



HIGHPOINT PARK STATION

SCALE: 1"=200'
LAT: 39.288519' LONG: -84.564587'

PAGE #	DRAWING NUMBER	SHEET DESCRIPTION
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2	EP7-4000	DRAWING INDEX
3	EP7-4001	LEGEND SHEET
4	EP7-4002	LEGEND SHEET
5	EP7-4004	FE-01 PIPING AND INSTRUMENTATION DIAGRAM
6	EC7-8001	FE-01 DRAWING INDEX
7	EC7-8101	FE-01 GENERAL NOTES
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9	EC7-8102	FE-01 STRUCTURAL SKID DETAILS SHEET 1 OF 3
10	EC7-8103	FE-01 STRUCTURAL SKID DETAILS SHEET 2 OF 3
11	EC7-8104	FE-01 STRUCTURAL SKID DETAILS SHEET 3 OF 3
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13	EM7-5100	FE-01 PLAN & SECTIONS FE-01 FLOW METER SKID
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15	12.03.75.502.01.501.2	ISOMETRIC
16	12.03.75.502.01.501.3	ISOMETRIC
17	12.03.75.502.01.501.4	ISOMETRIC
18	EP7-6000	FE-01 FLOW METER SKID DRAWING INDEX
19	EP7-6100	FE-01 FLOW METER SKID HAZARDOUS LOCATION PLAN
20	EP7-6300	FE-01 FLOW METER SKID AC-2 SKID LAYOUT DRAWING
21	EP7-6400	FE-01 FLOW METER SKID AC CONDUIT PLAN
22	EP7-6401	FE-01 FLOW METER SKID GROUNDING PLAN
23	EP7-6500	FE-01 FLOW METER SKID AC-2 BOX WIRING DIAGRAM
24	20M0596-EE-6001	FE-01 ELECTRICAL INSTRUMENT CABLE & CONDUIT SCHEDULE
25	EP7-7300	FE-01 FLOW METER SKID DC-1 BOX LAYOUT DRAWING
26	EP7-7400	FE-01 FLOW METER SKID DC CONDUIT PLAN
27	EP7-7500	FE-01 FLOW METER SKID DC-1 BOX WIRING DIAGRAM
28	EP7-7501	FE-01 FLOW METER SKID LOOP DIAGRAM
HEATER		
29	COU10071	6 LATERAL 2 PASS COIL FOR 7.0 M BTU/HR LINE HEATER
30	LNTR0062-P&D	HTR-102 7.0 MM BTU/HR INDIRECT HEATER PAID
31	LNTR0062	7.0 MM BTU/HR INDIRECT HEATER GENERAL ARRANGEMENT - 1
32	LNTR0062	7.0 MM BTU/HR INDIRECT HEATER GENERAL ARRANGEMENT - 2
33	LNTR0062	7.0 MM BTU/HR INDIRECT HEATER GENERAL ARRANGEMENT - 3
34	LNTR0062	7.0 MM BTU/HR INDIRECT HEATER GENERAL ARRANGEMENT - 4
35	LNTR0062	7.0 MM BTU/HR INDIRECT HEATER GENERAL ARRANGEMENT - 5
36	LNTR0062	7.0 MM BTU/HR INDIRECT HEATER GENERAL ARRANGEMENT - 6
37	LNTR0062	7.0 MM BTU/HR INDIRECT HEATER GENERAL ARRANGEMENT - 7
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40	7175-201-001	PN2 - CONTROL VALVE SKID CV-103 & CV-104
41	7175-202-001	PN2 - INSTRUMENT SUPPLY SYSTEM
42	7175-203-001	STRUCTURAL SKID LAYOUT
43	7175-203-002	STRUCTURAL DRAWING PANEL LAYOUT
44	7175-201-001	STRUCTURAL COMPONENT DETAILS
45	7175-201-002	STRUCTURAL TUBING SUPPORT & FILTER ROLE DETAILS
46	7175-200-001	MECHANICAL SKID LAYOUT
47	7175-200-002	MECHANICAL SKID SECTIONS
48	7175-700-001	MECHANICAL SKID DETAIL (1)
49	7175-700-002	MECHANICAL SKID DETAIL (2)
50	7175-700-003	MECHANICAL INSTRUMENT PANEL DETAIL
51	7175-1000-100	HAZARDOUS LOCATION - FLOW CONTROL SKID
52	7175-1000-200	GROUND PLAN - FLOW CONTROL SKID
53	7175-1000-100	DC CONDUIT LAYOUT - FLOW CONTROL SKID
54	7175-1000-110	DC JUNCTION BOX LAYOUT - "SUB B07"
55	7175-1000-111	DC JUNCTION BOX LAYOUT - "SUB B04"
56	7175-1400-100	LOOP DIAGRAM - FLOW CONTROL SKID
57	7175-1	MECH BOM
58	7175-2	STRUCTURAL BOM

59	7175-500-001	PA-105 COVER SHEET
60	7175-500-001	LAUNCHER STRUCTURAL LAYOUT
61	7175-501-001	GRATING DETAIL
62	7175-501-002	STRUCTURAL DETAILS
63	7175-600-001	LAUNCHER MECHANICAL SKID LAYOUT
64	7175-700-001	SPOOL DETAIL (1)
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66	DM1-2011	GUIDE BAR DETAILS
67	7175-1	MECH BOM
68	7175-2	STRUCTURAL BOM
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69	PHS-G-000-000193	PIPE SUPPORTS
BUILDING		
70	204212-1	BOCH DIESEL CLASSIFICATION BUILDING
71	204212-2	BOCH DIESEL CLASSIFICATION BUILDING
72	204212-3	BOCH DIESEL CLASSIFICATION BUILDING
73	204212-4	BOCH DIESEL CLASSIFICATION BUILDING
74	204212-5	BOCH DIESEL CLASSIFICATION BUILDING
75	204212-6	BOCH DIESEL CLASSIFICATION BUILDING

ISSUED FOR CONSTRUCTION

DATE: 10/01/2020
 BY: RDC, JBF (CAB)
 CHECKER INITIALS: JBF
 PROJECT NUMBER: 1801115
 DRAWING BY: MAS
 STATION ID: S0967/01
 DATE: 10/01/2020
 CHECKER INITIALS: CAB

DATE	DESCRIPTION	BY	CHK	APP	DESCRIPTION
10/01/2020	ISSUED FOR CONSTRUCTION	RDC, JBF	CAB		REVISIONS FOR CONSTRUCTION

DATE	DESCRIPTION	BY	CHK	APP	DESCRIPTION

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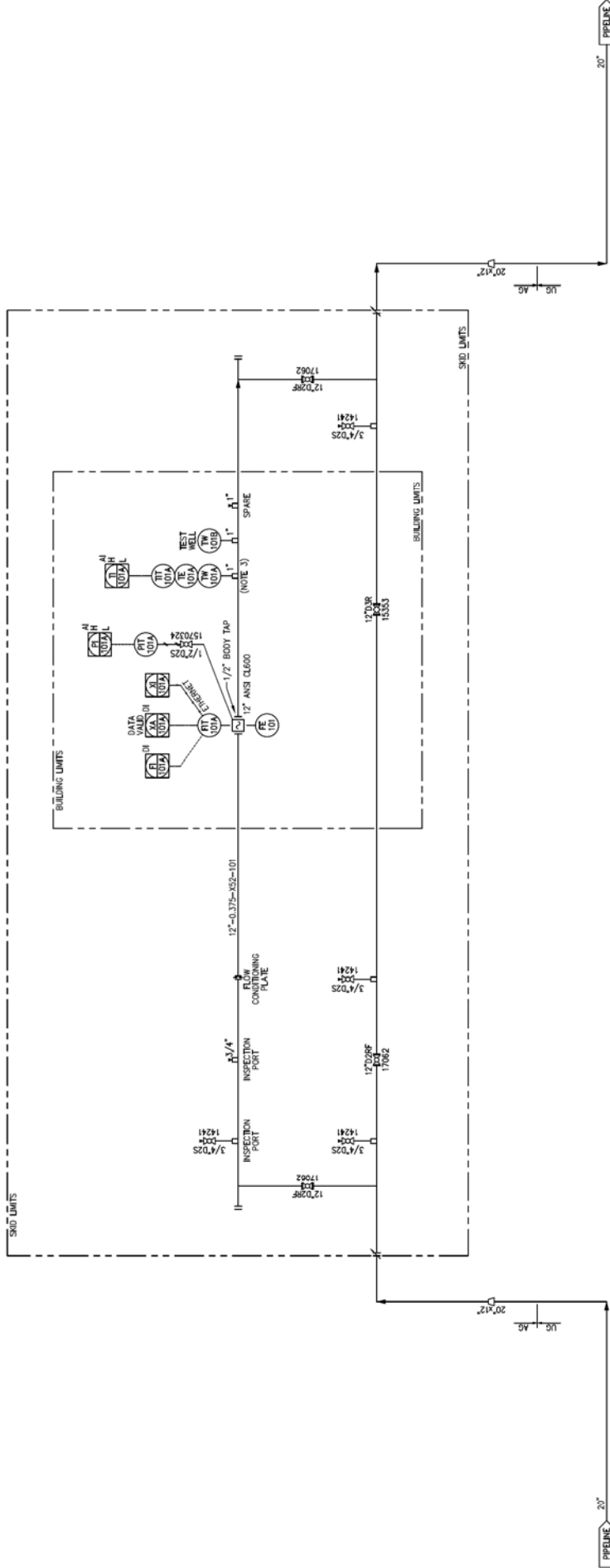
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DATE	DESCRIPTION	BY	CHK	APP	DESCRIPTION
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FLOW METER (FE-101)
 DESIGN PRESSURE 1000 PSIG
 DESIGN TEMPERATURE 465-570 FSG
 DESIGN PRESSURE -20 TO 120 DEG. F



NOTES:
 1. REFER TO VENDOR EQUIPMENT DRAWINGS FOR ADDITIONAL DETAIL.
 2. ALL WELDS SHALL BE MADE UNDER CONTROLLED CONDITIONS MUST BE APPROVED BY THE ENGINEERING DEPARTMENT.
 3. FIRST METER RUN TAP SHALL BE LOCATED AT LEAST 20 FROM THE METER OUTLET FLANGE WELD AND NO FARTHER THAN 50 FROM THE DOWNSTREAM METER FLANGE FACE PER ADA-3.

REFERENCE:

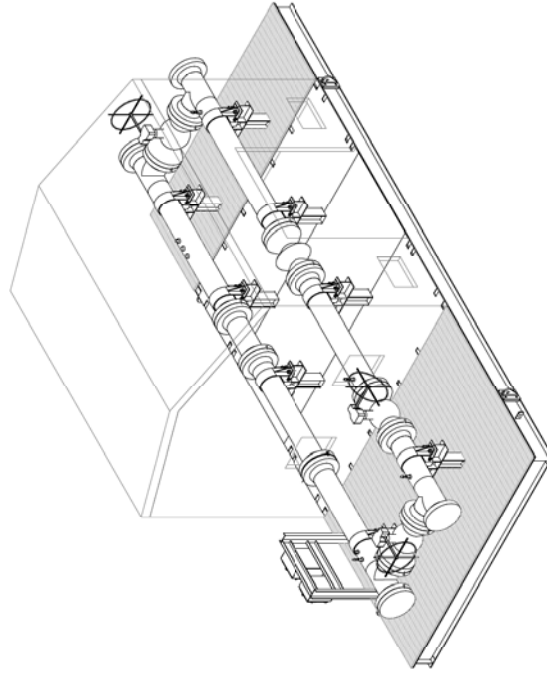
NO.	DATE	DESCRIPTION	BY	CHK	APPD
0	04/21/20	ISSUED FOR CONSTRUCTION	MG	PLA	MFC

GENERGY
 TRUSTED PARTNER SOLUTIONS
 PO BOX 455
 NEW BRUNSWICK, NJ 08903
 PHONE 908-429-4200
 WWW.GENERGY.COM

GENERGY
 C-350 PIPELINE PROJECT
 HIGHPOINT PARK STATION
 GENERGY PROJECT NO: 7174
 PIPING AND INSTRUMENTATION DIAGRAM
 FE-101 FLOW METER SKID

DATE NONE
 REV. NO. 20M/H008
 SHEET NO. EP7-4204


CENERGY
C-350 PIPELINE PROJECT
HIGHPOINT PARK STATION
CENERGY PROJECT NO: 7174
FE-101 FLOW METER SKID CIVIL/STRUCTURAL PACKAGE
 4/22/2020



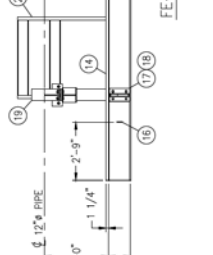
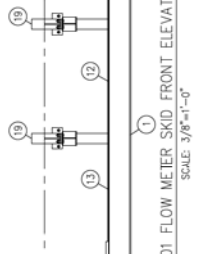
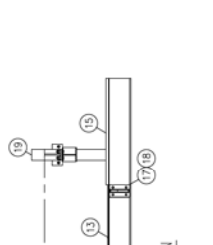
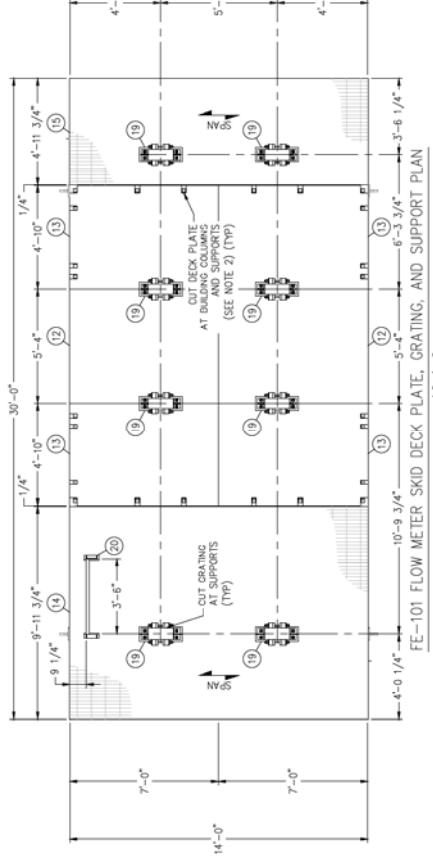
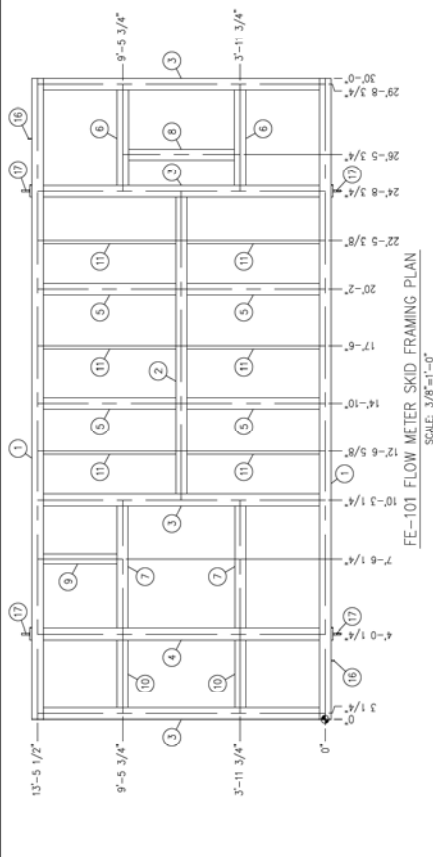
FE-101 FLOW METER SKID ISOMETRIC
 SCALE: 3/8"=1'-0"

FE-101 FLOW METER SKID - CIVIL/STRUCTURAL DRAWING INDEX				
DWG #	SIZE	TITLE	REV	DATE
EC7-8001	ARCH D	DRAWING INDEX	0	4/22/2020
EC7-8101	ARCH D	GENERAL NOTES	0	4/22/2020
EC7-8701	ARCH D	STRUCTURAL SKID LAYOUT	0	4/22/2020
EC7-8702	ARCH D	STRUCTURAL SKID DETAILS SHEET 1 OF 3	0	4/22/2020
EC7-8703	ARCH D	STRUCTURAL SKID DETAILS SHEET 2 OF 3	0	4/22/2020
EC7-8704	ARCH D	STRUCTURAL SKID DETAILS SHEET 3 OF 3	0	4/22/2020

ISSUED FOR CONSTRUCTION

NOTES:		REFERENCE:		 CENERGY ENERGY SOLUTIONS 100 BOX 459 10000 HIGHWAY 101 PHONE 3847-4250 WWW.CENERGY.COM		C-350 PIPELINE PROJECT HIGHPOINT PARK STATION CENERGY PROJECT NO: 7174		CIVIL/STRUCTURAL SKID DRAWING INDEX		FORM NO. 20M4058 EC7-8001		ISSUE NO. 0	
NO. DATE DESCRIPTION 0 04/22/20 ISSUED FOR CONSTRUCTION		BY: JAS MC MIC		CHK: JAS MC MIC		DRAWN BY: JAS MC MIC		CHECKED BY: JAS MC MIC		APPROVED BY: JAS MC MIC		DATE: 4/22/2020	

PARTS LIST		
ITEM	QTY	DESCRIPTION
1	2	W12x45 WIDE FLANGE BEAM, ASTM A992, GR 50
2	1	M-5 3/16"
3	4	W12x45 WIDE FLANGE BEAM, ASTM A992, GR 50
4	1	W12x45 WIDE FLANGE BEAM, ASTM A992, GR 50
5	4	W8x24 WIDE FLANGE BEAM, ASTM A992, GR 50
6	2	W8x24 WIDE FLANGE BEAM, ASTM A992, GR 50
7	2	W6x15 WIDE FLANGE BEAM, ASTM A992, GR 50
8	1	W6x15 WIDE FLANGE BEAM, ASTM A992, GR 50
9	1	W6x15 WIDE FLANGE BEAM, ASTM A992, GR 50
10	2	W6x15 WIDE FLANGE BEAM, ASTM A992, GR 50
11	2	W6x15 WIDE FLANGE BEAM, ASTM A992, GR 50
12	2	5/16" DIAMOND PL. ASTM A36, 4" x 11", WIDE 7'-0" LONG (SEE NOTE 3)
13	4	5/16" DIAMOND PL. ASTM A36, 4" x 11", WIDE 7'-0" LONG (SEE NOTE 3)
14	2	1 1/4" x 3/16" SEER BAR GR5.5, TYPE W-19-4 ASTM A1011 CS TYPE B [1/4"]
15	2	1 1/4" x 3/16" SEER BAR GR5.5, TYPE W-19-4 ASTM A1011 CS TYPE B [1/4"]
16	2	PLATE, 5' x 3' x 1/2" THK, W/9/16" THRU HOLES (2 PLACES) - BREAK CORNERS
17	4	BOLT ON LIFTING LUG FOR 3" STRUCTURAL SKID, 10" x 4 1/2" x 1" THK PLATE, ASTM A572 GR50 (LUG), 7" x 11 7/16" x 1" THK PLATE, W/1 3/16" THRU HOLES (4 PLACES) - BREAK CORNERS (LUG), ASTM A572 GR50 (BACKING PLATE)
18	4	PLATE, 7' x 11 7/16" x 1" THK, W/1 3/16" THRU HOLES (4 PLACES) - BREAK CORNERS (1/4"), ASTM A572 GR50, STIFF PLATE, 11 7/16" x 2 1/8" x 1/2" THK, ASTM A36, BREAK CORNERS (1/2")
19	8	1/2" DIA. W/1/4" DIA. DRILLING, ECG 8704
20	1	JUNCTION BOX SUPPORT ASSEMBLY, REF DWG ECT-8704



NO.	DATE	DESCRIPTION	BY	CHK	APPD
0	04/22/20	ISSUED FOR CONSTRUCTION	JAS	ME	MIC

ENERGY
TURNKEY ENERGY SOLUTIONS
PO BOX 659
MAYFIELD HEIGHTS, OH 44130
PHONE 330-143-4200

OHIO REGISTERED PROFESSIONAL ENGINEER
www.ener.com

4/22/20

GENERAL NOTES

EC7-8101

1. FOR ALL STRUCTURAL GENERAL NOTES, SEE DRAWING EC7-8101.

2. FOR LOCATIONS OF DECK PLATE CUTS AT BUILDING COLUMNS, FABRICATOR TO REFER TO THE LATEST STAMPED BUILDING DRAWINGS ISSUED BY STEEL NATION.

3. ALTERNATIVE TO ASTM A36 IS ASTM A786.

ISSUED FOR CONSTRUCTION

ENERGY

C-350 PIPELINE PROJECT
HIGHPOINT PARK STATION
ENERGY PROJECT NO: 7174

CIVIL/STRUCTURAL
FE-101 FLOW METER SKID
STRUCTURAL SKID LAYOUT

DATE: 04/22/20

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

APPROVED FOR CONSTRUCTION

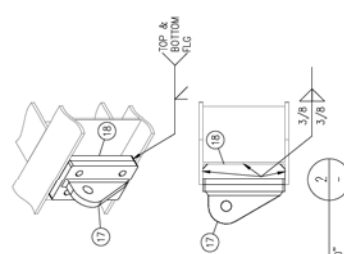
DATE: 04/22/20

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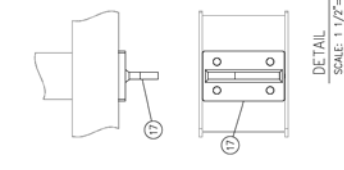
APPROVED FOR CONSTRUCTION

DATE: 04/22/20

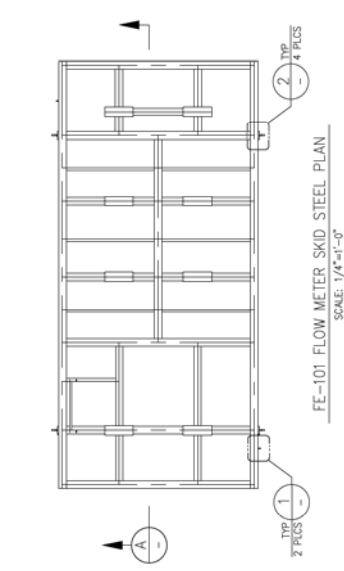
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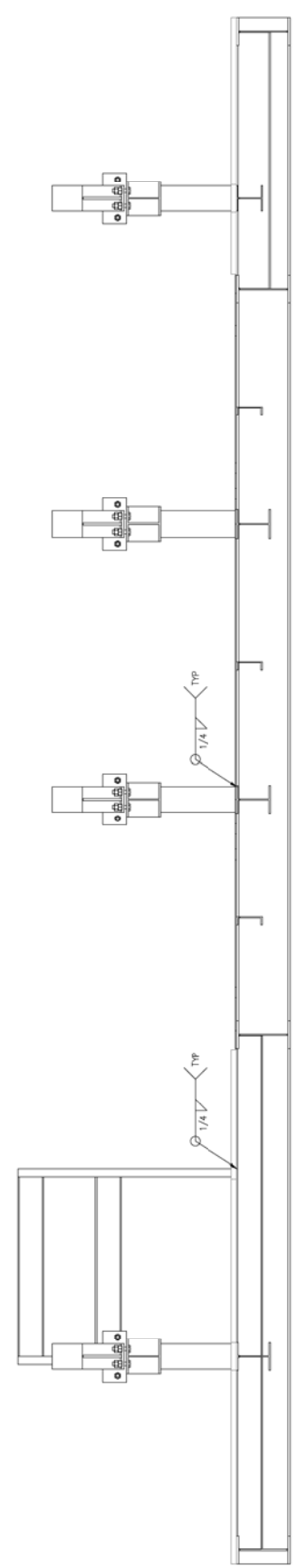
DETAIL
SCALE: 1 1/2"=1'-0"



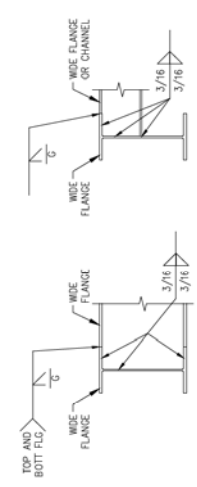
DETAIL
SCALE: 1 1/2"=1'-0"
DO NOT PAINT



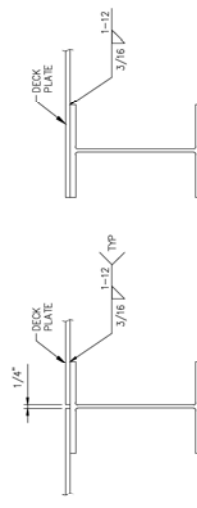
FE-101 FLOW METER SKID STEEL PLAN
SCALE: 3/4"=1'-0"
BECK PLATE & GRATING REQUIRED FOR CLARITY



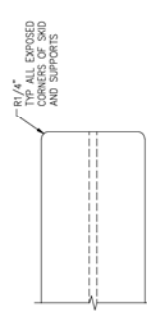
SECTION
SCALE: 1"=1'-0"



TYPICAL WELD DETAIL
SCALE: NONE



TYPICAL DECK PLATE WELD DETAIL
SCALE: NONE

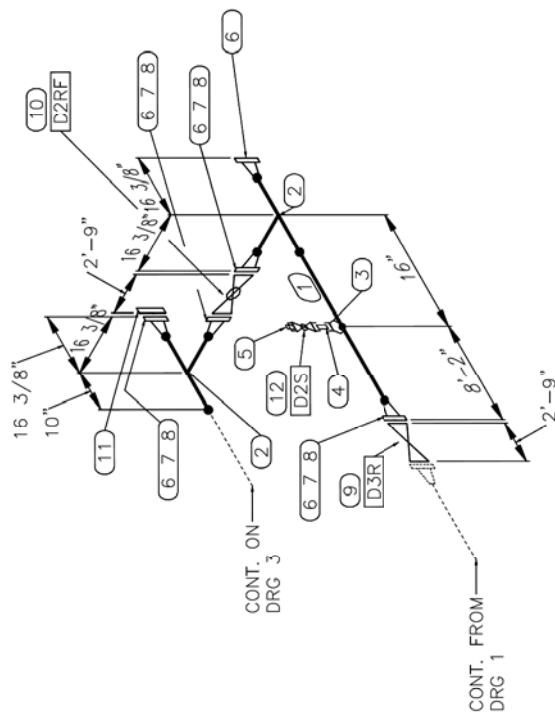


EXPOSED CORNER RADIUS DETAIL
SCALE: NONE

<p>CENERGY TURNKEY ENERGY SOLUTIONS PO BOX 459 1400 W. 14TH ST. MILWAUKEE, WI 53211 PHONE 384-1242/259</p>		<p>CENERGY GENERAL NOTES: C-350 PIPELINE PROJECT HIGHPOINT PARK STATION CENERGY PROJECT NO: 7174</p>			
		<p>CIVIL/STRUCTURAL SKID FE-101 FLOW METER STRUCTURAL SKID DETAILS - SHEET 1 OF 3</p>			
NO.	DATE	DESCRIPTION	BY	CHK	APPD
0	04/22/20	ISSUED FOR CONSTRUCTION	JAS	ME	MJC
<p>ISSUED FOR CONSTRUCTION</p>					
<p>NOTES: 1. FOR CIVIL/STRUCTURAL GENERAL NOTES, SEE DRAWING EC7-8101.</p>		<p>REFERENCE: EC7-8101 GENERAL NOTES</p>			
<p>PROJECT NO: 20M4058 DRAWN BY: ASHWIN SHUKLA DATE: 4/22/20</p>					
<p>PROJECT: CENERGY/DUKES CENTRAL CORRIDOR/CIVIL/20 D418/20M4058/8700 8800 STRUCTURAL SKID DWG/20M4058 EC7 8702.dwg</p>					



BILL OF MATERIAL			QTY
MARK	SIZE	DESCRIPTION	
1	12"	PIPE, 12" NPS X 0.375" W.T., API 5L PSL-2 GR X52	8'2"
2	12X12"	TEE, PIPE, 12" NPS X 0.375" W.T., MSS SP-75, GR 304	2
3	12X3/4"	TOL, 3/4" X 12", CL 3000, ASTM A694, F52, 52000	1
4	3/4"	NIPPLE, 3/4" NPS X 0.154" W.T., ASTM A733, CS, ASTM A106 GR B, SMLS, TBE (3" LG)	1
5	3/4"	PLUG, 3/4"NPS, HEX HEAD, ASME B16.11, ASTM A105	1
6	12"	FLANGE, PIPE, WN, RF, 12"NPS X 0.375" W.T., ASTM A694, ASME B16.5, GR F52, MSS SP-44	5
7	12"	GASKET, SPIRAL WOUND, 12"NPS, CLASS. 600, 1/8" THK, 304 SS-REBON WITH GRAPHITE FILLER, SPINNER RING, CS WEEB RING, ASME B16.20, TYPE E, TO SUIT MSS SP-44 FLANGE	4
8	12"	STUD BOLTS, ASTM A193 GR B7 W/ 2 HEAVY HEX NUTS, ASTM A194 GR 2H, (ASME CL 600 RF FLG) 1 1/4" (9" LG)	80
9	12"	PLUG VALVE, ASME CL 600 RF, (GEAR OP), D3R	1
10	12"	BALL VALVE, ASME CL 600 RF, (GEAR OP), D2RF	1
11	12"	FLANGE, PIPE, BLIND, RF, 12"NPS MSS SP-44, ASTM A105, ASME B16.5	1
12	3/4"	BALL VALVE, 3/4"NPS, THRD, 2000 PSIG, D2S	1



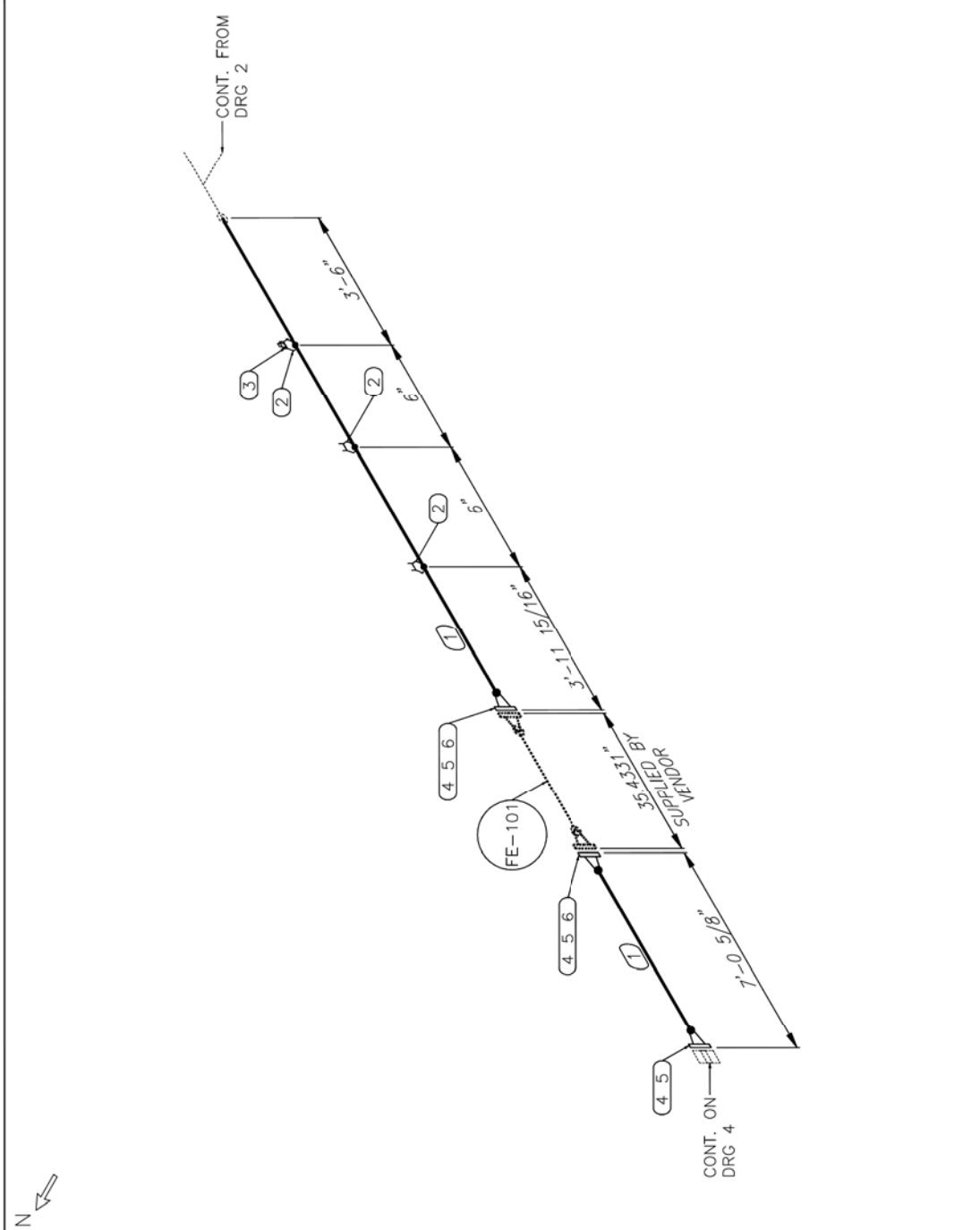
NOTES

- FABRICATOR TO VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
- FABRICATOR TO ADD 1'-0" OF EXTRA PIPE STOCK AT EACH FIELD WELD.
- FW DENOTES FIELD WELD.
- FABRICATOR TO PROVIDE HYDROSTATIC VENT AND DRAIN CONNECTIONS.

