# CONSTRUCTION DRAWINGS
# FOR
# CEDAR BAY (DISTRICT II) PUMP STATIONS AND FLOW REROUTING PROJECT
## ROBENA ROAD BOOSTER PUMP STATION

JEA PROJECT NO.: 8003550

JANUARY 2021

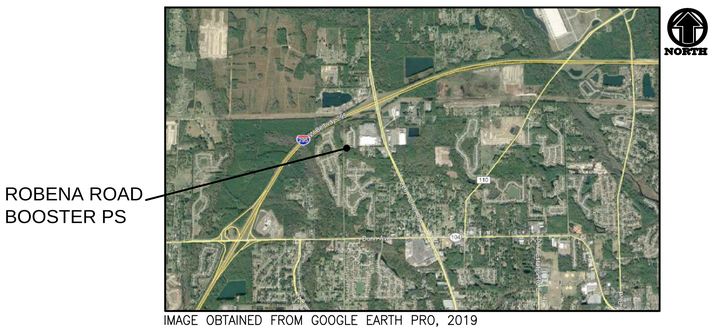



IMAGE OBTAINED FROM GOOGLE EARTH PRO, 2019

**VICINITY MAP**
NOT TO SCALE

PREPARED BY:

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FL COA No. EB-0000020
PROJECT NO. 6103-215629

JEA sm
Building Community

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## GENERAL NOTES:

1. THE CONTRACTOR SHALL STRICTLY FOLLOW DESIGN STANDARDS AS GIVEN IN "WATER AND SEWER STANDARDS MANUAL" BY JEA, JANUARY 1, 2020 OR, LATEST EDITION FOR ALL UTILITY INSTALLATION.
2. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK. THE CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
3. SUBMITTAL OF AS-BUILT SITE SURVEY, INCLUDING BENCHMARKS, IS REQUIRED PRIOR TO FINAL PAYMENT.
4. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NAVD OF 1988 AND ARE BASED ON BENCHMARKS AS SHOWN ON THE SURVEYS.
5. TOPOGRAPHIC SURVEYS WERE PERFORMED BY:
   CONSTRUCTION & ENGINEERING SERVICES CONSULTANT INC.
   9432 BAYMEADOWS RD., SUITE 100
   JACKSONVILLE, FLORIDA 32256
6. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ACTUAL LOCATIONS OF SUCH FEATURES AND BE FULLY RESPONSIBLE FOR ALL DAMAGES WHICH MIGHT BE OCCASIONED BY CONTRACTOR'S FAILURE TO VERIFY ACTUAL LOCATIONS OF FEATURES AFFECTING THE WORK.
7. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL PHYSICALLY VERIFY LOCATION OF ALL UTILITIES, ABOVE AND BELOW GROUND AND NOTIFY JEA 72 HOURS PRIOR TO DIGGING IN ANY PORTION OF THE SITE. ADDITIONAL NOTIFICATION LIMITATIONS SPECIFIED IN THE TECHNICAL SPECIFICATION.
8. THE CONTRACTOR SHALL CONTACT THE ENGINEER'S OFFICE IMMEDIATELY UPON FINDING ANY CONFLICTS DURING CONSTRUCTION ON ANY IMPROVEMENTS SHOWN ON THE DRAWINGS.
9. THE CONTRACTOR SHALL NOTE ALL EXISTING UTILITIES ENCOUNTERED DURING EXCAVATION AND INCLUDE AS-BUILT INFORMATION ON RECORD DRAWINGS.
10. FOR UTILITY SEPARATION REQUIREMENTS, PLEASE REFER TO JEA'S WATER AND SEWER STANDARDS MANUAL.
11. THE CONTRACTOR SHALL, BY REPAIR OR REPLACEMENT, RETURN TO EQUAL OR BETTER CONDITION ALL PAVEMENT, SIDEWALK, LAWNS, UTILITIES AND OTHER ITEMS DAMAGED BY THIS CONSTRUCTION ACTIVITY.
12. ABSOLUTELY NO WORK WILL BE ALLOWED WITHIN ANY CONSERVATION AREA, BUFFER AREA, MITIGATION AREA, OR DESIGNATED WETLAND AREA UNLESS SO SPECIFICALLY DESCRIBED BY THE PLANS.
13. MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO ENSURE THAT ADEQUATE EROSION AND SEDIMENTATION CONTROL ARE MAINTAINED AT ALL TIMES DURING THE PROJECT.
14. ALL BRUSH, STRIPPING OR UNSUITABLE MATERIAL SHALL BE LAWFULLY DISPOSED OF OFF-SITE AT THE CONTRACTOR'S EXPENSE. HOWEVER, NONE OF THE WASTE MATERIAL SHALL BE REMOVED FROM THE SITE WITHOUT PERMISSION OF THE OWNER.
15. NO REPRESENTATION IS MADE REGARDING BALANCED EARTHWORK. ANY EXCESS MATERIAL, OR MATERIAL NOT SUITABLE FOR USE AS BACKFILL, SHALL BE HAULED AWAY TO AN APPROVED DISPOSAL FACILITY AT THE CONTRACTOR'S EXPENSE, AND WHERE NECESSARY, SUITABLE FILL AND BACKFILL SHALL BE PROVIDED AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
16. THE APPROXIMATE BORING LOCATIONS ARE SHOWN ON SHEET C-6 FOR THE CONTRACTOR'S CONVENIENCE. THE PLAN VIEW LOCATION IS APPROXIMATE AND THE BORINGS MAY BE UP TO 10 FEET AWAY, HORIZONTALLY.
17. THE CONTRACTOR SHALL REFER TO GEOTECHNICAL EVALUATION PREPARED BY MESKEL & ASSOCIATES ENGINEERING, PLLC, GEOTECHNICAL EXPLORATION REPORT FOR CEDAR BAY (DISTRICT II) PUMPING STATIONS DATED NOVEMBER 5,, 2018. THE CONTRACTOR IS RESPONSIBLE FOR ANY CONCLUSIONS TO BE BE DRAWN FROM BORING(S) INCLUDING THE CHARACTER OF THE MATERIALS TO BE ENCOUNTERED. BORING LOCATIONS AND NUMBERS ARE SHOWN ON THE CIVIL SHEETS.
18. THE CONTRACTOR SHALL REFER TO THE SUBSURFACE INVESTIGATIONS DATA FOR SOFT DIG LOCATIONS AND INFORMATION GATHERED DURING DESIGN. THIS INFORMATION IS AVAILABLE UPON REQUEST FROM THE ENGINEER. SOFT DIG LOCATIONS ARE SHOWN ON THE CIVIL DRAWINGS.
19. THESE PLANS MAY HAVE BEEN CHANGED IN SIZE BY REPRODUCTION. THIS REDUCTION SHALL BE CONSIDERED WHEN OBTAINING SCALED DATA.

DATE:
JONATHAN Z GOLDMAN
PE NO. PE 0048925

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: B. COGGER
DRAWN BY: A. NUNES
SHEET CHK'D BY: J. HEALY
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: J. GOLDMAN
DATE: JANUARY 2021

CDM Smith
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FL COA No. EB-0000020

JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

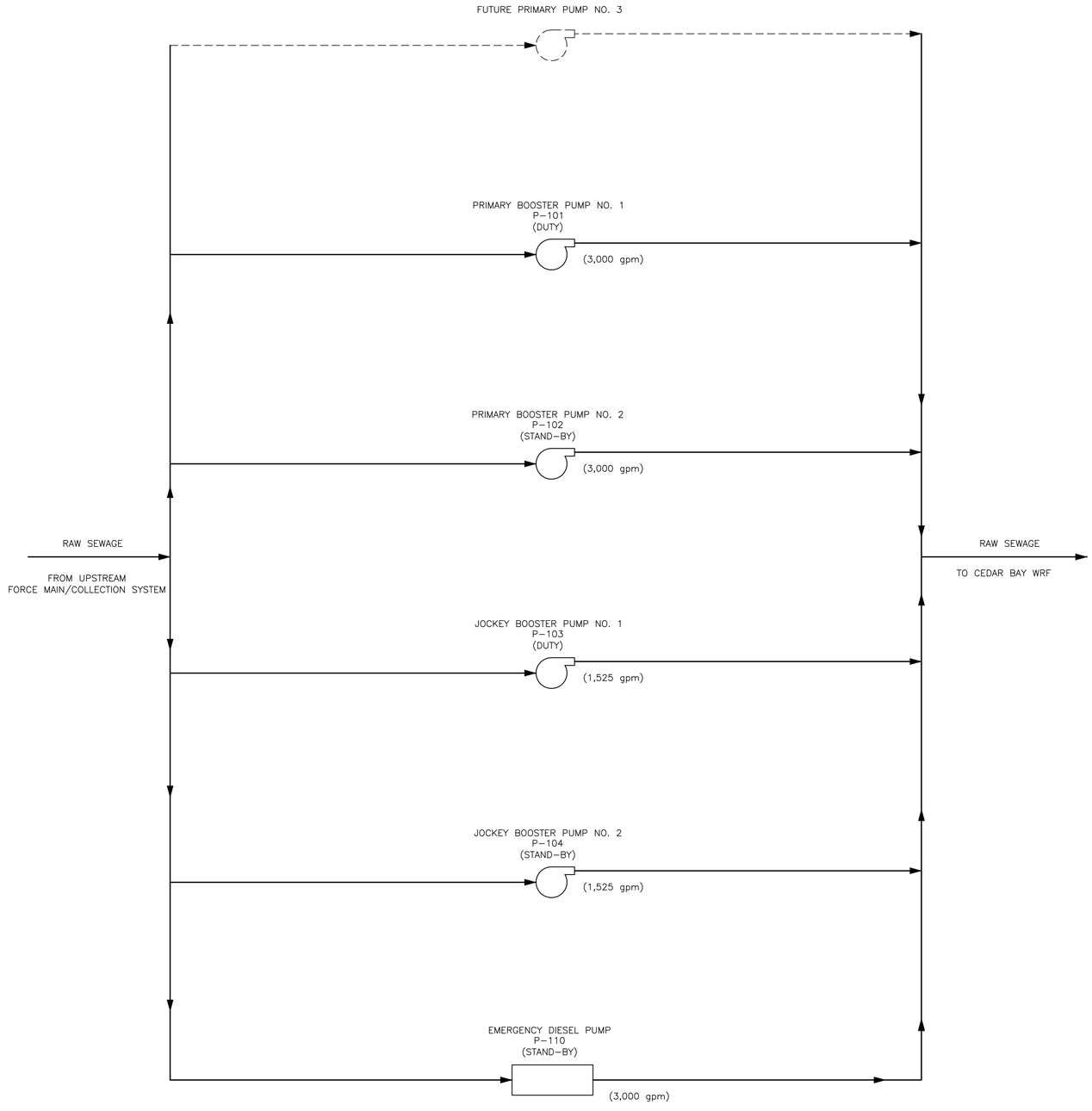
INDEX OF SHEETS
AND GENERAL NOTES

PROJECT NO. 6103-215629
FILE NAME: G001LEGN.DWG
SHEET NO.
G-1

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# ROBENA ROAD BOOSTER PS




NOTES:

1. DESIGN FLOWS WERE DERIVED FROM JEA SEWER DEMAND PROJECTIONS FOR THE CEDAR BAY BASIN SERVICE AREA. THE ROBENA ROAD BOOSTER PUMP STATION IS ANTICIPATED TO BOOST FLOWS FROM ROBENA, KEY HAVEN, AND WOODLEY SUB–BASINS. PEAK FACTORS WERE DERIVED USING THE 10–STATE STANDARDS.

| DESIGN YEAR | DESIGN FLOW CONDITION | PUMP IN OPERATION |
|---|---|---|
| 2020 | 435 gpm (ADF) | ONE JOCKEY |
| | 1,372 gpm (PEAK) | ONE PRIMARY |
| 2040 | 881 gpm (ADF) | ONE JOCKEY |
| | 3,000 gpm (PEAK) | ONE PRIMARY |


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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: B. COGGER
DRAWN BY: A. NUNES
SHEET CHK'D BY: B. WILLIAMS
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: J. GOLDMAN
DATE: JANUARY 2021


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FL COA No. EB-0000020


JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

ROBENA ROAD BOOSTER PUMP STATION
FLOW DIAGRAM

DATE:
JONATHAN Z GOLDMAN
PE NO. PE 0048925

PROJECT NO. 6103–215629
FILE NAME: G002PRDI.DWG

SHEET NO.
G-2

ISSUED FOR BID

## GENERAL INSTRUMENT OR FUNCTION SYMBOLS

PILOT LIGHT ON FIELD MOUNTED INSTRUMENT

PILOT LIGHT ON INSTRUMENT OR DEVICE LOCATED IN OR ON FRONT OF CENTRAL OR MAIN PANEL/CONSOLE. OPERATOR ACCESSIBLE

PILOT LIGHT ON INSTRUMENT OR DEVICE LOCATED IN OR ON FRONT OF MCC OR REMOTE PANEL/CONSOLE. OPERATOR ACCESSIBLE

FIELD MOUNTED INSTRUMENT

INSTRUMENT OR DEVICE LOCATED IN OR ON FRONT OF CENTRAL OR MAIN PANEL/CONSOLE. OPERATOR ACCESSIBLE

INSTRUMENT OR DEVICE LOCATED IN OR ON FRONT OF MCC OR REMOTE PANEL/CONSOLE. OPERATOR ACCESSIBLE

INSTRUMENTS SHARING COMMON HOUSING

VISIBLE ON VIDEO DISPLAY LOCATED ON FRONT OF CENTRAL OR MAIN PANEL/CONSOLE (SCADA). OPERATOR ACCESSIBLE

VISIBLE ON VIDEO DISPLAY LOCATED ON FRONT OF MCC. OPERATOR ACCESSIBLE

PN — FIELDBUS IMPLEMENTED FUNCTION LOCATED ON FIELD DEVICE. PB = PROFIBUS, PN = PROFINET, EN = ETHERNET, MB = MODBUS, MAY OR MAY NOT BE OPERATOR ACCESSIBLE

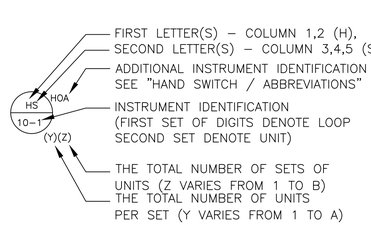
PN — PLC IMPLEMENTED FUNCTION

PN — FIELDBUS IMPLEMENTED FUNCTION LOCATED ON MCC. PB = PROFIBUS, PN = PROFINET, EN = ETHERNET, MB = MODBUS, MAY OR MAY NOT OPERATOR ACCESSIBLE

## INSTRUMENTATION FUNCTION CODE

| | FIRST LETTERS | | SECOND LETTERS | | |
|---|---|---|---|---|---|
| | COLUMN 1 | COLUMN 2 | COLUMN 3 | COLUMN 4 | COLUMN 5 |
| | MEASURED/INITIATING VARIABLE | VARIABLE MODIFIER | READOUT/PASSIVE | OUTPUT/ACTIVE FUNCTION | FUNCTION MODIFIER |
| A | ANALYSIS | | ALARM | | |
| B | BURNER, COMBUSTION | | USER'S CHOICE | USER'S CHOICE | USER'S CHOICE |
| C | USER'S CHOICE | | | | |
| D | USER'S CHOICE | DIFFERENCE, DIFFERENTIAL | | | DEVIATION |
| E | VOLTAGE | | SENSOR, PRIMARY ELEMENT | | |
| F | FLOW, FLOW RATE | RATIO | | | |
| G | USER'S CHOICE | | GLASS, GAUGE, VIEWING DEVICE | | |
| H | HAND | | | | HIGH |
| I | CURRENT | | INDICATE | | |
| J | POWER | | SCAN | | |
| K | TIME, SCHEDULE | TIME RATE OF CHANGE | | CONTROL STATION | |
| L | LEVEL | | LIGHT | | LOW |
| M | USER'S CHOICE | | | | MIDDLE, INTERMEDIATE |
| N | USER'S CHOICE | | USER'S CHOICE | USER'S CHOICE | USER'S CHOICE |
| O | USER'S CHOICE | | ORIFICE, RESTRICTION | | OPEN |
| P | PRESSURE | | POINT (TEST CONNECTION) | | |
| Q | QUANTITY | INTEGRATE, TOTALIZE | INTEGRATE, TOTALIZE | | |
| R | RADIATION | | RECORD | | RUN |
| S | SPEED, FREQUENCY | SAFETY | | SWITCH | STOP |
| T | TEMPERATURE | | | TRANSMIT | |
| U | MULTIVARIABLE | | MULTIFUNCTION | MULTIFUNCTION | |
| V | VIBRATION, MECHANICAL ANALYSIS | | | VALVE, DAMPER, LOUVER | |
| W | WEIGHT, FORCE | | WELL, PROBE | | |
| X | UNCLASSIFIED | X-AXIS | ACCESSORY DEVICES, UNCLASSIFIED | UNCLASSIFIED | UNCLASSIFIED |
| Y | EVENT, STATE, PRESENCE | Y-AXIS | | AUXILLARY DEVICES | |
| Z | POSITION, DIMENSION | Z-AXIS, SAFETY INSTRUMENTED SYSTEM | | DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT | |

## TYPICAL TAG NUMBERS & DESIGNATION




## HAND SWITCH ABBREVIATIONS

AO = AUTO/OFF
AM = AUTO/MANUAL
CAM = COMPUTER/AUTO/MANUAL
CM = COMPUTER/MANUAL
CL = COMPUTER/LOCAL
DOP = DOPPLER
E-STOP = EMERGENCY STOP
ED = ENABLE/DISABLE
FR = FORWARD/REVERSE
FOR = FORWARD/OFF/REVERSE
FS = FAST/SLOW
FOS = FAST/OFF/SLOW
HOA = HAND/OFF/AUTO
LLS = LEAD/LAG/STANDBY
LOC = LOCAL/OFF/COMPUTER
LOR = LOCAL/OFF/REMOTE
LOS = LOCKOUT/STOP
LA = LOCAL/AUTO
LR = LOCAL/REMOTE
OC = OPEN/CLOSED
OCA = OPEN/CLOSED/AUTO
OCR = OPEN/CLOSE/REMOTE
OOA = ON/OFF/AUTO
OOR = ON/OFF/REMOTE
OSC = OPEN/STOP/CLOSED
RSL = RAISE/STOP/LOWER
SS = START/STOP
SSR = SUPERVISORY
SET-POINT (BY COMPUTER), AUTO/MANUAL CONTROL STATION
SOR = START/OFF/RESET

## INSTRUMENT LINE SYMBOLS

PROCESS (CLOSED CONDUIT, DASHED LINE INDICATES ALTERNATE FLOW STREAM)

PROCESS (EXISTING)

PROCESS (OPEN CHANNEL)

DOUBLE WALL CONTAINMENT

A A — ANALOG SIGNAL (4 TO 20 mA dc, ETC.)

DISCRETE SIGNAL (ON/OFF, ETC.)

PNEUMATIC SIGNAL

CAPILLARY TUBE

DATA LINK

PN — PROFINET DATA LINK

PB — PROFIBUS DATA LINK

S — SERIAL SIGNAL

FO FO — FIBER OPTIC

FO PN FO — PROFINET ON FIBER OPTIC

FO PB FO — PROFIBUS ON FIBER OPTIC

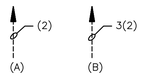
PACKAGE SYSTEM EQUIPMENT

EQUIPMENT/PROCESS BOUNDARY

BUILDING OR FACILITY BOUNDARY

HEAT TRACED

PARALLELING LINES




(A) TOTAL OF 2 SIGNALS

(B) 3 TYPICAL SETS OF 2 SIGNALS EACH. TOTAL OF 6 SIGNALS.

NON-CONNECTING LINES

DISCRETE INPUT

DISCRETE OUTPUT

ANALOG INPUT (X=TC – THERMOCOUPLE INPUT, RTD – RTD INPUT)

ANALOG OUTPUT

## PRIMARY ELEMENTS

FE — MAGNETIC FLOW METER

FE — ULTRASONIC FLOW METER

FE — TURBINE OR PROPELLER FLOW METER

FE — ROTAMETER

FE — THERMAL MASS FLOW METER

FE X — GENERAL INSERTION FLOW METER
IM=INSERT MAG

LE — FLOAT SWITCH

DPS — DIFFERENTIAL PRESSURE SWITCH

LE — ULTRASONIC LEVEL SENSOR

LE — CAPACITANCE LEVEL SENSOR

PG — PRESSURE GAUGE

TG — TEMPERATURE GAUGE

AE X — GENERAL ANALYZER
pH=pH
DO=DISSOLVED OXYGEN
H2S=HYDROGEN SULFIDE
LEL=% LOWER EXPLOSIVE LIMIT
O2=OXYGEN
O3=OZONE
NH3=NITRATE
TURB=TURBIDITY
FL=FLUORIDE

## GENERAL NOTES

1. IN GENERAL THIS LEGEND SHEET AND THE P&IDS ARE BASED ON THE INTERNATIONAL SOCIETY OF AUTOMATION (ISA) STANDARDS AND RECOMMENDED PRACTICES FOR INSTRUMENTATION AND CONTROL. SOME MODIFICATIONS, ADDITIONS, AND ALTERATIONS HAVE BEEN MADE AS REQUIRED TO ACCOMMODATE PROJECT REQUIREMENTS

2. SOME PROCESS ITEMS SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC., WHICH ARE NOT CRITICAL FOR AN UNDERSTANDING OF THE INSTRUMENTATION FUNCTIONS ARE NOT SHOWN ON THE P&IDS.

3. SEE ELECTRICAL AND MECHANICAL SHEETS AND SPECIFICATIONS FOR ADDITIONAL CONTROL AND INTERLOCK REQUIREMENTS.

## GENERAL ABBREVIATIONS

| | |
|---|---|
| AI | ANALOG IN |
| AO | ANALOG OUT |
| CPU | CENTRAL PROCESSOR UNIT |
| DI | DIGITAL OR DISCRETE INPUT |
| DO | DIGITAL OUTPUT |
| FC | FAIL CLOSED |
| FO | FAIL OPEN OR FIBER OPTIC |
| HMI | HUMAN MACHINE INTERFACE |
| MCC | MOTOR CONTROL CENTER |
| NC | NORMALLY CLOSED |
| NPW | NON-POTABLE WATER |
| NO | NORMALLY OPEN |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| PW | PLANT WATER |
| RIO | REMOTE INPUT/OUTPUT |
| UPS | UNINTERRUPTIBLE POWER SUPPLY |
| UVI | UV INTENSITY |
| UVT | UV TRANSMITTANCE |
| VFD | VARIABLE FREQUENCY DRIVE |

DATE:
WILLIAM SCOTT WHITMORE
PE NO. 58215

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

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DRAWN BY: R. CHARITY
SHEET CHK'D BY: W. WHITMORE
CROSS CHK'D BY: D. UBERT
APPROVED BY: W. WHITMORE
DATE: JANUARY 2021


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FL COA No. EB-0000020


JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

INSTRUMENTATION LEGEND
(SHEET 1 OF 2)

PROJECT NO. 6103-215629
FILE NAME: I001SYMB.DWG

SHEET NO.
I-1

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## TYPICAL PIPE TAG NUMBERS & DESIGNATION

41– 1014–AAB–6"–ST(lh)(2–3/8")

- 41 – AREA NUMBER
- 1014 – LINE NUMBER
- AAB – LINE CLASS DESIGNATION
- 6" – LINE SIZE
- ST – HEAT TRACING OR INSULATION I.D.
- (lh) – PURPOSE OF TRACING (*)
- (2–3/8") – QUANTITY AND SIZE OF TRACER

HEAT TRACING AND INSULATION I.D.

ET(*) – ELECTRICALLY TRACED AND INSULATED
ETT(*) – ELECTRICALLY TRACED WITH HEAT TRANSFER CEMENT AND INSULATION

(*) – (lh), HEAT CONSERVATION
(*) – (W), WINTERIZATION

TB – HEAT TRACED VALVE BODY, INSULATED
TBB – HEAT TRACED VALVE BODY AND BONNET, INSULATED

## VALVE SYMBOLS

- GATE VALVE (GV)
- PLUG VALVE (PV)
- BUTTERFLY VALVE (BFV)
- BALL VALVE (BV)
- CHECK VALVE
- GLOBE VALVE (GLV)
- SOLENOID VALVE (SV)
- NEEDLE VALVE (NV)
- PRESSURE REGULATING VALVE (PREGV)
- PRESSURE RELIEF VALVE (PRV)
- AIR RELEASE VALVE (ARV)

## VALVE ACTUATORS

- M – ROTARY MOTOR. (SHOWN TYPICALLY WITH ELECTRIC SIGNAL. MAY BE HYDRAULIC OR PNEUMATIC)
- S – SOLENOID

## PIPE LINE SYMBOLS

- PIPE UNION
- FLEXIBLE BELLOWS TYPE COUPLING
- FLEXIBLE COUPLING (GENERAL SYMBOL)
- QUICK CONNECT TYPE COUPLING
- HOSE CONNECTION
- REMOVABLE PLUG
- Y–STRAINER
- REDUCER/ENLARGER
- BLIND FLANGE
- CONTINUED PIPE
- CONCENTRIC FLANGE MOUNTED DIAPHRAGM SEAL
- THREADED DIAPHRAGM SEAL
- OPEN EQUIPMENT DRAIN
- MAJOR PROCESS LINE
- MINOR PROCESS LINE
- E (S) – ELECTRIC (OR STEAM) TRACING
- PROCESS FLUID / DWG NO. / TO/FROM LOCATION – DRAWING CONTINUATION

## TYPICAL EQUIPMENT TAG NUMBERS & DESIGNATION

P–1000–1A

- P – EQUIPMENT TYPE
- 10 – EQUIPMENT IDENTIFICATION (FIRST TWO DIGITS DENOTE ASSOCIATED AREA)
- 00 – USED WHEN MULTIPLE TRAINS ARE USED AND REPRESENTS THE TRAIN NUMBER.
- A – WHEN USED, LETTER DISTINGUISHES BETWEEN MULTIPLE, SIMILAR DEVICES.

## GATE SYMBOLS

- SLUICE GATE (SLG)
- SLIDE GATE (SG)
- WEIR GATE (WG)

## PROCESS EQUIPMENT

PARTIAL LIST
ADDITIONAL SYMBOLS MAY BE SHOWN ON THE FLOW DIAGRAMS

- CENTRIFUGAL PUMP
- CENTRIFUGAL BLOWER
- ROTARY PUMP
- ROTARY BLOWER
- SUBMERSIBLE PUMP
- SCUM PUMP
- VERTICAL PUMP
- BAR SCREEN
- SCREENING CONVEYOR
- MIXER
- SPRAY NOZZLE
- SILENCER
- WEIR
- THICKENER

DATE:
WILLIAM SCOTT WHITMORE
PE NO. 58215

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: W. WHITMORE
DRAWN BY: J. LOWE
SHEET CHK'D BY: W. WHITMORE
CROSS CHK'D BY: D. UBERT
APPROVED BY: W. WHITMORE
DATE: JANUARY 2021

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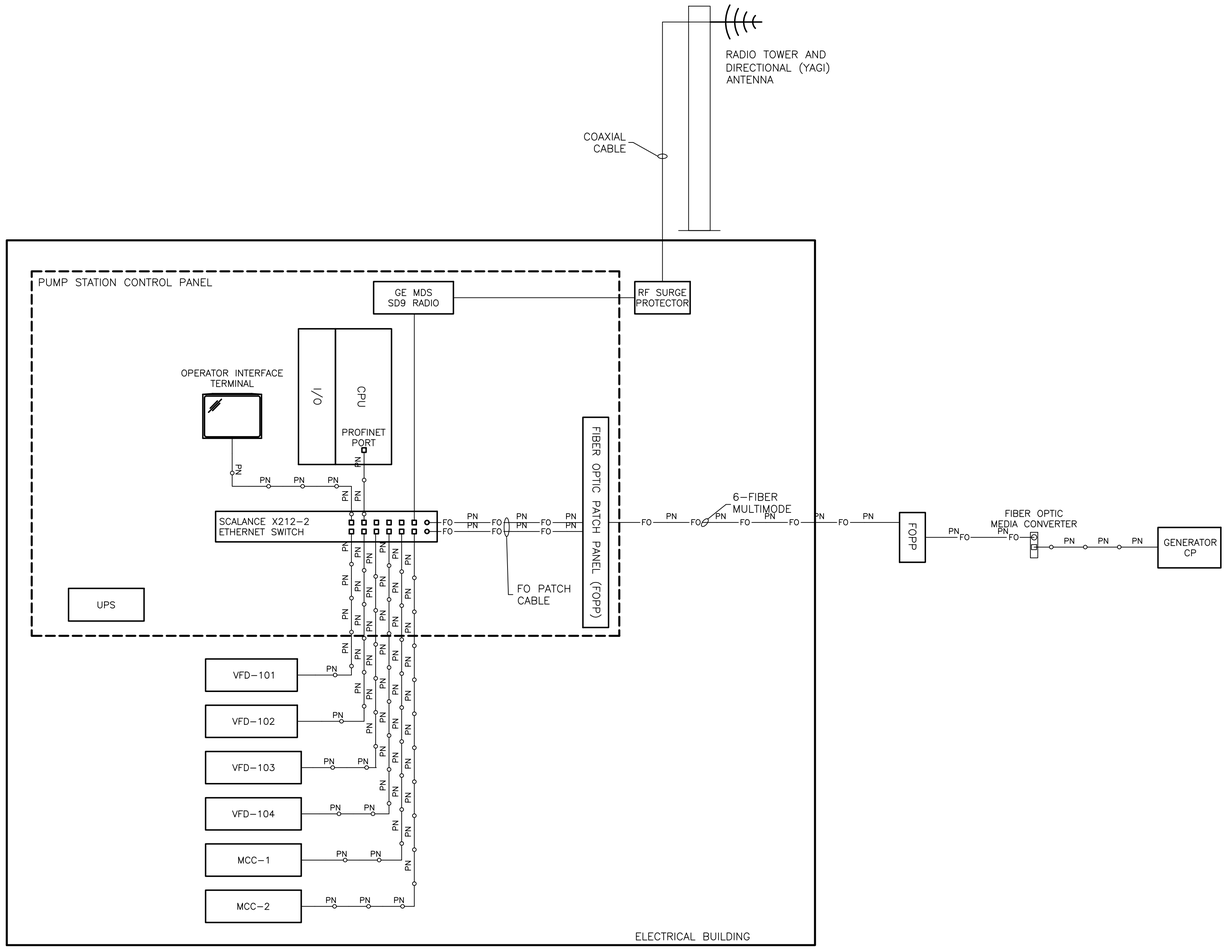
JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

INSTRUMENTATION LEGEND
(SHEET 2 OF 2)

PROJECT NO. 6103–215629
FILE NAME: I002SYMB.DWG
SHEET NO.
I-2

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| | | | | |

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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

SYSTEM ARCHITECTURE
ROBENA ROAD

DATE:
WILLIAM SCOTT WHITMORE
PE NO. 58215

PROJECT NO. 6103-215629
FILE NAME: 1003PIDT.DWG

SHEET NO.
I-3

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INLET PRESSURE A (NOTE 2)
INLET PRESSURE B (NOTE 2)
FUEL LEAK ALARM
FUEL LEVEL
VALVE CLOSED
PUMP FAULT
PUMP RUNNING
START COMMAND
IN AUTO
RUN STATUS
FAIL
SPEED INDICATION
SPEED CONTROL
VALVE CLOSED
START COMMAND
IN AUTO
RUN STATUS
FAIL
SPEED INDICATION
SPEED CONTROL
VALVE CLOSED
VALVE CLOSED
START COMMAND
IN AUTO
RUN STATUS
FAIL
SPEED INDICATION
SPEED CONTROL
VALVE CLOSED
START COMMAND
IN AUTO
RUN STATUS
FAIL
SPEED INDICATION
SPEED CONTROL
DISCHARGE PRESSURE
FLOW
PUMP STATION CONTROL PANEL

CP-110
DIESEL PUMP CONTROL PANEL

HS 104 | RL 104 | XL 104 | SI 104 | SC 104
VFD-104
JOCKEY PUMP NO. 2 VFD

HS 103 | RL 103 | XL 103 | SI 103 | SC 103
VFD-103
JOCKEY PUMP NO. 1 VFD

HS 102 | RL 102 | XL 102 | SI 102 | SC 102
VFD-102
BOOSTER PUMP NO. 2 VFD

HS 101 | RL 101 | XL 101 | SI 101 | SC 101
VFD-101
BOOSTER PUMP NO. 1 VFD

PG 105 | PIT 105
PE 105
FIT 106 ← 120VAC
FE 106
ABOVE GRADE (316SST)
BELOW GRADE (PVC) (NOTE 3)
TO CEDAR BAY WRF
TEE–20"–316SST
PLG–20"–DI

20"X14" TEE–316SST
FM–20"–PV (N.O.)
FM–20"–316SST
20"x12" REDUCER 12" PV (NC) 12" CAMLOCK
1" ANTI SIPHON VALVE
1" FIRE SAFE LOCKABLE BALL VALVE
ZSC 110 D15
FM–14"–CV
FM–14"–316SST
PG 110 B
PE 110 B
XS 110
LT 110
DIESEL EMERGENCY PUMP FUEL STORAGE TANK
FOR–1"–SS
FOS–1"–SS
12"X14"
PIT 100 A | PG 100 A | PE 100 A
PIT 100 B | PG 100 B | PE 100 B
PIT 110 A | PG 110 A | PE 110 A
P-110
EMERGENCY DIESEIL PUMP (STANDBY)
FM–16"–PV
16"X12"
FM–12"–316SST

20"X10" TEE–316SST
FM–10"–PV (N.O.)
ZSC 104 D15
FM–10"–CV
FM–10"–316SST
PG 104 B
PE 104 B
8"X10" (NOTE 1)
PG 104 A
PE 104 A
ADAPTER (NOTE 1)
P-104
JOCKEY PUMP NO. 2 (STANDBY)
FM–12"–316SST
FM–12"–DI

20"X10" TEE–316SST
FM–10"–PV (N.O.)
ZSC 103 D15
FM–10"–CV
PG 103 B
PE 103 B
8"X10" (NOTE 1)
PG 103 A
PE 103 A
ADAPTER (NOTE 1)
P-103
JOCKEY PUMP NO. 1 (DUTY)
FM–10"–316SST
FM–12"–316SST

20"X14" TEE–316SST
FM–14"–PV (N.O.)
ZSC 102 D15
FM–14"–CV
FM–14"–PV (N.O.)
PG 102 B
PE 102 B
8"X14" (NOTE 1)
PG 102 A
PE 102 A
ADAPTER (NOTE 1)
P-102
BOOSTER PUMP NO. 2 (STANDBY)
FM–14"–316SST
FM–12"–316SST
16"X12" RED (NOTE 1)
FM–12"–DI

20"X14" TEE–316SST
FM–14"–PV (N.O.)
ZSC 101 D15
FM–14"–CV
PG 101 B
PE 101 B
8"X14" (NOTE 1)
PG 101 A
PE 101 A
ADAPTER (NOTE 1)
P-101
BOOSTER PUMP NO. 1 (DUTY)
FM–14"–316SST
FM–12"–316SST
16"X12" RED (NOTE 1)
FM–12"–DI
FM–16"–DI

20"X14" TEE–316SST
FM–14"–PV (N.C.)
BF–14"–316SST
BLND–14"–FLG–316SST

PLUG–12"–316SST
FM–12"–316SST
FM–12"–DI
16"X12" RED
FM–16"–PV (N.C.)
FM–16"–DI
PLUG–20"–DI
FM–16"–PVC (SEE NOTE 3)
20"X16" TEE–DI
FUTURE BOOSTER PUMP NO. 3

FM–12"–DI
FM–12"–PV (N.O.)
FM–12"–PVC (SEE NOTE 3)
20"X12" TEE–DI
FM–20"–PVC
FM–16"–PV (N.O.)
FM–16"–PVC (SEE NOTE 3)
20"X16" TEE–DI

FROM UPSTREAM FORCE MAIN/ COLLECTION SYSTEM
FM–20"–PVC
PLUG–20"–DI
20"X16" TEE–DI
FM–20"–PV (N.O.)
20"x12" TEE 12" PV (NC) 12" CAMLOCK

NOTES:

1. COORDINATE ADAPTER AND REDUCER SIZE WITH PUMP MANUFACTURER FOR THE SUCTION AND DISCHARGE PIPING.
2. FOR EACH PAIR OF REDUNDANT SIGNALS, EACH INPUT SHALL BE LANDED ON A DIFFERENT INPUT MODULE IN THE PLC.
3. BELOW GRADE PIPING TRANSITIONS FROM PVC TO DUCTILE IRON BELOW PUMP STATION SLAB.

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

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DRAWN BY: R. CHARITY
SHEET CHK'D BY: W. WHITMORE
CROSS CHK'D BY: D. UBERT
APPROVED BY: W. WHITMORE
DATE: JANUARY 2021

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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

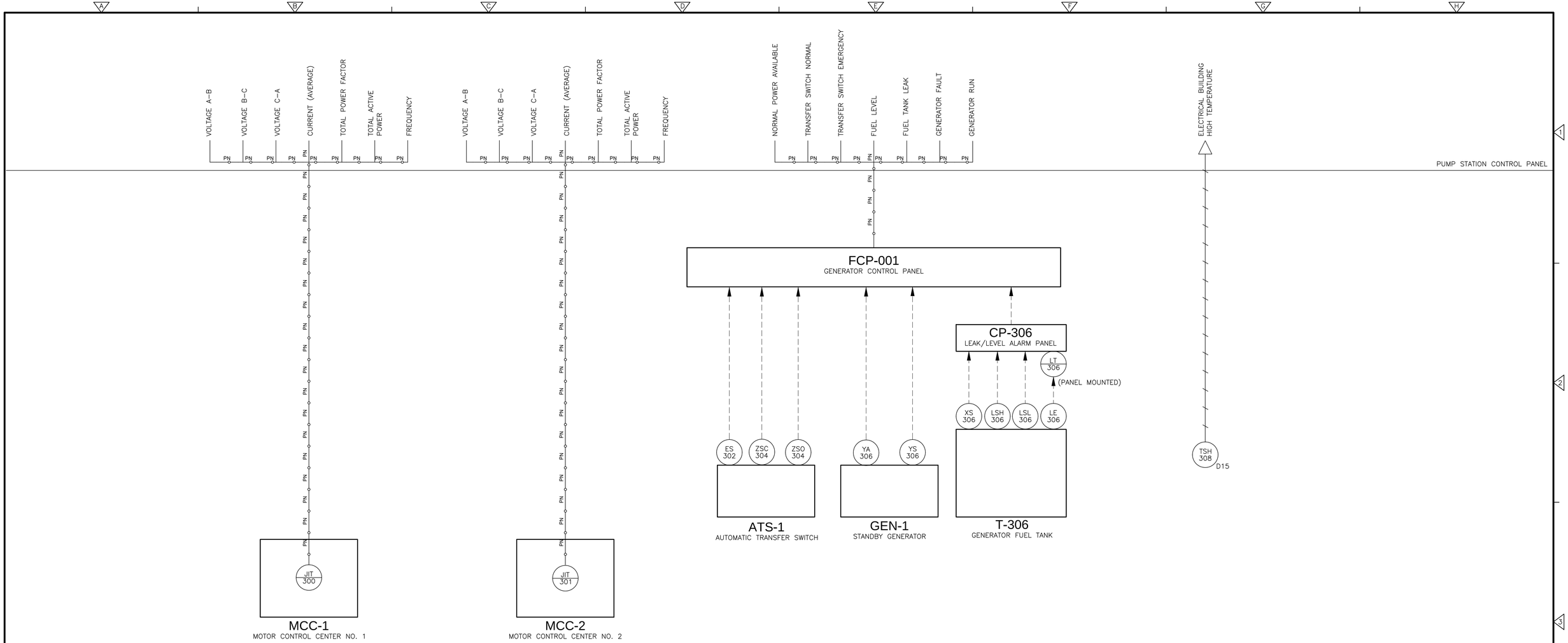
PROCESS & INSTRUMENTATION DIAGRAM
ROBENA ROAD BOOSTER PUMP STATION

DATE:
WILLIAM SCOTT WHITMORE
PE NO. 58215

PROJECT NO. 6103–215629
FILE NAME: I004PIDI.DWG

SHEET NO.
I-4

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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

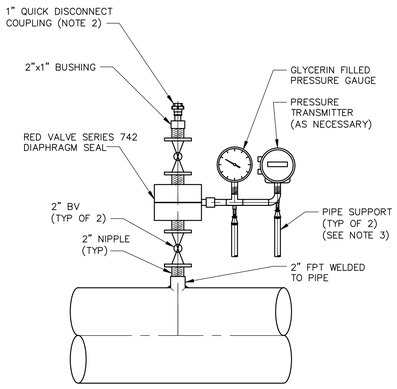
# PROCESS & INSTRUMENTATION DIAGRAM
# ROBENA ROAD ELECTRICAL

DATE:
WILLIAM SCOTT WHITMORE
PE NO. 58215

PROJECT NO. 6103–215629
FILE NAME: I005PIDI.DWG

SHEET NO.
I-5

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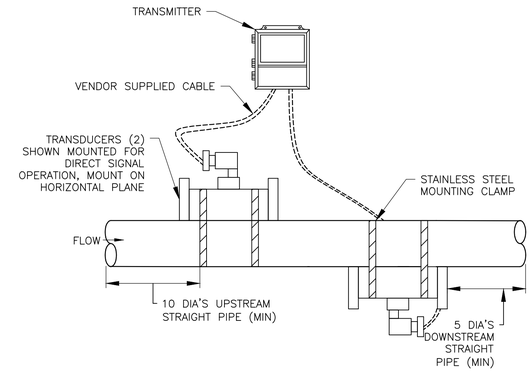



NOTES:

1. ALL PIPING, FITTINGS AND VALVES SHALL BE 316 STAINLESS STEEL.
2. CONFIRM QUICK DISCONNECT COUPLING SIZE W/ OWNER.
3. SUPPORT INSTRUMENT PIPING FROM THE SLAB W/ STAINLESS STEEL UNISTRUT, MOUNT AND CLAMP.

**ANNULAR PRESSURE SENSOR ASSEMBLY**

DETAIL A
NTS

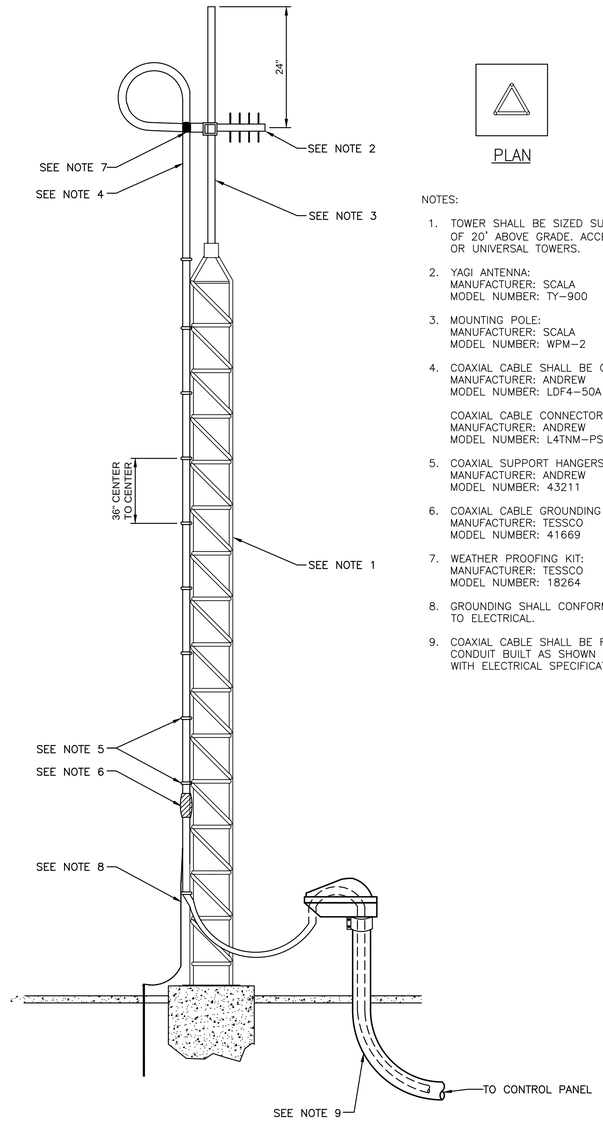



NOTES:

1. FOLLOW MANUFACTURER INSTRUCTIONS FOR INSTALLATION.

**ULTRASONIC FLOW METER (TRANSIT TIME)**

DETAIL B
NTS




**RADIO TOWER AND ANTENNA**
**(FOR POLE HEIGHTS 20 FEET AND ABOVE – NOT TO SCALE)**

DETAIL C
NTS



PLAN

NOTES:

1. TOWER SHALL BE SIZED SUCH THAT THE ANTENNA IS MOUNTED A MINIMUM OF 20' ABOVE GRADE. ACCEPTABLE MANUFACTURERS OF TOWERS ARE ROHN OR UNIVERSAL TOWERS.
2. YAGI ANTENNA:
   MANUFACTURER: SCALA
   MODEL NUMBER: TY–900
3. MOUNTING POLE:
   MANUFACTURER: SCALA
   MODEL NUMBER: WPM–2
4. COAXIAL CABLE SHALL BE ONE CONTINUOUS PIECE
   MANUFACTURER: ANDREW
   MODEL NUMBER: LDF4–50A

   COAXIAL CABLE CONNECTORS:
   MANUFACTURER: ANDREW
   MODEL NUMBER: L4TNM–PSA
5. COAXIAL SUPPORT HANGERS:
   MANUFACTURER: ANDREW
   MODEL NUMBER: 43211
6. COAXIAL CABLE GROUNDING KIT:
   MANUFACTURER: TESSCO
   MODEL NUMBER: 41669
7. WEATHER PROOFING KIT:
   MANUFACTURER: TESSCO
   MODEL NUMBER: 18264
8. GROUNDING SHALL CONFORM TO THE REQUIREMENTS OF NFPA 780. REFER TO ELECTRICAL.
9. COAXIAL CABLE SHALL BE RUN INTO A WEATHERHEAD AND UNDERGROUND CONDUIT BUILT AS SHOWN AND SEALED AGAINST MOISTURE IN CONFORMANCE WITH ELECTRICAL SPECIFICATIONS.

DATE:
WILLIAM SCOTT WHITMORE
PE NO. 58215

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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

INSTRUMENT INSTALLATION DETAILS

PROJECT NO. 6103–215629
FILE NAME: I006PIDT.DWG

SHEET NO.
I-6

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# GENERAL SITE NOTES:

1. ALL WORK AND MATERIALS SHALL BE IN COMPLETE ACCORDANCE WITH ALL RELATIVE SECTIONS OF "THE PROJECT SPECIFICATIONS" AND ALL CITY OF JACKSONVILLE AND JEA STANDARD DETAILS AND THE REQUIREMENTS OF OTHER AUTHORITIES HAVING JURISDICTION.

2. ALL WORK SHALL BE PERFORMED IN A SAFE MANNER. ALL SAFETY RULES AND GUIDELINES OF O.S.H.A. SHALL BE FOLLOWED. THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR ANY INJURIES OF HIS EMPLOYEES, AND ANY DAMAGE TO PRIVATE PROPERTY OR PERSONS DURING THE COURSE OF THIS PROJECT. ALL COSTS ASSOCIATED WITH COMPLYING WITH OSHA REGULATIONS AND THE FLORIDA TRENCH SAFETY ACT MUST BE INCLUDED IN THE CONTRACTORS BID.

3. THE PROPERTY SURVEYED HEREON APPEARS TO LIE WITHIN FLOOD ZONE "X" FROM THE FLOOD INSURANCE RATE MAPS, MAP NO. 12031C0179H, DATED JUNE 3, 2013.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE JOB SITE PRIOR TO PREPARING THE BID FOR THE PURPOSE OF FAMILIARIZING HIMSELF WITH THE NATURE AND THE EXTENT OF THE WORK AND LOCAL CONDITIONS, EITHER SURFACE OR SUBSURFACE, WHICH MAY AFFECT THE WORK TO BE PERFORMED, AND THE EQUIPMENT, LABOR AND MATERIALS REQUIRED. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF COMPLETE PERFORMANCE UNDER THIS CONTRACT. THE CONTRACTOR IS URGED TO TAKE COLOR PHOTOGRAPHS ALONG THE ROUTE OR SITE BOUNDARY OF THE PROJECT TO RECORD EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND TO AID IN RESOLVING POSSIBLE FUTURE COMPLAINTS THAT MAY OCCUR DUE TO THE CONSTRUCTION OF THE PROJECT.

5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EITHER CONDUCT ANY FIELD EXPLORATION OR ACQUIRE ANY GEOTECHNICAL ASSISTANCE REQUIRED TO ESTIMATE THE AMOUNT OF UNSUITABLE MATERIAL THAT WILL REQUIRE REMOVAL AND/OR TO ESTIMATE THE AMOUNT OF OFF SITE BORROW THAT WILL BE REQUIRED.

6. ALL IMPROVEMENTS SHOWN ARE TO BE WARRANTED BY THE CONTRACTOR TO JEA FOR A PERIOD OF TWO YEARS FROM DATE OF ACCEPTANCE BY JEA, SEE JEA STANDARD MANUAL SECTION 429.

7. ELEVATIONS SHOWN ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

8. TOPOGRAPHIC INFORMATION SHOWN HEREON TAKEN FROM MAP PROVIDED BY R.E. HOLLAND & ASSOCIATES, INC: DRAWING NO. D-12017, DATED 5/8/2017

9. REFERENCE PROJECT BENCHMARK: DESIGNATION 7215009 BM5, EL. 21.47 NAVD 88; STATE PLANE COORDINATES: Y = 2223080; X = 434686

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE PROJECT GEOTECHNICAL TESTING LABORATORY TO PERFORM MATERIAL TESTING AND SOIL TESTING IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THIS SHALL INCLUDE DENSITY TESTS IN ALL PAVEMENT AREAS AND IN ALL UTILITY TRENCHES.

11. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND INSURANCE REQUIRED FOR THE PROJECT INCLUDING RIGHT-OF-WAY PERMITS FOR WORK IN THE RIGHT-OF-WAY OR EASEMENTS.

12. THE CONTRACTOR SHALL COORDINATE THE WORK WITHIN CITY, COUNTY OR STATE RIGHT-OF-WAY WITH THE PROPER AGENCIES FOR TEMPORARY TRAFFIC CONTROL AND METHOD OF CONSTRUCTION & REPAIR.

13. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION WITH ALL OTHER CONTRACTORS. IN THE EVENT OF ANY CONFLICT WHATSOEVER, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

14. ALL CLEARING AND GRUBBING REQUIRED IN THIS PROJECT SHALL BE INCLUDED AS PART OF THIS PROJECT.

15. CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL SURVEY AND PROPERTY MONUMENTS. IF A MONUMENT IS DISTURBED, THE CONTRACTOR SHALL CONTRACT WITH THE SURVEYOR OF RECORD FOR REINSTALLATION OF THE MONUMENT.

16. ALL DEBRIS RESULTING FROM ALL ACTIVITIES SHALL BE DISPOSED OF OFF-SITE BY CONTRACTOR, IN ACCORDANCE WITH CONTRACT DOCUMENTS AND COUNTY REGULATIONS.

17. ALL EXCESS SUITABLE AND UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE BY THE CONTRACTORS UNLESS DIRECTED OTHERWISE BY ENGINEER.

18. ALL EXISTING TREES TO REMAIN SHALL BE PRESERVED AND PROTECTED.

19. BURNING OF TREES, BRUSH AND OTHER MATERIAL SHALL NOT BE ALLOWED.

20. IF DEWATERING CAPACITY REQUIRES A CONSUMPTIVE USE PERMIT (C.U.P.) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE PERMIT THROUGH THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.

21. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR APPROVAL OF ALL DEWATERING OPERATIONS PRIOR TO COMMENCEMENT.

22. THE LOCATION OF ALL EXISTING UTILITIES, STRUCTURES AND IMPROVEMENTS SHOWN ON THE DRAWINGS IS BASED ON LIMITED INFORMATION AND MAY HAVE NOT BEEN FIELD VERIFIED. THE LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL NOTIFY RESPECTIVE UTILITY OWNERS AND FIELD VERIFY LOCATIONS OF EXISTING UTILITIES AND OTHER IMPROVEMENTS PRIOR TO COMMENCING ANY CONSTRUCTION. IF THE LOCATIONS SHOWN ARE CONTRARY TO THE ACTUAL LOCATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE DISCREPANCY. THIS DISCREPANCY SHOULD BE RESOLVED PRIOR TO COMMENCING CONSTRUCTION. DURING CONSTRUCTION, ANY AND ALL DAMAGE RESULTING FROM THE CONSTRUCTION OPERATION SHALL BE REPAIRED AT NO EXPENSE TO THE OWNER.

23. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL GRADES, INVERTS AND TYPE OF MATERIAL OF EXISTING UTILITIES TO WHICH THE CONTRACTOR SHALL CONNECT.

24. FOR SEDIMENT AND EROSION CONTROL PLANS, DETAILS AND NOTES REFER TO SHEETS C-5, CD-2 AND CD-3.

25. THESE ENGINEERING DRAWINGS MAY NOT SHOW ALL OF THE STANDARD DETAILS REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY THAT THE CONSTRUCTION BE IN ACCORDANCE WITH ALL CURRENT CITY OF JACKSONVILLE AND JEA UTILITIES STANDARD DETAILS AND SPECIFICATIONS. THE CONTRACTOR SHALL OBTAIN A COPY OF JEA UTILITIES AND CITY OF JACKSONVILLE STANDARD DETAILS AND SPECIFICATIONS PRIOR TO BEGINNING CONSTRUCTION.

26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING A PERMANENT STAND OF SOD AND/OR GRASS PER CITY OF JACKSONVILLE STANDARDS AND MEETING THE NPDES FINAL STABILIZATION REQUIREMENTS.

27. UNSUITABLE MATERIALS UNDER WATER, SEWER PIPE, STORM PIPE OR STRUCTURES SHALL BE REMOVED AND REPLACED WITH SELECTED BACKFILL, PROPERLY COMPACTED.

28. UPON COMPLETION OF ALL CONSTRUCTION, PROJECT SHALL BE LEFT CLEAN.

## PAVING AND DRAINAGE NOTES:

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL MATERIALS TO THE ENGINEER FOR REVIEW AND APPROVAL, PRIOR TO FABRICATION AND/OR PURCHASE FOR CONSTRUCTION OF ANY UTILITY PIPE OR STRUCTURE.

2. FOR PAVING AND DRAINAGE DETAILS SEE SHEET NO. CD-1.

3. ALL UNDERGROUND UTILITIES MUST BE INSTALLED PRIOR TO PREPARATION OF SUBGRADE FOR PAVEMENT.

4. CURB AND GUTTER SHALL BE CITY STANDARD TYPE UNLESS OTHERWISE NOTED ON THE DRAWINGS AND SHALL BE A MIN. OF 3,000 PSI.

## AS-BUILT NOTES:

1. "AS-BUILT" DRAWINGS - DRAINAGE AS-BUILTS PROVIDED TO CITY OF JACSONVILLE AND THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT ARE REQUIRED TO BE SIGNED AND SEALED BY A FLORIDA REGISTERED LAND SURVEYOR. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTRACT WITH A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA FOR THE PREPARATION, FIELD LOCATIONS, CERTIFICATION AND SUBMITTAL OF "AS-BUILT" DRAWINGS IN ACCORDANCE WITH CURRENT COUNTY AND SJRWMD REGULATIONS. IN ADDITION TO THE DRAINAGE SYSTEM THE "AS-BUILTS" SHALL SHOW THE ELEVATIONS AND LOCATION, OF THE TOP OF BANK, WATER LEVEL, TOE OF SLOPE AND POND BOTTOM. THE POND AS BUILT SHALL ALSO SHOW PIPE SIZES & INVERTS, WEIR AND ORIFICE SIZES AND ELEVATIONS OF THE CONTROL STRUCTURE.

2. AS-BUILT WILL SHOW HORIZONTAL LOCATION OF ALL STRUCTURES TIED IN TWO DIRECTION, FINISHED FLOOR ELEVATION, PAVEMENT GRADES, AND ALL UNDERGROUND FACILITIES (HORIZONTAL AND VERTICAL).

3. AS-BUILT SHALL PROVIDE DETAILED DRAWINGS WHERE FIELD CONDITIONS REQUIRED A CHANGE FROM THAT SHOWN ON THE CONTRACT DRAWINGS.

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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: C.N. MAGPANTAY
DRAWN BY: T. PACE
SHEET CHK'D BY: C.N. MAGPANTAY
CROSS CHK'D BY: F. GRAY
APPROVED BY: S. DAVIS
DATE: JANUARY 2021

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Business Number CA 27598

JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

GENERAL NOTES

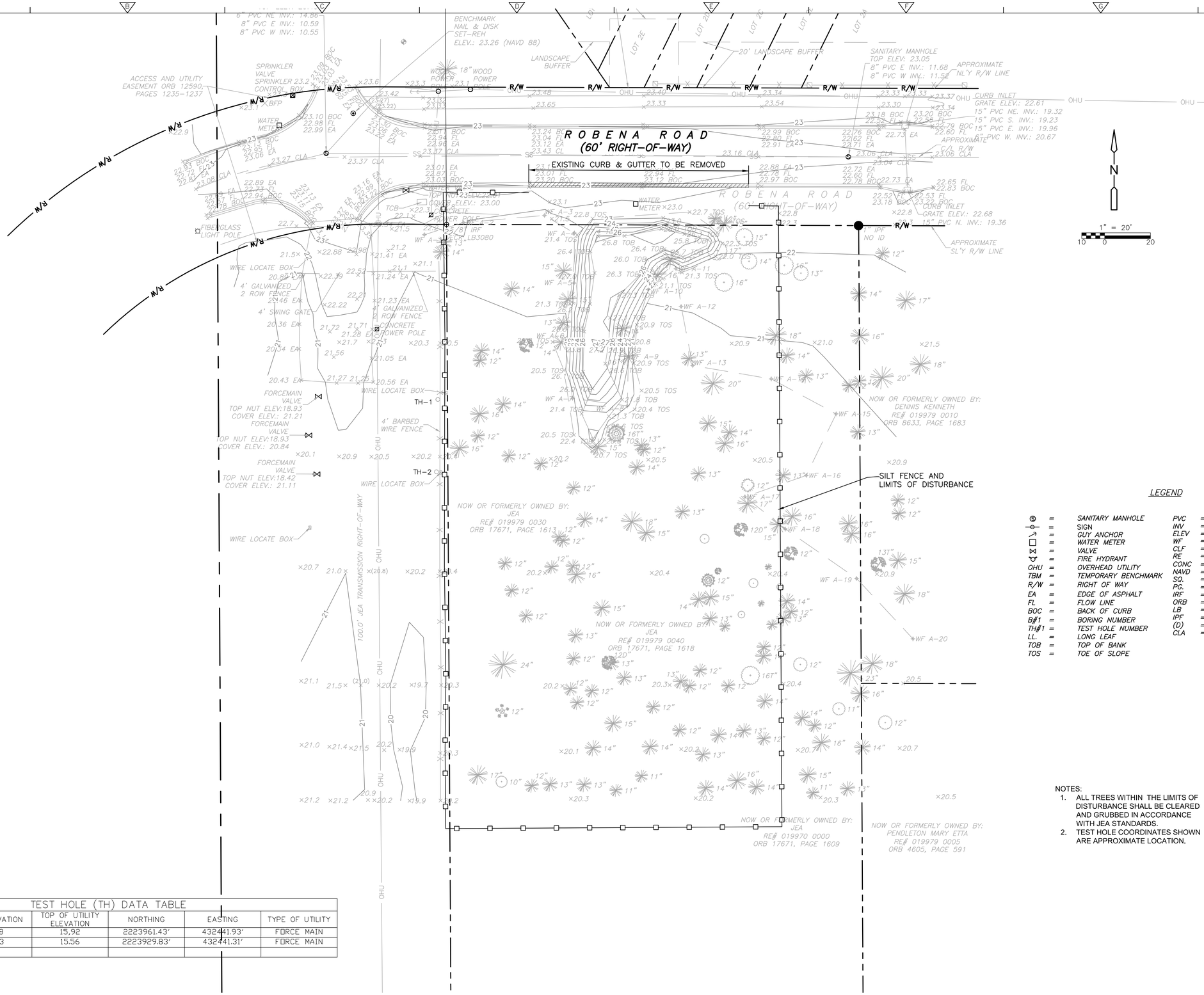
DATE:
CLARO NACU MAGPANTAY
PE NO. 60164

PROJECT NO. 6103-215629
FILE NAME:

SHEET NO.
C-1

ISSUED FOR BID

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## LEGEND

| | | | | | |
|---|---|---|---|---|---|
| ⓢ | = | SANITARY MANHOLE | PVC | = | POLYVINYL CHLORIDE |
| ⊸ | = | SIGN | INV | = | INVERT |
| ↗ | = | GUY ANCHOR | ELEV | = | ELEVATION |
| □ | = | WATER METER | WF | = | WETLAND FLAG |
| ⋈ | = | VALVE | CLF | = | CHAIN LINK FENCE |
| ♂ | = | FIRE HYDRANT | RE | = | REAL ESTATE |
| OHU | = | OVERHEAD UTILITY | CONC | = | CONCRETE |
| TBM | = | TEMPORARY BENCHMARK | NAVD | = | NORTH AMERICAN VERTICAL DATUM |
| R/W | = | RIGHT OF WAY | SQ. | = | SQUARE |
| EA | = | EDGE OF ASPHALT | PG. | = | PAGE |
| FL | = | FLOW LINE | IRF | = | IRON ROD FOUND |
| BOC | = | BACK OF CURB | ORB | = | OFFICIAL RECORDS BOOK |
| B#1 | = | BORING NUMBER | LB | = | LICENSED BUSINESS |
| TH#1 | = | TEST HOLE NUMBER | IPF | = | IRON PIPE FOUND |
| LL | = | LONG LEAF | (D) | = | DEED |
| TOB | = | TOP OF BANK | CLA | = | CENTER LINE OF ASPHALT |
| TOS | = | TOE OF SLOPE | | | |

| | | | |
|---|---|---|---|
| | = | BAY TREE | |
| | = | MAGNOLIA TREE | |
| | = | SWEETGUM TREE | |
| | = | OAK TREE | |
| | = | CAMPHER TREE | |
| | = | CYPRESS TREE | |
| | = | LONGLEAF PINE TREE | |

NOTES:
1. ALL TREES WITHIN THE LIMITS OF DISTURBANCE SHALL BE CLEARED AND GRUBBED IN ACCORDANCE WITH JEA STANDARDS.
2. TEST HOLE COORDINATES SHOWN ARE APPROXIMATE LOCATION.

