INSTALL 26.5' LP 06, 30' WIDE ALUMINUM SLIDE CATWALK WITH DOUBLE 42" HIGH HANDRAILS (SHOP DRAWING SHALL BE SUBMITTED FOR FABRICATING AND INSTALLATION OF THIS ITEM)

EXIST. METAL CATWALK

PROJECT ACCESS DRIVE

SITE DETAIL 1 ON THIS SHEET

EXIST. BRIDGE CONC. SLOPE PATT.

BANK AND SHORE RIP RAP (2:5)
WITH FILTER FABRIC

BANK AND SHORE RIP RAP (2:5)
WITH FILTER FABRIC

TWO PRE-STRESSED CONCRETE PILINGS
WITH CONCRETE CAP ON TOP
CREST EL. 45.25
SEE STRUCTURE PLAN SHEETS

TWO B & H (LEFT-UP) ALUMINUM SLIDE GATES
WITH ELECTRIC ACTUATORS (LIHITORQUE WX-10)
WHIPPS INC., SERIES 832 OR APPROVED EQUIVALENT
GATE INV: EL. 52.25
IF CONC. SLOPE PAVING
SEE SHEETS C-08 AND C-10 FOR DETAILS
SUGGESTED DRAIN LOCATION TYP.
SEE SHEET C-10 FOR DETAILS
SEE METAL SHEET FILES

LAT. N 28° 48' 43.6"
LONG. W 082° 16' 40.0"
EL. 42.85

10% FRC 1/2" ELECTROLE
CONNECT ELECTRIC FROM EQUIPMENT BOX TO ACTUATORS AND MODIFY SCADA SYSTEM FOR NEW GATE CONFIGURATION

VERMISHAPOKKA CHANNEL BOTTLED EL. 35.52

REAR Module BANK SLIDE TO CREST TO TOP OF RETAINING WALL

BANK AND SHORE RIP RAP UNDER THE BRIDGE

THE ORIENTATION OF THIS DETAIL IS FROM THE PERSPECTIVE OF SOMEONE STANDING WITHIN THE CANAL INVERT FACING WEST.

NOTES
1. ALL PROPOSED WORK MUST REMAIN WITHIN THE DISTRICT CANAL RIGHT OF WAY (OR DEER) EASEMENT.
2. MINIMUM DIMENSIONS HAVE BEEN PROVIDED. CONTRACTOR MAY PLACE LONGER PRE-STRESSED CONCRETE PILINGS AT HIS EXPENSE. CREST SHALL NOT BE MODIFIED.
3. SEE STRUCTURAL SHEETS FOR STRUCTURAL DETAILS.
4. A FLOW BYPASS SYSTEM IS NOT REQUIRED FOR THIS PROJECT AS A MEANDER STRUCTURE IS ABLE TO DIVERT FLOW.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

SOUTH 2379 BROAD ST. BROOKSVILLE, FL 34604-6899 PHONE: (352) 796-7211

AIM Engineering & Surveying, Inc.
CIVIL ENGINEERING * LAND SURVEYING * UE * TRANSPORTATION * UTILITIES
PROJECT MANAGEMENT * CONSTRUCTION ENGINEERING & MANAGEMENT
240 Fowler St. Ste. 100 Fort Myers, FL 33901 PHONE: 239-532-0369 Email: info@aimengineer.com CERTIFICATE OF AUTHORIZATION No. 216

TSALA APOPKA GOLF COURSE STRUCTURE MODIFICATION
WEIR SITE PLAN

MARCH 2019

DANIEL W. SCHROEDER P.E. No. 78646 PROFESSIONAL ENGINEER

DATE: MARCH 2019
DRAWN BY: BK
CHECKED BY: DS

C-07

PROJECT NO.

DATE DESCRIPTION

CIVIL ENGINEERING & SURVEYING, INC.
**SLOPE PAVEMENT REINFORCEMENT**

- 4" closed end jet filter with lower VENT ASTM A316 SS BACKFLOW PREVENTER
- Part # JF45SVV
- OR APPROVED EQUIVALENT

**DRAIN DETAIL - CANAL BOTTOM**

- 2" THICK CONCRETE SLOPE PAVEMENT
- FILTER FABRIC 2" UNDER SLOPE PAV. 100% PASSING NO. 200 SIEVE
- CLEAN FREE-DRAINING SAND 5% PASSING NO. 200 SIEVE

**SLOPE PAVEMENT DETAIL**

- FILTER FABRIC SHALL BE TYPE D-2 OR APPROVED EQUIVALENT (TYP.) UNDER RIP-RAP

**SECTION “D-D” CANAL STABILIZATION**

- PLACE FILTER FABRIC UNDERNEATH FOOTER
- BANK AND SHORE RIP-RAP
- DRAIN HOLE FORMED WITH 4" DIA. PVC PIPE @ 10'-0" MAX. CENTERS (STAGGERED)

**DRAIN DETAIL - CANAL SLOPE**

- FILTER FABRIC EMBEDDED 12" INTO CANAL SECTION
- EL 34.4
- BANK AND SHORE RIP-RAP
- PLACE FILTER FABRIC UNDERNEATH FOOTER
- BANK AND SHORE RIP-RAP:"
96"x96" ALUMINUM GATE GENERAL DETAILS
(BOTTOM-UP OPENING)
OR APPROVED EQUIVALENT

NOTE: CONTRACTOR TO SUBMIT SHOP DRAWINGS.

