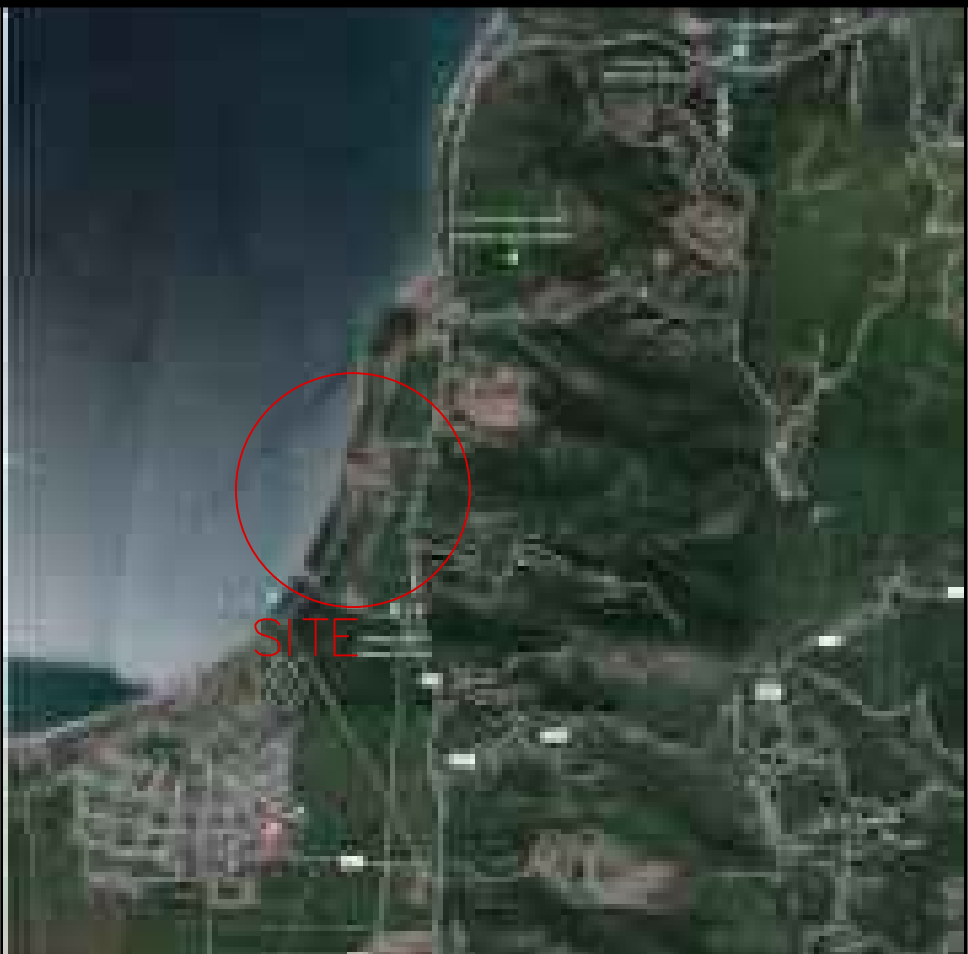
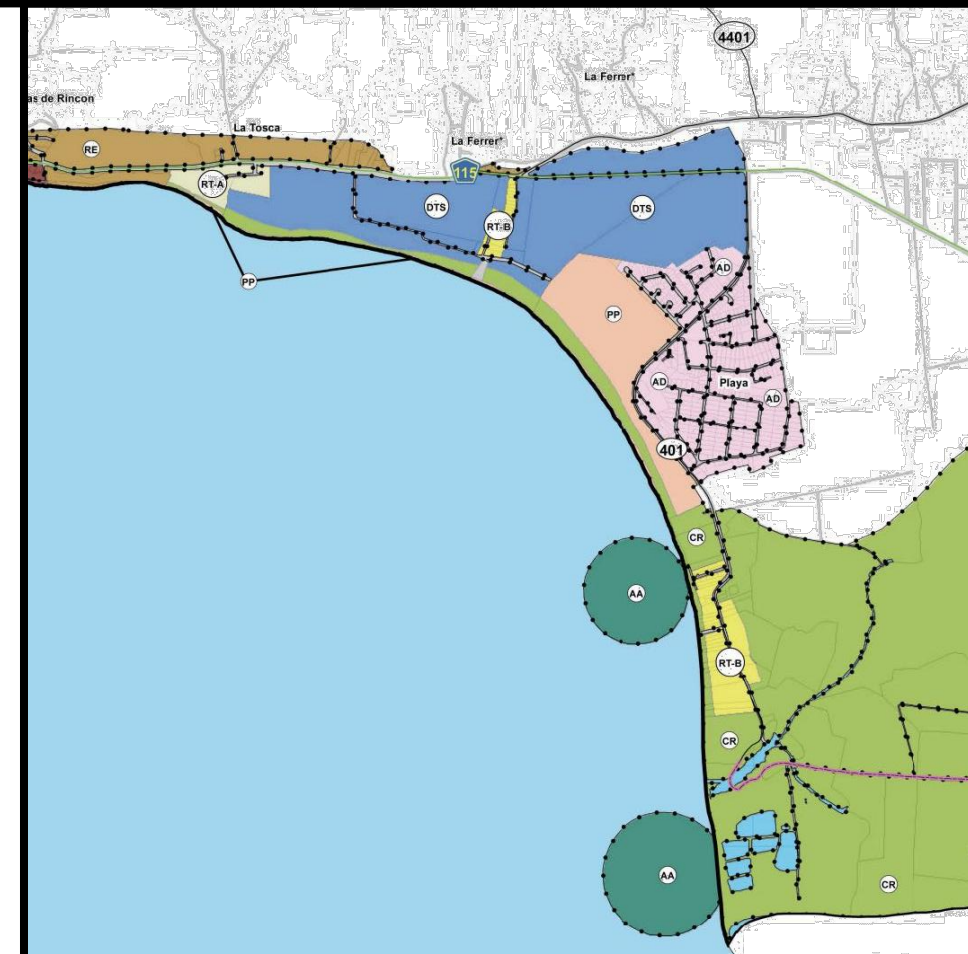


IMPROVEMENTS TO SANITARY SYSTEM CENTRO VACACIONAL VILLAS DE AÑASCO

P.R. ROAD #115, K.M. 5.0 BARRIO CAGUABO
AÑASCO, PR 00610

ISSUED FOR BID
NOT FOR CONSTRUCTION

CATASTRO #153-000-009-02
#153-000-009-03

LOCATION PLAN #153-000-009-02 #153-000-009-03	FLOOD PLAN 12 MAYO 2018_00015J	CALIFICATION PLAN	CORRESPONDENCE	LIST OF DRAWINGS	CERTIFICATION
			OWNER: DRNA SECTOR EL CINCO CARR 8838 KM 6.3 RIO PIEDRAS, PR 00926 TEL: (787) 999.2200 DESIGNER: M2A GROUP, PSC ING. MANUEL BERMUDEZ PAGAN LICENCIA: 15,572 867 AVE. MUNOZ RIVERA COND. VICK CENTER, SUITE D-305 SAN JUAN, PR 00925 TEL: (939) 338.2121 MEP: XXX	MECHANICAL DRAWINGS: SP-1.01 VILLAS DE AÑASCO - LIFT STATION NO.1 SP-1.02 VILLAS DE AÑASCO - LIFT STATION NO.2 SP-1.03 VILLAS DE AÑASCO - LIFT STATION NO.3 SP-2.01 DETAILS ELECTRICAL DRAWINGS: E-100 VILLAS DE AÑASCO - LIFT STATION NO.1 E-101 VILLAS DE AÑASCO - LIFT STATION NO.2 E-102 VILLAS DE AÑASCO - LIFT STATION NO.3 E-103 LIFT STATION NO.1 - GENERATOR E-104 LIFT STATION NO.2 - GENERATOR E-105 LIFT STATION NO.3 - GENERATOR E-106 NOTES & DETAILS	YO, ING. MANUEL BERMUDEZ PAGAN, LICENCIA 15,572, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONO, PREPARO Y/O DISEÑO ESOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS. TAMBIEN CERTIFICO QUE ENTIENDO QUE DICHO PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO Y CODIGOS DE CONSTRUCCION VIGENTES DE LAS AGENCIAS, JUNTAS REGLAMENTADORAS O CORPORACIONES PUBLICAS CON JURISDICCION. CERTIFICO ADEMAS, QUE EN LA PREPARACION DE ESTOS PLANOS Y ESPECIFICACIONES SE HA CUMPLIDO CAVALMENTE CON LO DISPUESTO EN LA LEY NUM. 14 DEL 8 DE ENERO DEL 2004, SEGUN ENMENDADA, CONOCIDA COMO LA "LEY PARA LA INVERSION POR LA INDUSTRIA PUERTORRIQUENA" Y CON LA LEY NUM. 319 DEL 15 DE MAYO DEL 1938, SEGUN ENMENDADA, LEY NUM. 96 DEL 6 DE JULIO DEL 1978, SEGUN ENMENDADA, SEGUN APLIQUE. RECONOZCO QUE CUALQUIER DECLARACION FALSA O FALSIFICACION DE LOS HECHOS QUE SE HAYA PRODUCIDO POR DESCONOCIMIENTO O POR NEGLIGENCIA YA SEA POR MI, MIS AGENTES O EMPLEADOS, O POR OTRAS PERSONAS CON MI CONOCIMIENTO, ME HACEN RESPONSABLE DE CUALQUIER ACCION JUDICIAL Y DICIPLINARIA POR LA OGPp.

Professional Seal



M2A GROUP, PSC

Ing. Manuel Bermudez Pagan
Licencia: 15,572
867 Ave. Munoz Rivera
Cond. Vick Center
Suite D-305
San Juan, PR 00925

IMPROVEMENTS TO
SANITARY SYSTEM

CENTRO VACACIONAL VILLAS
DE AÑASCO
AÑASCO, PUERTO RICO

ISSUE

MARCH. 1, 2023

RE-ISSUE

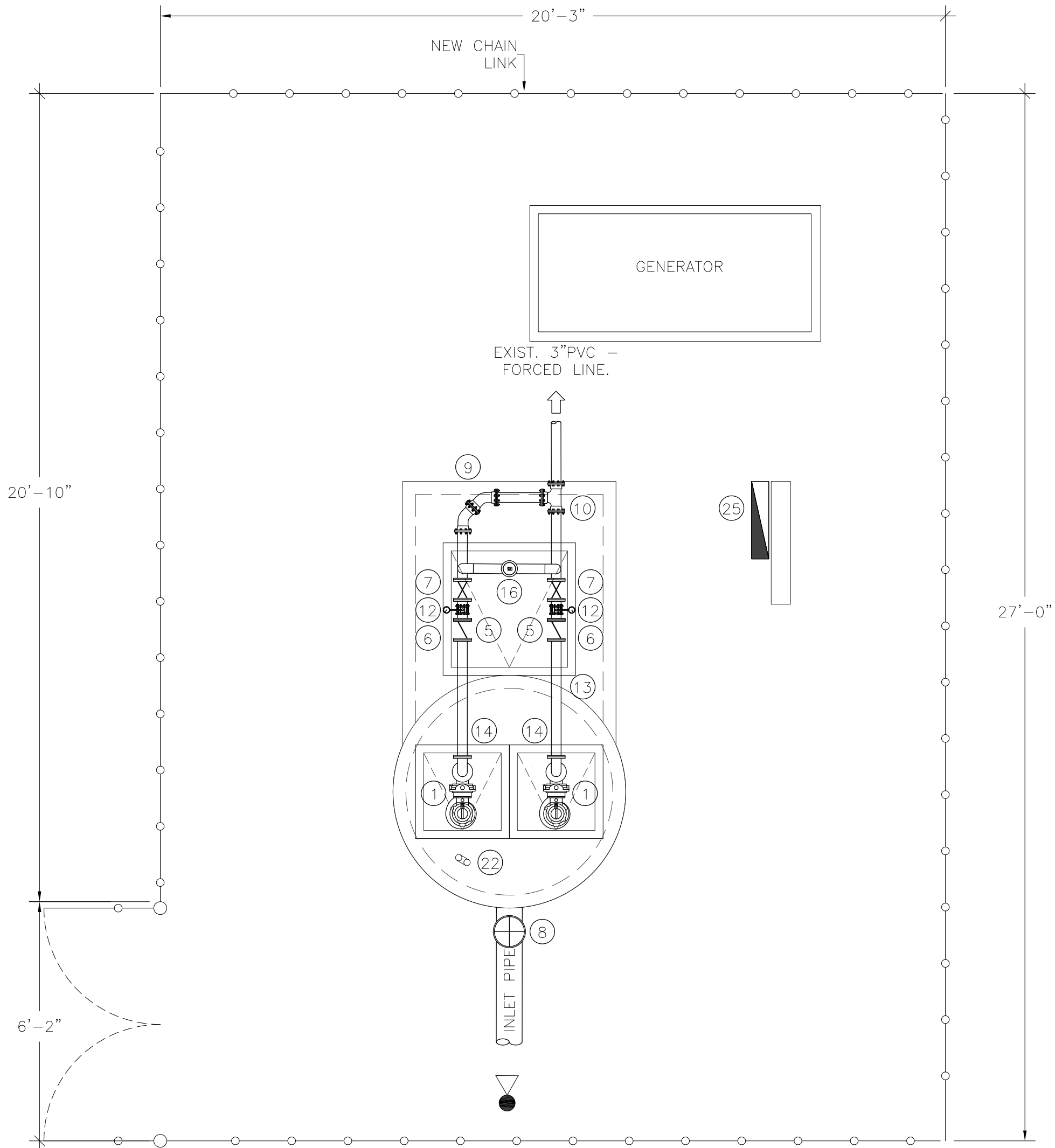
MM.DD.YY

PROJECT NO.

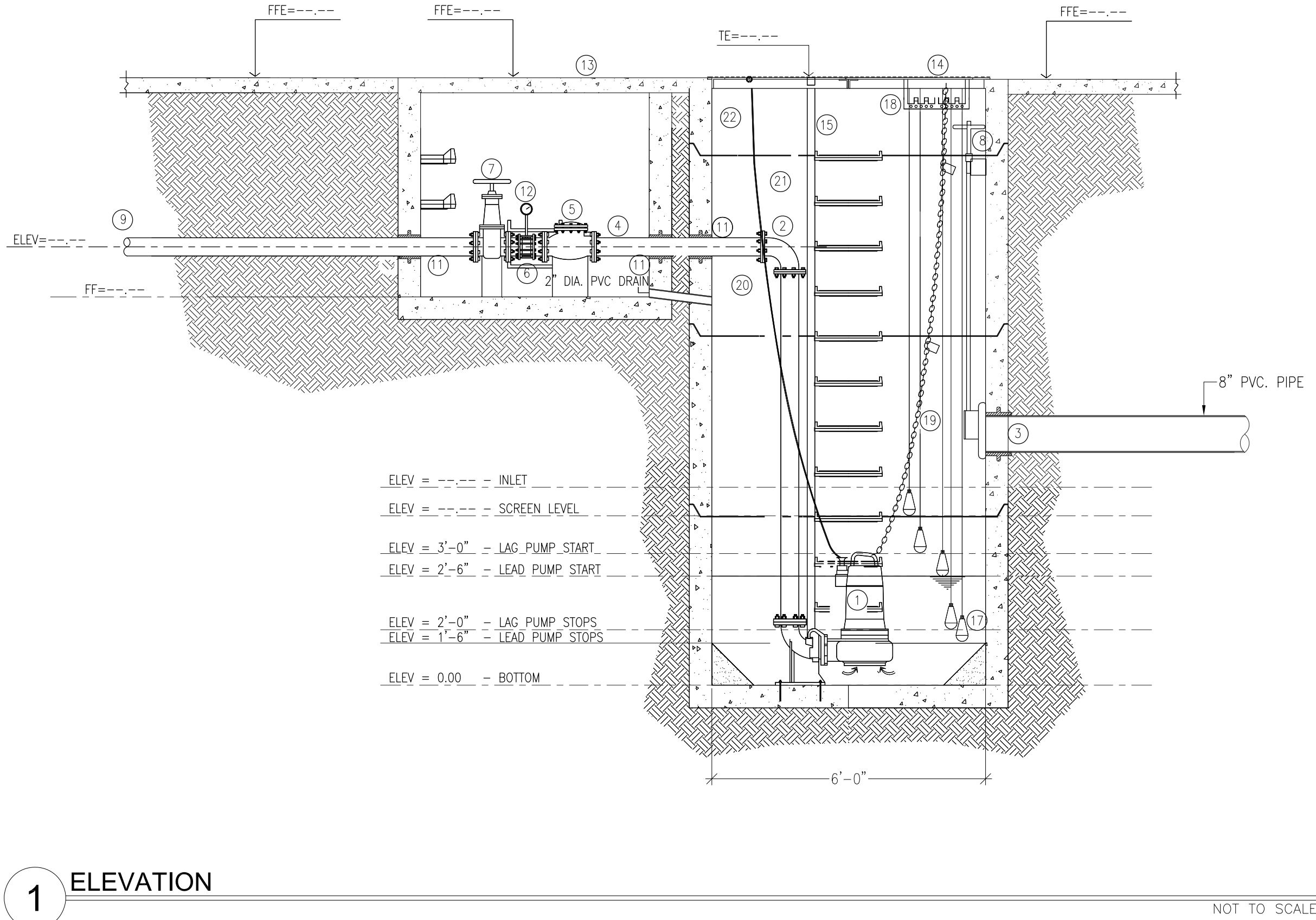
IMPROVEMENTS TO
SANITARY SYSTEM
CENTRO VACACIONAL
VILLAS DE AÑASCO

Cover Sheet

A.000



VILLAS DE AÑASCO LIFT STATION NO.1
SCALE: 3/8"=1'-0"



1 ELEVATION

NOT TO SCALE

EQUIPMENT ELEVATION

- | | |
|--|--|
| 1 NEW TWO (2) SOLID HANDLING, SUBMERSIBLE GRINDER PUMPS, 40 GPM, 100 FT TDH, 4.0 HP, 240 VOLTS, 3 PHASE, 60 HZ, 3450 RPM. EQUAL OR SIMILAR FLYGT MODEL MP-3085. PROVIDE WITH BREAK AWAY FITTINGS TO EACH PUMP. | 15 EXISTING LADDER |
| 2 2 1/2" C.I. 90° BEND F.I. ENDS | 16 NEW AUTOMATIC AIR VENT - PROVIDE NEW MANIFOLD AT THE DISCHARGE PIPING. |
| 3 8" INLET PIPE | 17 NEW WATER LEVEL FLOATS. |
| 4 2 1/2" C.I. NIPPLE FL. ENDS. | 18 NEW WATER LEVEL FLOATS CABLES RACK STAINLESS STEEL PLATE 0.0127 TH. |
| 5 NEW 2 1/2" CHECK VALVE FL. ENDS. | 19 NEW GALVANIZED CHAIN FOR LIFTING PUMPS. INSTALL HOOKS TO SUPPORT CHAIN FROM CONCRETE. |
| 6 NEW 2 1/2" FLANGED COUPLING ADAPTER | 20 NEW POWER CABLES (SEE ELECTRICAL PLANS). |
| 7 NEW 2 1/2" GATE VALVE FL. ENDS (RISING STEM), RESILIENT TYPE. | 21 NEW STAINLESS STEEL GUIDE PIPES. |
| 8 NEW 6" SLUICE GATE WITH REMOTE HANDLE (RISING STEM)- EQUAL TO WATERMAN MODEL P-32. | 22 NEW 4" CAST IRON VENT. PIPE. |
| 9 2 1/2" C.I. 90° BEND M.J. | 23 NEW HOSE BIB |
| 10 2 1/2" TEE M.J. | 24 NEW 1/2" REDUCED PRESSURE ZONE BACKFLOW PREVENTER EQUAL TO WATTS 009. |
| 11 3" WALL SLEEVE | 25 NEW POWER CONTROL PANEL IN NEMA 3X ENCLOSURE FURNISHED WITH: |
| 12 NEW SANITARY MANOMETER (0-100 PSI) | - (2) MANUAL MOTOR STARTER & PROTECTOR |
| 13 (EXIST.) DOUBLE LEAF ALUMINUM ACCESS DOOR, 24"x48" EACH ONE, ALL HINGES, BOLTS, NUTS, WASHERS AND LOCKS MUST BE ALUMINUM. | - (2) MAGNETIC STARTERS CONTACTORS |
| 14 (EXIST.) DOUBLE LEAF ALUMINUM ACCESS DOOR, 24"x48" EACH ONE, ALL HINGES, BOLTS, NUTS, WASHERS AND LOCKS MUST BE ALUMINUM. | - HMI-SELECTOR SWITCHES |
| | - RUN PILOT LIGHTS |
| | - ALTERNATOR |
| | - LOW LEVEL AND HIGH LEVEL ALARM |
| | - FLOAT SWITCH LEVEL LOGIC |

NOTE:

- CONTRACTOR SHALL VERIFY THE EXISTING FORCED LINE PIPING DIAMETER AND NOTIFY THE FINDINGS TO THE INSPECTOR AND OWNER.
- CONTRACTOR SHALL REPLACE OR INSTALL ALL VALVES AND ACCESSORIES DENOTES AS NEW AT THE EQUIPMENT LEGEND, INCLUDING THE FOLLOWING:
 - PUMPS
 - SLUICE GATE
 - GATE AND CHECK VALVES
 - MANOMETERS
 - AIR VENTS.
 - WATER LEVEL FLOATS
 - CONTROL PANEL

Yo, ANTONIO J. DAJER GUERRA, número de Licencia 11530 certifico que soy el profesional que diseñó estos planos y especificaciones complementarios. También, certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del Reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de Construcción Vigentes de las Agencias, Juntas Reglamentadoras o Corporaciones Públicas con jurisdicción. Certifico, además, que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la Ley 14-2004, según enmendada, conocida como la "Ley para Inversión por la Industria Puertorriqueña" y con la [Ley Núm. 139 de 15 de mayo de 1938, según enmendada; Ley Núm. 98 de 6 de julio de 1978, según enmendada; según aplique]. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido por desconocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OGP.