### TEST HOLE (TH) DATA TABLE

| TEST HOLE ID | TOP ELEVATION | TOP OF UTILITY ELEVATION | NORTHING | EASTING | TYPE OF UTILITY |
|---|---|---|---|---|---|
| TH-1 | 20.08 | 15.92 | 2223961.43' | 432441.93' | FORCE MAIN |
| TH-2 | 20.23 | 15.56 | 2223929.83' | 432441.31' | FORCE MAIN |
| | | | | | |

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: C.N. MAGPANTAY
DRAWN BY: T. PACE
SHEET CHK'D BY: C.N. MAGPANTAY
CROSS CHK'D BY: F. GRAY
APPROVED BY: S. DAVIS
DATE: JUNUARY 2021

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Business Number CA 27598

JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

# TOPOGRAPHIC SURVEY AND DEMOLITION PLAN

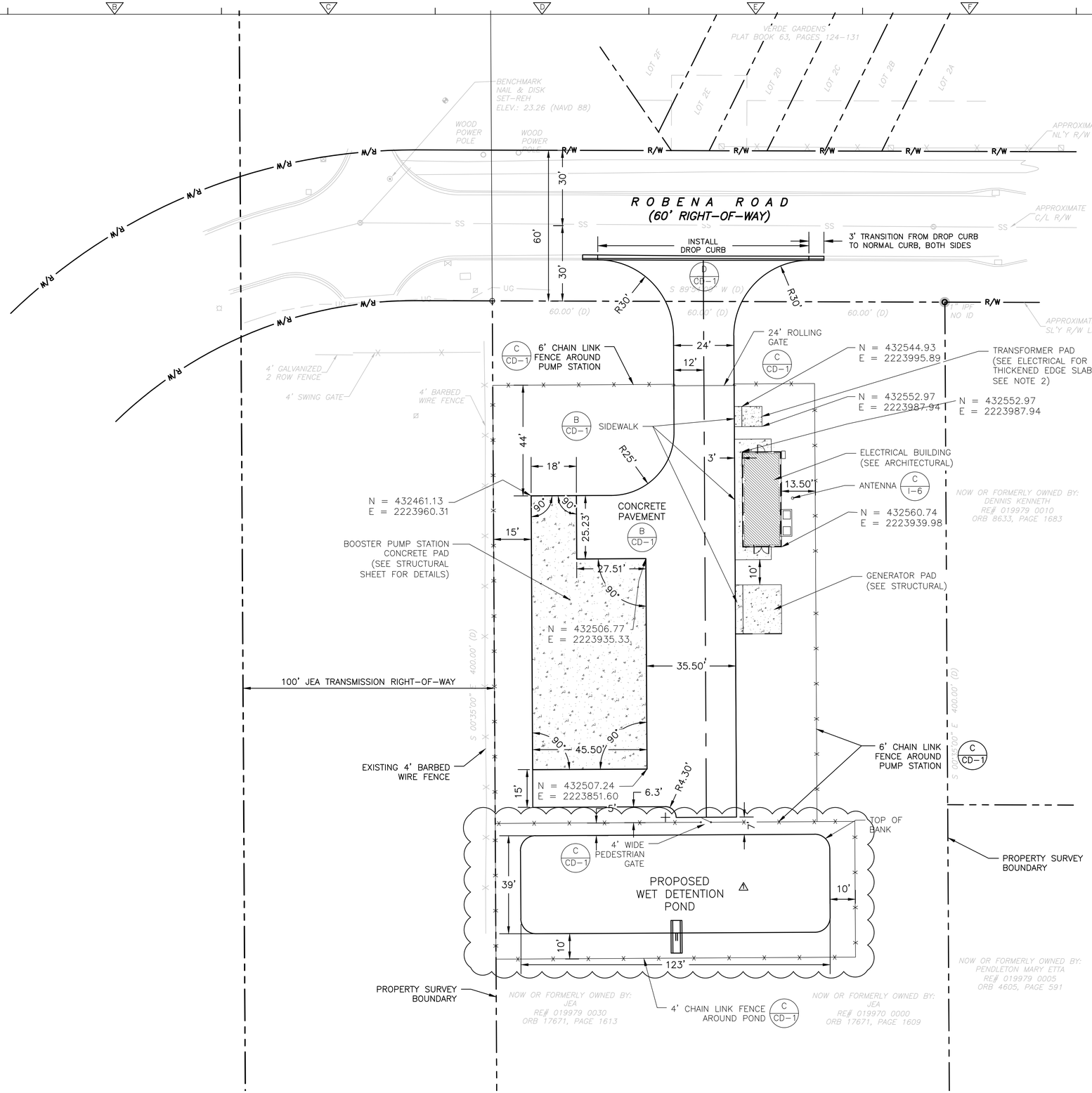
DATE:
CLARO NACU MAGPANTAY
PE NO. 60164

PROJECT NO. 6103-215629
FILE NAME:

SHEET NO.
C-2

ISSUED FOR BID

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NOTES:
1. CONTRACTOR SHALL ENSURE THAT THE SITE REMAINS SECURE AT ALL TIMES. SITE SHALL BE SECURED AT THE END OF EACH WORK DAY.
2. CONTRACTOR SHALL COORDINATE SIZE OF THE TRANSFORMER PAD WITH THE ELECTRICAL SERVICE PROVIDER.

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| 1 | 9–2–20 | CNM | FEG | POND CHANGED FROM DRY TO WET DETENTION |

DESIGNED BY: C.N. MAGPANTAY
DRAWN BY: T. PACE
SHEET CHK'D BY: C.N. MAGPANTAY
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APPROVED BY: S. DAVIS
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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

SITE GEOMETRY PLAN

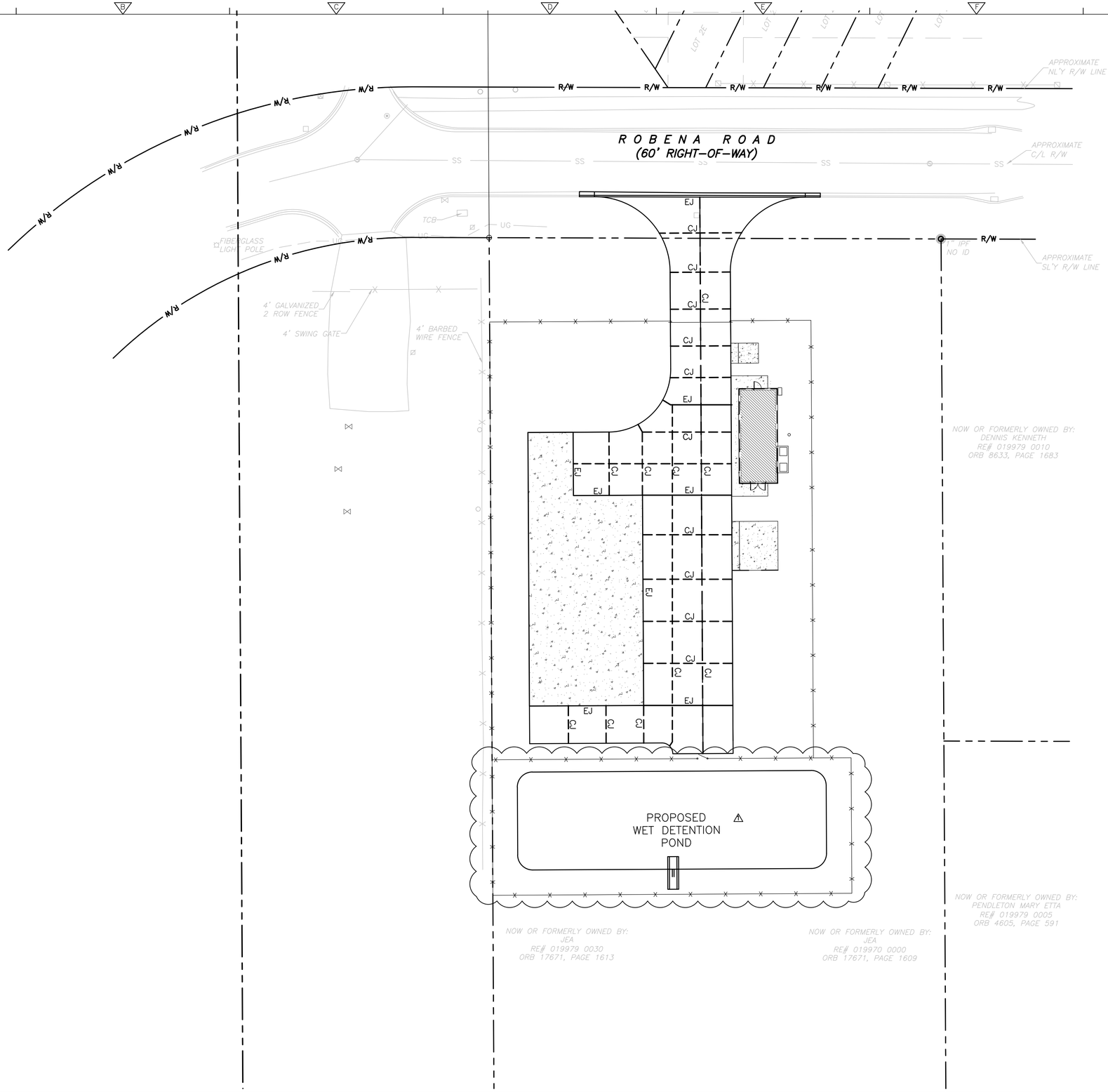
DATE:
CLARO NACU MAGPANTAY
PE NO. 60164

PROJECT NO. 6103–215629
FILE NAME:

SHEET NO.
C-3

ISSUED FOR BID

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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| ⚠ | 9-2-20 | CNM | FEG | POND CHANGED FROM DRY TO WET DETENTION |

DESIGNED BY: C.N. MAGPANTAY
DRAWN BY: T. PACE
SHEET CHK'D BY: C.N. MAGPANTAY
CROSS CHK'D BY: F. GRAY
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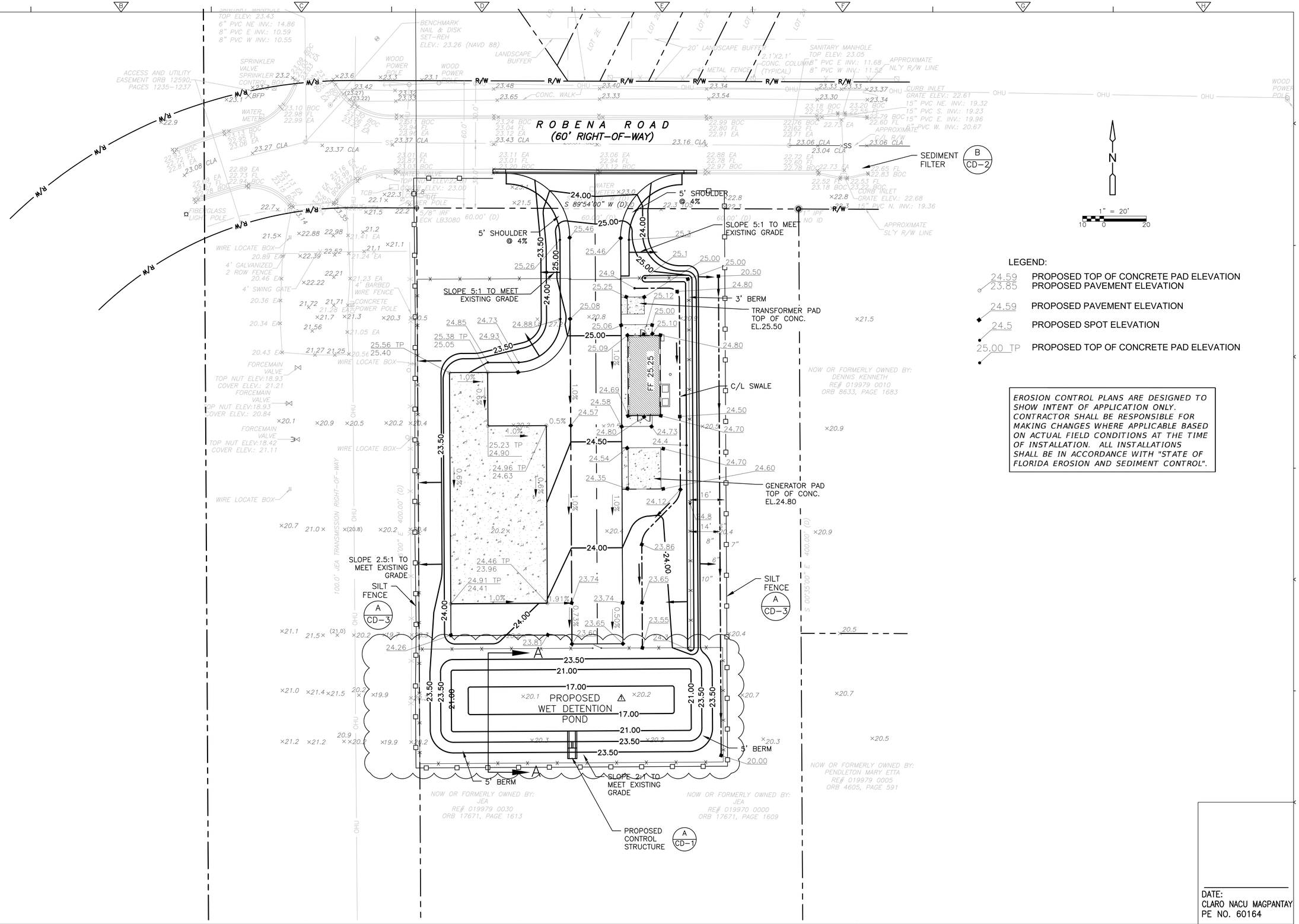
CONCRETE PAVEMENT JOINTS PLAN

DATE:
CLARO NACU MAGPANTAY
PE NO. 60164

PROJECT NO. 6103-215629
FILE NAME:

SHEET NO.
C-4

ISSUED FOR BID




LEGEND:

- 24.59 / 23.85 — PROPOSED TOP OF CONCRETE PAD ELEVATION / PROPOSED PAVEMENT ELEVATION
- 24.59 — PROPOSED PAVEMENT ELEVATION
- 24.5 — PROPOSED SPOT ELEVATION
- 25.00 TP — PROPOSED TOP OF CONCRETE PAD ELEVATION

*EROSION CONTROL PLANS ARE DESIGNED TO SHOW INTENT OF APPLICATION ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING CHANGES WHERE APPLICABLE BASED ON ACTUAL FIELD CONDITIONS AT THE TIME OF INSTALLATION. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH "STATE OF FLORIDA EROSION AND SEDIMENT CONTROL".*

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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| 1 | 9-2-20 | CNM | FEG | POND CHANGED FROM DRY TO WET DETENTION |

DESIGNED BY: C.N. MAGPANTAY
DRAWN BY: T. PACE
SHEET CHK'D BY: C.N. MAGPANTAY
CROSS CHK'D BY: F. GRAY
APPROVED BY: S. DAVIS
DATE: JANUARY 2021

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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

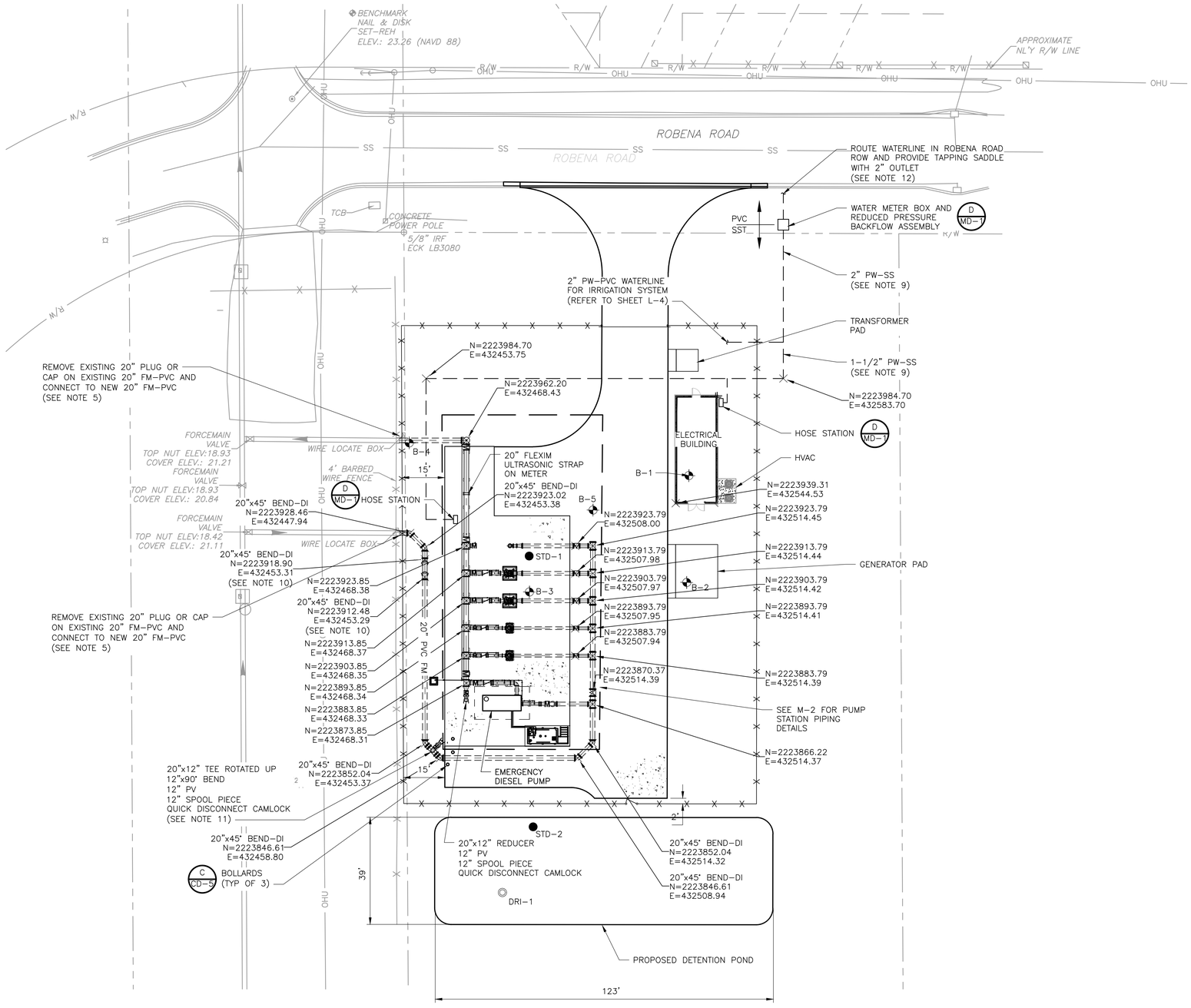
PAVING, GRADING, DRAINAGE AND EROSION CONTROL PLAN

DATE:
CLARO NACU MAGPANTAY
PE NO. 60164

PROJECT NO. 6103-215629
FILE NAME:

SHEET NO.
C-5

ISSUED FOR BID




**NOTES:**

1. ALL ABOVE GRADE PIPING SHALL BE FLANGED 316–SST.
2. ALL BELOW GRADE PIPING SHALL BE PVC WITH DUCTILE IRON FITTINGS.
3. ALL BELOW GRADE PIPING JOINTS, VALVES, AND FITTINGS SHALL BE RESTRAINED.
4. ALL BELOW GRADE VALVES SHALL BE INSTALLED WITH VALVE BOXES.
5. REFER TO SPECIFICATION 01014 FOR CONSTRUCTION SEQUENCE REQUIREMENTS. ONLY JEA STAFF SHALL OPERATE VALVES.
6. COORDINATE FINAL ANTENNA LOCATION WITH ENGINEER AND OWNER.
7. ALL YARD PIPING SHALL BE RESTRAINED FOR IT'S ENTIRE LENGTH.
8. ALL UNDERGROUND FORCE MAIN SHALL BE INSTALLED WITH LOCATOR WIRE. SEE DETAIL F SHEET CD–4.
9. REFER TO SHEET L–4 FOR IRRIGATION WATERLINES AND METER. TEES TO HOSE STATIONS SHALL BE 1–1/2" DOWNSTREAM OF IRRIGATION MAIN 2" WATERLINE.
10. CENTERLINE ELEVATION 19' FOR BELOW GRADE PIPING DOWNSTREAM OF 45° BEND.
11. 12" CONNECTION SHALL BE MINIMUM 3'–0" ABOVE GRADE TO PIPING CENTERLINE.
12. CONTRACTOR SHALL PROVIDE PAVEMENT REPAIR AS REQUIRED TO MATCH EXISTING ROADWAY CONDITIONS.
13. ALL BELOW GRADE PIPING BENEATH PUMP STATION SLAB SHALL BE DUCTILE IRON.

DATE:
JONATHAN Z GOLDMAN
PE NO. PE 0048925

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: B. COGGER
DRAWN BY: A. NUNES
SHEET CHK'D BY: B. WILLIAMS
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: J. GOLDMAN
DATE: JANUARY 2021

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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

YARD PIPING PLAN

PROJECT NO. 6103–215629
FILE NAME: C006STPL.DWG

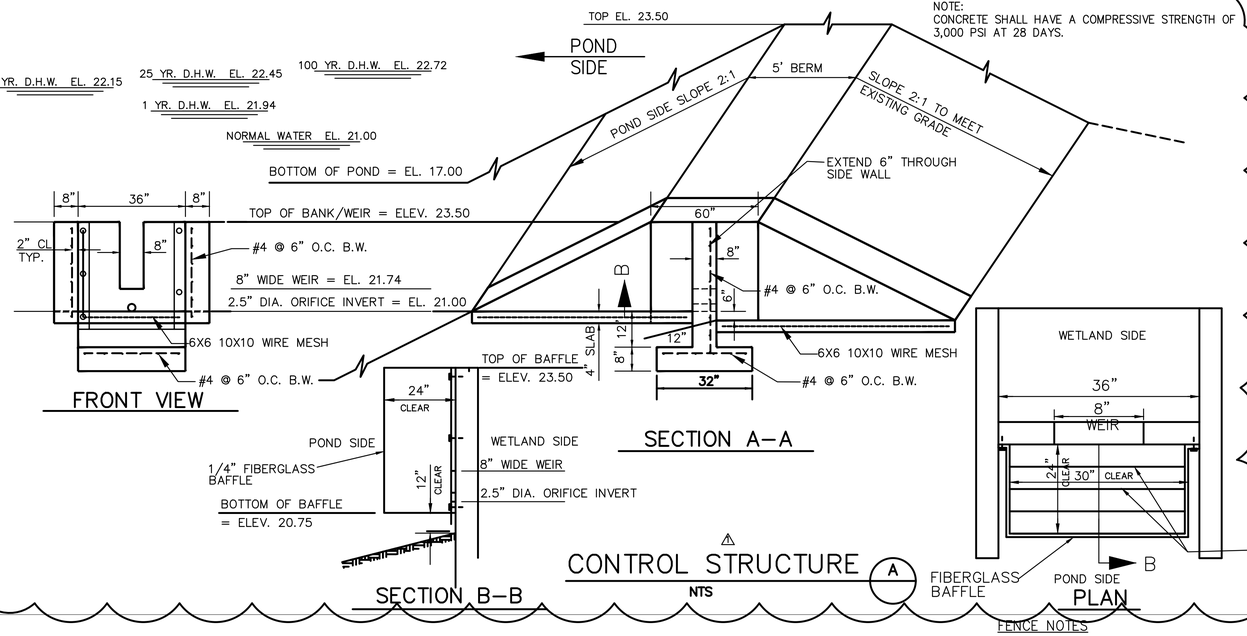
SHEET NO.
C-6

ISSUED FOR BID

XREFs: [CWP01ST, MWP001PS, CDMS_2436, 12017-CHANGE-Robena, SWZ0001PP, PWZ000FS, AWZ000EL- 2D] Images: []
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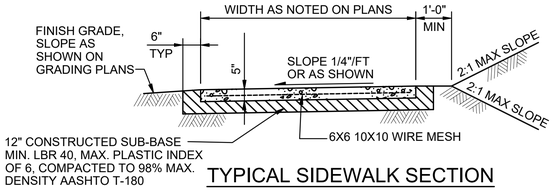
NOTE:
CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.



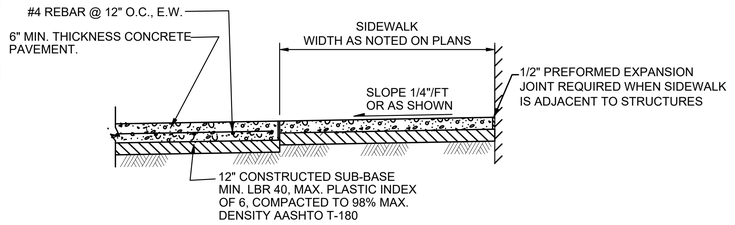

## CONTROL STRUCTURE

A

NTS




## TYPICAL SIDEWALK SECTION




## TYPICAL PAVEMENT AND SIDEWALK SECTION

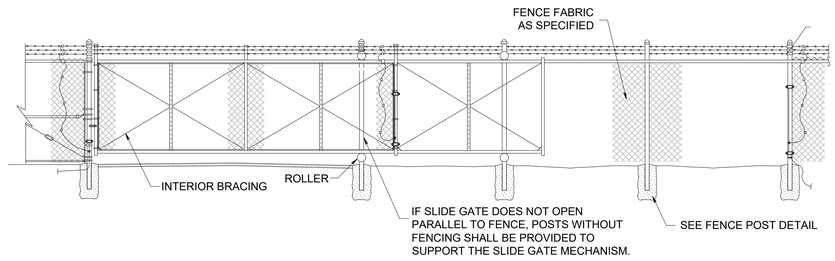
## PAVEMENT DETAILS

B

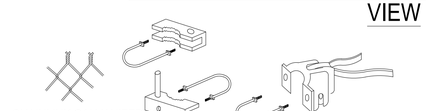
NTS

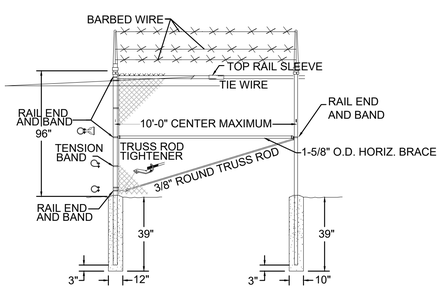
CONCRETE PAVEMENT NOTES:

1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.
2. (IMPORTED) SOIL USED FOR SUB–BASE SHALL BE FREE OF HEAVY CLAY, SILTS, STONES, PLANT ROOTS OR OTHER FOREIGN MATERIAL GREATER THAN 1½" IN DIAMETER IN ORDER TO ACHIEVE ADEQUATE AND UNIFORM COMPACTION.
3. CONTRACTION JOINTS SHALL BE FORMED OR SAWED IMMEDIATELY AFTER THE FINAL FINISH USING AN EARLY ENTRY SYSTEM SUCH AS THE SOFF–CUT SYSTEM.
4. ALL JOINTS MUST BE COMPLETED WITHIN 12 HOURS FROM TIME OF CONCRETE PLACEMENT.
5. CURE CONCRETE IMMEDIATELY AFTER FINISHING OPERATION IS COMPLETED BY USING ONE OF THE FOLLOWING METHODS: WATER, PIGMENTED WATER BASED CURING COMPOUND OR VISQUEEN AND BURLAP.
6. CONCRETE JOINT PATTERN, SEE ON SHEET NO. C–4.

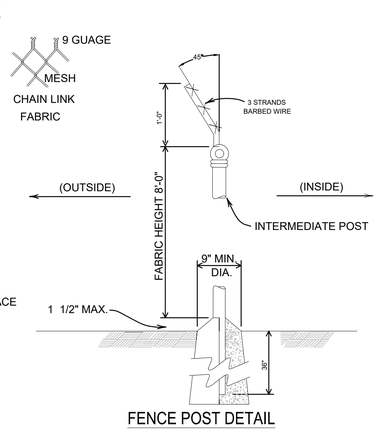



## SINGLE SLIDING VEHICLE GATE DETAIL, ELEVATION VIEW




CHAIN-LINK FENCE DETAIL




FENCE POST DETAIL

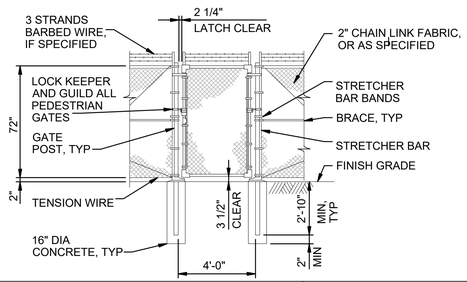
## FENCE AND GATE DETAILS

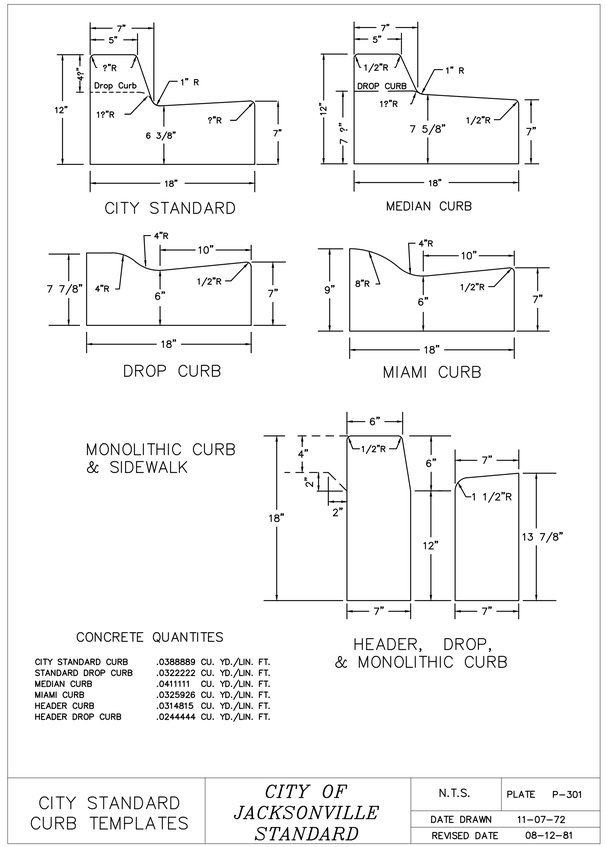
C

NTS

FENCE NOTES

1) FENCE TO BE INSTALLED AS INDICATED ON SITE PLAN.
2) GATE POST TO BE 4" O.D. GALVANIZED STEEL PIPE. CORNER POST TO BE 3" O.D. GALVANIZED STEEL PIPE. LINE POST TO BE 2 1/2" O.D. GALVANIZED STEEL PIPE.
3) ALL FENCE SHALL BE GROUNDED AT LEAST EVERY 1000 FT.
4) EVERY FENCE SHALL HAVE AT LEAST ONE GROUND.
5) GROUND SHALL BE INSTALLED AT EVERY POINT WHERE POWER LINES OF 2300 VOLTS OR MORE CROSS FENCE AND AN ADDITIONAL GROUND 150 FT. EACH SIDE OF THIS POINT.
6) GROUND WIRE SHOULD BE TIED TO STEEL FENCE POSTS AT 2 FT. INTERVALS.
7) BONDING WIRE BETWEEN GATE POST NEED NOT BE INSTALLED WHERE EXISTING ROAD PAVING OR RAILROAD TRACKS WOULD MAKE INSTALLATION IMPRACTICAL.
8) EMBEDDED CONCRETE PORTION OF FENCE POST SHALL HAVE MASTIC SEAL COATING TO A MINIMUM OF 6" ABOVE FINISH GRADE.
9) THREE STRANDS OF BARB WIRE SHALL BE PROVIDED ALONG THE TOP OF THE FENCE.
10) LINE POST SHALL BE SPACES NO GREATER THAT 10 FEET ON CENTERS.
11) BLACK, PVC COATED GALVANIZED STEEL POSTS SHALL BE USED WHERE BLACK FENCE FABRIC IS CALLED FOR.
12) BLACK PVC COATED BARB WIRE AND SUPPORTS SHALL BE USED WHERE BLACK FENCE FABRIC IS CALLED FOR.
13) ALL HARDWARE, EXCEPT BOLTS, BLACK, SHALL BE BLACK PVC COATED WHERE BLACK FENCE FABRIC IS CALLED FOR. BOLTS SHALL BE HOT DIPPED GALVANIZED.
14) FENCE CONSTRUCTION SHALL BE IN ACCORDANCE WITH JEA STANDARDS SECTION 492.




CONCRETE QUANTITES

| | | |
|---|---|---|
| CITY STANDARD CURB | .0388889 | CU. YD./LIN. FT. |
| STANDARD DROP CURB | .0322222 | CU. YD./LIN. FT. |
| MEDIAN CURB | .0411111 | CU. YD./LIN. FT. |
| MIAMI CURB | .0325926 | CU. YD./LIN. FT. |
| HEADER CURB | .0314815 | CU. YD./LIN. FT. |
| HEADER DROP CURB | .0244444 | CU. YD./LIN. FT. |

| | | | |
|---|---|---|---|
| CITY STANDARD CURB TEMPLATES | *CITY OF JACKSONVILLE STANDARD* | N.T.S. | PLATE P–301 |
| | | DATE DRAWN | 11–07–72 |
| | | REVISED DATE | 08–12–81 |

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| 1 | 9–2–20 | CNM | FEG | POND CHANGED FROM DRY TO WET DETENTION |

DESIGNED BY: C.N. MAGPANTAY
DRAWN BY: T. PACE
SHEET CHK'D BY: C.N. MAGPANTAY
CROSS CHK'D BY: F. GRAY
APPROVED BY: S. DAVIS
DATE: JANUARY 2021

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PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

PAVING, DRAINAGE AND FENCE DETAILS

DATE:
CLARO NACU MAGPANTAY
PE NO. 60164

PROJECT NO. 6103–215629
FILE NAME:

SHEET NO.
CD-1

ISSUED FOR BID

## EROSION CONTROL NOTES:

1. IT IS THE CONTRACTORS RESPONSIBILITY TO IMPLEMENT THE EROSION AND TURBIDITY CONTROLS AS SHOWN ON THE PLANS. IT IS ALSO THE CONTRACTORS RESPONSIBILITY TO ENSURE THESE CONTROLS ARE PROPERLY INSTALLED, MAINTAINED AND FUNCTIONING PROPERLY TO PREVENT TURBID OR POLLUTED WATER FROM LEAVING THE PROJECT SITE. THE CONTRACTOR WILL ADJUST THE EROSION AND TURBIDITY CONTROLS SHOWN ON THE PLANS AND ADD ADDITIONAL CONTROL MEASURES, AS REQUIRED,TO ENSURE THE SITE MEETS ALL FEDERAL, STATE AND LOCAL EROSION AND TURBIDITY CONTROL REQUIREMENTS. THE FOLLOWING BEST MANAGEMENT PRACTICES WILL BE IMPLEMENTED BY THE CONTRACTOR AS REQUIRED BY THE PLANS AND AS REQUIRED BY THE REGULATORY AGENCIES.

2. SEDIMENT BASINS AND TRAPS, PERIMETER DITCHES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP BEFORE ANY LAND–DISTURBING TAKES PLACE.

3. ALL SEDIMENT CONTROL MEASURES ARE TO BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND BE CONSTRUCTED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON BALANCE OF SITE. PERIMETER SEDIMENT BARRIERS SHALL BE CONSTRUCTED TO PREVENT SEDIMENT OR TRASH FROM FLOWING OR FLOATING ON TO ADJACENT PROPERTIES.

4. DURING CONSTRUCTION OF THE PROJECT SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTIONS AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

5. AFTER ANY SIGNIFICANT RAINFALL EVENT > 0.5 INCHES SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED FOR INTEGRITY. ANY DAMAGED DEVICES SHALL BE REPAIRED IMMEDIATELY.

6. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURE.

7. WHENEVER WATER SEEPS FROM A SLOPE FACE ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

8. SEDIMENT WILL BE PREVENTED FROM ENTERING ANY STORM DRAIN SYSTEM, DITCH, OR CHANNEL. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT–LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT. GRATE INLETS AND CURB INLETS SHALL BE PROTECTED TO PREVENT THE INFLOW OF SEDIMENT.

9. BEFORE TEMPORARY OR NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

10. WORK IN A LIVE WATER COURSE IS NOT ANTICIPATED AND MUST BE APPROVED BY THE ENGINEER AND ALL APPLICABLE REGULATORY AGENCIES. IN THE EVENT THAT WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENRICHMENT. CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

11. STOCKPILING MATERIAL: NO EXCAVATED MATERIAL SHALL BE STOCKPILED IN SUCH A MANNER AS TO DIRECT RUNOFF DIRECTLY OFF THE PROJECT SITE INTO ANY ADJACENT WATER BODY OR STORM WATER COLLECTION FACILITY.

12. EXPOSED AREA LIMITATION: THE SURFACE AREA OF OPEN, RAW ERODIBLE SOIL EXPOSED BY CLEARING AND GRUBBING OPERATIONS OR EXCAVATION AND FILLING OPERATIONS SHALL NOT EXCEED 1 ACRE. IF THE TOTAL AREA TO BE CLEARED IS EQUAL TO, OR EXCEEDS ONE (1) ACRE, THEN THE CONTRACTOR WILL BE RESPONSIBLE FOR PREPARING A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH EPA'S NPDES REGULATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR SUBMITTING A NOTICE ON INTENT (NOI) TO EPA FORTY–EIGHT (48) HOURS PRIOR TO COMMENCING CONSTRUCTION. IF REQUIRED THE COST FOR ALL WORK AND MATERIALS NECESSARY FOR THE PREPARATION, MODIFICATION, AND SUBMITTAL OF THE SWPPP AND IMPLEMENTATION DURING CONSTRUCTION SHALL BE INCLUDED IN THE CONTRACTORS BASE BID AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

13. TEMPORARY SEEDING: AREAS OPENED BY CONSTRUCTION OPERATIONS AND THAT ARE NOT ANTICIPATED TO BE RE–EXCAVATED OR DRESSED AND RECEIVE FINAL GRASSING TREATMENT WITHIN 30 DAYS SHALL BE SEEDED WITH A QUICK GROWING GRASS SPECIES WHICH WILL PROVIDE AN EARLY COVER DURING THE SEASON IN WHICH IT IS PLANTED AND WILL NOT LATER COMPETE WITH THE PERMANENT GRASSING.

14. TEMPORARY SEEDING AND MULCHING: SLOPES STEEPER THAN 6:1 THAT FALL WITHIN THE CATEGORY ESTABLISHED IN PARAGRAPH 12 ABOVE SHALL RECEIVE A LOOSE MEASURE OF MULCH MATERIAL CUT INTO THE SOIL OF THE SEEDED AREA ADEQUATE TO PREVENT MOVEMENT OF SEED AND MULCH.

15. TEMPORARY GRASSING: THE SEEDED OR SEEDED AND MULCHED AREA(S) SHALL BE ROLLED AND WATERED OR HYDROMULCHED OR OTHER SUITABLE METHODS IF REQUIRED TO ASSURE OPTIMUM GROWING CONDITIONS FOR THE ESTABLISHMENT OF A GOOD GRASS COVER. TEMPORARY GRASSING SHALL BE THE SAME MIX & AMOUNT REQUIRED FOR PERMANENT GRASSING IN THE CONTRACT SPECIFICATIONS.

16. TEMPORARY REGRASSING : IF, AFTER 14 DAYS FROM SEEDING, THE TEMPORARY GRASSED AREAS HAVE NOT ATTAINED A MINIMUM OF 75 PERCENT GOOD GRASS COVER, THE AREA WILL BE REWORKED AND ADDITIONAL SEED APPLIED SUFFICIENT TO ESTABLISH THE DESIRED VEGETATIVE COVER.

17. MAINTENANCE: ALL FEATURES OF THE PROJECT DESIGNED AND CONSTRUCTED TO PREVENT EROSION AND SEDIMENT SHALL BE MAINTAINED DURING THE LIFE OF THE CONSTRUCTION SO AS TO FUNCTION AS THEY WERE ORIGINALLY DESIGNED AND CONSTRUCTED.

18. PERMANENT EROSION CONTROL: THE EROSION CONTROL FACILITIES OF THE PROJECT SHOULD BE DESIGNED TO MINIMIZE THE IMPACT ON THE OFFSITE FACILITIES.

19. PERMANENT SEEDING: ALL AREAS WHICH HAVE BEEN DISTURBED BY CONSTRUCTION WILL, AS A MINIMUM, BE SEEDED. THE SEEDING MIX MUST PROVIDE BOTH LONG–TERM VEGETATION AND RAPID GROWTH SEASONAL VEGETATION. SLOPES STEEPER THAN 4:1 SHALL BE SEEDED AND MULCHED OR SODDED.

20. ALL SLOPES STEEPER THAN 3:1 SHALL BE SODDED WITH STAKED SOD.

21. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON–SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AND SWALES AT COMPLETION OF CONSTRUCTION.

22. THE SITE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED AND FINAL ACCEPTANCE FROM ENGINEER HAS BEEN RECEIVED.

23. CONTRACTOR SHALL INSURE THAT ALL DRAINAGE STRUCTURES, PIPES, ETC. ARE CLEANED OUT AND WORKING PROPERLY AT TIME OF ACCEPTANCE.

24. WIRE MESH SHALL BE LAID OVER THE DROP INLET SO THAT THE WIRE EXTENDS A MINIMUM OF 1 FOOT BEYOND EACH SIDE OF THE INLET STRUCTURE. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2–INCH OPENINGS SHALL BE USED. IF MORE THAN ONE STRIP OF MESH IS NECESSARY, THE STRIPS SHALL BE OVERLAPPED.

25. FDOT NO. 1 COARSE AGGREGATE SHALL BE PLACED OVER THE WIRE MESH AS INDICATED IN THE DETAIL FOR A GRAVEL INLET SEDIMENT TRAP. THE DEPTH OF STONE SHALL BE AT LEAST 12 INCHES OVER THE ENTIRE INLET OPENING. THE STONE SHALL EXTEND BEYOND THE INLET OPENING AT LEAST 18 INCHES ON ALL SIDES.

26. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONES MUST BE PULLED AWAY FROM THE INLET, CLEANED AND REPLACED.

27. BALES SHALL BE EITHER WIRE–BOUND OR STRING–TIED WITH THE BINDINGS ORIENTED AROUND THE SIDES RATHER THAN OVER AND UNDER THE BALES.

28. BALES SHALL BE PLACED LENGTHWISE IN A SINGLE ROW SURROUNDING THE INLET, WITH THE ENDS OF ADJACENT BALES PRESSED TOGETHER.

29. THE FILTER BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 8 INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AND COMPACTED AGAINST THE FILTER BARRIER.

30. EACH BALE SHALL BE SECURELY ANCHORED AND HELD IN PLACE BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALE.

31. LOOSE STRAW SHOULD BE WEDGED BETWEEN BALES TO PREVENT WATER FROM ENTERING BETWEEN BALES.

32. STRAW BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

33. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES AND NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BALES SHALL BE ACCOMPLISHED PROMPTLY. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE EROSION AND SEDIMENT CONTROLS ARE NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

34. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.

35. SEDIMENT DEPOSITS SHOULD BE REMOVED FROM ALL EROSION AND SEDIMENT CONTROLS AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE–THIRD THE HEIGHT OF THE BARRIER.

36. SEDIMENT SHALL BE REMOVED FROM INLEY SEDIMENT TRAPS AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BEDEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.

37. SOD SHALL BE PLACED AS DIRECTED BY THE ENGINEER IN AREAS WHICH MAY REQUIRE IMMEDIATE EROSION PROTECTION TO ENSURE WATER QUALITY STANDARDS ARE MAINTAINED.

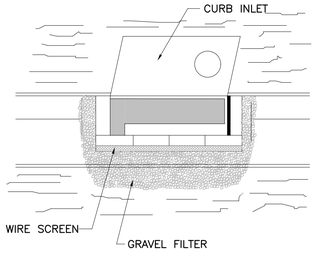
38. IF REQUIRED, A DEWATERING PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ANY DEWATERING. DEWATERING PUMPS SHALL NOT EXCEED THE CAPACITY OF THAT WHICH REQUIRES A CONSUMPTIVE USE PERMIT (CUP) FROM THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT. IF REQUIRED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN THE PERMIT. THE APPLICATION FOR THE CUP SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO THE REGULATORY AGENCY.

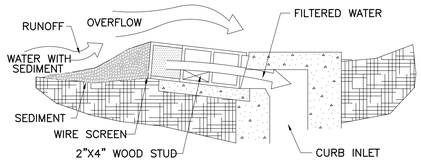
39. IN THE EVENT THAT A CONSUMPTIVE USE PERMIT (CUP) IS REQUIRED THE COST OF PREPARATION, SUBMITTAL, AND COMPLIANCE SHALL BE PART OF THE CONTRACT AT NO ADDITIONAL COST TO THE OWNER.

40. ANY DISCHARGE FROM DEWATERING ACTIVITY SHALL BE FILTERED AND CONVEYED TO THE OUTFALL IN A MANNER WHICH PREVENTS EROSION AND TRANSPORTATION OF SUSPENDED SOLIDS TO THE RECEIVING OUTFALL.

41. THIS PLAN INDICATES THE MINIMUM EROSION AND SEDIMENT MEASURES REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE RULES, REGULATIONS AND WATER QUALITY GUIDELINES AND MAY NEED TO INSTALL ADDITIONAL CONTROLS.

42. THE CONTRACTOR SHALL BE REQUIRED TO RESPOND TO ALL WATER MANAGEMENT DISTRICT INQUIRIES RELATIVE TO COMPLIANCE OF EROSION AND SEDIMENTATION CONTROL. THE COST OF THIS COMPLIANCE SHALL BE PART OF THE CONTRACT.



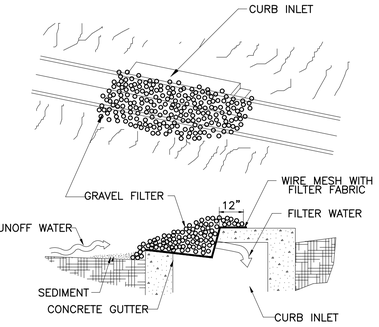




SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

### BLOCK & GRAVEL CURB INLET SEDIMENT FILTER

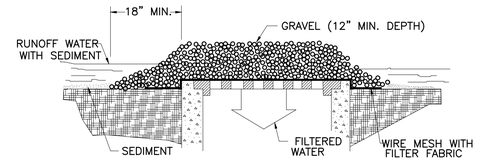
DETAIL A
N.T.S.




GRAVEL CURB INLET SEDIMENT FILTER

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.




GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCEN– TRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

### GRAVEL INLET SEDIMENT TRAP

DETAIL B
N.T.S.

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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

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DRAWN BY: T. PACE
SHEET CHK'D BY: C.N. MAGPANTAY
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APPROVED BY: S. DAVIS
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CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

DATE:
CLARO NACU MAGPANTAY
PE NO. 60164

PROJECT NO. 6103–215629
FILE NAME:

SHEET NO.
CD-2

ISSUED FOR BID

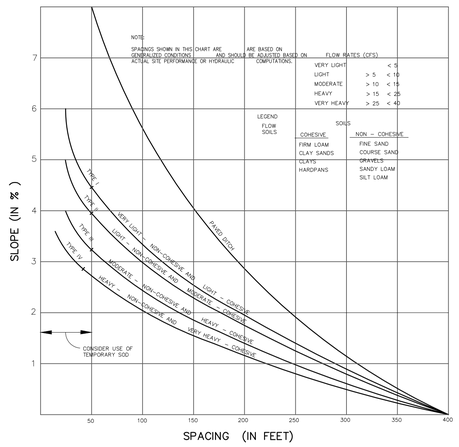
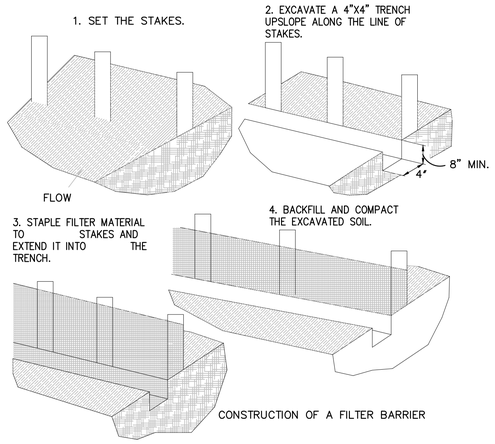



CHART I

RECOMMENDED SPACING FOR TYPE I AND TYPE II HAY BALE BARRIERS, AND TYPE III AND TYPE IV SILT FENCES AND PAVED DITCH HAY BALE BARRIERS

## SPACING RECOMMENDATION FOR SILT FENCES & HAY BALES

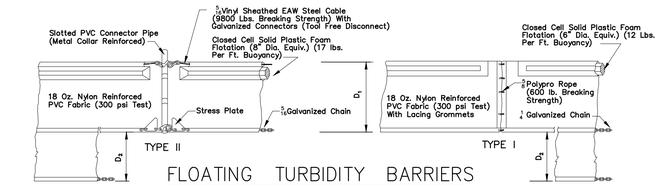
(D-906)
N.T.S.




PROPER PLACEMENT OF A FILTER BARRIER IN A DRAINAGE WAY

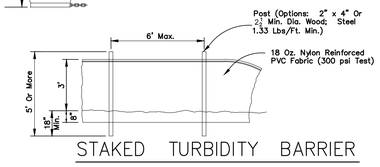
## FILTER BARRIER CONSTRUCTION DETAIL

(D-910)
N.T.S.

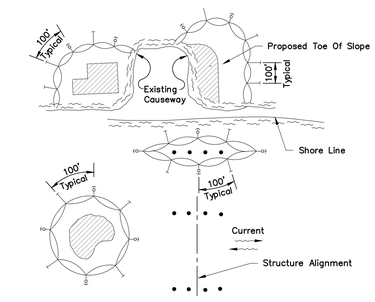



## FLOATING TURBIDITY BARRIERS

NOTICE:
COMPONENTS OF TYPES I & TYPE II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.

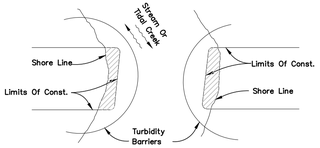



## STAKED TURBIDITY BARRIER

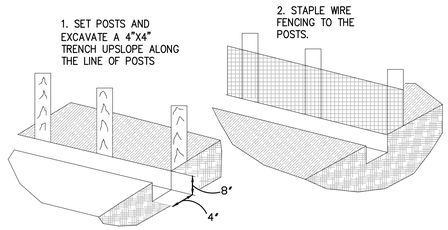



NOTES:
1. Turbidity barriers are to be used in all permanent bodies of water regardless of water depth.
2. Number and spacing of anchors dependent on current velocities.
3. Deployment of barrier around pile locations may vary to accommodate construction operations.
4. Navigation may require segmenting barrier during construction operations.
5. For additional information see Section 104 of the FDOT Standard Specifications.

## TURBIDITY BARRIER APPLICATIONS




Note:
Turbidity barriers for flowing streams and tidal creeks may be either floating, or staked types or any combinations of types that will suit site conditions and meet erosion control and water quality requirements. The barrier type(s) will be at the Contractors option unless otherwise specified in the plans, however payment will be under the contract lump sum price established in the bid proposal for Erosion & Sediment Control Posts in staked turbidity barriers to be installed in vertical position unless otherwise directed by the Engineer.

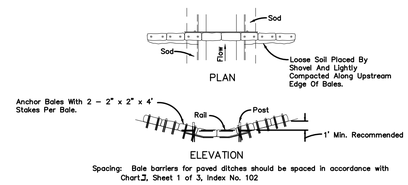



## CONSTRUCTION DETAILS FOR SILT FENCES

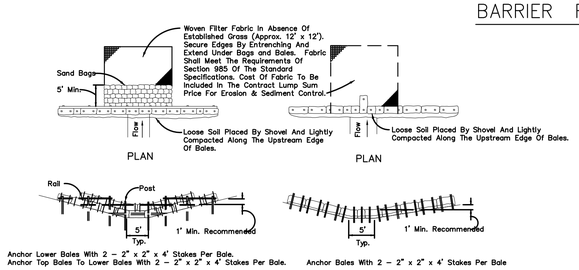
(D-909)

## TURBIDITY BARRIERS

(D-907)
N.T.S.




## BARRIER FOR PAVED DITCH




Application and Spacing: The use of Types I & II bale barriers should be limited to the conditions outlined in, Chart I, Sheet 1 of 3, Index No. 102

TYPE II TYPE I

BARRIER FOR UNPAVED DITCHES

## HAY BALE BARRIERS TYPE I & II

(D-912)
N.T.S.

DATE:
CLARO NACU MAGPANTAY
PE NO. 60164

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: C.N. MAGPANTAY
DRAWN BY: T. PACE
SHEET CHK'D BY: C.N. MAGPANTAY
CROSS CHK'D BY: F. GRAY
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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

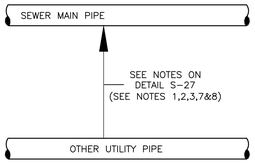
STORMWATER POLLUTION PREVENTION DETAILS

PROJECT NO. 6103-215629
FILE NAME:

SHEET NO.
CD-3

ISSUED FOR BID

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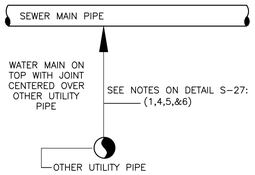

| OTHER PIPING TYPE | MINIMUM HORIZONTAL SEPARATION (FEET) GRAVITY | FM |
|---|---|---|
| 1. WATER MAIN | 6-10 | 6-10 |
| 2. WATER MAIN (SPECIAL CASE, NOTE #3 ON PLATE S-27) | 3 | 6-10 |
| 3. RECLAIMED WATER MAIN | 3 | 3 |

PLAN VIEW

## MINIMUM HORIZONTAL SEPARATION REQUIREMENTS

NOTE :

1. THE HORIZONTAL SEPARATION BETWEEN OTHER UTILITY MAINS NOT NOTED ABOVE SHALL BE 2 FEET MINIMUM.
2. THE PLANTING OF HARDWOOD TREES WITHIN 36 INCHES (HORIZONTAL CLEARANCE) OF THE MAIN SHALL BE PROHIBITED.




| OTHER PIPING TYPE | MINIMUM VERTICAL SEPARATION (INCHES) GRAVITY | FM |
|---|---|---|
| 1. WATER MAIN (NOTE 1) | 6-12 | 12 |
| 2. RECLAIMED WATER MAIN | 12 | 12 |

SECTION VIEW

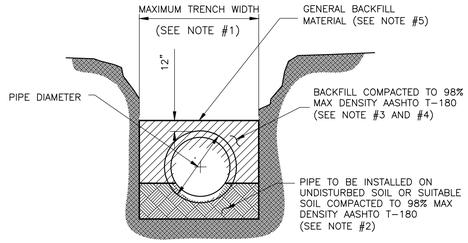
## MINIMUM VERTICAL SEPARATION REQUIREMENTS

NOTES :

1. IF THE SEWER MAIN IS ABOVE THE WATER MAIN THEN A 12" MINIMUM VERTICAL SEPARATION IS REQUIRED.
2. THE VERTICAL SEPARATION BETWEEN OTHER UTILITY MAINS NOT NOTED ABOVE SHALL BE 6 INCHES MINIMUM.

## MINIMUM SEPARATION NOTES

8/08 — DETAIL A — NTS — PLATE S-26




NOTES

1. TRENCH SIDES SHALL BE APPROXIMATELY VERTICAL BETWEEN AN ELEVATION OF 1 FOOT ABOVE THE TOP OF THE PIPE AND THE CENTER LINE OF THE PIPE; OTHERWISE, TRENCH SIDES SHALL BE AS VERTICAL AS POSSIBLE OR AS REQUIRED BY OSHA STANDARDS. REFER TO THE MEASUREMENT AND PAYMENT TO DETERMINE MAXIMUM PAYLINE WIDTHS.
2. BELL HOLE SHALL BE DUG TO PERMIT THE ENTIRE STRAIGHT BARREL OF THE PIPE TO REST ON THE UNDISTURBED TRENCH BOTTOM. BOULDERS OR LOOSE ROCKS LARGER THAN 3/4 INCH IN SIZE WILL NOT BE PERMITTED IN BACKFILL UP TO 1 FOOT ABOVE THE TOP OF THE PIPE.
3. BACK FILL MATERIAL UP TO A LEVEL OF 1 FOOT OVER THE PIPE SHALL CONSIST OF AASHTO CLASS A-3 SOIL (SUITABLE SOIL) AND SHALL EXCLUDE CLAY MATERIALS AND LOOSE ROCKS LARGER THAN 3/4 INCH SIZE.
4. BACKFILL MATERIAL UP TO A LEVEL 1 FOOT OVER THE TOP OF PIPE OR BOTTOM OF STRUCTURES SHALL BE PLACED IN 6 INCH COMPACTED THICKNESS LAYERS AND SHALL BE COMPACTED TO 98% MAX DENSITY AASHTO T-180.
5. SEE "EXCAVATION AND EARTHWORK", SECTION 408 IN THE JEA WATER & WASTEWATER STANDARDS MANUAL FOR ADDITIONAL REQUIREMENTS INCLUDING REMOVAL AND REPLACEMENT OF UNSUITABLE SOILS, DEWATERING, COMPACTION REQUIREMENTS AND DENSITY TESTING OF COMPACTED SOILS.

