITE 500 • BALTIMORE, MARYLAND 21202 • 410.728.2900

RACHEL A. CACIER LICENSE No. 15288 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE:	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY:	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY:	PART PLAN – GRATING SOLIDS HANDLING BUILDING
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 51 of 191	DATE OCTOBER 2025 S-6
		PROJECT NO.: 50.1890.97-A	

C:\Users\Kyle.Powell\Documents\Projects\Solids\50189097_Part Plan_Grating_Solids_Handling_Bldg_Oct 09, 2025_Kyle.Powell.rvt Plot Date: Oct 09, 2025 9:16am Plotted By: Kyle.Powell

DWG ABBREV	ITEM	SYMBOL
	GATE VALVE	
	KNIFE GATE VALVE	K
	PLUG VALVE	
	3-WAY PLUG VALVE	
	BUTTERFLY VALVE	
	BALL VALVE	
	3-WAY BALL VALVE	
	GLOBE VALVE	
	NEEDLE VALVE	
	DIAPHRAGM VALVE	
	PINCH VALVE	
	CONE VALVE	
	MUD VALVE	
	TELESCOPING VALVE	T
	CHECK VALVE	
	BALL CHECK VALVE	
	DUCKBILL CHECK VALVE	
	RELIEF VALVE	
	PRESSURE REDUCING VALVE	
	BACK PRESSURE VALVE	
	FLOW CONDITIONER	
	UNION	
	QUICK DISCONNECT COUPLING	
HG	HOSE GATE	
	WYE STRAINER	
	INSECT SCREEN	
FD	FLOOR OR TRENCH DRAIN	
FD	FLOOR DRAIN	FD
SG	SLIDE GATE	
SL	STOP LOG	
W	WEIR	W
	FLEXIBLE HOSE	
	END CAP	
	STATIC MIXER	
SG	SLIDE GATE	
SL	STOP LOG	
W	WEIR	W
VD	VOLUME DAMPER	VD

DWG ABBREV	ITEM	SYMBOL
	EXISTING PIPE & FACILITIES PROPOSED PIPE & FACILITIES	
	PIPE: 6" & SMALLER	
	PIPE: 8" & LARGER	
	FLANGE	
BF	BLIND FLANGE	BF BF
	WELDED	
PO	MECHANICAL JOINT	
PO	RESTRAINED PUSH ON JOINT	
	GROOVED COUPLING (PIPE 6" & SMALLER) GROOVED COUPLING (PIPE 8" & LARGER)	
	SLEEVE COUPLING	
	RESTRAINED SLEEVE COUPLING	
	FLANGE ADAPTER	
	RESTRAINED FLANGE ADAPTER	
	BOLTED SPLIT SLEEVE COUPLING (PIPE 6" & SMALLER) BOLTED SPLIT SLEEVE COUPLING (PIPE 8" & LARGER)	
	EXPANSION JOINT	
	RESTRAINED EXPANSION JOINT	
	CONCENTRIC REDUCER	
	ECCENTRIC REDUCER FLAT ON TOP	FOT
	ECCENTRIC REDUCER FLAT ON BOTTOM	FOB
	WYE STRAINER	
	INSULATION (PIPE 6" & SMALLER) INSULATION (PIPE 8" & LARGER)	
	EXISTING PIPE TO BE REMOVED	

DWG ABBREV	ITEM	SYMBOL
FE	FLOW RATE CONTROLLER	
FE	VENTURI FLOW METER	
FE	MAGNETIC FLOW METER	
	ORIFICE PLATE	
	DIAPHRAGM SEAL	
	ROTAMETER	
	RUPTURE DISC	
WS	WATER SURFACE	
	DIRECTION OF FLOW	
	END CAP	
	PITCH PIPE DOWN IN DIRECTION OF ARROW	
	LIMITS OF WORK (TRADE, CONTRACT, ETC.)	
	POINT OF CONNECTION NEW WORK TO EXISTING WORK	
	LIMITS (MATERIAL, FURNISHED BY, ETC.)	
	CHANNEL	
	ACTUATORS	
	MOTOR OPERATED	M
	SOLENOID OPERATED	S
	DIAPHRAGM	D
	CYLINDER – HYDRAULIC	H
	CYLINDER – PNEUMATIC	P
	ELECTRO – HYDRAULIC	EH
	EQUIPMENT MOTOR	M
	WALL / FLOOR CASTINGS	
FLG x PO	FLANGE AND PUSH ON JOINT	WATERSTOP
PO x PO	PUSH ON JOINT AND PUSH ON JOINT	
PO x PE	PUSH ON JOINT AND PLAIN END	
FLG x FLG	FLANGE AND FLANGE	
FLG x PE	FLANGE AND PLAIN END	

DWG ABBREV	ITEM	SYMBOL
	EQUIPMENT	
	POSITIVE DISPLACEMENT BLOWER	
	ROTODYNAMIC PUMP	
	DIAPHRAGM PUMP	
	HOSE OR TUBING PUMP	
	GRINDER	G
	SCREW CONVEYOR	
	DUPLEX BASKET STRAINER	
	SUBMERSIBLE MIXER	M
	MIXER	M

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AECOM TECHNICAL SERVICES, INC.
250 APOLLO DRIVE - CHELMSFORD, MA 01824
(978) 905-2100
www.aecom.com

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KEMEI DU LICENSE No. 14864 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

SCALE: NOT TO SCALE
DRAWN BY: SAC
CHECKED BY: DY
SHEET NO.: 52 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
PROCESS LEGEND
OCTOBER 2025 PM-01

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GENERAL NOTES:

1. EQUIPMENT AND SYSTEMS DIMENSIONS, LOCATIONS AND PIPING SYSTEM LAYOUTS ARE BASED ON EQUIPMENT PRE-PURCHASED BY THE OWNER AND EQUIPMENT SELECTED BY THE ENGINEER. IF CONTRACTOR PROPOSES TO PROVIDE EQUIPMENT THAT REQUIRES AN ARRANGEMENT OR SPACING DIFFERING FROM THAT INDICATED OR SPECIFIED, THE CONTRACTOR TO PREPARE AND SUBMIT TO THE ENGINEER FOR REVIEW DETAILED ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, INSTRUMENTATION HVAC AND ELECTRICAL DRAWINGS AND EQUIPMENT LISTS SHOWING ALL NECESSARY CHANGES AND EMBODYING ALL FEATURES OF THE EQUIPMENT AND/OR PROCESS SYSTEMS PROPOSED. THIS INFORMATION TO INCLUDE BUT NOT BE LIMITED TO PLANS, SECTIONS DETAILS AND SCHEMATICS OF ALL PIPING SYSTEMS AND APPURTENANCES REQUIRED, ELECTRICAL CONTROLS, CHEMICAL FEED SYSTEMS ETC.. SUCH CHANGES IF APPROVED BY THE ENGINEER SHALL BE AT NO ADDITIONAL COST TO THE OWNER AND NO TIME EXTENSION TO THE CONTRACT TIME FOR COMPLETION. THE CONTRACTOR TO ASSUME THE COST OF AND THE RESPONSIBILITY FOR ACCOMPLISHING ALL THE NECESSARY CHANGES CORRESPONDING TO THE DIMENSIONS AND CHARACTERISTICS OF THE EQUIPMENT SUBMITTED AND ACCEPTED BY THE ENGINEER. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
2. CONTRACTOR TO MAKE ALL REQUIRED FIELD MEASUREMENTS TO VERIFY EXISTING AND CONTRACT INTERFACE DIMENSIONS, LOCATIONS, AND OTHER CONDITIONS.
3. WHEN MAKING NEW CONNECTIONS TO EXISTING PIPING, THE CONTRACTOR MAY, AT HIS OPTION:
   A. REPLACE PIPING BACK TO NEAREST FITTING.
   B. USE RESTRAINED SLEEVE COUPLING OR FLANGE ADAPTERS.
   C. USE GROOVED COUPLINGS, PROVIDED EXISTING PIPES WALL THICKNESS COMPLIES WITH SPECIFIED LIMITS.
   D. USE BOLTED SPLIT SLEEVE COUPLINGS.
4. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR COVER PLATES, HATCHES, GRATING, AND RAILING DETAILS.
5. ALL PIPING UNDER CONCRETE SLABS OR STRUCTURES TO BE ENCASED IN CONCRETE, UNLESS OTHERWISE NOTED, REFER TO STRUCTURAL DRAWINGS.
6. ALL PIPING ENCASED IN CONCRETE TO HAVE PUSH-ON JOINTS AT ALL STRUCTURAL EXPANSION JOINTS.
7. PROVIDE EXPANSION JOINTS WITH CONTROL RODS FOR ALL EXPOSED PIPING CROSSING STRUCTURAL EXPANSION JOINTS.
8. ALL DIMENSIONS LOCATING EQUIPMENT ARE FROM FINISHED WALL SURFACES OR COLUMN CENTERLINES.
9. REFER TO INSTRUMENTATION DRAWINGS FOR INSTRUMENTATION AND CONTROL SYSTEMS. INSTRUMENT LOCATIONS ARE INDICATED ON MECHANICAL-PROCESS DRAWINGS IN APPROXIMATE LOCATION ONLY.
10. IN THE EVENT THERE IS A CONFLICT OF ANY PIPING SIZES, MATERIALS, VALVES, AND OTHER NON-INSTRUMENTATION/CONTROL PANEL ITEMS BETWEEN THE MECHANICAL PROCESS PROCESS FLOW DIAGRAMS AND THE INSTRUMENTATION P&ID'S, THE MECHANICAL PROCESS DRAWINGS TAKE PRECEDENT.
11. FOR CONTINUATION OF PIPING OUTSIDE STRUCTURES, SEE CIVIL DRAWINGS.
12. WALL AND FLOOR SLEEVES TO BE LARGE ENOUGH TO ACCOMMODATE FLANGES IF REQUIRED. FLOOR SLEEVES TO PROJECT AT LEAST 4 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE SHOWN, REFER TO DETAILS. IF SLEEVES ARE TO BE SEALED, PROVIDE GROOVED COUPLING PIPING CONNECTION TO FACILITATE INSTALLATION AND REMOVAL OF PIPING.
13. PROVIDE WALL CASTINGS WITH A WATERSTOP FOR ALL BURIED AND SUBMERGED PIPELINES AND FOR PIPING LOCATED WITHIN 2-FEET OF THE MAXIMUM WATER SURFACE. SEE DETAILS FOR ADDITIONAL CRITERIA.
14. ALL PIPE PENETRATIONS THROUGH INTERIOR AND EXTERIOR WALLS AND FLOORS TO BE SEALED WATERTIGHT. ROOF PENETRATIONS TO BE SEALED IN ACCORDANCE WITH ARCHITECTURAL DETAILS.
15. SLEEVE OR GROOVED COUPLINGS MAY BE USED WHERE NECESSARY, AND AS APPROVED, TO FACILITATE PIPING INSTALLATION.
16. FOR FLANGED SYSTEMS PROVIDE FLEXIBLE CONNECTORS WHERE NECESSARY, AND AS APPROVED TO FACILITATE PIPING INSTALLATION AND VALVE AND EQUIPMENT REMOVAL.
17. ALL FLEXIBLE CONNECTORS, INCLUDING EXPANSION JOINTS AND SLEEVE COUPLINGS TO BE RESTRAINED AS INDICATED OR AS REQUIRED FOR EXPANSION AND FOR FLEXIBILITY.
18. SMALL PIPING (CHEMICAL, SAMPLE, COMPRESSED AIR, PLANT 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, OR EQUIPMENT.
19. PORTIONS OF NON-PROCESS PIPING (PLUMBING, HVAC, CIVIL) ARE SHOWN FOR CLARITY OF DESIGN ONLY: REFER TO APPROPRIATE DRAWINGS AND SPECIFICATIONS FOR REQUIREMENTS.
20. CONTRACTOR TO PROTECT ALL EQUIPMENT, PIPING, AND VALVES FROM DAMAGE DURING DEMOLITION. ALL REPAIRS TO DAMAGED EQUIPMENT, PIPE, AND VALVES TO BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
21. BASE ELBOWS AND PIPE BRACES ARE SHOWN FOR PURPOSES OF ILLUSTRATION ONLY.
22. PROVIDE WALL MOUNTED SIGNS, IN ACCORDANCE WITH SPECIFIED ARCHITECTURAL REQUIREMENTS FOR ALL EXTERIOR WALL PENETRATIONS, INDICATING PIPE ORIGIN OR DESTINATION AND PIPE LABEL.
23. PROVIDE CONCRETE PADS FOR ALL FLOOR MOUNTED PROCESS EQUIPMENT, REFER TO STRUCTURAL DRAWINGS FOR DETAILS.
24. VENTS AND DRAINS:
   A. INSTALL VENT AND DRAIN PIPING AND VALVES SO THERE IS NO INTERFERENCE WITH ACCESS TO OR OPERATION OF ANY EQUIPMENT, VALVES, PIPING OR PANELS.
   B. PROVIDE ISOLATION VALVES FOR ALL VENTS AND DRAINS AS SPECIFIED AND INDICATED.
   C. LOCATE VALVES SO THAT THEY ARE ACCESSIBLE AND OPERABLE.
   D. PIPE ALL VENTS AND DRAINS SLOPED TO DRAIN TO THE NEAREST GUTTER, SUMP, TRENCH OR DRAIN, OR AS INDICATED.
   E. WHERE PIPING RUNS ACROSS A FLOOR, INSTALL 2 INCHES MAXIMUM ABOVE FLOOR.
25. ALL PIPE PENETRATIONS INTO THE FOLLOWING AREAS TO BE SEALED GASTIGHT:
   A. WET WELLS
   B. DEWATERING ROOM
   C. DRYER ROOM
   D. CHEMICAL ROOMS
26. PROVIDE PIPE SUPPORTS AND HANGERS IN ACCORDANCE WITH SECTION 15056.
27. SEE BELT DRYER SHOP DRAWINGS FOR PIPE AND DUCT SUPPORTS PROVIDED BY BELT DRYER MANUFACTURER.
28. THE BELT FILTER PRESSES AND ASSOCIATED EQUIPMENT ARE PRE-PURCHASED AND PROVIDED BY THE OWNER. CONTRACTOR TO COORDINATE WITH THE APPROVED SHOP DRAWINGS IN APPENDIX A, PRE-PURCHASED BELT FILTER PRESS.
29. THE BELT DRYERS, ODOR SCRUBBERS, AND ASSOCIATED EQUIPMENT ARE PRE-PURCHASED AND PROVIDED BY THE OWNER. CONTRACTOR TO COORDINATE WITH THE APPROVED SHOP DRAWINGS IN APPENDIX B, PRE-PURCHASED BELT DRYER SYSTEM.
30. THE DRYER BUILDING SLAB AND PRE-ENGINEERED METAL BUILDING ARE EXISTING. REFER TO CONTRACT 2 RECORD DRAWINGS.
31. CONTRACTOR TO PROVIDE AND INSTALL INSULATION AND JACKETING FOR BELT DRYER AND DUCTS. SEE BELT DRYER INSULATION DRAWING IN SHOP DRAWINGS AND SECTION 11501.

CHEMICAL NOTES:

1. UNLESS OTHERWISE INDICATED, ALL PIPE ELEVATIONS ARE TO BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. INSTALL HORIZONTAL PIPE RUNS WITH MINIMUM 8'-0" HEAD ROOM CLEARANCE UNLESS OTHERWISE INDICATED.
2. PIPE ROUTING IS TO BE DETERMINED BY THE CONTRACTOR EXCEPT AS SHOWN ON THE PLANS AND PROCESS FLOW DIAGRAMS, AND SUBJECT TO APPROVAL BY THE ENGINEER. SMALL PIPE ROUTING MUST NOT INTERFERE WITH ACCESS TO OR OPERATION OF ANY OTHER PIPE, VALVE, OR EQUIPMENT.
4. FLANGES TO BE PROVIDED AT ALL PIPING CONNECTIONS TO AND FROM EQUIPMENT AND AS SHOWN ON DIAGRAMS. FOR ADDITIONAL INFORMATION REFER TO PROCESS PIPING SCHEDULE.
5. ALL VENTS AND OVERFLOWS, NOT EQUIPPED WITH DUCKBILL CHECK VALVES, TO HAVE 24 MESH FRP OR PVC SCREEN. INSTALL BY STRETCHING THE SCREEN BETWEEN TWO FLANGES.
6. HORIZONTAL RUNS OF 2" AND SMALLER CHEMICAL PIPE TO BE CONTINUOUSLY SUPPORTED ON VINYL ESTER FRP ANGLE, WITH A MAXIMUM HANGER SPACING OF 5 FT. SUPPORT HORIZONTAL RUNS OF 2.5" AND LARGER IN ACCORDANCE WITH SECTION 15056. VERTICAL RUNS WITH CLAMPS AT A MAXIMUM SPACING OF 3 FEET ON CENTERS.
7. PROVIDE CONCRETE PADS FOR CHEMICAL STORAGE TANKS AS INDICATED. NOTCH PADS TO ACCOMMODATE DRAIN NOZZLES AND COORDINATE PAD DIMENSIONS WITH MANUFACTURER'S SEISMIC ANCHOR REQUIREMENTS.

INSTRUMENTATION LEGEND:

SEE INSTRUMENTATION DRAWINGS AND SPECIFICATIONS

FE	FLOW ELEMENT
FS	FLOW SWITCH
LE	LEVEL ELEMENT
LI	LEVEL INDICATOR
LIT	LEVEL INDICATING TRANSMITTER
LSH	LEVEL SWITCH HIGH
LSL	LEVEL SWITCH LOW
PI	PRESSURE INDICATOR
PIT	PRESSURE INDICATING TRANSMITTER

PROCESS GENERAL ABBREVIATIONS

ACFM	ACTUAL CUBIC FEET PER MINUTE	LG	LONG
AFF	ABOVE FINISHED FLOOR	LP	LOW POINT
ANCH	ANCHOR	LR	LONG RADIUS
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	L/S	LITERS PER SECOND
		LSH	LEVEL SWITCH LOW
APPROX	APPROXIMATE	LSP	LIQUID SAMPLE PORT
ARCH	ARCHITECTURAL	LxW	LENGTH X WIDTH
ARV	AIR RELEASE VALVE	LWL	LOW WATER LEVEL
AVV	AIR VACUUM VALVE	LLWL	LOW-LOW WATER LEVEL
BOD	BOTTOM OF DUCT	M	METER
CFM	CUBIC FEET PER MINUTE	MAX	MAXIMUM
CFS	CUBIC FEET PER SECOND	MATL	MATERIAL
CHEM	CHEMICAL	MCC	MOTOR CONTROL CENTER
CI	CAST IRON	MECH	MECHANICAL
CL	CENTERLINE OR CLASS	MGD	MILLION GALLONS PER DAY
CMU	CONCRETE MASONARY UNIT	MH	MANHOLE
CO	CLEANOUT	MIN	MINIMUM
CONC	CONCRETE OR CONCENTRIC	MJ	MECHANICAL JOINT
CONN	CONNECTION	MM	MILLIMETERS
CONT	CONTINUATION	NAVD	NORTH AMERICAN VERTICAL DATUM
CPVC	CHLORINATED POLYVINYLCHLORIDE	NC	NORMALLY CLOSED
CS	CARBON STEEL	NGVD	NATIONAL GEODETIC VERTICAL DATUM
DEG C	DEGREES CELSIUS	NO	NORMALLY OPEN
DEG F	DEGREES FAHRENHEIT	NO	NUMBER
DET	DETAIL	NOM	NOMINAL
DI	DUCTILE IRON	NPSH	NET POSITIVE SUCTION HEAD
DIA	DIAMETER	NPSHR	NET POSITIVE HEAD REQUIRED
DISCH	DISCHARGE	NPSH3	NPSH RESULTING IN 3% DROP IN HEAD
DN	DOWN	NPT	NATIONAL PIPE THREAD
DWG'S	DRAWINGS	NRS	NON-RISING STEM
ExE	FLEXIBLE COUPLING (EXPANSION x EXPANSION)	NTS	NOT TO SCALE
		OC	ON CENTER
ECC RED	ECCENTRIC REDUCER	OD	OUTSIDE DIAMETER
EFF	EFFLUENT	ODP	OPEN DRIP PROOF
EFF %	% EFFICIENCY	OPER	OPERATING
ELEC	ELECTRICAL	P	PRESSURE GAUGE
EL	ELEVATION	PE	PLAIN END
ELL	ELBOW	PI	PRESSURE INDICATOR
ENCL	ENCLOSURE	PIT	PRESSURE INDICATOR TRANSMITTER
EQUIP	EQUIPMENT	PLE	PLANT EFFLUENT
EXIST	EXISTING	PLMB	PLUMBING
FxE	EXPANSION COUPLING (FIXED x EXPANSION)	PO	PUSH-ON
		PRI	PRIMARY
FxF	RESTRAINED COUPLING (FIXED x FIXED)	PS	PRESSURE SWITCH
		PSH	PRESSURE SWITCH HIGH
FE	FLOW ELEMENT	PSI	POUNDS PER SQUARE INCH
FEP	FLUORINATED ETHYLENE-PROPYLENE	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
FF	FLAT FACE	PSIG	POUNDS PER SQUARE INCH GAGE
FHMB	FLAT HEAD MACHINE BOLT	PSV	PRESSURE SAFETY SWITCH
FIN FL	FINISHED FLOOR	PVC	POLYVINYLCHLORIDE
FIN GR	FINISHED GRADE	PVDF	POLYVINYLIDENE FLOURIDE
FIT	FLOW INDICATING TRANSMITTER	R	RADIUS
FLEX	FLEXIBLE	RED	REDUCER / REDUCING
FLG	FLANGE	RED FLG	REDUCING FLANGE
FCV	FLOW CONTROL VALVE	REF	REFERENCE
FOB	FLAT ON BOTTOM	REINF	REINFORCING
FOS	FLAT ON SIDE	REQ'D	REQUIRED
FOT	FLAT ON TOP	RFG	RISING FLAP GATE
FPD	FLOWER POT DISCHARGE	RPM	REVOLUTIONS PER MINUTE
FT/MIN	FEET PER MINUTE	SCH	SCHEDULE
FT/S	FEET PER SECOND	SE	SECONDARY EFFLUENT
FS	FLOW SWITCH	SH	SHEET
FSI	FORMED SUCTION INTAKE	SPD	SUMP PUMP DISCHARGE
FT	FEET	SPECS	SPECIFICATIONS
FW	FLUSHING WATER	SQ	SQUARE
GAL	GALLONS	SR	SHORT RADIUS
GALV	GALVANIZED	SS	STAINLESS STEEL
GPM	GALLONS PER MINUTE	STD	STANDARD
GCIC	GRIT CONCENTRATOR INFLUENT CHANNEL	STR	STRUCTURAL
HDPE	HIGH DENSITY POLYETHYLEYNE	TEFC	TOTALLY ENCLOSED FAN COOLED
HG	HOSE GATE	TEMP	TEMPERATURE
HHMB	HEXAGONAL HEAD MACHINE BOLT	TENV	TOTALLY ENCLOSED NON VENTILATED
Hg	MERCURY	THK	THICK
HP	HIGH POINT	TOC	TOP OF CONCRETE
HP	HORSE POWER	TOD	TOP OF DUCT
HPT	HOSE PIPE THREAD	TOS	TOP OF STEEL
HVAC	HEATING VENTILATION	TSH	TEMPERATURE SWITCH HIGH
HWL	HIGH WATER LEVEL	TYP	TYPICAL
ID	INSIDE DIAMETER	VD	VOLUME DAMPER
IN	INCHES	W/	WITH
INSUL	INSULATION	WxH	WIDTH x HEIGHT
INV	INVERT	WC	WATER COLUMN
IPT	IRON PIPE THREAD	WORK	WORKING
KG	KILOGRAM	WP	WEATHER PROTECTED
KW	KILOWATT	WPI	WEATHER PROTECTED TYPE I
LB	POUND	WPII	WEATHER PROTECTED TYPE II
LG	LONG	WS	WATER SURFACE
		XPROOF	EXPLOSION PROOF
		YD	YARD

ISSUED FOR BIDDING

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KEMEI DU — LICENSE — No. 14864 — DELAWARE PROFESSIONAL ENGINEER

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NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

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		DRAWN BY: SAC	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DY	
APPROVED DATE		SHEET NO.: 53 of 191	PROCESS GENERAL NOTES
		PROJECT NO.: 50.1890.97-A	
ASSISTANT DIRECTOR OF ENGINEERING			OCTOBER 2025 PM-02

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PROCESS PIPING SCHEDULE

	SYSTEM DESIGN CONDITIONS					PIPING					INSULATION		VALVING			TEST REQUIREMENTS				SPECS SECTION NUMBER	REMARKS
LEGEND	SYSTEM	TEMP (DEG F)		PRESSURE (PSI)		MATERIAL	DIAMETER RANGE	SCH/ CLASS	LINING/ COATING	JOINT TYPE	TYPE	THICKNESS (IN)	BLOCK	CHECK	THROTTLING	PRESSURE (PSI)	MEDIUM	TEST DURATION (MIN)	LEAKAGE ALLOWANCE (SEE NOTES)		
		OPER	MAX	WORK	MAX																
CA	COMPRESSED AIR	50	100	100	115	TYPE 316L STAINLESS STEEL	ALL	SEE SPEC	---	SOCKET WELDED/PRESS-FIT	---	---	BALL	SWING	---	125	AIR	1,440	ZERO	15370	---
CND	CONDENSATE	50	80	39	56	DUCTILE IRON TYPE 316L STAINLESS STEEL	4" AND LARGER 3" AND SMALLER	SEE SPEC	CERAMIC EPOXY ---	FLANGED/GROOVED/ RESTRAINED MJ OR PUSH-ON PRESS-FIT/SOCKET WELDED	---	---	KNIFE GATE BALL VALVE	RUBBER FLAPPER	---	60	WATER	60	ZERO	02615 15066 15370	---
CS	CAUSTIC SODA	50	80	10	30	CPVC	ALL	80	---	FLANGED/SOLVENT WELDED	CLOSED CELL FOAM	2	VENTED BALL	BALL CHECK	---	60	WATER	60	ZERO	15370	SEE NOTES
D	DRAIN	SAME AS SYSTEM				DUCTILE IRON (SEE REMARKS) PVC (SEE REMARKS)	4" AND LARGER 3" AND SMALLER	SEE SPEC 80	CERAMIC EPOXY ---	FLANGED/GROOVED/PUSH-ON FLANGED/SOLVENT WELDED	---	---	KNIFE GATE BALL VALVE	---	---	SAME AS SYSTEM	WATER	60	ZERO	02615 15370	UNLESS OTHERWISE INDICATED
DFF	DRYER FIRE FIGHTING	50	80	70	90	DUCTILE IRON TYPE 316L STAINLESS STEEL	4" AND LARGER 3" AND SMALLER	SEE SPECS	CEMENT ---	FLANGED/GROOVED/ RESTRAINED MJ OR PUSH-ON PRESS-FIT/SOCKET WELDED	CLOSED CELL FOAM	INSIDE: 1/2	KNIFE GATE/ BALL	RUBBER FLAPPER	---	100	WATER	60	ZERO	02615 15066 15370	---
FLT	FILTRATE	50	80	39	56	DUCTILE IRON TYPE 316L STAINLESS STEEL	4" AND LARGER 3" AND SMALLER	SEE SPEC	CERAMIC EPOXY ---	FLANGED/GROOVED/ RESTRAINED MJ OR PUSH-ON PRESS-FIT/SOCKET WELDED	---	---	KNIFE GATE BALL VALVE	RUBBER FLAPPER	---	60	WATER	60	ZERO	02615 15066 15370	---
SW	SOFTENED WATER	50	80	50	60	PVC	ALL	80	---	FLANGED/SOLVENT WELDED	---	---	BALL	---	---	100	WATER	60	ZERO	15370	---
POLY	POLYMER	50	80	50	60	PVC	ALL	80	---	FLANGED/SOLVENT WELDED	---	---	BALL	BALL CHECK	---	120	WATER	60	ZERO	15370	---
PW	PLANT WATER	50	80	45	90	DUCTILE IRON TYPE 316L STAINLESS STEEL	4" AND LARGER 3" AND SMALLER	SEE SPECS	CEMENT ---	FLANGED/GROOVED/ RESTRAINED MJ OR PUSH-ON PRESS-FIT/SOCKET WELDED	CLOSED CELL FOAM	INSIDE: 1/2 OUTSIDE: 2	KNIFE GATE/ GATE/BALL	---	---	100	WATER	60	ZERO	02615 15066 15370	---
PWS	POLYMER WATER SUPPLY	50	80	50	80	PVC	ALL	80	---	FLANGED/SOLVENT WELDED	---	---	BALL	---	---	100	WATER	60	ZERO	15370	---
SA	SULFURIC ACID	50	80	10	30	PVDF	ALL	80	---	SOCKET HEAT FUSION/ FLANGED	---	---	BALL	BALL CHECK	---	60	WATER	60	ZERO	15370	SEE NOTES
SAM	SAMPLE	SAME AS SYSTEM				TYPE 316L STAINLESS STEEL	3" AND SMALLER	SEE SPECS	---	SOCKET WELDED/PRESS-FIT	---	---	BALL	---	---	SAME AS SYSTEM	WATER	60	ZERO	15370	---
SH	SODIUM HYPOCHLORITE	50	80	10	30	CPVC	ALL	80	---	FLANGED/SOLVENT WELDED	---	---	VENTED BALL	BALL CHECK	---	60	WATER	60	ZERO	15370	SEE NOTES
SL	SLUDGE	50	80	39	52	DUCTILE IRON TYPE 316L STAINLESS STEEL	4" AND LARGER 3" AND SMALLER	SEE SPEC	CERAMIC EPOXY ---	FLANGED/GROOVED/ RESTRAINED MJ OR PUSH-ON PRESS-FIT/SOCKET WELDED	---	---	PLUG	RUBBER FLAPPER	---	100	WATER	60	ZERO	02615 15066 15370	---
V	VENT	SAME AS SYSTEM				SAME AS SYSTEM	---	---	---	SAME AS SYSTEM	---	---	---	---	---	SAME AS SYSTEM	WATER	60	ZERO	SAME AS SYSTEM	---

PROCESS PIPING NOTES:

1. PIPING SCHEDULE ABOVE REFERS TO MECHANICAL PROCESS PIPING ONLY. REFER TO OTHER DISCIPLINES FOR ANY NON-PROCESS PIPING SHOWN AS BACKGROUND INFORMATION ON THE MECHANICAL DRAWINGS AND FOR CONTINUATION OF PIPING BEYOND MECHANICAL DISCIPLINE LIMITS OF WORK.
2. TEST VENTS AND DRAINS TO SAME PRESSURE AS SYSTEM.
3. FOR OPEN VENTS, FILL VENT WITH WATER AND TEST FOR LEAKS.
4. PROVIDE FLANGES AT EQUIPMENT, VALVES AND AS INDICATED ON THE DRAWINGS.
5. ALL PIPING THAT IS NOT BURIED TO BE CONSIDERED EXPOSED.
6. PROVIDE INSULATION AND PROTECTIVE JACKET AS SPECIFIED FOR ALL EXTERIOR INSULATED PIPING AND FOR ALL INTERIOR INSULATED PIPING 6'-6" OR LOWER TO THE OPERATING FLOOR.
7. UNLESS OTHERWISE INDICATED, HEAT TRACE AND INSULATE WITH 2 INCHES OF INSULATION AS SPECIFIED FOR ALL EXTERIOR EXPOSED WATER AND DRAIN PIPING TO 3 FEET BELOW GRADE. SEE ELECTRICAL DRAWINGS FOR HEAT TRACING.

CAUSTIC SODA (SODIUM HYDROXIDE) PIPING NOTES:

1. CONCENTRATION: 25 PERCENT
2. SPECIFIC GRAVITY: 1.3
3. HARDWARE: TYPE 316 STAINLESS STEEL
4. ELASTOMERS: EPDM

SODIUM HYPOCHLORITE PIPING NOTES:

1. CONCENTRATION: 12.5 PERCENT
2. SPECIFIC GRAVITY: 1.2
3. HARDWARE: TITANIUM
4. ELASTOMERS: VITON OR CSM (HYPALON)

SULFURIC ACID PIPING NOTES:

1. CONCENTRATION: 93 PERCENT
2. SPECIFIC GRAVITY: 1.8
3. HARDWARE: TYPE 316 STAINLESS STEEL
4. ELASTOMERS: VITON

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KEMEL DU LICENSE No. 14864 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: NOT TO SCALE DRAWN BY: SAC CHECKED BY: DY
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 54 of 191 PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
PROCESS PIPING SCHEDULE
OCTOBER 2025 PM-03

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PROCESS PUMP SCHEDULE

TAG NO	NUMBER OF UNITS			NAME	LOCATION	PUMP TYPE	CONFIGURATION	RATING POINT				MIN SUCTION/ DISCHARGE SIZE (IN)	PUMP RPM MAX	SEAL TYPE	SEAL WATER (Y/N)	MOTOR DATA			DRIVE TYPE	SPEC SECTION	ANSI / HI PUMP TEST ACCEPTANCE GRADE	BASIS OF DESIGN	REMARKS
	TOTAL	OPER	STANDBY					CAPACITY (GPM)	HEAD (FEET)	MIN WIRE TO WATER EFF %	MIN SHUTOFF HEAD FT					HP	RPM (MAX)	ENCL TYPE					
BFP-P-1 THRU 4	4	4	0	BELT FILTER PRESS FEED PUMPS	SOLIDS HANDLING BUILDING	PROGRESSIVE CAVITY	DRY, HORIZONTAL, IN-LINE	300	102	--	128	8 / 8	260	PACKING	Y	30	1800	TEFC	GEAR REDUCER	11450	---	MOYNO 2000 SERIES	SEE NOTES
DFF-P-1 THRU 3	3	2	1	DRYER FIRE FIGHTING PUMPS	DRYER BUILDING	END SUCTION CENTRIFUGAL	HORIZONTAL	250	115	59	131	3 / 2.5	---	SINGLE MECHANICAL	N	20	1800	XPROOF	FLEX COUPLED	11318	14.6 / 1U	PENTAIR AURORA	SEE NOTES
FLT-P-1 THRU 3	3	2	1	FILTRATE AND CONDENSATE PUMPS	FILTRATE AND CONDENSATE PUMPING STATION	SUBMERSIBLE SCREW IMPELLER SOLIDS HANDLING	DISCHARGE ELBOW MOUNTED	1,350	90	72	164	10 / 5	1175	TANDEM MECHANICAL	N	50	1200	SUBM XPROOF	CLOSE COUPLED	11311	14.6 / 1U	HIDROSTAL H5K-S HE5B6	SEE NOTES
PW-P-1 THRU 3	3	2	1	PLANT WATER PUMPS	PLANT WATER PUMPING STATION	SUBMERSIBLE CLOSED IMPELLER	DISCHARGE ELBOW MOUNTED	972	139	72	190	5 / 6	1800	DOUBLE MECHANICAL	N	56	1800	SUBM	CLOSE COUPLED	11700	14.6 / 1U	KSB K 100-401	SEE NOTES

DRYER FIRE FIGHTING PUMPS (DFF-P-1 THRU 3) NOTES:

1. VARIABLE FREQUENCY DRIVE
2. CLASS II DIV 2 GROUPS F&G EXPLOSION PROOF MOTOR

BFP FEED PUMPS (BFP-P-1 THRU 4) NOTES:

1. VARIABLE FREQUENCY DRIVE
2. MINIMUM SPEED FLOW: 100 GPM
3. MAXIMUM SPEED FLOW: 300 GPM

FILTRATE AND CONDENSATE PUMPS (FLT-P-1 THRU 3) NOTES:

1. SCREW IMPELLER
2. VARIABLE FREQUENCY DRIVE
3. PRIMARY OPERATING POINT IN SCHEDULE IS AT 1159 RPM (39.7 HZ)
4. FULL SPEED SECONDARY RATING POINT: 2,400 GPM AT 50 FEET WITH MAXIMUM 14 FEET OF NPSH3 REQUIRED
5. MINIMUM SPEED RATING POINT: 750 GPM AT 32 FEET
6. PROVIDE PUMPS CAPABLE OF PASSING A 3.7 INCH DIAMETER SPHERE
7. PROVIDE LONG RADIUS REDUCING BASE ELBOW WITH 8 INCH DISCHARGE

PLANT WATER PUMPS (PW-P-1 THRU 3) NOTES:

1. ENCLOSED IMPELLER

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KEMEL DI LICENSE No. 14864 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: NOT TO SCALE
		DRAWN BY: SAC
		CHECKED BY: DY
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 55 of 191
		PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3

PROCESS EQUIPMENT SCHEDULES

OCTOBER 2025 PM-04

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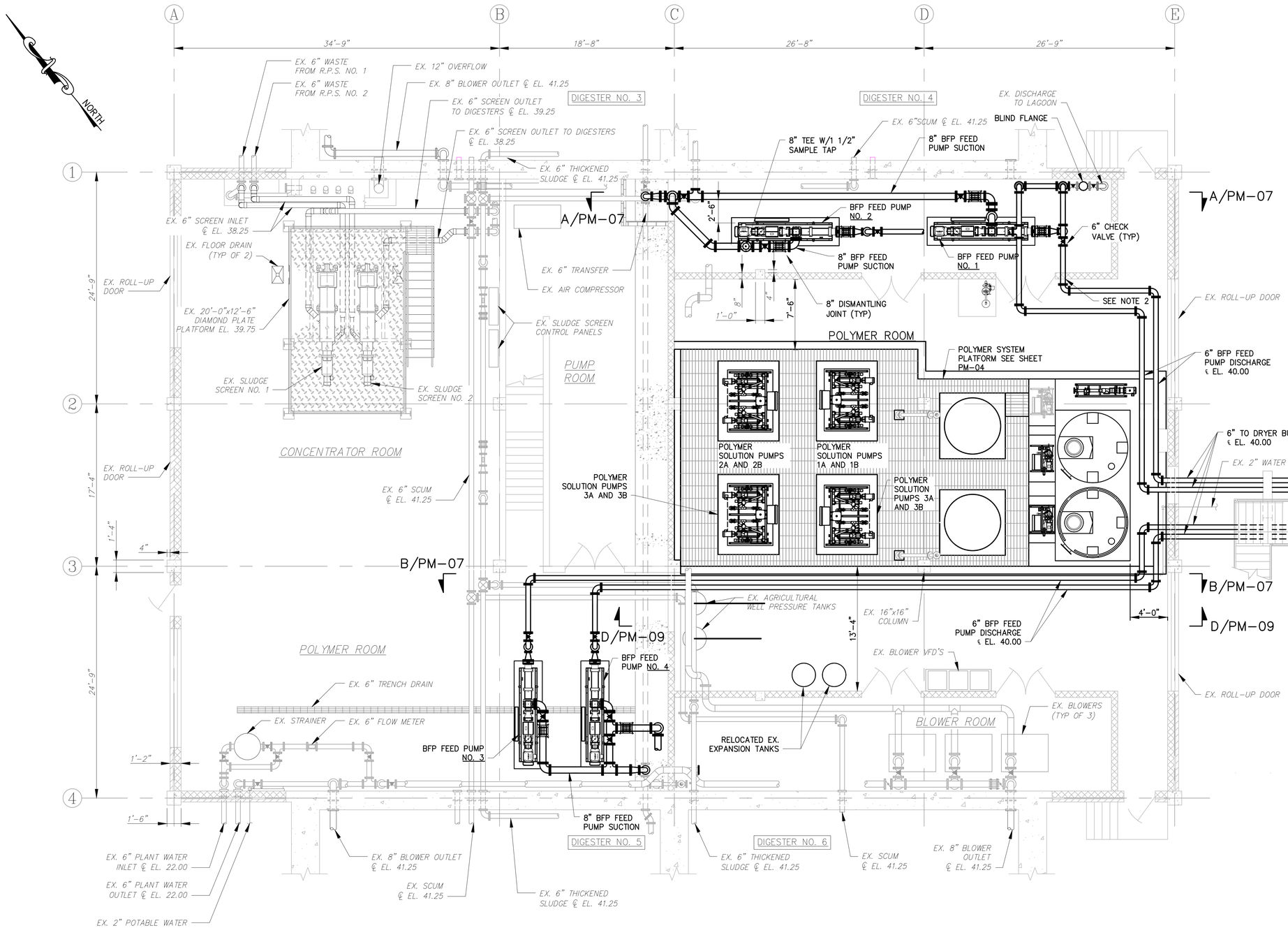

NOTES:

1. PIPE SUPPORTS NOT SHOWN FOR CLARITY. CONTRACTOR RESPONSIBLE FOR PROVIDING PIPE SUPPORTS IN ACCORDANCE WITH THE PROJECT MANUAL.
2. CORE DRILL NEW PIPE PENETRATIONS AND PROVIDE DOUBLE LINKSEAL.
3. PROVIDE CHAIN WHEEL OPERATORS FOR ANY PLUG VALVES LOCATED OUT OF REACH.
4. CONTRACTOR RESPONSIBLE FOR FINAL ROUTING OF POLYMER SOLUTION LINES TO INJECTION RING ON BFP FEED PUMP SUCTION AND VENTURI MIXER ON BFP FEED PUMP DISCHARGE. ROUTING OF POLYMER SOLUTION LINES TO BE PROVIDED AS SHOP DRAWINGS FOR APPROVAL.
5. NOT ALL POLYMER SYSTEM PIPING SHOWN FOR CLARITY. SEE PM-04 FOR ADDITIONAL POLYMER SYSTEM INFORMATION.
6. CONTRACTOR RESPONSIBLE FOR ROUTING SEAL WATER PIPING TO BFP FEED PUMPS. SEAL WATER TO BE POLYMER WATER FROM AGRICULTURAL WELL.

SOLIDS HANDLING BUILDING PLAN

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

3/16"=1'-0" 4' 2' 0 4' 8' 12'

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REVISIONS			
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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: 3/16"=1'-0"
DRAWN BY: RAD
CHECKED BY: RJA
SHEET NO.: 56 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SOLIDS HANDLING BUILDING
OVERALL PLAN
OCTOBER 2025 PM-05

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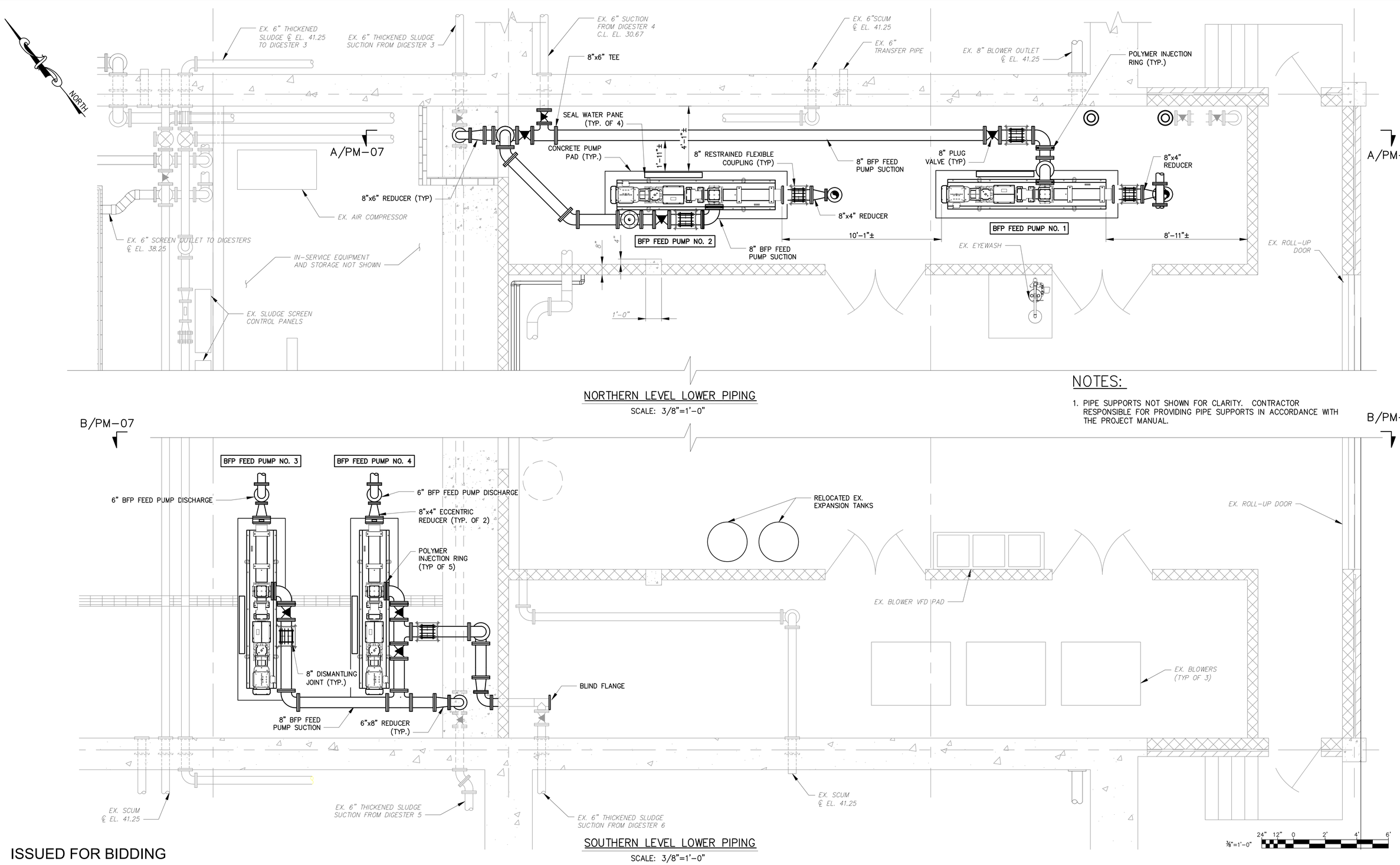

NORTHERN LEVEL LOWER PIPING

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

SOUTHERN LEVEL LOWER PIPING

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

NOTES:

1. PIPE SUPPORTS NOT SHOWN FOR CLARITY. CONTRACTOR RESPONSIBLE FOR PROVIDING PIPE SUPPORTS IN ACCORDANCE WITH THE PROJECT MANUAL.

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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 3/8"=1'-0"	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	SOLIDS HANDLING BUILDING
APPROVED DATE		SHEET NO.: 57 of 191	LOWER LEVEL PIPING PLAN
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PM-06

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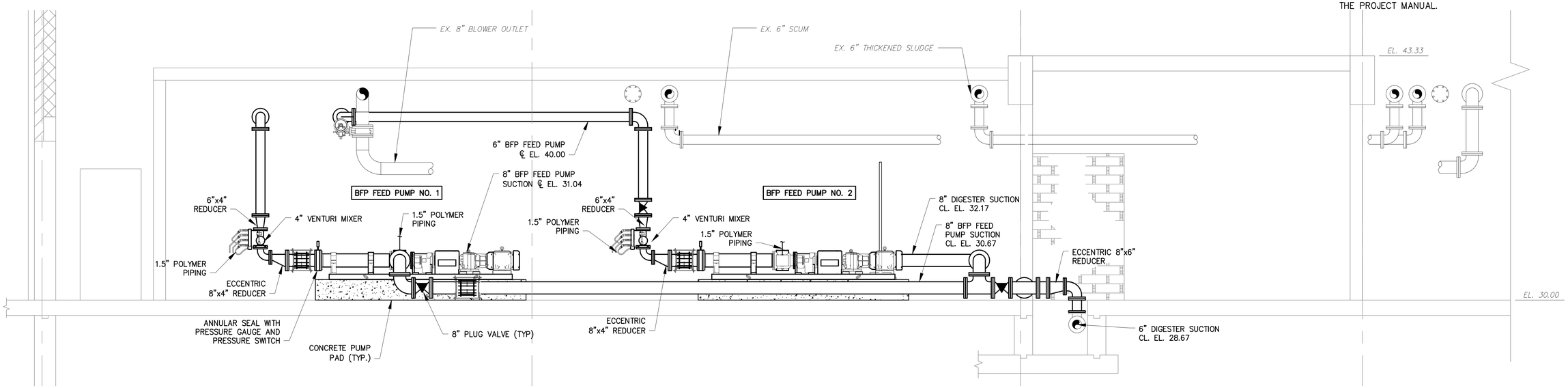
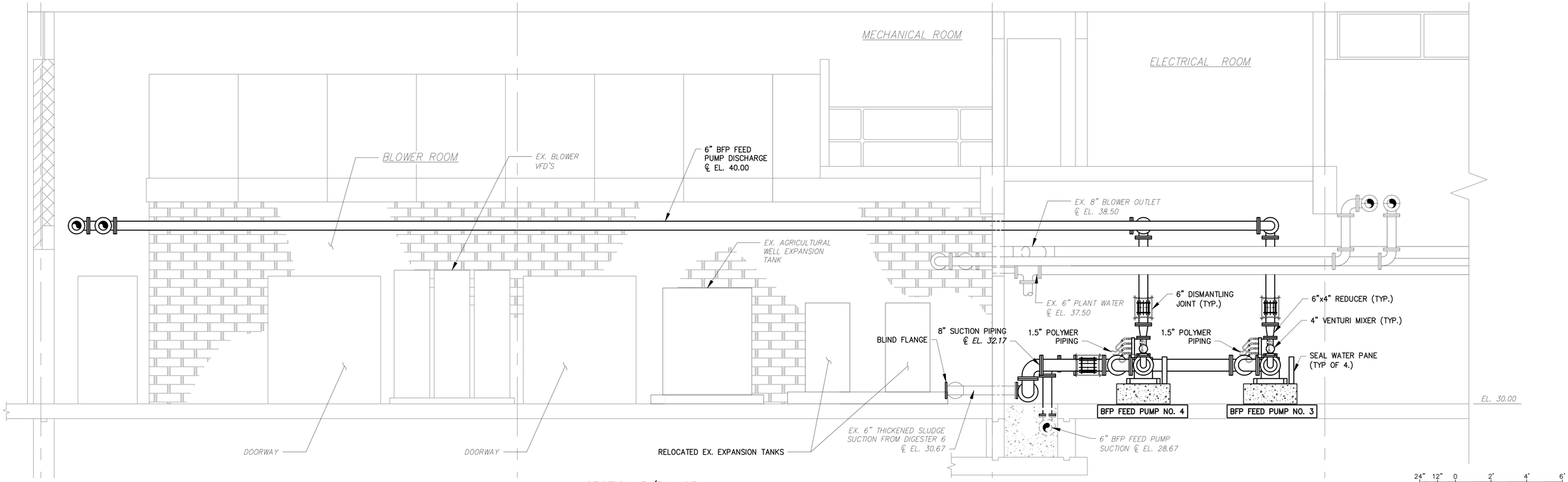
NOTES:

1. PIPE SUPPORTS NOT SHOWN FOR CLARITY. CONTRACTOR RESPONSIBLE FOR PROVIDING PIPE SUPPORTS IN ACCORDANCE WITH THE PROJECT MANUAL.



SECTION A/PM-05

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



SECTION B/PM-05

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

3/8"=1'-0" 24" 12" 0 2' 4' 6'

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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 3/8"=1'-0"	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	CONTRACT 3
APPROVED DATE		SHEET NO.: 58 of 191	SOLIDS HANDLING BUILDING SECTIONS
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PM-07

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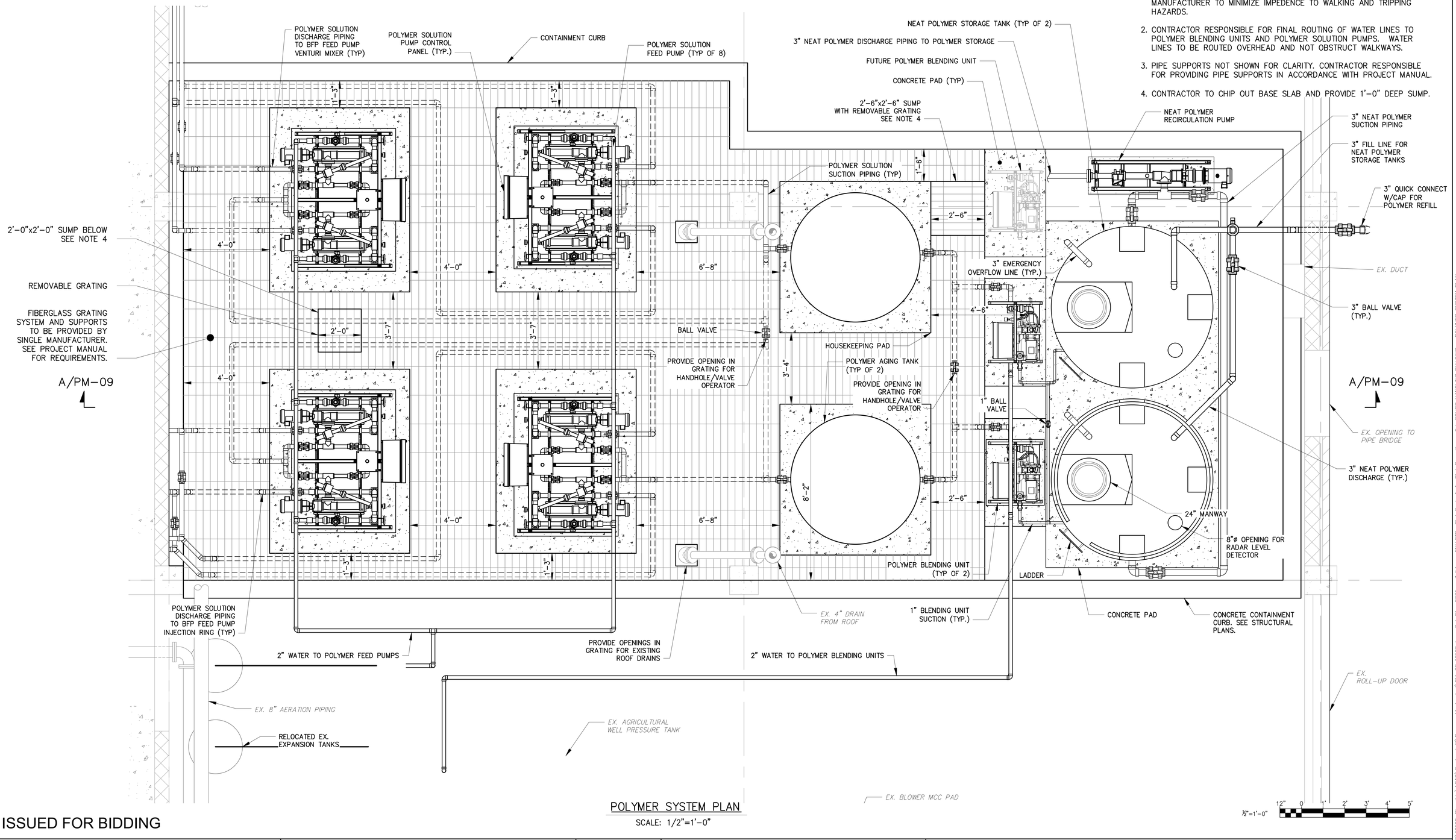
NOTES:

1. CONTRACTOR RESPONSIBLE FOR FINAL ROUTING OF NEAT POLYMER AND POLYMER SOLUTION LINES. COORDINATE WITH GRATING SYSTEM MANUFACTURER TO MINIMIZE IMPEDENCE TO WALKING AND TRIPPING HAZARDS.
2. CONTRACTOR RESPONSIBLE FOR FINAL ROUTING OF WATER LINES TO POLYMER BLENDING UNITS AND POLYMER SOLUTION PUMPS. WATER LINES TO BE ROUTED OVERHEAD AND NOT OBSTRUCT WALKWAYS.
3. PIPE SUPPORTS NOT SHOWN FOR CLARITY. CONTRACTOR RESPONSIBLE FOR PROVIDING PIPE SUPPORTS IN ACCORDANCE WITH PROJECT MANUAL.
4. CONTRACTOR TO CHIP OUT BASE SLAB AND PROVIDE 1'–0" DEEP SUMP.



POLYMER SYSTEM PLAN

SCALE: 1/2"=1'–0"

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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 1/2"=1'–0"	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	CONTRACT 3
APPROVED DATE		SHEET NO.: 59 of 191	SOLIDS HANDLING BUILDING
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	POLYMER SYSTEM PLAN
		OCTOBER 2025	PM–08

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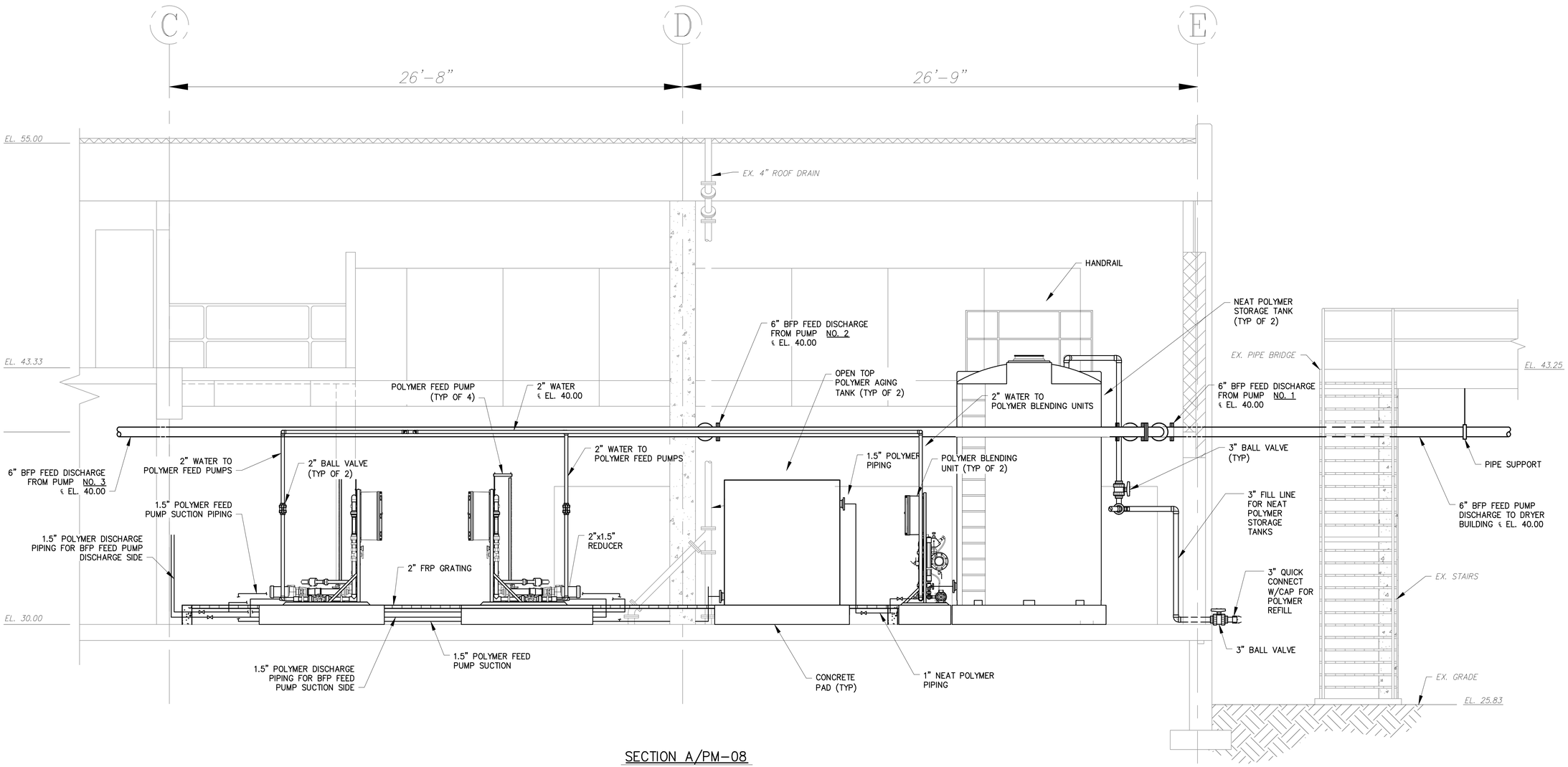
NOTES:

1. PIPE SUPPORTS NOT SHOWN FOR CLARITY. CONTRACTOR RESPONSIBLE FOR PROVIDING PIPE SUPPORTS IN ACCORDANCE WITH THE PROJECT MANUAL.



SECTION A/PM-08

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

3/8"=1'-0" 24" 12" 0 2' 4' 6'

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REVISIONS			
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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 3/16"=1'-0"	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	SOLIDS HANDLING BUILDING POLYMER SECTIONS
APPROVED DATE		SHEET NO.: 60 of 191	OCTOBER 2025 PM-09
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	

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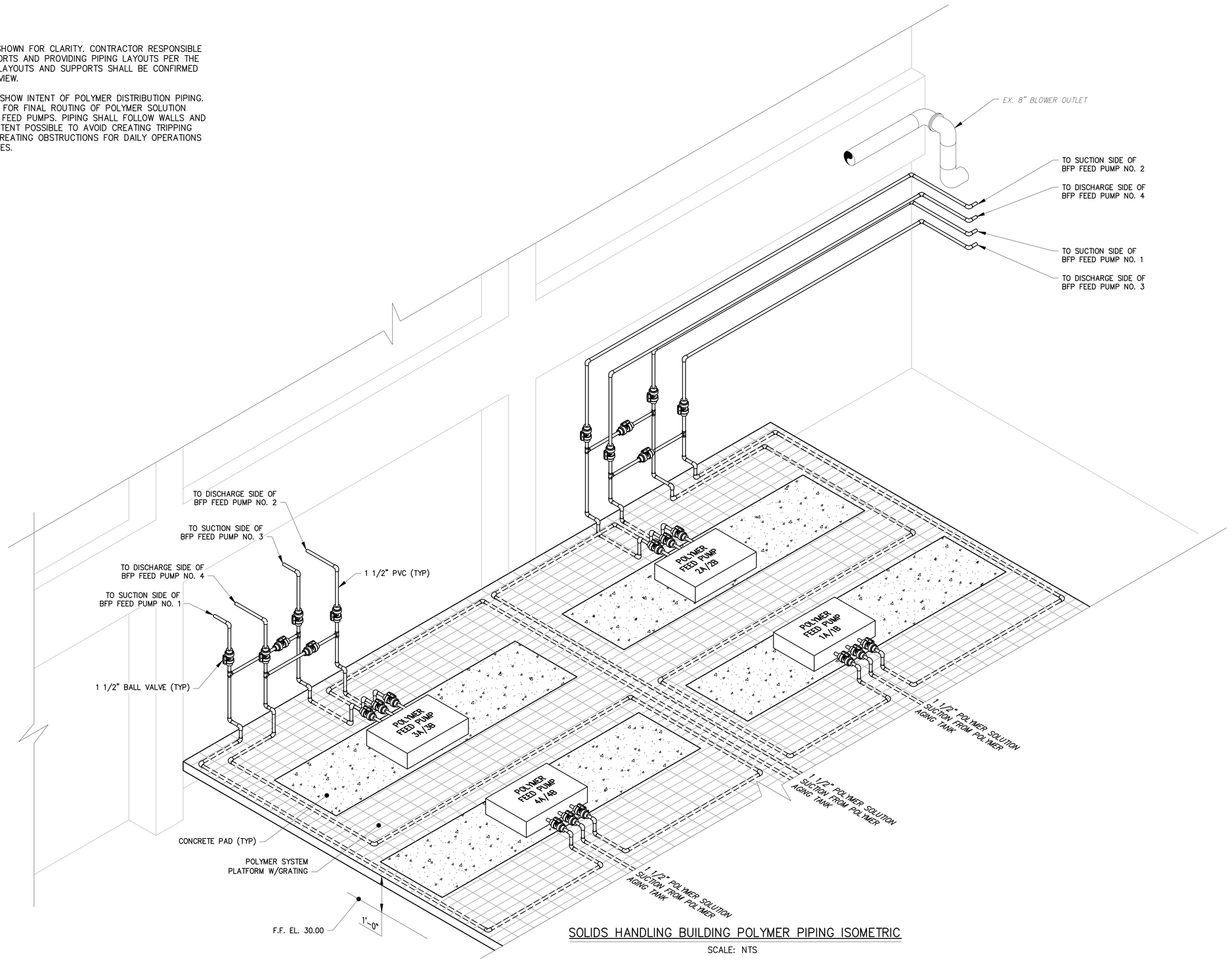
NOTES:

1. ALL PIPE SUPPORTS NOT SHOWN FOR CLARITY. CONTRACTOR RESPONSIBLE FOR DESIGNING PIPE SUPPORTS AND PROVIDING PIPING LAYOUTS PER THE PROJECT MANUAL. PIPING LAYOUTS AND SUPPORTS SHALL BE CONFIRMED DURING SHOP DRAWING REVIEW.

2. POLYMER PIPING LAYOUTS SHOW INTENT OF POLYMER DISTRIBUTION PIPING. CONTRACTOR RESPONSIBLE FOR FINAL ROUTING OF POLYMER SOLUTION DISCHARGE PIPING TO BFP FEED PUMPS. PIPING SHALL FOLLOW WALLS AND RUN OVERHEAD TO THE EXTENT POSSIBLE TO AVOID CREATING TRIPPING HAZARDS OR OTHERWISE CREATING OBSTRUCTIONS FOR DAILY OPERATIONS AND MAINTENANCE ACTIVITIES.



SOLIDS HANDLING BUILDING POLYMER PIPING ISOMETRIC

SCALE: NTS

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REVISIONS			
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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: NOT TO SCALE
DRAWN BY: RAD
CHECKED BY: RJA
SHEET NO.: 61of 191
PROJECT NO.:50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SOLIDS HANDLING BUILDING
POLYMER SYSTEM PIPING ISOMETIRC
OCTOBER 2025 PM-10

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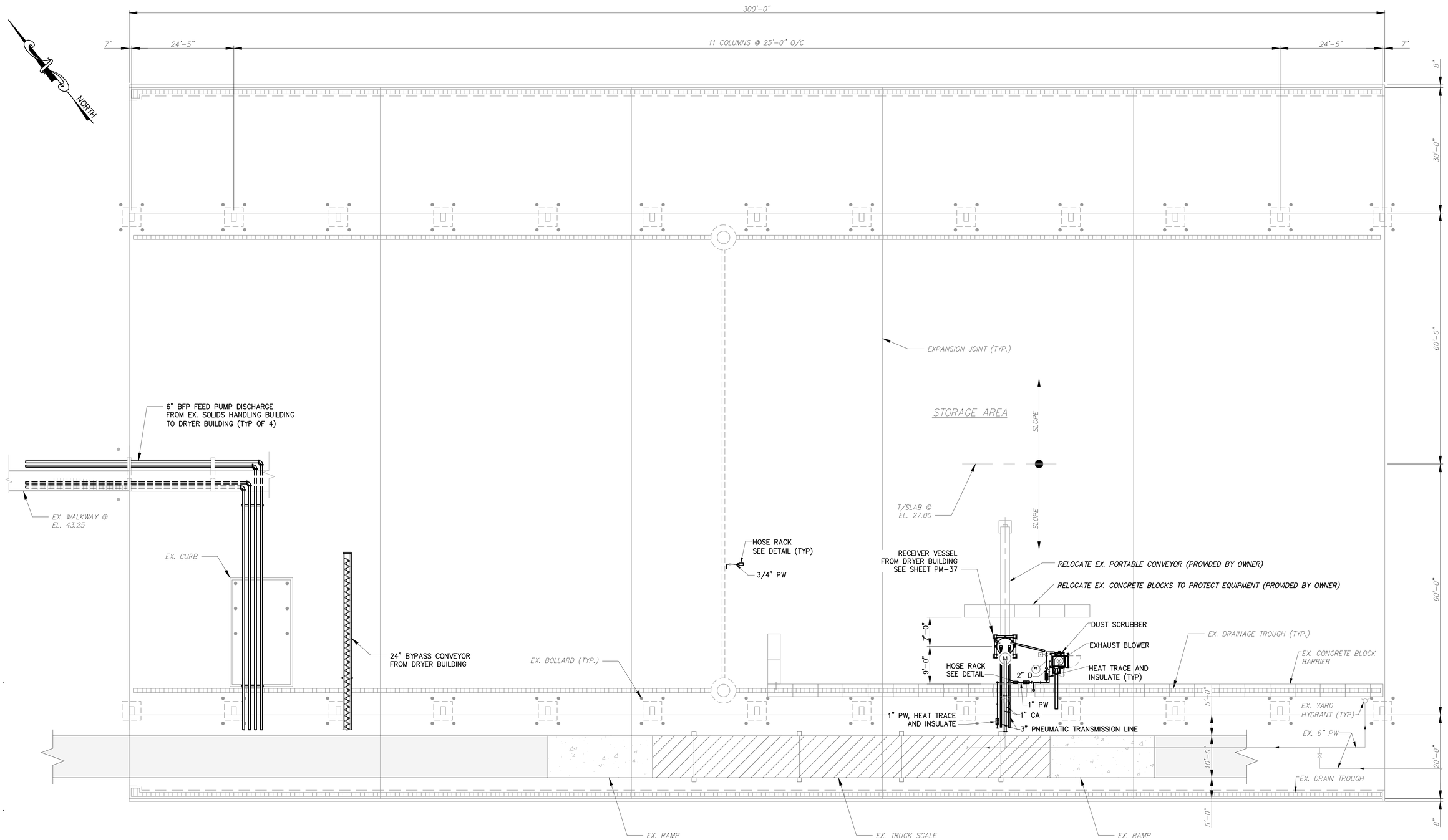

SLUDGE STORAGE PAVILION PLAN

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

3/32"=1'-0" 8' 4' 0 8' 16' 24'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 3/32"=1'-0"	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: RJA	SLUDGE STORAGE PAVILION OVERALL PLAN
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 62 of 191	OCTOBER 2025 PM-11
		PROJECT NO.:50.1890.97-A	

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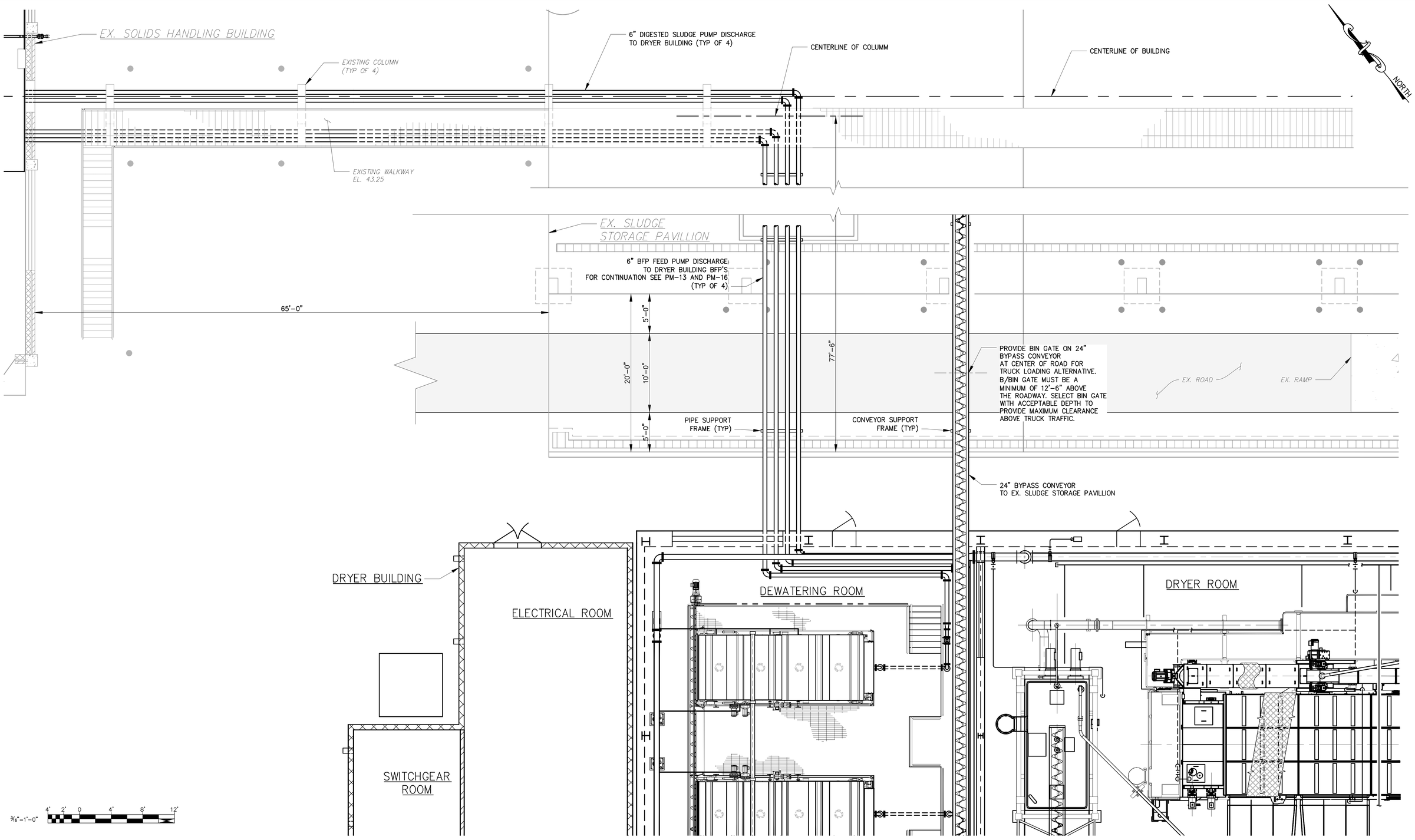

ISSUED FOR BIDDING

SLUDGE STORAGE PAVILION PIPE BRIDGE PLAN

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

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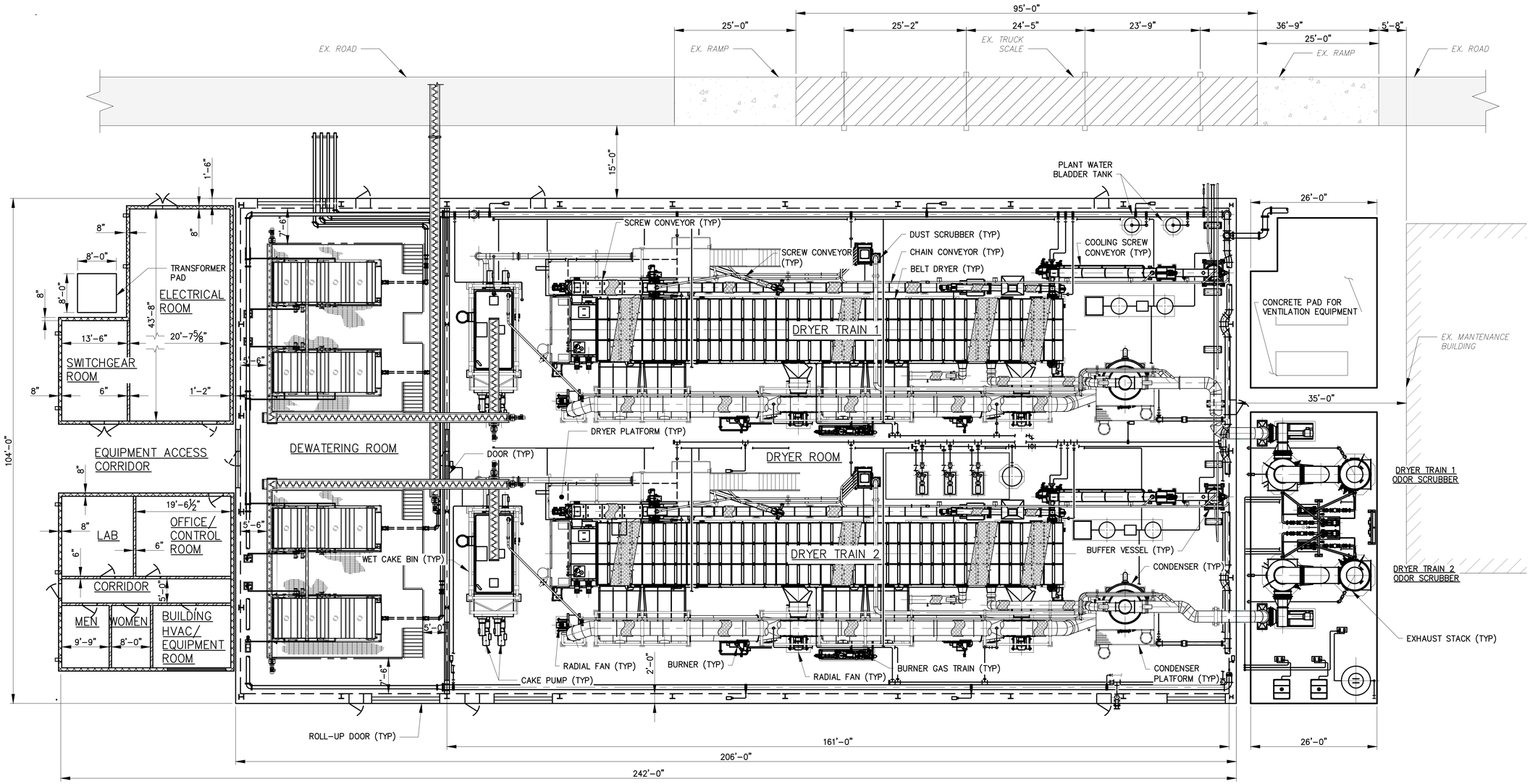
ROBERT J. ANDRYCHAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 3/16"=1'-0"	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	
APPROVED DATE		SHEET NO.: 63 of 191	SLUDGE STORAGE PAVILION PIPE BRIDGE AREA
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.:50.1890.97-A	OCTOBER 2025 PM-12

\\rkdfs.com\fs\Cloud Projects\2019\19129_Biosolids\ACAD\Contract III\Process Mechanical\PM-12 19129.dwg Oct 21, 2025 - 4:54pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab: SLUDGE STORAGE PAVILION PARTIAL PLAN



NOTES:

1. THE DIMENSIONS SHOWN ON THIS DRAWING FOR THE DRYER BUILDING ARE APPROXIMATE. REFER TO THE APPROVED SHOP DRAWINGS IN CONTRACT 2 FOR THE ACTUAL DIMENSIONS WHICH COULD VARY FROM THOSE SHOWN.
2. THE CONFIGURATION OF ANDRITZ'S DRYING SYSTEM IS BASED ON SHOP DRAWINGS FURNISHED BY ANDRITZ IN AUGUST 2024 AND APPROVED BY THE ENGINEER. THE ACTUAL CONFIGURATION MAY HAVE BEEN SUBSEQUENTLY CHANGED BY ANDRITZ AND THE CONSTRUCTION MUST BE COORDINATED BETWEEN THE CONTRACTOR AND ANDRITZ.
3. THE CONTRACTOR IS RESPONSIBLE FOR FINAL DIMENSIONS OF DROP CHUTES AND CONNECTIONS, INLETS, AND OUTLETS OF ALL CONVEYORS. COORDINATE INLET AND OUTLET FLANGE SIZING WITH CHUTE CONNECTIONS AND OTHER EQUIPMENT PRIOR TO RELEASE FOR FABRICATION.

PLAN

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

3/32"=1'-0" 8' 4' 0 8' 16' 24'

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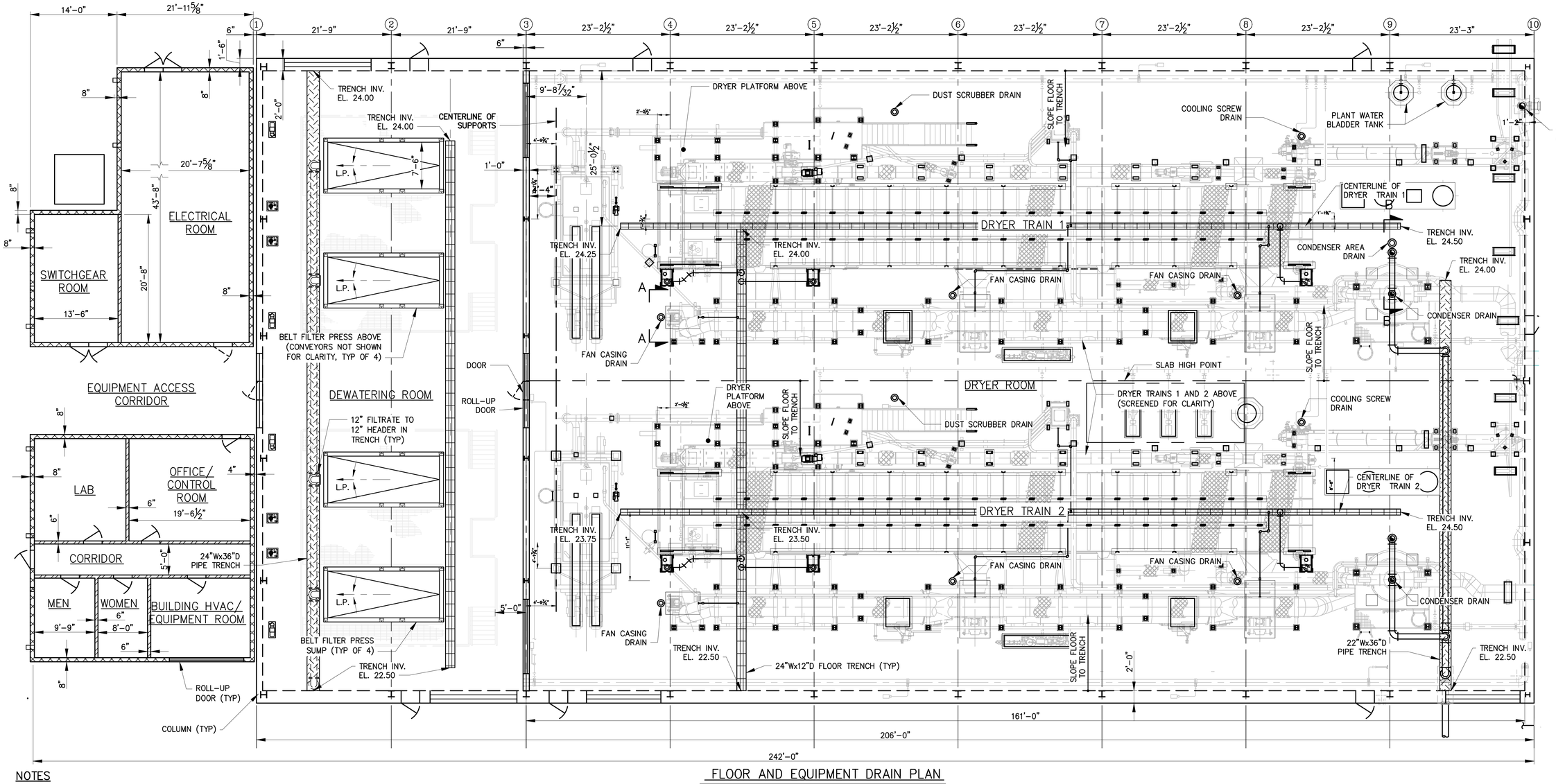
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
		DRAWN BY: DLJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	
APPROVED DATE		SHEET NO.: 64 of 191	PLAN – OVERVIEW OF DRYER BUILDING & ODOR CONTROL SYSTEM
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PM-13

\\adcrkk.com\fs\Cloud\Projects\2019\19129_Biosolids\ACAD\Contract III\Process Mechanical\PM-13 19129.dwg Oct 21, 2025 - 5:01pm ENV:CTB Plot Scale 1=1 Plot By: rdixon Tab:DRYER BUILDING & ODOR CONTROL SYSTEM

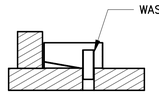


FLOOR AND EQUIPMENT DRAIN PLAN

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

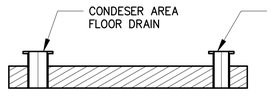
NOTES

1. THE LOCATIONS SHOWN ON THIS DRAWING IN THE DRYER ROOM FOR ANDRITZ'S EQUIPMENT PADS, DRAINS, ETC. ARE APPROXIMATE AND ARE BASED ON SHOP DRAWINGS FURNISHED BY ANDRITZ IN AUGUST 2024 AND APPROVED BY THE ENGINEER. ACTUAL LOCATIONS MAY HAVE BEEN SUBSEQUENTLY CHANGED BY ANDRITZ AND THE CONSTRUCTION MUST BE COORDINATED BETWEEN THE CONTRACTOR AND ANDRITZ.
2. THE LOCATIONS AND DIMENSIONS SHOWN ON THIS DRAWING FOR FLOOR TRENCHES AND PIPE TRENCHES IN THE DRYER ROOM AND DEWATERING ROOM ARE APPROXIMATE AND ARE FOR ILLUSTRATIVE PURPOSES. REFER TO CONTRACT 2 AS-BUILT DRAWINGS FOR THE EXACT LOCATIONS AND DIMENSIONS OF PIPE TRENCHES AND FLOOR TRENCHES.
3. EQUIPMENT IN THE DRYER ROOM DENOTED WITH ASTERISKS (**) IS NOT PROVIDED BY ANDRITZ.



SECTION A

SCALE: NOT TO SCALE



SECTION B

SCALE: NOT TO SCALE

⅛"=1'-0" 8' 4' 0 8' 16'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 1/8"=1'-0"	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	PLAN – DRYER BUILDING OVERVIEW AT FLOOR LEVEL
APPROVED DATE		SHEET NO.: 65 of 191	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PM-14

\\rkk.com\Va\Cloud Projects\2019\19129_Biosolids\CAD\Contract III\Process Mechanical\PM-14 19129.dwg Oct 21, 2025 - 5:21pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:DRYER BUILDING OVERVIEW AT FLOOR LEVEL

EX. ROAD

EX. RAMP

EX. TRUCK SCALE

6" BFP FEED PUMP DISCHARGE TO DRYER BUILDING BFP'S FOR CONTINUATION SEE SHEET PM-12 (TYP OF 4)

15'-0"

1'-6"

2'-0"

6"

7'-6"

9'-8 7/32"

25'-0 1/2"

ELECTRICAL ROOM

43'-8"

BFP NO.1

BFP NO.2

SCREW CONVEYOR (TYP)

SCREW CONVEYOR (TYP)

DUST SCRUBBER (TYP)

CHAIN CONVEYOR (TYP)

BELT DRYER (TYP)

COOLING SCREW CONVEYOR (TYP)

PLANT WATER BLADDER TANK

12" PLANT WATER TO PUMP STATION (SEE SHEET C-03)

DRYER TRAIN 1

DRYER (TYP)

SWITCHGEAR ROOM

20'-8"

13'-6"

20'-7 5/8"

1'-8"

104'-0"

14'-2"

EQUIPMENT ACCESS CORRIDOR

DEWATERING ROOM

DRYER PLATFORM (TYP)

DOOR (TYP)

DRYER ROOM

BFP NO.3

BFP NO.4

WET CAKE BIN (TYP)

DRYER TRAIN 2

BUFFER VESSEL (TYP)

CONDENSER (TYP)

14'-9 1/8"

19'-6 1/2"

LAB

OFFICE/ CONTROL ROOM

4"

16'-6"

CORRIDOR

5'-0"

6"

MEN

WOMEN

BUILDING HVAC/ EQUIPMENT ROOM

12'-10"

9'-9 1/8"

8'-0"

16'-0 1/2"

5'-0"

RADIAL FAN (TYP)

BURNER (TYP)

RADIAL FAN (TYP)

2'-0"

CONDENSER PLATFORM (TYP)

7'-6"

CAKE PUMP (TYP)

ROLL-UP DOOR (TYP)

COLUMN (TYP)

ROLL-UP DOOR (TYP)

161'-0"

206'-0"

242'-0"

NOTES:

1. THE DIMENSIONS SHOWN ON THIS DRAWING FOR THE DRYER BUILDING ARE APPROXIMATE. REFER TO THE APPROVED SHOP DRAWINGS IN CONTRACT 2 FOR THE ACTUAL DIMENSIONS WHICH COULD VARY FROM THOSE SHOWN.

2. THE CONFIGURATION OF ANDRITZ'S DRYING SYSTEM IS BASED ON SHOP DRAWINGS FURNISHED BY ANDRITZ IN AUGUST 2024 AND APPROVED BY THE ENGINEER. THE ACTUAL CONFIGURATION MAY HAVE BEEN SUBSEQUENTLY CHANGED BY ANDRITZ AND THE CONSTRUCTION MUST BE COORDINATED BETWEEN THE CONTRACTOR AND ANDRITZ.

PLAN

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

1/8"=1'-0" 8' 4' 0 8' 16'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

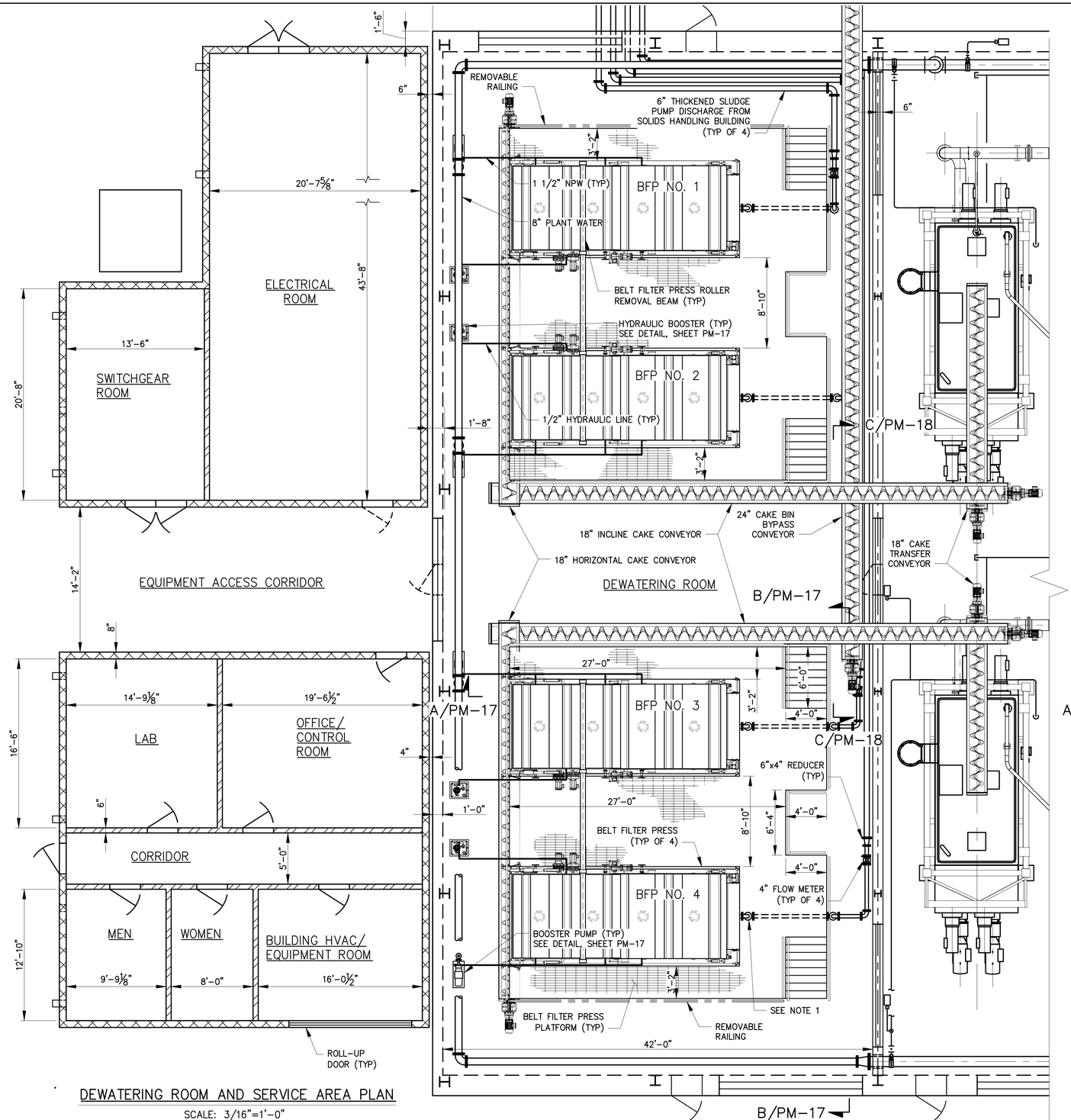
KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER
APPROVED DATE	
ASSISTANT DIRECTOR OF ENGINEERING	

SCALE: 1/8"=1'-0"
DRAWN BY: RAD
CHECKED BY: RJA
SHEET NO.: 66 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
PLAN – DRYER BUILDING OVERVIEW AT EQUIPMENT LEVEL
OCTOBER 2025 PM-15

\\ad.rkk.com\fs\Cloud\Projects\2019\19129_Biosolids\ACAD\Contract III\Process Mechanical\PM-15 19129.dwg Oct 21, 2025 - 5:23pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:DRYER BUILDING OVERVIEW AT EQUIPMENT LEVEL



DEWATERING ROOM AND SERVICE AREA PLAN

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

NOTE:

1. PROVIDE CIRCULAR OPENING IN GRATING FOR 4" SLUDGE FEED PIPE TO BE ROUTED UP THROUGH THE PLATFORM TO THE CONNECTION FOR THE BFP INFLUENT TROUGH. THIS IS TYPICAL FOR ALL FOUR BFP'S.
2. CONVEYOR SUPPORTS NOT SHOWN. FINAL CONVEYOR SUPPORT DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR AND CONVEYOR MANUFACTURER. REFER TO SPECIFICATION SECTION 14400 FOR ADDITIONAL DETAILS.
3. BELT FILTER PRESS ACCESS PLATFORM FINAL DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR. A SIGNED AND SEALED LAYOUT WITH DESIGN CALCULATIONS SHALL BE PROVIDED. THE ACCESS PLATFORM SHALL BE DESIGNED TO SUPPORT THE WEIGHT OF THE LARGEST BELT FILTER PRESS ROLLER WHEN REMOVED FOR MAINTENANCE IN ADDITION TO STANDARD PLATFORM LOADING.
4. NOT ALL PIPE SUPPORTS SHOWN. FINAL PIPE SUPPORT DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR. PIPE SUPPORT DESIGN SIGNED AND SEALED BY A PROFESSIONAL ENGINEER SHOULD BE PROVIDED.
5. PROVIDE 1/2" CLOSED CELL FOAM INSULATION WITH ALUMINUM JACKET ON SLUDGE FEED PIPING AND PLANT WATER PIPING. PROVIDE ACCESS FOR VALVES AND FLOW METERS.
6. THE DIMENSIONS SHOWN ON THIS DRAWING FOR THE DRYER BUILDING ARE APPROXIMATE. REFER TO THE APPROVED SHOP DRAWINGS IN CONTRACT 2 FOR THE ACTUAL DIMENSIONS WHICH COULD VARY FROM THOSE SHOWN.
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3/16"=1'-0" 4' 2' 0 4' 8' 12'

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ROBERT J. ANDRYSZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 3/16"=1'-0"	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	DEWATERING ROOM AND SERVICE AREA – EQUIPMENT LEVEL
APPROVED DATE		SHEET NO.: 67 of 191	OCTOBER 2025 PM-16
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	

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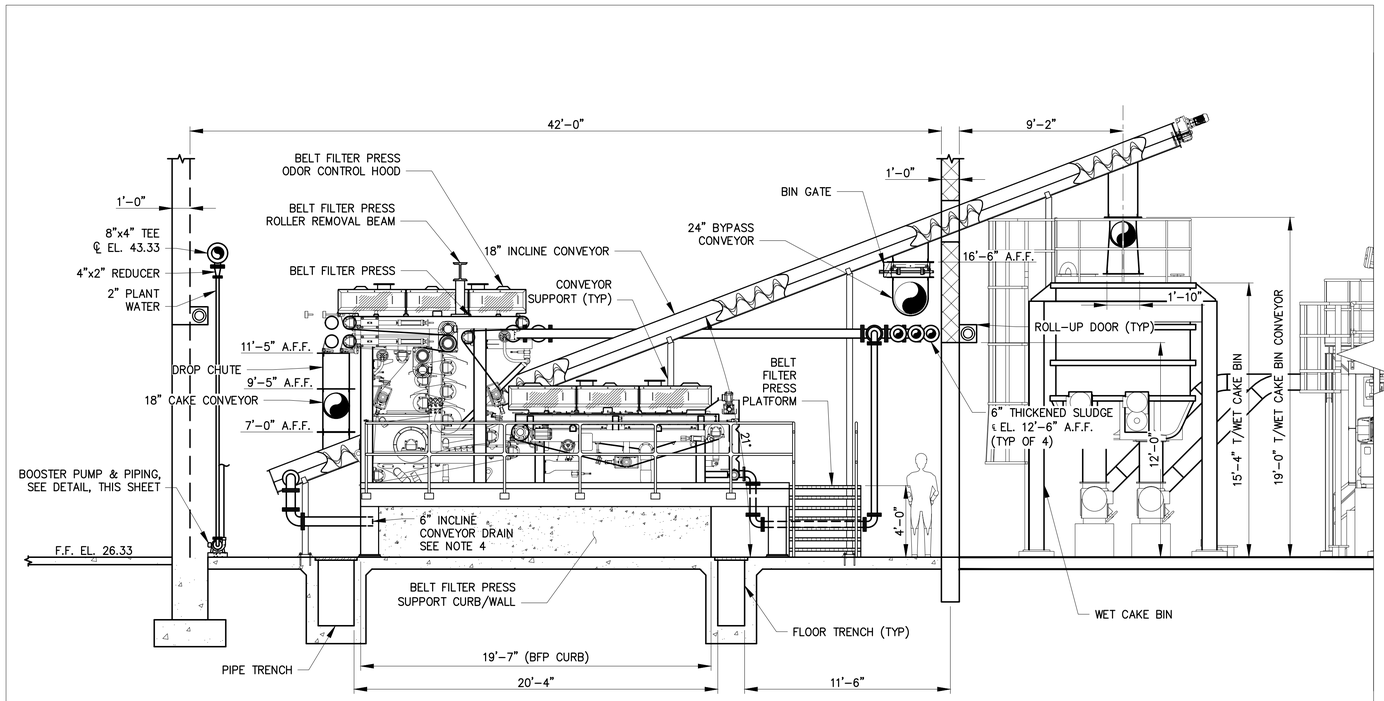
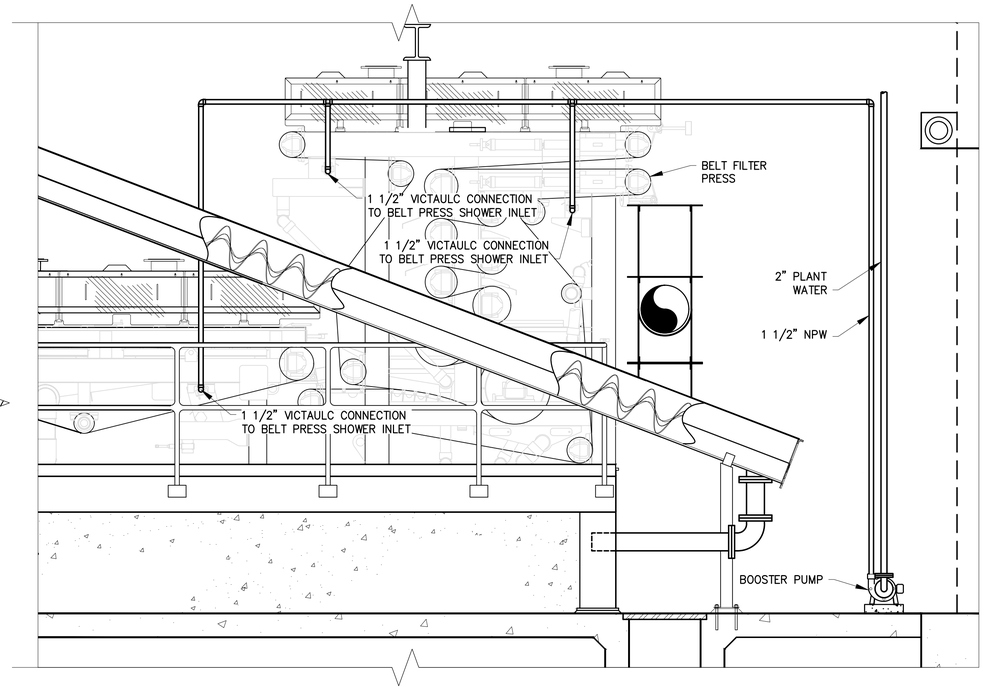


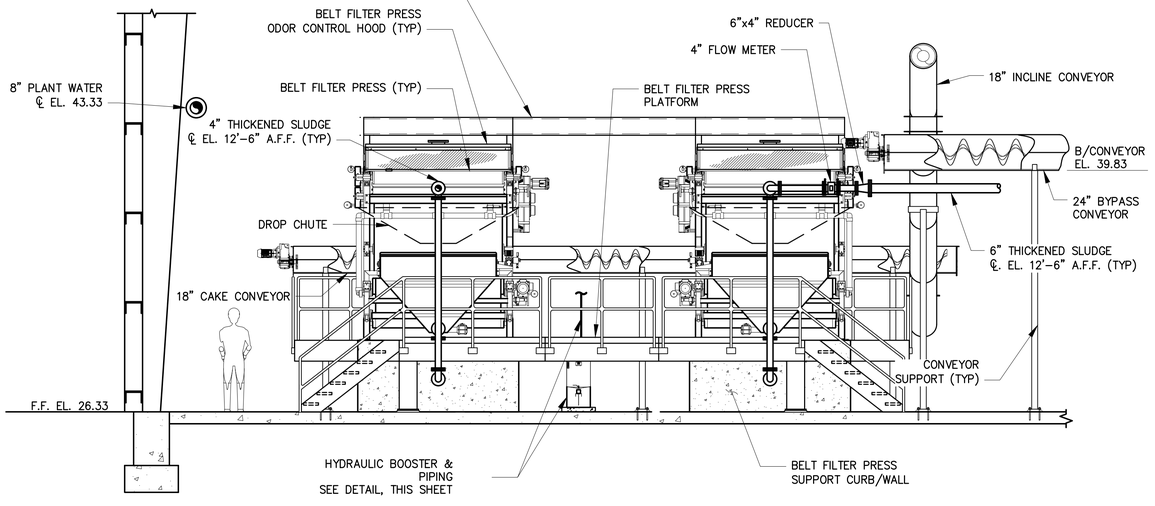
SECTION A/PM-16

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



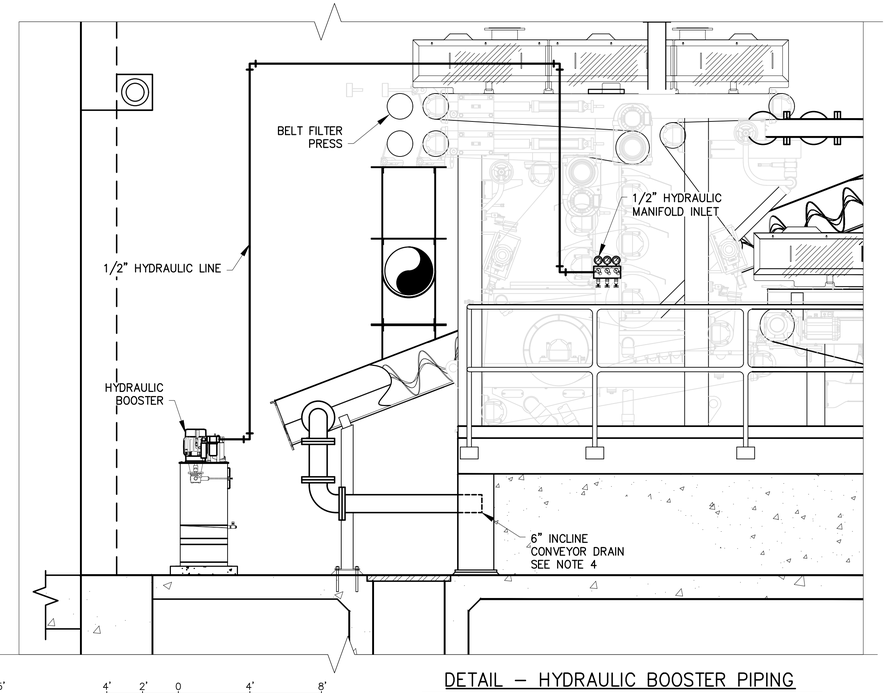
DETAIL - BOOSTER PUMP PIPING (NON-OPERATOR SIDE VIEW)

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



SECTION B/PM-16

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



DETAIL - HYDRAULIC BOOSTER PIPING

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

NOTES:

1. NOT ALL CONVEYOR SUPPORTS SHOWN. FINAL CONVEYOR SUPPORT DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR AND CONVEYOR MANUFACTURER. REFER TO SPECIFICATION SECTION 14400 FOR ADDITIONAL DETAILS.
2. BELT FILTER PRESS ACCESS PLATFORM FINAL DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR. A SIGNED AND SEALED LAYOUT WITH DESIGN CALCULATIONS SHALL BE PROVIDED. THE ACCESS PLATFORM SHALL BE DESIGNED TO SUPPORT THE WEIGHT OF THE LARGEST BELT FILTER PRESS ROLLER WHEN REMOVED FOR MAINTENANCE IN ADDITION TO STANDARD PLATFORM LOADING.
3. NOT ALL PIPE SUPPORTS SHOWN. FINAL PIPE SUPPORT DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR PIPE SUPPORT DESIGN SIGNED AND SEALED BY PROFESSIONAL ENGINEER SHOULD BE PROVIDED.
4. INCLINE CONVEYOR DRAIN SHALL BE ROUTED TO BFP SUMP AND THROUGH THE SUMP WALL TO A FREE DISCHARGE.
5. PROVIDE 1/2" CLOSED CELL FOAM INSULATION WITH ALUMINUM JACKET ON SLUDGE FEED PIPING AND PLANT WATER PIPING. PROVIDE ACCESS FOR VALVES AND FLOW METERS.
6. THE DIMENSIONS SHOWN ON THIS DRAWING FOR THE DRYER BUILDING ARE APPROXIMATE. REFER TO THE APPROVED SHOP DRAWINGS IN CONTRACT 2 FOR THE ACTUAL DIMENSIONS WHICH COULD VARY FROM THOSE SHOWN.
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8. THE CONTRACTOR IS RESPONSIBLE FOR FINAL DIMENSIONS OF DROP CHUTES AND CONNECTIONS, INLETS, AND OUTLETS OF ALL CONVEYORS. COORDINATE INLET AND OUTLET FLANGE SIZING WITH CHUTE CONNECTIONS AND OTHER EQUIPMENT PRIOR TO RELEASE FOR FABRICATION.