FECHA: MAR. 2023

ADG
ENGINEERING, P.S.C.
CONSULTING ENGINEERS

LLA, Bldg. Suite 703
10355 Kennedy Ave.
San Juan, P.R. 00920
TEL: (787) 749-8747
FAX: (787) 749-0535
EMAIL: adajer@adgeng.com

Professional Seal

2AGROUP

M2A GROUP, PSC
Ing. Manuel Bermudez Pagan
Licencia: 15,572
867 Ave. Muñoz Rivera
Cond. Wick Center
Suite D-305
San Juan, PR 00925

**MEJORAS AL SISTEMA
SANITARIO VILLAS
DE AÑASCO**
AÑASCO PUERTO RICO

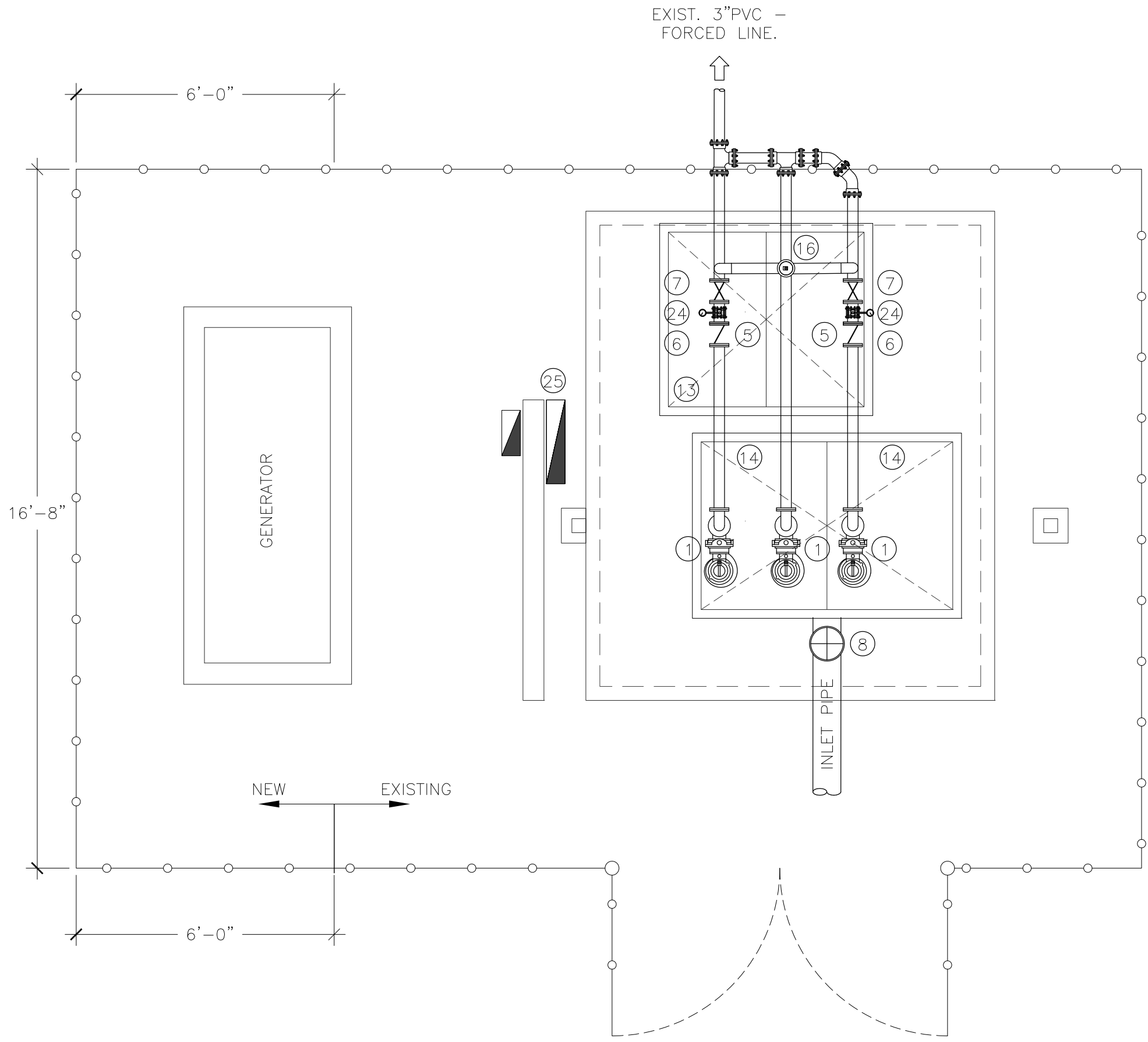
PROJECT NO.
FEB 08, 2023

PROJECT

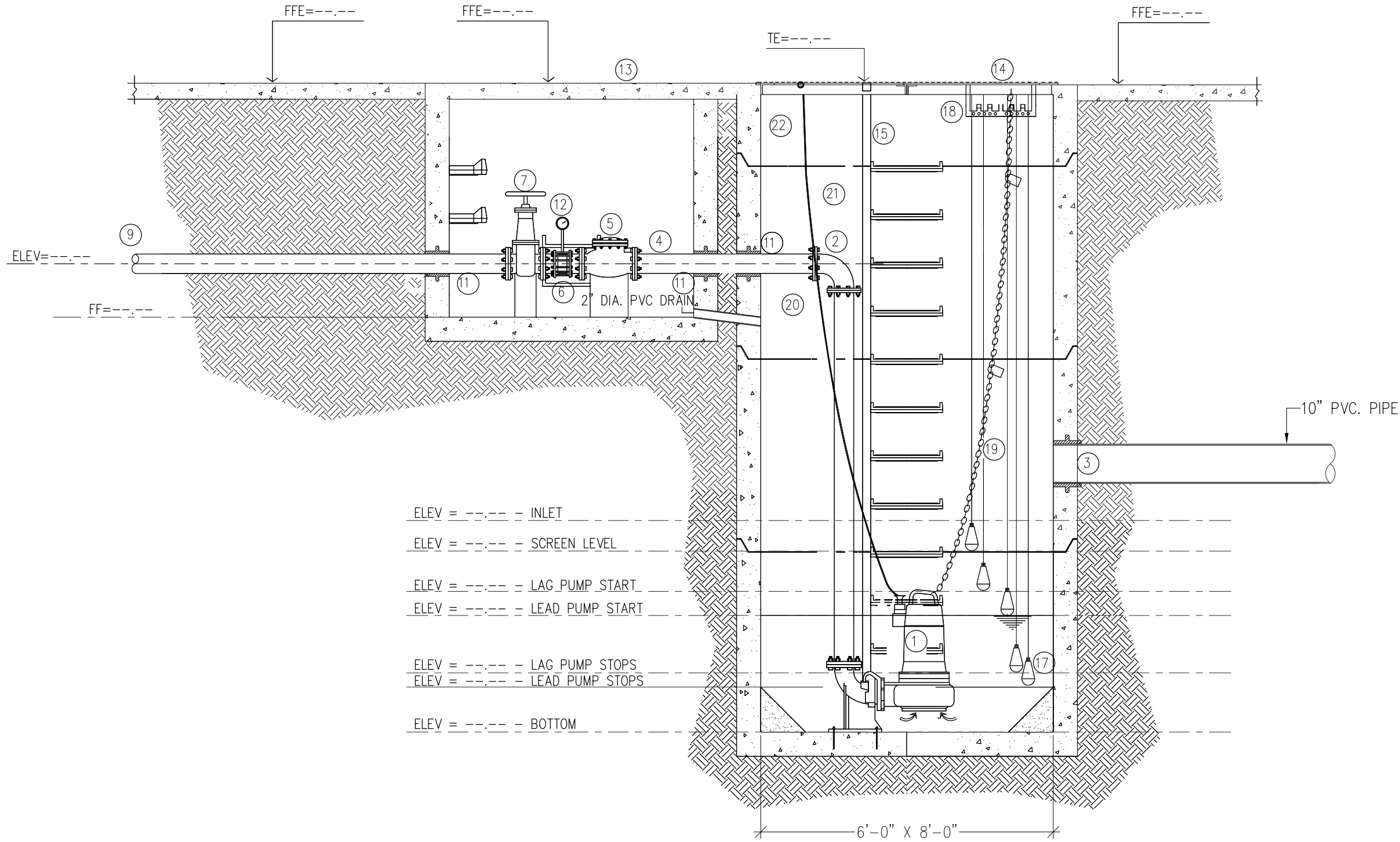
RE-ISSUE
MM.DD.YY

**VILLAS DE AÑASCO
LIFT STATION NO.1**

SP-1.01



VILLAS DE AÑASCO LIFT STATION NO.2
SCALE: 3/8"=1'-0"



1 ELEVATION

EQUIPMENT ELEVATION

- | | |
|---|---|
| 1 NEW THREE (3) SOLID HANDLING, SUBMERSIBLE GRINDER PUMPS, 80 GPM, 70 FT TDH, 4.0 HP, 240 VOLTS, 3 PHASE, 60 HZ, 3450 RPM. EQUAL OR SIMILAR FLYGT MODEL MP-3085. PROVIDE WITH BREAK AWAY FITTINGS TO EACH PUMP. | 15 EXISTING LADDER |
| 2 4" C.I. 90° BEND F.L. ENDS | 16 NEW AUTOMATIC AIR VENT - PROVIDE NEW MANIFOLD AT THE DISCHARGE PIPING. |
| 3 8" INLET PIPE | 17 NEW WATER LEVEL FLOATS. |
| 4 4" C.I. NIPPLE FL. ENDS. | 18 NEW WATER LEVEL FLOATS CABLES RACK STAINLESS STEEL PLATE 0.0127 TH. |
| 5 NEW 4" CHECK VALVE FL. ENDS. | 19 NEW GALVANIZED CHAIN FOR LIFTING PUMPS. INSTALL HOOKS TO SUPPORT CHAIN FROM CONCRETE. |
| 6 NEW 4" FLANGED COUPLING ADAPTER | 20 NEW POWER CABLES (SEE ELECTRICAL PLANS). |
| 7 NEW 4" GATE VALVE FL. ENDS (RISING STEM), RESILIENT TYPE. | 21 NEW STAINLESS STEEL GUIDE PIPES. |
| 8 NEW 10" SLUICE GATE WITH REMOTE HANDLE (RISING STEM)- EQUAL TO WATERMAN MODEL P-32. | 22 CAST IRON VENT. PIPE. |
| 9 4" C.I. 90° BEND M.J. | 23 NEW HOSE BIB |
| 10 4" TEE M.J. | 24 NEW 1/2" REDUCED PRESSURE ZONE BACKFLOW PREVENTER EQUAL TO WATTS 009. |
| 11 6" WALL SLEEVE | 25 NEW POWER CONTROL PANEL IN NEMA 3X ENCLOSURE FURNISHED WITH: <ul style="list-style-type: none">(2) MANUAL MOTOR STARTER & PROTECTOR(2) MAGNETIC STARTERS CONTACTORSHQA-SELECTOR SWITCHESRUN PILOT LIGHTSALTERNATORLOW LEVEL AND HIGH LEVEL ALARMFLOAT SWITCH LEVEL LOGIC |
| 12 NEW SANITARY MANOMETER (0-100 PSI) | |
| 13 EXIST. DOUBLE LEAF ALUMINUM ACCESS DOOR, 24"x48" EACH ONE, ALL HINGES, BOLTS, NUTS, WASHERS AND LOCKS MUST BE ALUMINUM. | |
| 14 EXIST. DOUBLE LEAF ALUMINUM ACCESS DOOR, 24"x36" EACH ONE, ALL HINGES, BOLTS, NUTS, WASHERS AND LOCKS MUST BE ALUMINUM. | |

NOTE:

- CONTRACTOR SHALL VERIFY THE EXISTING FORCED LINE PIPING DIAMETER AND NOTIFY THE FINDINGS TO THE INSPECTOR AND OWNER.
- CONTRACTOR SHALL REPLACE OR INSTALL ALL VALVES AND ACCESSORIES DENOTES AS NEW AT THE EQUIPMENT LEGEND, INCLUDING THE FOLLOWING:
 - PUMPS
 - SLUICE GATE
 - GATE AND CHECK VALVES
 - MANOMETERS
 - AIR VENTS.
 - WATER LEVEL FLOATS
 - CONTROL PANEL

Yo, ANTONIO J. DAJER GUERRA, número de Licencia 11530 certifico que soy el profesional que diseñó estos planos y especificaciones complementarios. También, certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del Reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de Construcción Vigentes de las Agencias, Juntos Reglamentadores o Corporaciones Públicas con jurisdicción. Certifico, además, que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la Ley 14-2004, según enmendada, conocida como la "Ley para Inversión por la Industria Puertorriqueña" y con la [Ley Núm. 139 de 15 de mayo de 1938, según enmendada; Ley Núm. 98 de 6 de julio de 1978, según enmendada; según aplique]. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido por desconocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OGP.

FECHA: MAR. 2023

LLA, Bldg. Suite 703
1055 Kennedy Ave.
San Juan, P.R. 00920
TEL: (787) 749-8747
FAX: (787) 749-0535
EMAIL: adajer@adgeng.com

Professional Seal



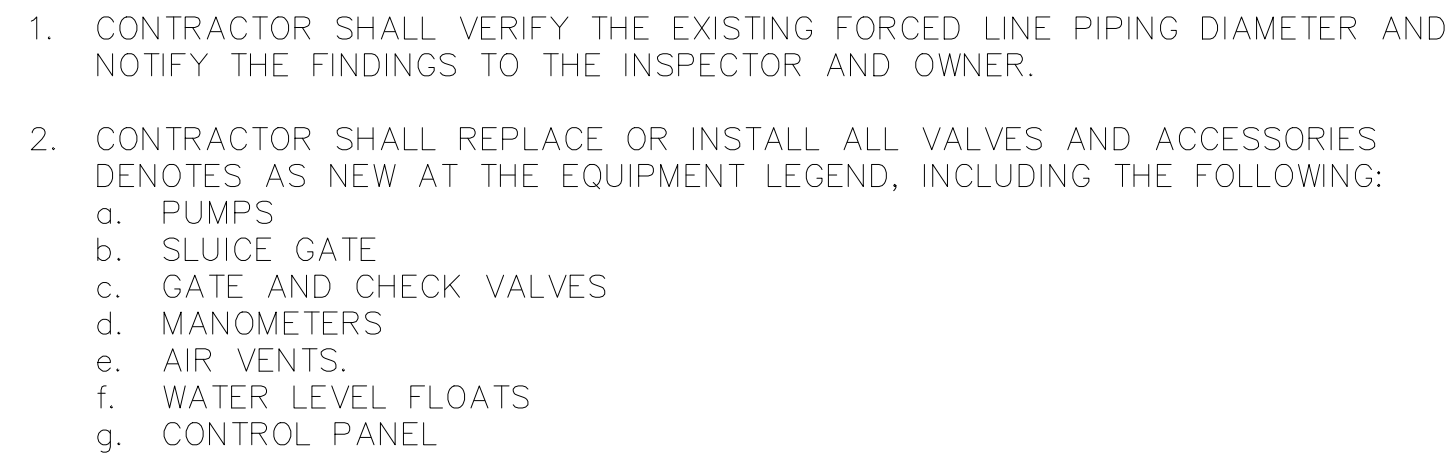
M2A GROUP, PSC
Ing. Manuel Bermudez Pagan
Licencia: 15,572
867 Ave. Muñoz Rivera
Cond. Wick Center
Suite D-305
San Juan, PR 00925

MEJORAS AL SISTEMA
SANITARIO VILLAS DE
AÑASCO
AÑASCO PUERTO RICO

PROJECT NO.
PROJECT
ISSUE
FEB 08, 2023
RE-ISSUE
MM.DD.YY

VILLAS DE AÑASCO
LIFT STATION NO.2

SP-1.02



I.L.A. Bldg. Suite 703
1055 Kennedy Ave.
San Juan, P.R. 00920
TEL: (787) 749-8747
FAX: (787) 749-0535
EMAIL: adajer@adgeng.com

Professional Seal



M2A GROUP, PSC
Ing. Manuel Bermudez Pagan
Licencia: 15,572
867 Ave. Muñoz Rivera
Cond. Vick Center
Suite D-305
San Juan, PR 00925

**MEJORAS AL SISTEMA
SANITARIO VILLAS DE
AÑASCO**

~
AÑASCO PUERTO RICO

ISSUE
FEB 08, 2023

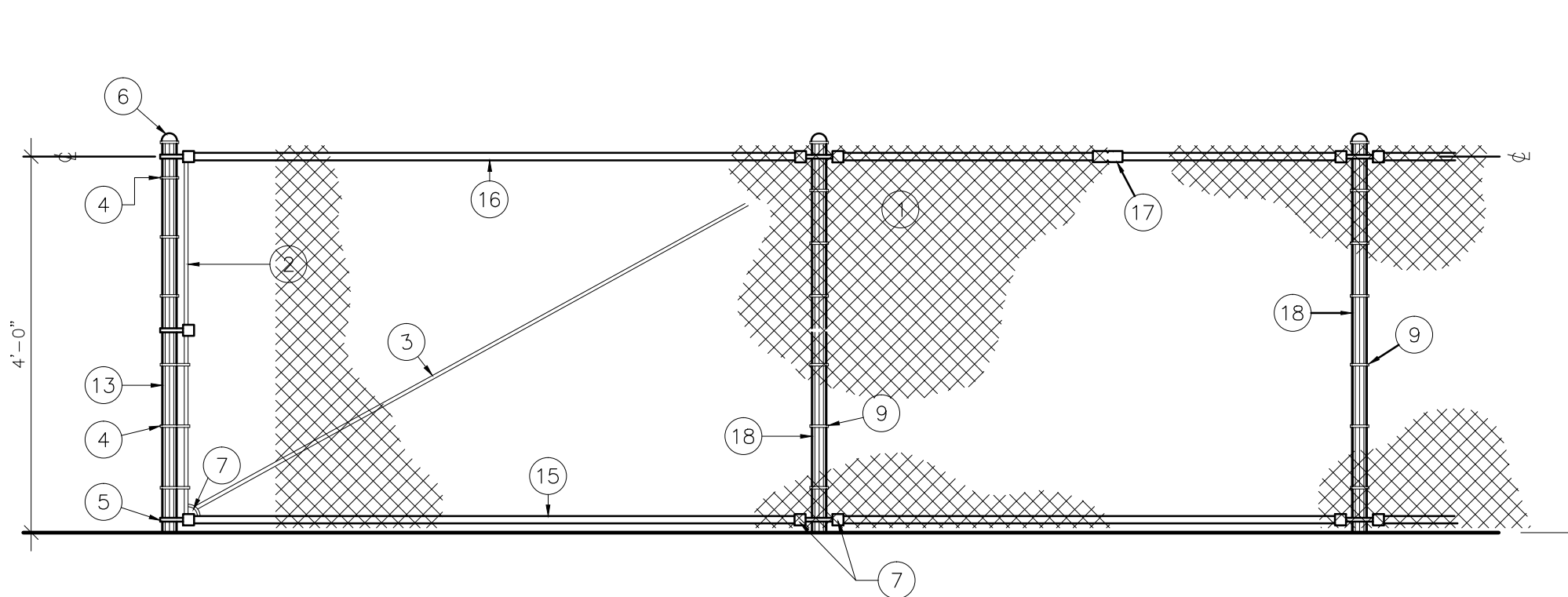
RE-ISSUE
MM.DD.YY

PROJECT NO.

