PUMP STATION NO. 8 REPLACEMENT
FINAL DESIGN PLANS
CITY OF HALLANDALE BEACH
BROWARD COUNTY, FL

LOCATION MAP
SECTION 27, TOWNSHIP 51 SOUTH, RANGE 42 EAST

PREPARED FOR:
CITY OF HALLANDALE BEACH

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CRAVEN • THOMPSON AND ASSOCIATES, INC.
ENGINEERS • PLANNERS • SURVEYORS
2003 N.W. 33RD STREET, FORT LAUDERDALE, FLORIDA 33311
PH (954) 735-8400 TEL (954) 735-8400
AILA LICENSE NUMBER: C-2806, WATER CONTROL NUMBER: 9092124

DATE: 2019.08.19
09:18:07 -04'00'

Patrick Gibney
Digitally signed by Patrick Gibney

CTA PROJECT NUMBER: 17-0039-001-02

VERTICAL INFORMATION HEREIN IS RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM (NAVD88).
BID # FY 2019-2020-001 PUMP STATION # 8 REPLACEMENT

1. Proposed sidewalk shall be 5' wide. Slopes of 2% cross and 1% longitudinal.


3. Full right of way shall be included in all construction. A 10' wide sidewalk shall be included in all construction.

4. Full protection required for existing utilities and utilities. All existing utilities shall be included in the base bid price.

5. Site contain 3, 12" steel belled piles, 1, 14" steel belled pile, and 1, 16" steel belled pile

6. All equipment shall be placed in accordance with the plans and specifications.

7. Lift station upgrade includes but not limited to: station and equipment, electrical connections, piping, valve, and antena.

8. Contractor shall conform to the requirements of Article 15 of County Ordinance.

9. Pump spacing and cover position shall be as required by equipment manufacturer. Confirm pump spacing and position before proceeding with construction.

10. Epoxy bonding agent shall be applied to precast concrete in accordance with the manufacturer's instructions.

11. All concrete work shall be in accordance with Florida Department of Transportation specifications.

12. Concrete class and strength are to be determined by concrete manufacturer. Confirm concrete class and strength before proceeding with construction.

13. Concrete class shall conform to the requirements of ASTM C300. All concrete used shall be in accordance with Florida Department of Transportation specifications.

14. Reinforcement steel shall conform to the Florida Department of Transportation specifications.

15. Water main and sanitary main shall be in accordance with Florida Department of Transportation specifications.

16. Wet well sections and precast units shall conform to the Florida Department of Transportation specifications.

17. Use expansion joint filler in precast joints. Cover joints with expansion joint filler.

18. All required hardware shall be stainless steel.

19. Restore all disturbed areas to the satisfaction of the owner.

20. Contractor shall prepare and submit an approved construction schedule for execution of the work.

21. Restoring utilities, pipelines, and sidewalks on the model shall be in accordance with the approved construction schedule.

22. If any existing utility in the plans is not shown or does not conform to the plans, the contractor shall conform to the plans.

23. The project is located in an area of potential ground water contaminants.

24. An existing facility is found to conflict with the plans or specifications, the contractor shall adjust the plans and specifications to accommodate the existing facility.

25. Wet well sections shall conform to the requirements of the AWWA standard.

26. Contractor shall conform to the requirements of the AWWA standard.

27. Contractor shall conform to the requirements of the AWWA standard.

28. Contractor shall conform to the requirements of the AWWA standard.

29. Contractor shall conform to the requirements of the AWWA standard.

30. Contractor shall conform to the requirements of the AWWA standard.
ENGINEERS       PLANNERS       SURVEYORS
PREPARED FOR:
CITY OF HALLANDALE BEACH