## OPEN CUT TRENCH FOR PRESSURE PIPE

8/08 — DETAIL B — NTS — PLATE W-42

1. IT IS REQUIRED THAT 'WATER MAINS' BE INSTALLED, CLEANED, DISINFECTED AND HAVE A SATISFACTORY BACTERIOLOGICAL SURVEY PERFORMED IN ACCORDANCE WITH THE LATEST APPLICABLE AWWA STANDARDS, CHAPTER 62-555, F.A.C. AND LATEST JEA WATER AND SEWER STANDARDS. FOR THE PURPOSE OF THIS SECTION, THE PHRASE 'WATER MAINS' SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER; FIRE HYDRANT LEADS; AND SERVICE LINES THAT HAVE AN INSIDE DIAMETER OF THREE (3) INCHES OR GREATER. IN ADDITION, THE PHRASE 'RECLAIMED WATER' REFERS TO THE WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
2. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE (3) FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER.
3. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS MAY BE REDUCED TO THREE (3) FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX (6) INCHES ABOVE THE TOP OF THE SEWER (SPECIAL CASE).
4. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX (6) INCHES, AND PREFERABLE TWELVE (12) INCHES, ABOVE OR AT LEAST TWELVE (12) INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
5. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS A LEAST TWELVE (12) INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

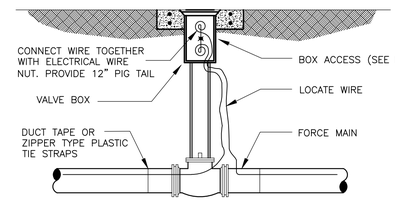
6 AT THE UTILITY CROSSINGS DESCRIBED IN NOTES 4 AND 5 ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE (3) FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER, AND AT LEAST SIX (6) FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINE CONVEYING RECLAIMED WATER.

7 NEW OR RELOCATED FIRE HYDRANTS SHALL BE LOCATED SO THAT THE HYDRANTS ARE AT LEAST THREE (3) FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER; AT LEAST THREE (3) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER OR WASTEWATER FORCE MAIN.

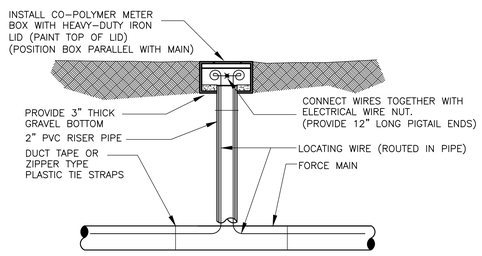
8. WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE, THE CONTRACTOR SHALL CONSULT THE DESIGN ENGINEER TO OBTAIN APPROVAL OF ANY ALTERNATIVE CONSTRUCTION METHODS, PRIOR TO CONSTRUCTION.

## WATER MAIN AND NON WATER MAIN SEPARATION REQUIREMENT NOTES

8/08 — DETAIL D — NTS — PLATE S-27




## LOCATE WIRE BOX UTILIZING VALVE BOX



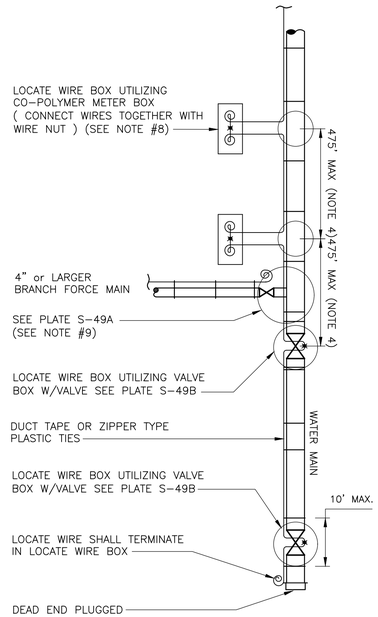

## LOCATE WIRE BOX UTILIZING METER BOX

NOTES:

1) LOCATE WIRE SHALL ENTER THE VALVE BOX THROUGH A "V" CUT IN THE 6" PVC RISER PIPE.

## LOCATE WIRE BOX

8/08 — DETAIL E — NTS — PLATE S-49B




NOTES:

1. LOCATING WIRE TO BE INSTALLED IN EITHER THE ONE OR ELEVEN O'CLOCK POSITION ON ALL DUCTILE IRON OR PVC (PRESSURE MAINS). LOCATE WIRE SHALL ALSO BE INSTALLED ON ALL (HDPE) POLY MAIN PIPING (1:00 OR 11:00 POSITION, IF POSSIBLE).
2. SECURE LOCATING WIRE TO PVC & D.I.P. FORCE MAIN BY USE OF DUCT TAPE OR ZIPPER TYPE PLASTIC TIE STRAPS SPACED AT A MAXIMUM DISTANCE OF TEN (10') AND AT EACH SIDE OF BELL JOINT OR FITTING.
3. THE ENTIRE LOCATING SYSTEM SHALL BE SUBJECTED TO TESTING TO DETERMINE ITS RELIABILITY. WHERE INSTALLED UNDER PAVEMENT AREAS, TESTING SHALL BE DONE PRIOR TO THE PLACEMENT OF PAVEMENT, UNLESS APPROVED OTHERWISE BY JEA.
4. LOCATING WIRE SHALL TERMINATE WITHIN AN ACTIVE VALVE BOX ( WITH A VALVE ) OR A METER BOX ( IF NO VALVE ) AT 475' INTERVALS. SEE DETAIL PLATE S-49B. WIRE CONNECTIONS BELOW GROUND (OUTSIDE OF A BOX) SHALL BE AVOIDED.
5. LOCATING WIRE SHALL BE 10 GAUGE, SINGLE STRAND, UF RATED (DIRECT BURIAL), COPPER WIRE WITH 30 MIL (MIN.) INSULATION WITH EITHER WHITE OR YELLOW COLOR. FOR HDD INSTALLATIONS, THE LOCATE WIRE SHALL BE COPPER COATED STEEL AS SPECIFIED IN SPEC. SECTION 750.
6. " ✖ " INDICATES THAT THE WIRES ARE CONNECTED TOGETHER.
7. " ◎ " INDICATES A WIRE PIG-TAIL (12" LONG)
8. AN "LW" CUT SHALL BE CARVED IN THE CONCRETE CURB AND PAINTED AT ALL LOCATE WIRE BOXES.
9. SEE JEA WATER AND WASTEWATER STANDARDS, LATEST EDITION.

## LOCATE WIRE CONSTRUCTION FOR FORCE MAINS

8/08 — DETAIL F — NTS — PLATE S-49

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: B. COGGER
DRAWN BY: A. NUNES
SHEET CHK'D BY: B. WILLIAMS
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: J. GOLDMAN
DATE: JANUARY 2021

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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

JEA STANDARD DETAILS

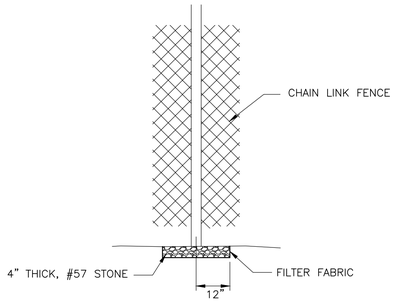
DATE:
JONATHAN Z GOLDMAN
PE NO. PE 0048925

PROJECT NO. 6103-215629
FILE NAME: CD04SDDT.DWG

SHEET NO.
CD-4

ISSUED FOR BID

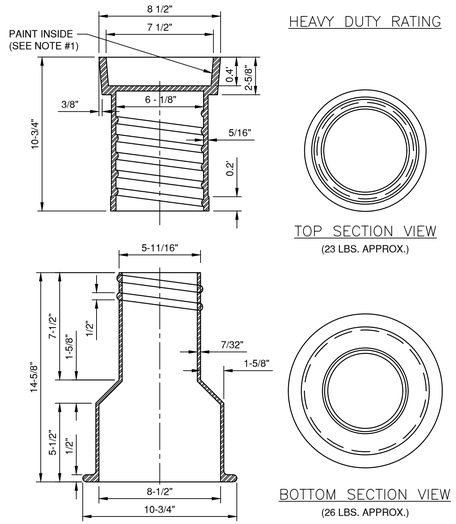
XREFs: [CDMS_2436] Images: []
Last saved by: EDWARDSAF Time: 1/25/2021 7:51:19 AM
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GRAVEL UNDER FENCE

DETAIL A

NTS




HEAVY DUTY RATING



TOP SECTION VIEW

(23 LBS. APPROX.)



BOTTOM SECTION VIEW

(26 LBS. APPROX.)

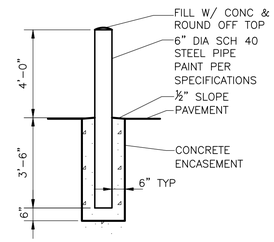
NOTES:

1. PAINT THE INSIDE OF THE TOP SECTION OF THE BOX WITH APPLICABLE COLOR (GREEN)
2. HEAVY DUTY RATING (TOTAL WEIGHT APPROX. 50 LBS.).

SEWER SYSTEM VALVE BOX

DETAIL B

NTS




BOLLARD POST

DETAIL C

NTS

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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: B. COGGER
DRAWN BY: A. NUNES
SHEET CHK'D BY: B. WILLIAMS
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: J. GOLDMAN
DATE: JANUARY 2021

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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

CIVIL DETAILS

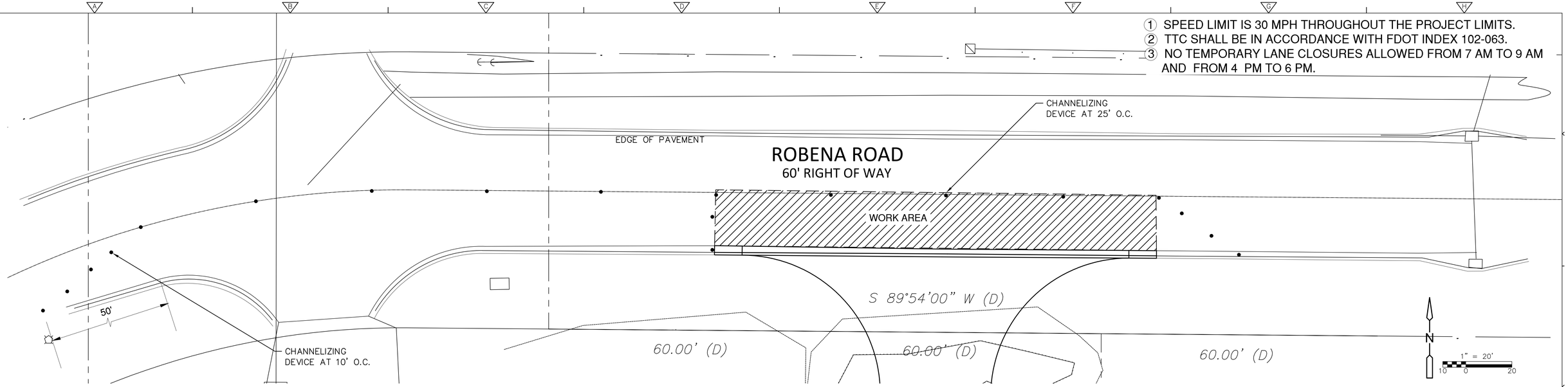
DATE:
JONATHAN Z GOLDMAN
PE NO. PE 0048925

PROJECT NO. 6103-215629
FILE NAME: CD05SDDT.DWG

SHEET NO.
CD-5

ISSUED FOR BID

1. SPEED LIMIT IS 30 MPH THROUGHOUT THE PROJECT LIMITS.
2. TTC SHALL BE IN ACCORDANCE WITH FDOT INDEX 102-063.
3. NO TEMPORARY LANE CLOSURES ALLOWED FROM 7 AM TO 9 AM AND FROM 4 PM TO 6 PM.







DATE:
CLARO NACU MAGPANTAY
PE NO. 60164

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: C.N. MAGPANTAY
DRAWN BY: T. PACE
SHEET CHK'D BY: C.N. MAGPANTAY
CROSS CHK'D BY: F. GRAY
APPROVED BY: S. DAVIS
DATE: JANUARY 2021


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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

TEMPORARY TRAFFIC CONTROL
PLAN AND NOTES

PROJECT NO. 6103-215629
FILE NAME:

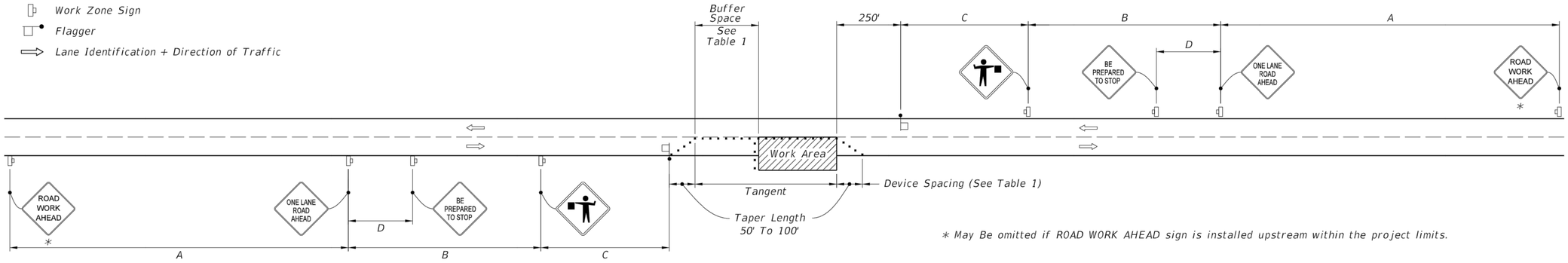
SHEET NO.
TTC-1

ISSUED FOR BID


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## SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Flagger
- Lane Identification + Direction of Traffic




* May Be omitted if ROAD WORK AHEAD sign is installed upstream within the project limits.

## WITHOUT TEMPORARY RAISED RUMBLE STRIPS

## GENERAL NOTES:

1. Special Conditions may be required in accordance with these notes and the following sheets:

   A. Railroad Crossings:
      a. If an active railroad crossing is located closer to the Work Area than the queue length plus 300 feet, extend the Buffer Space as shown on Sheet 3.
      b. If the queuing of vehicles across an active railroad crossing cannot be avoided, provide a uniformed traffic control officer or flagger at the highway-rail grade crossing to prevent vehicles from stopping within the highway-rail grade crossing, even if automatic train warning devices are in place.
   B. If the Work Area encroaches on the Centerline, use the Layout for Temporary Lane Shift to Shoulder on Sheet 3 only if the Existing Paved Shoulder width is sufficient to provide for an 11' lane between the Work Area and the Edge of Existing Paved Shoulder. Reduce the posted speed when appropriate.

2. Temporary Raised Rumble Strips:

   A. Use when both of the following conditions are met concurrently:
      a. Existing Posted Speed is 55 mph or greater;
      b. Work duration is greater than 60 minutes.
   B. Use a consistent Strip color throughout the work zone.
   C. Place each Rumble Strip Set transversely across the lane at locations shown.
   D. Use Option 1 or Option 2 as shown on Sheet 2. Use only one option throughout work zone.

3. Additional one-way control may be provided by the following means:
   A. Flag-carrying vehicle;
   B. Official vehicle;
   C. Pilot vehicles;
   D. Traffic signals.

   When flaggers are the sole means of one-way control, the flaggers must be in sight of each other or in direct communication at all times.

4. When a side road intersects the highway within the TTC zone, place additional TTC devices in accordance with other applicable TCZ Indexes.

5. The two channelizing devices directly in front of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.

6. When Buffer Space cannot be attained due to geometric constraints, use the greatest attainable length, not less than 200 ft, for posted speeds greater than 25 mph.

7. ROAD WORK AHEAD and the BE PREPARED TO STOP signs may be omitted if all of the following conditions are met:

   A. Work operations are 60 minutes or less.
   B. Speed limit is 45 mph or less.
   C. There are no sight obstructions to vehicles approaching the work area for a distance equal to the Buffer Space shown in Table 1.
   D. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
   E. Volume and complexity of the roadway has been considered.
   F. If a railroad crossing is present, vehicles will not queue across rail tracks.
   G. AFADs are not in use.

8. See Index 102-600 for general TCZ requirements and additional information.

9. Automated Flagger Assistance Devices (AFADs) may be used in accordance with Specifications Section 102, 990 and the APL vendor drawings.

**TABLE 1**

| Posted Speed | DEVICE SPACING: Maximum Spacing of Cones or Tubular Markers | | DEVICE SPACING: Maximum Spacing of Type I or Type II Barricades/Panels/Drums | | Distance Between Signs | | | | Buffer Space |
|---|---|---|---|---|---|---|---|---|---|
| | On a Taper | On a Tangent | On a Taper | On a Tangent | A | B | C | D | |
| 25 | 20' | 50' | 20' | 50' | 200' | 200' | 200' | 100' | 155' |
| 30 | 20' | 50' | 20' | 50' | 200' | 200' | 200' | 100' | 200' |
| 35 | 20' | 50' | 20' | 50' | 200' | 200' | 200' | 100' | 250' |
| 40 | 20' | 50' | 20' | 50' | 200' | 200' | 200' | 100' | 305' |
| 45 | 20' | 50' | 20' | 50' | 350' | 350' | 350' | 175' | 360' |
| 50 | 20' | 50' | 20' | 100' | 500' | 500' | 500' | 250' | 425' |
| 55 | 20' | 50' | 20' | 100' | 2640' | 1500' | 1000' | 500' | 495' |
| 60 | 20' | 50' | 20' | 100' | 2640' | 1500' | 1000' | 500' | 570' |
| 65 | 20' | 50' | 20' | 100' | 2640' | 1500' | 1000' | 500' | 645' |
| 70 | 20' | 50' | 20' | 100' | 2640' | 1500' | 1000' | 500' | 730' |

### CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA BETWEEN THE CENTERLINE AND A LINE 2' OUTSIDE THE EDGE OF TRAVEL WAY.

| LAST REVISION | REVISION | DESCRIPTION: |
|---|---|---|
| 11/01/17 | | |

FDOT FY 2020-21 STANDARD PLANS

# TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY

INDEX 102-603 | SHEET 1 of 3

2/26/2020 12:30:42 PM

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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
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DRAWN BY: T. PACE
SHEET CHK'D BY: C.N. MAGPANTAY
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APPROVED BY: S. DAVIS
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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

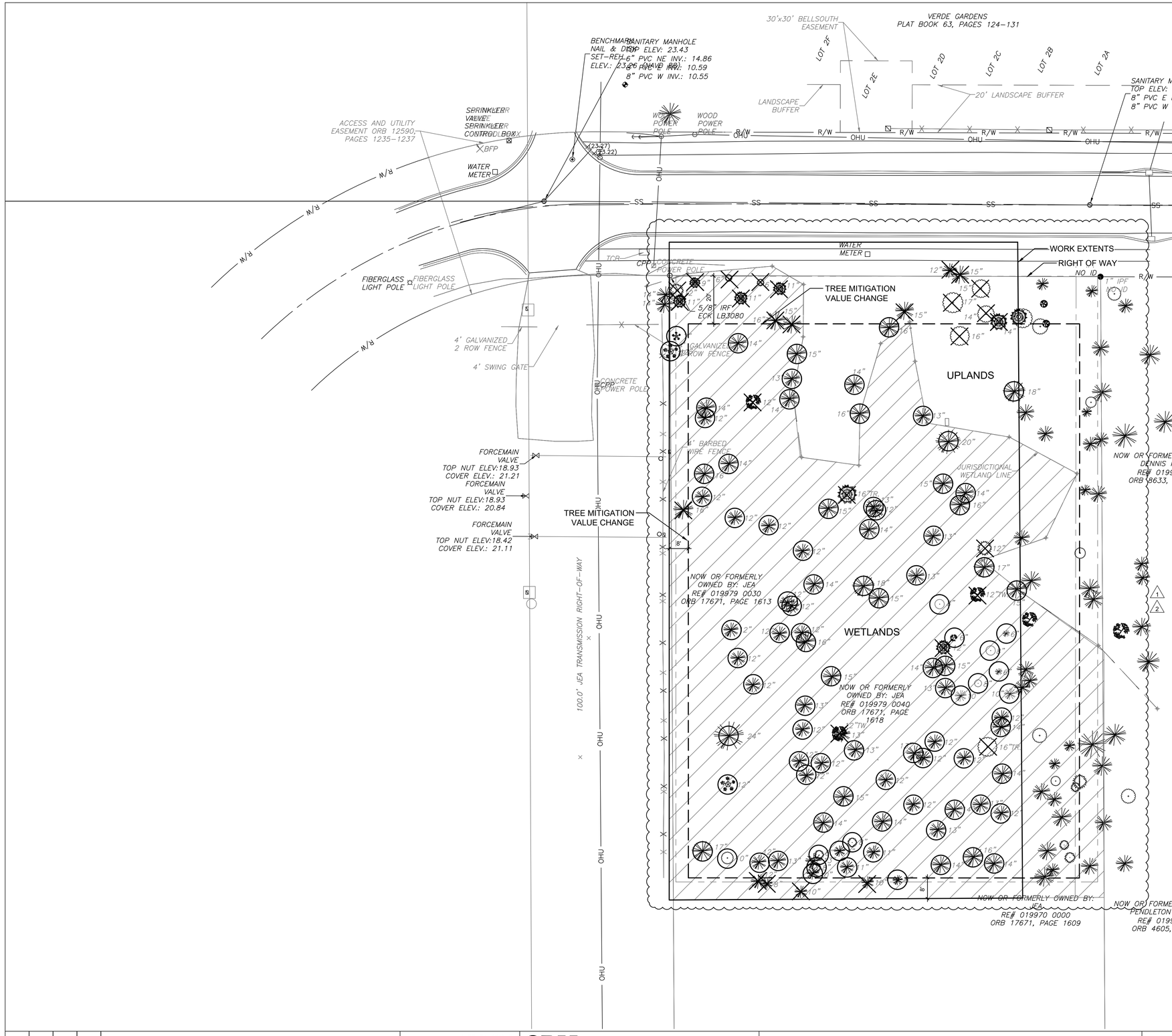
FDOT INDEX 102-063

DATE:
CLARO NACU MAGPANTAY
PE NO. 60164

PROJECT NO. 6103-215629
FILE NAME:

SHEET NO.
TTC-2

ISSUED FOR BID




CITY OF JACKSONVILLE DATA & CALCULATIONS.

TOTAL AREA = 1.08 ACRES (46,970 S.F.)
WETLAND MITIGATION AREA = 37,341 S.F.
UPLAND AREA = 9,629 S.F.

TREES TO REMAIN:

| Species | Inches |
|---|---|
| LOBLOLLY PINE | 12 |
| LOBLOLLY PINE | 15 |
| LOBLOLLY PINE | 15 |
| LOBLOLLY PINE | 16 |
| LOBLOLLY PINE | 16 |
| LOBLOLLY PINE | 8 |
| LOBLOLLY PINE | 15 |
| LOBLOLLY PINE | 10 |
| LOBLOLLY PINE | 10 |
| BALD CYPRESS | 16 |
| BALD CYPRESS | 12 |
| BALD CYPRESS | 11 |
| BALD CYPRESS | 11 |
| BALD CYPRESS | 11 |
| BALD CYPRESS | 14 |
| BALD CYPRESS | 9 |
| BALD CYPRESS | 6 |
| BALD CYPRESS | 6 |
| HOLLY | 6 |
| HOLLY | 6 |
| HOLLY | 12 |
| HOLLY | 12 |
| BAY | 12 |
| BAY | 12 |
| BAY | 12 |
| SWEET GUM | 16 |
| SWEET GUM | 15 |
| SWEET GUM | 17 |
| SWEET GUM | 14 |
| SWEET GUM | 16 |
| Total Removed | 363 |
| **Inches Required** | **121** |

511" - 121" = 390" SURPLUS
NO MITIGATION REQUIRED

TREES REMOVED:

| Species | Inches |
|---|---|
| LIVE OAK | 8 |
| LIVE OAK | 9 |
| LIVE OAK | 9 |
| SWEET GUM | 16 |
| SWEET GUM | 13 |
| SWEET GUM | 12 |
| SWEET GUM | 12 |
| BAY | 12 |
| BAY | 6 |
| BAY | 6 |
| HOLLY | 12 |
| HOLLY | 9 |
| HOLLY | 8 |
| HOLLY | 8 |
| LOBLOLLY PINE | 10 |
| LOBLOLLY PINE | 10 |
| LOBLOLLY PINE | 8 |
| LOBLOLLY PINE | 9 |
| LOBLOLLY PINE | 9 |
| LOBLOLLY PINE | 9 |
| LOBLOLLY PINE | 14 |
| LOBLOLLY PINE | 14 |
| LOBLOLLY PINE | 16 |
| LOBLOLLY PINE | 14 |
| LOBLOLLY PINE | 12 |
| LOBLOLLY PINE | 14 |
| LOBLOLLY PINE | 25 |
| LOBLOLLY PINE | 12 |
| LOBLOLLY PINE | 16 |
| LOBLOLLY PINE | 15 |
| LOBLOLLY PINE | 11 |
| LOBLOLLY PINE | 14 |
| LOBLOLLY PINE | 14 |
| LOBLOLLY PINE | 13 |
| LOBLOLLY PINE | 16 |
| LOBLOLLY PINE | 14 |
| LOBLOLLY PINE | 13 |
| LOBLOLLY PINE | 16 |
| LOBLOLLY PINE | 12 |
| LOBLOLLY PINE | 12 |
| LOBLOLLY PINE | 16 |
| LOBLOLLY PINE | 13 |
| **Total Preserved** | **511** |

GENERAL SYMBOL KEY

- PROTECTED TREE TO BE REMOVED
- UNPROTECTED TREE TO BE REMOVED
- WETLAND MITIGATION AREA

TREE SYMBOL KEY

- LOBLOLLY PINE
- SWEET GUM/LIVE OAK
- BAY TREE
- CHERRY LAUREL
- CYPRESS TREE
- HOLLY TREE

MARGARET E. GAFFNEY, RLA
LICENSED LANDSCAPE ARCHITECT
FL LA 6666918
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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |
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| | | | | |
| 2 | 11/16/20 | MEG | BAC | COMMENT RESPONSE |
| 1 | 9/8/20 | MEG | BAC | COMMENT RESPONSE |

DESIGNED BY: M. GAFFNEY–COOKE
DRAWN BY: M.E.G.
SHEET CHK'D BY: B.A.C.
CROSS CHK'D BY: M.E.G.
APPROVED BY: S. DAVIS
DATE: JANUARY 2021


CDM Smith
8381 Dix Ellis Trail, Suite 400
Jacksonville, FL 32256
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FL COA No. EB-0000020


JEA

CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT

ROBENA ROAD PUMP STATION

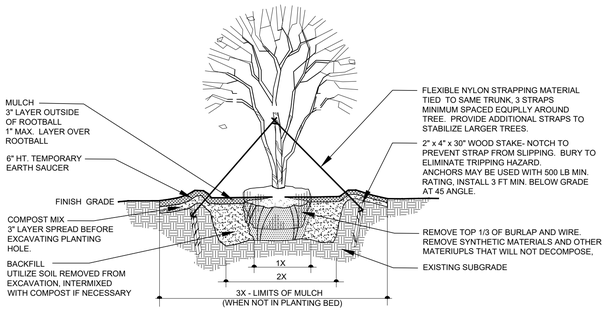
# TREE MITIGATION

PROJECT NO.
FILE NAME:

SHEET NO.
L-1

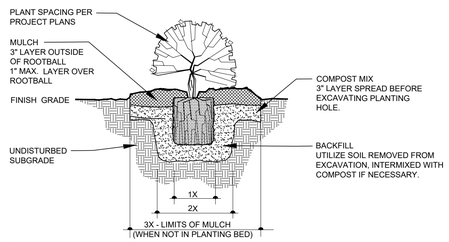
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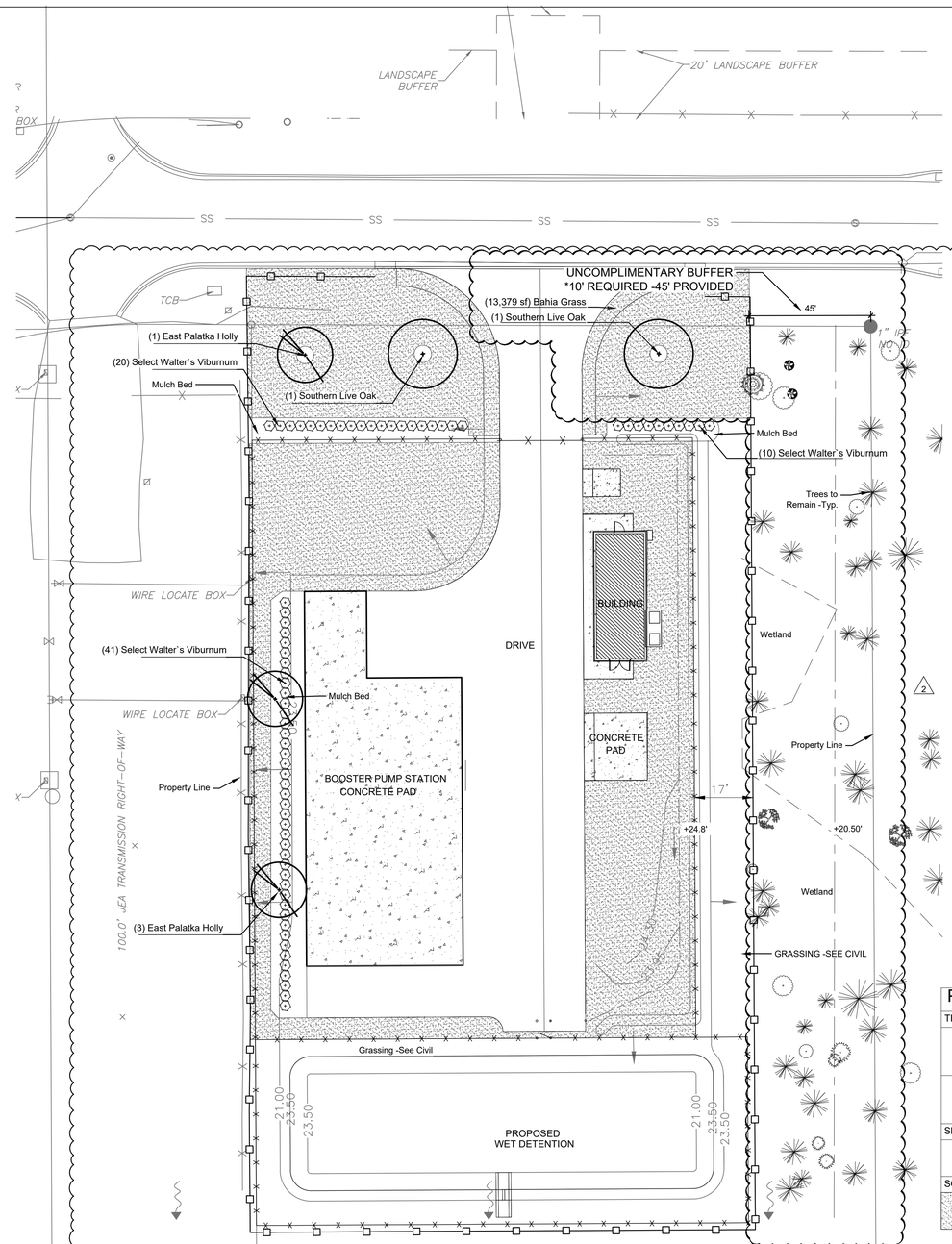

NOTES:
PLANT TOP OF ROOT BALL 2" ABOVE FINISH GRADE.
BOTTOM OF ROOT BALL SHALL BE SEATED DIRECTLY ON UNDISTURBED SUBGRADE.
TOPMOST ROOT-ROOT FLARE SHALL BE MADE VISIBLE PRIOR TO PLANTING.
ROOT DEFECTS - INSPECT ROOT BALL FOR ROOT DEFECTS, CUT ROOTS WHERE THEY BEGIN TO KINK OR CIRCLE. ROOT BALL SHALL COMPLY WITH FLORIDA GRADES AND STANDARDS.
STAKE ABOVE FIRST STRONG BRANCHES TO PROVIDE FIRM SUPPORT.

## SINGLE OR MULTIPLE STEM TREE PLANTING




NOTES:
- PLANT TOP OF ROOT BALL 1" HIGHER THAN TOP OF COMPOST LAYER.
- 6" MIN. BACKFILL AROUND SIDES OF ROOT BALL, 3" ON BOTTOM. WATER AND TAMP TO REMOVE AIR POCKETS.
- TOPMOST ROOT-ROOT FLARE SHALL BE MADE VISIBLE PRIOR TO PLANTING.
- ROOT DEFECTS - INSPECT ROOT BALL FOR ROOT DEFECTS, CUT ROOTS WHERE THEY BEGIN TO KINK OR CIRCLE. ROOT BALL SHALL COMPLY WITH FLORIDA GRADES AND STANDARDS.

## SHRUB PLANTING




CITY OF JACKSONVILLE DATA & CALCULATIONS.

TOTAL AREA = 1.08 ACRES (46,970 S.F.)
WETLAND MITIGATION AREA = 37,341 S.F.
UPLAND AREA = 9,629 S.F.
TREES REQ. 1/5,000 SF = 10 TREES
TREES PROVIDED = 3 PROP. + >7 EX. TREES

VEHICLE USE AREA

TOTAL AREA: 6,375 sq.ft.
Required Landscape: 10% of 6,375 = 638 sq.ft.
Provided: >638 sq.ft.

REQUIRED PLANTING
Required: 25% of 638 sq.ft.
Provided: >160 sq.ft.

Required: (1) Tree/4,000 sq.ft. = (2) Tree
Provided: >(2) Shade Trees

Required: Visual Screen at R.O.W.
Provided: (30) 36" Walter's Viburnum. @ 36" O.C.

Required: Visual Screen -Other
Provided: (30) 36" Walter's Viburnum. @ 36" O.C. or 4' Berm

LANDSCAPE ADJACENT TO R.O.W.

NORTH PROPERTY STREET FRONTAGE
Required: 180/ 50 = 4 Trees (50% Shade)
Provided: 3 Trees + 2 Existing = 5 (100% Shade)

PERIMETER LANDSCAPING ADJACENT TO ABUTTING PROPERTIES:

EAST BOUNDARY -UNCOMPLIMENTARY USE
Landscape Area (L.F. x 10')
Required: 256 L.F. x 10 = 2,560 S.F.
Provided: > 256 x 37' = 9,472 S.F.

Perimeter Trees (L.F. / 25)
Required: 256/ 25 = 12 Trees (50% Shade Trees)
Provided: 16 Retained Trees = (16 Shade)

Visual Screen
Required: 256 l.f. per Section 656.1216
Provided: 4' Berm and/or Existing Vegetation

WEST BOUNDARY -N/A SAME OWNER

SOUTH BOUNDARY -N/A SAME OWNER

* ALL PLANTINGS 50% OR MORE NATIVE

## PLANT SCHEDULE

| TREES | QTY | BOTANICAL NAME | COMMON NAME | REMARKS |
|---|---|---|---|---|
| | 3 | ILEX X ATTENUATA `EAST PALATKA` | EAST PALATKA HOLLY | 4" CAL., B&B., 14` - 16` HEIGHT & 6` - 8` SPREAD. 5` CT |
| | 2 | QUERCUS VIRGINIANA | SOUTHERN LIVE OAK | 4" CAL., 14` HEIGHT, 6` SPREAD, 5` CT MIN. |
| SHRUBS | QTY | BOTANICAL NAME | COMMON NAME | REMARKS |
| | 71 | VIBURNUM OBOVATUM `SELECT | SELECT WALTER`S VIBURNUM | 3 GAL., 36" HT., & SPD. |
| SOD/SEED | QTY | BOTANICAL NAME | COMMON NAME | REMARKS |
| | 13,400 SF | PASPALUM NOTATUM | BAHIA GRASS | 2" -3" THICK SOLID, FRESHLY CUT, WEED FREE |

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JEA

CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT

ROBENA ROAD PUMP STATION
# LANDSCAPE PLAN

PROJECT NO.
FILE NAME:

SHEET NO.
L-2

ISSUED FOR BID

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# PART 1- GENERAL

1.1 GENERAL NOTES

A. Contractor shall comply with applicable laws, ordinances and codes; obtain required permits, inspections; pay required fees.

B. Prior to preparing and submitting cost proposal, Bidder shall visit and inspect the project site to become familiar with existing conditions.

C. This contract includes providing and installing plant and landscape materials as described within the contract documents.

D. Contractor shall perform fine grading to establish finish grades in landscape areas. Fine grading shall include only minor grading to correct random or infrequent grade irregularities to 1" or less.

E. Grading-Berming labeled on the project plans shall be the responsibility of the landscape contractor to construct. Landscape contractor shall provide fill and grading for these areas and coordinate fill requirements with general contractor prior to bidding.

F. Bidder-Contractor shall verify all plant quantities shown on plans. Notify Landscape Architect-Owner's Representative of discrepancies.

G. Plant size noted in plant schedule shall be the minimum acceptable size. Container gallon size are minimum. Contractor shall provide the plant material in container size needed to meet plant size specified.

1.2 DEFINITIONS

A. Finish Grade: Top of surface soil and top of planting bed after plant installation.

B. Topsoil: Native or imported surface soil modified with soil amendments per recommendations from commercial soil-testing laboratory.

C. Compost Mix: Homogeneously blended organic material, see Part 2 - Products.

D. Subgrade: Soil below finish grade and soil below finish grade remaining after completing excavation.

E. Final Acceptance: Shall mean that point in time when requirements of contract documents are completed, including punch-list items, to the satisfaction of the Landscape Architect-Owner's Representative. Contractor will be notified in writing of final acceptance by Landscape Architect-Owner's Representative.

F. Warranty Period: Shall begin after notification of final acceptance, continuing for the duration of the specified period.

G. Final Warranty Inspection; Shall occur near the end of the warranty period.

H. Contract Documents: Project plan set, technical specifications and documentation issued during project bidding, award and installation.

1.3 SUBMITTALS

B. Product Data: Each type of product utilized

C. Samples: Mulch

D. Product certificates, confirmation letter that the Contractor has procured all plant materials and products to complete the project plans.

E. Planting Schedule: Indicating anticipated installation dates.

F. Maintenance Instructions: Provide prior to final acceptance.

G. Agronomic Soil Tests for Topsoil and Compost Mix: Soil testing and recommendations shall be performed by a commercial soil-testing laboratory. Areas to be installed with plants and lawn areas shall be tested. Tests shall include a fertility test, pH factor, percentage of organic matter and a suitability analysis. The suitability analysis shall include percolation tests and evaluation of soil composition to determine the soil's suitability to sustain the project's plant materials and to bring the soil to a pH rating between 5.5 to 6.5. Submit copy to Landscape Architect-Owner's Representative of soil tests, written recommendations for soil suitability, soil amendments, fertilizer, chemical conditioner application rates for soil preparation, and a maintenance fertilization program.

H. Manufacturer's Data: Include physical characteristics, application, installation instructions and recommendations to be utilized.

a. Fertilizer
b. Each soil amendment to be used
c. Herbicide
d. Super absorbent, if to be utilized
e. Pre-emergent herbicide
f. Materials identified in contract documents

I. Written plant guarantee

J. Prior to purchase and delivery of plants, Contractor shall provide the Landscape Architect-Owner's Representative with photos of proposed plant materials and coordinate nursery visit.

1.4 QUALITY ASSURANCE

A. Landscape Contractor Qualifications: The Landscape Contractor (Contractor) shall have previous experience installing projects of equal or greater size to the project plans. The Contractor shall have a full-time supervisor with a minimum of 5 years of experience that is on-site during installation process.

B. Soil Analysis: Contractor shall provide soil analysis of the existing surface soil and compost mix. Agronomic soil testing shall be performed by a commercial soil-testing laboratory.

C. Provide quality, size, genus, species, and variety of plants indicated, complying with "Florida Number 1" or better classification in "Grades and Standards for Nursery Plants," latest edition, published by Florida Department of Agriculture, Division of Plant Industry, Gainesville, Florida. To evaluate plants not specifically listed in the "Grades and Standards for Nursery Plants," use the appropriate matrix type.

D. Pre-Installation Conference: Prior to beginning plant installations, conduct conference at project site.

E. Substitutions:

1. If a plant material or product is not available, the Contractor shall submit to the Landscape Architect-Owner's Representative for approval, proof of non-availability with a recommendation for an equivalent material. When authorized, adjustment of contract amount may be made. No substitutions will otherwise be allowed.

F. Inspection: Landscape Architect-Owner's Representative may inspect plants at nursery and project site prior to planting, for compliance with plans. The Landscape Architect-Owner's Representative may inspect plants at any time for size and condition of balls, root systems, insects, injuries, latent defects, and reject plant materials at any time during progress of work. Contractor shall remove rejected plants from project site. The Landscape Architect-Owner's Representative's preliminary inspection is not to be construed as acceptance until such time as a written final acceptance inspection is received.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Prior to materials being shipped from supplier, Landscape Architect-Owner's Representative may inspect materials on-site or through the submission of photographs. Refer to the plant schedule within the project plan set for specific plants requiring on-site tagging-inspection.

B. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during delivery. Do not drop plant materials.

C. Deliver plants after preparations for planting have been completed and install immediately. If planting is delayed more than six hours after delivery, set plants trees in shade, protect from weather and mechanical damage, and keep roots moist.

1.6 WARRANTY

A. Warranty: Contractor shall warrant plants for the warranty period indicated against defects including death and unsatisfactory growth. Contractor will not be responsible for defects resulting from lack of adequate maintenance, abuse by Owner, winds of tropical storm speed per Saffir–Simpson Hurricane Scale or higher winds, or acts of God.

1. Warranty Period for Plant Materials: 1 year from date of final acceptance
2. Warranty Period for Sod: 6 months from date of final acceptance



1.7 MAINTENANCE

A. Plant Materials: Maintain until final acceptance by pruning, cultivating, watering, weeding, fertilizing, restoring planting saucers, tightening and repairing stakes and supports, resetting plants to proper grades, vertical position, as required to establish healthy, viable plantings. Spray insecticides to keep plants free of insects and disease.

B. Protect plant materials from damage due to landscape operations, operations by other contractors and others. Maintain protection during installation and final acceptance. Treat, repair, and replace damaged plantings at no additional cost to the Owner.

C. Maintenance of sod areas: The Contractor shall maintain until final acceptance by protecting sod areas against traffic or other use by warning signs and barricades, as approved by the Landscape Architect-Owner's Representative. Damaged sod shall be repaired by re-grading, then re-sod. Contractor shall mow, water and otherwise maintain sod areas in a satisfactory condition until final acceptance of the work.

1. Maintain sod areas until final acceptance by watering, weeding, mowing, applications of herbicides, fungicides, insecticides, fertilization and re-seeding until a full, uniform stand of grass free of weeds, undesirable grass species, disease, and insects is achieved and accepted by the Landscape Architect-Owner's Representative.

a. Repair, re-work, and re-sod all areas that have washed out, eroded, or are not a healthy stand of grass.

b. Mow sod areas when top growth reaches a height where no more than a third of the leaf blade will be removed at any single mowing. Repeat mowing to maintain specified height per recommendations of local agricultural extension agency.

1.8 REPLACEMENTS AND CONDITIONS

A. Promptly remove and replace plant materials that are dead, unhealthy condition, fallen below acceptable quality. Prior to the end of the warranty period, a final warranty inspection of the work may be made by the Landscape Architect-Owner's Representative. The Contractor shall remove and replace plant materials and sod areas found to not be in compliance with contract requirements. Replacement plant material size and species shall be as noted in the project plans. A new warranty period shall commence on each plant replaced during the warranty period, contractor shall maintain plant warranty log.

1.9 FINAL INSPECTION AND ACCEPTANCE

A. Final Inspection: Upon completion of landscape installation, the Contractor shall notify the Landscape Architect-Owner's Representative in writing 10 days prior to requested inspection date. Landscape Architect-Owner's Representative will make an inspection to determine compliance with contract documents. When inspected landscape work does not comply with contract documents, the Contractor shall remove and replace rejected work and continue maintenance. Contractor shall provide 48 hour notice to Landscape Architect-Owner's Representative requesting re-inspection.

Plant Materials:

a. Replace plant materials not in healthy condition, fails below quality requirements

B. Lawns:

a. At the time of final warranty inspection, sod areas shall be healthy, well-rooted even colored, lawn is established, weed free without open joints and bare areas.

# PART 2 - PRODUCTS

2.1 PLANTS

A. Tree and Shrub Material: Provide nursery-grown tree and shrub materials complying with plant quality requirements, Part 1-General. Provide well-shaped, fully branched, healthy, vigorous plants free of disease, insects, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

B. Ground Cover: Provide ground cover species indicated, established and well rooted in pots or similar containers, and complying with plant quality requirements, Part 1-General.

C. Annuals: Provide healthy, disease-free plants of species and variety shown or approved, complying with plant quality requirements, Part 1-General. Provide plants acclimated to the conditions they are to be installed on the project and are in bud with few, if any blooms.

D. Perennials: Provide healthy plants from a commercial nursery, of species and variety shown or approved, complying with plant quality requirements, Part 1-General.

E. Sod: Sod shall be species and locations in the project plans. Sod shall be freshly cut in pads (or rolls with prior approval). Sod shall be derived from an area having a soil type similar to the soil on which it is to be laid. Sod shall be healthy, free of weeds and insects including ground pearls and spittle bugs, in naturally green condition, and shall have an abundance of roots contained within a mat of topsoil derived in the harvesting process from the area where grown. Brown, dry, irregularly smooth, and/or un-fresh sod will be rejected.

2.2 PLANTING MATERIALS

A. Topsoil: pH range of 5.5 to 6.5, a minimum of 6 percent organic material content; free of stones 1 inch or larger in any dimension and extraneous materials harmful to plant growth.

1. Topoil Source: Amend existing surface soils according to recommendations from soil tests analyzed by commercial soil testing laboratory, see Part-1 General.

B. Soil Amendments: Following are soil amendments that may be utilized to modify existing surface soil according to recommendations from agronomic soil testing analysis.

a. Lime: Natural dolomitic limestone containing not less than 85 percent of total carbonates with a minimum of 30 percent magnesium carbonates, ground so that not less than 90 percent passes a 10-mesh sieve and not less than 50 percent passes a 100-mesh sieve.
b. Aluminum Sulfate: Commercial grade.
c. Peat Humus: Finely divided peat, completely decomposed and free of fibers to eliminate it's biological identity. Provide in granular form, free of hard lumps and with pH range suitable for intended use or Florida Muck with a texture and pH range suited for the intended use. Florida Muck shall be delivered in a non-muddy state, reasonably free of clay, roots and litter and other extraneous or toxic matter harmful to plant growth. Florida Muck shall be subject to approval by the Owner.
d. Bonemeal: Commercial, raw, finely ground; 4 percent nitrogen and 20 percent phosphoric acid.
e. Superphosphate: Soluble mixture of treated minerals; 20 percent available phosphoric acid.
f. Sand: Clean, washed builder's sand, free of toxic materials, free of salt, weeds, sticks and other debris. Sand shall conform to ASTM C3 for five aggregates.
g. Perlite: Conforming to National Bureau of Standards PS 23.
h. Vermiculite: Horticultural grade, free of toxic substances.
i. Sawdust: Rotted sawdust, free of chips, stones, sticks, soil, or toxic substances and with 7.5 pounds of nitrogen uniformly mixed into each cubic yard of sawdust.
j. Manure: Well rotted, unleached stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials and containing no chemicals or ingredients harmful to plants.
k. Mulch: Organic mulch shall be uniform in size, shape, texture and free from deleterious materials and suitable for top dressing of trees, shrubs, or plants and consisting of one of the following (see plan for mulch type):

1. Medium-sized (Mini-sized) pine bark chips, clean, bright and free from weeds, moss, sticks and other debris.
2. Areas indicated as "pine straw mulch" shall include mulch that is clean, bright and free from weeds, moss, sticks and other debris.
3. "Shredded hardwood mulch" shall be non-cypress and of a color and texture approved by the owner or Landscape Architect: submit samples,

l. Fertilizer:

1. Fertilizer: Pelletized fertilizer with nitrogen, phosphorous and potassium in 100 percent slow release form, with the following composition:

a. Composition: 8 percent nitrogen, 2 percent phosphorous, 12 percent potassium + 4 percent magnesium and all micro-nutrients



2.3 COMPOST MIX

A. Compost Mix: Manufactured mix that is weed and disease free, pasteurized composed of:
a. 34% Aged Pine Bark
b. 33% Finished Organic Compost
c. 33% Composted Cow Manure

B. Compost mix shall be sent to an approved agronomic soil-testing laboratory to provide the requirements noted Part 1-General.

D. Seed:

1. Seed: All seed shall be furnished from a certified seed dealer or certified seed grower; meet the requirements of the Florida Department of Agriculture regulations; be labeled in accordance therewith. Seed shall be free of noxious weeds.

E. Sprigging: Sprigs shall be certified to genetic purity, free of pests and disease, delivered in a timely fashion and consist of stems, leaves and stolons. The sprigs shall come from a certified supplier, approved by the Owner's Representative. After being harvested, the sprigs shall be delivered to the planting site within 24 hours. The stock shall contain no weeds, soil, or other debris and shall not be dried out at the time of planting.

Sprigs shall be harvested to facilitate separation and distribution. Sprigs shall average four to six inches in length and carry at least four nodes. Sprigs shall be planted within twenty- four hours after removal from the certified supplier. It shall be the Contractor's responsibility to protect the stolons, keeping them moist and out of the sunlight before and during the planting operation.

# PART 3 - EXECUTION

3.1 PLANTING

1. Prior to installing plant materials, Contractor shall perform drainage test excavations one per acre of site planting areas or submit plan of locations for Landscape Architect approval, a minimum of 250 ft on center throughout the planting and sod areas. Test excavations shall be a minimum of 12"dia. and 12" deeper than the largest proposed plant rootball. Test excavations shall be filled with water to finish grade, then monitored to verify excavations have completely drained within a 3 hour period. Landscape Contractor shall notify the Landscape Architect-Owner's Representative of any excavations which fail this test, prior to proceeding with plant installations. Corrective actions may be required, such as but not limited to over-excavation to break sub-surface soil conditions which shall be the Contractor's responsibility and may be considered additional work. Contractor shall seek and obtain approval from Owner's Representative prior to proceeding.

2. Unsuitable Soil Conditions: Absolutely no plastic or clayey soil is to be used in landscape areas. If such a condition is found, the area is to be back-filled with material of suitable sandy gradation which is porous and percolates well with reasonable compaction. If any planting or sod area has a plastic or clayey soil condition which prevents proper drainage, then a system of underdraining, turf drain or other means of releasing underground standing water must be incorporated under the direction of the Landscape Architect-Owner's representative.

3. Upon completion of landscape installation the finish grade of planting beds and lawn areas shall be minimum 6 inches below adjacent structures and slope away from existing structures per the Florida Building Code. Verify compliance with Florida Building Code with General Contractor prior to beginning work. Parking lot islands shall slope at 3% from center of island to curb. Finish grade shall be below sidewalks, curbs and walking surfaces to allow for mulch thickness and sod.

4. Upon completion of landscape installation, the Contractor shall notify the Landscape Architect-Owner's Representative in writing 10 days prior to requested inspection date. Landscape Architect-Owner's Representative will make an inspection to determine compliance with Contract Documents.

5. The Contractor shall be responsible for stability and plumb conditions of all plant materials, be legally liable for damage caused by instability of plant materials. Proper staking and guying is the Contractor's responsibility. Contractor shall under their own discretion provide additional staking and guying above and beyond the requirements of the project plans at no additional expense to the Owner.

A. Plant Material Installation and Planting Bed Preparation:

1. Topsoil shall be modified according to recommendations from agronomic soil-testing laboratory, prior to installation of plants.
2. Spead on top of topsoil a 3 inch layer of compost mix prior to planting. Mix shall be incorporated in planting holes during installation.
3. Do not spread compost mix if topsoil is frozen, muddy, or excessively wet.
4. Planting Pits and Trenches: Excavate circular planting pits with sides sloped inward. Trim base leaving center area raised slightly to support root ball and assist in drainage. Do not further disturb base. Scarify sides of plant pit smeared or smoothed during excavation.
5. Topmost Root: Topmost root-root flare shall be visible prior to planting - Find the topmost root and remove excess soil to expose topmost root-root flare.
6. Root Defects: Inspect root ball for root defects, cut roots at the point where they begin to kink or circle. Root ball shall comply with Florida Grades & Standards.
7. Remove rocks, sticks or other deleterious material greater than 1 inch in any 1 direction prior to backfill process.
8. Set tree, palm and shrubs plumb and in center of tree planting pit or trench with top of root ball 2 inches above finish grade.

a. Container Grown: Carefully remove root ball from container without damaging root ball or plant.

b. Ball and Burlaped Root ball: Do not use plant materials if root ball is cracked or broken before or during planting operation. Do not lift plants by the trunk. Remove rope, synthetic burlap, plastic and materials that will not decompose. Remove top 1/3 of wire basket.

c. Backfill planting excavation incorporating compost mix. Work soil around roots eliminate voids and air pockets. When planting pit is approximately one-half backfilled, water thoroughly before placing remainder of backfill.

d. Repeat watering until no more water is absorbed. After planting, remove excess soil and rake plant beds to a smooth even surface conforming to required finish grades.

e. Upon completion of plant installations, fertilize according to specifications.

f. Tree pits in non-irrigated areas shall be installed with super absorbent, according to manufacturer's recommendations.

9. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.
10. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.
11. Finish Grading: Level planting area to a smooth, uniform surface with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
12. Upon completion of plant installations, fertilize according to specifications.
13. Tree and Shrub Pruning: Prune, trees and shrubs according to International Society of Arboriculture standards. Contractor shall prune trees and shrubs to comply with Florida Grades and Standards. Prune plants to retain natural character.

B. Sod:

1. Topsoil shall be modified according to recommendations from agronomic soil-testing laboratory, prior to installation of sod, see Part 1-General.
2. Remove rocks, sticks or other deleterious material greater than 1 inch in any 1 direction prior to sod installation.
3. Finish grade to receive sod shall be uniformly graded and irrigated prior to sod installation. Sod shall be laid end-to-end and side-to-side to form a uniform layer of un-broken, un-gapped turf. All uneven edges shall be squarely trimmed to allow close and firm fitting of each piece. All gaps or spaces shall be filled to a smooth level with topsoil as specified herein. Edges shall be "heeled-in" and finished smoothly without uneven exposure. Place sod with staggered joints closely butted, tamped or rolled to an even surface to the required finished grade. Avoid continuous seam along line of water flow in swales. Place sod in rows at right angles to slope. Peg sod on slopes greater than 3:1.
4. Upon completion of sod installation, sod areas shall be watered to provide a healthy growing condition. Watering shall be monitored and adjusted by the Contractor to prevent over or under watering.



C. Seed:

1. Seed: All seed shall be furnished from an established seed dealer or certified seed grower; shall meet the requirements of the Florida Department of Agriculture regulations; and shall be labeled in accordance therewith. Seed shall be free of noxious weeds.

2. Seed Planting: At a minimum the contractor shall test the soil to verify conditions are acceptable for turf growth.

2.1. Submit agronomic soil tests for existing soil. Tests shall be performed by an approved agronomic soils testing laboratory and shall include a fertility test with the pH factor and the percentage of organic matter and a suitability analysis. The suitability analysis will include percolation tests and evaluation of soil composition to determine the soil's suitability to sustain healthy turf. Submit written recommendations for soil suitability and all necessary soil amendments, fertilizer and chemical conditioner application rates for soil preparation, and a post maintenance fertilization program. Submit recommendations to bring the soil to a pH rating between 5.5 to 6.5 and to supply necessary nutrients to satisfactory level for planting and sustaining vigorous turf growth. Submit a copy of soil tests with suitability analysis and recommendations to Owner's Representative prior to any planting.

2.2 At a minimum apply 100 lbs/acre of scarified, chemically treated Bahia Seed. Apply by hand, cyclone seeder, drill or hydro-seeding. The final result shall place the seeds ¼" - ½" below the soil.

2.3. At a minimum apply an additional 30 lbs/acre of quick growing rye grass over the entire area.

2.4. Contractor is responsible for utilizing the best application method to prevent erosion of soil during seed growth.

2.5. At a minimum apply mulch (straw, hay, wood, etc.) at a rate of 2.5 tons per acre during seeding.

2.6. At a minimum apply fertilizer during seeding at a rate of 250lbs/acre using a 12-6-8 fertilizer or other ratio recommending by the soil testing. An additive of 4% magnesium is also required and should be verified with soil testing.

2.7. Contractor is responsible for dust control and measure should be taken to minimize movement of dust in addition to seeding and mulching.

3. Watering: At a minimum apply 3/4" to 1" of water each week to the newly seeded areas to help germination until the grass is fully established. The contractor is responsible to monitor rainfall quantities and supplement with watering as necessary. The contractor shall record all watering information and furnish to the Owner's Representative when requested.

3.1. During the maintenance period the contractor shall supplement the rain water amount with hand watering as necessary to maintain an average of ½" of water weekly. At any time the owner's representative may require an immediate watering of areas they find suffering from a lack of water. The contractor will have 2 days to water these areas.

4. Maintenance: At a minimum the contractor shall be responsible for mowing the new established Bahia grass at four (4) different times throughout the 12 month warranty period. The timing of mowing shall be coordinated and approved by the owner's representative.

4.1. At a minimum the contractor shall implement a fertilization program that will adequately assist the continued health of the turfgrass. This should include a spring, summer, and fall fertilization treatment unless proper soil sample analysis is supplied to the owner's representative that warrants no treatment required. The owner's representative shall make the final decision.

4.2. At the request of the owner's representative, at any given time, any area of the project that has not properly been covered by turfgrass, that is undernourished, underwatered, eroded, or in any other way not acceptable to the owner's representative, the contractor will have seven (7) days to fully correct the problem at the contractor's expense.

D. Fertilization, Pre-Emergent and Mulching:

1. Prior to mulching, apply fertilizer specified in Part 2-Products to tree, palm, shrub, groundcover and sod areas at the rate of 1.5 pounds of actual fertilizer per 100 square feet. Fertilizer application shall be witnessed by Landscape Architect-Owner's Representative.

E. Mulching and Pre-Emergent Herbicide:

1. Apply pre-emergent herbicide to tree, palm, shrub, and groundcover areas according to manufacture's recommendations. Pre-emergent application shall be witnessed by Landscape Architect-Owner's Representative.

2. Mulch surfaces of tree, palm, shrub and groundcover areas. Apply 3 inch depth of settled mulch, level with adjacent finish grades, sidewalks, curbs and sod. Mulch over root ball of plants shall be 1 inch maximum.

F. Plant Protection:

1. Protect plants from damage due to landscape operations, operations by other contractors and trades, and others. Maintain protection during installation and maintenance periods, as approved by Landscape Architect-Owner's Representative. Treat, repair, or replace damaged plant materials.

G. Clean Up:

1. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose off Owner's property.

H. Sprigging:

1. The Contractor shall carefully coordinate the sprigging operation being careful not to sprig an area too large or move so swiftly that a reasonable watering operation could not follow. Carelessness on the part of the Contractor, as mentioned above, shall result in the Contractor being liable for the cost of additional sprigs and the replanting of same.

2. A successful planting shall be defined as the insertion of 12 live sprigs per square foot.

3. An automatic planting machine shall be used, the machine shall insert live sprigs at 1-1/2 to 2 inch centers and roll the surface smooth on one pass. A minimum rate for sports field shall be 400 bushels per acre and sprigs shall be "cut in" mechanically.

4. After planting, sprigs must be watered to avoid drying out. Watering must be maintained until the sprigs tack down, about 14 days, then reduced to kept the sprigs well irrigated until complete coverage is obtained. Insects such as army worms are the biggest insect threat and can completely destroy a stand of immature sprigs overnight, it is the Contractors responsibility to monitor and treat all infestations as may be required.