PROJECT

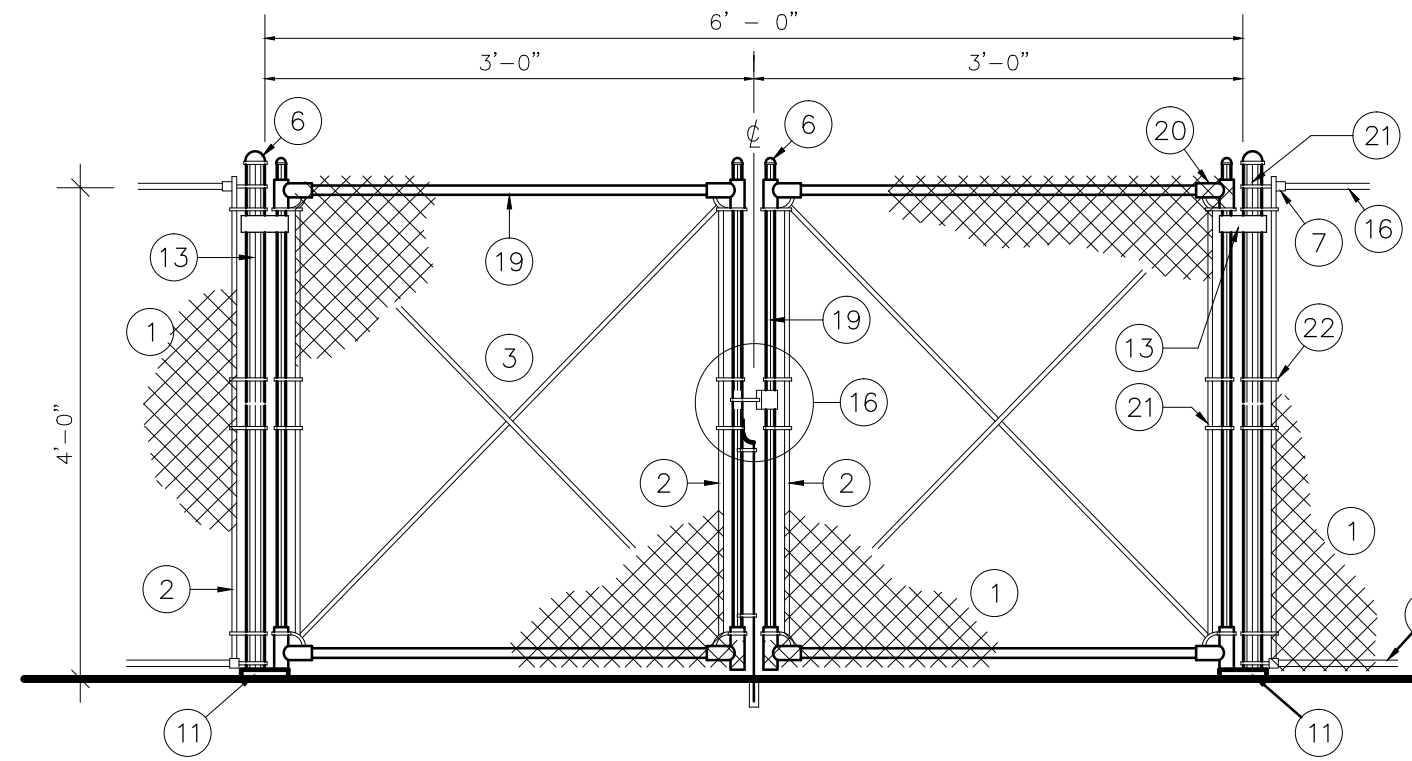
BALNEARIO DE AÑASCO LIFT STATION

SP-1.03



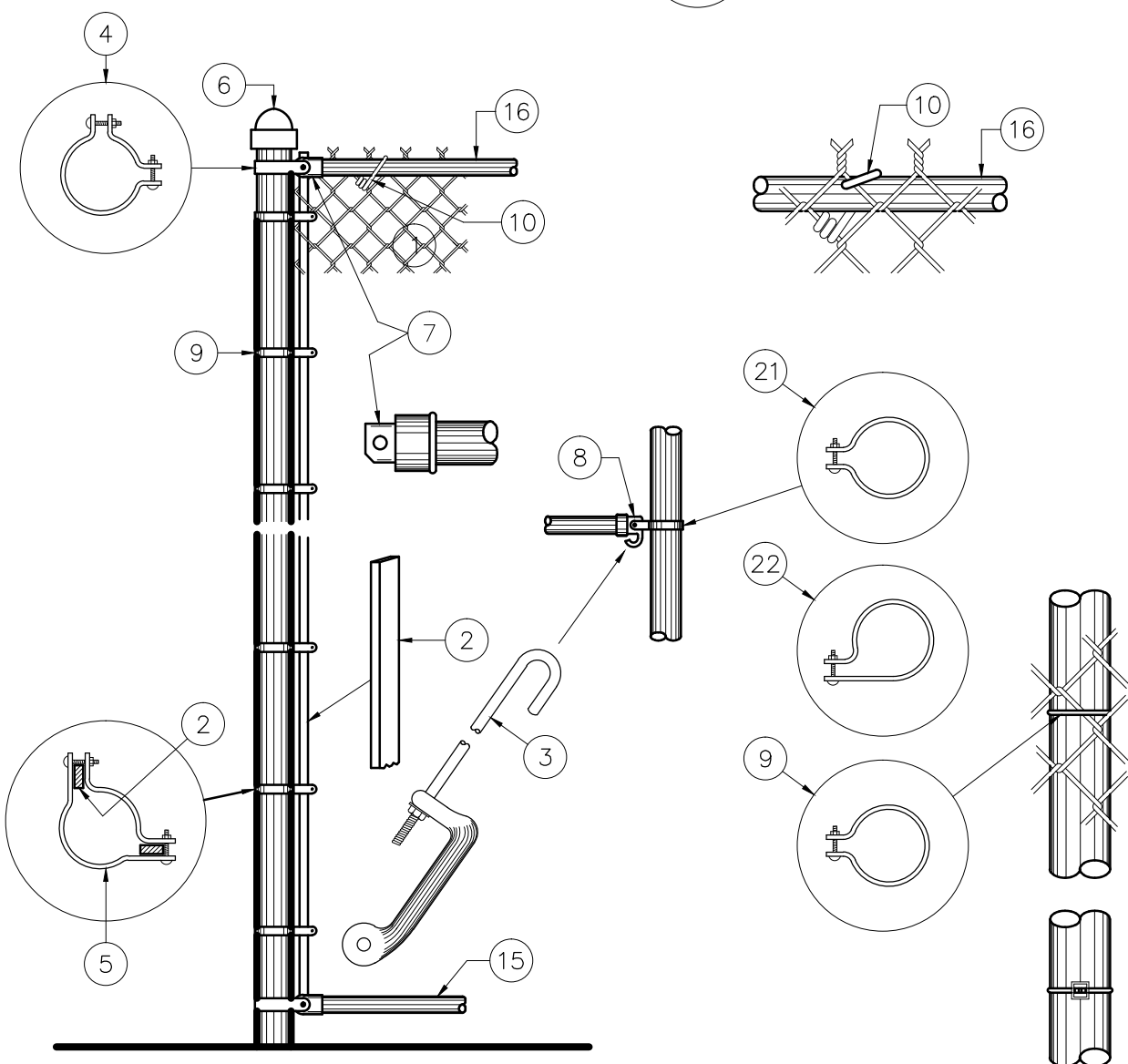
1 CORNER AND MIDDLE POST ELEVATION

NOT TO SCALE



2 SWINGING GATE ELEVATION

NOT TO SCALE



3 CORNER POST DETAILS

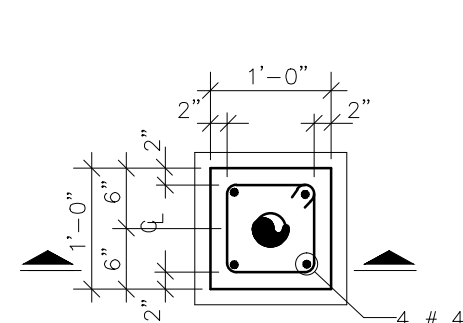
NOT TO SCALE

FENCE SCHEDULE

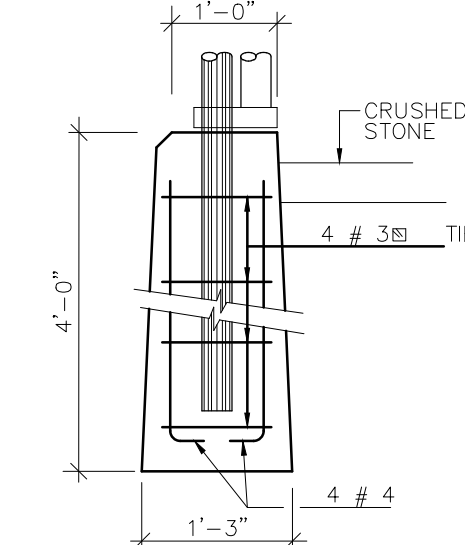
ITEM NO. DESCRIPTIONS

- 1 WIRE MESH 2" x 2" GAUGE NO. 6
2 GALVANIZED TENSION BAR 1/2" DIA.
3 GALVANIZED REINF. BAR WITH ADJUSTMENT TURN BUCKLE
4 GALVANIZED TENSION STRAP (CORNER POST 3")
5 GALVANIZED BRACE STRAP (CORNER POST 3")
6 TOP CONICAL CAP (3" CORNER POST)(2" ON GATE)
7 GALVANIZED BRACE END 5/8"
8 GALVANIZED BRACE END 5/8" WITH HOOK
9 GALVANIZED STRAP AND LINE WITH LOCK WASHER 2"
10 GALV. STEEL RAIL TIE STRAPELS
11 BOTTOM HINGE (3" TO 2")

- 12 SINGLE BOLT LOCK WITH PADLOCK
13 GALVANIZED END POST - 3" O.D. - 5.81 #/FT.
15 GALV. BOTTOM REINF. 1 5/8" O.D. (SECTIONAL)
16 GALV. TOP REINF. 1 5/8" O.D. (STRAIGHT WITH EXPANSION SLEEVE COUPLING)
17 EXPANSION SLEEVE COUPLING
18 GALVANIZED MIDDLE POST 2" O.D.
19 GALVANIZED GATE FRAME 2" O.D.
20 GALVANIZED ELBOW GATE 2"
21 GALVANIZED TENSION STRAP (GATE POST 2")
22 GALVANIZED BRACE STRAP (GATE POST 3")
23 TOP HINGE (3" TO 2")