½"=1'-0" 12" 0 1' 2' 3' 4' 5'

¾"=1'-0" 4' 2' 0 4' 8'

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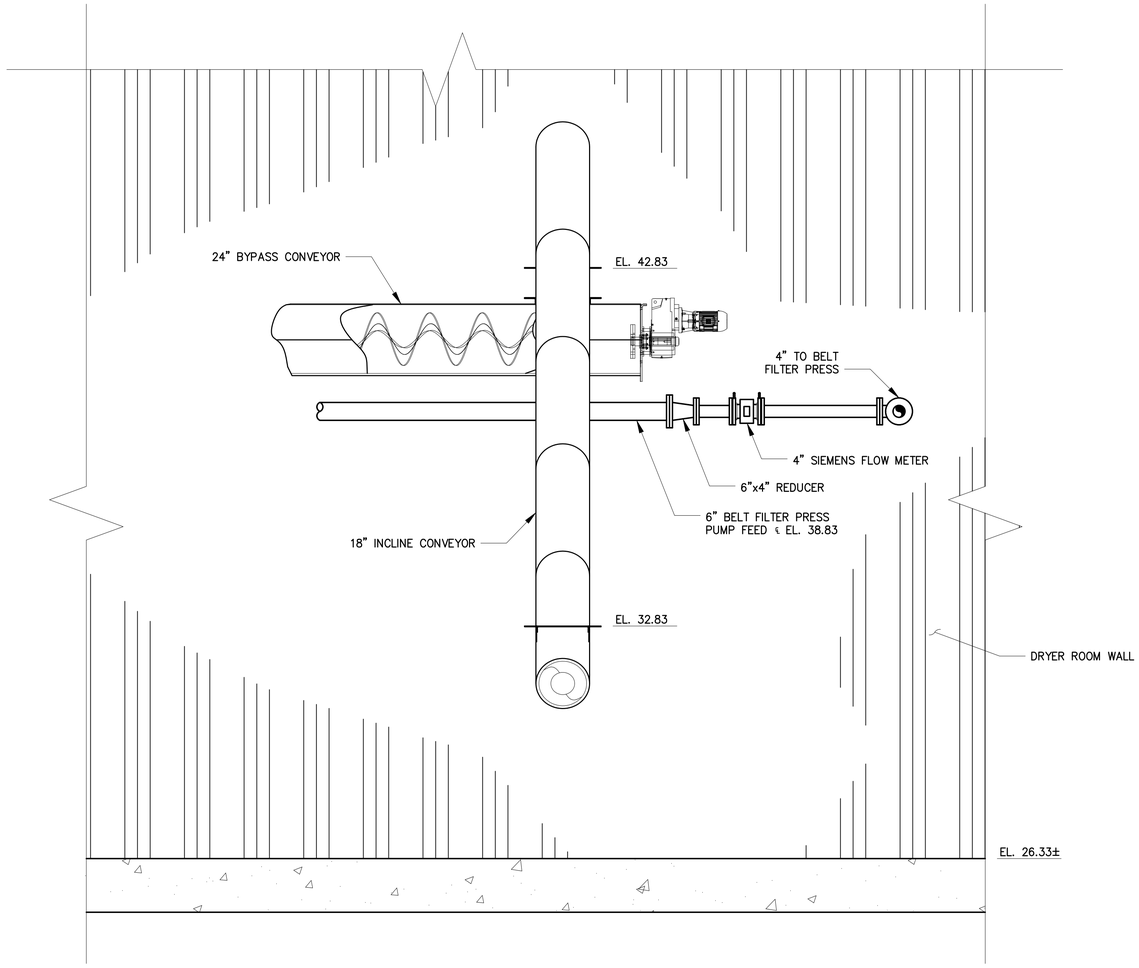
ROBERT J. ANDRYCHAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	
APPROVED DATE		SHEET NO.: 68 of 191	DEWATERING ROOM SECTIONS 1
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	
			OCTOBER 2025 PM-17

\\rkdfs.com\fs\Cloud Projects\2019\19129_Biosolids\ACAD\Contract III\Process Mechanical\PM-17 19129.dwg Oct 21, 2025 - 3:54pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab: DEWATERING ROOM AND SERVICE AREA



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

NOTE:

1. THE CONTRACTOR IS RESPONSIBLE FOR FINAL DIMENSIONS OF DROP CHUTES AND CONNECTIONS, INLETS, AND OUTLETS OF ALL CONVEYORS. COORDINATE INLET AND OUTLET FLANGE SIZING WITH CHUTE CONNECTIONS AND OTHER EQUIPMENT PRIOR TO RELEASE FOR FABRICATION.

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¼"=1'-0" 4' 2' 0 4' 8'

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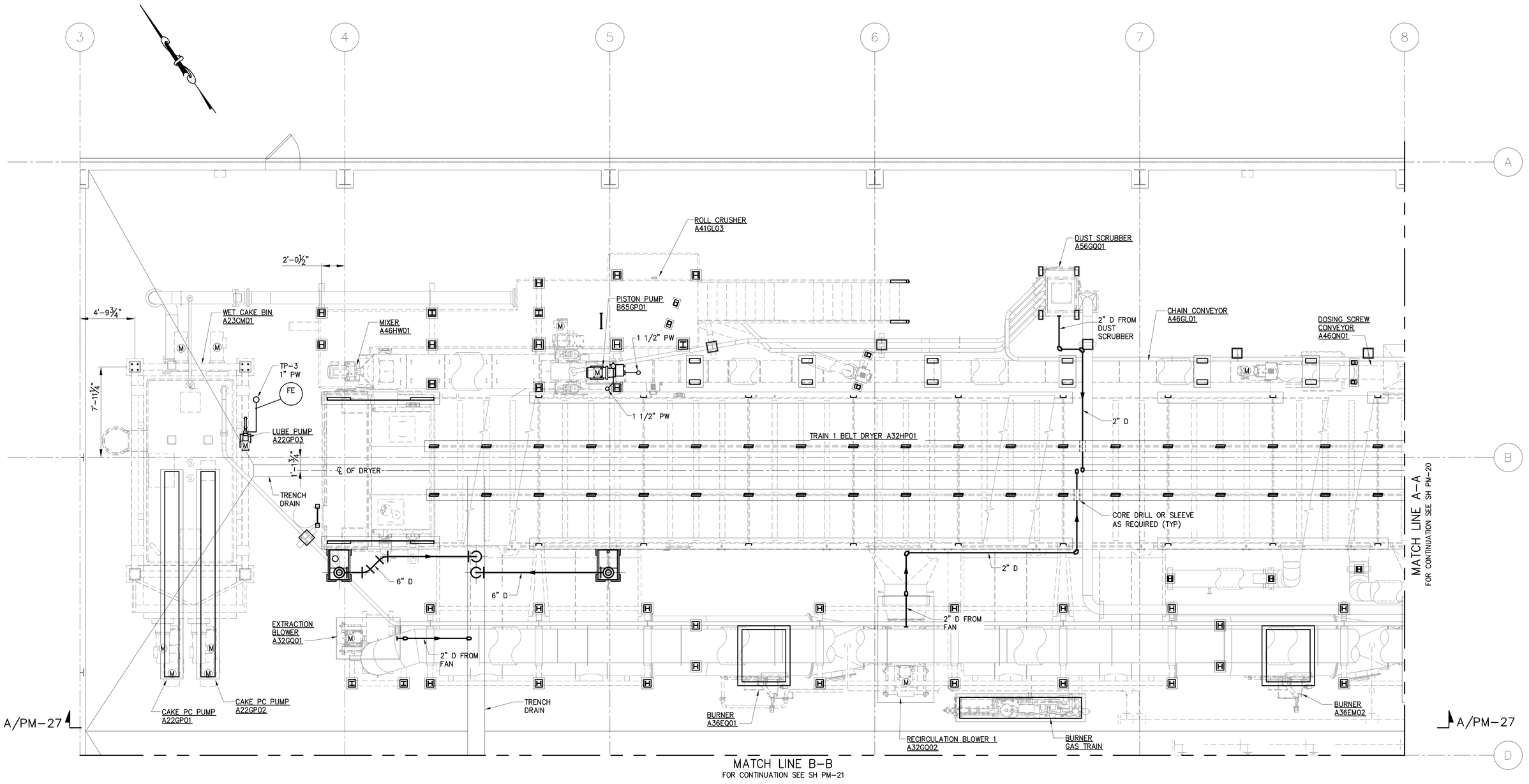
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	
APPROVED DATE		SHEET NO.: 69 of 191	DEWATERING ROOM SECTIONS 2
		PROJECT NO.: 50.1890.97-A	
ASSISTANT DIRECTOR OF ENGINEERING			OCTOBER 2025 PM-18



PLAN

NOTES:

1. LOCATE BELT DRYERS FROM PRE-ENGINEERED METAL BUILDING COLUMN LINES AS INDICATED. COORDINATE WITH PEMB RECORD DRAWINGS FROM CONTRACT 2 AND THE APPROVED BELT DRYER SHOP DRAWINGS IN APPENDIX B.

½"=1'-0" 4' 2' 0 4' 8'

ISSUED FOR BIDDING

AECOM
AECOM TECHNICAL SERVICES, INC.
250 APOLLO DRIVE - CHELMSFORD, MA 01824
(978) 905-2100
www.aecom.com

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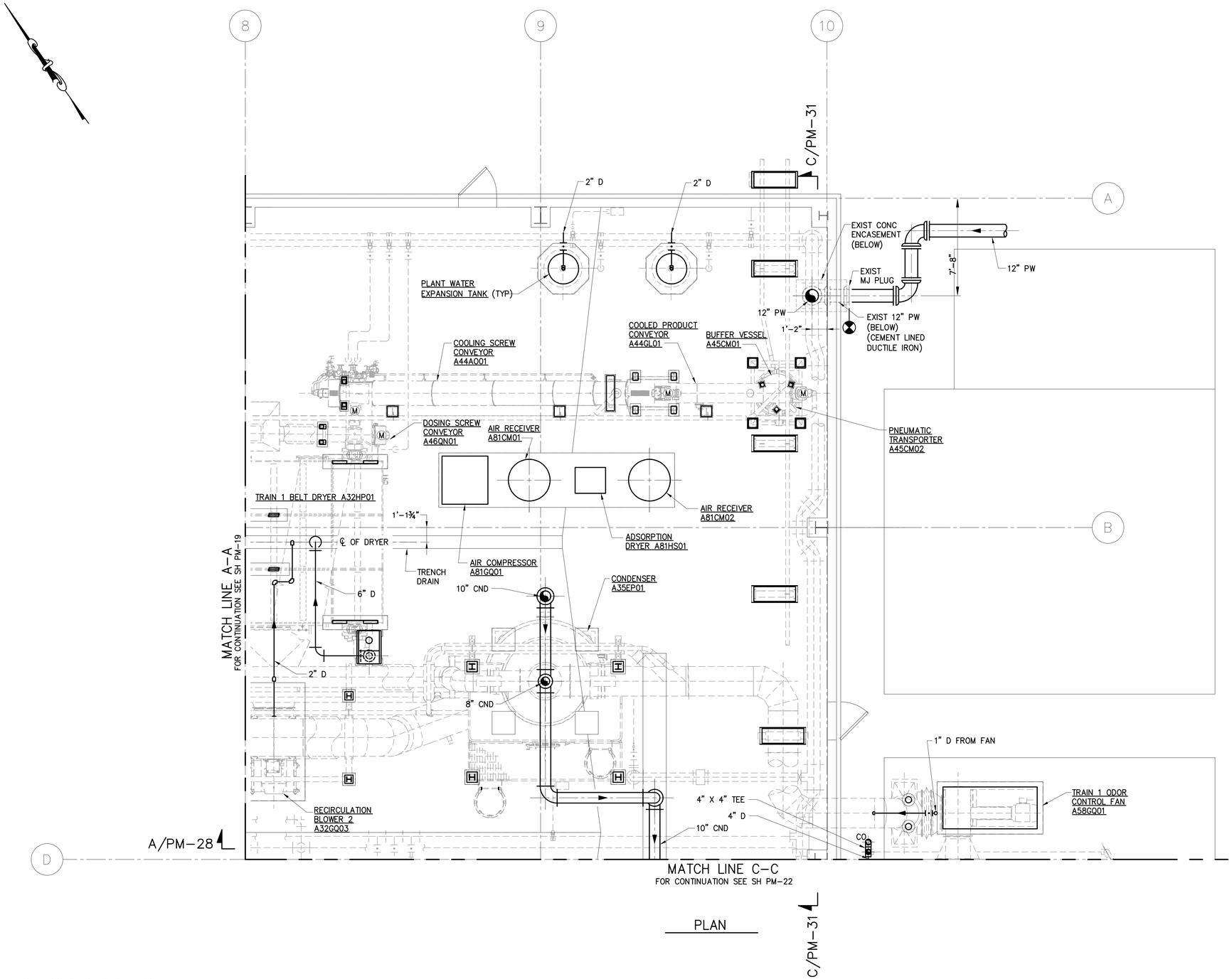
KEMEI DU LICENSE No. 14864 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SAC	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DY	DRYER BUILDING – DRYER ROOM EQUIPMENT SUPPORT PLAN I
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 70 of 191	
		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PM-19

E:\work\Proj (P)\60606154_kent county biosolids\910_CAD\20-sheets\0\PM-19 19'29.dwg Oct 22, 2025 - 2:11pm ENV.CTB Plot Scale 1=1 Plot By: RubinN Tab:PM-19 19'29



PLAN

NOTES:

1. LOCATE BELT DRYERS FROM PRE-ENGINEERED METAL BUILDING COLUMN LINES AS INDICATED. COORDINATE WITH PEMB RECORD DRAWINGS FROM CONTRACT 2 AND THE APPROVED BELT DRYER SHOP DRAWINGS IN APPENDIX B.

¼"=1'-0"

ISSUED FOR BIDDING

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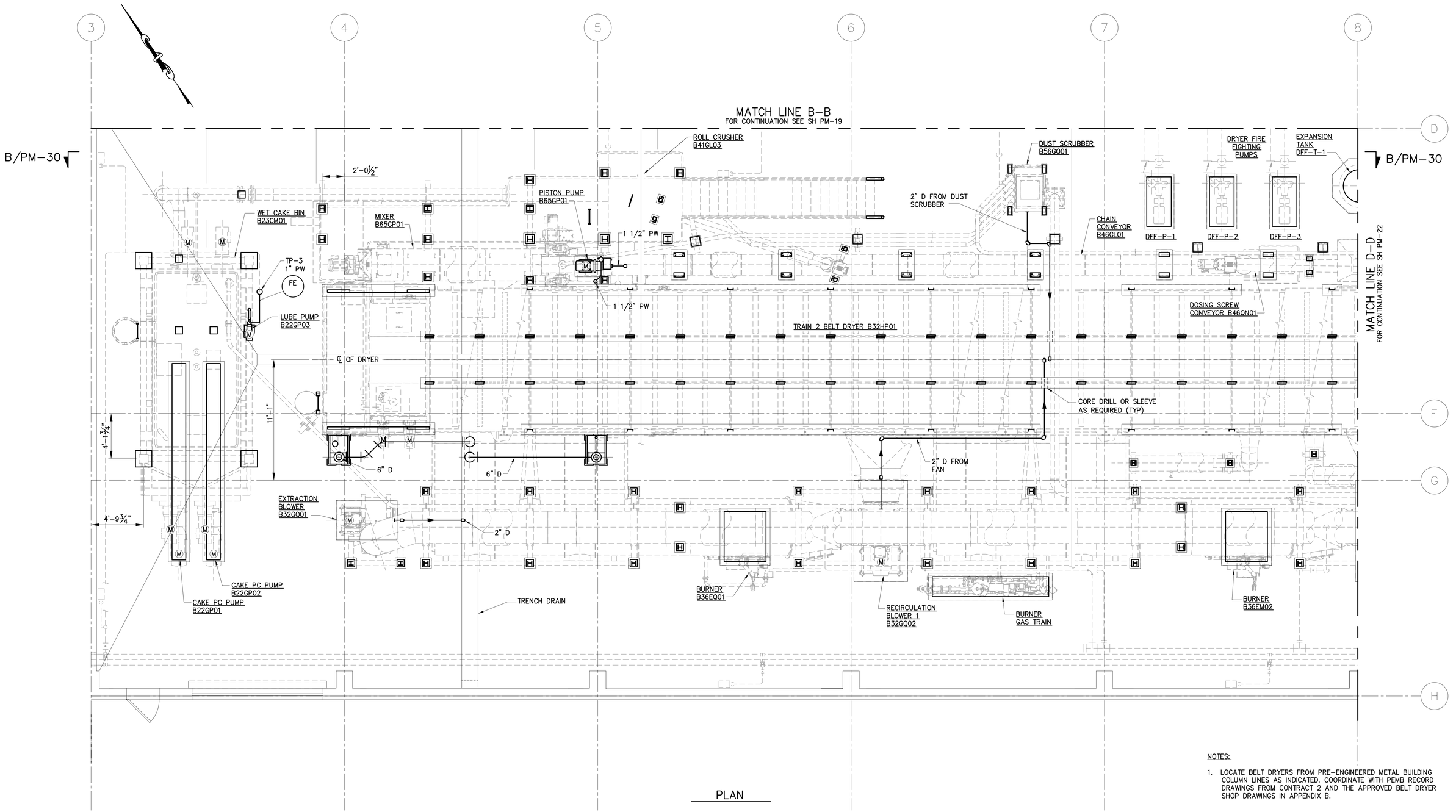
KEMEL DU LICENSE No. 14864 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: AS NOTED DRAWN BY: SAC CHECKED BY: DY	KENT COUNTY RRRF BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 71 of 191 PROJECT NO.: 50.1890.97-A	DRYER BUILDING – DRYER ROOM EQUIPMENT SUPPORT PLAN II
			OCTOBER 2025 PM-20

E:\work\Proj (P)\60606154_kent county biosolids\910_CAD\20-sheets\D\PM-20 19129.dwg Oct 22, 2025 - 2:12pm ENV.CTB Plot Scale 1=1 Plot By: RobinN Tab:PM-20 19129



PLAN

NOTES:

1. LOCATE BELT DRYERS FROM PRE–ENGINEERED METAL BUILDING COLUMN LINES AS INDICATED. COORDINATE WITH PEMB RECORD DRAWINGS FROM CONTRACT 2 AND THE APPROVED BELT DRYER SHOP DRAWINGS IN APPENDIX B.

¼"=1'–0"

4' 2' 0 4' 8'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
		DRAWN BY: SAC	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DY	CONTRACT 3
APPROVED DATE		SHEET NO.: 72 of 191	DRYER BUILDING – DRYER ROOM EQUIPMENT SUPPORT PLAN III
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	OCTOBER 2025 PM–21

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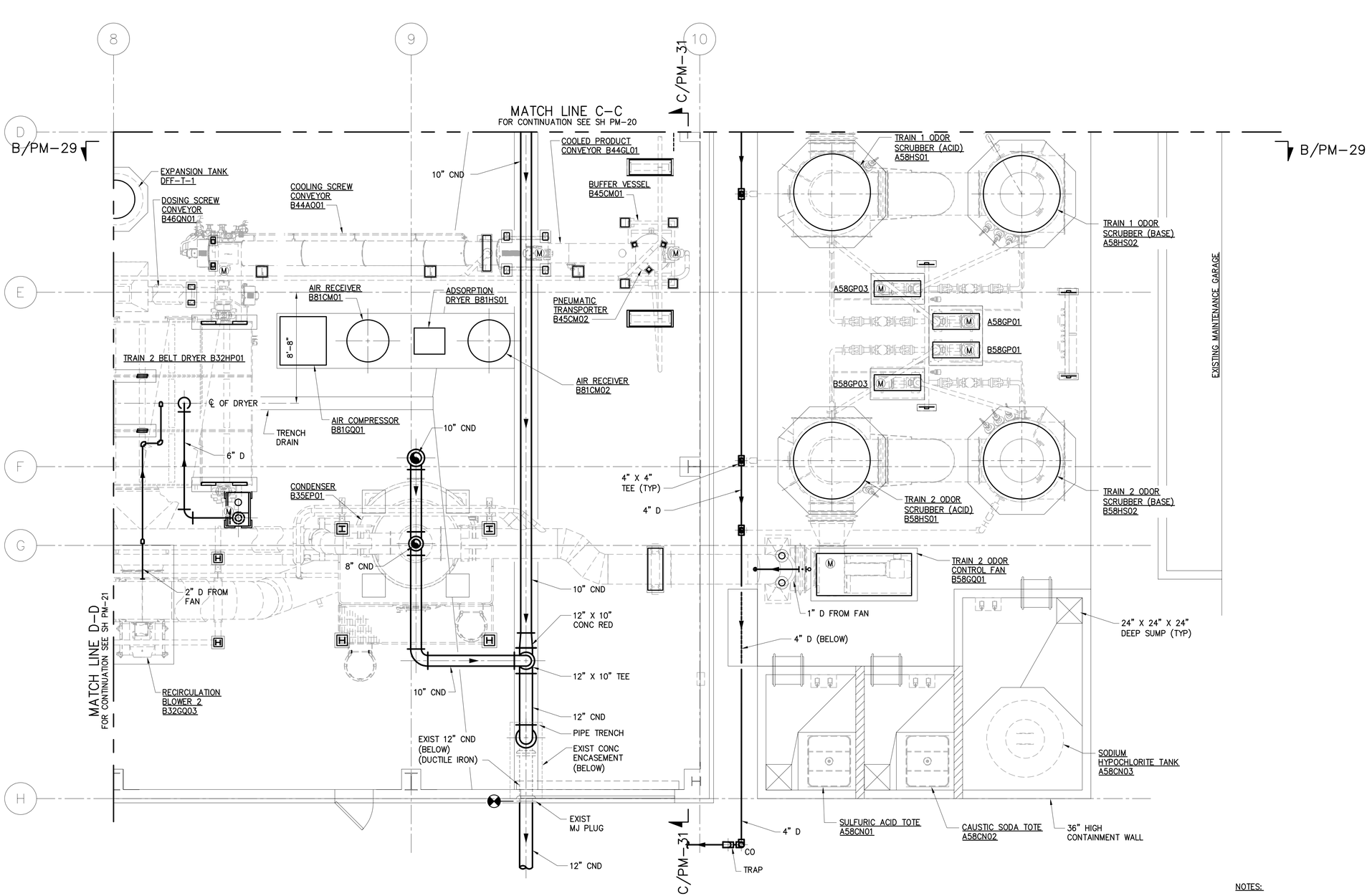

PLAN

NOTES:

1. LOCATE BELT DRYERS FROM PRE-ENGINEERED METAL BUILDING COLUMN LINES AS INDICATED. COORDINATE WITH PEMB RECORD DRAWINGS FROM CONTRACT 2 AND THE APPROVED BELT DRYER SHOP DRAWINGS IN APPENDIX B.

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

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE / DIRECTOR OF PUBLIC WORKS	APPROVED DATE / PROJECT MANAGER
APPROVED DATE / ASSISTANT DIRECTOR OF ENGINEERING	
SCALE: AS NOTED	
DRAWN BY: SAC	
CHECKED BY: DY	
SHEET NO.: 73 of 191	
PROJECT NO.: 50.1890.97-A	

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER BUILDING – DRYER ROOM EQUIPMENT SUPPORT PLAN IV
OCTOBER 2025 PM-22

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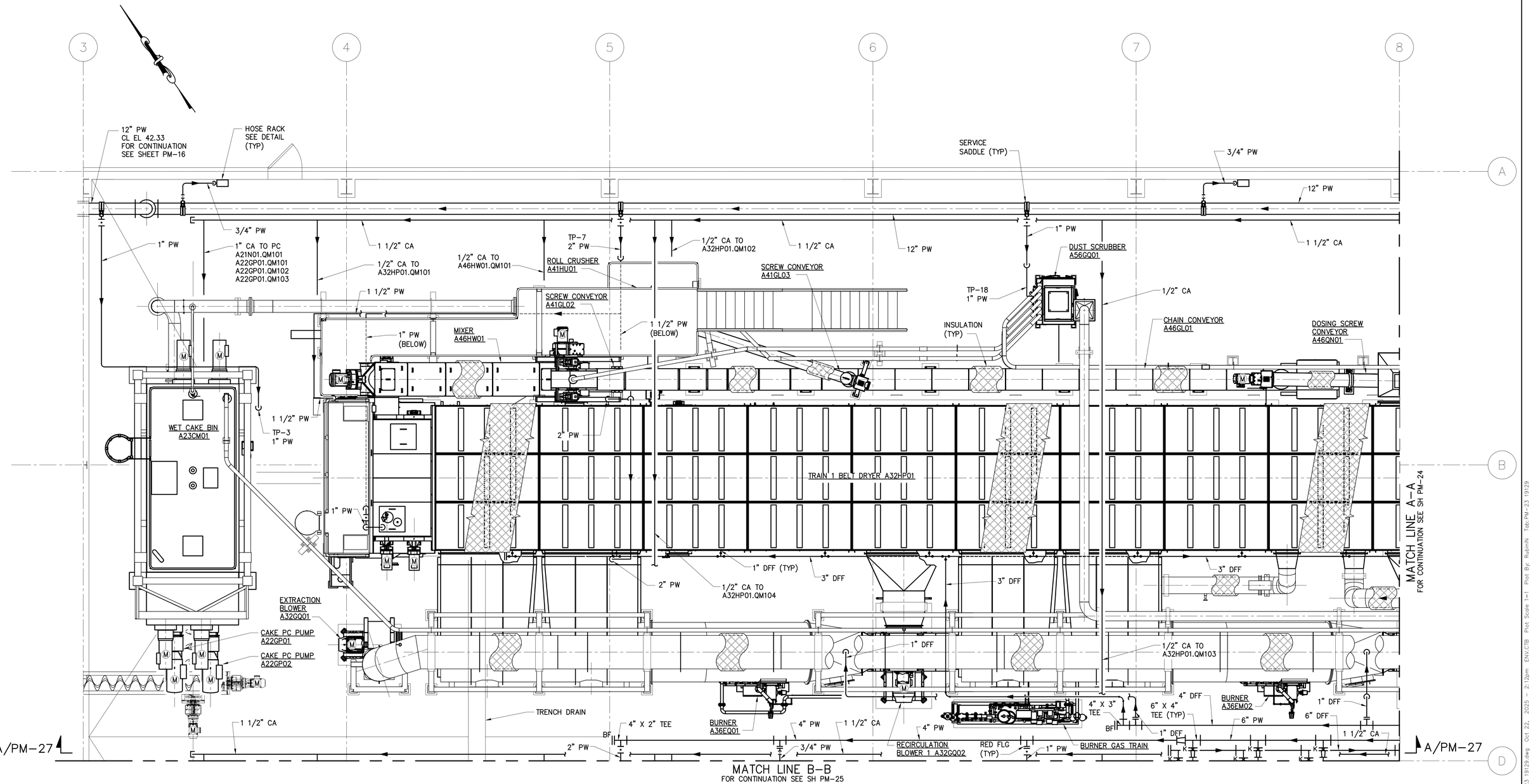

PLAN

ISSUED FOR BIDDING

¼"=1'-0"

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
		DRAWN BY: SAC	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DY	CONTRACT 3
APPROVED DATE		SHEET NO.: 74 of 191	DRYER BUILDING – DRYER ROOM & ODOR CONTROL PLAN I
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PM-23

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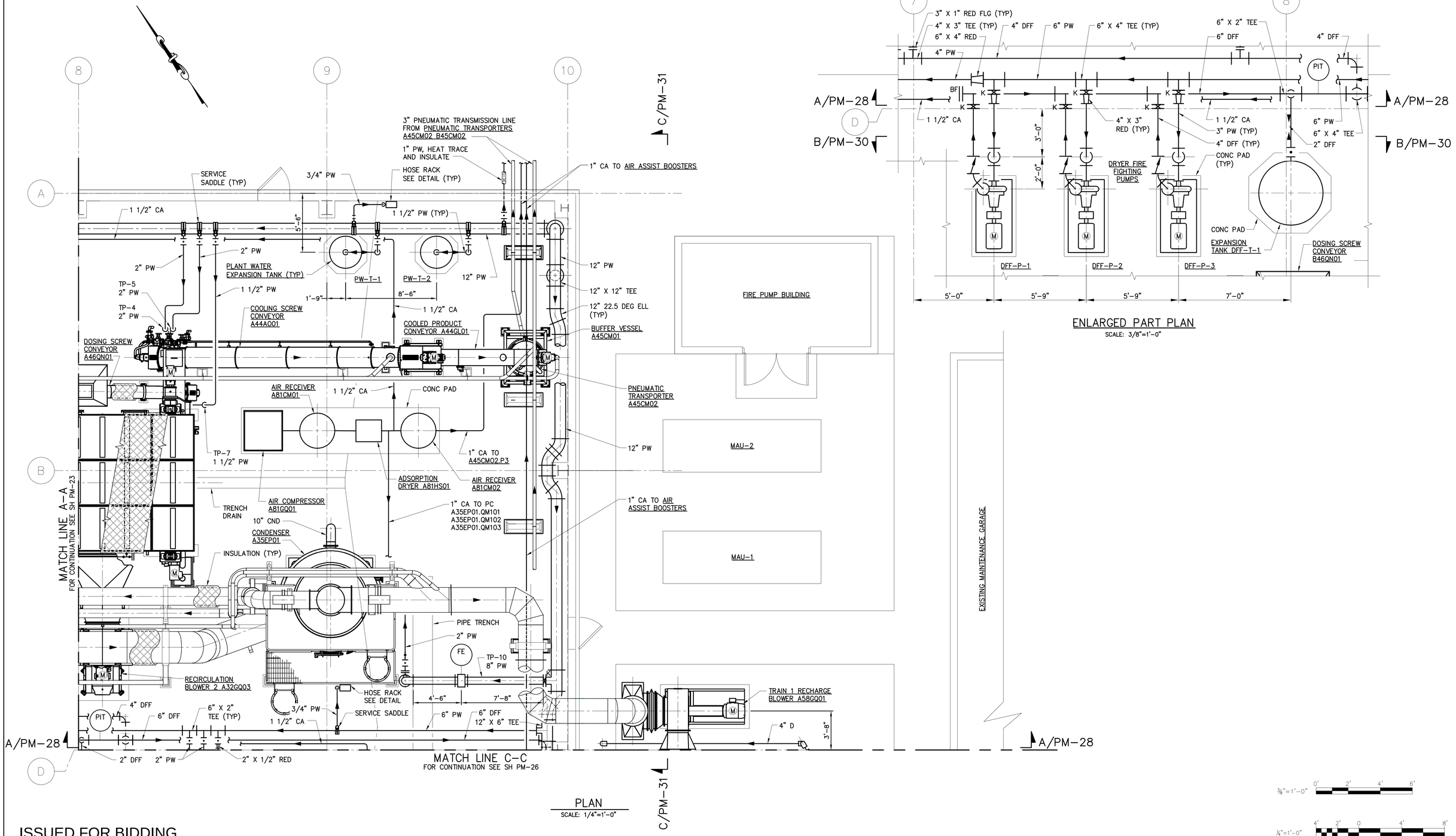

PLAN

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

ENLARGED PART PLAN

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

3/8"=1'-0" 0' 2' 4' 6'

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

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SAC	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DY	DRYER BUILDING – DRYER ROOM & ODOR CONTROL PLAN II
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 75 of 191	
		PROJECT NO.: 50.1890.97-A	
		OCTOBER 2025	PM-24

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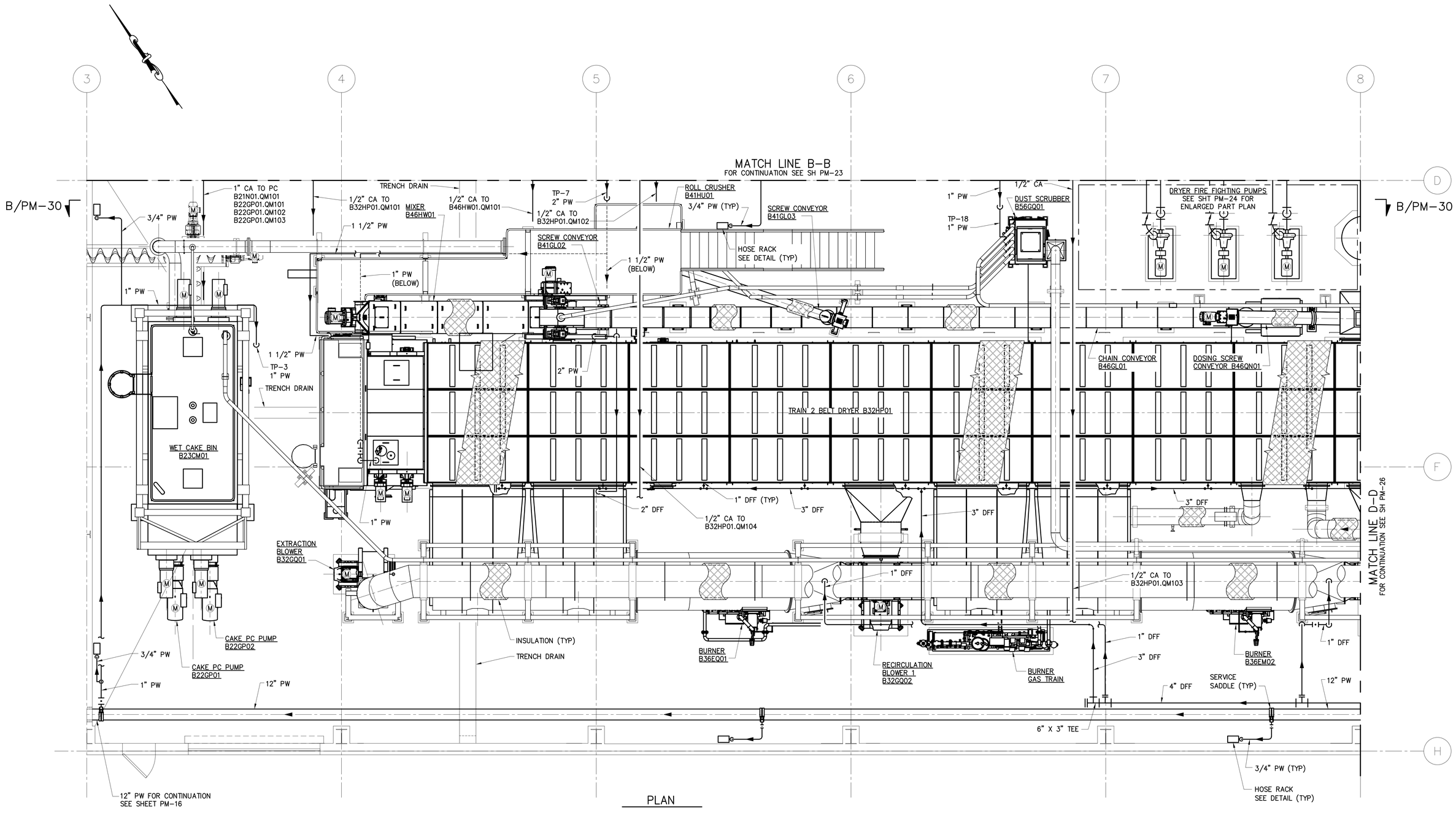

PLAN

ISSUED FOR BIDDING

¼"=1'–0"

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: AS NOTED DRAWN BY: SAC CHECKED BY: DY
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 76 of 191 PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER BUILDING – DRYER ROOM & ODOR CONTROL PLAN III
OCTOBER 2025 PM–25

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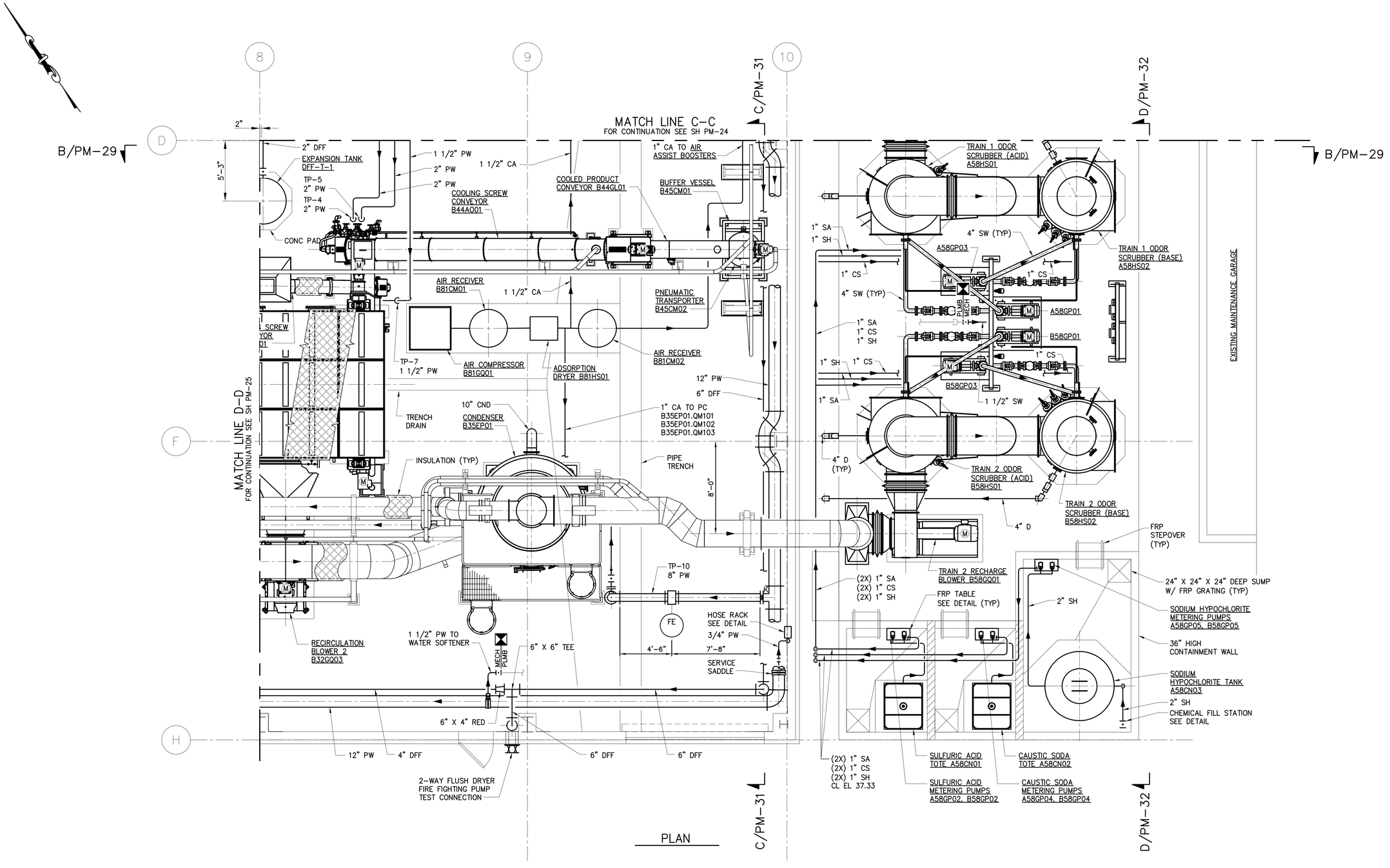

PLAN

ISSUED FOR BIDDING

¼"=1'-0"

4' 2' 0 4' 8'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
		DRAWN BY: SAC	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DY	
APPROVED DATE		SHEET NO.: 77 of 191	DRYER BUILDING – DRYER ROOM & ODOR CONTROL PLAN IV
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PM-26

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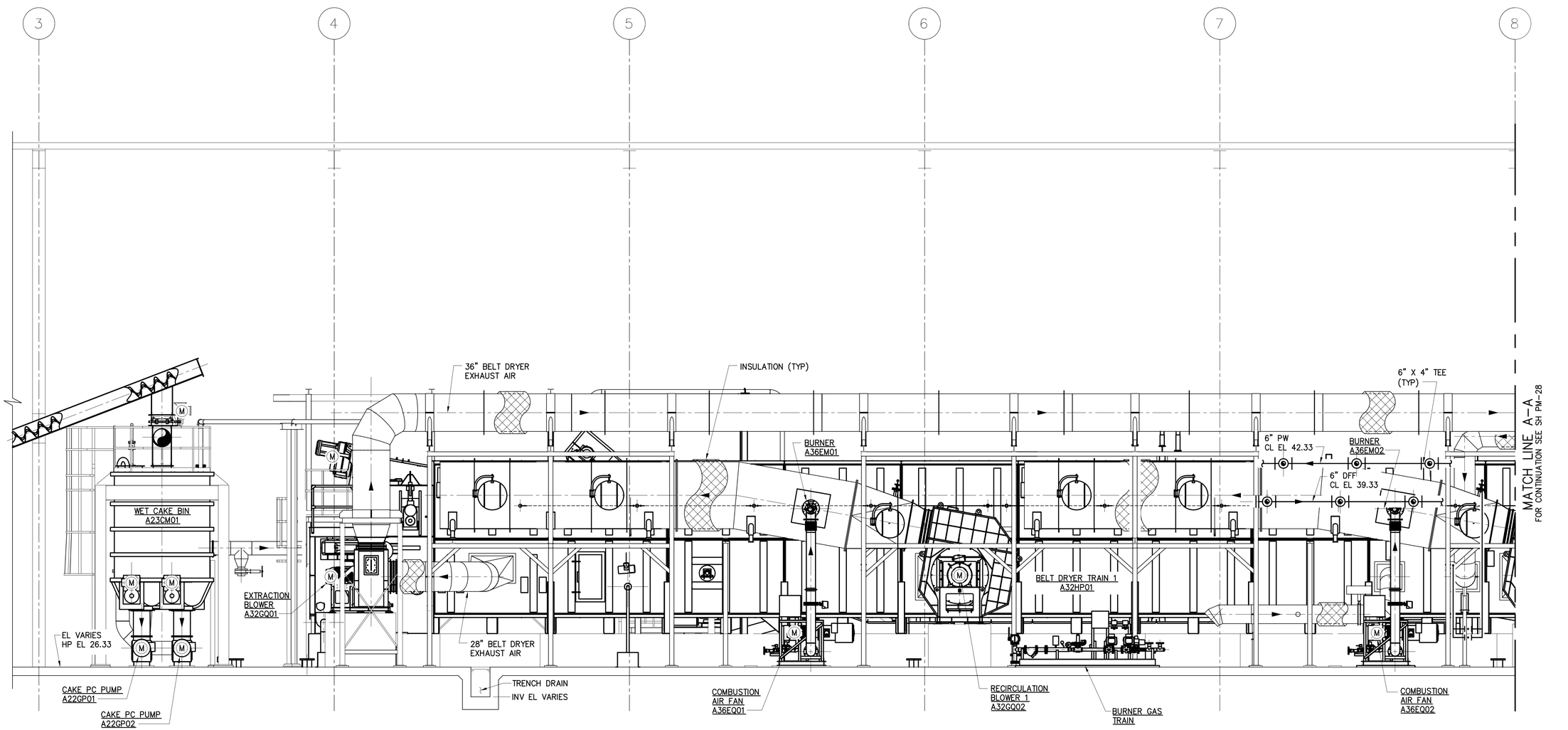

SECTION A/PM-19/23

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¼"=1'-0" 4' 2' 0 4' 8'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: AS NOTED
DRAWN BY: SAC
CHECKED BY: DY
SHEET NO.: 78 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER BUILDING – DRYER ROOM & ODOR CONTROL SECTIONS I
OCTOBER 2025 PM-27

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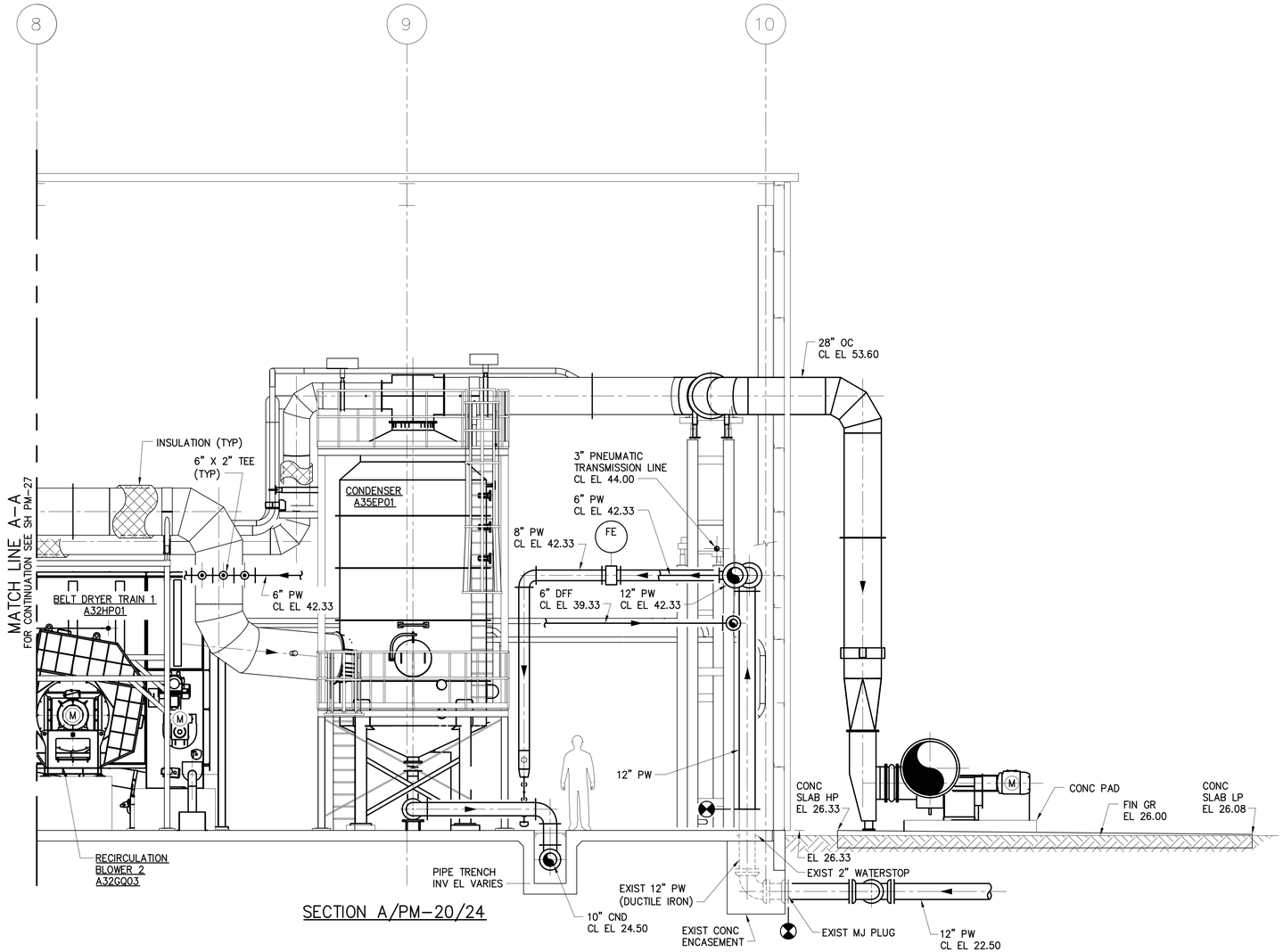

SECTION A/PM-20/24

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¼"=1'-0"

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REVISIONS			
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APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
		DRAWN BY: SAC	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DY	CONTRACT 3
APPROVED DATE		SHEET NO.: 79 of 191	DRYER BUILDING – DRYER ROOM & ODOR CONTROL SECTIONS II
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	OCTOBER 2025 PM–28

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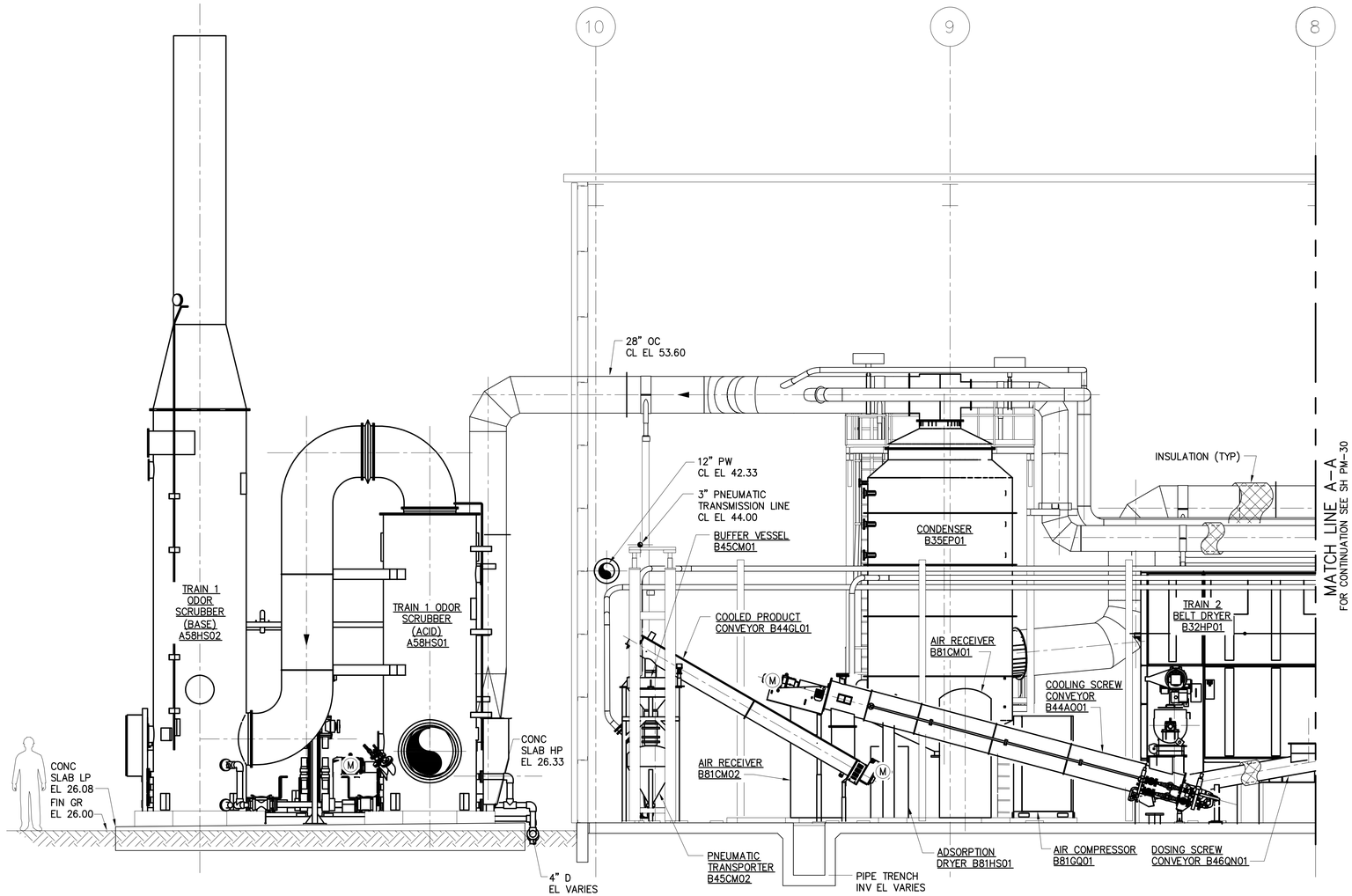

SECTION B/PM–22/26

¼"=1'–0"

4' 2' 0 4' 8'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE / DIRECTOR OF PUBLIC WORKS	APPROVED DATE / PROJECT MANAGER
APPROVED DATE / ASSISTANT DIRECTOR OF ENGINEERING	

SCALE: AS NOTED
DRAWN BY: SAC
CHECKED BY: DY
SHEET NO.: 80 of 191
PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER BUILDING – DRYER ROOM & ODOR CONTROL SECTIONS III
OCTOBER 2025 PM–29

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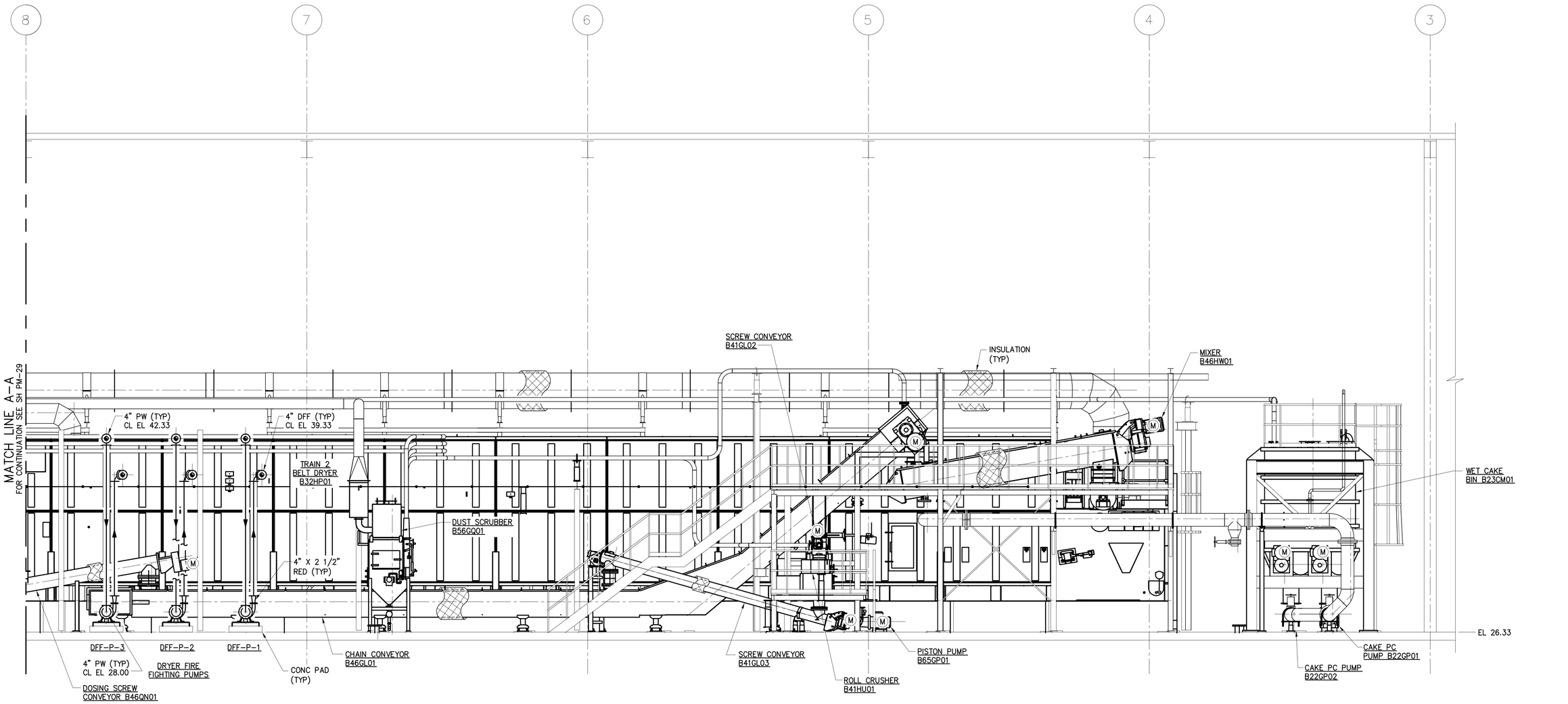

SECTION B/PM-21/25

¼"=1'-0"

4' 2' 0 4' 8'

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SAC	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DY	DRYER BUILDING – DRYER ROOM & ODOR CONTROL SECTIONS IV
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 81 of 191	
		PROJECT NO.: 50.1890.97-A	
		OCTOBER 2025	PM-30

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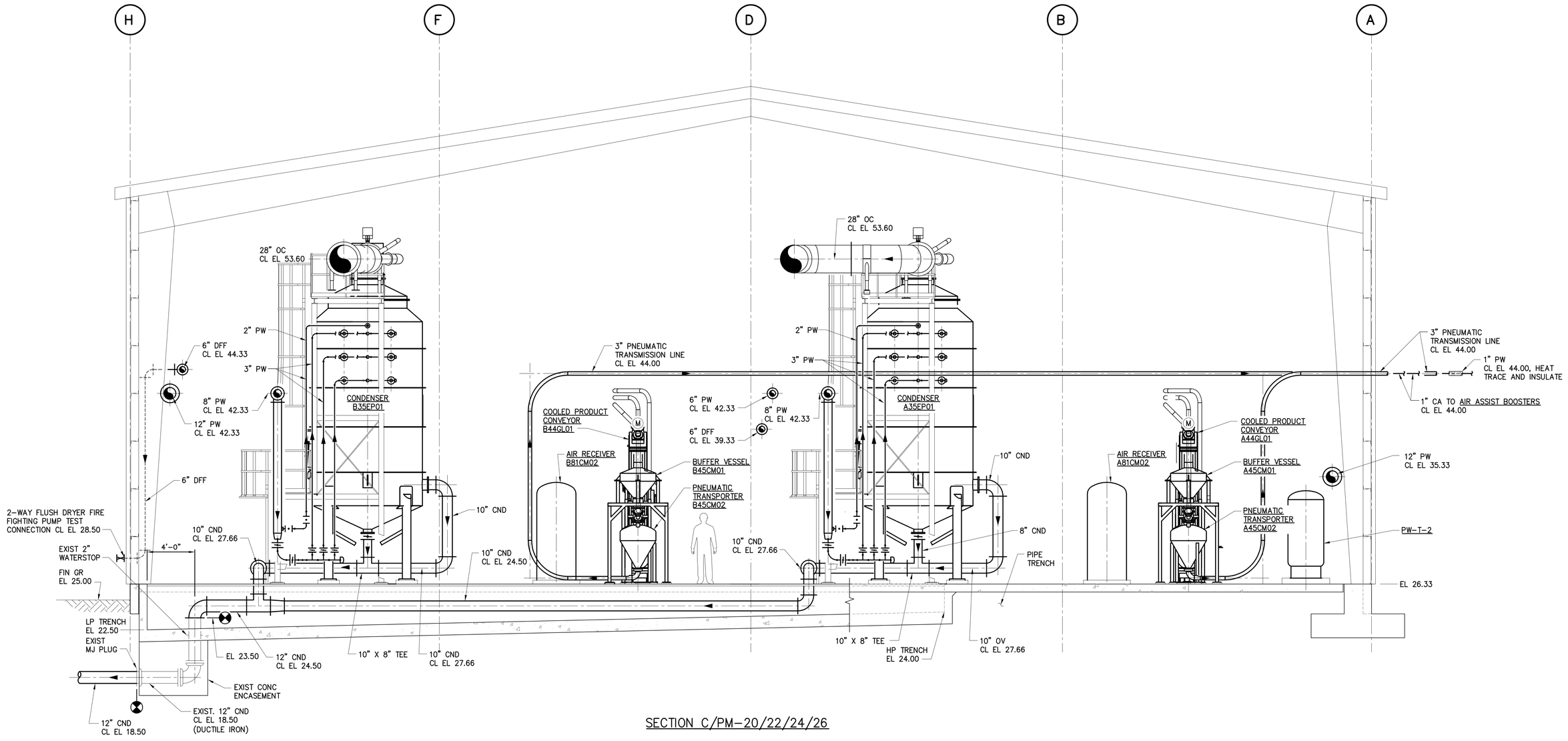

SECTION C/PM-20/22/24/26

¼"=1'-0"

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
		DRAWN BY: SAC	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DY	DRYER BUILDING – DRYER ROOM & ODOR CONTROL SECTIONS V
APPROVED DATE		SHEET NO.: 82 of 191	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PM-31

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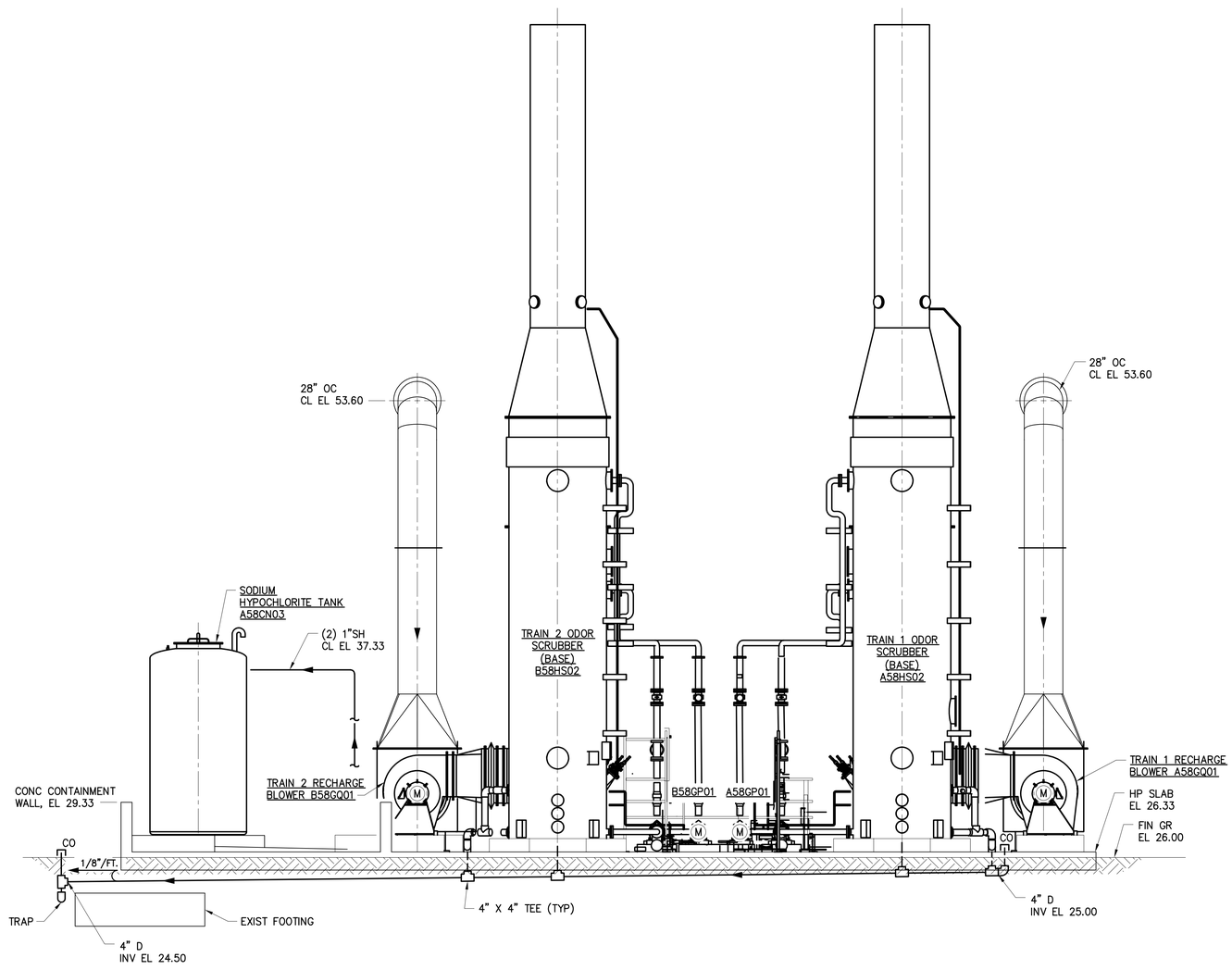

SECTION D/PM26

¼"=1'-0"

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE
DIRECTOR OF PUBLIC WORKS

APPROVED DATE
PROJECT MANAGER

APPROVED DATE
ASSISTANT DIRECTOR OF ENGINEERING

SCALE: AS NOTED
DRAWN BY: SAC
CHECKED BY: DY
SHEET NO.: 83 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER BUILDING – DRYER ROOM & ODOR CONTROL SECTIONS VI
OCTOBER 2025 PM-32

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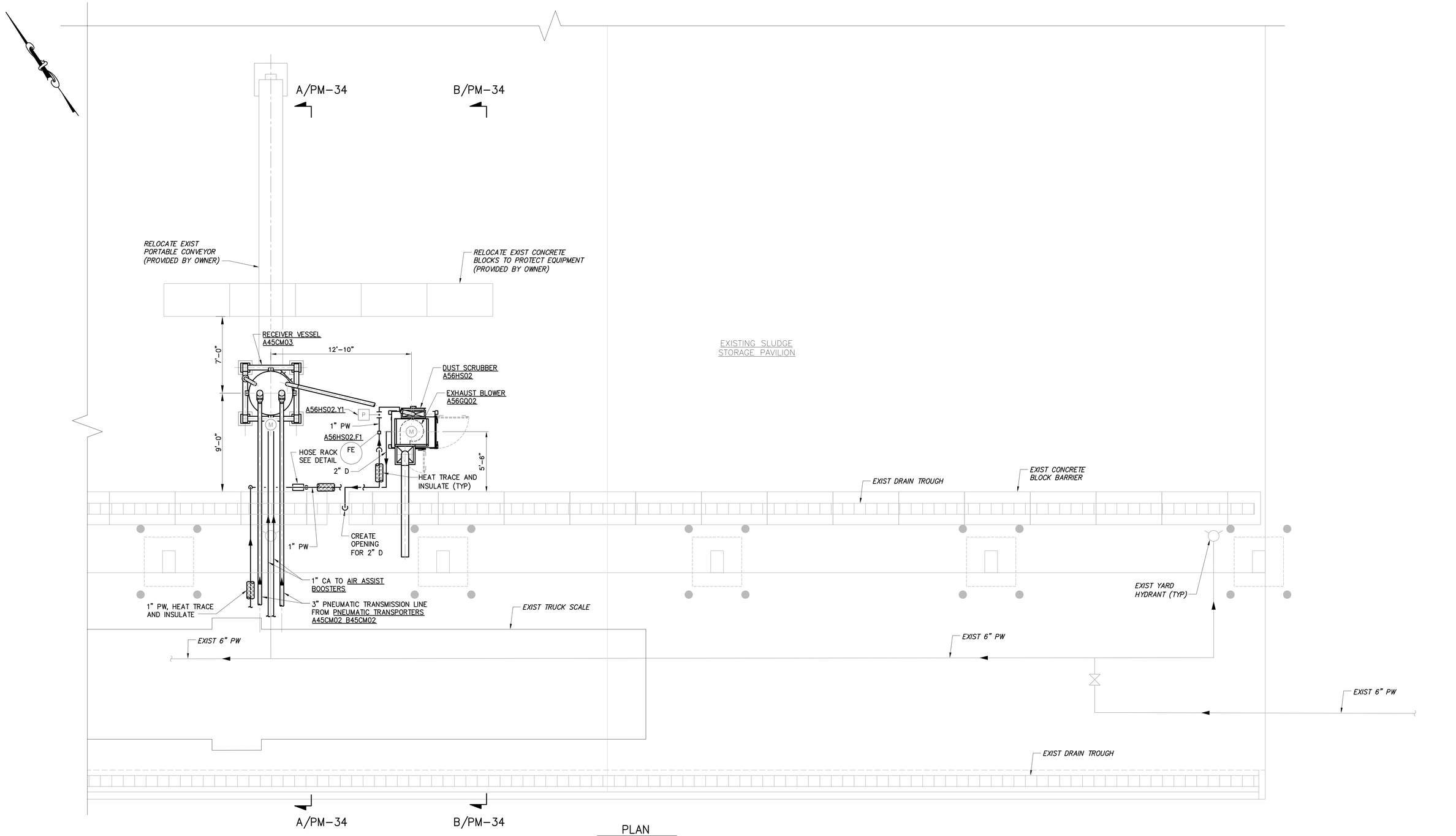

PLAN

½"=1'-0"

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REVISIONS			
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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SAC	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DY	SLUDGE STORAGE PAVILION – PART PLAN
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 84 of 191	
		PROJECT NO.: 50.1890.97-A	
		OCTOBER 2025	PM-33

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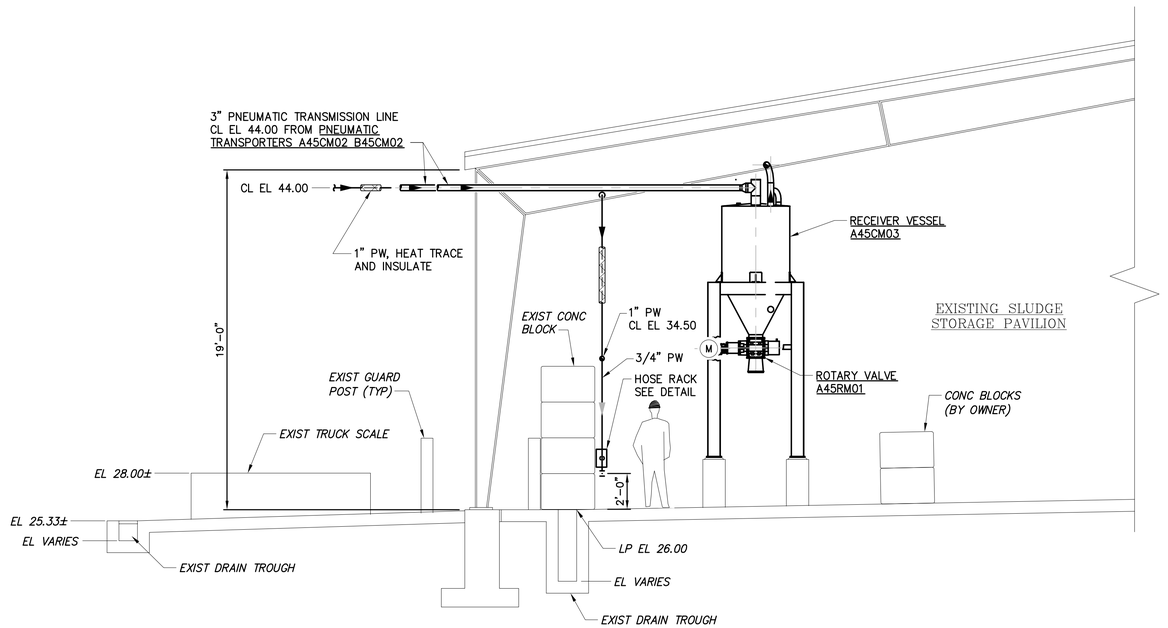
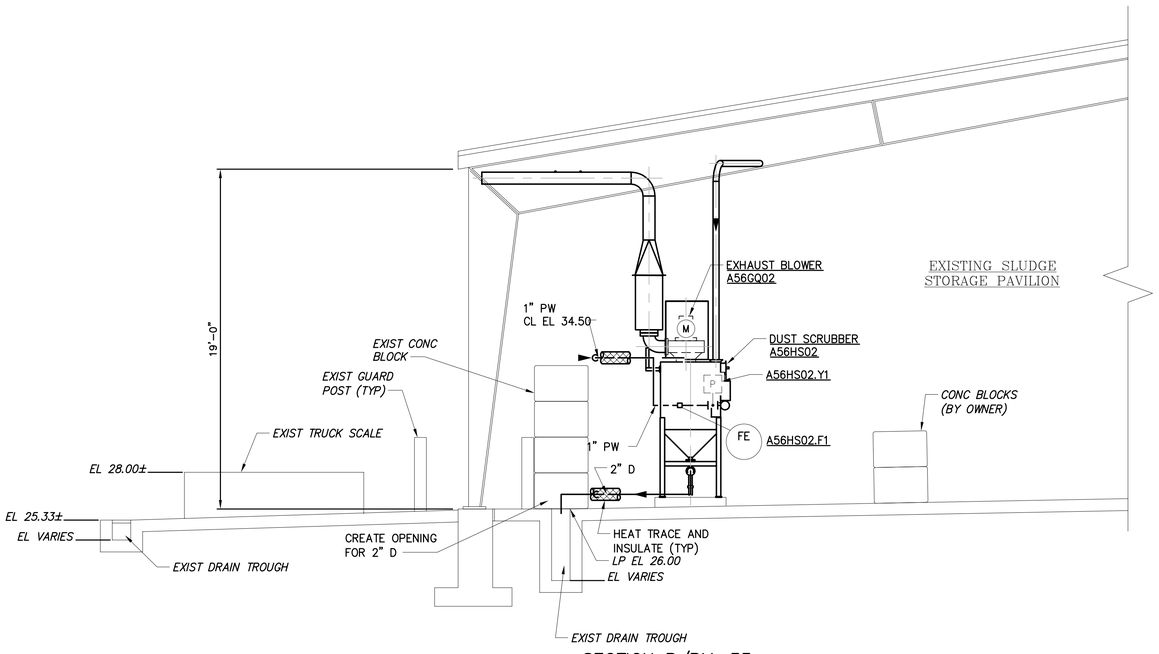


SECTION A/PM-33



SECTION B/PM-33

¼"=1'-0"

4' 2' 0 4' 8'

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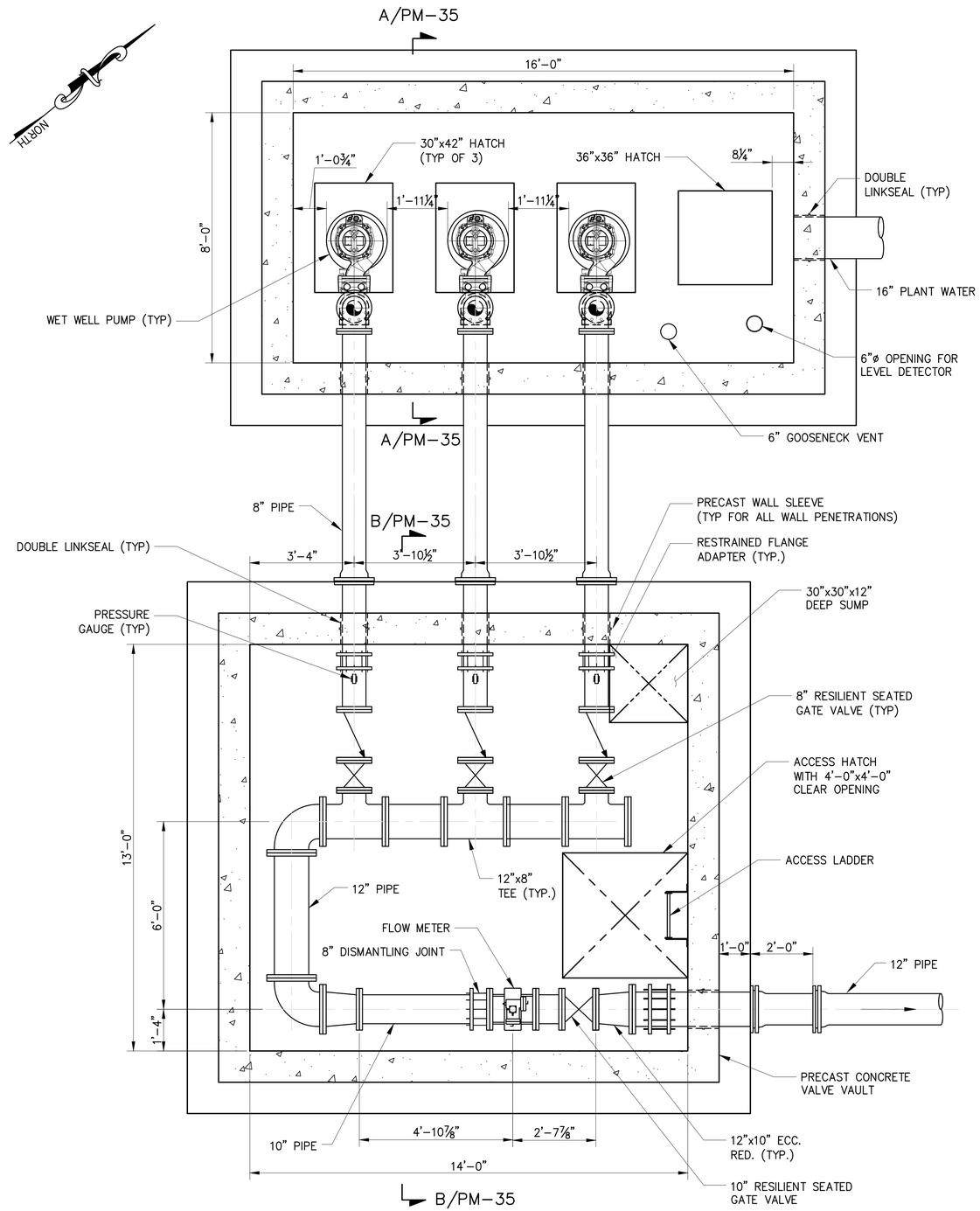
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

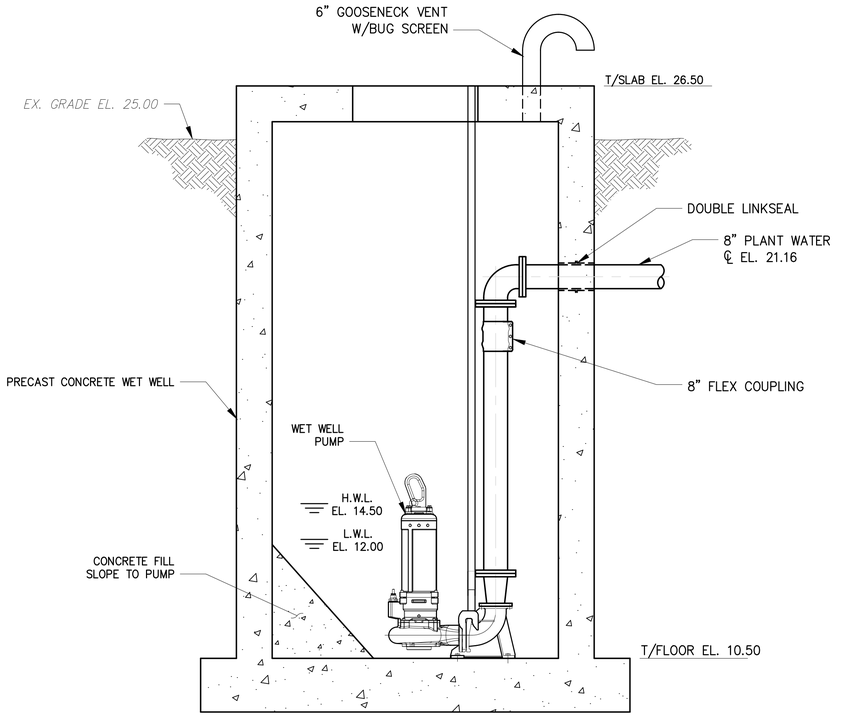
APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SAC	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DY	
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 85 of 191	SLUDGE STORAGE PAVILIION – SECTIONS
		PROJECT NO.: 50.1890.97-A	
		OCTOBER 2025	PM-34

E:\work\Proj (P)\60666154_kent county biosolids\910_CAD\20-sheets\(P)PM-34 19129.dwg Oct 22, 2025 - 2:14pm ENV:CTB Plot Scale 1=1 Plot By: RubinN Tab:PM-34 19129



PLANT WATER PUMP STATION AND VALVE VAULT PLAN

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



SECTION A/PM-35

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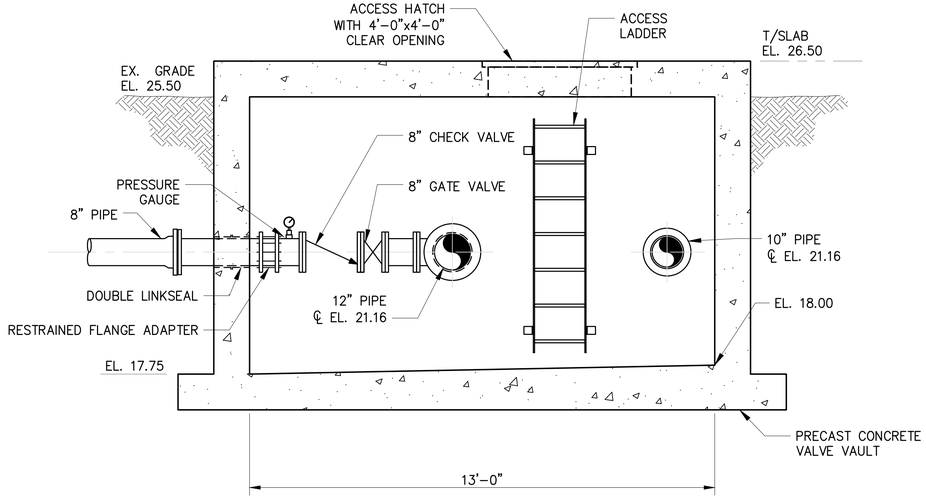

SECTION B/PM-35

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

½"=1'-0" 12" 0 1' 2' 3' 4' 5'

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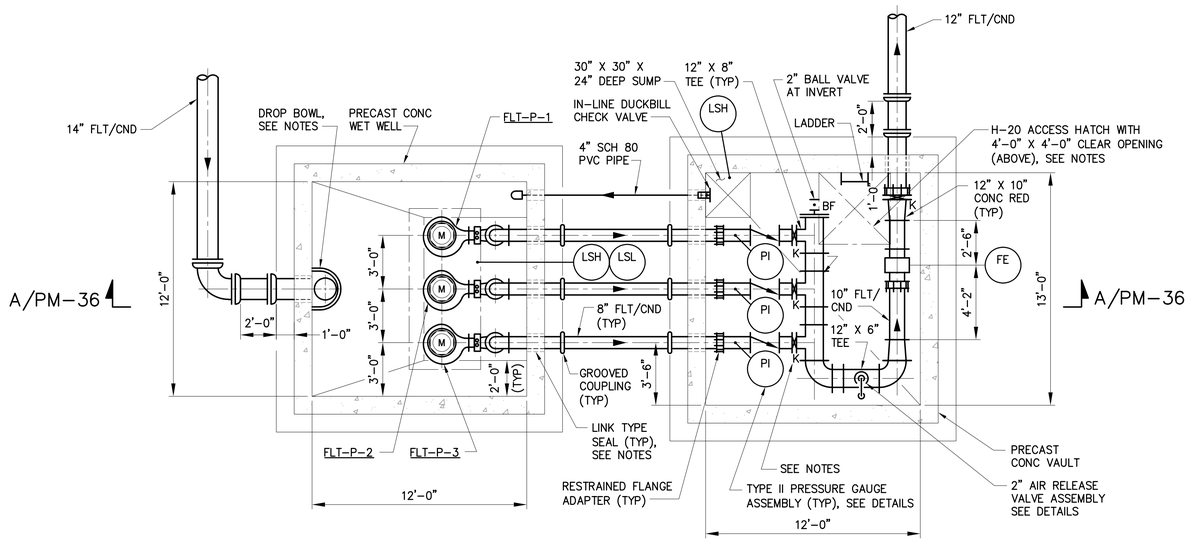
ROBERT J. ANDRYSZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

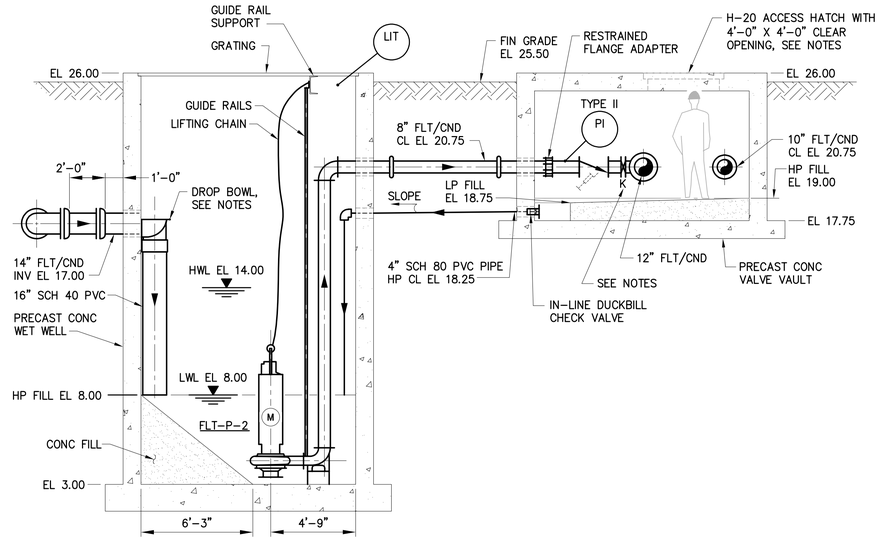
KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 1/2"=1'-0"	KENT COUNTY RRRF
		DRAWN BY: RAD/DLJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	PLANT WATER SYSTEM PUMP STATION ADDITION
APPROVED DATE		SHEET NO.: 86 of 191	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PM-35

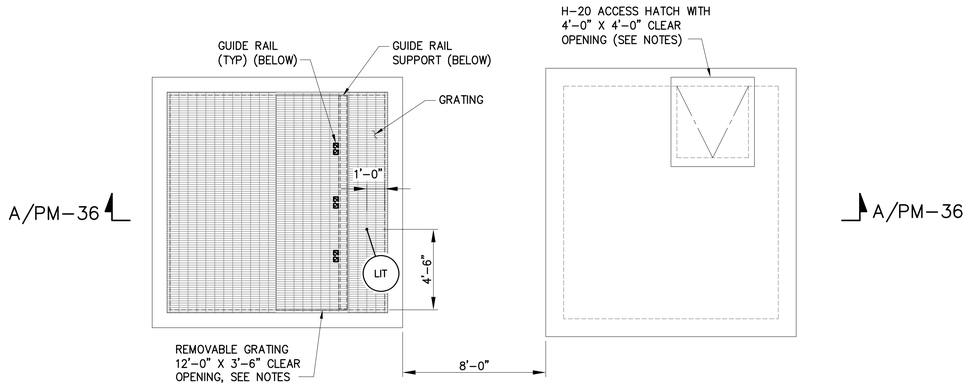
\\rkk.com\As\Cloud Projects\2019\19129_Biosolids\CAD\Contract III\Process Mechanical\PM-35 19129.dwg Oct 21, 2025 - 3:52pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:PLANT WATER SYSTEM PS



LOWER LEVEL PLAN



SECTION A/PM-36



GRADE LEVEL PLAN

NOTES:

1. ALL SUPPORTS, ANCHORS, AND HARDWARE FOR WET WELL AND VAULT TO BE TYPE 316 STAINLESS STEEL.
2. ALL PIPE PENETRATIONS TO HAVE EPDM LINK TYPE SEALS WITH TYPE 316 STAINLESS STEEL HARDWARE. PRECAST MANUFACTURER TO COORDINATE WITH LINK SEAL MANUFACTURER AND PROVIDE REQUIRED DIAMETER FOR EACH OPENING.
3. CONTRACTOR TO COORDINATE CLEAR OPENING OF GRATING WITH APPROVED PUMP SHOP DRAWINGS.
4. PRECAST MANUFACTURER TO PROVIDE MINIMUM 6-INCH LIFT IN FOUNDATION SLABS TO MEET REQUIRED FACTOR OF SAFETY OR UPLIFT.
5. PRECAST MANUFACTURER TO PROVIDE AN OSHA COMPLIANT GALVANIZED STEEL LADDER. CAST LADDER RUNGS ARE NOT ACCEPTABLE.
6. PROVIDE 24/15F RELINER DROP BOWL WITH 16" SCH 40 PVC DOWN PIPE AND ELASTOMERIC COUPLING WITH 316 SS CLAMPS.
7. PROVIDE KNIFE GATE VALVES (NRS TRANSVERSE SEAL TYPE) AS SPECIFIED IN SECTION 15114. PROVIDE A FLG X FLG SPOOL ADJACENT TO EACH KNIFE GATE AS INDICATED. SPOOL LENGTH (WHEN INCLUDING LENGTH OF KNIFE GATE VALVE) TO BE SAME LENGTH AS A FULL PORT ECCENTRIC PLUG VALVE.
8. ROUTE PUMP CABLES THROUGH OPENINGS IN WET WELL WALL NEAR THE SURFACE.

LEVEL SET POINTS:

EL 14.50 – HIGH LEVEL ALARM AND START LAG PUMP

EL 14.00 – START LEAD PUMP

EL 8.00 – STOP BOTH PUMPS AND CHANGE SEQUENCE OF LEAD / LAG PUMPS

EL 7.50 – LOW LEVEL ALARM

¼"=1'-0" 4' 2' 0 4' 8'

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KEMEL DU LICENSE No. 14864 DELAWARE PROFESSIONAL ENGINEER

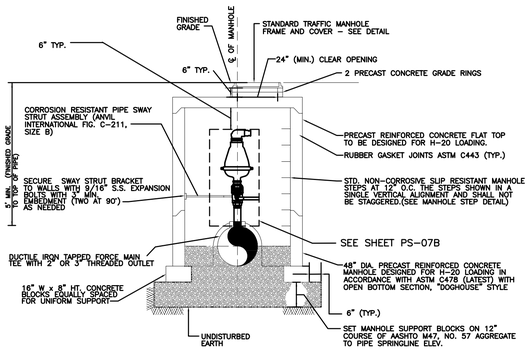
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: AS NOTED
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		DRAWN BY: SAC
		CHECKED BY: DY
		SHEET NO.: 87 of 191
		PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
FILTRATE & CONDENSATE PUMPING STATION PLAN AND SECTIONS
OCTOBER 2025 PM-36

E:\work\Proj (P)\60606154_kent county biosolids\910_CAD\20-sheets\D\PM-36_19129.dwg Oct 22, 2025 - 2:14pm ENV.CTB Plot Scale 1=1 Plot By: RubinN Tab:PM-36_19129



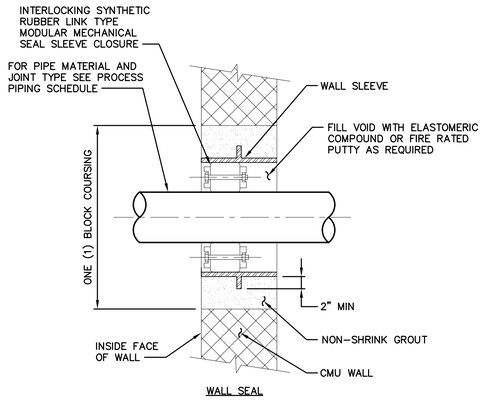
NOTES:

1. MANHOLE SHALL BE PROVIDED WITH A PVC PROTECTIVE LINING DURA-PLATE 100 BY A-LOK, AMERON T-LOCK OR EQUAL.
2. COAT MANHOLE EXTERIOR WITH BITUMINOUS MATERIAL.
3. HEAT-TREAT FRAME AND COVER USING FERRITIC NITROCARBURIZING PROCESS.
4. COAT FORCE MAIN TAPPED TEE W/ 401 PROTECTO PRIOR TO INSTALLATION
5. INSTALL COMPLETE SET OF MANUFACTURER-FURNISHED BACKWASH ACCESSORIES ON EACH VALVE PER MANUFACTURER DRAWINGS.
6. ALL HARDWARE, RODS, TIES AND ASSEMBLIES SHALL BE STAINLESS STEEL.

SMALL & MEDIUM DIAMETER (3"–16") FORCE MAIN COMBINATION SEWAGE AIR RELEASE/VACCUM RELIEF VALVE AND MANHOLE DETAIL

NOT TO SCALE

TAPPED TEE CONNECTION



WALL SEAL

WALL AND FLOOR SLEEVES:

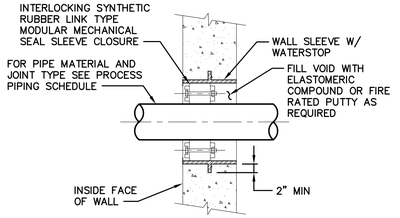
1. FUSION BONDED POLYMER COATED SCH. 40 STEEL WITH WATERSTOP WELDED ALL AROUND EACH SIDE.
2. HDPE FOR SLEEVES REQUIRING AN ID OF 16-INCH AND SMALLER.
4. PROVIDE OTHER MATERIALS WHERE INDICATED.
5. MANUFACTURERS: ADVANCED PRODUCTS AND SYSTEMS OR ACCEPTABLE EQUIVALENT.

LINK TYPE SEALS:

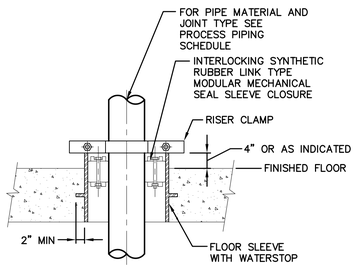
1. WATER SERVICE: BLACK EPDM.
2. HIGH TEMPERATURE AIR OR FIRE RATED APPLICATIONS: RED SILICONE.
3. HARDWARE: TYPE 316 STAINLESS STEEL.
4. MANUFACTURERS: INNERLYNX, LINK-SEAL OR ACCEPTABLE EQUIVALENT.

