



Greater Napanee

GREATER FOR MANY REASONS

NAPANEE WPCP ANAEROBIC DIGESTER BIOGAS UPGRADES

TOWN OF GREATER NAPANEE NAPANEE, ONTARIO



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KEY PLAN

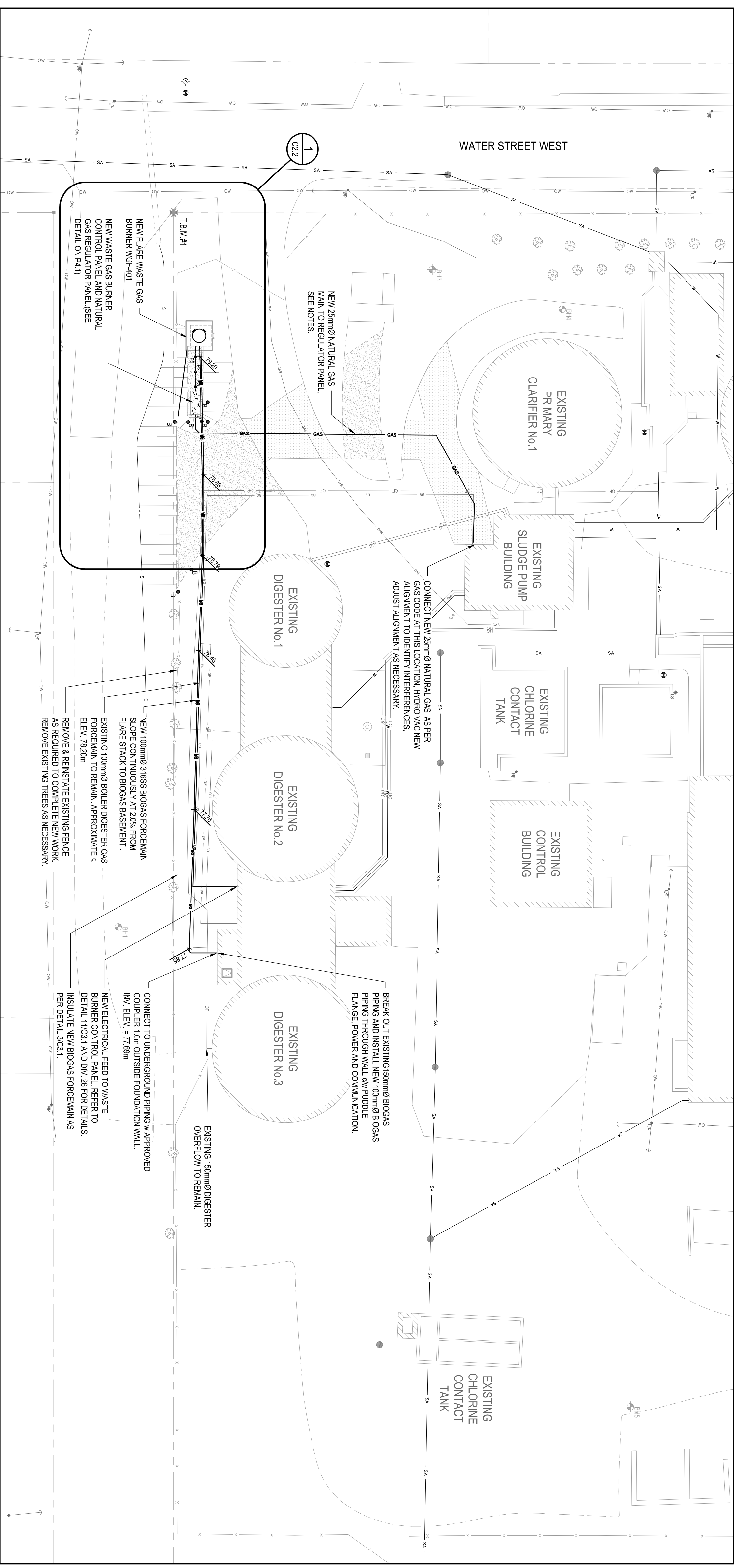
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DRAWING LIST

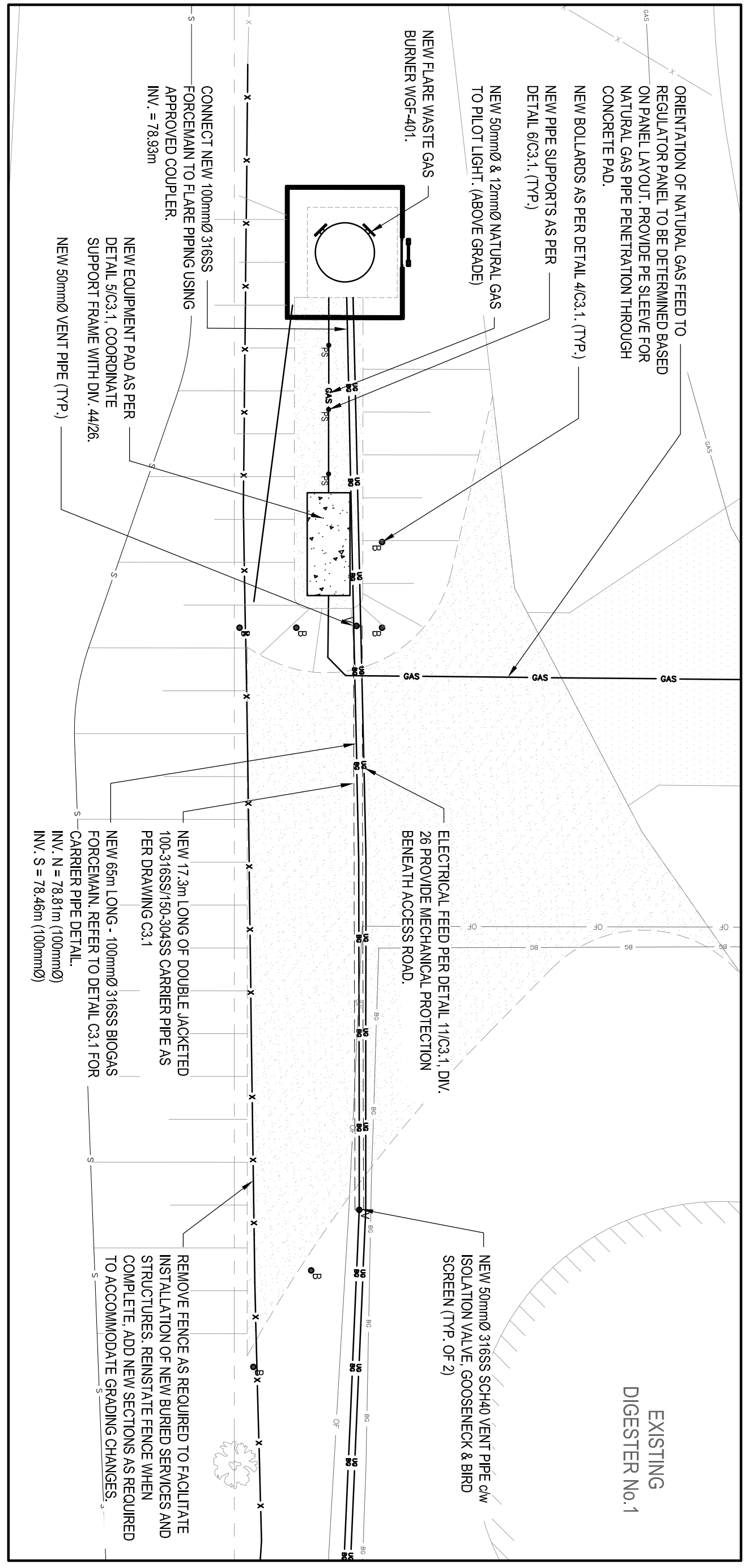
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AS-BUILT

DATE: 2019/04/08



SITE PLAN
SCALE: 1:250



PARTIAL PLAN BLOW-UP
SCALE: 1:100

LEGEND:

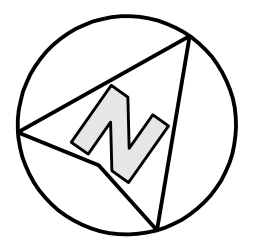
- EXISTING PROPERTY LINE
- NEW EDGE OF ASPHALT
- EXISTING EDGE OF SHOULDER
- EXISTING GRANULAR DRIVEWAY
- EXISTING DITCH/ DRAINAGE
- EXISTING TOP OF SLOPE
- EXISTING BOTTOM OF SLOPE
- EXISTING SWALE
- NEW FENCE
- EXISTING FENCE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATER MAIN
- EXISTING CULVERT
- EXISTING UTILITY MANHOLE
- EXISTING STORM MANHOLE
- EXISTING CATCH BASIN
- EXISTING VALVE
- EXISTING HYDRANT
- EXISTING VALVE
- TEMPORARY BENCHMARK
- EXISTING SLUDGE PUMP FORCEMAIN
- EXISTING SLUDGE TRANSFER LINE
- NEW BIOGAS LINE
- EXISTING BIOGAS LINE
- NEW NATURAL GAS LINE
- EXISTING GAS LINE
- NEW UNDERGROUND BELL
- NEW UNDERGROUND SERVICE
- EXISTING UNDERGROUND SERVICE
- EXISTING UTILITY POLE
- NEW BOLLARD
- NEW PIPE SUPPORT
- NEW PIPE SUPPORT
- NEW ASPHALT REINSTATEMENT
- NEW ASPHALT REINSTATEMENT
- NEW GRANULAR REINSTATEMENT
- AS PER DETAIL 803.3.1
- NEW FROST PROTECTION
- AS PER DETAIL 303.1

TEMPORARY BENCH MARKS

T.B.M. No.	Elev. (m)	T.B.M. DESCRIPTION
T.B.M. #1	81.46	TOP OF IRON BAR

- NOTES:**
- CONTRACTOR TO VERIFY LOCATION OF ALL BURIED SERVICES PRIOR TO START OF CONSTRUCTION.
 - TOPOGRAPHIC INFORMATION PROVIDED BY HOKPINS CHITTY (LAND SURVEYORS INC. ONTARIO LAND SURVEYORS)
 - ELEVATIONS SHOWN ON THIS PLAN ARE GEODETIC AND ARE REFERRED TO CGVD83 DATUM.
 - ALL DISTURBED AREAS TO BE REINSTATED WITH 150mm TOPSOIL AND SEED UNLESS OTHERWISE NOTED.
 - ALL NATURAL GAS PIPING TO BE INSTALLED AS PER APPLICABLE CODES, CSA B148, COORDINATE WITH UTILITY AS REQUIRED. ALL PIPING TO BE INSTALLED WITH 40 STEEL AND REFERRED TO CGVD83 DATUM.

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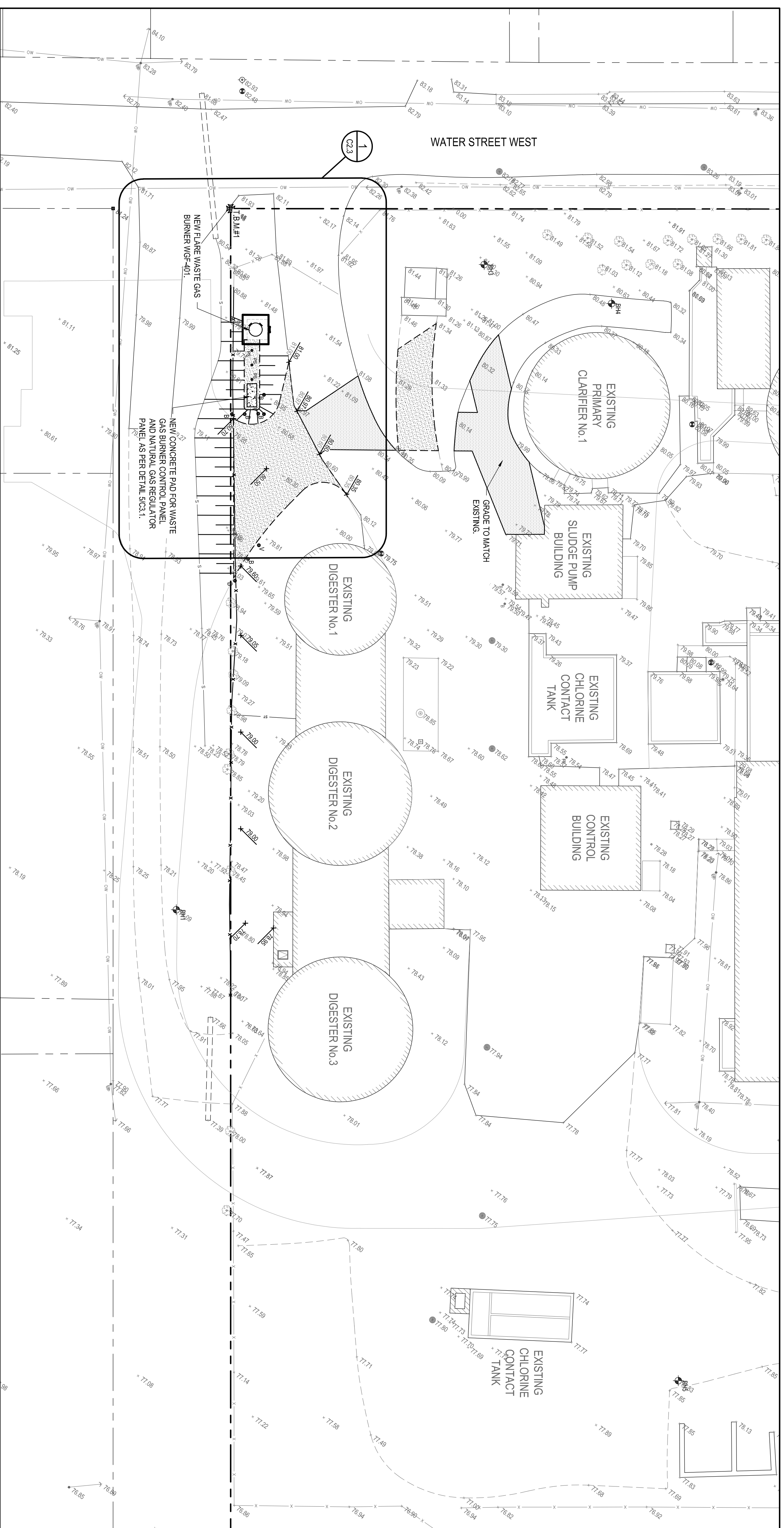
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Greater Napanee
 DESIGNER FOR NAPANEE REGION

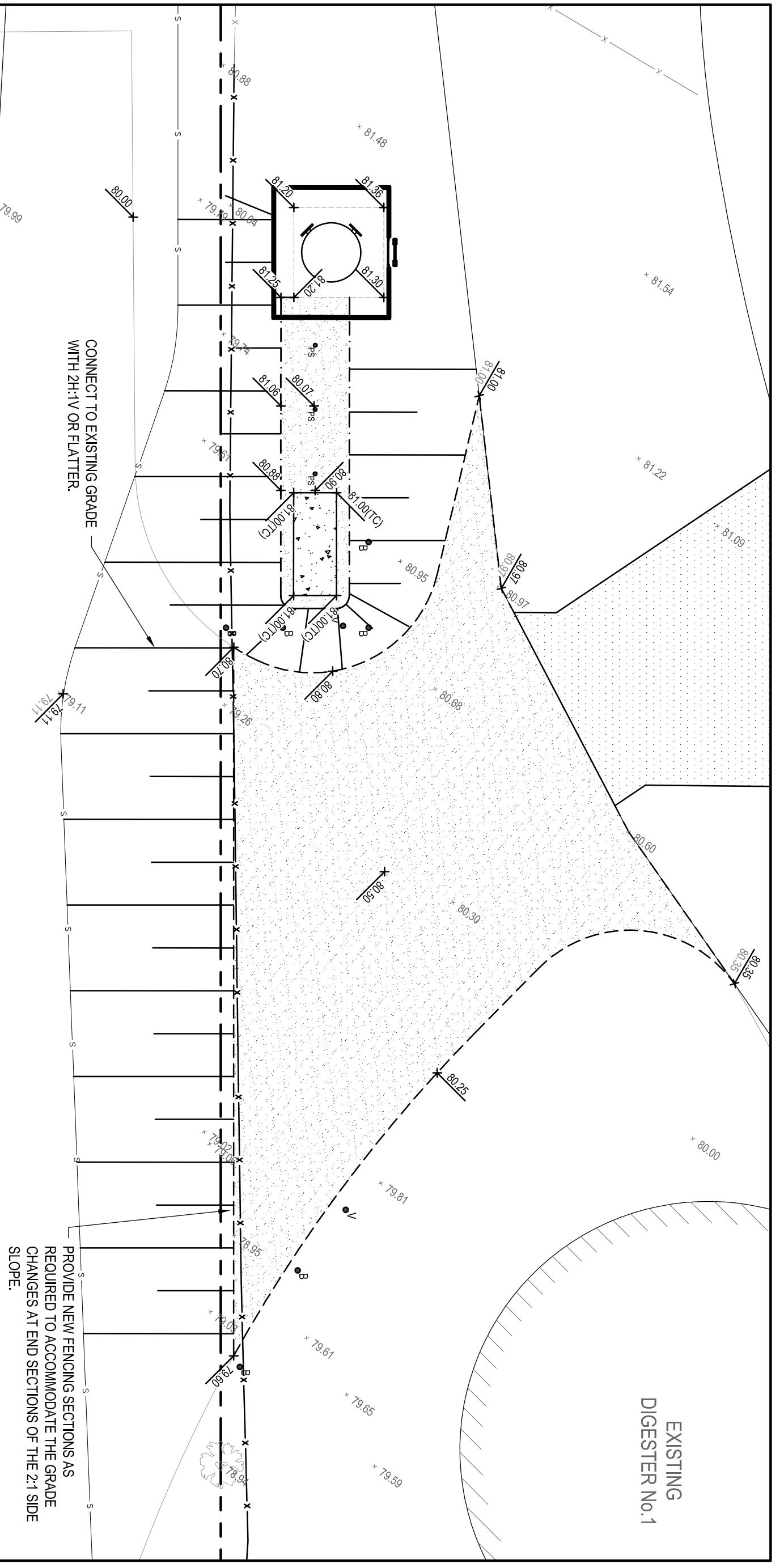
PROJECT:
 NAPANEE WPCP
 ANAEROBIC DIGESTER
 BIOGAS UPGRADES

TITLE:
 SITE SERVICING PLAN

SCALE:	AS SHOWN
DATE:	2017/10/02
DESIGNED BY:	J.B.
DRAWING NO.:	C22
CHECKED BY:	M.V.



SITE GRADING PLAN
SCALE: 1:250



PARTIAL SITE GRADING PLAN
SCALE: 1:100

LEGEND:

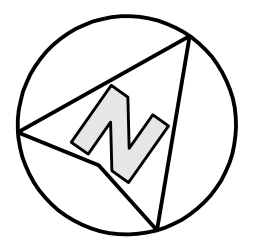
- EXISTING PROPERTY LINE
- NEW EDGE OF ASPHALT
- EXISTING EDGE OF SHOULDER
- EXISTING GRANULAR DRIVEWAY
- EXISTING DITCH CENTERLINE
- EXISTING TOP OF SLOPE
- EXISTING BOTTOM OF SLOPE
- EXISTING SWALE
- NEW FENCE
- EXISTING FENCE
- EXISTING CULVERT
- EXISTING SANITARY MANHOLE
- EXISTING STORM MANHOLE
- EXISTING CATCH BASIN
- EXISTING TRENCH
- TEMPORARY BENCHMARK
- FINISHED GROUND ELEVATION
- EXISTING GROUND ELEVATION
- TOP OF CONCRETE ELEVATION
- EXISTING UTILITY POLE
- NEW BOLLARD
- NEW PIPE SUPPORT
- GEOTECHNICAL
- BORHOLOGENOMETER
- NEW ASPHALT REINSTATEMENT AS PER DETAIL WCS.1
- NEW GRANULAR REINSTATEMENT AS PER DETAIL WCS.1

TEMPORARY BENCH MARKS

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T.B.M. #1	81.46	TOP OF IRON BAR

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 - ALL DISTURBED AREAS TO BE REINSTATED WITH 150mm TOPSOIL AND SEED UNLESS OTHERWISE NOTED.

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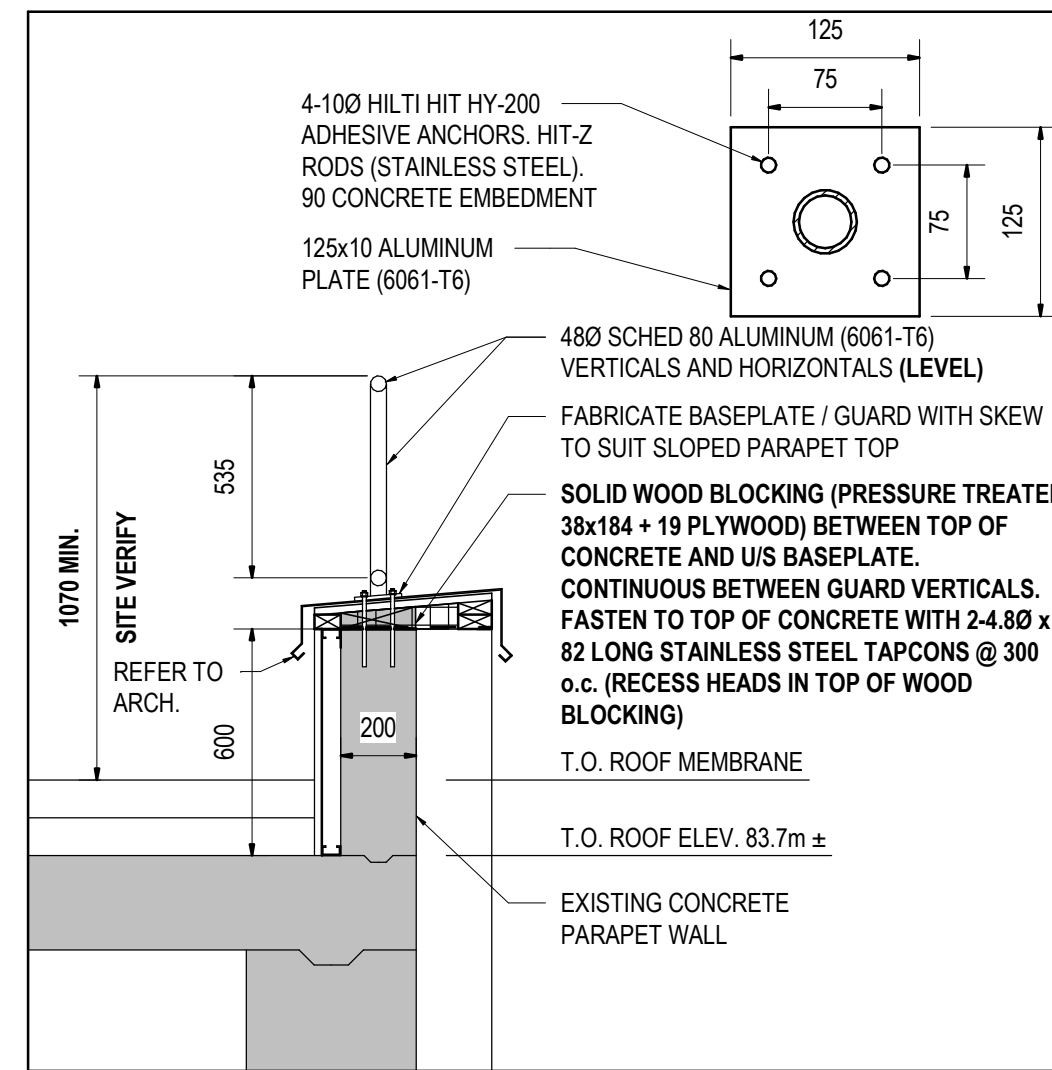
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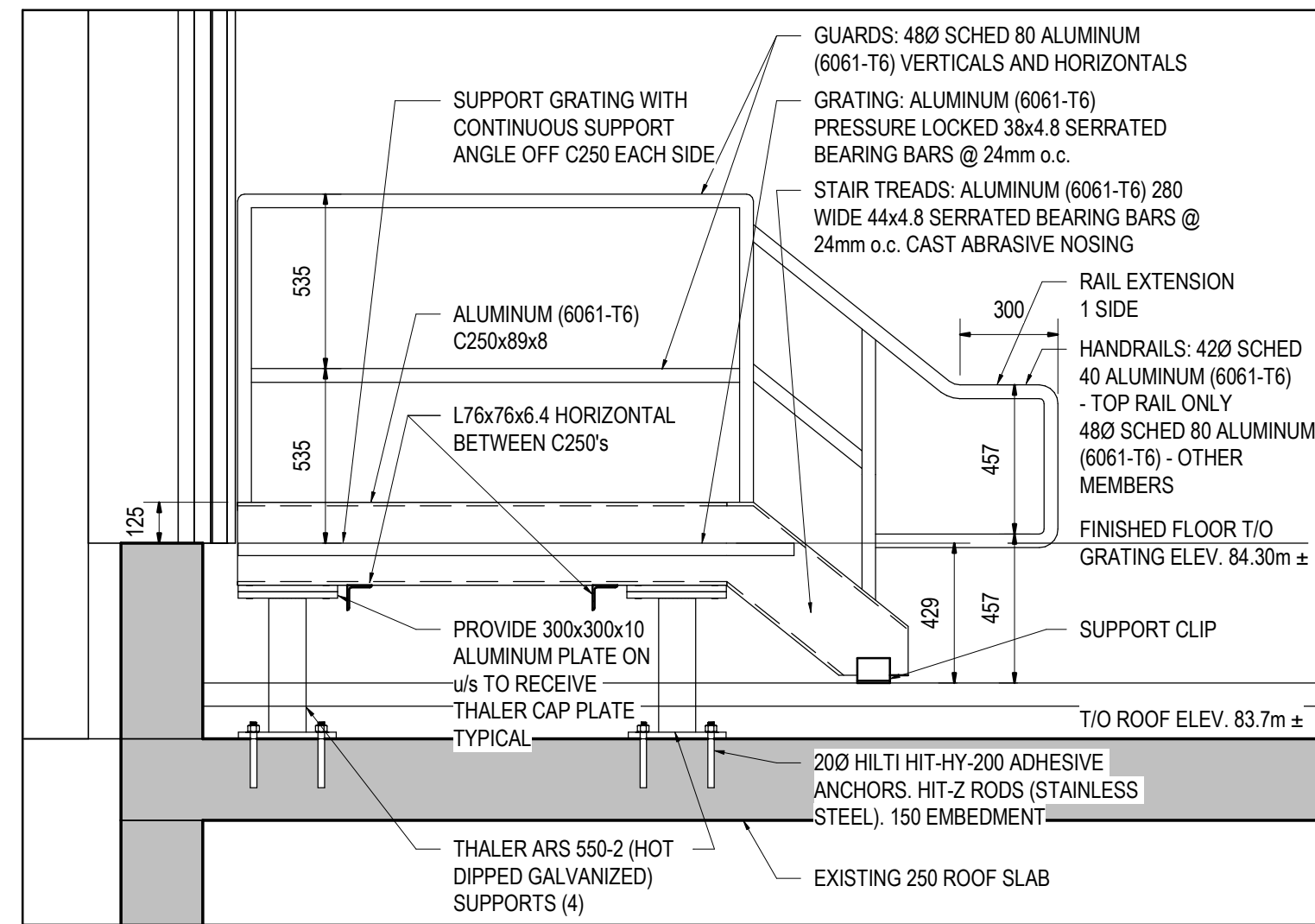
PROJECT:
 NAPANEE WPCP
 ANAEROBIC DIGESTER
 BIOGAS UPGRADES

TITLE:
 SITE GRADING PLAN

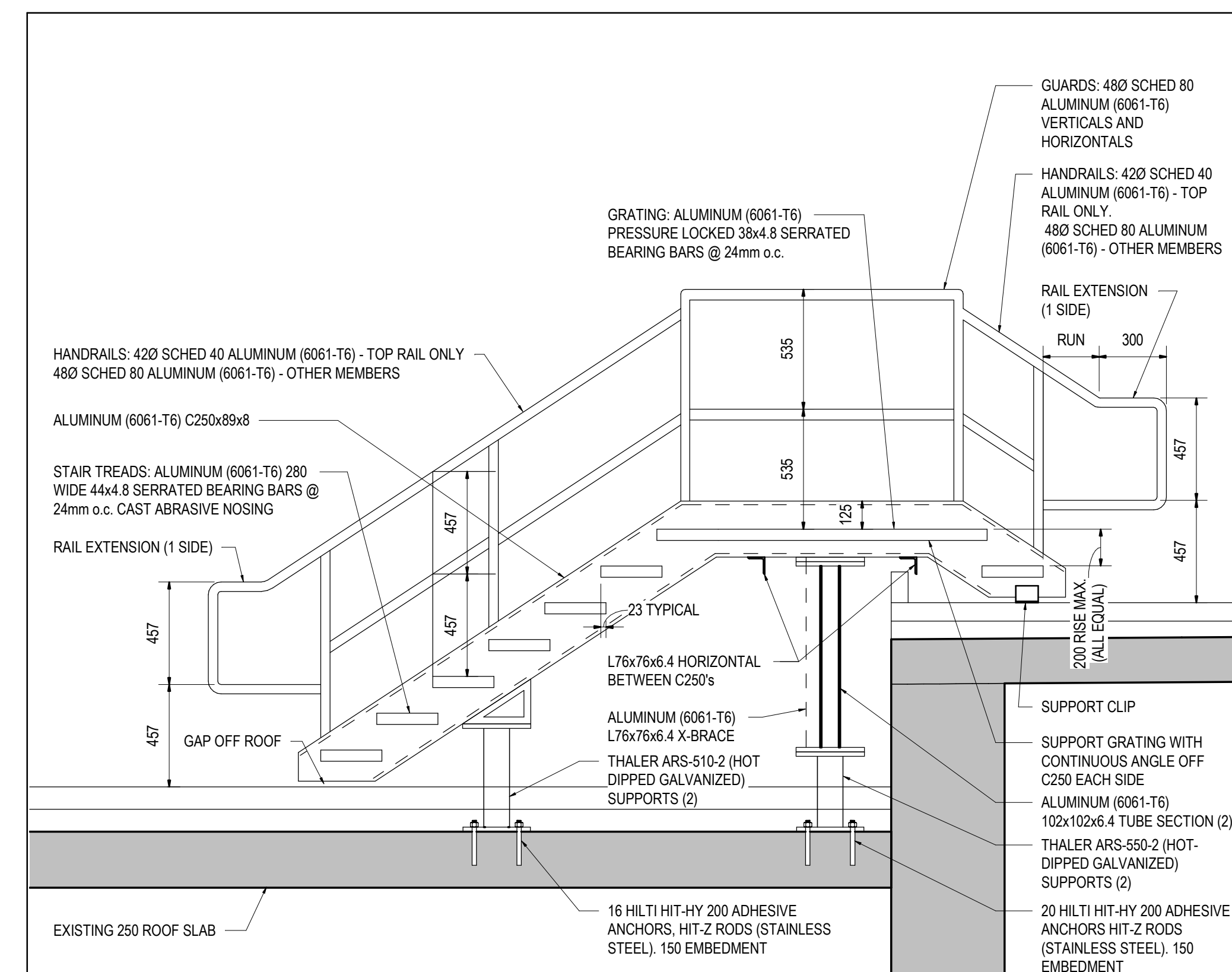
SCALE:	1:250	DATE:	2017/10/02
DESIGNED BY:	J.B.	DRAWING NO.:	C2.3
CHECKED BY:	M.V.		



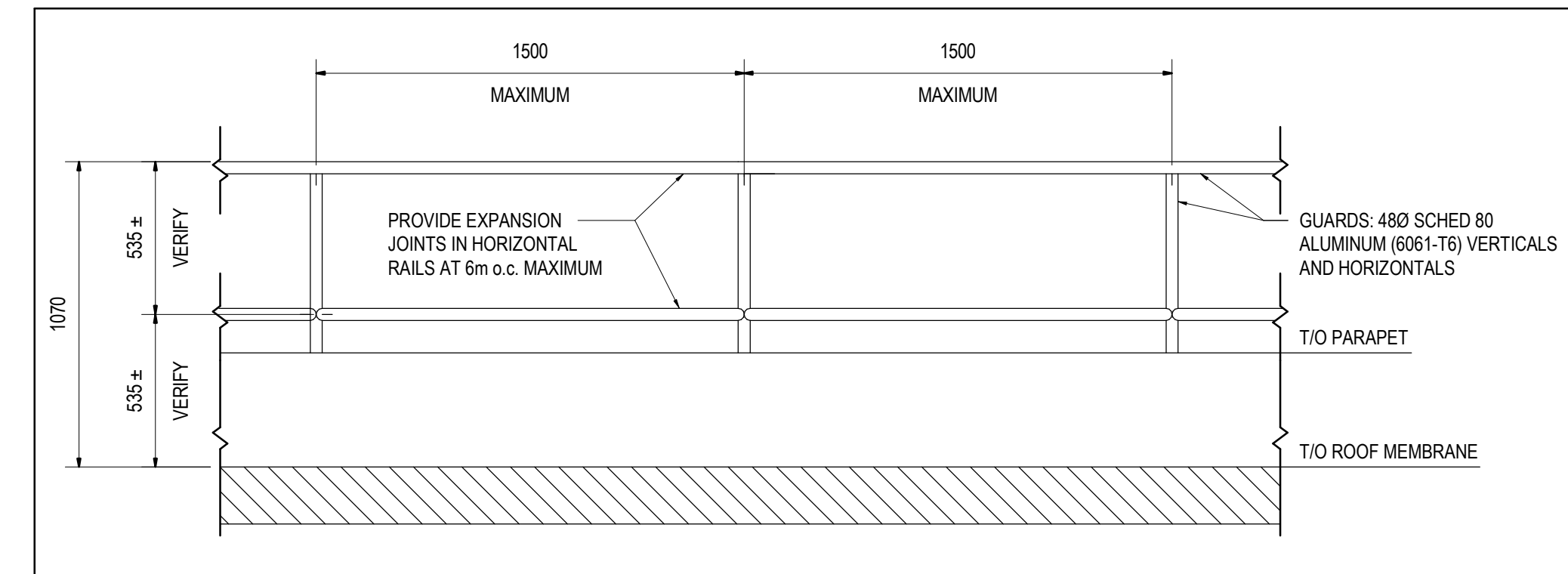
SECTION 3
S1.1 1:20



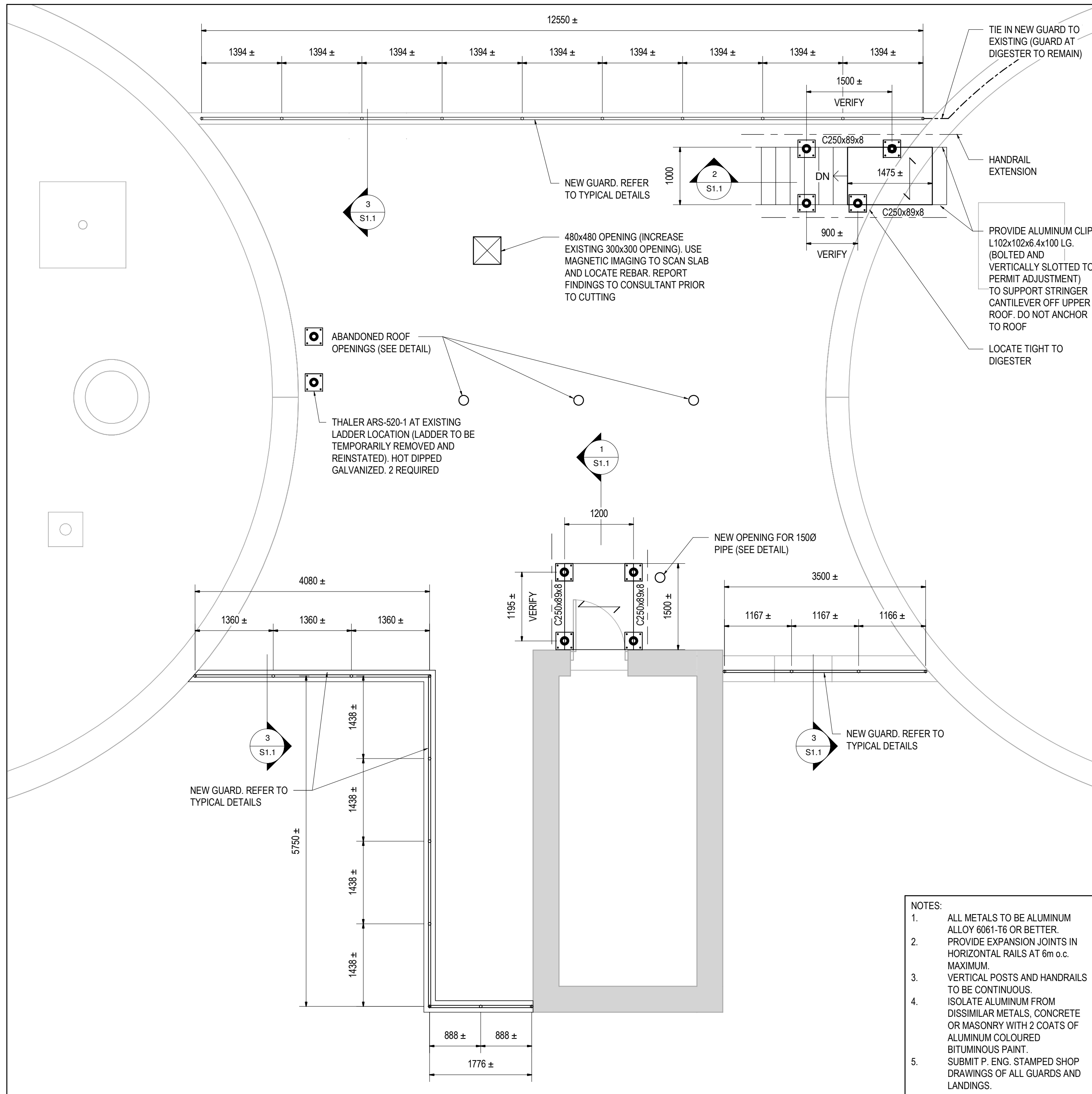
SECTION 1
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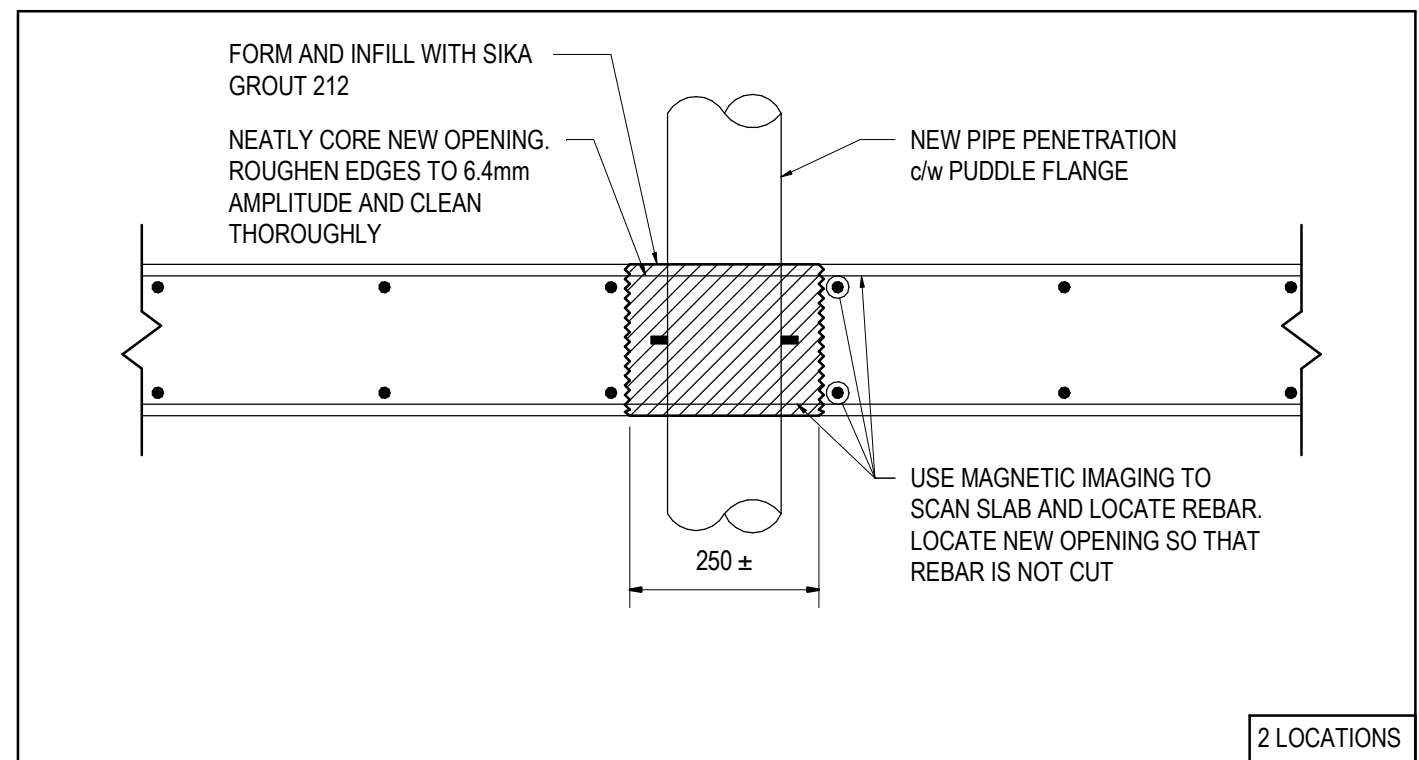
SECTION 2
S1.1 1:20