5. The sprigs must be properly fertilized until completely grown in (about 12 weeks in optimum season - do not attempt to sprig past August 1). Apply 1 lb of nitrogen/1,000 square feet per week, applied in 2, 1/2 lb applications for 12 weeks. The nitrogen source shall be 75% water soluble and 25% water insoluble. Test soil and apply lime as needed to meet , then apply a pre-plant "complete" fertilizer, 10-10-10 at least 2lb/M which needs to be lightly incorporated into the soil prior to sprigging.

6. Contractor shall be responsible for the planting and grow-in of all sprigged areas. The grow-in responsibilities shall include all mowing, fertilization monitoring, watering and any additional activities required to produce a weed-free dense turf. The grow-in and maintenance period shall be considered complete when a healthy, well-rooted, even-colored, viable lawn has been established, free of weeds, surface irregularities and no bare areas greater than 2-1/2 square inch/10 square feet, with no bare area greater than 1 sq in each. Contractor shall notify the Landscape Architect-Owner's Representative in writing requesting an inspection with 48 hours notice to determine final acceptance of all the sprigged areas.

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| REV. NO: | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: M. GAFFNEY–COOKE
DRAWN BY: M. GAFFNEY–COOKE
SHEET CHK'D BY: B.A.C.
CROSS CHK'D BY: M.E.G.
APPROVED BY: S. DAVIS
DATE: JANUARY 2021

CDM Smith
8381 Dix Ellis Trail, Suite 400
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FL COA No. EB-0000020

JEA

CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT

ROBENA ROAD PUMP STATION
LANDSCAPE SPECIFICATIONS

PROJECT NO.
FILE NAME:

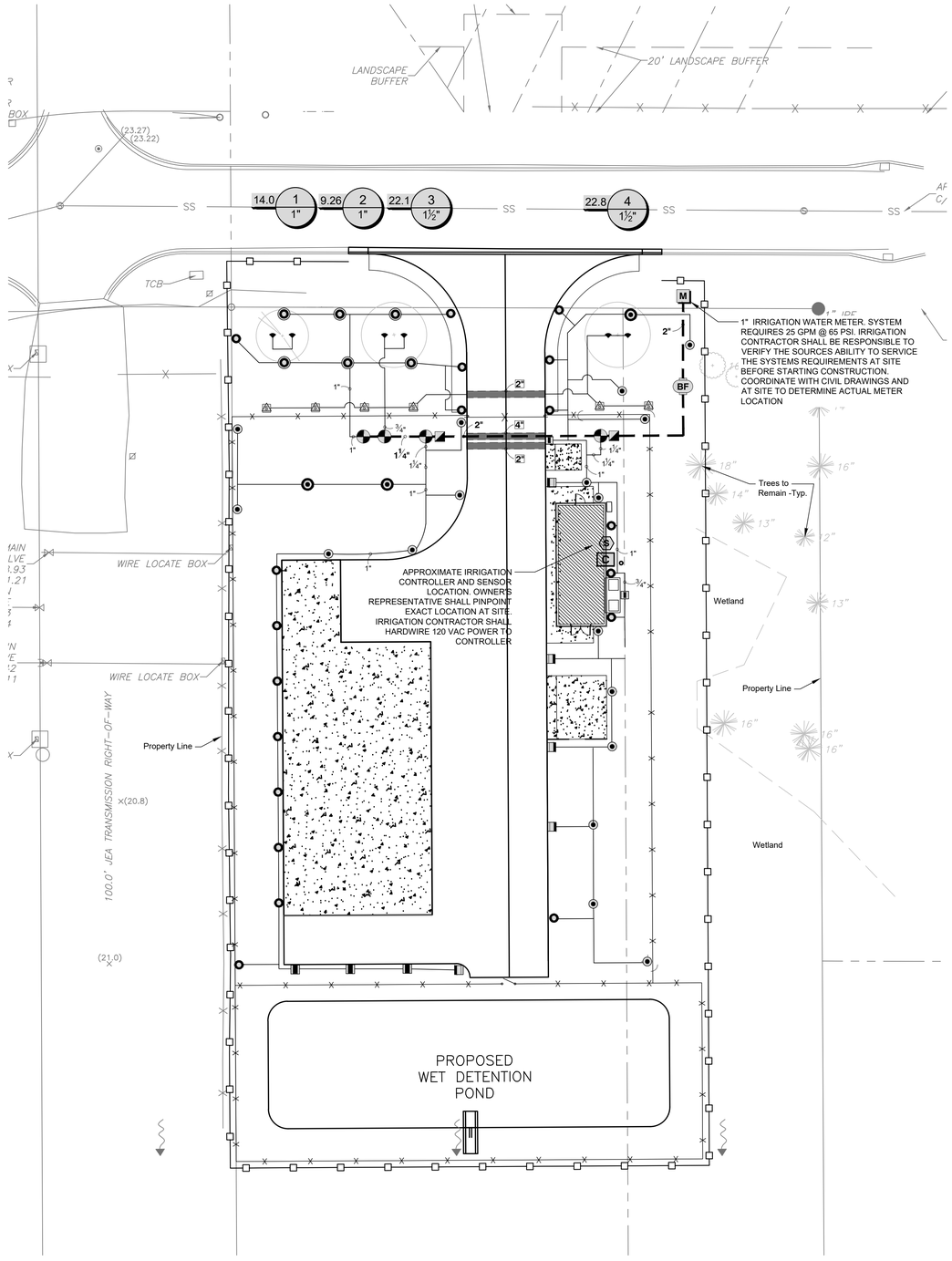
SHEET NO.
L-3

MARGARET S. GAFFNEY, RLA
LA 6666918
STATE OF FLORIDA

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ISSUED FOR BID

THE DESIGN PROFESSIONAL DENIES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND DESIGN INTENT THEY CONVEY OR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE DESIGN PROFESSIONALS GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES OR CONFLICTS WHICH ARE ALLEGED.




## IRRIGATION SCHEDULE

| SYMBOL | MANUFACTURER/MODEL/DESCRIPTION | QTY | PSI |
|---|---|---|---|
| EST LCS RCS CST SST | Rain Bird 1806-PRS-U 15 Strip Series<br>Shrub Spray, 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet. With Pressure Regulating Device. | 6 | 30 |
| R-VAN-LCS R-VAN-RCS R-VAN-SST | Rain Bird R-VAN-STRIP 1806-SAM-P45<br>Turf Rotary, 5`x15` (LCS and RCS), 5`x30` (SST) Hand Adjustable Multi-Stream Rotary w/ 1800 turf spray body on 6.0" pop-up, with check valve and 45 psi in-stem pressure regulator. 1/2" NPT Female Threaded Inlet. | 8 | 40 |
| R-VAN14 R-VAN14-360 | Rain Bird R-VAN14 1806-SAM-P45<br>Turf Rotary, 8`-14` 45-270 degrees and 360 degrees. Hand Adjustable Multi-Stream Rotary w/1800 turf spray body on 6.0" pop-up, with check valve and 45 psi in-stem pressure regulator. 1/2" NPT Female Threaded Inlet. | 2 | 40 |
| R-VAN18 R-VAN18-360 | Rain Bird R-VAN18 1806-SAM-P45<br>Turf Rotary, 13`-18` 45-270 degrees and 360 degrees. Hand Adjustable Multi-Stream Rotary w/1800 turf spray body on 6.0" pop-up, with check valve and 45 psi in-stem pressure regulator. 1/2" NPT Female Threaded Inlet. | 25 | 40 |
| R-VAN24 R-VAN24-360 | Rain Bird R-VAN24 1806-SAM-P45<br>Turf Rotary, 17`-24` 45-270 degrees and 360 degrees. Hand Adjustable Multi-Stream Rotary w/1800 turf spray body on 6.0" pop-up, with check valve and 45 psi in-stem pressure regulator. 1/2" NPT Female Threaded Inlet. | 20 | 40 |
| 1401 1402 1404 1408 | Rain Bird 1800-1400 Flood 1401<br>Fixed flow rate (0.25-2.0GPM), full circle bubbler, 1/2" FIPT. | 6 | 30 |

| SYMBOL | MANUFACTURER/MODEL/DESCRIPTION | QTY |
|---|---|---|
| | Rain Bird PEB<br>1", 1-1/2", 2" Plastic Industrial Valves. Low Flow Operating Capability, Globe Configuration. | 4 |
| | Rain Bird 3-RC<br>3/4" Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Thermoplastic Rubber Cover, and 1-Piece Body. | 2 |
| BF | Watts 919QT 1-1/4"<br>Backflow reduced pressure zone | 1 |
| C | Hunter PC-400<br>Light Commercial & Residential Controller, 4-station base module controller, 120 VAC, Outdoor model | 1 |
| S | Hunter WSS-SEN<br>Wireless Solar, rain freeze sensor with outdoor interface, connects to Hunter X-Core and ACC Controllers, install as noted. Includes gutter mount bracket. Module not included. | 1 |
| M | Water Meter 1"<br>1` water meter requires 25 GPM @ 65 PSI. irrigation contractor shall be responsible to verify the sources ability to service the systems requirements at site before starting construction. | 1 |
| | Irrigation Lateral Line: PVC Class 200 SDR 21<br>Only lateral transition pipe sizes 1" and above are indicated on the plan, with all others being 3/4" in size.Install 12" below final grade. | 1,248 l.f. |
| | Irrigation Mainline: PVC Class 200 SDR 21<br>Pipe sizes 3" inch or smaller shall have bell and socket joints. Pipe sizes larger then than 3" inch shall have snap connections w/ rubber gasket joints, thrust blocked. Install 18" below grade. | 140.9 l.f. |
| | Pipe Sleeve: PVC Schedule 40<br>Sizes shall be twice the diameter of the pipe or wire bundle carried. Place below all paving, hardscape etc. and as directed by the Owners representative. | 72.7 l.f. |

Valve Callout
Valve Number
Valve Flow
Valve Size

## VALVE SCHEDULE

| NUMBER | MODEL | SIZE | TYPE | GPM | HEADS | PIPE 3/4" | PIPE 1" | PIPE 1 1/4" | WIRE | DESIGN PSI | FRICTION LOSS | VALVE LOSS | PSI | PSI @ POC | PRECIP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Rain Bird PEB | 1" | Turf Rotary | 14.00 | 10 | 161.6 | 26.8 | | 136.0 | 40 | 1.07 | 2.24 | 43.31 | 57.76 | 0.42 in/h |
| 2 | Rain Bird PEB | 1" | Shrub Spray | 9.26 | 10 | 193.7 | | | 129.5 | 30 | 0.87 | 1.79 | 32.65 | 46.41 | 1.49 in/h |
| 3 | Rain Bird PEB | 1-1/2" | Turf Rotary | 22.14 | 20 | 327.2 | 49.2 | 14.7 | 116.9 | 40 | 3.72 | 3.84 | 47.55 | 63.61 | 0.41 in/h |
| 4 | Rain Bird PEB | 1-1/2" | Turf Rotary | 22.75 | 25 | 402.6 | 47.6 | 10.2 | 63.3 | 40 | 3.85 | 3.82 | 47.66 | 63.67 | 0.37 in/h |
| | Common Wire | | | | | | 140.9 | | | | | | | | |

## WATERING SCHEDULE - DAYLIGHT SAVING TIME

| NUMBER | MODEL | TYPE | PRECIP | SUN | MON | TUE | WED | THU | FRI | SAT | IN./WEEK | MIN./WEEK | GAL./WEEK | GAL./DAY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Rain Bird PEB | Turf Spray | 0.81 in/h | | | 38 min | | | 38 min | | 1 | 75 | 1,956 | 978.1 |
| 2 | Rain Bird PEB | Turf Rotary | 0.43 in/h | | | 53 min | | | 53 min | | 0.75 | 106 | 1,404 | 701.9 |
| 3 | Rain Bird PEB | Shrub Spray | 1.60 in/h | | | 19 min | | | 19 min | | 1 | 38 | 757.7 | 378.9 |
| 4 | Rain Bird PEB | Turf Rotary | 0.39 in/h | | | 58 min | | | 58 min | | 0.75 | 115 | 2,466 | 1,233 |
| 5 | Rain Bird PEB | Turf Rotary | 0.39 in/h | | | 59 min | | | 59 min | | 0.75 | 117 | 1,968 | 984.2 |
| | | TOTALS: | | | | 227 | | | 227 | | | 451 | 8,552 | 4,276 |

## WATERING SCHEDULE - EASTERN STANDARD TIME

| NUMBER | MODEL | TYPE | PRECIP | SUN | MON | TUE | WED | THU | FRI | SAT | IN./WEEK | MIN./WEEK | GAL./WEEK | GAL./DAY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Rain Bird PEB | Turf Spray | 0.81 in/h | | | 60 min | | | | | 0.80 | 60 | 1,565 | 1,565 |
| 2 | Rain Bird PEB | Turf Rotary | 0.43 in/h | | | 54 min | | | | | 0.38 | 54 | 715.1 | 715.1 |
| 3 | Rain Bird PEB | Shrub Spray | 1.60 in/h | | | 38 min | | | | | 1 | 38 | 757.7 | 757.7 |
| 4 | Rain Bird PEB | Turf Rotary | 0.39 in/h | | | 58 min | | | | | 0.38 | 58 | 1,244 | 1,244 |
| 5 | Rain Bird PEB | Turf Rotary | 0.39 in/h | | | 59 min | | | | | 0.38 | 59 | 992.6 | 992.6 |
| | | TOTALS: | | | | 269 | | | | | | 269 | 5,274 | 5,274 |

**Sec. 366.504. - Landscape irrigation schedule.**

During the time period when **Daylight Savings Time** is in effect, the following landscape irrigation schedule shall apply and is limited to only that necessary for efficient utilization. No more than l-inch of water may be applied per irrigation zone on each day that irrigation occurs, and in no event shall irrigation occur for more than one hour per irrigation zone, on each of the following specified irrigation days:

Non-residential landscape irrigation shall occur only on Tuesday and Friday and not between 10:00 a.m. and 4:00 p.m.

During the time period when Eastern Standard Time is in effect, the following landscape irrigation schedule shall apply to both residential and non-residential landscape and property owners are advised to limit landscape irrigation to only that necessary for efficient utilization. No more than 1" inch of water may be applied per irrigation zone on each day that irrigation occurs, and in no event shall irrigation occur for more than one hour per irrigation zone on each of the following specified irrigation days:

Non-residential landscape irrigation shall occur only on Tuesday and not between 10:00 a.m. and 4:00 p.m.

All landscape irrigation shall be limited to only that needed to meet landscape needs;

Any person who irrigates landscape with an automatic lawn sprinkler system installed after May 1, 1991, shall install, maintain and operate a rain sensor device or switch that overrides the irrigation system when adequate rainfall has occurred.

**Sec. 366.505. - Exceptions to landscape irrigation schedule.**

Landscape irrigation is subject to the following exceptions:

Irrigation using a micro-irrigation system is allowed anytime provided the amount of water used is limited to only that necessary for efficient utilization.

Irrigation of new landscape is allowed at any time of day on any day for the initial 30 days following installation and on every other day for the next 30 days for a total of one 60-day period, provided that the irrigation is limited to the minimum amount necessary for such landscape establishment.

Watering in of chemicals, including insecticides, pesticides, fertilizers, fungicides and herbicides when required by law, the manufacturer, or best management practices is allowed anytime within 24 hours of application. Watering in of chemicals shall not exceed L-inch of water per application except as otherwise required by law, the manufacturer, or best management practices.

Irrigation systems may be operated any time of day, on any day, for maintenance and repair purposes not to exceed 20 minutes per hour per zone.

Irrigation using a hand-held hose equipped with an automatic shut-off nozzle is allowed anytime.

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LICENSED LANDSCAPE ARCHITECT
LA 6666918
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| REV. NO. | DATE | DRWN. | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| 2 | 11/16/20 | MEG | BAC | COMMENT RESPONSE |
| 1 | 9/8/20 | JM | MEG | COMMENT RESPONSE |

DESIGNED BY: JASON MCELROY
DRAWN BY: JASON MCELROY
SHEET CHK'D BY: M.E.G.
CROSS CHK'D BY: B.A.C.
APPROVED BY: M.E.G
DATE: JANUARY 2021

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JEA

CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT

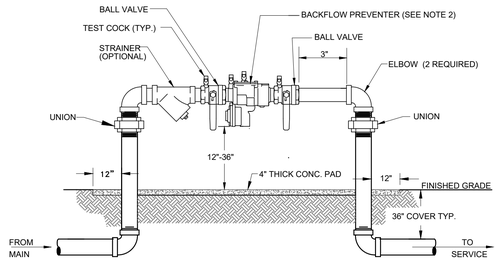
ROBENA ROAD PUMP STATION
# IRRIGATION PLAN

PROJECT NO.
FILE NAME:

SHEET NO.
L-4

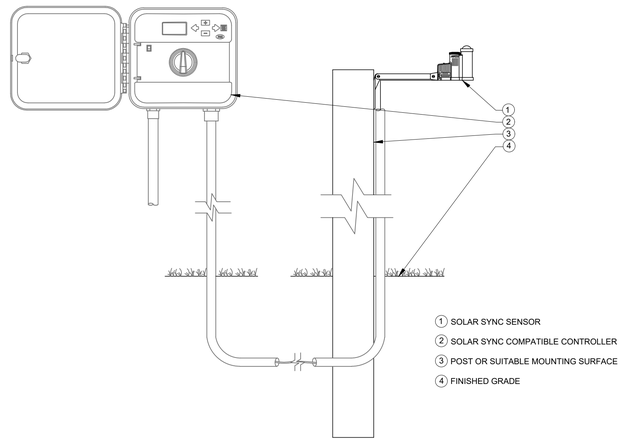
ISSUED FOR BID

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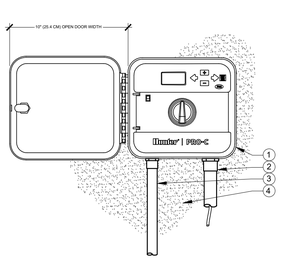

NOTES:
1. ALL PIPE AND FITTINGS 2" AND SMALLER SHALL BE THREADED SCHEDULE 40 GALVANIZED STEEL OR BRASS.
2. ALL BACKFLOW PREVENTER DEVICES SHALL BE APPROVED BY THE CITY/COUNTY BACKFLOW PREVENTER TECHNICIAN. ALL REDUCED PRESSURE BACKFLOW DEVICES SHALL BE USC APPROVED.
3. CONCRETE PAD IS REQUIRED FOR ALL INSTALLATIONS 1-1/2" OR LARGER.

## REDUCED PRESSURE BACKFLOW PREVENTER




1. SOLAR SYNC SENSOR
2. SOLAR SYNC COMPATIBLE CONTROLLER
3. POST OR SUITABLE MOUNTING SURFACE
4. FINISHED GRADE

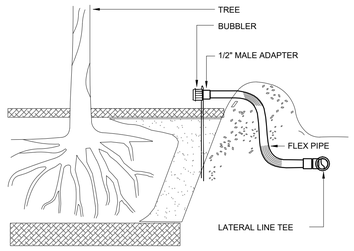
## SOLAR SYNC WITH WALL MOUNT CONTROLLER



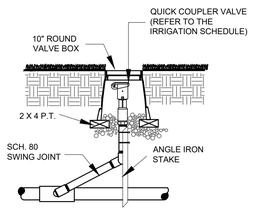

1. IRRIGATION CONTROLLER (PRO-C) PER PLAN
2. IRRIGATION CONTROL WIRE IN CONDUIT SIZE AND TYPE PER LOCAL CODES
3. ELECTRICAL SUPPLY CONDUIT CONNECT TO POWER SOURCE, J-BOX INSIDE CONTROLLER
4. ADJACENT SURFACE TO MOUNT CONTROLLER PER PLAN

NOTE
MOUNT CONTROLLER LCD SCREEN AT EYE LEVEL, CONTROLLER SHALL BE HARD-WIRED TO GROUNDED 110 VAC POWER SOURCE

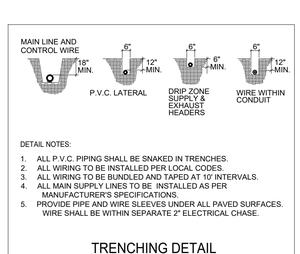
## PRO-C WALL MOUNT




## TREE BUBBLER DETAIL




## QUICK COUPLER TYPICAL DETAIL




DETAIL NOTES:
1. ALL P.V.C. PIPING SHALL BE SNAKED IN TRENCHES.
2. ALL WIRING TO BE INSTALLED PER LOCAL CODES.
3. ALL WIRING TO BE BUNDLED AND TAPED AT 10' INTERVALS.
4. ALL MAIN SUPPLY LINES TO BE INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS.
5. PROVIDE PIPE AND WIRE SLEEVES UNDER ALL PAVED SURFACES. WIRE SHALL BE WITHIN SEPARATE 2" ELECTRICAL CHASE.

## TRENCHING DETAIL

## IRRIGATION SYSTEM PERFORMANCE NOTES

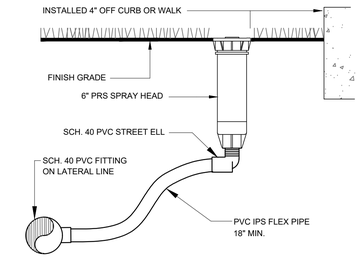
1. IRRIGATION SYSTEM IS DESIGNED TO OPERATE OFF A POTABLE WATER METER PROVIDING A MINIMUM FLOW OF 25 GPM AND A MINIMUM PRESSURE OF 65 PSI.

   CONTRACTOR MUST CONTACT THE LANDSCAPE ARCHITECT PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION IF THE AVAILABLE FLOW AND PRESSURE DEVIATES MORE THEN 5% OR WILL AFFECT THE PERFORMANCE OF THE SYSTEM.

   MINIMUM PRESSURE REQUIREMENTS - 65 PSI AT THE POINT OF CONNECTION
   A. 40 PSI AT THE BASE OF THE POP-UP ROTOR/ROTATOR HEADS
   B. 30 PSI AT THE BASE OF THE POP-UP SPRAY HEADS

2. HEAD LAYOUT IS BASED ON BASE INFORMATION PROVIDED. HEADS SHALL BE ADJUSTED TO ACCOMMODATE FIELD VARIATIONS WHILE MAINTAINING 100% COVERAGE AND MINIMIZING OVER-SPRAY ONTO PAVED AREAS AND BUILDINGS.

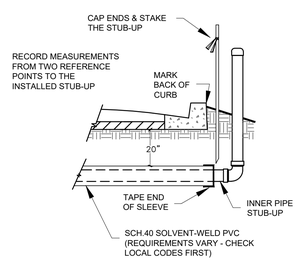
3. ½" PIPE SHALL NOT BE USED FOR LATERAL PIPING




## 6" POP-UP SPRAY HEAD DETAIL

## NOTES

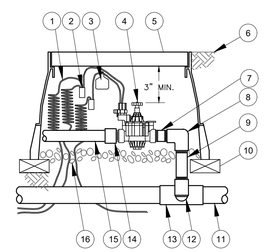
1. ALL WIRE WILL BE COLOR-CODED DIRECT BURIAL UL/LF WIRE: COMMON (WHITE) @12-1, CONTROL WIRE (RED) #14-1
2. ALL PIPING AND WIRING UNDER HARDTOPS WILL BE SCH 40 PVC PIPE SLEEVE
3. IRRIGATION INSTALLATION CONTRACTOR SHALL INSTALL (2) SPARE CONTROL WIRES, COLOR-CODED YELLOW AND COMMON FROM CONTROLLER TO MIDPOINT OF MAINLINE, MOUNTED IN 10" ROUND VALVE BOX.




## ROUGH IN SLEEVING DETAIL

## GENERAL IRRIGATION NOTES

1. ALL MAINLINES TO HAVE A MINIMUM OF 18" OF COVER. (CLASS 200 PVC PIPE).
2. ALL LATERAL AND SUB-MAIN PIPE TO HAVE A MINIMUM OF 12" OF COVER (CLASS 200 PVC PIPE).
3. NO ROCKS, BOULDER, OR OTHER EXTRANEOUS MATERIALS TO BE USED IN BACKFILLING OF TRENCH.
4. ALL PIPE TO BE INSTALLED AS PER MANUFACTURERS' SPECIFICATIONS.
5. ALL THREADED JOINTS TO BE COATED WITH TEFLON TAPE OR LIQUID TEFLON.
6. ALL LINES TO BE THOROUGHLY FLUSHED BEFORE INSTALLATION OF SPRINKLER HEADS.
7. SPRINKLER AND RELATED EQUIPMENT TO BE INSTALLED AS PER DETAILS.
8. ALL ELECTRICAL JOINTS TO BE MADE USING WATERPROOF CONNECTIONS AS SHOWN ON DETAILS.
9. ALL EQUIPMENT NOT SPECIFIED IN THE LEGEND SHALL BE DETERMINED AND FURNISHED BY THE CONTRACTOR.
10. NO ELECTRICAL CONNECTIONS SHALL BE MADE IN THE FIELD EXCEPT AT A VALVE CONTROL BOX OR ANOTHER VALVE BOX SPECIFICALLY FOR CONNECTIONS.
11. ANY DISCREPANCY BETWEEN THIS SHEET AND OTHERS IN THIS SET MUST BE REFERRED TO THE IRRIGATION CONSULTANT BY THE CONTRACTOR FOR CLARIFICATION BEFORE PRECEDING WITH THE WORK.
12. ALL 24 VOLT WIRE SHALL BE #12 UF/UL FOR COMMON WIRE, AND #14 UF/UL FOR CONTROL WIRES, DIRECT BURIAL, SOLID COPPER.
13. CONTRACTOR TO BE RESPONSIBLE FOR PROPER COVERAGE OF AREAS TO BE WATERED. i.e ADJUST HEADS WITH INSUFFICIENT COVERAGE DUE TO BLOCKAGE BY EXISTING OR PROPOSED SITE FEATURES.
14. CONTRACTOR TO REFER TO LANDSCAPE PLAN TO KEEP SPRINKLER EQUIPMENT AND ACCESSORY MATERIAL FROM INTERFERING WITH PROPER PLANTING. i.e VERIFY ROOT BALL SIZE FOR PLANTING
15. CONTRACTOR SHALL PROVIDE EXPANSION COILS AT EACH WIRE CONNECTION IN A VALVE BOX (WRAP AROUND 3/4" PIPE 12 TIMES.
16. CONTRACTOR TO UTILIZE APPROPRIATE AUTOMATIC DRAIN DEVICE WHERE LOW-HEAD DRAINAGE MAY OCCUR.
17. CONTRACTOR SHALL UTILIZE VALVE I.D. TAGS ON ALL REMOTE CONTROL VALVES.
17. ALL SPRINKLERS TO BE MOUNTED ON FLEX PIPE - REFER TO DETAILS.
18. 24 VOLT WIRE SHALL BE COLOR CODE; COMMON-WHITE, CONTROL-RED.
19. CONTRACTOR SHALL INSTALL MANUFACTURERS' RECOMMENDED GROUNDING EQUIPMENT FOR POWER SUPPLY AND VALVE OUTPUT WITH (2) 5/8" COPPER CLAD GROUND RODS.
20. CONTRACTOR SHALL INSTALL MANUFACTURERS' RECOMMENDATION ON FAULT GROUND AND LIGHTENING PROTECTION.
21. CONTROLLER GROUNDING MUST BE PER ASIC REQUIREMENTS.
22. ALL MATERIAL TO BE SUPPLIED BY CONTRACTOR TO OWNER:
    A. TWO WRENCHES FOR DISASSEMBLING AND ADJUSTING EACH TYPE OF SPRINKLER HEAD AND VALVE SUPPLIED.
    B. TWO KEYS FOR EACH OF THE AUTOMATIC CONTROLLERS.
    C. TWO QUICK COUPLER KEYS WITH MATCHING HOSE SWIVELS.
26. SYSTEM IS DIAGRAMMATIC TO IMPROVE CLARITY. ALL MAINLINE PIPING, ELECTRIC VALVES AND WIRING ARE TO BE INSTALLED IN LANDSCAPED AREAS AND REFERENCE THE LANDSCAPE PLAN PRIOR TO THE INSTALLATION OF PIPING TO AVOID CONTACT WITH PLANT MATERIALS EXISTING OR NEW.
27. CONTRACTOR TO ADD EXTENSION RISER TO POP-UP HEADS WHEN NEEDED TO PROVIDE PROPER COVERAGE.
28. CONTRACTOR SHALL INSTALL SPRINKLER EQUIPMENT 12" FROM FOUNDATIONS, ALSO INSTALL SPRINKLERS 4" FROM CURBS OR WALKS.
29. PRIOR TOP BID IRRIGATION CONTRACTOR SHALL VERIFY RIGHT-OF-WAY AND BACKFLOW REQUIREMENTS NO LATER THAN FIVE DAYS BEFORE BID SUBMITTALS. CONTRACTOR SHALL NOTIFY CONSULTANT OF ANY CHANGES FROM PLANS OR SPECIFICATIONS.
30. IRRIGATION CONTRACTOR SHALL PROVIDE THE OWNER AND LANDSCAPE ARCHITECT WITH A REPRODUCIBLE CROSS MEASURED AS-BUILT DRAWING OF THE INSTALLED IRRIGATION SYSTEM IN AUTOCAD 2010 FORMAT BEFORE FINAL ACCEPTANCE.
31. A 1-YEAR WARRANTY PERIOD SHALL BE PROVIDED FOR SYSTEM AFTER SUBSTANTIAL COMPLETION IS ACCEPTED. START UP AND ADJUSTING OF SYSTEM IN SPRING TIME SHALL BE INCLUDED IN WARRANTY.
32. PRIOR TO BID, CONTRACTOR SHALL VERIFY THAT ALL MATERIAL, INSTALLATION PARAMETERS AND OPERATIONS CONFORM TO ALL APPLICABLE CODES AND ORDINANCES NO LATER THAN FIVE DAYS BEFORE BID SUBMITTALS. CONTRACTOR SHALL NOTIFY IRRIGATION CONSULTANT/DESIGNER OF ANY CHANGES REQUIRED DUE TO CURRENT CODE OR ORDINANCE DISCREPANCIES. IF CONTRACTOR DOES NOT COMPLY TO THIS NOTIFICATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY INSTALLATION CHANGE AND REDESIGN COSTS FOR NON-COMPLIANCE.
33. UNLESS OTHERWISE NOTED, THE CONTRACTOR MUST COMPLETE TWP PRESSURE TESTS OF THE IRRIGATION SYSTEM MAINLINE(BOTH TO SHOW NO DROP IN PRESSURE DURING DURATION OF THE TEST).
    A. 2-HOUR PRESSURE TEST AT 1.5 TIMES THE SYSTEM STATIC PRESSURE
    B. 24-HOUR PRESSURE TEST AT THE SYSTEM STATIC PRESSURE
34. IRRIGATION INSTALLATION CONTRACTOR SHALL PROVIDE THE OWNER WITH A COLOR-CODED ZONE DIAGRAM PLAN, 8-1/2"X11" LAMINATED SHEET(S) TO IDENTIFY CONTROLLER STATION TO THE CONTROL VALVE NUMBER FOR EACH CONTROLLER. CHART IS TO BE LOCATED IN AN ADHESIVE POUCH ATTACHED TO THE INSIDE OF CONTROLLER(S).
35. THE CONTROLLER(S) SHALL SCHEDULE PROGRAM "A" TO A REGULAR RUN-TIME SETTINGS FOR AFTER THE ESTABLISHMENT PERIOD OF THE PLANT MATERIAL. PROGRAM "B" SHALL BE USED DURING THE ESTABLISHMENT PERIOD AND TURNED OFF AFTER THE 30-60 DAYS OF PLANT INSTALLATION.
18. THE IRRIGATION CONTRACTOR WILL READ ALL SPECIFICATIONS AND REVIEW ALL DETAILS AND EXAMINE THESE PLANS CAREFULLY PRIOR TO BIDDING THIS PROJECT. FAILURE TO READ THIS INFORMATION IS NOT AN ACCEPTABLE REASON IF THE JOB IS UNDERBID.
19. THE PLAN MAY NOT INCLUDE ALL MATERIALS. THIS DOESNT RELIEVE THE CONTRACTOR FROM BEING RESPONSIBLE TO PROVIDE A COMPLETE SYSTEM IN PERFECT WORKING ORDER.




1. 30" LINEAR LENGTH OF WIRE, COILED
2. WATERPROOF CONNECTION RAIN BIRD SPLICE-1 (1 OF 2)
3. ID TAG: RAIN BIRD VID SERIES
4. REMOTE CONTROL VALVE: RAIN BIRD PEB
5. VALVE BOX WITH COVER RAIN BIRD VB-STD
6. FINISH GRADE/TOP OF MULCH
7. PVC SCH 80 NIPPLE (CLOSE)
8. PVC SCH 40 ELL
9. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
10. BRICK (1 OF 4)
11. PVC MAINLINE PIPE
12. SCH 80 NIPPLE (2" LENGTH, HIDDEN) AND SCH 40 ELL
13. PVC SCH 40 TEE OR ELL
14. PVC SCH 40 MALE ADAPTER
15. PVC LATERAL LINE
16. 3" MINIMUM DEPTH OF ¾" WASHED GRAVEL

## ELECTRIC REMOTE CONTROL VALVE - PEB SERIES

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www.irrdesign.com
Jason McElroy
irrdesign@gmail.com

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| REV. NO. | DATE | DRWN. | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: JASON MCELROY
DRAWN BY: JASON MCELROY
SHEET CHK'D BY: B.A.C.
CROSS CHK'D BY: M.E.G.
APPROVED BY: M.E.G
DATE: JANUARY 2021

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JEA

CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT

ROBENA ROAD PUMP STATION
# IRRIGATION SPECIFICATIONS

PROJECT NO.
FILE NAME:

SHEET NO.
L-5

ISSUED FOR BID

# SYMBOLS (ABBREVIATIONS)

| | | |
|---|---|---|
| | UNCLASSIFIED. TYPE AS SHOWN ON THE DRAWINGS ADJACENT TO SYMBOL | |
| | GATE VALVE | (GV) |
| | KNIFE GATE VALVE | (KG) |
| | GLOBE VALVE | (GLV) |
| | BALL VALVE | (BV) |
| | 3-WAY BALL VALVE | (BV3) |
| | 4-WAY BALL VALVE | (BV4) |
| | RECYCLE CONTROL VALVE | (RCV) |
| | CONE VALVE | (CNV) |
| | NEEDLE VALVE | (NV) |
| | PINCH VALVE | |
| | DIAPHRAGM VALVE | (DV) |
| | BUTTERFLY VALVE | (BFV) |
| | PLUG VALVE, GENERAL SYMBOLS | (PV) |
| | 3-WAY PLUG VALVE | (PV3) |
| | 4-WAY PLUG VALVE | (PV4) |
| | CHECK VALVE, GENERAL SYMBOLS | (CV) |
| | SLANTING DISK CHECK VALVE | (SDCV) |
| | BALL CHECK VALVE | (BCV) |
| | DOUBLE DOOR CHECK VALVE | (DDCV) |
| | SOLENOID VALVE | (SV) |
| | MOTOR OPERERATED VALVE | (MOV) |
| | 3-WAY SOLENOID VALVE | (SV3) |
| | 4-WAY SOLENOID VALVE | (SV4) |
| | ANGLE VALVE | (AV) |
| | QUICK CONNECT COUPLING | (QCC) |
| | SLUICE GATE | (SLG) |
| | BULKHEAD GATE | (BHG) |
| | SLIDE GATE | (SG) |
| | WEIR SLIDE GATE | (WG) |
| | STOP PLATE GUIDES | (SPG) |
| | FLAP VALVE | (FLV) |
| | SHEAR GATE | (SHG) |
| | MUD VALVE | (MV) |
| | ROTOMETER | (RM) |

# SYMBOLS

| | | |
|---|---|---|
| | PRESSURE REDUCING REGULATOR SELF CONTAINED | (PCV) |
| | PRESSURE REDUCING REGULATOR WITH EXTERNAL PRESSURE TAP | (PCV) |
| | DIFFERENTIAL PRESSURE REDUCING REGULATOR WITH INTERNAL AND EXTERNAL PRESSURE TAPS | (PDCV) |
| | PRESSURE RELIEF OR SAFETY VALVE, STRAIGHT-THROUGH PATTERN, SPRING OR WEIGHT-LOADED, OR WITH INTEGRAL PILOT | (PSV) |
| | PRESSURE RELIEF OR SAFETY VALVE, GENERAL SYMBOL | (PSV) |
| | VACUUM RELIEF VALVE, GENERAL SYMBOL | (VRV) |
| | PRESSURE AND VACUUM RELIEF VALVE, SPRING OR WEIGHT-LOADED,OR WITH INTEGRAL PILOT | (PSV) |
| | RUPTURE DISK OR SAFETY HEAD FOR PRESSURE RELIEF | (PSE) |
| | RUPTURE DISK OR SAFETY HEAD FOR VACUUM RELIEF | (PSE) |
| | PRESSURE AND VACUUM RELIEF MANHOLE COVER | (PSE) |
| | SLIDE PLATE | (SP) |
| VD | MANUAL VOLUME DAMPER | |
| BDD | BACKDRAFT DAMPER | |
| | FOOT VALVE | |

# VALVE ACTUATORS

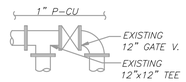
| | |
|---|---|
| | DIAPHRAGM, SPRING OPPOSED |
| | DIAPHRAGM, SPRING OPPOSED WITH POSITIONER |
| | DIAPHRAGM, PRESSURE-BALANCED |
| M | ROTARY MOTOR. (SHOWN TYPICALLY WITH ELECTRIC SIGNAL. MAY BE HYDRAULIC OR PNEUMATIC) |
| S | SOLENOID |
| | CYLINDER, SINGLE-ACTING, SPRING OPPOSED WITHOUT POSITIONER OR PILOT. |
| | CYLINDER, DOUBLE ACTING, WITHOUT POSITIONER OR PILOT |
| | EXAMPLE OF CYLINDER WITH POSITIONER |
| | ANY CYLINDER THAT IS ASSEMBLED WITH A PILOT SO THAT ASSEMBLY IS ACTUATED BY ONE CONTROLLED INPUT. PILOT MAY BE POSITIONER, SOLENOID VALVE, SIGNAL CONVERTER, etc. |
| | FLOAT ACTUATOR |
| | FLOAT ACTUATOR WITH PILOT VALVE |

# PIPE AND FITTING SYMBOLS

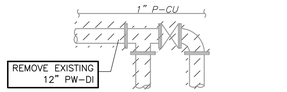
DOUBLE LINE PIPING | SINGLE LINE PIPING

| | |
|---|---|
| | PROCESS PIPING: 3" PIPE & SMALLER |
| | EXISTING PROCESS PIPING |
| | FUTURE PROCESS PIPING |
| | WELDED JOINT |
| SEE NOTE 2 | FLANGED JOINT SIMPLIFIED REPRESENTATION. (SEE NOTE 1 ) |
| | FLANGED JOINT (SEE NOTE 1 ) |
| (F) OR (R) | COUPLING FOR GROOVED END JOINTS: (F) FLEXIBLE (R) RIGID |
| | MECHANICAL JOINT (SEE NOTE 1 ) |
| | PUSH ON JOINT OR CAULKED BELL & SPIGOT JOINT (SEE NOTE 1 ) |
| | FLANGE x PLAIN END PIPE COUPLING (FLANGE ADAPTOR) |
| | PIPE COUPLING (SLEEVE-TYPE) |
| (A) ONE OR TWO LETTERS IDENTIFYING THE TYPE. REFER TO SPECIFICATIONS. | FLEXIBLE COUPLING OR EXPANSION JOINT (SLEEVE TYPE) |
| (B) | FLEXIBLE COUPLING OR EXPANSION JOINT (BELLOWS TYPE) |
| | FLANGE GUARD |
| | VALVE IN VERTICAL PIPE SHOWN IN PLAN VIEW |

## EXISTING FACILITIES SYMBOLOGY AND ANNOTATION




## EXISTING FACILITIES DEMOLITION SYMBOLOGY AND ANNOTATION




## PIPE AND FITTING SYMBOLS NOTES:

1. GENERIC JOINT SYMBOL IS USED FOR ALL SINGLE LINE PIPING SHOWN ON THE INTERIOR AND EXTERIOR PIPING DRAWINGS.
2. BOTH, DETAILED AND SIMPLIFIED FLANGE REPRESENTATION SYMBOLS MAY BE SHOWN ON THE DRAWINGS.
3. UNLESS MODIFIED BY THE GENERAL PROJECT NOTES OR DETAILED ON THE LAYOUT AND SCHEMATIC DRAWINGS PIPE AND FITTING JOINT REQUIREMENTS FOR THE VARIOUS PIPE MATERIALS ARE DEFINED IN THE SPECIFICATIONS AND ARE INDICATED ON THE PROCESS PIPE SCHEDULES

# PROCESS PIPE IDENTIFICATION

## PROCESS FLOW STREAMS

| | |
|---|---|
| D | DRAIN |
| FM | FORCE MAIN |
| PW | POTABLE WATER |
| SARV | SEWAGE AIR RELEASE VALVE |

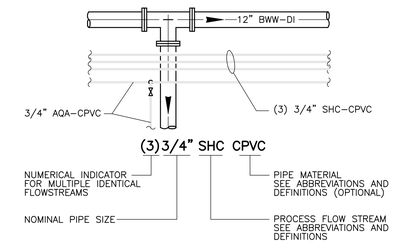
## PIPE MATERIALS

| | |
|---|---|
| DI | DUCTILE IRON |
| PVC | POLYVINYL CHLORIDE PIPE |
| RC | REINFORCED CONCRETE SEWER PIPE |
| 316 SST | STAINLESS STEEL |

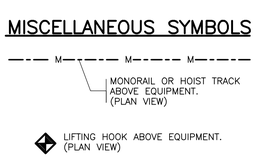
## PIPE JOINTS AND FITTINGS

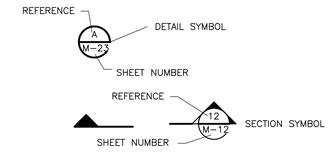
| | |
|---|---|
| BF | – BLIND FLANGE |
| ECC | – ECCENTRIC |
| FLG | – FLANGE |
| HFAC | – HARNESSED FLANGED ADAPTER COUPLING |
| LR | – LONG RADIUS |
| MJ | – MECHANICAL JOINT |
| PE | – PLAIN END |
| RED | – REDUCER |
| REST | – RESTRAINED |
| TRD | – THREADED |

# PIPE TAG




# MISCELLANEOUS SYMBOLS




LEGENDS SYMBOLS AND ABBREVIATIONS SHOWN ON SHEET M-1 INDICATE STANDARD SYMBOLS AND ABBREVIATIONS AND ARE PERTINENT TO THE CONDITIONS ON THIS SET OF DRAWINGS TO THE EXTENT APPLICABLE.

ADDITIONAL LEGENDS AND/OR ABBREVIATIONS MAY APPEAR IN THIS SET OF DRAWINGS TO INDICATE SPECIFIC CONDITIONS.

GENERAL NOTE
THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

NOTE:
FOR ALL VALVE TAGGING
REFER TO P&ID'S

DATE:
JONATHAN Z GOLDMAN
PE NO. PE 0048925

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: B. COGGER
DRAWN BY: A. NUNES
SHEET CHK'D BY: B. WILLIAMS
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: J. GOLDMAN
DATE: JANUARY 2021

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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

MECHANICAL LEGEND, SYMBOLS AND ABBREVIATIONS

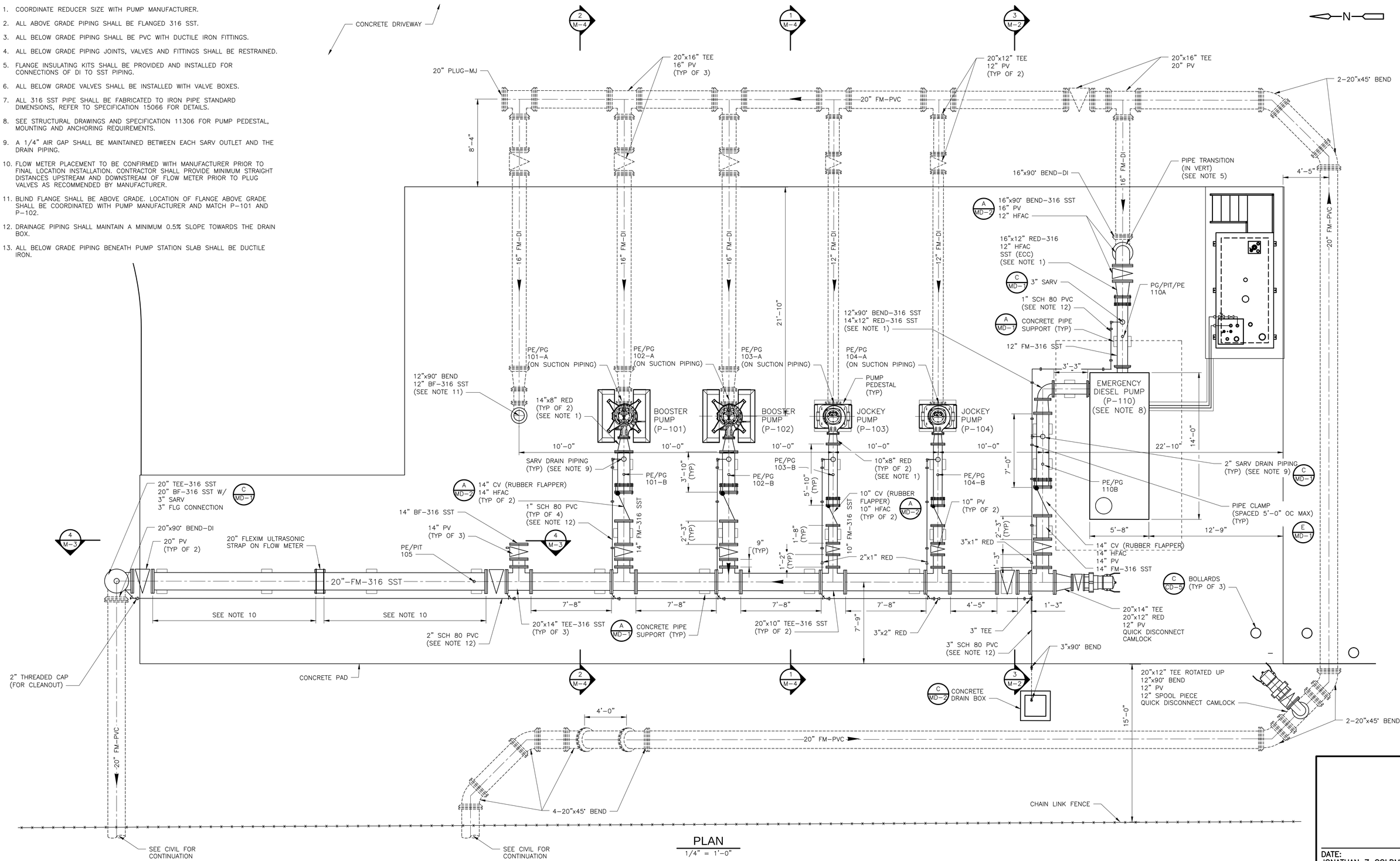
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FILE NAME: M001LEGD.DWG
SHEET NO.
M-1

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**NOTES:**

1. COORDINATE REDUCER SIZE WITH PUMP MANUFACTURER.
2. ALL ABOVE GRADE PIPING SHALL BE FLANGED 316 SST.
3. ALL BELOW GRADE PIPING SHALL BE PVC WITH DUCTILE IRON FITTINGS.
4. ALL BELOW GRADE PIPING JOINTS, VALVES AND FITTINGS SHALL BE RESTRAINED.
5. FLANGE INSULATING KITS SHALL BE PROVIDED AND INSTALLED FOR CONNECTIONS OF DI TO SST PIPING.
6. ALL BELOW GRADE VALVES SHALL BE INSTALLED WITH VALVE BOXES.
7. ALL 316 SST PIPE SHALL BE FABRICATED TO IRON PIPE STANDARD DIMENSIONS, REFER TO SPECIFICATION 15066 FOR DETAILS.
8. SEE STRUCTURAL DRAWINGS AND SPECIFICATION 11306 FOR PUMP PEDESTAL, MOUNTING AND ANCHORING REQUIREMENTS.
9. A 1/4" AIR GAP SHALL BE MAINTAINED BETWEEN EACH SARV OUTLET AND THE DRAIN PIPING.
10. FLOW METER PLACEMENT TO BE CONFIRMED WITH MANUFACTURER PRIOR TO FINAL LOCATION INSTALLATION. CONTRACTOR SHALL PROVIDE MINIMUM STRAIGHT DISTANCES UPSTREAM AND DOWNSTREAM OF FLOW METER PRIOR TO PLUG VALVES AS RECOMMENDED BY MANUFACTURER.
11. BLIND FLANGE SHALL BE ABOVE GRADE. LOCATION OF FLANGE ABOVE GRADE SHALL BE COORDINATED WITH PUMP MANUFACTURER AND MATCH P-101 AND P-102.
12. DRAINAGE PIPING SHALL MAINTAIN A MINIMUM 0.5% SLOPE TOWARDS THE DRAIN BOX.
13. ALL BELOW GRADE PIPING BENEATH PUMP STATION SLAB SHALL BE DUCTILE IRON.




## PLAN
1/4" = 1'-0"

DATE:
JONATHAN Z GOLDMAN
PE NO. PE 0048925

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: B. COGGER
DRAWN BY: A. NUNES
SHEET CHK'D BY: B. WILLIAMS
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: J. GOLDMAN
DATE: JANUARY 2021


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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

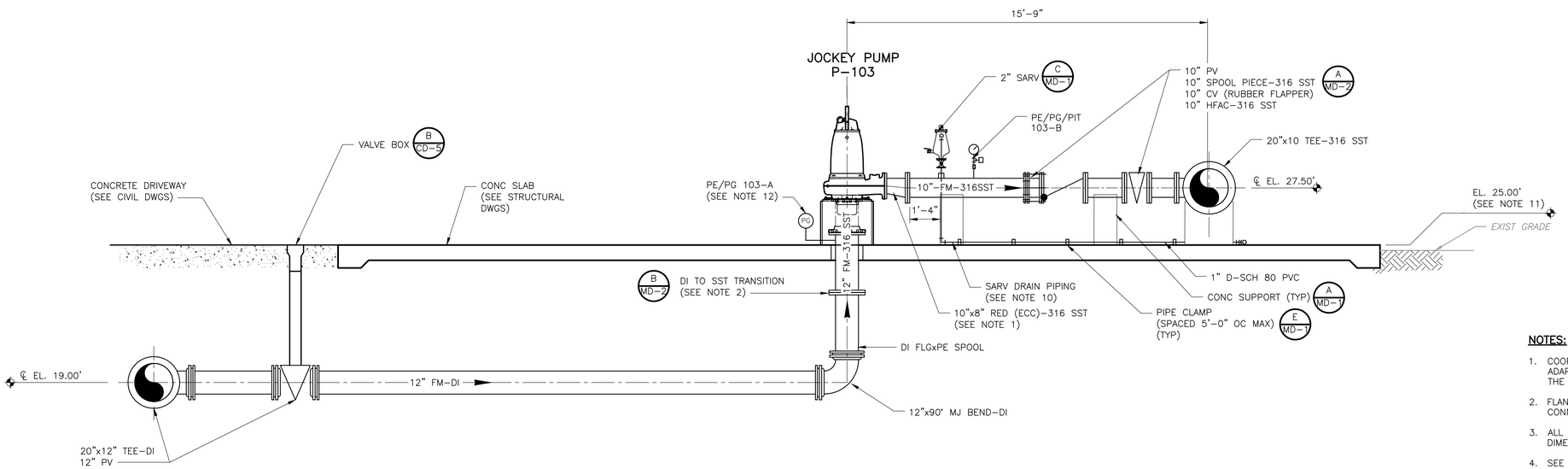
ROBENA ROAD PUMP STATION
PLAN

PROJECT NO. 6103-215629
FILE NAME: M002STPL.DWG

SHEET NO.
M-2

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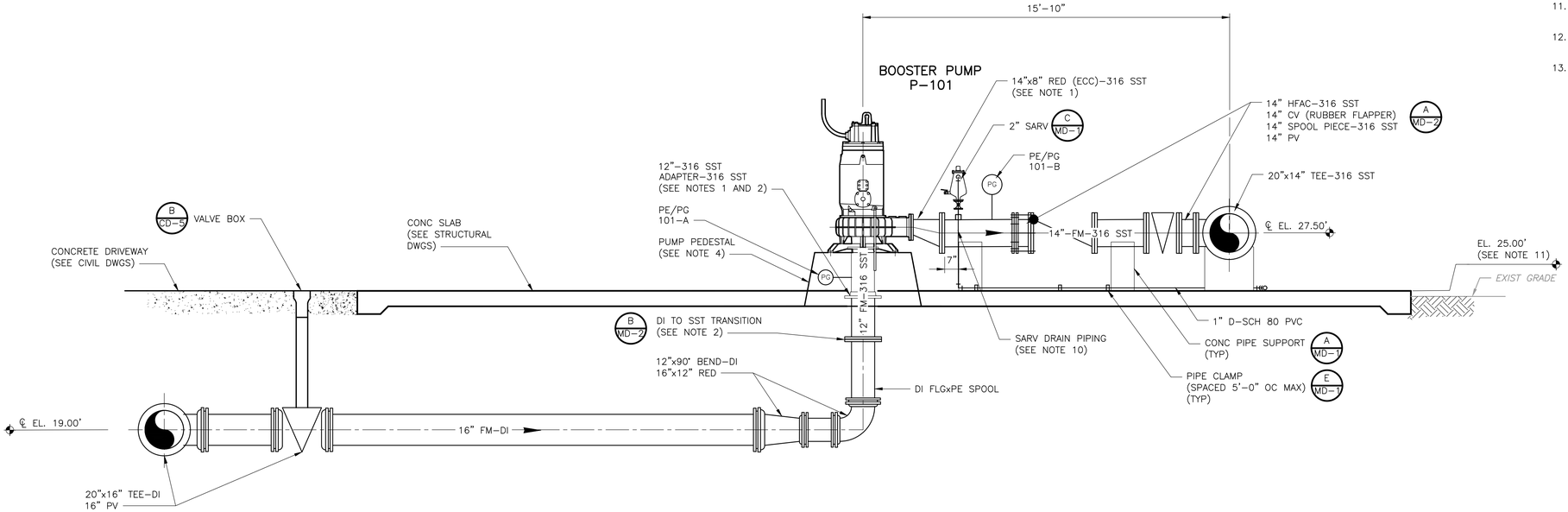

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JOCKEY PUMP PIPING

SECTION 1 / M-2

3/8" = 1'-0"




BOOSTER PUMP PIPING

SECTION 2 / M-2

3/8" = 1'-0"

**NOTES:**

1. COORDINATE REDUCER AND ADAPTER SIZE WITH PUMP MANUFACTURER. ADAPTER TO THE SUCTION SIDE OF THE PUMP SHALL BE PROVIDED BY THE PUMP MANUFACTURER.
2. FLANGE INSULATING KITS SHALL BE PROVIDED AND INSTALLED FOR CONNECTIONS OF DI TO SST PIPING.
3. ALL 316 SST PIPE SHALL BE FABRICATED TO IRON PIPE STANDARD DIMENSIONS, REFER TO SPECIFICATION 15066 FOR DETAILS.
4. SEE STRUCTURAL DRAWINGS AND SPECIFICATION 11306 FOR PUMP PEDESTAL, MOUNTING AND ANCHORING REQUIREMENTS.
5. ALL ABOVE GRADE PIPING SHALL BE FLANGED 316 SST.
6. ALL BELOW GRADE PIPING SHALL BE PVC WITH DI FITTINGS.
7. ALL BELOW GRADE PIPING, JOINTS, VALVES AND FITTINGS SHALL BE RESTRAINED.
8. ALL BELOW GRADE VALVES SHALL BE INSTALLED WITH VALVE BOXES.
9. REFER TO SPECIFICATION 15100 FOR VALVE REQUIREMENTS.
10. A 1/4" AIR GAP SHALL BE MAINTAINED BETWEEN EACH SARV OUTLET AND THE DRAIN PIPING.
11. ELEVATIONS IS APPROXIMATE AND VARIES. REFER TO GRADING PLANS ON CIVIL DRAWINGS.
12. CONTRACTOR SHALL COORDINATE TAP FOR PRESSURE GAUGE WITH PUMP MANUFACTURER ON SUCTION SIDE OF PUMP.
13. ALL BELOW GRADE PIPING BENEATH PUMP STATION SLAB SHALL BE DUCTILE IRON.