LINK TYPE SLEEVE CLOSURE THRU CMU WALL

NTS



WALL SEAL



FLOOR SEAL

WALL AND FLOOR SLEEVES:

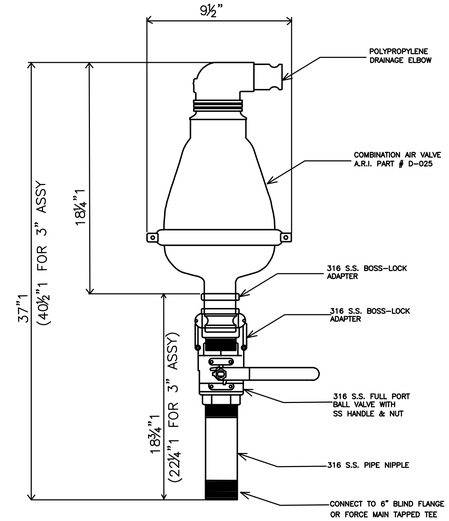
1. FUSION BONDED POLYMER COATED SCH. 40 STEEL WITH WATERSTOP WELDED ALL AROUND EACH SIDE.
2. HDPE FOR SLEEVES REQUIRING AN ID OF 16-INCH AND SMALLER.
4. PROVIDE OTHER MATERIALS WHERE INDICATED.
5. MANUFACTURERS: ADVANCED PRODUCTS AND SYSTEMS OR ACCEPTABLE EQUIVALENT.

LINK TYPE SEALS:

1. WATER SERVICE: BLACK EPDM.
2. HIGH TEMPERATURE AIR OR FIRE RATED APPLICATIONS: RED SILICONE.
3. HARDWARE: TYPE 316 STAINLESS STEEL.
4. MANUFACTURERS: INNERLYNX, LINK-SEAL OR ACCEPTABLE EQUIVALENT.

WALL AND FLOOR PENETRATION LINK TYPE SLEEVE CLOSURE

NTS

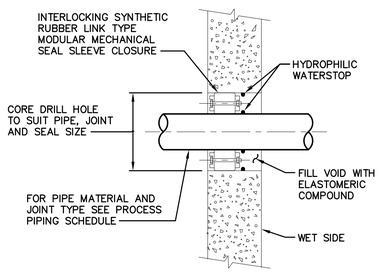


NOTE: 1) IF AIR RELEASE VALVE IS A TIGHT FIT YOU CAN USE A 2" CLOSE NIPPLE AND CUT THE LEVER
2) BALL VALVE SHALL BE APOLLO 76F-100-A SERIES OR EQUAL

2" AIR RELEASE VALVE ASSEMBLY

WITH 316 STAINLESS STEEL QUICK COUPLER ASSEMBLY

NOT TO SCALE

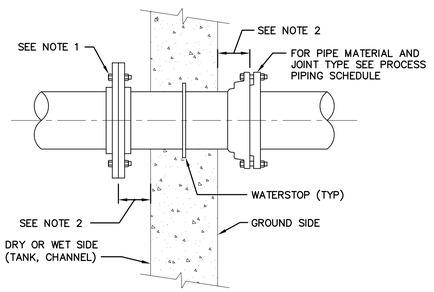


LINK TYPE SEALS:

1. MANUFACTURERS: INNERLYNX, LINK SEAL OR ACCEPTABLE EQUIVALENT PRODUCT.
2. MATERIAL: BLACK OR BLUE EPDM
3. HARDWARE: TYPE 316 STAINLESS STEEL

PENETRATION THRU EXISTING CONCRETE WALL OR FLOOR WITH LINK TYPE SLEEVE CLOSURE

NTS

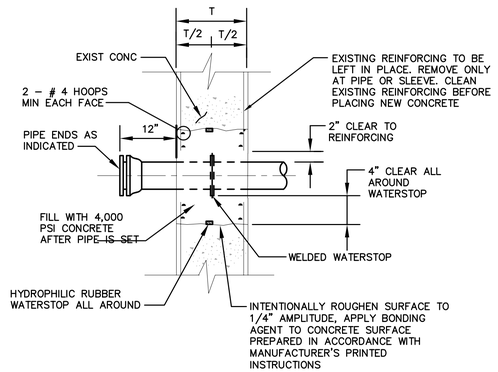


NOTES:

1. HARDWARE FOR WET SIDE SERVICE: TYPE 316 S.S.
2. 12-INCHES UNLESS OTHERWISE INDICATED.

WALL PENETRATION FOR NEW CONSTRUCTION

NTS



NEW CASTING IN EXISTING WALL

NTS

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KEMEI DU LICENSE No. 14864 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: NOT TO SCALE	KENT COUNTY RRRF
		DRAWN BY: SAC	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DY	PROCESS DETAILS I
APPROVED DATE		SHEET NO.: 88 of 191	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PM-37

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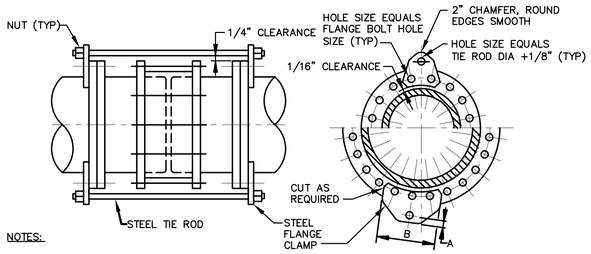
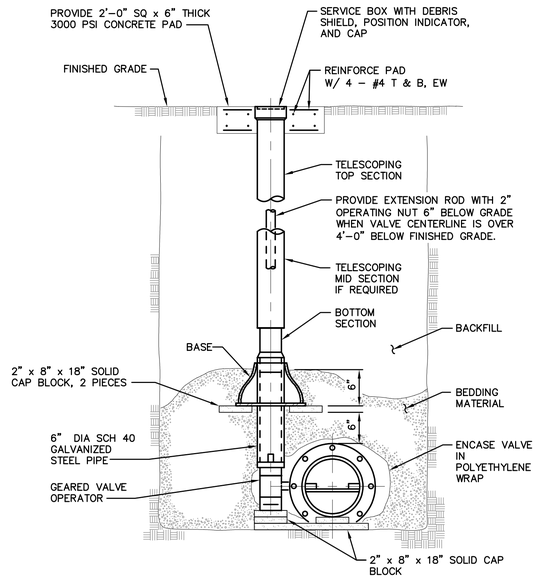


NOTES:

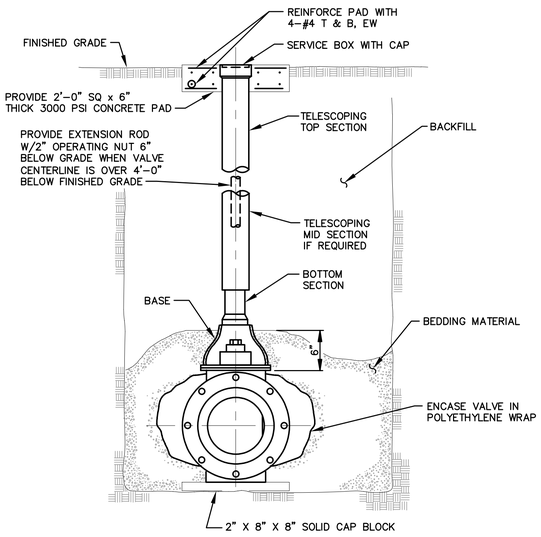
1. EQUALLY SPACE TIE RODS AROUND PIPE.
2. FOR STEEL FLANGE CLAMPS REQUIRING 3 BOLTS PER CLAMP, THE ORIENTATION OF THE STEEL FLANGE CLAMP AND PIPE FLANGE DRILLING IS PICTORIAL ONLY. EXACT ORIENTATION OF THE FLANGE CLAMP IS DETERMINED BY STANDARD FLANGE DRILLING.

PIPE SIZE	TIERODS		FLANGE CLAMP			
	NO.	DIA.	THICKNESS	NO. OF FLANGE BOLTS PER CLAMP	"A"	"B"
6"	2	1/2"	1/2"	2	2"	7 3/4"
8"	2	5/8"	1/2"	2	2"	8 5/8"
10"	2	3/4"	1/2"	2	2"	7 3/4"
12"	2	1"	1/2"	2	2"	8 1/2"
14"	2	1 1/8"	3/4"	2	2"	9"
16"	2	1 1/4"	7/8"	3	2"	12 1/4"
18"	2	1 3/8"	7/8"	3	2 1/2"	13"
20"	3	1 3/8"	1"	2	2 1/2"	8"
24"	4	1 3/8"	1"	2	2 1/2"	8 3/4"
30"	4	1 3/4"	1"	3	2 1/2"	12 1/4"
36"	6	1 3/4"	1 1/4"	2	2 1/2"	8 1/2"
42"	6	1 3/4"	1 1/4"	3	2 1/2"	12 3/4"
48"	8	1 3/4"	1 1/4"	3	2 1/2"	12 1/2"
54"	8	1 3/4"	1 1/4"	3	2 1/2"	12 1/2"

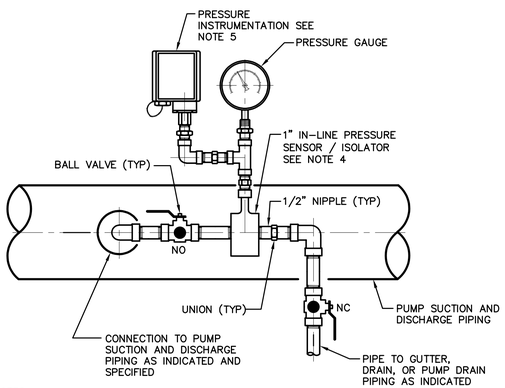
150 PSI SLEEVE COUPLING RESTRAINT FOR DUCTILE IRON PIPE
NTS



BURIED PLUG OR BUTTERFLY VALVE
NTS



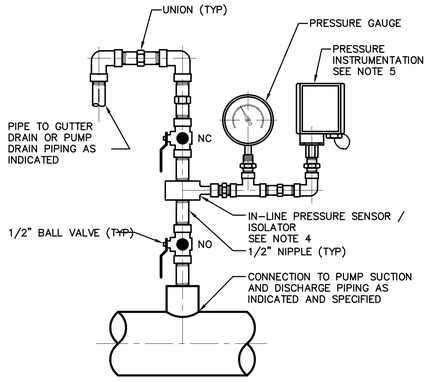
BURIED GATE VALVE
NTS



NOTES:

1. PIPING: TYPE 316L SS.
2. VALVES: TYPE 316 SS.
3. HARDWARE: TYPE 316 SS.
4. FOR 300 CLASS ANSI USE FLANGED SENSOR
5. PROVIDE GAUGE AND PRESSURE INSTRUMENTATION (PIT, PS, ETC.) AS INDICATED AND SPECIFIED.

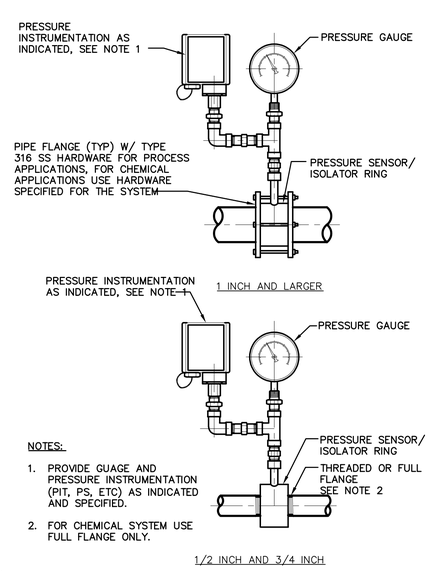
TYPE I
PRESSURE GAUGE / INSTRUMENT ASSEMBLY
NTS



NOTES:

1. PIPING: TYPE 316L SS.
2. VALVES: TYPE 316 SS.
3. HARDWARE: TYPE 316 SS.
4. FOR 300 CLASS ANSI USE FLANGED SENSOR.
5. PROVIDE GAUGE AND PRESSURE INSTRUMENTATION (PIT, PS, ETC.) AS INDICATED AND SPECIFIED.

TYPE II
PRESSURE GAUGE / INSTRUMENT ASSEMBLY
NTS



NOTES:

1. PROVIDE GUAGE AND PRESSURE INSTRUMENTATION (PIT, PS, ETC) AS INDICATED AND SPECIFIED.
2. FOR CHEMICAL SYSTEM USE FULL FLANGE ONLY.

1/2 INCH AND 3/4 INCH

TYPE III
PRESSURE GAUGE / INSTRUMENT ASSEMBLY
NTS

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KEMEI DU LICENSE No. 14864 DELAWARE PROFESSIONAL ENGINEER

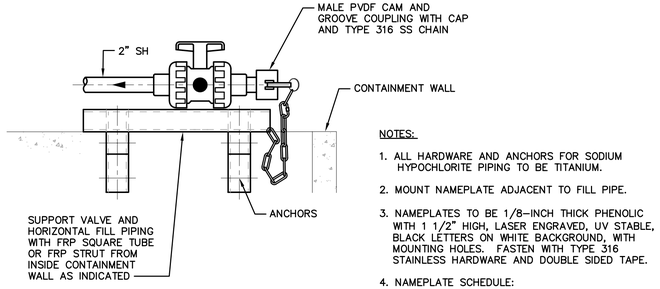
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: NOT TO SCALE DRAWN BY: SAC CHECKED BY: DY
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 89 of 191 PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
PROCESS DETAILS II
OCTOBER 2025 PM-38

E:\work\Proj (P)\60666154_kent county biosolids\910_CAD\20-sheets\(0)PM-38 19129.dwg Oct 22, 2025 - 2:14pm ENV:CTB Plot Scale 1=1 Plot By: RubinN Tab:PM-38 19129

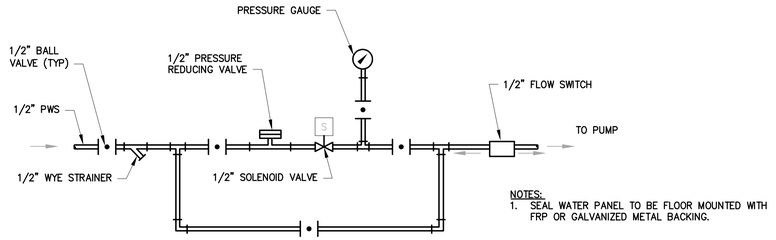


NOTES:

1. ALL HARDWARE AND ANCHORS FOR SODIUM HYPOCHLORITE PIPING TO BE TITANIUM.
2. MOUNT NAMEPLATE ADJACENT TO FILL PIPE.
3. NAMEPLATES TO BE 1/8–INCH THICK PHENOLIC WITH 1 1/2" HIGH, LASER ENGRAVED, UV STABLE, BLACK LETTERS ON WHITE BACKGROUND, WITH MOUNTING HOLES. FASTEN WITH TYPE 316 STAINLESS HARDWARE AND DOUBLE SIDED TAPE.
4. NAMEPLATE SCHEDULE:

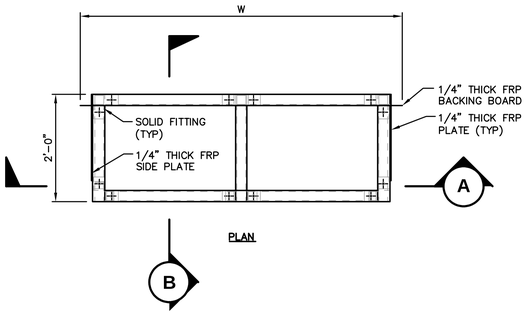
SODIUM HYPOCHLORITE
STORAGE TANK
A58CN03

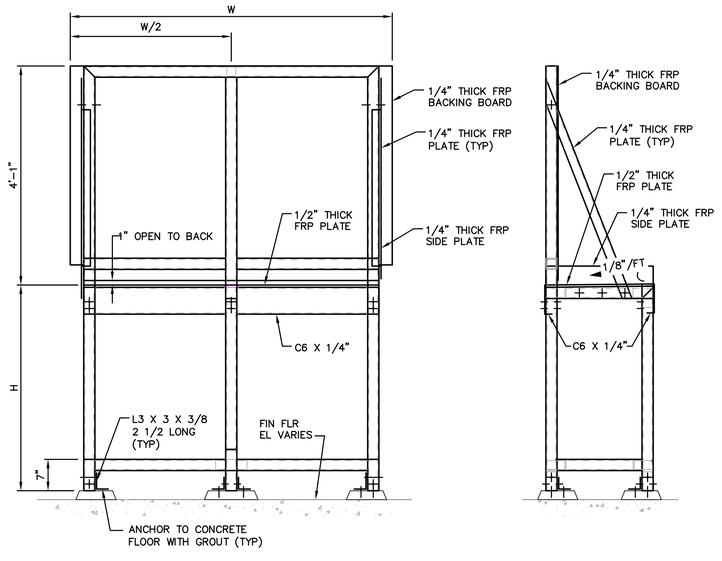
CHEMICAL FILL STATION
NTS



NOTES:
1. SEAL WATER PANEL TO BE FLOOR MOUNTED WITH FRP OR GALVANIZED METAL BACKING.

SEAL WATER PANEL DETAIL
NTS



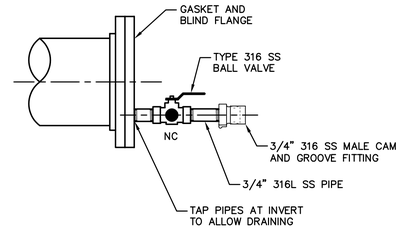


PUMPS	W (IN)	H (IN)
CAUSTIC SODA	36	36
SULFURIC ACID	36	36
SODIUM HYPOCHLORITE	36	36

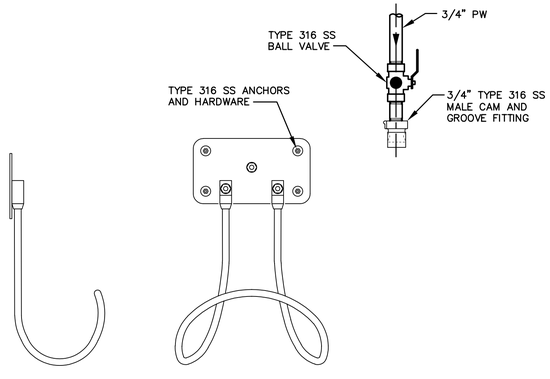
NOTES:

1. ALL FIBERGLASS TO BE SMOOTH GRAY VINYL ESTER RESIN (VFR)
2. TABLE POSTS AND FRAME TO BE 2 1/2" X 1/4" FRP SQUARE TUBE.
3. ALL METALLIC ANCHORS, CLIPS, CLAMPS, AND FASTENERS TO BE TYPE 316 STAINLESS STEEL.
4. MAKE ALL SQUARE TUBING JOINTS WITH INTERNAL SOLID FITTINGS, EPOXIED AND BOLTED.
5. CONTRACTOR TO COORDINATE OVERALL SHELF DIMENSIONS WITH FOOTPRINT OF RELOCATED METERING PUMPS, AND COORDINATE BACKING BOARD HEIGHT WITH ASSOCIATED PIPING, INSTRUMENTS, AND VALVES.

CHEMICAL METERING PUMP TABLE
NTS



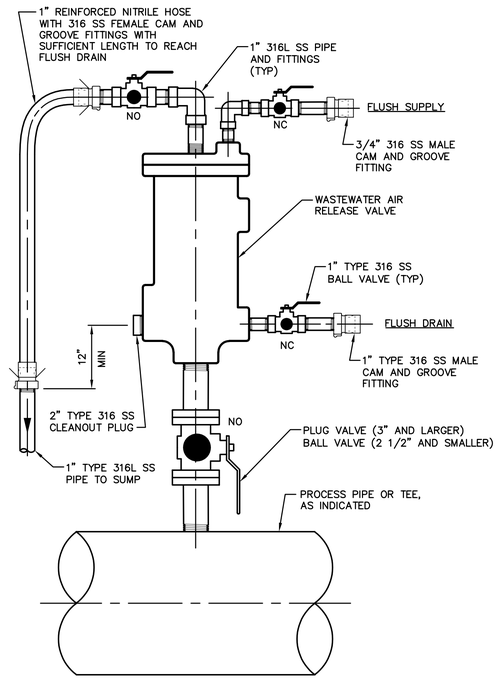
HOSE GATE / DRAIN
NTS



NOTES:

1. FOR EACH HOSE RACK, PROVIDE 50–FEET OF 3/4–INCH HOSE, NOZZLE, AND QUICK CONNECT FITTINGS AS SPECIFIED IN SECTION 15370.
2. PROVIDE A "CAUTION | NON–POTABLE WATER | DO NOT DRINK" SIGN LOCATED ABOVE EACH HOSE RACK. SIGN TO BE RIGID PVC WITH UV STABLE INK AND MOUNTING HOLES. USE TYPE 316 STAINLESS STEEL HARDWARE.

HOSE RACK
NTS



NOTES:

1. PROVIDE TYPE 316L SS PIPE AND FITTINGS PER SECTION 15370.
2. PROVIDE REDUCING BUSHINGS AS REQUIRED.
3. SEE SECTION 15101 FOR AIR RELEASE VALVE AND BALL VALVES.

WASTEWATER AIR RELEASE VALVE (1" THRU 4")
NTS

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KEMEI DU — LICENSE — No. 14864 — DELAWARE — PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: NOT TO SCALE DRAWN BY: SC CHECKED BY: DY SHEET NO.: 90 of 191 PROJECT NO.: 50.1890.97–A
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
PROCESS DETAILS III
OCTOBER 2025 PM–39

E:\work\Proj (P)\60606154_kent county biosolids\910_CAD\20-sheets\D\PM-39 19129.dwg Oct 22, 2025 - 2:14pm ENV:CTB Plot Scale 1=1 Plot By: RobinN Tab:PM-39 19129

LEGEND

BALL VALVE

GATE VALVE

BALANCING VALVE

GLOBE VALVE

BUTTERFLY VALVE

ANGLE VALVE

CHECK VALVE

TEMP CONTROL VALVE

CONTROL VALVE

PRESSURE REDUCING VALVE

GAUGE

M — MOTOR OPERATED

RELIEF VALVE

DRAIN VALVE

FLEXIBLE COUPLING

STRAINER

UNION

DIRECTION OF FLOW

CONCENTRIC REDUCER

TRANSFER GRILLE OR LOUVER

FLEXIBLE CONNECTION

SAD / OAD — SUPPLY AIR DUCT OR OUTSIDE AIR DUCT

RAD / EAD — RETURN AIR DUCT OR EXHAUST AIR DUCT

VD — VOLUME DAMPER

FD — FIRE DAMPER

PUMP - BASE MOUNTED

PUMP - IN-LINE

HWS — HEATING HOT WATER SUPPLY

HWR — HEATING HOT WATER RETURN

PIPE ANCHOR

PIPE GUIDE

AIR EXTRACTOR

SPLITTER DAMPER

TURNING VANES

M — MOTOR OPERATED DAMPER

RECTANGULAR DUCT TO ROUND

DUCT HEATER

SUPPLY DIFFUSER OR REGISTER

RETURN OR EXHAUST REGISTER

UH — UNIT HEATER

SUPPLY OR OUTSIDE (AIR)

RETURN OR EXHAUST (AIR)

THERMOMETER

CONNECT TO EXISTING

LIMIT OF WORK

LIMIT OF MATERIAL

CO — CARBON MONOXIDE SENSOR

F — FREEZESTAT

FS — FLOW SWITCH

H — HUMIDITY SENSOR

SD — DUCT SMOKE DETECTOR

SW — SWITCH

T — THERMOSTAT

TS — TEMPERATURE SENSOR

DEMOLITION

SUPPLY AIR DIFFUSER

RETURN AIR GRILLE

ABBREVIATIONS

AC	AIR CONDITIONER
AD	ACCESS DOOR
AF	AIR FOIL FAN
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AS	AIR SEPARATOR
BC	BACKWARD CURVE FAN
BDD	BACK DRAFT DAMPER
BLR	BOILER
BOD	BOTTOM OF DUCT
BTU	BRITISH THERMAL UNIT
BV	BALANCING VALVE
CC	COOLING COIL
CFM	CUBIC FEET PER MINUTE
COND	CONDENSATE
CP	CIRCULATING PUMP
CUH	CABINET UNIT HEATER
D	DRAIN
DAC	DUCTLESS AIR CONDITIONING UNIT
DB	DRY BULB
DEG	DEGREE
DF	DESTRATIFICATION FAN
DH	DEHUMIDIFIER
DHC	DUCT HEATING COIL
DN	DOWN
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EBB	ELECTRIC BASEBOARD
ECH	ELECTRIC CABINET HEATER
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE
ELE	ELECTRIC
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXP	EXPLOSIONPROOF
FAI	FRESH AIR INTAKE
FC	FLEXIBLE CONNECTION
FC	FORWARD CURVE FAN
FD	FIRE DAMPER
FF	FINISHED FLOOR
FLA	FULL LOAD AMPS
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FPM	FEET PER MINUTE
FS	FLOW SWITCH
FTR	FIN TUBE RADIATOR
GPM	GALLONS PER MINUTE
GUH	GAS FIRED UNIT HEATER
HC	HEATING COIL
HD	HOOD
HP	HORSEPOWER
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
IN WG	INCH WATER GAUGE
IV	ISOLATION VALVE
KW	KILOWATT
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
LD	LOUVERED DOOR / LEAK DETECTOR
LLSV	LIQUID LINE SOLENOID VALVE
LRA	LOCKED ROTOR AMPS
MAU	MAKE-UP AIR UNIT
MBH	THOUSAND BRITISH THERMAL UNIT
MD	MOTOR OPERATED DAMPER
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
ODP	OPEN DRIP-PROOF
OV	FUEL OVERFLOW
P	PUMP
PD	PRESSURE DROP
PH	PHASE
RA	RETURN AIR
RAF	RETURN AIR FAN
RAR	RETURN AIR REGISTER
RG	RETURN GRILLE
RGL	REFRIGERANT LIQUID LINE
RGS	REFRIGERANT SUCTION LINE
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SAD	SUPPLY AIR DIFFUSER
SAG	SUPPLY AIR GRILLE
SAR	SUPPLY AIR REGISTER
SD	SUCTION DIFFUSER / DUCT SMOKE DETECTOR
SF	SUPPLY FAN
SP	STATIC PRESSURE
SW	WALL SWITCH
TE	TOTALLY ENCLOSED
TEFC	TOTALLY ENCLOSED, FAN COOLED
TG	TRANSFER GRILLE
TK	TANK
TOD	TOP OF DUCT
TSP	TOTAL STATIC PRESSURE
UH	UNIT HEATER
V	VOLT
VCD	VOLUME CONTROL DAMPER
VD	VOLUME DAMPER
VTR	VENT THRU ROOF
W	WATT
WB	WET BULB
WG	WATER GAUGE
WMS	WIRE MESH SCREEN

GENERAL NOTES

1. INSTALL ALL WORK IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL CODES AND REGULATIONS.
2. INSULATE AND COVER ALL VALVES AND FITTINGS WITH PREFORMED FITTING COVERS.
3. PROVIDE AIRTIGHT ACCESS DOORS TO ALLOW FOR INSPECTION OF FIRE DAMPERS, CONTROL DAMPERS, INSTRUMENTATION, DETECTORS, FILTERS AND COILS FOR DUCTWORK NOT LESS THAN 6 INCHES BY 6 INCHES.
4. PROVIDE DAMPERS OF THE SAME MATERIALS AS THE DUCT SYSTEM WHERE THEY ARE INSTALLED. PROVIDE ALL DAMPERS WITH A POSITION INDICATOR THAT CAN BE EASILY SEEN FROM THE OPERATING LEVEL.
5. FIRE DAMPERS SHALL BE PROVIDED IN DUCTWORK AT FIRE RATED WALLS. PROVIDE FIRE DAMPERS AND CONNECTING DUCTWORK IN ACCORDANCE WITH NFPA 90A AND LOCAL CODES.
6. INSULATE ALL INTAKE AND EXHAUST AIR DUCTS AND AIR CONDITIONED SUPPLY AIR DUCTS AS SPECIFIED.
7. PROVIDE ALL EXHAUST LOUVERS WITH 1/2 INCH BIRD SCREEN. PROVIDE ALL INTAKE LOUVERS WITH INSECT OR BIRD SCREEN AS INDICATED.
8. COORDINATE WITH ARCHITECTURAL DRAWING AND PEMB SHOP DRAWINGS FOR OUTSIDE AIR INTAKE AND EXHAUST LOUVER ELEVATION, ROOF AND WALL OPENINGS (SIZE & LOCATION).
9. PROVIDE ALL COOLING COILS W/ CONDENSATE DRIP PANS AND PIPING. INSULATE PAN & PIPING AS SPECIFIED. CONDENSATE PIPE SIZES SHALL BE ONE INCH FOR UP TO 5 TONS OF COOLING, AND 1 1/4 INCH FOR 5 TO 30 TONS OF COOLING. TERMINATE CONDENSATE PIPE AT NEAREST DRAIN OR AS INDICATED.
10. BLANK OFF UNUSED LOUVER AREA W/ INSULATED ALUMINUM PANELS WHERE LOUVER AREA IS LARGER THAN INTAKE OR EXHAUST AIR DUCT CONNECTION.
11. ALL ROTATING EQUIPMENT SHALL HAVE FLEXIBLE PIPE OR DUCT CONNECTIONS AND APPROVED VIBRATION ISOLATORS.
12. PROVIDE ALL NECESSARY PIPING, EQUIPMENT AND SUPPORTS ETC. NOT SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS, BUT NECESSARY TO PROVIDE COMPLETE AND WORKABLE SYSTEMS.
13. PROVIDE COVERING TO ALL OPEN ENDS OF DUCTWORK TO PREVENT DUST, DIRT AND DEBRIS FROM ENTERING DURING CONSTRUCTION.
14. ALL SUPPLY AIR DIFFUSERS (SAD) ARE 4-WAY BLOW UNLESS OTHERWISE NOTED. SAD SELECTION BASED ON TITUS MODEL TDC. OFFICE AREA CEILING RETURN AIR GRILLES (RG) ARE BASED ON TITUS MODEL PAR. NECK SIZES SHALL BE AS INDICATED ON THE DRAWINGS. SUPPLY AIR REGISTERS (SAR) ARE BASED ON TITUS 300FS. RETURN AIR REGISTERS (RAR), EXHAUST AIR REGISTERS (ER), EXHAUST GRILLES (EG) AND TRANSFER GRILLES (TG) ARE BASED ON TITUS 350FL.
15. PROVIDE VOLUME DAMPERS AT ALL SUPPLY, RETURN AND EXHAUST AIR REGISTERS.
16. ALL EQUIPMENT SHALL BE LOCATED TO PROVIDE PROPER ACCESS FOR INSPECTION, MAINTENANCE AND SERVICE.
17. HVAC EQUIPMENT DIMENSIONS, LOCATIONS, DUCTWORK, AND PIPING SYSTEM LAYOUTS ARE BASED ON EQUIPMENT SELECTED BY THE ENGINEER. IF THE CONTRACTOR PROPOSES TO FURNISH EQUIPMENT THAT REQUIRES AN ARRANGEMENT OR SPACE DIFFERING FROM THAT INDICATED ON THE DRAWINGS OR SPECIFIED, THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER FOR APPROVAL, DETAILED HVAC, ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, INSTRUMENTATION, AND ELECTRICAL DRAWINGS AND EQUIPMENT LISTS SHOWING ALL NECESSARY CHANGES AND EMBODYING ALL FEATURES OF THE EQUIPMENT HE PROPOSES TO FURNISH. THIS INFORMATION SHALL INCLUDE BUT NOT BE LIMITED TO PLANS, SECTIONS, DETAILS, AND SCHEMATICS OF ALL APPURTENANCES REQUIRED. SUCH CHANGES IF APPROVED BY THE ENGINEER SHALL BE AT NO EXTRA COST TO THE OWNER. THE CONTRACTOR SHALL ASSUME THE COST OF, AND THE RESPONSIBILITY FOR SATISFACTORILY ACCOMPLISHING ALL THE NECESSARY CHANGES CORRESPONDING TO THE DIMENSIONS AND CHARACTERISTICS OF THE EQUIPMENT SUBMITTED AND APPROVED BY THE ENGINEER. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
18. ALL CONTROL CONDUIT AND WIRING BETWEEN HVAC EQUIPMENT AND CONTROL POINTS. POWER, CONDUIT AND WIRING TO MOTOR OPERATED DAMPERS SHALL BE PROVIDED BY DIVISION 16. ALL CONDUIT AND WIRING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF DIVISION 16.
19. SEE SECTION 01015 FOR SEQUENCE OF WORK LIMITATIONS.

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EDUARDO J. CHAVIANO LICENSE No.29803 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: NONE	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: BS	BIOSOLIDS CAPACITY EXPANSION PROJECT
APPROVED DATE		CHECKED BY: AC	CONTRACT 3
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 91 of 191	HVAC
		PROJECT NO.:50.1890.97-A	NOTES, LEGEND & ABBREVIATIONS
			OCTOBER 2025 H-01

INTAKE AND EXHAUST LOUVER SCHEDULE

ID	LOCATION	QTY	AREA SERVED	MODEL	APPLICATION	WIDTH (IN)	HEIGHT (IN)	DEPTH (IN)	VOLUME (CFM)	PRESSURE DROP (IN. WG)	FREE AREA VELOCITY (FT/MIN)	FREE AREA (SQ FT)	NOTES
LI-1	DRYER BLD	2	DEWATERING ROOM	GREENHECK ESD-635-84x84	INTAKE	84	84	6	6,394	0.006	204	31.3	A,B,C,E
LI-2	SERVICE BLD	1	EQUIPMENT ROOM	GREENHECK ESD-635-12x16	INTAKE	12	16	6	190	0.034	477	0.4	A,B,C,E
LI-3	SOLIDS HANDLING BLD	2	CONCENTRATOR ROOM	GREENHECK ESD-635-32x32	INTAKE	32	32	6	1,540	0.03	821	3.8	A,B,C,E
LI-4	SOLIDS HANDLING BLD	1	POLYMER ROOM	COOK 24X24GI	INTAKE	24	24	-	3,000	0.169	750	-	A,B,C,E
LE-1	DRYER BLD	3	DEWATERING ROOM	GREENHECK ESD-635-42x42	EXHAUST	42	42	6	6,060	0.104	883	6.9	B,E
LE-2	DRYER BLD	1	DEWATERING ROOM	GREENHECK ESD-635-42x42	EXHAUST	42	42	6	1,000	0.003	146	6.9	B,E
LE-3	SERVICE BLD	2	RESTROOM	GREENHECK ESD-202-8x8	EXHAUST	8	8	2	130	0.408	1,668	0.1	B,E
LE-4	SERVICE BLD	1	EQUIPMENT ROOM	GREENHECK WRH-12x12	EXHAUST	12	12	-	190	0.005	190	-	B,E

NOTES:
A. BIRDSCREEN, 1/2 IN. X 0.063 IN. ALUMINUM MESH, INTERNALLY MOUNTED
B. INSECTSCREEN
C. ACTUATOR, 2-POSITION-SPRING RETURN, 120V
D. FLANGED FRAME, FRONT
E. KYNAR PAINT, 70%, 2-COAT, STANDARD COLOR TO BE SELECTED

GAS-FIRED UNIT HEATER SCHEDULE

ID	LOCATION	QTY	TYPE	GAS TYPE	ENERGY		GAS CONNECTION IN	BUILDING GAS PRESSURE	STARTUP POWER		CONTROL ACCESS	BASIS OF DESIGN	NOTES
					MAX GAS INPUT BTU/H	MAX GAS FLOW CFH			VOLTAGE	AMPS			
GH-1 THRU G-14	DRYER BLD DEWATERING ROOM	14	WALL MOUNTED	Natural Gas	60,000	60	1/2		480			Cata-Dyne H24x60	

NOTES:
A. ZONE CONTROL PANEL
B. THERMOSTATICALLY CONTROLLED
C. WALL MOUNTED
D. GENERAL SERVICE, NEMA-12
E. CLASS I, DIVISION 1, GROUP D HAZARDOUS LOCATION APPROVED
F. 300 SERIES STAINLESS STEEL CONSTRUCTION AND MOUNTING HARDWARE

ENERGY RECOVERY VENTILATOR SCHEDULE

ID	Location	CFM (Min/Max)	Mounting	Defrost Type	Control Type	Voltage	Model	Notes
ERU-1	AHU Return Duct	50 / 130	Ceiling	Fan	Two-Speed Switch with Humidity Sensor	120/60/1	SYNC-110SE-S1	A, B, C

NOTES:
A. FACTORY BALANCED AIRFLOW — SIMPLIFIES INTEGRATION
B. COMPATIBLE WITH WIRELESS TIMER AND DEHUMIDISTAT — USEFUL FOR CONTROL FLEXIBILITY
C. REQUIRES INTERLOCK WITH AHU BLOWER — ESSENTIAL FOR RETURN/RETURN SETUPS TO PREVENT STALE AIR RECIRCULATION

EXHAUST FAN SCHEDULE

ID	LOCATION	QTY	DRIVE	CFM	TOTAL SYSTEM STATIC PRESSURE DROP	MOTOR H.P.	VOLTS/PHZ/HZ	BASIS OF DESIGN	NOTES
EF-11	DRYER BLD DEWATERING ROOM BELT PRESS HOODS	1	BELT	1,000	1.7	1	460/60/3	COOK 80TCNB	A,B
EF-12 THRU EF-14	DRYER BLD DEWATERING ROOM	3	BELT	6,060	0.1	1	460/60/3	COOK 30 AWB	A,B
EF-15	SERVICE BLD EQUIPMENT ROOM	1	DIRECT	190	0.32	1/4	115/60/1	GREENHECK AX-31-25-0425-VG	A,B
EF-16 THRU EF-17	SERVICE BLD RESTROOM	2	DIRECT	65	0.7	1/15	115/60/1	GREENHECK CSP-A390-VG	A,B
EF-18 THRU EF-19	SOLIDS HANDLING BLD CONCENTRATOR ROOM	2	BELT	1,540	0.25	1/4	460/60/3	GREENHECK GB-160	A,B,C
EF-20	SOLIDS HANDLING BLD POLYMER ROOM	1	DIRECT	3,000	1.0	3/4	460/60/3	COOK 150C17D (VF2)	A,B,C

NOTES:
A. BACK DRAFT DAMPER
B. BIRDSCREEN
C. INTEGRAL DISCONNECT

SPLIT SYSTEM SCHEDULE

OUTDOOR UNIT ID	INDOOR UNIT ID	INDOOR UNIT TYPE	LOCATION	RATED COOLING BTUH (IU/OU)	RATED HEATING BTUH (IU/OU)	CFM (IU/OU)	SEER	REFRIGERANT TYPE	VOLTS/PHZ/HZ	BREAKER AMPS (IU/OU)	BASIS OF DESIGN	NOTES
OU-1	IU-1A	WALL MOUNTED	ELECTRICAL ROOM	12,000 /36,000	26,400 / 41,000	526	29.9	R-454B	208/ 1/ 60	15/40	MITSUBISHI MSZ-FX12NL (x2) / MXZ-SM36NL	A,B,D
	IU-1B											
OU-2	IU-2	WALL MOUNTED	SWITCHGEAR ROOM	12,000	15,000	391	21.7	R-454B	208/ 1/ 60	15	MITSUBISHI MSZ-EX12NLS / SUZ-AA12NL	A,B,D
OU-3	IU-3	WALL MOUNTED	POLYMER BLD	6,000	9,000	420	35	R-454B	208/ 1/ 60	15	MITSUBISHI MSZ-FX06NL / MUZ-FX06NLHZ	A,B,D
OU-4	IU-4	WALL MOUNTED	POLYMER BLD	6,000	9,000	420	35	R-454B	208/ 1/ 60	15	MITSUBISHI MSZ-FX06NL / MUZ-FX06NLHZ	A,B,D

NOTES:
A. CONTRACTOR SHALL COORDINATE INDOOR UNIT INTERNAL STATIC PRESSURE FORMULATION AND REQUIRED HORSEPOWER
B. INTERIOR CONDITIONS: 75°F DB WITH 40% RH. COORDINATE COIL REQUIREMENTS WITH AIR HANDLER COMPONENTS. EXTERIOR CONDITIONS: 95°F DB.
C. WASHABLE FILTER
D. REMOTE THERMOSTAT/CONTROLER

AIR HANDLER UNIT SCHEDULE

MARK	MAX CFM	COIL TYPE	FACE AREA	FAN TYPE	FAN HP	FAN SPEED	VOLTS/PHZ/HZ	MFR	NOTES
AHU-1	735	PLATE FIN	4.37	CENTRIFUGAL	1/6	VARIABLE	208/1/60	MITSUBISHI PVA-AA18NL	A,B,C

NOTES:
A. ELECTRIC HEATER COIL, 5kW, Breaker
B. FILTER RETURN SIDE
C. THERMOSTAT CONTROLLED

HEAT PUMP CONDENSER UNIT SCHEDULE

MARK	NOM CAP TONS	TYPE	RLA	REFRIGERTANT TYPE	FAN HP	VOLTS/PHZ/HZ	BREAKER AMPS	MFR	NOTES
HP-1	1.5	SCROLL	9.0	R-454B	1/15	208/1/60	20	MITSUBISHI PUZ-AK18NL	

CONTROL DAMPER SCHEDULE

MARK NO	LOCATION	DIMENSION WIDTH	DIMENSION HEIGHT	TYPE OPENING	SERVES	TYPE SERVICE	UNIT ILLUSTRATED	REMARKS	NOTES
MD-11	SOLIDS HANDLING BLD	32"	32"	WALL LOUVER	CONCENTRATOR ROOM	INTAKE	GREENHECK VCD-33	B,C,D	OPEN WHEN EF-18 AND EF-19 OPERATE, OTHERWISE CLOSED
MD-12	SOLIDS HANDLING BLD	32"	32"	WALL LOUVER	CONCENTRATOR ROOM	INTAKE	GREENHECK VCD-33	B,C,D	OPEN WHEN EF-18 AND EF-19 OPERATE, OTHERWISE CLOSED
MD-13	DRYER BUILDING	42"	84"	WALL LOUVER	DEWATERING ROOM	INTAKE	GREENHECK VCD-33	B,C,D	OPEN WHEN EF-11 OPERATES, OTHERWISE CLOSED
MD-14	DRYER BUILDING	42"	84"	WALL LOUVER	DEWATERING ROOM	INTAKE	GREENHECK VCD-33	B,C,D	OPEN WHEN EF-12 OPERATES, OTHERWISE CLOSED
MD-15	DRYER BUILDING	42"	84"	WALL LOUVER	DEWATERING ROOM	INTAKE	GREENHECK VCD-33	B,C,D	OPEN WHEN EF-13 OPERATES, OTHERWISE CLOSED
MD-16	DRYER BUILDING	42"	84"	WALL LOUVER	DEWATERING ROOM	INTAKE	GREENHECK VCD-33	B,C,D	OPEN WHEN EF-14 OPERATES, OTHERWISE CLOSED
MD-17	SERVICE BLD	12"	16"	WALL LOUVER	EQUIPMENT ROOM	INTAKE	GREENHECK VCD-33	B,C,D	OPEN WHEN EF-15 OPERATES, OTHERWISE CLOSED

REMARKS:

A.	HI PRO POLYESTER PAINT FINISH	E.	JACKSHAFTED ACTUATOR
B.	ELECTRIC ACTUATOR	F.	316SS CONSTRUCTION
C.	ACTUATOR MOUNTING BRACKET	G.	NEMA 4X ENCLOSURE
D.	SPRING LOADED CLOSED	H.	NEMA 7 ENCLOSURE

* SIZES ARE APPROXIMATE, CONTRACTOR MUST FIELD VERIFY.

UNIT HEATER SCHEDULE

ID	LOCATION	POWER (kW)	TEMP. RISE (°F)	CFM	VOLTS/Hz/PHZ	BASIS OF DESIGN	NOTES
EUH-1	SERVICE BLD EQUIPMENT ROOM	5	40	400	480/60/4	MARKEL 5105CAINP3P	A,B,C,E
EUH-2	SERVICE BLD EQUIPMENT ROOM	5	40	400	480/60/4	MARKEL 5105CAINP3P	A,B,C,E

NOTES:
A. INTEGRAL THERMOSTAT
B. INTERGRAL DISCONNECT
C. WALL MOUNTED
D. CEILING MOUNTED
E. GENERAL SERVICE, NEMA-12

GRILLES AND DIFFUSERS SCHEDULE

MARK	MFR	MODEL	PANEL SIZE	NECK SIZE	USE	NOTES
D-1	GREENHECK	XG-6600-2S	24"x3-5/16"	6"x4" (via transition)	SUPPLY	A,B
D-2	GREENHECK	XG-7350	24"x24"	6"	SUPPLY	A,C,D
D-3	GREENHECK	XG-7350	24"x24"	8"	SUPPLY	A,C,D
SR-1	GREENHECK	SG42	30"x24"	-	SUPPLY	A,B,D,E
SR-2	GREENHECK	SG42	18"x18"	-	SUPPLY	A,B
G-1	GREENHECK	XG-7350R	24"x24"	6"	RETURN	A,C
G-2	GREENHECK	XG-7350R	24"x24"	5"	RETURN	A,C

NOTES:
A. COLOR BY OWNER
B. ALUMINUM CONSTRUCTION
C. STEEL CONSTRUCTION
D. ADJUSTABLE VANES
E. VOUME DAMPER

ISSUED FOR BIDDING

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RUMMEL, KLEPPER & KAHL, LLP
700 EAST PRATT STREET, SUITE 500 • BALTIMORE, MARYLAND 21202 • 410.728.2900

ROBERT J. ANDRYCHAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: NONE
DRAWN BY: DLJ
CHECKED BY: RJA
SHEET NO.: 92 of 191
PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SOLIDS HANDLING BLDG & DEWATERING ROOM SCHEDULES
OCTOBER 2025 H–02

\\rkk.com\fs\Cloud Projects\2019\19129_Biosolids\CAD\Contract III\HVAC\H-02 19129.dwg Oct 21, 2025 – 5:32pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:HVAC SCHEDULES

GAS FIRED MAKE UP AIR HANDLING UNIT SCHEDULE

TAG NO.	SERVES	TYPE	AIR HANDLING DATA							HEATING SECTION				ELECTRICAL		VFD	WEIGHT LBS	FILTER TYPE	DESIGN BASED ON MFR/ MODEL
			CFM		SP (IN WG)	SUPPLY FAN				INPUT	OUTPUT	EAT	LAT	VOLTS	PH				
			TOTAL	MIN OA	ESP	TYPE	MTR ENCL.	BHP	HP	MBH	MBH	(°F)	(°F)						
MAU-1	DRYER ROOM	OUTDOOR/ GRADE MTD	12,000	6,000	1.5	CENTR	TEFC	17.1	20	800	640	18	55	460	3	YES	1,400	2" PLEATED	REZNOR/ RPBL-800
MAU-2	DRYER ROOM	OUTDOOR/ GRADE MTD	12,000	6,000	1.5	CENTR	TEFC	17.1	20	800	640	18	55	460	3	YES	1,400	2" PLEATED	REZNOR/ RPBL-800

NOTES:
1. PROVIDE 100% OUTSIDE AIR MAKE UP UNIT WITH INDIRECT FIRED NATURAL GAS HEAT, INTERMITTENT SPARK PILOT W/ FLAME SUPERVISION AND TIMED LOCKOUT AND 409 STAINLESS STEEL HEAT EXCHANGER, BURNERS, BURNER DRIP PAN & UNIT BOTTOM.
2. PROVIDE DIGITAL ELECTRONIC MODULATION WITH MINIMUM 4:1 LOW FIRE TURNDOWN.
3. PROVIDE DIRTY FILTER PRESSURE SWITCH, FIRESTAT, AIR FLOW SWITCH AND GAS PRESSURE SAFETY SWITCHES.
4. PROVIDE VENTS/FLUES IN ACCORDANCE WITH MANUFACTURER'S AND BUILDING CODE REQUIREMENTS.
5. PROVIDE REZNOR PROGRAMMED DIGITAL CONTROLLER WITH OPTION D21 MODULATION GAS WITH DISCHARGE AIR OR SPACE TEMPERATURE SPACE CONTROLLER (AS SHOWN ON THE DRAWINGS OR DESCRIBED IN THE SEQUENCES OF OPERATION).
6. DOUBLE WALL INSULATED CABINET WITH SOLID INTERNAL LINER AND OA RAIN BAFFLED INTAKE HOOD.
7. SUPPLY FAN SHALL BE CONTROLLED BY VFD FOR 2 SPEED OPERATION. VFD PROVIDED BY THE MANUFACTURER.

FAN SCHEDULE

TAG NO.	QUANTITY	SERVES	TYPE	LOCATION	CFM	EXT STATIC (IN. W.G.)	RPM	DRIVE	MAX SONES/ dBA	ELECTRICAL DATA						WEIGHT LBS	SELECTION BASED ON MFR/ MODEL
										BHP	HP	VFD	MOTOR ENCLOSURE	VOLTS	PH		
EF-1 through 10	10	DRYER ROOM	PROPELLER- EXHAUST	WALL	19,100	0.5	939	BELT	58/ 89	3.86	.5	NO	TEFC	460	3	571	GREENHECK/ BAER-48-03-06-10

NOTES:
1. PROVIDE BACK DRAFT DAMPERS, AS INDICATED ON THE PLANS. NOTE FOR EF-10 BDD SHALL BE SET TO OPEN AT 0.05 IN WG.
2. ALL FANS, DAMPERS & ACCESSORIES SHALL BE COATED FOR CORROSION RESISTANCE WITH HI PRO POLYESTER.
3. MIN FEI 1.3
4. WALL HOUSING WITH OSHA GUARD AND BACK DRAFT DAMPER.
5. EXTENDED BEARING LUBE LINES, BEARINGS WITH GREASE FITTINGS
6. NEMA PREMIUM EFFICIENCY MOTOR.

SEQUENCES

A. GENERAL

1. IN GENERAL, THE HVAC EQUIPMENT SHALL BE CONTROLLED BY THE BUILDING PROCESS CONTROL SYSTEM OR CONTROLS SUPPLIED WITH THE PARTICULAR PIECE OF EQUIPMENT.
2. THE SEQUENCES SHALL BE REVERSIBLE UNLESS NOTED OTHERWISE.
3. ALL CONTROLS AND CONTROL COMPONENTS MUST MEET THE NEMA AREA ELECTRICAL CLASSIFICATION OF THE AREA IN WHICH THEY ARE LOCATED.
4. BUILDING FIRE ALARM SYSTEM INTERFACE: WHEN THE BUILDING FIRE ALARM SYSTEM DETECTS A FIRE ALARM CONDITION, THE HVAC VENTILATION SYSTEM IN THE BUILDING EXPERIENCING A FIRE ALARM SHALL BE SHUTDOWN.

B. GAS FIRED MAKE UP AIR UNITS AND ODOR CONTROL SYSTEM FANS:
EACH MAU SHALL BE INTERLOCK WITH THE RESPECTIVE ODOR CONTROL (OC) FAN (MAU-1, OCF-1) (MAU-2, OCF-2).

1. WHEN AN OCF IS CALLED TO START, THE ASSOCIATED MAU SHALL START. WHEN THE OCF STOPS THE MAU SHALL STOP.
2. STARTUP AND NORMAL OPERATION: UPON START UP, THE MAU'S OA MOTOR OPERATED DAMPER SHALL OPEN. WHEN ITS END SWITCH CONFIRMS THE DAMPER IS OPEN, THE MAU SHALL START AND OPERATE AT HIGH SPEED. THE MAU'S ARE 2-SPEED CONTROLLED BY A VFD, WHEN OPERATING WITH THE OC SYSTEM THE MAU'S SUPPLY FAN SHALL OPERATE AT HIGH SPEED. WHEN OPERATING ONLY FOR MINIMUM VENTILATION AND WINTER HEATING (WHEN BOTH ODOR CONTROL FANS ARE OFF) BOTH MAU'S SHALL RUN AT THE SAME TIME AT SLOW SPEED.
3. GAS HEATING SECTION: WHEN THE OUTSIDE AIR TEMPERATURE IS 55 DEGREES F (ADJUSTABLE) OR LOWER THE AIR HANDLING UNIT'S HEATING SECTION SHALL BE ENABLED. THE ROOM TEMPERATURE SENSOR ACTING THROUGH THE CONTROLLER, SHALL MODULATE STAGES OF GAS HEAT TO MAINTAIN ROOM TEMPERATURE SET POINT OF 55 DEGREES F (ADJUSTABLE).
4. SYSTEM SHUTDOWN: WHEN THE SYSTEM SHUTS DOWN; THE MAU SHALL STOP AND THE MAU'S OA MOTOR OPERATED DAMPER SHALL CLOSE.
5. SAFETIES:
   a. WHEN THE SUPPLY DUCT MOUNTED TEMPERATURE SENSOR SENSES A TEMPERATURE BELOW 35 DEGREES F (ADJUSTABLE) AFTER START-UP FLOWS HAVE BEEN ESTABLISHED (MINIMUM 5 MINUTES); THE CONTROLLER SHALL SHUT DOWN THE MAU SYSTEM. THE MAKE-UP AIR UNIT'S GAS HEATING SECTION AND SUPPLY FAN SHALL BE SHUT DOWN AND THE MAU'S OUTDOOR AIR DAMPER SHALL CLOSE, AND AN ALARM SIGNAL TRANSMITTED TO THE BUILDING PROCESS CONTROL SYSTEM. FLOW SWITCH STATUS SHALL ALSO BE TRANSMITTED TO SCADA.
   b. WHEN THE SUPPLY DUCT MOUNTED DUCT SMOKE DETECTOR SENSES SMOKE THE ASSOCIATED MAKE-UP AIR UNIT'S GAS HEATING SECTION AND SUPPLY FAN SHALL BE SHUT DOWN AND THE MAU'S OUTDOOR AIR DAMPER SHALL CLOSE, AND AN ALARM SIGNAL TRANSMITTED TO THE BUILDING PROCESS CONTROL SYSTEM. SMOKE DETECTOR AND FLOW SWITCH STATUS SHALL BE TRANSMITTED TO SCADA.

6. GENERAL: THE GAS FIRED MAKE UP AIR UNITS SHALL BE PROVIDED WITH DDC CONTROLS BY THE MAU MANUFACTURER FOR INTERFACE WITH THE BUILDING PROCESS CONTROL SYSTEM. REFER TO THE SCHEDULES FOR INFORMATION ON THE CONTROLS AND INSTRUMENTATION PROVIDED WITH THE MAU.

MAU	MAU OA DAMPER	OC FAN	MAU: FAN SPEED	SYSTEM MODE
MAU-1	MD-1A	OCF-1 RUN	HIGH	NORMAL
MAU-2	MD-2A	OCF-2 RUN	HIGH	NORMAL

WHEN BOTH OC FANS (OCF-1 & 2) ARE OFF

MAU-1	MD-1A	OCF-1 & 2 OFF	SLOW	MIN. VENT/HEAT
MAU-2	MD-2A	OCF-1 & 2 OFF	SLOW	MIN. VENT/HEAT

C. FANS CONTROLLED BY THERMOSTATS:

1. THE FANS SHALL BE ELECTRICALLY INTERLOCKED WITH THEIR ASSOCIATED OUTSIDE AIR DAMPER AS INDICATED IN THE TABLE.
2. WHEN THE SPACE TEMPERATURE IS ABOVE THE ROOM THERMOSTAT SET POINT (ADJUSTABLE), THE MOTOR OPERATED OUTSIDE AIR DAMPER SHALL OPEN AND THE FAN SHALL RUN.
3. WHEN THE SPACE TEMPERATURE IS BELOW THE ROOM THERMOSTAT SET POINT THE FAN SHALL STOP AND THE OUTSIDE AIR DAMPER SHALL CLOSE.

FAN	EA DAMPER	OA DAMPER	SET POINT
EF-1	BDD	MD-1	80 DEGREES F
EF-2	BDD	MD-2	85 DEGREES F
EF-3	BDD	MD-3	90 DEGREES F
EF-4	BDD	MD-4	80 DEGREES F
EF-5	BDD	MD-5	85 DEGREES F
EF-6	BDD	MD-6	90 DEGREES F
EF-7	BDD	MD-7	80 DEGREES F
EF-8	BDD	MD-8	85 DEGREES F
EF-9	BDD	MD-9	90 DEGREES F
EF-10	BDD	MD-10	85 DEGREES F

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EDMUND J. CHAVIANO LICENSE No 29803 DELAWARE PROFESSIONAL ENGINEER

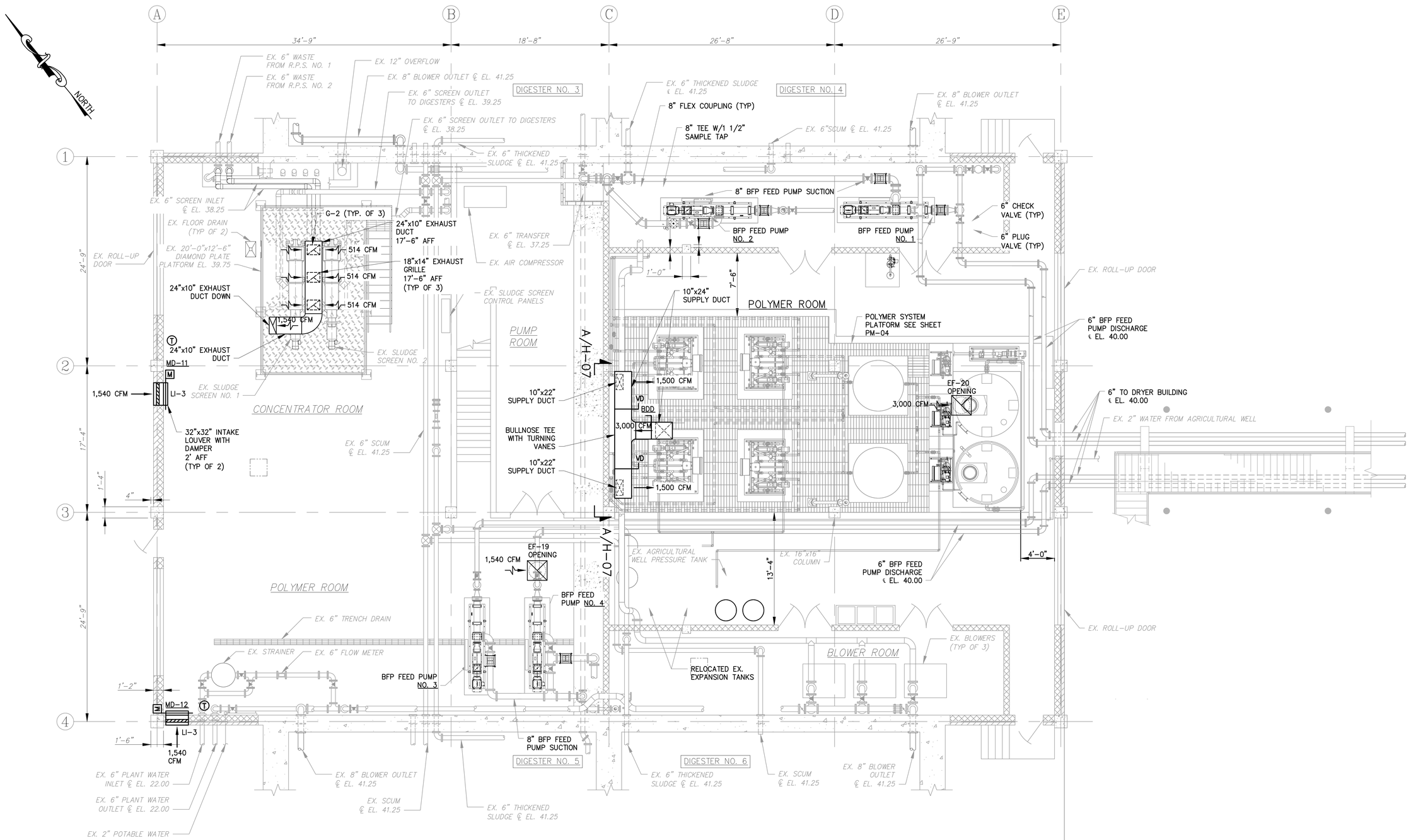
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE
DIRECTOR OF PUBLIC WORKS
APPROVED DATE
ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE
PROJECT MANAGER

SCALE: NONE
DRAWN BY: BS
CHECKED BY: AC
SHEET NO.: 93 of 191
PROJECT NO.:50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER ROOM
SCHEDULES & SEQUENCES
OCTOBER 2025 H-03



PLAN – MAIN FLOOR
SCALE: 3/16"=1'-0"

3/16"=1'-0" 4' 2' 0 4' 8' 12'

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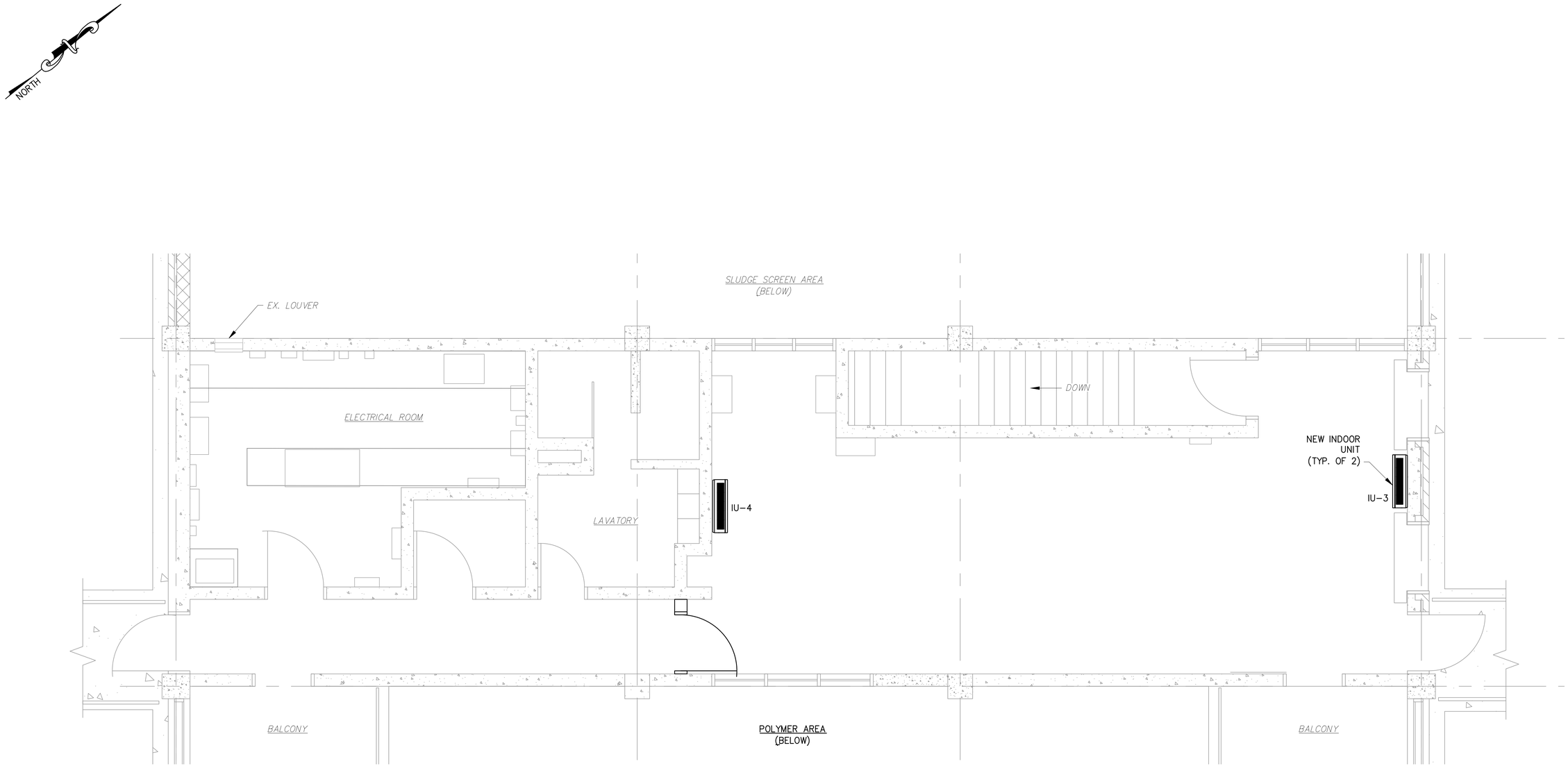
KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 3/16"=1'-0"	KENT COUNTY RRRF
		DRAWN BY: RAD	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	SOLIDS HANDLING BUILDING LOWER LEVEL HVAC PLAN
APPROVED DATE		SHEET NO.: 94 of 191	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 H-04

\\pdrkk.com\Vol\Cloud\Projects\2019\19129_Biosolids\ACAD\Contract III\HVAC\H-04 19129.dwg Oct 21, 2025 - 5:36pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab: SOLIDS HANDLING BUILDING - HVAC LAYOUT



UPPER LEVEL HVAC PLAN

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

3/8"=1'-0" 24" 12" 0 2' 4' 6'

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DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 3/8"=1'-0"	KENT COUNTY RRRF
		DRAWN BY: DLJ	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	CONTRACT 3
APPROVED DATE		SHEET NO.: 95 of 191	SOLIDS HANDLING BUILDING
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	UPPER LEVEL HVAC PLAN
		OCTOBER 2025	H-05

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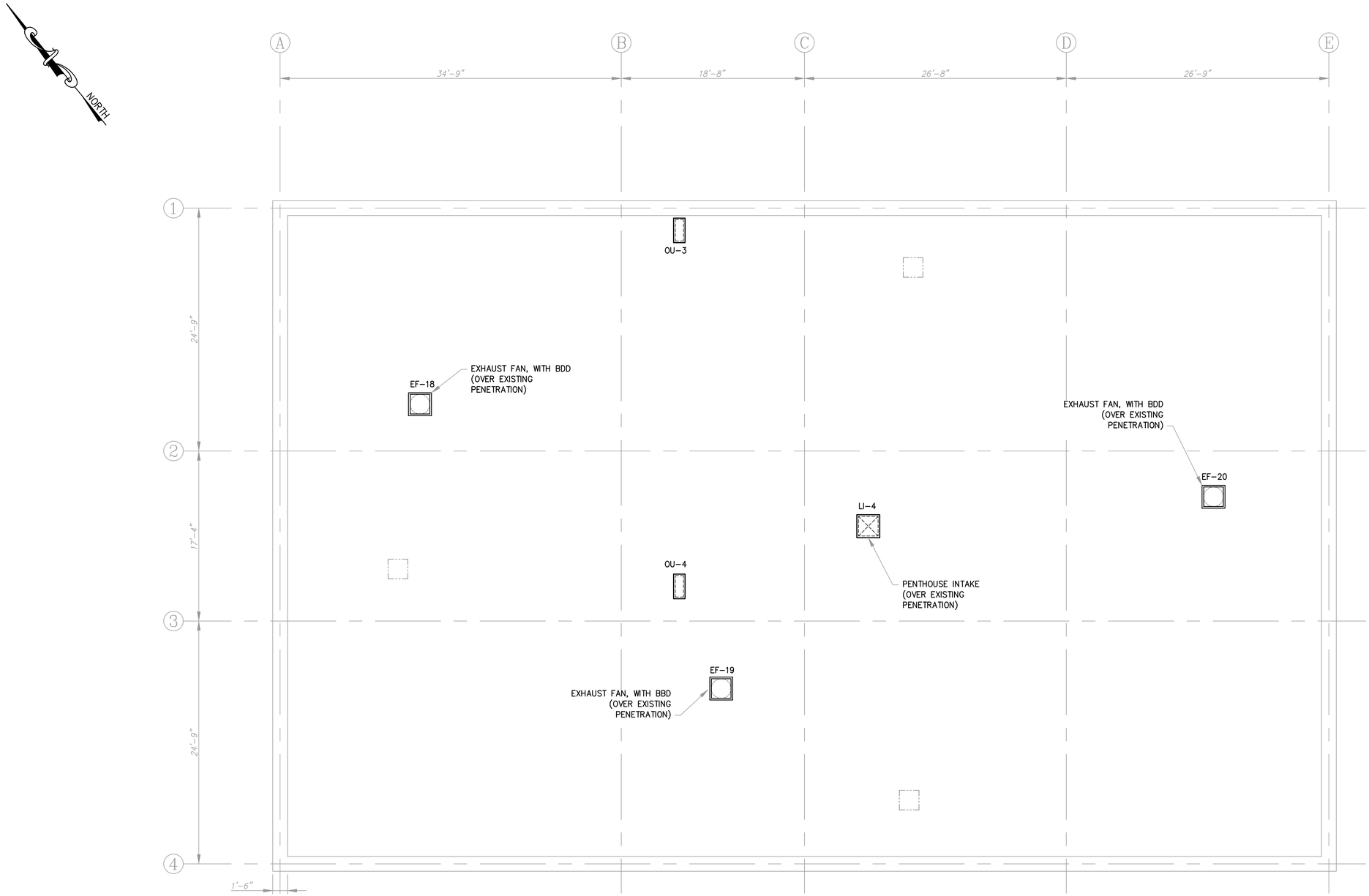

EXHAUST FANS AND SUPPLY
PENTHOUSE HVAC ROOF PLAN
SCALE: 3/16"=1'-0"

3/16"=1'-0" 4' 2' 0 4' 8' 12'

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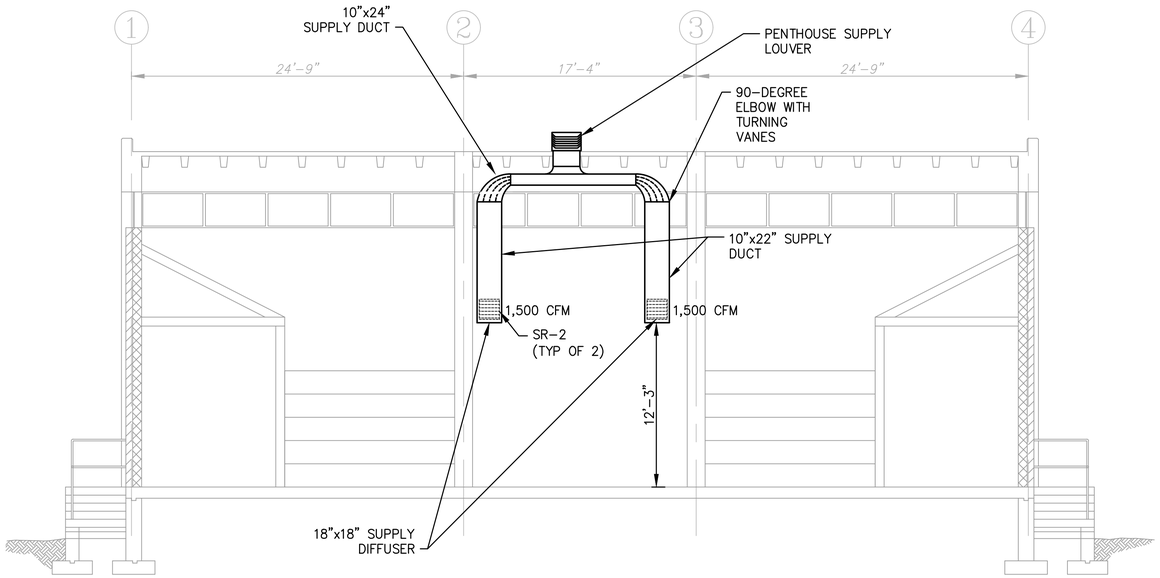
KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 3/16"=1'-0"	KENT COUNTY RRRF
		DRAWN BY: DLJ	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	CONTRACT 3
APPROVED DATE		SHEET NO.: 96 of 191	SOLIDS HANDLING BUILDING
		PROJECT NO.: 50.1890.97-A	HVAC ROOF PLAN
ASSISTANT DIRECTOR OF ENGINEERING			OCTOBER 2025 H-06

\\adt-kk.com\ls\Cloud Projects\2019\19129_Biosolids\ACAD\Contract III\HVAC\H-06 19129.dwg Oct 21, 2025 - 5:41pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:SOLIDS HANDLING BUILDING ROOF - HVAC LAYOUT



SECTION A/H-04
CONCENTRATOR ROOM DUCT WORK
SCALE: 3/16"=1'-0"

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3/16"=1'-0" 4' 2' 0 4' 8' 12'

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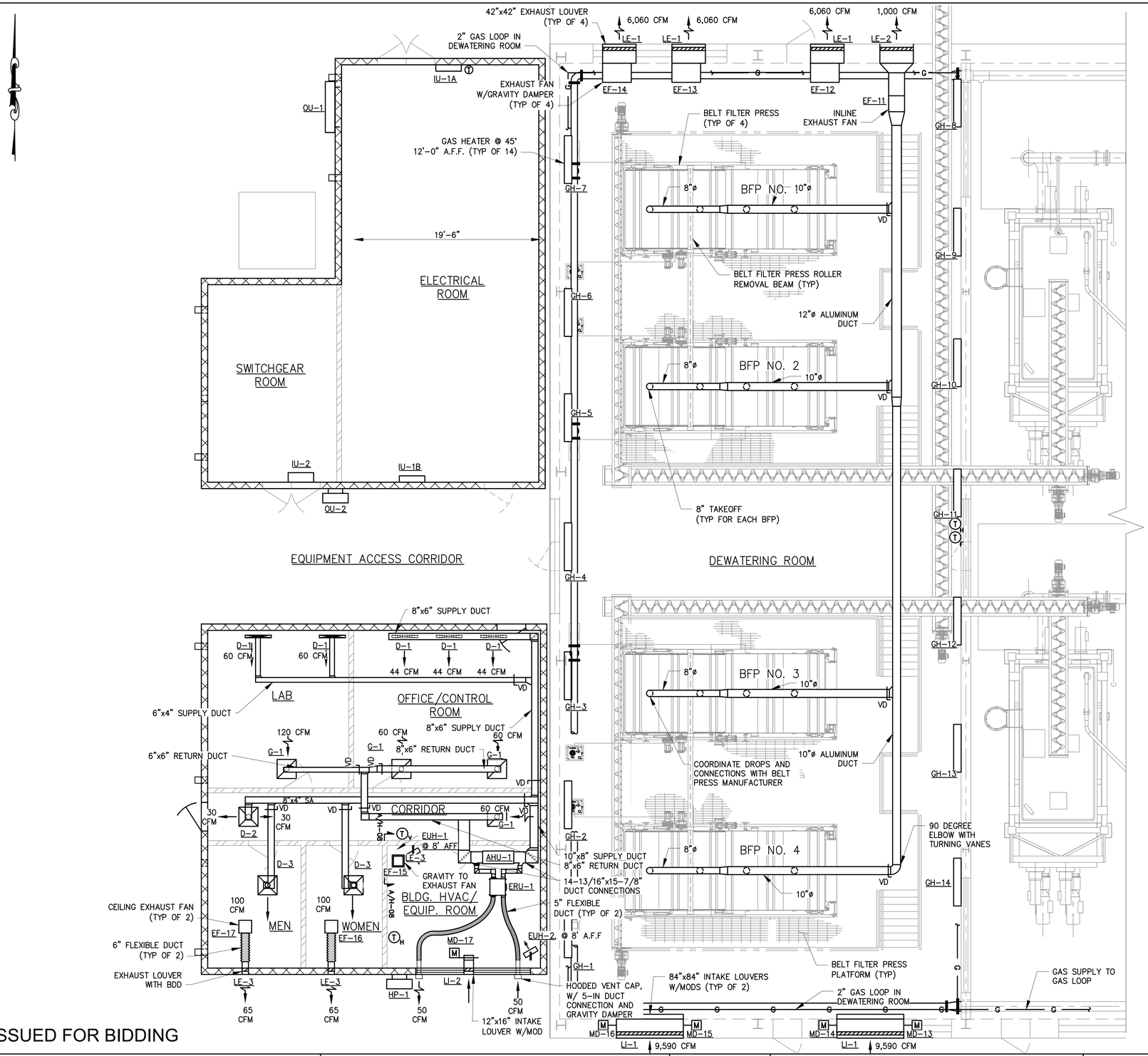
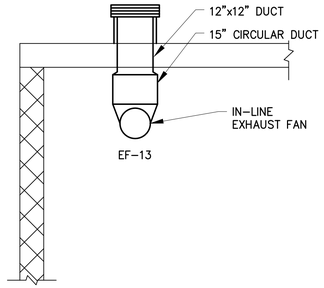
KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 1/8"=1'-0"
		DRAWN BY: DLJ
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA
APPROVED DATE		SHEET NO.: 97 of 191
		PROJECT NO.: 50.1890.97-A
ASSISTANT DIRECTOR OF ENGINEERING		

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SOLIDS HANDLING BUILDING
HVAC SECTIONS
OCTOBER 2025 H-07

\\adt-kk.com\16\Cloud Projects\2019\19129_Biosolids\ACAD\Contract III\HVAC\H-07 19129.dwg Oct 21, 2025 - 5:42pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:SECTION VIEW





SECTION A/H-08
EXHAUST FAN SECTION

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

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½"=1'-0" 12" 0 1' 2' 3' 4' 5'

¾6"=1'-0" 4' 2' 0 4' 8' 12'

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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 3/16"=1'-0"	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: RAD/DLJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: RJA	BFP ROOM AND SERVICE AREA HVAC PLAN
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 98 of 191	OCTOBER 2025 H-08
		PROJECT NO.: 50.1890.97-A	

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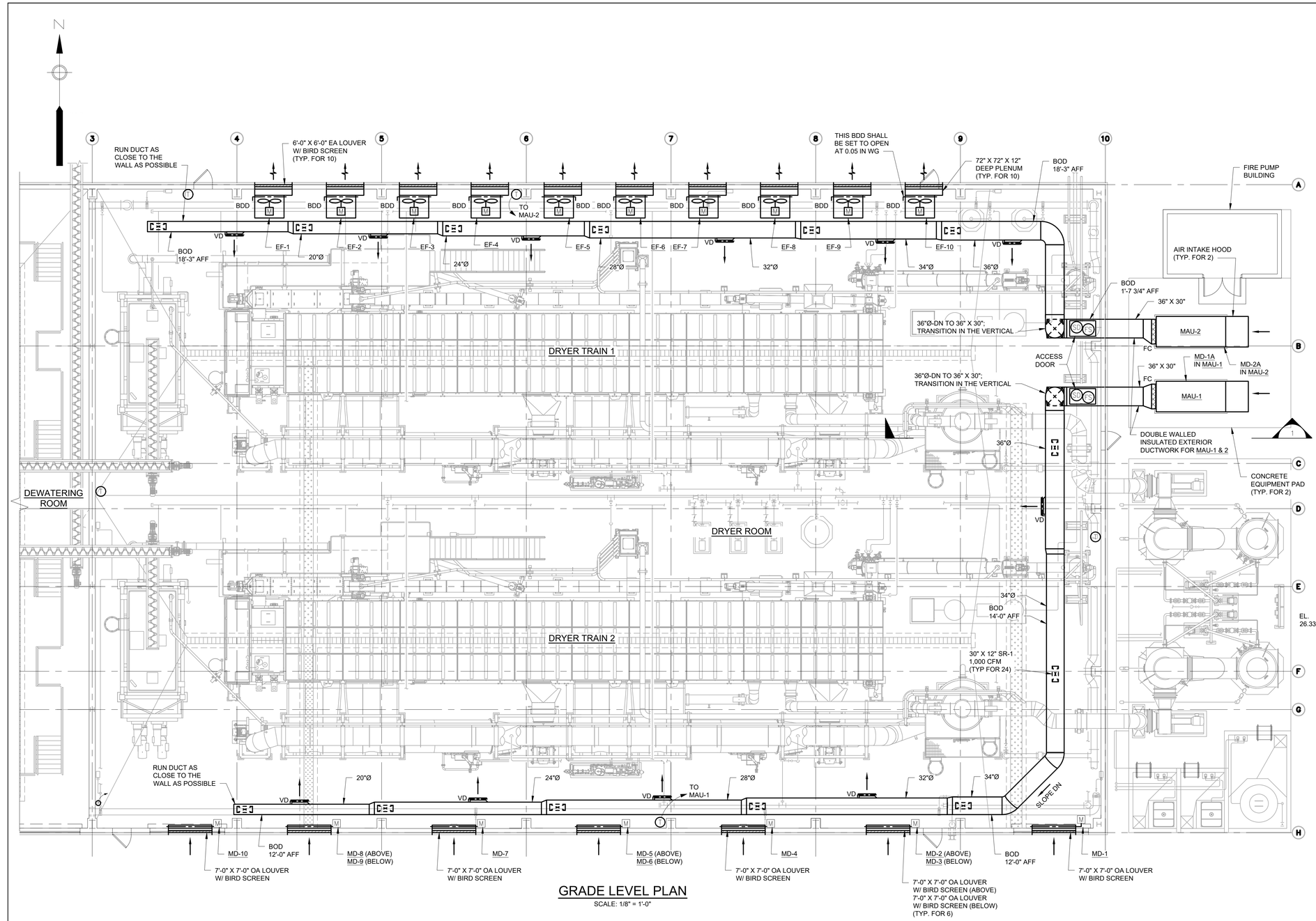
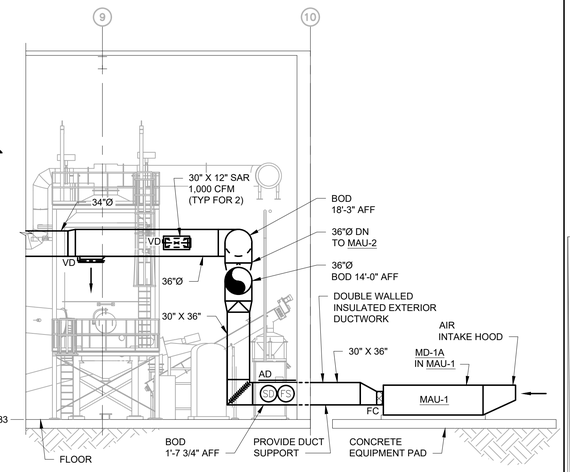
NOTES:

1. DUCTWORK IN THE DRYER ROOM SHALL BE ALUMINUM, 2-IN. POSITIVE OR NEGATIVE STATIC PRESSURE CLASS.
2. LOCATE FANS AT LOWER PORTION OF THE PLENUM.



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



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

1/8"=1'-0" 0 4 8 12 16 20 24 SCALE FEET

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JOSEPH J. CHAVIANO LICENSE No.29803 PROFESSIONAL ENGINEER

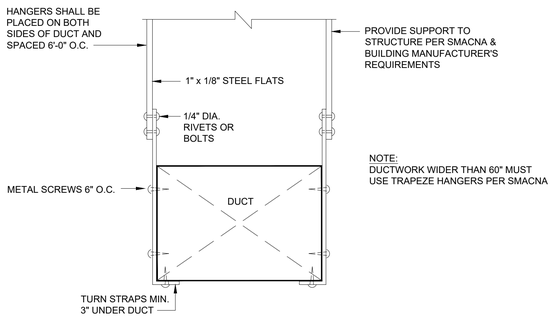
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

SCALE: 1/8" = 1'-0"
DRAWN BY: BS
CHECKED BY: AC
SHEET NO.: 99 of 191
PROJECT NO.:50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER ROOM
HVAC PLAN & SECTION
OCTOBER 2025
H-09

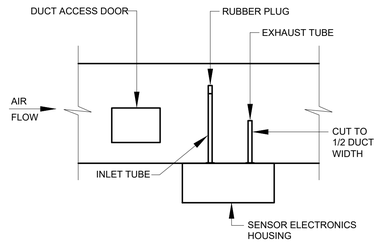


NOTE:
DUCTWORK WIDER THAN 60" MUST USE TRAPEZE HANGERS PER SMACNA

NOTE: TRAPEZE HANGERS MAY BE USED

DUCTWORK STRAP HANGER 60" WIDTH MAX.

NTS

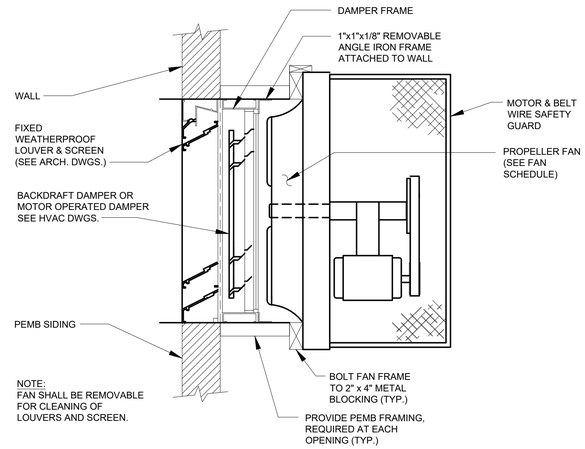


NOTES:

1. HOLE IN INLET TUBE TO FACE STREAM.
2. MOUNT HOUSING IN VERTICAL OR HORIZONTAL PLANE; ANGULAR MOUNTING NOT PERMITTED.
3. TUBES TO RUN PARALLEL TO FLOOR.

DUCT SMOKE DETECTOR DETAIL

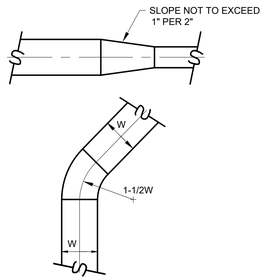
NTS



NOTE:
FAN SHALL BE REMOVABLE FOR CLEANING OF LOUVERS AND SCREEN.

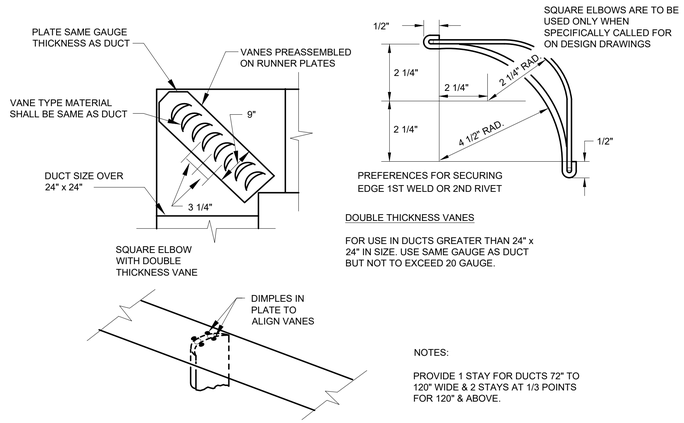
WALL MOUNTED PROPELLER FAN

NTS



CONSTRUCTION OF TRANSITION AND 45° ELBOWS

NTS



SQUARE ELBOWS ARE TO BE USED ONLY WHEN SPECIFICALLY CALLED FOR ON DESIGN DRAWINGS

DOUBLE THICKNESS VANES

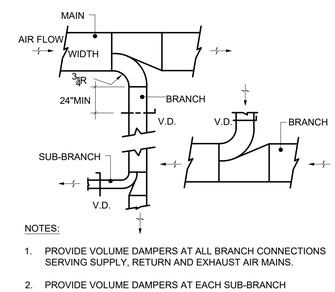
FOR USE IN DUCTS GREATER THAN 24" x 24" IN SIZE. USE SAME GAUGE AS DUCT BUT NOT TO EXCEED 20 GAUGE.

NOTES:

PROVIDE 1 STAY FOR DUCTS 72" TO 120" WIDE & 2 STAYS AT 1/3 POINTS FOR 120" & ABOVE.

TURNING VANE DETAIL

NTS

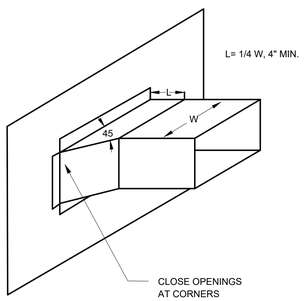


NOTES:

1. PROVIDE VOLUME DAMPERS AT ALL BRANCH CONNECTIONS SERVING SUPPLY, RETURN AND EXHAUST AIR MAINS.
2. PROVIDE VOLUME DAMPERS AT EACH SUB-BRANCH CONNECTIONS SERVING RETURN AND EXHAUST AIR BRANCHES.
3. PROVIDE VOLUME DAMPER AT EACH SUPPLY AIR SUB-BRANCH CONNECTION & SUBSEQUENT SUB-BRANCH CONNECTIONS.
4. VOLUME DAMPERS AT DUCTS OVER 2 SQ.FT. SHALL BE OF THE OPPOSED BLADE TYPE UNLESS OTHERWISE NOTED.

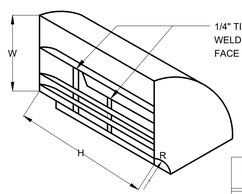
DUCT BRANCH AND SUB-BRANCH CONNECTIONS

NTS



45° BRANCH CONNECTION

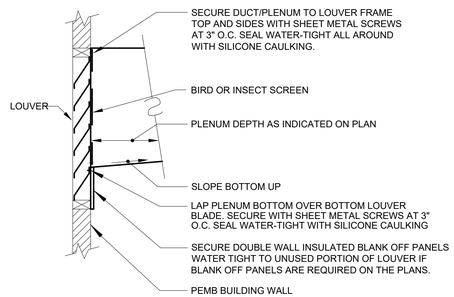
NTS



ELBOW DEPTH H REQUIRED	NUMBER OF TIE RODS
0"-12"	NONE
13"-20"	1
21"-48"	2
49"-64"	3
65"-80"	4

CONSTRUCTION OF RADIUS ELBOWS

NTS



LOUVER - PLENUM / DUCT CONNECTION DETAIL

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EDMUNDO CHAVIANO LICENSE No.29803 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

SCALE: AS NOTED
DRAWN BY: BS
CHECKED BY: AC
SHEET NO.: 100 of 191
PROJECT NO.:50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
HVAC
DETAILS
OCTOBER 2025 H–10

LEGEND

- BURIED PIPING
- D — DRAIN
- W — WASTE
- V — VENT
- AW — ACID WASTE
- AV — ACID VENT
- TW1 — TEMPERED WATER (POTABLE)
- HW1 — HOT WATER (POTABLE)
- W1 — COLD WATER (POTABLE)
- W2 — COLD WATER (NON-POTABLE)
- SW — SOFTENED WATER
- HWR — HOT WATER RETURN (POTABLE)
- TWR — TEMPERED WATER RETURN (POTABLE)
- PW — PLANT WATER
- NG — NATURAL GAS
- PIPE DROP
- PIPE RISER
- GATE VALVE
- CHECK VALVE
- BALL VALVE
- PRESSURE REDUCING VALVE
- FD — FLOOR DRAIN
- FCO — FLOOR CLEANOUT
- EMERGENCY SHOWER AND EYE/FACE WASH
- EMERGENCY SHOWER
- EMERGENCY EYE/FACE WASH
- PRESSURE GAUGE WITH BALL VALVE SHUTOFF AND SNUBBER
- THERMOMETER
- STRAINER
- PITCH DOWN IN DIRECTION OF FLOW
- UNION
- END CAP
- WHA — WATER HAMMER ARRESTOR
- FS — FLOW SWITCH
- VALVE IN RISER
- HB — HOSE BIBB
- WH — WALL HYDRANT

LEGEND - MISCELLANEOUS

- NEW WORK (SHOWN DARK LINE)
- NEW WORK BY OTHERS (SHOWN LIGHT LINE)
- CONNECT TO EXISTING
- LIMIT OF WORK
- LIMIT OF MATERIAL

ABBREVIATIONS

AC	AIR COMPRESSOR
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ARCH	ARCHITECTURAL
AVTR	ACID VENT THROUGH ROOF
AV	ACID VENT
AW	ACID WASTE
BP	BOOSTER PUMP
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
CFH	CUBIC FEET PER HOUR
℄	CENTER LINE
CO	CLEANOUT
CU. FT	CUBIC FEET
CW	COLD WATER
D	DRAIN
DB	DESIGN BUILDER
DCBFP	DOUBLE CHECK BACK FLOW PREVENTER
DCO	DANDY CLEANOUT
DEG	DEGREE
DH	DRENCH HOSE
DIA	DIAMETER
DN	DOWN
DWH	DOMESTIC WATER HEATER
DWV	DRAIN-WASTE-VENT
EFF	EFFICIENCY
EEW	EMERGENCY EYEWASH
EEW/DH	DUAL PURPOSE EMERGENCY EYEWASH/DRENCH HOSE
EL	ELEVATION
ES	EMERGENCY SHOWER
ET	EXPANSION TANK
EWH	ELECTRIC WATER HEATER
EWS	EMERGENCY WASH STATION
EXIST	EXISTING
F	FAHRENHEIT
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FF	FINISHED FLOOR
FS	FLOW SWITCH
FT	FOOT, FEET
FWPS	FINISHED WATER PUMP STATION
GAL	GALLONS
GC	GENERAL CONTRACTOR
GCO	GRADE CLEANOUT (OUTDOOR)
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIB
HP	HORSEPOWER
HW1	DOMESTIC (POTABLE) HOT WATER
HWR	HOT WATER RETURN
IE	INVERT ELEVATION
IN	INCHES
IN. WC.	INCHES WATER COLUMN
IW	INDIRECT WASTE
KW	KILOWATTS
LAV	LAVATORY
LBS	POUNDS
LPG	LIQUEFIED PETROLEUM GAS (PROPANE)
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MFR	MANUFACTURER
MIN	MINIMUM
MV	MIXING VALVE
NC	NORMALLY CLOSED
NG	NATURAL GAS
NTS	NOT TO SCALE
OED	OPEN END DRAIN
P	PLUMBING FIXTURE, PUMP
PCT	PERCENT
PE	POLYETHYLENE
PIT	PRESSURE INDICATING TRANSMITTER
PLBG	PLUMBING
PLC	PROGRAMMABLE LOGIC CONTROLLER
PPM	PARTS PER MILLION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH (GAUGE)
PW	PLANT WATER
QTY	QUANTITY
RPBFP	REDUCED PRESSURE BACKFLOW PREVENTER
RW	RAIN WASTE
RWPS	RAW WATER PUMP STATION
SAN	SANITARY
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SP	SUMP PUMP
SPD	SUMP PUMP DISCHARGE
SST	STAINLESS STEEL
SW	SOFTENED WATER
TP	TRAP PRIMER
TW1	POTABLE TEMPERED WATER
TWR	TEMPERED WATER RETURN
TYP	TYPICAL
V	VENT
VAC	VACUUM, VOLTS ALTERNATING CURRENT
VDC	VOLTS DIRECT CURRENT
VP	VACUUM PUMP
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
W	WASTE
W1	DOMESTIC (POTABLE) COLD WATER
W2	SERVICE (POTABLE) COLD WATER
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTOR
WS	WATER SOFTENER
WTP	WATER TREATMENT PLANT

GENERAL NOTES:

1. THE DRAWINGS ARE DIAGRAMMATIC ONLY TO SHOW THE SCOPE OF THE WORK INVOLVED. DO NOT SCALE DRAWINGS FOR FABRICATION PURPOSES. FINAL LOCATION OF EQUIPMENT AND PIPING SHALL BE DETERMINED IN FIELD. ANY WORK INSTALLED CONTRARY TO OR WITHOUT APPROVAL SHALL BE SUBJECT TO CHANGE.
2. PERFORM ALL WORK IN STRICT ACCORDANCE WITH LAWS, REGULATIONS, AND STANDARDS OF LOCAL, STATE AND FEDERAL GOVERNMENTS.
3. GIVE ALL NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES HAVING JURISDICTION AS REQUIRED TO PERFORM WORK.
4. COOPERATE AND COORDINATE WITH OTHER TRADES IN EXECUTING THE WORK. PERFORM WORK SO THAT PROGRESS OF ENTIRE PROJECT SHALL NOT BE DELAYED. PROVIDE INFORMATION TO OTHER TRADES AS REQUESTED. OBTAIN FINAL ROUGHING DIMENSIONS AS REQUIRED TO COMPLETE WORK.
5. PROVIDE PROPER ACCESS TO MATERIAL AND EQUIPMENT REQUIRING INSPECTION, MAINTENANCE OR SERVICE.
6. WHERE SUSPENDED CEILINGS ARE PROVIDED, RUN ALL EQUIPMENT AND PIPING CONCEALED ABOVE SUSPENDED CEILING. SEE ARCHITECTURAL DRAWINGS FOR SUSPENDED CEILING LOCATIONS.
7. SUBMIT SHOP DRAWINGS AND PRODUCT INFORMATION. NO WORK SHALL PROCEED WITHOUT WRITTEN APPROVAL ON EACH ITEM SCHEDULED, SPECIFIED OR SHOWN ON PLAN
8. PROVIDE ALL NECESSARY PIPING, EQUIPMENT AND SUPPORTS ETC. NOT SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS, BUT NECESSARY TO PROVIDE COMPLETE AND WORKABLE SYSTEMS.