REFERENCE

NO.	DATE	DESCRIPTION
0	4/7/20	ISSUED FOR CONSTRUCTION

<p>ENERGY TANKWAY ENERGY SOLUTIONS PO BOX 405 MUSKOGEE, AL 36555 PHONE 334-342-6200</p>	<p>M&E ENGINEERS ARCHITECTS WWW.MEFL.COM</p>	<p>ENERGY</p>
		<p>C-350 PIPELINE PROJECT HIGHPOINT PARK STATION ENERGY PROJECT NO: 7174</p>
<p>DATE: 4/15/20 DRAWING NO: 2006058</p>		<p>LINE NO. 12 -0.375-452-101</p>
<p>ISSUED FOR CONSTRUCTION</p>		<p>REVISION NO. 0</p>



BILL OF MATERIAL			QTY
MARK	SIZE	DESCRIPTION	
1	12"	PIPE, 12" NPS X 0.375" W.T., API 5L PSL-2 GR X52	14'0"
2	12X1"	TOL 152000, 1" X 12", CL 3000, ASTM A694, F52,	3
3	1"	PLUG, 1" NPS, HEX HEAD, ASME B16.11, ASTM A105	1
4	12"	FLANGE, PIPE, WN, RF, 12"NPS X 0.375" W.T., ASTM A694, ASME B16.5, GR F52, MSS SP-44	3
5	12"	GASKET, SPIRAL WOUND, 12"NPS, CLASS 600, 1/8" THK, 304 SS RIBBON WITH GRAPHITE FILLER, SS INNER RING, CS OUTER RING, ASME B16.20, TYPE E, TO SUIT MSS SP-44 FLANGE	3
6	12"	STUD BOLTS: ASTM A193 GR B7 W/ 1/2 HEAVY HEX NUTS, ASTM A194 GR 2H, (ASME CL 600 RF FLG) 1 1/4" (9 LG)	40

ENERGY
TURNKEY ENERGY SOLUTIONS
PO BOX 405
10000 W. 110TH ST
PHOENIX, AZ 85044-0405

DMC
DYNAMIC MODELING CORPORATION
www.dmcinc.com

DATE: 04/15/10 DRAWING NO: 2006058

ENERGY

C-350 PIPELINE PROJECT
HIGHPOINT PARK STATION
GENERATE PROJECT NO: 7174

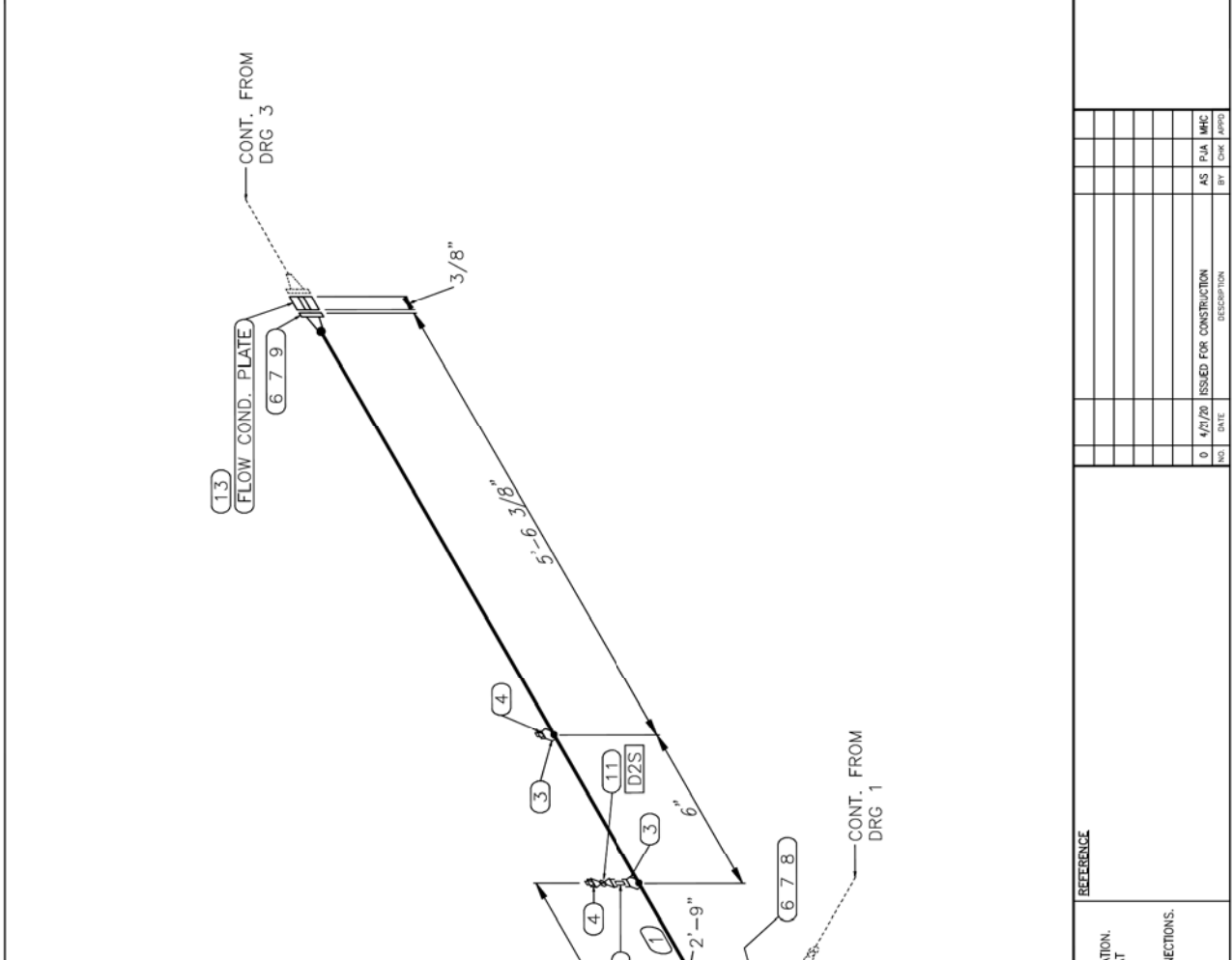
PIPING
ISOMETRIC
LINE NO. 12-0.375-A52-101
SHEET NO. 12-0.375-A52-101-SHT-3 TOTAL SHEETS 0

REFERENCE

1. FABRICATOR TO VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
2. FABRICATOR TO ADD 1'-0" OF EXTRA PIPE STOCK AT EACH FIELD WELD.
3. FW DENOTES FIELD WELD.
4. FABRICATOR TO PROVIDE HYDROSTATIC VENT AND DRAIN CONNECTIONS.

NO.	DATE	DESCRIPTION	BY	CHK	APPD
0	4/1/10	ISSUED FOR CONSTRUCTION	AS	PLA	MFC

BILL OF MATERIAL			QTY
MARK	SIZE	DESCRIPTION	
1	12"	PIPE, 12" NPS X 0.375" W.T., API 5L PSL-2 GR X52	60'
2	12X12"	TEE, PIPE, 12" NPS X 0.375" W.T., MSS SP-75, GR. 304	1
3	12X3/4"	TOL. 3/4" X 12", CL 3000, ASTM A694, F52, 52000	2
4	3/4"	PLUG, 3/4"NPS, HEX HEAD, ASME B16.11, ASTM A105	2
5	3/4"	NIPPLE, 3/4" NPS X 0.154" W.T., ASTM A733, CS, ASTM A106 GR B, SMLS, TBE (3" LG)	1
6	12"	FLANGE, PIPE, WN, RF, 12"NPS X 0.375" W.T., ASTM A694, ASME B16.5, GR F52, MSS SP-44	3
7	12"	GASKET, SPIRAL WOUND, 12"NPS, CLASS 600, 1/8" THK, 304 SS-REBON WITH GRAPHITE FILLER, SS-REBON, CS WEEB RING, ASME B16.20, TYPE E, TO SUIT MSS SP-44 FLANGE	3
8	12"	STUD BOLTS, ASTM A193 GR B7 W/ 2 HEAVY HEX NUTS, ASTM A194 GR 2H, (ASME CL 600 RF FLG) 1 1/4" (9" LG)	40
9	12"	STUD BOLTS, ASTM A193 GR B7 W/ 2 HEAVY HEX NUTS, ASTM A194 GR 2H, (ASME CL 600 RF FLG) 1 1/4" (9 3/4" LG)	20
10	12"	FLANGE, PIPE, BLIND, RF, 12"NPS MSS SP-44, ASTM A105, ASME B16.5	1
11	3/4"	BALL VALVE, 3/4"NPS, THRD, 2000 PSIG, D2S	1
12	12"	BALL VALVE, ASME CL 600 RF, (GEAR OP), D2RF	1
13	12"	FLOW CONDITIONING PLATE, 3/8" THK	1



NO.	DATE	ISSUED FOR CONSTRUCTION	DESCRIPTION	BY	CHK	APPD
0	4/7/20	ISSUED FOR CONSTRUCTION		AS	PJA	MFC

REFERENCE	
1.	FABRICATOR TO VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
2.	FABRICATOR TO ADD 1'-0" OF EXTRA PIPE STOCK AT EACH FIELD WELD.
3.	FW DENOTES FIELD WELD.
4.	FABRICATOR TO PROVIDE HYDROSTATIC VENT AND DRAIN CONNECTIONS.

NOTES	
1.	FABRICATOR TO VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
2.	FABRICATOR TO ADD 1'-0" OF EXTRA PIPE STOCK AT EACH FIELD WELD.
3.	FW DENOTES FIELD WELD.
4.	FABRICATOR TO PROVIDE HYDROSTATIC VENT AND DRAIN CONNECTIONS.

 ENERGY TANKWY ENERGY SOLUTIONS PO BOX 405 10000 W. 100TH AVE PHONE 304-412-6200	 MFC MFC ENGINEERING CONSULTING INC. (U.S.) WWW.MFC-USA.COM	PROJECT NO. 2006058	SHEET NO. 12-0.375-A52-101	REVISION NO. 0
		C-350 PIPELINE PROJECT HIGHPOINT PARK STATION GENERGT PROJECT NO: 7174	PIPING ISOMETRIC	LINE NO. 12-0.375-A52-101


CENERGY
C-350 PIPELINE PROJECT
HIGHPOINT PARK STATION
CENERGY PROJECT NO: 7174
FE-101 FLOW METER ELECTRICAL & INSTRUMENT PACKAGE

INCLUDED IN THIS ISSUE	REV.	DWG. NO.	DWG TITLE
X	0	EE7-6000	ELECTRICAL & INSTRUMENT DRAWING INDEX
X	0	EE7-6100	ELECTRICAL - HAZARDOUS LOCATION PLAN
X	0	EE7-6300	ELECTRICAL - AC J-BOX LAYOUT DRAWING
X	0	EE7-6400	ELECTRICAL - AC CONDUIT PLAN
X	0	EE7-6401	ELECTRICAL - GROUNDING PLAN
X	0	EE7-6500	ELECTRICAL - AC J-BOX WIRING DIAGRAM
X	0	EE4001	ELECTRICAL & INSTRUMENT CABLE & CONDUIT SCHEDULE
X	0	EE7-7300	INSTRUMENT - DC J-BOX LAYOUT DRAWING
X	0	EE7-7400	INSTRUMENT - DC CONDUIT PLAN
X	0	EE7-7500	INSTRUMENT - DC J-BOX WIRING DIAGRAM
X	0	EE7-7501	INSTRUMENT - LOOP DIAGRAM

NOTES:

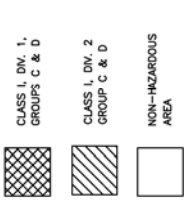
REFERENCE:

NO.	DATE	ISSUED FOR CONSTRUCTION	TA	BKR	MHC
0	04/21/20	ISSUED FOR CONSTRUCTION			


CENERGY
 TURNKEY ENERGY SOLUTIONS
 7174 HIGHPOINT PARK STATION
 MOUNTAIN VIEW, OHIO 45154
 PHONE 504-740-4350
 WWW.MVES.COM
 OHIO REGISTERED ENGINEERING FIRM #1416

Date of AS SHOWN: 20MAY09
 Project No.: 20MAY09
 Drawing No.: EE7-6000
 Revision No.: 0

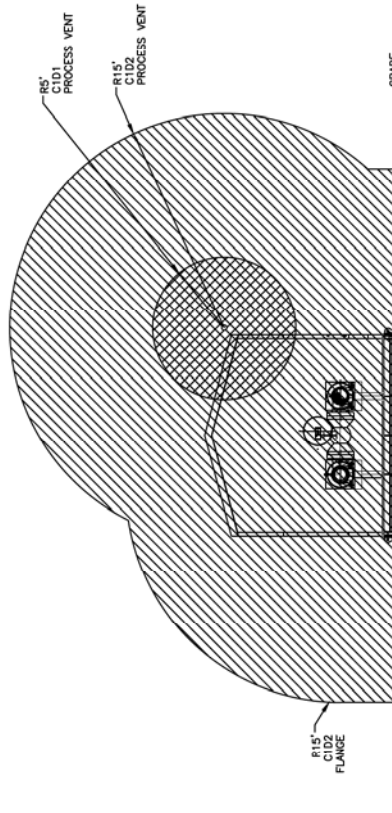
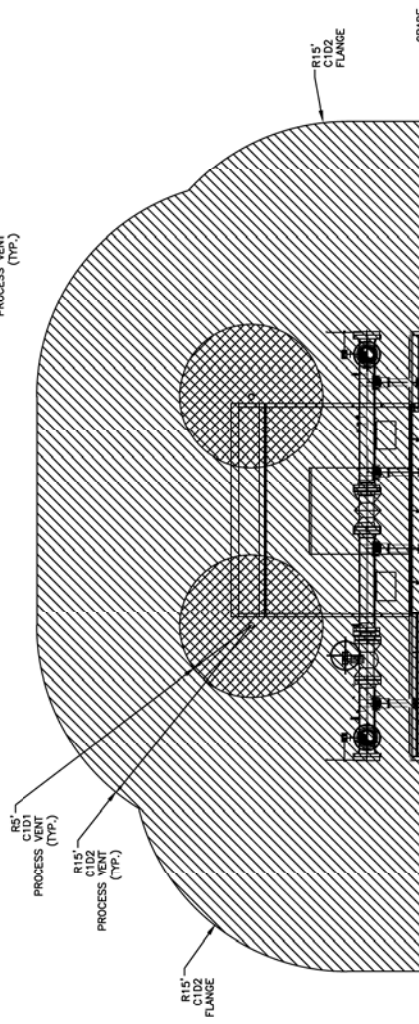
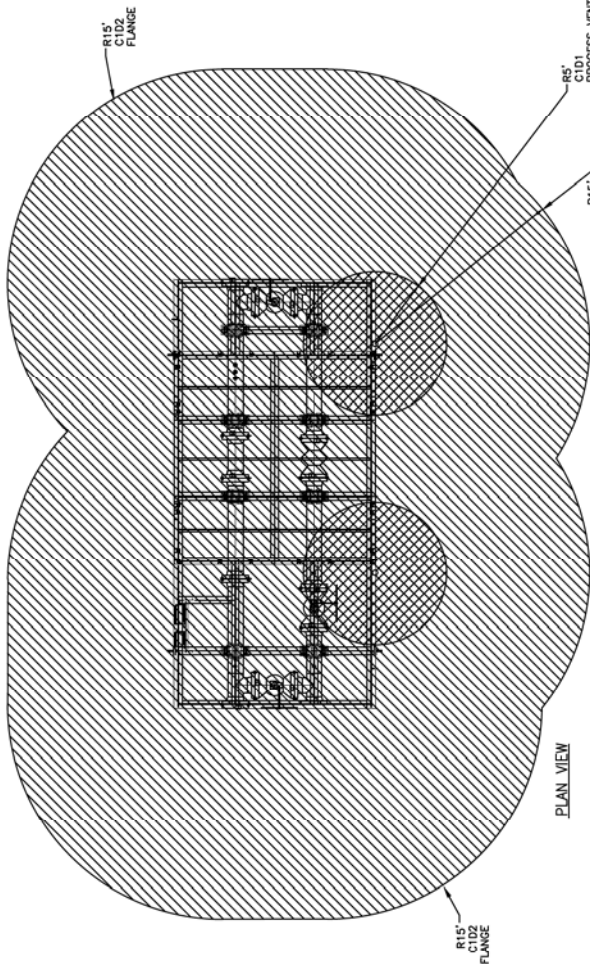
AREA CLASSIFICATIONS
CLASSIFICATION SYSTEM FOR THE
AMERICAN GAS ASSOCIATION (AGA) 101



GENERAL CLASSIFICATION NOTES:

CLASS 1, DIVISION 1, AREA
5' RADIUS AROUND ALL BLOWDOWN VENTS, RELIEF VALVES AS CONSIDERED NORMAL ORIENTATION.
5' RADIUS AROUND ALL INSTRUMENT VENTS FOR THESE CONSIDERED NORMAL ORIENTATION.
FOR OPERATION/MAINTENANCE CONDITIONS CONSIDERED "NON-NORMAL," THE AREA SPECIAL PRECAUTIONS TO BE TAKEN DURING THAT OPERATION/MAINTENANCE.
ALL VENTS MUST BE KEPT AT A MINIMUM THE 5' RADIUS AROUND INSTRUMENT VENTS TO NOT ALLOW THE VENTING/ROUPOFF TO CREATE BUILDING/STRUCTURE.

CLASS 1, DIVISION 2, AREA
15' RADIUS AROUND ALL BLOWDOWN VENTS, RELIEF PIPING AND LOADERS.
5' RADIUS AROUND INSTRUMENT VENTS.
BUILDING VENTILATION TO MEET ASIA REQUIREMENTS FOR CLASS 1 DIVISION 2 IN BUILDING.



NOTES:
1. VENTILATION INSTALLATION CONTRACTOR TO ROUTE (A) PROCESS VENTS, ONE FROM EACH MANUAL BLOWDOWN VALVE, FOLLOWING SHD ILLUSTRATION. CONTRACTOR TO ENSURE CLASS 1 DIVISION 1 CLOUDS DO NOT ENRICH ON ANY LOUVER OPENINGS, DOOR OPENINGS.
2. IN ADDITION TO NATURAL VENTILATION VIA LOWERS, A GAS DETECTOR WILL BE INSTALLED WITHIN THE METER BUILDING ENCLOSURE.

REFERENCE:

NO.	DATE	DESCRIPTION	TA	ENR	MFC
0	04/21/20	ISSUED FOR CONSTRUCTION			

ENERGY
TURNKEY ENERGY SOLUTIONS
PO BOX 469
MARIETTA, GA 30067
PHONE 770-424-4250
WWW.ENERGY.COM

CHS REGISTERED ENGINEERING FIRM #1811

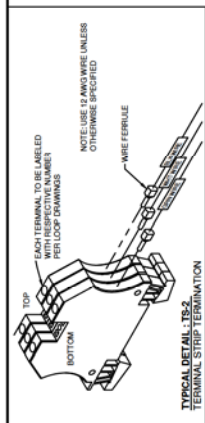
AS SHOWN PREP. NO. 20MH058

ENERGY

C-350 PIPELINE PROJECT
HIGHPOINT PARK STATION
ENERGY PROJECT NO: 7174

ELECTRICAL
FE-101 FLOW METER SKID
HAZARDOUS LOCATION PLAN
EE7-6100

ITEM	QTY	MANUFACTURER	CATALOG NUMBER	DESCRIPTION
1	1	HOFMAN	1877XZ	ENCLOSURE CONTINUOUS TRIM WITH CLAMP, TYPE 4X
2	1	HOFMAN	1420 DSE	ALUMINUM BASED ON BULK (3000) 1/2" ZINC PLATE (AM L) (200) 3/16" x 7/16"
3	2	AM	1482 CAL26	HEAVY DUTY ANCHOR
4	2	AM	1482 CAL26	HEAVY DUTY ANCHOR
5	7	AM	1482-3-RL	SCAMP FEEDTHROUGH SCREW TYPE TERMINAL, BLACK
6	7	AM	1482-3-W	SCAMP FEEDTHROUGH SCREW TYPE TERMINAL, WHITE
7	7	AM	1482-3-G	SCAMP FEEDTHROUGH SCREW TYPE TERMINAL, GREEN
8	1	THOMAS AND BETTS	1702AMV06	WIRE DUCT, 2" x 4" x 6" GREY
9	1			JUNCTION BOX PHENOLIC TAG - 1" x 6" WITH 1/2" LETTERING "ACJB"
10	1			JUNCTION BOX PHENOLIC TAG - 1" x 2.5" WITH 1/2" LETTERING "120VAC"
11	1			JUNCTION BOX PHENOLIC TAG - 1" x 1.5" WITH 1/2" LETTERING "ACJB"



- NOTES:
- 1. TERMINAL STRIP WORK WITH THE LATEST VERSION OF THE NEC
 - 2. TERMINAL STRIP SHALL BE FOR SCAMP AND NOT FOR WIRE NUTS
 - 3. ALL WIRE AND CABLE LABELING IS TO BE VISIBLE FROM FRONT OF PANEL
 - 4. ALL WIRE AND CABLE LABELING IS TO BE VISIBLE FROM FRONT OF PANEL
 - 5. ALL WIRE AND CABLE LABELING IS TO BE VISIBLE FROM FRONT OF PANEL
 - 6. ALL WIRE AND CABLE LABELING IS TO BE VISIBLE FROM FRONT OF PANEL
 - 7. ALL WIRE AND CABLE LABELING IS TO BE VISIBLE FROM FRONT OF PANEL
 - 8. ALL WIRE AND CABLE LABELING IS TO BE VISIBLE FROM FRONT OF PANEL
 - 9. ALL WIRE AND CABLE LABELING IS TO BE VISIBLE FROM FRONT OF PANEL
 - 10. ALL WIRE AND CABLE LABELING IS TO BE VISIBLE FROM FRONT OF PANEL
 - 11. ALL WIRE AND CABLE LABELING IS TO BE VISIBLE FROM FRONT OF PANEL

REFERENCE:

NOTES:

- CONTRACTOR TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION IN ACCORDANCE TO THE LATEST VERSION OF THE NEC, ALL NECESSARY LABOR, EQUIPMENT, AND MATERIAL TO PROVIDE A COMPLETE INSTALLATION.

NO.	DATE	DESCRIPTION	BY	CHK	APP
0	04/21/20	ISSUED FOR CONSTRUCTION	TA	BKR	MHC

ENERGY
TURNKEY ENERGY SOLUTIONS
MILWAUKEE, WI 53244
PHONE: 304-740-4250
WWW.ENERGY.COM

20M-6505
20M-6505
20M-6505

ENERGY
C-500 PIPELINE PROJECT
HIGHPOINT PARK STATION
ENERGY PROJECT NO. 7174

FE-101 FLOW METER SKID
AC JUNCTION BOX LAYOUT DRAWING

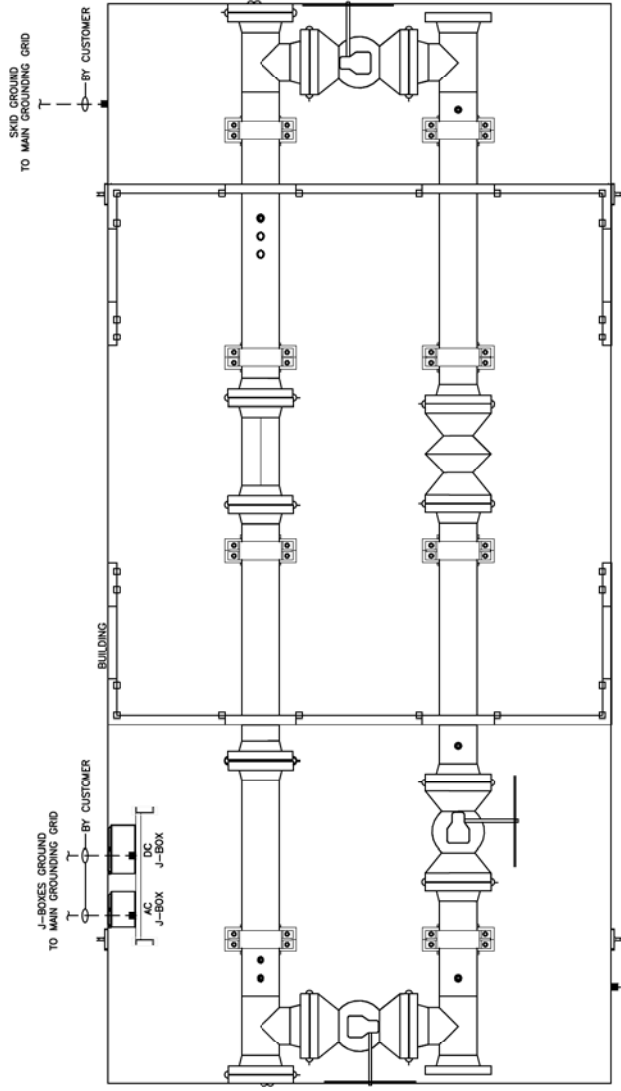
20M-6505-01-000

0

GROUNDING LEGEND:
 ■ BOLTED/MECHANICAL CONNECTION

GROUNDING NOTES:

- METER PAD SHALL BE PROVIDED WITH TWO CONNECTION POINTS TO THE MAIN GROUNDING GRID. THE CONNECTIONS SHALL BE MADE TO THE OPPOSITE CORNERS ON THE OUTSIDE OF THE EQUIPMENT AND ARE NOTED ON THIS DRAWING.
- VENUES SHALL PROPERLY GROUND ALL EQUIPMENT ENCLOSURES. THE GROUNDING SHALL BE MADE TO THE MAIN GROUNDING GRID AND IN ACCORDANCE WITH THE REQUIREMENTS OF NEC 501.30(A) AND 501.30(B).



NOTES:
 1. CONTRACTOR TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.
 2. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY LABOR, EQUIPMENT, AND MATERIAL TO PROVIDE A COMPLETE INSTALLATION.

REFERENCE:

NO.	DATE	DESCRIPTION	BY	CHK	APPD
0	04/21/20	ISSUED FOR CONSTRUCTION	TA	BKR	MFC

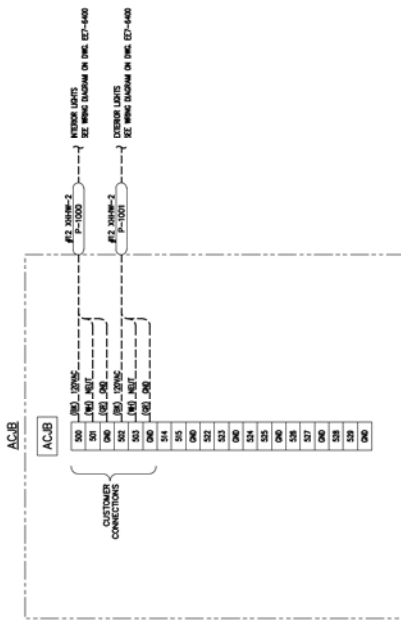
CENERGY
 TURNKEY ENERGY SOLUTIONS
 1000 W. WASHINGTON
 MOUNTAIN VIEW, MO 64154
 PHONE: 304-742-4250
 WWW.MVES.COM

MH
 OHIO REGISTERED ENGINEERING FIRM #1416
 DATE: AS SHOWN
 DRAWING NO.: 20MH058

CENERGY
 C-350 PIPELINE PROJECT
 HIGHPOINT PARK STATION
 CENERGY PROJECT NO: 7174

ELECTRICAL
 FE-101 FLOW METER SKID
 GROUNDING PLAN

PROJECT NO.: EE7-6401
 SHEET NO.: 0



NOTES:

REFERENCE:

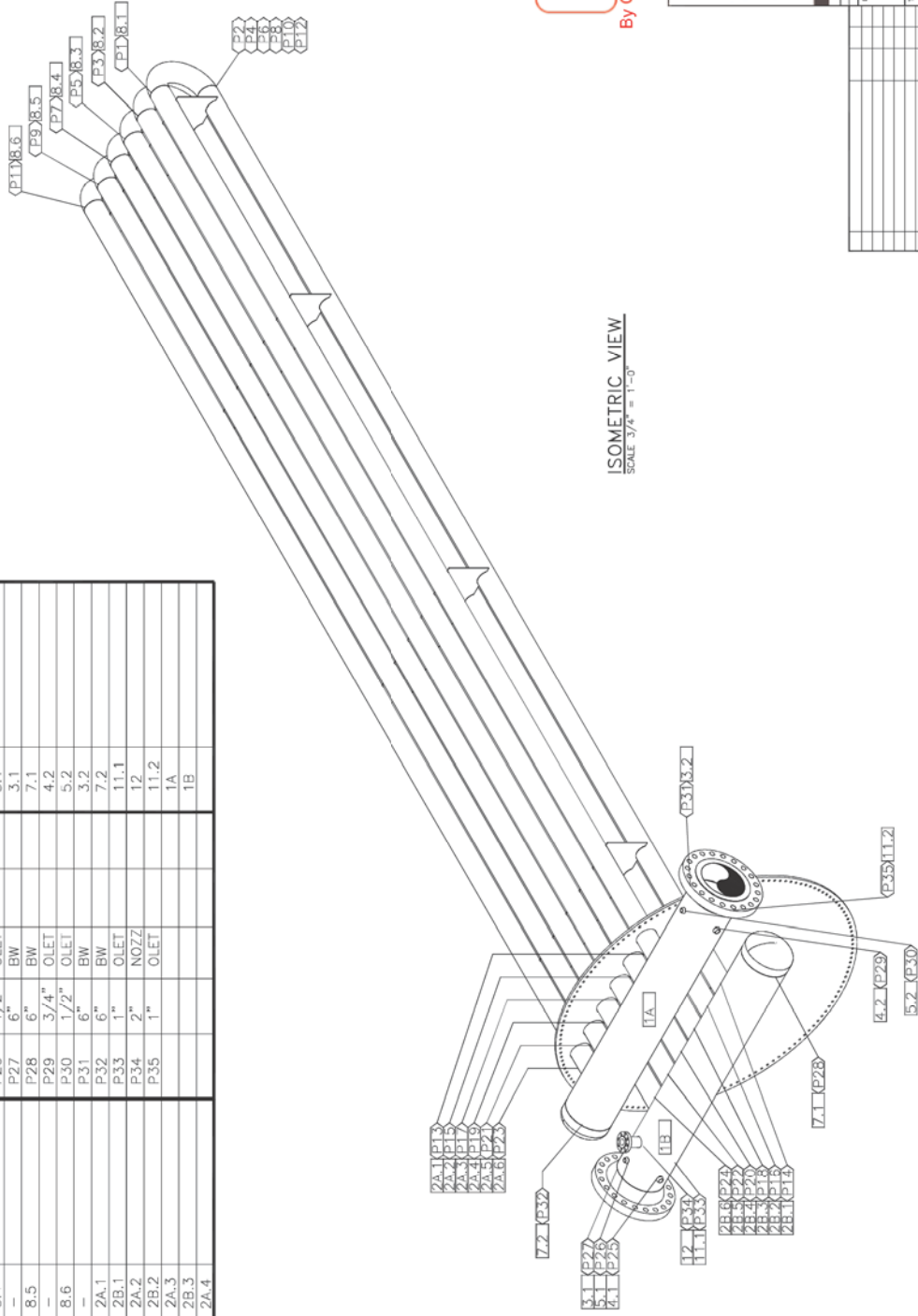
NO.	DATE	DESCRIPTION	BY	CHK	APPD
0	04/21/20	ISSUED FOR CONSTRUCTION	TA	BR	MHC

CENERGY
TURNKEY ENERGY SOLUTIONS
PO BOX 495
MARIETTA, OHIO 45750
PHONE 330.742.4250
WWW.CENERGY.COM

OHIO REGISTERED ENGINEERING FIRM #1811
MM
CALL AS SHOWN
FIRM NO. 20MH05B
DRAWING NO. EE7-6500

CENERGY
C-350 PIPELINE PROJECT
HIGHPOINT PARK STATION
CENERGY PROJECT NO: 7174
ELECTRICAL
FE-101 FLOW METER SKID
AC J-BOX WIRING DIAGRAM
DRAWING NO. EE7-6500

RPO: <input type="checkbox"/> WELDS				HEAT NUMBERS				RPO: <input type="checkbox"/> WELDS				HEAT NUMBERS			
WELD No.	SIZE	TYPE	WELD ID	WELD X-RAY ID	ITEM No.	HEAT NO.	WELD No.	SIZE	TYPE	WELD ID	WELD X-RAY ID	ITEM No.	HEAT NO.		
P1	6"	BW			8.1		P20	6"	BW			2B.4			
P2	6"	BW			-		P21	6"	BW			2A.5			
P3	6"	BW			8.2		P22	6"	BW			2B.5			
P4	6"	BW			-		P23	6"	BW			2A.6			
P5	6"	BW			8.3		P24	6"	BW			2B.6			
P6	6"	BW			-		P25	3/4"	OLET			4.1			
P7	6"	BW			8.4		P26	1/2"	OLET			5.1			
P8	6"	BW			-		P27	6"	BW			3.1			
P9	6"	BW			8.5		P28	6"	BW			7.1			
P10	6"	BW			-		P29	3/4"	OLET			4.2			
P11	6"	BW			8.6		P30	1/2"	OLET			5.2			
P12	6"	BW			-		P31	6"	BW			3.2			
P13	6"	BW			2A.1		P32	6"	BW			7.2			
P14	6"	BW			2B.1		P33	1"	OLET			11.1			
P15	6"	BW			2A.2		P34	2"	NOZZ			12			
P16	6"	BW			2B.2		P35	1"	OLET			11.2			
P17	6"	BW			2A.3							1A			
P18	6"	BW			2B.3							1B			
P19	6"	BW			2A.4										