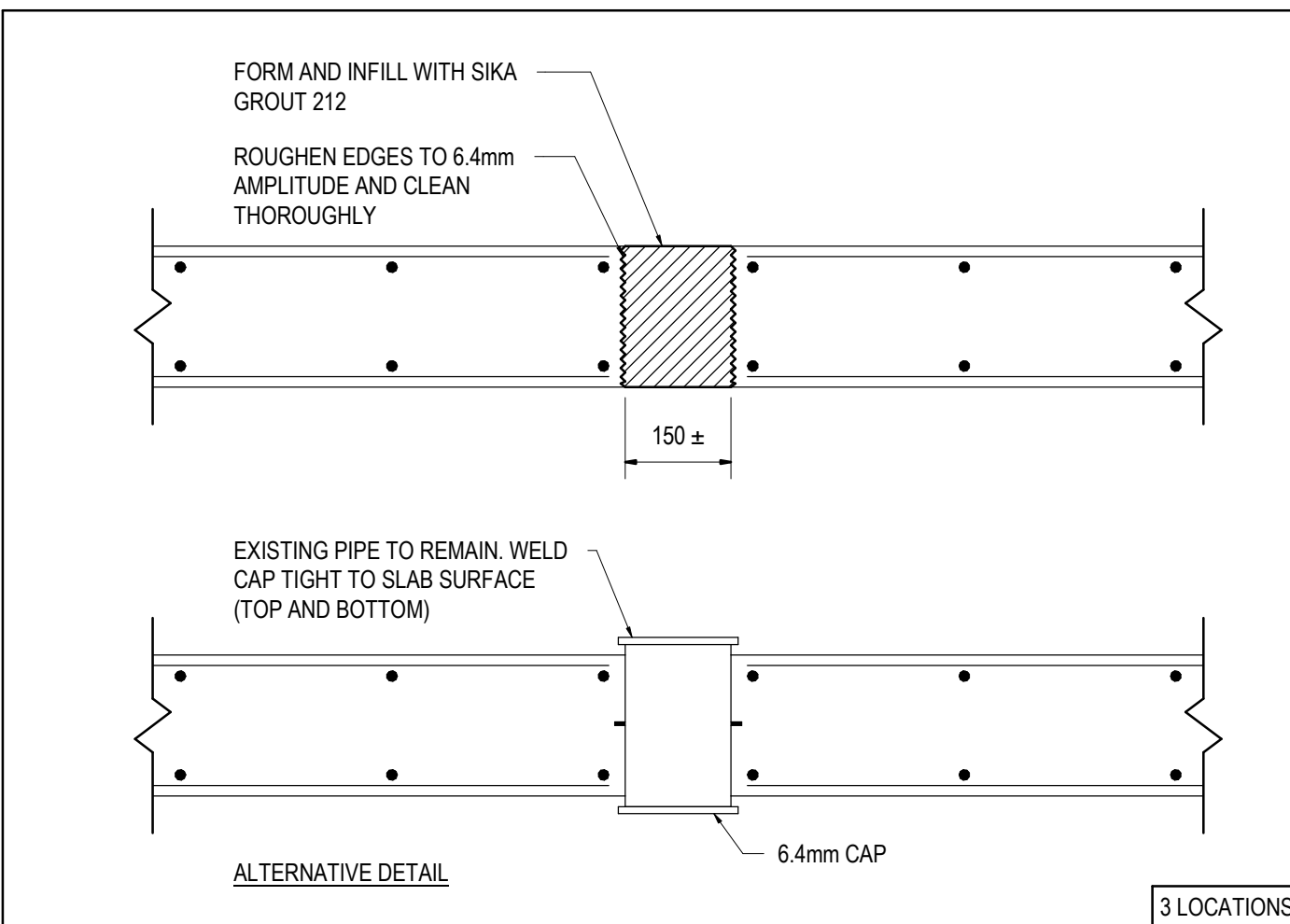
TYPICAL GUARD DETAILS
1:20



PART ROOF PLAN - DIGESTER CONTROL BUILDING
1:50



NEW PIPE OPENING
1:10



ABANDONED ROOF OPENINGS - TYPICAL DETAIL
1:10

DATE	NO.	REVISION
2019/04/08	1	AS-BUILT

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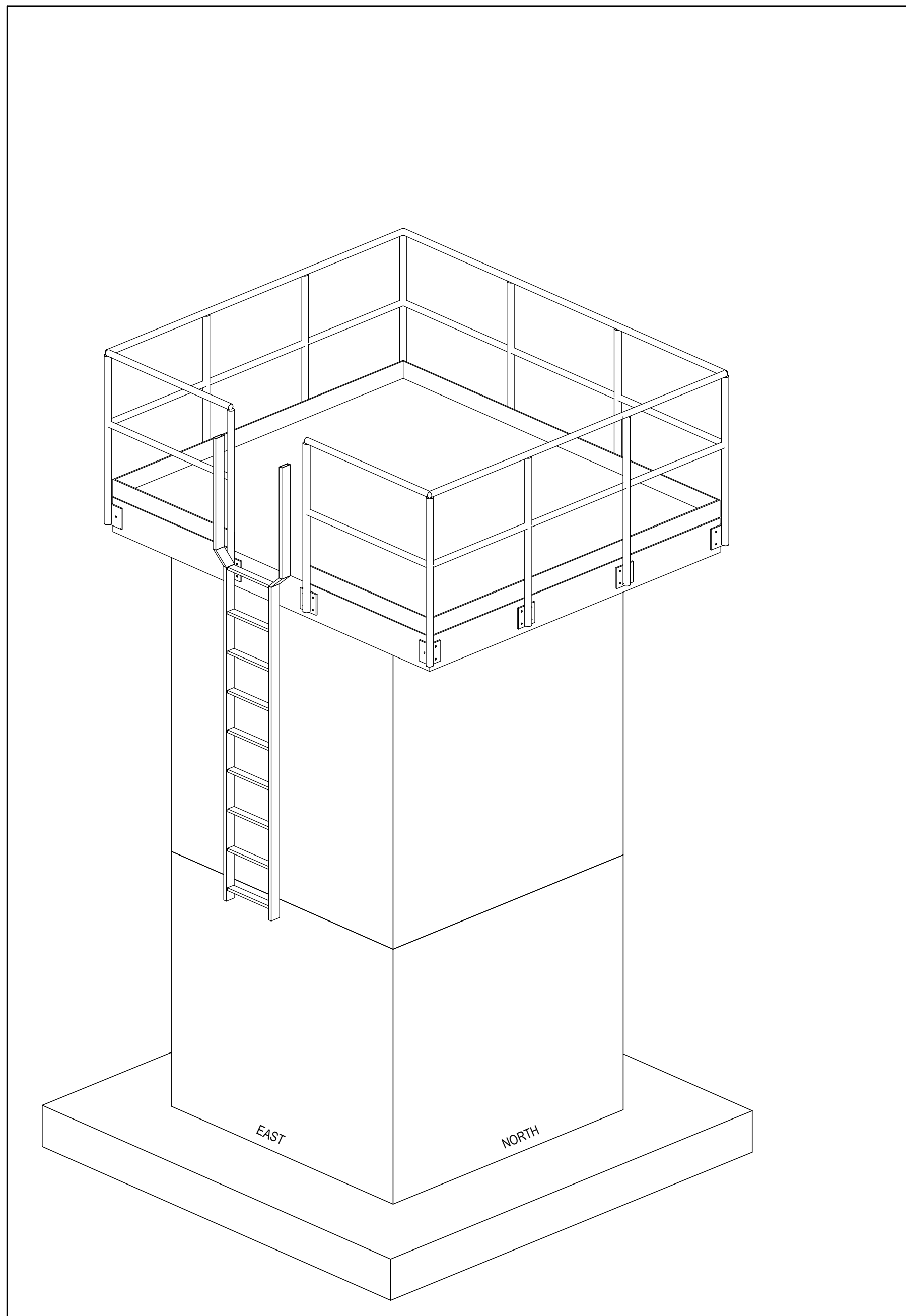
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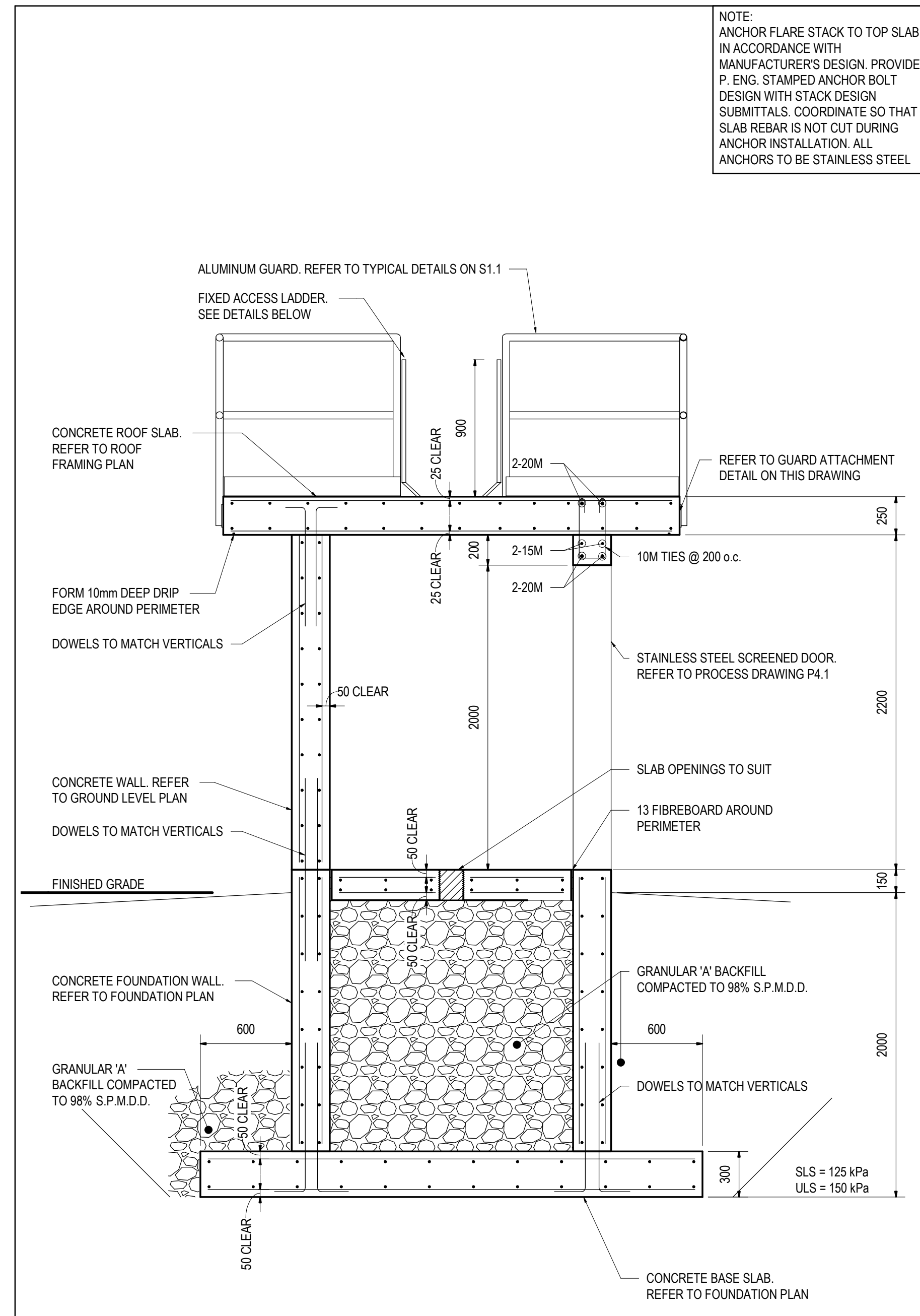
 Greater Napanee
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PROJECT:
NAPANEE WPCP: ANAEROBIC DIGESTER BIOGAS UPGRADES
 PART ROOF PLAN, SECTIONS, AND DETAILS

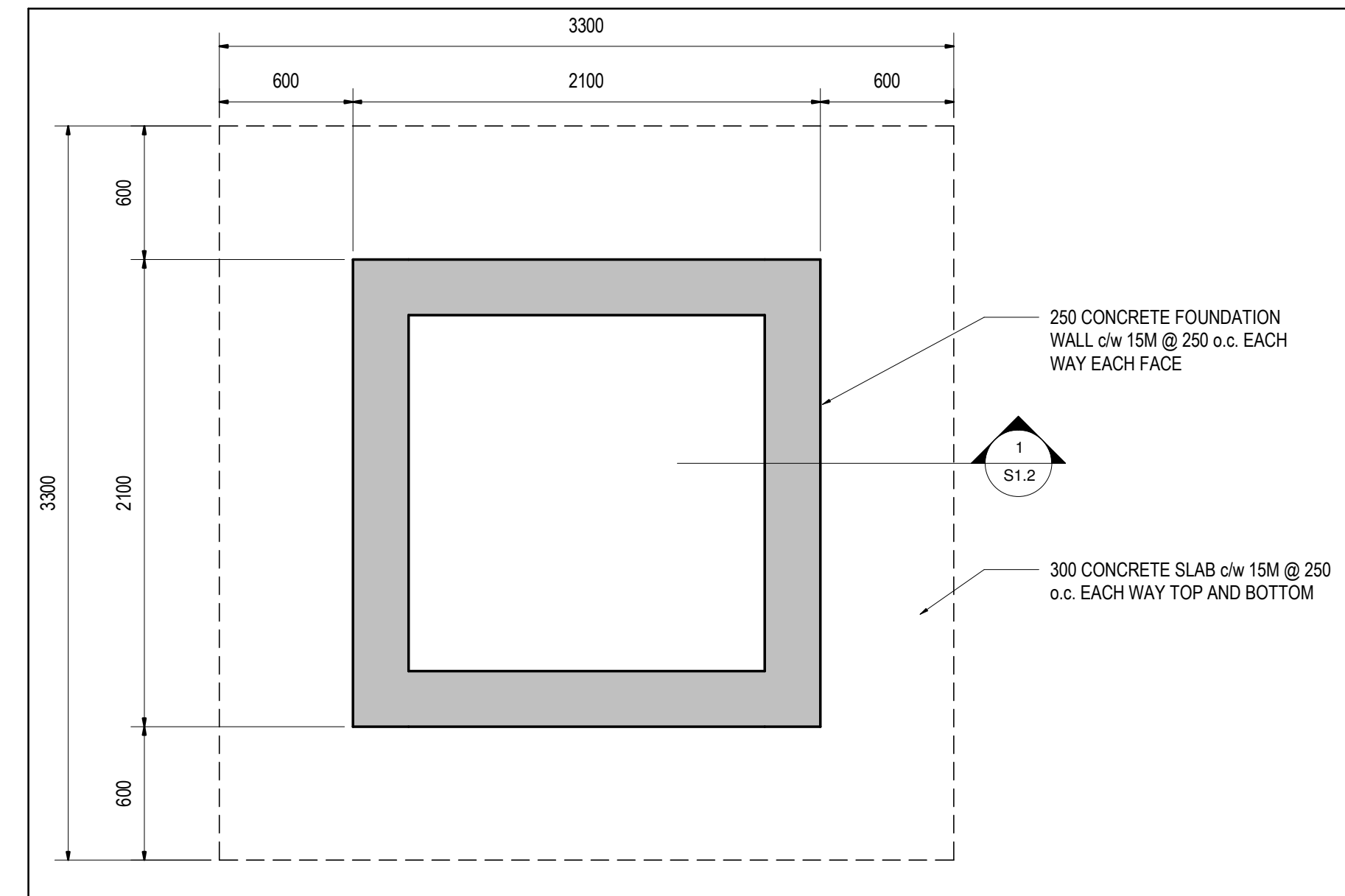
TITLE:
 SCALE: As indicated
 DESIGNED BY: G.E.
 DRAWN BY: J.G.
 CHECKED BY: J.B.
 JOB NO: 17102
 DATE: 2017/09/08
 DRAWING NO.
S1.1



STRUCTURE ISOMETRIC

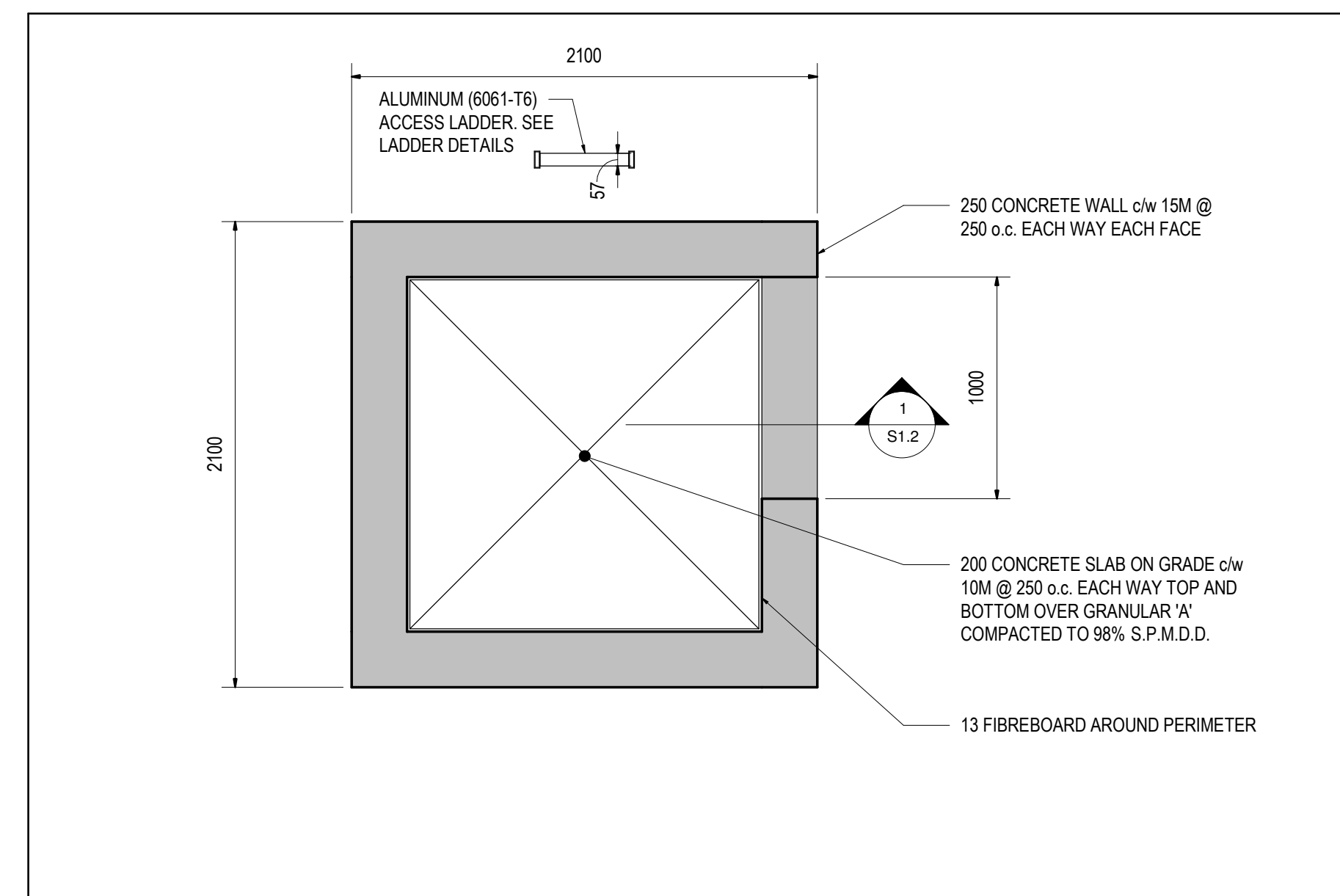


SECTION
1:25



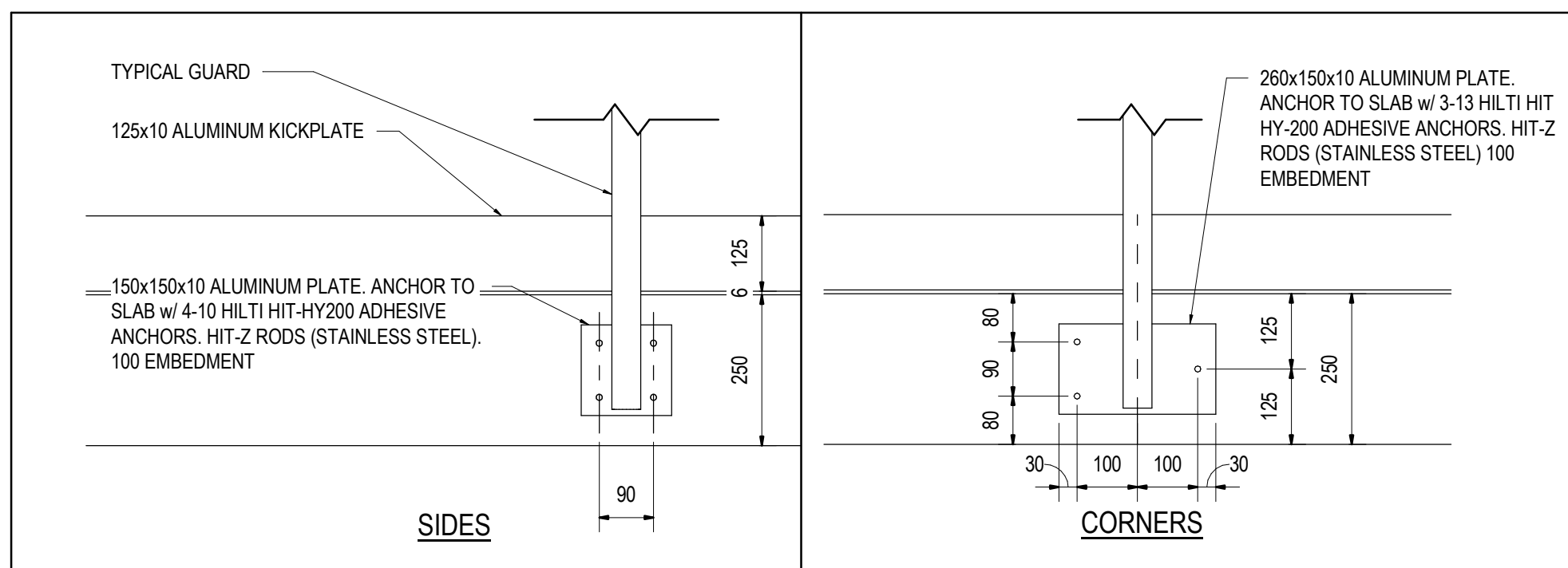
FOUNDATION PLAN

1:25



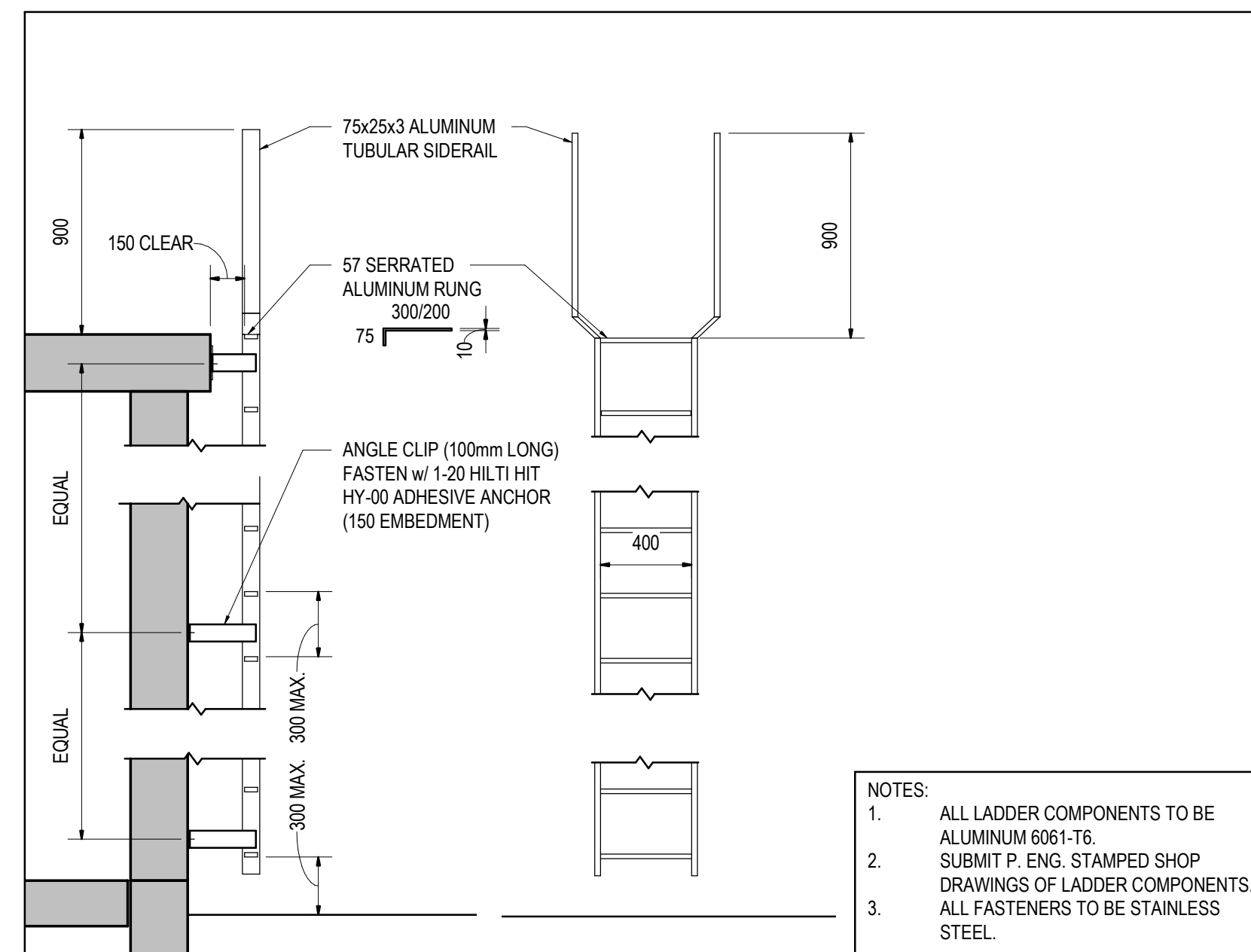
GROUND LEVEL PLAN

1:25



TYPICAL GUARD ATTACHMENT

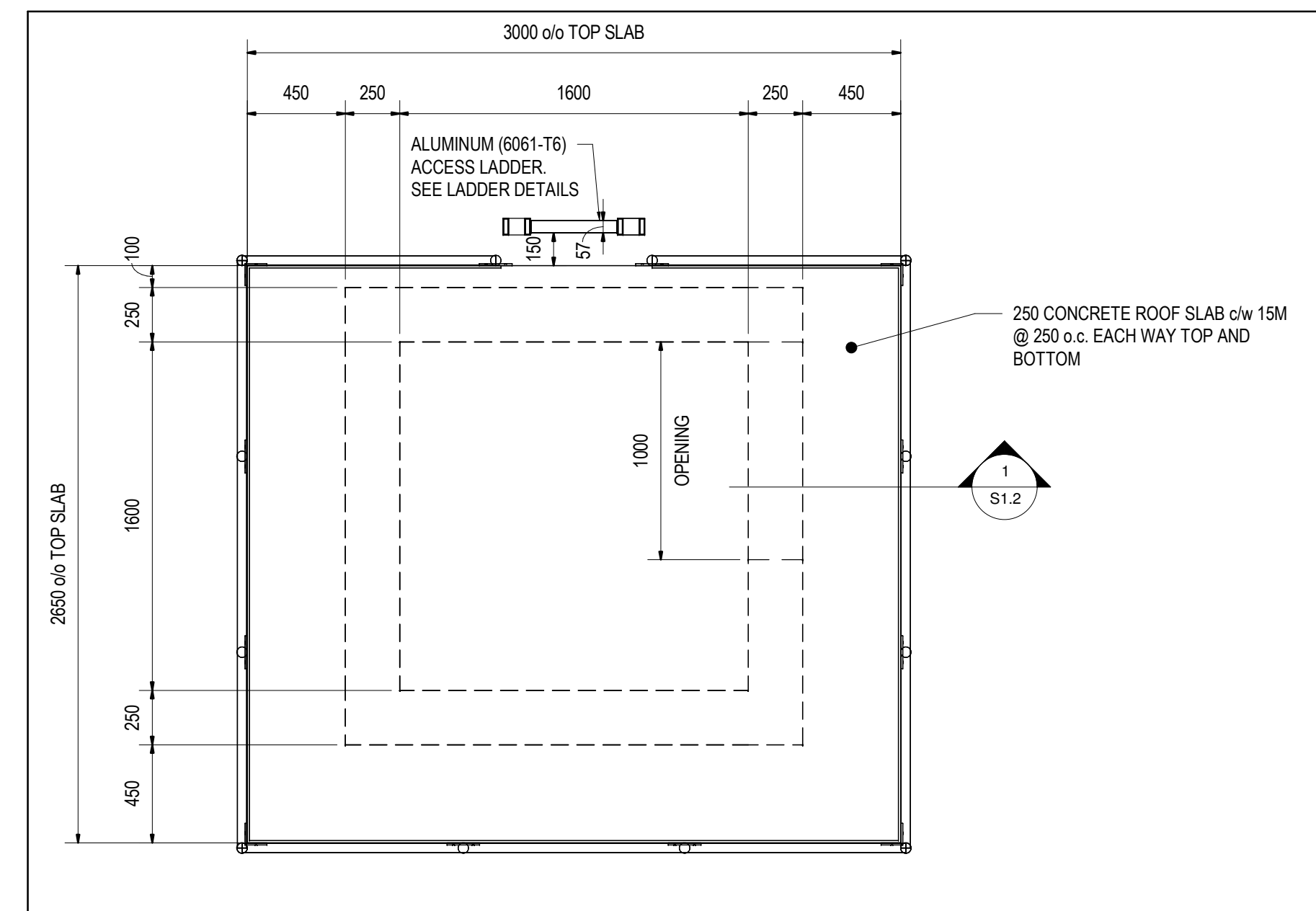
1:10



LADDER DETAILS

1:25

- NOTES:
1. ALL LADDER COMPONENTS TO BE ALUMINUM 6061-T6.
 2. SUBMIT P. ENG. STAMPED SHOP DRAWINGS OF LADDER COMPONENTS.
 3. ALL FASTENERS TO BE STAINLESS STEEL.

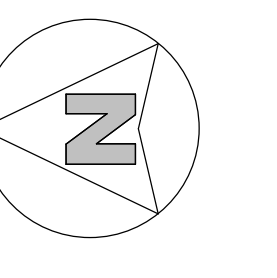


ROOF FRAMING PLAN

1:25

DATE	NO.	REVISION
2019/04/08	1	AS-BUILT

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CLIENT:

Greater Napanee
Sustainable Food Industry Development

PROJECT:

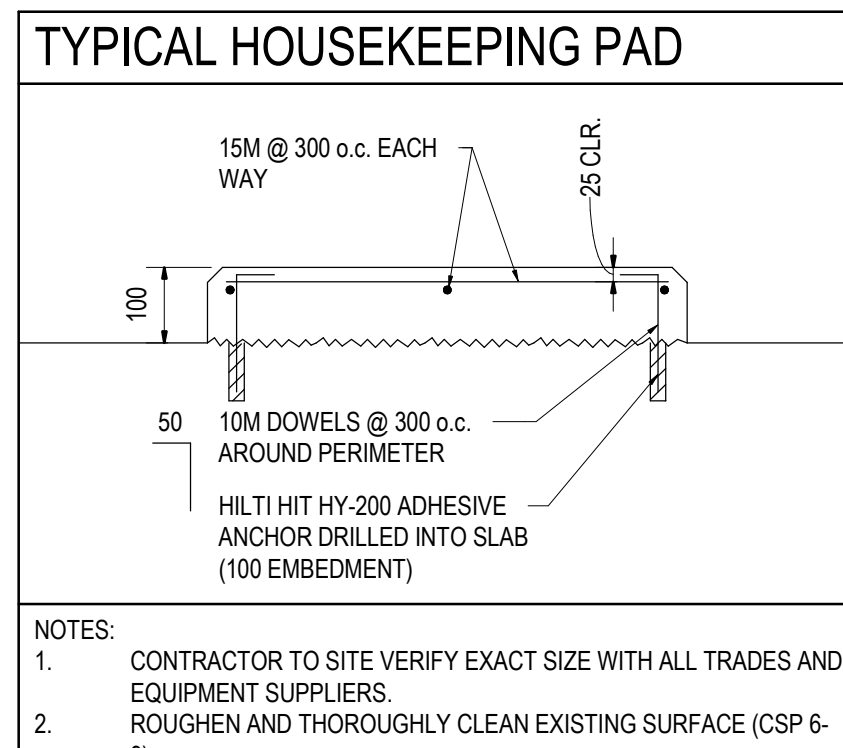
NAPANEE WPCP: ANAEROBIC DIGESTER BIOGAS UPGRADES

TITLE:

FLARE STACK FOUNDATION, GROUND AND ROOF FRAMING PLANS, SECTION, AND DETAILS

SCALE:	JOB NO:
As indicated	17102
DESIGNED BY:	DATE:
G.E.	2017/09/08
DRAWN BY:	DRAWING NO.:
J.G.	
CHECKED BY:	
J.B.	