PLUMBING NOTES:

1. PIPING AND ACCESSORIES
   - A. PIPING SHALL FOLLOW THE GENERAL ROUTING INDICATED ON DRAWINGS. COORDINATE LOCATION WITH ALL OTHER PIPING, DUCTWORK, AND EQUIPMENT.
   - B. PROVIDE UNIONS IN CONNECTIONS TO EQUIPMENT FOR REPAIRS AND/OR REPLACEMENT. LOCATE BETWEEN SHUTOFF VALVES AND EQUIPMENT.
   - C. ALL SHUT-OFF VALVES AND WATER HAMMER ARRESTORS SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS.
   - D. PROVIDE PROPER DRAINAGE FOR ALL PIPING SYSTEMS. PITCH DOWN ALL HORIZONTAL DRAIN PIPING MIN. 1/4 INCH PER FOOT FOR 3" AND SMALLER. MIN. 1/8 INCH PER FOOT FOR 4" AND LARGER.
   - E. PROVIDE SEISMIC RESTRAINTS FOR PIPING AND EQUIPMENT WHERE REQUIRED BY THE BUILDING CODE.
   - F. MAINTAIN MAXIMUM HEADROOM. UNLESS OTHERWISE INDICATED, RUN ALL PRESSURIZED OVERHEAD HORIZONTAL PIPING MAXIMUM 12" BELOW ROOF STRUCTURAL MEMBERS. PIPING RUNNING ALONG WALLS MAY BE INSTALLED MIN. 8'-0" AFF. RUN ALL GRAVITY OVERHEAD HORIZONTAL PIPING AS HIGH AS POSSIBLE WHILE MAINTAINING REQUIRED PITCH.
   - G. PROVIDE FIRE STOP MATERIAL WHERE PIPING PENETRATES FIRE RATED WALLS.
   - H. VERIFY PLUMBING FIXTURE ROUGH-INS PRIOR TO START OF WORK.
   - I. PROVIDE ALL COLD WATER LINES, HOT WATER LINES, AND TEMPERED WATER LINES TO PLUMBING FIXTURES WITH ISOLATION VALVES.
   - J. SELECT AND INSTALL WATER HAMMER ARRESTORS (WHA) PER PDI WH 201 REQUIREMENTS WHERE INDICATED ON DRAWINGS.
   - K. NO PORTION OF THE SANITARY DRAIN-WASTE-VENT SYSTEM INSTALLED UNDERGROUND SHALL BE LESS THAN TWO INCHES IN DIAMETER.
   - L. SANITARY PLUMBING VENTS THROUGH ROOF SHALL BE GREATER THAN 25 FEET HORIZONTALLY FROM ALL FRESH AIR INTAKES AND BUILDING OPENINGS AND SHALL BE TERMINATED MINIMUM 18 INCHES, BUT NO MORE THAN 24" ABOVE ROOF. SANITARY PLUMBING VENTS THAT TERMINATE NO LESS THAN TWO FEET ABOVE THE TOP OF A FRESH AIR INTAKE MAY BE LOCATED AS CLOSE AS TEN FEET.
   - M. WITH EXCEPTION OF TRAP PRIMER PIPING, RUN ALL BURIED PIPING BENEATH, NOT IN, CONCRETE FLOOR SLABS. BURIED TRAP PRIMER PIPING SHALL BE RUN THROUGH CONCRETE FLOOR SLAB AND SLEEVED IN POLYETHYLENE TUBING.
   - N. NO PLUMBING PIPING SHALL BE PERMITTED IN ELECTRICAL ROOM AND STAIRWELLS; NO GAS PIPING SHALL BE PERMITTED IN ELECTRICAL ROOM AND STAIRWELLS.
   - O. INSTALL DOMESTIC WATER HEATER INTAKE/EXHAUST PIPING IN ACCORDANCE WITH MFR INSTRUCTIONS. INSTALL DOMESTIC WATER HEATER CONDENSATE ACIDIC NEUTRALIZING TUBE IN ACCORDANCE WITH MFR INSTRUCTIONS.
   - P. WHERE AUTOMATIC TRAP PRIMERS ARE NOT INDICATED AT FLOOR DRAINS, PROVIDE BARRIER TYPE TRAP SEAL PROTECTION DEVICE FOR FLOOR DRAIN.
   - Q. PROVIDE DEEP SEAL TRAPS WITH MIN 4" SEAL FOR EACH FLOOR DRAIN.
   - R. PRESSURE TEST ALL SANITARY DRAIN AND WATER PIPING PER LOCAL, STATE AND INTERNATIONAL PLUMBING CODES.
2. INSULATION
   - A. INSULATE ALL COLD WATER (W1) (W2), DOMESTIC HOT WATER (HW1) (HWR) AND EMERGENCY SHOWER/EYE/FACE WASH TEMPERED WATER (TW1) (TWR) PIPING.
   - B. INSULATE HEAT-TRACED WATER PIPING.
3. ELECTRICAL WORK
   - A. ENCLOSURES SHALL MEAN ELECTRICAL EQUIPMENT ENCLOSURES AND ASSOCIATED CONDUIT.
   - B. ENCLOSURES SHALL BE NEMA TYPE 1 UNLESS OTHERWISE INDICATED IN AREA CLASSIFICATION SCHEDULE ON ELECTRICAL DRAWINGS.
   - C. REFER TO TABLE OF RESPONSIBILITY - ELECTRICAL, HVAC & PLUMBING ON ELECTRICAL DRAWINGS.
4. FLASHING
   - A. ALL FLASHING OF PIPE PENETRATIONS THROUGH ROOF AND/OR WALLS SHALL BE BY THE METAL BUILDING FABRICATOR FOR PRE-FABRICATED METAL BUILDINGS AND BY THE ROOFING CONTRACTOR FOR OTHER BUILDINGS.
5. EQUIPMENT MOUNTING HEIGHTS
   - A. MIXING VALVES - 5'-0" AFF
   - B. BACKFLOW PREVENTERS - 3'-6" TO ℄
   - C. HOSE BIBBS - 3'-0" AFF
   - D. WALL HYDRANTS - 3'-0" AFG
   - E. IN-LINE PUMPS - 5'-0" AFF (WALL-MOUNTED)
   - F. IN-LINE PUMPS - MIN 7'-0" AFF (CEILING SUSPENDED)

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EDMUND J. CHAVIANO LICENSE No.29803 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING	

SCALE: NONE	KENT COUNTY RRRF
DRAWN BY: BS	BIOSOLIDS CAPACITY EXPANSION PROJECT
CHECKED BY: AG	CONTRACT 3
SHEET NO.: 101 of 191	PLUMBING
PROJECT NO.:50.1890.97–A	NOTES, LEGEND & ABBREVIATIONS
	OCTOBER 2025 P–01

PLUMBING FIXTURE SCHEDULE

TAG NO.	MANUFACTURER MODEL NO. OR EQUAL	FIXTURE TYPE	FIXTURE DIMENSIONS (WHERE APPLICABLE)	WATER USAGE	SOIL OR WASTE	VENT	COLD WATER	HOT WATER	TEMPERED WATER	REMARKS
P-1	KOHLER K-3493	WATER CLOSET	N/A	1.6 GALLONS PER FLUSH	3"	2"	3/4"	-	-	(1)
P-2	KOHLER K-12638	LAVATORY	20" WIDE X 27" FRONT TO REAR	0.5 GPM AT 60 PSIG FLOW PRESSURE	1 1/2"	1 1/2"	3/4"	3/4"	-	(2)
P-3	JUST SLF-ADA-2231-A65-J	LABATORY SINK	31" WIDE X 22" FRONT TO REAR X 6 1/2" DEEP	-	1 1/2"	1 1/2"	3/4"	3/4"	-	(3)
P-4	GUARDIAN G1950	EMERGENCY SHOWER AND EYE/FACE WASH UNIT	-	20 GPM AT 30 PSIG FLOW PRESSURE	-	-	-	-	1 1/4"	(4) (5) (6) (7)
P-5	GUARDIAN GFR1205	EMERGENCY SHOWER THROUGH-WALL TYPE (FREEZE RESISTANT)	--	20 GPM @ 30 PSIG	-	-	-	-	1"	(4) (5) (7) (8)
P-6	GUARDIAN GFR1724	EMERGENCY EYE/FACE WASH THROUGH-WALL TYPE (FREEZE RESISTANT)	--	3 GPM @ 30 PSIG	-	-	-	-	1/2"	(4) (5) (8)

(1) WATER CLOSET: ASME A112.19.2, ADA COMPLIANT, WHITE VITREOUS CHINA, FLOOR MOUNTED / FLOOR OUTLET, INTEGRAL TRAP, ELONGATED BOWL, AND WHITE SOLID PLASTIC ELONGATED OPEN FRONT SEAT; FLUSH TANK, VACUUM BREAKER. HEIGHT TO TOP OF SEAT SHALL BE 17" TO 19" ABOVE FLOOR.

(2) LAVATORY: ASME A112.19.2, ADA COMPLIANT, WALL HUNG WITH CARRIER, WHITE VITREOUS CHINA, FRONT CONCEALED OVERFLOW; ASME A112.18.1 CHROME PLATED COPPER ALLOY CENTERSET FAUCET (4" CENTERS) WITH LEVER HANDLES, AERATOR AND SUPPLY FITTINGS; PERFORATED GRID STRAINER WITH ADA COMPLIANT OFFSET TAILPIECE AND 1-1/4" ADJUSTABLE P-TRAP, ASME A112.18.2.

(3) LABORATORY SINK: ASME A112.19.3, ADA COMPLIANT, 18 GAGE STAINLESS STEEL WITH INTEGRAL MOUNTING RIM, SINGLE COMPARTMENT WITH LEDGE BACK AND UNDERSIDE COATED WITH SOUND DAMPENING MATERIAL; TOP-MOUNTED ASME A112.18.1 COPPER ALLOY FAUCET WITH SWING SPOUT AND SUPPLY FITTINGS; STAINLESS STEEL DRAIN OUTLET WITH CUP STRAINER AND 1-1/2" TAIL PIECE, ASME A112.18.2.

(4) 20 GPM FLOW CONTROL VALVE.

(5) ANSI COMPLIANT IDENTIFICATION SIGN.

(6) MIXING VALVE

(7) ELECTRIC ALARM UNIT WITH FLASHING LIGHT AND HORN IN NEMA 4X ENCLOSURE WITH WALL MOUNTING KIT, 0.5 AMPS AT 120 VAC; 1 1/4" DOUBLE POLE DOUBLE THROW FLOW SWITCH (SECOND CONTACT FOR REMOTE SIGNALING TO SCADA); MINIMUM 60" LONG NEMA 4X CONNECTOR CABLE.

(8) FIXTURE P-5 ALARM FLOW SWITCH TO BE INSTALLED IN THE COMMON WATER SUPPLY LINE SERVING THE SHOWER (P-5) AND EYEWASH (P-6) SUCH THAT FIXTURE P-5 ELECTRIC ALARM UNIT WILL SERVICE SHOWER AND THE EYEWASH.

EXPANSION TANK SCHEDULE

TAG NO.	MANUFACTURER MODEL NO. OR EQUAL	LOCATION	SERVICE	FLUID	TOTAL VOLUME (GALLONS)	MIN ACCEPTANCE VOLUME (GALLONS)	PRE-CHARGED PRESSURE (PSIG)	MOUNTING	MAX. OPER WT. (LBS)	REMARKS
ET-1	AMTROL ST-42V-C	HVAC / EQUIPMENT ROOM	DWH THERMAL EXPANSION	POTABLE WATER	18	10.2	50	FLOOR	170	(1)
ET-2	AMTROL ST-42V-C	DRYER ROOM	DWH THERMAL EXPANSION	POTABLE WATER	18	10.2	50	FLOOR	170	(1)

(1) ASME 175 PSIG RATED

GAS-FIRED DOMESTIC WATER HEATER SCHEDULE

TAG NO.	MANUFACTURER MODEL NO. OR EQUAL	LOCATION	FUEL TYPE	STORAGE CAPACITY (GALLONS)	MIN. RECOVERY 100 DEG. F RISE-GPH	MAX. INPUT (MBH)	REQUIRED GAS PRESSURE (IN W.C.)	MIN. EFF (%)	VOLTS	PHASE	MAX. AMPS	OPER. WT. (LBS)	REMARKS
DWH-1	RHEEM HE 119-130	HVAC / EQUIPMENT ROOM	NATURAL GAS	119	150	130	3.5 TO 14	95	120	1	10	1400	(1) (2) (3) (4)
DWH-2	RHEEM HE 119-130	DRYER ROOM	NATURAL GAS	119	150	130	3.5 TO 14	95	120	1	10	1400	(1) (2) (3) (4)

(1) PRESSURE/TEMPERATURE RELIEF VALVE

(2) DRAIN VALVE

(3) CONDENSATE NEUTRALIZATION SYSTEM

(4) CONCENTRIC VENT KIT

WATER SOFTENER SCHEDULE

TAG NO.	MANUFACTURER MODEL NO. OR EQUAL	LOCATION	RESIN		SALT TANK		OPER TEMP (DEG F)	OPER PRESSURE (PSIG)	FLOW (GPM)	MAX. ALLOWABLE CLEAR WATER IRON (PPM)	RECHARGE WATER USED (GAL)	ELECTRICAL			REMARKS
			RESIN QTY (CU FT)	NOMINAL TANK SIZE (IN)	CAPACITY (LBS)	SIZE (IN)						VAC	VDC	WATTS	
WS-1	ECOWATER SYSTEMS EWS1015S	DRYER ROOM	3	17" X 58"	1,000	24" X 50"	35-100	30	20	20	151	120	24	65	

DWH CONDENSATE PUMP SCHEDULE

TAG NO.	MANUFACTURER MODEL NO. OR EQUAL	LOCATION	EQUIPMENT SERVED	MIN. CAPACITY (GPH)	DISCHARGE HEAD (FT)	MOTOR DATA			REMARKS
						HP	VOLT	PHASE	
CP-1	LITTLE GIANT VCMA-15UL	DRYER ROOM	DWH-2	50	5	1/50	115	1	(1)

(1) 6 FT CORD WITH 3 PRONG PLUG

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EDUARDO J. CHAVIANO LICENSE No.29803 DELAWARE PROFESSIONAL ENGINEER

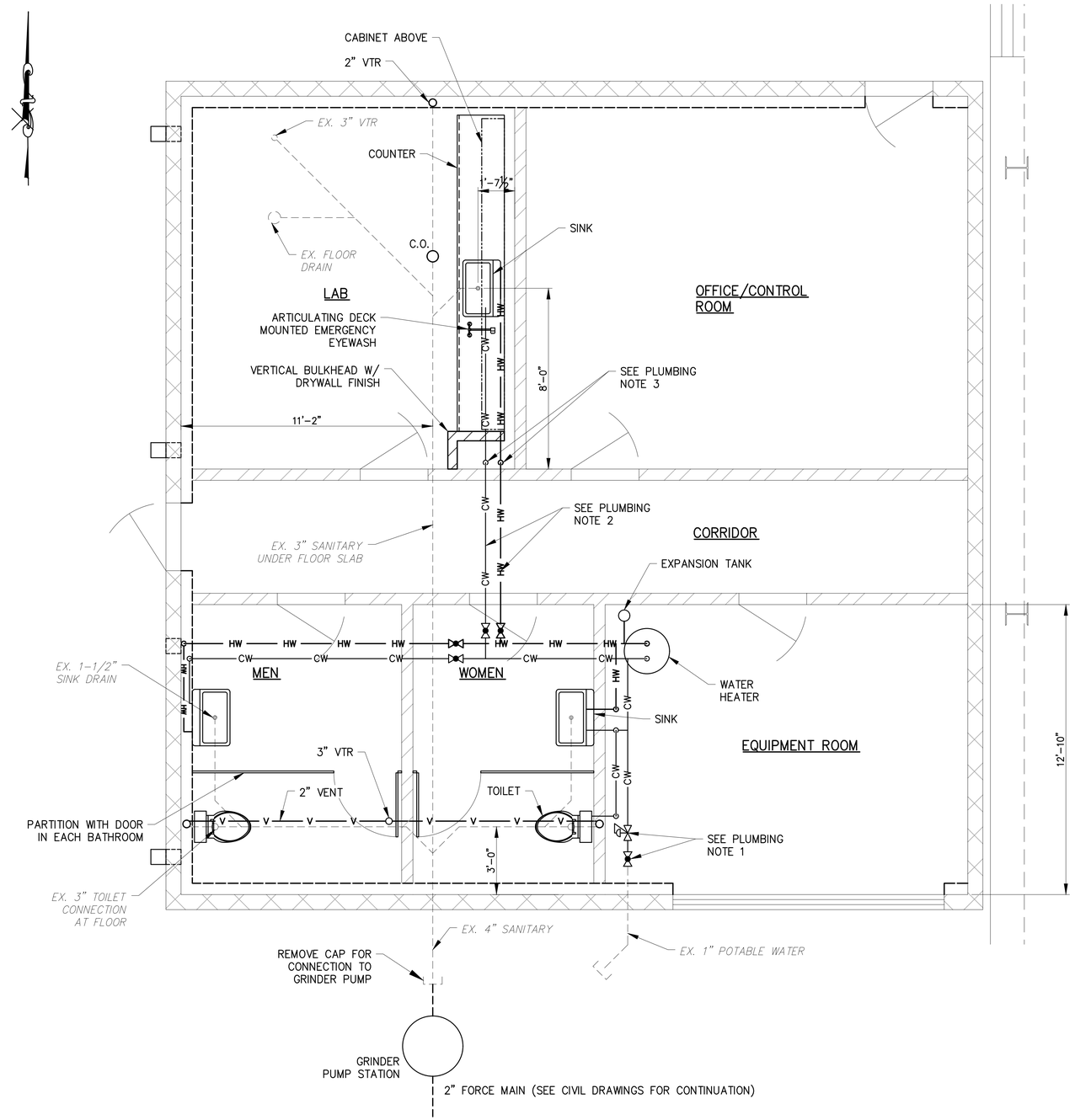
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: NONE
DRAWN BY: BS
CHECKED BY: AG
SHEET NO.: 102 of 191
PROJECT NO.:50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
PLUMBING SCHEDULES
OCTOBER 2025 P-02

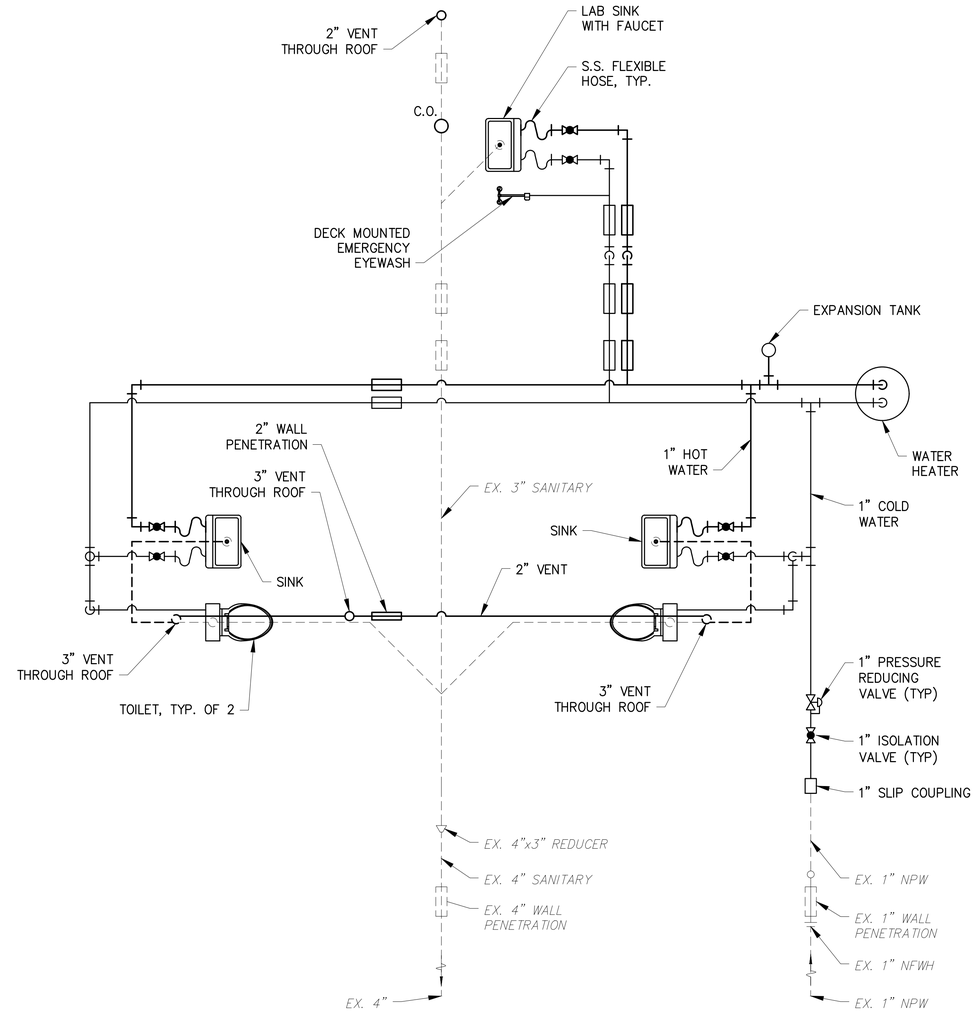


PLUMBING PLAN

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

PLUMBING NOTES:

1. CONNECT TO EX. 1" WATER. PROVIDE SHUTOFF VALVE AND PRESSURE REGULATOR.
2. RUN CW AND HW ABOVE ACOUSTIC CEILING TILE IN WOMENS ROOM AND CORRIDOR.
3. RUN CW AND HW DOWN INSIDE BULKHEAD AND CUT TO UNDER COUNTER TO LABORATORY SINK.
4. ALL SINK, TOILET, OR OTHER WATER FIXTURES SHALL HAVE ISOLATION VALVES AND FLEXIBLE STAINLESS BRAIDED LINES THAT CONNECT TO EACH FIXTURE SUPPLY CONNECTION. SIZE ACCORDING TO FIXTURE CONNECTION POINT.



1 PLUMBING SCHEMATIC

SCALE: NONE

3/8"=1'-0" 24" 12" 0 2' 4' 6'

ISSUED FOR BIDDING

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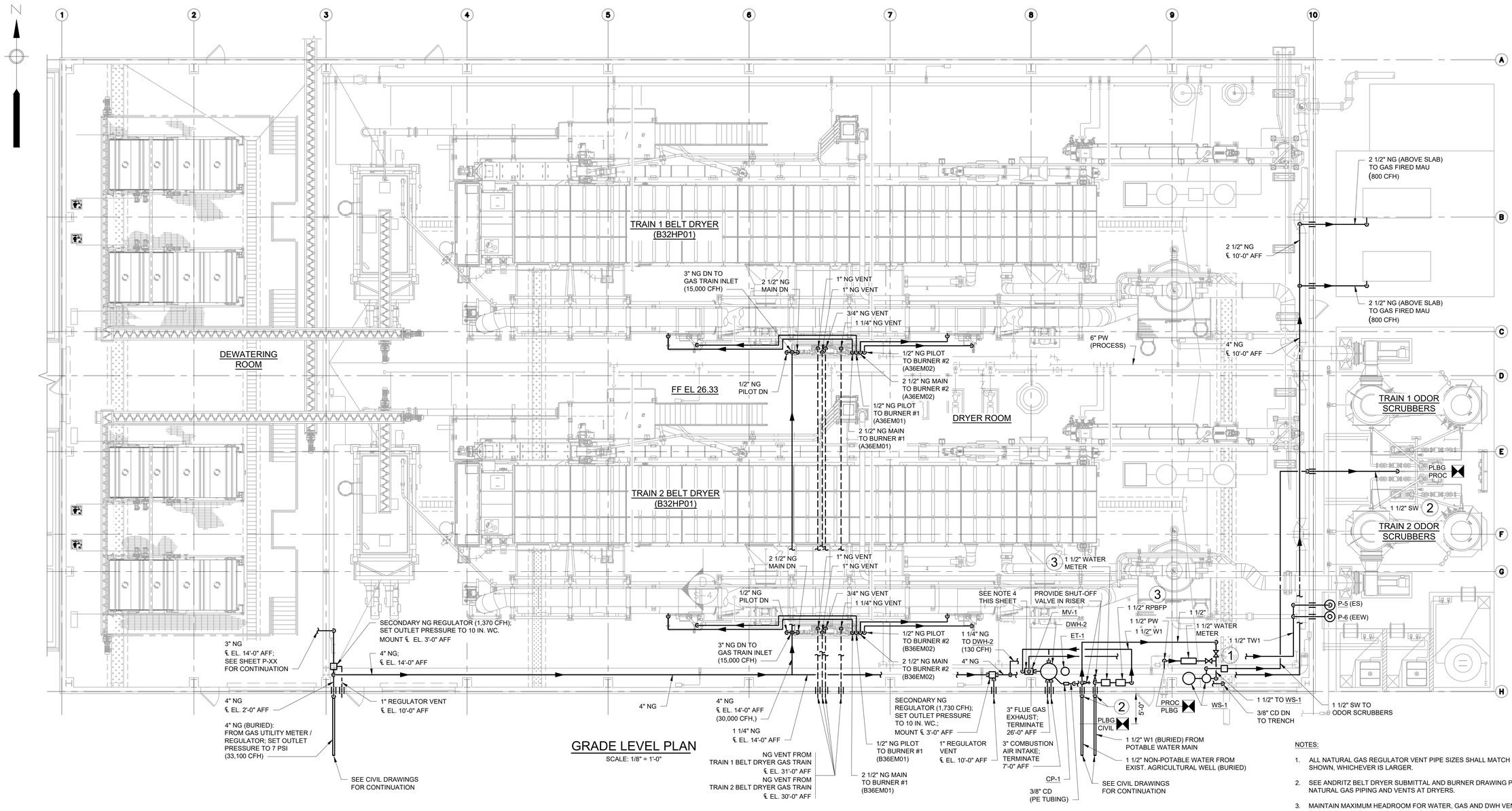
ROBERT J. ANDRZEJCZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 3/8"=1'-0"	KENT COUNTY RRRF
		DRAWN BY: DLJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: RJA	LABORATORY, MEN'S, AND WOMEN'S ROOM PLUMBING
APPROVED DATE		SHEET NO.: 103 of 191	OCTOBER 2025 P-03
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	

\\rkdnk.com\Vol\Cloud Projects\2019\19129_Biosolids\ACAD\Contract III\P-03_19129.dwg Oct 21, 2025 - 3:52pm ENV.CTB Plot Scale 1=1 Plot By: rdixon Tab:PLUMBING PLAN



GRADE LEVEL PLAN

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

KEY NOTES:

1. PROVIDE 1-1/2" WATER PRESSURE REGULATOR BY WATTS OR EQUAL; 25 PSI - 75 PSI OUTLET PRESSURE ADJUSTMENT RANGE.
2. HEAT TAPE ON OUTDOOR WATER PIPING. INSULATE PIPE PER SPEC. SECTION 15400; HEAT TAPE, POWER AND CONTROL BY DIV 16.
3. DO NOT LOCATE METER AND RPBFP DIRECTLY BENEATH HVAC LOUVER.

NOTES:

1. ALL NATURAL GAS REGULATOR VENT PIPE SIZES SHALL MATCH REGULATOR OUTLET OR AS SHOWN, WHICHEVER IS LARGER.
2. SEE ANDRITZ BELT DRYER SUBMITTAL AND BURNER DRAWING PACKAGE FOR DETAILED NATURAL GAS PIPING AND VENTS AT DRYERS.
3. MAINTAIN MAXIMUM HEADROOM FOR WATER, GAS AND DWH VENT PIPING EXCEPT AS SPECIFIED HEREIN. IN DEWATERING ROOM AND DRYER ROOM, ADHERE TO THE FOLLOWING:
   1) WATER, GAS AND DWH VENT PIPING SHALL BE RUN MIN ℄ 14'-0" AFF.
   2) WATER, GAS AND DWH VENT PIPING SHALL BE RUN ALONG WALLS, AND SUPPORTED FROM WALLS, WHEREVER POSSIBLE.
   3) WATER, GAS AND DWH VENT PIPING NOT RUNNING ALONG WALLS SHALL BE SUPPORTED BY HORIZONTAL TYPE 316 SST STRUCTURAL BRIDGING THAT IS ELEVATED MIN ℄ 14'-0" AFF AND SUPPORTED FROM THE FLOOR.
4. MOUNT TEMPERED WATER MIXING VALVE AND ASSOCIATED PIPING ON TYPE 316 SST SUPPORT FRAMING SUPPORTED FROM THE FLOOR.

1/8"=1'-0" SCALE: 0 4 8 12 16 20 24 FEET

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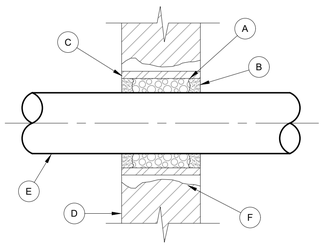
EDWARD J. CHAVIANO LICENSE No.29803 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: 1/8" = 1'-0"	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: BS	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: AG	DRYER BUILDING
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 104 of 191	PLUMBING WATER & GAS PLAN
		PROJECT NO.:50.1890.97-A	OCTOBER 2025 P-04



A — PROVIDE CLEARANCE AS SPECIFIED BETWEEN PIPE SLEEVE AND PIPE. PACK CLEARANCE SPACE WITH SPECIFIED INSULATION

B — PROVIDE SPECIFIED END SEALANT

C — SLEEVE-PROVIDE AS SPECIFIED. SEAL AROUND OUTSIDE OF SLEEVE WITH NON-SHRINK GROUT. EXTEND FLOOR PIPE SLEEVES 2" ABOVE FLOOR.

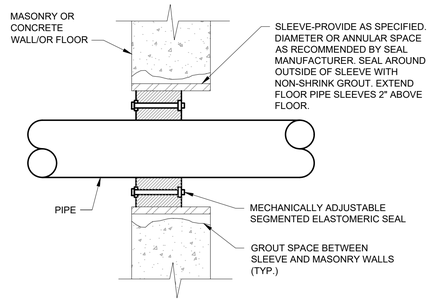
D — WALL OR FLOOR

E — PIPE

F — GROUT SPACE BETWEEN SLEEVE AND MASONRY WALLS

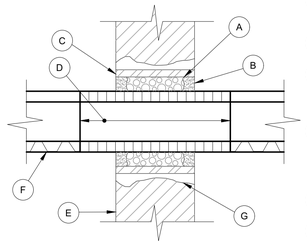
INTERIOR WALL/FLOOR UNINSULATED PIPE PENETRATION DETAIL

(NOT FOR WATER TIGHT CONSTRUCTION)
NTS



EXTERIOR WALL/FLOOR PIPE PENETRATION DETAIL

NTS



A — PROVIDE CLEARANCE AS SPECIFIED BETWEEN PIPE SLEEVE OR CORE DRILLED HOLE AND PIPE. PACK CLEARANCE SPACE WITH SPECIFIED INSULATION

B — PROVIDE SPECIFIED END SEALANT

C — SLEEVE-PROVIDE AS SPECIFIED. SEAL AROUND OUTSIDE OF SLEEVE WITH NON-SHRINK GROUT. EXTEND FLOOR PIPE SLEEVES 2" ABOVE FLOOR.

D — CALCIUM SILICATE OR APPROVED EQUAL INSULATION THRU PENETRATION AND EXTENDED 2" ON BOTH SIDES OF WALL OR FLOOR; PROVIDE METAL JACKET AS SPECIFIED OVER INSULATION

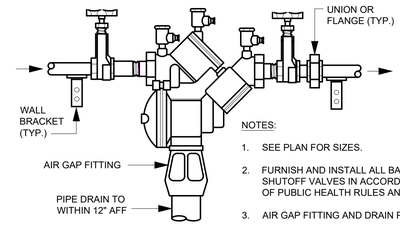
E — WALL OR FLOOR

F — SPECIFIED INSULATION OVER PIPE

G — GROUT SPACE BETWEEN SLEEVE AND MASONRY WALLS

INTERIOR WALL/FLOOR INSULATED PIPE PENETRATION DETAIL

(NOT FOR WATER TIGHT CONSTRUCTION)
NTS

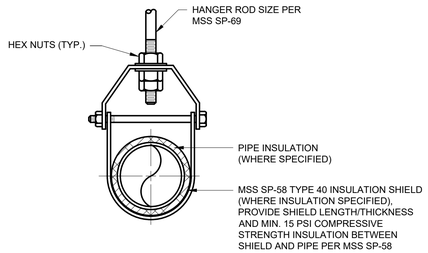


NOTES:

1. SEE PLAN FOR SIZES.
2. FURNISH AND INSTALL ALL BACKFLOW PREVENTERS AND SHUTOFF VALVES IN ACCORDANCE WITH DELAWARE DIVISION OF PUBLIC HEALTH RULES AND REGULATIONS.
3. AIR GAP FITTING AND DRAIN PIPE SIZED PER MFR.
4. BALL VALVES MAY BE SUBSTITUTED FOR GATE VALVES SHOWN.

REDUCED PRESSURE BACKFLOW PREVENTER DETAIL

NTS

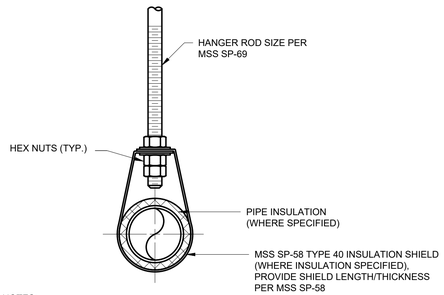


NOTES:

1. SEE SECTION 15400 FOR HANGER AND SUPPORT MATERIAL AND SPACING REQUIREMENTS.

MSS SP-58 TYPE 1 PIPE HANGER DETAIL (FOR 2" AND LARGER PIPE SIZES - EXCLUDING INSULATION)

NTS

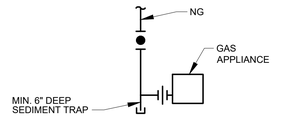


NOTES:

1. SEE SECTION 15400 FOR HANGER AND SUPPORT MATERIAL AND SPACING REQUIREMENTS.

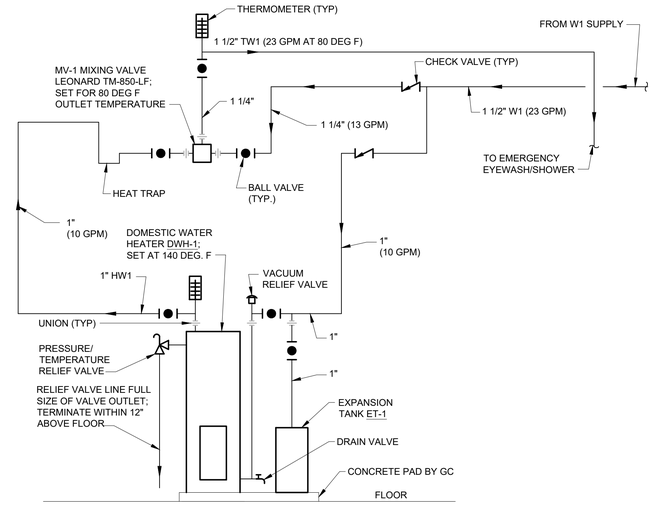
MSS SP-58 TYPE 7 PIPE HANGER DETAIL (FOR 1-1/2" AND SMALLER PIPE SIZES - EXCLUDING INSULATION)

NTS



APPLIANCE GAS CONNECTION DETAIL

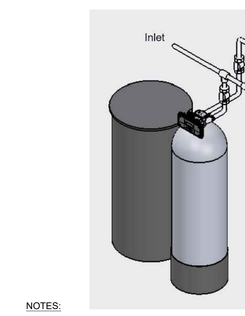
NTS



WATER PIPING SCHEMATIC

DWH-2 DOMESTIC WATER HEATER PIPING DETAIL

NTS

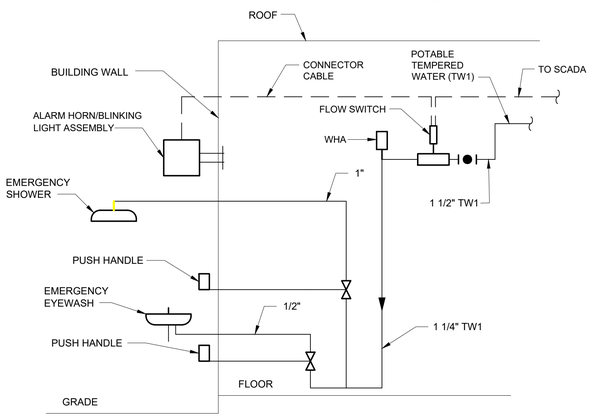


NOTES:

1. PROVIDE 3/4" DRAIN, DISCHARGE TO FLOOR TRENCH.

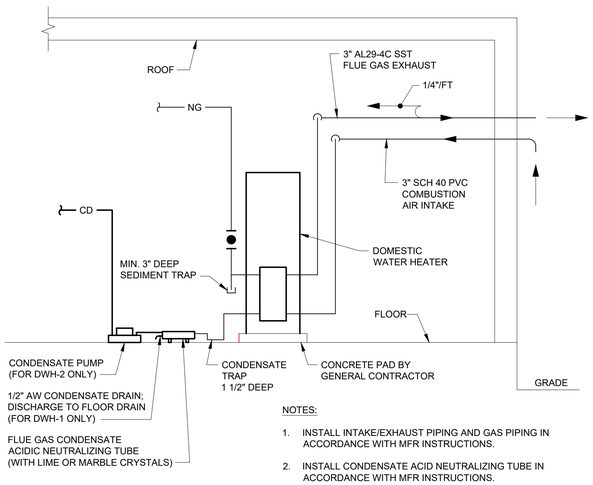
WATER SOFTENER PIPING DETAIL

NTS



OUTDOOR EMERGENCY EYEWASH/SHOWER PIPING DETAIL

NTS

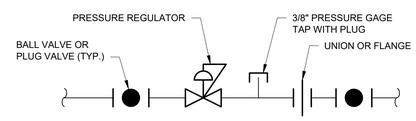


NOTES:

1. INSTALL INTAKE/EXHAUST PIPING AND GAS PIPING IN ACCORDANCE WITH MFR INSTRUCTIONS.
2. INSTALL CONDENSATE ACID NEUTRALIZING TUBE IN ACCORDANCE WITH MFR INSTRUCTIONS.

DWH-1 / DWH-2 DOMESTIC WATER HEATER GAS PIPING DETAIL

NTS



NOTES:

1. REGULATORS INSTALLED INSIDE BUILDING SHALL HAVE FULL-SIZE VENT PIPE FROM RELIEF OUTLET ON REGULATOR EXTENDED TO A POINT OUTSIDE OF BUILDING

SECONDARY NATURAL GAS PRESSURE REGULATOR PIPING DETAIL

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EDWARD J. CHAVIANO LICENSE No.29803 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: BS	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: AG	PLUMBING DETAILS
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 105 of 191	
		PROJECT NO.:50.1890.97–A	
		OCTOBER 2025	P–05

FIRE PROTECTION LEGEND

- BRANCH - BOTTOM CONNECTION
- BRANCH - TOP CONNECTION
- BURIED PIPE
- CAP PIPE
- FLANGE
- PIPE ELBOW DOWN
- PIPE ELBOW UP
- TEE
- UNION
- BALL VALVE
- CHECK VALVE
- NON-INDICATING GATE VALVE
- INDICATING GATE VALVE
- OS&Y GATE VALVE WITH TAMPER SWITCH
- AUTOMATIC AIR RELEASE VALVE
- FHV — FIRE HOSE VALVE
- PRESSURE RELIEF VALVE
- WYE STRAINER
- SIAMESE FIRE DEPARTMENT CONNECTION
- STORZ FIRE DEPARTMENT CONNECTION
- FLEXIBLE PIPE CONNECTOR
- PRESSURE GAUGE WITH BALL VALVE SHUTOFF AND SNUBBER
- RISER
- UPRIGHT SPRINKLER
- ELECTRIC ALARM BELL
- PIPE SLOPED DOWN
- WATER FLOW SWITCH
- F — FIRE PUMP
- J — JOCKEY PUMP
- M — FLOW METER

GENERAL NOTES

1. ALL WORKING DRAWINGS AND CALCULATIONS SHALL BE STAMPED AND SIGNED BY THE FIRE SPRINKLER SUBCONTRACTOR'S PROFESSIONAL FIRE PROTECTION ENGINEER AND SHALL BE SUBMITTED TO THE LOCAL FIRE DEPARTMENT FOR APPROVAL AND PERMIT PRIOR TO THE COMMENCEMENT OF ANY FIRE SPRINKLER WORK. ALL WORKING DRAWINGS AND CALCULATIONS AS DESCRIBED ABOVE SHALL ALSO BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
2. USE GROUPS IN THIS STRUCTURE ARE NOT TO EXCEED THOSE INDICATED ON THE ARCHITECTURAL DRAWINGS. A FIRE PROTECTION AND HYDRAULIC ANALYSIS INDICATING THE ACCEPTABILITY OF THE FIRE SUPPRESSION SYSTEMS AND ASSOCIATED SYSTEMS TO ADEQUATELY SERVE THE PROPOSED USE GROUPS SHALL BE CONDUCTED BY A CERTIFIED FIRE PROTECTION DESIGNER PRIOR TO USE GROUP CHANGES OF A GREATER HAZARD.
3. DURING CONSTRUCTION, PROVIDE FIRE PREVENTION SAFEGUARDING IN ACCORDANCE WITH NFPA 241 AND OWNER PROCEDURES.
4. MAINTAIN MAXIMUM HEADROOM FOR ALL PIPING.
5. UNLESS OTHERWISE SPECIFIED, ENCLOSURES FOR ELECTRICAL COMPONENTS SHALL BE NEMA TYPE 4 SO LOCATED WHERE INDICATED ON THE FIRE SPRINKLER DRAWINGS. ENCLOSURE SHALL MEAN ELECTRICAL EQUIPMENT ENCLOSURES AND ASSOCIATED CONDUIT.
6. PAINT ALL FIRE SPRINKLER PIPING EXPOSED TO VIEW IN BUILDING; COLOR TO BE SAFETY RED.

ABBREVIATIONS

ABD	AUTOMATIC BALL DRIP VALVE	FW	FIRE WATER
ACV	ALARM CHECK VALVE	GC	GENERAL CONTRACTOR
AFF	ABOVE FINISHED FLOOR	GPM	GALLONS PER MINUTE
AFG	ABOVE FINISHED GRADE	HP	HORSEPOWER
ASSY	ASSEMBLY	HR	HOUR
ATC	ACOUSTICAL TILE CEILING	IN	INCH
ATS	AUTOMATIC TRANSFER SWITCH	MAX	MAXIMUM
BFP	BACKFLOW PREVENTER	MFR	MANUFACTURER
℄	CENTER LINE	MIN	MINIMUM
CV	CONTROL VALVE	NC	NORMALLY CLOSED
D	DRAIN	NO	NORMALLY OPEN
DB	DESIGN BUILDER	NTS	NOT TO SCALE
DCBFP	DOUBLE CHECK BACKFLOW PREVENTER	ODP	OPEN DRIP PROOF
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY	OS&Y	OUTSIDE SCREW AND YOKE
DEG	DEGREE	PIV	POST INDICATING VALVE
DN	DOWN	PSI	POUNDS PER SQUARE INCH
DPV	DRY PIPE VALVE	RPM	REVOLUTIONS PER MINUTE
FACP	FIRE ALARM CONTROL PANEL	SPR	SPRINKLER
FCO	FLOOR CLEANOUT	SQ. FT	SQUARE FEET
FD	FLOOR DRAIN	SST	STAINLESS STEEL
FDC	FIRE DEPARTMENT CONNECTION	TEFC	TOTALLY ENCLOSED FAN COOLED
FHV	FIRE HOSE VALVE	TYP.	TYPICAL
FP	FIRE PROTECTION	V	VENT
FPS	FEET PER SECOND	VIF	VERIFY IN FIELD
FS	FLOW SWITCH	VTR	VENT THROUGH ROOF
FT	FOOT	WTP	WATER TREATMENT PLANT

MISCELLANEOUS LEGEND

- NEW FIRE SUPPRESSION WORK (SHOWN DARK LINE)
- NEW WORK BY OTHERS (SHOWN LIGHT LINE)
- EXISTING WORK
- LIMIT OF WORK
- CONNECT TO EXISTING
- AREA TO BE SPRINKLED

WATER-BASED FIRE SUPPRESSION SPRINKLER SYSTEMS

1. THE FIRE SPRINKLER SUBCONTRACTOR SHALL DESIGN SPRINKLER SYSTEMS AND PRODUCE A COMPLETE SET OF WORKING DRAWINGS IN ACCORDANCE WITH NFPA 13-2016. SYSTEMS SHALL BE HYDRAULICALLY CALCULATED PER THE DESIGN CRITERIA PROVIDED AND REQUIRED.
2. THE OWNER IS TO PROVIDE HEAT AS REQUIRED THROUGHOUT THE BUILDING TO PREVENT WATER IN THE SYSTEM FROM FREEZING. THE OWNER IS ALSO TO MAINTAIN THE SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 25 TESTING AND MAINTENANCE CRITERIA.
3. THE FIRE SPRINKLER DRAWINGS ARE NOT INTENDED TO SHOW SPRINKLER HEAD LOCATIONS, NUMBER OF SPRINKLER HEADS, OR THE SIZE AND ROUTING OF SPRINKLER PIPING. THIS SHALL BE THE RESPONSIBILITY OF THE FIRE SPRINKLER SUBCONTRACTOR. THE FIRE SPRINKLER SUBCONTRACTOR SHALL COORDINATE WITH THE ARCHITECTURAL DRAWINGS.
4. THE DESIGN AREAS AND DENSITIES INDICATED ON THE FIRE SPRINKLER DRAWINGS ARE FOR REFERENCE ONLY. THE FIRE SPRINKLER SUBCONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ALL DESIGN AREAS AND DENSITIES IN STRICT ACCORDANCE WITH NFPA 13.
5. IN ROOMS HAVING ACOUSTIC TILE CEILINGS, SPRINKLER HEADS SHALL BE CENTERED IN TILES.
6. SPRINKLER HEADS SHALL BE UL LISTED AND FM APPROVED FOR THE INSTALLATION APPLICATION AND CONFIGURATION SPECIFIC TO THIS PROJECT AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. POSITION ALL HEADS IN ACCORDANCE WITH NFPA 13, UL, FM AND THE MANUFACTURER'S INSTRUCTIONS. ALL HEADS SHALL BE OF THE SAME MANUFACTURER.
7. SPRINKLER HEADS SHALL BE STANDARD RESPONSE OR QUICK RESPONSE, STANDARD COVERAGE. SPRINKLER HEAD K-FACTOR SHALL BE 5.6 MINIMUM UNLESS OTHERWISE NOTED HEREIN. SPRINKLER HEADS IN DEWATERING ROOM AND DRYER ROOM SHALL HAVE 8.0 MINIMUM K-FACTOR AND CORROSION RESISTANT COATING.
8. COORDINATE WITH LOCAL FIRE MARSHAL ON LOCATION AND TYPE OF FIRE DEPARTMENT CONNECTION (FDC).

SPRINKLER SYSTEM DESIGN CRITERIA

1. PROVIDE FULL COVERAGE AUTOMATIC SPRINKLER SYSTEM IN SPACES INDICATED PER NFPA 13.
2. PROVIDE NFPA 13 HAZARD CLASSIFICATIONS AND SPRINKLER ZONES AS FOLLOWS AND AS INDICATED ON FLOOR PLANS.

SPACE	NFPA 13 HAZARD CLASSIFICATION	DENSITY	GPM	SYSTEM PIPE
ADMINISTRATION / OPERATIONS AREA	NO SPRINKLERS	- - -		
DEWATERING ROOM	ORDINARY HAZARD GROUP 1	0.15 GPM/SQ. FT. OVER 1,500 SQ. FT. OR LESS	-	WET PIPE
FIRE PUMP HOUSE (DIESEL FIRE PUMP)	EXTRA HAZARD GROUP 2	0.40 GPM/SQ. FT. OVER 2,500 SQ. FT. OR LESS	-	WET PIPE
DRYER ROOM	ORDINARY HAZARD GROUP 2	0.20 GPM/SQ. FT. OVER 1,500 SQ. FT. OR LESS	-	WET PIPE

- HOSE STREAM ALLOWANCE: 250 GPM FOR 60 MINUTES.

3. PROVIDE SPRINKLERS IN ALL ANCILLARY SPACES REQUIRED BY NFPA 13-2016, ARTICLE 8.15, EXCEPT NO SPRINKLERS IN ELECTRICAL ROOMS THAT ARE 2-HOUR FIRE RATED, CONTAIN ONLY DRY TYPE ELECTRICAL EQUIPMENT, AND ARE NOT USED FOR COMBUSTIBLE STORAGE SPACE PER ARTICLE 8.15.11.
4. PROVIDE SPRINKLERS AROUND AND BELOW OBSTRUCTIONS REQUIRED BY NFPA 13-2016, CHAPTER 8.
5. PROVIDE SPRINKLERS UNDER ALL FRP (COMBUSTIBLE) PLATFORMS REQUIRED BY NFPA 13-2016, ARTICLE 8.15.6. PROVIDE SPRINKLERS UNDER ALL METAL (NON-COMBUSTIBLE) PLATFORMS GREATER THAN 4'-0" WIDE REQUIRED BY NFPA 13-2016, ARTICLE 8.5.5.3.
6. PROVIDE SPRINKLERS IN SKYLIGHTS AND CEILING POCKETS REQUIRED BY NFPA 13-2016, ARTICLES 8.5.7 AND 8.6.7.
7. PROVIDE SPRINKLERS UNDER EXTERIOR PROJECTIONS REQUIRED BY NFPA 13-2016 ARTICLE 8.15.7.
8. PROVIDE SPRINKLERS WITH TEMPERATURE RATING GREATER THAN "ORDINARY" WHERE REQUIRED BY NFPA 13-2016, ARTICLE 8.3.2.
9. HYDRAULIC CALCULATIONS SHALL INCORPORATE A MINIMUM 10 PSI CUSHION AT DESIGN CONDITIONS TO ALLOW FOR FUTURE DEGRADATION OF THE WATER SUPPLY.
10. ALL PIPING AND COMPONENTS SUBJECT TO PRESSURE SHALL BE RATED FOR MINIMUM 175 PSIG WORKING PRESSURE.

FIRE WATER SUPPLY HYDRAULIC DATA

1. THE FOLLOWING IS ESTIMATED FIRE WATER SUPPLY HYDRAULIC DATA FOR BIDDING PURPOSES. FOLLOWING CONSTRUCTION OF THE NEW PLANT WATER PUMP STATION, AND ANY NEW FIRE WATER MAINS AND HYDRANTS ON SITE, THE FIRE SPRINKLER SUBCONTRACTOR SHALL PERFORM A FIRE HYDRANT FLOW TEST IN THE VICINITY OF THE NEW DRYER BUILDING, IN ACCORDANCE WITH NFPA 291 THAT SHALL BE USED TO PERFORM HYDRAULIC CALCULATIONS FOR DESIGN OF THE WATER-BASED FIRE SPRINKLER SYSTEM:

   STATIC PRESSURE: 40 PSIG
   RESIDUAL PRESSURE: 25 PSIG
   FLOW: 760 GPM

2. PROVIDE FIRE PUMP SYSTEM IN ACCORDANCE WITH NFPA 20 WITH BYPASS AND FLOW METER.

ISSUED FOR BIDDING

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EDWARD J. CHAVIANO — No.29803 — DELAWARE — PROFESSIONAL ENGINEER — LICENSE

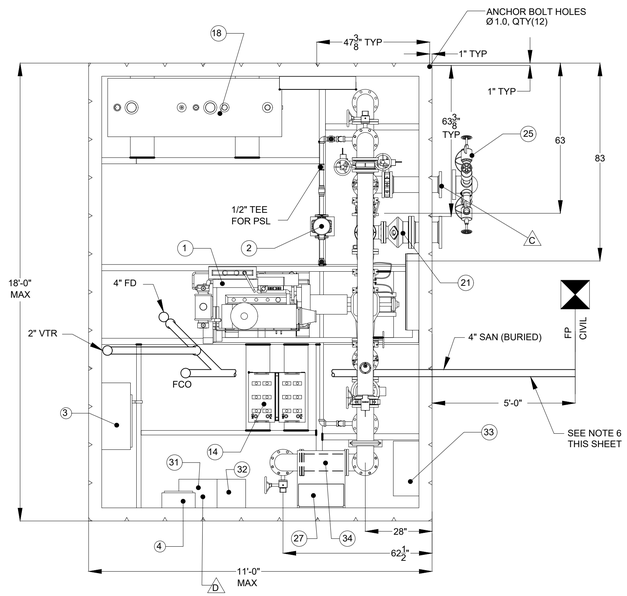
REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

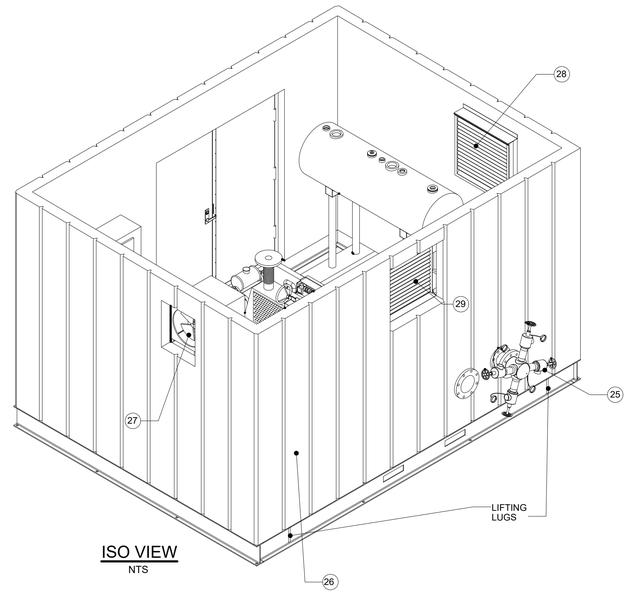
APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

SCALE: NONE
DRAWN BY: BS
CHECKED BY: AG
SHEET NO.: 106 of 191
PROJECT NO.:50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
FIRE PROTECTION
NOTES, LEGEND & ABBREVIATIONS
OCTOBER 2025 FP-01



PLAN VIEW
NTS



ISO VIEW
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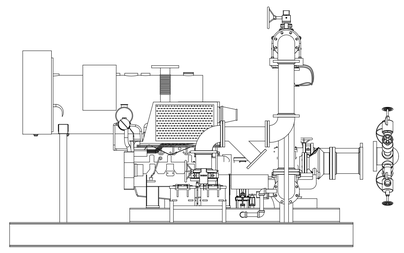

FRONT VIEW
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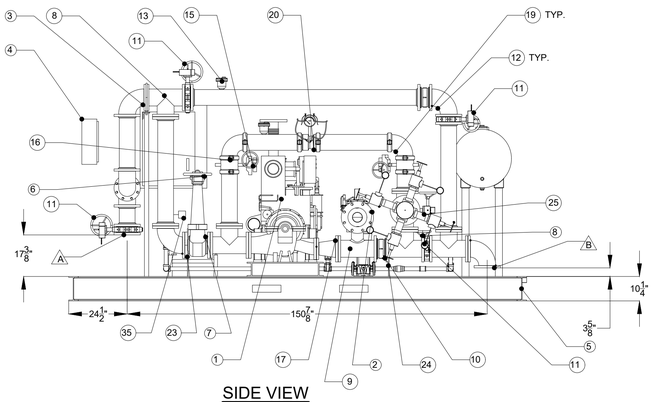

SIDE VIEW
NTS

PACKAGED FIRE PUMP MFR. NOTES:

1. EXCEPT AS OTHERWISE INDICATED, DIMENSIONS ARE IN INCH AND MAY VARY ± 1/4"
2. JOCKEY LINE COMPONENT PLACEMENT FOR REFERENCE ONLY. COMPONENT PLACEMENT MAY VARY TO EASE ASSEMBLY.
3. PERIMETER CHANNELS OF SYSTEM BASE WILL BE 10" I-BEAM, OR AS REQUIRED.
4. LIFT SLOT LOCATION ARE APPROXIMATE.
5. OPEN STRUCTURAL STEEL BASE TO BE GROUTED ON SITE BY OTHERS.
6. TAMPER SWITCHES, SPRINKLER FLOW SWITCH, AND LOW PRESSURE SWITCH TO BE WIRED TO CUSTOMER ALARM BY OTHERS.
7. ALL PIPE TO BE SCHEDULE 40 STEEL PIPE, PAINTED SAFETY RED.
8. ALL PIPE TO BE COMPLETED BY A WELDER CERTIFIED TO AURORA PUMP WELDING PROCEDURE SPECIFICATION APS-4. TOP PASS WAVE MAX. 1/8" OVERLAP.
9. PUMP HOUSE CEILING TO BE 9' HIGH, OR AS REQUIRED.
10. PUMP HOUSE; EST. WEIGHT 25,000 LBS

ITEM NO.	PW_BOM_DESCRIPTION	QTY.
1	FIRE PUMP	1
2	JOCKEY PUMP	1
3	METRON MODEL FD4 OR FACTORY CHOICE DIESEL FIRE PUMP CONTROLLER IN A NEMA 2 ENCLOSURE.	1
4	METRON MODEL M15A OR FACTORY CHOICE JOCKEY PUMP CONTROLLER IN A NEMA 2 ENCLOSURE.	1
5	6" C CHANNEL STRUCTURAL STEEL BASE	1
6	SUPERVISORY SWITCH FOR OS & Y GATE VALVE	1
7	6" OS & Y GATE VALVE	1
8	6" FLANGED STRAIGHT TEE	5
9	6" X 6" X 4" REDUCING TEE	1
10	6" WAFER CHECK VALVE, FLANGED CONNECTION	2
11	6" BUTTERFLY VALVE	3
12	6" 90° STD. RAD. FLG ELBOW	6
13	1/2" NPT AIR RELEASE VALVE	2
14	BATTERIES FOR DIESEL ENGINE	2
15	6" GROOOVED BUTTERFLY VALVE	2
16	SIZE 6" FLANGE,GROOVED RIGID COUPLING,	8
17	6" X 4" X 9" L, CONCENTRIC REDUCER	1
18	119 GALLON DOUBLE WALL FUEL TANK	1
19	6" 90 DEGREE ELBOW, GROOVED	2
20	6" VENTURI TYPE FLOW METER	1
21	4" MAIN RELIEF VALVE	1
22	4" X 8" WASTE CONES	1
23	6" PIPE SUPPORTS	1
24	6" PIPE SUPPORTS	1
25	6" HOSE HEADER ASSEMBLY	1
26	PUMP HOUSE	1
27	EXHAUST FAN	1
28	AC LOUVER	1
29	DC LOUVER	1
30	MUFFLER, RESIDENTIAL GRADE (ATOP PUMP HOUSE)	1
31	24 INCH WIREWAY	1
32	MINI POWER ZONE	1
33	5KW HEATER	1
34	6" WYE STRAINER (MOUNT HORIZONTALLY)	1
35	LOW PRESSURE SWITCH	1

CONNECTION TABLE	
A	6" 150# SUCTION CONNECTION
B	6" 150# DISCHARGE CONNECTION
C	6" 150# HOSE HEADER CONNECTION
D	460/3/60 INCOMING POWER CONNECTION

FIRE PUMP CONTROL SEQUENCES OF OPERATION

1. FIRE PUMP FP-1:
   WATER PRESSURE SHALL BE SENSED BY THE PUMP CONTROLLER PRESSURE SWITCH. UPON A DROP IN WATER PRESSURE BELOW 60 PSIG (ADJUSTABLE), THE PUMP SHALL START. THE PUMP SHALL RUN CONTINUOUSLY UNTIL IT IS TURNED OFF MANUALLY.
2. PRESSURE MAINTENANCE (JOCKEY) PUMP JP-1:
   WATER PRESSURE SHALL BE SENSED BY THE PUMP CONTROLLER PRESSURE SWITCH. UPON A DROP IN WATER PRESSURE BELOW 65 PSIG (ADJUSTABLE), THE PUMP SHALL START. UPON A RISE IN WATER PRESSURE ABOVE 85 PSIG (ADJUSTABLE), THE PUMP SHALL STOP.

FIRE PUMP BUILDING NOTES

1. FIRE PUMP AND JOCKEY PUMP DATA SCHEDULED ON THIS SHEET IS FOR BIDDING PURPOSES. THE FIRE SUPPRESSION SUBCONTRACTOR SHALL PREPARE HYDRAULIC CALCULATIONS FOR FINAL SELECTION OF PACKAGED FIRE PUMP/JOCKEY PUMP SYSTEM AND PREFABRICATED BUILDING.
2. ALL FIRE SUPPRESSION PIPING AND COMPONENTS WITHIN THE FIRE PUMP BUILDING SUBJECT TO FIRE PUMP/JOCKEY PUMP DISCHARGE PRESSURE SHALL BE RATED FOR MINIMUM 175 PSIG WORKING PRESSURE. ALL OTHER FIRE SUPPRESSION PIPING WITHIN THE FIRE PUMP BUILDING SHALL BE RATED FOR MINIMUM 175 PSIG WORKING PRESSURE.
3. PROVIDE SPRINKLERS IN FIRE PUMP BUILDING COMPLETE WITH RISER CHECK VALVE ASSEMBLY AND FLOW SWITCH. FLOW SWITCH WIRING TO DRYER BUILDING FIRE ALARM CONTROL PANEL BY DIV 16.
4. PROVIDE LOW PRESSURE SWITCH ON SUCTION SIDE OF FIRE PUMP SET FOR 20 PSIG; PRESSURE SWITCH WIRING TO DRYER BUILDING FIRE ALARM CONTROL PANEL BY DIV 16.
5. PROVIDE TAMPER (SUPERVISORY) SWITCHES ON ALL CONTROL VALVES. TAMPER SWITCHES WIRING TO DRYER BUILDING FIRE ALARM CONTROL PANEL BY DIV 16.
6. THE GC SHALL FIELD PROVIDE FLOOR DRAIN AND ASSOCIATED DRAIN PIPING AS INDICATED. FLOOR DRAIN (FD) AND PIPING SHALL BE IN ACCORDANCE WITH SECTION 15400 OF THE SPECIFICATIONS.
7. SEE CIVIL DRAWINGS FOR FIRE PUMP BUILDING SITE LOCATION, AND STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS. FOUNDATION AND CONCRETE PAD BY GC.

DIESEL FIRE PUMP SCHEDULE (P X)

TAG NO.	PUMP MANUFACTURER MODEL NO. *	ENGINE MANUFACTURER MODEL NO.	LOCATION	TYPE	CAPACITY (GPM)	MIN TOTAL HEAD (PSI)	MIN SUCTION PRESSURE (PSI)	ENGINE DATA			REMARKS
								ENGINE HP	BRAKE HP	RPM	
FP-1	AURORA 4-481-11A	CLARKE JU4H-UFAEA0	FIRE PUMP BUILDING	HORIZ. SPLIT CASE CENTRIFUGAL	510	40	25	37	37	1,760	(1) (2) (3) (4) (5) (6) (7)

*SELECTION BASED ON AURORA MODEL DFPS 6 OR EQUAL DIESEL FIRE PUMP PACKAGE WITH TEST LOOP, BYPASS AND MAIN RELIEF VALVE

(1) PUMP CASING AUTOMATIC AIR RELEASE VALVE (SIZE PER PUMP MFR)
(2) PUMP CASING PRESSURE RELIEF VALVE (SIZE PER PUMP MFR)
(3) ECCENTRIC SUCTION REDUCER AND CONCENTRIC DISCHARGE INCREASER
(4) SUCTION AND DISCHARGE PRESSURE GUAGES WITH SHUTT-OFF VALVES
(5) HOSE HEADER WITH FIRE HOSE VALVES AND AUTOMATIC BALL DRIP (SIZE PER PUMP MFR)
(6) FLOW METERING SYSTEM (SIZE PER PUMP MFR)
(7) RESIDENTIAL GRADE MUFFLER

JOCKEY PUMP SCHEDULE (P X)

TAG NO.	MANUFACTURER MODEL NO. OR EQUAL	LOCATION	TYPE	CAPACITY (GPM)	MIN. TOTAL HEAD (PSI)	MOTOR DATA				REMARKS
						HP	VOLTS	PHASE	RPM	
JP-1	AURORA PVM1-5	FIRE PUMP BUILDING	VERT. MULTI STAGE CENTRIF	4	60	3/4	460	3	3450	(1) (2)

(1) FLANGED CONNECTIONS
(2) TEFC MOTOR

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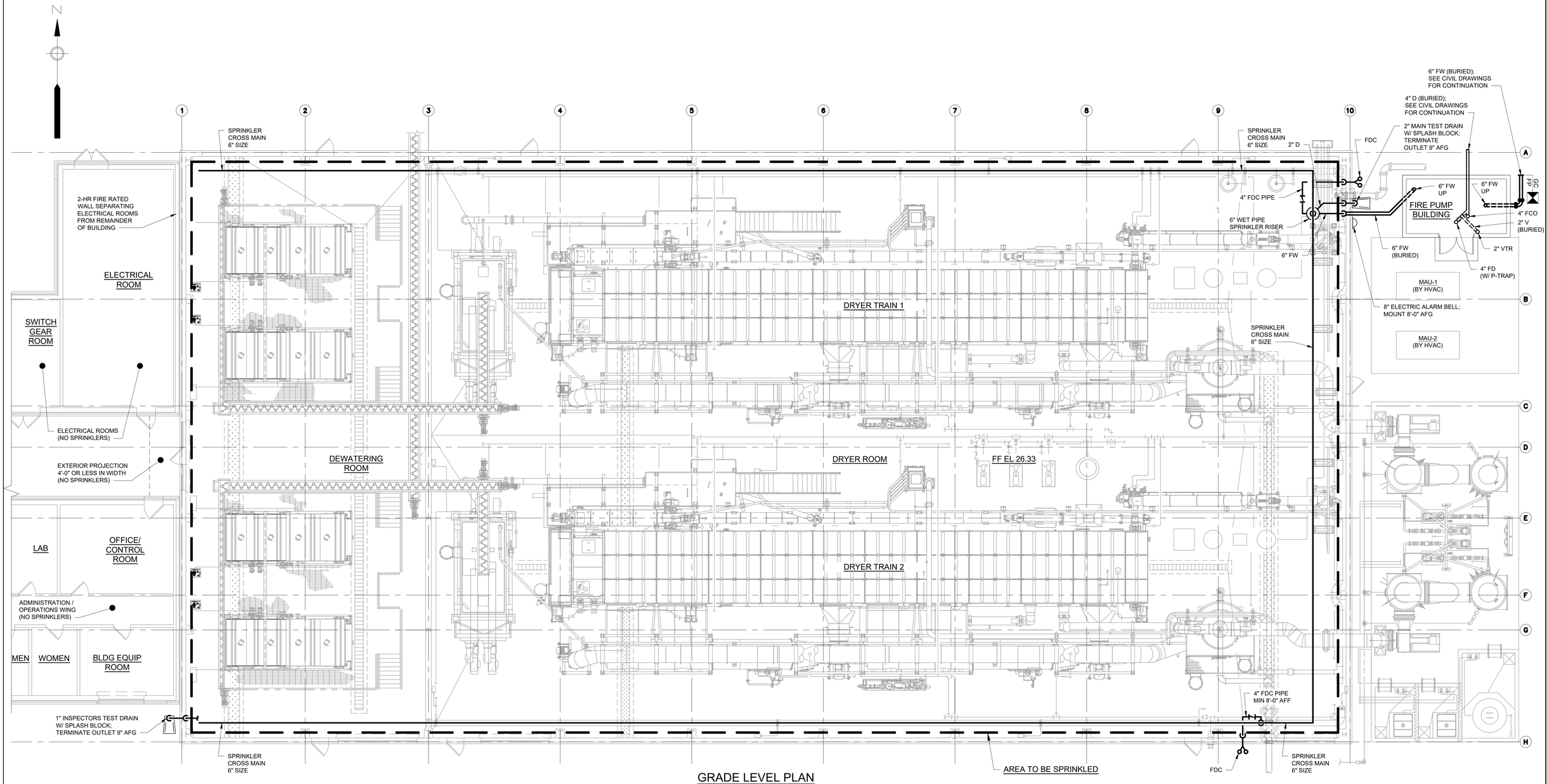
EDMUNDO J. CHAVIANO LICENSE No.29803 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS NOTED	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: BS	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: AG	FIRE PUMP BUILDING PLAN, NOTES & SECTIONS
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 107 of 191	
		PROJECT NO.:50.1890.97–A	OCTOBER 2025 FP–02



GRADE LEVEL PLAN

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

NOTES:

1. ALL SPRINKLER SYSTEM ELECTRICAL COMPONENTS ENCLOSURES SHALL BE NEMA TYPE 4 EXCEPT SHALL BE EXPLOSION PROOF WHERE LOCATED IN DRYER ROOM AND DEWATERING ROOM.
2. MAINTAIN MAXIMUM HEADROOM FOR SPRINKLER PIPING EXCEPT AS SPECIFIED HEREIN. IN DEWATERING ROOM AND DRYER ROOM, ADHERE TO THE FOLLOWING:
   1) SPRINKLER PIPING SHALL BE RUN MIN 14'-0" AFF.
   2) SPRINKLER PIPING SHALL BE RUN ALONG WALLS, AND SUPPORTED FROM WALLS, WHEREVER POSSIBLE.
   3) SPRINKLER PIPING NOT RUNNING ALONG WALLS SHALL BE SUPPORTED BY HORIZONTAL TYPE 316 SST STRUCTURAL BRIDGING THAT IS ELEVATED MIN 14'-0" AFF AND SUPPORTED FROM THE FLOOR.
3. FIRE PUMP BUILDING FLOOR DRAIN AND ASSOCIATED PIPING BY GC.

1/8"=1'-0" SCALE: 0 4 8 12 16 20 24 FEET

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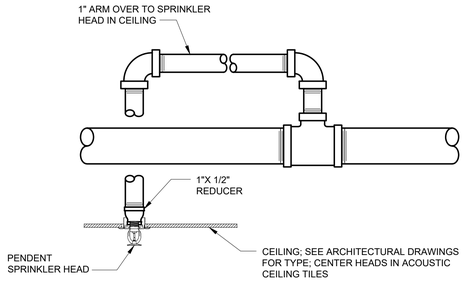
APPROVED DATE
DIRECTOR OF PUBLIC WORKS

APPROVED DATE
PROJECT MANAGER

APPROVED DATE
ASSISTANT DIRECTOR OF ENGINEERING

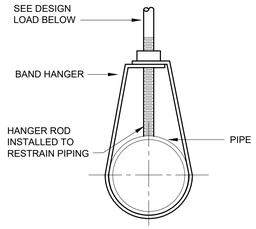
SCALE: 1/8" = 1'-0"
DRAWN BY: BS
CHECKED BY: AG
SHEET NO.: 108 of 191
PROJECT NO.:50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER BUILDING
FIRE PROTECTION PLAN
OCTOBER 2025 FP-03

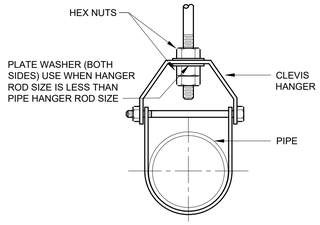


SPRINKLER HEAD ARM OVER DETAIL

NTS



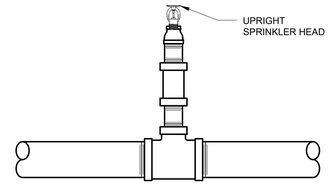
PIPING 1 1/2" AND SMALLER



PIPING 2" AND LARGER

TYPICAL PIPE SUPPORT DETAILS

NTS



UPRIGHT SPRINKLER HEAD DETAIL

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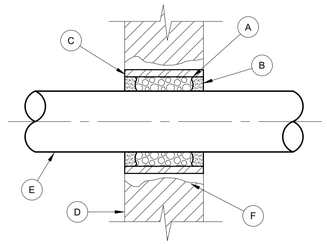
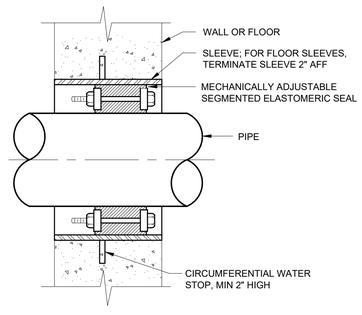


- A — PROVIDE CLEARANCE AS SPECIFIED BETWEEN PIPE SLEEVE AND PIPE. PACK CLEARANCE SPACE WITH SPECIFIED INSULATION.
- B — PROVIDE SPECIFIED END SEALANT
- C — SLEEVE-PROVIDE AS SPECIFIED. FOR FLOOR SLEEVES, TERMINATE SLEEVE 2" AFF.
- D — WALL OR FLOOR
- E — PIPE
- F — GROUT SPACE BETWEEN SLEEVE AND MASONRY WALLS

INTERIOR WALL/FLOOR PIPE- PENETRATION DETAIL (NOT FOR WATER TIGHT CONSTRUCTION)

NTS



EXTERIOR WALL / FLOOR PIPE-PENETRATION DETAIL

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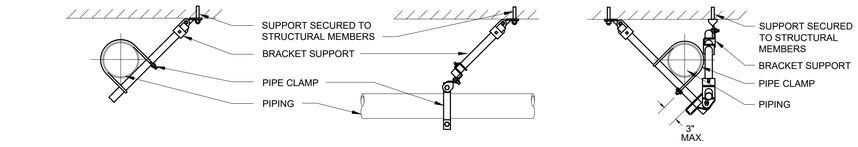
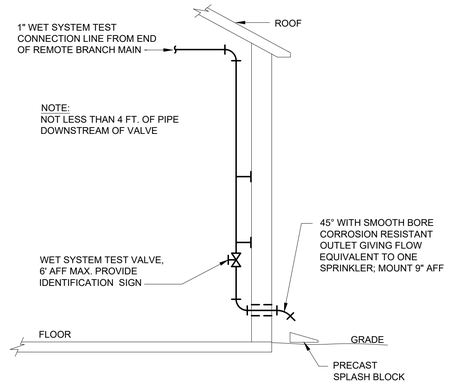


NOTE:
ALL PIPING SHALL BE SEISMICALLY BRACED AND INSTALLED PER NFPA 13.

TYPICAL SEISMIC PIPE BRACING DETAILS

NTS



INSPECTOR'S TEST DRAIN WET PIPE SPRINKLER DETAIL

NTS

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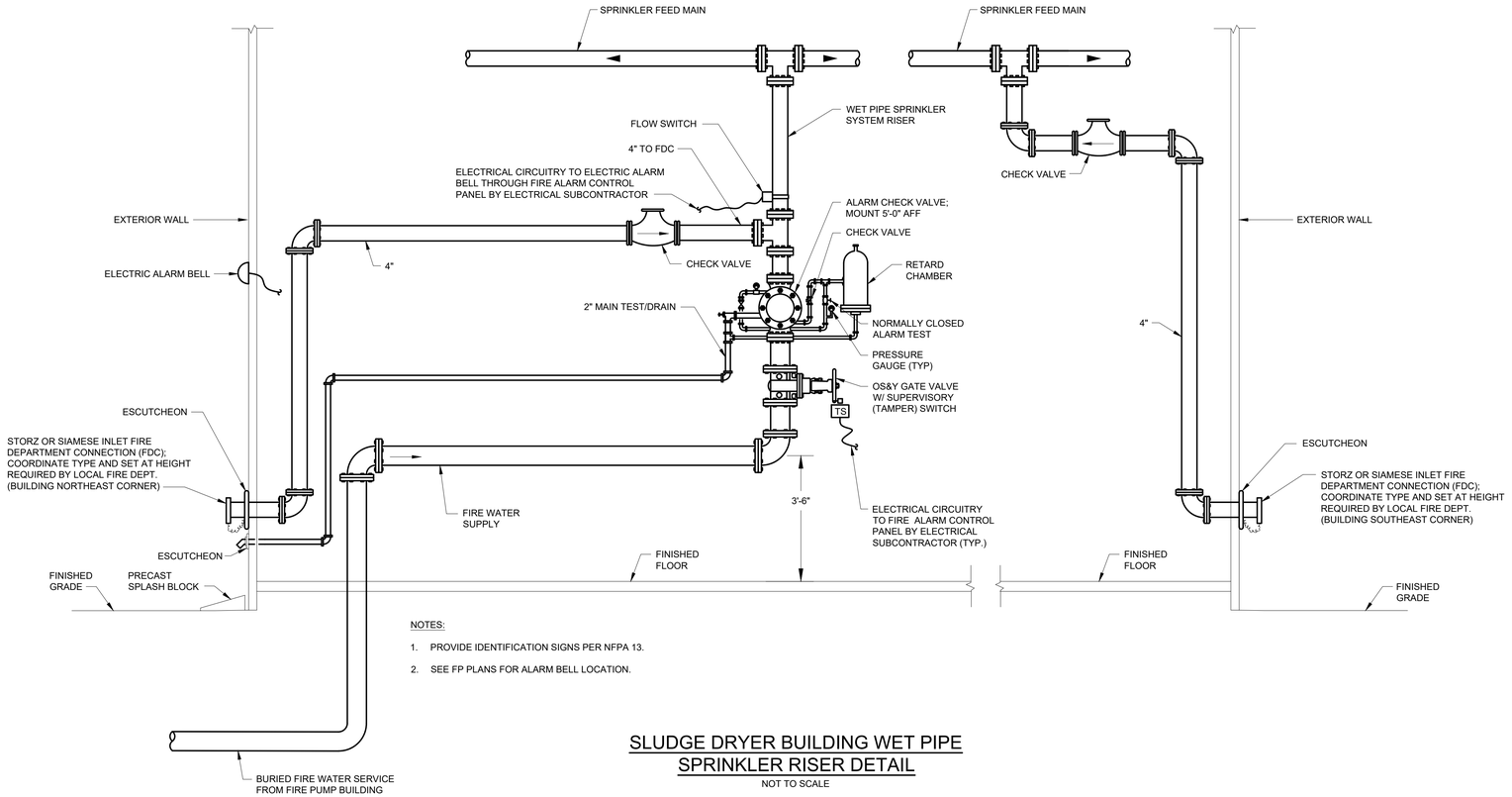
APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: AS NOTED	KENT COUNTY RRRF
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		DRAWN BY: BS	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
		CHECKED BY: AG	DRYER BUILDING
		SHEET NO.: 109 of 191	FIRE PROTECTION DETAILS I
		PROJECT NO.:50.1890.97–A	OCTOBER 2025 FP–04



NOTES:

1. PROVIDE IDENTIFICATION SIGNS PER NFPA 13.
2. SEE FP PLANS FOR ALARM BELL LOCATION.

SLUDGE DRYER BUILDING WET PIPE SPRINKLER RISER DETAIL

NOT TO SCALE

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APPROVED DATE		CHECKED BY: AG	DRYER BUILDING
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 110 of 191	FIRE PROTECTION DETAILS II
		PROJECT NO.:50.1890.97-A	OCTOBER 2025 FP-05

ELECTRICAL ABBREVIATIONS

A	–	AMPERES	MCC	–	MOTOR CONTROL CENTER
AC	–	ALTERNATING CURRENT	MCP	–	MOTOR CIRCUIT PROTECTOR
A.F.F.	–	ABOVE FINISHED FLOOR	M.O.D.	–	MOTOR OPERATED DAMPER
A.F.G.	–	ABOVE FINISHED GRADE	MV	–	MEDIUM VOLTAGE
AIC	–	AMPERE INTERRUPTING CAPACITY	N.C.	–	NORMALLY CLOSED
ALUM.	–	ALUMINUM	N.O.	–	NORMALLY OPEN
ATS	–	AUTOMATIC TRANSFER SWITCH	NO.	–	NUMBER
C	–	CONDUIT	P	–	POLE
CP	–	CONTROL PANEL	PCS	–	PROCESS CONTROL SYSTEM
CT	–	CURRENT TRANSFORMER, CONSTANT TORQUE	PLC	–	PROGRAMMABLE LOGIC CONTROLLER
CTRL	–	CONTROL	PH	–	PHASE
D	–	DEEP	PNL	–	PANEL
DC	–	DIRECT CURRENT	PR.	–	PAIR
DISC.	–	DISCONNECT	PS	–	PUMP STATION
DWG.	–	DRAWING	SCH.	–	SCHEDULE
EF	–	EXHAUST FAN	SHLD.	–	SHIELDED
FLA	–	FULL LOAD AMPS	SN	–	SOLID NEUTRAL
G.F.I.	–	GROUND FAULT INTERRUPTER	SPD	–	SURGE PROTECTIVE DEVICE
GRD.	–	GROUND	S.S.	–	STAINLESS STEEL
GRS	–	GALVANIZED RIGID STEEL	T–M	–	THERMAL MAGNETIC
H	–	HIGH	TYP.	–	TYPICAL
H/O/A	–	HAND/OFF/AUTO	V	–	VOLTS
HP	–	HORSEPOWER	VT	–	VARIABLE TORQUE
I/O	–	INPUT/OUTPUT	VFD	–	VARIABLE FREQUENCY DRIVE
KV	–	KILOVOLT	W	–	WIRE, WATT, WIDE
KW	–	KILOWATT	WP	–	WEATHERPROOF
MAU	–	MAKE–UP AIR UNIT	XFMR	–	TRANSFORMER

ELECTRICAL SYMBOL SCHEDULE

	–	LED LIGHT FIXTURE
	–	EMERGENCY LIGHT FIXTURE
	–	COMBINATION EMERGENCY/ EXIT FIXTURE
	–	EMERGENCY LIGHT FIXTURE REMOTE HEAD
	–	EXIT FIXTURE
	–	PHOTOCELL
	–	20A–120V DUPLEX RECEPTACLE
(5)	–	MOTOR (NUMBER INDICATES HP)
	–	DISCONNECT SWITCH
E	–	EMERGENCY STOP PUSH BUTTON
L	–	LANYARD SWITCH
LS	–	LIMIT SWITCH
P	–	PRESSURE SWITCH
Z	–	ZERO SPEED SWITCH
PT	–	PRESSURE TRANSMITTER
TT	–	TEMPERATURE TRANSMITTER
VT	–	VIBRATION TRANSMITTER
S	–	SOLENOID VALVE
SS	–	SPEED SENSOR
J	–	JUNCTION BOX
T	–	THERMOSTAT
T	–	TRANSFORMER
FH	–	FIRE ALARM PULL STATION
	–	FIRE ALARM HORN/STROBE
S	–	SMOKE DETECTOR
S	–	SINGLE POLE SWITCH
S_3	–	THREE–WAY SWITCH
S_4	–	FOUR–WAY SWITCH
S_T	–	MANUAL STARTER SWITCH WITH THERMAL OVERLOAD
	–	HOME RUN TO PANEL
	–	TICKS INDICATE NUMBER OF WIRES – NOT INCLUDING GROUND CONDUCTOR
	–	WIRING CONCEALED IN CONDUIT
	–	CONDUIT CONCEALED IN FLOOR OR SLAB
	–	CIRCUIT BREAKER
	–	MOTOR STARTER
	–	THERMAL OVERLOAD
	–	CONCRETE ENCASED ELECTRICAL DUCT BANK
A	–	DUCT BANK CROSS SECTION
G	–	#4/0 GROUND RING
	–	CADWELD GROUND CONNECTION

GENERAL ELECTRICAL NOTES (APPLICABLE TO ALL DRAWINGS)

1. EXISTING EQUIPMENT IS SHOWN IN A LIGHT WEIGHT AND IDENTIFIED WITH SLANTED TEXT. NEW EQUIPMENT AND WIRING IS SHOWN BOLD.
2. ALL FASTENERS AND MOUNTING HARDWARE USED FOR THE INSTALLATION OF ALL ELECTRICAL ITEMS SHALL BE 316 STAINLESS STEEL.
3. ALL ALUMINUM BACKBOARDS SHALL BE 3/16 INCH THICK, AND SIZED AS REQUIRED TO ACCOMMODATE EQUIPMENT. EDGES OF BACKBOARDS SHALL BE BEVELED SO THEY ARE SMOOTH.
4. ALL ALUMINUM IN CONTACT WITH CONCRETE SHALL BE COATED WITH TWO COATS OF ZINC CHROMATE PRIMER OR BITUMINOUS PAINT TO PREVENT A REACTION BETWEEN THE ALUMINUM AND CONCRETE.
5. WHERE ELECTRICAL EQUIPMENT IS SHOWN MOUNTED ON A CONCRETE PAD, THE PAD SHALL BE 3" HIGH WITH CHAMFERED EDGES. THE PAD SHALL EXTEND 2" BEYOND THE EDGES OF THE EQUIPMENT.
6. CONTRACTOR SHALL FURNISH AND INSTALL A SEPARATE INSULATED GROUND CONDUCTOR IN ALL CONDUITS. ALL GROUND CONDUCTORS SHALL BE #12 UNLESS NOTED OTHERWISE ON DRAWINGS.
7. CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF ALL UNDERGROUND CONDUITS AND DUCT BANKS TO AVOID INTERFERENCES WITH UNDERGROUND PIPING.
8. ALL DUCT BANKS THAT PENETRATE BUILDING WALLS SHALL BE DOWELED INTO THE WALL USING #4 REBAR.
9. ALL DUCT BANKS AND CONDUITS SHALL BE SLOPED AWAY FROM BUILDINGS AND STRUCTURES.
10. WHERE A WIRING LEGEND IS SHOWN ON A DRAWING, IT ONLY PERTAINS TO THAT DRAWING.
11. WIRING SHOWN TO MOTOR DISCONNECT SWITCHES SHALL CONTINUE TO THE MOTOR.
12. ALL CONDUITS SHALL BE LABELED INDICATING THE VOLTAGE OF THE WIRING IN THE CONDUIT.
13. PROVIDE AN ENGRAVED YELLOW NAMEPLATE ON ALL NEW PANELS INDICATING WHERE THE PANEL IS FED FROM.
14. PROVIDE AN ENGRAVED NAMEPLATE ON ALL NEW ELECTRICAL EQUIPMENT INDICATING THE AIC RATING OF THE EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.16 AND 110.24 OF THE NATIONAL ELECTRICAL CODE.

ELECTRICAL DEMOLITION NOTES (APPLICABLE TO ALL DRAWINGS)

1. ALL EXISTING ELECTRICAL EQUIPMENT, CONDUIT AND WIRE BEING REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR, UNLESS NOTED OTHERWISE.
2. WHERE EXISTING EQUIPMENT IS INDICATED TO BE REMOVED, ALL CONDUITS AND WIRING TO THIS EQUIPMENT SHALL BE REMOVED BACK TO THEIR SOURCE.
3. CONDUITS BEING REMOVED THAT PENETRATE EXISTING FLOORS OR WALLS SHALL BE CUT OFF FLUSH WITH EXISTING SURFACE AND SEALED WITH NON–SHRINK GROUT.
4. INSTALL A STAINLESS STEEL COVER PLATE OVER ALL RECESSED OUTLET BOXES WHERE WIRING DEVICE HAS BEEN REMOVED.
5. PATCH HOLES IN WALLS REMAINING FROM REMOVAL OF EQUIPMENT WITH NON–SHRINK GROUT.

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ROBERT J. ANDRYSZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

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		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	ELECTRICAL ABBREVIATIONS, SYMBOLS, AND NOTES
APPROVED DATE		SHEET NO.: 111 of 191	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	OCTOBER 2025 E–01

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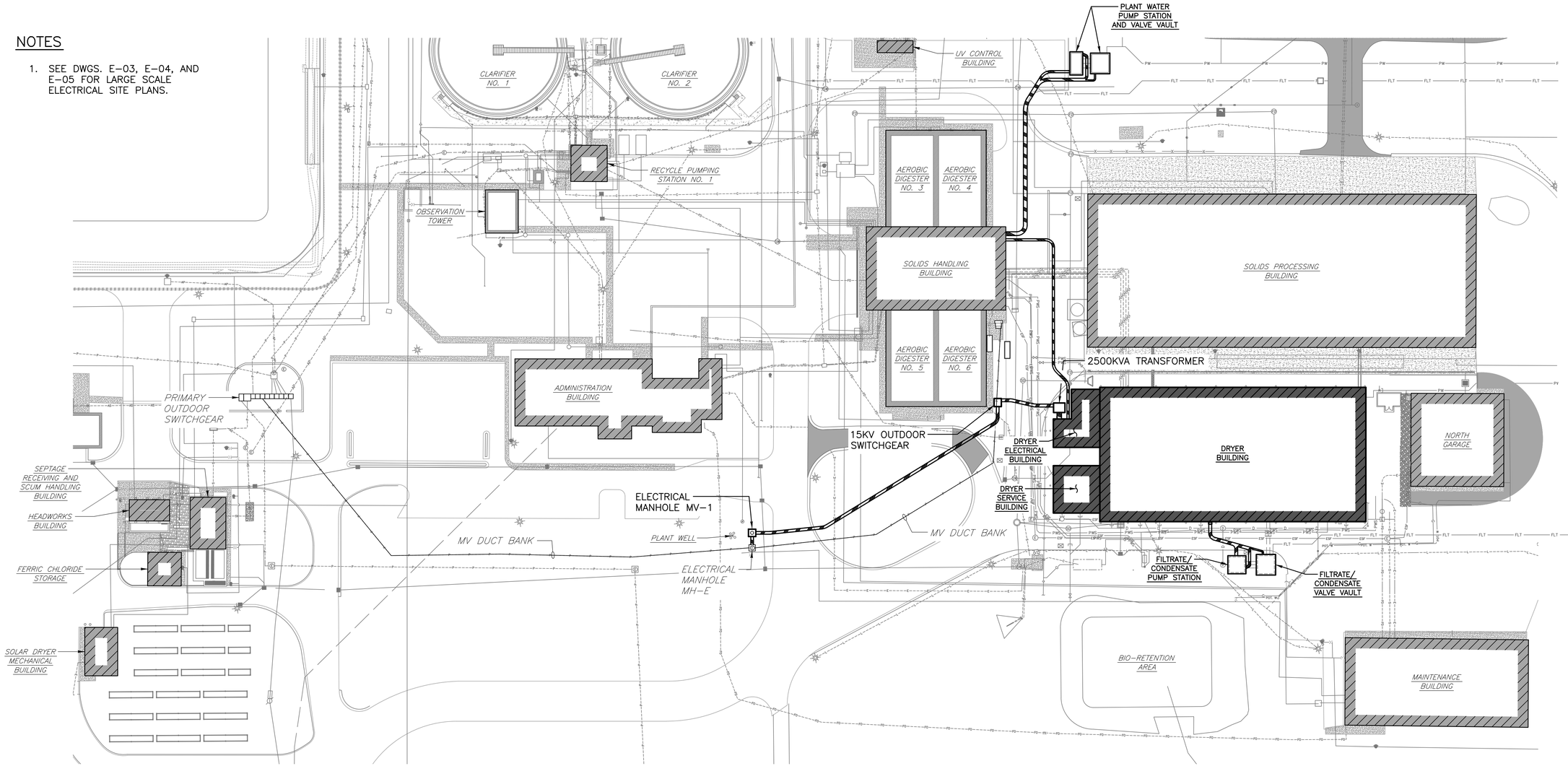
NOTES

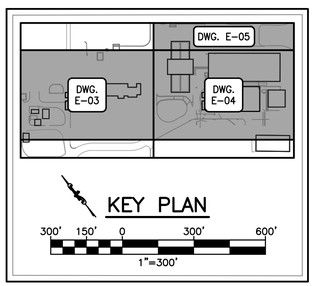
1. SEE DWGS. E-03, E-04, AND E-05 FOR LARGE SCALE ELECTRICAL SITE PLANS.



NORTH

OVERALL ELECTRICAL SITE PLAN

1"=40' 40' 20' 0 40' 80'



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APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

SCALE: AS SHOWN
DRAWN BY: SMJ
CHECKED BY: DTB
SHEET NO.: 112 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
OVERALL
ELECTRICAL SITE PLAN
OCTOBER 2025 E-02

\\dd.rkk.com\fs\Cloud Projects\2019\19129_Biosolids\Electrical\Dryer Project\Cadd\Elec\E-02 19128.dwg Oct 22, 2025 - 12:46pm ENV.CTB Plot Scale 1=1 Plot By: sjamison Tab:Layout1

OBSERVATION TOWER

2" SPR

ADMINISTRATION BUILDING

PRIMARY OUTDOOR SWITCHGEAR
SEE DWG. E-10 FOR MODIFICATIONS

HEADWORKS BUILDING

SEPTAGE RECEIVING AND SCUM HANDLING BUILDING

FERRIC CHLORIDE STORAGE

SOLAR DRYER MECHANICAL BUILDING

ELECTRICAL MANHOLE MV-1

PLANT WELL

EXISTING MV DUCT BANK WITH (2) 4"C

ELECTRICAL MANHOLE MH-E

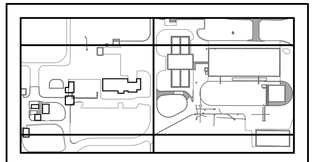
EXISTING MV DUCT BANK WITH (2) 4"C

MATCHLINE "A" – SEE DWG. E-4

NORTH

ELECTRICAL SITE PLAN

1"=20' 20' 10' 0 20' 40'



KEY PLAN

300' 150' 0 300' 600'

1"=300'

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ROBERT J. ANDRYCHCIAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	ELECTRICAL SITE PLAN SHEET 1
APPROVED DATE		SHEET NO.: 113 of 191	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	
		OCTOBER 2025	E-03

\\rkk.com\As\Cloud Projects\2019\19129_Biosolids\Electrical\Dryer Project\Cad\Elec\E-03 19129.dwg Oct 22, 2025 - 12:46pm ENV.CTB Plot Scale 1=1 Plot By: sjamison Tab:Layout1

MATCHLINE "B" – SEE DWG. E-5

MATCHLINE "A" – SEE DWG. E-3

AEROBIC DIGESTER NO. 3

AEROBIC DIGESTER NO. 4

SOLIDS HANDLING BUILDING

SOLIDS PROCESSING BUILDING

TRANSFORMER T-A

SOLIDS HANDLING BUILDING OUTDOOR SWITCHGEAR

AEROBIC DIGESTER NO. 5

AEROBIC DIGESTER NO. 6

400KW GENERATOR

2500KVA TRANSFORMER

15KV OUTDOOR SWITCHGEAR. SEE NOTE 2

DRYER ELECTRICAL BUILDING

DRYER BUILDING

DRYER SERVICE BUILDING

NORTH GARAGE

FILTRATE/CONDENSATE PUMP STATION PULL BOX

MV DUCT BANK TO TRANSFORMER T-A WITH (2) 4"C

FILTRATE/ CONDENSATE PUMP STATION

VALVE VAULT

GROUND TEST POINT. SEE DETAIL ON DWG. E-06

#4/0 COPPER GROUND RING. SEE SPECS FOR GROUNDING REQUIREMENTS

MAINTENANCE BUILDING

NOTES

1. ALL ELECTRICAL EQUIPMENT IN THE DRYER ELECTRICAL BUILDING SHALL BE CONNECTED TO THE GROUND RING WITH A #2/0 GRD. WIRE.
2. SEE DWG. E-8 FOR 15KV OUTDOOR SWITCHGEAR PLAN. COORDINATE SWITCHGEAR INSTALLATION WITH EXISTING MV DUCT BANK TO TRANSFORMER T-A.
3. SEE DWG. E-8 FOR CONCRETE PAD DETAIL FOR 15KV OUTDOOR SWITCHGEAR AND THE 2500KVA TRANSFORMER.

WIRING LEGEND

(1) #2/0 GRD.-1¼"C TO STEEL COLUMN IN BUILDING

(2) 1"C FOR PHONE LINES TO ADMINISTRATION BUILDING

NORTH

ELECTRICAL SITE PLAN

1"=20' 20' 10' 0 20' 40'

KEY PLAN

300' 150' 0 300' 600'

1"=300'

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PROJECT MANAGER

APPROVED DATE
ASSISTANT DIRECTOR OF ENGINEERING

SCALE: AS SHOWN
DRAWN BY: SMJ
CHECKED BY: DTB
SHEET NO.: 114 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
ELECTRICAL SITE PLAN
SHEET 2
OCTOBER 2025 E-04

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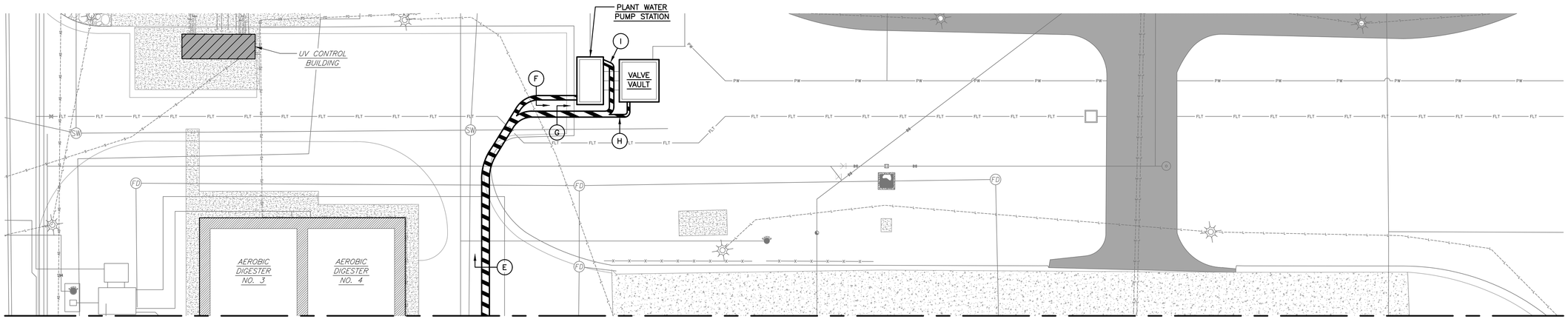
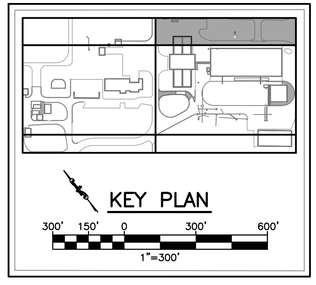


MATCHLINE "B" – SEE DWG. E–4

ELECTRICAL SITE PLAN

1"=20' 20' 10' 0 20' 40'



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APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		DRAWN BY: SMJ CHECKED BY: DTB SHEET NO.: 115 of 191 PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
ELECTRICAL SITE PLAN
SHEET 3
OCTOBER 2025 E–05

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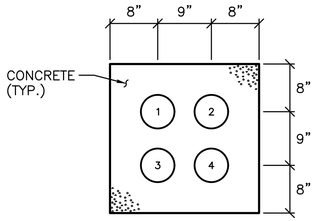
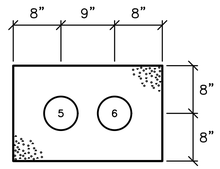
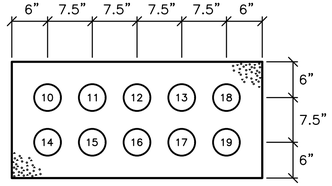


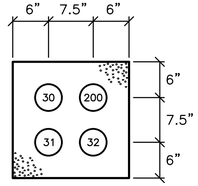
DUCT BANK (A)



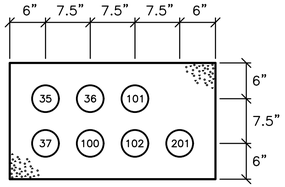
DUCT BANK (B)



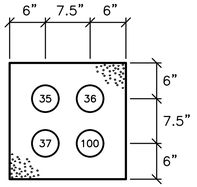
DUCT BANK (C)



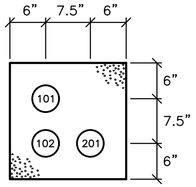
DUCT BANK (D)



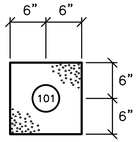
DUCT BANK (E)



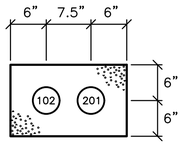
DUCT BANK (F)



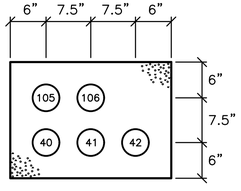
DUCT BANK (G)



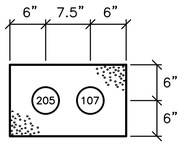
DUCT BANK (H)



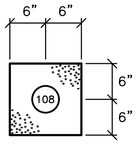
DUCT BANK (I)



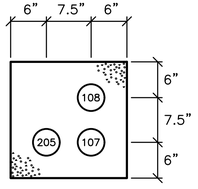
DUCT BANK (J)



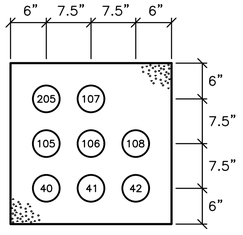
DUCT BANK (K)



DUCT BANK (L)



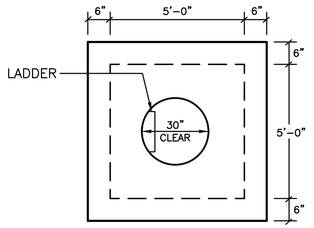
DUCT BANK (M)



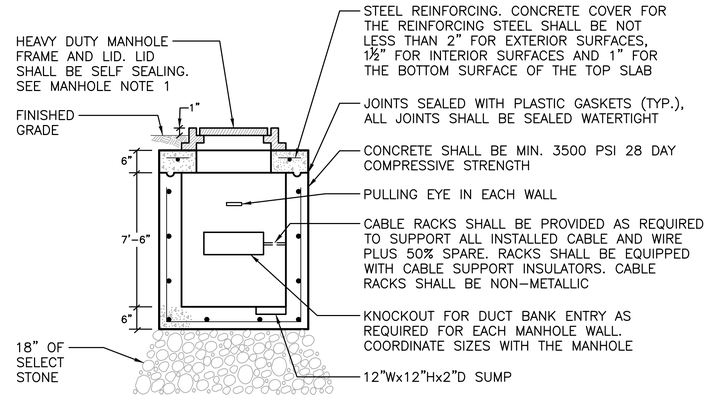
DUCT BANK (N)

MANHOLE NOTES

1. MANHOLE LID SHALL BE STAMPED "MEDIUM VOLTAGE".
2. INSTALL A PLASTIC INSERT IN THE MANHOLE LID.
3. PROVIDE A FIBERGLASS ACCESS LADDER IN THE MANHOLE.
4. ALL DUCT BANK ENTRIES INTO THE MANHOLE SHALL BE SEALED WATERTIGHT.