1. THE INTERIOR CONCRETE SURFACES OF THE WETWELL, VALVE VAULT, THE INTERIOR OF THE CONVERTED LIFT STATION SECTIONAL PLAN
2. CONTRACTOR SHALL PROVIDE CONTINUOUS SANITARY SERVICE AT ALL TIMES DURING CONSTRUCTION, INCLUDING, WASTEWATER, AND/OR ANY OTHER REQUIRED EQUIPMENT OR SERVICE NEEDED TO FACILITATE CONTINUOUS
3. WETWELL AND VALVE VAULT ACCESS HATCHES SHALL BE US FOUNDRY TYPE "THD" ALUMINUM ACCESS HATCHES
4.use Ramneck joint filler in precast joints, cover joints with mortar.
5. CONCRETE CLASS AND STRENGTH ARE TO BE DETERMINED BY STANDARD LABORATORY CYLINDER TEST, AS PER
7. USE RAMNECK JOINT FILLER IN PRECAST JOINTS, COVER JOINTS WITH MORTAR.
8. WETWELL SECTIONS AND PRECAST UNITS SHALL CONFORM TO ASTM C478.
9. CONTRACTOR SHALL PREPARE, GET APPROVAL FROM THE REQUIRED AGENCIES, AND IMPLEMENT THE APPROVED
10. PRECAST CIRCULAR
11. EXISTING WATER METER SHALL BE RELOCATED BY THE CITY OF HALLANDALE. CONTRACTOR SHALL COORDINATE
12. CONTRACTOR SHALL PRESERVE EXISTING FEATURES OF ADJACENT PROPERTIES (PAVING, CURBING, FENCING,
14. CONCRETE CLASS AND STRENGTH ARE TO BE DETERMINED BY STANDARD LABORATORY CYLINDER TEST, AS PER
16. ULTRAFLEX SHALL BE APPLIED IN A MINIMUM OF TWO (2) COATS, 50 MILS DFT TOTAL. FIRST COAT COLOR TO BE TAN; FINAL
17. EXISTING WATER METER SHALL BE RELOCATED BY THE CITY OF HALLANDALE. CONTRACTOR SHALL COORDINATE
18. USE RAMNECK JOINT FILLER IN PRECAST JOINTS, COVER JOINTS WITH MORTAR.
19. WETWELL SECTIONS AND PRECAST UNITS SHALL CONFORM TO ASTM C478.
20. CONTRACTOR SHALL PREPARE, GET APPROVAL FROM THE REQUIRED AGENCIES, AND IMPLEMENT THE APPROVED
21. WETWELL AND VALVE VAULT ACCESS HATCHES SHALL BE US FOUNDRY TYPE "THD" ALUMINUM ACCESS HATCHES
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34. CONTRACTOR SHALL PRESERVE EXISTING FEATURES OF ADJACENT PROPERTIES (PAVING, CURBING, FENCING,
35. THE INTERIOR CONCRETE SURFACES OF THE WETWELL, VALVE VAULT, THE INTERIOR OF THE CONVERTED
36. USE RAMNECK JOINT FILLER IN PRECAST JOINTS, COVER JOINTS WITH MORTAR.
37. WETWELL SECTIONS AND PRECAST UNITS SHALL CONFORM TO ASTM C478.
38. CONTRACTOR SHALL PREPARE, GET APPROVAL FROM THE REQUIRED AGENCIES, AND IMPLEMENT THE APPROVED
39. WETWELL AND VALVE VAULT ACCESS HATCHES SHALL BE US FOUNDRY TYPE "THD" ALUMINUM ACCESS HATCHES
40. CONTRACTOR SHALL PRESERVE EXISTING FEATURES OF ADJACENT PROPERTIES (PAVING, CURBING, FENCING,

NOTES:

1. CONCRETE PADS ARE SHOWN FOR REFERENCE ONLY. NO STRUCTURAL CALCULATIONS WERE DONE FOR THE DESIGN OF THESE CONCRETE PADS.

2. 12" COMPACTED CRUSHED STONE BEDDING UNDER GENERATOR CONCRETE PAD.

3. 6" COMPACTED CRUSHED STONE BEDDING UNDER CONTROL PANEL, ELECTRICAL EQUIPMENT AND TERMINATION PANEL CONCRETE PADS.

4. COMPACTED SUBGRADE SHALL BE PLACED UNDER THE COMPACTED CRUSHED STONE.
BID # FY 2019-2020-001 PUMP STATION # 8 REPLACEMENT

**GENERAL FOUNDATION NOTE**

If soft, compressible material is encountered at the pipe, structure or equipment pad subgrade level, the contractor shall remove and dispose of up to 2 vertical feet of that material, if necessary. Until firm material is encountered, and replace it with sand or bonded stone compacted to 100% of dry maximum density at no additional cost to the City.