S1.2

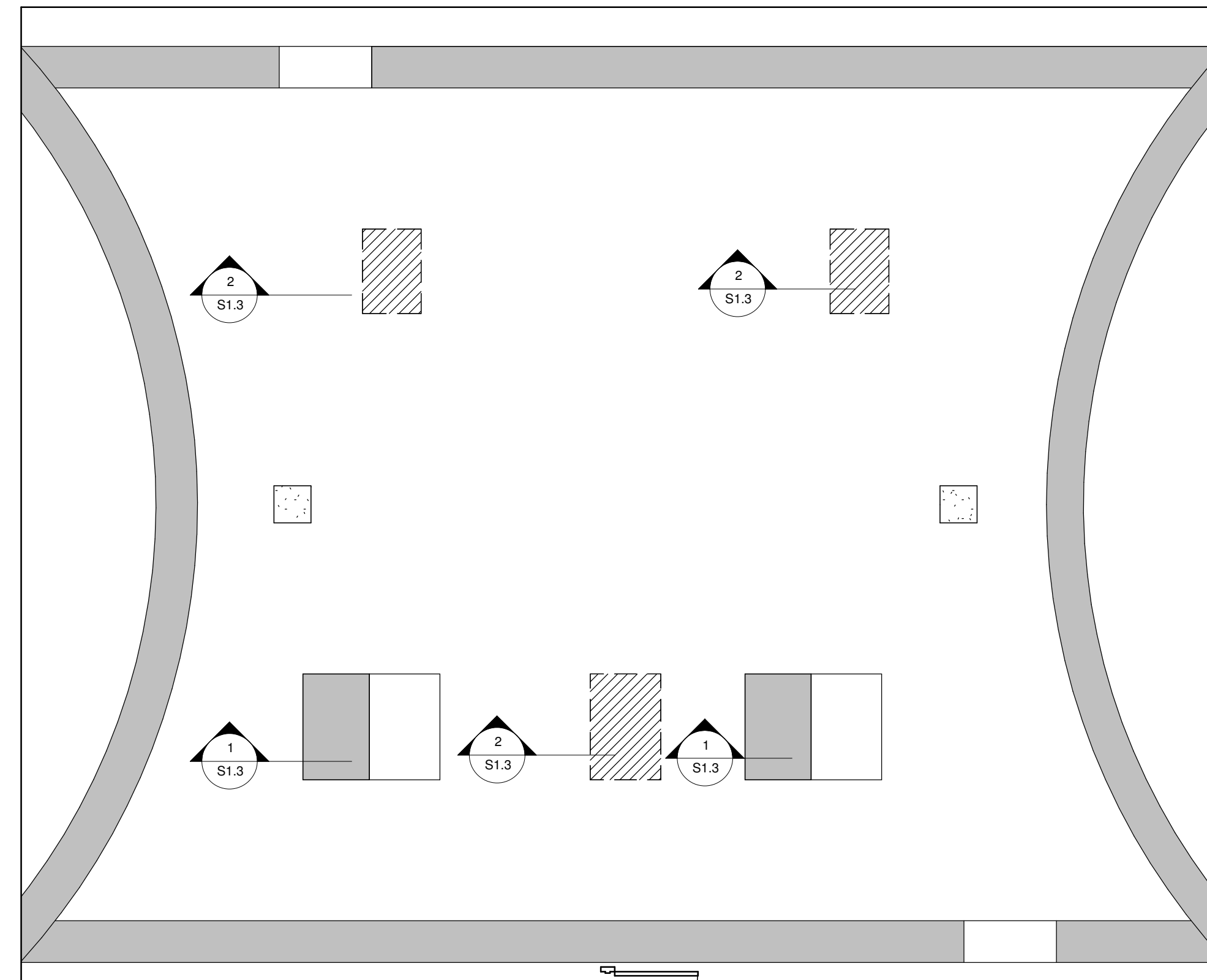


CONCRETE TYPES SCHEDULE

MINIMUM 28 DAY COMPRESSIVE STRENGTH	MAXIMUM SLUMP	EXPOSURE CLASS	W/C RATIO	AIR CONTENT
MIX 1 - FLARE STACK CONCRETE				
35 MPa	SEE NOTE 2	C-1	0.40	5-8%
MIX 2 - CONCRETE PADS				
25 MPa	SEE NOTE 2	N	0.55	-

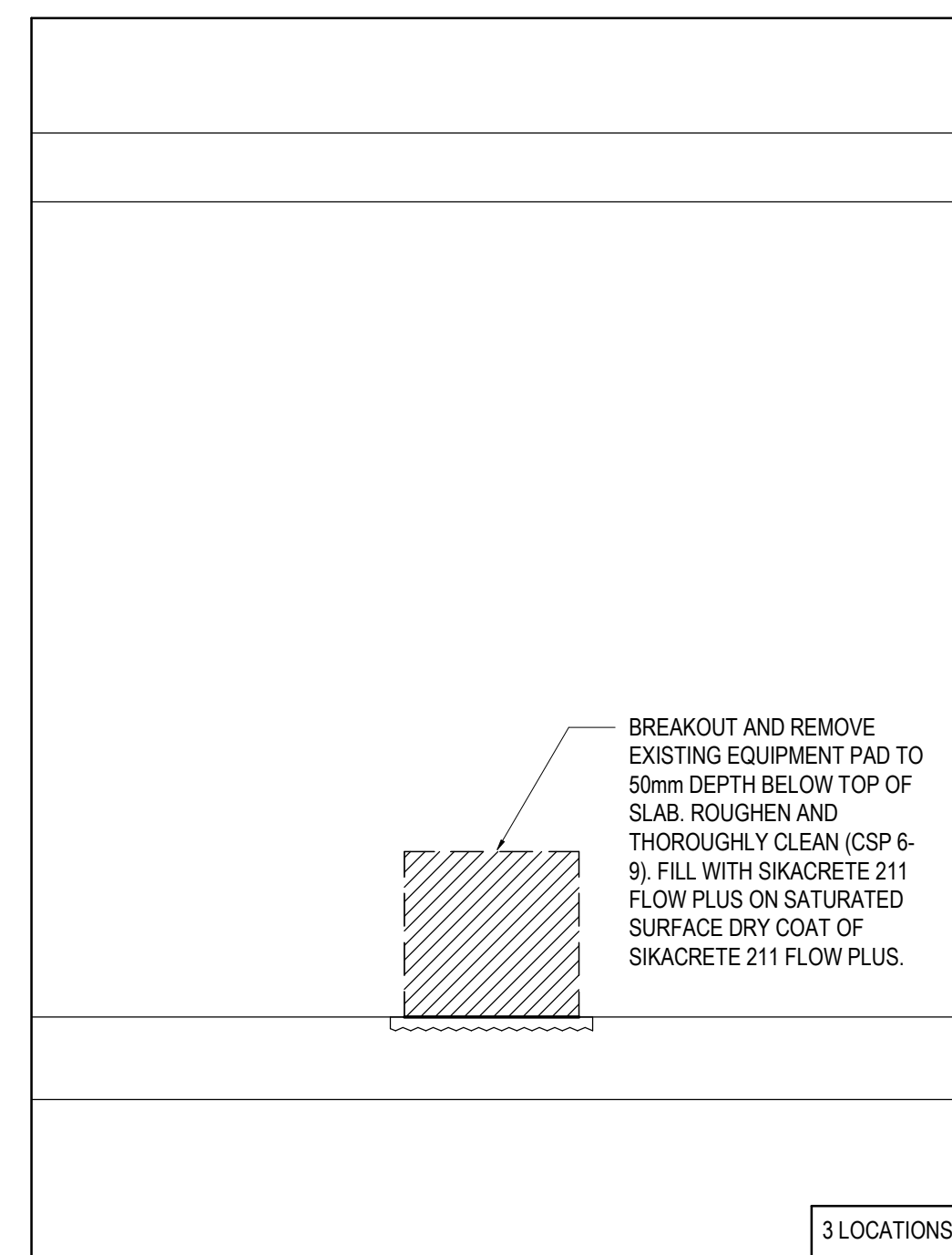
NOTES:

- MAXIMUM AGGREGATE SIZE OF ALL CONCRETE TO BE 20mm.
- PROVIDE A CONCRETE MIX DESIGN WITH A SLUMP OF 50mm. ADD SUPER PLASTICIZER TO PRODUCE A CONCRETE SLUMP OF 125±25mm.

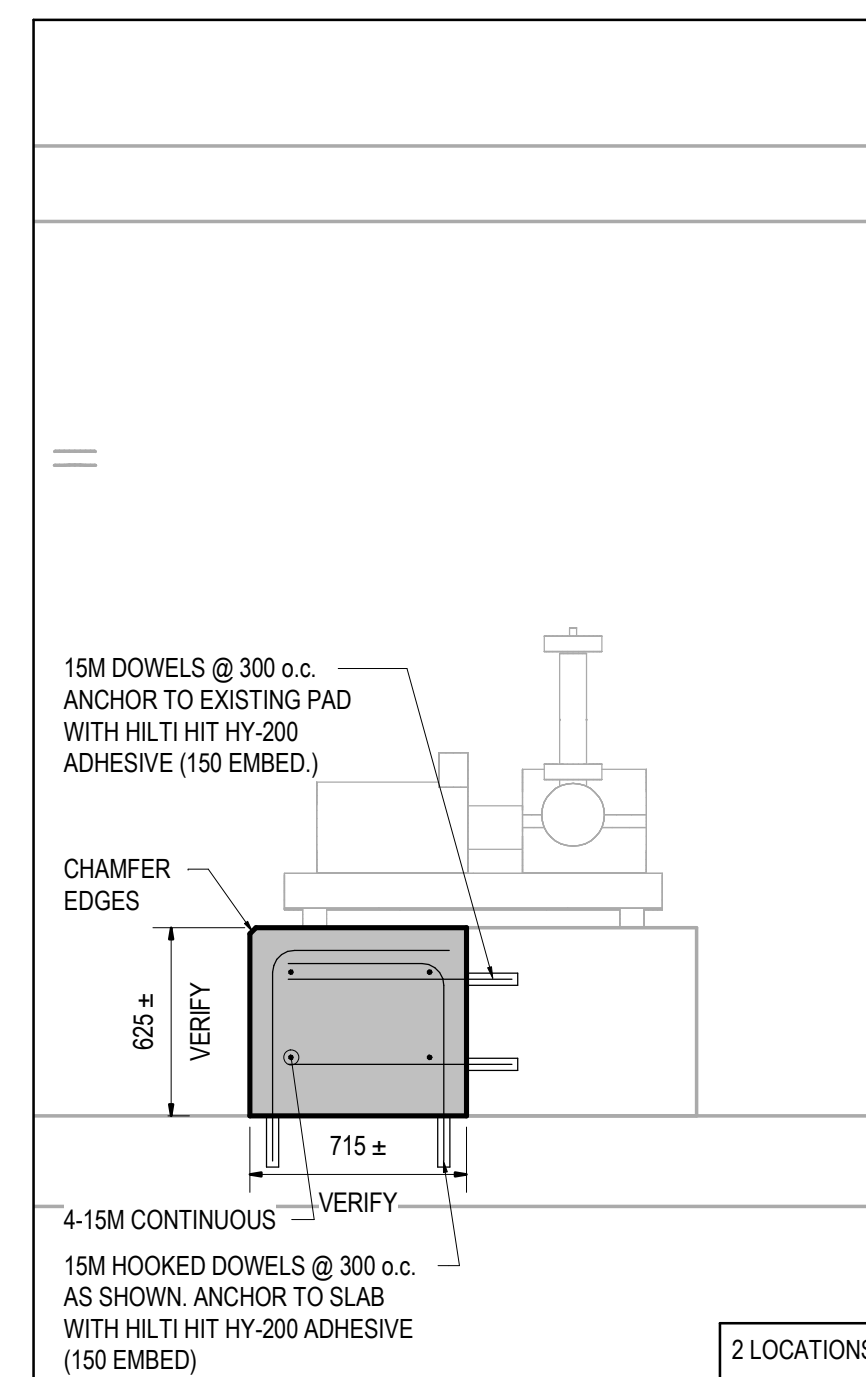


MAIN BIOGAS ROOM

1: 50



SECTION 2
S1.3 1: 25



SECTION 1
S1.3 1: 25

GENERAL NOTES

GENERAL

- DESIGN WORK IN ACCORDANCE WITH THE 2012 ONTARIO BUILDING CODE. CONSTRUCT IN ACCORDANCE WITH THE 2012 ONTARIO BUILDING CODE AND THE APPLICABLE REQUIREMENTS OR BY-LAWS OF THE AUTHORITY HAVING JURISDICTION.
- SITE VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS. REPORT DISCREPANCIES TO THE CONSULTANT.
- THE GENERAL CONTRACTOR IS RESPONSIBLE TO REVIEW ARCHITECTURAL AND STRUCTURAL DRAWINGS TO ENSURE DIMENSIONS CONFORM BETWEEN THE TWO. REPORT DISCREPANCIES TO THE CONSULTANT.
- REVIEW AND APPLY CONTRACT SPECIFICATIONS IN ADDITION TO ALL OTHER DISCIPLINE DRAWINGS AND SPECIFICATIONS. SHOULD DISCREPANCIES EXIST WITH DETAILS SHOWN BY OTHER DISCIPLINES, ASSUME THE MORE STRINGENT DETAIL APPLIES UNLESS DIRECTED OTHERWISE BY THE ENGINEER OF RECORD.
- ALL LABOUR AND MATERIALS IN ACCORDANCE WITH THE LATEST EDITION OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND THE 2012 ONTARIO BUILDING CODE. THE STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE ACTING AS A WHOLE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE TEMPORARY SHORING, BRACING ETC. AS REQUIRED TO ENSURE STABILITY AND SAFETY OF THE WORKERS DURING CONSTRUCTION.
- THE GENERAL CONTRACTOR IS RESPONSIBLE TO ENSURE THE CONSTRUCTION METHODS WILL NOT CAUSE DAMAGE TO SURROUNDING BUILDINGS, STRUCTURES OR UTILITIES. DOCUMENT AND PREPARE A PRE-CONSTRUCTION SURVEY AND SUBMIT TO THE CONSULTANT PRIOR TO COMMENCING CONSTRUCTION WHERE APPLICABLE.
- THE GENERAL CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH OTHER DISCIPLINES FOR REQUIRED EMBEDDED OR ANCHORED ITEMS OR OPENINGS. NOT ALL ITEMS OR OPENINGS ARE NECESSARILY SHOWN ON THE STRUCTURAL DRAWINGS.
- THE STRUCTURE HAS BEEN DESIGN FOR THE SERVICE LOADING INDICATED. CONTRACTOR RESPONSIBLE TO ENSURE THIS LOADING IS NOT EXCEEDED DURING CONSTRUCTION.
- REVIEW OF SHOP DRAWINGS IF FOR GENERAL CONFORMITY ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ALL COORDINATION IS COMPLETE.

ALUMINUM GUARDS, HANDRAILS AND PLATFORMS

- WHERE INDICATED, ALL GUARD, HANDRAIL, AND PLATFORM MATERIALS SHALL BE ALUMINUM ALLOY 6061-T6.
- PROVIDE EXPANSION JOINTS IN HORIZONTAL GUARDS, HANDRAILS AND KICKPLATES AT MAXIMUM 6M O.C.
- ALL HANDRAILS AND GUARDS SHALL HAVE A CLEAR SATIN ANODIZED FINISH. STAIRS AND PLATFORMS SHALL HAVE A MILL FINISH.
- ALL GUARD AND HANDRAIL CONNECTIONS TO BE WELDED AND GROUND SMOOTH UNLESS NOTED OTHERWISE. SUBMIT SHOP DRAWINGS BEARING THE SEAL OF PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO DETAILING ALL ALUMINUM PLATFORMS, GUARDS AND HANDRAILS IN ACCORDANCE WITH THE INTENT ILLUSTRATED ON THE DESIGN DRAWINGS. FOLLOW MINIMUM LOAD REQUIREMENTS IN ACCORDANCE WITH THE 2012 ONTARIO BUILDING CODE. ALUMINUM DESIGN IN ACCORDANCE WITH CAN/CSA S157-05 STRENGTH DESIGN IN ALUMINUM. WELDING AND WELD PROCEDURES IN ACCORDANCE WITH CSA W59.2 AND W47.2 (LATEST EDITIONS).
- ALL FASTENERS SHALL BE STAINLESS STEEL.
- SITE VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS. REPORT DISCREPANCIES TO THE CONSULTANT.
- WHERE ALUMINUM IS IN CONTACT WITH DISSIMILAR METALS, CONCRETE, OR MASONRY, PAINT THE SURFACES IN CONTACT WITH TWO COATS OF ALUMINUM COLOURED BITUMINOUS PAINT.

CONCRETE

- ALL CONCRETE SHALL BE NORMAL WEIGHT DESIGNED TO MEET THE PERFORMANCE CRITERIA INDICATED IN THE CONCRETE TYPE SCHEDULE.
- PROVIDE CERTIFICATION THAT THE PLANT, EQUIPMENT, AND MATERIALS TO BE USED IN CONCRETE COMPLY WITH THE REQUIREMENTS OF CAN/CSA-A23.1/A23.2 AND THAT THE MIX IS ADJUSTED TO PREVENT ALKALI AGGREGATE REACTIVITY PROBLEMS.
- THE AGGREGATE SOURCE MUST BE LISTED ON THE APPROVED LIST PUBLISHED BY THE MINISTRY OF TRANSPORTATION ONTARIO.
- WET CURE CONCRETE COMMENCING IMMEDIATELY AFTER CONCRETE HARDENS. USE NON-STAINING GEOTEXTILE COVERING. ALL SURFACES SHALL BE MAINTAINED CONTINUOUSLY WET FOR A PERIOD OF 7 DAYS. ALTERNATIVELY, A COMPATIBLE CURING COMPOUND IN ACCORDANCE WITH CSA A23.1/A23.2 AND ASTM C309 WILL BE CONSIDERED.
- CONCRETE HAULING TIME: MAXIMUM ALLOWABLE TIME FOR CONCRETE TO BE DELIVERED TO SITE AND DISCHARGED NOT TO EXCEED 120 MINUTES AFTER BATCHING (UNLESS NOTED AS LESS BY CONCRETE SUPPLIER).

REINFORCING STEEL

- ALL REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CAN/CSA G30.18.
- ALL REINFORCING STEEL DETAILING SHALL BE IN ACCORDANCE WITH CAN/CSA A23.1.
- REINFORCING STEEL: GRADE 60 (400MPa).
- REINFORCING SHALL BE SUPPORTED AND HELD FIRMLY IN PLACE SO AS NOT TO MOVE DURING POURING OPERATIONS. DOWELS SHALL BE HELD FIRMLY IN PLACE AND SHOULD NOT BE SET IN PLACE DURING POURING OPERATIONS.
- MINIMUM REINFORCING CLEAR COVER:
BASE SLAB BOTTOM = 75mm
BASE SLAB SIDES AND TOP = 50mm
SLAB ON GRADE TOP, BOTTOM AND SIDES = 50mm
SUSPENDED SLABS TOP, BOTTOM AND SIDES = 25mm
WALLS = 50mm

CONCRETE FORMWORK

- ALL FORMWORK SHALL BE DESIGNED, ERECTED, SUPPORTED, BRACED AND MAINTAINED IN ACCORDANCE WITH CSA S269.1-16 FALSEWORK AND FORMWORK.
- ALL SHORING WORK FOR THE SUSPENDED SLAB SHALL REMAIN IN PLACE FOR A MINIMUM OF 7 DAYS OR UNTIL THE CONCRETE HAS REACHED 75% OF THE SPECIFIED CONCRETE STRENGTH, WHICHEVER IS LONGER.
- PENETRATIONS SHALL NOT BE PERMITTED IN ANY CONCRETE MEMBERS OTHER THAN THOSE INDICATED ON THE STRUCTURAL DRAWING WITHOUT WRITTEN PERMISSION FROM THE ENGINEER OF RECORD.

FOUNDATIONS

- REFERENCE GEOTECHNICAL MEMORANDUM 11140477-1 DATED JULY 20, 2017 PREPARED BY GHD.
SLS = 125kPa
ULS = 150kPa
GEOTECHNICAL CONSULTANT TO VERIFY BEARING CAPACITY IN WRITING PRIOR TO POURING CONCRETE.

CODES AND STANDARDS

GENERAL BUILDING CODE:
ONTARIO BUILDING CODE 2012

STRUCTURAL STEEL
CSA S16-14 - DESIGN OF STEEL STRUCTURES

CONCRETE
CAN/CSA-A23.3-04 - DESIGN OF CONCRETE STRUCTURES

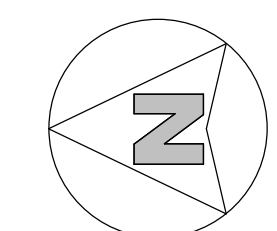
ALUMINUM
CSA S157-05 - STRENGTH DESIGN IN ALUMINUM

DESIGN LOADS

- IMPORTANCE FACTOR - POST DISASTER
- SNOW: Is = 1.25 ULS; Ss = 1.9 kPa; Sr = 0.4 kPa
 - WIND: Iw = 1.25 ULS; q (1/50) = 0.43 kPa
 - EQ: SEISMIC SITE CLASS D - Ie=1.5
 - STAIRS AND WALKWAYS: DL = 0.5 kPa; LL = 4.8 kPa
 - GUARDS AND HANDRAILS: IN ACCORDANCE WITH ONTARIO BUILDING CODE 4.1.5.14.
- SPECIFIED HORIZONTAL LOAD OF 0.75 kN/m OR A CONCENTRATED LOAD OF 1.0 kN APPLIED AT ANY POINT.
- PICKET DESIGN (IF APPLICABLE) = 0.50 kN
- SPECIFIED LOAD OF 1.5 kN/m APPLIED VERTICALLY AT THE TOP OF THE GUARD.
 - FLARE STACK = 12 kN

DATE	NO.	REVISION
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CLIENT:

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established 1827

PROJECT:

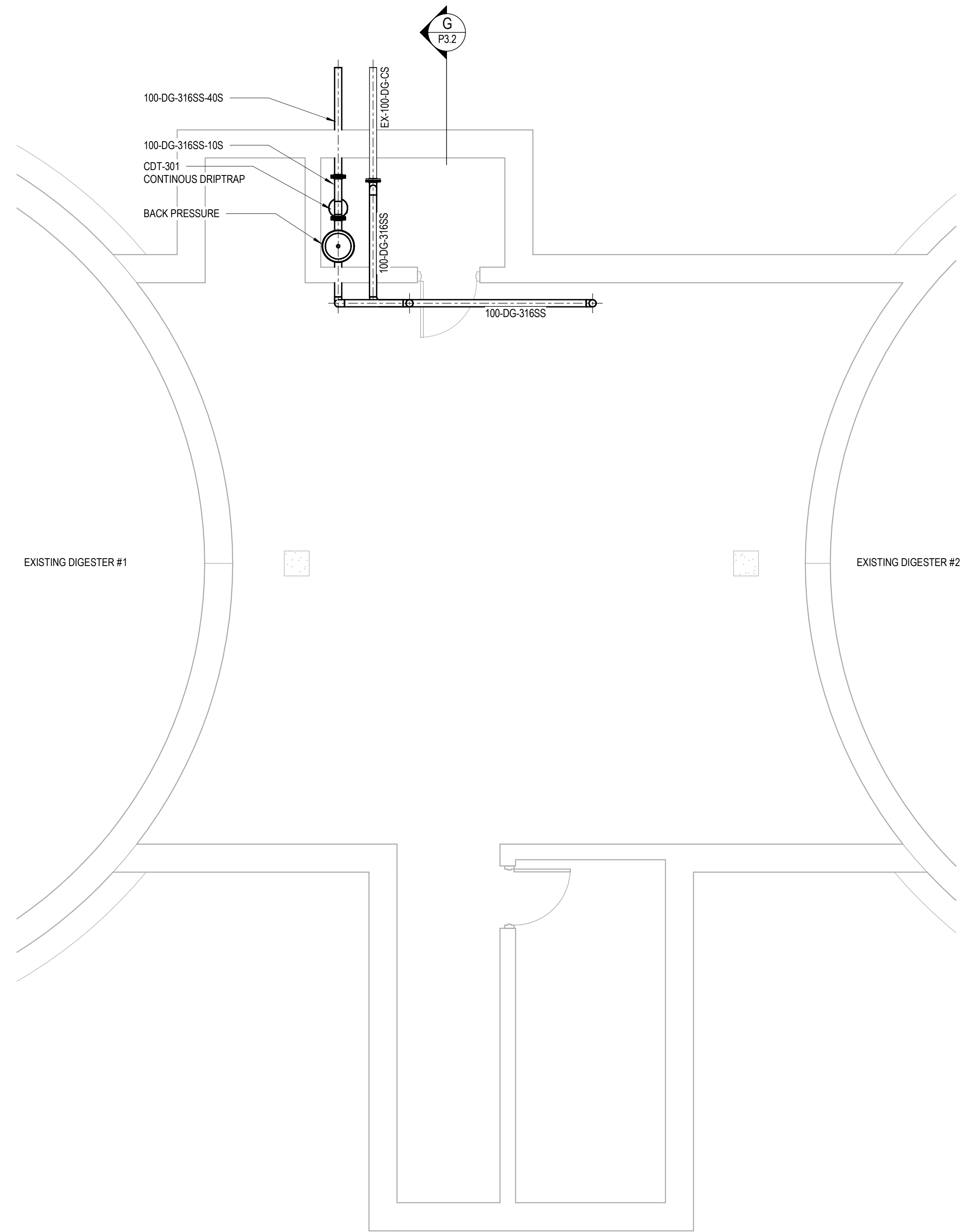
NAPANEE WPCP: ANAEROBIC DIGESTER BIOGAS UPGRADES

TITLE:

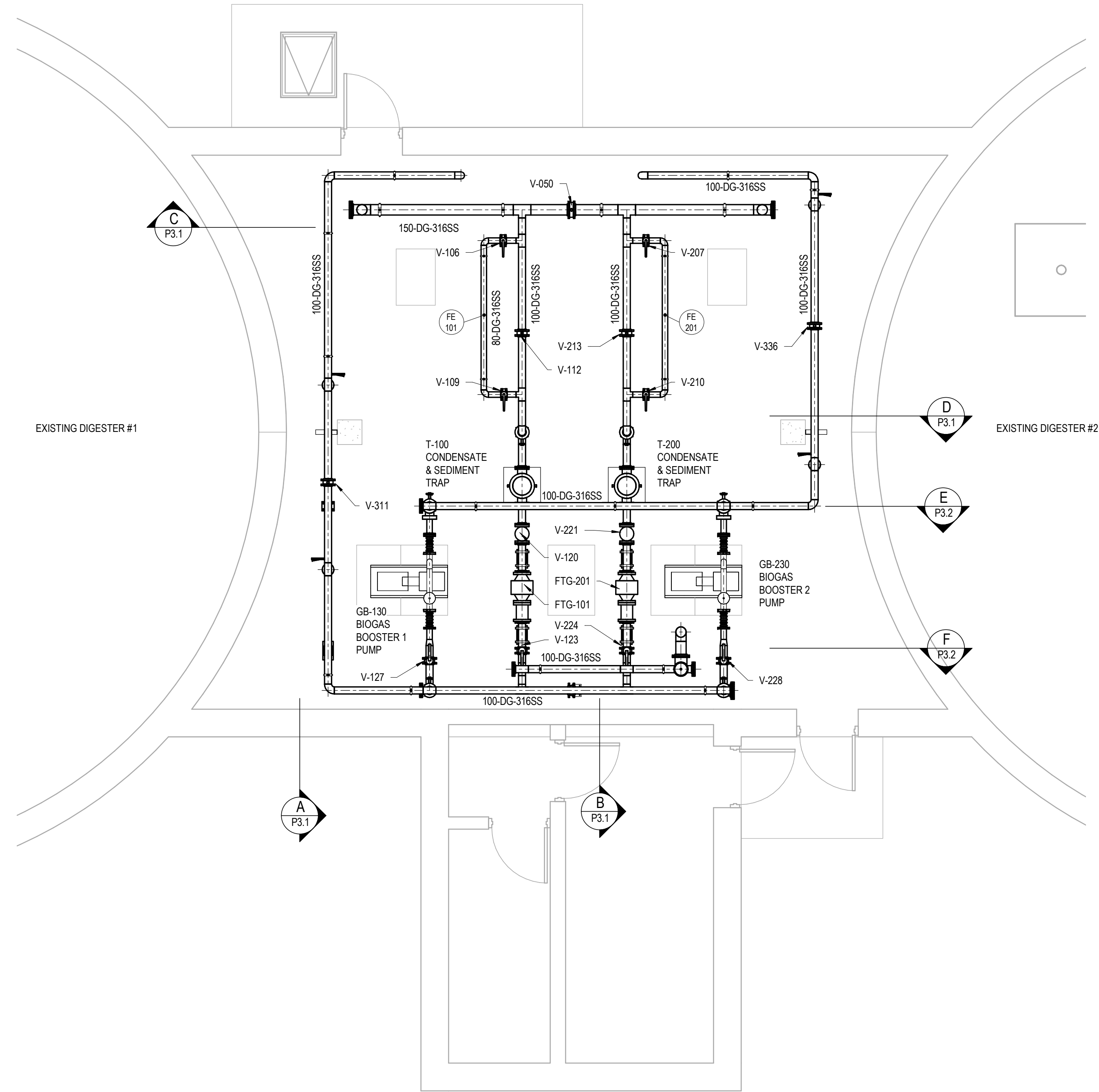
GENERAL NOTES, STRUCTURAL REMOVALS, AND TYPICAL DETAILS

SCALE: As indicated	JOB NO: 17102
DESIGNED BY: G.E.	DATE: 2017/09/08
DRAWN BY: J.G.	DRAWING NO.:
CHECKED BY: J.B.	S1.3

04/04/2019 8:39:02 AM
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1
 P2.1
BASEMENT FLOOR PLAN
 1:50



2
 P2.1
GROUND FLOOR PLAN
 1:50

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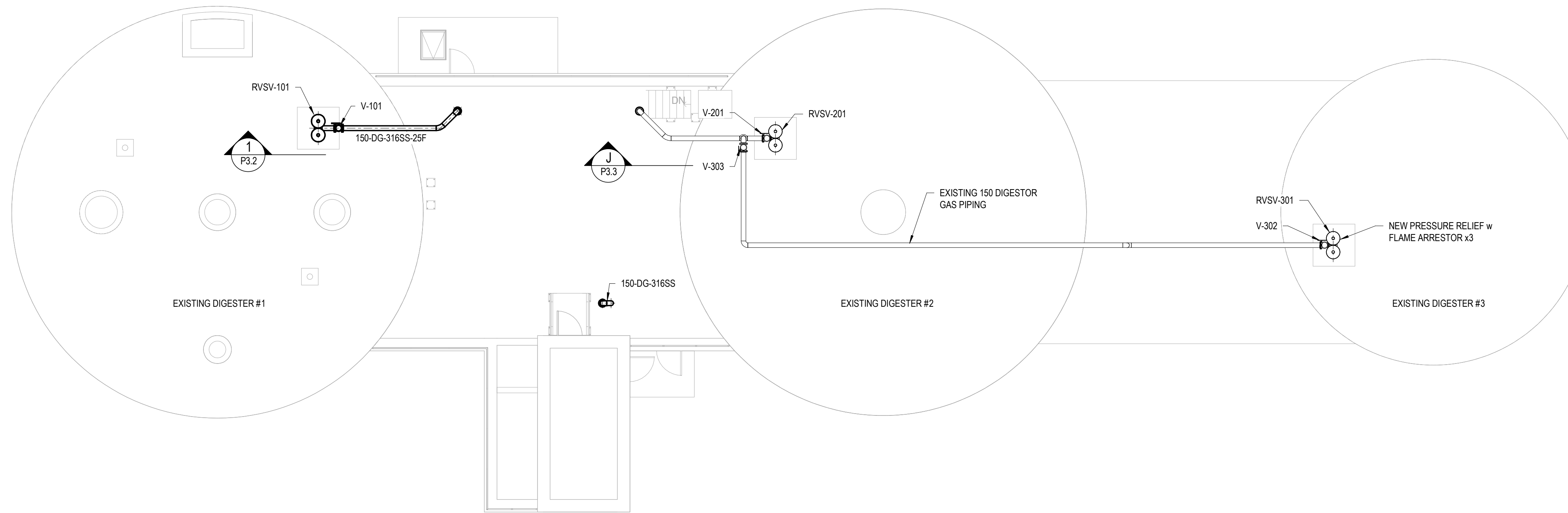


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 443-1169 443-1169 443-1169

PROJECT:
**NAPANEE WPCP ANAEROBIC
 DIGESTER BIOGAS UPGRADES**

TITLE:
**DIGESTER GAS PIPING FLOOR
 PLANS**

SCALE: 1:50	JOB NO: 17102
DESIGNED BY: J.B.	DATE: 2017/10/02
DRAWN BY: K.B.W.	DRAWING NO. P2.1
CHECKED BY: M.V.	



J
P2.2
ROOF PLAN
1 : 100

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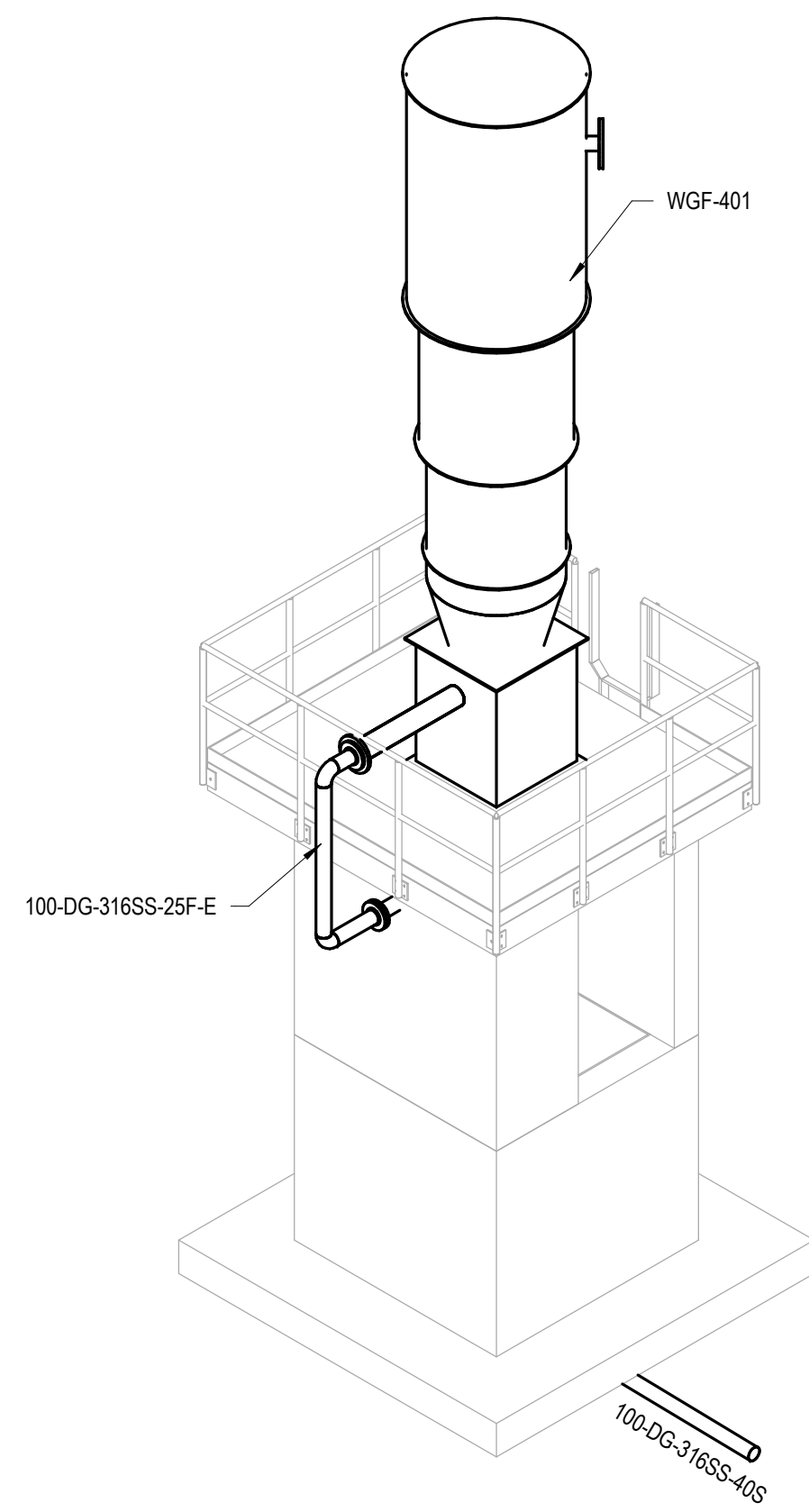


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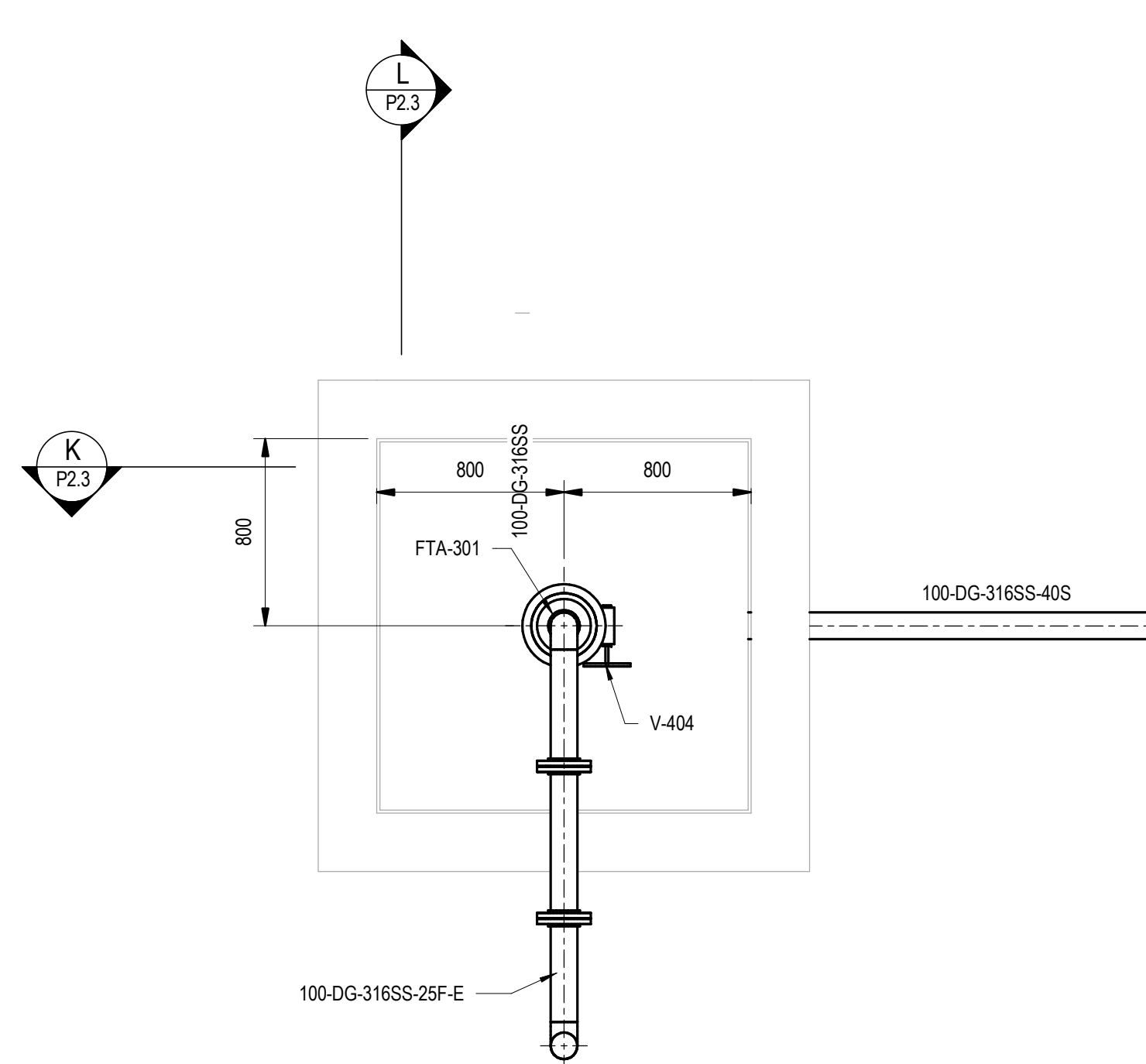
PROJECT:
NAPANEE WPCP ANAEROBIC DIGESTER BIOGAS UPGRADES

TITLE:
DIGESTER GAS PIPING FLOOR PLAN - ROOF

SCALE: 1 : 100	JOB NO: 17102
DESIGNED BY: J.B.	DATE: 2017/10/02
DRAWN BY: K.B.W.	DRAWING NO. P2.2
CHECKED BY: M.V.	