ISOMETRIC VIEW
SCALE: 3/4" = 1'-0"

ISSUED FOR CONSTRUCTION
By CVVYVIAL at 7/19/20 @ 12:03pm

www.kwi.com 1-844-594-4626

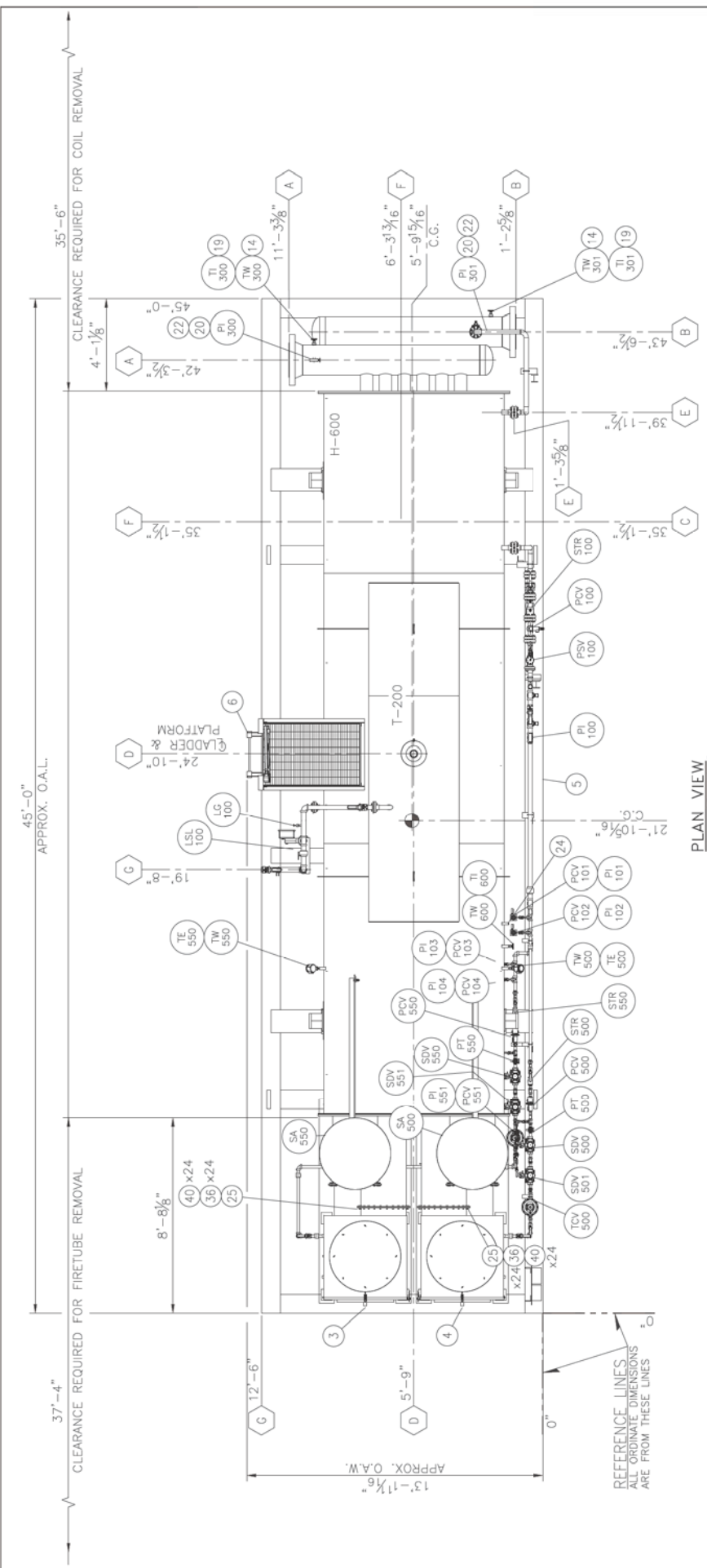
DATE: 7/19/20
SCALE: AS SHOWN
SHEET NO: 4 OF 4

DUKE ENERGY
TITLE: 6 LATERAL 2 PASS COIL FOR 7.0MM BTU/HR LINE HEATER

SCALE: AS SHOWN
SHEET NO: 4 OF 4

DATE: 7/19/20
SCALE: AS SHOWN
SHEET NO: 4 OF 4

REV	DESCRIPTION	DATE	BY	CHK
0	ISSUED FOR CONSTRUCTION	7/19/20	CVV	YV



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

ISSUED FOR CONSTRUCTION

OPERATING WEIGHT = 144,300 LBS.
EMPTY WEIGHT = 70,300 LBS.

NOTES:
1. TUBE SDV-500,501,550,551 VENTS TO COIL END OF SKID.

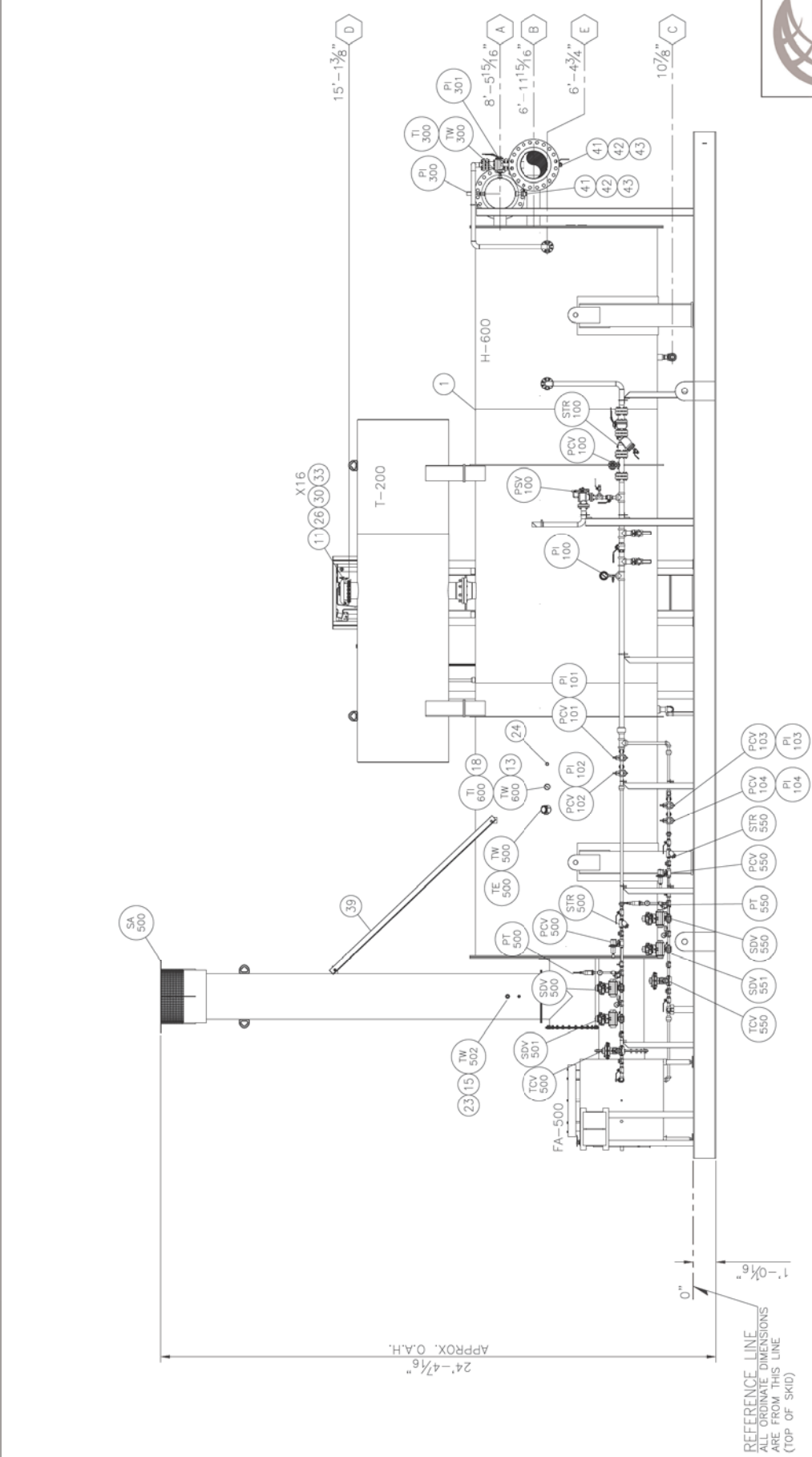
CUSTOMER CONNECTION SCHEDULE	
MARK	DESCRIPTION
A	16" 600# RF
B	16" 600# RF
C	16" 600# RF
D	16" 600# RF
E	2" 600# RF
F	1/2" 3000# NPT
G	2" 3000# NPT

KWI

www.kwiintl.com 1-844-594-4626

DESIGN	DATE	BY	CHKD	APP'D
CLIENT	DUKE ENERGY			
TITLE				
7,000 BTU/HR INDIRECT LINE HEATER GENERAL ARRANGEMENT				
SCALE	1/2" = 1'-0"	DATE	10/16/16	102653
PROJECT NO.	102653	REV	1	OF 7
UNPROJ. NO.	102653	REV	1	OF 7

TOLERANCES:	± 1/2"
PROCESS CONNECTIONS	± 1/4"
STRUCTURAL	± 1/4"
ANCHOR BOLTS	± 1/4"



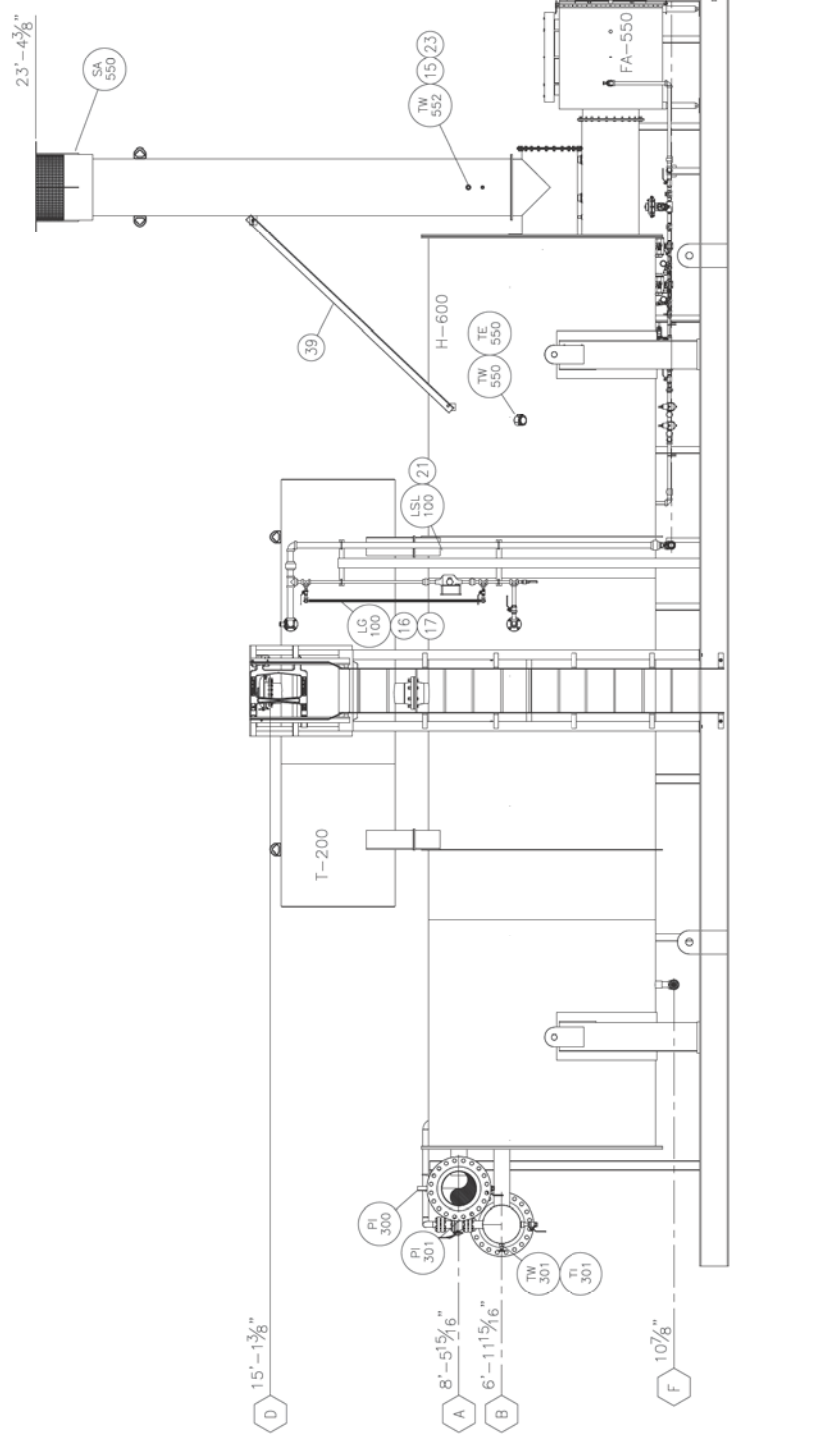
ELEVATION VIEW
SCALE: 1/2" = 1'-0"

ISSUED
FOR CONSTRUCTION
12/14/20 at 7:19pm



DATE	DESIGNED	CHECKED	APPROVED
12/14/20			
CLIENT	DUKE ENERGY		
TITLE	7,000 BTU/HR INDIRECT LINE HEATER GENERAL ARRANGEMENT		
SCALE	AS SHOWN	SHEET	10216 - 10263
REV	DESCRIPTION	DATE	BY
1	BASED FOR CONSTRUCTION		
2	ISSUED FOR CONSTRUCTION	12/14/20	DK
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DATE	DESIGNED	CHECKED	APPROVED
12/14/20			
CLIENT	DUKE ENERGY		
TITLE	7,000 BTU/HR INDIRECT LINE HEATER GENERAL ARRANGEMENT		
SCALE	AS SHOWN	SHEET	10216 - 10263
REV	DESCRIPTION	DATE	BY
1	BASED FOR CONSTRUCTION		
2	ISSUED FOR CONSTRUCTION	12/14/20	DK
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REAR VIEW
SCALE: 1/2" = 1'-0"

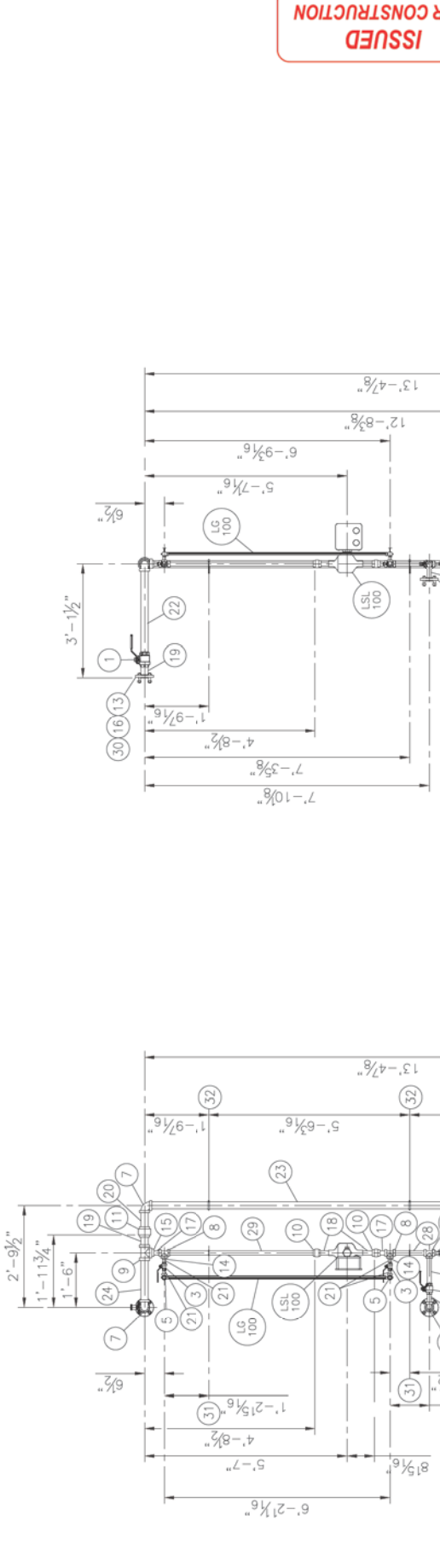
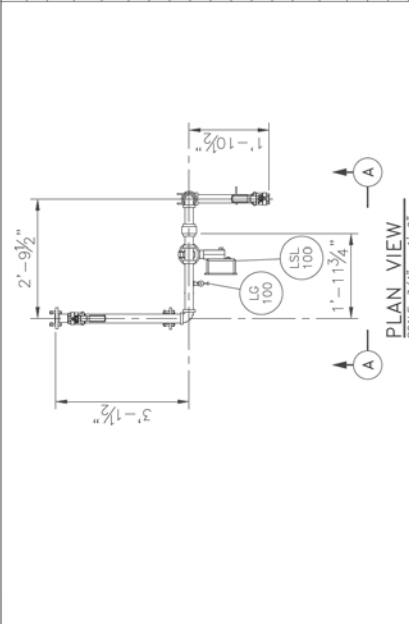
ISSUED
FOR CONSTRUCTION
CVYAL at 7/9/20 @ 12:14pm

www.kwiintl.com
1-844-594-4626

DATE	ISSUED	CHECKED	APPROVED
04/23/2020			
CLIENT			
DUKE ENERGY			
TITLE			
7,000+ BTU/HR INDIRECT LINE HEATER GENERAL ARRANGEMENT			
SCALE		SHEET	
AS SHOWN	10818	102663	
DESCRIPTION		DATE	BY
3 ISSUED FOR CONSTRUCTION		04/14/20	CK
REV		DATE	BY
1		04/14/20	CK
2		04/14/20	CK
3		04/23/20	CK
UNIFORMSHEET		SHEET	OF
		3	7
		0	0

BILL OF MATERIAL

ITEM QTY	TAG	PART NO	DESCRIPTION	LENGTH	ITEM QTY	TAG	PART NO	DESCRIPTION	LENGTH
1 2	A25	BLVU3839	VALVE,BALL,RP,2.0,NPT,2PC,FLOATING,A105,BODY,1.5000,CWP,RPTFE,SEAT, RPTFE,SEAL,LATCH,LOCK,APOLLO,7.3A10B01-27		17 2		NIPPO640	NIPPLE,PIPE,TBE,1.000,X.0.00,WT.0.179,S.080,XH,SA,1068,DOMESTIC, MATERIAL	
2 1	A25	BLVU3840	VALVE,BALL,RP,2.0,NPT,2PC,FLOATING,A105,BODY,2000,CWP,RPTFE,SEAT, RPTFE,SEAL,LATCH,LOCK,APOLLO,7.3A10B01-27		18 3		NIPPO643	NIPPLE,PIPE,TBE,1.000,X.0.4.00,WT.0.179,S.080,XH,SA,1068,DOMESTIC, MATERIAL	
3 3	A25	BLVU3841	VALVE,BALL,RP,2.0,NPT,2PC,FLOATING,A105,BODY,2000,CWP,RPTFE, SEAT,RPTFE,SEAL,LATCH,LOCK,APOLLO,7.3A10B01A-27		19 3		NIPPO648	NIPPLE,PIPE,TBE,2.000,X.0.4.00,WT.0.218,S.080,XH,SA,1068,DOMESTIC, MATERIAL	
4 1		FTNP0948	FITTING,PLUG,NPT,1.05,FS,HEX,HEAD,0.500,SA,105,DOMESTIC,MATERIAL		20 1		NIPPO651	NIPPLE,PIPE,TBE,2.000,X.0.6.00,WT.0.218,S.080,XH,SA,1068,DOMESTIC, MATERIAL	
5 2		FTNP0951	FITTING,NPT,ELBOW,90°105,FS,0.3M,0.500,SA,105,DOMESTIC,MATERIAL		21 5		NIPPO651	NIPPLE,PIPE,TBE,0.500,X.0.2.00,WT.0.187,S,1.60,SA,1068,DOMESTIC, MATERIAL	
6 1		FTNP0952	FITTING,NPT,ELBOW,90°105,FS,0.3M,1.000,SA,105,DOMESTIC,MATERIAL		22 1		PIPE0898	PIPE,SA,1068,SMLS,02.000,WT.0.218,S.080,XH,DOMESTIC,MATERIAL	2'-4"
7 3		FTNP0953	FITTING,NPT,ELBOW,90°105,FS,0.3M,2.000,SA,105,DOMESTIC,MATERIAL		23 1		PIPE0898	PIPE,SA,1068,SMLS,02.000,WT.0.218,S.080,XH,DOMESTIC,MATERIAL	12'-7 3/8"
8 3		FTNP0955	FITTING,NPT,TEE,105,FS,0.3M,1.000,SA,105,DOMESTIC,MATERIAL		24 1		PIPE0898	PIPE,SA,1068,SMLS,02.000,WT.0.218,S.080,XH,DOMESTIC,MATERIAL	
9 1		FTNP0956	FITTING,NPT,TEE,105,FS,0.3M,2.000,SA,105,DOMESTIC,MATERIAL		25 1		PIPE0898	PIPE,SA,1068,SMLS,02.000,WT.0.218,S.080,XH,DOMESTIC,MATERIAL	
10 2		FTNP0957	FITTING,NPT,UNION,HEX,105,FS,0.3M,1.000,SA,105,DOMESTIC,MATERIAL		26 1		PIPE0898	PIPE,SA,1068,SMLS,02.000,WT.0.218,S.080,XH,DOMESTIC,MATERIAL	1'-2 1/2"
11 2		FTNP0958	FITTING,NPT,UNION,HEX,105,FS,0.3M,2.000,SA,105,DOMESTIC,MATERIAL		27 1		PIPE0902	PIPE,SA,1068,SMLS,01.000,WT.0.179,S.080,XH,DOMESTIC,MATERIAL	4 1/4"
12 1		FLGRF6417	FLANGE,RF,THREADED,ANSI,0150#,02.000,X,1.000,NPT,SA,105,DOMESTIC, MATERIAL		28 1		PIPE0902	PIPE,SA,1068,SMLS,01.000,WT.0.179,S.080,XH,DOMESTIC,MATERIAL	9 11/16"
13 1		FLGRF6418	FLANGE,RF,THREADED,ANSI,0150#,02.000,X,2.000,NPT,SA,105,DOMESTIC, MATERIAL		29 1		PIPE0902	PIPE,SA,1068,SMLS,01.000,WT.0.179,S.080,XH,DOMESTIC,MATERIAL	10 13/16"
14 3		FTGTH0191	FITTING,NPT,BUSHING,FS,0.3M,1.000,X,0.500,SA,105,DOMESTIC,MATERIAL		30 8		STUDS0008	STUD,B7.0.625,X.0.3.250,SA,193,W/2H,NUTS,ZINC	4'-0 9/16"
15 1		FTGTH0192	FITTING,NPT,BUSHING,FS,0.3M,2.000,X,1.000,SA,105,DOMESTIC,MATERIAL		31 2		UBOL1013	UBOLT,PIPE,02.000,SHANK,0.375,NC,ZINC,STD	
16 2		GASKT0045	GASKET,SPRAL, WOUND,0150#,02.000,304,SS		32 3		UBOL1046	UBOLT,PIPE,02.000,SHANK,0.375,NC,ZINC,STD	

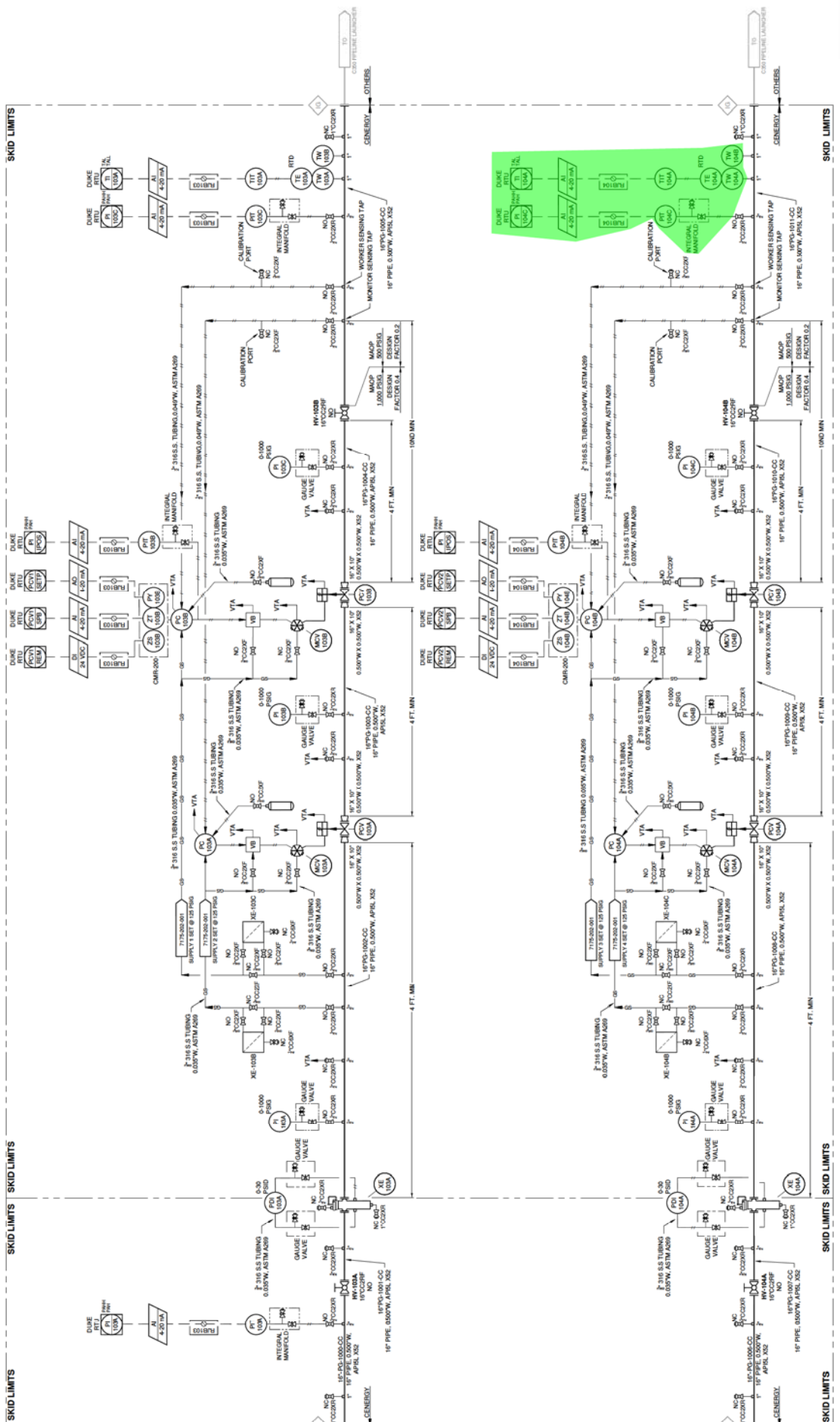


ISSUED
FOR CONSTRUCTION

By CRYVAL at 7/19/20 @ 12:14pm

www.kwiintl.com 1-844-594-4676

DATE: 7/19/20	DESIGN: []	CHECKED: []	APPROVED: []
SCALE: AS SHOWN	DUKE ENERGY		
7,000 BTU/HR INDIRECT LINE HEATER GENERAL ARRANGEMENT			
NO. OF SHEETS: 6	SHEET NO: 5	TOTAL SHEETS: 6	DATE: 7/19/20
UNIFORMSHEET			



DUKE - CV103/104
C350 PROJECT - HIGHPOINT PARK STATION
PIPING & INSTRUMENTATION DIAGRAM
CONTROL VALVE SKID CV-103 & 104

COUNTY: DEWEES | TOWN: DEWEES | STATE: OHIO
 DRAWING NUMBER: 7175-201-001 | SHEET: 1 OF 1

CENERGY
 ENGINEERING (MANUFACTURING) CONSTRUCTION

PO BOX 485
 14000 W. STATE ST.
 WILMINGTON, OHIO 45390
 WWW.CENERGY.COM

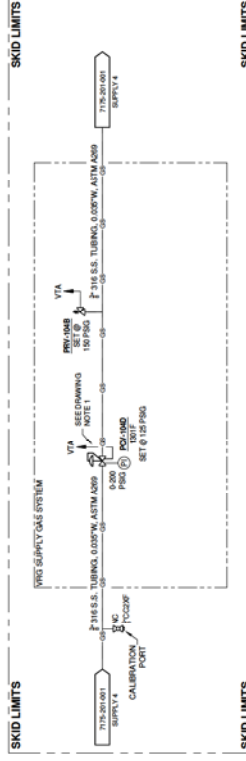
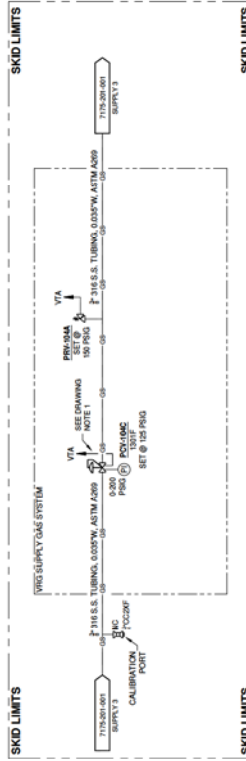
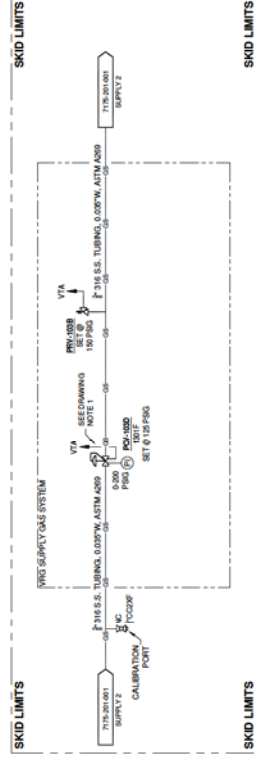
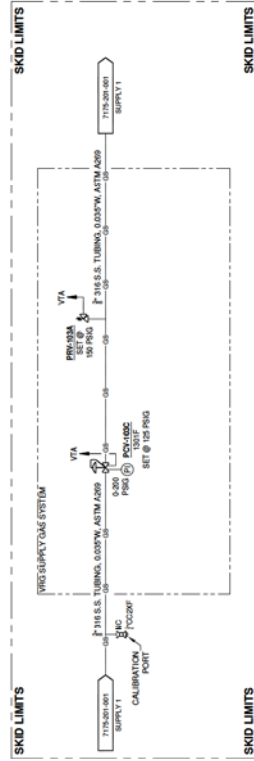
REV	DESCRIPTION	DATE
1	ISSUED FOR CONSTRUCTION	05/11/2020
2	ISSUED FOR CONSTRUCTION	
3	ISSUED FOR CONSTRUCTION	
4	ISSUED FOR CONSTRUCTION	
5	ISSUED FOR CONSTRUCTION	
6	ISSUED FOR CONSTRUCTION	
7	ISSUED FOR CONSTRUCTION	
8	ISSUED FOR CONSTRUCTION	
9	ISSUED FOR CONSTRUCTION	
10	ISSUED FOR CONSTRUCTION	

REV	DESCRIPTION	DATE
1	ISSUED FOR CONSTRUCTION	05/11/2020
2	ISSUED FOR CONSTRUCTION	
3	ISSUED FOR CONSTRUCTION	
4	ISSUED FOR CONSTRUCTION	
5	ISSUED FOR CONSTRUCTION	
6	ISSUED FOR CONSTRUCTION	
7	ISSUED FOR CONSTRUCTION	
8	ISSUED FOR CONSTRUCTION	
9	ISSUED FOR CONSTRUCTION	
10	ISSUED FOR CONSTRUCTION	