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**TYPICAL PLUG VALVE INSTALLATION**

- Concrete support pad
- Plastic sheet between valve and concrete
- Flexible coupling
- Staircase iron with lid
- Vent

**AIR RELEASE VALVE DETAIL (INSIDE VALVE VAULT)**

- 2" P.I.D. pipe
- Staircase iron
- Stainless steel with lid
- Valve

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**GRAVEL BUFFER & BUNKER DETAIL**

- Smoothed subgrade treated with pre-emergence weed killer
- Sand filter barrier
- Bermuda grass

**GRAVEL BUNKER & BUNKER DETAIL**

- Smoothed subgrade treated with pre-emergence weed killer
- Sand filter barrier
- Bermuda grass

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**UNPAVED AREAS**

- Trench detail
- General foundation note
- Pumps station no. 8 replacement
- City of Hallandale Beach

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**PUMP STATION NO. 8 REPLACEMENT CITY OF HALLANDALE BEACH**

- Pump station details
- BID # FY 2019-2020-001
SECTION G-G
TYPICAL CURB ELEVATION (NOT TO SCALE)
1. The contractor shall provide all necessary labor and materials to install the electrical systems as indicated on the drawings. All electrical work shall be in accordance with the National Electrical Code, National Electrical Safety Code, Local Codes and Florida Building Codes.

5. The contractor shall coordinate their work with the consultant and City of Hallandale.

7. The contractor shall, before submitting their bid, visit the site of the project and become familiar with the existing conditions. No allowance will be made for existing conditions or failure of the contractor to observe them.

15. All equipment furnished and installed by the contractor (except the mentioned units) shall be guaranteed against defects in material and workmanship for a period of one year from date of substantial completion.

26. All conduits and cable runs shall be identified in the junction boxes, pull boxes, control panels, panelboards, lighting poles, controllers and service points. Identification shall match panelboard schedules.

27. Conduit Pulling Schedule shall not exceed manufacturer's recommendations. Contractor shall install all pull boxes to meet manufacturer’s requirements.

31. The contractor may combine conductors to limit the number of conduits leaving the panelboard. Contractor shall derate the wires as per NEC and increase the size of the wires accordingly.

33. Contractor shall provide to the owner within 30 days after the date of system acceptance record drawings depicting the location and area served by all installed distributions per the 2017 Florida Building Code. Energy Conservation-C405.6.3.

37. The contractor shall furnish an arc flash hazard analysis study per 2018 NFPA 70E - Standards for Electrical Safety in the Workplace. The analysis shall be of sufficient durability to withstand the environment installed per NEC Article 110.24A and 110.24B.

43. The contractor shall furnish all riser and one-line diagrams showing on building layouts. Contractor shall supply all conduits and cables as shown on riser and one-line diagrams.

50. All conduits shall be identified in junction boxes, pull boxes, control panels, panelboards, lighting poles, controllers and service points. Identification shall match panelboard schedules.

51. All conduits shall be identified in junction boxes, pull boxes, control panels, panelboards, lighting poles, controllers and service points. Identification shall match panelboard schedules.

52. The drawings are not intended to show the exact location of conduit runs. These are to be coordinated with the other trades so that conflicts are avoided prior to installation.

53. All locations of equipment, panels, etc. are shown for illustrative purposes. Contractor shall verify and coordinate exact location and runs with the sub-contractors and equipment suppliers prior to any installation and their installation shall be in accordance with the corresponding construction.

54. All locations of conduits and pull boxes are approximate. Contractor shall coordinate exact location with utilities and verify any conduit and equipment accessibility.

55. Not all conduits shown on riser and one-line diagrams are shown on building layouts. Contractor shall supply all conduits and cables as shown on riser and one-line diagrams.

62. All conduits shall be identified in junction boxes, pull boxes, control panels, panelboards, lighting poles, controllers and service points. Identification shall match panelboard schedules.