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: B. COGGER
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PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

ROBENA ROAD PUMP STATION
SECTIONS

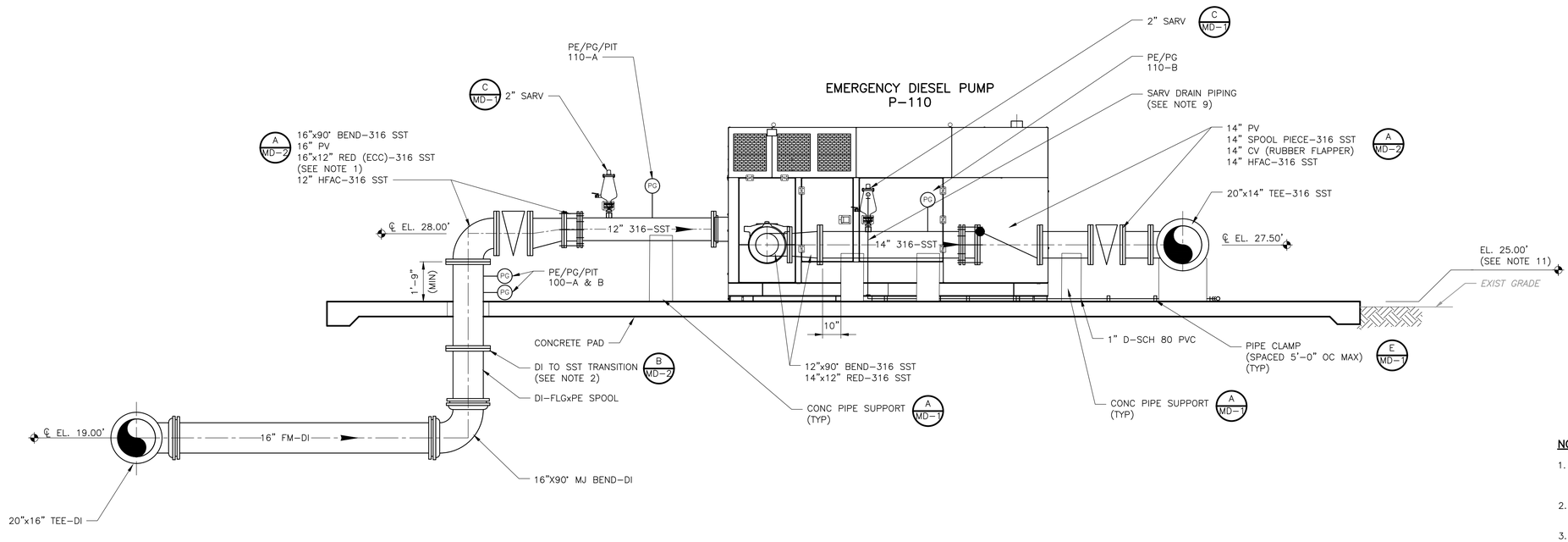
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PE NO. PE 0048925

PROJECT NO. 6103-215629
FILE NAME: M003PSPL.DWG

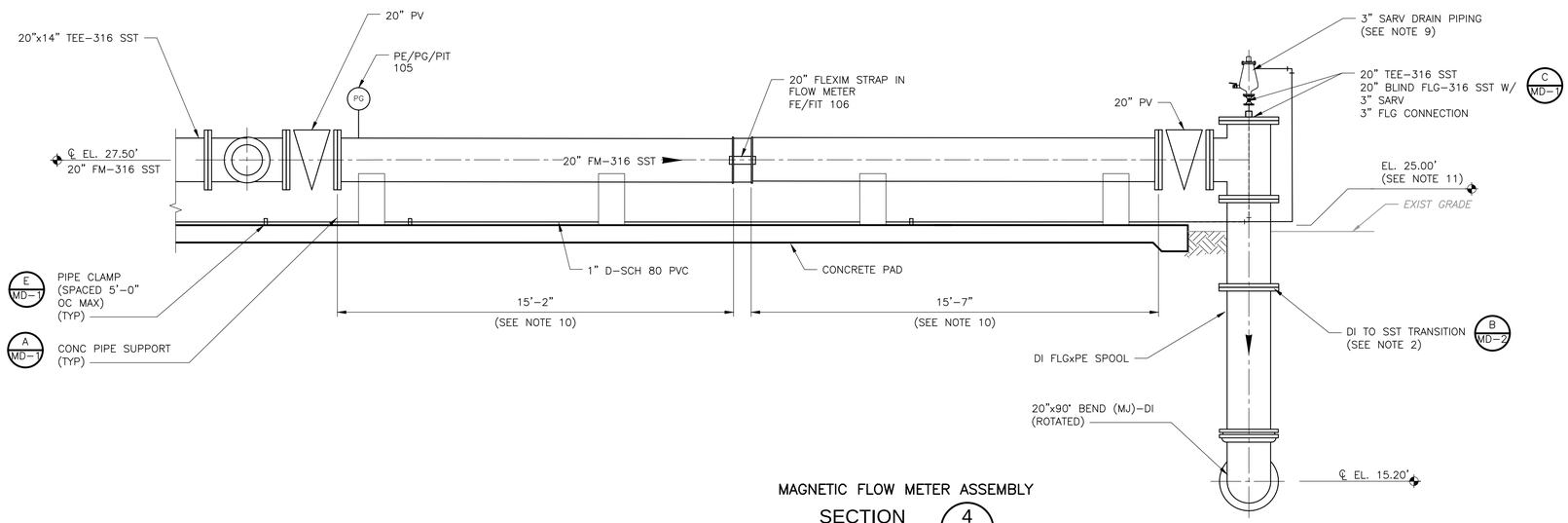
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EMERGENCY DIESEL PUMP PIPING
SECTION 3 / M–2
3/8" = 1'–0"




MAGNETIC FLOW METER ASSEMBLY
SECTION 4 / M–2
3/8" = 1'–0"

**NOTES:**

1. COORDINATE REDUCER AND ADAPTER SIZE WITH PUMP MANUFACTURER. ADAPTER TO THE SUCTION SIDE OF THE PUMP SHALL BE PROVIDED BY THE PUMP MANUFACTURER.
2. FLANGE INSULATING KITS SHALL BE PROVIDED AND INSTALLED FOR CONNECTIONS OF DI TO SST PIPING.
3. ALL 316 SST PIPE SHALL BE FABRICATED TO IRON PIPE STANDARD DIMENSIONS, REFER TO SPECIFICATION 15066 FOR DETAILS.
4. ALL ABOVE GRADE PIPING SHALL BE FLANGED 316 SST.
5. ALL BELOW GRADE PIPING SHALL BE PVC WITH DI FITTINGS.
6. ALL BELOW GRADE PIPING, JOINTS, VALVES AND FITTINGS SHALL BE RESTRAINED.
7. ALL BELOW GRADE VALVES SHALL BE INSTALLED WITH VALVE BOXES.
8. REFER TO SPECIFICATION 15100 FOR VALVE REQUIREMENTS.
9. A 1/4" AIR GAP SHALL BE MAINTAINED BETWEEN EACH SARV OUTLET AND THE DRAIN PIPING.
10. FLOW METER PLACEMENT TO BE CONFIRMED WITH MANUFACTURER. CONTRACTOR SHALL PROVIDE MINIMUM STRAIGHT DISTANCES UPSTREAM AND DOWNSTREAM OF FLOW METER PRIOR TO PLUG VALVES AS RECOMMENDED BY THE MANUFACTURER.
11. ELEVATION APPROXIMATE AND VARIES. REFER TO GRADING PLANS ON CIVIL DRAWINGS.
12. DRAINAGE PIPING SHALL MAINTAIN A MINIMUM 0.5% SLOPE TOWARDS THE DRAIN BOX.
13. ALL BELOW GRADE PIPING BENEATH PUMP STATION SLAB SHALL BE DUCTILE IRON.

DATE:
JONATHAN Z GOLDMAN
PE NO. PE 0048925

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: B. COGGER
DRAWN BY: A. NUNES
SHEET CHK'D BY: B. WILLIAMS
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: J. GOLDMAN
DATE: JANUARY 2021

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FL COA No. EB-0000020

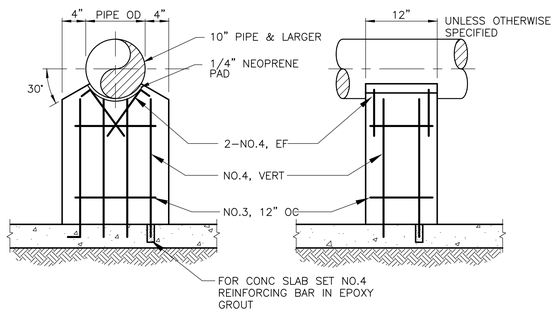
JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

ROBENA ROAD PUMP STATION
SECTIONS

PROJECT NO. 6103–215629
FILE NAME: M004PSPL.DWG
SHEET NO. M-4

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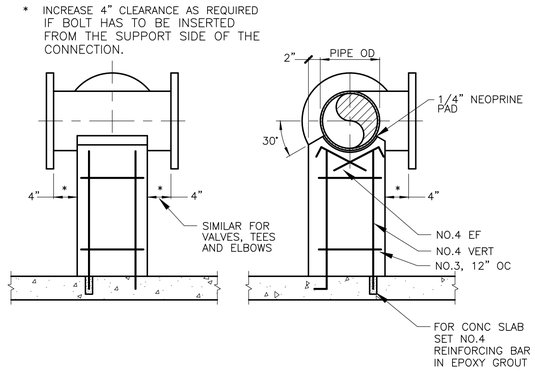
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10" PIPE AND LARGER

DETAIL A

NTS




CONC SUPPORT – TEES, VALVES AND ELBOWS

DETAIL B

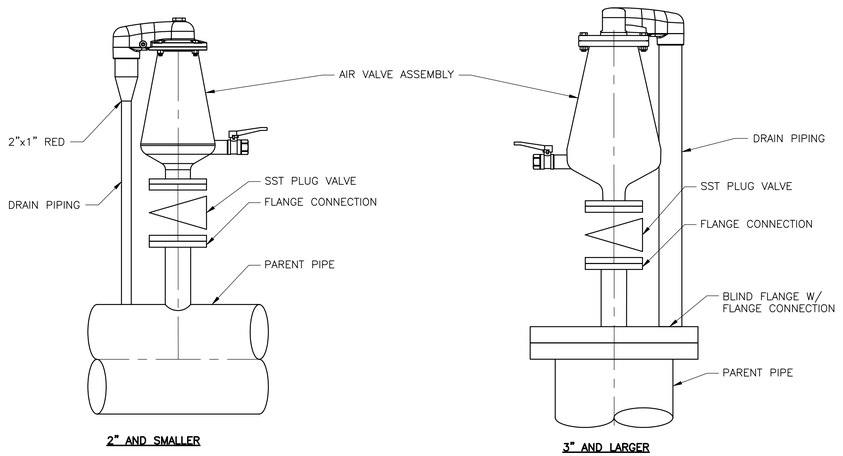
NTS

| DIMENSIONS IN INCHES | | | | | |
|---|---|---|---|---|---|
| PIPE DIA. | 'A' | 'B' SEE NOTE 3 BELOW | 'C' HOLE DIA. | 'D' FLAT BAR SIZE | LOAD RATING LBS.* |
| 3/4 | 5-15/16 | 2-1/2 | 7/16 | 3/16 X 1-1/4 | 300 |
| 1 | 6-1/4 | 2-5/8 | 7/16 | 3/16 X 1-1/4 | 300 |
| 1-1/4 | 6-11/16 | 2-3/4 | 7/16 | 3/16 X 1-1/4 | 300 |
| 1-1/2 | 6-15/16 | 3 | 7/16 | 3/16 X 1-1/4 | 300 |
| 2 | 8-5/16 | 3-3/16 | 7/16 | 1/4 X 1-1/4 | 500 |
| 2-1/2 | 8-7/8 | 3-7/16 | 7/16 | 1/4 X 1-1/4 | 500 |
| 3 | 9-1/8 | 3-3/4 | 7/16 | 1/4 X 1-1/4 | 500 |
| 3-1/2 | 10-1/16 | 4 | 7/16 | 1/4 X 1-1/4 | 500 |
| 4 | 10-9/16 | 4-1/4 | 9/16 | 1/4 X 1-1/2 | 600 |
| 5 | 11-3/4 | 4-3/4 | 9/16 | 1/4 X 1-1/2 | 600 |
| 6 | 14-3/8 | 5-5/16 | 9/16 | 3/8 X 1-1/2 | 850 |
| 8 | 16-5/8 | 6-5/16 | 9/16 | 3/8 X 1-1/2 | 850 |

* SAFETY FACTOR OF 5

NOTES:

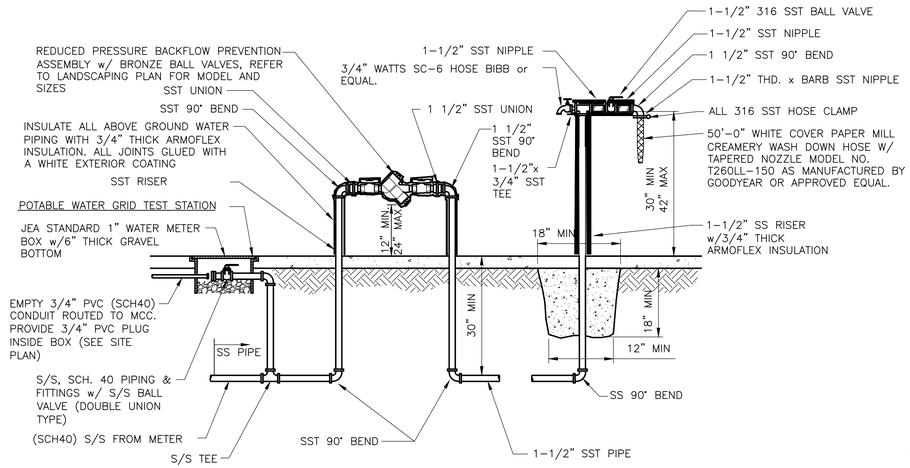
1. ALL PIPES, VALVES AND FITTINGS ON AIR RELEASE VALVES SHALL BE 316 SST.
2. COORDINATE EXACT SIZE OF FLANGE CONNECTION WITH AIR RELEASE VALVE SUPPLIER.
3. ROUTE DRAIN PIPING TO CONCRETE DRAIN BOX AS SHOWN ON M-2.




SEWAGE AIR REPLEASE VALVE

DETAIL C

NTS



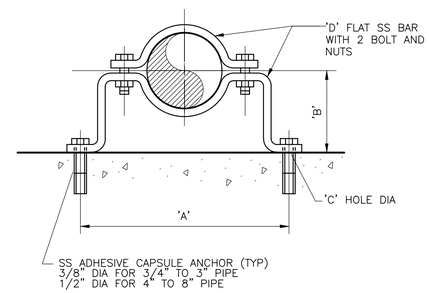

NOTES:

1. ALL PIPING ABOVE AND UNDER CONCRETE SLAB SHALL BE 316 SST SCHEDULE 40.
2. REFER TO CIVIL AND LANDSCAPING IRRIGATION PLANS FOR PIPING SIZES.

HOSE STATION

DETAIL D

NTS




NOTES:

1. PIPE CLAMPS, WASHER AND SHIELD SHALL BE TYPE 316 STAINLESS STEEL.
2. WHEN USED WITH PVC OR FIBERGLASS PIPE PROVIDE STAINLESS STEEL SHIELD AROUND PIPE AT CLAMP, WITH LOOSE FIT. WRAP COPPER TUBES WITH 2" STRIP OF RUBBER FABRIC
3. FOR FLANGED PIPING INCREASE 'B' DIMENSION AS REQUIRED ALL ANCHOR BOLTS SHALL BE TYPE 316 SS.

PIPE CLAMPS FOR INDIVIDUAL PIPES

DETAIL E

NTS

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: B. COGGER
DRAWN BY: A. NUNES
SHEET CHK'D BY: B. WILLIAMS
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APPROVED BY: J. GOLDMAN
DATE: JANUARY 2021

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FL COA No. EB-0000020

JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

MECHANICAL DETAILS I

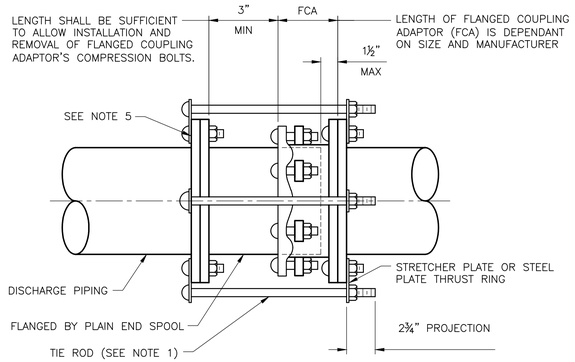
DATE:
JONATHAN Z GOLDMAN
PE NO. PE 0048925

PROJECT NO. 6103-215629
FILE NAME: MD01PSDT.DWG

SHEET NO.
MD-1

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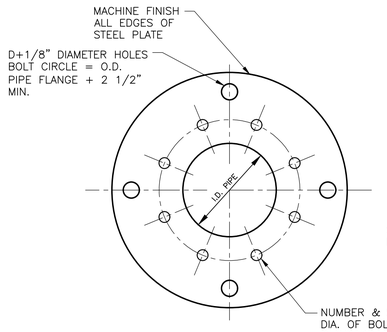



FOR FLANGED COUPLING ADAPTOR

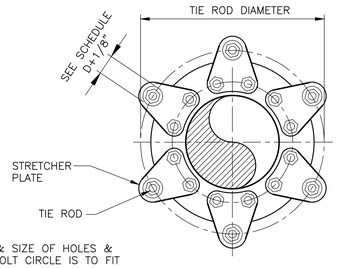
NOTES:

1. PROVIDE NUMBER OF TIE RODS PER SCHEDULE. EVENLY SPACE INSTALLATION OF THE TIE RODS. LENGTH OF TIE RODS TO BE DETERMINED BY CONTRACTOR BASED ON SIZE AND FLANGED COUPLING ADAPTOR AND FINAL LENGTH OF SPOOL PIECE.
2. TIE ROD SCHEDULE IS VALID FOR PRESSURES UP TO 150 PSI. FOR PRESSURES OVER 150 PSI SEE AWWA MANUAL 11.
3. PROVIDE STRETCHER PLATE OR STEEL PLATE THRUST RING FOR ATTACHMENT OF TIE RODS. FOR SIZE SEE TABLE.
4. MATERIALS – HARNESS RODS: ASTM A-307 HOT DIP GALVANIZED.
   STRETCHER PLATE: ASTM A36 STEEL HOT DIP GALVANIZED.
   FLEXIBLE COUPLING: PER SPECIFICATIONS
5. WELD TO DEVELOP MIN. THE STRENGTH OF PIPE. REPAIR COATINGS AS REQUIRED.
6. WRAP ALL COUPLING BURIED BELOW GRADE IN PROTECTIVE TAPE.

| TIE ROD SCHEDULE FOR HARNESSED JOINTS | | | |
|---|---|---|---|
| PIPE DIAMETER (IN) | TIE ROD DIAMETER (D) (IN) | NUMBER OF TIE RODS | STRETCHER PLATE THICKNESS (IN) |
| 6 | 5/8 | 2 | 3/8 |
| 8 | 5/8 | 2 | 3/8 |
| 10 | 5/8 | 2 | 3/8 |
| 12 | 3/4 | 2 | 3/8 |
| 14 | 3/4 | 2 | 3/8 |
| 16 | 7/8 | 2 | 1/2 |
| 18 | 1 | 2 | 1/2 |
| 20 | 1 | 2 | 1/2 |
| 24 | 1-1/8 | 4 | 1/2 |
| 30 | 1-1/8 | 4 | 1/2 |
| 36 | 1-1/4 | 4 | 5/8 |
| 42 | 1-1/2 | 4 | 3/4 |
| 48 | 1-5/8 | 4 | 3/4 |
| 54 | 1-5/8 | 6 | 3/4 |

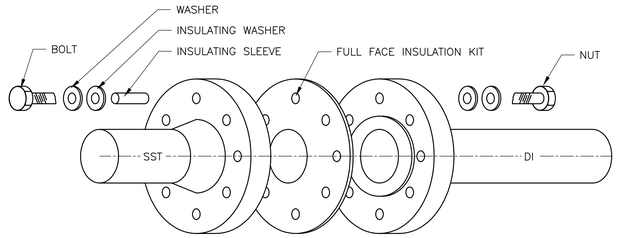



SECTION STEEL PLATE THRUST RING




SECTION STRETCHER PLATE

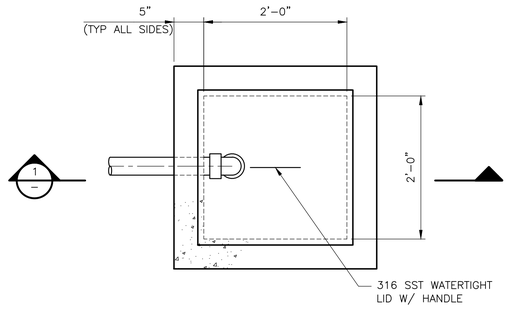
HARNESSED FLANGE ADAPTER COUPLING (HFAC)
DETAIL A
NTS



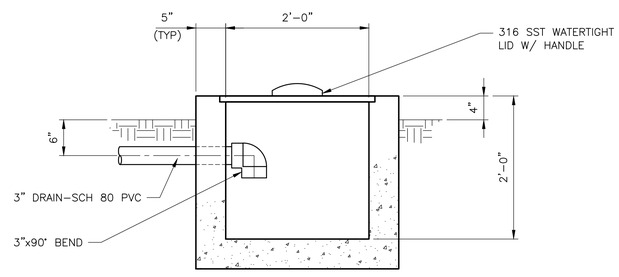

NOTES:

1. GASKET KIT SHALL PROVIDE COMPLETE CATHODIC PROTECTION OF BOTH FLANGE FACES. THE GASKET HAS SAME OUTSIDE DIAMETER OF FLANGES.
2. ALL BOLTS AND ASSOCIATED HARDWARE SHALL BE 316 STAINLESS STEEL.

FLANGE INSULATING KIT
DETAIL B
NTS




PLAN




SECTION

NOTES:

1. PRECAST CONCRETE SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF ASTM C-478 WITH 4000 LB CONCRETE, TYPE II CEMENT.

PRECAST CONCRETE DRAIN BOX
DETAIL C
NTS

DATE:
JONATHAN Z GOLDMAN
PE NO. PE 0048925

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: B. COGGER
DRAWN BY: A. NUNES
SHEET CHK'D BY: B. WILLIAMS
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: J. GOLDMAN
DATE: JANUARY 2021

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FL COA No. EB-0000020

JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

MECHANICAL DETAILS II

PROJECT NO. 6103-215629
FILE NAME: MD02PSDT.DWG
SHEET NO.
MD-2

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## ABBREVIATIONS

| | | | | | |
|---|---|---|---|---|---|
| & | AND | GB | GLASS BLOCK | REF | ROOF EXHAUST FAN |
| < | ANGLE | GRT | GRATING | REINF | REINFORCE (D, ING) |
| @ | AT | GYP | GYPSUM | REQ'D | REQUIRED |
| AB | ANCHOR BOLT | GWB | GYPSUM WALL BOARD | REV | REVISED |
| ABV | ABOVE | HARD | HARDENER | RF | ROOF FAN |
| ACMU | ACOUSTICAL CONCRETE MASONRY UNIT | HD | HEAVY DUTY | RFG | ROOFING |
| AFF | ABOVE FINISHED FLOOR | HDWD | HARDWOOD | RGH | ROUGH |
| AFG | ABOVE FINISHED GRADE | HDWR | HARDWARE | RJ | REVEAL/RUSTICATION JOINT |
| AL, ALUM | ALUMINUM | HGR | HANGER | RL | RAIN LEADER |
| AMP | ACOUSTICAL METAL PANELS | HGT | HEIGHT | RLG | RAILING |
| ANOD | ANODIZE(D) | HM | HOLLOW METAL | RM | ROOM |
| ASSY | ASSEMBLY | HOR | HORIZONTAL | RO | ROUGH OPENING |
| BBT | BIOBASED TILE | HP | HIGH POINT | RT | RUBBER TILE |
| BD | BOARD | HR | HANDRAIL | RWL | RAIN WATER LEADER |
| BEV | BEVEL(ED) | IN | INCH | S | STEEL S-SHAPED DESIGNATION |
| BLDG | BUILDING | INST | INSTRUMENTATION | SAT | SUSPENDED ACOUSTICAL TILE |
| BLK | BLOCK | INSUL | ISULATION | SB | SEAMLESS BASE |
| BLKG | BLOCKING | JC | JANITOR'S CLOSET | SCHD | SCHEDULE |
| BRG | BEARING | JT | JOINT | SCRN | SCREEN(ED, ING) |
| BRK | BRICK | JT FLR | JOINT FILLER | SECT | SECTION |
| BRS | BRASS | L | LINE OF STRUCTURAL ANGLE DESIGNATION | SF | SEAMLESS FLOORING |
| BRZ | BRONZE | LAB | LABORATORY | SGFT | STRUCTURAL GLAZED FACING TILE |
| BTM | BOTTOM | LAD | LADDER | SHT | SHEET |
| C TO C | CENTER TO CENTER | LAM | LAMINATED | SIM | SIMILAR |
| CAB | CABINET | LAV | LAVATORY | SK | SINK |
| CEM | CEMENT | LG | LAMINATED GLASS | SL | SLOPE |
| CF | COMPRESSIBLE FILLER | LINO | LINOLEUM | SLNT | SEALANT |
| CGFB | CEMENTITIOUS GLASS FIBER BOARD | LKR | LOCKER | SPEC | SPECIFICATION, SPECIFIED |
| CH | CONCRETE HARDENER | LNTL | LINTEL | SST | STAINLESS STEEL |
| CHAM | CHAMFER | LP | LOW POINT | STD | STANDARD |
| CHAN | CHANNEL | LT | LIGHT(S) | STL | STEEL |
| CIP | CAST IN PLACE | MAS | MASONRY | STOR | STORAGE |
| CJ | CONTROL JOINT | MATL | MATERIAL | STRU | STRUCTURE(S, URAL) |
| CL OR | CENTERLINE | MAX | MAXIMUM | STWY | STAIRWAY |
| CLG | CEILING | MEMB | MEMBRANE | SUPT | SUPERINTENDENT |
| CLKG | CAULKING | MFR | MANUFACTURER | SUSP | SUSPENDED |
| CMU | CONCRETE MASONRY UNIT | MIN | MINIMUM | T | TREAD(S) |
| COL | COLUMN | MISC | MISCELLANEOUS | TBM | TRAFFIC BEARING MEMBRANE |
| COMP | COMPRESSIBLE | MO | MASONRY OPENING | T&G | TONGUE AND GROOVE |
| CONC | CONCRETE | MR | MOISTURE RESISTANT | TEMP | TEMPERATURE |
| CONT | CONTINUOUS | MRAT | MOISTURE RESISTANT ACOUSTICAL TILE | TEMP | TEMPERED |
| CRPT | CARPET, CARPET TILE | MTD | MOUNTED | TEMP | TEMPORARY |
| CRS | COURSE(S) | MTG | MOUNTING | TER | TERRAZZO |
| CT | CERAMIC TILE | MTL | METAL | TERB | TERRAZZO BASE |
| CET | DETAIL | NIC | NOT IN CONTRACT | THK | THICK(NESS) |
| DF | DRINKING FOUNTAIN | NOM | MONINAL | THR | THRESHOLD |
| DIA | DIAMETER | NTS | NOT TO SCALE | TKBD | TACKBOARD |
| DIAG | DIAGONAL | OC | ON CENTER | TOB | TOP OF BRICK |
| DIM | DIMENSION | OH | OVERHANG | TOC | TOP OF CONCRETE |
| DISP | DISPENSER | OPNG | OPENING | TOIL | TOILET |
| DN | DOWN | OPP HD | OPPOSITE HAND | TOM | TOP OF MASONRY |
| DP | DAMPPROOFING | ORD | OVERFLOW ROOF DRAIN | TOPG | TOPPING |
| DR | DRAIN | OSB | ORIENTED STRAND BOARD | TOS | TOP OF STEEL |
| ELEC | ELECTRICAL | OV | OVER | TS | STRUCTURAL TUBING (STEEL UNLESS NOTED) |
| ELEV | ELEVATION | OVHD | OVERHEAD | TSL | TOP OF SLAB |
| EQ | EQUAL(LY) | PERIM | PERIMETER | TWF | THROUGH WALL FLASHING |
| EQPT | EQUIPMENT | PL | PLATE | TYP | TYPICAL |
| EWC | ELECTRICAL WATER COOLER | PL | PROPERTY LINE | UC | UNDERCUT |
| EXP | EXPOSED | PLAS | PLASTER | UON | UNLESS OTHERWISE NOTED |
| EJ | EXPANSION JOINT | PLK | PLANK | UR | URINAL |
| EXIST, (E) | EXISTING | PLYWD | PLYWOOD | VB | VAPOR BARRIER |
| FD | FLOOR DRAIN | PM | PRESSED METAL | VCT | VINYL COMPOSITE TILE |
| FE | FIRE EXTINGUISHER | PR | PAIR | VERT | VERTICAL |
| FF | FACTORY FINISH | PRD | PROMENADE ROOF DRAIN | VEST | VESTIBULE |
| FGL | FIBERGLASS | PRCST | PRECAST | VTR | VENT THRU ROOF |
| FIN | FINISH(ED) | PREFAB | PRE-FABRICATED | W | WITH |
| FLG | FLASHING | PT | PREASSURE TREATED | W/ | WITH |
| FL | FLOOR(ING) | PRMLD | PREMOLDED | W/A | WHERE APPLICABLE |
| FLR | FILLER | PSF | POUNDS PER SQUARE FOOT | W/O | WITHOUT |
| FR | FRAME | PTD | PAINTED | WC | WATER CLOSET |
| FRP | FIBERGLASS REINFORCED PLASTIC | QT | QUARRY TILE | WD | WOOD |
| FO | FRAME OPENING | QTB | QUARRY TILE BASE | WDW | WINDOW |
| FV | FIELD VERIFY | R | RISER(S) | WF | WIDE FLANGE |
| FXD | FIXED | R+S | BACKER ROD & SEALANT | WPG | WATERPROOFING |
| GA | GAGE, GAUGE | RB | RUBBER BASE | WT | STEEL TEE-SHAPE DESIGNATION |
| GALV | GALVANIZED | RD | ROOF DRAIN | WWF | WELDED WIRE FABRIC |
| GL | GLASS | RECT | RECEPTACLE | | |

## LINE TYPES (UNLESS OTHERWISE NOTED)

CONTINUOUS - NEW CONSTRUCTION

DASHED ON CONSTRUCTION PLAN/SHEETS - HIDDEN ELEMENTS BEYOND, ABOVE OR BELOW

## MATERIAL SYMBOLS

EARTH

GRAVEL

BRICK

CONCRETE MASONRY UNIT (CMU)

PRECAST CONCRETE

CAST-IN-PLACE CONCRETE

WOOD BLOCKING

WOOD FINISH

PLYWOOD

RIGID INSULATION

BLANKET INSULATION

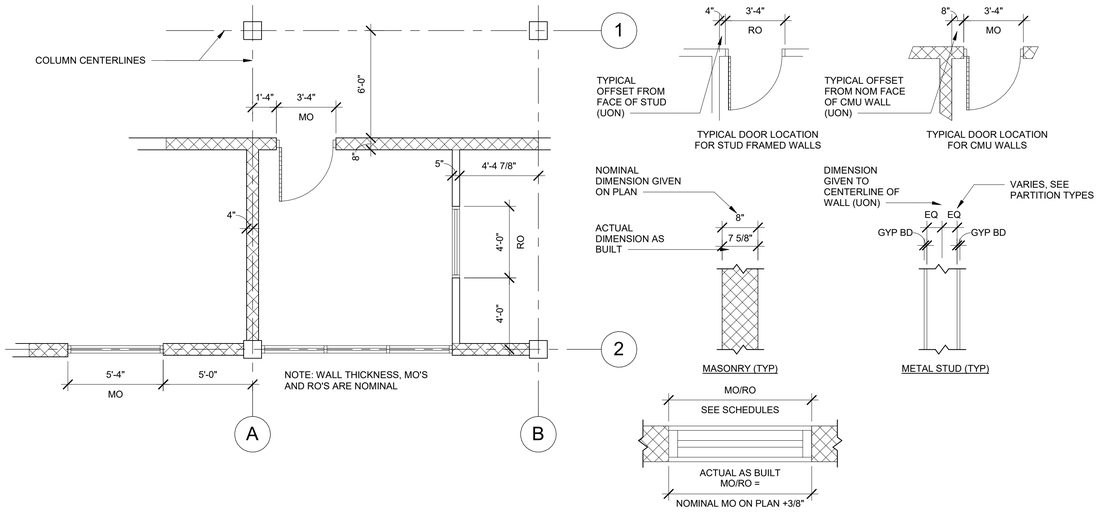
STEEL

ALUMINUM

STUCCO / GROUT

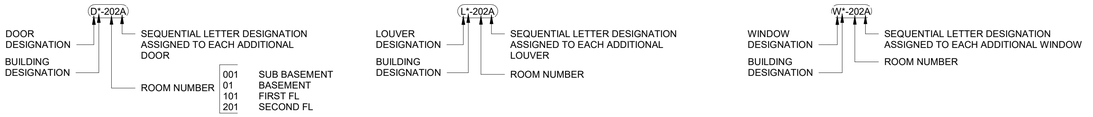
CAULK

## DIMENSIONING SYSTEM




## OPENINGS

USUALLY LABELD IN PLAN VIEW; HOWEVER, OPENINGS NOT SHOWN IN PLAN ARE LABELED ON ELEVATIONS




## GENERAL NOTES

NOT ALL EQUIPMENT IS SHOWN FOR CLARITY. REFER TO THE APPROPRIATE DISCIPLINE SHEETS FOR SPECIFIC EQUIPMENT LAYOUT AND OTHER REQUIREMENTS

SEE CIVIL SHEETS FOR SIDEWALK, ROAD PAVING AND FINISH GRADE ELEVATIONS.

SEE STRUCTURAL SHEETS FOR SIZE AND LOCATION OF CONCRETE PADS, TRENCHES, VAULTS, SUMPS, ETC

SEE STRUCTURAL SHEETS FOR CONCRETE REINFORCEMENT

ALL ITEMS TO BE NEW UNLESS SPECIFICALLY NOTED OTHERWISE.

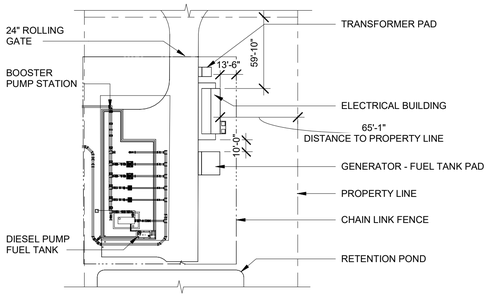
DO NOT SCALE FROM THE DRAWINGS

NOTIFY ARCHITECT IF CONSTRUCTION DOCUMENTS DIFFER FROM ACTUAL FIELD CONDITIONS PRIOR TO FABRICATION OR NEW CONSTRUCTION

THIS DRAWING CONTAINS A GENERAL LIST OF SYMBOLS AND ABBREVIATIONS. NOT ALL ITEMS SHOWN HERE APPEAR ON THE CONTRACT DRAWINGS.

## SITE PLAN

1" = 60'-0"




NOTE: SEE CIVIL DWG FOR ADDITIONAL SITE INFORMATION

## BUILDING CODE KEY DETERMINATIONS

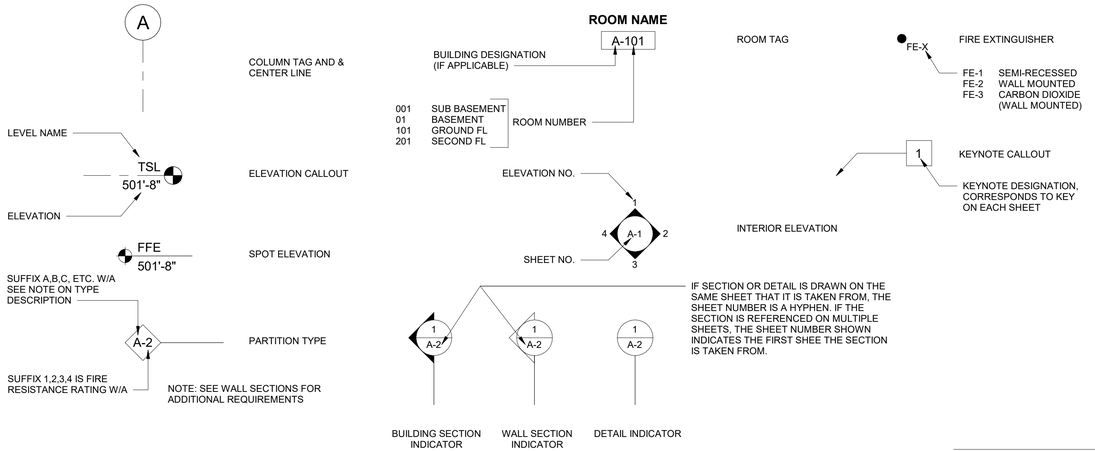
| | | | | |
|---|---|---|---|---|
| APPLICABLE CODES | FLORIDA BUILDING CODE, BUIDING SEVENTH EDITION<br>FLORIDA BUILDING CODE, ENERGY CONSERVATION SEVENTH EDITION<br>FLORIDA FIRE PREVENTION CODE, SEVENTH EDITION<br>(NFPA 1 - FIRE CODE, FLORIDA EDITION AND NFPA 101 - LIFE SAFETY CODE, FLORIDA EDITION)<br>FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION, SEVENTH EDITION | | | |
| ELECTRICAL BUILDING | | | | |
| ACCESSIBILITY REQUIREMENTS<br>SECTION 203.5 | PUMP STATION ELECTRICAL ROOMS FREQUENTED BY SERVICE PERSONNEL ONLY FOR MAINTENANCE AND MONITORING SHALL NOT BE REQUIRED TO COMPLY. | | | |
| BUILDING CLASSIFICATION<br>OCCUPANCY - SECTION 306<br>CONSTRUCTION - SECTION 602.2 | F-2 LOW HAZARD FACTORY INDUSTRIAL<br>TYPE IIB | | | |
| BUILDING HEIGHTS AND AREAS<br>TABLE 506.2<br>TABLE 504.3<br>TABLE 504.4 | MAX AREA<br>MAX HEIGHT<br>MAX STORES | 23,000 SF PER FLOOR<br>55 FEET<br>3 | ACTUAL<br>ACTUAL<br>ACTUAL | 532 SF<br>13 FEET<br>1 |
| OCCUPANT LOAD<br>SECTION 1004.1.2 | 532/100 SF PER OCCUPANT = 6 OCCUPANTS | | | |
| EXITS PER SPACE<br>TABLE 1006.2.1 | REQUIRED | 1 | ACTUAL | 2 |
| MAX TRAVEL DISTANCE<br>TABLE 1017.2 | MAXIMUM | 75 FT | ACTUAL | 19 FEET |
| FIRE SEPARATION DISTANCE<br>PROPERTY LINE | TYPE IIB $\geq$ 30 FROM BLDGS AND | | ACTUAL = 60 | FEET MINIMUM |
| FIRE RESISTANCE RATING<br>TABLE 705.2 | EXTERIOR WALLS, X $\geq$ 30 | | 0 HR FIRE RATED | |
| STAIRS | N/A | | | |
| RAMPS | N/A | | | |
| HAZARDOUS CHEMICAL<br>EXTERIOR STORAGE<br>NFPA 30 | GENERATOR - FUEL TANK<br>275-30,000 GAL = 5 FEET<br>SEPERATION FROM BUILDING | | ACTUAL 400<br>ACTUAL 10 | GALLONS<br>FEET |
| | DIESEL PUMP FUEL TANK<br>275-30,000 GAL = 5 FEET<br>SEPERATION FROM BUILDING | | ACTUAL 1000<br>ACTUAL 89 | GALLONS<br>FEET |
| SPRINKLERS REQUIRED<br>SECTION 903 | NO | | | |
| FIRE ALARM REQUIRED<br>SECTION 907 | NO | | | |

## ARCHITECTURAL SHEET INDEX


A-1 ARCHITECTURAL SHEET INDEX, GENERAL NOTES, ABBREVIATIONS, SYMBOLS AND BUILDING CODE KEY DETERMINATIONS

A-2 ELECTRICAL BUILDING FLOOR AND ROOF PLAN, EXTERIOR ELEVATIONS, SCHEDULES AND DETAILS


## SYMBOLS





CLARICE E. SOLLOG, AIA
NO. AR96709
FL. CORP ARCHITECTURE AA-002781
101 SOUTHHALL LANE, SUITE 200
MAITLAND, FL 32751


| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: C. SOLLOG
DRAWN BY: G. HOBDY
SHEET CHK'D BY: A. CULP
CROSS CHK'D BY: M. ALFORD
APPROVED BY: C. SOLLOG
DATE: JANUARY 2021


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FL COA No. EB -0000020


JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

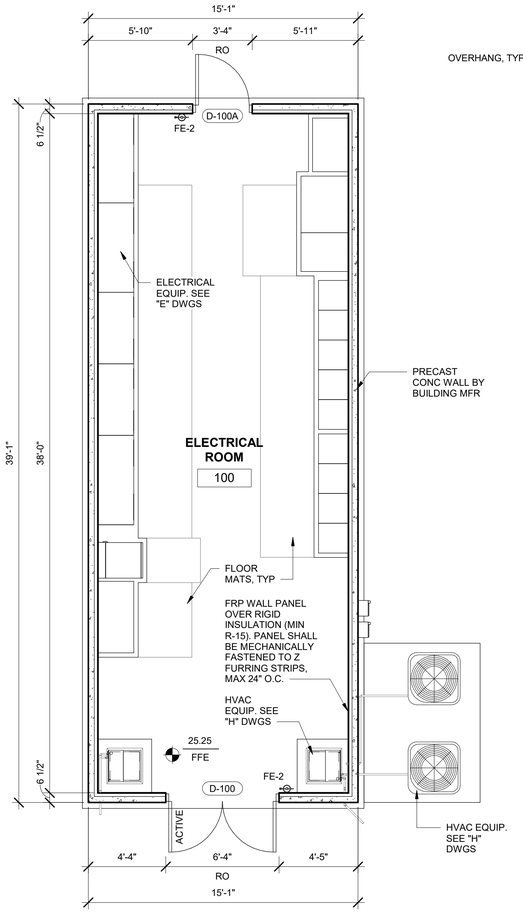
ARCHITECTURAL SHEET INDEX, GENERAL NOTES, ABBREVIATIONS, SYMBOLS AND BUILDING CODE KEY DETERMINATIONS

PROJECT NO. 6103-215629
FILE NAME: AWZ000EL.RVT

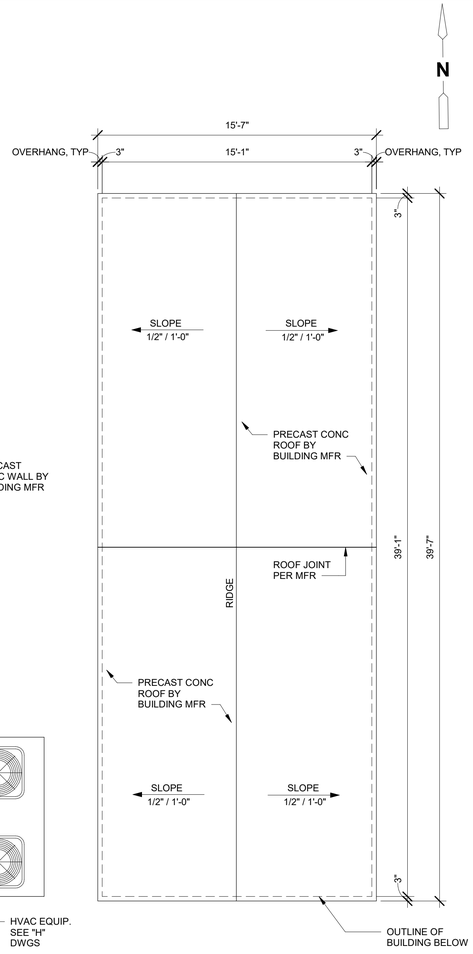
SHEET NO.
A-1

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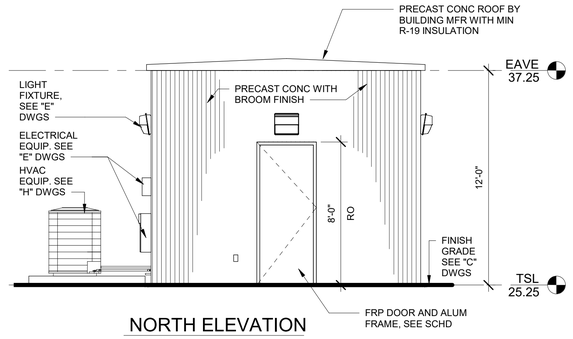



## FLOOR PLAN
1/4" = 1'-0"

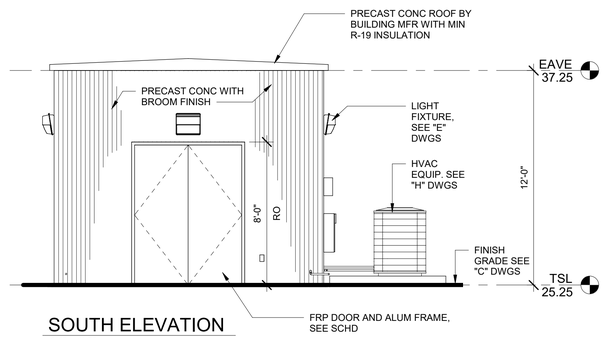



## ROOF PLAN
1/4" = 1'-0"

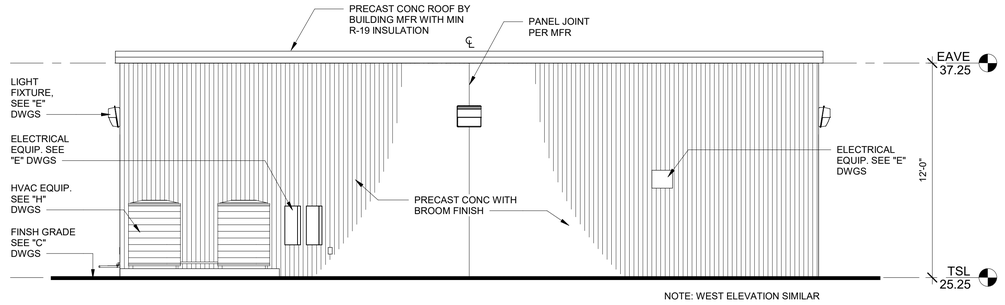
NOTE: PROVIDE MIN R-19 INSULATION AT INTERIOR SIDE OF ROOF PANEL SEE DETAIL "D"




## NORTH ELEVATION
1/4" = 1'-0"




## SOUTH ELEVATION
1/4" = 1'-0"




NOTE: WEST ELEVATION SIMILAR

## EAST ELEVATION
1/4" = 1'-0"

**GENERAL NOTES:**

SEE SHEET A-1 FOR ADDITIONAL GENERAL NOTES AND BUILDING CODE KEY DETERMINATIONS

THIS DRAWING IS PROVIDED FOR DESIGN INTENT ONLY. BUILDING MANUFACTURER SHALL BE RESPONSIBLE TO DESIGN, MANUFACTURE AND INSTALL BUILDING AND BUILDING COMPONENTS TO MEET ALL APPLICABLE CODE REQUIREMENTS AND DESIGN CRITERIA LISTED IN THE SPECIFICATION.

**ELECTRICAL BUILDING FINISH SCHEDULE**

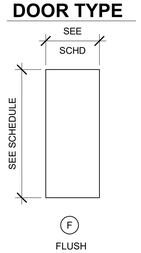
| ROOM NAME | ROOM NUMBER | FLOOR | | WALL | | | | | | | | | | CEILING | | | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | NORTH | | EAST | | SOUTH | | WEST | | BASE | | | | | |
| | | MATERIAL | FINISH | MATERIAL | FINISH | MATERIAL | FINISH | MATERIAL | FINISH | MATERIAL | FINISH | MATERIAL | DETAIL | MATERIAL | FINISH | HEIGHT | |
| ELECTRICAL ROOM | 100 | CONC | SEAL | FRP | SPEC | FRP | SPEC | FRP | SPEC | FRP | SPEC | -- | -- | FRP | SPEC | 12'-0" | |

**ELECTRICAL BUILDING DOOR SCHEDULE**

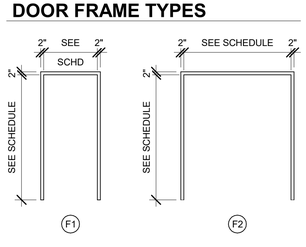
| DOOR NUMBER | ROOM NAME | EXT DOOR | SIZE | | | DOOR | | | | FRAME | | | DETAILS | | | FIRE RATING (MIN) | HARDWARE SET | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | WIDTH | HEIGHT | TYPE | MATERIAL | FINISH | GLAZING | TYPE | MATERIAL | FINISH | HEAD | JAMB | THRESHOLD | | | |
| D-100 | ELECTRICAL ROOM | * | PR | 3'-0" | 7'-10" | F | FRP | SPEC | -- | F2 | ALUM | SPEC | A/- | B/- | C/- | 0 | HW2 | 1 |
| D-100A | ELECTRICAL ROOM | * | | 3'-0" | 7'-10" | F | FRP | SPEC | -- | F1 | ALUM | SPEC | A/- | B/- | C/- | 0 | HW1 | |

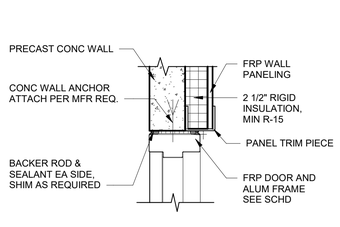
DOOR NOTES:
1. ACTIVE LEAF DESIGNATED ON PLAN.

## DOOR TYPE



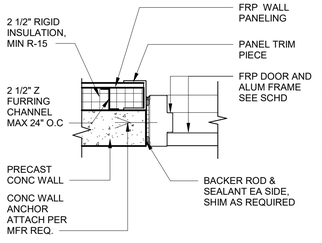

## DOOR FRAME TYPES



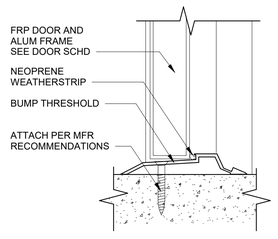

DOOR HEAD

## A DETAIL
1 1/2" = 1'-0"



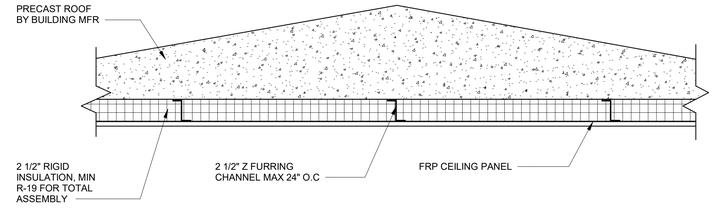

DOOR JAMB

## B DETAIL
1 1/2" = 1'-0"




DOOR THRESHOLD

## C DETAIL
3" = 1'-0"




NOTE: INSULATION AND FRP PANEL ATTACHMENT TO BE COORDINATED WITH INTERIOR ROOF PANEL PANEL PROFILE. THIS DETAIL ASSUMES FLUSH SURFACE.

CEILING

## D DETAIL
1 1/2" = 1'-0"


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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

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DRAWN BY: G. HOBDY
SHEET CHK'D BY: A. CULP
CROSS CHK'D BY: M. ALFORD
APPROVED BY: C. SOLLOG
DATE: JANUARY 2021


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Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB -0000020


JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

ELECTRICAL BUILDING
FLOOR AND ROOF PLAN, EXTERIOR ELEVATIONS, SCHEDULES AND DETAILS

PROJECT NO. 6103-215629
FILE NAME: AWZ000EL.RVT

SHEET NO.
A-2

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# GENERAL NOTES

DESIGN CRITERIA:

CODES:

- FLORIDA BUILDING CODE, 7TH EDITION (2020)
- OTHER STRUCTURES: ACI 318-14 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"
- PCI DESIGN HANDBOOK

DESIGN LOADS:

LIVE LOADS:

| | | |
|---|---|---|
| • WALKWAYS | 100 | PSF |
| • PROCESS SLABS ON GRADE | 200 | PSF |
| • STORAGE AREAS AND ELECTRICAL ROOM | 300 | PSF |

SUPERIMPOSED LOADS:

| | |
|---|---|
| • ROOF LIVE | 20 PSF |
| • ROOF DEAD | 10 PSF |

WIND DESIGN DATA: ASCE 7-16

| | |
|---|---|
| • ULTIMATE DESIGN WIND SPEED, $V_{ult}$ (3 SECOND GUST) | 135 MPH |
| • NOMINAL DESIGN WIND SPEED, $V_{asd}$ | 105 MPH |
| • RISK CATEGORY | III |
| • WIND EXPOSURE CATEGORY | C |
| • ENCLOSURE CLASSIFICATION | ENCLOSED |
| • INTERNAL PRESSURE COEFFICIENT | ± 0.18 |

EARTHQUAKE:

- NOT APPLICABLE PER FBC DECLARATORY STATEMENT DS2015-092

FLOOD DESIGN DATA:

- 1% ANNUAL CHANCE FLOOD BASE FLOOD ELEVATION: NOT IN A FLOOD ZONE

CONCRETE 28-DAY STRENGTH:

| | |
|---|---|
| • SLABS, BEAMS, WALLS AND COLUMNS | 4000 PSI |
| • PRECAST/PRESTRESSED ELEMENTS | 5000 PSI |

FOUNDATIONS:

- MAX ALLOWABLE NET SOIL BEARING PRESSURE FOR MAT FOUNDATIONS OVER SUBSURFACE PREPARED AS PER SPECIFICATIONS PER GEOTECHNICAL REPORT:

| | |
|---|---|
| • PUMP STATION & MISC PADS | 2000 PSF |
| • ELECTRICAL BUILDING | 2500 PSF |

GENERAL CONDITIONS:

ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, CIVIL, ELECTRICAL AND SHOP DRAWINGS AND SPECIFICATIONS.

THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE INSTALLATION OF THE STRUCTURE, SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK.

FOR ALL ITEMS EMBEDDED IN OR PASSED THROUGH CONCRETE, THE CONTRACTOR SHALL INITIALLY REFER TO ARCHITECTURAL, ELECTRICAL, MECHANICAL, HEATING AND VENTILATION DRAWINGS AND APPROVED SHOP DRAWINGS FOR TYPE, SIZE, LOCATION AND SPECIAL INSTALLATION REQUIREMENTS FOR THESE ITEMS.

THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATION AND OTHERS.

SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.

ANY EQUIPMENT THAT MAY INDUCE VIBRATION TO THE STRUCTURE SHALL BE ADEQUATELY ISOLATED FROM THE STRUCTURES.

STANDARD DETAILS APPLY TO ALL SIMILAR SITUATIONS ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

CONCRETE:

ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318 REQUIREMENTS.

ALL CONCRETE SHALL BE AIR-ENTRAINED.

WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494.

ALL CONCRETE SURFACES EXPOSED TO AIR, UNLESS OTHERWISE NOTED IN SPECIFICATIONS, SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS CEMENT FINISHING IS COMPLETED OR FORMS ARE REMOVED.

ALL EXPOSED CORNERS OF CONCRETE SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATION OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWING.

REINFORCING STEEL:

REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 REQUIREMENTS.

ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI 315 REQUIREMENTS. REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER UNLESS OTHERWISE NOTED:

| | |
|---|---|
| • CONCRETE CAST AGAINST EARTH | 3" |
| • FORMED SURFACES IN CONTACT WITH SOIL, SEWAGE, WATER OR EXPOSED TO WEATHER | 2" |
| • FORMED SURFACES NOT EXPOSED TO WEATHER OR IN CONTACT WITH SOIL: | |
| SLABS, WALLS AND JOISTS | 3/4" |
| BEAMS AND COLUMNS | 1-1/2" |

LAP SPLICES SHALL BE AS SHOWN ON THE DRAWINGS. FOR LAP SPLICES NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL.

THE CONTRACTOR SHALL PREPARE PLACING DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI 315 REQUIREMENTS.

PRECAST PRESTRESSED CONSTRUCTION:

ALL PRECAST PRESTRESSED MEMBERS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR THE DESIGN LOADS LOADS SHOWN ON THE DRAWINGS IN CONFORMANCE WITH THE REQUIREMENTS OF APPLICABLE SPECIFICATIONS. EQUIPMENT LOADS OR OTHER LOADING SUCH AS A BRIDGE CRANE SUPPORT LOADS SHALL BE CONSIDERED AS REQUIRED.

CONCRETE CRACK REPAIR:

CRACKS ON HORIZONTAL SURFACES SHALL BE REPAIRED BY GRAVITY FEEDING CRACK SEALANT INTO CRACKS PER MANUFACTURER'S RECOMMENDATIONS. IF CRACKS ARE LESS THAN 1/16" IN THICKNESS THEY SHALL BE PRESSURE INJECTED.

CRACKS ON VERTICAL SURFACES SHALL BE REPAIRED BY PRESSURE INJECTING CRACK SEALANT THROUGH VALVES SEALED TO SURFACE WITH CRACK REPAIR EPOXY ADHESIVE PER MANUFACTURER'S RECOMMENDATIONS.

GEOTECHNICAL REPORT:

GEOTECHNICAL ENGINEERING REPORT ENTITLED, "FINAL REPORT OF GEOTECHNICAL EXPLORATION FOR JEA DISTRICT 2 PUMP STATION AND FLOW REROUTING," BY MESKEL & ASSOCIATES ENGINEERING, DATED NOVEMBER 5, 2018.

SITE PREPARATION:

REFER TO DIVISION 2 SPECIFICATIONS FOR CLEARING AND STRIPPING, TEMPORARY GROUNDWATER CONTROL, SOIL PREPARATION, SURFACE COMPACTION, AND STRUCTURAL BACKFILL AND FILL SOILS IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.

DEFERRED SUBMITTALS:

1. THE FOLLOWING PORTIONS OF THE PROJECT ARE DEFFERED SUBMITTAL ITEMS AND HAVE NOT BEEN DESIGNED BY THE ENGINEER OF RECORD:

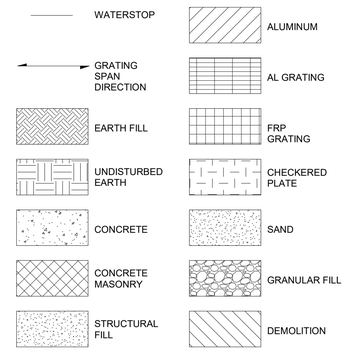
   a. GENERATOR
   b. PRECAST BUILDING

2. DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW DURING THE CONSTRUCTION PHASE OF THE PROJECT.

3. DEFERRED SUBMITTAL ITEMS SHALL BE STAMPED AND SEALED BY A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.

4. DEFERRED SUBMITTAL ITEMS SHALL NOT BE ERECTED OR INSTALLED UNTL THE ENGINEER OF RECORD HAS REVIEWED THE SUBMITTAL DOCUMENTS AND INDICATED THAT THEY HAVE BEEN REVIEWED AND FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE STRUCTURE.

# LEGEND AND SYMBOLS




# ABBREVIATIONS

| | | | |
|---|---|---|---|
| # | NUMBER | INT | INTERIOR |
| & | AND | INV | INVERT |
| @ | AT | JT | JOINT |
| AB | ANCHOR BOLT | KO | KNOCKOUT |
| ABV | ABOVE | LG | LENGTH |
| ACC | ACCELERATION | LLH | LONG LEG HORIZONTAL |
| ADDL | ADDITIONAL | LLV | LONG LEG VERTICAL |
| ALUM/AL | ALUMINUM | LNTL | LINTEL |
| ALT | ALTERNATE (ING) | LOC(S) | LOCATION(S)/LOCATED |
| APPROX | APPROXIMATELY | LONG. | LONGITUDINAL |
| B TO B | BACK TO BACK | LP | LOW POINT |
| BEV | BEVEL (ED) | LT | LEFT |
| BLK | BLOCKING | LW | LIGHTWEIGHT |
| BOT | BOTTOM | MAS | MASONRY |
| BRG | BEARING | MAX | MAXIMUM |
| B/W | BETWEEN | MB | MACHINE BOLTS |
| CIRC | CIRCUMFERENTIAL | MCJ | MASONRY CONTROL JOINT |
| CJ | CONSTRUCTION JOINT | MFR | MANUFACTURER |
| CL | CENTERLINE | MIN | MINIMUM |
| CLJ | CONTROL JOINT | MO | MASONRY OPENING |
| CLR | CLEAR | NF | NEAR FACE |
| CMU | CONCRETE MASONRY UNITS | NS | NON-SHRINK |
| COL | COLUMN | NTS | NOT TO SCALE |
| CONC | CONCRETE | OC | ON CENTER |
| CONN | CONNECTION | OD | OUTSIDE DIAMETER |
| CONT | CONTINUOUS | OF | OUTSIDE FACE |
| CPLG | COUPLING | OPNG | OPENING |
| CRS | COURSE (S) | OPP | OPPOSITE |
| CSK | COUNTERSINK | OPT | OPTIONAL |
| CTR | CENTER(ED) | PCJ | PARTIAL CONTRACTION JOINT |
| d | PENNY | PJF | PREMOLDED JOINT FILLER |
| DET | DETAIL | PLYWD | PLYWOOD |
| DIA | DIAMETER | PREFAB | PREFABRICATED |
| DIAG | DIAGONAL | PROJ | PROJECTION |
| DIR | DIRECTION | PVMT | PAVEMENT |
| DL | DEAD LOAD | R | RISER(S) |
| DO. | DITTO | RAD | RADIUS |
| DWG | DRAWING | RC | REINFORCED CONCRETE |
| DWL | DOWEL | REF | REFERENCE/REFER |
| EA | EACH | REINF | REINFORCE (D, ING) |
| EB | EXPANSION BOLT | REQD | REQUIRED |
| EF | EACH FACE | REV | REVISION |
| EL | ELEVATION | RLG | RAILING |
| EMBED | EMBEDMENT | RO | ROUGH OPENING |
| EQ | EQUAL (LY) | RT | RIGHT |
| EQUIP | EQUIPMENT | SCJ | SLAB CONTROL JOINT |
| ES | EACH SIDE | SECT | SECTION |
| EW | EACH WAY | SIM | SIMILAR |
| EXST | EXISTING | SP | SPACE (S, ED) |
| EXP JT | EXPANSION JOINT | SQ | SQUARE |
| EXT | EXTERIOR | SS | STAINLESS STEEL |
| f'c | CONCRETE COMPRESSION STRESS | STD | STANDARD |
| f'm | MASONRY PRISM STRESS | STIF | STIFFENER |
| FAB | FABRICATE (OR, ED) | STIR | STIRRUP (S) |
| FDN | FOUNDATION | STL | STEEL |
| FF | FAR FACE | SYM | SYMMETRICAL |
| FHMS | FLATHEAD MACHINE SCREW | T | TREAD(S) |
| FHWS | FLATHEAD WOOD SCREW | T/ | TOP OF |
| FL | FLOOR | T&B | TOP AND BOTTOM |
| FRP | FIBERGLASS REINFORCED PLASTIC | TF | TOP FACE |
| FTG | FOOTING | THD | THREADED |
| GALV | GALVANIZED | TOC | TOP OF CONCRETE |
| GBT | GRAVITY BELT THICKENER | TRNSV | TRANSVERSE |
| GLB | GLASS BLOCK | TYP | TYPICAL |
| GR | GRADE | UNO | UNLESS NOTED OTHERWISE |
| GRTG | GRATING | VB | VAPOR BARRIER |
| H | HIGH | VIF | VERIFY IN FIELD |
| HAS. | HEADED ANCHOR STUD | W | WIDE |
| HDR | HEADER | W/ | WITH |
| HOR | HORIZONTAL | W/O | WITHOUT |
| HP | HIGH POINT | WD | DRIFT WIDTH |
| ID | INSIDE | WP | WORKING POINT |
| I.E. | INVERT ELEVATION | WSTP | WATERSTOP |
| IF. | INSIDE FACE | WWF | WELDED WIRE FABRIC |

ABBREVIATION NOTES:

1. ABBREVIATIONS AND DESIGNATIONS FOR STEEL MEMBERS MAY BE FOUND IN THE CURRENT MANUAL OF STEEL CONSTRUCTION BY AISC.
2. ABBREVIATIONS OF TECHNICAL SOCIETIES AND TRADE ASSOCIATIONS MAY BE FOUND IN THE SPECIFICATIONS.
3. WELDING SYMBOLS AND ABBREVIATIONS MAY BE FOUND IN AWS 2.4.