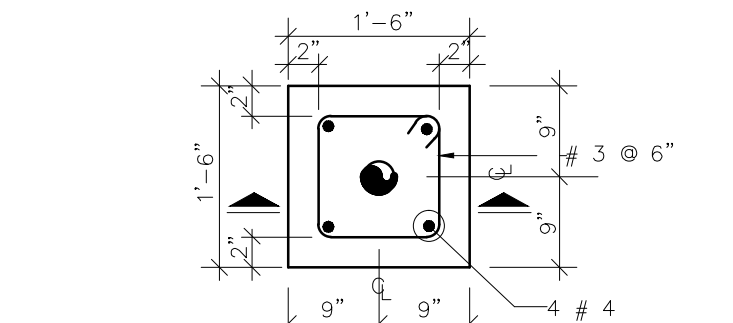
PLAN



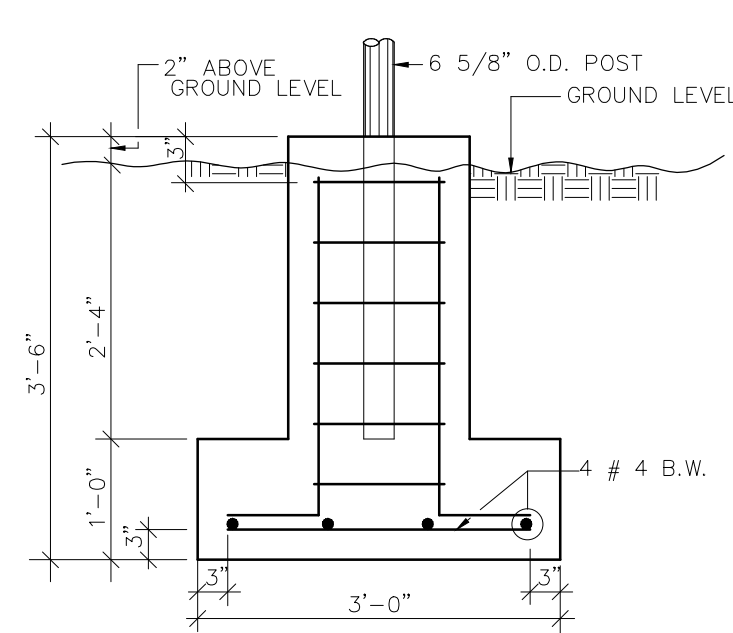
SECTION

4 TYPICAL FOOTING POST CORNER OR MIDDLE POST

NOT TO SCALE



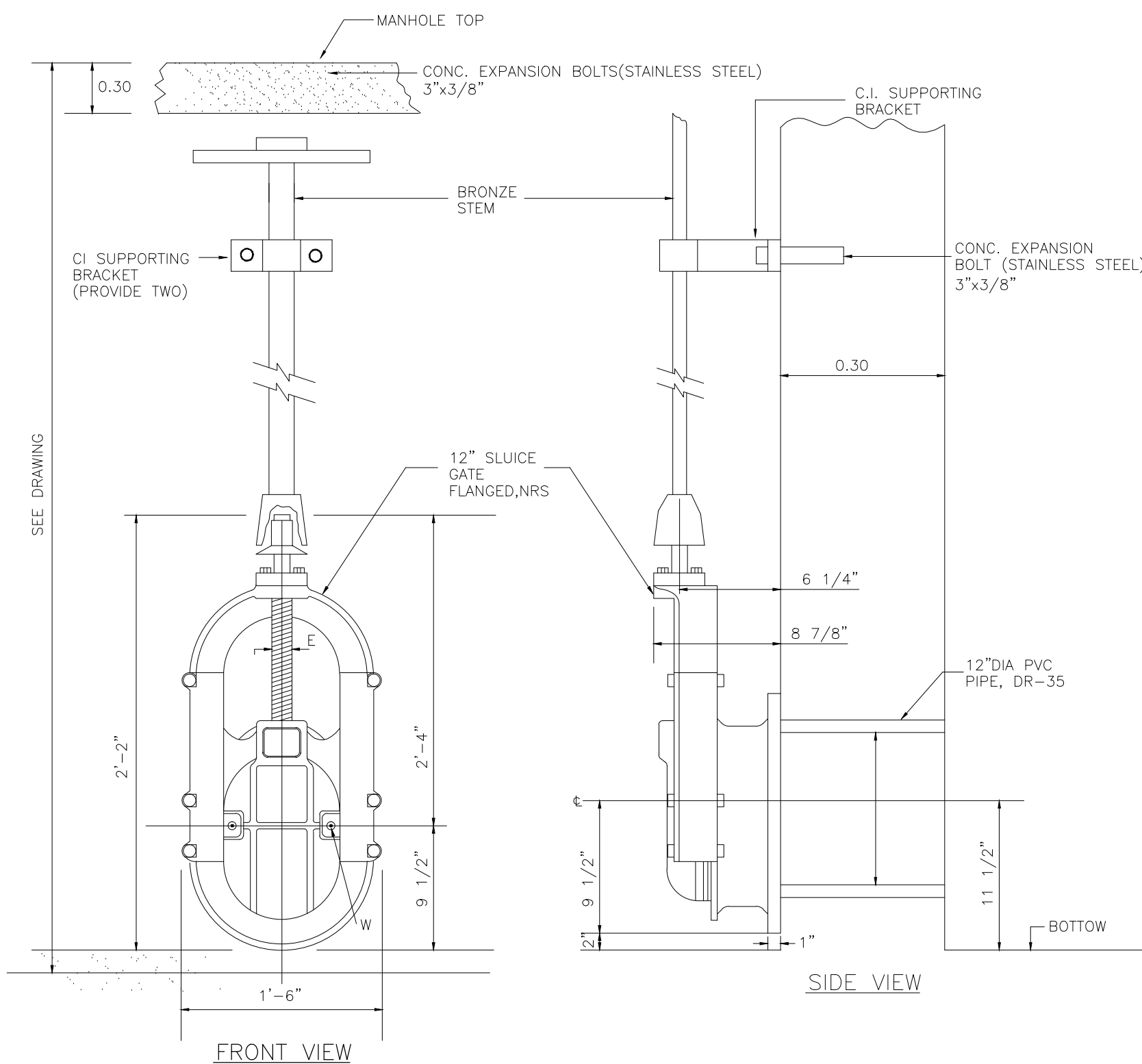
PLAN



SECTION

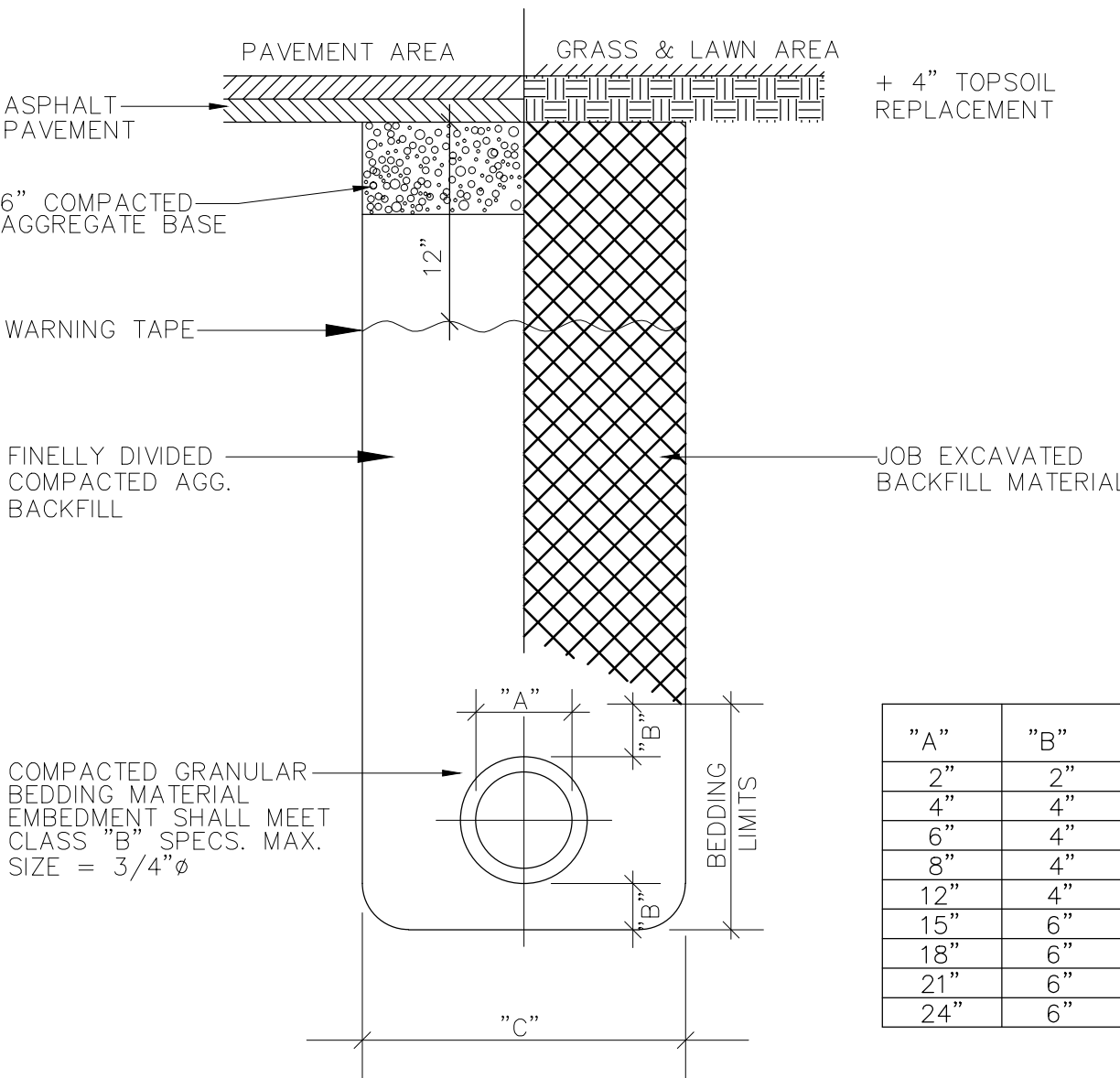
5 GATE POST FOOTING DETAIL

NOT TO SCALE



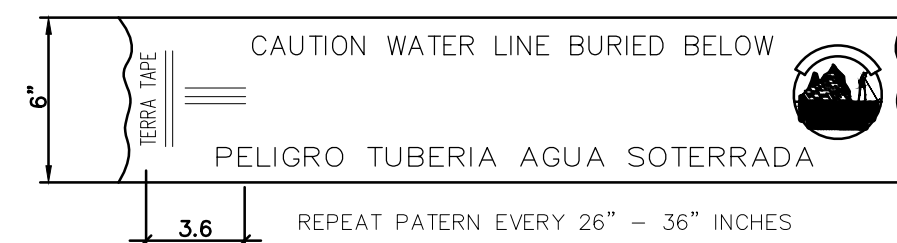
7 SLUICE GATE DETAIL

NOT TO SCALE



8 TRENCH AND BACKFILL DETAIL

NOT TO SCALE



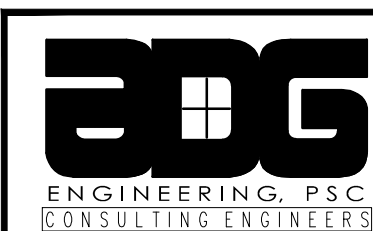
9 WARNING TAPE

NOT TO SCALE

PROVIDE A WARNING TAPE ABOVE ALL UNDERGROUND PIPE TO 12" DEPTH FROM THE TOP OF SOIL. THE WARNING TAPE SHALL HAVE 3" WIDTH AND SHALL BE EQUAL OR SIMILAR TO THE WARNING TAPES MANUFACTURED BY REEF INDUSTRIES INC.

Yo, ANTONIO J. DAJER GUERRA, número de Licencia 11530 certifico que soy el profesional que diseñó estos planos y especificaciones complementarias. También, certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del Reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de Construcción Vigentes de las Agencias, Juntos Reglamentados o Corporaciones Públicas con Jurisdicción. Certifico, además, que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la Ley 14-2004, según enmendada, conocida como la "Ley para inversión por la Industria Puertorriqueña" y con la Ley Núm. 139 de 15 de mayo de 1938, según enmendada; Ley núm. 96 de 6 de julio de 1978, según enmendada; según aplique. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido por desconocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OGP.

FECHA: MAR. 2023



ILLA, Bldg. Suite 703
1055 Kennedy Ave.
San Juan, P.R. 00920
TEL: (787) 749-8747
FAX: (787) 749-0535
EMAIL: adajer@adgeng.com

Professional Seal



MZA GROUP, PSC
Ing. Manuel Bermudez Pagan
Licencia: 15,572
867 Ave. Muñoz Rivera
Cond. Vick Center
Suite D-305
San Juan, PR 00925

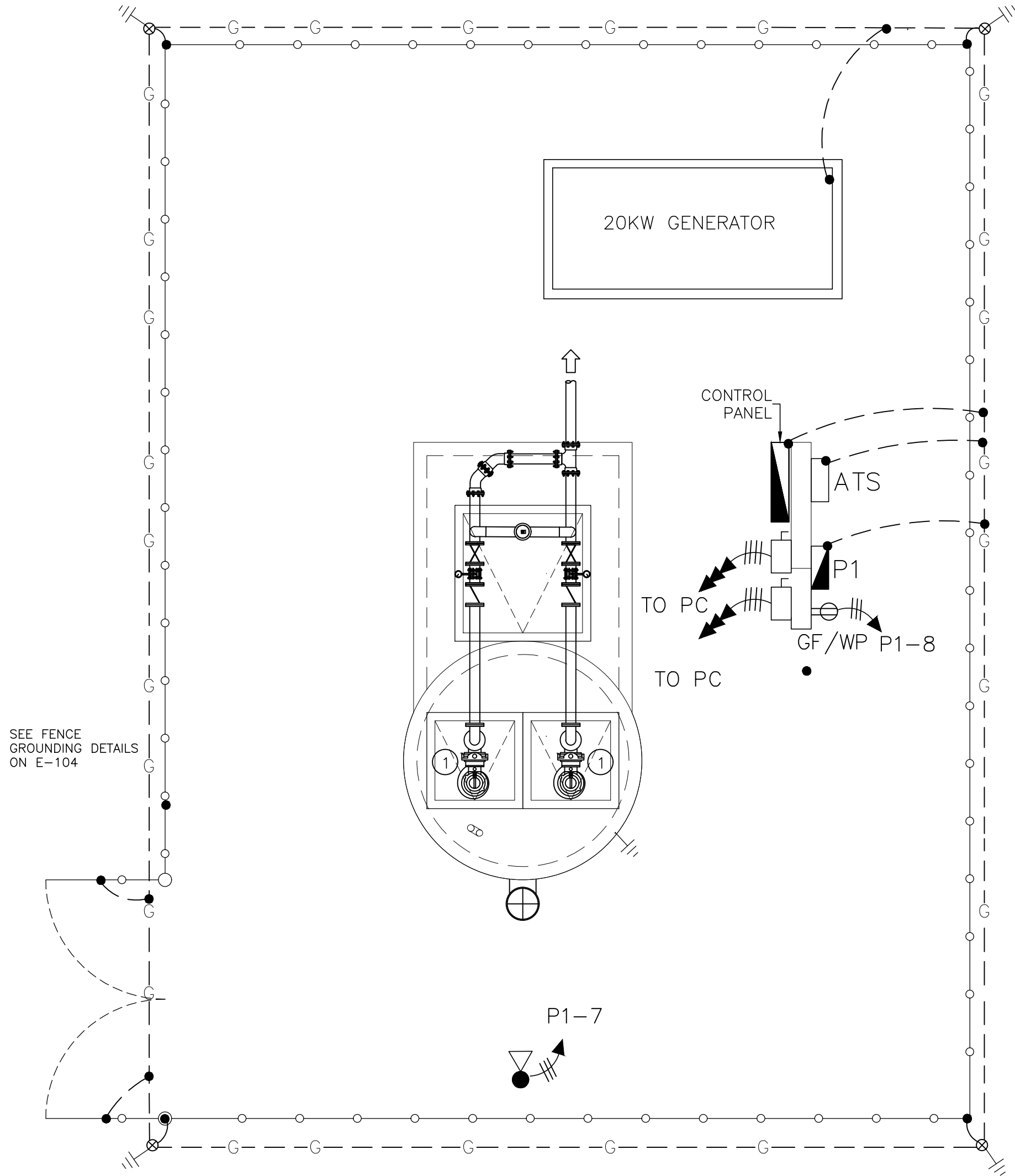
**MEJORAS AL SISTEMA
SANITARIO VILLAS
DE AÑASCO**
AÑASCO PUERTO RICO

PROJECT NO.
FEB 08, 2023

PROJECT
RE-ISSUE
MM,DD,YY

DETAILS

SP-2.01



VILLAS DE AÑASCO LIFT STATION NO.1

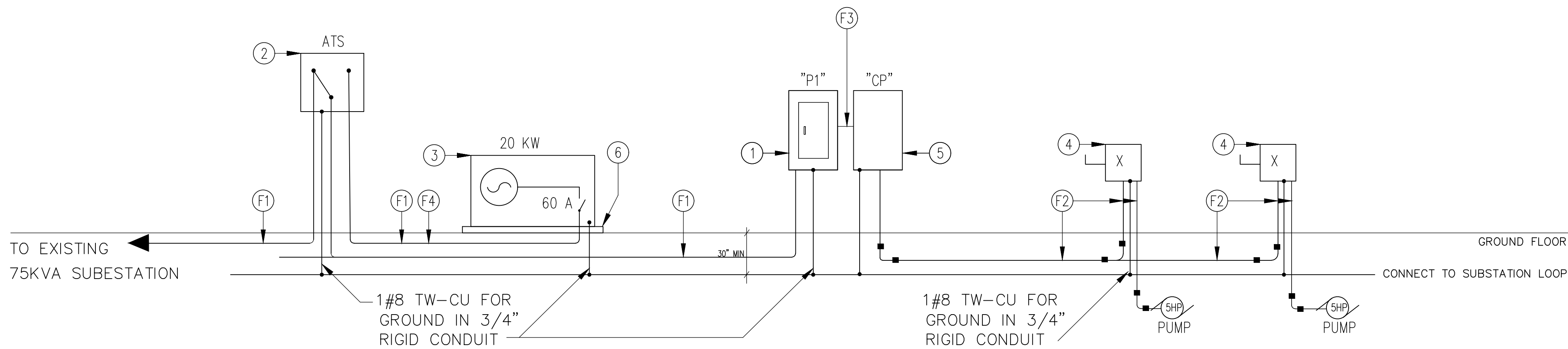
SCALE: 3/8"=1'-0"

EQUIPMENT DESCRIPTION

- ① NEW TWO (2) NON-CLOG, SOLID HANDLING, SUBMERSIBLE GRINDER PUMPS, 40 GPM, 100 FT TDH, 5.0 HP, 230 VOLTS, 3 PHASE, 60 HZ, 3450 RPM. PROVIDE WITH BREAK AWAY FITTINGS TO EACH PUMP.

ELECTRICAL PANEL SCHEDULE - P1							
EQUIPMENT DESCRIPTION	TRIP AMPS	POLE	A	B	C	POLE	TRIP AMPS
CONTROL PANEL	50	3	1	2	3		
LIGHT	20	1	7	8	9	1	20
SPARE	20	1	11	12	13		
INDICATES THIS CIRCUIT TO RECEIVE HANDLE LOCK-ON CLIP. SQUARE-D TYPE NOOD OR SIMILAR 22K AIC				PANEL P1 3 PHASE 4 WIRE 120/240 VOLTS GROUND BUS - FLUSH MTD. 60/60A MAIN BREAKER			

THIS SYSTEM IS A 240V-3Ø. ONE OF THE PHASES SHALL NOT BE USED FOR 120V PURPOSES..



ONE LINE DIAGRAM

SCALE: N.T.S.

1. ALL EXTERIOR EQUIPMENTS SHALL BE STAINLESS STEEL. (NEMA 4X).

RISER DIAGRAM LEGEND:

- ① PANEL AS PER SCHEDULE
② 50A ATS. 240V, 3Ø
③ 20KW, 240V, 3Ø GENERATOR. SEE DETAILS ON E-103
④ 30A SAFETY SWITCH 240V, 3P, F:25A. OR AS PER MANUFACTURER RECOMMENDATION.
⑤ PUMPS CONTROL PANEL. SEE MECHANICAL DRAWING FOR DETAIL
⑥ CONCRETE PAD

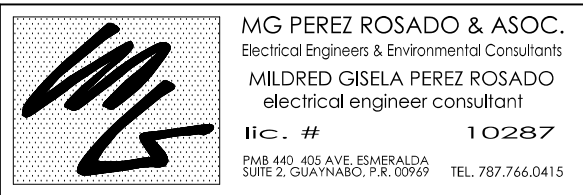
FEEDER SCHEDULE

- F1 4#4 RHW-2 & 1#10 AWG IN 1.25" CONDUIT.
F2 3#10 RHW-2 & 1#10 IN 3/4" CONDUIT
F3 3#4 RHW-2 & 1#10 AWG IN 1.25" CONDUIT.
F4 ONE RUN OF 3/4" CONDUIT FOR SIGNAL FROM GENERATOR TO ATS

LEGEND:

- SEALING BUSHINGS

Yo, Mildred Gisela Perez Rosado ingeniera licenciada numero 10287, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentarias o Corporaciones Públicas con jurisdicción. Certifico además que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la ley 14-2004, según enmendada, conocido como la "Ley para la inversión por la industria Puertorriqueña" y con la ley num. 319 de 15 de mayo de 1938, según enmendada; ley num.36 de 6 de julio de 1978, según enmendada; según aplica; Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido por desconocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OQPe.



Professional Seal



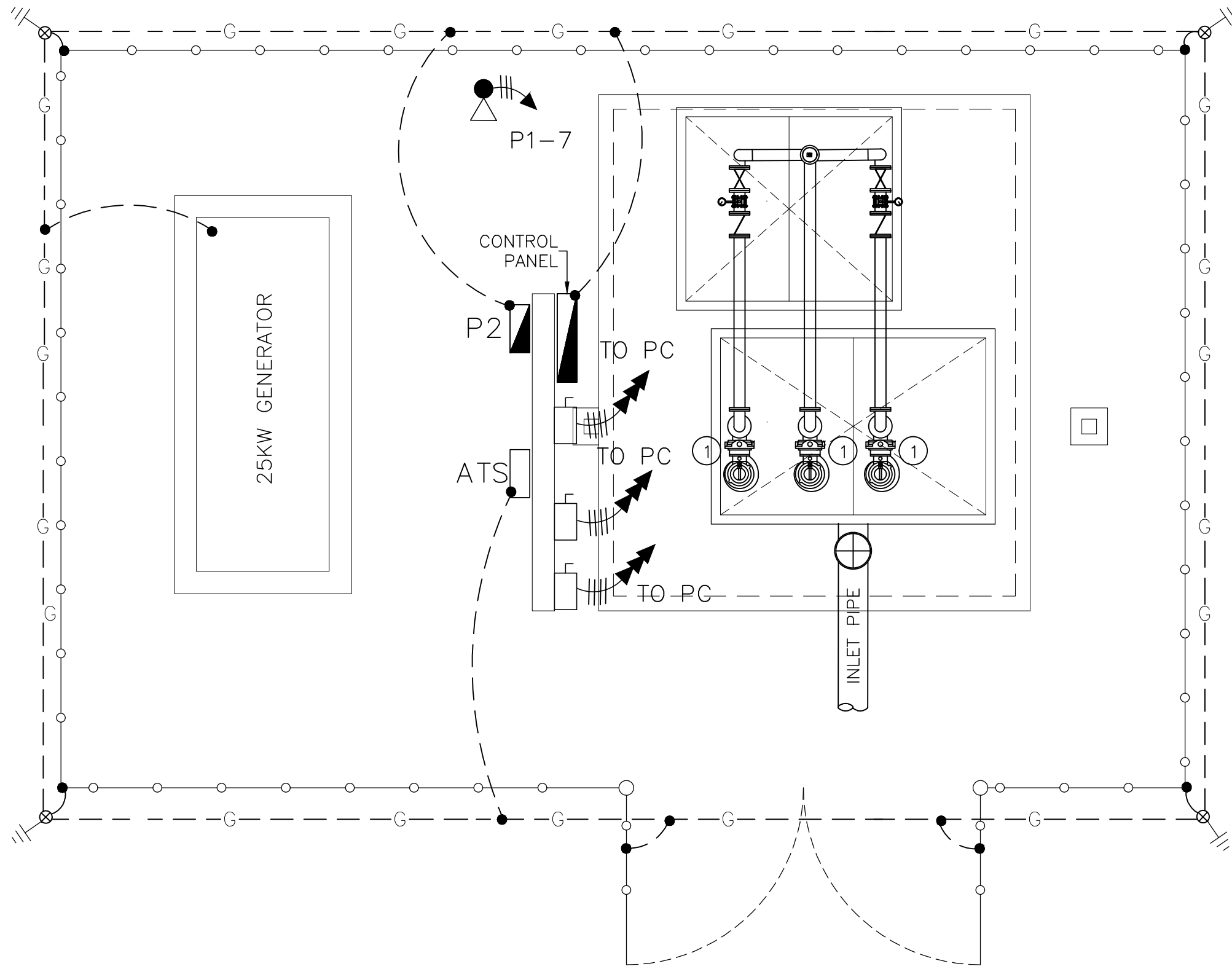
M2A GROUP, PSC
Ing. Manuel Bermudez Pagan
Licencia: 15,572
867 Ave. Muñoz Rivera
Cond. Wick Center
Suite D-305
San Juan, PR 00925

MEJORAS AL SISTEMA
SANITARIO VILLAS
DE AÑASCO
AÑASCO PUERTO RICO

PROJECT NO. ISSUE
FEB 08, 2023
PROJECT RE-ISSUE
MM,DD,YY

VILLAS DE AÑASCO
LIFT STATION NO.1

E-100



VILLAS DE AÑASCO LIFT STATION NO.2

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

EQUIPMENT DESCRIPTION

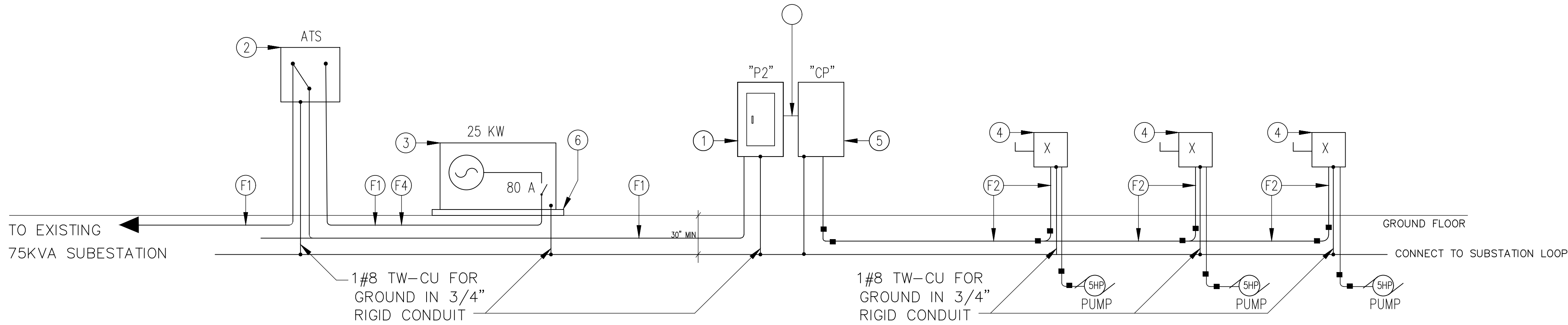
- 1 NEW THREE (3) NON-CLOG, SOLID HANDLING, SUBMERSIBLE GRINDER PUMPS, 80 GPM, 70 FT TDH, 5.0 HP, 208-230 VOLTS, 3 PHASE, 60 HZ, 3450 RPM. PROVIDE WITH BREAK AWAY FITTINGS TO EACH PUMP.