SERIES 823 WEIR GATE (96"x96" ALUMINUM BOTTOM-UP OPENING)
OR APPROVED EQUIVALENT

SERIES 823 WEIR GATE (SECTION DETAILS)
OR APPROVED EQUIVALENT

AIM Engineering & Surveying, Inc.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD ST. BROOKSVILLE, FL 34604-6899
PHONE: (352) 796-7211

TSALA APOPKA GOLF COURSE STRUCTURE MODIFICATION
SLIDE GATE DETAIL

18-0790
NOTE: CUTTING/WELDING OF EXIST. SHEET PILING MAY BE REQUIRED FOR INCORPORATION OF GATE SUPPORT STRUCTURE.
### Bill of Reinforcing Steel

**Wall Thickness**

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<tr>
<th>Wall No.</th>
<th>Size</th>
<th>No.</th>
<th>Spacing</th>
<th>Length</th>
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**Average Length**

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**Total Wall Quantities**

1. **Concrete**
   - Footing: 18.3 CY
   - Wall: 20.9 CY
   - Total: 39.2 CY

2. **Steel**
   - Rebar: 3,611 lbs

---

### Notes

1. Work these Data Tables with Index 400-010.
2. Concrete Class IV (f"c = 5,500 psi for retaining wall) with silica fume, metakaolin or ultrafine fly ash.
3. Wall exposed face surface texture shall be Type "A", Smooth.
4. Environmental Classification is R/A.
5. Minimum Soil Nominal Bearing Resistance = 2,000 psi.
6. A value of 'D' for Slope Backwall indicates front and back of wall are parallel.
7. D_t is typical depth of soil and is used for design purposes only. See Control Drawings for actual ground line.
8. Non-zero values for L_{eff} and D_{typ} indicate the existence of a shear key.
9. A non-zero value for V_{iy} indicates the existence of a footing step, see Control Drawings for location.
10. Bars J, K, L and F carry uniformly between begin and end wall heights as indicated by begin and end dimensions.
11. The number of G1 Bars includes 2 additional bars when a shear key is specified.
12. For walls with variable begin/end height, Bars G2 shall be fanned such that they are evenly spaced throughout length of wall.
DESIGN METHODOLOGY:
LOAD AND RESISTANCE FACTOR DESIGN (LRFD) METHOD.

DESIGN LOADING:
1. DEAD LOAD
   a) Reinforced Concrete: 150 PSF
   b) Live Load
   2. WIND LOAD
   a) Risk Category: IV
   b) Exposure Category: B
   c) BROOKSVILLE, FL.
   d) Height of Structure Above Ground: 20 FT
   e) Wind Pressure: 30 PSF

VERTICAL DATUM:
Elevations are according to North American Vertical Datum (NAVD) of 1988.

PLAN DIMENSIONS:
1. All dimensions in these plans are measured in feet and inches either horizontally or vertically unless otherwise noted.
2. All dimensions are given for a mean temperature of 77°F.
3. Minimum of 2 clearance for all reinforcement unless noted otherwise.
4. Abbreviations:
   E.F. – Each Face
   O.H. – Opposite Hand

CONCRETE:
1. Concrete F=4,000 PSI compressive strength at 28 days, for gate support structure, foot section 400.
2. It was assumed that the environment is classified as slightly aggressive.
   No documents of specific water tests were available to classify the environment as moderate or extremely aggressive.
3. Reference the geotechnical engineering report recommendations regarding ground water conditions, site conditions and subsurface exploration.
4. All exposed edges and corners of concrete shall be chamfered 1” unless otherwise noted.