ISSUED FOR CONSTRUCTION

- GENERAL NOTES:**
1. BUILT TO DUKE STANDARDS & SPECIFICATION
 2. DESIGN TEMPERATURE: 100°F TO 180°F
 3. DESIGN PRESSURE: 1500 PSIG
 4. INLET OPERATING PRESSURE RANGE: 400 - 600 PSIG
 5. OUTLET OPERATING PRESSURE RANGE: 400 - 600 PSIG
 6. OPERATING TEMPERATURE: 50° - 120°F
 7. VTA DESIGNATES A NORMALLY OPERATED CLASS 1 SOURCE
 8. BE PIPED AWAY A MINIMUM OF 10' FROM ANY CLASS 1 DIVISION 2 EQUIPMENT
 9. BE PIPED AWAY A MINIMUM OF 10' FROM ANY CLASS 1 DIVISION 2 EQUIPMENT
 10. BE PIPED AWAY A MINIMUM OF 10' FROM ANY CLASS 1 DIVISION 2 EQUIPMENT
 11. OUTLET DESIGN PRESSURE: 500 PSIG
 12. DESIGN TEMPERATURE: 100°F TO 180°F
 13. DESIGN PRESSURE: 1500 PSIG
 14. INLET OPERATING PRESSURE RANGE: 400 - 600 PSIG
 15. OUTLET OPERATING PRESSURE RANGE: 400 - 600 PSIG
 16. OPERATING TEMPERATURE: 50° - 120°F
 17. VTA DESIGNATES A NORMALLY OPERATED CLASS 1 SOURCE
 18. BE PIPED AWAY A MINIMUM OF 10' FROM ANY CLASS 1 DIVISION 2 EQUIPMENT
 19. BE PIPED AWAY A MINIMUM OF 10' FROM ANY CLASS 1 DIVISION 2 EQUIPMENT
 20. BE PIPED AWAY A MINIMUM OF 10' FROM ANY CLASS 1 DIVISION 2 EQUIPMENT

VRO SUPPLY GAS SYSTEM
FISHER 1301F REGULATOR
REGO 9434 RELIEF VALVE - COLOR IDENTIFICATION: RED



- GENERAL NOTES:**
1. BUILT TO DUKE STANDARDS & SPECIFICATION
 2. DOT CLASS 4 DESIGN
 3. DESIGN TEMPERATURE RANGE: -20°F TO 180°F
 4. INLET OPERATING PRESSURE RANGE: 400 - 620 PSIG
 5. OUTLET OPERATING PRESSURE RANGE: 125 - 150 PSIG
 6. CORROSION ALLOWANCE: 0.00
 7. INLET DESIGN FACTOR: 0.2
 8. OUTLET DESIGN FACTOR: 0.2
 9. CORROSION ALLOWANCE: 0.00
 10. INLET DESIGN PRESSURE: 1000 PSIG
 11. BE PIPED AWAY FROM BUILDING
 12. BE PIPED AWAY FROM BUILDING
 13. BE PIPED AWAY FROM BUILDING
 14. BE PIPED AWAY FROM BUILDING
 15. BE PIPED AWAY FROM BUILDING
 16. BE PIPED AWAY FROM BUILDING
 17. BE PIPED AWAY FROM BUILDING
 18. BE PIPED AWAY FROM BUILDING
 19. BE PIPED AWAY FROM BUILDING
 20. BE PIPED AWAY FROM BUILDING

DRAWING STATUS:

ISSUED FOR CONSTRUCTION

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
1	ISSUED FOR CONSTRUCTION	WAT	TPL	REP	05/11/2020

CENERGY
ENGINEERING (MANUFACTURING) CONSTRUCTION

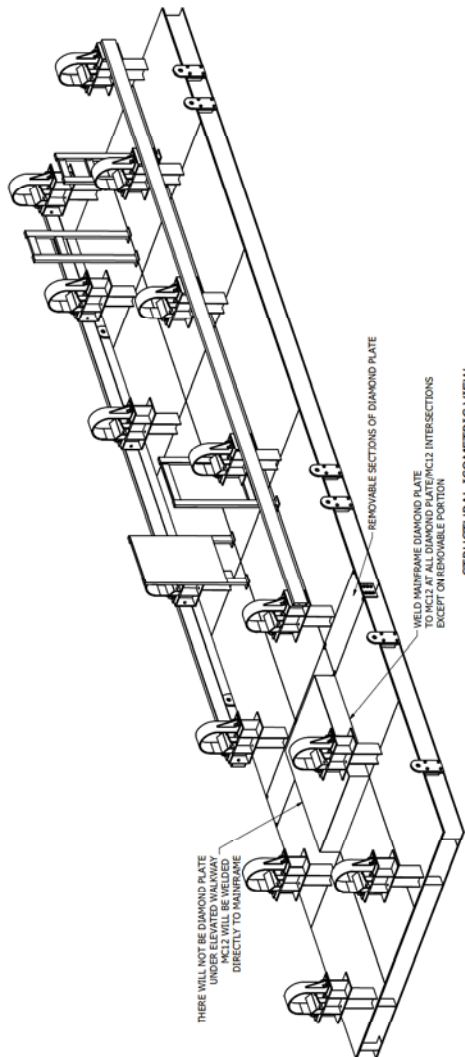
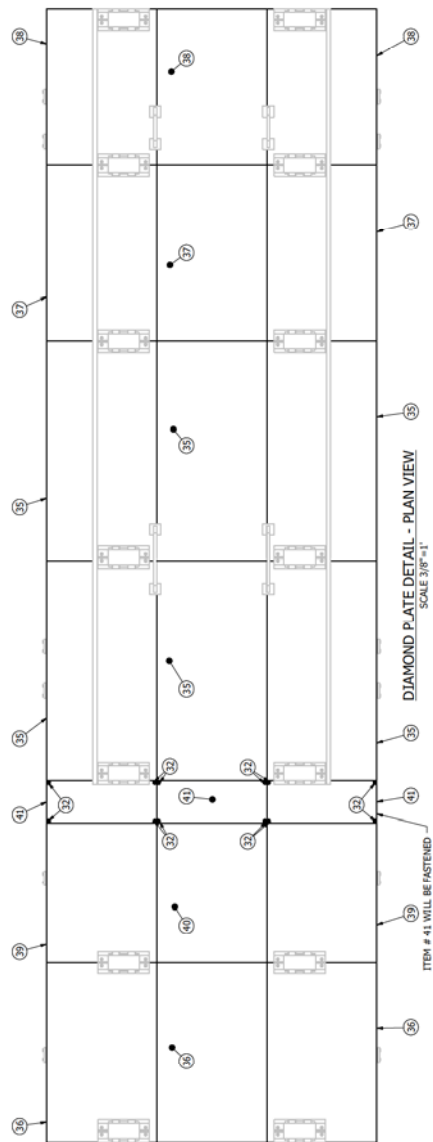
PO BOX 485
 INDIANAPOLIS, IN 46216-0485
 WWW.CENERGYCO.COM

DUKE - CV103/104
C350 PROJECT - HIGHPOINT PARK STATION
PIPING & INSTRUMENTATION DIAGRAM
INSTRUMENT SUPPLY SYSTEM

COUNTY/PARISH: HAMILTON/COUNTY STATE: OHIO
 DRAWING NUMBER: 7175-202-001
 DRAWING SCALE: NONE

SHEET 1 OF 1

REVISION 0



NOTES:

1. ALL STRUCTURAL STEEL SHALL BE FURNISHED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AISC STEEL CONSTRUCTION MANUAL, 13TH EDITION
2. ALL STRUCTURAL STEEL SHALL BE PAINTED PER DUKE SPEC
3. WIRE FLANGE SHAPES - ASTM A588, GR50
4. WELDS - EPOXY LOW HYDROGEN ROD MEETING THE REQUIREMENTS OF AWS D1.1

DRAWING STATUS:

ISSUED FOR CONSTRUCTION

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	CNS	ECW	ZAT	05/11/2020

CENERGY
ENGINEERING | MANUFACTURING | CONSTRUCTION

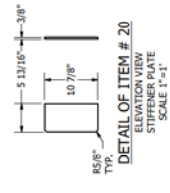
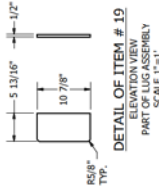
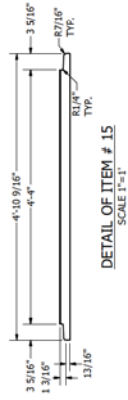
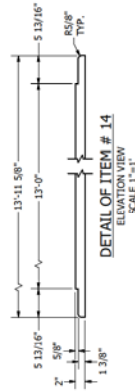
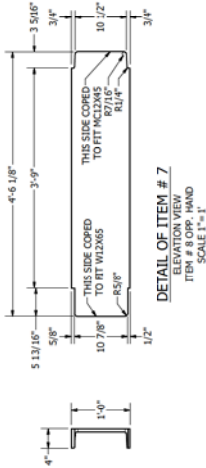
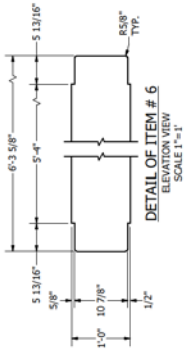
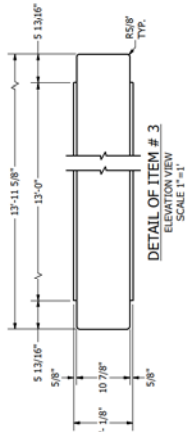
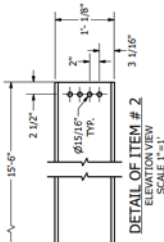
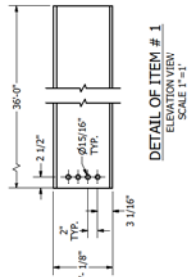
PO BOX 485
HAMILTON, OHIO 45011
PHONE: 513-767-8240
WWW.CENERGYCO.COM

DUKE - CV103/104
C350 PROJECT - HIGHPOINT PARK STATION
16'X10' FC SKID - STRUCTURAL
DIAMOND PLATE LAYOUT

COUNTY/FANSHIP: HAMILTON/COUNTY STATE: OHIO
DRAWING NUMBER: 7175-500-002
DRAWING SCALE: 3/8"=1'

REVISION
SHEET: 1 OF 1

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- NOTES:
1. ALL STRUCTURAL STEEL SHALL BE FURNISHED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AISC STEEL CONSTRUCTION MANUAL, 13TH EDITION.
 2. ALL STRUCTURAL STEEL SHALL BE PAINTED PER DUKE SPEC.
 3. WELD FLANGE SHAPES - ASTM A992, GR50.
 4. HIGH STRENGTH BOLTS - ASTM A325, TYPE 1, GALVANIZED.
 5. WEBS - EPOXY LOW HYDROGEN ROD MEETING THE REQUIREMENTS OF AWS D1.1.
 6. ALL DETAILS THIS SIDE TOP DOWN UNLESS NOTED OTHERWISE.

ISSUED FOR
CONSTRUCTION

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	CNS	ECW	ZAT	05/11/2020

CENERGY
ENGINEERS (MANUFACTURING) CONSTRUCTION

PO BOX 485
MARIETTA, OHIO 45750
PHONE 367-824200
WWW.CENERGYCO.COM

DUKE - CV103/104
C350 PROJECT - HIGHPOINT PARK STATION
16"X10" FC SKID - STRUCTURAL
STRUCTURAL COMPONENT DETAILS

COUNTY/FARISH: HAMILTON/COUNTY STATE: OHIO
DRAWING NUMBER: 7175-501-001
DRAWING SCALE: 1"=1'

REVISION
SHEET: 1 OF 1

ITEM	QTY	DESCRIPTION
1	1	CS @ 13.75 LB/FT STRUCTURAL CHANNEL, ASTM A992, 35'-5" LONG
2	5	PLATE, 8" x 1/2" x 1/4", ASTM A36

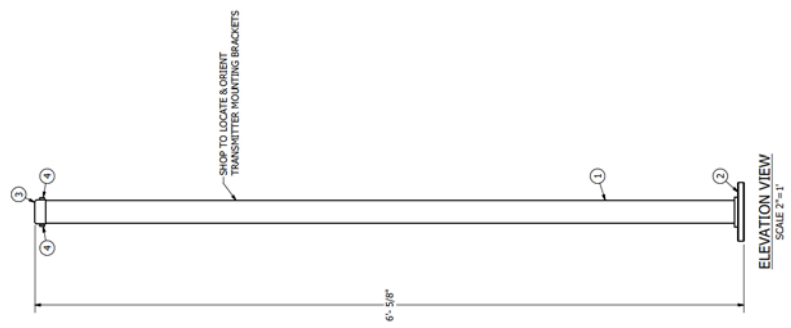
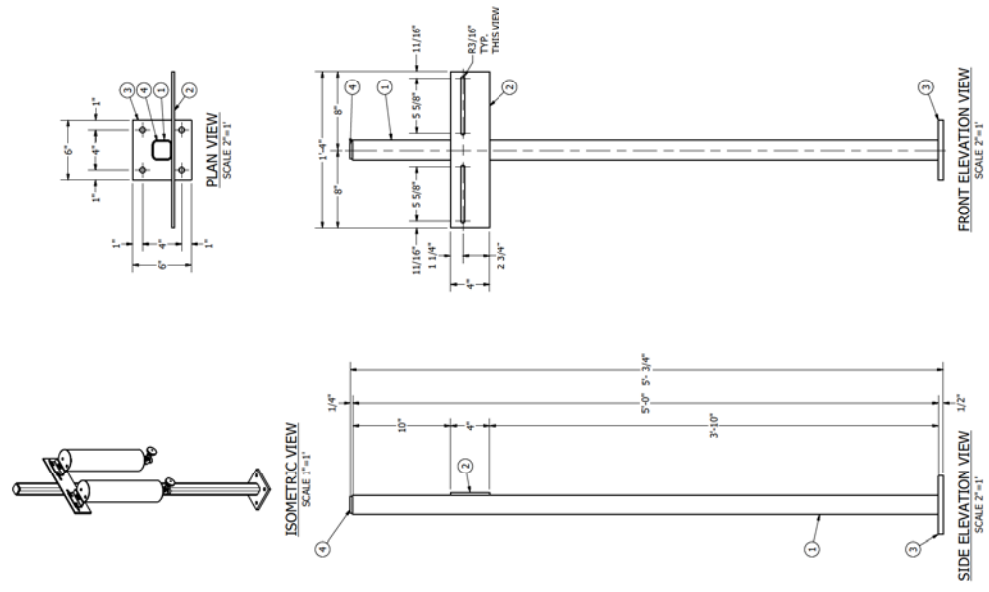
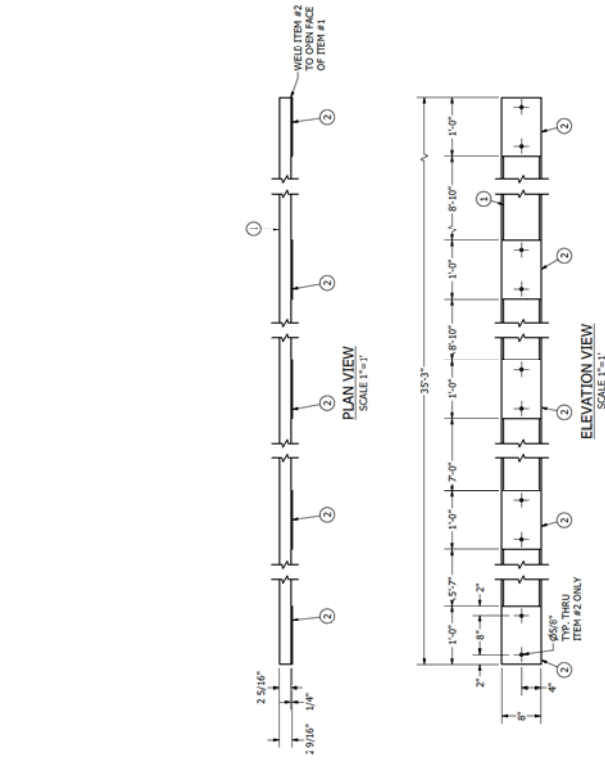
QTY (2) REQUIRED

ITEM	QTY	DESCRIPTION
1	1	ANSI, 2 X 2 X 1/4 SQUARE TUBE, 60" LONG, ASTM A36
2	1	4" x 1/4" FLAT BAR STEEL, 16" LONG, SLOTTED PER DETAIL, ASTM A36
3	1	6" x 6" x 1/2" PLATE, ASTM A36
4	1	1-3/4" x 1-3/4" x 1/4" ASTM A36 STEEL PLATE

QTY (2) REQUIRED

ITEM	QTY	DESCRIPTION
1	1	2" PIPE, 0.218" W, ASTM A106 GRB, GALVANIZED, TOE X POE, 6 FT LONG
2	1	2" FLANGE, PF, NPT, GALVANIZED
3	1	2" CAP, SLIP ON
4	2	1/4" HEX HEAD SELF TAPPING SCREW, 3/4" LONG

QTY (2) REQUIRED



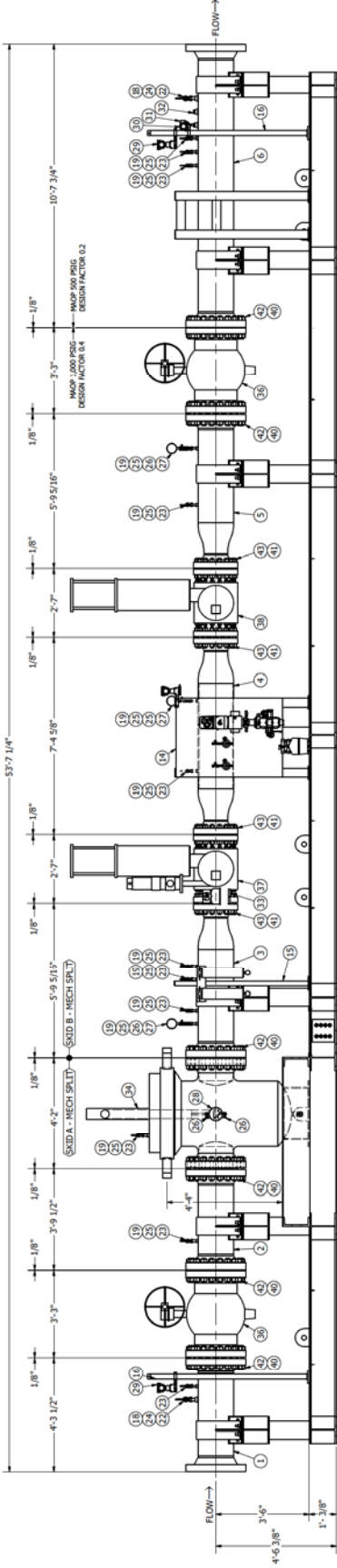
NOTES:
 1. ALL STRUCTURAL STEEL SHALL BE FURNISHED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AISC STEEL CONSTRUCTION MANUAL, 13TH EDITION
 2. ALL STRUCTURAL STEEL SHALL BE PAINTED PER DUKE SPEC
 3. WELD FLANGE SHAPES - ASTM A992, Q360
 4. HIGH STRENGTH BOLTS - ASTM A325, TYPE 1 GALVANIZED
 5. WELDS - E70XX LOW HYDROGEN ROD MEETING THE REQUIREMENTS OF AWS D1.1

ISSUED FOR CONSTRUCTION

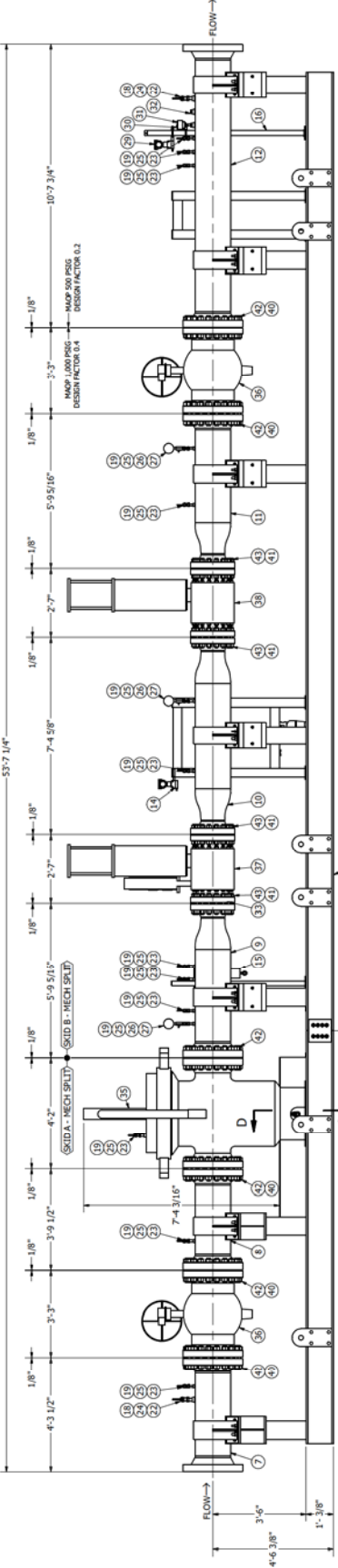
REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	CNS	ECW	ZAT	05/11/2020

ENERGY ENGINEERS
 ENGINEERS (MANUFACTURING) CONSTRUCTION
 PO BOX 485
 HAMILTON, OHIO 45011
 PHONE 513-767-8240
 WWW.ENERGYCO.COM

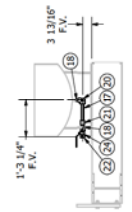
DRAWING STATUS: **DUKE - CV103/104**
C350 PROJECT - HIGHPOINT PARK STATION
16"X10" FC SKID - STRUCTURAL
TUBING SUPPORT & FILTER POLE DETAILS
 COUNTY: FRANKLIN, HAMILTON, CLAY COUNTY STATE: OHIO
 DRAWING NUMBER: 7175-501-002
 DRAWING SCALE: 2"=1'
 SHEET: 1 OF 1



SECTION B-B
REF DWG # 7175-600-001
BOLT-ON TUBING SUPPORT REMOVED FOR CLARITY
SCALE 1/2"=1'



VIEW C-C
REF DWG # 7175-600-001
BOLT-ON TUBING SUPPORT REMOVED FOR CLARITY
SCALE 1/2"=1'



SECTION D-D (THIS PAGE)
FILTER DRAIN DETAIL
TYP. 2 PLACES
SCALE 1/2"=1'

DUKE - CV103/104
C350 PROJECT - HIGHPOINT PARK STATION
16\"/>

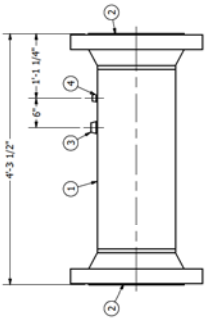
CENERGY ENGINEERS (INCORPORATED) CONSTRUCTION
PO BOX 485
MADISON, OHIO 43040
PHONE 367-8249
WWW.CENERGYCO.COM

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	CNS	ECW	NPF	05/11/2020

ISSUED FOR CONSTRUCTION

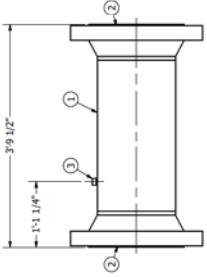
- REVISIONS:**
- 1. BUILD TO SAME STANDARDS & SPECIFICATION
 - 2. ASME B31.9
 - 3. DESIGN FLOW: 12 TO 20 MGD
 - 4. INLET DESIGN FACTOR: 0.4
 - 5. CORROSION ALLOWANCE: 0.00
 - 6. 100% RADIOGRAPHIC INSPECTION
 - 7. 100% HYDRO TEST WITH WATER AT MIN. 1,500 PSIG / MAX. 1,500 FOR EIGHT (8) HOURS
 - 8. INLET HYDRO TEST WITH WATER AT MIN. 1,000 PSIG / MAX. 1,000 FOR EIGHT (8) HOURS
 - 9. INLET HYDRO TEST WITH WATER AT MIN. 1,000 PSIG / MAX. 1,000 FOR EIGHT (8) HOURS
 - 10. INLET HYDRO TEST WITH WATER AT MIN. 1,000 PSIG / MAX. 1,000 FOR EIGHT (8) HOURS
 - 11. OUTLET DESIGN PRESSURE: 150 PSIG
 - 12. DESIGN TEMPERATURE RANGE: -20 TO 100°F
 - 13. DESIGN FLOW: 12 TO 20 MGD
 - 14. OUTLET PRESSURE: 400 PSIG
 - 15. GATE VALVES TO BE FIELD BOLTED BY OTHERS
 - 16. GATE VALVES TO BE FIELD BOLTED BY OTHERS
 - 17. NORMALLY OPERATED CLASS 1500 VENTS MUST BE SPED A
 - 18. DUE TO ROUTE LOW PRESSURE VENTS 15' AWAY FROM BUILDING EYE & HIGH PRESSURE VENTS 5'-11" AWAY FROM BUILDING

SPOOL # 7175-2-1	
ITEM	QTY
1	16" PIPE, 0.500"W, AP5L PSL-2 X52, ERW/LSAW, 4 FT LONG
2	16" FLANGE, R FWN, ANSI 600, 0.500"W, A694 F52, MSS SP-44
3	1" THREADED, 3000#, FOR 16" RUN PIPE, A694 F52, MSS SP-97
4	1/2" THREADED, 3000#, FOR 16" RUN PIPE, A694 F52, MSS SP-97



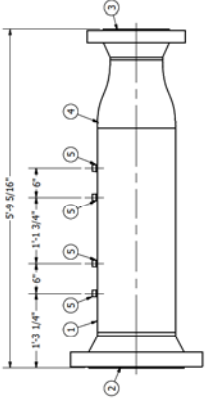
ELEVATION VIEW
SCALE 1"=1'

SPOOL # 7175-2-2	
ITEM	QTY
1	16" PIPE, 0.500"W, AP5L PSL-2 X52, ERW/LSAW, 3 FT LONG
2	16" FLANGE, R FWN, ANSI 600, 0.500"W, A694 F52, MSS SP-44
3	1/2" THREADED, 3000#, FOR 16" RUN PIPE, A694 F52, MSS SP-97



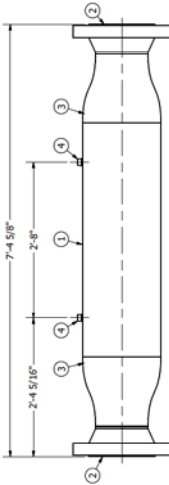
ELEVATION VIEW
SCALE 1"=1'

SPOOL # 7175-2-3	
ITEM	QTY
1	16" PIPE, 0.500"W, AP5L PSL-2 X52, ERW/LSAW, 4 FT LONG
2	16" FLANGE, R FWN, ANSI 600, 0.500"W, A694 F52, MSS SP-44
3	1" THREADED, 3000#, FOR 16" RUN PIPE, A694 F52, MSS SP-97
4	1/2" THREADED, 3000#, FOR 16" RUN PIPE, A694 F52, MSS SP-97



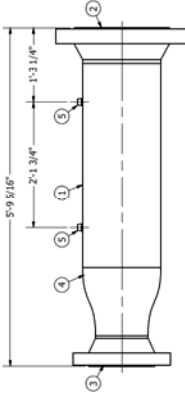
ELEVATION VIEW
SCALE 1"=1'

SPOOL # 7175-2-4	
ITEM	QTY
1	16" PIPE, 0.500"W, AP5L PSL-2 X52, ERW/LSAW, 4 FT LONG
2	16" FLANGE, R FWN, ANSI 600, 0.500"W, A694 F52, MSS SP-44
3	1" THREADED, 3000#, FOR 16" RUN PIPE, A694 F52, MSS SP-97
4	1/2" THREADED, 3000#, FOR 16" RUN PIPE, A694 F52, MSS SP-97



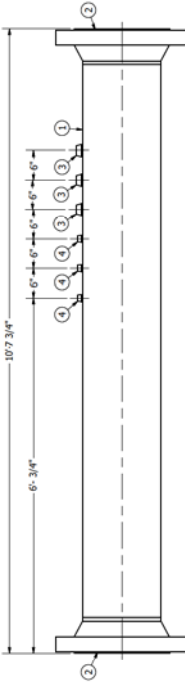
ELEVATION VIEW
SCALE 1"=1'

SPOOL # 7175-2-5	
ITEM	QTY
1	16" PIPE, 0.500"W, AP5L PSL-2 X52, ERW/LSAW, 4 FT LONG
2	16" FLANGE, R FWN, ANSI 600, 0.500"W, A694 F52, MSS SP-44
3	1" THREADED, 3000#, FOR 16" RUN PIPE, A694 F52, MSS SP-97
4	1/2" THREADED, 3000#, FOR 16" RUN PIPE, A694 F52, MSS SP-97



ELEVATION VIEW
SCALE 1"=1'

SPOOL # 7175-2-6	
ITEM	QTY
1	16" PIPE, 0.500"W, AP5L PSL-2 X52, ERW/LSAW, 10 FT LONG
2	16" FLANGE, R FWN, ANSI 600, 0.500"W, A694 F52, MSS SP-44
3	1" THREADED, 3000#, FOR 16" RUN PIPE, A694 F52, MSS SP-97
4	1/2" THREADED, 3000#, FOR 16" RUN PIPE, A694 F52, MSS SP-97



ELEVATION VIEW
SCALE 1"=1'

NOTES:
 1. BUILD TO ASME STANDARDS & SPECIFICATION
 2. ASME B31.8 DESIGN
 3. INLET DESIGN FACTOR, 0.4
 4. CORROSION ALLOWANCE, 0.00
 5. 100% RADIOGRAPHIC INSPECTION
 6. INLET HYDRO TEST WITH WATER AT MIN 1,500 PSIG / MAX 1,500 FOR EIGHT (8) HOURS
 7. INLET HYDRO TEST WITH WATER AT MIN 1,000 PSIG / MAX 1,000 FOR EIGHT (8) HOURS
 8. INLET HYDRO TEST WITH WATER AT MIN 1,000 PSIG / MAX 1,000 FOR EIGHT (8) HOURS
 9. INLET HYDRO TEST WITH WATER AT MIN 1,000 PSIG / MAX 1,000 FOR EIGHT (8) HOURS
 10. INLET HYDRO TEST WITH WATER AT MIN 1,000 PSIG / MAX 1,000 FOR EIGHT (8) HOURS
 11. OUTLET DESIGN PRESSURE, 500 PSIG

ISSUED FOR CONSTRUCTION

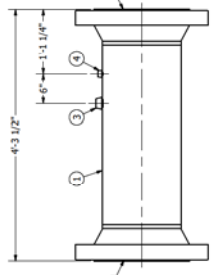
REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	CNS	ECW	NSF	05/11/2020

GENERGY ENGINEERS (MANUFACTURING) CONSTRUCTION
 PO BOX 485
 HAMILTON, OHIO 45011
 PHONE 361-8240
 WWW.GENERGYCO.COM

DUKE - CV103/104
C350 PROJECT - HIGHPOINT PARK STATION
16"X10" FC SKID - MECHANICAL
SPOOL DETAIL (1)
 COUNTY/FARSHER, HAMILTON COUNTY STATE, OHIO
 DRAWING NUMBER: 7175-700-001
 DRAWING SCALE: 1"=1'
 SHEET: 1 OF 1

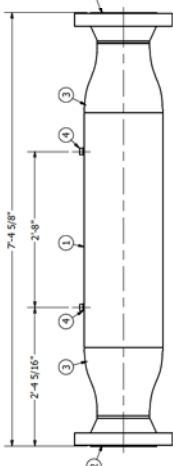
THESE DRAWINGS ARE THE PROPERTY OF GENERGY, LLC. DRAWINGS SHALL BE USED FOR THE PROJECT OF GENERGY, LLC. NO PART SHALL BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF GENERGY, LLC.