ELECTRICAL PANEL SCHEDULE - P2									
EQUIPMENT DESCRIPTION	TRIP AMPS	POLE	1	2	3	4	5	6	7
CONTROL PANEL	70	3	1	2	3	4	5	6	7
LIGHT	20	1	8	9	10	11	12		
SPARE	20	1							

INDICATES THIS CIRCUIT TO RECEIVE HANDLE LOCK-ON CLIP. SQUARE-D TYPE NOOD OR SIMILAR 22K AIC

PANEL P2 3 PHASE 4 WIRE 120/240 VOLTS GROUND BUS - FLUSH MTD. 100/80A MAIN BREAKER

THIS SYSTEM IS A 240V-3Ø. ONE OF THE PHASES SHALL NOT BE USED FOR 120V PURPOSES..



ONE LINE DIAGRAM

SCALE: N.T.S.

RISER DIAGRAM LEGEND:

- 1 PANEL AS PER SCHEDULE
- 2 50A ATS. 240V, 3Ø
- 3 30KW, 240V, 3Ø GENERATOR. SEE DETAILS ON E-104
- 4 30A SAFETY SWITCH 240V, 3P, F:25A. OR AS PER MANUFACTURER RECOMMENDATION.
- 5 PUMPS CONTROL PANEL. SEE MECHANICAL DRAWING FOR DETAILS
- 6 CONCRETE PAD

FEEDER SCHEDULE

- F1 4#4 RHW-2 & 1#10 AWG IN 1.25" CONDUIT.
- F2 3#10 RHW-2 & 1#10 IN 3/4" CONDUIT
- F3 3#4 RHW-2 & 1#10 AWG IN 1.25" CONDUIT.
- F4 ONE RUN OF 3/4" CONDUIT FOR SIGNAL FROM GENERATOR TO ATS

LEGEND:

- SEALING BUSHINGS

Yo, Mildred Gisela Perez Rosado ingeniera licenciada numero 10287, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentarias o Corporaciones Públicas con jurisdicción. Certifico además que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la ley 14-2004, según enmendada, conocida como la "Ley para la inversión por la industria Puertorriqueña" y con la ley num. 319 de 15 de mayo de 1938, según enmendada; ley num.36 de 6 de julio de 1978, según enmendada; según aplicable. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido por desconocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OQPe.

MG PEREZ ROSADO & ASOC.
Electrical Engineer & Environmental Consultant
MILDRED GISELA PEREZ ROSADO
electrical engineer consultant
I.E.C. # 10287
P.O. BOX 401, AV. DE LA ESTRELLA
SUITE 2, GUAYAMA, P.R. 00969 TEL. 787.766.0415

Professional Seal



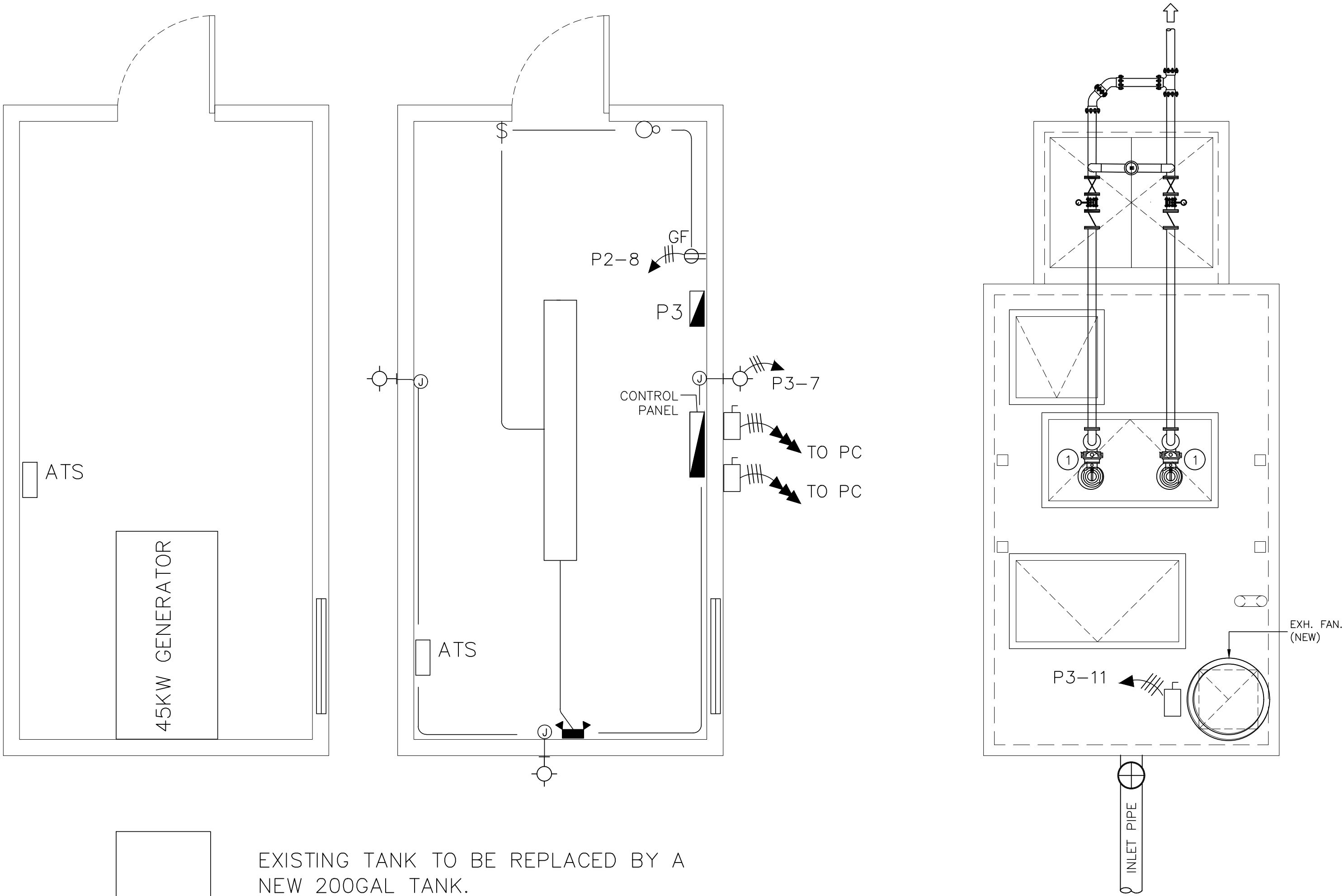
M2A GROUP, PSC
Ing. Manuel Bermudez Pagan
Licencia: 15,572
867 Ave. Muñoz Rivera
Cond. Wick Center
Suite D-305
San Juan, PR 00925

MEJORAS AL SISTEMA
SANITARIO VILLAS
DE AÑASCO
AÑASCO PUERTO RICO

PROJECT NO. ISSUE
FEB 08, 2023
RE-ISSUE
MM.DD.YY

VILLAS DE AÑASCO
LIFT STATION NO.2

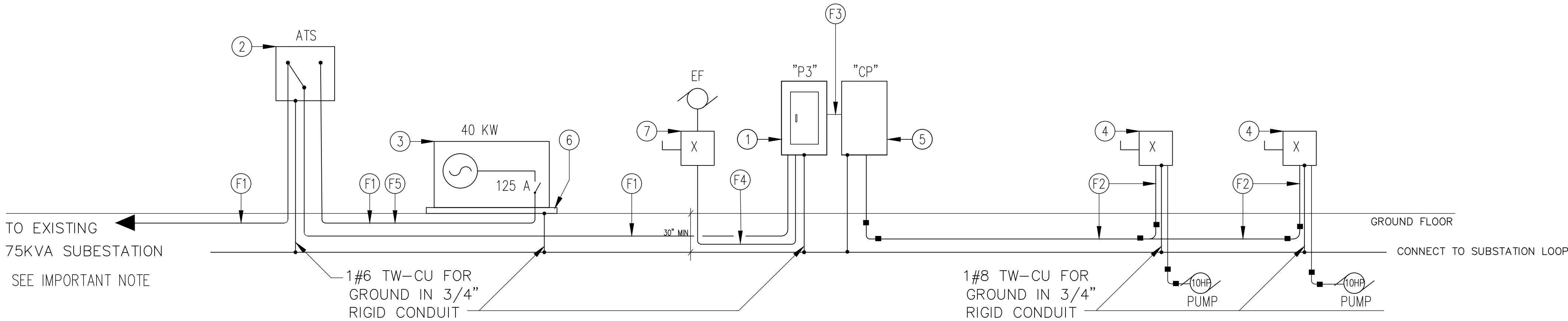
E-101



EXISTING TANK TO BE REPLACED BY A
NEW 200GAL TANK.
CONTRACTOR SHALL CONSULT A STRUCTURAL
ENGINEER TO VERIFY THE CONDITIONS OF THE BASE

BALNEARIO DE AÑASCO LIFT STATION

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



ONE LINE DIAGRAM

SCALE: N.T.S.

IMPORTANT NOTE:

CONTRACTOR SHALL REPLACED THE CONDUIT FROM EXISTING
SUBSTATION WITH PVC SCHED 80 AS LUMA REQUIREMENTS

EQUIPMENT DESCRIPTION

- ① NON-CLOG, SOLID HANDLING, SUBMERSIBLE GRINDER
PUMPS, 300 GPM, 50 FT TDH, 10 HP, 208-230 VOLTS,
3 PHASE, 60 HZ, 3450 RPM. PROVIDE WITH BREAK
AWAY FITTINGS TO EACH PUMP.

ELECTRICAL PANEL SCHEDULE - P3										
EQUIPMENT DESCRIPTION	TRIP AMPS	POLE	1 A B C 2				POLE	TRIP AMPS	EQUIPMENT DESCRIPTION	
CONTROL PANEL	100	3							SPARE	
LIGHT	20	1					1	20	SPARE	
EXHAUST FAN	20	1								
INDICATES THIS CIRCUIT TO RECEIVE HANDLE LOCK-ON CLIP. SQUARE-D TYPE NOOD OR SIMILAR 22K AIC					PANEL P3 3 PHASE 4 WIRE 120/240 VOLTS GROUND BUS - FLUSH MTD. 125/125 MAIN BREAKER					

THIS SYSTEM IS A 240V-3Ø. ONE OF THE PHASES SHALL NOT BE USED FOR 120V PURPOSES..

RISER DIAGRAM LEGEND:

- ① PANEL AS PER SCHEDULE
② 125A ATS. 240V, 3Ø
③ 40KW, 240V, 3Ø GENERATOR. SEE DETAILS ON E-105
④ 60A SAFETY SWITCH 240V, 3P, F:45A.
OR AS PER MANUFACTURER RECOMMENDATION.
⑤ PUMPS CONTROL PANEL. SEE MECHANICAL DRAWINGS FOR DETAILS
⑥ CONCRETE PAD
⑦ 30A SAFETY SWITCH 120V, 1P, F:20A.
OR AS PER MANUFACTURER RECOMMENDATION.

FEEDER SCHEDULE

- F1 4#2 RHW-2 & 1#8 AWG IN 1.5" CONDUIT.
F2 3#6 THHN & 1#10 IN 1" CONDUIT
F3 3#2 RHW-2 & 1#8 AWG IN 1.5" CONDUIT.
F4 2#12 THHN IN 3/4" CONDUIT.
F5 ONE RUN OF 3/4" CONDUIT FOR SIGNAL FROM
GENERATOR TO ATS

LEGEND:

- SEALING BUSHINGS

Yo, Mildred Gisela Perez Rosado ingeniera licenciada numero 10287,
certifico que soy el profesional que diseñó estos planos y
los especificaciones complementarias. También certifico que
entiendo que dichos planos y especificaciones cumplen con las
disposiciones aplicables del reglamento Conjunto y las disposiciones
aplicables de los Reglamentos y Códigos de las Agencias, Juntas
Reglamentarias o Corporaciones Públicas con jurisdicción. Certifico
ademas que en la preparación de estos planos y especificaciones se
ha cumplido cabalmente con lo dispuesto en la ley 14-2004, según
enmendada, conocida como la "Ley para la inversión por la industria
Puertorriqueña" y con la ley num. 319 de 15 de mayo de 1938,
según enmendada; ley num.36 de 6 de julio de 1978, según enmendada;
según aplicable. Reconozco que cualquier declaración falsa o falsificación
de los hechos que se haya producido por desconocimiento o por
negligencia ya sea por mí, mis agentes o empleados, o por otras
personas con mi conocimiento, me hacen responsable de cualquier
acción judicial y disciplinaria por la OQPe.

MG PEREZ ROSADO & ASOC.
Electrical Engineer & Environmental Consultant
MILDRED GISELA PEREZ ROSADO
electrical engineer consultant
I.E.C. # 10287
P.O. BOX 450, AV. ESTADAL
SUITE 2, GUAYAMA, P.R. 00969 TEL. 787.766.0415

Professional Seal

2AGROUP

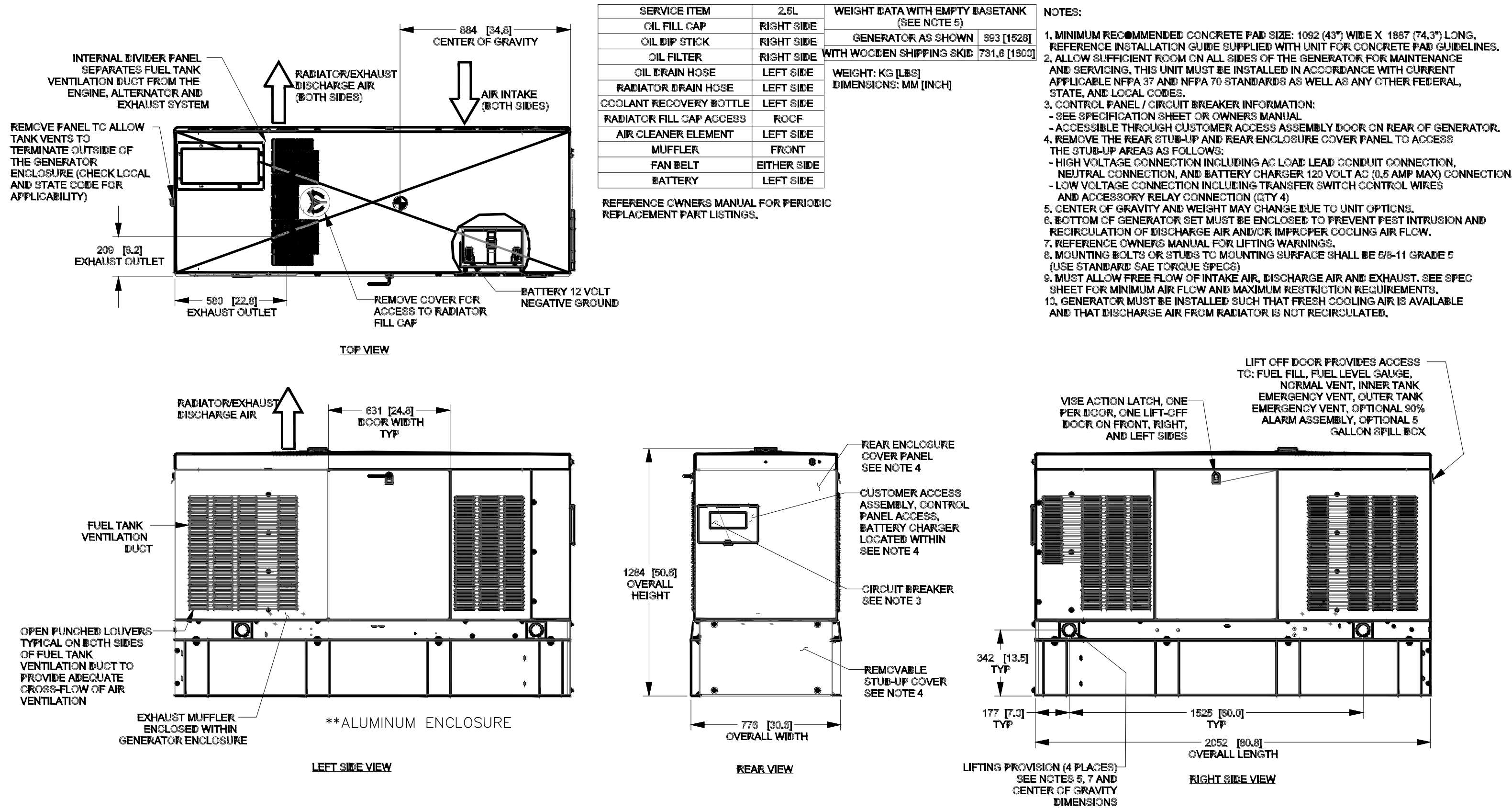
M2A GROUP, PSC
Ing. Manuel Bermudez Pagan
Licencia: 15,572
867 Ave. Muñoz Rivera
Cond. Wick Center
Suite D-305
San Juan, PR 00925

MEJORAS AL SISTEMA
SANITARIO VILLAS
DE AÑASCO
AÑASCO PUERTO RICO

PROJECT NO. ISSUE
FEB 08, 2023
RE-ISSUE
MM.DD.YY
PROJECT

BALNEARIO DE
AÑASCO LIFT
STATION #1

E-102



AUTOMATIC TRANSFER SWITCH #1:
RATED 60 AMPS. MAIN BREAKER 240V., 3 PHASE, 4 W.,
60 HZ., IN A NEMA 12 ENCLOSURE, WITH PILOT LIGHTS ON DOOR
AND THE FOLLOWING ACCESSORIES:

- SELECTOR SWITCH WITH OFF-AUTOMATIC CHECK POSITION.
- TIME DELAY IN TRANSFER TO EMERGENCY ENGINE START, ADJUSTABLE FROM 1 TO 300 SECONDS.
- TIME DELAY ON RESTORATION TO NORMAL LINE, ADJUSTABLE FROM 1 TO 300 SECONDS.
- CLOCK EXERCISER TO START THE GENERATOR SET AUTOMATIC. IT SHALL OPERATE EVERY WEEK AND RUN THE GENERATOR SET FOR HALF (1/2) HOUR WITH AND WITHOUT LOAD AND THEN STOP THE GENERATOR SET AUTOMATICALLY.
- ALL OTHER ACCESSORIES REQUIRED FOR NORMAL OPERATIONS
- TIME DELAY BEFORE ENGINE STARTING. ADJUSTABLE FROM 1 TO 300 SECONDS.
- ENGINE OVERRUN TO PROVIDE UNLOADED ENGINE OPERATION AFTER RETRANSFER TO NORMAL, ADJUSTABLE FROM 1 TO 300 SECONDS.
- THE TRANSFER SWITCH SHOULD BE DOUBLE THROW, ACTUATED BY TWO ELECTRICAL OPERATORS, MOMENTARILY ENERGIZED WITH A MINIMUM TRANSFER TIME OF 400 MILLISECONDS.
- DIESEL SUPPLY AND RETURN LINES SHALL BE INSTALLED WITHIN 3/4"Ø PVC PIPE WHENEVER THEY RUN UNDERGROUND.