63. Contractor Pulling Schedule shall not exceed manufacturer’s recommendations. Contractor shall install all pull boxes to meet manufacturer’s requirements.

64. The contractor shall be responsible for all conduit and wiring installation for all work performed equipment purchase orders, if the shop drawings differ from the foregoing schedule, the contractor shall request the & submits the revised design for the consultant’s approval. After the shop drawings, there shall be no additional cost to the owner for any additional conduits and equipment. Pulls for conduits are to be provided by the owner. The owner shall notify all subcontractors and incorporate all changes with the conduit and equipment suppliers.

65. Grounding shall be installed in accordance with NEC Article 250. The grounding system test shall not exceed a 24 hour open circuit withstand of 5000A. Additional grounding to meet the requirements shall be installed at no extra cost. Grounding and bonding connections shall not be painted. All grounding connections shall be specifically identified on the drawings.

66. All equipment grounding and neutral shall be sized per NEC. The grounding conductors shall be in all electrical systems. Power and control, whether or not it is included in the plans.

67. All enclosures, tab, airway, pull boxes etc. shall contain a grounding bus. Contractor shall install a grounding bus to this bus via grounding bus bar and extend as needed from this bus to the enclosure.

68. Provides conduit duct seal at all conduit ends.

69. All spares conduits shall be sealed with a cap at both ends and a full string installed with identification on both ends.

70. Typhography panels shall be installed in such panelboards. And typographic terminal block schedules in such control cabinets.

71. Contractor shall maintain panelboard loads at the end of the project.

72. All service conductors shall be rated for the ampacity of the panelboard. All panelboards shall be PVC schedule 40 or rated aluminum/bronze.

73. Grounding of neutral conductors shall not be permissible.

74. The contractor may combine conductors to limit the number of conductors leaving the panelboard. Contractor shall verify the sizes of each panel board.

75. Branch and feeder conductors shall be sized for minimum fault level of 50% nominal current at the point of connection load for the 2017 Florida Building Code. Energy Conservation-C405.6.3.

76. The owner shall have the right to rebuild materials that are to be removed in the design. The contractor shall coordinate with the owner prior to demolition and deliver salvaged material to the owner’s coordinate group.

77. For cable conduit code plans refer to specifications.

78. Contractor shall provide the owner within 30 days after the date of the system acceptance record drawings. Excavation of the concrete installation as indicated in the drawings is required. All conduits are subject to the jurisdiction of the city of Hallandale.

79. All references to SS or stainless steel shall be black or stainless steel.

80. All electrical equipment shall be permanently identified and served for the requirements of the NEC and the Florida Building Code.

81. Minimum space allocated between power points and instrumentation communication cable shall be.
DEMOLITION NOTES:
- Contractor shall coordinate with FPL and shall disconnect and remove the existing power conductors from FPL handhole to the existing FPL meter, complete.
- Contractor shall disconnect, remove and dispose of the control panel and conductor/conduit system, complete.
- Existing lift station and RTU are to remain in service during construction of the new lift station. Contractor shall provide temporary power as needed to maintain electrical service in operation.
- Contractor shall disconnect, remove, and deliver existing RTU control panel and antenna to the owner.

CONTRACTOR SHALL COORDINATE WITH FPL, AND SHALL DISCONNECT AND REMOVE THE EXISTING POWER CONDUCTORS FROM FPL HANDHOLE TO THE EXISTING FPL METER, COMPLETE.

CONTRACTOR SHALL DISCONNECT, REMOVE AND DISPOSE OF THE CONTROL PANEL AND CONDUCTOR/CONDUIT SYSTEM, COMPLETE.

EXISTING LIFT STATION AND RTU ARE TO REMAIN IN SERVICE DURING CONSTRUCTION OF THE NEW LIFT STATION. CONTRACTOR SHALL PROVIDE TEMPORARY POWER AS NEEDED TO MAINTAIN ELECTRICAL SERVICE IN OPERATION.