DATE:
ELIAS A. RIVERA
PE NO. 81626

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: M. TRAPP
DRAWN BY: M. TRAPP
SHEET CHK'D BY: T. VERWEY
CROSS CHK'D BY: Y. POLEMATIDIS
APPROVED BY: E. RIVERA
DATE: JANUARY 2021

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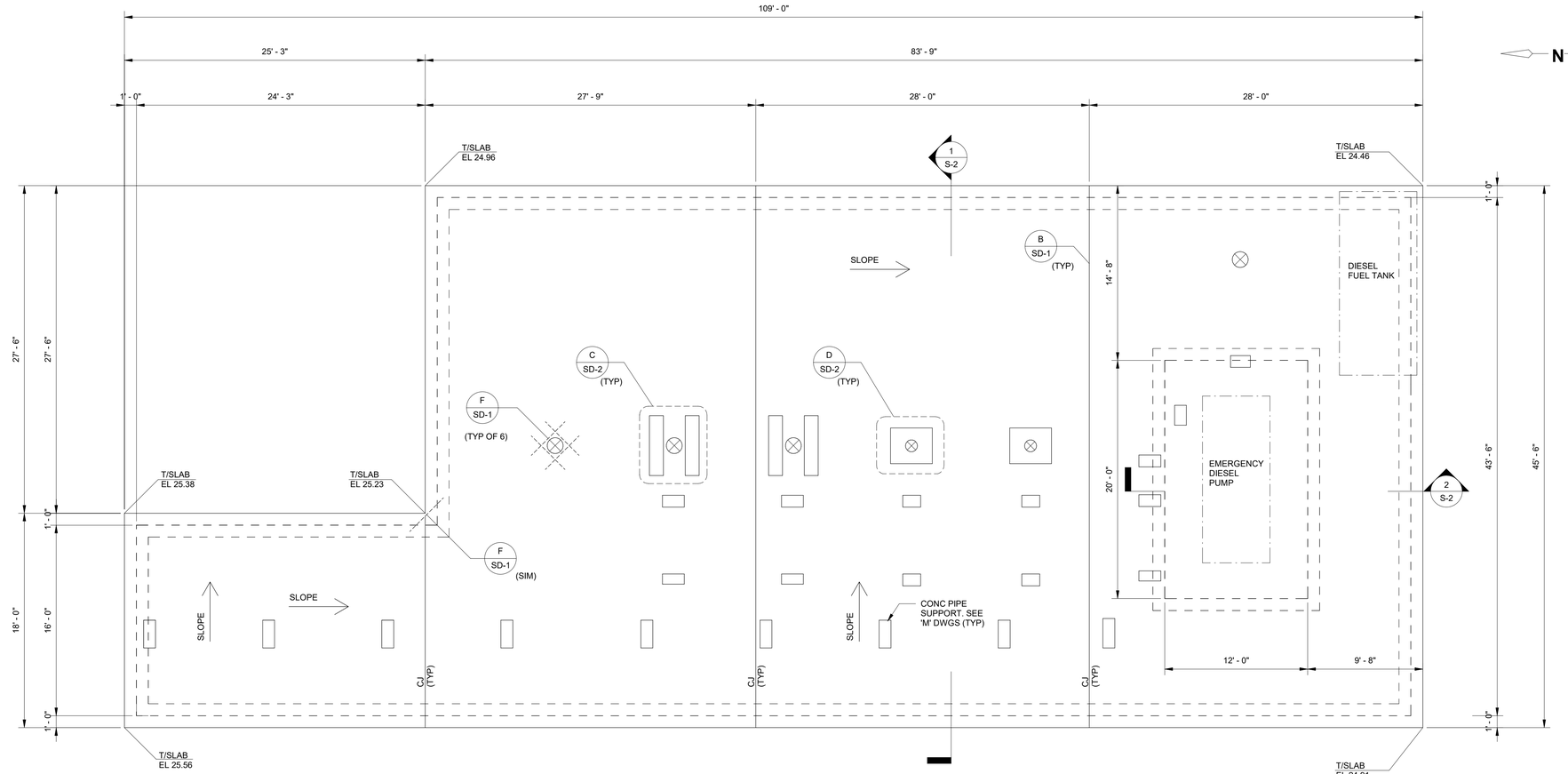
JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

GENERAL STRUCTURAL NOTES, LEGEND AND ABBREVIATIONS

PROJECT NO. 6103-215629
FILE NAME: S000STNT.RVT
SHEET NO. S-1

ISSUED FOR BID

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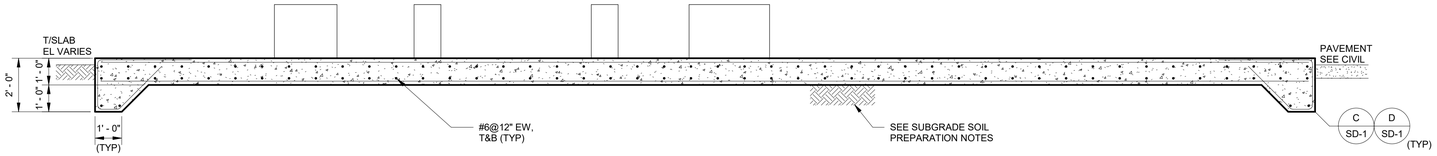



## PUMP STATION FOUNDATION PLAN

3/16" = 1'-0"

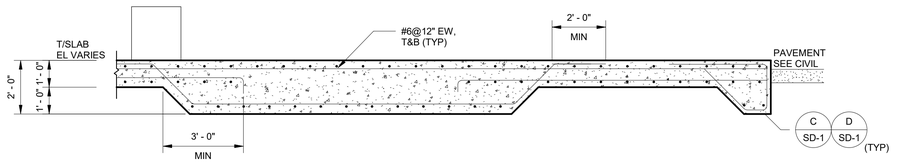
NOTES:

1. COORDINATE LOCATION OF EQUIPMENT WITH CIVIL, ELECTRICAL, MECHANICAL AND FINAL APPROVED EQUIPMENT SHOP DRAWINGS.
2. ANCHORAGE OF EQUIPMENT SHALL BE PROVIDED BY THE EQUIPMENT MANUFACTURER'S DELEGATE ENGINEER.




## 1 SECTION

3/8" = 1'-0"




## 2 SECTION

3/8" = 1'-0"

SUBGRADE SOIL PREPARATION NOTES:

1. REFER TO DIVISION 2 SPECIFICATIONS FOR CLEARING AND STRIPPING, TEMPORARY GROUNDWATER CONTROL, SOIL PREPARATION, SURFACE COMPACTION, AND STRUCTURAL BACKFILL AND FILL SOILS IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
2. SUBGRADE SOILS BELOW SLABS ON GRADE SHALL BE IMPORT STRUCTURAL FILL OR SUITABLE ON-SITE SOILS AS DEFINED IN THE GEOTECHNICAL REPORT AND DIVISION 2 SPECIFICATIONS.
3. COMPACT 24" LAYER OF SUBGRADE SOIL TO 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY PER ASTM D-1557 OR AASHTO T180.

DATE:
ELIAS A. RIVERA
PE NO. 81626

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

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DRAWN BY: M. TRAPP
SHEET CHK'D BY: T. VERWEY
CROSS CHK'D BY: Y. POLEMATIDIS
APPROVED BY: E. RIVERA
DATE: JANUARY 2021

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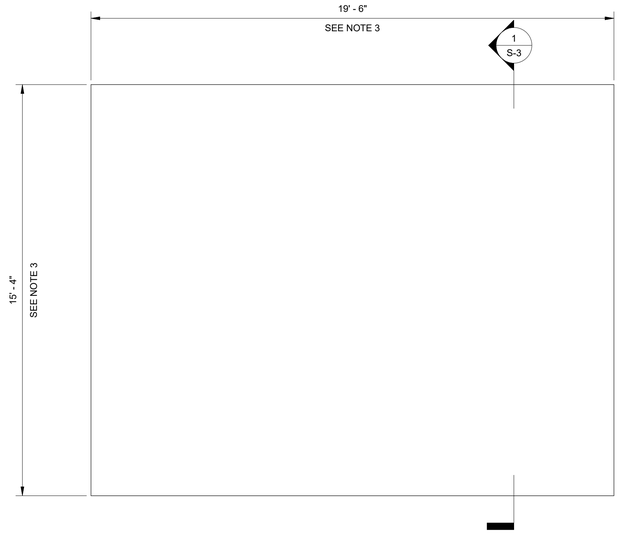
JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

ROBENA ROAD BOOSTER PUMP STATION
FOUNDATION PLANS AND SECTIONS

PROJECT NO. 6103-215629
FILE NAME: SWZ0001EL.RVT
SHEET NO.
S-2

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## GENERATOR PAD PLAN

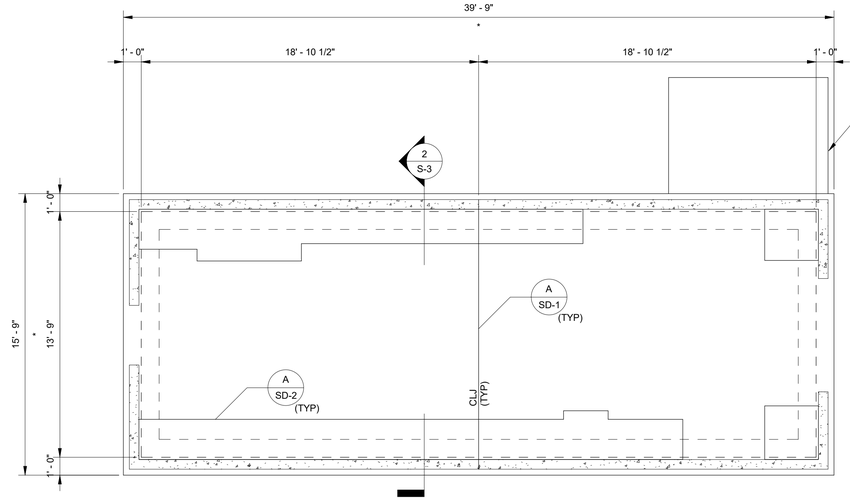
3/8" = 1'-0"

GENERATOR PAD NOTES:

1. COORDINATE LOCATION OF EQUIPMENT WITH CIVIL, ELECTRICAL, MECHANICAL AND FINAL APPROVED EQUIPMENT SHOP DRAWINGS.
2. ANCHORAGE OF EQUIPMENT SHALL BE PROVIDED BY THE EQUIPMENT MANUFACTURER'S DELEGATE ENGINEER.
3. GENERATOR PAD DIMENSIONS ARE CONSIDERED PRELIMINARY UNTIL FINAL APPROVED GENERATOR SHOP DRAWINGS HAVE BEEN RETURNED TO THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THAT THE FINAL PAD DIMENSIONS MATH THE FINAL APPROVED EQUIPMENT.

SUBGRADE SOIL PREPARATION NOTES:

1. REFER TO DIVISION 2 SPECIFICATIONS FOR CLEARING AND STRIPPING, TEMPORARY GROUNDWATER CONTROL, SOIL PREPARATION, SURFACE COMPACTION, AND STRUCTURAL BACKFILL AND FILL SOILS IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
2. SUBGRADE SOILS BELOW SLABS ON GRADE SHALL BE IMPORT STRUCTURAL FILL OR SUITABLE ON-SITE SOILS AS DEFINED IN THE GEOTECHNICAL REPORT AND DIVISION 2 SPECIFICATIONS.
3. COMPACT 24" LAYER OF SUBGRADE SOIL TO 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY PER ASTM D-1557 OR AASHTO T180.

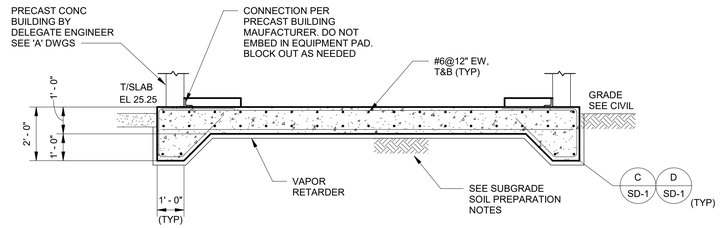



EQUIPMENT PAD NOTES:

1. FIELD COORDINATE EQUIPMENT PAD DIMENSIONS WITH EQUIPMENT APPROVED BY ENGINEER.
2. PROVIDE CORNER REINFORCING AT ALL WIREWAY CORNERS SIMILAR TO DETAIL F/SD-1. BEND AS NEEDED TO MEET 2" CONCRETE COVER REQUIREMENT.
3. BLOCK OUT AS NEEDED AT PRECAST BUILDING TIE DOWN CONNECTION ANGLES.
4. CONTRACTOR SHALL SUBMIT CONDUIT PENETRATION LAYOUT TO ENGINEER FOR APPROVAL PRIOR TO SETTING CONCRETE FOUNDATION SLAB.
5. * FOUNDATION DIMENSIONS ARE PRELIMINARY UNTIL PRECAST BUILDING SHOP DRAWINGS HAVE BEEN SUBMITTED TO AND APPROVED BY THE ENGINEER.

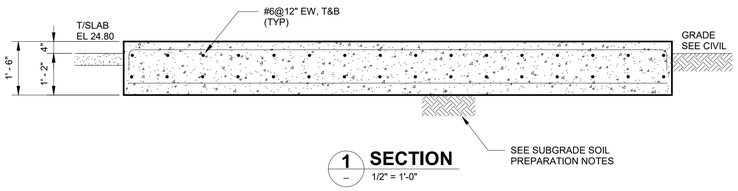
## ELECTRICAL BUILDING FOUNDATION PLAN

1/4" = 1'-0"




## 2 SECTION

3/8" = 1'-0"



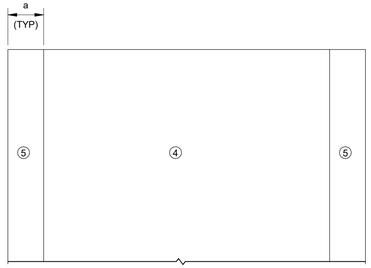

## 1 SECTION

1/2" = 1'-0"

| WIND PRESSURE (PSF) FOR COMPONENT AND CLADDING (Vult) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EFFECTIVE WIND AREA (SQ. FT.) | PRESSURE (+)/SUCTION (-) | | | | | | | | | | | |
| | ROOF (PSF) | | | | | | | | WALL (PSF) | | | |
| | ZONE 1' | | ZONE 1 | | ZONE 2 | | ZONE 3 | | ZONE 4 | | ZONE 5 | |
| < 10.00 | 28.6 | -48.8 | 28.6 | -75.7 | 28.6 | -95.9 | 28.6 | -126 | 48.8 | -51.8 | 48.8 | -60.9 |
| 10 TO 20 | 28.6 | -48.8 | 28.6 | -75.7 | 28.6 | -95.9 | 28.6 | -126 | 58.8 | -51.8 | 48.8 | -60.9 |
| 20 TO 50 | 27.6 | -48.8 | 27.6 | -71.5 | 27.6 | -90.5 | 27.6 | -115 | 47.2 | -50.2 | 47.2 | -57.7 |
| 50 TO 100 | 26.2 | -48.8 | 26.2 | -66.0 | 26.2 | -83.4 | 26.2 | -101 | 45.1 | -48.1 | 45.1 | -53.4 |
| >= 100 | 25.2 | -48.8 | 25.2 | -61.8 | 25.2 | -78.1 | 25.2 | -90.5 | 42.4 | -46.5 | 43.4 | -50.2 |

ELECTRICAL BUILDING WIND PRESSURE NOTES:

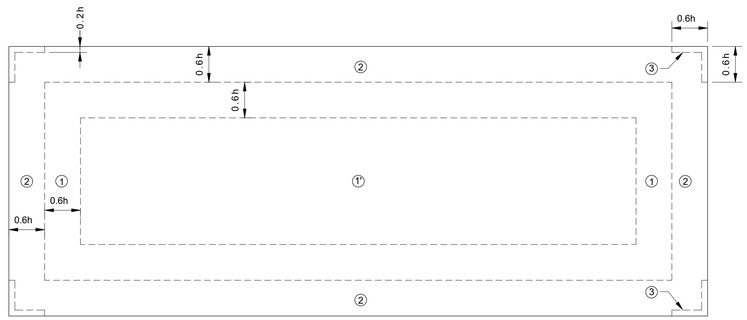
1. BUILDING SHALL BE DESIGNED AS ENCLOSED PER FBC WITH AN ULTIMATE DESIGN WIND SPEED OF 135 MPH. REFER TO S-1 FOR ADDITIONAL WIND DESIGN CRITERIA.
2. FOR ASD PRESSURES, APPLY A FACTOR OF 0.6 TO THE LISTED PRESSURES CORRESPONDING TO $V_{ULT}$.
3. ZONE WIDTH DIMENSIONS, a = 3'-0" (WALLS) AND h = 12'-0" (ROOF).




COMPONENTS AND CLADDING WALL ZONE DIAGRAM

## ELEVATION

NTS




COMPONENTS AND CLADDING ROOF ZONE DIAGRAM

## PLAN

NTS

DATE:
ELIAS A. RIVERA
PE NO. 81626

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: M. TRAPP
DRAWN BY: M. TRAPP
SHEET CHK'D BY: T. VERWEY
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APPROVED BY: E. RIVERA
DATE: JANUARY 2021

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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

ROBENA ROAD BOOSTER PUMP STATION
ELECTRICAL BUILDING AND GENERATOR
FOUNDATION PLANS AND SECTIONS

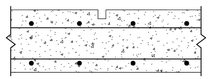
PROJECT NO. 6103-215629
FILE NAME: SWZ0001EL.RVT
SHEET NO.
S-3

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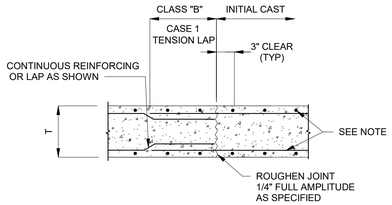
NOTES:

1. SAWCUT WIDTH 1/8" MIN - 1/4" MAX.
2. SAWCUT DEPTH 1" MIN - 1-1/2" MAX.
3. FILL JOINT TO FULL DEPTH WITH SELF-LEVELING SEALANT. USE BACKER ROD OR BOND BREAKER TAPE PER MANUFACTURER.



CONTROL JOINT

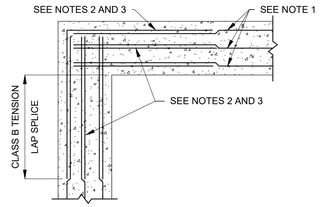
**A DETAIL**
NTS




NOTE: SECOND POUR SHALL BE 24 HOURS AFTER INITIAL POUR.

CONSTRUCTION JOINT

**B DETAIL**
NTS

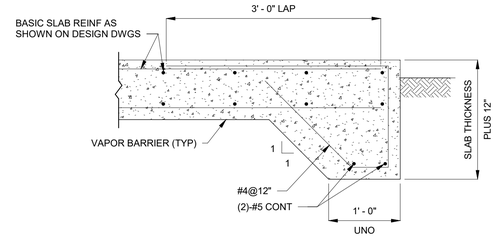



THICKENED EDGE CORNER REINFORCING

**C DETAIL**
NTS

STANDARD DETAIL NOTES:

1. BASIC SLAB REINFORCEMENT AS SHOWN ON DESIGN DRAWINGS.
2. SIZE AND SPACING OF BAR TO MATCH WALL/BEAM REINFORCEMENT AS SHOWN ON DESIGN DRAWINGS.
3. FOR ADDITIONAL BARS AT CORNERS, SEE DESIGN DRAWINGS.




THICKENED EDGE SLAB

**D DETAIL**
NTS

CLASS B TENSION LAP SPLICE LENGTHS IN WALLS AND SLABS (INCHES)

| BAR SIZE | BLACK STEEL f'c=4000 psi | |
|---|---|---|
| | TOP BARS | OTHER BARS |
| 3 | 15 | 12 |
| 4 | 20 | 15 |
| 5 | 29 | 23 |
| 6 | 40 | 31 |
| 7 | 65 | 50 |
| 8 | 81 | 62 |
| 8* | 49 | 37 |
| 9* | 60 | 46 |
| 10* | 74 | 57 |

TENSION DEVELOPMENT LENGTHS IN WALLS AND SLABS (INCHES)

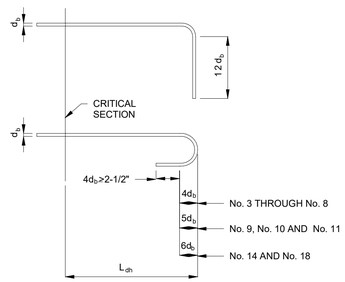
| BAR SIZE | BLACK STEEL f'c=4000 psi | |
|---|---|---|
| | TOP BARS | OTHER BARS |
| 3 | 12 | 12 |
| 4 | 15 | 12 |
| 5 | 22 | 17 |
| 6 | 31 | 24 |
| 7 | 50 | 38 |
| 8 | 62 | 48 |
| 8* | 37 | 29 |
| 9* | 46 | 36 |
| 10* | 57 | 44 |

NOTES:

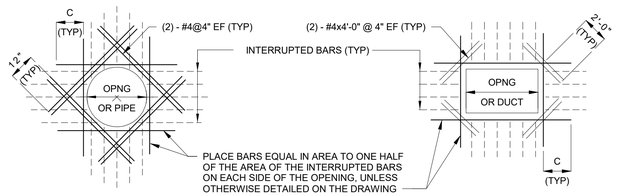
1. MINIMUM BAR SPACING = 6" ON CENTER.
2. TABLE VALUES ARE BASE UPON A MINIMUM CONCRETE COVER = 1", EXCEPT AS NOTED BY *. * INDICATES MINIMUM CONCRETE COVER = 2". REFER TO S-1 FOR MINIMUM COVER REQUIREMENTS.
3. A TOP BAR IS A HORIZONTAL BAR WHERE MORE THAN 12" OF FRESH CONCRETE IS CAST DIRECTLY BELOW THE BAR. WHERE HORIZONTAL WALL REINFORCEMENT IS UNIFORMLY SPACED IN A VERTICAL PLANE AT 12" MAXIMUM SPACING, LENGTHS MAY BE AS FOR "OTHER BARS."

LAP SPLICE AND DEVELOPMENT LENGTHS

**E DETAIL**
NTS




HOOKED BAR DETAILS FOR DEVELOPMENT OF STANDARD HOOKS

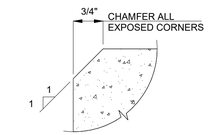



NOTES:

1. DETAIL IS TYPICAL FOR ALL OPENINGS 12" AND GREATER IN CONCRETE WALLS AND SLABS UNLESS OTHERWISE NOTED. SPREAD REINFORCING AT SMALLER OPENINGS.
2. BARS ARE NOT REQUIRED AT AN OPENING EDGE PARALLEL TO AND WITHIN 6 INCHES OF A WALL OR BEAM.
3. C = CLASS "B" CASE 1 TENSION LAP.
4. REINFORCING STEEL IS TO BE CARRIED ACROSS ALL CONSTRUCTION JOINTS.
5. WHERE OPENING IS WITHIN 4'-0" OF BASE SLAB, PROVIDE MATCHING DOWELS FOR ADDITIONAL BARS.

REINFORCING AT OPENINGS

**F DETAIL**
NTS




CHAMFER

**G DETAIL**
NTS

DATE:
ELIAS A. RIVERA
PE NO. 81626

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
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JEA
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ROBENA ROAD BOOSTER PUMP STATION

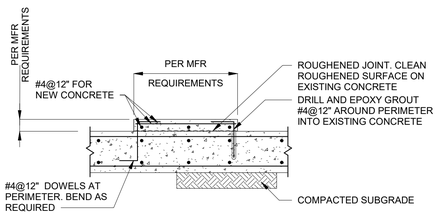
STANDARD DETAILS I

PROJECT NO. 6103-215629
FILE NAME: SD01STDT.RVT

SHEET NO.
SD-1

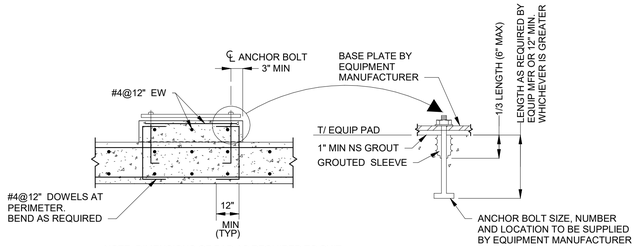
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HOUSEKEEPING PAD FOR NEW OR EXISTING SLAB

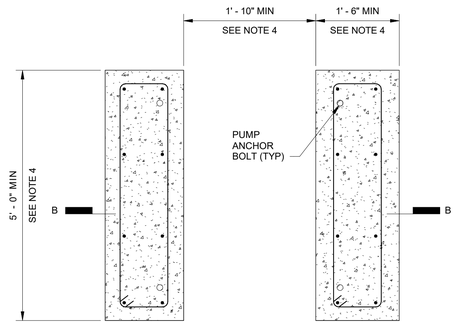
**A DETAIL**
NTS




NOTE: DIMENSIONS OF PAD AS REQUIRED TO SUIT EQUIPMENT (4" MIN HEIGHT UNLESS PAD IS CAST INTEGRALLY WITH SLAB)

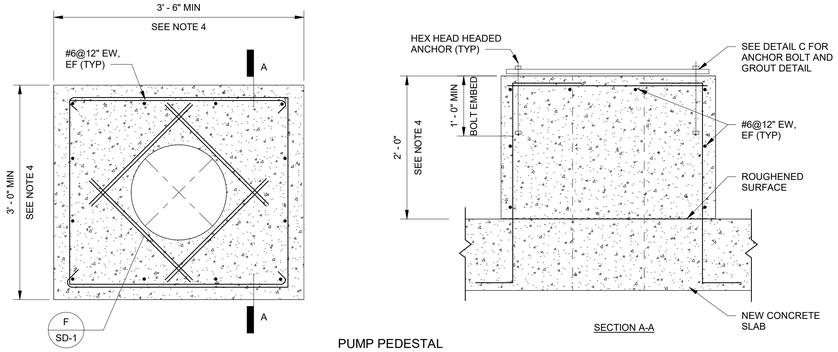
EQUIPMENT PAD

**B DETAIL**
NTS



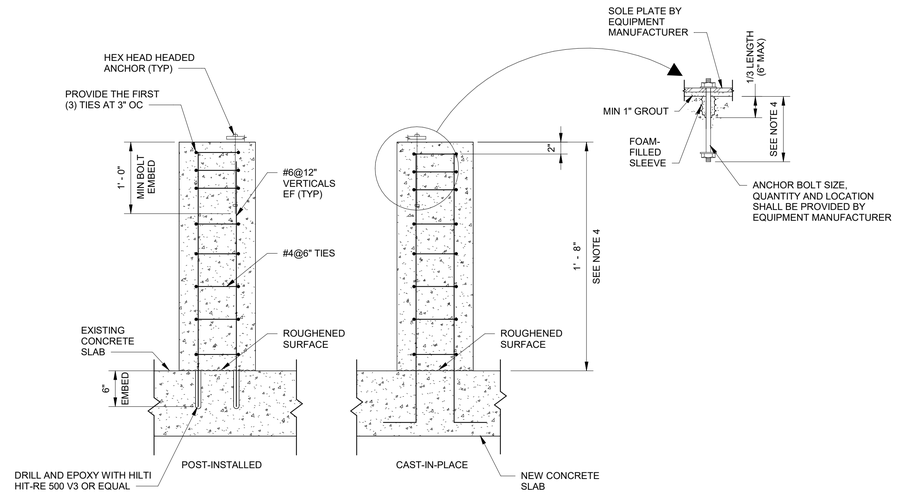

PUMP PEDESTAL NOTES:

1. EACH PUMP SHALL BE CENTERED BETWEEN THE TWO PEDESTALS.
2. THE MINIMUM DISTANCE BETWEEN AN ANCHOR BOLT AND THE EDGE OF THE CONCRETE SHALL NOT BE LESS THAN 3.5".
3. PUMPS SHALL BE LEVELD IN ACCORDANCE WITH MANUFACTURED REQUIREMENTS.
4. COORDINATE LAYOUT WITH PUMP MANUFACTURER. PEDESTAL DESIGN AND ANCHOR BOLTS ARE PRELIMINARY PENDING FINAL PUMP SELECTION. FINAL PEDESTAL AND ANCHOR BOLTS WILL BE PROVIDED BY THE ENGINEER AFTER APPROVED PUMP SUBMITTALS HAVE BEEN RECEIVED.



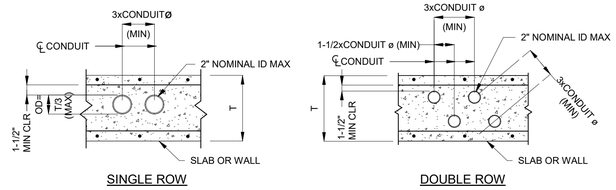

PUMP PEDESTAL

**D DETAIL**
NTS




TYPICAL PUMP PEDESTALS

**C DETAIL**
NTS




CONDUIT NOTES:

1. NO CONDUIT SHALL BE EMBEDDED IN STRUCTURAL BEAMS, COLUMNS, WALLS OR SLABS UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWING.
2. CONDUIT SHALL BE PLACED 6" BELOW SLAB.
3. WHERE CONDUIT MUST PASS THROUGH A SLAB OR WALL, MINIMUM SIZE AND SPACING REQUIREMENT PER ACI 318-SECTION 6.3 AND THIS DETAIL.
4. ALUMINUM SHALL NOT BE EMBEDDED IN CONCRETE UNLESS COATED TO PREVENT ALUMINUM-CONCRETE REACTION.

CONDUIT PASSING THROUGH SLAB OR WALL

**E DETAIL**
NTS

DATE:
ELIAS A. RIVERA
PE NO. 81626

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

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DRAWN BY: M. TRAPP
SHEET CHK'D BY: T. VERWEY
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FL COA No. EB-0000020

JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

STANDARD DETAILS II

PROJECT NO. 6103-215629
FILE NAME: SD02STDT.RVT

SHEET NO.
SD-2

ISSUED FOR BID

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## HVAC SYMBOLS

| | |
|---|---|
| T | THERMOSTAT |
| HT | HIGH TEMPERATURE SWITCH |
| LT | LOW TEMPERATURE SWITCH |
| SD | SMOKE DETECTOR |
| FS | FLOW SENSOR |
| H | HUMIDISTAT |
| WT | WALL TIMER |
| BG | BREAK GLASS SWITCH |
| WS | WALL SWITCH |
| M | MOTOR OPERATED DAMPER |
| | EXTERIOR ALARM STATION |
| | INTERIOR ALARM STATION |
| CD | CONTROL DAMPER |
| FD | FIRE DAMPER |
| SD | SMOKE ACTUATED FIRE DAMPER |
| FC | FLEXIBLE CONNECTION |
| | ELBOW WITH TURNING VANES |
| EG | EXHAUST GRILLE |
| ER | EXHAUST REGISTER |
| RG | RETURN GRILLE |

## HVAC SYMBOLS

| | |
|---|---|
| SR | SUPPLY REGISTER |
| | SUPPLY DUCT |
| | RETURN/EXHAUST DUCT |
| DG | DOOR GRILLE |
| TG | TRANSFER GRILLE |
| RG | TRANFER DUCT |
| SD | SPLITTER DAMPER |
| | SHOE-TAP |
| | DAMPER-EXTRACTOR DUCT CONNECTION |
| | CEILING DIFFUSER - TYPE VARIES |
| EF | ROOF MOUNTED EXHAUST FAN |
| EF | WALL MOUNTED EXHAUST FAN |
| VAV | VARIABLE AIR VOLUME REGULATOR W/ OUTLETS |
| | ROUND FLEXIBLE INSULATED DUCT |
| | SHEET METAL DUCT |
| EUH | ELECTRIC UNIT HEATER |
| EDH | ELECTRIC DUCT HEATER |
| ERU | ENERGY RECOVERY UNIT |
| WT | WT BOX WITH TRANSITION |

NOTE:

1. SYMBOLS AND ABBREVIATIONS SHOWN ON THE SHEET ARE GENERIC AND MAY NOT HAVE BEEN USED ON THE PROJECT.

## HVAC ABBREVIATIONS

| | |
|---|---|
| A | AIR |
| AABC | ASSOCIATED AIR BALANCE COUNCIL |
| ACCU | AIR COOLED CONDENSING UNIT |
| AD | ACCESS DOOR |
| AFF | ABOVE FINISHED FLOOR |
| AHU | AIR HANDLING UNIT |
| AL | ALUMINUM |
| APU | AIR PURIFICATION UNIT |
| AR | ACID RESISTING |
| ASHRAE | AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS |
| ASME | AMERICAN SOCIETY OF MECHANICAL ENGINEERS |
| ATC | AUTOMATIC TEMPERATURE CONTROL |
| BDD | BACKDRAFT DAMPER |
| BEL | BELOW |
| BLDG | BUILDING |
| BS | BIRD SCREEN |
| BTU | BRITISH THERMAL UNITS |
| C | CONDENSATE |
| CD | CONTROL DAMPER |
| CFM | CUBIC FEET PER MINUTE |
| CLG | CEILING |
| CONC | CONCRETE |
| CONN | CONNECTION |
| CW | CHILLED WATER |
| CWR | CHILLED WATER RETURN |
| CWS | CHILLED WATER SUPPLY |
| DB | DRY BULB |
| DG | DOOR GRILLE |
| DHU | DEHUMIDIFICATION UNIT |
| DIA | DIAMETER |
| DISC | DISCHARGE |
| DN | DOWN |
| DPR | DAMPER |
| DS | DISCONNECT SWITCH |
| EA | EACH |
| EDH | ELECTRIC DUCT HEATER |
| EER | ENERGY EFFICIENCY RATION |
| EF | EXHAUST FAN |
| EG | EXHAUST GRILLE |
| ER | EXHAUST REGISTER |
| EUH | ELECTRIC UNIT HEATER |
| EVAP | EVAPORATOR |
| FC | FLEXIBLE CONNECTION |
| FD | FIRE DAMPER |
| FIN | FINISH |
| FL | FLOOR |
| FLA | FULL LOAD AMPS |
| FRP | FIBERGLASS REINFORCED PLASTIC |
| FT | FEET |
| FT² | SQUARE FEET |
| GA | GAUGE |
| GALV/GS | GALVANIZED |
| GFC | GAS FIRED CHILLER |
| GPH | GALLONS PER HOUR |
| GPM | GALLONS PER MINUTE |
| HG | HOT GAS |
| HP | HORSEPOWER |

## HVAC ABBREVIATIONS

| | |
|---|---|
| HR | HOUR |
| HW | HOT WATER |
| KW | KILOWATT |
| LD | LINEAR DIFFUSER |
| LIQ | LIQUID |
| LVR | LOUVER |
| MAU | MAKE-UP AIR UNIT |
| MCA | MAXIMUM CURRENT AMPS |
| MCC | MOTOR CONTROL CENTER |
| MFR | MANUFACTURER |
| MTD | MOUNTED |
| MTG | MOUNTING |
| NOM | NOMINAL |
| NTS | NOT TO SCALE |
| O/A | OUTSIDE AIR |
| OBD | OPPOSED BLADE DAMPER |
| PAC | PACKAGED AIR CONDITIONING UNIT |
| PBD | PARALLEL BLADE DAMPER |
| PCD | PERFORATED CEILING DIFFUSER |
| PCF | POUNDS PER CUBIC FOOT |
| PPM | PARTS PER MILLION |
| PSI | POUNDS PER SQUARE INCH |
| PVC | POLYVINYL CHLORIDE |
| R | REFRIGERANT |
| R/A | RETURN AIR |
| RG | RETURN GRILLE |
| RM | ROOM |
| RPM | REVOLUTIONS PER MINUTE |
| S/A | SUPPLY AIR |
| SAD | SUPPLY AIR DIFFUSER |
| SEER | SEASONAL ENERGY EFFICIENCY RATIO |
| SHT | SHEET |
| SM | SHEET METAL |
| SMACNA | SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION |
| SP | STATIC PRESSURE |
| SR | SUPPLY REGISTER |
| SS | STAINLESS STEEL |
| ST | STEAM |
| STD | STANDARD |
| SUCT | SUCTION |
| SW | SWITCH |
| TDH | TOTAL DISCHARGE HEAD |
| TEMP | TEMPERATURE |
| TG | TRANSFER GRILLE |
| TSP | TOTAL STATIC PRESSURE |
| TV | TURNING VANES |
| TYP | TYPICAL |
| UH | UNIT HEATER |
| UL | UNDERWRITERS LABORATORY |
| VAP | VAPOR |
| VVT | VARIABLE VOLUME TERMINAL |
| W/ | WITH |
| WB | WET BULB |
| WG | WATER GAUGE |
| WT | WEIGHT |
| WTR | WATER |

## HVAC NOTES

1. HVAC EQUIPMENT DIMENSIONS, LOCATIONS, DUCTWORK AND PIPING SYSTEM LAYOUTS ARE BASED ON EQUIPMENT SELECTED BY THE ENGINEER. IF THE CONTRACTOR PROPOSES TO FURNISH EQUIPMENT THAT REQUIRES AN ARRANGEMENT OR SPACE DIFFERING FROM THAT INDICATED ON THE DRAWINGS, OR SPECIFIED, THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER, FOR APPROVAL, DETAILED ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, INSTRUMENTATION, HVAC AND ELECTRICAL DRAWINGS AND EQUIPMENT LISTS SHOWING ALL NECESSARY CHANGES AND EMBODYING ALL FEATURES OF THE EQUIPMENT THE CONTRACTOR PROPOSES TO FURNISH. THIS INFORMATION SHALL INCLUDE BUT SHALL NOT BE LIMITED TO PLANS, SECTIONS, DETAILS, AND SCHEMATICS OF ALL APPURTENANCES REQUIRED. SUCH CHANGES, IF APPROVED BY THE ENGINEER, SHALL BE AT NO EXTRA COST TO THE OWNER. THE CONTRACTOR SHALL ASSUME THE COST OF, AND THE RESPONSIBILITY FOR, SATISFACTORILY ACCOMPLISHING ALL THE NECESSARY CHANGES CORRESPONDING TO THE DIMENSIONS AND CHARACTERISTICS OF THE EQUIPMENT SUBMITTED AND APPROVED BY THE ENGINEER. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
2. SIZES OF EQUIPMENT PADS INDICATED ON THE DRAWINGS ARE APPROXIMATE. EXACT DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FOR THE EQUIPMENT FURNISHED. ALL FLOOR MOUNTED EQUIPMENT SHALL BE SET ON CONCRETE PADS CONFORMING TO DETAILS SHOWN ON THE STRUCTURAL DRAWINGS.
3. DIELECTRIC COUPLINGS, FLANGES OR UNIONS SHALL BE INSTALLED AT ALL CONNECTIONS OF COPPER PIPE TO OTHER TYPES OF METALLIC PIPING.
4. HVAC PIPING AND DUCTWORK DRAWINGS DO NOT SHOW ALL DRAINS, VENTS, OFFSETS AND FITTINGS ETC. REQUIRED FOR THE COMPLETE SYSTEM. SMALL PIPING IS SHOWN APPROXIMATELY TO SCALE BUT NOT EVERY FITTING AND OFFSET IS SHOWN. SOME VALVES AND APPURTENANCES MAY BE OMITTED FOR THE SAKE OF CLARITY. THE CONTRACTOR SHALL FURNISH, INSTALL AND TEST ALL HVAC SYSTEMS SHOWN ON THE DRAWINGS AND DETAILS, AND/OR AS DEFINED IN THE SPECIFICATIONS TO PROVIDE THE COMPLETE SYSTEM.
5. UNLESS OTHERWISE SHOWN ON THE DRAWING, ALL WALL PENETRATIONS SHALL BE AS SHOWN ON THE WALL PENETRATION DETAILS. ABOVE GROUND EXTERIOR WALL AND ROOF PENETRATIONS SHALL BE AS SHOWN ON THE ARCHITECTURAL DRAWINGS. IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY SUBSTITUTE ALTERNATE METHODS PROVIDING THEY MEET INTENDED DESIGN REQUIREMENTS.
6. NOT ALL AND ONLY CERTAIN TYPES OF SUPPORTS ARE SHOWN ON THE HVAC DRAWINGS. UNLESS OTHERWISE DETAILED ON THE DRAWINGS ALL PIPE AND DUCT SUPPORTS SHALL BE DESIGNED, FURNISHED AND INSTALLED BY THE CONTRACTOR AS SPECIFIED AND TO THE APPROVAL OF THE ENGINEER.
7. FOR ALL ROOF MOUNTED EQUIPMENT, MAINTAIN A MINIMUM OF 10'-0" CLEARANCE FROM ANY ROOF EDGE UNLESS GUARDRAILS HAVE BEEN PROVIDED.
8. UNLESS OTHERWISE NOTED, MOUNT ALL DUCTWORK AND PIPING TIGHT TO STRUCTURE. MAINTAIN A MINIMUM 7'-6" CLEAR HEIGHT BELOW DUCTWORK, INCLUDING SUPPORTS. COORDINATE INSTALLATION OF DUCTWORK WITH ALL OTHER NEW AND EXISTING EQUIPMENT, PIPING, CONDUIT, ETC.
9. SEE ELECTRICAL DRAWINGS FOR AREA ELECTRICAL/CODE RATING. ALL HVAC EQUIPMENT SHALL COMPLY WITH THE REQUIREMENTS OF THOSE AREA CLASSIFICATIONS.

### WASTEWATER PUMP STATION ENERGY CODE NOTES:

1. THE ELECTRICAL ROOM IS EXEMPT FROM THE REQUIREMENTS OF THE FLORIDA BUILDING CODE - ENERGY CONSERVATION, BY PARAGRAPH C101.4.2.4. PER EXEMPTION 4, THE ELECTRICAL ROOM COOLING EQUIPMENT PROVIDES SPACE CONDITIONING FOR THE ELECTRICAL EQUIPMENT ONLY IN ORDER TO KEEP THE FACILITY OPERATIONAL. NO HEATING SYSTEMS ARE PROVIDED.

### OUTDOOR AIR CALCULATIONS

| BUILDING | SPACE | AREA (SQ. FT.) | VOLUME (CU. FT.) | ASHRAE 62.1 REQ'D VENTILATION RATE | ASHRAE 62.1 REQ'D VENTILATION | PROVIDED VENTILATION RATE | PROVIDED VENTILATION | VENTILATION PROVIDED BY | OUTDOOR AIR PROVIDED BY | ADDITIONAL VENTILATION PROVIDED BY | ADDITIONAL OUTDOOR AIR PROVIDED BY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ELECTRICAL BUILDING | ELECTRICAL ROOM | N/A | N/A | SEE NOTE 2 | SEE NOTE 2 | N/A | N/A | N/A | N/A | N/A | N/A |

NOTES:

1. OUTDOOR AIR CALCULATIONS PROVIDED PER ASHRAE STANDARD 62 ARE PROVIDED FOR INFORMATIONAL AND CODE REVIEW PURPOSES ONLY. THE CALCULATIONS DO NOT CHANGE THE CONTRACT DOCUMENTS.

2. THIS AREA IS NORMALLY UNOCCUPIED AND IS NOT COVERED UNDER THE SCOPE OF ASHRAE 62.1.

ASHRAE - AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS
AC/HR - AIR CHANGES PER HOUR
CFM/SQ. FT. - CUBIC FEET PER MINUTE PER SQUARE FOOT
N/A - NOT APPLICABLE

DATE:
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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
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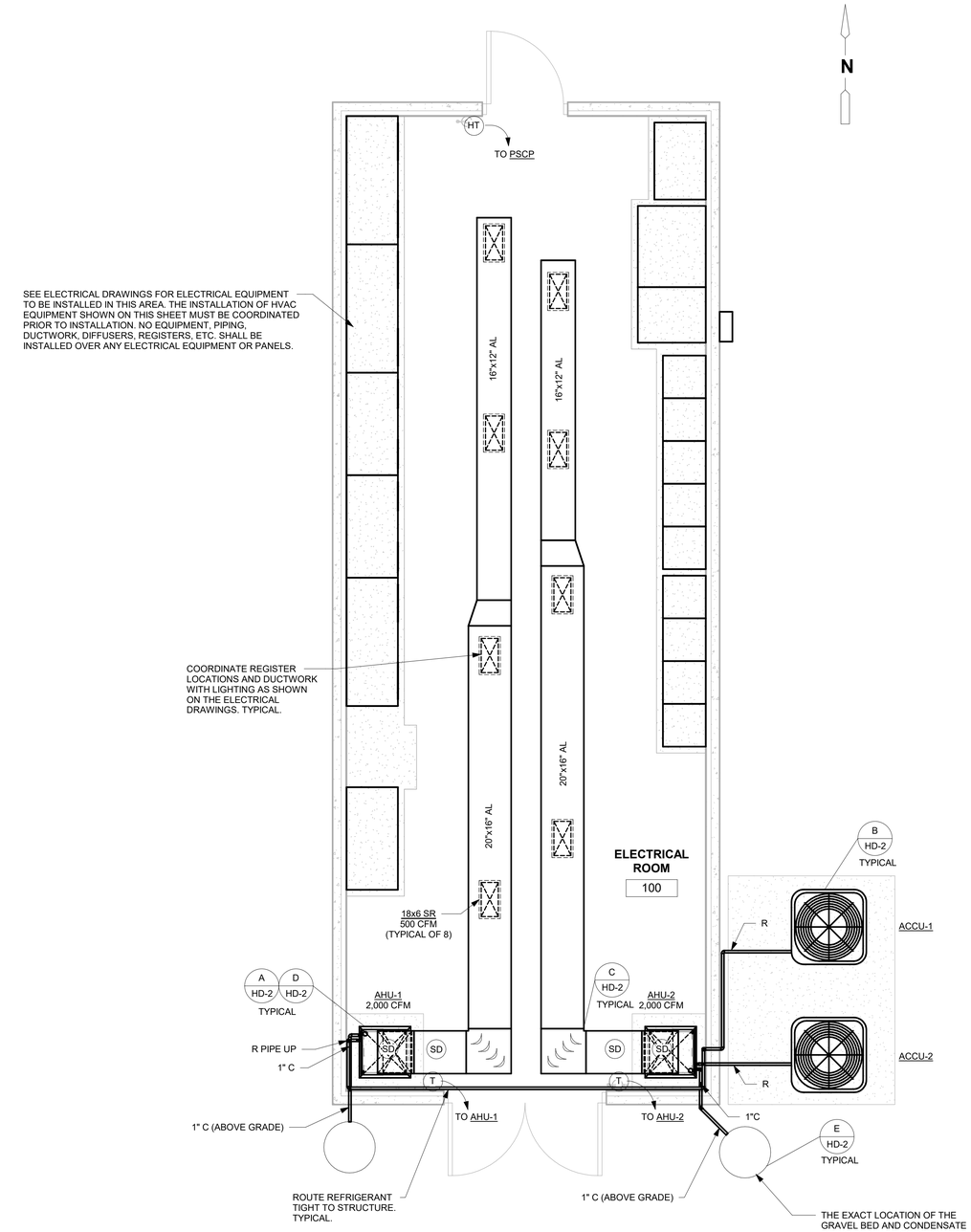
JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

HVAC SYMBOLS AND ABBREVIATIONS

PROJECT NO. 6103-215629
FILE NAME: HWZ000EL.RVT

SHEET NO.
H-1

ISSUED FOR BID




## ELECTRICAL BUILDING HVAC PLAN

3/8" = 1'-0"

NOTES:

1. COORDINATE LOCATIONS OF ALL HVAC PIPING, DUCTWORK, AND EQUIPMENT WITH ALL OTHER UTILITIES, PIPING, ELECTRICAL DUCT BANKS, CONDUIT, WIRING, LIGHTING, BUILDING STRUCTURES, ETC.

2. COIL COATINGS, ASSOCIATED REFRIGERANT PIPING, AND REFRIGERANT CIRCUIT COMPONENTS WITH EACH AIR HANDLING UNIT AND CONDENSING UNIT CABINETS SHALL BE APPLIED BY BRONZ-GLOW TECHNOLOGIES INC., ALL FIELD PIPING IS TO BE CAOTED WITH BRONZ-GLOW TECHNOLOGIES INC. AEROSOL PLATINUM COLOR. NO OTHER COATINGS ARE ACCEPTABLE.

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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
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| | | | | |

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ROBENA ROAD BOOSTER PUMP STATION

ROBENA ROAD PUMP STATION
ELECTRICAL BUILDING HVAC PLAN

PROJECT NO. 6103-215629
FILE NAME: HWZ000EL.RVT

SHEET NO.
H-2

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## AIR COOLED CONDENSING UNIT SCHEDULE

| MARK | MATCH WITH | SYSTEM CAPACITY | | PIPING | | CONDENSER | | | | COMPRESSOR | | | | | REMARKS | MANUFACTURER MODEL | HEATING CAP. @ 47° F | HSPF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BTUH | SEER | SUCT. | LIQ. | OSA °F | CFM | ROWS | FLA | NO. | TYPE | RLA COMP | VOLT | PHASE | | | | |
| ACCU-1 | AHU-1 | 54.9 | 17 | SEE NOTE B | SEE NOTE B | 95 | - | SEE NOTE B | 1.3 | 1 | 2-STAGE SCROLL | 32.1 | 208 V | 1ø | SEE NOTES A, B, AND C BELOW | TRANE 4TTR7060 | - | - |
| ACCU-2 | AHU-2 | 54.9 | 17 | SEE NOTE B | SEE NOTE B | 95 | - | SEE NOTE B | 1.3 | 1 | 2-STAGE SCROLL | 32.1 | 208 V | 1ø | SEE NOTES A, B, AND C BELOW | TRANE 4TTR7060 | - | - |

NOTE A: PROVIDE THE UNIT WITH THE FOLLOWING OPTIONS: BRONZ-GLOW HUSKY DIPPED COATING ON THE CONDENSER COILS AND ON ALL ASSOCIATED REFRIGERANT TUBING WITHIN THE UNIT CABINET COATING PER THE SPECIFICATIONS, STAINLESS STEEL HARDWARE (EXTERNAL HARDWARE ONLY), NON-RUST BASE PAN, SERVICE VALVES, HIGH AND LOW PRESSURE SWITCHES, FILTER DRIER, PRESSURE RELIEF VALVE, THERMAL OVERLOAD, LOW AMBIENT CONTROLS TO 0°F, THERMOSTATIC EXPANSION VALVES, LIQUID LINE SOLENOID VALVE, CRANKCASE HEATER, EVAPORATOR FREEZE THERMOSTAT, COMPRESSOR START ASSITANCE, HARD START KIT, TIME DELAY RELAY, WINTER START CONTROL, SUPPORT FEET, AND OUTDOOR TEMPERATURE SENSOR.

NOTE B: FOR ALL UNITS, PROVIDE REFRIGERANT PIPING SIZES, COIL ROWS, AND FINS PER THE MANUFACTURER'S RECOMMENDATIONS.

NOTE C: UNITS SHALL BE TRANE.

## AIR HANDLING UNIT SCHEDULE

| ITEM NO. | AREA SERVED | SHEET NO. | COOLING COIL DATA | | | | | | | CFM | OSA CFM | ESP | HP | VOLTAGE | AHU PHASE | DRIVE | FILTERS | | REMARKS | MANUFACTURER MODEL | AUX. ELECTRIC HEAT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ENTERING AIR | | LEAVING AIR | | TOTAL MBH | SENSIBLE MBH | ROWS FINS | | | | | | | | TYPE | SIZE NO. | | | KW | VOLT | PHASE | NO. OF STAGES |
| | | | DB | WB | LDB | LWB | | | | | | | | | | | | | | | | | | |
| AHU-1 | ELECTRICAL ROOM | H-2 | 80 | 62 | - | - | 54.9 | 53.4 | SEE NOTE B | 2,000 | 0 | 0.3" | 1 | 208 | 1 ø | DIRECT | SEE NOTE A | SEE NOTE A | SEE NOTES A, B, AND C | TRANE TAM9A0C60 | 2.88 | 208 V | 1ø | 1 |
| AHU-2 | ELECTRICAL ROOM | H-2 | 80 | 62 | - | - | 54.9 | 53.4 | SEE NOTE B | 2,000 | 0 | 0.3" | 1 | 208 | 1 ø | DIRECT | SEE NOTE A | SEE NOTE A | SEE NOTES A, B, AND C | TRANE TAM9A0C60 | 2.88 | 208 V | 1ø | 1 |

NOTE A: PROVIDE UNIT WITH THE FOLLOWING OPTIONS: BRONZ-GLOW HUSKY PLATINUM DIPPED COIL COATING ON THE EVAPORATOR COILS, ON ALL ASSOCIATED REFRIGERANT TUBING WITHIN THE UNIT, AND ON ALL INTERCONNECTING REFRIGERANT PIPING BETWEEN THE CONDENSING UNIT AND THE AIR HANDLING UNIT , STAINLESS STEEL HARDWARE (EXTERNAL HARDWARE ONLY), 1" THICK FARR 30/30 FILTERS, UPBLAST DISCHARGE, CORROSION RESISTANT COIL CASING, CORROSION RESISTANT CONDENSATE PAN, TIME DELAY RELAY, PROGRAMMABLE 2-STAGE COOLING THERMOSTAT/1-STAGE HEATING, CONDENSATE DRAIN TRAP KIT, FILTER GAUGE, AND ECM MOTOR TESTER.

NOTE B: FOR ALL UNITS, PROVIDE SAFE-T-SWITCH MODEL SS2, OR EQUAL, CONDENSATE OVERFLOW SHUT-OFF SWITCH ON THE AUXILLARY DRAIN CONNNECTIONS OF EACH AIR HANDLING UNIT, INSTALL PER THE MANUFACTURER'S INSTRUCTIONS. PROVIDE ALL NECESSARY RELAYS, FITTINGS, WIRING, CONTACTS, ETC. FOR ALL UNITS. PROVIDE REFRIGERANT PIPING SIZES, COIL ROWS, AND FINS PER THE MANUFACTURER'S RECOMMENDATIONS.

NOTE C: UNITS SHALL BE TRANE.

## CONTROL COMPONENT SCHEDULE

| SYMBOL | DESCRIPTION |
|---|---|
| T | HONEYWELL T6 PRO SERIES DIGITAL THERMOSTAT FOR AHU-1 AND AHU-2. |
| SD | PHOTOELECTRIC SMOKE DETECTOR SYSTEM SENSOR INNOVAIR MODEL D4120 .OR EQUAL. REFER TO THE SPECIFICATIONS. |
| HT | HEAVY DUTY, CORROSION RESISTANT LINE VOLTAGE THERMOSTAT/HIGH TEMPERATURE SWITCH JOHNSON CONTROLS A19BAF-1C OR EQUAL WITH CLEAR LOCKING COVER. SET AT 95°F. |

## DUCTWORK MATERIAL SCHEDULE

| SYMBOL | DESCRIPTION |
|---|---|
| AL | ALUMINUM DUCTWORK PER SMACNA STANDARDS. |

## AIR DISTRIBUTION DEVICE SCHEDULE

| SYMBOL | DESCRIPTION | MODEL | FRAME TYPE | MATERIAL | FINISH | REMARKS |
|---|---|---|---|---|---|---|
| SR | SUPPLY REGISTER HIGH VELOCITY | METAL*AIRE RLD-DF | PLASTER | ALUMINUM | OFF-WHITE ENAMEL | OPPOSED BLADE DAMPER |

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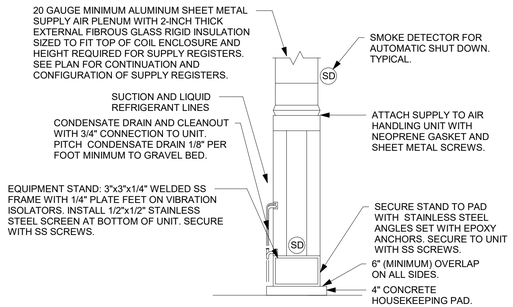
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CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

HVAC SCHEDULES

PROJECT NO. 6103-215629
FILE NAME: HWZ000EL.RVT

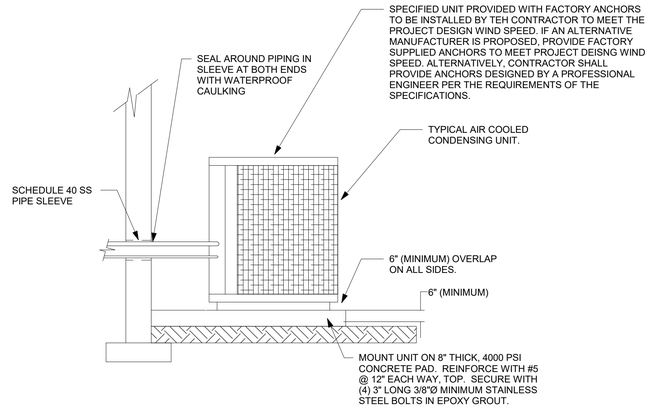
SHEET NO.
HD-1

ISSUED FOR BID




AIR HANDLING UNIT MOUTNING

**A DETAIL**
NTS

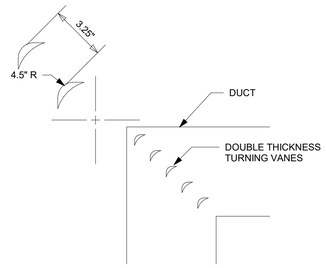



THROUGH WALL PIPING AND CONDENSER MOUNTING

**B DETAIL**
NTS

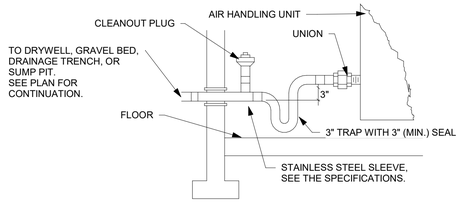
NOTE:

FOR EQUIPMENT TIE DOWNS SHOWN ON DETAIL B/HD-2, AT THE CONTRACTOR'S OPTION, ALTERNATE TIE DOWN METHODS MAY BE PROPOSED. ALTERNATE TIE DOWNS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER PER THE REQUIREMENTS THE SPECIFICATIONS.