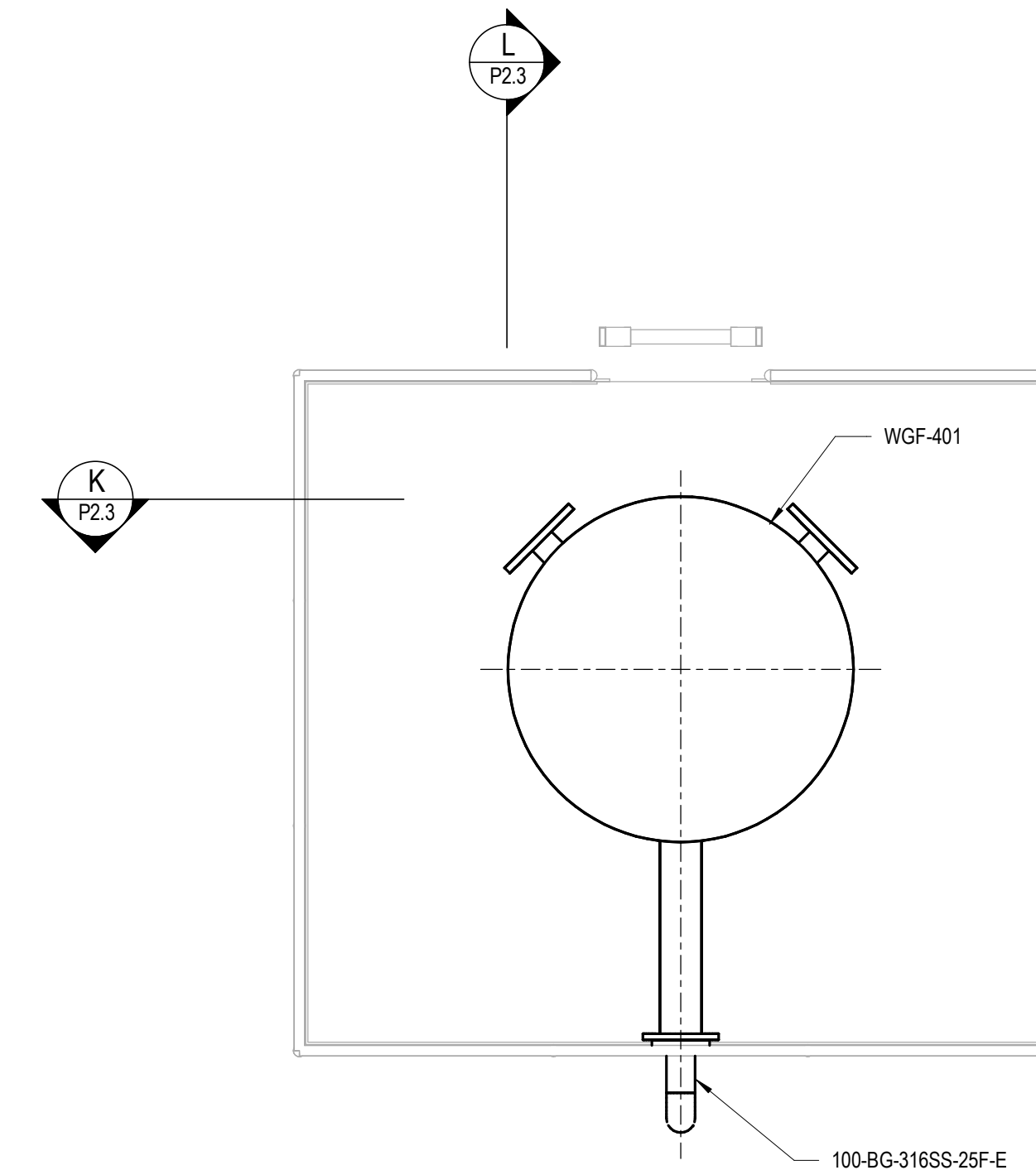


3D - FLARE STACK



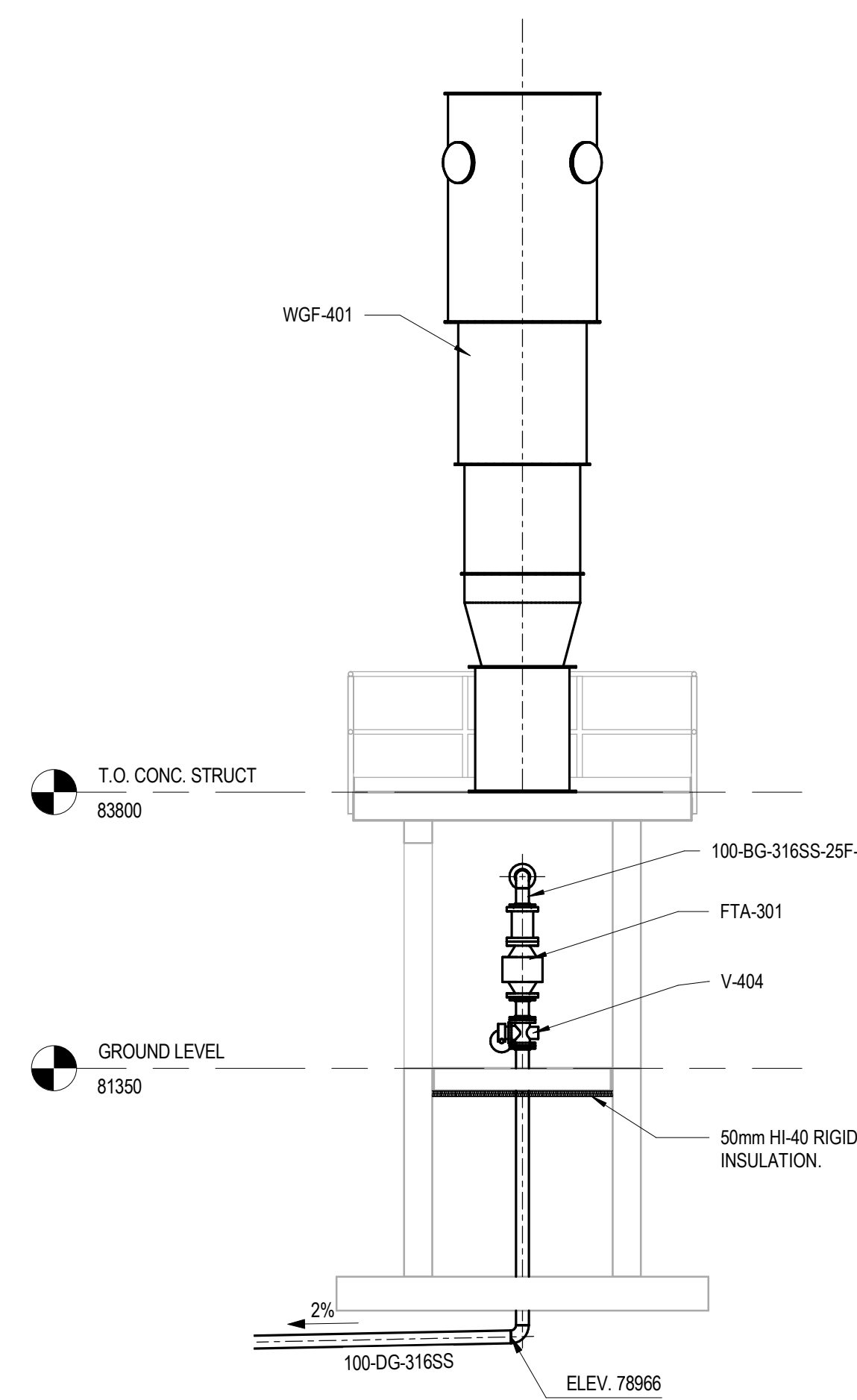
FLARE STACK - GROUND FLOOR PLAN (ELEV. 81350)

1:25

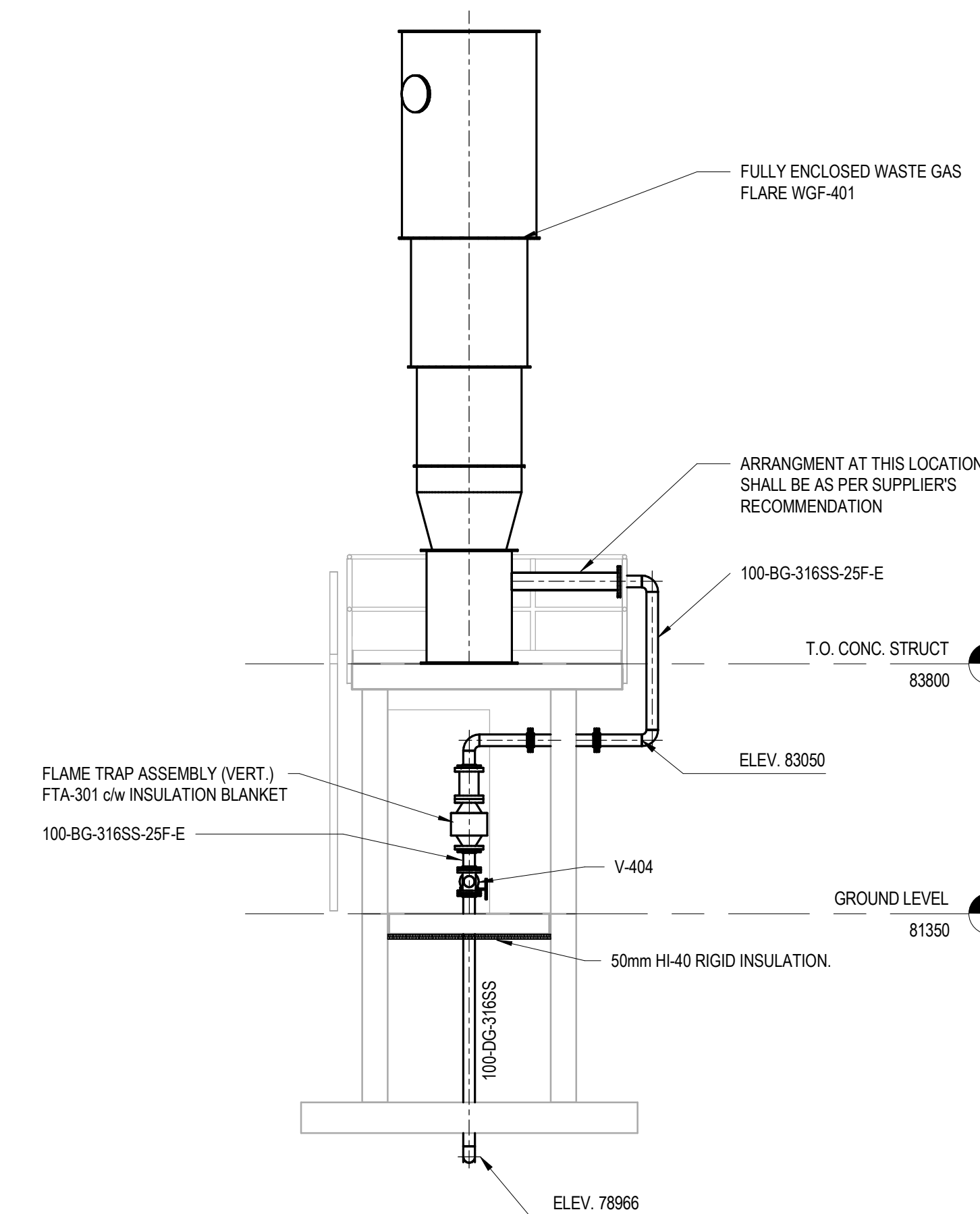


FLARE STACK - ROOF PLAN (ELEV. 84100)

1:25



SECTION K
1:50



SECTION L
1:50

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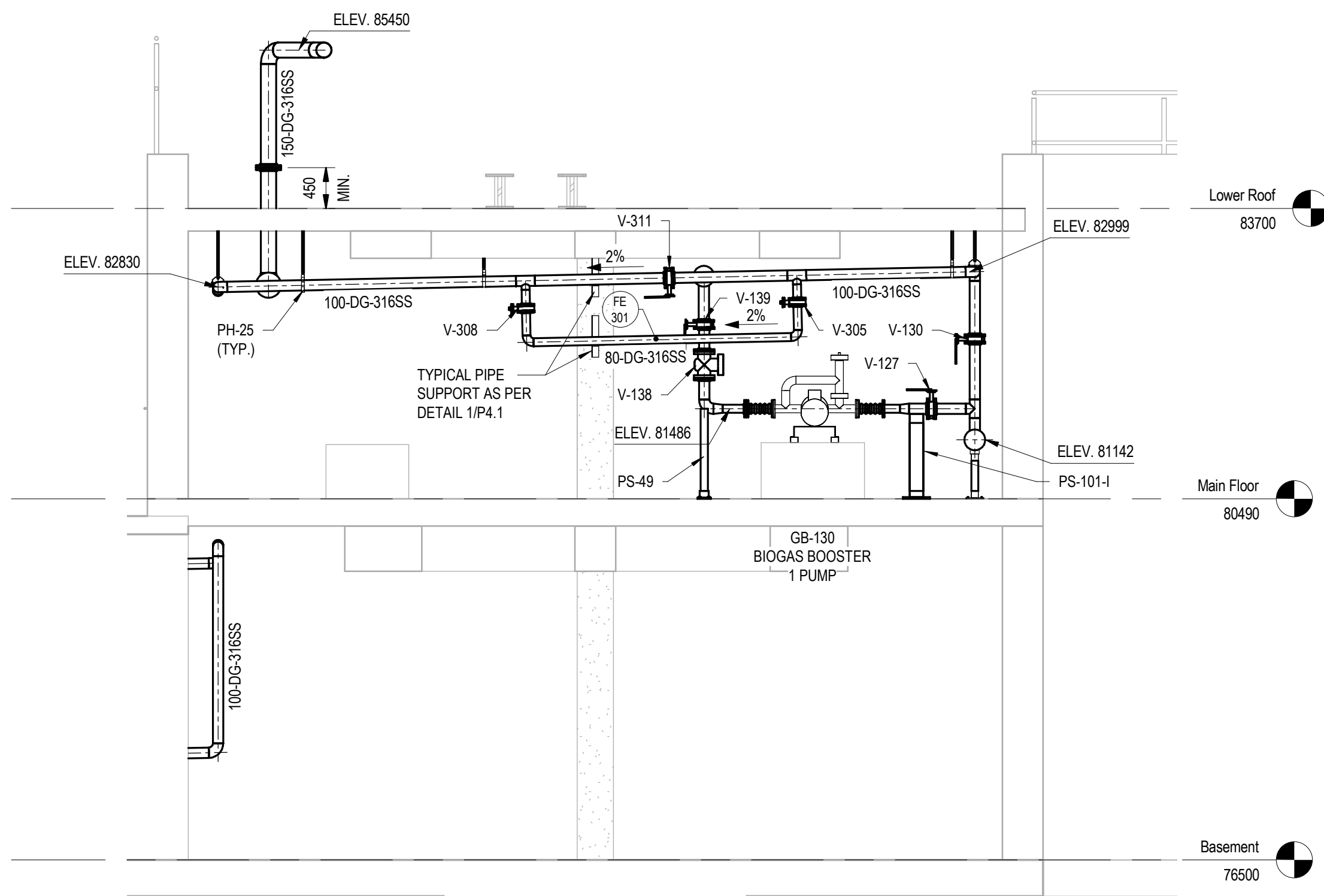
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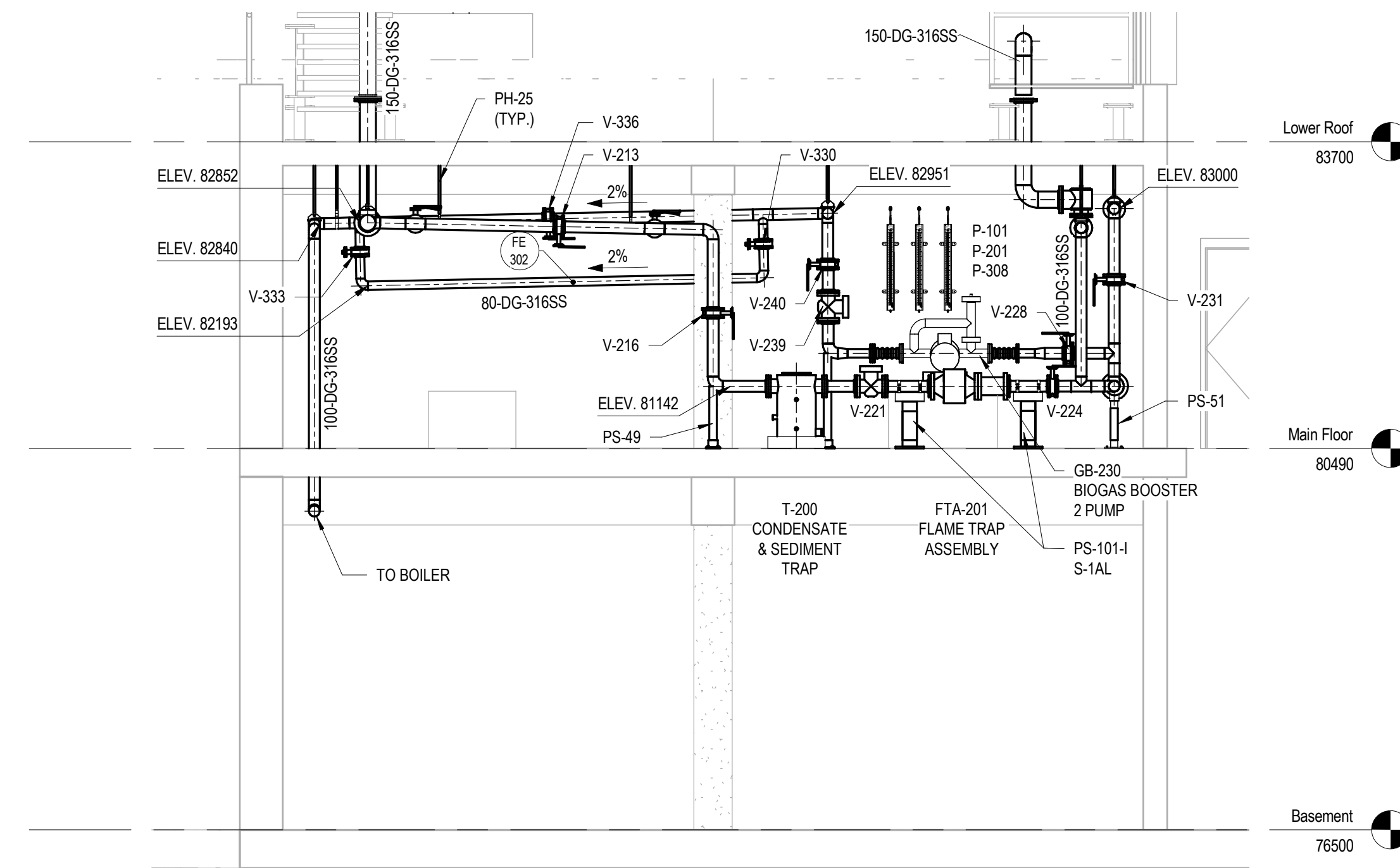
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FLARE STACK PIPING - PLANS & SECTIONS

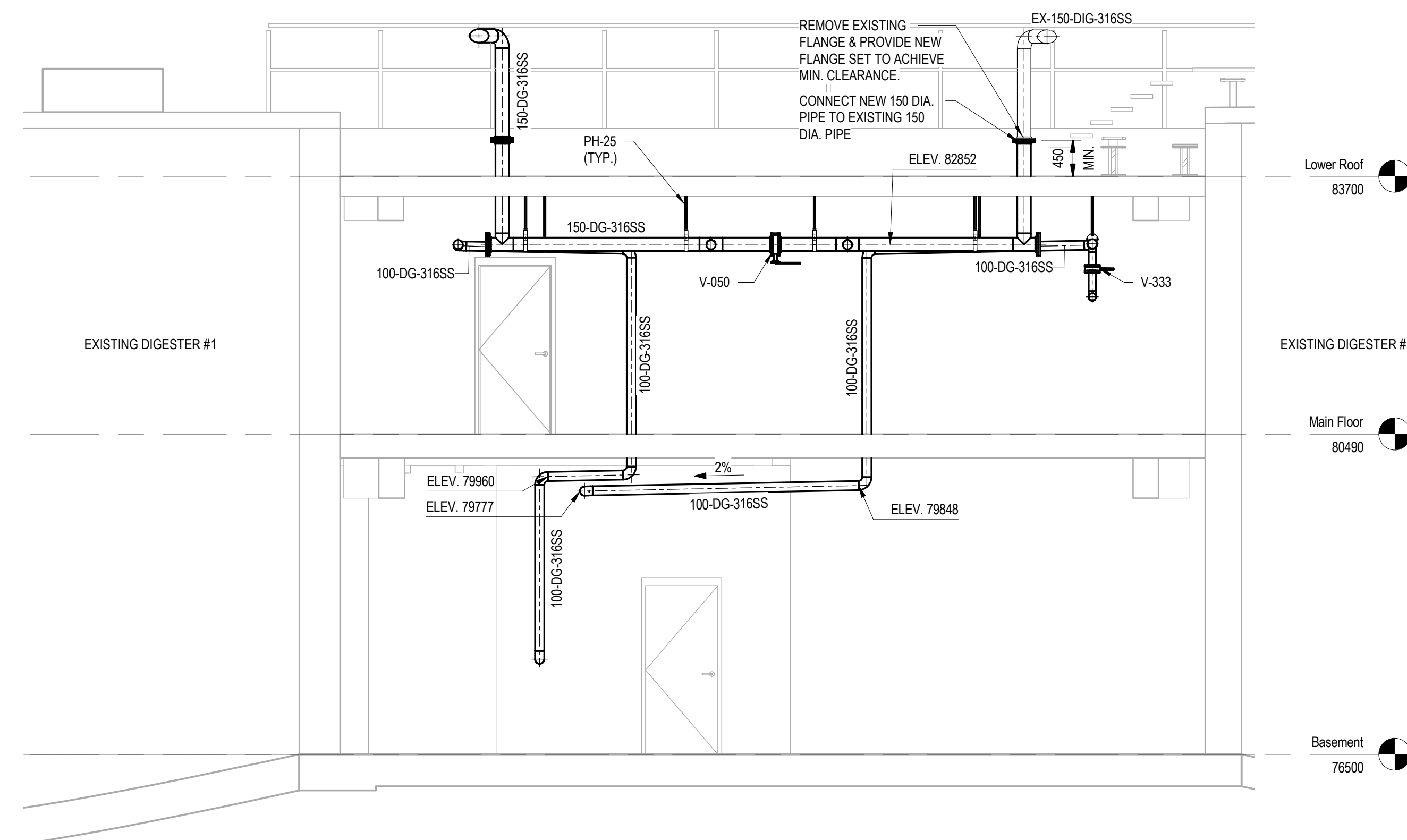
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DESIGNED BY: J.B.	DATE: 2017/10/02
DRAWN BY: K.B.W.	DRAWING NO. P2.3
CHECKED BY: M.V.	



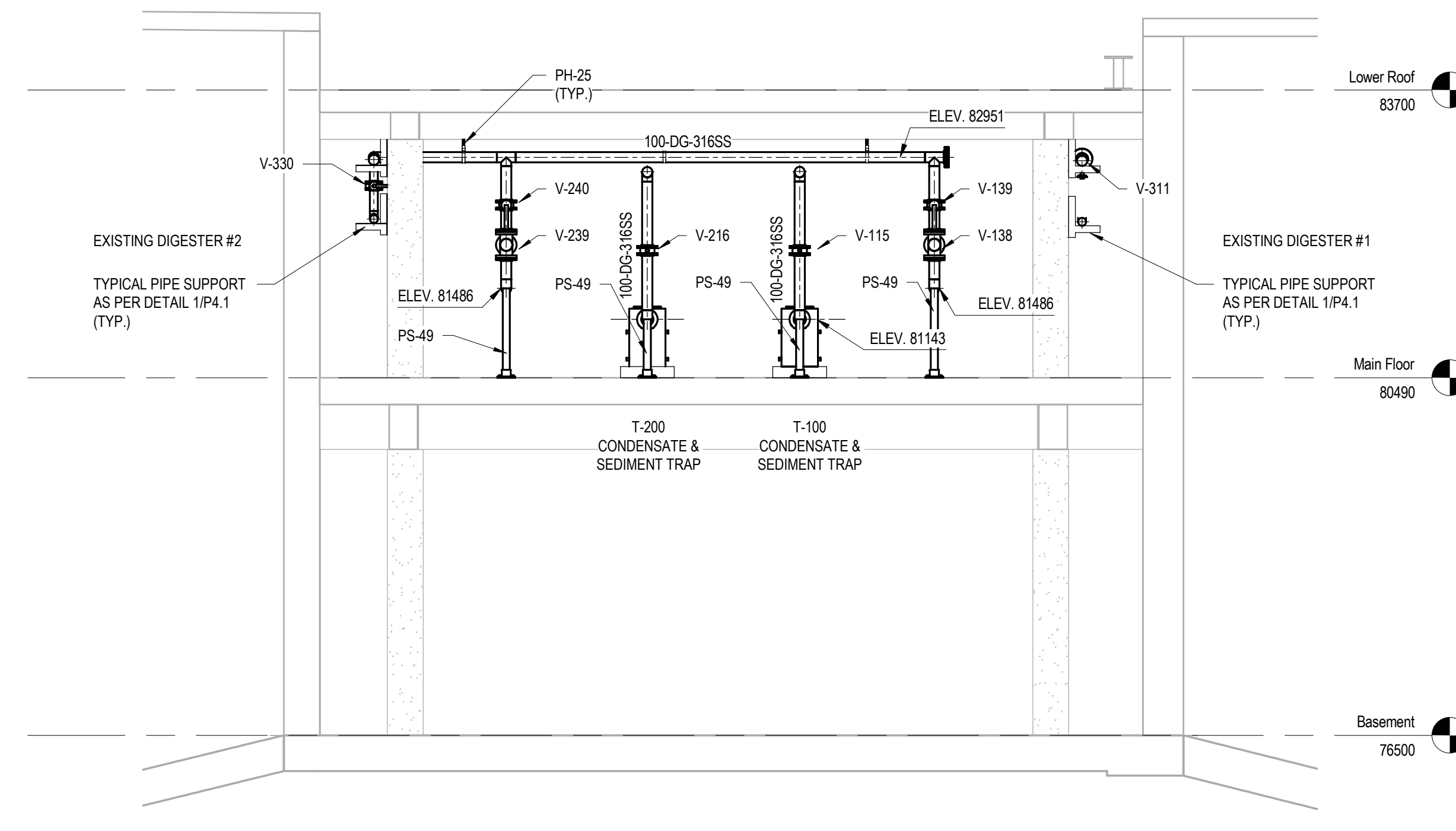
A SECTION A
P3.1 1:50



B SECTION B
P3.1 1:50



C SECTION C
P3.1 1:50



D SECTION D
P3.1 1:50

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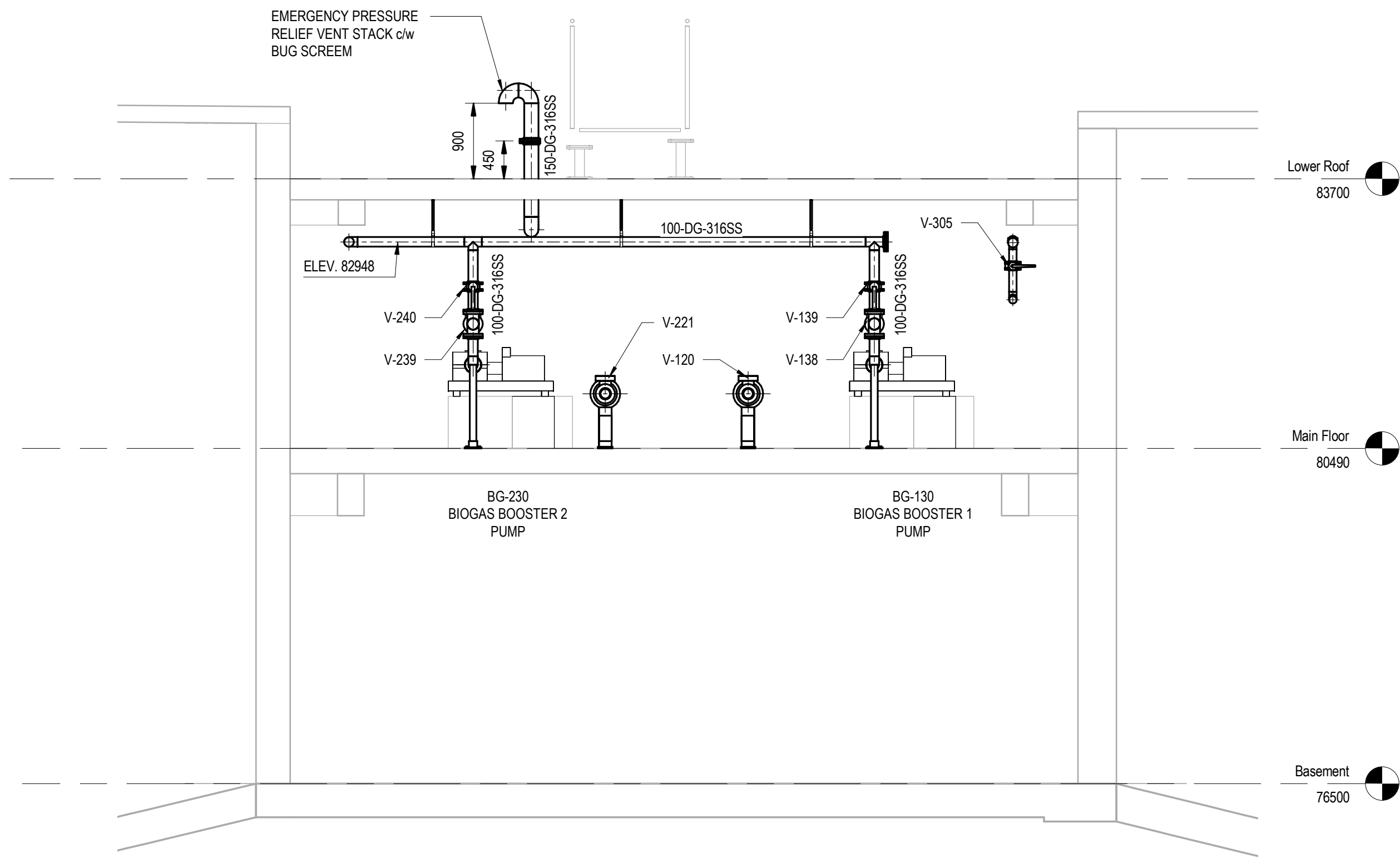
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PROJECT:
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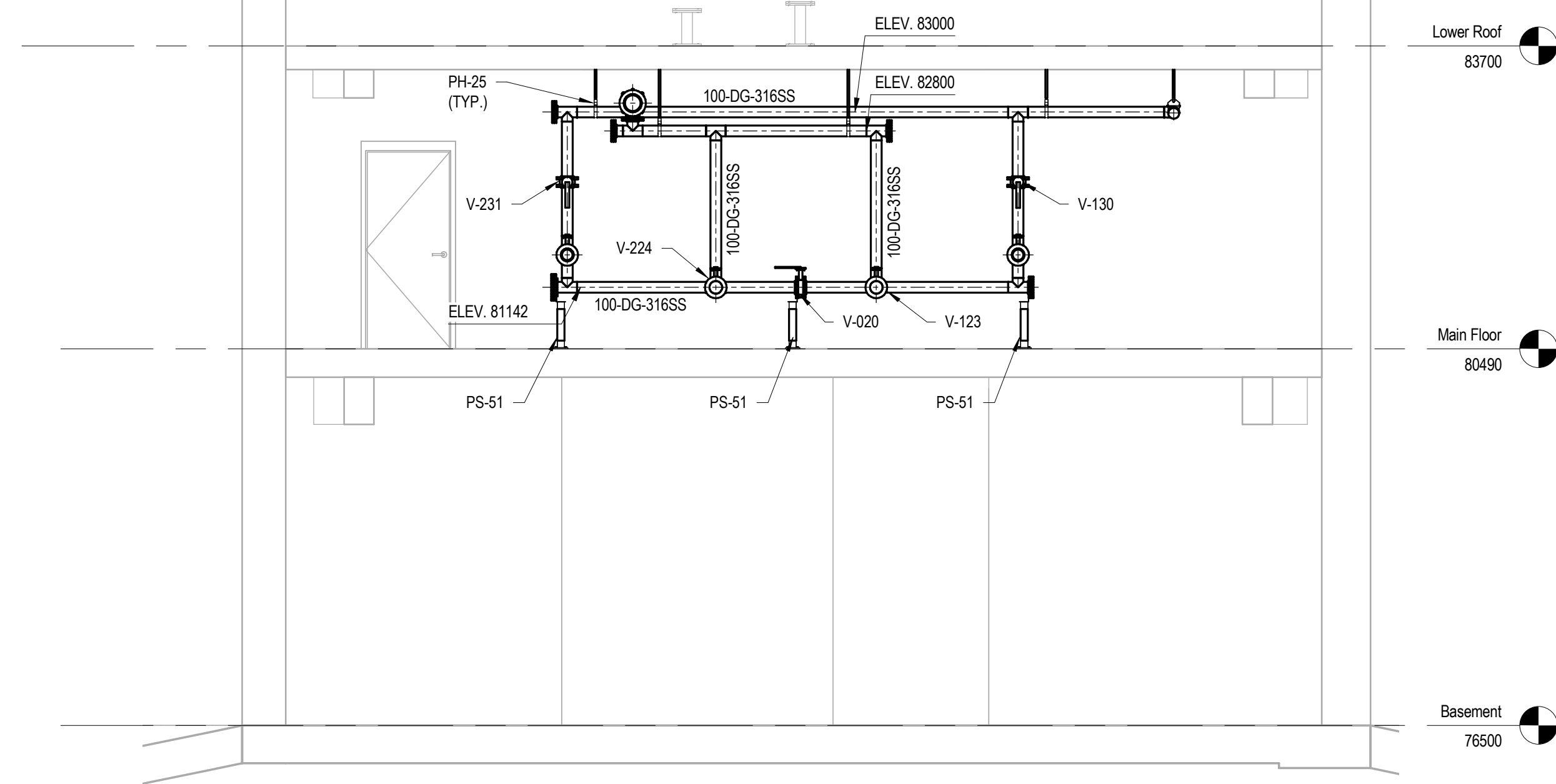
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DRAWN BY: K.B.W.	DRAWING NO.:
CHECKED BY: M.V.	P3.1