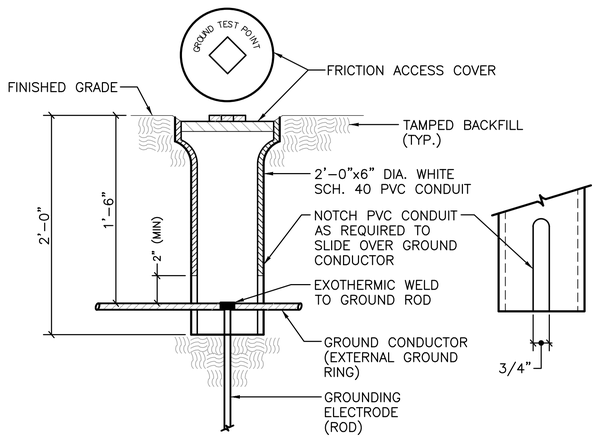
PLAN VIEW



SECTION

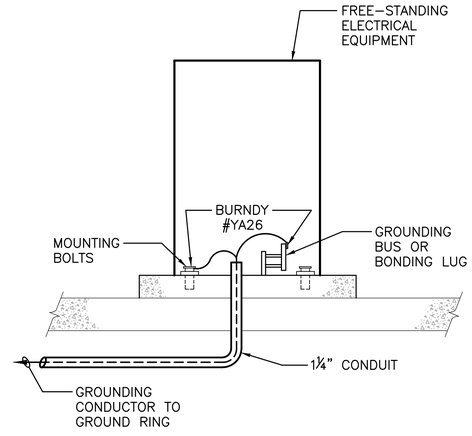
ELECTRICAL MANHOLE MV-1 DETAIL

NO SCALE



GROUND TEST POINT DETAIL

NO SCALE



TYPICAL ENCLOSURE GROUNDING DETAIL

NO SCALE

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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

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DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DTB	DUCT BANK CROSS SECTIONS AND ELECTRICAL SITE DETALS
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 116 of 191	OCTOBER 2025 E-06
		PROJECT NO.: 50.1890.97-A	

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15KV POWER DUCT BANK CONDUIT SCHEDULE

CONDUIT NO.	CONDUIT SIZE	CONDUIT MATERIAL	FROM	TO	VIA DUCT BANKS	CIRCUITS
1	5"	PVC	EXISTING ELECTRICAL MANHOLE MH–E	15KV OUTDOOR SWITCHGEAR	(A)	SWITCHGEAR 15KV FEEDER
2	5"	PVC	EXISTING ELECTRICAL MANHOLE MH–E	15KV OUTDOOR SWITCHGEAR	(A)	SPARE
3	5"	PVC	EXISTING ELECTRICAL MANHOLE MH–E	15KV OUTDOOR SWITCHGEAR	(A)	EXISTING TRANSFORMER T–A FEEDER
4	5"	PVC	EXISTING ELECTRICAL MANHOLE MH–E	15KV OUTDOOR SWITCHGEAR	(A)	SPARE
5	5"	PVC	15KV OUTDOOR SWITCHGEAR	DRYER BUILDING TRANSFORMER	(B)	TRANSFORMER FEEDER
6	5"	PVC	15KV OUTDOOR SWITCHGEAR	DRYER BUILDING TRANSFORMER	(B)	SPARE
7–9			(NOT USED)			

480V POWER DUCT BANK CONDUIT SCHEDULE

CONDUIT NO.	CONDUIT SIZE	CONDUIT MATERIAL	FROM	TO	VIA DUCT BANKS	CIRCUITS
10	4"	PVC	DRYER BUILDING TRANSFORMER	MAIN DISTRIBUTION SWITCHBOARD IN DRYER ELECTRICAL BUILDING	(C)	SWITCHBOARD FEEDER (SET 1)
11	4"	PVC	DRYER BUILDING TRANSFORMER	MAIN DISTRIBUTION SWITCHBOARD IN DRYER ELECTRICAL BUILDING	(C)	SWITCHBOARD FEEDER (SET 2)
12	4"	PVC	DRYER BUILDING TRANSFORMER	MAIN DISTRIBUTION SWITCHBOARD IN DRYER ELECTRICAL BUILDING	(C)	SWITCHBOARD FEEDER (SET 3)
13	4"	PVC	DRYER BUILDING TRANSFORMER	MAIN DISTRIBUTION SWITCHBOARD IN DRYER ELECTRICAL BUILDING	(C)	SWITCHBOARD FEEDER (SET 4)
14	4"	PVC	DRYER BUILDING TRANSFORMER	MAIN DISTRIBUTION SWITCHBOARD IN DRYER ELECTRICAL BUILDING	(C)	SWITCHBOARD FEEDER (SET 5)
15	4"	PVC	DRYER BUILDING TRANSFORMER	MAIN DISTRIBUTION SWITCHBOARD IN DRYER ELECTRICAL BUILDING	(C)	SWITCHBOARD FEEDER (SET 6)
16	4"	PVC	DRYER BUILDING TRANSFORMER	MAIN DISTRIBUTION SWITCHBOARD IN DRYER ELECTRICAL BUILDING	(C)	SWITCHBOARD FEEDER (SET 7)
17	4"	PVC	DRYER BUILDING TRANSFORMER	MAIN DISTRIBUTION SWITCHBOARD IN DRYER ELECTRICAL BUILDING	(C)	SWITCHBOARD FEEDER (SET 8)
18	4"	PVC	DRYER BUILDING TRANSFORMER	MAIN DISTRIBUTION SWITCHBOARD IN DRYER ELECTRICAL BUILDING	(C)	SPARE
19	4"	PVC	DRYER BUILDING TRANSFORMER	MAIN DISTRIBUTION SWITCHBOARD IN DRYER ELECTRICAL BUILDING	(C)	SPARE

480V POWER DUCT BANK CONDUIT SCHEDULE

CONDUIT NO.	CONDUIT SIZE	CONDUIT MATERIAL	FROM	TO	VIA DUCT BANKS	CIRCUITS
20–29			(NOT USED)			
30	4"	PVC	MAIN DISTRIBUTION SWITCHBOARD IN DRYER ELECTRICAL BUILDING	DRYER BUILDING PULL BOX IN SOLIDS HANDLING BUILDING	(D)	MCC–S FEEDER (SET 1)
31	4"	PVC	MAIN DISTRIBUTION SWITCHBOARD IN DRYER ELECTRICAL BUILDING	DRYER BUILDING PULL BOX IN SOLIDS HANDLING BUILDING	(D)	MCC–S FEEDER (SET 2)
32	4"	PVC	MAIN DISTRIBUTION SWITCHBOARD IN DRYER ELECTRICAL BUILDING	DRYER BUILDING PULL BOX IN SOLIDS HANDLING BUILDING	(D)	SPARE
33–34			(NOT USED)			
35	2"	PVC	PLANT PUMP STATION POWER PULL BOX IN SOLIDS HANDLING BUILDING	PLANT WATER PUMP NO. 1 ELECTRICAL BACKBOARD	(E) (F)	PLANT WATER PUMP NO. 1 MOTOR FEEDER
36	2"	PVC	PLANT PUMP STATION POWER PULL BOX IN SOLIDS HANDLING BUILDING	PLANT WATER PUMP NO. 2 ELECTRICAL BACKBOARD	(E) (F)	PLANT WATER PUMP NO. 2 MOTOR FEEDER
37	2"	PVC	PLANT PUMP STATION POWER PULL BOX IN SOLIDS HANDLING BUILDING	PLANT WATER PUMP NO. 3 ELECTRICAL BACKBOARD	(E) (F)	PLANT WATER PUMP NO. 3 MOTOR FEEDER
38–39			(NOT USED)			
40	2"	PVC COATED GRS	FILTRATE PUMPS ELECTRICAL BACKBOARD	FILTRATE/CONDENSATE PUMP STATION PULL BOX AT DRYER BUILDING	(J) (N)	FILTRATE PUMP NO. 1 MOTOR FEEDER
41	2"	PVC COATED GRS	FILTRATE PUMPS ELECTRICAL BACKBOARD	FILTRATE/CONDENSATE PUMP STATION PULL BOX AT DRYER BUILDING	(J) (N)	FILTRATE PUMP NO. 2 MOTOR FEEDER
42	2"	PVC COATED GRS	FILTRATE PUMPS ELECTRICAL BACKBOARD	FILTRATE/CONDENSATE PUMP STATION PULL BOX AT DRYER BUILDING	(J) (N)	FILTRATE PUMP NO. 3 MOTOR FEEDER
43–99			(NOT USED)			

NOTES

1. CONNECT CONDUIT NOS. 10–19 TO EXISTING 4" CONDUITS THAT ARE BEING INSTALLED UNDER CONTRACT 2.

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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: AS SHOWN
DRAWN BY: SMJ
CHECKED BY: DTB
SHEET NO.: 117 of 191
PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
15KV AND 480V POWER DUCT BANK CONDUIT SCHEDULES
OCTOBER 2025 E–07

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120V POWER AND CONTROL DUCT BANK CONDUIT SCHEDULE

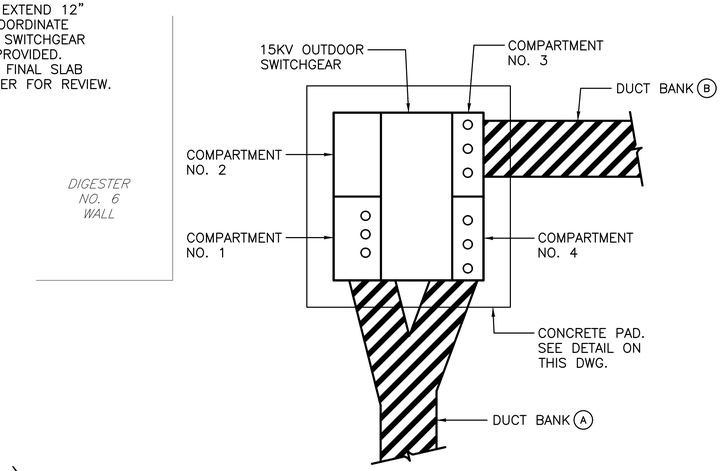
CONDUIT NO.	CONDUIT SIZE	CONDUIT MATERIAL	FROM	TO	VIA DUCT BANKS	CIRCUITS
100	2"	PVC	PLANT PUMP STATION POWER PULL BOX IN SOLIDS HANDLING BUILDING	PLANT WATER PUMP NO. 3 ELECTRICAL BACKBOARD	(E) (F)	120V CONTROL
101	2"	PVC	PLANT PUMP STATION POWER PULL BOX IN SOLIDS HANDLING BUILDING	PULL BOX NO. 1 IN PLANT WATER PUMP STATION VALVE VAULT	(E) (G) (H)	120V POWER
102	2"	PVC	PLANT PUMP STATION POWER PULL BOX IN SOLIDS HANDLING BUILDING	PLANT WATER PUMP STATION FLOW METER TRANSMITTER ELECTRICAL BACKBOARD	(E) (G) (I)	120V POWER
103–104			(NOT USED)			
105	1½"	PVC	FILTRATE PUMPS ELECTRICAL BACKBOARD	FILTRATE/CONDENSATE PUMP STATION PULL BOX AT DRYER BUILDING	(J) (N)	120V POWER
106	1½"	PVC	FILTRATE PUMPS ELECTRICAL BACKBOARD	FILTRATE/CONDENSATE PUMP STATION PULL BOX AT DRYER BUILDING	(J) (N)	120V CONTROL
107	1½"	PVC	FILTRATE/CONDENSATE PUMP STATION FLOW METER XMTR ELECTRICAL BACKBOARD	FILTRATE/CONDENSATE PUMP STATION PULL BOX AT DRYER BUILDING	(K) (M) (N)	120V POWER
108	1½"	PVC	PULL BOX NO. 1 IN FILTRATE/CONDENSATE PUMP STATION VALVE VAULT	FILTRATE/CONDENSATE PUMP STATION PULL BOX AT DRYER BUILDING	(L) (M) (N)	120V POWER
109–199			(NOT USED)			

INSTRUMENTATION DUCT BANK CONDUIT SCHEDULE

CONDUIT NO.	CONDUIT SIZE	CONDUIT MATERIAL	FROM	TO	VIA DUCT BANKS	CIRCUITS
200	2"	PVC	DRYER BUILDING PLC PANEL	DRYER BUILDING PULL BOX IN SOLIDS HANDLING BUILDING	(D)	FIBER OPTIC CABLE
201	2"	PVC COATED GRS	PLANT PUMP STATION INSTRUMENTATION PULL BOX IN SOLIDS HANDLING BUILDING	PLANT WATER PUMP STATION FLOW METER TRANSMITTER ELECTRICAL BACKBOARD	(E) (G) (I)	24VDC AND ANALOG
202–204			(NOT USED)			
205	1½"	PVC COATED GRS	FILTRATE/CONDENSATE PUMP STATION FLOW METER XMTR ELECTRICAL BACKBOARD	FILTRATE/CONDENSATE PUMP STATION PULL BOX AT DRYER BUILDING	(K) (M) (N)	24VDC AND ANALOG

NOTES

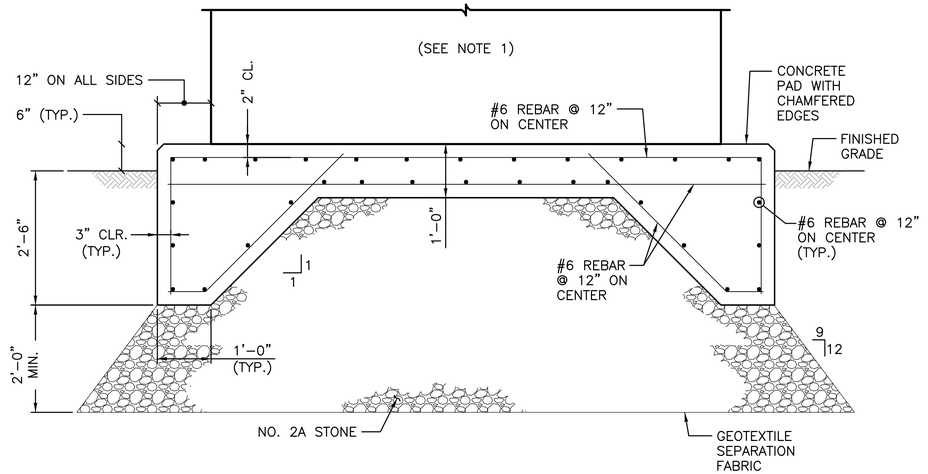
1. THE CONCRETE PAD DETAIL IS TYPICAL FOR THE 15KV OUTDOOR SWITCHGEAR AND THE 2500KVA TRANSFORMER.
2. THE CONCRETE PAD SHALL EXTEND 12" BEYOND THE EQUIPMENT. COORDINATE DIMENSIONS WITH OUTDOOR SWITCHGEAR AND TRANSFORMER BEING PROVIDED. CONTRACTOR SHALL SUBMIT FINAL SLAB DIMENSIONS TO THE ENGINEER FOR REVIEW.



NORTH

15KV OUTDOOR SWITCHGEAR ELECTRICAL PLAN

3/8"=1'–0" (24" 12" 0 2' 4' 6')



OUTDOOR SWITCHGEAR AND TRANSFORMER CONCRETE PAD DETAIL

(SEE NOTE 1)

3/4"=1'–0" (12" 6" 0 1' 2' 3')

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APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

SCALE: AS SHOWN
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SHEET NO.: 118 of 191
PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DUCT BANK
CONDUIT SCHEDULES
OCTOBER 2025 E–08

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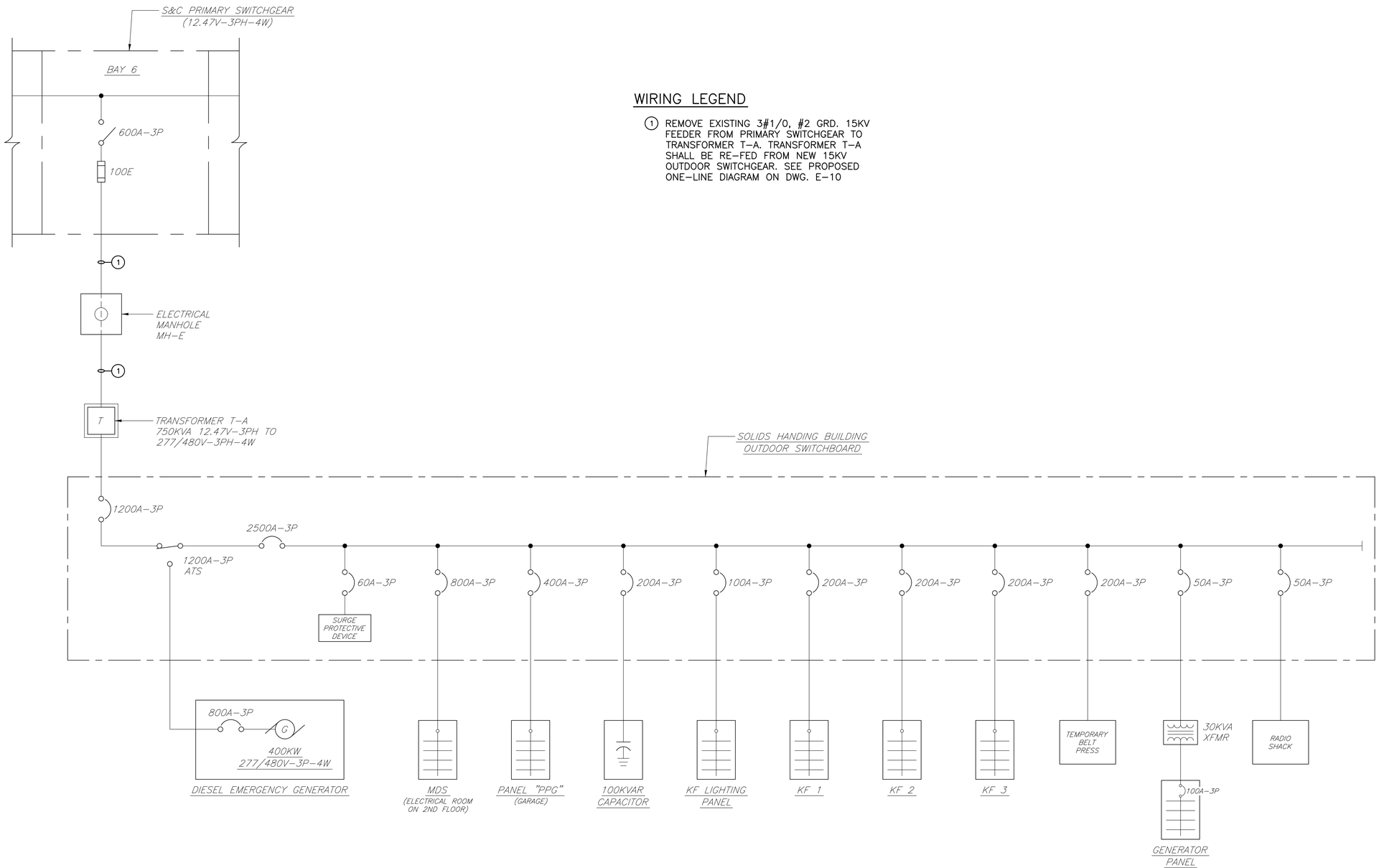

WIRING LEGEND

(1) REMOVE EXISTING 3#1/0, #2 GRD. 15KV FEEDER FROM PRIMARY SWITCHGEAR TO TRANSFORMER T-A. TRANSFORMER T-A SHALL BE RE-FED FROM NEW 15KV OUTDOOR SWITCHGEAR. SEE PROPOSED ONE-LINE DIAGRAM ON DWG. E-10

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DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	
APPROVED DATE		SHEET NO.: 119 of 191	SOLIDS HANDLING BUILDING EXISTING ONE-LINE DIAGRAM
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 E-09

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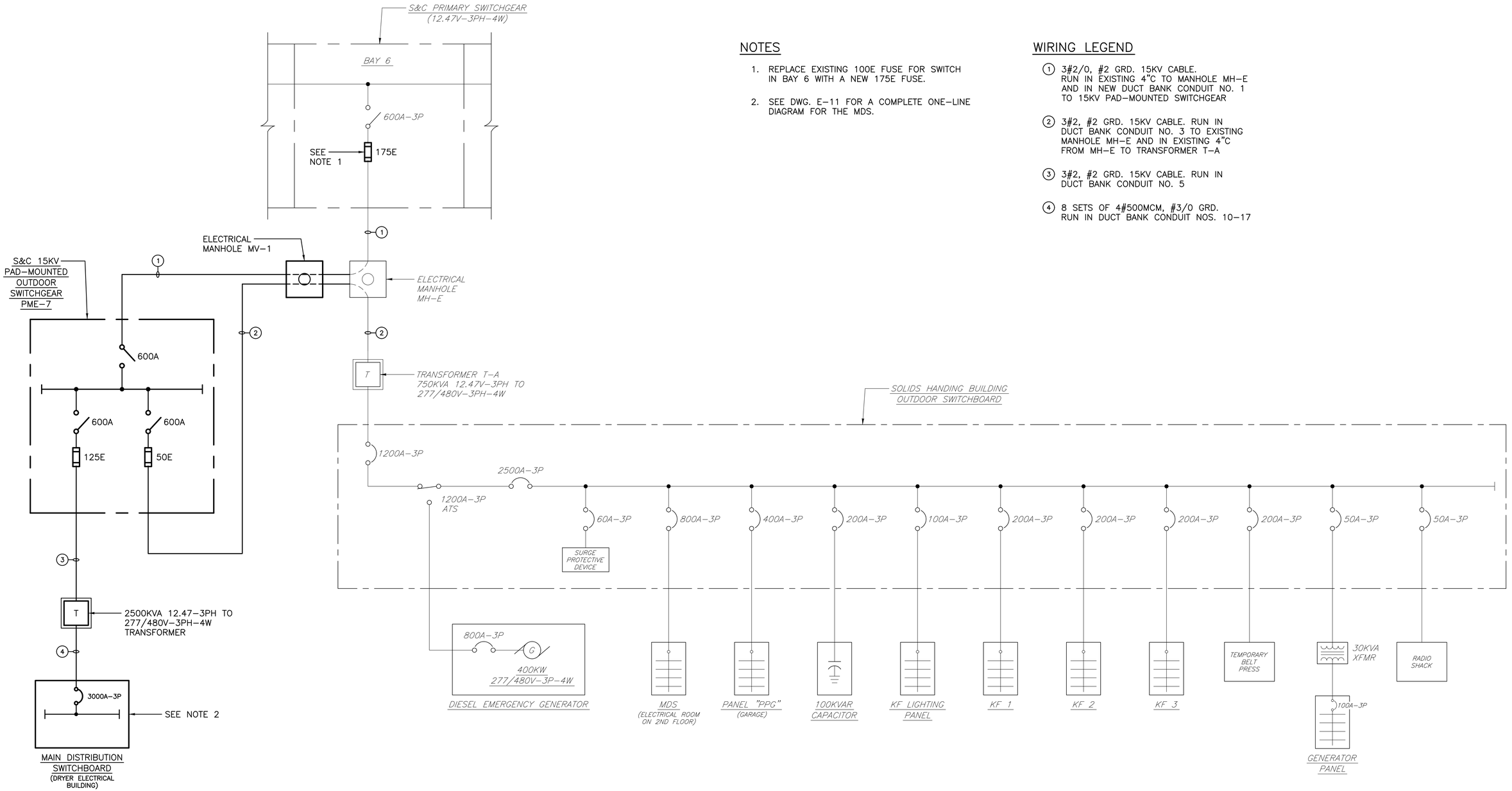

NOTES

1. REPLACE EXISTING 100E FUSE FOR SWITCH IN BAY 6 WITH A NEW 175E FUSE.
2. SEE DWG. E-11 FOR A COMPLETE ONE-LINE DIAGRAM FOR THE MDS.

WIRING LEGEND

(1) 3#2/0, #2 GRD. 15KV CABLE. RUN IN EXISTING 4"C TO MANHOLE MH-E AND IN NEW DUCT BANK CONDUIT NO. 1 TO 15KV PAD-MOUNTED SWITCHGEAR

(2) 3#2, #2 GRD. 15KV CABLE. RUN IN DUCT BANK CONDUIT NO. 3 TO EXISTING MANHOLE MH-E AND IN EXISTING 4"C FROM MH-E TO TRANSFORMER T-A

(3) 3#2, #2 GRD. 15KV CABLE. RUN IN DUCT BANK CONDUIT NO. 5

(4) 8 SETS OF 4#500MCM, #3/0 GRD. RUN IN DUCT BANK CONDUIT NOS. 10-17

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KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER AND SOLIDS BUILDING PROPOSED ONE-LINE DIAGRAM
OCTOBER 2025 E-10

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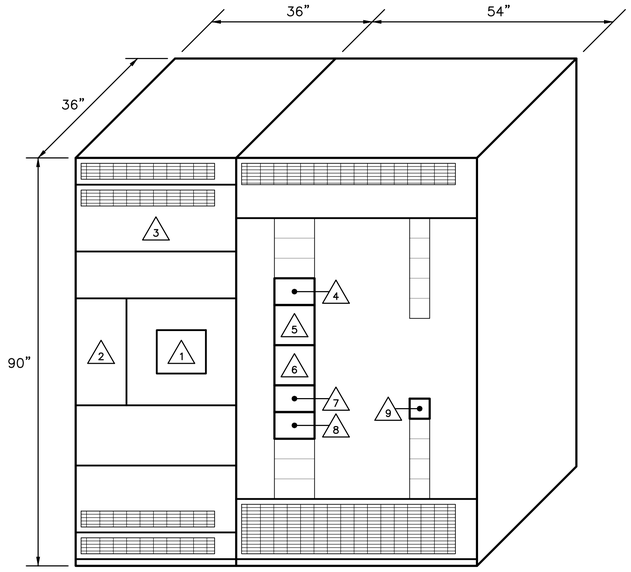


MAIN DISTRIBUTION SWITCHBOARD ELEVATION

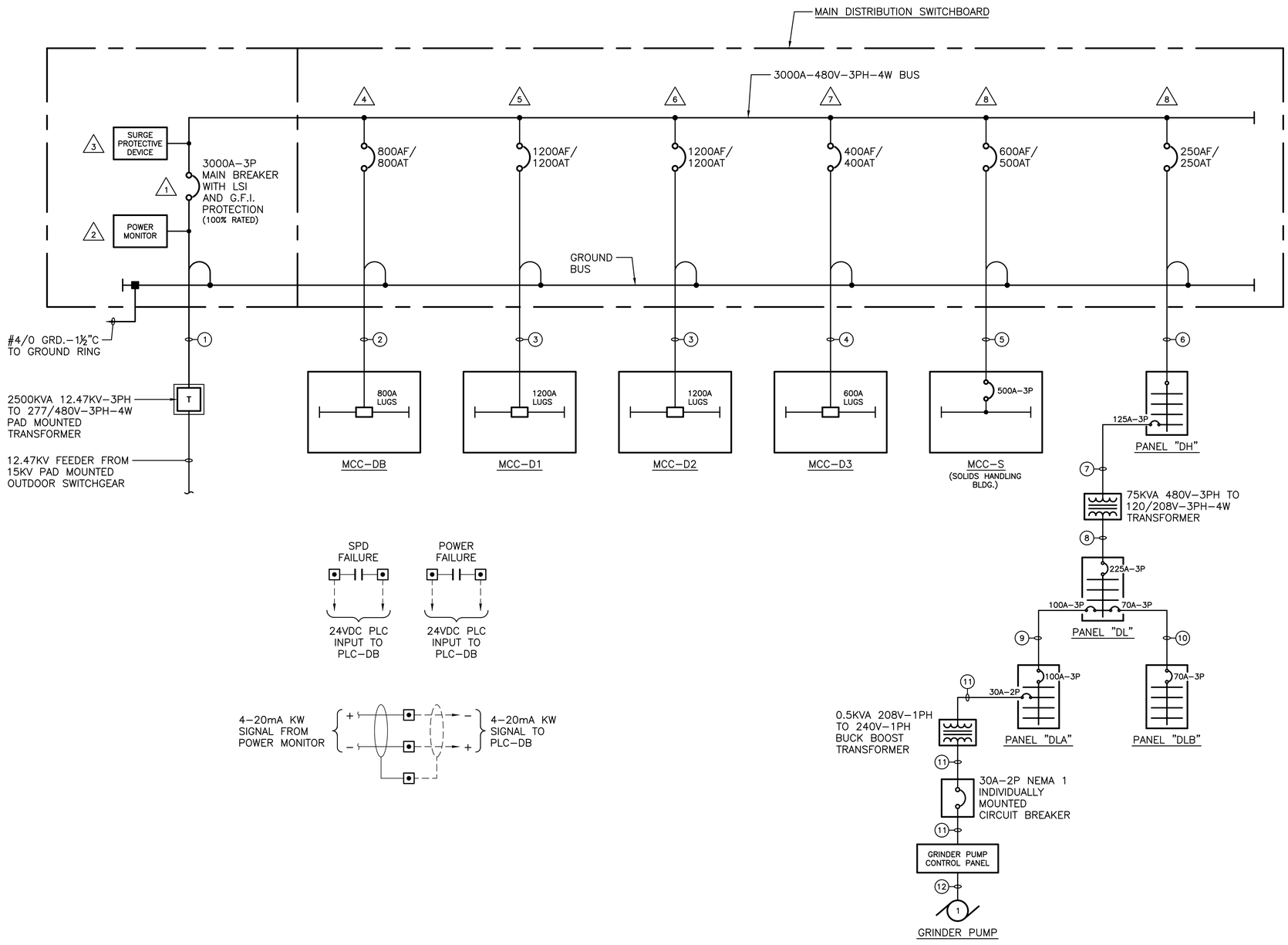
NOTES

1. THE MAIN DISTRIBUTION SWITCHBOARD ONE–LINE DIAGRAM IS NOT INTENDED TO SHOW ALL MCC EQUIPMENT. SEE PCS DRAWINGS FOR COMPLETE MCC ONE–LINE DIAGRAM.
2. PROVIDE THE REQUIRED NUMBER AND SIZE OF LUGS IN THE SWITCHBOARD TO TERMINATE THE WIRING SHOWN ON THE ONE–LINE DIAGRAMS.

WIRING LEGEND

1. 8 SETS OF 4#500MCM, #3/0 GRD.–4"C PLUS (2) SPARE 4"C
2. 2 SETS OF 3#500MCM, #1/0 GRD.–4"C
3. 4 SETS OF 3#350MCM, #3/0 GRD.–3"C
4. 3#500MCM, #3 GRD.–3"C
5. 2 SETS OF 4#300MCM, #1 GRD. RUN IN DUCT BANK CONDUIT NOS. 30 AND 31
6. 4#250MCM, #4 GRD.–3"C
7. 3#1, #6 GRD.–1½"C
8. 4#4/0, #4 GRD.–2½"C
9. 4#3, #8 GRD.–1¼"C
10. 4#4, #8 GRD.–1¼"C
11. 3#10, #10 GRD.–3/4"C
12. PUMP CABLE

UNIT LOCATION	DESCRIPTION
1	3000A MAIN BREAKER
2	POWER MONITOR
3	SURGE PROTECTIVE DEVICE
4	MCC–DB
5	MCC–D1
6	MCC–D2
7	MCC–D3
8	MCC–S
9	PANEL "DH"



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APPROVED DATE
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KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
MAIN DISTRIBUTION SWITCHBOARD
OCTOBER 2025
E–11

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NOTES

1. THE DRYER ROOM IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IN THE DRYER ROOM SHALL MEET THIS CLASSIFICATION.
2. ALL CONDUIT IN THE DRYER BUILDING SHALL BE ROUTED ALONG THE WALLS AND SUPPORTED FROM THE BUILDING COLUMNS.
3. THE FILTRATE/CONDENSATE PUMP STATION PULL BOX SHALL BE NEMA 4X ALUMINUM, SIZE: 24"H x 30"W x 18"D. MOUNT PULL BOX ON STAINLESS STEEL UNI-STRUT.
4. ALL RECEPTACLES SHALL BE WP, G.F.I.
5. MOUNT RECEPTACLES 36" ABOVE FINISHED FLOOR ON AN ALUMINUM BACKBOARD FASTENED TO STAINLESS STEEL UNI-STRUT UNLESS NOTED OTHERWISE. COORDINATE EXACT LOCATIONS WITH PROCESS EQUIPMENT AND PIPING.
6. MOUNT RECEPTACLES 36" ABOVE GRATING ON AN ALUMINUM BACKBOARD FASTENED TO THE HANDRAIL. COORDINATE EXACT LOCATION WITH PROCESS EQUIPMENT AND PIPING.

WIRING LEGEND

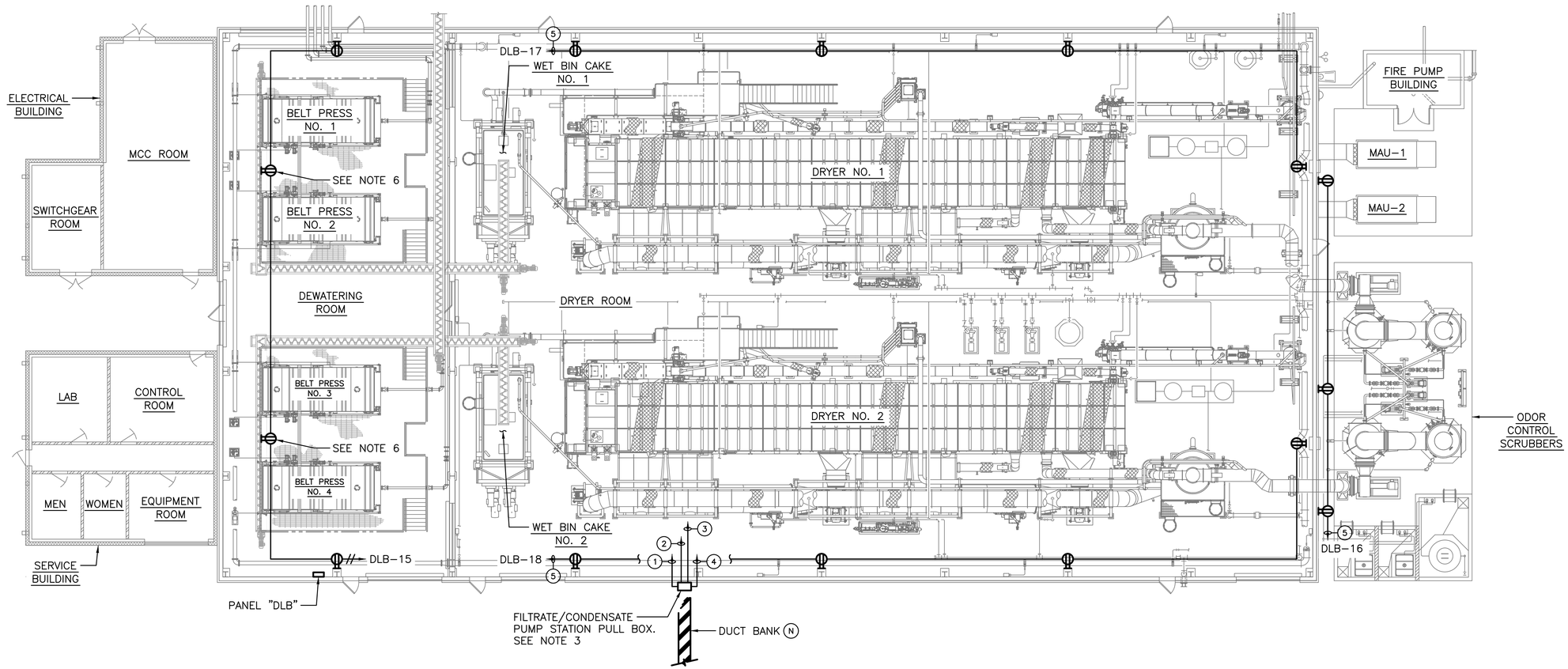
(1) (3) 2"C TO MCC-DB FOR FILTRATE PUMP MOTOR FEEDERS

(2) 2"C TO PANEL "DLB" FOR 120V POWER WIRING

(3) 1¼"C TO MCC-DB FOR 120V CONTROL WIRING

(4) 1¼"C TO DRYER BUILDING PLC PANEL FOR INSTRUMENTATION WIRING

(5) 2#10, #10 GRD.-3/4"C TO PANEL "DLB"



NORTH

DRYER BUILDING
OVERALL ELECTRICAL PLAN

3/32"=1'-0" 8' 4' 0 8' 16' 24'

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		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	DRYER BUILDING OVERALL ELECTRICAL PLAN
APPROVED DATE		SHEET NO.: 122 of 191	OCTOBER 2025 E-12
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	

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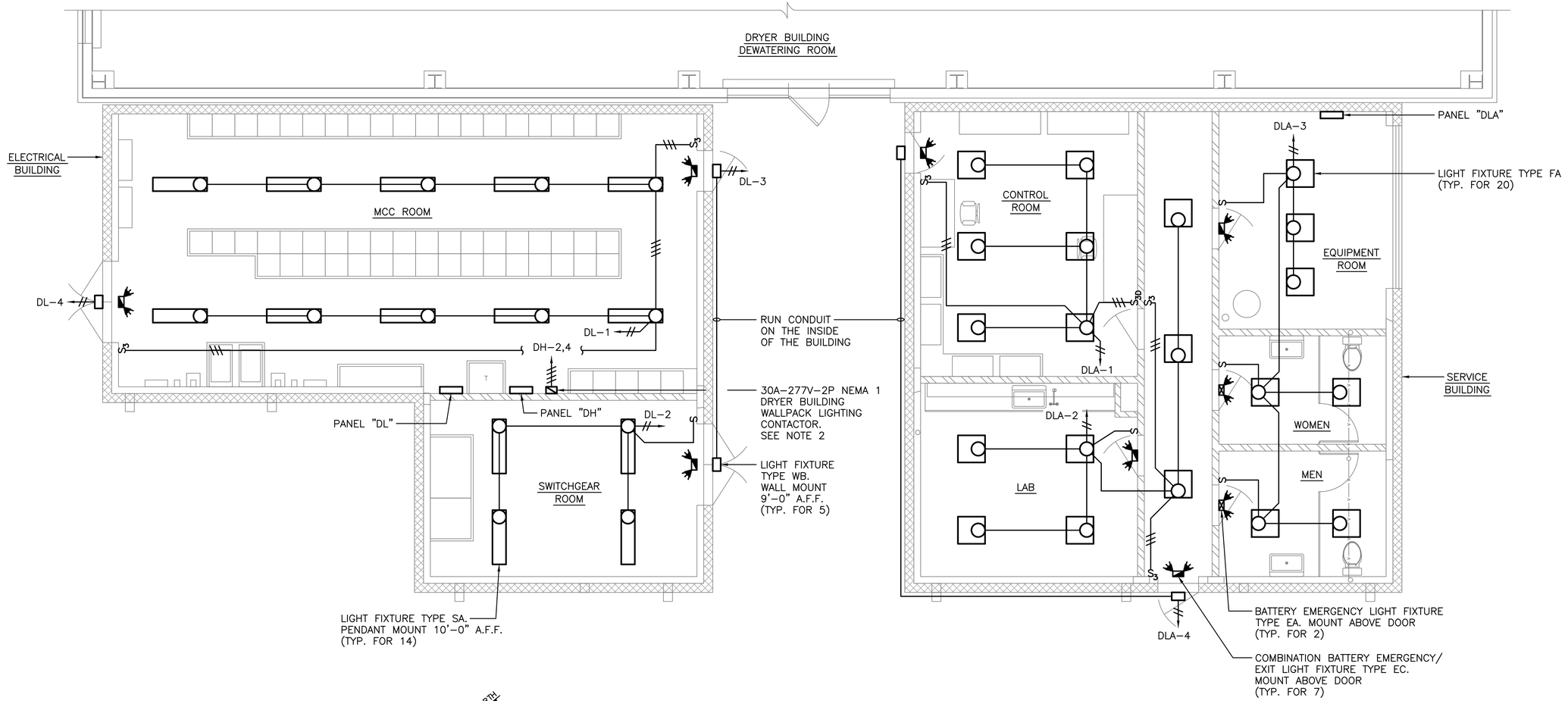
NOTES

1. ALL EMERGENCY LIGHTS AND EXIT FIXTURES SHALL BE WIRED TO LIGHTING CIRCUIT IN ROOM WHERE THEY ARE LOCATED AHEAD OF ALL SWITCHES.

2. PROVIDE AN ENGRAVED NAMEPLATE ON THE LIGHTING CONTACTOR WHICH READS:

   DRYER BUILDING WALLPACK LIGHTING CONTACTOR



NORTH

DRYER ELECTRICAL BUILDING AND SERVICE BUILDING LIGHTING PLAN

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

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DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	DRYER ELECTRICAL AND SERVICE BUILDINGS LIGHTING PLAN
APPROVED DATE		SHEET NO.: 123 of 191	OCTOBER 2025 E-13
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	

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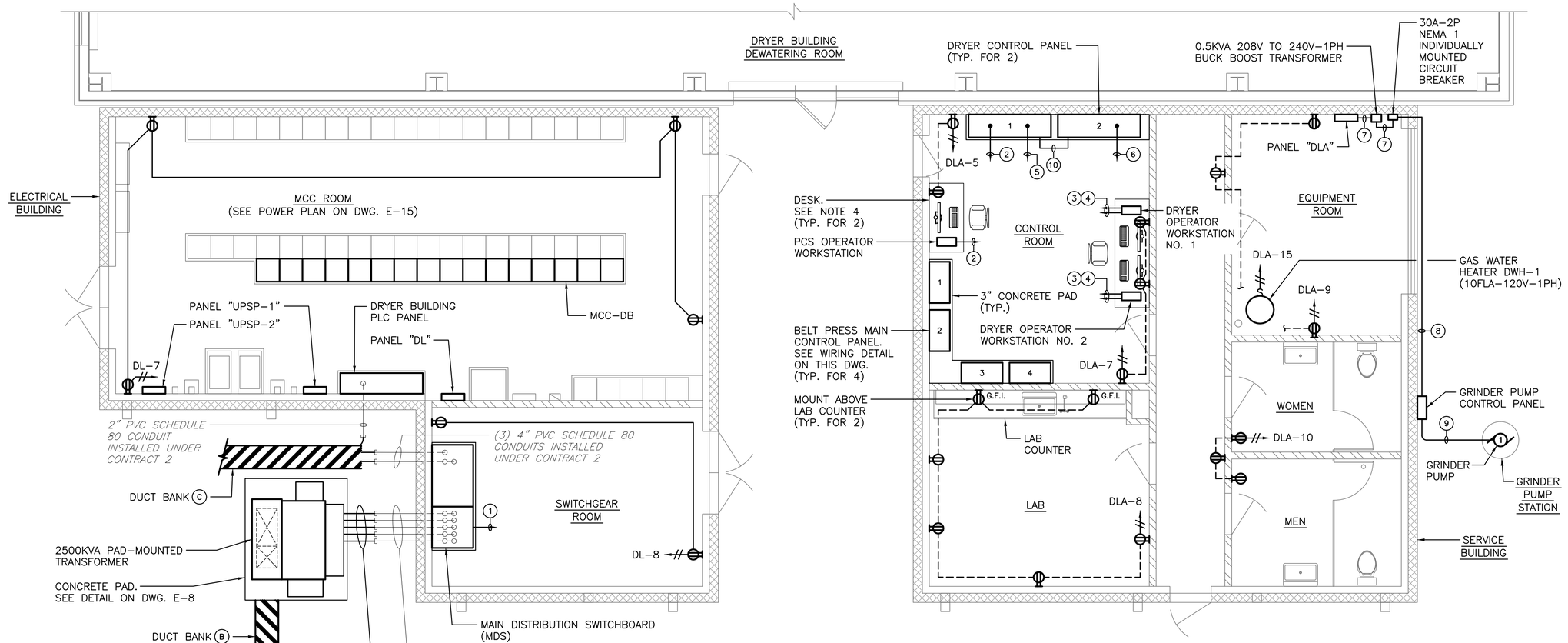


NOTES

1. THE DRYER CONTROL PANELS ARE BEING FURNISHED BY ANDRITZ FOR INSTALLATION BY THE CONTRACTOR.
2. THE BELT PRESS MAIN CONTROL PANELS ARE BEING FURNISHED BY BDP FOR INSTALLATION BY THE CONTRACTOR.
3. SEE MDS ONE–LINE DIAGRAM ON DWG. E–11 FOR ADDITIONAL POWER WIRING.
4. PROVIDE A DESK SIZED TO ACCOMMODATE WORKSTATIONS.

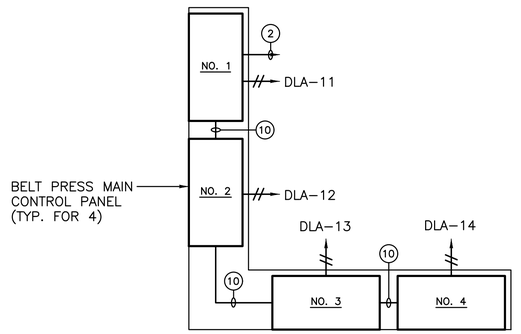
WIRING LEGEND

1. 4#14 AND 1 PR. #18 SHLD.–3/4"C (24VDC) TO DRYER BUILDING PLC PANEL
2. ETHERNET CABLE–3/4"C TO DRYER BUILDING PLC PANEL
3. ETHERNET CABLE–3/4"C TO DRYER NO. 1 CONTROL PANEL
4. ETHERNET CABLE–3/4"C TO DRYER NO. 2 CONTROL PANEL
5. 2#12–3/4"C TO PANEL "UPSP–1"
6. 2#12–3/4"C TO PANEL "UPSP–2"
7. 3#10, #10 GRD.–3/4"C
8. 3#10, #10 GRD.–3/4"C. RUN UNDERGROUND TO CONTROL PANEL
9. PUMP POWER/CONTROL CABLE
10. ETHERNET CABLE–3/4"C

NORTH

DRYER ELECTRICAL BUILDING AND SERVICE BUILDING POWER PLAN

1/4"=1'–0" (4' 2' 0 4' 8')



BELT PRESS MAIN CONTROL PANELS WIRING DETAIL

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DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	DRYER ELECTRICAL AND SERVICE BUILDINGS POWER PLAN
APPROVED DATE		SHEET NO.: 124 of 191	OCTOBER 2025 E–14
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	

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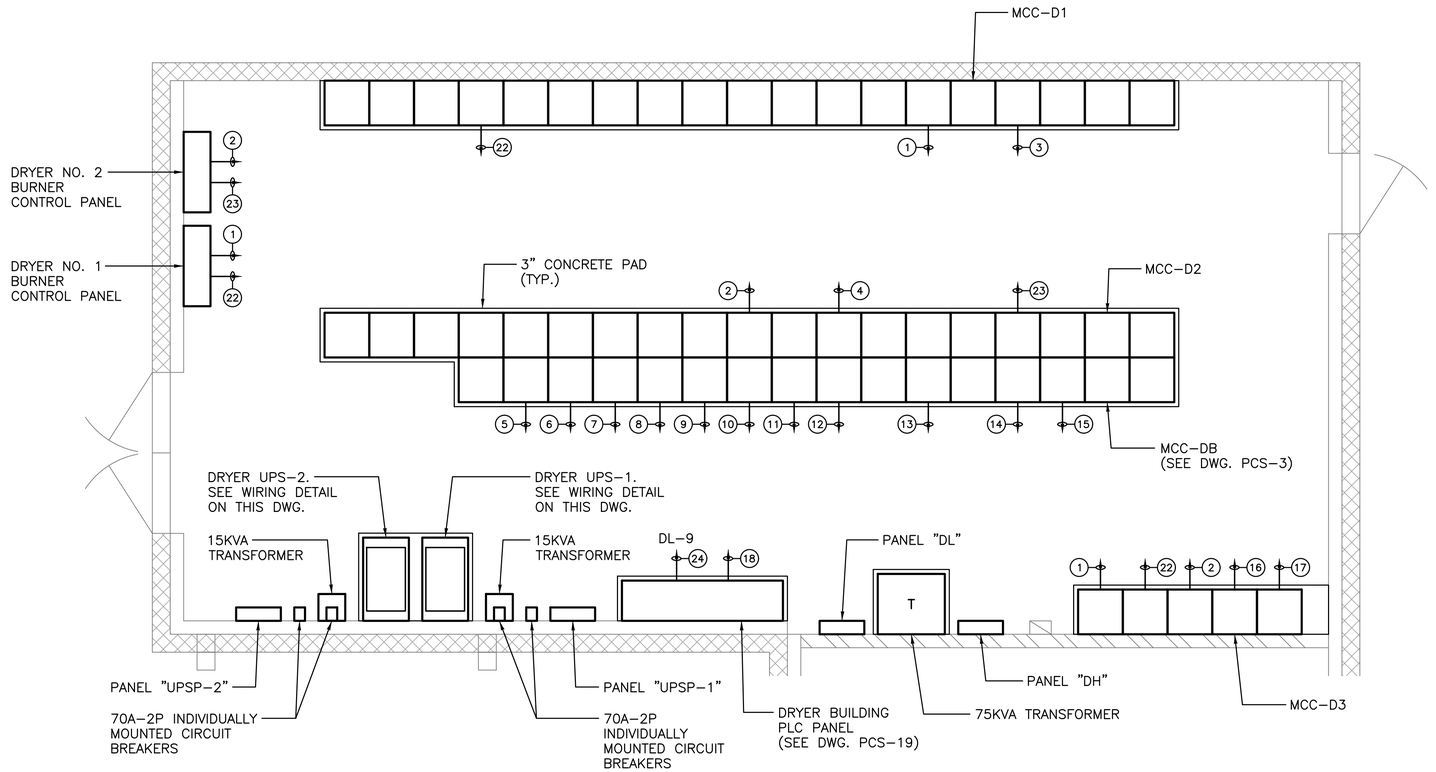
NOTES

1. MCC–D1, MCC–D2, MCC–D3, AND THE DRYER BURNER CONTROL PANELS ARE BEING FURNISHED BY ANDRITZ FOR INSTALLATION BY THE CONTRACTOR.
2. SEE MDS ONE–LINE DIAGRAM ON DWG. E–11 FOR ADDITIONAL POWER WIRING.
3. ALL ELECTRICAL EQUIPMENT SHOWN ON THE DRYER UPS SYSTEM WIRING DETAIL IS BEING FURNISHED BY ANDRITZ FOR INSTALLATION BY THE CONTRACTOR.

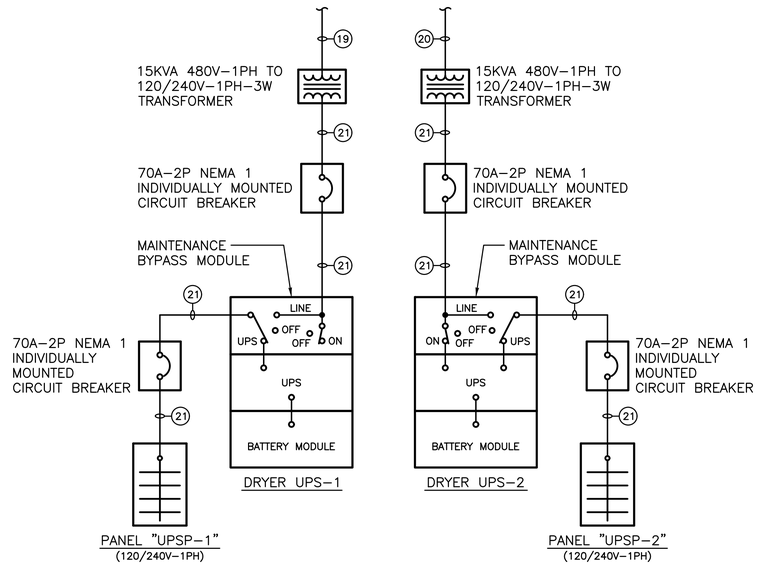


DRYER ELECTRICAL BUILDING MCC ROOM POWER PLAN

3/8"=1'–0" 24" 12" 0 2' 4' 6'

WIRING LEGEND

1. ETHERNET CABLE–3/4"C TO DRYER NO. 1 CONTROL PANEL
2. ETHERNET CABLE–3/4"C TO DRYER NO. 2 CONTROL PANEL
3. 110#14–3"C TO DRYER NO. 1 CONTROL PANEL FOR E–STOP WIRING
4. 110#14–3"C TO DRYER NO. 2 CONTROL PANEL FOR E–STOP WIRING
5. 34#14–1½"C (120VAC) TO BELT PRESS NO. 1 MAIN CONTROL PANEL
6. 6#14 AND (6) 1 PR. #18 SHLD.–1½"C TO BELT PRESS NO. 1 MAIN CONTROL PANEL
7. 34#14–1½"C (120VAC) TO BELT PRESS NO. 2 MAIN CONTROL PANEL
8. 6#14 AND (6) 1 PR. #18 SHLD.–1½"C TO BELT PRESS NO. 2 MAIN CONTROL PANEL
9. 34#14–1½"C (120VAC) TO BELT PRESS NO. 3 MAIN CONTROL PANEL
10. 6#14 AND (6) 1 PR. #18 SHLD.–1½"C TO BELT PRESS NO. 3 MAIN CONTROL PANEL
11. 34#14–1½"C (120VAC) TO BELT PRESS NO. 4 MAIN CONTROL PANEL
12. 6#14 AND (6) 1 PR. #18 SHLD.–1½"C TO BELT PRESS NO. 4 MAIN CONTROL PANEL
13. 86#14–3"C (24VDC) TO DRYER BUILDING PLC PANEL
14. 42#14–2"C (120VAC) TO DRYER BUILDING PLC PANEL
15. (6) 1 PR. #18 SHLD.–1½"C TO DRYER BUILDING PLC PANEL
16. 4#14–3/4"C TO DRYER NO. 1 CONTROL PANEL FOR E–STOP WIRING
17. 4#14–3/4"C TO DRYER NO. 2 CONTROL PANEL FOR E–STOP WIRING
18. 6–STRAND FIBER OPTIC CABLE TO THE SOLIDS HANDLING BUILDING PLC PANEL. RUN IN DUCT BANK CONDUIT NO. 200
19. 2#8, #10 GRD.–1"C TO MCC–D1
20. 2#8, #10 GRD.–1"C TO MCC–D2
21. 3#4, #8 GRD.–1¼"C
22. 2#12–3/4"C TO PANEL "UPSP–1"
23. 2#12–3/4"C TO PANEL "UPSP–2"
24. 2#10, #10 GRD.–3/4"C TO PANEL "DL"



DRYER UPS SYSTEM WIRING DETAIL

(SEE NOTE 3)

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KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER ELECTRICAL BUILDING MCC ROOM POWER PLAN
OCTOBER 2025 E–15

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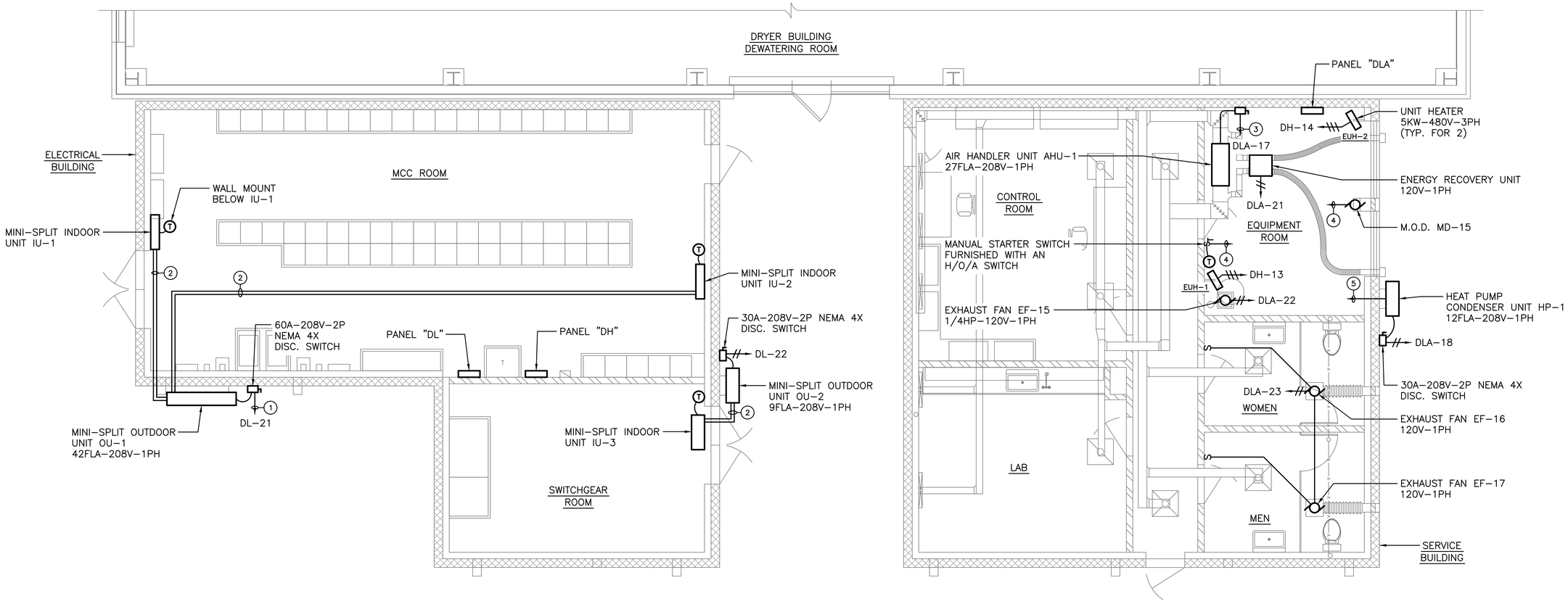
WIRING LEGEND

1. 2#6, #10 GRD.–1"C TO PANEL "DL"
2. (2) 3/4"C FOR POWER AND CONTROL WIRING TO MINI–SPLIT INDOOR UNIT. COORDINATE WIRING REQUIREMENTS WITH SYSTEM MANUFACTURER
3. 2#8, #10 GRD.–1"C TO PANEL "DLA"
4. 2#12–3/4"C TO EXHAUST FAN EF–15
5. 3/4"C FOR WIRING TO AIR HANDLER UNIT AHU–1. COORDINATE WIRING REQUIREMENTS WITH SYSTEM MANUFACTURER



NORTH

DRYER ELECTRICAL BUILDING AND SERVICE BUILDING
HVAC ELECTRICAL PLAN

1/4"=1'–0" 4' 2' 0 4' 8'

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APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		DRAWN BY: SMJ CHECKED BY: DTB SHEET NO.: 126 of 191 PROJECT NO.: 50.1890.97–A	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3 DRYER ELECTRICAL AND SERVICE BUILDINGS HVAC ELEC. PLAN OCTOBER 2025 E–16

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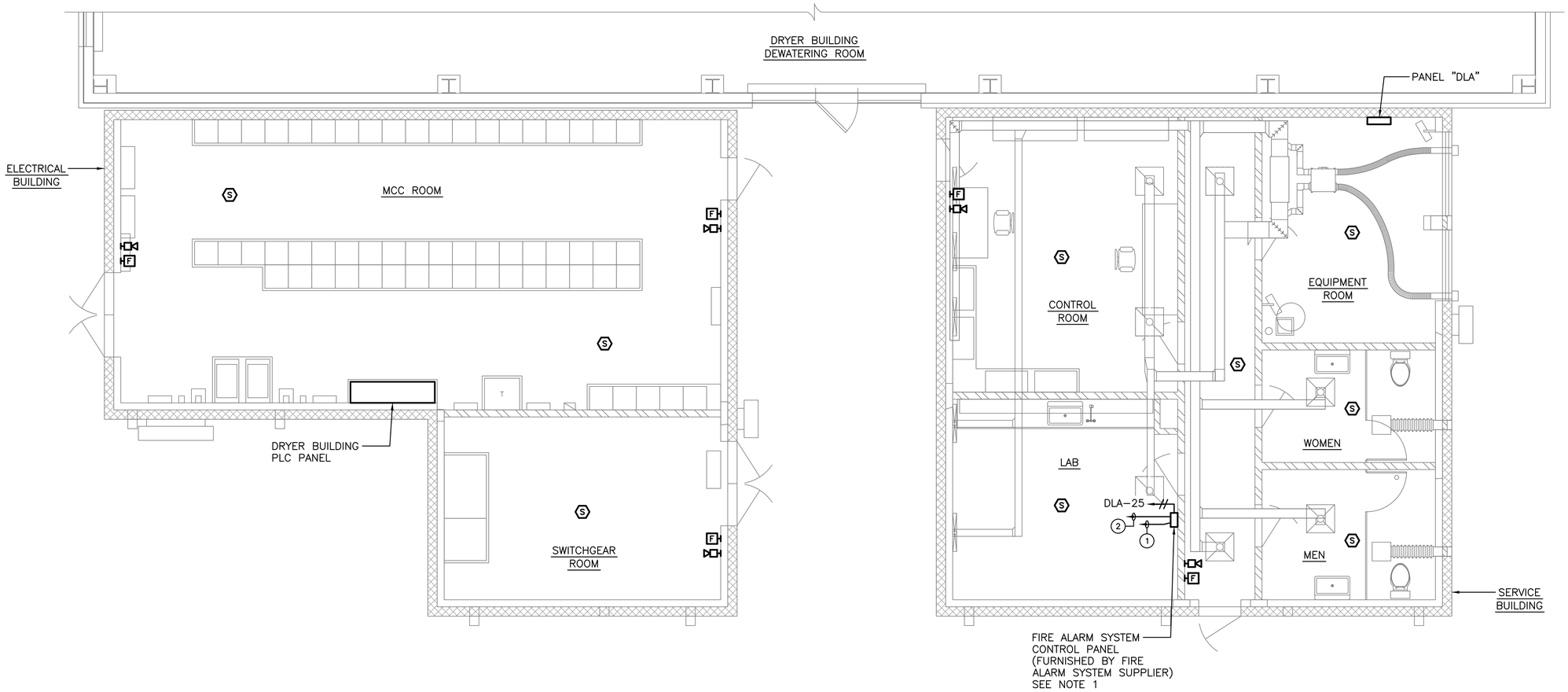
NOTES

1. CONTRACTOR SHALL WIRE FIRE ALARM SYSTEM EQUIPMENT AS REQUIRED BY THE FIRE ALARM SYSTEM MANUFACTURER.

WIRING LEGEND

(1) 2#14–3/4"C TO DRYER BUILDING PLC PANEL

(2) (2) TELEPHONE LINES TO COMMUNICATIONS BACKBOARD IN ADMINISTRATION BUILDING. RUN IN 1"C TO EXISTING HANDHOLE AND IN EXISTING SITE CONDUIT TO BUILDING



NORTH

DRYER ELECTRICAL BUILDING AND SERVICE BUILDING
FIRE ALARM SYSTEM PLAN

1/4"=1'–0" 4' 2' 0 4' 8'

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APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

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SHEET NO.: 127 of 191
PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER ELECTRICAL AND SERVICE FIRE ALARM SYSTEM PLAN
OCTOBER 2025 E–17

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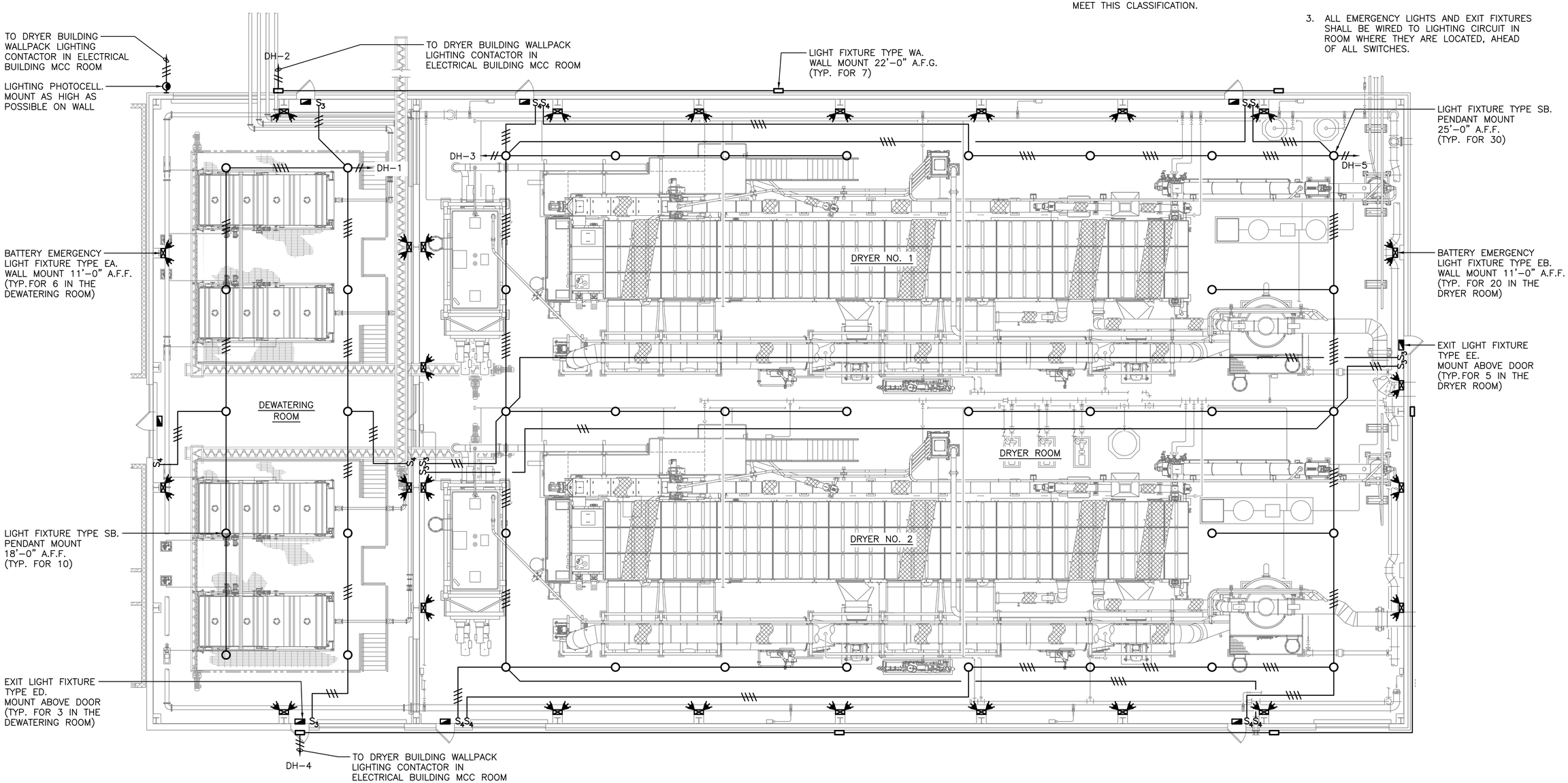
NOTES

1. THE DRYER ROOM IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IN THE DRYER ROOM SHALL MEET THIS CLASSIFICATION.
2. COORDINATE THE INSTALLATION OF THE LIGHT FIXTURES WITH PROCESS EQUIPMENT AND PIPING, MECHANICAL EQUIPMENT, AND STRUCTURAL BEAMS TO AVOID INTERFERENCES.
3. ALL EMERGENCY LIGHTS AND EXIT FIXTURES SHALL BE WIRED TO LIGHTING CIRCUIT IN ROOM WHERE THEY ARE LOCATED, AHEAD OF ALL SWITCHES.



NORTH

DRYER BUILDING LIGHTING PLAN

1/8"=1'-0" 8' 4' 0 8' 16'

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APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: AS SHOWN
DRAWN BY: SMJ
CHECKED BY: DTB
SHEET NO.: 128 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER BUILDING LIGHTING PLAN
OCTOBER 2025 E-18

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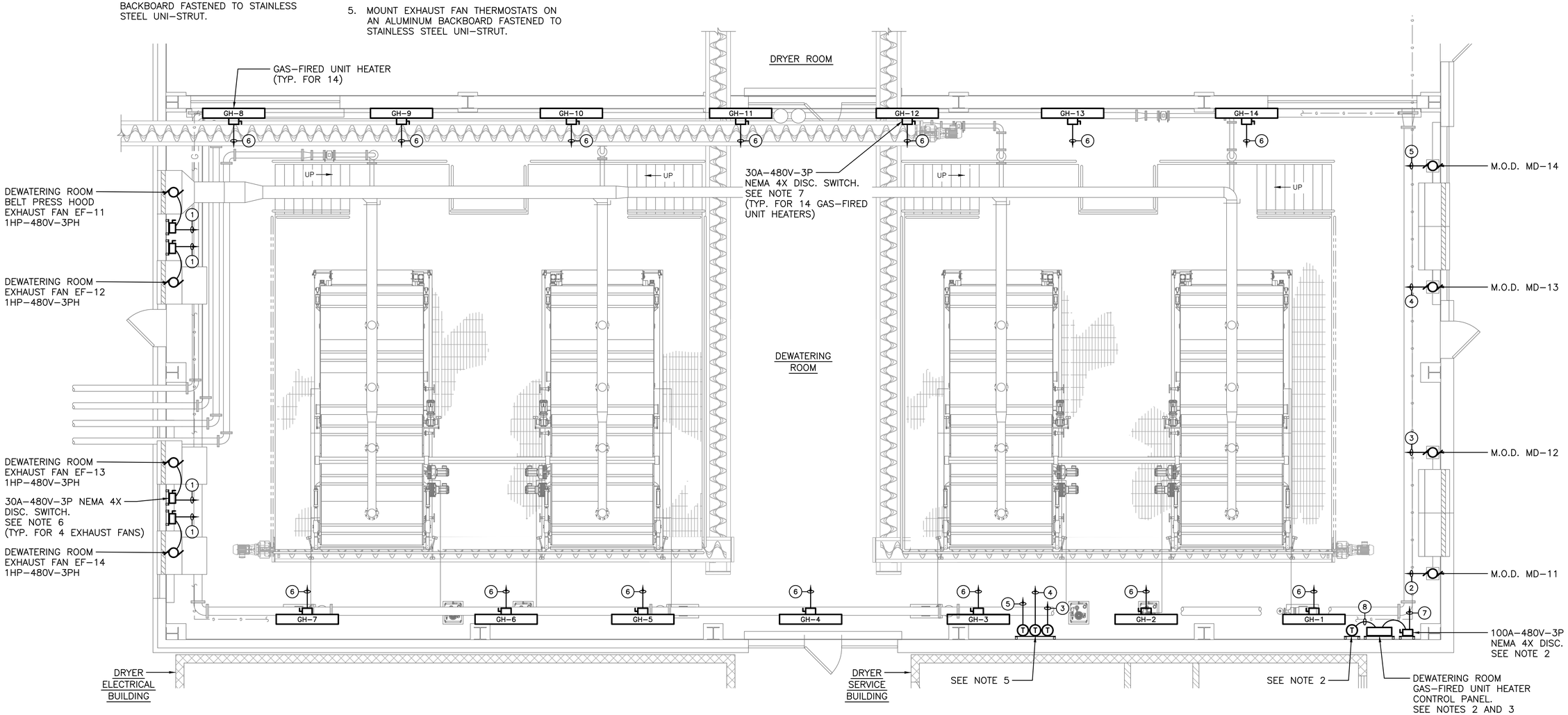
NOTES

1. THE DRYER ROOM IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IN THE DRYER ROOM SHALL MEET THIS CLASSIFICATION.
2. MOUNT DISCONNECT SWITCH, GAS–FIRED UNIT HEATER CONTROL PANEL, AND THERMOSTAT ON AN ALUMINUM BACKBOARD FASTENED TO STAINLESS STEEL UNI–STRUT.
3. GAS–FIRED UNIT HEATER CONTROL PANEL SHALL BE NEMA 4X STAINLESS STEEL. CONTROL PANEL SHALL BE FURNISHED BY THE HEATER MANUFACTURER.
4. COORDINATE WIRING FOR THE GAS–FIRED UNIT HEATERS WITH THE HEATER MANUFACTURER.
5. MOUNT EXHAUST FAN THERMOSTATS ON AN ALUMINUM BACKBOARD FASTENED TO STAINLESS STEEL UNI–STRUT.
6. MOUNT EXHAUST FAN DISCONNECT SWITCHES ON AN ALUMINUM BACKBOARD FASTENED TO STAINLESS STEEL UNI–STRUT.
7. MOUNT UNIT HEATER DISCONNECT SWITCHES ON AN ALUMINUM BACKBOARD FASTENED TO STAINLESS STEEL UNI–STRUT. EXACT LOCATION OF DISCONNECT SWITCHES TO BE DETERMINED IN THE FIELD.

WIRING LEGEND

1. 3#12–3/4"C TO MCC–DB
2. 2#14–3/4"C TO EF–11 MOTOR STARTER IN MCC–DB
3. 2#14–3/4"C TO EF–12 MOTOR STARTER IN MCC–DB
4. 2#14–3/4"C TO EF–13 MOTOR STARTER IN MCC–DB
5. 2#14–3/4"C TO EF–14 MOTOR STARTER IN MCC–DB
6. 3#12–3/4"C TO DEWATERING ROOM GAS–FIRED UNIT HEATER CONTROL PANEL
7. 3#3, #8 GRD.–1¼"C TO MCC–DB
8. 2#14–3/4"C



DEWATERING ROOM HVAC ELECTRICAL PLAN

1/4"=1'–0" (4' 2' 0 4' 8')

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APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
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KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DEWATERING ROOM HVAC ELECTRICAL PLAN
OCTOBER 2025 E–19

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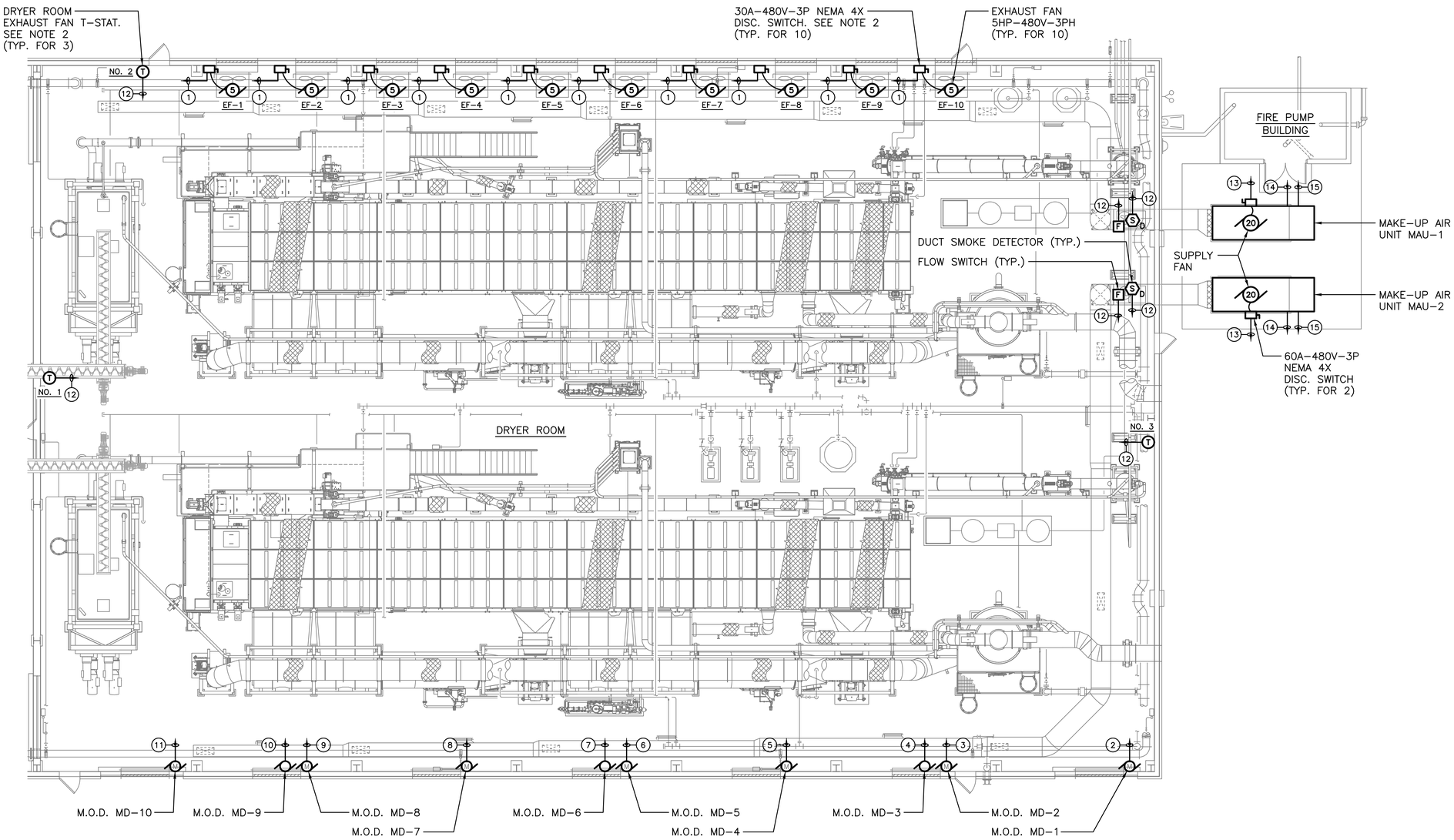

NORTH

DRYER ROOM
HVAC ELECTRICAL PLAN

1/8"=1'-0" 8' 4' 0 8' 16'

NOTES

1. THE DRYER ROOM IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IN THE DRYER ROOM SHALL MEET THIS CLASSIFICATION.
2. MOUNT THE EXHAUST FAN DISCONNECT SWITCHES AND THERMOSTATS ON AN ALUMINUM BACKBOARD FASTENED TO STAINLESS STEEL UNI-STRUT. THE EXACT MOUNTING LOCATION SHALL BE COORDINATED IN THE FIELD.

WIRING LEGEND

(1) 3#10, #10 GRD.-3/4"C TO MCC-DB
(2) 2#14-3/4"C TO EF-1 MOTOR STARTER IN MCC-DB
(3) 2#14-3/4"C TO EF-2 MOTOR STARTER IN MCC-DB
(4) 2#14-3/4"C TO EF-3 MOTOR STARTER IN MCC-DB
(5) 2#14-3/4"C TO EF-4 MOTOR STARTER IN MCC-DB
(6) 2#14-3/4"C TO EF-5 MOTOR STARTER IN MCC-DB
(7) 2#14-3/4"C TO EF-6 MOTOR STARTER IN MCC-DB
(8) 2#14-3/4"C TO EF-7 MOTOR STARTER IN MCC-DB
(9) 2#14-3/4"C TO EF-8 MOTOR STARTER IN MCC-DB
(10) 2#14-3/4"C TO EF-9 MOTOR STARTER IN MCC-DB
(11) 2#14-3/4"C TO EF-10 MOTOR STARTER IN MCC-DB
(12) 2#14-3/4"C (24VDC) DRYER BUILDING PLC PANEL
(13) 3#4, #6 GRD.-1¼"C TO MCC-DB
(14) 10#14 AND (2) 1 PR. #18 SHLD.-1½"C TO DRYER BUILDING PLC PANEL
(15) 2#14-3/4"C (24VAC) TO DRYER BUILDING PLC PANEL

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		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	DRYER ROOM HVAC ELECTRICAL PLAN
APPROVED DATE		SHEET NO.: 130 of 191	OCTOBER 2025 E-20
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	

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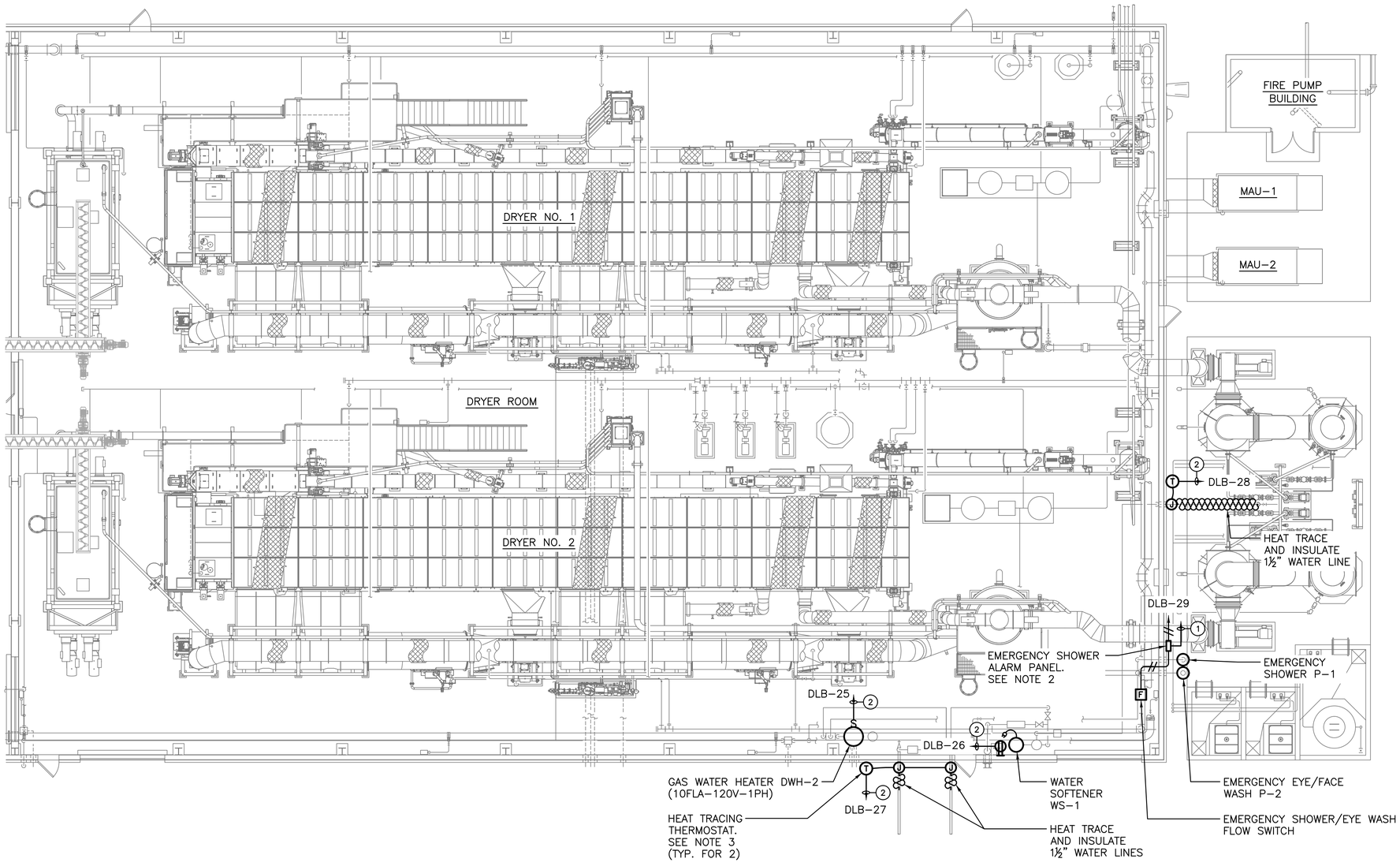

NOTES

1. THE DRYER ROOM IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IN THE DRYER ROOM SHALL MEET THIS CLASSIFICATION.
2. MOUNT ALARM PANEL ON AN ALUMINUM BACKBOARD SUPPORTED BY STAINLESS STEEL UNI-STRUT.
3. MOUNT HEAT TRACING THERMOSTAT ON AN ALUMINUM BACKBOARD SUPPORTED BY STAINLESS STEEL UNI-STRUT.

WIRING LEGEND

(1) 2#14-3/4"C (24VDC) TO DRYER BUILDING PLC PANEL

(2) 2#10, #10 GRD.-3/4"C TO PANEL "DLB"

NORTH

DRYER ROOM
PLUMBING ELECTRICAL PLAN

1/8"=1'-0" 8' 4' 0 8' 16'

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APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
		CHECKED BY: DTB	DRYER ROOM PLUMBING ELECTRICAL PLAN
		SHEET NO.: 131 of 191	OCTOBER 2025 E-21
		PROJECT NO.: 50.1890.97-A	

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NOTES

1. THE DRYER ROOM IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IN THE DRYER ROOM SHALL MEET THIS CLASSIFICATION.
2. MOUNT BELT PRESS LOCAL CONTROL PANELS ON AN ALUMINUM BACKBOARD FASTENED TO STAINLESS STEEL UNI-STRUT. TOP OF PANEL SHALL BE 5'-6" ABOVE GRATING.
3. MOUNT FLOW METER TRANSMITTERS ON AN ALUMINUM BACKBOARD FASTENED TO STAINLESS STEEL UNI-STRUT. TOP OF TRANSMITTER SHALL BE 5'-0" ABOVE GRATING.
4. MOUNT DISCONNECT SWITCHES AND GATE CONTROL PANELS ON AN ALUMINUM BACKBOARD FASTENED TO STAINLESS STEEL UNI-STRUT.
5. THE LOCATION OF THE INCLINED CAKE CONVEYOR AND INCLINED CAKE CONVEYOR DISCHARGE GATE DISCONNECT SWITCHES SHALL BE DETERMINED IN THE FIELD.
6. PANEL "DLB" SHALL BE FURNISHED IN A NEMA 4X STAINLESS STEEL ENCLOSURE. MOUNT PANEL ON AN ALUMINUM BACKBOARD SUPPORTED BY STAINLESS STEEL UNI-STRUT.

WIRING LEGEND

1. 16#14-1¼"C TO BELT PRESS MAIN CONTROL PANEL LOCATED IN SERVICE BUILDING CONTROL ROOM
2. 2#14-3/4"C TO BELT PRESS LOCAL CONTROL PANEL
3. 12#12, 4#12 GRD.-1¼"C TO MCC-DB
4. 10#14-3/4"C TO BELT PRESS MAIN CONTROL PANEL
5. ETHERNET CABLE-3/4"C TO BELT PRESS MAIN CONTROL PANEL
6. 3#12-3/4"C TO MCC-DB
7. 3#10, #10 GRD.-3/4"C TO MCC-DB
8. 7#14-3/4"C TO BELT PRESS MAIN CONTROL PANEL
9. 2#14-3/4"C TO BELT PRESS MAIN CONTROL PANEL
10. 1 PR. #18 SHLD.-3/4"C TO DRYER BUILDING PLC PANEL
11. 4#14-3/4"C (120VAC) TO DRYER BUILDING PLC PANEL
12. 2#14-3/4"C (120VAC) TO MCC-DB
13. 4#14-3/4"C (24VDC) TO DRYER BUILDING PLC PANEL
14. FLOW METER SIGNAL CABLES IN (2) 3/4"C
15. 7#14-3/4"C TO DISCHARGE GATE ACTUATOR
16. 6#14-3/4"C (24VDC) TO DRYER BUILDING PLC PANEL

30A-480V-3P NEMA 4X DISC. SWITCH. SEE NOTE 5 (TYP. FOR 2 INCLINED CAKE CONVEYORS AND 2 INCLINED CAKE CONVEYOR DISCHARGE GATES)
INCLINED CAKE CONVEYOR NO. 2
INCLINED CAKE CONVEYOR NO. 1
DRYER ROOM
FLOW METER TRANSMITTER. SEE NOTE 3 (TYP. FOR 4)
ZERO SPEED SWITCH FOR CAKE BIN BYPASS CONVEYOR IS LOCATED IN THE SOLIDS PROCESSING BUILDING
4" MAGNETIC FLOW METER (BELT PRESS NO. 2 SLUDGE FLOW)
INCLINED CAKE CONVEYOR NO. 1 DISCHARGE GATE
INCLINED CAKE CONVEYOR NO. 2 DISCHARGE GATE
4" MAGNETIC FLOW METER (BELT PRESS NO. 3 SLUDGE FLOW)
4" MAGNETIC FLOW METER (BELT PRESS NO. 4 SLUDGE FLOW)
4" MAGNETIC FLOW METER (BELT PRESS NO. 1 SLUDGE FLOW)
BELT PRESS LOCAL CONTROL PANEL. SEE NOTE 2 (TYP. FOR EACH BELT PRESS)
CAKE BIN BYPASS CONVEYOR
INCLINED CAKE CONVEYOR NO. 1 DISCHARGE GATE CONTROL PANEL. SEE DWG. PCS-37 AND NOTE 4
INCLINED CAKE CONVEYOR NO. 2 DISCHARGE GATE CONTROL PANEL. SEE DWG. PCS-37 AND NOTE 4
480V JUNCTION BOX (TYP. FOR EACH BELT PRESS)
120V JUNCTION BOX (TYP. FOR EACH BELT PRESS)
ROLL-UP DOOR CONTROL STATION (TYP. FOR 6)
ROLL-UP DOOR OPERATOR (TYP. FOR 6)
EMERGENCY STOP LANYARD SWITCH (TYP. FOR EACH CONVEYOR)
PANEL "DLB". SEE NOTE 6
DEWATERING ROOM
ZERO SPEED SWITCH (TYP. FOR EACH CONVEYOR)
HORIZONTAL CAKE CONVEYOR NO. 1
HORIZONTAL CAKE CONVEYOR NO. 2
WASH WATER LOW PRESSURE SWITCH (TYP. FOR 4)
WASH WATER VALVE (TYP. FOR 4)
HYDRAULIC SYSTEM LOW PRESSURE SWITCH (TYP. FOR 4)
DRYER ELECTRICAL BUILDING
30A-480V-3P NEMA 4X DISC. SWITCH. SEE NOTE 4 (TYP. FOR 11)
BELT PRESS NO. 1 WASH WATER PUMP
BELT PRESS NO. 1 HYDRAULIC PUMP
BELT PRESS NO. 2 WASH WATER PUMP
BELT PRESS NO. 2 HYDRAULIC PUMP
BELT PRESS NO. 3 WASH WATER PUMP
BELT PRESS NO. 3 HYDRAULIC PUMP
BELT PRESS NO. 4 WASH WATER PUMP
BELT PRESS NO. 4 HYDRAULIC PUMP
DRYER SERVICE BUILDING
DLB-1
DLB-2
DLB-3
DLB-4
DLB-9
DLB-10
DLB-11
DLB-12
DLB-13
DLB-14
BELT PRESS NO. 1
BELT PRESS NO. 2
BELT PRESS NO. 3
BELT PRESS NO. 4
NORTH

DRYER BUILDING DEWATERING ROOM POWER PLAN

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

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APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

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KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER BUILDING DEWATERING ROOM POWER PLAN
OCTOBER 2025 E-22

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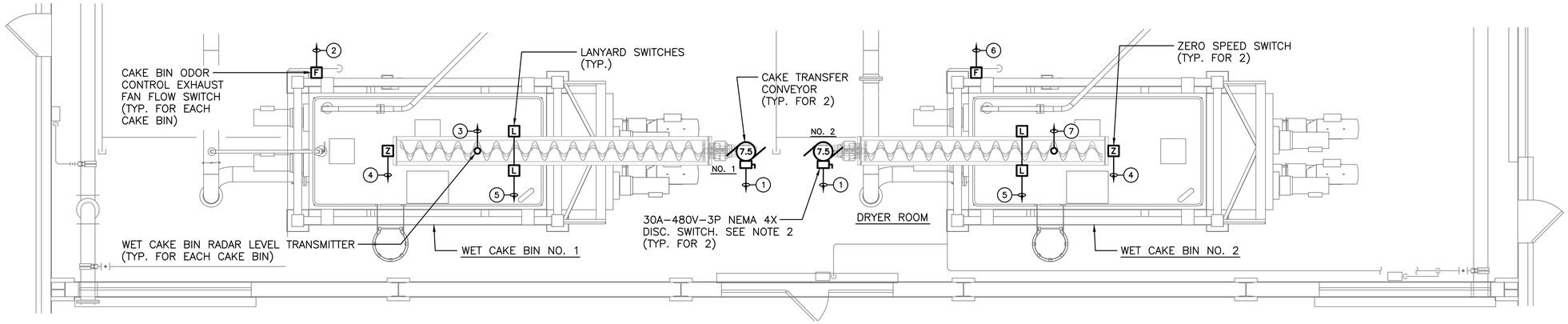
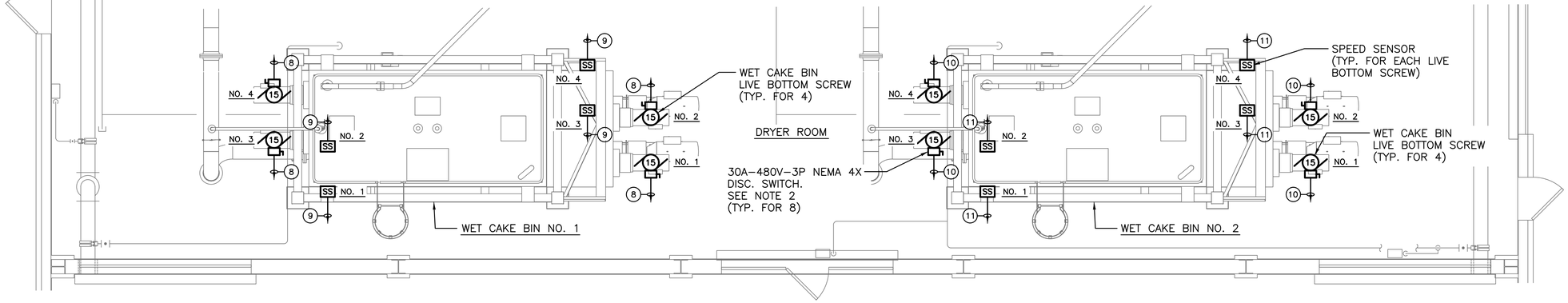


NORTH

WET CAKE BINS – TOP VIEW
ELECTRICAL PLAN

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



NORTH

WET CAKE BINS – LIVE BOTTOM SCREWS
ELECTRICAL PLAN

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

NOTES

1. THE DRYER ROOM IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IN THE DRYER ROOM SHALL MEET THIS CLASSIFICATION.
2. THE EXACT MOUNTING LOCATION FOR THE DISCONNECT SWITCHES SHALL BE COORDINATED IN THE FIELD.
3. THE POWER WIRING FOR THE WET CAKE BIN LIVE BOTTOM SCREWS SHALL BE TYPE RHH/RHW-2/USE-2.

WIRING LEGEND

(1) 3#10, #10 GRD.-3/4"C TO MCC-DB
(2) 2#14-3/4"C (24VDC) TO DRYER NO. 1 CONTROL PANEL
(3) 1 PR. #18 SHLD.-3/4"C TO DRYER NO. 1 CONTROL PANEL
(4) 4#14-3/4"C (120VAC) TO DRYER BUILDING PLC PANEL
(5) 2#14-3/4"C (120VAC) TO MCC-DB
(6) 2#14-3/4"C (24VDC) TO DRYER NO. 2 CONTROL PANEL
(7) 1 PR. #18 SHLD.-3/4"C TO DRYER NO. 2 CONTROL PANEL
(8) 3#8, #10 GRD.-1¼"C TO MCC-D1
(9) 3#14-3/4"C (120VAC) TO DRYER NO. 1 CONTROL PANEL
(10) 3#8, #10 GRD.-1¼"C TO MCC-D2
(11) 3#14-3/4"C (120VAC) TO DRYER NO. 2 CONTROL PANEL

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DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	WET CAKE BINS ELECTRICAL PLANS
APPROVED DATE		SHEET NO.: 133 of 191	OCTOBER 2025 E-23
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	

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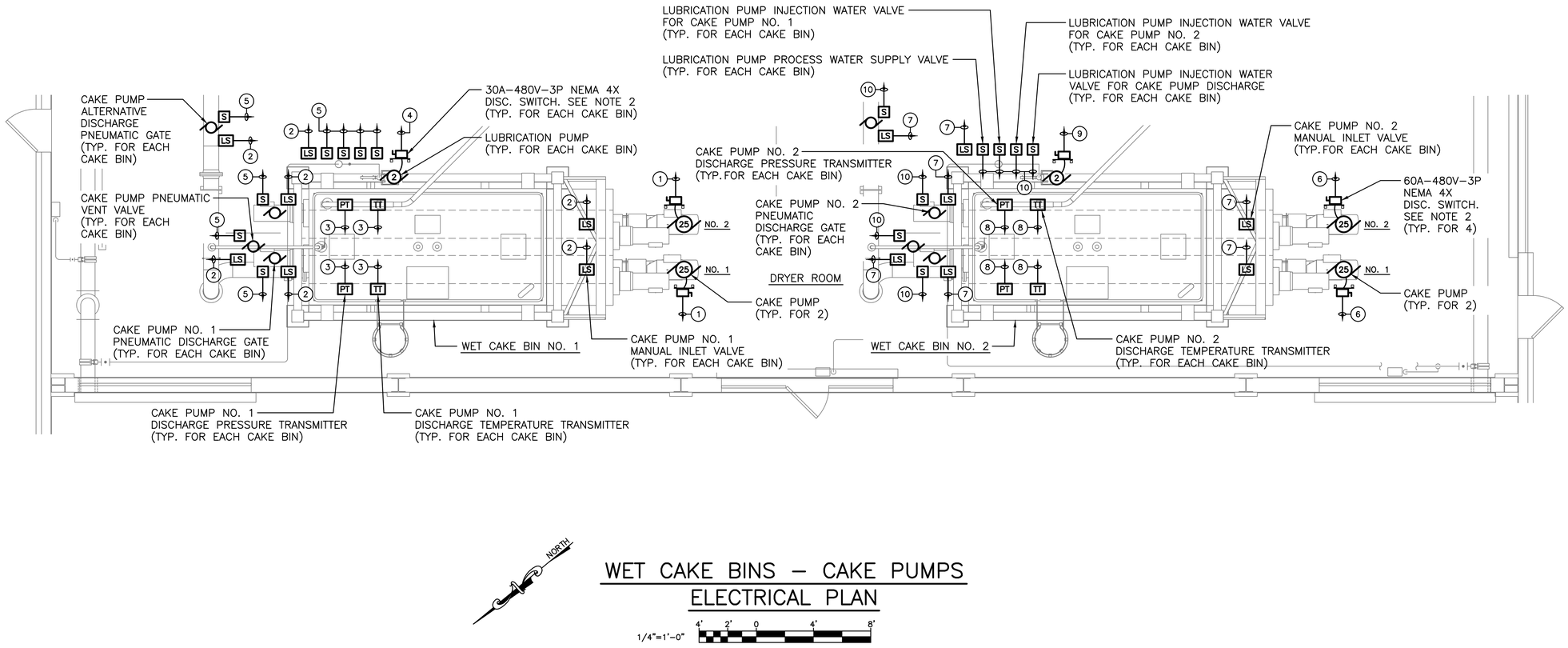

NOTES

1. THE DRYER ROOM IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IN THE DRYER ROOM SHALL MEET THIS CLASSIFICATION.
2. MOUNT DISCONNECT SWITCHES ON AN ALUMINUM BACKBOARD SUPPORTED BY STAINLESS STEEL UNI-STRUT. THE EXACT MOUNTING LOCATION FOR DISCONNECT SWITCHES SHALL BE COORDINATED IN THE FIELD.
3. THE POWER WIRING FOR THE CAKE PUMPS AND LUBRICATION PUMPS SHALL BE TYPE RHH/RHW-2/USE-2.