EMERGENCY GENERATOR AND TRANSFER SWITCH SPECIFICATIONS:

DIESEL GENERATOR: SIMILAR OR EQUAL MODEL RD020-GENERAC 20KW- 25KVA PAD- 240V, 3Ø,
INCLUDES THE FOLLOWING:

- WATER COOLED RADIATOR.
- ONE (1) TANK GROUND FUEL (DIESEL) TANK (95 GALLON CAPACITY) WITH ALL FUEL SUPPLY, RETURN AND VENTILATION LINES AND EQUIPMENT.
- TWO 12 VOLT. HEAVY-DUTY BATTERY WITH RACK AND CABLES.
- EXHAUST CRITICAL TYPE MUFFLER WITH STEEL CONNECTION AND FITTINGS, INCLUDING FLEXIBLE SECTION AND RAIN CAP FPR EXHAUST.
- VIBRATION ISOLATORS.
- PUMPS AND FILTER AS REQUIRED.
- RELAYS AND CONTACTORS AS REQUIRED FOR REMOTE CONTROL FROM TRANSFER SWITCH.
- INSTRUMENTS CONTROL PANEL INCLUDING THE FOLLOWING:
 - VOLTMETER AND SELECTOR SWITCH.
 - AMMETER AND SELECTOR SWITCH.
 - REMOTE START-STOP TERMINALS.
 - FREQUENCY METER AND SELECTOR SWITCH.
 - RUNNING METER.
 - FIELD CIRCUIT BREAKER.
 - VOLTAGE REGULATOR AND TWO POSITION SWITCH (OFF AND AUTOMATIC).
 - WATER TEMPERATURE GAUGE.
 - OIL PRESSURE GAUGE.
 - AUTOMATIC SHUTDOWN DEVICE WITH INDICATOR LIGHTS FOR:
 - OVER-CRANKING PROTECTION.
 - HIGH WATER TEMPERATURE.
 - LOW WATER TEMPERATURE.
 - OIL LEVEL
 - BATTERY CHARGE
- START-STOP TERMINAL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE CONSTRUCTION AND OPERATION PERMITS FOR THE GENERATOR FROM THE ENVIRONMENTAL QUALITY BOARD (JUNTA DE CALIDAD AMBIENTAL).

Yo, Mildred Gisela Perez Rosado ingeniera licenciada numero 10287, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentarias o Corporaciones Públicas con jurisdicción. Certifico además que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la ley 14-2004, según enmendada, conocida como la "Ley para la inversión por la industria Puertorriqueña" y con la ley num. 319 de 15 de mayo de 1938, según enmendada; ley num.36 de 6 de julio de 1978, según enmendada; según aplicable. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido por desconocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OQPe.

MG PEREZ ROSADO & ASOC.
Electrical Engineer & Environmental Consultant
MILDRED GISELA PEREZ ROSADO
electrical engineer consultant
LIC. # 10287
P.O. BOX 450 AVE. ESTEREADE
SUITE 2 GUAYAMA, P.R. 00969 TEL. 787.766.0415

Professional Seal

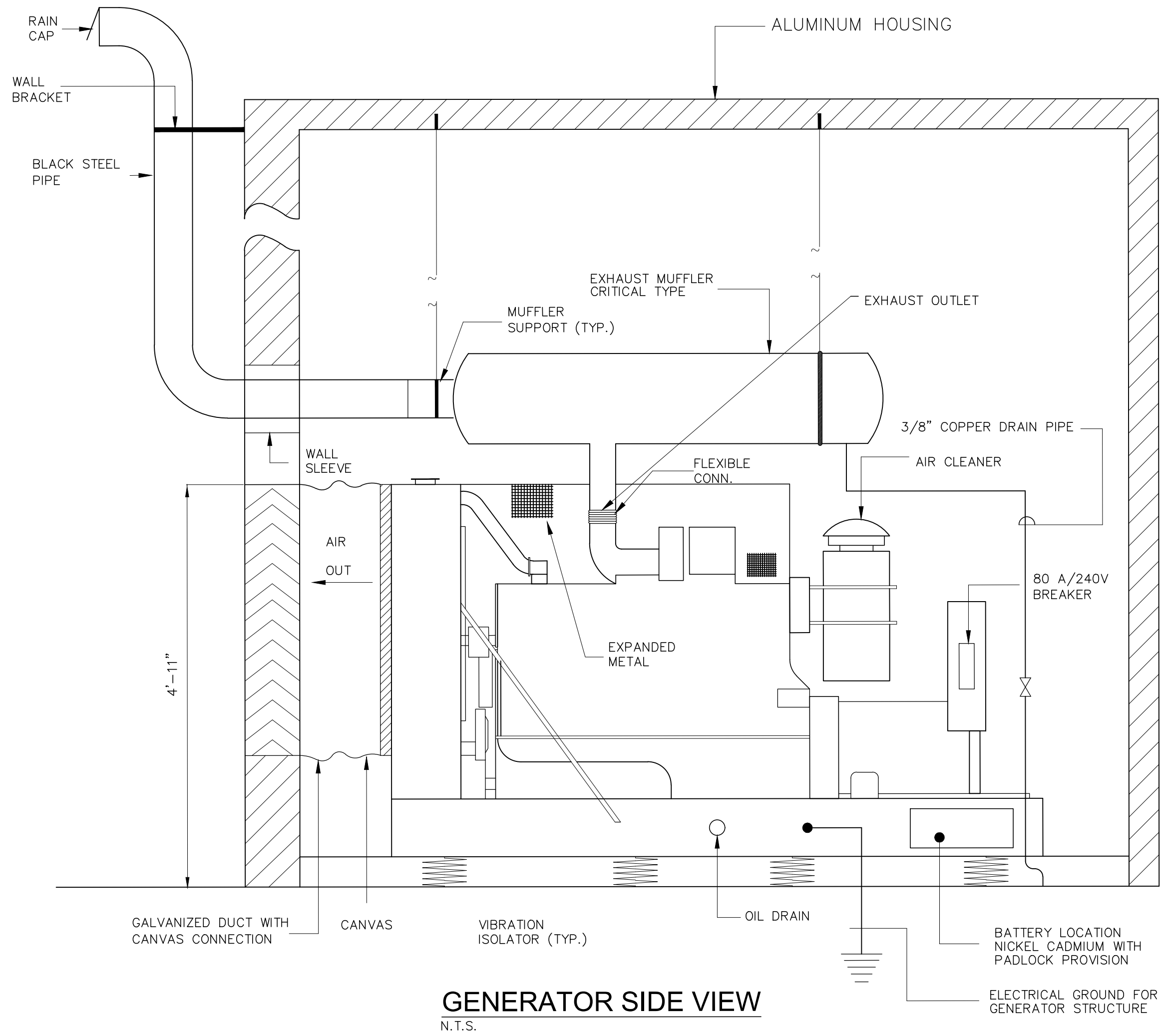


M2A GROUP, PSC
Ing. Manuel Bermudez Pagan
Licencia: 15,572
867 Ave. Muñoz Rivera
Cond. Vick Center
Suite D-305
San Juan, PR 00925

MEJORAS AL SISTEMA
SANITARIO VILLAS
DE AÑASCO
AÑASCO PUERTO RICO

PROJECT NO.
ISSUE
FEB 08, 2023
PROJECT
RE-ISSUE
MM.DD.YY

VILLAS DE AÑASCO
GENERADOR-LIFT
STATION NO.1

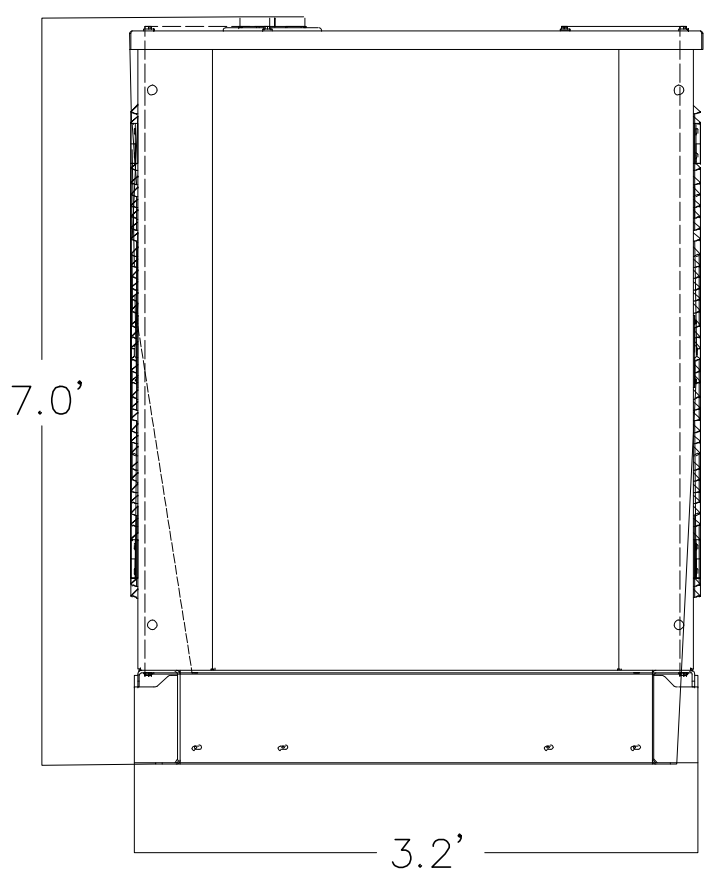
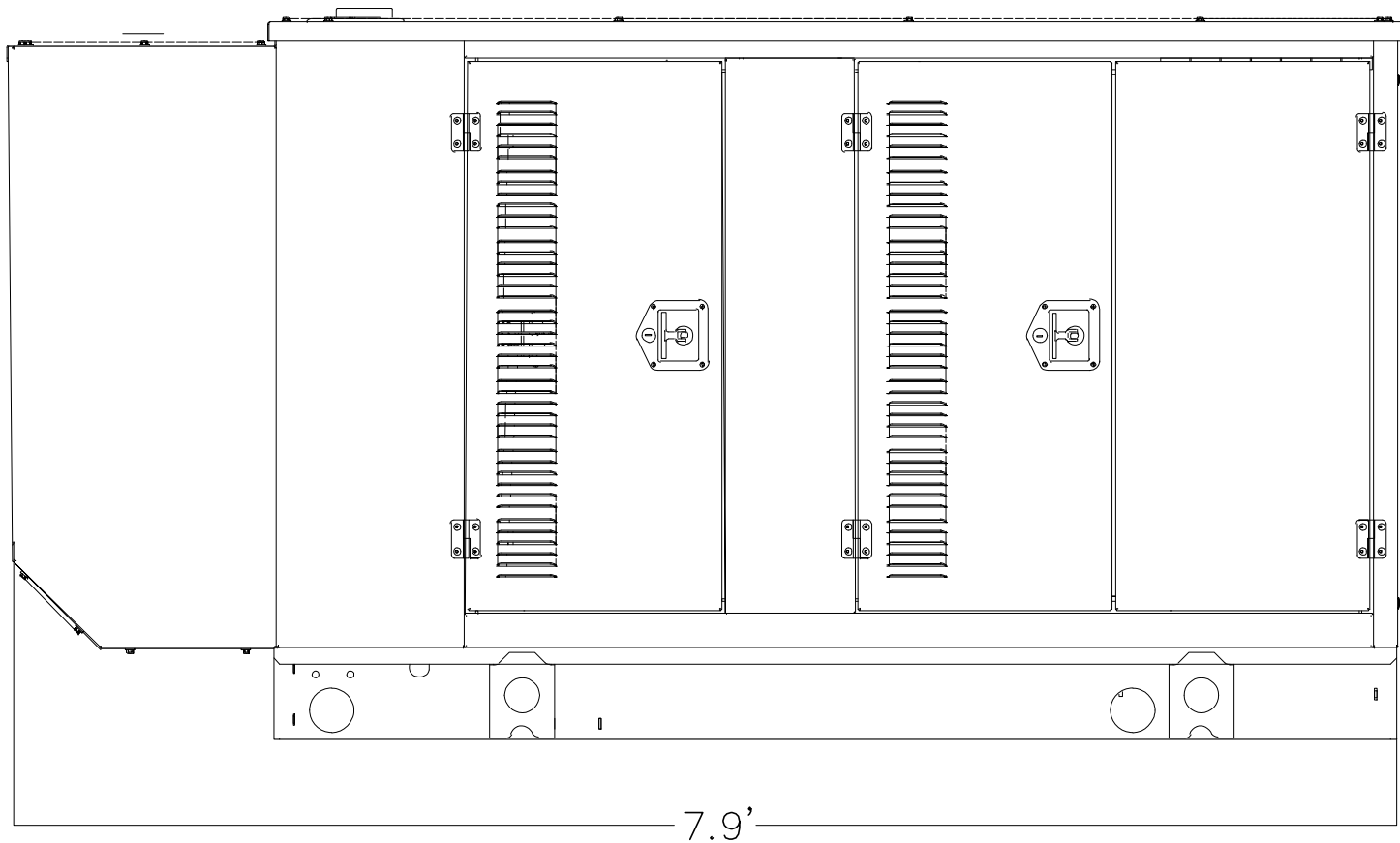


- AUTOMATIC TRANSFER SWITCH #1:
RATED 80 AMPS. MAIN BREAKER 240V., 3 PHASE, 4 W., 60 HZ., IN A NEMA 12 ENCLOSURE, WITH PILOT LIGHTS ON DOOR AND THE FOLLOWING ACCESSORIES:
- SELECTOR SWITCH WITH OFF-AUTOMATIC CHECK POSITION.
 - TIME DELAY IN TRANSFER TO EMERGENCY ENGINE START, ADJUSTABLE FROM 1 TO 300 SECONDS.
 - TIME DELAY ON RESTORATION TO NORMAL LINE, ADJUSTABLE FROM 1 TO 300 SECONDS.
 - CLOCK EXERCISER TO START THE GENERATOR SET AUTOMATIC. IT SHALL OPERATE EVERY WEEK AND RUN THE GENERATOR SET FOR HALF (1/2) HOUR WITH AND WITHOUT LOAD AND THEN STOP THE GENERATOR SET AUTOMATICALLY.
 - ALL OTHER ACCESSORIES REQUIRED FOR NORMAL OPERATIONS
 - TIME DELAY BEFORE ENGINE STARTING. ADJUSTABLE FROM 1 TO 300 SECONDS.
 - ENGINE OVERRUN TO PROVIDE UNLOADED ENGINE OPERATION AFTER RETRANSFER TO NORMAL, ADJUSTABLE FROM 1 TO 300 SECONDS.
 - THE TRANSFER SWITCH SHOULD BE DOUBLE THROW, ACTUATED BY TWO ELECTRICAL OPERATORS, MOMENTARILY ENERGIZED WITH A MINIMUM TRANSFER TIME OF 400 MILLISECONDS.
 - DIESEL SUPPLY AND RETURN LINES SHALL BE INSTALLED WITHIN 3/4"Ø PVC PIPE WHENEVER THEY RUN UNDERGROUND.

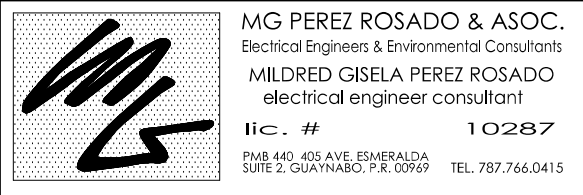
EMERGENCY GENERATOR AND TRANSFER SWITCH SPECIFICATIONS:

DIESEL GENERATOR: SIMILAR OR EQUAL MODEL SD025-GENERAC 25KW- 31KVA PAD- 240V, 3Ø, INCLUDES THE FOLLOWING:

- WATER COOLED RADIATOR.
- ONE (1) TANK GROUND FUEL (DIESEL) TANK (190 GALLON CAPACITY) WITH ALL FUEL SUPPLY, RETURN AND VENTILATION LINES AND EQUIPMENT.
- TWO 12 VOLT. HEAVY-DUTY BATTERY WITH RACK AND CABLES.
- EXHAUST CRITICAL TYPE MUFFLER WITH STEEL CONNECTION AND FITTINGS, INCLUDING FLEXIBLE SECTION AND RAIN CAP FPR EXHAUST.
- VIBRATION ISOLATORS.
- PUMPS AND FILTER AS REQUIRED.
- RELAYS AND CONTACTORS AS REQUIRED FOR REMOTE CONTROL FROM TRANSFER SWITCH.
- INSTRUMENTS CONTROL PANEL INCLUDING THE FOLLOWING:
 - VOLTMETER AND SELECTOR SWITCH.
 - AMMETER AND SELECTOR SWITCH.
 - REMOTE START-STOP TERMINALS.
 - FREQUENCY METER AND SELECTOR SWITCH.
 - RUNNING METER.
 - FIELD CIRCUIT BREAKER.
 - VOLTAGE REGULATOR AND TWO POSITION SWITCH (OFF AND AUTOMATIC).
 - WATER TEMPERATURE GAUGE.
 - OIL PRESSURE GAUGE.
 - LOW WATER TEMPERATURE.
 - OIL LEVEL
 - BATTERY CHARGE
- START-STOP TERMINAL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE CONSTRUCTION AND OPERATION PERMITS FOR THE GENERATOR FROM THE ENVIRONMENTAL QUALITY BOARD (JUNTA DE CALIDAD AMBIENTAL).



Yo, Mildred Gisela Perez Rosado ingeniera licenciada numero 10287, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentarias o Corporaciones Públicas con jurisdicción. Certifico además que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la ley 14-2004, según enmendada, conocida como la "Ley para la inversión por la industria Puertorriqueña" y con la (Ley num. 319 de 15 de mayo de 1938, según enmendada; Ley num.36 de 6 de julio de 1978, según enmendada; según aplicable). Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido por desconocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OQPe.