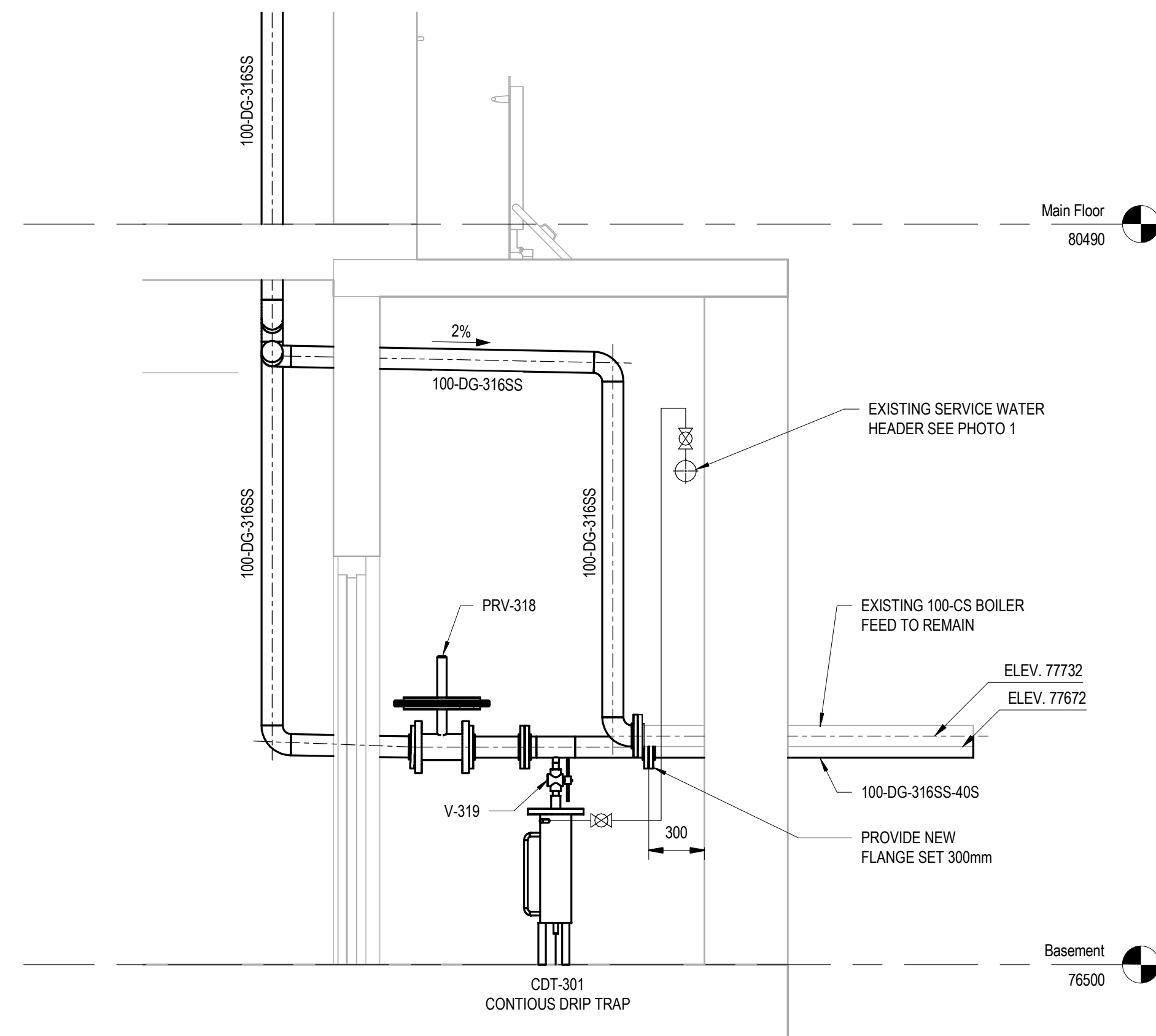
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E SECTION E
P3.2 1:50



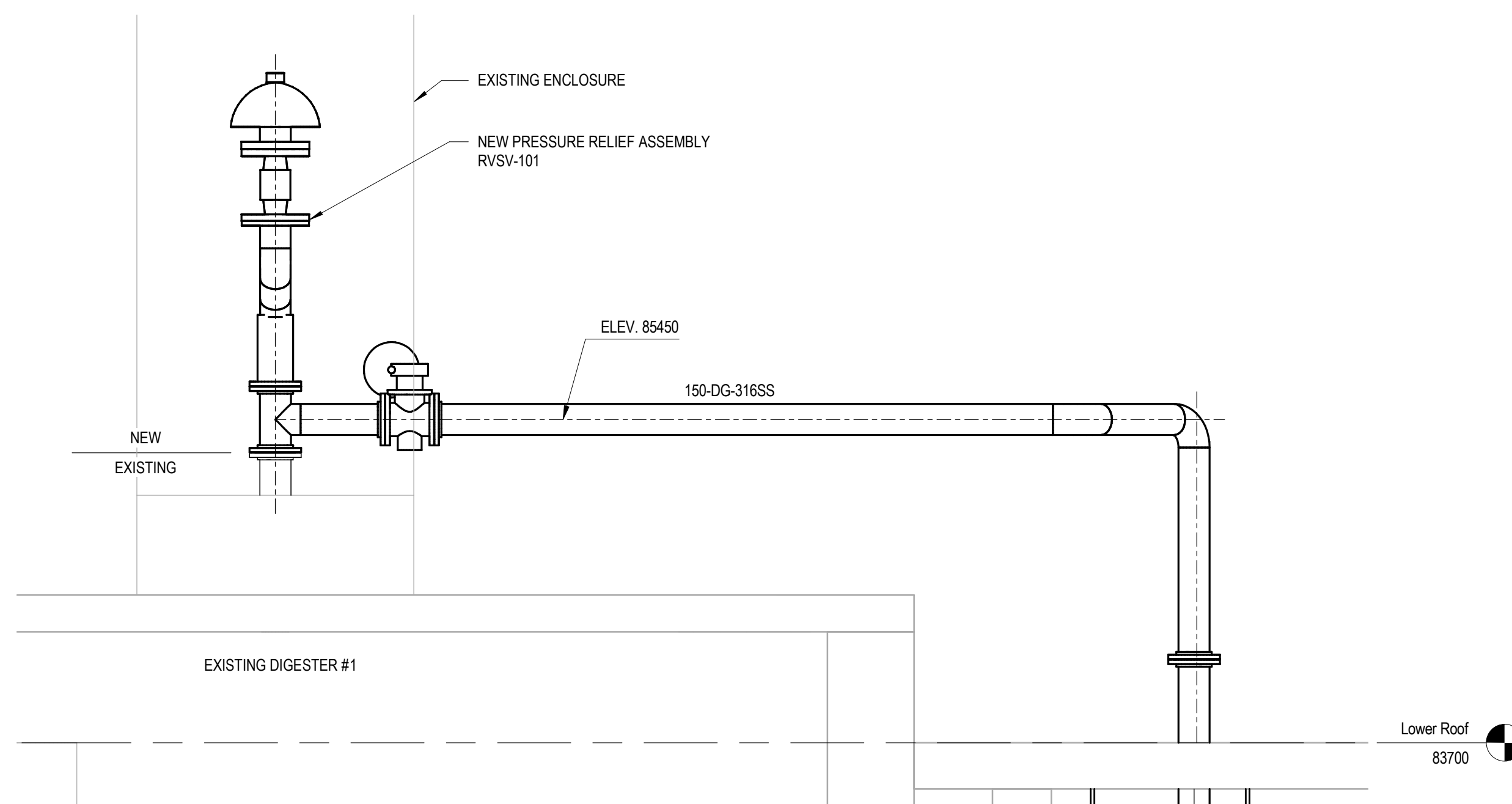
F SECTION F
P3.2 1:50



G SECTION G
P3.2 1:25



PHOTO: 1
SCALE: N.T.S.



1 SECTION H
P3.2 1:25

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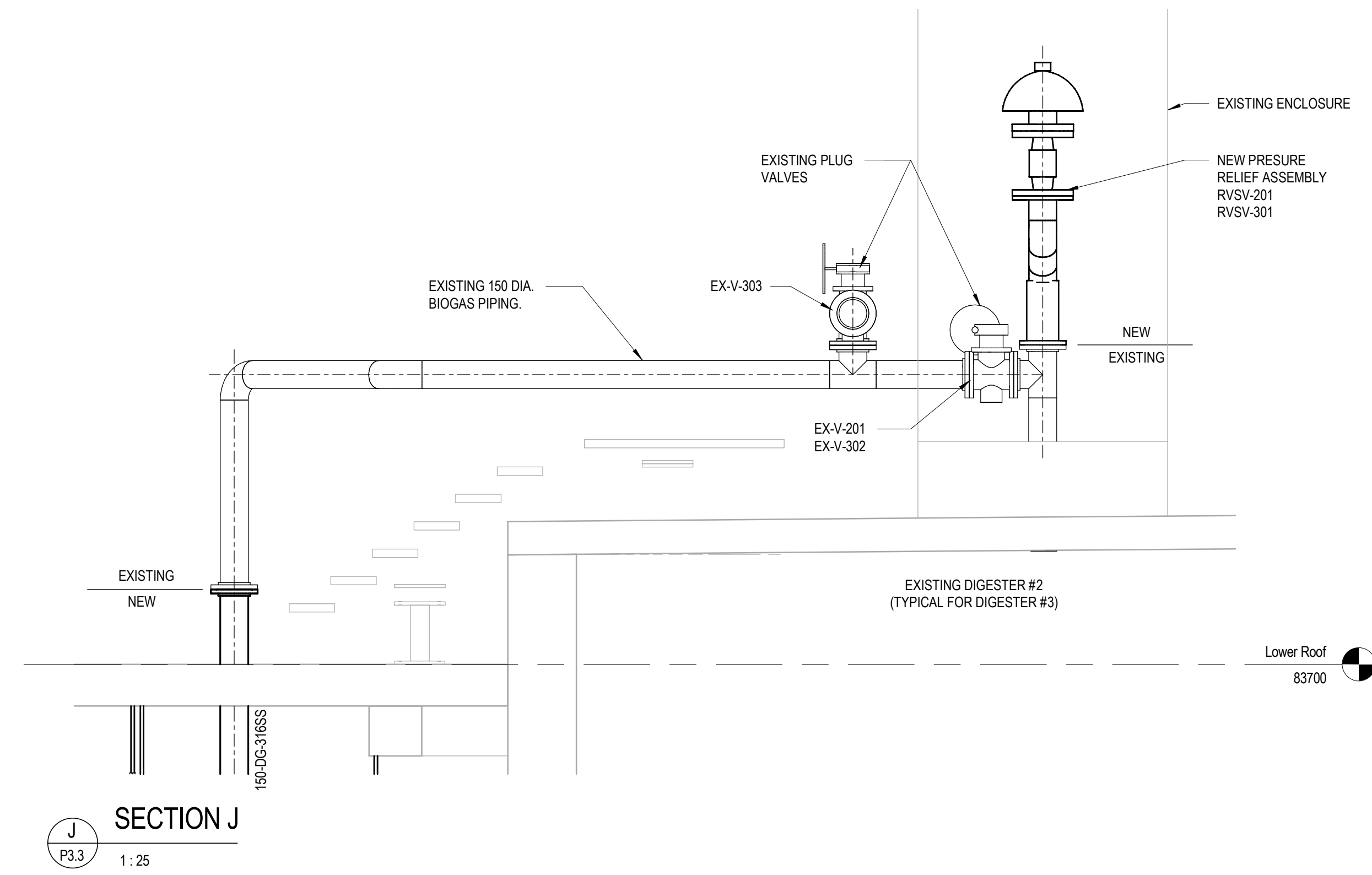
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Established 1827

PROJECT:
NAPANEE WPCP ANAEROBIC DIGESTER BIOGAS UPGRADES

TITLE:
SECTIONS

SCALE: As indicated	JOB NO: 17702
DESIGNED BY: J.B.	DATE: 2017/10/02
DRAWN BY: K.B.W.	DRAWING NO. P3.2
CHECKED BY: J.E.	

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SECTION J
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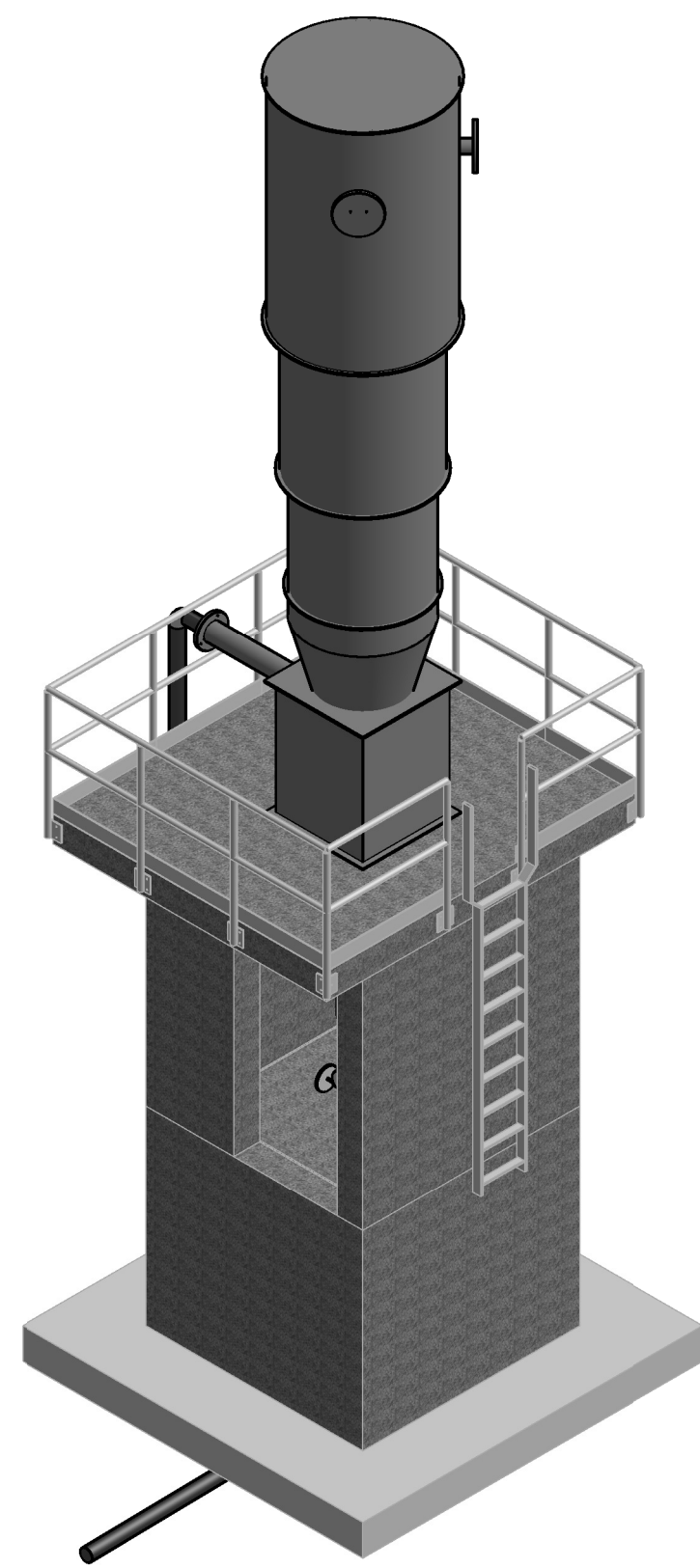


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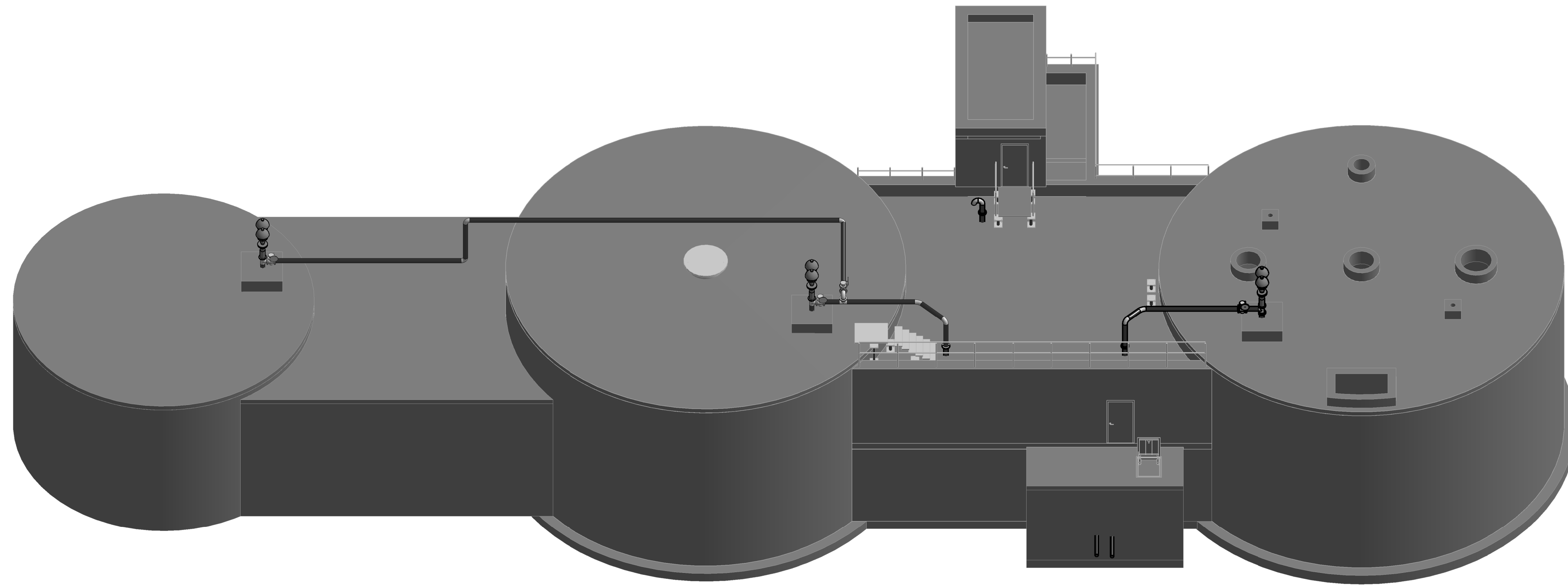
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NAPANEE WPCP ANAEROBIC DIGESTER BIOGAS UPGRADES

TITLE:
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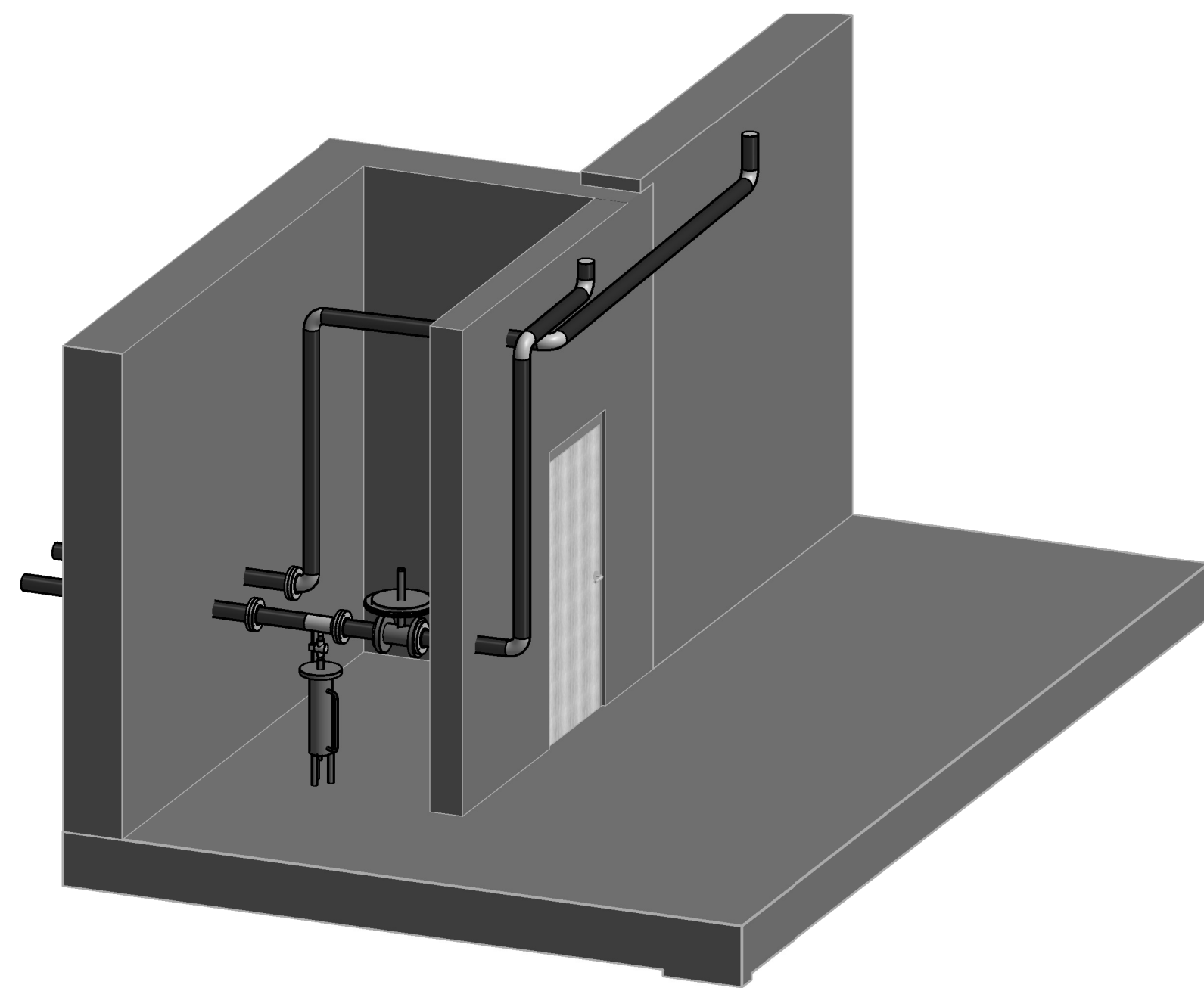
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DRAWN BY: K.B.W.	DRAWING NO.:
CHECKED BY: M.V.	P3.3



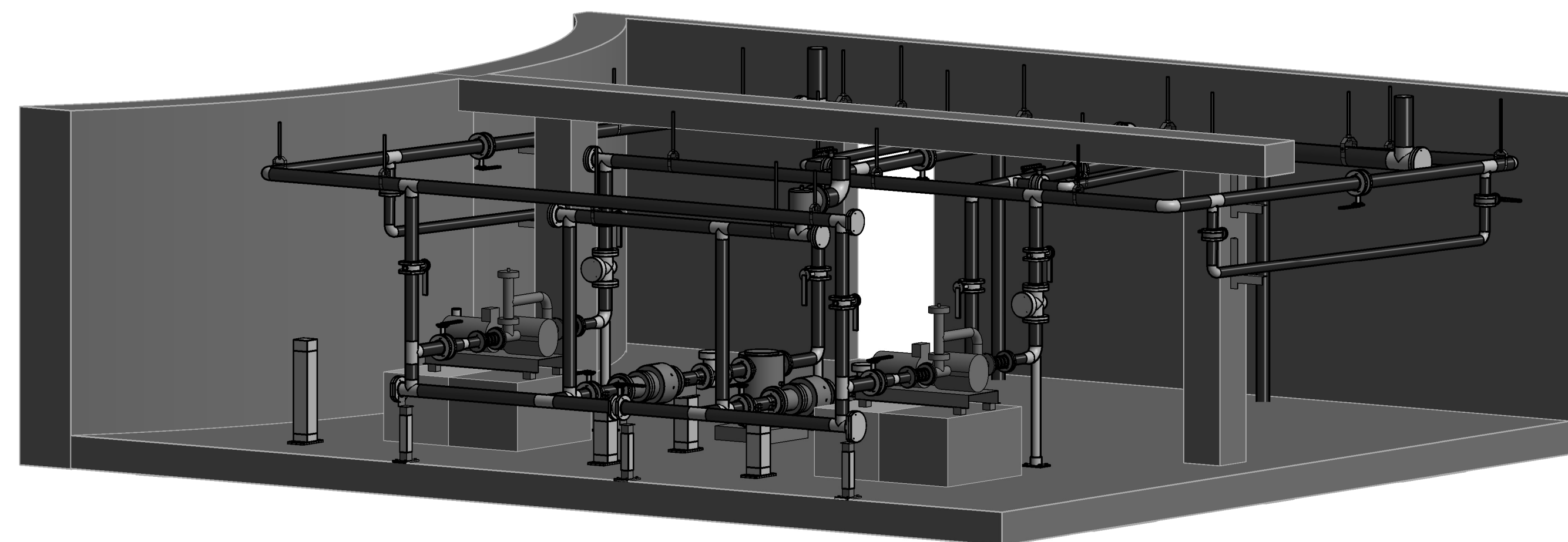
3D - FLARE STACK VIEW



3D - ROOF PLAN VIEW



3D - BASEMENT FLOOR VIEW



3D - GROUND FLOOR VIEW

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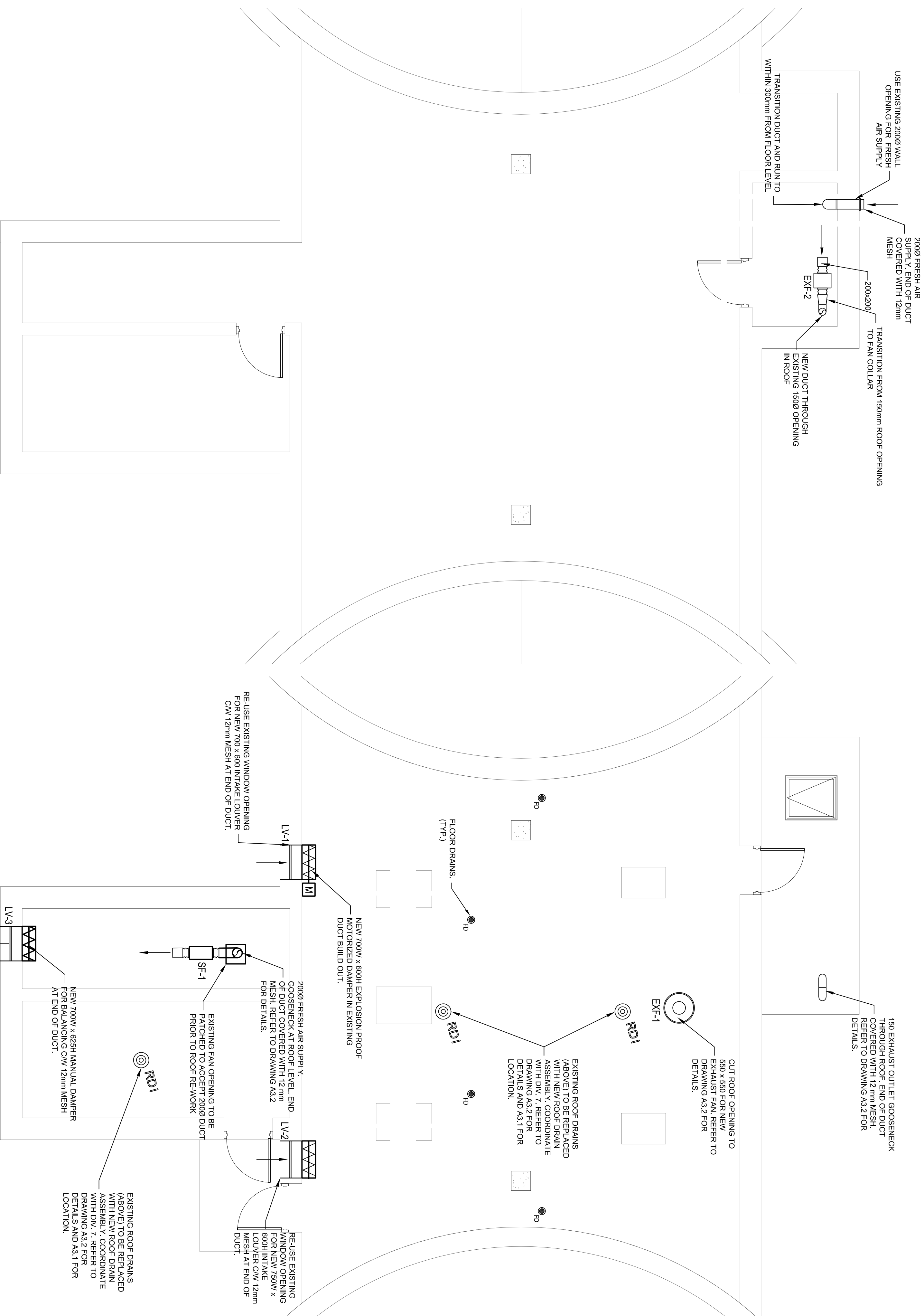
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CLIENT:
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 4381818 4381818 4381818

PROJECT:
NAPANEE WPCP ANAEROBIC DIGESTER BIOGAS UPGRADES

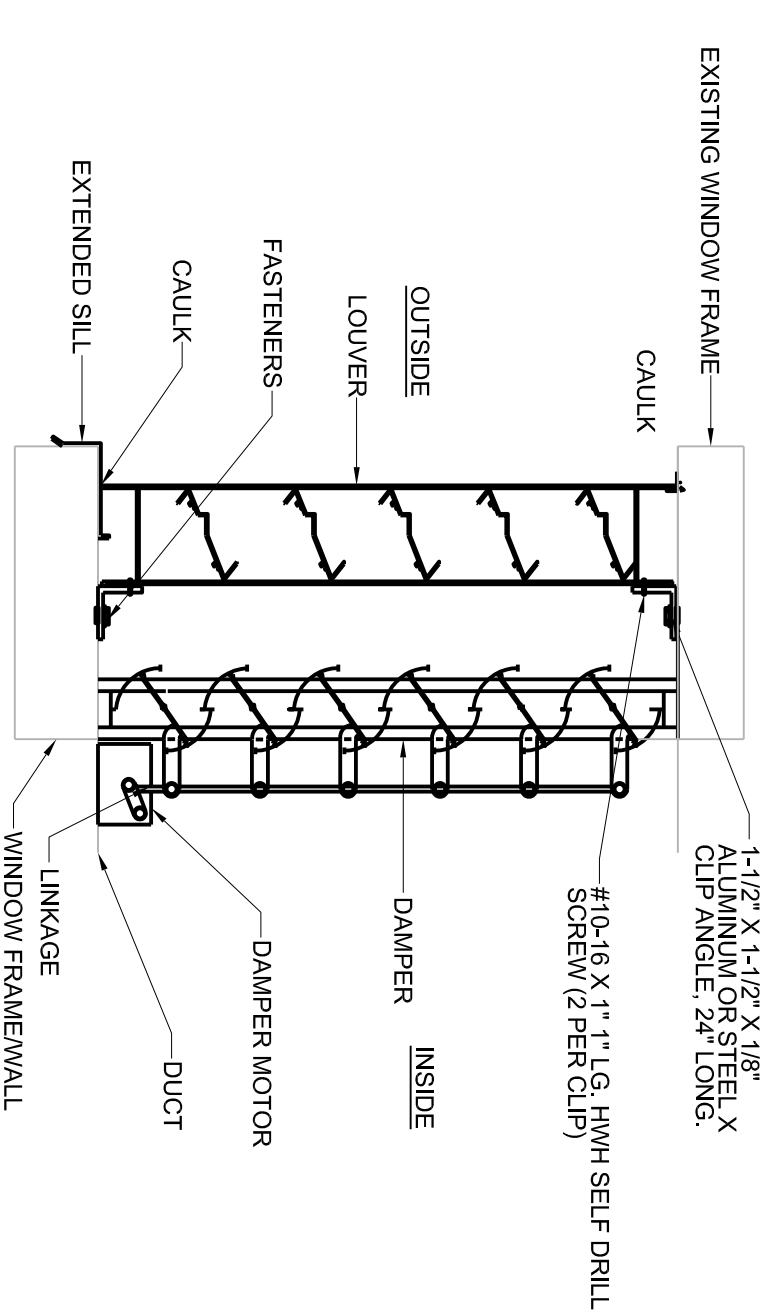
TITLE:
3D VIEWS

SCALE:	JOB NO: 17102
DESIGNED BY: J.B.	DATE: 2017/10/02
DRAWN BY: K.B.W.	DRAWING NO.:
CHECKED BY: M.V.	P6.1



BASEMENT FLOOR PLAN
SCALE: 1:50

GROUND FLOOR PLAN
SCALE: 1:50



LOUVER/DAMPER DETAIL
SCALE: NTS

ITEM No.	SERVICE	LOCATION	MANUFACTURER	MODEL	TYPE	AIR FLOW (US)	EXT. S.P. (Pa)	ELECTRICAL DATA	HP	AMPS (FLA)	RPM	CONTROLS & OPTIONS
EXF-1	GROUND FLOOR GAS ROOM VENTILATION	GROUND FLOOR GAS ROOM	GREENHECK	G-143-A	DIRECT DRIVE CENTRIFUGAL ROOF EXHAUST FAN	950	62	VOLT 575 HZ 60 PH 3	1	1.7	1188	OPERATED CONTINUOUSLY ON LOW SPEED AND BY OCCUPANCY SWITCH/GAS DETECTION SYSTEM ON HIGH SPEED. CW/VPD. EXPLOSION PROOF ENCLOSURE. WEATHERPROOF DISCONNECT SWITCH. EXP PROOF MOTOR WITH THERMAL OVERLOADS. INSULATED CURB AND SEAL.
EXF-2	BASEMENT GAS ROOM VENTILATION	BASEMENT GAS ROOM	GREENHECK	CSP-4200	PREMIUM INLINE CABINET FAN	70	125	VOLT 60 HZ 60 PH 1	-	0.43	900	EXHAUST FAN SHALL OPERATE CONTINUOUSLY. EXHAUST FAN SHALL BE BALANCED TO 70 US (150 CFM) ON CONTINUOUS OPERATION.
SF-1	ELECTRICAL ROOM VENTILATION	MAIN FLOOR MCC ROOM	THERMOLEC	FER-6-3-6003	MINI MAKE UP AIR CABINET FAN	47	62	VOLT 575 HZ 60 PH 3	-	5	-	OPERATED CONTINUOUSLY. CW/3 W/HEATER. HANGER BRACKETS AND SPRING ISOLATORS. DUCT SENSOR. AIRFLOW SENSOR. WEATHERPROOF DISCONNECT SWITCH. MOTOR WITH THERMAL OVERLOADS.

NOTE: ALL FANS SHALL BE UL/ULC LISTED - "POWER VENTILATORS". ALL MOTORS SHALL HAVE CSA APPROVAL. FANS SHALL BE CW/1 YEAR WARRANTY.

FAN SCHEDULE

LOUVER SCHEDULE

ITEM No.	SERVICE	BLADE TYPE	SIZE	BLADE DEFLECTION	ADJUSTABLE DEPTH	MATERIAL	MAKE	MODEL	CONTROLS & OPTIONS
LV1, LV2, LV3	BIOGAS ROOM/ELECT. ROOM AIR STATIONARY	SEE DRAWING	43" CONTINUOUS BLADE	100mm	EXTRUDED ALUMINIUM (6063 - T5)	EH PRICE	JE443	CW EXTENDED SILL, INSECT SCREEN, BAKED ENAMEL FINISHED	

NOTE: ALL LOUVERS SHALL BE CW WITH MATCHING TAMCO 9000 BF DAMPERS. ONE DAMPER SHALL INCLUDE BELIMO OPERATOR WITH AN EXPLOSION PROOF MOTOR.

EXF-1 (VFD) OPERATION

- DURING NORMAL OPERATION, EXHAUST FAN SHALL OPERATE CONTINUOUSLY ON LOW SPEED. EXHAUST FAN SHALL BE BALANCED WITH VFD TO 425 US (1000 CFM) DURING CONTINUOUS OPERATION. MOTORIZED DAMPER SHALL BE NORMALLY CLOSED.
- ON GAS DETECTION AND/OR OCCUPANCY OF THE SPACE, VFD SHALL BE SENT A SIGNAL TO INCREASE FAN SPEED. EXHAUST FAN SHALL EXHAUST 950 US (2000 CFM) FROM SPACE.
- ON GAS DETECTION AND/OR OCCUPANCY OF THE SPACE, DAMPER SHALL BE SET TO FULLY OPEN.

EXF-2 OPERATION

- EXHAUST FAN SHALL OPERATE CONTINUOUSLY. EXHAUST FAN SHALL BE BALANCED TO 70 US (150 CFM) ON CONTINUOUS OPERATION.

SF-1 OPERATION

- SUPPLY FAN SHALL OPERATE CONTINUOUSLY. SUPPLY FAN SHALL BE BALANCED TO 47 US (100 CFM) ON CONTINUOUS OPERATION.