WIRING LEGEND

(1) 3#6, #8 GRD.-1½"C TO MCC-D1
(2) 4#14-3/4"C (24VDC) TO DRYER NO. 1 CONTROL PANEL
(3) 1 PR. #18 SHLD.-3/4"C TO DRYER NO. 1 CONTROL PANEL
(4) 3#12-3/4"C TO MCC-D1
(5) 2#14-3/4"C (24VDC) TO DRYER NO. 1 CONTROL PANEL
(6) 3#6, #8 GRD.-1½"C TO MCC-D2
(7) 4#14-3/4"C (24VDC) TO DRYER NO. 2 CONTROL PANEL
(8) 1 PR. #18 SHLD.-3/4"C TO DRYER NO. 2 CONTROL PANEL
(9) 3#12-3/4"C TO MCC-D2
(10) 2#14-3/4"C (24VDC) TO DRYER NO. 2 CONTROL PANEL

NORTH

WET CAKE BINS - CAKE PUMPS ELECTRICAL PLAN

1/4"=1'-0" (4' 2' 0 4' 8')

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ROBERT J. ANDRYCHAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: AS SHOWN
DRAWN BY: SMJ
CHECKED BY: DTB
SHEET NO.: 134 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
WET CAKE BINS CAKE PUMPS ELECTRICAL PLAN
OCTOBER 2025 E-24

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NOTES

1. THE DRYER ROOM IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IN THE DRYER ROOM SHALL MEET THIS CLASSIFICATION.
2. MOUNT ALL DISCONNECT SWITCHES ON AN ALUMINUM BACKBOARD SUPPORTED BY STAINLESS STEEL UNI-STRUT. EXACT MOUNTING LOCATION SHALL BE DETERMINED IN THE FIELD. ALL DISCONNECT SWITCHES SHALL BE 30A-480V-3P NEMA 4X UNLESS NOTED OTHERWISE.
3. COORDINATE ALL WIRING FOR THE DRYER WITH THE DRYER MANUFACTURER.

WIRING LEGEND

(1) 3#12-3/4"C TO MCC-D1

(2) 3#10, #10 GRD.-1"C TO MCC-D1

(3) 3#8, #6 GRD.-1"C TO MCC-D1

(4) 3#4, #6 GRD.-1½"C TO MCC-D1

(5) 3#1/0, #3 GRD.-2"C TO MCC-D3

(6) 3#10, #10 GRD.-1¼"C TYPE RHH/RWH-2/USE-2 CABLE TO MCC-D1

(7) 3#8, #10 GRD.-1½"C TYPE RHH/RWH-2/USE-2 CABLE TO MCC-D1

(8) 3#1, #4 GRD.-2"C TYPE RHH/RWH-2/USE-2 CABLE TO MCC-D1

(9) 3#3/0, #4 GRD.-3"C TYPE RHH/RWH-2/USE-2 CABLE TO MCC-D1

(10) 3#6, #8 GRD.-1½"C TYPE RHH/RWH-2/USE-2 CABLE TO MCC-DB

(11) 15#14-1"C TO DRYER NO. 1 BURNER CONTROL PANEL IN DRYER ELECTRICAL BUILDING MCC ROOM

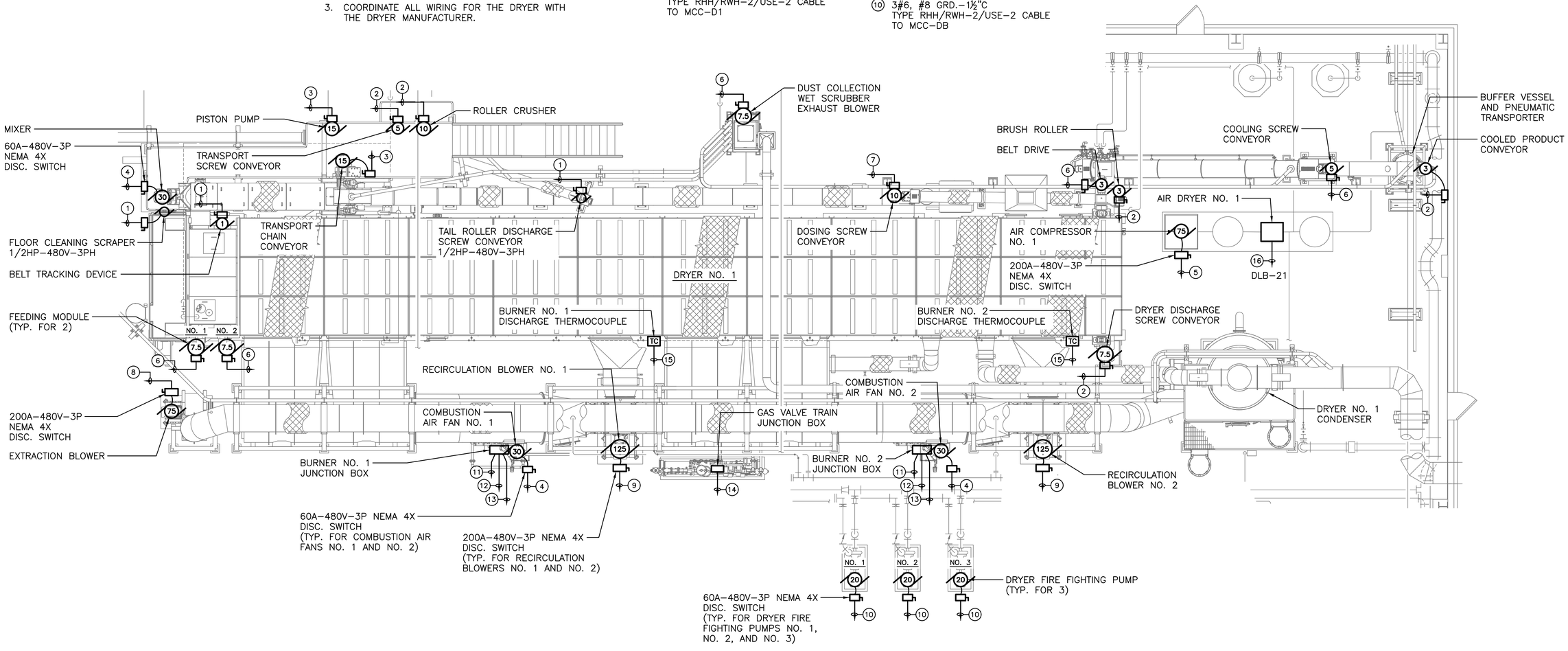
(12) (2) 1 PR. #18 SHLD. AND (2) 3/C #18 SHLD.-1½"C TO DRYER NO. 1 BURNER CONTROL PANEL

(13) 2#14-3/4"C TO GAS VALVE TRAIN JUNCTION BOX

(14) 12#14-3/4"C TO DRYER NO. 1 BURNER CONTROL PANEL

(15) THERMOCOUPLE WIRE-3/4"C TO DRYER NO. 1 BURNER CONTROL PANEL

(16) 2#10, #10 GRD.-3/4"C TO PANEL "DLB"



DRYER NO. 1 – POWER PLAN

3/16"=1'-0" 4' 2' 0 4' 8' 12'

NORTH

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DTB	DRYER NO. 1 POWER PLAN
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 135 of 191	OCTOBER 2025 E-25
		PROJECT NO.: 50.1890.97-A	

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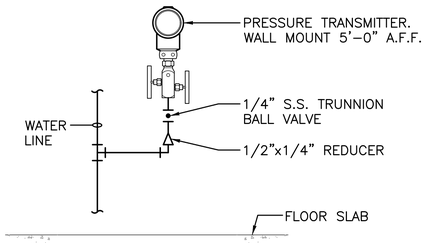


NOTES

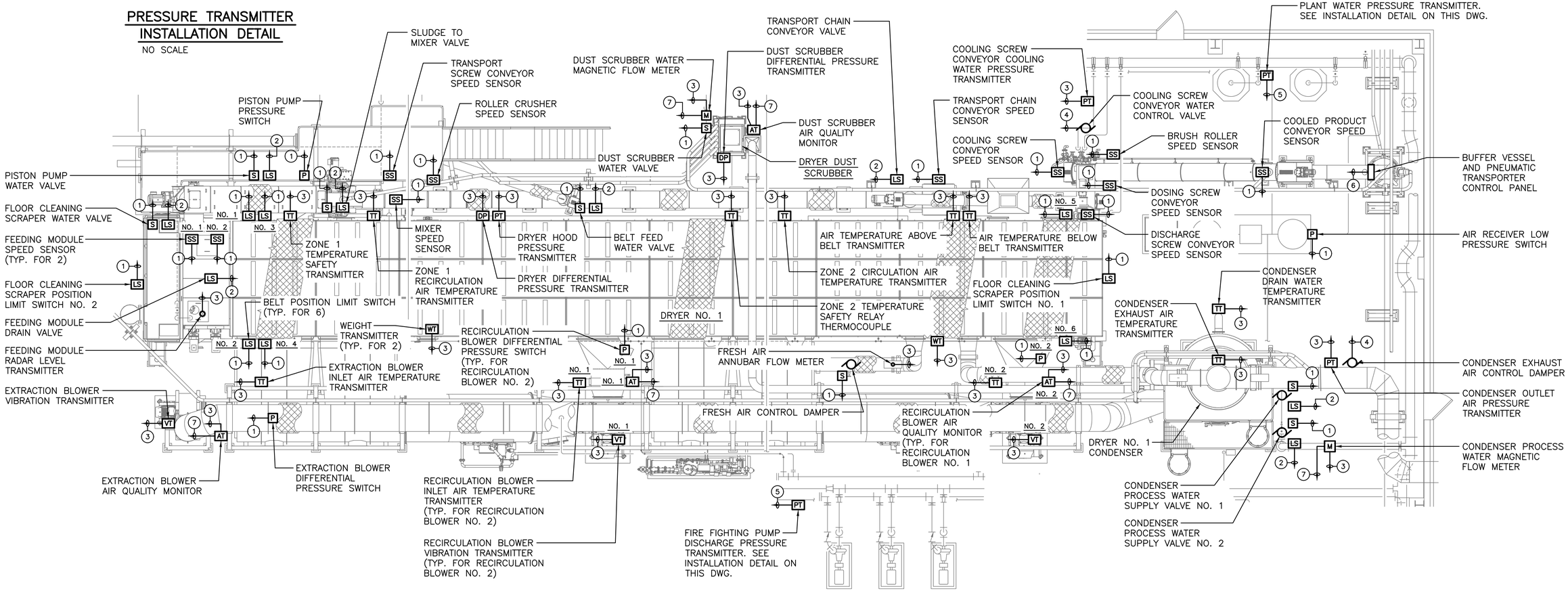
1. THE DRYER ROOM IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IN THE DRYER ROOM SHALL MEET THIS CLASSIFICATION.
2. COORDINATE THE DRYER INSTRUMENTATION WIRING WITH THE DRYER MANUFACTURER.

WIRING LEGEND

1. 2#14-3/4"C (24VDC) TO DRYER NO. 1 CONTROL PANEL
2. 4#14-3/4"C TO DRYER NO. 1 CONTROL PANEL
3. 1 PR. #18 SHLD.-3/4"C TO DRYER NO. 1 CONTROL PANEL
4. (2) 1 PR. #18 SHLD.-1"C TO DRYER NO. 1 CONTROL PANEL
5. 1 PR. #18 SHLD.-3/4"C TO DRYER BUILDING PLC PANEL
6. 40#14 AND (2) 1 PR. #18 SHLD.-2"C TO DRYER NO. 1 CONTROL PANEL
7. 2#12-3/4"C TO PANEL "USPS-1" IN DRYER ELECTRICAL BUILDING

PRESSURE TRANSMITTER INSTALLATION DETAIL

NO SCALE



NORTH

3/16"=1'-0" 4' 2' 0 4' 8' 12'

DRYER NO. 1 INSTRUMENTATION PLAN

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	CONTRACT 3
APPROVED DATE		SHEET NO.: 136 of 191	DRYER NO. 1 INSTRUMENTATION PLAN
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 E-26

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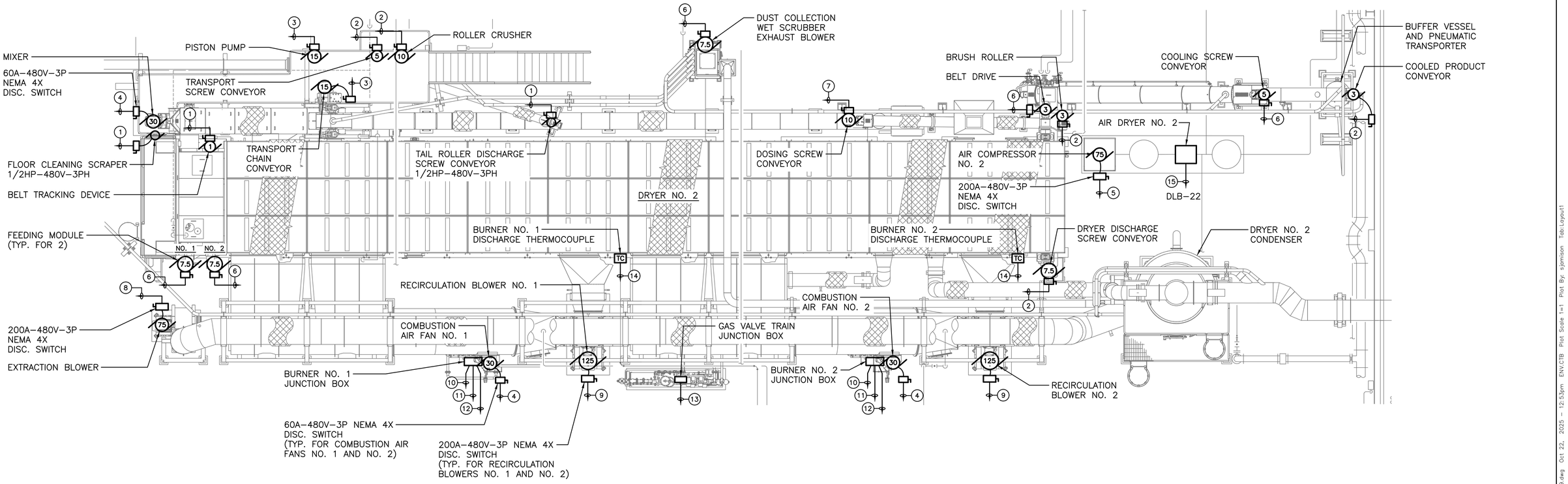
NOTES

1. THE DRYER ROOM IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IN THE DRYER ROOM SHALL MEET THIS CLASSIFICATION.
2. MOUNT ALL DISCONNECT SWITCHES ON AN ALUMINUM BACKBOARD SUPPORTED BY STAINLESS STEEL UNI-STRUT. EXACT MOUNTING LOCATION SHALL BE DETERMINED IN THE FIELD. ALL DISCONNECT SWITCHES SHALL BE 30A-480V-3P NEMA 4X UNLESS NOTED OTHERWISE.
3. COORDINATE ALL WIRING FOR THE DRYER WITH THE DRYER MANUFACTURER.

WIRING LEGEND

1. 3#12-3/4"C TO MCC-D2
2. 3#10, #10 GRD.-1"C TO MCC-D2
3. 3#8, #6 GRD.-1"C TO MCC-D2
4. 3#4, #6 GRD.-1½"C TO MCC-D2
5. 3#1/0, #3 GRD.-2"C TO MCC-D3
6. 3#10, #10 GRD.-1¼"C TYPE RHH/RWH-2/USE-2 CABLE TO MCC-D2
7. 3#8, #10 GRD.-1½"C TYPE RHH/RWH-2/USE-2 CABLE TO MCC-D2
8. 3#1, #4 GRD.-2"C TYPE RHH/RWH-2/USE-2 CABLE TO MCC-D2
9. 3#3/0, #4 GRD.-3"C TYPE RHH/RWH-2/USE-2 CABLE TO MCC-D2
10. 15#14-1"C TO DRYER NO. 2 BURNER CONTROL PANEL IN DRYER ELECTRICAL BUILDING MCC ROOM
11. (2) 1 PR. #18 SHLD. AND (2) 3/C #18 SHLD.-1½"C TO DRYER NO. 2 BURNER CONTROL PANEL
12. 2#14-3/4"C TO GAS VALVE TRAIN JUNCTION BOX
13. 12#14-3/4"C TO DRYER NO. 2 BURNER CONTROL PANEL
14. THERMOCOUPLE WIRE-3/4"C TO DRYER NO. 2 BURNER CONTROL PANEL
15. 2#10, #10 GRD.-3/4"C TO PANEL "DLB"



DRYER NO. 2 – POWER PLAN

3/16"=1'-0"

4' 2' 0 4' 8' 12'

NORTH

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SMJ
APPROVED DATE		CHECKED BY: DTB
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 137 of 191
		PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER NO. 2
POWER PLAN
OCTOBER 2025 E-27

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NOTES

1. THE DRYER ROOM IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IN THE DRYER ROOM SHALL MEET THIS CLASSIFICATION.
2. COORDINATE THE DRYER INSTRUMENTATION WIRING WITH THE DRYER MANUFACTURER.

WIRING LEGEND

(1) 2#14–3/4"C (24VDC) TO DRYER NO. 2 CONTROL PANEL

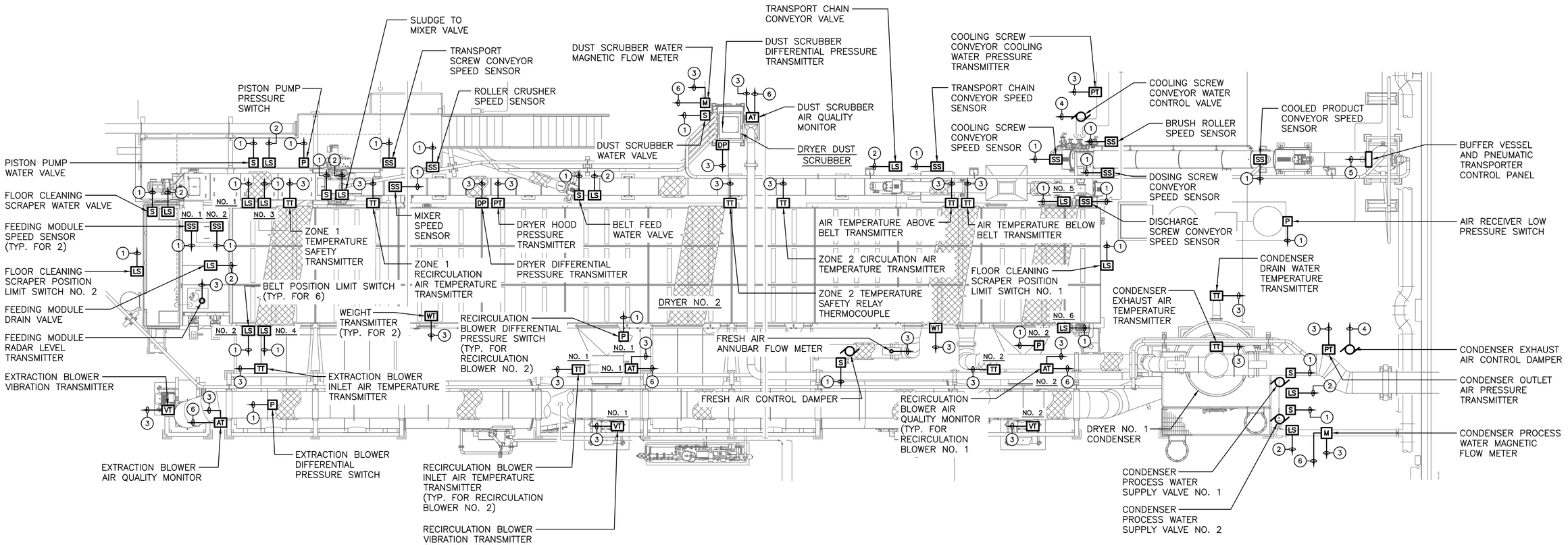
(2) 4#14–3/4"C TO DRYER NO. 2 CONTROL PANEL

(3) 1 PR. #18 SHLD.–3/4"C TO DRYER NO. 2 CONTROL PANEL

(4) (2) 1 PR. #18 SHLD.–1"C TO DRYER NO. 2 CONTROL PANEL

(5) 40#14 AND (2) 1 PR. #18 SHLD.–2"C TO DRYER NO. 2 CONTROL PANEL

(6) 2#12–3/4"C TO PANEL "UPSP–2" IN DRYER ELECTRICAL ROOM



DRYER NO. 2
INSTRUMENTATION PLAN

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: AS SHOWN
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		DRAWN BY: SMJ CHECKED BY: DTB SHEET NO.: 138 of 191 PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER NO. 2
INSTRUMENTATION PLAN
OCTOBER 2025 E–28

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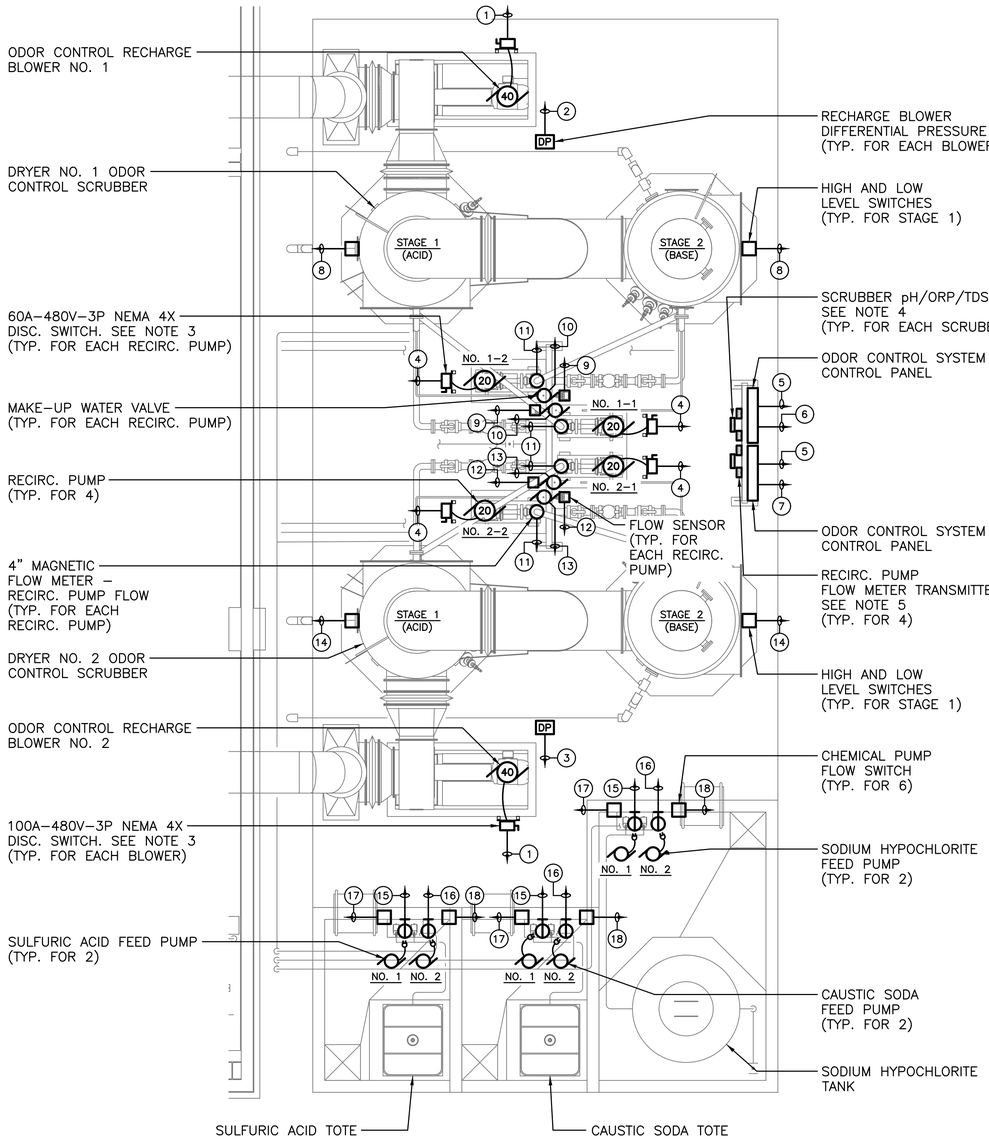

NORTH

ODOR CONTROL SYSTEM ELECTRICAL PLAN

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

NOTES

1. ALL CONDUIT FOR THE ODOR CONTROL SYSTEM AND CHEMICAL FEED PUMPS SHALL BE PVC COATED GALVANIZED RIGID STEEL.
2. COORDINATE WIRING FOR ODOR CONTROL SYSTEM WITH SYSTEM MANUFACTURER/SUPPLIER.
3. MOUNT BLOWER AND PUMP DISCONNECT SWITCHES ON AN ALUMINUM BACKBOARD SUPPORTED BY STAINLESS STEEL UNI–STRUT.
4. THE WIRING FROM EACH SCRUBBER pH/ORP/TDS TRANSMITTER SHALL BE AS FOLLOWS:

   (5) 1 PR. #18 SHLD.–1½"C FROM SCRUBBER NO. 1 pH/ORP/TDS TRANSMITTER TO ODOR CONTROL SYSTEM NO. 1 CONTROL PANEL

   (5) 1 PR. #18 SHLD.–1½"C FROM SCRUBBER NO. 2 pH/ORP/TDS TRANSMITTER TO ODOR CONTROL SYSTEM NO. 2 CONTROL PANEL
5. THE WIRING FROM EACH RECIRC. PUMP FLOW METER TRANSMITTER SHALL BE AS FOLLOWS:

   1 PR. #18 SHLD.–3/4"C FROM RECIRC. PUMP NO. 1–1 TRANSMITTER TO ODOR CONTROL SYSTEM NO. 1 CONTROL PANEL

   1 PR. #18 SHLD.–3/4"C FROM RECIRC. PUMP NO. 1–2 TRANSMITTER TO ODOR CONTROL SYSTEM NO. 1 CONTROL PANEL

   1 PR. #18 SHLD.–3/4"C FROM RECIRC. PUMP NO. 2–1 TRANSMITTER TO ODOR CONTROL SYSTEM NO. 2 CONTROL PANEL

   1 PR. #18 SHLD.–3/4"C FROM RECIRC. PUMP NO. 2–2 TRANSMITTER TO ODOR CONTROL SYSTEM NO. 2 CONTROL PANEL

WIRING LEGEND

(1) 3#2, #3 GRD.–2"C TO MCC–D3 IN DRYER ELECTRICAL BUILDING

(2) 2#14, #14 GRD.–3/4"C TO DRYER NO. 1 CONTROL PANEL IN DRYER SERVICE BUILDING

(3) 2#14, #14 GRD.–3/4"C TO DRYER NO. 2 CONTROL PANEL IN DRYER SERVICE BUILDING

(4) 3#4, #4 GRD.–1½"C TO MCC–D3

(5) 3#10, #10 GRD.–1"C TO MCC–D3

(6) ETHERNET CABLE–3/4"C TO DRYER NO. 1 CONTROL PANEL

(7) ETHERNET CABLE–3/4"C TO DRYER NO. 2 CONTROL PANEL

(8) 6#14–3/4"C TO ODOR CONTROL SYSTEM NO. 1 CONTROL PANEL

(9) 3/C #18 SHLD.–3/4"C TO ODOR CONTROL SYSTEM NO. 1 CONTROL PANEL

(10) 8#14–3/4"C TO ODOR CONTROL SYSTEM NO. 1 CONTROL PANEL

(11) FLOW METER SIGNAL CABLES IN (2) 3/4"C TO FLOW METER TRANSMITTER

(12) 3/C #18 SHLD.–3/4"C TO ODOR CONTROL SYSTEM NO. 2 CONTROL PANEL

(13) 8#14–3/4"C TO ODOR CONTROL SYSTEM NO. 2 CONTROL PANEL

(14) 6#14–3/4"C TO ODOR CONTROL SYSTEM NO. 2 CONTROL PANEL

(15) 2#14–3/4"C TO ODOR CONTROL SYSTEM NO. 1 CONTROL PANEL

(16) 2#14–3/4"C TO ODOR CONTROL SYSTEM NO. 2 CONTROL PANEL

(17) 2#14–3/4"C (24VDC) TO ODOR CONTROL SYSTEM NO. 1 CONTROL PANEL

(18) 2#14–3/4"C (24VDC) TO ODOR CONTROL SYSTEM NO. 2 CONTROL PANEL

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		CHECKED BY: DTB	ODOR CONTROL SYSTEM ELECTRICAL PLAN
		SHEET NO.: 139 of 191	OCTOBER 2025 E–29
		PROJECT NO.: 50.1890.97–A	

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NOTES

1. THE AREA AROUND THE RECEIVER VESSEL AND DUST SCRUBBER IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING AT THE SCRUBBER AND RECEIVER VESSEL SHALL MEET THIS CLASSIFICATION.
2. MOUNT DISCONNECT SWITCH ON AN ALUMINUM BACKBOARD SUPPORTED BY STAINLESS STEEL UNI-STRUT. THE EXACT MOUNTING LOCATION FOR THE DISCONNECT SWITCH SHALL BE COORDINATED IN THE FIELD.

WIRING LEGEND

(1) 3#10, #10 GRD.-3/4"C TO MCC-D3

(2) 2#14-3/4"C TO DRYER NO. 1 CONTROL PANEL

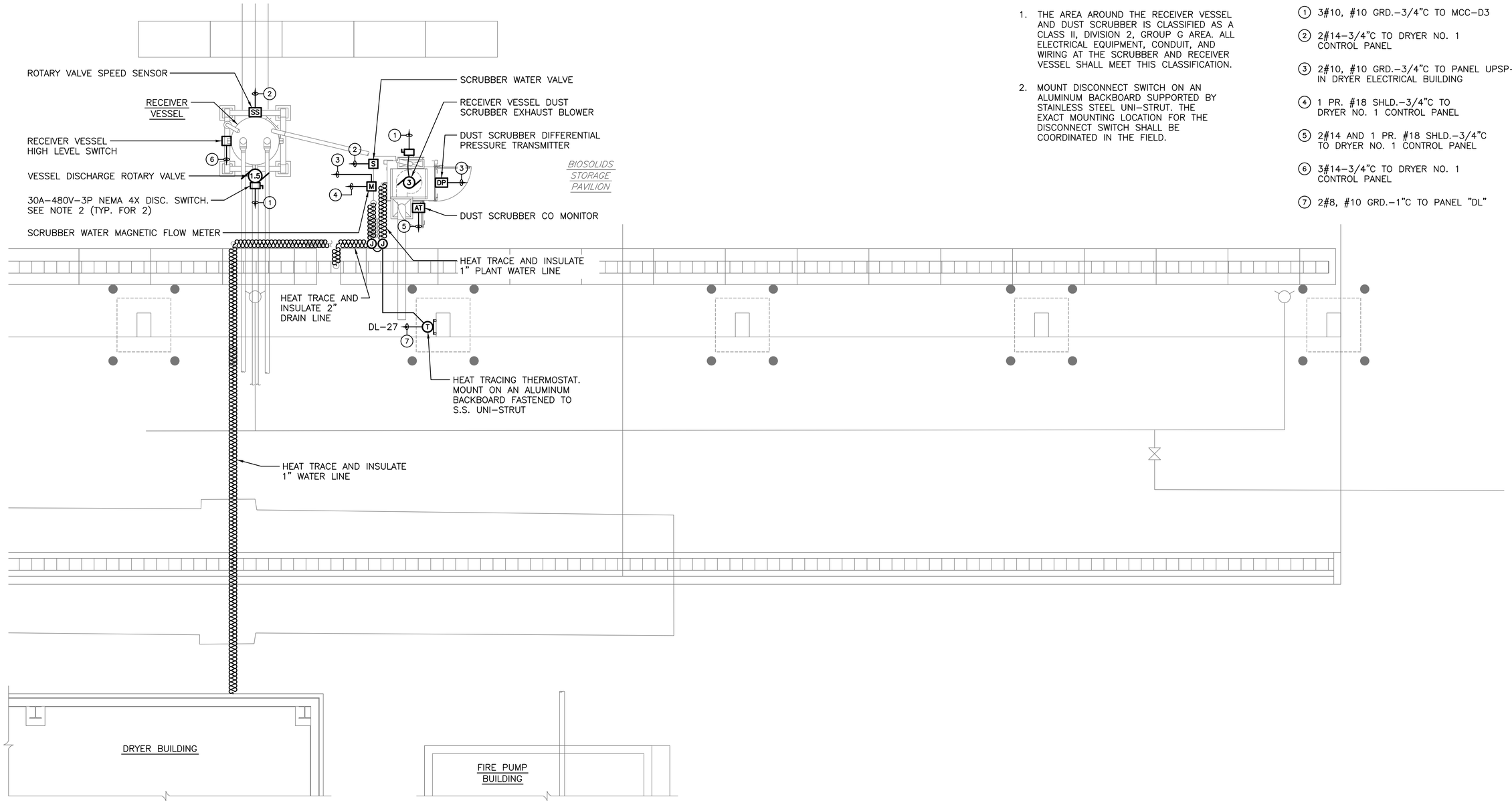
(3) 2#10, #10 GRD.-3/4"C TO PANEL UPSP-1 IN DRYER ELECTRICAL BUILDING

(4) 1 PR. #18 SHLD.-3/4"C TO DRYER NO. 1 CONTROL PANEL

(5) 2#14 AND 1 PR. #18 SHLD.-3/4"C TO DRYER NO. 1 CONTROL PANEL

(6) 3#14-3/4"C TO DRYER NO. 1 CONTROL PANEL

(7) 2#8, #10 GRD.-1"C TO PANEL "DL"



BIOSOLIDS STORAGE PAVILION
ELECTRICAL PLAN

1/8"=1'-0" 8' 4' 0 8' 16'

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REVISIONS			
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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DTB	BIOSOLIDS STORAGE PAVILION ELECTRICAL PLAN
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 140 of 191	OCTOBER 2025 E-30
		PROJECT NO.: 50.1890.97-A	

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PANELBOARD "DH" SCHEDULE

VOLTAGE: 277/480V–3PH–4W
MAIN BUS BARS AND LUGS: 250A
MAIN BREAKER: NONE

PANEL TYPE: SURFACE MOUNTED, BREAKER
MIN. A.I.C. RATING: 35,000
LOCATION: DRYER ELECTRICAL BLDG. MCC ROOM

NOTES	HP	WATTS	LOCATION	POLE	AMP/TRIP			AMP/TRIP	POLE	LOCATION	WATTS	HP	NOTES
LIGHTS		1700	DEWATER. ROOM	1	20	1	2	20	1	OUTSIDE	220		EXTERIOR LIGHTS
LIGHTS		2300	DRYER ROOM	1	20	3	4	20	1	OUTSIDE	300		EXTERIOR LIGHTS
LIGHTS		2700	DRYER ROOM	1	20	5	6	20	1				SPARE
PANEL "DL" XFMR		75,000	MCC ROOM	3	125	7	8	20	3				SPARE
EQUIPMENT ROOM UNIT HEATER EUH–1		5000	EQUIP. ROOM	3	20	13	14	20	3	EQUIP. ROOM	5000		EQUIPMENT ROOM UNIT HEATER EUH–2
SPARE				3	20	19	20	20	3				SPARE
SPARE				3	20	25	26	20	3				SPARE
SPACE						31	32						SPACE
SPACE						37	38						SPACE

PANELBOARD "DL" SCHEDULE

VOLTAGE: 120/208V–3PH–4W
MAIN BUS BARS AND LUGS: 225A
MAIN BREAKER: 225A–3P

PANEL TYPE: SURFACE MOUNTED, BREAKER
MIN. A.I.C. RATING: 18,000
LOCATION: DRYER ELECTRICAL BLDG. MCC ROOM

NOTES	HP	WATTS	LOCATION	POLE	AMP/TRIP			AMP/TRIP	POLE	LOCATION	WATTS	HP	NOTES
LIGHTS		700	MCC ROOM	1	20	1	2	20	1	SWGEAR ROOM	300		LIGHTS
EXTERIOR LIGHTS		100	OUTSIDE	1	20	3	4	20	1	OUTSIDE	50		EXTERIOR LIGHT
SPARE				1	20	5	6	20	1				SPARE
RECEPTACLES		800	MCC ROOM	1	20	7	8	20	1	SWGEAR ROOM	400		RECEPTACLES
DRYER BUILDING PLC PANEL		2000	MCC ROOM	1	30	9	10	20	1				SPARE
SPARE				1	20	11	12	20	1				SPARE
PANEL "DLA"	80 FLA		SERVICE BLDG.	3	100	13	14	70	3	DEWATER. ROOM		50 FLA	PANEL "DLB"
SPARE				1	20	19	20	20	1				SPARE
MINI–SPLIT OUTDOOR UNIT OU–1	42 FLA		OUTSIDE MCC RM	2	60	21	22	20	2	OUTSIDE SWGR RM		9 FLA	MINI–SPLIT OUTDOOR UNIT OU–2
SPARE				1	20	25	26	20	1				SPARE
*SCRUBBER WATER HEAT TRACING		1000	STORAGE PAVILION	1	20	27	28	20	1				SPARE
SPARE				1	20	29	30	20	1				SPARE
SPARE				1	20	31	32	20	1				SPARE
SPARE				1	20	33	34	20	1				SPARE
SPARE				1	20	35	36	20	1				SPARE
SPARE				1	20	37	38	20	1				SPARE
SPARE				1	20	39	40	20	1				SPARE
SPARE				1	20	41	42	20	1				SPARE

* PROVIDE A GFCI CIRCUIT BREAKER WITH 30mA TRIP LEVEL FOR HEAT TRACING CIRCUITS

PANELBOARD "DLA" SCHEDULE

VOLTAGE: 120/208V–3PH–4W
MAIN BUS BARS AND LUGS: 100A
MAIN BREAKER: 100A–3P

PANEL TYPE: SURFACE MOUNTED, BREAKER
MIN. A.I.C. RATING: 18,000
LOCATION: DRYER SERVICE BUILDING EQUIP. ROOM

NOTES	HP	WATTS	LOCATION	POLE	AMP/TRIP			AMP/TRIP	POLE	LOCATION	WATTS	HP	NOTES
LIGHTS		200	CONTROL ROOM	1	20	1	2	20	1	LAB	200		LIGHTS
LIGHTS		250	EQUIP. ROOM	1	20	3	4	20	1	OUTSIDE	100		EXTERIOR LIGHTS
RECEPTACLES		400	CONTROL ROOM	1	20	5	6	20	1				SPARE
RECEPTACLES		600	CONTROL ROOM	1	20	7	8	20	1	LAB	1200		RECEPTACLES
RECEPTACLES		600	EQUIP. ROOM	1	20	9	10	20	1	WOMEN/ MEN	600		RECEPTACLES
BELT PRESS NO. 1 MAIN CONTROL PANEL		1500	CONTROL ROOM	1	20	11	12	20	1	CONTROL ROOM	1500		BELT PRESS NO. 2 MAIN CONTROL PANEL
BELT PRESS NO. 3 MAIN CONTROL PANEL		1500	CONTROL ROOM	1	20	13	14	20	1	CONTROL ROOM	1500		BELT PRESS NO. 4 MAIN CONTROL PANEL
GAS WATER HEATER GWH–1	10 FLA		EQUIP. ROOM	1	20	15	16	20	1				SPARE
AIR HANDLER UNIT AHU–1	27 FLA		EQUIP. ROOM	2	40	17	18	20	2	OUTSIDE		12 FLA	HEAT PUMP CONDENSER UNIT HP–1
ENERGY RECOVERY UNIT ERU–1		200	EQUIP. ROOM	1	20	21	22	20	1	EQUIP. ROOM		1/4	EQUIPMENT ROOM EXHAUST FAN EF–15
WOMEN/MEN'S ROOM FANS EF–16 AND EF–17	1/8		WOMEN/ MEN	1	20	23	24	30	2	EQUIP. ROOM		1	GRINDER PUMP TRANSFORMER
FIRE ALARM SYSTEM CONTROL PANEL		500	LAB	1	20	25							
SPARE				1	20	27	28	20	1				SPARE
SPARE				1	20	29	30	20	1				SPARE

PANELBOARD "DLB" SCHEDULE (SEE NOTE 1)

VOLTAGE: 120/208V–3PH–4W
MAIN BUS BARS AND LUGS: 100A
MAIN BREAKER: 70A–3P

PANEL TYPE: SURFACE MOUNTED, BREAKER
MIN. A.I.C. RATING: 18,000
LOCATION: DRYER BUILDING DEWATERING ROOM

NOTES	HP	WATTS	LOCATION	POLE	AMP/TRIP			AMP/TRIP	POLE	LOCATION	WATTS	HP	NOTES
BELT PRESS NO. 1 SLUDGE FLOW XMTR		200	DEWATER. ROOM	1	20	1	2	20	1	DEWATER. ROOM	200		BELT PRESS NO. 2 SLUDGE FLOW XMTR
BELT PRESS NO. 3 SLUDGE FLOW XMTR		200	DEWATER. ROOM	1	20	3	4	20	1	DEWATER. ROOM	200		BELT PRESS NO. 4 SLUDGE FLOW XMTR
SPARE				1	20	5	6	20	1				SPARE
SPARE				1	20	7	8	20	1				SPARE
OVERHEAD DOOR OPERATOR NO. 1	1/2		DEWATER. ROOM	1	20	9	10	20	1	DEWATER. ROOM		1/2	OVERHEAD DOOR OPERATOR NO. 2
OVERHEAD DOOR OPERATOR NO. 3	1/2		DEWATER. ROOM	1	20	11	12	20	1	DEWATER. ROOM		1/2	OVERHEAD DOOR OPERATOR NO. 4
OVERHEAD DOOR OPERATOR NO. 5	1/2		DEWATER. ROOM	1	20	13	14	20	1	DEWATER. ROOM		1/2	OVERHEAD DOOR OPERATOR NO. 6
RECEPTACLES		800	DEWATER. ROOM	1	20	15	16	20	1	ODOR SCRUBBER	600		RECEPTACLES
RECEPTACLES		800	DRYER ROOM	1	20	17	18	20	1	DRYER ROOM	800		RECEPTACLES
SPARE				1	20	19	20	20	1				SPARE
AIR DRYER NO. 1		500	DRYER ROOM	1	20	21	22	20	1	DRYER ROOM	500		AIR DRYER NO. 2
SPARE				1	20	23	24	20	1				SPARE
GAS WATER HEATER DWH–2	10 FLA		DRYER ROOM	1	20	25	26	20	1	DRYER ROOM	500		WATER SOFTENER WS–1 RECEPTACLE
*HEAT TRACING THERMOSTAT		500	OUTSIDE	1	20	27	28	20	1	ODOR SCRUBBER	500		*HEAT TRACING THERMOSTAT
EMERGENCY SHOWER ALARM PANEL		500	ODOR SCRUBBER	1	20	29	30	20	1				SPARE
SPARE				1	20	31	32	20	1				SPARE
FILTRATE PUMP MONITORING PANEL		200	FILTRATE PS	1	20	33	34	20	1	FILTRATE PS	400		FILTRATE FLOW METER XMTR AND RECEPTACLE
VALVE VAULT LIGHTS AND RECEPTACLE		300	FILTRATE PS	1	20	35	36	20	1	FILTRATE PS		1/2	VALVE VAULT SUMP PUMP
SPARE				1	20	37	38	20	1				SPARE
SPARE				1	20	39	40	20	1				SPARE
SPARE				1	20	41	42	20	1				SPARE

* PROVIDE A GFCI CIRCUIT BREAKER WITH 30mA TRIP LEVEL FOR HEAT TRACING CIRCUITS

NOTES

1. PANEL "DLB" SHALL BE FURNISHED IN A NEMA 4X STAINLESS STEEL ENCLOSURE.

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NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

SCALE: AS SHOWN
DRAWN BY: SMJ
CHECKED BY: DTB
SHEET NO.: 141 of 191
PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER BUILDING
PANELBOARD SCHEDULES
OCTOBER 2025 E–31

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NOTES

1. ALL CONDUIT IN THE FILTRATE/CONDENSATE PUMP STATION AND VALVE VAULT SHALL BE PVC COATED GALVANIZED RIGID STEEL.

WIRING LEGEND

(1) PUMP POWER CABLE. RUN CABLE ALONG UNDERSIDE OF PUMP STATION SLAB AND IN 2"C TO ELECTRICAL BACKBOARD

(2) PUMP CONTROL CABLE. RUN CABLE ALONG UNDERSIDE OF PUMP STATION SLAB AND IN 2"C TO ELECTRICAL BACKBOARD

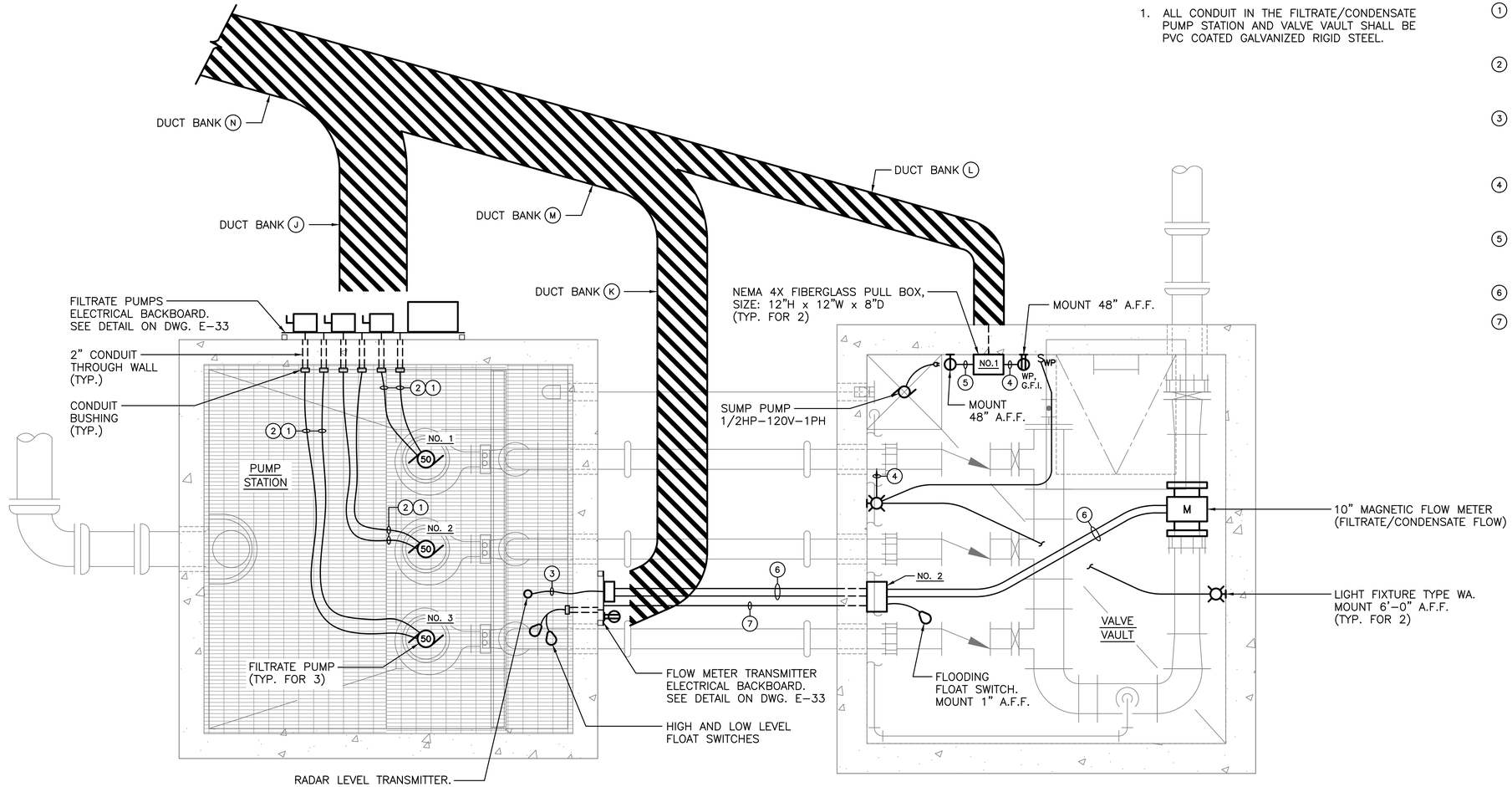
(3) 1 PR. #18 SHLD. TO DRYER BUILDING PLC PANEL. RUN IN 3/4"C TO FLOW METER TRANSMITTER ELECTRICAL BACKBOARD AND IN DUCT BANK CONDUIT NO. 205

(4) 2#10, #10 GRD. TO PANEL "DLB" (CIRCUIT NO. 35) IN DRYER BUILDING. RUN IN 3/4"C TO PULL BOX NO. 1 AND IN DUCT BANK CONDUIT NO. 108

(5) 2#4, #4 GRD. TO PANEL "DLB" (CIRCUIT NO. 36). RUN IN 1"C TO PULL BOX NO. 1 AND IN DUCT BANK CONDUIT NO. 108

(6) FLOW METER SIGNAL CABLES IN (2) 3/4"C

(7) 2#14 TO DRYER BUILDING PLC PANEL. RUN IN 3/4"C TO FLOW METER TRANSMITTER ELECTRICAL BACKBOARD AND IN DUCT BANK CONDUIT NO. 205



FILTRATE/CONDENSATE PUMP STATION ELECTRICAL PLAN

NORTH

1/2"=1'-0" 12" 0 1' 2' 3' 4' 5'

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SHEET NO.: 142 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
FILTRATE/CONDENSATE PUMP STATION ELECTRICAL PLAN
OCTOBER 2025 E-32

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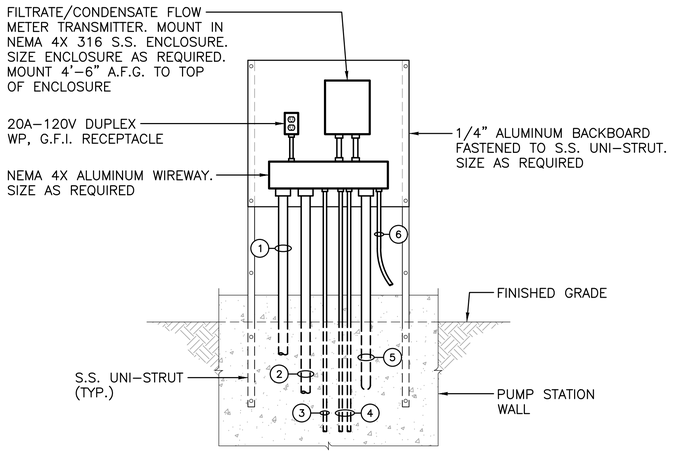
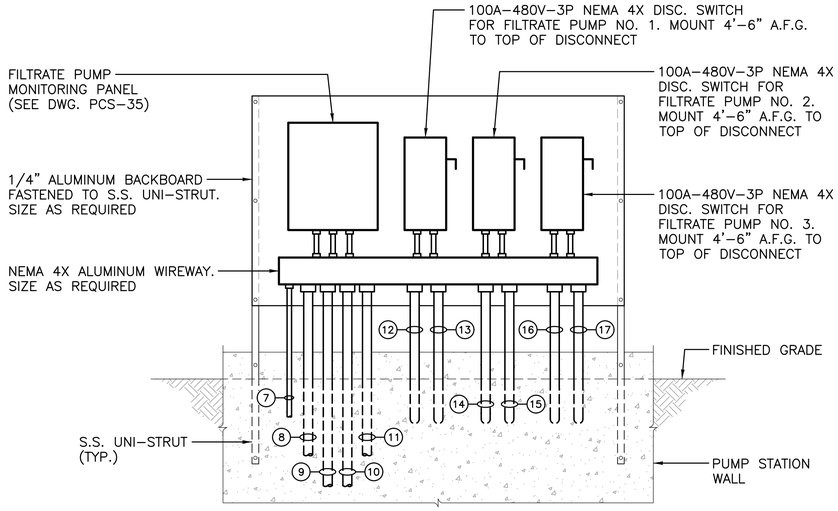


FLOW METER TRANSMITTER ELECTRICAL BACKBOARD DETAIL

NO SCALE



FILTRATE PUMPS ELECTRICAL BACKBOARD DETAIL

NO SCALE

NOTES

1. THE POWER WIRING FOR THE FILTRATE PUMP MOTOR FEEDERS SHALL BE TYPE RHH/RHW-2/USE-2.

WIRING LEGEND

(1) 2#10, #10 GRD. TO PANEL "DLB" (CIRCUIT NO. 34) IN DRYER BUILDING. RUN IN DUCT BANK CONDUIT NO. 107

(2) 6#14 AND (2) 1 PR. #18 SHLD. TO DRYER BUILDING PLC PANEL. RUN IN DUCT BANK CONDUIT NO. 205

(3) 2#14-3/4"C TO PULL BOX NO. 2 IN VALVE VAULT FOR FLOODING FLOAT SWITCH

(4) FLOW METER SIGNAL CABLES IN (2) 3/4"C

(5) HIGH AND LOW LEVEL FLOAT SWITCH CABLES-1½"C

(6) 1 PR. #18 SHLD.-3/4"C FROM RADAR LEVEL TRANSMITTER

(7) 2#10, #10 GRD. TO PANEL "DLB" (CIRCUIT NO. 33). RUN IN DUCT BANK CONDUIT NO. 105

(8) 12#14 (120V CONTROL) TO MCC-DB. RUN IN DUCT BANK CONDUIT NO. 106

(9) 3#1, #4 GRD. TO MCC-DB IN DRYER BUILDING. RUN IN DUCT BANK CONDUIT NO. 40

(10) 3#1, #4 GRD. TO MCC-DB IN DRYER BUILDING. RUN IN DUCT BANK CONDUIT NO. 41

(11) 3#1, #4 GRD. TO MCC-DB IN DRYER BUILDING. RUN IN DUCT BANK CONDUIT NO. 42

(12) FILTRATE PUMP NO. 1 POWER CABLE-2"C

(13) FILTRATE PUMP NO. 1 CONTROL CABLE-2"C

(14) FILTRATE PUMP NO. 2 POWER CABLE-2"C

(15) FILTRATE PUMP NO. 2 CONTROL CABLE-2"C

(16) FILTRATE PUMP NO. 3 POWER CABLE-2"C

(17) FILTRATE PUMP NO. 3 CONTROL CABLE-2"C

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		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	
APPROVED DATE		SHEET NO.: 143 of 191	FILTRATE PUMP STATION ELECTRICAL BACKBOARD DETAILS
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 E-33

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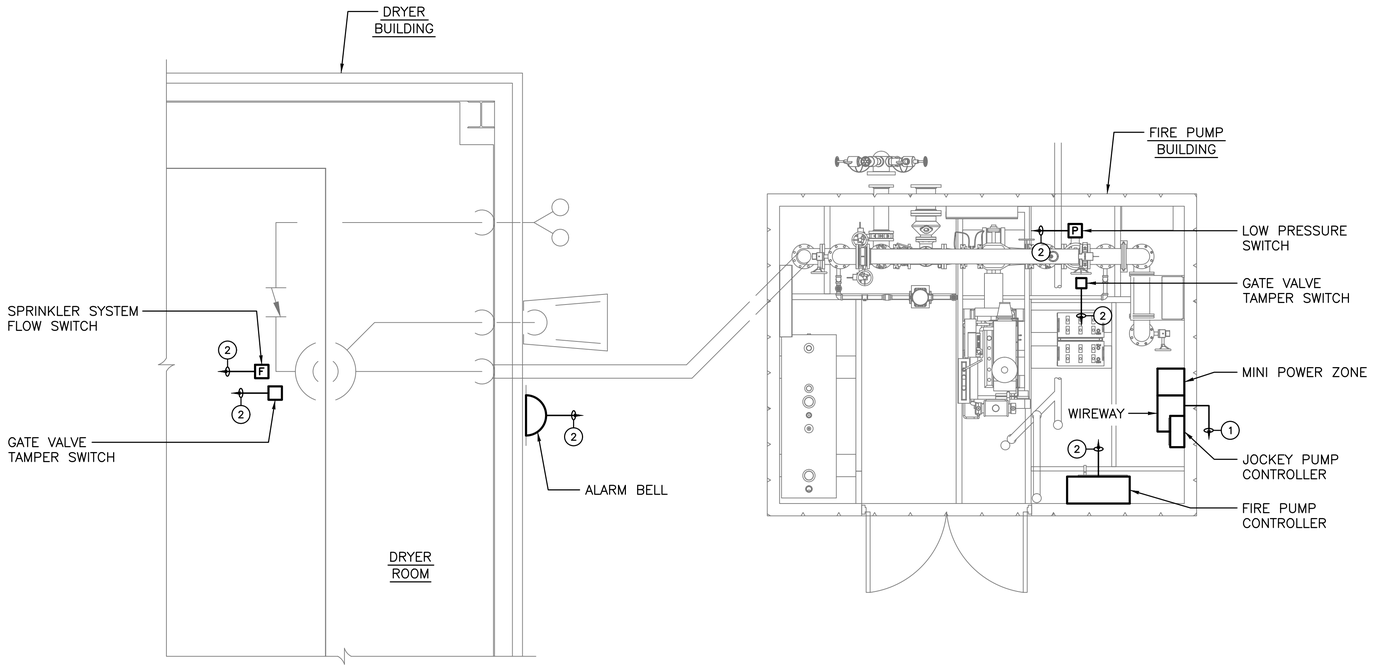

NOTES

1. THE DRYER ROOM IS CLASSIFIED AS A CLASS II, DIVISION 2, GROUP G AREA. ALL ELECTRICAL EQUIPMENT, CONDUIT, AND WIRING IN THE DRYER ROOM SHALL MEET THIS CLASSIFICATION.
2. COORDINATE THE WIRING FOR THE FIRE PUMP BUILDING WITH THE BUILDING SUPPLIER.

WIRING LEGEND

(1) 3#2, #6 GRD.–1½"C TO MCC–BP IN DRYER ELECTRICAL BUILDING

(2) 2#14–3/4"C TO FIRE ALARM PANEL IN DRYER SERVICE BUILDING LAB

NORTH

FIRE PUMP BUILDING AND SPRINKLER SYSTEM ELECTRICAL PLAN

3/8"=1'–0" 24" 12" 0 2' 4' 6'

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KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
FIRE PUMP BUILDING
ELECTRICAL PLAN
OCTOBER 2025 E–34

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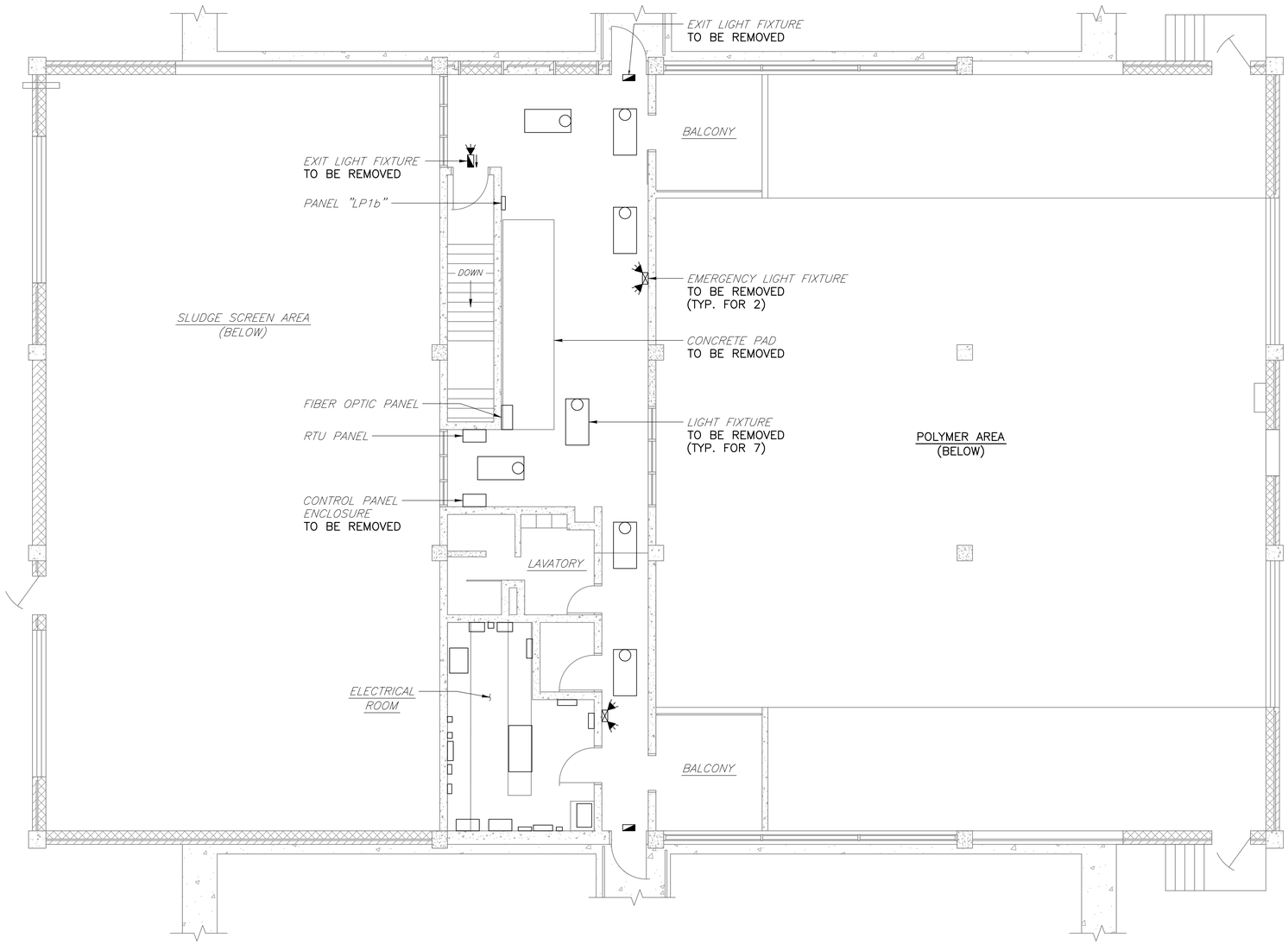

NOTES

1. WHERE EQUIPMENT IS NOTED TO BE REMOVED, REMOVE ALL ASSOCIATED CONDUIT AND WIRE.

SOLIDS HANDLING BUILDING – UPPER LEVEL
ELECTRICAL DEMOLITION PLAN

NORTH

3/16"=1'-0" 4' 2' 0 4' 8' 12'

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DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	
APPROVED DATE		SHEET NO.: 145 of 191	SOLIDS HANDLING BLDG. UPPER LEVEL ELECTRICAL DEMO PLAN
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 E-35

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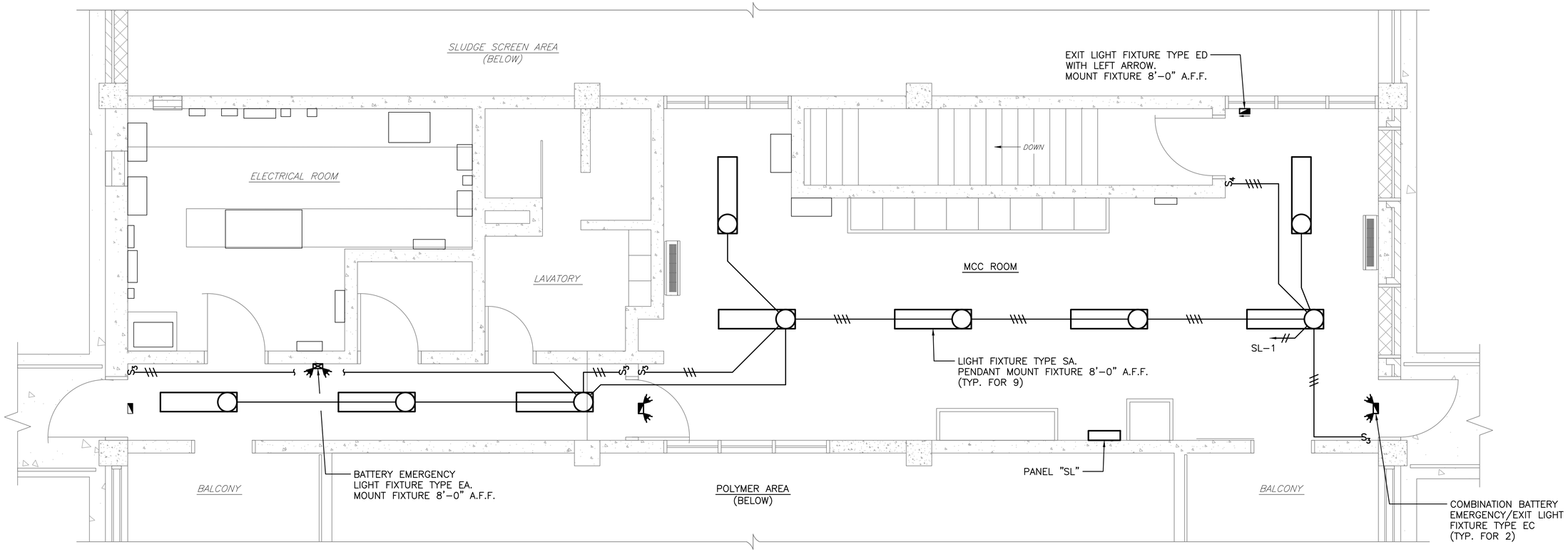
NOTES

1. COORDINATE LOCATION OF LIGHT FIXTURES WITH EXISTING CONDUITS AND STRUCTURAL BEAMS TO AVOID INTERFERENCES.
2. WIRE ALL EMERGENCY AND EXIT LIGHTS TO THE LIGHTING CIRCUIT IN THE ROOM WHERE THEY ARE LOCATED, AHEAD OF ALL SWITCHES.



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SOLIDS HANDLING BUILDING – UPPER LEVEL LIGHTING PLAN

3/16"=1'-0" 4' 2' 0 4' 8' 12'

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KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SOLIDS HANDLING BUILDING
UPPER LEVEL LIGHTING PLAN
OCTOBER 2025 E-36

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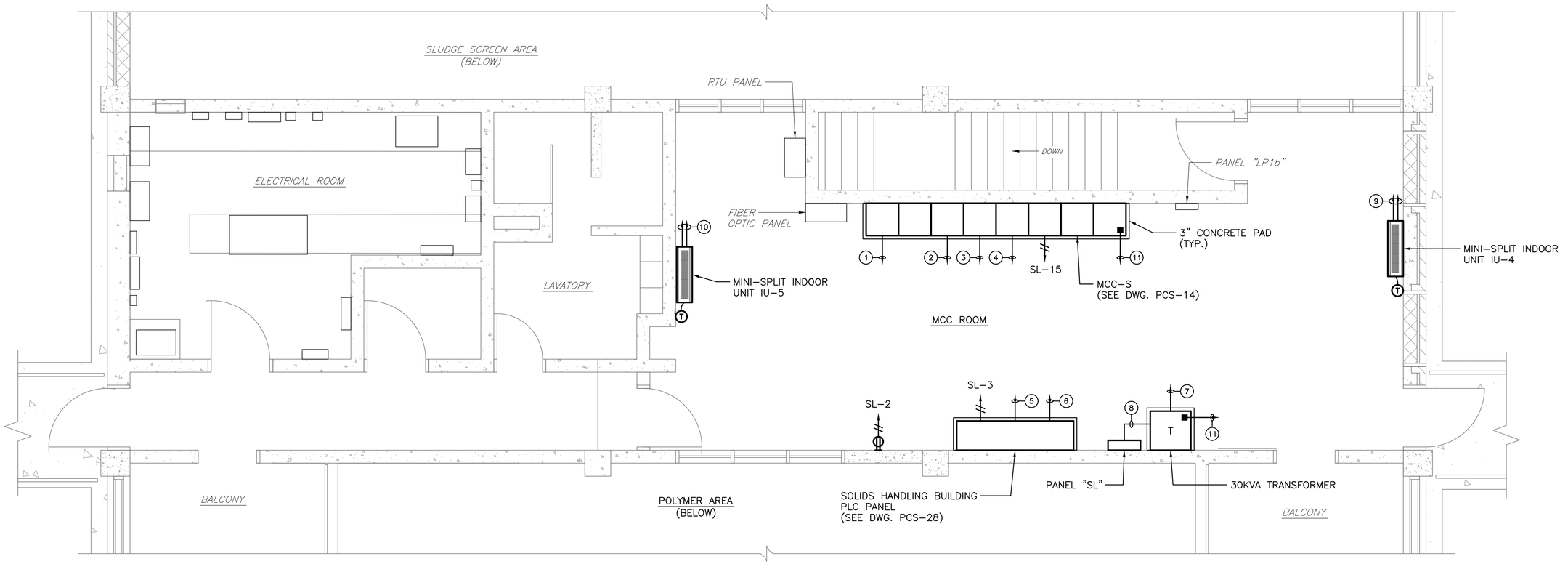
WIRING LEGEND

1. MCC FEEDER FROM MDS. RUN IN (2) 4"C TO PULL BOX NO. 1 IN POLYMER AREA AND IN DUCT BANK CONDUIT NOS. 30 AND 31
2. 8#14–3/4"C (120VAC) TO SOLIDS HANDLING BUILDING PLC PANEL
3. 130#14–3"C (24VDC) TO SOLIDS HANDLING BUILDING PLC PANEL
4. (9) 1 PR. #18 SHLD.–2"C TO SOLIDS HANDLING BUILDING PLC PANEL
5. 6–STRAND FIBER OPTIC CABLE TO DRYER BUILDING PLC PANEL. RUN IN 1½"C TO DRYER BUILDING PULL BOX IN POLYMER AREA AND IN DUCT BANK CONDUIT NO. 200
6. ETHERNET CABLE–3/4"C TO EXISTING FIBER OPTIC PANEL
7. 3#8, #10 GRD.–1"C TO MCC–S
8. 4#3, #8 GRD.–1¼"C
9. (2) 3/4"C FOR POWER AND CONTROL WIRING TO MINI–SPLIT OUTDOOR UNIT OU–3 ON ROOF. COORDINATE WIRING REQUIREMENTS WITH SYSTEM MANUFACTURER
10. (2) 3/4"C FOR POWER AND CONTROL WIRING TO MINI–SPLIT OUTDOOR UNIT OU–4 ON ROOF. COORDINATE WIRING REQUIREMENTS WITH SYSTEM MANUFACTURER
11. #2/0 GRD.–1¼"C TO DRYER BUILDING GROUND RING



NORTH

SOLIDS HANDLING BUILDING – UPPER LEVEL POWER PLAN

3/16"=1'–0" 4' 2' 0 4' 8' 12'

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BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
SOLIDS HANDLING BUILDING UPPER LEVEL POWER PLAN
OCTOBER 2025 E–37

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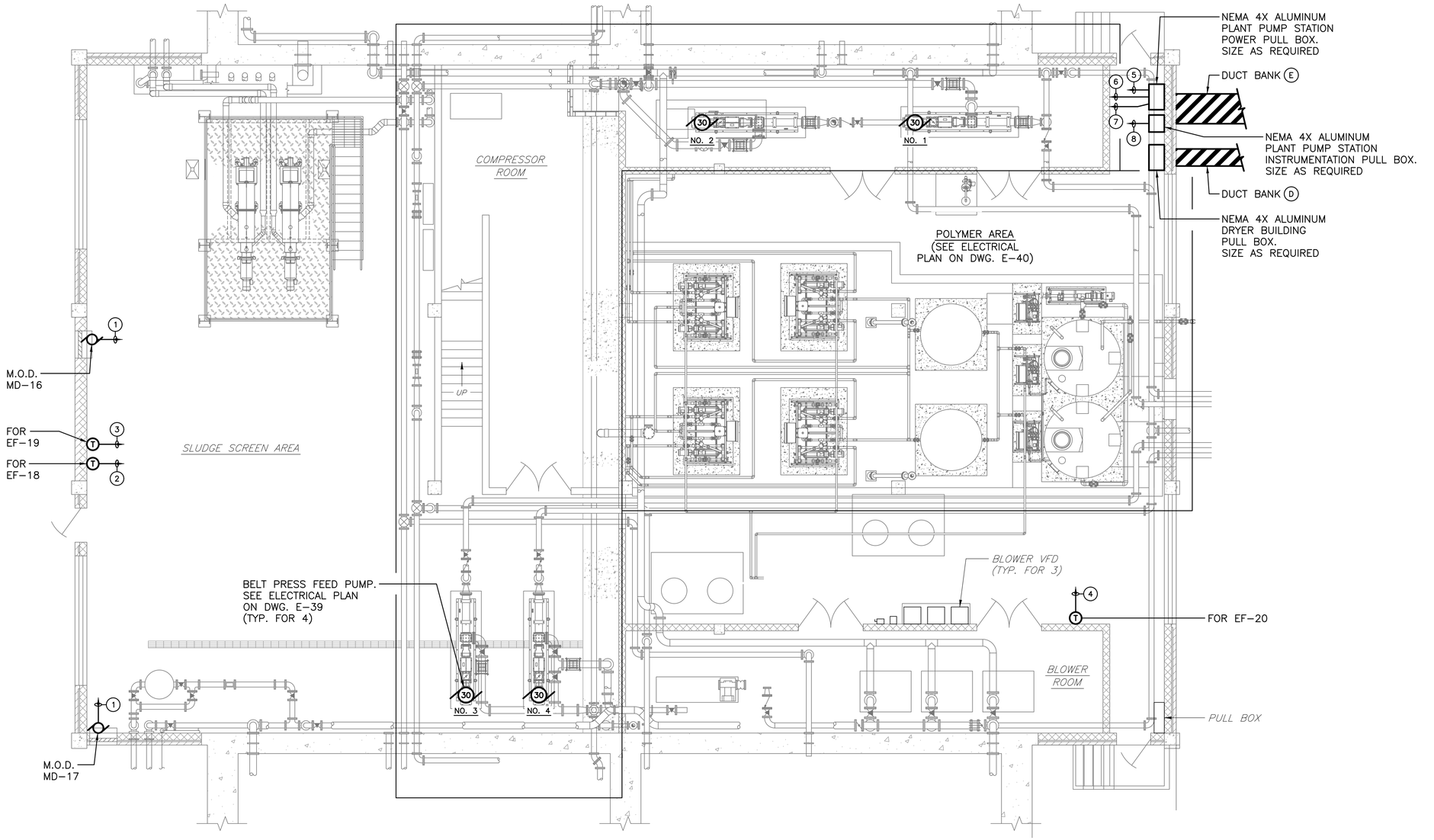

WIRING LEGEND

1. 2#14-3/4"C TO EXHAUST FAN CONTROLS BUCKET IN MCC-S
2. 2#14-3/4"C TO EXHAUST FAN EF-18 MOTOR STARTER IN MCC-S
3. 2#14-3/4"C TO EXHAUST FAN EF-19 MOTOR STARTER IN MCC-S
4. 2#14-3/4"C TO EXHAUST FAN EF-20 MOTOR STARTER IN MCC-S
5. (3) 1½"C TO MCC-S FOR PLANT WATER PUMP MOTOR FEEDERS
6. 1½"C FOR TO MCC-S FOR 120V CONTROL WIRING
7. 1½"C TO PANEL "SL" FOR 120V POWER WIRING
8. 1½"C TO SOLIDS HANDLING BUILDING PLC PANEL FOR 24VDC AND ANALOG WIRING

SOLIDS HANDLING BUILDING – LOWER LEVEL ELECTRICAL PLAN

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APPROVED DATE		SHEET NO.: 148 of 191	SOLIDS HANDLING BUILDING LOWER LEVEL ELECTRICAL PLAN
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 E-38

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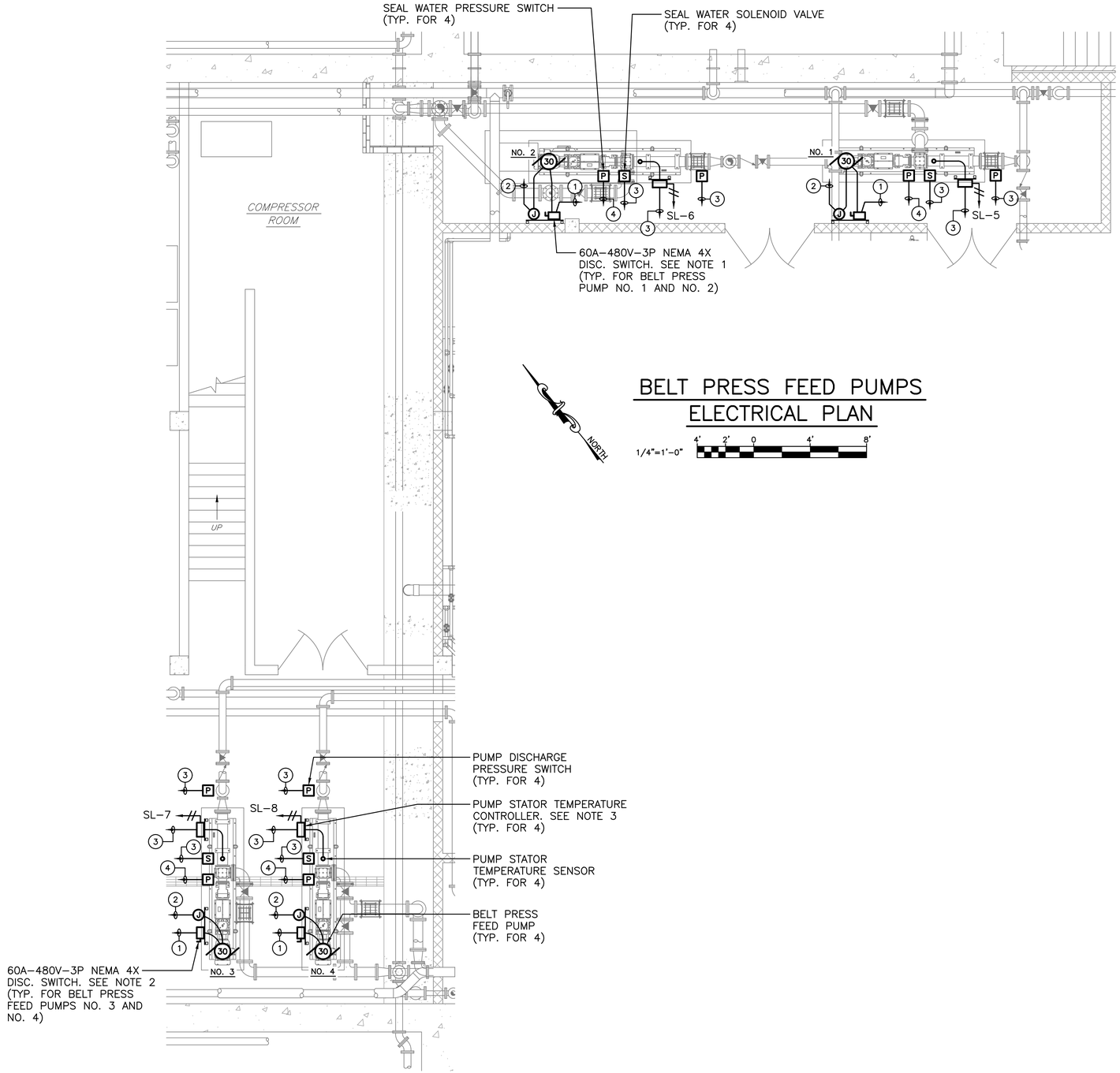

BELT PRESS FEED PUMPS ELECTRICAL PLAN

NOTES

1. WALL MOUNT THE DISCONNECT SWITCHES AND JUNCTION BOXES FOR BELT PRESS FEED PUMPS NO. 1 AND NO. 2 ON AN ALUMINUM BACKBOARD FASTENED TO FIBERGLASS UNI-STRUT.
2. MOUNT THE DISCONNECT SWITCHES AND JUNCTION BOXES FOR BELT PRESS FEED PUMPS NO. 3, AND NO. 4 ON AN ALUMINUM BACKBOARD SUPPORTED BY FIBERGLASS UNI-STRUT.
3. MOUNT PUMP STATOR TEMPERATURE CONTROLLER ON AN ALUMINUM BACKBOARD SUPPORTED BY FIBERGLASS UNI-STRUT.
4. THE POWER WIRING FOR THE BELT PRESS FEED PUMP MOTOR FEEDERS SHALL BE TYPE RHH/RHW-2/USE-2.

WIRING LEGEND

(1) 3#6, #8 GRD.-1¼"C TO PUMP VFD IN MCC-S ON SECOND FLOOR

(2) 2#14-3/4"C FROM MOTOR THERMAL SWITCHES TO PUMP VFD IN MCC-S

(3) 2#14-3/4"C (120VAC) TO PUMP VFD IN MCC-S

(4) 2#14-3/4"C (24VDC) TO SOLIDS HANDLING BUILDING PLC PANEL ON SECOND FLOOR

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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

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APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: AS SHOWN
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CHECKED BY: DTB
SHEET NO.: 149 of 191
PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
BELT PRESS FEED PUMPS ELECTRICAL PLAN
OCTOBER 2025 E-39

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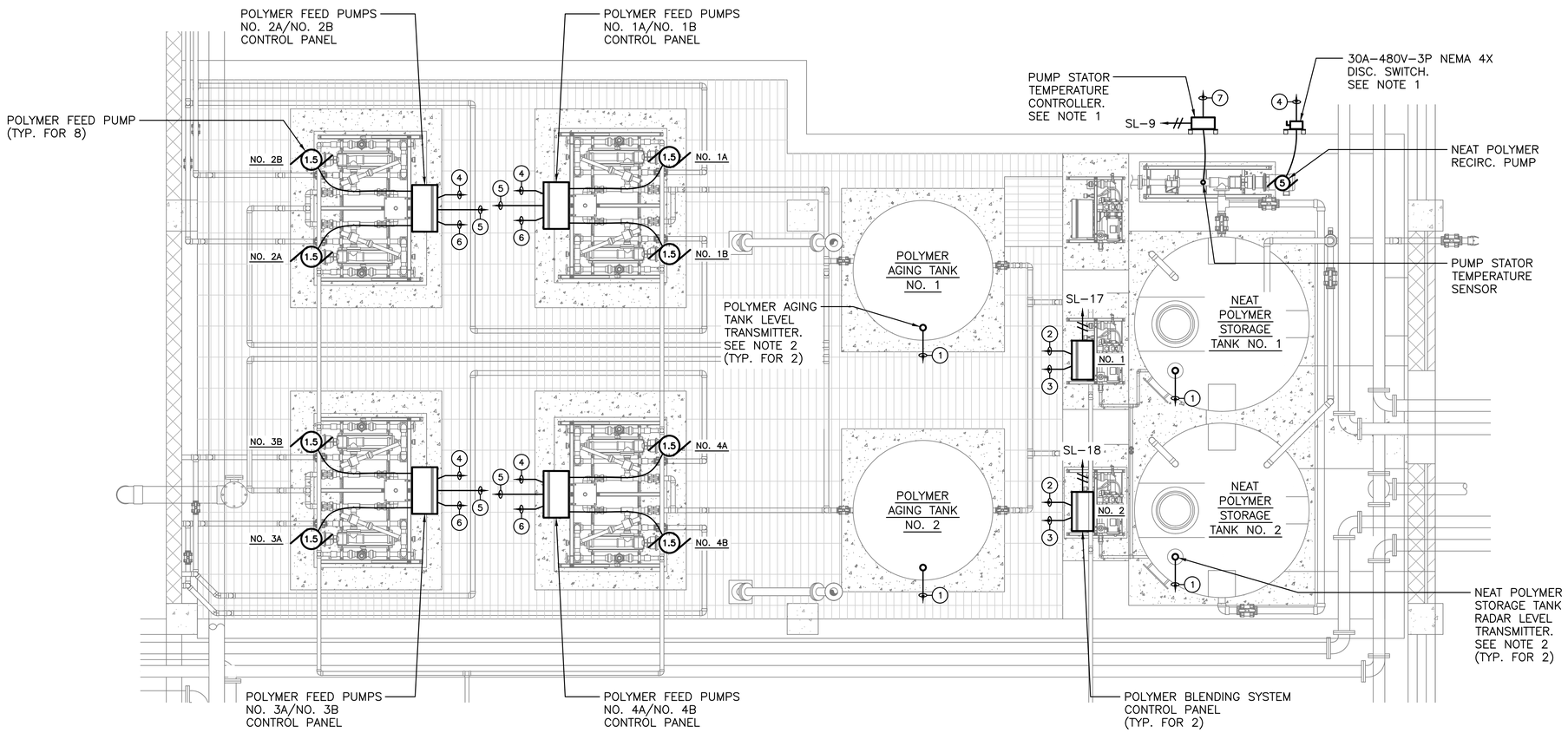

NOTES

1. MOUNT NEAT POLYMER RECIRC. PUMP DISCONNECT SWITCH AND PUMP STATOR TEMPERATURE CONTROLLER ON AN ALUMINUM BACKBOARD SUPPORTED BY FIBERGLASS UNI-STRUT.
2. THE POLYMER TANK LEVEL TRANSMITTERS SHALL BE FURNISHED BY THE PROCESS CONTROL SYSTEM SUPPLIER.

WIRING LEGEND

(1) 1 PR. #18 SHLD.-3/4"C TO SOLIDS HANDLING BUILDING PLC PANEL ON SECOND FLOOR

(2) (2) 1 PR. #18 SHLD.-3/4"C TO SOLIDS HANDLING BUILDING PLC PANEL

(3) 8#14-3/4"C (24VDC) TO SOLIDS HANDLING BUILDING PLC PANEL

(4) 3#12-3/4"C TO MCC-S ON SECOND FLOOR

(5) 20#14-1¼"C (24VDC) TO SOLIDS HANDLING BUILDING PLC PANEL

(6) (4) 1 PR. #18 SHLD.-1¼"C TO SOLIDS HANDLING BUILDING PLC PANEL

(7) 2#14-3/4"C TO MCC-S

NORTH

POLYMER SYSTEM ELECTRICAL PLAN

3/8"=1'-0" 24" 12" 0 2' 4' 6'

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		CHECKED BY: DTB
		SHEET NO.: 150 of 191
		PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
POLYMER SYSTEM ELECTRICAL PLAN
OCTOBER 2025 E-40

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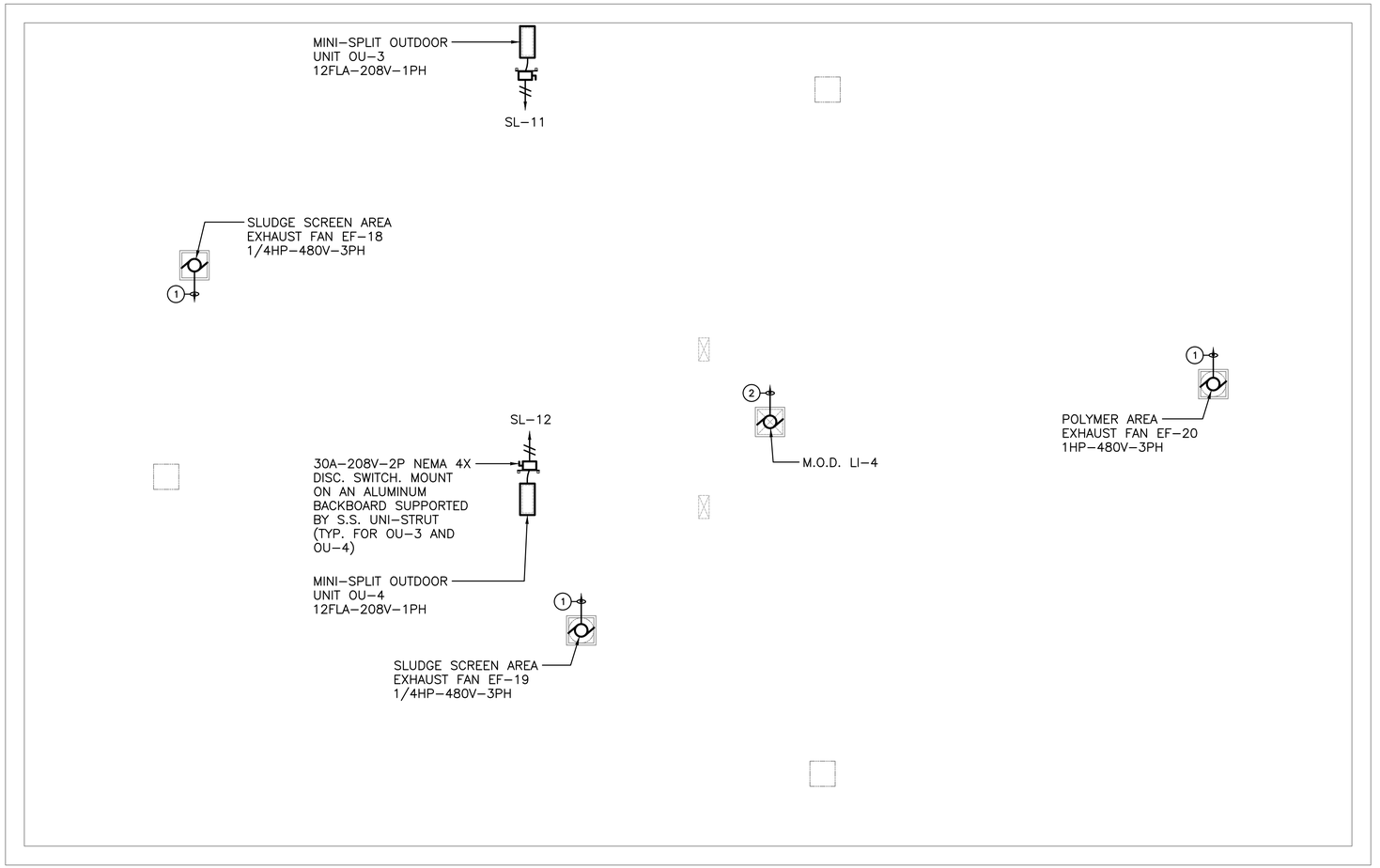

WIRING LEGEND

1. 3#12-3/4"C TO MCC-S
2. 2#14-3/4"C TO EXHAUST FAN EF-20 MOTOR STARTER IN MCC-S

NORTH

SOLIDS HANDLING BUILDING – ROOF HVAC ELECTRICAL PLAN

3/16"=1'-0" 4' 2' 0 4' 8' 12'

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KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SOLIDS HANDLING BUILDING
ROOF HVAC ELECTRICAL PLAN
OCTOBER 2025 E-41

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PANELBOARD "SL" SCHEDULE

VOLTAGE: 120/208V–3PH–4W
MAIN BUS BARS AND LUGS: 100A
MAIN BREAKER: 100A–3P

PANEL TYPE: SURFACE MOUNTED, BREAKER
MIN. A.I.C. RATING: 18,000
LOCATION: SOLIDS HANDLING BLDG. MCC ROOM

NOTES	HP	WATTS	LOCATION	POLE	AMP/TRIP			AMP/TRIP	POLE	LOCATION	WATTS	HP	NOTES
LIGHTS		600	MCC ROOM	1	20	1	2	20	1	MCC ROOM	200		RECEPTACLE
SOLIDS HANDLING BUILDING PLC PANEL		1000	MCC ROOM	1	20	3	4	20	1				SPARE
BELT PRESS FEED PUMP NO. 1 TEMP. CONTROLLER		200	LOWER LEVEL	1	20	5	6	20	1	LOWER LEVEL	200		BELT PRESS FEED PUMP NO. 2 TEMP. CONTROLLER
BELT PRESS FEED PUMP NO. 3 TEMP. CONTROLLER		200	LOWER LEVEL	1	20	7	8	20	1	LOWER LEVEL	200		BELT PRESS FEED PUMP NO. 3 TEMP. CONTROLLER
NEAT POLYMER RECIRC. PUMP TEMP. CONTROLLER		200	POLYMER AREA	1	20	9	10	20	1				SPARE
MINI–SPLIT OUTDOOR UNIT OU–3	12 FLA		ROOF	2	20	11	12	20	2	ROOF		12 FLA	MINI–SPLIT OUTDOOR UNIT OU–4
EXHAUST FAN M.O.D. CONTROLS IN MCC–S		500	MCC–S	1	20	15	16	20	1				SPARE
POLYMER BLENDING SYSTEM NO. 1 CTRL PNL		500	POLYMER AREA	1	20	17	18	20	1	POLYMER AREA	500		POLYMER BLENDING SYSTEM NO. 2 CTRL PNL
SPARE				1	20	19	20	20	1				SPARE
PLANT WATER FLOW METER TRANSMITTER		200	PLANT WATER PS	1	20	21	22	20	1	PLANT WATER PS	200		RECEPTACLE ON FLOW METER BACKBOARD
VALVE VAULT LIGHTS AND RECEPTACLE		400	PLANT WATER PS	1	20	23	24	20	1	PLANT WATER PS		1/2	VALVE VAULT SUMP PUMP
SPARE				1	20	25	26	20	1				SPARE
SPARE				1	20	27	28	20	1				SPARE
SPARE				1	20	29	30	20	1				SPARE

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PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SOLIDS HANDLING BUILDING
PANELBOARD SCHEDULE
OCTOBER 2025 E–42

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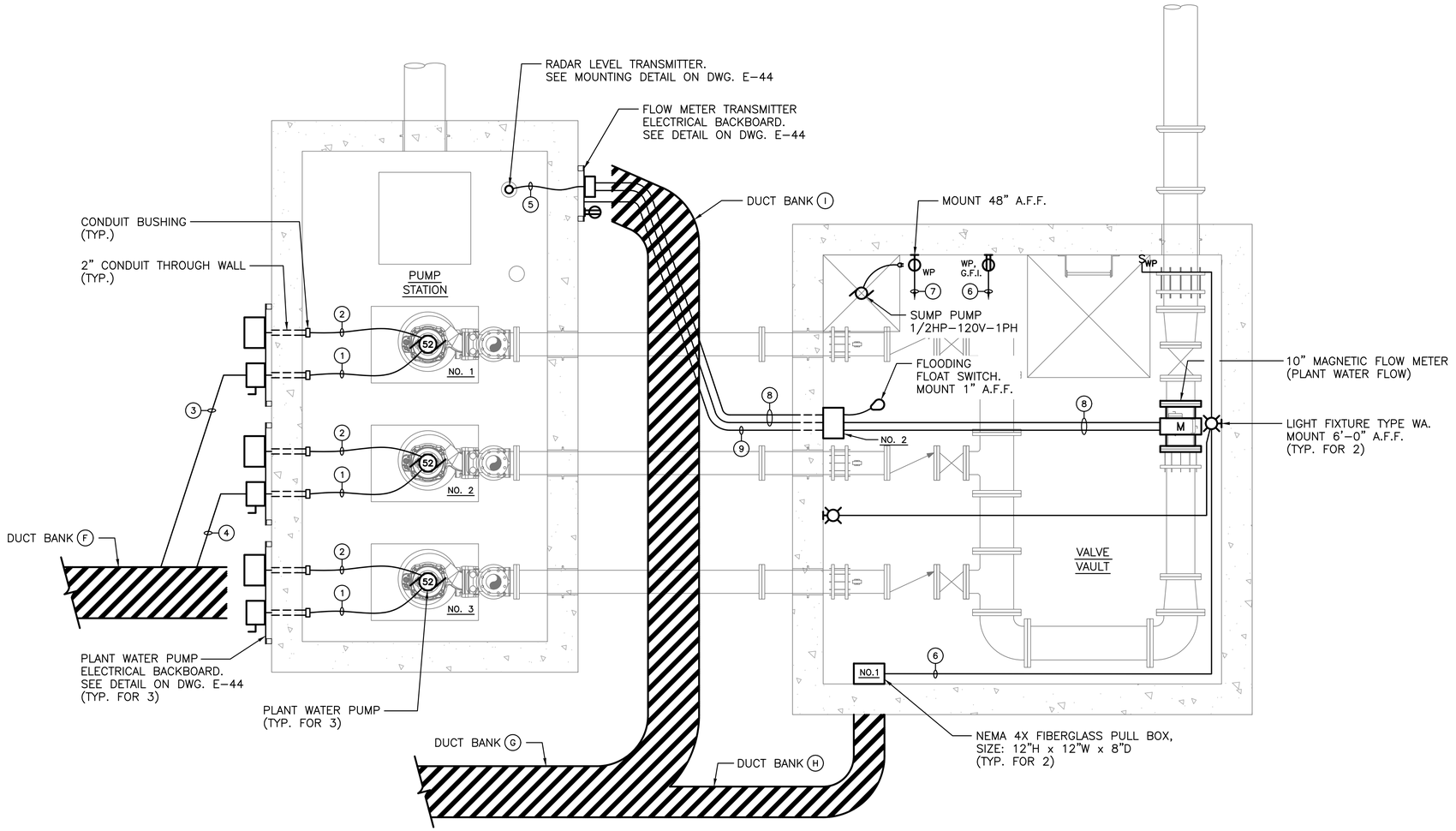

PLANT WATER PUMP STATION
ELECTRICAL PLAN

NORTH

1/2"=1'-0" 12" 0 1' 2' 3' 4' 5'

NOTES

1. ALL CONDUIT IN THE PLANT PUMP STATION AND VALVE VAULT SHALL BE PVC COATED GALVANIZED RIGID STEEL.

WIRING LEGEND

(1) PUMP POWER CABLE. RUN CABLE ALONG UNDERSIDE OF PUMP STATION SLAB AND IN 2"C TO ELECTRICAL BACKBOARD

(2) PUMP CONTROL CABLE. RUN CABLE ALONG UNDERSIDE OF PUMP STATION SLAB AND IN 2"C TO ELECTRICAL BACKBOARD

(3) DUCT BANK CONDUIT NO. 35

(4) DUCT BANK CONDUIT NO. 36

(5) 1 PR. #18 SHLD. TO SOLIDS HANDLING BUILDING PLC PANEL. RUN IN 3/4"C TO FLOW METER TRANSMITTER ELECTRICAL BACKBOARD AND IN DUCT BANK CONDUIT NO. 201

(6) 2#10, #10 GRD. TO PANEL "SL" IN SOLIDS HANDLING BUILDING. RUN IN 3/4"C TO PULL BOX NO. 1 AND IN DUCT BANK CONDUIT NO. 101

(7) 2#4, #4 GRD. TO PANEL "SL". RUN IN 1"C TO PULL BOX NO. 1 AND IN DUCT BANK CONDUIT NO. 101

(8) FLOW METER SIGNAL CABLES IN (2) 3/4"C

(9) 2#14 TO SOLIDS HANDLING BUILDING PLC PANEL. RUN IN 3/4"C TO FLOW METER TRANSMITTER ELECTRICAL BACKBOARD AND IN DUCT BANK CONDUIT NO. 201

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KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
PLANT WATER PUMP STATION
ELECTRICAL PLAN
OCTOBER 2025 E-43

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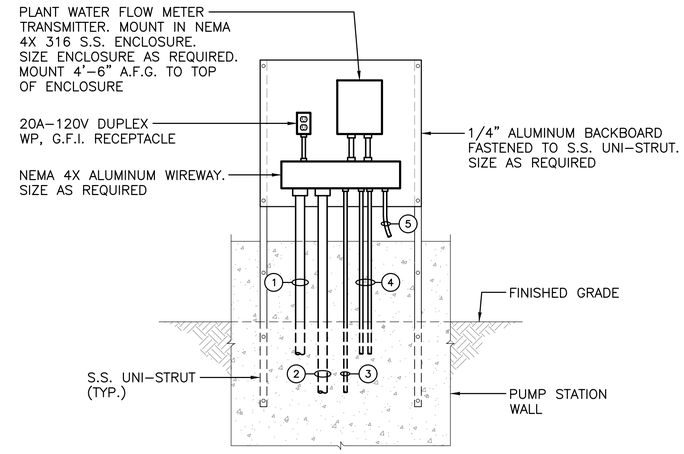
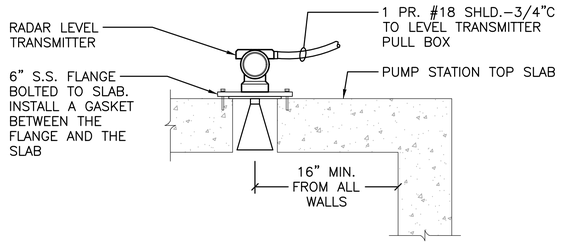


FLOW METER TRANSMITTER ELECTRICAL BACKBOARD DETAIL

NO SCALE

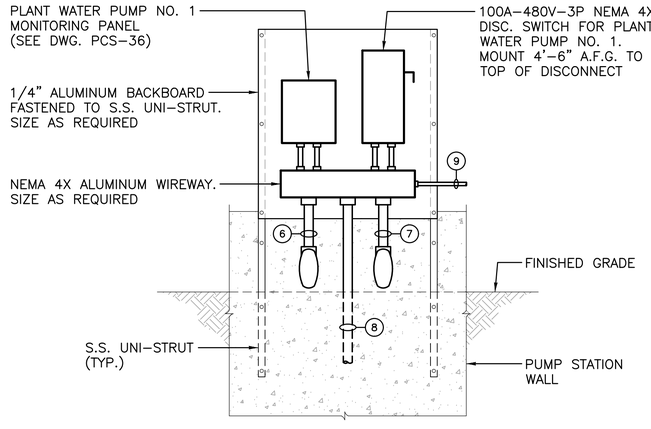


RADAR LEVEL TRANSMITTER MOUNTING DETAIL

NO SCALE

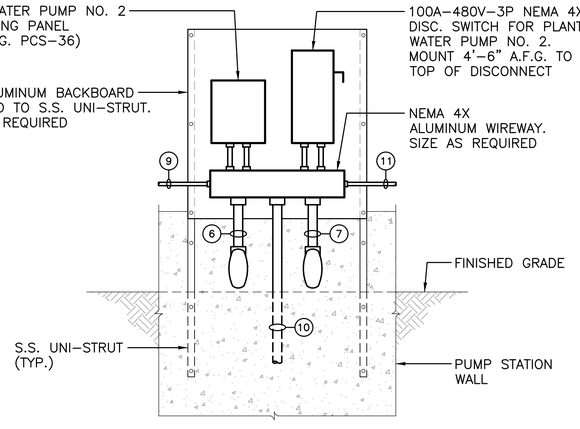
WIRING LEGEND

1. 4#10, 2#10 GRD. TO PANEL "SL" IN SOLIDS HANDLING BUILDING. RUN IN DUCT BANK CONDUIT NO. 102
2. 2#14 AND (2) 1 PR. #18 SHLD. TO SOLIDS HANDLING BUILDING PLC PANEL. RUN IN DUCT BANK CONDUIT NO. 201
3. 2#14-3/4"C TO PULL BOX NO. 2 IN VALVE VAULT FOR FLOAT SWITCH
4. FLOW METER CABLES IN (2) 3/4"C
5. 1 PR. #18 SHLD.-3/4"C FROM RADAR LEVEL TRANSMITTER
6. PUMP CONTROL CABLE-2"C
7. PUMP POWER CABLE-2"C
8. 3#1, #4 GRD. TO MCC-S IN SOLIDS HANDLING BUILDING. RUN IN DUCT BANK CONDUIT NO. 35
9. 6#14-3/4"C (120V CONTROL) FROM PLANT WATER PUMP NO. 1 ELECTRICAL BACKBOARD TO PLANT WATER PUMP NO. 2 BACKBOARD
10. 3#1, #4 GRD. TO MCC-S IN SOLIDS HANDLING BUILDING. RUN IN DUCT BANK CONDUIT NO. 36
11. 12#14-3/4"C (120V CONTROL) FROM PLANT WATER PUMP NO. 2 ELECTRICAL BACKBOARD TO PLANT WATER PUMP NO. 3 BACKBOARD
12. 3#1, #4 GRD. TO MCC-S IN SOLIDS HANDLING BUILDING. RUN IN DUCT BANK CONDUIT NO. 37
13. 18#14 (120V CONTROL) TO MCC-S. RUN IN DUCT BANK CONDUIT NO. 100



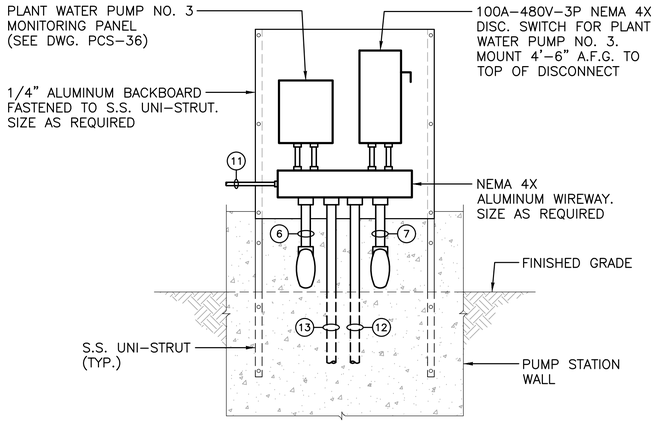
PLANT WATER PUMP NO. 1 ELECTRICAL BACKBOARD DETAIL

NO SCALE



PLANT WATER PUMP NO. 2 ELECTRICAL BACKBOARD DETAIL

NO SCALE



PLANT WATER PUMP NO. 3 ELECTRICAL BACKBOARD DETAIL

NO SCALE

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PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
PLANT WATER PUMP STATION ELECTRICAL BACKBOARD DETAILS
OCTOBER 2025 E-44

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ABBREVIATIONS

A	—	AMPS	MCC	—	MOTOR CONTROL CENTER
AC	—	ALTERNATING CURRENT	MCP	—	MOTOR CIRCUIT PROTECTOR
ATS	—	AUTOMATIC TRANSFER SWITCH	M.O.D.	—	MOTOR OPERATED DAMPER
AUX.	—	AUXILIARY	M–OL'S	—	MOTOR OVERLOADS
BLDG.	—	BUILDING	MS.	—	MOTOR STARTER
C	—	CONDUIT	N	—	NEUTRAL
CT	—	CONSTANT TORQUE	NO.	—	NUMBER
D	—	DEEP	O/C/A	—	OPEN/CLOSE/AUTO
DC	—	DIRECT CURRENT	P	—	POLE
DISC.	—	DISCONNECT	PCS	—	PROCESS CONTROL SYSTEM
DWG.	—	DRAWING	PH	—	PHASE
EXIST.	—	EXISTING	PLC	—	PROGRAMMABLE LOGIC CONTROLLER
G.F.I.	—	GROUND FAULT INTERRUPTER	SHLD.	—	SHIELDED
GRD.	—	GROUND	SPD	—	SURGE PROTECTIVE DEVICE
H	—	HIGH	S.S.	—	STAINLESS STEEL
H/O/A	—	HAND/OFF/AUTO	SSRV	—	SOLID STATE REDUCED VOLTAGE
HP	—	HORSEPOWER	T–M	—	THERMAL MAGNETIC
IC	—	ISOLATION CONTACTOR	TVSS	—	TRANSIENT VOLTAGE SURGE SUPRESSOR
I/O	—	INPUT/OUTPUT	TYP.	—	TYPICAL
KV	—	KILOVOLT	V	—	VOLTS
KW	—	KILOWATT	VFD	—	VARIABLE FREQUENCY DRIVE
L	—	LOW, LINE	VT	—	VARIABLE TORQUE
L/O/R	—	LOCAL/OFF/REMOTE	W	—	WIDE, WIRE
mA	—	MILLIAMP	WRF	—	WATER RECLAMATION FACILITY

MODICON M340H PLC LEGEND

BMXP342020H – PROGRAMMABLE CONTROLLER
BMXCPS3500H – POWER SUPPLY
BMXPRA0100H – REMOTE I/O ADAPTER MODULE
BMXDDI1602H – 16 POINT 24VDC INPUT MODULE
BMXDAI1604H – 16 POINT 120VAC INPUT MODULE
BMXDRA1605H – 16 POINT 24VDC RELAY OUTPUT MODULE
BMXAMI0810H – 8 POINT ANALOG INPUT MODULE
BMXAMO0410H – 4 POINT ANALOG OUTPUT MODULE

SYMBOLS

3 POSITION SELECTOR SWITCH (X INDICATES CLOSED POSITION)

NORMALLY OPEN PUSH BUTTON

NORMALLY CLOSED PUSH BUTTON

NORMALLY OPEN CONTACT

NORMALLY CLOSED CONTACT

(M) MOTOR STARTER COIL

(C) CONTACTOR COIL

(CR) CONTROL RELAY

(IR) INTERPOSING RELAY

MOTOR THERMAL SWITCH

PRESSURE SWITCH–NORMALLY OPEN

PRESSURE SWITCH–NORMALLY CLOSED

SELECTOR SWITCH

(A) PUSH–TO–TEST PILOT LIGHT– LENS COLOR IS INDICATED BY LETTER INSIDE
A – AMBER
B – BLUE
G – GREEN
R – RED
W – WHITE

PUMP NO. 1 ← NAMEPLATE WITH 1/4" MINIMUM TEXT

HAND OFF AUTO ← LEGEND PLATE (TYP.)