SPOOL # 7175-2-7		DESCRIPTION
ITEM QTY		
1	16" PIPE, 0.500"W, AP15L, PSL-2 XS2, ERW/LSAW, 4 FT LONG	
2	16" FLANGE, RPVN, ANSI 600, 0.500"W, A694 F52, MSS SP-44	
3	1" THREADED REDUCER, 0.500" X 0.500"W, WPT52, MSS SP-75	
4	1/2" THREADED, 3000# FOR 16" RUN PIPE, A694 F52, MSS SP-97	



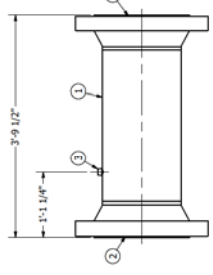
ELEVATION VIEW
SCALE 1"=1'

SPOOL # 7175-2-10		DESCRIPTION
ITEM QTY		
1	16" PIPE, 0.500"W, AP15L, PSL-2 XS2, ERW/LSAW, 4 FT LONG	
2	16" FLANGE, RPVN, ANSI 600, 0.500"W, A694 F52, MSS SP-44	
3	1" THREADED REDUCER, 0.500" X 0.500"W, WPT52, MSS SP-75	
4	1/2" THREADED, 3000# FOR 16" RUN PIPE, A694 F52, MSS SP-97	



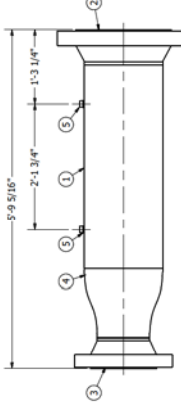
ELEVATION VIEW
SCALE 1"=1'

SPOOL # 7175-2-8		DESCRIPTION
ITEM QTY		
1	16" PIPE, 0.500"W, AP15L, PSL-2 XS2, ERW/LSAW, 3 FT LONG	
2	16" FLANGE, RPVN, ANSI 600, 0.500"W, A694 F52, MSS SP-44	
3	1" THREADED REDUCER, 0.500" X 0.500"W, WPT52, MSS SP-75	
4	1/2" THREADED, 3000# FOR 16" RUN PIPE, A694 F52, MSS SP-97	



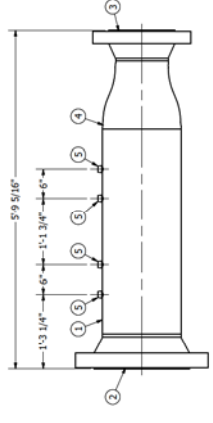
ELEVATION VIEW
SCALE 1"=1'

SPOOL # 7175-2-11		DESCRIPTION
ITEM QTY		
1	16" PIPE, 0.500"W, AP15L, PSL-2 XS2, ERW/LSAW, 4 FT LONG	
2	16" FLANGE, RPVN, ANSI 600, 0.500"W, A694 F52, MSS SP-44	
3	1" THREADED REDUCER, 0.500" X 0.500"W, WPT52, MSS SP-75	
4	1/2" THREADED, 3000# FOR 16" RUN PIPE, A694 F52, MSS SP-97	



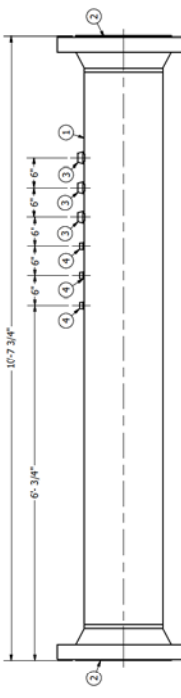
ELEVATION VIEW
SCALE 1"=1'

SPOOL # 7175-2-9		DESCRIPTION
ITEM QTY		
1	16" PIPE, 0.500"W, AP15L, PSL-2 XS2, ERW/LSAW, 4 FT LONG	
2	16" FLANGE, RPVN, ANSI 600, 0.500"W, A694 F52, MSS SP-44	
3	1" THREADED REDUCER, 0.500" X 0.500"W, WPT52, MSS SP-75	
4	1/2" THREADED, 3000# FOR 16" RUN PIPE, A694 F52, MSS SP-97	



ELEVATION VIEW
SCALE 1"=1'

SPOOL # 7175-2-12		DESCRIPTION
ITEM QTY		
1	16" PIPE, 0.500"W, AP15L, PSL-2 XS2, ERW/LSAW, 10 FT LONG	
2	16" FLANGE, RPVN, ANSI 600, 0.500"W, A694 F52, MSS SP-44	
3	1" THREADED REDUCER, 0.500" X 0.500"W, WPT52, MSS SP-75	
4	1/2" THREADED, 3000# FOR 16" RUN PIPE, A694 F52, MSS SP-97	



ELEVATION VIEW
SCALE 1"=1'

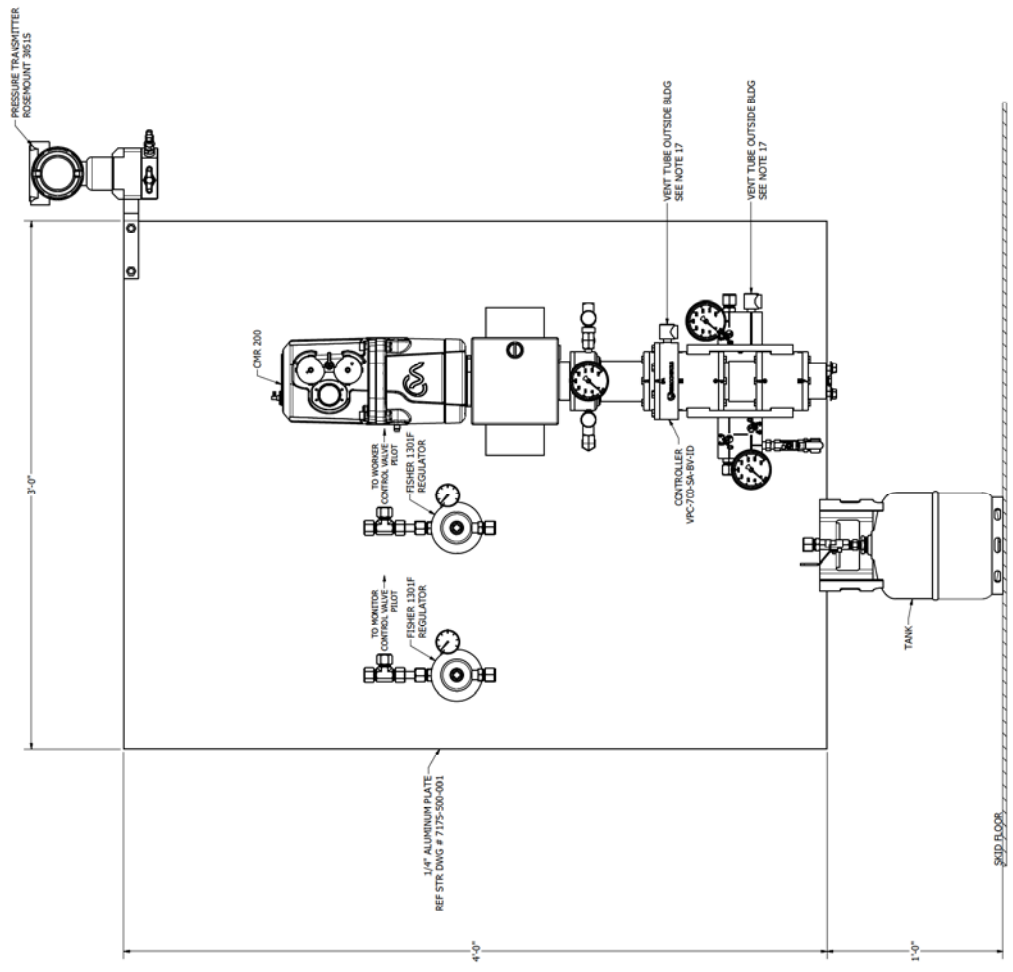
NOTES:
 1. ALL TO COME STANDARDS & SPECIFICATION
 2. ASME B31.9 DESIGN
 3. INLET DESIGN FACTOR 0.4
 4. CORROSION ALLOWANCE 0.00
 5. 100% RADIOGRAPHIC INSPECTION
 6. INLET HYDRO TEST WITH WATER AT MIN 1,500 PSIG / MAX 1,600 PSIG FOR EIGHT (8) HOURS
 7. INLET HYDRO TEST WITH WATER AT MIN 1,500 PSIG / MAX 1,600 PSIG FOR EIGHT (8) HOURS
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 9. INLET HYDRO TEST WITH WATER AT MIN 1,500 PSIG / MAX 1,600 PSIG FOR EIGHT (8) HOURS
 10. INLET HYDRO TEST WITH WATER AT MIN 1,500 PSIG / MAX 1,600 PSIG FOR EIGHT (8) HOURS
 11. OUTLET DESIGN PRESSURE 500 PSIG
 12. DESIGN TEMPERATURE RANGE -20 TO 100°F
 13. DESIGN FLOW 12 TO 20 MMSGD RANGE 460 - 675 PSIG
 14. OUTLET PRESSURE 400 PSIG
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ISSUED FOR CONSTRUCTION

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	CNS	ECW	NSF	05/11/2025

GENERGY
 ENGINEERING (MANUFACTURING) CONSTRUCTION
 PO BOX 485
 HAMILTON, OHIO 45011
 PHONE 360-742-4200
 WWW.GENERGYCO.COM

DUKE - CV103/104
C350 PROJECT - HIGHPOINT PARK STATION
16"X10" FC SKID - MECHANICAL
SPOOL DETAIL (2)
 COUNTY/PAISER: HAMILTON/COUNTY STATE: OHIO
 DRAWING NUMBER: 7175-700-002
 DRAWING SCALE: 1"=1'
 SHEET: 1 OF 1



ELEVATION VIEW
 FOR LAYOUT REFERENCE ONLY
 FINAL PANEL ASSEMBLY MAY VARY
 REF ENGINEERED EQUIPMENT BOOK
 FOR ALL PART IDENTIFICATION
 SCALE 3"=1'

DUKE - CV103/104
 C350 PROJECT - HIGHPOINT PARK STATION
 16"X10" FC SKID - MECHANICAL
 INSTRUMENT PANEL DETAIL

CENERGY
 ENGINEERS (MANUFACTURING) CONSTRUCTION
 PO BOX 485
 HAMILTON, OHIO 45011
 PHONE 513-767-8240
 WWW.CENERGYCO.COM

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	CNS	ECW	NPF	05/11/2020

REVISION HISTORY

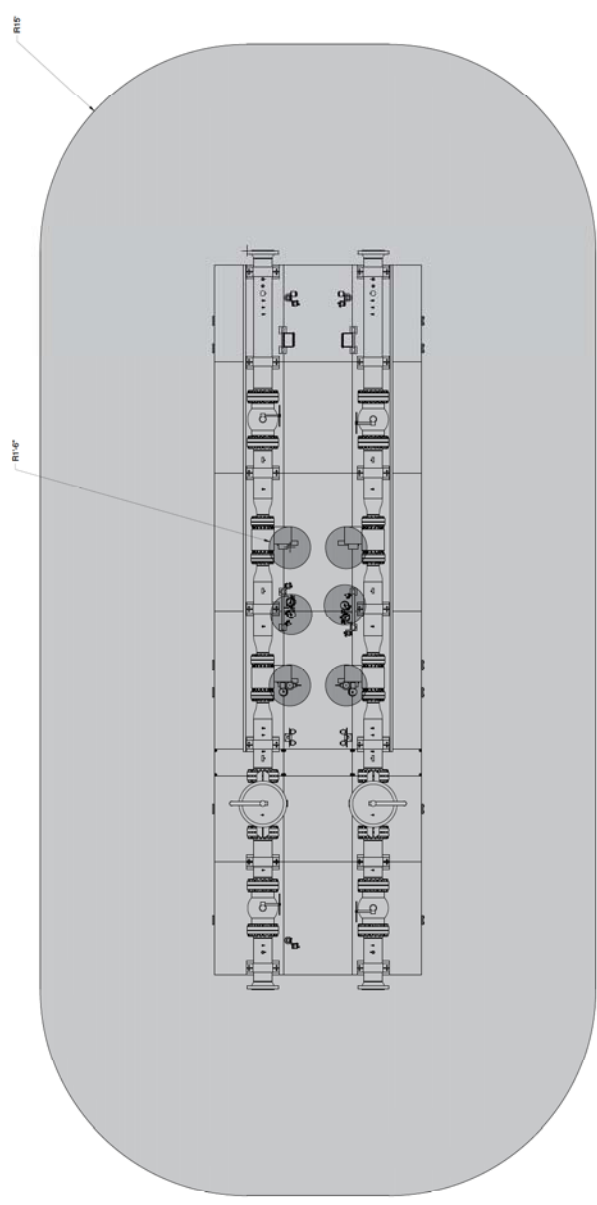
DRAWING STATUS:
ISSUED FOR CONSTRUCTION

- 1. BUILT TO DUNE STANDARDS & SPECIFICATION
- 2. ASME B31.9
- 3. DESIGN FLOW: 12 TO 20 MMSGD
- 4. INLET DESIGN PRESSURE: 0-4 PSIG
- 5. INLET DESIGN TEMPERATURE: 30 TO 100°F
- 6. CORROSION ALLOWANCE: 0.00
- 7. 100% RADIOGRAPHIC INSPECTION
- 8. INLET HYDRO TEST WITH WATER AT MIN. 1,500 PSIG / MAX. 1,500 FOR EIGHT (8) HOURS
- 9. INLET HYDRO TEST WITH AIR AT MIN. 750 PSIG / MAX. 600 FOR EIGHT (8) HOURS
- 10. DESIGN TEMPERATURE RANGE: -20 TO 100°F
- 11. DESIGN FLOW: 12 TO 20 MMSGD
- 12. RANGE: 400 - 675 PSIG
- 13. OUTLET PRESSURE: 400 PSIG
- 14. OUTLET TEMPERATURE: 30 TO 100°F
- 15. OUTLET MATERIAL: 304L STAINLESS STEEL
- 16. OTHER: NONE
- 17. NORMALLY OPERATED CLASS 1, DIV 1 VENTS MUST BE SPED A
- 18. DUE TO ROUTE LOW PRESSURE VENTS 15' AWAY FROM BUILDING EYE & HIGH PRESSURE VENTS 5'-11" AWAY FROM BUILDING

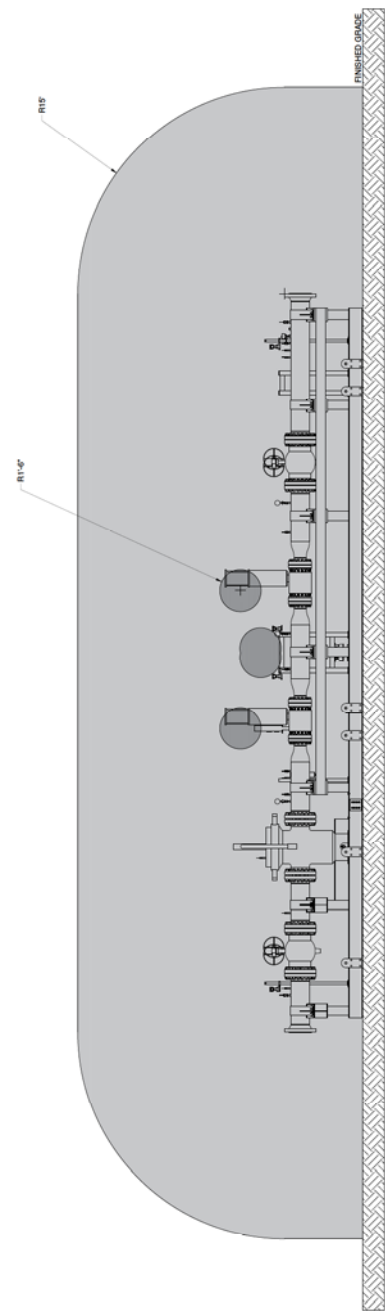
AREA CLASSIFICATIONS
CLASSIFIED ACCORDING TO THE AMERICAN GAS ASSOCIATION (AGA) 1001



GENERAL CLASSIFICATION NOTE:
CLASS 1 DIVISION 1 AREAS
5' RADIUS AROUND ALL BLOWDOWN VENTS RELIEF VALVES AS CONSIDERED NORMAL OPERATIONS
1.5' RADIUS AROUND ALL INSTRUMENT VENTS FOR THOSE CONSIDERED NORMAL OPERATIONS
FOR OPERATION/MAINTENANCE CONDITIONS
CLASS 1 DIVISION 2 AREAS
15' RADIUS AROUND ALL BLOWDOWN VENTS, RELIEF VALVES, CLOSURES, FLANGES, VALVES, HEADERS, PIPING AND LOUVERS
3' RADIUS AROUND INSTRUMENT VENTS



PLAN VIEW



ELEVATION VIEW

GENERAL NOTES:
1. FOR CLASSIFICATION LOCATIONS FOR ELECTRICAL INSTALLATIONS IN GAS UTILITY AREAS

DRAWING STATUS:
ISSUED FOR CONSTRUCTION

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	JPH	DBB	JSA	08/11/2010

GENERGY ENGINEERING (MANUFACTURING) CONSTRUCTION
PO BOX 485
MADISON, IN 47102
PHONE: 317.254.4500
WWW.GENERGYCO.COM

C350 PROJECT - HIGHPOINT PARK STATION
HAZARDOUS LOCATION
FLOW CONTROL SKID
COUNTY/PARISH: HAMILTON COUNTY / STATE: OHIO
DRAWING NUMBER: 7175-1200-100
DRAWING SCALE: NONE
SHEET: 1 OF 1
REVISION: 0

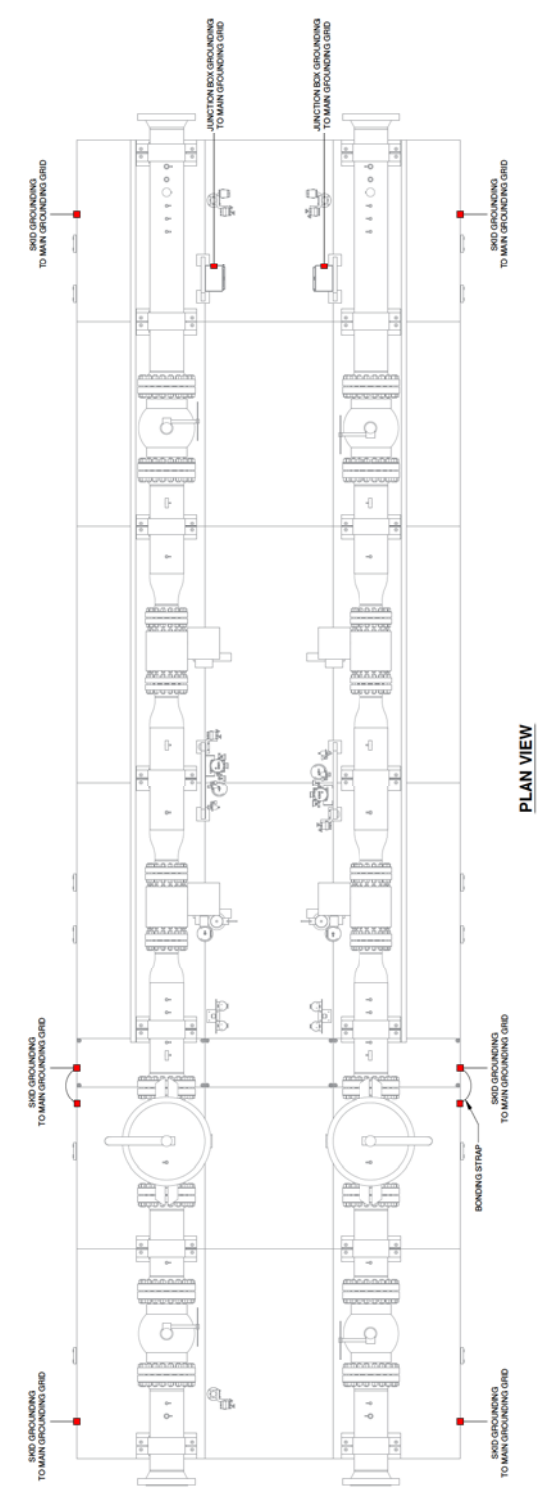
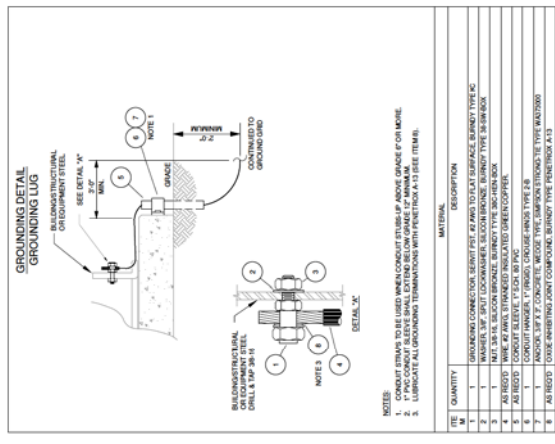
DRAWING CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF GENERGY, LLC AND SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF GENERGY, LLC. DRAWING SHALL BE USED FOR ITS INTENDED PURPOSE AND SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF GENERGY, LLC.

GROUNDING LEGEND

- ELECTRICAL MECHANICAL CONNECTION

GROUNDING NOTES:

- THE RESPECTIVE REGULATOR SKIDS SHALL BE PROVIDED WITH (4) ATTACHMENTS FOR ELECTRICAL GROUNDING PROVISIONS. THE ATTACHMENTS SHALL BE PROVIDED ON THE OUTSIDE OF THE EQUIPMENT AND SHALL BE NOTED ON THE DRAWINGS.
- ALL ELECTRICAL CONNECTIONS SHALL BE MADE TO THE EQUIPMENT ENCLLOSURES CONDUITS AND ANY SERVICE CONDUIT THAT IS TO BE GROUNDED TO THE MAIN GROUNDING GRID IN ACCORDANCE WITH THE REQUIREMENTS OF NEC 250 AND 250.200.
- SKIDS ARE TO BE BONDED TOGETHER UTILIZING BONDING STRAP



PLAN VIEW

ITEM	QUANTITY	DESCRIPTION	MATERIAL
1	4	GROUNDED CONDUCTOR FOR SKID TO MAIN GROUNDING GRID	1/2\"/>

- NOTES:**
1. CONDUIT STRAPS TO BE USED WHEN CONDUIT STRAPS UP ABOVE GRADE TO CONDUIT.
 2. CONDUIT SHALL BE USED FOR ALL GROUNDING TERMINATIONS WITH PENETRATION AS PER DETAIL.
 3. LUBRICATE ALL GROUNDING TERMINATIONS WITH PENETRATION AS PER DETAIL.

DUKE - CV103/104
C350 PROJECT - HIGHPOINT PARK STATION
GROUNDING PLAN
FLOW CONTROL SKID

CENERGY ENGINEERING (MANUFACTURING) CONSTRUCTION
 PO BOX 485
 1000 W. 10TH ST.
 P.O. BOX 485
 P.O. BOX 485
 P.O. BOX 485
 WWW.CENERGYCO.COM

COUNTY/PARISH: HAMILTON COUNTY (STATE: MD)
 DRAWING NUMBER: 7175-1200-200
 ESTIMATE: 0002

REVISION: 0
 SHEET: 1 OF 1

REVISION HISTORY

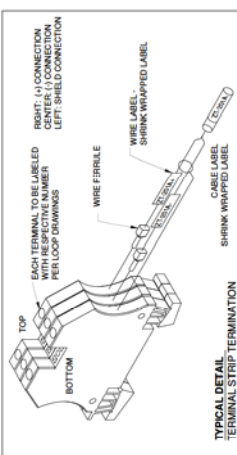
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0	ISSUED FOR CONSTRUCTION	JPH	BDB	JSA	08/11/2020

ISSUED FOR CONSTRUCTION

GENERAL NOTES:

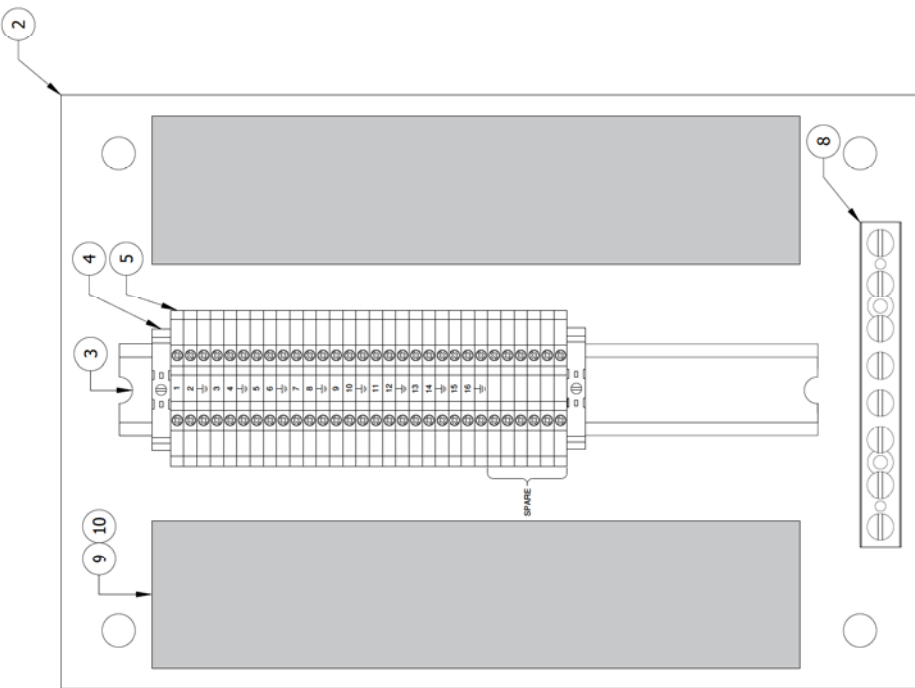
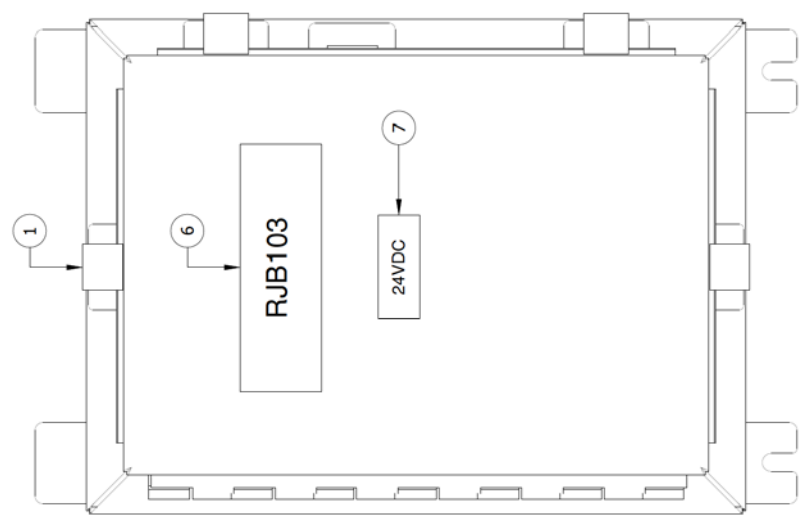
1. CONTRACTOR TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION IN ACCORDANCE TO THE LATEST VERSION OF THE NEC.
2. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY LABOR, EQUIPMENT AND MATERIAL TO PROVIDE COMPLETE INSTALLATION.

ITEM	QTY	MANUFACTURER	CATALOG NUMBER	DESCRIPTION
1	1	HOFFMAN	A19H208SLP	NEMA 4X JUNCTION BOX 18X12X8
2	1	HOFFMAN	A19P12	ENCLOSURE BACKPLANE
3	1	AB	1482-D08	ALUMINUM RASSED DIN RAIL (28mm x 57.5mm HIGH x 1M LONG) 30mm x 7.5mm
4	2	AB	1482-ENL28	HEAVY DUTY ANCHOR
5	30	AB	1482-J3	FEEDTHROUGH TERMINAL GREY
6	1			JUNCTION BOX PHENOLIC TAG - 2" x 6" WITH 1/2" LETTERING "RJB103"
7	1	PANDUIT	UG950-1146	JUNCTION BOX PHENOLIC TAG - 1" x 2.25" WITH 1/2" LETTERING "24VDC"
8	1	PANDUIT	GG24L508	UNIVERSAL GROUND BAR #14-4 WIRE 4 PORTS
9	1	PANDUIT	GG24L508	2" x 4" WIRE DUCT - GREY
10	1	PANDUIT	CG208	2" WIRE DUCT COVER



NOTES:

- CONTRACTOR SHALL COMPLY WITH THE LATEST VERSION OF THE NEC
- TERMINALS ARE RATED FOR 1000V MAX AT 1000MCMC
- ALL CONNECTIONS SHALL BE MADE AT THE REAR FRONT OF PANEL
- LABEL IDENTIFICATION SHALL BE PAID ATTENTION FOR EASE OF MAINTENANCE
- JUNCTION BOX AND TERMINAL STRIP ARE TO BE ATTACHED WITH 2 PART EPOXY



GENERAL NOTES:

- CONTRACTOR TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION IN ACCORDANCE TO THE LATEST VERSION OF THE NEC
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY LABOR, EQUIPMENT AND MATERIAL TO PROVIDE COMPLETE INSTALLATION

DRAWING STATUS:

ISSUED FOR
CONSTRUCTION

REVISION HISTORY

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
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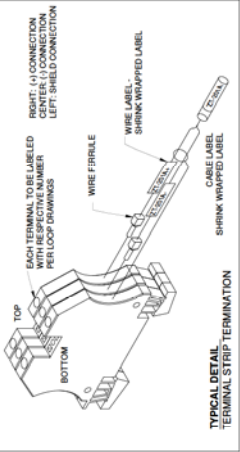
CENERGY
ENGINEERING/MANUFACTURING/CONSTRUCTION

PO BOX 485
MILTON, MA 02138
PHONE: 781-543-6490
WWW.CENERGY.COM

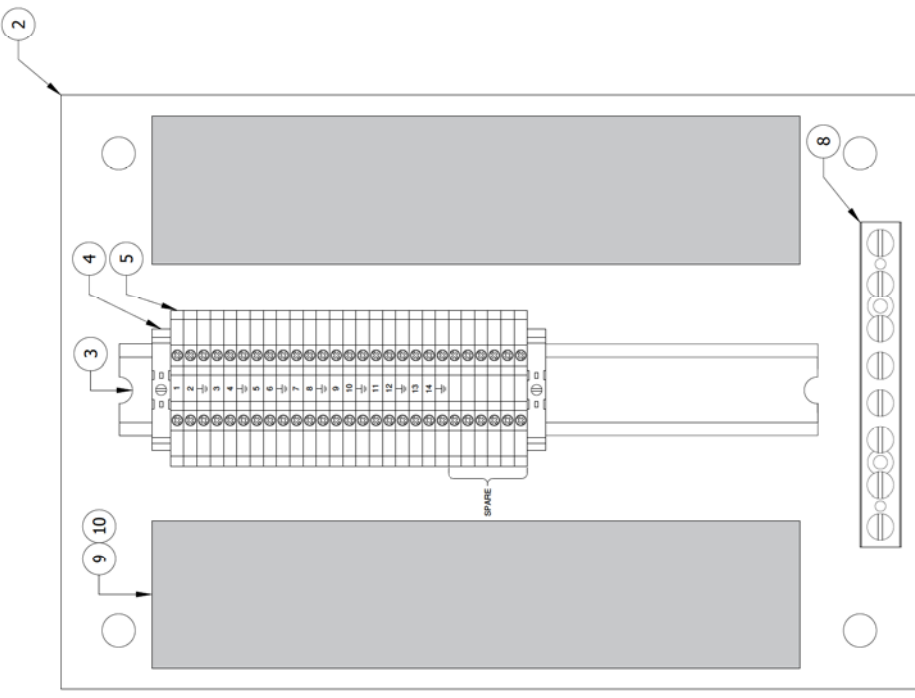
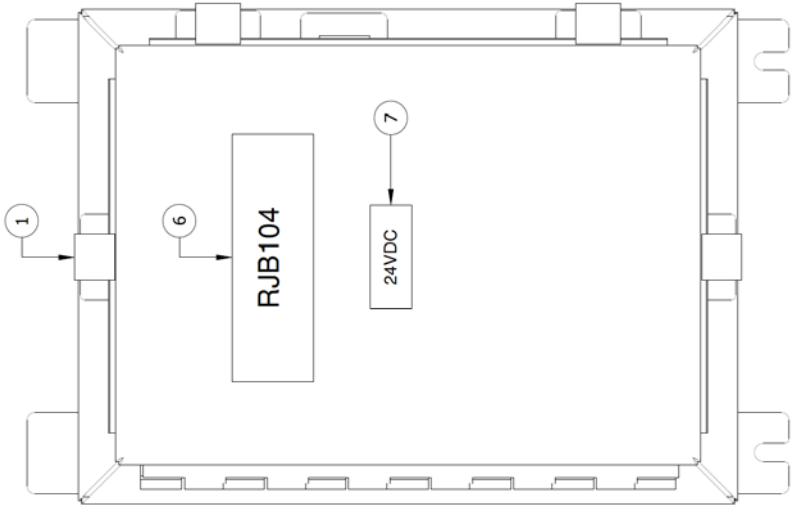
DUKE - CV103/104
C350 PROJECT - HIGHPOINT PARK STATION
DC JUNCTION BOX LAYOUT
RJB103*

COUNTY/PARISH: HAMILTON COUNTY ESTATE: CHD
DRAWING NUMBER: 7175-1300-110 SHEET: 1 OF 1
DRAWING SCALE: NONE REVISION: 0

ITEM	QTY	MANUFACTURER	CATALOG NUMBER	DESCRIPTION
1	1	HOFFMAN	A19H208SLP	NEMA 4X JUNCTION BOX 18X12X8
2	1	HOFFMAN	A19P12	ENCLOSURE BACKPLANE
3	1	AB	1482-D98	ALUMINUM RASSED DIN RAIL (26mm x 57.5mm HIGH x 1M LONG) 35mm x 7.5mm
4	2	AB	1482-ENL58	HEAVY DUTY ANCHOR
5	27	AB	1482-J3	FEEDTHROUGH TERMINAL GREY
6	1			JUNCTION BOX PHENOLIC TAG - 2" x 6" WITH 1/2" LETTERING "RJB104"
7	1	PANDUIT	UG800-1146	JUNCTION BOX PHENOLIC TAG - 1" x 2.25" WITH 1/2" LETTERING "24VDC"
8	1	PANDUIT	GG24L58	UNIVERSAL GROUND BAR, #14-4 WIRE, 4 PORTS
9	1	PANDUIT	CG24L58	2" x 4" WIRE DUCT - GREY
10	1		CG24L58	2" WIRE DUCT COVER



- NOTES:
- CONTRACTOR SHALL COMPLY WITH THE LATEST VERSION OF THE NEC
 - TERMINALS ARE RATED FOR 1000V MAX AT 1000A AC
 - TERMINALS SHALL BE INSTALLED IN ACCORDANCE WITH THE WRITTEN CONSENT OF ENERGY LLC AND SHALL NOT BE COMED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF ENERGY LLC
 - DRAMAING SHALL BE USED FOR ITS INTENDED PURPOSE AND SHALL BE RETURNED UNTO DRAWING
 - LABEL IDENTIFICATION SHALL BE PAID ATTENTION FOR EASE OF MAINTENANCE
 - JUNCTION BOX AND TERMINAL STRIP ARE TO BE ATTACHED WITH 2 PART EPOXY