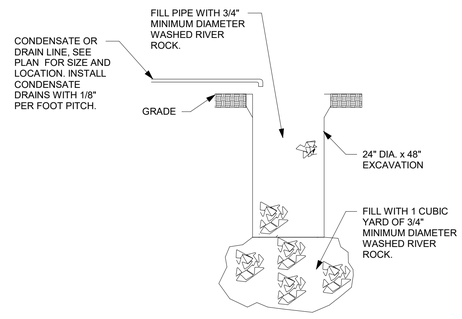

SHEET METAL
DUCT TURNING VANES

**C DETAIL**
NTS




CONDENSATE DRAIN

**D DETAIL**
NTS




GRAVEL BED

**E DETAIL**
NTS

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DATE: JANUARY 2021

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4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020

JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

HVAC DETAILS

PROJECT NO. 6103-215629
FILE NAME: HWZ000EL.RVT

SHEET NO.
HD-2

ISSUED FOR BID

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## GENERAL ABBREVIATIONS

| | |
|---|---|
| @ | AT |
| AD | AREA DRAIN |
| A.F.F. | ABOVE FINISHED FLOOR |
| AV | ACID VENT |
| AW | ACID WASTE |
| B.F.F. | BELOW FINISHED FLOOR |
| BFP | BACKFLOW PREVENTER |
| BWV | BACKWATER VALVE |
| BLDG | BUILDING |
| ℄ | CENTERLINE |
| CA | COMPRESSED AIR |
| CD | CAVITY DRAIN |
| CI | CAST IRON |
| CO | CLEANOUT |
| CONT | CONTINUOUS, CONTINUE |
| CS | CUP SINK |
| CU FT | CUBIC FEET |
| CV | CHECK VALVE |
| CW | COLD WATER |
| DI | DUCTILE IRON |
| DN | DOWN |
| DW | DISHWASHER |
| DWG | DRAWING |
| DWV | DRAIN WASTE VENT |
| E | EMERGENCY WATER |
| (E) | EXISTING, TO REMAIN |
| ECO | EXTERIOR CLEANOUT |
| ED | EQUIPMENT DRAIN |
| EL | ELEVATION |
| ES | EMERGENCY SHOWER |
| ES/EW | EMERGENCY SHOWER AND EYE WASH |
| EWC | ELECTRIC WATER COOLER |
| EWST | EMERGENCY WATER STORAGE TANK |
| EWU | EYE WASH UNIT |
| FAS | FLOW ALARM SWITCH |
| FCO | FLUSH FLOOR CLEANOUT |
| FD | FLOOR DRAIN |
| FE | FIRE EXTINGUISHER |
| FHV&C | FIRE HOSE VALVE AND CABINET |
| FS | FLOW SWITCH |
| FV | FIRE VALVE |
| F/BS | FACE/BODY SPRAY |
| G | GAS |
| GPM | GALLONS PER MINUTE |
| HB | HOSE BIBB |
| HEV | HOSE END VALVE |
| HW | HOT WATER |
| HWR | HOT WATER RETURN |
| INV | INVERT |
| IOS | INSTALLED BY OTHER SECTION |
| IPS | IRON PIPE SIZE |
| KS | KITCHEN SINK |
| KU | KITCHEN UNIT |
| LAB | LABORATORY |
| LAV | LAVATORY |
| LBV | LOCKABLE BALL VALVE |
| LCW | LAB COLD WATER |
| LHW | LAB HOT WATER |
| LS | LAB SINK |
| MAX | MAXIMUM |
| MB | MOP BASIN |
| MIN | MINIMUM |
| MXV | MIXING VALVE |
| NO | NUMBER |
| OED | OPEN END OR OPEN EQUIPMENT DRAIN |
| ORD | OVERFLOW ROOF DRAIN |
| ORL | OVERFLOW RAIN LEADER |
| PW | PROTECTED WATER |
| PD | PUMP DISCHARGE |
| PG | PRESSURE GAUGE |
| PH | POST HYDRANT |
| PHW | PROTECTED HOT WATER |
| PP | POLYPROPYLENE |
| PRW | PRESSURE WASTE |
| PSI | POUNDS PER SQUARE INCH |
| P&T | PRESSURE & TEMPERATURE |
| PVC | POLYVINYL CHLORIDE |
| RD | ROOF DRAIN |
| RL | RAINLEADER |
| RM | ROOM |
| RPZ | REDUCED PRESSURE ZONE BACKFLOW PREVENTER |
| S | SOIL |
| SH | SHOWER |
| SHT | SHEET |
| SP | SPRINKLER |
| SQ | SQUARE |
| SS | STAINLESS STEEL |
| SSK | SERVICE SINK |
| ST | SAND TRAP |
| TD | TRENCH OR TROUGH DRAIN |
| THK | THICK(NESS) |
| TP | TRAP PRIMER |
| TYP | TYPICAL |
| UR | URINAL |
| V | VENT |
| VAC | VACUUM |
| VB | VACUUM BREAKER |
| VE | VACUUM EXHAUST |
| VTR | VENT THROUGH ROOF |
| W | WASTE |
| W/ | WITH |
| WC | WATER CLOSET |
| WCO | WALL CLEANOUT |
| WF | WASH FOUNTAIN |
| WH | WALL HYDRANT |
| WHA | WATER HAMMER ARRESTOR |
| WHS | WASH HOSE STATION |
| W&V | WASTE & VENT |

NOTES:

1. SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET ARE GENERAL AND MAY NOT HAVE BEEN USED ON THIS PROJECT.

## SYMBOLS

- SOIL OR WASTE
- VENT
- COLD WATER (POTABLE)
- HOT WATER (POTABLE)
- HOT WATER RETURN (POTABLE)
- A — COMPRESSED AIR
- AV — ACID VENT
- AW — ACID WASTE
- E — EMERGENCY WATER
- ES — EMERGENCY WATER (EMERGENCY SHOWER–LAB ONLY)
- FL — FIRE LINE
- FS — FIRE SERVICE WATER (POTABLE)
- G — GAS
- HWR — HOT WATER RETURN (POTABLE)
- LCW — LABORATORY COLD WATER (NON–POTABLE)
- LHW — LABORATORY HOT WATER (NON–POTABLE)
- PD — PUMP DISCHARGE
- PW — PROTECTED WATER (NON–POTABLE)
- PHW — PROTECTED HOT WATER (NON–POTABLE)
- PRW — PRESSURE WASTE
- RL — RAINLEADER
- SP — SPRINKLER LINE
- V — VACUUM
- VE — VACUUM EXHAUST
- VALVE
- LOCKABLE BALL VALVE
- CHECK VALVE
- FLOW ALARM SWITCH
- ES/EW – EMERGENCY SHOWER/EYEWASH
- WHA — WATER HAMMER ARRESTOR
- CLEANOUTS
- FLUSH FLOOR CLEANOUT
- WATER PROOF SLEEVE
- FLOOR DRAIN OR ROOF DRAIN
- (1) PROTECTED WATER CONNECTION IDENTIFICATION NUMBER
- OPEN END DRAIN
- EQUIPMENT PROVIDED UNDER PLUMBING SECTION
- EQUIPMENT PROVIDED BY OTHERS REQUIRING PLUMBING CONNECTIONS
- DN OR DROP — "DN" DENOTES PIPES WHICH PENETRATE THE FLOOR BELOW. "DROP" DENOTES PIPES WHICH DO NOT.
- UP OR RISE — "UP" DENOTES PIPES WHICH PENETRATE THE FLOOR ABOVE. "RISE" DENOTES PIPES WHICH DO NOT.

THE TERMS "DN" "DROP" "UP" & "RISE" ARE USED TO INDICATE THE VERTICAL DIRECTION IN WHICH A PIPE LINE CONTINUES FROM THE IMAGINARY PLANE OF VIEW. THE TERMS HAVE NO RELEVANCE TO THE DIRECTION OF FLOW WITHIN THE PIPE LINE.

- POINT WHERE NEW CONSTRUCTION CONNECTS TO EXISTING CONSTRUCTION
- POINT BETWEEN EXISTING CONSTRUCTION TO REMAIN AND EXISTING CONSTRUCTION TO BE DEMOLISHED.
- MIXING VALVE

DATE:
JOSHUA H MEINIG
PE NO. 72454

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: J. MEINIG
DRAWN BY: J. MEINIG
SHEET CHK'D BY: P. POULIOT
CROSS CHK'D BY: J. GOLDMAN
APPROVED BY: J. MEINIG
DATE: JANUARY 2021

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JEA
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ROBENA ROAD BOOSTER PUMP STATION

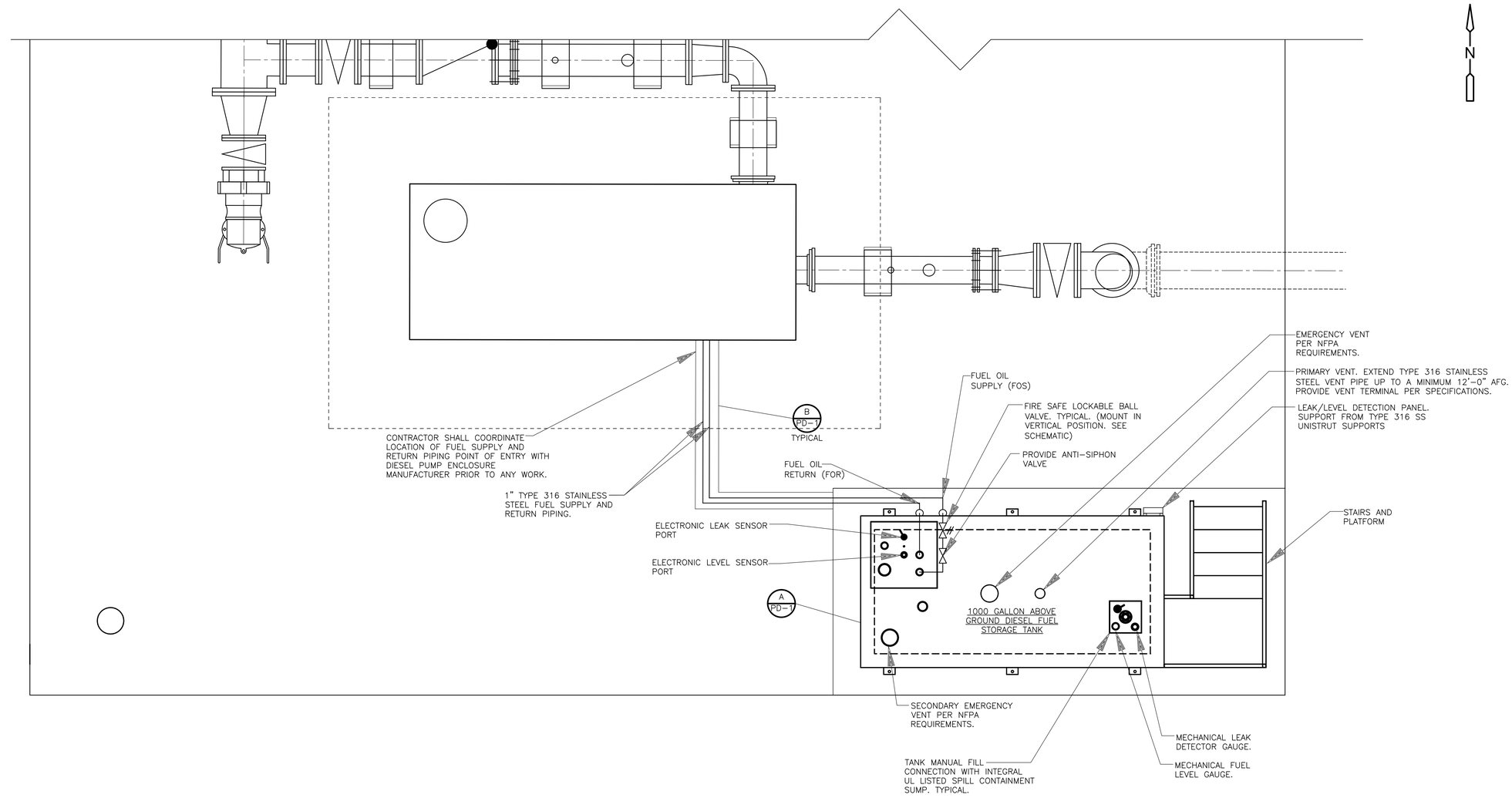
PLUMBING SYMBOLS AND ABBREVIATIONS

PROJECT NO. 6103–215629
FILE NAME: P001SYMB.DWG

SHEET NO.
P-1

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FUEL PIPING
PLAN
1/2" = 1'-0"

NOTES:

1. INSTALLATION SHALL MEAN THE DATE THAT THE STORAGE TANK SYSTEM OR SYSTEM COMPONENT PLACEMENT OR CONSTRUCTION WILL BEGIN.
2. CONTRACTOR SHALL NOTIFY JEA IN WRITING OR ELECTRONIC FORMAT BETWEEN 30 AND 45 DAYS BEFORE INSTALLATION OF A STORAGE TANK SYSTEM OR SYSTEM COMPONENT UNLESS JEA AGREES TO A SHORTER TIME PERIOD.
3. NOTIFICATION SHALL ALSO BE RECEIVED BY JEA PM IN WRITING OR ELECTRONIC FORMAT BETWEEN 48 AND 72 HOURS PRIOR TO THE INSTALLATION WORK TO CONFIRM THE DATE AND TIME OF THE SCHEDULED ACTIVITIES.
4. THE ENTIRE SYSTEM INCLUDING THE TANKS, PIPING, EQUIPMENT, AND LEAK DETECTION SYSTEM SHALL BE INSPECTED AND APPROVED BY DEP.
5. CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL OF THE INSTALLATION FROM THE LOCAL FIRE OFFICIAL OF JURISDICTION.
6. CONTRACTOR SHALL PROVIDE NEW FUEL PIPING IN ACCORDANCE WITH THE SPECIFICATIONS. FUEL SYSTEM SHALL BE A COMPLETE AND USEABLE SYSTEM SUPPLYING FUEL TO THE FACILITY EMERGENCY GENERATORS.
7. NEW FUEL PIPING, SYSTEMS, AND/OR MODIFICATIONS TO EXISTING FUEL SYSTEMS SHALLMEET THE REQUIREMENTS OF FAC CHAPTER 62-761 AND 62-767, NFPA 30 AND 37. REFER TO SPECIFICATIONS.

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: J. MEINIG
DRAWN BY: J. MEINIG
SHEET CHK'D BY: P. POULIOT
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ROBENA ROAD PUMP STATION
FUEL SYSTEM PLUMBING PLAN

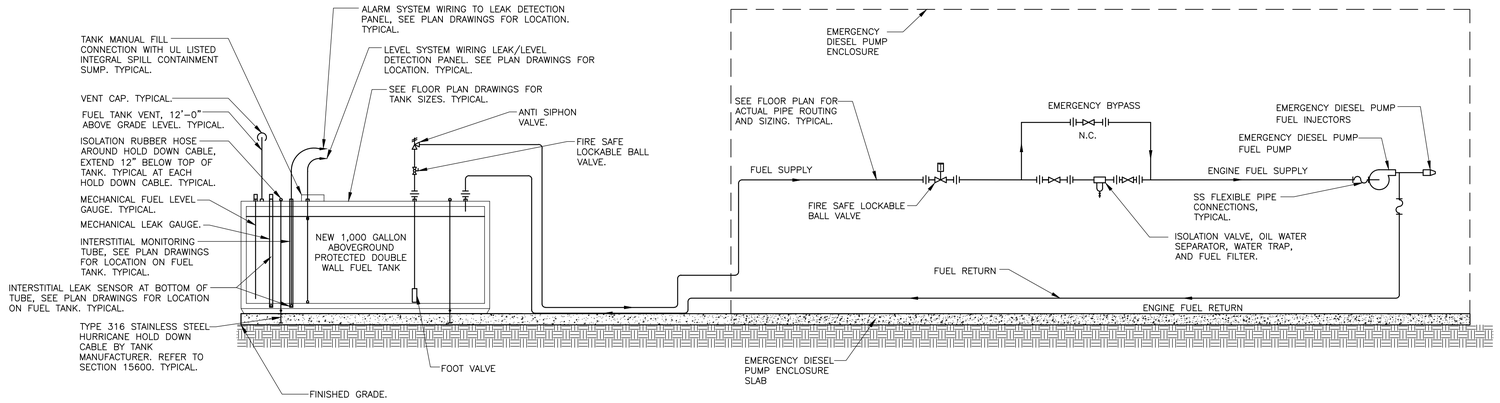
DATE:
JOSHUA H MEINIG
PE NO. 72454

PROJECT NO. 6103-215629
FILE NAME: P002FSPL.DWG

SHEET NO.
P-2

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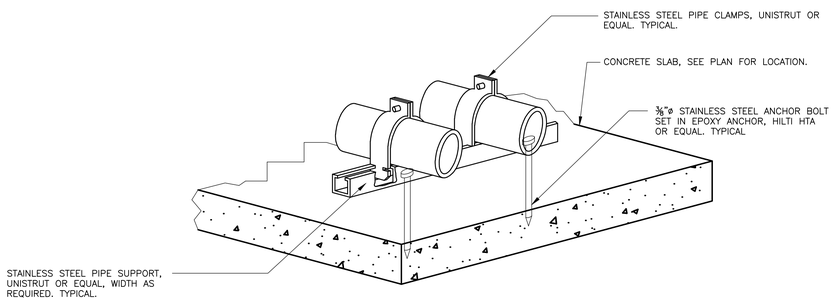

NOTE: FOR EQUIPMENT TIE DOWNS SHOWN ON DETAILS A/– AT THE CONTRACTOR'S OPTION, ALTERNATE TIE DOWN METHODS MAY BE PROPOSED. ALTERNATE TIE DOWNS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER PER THE REQUIREMENTS OF SECTION 15600.

PIPING NOTE: SEE SPECIFICATION SECTION 15600 FOR PIPING REQUIREMENTS.

FUEL TANK PIPING SCHEMATIC

DETAIL A / –

NTS




FUEL PIPING MOUNTING DETAIL

DETAIL B / –

NTS

DATE:
JOSHUA H MEINIG
PE NO. 72454

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
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| | | | | |

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ROBENA ROAD BOOSTER PUMP STATION

FUEL SYSTEM DETAILS

PROJECT NO. 6103–215629
FILE NAME: PD01DETL.DWG

SHEET NO.
PD-1

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| ONE LINE OR CONTROL DIAGRAM | PLAN | DESCRIPTION |
|---|---|---|
| S2 CS | — | MEDIUM VOLTAGE DRAWOUT TYPE POWER CIRCUIT BREAKER<br>CS=CONTROL SWITCH |
| FRAME TRIP | CB | LOW VOLTAGE AIR OR MOLDED CASE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED. |
| SIZE # AMPS TYPE * | | COMBINATION MOTOR CIRCUIT PROTECTOR AND MAGNETIC MOTOR STARTER, FULL VOLTAGE NON–REVERSING UNLESS OTHERWISE NOTED:<br>* FVR – FULL VOLTAGE REVERSING<br>RVNR – REDUCED VOLTAGE NON–REVERSING<br>RVAT – REDUCED VOLTAGE AUTOTRANSFORMER<br>RVSS – REDUCED VOLTAGE SOLID STATE<br>2S1W – TWO SPEED, ONE WINDING<br>2S2W – TWO SPEED, TWO WINDING<br>(DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE) |
| */ | | NON–FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE<br>* AMPERE RATING NOTED IF OTHER THAN 30A<br>(DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE) |
| */ | F | FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE.<br>* AMPERE RATING AND FUSE SIZE AS NOTED<br>* AMPERE RATING NOTED IF OTHER THAN 30A FUSE RATING<br>(DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE) |
| | P 2 | MANUAL MOTOR STARTER WITH THERMAL OVERLOAD HEATER, 1 POLE UNLESS OTHERWISE NOTED "P" INDICATES WITH PILOT LIGHT "2" INDICATES TWO POLE<br>(DIAGRAMMATICALLY SHOWN, CONTRACTOR SHALL FIELD LOCATE) |
| | — | DRAWOUT TYPE EQUIPMENT OR DEVICE |
| | — | MEDIUM VOLTAGE CABLE TERMINATION |
| | — | MEDIUM VOLTAGE AIR INTERRUPTER SWITCH |
| * | — | MEDIUM VOLTAGE FUSED AIR INTERRUPTER SWITCH<br>* FUSE RATING |
| | — | MEDIUM VOLTAGE FUSED MOTOR CONTROLLER |
| XFMR NO. 1 480V Δ KVA 120/208V 3P, 4W | T | TRANSFORMER, RATINGS AND CONNECTIONS AS NOTED. UNLESS OTHERWISE NOTED ON THE SINGLE LINE DIAGRAMS, ALL DRY TYPE TRANSFORMERS SERVICING ADMINISTRATIVE AND LABORATORY SPACES SHALL HAVE A K FACTOR OF 4. ISOLATION TRANSFORMERS SHALL HAVE A K–20 RATING |
| * A TO 5 | — | CURRENT TRANSFORMER<br>* QUANTITY<br>A = PRIMARY AMPERES |
| * V TO 120 | — | POTENTIAL TRANSFORMER<br>* QUANTITY<br>V = PRIMARY VOLTAGE |
| | G | GENERATOR, RATINGS AND CONNECTIONS AS NOTED |
| ATS N S 100A | — | AUTOMATIC OR MANUAL TRANSFER SWITCH NO.1 (ATS–1), (MTS–1) "N" INDICATES NORMAL OR PREFERRED SOURCE "S" INDICATES STANDBY OR ALTERNATE SOURCE 100A INDICATES CONTINUOUS CURRENT RATING |
| * | * | VARIABLE SPEED DRIVE CONTROLLER<br>* D.C. = D.C. DRIVE CONTROLLER<br>SCR = SILICON CONTROLLED RECTIFIER<br>VFD = VARIABLE FREQUENCY DRIVE |
| #KW | E | UNIT HEATER – ELECTRIC HEATING COIL AND FAN<br># – RATING |
| — | U | UNIT HEATER – GAS FIRED, STEAM OR WATER HEATING COIL AND FAN |
| 5 | M | MOTOR, NUMERAL INDICATES HORSEPOWER |
| VS VM * | — | VOLTMETER WITH SWITCH, 3 PHASE |
| AS AM * | — | AMMETER WITH SWITCH, 3 PHASE |

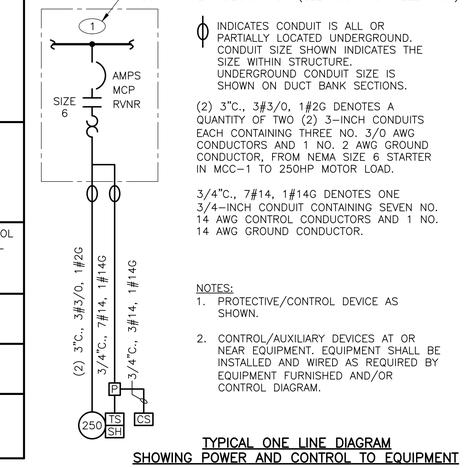
| ONE LINE OR CONTROL DIAGRAM | PLAN | DESCRIPTION |
|---|---|---|
| * | — | METER<br>* WM – WATTMETER<br>WHM – WATTHOUR METER<br>WHDM – WATTHOUR DEMAND METER<br>WHDR – WATTHOUR DEMAND RECORDER<br>PF – POWER FACTOR METER<br>DMU – DIGITAL METERING UNIT<br><br>TRANSDUCER<br>AX – CURRENT TRANSDUCER<br>WX – WATT TRANSDUCER<br>WHX – WATTHOUR TRANSDUCER |
| * | * | RELAY, NO. AS INDICATED<br>25 – SYNCHRONISM CHECK RELAY<br>27 – UNDERVOLTAGE RELAY<br>32 – DIRECTIONAL POWER RELAY<br>38 – BEARING PROTECTIVE DEVICE<br>40 – LOSS OF EXCITATION RELAY<br>42 – RUNNING CONTACTOR/PILOT RELAY<br>46 – REVERSE PHASE/PHASE BALANCE/CURRENT RELAY<br>47 – PHASE SEQUENCE VOLTAGE RELAY<br>49 – MACHINE OR TRANSFORMER THERMAL RELAY<br>50/51 – INSTANTANEOUS/TIME OVERCURRENT RELAY<br>50G – INSTANTANEOUS GROUND<br>51 – TIME OVERCURRENT RELAY<br>51G – TIME OVERCURRENT RELAY, GROUNDING RESISTOR TYPE<br>51N – TIME OVERCURRENT RELAY, RESIDUAL TYPE<br>51V – TIME OVERCURRENT RELAY WITH VOLTAGE RESTRAINT<br>51X – AUXILIARY RELAY (TRIPS CB AND ALARMS)<br>59 – OVERVOLTAGE RELAY<br>60 – NEGATIVE SEQUENCE VOLTAGE RELAY<br>62 – TIME DELAY RELAY<br>63 – OVERPRESSURE RELAY<br>64 – GENERATOR FIELD GROUND RELAY<br>67 – AC DIRECTIONAL OVERCURRENT RELAY<br>74 – ALARM LATCHING RELAY<br>83 – AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY<br>86 – LOCKING–OUT RELAY<br>87 – DIFFERENTIAL PROTECTIVE RELAY<br>B – SUFFIX INDICATES "BUS"<br>G – SUFFIX INDICATES "GENERATOR"<br>GF – GROUND FAULT<br>ST – SHUNT TRIP<br>T – SUFFIX INDICATES "TRANSFORMER"<br>X – SUFFIX INDICATES "AUXILIARY" |
| * | — | SPECIAL CAPACITOR<br>* SC – SURGE CAPACITOR<br>PF – POWER FACTOR CORRECTION CAPACITOR |
| * | — | TUNED POWER FACTOR CORRECTION CAPACITOR |
| | — | PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY CLOSED |
| | — | PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY OPEN |
| | ES | EMERGENCY STOP PUSHBUTTON WITH RED MUSHROOM HEAD OPERATOR (MAINTAINED CONTACT) |
| START STOP | PBL | START–STOP PUSHBUTTON CONTROL STATION (MOMENTARY CONTACT) WITH LOCKOUT DEVICE ON STOP |
| | PBM | START–STOP PUSHBUTTON CONTROL STATION, MAINTAINED CONTACT WITH LOCKOUT DEVICE ON STOP |
| OFF ON | S/S | OFF/ON SELECTOR SWITCH |
| L R (XO) (OX) | LR | LOCAL/REMOTE SELECTOR SWITCH |
| A B C* (XOO) (OXO) (OOX) | * | 3 POSITION SELECTOR SWITCH, MAINTAINED CONTACT<br>O–OPEN X–CLOSED<br>POSITION / TOP CONTACT / MIDDLE CONTACT / BOTTOM CONTACT<br>A / X / O / O<br>B / O / X / O<br>C / O / O / X<br><br>NAMEPLATE (A/B/C)<br>HOA – HAND/OFF/AUTO<br>HOR – HAND/OFF/REMOTE<br>LOR – LOCAL/OFF/REMOTE<br>RSL – RAISE/STOP/LOWER<br>TOA – TEST/OFF/AUTO |
| GD/VF # | GD/VF # | GAS DETECTOR / VENTILATION FAILURE ALARM<br># INDICATES TYPE OF UNIT<br>1=MASTER, 2=REMOTE |
| 42 # | — | MOTOR STARTER COIL, NUMBER AS INDICATED TO DENOTE INTERLOCKING ONLY |
| CR # | — | CONTROL RELAY COIL, NUMBER AS INDICATED |

| ONE LINE OR CONTROL DIAGRAM | PLAN | DESCRIPTION |
|---|---|---|
| * | — | PILOT LIGHT, COLOR AS NOTED<br>* R – RED<br>G – GREEN<br>B – BLUE<br>W – WHITE<br>A – AMBER |
| * | — | PILOT LIGHT, PUSH–TO–TEST TYPE, COLOR AS NOTED ABOVE. |
| * # RANGE SETPOINT | | TIME DELAY RELAY<br>RANGE AS NOTED<br>SETPOINT AS NOTED<br># NUMBER AS INDICATED<br>* TDE – TIME DELAY AFTER ENERGIZATION ON DELAY<br>TDD – TIME DELAY AFTER DE–ENERGIZATION OFF DELAY |
| * NOTC | | NOTC– NORMALLY OPEN, TIMED CLOSING WHEN ENERGIZED |
| NCTO | | NCTO– NORMALLY CLOSED, TIMED OPENING WHEN ENERGIZED |
| NOTO | | NOTO– NORMALLY OPEN, TIMED OPENING WHEN DE–ENERGIZED |
| NCTC | | NCTC– NORMALLY CLOSED, TIMED CLOSING WHEN DE–ENERGIZED |
| | * – ## | FIELD INSTRUMENT, TAG NO. AS INDICATED<br>* INDICATES INSTRUMENT TYPE DEFINED ON LOOP SHEETS OR P & ID<br>## INDICATES LOOP NO. |
| | LS OR ■ | LIQUID LEVEL (FLOAT) SWITCH |
| | | NORMALLY OPEN, CLOSES ON RISING LEVEL |
| | | NORMALLY CLOSED, OPENS ON RISING LEVEL |
| | PS OR ■ | PRESSURE OR VACUUM SWITCH |
| | | NORMALLY OPEN, CLOSES ON RISING PRESSURE |
| | | NORMALLY OPEN, CLOSES ON DROPPING PRESSURE |
| | | NORMALLY CLOSED, OPENS ON RISING PRESSURE |
| | | NORMALLY CLOSED, OPENS ON DROPPING PRESSURE |
| | TS OR T OR ■ | TEMPERATURE SWITCH OR THERMOSTAT |
| | | NORMALLY OPEN, CLOSES ON RISING TEMPERATURE |
| | | NORMALLY OPEN, CLOSES ON DROPPING TEMPERATURE |
| | | NORMALLY CLOSED, OPENS ON RISING TEMPERATURE |
| | | NORMALLY CLOSED, OPENS ON DROPPING TEMPERATURE |
| | FS OR ■ | FLOW SWITCH (AIR, WATER, ETC.) |
| | | NORMALLY OPEN, CLOSES ON INCREASED FLOW |
| | | NORMALLY CLOSED, OPENS ON INCREASED FLOW |
| | ZS OR ■ | POSITION (LIMIT) SWITCH |
| | | NORMALLY OPEN |
| | | NORMALLY OPEN – HELD CLOSED |
| | | NORMALLY CLOSED |
| | | NORMALLY CLOSED – HELD OPEN |
| | WS OR ■ | TORQUE SWITCH |
| | | NORMALLY OPEN, CLOSES ON HIGH TORQUE |
| | | NORMALLY CLOSED, OPENS ON HIGH TORQUE |
| # | — | UTILIZED IN CONJUNCTION WITH OTHER CONTROL SCHEMATIC SYMBOLS TO DEPICT THE PHYSICAL LOCATION OF THE DEVICE<br># REPRESENTS LOCATION<br>SEE LOCATION LEGEND ON DRAWING |
| | — | CONDUCTORS OR CONDUITS CROSSING PATHS BUT NOT CONNECTED |
| | — | CONDUCTORS ELECTRICALLY CONNECTED |
| | S | SOLENOID VALVE |

| ONE LINE OR CONTROL DIAGRAM | PLAN | DESCRIPTION |
|---|---|---|
| LA | — | LIGHTNING ARRESTER |
| | | GROUND OR GROUND ROD |
| 30A | — | FUSE, AMPERE RATING AS NOTED |
| | HTR | STRIP HEATER OR HEATING ELEMENT |
| | — | INDUCTOR |
| TG | TG | TACHOMETER GENERATOR |
| | — | CONTACT, NORMALLY OPEN (NO) |
| | — | CONTACT, NORMALLY CLOSED (NC) |
| | — | OVERLOAD RELAY HEATER |
| | — | *<br>K = KEY INTERLOCK<br>E = ELECTRICAL INTERLOCK |
| TB | — | TERMINAL OR TEST BLOCK |
| RTD | — | RESISTANCE TEMPERATURE DETECTOR |
| VE OR VE | — | VIBRATION DETECTOR |
| DM | DM | DAMPER MOTOR |
| ETM | — | ELAPSED TIME METER |
| M | M | MOTOR OPERATED VALVE OR GATE |
| | — | INDICATES LIMITS OF ELECTRICAL EQUIPMENT OR WIRING ENCLOSURE |

EXISTING WORK | NEW WORK | FUTURE EXPANSION

## EXISTING, NEW OR FUTURE CONDITION DESIGNATION




INDICATES CONDUIT IS ALL OR PARTIALLY LOCATED UNDERGROUND. CONDUIT SIZE SHOWN INDICATES THE SIZE WITHIN STRUCTURE. UNDERGROUND CONDUIT SIZE IS SHOWN ON DUCT BANK SECTIONS.

(2) 3"C., 3#3/0, 1#2G DENOTES A QUANTITY OF TWO (2) 3–INCH CONDUITS EACH CONTAINING THREE NO. 3/0 AWG CONDUCTORS AND 1 NO. 2 AWG GROUND CONDUCTOR, FROM NEMA SIZE 6 STARTER IN MCC–1 TO 250HP MOTOR LOAD.

3/4"C., 7#14, 1#14G DENOTES ONE 3/4–INCH CONDUIT CONTAINING SEVEN NO. 14 AWG CONTROL CONDUCTORS AND 1 NO. 14 AWG GROUND CONDUCTOR.

NOTES:
1. PROTECTIVE/CONTROL DEVICE AS SHOWN.
2. CONTROL/AUXILIARY DEVICES AT OR NEAR EQUIPMENT. EQUIPMENT SHALL BE INSTALLED AND WIRED AS REQUIRED BY EQUIPMENT FURNISHED AND/OR CONTROL DIAGRAM.

TYPICAL ONE LINE DIAGRAM SHOWING POWER AND CONTROL TO EQUIPMENT

**GENERAL NOTE**
THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

## NOTES:

1. IN GENERAL CONDUIT ROUTING FOR EQUIPMENT AND DEVICES IS NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING ALL CONDUITS WHICH SHALL INCLUDE CONDUITS SHOWN ON ONE–LINE AND RISER DIAGRAMS AND HOME–RUNS SHOWN ON PLAN DRAWINGS. REFER TO SPECIFICATIONS FOR MATERIALS AND INSTALLATION REQUIREMENTS.
2. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUITS REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS.
3. SWITCHGEAR AND MOTOR CONTROL CENTER COMPARTMENT DESIGNATIONS AS INDICATED BELOW:
   - BLANK: NOT INTENDED FOR USE. PLATE ONLY
   - SPACE: EQUIPPED WITH REQUIRED BUS AND HARDWARE FOR THE FUTURE ADDITION OF BREAKERS AND/OR STARTERS WITHIN THE SIZE AND RANGE SHOWN
   - SPARE: CONTAINS A COMPLETELY INSTALLED BREAKER AND/OR STARTER OF SIZE AND TYPE INDICATED FOR FUTURE USE.
4. INTERPRETATION OF ELECTRICAL DRAWINGS: CIRCUIT IDENTIFICATION, ROUTING, AND SIZES OF CONDUITS AND WIRES ARE SHOWN ON THE FOLLOWING DRAWINGS:

A. ONE LINE POWER DIAGRAMS: POWER, CONTROL AND SIGNAL WIRING REQUIREMENTS FOR ELECTRICAL DISTRIBUTION EQUIPMENT AND UTILIZATION EQUIPMENT POWERED FROM SWITCHGEAR, SWITCHBOARDS, MOTOR CONTROL CENTERS AND MAJOR POWER DISTRIBUTION PANELBOARDS ARE TYPICALLY SHOWN ON THE ONE LINE DIAGRAMS. THE PARAMETERS IDENTIFIED ON THE ONE LINE DIAGRAMS ARE: CIRCUIT IDENTIFICATION, CIRCUIT ORIGIN AND DESTINATION, CONDUIT SIZE, WIRE SIZE AND QUANTITY FOR COMPLETE CIRCUIT LENGTH, AND AUXILIARY DEVICES ASSOCIATED WITH THE CONTROL/PROTECTION OF THE POWERED EQUIPMENT, AND SIZE OF THE GROUNDING ELECTRODE CONDUCTORS.

B. INSTRUMENTATION AND CONTROL RISER DIAGRAMS: POWER, CONTROL, SIGNAL AND DATA HIGHWAY WIRING REQUIREMENTS FOR INSTRUMENTS AND CONTROL DEVICES CONTROLLED/MONITORED FROM INSTRUMENTATION AND CONTROL PANELS SUCH AS RTUS, PLCS, TERMINAL CABINETS, AND REMOTE I/O PANELS ARE TYPICALLY SHOWN ON THE INSTRUMENTATION AND CONTROL ONE LINE DIAGRAMS. THE PARAMETERS IDENTIFIED ON THE ONE LINE DIAGRAMS ARE: CIRCUIT IDENTIFICATION, CIRCUIT ORIGIN AND DESTINATION, CONDUIT SIZE, WIRE SIZE, QUANTITY AND TYPE FOR COMPLETE CIRCUIT LENGTH, AND AUXILIARY DEVICES ASSOCIATED WITH THE CONTROL/PROTECTION OF THE POWERED EQUIPMENT.

C. FLOOR PLANS: FOR DETERMINING THE LENGTH OF CIRCUITS LOCATED WITHIN STRUCTURES, FLOOR PLANS SHOW THE LOCATION OF ELECTRICAL DISTRIBUTION EQUIPMENT, CONTROL PANELS, UTILIZATION EQUIPMENT, INSTRUMENTS, ANCILLARY EQUIPMENT AND DEVICES AND THE ANTICIPATED PENETRATION LOCATIONS WHERE CONDUITS EXIT/ENTER THE STRUCTURE. HOMERUNS MAY ALSO BE SHOWN FROM MISCELLANEOUS EQUIPMENT NOT SHOWN ON A ONE LINE OR RISER DIAGRAM.

D. SITE PLANS: FOR DETERMINING THE LENGTH OF CIRCUITS EXTERIOR TO STRUCTURES AND TO IDENTIFY THE SPECIFIC REQUIREMENTS OF THE UNDERGROUND CONDUITS OR DUCT BANKS, SITE PLANS SHOW THE GENERAL ROUTING OF UNDERGROUND CONDUITS AND DUCT BANKS WITH SECTIONS INDICATING THE CONDUIT SIZE, ARRANGEMENT AND CIRCUIT ROUTING.

E. NOTE THAT CONDUIT SIZE WITHIN THE STRUCTURE IS INDICATED ON ONE–LINE DIAGRAM AND UNDERGROUND SIZE IS INDICATED ON DUCT BANK SECTIONS.

DATE:
SPENCER J. PERRY JR
PE NO. 62587

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

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DRAWN BY: R. CARTER
SHEET CHK'D BY: S. PERRY
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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

ELECTRICAL LEGEND I

PROJECT NO. 6103–215629
FILE NAME: E001NFLG.DWG
SHEET NO. E-1

ISSUED FOR BID


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| SYMBOL | DESCRIPTION |
|---|---|
| A 3 b | LIGHTING FIXTURE<br>"A" – FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)<br>"b" – CONTROLLED BY SWITCH "b"<br>"3" – CIRCUIT NUMBER |
| A 3 b | LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE |
| A 3 b | WALL MOUNTED TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE |
| A 3 OR A 3 | CROSS HATCH INDICATES LIGHTING FIXTURE THAT IS UNSWITCHED AND SHALL REMAIN ON AT ALL TIMES. NOTATIONS SAME AS ABOVE. |
| A 3 b OR A 3 b | SHADED AREA INDICATES LIGHTING FIXTURE THAT IS EQUIPPED WITH EMERGENCY BACKUP POWER SOURCE. NOTATIONS SAME AS ABOVE. |
| A 3 | POLE MOUNTED AREA TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE |
| A 3 | POLE MOUNTED ROADWAY TYPE LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE |
| EM 3 (*) | EMERGENCY LIGHTING BATTERY UNIT WITH TWO LAMP HEADS<br>"EM" – FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)<br>"3" – SUPERVISORY CIRCUIT<br>* – FIXTURE TAG # |
| R-2 BU-1(*) | REMOTE EMERGENCY ADJUSTABLE WALL LIGHTING FIXTURE WITH TWO LAMP HEADS<br>"R-2" – FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)<br>* – HOME RUN TO BATTERY UNIT INDICATED. CONDUIT SHALL BE 3/4" AND CONTAIN (2) NO. 12 AWG BRANCH CIRCUIT CONDUCTORS AND (1) NO. 12 AWG GROUND CONDUCTOR UNLESS OTHERWISE INDICATED. |
| A 3 | COMBINATION BATTERY UNIT AND EXIT SIGN. FILLED QUADRANT REPRESENTS FACE SIDE OF SIGN. |
| A 3 | CEILING MOUNTED EXIT SIGN, NOTATIONS SAME AS ABOVE. WHEN USED, ARROW INDICATES DIRECTION OF EGRESS. FILLED QUADRANT REPRESENTS FACE SIDE OF SIGN. (DOUBLE FACE DOUBLE CHEVRONS SHOWN) |
| A 3 | WALL MOUNTED EXIT SIGN, NOTATIONS SAME AS ABOVE. WHEN USED, ARROW INDICATES DIRECTION OF EGRESS. FILLED QUADRANT REPRESENTS FACE SIDE OF SIGN. |
| RH-3 E 3 BU-1(*) | REMOTE EMERGENCY CEILING LIGHTING FIXTURE.<br>"RH-3" – FIXTURE TYPE (SEE LIGHTING FIXTURE SCHEDULE)<br>"3" – SUPERVISORY CIRCUIT<br>* – HOME RUN TO BATTERY UNIT INDICATED. CONDUIT SHALL BE 3/4" AND CONTAIN 2 NO. 12 AWG BRANCH CIRCUIT CONDUCTORS AND 1 NO. 12 AWG GROUND CONDUCTOR UNLESS OTHERWISE INDICATED. |
| | HOME RUN TO DESIGNATED EQUIPMENT. BRANCH CIRCUIT CONDUIT WITH 2 NO. 12 AWG BRANCH CIRCUIT CONDUCTORS AND 1 NO. 12 AWG GROUND CONDUCTOR UNLESS OTHERWISE NOTED. NUMBER OF ARROWS INDICATE NUMBER OF CIRCUITS. FOR MINIMUM SIZE CONDUIT PERMITTED REFER TO THE SPECIFICATIONS. |
| | CONDUIT CONCEALED IN WALL, IN SLAB ABOVE, OR ABOVE CEILING. |
| | CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND. |
| | CONDUIT RUN EXPOSED. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL. |
| | 'X' INDICATES EXPLOSION PROOF CONDUIT SEAL FITTING. |
| | CONCRETE ENCASED DUCTBANK. WIDTH VARIES, SEE DUCTBANK SECTION/DETAILS FOR REQUIREMENTS AND WIDTH |
| | CONDUIT STUBBED OUT AND CAPPED |
| (2) 3"C., 3#3/0, 1#2G | DENOTES A QUANTITY OF TWO (2) 3-INCH CONDUITS EACH CONTAINING THREE NO. 3/0 AWG CONDUCTORS AND 1 NO. 2 AWG GROUND CONDUCTOR. |
| 2-2/C#16 SH | DENOTES A QUANTITY OF TWO INSTRUMENT CABLES. EACH CABLE TO CONSIST OF TWO NO. 16 AWG CONDUCTORS TWISTED TOGETHER AND COVERED WITH A METALLIC SHIELD AND AN OVERALL PROTECTIVE JACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED. |
| 2-3/C#16 SH | SAME AS ABOVE EXCEPT CABLE TO CONSIST OF THREE NO. 16 AWG CONDUCTORS TWISTED, SHIELDED AND COVERED WITH AN OVERALL PROTECTIVE JACKET. REFER TO THE SPECIFICATIONS FOR THE EXACT CABLE TO BE PROVIDED. |
| (3) 4"C. | THREE 4-INCH CONDUITS |
| | FLEXIBLE METAL CONDUIT "WHIP" (3/4"C., 2#12, 1#12G UNLESS OTHERWISE NOTED) FOR LIQUID TIGHT MOTOR CONNECTIONS |
| | 'X' INDICATES CONDUIT SEAL FITTING IN OTHER THAN CODE REQUIRED LOCATIONS. |
| | INDICATES MOTOR STARTER AND/OR MOTOR CONTROL EQUIPMENT WITHIN THE ENCLOSURE. |

| SYMBOL | DESCRIPTION |
|---|---|
| $a | SINGLE POLE SWITCH "a" INDICATES FIXTURES CONTROLLED. |
| $a 2 | DOUBLE POLE SWITCH "a" INDICATES FIXTURES CONTROLLED. |
| $c 3 | THREE WAY SWITCH "c" INDICATES FIXTURES CONTROLLED. |
| $a 4 | FOUR WAY SWITCH "a" INDICATES FIXTURES CONTROLLED. |
| $a D | DIMMER SWITCH "a" INDICATES FIXTURES CONTROLLED |
| $OS | SINGLE POLE SWITCH<br>"OS" INDICATES A PASSIVE INFRARED OCCUPANCY SENSOR |
| $OS 2 | DOUBLE POLE SWITCH<br>"OS" INDICATES PROGRAMMABLE OCCUPANCY SENSOR CAPABLE OF INBOARD/OUTBOARD SWITCHING |
| $DT | SINGLE POLE SWITCH<br>"DT" INDICATES DUAL TECHNOLOGY PROGRAMMABLE OCCUPANCY SENSOR CAPABLE OF SENSING MOTION AND SOUND |
| C 3 | LIGHTING CONTACTOR WITH NUMBER OF POLES AS INDICATED |
| TM | TIME SWITCH |
| | PUSH BUTTON STATION |
| TYPE A | INDICATES ALL LIGHTING FIXTURES WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE TYPE "A" UNLESS OTHERWISE NOTED. SEE LIGHTING FIXTURE SCHEDULE FOR TYPES |
| | LIGHTING PANELBOARD (LP-#)<br>SHOWN ON PLAN PER ACTUAL PANEL DIMENSIONS |
| | POWER PANELBOARD (PP-#) OR DISTRIBUTION PANELBOARD (DP-#)<br>SHOWN ON PLAN PER ACTUAL PANEL DIMENSIONS |
| | LIGHTING CONTACTOR PANELBOARD (LCP-#)<br>SHOWN ON PLAN PER ACTUAL PANEL DIMENSIONS |
| * 4 | DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W<br>* GFCI – GROUND FAULT CIRCUIT INTERRUPTER TYPE<br>WP – WEATHERPROOF<br>XP – EXPLOSION PROOF<br>T – TRANSIENT VOLTAGE SURGE SUPPRESSOR<br>IC – ISOLATED GROUND<br>4 – CIRCUIT NUMBER |
| * 4 | DUPLEX RECEPTACLE, 20A, 120V, 2P, 3W<br>MOUNTED ABOVE COUNTER-TOP OR 42" AFF<br>* NOTATIONS SAME AS ABOVE |
| * 60 3 4W | SPECIAL PURPOSE RECEPTACLE<br>* – VOLT RATING<br>"3" – NUMBER OF POLES<br>"60" – AMPERE RATING<br>"4W" – 4 WIRES IN ADDITION TO GROUND |
| | MULTI-OUTLET ASSEMBLY, SYMBOL DENOTES RECEPTACLE TYPE |
| | FLUSH FLOOR OUTLET BOX WITH TYPE OUTLET INDICATED |
| | UNDER FLOOR DUCT SYSTEM WITH TYPE OUTLETS INDICATED |
| | THREE CELL UNDER FLOOR DUCT SYSTEM JUNCTION BOX |
| J OR J | JUNCTION BOX |
| P | PULL BOX |
| TC | TERMINAL CABINET |
| OS | OCCUPANCY SENSOR |
| PC | PHOTOCELL |
| ESA | EMERGENCY EYEWASH/SHOWER ALARM STATION WITH FLOW SWITCH(ES) |
| | INDICATED EQUIPMENT AND MATERIALS TO BE DEMOLISHED |
| DUST | INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 12 CONSTRUCTION (OR GASKETED AND SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED. |
| DAMP OR WET | INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CONSTRUCTION (OR GASKETED AND SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED. |
| CORROSIVE | INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CONSTRUCTION (OR CORROSION RESISTANT CONSTRUCTION SUITABLE FOR USE IN A WET LOCATION WHERE NEMA STANDARDS DO NOT APPLY) UNLESS OTHERWISE NOTED. |
| CLASS I, DIV. 1 GROUP D | INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL CONFORM TO N.E.C. REQUIREMENTS FOR THE HAZARDOUS AREA CLASSIFICATION SHOWN. |

| SYMBOL | DESCRIPTION |
|---|---|
| | GROUND SYSTEM GRID OR LOOP, 36" BELOW FINISHED GRADE UNLESS OTHERWISE NOTED. |
| | EXOTHERMIC WELD CONNECTION |
| | 3/4" x 10'-0" GROUND ROD. UNLESS SPECIFIED OTHERWISE. |
| | GROUND ROD TEST WELL STATION<br>(SEE DETAIL SHEET FOR REQUIREMENTS) |
| | COMMUNICATION SYSTEMS |
| K | TELEPHONE OUTLET FOR DESK TYPE HANDSET<br>K = KEY SYSTEM |
| K | TELEPHONE OUTLET FOR WALL TYPE HANDSET (MOUNT UP 4'-6")<br>K = KEY SYSTEM |
| | PAGE/PARTY TELEPHONE OUTLET FOR DESK TYPE HANDSET |
| | PAGE/PARTY TELEPHONE OUTLET FOR WALL TYPE HANDSET, MOUNT UP 4'-6" |
| S H W | PAGING SPEAKER, WALL MOUNTED<br>H = HORN TYPE<br>W = WIDE ANGLE TYPE |
| S W | PAGING SPEAKER, WALL MOUNTED, BI-DIRECTIONAL, HORN TYPE<br>W = WIDE ANGLE TYPE |
| S | PAGING SPEAKER, FLUSH MOUNTED CEILING TYPE |
| S | PAGING SPEAKER, SURFACE MOUNTED CEILING TYPE |
| VC | REMOTE WALL MOUNTED VOLUME CONTROL FOR CEILING SPEAKER, MOUNT UP 5'-0" |
| A | PAGING SPEAKER AMPLIFIER ASSEMBLY |
| TM | TELEPHONE CABINET OR BACKBOARD AS NOTED |
| P OR C | "C" – DATA INPUT/OUTPUT CABLE OUTLET<br>"P" – PROCESS COMPUTER SYSTEM (CAT6 RJ-45 JACK) |
| GD/VF # | GAS DETECTOR/VENTILATION FAILURE ALARM,<br># INDICATES TYPE OF UNIT.<br>1 = MASTER, 2 = REMOTE |
| GB | GAS DETECTION/VENTILATION FAILURE WEATHERPROOF DUAL-LITE BEACON<br>MOUNT TOP OF DEVICE UP 6'-8" A.F.F. |
| 15 G | GAS DETECTION/VENTILATION FAILURE HORN/STROBE<br>MOUNT TOP OF DEVICE UP 6'-8" A.F.F. |
| G | GAS DETECTION/VENTILATION FAILURE HORN,<br>MOUNT TOP OF DEVICE UP 6'-8" A.F.F. |
| G | GAS DETECTION/VENTILATION FAILURE STROBE,<br>MOUNT TOP OF DEVICE UP 6'-8" A.F.F. |
| | SECURITY SYSTEMS |
| SACP | SECURITY ALARM CONTROL PANEL |
| DS | SECURITY ALARM DOOR SWITCH |
| K | SECURITY ALARM KEY PAD |
| R | SECURITY SYSTEM CARD ACCESS READER |
| WS | SECURITY ALARM WINDOW SWITCH |
| | SECURITY ALARM MOTION DETECTOR |
| CCTV | CLOSED CIRCUIT TV CAMERA |
| PTZ | PAN, TILT, ZOOM CAMERA LENS CONTROLS |
| GB | GLASS BREAK DETECTOR |
| | FIRE ALARM SYSTEMS |
| H 200 R | FIRE ALARM HEAT DETECTOR 135 FIXED TEMPERATURE UNLESS OTHERWISE NOTED.<br>"200" – 200 FIXED TEMPERATURE<br>"R" – FIXED TEMPERATURE RATE-OF-RISE TYPE |
| I | FIRE ALARM SMOKE DETECTOR PHOTOELECTRIC TYPE UNLESS OTHERWISE NOTED.<br>"I" – IONIZATION TYPE. |
| D | FIRE ALARM DUCT SMOKE DETECTOR |
| FACP | FIRE ALARM CONTROL PANEL |
| FV | FIRE ALARM VENTILATION PANEL WITH GRAPHIC PANEL |
| FA | REMOTE FIRE ALARM ANNUNCIATOR PANEL |

| SYMBOL | DESCRIPTION |
|---|---|
| F | FIRE ALARM MASTER BOX |
| F | FIRE ALARM HORN, MOUNT UP 7'-6" |
| 15 F | FIRE ALARM STROBE, MOUNT UP 6'-8"<br>15 = CANDELA RATING |
| 15 F | FIRE ALARM HORN AND STROBE LIGHT COMBINATION, MOUNT UP 6'-8"<br>15 = CANDELA RATING |
| F | FIRE ALARM MANUAL PULL STATION, MOUNT UP 4'-0" |
| VSS | SPRINKLER VALVE SUPERVISORY SWITCH |
| SFS | SPRINKLER FLOW ALARM SWITCH |
| F | FIRE ALARM BELL |
| FB | WEATHERPROOF HI-INTENSITY FIRE ALARM STROBE LIGHT WITH HORN |
| PIR | PASSIVE INFRARED DETECTOR |
| R | SMOKE BEAM DETECTOR (RECEIVER) |
| T | SMOKE BEAM DETECTOR (TRANSMITTER) |
| | FIRE ALARM SMOKE DETECTOR REMOTE INDICATOR AND TEST SWITCH |

| ABBREVIATIONS | |
|---|---|
| A | AMPS |
| AC | ALTERNATING CURRENT |
| AFF | ABOVE FINISHED FLOOR |
| AFG | ABOVE FINISHED GRADE |
| AL | ALUMINUM |
| AIC | AMPERE INTERRUPTING CAPACITY |
| AMP | AMPERE |
| ATS | AUTOMATIC TRANSFER SWITCH |
| AUTO | AUTOMATIC |
| AUX | AUXILIARY |
| AWG | AMERICAN WIRE GAUGE |
| BKR | BREAKER |
| BLDG | BUILDING |
| C | CONDUIT |
| CB | CIRCUIT BREAKER |
| CGD | COMBUSTIBLE GAS DETECTOR |
| CKT | CIRCUIT |
| CLB | CURRENT LIMITING BREAKER |
| CLF | CURRENT LIMITING FUSE |
| CP | CONTROL PANEL |
| CPT | CONTROL POWER TRANSFORMER |
| CR | CONTROL RELAY |
| CS | CONTROL SWITCH/CONTROL STATION |
| CT | CURRENT TRANSFORMER |
| CU | COPPER |
| CWS | CONDUIT WALL SEAL |
| DC | DIRECT CURRENT |
| DIA | DIAMETER |
| DMU | DIGITAL METERING UNIT |
| DN | DOWN |
| EC | EMPTY CONDUIT |
| ELEC | ELECTRICAL |

| ABBREVIATIONS (CONTINUED) | |
|---|---|
| ELEV | ELEVATION |
| EM | EMERGENCY |
| ENCL | ENCLOSURE OR ENCLOSED |
| EQUIP | EQUIPMENT |
| EWC | ELECTRIC WATER COOLER |
| EWH | ELECTRIC WATER HEATER |
| EX | EXISTING |
| FO | FIBER OPTIC |
| FU | FUSE |
| GCP | GENERATOR CONTROL PANEL |
| GEN | GENERATOR |
| G, GND | GROUND |
| GFI | GROUND FAULT INTERRUPTER |
| GRS | GALVANIZED RIGID STEEL |
| HACR | HEATING & AIR CONDITIONING RATED |
| HH | HANDHOLE |
| HT | HEIGHT |
| HID | HIGH INTENSITY DISCHARGE |
| HP | HORSEPOWER |
| HZ | HERTZ |
| ID | IDENTIFICATION |
| INSTR | INSTRUMENT |
| K | KILO (PREFIX) |
| kcmil | 1000 CIRCULAR MILS |
| KVA | KILOVOLT AMPERES |
| KW | KILOWATTS |
| LA | LIGHTNING ARRESTER |
| LTG | LIGHTING |
| LP | LIGHTING PANEL |
| LV | LOW VOLTAGE |
| MAX | MAXIMUM |
| MCB | MAIN CIRCUIT BREAKER |
| MCC | MOTOR CONTROL CENTER |
| MCP | MOTOR CIRCUIT PROTECTOR |
| MDP | MAIN DISTRIBUTION PANEL |
| MFR | MANUFACTURER |
| MH | MANHOLE |
| MIN | MINIMUM |
| MLO | MAIN LUGS ONLY |
| MTD | MOUNTED |
| MTS | MANUAL TRANSFER SWITCH |
| MV | MEDIUM VOLTAGE |
| N | NEUTRAL |
| NC | NORMALLY CLOSED |
| NO | NORMALLY OPEN OR NUMBER |
| NTS | NOT TO SCALE |
| OH | OVERHEAD |
| OL | OVERLOAD |
| PB | PULL BOX |
| PCP | PUMP CONTROL PANEL |
| PH | PHASE |
| PMH | POWER MANHOLE |
| PNL | PANEL OR PANELBOARD |
| PR | PAIR |
| PRI | PRIMARY |
| PT | POTENTIAL TRANSFORMER |
| PVC | POLYVINYL CHLORIDE |
| RECPT | RECEPTACLE |
| REQD | REQUIRED |
| QTY | QUANTITY |
| SA | SURGE ARRESTER |
| SEC | SECONDS OR SECONDARY |
| SH | SHIELDED OR SPACE HEATER |
| SHH | SIGNAL HANDHOLE |
| SPD | SURGE PROTECTIVE DEVICE |
| SS | STAINLESS STEEL |
| SV | SOLENOID VALVE |
| SW | SWITCH |
| SWBD | SWITCHBOARD |
| SWGR | SWITCHGEAR |
| TC | TIME TO CLOSE OR TRAY CABLE |
| TEL | TELEPHONE |
| TO | TIME TO OPEN |
| TS | TWISTED SHIELDED OR THERMAL SWITCH |
| TYP | TYPICAL |
| UG | UNDERGROUND |
| UON | UNLESS OTHERWISE NOTED |
| UPS | UNINTERRUPTIBLE POWER SUPPLY |
| V | VOLTS |
| VA | VOLT AMPS |
| VFD | VARIABLE FREQUENCY DRIVE |
| W | WATTS, WIDTH, WITH, WIRE |
| WP | WEATHERPROOF |
| XP | EXPLOSION PROOF |
| XFMR | TRANSFORMER |

A E-4 — SHEET NO. WHERE DETAIL IS DRAWN

SYMBOL WHERE THERE IS A DETAIL

DETAIL A 1/4" = 1'-0" E-3 — SHEET NO. WHERE THERE IS A DETAIL

SYMBOL WHERE DETAIL IS DRAWN

DETAIL SYMBOL

1 E-4 — SHEET NO. WHERE SECTION IS DRAWN

SYMBOL WHERE THERE IS A SECTION

SECTION 1 1/4" = 1'-0" E-3 — SHEET NO. WHERE SECTION IS TAKEN

SYMBOL WHERE SECTION IS DRAWN

SECTION SYMBOL

**GENERAL NOTE**
THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY NOT APPEAR ON THE DRAWINGS.

DATE:
SPENCER J. PERRY JR
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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

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JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

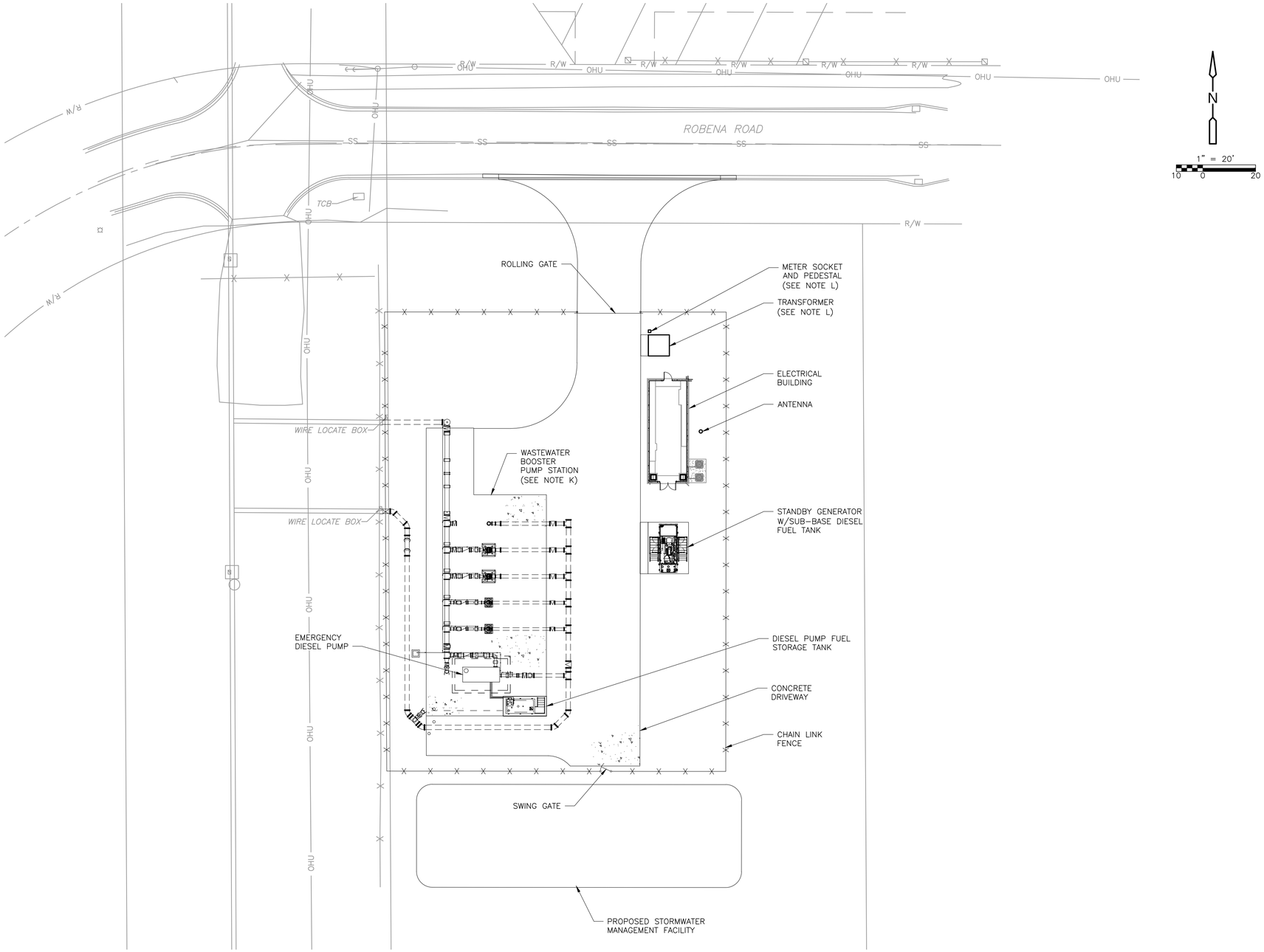
ELECTRICAL LEGEND II

PROJECT NO. 6103-215629
FILE NAME: E002NFLG.DWG

SHEET NO.
E-2

ISSUED FOR BID

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PLAN




## GENERAL NOTES:

A. DO NOT SCALE THE ELECTRICAL DRAWINGS REFER TO THE CIVIL, MECHANICAL, STRUCTURAL DRAWINGS, AND APPROVED MANUFACTURER'S SHOP DRAWINGS FOR THE EXACT LOCATION OF ALL EQUIPMENT.