CONTRACTOR SHALL DISCONNECT, REMOVE AND DELIVER EXISTING RTU CONTROL PANEL AND ANTENNA TO THE OWNER.
VFD CABINET TO BE A NEMA 4X STAINLESS STEEL 316 ENCLOSURE. MINIMUM DIMENSIONS SHALL BE 80"W x 36"H x 20"D. ENCLOSURE SHALL BE PAINTED WHITE WITH SUNSHIELDS LOCATED AT THE TOP OF THE CABINET.

NOTE:

DEADFRONT VIEW

INTERNAL VIEW

VFD CABINET LAYOUT

CIRCUIT BREAKERS

CB1,2,3,4

PROJECT NO.

SHEET OF

PREPARED FOR:

DATE:

SCALE:

DESIGN BY:

DRAWN BY:

DESCRIPTION:

CHECKED BY:

DATE:

APPROVED BY:

CRAVEN  THOMPSON AND ASSOCIATES, INC.

ENGINEERS  PLANNERS  SURVEYORS

Amy L. Champagne-Baker

Florida P.E. No. 73735

17-0039-001-02

PUMP STATION NO. 8 REPLACEMENT

CITY OF HALLANDALE BEACH

BID # FY 2019-2020-001 PUMP STATION # 8 REPLACEMENT

Amy L. Champagne-Baker, PE

Digitally signed by Amy L. Champagne-Baker, PE
Reason: This item has been digitally signed and sealed
Date: 2019.08.06 16:00:47 -04'00'
BID # FY 2019-2020-001 PUMP STATION # 8 REPLACEMENT

BILL OF MATERIAL

1  MINILOG 1000 PROGRAMMABLE CONTROLLER
2  ALLEN-BRADLEY, 1762-TB1010
3  PROTECTIVE ENCLOSURE: RATING 30VA, SIZE 1/2, NOSE RADIUS 0.400
4  ALLEN-BRADLEY, 1771-N3G
5  POWER SUPPLY: MODEL 1771-P100B, 120V AC/480V DC, SIZE 1/2, NOSE RADIUS 0.400
6  ALLEN-BRADLEY, 1771-N5G
7  PROTECTIVE ENCLOSURE: RATING 100VA, SIZE 1/2, NOSE RADIUS 0.400
8  ALLEN-BRADLEY, 1771-N2G
9  PROTECTIVE ENCLOSURE: RATING 25VA, SIZE 1/2, NOSE RADIUS 0.400
10  ALLEN-BRADLEY, 1771-N1G
11  PROTECTIVE ENCLOSURE: RATING 5VA, SIZE 1/2, NOSE RADIUS 0.400
12  ALLEN-BRADLEY, 1771-N3G
13  PROTECTIVE ENCLOSURE: RATING 200VA, SIZE 1/2, NOSE RADIUS 0.400
14  ALLEN-BRADLEY, 1771-N5G
15  PROTECTIVE ENCLOSURE: RATING 100VA, SIZE 1/2, NOSE RADIUS 0.400
16  ALLEN-BRADLEY, 1771-N2G
17  PROTECTIVE ENCLOSURE: RATING 25VA, SIZE 1/2, NOSE RADIUS 0.400
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24  ALLEN-BRADLEY, 1771-N2G
25  PROTECTIVE ENCLOSURE: RATING 25VA, SIZE 1/2, NOSE RADIUS 0.400
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66  ALLEN-BRADLEY, 1771-N1G
67  PROTECTIVE ENCLOSURE: RATING 5VA, SIZE 1/2, NOSE RADIUS 0.400

NOTE:

BID # FY 2019-2020-001 PUMP STATION # 8 REPLACEMENT

DEADFRONT VIEW

PLC CABINET LAYOUT

INTERNAL VIEW

NOTE:

APPENDIX B: BILL OF MATERIAL

NOTE:

APPENDIX C: COMMUNICATIONS SCHEMATIC

NOTE:

APPENDIX D: ELECTRICAL RTU DETAILS

NOTE:

APPENDIX E: PLC CABINET LAYOUT

NOTE:

APPENDIX F: PLC CABINET TO BE A NEMA 4X STAINLESS STEEL 316 ENCLOSURE, MINIMUM DIMENSIONS SHALL BE 48"W x 48"H x 15"D. ENCLOSURE SHALL BE PAINTED WHITE WITH SUNSHIELDS LOCATED AT THE TOP AND SIDES OF THE CABINET.