REINFORCING STEEL:
1. All reinforcing steel shall be Grade 60 Carbon Steel per specification section 032.
2. All dimensions pertaining to location of reinforcements are to be determined at centerline of bars except where the clear dimension is shown to face of concrete.
3. All hooks and bends, unless otherwise noted in the plans, shall be in accordance with the foot standard plans index 425-001, "Bar Bending Details (Steel)."
4. All lap splices, unless otherwise noted in plans, shall be in accordance with AASHO LRFD Bridge Design Specifications.
5. Reinforcement detail dimensions are out-to-out of bars.
6. Typical reinforcing bars are designated as:

<table>
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<tr>
<th>REINFORCING BAR</th>
<th>LENGTH</th>
<th>DIAMETER</th>
<th>TYPE</th>
<th>QTY</th>
<th>AREA</th>
<th>AREA END</th>
<th>AREA SIDE</th>
<th>AREA OVER</th>
<th>AREA UNDER</th>
<th>AREA FILL</th>
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SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD ST. BROOKSVILLE, FL. 34604-6899
PHONE: (352) 796-7211

JAMES TOOMBS
PROFESSIONAL ENGINEER
P.E. No. 41390

TSALA APOPKA GOLF COURSE STRUCTURE MODIFICATION
GENERAL NOTES

DATE: MARCH 2019

JAMES TOOMBS
PROFESSIONAL ENGINEER
P.E. No. 41390

18-0790

S-05
NOTES

TRAFFIC RAILINGS OR PARAPETS:
If there is a Traffic Railing or Parapet on the wall, align Wall Joints with V-Grooves, and Wall Expansion Joints with Barrier Open Joints.

FOUNDATION: Prepare the soil below the footing in accordance with the requirements for spread footings in Specification Section 455.

* Shear Key is required only when specified in the Plans.

TYPICAL SECTION

REINFORCING STEEL BENDING DIAGRAMS

- **BARS G1**
  - 1/2" Lap Splice (Typ.)
  - Slope Backwall
  - BARS J & K
  - BARS M

NOTE: All bar dimensions are out-of-out
GENERAL ELECTRICAL NOTES AND REQUIREMENTS

1. INSTALLATION REQUIREMENTS


The installation of the systems shall be in accordance with the materials and methods indicated in the plans and specifications. Any changes indicated shall be submitted in writing to and approved by the owner. If not included in the submittals and not specified, materials and methods shall be provided per plans and specifications.

The codes represent the minimum installation criteria for the project. It is the responsibility of the installing contractor to adhere to the design documents so long as they do not indicate installations that will prevent code violations. No additional changes shall be made or added to change the code. Any changes to the plans shall be submitted in writing to and approved by the owner.

2. Work shall include all labor, materials, permits and costs for installation of a complete electrical system.

The Contractor shall identify and obtain separate permits for the low voltage systems to be installed as part of the electrical system. This includes (but is not limited to) fire alarm, telephones, intercom, access control, security, and other similar systems.

3. It is not the purpose of these plans to show all details of construction. Only the intent of electrical construction is responsible for the purchase and installation of all items such as wiring, switches, conductors, fuses and fittings, etc., as necessary for a complete electrical system in working order.

4. Contractor is responsible for providing complete RFI's based upon the entire set of construction documents. The extent to all devices indicated in plans and all equipment required to support those devices. For any reason, the intent of the engineer, architect or client is unclear then the contractor is to get clarification prior to proceeding with the RFI. If the contractor fails to do so, the contractor shall be required to incur any additional costs incurred in reviewing the intent of the engineer, architect, or client.

5. All equipment, fixtures, etc., shall be furnished, tested, adjusted and placed in satisfactory operating condition by the contractor and shall guarantee all craftsmanship, materials and equipment to be free of defects for a period of (1) one year from date of owner acceptance, and shall repair such defects without cost to the owner. All equipment shall be covered for the duration of the manufacturer's guarantee or warranty. This contractor shall furnish the owner with all manufacturer's guarantees and warranties.

6. All conductors, buses, etc., shown are to be copper unless noted otherwise.

7. All wiring to have approved 250V insulation unless noted otherwise.

8. Minimum wire size to be #2 2a.

9. No "whip" or "flyback" droppers permitted.

10. All devices and equipment to be same brand and same model number as shown on plans. All devices and equipment to be same brand and same model number as shown on plans.

11. In the contractor's responsibility to immediately within (2) working days of discovery notify in writing (via fax, email) or phone call and associated work order letter copies to all parties involved. The contractor and electrical contractors shall coordinate with the appropriate utility company with regards to the electrical service to the project that shall occur immediately upon project start date. Coordination with any existing materials or construction of project. Architect and engineer shall be notified in writing as to the date of coordination and the results of the coordination. Any issues shall be reviewed by the architect and engineer. Revisions or additional work shall be performed by the installing contractor.

12. All electrical conduits not containing specified conductors shall have a pull wire installed.

13. Do not scale the electrical drawings. Refer to the actual site conditions for electrical location, layout, colors, door swings, etc.

14. Shop drawings shall be provided for all electrical equipment that is to be used on this project. No additional changes shall be provided or approved by the owner. If not included in the submittals and not specified, materials and methods shall be provided per plans and specifications.

15. Shop drawings shall be provided for all electrical equipment that is to be used on this project. No additional changes shall be provided or approved by the owner. If not included in the submittals and not specified, materials and methods shall be provided per plans and specifications.