Professional Seal

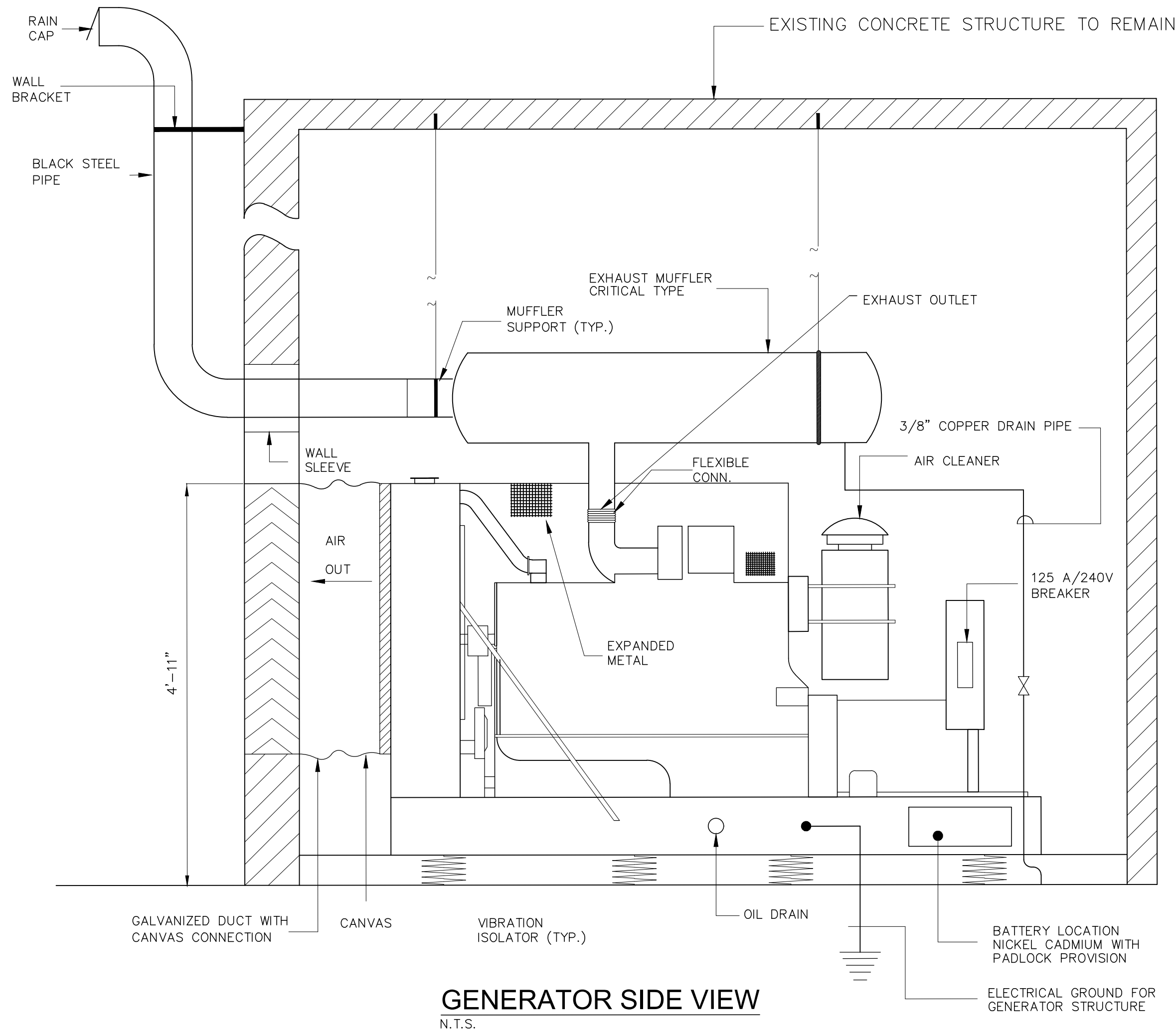


M2A GROUP, PSC
Ing. Manuel Bermudez Pagan
Licencia: 15,572
867 Ave. Muñoz Rivera
Cond. Wick Center
Suite D-305
San Juan, PR 00925

MEJORAS AL SISTEMA
SANITARIO VILLAS
DE AÑASCO
AÑASCO PUERTO RICO

PROJECT NO.
PROJECT
ISSUE
FEB 08, 2023
RE-ISSUE
MM,DD,YY

VILLAS DE AÑASCO
GENERADOR-LIFT
STATION NO.2



AUTOMATIC TRANSFER SWITCH #1:
RATED 125 AMPS. MAIN BREAKER 240V., 3 PHASE, 4 W.,
60 HZ., IN A NEMA 12 ENCLOSURE,WITH PILOT LIGHTS ON DOOR
AND THE FOLLOWING ACCESSORIES:

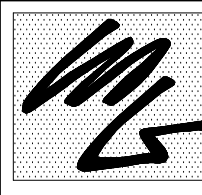
- SELECTOR SWITCH WITH OFF-AUTOMATIC CHECK POSITION.
- TIME DELAY IN TRANSFER TO EMERGENCY ENGINE START, ADJUSTABLE FROM 1 TO 300 SECONDS.
- TIME DELAY ON RESTORATION TO NORMAL LINE,ADJUSTABLE FROM 1 TO 300 SECONDS.
- CLOCK EXERCISER TO START THE GENERATOR SET AUTOMATIC. IT SHALL OPERATE EVERY WEEK AND RUN THE GENERATOR SET FOR HALF (1/2) HOUR WITH AND WITHOUT LOAD AND THEN STOP THE GENERATOR SET AUTOMATICALLY.
- ALL OTHER ACCESSORIES REQUIRED FOR NORMAL OPERATIONS
- TIME DELAY BEFORE ENGINE STARTING. ADJUSTABLE FROM 1 TO 300 SECONDS.
- ENGINE OVERRUN TO PROVIDE UNLOADED ENGINE OPERATION AFTER RETRANSFER TO NORMAL, ADJUSTABLE FROM 1 TO 300 SECONDS.
- THE TRANSFER SWITCH SHOULD BE DOUBLE THROW, ACTUATED BY TWO ELECTRICAL OPERATORS, MOMENTARILY ENERGIZED WITH A MINIMUM TRANSFER TIME OF 400 MILLISECONDS.
- DIESEL SUPPLY AND RETURN LINES SHALL BE INSTALLED WITHIN 3/4"Ø PVC PIPE WHENEVER THEY RUN UNDERGROUND.

EMERGENCY GENERATOR AND TRANSFER SWITCH SPECIFICATIONS:

DIESEL GENERATOR: SIMILAR OR EQUAL MODEL SD040-GENERAC 40KW- 50KVA PAD- 240V, 3Ø,
INCLUDES THE FOLLOWING:

- WATER COOLED RADIATOR.
- OUTDOOR TANK GROUND FUEL - 200 GAL. MIN OF CAPACITY WITH ALL FUEL SUPPLY, RETURN AND VENTILATION LINES AND EQUIPMENT. SHALL INCLUDE DIESEL PUMP IF IS REQUIRED.
- TWO 12 VOLT. HEAVY-DUTY BATTERY WITH RACK AND CABLES.
- EXHAUST CRITICAL TYPE MUFFLER WITH STEEL CONNECTION AND FITTINGS, INCLUDING FLEXIBLE SECTION AND RAIN CAP FPR EXHAUST.
- VIBRATION ISOLATORS.
- PUMPS AND FILTER AS REQUIRED.
- RELAYS AND CONTACTORS AS REQUIRED FOR REMOTE CONTROL FROM TRANSFER SWITCH.
- INSTRUMENTS CONTROL PANEL INCLUDING THE FOLLOWING:
 - VOLTMETER AND SELECTOR SWITCH.
 - AMMETER AND SELECTOR SWITCH.
 - REMOTE START-STOP TERMINALS.
 - FREQUENCY METER AND SELECTOR SWITCH.
 - RUNNING METER.
 - FIELD CIRCUIT BREAKER.
 - VOLTAGE REGULATOR AND TWO POSITION SWITCH (OFF AND AUTOMATIC).
 - WATER TEMPERATURE GAUGE.
 - OIL PRESSURE GAUGE.
 - AUTOMATIC SHUTDOWN DEVICE WITH INDICATOR LIGHTS FOR:
 - OVER-CRANKING PROTECTION.
 - HIGH WATER TEMPERATURE.
 - LOW WATER TEMPERATURE.
 - OIL LEVEL
 - BATTERY CHARGE
- START-STOP TERMINAL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE CONSTRUCTION AND OPERATION PERMITS FOR THE GENERATOR FROM THE ENVIRONMENTAL QUALITY BOARD (JUNTA DE CALIDAD AMBIENTAL).

Yo, Mildred Gisela Perez Rosado ingeniera licenciada numero 10287, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentarias o Corporaciones Públicas con jurisdicción. Certifico además que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la ley 14-2004, según enmendada, conocida como la "ley para la inversión por la industria Puertorriqueña" y con la (ley num. 319 de 15 de mayo de 1938, según enmendada; ley num.36 de 6 de julio de 1978, según enmendada; según aplicable), reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido por desconocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OQPe.

 MG PEREZ ROSADO & ASOC.
Electrical Engineer & Environmental Consultant
MILDRED GISELA PEREZ ROSADO
electrical engineer consultant
I.E.C. # 10287
P.O. BOX 401, AV. BOULEVARD
SUITE 2, GUAYAMA, P.R. 00969 TEL. 787.766.0415

Professional Seal



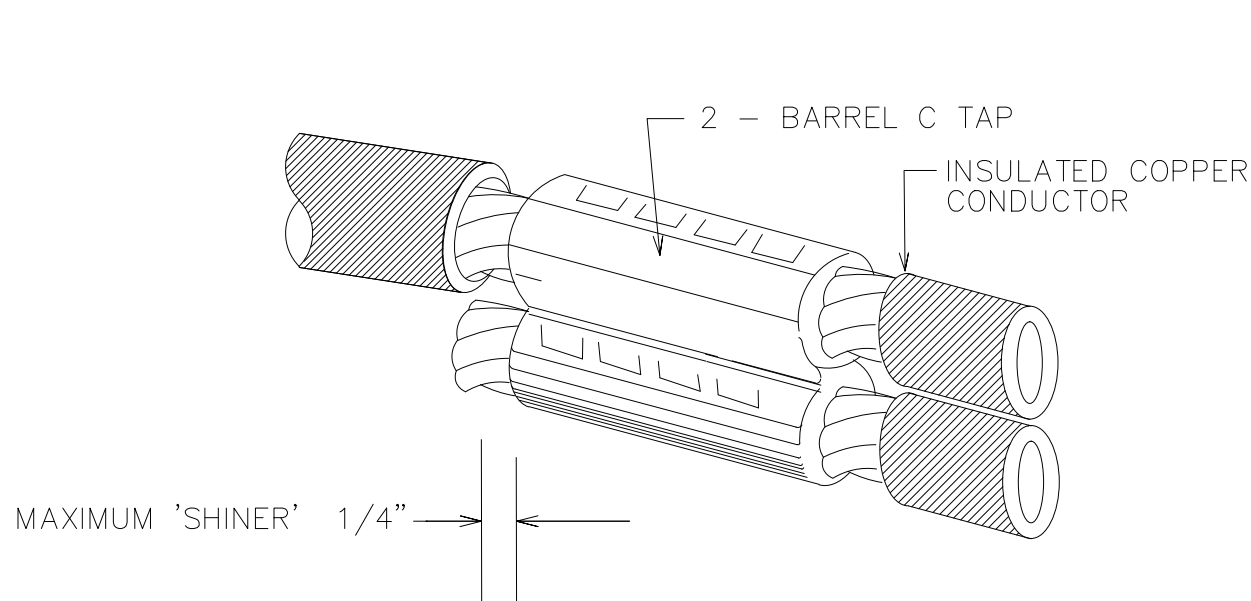
M2A GROUP, PSC
Ing. Manuel Bermudez Pagan
Licencia: 15,572
867 Ave. Muñoz Rivera
Cond. Vick Center
Suite D-305
San Juan, PR 00925

MEJORAS AL SISTEMA
SANITARIO VILLAS
DE AÑASCO
AÑASCO PUERTO RICO

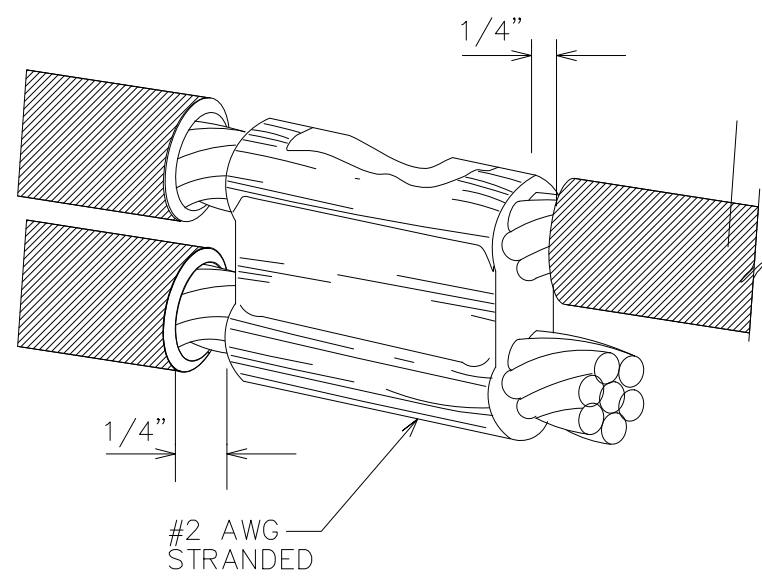
PROJECT NO.
PROJECT
ISSUE
FEB 08, 2023
RE-ISSUE
MM.IDD.YY