CONSULTANT:
EVB
ENGINEERING
208 RITT STREET
LONDON ONTARIO, M6G 1R9
TEL: 613-665-0751 FAX: 613-665-4469
WEBSITE: www.evbeng.com

SUB-CONSULTANT:
HSP Inc.
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Canada K0C 1P0
T: 613-932-3289
F: 613-932-0128
www.hsp.ca

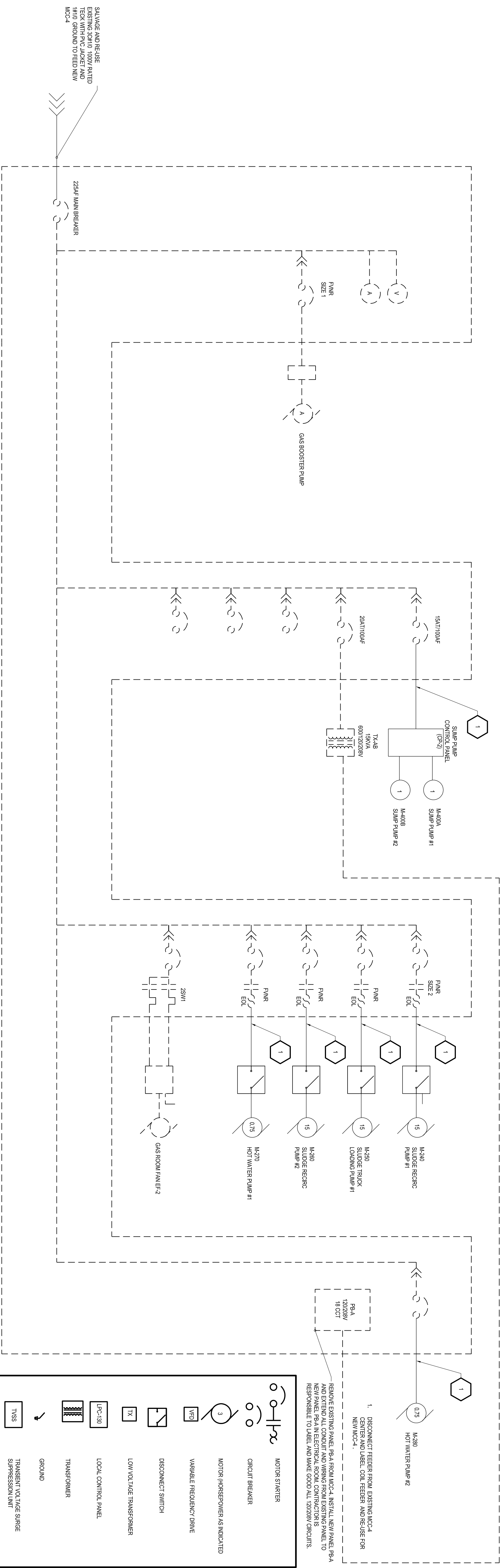
ARCHITECTURE | 49
136 ROSEMOUNT AVENUE
CORNWALL, ONTARIO, CANADA K0A 3E7
TEL: 613-665-8827 FAX: 613-665-0253 ARCHIT@UPPER8.COM

Greater Napanee
Greater than any other features

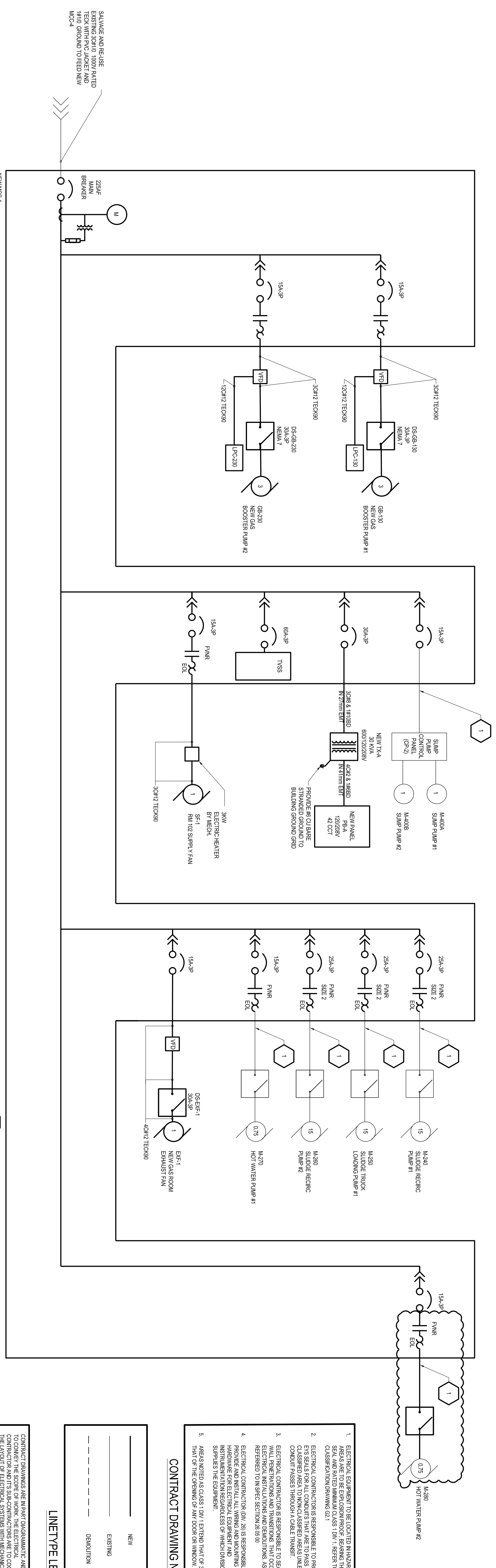
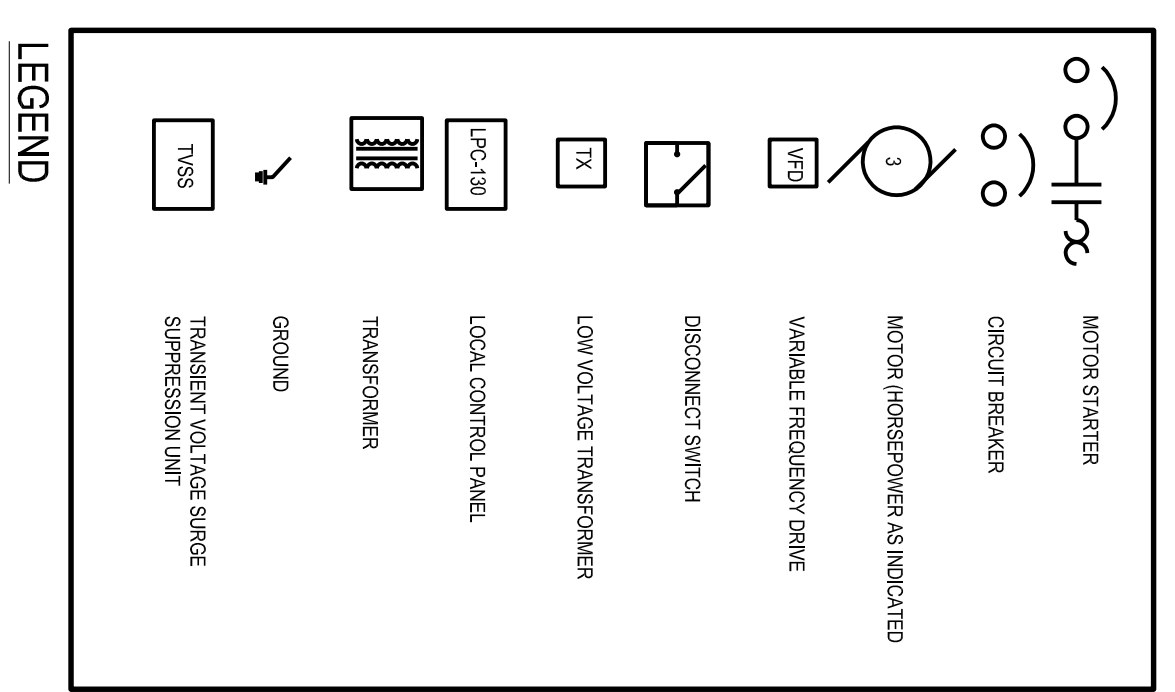
PROJECT:
REHABILITATION OF BIOGAS PIPING AND FLARE NAPANEE WPCP

TITLE:
MECHANICAL HVAC SYSTEM LAYOUT, DETAILS AND SCHEDULES

SCALE:	AS SHOWN	DATE:	2017/08/08
DESIGNED BY:	S. PERRY	DRAWING NO.:	M.1.1
CHECKED BY:	B. GRANDMANSION		
	B. DOURRE		



EXISTING MCC-4 DEMOLITION LAYOUT



NEW MCC-4 LAYOUT

NEW MCC-4
NEW BUILDING
600-400V-420V
FED FROM MCC-1

225kV MAIN BREAKER
SALVAGE AND RE-USE
EXISTING 3PH 100V RATED
EQUIPMENT TO BE
INSTALLED IN NEW
MCC-4

1. DISCONNECT FEEDER FROM EXISTING MCC-4 CENTER AND LABEL, COIL FEEDER AND RE-USE FOR SCHEMATICS FROM WINDO DETAILS

CONTRACT DRAWING NOTES

CONTRACT DRAWINGS ARE IN PART DISASSEMBLY AND INTEND TO COMPLETE THE SCOPE OF WORK. THE ELECTRICAL CONTRACTOR AND ITS SUB-CONTRACTORS ARE TO COORDINATE WITH ALL OTHER CONTRACTORS TO COMPLETE THE ELECTRICAL AND ARCHITECTURAL COMPONENTS. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL NECESSARY MATERIALS AND LABOR TO MEET THE REQUIREMENTS SET OUT IN THE ONTARIO ELECTRICAL CODES. MOST RECENT EDITION THERE WILL BE IN EXTRA COORDINATION.

CONTRACT DRAWING NOTES

1. DISCONNECT FEEDER FROM EXISTING MCC-4 CENTER AND LABEL, COIL FEEDER AND RE-USE FOR SCHEMATICS FROM WINDO DETAILS

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CLIENT: NAPANEE WPCP
ANAEROBIC DIGESTER BIOGAS UPGRADES

PROJECT: ANAEROBIC DIGESTER BIOGAS MCC-4 SINGLE LINE

TITLE: ELECTRICAL

DATE: 2017/08/08

DRAWN BY: B. SWANIS

CHECKED BY: N. DURBIC

SCALE: AS SHOWN

DESIGNED BY: B. SWANIS

DRAWING NO.: E1.2

CONSULTANT: EVB Environmental

208 PITT STREET
CORNWALL, ONTARIO CANADA, N6A 3P6
TEL: 613-853-5753 FAX: 613-853-6480
WWW.EVBENVIRONMENTAL.COM

CONSULTANT: HSP Inc.

5715 WILSON DRIVE
LONG SAUL, ON
CANADA K0C 1P0
TEL: 613-493-2125
WWW.HSP.CA

ARCHITECTURE 49

154 ROSSIGNOL AVENUE
CORNWALL, ONTARIO CANADA K6J 4E5
TEL: 613-853-5802 FAX: 613-856-0381 ARCH@TECHDRE.COM

CLIENT: Greater Napanee

PROJECT: NAPANEE WPCP
ANAEROBIC DIGESTER BIOGAS UPGRADES

TITLE: ELECTRICAL

DATE: 2017/08/08

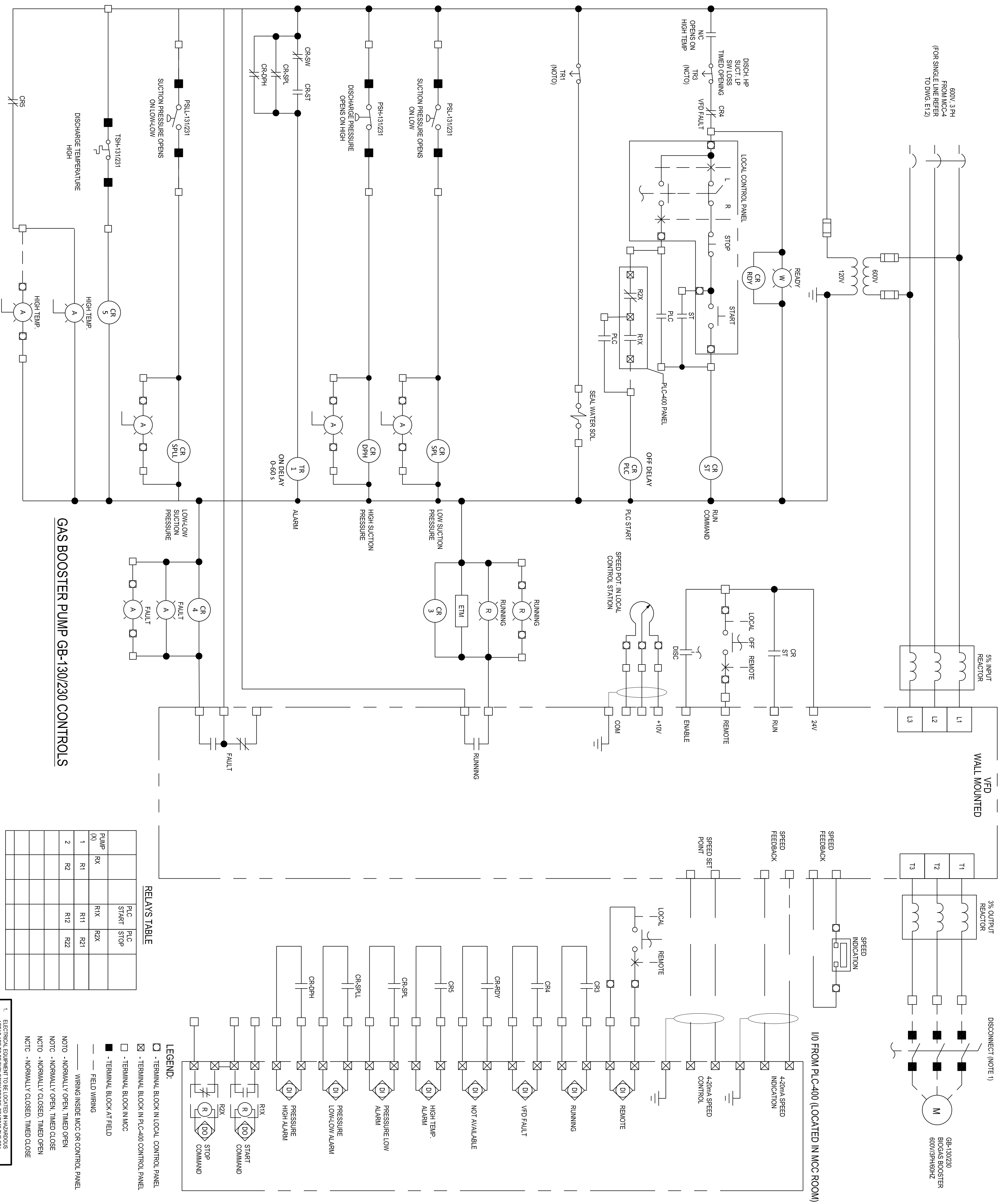
DRAWN BY: B. SWANIS

CHECKED BY: N. DURBIC

SCALE: AS SHOWN

DESIGNED BY: B. SWANIS

DRAWING NO.: E1.2



GAS BOOSTER PUMP GB-1307230 CONTROLS

RELAYS TABLE

PUMP	PLC START	PLC STOP
1	R1	R21
2	R2	R22

LEGEND:

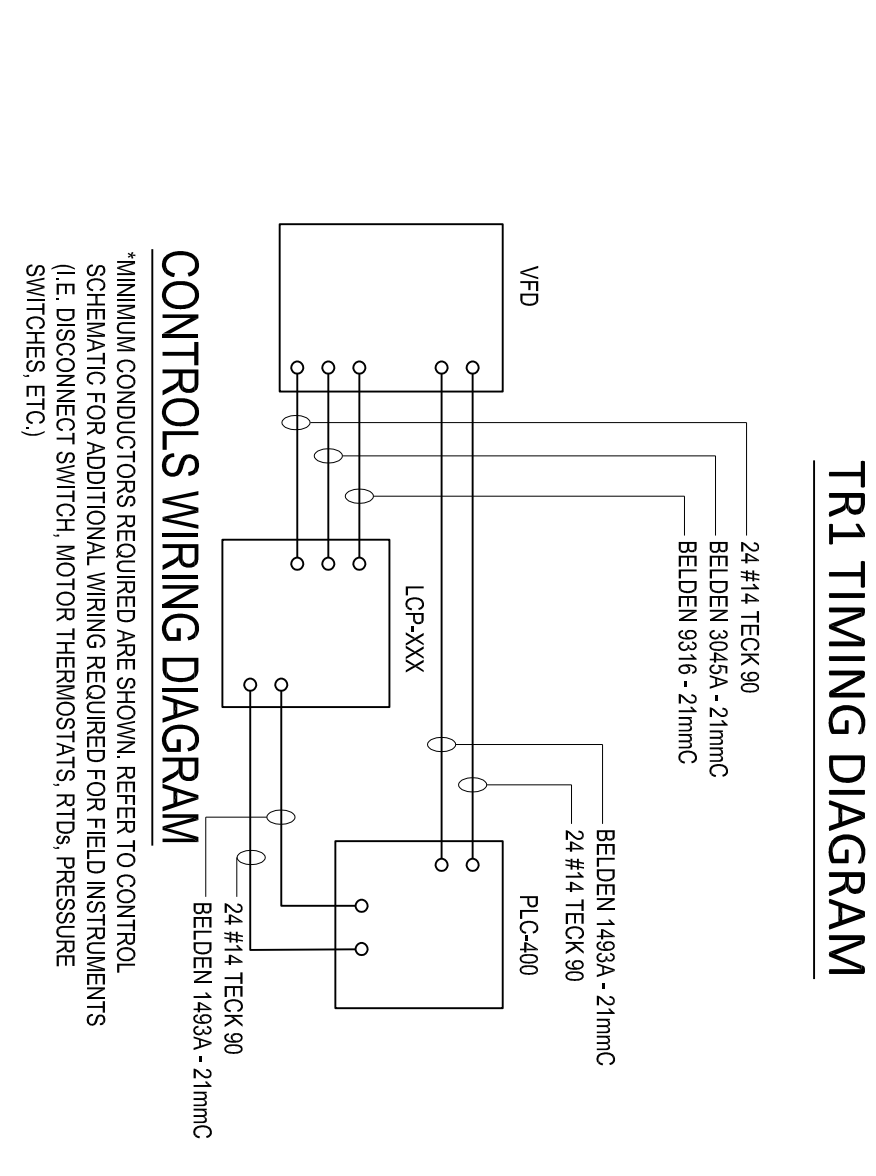
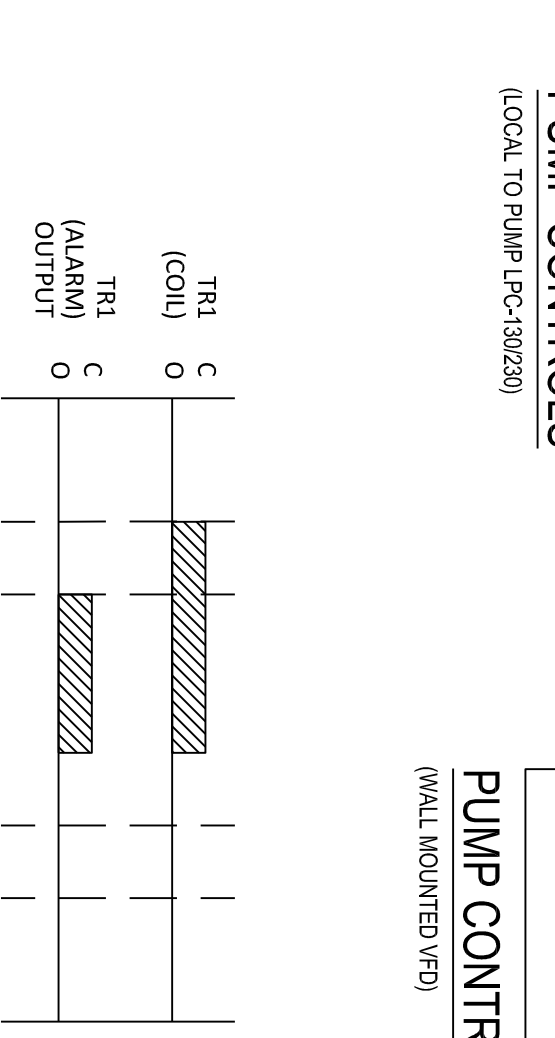
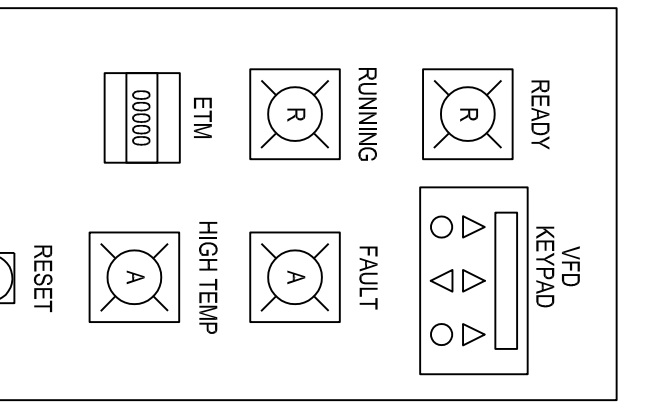
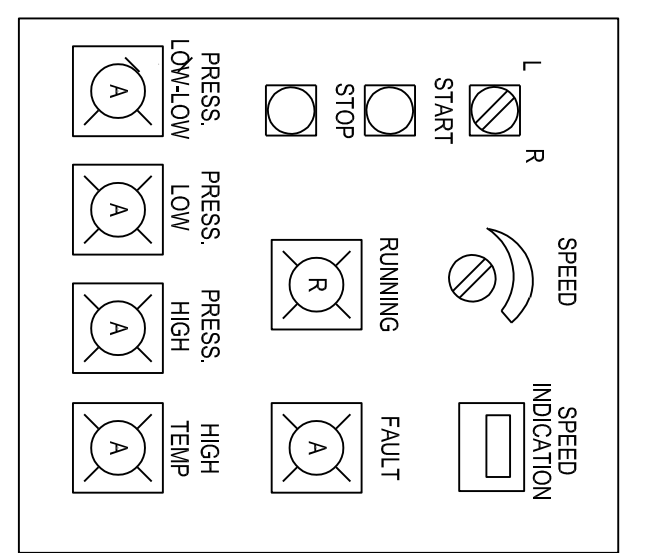
- - TERMINAL BLOCK IN LOCAL CONTROL PANEL
- - TERMINAL BLOCK IN PLC-400 CONTROL PANEL
- - TERMINAL BLOCK IN MCC
- - TERMINAL BLOCK ATTENDED
- - FIELD WIRING
- - WIRING INSIDE MCC OR CONTROL PANEL

NOTES:

1. ELECTRICAL EQUIPMENT TO BE LOCATED IN HAZARDOUS AREAS ARE TO BE EXEMPT FROM THE CSA CLASSIFICATION REQUIREMENTS.
2. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE CLASSIFIED AREAS TO NON-CASSED AREAS UNLESS THE COMPANY PASSES THROUGH A CABLE TRUNK.
3. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO SEAL ALL ELECTRICAL INSTALLATIONS AND GENDAL TRUNKS AS REFERRED TO IN SPEC SECTION 21.05.00.
4. ELECTRICAL CONTRACTOR DIV. 20 IS RESPONSIBLE TO PROVIDE AND INSTALL ALL WIRING AND WIRING MATERIALS AND ACCESSORIES OF WHICH DIVISION SUPPLIES THE EQUIPMENT.
5. AERAS NOTED IS CLASS 1 DIV 1 EXTEND THAT IS FROM THAT OF THE OPENING OF ANY DOOR OR WINDOW.

CONTRACT DRAWING NOTES

1. ELECTRICAL EQUIPMENT TO BE LOCATED IN HAZARDOUS AREAS ARE TO BE EXEMPT FROM THE CSA CLASSIFICATION REQUIREMENTS.
2. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE CLASSIFIED AREAS TO NON-CASSED AREAS UNLESS THE COMPANY PASSES THROUGH A CABLE TRUNK.
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5. AERAS NOTED IS CLASS 1 DIV 1 EXTEND THAT IS FROM THAT OF THE OPENING OF ANY DOOR OR WINDOW.



CONTRACT DRAWING NOTES

1. EARLY BREAK, LATE TAKE CONTACT TO VFD.
2. SEE INSTRUMENTATION DRAWINGS FOR CONNECTIONS TO PLC.
3. ALL LIGHTS SHALL BE PUSH-TO-TESTED.
4. ALL TIMERS SHALL HAVE 2 I/O AND 2 N.C. TIMED CONTACTS AND 1 N.O. AND 1 N.C. INSTANTANEOUS CONTACTS.
5. FOR ALL DEVICES, PROVIDE LOCAL JUNCTION BOXES ON DIN RAIL MOUNTED TERMINAL BLOCKS FOR TERMINATION OF SPARE CONDUCTORS.
6. FOR ALL INSTRUMENTS, LOCATED IN HAZARDOUS CLASSIFIED AREAS THAT ARE TIED BACK TO THE MCCS OR BARRIERS AND/OR RELAYS INSIDE MCC OR LCP.

CONTRACT DRAWING NOTES

CONTRACT DRAWINGS ARE IN PART SUPPLEMENTARY AND INTEND TO COMPLETE THE SCOPE OF WORK. THE ELECTRICAL CONTRACTOR AND ITS SUBCONTRACTORS ARE TO COORDINATE ALL ELECTRICAL AND MECHANICAL WORK WITH THE ARCHITECTURAL AND MECHANICAL CONTRACTORS. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL WIRING AND WIRING MATERIALS AND ACCESSORIES OF WHICH DIVISION SUPPLIES THE EQUIPMENT. THERE WILL BE NO EXTRA CHARGES FOR THE REVISIONS SET OUT IN THE ELECTRICAL COORDINATION SHEET.

REVISIONS

DATE	NO.	REVISION
2019/08/08	1	AS-BUILT

CLIENT: HSP Inc. 208 PITT STREET CORNWALL, ONTARIO CANADA, N6A 3P6
 TEL: 519-833-5892 FAX: 519-833-5895
 WEB: www.hsp.ca

CONSULTANT: HSP Inc. 5715 WILLOW DRIVE Long Sault, ON Canada K0C 1P0
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ARCHITECTURE 49

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 TEL: 519-833-5892 FAX: 519-836-0381 ARCH@TECHNICAL.HSP.COM

PROJECT: NAPANEE WPCP ANAEROBIC DIGESTER BIOGAS UPGRADES

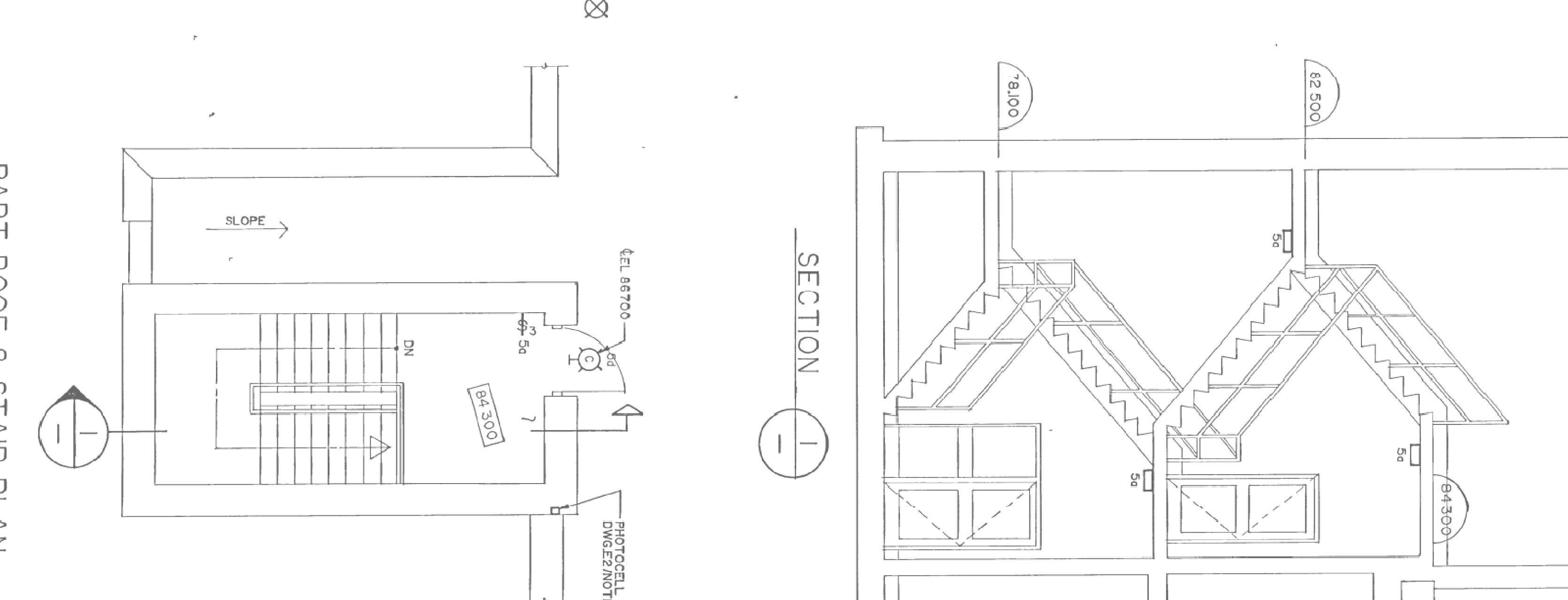
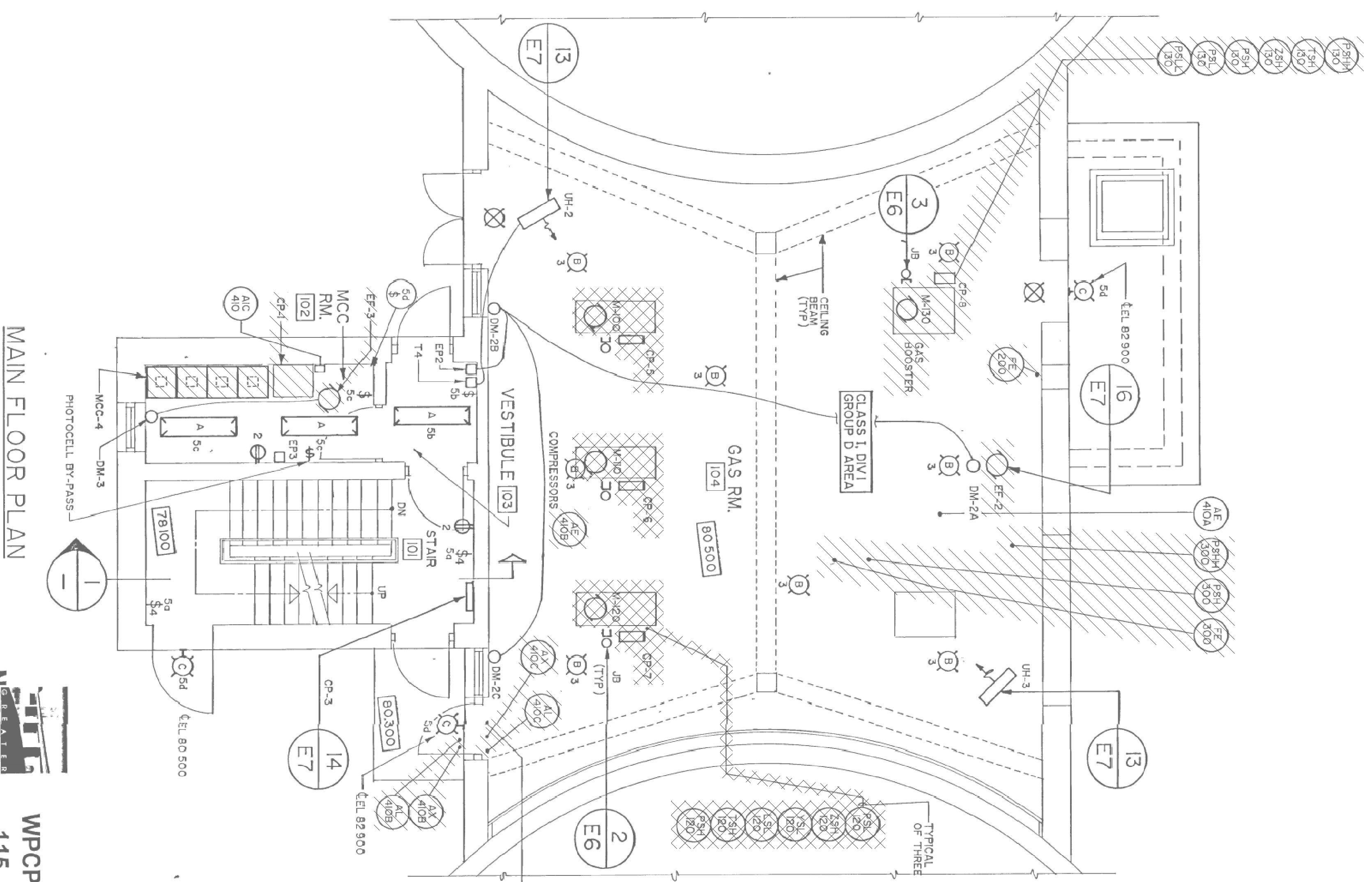
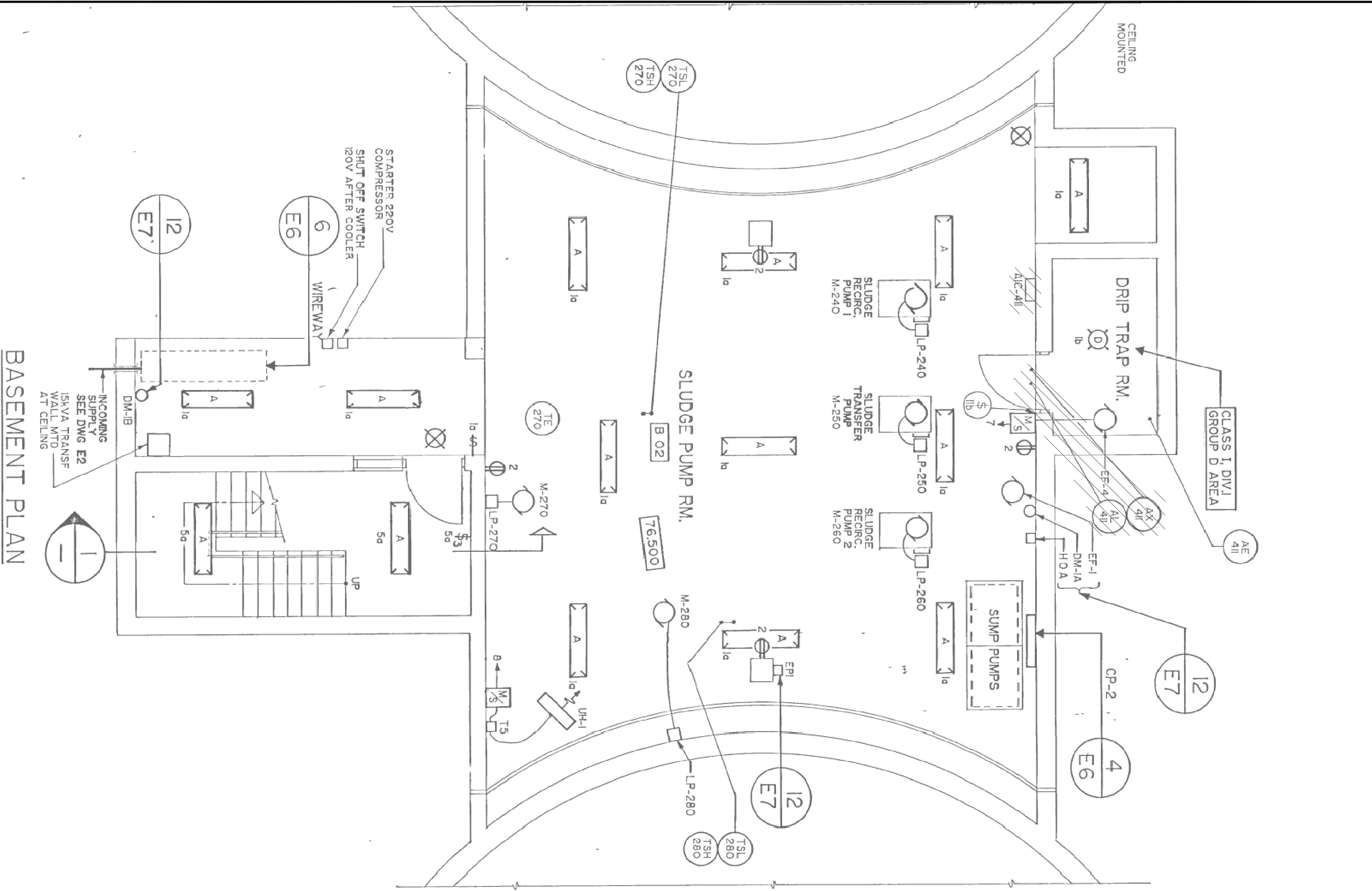
TITLE: ELECTRICAL ANAEROBIC DIGESTER BIOGAS BOOSTER PUMP WIRING DIAGRAM

SCALE: AS SHOWN

AS SHOWN	DATE
B. SVAMIS	2017/08/08
B. SVAMIS	2017/08/08

DESIGNED BY: B. SVAMIS
 DRAWING NO.: E3.2
 CHECKED BY: N. DURBIC

LUMINAIRES MOUNTING HEIGHT
 BASEMENT U/S AT EL. 2900mm A/F EXCEPT
 AS NOTED
 MAIN FLOOR CEILING MOUNTED



PREVIOUSLY REMOVED
 REMOVED AS PART OF THE
 CURRENT SCOPE

DATE	NO.	REVISION
2018/04/08	1	AS-BUILT

CONSULTANT:
EVB
 ENGINEERING
 208 RITT STREET
 TORONTO, ONTARIO, CANADA M5S 1R9
 TEL: 416-593-5751 FAX: 416-593-6460
 WEBSITE: EVBENGINEERING.COM