NOTE:

APPENDIX G: NOTE: QUANTITY SHOWN ON BILL OF MATERIAL IS MINIMUM REQUIREMENTS. PROVIDE AND INSTALL ADDITIONAL COMPONENTS AS NEEDED FOR A COMPLETE AND FUNCTIONAL LIFT STATION CONTROL PANEL IN PLACE.

APPENDIX H: ANYL CHAMPION BASED STAFF OF FLORIDA, PROFESSIONAL ENGINEER, LICENSE NO. AND TOS LAW, HAS BEEN ELECTRONICALLY SIGNED AND SEAL BY ANYL L. CHAMPION BASED, P.E., ON THE DATE INDICATED HERE USING A TSA AUTHENTICATION CODE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALLED AND THE TSA AUTHENTICATION CODE IS A FUNCTIONAL LIFT STATION CONTROL PANEL IN PLACE. AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
NOT TO SCALE

POWER/COMMUNICATION CONNECTION BOX DETAIL

1. PROVIDE 3/4"Ø CONDUIT FROM BOX TO WET WELL FOR CONTROL WIRING (IF NECESSARY).
2. PROVIDE PADLOCK CAPABLE COVER.

NOTE:
- ELECTRICAL EQUIPMENT RACK INSTALLATION SHALL MEET FLORIDA BUILDING CODE WIND LOADING REQUIREMENT WITH APPROPRIATE WIND GUST FACTOR FOR THE LOCATION OF INSTALLATION. THE ELECTRICAL EQUIPMENT RACK INSTALLATION SHALL BE DESIGNED AND DRAWN BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA AND MEET THE GIVEN WIND LOADING REQUIREMENT.
- MAXIMUM DISTANCE BETWEEN TWO POSTS SHALL BE 5 FEET.

CONCRETE HOUSE KEEPING PAD (SEE CIVIL DETAILS) TYPICAL FOR ALL EQUIPMENT RACK.

3000 PSI CONCRETE (TYPICAL)
1 1/2" 316 SS CHANNEL, MOUNTED AS REQUIRED

POWER CONNECTION BOX

COMMUNICATION CONNECTION BOX

CONCRETE HOUSE MOUNTING-TIPICAL FOR ALL EQUIPMENT RACK.

COORDINATE SIZE WITH MANUFACTURER.

CONDUIT SEAL CABLE CORD FITTING WITH GLAND NUT & NEOPRENE BUSHING EQUAL TO CROUSE HINDS CGFP SIZE OR AS REQUIRED FOR CABLE O.D.

6-CIRCUIT CONTROL INSULATED TERM BLOCK PANEL MOUNT ALLEN BRADLEY BULLETIN 1492

6-POLE POWER INSULATED TERM BLOCK PANEL MOUNT ALLEN BRADLEY BULLETIN 1492 SIZED AS REQUIRED.

1/8" DRAIN AND VENTILATION HOLES COAT WITH CLEAR URETHANE SEAL

ELECTRICAL-ELECTRONIC INSULATOR AS CRC 'U' 02049

PROJECT NO. SHEET OF
PREPARED FOR:
DATE: SCALE:
DESIGN BY:
DRAWN BY:
DESCRIPTION:
CHECKED BY:
DATE:APPROVED BY: BY:

CRAVEN THOMPSON AND ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS

Amy L. Champagne-Baker, PE Florida P.E. No. 73735

Digitally signed by Amy L. Champagne-Baker, PE
Reason: This item has been digitally signed and sealed Date: 2019.08.06 16:01:20 -04'00'

BID # FY 2019-2020-001 PUMP STATION # 8 REPLACEMENT
### Electrical Power Pedestal Detail

**PREPARED FOR:** CRAVEN THOMPSON AND ASSOCIATES, INC.

**DATE:** 7/3/19

**SCALE:**

**DESIGN BY:**

**DRAWN BY:**

**CHECKED BY:**

**APPROVED BY:**

**Amy L. Champagne-Baker, PE**

**Florida P.E. No. 73735**

**Digitally signed by Amy L. Champagne-Baker, PE**

**Reason:** This item has been digitally signed and sealed

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**POWER EQUIPMENT LAYOUT**

**NOTE:**

Electrical equipment rack installation shall meet Florida Building Code wind loading requirements with appropriate wind gust factor for the location of installation. The contractor shall submit the shop drawing-submittal. A wind loading calculation sheet shall be signed and sealed by a registered structural engineer. Minimum distance between two supports shall be 5 feet.