START ← PILOT DEVICE (TYP.)

RUN

TYPICAL PILOT DEVICE LAYOUT

(B) PUSH BUTTON – BUTTON COLOR IS INDICATED BY LETTER INSIDE
B – BLUE
G – GREEN
R – RED
O – ORANGE
W – WHITE
Y – YELLOW
BLANK – BLACK

ETM ELAPSED TIME METER

ENGRAVED NAMEPLATE

CONTROL PANEL CIRCUIT BREAKER

(5) MOTOR (NUMBER INDICATES HP)

SOLENOID VALVE

ISR INTRINSICALLY SAFE RELAY

480V / 120V CONTROL TRANSFORMER

FUSE

THERMOSTAT

FLOAT SWITCH

FLOW SWITCH

(K) KIRK KEY INTERLOCK

MOTOR STARTER

THERMAL OVERLOAD

CIRCUIT BREAKER

DISCONNECT SWITCH

LEGEND

TERMINAL IN MCC FOR FIELD WIRING

TERMINAL IN VFD FOR FIELD WIRING

TERMINAL IN MOTOR STARTER FOR FIELD WIRING

TERMINAL IN PLC PANEL FOR FIELD WIRING

TERMINAL IN CONTROL PANEL FOR FIELD WIRING

TERMINAL IN VALVE OR GATE ACTUATOR FOR FIELD WIRING

INDICATES WIRING IN CONTROL PANEL

INDICATES FIELD WIRING

GROUND

CONNECTING WIRES

NOTES

1. EXISTING EQUIPMENT IS SHOWN IN A LIGHT WEIGHT AND IDENTIFIED WITH SLANTED LETTERING. NEW EQUIPMENT AND WIRING IS SHOWN BOLD.
2. COORDINATE SIZE OF ALL BREAKERS, MOTOR STARTERS AND VFDs WITH ACTUAL HORSEPOWERS OF EQUIPMENT BEING FURNISHED.
3. ALL WIRING SHALL CONFORM TO THE FOLLOWING COLOR CODE:

120 VOLT, 1 PHASE:	BLACK – PHASE WIRE WHITE – NEUTRAL WIRE
CONTROL WIRES:	120VAC – RED 24VDC – BLUE EXTERNAL POWER SOURCE – YELLOW
INTRINSICALLY SAFE: WIRES	PURPLE
GROUND WIRES:	GREEN

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APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		DRAWN BY: SMJ CHECKED BY: DTB SHEET NO.: 155 of 191 PROJECT NO.: 50.1890.97–A	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3 PCS ABBREVIATIONS, SYMBOLS, AND LEGEND OCTOBER 2025 PCS–01

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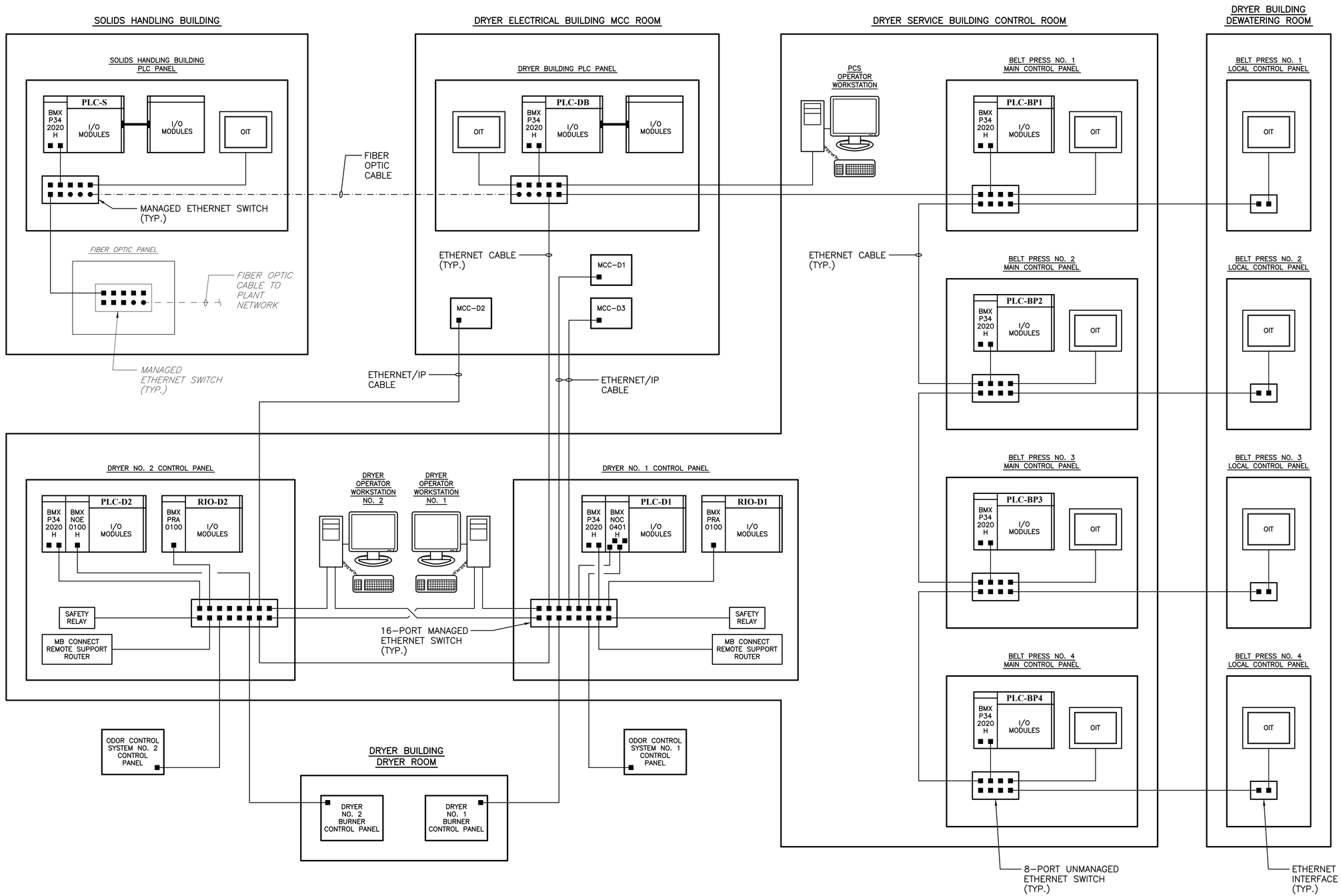

NOTES

1. THE BELT PRESS MAIN CONTROL PANELS AND LOCAL CONTROL PANELS ARE BEING FURNISHED BY THE BELT PRESS MANUFACTURER.
2. THE DRYER CONTROL PANELS AND DRYER BURNER CONTROL PANELS ARE BEING FURNISHED BY THE DRYER MANUFACTURER.
3. THE ODOR CONTROL SYSTEM CONTROL PANELS ARE BEING FURNISHED BY THE ODOR CONTROL SYSTEM MANUFACTURER.

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ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PCS-02

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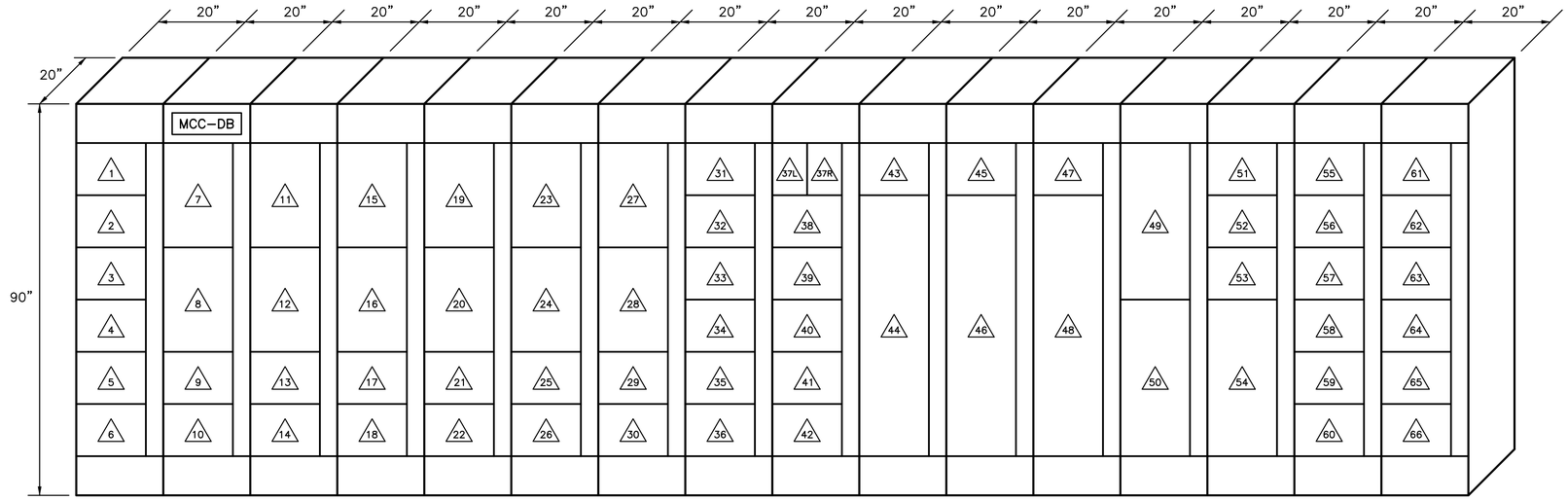

MCC–DB ELEVATION

NO SCALE

NOTES

1. MCC–DB IS LOCATED IN THE DRYER ELECTRICAL BUILDING MCC ROOM.
2. "MCC–DB" NAMEPLATE SHALL HAVE 2" HIGH LETTERS.

UNIT LOCATION	DESCRIPTION
1	800A MAIN LUGS
2	DRYER ROOM MAU NO. 1
3	DRYER ROOM MAU NO. 2
4	DEWATERING ROOM GAS–FIRED UNIT HEATER CONTROL PANEL
5	SPACE
6	SPACE
7	BELT PRESS NO. 1 FEED BOX DRIVE
8	BELT PRESS NO. 1 GRAVITY BELT DRIVE
9	BELT PRESS NO. 1 HYDRAULIC PUMP
10	BELT PRESS NO. 1 WASH WATER PUMP
11	BELT PRESS NO. 1 PRESSURE SECTION DRIVES
12	BELT PRESS NO. 2 PRESSURE SECTION DRIVES
13	SPACE
14	SPACE

UNIT LOCATION	DESCRIPTION
15	BELT PRESS NO. 2 FEED BOX DRIVE
16	BELT PRESS NO. 2 GRAVITY BELT DRIVE
17	BELT PRESS NO. 2 HYDRAULIC PUMP
18	BELT PRESS NO. 2 WASH WATER PUMP
19	BELT PRESS NO. 3 FEED BOX DRIVE
20	BELT PRESS NO. 3 GRAVITY BELT DRIVE
21	BELT PRESS NO. 3 HYDRAULIC PUMP
22	BELT PRESS NO. 3 WASH WATER PUMP
23	BELT PRESS NO. 3 PRESSURE SECTION DRIVES
24	BELT PRESS NO. 4 PRESSURE SECTION DRIVES
25	SPACE
26	SPACE
27	BELT PRESS NO. 4 FEED BOX DRIVE
28	BELT PRESS NO. 4 GRAVITY BELT DRIVE

UNIT LOCATION	DESCRIPTION
29	BELT PRESS NO. 4 HYDRAULIC PUMP
30	BELT PRESS NO. 4 WASH WATER PUMP
31	HORIZONTAL CAKE CONVEYOR NO. 1
32	INCLINED CAKE CONVEYOR NO. 1
33	CAKE TRANSFER CONVEYOR NO. 1
34	HORIZONTAL CAKE CONVEYOR NO. 2
35	INCLINED CAKE CONVEYOR NO. 2
36	CAKE TRANSFER CONVEYOR NO. 2
37L	INCLINED CAKE CONVEYOR NO. 1 DISCHARGE GATE
37R	INCLINED CAKE CONVEYOR NO. 2 DISCHARGE GATE
38	CAKE BIN BYPASS CONVEYOR
39	DEWATERING ROOM BELT PRESS HOOD EXHAUST FAN EF–11
40	DEWATERING ROOM EXHAUST FAN EF–12

UNIT LOCATION	DESCRIPTION
41	DEWATERING ROOM EXHAUST FAN EF–13
42	DEWATERING ROOM EXHAUST FAN EF–14
43	SPACE
44	FILTRATE PUMP NO. 1
45	SPACE
46	FILTRATE PUMP NO. 2
47	SPACE
48	FILTRATE PUMP NO. 3
49	DRYER FIRE FIGHTING PUMP NO. 1
50	DRYER FIRE FIGHTING PUMP NO. 2
51	SPACE
52	SPACE
53	FIRE PUMP BUILDING

UNIT LOCATION	DESCRIPTION
54	DRYER FIRE FIGHTING PUMP NO. 3
55	DRYER ROOM EXHAUST FAN EF–1
56	DRYER ROOM EXHAUST FAN EF–2
57	DRYER ROOM EXHAUST FAN EF–3
58	DRYER ROOM EXHAUST FAN EF–4
59	DRYER ROOM EXHAUST FAN EF–5
60	SPACE
61	DRYER ROOM EXHAUST FAN EF–6
62	DRYER ROOM EXHAUST FAN EF–7
63	DRYER ROOM EXHAUST FAN EF–8
64	DRYER ROOM EXHAUST FAN EF–9
65	DRYER ROOM EXHAUST FAN EF–10
66	SPACE

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

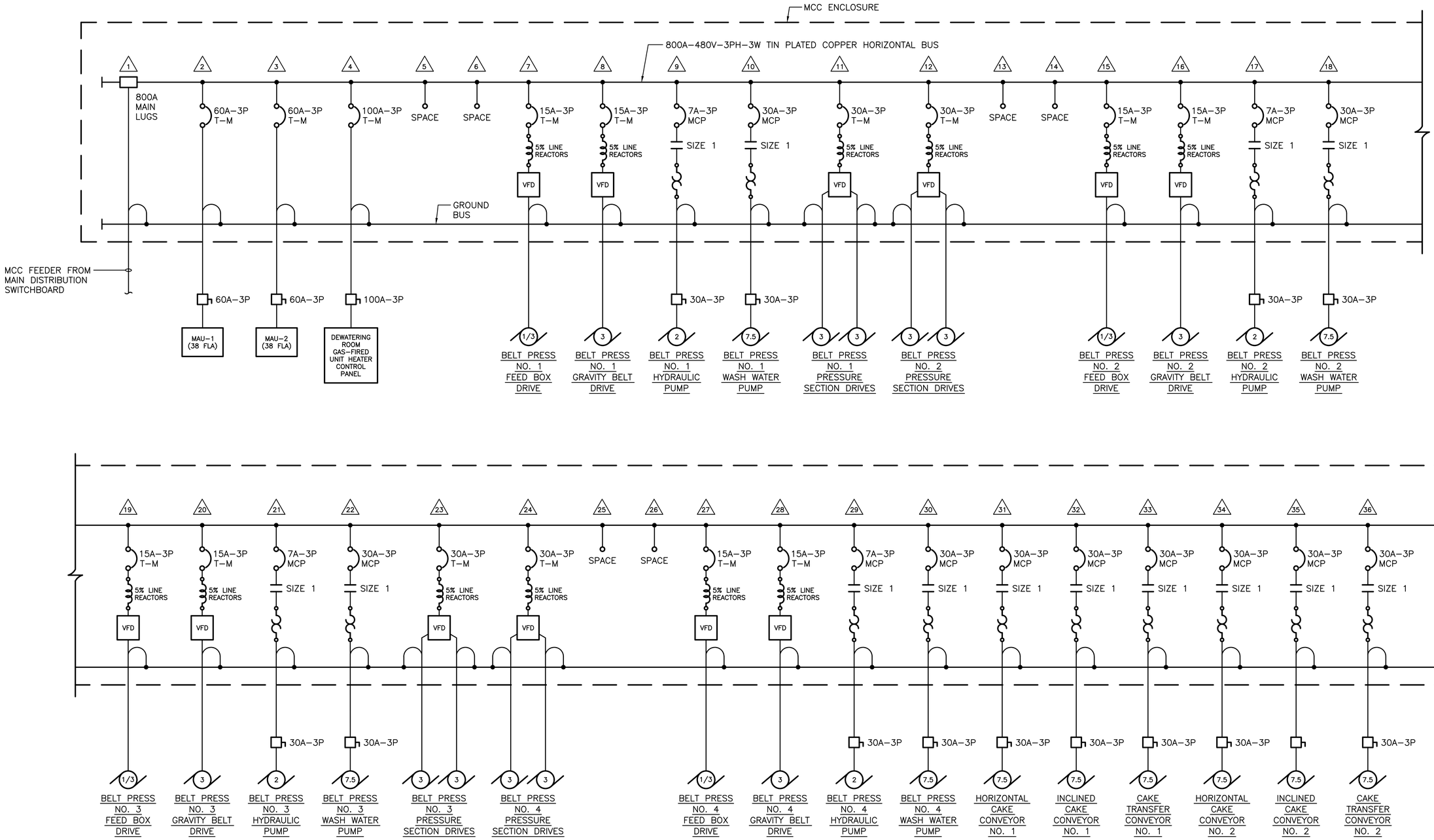
KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE
DIRECTOR OF PUBLIC WORKS
APPROVED DATE
ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE
PROJECT MANAGER

SCALE: AS SHOWN
DRAWN BY: SMJ
CHECKED BY: DTB
SHEET NO.: 157 of 191
PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
MCC–DB ELEVATION
OCTOBER 2025 PCS–03

\\ad.rkk.com\Vs\Cloud\Projects\2019\19129_Biosolids\Electrical\Dryer Project\Cadd\Elec\PCS-03 19129-DB.dwg Oct 22, 2025 - 1:12pm ENV.CTB Plot Scale 1=1 Plot By: sjamison Tab:Layout1



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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: AS SHOWN DRAWN BY: SMJ CHECKED BY: DTB
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 158 of 191 PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
MCC–DB
ONE–LINE DIAGRAM
OCTOBER 2025 PCS–04

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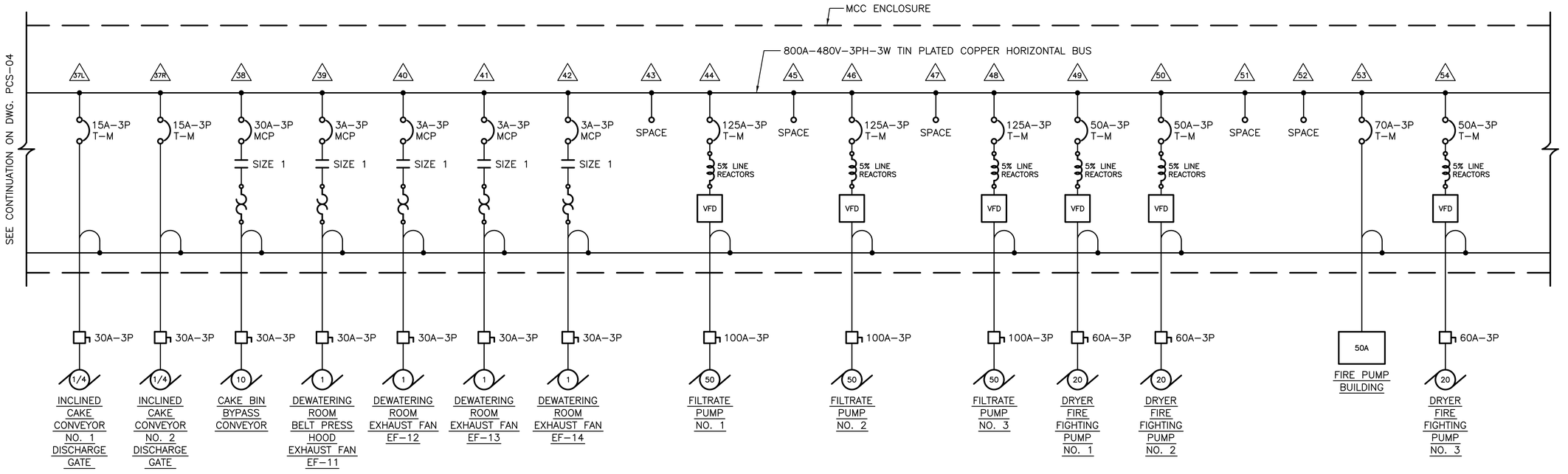

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: AS SHOWN
DRAWN BY: SMJ
CHECKED BY: DTB
SHEET NO.: 159 of 191
PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
MCC–DB
ONE–LINE DIAGRAM
OCTOBER 2025 PCS–05

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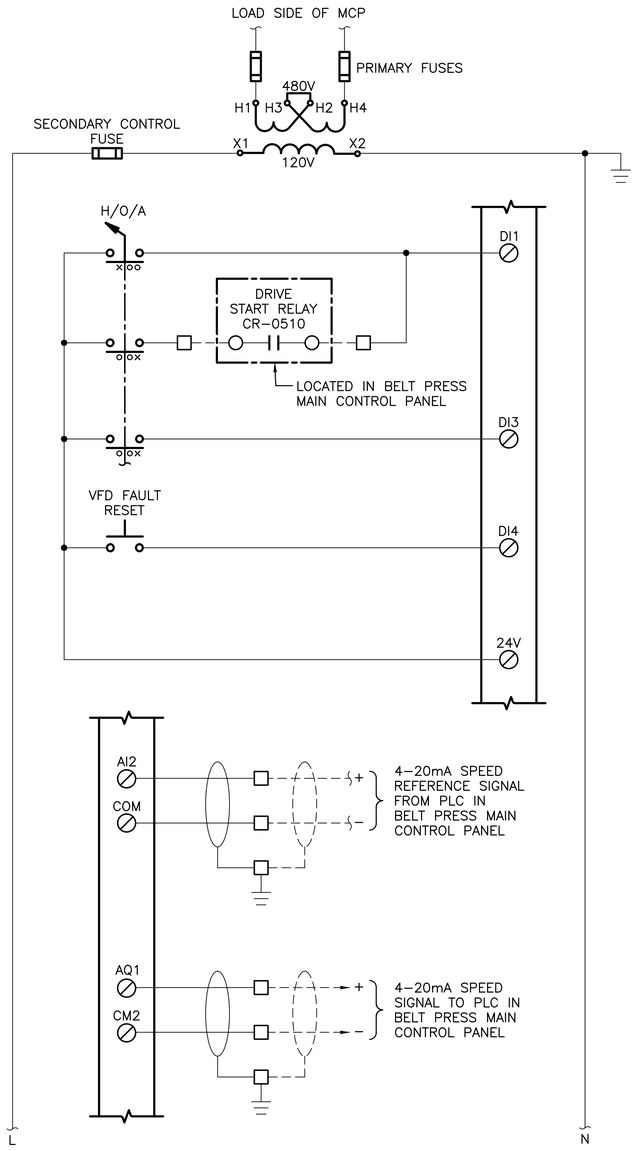
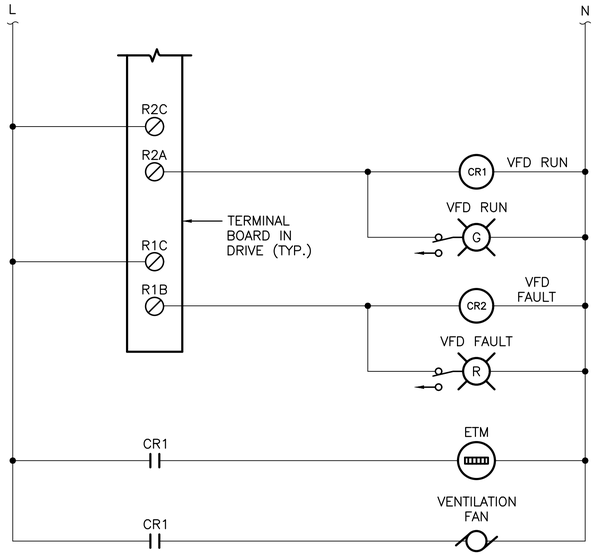
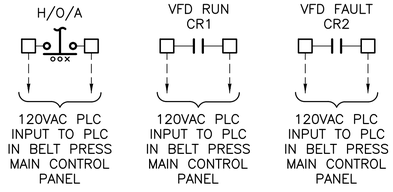


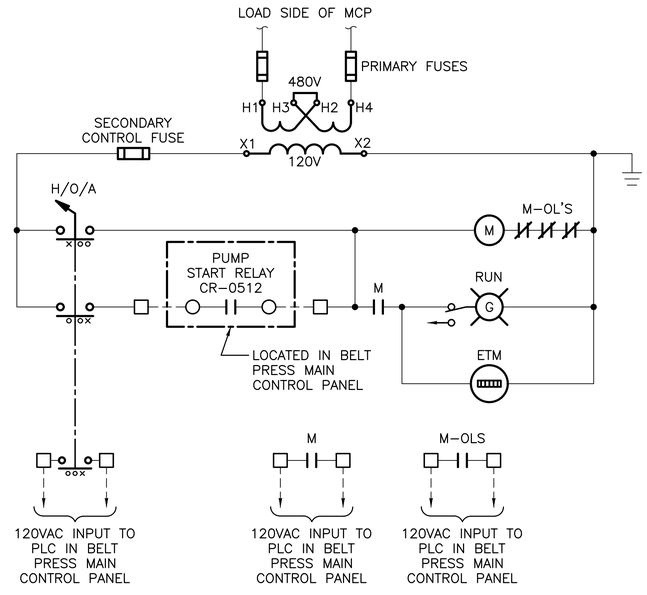
BELT PRESS NO. 1, NO. 2, NO. 3, AND NO. 4
FEED BOX DRIVE
VFD WIRING DIAGRAM

NOTES

1. COORDINATE VFD CONTROL WIRING WITH THE VFD MANUFACTURER. REFER TO THE DESCRIPTION OF OPERATION IN THE SPECS FOR THE AUTO START/STOP AND SPEED CONTROL SEQUENCE.







BELT PRESS NO. 1, NO. 2, NO. 3, AND NO. 4
HYDRAULIC PUMP
CONTROL WIRING DIAGRAM

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	CONTRACT 3
APPROVED DATE		SHEET NO.: 160 of 191	MCC-DB
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	CONTROL WIRING DIAGRAMS
			OCTOBER 2025 PCS-06

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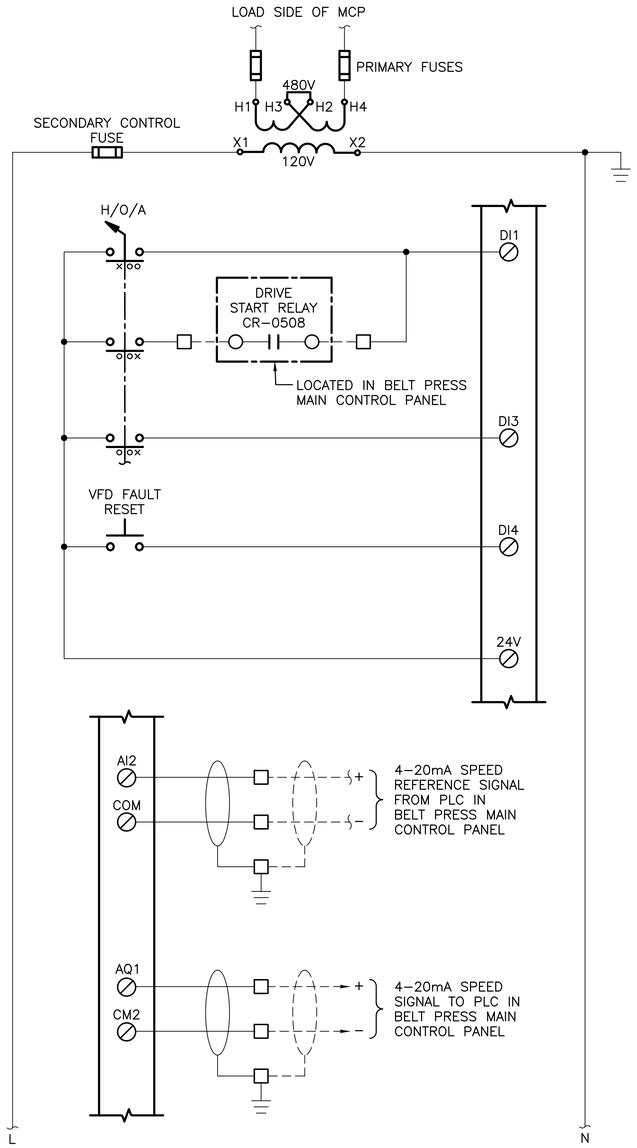
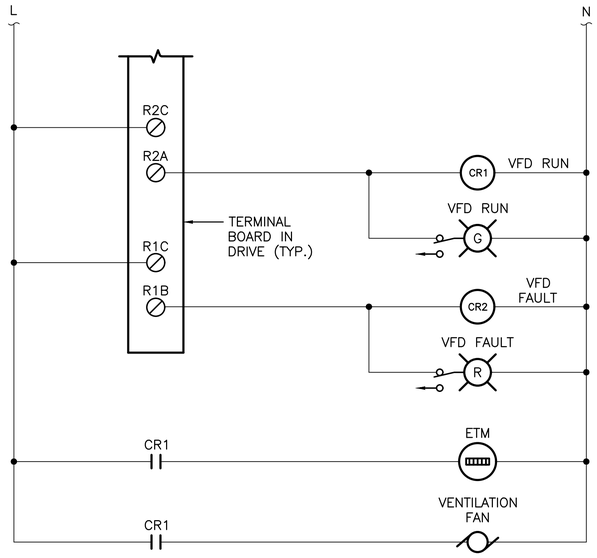
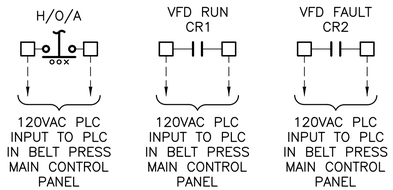


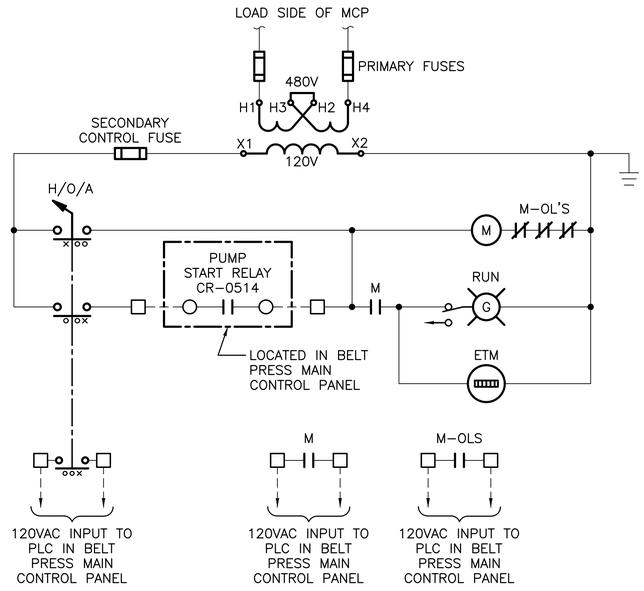
BELT PRESS NO. 1, NO. 2, NO. 3, AND NO. 4
GRAVITY BELT DRIVE
VFD WIRING DIAGRAM

NOTES

1. COORDINATE VFD CONTROL WIRING WITH THE VFD MANUFACTURER. REFER TO THE DESCRIPTION OF OPERATION IN THE SPECS FOR THE AUTO START/STOP AND SPEED CONTROL SEQUENCE.







BELT PRESS NO. 1, NO. 2, NO. 3, AND NO. 4
WASH WATER PUMP
CONTROL WIRING DIAGRAM

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN
		DRAWN BY: SMJ
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB
APPROVED DATE		SHEET NO.: 161 of 191
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
MCC-DB
CONTROL WIRING DIAGRAMS
OCTOBER 2025 PCS-07

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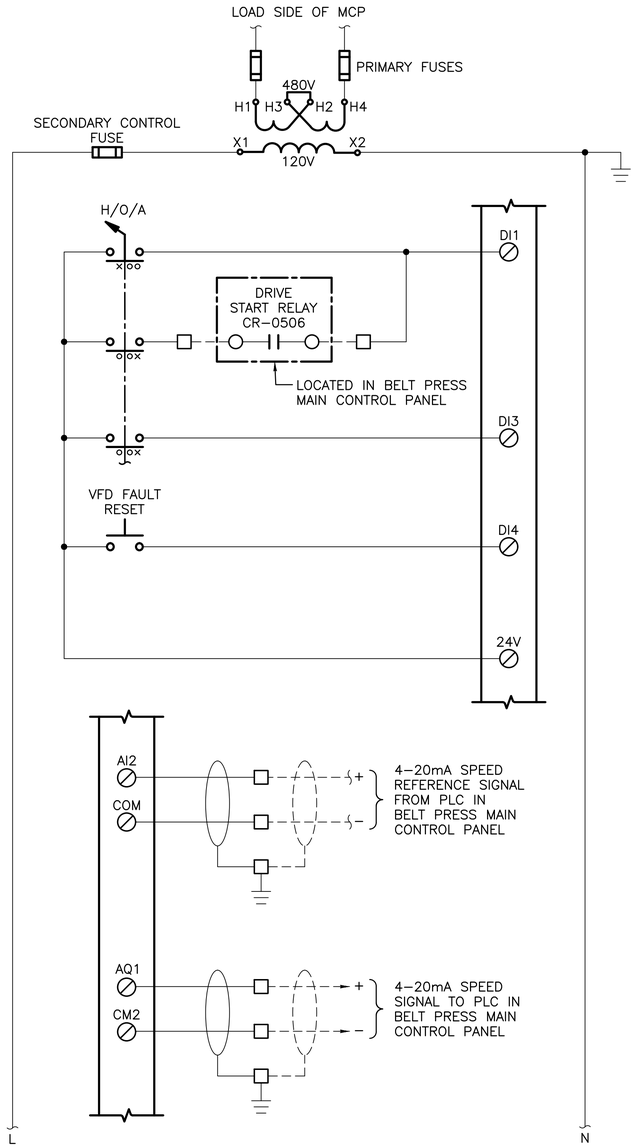
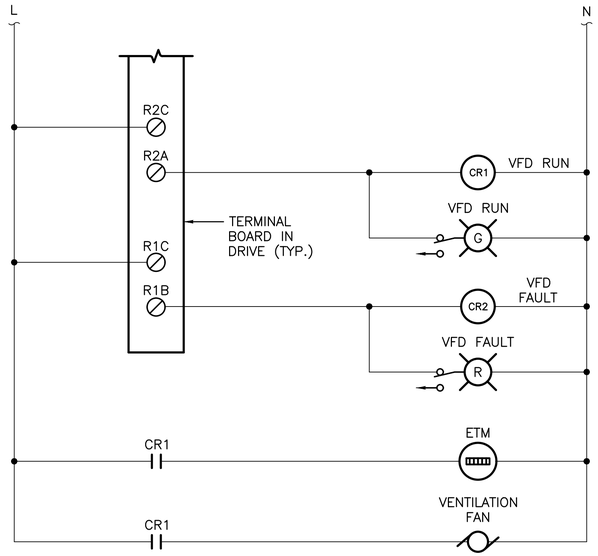
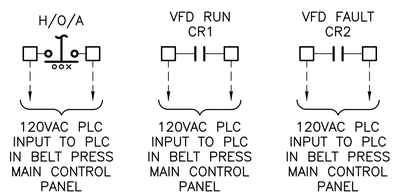


NOTES

1. COORDINATE VFD CONTROL WIRING WITH THE VFD MANUFACTURER. REFER TO THE DESCRIPTION OF OPERATION IN THE SPECS FOR THE AUTO START/STOP AND SPEED CONTROL SEQUENCE.





BELT PRESS NO. 1, NO. 2, NO. 3, AND NO. 4 PRESSURE SECTION DRIVES VFD WIRING DIAGRAM

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REVISIONS			
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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	CONTRACT 3
APPROVED DATE		SHEET NO.: 162 of 191	MCC-DB
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	CONTROL WIRING DIAGRAMS
			OCTOBER 2025 PCS-08

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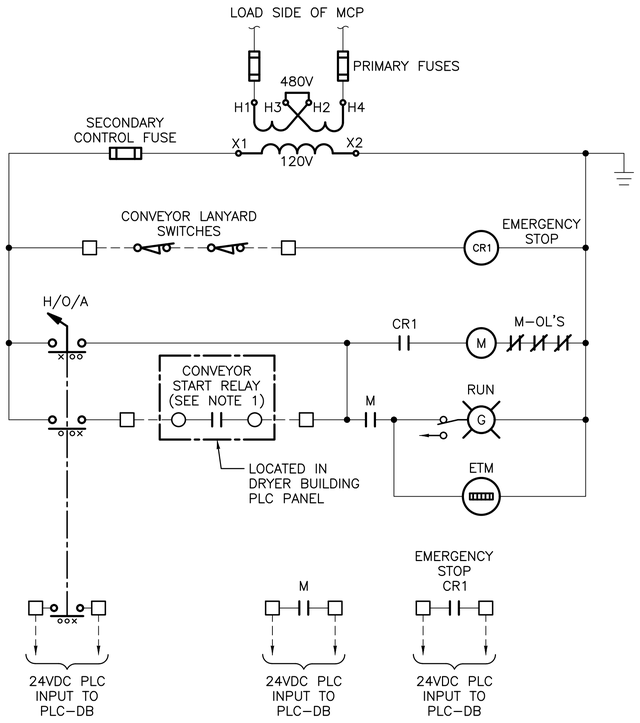
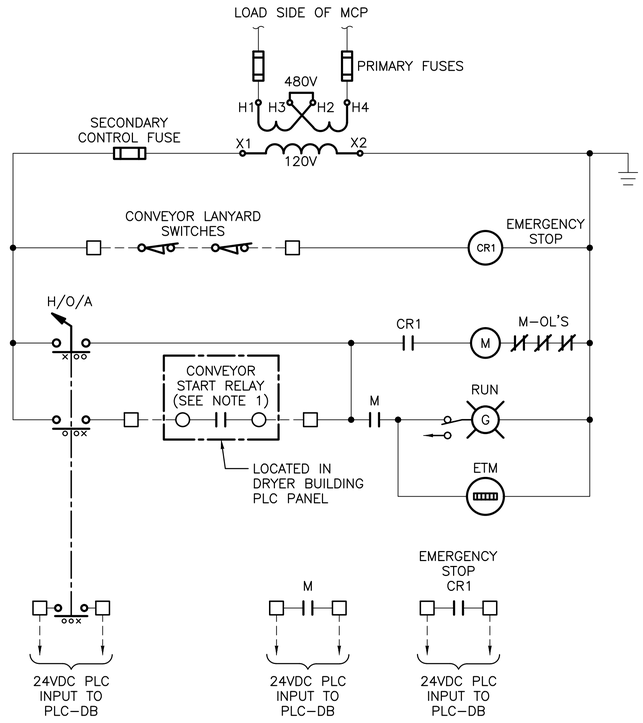
NOTES

1. THE START RELAY CONTACTS FOR THE CONVEYORS ARE AS FOLLOWS:

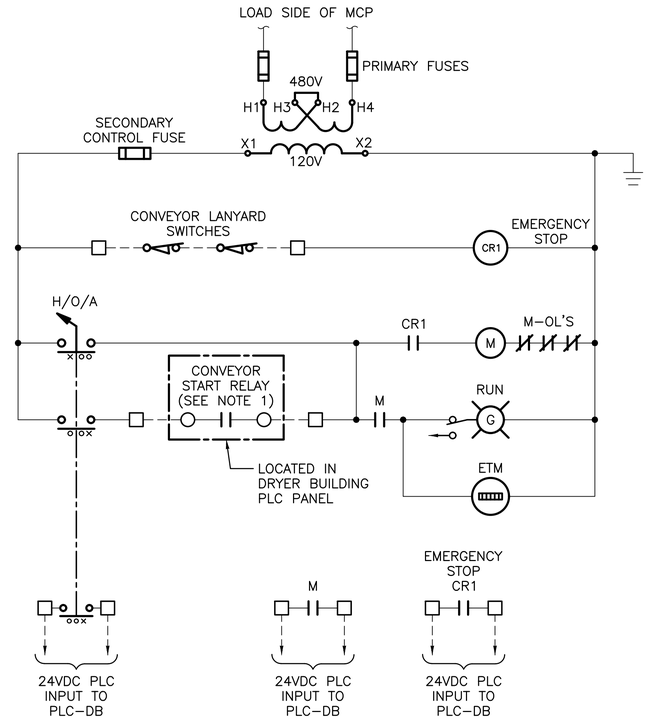
   HORIZONTAL CAKE CONVEYOR NO. 1 – IR1
   HORIZONTAL CAKE CONVEYOR NO. 2 – IR6
   INCLINED CAKE CONVEYOR NO. 1 – IR2
   INCLINED CAKE CONVEYOR NO. 2 – IR7
   CAKE TRANSFER CONVEYOR NO. 1 – IR5
   CAKE TRANSFER CONVEYOR NO. 2 – IR10



HORIZONTAL CAKE CONVEYORS NO. 1 AND NO. 2
CONTROL WIRING DIAGRAM



INCLINED CAKE CONVEYORS NO. 1 AND NO. 2
CONTROL WIRING DIAGRAM



CAKE TRANSFER CONVEYORS NO. 1 AND NO. 2
CONTROL WIRING DIAGRAM

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DTB	MCC–DB
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 163 of 191	CONTROL WIRING DIAGRAMS
		PROJECT NO.: 50.1890.97–A	OCTOBER 2025 PCS–09

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NOTES

1. THE CONTROL WIRING DIAGRAM FOR DRYER ROOM EXHAUST FAN EF-1 IS TYPICAL FOR THE FOLLOWING EXHAUST FANS:

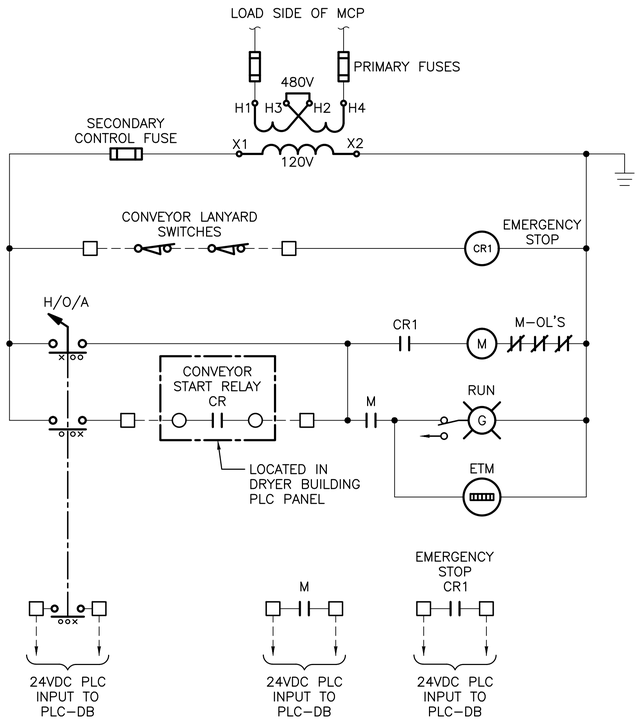
   DRYER ROOM EXHAUST FAN EF-1
   DRYER ROOM EXHAUST FAN EF-2
   DRYER ROOM EXHAUST FAN EF-3
   DRYER ROOM EXHAUST FAN EF-4
   DRYER ROOM EXHAUST FAN EF-5
   DRYER ROOM EXHAUST FAN EF-6
   DRYER ROOM EXHAUST FAN EF-7
   DRYER ROOM EXHAUST FAN EF-8
   DRYER ROOM EXHAUST FAN EF-9
   DRYER ROOM EXHAUST FAN EF-10

2. THE START RELAY CONTACTS FOR THE DRYER ROOM EXHAUST FANS ARE AS FOLLOWS:

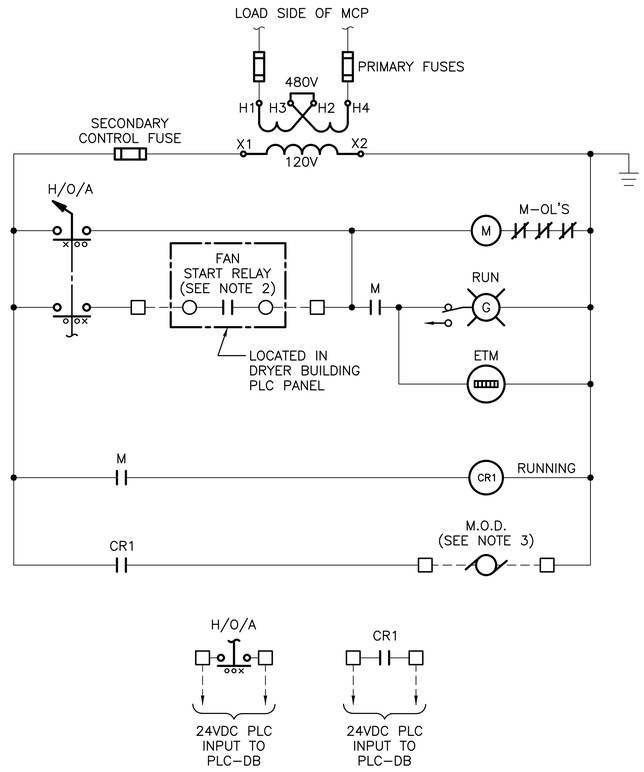
   DRYER ROOM EXHAUST FAN EF-1 – IR19
   DRYER ROOM EXHAUST FAN EF-2 – IR20
   DRYER ROOM EXHAUST FAN EF-3 – IR21
   DRYER ROOM EXHAUST FAN EF-4 – IR22
   DRYER ROOM EXHAUST FAN EF-5 – IR23
   DRYER ROOM EXHAUST FAN EF-6 – IR24
   DRYER ROOM EXHAUST FAN EF-7 – IR25
   DRYER ROOM EXHAUST FAN EF-8 – IR26
   DRYER ROOM EXHAUST FAN EF-9 – IR27
   DRYER ROOM EXHAUST FAN EF-10 – IR28

3. THE M.O.D.s FOR THE DRYER ROOM EXHAUST FANS ARE AS FOLLOWS:

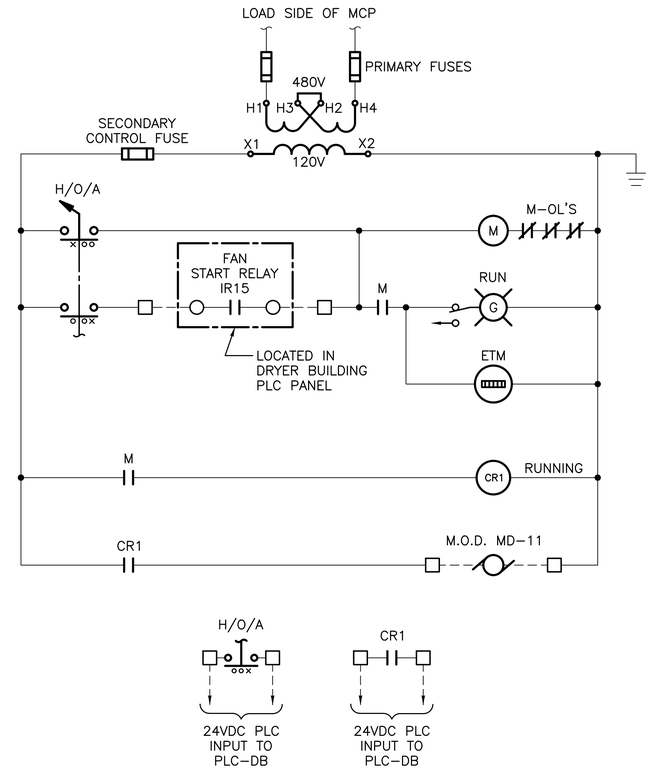
   DRYER ROOM EXHAUST FAN EF-1 – M.O.D. MD-1
   DRYER ROOM EXHAUST FAN EF-2 – M.O.D. MD-2
   DRYER ROOM EXHAUST FAN EF-3 – M.O.D. MD-3
   DRYER ROOM EXHAUST FAN EF-4 – M.O.D. MD-4
   DRYER ROOM EXHAUST FAN EF-5 – M.O.D. MD-5
   DRYER ROOM EXHAUST FAN EF-6 – M.O.D. MD-6
   DRYER ROOM EXHAUST FAN EF-7 – M.O.D. MD-7
   DRYER ROOM EXHAUST FAN EF-8 – M.O.D. MD-8
   DRYER ROOM EXHAUST FAN EF-9 – M.O.D. MD-9
   DRYER ROOM EXHAUST FAN EF-10 – M.O.D. MD-10



CAKE BIN BYPASS CONVEYOR
CONTROL WIRING DIAGRAM



DRYER ROOM EXHAUST FAN EF-1
CONTROL WIRING DIAGRAM
(SEE NOTE 1)



DEWATERING ROOM BELT PRESS HOOD
EXHAUST FAN EF-11
CONTROL WIRING DIAGRAM

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	MCC-DB
APPROVED DATE		SHEET NO.: 164 of 191	CONTROL WIRING DIAGRAMS
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PCS-10

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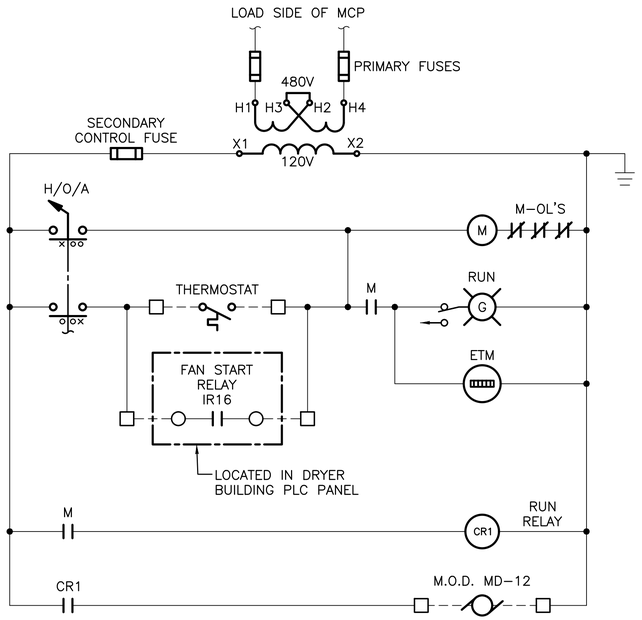
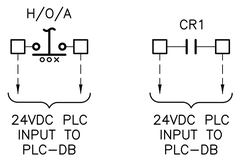
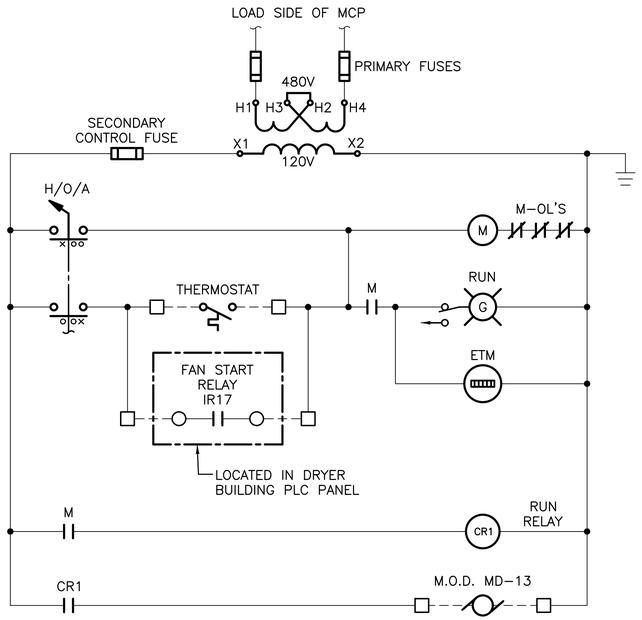
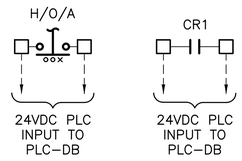


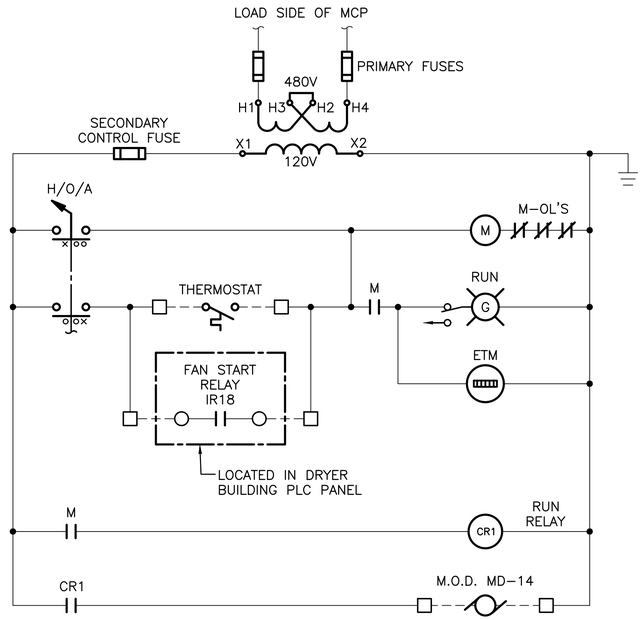


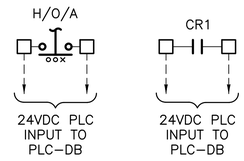
DEWATERING ROOM EXHAUST FAN EF-12
CONTROL WIRING DIAGRAM





DEWATERING ROOM EXHAUST FAN EF-13
CONTROL WIRING DIAGRAM





DEWATERING ROOM EXHAUST FAN EF-14
CONTROL WIRING DIAGRAM

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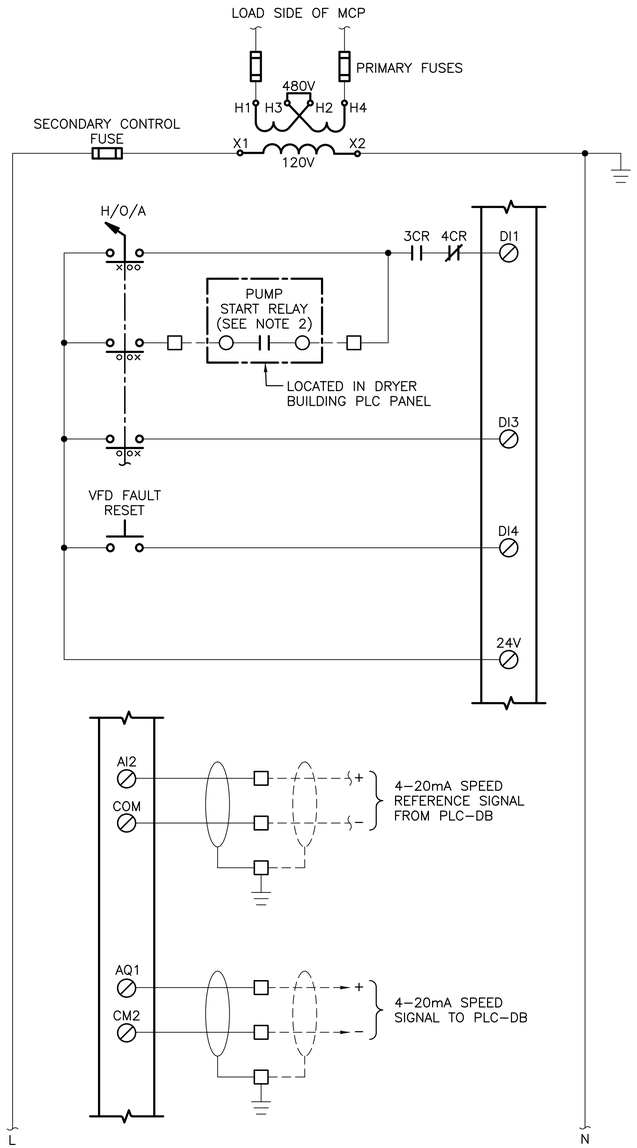
REVISIONS			
NO.	DESCRIPTION	BY	DATE

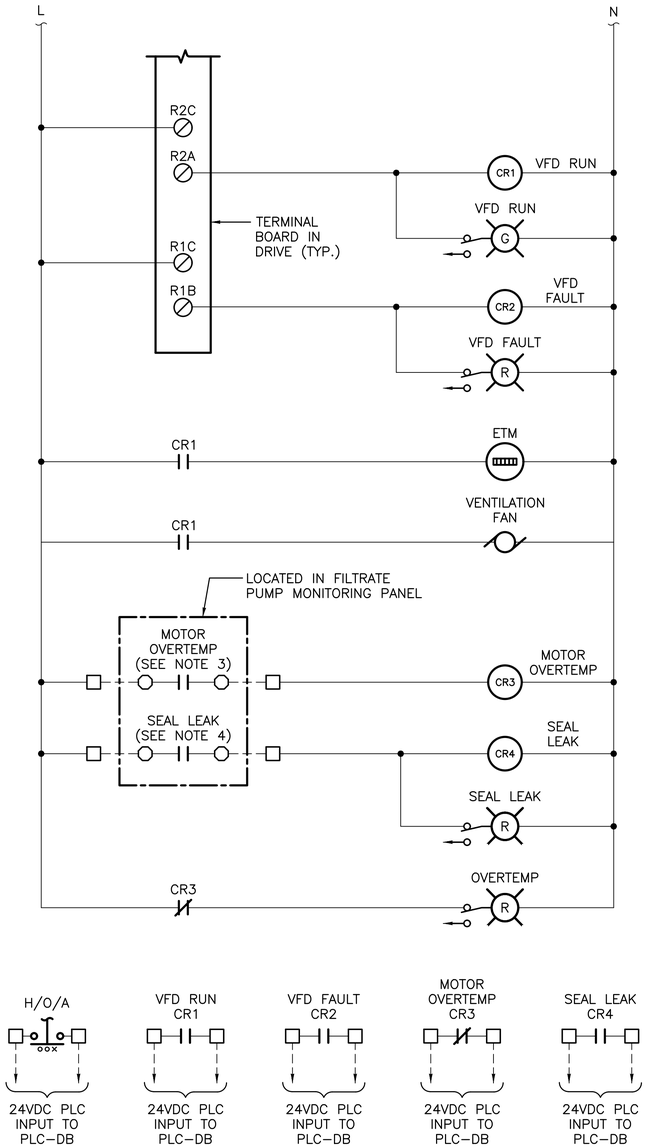
KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: AS SHOWN
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		DRAWN BY: SMJ
		CHECKED BY: DTB
		SHEET NO.: 165 of 191
		PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
MCC-DB
CONTROL WIRING DIAGRAMS
OCTOBER 2025 PCS-11

\\rkd.rkk.com\jb\Cloud Projects\2019\19729_Biosolids\Electrical\Dryer Project\Cadd\Elec\PCS-11 19729.dwg Oct 22, 2025 - 1:13pm ENV.CTB Plot Scale 1=1 Plot By: sjamison Tab:Layout1





NOTES

1. COORDINATE VFD CONTROL WIRING WITH THE VFD MANUFACTURER. REFER TO THE DESCRIPTION OF OPERATION IN THE SPECS FOR THE AUTO START/STOP AND SPEED CONTROL SEQUENCE.
2. THE PUMP START RELAY CONTACTS FOR THE FILTRATE PUMPS ARE AS FOLLOWS:

   FILTRATE PUMP NO. 1 – IR12
   FILTRATE PUMP NO. 2 – IR13
   FILTRATE PUMP NO. 3 – IR14
3. THE PUMP OVERTEMP RELAY CONTACTS FOR THE FILTRATE PUMPS ARE AS FOLLOWS:

   FILTRATE PUMP NO. 1 – CR1
   FILTRATE PUMP NO. 2 – CR3
   FILTRATE PUMP NO. 3 – CR5
4. THE PUMP SEAL LEAK RELAY CONTACTS FOR THE FILTRATE PUMPS ARE AS FOLLOWS:

   FILTRATE PUMP NO. 1 – CR2
   FILTRATE PUMP NO. 2 – CR4
   FILTRATE PUMP NO. 3 – CR6

FILTRATE PUMPS NO. 1, NO. 2, AND NO. 3 VFD WIRING DIAGRAM

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	MCC–DB CONTROL WIRING DIAGRAMS
APPROVED DATE		SHEET NO.: 166 of 191	OCTOBER 2025 PCS–12
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	

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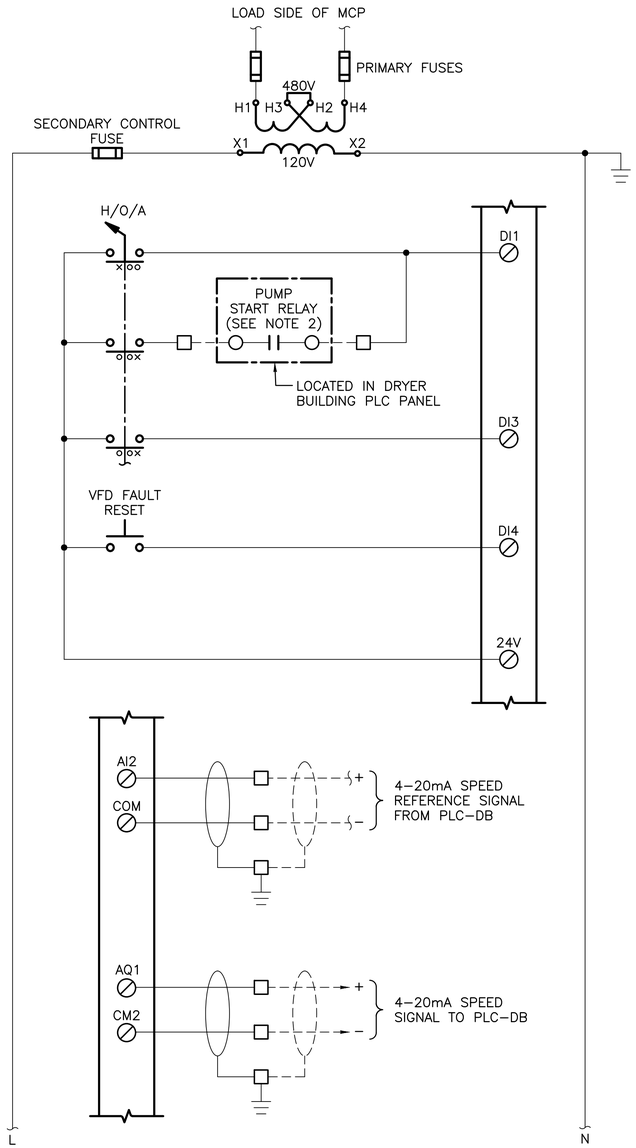
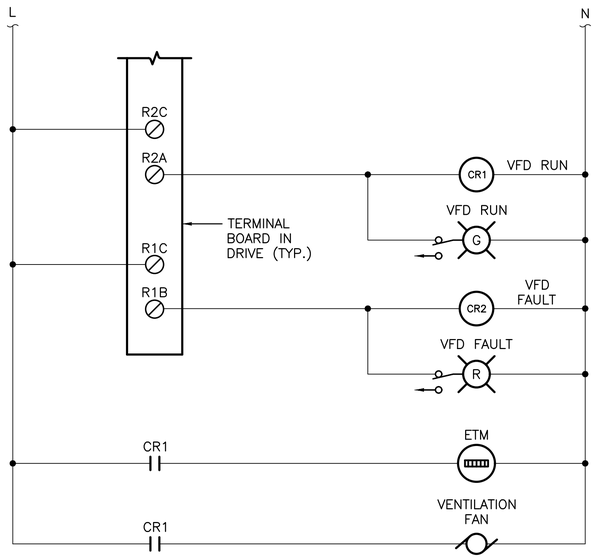


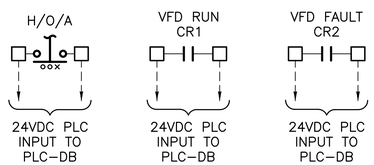
NOTES

1. COORDINATE VFD CONTROL WIRING WITH THE VFD MANUFACTURER. REFER TO THE DESCRIPTION OF OPERATION IN THE SPECS FOR THE AUTO START/STOP AND SPEED CONTROL SEQUENCE.

2. THE PUMP START RELAY CONTACTS FOR THE DRYER FIRE FIGHTING PUMPS ARE AS FOLLOWS:

   DRYER FIRE FIGHTING PUMP NO. 1 – IR31
   DRYER FIRE FIGHTING PUMP NO. 2 – IR32
   DRYER FIRE FIGHTING PUMP NO. 3 – IR33





DRYER FIRE FIGHTING PUMPS NO. 1, NO. 2, AND NO. 3 VFD WIRING DIAGRAM

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN
		DRAWN BY: SMJ
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB
APPROVED DATE		SHEET NO.: 167 of 191
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
MCC–DB
CONTROL WIRING DIAGRAMS
OCTOBER 2025 PCS–13

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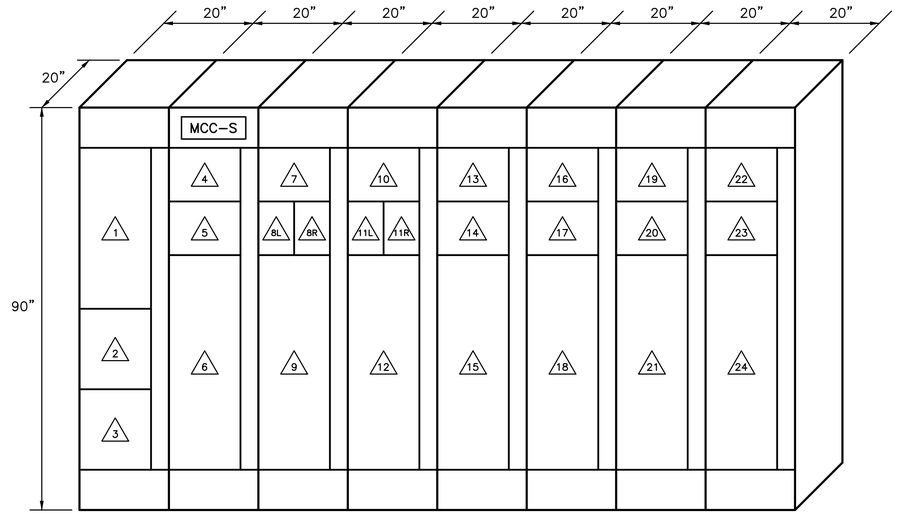

MCC–S ELEVATION

NO SCALE

NOTES

1. MCC–S IS LOCATED IN THE SOLIDS HANDLING BUILDING.
2. "MCC–S" NAMEPLATE SHALL HAVE 2" HIGH LETTERS.

UNIT LOCATION	DESCRIPTION
1	500A MAIN BREAKER
2	POWER MONITOR
3	SURGE PROTECTIVE DEVICE
4	PANEL "SL" TRANSFORMER
5	NEAT POLYMER RECIRC PUMP
6	BELT PRESS FEED PUMP NO. 1
7	SPACE
8L	POLYMER FEED PUMPS NO. 1A/1B CONTROL PANEL
8R	POLYMER FEED PUMPS NO. 2A/2B CONTROL PANEL

UNIT LOCATION	DESCRIPTION
9	BELT PRESS FEED PUMP NO. 2
10	SPACE
11L	POLYMER FEED PUMPS NO. 3A/3B CONTROL PANEL
11R	POLYMER FEED PUMPS NO. 4A/4B CONTROL PANEL
12	BELT PRESS FEED PUMP NO. 3
13	SLUDGE SCREEN AREA EXHAUST FAN EF–18
14	SLUDGE SCREEN AREA EXHAUST FAN EF–19
15	BELT PRESS FEED PUMP NO. 4
16	SLUDGE SCREEN AREA EXHAUST FAN M.O.D. CONTROLS

UNIT LOCATION	DESCRIPTION
17	POLYMER AREA EXHAUST FAN EF–20
18	PLANT WATER PUMP NO. 1
19	SPACE
20	SPACE
21	PLANT WATER PUMP NO. 2
22	SPACE
23	SPACE
24	PLANT WATER PUMP NO. 3

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	
APPROVED DATE		SHEET NO.: 168 of 191	MCC–S ELEVATION
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	OCTOBER 2025 PCS–14

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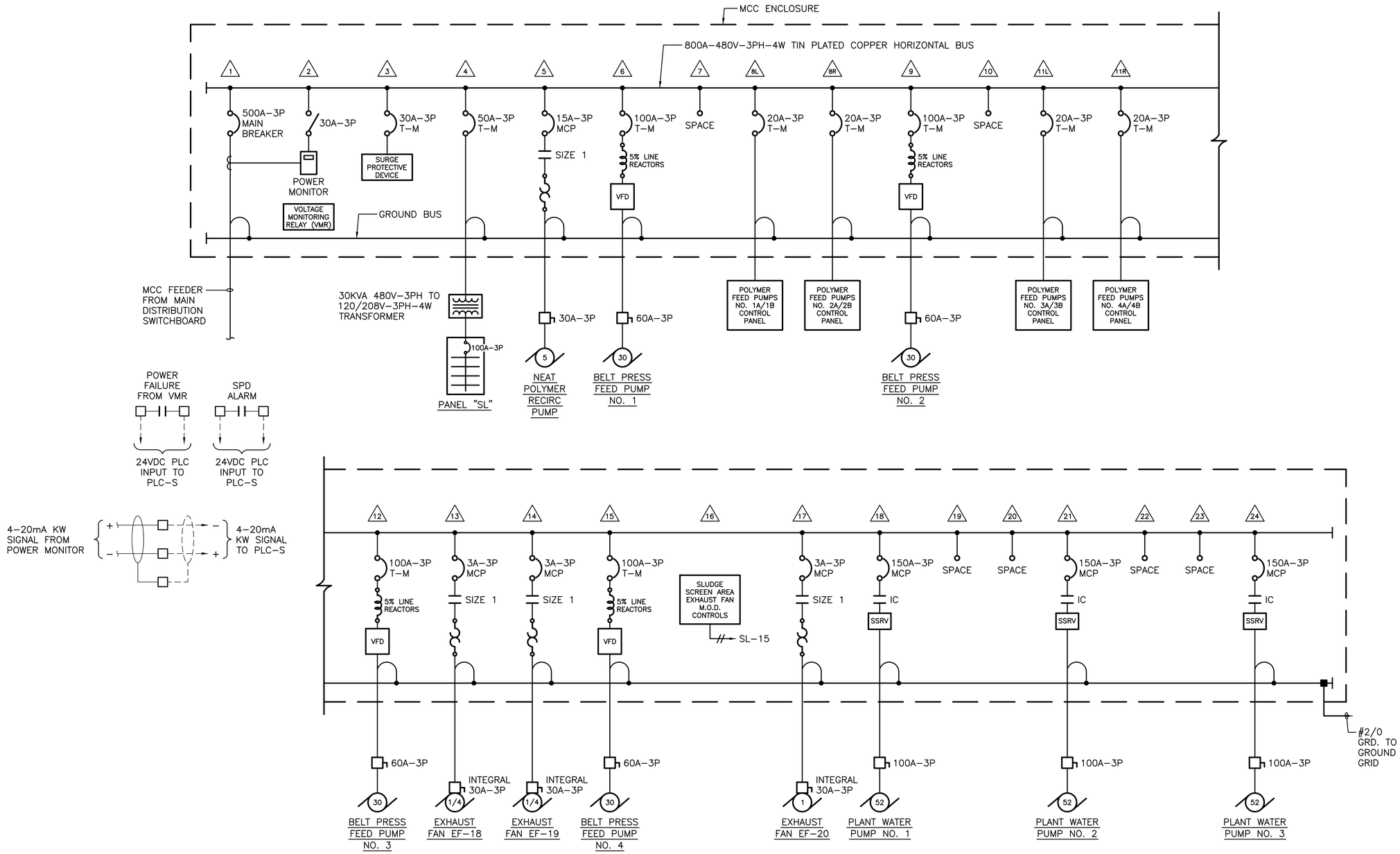

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DTB	MCC–S ONE–LINE DIAGRAM
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 169 of 191	OCTOBER 2025 PCS–15
		PROJECT NO.: 50.1890.97–A	

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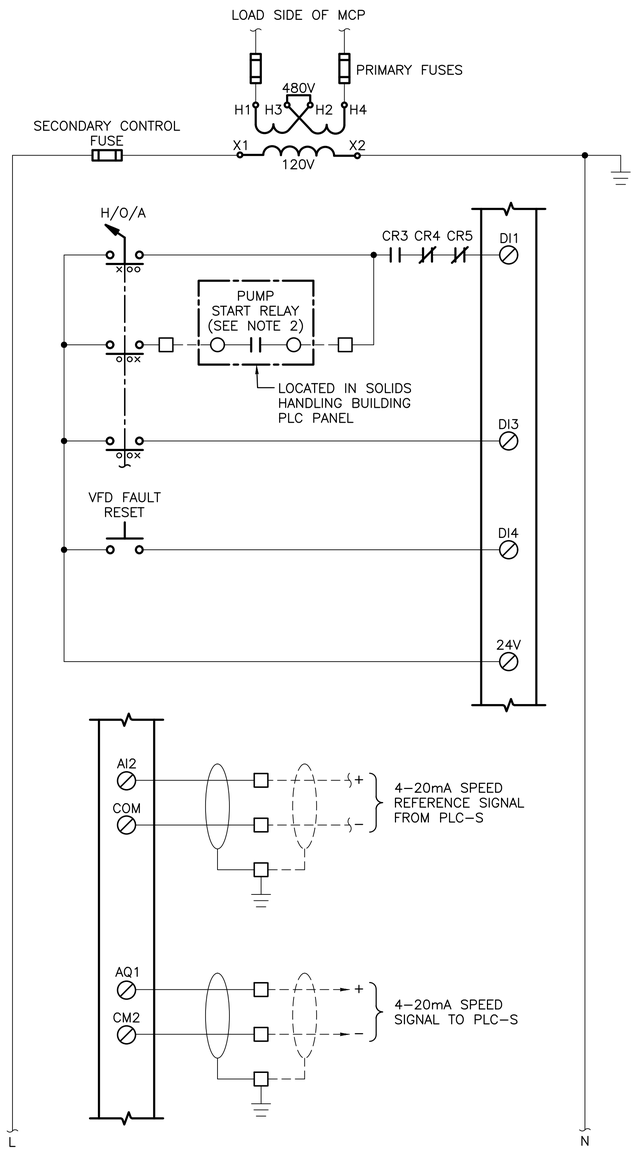
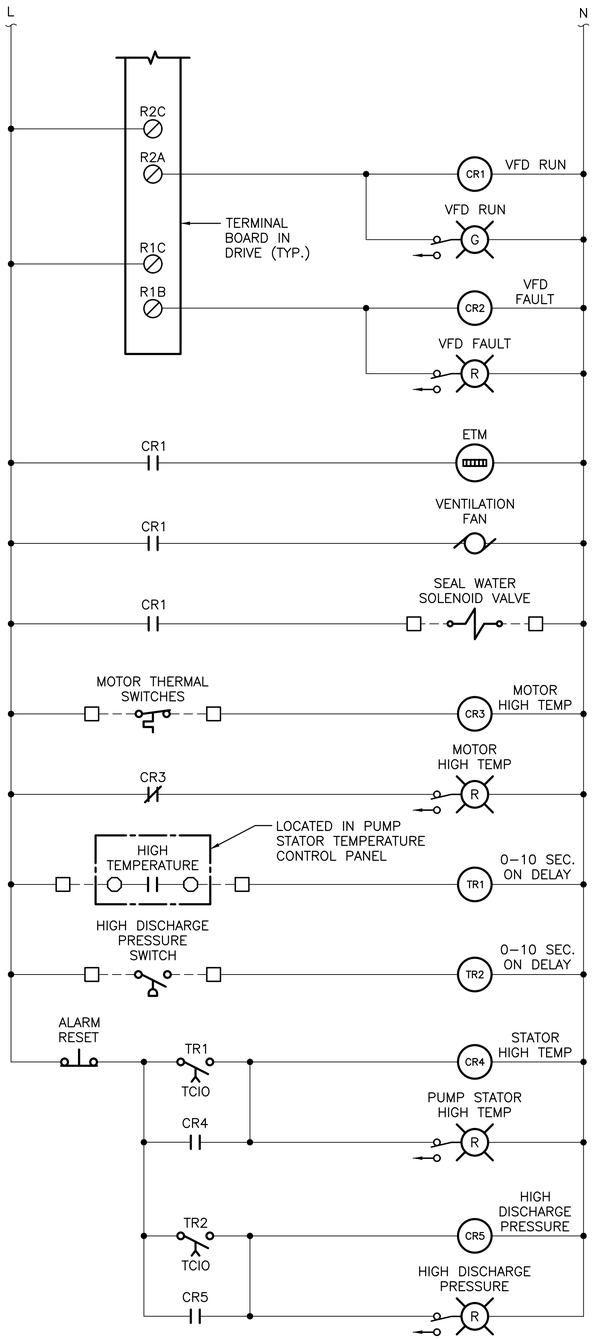
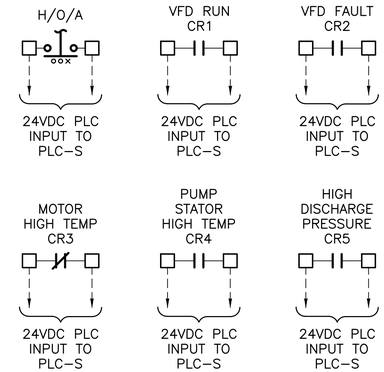




NOTES

1. COORDINATE VFD CONTROL WIRING WITH THE VFD MANUFACTURER. REFER TO THE DESCRIPTION OF OPERATION IN THE SPECS FOR THE AUTO START/STOP AND SPEED CONTROL SEQUENCE.
2. THE START RELAY CONTACTS FOR THE BELT PRESS FEED PUMPS ARE AS FOLLOWS:

   BELT PRESS FEED PUMP NO. 1 – IR1
   BELT PRESS FEED PUMP NO. 2 – IR2
   BELT PRESS FEED PUMP NO. 3 – IR3
   BELT PRESS FEED PUMP NO. 4 – IR4



BELT PRESS FEED PUMPS NO. 1, NO. 2, NO. 3, AND NO. 4 VFD WIRING DIAGRAM

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	CONTRACT 3
APPROVED DATE		SHEET NO.: 170 of 191	MCC–S
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	CONTROL WIRING DIAGRAMS
			OCTOBER 2025 PCS–16

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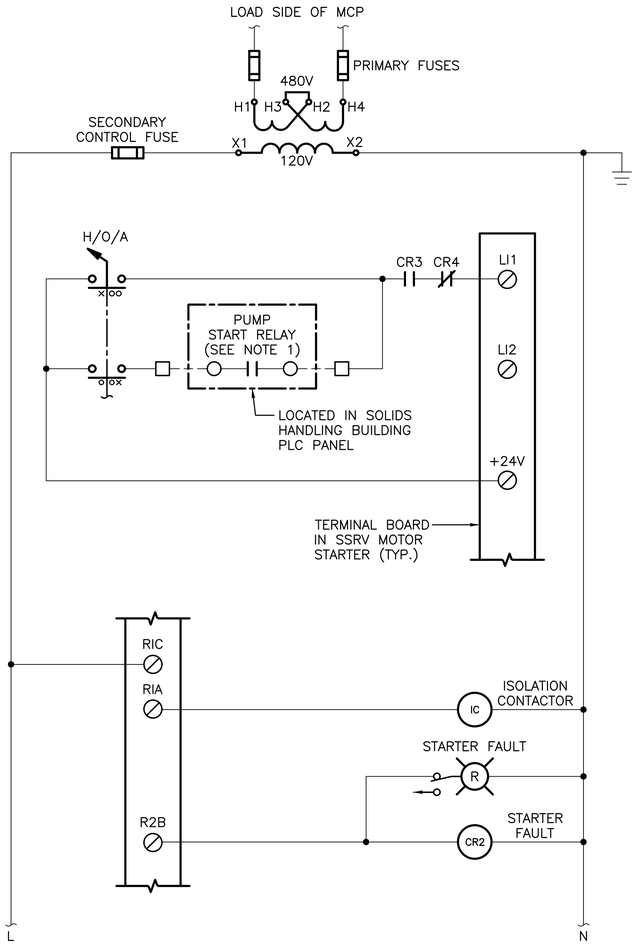
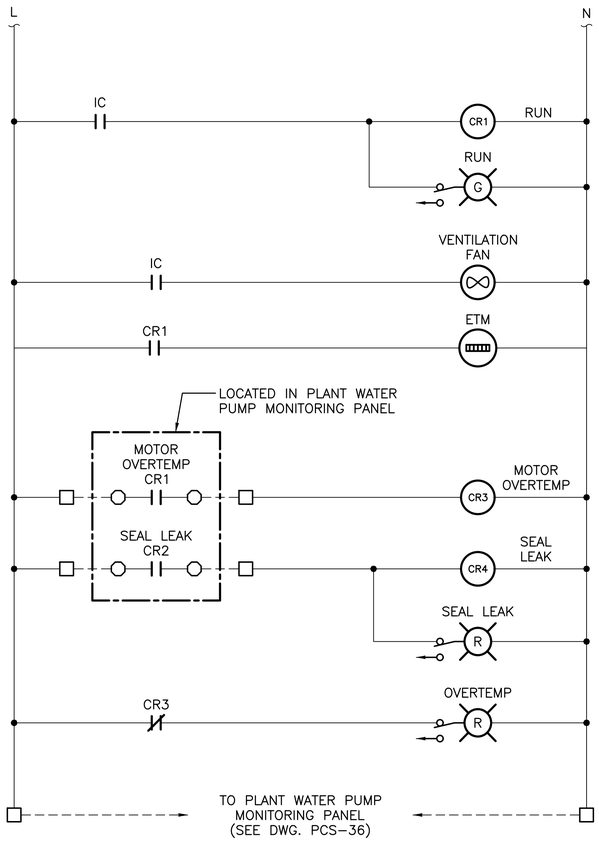
NOTES

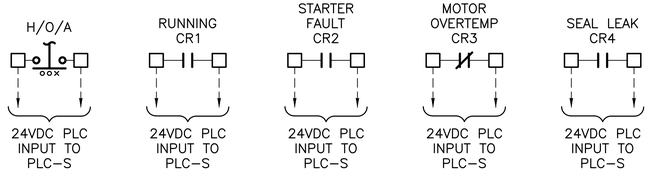
1. THE PUMP START RELAY CONTACTS FOR THE PLANT WATER PUMPS ARE AS FOLLOWS:

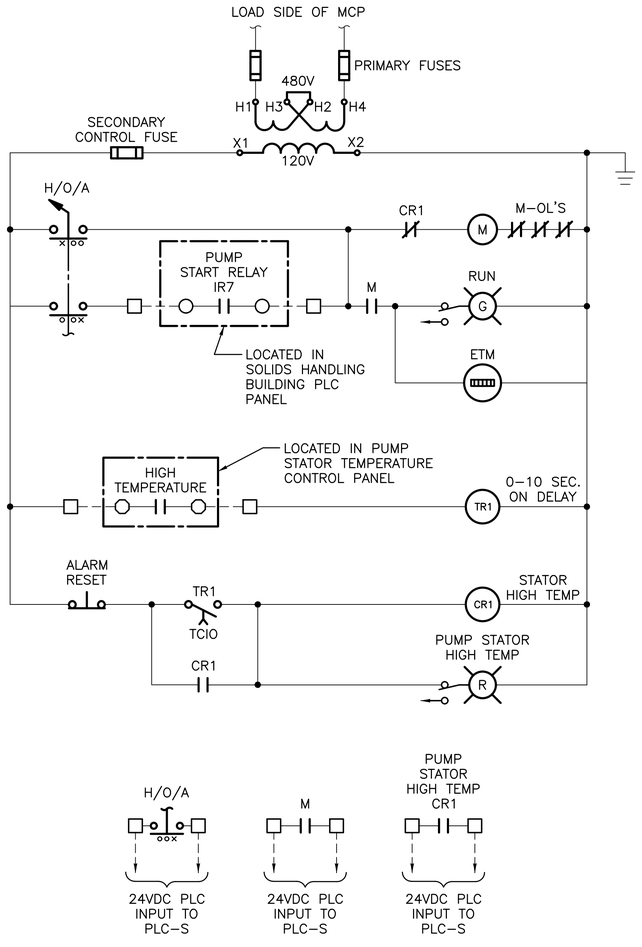
   PLANT WATER PUMP NO. 1 – IR16
   PLANT WATER PUMP NO. 2 – IR17
   PLANT WATER PUMP NO. 3 – IR18



PLANT WATER PUMPS NO. 1, NO. 2, AND NO. 3
SSRV STARTER CONTROL WIRING DIAGRAM







NEAT POLYMER RECIRC PUMP
CONTROL WIRING DIAGRAM

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — PROJECT MANAGER
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING

SCALE: AS SHOWN
DRAWN BY: SMJ
CHECKED BY: DTB
SHEET NO.: 171 of 191
PROJECT NO.: 50.1890.97–A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
MCC–S
CONTROL WIRING DIAGRAMS
OCTOBER 2025 PCS–17

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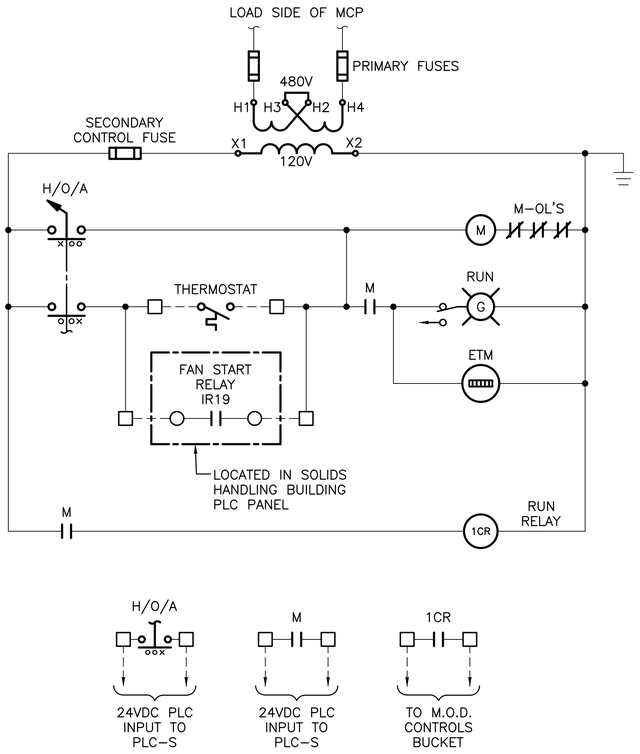
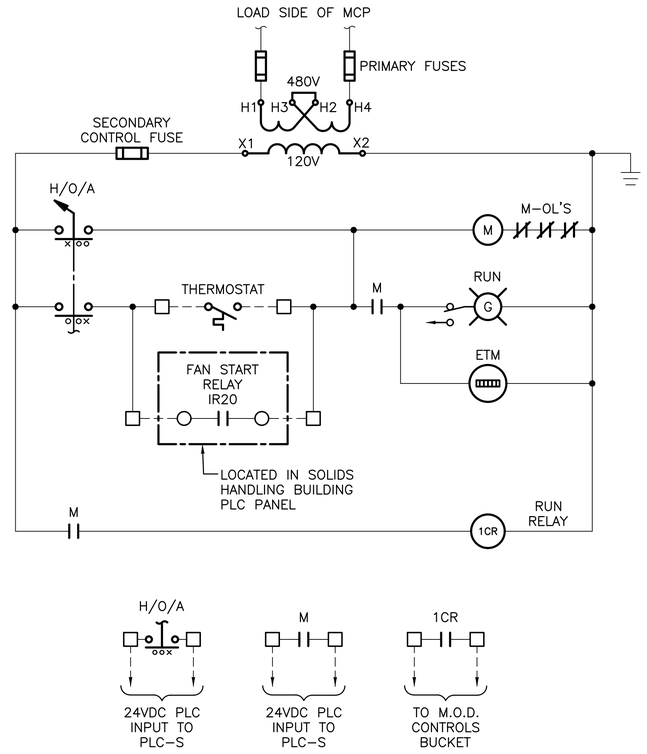
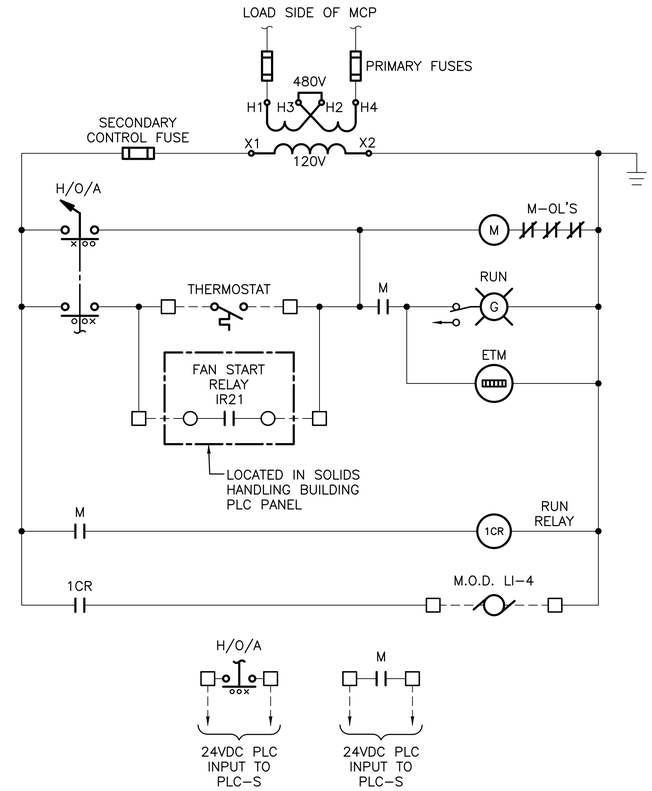


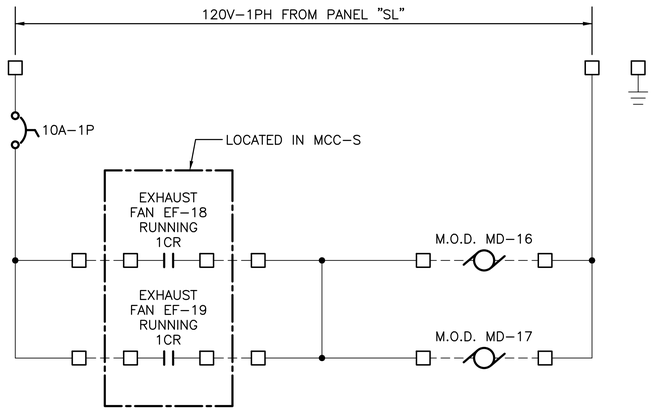
SLUDGE SCREEN AREA EXHAUST FAN EF–18
CONTROL WIRING DIAGRAM



SLUDGE SCREEN AREA EXHAUST FAN EF–19
CONTROL WIRING DIAGRAM



POLYMER AREA EXHAUST FAN EF–20
CONTROL WIRING DIAGRAM



SLUDGE SCREEN AREA EXHAUST FAN M.O.D. CONTROLS
WIRING DIAGRAM

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DTB	MCC–S
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 172 of 191	CONTROL WIRING DIAGRAMS
		PROJECT NO.: 50.1890.97–A	OCTOBER 2025 PCS–18