GENERAL NOTES:

- CONTRACTOR TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION IN ACCORDANCE TO THE LATEST VERSION OF THE NEC
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY LABOR, EQUIPMENT AND MATERIAL TO PROVIDE COMPLETE INSTALLATION

DRAWING STATUS:

ISSUED FOR CONSTRUCTION

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	JHM	JSB	JSA	08/11/2023

GENERGY
ENGINEERING/MANUFACTURING/CONSTRUCTION

PO BOX 485
MILWAUKEE, WI 53240
PHONE: 775-334-4840
WWW.GENERGYCO.COM

DUKE - CV103/104
C350 PROJECT - HIGHPOINT PARK STATION
DC JUNCTION BOX LAYOUT
"RJB104"

COUNTY/PARISH: HAMILTON COUNTY STATE: OHIO
DRAWING NUMBER: 7175-1300-111
DRAWING SCALE: NONE

SHEET: 1 OF 1

REVISION:



REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	JMH	DBB	JSA	01/10/20

ISSUED FOR CONSTRUCTION

DRAWING STATUS:

GENERAL NOTES:
 1. CONTRACTOR TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION IN ACCORDANCE TO THE LATEST VERSION OF THE NEC
 2. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY LABOR, EQUIPMENT AND MATERIAL TO PROVIDE COMPLETE INSTALLATION

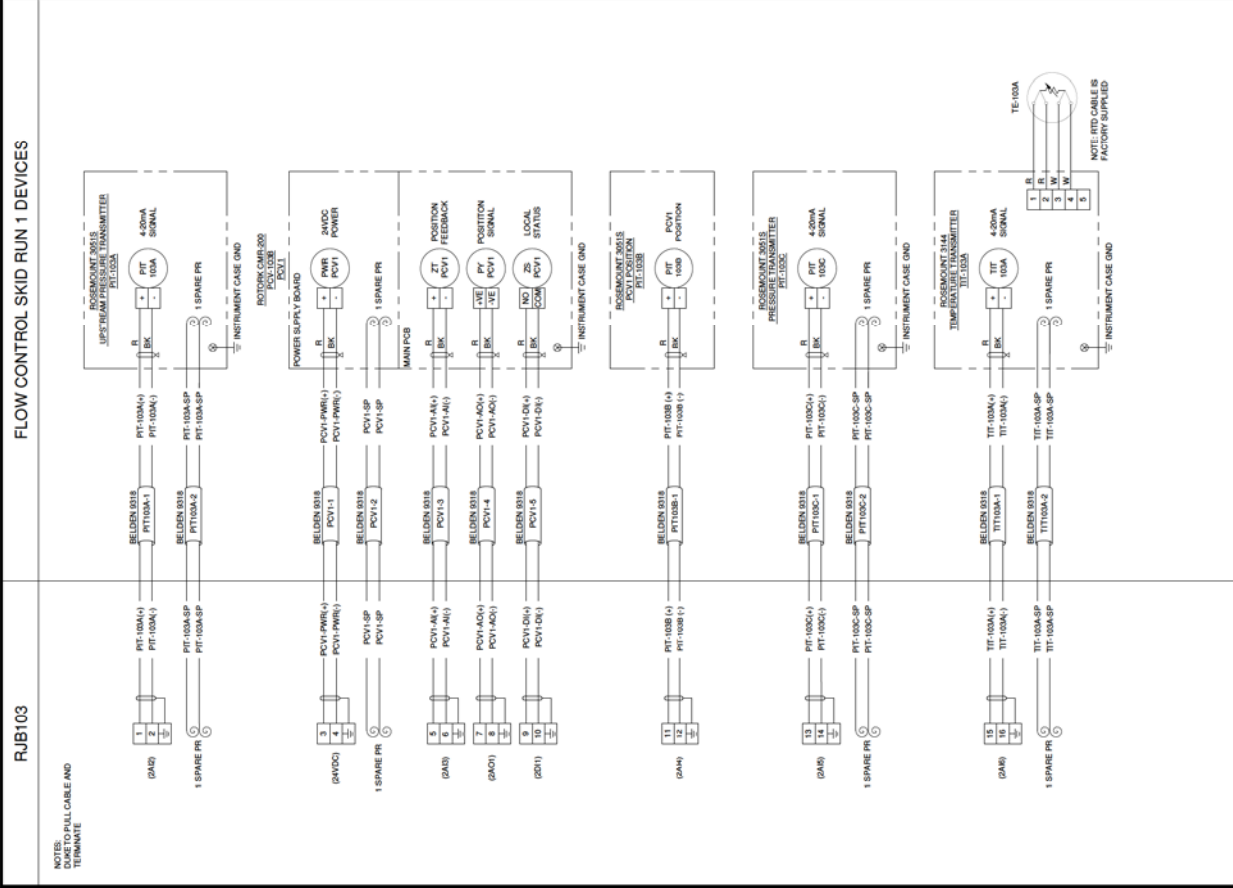
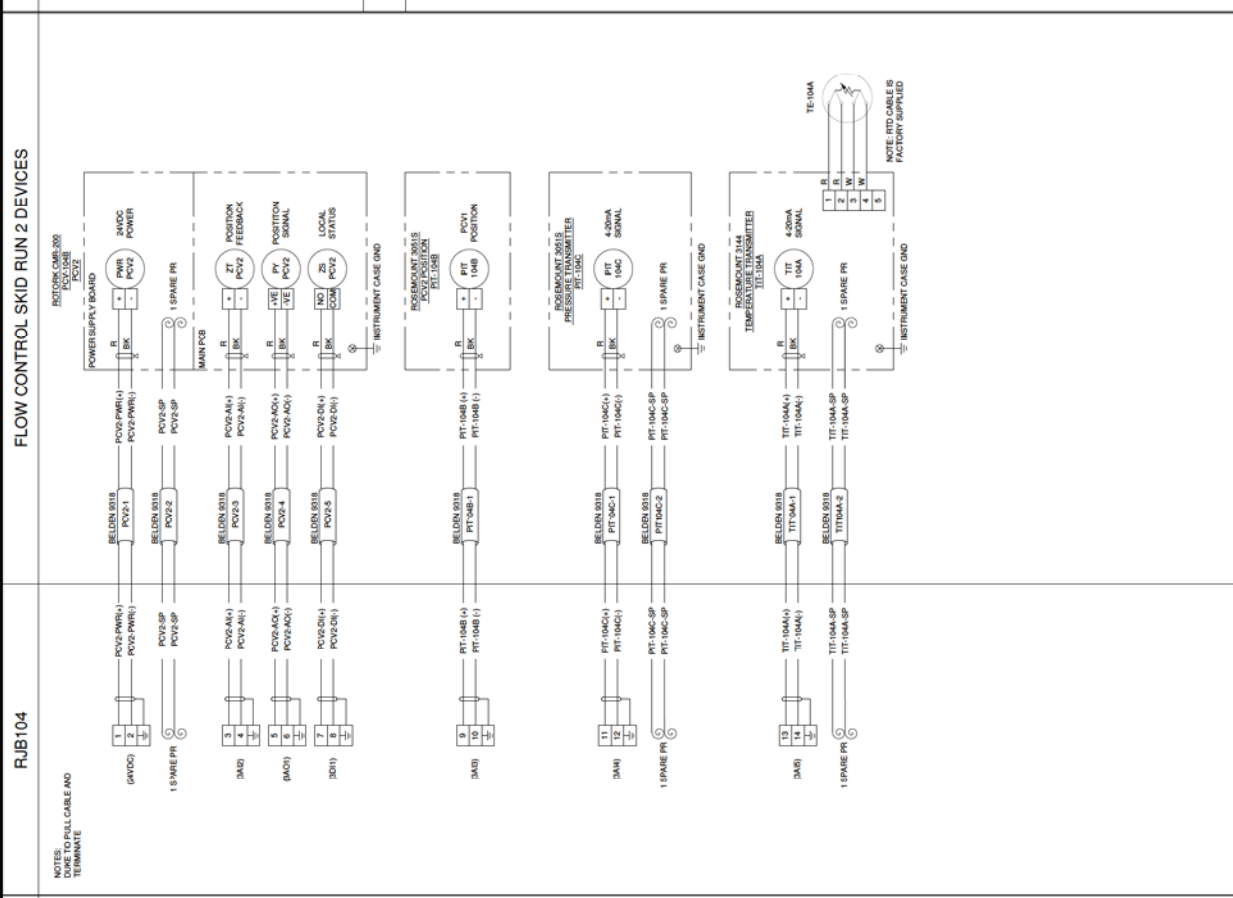
NOTES & LEGEND

ELECTRICAL NOTES (DRAWING SPECIFIC):

- SHIELDS ARE TO BE CUT AND PROPERLY TAPED AT THE INSTRUMENT
- SPARE WIRES ARE TO BE COILED AND STORED IN A MANNER THAT THEY ARE EASILY IDENTIFIABLE. LENGTH IS TO BE PROVIDED TO REACH ALL TERMINALS IN THE INSTRUMENT ROOM IN HEAD THEN THEY ARE TO BE STORED IN EXPLOSION PROOF JAR STYLE FITTING AT THE INSTRUMENT HEAD
- INSTRUMENTS ARE TO BE SEALERED TO MEET THE INSTRUMENT MANUFACTURER'S REQUIREMENTS
- ALL INSTRUMENT CASES MUST BE GROUNDED. REFERENCE TO GROUND SHOULD BE MEASURED AT JOHM TO EARTH CONNECTION TO BE MADE WITH #10AWG THINW GROUND INSTRUMENT JUNCTION BOX (RUB/VA RUB/VA)
- SPARES, BOND TERMINALS, OR WIRE FERRULES ARE TO BE USED AT ALL CONNECTIONS

LEGEND

- OUT A TAPED SHIELD
- SPARE WIRE - COILED AND STORED
- BELODN XXXX / XXXXXX CABLE ID
- XX UT XXXX INSTRUMENT CONNECTION
- TERMINAL CONNECTION

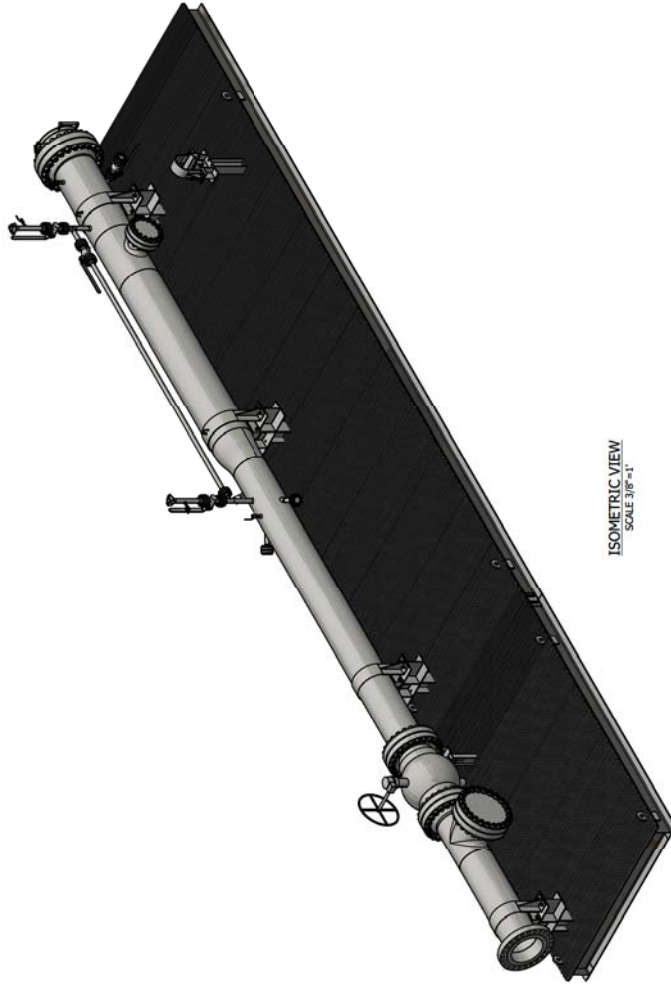


Needs to be Quoted Item Out for Quote										PREVAILING AML: Duke										SECONDARY AML																			
Design Status:										Project Name: Duke CV-103/104 Flow Control										DESIGN QTY.																			
Item #	Vendor	Quote#	PO#	IFC	Date Quoted	PO Issued Date	ETA	7175	Manufacturer	Description	IFR QTY	IFA QTY	IFB QTY	IFC QTY	IFD QTY	IFE QTY	IF F Qty	IF G Qty	IF H Qty	IF I Qty	IF J Qty	IF K Qty	IF L Qty	IF M Qty	IF N Qty	IF O Qty	IF P Qty	IF Q Qty	IF R Qty	IF S Qty	IF T Qty	IF U Qty	IF V Qty	IF W Qty	IF X Qty	IF Y Qty	IF Z Qty	Notes	
Components																																							
CMP71										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP72										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP73										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP74										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP75										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP76										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP77										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP78										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP79										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP80										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP81										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP82										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP83										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP84										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP85										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP86										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP87										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP88										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP89										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP90										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP91										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP92										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP93										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP94										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP95										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP96										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP97										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP98										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP99										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
CMP100										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
Structural Steel																																							
S1										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
S2										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
S3										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
S4										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
S5										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
S6										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
S7										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													
S8										1/2" X 1/2" X 1/2" PLATE, ASTM A36																													

ISSUED FOR
CONSTRUCTION

DUKE ENERGY, PL-105 LAUNCHER SKID

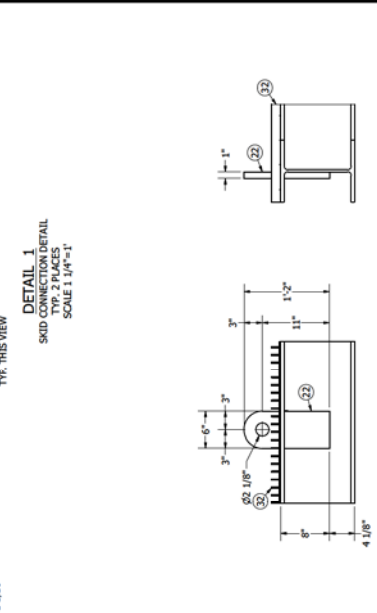
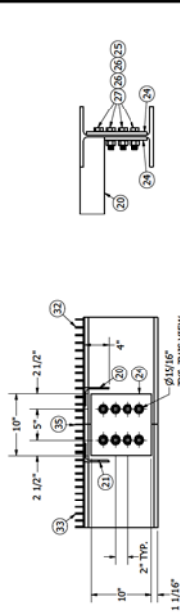
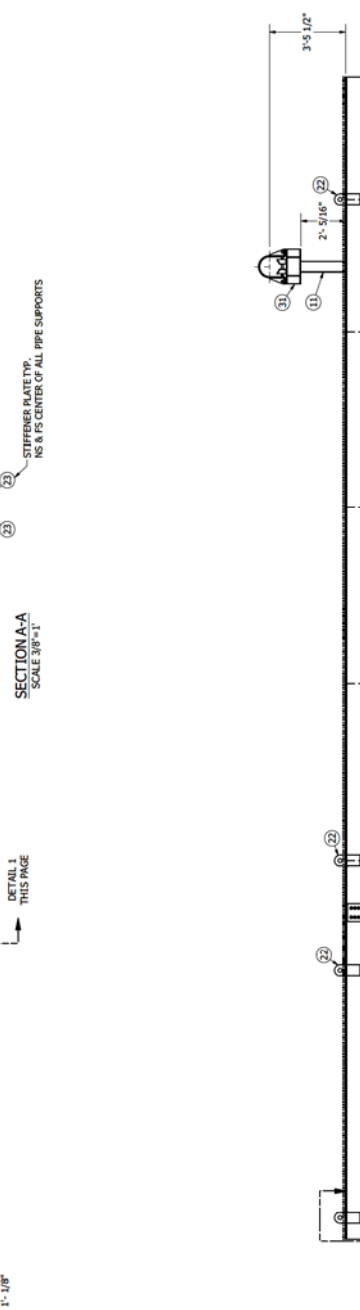
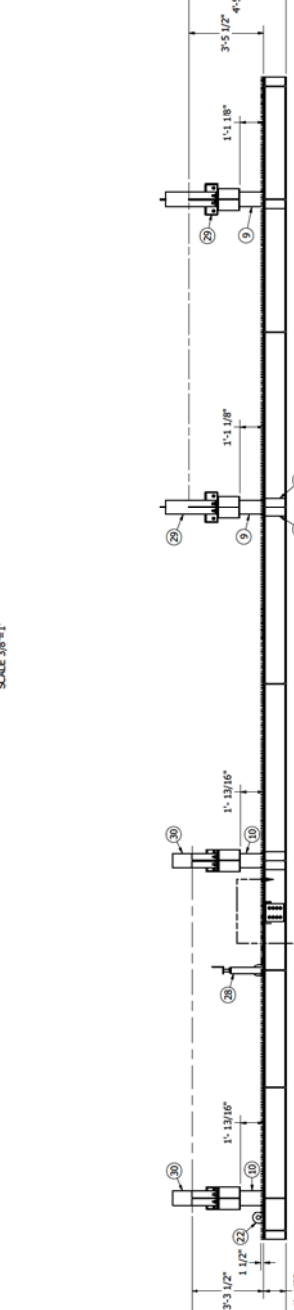
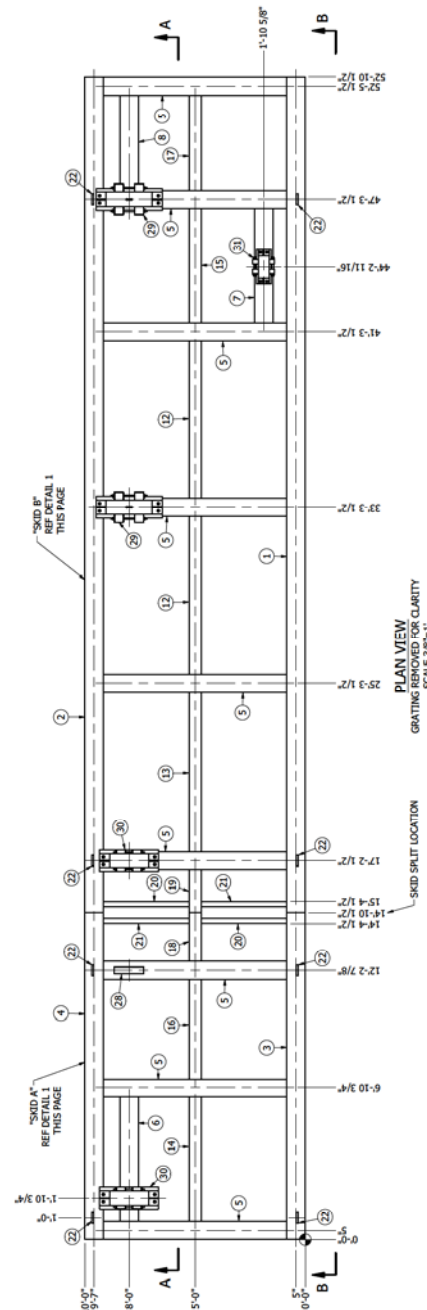
ISSUED FOR CONSTRUCTION
03/30/2020



ISOMETRIC VIEW
SCALE 3/8"=1'

DWG #	SIZE	NAME	REV	DATE
7176-500-001	ARCH D	LAUNCHER STRUCTURAL LAYOUT	0	03/30/2020
7176-501-001	ARCH D	SPPOOL DEFALL (1)	0	03/30/2020
7176-501-002	ARCH D	SPPOOL DEFALL (2)	0	03/30/2020
7176-501-003	ARCH D	GUIDE BAR DETAILS	0	03/30/2020
7176-600-001	ARCH D	LAUNCHER SKID LAYOUT	0	03/30/2020
7176-700-001	ARCH D	SPPOOL DEFALL (1)	0	03/30/2020
7176-700-002	ARCH D	SPPOOL DEFALL (2)	0	03/30/2020
DM-ST-2011	ARCH D	GUIDE BAR DETAILS	0	01/01/2017

ITEM	QTY	DESCRIPTION	LENGTH
1	1	1W 12x53 WIDE FLANGE BEAM, ASTM A992	38'-0"
2	1	1W 12x53 WIDE FLANGE BEAM, ASTM A992	38'-0"
3	1	1W 12x53 WIDE FLANGE BEAM, ASTM A992	14'-10 1/2"
4	1	1W 12x53 WIDE FLANGE BEAM, ASTM A992	14'-10 1/2"
5	9	1W 12x53 WIDE FLANGE BEAM, ASTM A992	6'-1 5/8"
6	1	1W 12x53 WIDE FLANGE BEAM, ASTM A992	5'-11 5/8"
7	1	1W 12x53 WIDE FLANGE BEAM, ASTM A992	5'-11 5/8"
8	1	1W 12x53 WIDE FLANGE BEAM, ASTM A992	5'-11 5/8"
9	2	1W 8x31 WIDE FLANGE BEAM, ASTM A992	1'-13 1/2"
10	2	1W 8x31 WIDE FLANGE BEAM, ASTM A992	1'-13 1/2"
11	1	1W 8x31 WIDE FLANGE BEAM, ASTM A992	2'-5 1/2"
12	1	1W 8x31 WIDE FLANGE BEAM, ASTM A992	6'-5 3/8"
13	2	1W 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992	6'-5 3/8"
14	1	1W 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992	5'-11 5/8"
15	1	1W 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992	5'-3 3/4"
16	1	1W 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992	5'-11 5/8"
17	1	1W 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992	5'-3 3/4"
18	1	1W 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992	2'-3 11/16"
19	1	1W 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992	4'-5 11/16"
20	2	1/4" X 3/4" STRUCTURAL ANGLE, ASTM A36	4'-8 11/16"
21	2	1/4" X 3/4" STRUCTURAL ANGLE, ASTM A36	4'-8 11/16"
22	8	LIFTING LUG, 1 1/2" X 6" X 1/4", ASTM A36	
23	9	PLATE, 10 15/16" X 4 3/4" X 3/16", ASTM A36	
24	16	1/2" WASHERS, 7/8" THREAD SIZE, TYPE 1 GALVANIZED, ASTM A325	
25	16	1/2" NUTS, 7/8" THREAD SIZE, TYPE 1 GALVANIZED, ASTM A325	
26	32	1/4" BOLTS, 7/8" UNC, 3" LONG, HIGH STRENGTH, TYPE 1 GALVANIZED, ASTM A325	
27	16	1/4" BOLTS, 7/8" UNC, 3" LONG, HIGH STRENGTH, TYPE 1 GALVANIZED, ASTM A325	
28	1	2" X 4" PIPE SUPPORT, EZ - LINE SHIM - BLOCK, CLAMP, AND WIDE FLANGE ASSEMBLY, W8C01-NA, BASE	
29	2	2" X 4" PIPE SUPPORT, EZ - LINE SHIM - BLOCK, CLAMP, AND WIDE FLANGE ASSEMBLY, W8C01-NA, BASE	
30	2	10" PIPE SUPPORT, EZ - LINE SHIM - BLOCK, CLAMP, AND WIDE FLANGE ASSEMBLY, W8C01-NA, BASE	
31	1	10" PIPE SUPPORT, EZ - LINE SHIM - BLOCK, CLAMP, AND WIDE FLANGE ASSEMBLY, W8C01-NA, BASE	
32	16	WELDED BAR GRATING, GALVANIZED HOT DIPPED, 1-1/2" SERATED, 3" WIDE X 10" LONG	10'-0"
33	1	WELDED BAR GRATING, GALVANIZED HOT DIPPED, 1-1/2" SERATED, 2'-6" WIDE X 10" LONG	10'-0"
34	1	WELDED BAR GRATING, GALVANIZED HOT DIPPED, 1-1/2" SERATED, 10'-0" WIDE X 10" LONG	10'-0"
35	1	WELDED BAR GRATING, GALVANIZED HOT DIPPED, 1-1/2" SERATED, 9" WIDE X 10" LONG	10'-0"



NOTES:

- ALL STRUCTURAL STEEL SHALL BE FABRICATED, MANUFACTURED, AND ERECTED IN ACCORDANCE WITH THE AISC STEEL CONSTRUCTION MANUAL, 13TH EDITION.
- ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF AISC 360.
- ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF AISC 360.
- WIDE FLANGE SHAPES - ASTM A992, GR50
- PIPE - ASTM A106, GR50
- WELDS - EPOXY LOW HYDROGEN R00 MEETING THE REQUIREMENTS OF AWS D1.1

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	BMW	ECW	ZAH	03/03/2020

REVISION HISTORY					
REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	BMW	ECW	ZAH	03/03/2020

ISSUED FOR CONSTRUCTION

DRAWING STATUS:

DUKE - PL 105

C350 PROJECT - HIGHPOINT PARK STATION

20" LAUNCHER SKID - STRUCTURAL LAYOUT

COUNTY: PARSEIP, MAUMON, LOAN COUNTY STATE: OHIO

DRAWING NUMBER: 7176-500-001

REVISION: 0

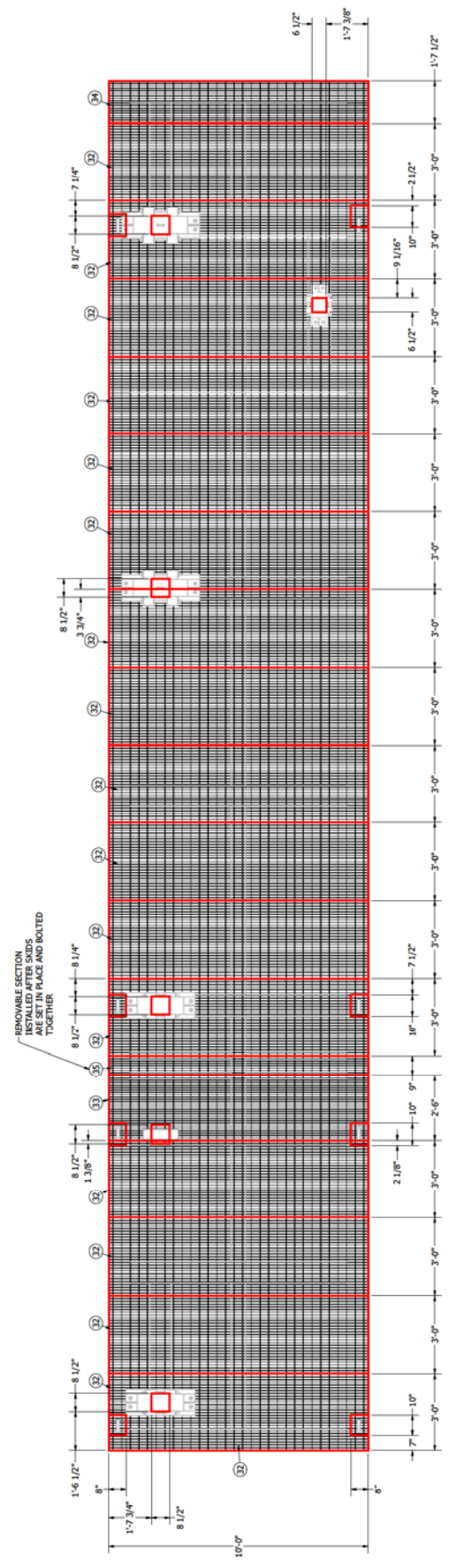
SCALE: AS NOTED

SHEET: 1 OF 1

GENERGY ENGINEERING MANUFACTURING CONSTRUCTION

PO BOX 685
MARIETTA, OHIO 45750
PHONE: 740.244.6500
WWW.GENERGYECO.COM

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GRATING LAYOUT
 CUT GRATING AS NEEDED
 REF BOM ON DWG # 7176-500-001
 SCALE 1/2"=1'

REMOVABLE SECTION
 INSTALLED AFTER SKIDS
 ARE SET IN PLACE AND BOLTED
 TOGETHER

DUKE - PL 105
 C350 PROJECT - HIGHPOINT PARK STATION
 20" LAUNCHER SKID - STRUCTURAL
 GRATING DETAIL

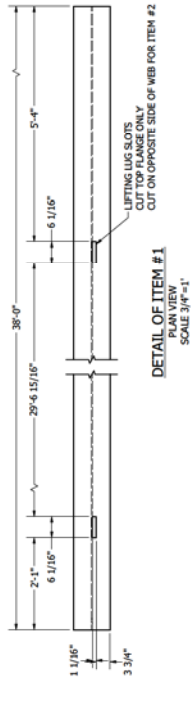
COUNTY/PARISH: HAMILTON COUNTY | STATE: OHIO
 DRAWING NUMBER: 7176-501-001
 DRAWING SCALE: AS NOTED

GENERGY
 ENGINEERING/MANUFACTURING/CONSTRUCTION
 PO BOX 485
 1400 W. STATE ST.
 PRINCETON, OHIO 43071
 WWW.GENERGYCO.COM

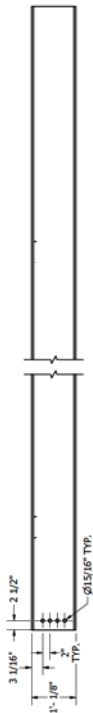
REVISION HISTORY		DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
REV	0	ISSUED FOR APPROVAL	BWV	ECW	ZAH	03/30/2020

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ISSUED FOR CONSTRUCTION

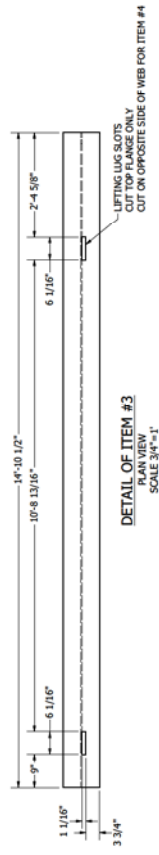
REVISION	0
SHEET	1 OF 1



DETAIL OF ITEM #1
ELEVATION VIEW
SCALE 3/4"=1'



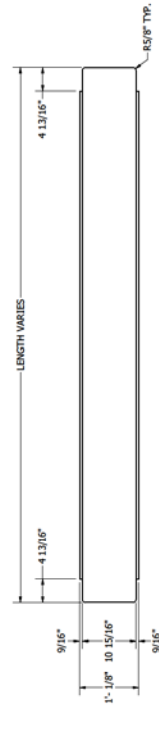
DETAIL OF ITEM #2
ELEVATION VIEW
SCALE 3/4"=1'



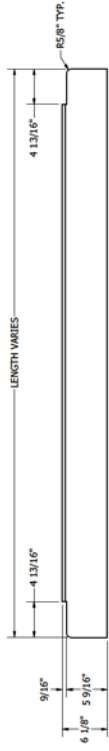
DETAIL OF ITEM #3
ELEVATION VIEW
SCALE 3/4"=1'



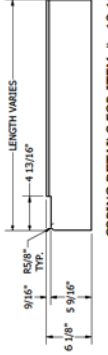
DETAIL OF ITEM #4
ELEVATION VIEW
SCALE 3/4"=1'



DETAIL OF ITEM #5
ELEVATION VIEW
SCALE 1"=1'



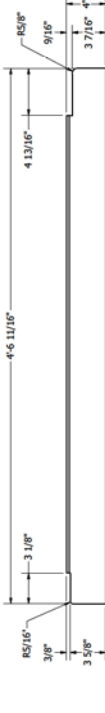
DETAIL OF ITEM #6
ELEVATION VIEW
SCALE 1 1/2"=1'



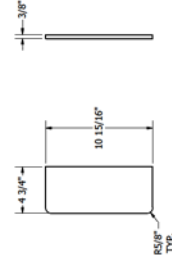
DETAIL OF ITEM #7
ELEVATION VIEW
SCALE 1 1/2"=1'



DETAIL OF ITEM #8
ELEVATION VIEW
SCALE 2"=1'



DETAIL OF ITEM #9
ELEVATION VIEW
SCALE 2"=1'



DETAIL OF ITEM #10
ELEVATION VIEW
SCALE 2"=1'

NOTE:
1. ALL DIMS ARE IN INCHES UNLESS OTHERWISE NOTED.