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 Concord, ON L4C 1P9
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 F: 613-893-4125
 WWW.HSP-CA.COM

SUBCONSULTANT:
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 146 ROSEMOUNT AVENUE
 CORNWALL, ONTARIO, CANADA K6J 3E7
 TEL: 613-663-8021 FAX: 613-666-0233 PAROCHIE@ARCHITECTURE49.COM

PROJECT:
Greater Napanee
 NAPANEE WPCP
 ANAEROBIC DIGESTER
 BIOGAS UPGRADES

TITLE:
**DIGESTERS & CONTROL BUILDING
 REMOVALS FLOOR PLAN**

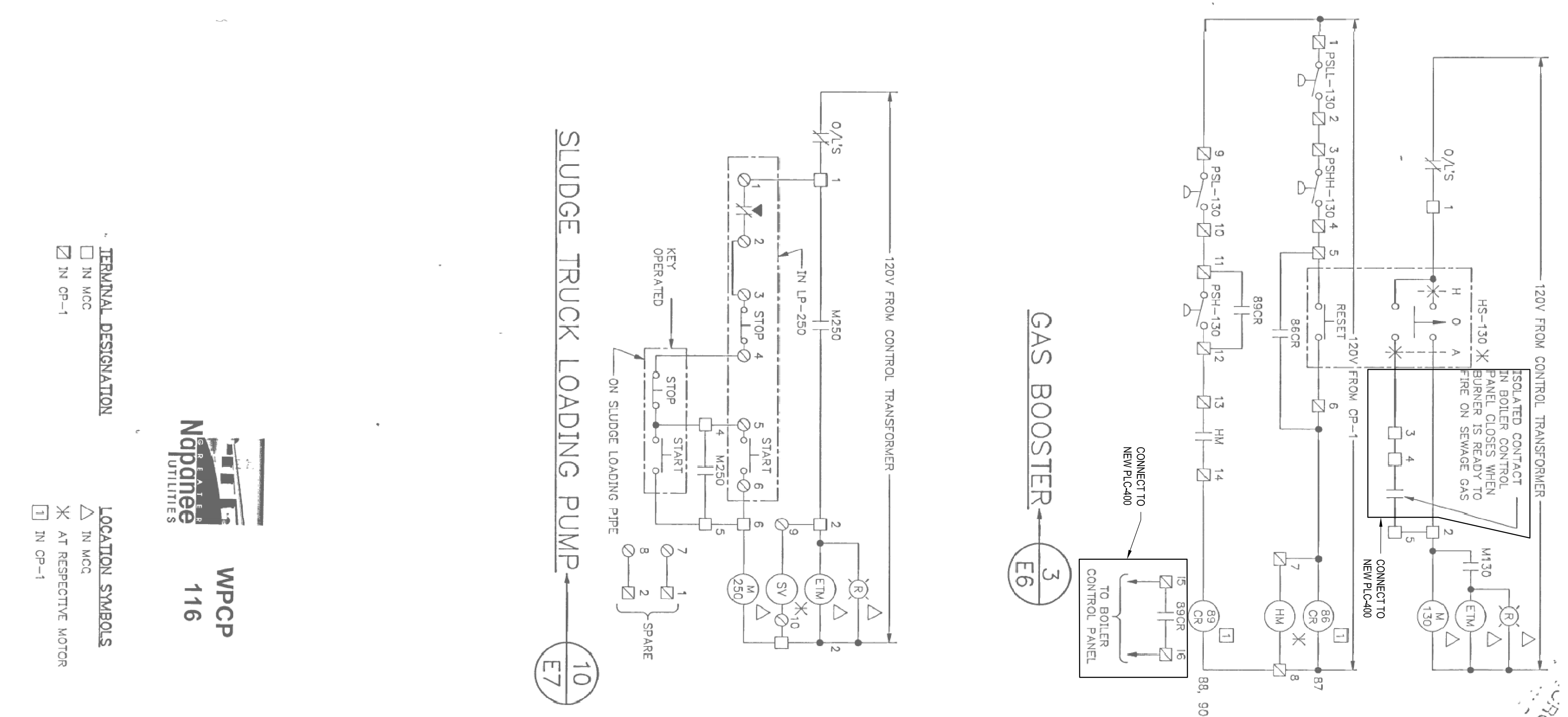
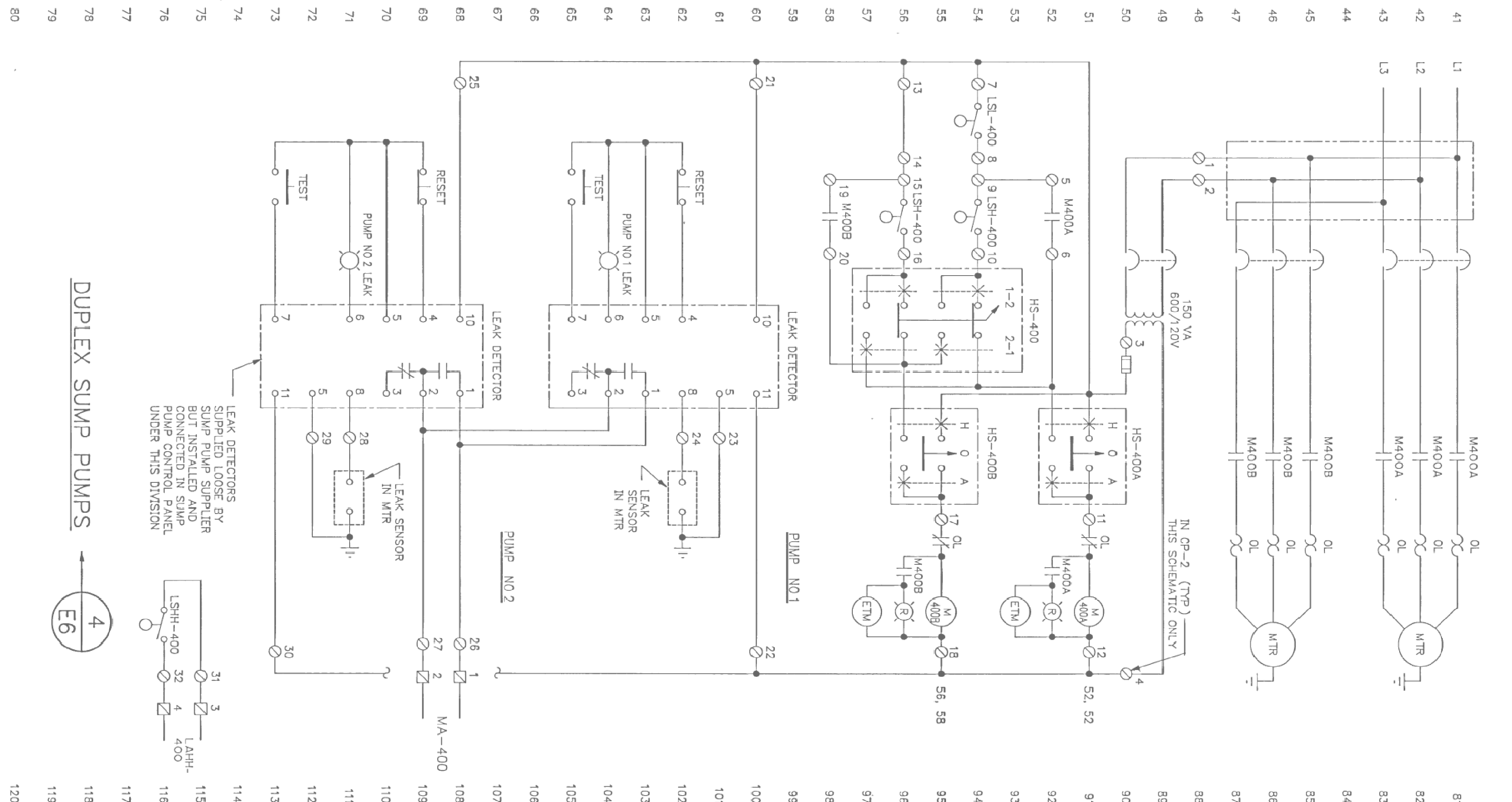
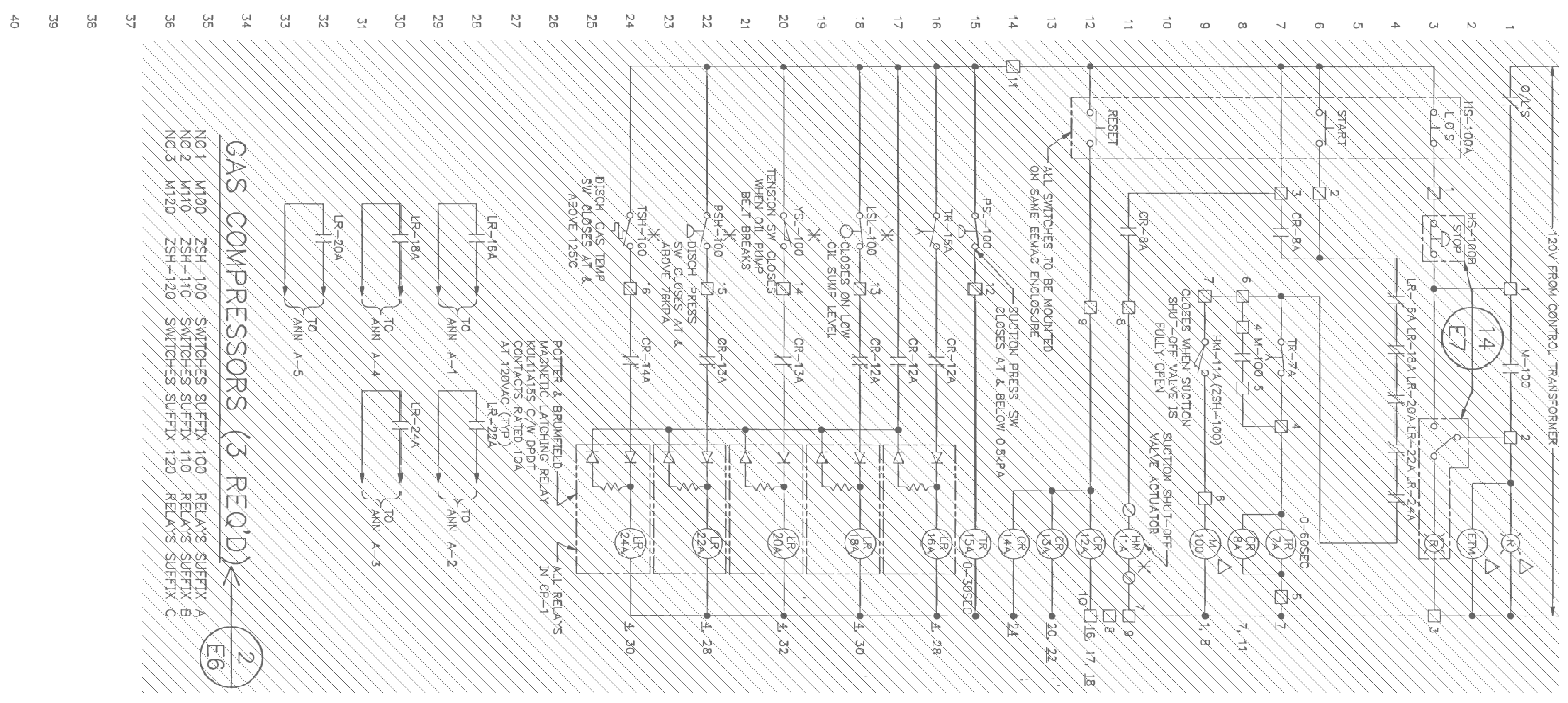
SCALE:
 N.T.S.
 1/16" = 1'-0"

DESIGNED BY:
 J.B.

DATE:
 2017/10/02

DRAWING NO.
 K.S.W.

CHECKED BY:
 E.S.2



LEGEND

- REMOVED AS PART OF THE CURRENT SCOPE

LEGEND

- TERMINAL DESIGNATION: IN MCC, IN CP-1
- LOCATION SYMBOLS: IN MCC, AT RESPECTIVE MOTOR, IN CP-1

WPCP 116

Greater Napanee UTILITIES

ARCHITECTURE | 49

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CLIENT: 148 ROSSMOUNT AVENUE CORNWALL, ONTARIO CANADA K0A 1E5
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PROJECT: NAPANEE WPCP ANAEROBIC DIGESTER BIOGAS UPGRADES

TITLE: DIGESTERS & CONTROL BUILDING REMOVALS CONTROL SCHEMATICS

SCALE: AS SHOWN
 N.T.S. 1/102
 DESIGNED BY: J.B.
 DRAWN BY: K.B.W.
 CHECKED BY: M.V.

DATE: 2017/10/02
DRAWING NO.: E5.3

REMOVED AS PART OF THE CURRENT SCOPE

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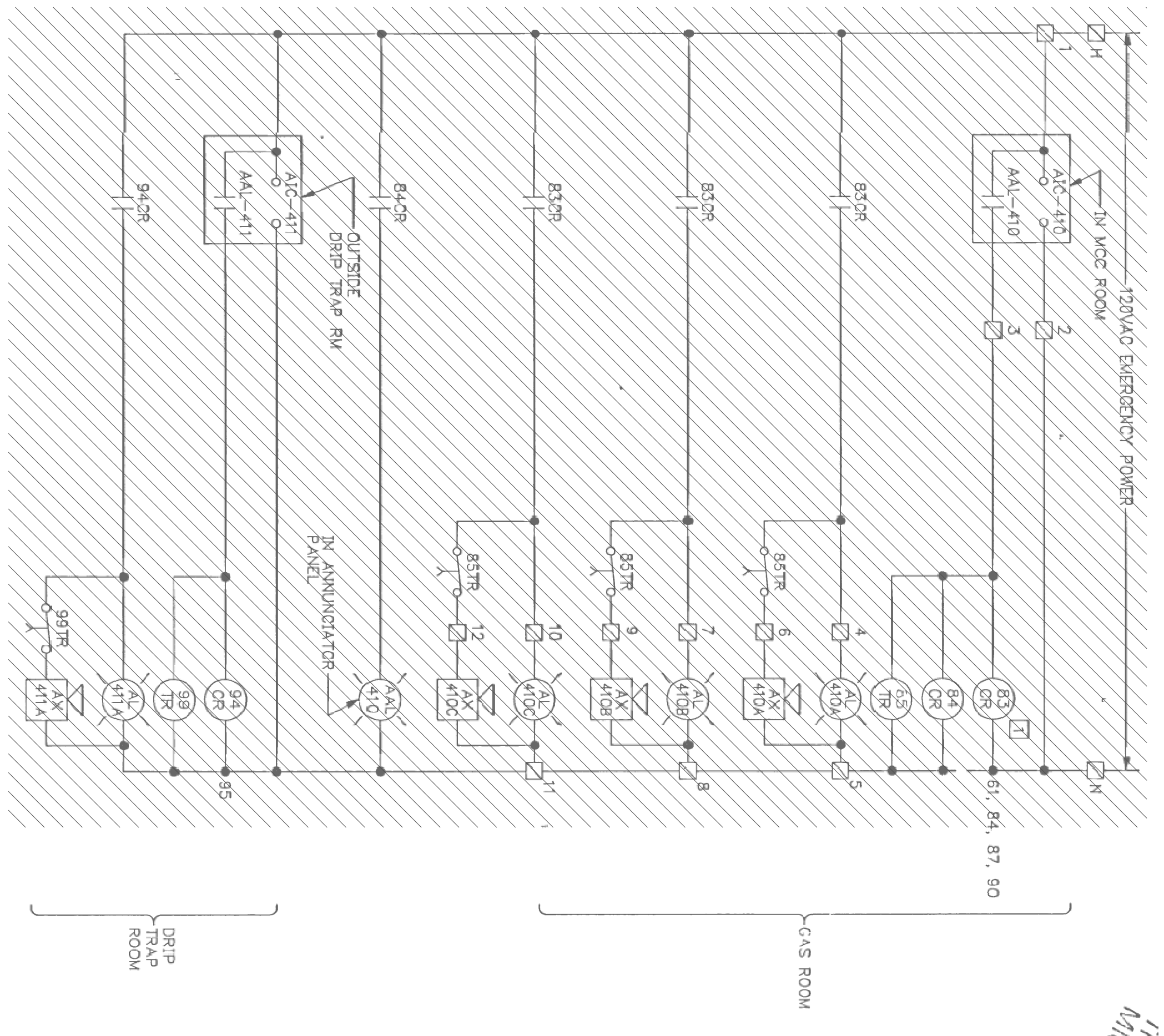
CONSULTANT:
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 ENGINEERING CONSULTANTS
 208 PITT STREET
 TORONTO, ONTARIO M5G 1P6
 TEL: 416-593-5251 FAX: 416-593-5460
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SUB-CONSULTANT:
HSP Inc.
 5715 Vantage Drive
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 TEL: 613-893-3289
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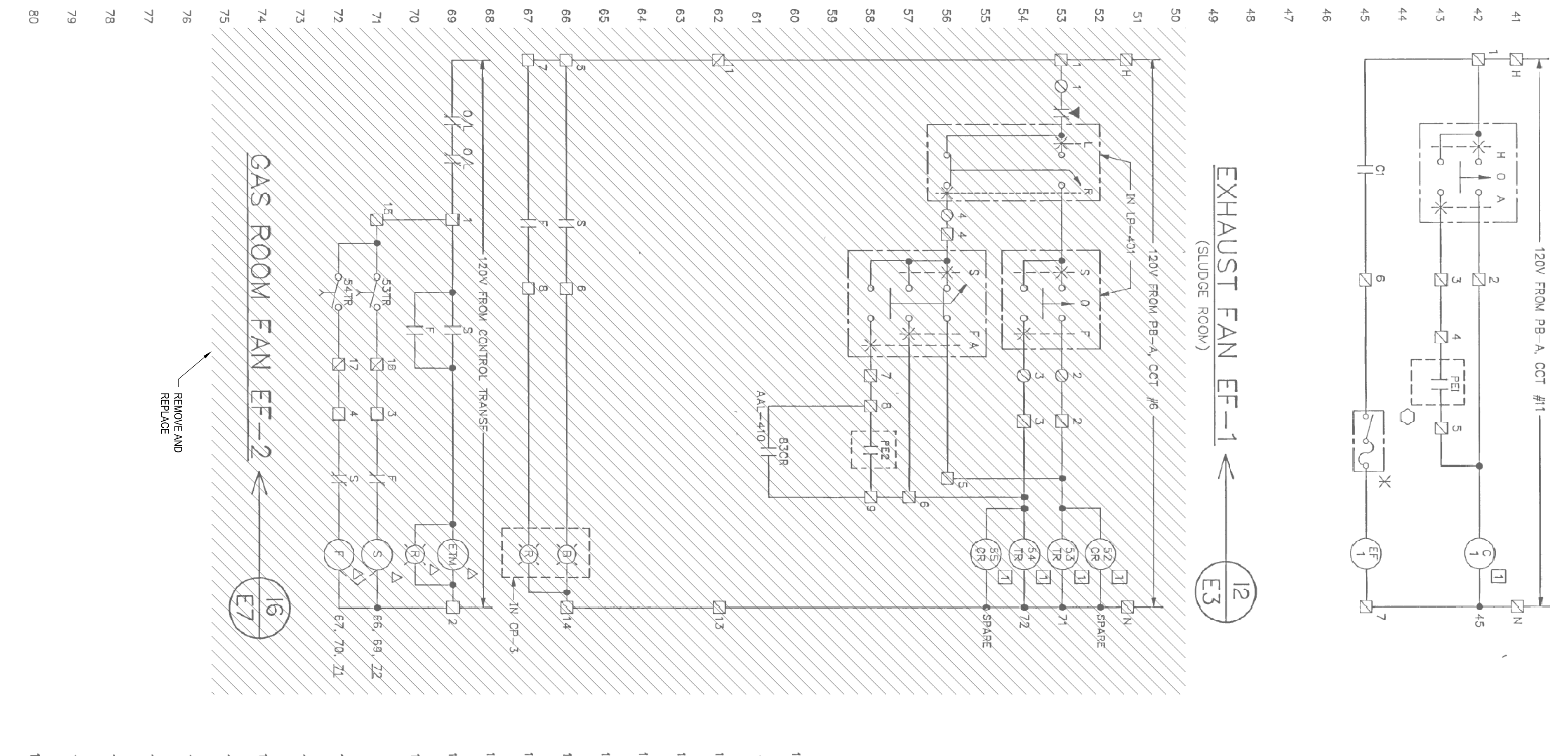
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 146 ROSSMOUNT AVENUE
 CORNWALL, ONTARIO CANADA K0A 3E5
 TEL: 613-535-2012 FAX: 613-535-0233 PAROCHIE@GREATERNAPANEE.COM

Greater Napanee
 WATER AND SEWER UTILITY
WPCCP 117
DIGESTERS & CONTROL BUILDING
ANAEROBIC DIGESTER
BIOGAS UPGRADES
REMOVALS CONTROL
SCHEMATICS

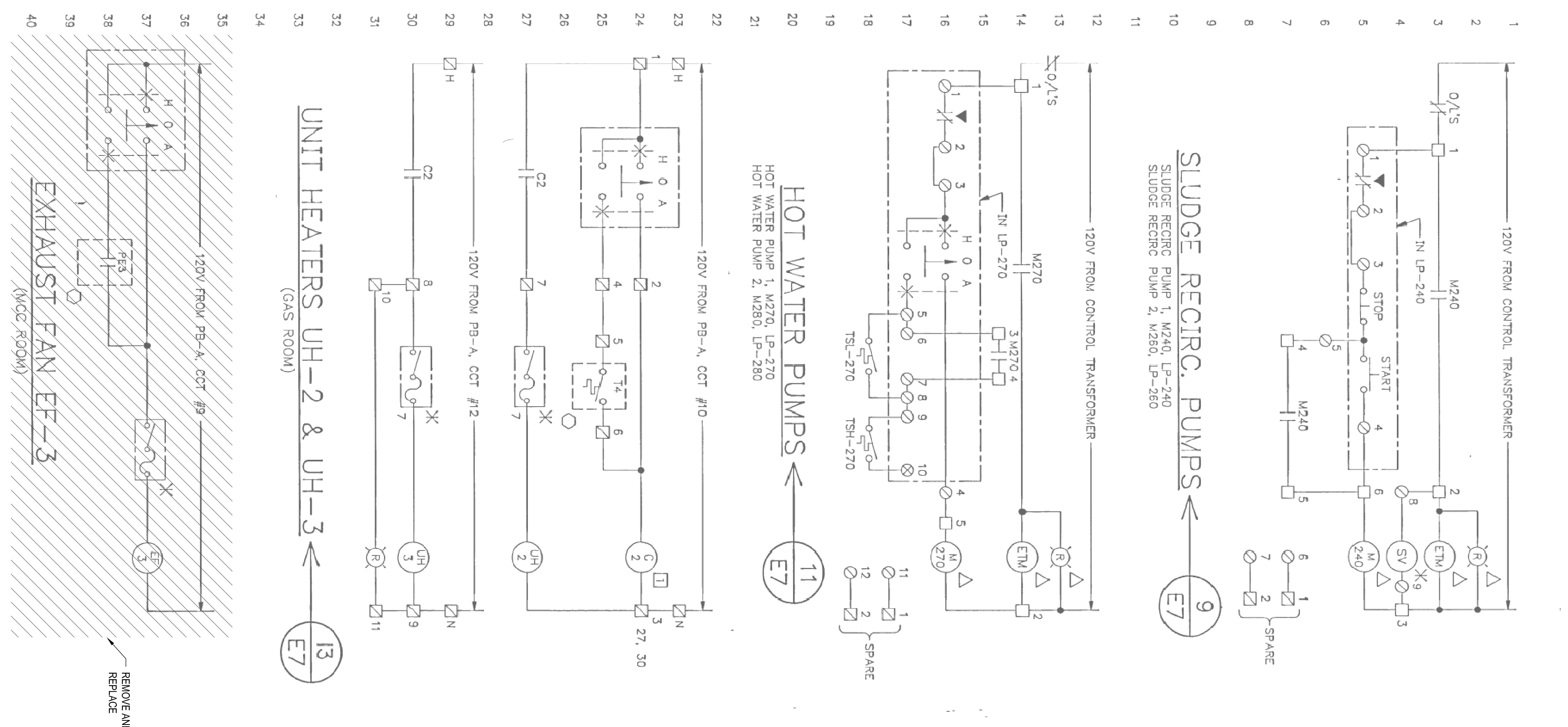
SCALE: AS SHOWN
 N.T.S. 1/102
 DESIGNED BY: J.B.
 DRAWN BY: K.B.W.
 CHECKED BY: M.V.
 DATE: 2017/10/2
 DRAWING NO.: E5.4



COMBUSTIBLE GAS ALARM
 TO BE REMOVED AND REPLACED WITH NEW.



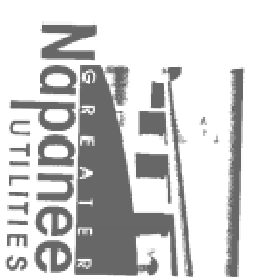
EXHAUST FAN EF-1
 (SLUDGE ROOM)

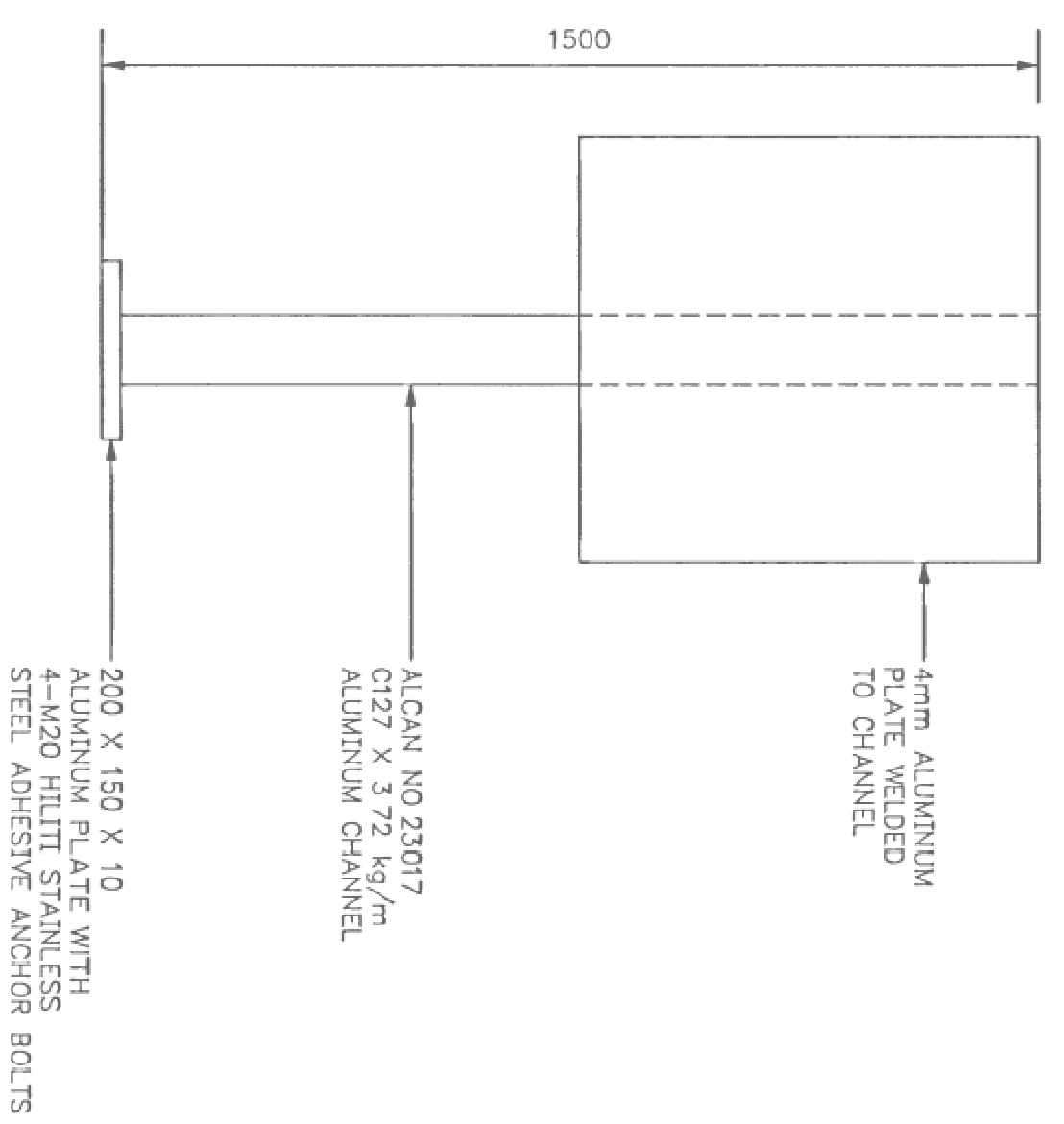


HOT WATER PUMPS
 HOT WATER PUMP 1, M270, LP-270
 HOT WATER PUMP 2, M280, LP-280

UNIT HEATERS UH-2 & UH-3
 (GAS ROOM)

EXHAUST FAN EF-3
 (WGC ROOM)

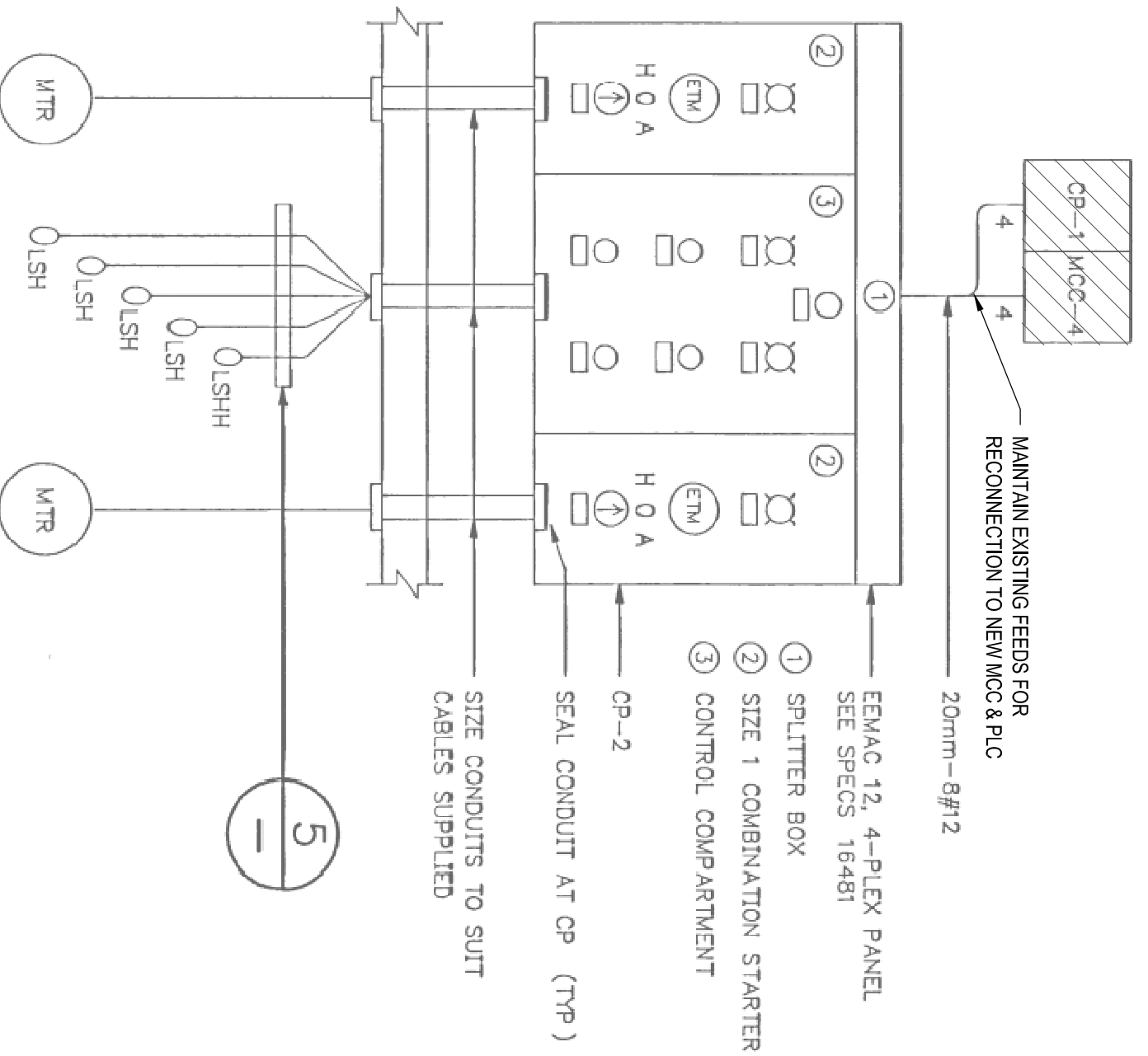




NOTE: AS AN ALTERNATIVE MATERIAL USE STAINLESS STEEL INSTEAD OF ALUMINUM

DETAIL

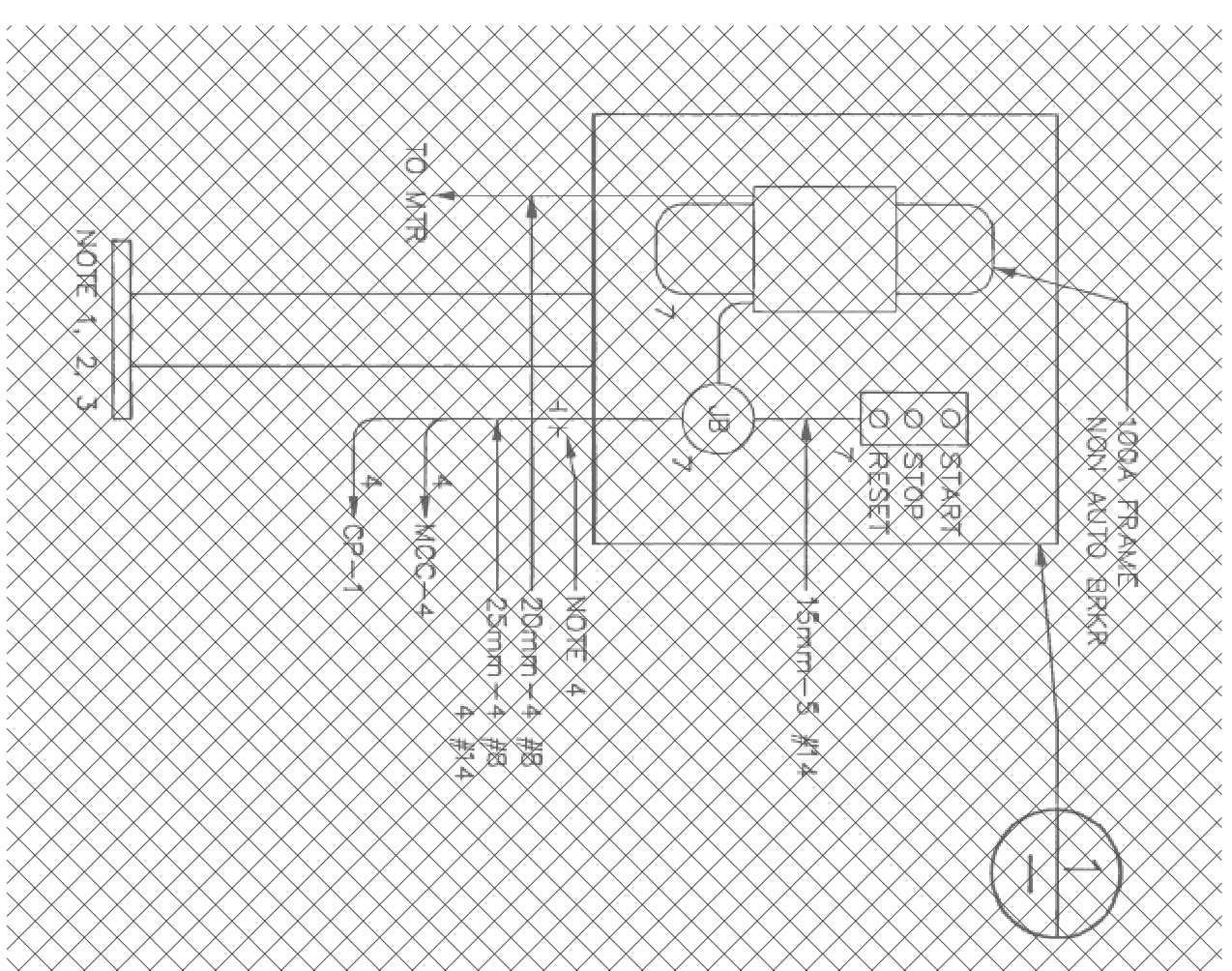
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DUPLEX SUMP PUMP