16. Shop drawings submitted by way of an electronic project management system are not acceptable.

17. Wiring to be:
   a. NEC as conduit and conductors.
   b. PVC-3 conduit where subject to vibration.
   c. JXAC- AL aluminum conductors are allowed.

18. Existing panels: The electrical contractor shall update the directory of any existing panel being used for the renovation. The new electrical shall include all information as previously referenced and shall include accurate branch circuit descriptions of existing branch circuits. The electrical contractor shall trace existing circuitry as necessary to provide the new and accurate circuitry.

19. Conduit shall be color coded as follows:
   120/240 volt single phase:
   red/white/black/yellow
   wire size A and smaller wire shall have factory colored insulation as listed above. Wire size #4 and larger wire shall be color coded by tape. Color tape shall be applied to conductors at 90° intervals. A minimum "staples".

20. Notice to Contractor:

   a. The drawings and specifications that have been prepared for this project must be reviewed by the Florida Building Commission.

21. Within 30 days of project completion, record drawings (if built) of the project shall be provided by the contractor(s) and submitted to the owner. These shall include (minimum) a single line power flow and schematic drawing(s) and floor plans. In addition, owner copies of operating manuals for all equipment requiring names and addresses, and contact for qualified service agency(s).

22. It is noted that if there is no construction observation ("COC") Work performed by the engineer(s)/ of record there will be no certified plans (as built) prepared by the engineer(s)/ of record.

23. As installed, the system voltage drops are less than 2% for feeders and 3% for the branch circuits.
**KEY NOTES**

1. 1" HDG-RS CONDUIT BODY SELECTED AND POSITIONED SUCH THAT COVER OPENING IS ACCESSIBLE FROM CATHARK FOR SERVICING. EQUIVALENT TO CROSSFRINGS HDG SERIES.

2. 1" HDG-RS CONDUIT WITH CONDUCTORS AS FOLLOWS:
   2a. (2) #12 Cu [H/H for Actuator #1]; (2) #12 Cu [H/H for Actuator #2].
   2b. (2) #12 Cu [H/H for Actuator #2] and (1) #12 Cu-B.
   NOTE: THE CONDUCTORS REFERENCED IN THE NOTE ARE TO BE RATED AT 90°F FOR TEMPERATURE AND CONDUIT-FILL DESIGNING PURPOSES.
   NOTE: THE CURRENT CARRYING CONDUCTORS FOR THESE CIRCUITS ARE TO BE UN-SPLICED FOR THEIR ENTIRE LENGTH FROM SOURCE TO LOAD. THE EQUIPMENT BONDING CONDUCTOR IS TO BE TAPPED FOR CONNECTION AS NECESSARY.

3. 3/4" HDG-RS CONDUIT WITH (3) #12 Cu [H/H/B]. TRANSITION TO 3/4" LING-B FOR FINAL CONNECTION TO ACTUATOR. MAXIMUM LENGTH OF 18'.

4. ACTUATOR: BASIS OF DESIGN IS RATED AT 2/3 HP, 240 VOLT, 1-PHASE, 4.6 AMPS (FULL LOAD), 20 AMPS (LOCKED ROTOR).

5. EXISTING CONTROL CABINET TO BE REUSED AND REWORKED FOR NEW CONTROLS.

6. EXISTING PANEL "A" LOCATED WITHIN A WEATHERPROOF ENCLOSURE - PANEL TO BE REUSED AND REWORKED FOR NEW ACTUATORS. SEE PANEL SCHEDULE FOR SETS.

7. EXISTING SERVICE DISCONNECT TO BE REUSED, CLEAN AND LUBRICATE MECHANISM.

8. EXISTING UTILITY METER TO BE REUSED.

9. REUSE OF EXISTING WIRING. IT IS PERMISSIBLE TO REUSE THE EXISTING 1" HDG-RS CONDUIT WHICH IS ROUTED FROM THE SHORE MOUNTED CONTROL CABINET TO THE EXISTING GATES. THIS CONDUIT MAY BE REUSED UP TO THE FIRST COUPLING, ROUGHLY 10' ONTO THE EXISTING WIRING STRUCTURE. PRIOR TO REUSE, THE CONTRACTOR SHALL VERIFY THE INTEGRITY OF THE EXISTING CONDUIT. PRICING FOR A COMPLETE RUN OF NEW CONDUIT SHALL BE INCLUDED IN THE BD.

---

Weir Elevation
Scale: 1" = 10'-0"
Existing Panel "W" Schedule

100 Amp Bus - MCB (Main Fed) - 120/240V - 1-Phase - S/N
24 Circuit - Surface Mounted - NEMA 1

Note: The MCB and the secondary source CB are connected with a handle tie for use as a manual transfer switch.

Power Riser Diagram

Not to Scale