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### Electrical Panel Load Schedule

<table>
<thead>
<tr>
<th>Circuit Name</th>
<th>Ribs</th>
<th>Amps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generator Strip Center</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Generator AC Power Center</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Battery AC Power Center</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>2 Screw Jack</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>3 Screw Jack</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>4 Screw Jack</td>
<td>1</td>
<td>20</td>
</tr>
</tbody>
</table>

**TOTAL AMPS:** 34.2 (Bus A) 24.5 (Bus B)

**RATED VOLTAGE:** 240V

---

### Electrical Panel Wiring Diagram

- **240V Neutral Lead**
- **208V Neutral Lead**
- **120V Neutral Lead**
- **480V Neutral Lead**

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### Electrical Panel Specifications

- **Vendor:**
- **Model:**
- **Serial Number:**

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### Electrical Panel Requirements

- **Conduit:** PVC
- **Supports:** Typical at all equipment locations
- **Grounding:**
  - 1 1/2" 316 SS Channel, mounted as required
  - 4"Ø Aluminum Post, (TYP.)
  - 15 KVA XFMR in A NEMA 3R Stainless Steel 316 Enclosure.
**NOT TO SCALE**

- **AWG**  & **3/4" DIA. x 20' COPPERCLAD GROUND ROD**
- **EXOTHERMICALLY WELDED**
- **17'-0"**
- **24" MIN.**

**HANDHOLE WITH STAINLESS STEEL HARDWARE**

**BOND TO POLE GROUNDING SYSTEM VIA GROUND WIRE**

**CONCRETE SQUARE HOLLOW POLE**

- **(2) 30A RATED, HEB-A INLINE FUSE HOLDERS EACH WITH KTK 5 AMP FUSE**

**HANDHOLE LARGE ENOUGH TO ACCOMMODATE**

- **18" LIGHTNING ROD AND #2 DOWN CONDUCTOR ATTACHED TO GROUND ROD BY BASE OF POLE. LIGHTNING PROTECTION SHALL MEET NFPA 780**