ISSUED FOR CONSTRUCTION

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	BW	ECW	ZAH	03/30/2020

REVISION HISTORY

DRAWING STATUS: **ISSUED FOR CONSTRUCTION**

DUKE - PL 105
C350 PROJECT - HIGHPOINT PARK STATION
20" LAUNCHER SKID - STRUCTURAL
DETAILS

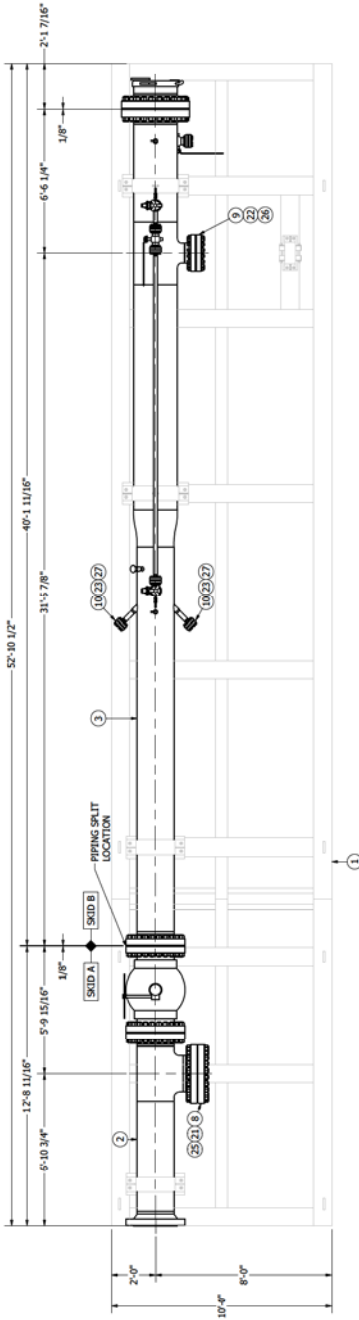
COUNTY/PARISH: HAMILTON COUNTY STATE: OHIO
DRAWING NUMBER: 7176-501-002
DRAWING SCALE: AS NOTED

REVISION: 0

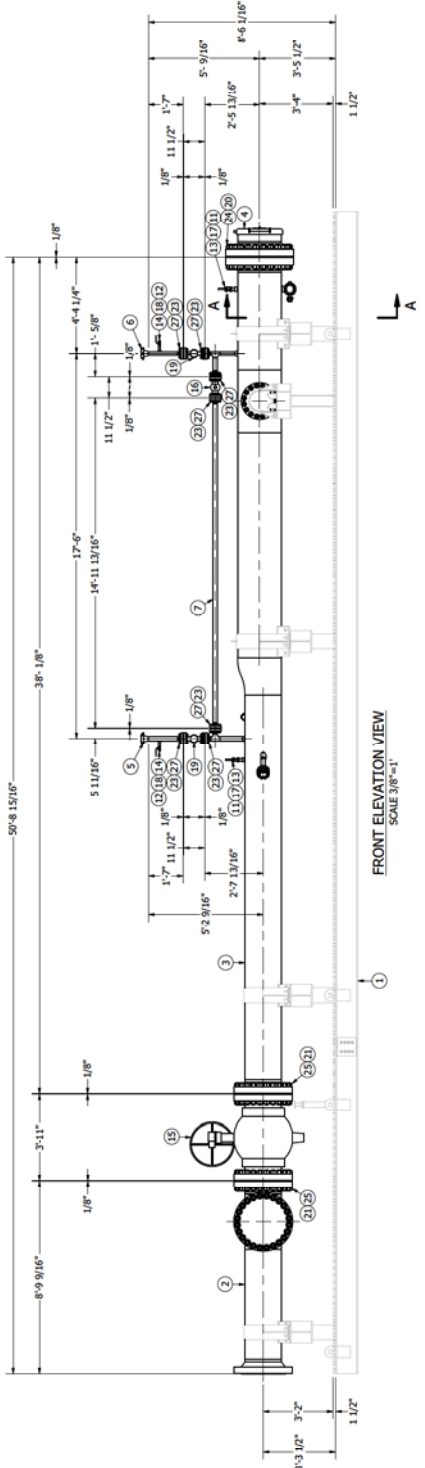
SHEET: 1 OF 1

GENERGY
ENGINEERING/MANUFACTURING/CONSTRUCTION

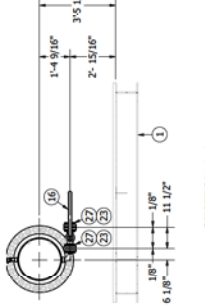
PO BOX 485
MARIETTA, OHIO 45750
PHONE: 741-242-8000
WWW.GENERGYCO.COM



PLAN VIEW
GRATING REMOVED FOR CLARITY
SCALE 3/8"=1"



FRONT ELEVATION VIEW
SCALE 3/8"=1"



SECTION A-A
SCALE 3/8"=1"

ITEM	QTY	DESCRIPTION
1	1	LAUNCHER STRUCTURAL ASSEMBLY, REF DWG # 7176-500-001
2	1	SKOOL # 7176-1-1, REF DWG # 7176-700-001
3	1	SKOOL # 7176-1-2, REF DWG # 7176-700-001
4	1	SKOOL # 7176-1-3, REF DWG # 7176-700-001
5	1	SKOOL # 7176-1-4, REF DWG # 7176-700-001
6	1	SKOOL # 7176-1-5, REF DWG # 7176-700-001
7	1	SKOOL # 7176-1-6, REF DWG # 7176-700-001
8	1	20" BLIND FLANGE, RF, ANSI 600, ASME B16.5, ASTM A105 GR.3
9	1	10" BLIND FLANGE, RF, ANSI 600, ASME B16.5, ASTM A105 GR.3
10	2	1" PIPE NUTS, SCH 80, 3" LONG, SWASTON, GR3, ASTM A193, THE
11	2	1" PLUGS, SQUARE HEAD, 3000#, ASTM A105, FORGED STEEL, ASME B16.11, SOLID
12	1	1" PLUGS, SQUARE HEAD, 3000#, ASTM A105, ASME B16.11, SOLID
13	2	1/2" BALL VALVE, RFFE, ANSI 600, FULL PORT W/ GEAR OPERATOR AND HANDWHEEL, REF ENGINEERED EQUIPMENT BOB
14	2	1" BALL VALVE, RFFE, ANSI 600, FULL PORT W/ LEVER OPERATOR, REF ENGINEERED EQUIPMENT BOB
15	2	1" BALL VALVE, 2000#, RHP, REDUCED PORT W/ LOCKING LEVER, REF ENGINEERED EQUIPMENT BOB
16	2	1" BALL VALVE, RFFE, ANSI 600, FULL PORT W/ LEVER OPERATOR, REF ENGINEERED EQUIPMENT BOB
17	2	1" BALL VALVE, RFFE, ANSI 600, FULL PORT W/ LEVER OPERATOR, REF ENGINEERED EQUIPMENT BOB
18	1	24" GASKET, ANSI 600, FLEXITALLIC CGL, SPIRAL WOUND, 304SS INNER & CS OUTER RING, TYPE F, 1/8"
19	3	20" GASKET, ANSI 600, FLEXITALLIC CGL, SPIRAL WOUND, 304SS INNER & CS OUTER RING, TYPE F, 1/8"
20	1	TH, ASME B16.20
21	1	TH, ASME B16.20
22	1	TH, ASME B16.20
23	11	2" GASKET, ANSI 600, FLEXITALLIC CGL, SPIRAL WOUND, 304SS INNER & CS OUTER RING, TYPE F, 1/8"
24	24	1-7/8" STUD BOLT, 1/4" L, ASTM A193 GRADE B7, QTY (2) HEAVY HEX NUTS EA, ASTM A194, GR. 2H W/ QTY (2) WASHER, CADMIUM PLATED
25	72	1-5/8" STUD BOLT, 1/2" L, ASTM A193 GRADE B7, QTY (2) HEAVY HEX NUTS EA, ASTM A194, GR. 2H W/ QTY (2) WASHER, CADMIUM PLATED
26	18	1-3/4" STUD BOLT, 3/4" L, ASTM A193 GRADE B7, QTY (2) HEAVY HEX NUTS EA, ASTM A194, GR. 2H W/ QTY (2) WASHER, CADMIUM PLATED
27	80	3/8" STUD BOLT, 4-5/4" L, ASTM A193 GRADE B7, QTY (2) HEAVY HEX NUTS EA, ASTM A194, GR. 2H W/ QTY (2) WASHER, CADMIUM PLATED

ESTIMATED WEIGHT OF SKID 'A': 11,000 LBS
ESTIMATED WEIGHT OF SKID 'B': 17,000 LBS

GENERAL NOTES:

- 2. ASME B31.1, CODE STANDARDS & SPECIFICATION
- 3. ASME E11.1, CODE STANDARDS & SPECIFICATION
- 4. DESIGN FACTOR 1.0
- 5. CORROSION ALLOWANCE 0.00
- 6. DESIGN PRESSURE OF 500 PSIG
- 7. DESIGN PRESSURE OF 1000 PSIG
- 8. HYDROSTATIC TEST WITH WATER AT 1.5X (1500 PSIG) MAX. 800 FOR 800 (8) HOURS
- 9. DESIGN FLOW: 12,200 MMBFSD
- 10. DESIGN TEMPERATURE: 400 - 438 PSIG
- 11. GRATING PRESSURE RATING: 400 - 438 PSIG

REVISION HISTORY:

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	BHW	ECW	RNF	03/06/2020

ISSUED FOR CONSTRUCTION

DRAWING STATUS:

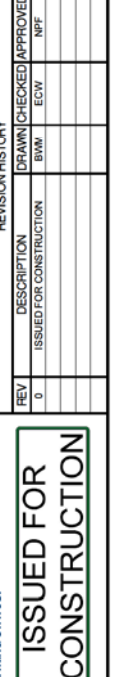
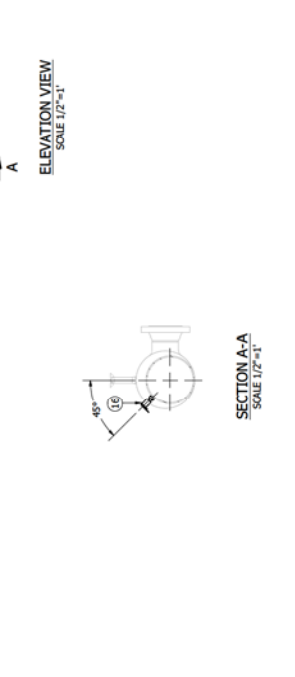
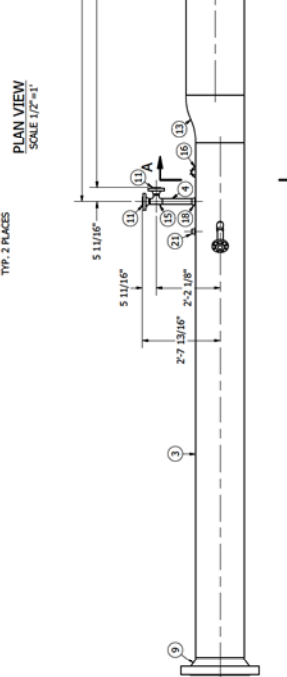
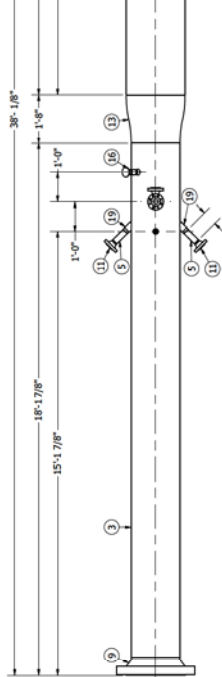
12. OPERATING TEMPERATURE OF 374 - 1304
13. SKIDS 'A' & 'B' SHOULD BE LIFTED INDEPENDENTLY, BOLTED CONNECTION IS NOT DESIGNED TO SUPPORT FULLY ASSEMBLED LIFTING.

DUKE - PL 105
C350 PROJECT - HIGHPOINT PARK STATION
20" LAUNCHER SKID - MECHANICAL
SKID LAYOUT

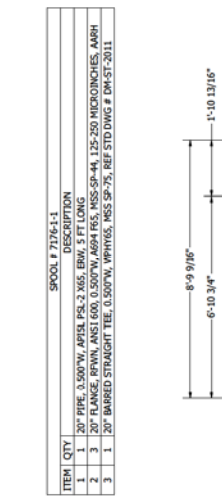
COUNTY: PARSONS, MAHON COUNTY STATE: OHIO
DRAWING NUMBER: 7176-500-001
DRAWING SCALE: AS NOTED

SHEET 1 OF 1

ITEM	QTY	DESCRIPTION
1	1	24" PIPE, 0.500"W, APISL PSL-2 X65, L5AW, 11 FT LONG
2	1	24" PIPE, 0.500"W, APISL PSL-2 X65, L5AW, 5 FT LONG
3	1	24" PIPE, 0.500"W, APISL PSL-2 X65, L5AW, 5 FT LONG
4	1	24" PIPE, 0.218"W, APISL PSL-2 X52, ERW, 1 FT LONG
5	2	2" PIPE, 0.218"W, APISL PSL-2 X52, ERW, 1 FT LONG
6	1	2" PIPE, 0.218"W, APISL PSL-2 X52, ERW, 1 FT LONG
7	1	24" FLANGE, ERWIN, ANSI 600, 0.500"W, A694 F65, MSS SP-44, 125-250 MICROINCHES, AARH
8	1	24" FLANGE, ERWIN, ANSI 600, 0.500"W, A694 F65, MSS SP-44, 125-250 MICROINCHES, AARH
9	1	24" FLANGE, ERWIN, ANSI 600, 0.218"W, A694 F65, MSS SP-44, 125-250 MICROINCHES, AARH
10	1	24" FLANGE, ERWIN, ANSI 600, 0.218"W, A694 F65, MSS SP-44, 125-250 MICROINCHES, AARH
11	1	24" x 10" BARRED REDUCING TEE, 0.500"W x 0.365"W, WPH465, MSS SP-75, REF STD DWG # DM-ST-2011
12	1	24" x 20" ECCENTRIC REDUCER, 0.500"W x 0.500"W, WPH165, MSS SP-75
13	1	24" x 20" ECCENTRIC REDUCER, 0.500"W x 0.500"W, WPH165, MSS SP-75
14	1	24" x 20" ECCENTRIC REDUCER, 0.500"W x 0.500"W, WPH165, MSS SP-75
15	1	24" x 20" ECCENTRIC REDUCER, 0.500"W x 0.500"W, WPH165, MSS SP-75
16	1	24" x 20" ECCENTRIC REDUCER, 0.500"W x 0.500"W, WPH165, MSS SP-75
17	1	24" x 20" ECCENTRIC REDUCER, 0.500"W x 0.500"W, WPH165, MSS SP-75
18	1	24" x 20" ECCENTRIC REDUCER, 0.500"W x 0.500"W, WPH165, MSS SP-75
19	1	24" x 20" ECCENTRIC REDUCER, 0.500"W x 0.500"W, WPH165, MSS SP-75
20	1	24" x 20" ECCENTRIC REDUCER, 0.500"W x 0.500"W, WPH165, MSS SP-75
21	1	24" x 20" ECCENTRIC REDUCER, 0.500"W x 0.500"W, WPH165, MSS SP-75
22	1	24" x 20" ECCENTRIC REDUCER, 0.500"W x 0.500"W, WPH165, MSS SP-75



ITEM	QTY	DESCRIPTION
1	1	20" PIPE, 0.500"W, APISL PSL-2 X65, ERW, 5 FT LONG
2	3	20" FLANGE, ERWIN, ANSI 600, 0.500"W, A694 F65, MSS SP-44, 125-250 MICROINCHES, AARH
3	1	20" BARRED STRAIGHT TEE, 0.500"W, WPH165, MSS SP-75, REF STD DWG # DM-ST-2011



ISSUED FOR CONSTRUCTION

GENERAL NOTES:

- ASME B31.1 CODE STANDARD & SPECIFICATION
- ALL SKIDS SHALL BE LIFTED INDEPENDENTLY, ISOLATED CONNECTION
- SKIDS "A" & "B" SHOULD BE LIFTED INDEPENDENTLY, ISOLATED CONNECTION
- IS NOT DESIGNED TO SUPPORT FULLY ASSEMBLED UPLIFT.
- DESIGN ALLOWANCE 0.00
- DESIGN FACTOR 0.9
- DESIGN PRESSURE OF 500 PSIG
- DESIGN TEMPERATURE OF 374 °F
- DESIGN WIND SPEED 110 MPH
- HYDROSTATIC TEST WITH WATER AT 1.5X DESIGN PRESSURE FOR 8 HOURS
- DESIGN FLOW 12,208 MASCFD @ 458 PSIG
- OPERATING TEMPERATURE OF 374 °F
- SKIDS "A" & "B" SHOULD BE LIFTED INDEPENDENTLY, ISOLATED CONNECTION
- IS NOT DESIGNED TO SUPPORT FULLY ASSEMBLED UPLIFT.

DRAWING STATUS:

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	BRW	ECW	RFP	03/03/2020

REVISION HISTORY:

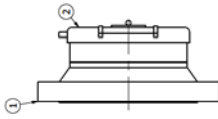
REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	BRW	ECW	RFP	03/03/2020

CENERGY ENGINEERING (MANUFACTURING) CONSTRUCTION
 PO BOX 485
 MAPLE CREEK, CO 80541
 PHONE 303.744.8480
 WWW.CENERGYCO.COM

DUKE - PL 105
C350 PROJECT - HIGHPOINT PARK STATION
20" LAUNCHER SKID - MECHANICAL
SPOOL DETAIL (1)

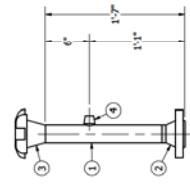
COUNTY/PARISH: MAPLE CREEK COUNTY STATE: COLO
 DRAWING NUMBER: 7176-700-001
 DRAWING SCALE: AS NOTED SHEET: 1 OF 1

SPOOL # 71764-3		
ITEM	QTY	DESCRIPTION
1	1	2" FLANGE, RPWN, ANSI 600, 0.500"W, A694 F52, MSS SP-44, 125-250 MICRONS, AMRH
2	1	2" VERTICAL CLAMP RING CLOSURE W/O-RING SEAL, ASME B31.8, RATED FOR 500 PSIG MWP @ 0.2 DF, FOR 500 PSIG MWP @ 0.2 DF, PART # 1248551



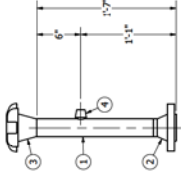
ELEVATION VIEW
SCALE 1 1/2"=1'

SPOOL # 71764-5		
ITEM	QTY	DESCRIPTION
1	1	2" PIPE, 0.218"W, APISL PSL-2 XS2, ERW, 2 FT LONG
2	1	2" FLANGE, RPWN, ANSI 600, 0.218"W, A694 F52, MSS SP-44, 125-250 MICRONS, AMRH
3	1	2" VERTICAL CLAMP RING CLOSURE W/O-RING SEAL, ASME B31.8, RATED FOR 500 PSIG MWP @ 0.2 DF, WITH MANUFACTURER TAG
4	1	1/2" PIPET, THD, 6000#, FOR 2" RUN PIPE, A694 F52, MSS SP-97



ELEVATION VIEW
SCALE 1 1/2"=1'

SPOOL # 71764-4		
ITEM	QTY	DESCRIPTION
1	1	2" PIPE, 0.218"W, APISL PSL-2 XS2, ERW, 2 FT LONG
2	1	2" FLANGE, RPWN, ANSI 600, 0.218"W, A694 F52, MSS SP-44, 125-250 MICRONS, AMRH
3	1	2" VERTICAL CLAMP RING CLOSURE W/O-RING SEAL, ASME B31.8, RATED FOR 500 PSIG MWP @ 0.2 DF, WITH MANUFACTURER TAG
4	1	1/2" PIPET, THD, 6000#, FOR 2" RUN PIPE, A694 F52, MSS SP-97



ELEVATION VIEW
SCALE 1 1/2"=1'

SPOOL # 71764-6		
ITEM	QTY	DESCRIPTION
1	1	2" PIPE, 0.218"W, APISL PSL-2 XS2, ERW, 15 FT LONG
2	1	2" FLANGE, RPWN, ANSI 600, 0.218"W, A694 F52, MSS SP-44
3	1	125-250 MICRONS, AMRH



ELEVATION VIEW
SCALE 3/4"=1'

- GENERAL NOTES:**
- ASME B31.8 CODE STANDARD & SPECIFICATION
 - ASME B31.8 CODE STANDARD & SPECIFICATION
 - ASME B31.8 CODE STANDARD & SPECIFICATION
 - DESIGN FACTOR 0.2
 - CORROSION ALLOWANCE 0.00
 - DESIGN PRESSURE OF 500 PSIG
 - DESIGN PRESSURE OF 500 PSIG
 - DESIGN TEMPERATURE OF 100°F
 - HYDROSTATIC TEST WITH WATER AT 1.5X (150) PSIG / MAX. 600 FOR EIGHT (8) HOURS
 - DESIGN FLOW 12.258 MAFSFD
 - OPERATING PRESSURE 450 - 458 PSIG
 - OPERATING TEMPERATURE OF 374 - 1204
 - SKIDS "A" & "B" SHOULD BE LIFTED INDEPENDENTLY, ISOLATED CONNECTION IS NOT DESIGNED TO SUPPORT FULLY ASSEMBLED LIFTING.

ISSUED FOR CONSTRUCTION

REVISION HISTORY

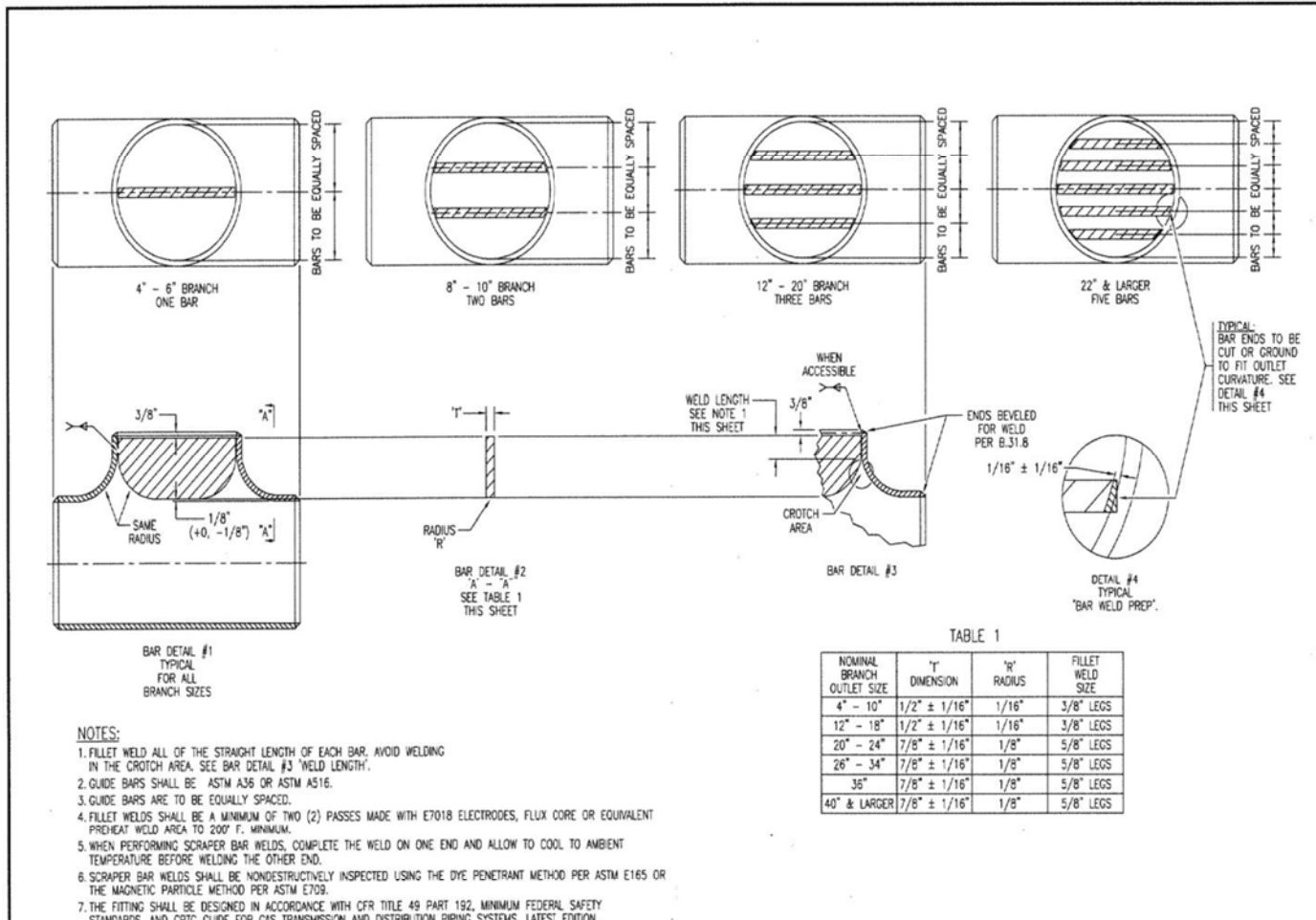
REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	BNW	ECW	RFF	03/03/2020

GENERGY
ENGINEERING & MANUFACTURING (CONSTRUCTION)

PO BOX 485
MARIETTA, OHIO 45750
PHONE 330.744.4480
WWW.GENERGYCO.COM

DUKE - PL 105
C350 PROJECT - HIGHPOINT PARK STATION
20" LAUNCHER SKID - MECHANICAL
SPOOL DETAIL (2)

COUNTY/PARISH: HAMILTON COUNTY STATE: OHIO
DRAWING NUMBER: 7176-700-002
DRAWING SCALE: AS NOTED SHEET: 1 OF 1

FIGURE III: Guide Bar Details for Piggable Drawn Nozzle and Weld Tee Fittings.


Needs to be Quoted Item Out for Quote		PO Generated and Sent to Vendor		PREVAILING AML: Duke		Project Name: Duke PL-105 Launcher		SECONDARY AML:							
Design Status:	IFC	PO#	Date Quoted	PO Issued Date	ETA	Manufacturer	Description	IFR QTY	IFA QTY	IAA Rev. #	IFB QTY	IFC QTY	IFD QTY	IFE QTY	Notes
Item #	Vendor	Quote#					Components								
CMP7							UTING LOG, 1/2" x 3/4" x 11/16" ASTM A36	8							
CMP8							UTING LOG, 1/2" x 3/4" x 11/16" ASTM A36	7							
CMP9							PLATE, 10 x 10 x 1/2" TK, ASTM A36	4							
CMP10							WASHER, 7/8" THREAD SIZE, TYPE 1 GALVANIZED, ASTM A425	16							
CMP11							NUT, 7/8" UNC, HIGH STRENGTH, TYPE 1 GALVANIZED, ASTM A425	32							
CMP12							BOLT, 7/8" UNC, 3" LONG, HIGH STRENGTH, TYPE 1 GALVANIZED, ASTM A425	16							
CMP13							3/4" ID LINE FLANGE SUPPORT, FIBRE "A" BARE, 3-1/2" TO PIPE CENTRELINE	1							
CMP14							3/4" ID PIPE SUPPORT, 1/2" LINE SHIM, BLOCK CLAMP AND WIDE FLANGE ASSEMBLY, W3SC Q1 NA	2							
CMP15							WELDED BAR GRATING, GALVANIZED HOT DIPPED, 1-1/2" SERRATED, 3" WIDE x 10" LONG	16							
CMP16							WELDED BAR GRATING, GALVANIZED HOT DIPPED, 1-1/2" SERRATED, 3-6" WIDE x 10" LONG	1							
CMP17							WELDED BAR GRATING, GALVANIZED HOT DIPPED, 1-1/2" SERRATED, 1-1/2" WIDE x 10" LONG	1							
CMP18							WELDED BAR GRATING, GALVANIZED HOT DIPPED, 1-1/2" SERRATED, 3" WIDE x 10" LONG	1							
CMP19							3/4" ID PIPE SUPPORT, 1/2" LINE SHIM, BLOCK CLAMP AND WIDE FLANGE ASSEMBLY, W3SC Q1 NA	0							
CMP20							PLATE, 10 x 10 x 1/2" TK, ASTM A36	0							
Structural Steel															
51							W12x53 WIDE FLANGE BEAM, ASTM A992	310							
							W12x53 WIDE FLANGE BEAM, ASTM A992, 36' 0" LONG	2							
							W12x53 WIDE FLANGE BEAM, ASTM A992, 14' x 10 1/2" LONG	2							
							W12x53 WIDE FLANGE BEAM, ASTM A992, 9' x 5' 8" LONG	9							
							W12x53 WIDE FLANGE BEAM, ASTM A992, 6' x 5' 8" LONG	1							
							W12x53 WIDE FLANGE BEAM, ASTM A992, 5' x 11' 5" LONG	1							
							W12x53 WIDE FLANGE BEAM, ASTM A992, 5' x 11' 5" LONG	1							
52							W8x31 WIDE FLANGE BEAM, ASTM A992	5							
							W8x31 WIDE FLANGE BEAM, ASTM A992, 1-1 1/8" LONG	2							
							W8x31 WIDE FLANGE BEAM, ASTM A992, 1-1 1/8" LONG	2							
							W8x31 WIDE FLANGE BEAM, ASTM A992, 1-1 1/8" LONG	2							
53							W7 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992, 7' x 11 1/2" LONG	5							
							W7 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992, 8' x 5' 8" LONG	2							
							W7 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992, 6' x 5' 8" LONG	1							
							W7 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992, 5' x 11 1/2" LONG	1							
							W7 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992, 5' x 11 1/2" LONG	1							
							W7 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992, 5' x 11 1/2" LONG	1							
							W7 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992, 5' x 11 1/2" LONG	1							
							W7 6x43 STRUCTURAL TEE FROM W SHAPE, ASTM A992, 2' x 11 1/2" LONG	1							
54							L4 x 3 x 1/4 STRUCTURAL ANGLE, ASTM A36	20							
							L4 x 3 x 1/4 STRUCTURAL ANGLE, ASTM A36, 4' x 17' 10" LONG	4							
							W8x31 WIDE FLANGE BEAM, ASTM A992	0							
							W8x31 WIDE FLANGE BEAM, ASTM A992, 2-5/16" LONG	0							
55															

CONCRETE FOUNDATION NOTES:

- ADDITIONAL EXCAVATION BELOW FOOTINGS MAY BE NECESSARY TO REACH UNDISTURBED SOIL. SHOULD THIS OCCUR, THE BOTTOM OF THE FOOTING SHALL BE COMPACTED SAND FILL MEETING THE REQUIREMENTS OF MODIFIED PROCTOR COMPACTION TEST (ASTM D 1557) TO 95% IN SIX INCH LIFTS.
 - ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1" X 1/4" CHAMFER.
 - CONCRETE SHALL BE MIXED AND POURED PER REFINEMENT DESIGN AND CONSTRUCTION STANDARDS. FRESH CONCRETE SHALL BE INSTALLED TO SURFACE OF ALL CONCRETE AND TESTED.
 - ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 SPECIFICATION. STEEL REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60 AND WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. THE WIRE SHALL CONFORM TO ASTM A62.
 - UNDESIRABLE OR EXCESS EARTH SHALL BE DEPOSED OF AT AN APPROVED WASTE LOCATION. SOIL BEING DEPOSED SHALL BE TESTED AND APPROVED BY EITHER THE PROJECT MANAGER OR CONSTRUCTION MANAGER.
 - ROCKSHIELD OR SIMILAR COMPANY APPROVED PRODUCT MUST BE INSTALLED BETWEEN ALL PIPE AND FITTINGS THAT COME INTO CONTACT WITH CONCRETE. A LAYER OF NON-ABRASIVE MATERIAL SUCH AS FRP SHALL BE INSTALLED BETWEEN ALL PIPE SUPPORTS AND PIPING.
- ALL FIELD BENDING OF REBAR SHALL BE DONE COLD.

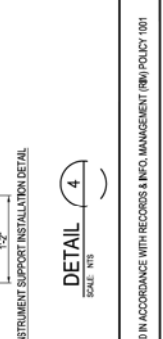
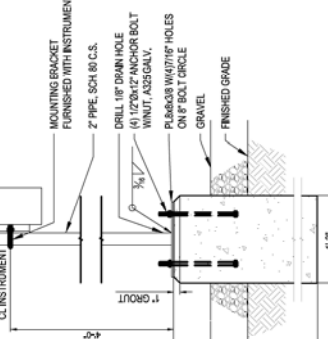
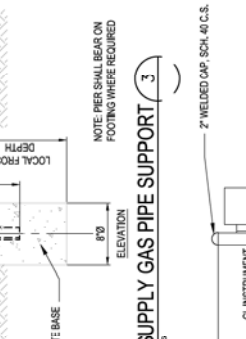
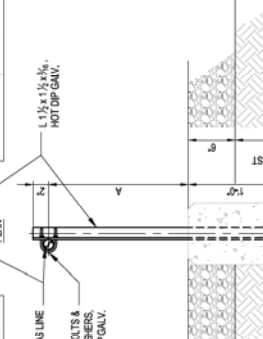
NOTE:
FOUNDATION DESIGN IS BASED ON ALLOWABLE BEARING PRESSURE OF SOIL OR STRUCTURAL FILL EQUAL TO OR GREATER THAN 1500 PSF. CONTRACTOR SHALL VERIFY BEARING PRESSURE CAPACITY PRIOR TO INSTALLING FOUNDATION.