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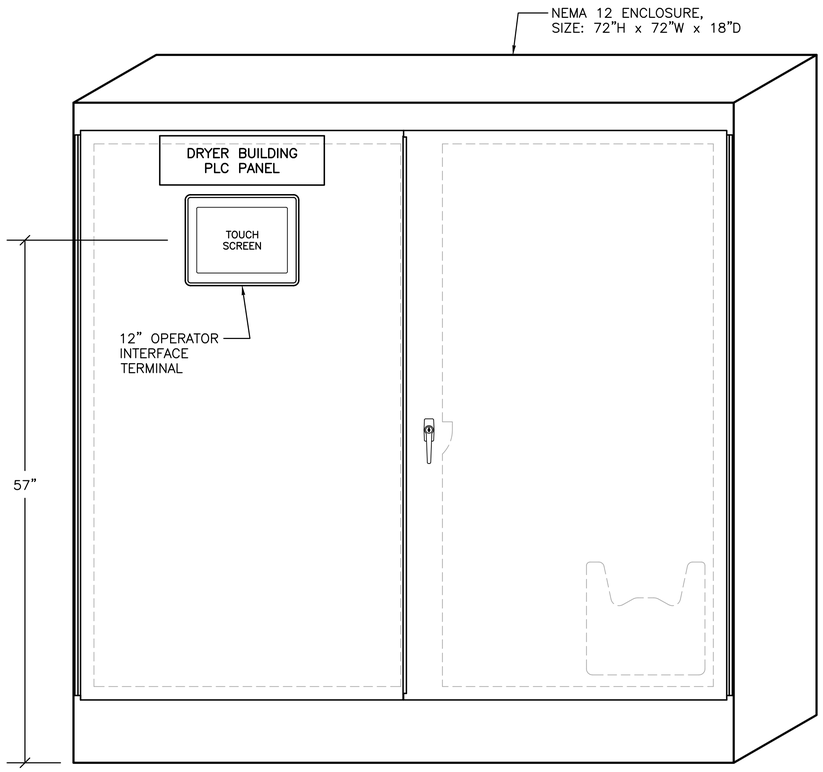
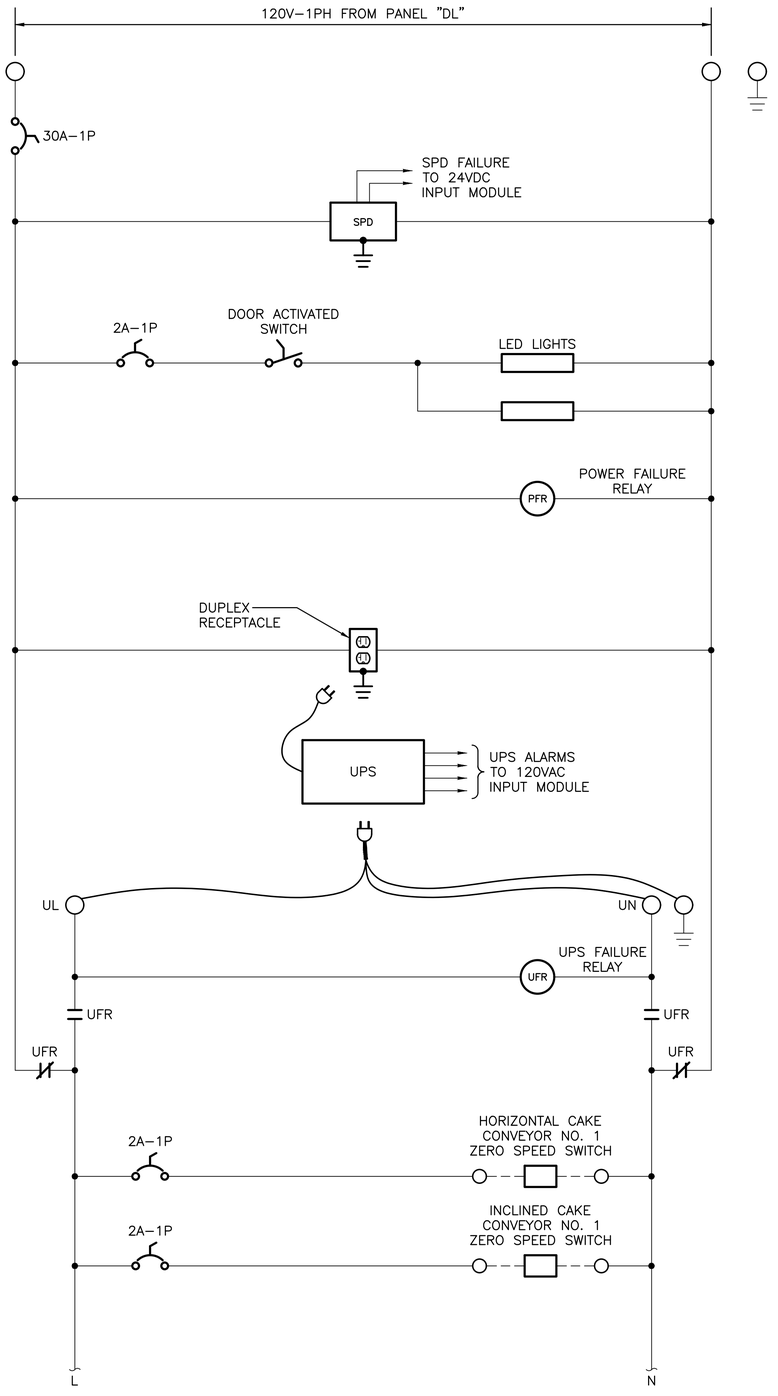
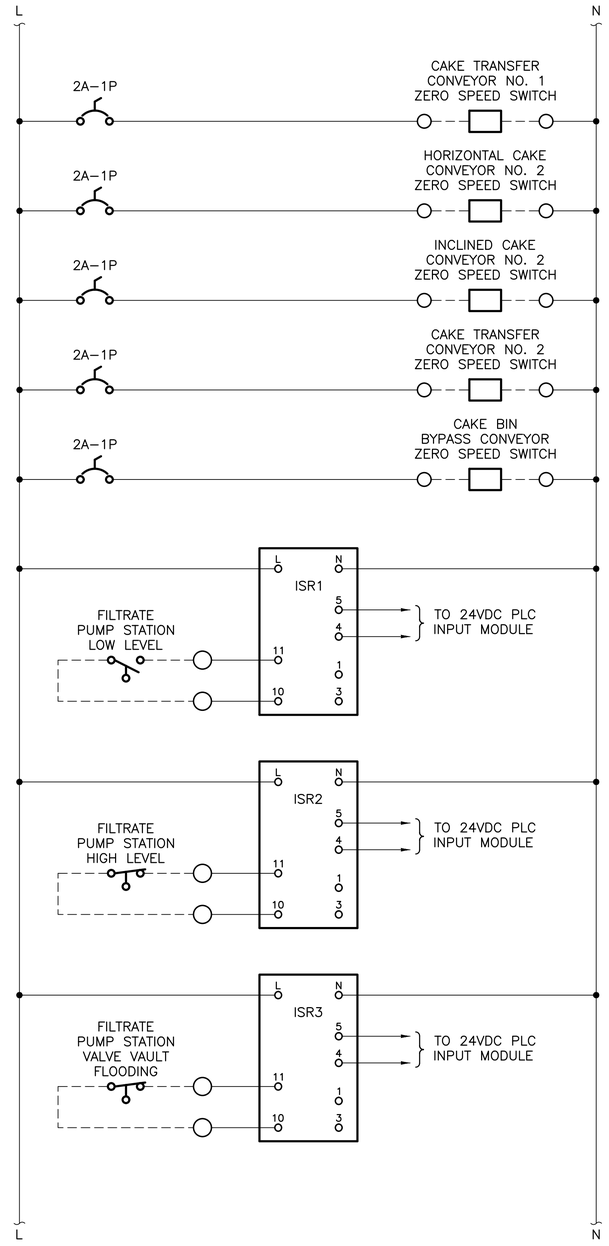
NOTES

1. PLC PANEL NAMEPLATE SHALL BE ENGRAVED WITH 1" HIGH LETTERS.



DRYER BUILDING PLC PANEL
PANEL LAYOUT





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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

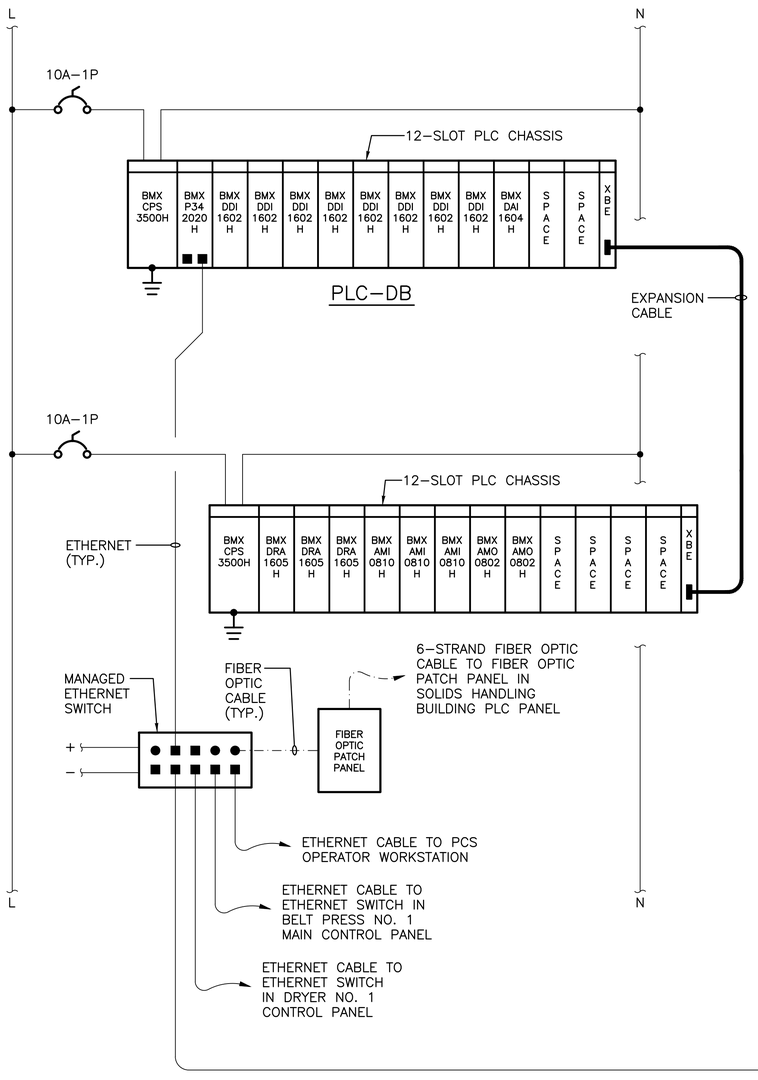
APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: AS SHOWN DRAWN BY: SMJ CHECKED BY: DTB SHEET NO.: 173 of 191 PROJECT NO.: 50.1890.97–A
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		

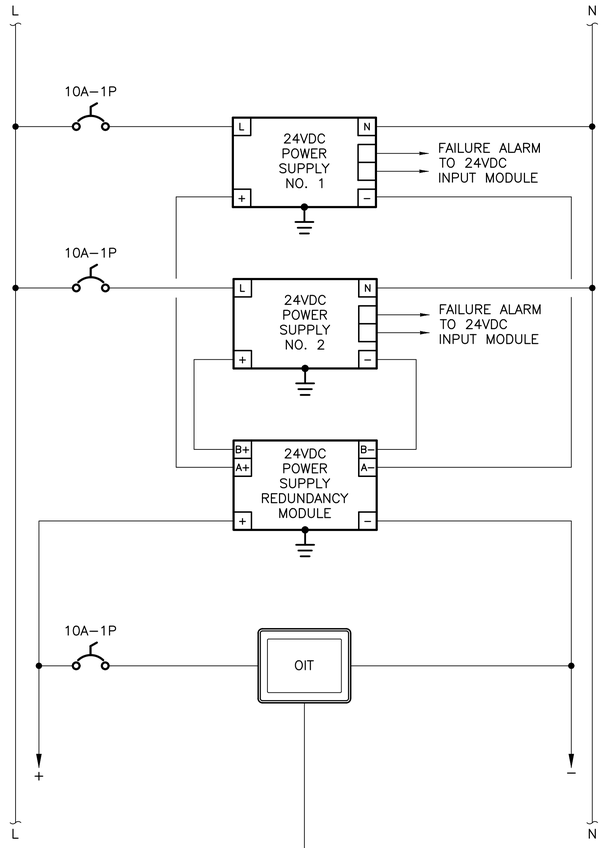
KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3

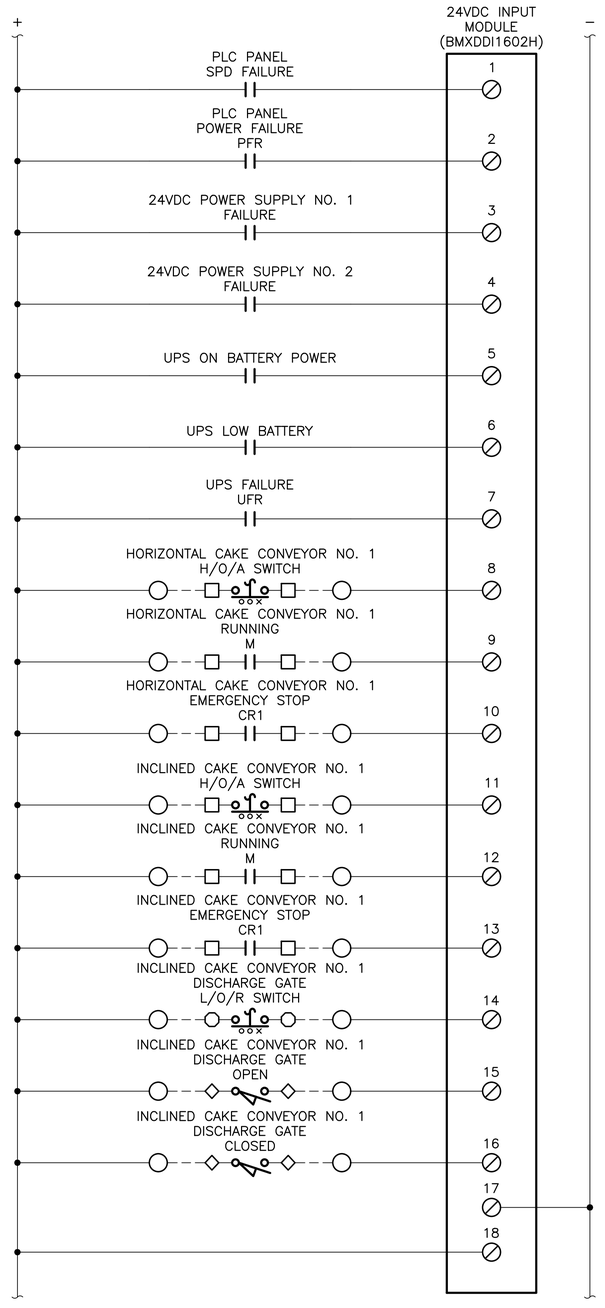
DRYER BUILDING PLC PANEL

OCTOBER 2025 PCS–19

\\dol.rkk.com\jb\Cloud Projects\2019\19129_Biosolids\Electrical\Dryer Project\Cadd\Elec\PCS-19 19129-DB.dwg Oct 22, 2025 - 1:14pm ENV.CTB Plot Scale 1=1 Plot By: sjamison Tab: Layout







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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	DRYER BUILDING PLC PANEL WIRING DIAGRAM
APPROVED DATE		SHEET NO.: 174 of 191	OCTOBER 2025 PCS–20
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	

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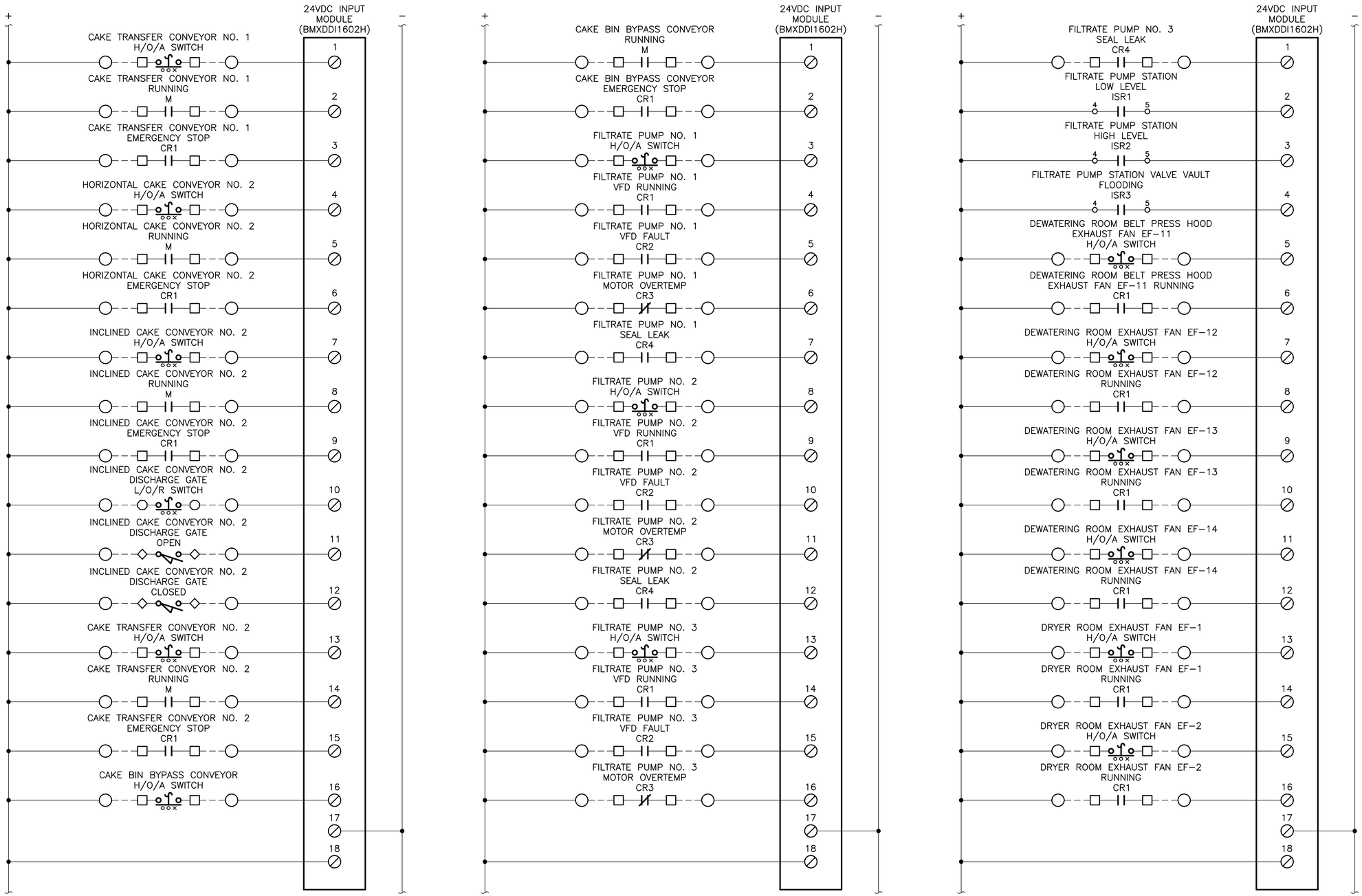

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DTB	DRYER BUILDING PLC PANEL WIRING DIAGRAM
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 175 of 191	OCTOBER 2025 PCS−21
		PROJECT NO.: 50.1890.97−A	

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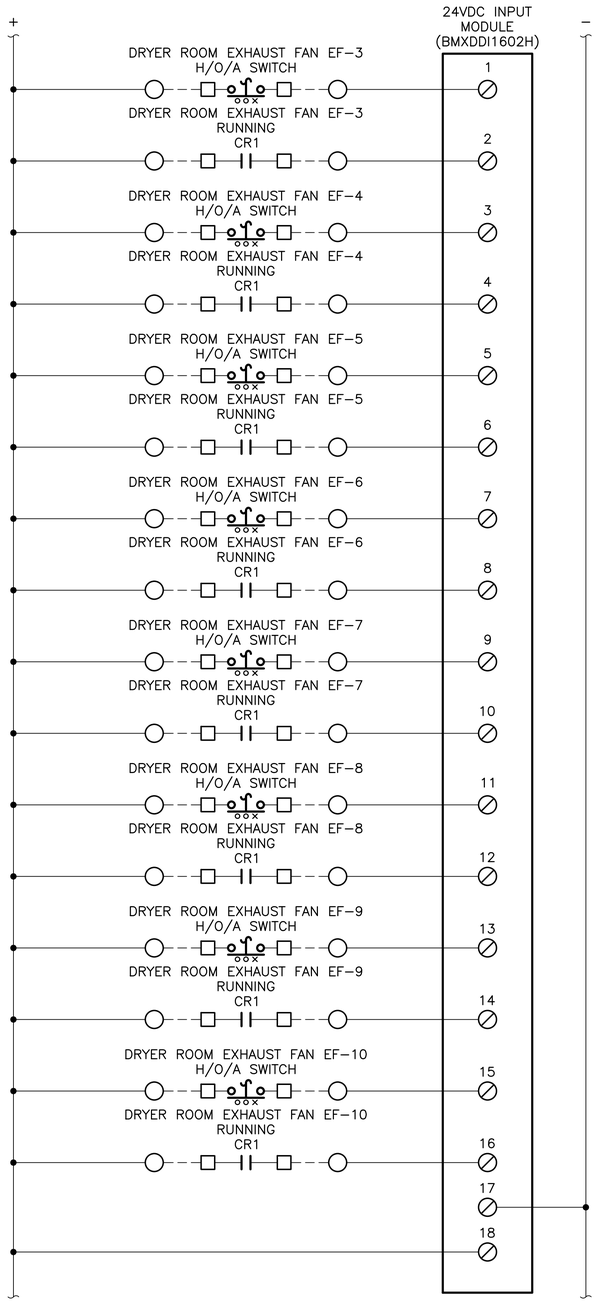

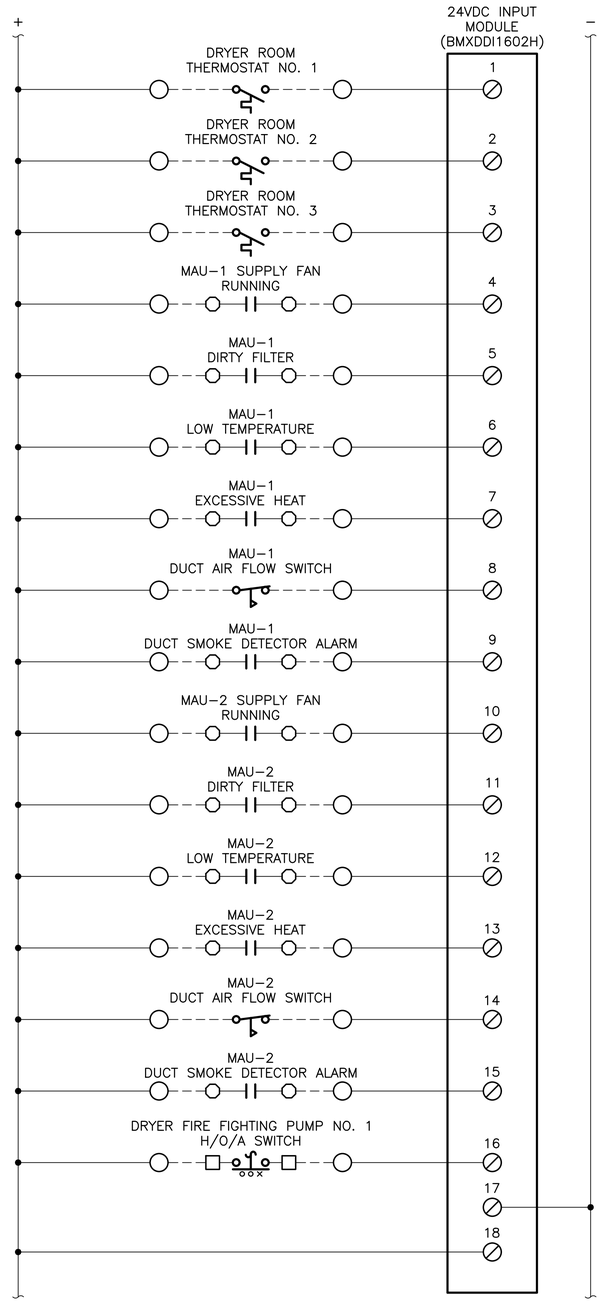

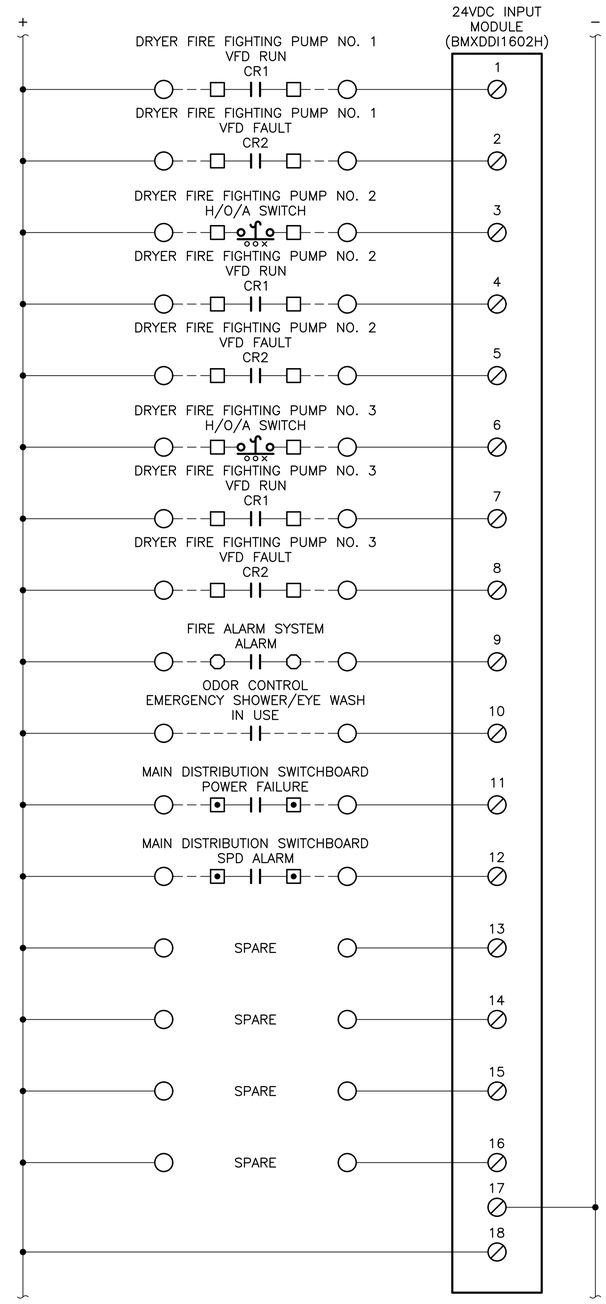

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REVISIONS			
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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	DRYER BUILDING PLC PANEL WIRING DIAGRAM
APPROVED DATE		SHEET NO.: 176 of 191	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PCS-22

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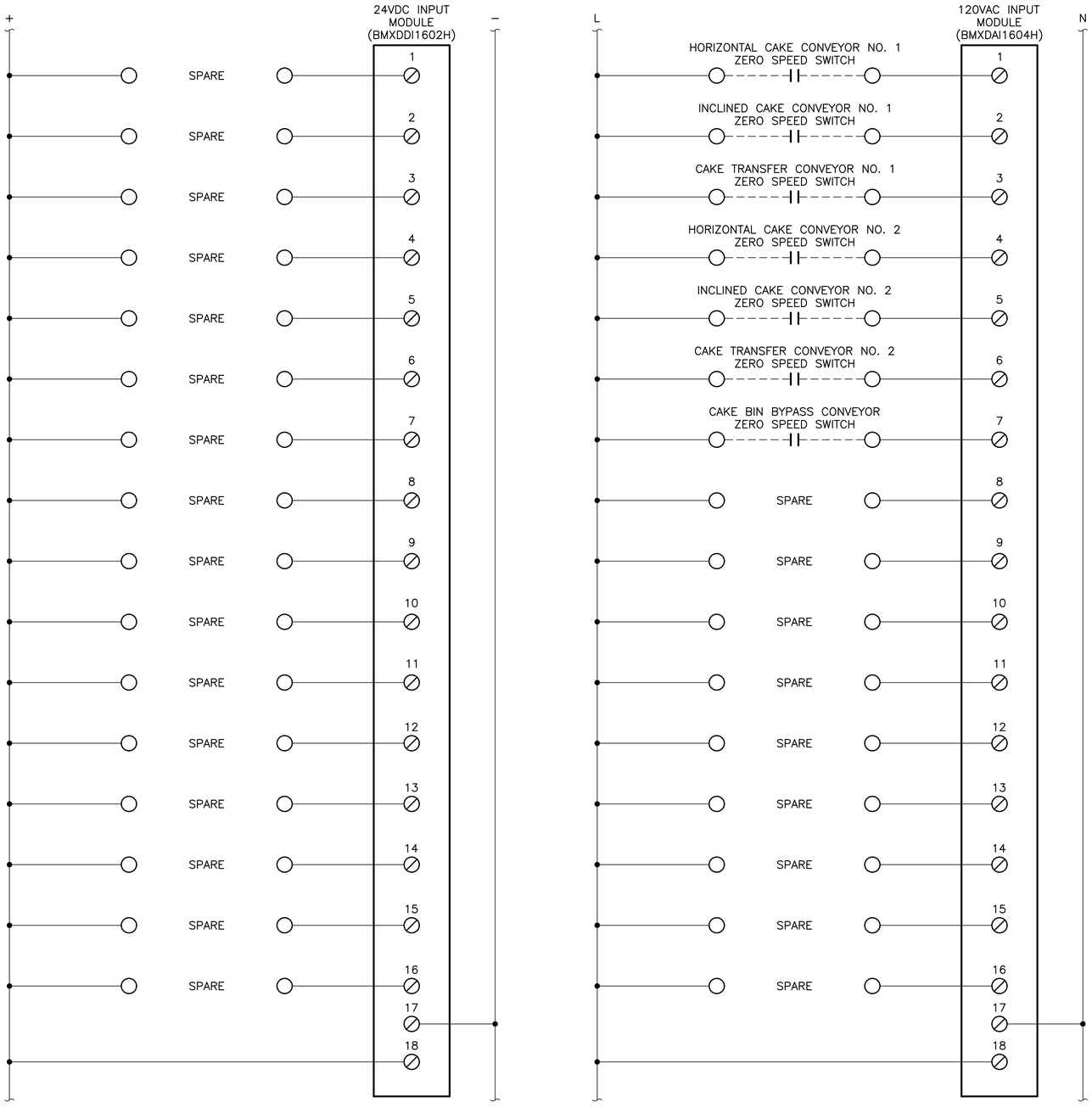

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REVISIONS			
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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	DRYER BUILDING PLC PANEL WIRING DIAGRAM
APPROVED DATE		SHEET NO.: 177 of 191	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	OCTOBER 2025 PCS-23

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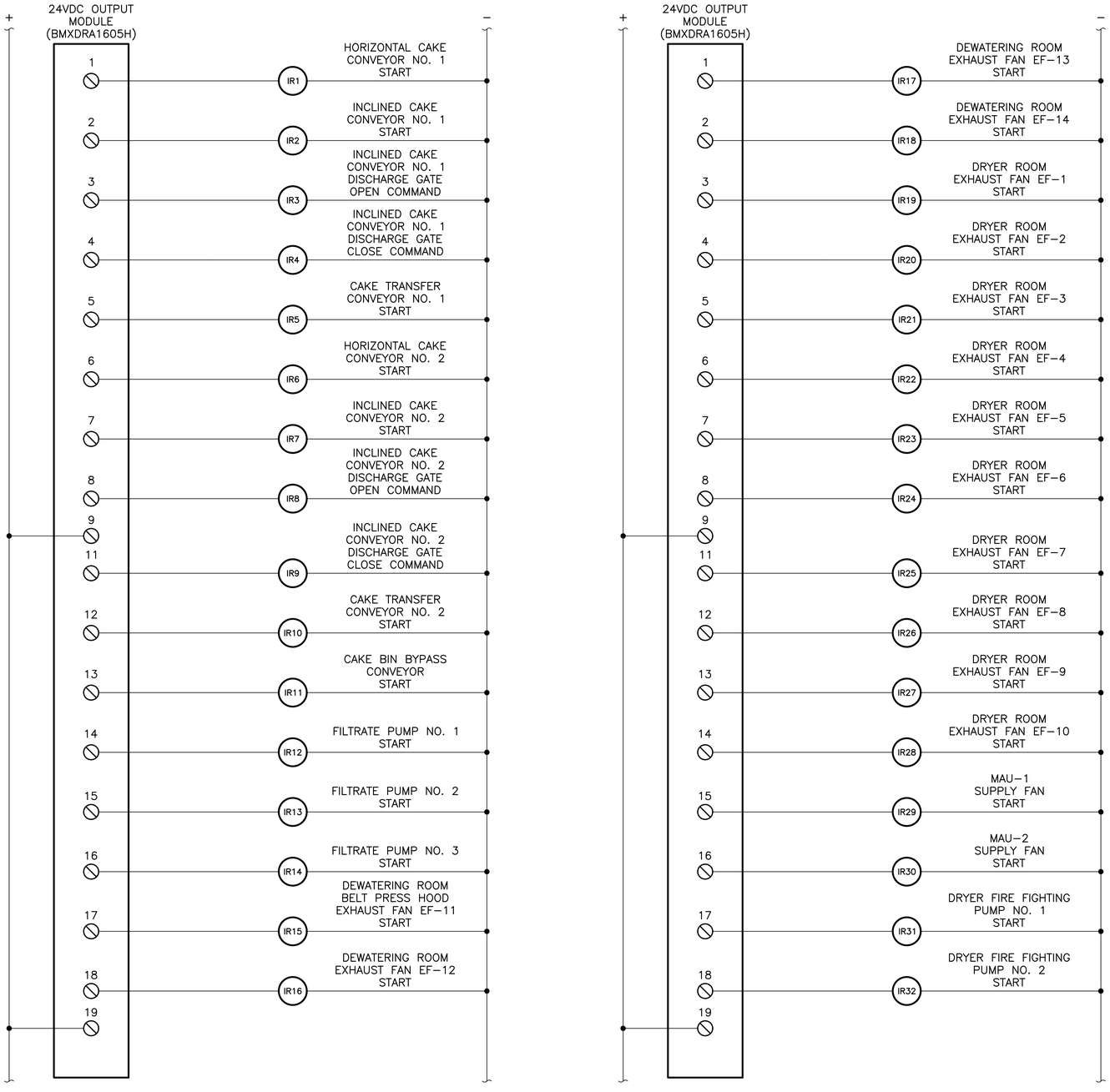

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: AS SHOWN
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		DRAWN BY: SMJ CHECKED BY: DTB SHEET NO.: 178 of 191 PROJECT NO.: 50.1890.97−A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
DRYER BUILDING PLC PANEL WIRING DIAGRAM
OCTOBER 2025 PCS−24

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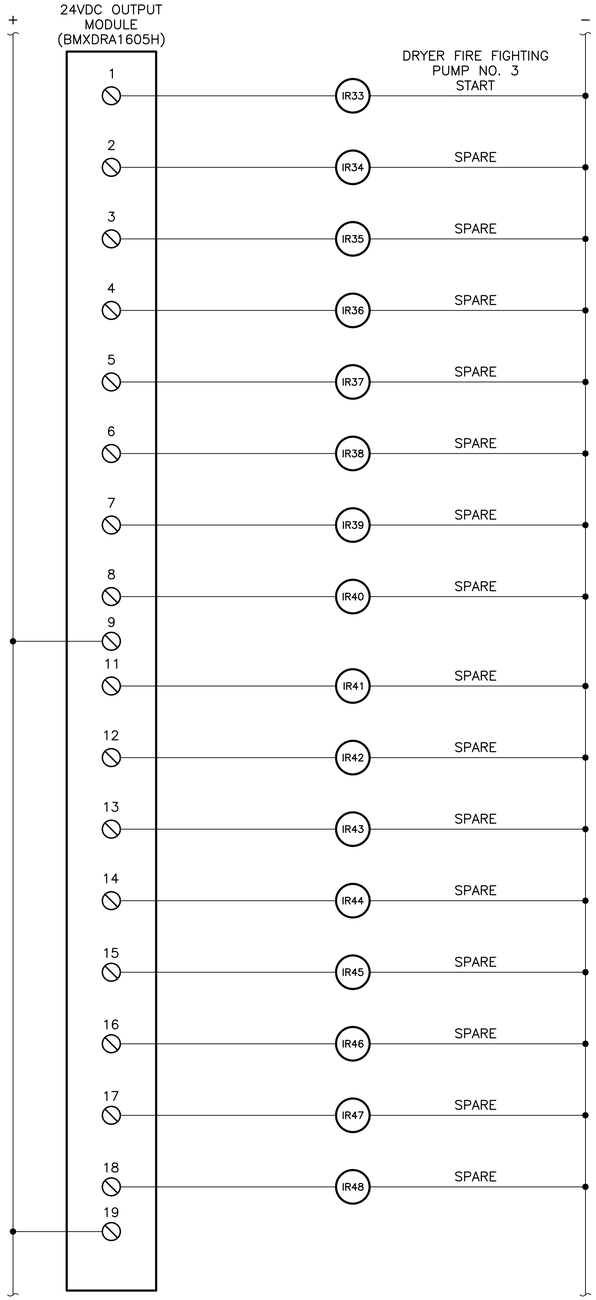

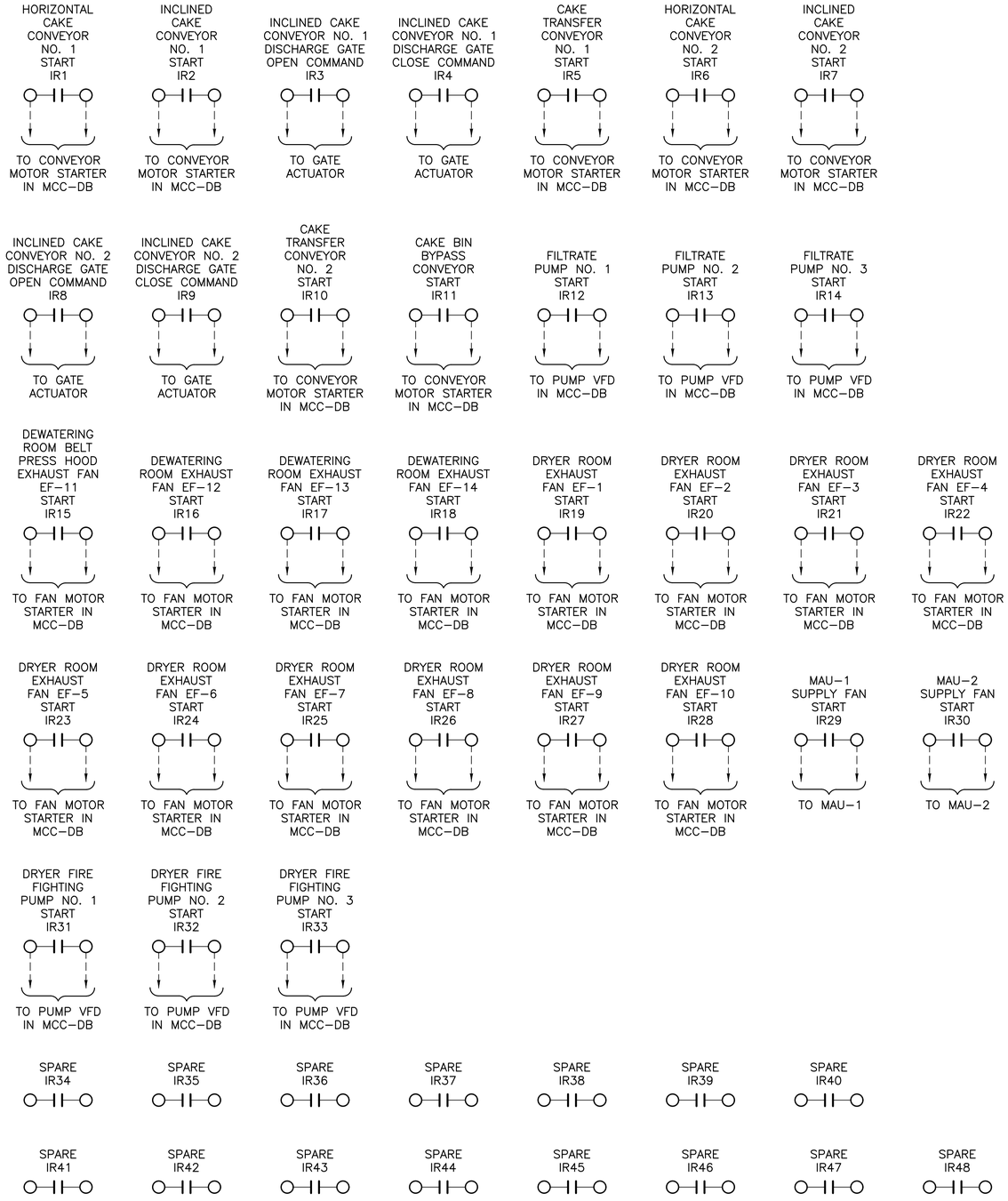

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DTB	DRYER BUILDING PLC PANEL WIRING DIAGRAM
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 179 of 191	OCTOBER 2025 PCS−25
		PROJECT NO.: 50.1890.97−A	

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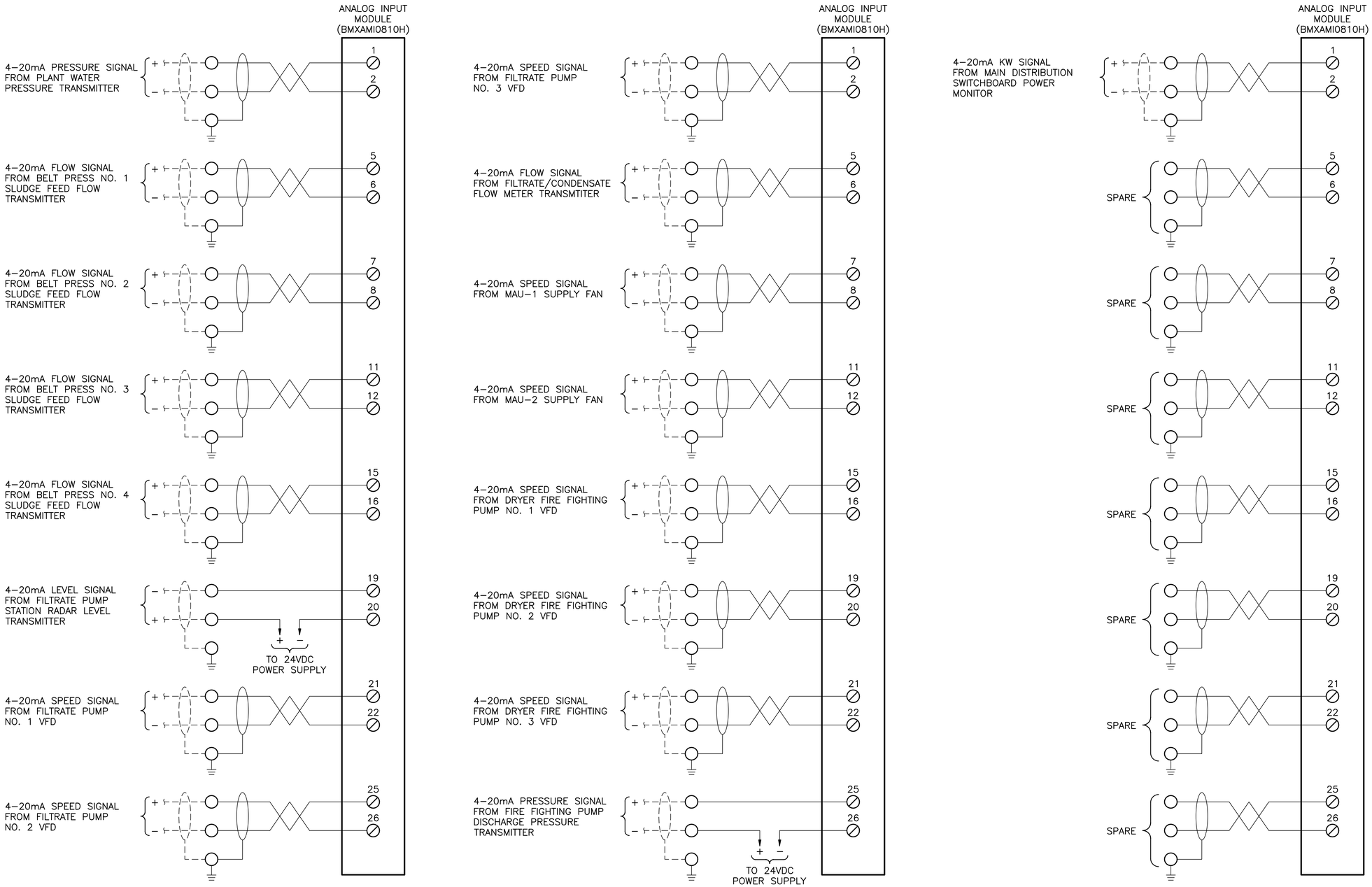

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REVISIONS			
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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	DRYER BUILDING PLC PANEL WIRING DIAGRAM
APPROVED DATE		SHEET NO.: 180 of 191	OCTOBER 2025 PCS–26
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	

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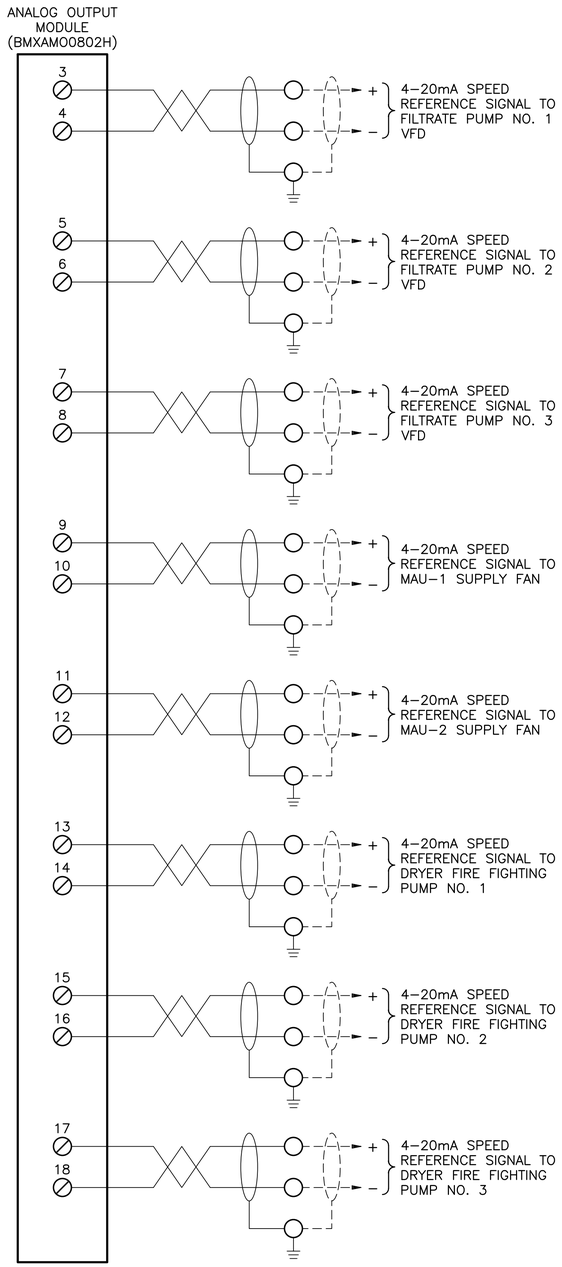

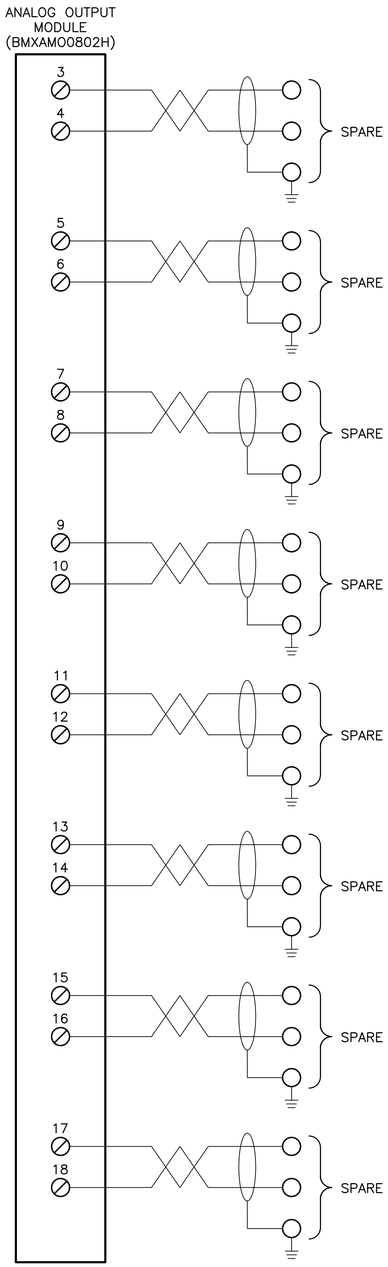

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	
APPROVED DATE		SHEET NO.: 181 of 191	DRYER BUILDING PLC PANEL WIRING DIAGRAM
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	OCTOBER 2025 PCS–27

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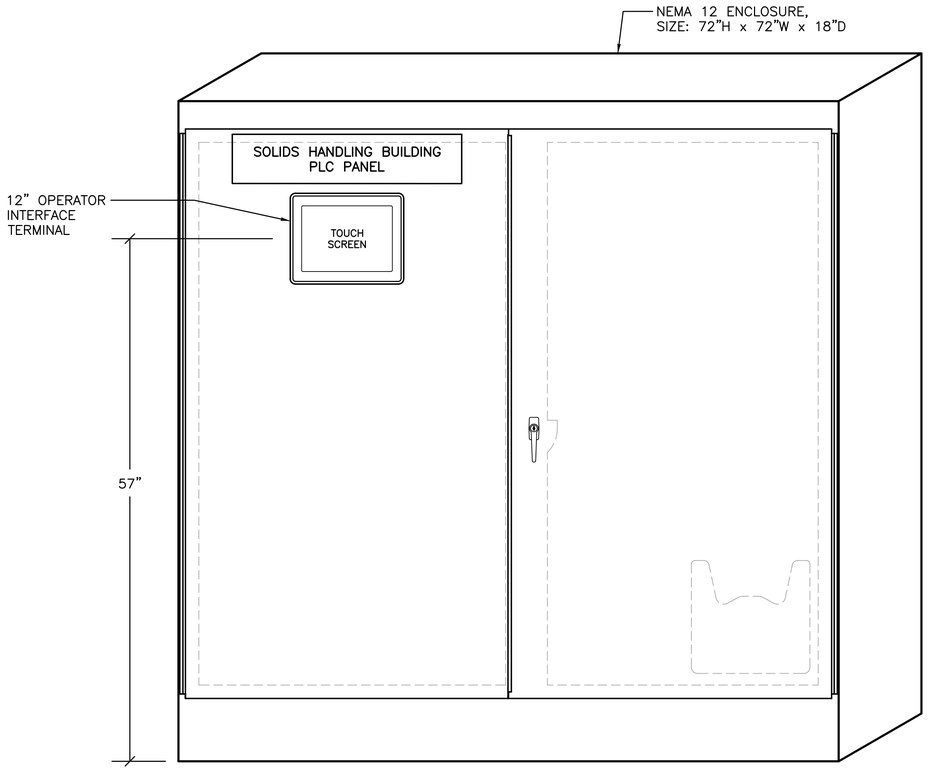
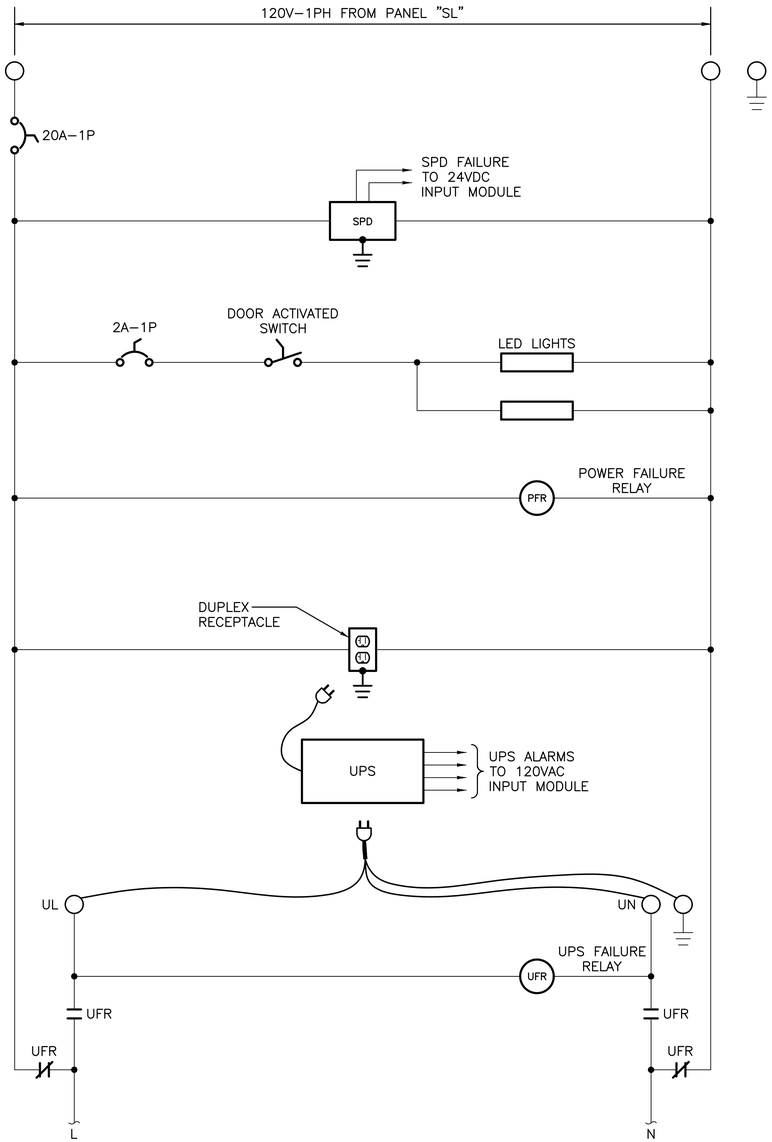
NOTES

1. PLC PANEL NAMEPLATE SHALL BE ENGRAVED WITH 1" HIGH LETTERS.



SOLIDS HANDLING BUILDING PLC PANEL
PANEL LAYOUT



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LICENSE
No. 22123
DELAWARE
PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	SOLIDS HANDLING BUILDING PLC PANEL
APPROVED DATE		SHEET NO.: 182 of 191	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	OCTOBER 2025 PCS–28

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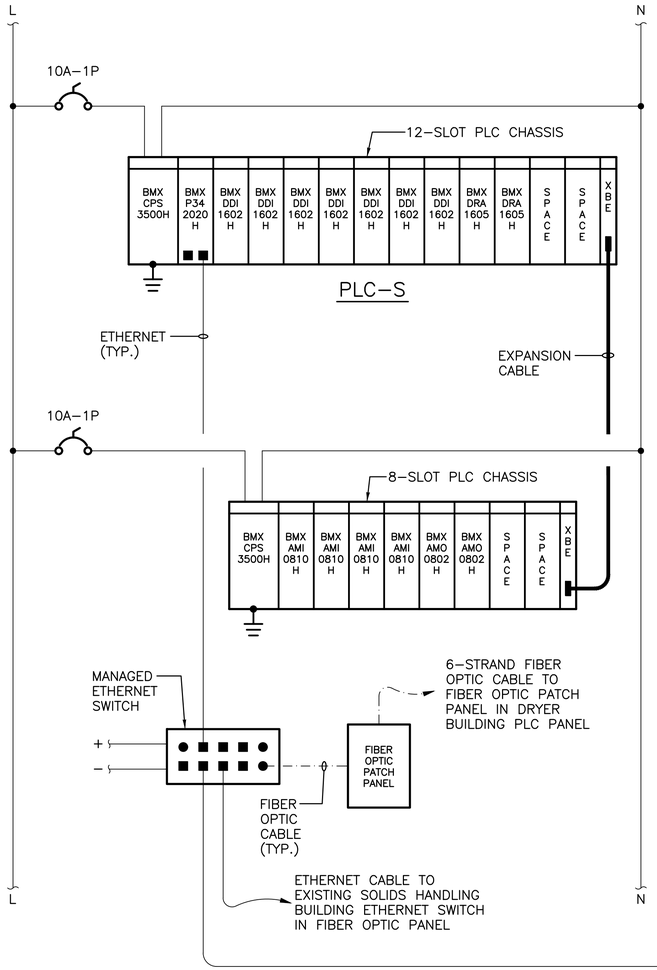

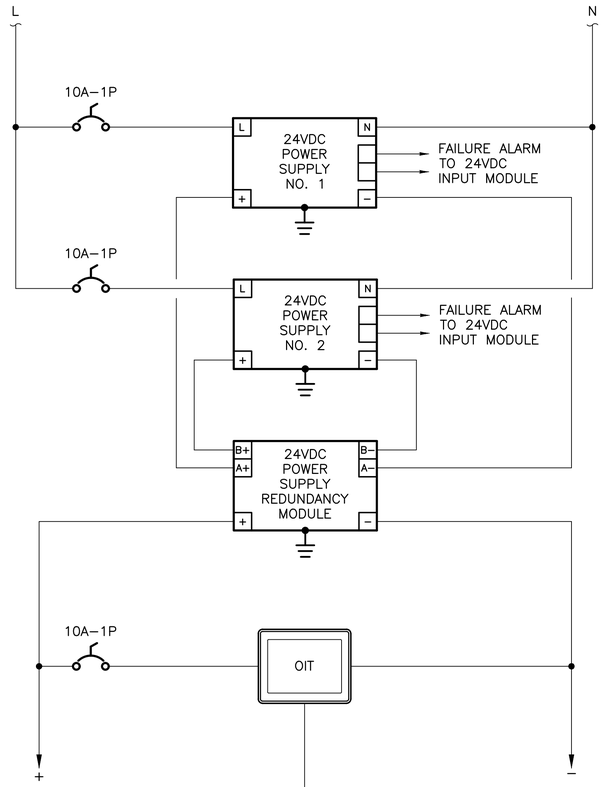

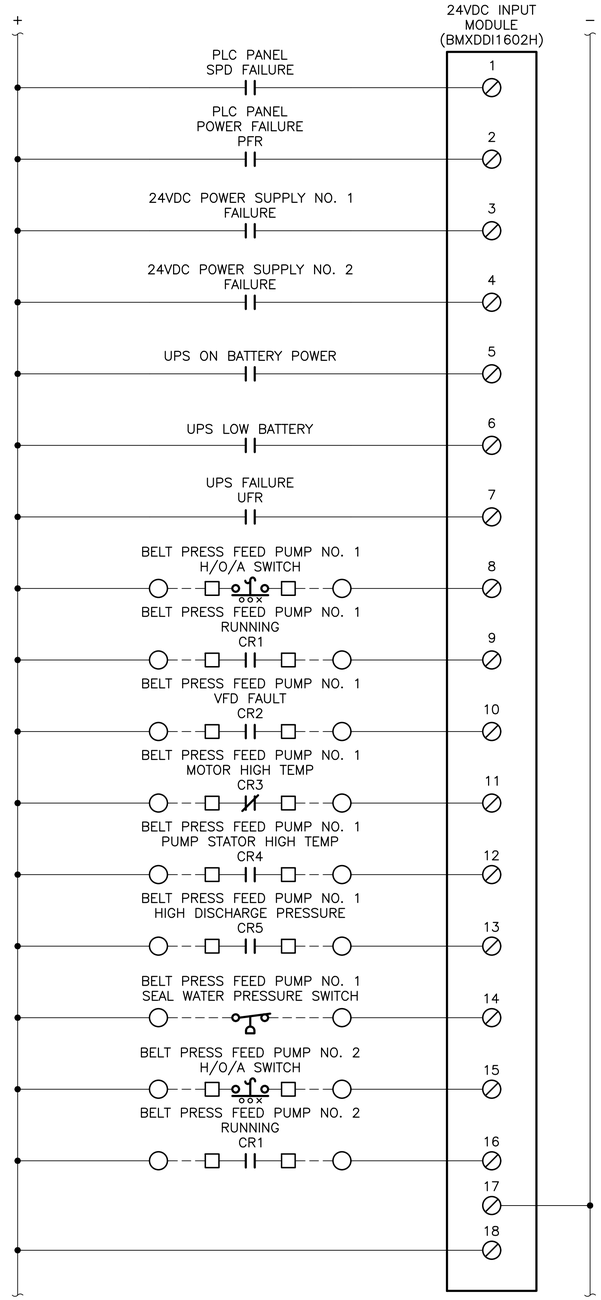

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	
APPROVED DATE		SHEET NO.: 183 of 191	SOLIDS HANDLING BUILDING PLC PANEL WIRING DIAGRAM
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	OCTOBER 2025 PCS–29

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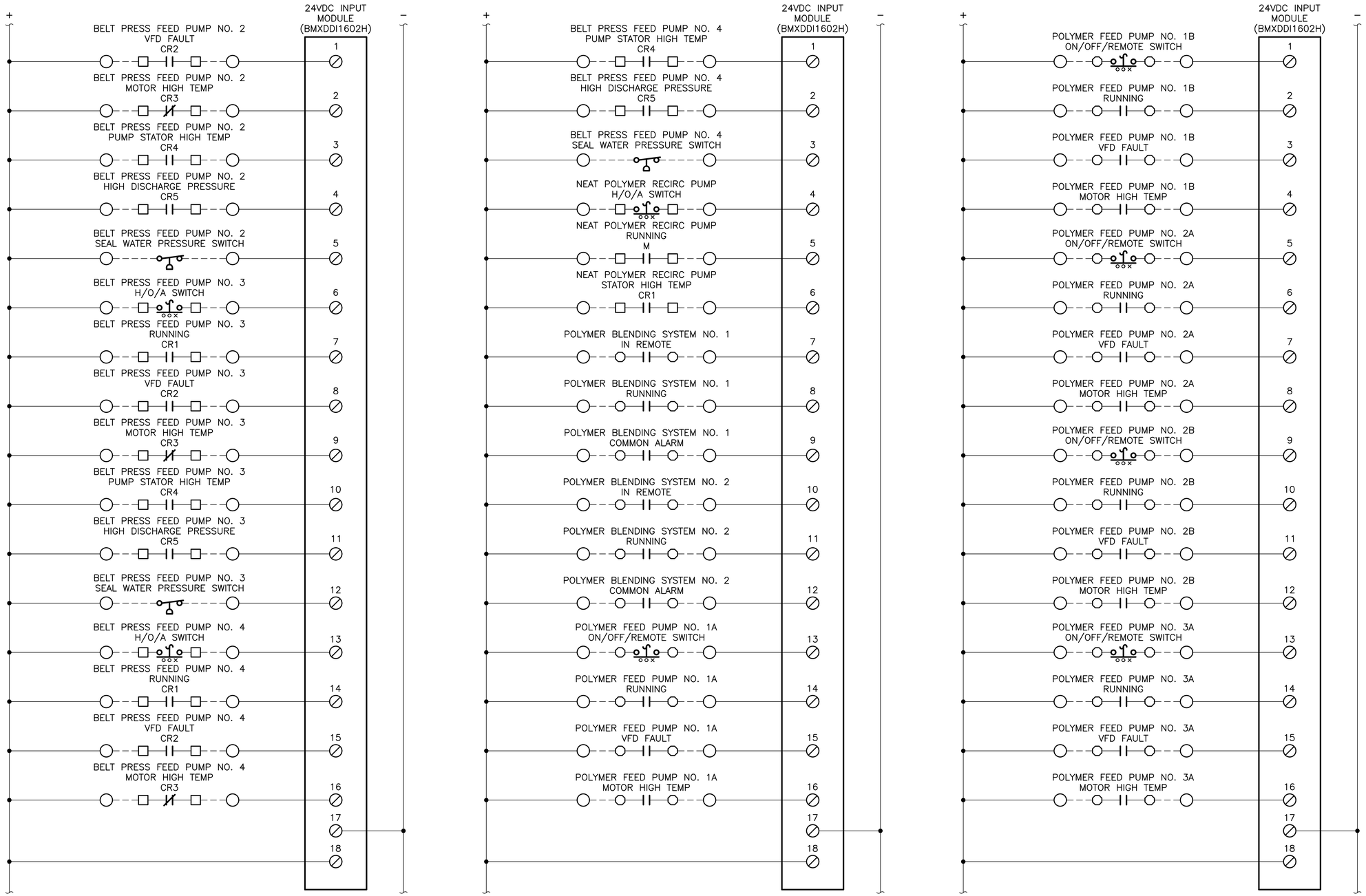

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
APPROVED DATE		CHECKED BY: DTB	SOLIDS HANDLING BUILDING PLC PANEL WIRING DIAGRAM
ASSISTANT DIRECTOR OF ENGINEERING		SHEET NO.: 184 of 191	OCTOBER 2025 PCS-30
		PROJECT NO.: 50.1890.97-A	

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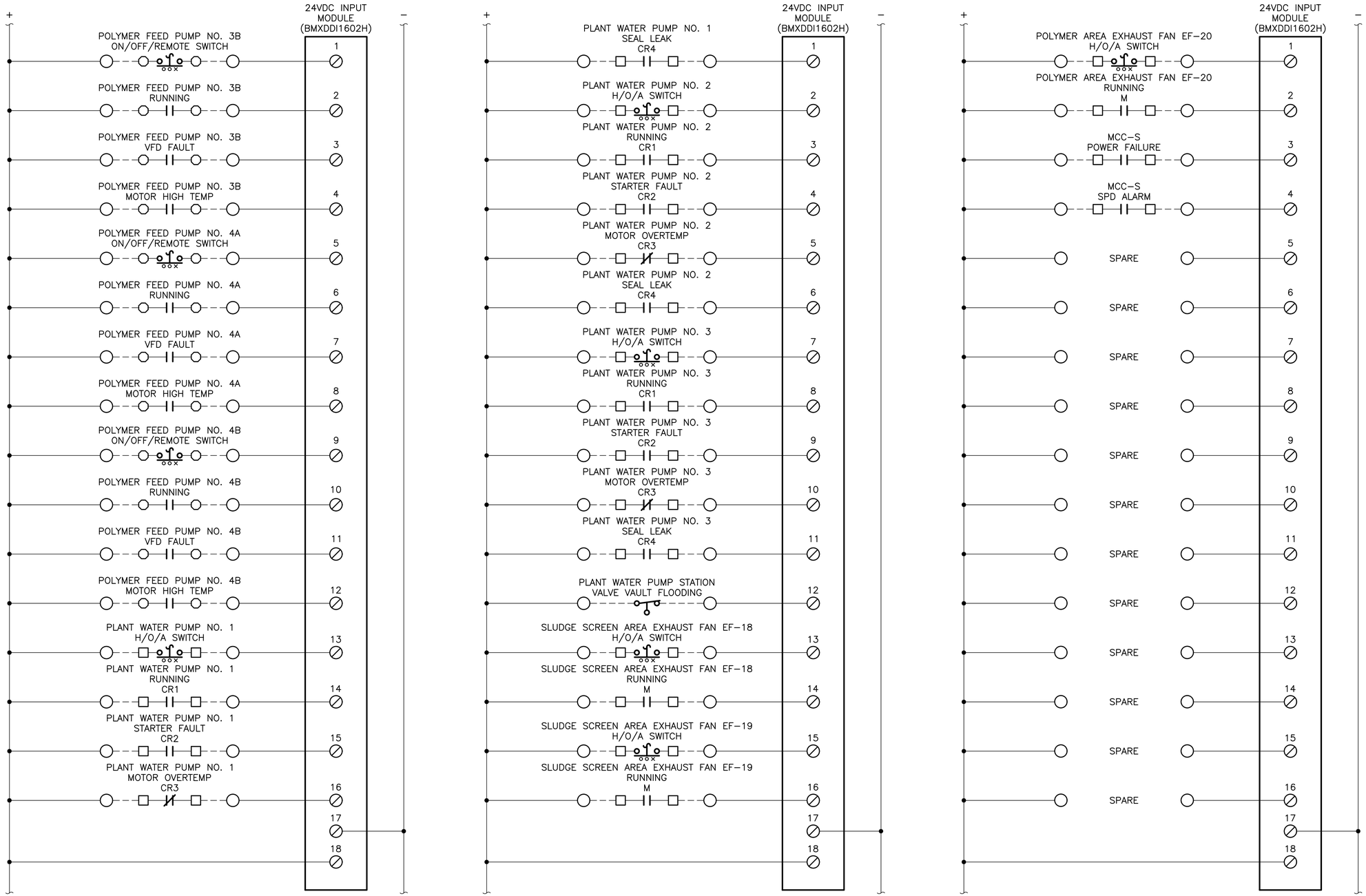

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REVISIONS			
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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	SOLIDS HANDLING BUILDING PLC PANEL WIRING DIAGRAM
APPROVED DATE		SHEET NO.: 185 of 191	OCTOBER 2025 PCS-31
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97-A	

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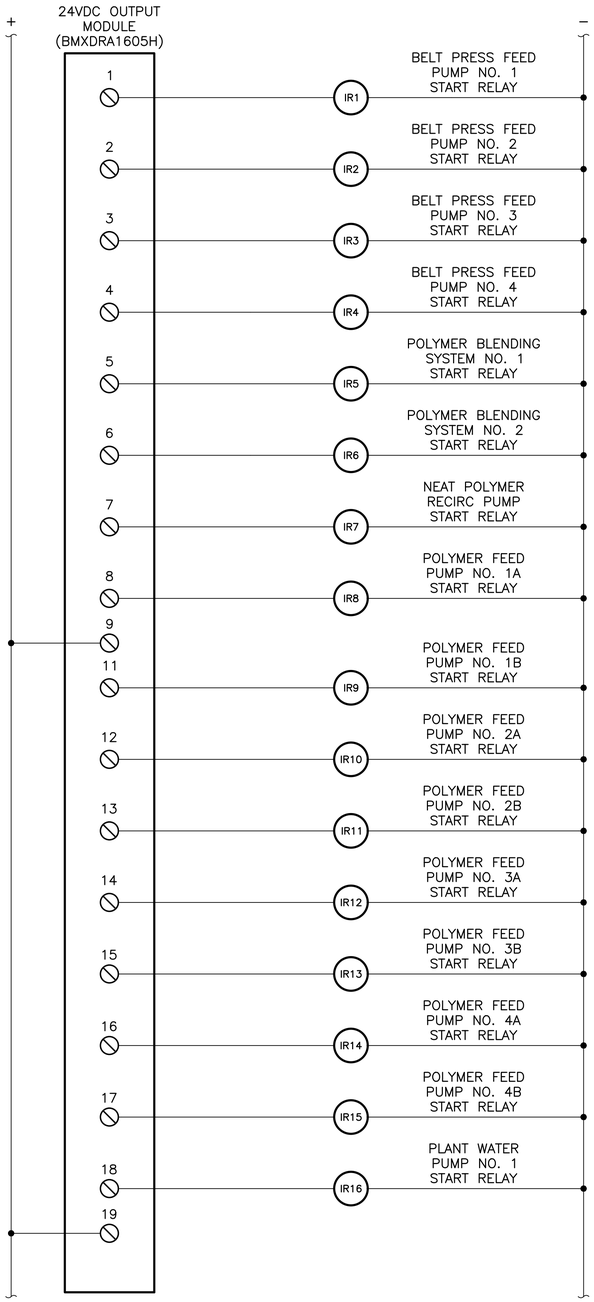

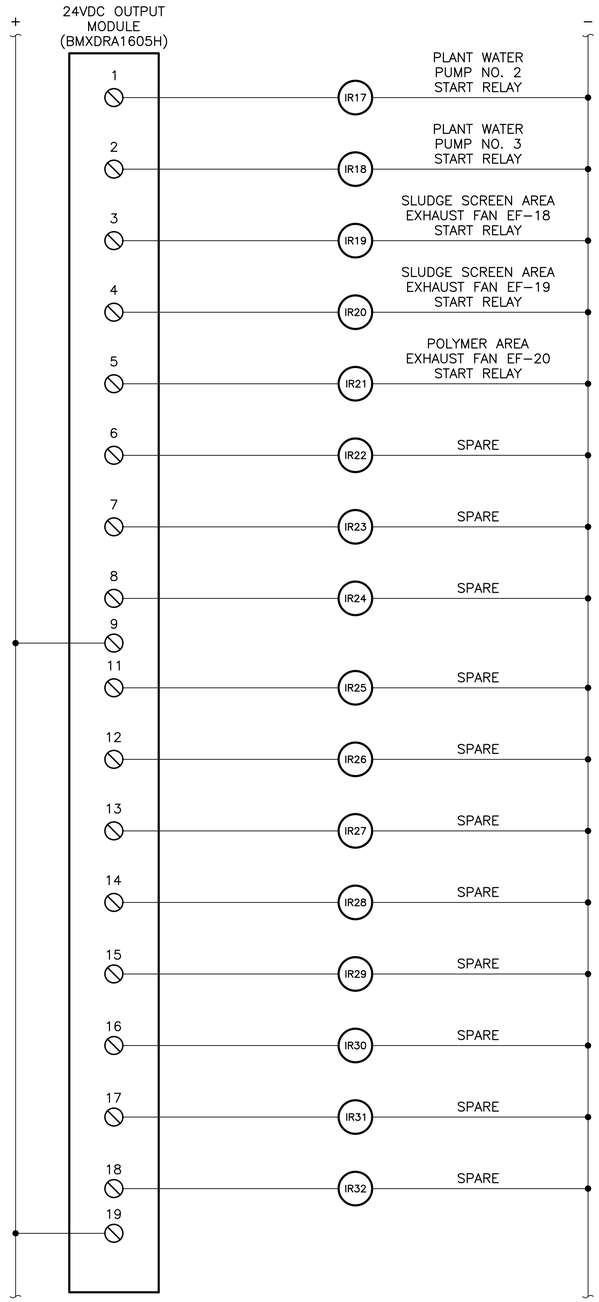

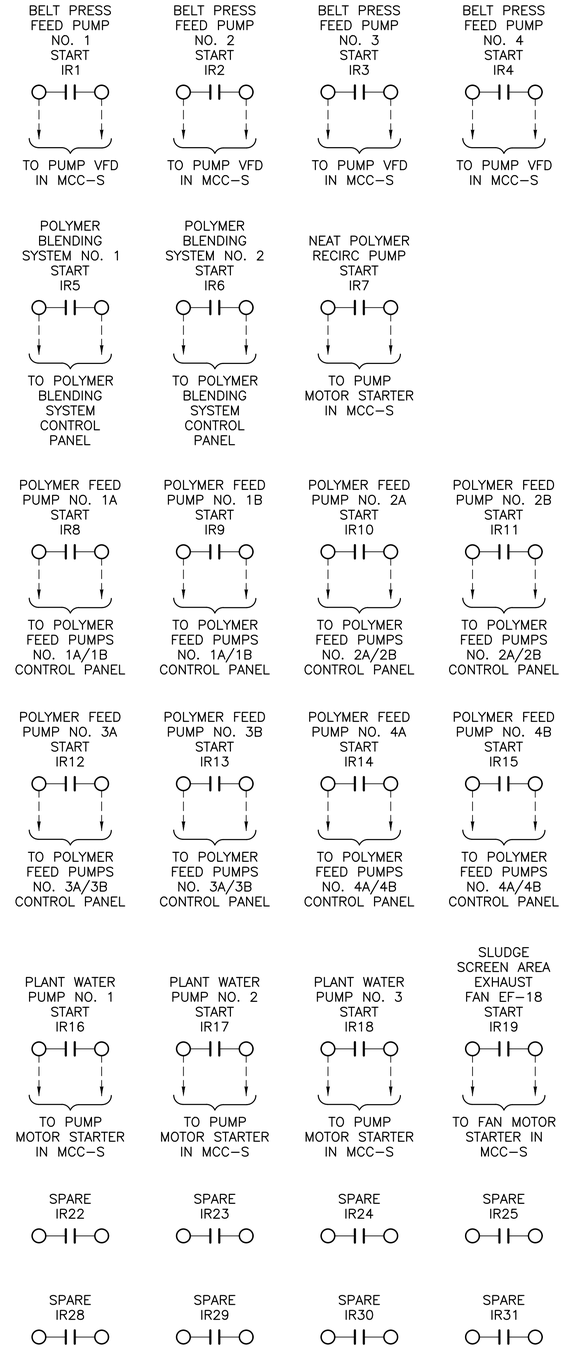

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

APPROVED DATE — DIRECTOR OF PUBLIC WORKS
APPROVED DATE — ASSISTANT DIRECTOR OF ENGINEERING
APPROVED DATE — PROJECT MANAGER

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

SCALE: AS SHOWN
DRAWN BY: SMJ
CHECKED BY: DTB
SHEET NO.: 186 of 191
PROJECT NO.: 50.1890.97−A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
SOLIDS HANDLING BUILDING PLC PANEL WIRING DIAGRAM
OCTOBER 2025 PCS−32

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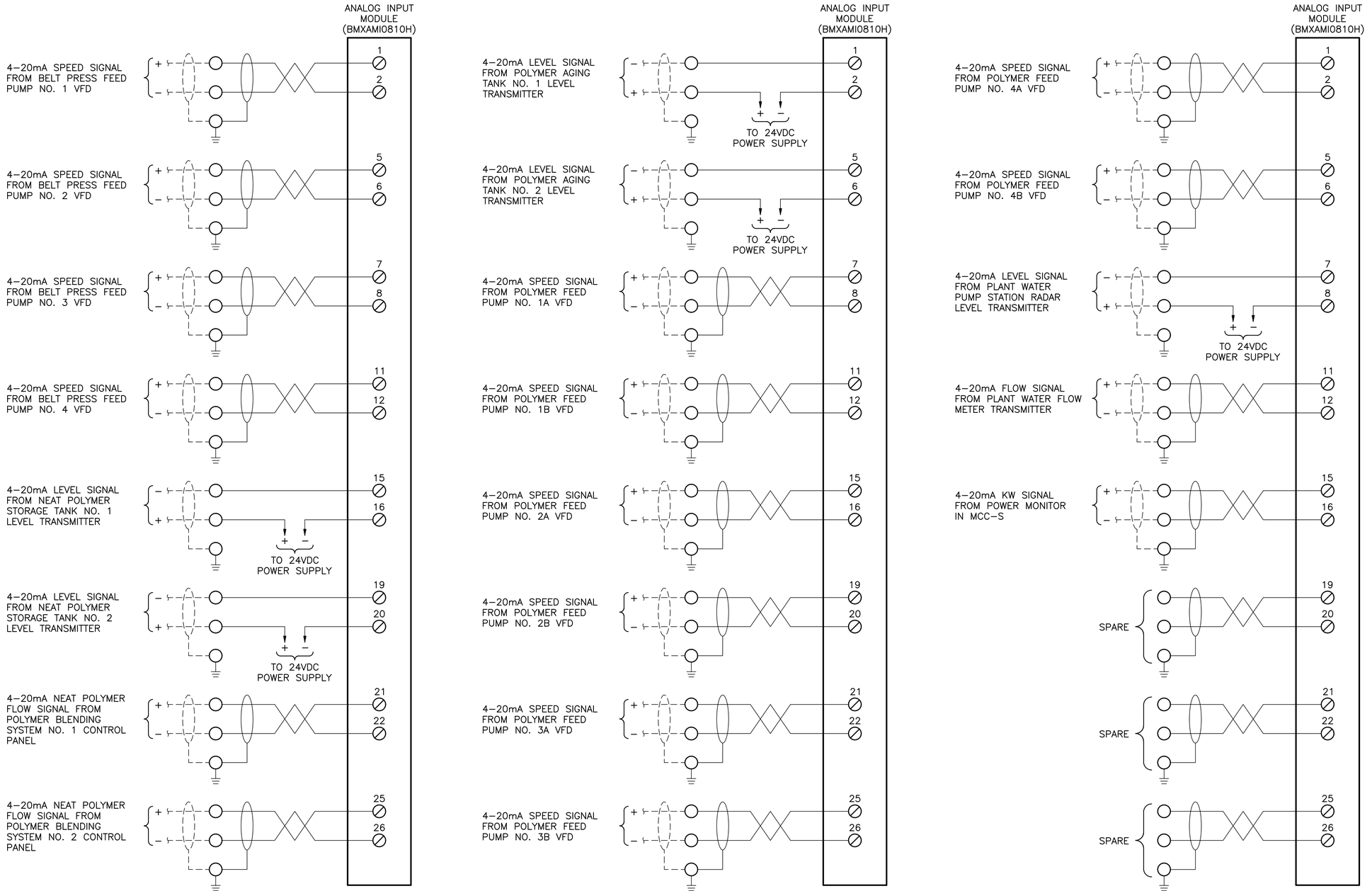

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ROBERT J. ANDRYSZAK LICENSE No. 22123 DELAWARE PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	SOLIDS HANDLING BUILDING PLC PANEL WIRING DIAGRAM
APPROVED DATE		SHEET NO.: 187 of 191	OCTOBER 2025 PCS–33
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	

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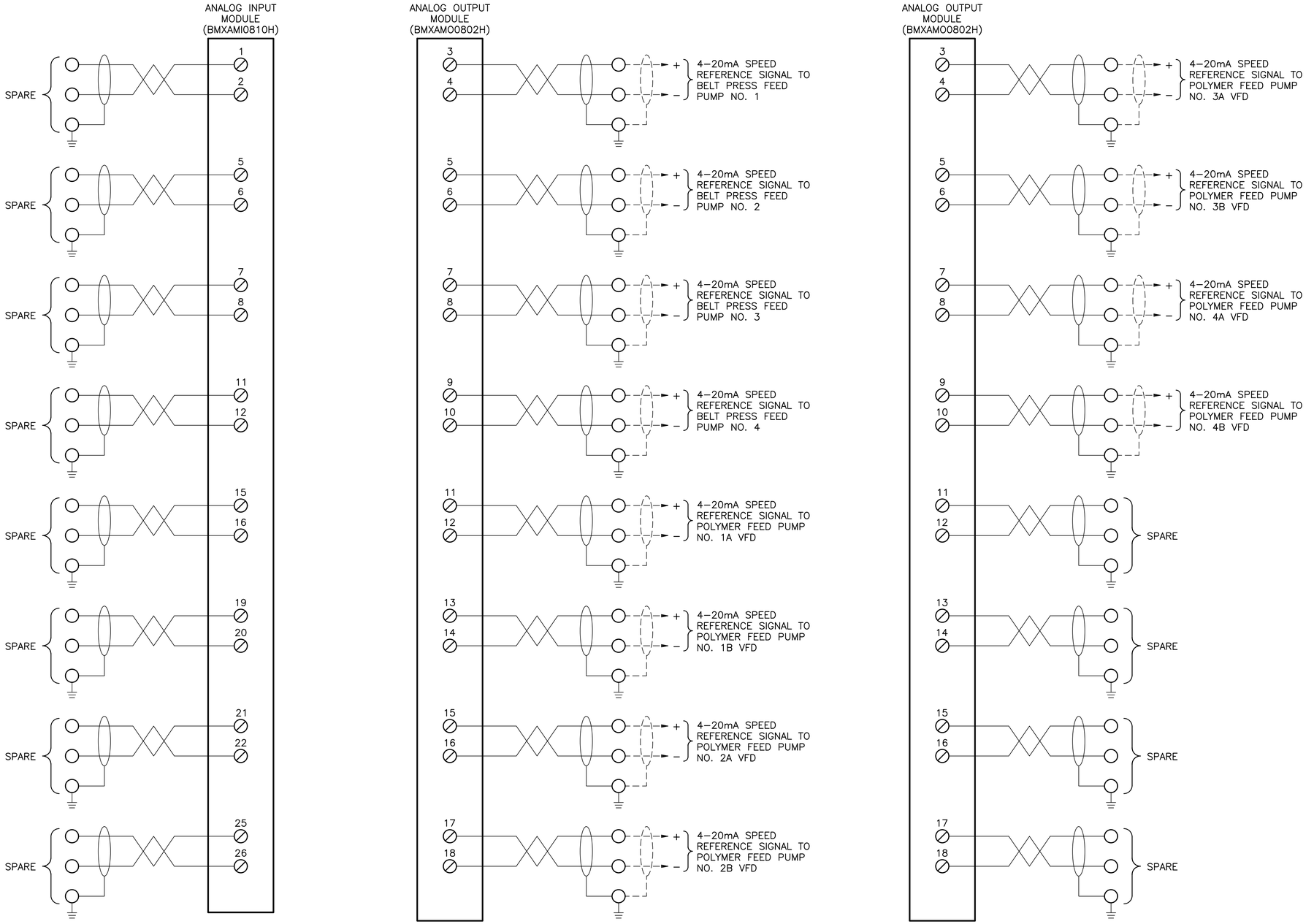

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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	SOLIDS HANDLING BUILDING
APPROVED DATE		SHEET NO.: 188 of 191	PLC PANEL WIRING DIAGRAM
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	OCTOBER 2025 PCS–34

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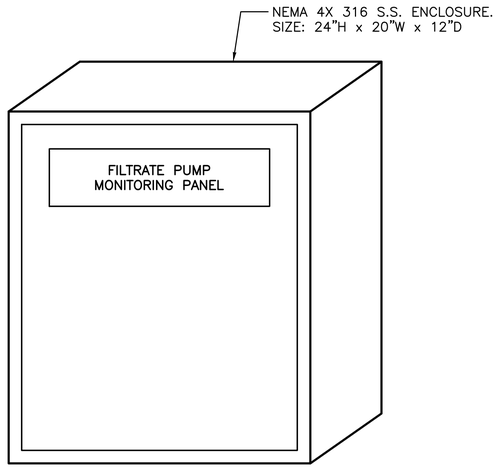
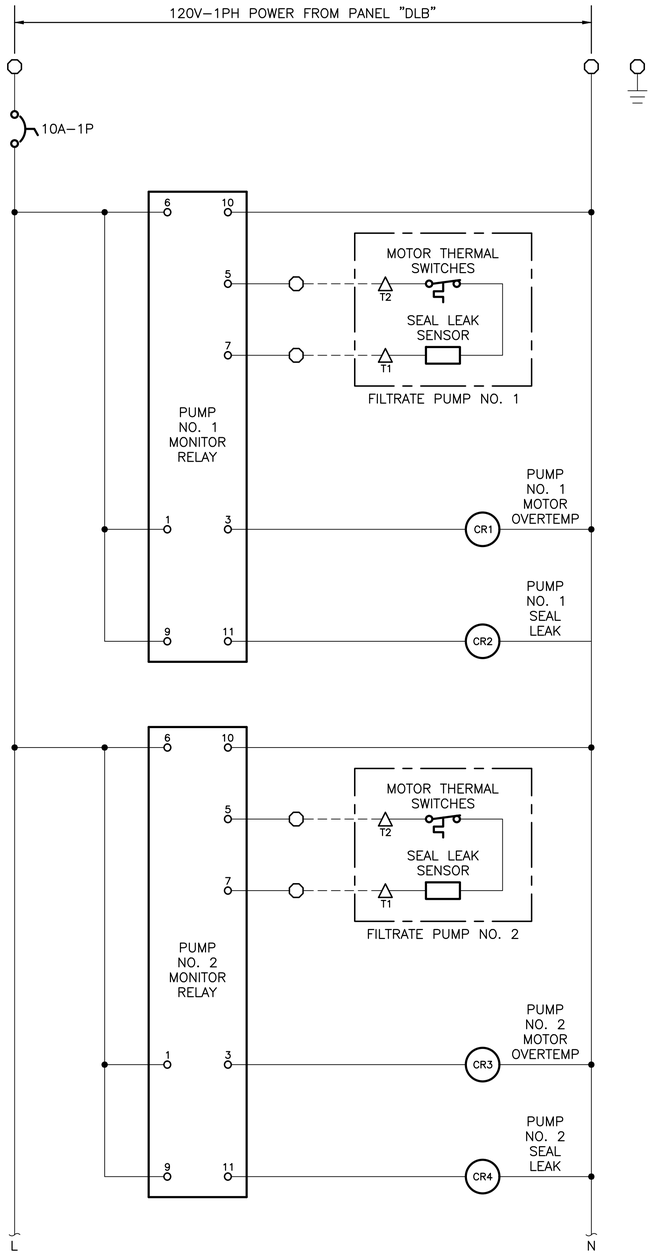
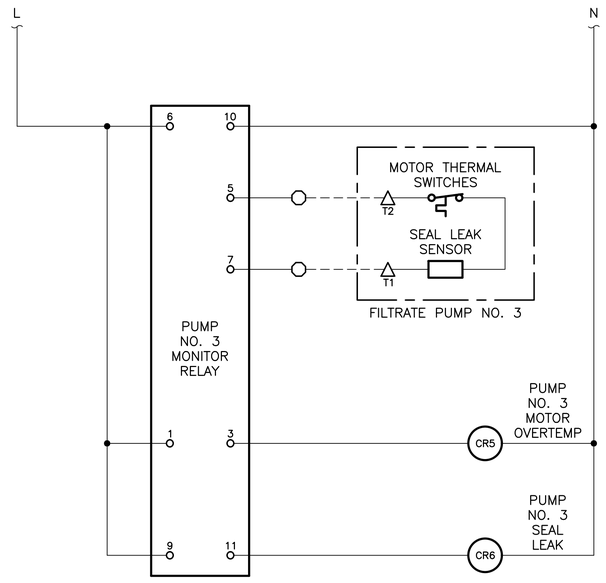
NOTES

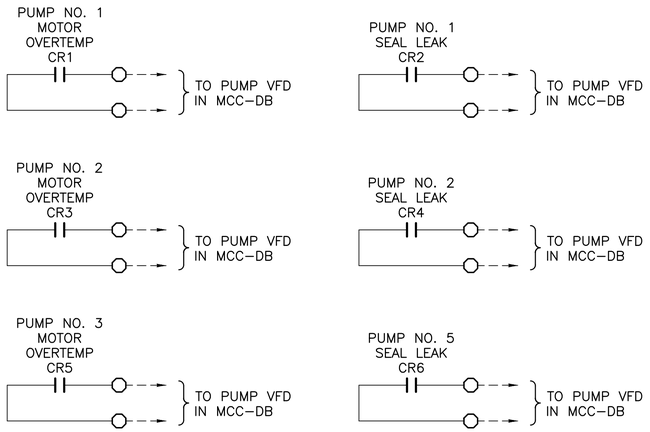
1. MONITORING PANEL MAIN NAMEPLATE SHALL BE ENGRAVED WITH 1/2" HIGH LETTERS.
2. COORDINATE THE PUMP MONITOR RELAYS WITH THE PUMPS BEING FURNISHED.



FILTRATE PUMP MONITORING PANEL
PANEL LAYOUT







FILTRATE PUMP MONITORING PANEL
WIRING DIAGRAM

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REVISIONS			
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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	FILTRATE PUMP MONITORING PANEL
APPROVED DATE		SHEET NO.: 189 of 191	OCTOBER 2025 PCS–35
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	

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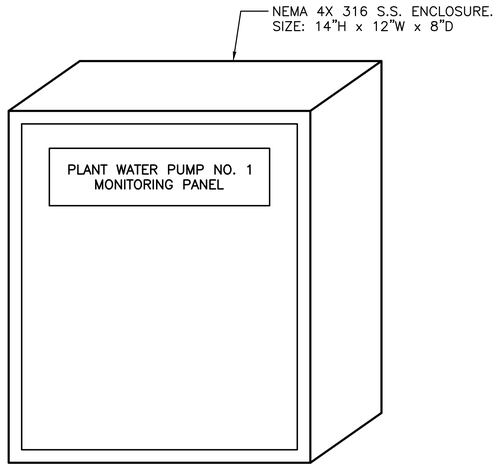
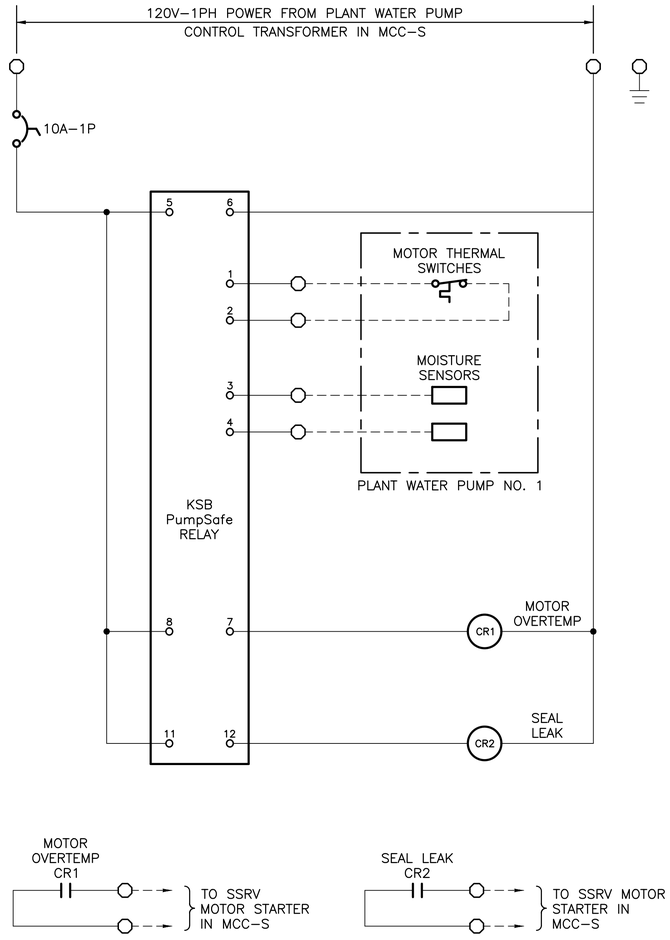
NOTES

1. MONITORING PANEL MAIN NAMEPLATE SHALL BE ENGRAVED WITH 1/2" HIGH LETTERS.
2. COORDINATE THE PUMP MONITOR RELAY WITH THE PUMPS BEING FURNISHED.
3. THE PLANT WATER PUMP NO. 1 MONITORING PANEL PANEL LAYOUT AND WIRING DIAGRAM IS TYPICAL FOR THE FOLLOWING THREE (3) MONITORING PANELS:

   PLANT WATER PUMP NO. 1 MONITORING PANEL
   PLANT WATER PUMP NO. 2 MONITORING PANEL
   PLANT WATER PUMP NO. 3 MONITORING PANEL



PLANT WATER PUMP NO. 1
MONITORING PANEL
PANEL LAYOUT
(SEE NOTE 3)



PLANT WATER PUMP NO. 1 MONITORING PANEL
WIRING DIAGRAM
(SEE NOTE 3)

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REVISIONS			
NO.	DESCRIPTION	BY	DATE

KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE	APPROVED DATE	SCALE: AS SHOWN	KENT COUNTY RRRF
		DRAWN BY: SMJ	BIOSOLIDS CAPACITY EXPANSION PROJECT CONTRACT 3
DIRECTOR OF PUBLIC WORKS	PROJECT MANAGER	CHECKED BY: DTB	PLANT WATER PUMP MONITORING PANELS
APPROVED DATE		SHEET NO.: 190 of 191	
ASSISTANT DIRECTOR OF ENGINEERING		PROJECT NO.: 50.1890.97–A	OCTOBER 2025 PCS–36

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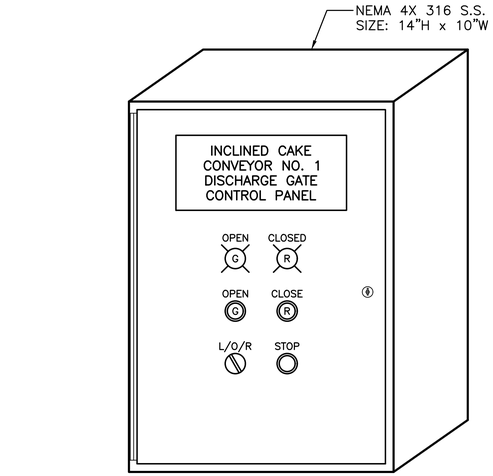

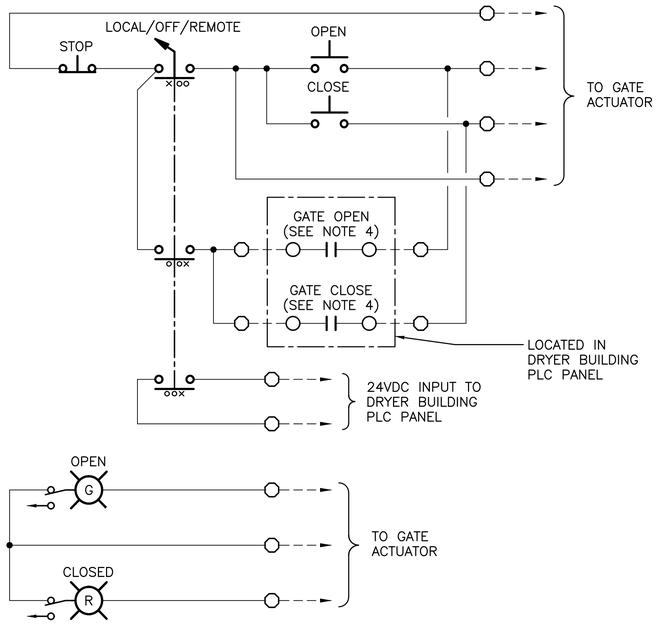

INCLINED CAKE CONVEYOR NO. 1 DISCHARGE GATE CONTROL PANEL PANEL LAYOUT AND WIRING DIAGRAM

(TYP. FOR INCLINED CAKE CONVEYOR NO. 1 AND NO. 2 DISCHARGE GATE CONTROL PANELS)

NOTES

1. COORDINATE GATE CONTROL PANEL WIRING WITH VALVE ACTUATORS.
2. DISCHARGE GATE CONTROL PANEL NAMEPLATES SHALL BE ENGRAVED WITH 1/2" HIGH LETTERS.
3. THE OPEN AND CLOSE RELAY CONTACTS FOR THE DISCHARGE GATES ARE AS FOLLOWS:

   INCLINED CAKE CONVEYOR NO. 1 DISCHARGE GATE OPEN: IR3
   INCLINED CAKE CONVEYOR NO. 1 DISCHARGE GATE CLOSE: IR4
   INCLINED CAKE CONVEYOR NO. 2 DISCHARGE GATE OPEN: IR8
   INCLINED CAKE CONVEYOR NO. 2 DISCHARGE GATE CLOSE: IR9

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REVISIONS			
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KENT COUNTY, DELAWARE
DEPARTMENT OF PUBLIC WORKS

APPROVED DATE DIRECTOR OF PUBLIC WORKS	APPROVED DATE PROJECT MANAGER	SCALE: AS SHOWN
APPROVED DATE ASSISTANT DIRECTOR OF ENGINEERING		DRAWN BY: SMJ CHECKED BY: DTB SHEET NO.: 191 of 191 PROJECT NO.: 50.1890.97-A

KENT COUNTY RRRF
BIOSOLIDS CAPACITY EXPANSION PROJECT
CONTRACT 3
INCLINED CAKE CONVEYOR
DISCH. GATE CONTROL PANELS
OCTOBER 2025 PCS-37

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