- **MCGRAW EDISON GALLEON LED AREA FIXTURE, MODEL NO. GLEON-AF-02-LED-E1-T4FT.**

**FIXTURES SHALL BE SEAMLESS ON THE TOP AND SIDES.**

- **SITE LIGHTING FIXTURE AND POLE DETAIL**

**CONDUIT GROUNDING**

- **ALL CONDUIT SHALL BE GROUNDED WITH "O-Z/GEDNEY" (OR EQUAL) TYPE BLG GROUNDING BUSHINGS**

- **LOCK WASHER**

- **EQUIPMENT ENCLOSURE**

**MIN. 12" STRAIGHT SECTION**

**INSULATED THROAT BUSHING**

**TYPICAL FOR ALL CONDUIT ENTRANCES INTO NEMA 3R,**

**NOTE:**

**RAIN TIGHT SPACE-MAKER HUB WITH INSULATED NEOPRENE "O" RING ON 4X ENCLOSURES. NEMA 4, OR NEMA CONDUIT HUB**

**MULTIPLE CONDUIT IN EARTH**

**CONDUIT SEAL OFF (SPLIT TYPE)**

**GROUND CABLE CONNECTION**

**GROUND CABLE EXOTHERMIC WELD TO REBAR**

**HORIZONTAL STAGGERING OF SPACERS AND JOINTS**
COORDINATE WITH CITY FOR ANTENNA

ANTENNA NOTES:
1. SURFACE MOUNT SUPPORT BASE TO BE ADJUSTED AS REQUIRED BY FINAL ANTENNA HEIGHT (MIN. 12 FEET).
2. MAST & METAL STRUCTURE SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C. SECTION 810-21.
3. ALL POLE INSTALLATIONS SHALL BE SUITABLE FOR WIND LOADING AND APPROPRIATE GUST FACTOR PER APPLICABLE BUILDING CODE. THE CONTRACTOR SHALL INCLUDE WITH THE SHOP DRAWING SUBMITTAL, A MAST WIND LOADING CALCULATION SIGNED & SEALED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA SHOWING THAT THE PROPOSED MAST AND FOUNDATION WILL MEET THE GIVEN WIND LOADING REQUIREMENT.
4. INSTALL GROUND CLAMP ON EACH LEG AND INTERCONNECT WITH #4/0 BARE COPPER GROUNDING CONDUCTOR.
5. WRAP CABLE FOR LEVEL TRANSDUCER AROUND WET WELL WALL OPENING TO THE LEVEL TRANSDUCER.
6. INSTALL GROUND CLAMP ON EACH LEG AND INTERCONNECT WITH #4/0 BARE COPPER GROUNDING CONDUCTOR.
7. SPARE CONDUIT INTO WET WELL SHALL BE CAPPED.
8. INSTALL GROUND CLAMP ON EACH LEG AND INTERCONNECT WITH #4/0 BARE COPPER GROUNDING CONDUCTOR.

NOTES:
1. RIGID CONDUITS SHALL BE STUBBED INTO WALL OF WET WELL 24" MIN. BELOW GROUND LEVEL TO PROVIDE ACCESS TO CABLES AND CONTROL WIRING.
2. CONDUITS SHOULDN'T BE EXPOSED TO TEMPERATURES EXCEEDING 400°F OR HARDENING CAN'T BE AVOIDED.
3. PIPE MATERIAL SHALL BE STAINLESS STEEL 150 LBS (MIN.) \(304L\) TYPE, FLEXIBLE CONDUIT.
4. ALL CABLES SHALL BE MOUNTED IN CONCRETE STRUCTURE.
5. ALL CABLES SHALL HAVE A STRAIN RELEASE CLAMP FIXED TO THE WET WELL STRUCTURE WITH KINDBIND, HEAVY DUTY STAINLESS STEEL BRACE SLEEVE FOR ALL PUMP CABLES.
6. FLOAT SWITCH CABLES SHALL BE INSTALLED IN THE SAME WAY AS THE PUMP CABLES ARE INSTALLED.
7. ALL CABLES SHALL BE BROUGHT OUT TO THE HATCH OPENING ON THE OUTSIDE OF THE WET WELL STRUCTURE AS SHOWN.
8. FLOAT SWITCH CABLES SHALL BE BROUGHT OUT TO THE HATCH OPENING TO ALLOW CABLES TO BE SUPPORTED BY ANCHORS.

WET WELL LEVEL, FLOATS, AND CABLE INSTALLATION DETAIL

NOT TO SCALE

NOTES:
1. The hole in the wet well wall for conduit stubs shall be sized and bored for the conduit to fit. The hole shall be grouted.
2. When conduit stub is 12" or over in length, the stub shall be supported by hangers.
3. The stubs inside the wet well shall be brought out to the hatch opening to allow cables to be supported by anchors.
4. The stubs inside the wet well shall be brought out to the hatch opening to allow cables to be supported by anchors.
5. All cables shall have a strain release clamp fixed to the wet well structure with kinbind, heavy duty stainless steel brace sleeve for all pump cables.

NOTES:
1. All conduit stubs shall be stubbed into wall of wet well 24" MIN. BELOW GROUND LEVEL TO PROVIDE ACCESS TO CABLES AND CONTROL WIRING.
2. CONDUITS SHOULDN'T BE EXPOSED TO TEMPERATURES EXCEEDING 400°F OR HARDENING CAN'T BE AVOIDED.
3. PIPE MATERIAL SHALL BE STAINLESS STEEL 150 LBS (MIN.) \(304L\) TYPE, FLEXIBLE CONDUIT.
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WET WELL LEVEL, FLOATS, AND CABLE INSTALLATION DETAIL

NOT TO SCALE