FOR ABOVE GROUND VALVE SETTINGS (DETAIL 3)

MAINLINE NOMINAL VALVE SIZE (IN.)	A
6"	3'-2 7/8"
8"	3'-2 1/8"
12"	3'-4 1/8"
16"	3'-3 3/8"
20"	3'-3 3/4"
24"	4'-1 3/4"
30"	4'-2 3/4"

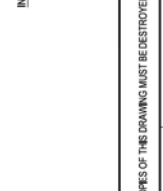
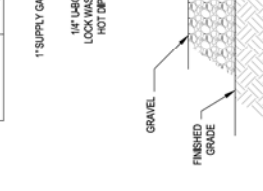
FOR BELOW GROUND VALVE SETTINGS (DETAIL 3)

MAINLINE NOMINAL VALVE SIZE (IN.)	A
6"	1'-4"
8"	1'-4"
12"	1'-4"
16"	1'-4"
20"	1'-4"
24"	1'-4"
30"	1'-4"



PER DIMENSIONS FOR ABOVE GRADE VALVES

NOMINAL VALVE SIZE (IN.)	DETAIL	PER DIAMETER "X" (IN.)	PER CLOSED TIES	FOOTING SIDE DIMENSION "Y" (FT)	FOOTING BARS "Z"	FT LINE ADJUSTABLE PIPE SUPPORT OR EQUIV.
6	2	1	24	NA	NA	50-FR-6 P.S. D=1-5/8 7/16"
8	4	2	24	(8) #5 WSTD. HOOK	#5 @ 12" E.W.	50-FR-8 P.S. D=1-9/16 7/16"
10	4	2	24	(8) #5 WSTD. HOOK	#5 @ 12" E.W.	50-FR-10 P.S. D=1-7/8 1/2"
12	4	2	24	(8) #5 WSTD. HOOK	#5 @ 12" E.W.	1215-FR-12 P.S. D=1-9/16 1/2"
16	6	2	24	(8) #5 WSTD. HOOK	#5 @ 12" E.W.	1215-FR-16 P.S. D=1-11/16 1/2"
20	6	2	24	(8) #5 WSTD. HOOK	#5 @ 12" E.W.	2024-FR-20 P.S. D=1-13/16 1/2"
24	6	2	24	(8) #5 WSTD. HOOK	#5 @ 12" E.W.	2024-FR-24 P.S. D=1-11/16 1/2"
30	6	2	24	(8) #5 WSTD. HOOK	#5 @ 10" E.W.	2024-FR-30 P.S. D=2-3/4 3/4"



STANDARD DRAWING
MAINLINE VALVE
PIPE SUPPORTS

Piedmont Natural Gas
CORPORATION
COMP. OFFICE 4201 REDMOND ROAD
CHARLOTTE, NC 28218

NO.	DATE	REVISION DESCRIPTION	BY	CHK	APP	DESCRIPTION
0	01/10/17	FINAL SUBMITTAL	FGJ			

APPROVALS

DATE	INITIALS	REGIONAL ENGINEER	MGR TECH	REC. STD	PRINCIPAL	DESIGNER
XXX/XX/20XX	XXX	XXX	XXX	XXX	XXX	XXX

PROJECT NUMBER: 00000000
DRAWING BY: IMCM
STATION ID: XXX-00000-000X
CHECKER/INITIALS: XXX

REG. DWGS: PNG-G-000-0001005
SHEET(S): 6 OF 21 | DWG SCALE: AS NOTED
DWG DATE: 01/10/2017 | SUPERSEDED: _____
DRAWING NUMBER: PNG - G-000-0001037
REVISION: 0
DISCIPLINE / RESOURCE IDENTIFY LINE NUMBER

PROFESSIONAL ENGINEER/STAMP

PEDIMENT'S NATURAL GAS FACILITY DRAWINGS ARE CONSIDERED CONFIDENTIAL (CM-185) DRAWING IS CURRENT ONLY THROUGH THE LATEST REVISION DATE. TO INSURE THERE IS NO RISK OF INAPPROPRIATE DISCLOSURE ALL PREVIOUS PAPER COPIES OF THIS DRAWING MUST BE DESTROYED IN ACCORDANCE WITH RECORDS & INFO. MANAGEMENT (RIM) POLICY 1001

PROPRIETARY & CONFIDENTIAL. ALL RIGHTS RESERVED. DO NOT SCALE THIS DRAWING. USE DIMENSIONS ONLY. THIS DRAWING IS CURRENT ONLY THROUGH THE LATEST REVISION DATE. TO INSURE THERE IS NO RISK OF INAPPROPRIATE DISCLOSURE ALL PREVIOUS PAPER COPIES OF THIS DRAWING MUST BE DESTROYED IN ACCORDANCE WITH RECORDS & INFO. MANAGEMENT (RIM) POLICY 1001

DUKE: HIGHPOINT STATION

8 x 24 DUAL CLASSIFICATION BUILDING

CAS REF.# 20-4212

JUNE 2020 REV.A

DRAWING / SUBMITTAL REVIEW

APPROVED APPROVED WITH CHANGES NOTED

REVISE AND RESUBMIT REJECTED

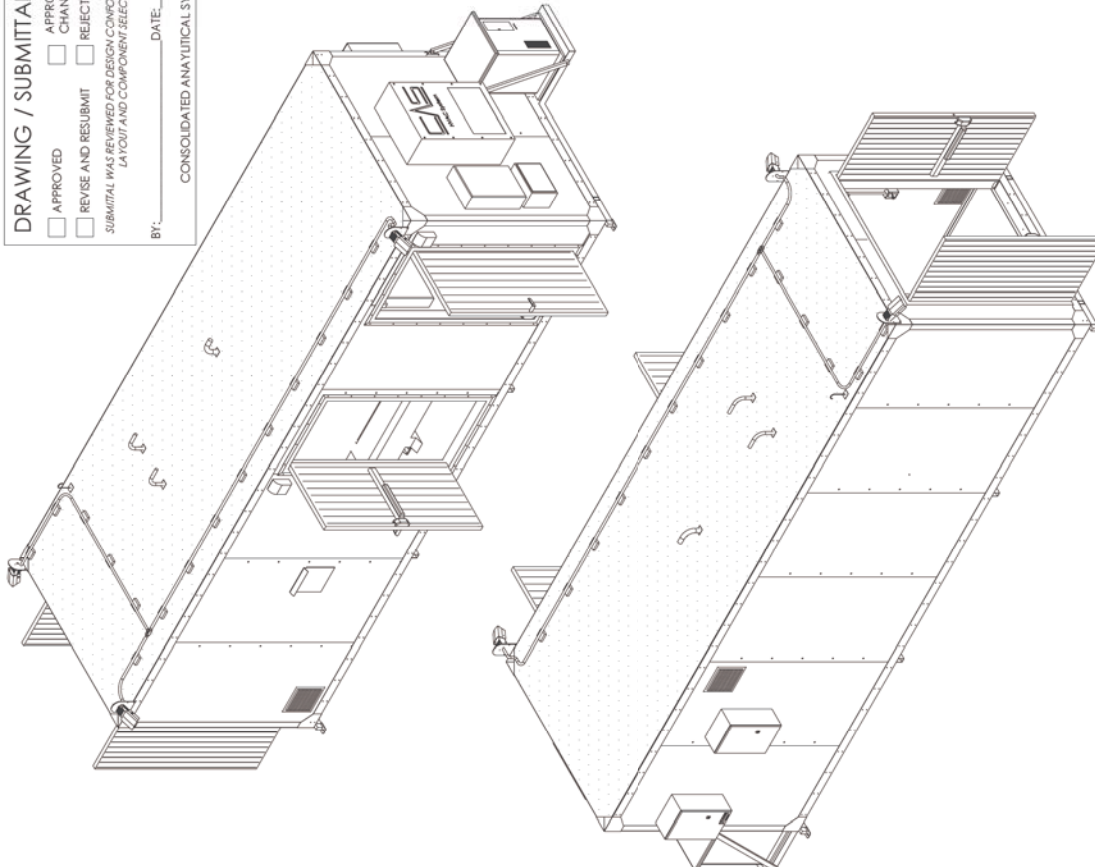
SUBMITTAL WAS REVIEWED FOR DESIGN CONFORMITY INCLUDING LAYOUT AND COMPONENT SELECTION

BY: _____ DATE: _____

CONSOLIDATED ANALYTICAL SYSTEMS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	9000-EL-100A	120/240V 100A 1PH LOAD CENTER 30 SPACE	1
2	SW-03-010	240V 100A TRANSFER SWITCH	1
3	HVAC 12K BTU W/3K HEATER	240V 20A HVAC 1 TON	1
4	EL-30-43BE	120V 20A DUPLICATION RECEPTACLE	3
5	SURGE	240V 100A FILTER IN ENCLOSURE	1
6	B&S 040375	10 KW NATURAL GAS GENERATOR	1
7	SW-02-008 PC	POWER CONDITIONER 1500VA	1
8	CID2 HEATER	CID2 240V 3600W CONVECTION HEATER W/THERMOSTAT	1
9	DR-SEN	CID2 DOOR SENSOR	4
10	6900-03:LEL	CID2 LEL-1 SENSOR	1
11	SW-04-004 (Strobe)	CID2 BLUE STROBE ST-1	1
12	6900-01	CID2 HEATER DISCONNECT	1
13	KILLARK LAL60300-14-2AP	CID2 48" LIGHT FIXTURE	3
14	EXTERIOR LIGHT	EXTERIOR LED LIGHT (18W) W/PHOTOCELL	2
15	EL-LIGHT	48" LED LIGHT	1
16	CID2 LIGHT SWITCH	CID2 LIGHT SWITCH	2
17	SW-01-007	SECURITY CAMERA, POE	3
18	CAB-3DR	3 DRAWER CABINET	1
19	9000-NI	FIXED LOUVERED VENT 14"X14"	2
20	SW-01-003 (Enclosure)	PASSTHROUGH ENCLOSURE #1	1
21	TIE DOWN BLOCK	SHELTER TIE DOWN	4
22	SW-04-007	500 GALLON ODOORANT TANK	1
23	SW-04-007 (NjexDuo)	DUAL CABINET NIJEX SYSTEM	1
24	00-608.1	15 GALLON GAS SCRUBBER	1
25	SW-05-005	PASSTHROUGH W/RAIN GUARD	1
26	SW-01-003 (Enclosure)	PASSTHROUGH ENCLOSURE #2	1

REF#	TAG LABEL	DESCRIPTION	QTY.
1	SPD	SURGE SUPPRESSION DEVICE	1
2	SR	NEMA 4X SIGNAL ENCLOSURE	1
3	TRW	120V 240V TRANSFER SWITCH	1
4	PB	NEMA 4X POWER ENCLOSURE	1
5	GN	NATURAL GAS GENERATOR	1
6	6M	6MEDOR	1
7	DS	100A 120V DISCONNECT	1
8	AP	ACCESS PANEL	1
9	AC	HVAC 1 TON	1



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PROJECT: _____ TITLE: _____

DATE: _____ DATE: _____

ANALYTICAL SYSTEMS

20-4212 DUKE HIGHPOINT (8x24)

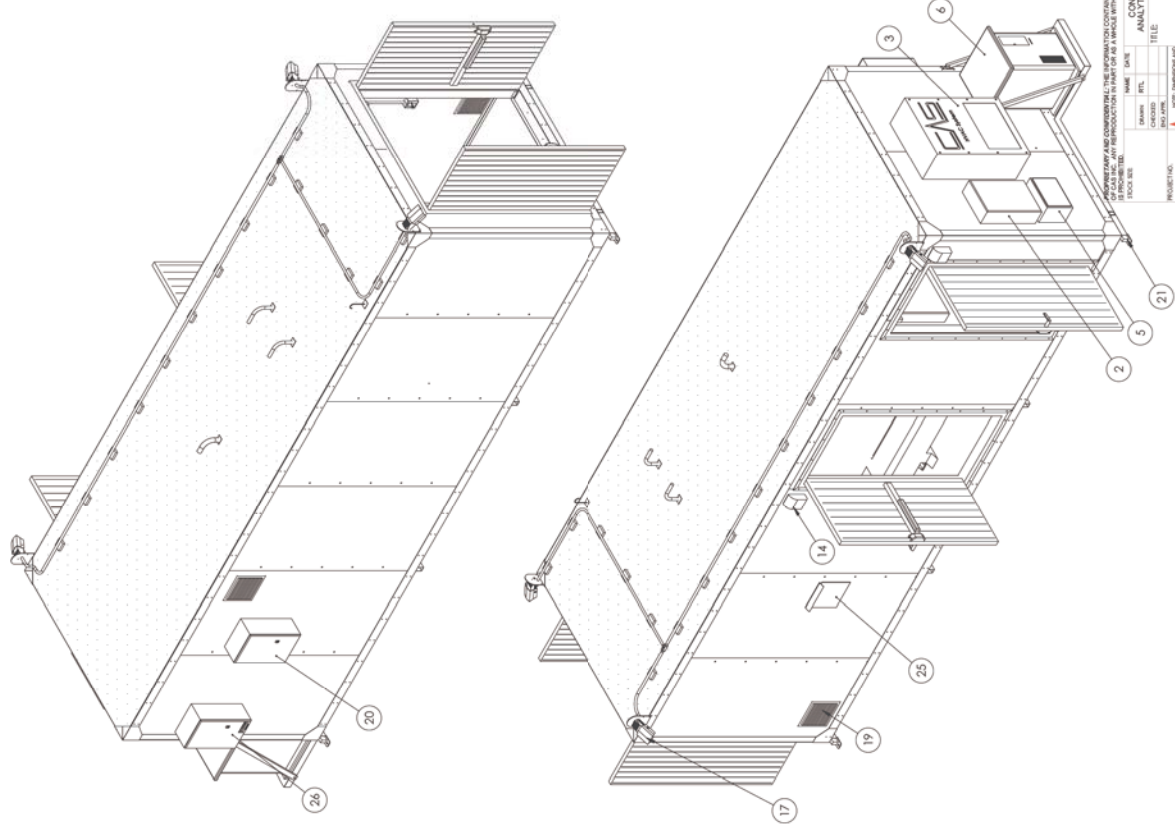
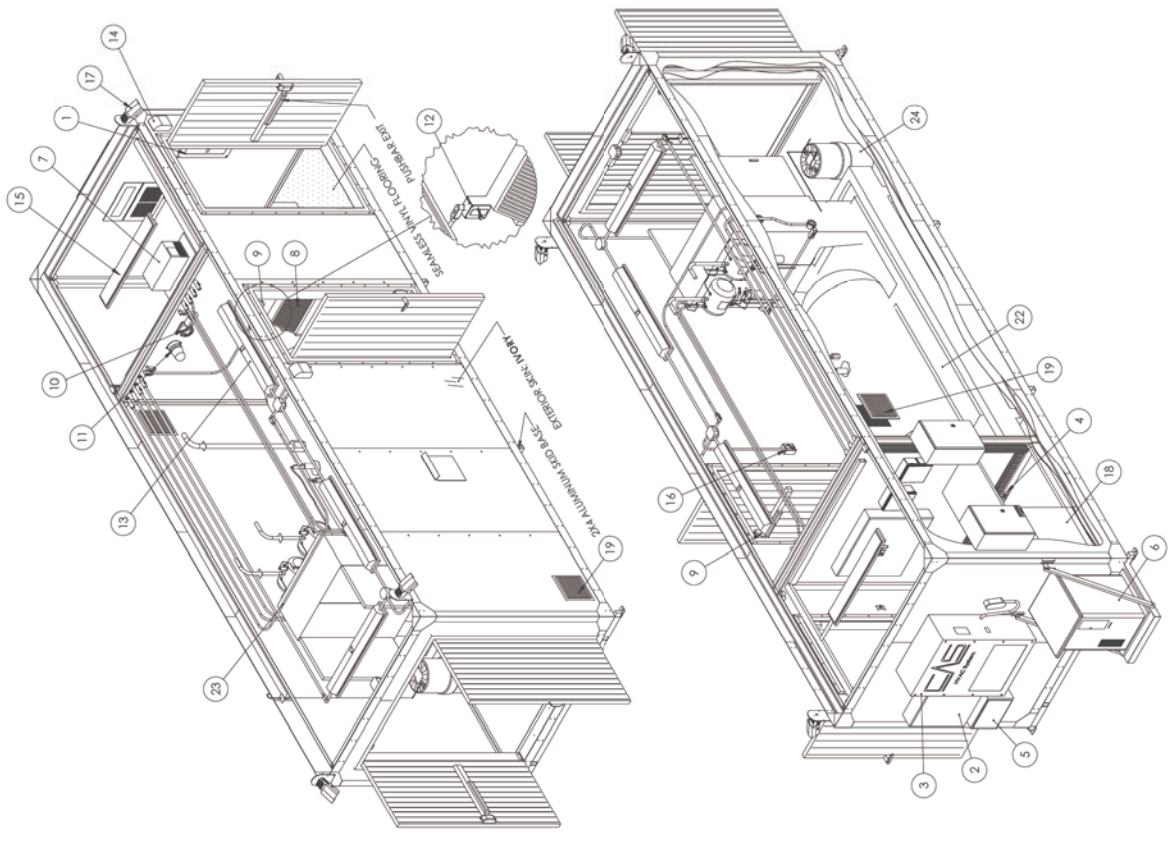
SCALE: 1/20 WEIGHT: _____

REV A

SHEET 1 OF 6

ZONE	REV.	DESCRIPTION	DATE
A8	A	REVISED PER CUSTOMER MARK UPS	6/9/2020

ESTIMATED WEIGHT W/EMPTY TANK: 12,500LBS



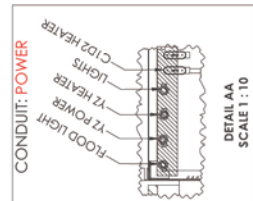
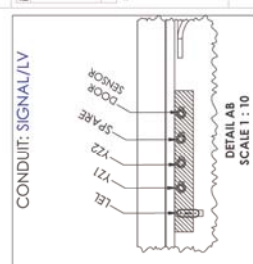
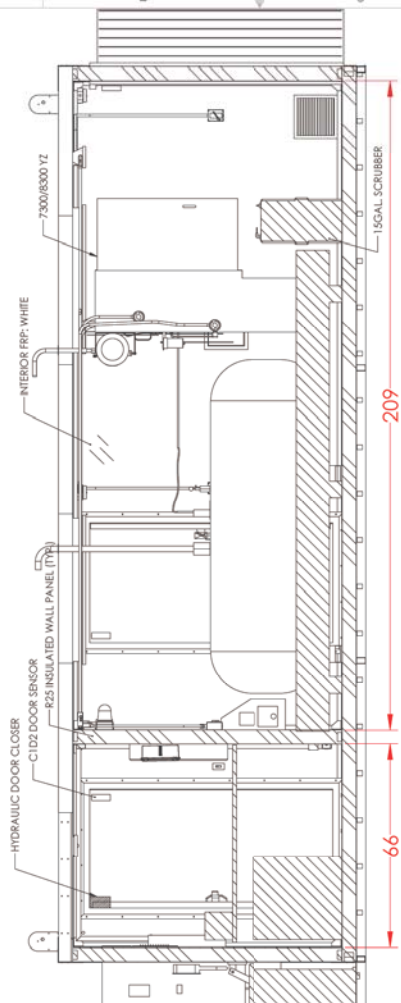
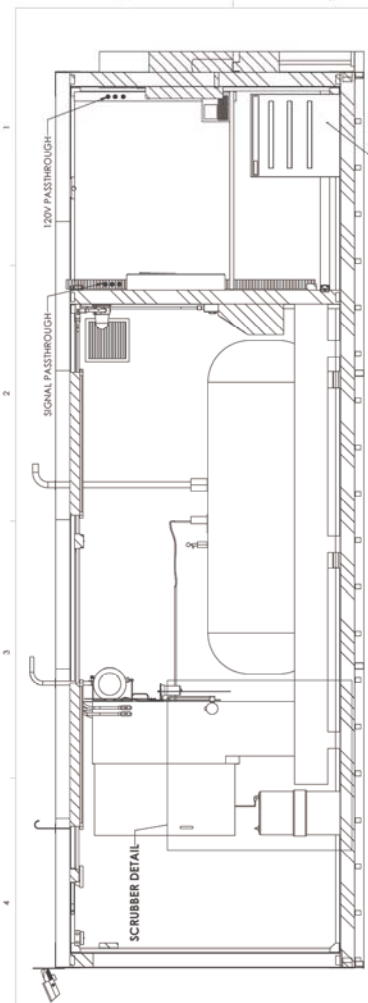
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 SHEET: DWG. NO. 20-4212
 SCALE: 1/20
 WEIGHT: A
 SHEET 2 OF 6

COMPANY: CONSOLIDATED ANALYTICAL SYSTEMS
 ADDRESS: 1000 W. 10TH AVENUE, SUITE 100, DENVER, CO 80202
 PHONE: (303) 733-1100
 FAX: (303) 733-1101
 WWW: WWW.CAS-ANALYTICAL.COM

PROJECT TITLE: ANALYTICAL SYSTEMS
 CLIENT: CAS
 ARCHITECT: CAS
 ENGINEER: CAS
 DATE: 10/15/10

DRAWN BY: []
 CHECKED BY: []
 DATE: []

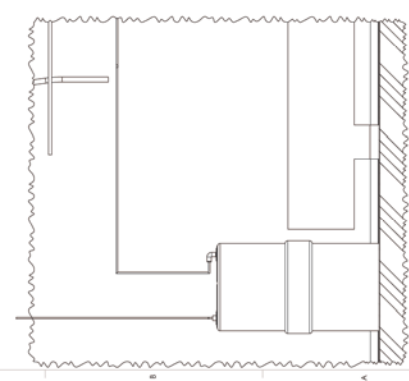
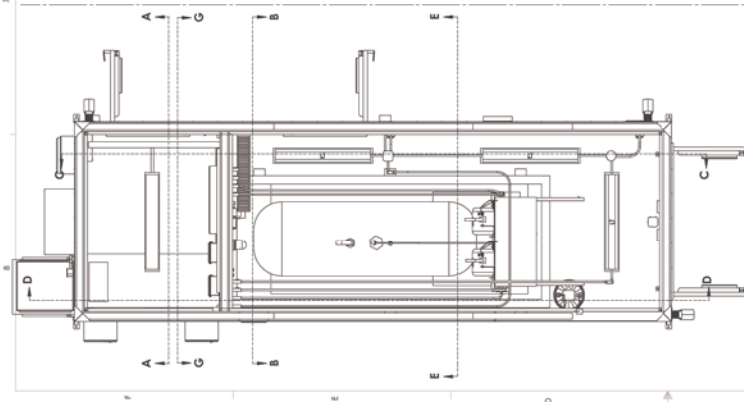
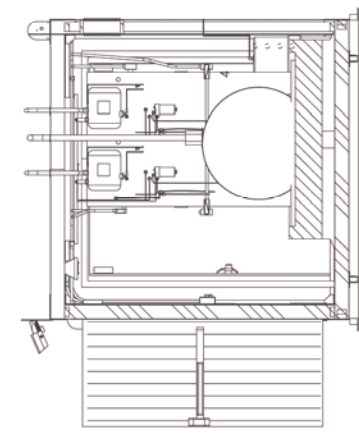
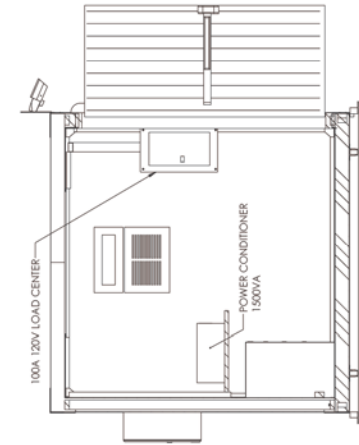
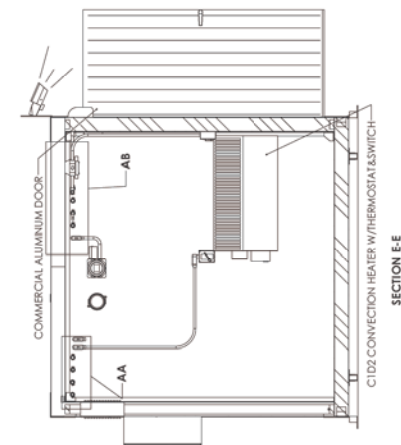
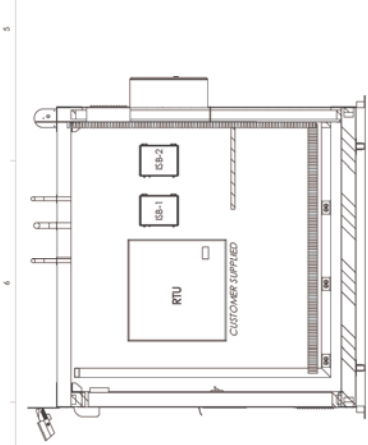
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DATE:	10/20/2020
DESIGNER:	CONSOLIDATED ANALYTICAL SYSTEMS
CHECKED:	10/20/2020
SCALE:	SCALE: 1:20
WEIGHT:	SCALE: 1:20

REV A



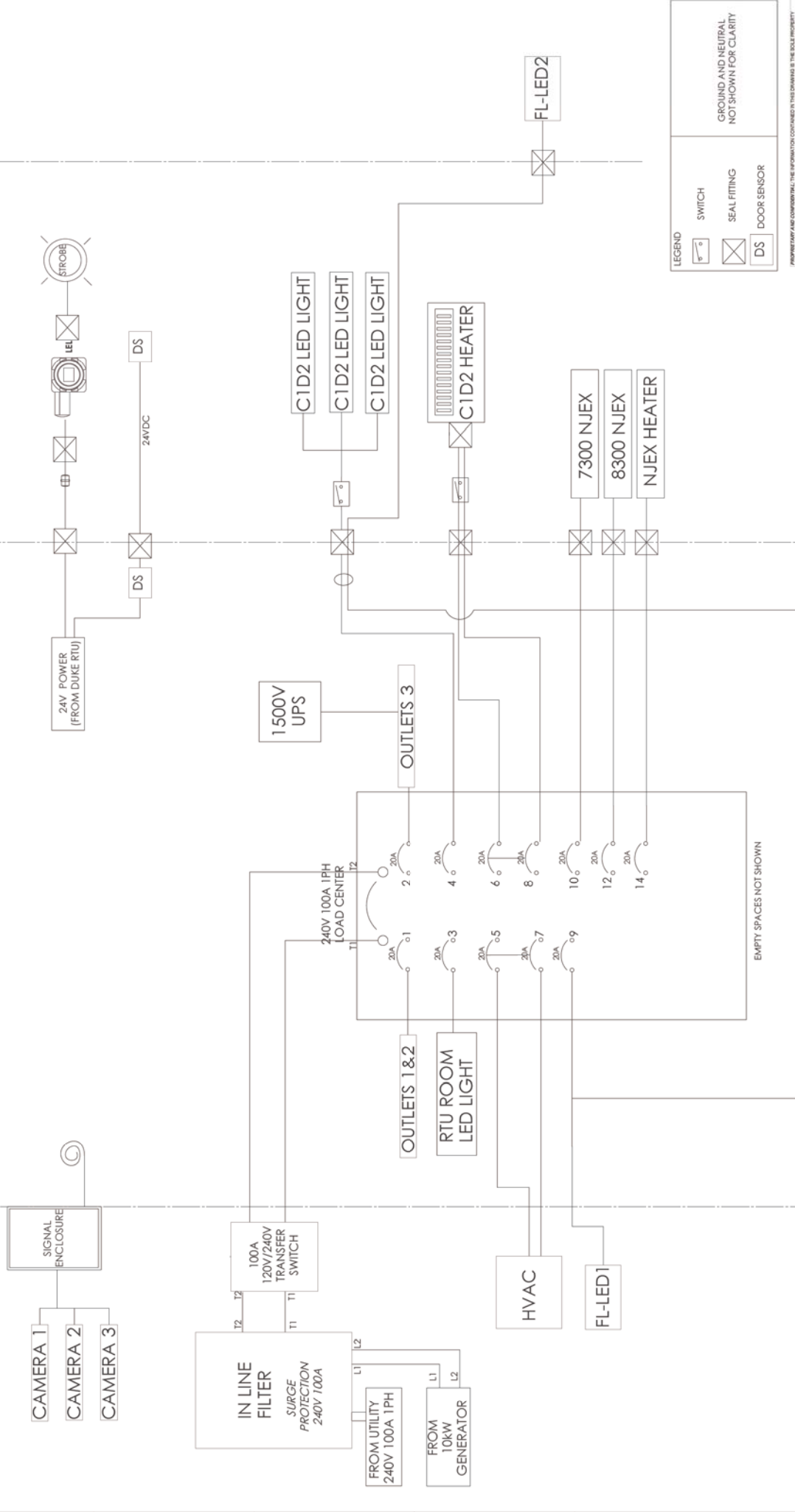
SCRUBBER DETAIL
SCALE 1:10

EXTERIOR

RTU ROOM

EQUIPMENT ROOM - C1D2

EXT.2



LEGEND

- SWITCH
- SEAL FITTING
- DS DOOR SENSOR
- GROUND AND NEUTRAL NOT SHOWN FOR CLARITY

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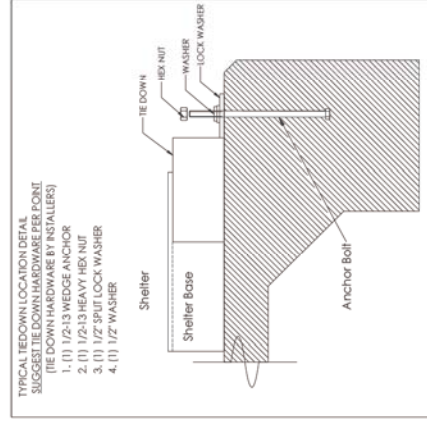
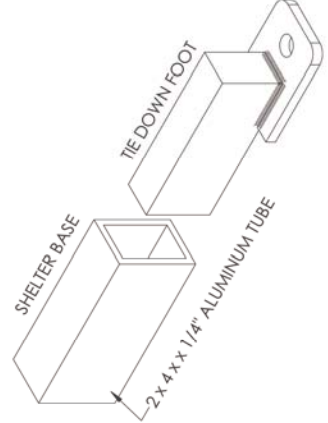
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CHECKED:	CONRAD
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PROJECT:	20-4212 DUKE HIGHPOINT (8x24)
CLIENT:	20-4212
SCALE:	1:32
WEIGHT:	

CONSULTANT ANALYTICAL SYSTEMS

20-4212 DUKE HIGHPOINT (8x24)

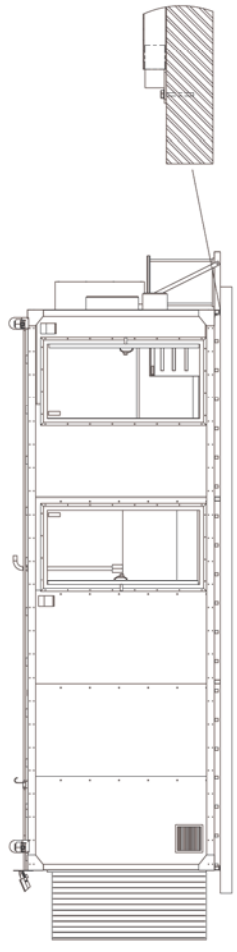
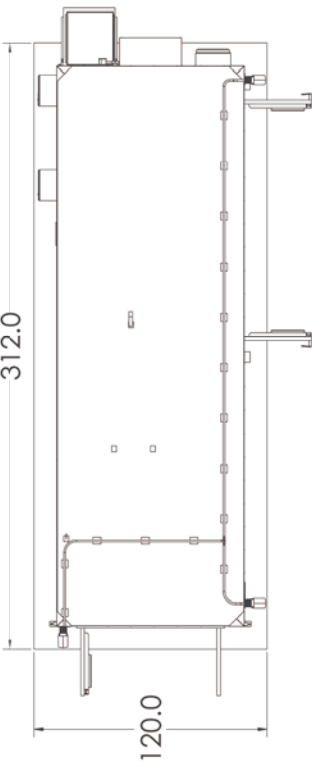
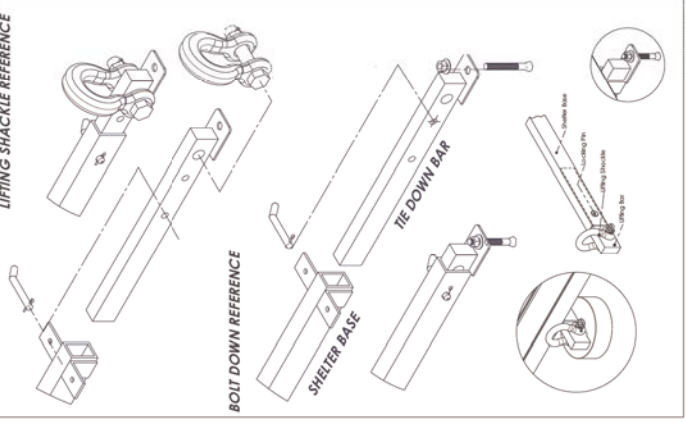
REV: A

SHEETS OF 6



TYPICAL TIE-DOWN LOCATION DETAILS
 SUGGESTED TIE-DOWN HARDWARE PER POINT
 (TIE-DOWN HARDWARE BY INSTALLERS)
 1. (1) 1/2-13 WEDGE ANCHOR
 2. (1) 1/2-13 HEAVY HEX NUT
 3. (1) 1/2\"/>

LIFTING SHACKLE REFERENCE



**TYPICAL CONFIGURATION - FINAL PAD DESIGN MUST BE DETERMINED BY PE AND ADHERE TO ALL CODES
 **BASE DESIGN SUBJECT TO CHANGE BASED ON ODORANT STORAGE TANK LOCATION

CONSIDERED ANALYTICAL SYSTEMS

PROJECT:	20-4212 DUKE HIGHPOINT (8x24)
DATE:	20-4212
SCALE:	1:50
WEIGHT:	A

CONSIDERED ANALYTICAL SYSTEMS