BALNEARIO DE
AÑASCO LIFT
STATION #1

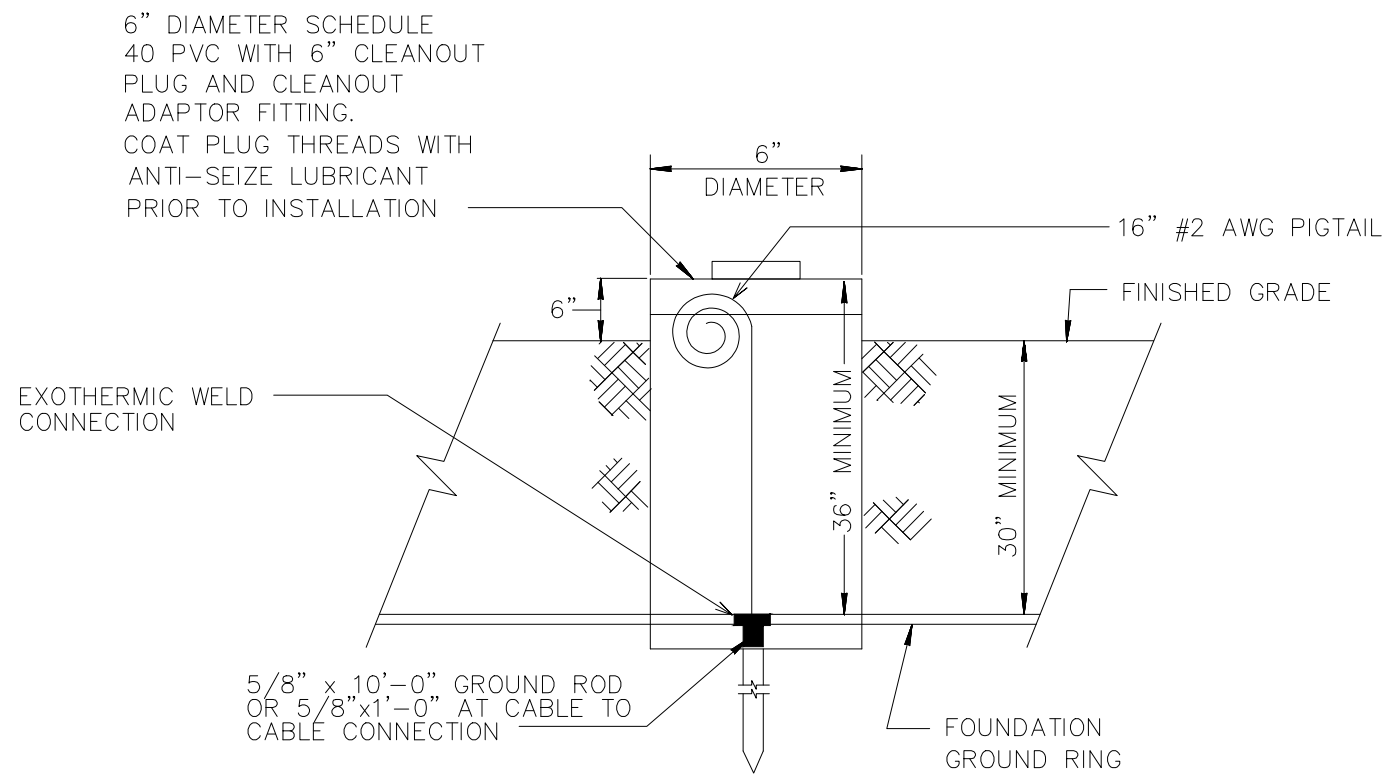
E-105



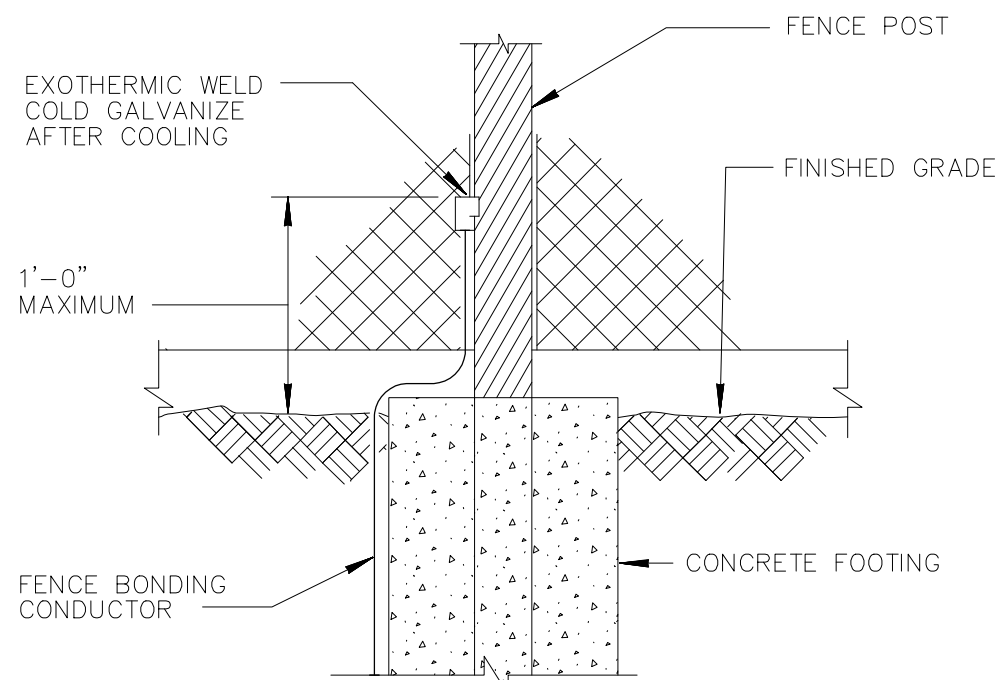
C TAP CRIMP CONNECTOR
NOT TO SCALE



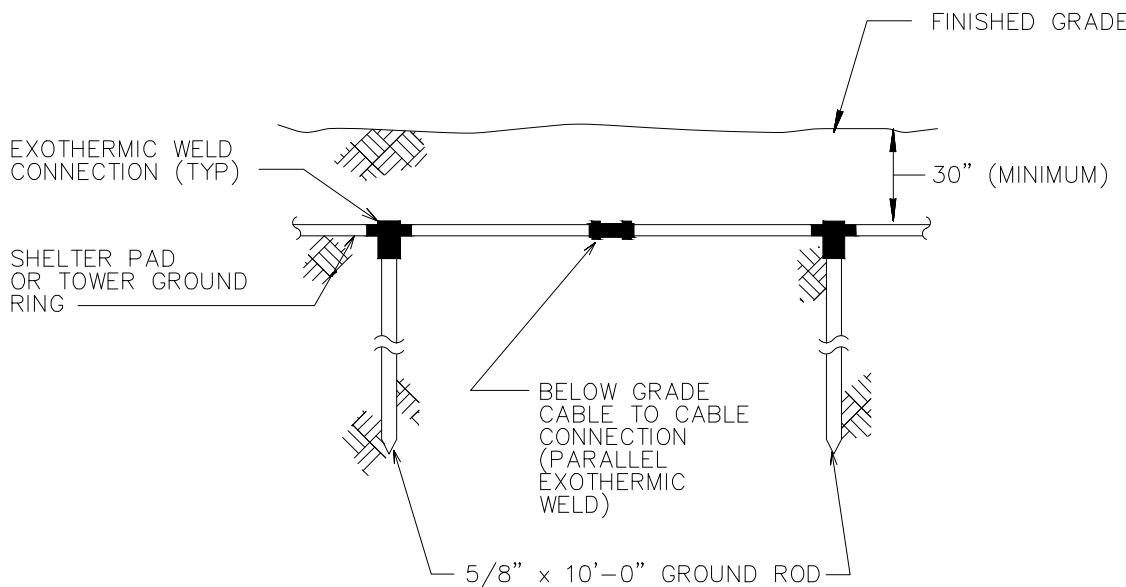
DETAIL- EXOTHERMIC WELD
PARALLEL CABLES DETAIL
NOT TO SCALE



INSPECTION / TEST PIT DETAIL



FENCE BONDING DETAIL
NOT TO SCALE



BELOW GRADE
CABLE TO CABLE CONNECTION
NOT TO SCALE

GENERAL NOTES

- ALL ELECTRICAL OUTLETS INDICATED IN DRAWING SHALL BE INSTALLED AS INDICATED.
- ALL WIRES AND CABLES SHALL BE THWN/THHN-600V. INSULATION.
- UNLESS OTHERWISE INDICATED ALL WIRES AND CABLES SHALL BE COPPER.
- PROVIDE GROUND WIRE IN ALL THE CONDUITS.
- PROVIDE #12-AWG GREEN JUMPER BETWEEN RECEPTACLE GROUNDING SCREW AND OUTLET BOX GROUNDING SCREW.
- UNLESS OTHERWISE INDICATED ALL CONDUITS SHALL BE 3/4" IN DIAMETER MINIMUM.
- ALL UNDERGROUND CONDUIT COUPLING SHALL BE WATERTIGHT.
- PROVIDE AN EXPANSION JOINT COUPLING OF THE REQUIRED TYPE AND SIZE WHENEVER A CONDUIT CROSSES AN EXPANSION JOINT.
- PROVIDE PLASTIC CONDUIT DIVIDERS IN ALL UNDERGROUND CONDUIT RUNS. MAXIMUM DISTANCE BETWEEN DIVIDERS TO BE 4'-0".
- CONTRACTOR MUST MAKE SURE THAT THE ENTIRE ELECTRICAL SYSTEM HAS GROUND CONTINUITY.
- ALL THE ELECTRICAL INSTALLATION SHALL BE DONE IN A NEAT & WORKMANLIKE MANNER, ACCORDING TO THE LAST EDITION OF THE NATIONAL ELECTRICAL CODE, THE PUERTO RICO ELECTRIC POWER AUTHORITY LATEST STANDARD & THE PUERTO RICO TELEPHONE CO. LATEST PRACTICES.
- THE CONTRACTOR SHALL VISIT THE JOB SITE AND BECOME ACQUAINTED WITH THE EXISTING FIELD CONDITIONS. IT SHALL BE THE DIRECT RESPONSIBILITY OF THE CONTRACTOR TO BRING PROMPTLY TO THE ATTENTION OF THE ENGINEER ANY DISCREPANCIES BETWEEN THE EXISTING FIELD CONDITIONS AND THOSE THAT WERE USED FOR DESIGN PURPOSES. THIS SHALL BE DONE BEFORE THE CONTRACTOR SUBMITS HIS BID, SO THAT THE ENGINEER CAN RENDER A DECISION ON THE MATTER BEFORE THE BIDS ARE RECEIVED. THE SUBMITTAL OF THE BID BY THE CONTRACTOR WILL BE HELD AS PROOF THAT CONTRACTOR UNDERSTANDS THOROUGHLY AND COMPLETELY THE SCOPE OF THE WORK INVOLVED, HAS FAMILIARIZED HIMSELF WITH THE EXISTING FIELD CONDITIONS, AND HAS INCLUDED IN HIS BID ALL THE ITEMS NECESSARY TO PERFORM THE ELECTRICAL WORK. NO ALLOWANCE WILL BE PERMITTED ON THIS MATTER AFTER THE BIDS ARE RECEIVED.
- UNLESS OTHERWISE INDICATED ALL OUTLETS SHALL BE FLUSH MOUNTED AND SHALL HAVE THEIR OWN INDEPENDENT OUTLET BOXES. MINIMUM SIZE OF OUTLET BOX TO BE 4" SQUARE & 1 1/2" DEEP. EXACT SIZE OF OUTLET BOX SHALL BE DETERMINED ACCORDING TO THE MAXIMUM NUMBER OF CONDUCTORS IN THE BOX PER N.E.C. ARTICLE 370-SECTION 6, NOT FOR A/V PURPOSES.
- ALL INDICATED HEIGHTS ARE FROM CENTER OF BOX TO FINISHED FLOOR.
- CONTRACTOR SHALL BALANCE ALL LOADS.
- ROUTE OF CONDUITS SHOWN IN THE LAYOUT IS SCHEMATIC AND INTENDED ONLY TO INDICATE INTERCONNECTIONS BETWEEN OUTLETS. EXACT CONDUIT ROUTING SHALL BE DETERMINED AT THE JOB SITE TO CONFORM WITH THE EXISTING FIELD CONDITIONS AND SHALL BE SUBJECT TO THE FINAL APPROVAL OF THE ARCHITECT/ENGINEER.
- LEAVE A #12-AWG-TW FISHWIRE IN ALL EMPTY CONDUITS.
- ALL PANELBOARDS AND LOAD CENTERS SHALL BE PROVIDED WITH A FACTORY INSTALLED GROUND BUS FOR CONNECTING TO GROUND ALL THE GROUND WIRES OR CABLES ENTERING OR LEAVING THE PANELBOARD. THE GROUND BUS SHALL BE SIMILAR IN SIZE AND CHARACTERISTICS TO THE NEUTRAL BUS. ALL PANELBOARDS SHALL HAVE A MONOFLOT FRONT AND KEY LOCK.
- WHEN TWO OR MORE WIRING DEVICES ARE SHOWN TOGETHER IN ADJACENT POSITIONS AND AT THE SAME HEIGHT, THEY SHALL BE INSTALLED IN A MULTIPLE GANG OUTLET BOX OF THE PROPER SIZE SO THAT ONLY ONE RAISED COVER PLATE OF THE REQUIRED TYPE AND SIZE ARE USED. 120V AND 277V OUTLETS SHALL BE IN SEPARATE BOXES-SHOULD THAT BE INDICATING SWITCHES.
- UNLESS OTHERWISE INDICATED, ALL WIRING DEVICES SHALL BE WHITE COLORED WITH 302 STAINLESS STEEL COVER PLATES, EXCEPT THE WEATHERPROOF OUTLETS WHICH SHALL HAVE THEIR STANDARD GRAY COVER PLATES.
- WHEN TWO OR MORE PANELBOARDS OR CABINETS ARE SHOWN TOGETHER IN ADJACENT LOCATIONS, THE TOP OF ALL PANELBOARDS OR CABINETS SHALL BE ALIGNED WITH THE TOP OF THE BIGGEST ONE SO THAT ALL THE TOPS ARE AT EXACTLY THE SAME HEIGHT FROM THE FINISHED FLOOR.
- IN CONDUIT RUNS, THE NUMBER OF ARROWS DESIGNATE THE NUMBER OF CIRCUITS IN THE CONDUIT (ONE POLE IN THE PANELBOARD PER EACH CIRCUIT), THE NUMBER OF LINES DESIGNATE THE NUMBER OF CONDUCTORS IN THE CONDUIT, THE LONGER LINE BEING A NEUTRAL CONDUCTOR AND "1" BEING THE GROUND CONDUCTOR.
- TELEPHONE TERMINALS CABINET SHALL BE APPROVED EQUAL TO COLUMBIA METAL TYPE "Pf" WITH THE DOOR HINGES, LOCK AND 3/4" PLYWOOD BACKBOARD COVER AT THE BOTTOM OF THE CABINET.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE VOLTAGE CHARACTERISTICS AT THE SITE WITH PREPA AT THE TIME OF INSTALLATION BEFORE ORDERING ANY PRIMARY EQUIPMENT.
- ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE.
- ALL THE SELF-STANDING AND SURFACE MOUNTED ELECTRICAL EQUIPMENT AS WELL AS THE LUMINARIES SHALL ALL BE BRACED FOR SEISMIC SHOCK ACCORDING TO THE SEISMIC RESTRAINT MANUAL GUIDELINES FOR MECHANICAL SYSTEMS. THE SAME APPLIES TO ALL THE CONDUIT WORK. THE DETAILS AND INSTALLATION METHODS IN SAID MANUAL SHALL BE MODIFIED AS REQUIRED TO FIT THE ELECTRICAL INSTALLATION OF THE PROJECT.
- FOR FINAL LOCATION OF MECHANICAL EQUIPMENT SEE CORRESPONDING MECHANICAL AND ARCHITECTURAL DRAWINGS, CONTRACTOR TO RELOCATE ELECTRICAL ROUGH-IN ACCORDINGLY AT NO ADDITIONAL COST TO OWNER.
- CONDUIT WORK:
 - ALL CONDUITS INSTALLED UNDERGROUND SHALL BE PVC SCH. 40.
 - ALL CONDUITS INSTALLED EMBEDDED IN FLOOR SLABS WHICH ARE IN DIRECT CONTACT WITH THE EARTH SHALL BE PVC SCH. 40.
 - ALL CONDUITS INSTALLED EMBEDDED IN WALLS, CEILING SLABS AND IN FLOOR SLABS WHICH ARE NOT IN DIRECT CONTACT WITH THE EARTH SHALL BE EMT.
 - ALL CONDUITS INSTALLED IN THE AREA BETWEEN HUNG CEILINGS AND CEILING SLABS OR METAL DECKS SHALL BE EMT.
 - ALL CONDUITS INSTALLED EXPOSED IN INDOOR AREAS SHALL BE RIGID.
 - ALL CONDUITS INSTALLED EXPOSED IN OUTDOOR AREAS SHALL BE RIGID GALV. STEEL.
 - FINAL CONNECTIONS TO ALL MOTORS AND ELECTRICAL EQUIPMENT SHALL BE DONE WITH LIQUIDTIGHT FLEXIBLE STEEL CONDUIT.
- ALL WIRES AND CABLES SHALL BE #12-AWG, EXCEPT WHEN OTHERWISE INDICATED IN THE DRAWINGS OR AS INDICATED BELOW FOR 20 AMP. CKTS. WIRE SIZING:
 - ALL 20 AMP. 120VOLT CIRCUIT RUNS SHALL BE AS FOLLOWS:
 - 5' TO 100' IN LENGTH, #12-AWG.
 - 100' TO 200' IN LENGTH, #10-AWG.
 - 200' TO 300' IN LENGTH, #8-AWG.
 - 300' TO 400' IN LENGTH, #6-AWG.

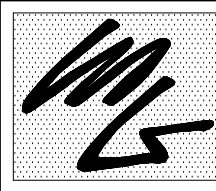
- ALL PENDANT MOUNTED LUMINARIES SHALL BE INSTALLED USING STEMS, 2 STEMS PER EACH 4' LUMINARY. STEMS SHALL BE PAINTED OF THE COLOR REQUIRED BY THE ARCHITECT.
- ALL PENETRATIONS THRU THE FLOORS, CONNECTING TWO OR MORE LEVELS SHALL BE FIRE RATED AND SMOKE TIDE SEALED IN ACCORDANCE WITH THE REQUIREMENTS OF IBC WITH APPROVED FIRE STOPPING MATERIALS.
- THE CONTRACTOR SHALL CONSIDER IN HIS BED IF THERE EXIST ANY ELECTRICAL DEVICE OR EQUIPMENT IN THE WALL OR WALLS IN CONTRACT TO BE DEMOLISH AND SHALL CONNECT THEM TO THE NEAREST ELECTRICAL FACILITY, BUT BEFORE THAT, THE CONTRACTOR SHALL VERIFY IF CIRCUITS DON'T HAVE ANY PROBLEMS OF POSSIBLE OVERLOAD.
- NO "UP" TYPE CONDUCTOR ALLOWED. ALL DROPS TO FIXTURES AND EQUIPMENT TO BE DONE IN FLEXIBLE METALLIC CONDUIT SIZE, MAXIMUM LENGTH AND TYPE AS PER NEC AND TO OTHER EQUIPMENT AS REQUIRED BY CODES.
- ALL EQUIPMENT AND MATERIAL TO BE NEW THROUGHOUT AND AS PER NEMA AND U.S. STANDARDS AND APPROXIMATELY LABELED ALSO FOR EXISTING

- CONTRACTOR SHALL COORDINATE ALL OF HIS WORK, SHIPPING OR CUTTING, ETC. WITH EXISTING SERVICES AND UTILITIES AND WITH OWNER, OWNER'S ENGINEER, LANDLORD OR REPRESENTATIVE. THE CONTRACTOR IS REQUIRED TO VISIT THE PROJECT AND REPORT HIS COMMENTS BEFORE BIDDING. OWNER'S GENERAL CONDITIONS SHALL FORM PART OF THIS PHASE.
- EQUIPMENT TO BE SUPPLIED AND INSTALLED BY OWNER AND OTHER TRADES OR CONTRACTORS TO HAVE INTEGRAL OVERLOAD PROTECTION, DISCONNECTING MEANS AND GROUND FAULT PROTECTION WHERE REQUIRED. POWER FACTOR FOR ALL EQUIPMENT TO BE ABOVE REQUIRED BY THE PUERTO RICO ENERGY CODE.
- CONTRACTOR TO SUBMIT FOR APPROVAL ALL EQUIPMENT, LIGHTING FIXTURES, BUS DUCTS, TRANSFORMERS, PANELS, CONDUITS, AND FITTINGS, RECEPTACLES AND ANY OTHER ELECTRICAL MATERIALS REQUIRED FOR THE WORK TO BE PERFORMED.
- THE ELECTRICAL INSTALLATION MATERIALS AND METHOD OF WORK SHALL BE IN COMPLETE ACCORDANCE WITH LATEST PREPA NEC OF P.R., FRID, OSHA, ARPE AND OTHER AGENCY'S APPLICABLE CODES AND REGULATIONS FOR SAID TYPE OF WORK AND SHALL BE SUBMITTED TO OWNER FOR APPROVAL. COORDINATION WITH OWNER'S REPRESENTATIVE IS MANDATORY.
- ALL RECEPTACLES AND SWITCHES SHALL BE HEAVY DUTY SPECIFICATION GRADE OF THE COLOR TO BE CHOSEN BY ARCHITECT. ALL WALL PLATES TO BE HEAVY DUTY STAINLESS STEEL.
- ALL CONDUITS SHALL BE SECURELY FASTENED TO OUTLET BOXES OR CABINETS WITH ONE BUSHING AND TWO LOCKWAS. ONE INSIDE AND THE OTHER OUTSIDE THE BOX OR CABINET OR FIXTURE AND INSULATED BUSHING ON CONDUITS 1-1/4" DIAMETER AND LARGER SHALL BE USED.
- CONTRACTOR TO COLOR CODE ALL WIRING AS SHOWN:
 - ALL FEEDERS AT 277/480 VOLTS TO BE ORANGE, YELLOW, BROWN
 - ALL FEEDERS AT 120/208 VOLTS TO BE RED, BLUE, BLACK
 - ALL SWITCH RETURNS TO BE PURPLE, VIOLET, LIGHT BLUE
 - ALL NEUTRAL CONDUCTORS TO BE WHITE
 - ALL GROUND CONDUCTORS TO BE GREEN
- COORDINATION IS MANDATORY IN THIS PROJECT. CONTRACTOR MUST COORDINATE ALL HIS WORK WITH ARCHITECT/ENGINEER AND OWNER'S REPRESENTATIVE.
- CONTRACTOR SHALL COMPLY WITH UNIFORM BUILDING CODE (UBC) FOR LIGHTING FIXTURE INSTALLATION IN HUNG CEILINGS FOR SEISMIC ZONE 3 COMPLIANCE. ALL FIXTURES TO HAVE CALIFORNIA CLIPS TO HOLD FIXTURES TO HUNG CEILING AND ALL FIXTURES TO BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE AS REQUIRED. UNIFORM BUILDING CODE STANDARD 25-2 CONSTRUCTION METHODS THAT MAY BE USED FOR LIGHT HEIGHT SUSPENDED CEILINGS. THESE STANDARDS SHALL BE USED AS GUIDE FOR SUPPORTING OF BOTH THE SUSPENDED CEILING AND THE LIGHTING FIXTURES.

LEGEND:

- | | |
|--|---|
| | WALL LIGHTING OUTLET, 7"-6" A.F.F. UNLESS OTHERWISE INDICATED IN THE DRAWINGS. LITONIA LIGHTING TFX4 LED FLOOD LIGHT OUTDOOR 120V 296 WATTS |
| | 3/4" EMT CONDUIT IN WALLS OR FLOOR. NUMBER OF CONDUCTORS INSIDE, NO CROSSHATCH INDICATES TWO CONDUCTORS. |
| | 3/4" EMT CONDUIT IN CEILING SLAB INSIDE. PLENUM, NUMBER OF CONDUCTORS INSIDE, NO CROSSHATCH INDICATES TWO CONDUCTORS. |
| | HOMERUN TO PANELBOARD NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS INSIDE. |
| | PANELBOARD AT 5'-0" A.F.F. AS INDICATED IN SINGLE LINE DIAGRAM. |
| | SAFETY SWITCH. SEE LEGEND FOR DETAILS IN ONE LINE DIAGRAM |
| | DISCONNECT SWITCH. SEE LEGEND FOR DETAILS IN ONE LINE DIAGRAM |
| | MAIN GROUNDING LOOP #2/0 AWG BARE COPPER. |
| | EXOTHERMIC CONNECTION TO STRUCTURAL STEEL WITH #2 AWG BARE COPPER WIRE. |
| | 5/8" X 10'-0" GROUNDING ROD OR AS INDICATED |
| | EXOTHERMIC CABLE CONNECTION. |
| | DUPLEX CONVENIENCE RECEPTACLE, GROUND TYPE, NEMA 5-20R 20 AMP, 125V, AT 5'-0" A.F.F. UNLESS OTHERWISE INDICATED. "W.P." MEANS WEATHER PROOF. (C.F. MEANS GROUND FAULT CIRCUIT INTERRUPTER.). |
| | HEAVY DUTY QUIET SWITCH, WALL TYPE 20A-120 VAC SINGLE POLE INSTALL FLUSH WITH WALL IN 2-1/8" X 4" GALVANIZED BOX OR GANGED TOGETHER AT 48" A.F.F. 3W INDICATES THREE WAY, 4W MEANS FOUR WAY. SUBLETTER INDICATES LIGHT CONTROLLED K INDICATES KEY OPERATED. |
| | EMERGENCY LIGHT WITH BATTERY PACK. DUAL LITE EVHC 12 012L |
| | AL-D 60NB 136 SK 5X5 UNIV PEC SF3 FL BBT BY BEACON POLE. 25' ALUMINUM POLE WITH ADAPTERS TO SPECIFIED LAMP |
| | LRO 8 40 ML E U BY COLUMBIA LIGHTING |
| | WGH-225L-4K-U-L PBT BY HUBBELL LIGHTING |

Yo, Mildred Gisela Perez Rosado ingeniera licenciada numero 10287, certifico que soy el profesional que diseñó estos planos y las especificaciones complementarias. También certifico que entiendo que dichos planos y especificaciones cumplen con las disposiciones aplicables del reglamento Conjunto y las disposiciones aplicables de los Reglamentos y Códigos de las Agencias, Juntas Reglamentarias o Corporaciones Públicas con jurisdicción. Certifico además que en la preparación de estos planos y especificaciones se ha cumplido cabalmente con lo dispuesto en la ley 14-2004, según enmendada, conocida como la "Ley para la inversión por la industria Puertorriqueña" y con la ley num. 319 de 15 de mayo de 1938, según enmendada; ley num.36 de 6 de julio de 1978, según enmendada; según aplicable. Reconozco que cualquier declaración falsa o falsificación de los hechos que se haya producido por desconocimiento o por negligencia ya sea por mí, mis agentes o empleados, o por otras personas con mi conocimiento, me hacen responsable de cualquier acción judicial y disciplinaria por la OQPe.



MG PEREZ ROSADO & ASOC.
Electrical Engineers & Environmental Consultants
MILDRED GISELA PEREZ ROSADO
electrical engineer consultant
I.E.C. # 10287
P.O. BOX 40 AV. ESTERUA
SUITE 2 GUAYAMA, P.R. 00969 TEL. 787.766.0415

Professional Seal

2AGROUP

M2A GROUP, PSC
Ing. Manuel Bermudez Pagan
Licencia: 15.572
867 Ave. Muñoz Rivera
Cond. Vick Center
Suite D-305
San Juan, PR 00925

MEJORAS AL SISTEMA
SANITARIAS VILLAS
DE AÑASCO
AÑASCO PUERTO RICO

ISSUE
FEB 08, 2023

RE-ISSUE
MM.DD.YY

PROJECT NO.
PROJECT

NOTES & DETAILS

E-106