B. ALL WORK SHALL COMPLY WITH NEC AND LOCAL CODES.

C. CONDUCTORS SHALL NOT BE SPLICED EXCEPT AS NOTED IN SPECS.

D. ALL CONDUITS SHALL HAVE A BOND WIRE SIZED PER TABLE 250.122 OF THE NEC (UNLESS OTHERWISE NOTED).

E. CONTRACTOR SHALL FIELD VERIFY EXISTING UNDERGROUND UTILITIES, PIPING, ETC. REROUTE NEW CONDUITS, DUCTBANK, MANHOLES, PULL BOXES, ETC., AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.

F. DO NOT INSTALL ANY CONDUITS, DUCTBANKS, PULLBOXES, MANHOLES, ETC. IN THE AREAS DESIGNATED FOR FUTURE STRUCTURES.

G. CONDUITS EMBEDDED IN CONCRETE SLABS SHALL MEET THE INSTALLATION AND SPACING REQUIREMENTS SPECIFIED IN DIVISION 3 AND AS SHOWN ON THE STRUCTURAL DRAWINGS.

H. REFER TO THE STRUCTURAL DRAWING DETAILS FOR EQUIPMENT PAD REQUIREMENTS.

I. REFER TO STRUCTURAL DRAWING S-1 FOR THE PROJECT WIND LOADS CRITERIA.

J. REFER TO SPECIFICATION SECTION 16502 FOR THE LIGHTNING PROTECTION SYSTEM REQUIREMENTS.

K. THE BOOSTER PUMP STATION IS UNCLASSIFIED PER NFPA 820, TABLE 4.2.2, ROW 16.

L. INSTALLATION PER JEA RULES AND REGULATIONS FOR ELECTRICAL SERVICE.

XREFs: [CWP01ST, MWP001PS, CDMS_2436, 12017-CHANGE-Robena, EWP000GN, SWZ0001PP, PWZ000FS, AWZ000EL- 2D] Images: []
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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: J. SANCHEZ
DRAWN BY: R. CARTER
SHEET CHK'D BY: S. PERRY
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: S. PERRY
DATE: JANUARY 2021

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020

JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

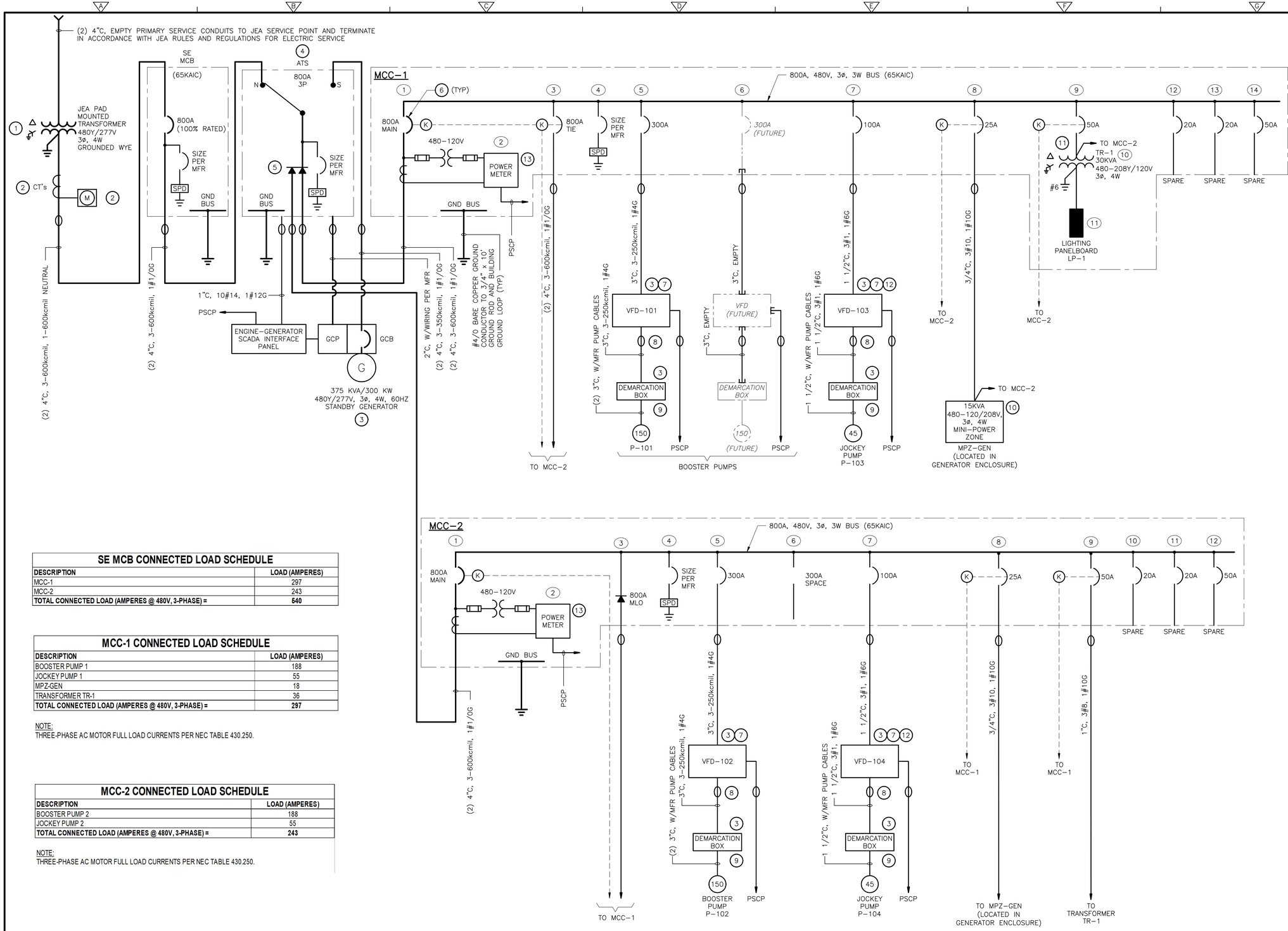
ELECTRICAL SITE PLAN

DATE:
SPENCER J. PERRY JR
PE NO. 62587

PROJECT NO. 6103-215629
FILE NAME: E003STPL.DWG

SHEET NO.
E-3

ISSUED FOR BID




## KEYED NOTES:

1. THE ESTIMATED MAXIMUM AVAILABLE FAULT CURRENT AT THE SECONDARY TERMINALS OF THE TRANSFORMER IS 14,400 AMPS. BASED ON 500 KVA, 5% Z TRANSFORMER.
2. PROVIDE METER SOCKET, PEDESTAL, ETC. PER JEA RULES AND REGULATIONS FOR ELECTRIC SERVICE.
3. PROVIDE DIESEL ENGINE GENERATOR, AUTOMATIC TRANSFER SWITCH, VARIABLE FREQUENCY DRIVES, AND DEMARCATION BOXES IN ACCORDANCE WITH JEA WATER AND WASTEWATER STANDARDS SECTIONS 472 AND 435 AND JEA FACILITIES STANDARDS SECTIONS 26 32 13 AND 26 36 23.
4. JEA STANDARD ASCO 7000 SERIES AUTOMATIC TRANSFER BYPASS-ISOLATION SWITCH WITH DELAYED TRANSITION. FRONT CONNECTED AND FRONT ACCESS. PROVIDE ASCO 5410 POWER QUALITY METER WITH 150BT1 TECHNOLOGY PACKAGE.
5. PROVIDE DOUBLE LUGGING AND THE NECESSARY HARDWARE, PULL BOX, ETC, FOR THE SIZE AND QUANTITY OF CONDUCTORS AND CONDUITS SHOWN.
6. ALL CIRCUIT BREAKERS RATED 400A AND LARGER SHALL BE 100% RATED.
7. THE 6-PULSE VFD SHALL BE EQUIPPED WITH AN INTEGRATED 5% MINIMUM INPUT LINE REACTOR AND DV/DT OUTPUT FILTER. REFER TO SECTION 16370 FOR ADDITIONAL REQUIREMENTS.
8. PROVIDE VFD CABLES FROM VFD TO DEMARCATION BOX.
9. TERMINATE ALL CONDUITS AT BOTTOM ENTRY OF DEMARCATION BOX.
10. PROVIDE DOUBLE LUGGING ON MAIN CIRCUIT BREAKER.
11. PROVIDE SIGNAGE ON TRANSFORMER TO INDICATE SERVED FROM MCC-1 OR MCC-2.
12. THE JOCKEY PUMP VFD SHALL BE CONSTANT TORQUE DESIGN. COORDINATE WITH SECTION 11306 FOR PUMP/MOTOR REQUIREMENTS.
13. THE POWER METER SHALL BE SIEMENS PAC4200 WITH PROFINET EXPANSION MODULE.

| SE MCB CONNECTED LOAD SCHEDULE | |
|---|---|
| **DESCRIPTION** | **LOAD (AMPERES)** |
| MCC-1 | 297 |
| MCC-2 | 243 |
| **TOTAL CONNECTED LOAD (AMPERES @ 480V, 3-PHASE) =** | **640** |

| MCC-1 CONNECTED LOAD SCHEDULE | |
|---|---|
| **DESCRIPTION** | **LOAD (AMPERES)** |
| BOOSTER PUMP 1 | 188 |
| JOCKEY PUMP 1 | 55 |
| MPZ-GEN | 18 |
| TRANSFORMER TR-1 | 36 |
| **TOTAL CONNECTED LOAD (AMPERES @ 480V, 3-PHASE) =** | **297** |

NOTE:
THREE-PHASE AC MOTOR FULL LOAD CURRENTS PER NEC TABLE 430.250.

| MCC-2 CONNECTED LOAD SCHEDULE | |
|---|---|
| **DESCRIPTION** | **LOAD (AMPERES)** |
| BOOSTER PUMP 2 | 188 |
| JOCKEY PUMP 2 | 55 |
| **TOTAL CONNECTED LOAD (AMPERES @ 480V, 3-PHASE) =** | **243** |

NOTE:
THREE-PHASE AC MOTOR FULL LOAD CURRENTS PER NEC TABLE 430.250.

## ONE LINE POWER DIAGRAM

DATE:
SPENCER J. PERRY JR
PE NO. 62587

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: J. SANCHEZ
DRAWN BY: R. CARTER
SHEET CHK'D BY: S. PERRY
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: S. PERRY
DATE: JANUARY 2021

CDM Smith
4651 Salisbury Road, Suite 420
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FL COA No. EB-0000020

JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

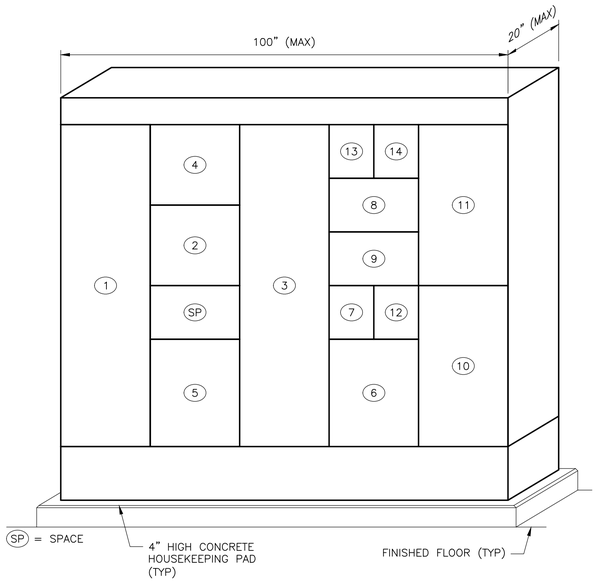
ONE LINE POWER DIAGRAM

PROJECT NO. 6103-215629
FILE NAME: E004NFOL.DWG

SHEET NO.
E-4

ISSUED FOR BID

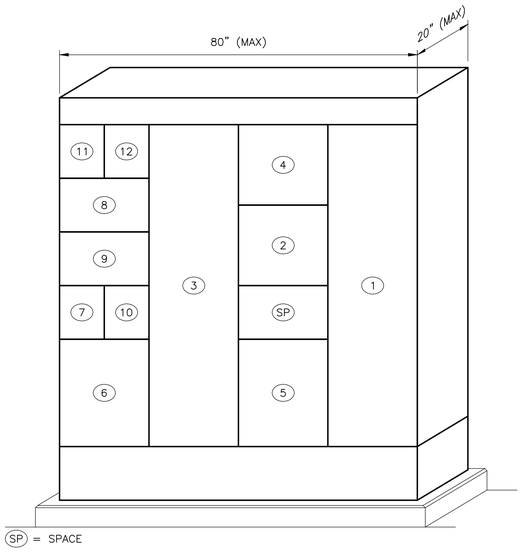
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MCC–1

## FRONT ELEVATION

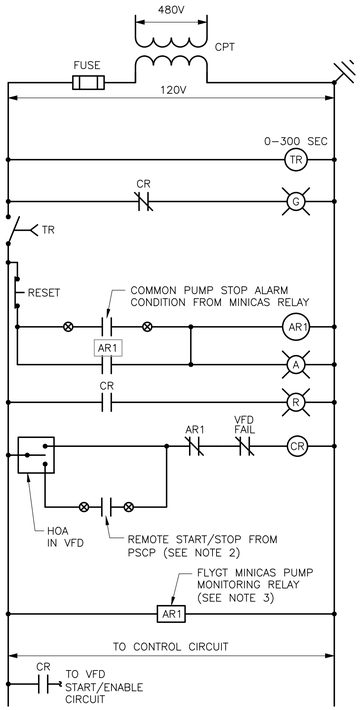
NTS

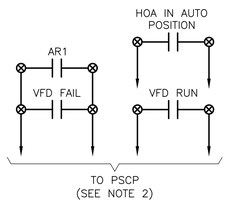



MCC–2

## FRONT ELEVATION

NTS



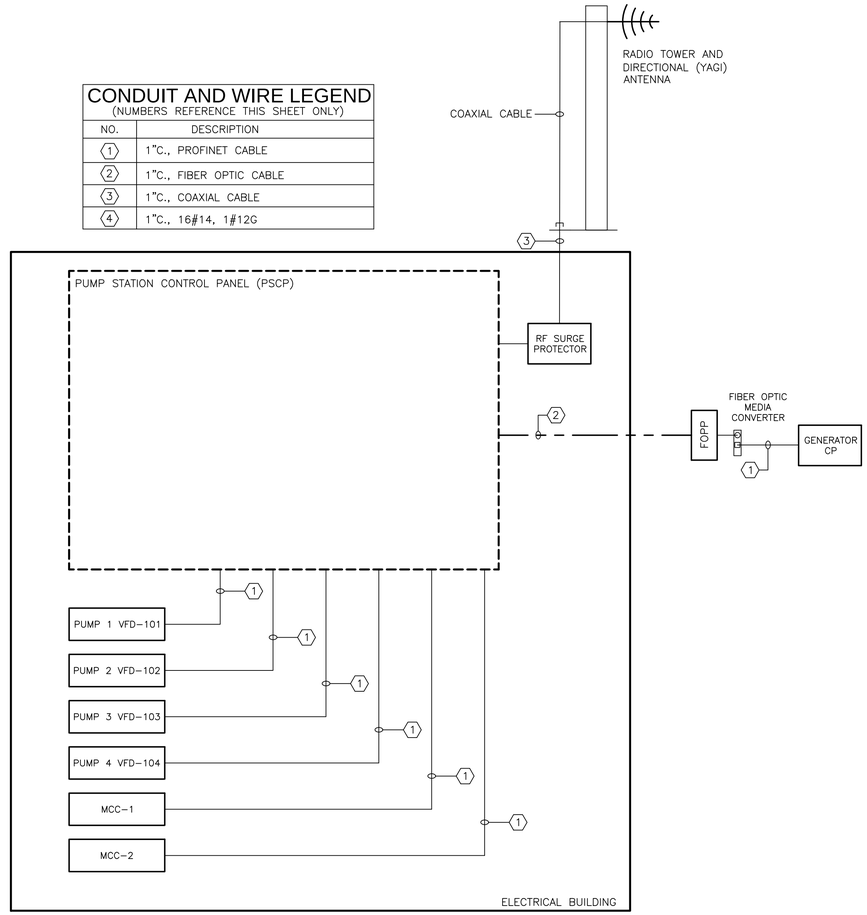




BOOSTER PUMP VARIABLE FREQUENCY DRIVES

## ELEMENTARY CONTROL DIAGRAM

### CONDUIT AND WIRE LEGEND
(NUMBERS REFERENCE THIS SHEET ONLY)

| NO. | DESCRIPTION |
|---|---|
| 1 | 1"C., PROFINET CABLE |
| 2 | 1"C., FIBER OPTIC CABLE |
| 3 | 1"C., COAXIAL CABLE |
| 4 | 1"C., 16#14, 1#12G |




INSTRUMENTATION & CONTROL

## RISER DIAGRAM

**PANELBOARD LP-1**

**100** AMP MAIN BREAKER — LOCATION: **ELECTRICAL BUILDING**
**100** AMP BUS RATING **42** POLES **10** KA SHORT CIRCUIT RATING — ENCLOSURE RATING: **NEMA 1**
**208/120** VOLTS **3** PHASE **4** WIRE **60 Hz.** — ELECTRONIC GRADE: **NO** — MOUNTING: **MCC**

| CIRCUIT NO. | DESCRIPTION | LOAD KVA PHASE A | LOAD KVA PHASE B | LOAD KVA PHASE C | BREAKER AMPS/ POLES | NOTES |
|---|---|---|---|---|---|---|
| 1 | LIGHTING - ELEC BLDG | 0.27 | | | 20 /1 | 6 |
| 3 | LIGHTING - ELEC BLDG | | 0.16 | | 20 /1 | 6 |
| 5 | LIGHTING - SITE | | | 0.6 | 20 /1 | 6 |
| 7 | RECEPTACLES - SITE LIGHT POLES | 0.54 | | | 20 /1 | 6 |
| 9 | RECEPTACLES - ELEC BLDG | | 0.36 | | 20 /1 | 6 |
| 11 | RECEPTACLES - ELEC BLDG | | | 0.54 | 20 /1 | 6 |
| 13 | PSCP | 1 | | | 20 /1 | 6 |
| 15 | SPARE | | 0 | | 20 /1 | |
| 17 | SPARE | | | | 20 /1 | |
| 19 | FIT-106 | 0.05 | | | 20 /1 | 6 |
| 21 | NETWORK FIBER RACK | | 0.3 | | 20 /1 | 6 |
| 23 | LT-110 | | | 0.05 | 20 /1 | 6 |
| 25 | DIESEL PUMP LCP | 0.5 | | | 20 /1 | 6 |
| 27 | CP-306 | | 0.2 | | 20 /1 | 6 |
| 29 | IRRIGATION CONTROLLER | | | 0.2 | 20 /1 | 6 |
| 31 | SPARE | | | | 20 /1 | |
| 33 | SPARE | | | | 20 /1 | |
| 35 | SPARE | | | | 20 /1 | |
| 37 | SPARE | | | | 20 /1 | |
| 39 | SPARE | | | | 20 /1 | |
| 41 | SPARE | | | | 20 /1 | |
| | TOTAL PHASE KVA THIS SIDE | 2.36 | 1.02 | 1.39 | | |

| CIRCUIT NO. | DESCRIPTION | LOAD KVA PHASE A | LOAD KVA PHASE B | LOAD KVA PHASE C | BREAKER AMPS/ POLES | NOTES |
|---|---|---|---|---|---|---|
| 2 | AHU-1 | 0.31 | | | 15 /2 | 6 |
| 4 | | | 0.31 | | | |
| 6 | ACCU-1 | | | 3.53 | 60 /2 | 7 |
| 8 | | 3.53 | | | | |
| 10 | AHU-2 | | 0.31 | | 15 /2 | 6 |
| 12 | | | | 0.31 | | |
| 14 | ACCU-2 | 3.53 | | | 60 /2 | 7 |
| 16 | | | 3.53 | | | |
| 18 | SPARE | | | | 20 /1 | |
| 20 | SPARE | | | | 20 /1 | |
| 22 | SPARE | | | | 20 /1 | |
| 24 | SPARE | | | | 20 /1 | |
| 26 | SPARE | | | | 20 /1 | |
| 28 | SPACE | | | | 20 /1 | |
| 30 | SPACE | | | | 20 /1 | |
| 32 | SPACE | | | | 20 /1 | |
| 34 | SPACE | | | | 20 /1 | |
| 36 | SPACE | | | | 20 /1 | |
| 38 | SPACE | | | | 20 /1 | |
| 40 | SPACE | | | | 20 /1 | |
| 42 | SPACE | | | | 20 /1 | |
| | TOTAL PHASE KVA THIS SIDE | 7.37 | 4.15 | 3.84 | | |
| | TOTAL KVA PER PHASE | 9.73 | 5.17 | 5.23 | | |
| | TOTAL THREE PHASE KVA | | 20.13 | | | |

NOTES:

1. PROVIDE LOCKING HARDWARE
3. 30 ma GFI CIRCUIT BREAKER FOR EQUIPMENT PROTECTION ONLY (HEAT TRACE)
5. BRANCH CIRCUIT WIRING: 3/4"C, 3#12 & 1#12G
7. BRANCH CIRCUIT WIRING: 1"C, 2#6 & 1#10G
9.

NOTES CONT.:

2. 5 ma GROUND FAULT INTERRUPTER (GFI) CIRCUIT BREAKER
4. PROVIDE LOCKING HARDWARE & PAINT BREAKER HANDLE RED (FACP)
6. BRANCH CIRCUIT WIRING: 3/4"C, 2#12 & 1#12G
8.
10.

NOTES:

1. SEE SPECIFICATIONS AND INSTRUMENTATION LOOP DIAGRAMS FOR ADDITIONAL CONTROL REQUIREMENTS.
2. COMMUNICATION LINK WITH PSCP VIA PROFINET CABLE.
3. PUMP MONITORING RELAY IS FURNISHED UNDER DIVISION 11. VFD MANUFACTURER SHALL INSTALL AND WIRE PER RELAY MANUFACTURER'S REQUIREMENTS. PROVIDE ADDITIONAL RELAYS, CONTACTS, WIRING, INDICATORS, ETC. AS REQUIRED.

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: J. SANCHEZ
DRAWN BY: R. CARTER
SHEET CHK'D BY: S. PERRY
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: S. PERRY
DATE: JANUARY 2021

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020

JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

MCC FRONT ELEVATIONS,
ELEMENTARY CONTROL DIAGRAMS
AND PANELBOARD SCHEDULE

DATE:
SPENCER J. PERRY JR
PE NO. 62587

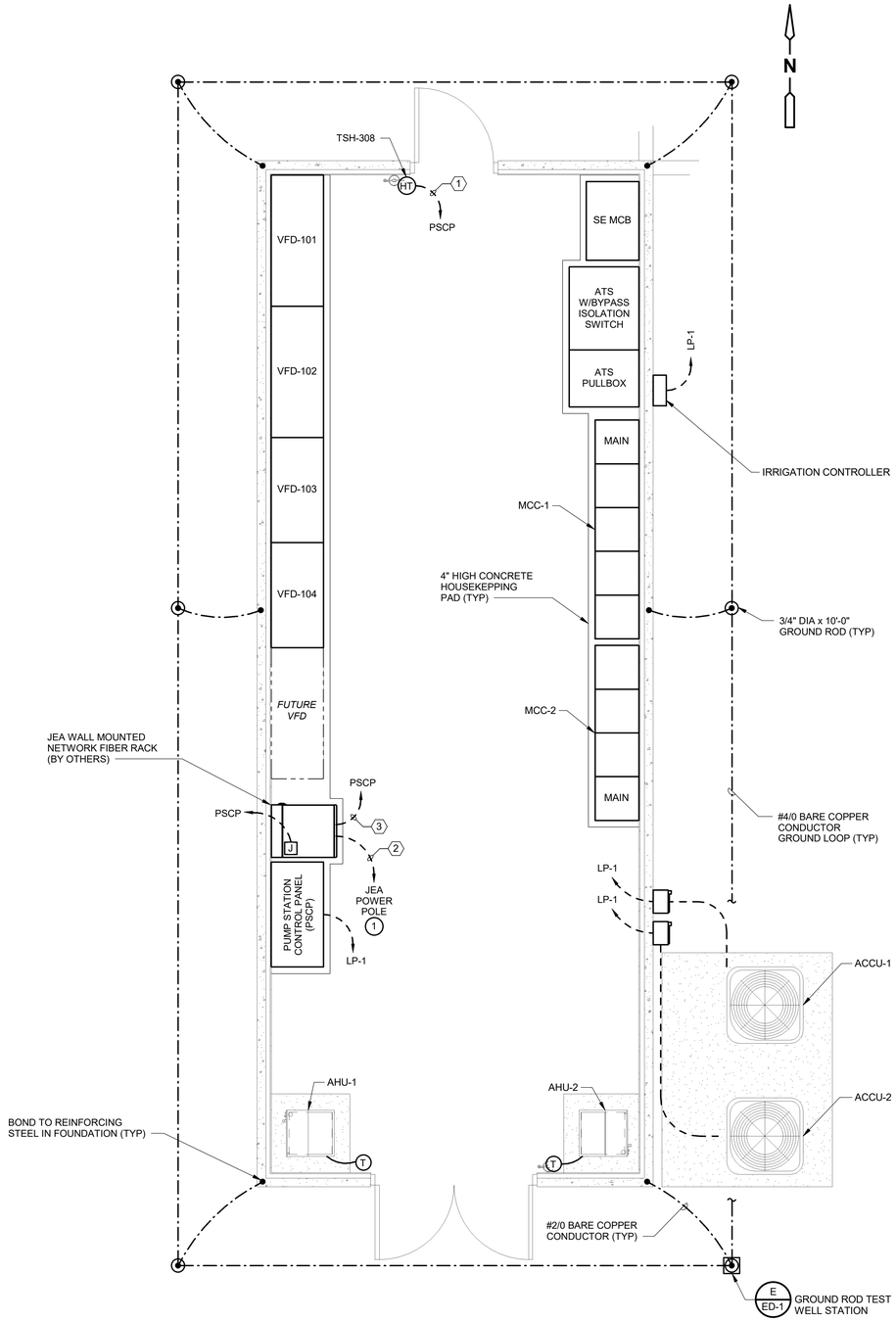
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FILE NAME: E005PBSH.DWG

SHEET NO.
E-5

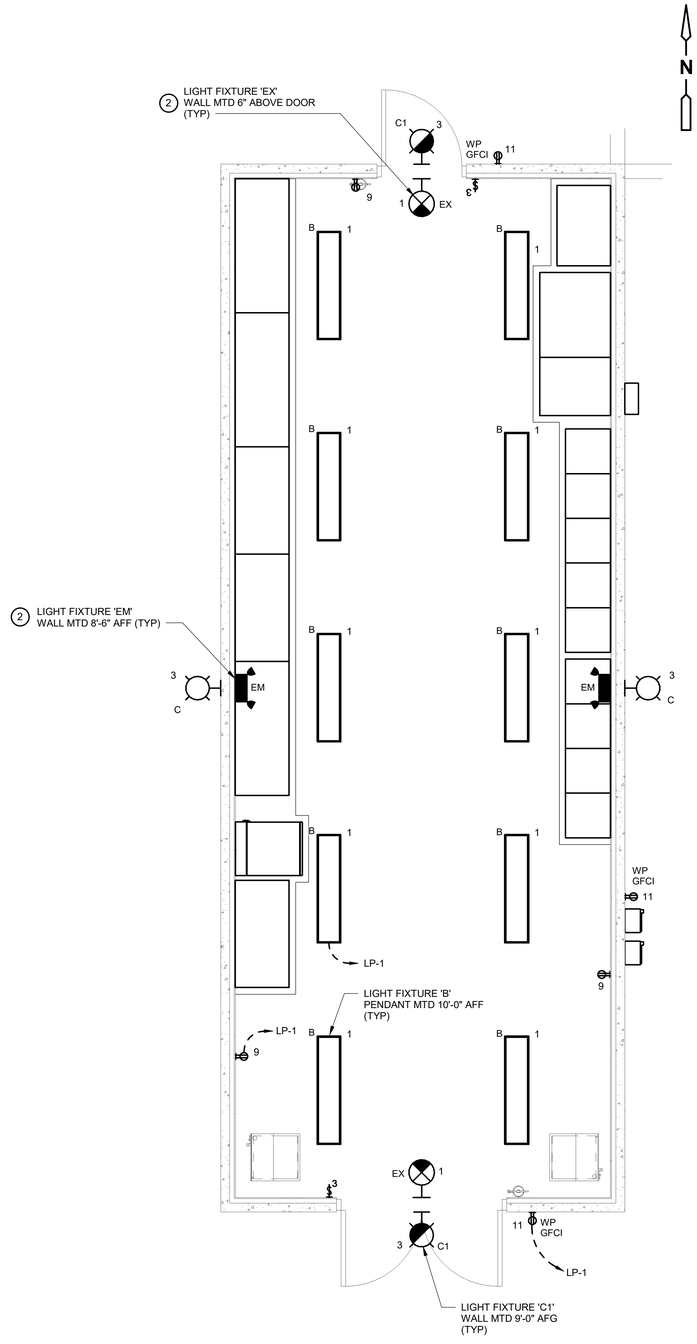
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**POWER**
PLAN
3/8" = 1'-0"




**LIGHTING**
PLAN
3/8" = 1'-0"

## KEYED NOTES:

1. COORDINATE LOCATION OF POWER POLE WITH JEA.
2. EXIT SIGN 'EX' AND EMERGENCY EGRESS LIGHT FIXTURE 'EM' SHALL BE WIRED TO THE NORMAL LIGHTING CIRCUIT OF THE ROOM IT SERVES AND TO THE LINE-SIDE OF THE LIGHT SWITCH.

## CONDUIT AND WIRE LEGEND
(NUMBERS REFERENCE THIS SHEET ONLY)

| NO. | DESCRIPTION |
|---|---|
| 1 | 3/4"C., 2#14, 1#12G |
| 2 | 4"C., EMPTY FOR FIBER OPTIC CABLE |
| 3 | 1"C., EMPTY FOR ETHERNET CABLE |

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: J. SANCHEZ
DRAWN BY: R. CARTER
SHEET CHK'D BY: S. PERRY
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: S. PERRY
DATE: JANUARY 2021

CDM Smith
4651 Salisbury Road, Suite 420
Jacksonville, FL 32256
Tel: (904) 731-7109
FL COA No. EB-0000020

JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

ELECTRICAL BUILDING
ELECTRICAL PLANS

DATE:
SPENCER J. PERRY JR
PE NO. 62587

PROJECT NO. 6103-215629
FILE NAME: EWZ000EL.RVT

SHEET NO.
E-6

ISSUED FOR BID

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## CONDUIT AND WIRE LEGEND
(NUMBERS REFERENCE THIS SHEET ONLY)

| NO. | DESCRIPTION |
|---|---|
| 1 | 1"C., 10#14, 1#12G |
| 2 | 3/4"C., 2#14, 1#12G |
| 3 | 3/4"C., 1-2/C#16SH |
| 4 | 1"C., W/CABLE PER MFR |
| 5 | 1"C., FIBER OPTIC CABLE |
| 6 | 3/4"C., 8#14, 1#12G |
| 7 | 1"C., EMPTY |
| 8 | 1"C., 2-2/C#16SH |

TO ELECTRICAL BUILDING GROUND LOOP
TO STANDBY GENERATOR GROUND LOOP
E ED-1 GROUND ROD TEST WELL STATION
3/4"x10'-0" GROUND ROD (TYP)
WP GFCI
SEE DIESEL PUMP FUEL STORAGE TANK PLAN FOR DETAILS
BOND TO STAIR
#2/0 BARE COPPER CONDUCTOR (TYP)
BOND TO REINFORCING STEEL IN CONCRETE SLAB (TYP)
#4/0 BARE COPPER CONDUCTOR GROUND LOOP (TYP)
BOND TO TANK
PIT/PE-100-A
PIT/PE-100-B
PSCP
PIT/PE-110-A
CONCRETE DRIVEWAY
PANEL MOUNTING (TYP) L ED-2
JEA STANDARD DEMARCATION BOX (MIN 24"x24"x12" NEMA 4X TYPE 316 SS WITH HINGED COVER) (TYP)
VFD
TB
M
DRY PIT SUBMERSIBLE PUMP (FUTURE)
DRY PIT SUBMERSIBLE PUMP (TYP)
P-101
P-102
P-103
P-104
P-110
LP-1
CONTROL PANEL CP-110
EMERGENCY DIESEL PUMP P-110
FIT-106
FLOW METER PANEL
FE-106
ZSC-101
ZSC-102
ZSC-103
ZSC-104
ZSC-110
PIT/PE-105
L1 E-9 POLE MOUNTED LUMINAIRE (TYP)
CONCRETE PAD
BOND TO PIPE (TYP)
CONCRETE DRAIN BOX

PLAN
1/4" = 1'-0"

DATE:
SPENCER J. PERRY JR
PE NO. 62587

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

DESIGNED BY: J. SANCHEZ
DRAWN BY: R. CARTER
SHEET CHK'D BY: S. PERRY
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APPROVED BY: S. PERRY
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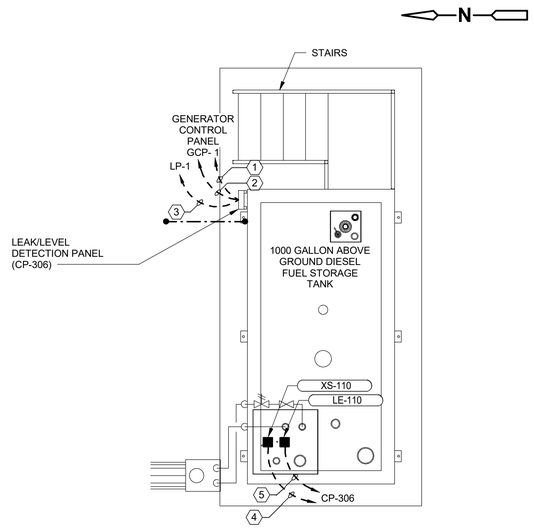
JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

ROBENA ROAD BOOSTER PUMP STATION
ELECTRICAL PLAN

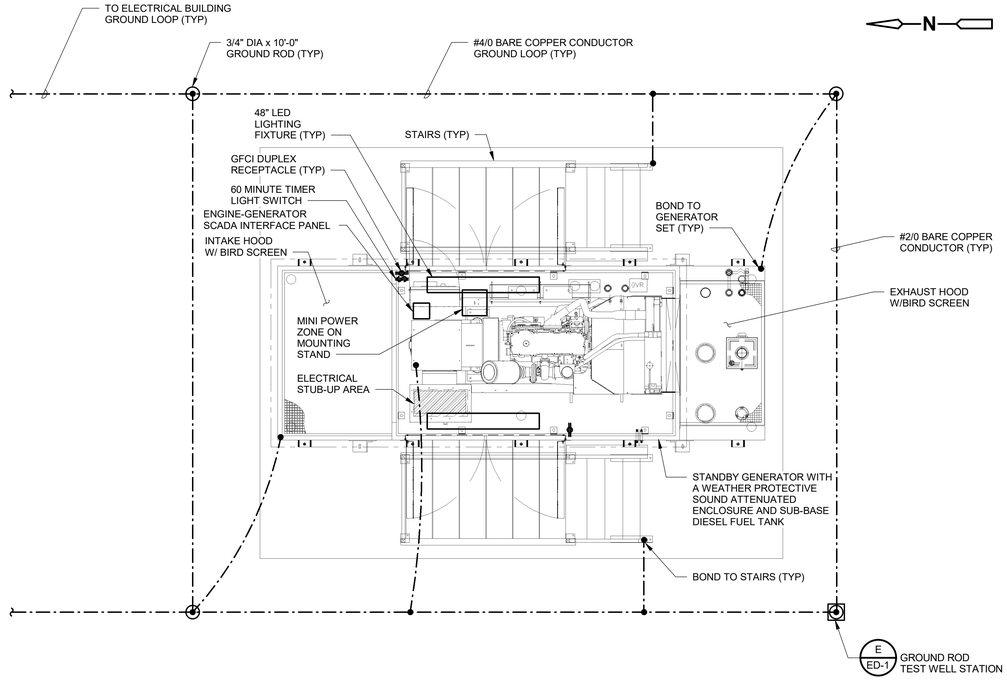
PROJECT NO. 6103-215629
FILE NAME: E007STPL.DWG
SHEET NO.
E-7

ISSUED FOR BID

| CONDUIT AND WIRE LEGEND (NUMBERS REFERENCE THIS SHEET ONLY) | |
|---|---|
| NO. | DESCRIPTION |
| 1 | 3/4"C., 1-2/C#16 SH |
| 2 | 3/4"C., 6#14, 1#12G |
| 3 | 3/4"C., 2#12, 1#12G |
| 4 | 3/4"C., 2#14, 1#12G |
| 5 | 1"C., WIRING PER MANUFACTURER |




**DIESEL PUMP FUEL STORAGE TANK**
PLAN
3/8" = 1'-0"




**STANDBY GENERATOR**
PLAN
3/8" = 1'-0"

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| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

DESIGNED BY: J. SANCHEZ
DRAWN BY: R. RUCK
SHEET CHK'D BY: S. PERRY
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: S. PERRY
DATE: JANUARY 2021

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FL COA No. EB-0000020

JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

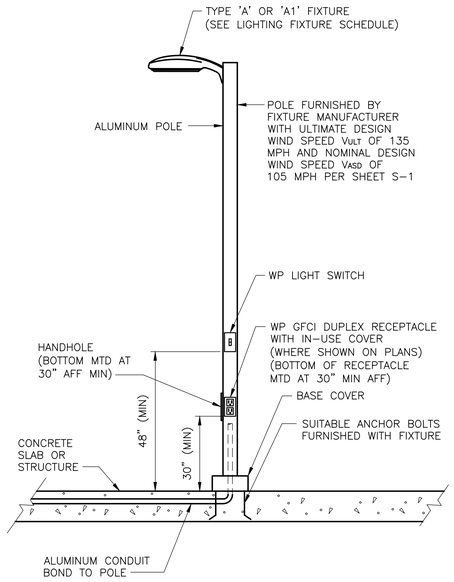
STANDBY GENERATOR
AND DIESEL PUMP FUEL TANK
ELECTRICAL PLANS

DATE:
SPENCER J. PERRY JR
PE NO. 62587

PROJECT NO. 6103-215629
FILE NAME: EWZ000GB.RVT

SHEET NO.
E-8

ISSUED FOR BID




POLE MOUNTED LUMINAIRE

DETAIL L1

NTS

## LIGHTING FIXTURE SCHEDULE

| TYPE | WATT | DESCRIPTION | MFR (OR APPROVED EQUAL) |
|---|---|---|---|
| A | 96 | POLE MOUNTED LED LIGHT FIXTURE; 96 LED's (10477 LUMENS); DIE CAST ALUMINUM HOUSING WITH INTEGRAL COOLING FINS; TWO-PIECE DIE CAST ALUMINUM DRIVER COMPARTMENT SEALED WITH A ONE-PIECE SILICONE GASKET; IES FULL CUTOFF OPTICS; DARK SKY CERTIFIED; SILVER METALLIC POLYESTER POWDER COAT FINISH; 350 mA HIGH-PERFORMANCE LED DRIVER; L70 AT 100,000+ IN 25° C ENVIRONMENTS; 90% POWER FACTOR; UNIVERSAL VOLTAGE (120-277V); 10kV SURGE PROTECTOR; TERMINAL BLOCK SUPPLIED AS STANDARD; TYPE III LIGHT DISTRIBUTION; CRI OF 75 FOR 5000K; PHOTOCELL CONTROL; ETL LISTED FOR WET LOCATIONS; IP65 RATED; DLC LISTED; 5 YEAR WARRANTY ON ENTIRE SYSTEM | VISIONAIRE LIGHTING: VLX LED SERIES<br>SEE NOTES 1 AND 2 |
| A1 | 96 | POLE MOUNTED LED LIGHT FIXTURE WITH BACK SIDE CUTOFF LOUVER SHIELD; 96 LED's (10477 LUMENS); DIE CAST ALUMINUM HOUSING WITH INTEGRAL COOLING FINS; TWO-PIECE DIE CAST ALUMINUM DRIVER COMPARTMENT SEALED WITH A ONE-PIECE SILICONE GASKET; IES FULL CUTOFF OPTICS; DARK SKY CERTIFIED; SILVER METALLIC POLYESTER POWDER COAT FINISH; 350 mA HIGH-PERFORMANCE LED DRIVER; L70 AT 100,000+ IN 25° C ENVIRONMENTS; 90% POWER FACTOR; UNIVERSAL VOLTAGE (120-277V); 10kV SURGE PROTECTOR; TERMINAL BLOCK SUPPLIED AS STANDARD; TYPE III LIGHT DISTRIBUTION; CRI OF 75 FOR 5000K; PHOTOCELL CONTROL; ETL LISTED FOR WET LOCATIONS; IP65 RATED; DLC LISTED; 5 YEAR WARRANTY ON ENTIRE SYSTEM | VISIONAIRE LIGHTING: VLX LED SERIES<br>SEE NOTES 1 AND 2 |
| B | 62 | 1x4 FULLY ENCLOSED, DUAL PENDANT BRACKETS; GASKETED INDUSTRIAL LED LUMINAIRE; 5VA FIBERGLASS HOUSING, STAINLESS STEEL LATCHES; HIGH REFLECTANCE WHITE FINISH; 7757 LUMENS, 80 CRI, 4000K CCT; RIBBED FROSTED POLYCARBONATE LENS; LONG LIFE LED's; L70 AT 60,000 HOURS. FIXED OUTPUT DRIVER; SURFACE OR SUSPENDED MOUNTING; UNIVERSAL VOLTAGE 120-277V; CONFORMS TO UL STD 1598 AND UL STD 2108; LISTED FOR WET LOCATIONS; CERTIFIED, IP65, AND IP67 CERTIFIED, AND RATED FOR NEMA 4X; 5 YEAR WARRANTY | COLUMBIA LIGHTING: LXEM SERIES |
| C | 72 | LED WALL MOUNTED FIXTURE; DIE-CAST ALUMINUM HOUSING; IMPACT-RESISTANT TEMPERED GLASS LENS; FULLY GASKETED; 20 HIGH-EFFICACY LED'S (L87/100,000 HRS AT 25° C) MOUNTED TO METAL-CORE CIRCUIT BOARD AND INTEGRAL ALUMINUM HEAT SINK; 6983 LUMENS; 4000K CCT, 70 CRI; TYPE III MEDIUM LIGHT DISTRIBUTION; POLYSTER POWDERCOAT NATURAL ALUMINUM FINISH; 1000mA LED DRIVERS; 120V; UL LISTED WET LOCATION; IP55 RATED; PHOTOCELL CONTROL | LITHONIA LIGHTING: TWH LED SERIES |
| C1 | 72 | LED WALL MOUNTED FIXTURE; DIE-CAST ALUMINUM HOUSING; IMPACT-RESISTANT TEMPERED GLASS LENS; FULLY GASKETED; 20 HIGH-EFFICACY LED'S (L87/100,000 HRS AT 25° C) MOUNTED TO METAL-CORE CIRCUIT BOARD AND INTEGRAL ALUMINUM HEAT SINK; 6983 LUMENS; 4000K CCT, 70 CRI; TYPE III MEDIUM LIGHT DISTRIBUTION; POLYSTER POWDERCOAT NATURAL ALUMINUM FINISH; 1000mA LED DRIVERS; 120V; UL LISTED WET LOCATION; IP55 RATED; EMERGENCY BATTERY BACKUP; PHOTOCELL CONTROL | LITHONIA LIGHTING: TWH LED SERIES |
| EX | 3.8 | EXIT SIGN W/DIE CAST ALUMINUM HOUSING, WHITE BODY, BRUSHED ALUMINUM FACE, RED LED LAMPS, RED POLYCARBONATE LENS W/PRISMATIC DIFFUSER, SEALED NICKEL CADMIUM BATTERY, FULLY AUTOMATIC SOLID STATE CHARGER, FLAT OR OPENING MOUNTED AS REQUIRED, 120V, 12V DC | PHILIPS CHLORIDE: 55 LINE SERIES |
| EM | 15 | EMERGENCY LIGHTING UNIT, NEMA 4X RATED FIBERGLASS HOUSING WITH INDUSTRIAL GRAY FINISH, INPUT VOLTAGE 120/277 VAC, SOLID STATE BATTERY CHARGER, 12 VDC OPERATION, 90 MINUTE CAPACITY, 2-12 WATT HALOGEN SEALED BEAM LAMPS, EXTERNAL TEST SWITCH AND LED "READY" LIGHT, NICKEL CADMIUM BATTERY, UL 924 WET LOCATION LISTED, FULL 3 YEAR WARRANTY | PHILIPS CHLORIDE: VNX SERIES |

NOTES:

1. FIXTURE MANUFACTURER SHALL FURNISH A 14' SQUARE ALUMINUM POLE. POLE SHALL HAVE A CLEAR ANODIZED FINISH AND MEET WIND LOADS AND GUST FACTOR FOR RELATED PROJECT LOCATION. POLE SHALL BE MOUNTED TO A CONCRETE STRUCTURE PER DETAIL 'L1' WHERE SHOWN ON DRAWINGS. SUITABLE ANCHOR BOLTS, BASE COVER, GROUND LUG AND VIBRATION PAD FURNISHED WITH POLE.
2. SITE LIGHT POLES ARE SWITCH OPERATED ON/OFF WITH PHOTOCELL OVER-RIDE.

DATE:
SPENCER J. PERRY JR
PE NO. 62587

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|

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CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: S. PERRY
DATE: JANUARY 2021

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FL COA No. EB-0000020

JEA
CEDAR BAY (DISTRICT II)
PUMPING STATIONS AND FLOW REROUTING PROJECT
ROBENA ROAD BOOSTER PUMP STATION

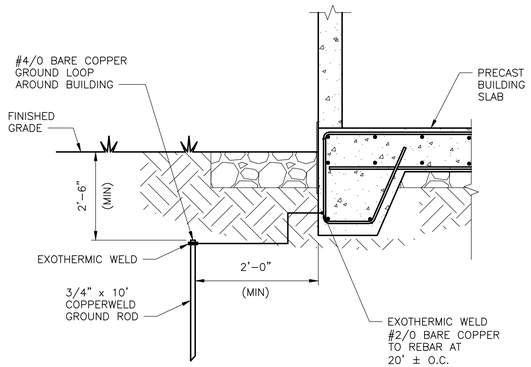
LIGHTING FIXTURE SCHEDULE AND DETAILS

PROJECT NO. 6103-215629
FILE NAME: E009LFDT.DWG

SHEET NO.
E-9

ISSUED FOR BID

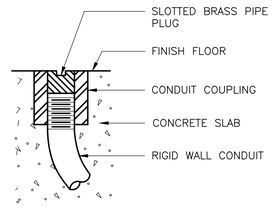
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BULIDING STRUCTURE BONDING

DETAIL A

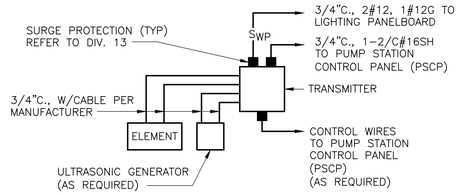
NTS –




CONDUIT TERMINATION STUB OUT

DETAIL B

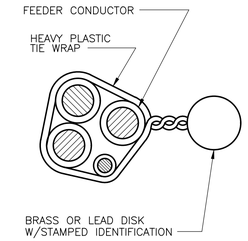
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TYPICAL TRANSMITTER

DETAIL C

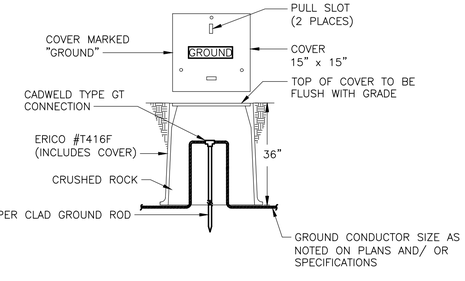
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U.G. CABLE TAG

DETAIL D

NTS –



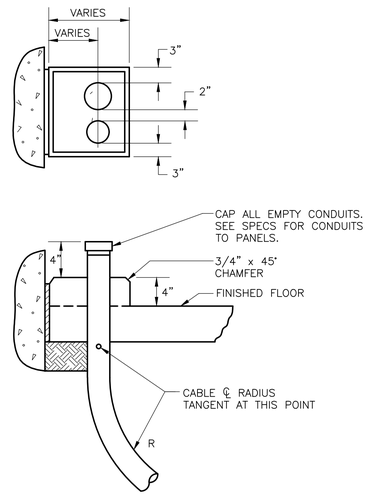

**NOTE:**

1. TO IMPROVE SYSTEM RESISTANCE, ERICO GEM MAY BE USED AS A BACKFILL MATERIAL IN AN AUGERED HOLE.

GROUND ROD TEST WELL STATION

DETAIL E

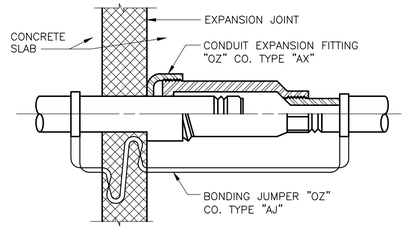
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TYPICAL CONDUIT THROUGH SLAB

DETAIL F

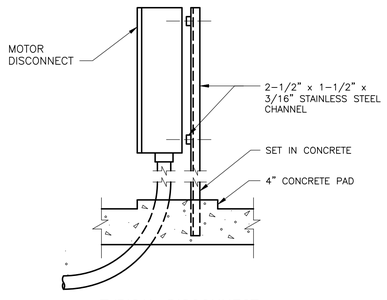
NTS –




EXPANSION FITTING

DETAIL G

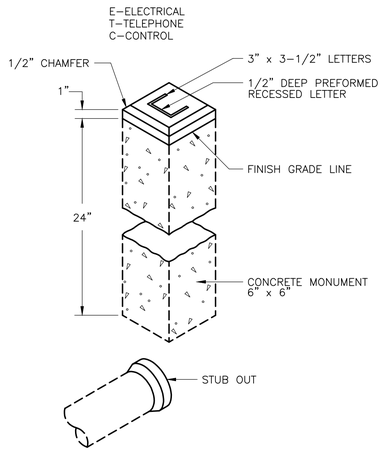
NTS –




TYPICAL DISCONNECT

DETAIL H

NTS –




CONDUIT STUB MONUMENT

DETAIL J

NTS –

DATE:
SPENCER J. PERRY JR
PE NO. 62587

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

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DRAWN BY: R. CARTER
SHEET CHK'D BY: S. PERRY
CROSS CHK'D BY: I. POLEMATIDIS
APPROVED BY: S. PERRY
DATE: JANUARY 2021

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JEA
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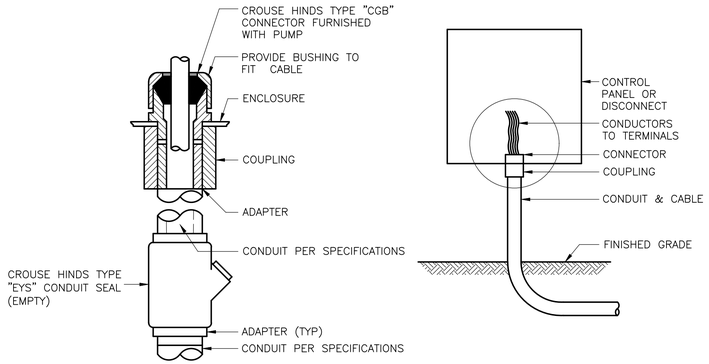
ELECTRICAL DETAILS I

PROJECT NO. 6103-215629
FILE NAME: ED01NFDT.DWG

SHEET NO.
ED-1

ISSUED FOR BID

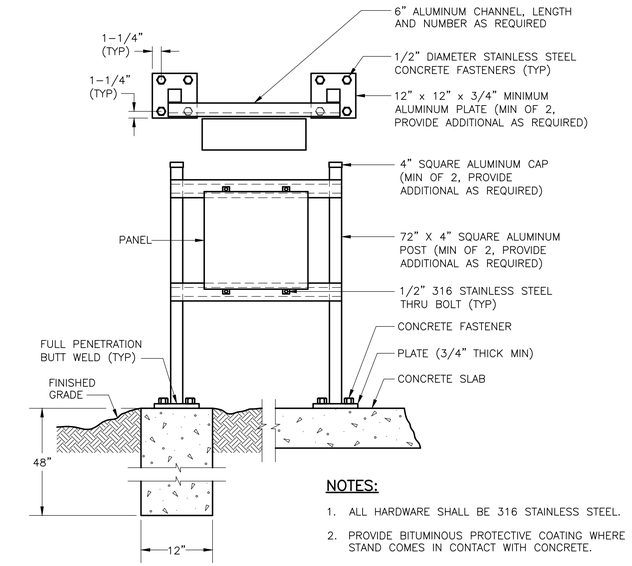
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WATER–TIGHT CONNECTION

DETAIL K

NTS



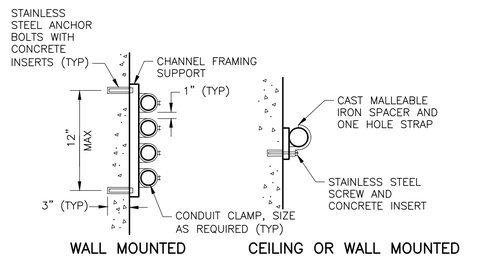

NOTES:

1. ALL HARDWARE SHALL BE 316 STAINLESS STEEL.
2. PROVIDE BITUMINOUS PROTECTIVE COATING WHERE STAND COMES IN CONTACT WITH CONCRETE.

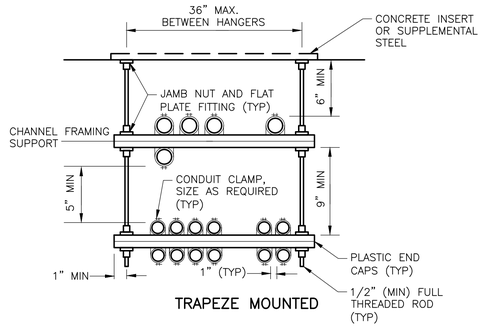
PANEL MOUNTING

DETAIL L

NTS




WALL MOUNTED CEILING OR WALL MOUNTED

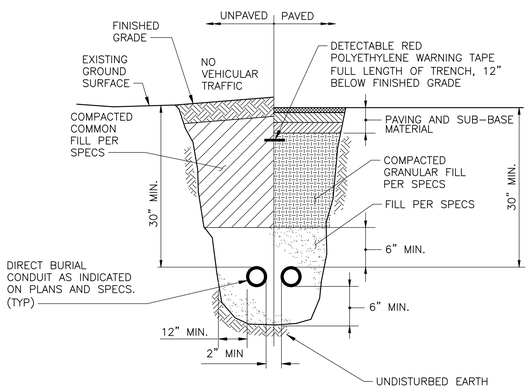



TRAPEZE MOUNTED

CONDUIT MOUNTING

DETAIL M

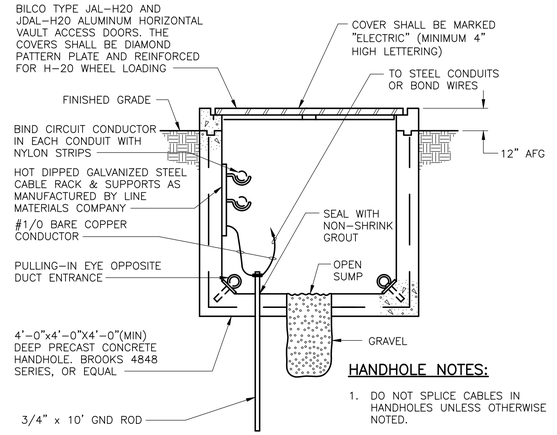
NTS




TYPICAL DIRECT BURIED CONDUIT INSTALLATION

DETAIL N

NTS




HANDHOLE NOTES:

1. DO NOT SPLICE CABLES IN HANDHOLES UNLESS OTHERWISE NOTED.
2. ALL MOUNTING HARDWARE SHALL BE 316 SS.
3. HANDHOLE TO BE PLACED ON 6" BASE OF NO. 57 STONE.

HANDHOLE

DETAIL P

NTS

DATE:
SPENCER J. PERRY JR
PE NO. 62587

| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|---|---|---|---|---|
| | | | | |

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ROBENA ROAD BOOSTER PUMP STATION

ELECTRICAL DETAILS II

PROJECT NO. 6103–215629
FILE NAME: ED02NFDT.DWG

SHEET NO.
ED-2

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