CS DWG E4

4 E3

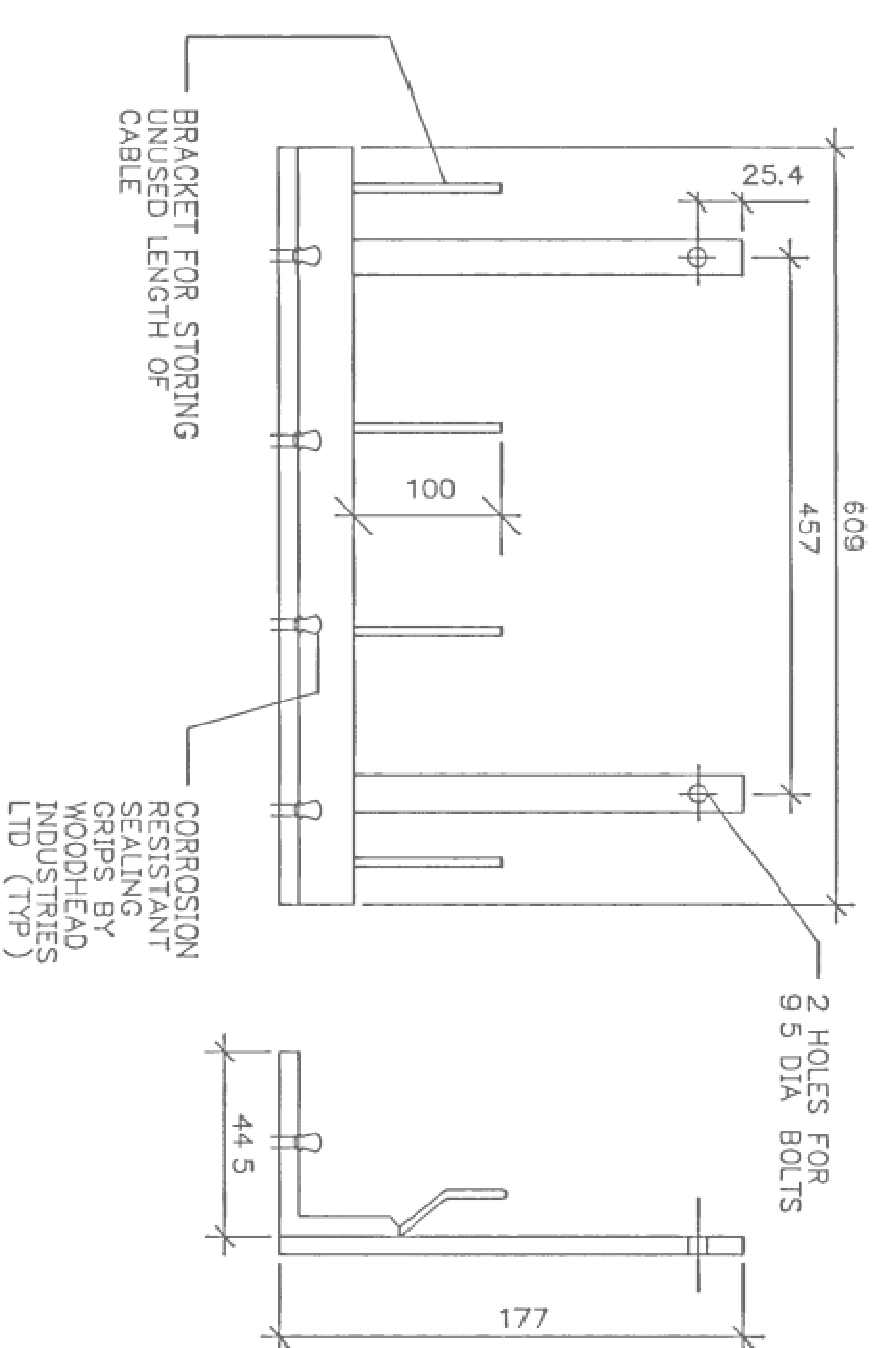


GAS COMPRESSOR CONTROLS (3 REQUIRED)

WIRING DETAIL

CS DWG E4

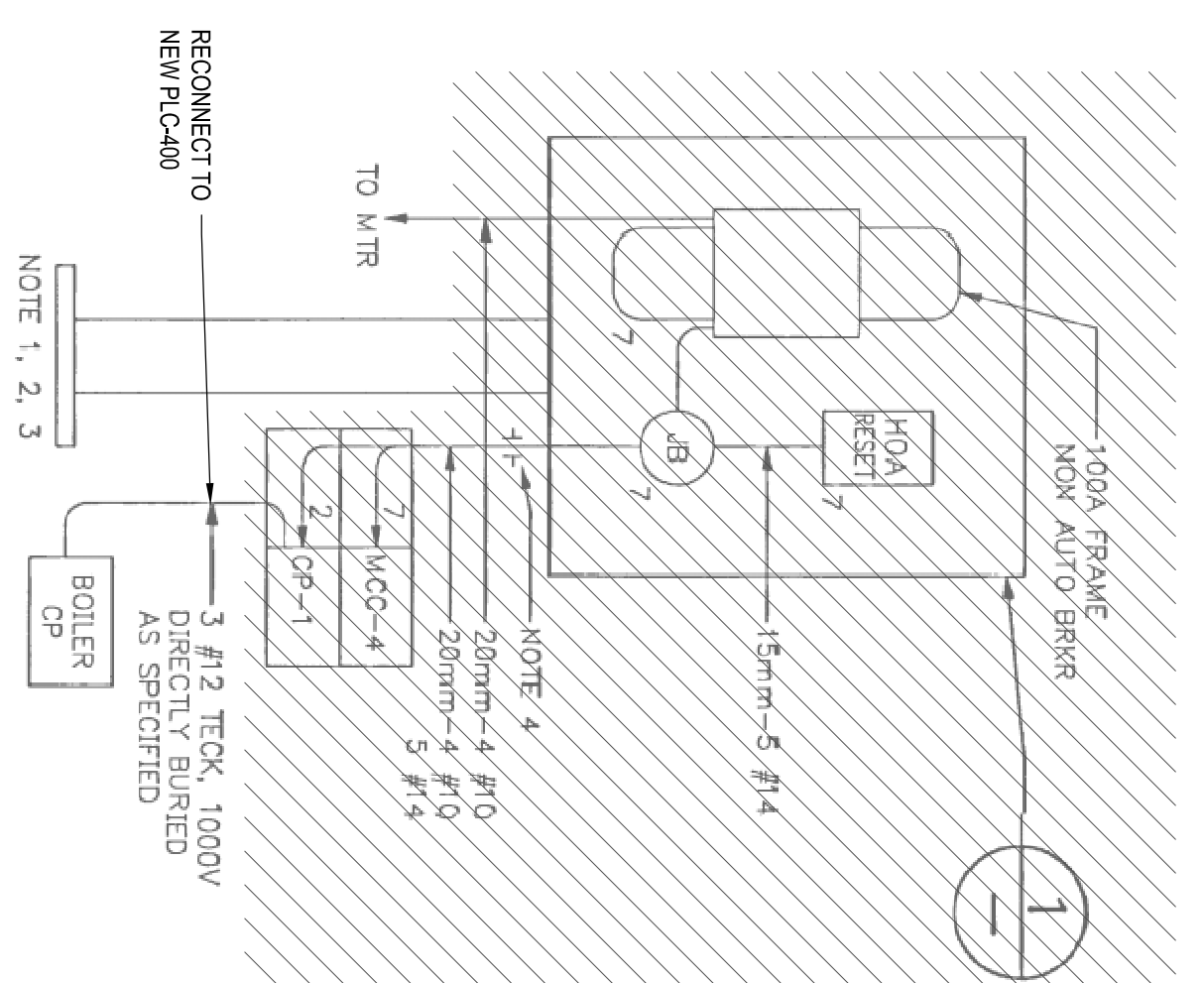
2 E3



LEVEL REGULATOR HANGER

(HOT DIP GALVANIZED)

5

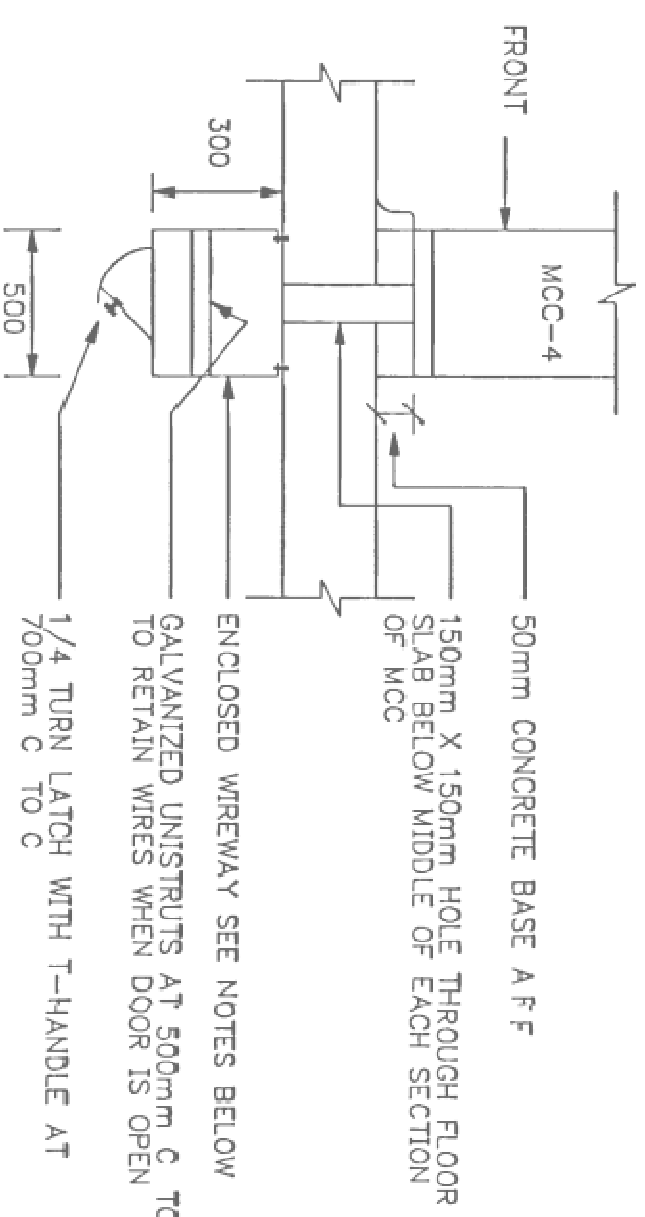


GAS BOOSTER

WIRING DETAIL

CS DWG E4

3 E3



WIREWAY

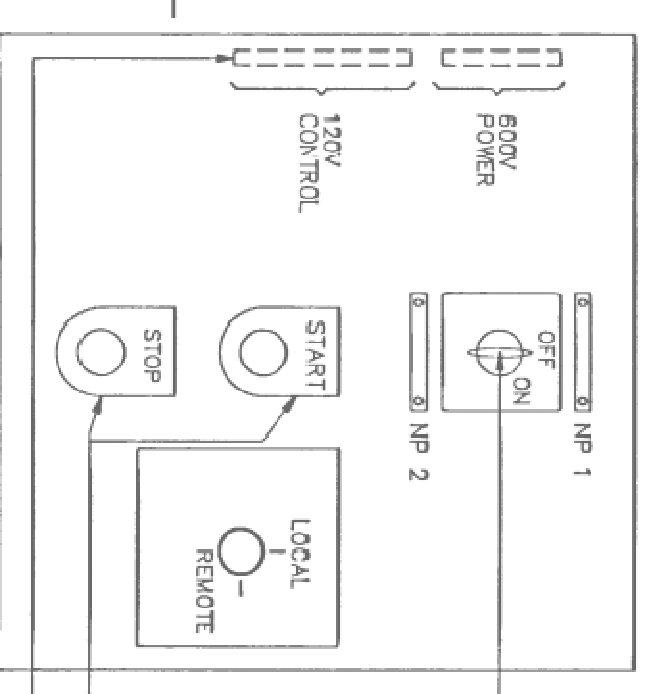
6 E3

- NOTES:**
- 1) PROVIDE GALVANIZED WIREWAY 2000 X 300 X 500 MADE OF #12 GAUGE STEEL WITH ONE PRIMER & TWO FINISH COATS ON ALL SURFACES ANCHORED TO CEILING BELOW MCC-4 SECTIONS 1-4 AS SHOWN
 - 2) PROVIDE ACCESS OPENINGS IN THE BOTTOM OF WIREWAY WITH HINGED DOORS
 - 3) PROVIDE HOLES IN THE WIREWAY FOR TERMINATION OF CABLES & CONDUITS PROVIDE NON-METALLIC ENTRY PLATES SERVING CABLES TO MAIN BREAKER IN MCC PROVIDE 20% SPARE HOLES WITH PLUGS

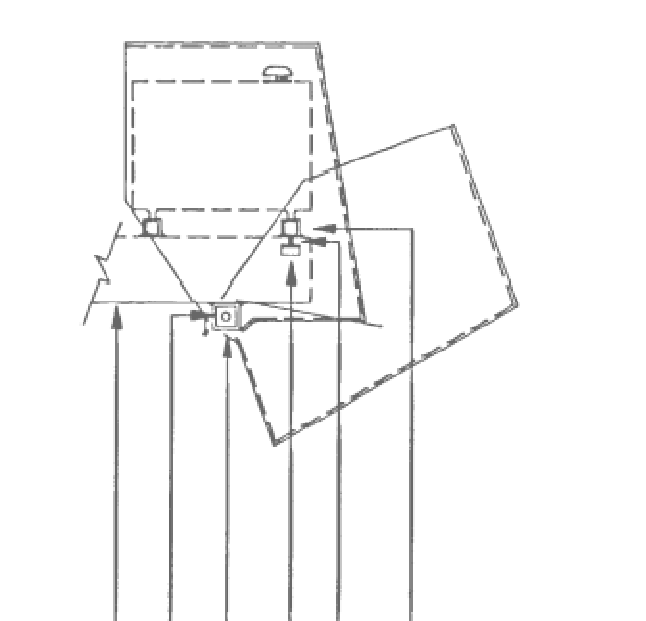
LOCAL PANEL SCHEDULE-SEE SPECS.

TAG NO.	SERVICE	CS	MTD	LOCATION DWG / GRID	NOTES
LP-240	SLUDGE RECIRC PUMP 1	E5	CHANNEL	E3	
LP-260	SLUDGE RECIRC PUMP 2	E5	CHANNEL	E3	
LP-250	SLUDGE TRUCK LOADING PUMP	E5	CHANNEL	E3	
LP-270	HOT WATER PUMP 1	E5	WALL	E3	
LP-280	HOT WATER PUMP 2	E5	WALL	E3	
LP-401	GAS ROOM EXHAUST FAN	E5	CHANNEL	E3	5

- NOTES:**
- 1 ALL EQUIPMENT TO BE EXPLOSIONPROOF
 - 2 COAT ALL NON-ALUMINUM ENCLOSURES WITH BITUMINOUS PAINT & ALLOW TO DRY BEFORE BOLTING TO ALUMINUM PLATE
 - 3 USE ONLY STAINLESS STEEL BOLTS
 - 4 CORERILL SUITABLE HOLES THROUGH FLOOR AND SEAL AS SPECIFIED
 - 5 PROVIDE RAIN HOOD AS DETAILED FOR ALL OUTDOOR LOCAL PANELS AND ANTI-CONDENSATION SPACE HEATER



LOCAL PANEL - FRONT VIEW - N.T.S.



RAIN HOOD DETAIL

- ITEM**
- 1) ENGRAVE LAMICOID NAMEPLATE AS PER LOCAL PANEL SCHEDULE UNDER COLUMN "SERVICE"
 - 2) ENGRAVE LAMICOID NAMEPLATE 600V DISCONNECT SWITCH
 - 3) 600V DISCONNECT SWITCH (PADLOCKABLE IN "ON" & "OFF" POSITION) WITH AUX CONTACTS TO OPEN BEFORE MAIN SWITCH
 - 4) HEAVY DUTY OIL TIGHT PUSHBUTTON
 - 5) TERMINAL BLOCKS WITH MOUNTING RAIL SCREWED TO SUB-PANEL SEE SPECS
 - 6) EXTENDED ALUMINUM TUBING WELDED TO CHANNEL
 - 7) RUBBER BUMPER
 - 8) ALUMINUM "L" BRACKET WELDED TO INSIDE OF HOOD ONE ON EACH SIDE TO STOP HOOD IN CLOSED POSITION
 - 9) 3/8" DIAMETER SS BOLT ON EACH SIDE TO ACT AS A HINGE CHANNEL AS PER DRAWING E7/DETAIL B

LOCAL PANEL DETAIL

7 E3

PREVIOUSLY REMOVED
REMOVED AS PART OF THE
CURRENT SCOPE

DATE: 2018/04/08
No. 1
REVISION: ASBUILT

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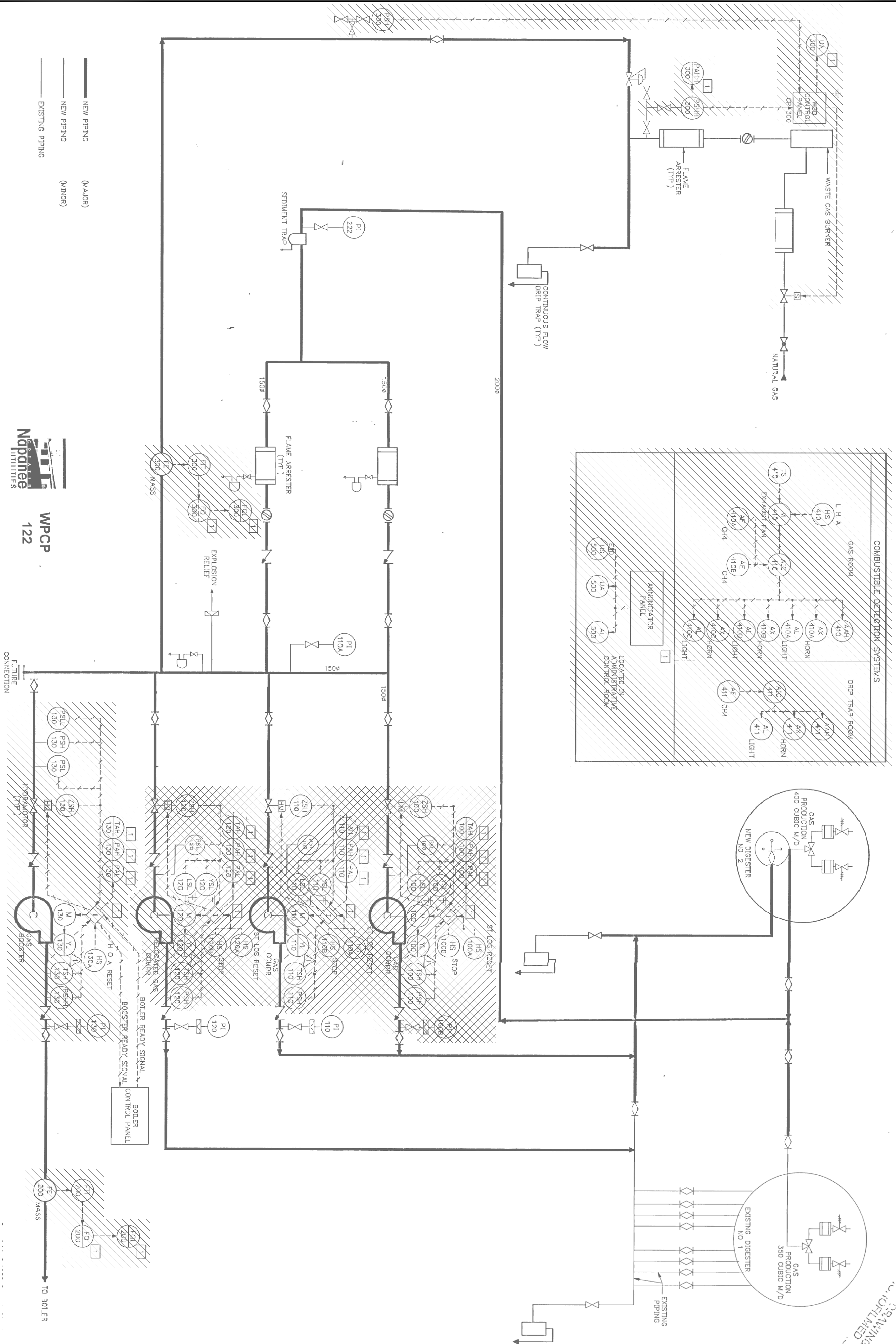
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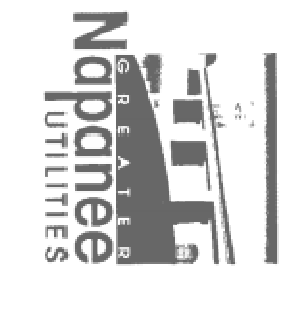
PROJECT:
NAPANEE WPCP
ANAEROBIC DIGESTER
BIOGAS UPGRADES

**EXISTING SLUDGE BUILDING
REMOVALS DETAILS**

SCALE: AS SHOWN
N.T.S.
DESIGNED BY: J.B.
DATE: 2017/10/02
DRAWING NO.: E5.5
CHECKED BY: A.W.



——— NEW PIPING (MAJOR)
 ——— NEW PIPING (MINOR)
 ——— EXISTING PIPING



WPCP
122

REFER TO PROCESS FOR PIPING AND EQUIPMENT REMOVALS

[Cross-hatched box] PREVIOUSLY REMOVED
 [Hatched box] REMOVED AS PART OF THE CURRENT SCOPE

DATE	NO.	REVISION
2018/04/08	1	AS-BUILT

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Greater Napanee
 WATER SERVICES DIVISION

PROJECT:
 NAPANEE WPCP
 ANAEROBIC DIGESTER
 BIOGAS UPGRADES

TITLE:
 EXISTING SLUDGE BUILDING
 REMOVALS DIGESTER GAS P&ID

SCALE	AS SHOWN
N.T.S.	1/16"
DESIGNED BY:	DATE
J.B.	2017/10/02
DRAWN BY:	DRAWING NO.
K.B.W.	ES.7
CHECKED BY:	M.V.

PREVIOUSLY REMOVED
REMOVED AS PART OF THE
CURRENT SCOPE

DATE	NO.	REVISION
2018/04/08	1	AS-BUILT

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PROJECT:
Greater Napanee
NAPANEE WPCP
ANAEROBIC DIGESTER
BIOGAS UPGRADES

TITLE:
EXISTING SLUDGE BUILDING
REMOVALS CONTROL PANEL &
INSTALLATION DETAIL

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

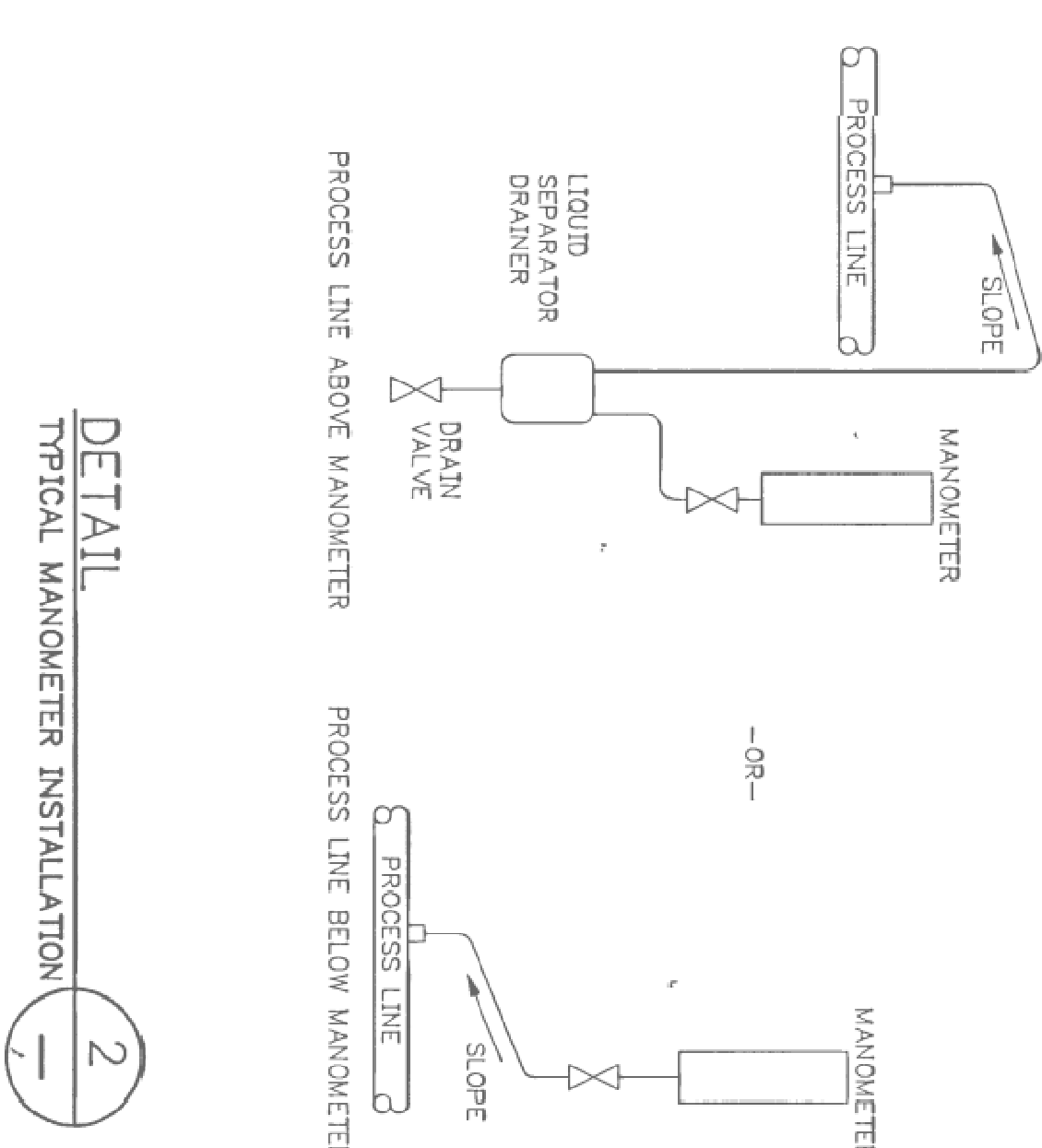
DATE: 2017/10/02

DESIGNED BY: J.B.

DRAWING NO.: E5.8

CHECKED BY: M.V.

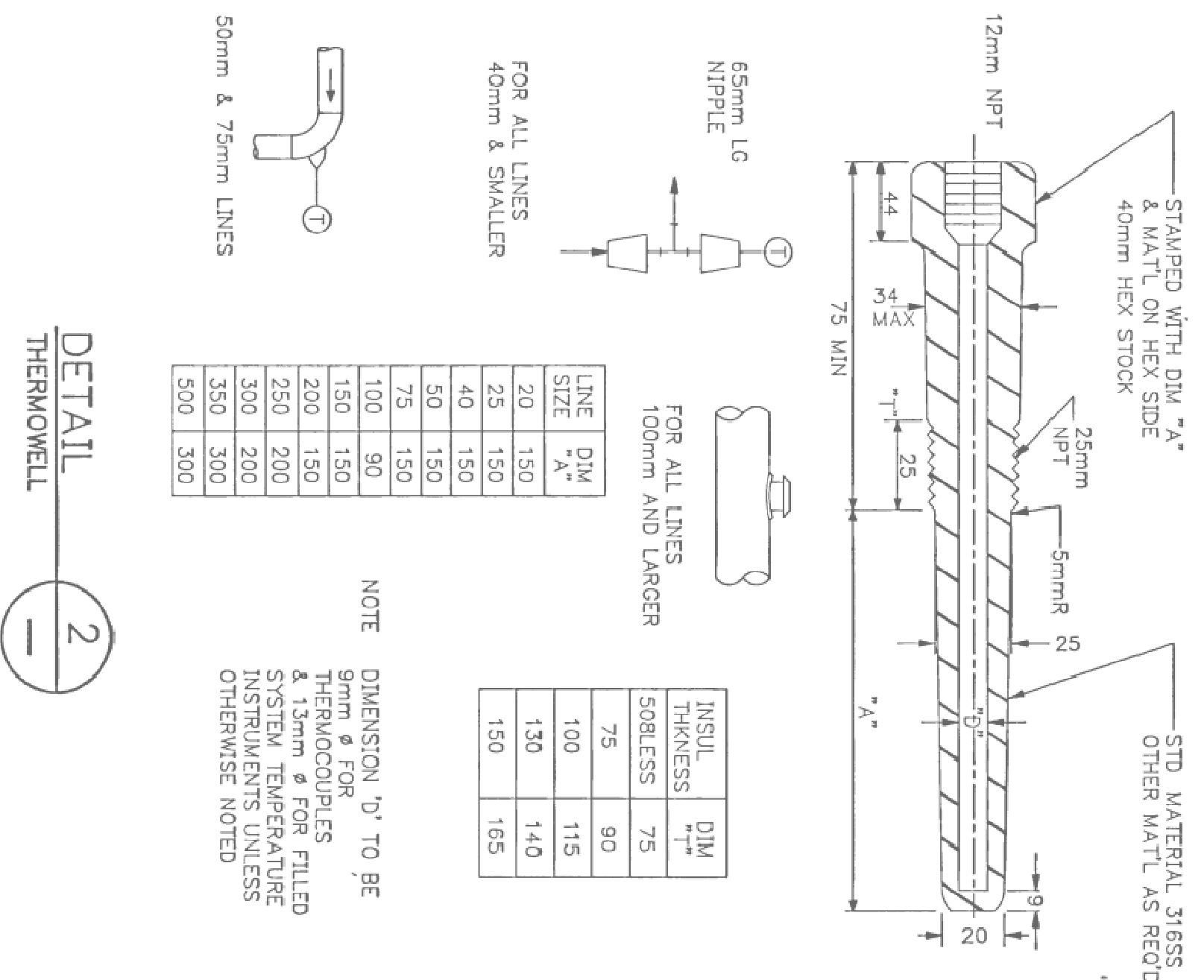
1/11/2018



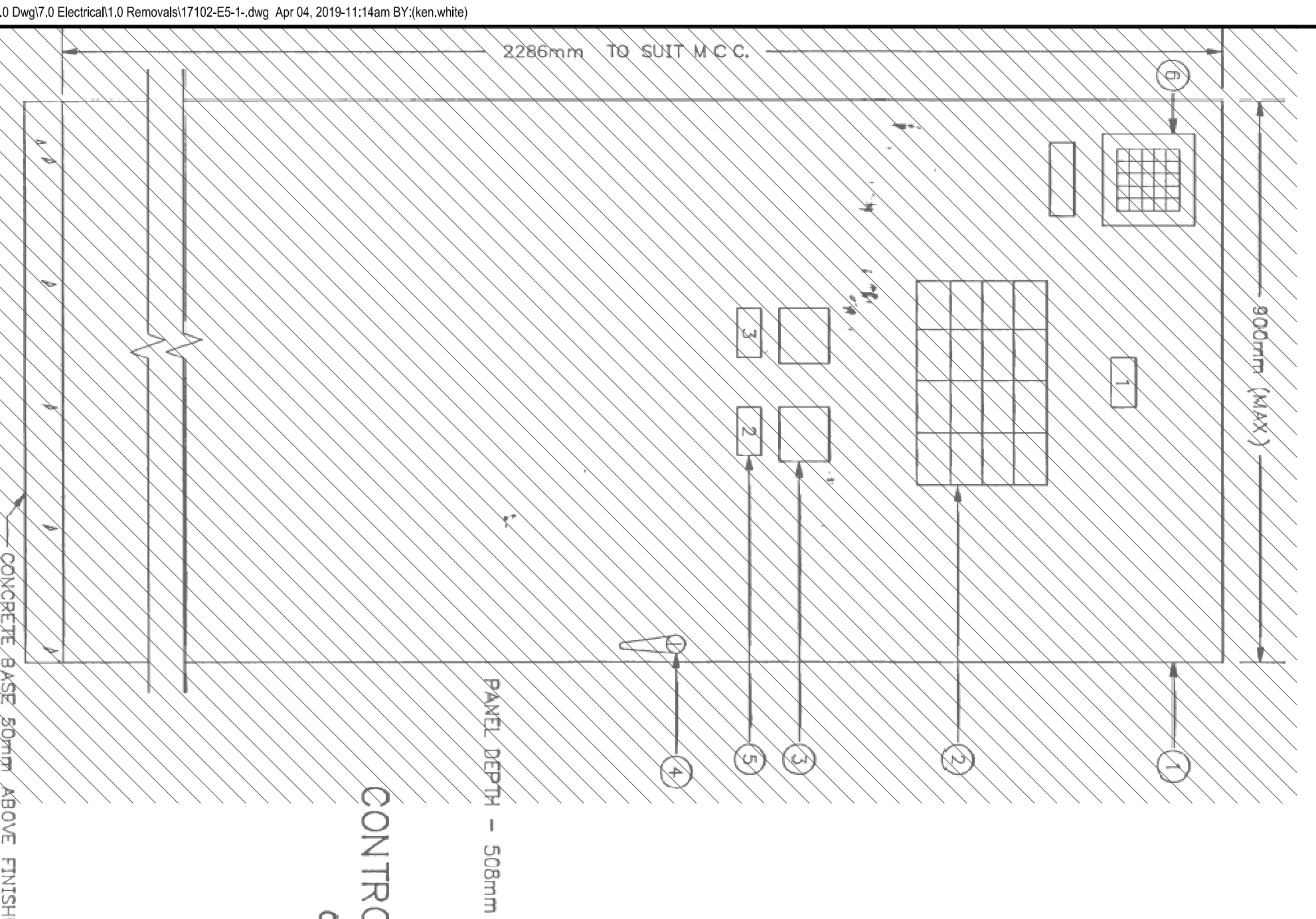
DETAIL 2
TYPICAL MANOMETER INSTALLATION

LINE SIZE	DIM "A"	INSUL THICKNESS	DIM "B"
20	150	75	90
25	150	100	115
40	150	130	140
50	150	150	165
75	150	100	115
100	90	100	115
150	150	150	200
200	150	200	200
250	150	250	200
300	200	300	200
350	300	350	300
500	300	500	300

NOTE
DIMENSION 'D' TO BE
9mm Ø FOR
THERMOCOUPLES
& 12mm Ø FOR FILLED
SYSTEM THERMALS
UNLESS OTHERWISE
OTHERWISE NOTED



DETAIL 1
MASS FLOW SENSOR



CONTROL PANEL
CP-1

- EQUIPMENT SCHEDULE**
- SUPPORT COMPLETE WITH RELAYS, TERMINAL BLOCKS AND ASSOCIATED HARDWARE
 - ALARM ANNUNCIATOR
 - INSTRUMENT INDICATOR
 - MECHANICAL LOCKABLE HANDLE
 - LAMACOID NAMEPLATE
 - WARNING ALARM
- NAME PLATE SCHEDULE**
- N.P NAME PLATE TO READ
- CONTROL PANEL CP-1
 - WASTE GAS BURNER GAS FLOW FOI-200
 - BOILER DIESTER GAS FLOW FOI-200

ANNUNCIATOR ALARM SCHEDULE

ROW	COLUMN	ALARM	TAG#	DESCRIPTION
1	1	A	PAL-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
1	1	B	PAH-100	GAS COMPRESSOR M-100 HIGH DISCHARGE PRESSURE
1	1	A	TAH-100	GAS COMPRESSOR M-100 HIGH DISCHARGE TEMPERATURE
1	2	A	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
1	2	B	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
1	2	A	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
1	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
1	3	A	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
1	3	B	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
1	3	A	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
1	3	B	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
1	4	A	PAH-130	GAS COMPRESSOR M-130 LOW SUCTON PRESSURE
1	4	B	PAH-130	GAS COMPRESSOR M-130 LOW SUCTON PRESSURE
1	4	A	TAH-130	GAS COMPRESSOR M-130 HIGH DISCHARGE TEMPERATURE
1	4	B	TAH-130	GAS COMPRESSOR M-130 HIGH DISCHARGE TEMPERATURE
2	1	A	LAH-400	SUMP PUMP LEVEL OVERFLOW
2	1	B	LAH-400	SUMP PUMP LEVEL OVERFLOW
2	2	A	PAH-300	WASTE GAS BURNER LINE BLOCKAGE
2	2	B	PAH-300	WASTE GAS BURNER COMMON ALARM
2	2	A	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	B	PAH-100	GAS COMPRESSOR M-100 HIGH DISCHARGE PRESSURE
2	2	A	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	B	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	A	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	A	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	A	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	B	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	A	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	B	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	A	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	B	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	A	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	A	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	A	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	B	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	A	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	B	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	A	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	B	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	A	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	A	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	A	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	B	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	A	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	B	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	A	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	B	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	A	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	A	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	A	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	B	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	A	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	B	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	A	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	B	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	A	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	A	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	A	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	B	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	A	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	B	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	A	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	B	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	A	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	A	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	A	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	B	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	A	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	B	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	A	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	B	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	A	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	A	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	A	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	B	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	A	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	B	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	A	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	B	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
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2	2	B	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	A	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
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2	2	B	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
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2	2	A	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
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2	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
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2	2	B	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
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2	2	A	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	B	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	A	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	A	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	A	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	B	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	A	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	B	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	A	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
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2	2	A	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	A	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	B	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
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2	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
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2	2	B	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	A	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	B	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
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2	2	B	PAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE PRESSURE
2	2	A	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-120	GAS COMPRESSOR M-120 HIGH DISCHARGE TEMPERATURE
2	2	A	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	B	TAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE TEMPERATURE
2	2	A	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	B	PAH-110	GAS COMPRESSOR M-110 HIGH DISCHARGE PRESSURE
2	2	A	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	B	PAH-100	GAS COMPRESSOR M-100 LOW SUCTON PRESSURE
2	2	A	PAH-120	GAS COMPRESSOR M-12